Strata® DK

Digital Business Telephone Solutions

Feature Description Manual

DK14

Software Release 3.1

DK40

Software Release 3.1

DK424

Software Releases 4.0, 4.1

Strata DK
General End User Information

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Introduction

This manual pertains to features and capabilities of Strata DK14 Release 1, DK40 Release 1, and DK424 Release 4 digital business telephone systems. Each feature profile includes:

- **System Availability** – indicates whether a feature is standard, optional or available only on certain Strata systems.
- **Description** – gives a detailed description of the feature.
- **Benefits** – provides an overview of benefits when using the feature either alone or with other Strata features.

Organization

This manual is divided into the following chapters:

- **Chapter 1 – System Overview** outlines basic categories and options for Strata features. Multiple tables provide hardware and software capacities and all the available features.
- **Chapter 2 – Features** provides all of the available features in the Strata DK systems in alphabetical order.
- **Chapter 3** – **Strata AirLink™** outlines the basic concepts of the analog and digital wireless systems and describes the components and configuration software. For detailed information, refer to the *Strata Airlink Installation* and *User Guides*, and *Strata DK I&M* and *General Description Manuals*.
- **Chapter 4 – PC Attendant Console** provides an alphabetical list by feature name, a profile for each Strata DK424 PC Attendant Console feature.
- **Chapter 5 – Automatic Call Distribution (ACD)** details the various features and options available with ACD applications.
- **Chapter 6 – Hospitality Management Information System (HMIS)** provides an overview of HMIS capabilities. For detailed feature information, refer to the *HMIS User Guide* and *HMIS General Description*.

Conventions

This manual uses these conventions:

Note Elaborates specific items or references other information. Within some tables, general notes apply to the entire table and numbered notes apply to specific items.

Important! *Calls attention to important instructions or information.*

DN	any Directory Number button, also known as an extension or intercom number.
PDN	any Primary Directory Number button (the extension number for the telephone).
SDN	any Secondary appearance of a PDN. A PDN which appears on another telephone is considered an SDN.
PhDN	any Phantom Directory Number button (an additional DN).
Phone Buttons	are not highlighted in **Arial Bold** as in other TSD documentation.
Courier	shows a computer keyboard entry or screen display.
“Type”	indicates entry of a string of text.
“Press”	indicates entry of a single key. For example: Type **prog** then press **Enter**.
+	shows a multiple PC keyboard or phone button entry. Entries without spaces between them show a simultaneous entry. Example: **Esc** + **Enter**. Entries with spaces between them show a sequential entry. Example: **#** + **5**.
~	means “through.” Example: 350 ~ 640 Hz frequency range.
➤	denotes the beginning of a procedure.
➤	denotes the step in a one-step procedure.
See Figure 10	Grey words within the printed text denote cross-references. In the electronic version of this document (Strata DK Library CD-ROM or FYI Internet download), cross-references appear in blue hypertext.

Related Documents

The following documents contain additional information about Strata DK systems.

- **Digital Telephone User Guide** provides all the procedures necessary to operate Toshiba-proprietary digital telephones including Liquid Crystal Display (LCD) features. It also includes instructions for using the add-on module/DSS console.
- **Digital Telephone Quick Reference Guide** provides a quick reference for frequently used digital telephone features.
- **Digital Single Line Telephone User Guide** provides all the procedures necessary to operate the Toshiba DKT2001 telephone features.
- **Electronic Telephone User Guide** explains all the procedures necessary to operate Toshiba-proprietary electronic telephones including all LCD features. Does not apply to the Strata DK14 system. It also includes instructions for using the electronic DSS console.
- **Electronic Telephone Quick Reference Guide** provides a quick reference for frequently used electronic telephone features. Does not apply to the Strata DK14 system.
- **Standard Telephone User Guide** explains all the procedures necessary to operate rotary dial and push-button standard telephones.
- **Strata AirLink™ Wireless Telephone User Guide** expalins all the operating procedures and features for the wireless handset.
- **System Administrator Guide** gives instructions for the System Administrator to manage a system. Contains instructions for station relocation, system Speed Dial, and other features only activated by the System Administrator.
- **PC/Data Interface User Guide** explains all the procedures necessary to operate stand alone data interface units while in the data mode for printer sharing and modem pooling. Also provides instructions for connecting to a PC with Telephone Application Programming Interface (TAPI).
- **Cordless Telephone User Guide** provides instructions on using the DKT2004-CT cordless digital telephone as a single unit or in conjunction with a digital telephone.
- **PC-DKT User Guide** provides installation and operation information for the Personal Computer Digital Key Telephone system.
- **DKAdmin/DKBackup User Guide** describes how to use the DK Admin/DK Backup interactive software applications, which enable you to easily and quickly custom program and/or update the Strata DK14/DK40/DK424 with a user friendly PC display. It also describes how to backup and restore existing Strata DK14/DK40/DK424 system data using the programs.
- **Keyprint 2000 User Guide** provides instructions for the Keyprint 2000 software printing package which enables you to print and store custom button label keystrips for Strata DK 2000-series 10-button or 20-button digital telephones, 20-button add-on modules, and 60-button digital DSS consoles.
- **Strata DK Programming Manual** provides all instructions necessary to program the Strata DK14, DK40, and DK424 systems and system record sheets including ACD.

- **Strata DK Installation & Maintenance Manual** provides installation instructions for configuring and installing the Strata DK14, DK40 and DK424. It also includes ISDN, T1/DS-1 interface installation and configuration instructions as well as fault finding flowcharts to troubleshoot the systems. An ACD section provides instructions for installing ACD into the Strata DK424.
- **Strata AirLink Wireless System Installation Guide** provides step-by-step hardware and software installation instructions. It includes examples of system configurations, information on performing site surveys, and troubleshooting techniques.
- **Strata DK Library CD-ROM** enables you to view, print, navigate and search publications for Strata DK14, DK40 and DK424 digital business telephone systems.
- **Hospitality Management Information System (HMIS) General Description** provides an overall view of the system's hardware, software, applications and features. The HMIS is a PC-based solution designed to meet the specific operational needs of small- to medium-sized hotel/motels and includes both the PC and software.
- **Hospitality Management Information System (HMIS) User Guide** describes the product's many software features and gives step-by-step instructions for using them.

The following applies only to the Strata DK424.

- **ACD/MIS General Description** provides a system overview, including hardware and feature information. Highlights the technology employed in operating the ACD system.
- **ACD Agent Guide** describes the ACD agent feature operation along with step-by-step procedures for using features.
- **ACD Supervisor Guide** provides instruction on how to use the ACD supervisor features.
- **PC Attendant Console User Guide** explains the procedures necessary to operate the PC Attendant Console.
- **PC Attendant Console Quick Reference Guide** provides a quick reference for frequently-used PC Attendant Console features.
- **DKQuote User Guide** shows how to use this interactive software to assist you with Strata DK systems configuration and pricing worksheets.
- **Call Center Viewer User Guide** describes how to install and operate the Call Center Viewer application on a PC. It explains how to view and customize ACD group and agent status information.

System Overview 1

The Strata DK14, DK40, and DK424 are digital business telephone systems that are electronically compatible with the public telephone network and can function in PBX or Centrex environments.

Each system can be configured as key or hybrid (DK424 PBX also) with separate Federal Communications Commission (FCC) registration numbers for each type. Feature capabilities are very similar. The primary difference between models is capacity. Each system and station feature is described completely, beginning on Pages 17 and 126 respectively.

Strata DK14

The Strata DK14 uses a compact, single cabinet, wall mount design. It provides built-in circuitry for two CO lines and four digital stations. It can be expanded to a maximum capacity of four CO lines and ten stations (eight digital telephone stations and two standard stations).

Strata DK40

The Strata DK40 uses a compact, double cabinet (base plus expansion), wall mount design. It provides capacity for four CO lines, eight digital stations, and four standard stations in the base cabinet. With the expansion cabinet, it has a maximum capacity of 12 CO lines and 28 stations.

Strata DK424

The Strata DK424 uses a modular, building block system design that can be configured using from one to seven cabinets (base cabinet and up to six expansion cabinets). This enables customers to grow cost effectively from small to large configurations. They can reuse common equipment by adding options rather than replacing existing hardware. The only part they potentially replace is the processor, depending upon the size they start with or grow to.

There are four DK424 processor models available having different degrees of capacity, capability, and price. The processors are:

- **RCTUA** small system processor – for one-cabinet configurations not requiring some of the advanced features, such as ACD/MIS, PRI, T1 Interface, Attendant Console, or System Open Architecture Interface (OAI). It provides a maximum capacity for 16 CO lines and 32 stations.
- **RCTUBA/BB** medium system processor – for one- or two-cabinet configurations and supports all of the advanced features, such as ACD/MIS, PRI, T1 Interface, Attendant Console, and System OAI. It provides a maximum capacity for 48 CO lines or 80 stations.
- **RCTUC/D** large system processor – for up to six-cabinet configurations and supports all of the advanced features. It provides a maximum capacity for 144 CO lines or 240 stations.
- **RCTUE/F** maximum system processor – for up to seven-cabinet configurations and supports all of the advanced features. It provides a maximum capacity for 200 CO lines or 336 stations.

Migration

An important aspect of the Toshiba product line strategy is cost-effective migration from smaller to larger systems. This includes reusing as much of the existing equipment as possible.

All Strata DK systems use the same 2000-series digital telephones and wiring. This means a customer growing from as small as a DK14 to as large as a DK424 can use the same telephones.

Older digital and electronic telephones are also compatible with Strata DK40 and DK424 systems. This means customers growing out of older Strata systems into current larger ones, can reuse their existing electronic telephones.

Printed circuit boards from Strata DK24/56/96 systems can be reused in DK424 systems. This includes CO line interface cards, station interface cards, and option cards. This means DK24/56/96 customers need only to buy a new processor and the appropriate number of cabinets to migrate to the larger DK424.

Customers buy Toshiba telecommunication products knowing their investment is designed for long-term use. Not only are they buying quality products that will last, but they can also grow and expand cost effectively.

System Capacities

Table 1 is an overview of each system's hardware capacities and Table 2 is an overview of each system's software capabilities.

Table 1 Hardware Capacities

			DK424			
Lines and PCB Slots	**DK14**	**DK40**	**RCTUA**	**RCTUBA/BB**	**RCTUC/D**	**RCTUE/F**
Universal slots	0	4[1]	6	12	36	54
CO lines – loop start	4	12[2]	16[2]	48[2]	144[2]	200[2]
CO lines – ground start	0	12	16[2]	40[2]	136[2]	200[2]
DID lines (analog)	0	12	16[3]	40[3]	136[3]	200[3]
Tie lines (analog)	0	12	16[3]	40[3]	136[3]	200[3]
T1 (DS-1 lines each)	0	0	0	48[4]	144[4]	192[4]
ISDN BRI (S/T or U) B channel lines	0	0	8[5]	16[5]	16[5]	16[5]
ISDN PRI (T) B channel lines	0	0	0	47[6]	141[6]	188[6]
Squared-system maximum (lines + stations)	4 + 4	12 + 12	16 + 16	48 + 48	144 + 144	200 + 200
Stations and Peripherals						
Add-on modules (DADM)	8	12	12	40	120	200
Attendant consoles	0	0	0	2	4	4
DKT2004-CT cordless telephones	8	28	32	80	240	336
DKT2004-CT simultaneous calls	8	9	9	9	9	9
Door locks	2	3	4	5	5	5
Door phones	6	9	9	12	12	12
DSS consoles	0	3	3	4	8	8
ISDN BRI station circuits TE-1 and TA (2B + D per circuit)[7]	0	0	8	16	40	64
Handset OCA stations	8	28	32	80	240	336
Off-premises stations	2	20	32	80	232	328
PDIU-DS[8]	7	24	31	79	160	208
RPCI-DI used for data + TAPI, per system[8]	8	24	32	80	144	200
RPCI-DI used for TAPI only per: ♦ Cabinet[8] ♦ System[8]	 N/A 8	 N/A 24	 32 32	 40 80	 40 186	 40 280
Speaker OCA stations[8]	8	28	32	80	160	208
Standard stations	2	20	24	72	232	328
Telephones – DKT	8	28[9]	32[10]	80[10]	240[10]	336[10]
Telephones – EKT	0	16[9]	32[10]	80[10]	240[10]	328[10]
Strata AirLink wireless handsets	N/A	20	24	72	232	328

1. There are four universal slots in the DK40 expansion unit.
2. All CO line capacities assume a PIOU, PIOUS, PEPU, RSSU, or RSIU is installed for RCTUBA/BB, RCTUC/D or RCTUE/F, but no Caller ID RCIU2/RCIS PCBs.
3. Limits apply to analog DID and Tie lines, not T1 DID/Tie lines.
4. T1 lines can be loop start, ground start, Tie, or DID (maximum 24 lines per unit, any type or combination).
5. BRI lines provide CO line services, including Caller ID, DID and Direct Inward Lines (DIL).
6. PRI lines provide CO line services, including Caller ID, ANI, DID, Tie, POTS, FX and DIL.

7. ISDN BRI TE-1 and TA include ISDN telephones, modems, video conference interfaces, etc. Up to two stations (TE-1 and/or TA) can connect to and share one BRI S-type circuit. Only one station can connect to a BRI U-type circuit.
8. Speaker OCA, PDIU and RPCI capacity is determined by 2B channel slot availability and power supply limits.
9. To install the maximum of 28 total DKTs and EKTs in the DK40, up to 16 of the stations can be EKTs and at least 8 of the stations must be DKTs.
10. Maximum capacity of DKT/EKT stations per DK424 cabinet is 62, less for EKT 2000, 3000 (Power Factor limitation).

Table 2 System Software Capacities

Software	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Class of Srv. Toll Restriction Levels	4	4	4	4	8	8
Call Pickup CO Line Groups	2	2	2	2	4	4
Call Pickup Station Groups	8	20	20	20	20	20
Pooled CO Line Groups	4	8	8	8	16	16
Conference Parties	4	4	4	4	4	4
Simultaneous Conferences	2	4	3	7	7	14
Tandem CO Line Connections	2	4	4	10	10	20
System Speed Dial Numbers	40	40	40	100	100	800
Station Speed Dial Numbers	40	40	40	40	40	40
Speed Dial Digits	20	20	20	20	20	20
Speed Dial Digits Chained	37	37	37	37	37	37
Account Code Digits	4~15	4~15	4~15	4~15	4~15	4~15
Verified Account Codes	100	300	300	300	300	300
DISA Security Code Digits	1~15	1~15	1~15	1~15	1~15	1~15
DNIS Numbers	N/A	N/A	200	350	500	500
Abandoned ANI/Caller ID Number	N/A	N/A	200	400	1000	2000
Primary Directory Numbers	N/A	N/A	32	80	240	336
Phantom (Multiple) Directory Numbers	N/A	N/A	32	80	240	336

Feature Availability

Refer to Tables 3~7 for features and services that are available for Strata DK systems.

Table 3 Strata DK System Feature Availability

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Account Codes-Forced	STD	STD	STD	STD	STD	STD
Account Codes-Verifiable	STD	STD	STD	STD	STD	STD
Account Codes-Voluntary	STD	STD	STD	STD	STD	STD
Alarm Sensor	OPT	OPT	OPT	OPT	OPT	OPT
Alternate Answer Point	STD	STD	STD	STD	STD	STD
Amplified Conference Interface	N/A	OPT	OPT	OPT	OPT	OPT
Automated Attendant, Built-in	OPT	OPT	OPT	OPT	OPT	OPT
Auto Attendant Delayed Ringing	OPT	OPT	OPT	OPT	OPT	OPT
Automatic Call Distribution	N/A	N/A	N/A	OPT	OPT	OPT
Automatic No. Identification (ANI)	N/A	OPT	OPT	OPT	OPT	OPT
Automatic Recall (Hold, Transfer)	STD	STD	STD	STD	STD	STD
Automatic Release from Hold	STD	STD	STD	STD	STD	STD
Background Music Interface	STD	STD	STD	STD	STD	STD
Battery Backup Interface-System	STD	STD	STD	STD	STD	STD
Battery Backup-Memory	STD	STD	STD	STD	STD	STD
Call Waiting Tone	STD	STD	STD	STD	STD	STD
Caller ID	OPT	OPT	OPT	OPT	OPT	OPT
Centrex/PBX Compatibility	STD	STD	STD	STD	STD	STD
Centrex Ringing Repeat	STD	STD	STD	STD	STD	STD
Class of Service, Station	STD	STD	STD	STD	STD	STD
Class of Service, Travelling	STD	STD	STD	STD	STD	STD
CO Line Call Pickup Groups	2 Groups	2 Groups	2 Groups	2 Groups	4 Groups	4 Groups
CO Line Groups	4 Groups	8 Groups	8 Groups	8 Groups	16 Groups	16 Groups
CO Line Queuing	STD	STD	STD	STD	STD	STD
Computer Telephony Integration (CTI)	OPT	OPT	OPT	OPT	OPT	OPT
Conferencing	4 Party	4 Party	4 Party	4 Party	4 Party	4 Party
Credit Card Calling (“0+” Dialing)	STD	STD	STD	STD	STD	STD
Delayed Ringing	STD	STD	STD	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

Table 3 Strata DK System Feature Availability *(continued)*

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Dialed Number ID Service (DNIS)	N/A	OPT	OPT	OPT	OPT	OPT
Direct Inward Dialing (DID)	N/A	OPT	OPT	OPT	OPT	OPT
Direct Inward System Access (DISA)	OPT	OPT	OPT	OPT	OPT	OPT
Distinctive CO Ringing	STD	STD	STD	STD	STD	STD
Door Lock Control	OPT	OPT	OPT	OPT	OPT	OPT
Dual-tone Multi-frequency (DTMF) and Dial Pulse Compatible	STD	STD	STD	STD	STD	STD
DTMF Signal Time Setting (160/80 ms)	STD	STD	STD	STD	STD	STD
End-to-End Signal Tones	OPT	OPT	OPT	OPT	OPT	OPT
E911 Enhanced Operation	OPT	OPT	OPT	OPT	OPT	OPT
FCC Registration (Key, Hybrid)	STD	STD	STD	STD	STD	STD
FCC Registration (PBX)	N/A	N/A	STD	STD	STD	STD
Flash Timing Programmable	STD	STD	STD	STD	STD	STD
Flexible Button Assignment	STD	STD	STD	STD	STD	STD
Flexible Intercom DN Numbering	STD	STD	STD	STD	STD	STD
Flexible Line Ringing Assignment	STD	STD	STD	STD	STD	STD
Flexible Slot Assignment	N/A	OPT (Expansion Cabinet)	STD	STD	STD	STD
Ground Start Lines	N/A	OPT	OPT	OPT	OPT	OPT
Hotline Service (Emergency Ringdown)	N/A	N/A	STD	STD	STD	STD
Internal Call Hold	STD	STD	STD	STD	STD	STD
Internal Call Transfer	STD	STD	STD	STD	STD	STD
ISDN Basic Rate Interface	N/A	N/A	OPT	OPT	OPT	OPT
ISDN Primary Rate Interface	N/A	N/A	N/A	OPT	OPT	OPT
Least Cost Routing (LCR)	STD	STD	STD	STD	STD	STD
Live System Programming	STD	STD	STD	STD	STD	STD
Message Waiting (MW) DKT	STD	STD	STD	STD	STD	STD
MW Lamp Generator for 2500 SLTs	N/A	OPT	STD	STD	STD	STD
Modular Expansion System Design	N/A	STD	STD	STD	STD	STD
Multiple DNs	STD	STD	STD	STD	STD	STD
Music-on-Hold Interface	STD	STD	STD	STD	STD	STD
Night Ringing Answer Code	STD	STD	STD	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

Table 3 Strata DK System Feature Availability *(continued)*

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Night Ring Over External Page	STD	STD	STD	STD	STD	STD
Night Ring Over Ext. Page Zones	N/A	OPT	OPT	OPT	OPT	OPT
Night Service	STD	STD	STD	STD	STD	STD
Non-blocking Dialing DKT/EKT	STD	STD	STD	STD	STD	STD
Non-blocking Internal Call	STD	STD	STD	STD	STD	STD
Off-premises Stations	OPT	OPT	OPT	OPT	OPT	OPT
Outgoing Call Restriction	STD	STD	STD	STD	STD	STD
Page Pickup (Meet-Me Page)	STD	STD	STD	STD	STD	STD
Paging-External Interface	STD	STD	OPT	OPT	OPT	OPT
Paging-External Zone (4 zones)	N/A	OPT	OPT	OPT	OPT	OPT
Paging-Internal DKT All Call	STD	STD	STD	STD	STD (120)	STD (120)
Paging-Internal DKT Group	4 Groups	4 Groups	4 Groups	4 Groups	8 Groups	8 Groups
Pooled CO Line Groups	4	8	8	8	16	16
Power Failure Transfer	STD	STD	OPT	OPT	OPT	OPT
Privacy/Non Privacy Option	STD	STD	STD	STD	STD	STD
Relay Service	STD	STD	OPT	OPT	OPT	OPT
Remote Maint./Admin.	OPT	OPT	OPT	OPT	OPT	OPT
SMDR	OPT	OPT	OPT	OPT	OPT	OPT
Station Hunting – Dist.	STD	STD	STD	STD	STD	STD
Station Hunting – Serial	STD	STD	STD	STD	STD	STD
Station Relocation	STD	STD	STD	STD	STD	STD
System Programming Through Station	STD	STD	STD	STD	STD	STD
System Speed Dialing	40	40	40	100	100	100
Tandem CO Line Connection	STD	STD	STD	STD	STD	STD
Tenant Service	2	2	2	4	4	4
Tie Line Transfer Recall	N/A	STD	STD	STD	STD	STD
T1 Interface	N/A	N/A	N/A	OPT	OPT	OPT
Toll Restriction	STD	STD	STD	STD	STD	STD
Toll Restriction Override Codes	STD	STD	STD	STD	STD	STD
Toll Restr. Speed Dial Override	STD	STD	STD	STD	STD	STD
Transfer Privacy	STD	STD	STD	STD	STD	STD
TTY Local Terminal Interface	OPT	OPT	OPT	OPT	OPT	OPT

STD = Standard
OPT = Optional
N/A = Not Available

Table 3 Strata DK System Feature Availability *(continued)*

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Upload/Download Programming	OPT	OPT	OPT	OPT	OPT	OPT
Voice Mail Integration In Band	STD	STD	STD	STD	STD	STD
Voice Mail Integration (SMDI)	STD	STD	STD	STD	STD	STD
Voice or Tone Signaling Selectable	STD	STD	STD	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

Table 4 Strata DK LCD Feature Availability

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Alphanumeric Personal Messages	10	10	10	10	10	10
Alphanumeric System Messages	40	40	40	40	40	40
ANI/DNIS Display	N/A	OPT	OPT	OPT	OPT	OPT
Auto Callback Number Display	STD	STD	STD	STD	STD	STD
BLF Indication	STD	STD	STD	STD	STD	STD
Busy Station Messaging	STD	STD	STD	STD	STD	STD
Call Duration Display	STD	STD	STD	STD	STD	STD
Call FWD Source/Destination	STD	STD	STD	STD	STD	STD
Called Station Messaging	STD	STD	STD	STD	STD	STD
Caller ID Display	OPT	OPT	OPT	OPT	OPT	OPT
Calling Station Messaging	STD	STD	STD	STD	STD	STD
Calling/Called Number Intercom/DN	STD	STD	STD	STD	STD	STD
Clock/Calendar Display	STD	STD	STD	STD	STD	STD
CO Line ID Incoming/Outgoing	STD	STD	STD	STD	STD	STD
Dial Input Verification	STD	STD	STD	STD	STD	STD
Feature Activation Display	STD	STD	STD	STD	STD	STD
Feature Prompting with Soft Keys	STD	STD	STD	STD	STD	STD
Group Station Messaging	STD	STD	STD	STD	STD	STD
Intercom/DN User Name Display	STD	STD	STD	STD	STD	STD
Remote/Group Station Messaging	STD	STD	STD	STD	STD	STD
Speed Dial Directory Dialing	STD	STD	STD	STD	STD	STD
Speed Dial Directory Name Scroll	STD	STD	STD	STD	STD	STD
Timed Reminders	STD	STD	STD	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

Table 5 Strata DK Station Feature Availability

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Alert Signal Button	STD	STD	STD	STD	STD	STD
Auto Busy Redial (ABR)	OPT	OPT	STD	STD	STD	STD
Auto Callback Intercom	STD	STD	STD	STD	STD	STD
Auto Dial Inside (DSS) Buttons	STD	STD	STD	STD	STD	STD
Auto Dial Outside Buttons	STD	STD	STD	STD	STD	STD
Automatic Hold	STD	STD	STD	STD	STD	STD
Auto Off-Hook Line Selection	STD	STD	STD	STD	STD	STD
Background Music (BGM) with Station Control	STD	STD	STD	STD	STD	STD
Busy Override Tone	STD	STD	STD	STD	STD	STD
Busy Station Transfer/Ringing	STD	STD	STD	STD	STD	STD
Call Forward-All Calls (CFAC)	STD	STD	STD	STD	STD	STD
Call Forward-Busy (CFB)	STD	STD	STD	STD	STD	STD
Call Forward-Busy/No Answer (CFBNA)	STD	STD	STD	STD	STD	STD
Call Forward-No Answer (CFNA)	STD	STD	STD	STD	STD	STD
Call Forward-External/Remote	STD	STD	STD	STD	STD	STD
Call Forward-Fixed (CFF)	STD	STD	STD	STD	STD	STD
Call Forward Override	STD	STD	STD	STD	STD	STD
Call Park	STD	STD	STD	STD	STD	STD
Call Park Orbits	STD	STD	STD	STD	STD	STD
Call Pickup-Directed Station	STD	STD	STD	STD	STD	STD
Call Pickup-Holding/Parked	STD	STD	STD	STD	STD	STD
Call Pickup-Ringing CO Line	STD	STD	STD	STD	STD	STD
Call Pickup-Ringing CO Tenant Groups	2 Groups	2 Groups	2 Groups	2 Groups	4 Groups	4 Groups
Call Pickup-Station Group	20 Groups	20 Groups	20 Groups	20 Groups	20 Groups	20 Groups
Call Transfer Immediate	STD	STD	STD	STD	STD	STD
Call Transfer with Announcement	STD	STD	STD	STD	STD	STD
Call Transfer with Camp-on	STD	STD	STD	STD	STD	STD
Centrex/PBX Feature Buttons	STD	STD	STD	STD	STD	STD
Continuous DTMF Signal Time (DKT2000)	STD	STD	STD	STD	STD	STD
Distinctive Station Ringing	3 Tones	3 Tones	3 Tones	3 Tones	3 Tones	3 Tones
Do Not Disturb (DND)	STD	STD	STD	STD	STD	STD
Do Not Disturb Override	STD	STD	STD	STD	STD	STD
DP/DTMF Mode Change (Tone Button)	STD	STD	STD	STD	STD	STD
Exclusive Hold	STD	STD	STD	STD	STD	STD
Executive Override (Break-in)	STD	STD	STD	STD	STD	STD
Flash Button	STD	STD	STD	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

Table 5 Strata DK Station Feature Availability *(continued)*

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Handset CW/Camp-on Tone On/Off	STD	STD	STD	STD	STD	STD
Handset Volume Control (DKT)	STD	STD	STD	STD	STD	STD
Handsfree Answerback on Internal Calls	STD	STD	STD	STD	STD	STD
Headset Compatible	OPT	OPT	OPT	OPT	OPT	OPT
Hearing-Aid Compatible	STD	STD	STD	STD	STD	STD
Line in Use (I-Use)	STD	STD	STD	STD	STD	STD
Line on Hold (I-Hold)	STD	STD	STD	STD	STD	STD
Microphone Control Button	STD	STD	STD	STD	STD	STD
Microphone Sensitivity Control (DKT)	STD	STD	STD	STD	STD	STD
Off-hook Call Announce (OCA) Handset	STD	STD	STD	STD	STD	STD
Off-hook Call Announce (OCA) Speaker	OPT	OPT	OPT	OPT	OPT	OPT
On-hook Dialing	STD	STD	STD	STD	STD	STD
Pooled CO Line Buttons	STD	STD	STD	STD	STD	STD
Privacy Button	STD	STD	STD	STD	STD	STD
Privacy Override	STD	STD	STD	STD	STD	STD
Privacy Release Button	STD	STD	STD	STD	STD	STD
Private CO Lines	STD	STD	STD	STD	STD	STD
Release Button	STD	STD	STD	STD	STD	STD
Release/Answer Button	STD	STD	STD	STD	STD	STD
Remote Retrieval of Held Calls	STD	STD	STD	STD	STD	STD
Repeat Last Number Dialed	STD	STD	STD	STD	STD	STD
Ringing Line Preference	STD	STD	STD	STD	STD	STD
Saved Number Redial	STD	STD	STD	STD	STD	STD
Speakerphone	OPT	OPT	OPT	OPT	OPT	OPT
Station Speed Dial Numbers	40	40	40	40	40	40
Two Color LEDs – DKT	STD	STD	STD	STD	STD	STD
User Programmable Feature Buttons	STD	STD	STD	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

Table 6 Strata DK CTI Feature Availability

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Data Button on DKT	OPT	OPT	OPT	OPT	OPT	OPT
Data Release Button on DKT	OPT	OPT	OPT	OPT	OPT	OPT
Data Switching	OPT	OPT	OPT	OPT	OPT	OPT
Keyboard Dialing of Data and Voice Calls	OPT	OPT	OPT	OPT	OPT	OPT
Modem Pooling	OPT	OPT	OPT	OPT	OPT	OPT
Printer Sharing	OPT	OPT	OPT	OPT	OPT	OPT
Security Groups	4 Groups	4 Groups	4 Groups	4 Groups	4 Groups	4 Groups
Telephone Application Programming Interface (TAPI) Compatible	OPT	OPT	OPT	OPT	OPT	OPT
System Open Architecture Interface (OAI)	N/A	N/A	N/A	OPT	OPT	OPT

STD = Standard
OPT = Optional
N/A = Not Available

Table 7 Strata DK PC Attendant Console Feature Availability

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Answer Button	N/A	N/A	N/A	STD	STD	STD
Answer Priority	N/A	N/A	N/A	STD	STD	STD
Answer Prompting by CO Line or DNIS	N/A	N/A	N/A	STD	STD	STD
Attendant Conference Setup	N/A	N/A	N/A	STD	STD	STD
Auto Day/Night Mode Switching	N/A	N/A	N/A	STD	STD	STD
Busy Lamp Field (BLF) Display	N/A	N/A	N/A	STD	STD	STD
Call Waiting Count Display	N/A	N/A	N/A	STD	STD	STD
Color CRT Display	N/A	N/A	N/A	STD	STD	STD
Dial 0 for Attendant	N/A	N/A	N/A	STD	STD	STD
Dialing Outside Number for Station User	N/A	N/A	N/A	STD	STD	STD
Direct Station Selection (DSS)	N/A	N/A	N/A	STD	STD	STD
Directory Display and Dialing	N/A	N/A	N/A	STD	STD	STD
DTMF Tone Signaling from Dial Pad	N/A	N/A	N/A	STD	STD	STD
Emergency Calls	N/A	N/A	N/A	STD	STD	STD
Emergency Page	N/A	N/A	N/A	STD	STD	STD
Feature On-line Help	N/A	N/A	N/A	STD	STD	STD
Feature Prompting with Soft Keys	N/A	N/A	N/A	STD	STD	STD
Flexible Programmable Keys	N/A	N/A	N/A	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

Table 7 Strata DK PC Attendant Console Feature Availability *(continued)*

Feature	DK14	DK40	DK424 RCTUA	DK424 RCTUBA/BB	DK424 RCTUC/D	DK424 RCTUE/F
Headset Operation	N/A	N/A	N/A	STD	STD	STD
Hold Button	N/A	N/A	N/A	STD	STD	STD
Hold Timer Display	N/A	N/A	N/A	STD	STD	STD
Incoming Call Identification	N/A	N/A	N/A	STD	STD	STD
Incoming Call Statistics	N/A	N/A	N/A	STD	STD	STD
Interposition Call Transfer	N/A	N/A	N/A	STD	STD	STD
Join Button	N/A	N/A	N/A	STD	STD	STD
Keyboard or Mouse Operation	N/A	N/A	N/A	STD	STD	STD
Load Sharing	N/A	N/A	N/A	STD	STD	STD
Loop Hold Display	N/A	N/A	N/A	STD	STD	STD
Maint./Admin. from Attendant Console	N/A	N/A	N/A	OPT	OPT	OPT
Message Center	N/A	N/A	N/A	STD	STD	STD
Multi-tasking	N/A	N/A	N/A	STD	STD	STD
Overflow	N/A	N/A	N/A	STD	STD	STD
Override	N/A	N/A	N/A	STD	STD	STD
Park and Page	N/A	N/A	N/A	STD	STD	STD
Position Busy Mode	N/A	N/A	N/A	STD	STD	STD
Release Button	N/A	N/A	N/A	STD	STD	STD
Reminder Notes	N/A	N/A	N/A	STD	STD	STD
Split Button	N/A	N/A	N/A	STD	STD	STD
Three-way Calling	N/A	N/A	N/A	STD	STD	STD
Through Dialing	N/A	N/A	N/A	STD	STD	STD
Transfer Direct to Voice Mail Box	N/A	N/A	N/A	STD	STD	STD
Trunk Group Access Control	N/A	N/A	N/A	STD	STD	STD
Volume Control	N/A	N/A	N/A	STD	STD	STD
Microsoft® Windows® PC Operation	N/A	N/A	N/A	STD	STD	STD

STD = Standard
OPT = Optional
N/A = Not Available

System Administration Tools

Important and time-saving installation and support tools are available for use with Strata DK systems. Installation and support is easier and more efficient for both Toshiba dealers and end users. These PC software programs are easy to use with a menu-driven format and help screens.

DKQuote

DKQuote is an automated Strata DK system configuration software package that makes it easy for you to determine which system components you need for configuration of a Strata DK system. Use it for original installation or add-ons.

DKQuote is like an on-line worksheet that serves as a checklist that even tells you in which slot to install circuit cards. You can insert your own prices that are password protected. It is great for:

- Sales representatives preparing a bid using Strata DK14, DK40, or DK424 systems.
- Operations personnel ordering equipment.
- Technicians doing installation planning.

This software package runs on your 486 or faster IBM-compatible PC with Windows 95.

DKAdmin

DKAdmin, a Strata DK14, DK40, DK424 system programming and administration software package, provides all the functions of DKBackup, plus it easily and efficiently enables you to do off-line system programming from a 486 or faster PC with DOS 6.2 or above. With DKAdmin you can:

- Query the Strata DK system for all or specific programming functions.
- Display or change all information for a single station, such as Toll Restriction Class, Auto Busy Redial (ABR), Busy Override, telephone LCD names, and Speed Dial.

Note Queries and changes can be done by selecting from a program table, feature table, or station ID/range/user name table.

- Change programming for a range of stations for the same function or for specific individual stations.
- Save the complete Strata DK configuration programming information in a disk file on a PC the same way as DKBackup. This saves customer data such as Speed Dial, numbering plan, ringing assignments, station options, and LCD messages.
- Save certain programming changes as templates for later use with the transfer data function. This is valuable in re-creating a specific customer's saved data for reloading, using file upload capabilities. This also enables you to build a library of standard types of installations for use in new installations minimizing programming effort.

DKAdmin requires the DKAdmin (red) copy-protection key and is not compatible with the DKBackup (green) copy-protection key.

Using the backup function built into DKAdmin, the system configuration program options and customer data is retrieved from the processor. The options and customer data are saved in a file on your IBM-compatible PC, which is connected to the system using a PIOU, PIOUS, RSSU, RSIU, TSIU (DK40), or WSIU (DK14).

DKAdmin then enables you to add or change customer data (both system-wide programming and individual-station settings) using a PC independent of the Strata DK system. Password protection enables multiple levels of access, so some users can only edit and change selected items in the Strata DK database, while others can change all programs and station settings.

For example, DKAdmin provides a station administration menu that enables the end user to add, delete, or change any Strata DK feature on a user's telephone, such as telephone flexible buttons, Speed Dial numbers, station class of service, station user LCD names, LCD messages, and more.

Using the restore function built into DKAdmin, the new data can be restored to the Strata DK from the PC file, changing the customer program options and customer data, locally on-site or remotely over telephone lines and modems.

DKAdmin makes it easy to maintain and update the end-user's system and provides an efficient way to backup and restore their current database. The DKAdmin software is easy to use with a menu-driven spreadsheet format and help screens.

DKBackup

DKBackup is a Strata DK software package, which enables you to retrieve system configuration program options (Speed Dial, numbering plan, ringing assignments, and station options) from the system processor. It also saves the data in a file on your IBM-compatible PC (486 or faster with DOS 6.2 or above), which is connected to the system using a PIOU, PIOUS, RSSU, RSIU, TSIU (DK40) or WSIU (DK14).

Customer data can be restored to the Strata DK by sending the data from the PC file to the new initialized system, locally (on-site) or remotely, over telephone lines and modems. The backup procedure can be performed for the whole customer database or selected individual parts (programming options, System Speed Dial, Station Speed Dial, voice mail codes, user names, Call Forward status, Message Waiting status, and Lost Call Caller ID and ANI telephone numbers).

DKBackup provides an efficient way to backup and restore the customer's database. It also makes an easy installation tool and is especially useful for providing software upgrades without having to manually re-program everything.

It is easy to use because of its menu-driven spreadsheet format and help screens. The software is available on a 3.5-inch floppy diskette operating in conjunction with the DKBackup (green) copy-protection key which plugs into your 25-pin PC printer port.

StrataControl

StrataControl is a Windows-based PC tool designed to make simple system programming changes to Strata DK40 and DK424 digital business telephone systems easy for end users.

StrataControl enables users to download information from their Strata DK system and make programming changes using their PC. When the changes are completed, they are uploaded and implemented in their Strata DK system. Both direct connection and modem access are available, so customers have the added advantage of configuring systems remotely.

StrataControl enables customers to manage and store system programming information for multiple systems in separate files. If the customer has multiple Strata DK systems, all of the systems can be administered from the same StrataControl application. StrataControl provides the ability to modify programming in the following categories.

System Administration

- Auto Attendant
- Operating parameters
- Account Codes
- ACD
- Call Park
- Long distance parameters
- Serial output parameters

Station Administration

- Button assignments on telephones, add-on modules, DSS consoles, and Attendant consoles
- Station group options
- Station operating parameters
- Station general options
- Standard telephone options

Customer Data

- Name assignments to extensions, CO lines, page groups, pick-up groups, and hunt groups
- ACD functionality
- Data station hunting

Printing and Output

- Keystrips according to telephone station programming (prints on blank 2000-series DKT keystrip stock available from Toshiba)
- *Digital Telephone User Guide*
- Custom *Quick Reference Telephone Guide* based upon station features and options assigned within the system
- Extension lists

CO Line Administration

- CO line names
- Ringing assignments

Important! *StrataControl enables self-administration of the simpler aspects of programming and maintenance. It does not contain and is not designed to accommodate the complete installation and maintenance functions that the DKAdmin package provides. StrataControl is designed for the end user and DKAdmin is designed for the trained service technician.*

Keyprint 2000

Keyprint 2000, a keystrip printing software package, creates and prints custom button label keystrips for 2000-series 10 or 20-button digital telephones. It runs on a 386 or faster PC with DOS 3.3 and above and prints on laser or 24-pin dot matrix printers.

The software supports hundreds of different printers from lasers to dot matrix. It prints three keystrips per sheet on the DKT 2000-series blank keystrip stock for output to small or large groups of custom keystrips. It is easy to use with a menu driven format. You can display, change, and store keystrip layouts to create a database of many keystrip varieties.

Keyprint 2000 is available on a copy-protected 3.5-inch floppy disk.

Strata AirLink Wireless Manager

The Strata AirLink™ Wireless Telephone System includes the Strata AirLink Manager administration software that configures the wireless system and handset features on the controller.

The software runs diagnostics and enables the System Administrator to check Base Station status and remove or restore service to the Base Stations. It also reports alarm conditions and provides traffic statistics on Base Station channel usage throughout the system.

Available on 3.5-inch floppy disks, the software application runs under Microsoft Windows on an IBM-compatible Personal Computer (PC). It is easy to use with a menu-driven format.

Features 2

System Features

This section describes the system features for the Strata DK14, DK40, and DK424. The features apply to all these systems, except where noted.

Account Codes

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Account Codes are 4~15 digits in length and are often used for cost allocation. The codes are printed on a Station Message Detail Recording (SMDR) printout with other call details, so that the customer can identify all calls associated with a specific account code.

Forced Account Codes can be required on selected CO lines, which forces the assigned stations to enter those account codes. Stations without the Forced Account Code feature can voluntarily enter account codes on any incoming or outgoing call over any CO line. While account codes can also be entered on incoming calls, the entry cannot be forced on these calls.

The DK14, DK40, and DK424 systems can have up to 300 Verifiable Account Codes which can be forced or voluntary. DK424 systems with RCTUE/F processors can have up to 500 Verifiable Account Codes.

Stations and CO lines can have one of four possible account code features:

- Forced Account Codes
- Voluntary Account Codes
- Forced Verifiable Account Codes
- Voluntary Verifiable Account Codes

If Verifiable Account Codes are forced, the Strata DK system verifies the code entered by the user before it authorizes the call.

Verifiable Account Codes can be set up in two ways:

- All digits in the code can be verified. With this method, 300 (or 500 with RCTUE/F) specific account codes can be verified. For example, if a 4-digit code is used, the system can verify 300 specific 4-digit numbers. If a 9-digit code is used, the system can verify 300 specific 9-digit numbers.
- The first "portion" of the code can be verified. This enables 300 specific verifiable "prefixes," which can then enable thousands of "partially" Verifiable Account Codes. For example, with a 5-digit code, there could be 300 verifiable 3-digit prefixes:

  100 _ _, which verifies 10000, 10001, 10002, ... 10099 (100 codes)
  101 _ _, which verifies 10100, 10101, 10102, ... 10199 (100 codes)
  102 _ _, which verifies 10200, 10201, 10202, ... 10299 (100 codes)

  •
  •
  •

  299 _ _, which verifies 29900, 29901, 29902, ... 29999 (100 codes)

Each of the 300 verifiable prefixes partially verifies 100 codes, for a total of 30,000 partially verifiable codes. This is an important capability to ensure valid accounts are being used while allowing freedom to use sub-accounts for specific allocation of the call.

A Verifiable Account Code can have a toll restriction class of service. When an account code is entered at a station, the system checks the toll restriction class of service associated with that account code, and then determines if the call is authorized.

The Account Code button can be programmed on an electronic or digital telephone to facilitate voluntary account code entry during conversations without interrupting the talk path. It can also be used to enter Verified Account Codes to enable normally restricted stations to dial long distance calls.

Note The 911 emergency number and two other optional customer-designed numbers (up to four digits long) can be assigned to bypass Forced Verified Account Code requirements.

Benefits

Account Codes control costs and ensure accurate billing to departments, clients, projects, or individual employees. The advantage of using Account Codes for this purpose is that they register on SMDR for tracking and reporting.

Forced and verified account codes can also be used in conjunction with Toll Restriction. Used this way, they function as override codes or as traveling class of service codes.

Alarm Sensor

System Availability

Optional on Strata DK14, DK40, and DK424 systems. Other requirements:

- DK40 and DK424 – PIOU or PIOUS option interface unit
- DK14 – DDCB door phone control box

Description

The Alarm Sensor is configured with a customer-supplied alarm. When the sensor detects that the alarm relay is activated, it causes all telephones to sound an alert tone. Any station programmed with the Alarm button (alarm reset) can reset the alarm on a Strata DK system.

Benefits

Conveniently controlled with an electronic telephone, so that you can have an alarm indication wherever telephones are located. The source of the alarm would be controlled from the device creating the alarm indication.

Alternate Answer Point

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Alternate Answer Point enables you to answer transferred CO line calls from any station that shares the CO Line button appearance or secondary DN for the destination station.

Benefits

Ideal for employees who have high mobility and promotes efficiency and better service to callers. It can also minimize the distraction caused by unanswered ringing phones.

Amplified Conference

System Availability

Standard on Strata DK40 and DK424 systems only. Other requirements:

- Customer-supplied automatic gain, switched, two-way line amplifier

Description

One or more customer-provided amplifiers can be connected to proprietary station ports in the system. The amplifiers are automatically activated whenever a user conferences two CO lines together. Up to two amplifiers can be connected on the DK40 and up to four amplifiers on DK424 systems.

With Strata DK systems using Amplified Conference, there is negligible loss through the system, and the amplifier compensates for loss in volume over the public network. Any

two-way line amplifier that is FCC registered with Automatic Gain Control (AGC) should be compatible. The Reliance Electric model VFR 5050 has been successfully used.

The amplifier increases signal strength between any two outside CO lines. If Tandem, Call-Forward External, or Direct Inward System Access (DISA) CO line connections are provided in the system, the CO line-to-CO line connection is amplified.

Amplified connections are available on a first-come, first-served basis. On Strata DK systems, amplified conference is available to a standard telephone as well as digital or electronic telephones.

Each amplifier requires two EKT station ports, and reduces the station capacity by two. The two ports supporting the amplifier must be designated ports on a PEKU card. One PEKU supports one external amplifier.

Benefits

Enables the external parties of a conference call to hear each other. Conference calls are shorter and more efficient, since time is not wasted repeating inaudible parts of the conversation. Shorter calls are cheaper calls. When conferees can hear clearly, they get accurate information.

Auto Attendant

System Availability

Optional software feature on Strata DK14, DK40, and DK424 systems. Other requirements:

- Upgrade keys QKYS (DK14), KKYS (DK40), and RKYS1~4 (DK424)
- DTMF tone receivers to receive dialed digits (determines the amount of calls that can be simultaneously answered by the Auto Attendant)
- Standard station ports for connection of announcers
- Ground and loop start lines only

Important! *Auto Attendant cannot be used with Tie, DID, DNIS, or ANI lines for any applications including ACD.*

Description

The built-in Auto Attendant feature acts as a round-the-clock Attendant that automatically directs incoming calls to stations. Calls can be answered simultaneously depending upon the number of DTMF tone receivers are installed in the system (maximum of 3 in DK14, 5 in DK40, and 24 in DK424).

Callers who dial into assigned Auto Attendant lines receive a menu of dialing prompts, such as, “Dial 5 for Sales or dial 6 for Technical Support.” When the caller dials the digit, the call routes to a DN, ACD group, or Distributed Hunt group (assigned in system programming).

An unlimited number of CO lines can be programmed for immediate answer or delayed ring, such as 12 or 24 seconds, at selected stations. Auto Attendant also enables access to outgoing lines by using DISA, which should be security protected with Account Codes and/or a DISA security code.

CO lines that are assigned as Auto Attendant lines, in any of the system's three time of day modes (Day, Day 2, Night), can be assigned to ring stations or a night bell when the system is switched to another mode. This enables calls to be manually answered until the Attendant requests the Auto Attendant to answer all new calls.

Customer-provided digital announcement devices and optional QRCU3 (DK14), K5RCU (DK40) or RRCS (DK424) tone receiver PCBs are required. Multiple callers can be connected to one digital announcer simultaneously as follows:

- **DK14** enables up to three caller connections
- **DK40** enables up to five caller connections
- **DK424** enables up to 24 caller connections

One DTMF receiver is needed for each caller.

The Auto Attendant can be programmed to answer on a delayed ring basis, which can be used for overflow and secondary answering purposes. This enables callers to hear Music-on-Hold (MOH) or Ring Back Tone (program option) after dialing a selection.

The system can have a primary announcement only, or a primary and secondary announcement. The primary announcement is the initial greeting played to the caller usually providing dialing instructions. The secondary announcement is automatically played if the selected station is not available.

From one to four primary announcers can be configured on a DK40 or DK424 system and one or two on a DK14 system. Light or normal incoming call traffic and/or short announcements can be handled by one or two announcers, while up to four can satisfy the demands of heavy traffic applications and/or long announcements.

The DK424 can have one to four primary announcers and zero to four secondary announcers. The DK40 can have a maximum of four announcers, and for the DK14, two announcers are maximum.

Each announcement is stored on a customer-supplied digital announcer connected to a standard telephone station port.

Callers who are directed to a station that is busy or does not answer are routed to:

- One secondary announcement which could inform the caller that the destination is unavailable and repeat the menu.
- The original announcement to hear the greeting and menu repeated.
- Ring designated alternate stations.

Unanswered calls ring the final destination station until either:

- A disconnect signal is received from the CO

  ...or, the call is disconnected by an optional Strata DK call timer

  ...or, the call is call forwarded.

If using loop start CO lines, reliable automatic release from hold must be available from the CO. Ground start lines are preferred, because of better disconnect supervision. With T1, ground-start lines must be provided.

Benefits

Extremely flexible with a single-level dialing menu and can have as many as 10 selections, each of which can direct calls to specific stations, hunt groups, or ACD Groups (DK424 only). If the caller knows the extension number wanted, quick and direct access is achieved. With Auto Attendant, customers and employers are provided an option to specify how their calls are handled.

Twenty-four hour coverage means no need to worry about lunch and break coverage and provides after-hours coverage. Also, overflow call coverage during peak traffic periods are handled efficiently without requiring additional Attendants to answer calls.

Auto Attendant can process a larger volume of calls more quickly and efficiently than a live Attendant. This provides incoming callers better overall service.

Three modes of ringing (Day, Day 2, Night) can be assigned for flexible answering by the built-in Auto Attendant or the Attendant.

Automatic Hold Recall

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

When a station user puts a call on hold, the call automatically rings back to that station after a programmable period of time. Hold recall time is normally set at 32 seconds, but can be programmed from 11 to 160 seconds.

Benefits

Programmable option to the specific needs of the station user. It can be disabled altogether or programmed for different recall times on a station-by-station basis. It ensures that station users pick up calls that has been put on hold.

Courteous customer service dictates that the caller should be acknowledged periodically and informed about the cause of any delay. This feature can help a company project a professional, efficient, and courteous image.

Automatic Number Identification (ANI)

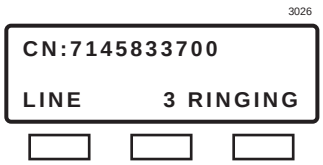
System Availability

Optional on Strata DK40 and DK424 systems with a tone receiver PCB (K5RCU for DK40 and RRCS for DK424). Unavailable on Strata DK14 systems.

Description

ANI displays the telephone number of the calling party on the LCD of a ringing telephone, Attendant Console display, and/or sends it to an application computer or voice mail. The information is displayed on direct incoming, transferred, and call-forwarded calls. The ANI information continues with the call as many times as the active call is forwarded or transferred within the system.

The system supports ANI on analog or digital (T1) DID and Tie lines and provides helpful call identification information to answering parties. A typical ANI display example is shown below:



ANI is usually associated with “1-800” type calls offered by various long distance carriers (except AT&T) through T1 facilities. However, the Strata DK also provides ANI information received over analog DID and Tie line circuits. Either Sprint or MCI ANI format is supported.

ANI data is routed to DNs, Distributed Hunt Groups, ACD groups, voice mail devices, and external network numbers through external-call routing. ANI data on answered calls can be displayed on SMDR reports. ANI numbers can be routed to different destinations during Day, Day 2, or Night mode.

ANI digits can be received independently or simultaneously with Dialed Number Identification Service (DNIS) called number digits. When received with DNIS digits, calls can be routed to unique destinations for each DNIS number (see Table 8 on Page 27). When ANI is received without DNIS, all ANI calls ring the same selected destination.

Abandoned Call Numbers

ANI data is stored in system memory for calls that ring, but are abandoned before being answered so users see the telephone number of who called, even if the caller did not leave a message. LCD telephone and Attendant Console users can display and Auto Dial the “abandoned call” ANI numbers.

The DK424 system stores up to 2,000 ANI abandoned calls with the RCTUE/F processor, up to 1000 on RCTUC/D, up to 400 on RCTUBA/BB, and up to 200 on RCTUA. DK14 and DK40 can store up to 200 ANI abandoned call numbers. Individual stations can be programmed to store from 0 to 100 of the total ANI abandoned calls in increments of 10.

A typical ANI abandoned call display is shown below.

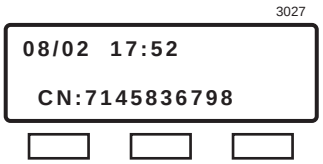


Table 8 ANI, Caller ID, and DNIS Routing Destinations

Routing Destination	ANI Line Calls	Caller ID Line Calls	DNIS Line Calls[1,2]	Tie & DID Line Calls[2]	Ground[2]/ Loop Start Line Calls
Individual Primary/Secondary/Phantom Directory Number	X	X	X	X	X
CO Line or pooled line buttons		X			X
Individual Distributed Hunt (DH) Group[2]	X	X	X	X	X
Individual Automatic Call Distribution (ACD) Groups	X	X	X	X	X
Remote Maintenance/Administration (M&A) Modem	X	X	X	X	X
System external Page (Tie lines, private network lines only)				X	
System night bell or night ringing over external Page	X	X	X	X	X
Intercept destination (station console announcement) applies to DID line types only	X		X	X	
External telephone network numbers	X	X	X	X	X
Voice mail box/Auto Attendant device	X	X	X	X	X

1. DNIS calls can be received independently or simultaneously with ANI “calling number” digits.
2. Not supported by DK14.

Computer Applications

For computer applications, ANI digits are sent to an individual PC connected using an Integrated PC Data Interface Unit (RPCI-DI). On DK424 ACD applications, ANI digits can also be sent to ACD agents using a LAN computer with system open architecture if it has the Serial Interface Unit (RSIU). It enables pop-up screens on the PC that provide information regarding the calling/called party before answering and during the call. System open architecture requires Release 3.2 or higher DK424 software.

Benefits

Provides instant information about the person calling to the station user and expedites call handling by shortening the length of the telephone call. Most of the information that the caller would have to provide is already available to the call taker.

Abandoned call information is available so station users know the telephone number and time/date of the last call, even if the caller hung up without leaving a message. This provides better service to callers and is a big productivity boost to call takers.

Automatic Release From Hold

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

If an outside caller on hold hangs up, the system automatically disconnects the call and frees the line for other calls. This feature applies to DISA, DNIS and/or ANI external routed calls, Auto Attendant, and voice mail calls, as well as regular voice calls.

Automatic Release is available on a line-by-line basis, while on hold only or at all times, and operates only with COs that provide a disconnect (calling party control) signal.

This feature is designed to work with loop start CO lines and is not available on T1 lines.

Benefits

Provides full use of all CO lines at all times. A CO line is not tied up if a station user puts the line on hold and the caller hangs up before the station user returns to the call.

This is very useful for disconnect supervision in voice mail and built-in Auto Attendant applications, but availability and reliability of the signaling from the CO must be confirmed.

Background Music (BGM) Interface

System Availability

The primary BGM interface is standard on Strata DK14, DK40, and DK424 systems, while the secondary interface is optional. The music source is customer supplied.

Description

A BGM/Music-on-Hold (MOH) RCA jack is built into the common control unit on DK14, DK40, and DK424 systems and connects a customer-supplied music source to the system. The music source or sources is flexible, providing one music source for phone and external speakers or a separate source for each.

When BGM is broadcast over digital or electronic phone speakers, no optional hardware is required. The customer-supplied music source for both background music on phone speakers and MOH connects directly to the common control unit.

To connect BGM (separate music source) over phone speakers, a station port should be assigned. The required interfaces cards are:

- **DK14** – QSTU
- **DK40** – KSTU, RSTU, PSTU, PEKU, or PESU

- **DK424** – RSTU, RDSU, PSTU, PEKU, or PESU

When a music source is connected and this feature is activated, a station user can access BGM through the speaker of a digital or electronic telephone. The music is turned on and off at the user's option using the BGM button or a dial access code. The user can also control the volume.

On DK40 and DK424 systems, up to three separate music sources can be connected to the system at the same time. One source can broadcast BGM over digital or electronic telephone speakers, the second broadcasts over external speakers, and the third provides music or a recording for MOH. DK14 systems can support two separate music sources, one for MOH, and the other shared by DKT and external speakers.

When the source input for BGM over external speakers is unamplified, a DK40 or DK424 system can use the built-in, three-watt amplifier of an Option Interface Unit (PIOU or PEPU). Amplified music output requires the PIOU or PEPU, or the music input source must be connected through an external amplifier.

If an external paging system is installed, music can also be broadcast through the external paging speakers, providing background music throughout the facility. Music on both the external speaker and the telephones is muted when a paging announcement is made or when night ringing occurs.

Benefits

Provides music that is conducive to the work environment and enable employees to listen without the conflict that can accompany the use of radios or tape recorders.

Caller Identification (ID)

System Availability

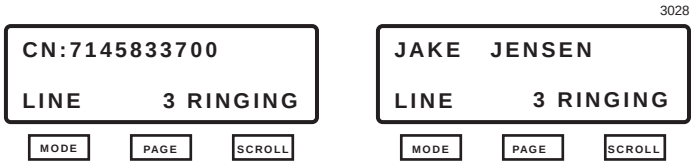
Optional on Strata DK14, DK40, and DK424 systems. Requirements are Caller ID and ground or loop start CO line PCBs, and:

- **DK14** – the WSIU PCB provides an RS-232 interface to a customer-provided Caller ID interface device (TC-1041). CO lines that receive Caller ID must be cross connected to the TC-1041 (MLX-41) Caller ID interface box. The TC-1041 (MLX-41) is available from TEL-CONTROL, Inc., P.O. Box 4087, Huntsville, AL 35815-4087, (205) 881-4000.
- **DK40** – the TCIU2, RCIU2 and RCIS PCBs provides four Caller ID circuits each. The TCIU2 is used for base cabinet lines and the RCIU2/RCIS is used for expansion cabinet lines to provide up to eight Caller ID interface circuits. A TCIU2/RCIU2/RCIS circuit must be available for each line that is to receive Caller ID.
- **DK424** – when ordered from the factory, the RCIU2 PCB provides four Caller ID circuits; however, an RCIS piggyback PCB can be installed on the RCIU2 to provide four more Caller ID circuits, for a maximum of eight Caller ID circuits per cabinet slot. An RCIU2/RCIS circuit must be available for each line that is to receive Caller ID.

Description

The telephone number or name of the calling party can be displayed on the LCD of a ringing telephone, Attendant Console display, and/or sent to an application computer or voice mail. The information is displayed on direct, incoming, transferred, and forwarded calls. The Caller ID information continues with the call as many times as the active call is forwarded or transferred within the system.

A maximum of 10 telephone number digits can be displayed or sent to a computer, and a maximum of 15 characters for the name. A typical Caller ID display with soft keys off is shown below:



If both the name and number of the caller are sent by the COs, the name, rather than number, appears on the top line of the LCD display. The name and number do not appear together on the same LCD display. However, while the call is ringing, the user can press the Page button to toggle the top line display from name to number and back. This enables the station user to see both the name and number of the caller while the telephone is ringing. If the Caller ID feature is being used in conjunction with a CTI application, both the name and number are sent to the TAPI application computer.

Caller ID, on ground or loop start lines, provides similar capabilities as ANI. However, Caller ID in addition to the telephone number, can also provide the name of the caller, (if provided by the local CO). Caller ID is a feature offered by local COs on ground or loop start lines, whereas, ANI is delivered by long distance providers on digital (T1) or analog DID and Tie lines.

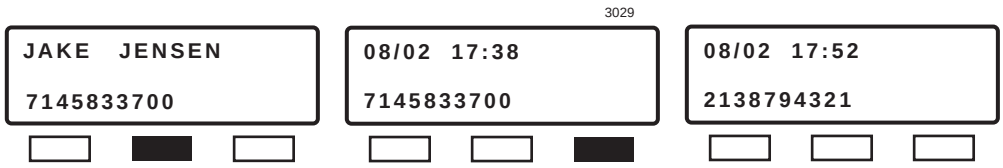
Note Caller ID is not available on analog DID, Tie, or digital T1 lines.

Caller ID data is routed to DNs, Distributed Hunt groups, ACD groups (DK424 only), voice mail devices, and external network numbers through External Call Forward for private lines only. Caller ID data on answered calls can be displayed on SMDR reports and routed to different destinations during Day, Day 2, or Night mode.

Abandoned Call Numbers

Caller ID data is stored in system memory for calls that ring, but are abandoned before being answered. This gives the user the name (if provided by the local CO) and telephone number of caller, even if the caller did not leave a message. LCD telephone and Attendant Console users can display and Auto Dial the “abandoned call” numbers.

The DK424 system stores up to 2,000 abandoned calls with the RCTUE/F processor, up to 1000 on RCTUC/D, up to 400 on RCTUBA/BB, and up to 200 on RCTUA3. DK14 and DK40 can store up to 200 abandoned call numbers. Individual stations can be programmed to store from 0 to 100 of the total abandoned calls in increments of 10. A typical abandoned call display is shown below:



Computer Applications

For computer applications, Caller ID digits are sent to an individual PC using an Integrated PC Data Interface Unit (RPCI-DI). On DK424 ACD applications, the digits can also be sent to ACD agents using a LAN computer with system open architecture if it has the Serial Interface Unit (RSIU). It enables pop-up screens on the PC that provide information regarding the calling/called party before answering and during the call. System open architecture requires Release 3.2 or higher DK424 software.

Benefits

Provides instant information about the calling person. It expedites call handling by shortening the length of the phone call. Most of the information that the caller has to provide is already available to the call taker. Even abandoned call information is available, so station users know the phone number, even if the caller hung up without leaving a message. This provides better service to callers and is a big productivity boost to call takers.

Centrex/PBX Compatibility

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Any Strata DK system can be installed behind a Centrex or PBX system. It can function as part of the Centrex or PBX system while providing its users with the Strata DK features and digital feature telephones.

To further enhance Strata DK compatibility with Centrex and PBX, access codes for features in the host system can be programmed as if they were system Speed Dial numbers. These codes can then be assigned to the Speed Dial button, also known as station Automatic Dialing buttons, providing one-button access to the CO, Centrex or PBX feature. Each CO/Centrex/PBX feature access code can have up to 20 digits, including pauses and flashes.

When a Strata DK system is installed behind a PBX, some or all of the CO/PBX line buttons function like PBX extensions. When such a PBX line button is accessed, the station user receives PBX dial tone, not CO dial tone. To access a CO line on the PBX, the user must dial an access code. For example, “9” might be dialed to get a local CO line; Tie lines to other company locations might be accessed by “72” or “73.”

A Strata DK system can be programmed to recognize these PBX access codes or disregard them on identified lines when it inspects dialed numbers for toll restriction purposes or performs other features such as Last Number Redial. This enables the system to continue to provide its features, even when calls are ultimately going out from the PBX.

Benefits

Increased cost savings to the customer because the economical Strata DK systems can be used in satellite locations. Users can take advantage of the Centrex and/or PBX features, the PBX trunking, and the PBX networking capabilities.

Strata DK systems can also be used within a PBX environment to serve a community of interest which needs the functionality of electronic telephone sets that may not be provided by the PBX.

Also, CO/Centrex/PBX feature buttons give users easy, one-button access to features that would otherwise require more complicated access procedures. Since users do not have to look up feature access codes, this saves time. Time wasting dialing errors can also be eliminated through the use of feature buttons.

Centrex Ringing Repeat

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Strata DK systems can be programmed to reproduce Centrex or PBX ringing patterns, enabling the user to differentiate between station or CO line calls and various callback features on the Centrex or PBX line.

Benefits

Enables the user to hear the same on/off ringing patterns that are heard for special calling and callback features on CO, Centrex, or PBX lines. Users do not have to learn new ringing cadences and can easily differentiate between station or CO line calls or various callback features on the Centrex or PBX line.

Computer Telephony Integration (CTI)

System Availability

Digital telephone PC interface is optional on all Strata DK14, DK40, and DK424 systems. System Open Architecture Interface (OAI) is optional on DK424 Release 3.2. and higher systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors.

Description

CTI combines the capabilities of the Strata DK digital business telephone system with custom functionality provided by computer applications. This is provided in two ways:

- Digital telephone integrated PC interface
- System OAI (DK424 Release 3.2 and higher only)

The PC must be running Microsoft Windows software.

Digital Telephone Integrated PC Interface

Toshiba 2000-series digital telephone can be connected to a PC, enabling routine simultaneous voice and data switching applications and for more robust CTI applications. The connection is made with an RS-232 cable from a communication port on a PC to an RS-232 port on the digital telephone.

The RS-232 port is provided by equipping the digital telephone with an integrated Personal Computer Interface Unit (RPCI-DI). This is an optional unit that replaces the normal telephone base and equips the telephone for simultaneous computer-telephone interface and voice/data features.

Data switching applications enable users to make data calls to printers, PCs, and other data devices. Users can also make voice calls using PC directory dialing software without the need of a modem or an extra outgoing line. The system can also be programmed with one to four security groups and can restrict calls between groups. It can also support modem pooling and printer sharing.

For CTI applications, digital telephones can be connected to a computer with application software using the TAPI to provide customized functionality. Any TAPI enabled PC software is compatible with Strata DK systems.

The most common use of this application is a database look up and pop-up screens on a computer which contains information on the calling party. From the Strata DK system, Caller ID, ANI, DNIS, and call-processing information can be passed from the digital telephone to the application computer to provide the information necessary for the application’s database look up and pop-up screens.

StrataLink

The Strata DK can interface with computer applications which conform to Windows TAPI format. The Toshiba StrataLink Telephone Service Provider Interface (TSPI) software, which enables the Strata DK to communicate with TAPI applications, is bundled with the RPCI-DI in the form of a 3.5 inch, IBM-compatible, floppy disk.

StrataLink software greatly enhances the use of the basic TAPI interface. It enables you to customize the call-control functions of your PC application with many value-added capabilities, such as:

- Selecting how the PC application responds to the next call event

  StrataLink accepts call events from the telephone, applies call handling rules and conditions, and causes resulting actions to take place in the PC application. You choose the rules and conditions to customize how your application works.

- Handling multiple telephone calls

  Most TAPI compatible applications only respond to a ringing line for Caller ID database look up and screen display so only one call is handled at a time. StrataLink enables the application to respond to multiple calls and events that capture calls and when reconnecting to a held call. You can delay the screen display while on another call or for a programmed amount of time.

- Handling multiple PC applications from the same telephone. Incoming calls can activate actions in different applications depending upon the type of call. For example, you can:
  - Generate a “customer database” application display of callers on your regular DNs
  - Use “help desk” application software generated from ACD calls
  - Beep your pager with Caller ID when you are away from your desk
  - Assign different applications to work on specific buttons on your telephone, or on all buttons

- Enhancing outbound calling

  StrataLink provides for outbound telephone calling and call control from the PC application.

- Setting up, testing, and monitoring are easy

  StrataLink provides tools for testing the interface, debugging or monitoring the call events, and setting up. Simply select from predefined tested applications and the proper interface is automatically assigned.

Figure 1 is an example of the TAPI interface that connects the digital telephone to the PC in a desktop integration application example. This is used when the database information resides in the individual PC.

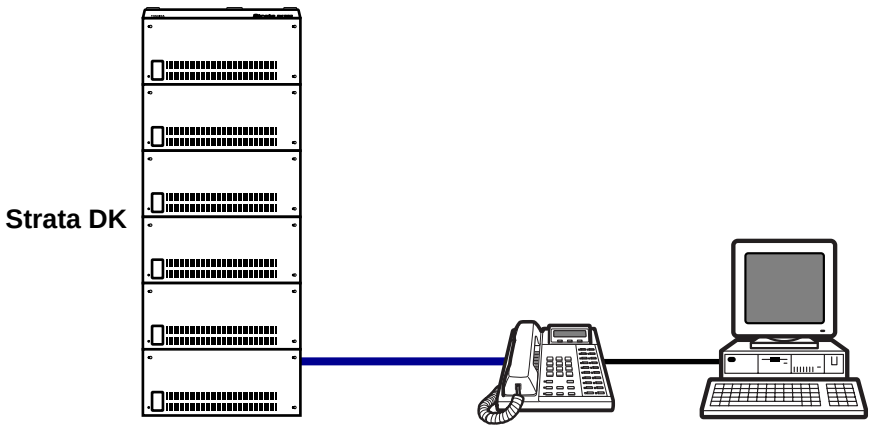


Figure 1 PC and Digital Telephone TAPI Interface Connection

Figure 2 is an example of the TAPI interface that connects the digital telephone to the PC and the PC to the LAN server in a LAN application. This is used when the database information resides in the server.

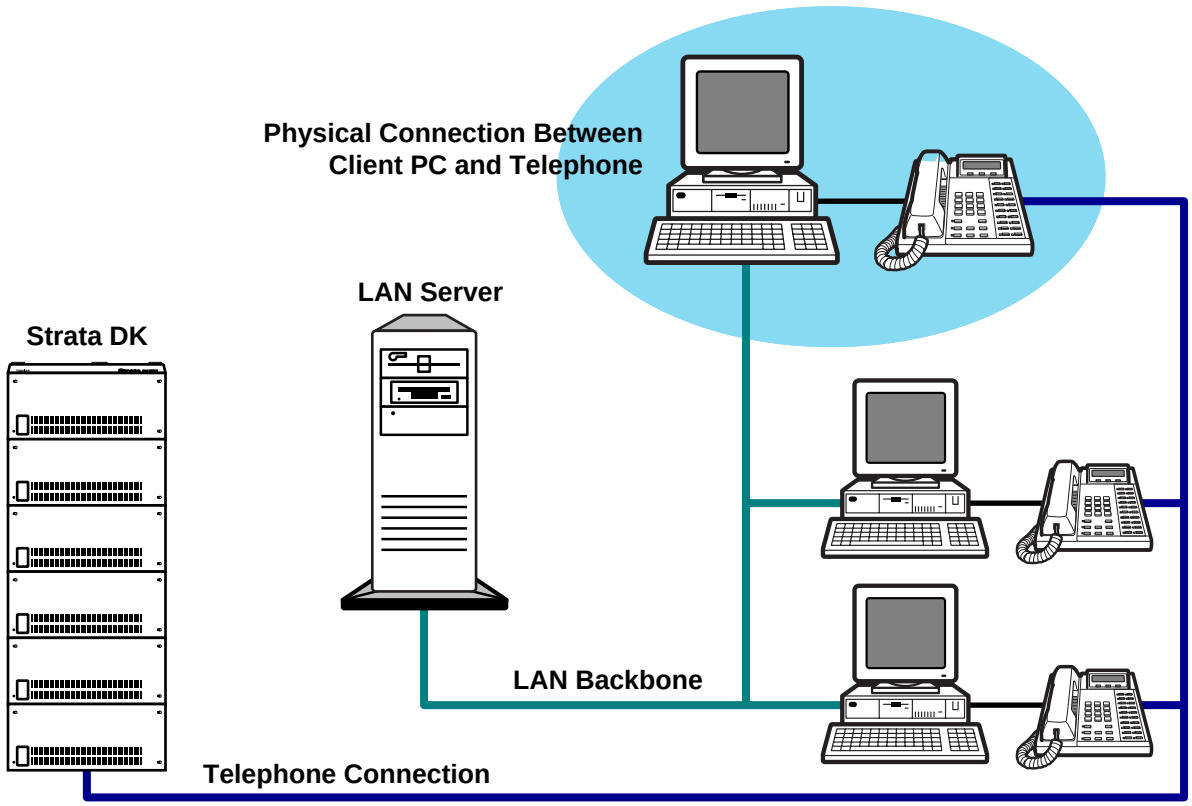


Figure 2 CTI Interface Connection

System Open Architecture Interface (OAI)

System OAI is available only in DK424, Release 3.2 and higher and enables the DK424 to use a computer application processor for system-wide CTI ACD applications. This system-wide CTI capability is designed specifically for ACD applications, in which a computer running third-party software provides applications such as screen pop-ups, call routing, telemarketing, or custom applications can be developed.

The DK424 sends ACD/MIS data plus ANI, DNIS, and Caller ID call data for ACD calls to the application computer using an RS-232 system OAI port on the RSIU option card. It also requires the RKYS4 feature key installed on the processor card. In addition to providing open architecture, the RKYS4 also provides built-in Auto Attendant, ACD, and MIS application support.

Benefits

CTI enables custom functionality to the user's business telephone system providing efficiency and convenience. By combining the two technologies, users gain functionality that cannot be provided by the telephone or the computer by themselves. Users can choose among many TAPI enabled PC software packages to provide the custom functionality for their specific needs. It is especially useful in ACD applications.

Simultaneous voice and data transmission over a single-wire pair eliminates additional wiring requirements and minimizes port usage on the system. For example, modem pooling and printer sharing enables multiple users to maximize efficient usage of expensive peripheral devices.

PC keyboard dialing of data or voice calls increases user efficiency. Auto dialing by name from directories stored in PCs equipped with inexpensive desk organizer-type software (modem not required) is an example.

Data security groups control who is authorized to make outside data calls, which can get expensive if linked to databases which charge for access.

Conferencing

System Availability

Standard on Strata DK14, DK40, and DK424 systems. Amplified conference is available on DK40 and DK424 systems, but unavailable on the DK14.

Description

Conferencing enables other people to join your conversation. These additional people can be inside or outside the DK system. Any digital or standard telephone can set up conferencing with other digital or standard telephones. The following combinations are available:

- One or two stations and two outside lines
- Two or three stations and one outside line

- Four stations on one internal DN line
- Voice mail plus one station and two other internal or outside line parties (DK424 only)

The Conferencing feature is enabled or disabled by system-wide programming.

The number of simultaneous conferences that are allowed are:

System	Four-party	Three-party
DK14	2	2
DK40	3	4
DK424 RCTUA	3	4
DK424 RCTUBA/BB	7	10
DK424 RCTUC/D	7	10
DK424 RCTUE/F	14	20

On DK40 and DK424 systems, the CO line conference can be amplified with a customer-supplied two-way amplifier. On Strata DK systems, there is negligible loss through the system, so the amplifier compensates for loss in volume over the public network (see “Amplified Conference” for details).

On DK424 systems, Toshiba digital telephones can transmit DTMF tones during CO line conference calls. The basic application of this feature enables a station user to call voice mail during a conference call and play messages to all parties in the conference. The DTMF tones can be sent from any DK424 station in the conference.

Benefits

Provides a convenience to business, because everyone participating in the conference gets the same information at the same time reducing confusion and saving time.

Credit Card Calling (“0+” Dialing)

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Callers can make “0+” telephone credit card calls from selected toll restricted stations. Calls are billed to the credit card instead of the Strata DK CO line. The “0+” credit card calling feature can be selectively assigned to stations and CO lines.

If a toll restricted station has the credit card calling feature, the Strata DK system requires the user to enter a certain number (programmable) of digits after dialing “0” on a CO line that has the feature. If the caller does not enter that number of digits within 20 seconds after dialing “0”, the call is dropped.

If the system has LCR, a station that has the feature can place a “0+” credit card call on any CO line accessed by LCR.

Benefits

Provides the convenience of “0+” telephone credit card calling without compromising toll restriction.

Delayed Ringing

System Availability

Standard on all Strata DK14, DK40, and DK424 systems.

Description

A ringing delay of 12 or 24 seconds can be programmed for each CO line that rings at a given station. For example, an incoming CO line can be programmed to ring at one station (or a group of stations) immediately when the call comes in, and at a second station (or group of stations) 12 or 24 seconds later. It can be applied to ringing assignments for Day 1, Day 2, and Night ringing modes. See “Night Transfer (Day/Night Modes)” for more information.

The Auto Attendant can be programmed to answer CO lines, either 12 or 24 seconds after stations have been ringing. In this case, the telephones that initially ring, stop ringing when the Auto Attendant answers.

For multiple DNs, the same capability as above exists for ground or loop start CO lines. For internal, DID or Tie line calls, a different delayed ringing controlled by different system programs is available. This means that secondary DNs can ring delayed after the PDN or PhDN. Or, the SDN can ring first, followed by delayed ringing of 12 or 24 seconds at the PDN or PhDN.

Benefits

Improves call handling and call coverage by providing one or more alternate answering positions for any incoming CO line or DN appearances. Calls have a greater chance of being answered promptly.

Because of the delay in ringing, employees at alternate answering stations are not disturbed by ringing while they wait to see if the called station answers. If the line rings at their station, they know they should answer it. Delayed ringing on multiple DNs is perfect for “Boss/Secretary” call coverage.

Dialed Number Identification Service (DNIS)

System Availability

Optional on Strata DK40 and DK424 systems with DTMF DNIS, and unavailable on DK14. Standard for dial pulse DNIS. May require DTMF tone receivers.

Description

DNIS identifies the called number and displays it on the LCDs of ringing telephones. The DK424 compares the received digits (DNIS tag) to a program table that determines how to route the call and what display to provide. A 16-character alpha/numeric identifier is displayed on the ringing telephone's LCD or Attendant Console display.

DNIS digits can also be sent to an application computer. DNIS names are stored within the Strata DK as defined by the user and programmed into Strata DK system programming. The names display on direct, incoming, transferred, and call forwarded calls. This enables calls to be answered appropriately by type of call. A DNIS display is shown below:

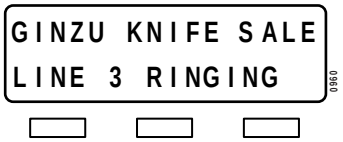
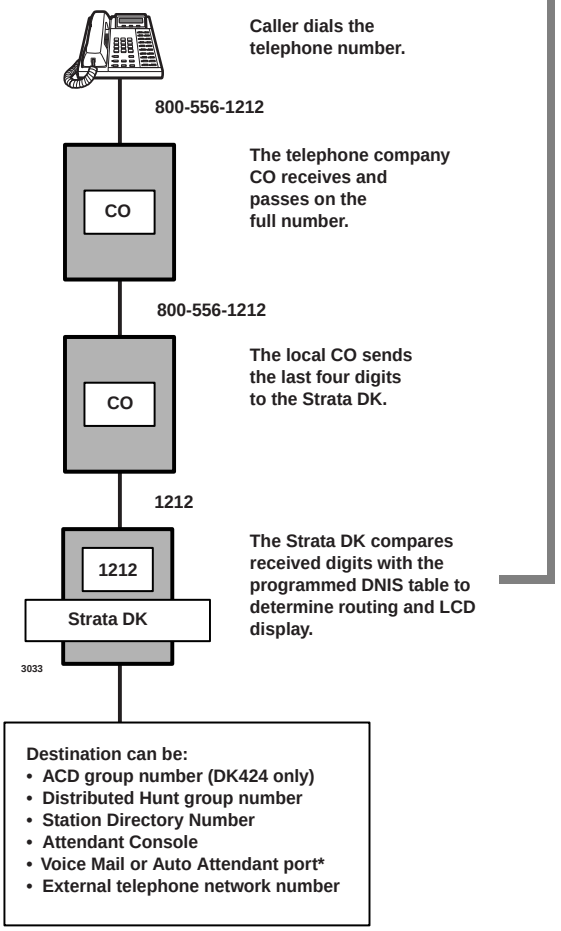


Figure 3 shows a sample overview of the call flow provided by the Strata DK DNIS capability.



* *Stand-alone Auto Attendant, not Strata DK built-in Auto Attendant.*

Day 1 Example	Normal Routing	
Incoming Number	Day 1 Destination	LCD Display
1209	201	Sales Dept
1210	202	Service Dept
1211	225	Credit Dept
1212	310	Production Dept
1213	350	Documentation
1214	555	Tech. Support
1215	420	Marketing
1216	430	Administration
1217	502	Engineering
1218	271	National Accts

Day 2 Example	Routing to Other Offices Still Open	
Incoming Number	**Day 1 Destination**	**LCD Display**
1209	801-1209	Sales Dept
1210	801-1210	Service Dept
1211	225	Credit Dept
1212	802-1212	Production Dept
1213	350	Documentation
1214	803-1214	Tech. Support
1215	420	Marketing
1216	430	Administration
1217	502	Engineering
1218	802-1218	National Accts

Night Example	Routing to Outside Answering Service	
Incoming Number	Day 1 Destination	LCD Display
1209	1-714-555-2222	Company Name
1210	1-714-555-2222	Company Name
1211	1-714-555-2222	Company Name
1212	1-714-555-2222	Company Name
1213	1-714-555-2222	Company Name
1214	1-714-555-2222	Company Name
1215	1-714-555-2222	Company Name
1216	1-714-555-2222	Company Name
1217	1-714-555-2222	Company Name
1218	1-714-555-2222	Company Name
1219	1-714-555-2222	Company Name
1220	1-714-555-2222	Company Name

Figure 3 DNIS Examples

DNIS is supported on digital T1 or analog DID and Tie lines. DNIS is typically used with "1-800" type of calls using long distance carriers over T1, but can also be provided over analog DID and Tie line circuits.

It is important to note that the Strata DK DNIS feature can treat all incoming local DID and Tie line calls the same. It can treat them as incoming DNIS long distance 1-800 calls for the purpose of routing these calls through the DNIS tables in the Strata DK. This is what makes DNIS such a flexible feature.

DNIS enables multiple numbers to ring into the same line or line group, providing optimum trunk usage as well as helpful called number/name identification information. This provides much more efficient usage of lines than the traditional usage of 800 numbers. Traditionally, each 800 number was assigned to its own line group, often resulting in a large number of under-used lines. The Strata DK DNIS capability solves this problem by using each DNIS line on an as-needed basis for different 800 number calls.

DNIS data is routed to DNs that can have multiple appearances, Distributed Hunt groups, ACD groups (DK424 only), and external network numbers through external call routing. DNIS digits can be received independently or simultaneously with ANI digits.

Each DNIS number can have its own voice mail ID code and can be routed to different destinations during Day/Day2/Night mode.

The DK424 supports 500, 350, 200 DNIS numbers and 300, 200, 100 telephone network numbers for the RCTUE/F, RCTUC/D, RCTUBA/BB, RCTUA, respectively. The DK40 supports 200.

External Telephone Network Numbers

All DNIS/DID/Tie numbers that ring into the Strata DK can be routed externally to any outside telephone number. Depending on the application, the caller DNIS name may be passed to the destination Strata DK when routed over the user's end-to-end telephone network.

Voice Mail

If assigned in the system database, incoming calls for each unique DNIS/DID/Tie number can be directly routed or call forwarded to a designated voice mailbox. This enables callers of each DNIS/DID/Tie number to receive immediate, personal custom greetings. This feature is available using in-band integration, but not available using SMDI.

Benefits

Station users can easily answer calls appropriately by type of call with the helpful call identification information. For example, this is very helpful for answering services, executive suites, or multiple product line sales applications.

Also, optimum trunk usage saves money by providing the same level of service with fewer "1-800" type lines.

Direct Inward Dialing (DID)

System Availability

Optional on Strata DK40 and DK424 systems, but unavailable on DK14 systems. Typically require DTMF tone receivers.

Description

DID enables incoming calls to ring a specific DN, or any number of stations which share a common DN, without going through the answering position. Calls over a single DID line can reach any one of a number of stations, ACD groups, or Distributed Hunt groups, depending upon the last four digits of the telephone number dialed. DID lines can use DNIS programs to provide DID with all DNIS features.

Each DID line has a single office code and a block of extension numbers that can individually ring stations as assigned in system programming. DID lines can directly access the remote maintenance modem, but not the Strata DK built-in Auto Attendant.

DID lines can optionally provide automatic camp-on busy when callers dial a busy station on incoming DID calls. This feature provides a camp-on tone and distinctive LED flash at the busy station.

If a second DID call is received at a busy station that has only one PDN button, the station user hears muted camp-on tone, and the second call camps-on (assuming camp-on has been turned on). If camp-on is off, the second caller hears busy tone unless forwarded to another station.

If a second DID call is received at a busy station that has more than one primary PDN button, the station user has the option of hearing muted camp-on tone and the second call camp-on, or the second call rings continuously on the other PDN button. This enables the station user to answer multiple calls to their DID number, including transferred calls. Two appearances of the PDN are recommended for this operation. Up to four PDN appearances may be used for some applications.

Outgoing calls can be made on two-way DID lines. However, ABR is not supported for those two-way lines. DID lines can be either DTMF or dial pulse signaling. Also note that a secondary protector is required for each DID circuit.

DID calls call forward externally if the station has Call-Forward External activated.

DID lines can be provided through analog circuits on the TDDU and RDDU interface or through digital circuits on the T1/DS-1 RDTU interface. An optional DTMF tone receiver (K5RCU or RRCS) is typically required for DID line DTMF operation.

Benefits

Provides efficient, direct calling to individual stations without going through the answer position and reduces the load on call answering positions. It also gives “private line” service to many individuals at a lower cost.

Direct Inward System Access (DISA)

System Availability

Optional on Strata DK14, DK40, and DK424 systems. Requires DTMF tone receivers.

Description

By calling in on a specific telephone number assigned to DISA, callers are connected directly to the Strata DK system and can dial internal stations or outgoing CO lines without going through the Attendant.

The caller dials the CO line number for DISA and hears two rings. Then a tone sounds for nine seconds, during which the caller dials a station number or the access code for a specific outgoing CO line or line group (“9” for LCR is not enabled). If the station or CO line is busy, the caller can dial another station or CO line. If no station number or CO line access code is dialed and the nine-second interval elapses, the call is transferred to a pre-assigned ringing arrangement (Day, Day2, or Night).

An optional DISA security code (1~15 digits) can be programmed and is highly recommended in all DISA applications. When the security code is programmed, the caller must enter it in order to make outgoing DISA calls on CO lines. The security code is not required to dial internal stations. Certain digital telephones selected in programming can revise the DISA security code.

A caller can also be required to enter a forced/verified account code (1~15 digits), along with the DISA security code, to access to an outgoing CO line through the system. This can be used as a secondary level of access security.

Strata DK systems can provide a DISA class of service to CO lines, which enables Toll Restriction to be applied to DISA CO line calls. For example, outgoing CO line calls could be restricted to local calls only when accessed through DISA. Any number of CO lines can be programmed with the DISA feature. CO lines can be programmed as normal lines during daytime operation and DISA lines at night.

The DISA feature can be accessed from the Strata DK built-in Auto Attendant by dialing “*” during the Auto Attendant greeting. Whenever using the DK built-in Auto Attendant, the system DISA security code should be used to prevent unauthorized calls through (into and out of) the Strata DK system.

Note Loop start and ground start CO lines can be programmed with DISA, but DID and Tie lines cannot.

Benefits

Saves money because employees can use the company’s calling network even when they are not in the office. Saves time because employees can call directly into the desired station without waiting for the Attendant to answer. Reduces the Attendant’s incoming call load and enhances service. Before and after hours, family members and others can use DISA to directly dial an employee’s station, improving the chances that the employee receives the call.

Distinctive CO Line/Internal Ringing

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Incoming CO lines ring with a different ring cadence than do internal intercom/DN calls. Users can easily distinguish the type of call, even when the telephone is not in view. This feature works with digital, electronic, or standard telephones.

Benefits

Conveniently identifies the type of call ringing the station. The station user can answer with an appropriate greeting.

Door Lock Control

System Availability

Optional on all Strata DK14, DK40, and DK424 systems using the Door Phone/Lock Control Box (DDCB) interface. DK40 and DK424 also support one Door Lock Control using PIOU, PIOUS, or PEPU.

Description

The Door Lock Control feature enables any telephone programmed with the Door Unlock button to unlock a door. Pressing the button activates the electronic door lock, and the lock opens for three to six seconds as specified in programming. The electronic door lock mechanism must be supplied by the customer. The number of locks each system supports is:

- **DK14** – up to two locks
- **DK40** – up to three locks
- **DK424** – up to four locks with the RCTUA; all other processors support up to five locks

Benefits

Provides a great convenience by eliminating the need for extra equipment to remotely control the lock, or the need to physically get up and go to the door to open it.

Door Phone

System Availability

Optional on Strata DK14, DK40, and DK424 systems requiring the door phone/lock control box (DDCB).

Description

The optional door phone/monitor station is an external/remote two-way speaker box which has a direct voice link to a station. A door phone is frequently mounted near a building entrance and associated with a customer-provided door lock to help screen visitors. Pressing the button on a door phone sends a distinctive ringing only to idle digital or electronic stations which have been programmed to receive ringing from that door phone.

If all stations are busy, a muted ring is sent to the lowest numbered station programmed to ring. When a station answers, it is automatically connected to the door phone. Door phones can be programmed to ring over external page when the system is in Night mode.

A station can dial an individual door phone/monitor station and either converse with someone at the door phone, or simply monitor conversation or sound at the door phone. No warning tone is heard at the door phone/monitor station when it is called by a station.

Door phones are supported by the door phone/lock control box (DDCB) external module. One control box supports up to three door phones. The DDCB requires one DKT station circuit on a PDKU, RDSU, KCDU, or QCDU.

Door phones can be assigned to ring PDNs and/or PhDNs. The number of door phones is each system supports is:

- **DK14** – up to six door phones
- **DK40** – up to nine door phones
- **DK424** – up to nine door phones with RCTUA, and up to twelve door phones with all other processors

Benefits

Increases building security and employee safety, especially after hours. It can also provide a “hot line” calling link between an office and such facilities as a warehouse or laboratory.

DTMF and Dial Pulse CO Line Compatible

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Signals generated by pressing the dial pad buttons of a digital telephone are neither DTMF nor rotary dial signals. The system can be programmed to translate these station signals to either DTMF or rotary dial signals as required by the serving CO.

Each line is programmed individually for DTMF or rotary dial signaling. If a CO line is rotary, a telephone or Attendant Console user can send DTMF tones as required, by pressing the Tone Dial Select button (flexible program option).

The system can be programmed to enable or prevent DTMF tones from being returned to digital telephones when a user dials on outside lines or sends DTMF digits to a voice mail device.

Benefits

Provides easy accommodation of both older, rotary CO and the newer touch-tone COs. In both cases, the station user can still have the convenience and aesthetic appeal of a push-button phone.

DTMF Signal Time Setting

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

For Strata DK systems, the Speed Dial and voice mail integration DTMF signal time can be set independently at 80 or 160 ms in system programming for CO line dialing and for voice mail auto dial digits. The standard setting for CO line dialing is 80 ms. The standard setting for voice mail digits is 160 ms.

See also the station feature, “Continuous DTMF Signal Time.”

Benefits

Provides flexibility in meeting both the DTMF requirements of the serving CO and those of a voice mail device. As a result, a customer can have faster connection time to the public network and still accommodate voice mail systems.

E911 Enhanced Operation

System Availability

Optional feature on Strata DK14, DK40, and DK424 systems. Additional equipment required.

Description

DK14, DK40, and DK424 systems support Enhanced 911 (E911) locator services. This feature sends the DN of the telephone dialing 911 to the 911 service, so that the dispatcher can determine the exact location (building, floor, office number, etc.) from which the call is originating.

DK14 and DK40 systems support the E911 feature by providing an interface to an external third-party adjunct system. The third-party E911 adjunct system provides translation and signaling of the correct DN location information to the 911 Public Safety Answering Point (PSAP).

The DK424 system supports the E911 enhanced locator service operation without external third party adjunct equipment. This is done through the CAMA Trunk Interface Unit (RMCS), which is a special CO line card that is installed in a card slot.

Note The FCC is in the process of defining national standards for E911 compatibility, but there is no official due date. At present both legal and technical requirements vary significantly by state and readers are advised to contact local emergency service providers and telephone companies for detailed requirements.

E911 dispatchers sometimes encounter problems when handling emergency calls from a business telephone system, because they cannot identify specific locations within the calling system. In standard 911 calling, when a caller dials 911 for emergency assistance, the responding PSAP immediately receives a screen displaying information about the calling line.

The central 911 database contains name and address information on every telephone number which is normally the listed subscriber name and the address where the line is terminated. In many cases, this is sufficient information for the responding agency to find the party needing help, especially in private residential locations and small businesses.

However, some of these emergency 911 calls come from large organizations that may have a large, multi-floor building, or multiple buildings within a campus-type environment. This makes it more difficult for the responding agency to find the party needing assistance when they arrive. The same difficulty can be created if the call is originated from an off-premise station that is terminated at a different address than the main switching system.

E911 provides locator information to the PSAP which is more complete by including the building, floor, etc., along with the name and address of the calling number. This is done by sending a translation of the 911 caller's station number called a CESID (Caller's Emergency Service Identification) to the E911 PSAP. This CESID is then cross-referenced with name/number/address data in the E911central ALI (Automatic Location Identification) database, and the E911 dispatcher receives the precise location along with the basic information.

Important! *In many cases, the only way to provide a unique CESID for each station that is recognizable by the telephone company is to use DID service.*

DK14 and DK40 Operation

DK14 and DK40 systems support E911 operation by forwarding 911 calls and 9+911 calls to designated standard ports to interface with external third-party adjunct translation equipment

designed to handle this interface. The systems provide up to two standard telephone ports for this purpose.

The adjunct equipment receives the Strata DK DN in DTMF format and translates it into a number and format recognizable by the telephone company and E911 systems. The translated number is sent to the proper PSAP using the telephone company's 911 tandem switch where it is matched up with a central ALI database to provide enhanced information to the PSAP dispatcher.

The interface between the third-party adjunct equipment and the E911 tandem CO must use special CAMA trunks. Order these specialized trunks through the special ordering desk of your local phone company.

DK424 Operation

The DK424 system supports the E911 enhanced locator service operation without external third-party adjunct equipment and without requiring standard station ports for connection. This is done through the CAMA Trunk Interface Unit (RMCU/RMCS), which is a special CO line card that is installed in a card slot.

The CAMA Trunk Interface Unit (RMCU) supports CAMA trunk circuits with either one or two subassemblies that attach to it. The CAMA Trunk Subassembly (RCMS) provides two CAMA trunk circuits. The RMCU with two RCMS subassemblies provides a total of four circuits in the same card slot and is supported for direct CAMA trunk connection. Software in the DK424 performs the locator translation and signaling.

Important!

- In many cases the only way to provide a unique CESID for each station that is recognizable by the telephone company is to use DID service.
- In order for this feature to be effective, 911 calls and 9+911 calls must be dialed from a DKT DN or from a single line telephone. 911 calls originated from the CO Line button or the Pooled Line button bypass the adjunct equipment and go directly to the CO exactly as dialed.

Adjunct Equipment Suppliers

Two companies have been identified that supply the E911 adjunct translation systems – Proctor and Associates, Redmond, WA (800) 824-9719; and Telident, Inc., Minneapolis, MN (800) 536-4911.

Information regarding the E911 adjunct interface equipment can be found in the *Strata DK Installation and Maintenance Manual.*

Benefits

The agency responding to the 911 call gets location information that makes it easier for them to find the right location within the facility. This provides faster emergency service to those needing it.

External Amplified Speaker

System Availability

Optional on Strata DK14, DK40, and DK424 systems using HESB and the appropriate interface unit (HHEU) inside the phone, or the PIOU or PEPU paging interface.

Description

The External Amplified Speaker (HESB) is a six-inch, three-watt speaker with a three-watt amplifier built into a wooden speaker box. It can be used to:

- Amplify the ringing on a digital or electronic telephone.
- Provide a paging amplifier/speaker.
- Create an amplified talk-back speaker arrangement in an area where a telephone is not needed. The HESB is installed as a speaker and connected to a door phone unit that is used as the talk-back microphone.

The number of HESBs that can be installed per system depends on the function of the HESB. Any number of HESBs can provide loud ringing bells for electronic or digital telephones. Only one HESB can be installed if it is used as a paging or an amplified talk-back speaker.

Note Digital or electronic telephones, an HHEU2 interface, and an HESC-65A cable are required for each phone that has a loud ringing bell. A 2000-series digital telephone that has been upgraded with a data interface unit can be upgraded with the HHEU2 options but older telephone models cannot.

On DK40 and DK424 systems, the PIOU or PEPU Option Interface Unit is required when an HESB is used as a paging/amplifier speaker or an amplified talk-back speaker.

Benefits

Provides several options to make a communications system more efficient. A loud ringing bell can improve call handling in noisy areas where non-amplified ringing on a phone may not be heard.

A paging speaker ensures that paging announcements can be clearly heard throughout an area. In an area where a DKT is not needed, a talk-back speaker provides a cost-effective communications solution.

Flexible Button Assignment

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

On both 10-button and 20-button telephones, one button is usually assigned to the Intercom/ Primary PN function. In some cases, the Automatic Off-hook Selection feature can be programmed to select the Intercom line, eliminating the need for an Intercom/DN button.

The other buttons can be assigned to a CO/PBX line or to certain features. Following are the possible assignments for a button.

- CO/PBX Line Button – If the telephone is being used in conjunction with a DSS console, all buttons could be used as CO/PBX buttons.
- Pooled Line Button – Enable a group of CO lines to "appear" under one button. Up to four Pooled Line buttons per CO line group can be assigned at each telephone. See "Pooled CO Lines" for more information.

Feature Activation Button

Table 9 lists the features that can be assigned to flexible buttons.

Table 9 Assignable Features

Feature Name		
Account Codes	Alarm Reset	Alert Signal
All Call Voice Page	Alphanumeric Messaging	Automatic Busy Redial
Automatic Callback (Internal Calls)	Background Music (BGM) Interface	Call Forward – All Calls
Call Forward – Busy	Call Forward – Busy/No Answer	Call Forward – External
Call Forward – Fixed	Call Forward – No Answer	Call Park
Call Park LCD Display	Call Park/Page	Call Pickup (Directed)
Call Pickup (Group)	Call Pickup 1~4 (Tenant 1~4)	Data Release
Caller Identification (ID)/ANI	Data	Do Not Disturb (DND)
Direct Station Selection (DSS)	Directory Numbers (PhDN, PDN, SDN)	Locked Automatic Dialing
Door Unlock 1~5	DTMF/Rotary Signal Selector (Tone Key)	LCD Message
Flash	Handset OCA	Lost Call Auto Dial
Modem	Night Transfer (Day/Night Modes) (Tenant 1~4)	Night Transfer Lock
Pause (1.5, 3, or 10 Seconds)	Pooled Line Group 1~16	Privacy
Privacy Release	Release	Released Answer
Redial Last Number	Saved Number Redial	Speed Dial Select
Speed Dial Pause and Long Pause	Station Speed Dial Codes	Tone (DTMF/Rotary Signal Selector)
Message Waiting for PhDNs	Microphone Cutoff	

There are several standard keystrip patterns that can be programmed to make button assignments easy. Buttons on individual stations can then be changed from the standard keystrip pattern selected for that station. Strata DK systems have four keystrip patterns from which to choose (A, B, C, and D).

However, on 10-button and 20-button telephones, Flexible Button Assignment enables the programmer to define each of the buttons instead of choosing a standard keystrip pattern and

then changing individual buttons. Any button which is not programmed for a specific feature or CO line is automatically assigned per the initialized pattern.

The use of the “Keyprint 2000” PC software package now makes custom keystrips easy to create and print.

Benefits

Flexible Button Assignment enables each phone to be customized to the particular needs of the station user. The system can be tailored to fit the business communication needs.

Flexible Intercom/DN Numbering

System Availability

Standard on Strata DK14, DK40, DK424 systems.

Description

Flexible Intercom/DN Numbering enables a station intercom or DN, including the numbers for the Attendant stations, to be any number from one to four digits long. The intercom/DN does not have to correspond to the fixed station location number in the Key Service Unit (KSU).

The maximum number of available unique station DNs (PDNs plus PhDNs) are listed below:

- **DK14** - up to 20 unique station DNs are allowed
- **DK40** - up to 56 unique station DNs are allowed
- **DK424** - up to 672 unique station DNs are allowed

Single-digit DNs, such as “0”, can be assigned to Attendant Consoles or Attendant telephones.

Benefits

Enables a consistent numbering plan for and facilitate the efficient use of a business’ communications system when the system includes several different types of telephone systems. Branch offices which have Strata DK systems can have the same numbering plan as larger offices using PBXs.

In the case where a system is being used behind Centrex, intercom numbers/DN can match Centrex numbers.

If a Strata DK system is replacing a system that had a three- or four-digit numbering plan, the same plan can be used with the new system, eliminating the need for new directories and new extension numbers.

Finally, if the Strata DK system is being used with a voice mail system that has three- or four-digit mailbox numbers, the extension numbers can match the mailbox numbers.

Flexible Line Ringing Assignment

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Each incoming CO/PBX line that appears on a given station can be programmed to either ring or not ring at that station. Each CO/PBX line can be programmed to ring at any number of electronic/digital telephones. Thus, the number of ringing electronic/digital telephones per CO line is limited only by system size. In the DK424, a maximum of 120 phones can ring at one time.

Each CO line can be programmed to ring the Auto Attendant, night bell, DISA, remote maintenance modem or any station DN in the system. A different ringing assignment can be created for each of three ringing modes – Day, Day2 or Night. Also, stations assigned to ring can do so with any of the following timing designations.

- Immediate

  Stations assigned Immediate timing ring as soon as the line rings into the system.

- Delay 1

  If stations with Immediate timing have not answered within 12 seconds (3 rings), stations assigned Delay 1 timing also begin ringing. Immediate Ring telephones continue to ring when Delay 1 Ring telephones ring.

- Delay 2

  If the above stations have not answered within 24 seconds (6 rings), stations assigned Delay 2 timing also begin ringing. Immediate and Delay 1 Ring telephones continue to ring when Delay 2 Ring telephones ring.

A related feature, Night Transfer, enables programming of up to three different CO line ringing patterns (Day, Day 2, and Night). The ringing pattern can be controlled by any station programmed with a Night Transfer button. In tenant service, there are two Night Transfer buttons on DK14 and DK40 systems and four on the DK424.

If a DK system is being used in tenant service, each tenant can separately define and control three ringing patterns using the Night Transfer1~4 buttons.

Benefits

Provides the flexibility to define CO ringing arrangements to fit the needs of the business. Calls can get to their destination quickly. CO/PBX lines can ring directly to a station or group of stations in a specific department, without going through a central Attendant. This reduces the Attendant call load and enables better service to callers. Flexible Line Ringing Assignment also enables the use of private lines in the system, and is used for tenant service.

Flexible Slot Assignment

System Availability

Standard on Strata DK424 systems only. Available in expansion unit of DK40, but unavailable for DK14.

Description

The flexible slot architecture on DK424 systems enables almost any combination of CO line and station ports. Slots in the KSU can be assigned as station, CO line, or Option Interface slots in a variety of custom configurations. All stations, CO lines, and optional printed circuit boards are the same size and use the same connector to mount into the backplane of the base or expansion Key Service Unit cabinet.

Any printed circuit board can be installed in any slot, with the exceptions of the RCTU common control unit, which goes in designated processor slots, and the PDKU or PEKU which must be installed in slot 11 if RSIU is not used. If RSIU is used, RSIU must be installed in slot 11, in this case a PDKU or PEKU must be installed in slot 12 of the DK424 to enable system programming and system administration functions.

Benefits

Increases the variety of line/station combinations, so a customer can have a system that is sized and tailored to meet their specific needs.

Ground Start Lines

System Availability

Optional in Strata DK40 and DK424 systems, and unavailable in DK14 systems. Requires:

- Analog – one RGLU card for each four lines
- Digital – T1 Interface (RDTU) in DK424 systems

Description

Ground start lines provide better trunk supervision for disconnect signaling than loop start lines. This is particularly valuable in voice mail, Auto Attendant, and ACD applications. It also greatly reduces the possible collision of incoming and outgoing pooled line groups calls.

Individual circuits on the RGLU ground/loop start interface unit or RDTU T1 interface unit can be configured individually for loop start or ground start, and for DTMF or dial pulse signaling, thus maximizing performance and configuration flexibility on a line-by-line basis.

Benefits

Provides flexibility in choosing the best type of lines for the customer's application and assists in gaining the performance characteristics they require.

Hotline Service (Emergency Ringdown)

System Availability

Standard on Strata DK424 systems, but unavailable on DK14 and DK40 systems.

Important! *This feature works only with analog single-line telephones, not with digital telephones.*

Description

Analog single-line telephones can be programmed so that when the user goes off-hook, they automatically ring a designated extension without dialing. The receiving station or Attendant console displays the station name/number of the off-hook calling station.

This feature is very useful for hotel/motel applications, in which lobby or public area telephones either do not have dial access, or for convenience, automatically call the front desk.

This feature is also very useful for healthcare applications. If an analog single-line station is left off-hook and fails to complete the dialing of a valid number within a programmable time period, continuous ringing occurs at a designated extension.

Benefits

Provides convenience and service to hotel/motel guests calling from lobby or public area telephones. In healthcare applications, emergency ringdown operation assists callers who may not be able to complete the call by dialing.

ISDN Basic Rate Interface (BRI)

System Availability

Optional on Strata DK424 systems and unavailable with DK40 and DK14 systems. The DK424 supports the BRI S/T with Release 4.1 and higher, and BRI U with Release 4.2 and higher.

Description

BRI is the smaller capacity ISDN interface, providing two simultaneous voice or data connections. BRI uses the 2B+D transmission format which is defined as two 64 kbps bearer channels and one 16 kpbs data (control) channel.

The two B-channels can also be combined for data transmission at speeds up to 128 kbps. The D-channel carries call setup control data and can also be used as a third connection for packet data transmission when using an external NT-1.

ISDN BRI services are designed mostly for end-user station interfaces. The DK424 can connect group IV faxs, PCs, computer terminals or ports, LAN bridges, video conferencing terminals, or other devices that can benefit from an all digital transmission link.

The DK424 system also supports BRI interface from the public network as CO line service. The station-side connection supports multi-point multiple device connection to the same BRI circuit. Applications that are supported include:

- Video conferencing
- Remote access servers
- Faster Internet access
- High-speed data connections from ISDN stations to the public ISDN network, as well as typical voice and fax connections
- Calling Number ID services
- DID
- Direct Inward Lines

Calling Number ID services are provided through the D-channel function of ISDN's out-of-band signaling format. The ISDN link sends the Caller ID for the service originating the call. This number can be the listed DN, DID number, or a private line number used for billing, as well as identification to the called location. Caller ID blocking and screening are available options. Incoming calls are identified by Caller ID and the information is used in the DK424 like ANI. DNIS information is also provided over ISDN lines.

The following BRI S/T Interface cards will be supported by the DK424 system in a future release:

- Basic Rate S/T Interface Unit (RBSU) provides two BRI S/T (four-wire) interfaces that can be used for network- or station-side connections. It has connectors for a two-port add-on subassembly.
- Basic Rate S/T Interface Subassembly (RBSS) attaches to the RBSU to provide two additional BRI S/T interfaces that can be used for station-side connections only.

The combination of the RBSU and the RBSS subassembly can provide four BRI S/T interfaces in one card slot.

Note Network connections using BRI S/T interface require a customer-supplied external NT-1 device.

The following BRI U Interface cards will be supported by the DK424 system in a future release:

- Basic Rate U Interface Unit (RBUU) provides two BRI U (two-wire) interfaces that can be used for network- or station-side connections. The RBUU has connectors for a two-port add-on subassembly.
- Basic Rate U Interface Subassembly (RBUS) attaches to the RBUU to provide two additional BRI U interfaces that can be used for station-side connections only.

The combination of the RBUU and the RBUS subassembly can provide four BRI U interfaces in one card slot.

ISDN Applications

ISDN features can be employed in many useful applications.

- **Calling Number Services**: The Signaling System 7 (SS7) communications backbone network supports ISDN PRI trunks across various CO switching systems by providing end-to-end digital connectivity. In a calling number service application, for example, this extends calling number information across the entire Public Switched Telephone Network (PSTN) by passing this information across the various CO switching system nodes. Calling number information is very important in CTI applications.
- **High Speed Data**: Performance improvement (speed and accuracy) and connectivity is becoming a major factor in ISDN data-related applications. For example, a computer database interface works well on ISDN lines for large capacity file transfer, high resolution graphics transfer, online transaction processing, and information retrieval applications. ISDN provides better performance for these applications which require faster call setup and network response times than older, more restrictive analog networks can provide. ISDN also provides higher data accuracy than today's analog network.
- **Video Conferencing**: Color video transmission requires greater bandwidth and flexibility for video conferencing and related applications. Video conferencing systems integrate cameras, displays, CODECs, and control units. The CODEC can set up various transmission rates between 64 kbps and 1.5 Mbps, as required.
- **Video Telephones**: Video phones can transmit voice and image simultaneously with ISDN. Transmission of still images at high speeds is easy, as well as color moving picture communication among several parties. This integrates a telephone, a video camera with an image sensor, and a small color LCD display.
- **Multi-device Connection**: Up to eight devices can share one ISDN BRI line using station-side connections. For example, one line can accommodate two phones and multiple PCs or fax machines. The station interface is limited to two DNs. With conventional analog service, two lines are required to transmit data and talk on the phone at the same time, unless a Data Interface Unit (DIU) is used. The customer saves money by sharing CO line resources and is provided the benefits of higher speed.
- **Multiple LAN Link**: Linking multiple LANs together, using ISDN, is very efficient at the 64 kbps high-speed rates, and data transmission over the digital network provides extremely high-data accuracy. This would replace the typical LAN bridge and modems in use today, which are much slower and provide less data accuracy via the analog network. The DK424 supports BR1 station-side connection of access router devices used in these applications.
- **High Speed Fax**: G4 Facsimile offers high-speed and high-image quality. G4 Fax machines do not have to be isolated within a stand-alone system. Many G4 Fax machines can also communicate with G3 Fax machines, because the connection with existing networks is handled by the ISDN side.
- **Telecommuting**: The idea of employees working at home is a much more effective and practical option with ISDN services. The employees have access to office technology necessary to make them work almost as effectively at home as in the office.
- **Resource Sharing**: Local network functions, such as printer sharing and modem sharing, are supported by connecting these devices through terminal adapters. Users can share

equipment regardless of location. It also eliminates the need for dedicated connections, since all network resources are available on a dial-up basis.

- **ISDN BRI through Centrex**: This is offered by many local exchange carriers, who offer both Centrex and ISDN lines. Blending the calling features of Centrex with BRI provides many customized capabilities. Examples are Caller ID, and the ability to set up data calls between parties using the 64 kbps B-channel without the need for lower speed modems.
- **Carrier Gateway**: This is the general “catch all” category that connects anything to anything over the PSTN. Using ISDN for this purpose provides speed, accuracy, and connectivity advantages for applications like Internet connection, e-mail, Telex, Voice Mail, and Fax forwarding.

Benefits

Faster call setup times make ISDN call connections faster, because a separate modem-type of communication with the public network is used. Calls using analog connections or T1 digital connections can take several seconds longer before the call connection is made, because they send DTMF tones and wait for audible tones in return.

Immediate Caller ID is provided on ISDN calls, because Caller ID is transmitted with each call setup message. This makes Caller ID information immediate rather than waiting for this information to be sent after starting the ringing process as with analog lines.

Higher speed digital data connection is possible on a BRI connection to the ISDN network.

DID-type functionality enables direct incoming calls to be routed and ring at designated telephones according to the number dialed. This provides DID functionality over ISDN lines without the additional expense of purchasing a block of numbers from the telephone company and subscribing to DID service.

ISDN Primary Rate Interface (PRI)

System Availability

Optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processor. Not available with DK424 RCTUA, DK40, or DK14 systems.

Description

PRI is the larger capacity ISDN interface, providing 23 simultaneous voice or data connections. PRI uses the 23B+D transmission format which is defined as 23 64 kbps bearer channels and one 64 kbps data (control) channel, with total bandwidth of 1.536 Mbps.

ISDN PRI is designed as the bulk trunk interface to the ISDN network. PRI connects the DK424 telephone system to an intra- or inter-LATA communication provider. PRI can be used to send and receive voice and data.

PRI can save money by enabling the multiple use of the channels on the PRI link for a variety of services on demand, such as DID, Tie, FX, WATS, 800, etc. This capability to support multiple services and dynamically allocate channel use as needed is known as the call-by-call

feature and is described in more detail below. PRI lines also support the Calling Number ID Services also described below.

ISDN PRI is supported in the DK424 system by using the Primary Rate Interface Unit (RPTU). The RPTU is a 24-channel PRI card providing 1 data (control) channel and 23 bearer channels. All B-channels appear and program as CO lines in the DK424 system and can be individually configured for local service, FX, WATS, DID, Tie line, etc. service operation. Network connection using PRI interface requires a customer supplied external Channel Service Unit (CSU).

The DK424 provides the following ISDN PRI features:

- **Call-by-Call Service Selection** permits the grouping of individual PRI B-channels to be shared among various types of services specified by the customer, instead of having to dedicate each channel to a particular type of service. For example, when using standard (POTS), DID, Tie, FX, WATS, and 800, the line circuits (individual or groups) of B-channels of a PRI circuit can be designated to these various services dynamically on a call-by-call basis.

  B-channels can be dynamically allocated among services on a demand basis, depending on varying requirements for outgoing and incoming calls. This could also be used for voice or data on demand, or to switch between AT&T Megacom™ service and Megacom 800 service, if the user has both. This dynamic allocation of service can reduce the number of circuits required to access various services, especially if different services have peak busy periods at different times of the day.

  Release 4.2 enables a minimum and maximum number of B-channels to be used for each service on this common set of B-channels in system programming. Each of these values can be set for three time periods during the day. With these values, calls can be rejected if they exceed the maximum number subscribed for that service or they can ensure that a minimum number of channels remain available for incoming calls. Thus, the system can be used to provide an optimum service to meet the objectives of the business.

- **Non-facility Associated Signaling** increases traffic handling on PRI lines. A single 64 kbps D-channel on one PRI line can be used to handle the signaling for two PRI lines on the DK424 system, instead of the usual signaling that requires one 64 kbps D-channel for each PRI line. This is very important when using the Call-by-call feature to enable trunk groups larger than the 23 B-channels available on one PRI line. This extends the number of call-by-call B-channels to 47 (2 x 24 -1) and extends the number of B-channels on the second (non-signaling) PRI line from 23 to 24. This provides better performance and cost savings in high volume ISDN PRI applications.

- **Calling Number Services** are provided through the D-channel function of ISDN's out-of-band signaling format. The ISDN link sends the Caller ID for the service originating the call. This number can be the listed directory number, DID number, or a private line number used for billing, as well as identification to the called location. Caller ID blocking and screening are available options. Incoming calls receive the Caller ID from the caller and is used in DK424 like ANI. DNIS information is also provided over ISDN lines.

  Calling Number Services can be divided into four different types:

  - **Number Provisioning** for outgoing calls is controlled by subscription parameters with your telco provider. The choice is for the number to be necessary or not. The number sent is based on the call originator and the call type. The originator can be a tandem call, a station (with or without DID), or a station with a designated number. The type of call refers to whether it is direct or redirected (call forwarded).

For a tandem call, the Calling Party Number digits received are the digits that are sent. For a direct station call, the default number assigned to the selected service and which is programmed into the Strata DK as the Listed Directory Number are the number that is sent. In this case, the system can send a fixed number (assigned in the system) or it can use the DID programming to determine he number to be sent.

- **Number Screening** is a feature of the public network. This is normally performed by the network to ensure the call being placed has a valid billing number for the call. In systems with a flexible Calling Number Provisioning, the network can perform the screening of the call to ensure the number provided is valid for billing or reject the call, rather than completing the call and billing it to the default Listed Directory Number.
- **Number Privacy** enables the caller to prevent the public network from delivering the Calling Number to the called party on a per-call basis. Service subscribers can request from the public network that the number be presented or not as a default. Subscribers can also select the ability to change or not change the default settings. If a public telco service enables changes to be made, then a user can enter change a code to the setting for that call after selecting a trunk group.
- **Number Delivery** sends the calling number with the call setup message to indicate who is calling, if that number is not blocked. When the Strata DK receives this number, it is handled the same way that ANI information from T1 trunks is handled. i.e., The number displays on the called telephone's LCD, or it can be used by TAPI interfaces, or recorded in SMDR data records, etc.

Note Name Delivery is not currently supported due to the lack of a common specification for the public ISDN network.

ISDN Applications

ISDN features can be employed in many useful applications.

- **Calling Number Services**: The Signaling System 7 (SS7) communications backbone network supports ISDN PRI trunks across various Central Office switching systems. ISDN depends upon SS7 out-of-band D-channel signaling control to provide end-to-end digital connectivity. In a calling number service application, for example, this extends calling number information across the entire public switched telephone network by passing this information across the various Central Office switching system nodes. Calling number information is very important in Computer Telephony Integration (CTI) applications.
- **High Speed Data**: Performance improvement (speed and accuracy) and connectivity is becoming a major factor in ISDN data related applications. For example, computer database interface works well on ISDN lines for large capacity file transfer, high resolution graphics transfer, online transaction processing, and information retrieval applications. ISDN provides better performance for these applications which require faster call setup and network response times than older, more restrictive analog networks can provide. ISDN also provides higher data accuracy than today's analog network.
- **Video Conferencing**: Color video transmission requires greater bandwidth and flexibility for video conferencing and related applications. Video conferencing systems integrate cameras, displays, CODEC, and control unit. The CODEC can set up various transmission rates between 64 kbps and 1.5 Mbps, as required.
- **High Speed Fax**: G4 Facsimile via ISDN offers high speed and high image quality. G4 Fax machines do not have to be isolated within a stand-alone system. Many G4 Fax machines can also communicate with G3 Fax machines because the connection with existing networks is handled by the ISDN side.
- **Telecommuting**: The idea of employees working at home is a much more effective and practical option with ISDN services. ISDN can provide employees working at home access to office technology necessary to make them work almost as effectively at home as in the office.
- **PRI Static Integrated Network Access:** Designed to eliminate the cost of maintaining separate access lines for private-line services and switched services. The traffic over the two types of access lines can be combined over the same access line. For example, a user can access AT&T's ACCUNET private-line services, Software Defined Data Network, and ACCUNET Switched Digital services all over the same line.
- **Resource Sharing**: ISDN lines can support local network functions such as printer sharing and modem sharing by connecting these devices through terminal adapters. This enables users to share equipment regardless of location. It also eliminates the need for dedicated connections, since all network resources are available on a dial-up basis.
- **Carrier Gateway**: This is the general "catch all" category that would be used to connect anything to anything over the public network. Using ISDN for this purpose provides speed, accuracy, and connectivity advantages for applications like Internet connection, e-mail, Telex, Voice Mail, and Fax forwarding.

Benefits

Faster call setup times make ISDN call connections faster because a separate modem-type of communication with the public network is used. Calls using analog connections or T1 digital connections can take several seconds longer before the call connection is made because they send DTMF tones and wait for audible tones in return.

Immediate Caller ID is provided on ISDN calls because Caller ID is transmitted with each call setup message. This makes Caller ID information immediate rather than waiting for this information to be sent after starting the ringing process as with analog lines.

Shared use of lines for voice, data, fax, and video enables each channel on ISDN services to be used for multiple purposes based upon the setup request. Lines can be used for many services without the need for modems or other devices. Sharing the channels for a variety of services can save you money in monthly service charges, compared to the dedicated lines required using traditional analog lines for each service.

Higher speed digital data connections is possible on a PRI connection to the ISDN network. ISDN provides better performance for applications which require faster call setup and network response times than older, more restrictive analog networks can provide. ISDN also provides higher data accuracy than today's analog network.

DID-type functionality enables direct incoming calls to be routed and ring at designated telephones according to the number dialed. This provides DID functionality over ISDN lines without the additional expense of purchasing a block of numbers from the telephone company and subscribing to DID service.

Least Cost Routing (LCR)

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Enables the system to automatically route each outgoing call over the least costly trunk or common carrier connected to the system. A station user simply dials the LCR access code (9), followed by the telephone number. When properly programmed, the system chooses the most cost-effective CO line available to the user.

The programming options can also choose a specific route for long distance calls when enabled. Specific routes can also be assigned for local calls. Up to three time-of-day schedules can be set up to enable different routes selected at different times of the day.

Up to five special codes can be exempt from LCR. Usually, these are emergency codes such as 911, which should never be blocked by LCR.

Table 10 lists the LCR capacities for each Strata system.

Table 10 LCR Capacities

			DK424			
LCR	DK14	DK40	RCTUA	RCTUBA/BB	RCTUC/D	RCTUE/F

LCR route plans	8	8	8	8	16	16
Area Code/Office Code (AC/OC) exception tables	8	8	8	8	16	16
Time schedules	3	3	3	3	3	3
Station classes	4	4	4	4	8	8
Route definition tables	4	4	4	4	6	6
Modify digit tables	6	6	6	6	12	12

As a programmable option, a warning tone can be heard when the system has selected the most expensive route. This gives the user the option to wait until a less expensive line becomes available.

LCR is compatible with Automatic Busy Redial and line-to-line connections.

LCR and Toll Restriction features have the following additional capabilities:

- "Assume 9" Centrex users can dial four-digit Centrex numbers and be routed locally, even if the number conflicts with restricted long distance area codes.
- Special area codes can be dialed without the "1" prefix, so calls are unrestricted and routed the same as local seven-digit numbers.
- Up to six special area codes can be stored in a table which is very useful in areas not using standard North American Numbering Plan dialing.
- Special codes that begin or end with * or # that override Toll Restriction can be dialed and are routed locally in either normal or Centrex environments.

  This is very useful for dialing Centrex feature codes or extension numbers. It can also be used for Caller ID per-call blocking.
- Universal 976 number blocking. Four other office codes can be stored in a table to provide universal blocking.

Benefits

LCR reduces the costs of long distance calling by ensuring that each call is placed over the least costly route available to that user at that time. Placing a call is simpler for station users, since they do not have to decide which line to use, or remember how to access specific lines.

Line Call Pickup Groups

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

With the CO Line Call Pickup Group feature, up to two CO Line Call Pickup Groups can be programmed on DK14 and DK40 systems and up to four groups on DK424. Ringing CO lines in the first CO line group can be picked up with an access code or with the Directed Pickup1

button, if it appears on the telephone. Ringing CO lines in the second CO line group can be picked up with an access code or with the Directed Pickup2 button, if it appears on the telephone.

As an option, all CO lines could be put into one group. A ringing CO line could then be picked up with an access code or with the Directed Pickup button.

On Strata DK systems with tenant service, the CO lines for tenant 1 could be put into one CO line group, and the CO lines for tenant 2 could be put into another CO line group. Then, tenant 1 station users can use the Directed Pickup1 button and tenant 2 station users can use the Directed Pickup2 button to pick up the CO lines assigned to them.

Benefits

Enables convenient and efficient call handling for CO line calls. Station users do not have to determine which CO line is ringing in order to answer it, nor does the ringing CO line have to appear on their telephone in order for them to pick it up.

Line Groups

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Also known as Trunk Groups, this feature enables the CO lines on any Strata system to be assigned to CO line groups. Station users can access the CO line groups by dialing a specific CO line group access code. This enables a customer to group various types of CO lines together for convenient access.

For example, a customer might want to put Tie lines in one CO line group and WATS lines in another. Users would then access the CO line group that was appropriate for the type of call being placed. If all lines in that CO line group were busy, the user could queue for the CO line group.

If the system is programmed for Least Cost Routing (LCR), station users do not need to select a specific CO line group. DK14 systems recognizes up to four CO line groups. DK40 and DK424 systems with RCTUA or RCTUBA/BB processor can be programmed for up to eight CO line groups. DK424 systems with an RCTUC/D or RCTUE/F processor can be programmed for up to 16 CO line groups.

CO line groups are also the pooled line groups that can be assigned to buttons on a DKT. Pooled Line Group 1 is CO Line Group 1, Pooled Line Group 2 is CO Line Group 2, and so on. Up to four Pooled Line Group buttons for the same CO line group can be assigned to a station to facilitate handling several calls on that CO line group at that station. See “Pooled CO Lines” for more information.

Benefits

Enables queuing, single-line telephone access to CO lines, Pooled lines, CO line Call Pickup Groups, and Tenant Service. They are also used to define LCR schemes.

Line Queuing

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

This feature is also known as trunk queuing. When all lines are in use, this provides a means to "stack" station users in a waiting queue for an available outgoing CO line. The Automatic Callback feature notifies the station user when a line becomes available.

A DKT or a standard single-line station can queue up for a busy outgoing CO line or CO line group. When the desired line is available, the system calls the station back, and the station can proceed with the call.

Users save time since they do not have to keep checking to see if the line they want is free. Once they have queued for the line, they can return to their work, knowing that the system calls them as soon as the line is available.

Benefits

If LCR is installed, Line Queuing provides a convenience to users who are restricted to certain call routes.

Live System Programming

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Programming can be performed on a Strata DK system without taking the system out of service. The system can be put into programming mode, and data can be entered.

During the programming, the station executing commands is the only station that loses normal functioning. Service is not interrupted to any other station.

Live system programming can be done locally or remotely using a DKAdmin PC, if the system is equipped for remote administration/maintenance. When the system is programmed from a remote or local terminal, all stations remain functional.

Benefits

Eliminates any disruption to telephone service during the business day caused by programming adds, moves or changes. In addition, it helps control costs by eliminating the need to do these changes after hours at overtime rates.

Memory Protection

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

The system memory has its own battery backup to protect the system's and customer's programmed data in the event of a power failure. The battery system is capable of retaining information for up to six years. In the event of a short-term or long-term power failure, data integrity is maintained. This means that the system programming (e.g., system parameters, toll restriction tables, station classes of service, LCR programming, ringing assignments, message and Speed Dial memory, etc.) is not lost.

Benefits

In the event of a power failure, the system data is completely reinstated upon restoration of power.

Message Waiting

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones. Standard on DK40 and DK424 systems using standard telephones and the RSTU2 card. Message Waiting on standard telephones is not supported on DK14 systems.

Description

The Message Waiting feature enables any station and most voice mail devices to set a Message Waiting LED at any digital/electronic station which has a Message Waiting (MSG) button. On Strata DK systems with digital telephones, there is a fixed MSG button.

Message waiting indication can be turned on by the calling station; or, if the station has been forwarded to voice mail, the message waiting indication is activated once the calling station leaves a message in voice mail. The station user can retrieve the message simply by pressing the Message button associated with the LED.

The Message Waiting feature on DK40 or DK424 systems also applies to standard telephones with a message waiting lamp. However, unlike the digital telephone station user who can retrieve messages by pressing a button, the standard telephone user is notified by an activated message waiting lamp on the telephone. The standard station user can enter an access code to retrieve the messages. A standard telephone with message waiting lamp must be connected to an RSTU2 station card in the DK40 or DK424. Message Waiting features on DK14 systems do not apply to standard telephones.

Up to four message waiting indicators can be set on any given station. However, the fourth indicator is always reserved for a message from the message center. This means that a maximum of three other stations can activate Message Waiting on a station at any one time.

The extension number of the station that sent the message is displayed on an LCD telephone. The total number of station numbers that can be displayed depends on the length of the station numbers. Up to eight LCD characters can be used for all of the station numbers. Thus, if station numbers are two digits long, up to four station numbers can be displayed. All station numbers can be displayed using the Scroll button.

Any station or voice mail system can be designated as a message center. There can be only one designated message center in the system, even if tenant service is installed.

If a voice mail system is assigned as the message center, the voice mail system can set message waiting at a station when a message arrives in that station's mailbox. It can also dial a code to cancel the Message Waiting LED on a station, once the station user has picked up the message.

When the voice mail system leaves a message waiting indication on an LCD telephone, a "V" is displayed next to the voice mail port extension number to indicate that the message is from the voice mail system.

When LCD messaging is used to send a silent message to the LCD telephones, an "M" is displayed next to the station DN.

Benefits

People sometimes forget to check for messages, or do so infrequently, especially if they are not located near the Attendant Console. They may not be aware that they have messages, and important messages or requests for timely callbacks can go unattended for several hours. The Message Waiting feature alerts the station user to waiting messages, thereby making the communication system more efficient and providing better service to customers and other callers.

Standard telephone applications are more feasible with Call Waiting lamp activation, especially in voice mail and hotel/motel applications. This can be important when selling a DK40 or DK424 to a customer who wants to reuse a substantial number of existing standard single-line telephones.

Multiple Directory Numbers (DNs)

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Multiple DNs provide the ultimate in call coverage flexibility. Station DNs can appear on multiple telephones, and individual telephones can have multiple appearances of their own station DNs. All DNs can originate and answer calls.

A DN button can also release an existing call and originate another call with one press of the DN button. Press the DN button you are using to automatically release the existing call. This gives you a dial tone enabling you to make another call. Three types of DNs are available.

Primary Directory Number (PDN)

Each telephone has a unique PDN and can have up to four button appearances of its own PDN.

Secondary Directory Number (SDN)

When the PDN of a station appears on another station, it becomes a SDN on the other station. The PDN of one telephone can appear as a SDN on all other digital telephones on the system and can ring on all other digital telephones (except the DK424 with a maximum of 120 telephones). Incoming and outgoing calls can occur on each PDN or SDN.

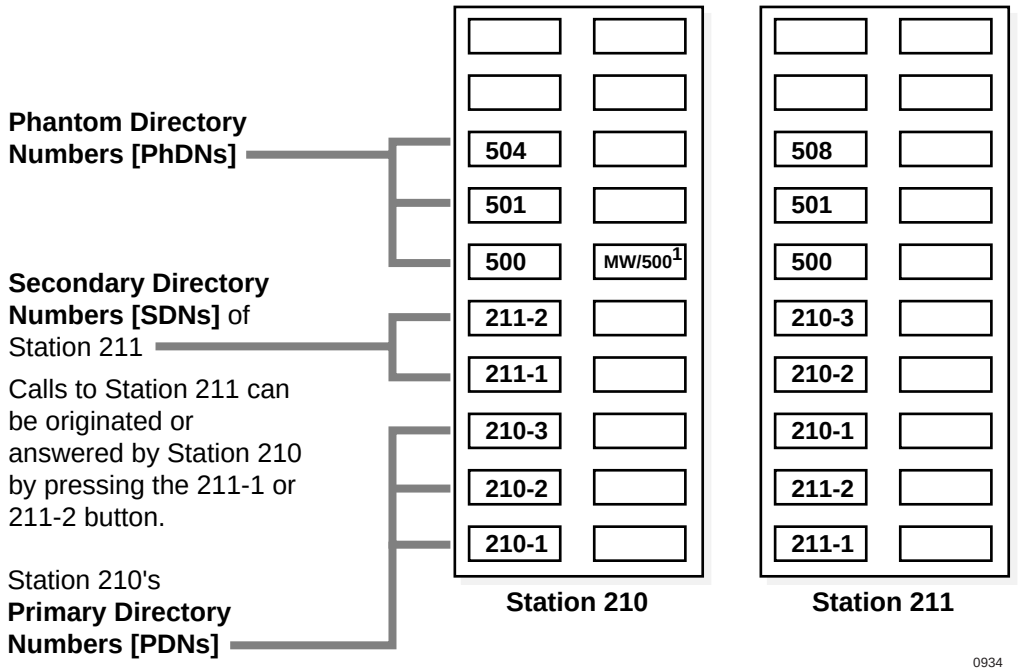
Each telephone can be assigned with up to four of the same SDN buttons. The maximum number PDN plus SDN buttons on each telephone is 16.

Phantom Directory Number (PhDN)

The system also provides PhDNs that can be dedicated to a station or group of stations (usually in the same area or department). Each PhDN number can only appear once on a given telephone, but each telephone can have up to eight different PhDN buttons. A PhDN can also appear on all digital telephones on the system and can ring on all other digital telephones (except DK424 with a maximum of 120 telephones).

Each PhDN is assigned to a designated telephone owner in system programming. The owner has the following telephone privileges for their PhDN:

- Set Call Forward for PhDN
- Set Call Forward Mail Box destination of PhDN
- Receive Message Waiting (MW) indication for up to four PhDNs on individual PhDN/MW button LEDs
- Receive OCA when the PhDN is called



7 1.Each PhDN can have a dedicated Message Waiting PhDN/MW button to notify the PhDN owner telephone user that there is a message for the person or department associated with the PhDN. Up to four PhDN/MW buttons can be programmed into each telephone.

Figure 4 Multiple DNs

Incoming calls come into a PDN from the top down. For example, incoming calls to Station 210's PDN rings first at the top "210" line; the second call rings at the "210" line below it; and the third call rings at the bottom "210" line. Auto preference for DNs are from the bottom PDN up.

A station PDN show busy on Busy Lamp Field when the station is off-hook on any DN, CO line or Tie line. PhDNs do not display Busy Lamp indication.

PhDNs (the 500-series extension numbers on the keystrip in this example) are usually associated with a function such as an "800" number for a technical support group. A specific PDN is usually associated with a person, for example, Station 210 is assigned to Steve, Station 211 is assigned to Susan, etc.

Table 11 Maximum Multiple DNs

Type of Number	Digital Telephone	DK14	DK40	DK424			
				RCTUA	RCTUBA/BB	RCTUC/D	RCTUE/F
PDNs	4 (same DNs)	10	28	32	80	240	336
SDNs	15[1]	10[2]	28[2]	32[2]	80[2]	240[2]	336[2]
PhDNs	8 (different DNs)	10	28	32	80	240	336
Total DNs	20	20	56	64	160	480	672

1. Total 16 combination of PDN and [SDN] per telephone.
2. PDN and SDN are the same number.

Benefits

Multiple DNs provide the ultimate in call coverage flexibility. They are convenient and provide an easy way to answer each other's calls or general calls to a departmental group. This is both a common requirement in most large installations and has many useful applications in smaller organizations as well.

Multiple FCC Registration

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

DK14 and DK40 systems can be configured as either key or hybrid with separate FCC registration numbers for each type. DK424 systems can be configured as a key, hybrid, or PBX, with separate FCC registration numbers for each type. The appropriate configuration for an individual system depends on how it functions.

If the system is configured for only manual selection of outgoing lines, it may be registered as a key telephone system. If the system is configured for automatic selection of outgoing lines such as dial access, Least Cost Routing, and pooled line buttons, the system may have to be registered as a hybrid or PBX telephone system.

In addition, certain features (DID, Tie lines, and off-premises stations) can also require hybrid or PBX telephone system registration in some areas.

Benefits

Ensures compliance with FCC regulations regardless of how the system is configured.

Multiple Simultaneous Handsfree Intercom Paths

System Availability

Standard on all Strata DK systems with digital or electronic telephones.

Description

The intercom paths on the Strata DK systems are designed to carry handsfree conversations on all intercom calls at the same time. The digital technology of the DK systems provides completely non-blocking intercom paths and enables unlimited, simultaneous, and handsfree intercom calls.

Benefits

Non-blocking, digital technology enables any station to make a handsfree intercom call at any time.

Music-on-Hold (MOH) Interface

System Availability

Standard on Strata DK14, DK40, and DK424 systems. The music source is customer supplied.

Description

A MOH/Background Music (BGM) RCA jack is built into the common control unit on DK14, DK40, and DK424 systems. The jack connects a customer-supplied music source for MOH, BGM, or both.

The MOH interface connects the system to a customer-supplied music source. CO lines placed on hold are connected to the music source. BGM can share a music source used for MOH or have a separate source.

If a DK40 and DK424 system is configured with a tape recorder that plays a pre-recorded message to holding parties, the Option Interface Unit (PIOU, PIOUS, or PEPU) is suggested. These units have a relay that can be programmed to control a tape player every time a CO line is placed on hold. The tape recorder does not run continuously. When the relay activates, the tape plays. When the line goes off hold, the tape stops. DK14 does not support the PIOU, PIOUS, or PEPU card.

The MOH volume can be adjusted using system controls.

Benefits

Customers can realize a cost benefit with this feature, as they do not have to purchase a separate interface card for MOH (the customer provides the music source). MOH is not simply for entertaining callers while they are on hold. It also assures the caller that he or she is still connected to the system. The customer can substitute a promotional tape for a music source, enabling the customer to advertise to callers on hold.

The separate music sources available on Strata DK enables callers on hold to hear special music and/or advertising messages while station users hear and external speakers play different music.

Some firms like to select a particular type of music to reinforce an image they are trying to create.

Night Ringing Answer Code

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

The Night Ringing Answer Code enables any station to answer an incoming call that rings when the system is in Night mode. The user dials a code to answer the call.

When a DK system is used in tenant service, each tenant can have a separate Call Pickup button which connects the user to the ringing call.

Benefits

Enables answering a call after hours when it rings over the external page, a night bell, or through selected telephones. Family members, other employees, and even customers can reach employees after hours. This affords peace of mind to the employees and their families.

Night Ringing Over External Page

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

An option can be selected through system programming to have incoming CO line calls and door phones ring over external paging when the system is in Night mode. Night ringing over the external page can be assigned on a CO line-by-CO line basis.

Door phone ringing can also be programmed to sound over an external speaker. The call can be picked up by any telephone.

If a system is used for Tenant Service, the lines assigned to Tenant 1~4 can be programmed to ring over the external paging system. Lines for Tenants 1~4 ring according to the Night mode that is programmed for them.

Benefits

If a customer has an external paging system that gives sufficient coverage to the work area, there is no need to purchase additional equipment for night ringing. CO line calls after hours ring over the existing paging system, assuring those people working after hours that they will receive important calls.

Because ringing can be programmed on a line-by-line basis, lines which do not require attention after hours need not ring over page. This minimizes disturbance to those working after hours.

Night Ringing Over Selected Page Zone

System Availability

Optional on Strata DK40 and DK424 systems using PIOU, PIOUS, or PEPU cards. Zone paging is not available on DK14.

Description

If zone paging has been installed, incoming CO line calls can be programmed to ring over selected page zones using customer-supplied paging equipment. The CO lines can be placed into two groups, and each group can be assigned to night ring over different PIOU paging zones. Programmed lines can be divided into tenant groups which can then be assigned to night ring over the selected zones.

Programmed lines can be divided into tenant groups which can then be assigned to night ring over the selected zones:

- **DK40** – two tenant groups
- **DK424** – two tenant groups with RCTUA; all other processors support four tenant groups

Benefits

Enables night calls to ring over external paging and differentiate between two groups of calls. People working after hours are not bothered by calls that are not directed to their area.

Night Transfer (Day/Night Modes)

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Also known as Night Service, all Strata systems can be programmed for up to three alternate CO line ringing arrangements. They are Day, Day2, and Night.

Day mode is for normal system operation during business hours. DAY2 mode is often used for a ringing arrangement to handle calls when the Attendant is at lunch or on a break. For example, incoming calls could be sent to a secretary or Auto Attendant that has been designated as the backup Attendant. Night mode is used after hours and on weekends.

For each of the three modes, each CO line can be assigned to ring at any station in the system including off-premises stations. For example, the CO lines could be assigned to ring a voice mail port, or could ring any number of stations. For a given CO line, the ringing arrangements for each of the three modes can be entirely different. The Delayed Ringing feature can also be applied individually to all three modes.

If a CO line is programmed to ring at only one telephone in a particular ringing arrangement, a CO line call to that telephone forwards if the telephone is in the Call Forward mode. If the telephone is in a station hunt group, the call hunts.

Night Ringing can also go to external page. It can also go to a night bell and/or to an answering machine. The PIOU, PIOUS or PEPU option interface unit is required for night ringing over external page on a DK40 or DK424 system.

Benefits

Efficient handling of calls by several pre-programmed ringing arrangements. The customer can easily switch among the arrangements to handle calls at different times of day.

Non-blocking Dialing

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

On Strata DK systems, Non-blocking Dialing means that all outside CO and internal DN lines can be in use simultaneously, and any station can be connected to any other station on an intercom call. Since there is no set number of intercom paths, no one would be blocked from making a call if a CO line is free.

The only potential blocking a Strata user could experience is with single-line telephones. Blocking could occur if an insufficient number of DTMF receiver circuits are installed or in an extremely high traffic situation.

Benefits

Enables buying a system that is the correct size for a business, because the system capacity is fully used at all times. The customer does not have to buy extra capacity in order to ensure that calls are never be blocked during busy hours. This non-blocking digital technology enables station users to make calls whenever they need to.

Off-premises Station (OPS)

System Availability

Optional on all Strata DK systems, using standard station ports and DTMF receivers. A 48-volt interface is available (R48S) to extend the loop length or match the network interface.

Description

An OPS is a standard 2500-type (DTMF/tone) or 500-type (rotary) single-line set located off-site from where the system is installed. It normally requires a special line from the CO. Secondary protectors must be installed on OPS lines. Each Strata system can support the following off-premise stations.

- **DK14** – up to two OPS
- **DK40** – up to a total of 20 OPS
- **DK424**:
  - RCTUA – up to 24 standard single-line telephones
  - RCTUBA/BB – up to 72 standard single-line telephones
  - RCTUC/D – up to 232 standard single-line telephones
  - RCTUE/F – up to 328 standard single-line telephones

Standard, single-line sets have access to many of the same features as digital stations, although the access method is different. Since the standard phone does not have feature buttons, access codes are used to activate features.

The system can be programmed to enable standard single line sets to access an outside line by dialing a CO line access code (often “9”). CO lines can be selectively included in, or excluded from, the “dial 9” group.

As a programmable option, CO line groups can be defined. The standard single line set can access a CO line group by dialing the CO line group access code. This option is useful when the set is only enabled access to a certain group of CO lines. Individual CO lines can be selected by a standard single line set by dialing “7” plus the CO line number.

Benefits

Enables installation of stations beyond the 1000-foot limitation of the DKT. It also enables the less expensive standard telephones to be used at satellite locations and to have access to many system features. It can eliminate the cost of installing a separate phone system.

Customers can use the less expensive standard single line telephones on-premises for employees who do not need the full complement of features afforded by the digital telephone.

Outgoing Call Restriction

System Availability

Standard on Strata DK14, DK40, and DK424 systems, programmable by station.

Description

Through programming, stations can be selectively restricted from making outgoing calls on any, or all CO/PBX lines. However, a station that is restricted from making outgoing calls may still receive calls on those lines.

Because Outgoing Call Restriction is applied on a CO line-by-CO line basis, each employee's phone can be programmed so that the employee can only access those CO lines necessary to do his or her job. For example, if a set of WATS lines was installed in the system for the use of a special sales group, employees who are not in the sales group can be restricted from accessing those WATS lines.

Benefits

Provides potential cost and productivity benefits, because employees who do not need to make outgoing calls as part of their job, are restricted. In addition, if it is an employee's job to answer incoming calls, this feature ensures that the employee do not tie up those lines with outgoing calls. More efficient service can then be given to the incoming callers.

Paging - All Call Voice Page

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

All Call Voice Page enables a station user to make a voice announcement through the speakers of all telephones which are not in use or otherwise blocked from receiving an all call page (maximum 120 on DK424). The user presses the All Call Page button or dials an access code

and makes the announcement through the station handset. Stations that are busy on-hook or off-hook do not receive the page, even if equipped with Off-hook Call Announce.

The system can be programmed to include external paging in the All Call Voice Page. Through programming, stations can also be excluded from receiving such page announcements.

Benefits

Enables paging of all employees simultaneously without the need for an external paging system. All Call Voice Page provides this capability without the expense of an external paging system.

Even if an external paging system is installed, the All Call Voice Page feature can still be very useful. People sometimes “tune out” external paging. Paging through the phone with this feature gets attention.

Some employees may not be located within range of the external paging system. This feature can bring a paging announcement directly to their desktop.

Certain applications may not be appropriate for external paging where the paging activity might distract or disturb the clientele. In these cases, paging through the telephones provides an excellent solution.

Paging - External Page Interface

System Availability

Standard on Strata DK14 and DK40. Optional on Strata DK424 systems using PIOU, PIOUS, or PEPU cards.

Description

On DK14 and DK40 systems, there is a 600-ohm output which can be connected to a customer-provided external amplifier and compatible talk-back speaker.

On DK424 systems, an Option Interface Unit (PIOU or PEPU) can be installed to provide an internal three-watt amplifier and an external page interface. The PIOU can support zone paging with up to four zones. The PEPU can support just one zone. An optional two-way 600-ohm voice path is available on the PIOU, PEPU, or PIOUS for use with a customer-supplied talk back speaker/amplifier.

The PIOU or PEPU provides a relay contact to mute background music over external page when a voice page is in progress.

Benefits

Provides instant access to employees who do not have phones or who are away from their desks, and saves time locating them.

All Strata DK systems connect easily to an external paging system.

Paging - External Zone Paging

System Availability

Optional on Strata DK40 and DK424 systems using the PIOU Option Interface Unit. Not available on DK14.

Description

The DK40 can support as many as four and the DK424 can support up to eight External Page Zones. Station users can access one, four, or eight zones simultaneously by dialing a brief access code.

The PIOU Option Interface Unit and customer-supplied speakers and amplifiers are required to support external zone paging. DK424 systems require two PIOU units to support eight Page Zones.

Benefits

Conveniently pages a specific area without distracting employees who do not need to hear the announcement.

Paging - Group Paging

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Digital/electronic telephones can be divided into paging groups. A unique access code is assigned to each paging group, which enables voice paging exclusively to the telephones assigned to that group. Any station user can make an announcement to just one or all of these groups. The page is sent to the speaker of all idle telephones in the page group.

The DK systems support:

- **DK14** – up to five paging groups
- **DK40** – up to five paging groups
- **DK424** (RCTUC/D and RCTUE/F – up to nine paging groups in systems
- **DK424** (RCTUA or RCTUBA/BB) – up to five paging groups

The above group capacities include the All Call Page paging groups.

Any number of stations can be in a paging group, and a station can be in up to four paging groups. Group paging is always heard through the speakers on the digital telephones. The Cordless DKT-2004-CT or standard telephone is not compatible with paging.

If one group is being paged, the Group Paging feature is not available to any other group until the first group page is completed.

Benefit

Enhances office efficiency by providing a quick way to contact a group of people without disrupting other workers who do not need to hear the message. When all groups are paged, everyone can hear the announcement simultaneously.

Pooled CO Lines

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

A “CO line group” and a “CO line pool” are the same except a pool of CO lines can appear under one CO line button on a telephone. CO lines can be pooled in categories. For example, all WATS lines of the same type can be in one pool, all regular CO lines in another, and all Tie lines to the same destination in a third. Pooled and single-appearing line buttons are designed for use with loop- and ground-start lines, not DID, Tie, DNIS, or ANI lines.

The number of CO line groups available on Strata DK systems are as follows:

DK14	4
DK40	8
DK424 with RCTUA or RCTUBA/BB	8
DK424 with RCTUC/D or RCTUE/F	16

Each CO line pooled group can appear on up to four Pooled Line Grp (group) buttons on a digital telephone. This enables the user to process several calls in that CO line group at the same time. If a station user regularly processes more than one call at a time, Toshiba recommends that the station be assigned more than one Pooled Line Grp button.

It is also recommended to separate incoming and outgoing CO lines into separate groups. This prevents the accidental pickup of incoming calls when making outgoing calls.

Benefits

Provides the use of less expensive 10-button telephones instead of 20-button telephones for access to the same number of CO lines.

The Pooled Line Grp button also offers “hybrid” type system operation, even while configured for “key” operation. This also enables the Strata DK to compete more cost effectively against hybrids.

Power Failure Transfer

System Availability

Standard on Strata DK14 and DK40 systems. Optional on DK424 systems using the external power failure transfer module (DPFT).

Description

Power Failure Transfer automatically switches CO lines directly to a standard single-line telephone and provides emergency service if commercial AC power fails. When AC power is restored, the system automatically switches back, and the standard power failure transfer telephone becomes inoperative again.

The DK14 and DK40 have one power failure transfer port as standard equipment. The DK424 required one port (DPFT) and transfers up to eight CO lines to dedicated, customer-provided single-line telephones.

The DPFT requires one port on an RSTU or RDSU, and only one DPFT can be supported per RSTU or RDSU. The DPFT 24V control connects only to an RSTU or RDSU. Multiple DPFTs can be attached depending upon the number of power failure transfer CO line circuits required.

During a power failure, the following connections are made:

- **DK14** – one CO line is connected directly to the PF phone.
- **DK40** – one CO line in the base KSU in connected directly to the PF phone. Up to eight more can be added in the expansion cabinet using a DPFT and RSTU.
- **DK424** – multiple CO lines can be switched. If AC power is lost, the PF telephone is automatically and directly connected to the first CO line.

Benefits

Enables making and receiving calls without interruption of service.

Privacy/Non-privacy Option

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

The system can be programmed as private or non-private. When the system is in the private mode, a station user who makes a call on a CO line or intercom has exclusive use of that line. Other stations cannot enter the line by pressing the Line button. When the system is in the non-private mode, other stations can enter the conversation by pressing the CO Line button.

This feature applies to CO line buttons only and does not apply to DNs. Outside CO lines can be private or non-private on a station-by-station basis. Private lines prohibit users from pressing a common CO line button and accessing a line that is already in use, whereas users can do so on non-private lines.

Private line users can change the mode by pressing the Privacy Release button enabling as many as three stations (total) on a line. Non-private users can block access to their lines by pressing the Privacy button.

Benefits

Greater flexibility because the system can be customized to meet the business' needs.

Relay Service

System Availability

On Strata DK14, DK40, and DK424 systems, one relay contact is standard. Two relays can be provided on DK424 systems if using a PIOU, PIOUS, or PEPU option card.

Description

The standard relay can be programmed for one of three options:

- **External Page:** A page over external speakers mutes Background Music (BGM) that is being broadcast over the same speakers.
- **Night Relay:** An answering machine or a night bell (or chime) are activated when a call rings in during Night mode.
- **Hold Relay:** A Music-on-Hold source turns on when a call is placed on hold, and goes off when the caller is taken off hold. With the relay installed, the music source does not have to play continuously.

On DK40 or DK424 systems, two relays are provided using a PIOU, PIOUS, or PEPU option card. In addition to External Page, Night Relay, or Hold Relay, these optional relays can also be programmed for Door Lock Control, which opens a customer-supplied door lock for three or six seconds when a designated button is pressed on selected telephones. See "Door Lock Control" for more information.

If a system has BGM on an external paging system, the external page relay makes it possible to suppress the BGM when a voice announcement is made over the paging system. Voice announcements can be heard clearly without interference from the BGM.

Benefits

Increases options for handling calls when the system is in night service. The customer can choose the best arrangement that meets the needs of their business.

Remote Administration/Maintenance

System Availability

Optional on all Strata DK systems. Required are:

DK14 – QSMU and external modem

DK40 – PIOU or PIOUS, and the IMDU modem subassembly; or RSSU and external modem

DK424 – PIOU or PIOUS, and the IMDU modem subassembly; or RSSU and external modem; or RSIU with RMDS or an external modem

Description

Remote Administration/Maintenance enables administrative and diagnostic software programs to be run "live," without interruption of normal system operation from a remote location. The IMDU modem can operate at 300 or 1200 baud full duplex. DK424 can use the RSIU card with the RMDS modem at up to 2400 baud or an external modem at up to 9600 bps.

The Remote Administration module requires two programmable security codes for access to all programs (Level 1) or station class of service programs only (Level 2). There are six operating modes:

- Programming mode – all programs
- Data dump mode – all programs
- Test CO lines/stations
- LCD messaging – edit and set completely new messages for any DKT (system and personal messages)
- Speed dial edit/change
- DKAdmin for backup/restore and program administration (see DKAdmin description in System Overview section for details)

In order for the Remote Administration module to work, one CO/Centrex/PBX line must be connected to the system. However, this line does not have to be dedicated to the module. If the CO line is dedicated it can be programmed to ring the module directly during any ringing mode (Day, Day 2, or Night).

If automatic connection is not programmed, connection between a CO line and the module is accomplished using the Call Transfer feature. Remote administration/maintenance can also be accessed through Auto Attendant, Direct Inward System Access (DISA), and/or DID lines.

Benefits

Reduced service costs because routine service and administrative procedures can be done from the service company's office. Service time is also reduced.

Reserve Power Battery Backup Interface

System Availability

Standard on Strata DK14, DK40, and DK424 systems. Batteries are customer supplied.

Description

On the DK14, an optional battery backup unit is available for the system power supply. The backup unit (HPFB-6) includes the battery pack and built-in charger and mounts externally. Either one or two HPFB-6s can be connected. If other types of batteries are used with DK14, they are not charged by the DK14 power supply.

Customer-supplied 12-volt batteries can be connected to the DK40 or DK424 systems as a power failure backup system. Batteries are connected to the system's standard power supply by an optional connector cable. The DK40 and DK424 power supplies provide a built-in battery charger. Gel-cell maintenance free batteries are recommended.

In the event of a power failure, the system automatically switches to battery power without interruption. All functions of the Strata system continue to operate for several hours after a loss of normal electrical power. The exact time period depends on the type and size of batteries used, system capacity, and traffic (see the *Strata DK General Description* for details). No calls are disconnected during the switch to battery power.

During normal power conditions, the batteries are kept fully charged by the system power supply.

Benefits

Ensures that telephone service is not interrupted by a power failure.

Speed Dial

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Also known as automatic dialing, this feature enables the customer to assign dialing codes to telephone numbers that are frequently called. Station users can then "speed dial" the number by using the code, instead of manually dialing the number.

Each system Speed Dial number can have up to 20 digits. Two or more speed numbers can also be "chained" during one call to accommodate numbers that have more than 20 digits. Pauses and flashes can be programmed into the number. Both system and station Speed Dial numbers are available.

System Speed Dial

System Speed Dial numbers are available to all station users. A designated station, Attendant console, or DKAdmin PC can assign the Speed Dial numbers. The maximum number of Speed Dial numbers that are available is:

- **DK14** – up to 40
- **DK40** – up to 40
- **DK424**
  - RCTUA processor – up to 40
  - RCTUBA/BB processor – up to 100
  - RCTUC/D processor – up to 100
  - RCTUE/F processor – up to 800

Access to the Speed Dial numbers can be assigned on a station-by-station basis, and some stations can be restricted. If a station user is restricted from using the Speed Dial numbers, that user is automatically restricted from having station speed numbers. The Speed Dial numbers can also be programmed to override toll restriction.

If the system is installed behind a Centrex or a PBX, the Speed Dial locations can also be used for storage of Centrex/PBX feature access codes. Those codes can then be assigned to appear as automatic dialing buttons on phones that need them. In this way, Centrex or PBX feature codes can be programmed for one-button access.

System Speed Dial codes 90~99 can be pre-defined and incorporated into any other Speed Dial code to dial up to 20 digits (37 digits chained) using one code. For example, an Other Common Carrier (OCC) access number could be programmed as Speed Dial code 90. Then, Speed Dial code 90 could be used as part of the telephone number for another Speed Dial code by entering *90 as the first three digits in the telephone number for that Speed Dial code.

Station Speed Dial

This feature enables the station user to have a private automatic dialing list. Each station can have up to 40 station Speed Dial numbers. The numbers in this list can be changed by the station user at will. Station Speed Dial can be enabled or denied on a station-by-station basis.

The station user assigns a two-digit code to each of the telephone numbers, and programs a number for each code. The user can then “speed dial” the number by using the code, instead of having to dial the number manually. If the station has buttons assigned as Speed Dial buttons, one speed dial number can be programmed for each SD. Numbers not assigned to SD must be accessed with a Speed Dial code.

If system Speed Dial codes 60~90 or 600~699 have been pre-defined, they can be incorporated into a station Speed Dial code to dial up to 37 digits automatically using one code. For example, an OCC access number could be programmed as system Speed Dial code 90. Then, system Speed Dial code 90 could be used as part of the telephone number for a station Speed Dial code by entering *90 as the first three digits in the telephone number for that station Speed Dial code.

If the user has a 20-button LCD telephone with the Speed Dial memo feature, a 12-character name can be programmed for each of the 40 personal Speed Dial numbers. The LCD user can then scroll through the “memo pad” of names and numbers. When the desired name and number appears on the LCD, the user can press a CO line to automatically dial the number.

Benefits

Looking up telephone numbers can be time consuming. Errors can be made in dialing which also waste time and can be costly. By using automatic dialing for numbers that are frequently called, those time-wasters are eliminated.

Sometimes certain employees need to make business toll calls. However, it may also be desirable to toll restrict those employees, yet enable them to dial specific business toll calls using system speed dial numbers. This eliminates the possibility of telephone abuse and can reduce costs.

Station Speed Dial enables the Strata DK system to be customized. Station users can us personal Speed Dial for telephone numbers they need which are not on a System Speed Dial list.

Station Hunting

System Availability

Standard on all Strata DK14, DK40, and DK424 systems.

Description

Serial Hunting (SH)

When a called station is busy, the call is routed to the next station in the hunt group. If that station is busy, the call is routed to the next station in the hunt group and so on. If a station has Call Forward set, the call that is hunting is forwarded and leaves the hunt group. Hunt group routing is assigned in the system programming database.

Assignment is flexible, so any station may hunt to any other station. Many stations may be linked together in the same chain. The hunt group may be as big as all the stations in the system, or as small as two stations.

SH can be used with PhDNs, PDNs, or a combination of these. In the case of tone ringing to multiple appearing PDNs, hunting takes place only if none of the multiple appearances of that DN are idle. If the call is Voice Announce, then hunting occurs if that PDN's station is off-hook on any DN or CO line. A ground or loop start call hunts from a PDN or PhDN *only* if it has been assigned to ring exclusively at the owner station of that DN.

Data-call serial hunting is different from voice-call serial hunting. Data-call group assignment is independent from voice-call hunt groups, but the same hunt group size characteristics as above also apply to data-call hunting.

Distributed Hunting (DH)

When a call is directed to a DH group, the systems hunts for the next available idle station in rotation order and then sends the call there. Calls are more evenly distributed than with SH. If a station has DND set, hunting skips to the next idle station.

A maximum of 16 DH groups are provided. Each group has its own unique DN which is like a pilot number. Up to 32 stations can be in any one group, and distribution can be in any rotation desired. A station can be a member of more than one group. If such is the case, the lower group number has priority. For example, a call in group seven's queue would first ring to station 201 even if another call had been in group eight's queue and had been waiting longer for station 201.

Calls can be routed to DH groups from Caller ID/DNIS/ANI lines, Tie lines, loop or ground start lines, stations transferring calls, internal direct calls, DISA calls and calls routed through built-in or external Auto Attendant. Calls forwarded from stations, or overflow calls from ACD groups can also be routed to a particular DH group (except for Call Forward Fixed).

DH group member telephones should be equipped with Pooled Line buttons if ground/loop start lines ring directly to DH groups. The routed CO line flashes only on the called members Pooled Line button.

DH member telephones should be equipped with PDNs, not CO Line or Pooled Line buttons for DID and Tie lines that directly ring to a DH Group. This is to avoid two buttons flashing on the telephone when it is called.

PhDNs cannot be assigned as members of DH groups.

ACD Overflow to DH Group (DK424 only)

ACD calls can overflow to DH groups if there is an idle agent in the DH group, but remain in the ACD queue at overflow time if all DH group members are busy.

ACD Agent Ring-No-Answer to DH Group (DK424 only)

ACD calls can route to a DH group during an agent ring-no-answer condition if there is an idle agent in the DH group. If all DH group members are busy when an agent ring-no-answer call attempts to route to the DH group, the ACD call routes to the ACD CO line normal ringing assignments.

However, once a call enters a DH group, it cannot be forwarded or serial hunted out of that group. This is to avoid falsely routing calls to personal voice mail boxes. Calls cannot be routed to DH groups by SH. Also, calls overflowing from an Attendant Console position or DID intercept calls cannot be routed to a DH group.

Calls are distributed to a station's PDN in the case of internal, DID, or Tie line calls. In the case of ground or loop start lines, Pooled Line buttons can be established on a station for separate identification of DH calls. In this case, both the Pooled Line LED and a common PhDN LED flashes. When answered, the call is resident on the Pooled Line button. Individual PhDNs cannot receive DH calls.

If no stations in a DH group are idle, new calls routed to that group are placed in a queue waiting a station to become idle. A maximum of 10 calls can be in each group's queue. Callers in queue hear ringback tone until a DH member becomes idle and the call is answered. The 11th caller trying to enter the queue receives busy tone.

Benefits

Enhances call handling by providing better service to customers and outside callers, because they usually reach someone on the first try who can help them. It can also boost productivity for internal callers, since they do not have to hang up and redial another DN if the first party does not answer.

DH is very popular in voice mail applications with all voice mail ports in a DH group. This provides very efficient use and availability of voice mail ports.

Station Message Detail Recording (SMDR)

System Availability

Optional on Strata DK14, DK40, and DK424 systems. Required in each system are:

DK14 – WSIU

DK40 – TSIU in the base or PIOUS or PIOU in the expansion cabinet

DK424 – PIOUS, PIOU, RSSU, or RSIU

Description

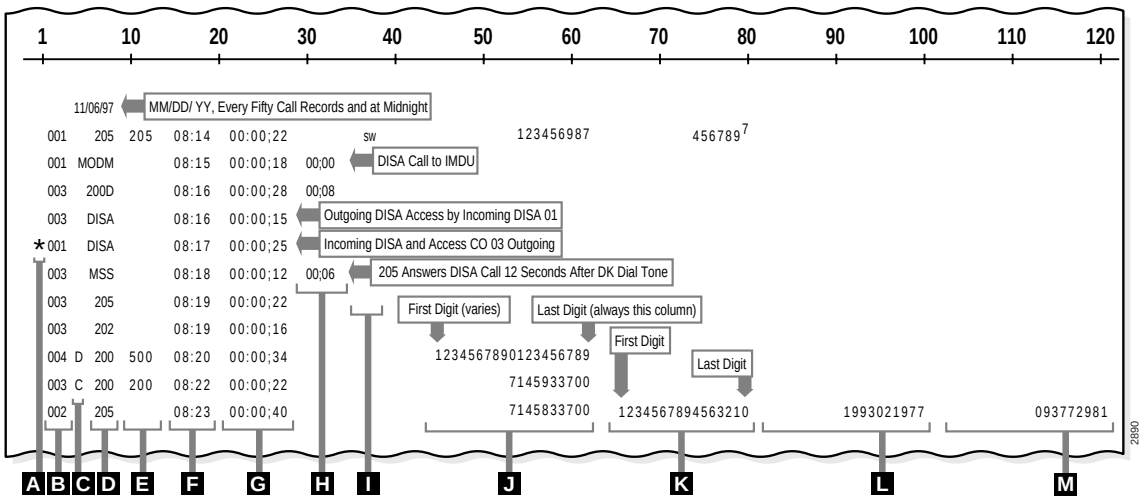
SMDR prints call records of both incoming and outgoing calls or outgoing calls only. Strata DK systems can also print a call record of outgoing toll calls only. Calls of less than one or ten seconds (programmable option) are not recorded.

The basic SMDR printout includes:

- Time and duration of the call

- Time to answer the call
- Stations to which the call was transferred
- Type of call – all calls, outgoing only, and toll
- Station number that made the call
- DN of the destination
- Account codes (if the system has been programmed to include)
- ANI, Caller ID, and DNIS/DID/Tie numbers/names (if the system has been programmed to include)

If present, the names take the place of the system Account Codes. A sample of the SMDR output for outgoing calls is shown in Figure 5.



A	* Indicates a disconnected call.[4]	Field Number 1
B	CO Line Number (001~144).	Field Number (2~4)[3]
C	C = Caller ID Call; D = ANI or DNIS Call.	Field Number 5
D	[PDN] of the Station (1~4 digits)[2] making/answering a call.	Field Number (7~10)[3]
E	Primary, Secondary, or Phantom Directory Number which made/answered the call (1~4 digits). Blank if call is made from a CO line button.	Field Number (12~15)[3]
F	Time of Day (HH:MM; hour and minute the call was released).	Field Number (17~21)[3]
G	Call Duration (HH:MM;SS).[1]	Field Number (23~30)[3]
H	CO Line Incoming Ring Duration Before Answer (MM:SS).	Field Number (32~36)[3]
I	Station to which the CO line was transferred (1~4 digits).	Field Number (38~41)[3]
J	Outgoing Telephone Number • Incoming Calls (1~20 digits).[5] ANI Number (10 digits) DNIS Number (2~5 digits) Caller ID Number or ID Code • Outgoing Calls (1~20 digits).	Field Number (43~63)[3] DNIS/ANI Format: * 7145833730 * 3846 * ANI DNIS
K	DNIS NAME[5] (0~16 characters) Caller ID NAME[5] (0~16 characters) or Account Code[6] (4~15 digits).	Field Number (65~80)[3]
L	Outgoing Subaddress on ISDN call.	Field Number (82~101)
M	Incoming Subaddress on ISDN call.	Field Number (103~122)

1. Call Duration (incoming, outgoing, or transfer) must be 1 or 10 seconds (minimum) to generate a call record printout. It can be set to 1.0 or 10 seconds using Program 60-2.
2. "MSS": designates a Direct Inward System Access (DISA) or External Call Forward CO call to a station that is not answered; or, answered after 1 or 10 seconds per Program 60-2. The call will register as a normal incoming call if answered before the threshold time (1.0 or 10 seconds depending on Program 60-2). DISA calls always register 05~06 seconds ring before answer duration time.
3. Field column information is provided for SMDR output formatting purposes.
4. A "*" in the first column indicates that the call was disconnected by the Central Office Calling Party Control (CPC) or Automatic Release (AR) signal. Loop start CO lines must have Programs 15-0 and 15-3 enabled to be dropped by the CPC signal.
5. ANI, DNIS, and Caller ID information is sent out the SMDR port for Answered Calls only. Abandoned calls; ANI, DNIS, and Caller ID information is not sent out the SMDR port, but it can be stored in station memory. See Program *51 and *52.
6. See Program 60-1.
7. DK will send a Carriage Return (CR) and Line Feed (LF) ASCII symbol after each line of data.

General Notes

- "MODM": designates a call to the IMDU, Remote Maintenance Modem.
- "DISA": designates a DISA or External Call Forward call through the system via CO to CO connection.
- The call record data is ASCII-formatted, 8 bits; no parity, 1-stop bit.
- Special dial printout: Tone = "T", Long pause = "L", Flash = "F", Pause = "P"

Figure 5 SMDR Output - Incoming Calls

SMDR is supported in each system as follows:

- **DK14** – requires the WSIU module which is equipped with an RS-232C connector for attachment to a customer-provided printer or recording device.

  Data output speed can be set at 300 or 1200 bps.

- **DK40** – requires the TSIU, PIOU or PIOUS which is equipped with an ASCII RS-232, 6-wire modular connector, compatible with most call accounting devices.

- **DK424** – requires the PIOU, PIOUS, RSSU, or RSIU which is equipped with an ASCII RS-232 6-wire modular connector and compatible with most call accounting devices. A PPTC connector converts a 6-wire modular connection to a 25-pin connection (DB-25) and is available from Toshiba.

The DK40 and DK424 also requires a PPTC connector which converts a 6-wire, modular connection to a 25-pin connection (DB-25) and is available from Toshiba.

Benefits

Save costs because telephone abuse can be pinpointed and corrected and telephone bills are properly allocated back to the departments that made the calls.

Further, since account codes are included in the SMDR printout, lawyers, accountants, and others who provide hourly professional services can accurately bill clients for telephone time.

SMDR can also help increase productivity for employees such as telemarketers who must learn to spend the optimal amount of time on each call.

Station Relocation

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

When Station Relocation is activated, a telephone can automatically maintain its particular characteristics (personal speed dial, flexible keys, feature set, and all DNs) when it is relocated from one modular jack to another.

A vacant jack of the same circuit type (DKT, EKT, and SLT) must be available whenever relocating a station. You can swap or remove an existing telephone to provide a vacant jack. Only one telephone can be relocated at a time. Station Relocation is available system-wide and can be turned off and on only by the System Administrator's station.

Note This feature does not work when stations are relocated from a PDKU to a KCDU in the DK40.

There are two types of Station Relocation – moving the physical location of the telephone, or using dial codes to relocate telephone set features without physically moving its location.

Benefits

Makes moving telephones quick and easy. Just unplug the telephone from one jack and plug it into another. Saves the expense of having a third party re-program the system to reflect these changes.

System Programming Through Station

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Any Strata DK system can be programmed using a 20-button digital LCD telephone in the system. On DK424 systems, programming is done from the digital telephone connected to PDKU port 005. On DK14 and DK40 systems, programming can be done using any station port.

During programming, the station executing the commands is the only station that loses normal functioning. Service to all other stations remains normal.

Benefits

Enables simple moves and changes without purchasing additional terminal equipment. All programming can be done with a digital LCD telephone.

Tandem CO Line Connection (Trunk-to-Trunk)

System Availability

Standard on Strata DK14, DK40, and DK424 systems. A DKT that sets up a Tandem CO line connection must have two CO line appearances or the connection must be set up on a DN. On DK424 systems with Release 3.2 or later versions, this feature also enables standard telephones and voice mail/Auto Attendant ports to set up a conference with two CO lines and then drop out.

Description

Also known as Trunk-to-Trunk Connection, this feature connects a station user to two CO lines in a conference. After connection, the station user can drop out of the conversation leaving the two outside parties in an unsupervised conference. The CO lines remain connected until one of the parties hangs up. Each CO line in the system can be enabled or denied the Tandem CO Line Connection feature. Each system supports:

- **DK14** – two connections
- **DK40** – four connections (maximum)
- **DK424** – ten connections (maximum)

Amplified Conference

If the amplified conference option is installed and the amplifier is available, the Tandem CO Line Connection is automatically amplified. A trunk-to-trunk connection (up to 10 at one time) is established on each DNIS external network call.

With Drop Out

On DK424 Release 3.2 and later versions, Tandem CO Line Connection – With Drop Out enables standard telephones and Voice Mail/Auto Attendant ports to set up a conference with two CO lines and then drop out of the conference leaving the two CO lines connected.

The station that sets up the two-line connection can reconnect to the tandem connection by dialing a pickup code. If more than one tandem connection is set up by a station, the pickup code reconnects that station to the tandem connection that has the lowest CO line number as a priority.

Prior to Release 3.2 software, standard telephones could set up two-line conferences, but they could not drop out of the connection. The pickup code function applies only to the station that sets up the tandem connection. A station cannot pick up a tandem connection which was set up by another station.

Automatic Release from Hold

For loop start lines, Strata systems have an Automatic Release from Hold capability that provides automatic disconnect. It recognizes the disconnect signal from the CO. If the CO does not provide the disconnect signal (most do), the trunk-to-trunk conference must be monitored and released by the station user who set it up. For ground start, DID or Tie lines handling the incoming trunk, automatic release is accomplished from disconnect supervision.

Benefits

Enables important incoming calls to be connected to employees who are out of the office, resulting in more convenient calling and efficient call handling. Internal callers who set up conference calls can drop out of the conference when they no longer need to participate. They can return to productive work and use their phone to make and receive other calls.

Tenant Service

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Businesses in the same office building can share a system. One DK14, DK40, or DK424 (with an RCTUA processor) can be shared by two businesses. The DK424 with an RCTUBA/BB, RCTUC/D, or RCTUE/F processor can have up to four tenants.

Separate Features

Tenants can have separate LCR and Toll Restriction plans, Page Groups/Zones, Night Transfer ringing assignments, flexible door phone assignments, and CO line ringing assignments. CO/PBX lines for each tenant appear in the correct sequence on telephones, and each tenant can have up to two dedicated DSS consoles. Station-to-station calling can be done between the two businesses.

CO lines assigned to Tenants 1 and 2 can activate night ringing over external page. Each tenant has its own Night Transfer function and can independently control night ringing using their DSS units. Both tenants share a common night bell or a common external page zone for night ringing. With DK40 and DK424 systems, if zone paging is installed, the two CO line groups can ring over different paging zones at night.

Ringing CO lines assigned to Tenant 1 can be picked up using the Night Transfer1 button, while ringing CO lines assigned to Tenant #2 can be picked up using the Night Transfer2 button.

Benefits

Provides sharing of functions, features, and costs of a Strata DK system by two to four small companies that do not each require a separate system. They also may be able to reduce costs further by sharing a receptionist.

If the businesses are related, a common system enables them to communicate easily with each other without the expense of separate systems.

Tenant service enables the businesses to appear as two separate companies. They can have separate lines, Attendants, and ringing arrangements. Costs can be easily allocated according to use.

Tie Lines

System Availability

Optional on Strata DK40 and DK424 systems and requires REMU or T1 (RDTU on DK424). Unavailable for the DK14.

Description

Tie lines can be installed on a DK40 or DK424 system to connect it to a PBX or another DK system in a private communications network. Tie lines can use all DNIS program assignments. Incoming Tie line calls can ring a number of destinations within the DK system.

Incoming Tie lines are enabled with Voice First Calling, and the called station can answer back handsfree. Incoming Tie lines cannot originate Off-hook Call Announce to a station at the distant end.

On the transferring station's LCD, Tie Line Transfer Recall displays the destination station number and CO line number of a CO line call transferred to a station over a Tie line to another system, when the call times out and recalls back to the transferring station. The recall timing is programmable to meet each customer's individual need. This feature enables the answering position to answer calls appropriately by knowing the difference between a new incoming call and a transferred call recalling to the Attendant.

Analog Tie lines are supported by the E&M Tie Line Unit (REMU), which provides four E&M type 1 or 2 signaling Tie lines. The Tie lines can be two-wire or four-wire transmission Tie lines and can be immediate or wink start. Digital Tie lines are supported by the T1 Interface Unit (RDTU).

A secondary protector is required for each Tie line circuit. An optional DTMF tone receiver PCB is required in Tie line operation. Tie lines can be configured as dial pulse (rotary) or DTMF (tone), and can be toll restricted.

Benefits

Helps to fix costs when the customer has heavy traffic to specific locations, because Tie lines are tariffed at a flat rate per month and are not usage dependent. If Tie lines and toll restriction are used together, there can be significant reductions in telephone expense.

Tie lines can also access features or CO lines in the distant PBX or key system providing an opportunity to further reduce costs.

Calls transferred from the answer position are often unanswered by the station to which the call is transferred. The Tie Line Transfer Recall feature works with calls transferred over Tie lines just as they would within the originating system. This feature enables the answering position to answer calls appropriately by knowing the difference between a new incoming call and a transferred call recalling to the Attendant. This provides the caller better treatment and service.

Toll Restriction

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Station users can be individually restricted from making toll calls, according to one of the three toll restriction schemes which are:

- 0/1 – system denies any CO calls with 0 or 1 as the first or second digit in the number dialed.

- Area code (three digits) – system denies any calls made by a station whose first three digits are toll restricted.
- Area code/office code (six digits) – system denies any calls made by a station whose first six digits are toll restricted.

The three- and six-digit toll restriction schemes can be further refined as follows:

- Any one of four toll restriction levels (eight with DK424 RCTUC/D or RCTUE/F) can be assigned. The levels can be defined so that each one is progressively more restrictive by enabling or denying specific area or office codes, calls to long distance information, international calls, and operator-assisted calls. The levels can be modified using up to eight exception tables that enable access to specific office codes within restricted area codes.
- A toll restricted station can still be enabled to dial 411, 911, or 800 numbers if desired.
- Traveling class of service codes can be defined, one for each level of toll restriction. When dialed at a toll restricted station, these codes change the level of toll restriction on the station to the level enabled by the code for one call. The station then reverts back to its original level of toll restriction. The codes can be changed by certain stations that are selected in programming.
- Any toll-restricted station can be assigned the credit card calling feature, which enables a user to make a "0+" telephone credit card call from that station.
- Verifiable Account Codes can have a toll restriction class of service. When such an account code is entered at a station, the station assumes the toll restriction class of service of the account code for that call.
- The Toll Restriction feature can be disabled on a given CO line. For example, toll restriction might be disabled on a Tie line, to enable the station to dial extension numbers on the distant PBX.
- Restriction levels can also be assigned to verified account codes, which require a user to enter an account code before dialing long distance. Individual lines can be defined as unrestricted.

All systems can also be programmed to recognize equal access codes (10XXX and 950-10XX), an OCC (Other Common Carrier) DN, authorization codes, and PBX access codes.

On Strata DK systems, any OPS or Tie line can be toll restricted, but it is recommended to use LCR for standard single-line telephones.

Toll Restriction Override

There are several ways to override a Toll Restriction level. They are:

- Assign three- to four-digit codes
- Use Centrex feature codes beginning with *
- Assign system Speed Dial numbers

Up to two toll restriction override codes can also be defined. When dialed at a toll restricted station, these codes enable the user of the code to override the toll restriction at that station. The codes may be changed by certain stations that are selected in programming.

See "Toll Restriction Override Codes" and "Toll Restriction Override Using System Speed Dial" for more information.

Benefits

Reduces phone bills because users can make only those toll calls that are necessary for them to carry out their job responsibilities.

Toll Restriction Override Codes

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Up to two Toll Restriction Override codes can be defined. When dialed at a toll restricted station, these codes enable the user to override the toll restriction at that station. The codes may be changed by certain stations that are selected in programming.

Up to four (eight on DK424 RCTUC/D and RCTUE/F) service code traveling classes can be defined, one for each level of toll restriction. When dialed at a toll restricted station, these codes change the level of toll restriction on the station to the level enabled by the code for one call. The station then reverts to its original level of toll restriction. The codes may be changed by certain stations that are selected in programming.

See the "Toll Restriction" for additional information.

Benefits

Enables authorized users the convenience of overriding toll restriction for more flexible outgoing calling.

Toll Restriction Override Using System Speed Dial

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

System Speed Dial numbers can be programmed to override Toll Restriction. When employees need to access a toll number restricted by area/office code, an employer can assign that particular toll number as a System Speed Dial number.

After overriding Toll Restriction with system Speed Dial, the user can be enabled or blocked from dialing additional digits. Dialing long distance provider access codes (10XXX and 101XXX) is *not* allowed, except when using system Speed Dial numbers or LCR.

Benefits

Enables employees to dial specific legitimate business toll calls, without making any other calls to that particular area or office code. Preventing unnecessary toll calls can result in cost savings.

Sometimes an Attendant is asked to screen and place calls for toll-restricted users. This feature eliminates that extra work, and frees the Attendant to give more attention to incoming calls.

Transfer Privacy

System Availability

Standard on all Strata DK14, DK40, and DK424 systems.

Description

In a system programmed for Transfer Privacy, an outside call that has been transferred can only be answered at the station to which the call has been transferred or at another station using the Directed Call Pickup feature. No other station can pick up the transferred call using the CO Line button.

Privacy features only apply to CO lines and CO line button appearances. The Transfer Privacy feature does not apply to multiple DN appearances. However, if Transfer Privacy is enabled, a call that is blind-transferred to a multiple appearing DN of a CO Line, will only ring on the DN of the prime station (of a PDN) or the owner of a PhDN.

The transferred call rings on all stations having the transferred-to DN before the transferring station releases (hangs up) the call, but rings on the prime or owner station only after the call is released.

Benefits

Enables protection for the confidentiality of outside calls that have been transferred. Callers are assured that the only station that can answer the transferred call is the station to which the call has been transferred.

Traveling Class of Service

System Availability

Standard feature on Strata DK14, DK40, and DK424 systems.

Description

The normal Toll Restriction class of a station can be temporarily changed to another class. Each of the four (eight in DK424 RCTUC/D or RCTUE/F) toll restriction classes of service can be assigned a four-digit code and given to users.

By entering the code at a station, a user changes the toll restriction class of service on that station to the class of service of the code, which remains in effect for the duration of the call. The station then reverts to its normal class of service. Any station can be programmed to change these codes for security purposes.

The codes do not print on the Station Message Detail Recording (SMDR) call records. However, Verified Account Codes, which can also change Toll Restriction Class of Service, print out on SMDR reports.

Benefits

Helps organizations manage telephone expenses and enables selected employees with the convenience of using any station while maintaining toll restriction control.

T1 Interface

System Availability

Optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D or RCTUE/F processor. Unavailable on the DK14, DK40, or DK424 with RCTUA processor.

Description

The T1 Interface provides 8, 16, or 24 multiplexed, simultaneous two-way voice channels for cost-effective connection to high quality, digital CO services. This enables the system to connect to a CO, another DK424 system, or other telephone systems.

Each T1 channel can be individually configured for ANI, DNIS, loop and ground start operation, DID operation, or Tie line operation. Both Super Frame and Extended Super Frame modes are supported. T1 Interface requires the installation of a Telco or customer-provided Channel Service Unit.

T1 DID hookswitch flash capability provides hookswitch flash operation on T1 two-way DID, ground start, and Tie lines. This improves DID functionality in T1 applications. This feature requires the RDTU2 T1 card.

For E&M Tie lines, configured incoming 800, or other services, an answering position or DN must be provided to answer and transfer calls, because all calls are routed to one number. This applies for AT&T Megacom™ and like services. With multiple DNs, a Megacom call can be answered from any phone having the corresponding DN.

Ground start operation must be used with ACD or Auto Attendant. T1 loop start lines do not have any disconnect supervision.

Benefits

Provides economic advantages using the high-traffic capacity of 24 multiplexed, simultaneous two-way channels. T1 users also benefit from the increased quality of digital transmission. Access to the T1 interface is completely transparent to the station users.

Voice Mail Interface

System Availability

Optional on all Strata DK systems. Requires standard station ports on DK14, DK40, or DK424 systems. Voice mail can also be connected through an RS-232 port using SMDI.

Description

Any Strata DK system can be configured with a voice mail messaging system. The system can be a Toshiba Stratagy, or a customer-supplied voice mail messaging system.

When voice mail is installed with a DK system, each port on the voice mail system requires one standard single-line phone port. No external modules are required.

Depending on the voice mail product installed, some or all of the following features may be provided.

Automated Attendant

Many voice mail systems offer Automated Attendant as part of their overall feature package.

ANI/DNIS Routing to Voice Mailbox

Each DNIS number or all ANI numbers can route directly to a voice mailbox independent of the user's voice mailboxes. Routing ANI/DNIS calls directly to a voice mailbox can be set for all calls or just calls during a particular system mode (Day, Day2, or Night). This feature is available with in-band voice mail integration only, not with SMDI.

Call Forward to Voice Mailbox

Each user can forward calls directly to a personal mailbox. The caller bypasses the usual sequence of voice mail commands and leaves a message after hearing a greeting and/or a tone. Also, if someone calls Station A and Station A call forwards to Station B, which in turn call forwards to voice mail, the caller is connected to Station A's personal mailbox.

Message Waiting Indication

When a message is recorded in a user's mailbox, the voice mail system automatically sets a message waiting indication at the station user's DKT, EKT, or single-line telephone with message lamp (DK40 and DK424 systems, only). The indication is turned off after the user listens to the message.

Station Voice Mail Control

Station users can control voice mail equipment from their telephone dial pad. DK14 and DK40 stations can control voice mail equipment when not connected in a conference call. DK424 stations can control voice mail equipment on normal or conference calls with other stations and outside parties.

Users with 2000-series digital telephones can also send continuous DTMF tones.

In-band Voice Mail Integration

The integration of special voice mail features in system software enables the Strata DK and Toshiba Voice Processing systems to work together efficiently using in-band DTMF signaling tones. This is standard on the DK14, DK40, and DK424 systems. Many other manufacturers' voice mail systems also support in-band signaling integration with DK14, DK40, and DK424 systems.

SMDI Voice Mail Integration

SMDI voice mail integration is available for use with Stratagy or non-Toshiba voice mail systems and can provide more efficient voice mail integration than in-band DTMF signaling when used in high volume applications. It requires fewer DTMF receivers and sends information quicker, because the voice mail machine processes digital RS-232 data faster that DTMF tones.

SMDI integrates Strata DK with Stratagy and other voice mail systems, through a digital RS-232 connection on a WSIU, TSIU, PIOU, PIOUS, RSSU, or RSIU using standard central office protocol, providing more universal compatibility with Stratagy or non-Toshiba voice mail systems.

SMDI provides all the integration features of in-band DTMF signaling, except it does not support the equivalent of A-tone answer supervision, B-tone recall supervision, or D-tone disconnect supervision. SMDI can be important in selling Strata with non-Toshiba voice mail systems that customers may already have and want to keep to use with their new Strata DK system.

Advantages provided by the Strata DK and the Stratagy SMDI integration are:

- Uses the ports faster and more efficiently
  - SMDI is a faster and more efficient integration compared to DTMF (in-band) integration and is recommended for high-traffic installations.
- Improves call coverage
  - Stratagy uses the call forwarding status (e.g., all calls, no answer, busy, etc.) supplied by SMDI to provide better call coverage. The status information also enables Stratagy to perform custom applications using Stratagy RNA and Busy Chain options.
- Streamlines messaging procedures
  - SMDI provides the calling party's extension to Stratagy. Users calling Stratagy from their telephones do not have to enter their user ID to log on to their mailboxes.
  - When an internal party calls an extension that is forwarded to voice mail, SMDI applies the calling party's identification to the message. Since the source of the message is already known, the message recipient does not have to enter the user ID when replying to it.

- Caller ID and ANI numbers are delivered to the voice mail machine via SMDI packets. DNIS names are not sent on SMDI packets.

Table 12 is a comparison of the feature integration provided by in-band DTMF signaling and SMDI.

Table 12 In-band and SMDI Comparison

Equipment	In-band	SMDI
A-tone (or equivalent) Answer Supervision	Yes	Yes
B-tone (or equivalent) Recall Supervision	Yes	No
D-tone (or equivalent) Disconnect Supervision	Yes	No
Option Card Required in Strata DK	No	Yes
Performance	Slower	Faster
DTMF Receivers Required	More	Fewer
Integration Software in Voice Mail System	Standard[1]	Optional[2]
Available in DK14 and DK40	Yes	Yes
Available in DK424 RCTUA	Yes	Yes
Available in DK424 RCTUBA/BB	Yes	Yes
Available in DK424 RCTUC/D	Yes	Yes
Available in DK424 RCTUE/F	Yes	Yes

1. In-band integration standard with Toshiba Stratagy. It is standard with most other manufacturers, but may be optional with some.
2. SMDI integration standard with all Stratagy systems. SMDI integration optional with most other manufacturers, but may be standard with some.

Benefits

The customer can gain the benefits of using a voice mail system, because it can easily be attached to a Strata system. DK systems are compatible with all Toshiba Stratagy systems and many different brands of voice mail systems.

Callers can leave detailed messages for a specific employee and feel their needs are being addressed immediately, rather than neglected until the employee calls back. This uses your employees' time more efficiently and enables them to provide your customers better service.

Voice or Tone Signaling

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Any DK system can be programmed for tone ringing or voice announce as the standard method of internal call signaling. With tone ring signaling selected, a station rings when called

by another internal station. The called telephone receives a one-second ring tone every three seconds.

With voice announce signaling selected, a station does not ring when called on its DN/PDN by another internal station. Instead, a tone burst is heard, followed by the caller's voice over the called telephone's speaker. Voice announce signaling enables handsfree talkback from the called telephone on internal and private network Tie line calls.

Regardless of whether tone ringing or voice announce has been programmed for the system, a caller can always select the alternate method by dialing "1" after the station number.

When PhDNs are called, they always ring with tone ring signaling. Callers can select voice announce signaling by dialing "1" after the PhDn.

If there is a DSS console in the system, it can be programmed for voice or tone signaling independent of the choice for the system (DSS console is not used with DK14).

Benefits

Provides privacy and protects confidential communications. Voice signaling enables quick communication with handsfree talkback.

Wall or Table Mounting

System Availability

Optional on Strata DK424 systems. The DK14 and DK40 is designed for wall mounting only.

Description

The DK424 base Key Service Unit (KSU) and expansion cabinets can be wall or floor mounted even with a fully configured, seven-cabinet system. The modular DK424 cabinet configuration can be built from the bottom (base cabinet) up or from the top down.

Benefits

Enables installation almost anywhere the customer has space available.

Station Features

This section describes the features that are available to Strata DK station users. Not all of the features for digital phones are available on the digital cordless phones.

Alert Signal Button

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

The Alert Signal button enables a digital or electronic telephone user to signal a designated station. Whenever the user presses the Alert Signal button, they automatically ring the designated station with a distinctive alert-ring signal. This signal alerts a person about some pre-arranged event or action. No talk path exists between the called and calling telephones.

The alerting signal is sent to phones that are idle, busy (on or off-hook), in speakerphone mode, call forwarded, or in a Do Not Disturb mode.

Each station that has this feature can send or receive the alert signal to and from another station. A station can have up to four unique Alert Signal buttons to signal to and from four different stations.

Benefits

Useful in interoffice applications to alert everyone about pre-arranged events or actions. This option is engaged with the press of a button without the need for conversation.

Automatic Busy Redial (ABR)

System Availability

Standard on Strata DK14, DK40, and DK424 systems. DK14 and DK40 systems require digital or electronic telephone and busy tone detectors. Not compatible with outgoing DID or Tie line calls.

Description

ABR enables a station user to automatically redial a busy outside number up to 15 times at pre-programmed intervals. Call attempts can be programmed for 30- or 60-second intervals. ABR is not attempted if the calling station is busy with another call, but the pre-programmed timer continues to run.

When the redial is successful, the calling station receives ABR ringback tone for 40 seconds or until the call is answered.

This feature can be enabled or denied on a station-by-station basis. It can be accessed by using a feature code, or it can be programmed as a feature button.

This feature is not available on outgoing Tie or DID lines.

Automatic Busy Redial is completely compatible with Least Cost Routing functions.

Benefits

Saves time and money because the station user does not waste time looking up numbers. The system redials the number accurately, eliminating costly dialing errors, especially on long telephone numbers. Business can be completed efficiently, because the system automatically tries the number again, while the user continues to work.

Since the feature can be assigned on a station-by-station basis, a company can assign it only to those who require it. This way, CO lines are not be tied up with an excessive amount of redials.

Automatic Busy Redial can cut costs because it only redials a call on the CO line originally selected by the Least Cost Routing feature.

Automatic Callback (Internal Calls)

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

A station user makes an internal call and finds the called station busy or in Do Not Disturb mode. By using a flexible button or by dialing a special code, the caller can activate Automatic Callback. When the called station is free, the system rings the caller with a special tone. When the caller answers, the system automatically rings the called party.

If the caller hears a busy tone after answering the Automatic Callback, it means that the called party has made or received another call. The callback request is not canceled, and the system rings the caller as soon as the called station is free again.

When calling a station with multiple PDNs in the ring first mode, ACB is available to the calling station only if all the PDNs of the called station are busy.

The caller can cancel the callback request at any time with a cancellation feature code.

Benefits

Minimizes user’s time redialing a busy number. The caller can use that time more productively. Automatic Callback also minimizes the frustration of continuous busy signals.

Sometimes people “hang around” outside an office, waiting for someone to complete a phone call. Automatic Callback could be used to give an indication that the person is off the phone instead of wasting time “pacing the hall.”

Automatic Hold

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Each station can be individually set in programming for Auto Hold or Auto Release of an existing call when another incoming call is answered. Auto Hold automatically places an existing CO line or internal call on hold when another incoming call is answered. Auto Release automatically releases an existing CO line or internal call when another incoming call is answered.

Both Auto Hold and Auto Release can be overridden by pressing the Release or Hold button, respectively, before answering another incoming call.

Benefits

Saves time in call splitting applications in which users want to switch back and forth between two calls, particularly the busy DSS operator. Auto Release saves time in heavy-call answering applications when users want to disconnect from a finished call and answer the next call simultaneously.

Automatic Off-hook Line Selection

System Availability

Standard on Strata DK14, DK40, and DK424 systems. Requires digital or electronic telephones. Unavailable for Off-premises Station or on a standard single-line station.

Description

Automatic Off-hook Line Selection enables a station to automatically access a specific line or line group and an internal PDN when the station user lifts the handset to place a call. The station user does not have to press the line button or DN button for the preferred line. The Spkr button also auto-selects the programmed line or line group and DN.

A station can be programmed to require manual selection of a line or to automatically access one of the following when the user picks up the handset to place a call:

- A specific CO/PBX line group

- An intercom or DN
- The lowest numbered CO/PBX line that appears on the DKT

If Automatic Off-hook Line Selection is not assigned, the user gets no dial tone and must manually access the line or feature.

If Automatic Off-hook Line Selection for a particular station is assigned to a CO/PBX line group, the station user gets dial tone from the last free line in that line group when the handset is lifted. The station user can dial the telephone number without pressing a CO/PBX line button. If all lines in the assigned group are busy, the user hears busy tone and can use the trunk queuing feature.

Assigning Automatic Off-hook Line Selection to a trunk group is a convenience to the user who almost always makes outside calls. If Automatic Off-hook Line Selection is assigned to an intercom or DN, the user gets internal call dial tone when the handset is lifted. The user can dial another station without using the intercom or DN button. This is a convenience to the user who almost always makes internal calls.

If Automatic Off-hook Line Selection is assigned to the lowest numbered CO/PBX line on the telephone, the user gets dial tone from that specific CO line, and can dial a telephone number without pressing the button for that line. This could be a convenience to an executive whose private line appears on that DKT.

Benefits

Provides the convenience of not having to look for a free line or press a line button to place the most frequently made calls.

Background Music (BGM) with Station Control

System Availability

Standard on Strata DK14, DK40, and DK424 systems if used through DKT speakers.

Description

A BGM/Music-on-Hold (MOH) RCA jack is built into the common control unit on DK14, DK40, and DK424 systems. This jack connects a customer-supplied music source to be used for BGM, MOH, or both.

BGM can be sent to the telephone and external speakers. The customer-supplied background music can be applied to the telephone and external speakers, or each can have a separate music source.

If a system is connected to a music source and this feature is activated, a station user can access background music through the speaker of a digital or electronic telephone. The music can be turned on and off at the user's option using the Tel Set Music button or dialing an access code. The user can also control the volume.

If an external paging system is installed, music can also be broadcast through the external paging speakers providing background music throughout the facility. The background music over external page can be turned on and off from a telephone or Attendant Console.

No optional hardware is required when background music is broadcast over digital or electronic telephone speakers. The customer-supplied music source for both background music on telephone speakers and MOH connects directly to the common control unit.

If a separate music source for background music over telephone speakers is desired, it can connect to a designated station port. This enables separate sources for MOH and telephone background music.

Music on both the external speaker and the telephones is muted when a paging announcement is made or when night ringing occurs.

Music Sources

Each system can support the following:

- **DK14** – two separate music sources, one for MOH and the other shared by DKT speaker and external speaker background music. The QSTU card provides the music source connection to designated station ports.
- **DK40** – up to three separate music sources, one can broadcast background music over digital or electronic telephone speakers, another can broadcast over external speakers, and the third can provide music or a recording for MOH. The KSTU, RSTU, PSTU, PEKU, or PESU cards provide the music source connection to designated station ports.
- **DK424** – up to three separate music sources one can broadcast background music over digital or electronic telephone speakers, another can broadcast over external speakers, and the third can provide music or a recording for MOH. The RSTU, RDSU, PSTU, PEKU, or PESU cards provide the music source connection to designated station ports.

On a DK40 or DK424 system, when the source input for background music over external speakers is unamplified, it can use the built-in three-watt amplifier of an Option Interface Unit (PIOU or PEPU). Amplified music output requires either the PIOU or PEPU, or the music input source can be connected through an external amplifier.

Benefits

Provides relaxing music to employees while they are working, and music that is conducive to the work environment. Conflicts over type of music played are avoided and employees have the option of simply turning off the music on their telephones.

Busy Override Tone

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

After dialing an internal station and receiving a busy signal, a caller can press a Soft Key or dial a code which signals the called station with a tone burst indicating that a call is waiting. This enables a station user to send tone bursts to a busy station's idle DN or line button by dialing 2 or by pressing a feature button.

The tone burst can be sent either two times (four seconds apart) or repeated continuously every four seconds. If there are no idle DNs or line buttons on the busy station, the station receives two bursts of camp-on tone (see "Call Transfer with Camp-on" for more information).

A busy digital or electronic station can receive this tone. DKT2000-series telephone users can adjust their telephones to receive the tone over their handsets or headset receivers, as well as the speaker. Standard telephones receive camp-on tones twice from the handset receiver (it is not continuous on standard telephones).

Benefits

Provides user convenience and calling efficiency. Selected users can access busy extensions, either to give them a priority message or to announce a caller or guest.

Busy Station Transfer/Busy Station Ringing

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

The Busy Station Transfer and Busy Station Ringing features operate together to ensure that a busy digital or electronic telephone station always receives transferred calls along with distinct LED and tone indications. A typical application is when an Auto Attendant device transfers calls frequently to a busy answering position station.

Digital and electronic telephones, programmed with this feature, ring and provide ringback even when they are busy on another call. This is important to voice mail and Auto Attendant applications, in which incoming calls are often transferred from the Auto Attendant to busy stations, especially the DSS station. It prevents outside callers from being sent back to the Auto Attendant or voice mail after already making their choice from the Auto Attendant or voice mail greeting.

When either an internal caller or Auto Attendant transfers an external call to a busy telephone assigned with this feature, the caller hears ring-back tone, not busy tone. The called, busy telephone rings with a muted tone, and the applicable LED flashes in synchronization with the ringing. Both the called and the calling party must be programmed for this feature. If one is not, normal operation occurs.

To answer the incoming call, the called party can transfer, release, or place the current call on hold before pressing the button associated with the flashing LED. If Auto Hold is programmed

for that station, the user presses the button of the new call and the existing call is held automatically. Otherwise, the transferred call camps-on after ringing and not being answered.

If the called station is an LCD telephone, it shows which CO line is camped-on. Called stations can continue to operate other features in the normal way. If called while idle, these stations ring normally.

Any number of electronic and digital telephones can be individually programmed with this feature. Busy Station Transfer/Ringing does not operate on standard telephones.

Benefits

Ensures that important calls are answered more efficiently and reduces caller frustration by preventing them from looping back and forth from the Auto Attendant or voice mail without talking to anyone. This feature may also have applications for stations needing to get through to a busy answering position or message center without getting a busy signal.

Call Forward

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Using the Call Forward feature, a station user can route all calls to an alternate station or voice mail device. Except for fixed call forwarding, the station user selects the destination when setting call forward. Call forwarding can be set by a feature button or access code. Stations in call forward mode can originate calls as usual.

Internal DN and CO line calls that have been transferred to the station are forwarded. CO lines that ring only at that station also forward. CO lines that ring more than one station do not forward on DK14 and DK40 systems, but do forward on a DK424 system under certain conditions.

On DK424, a telephone can be designated in system programming as the Call Forward controlling telephone in applications that require ground and loop start CO lines to ring a group of telephones. The Call Forward control telephone must be only one designated to ring in the delay ring assignment, in which the call should forward.

The ringing assignment (Immediate, 12-second delay, 24-second delay) in which a CO line call forwards is designated independently for the Day, Day2, and Night Ring modes. Once assigned, the CO line follows the call forward setting (Busy, No Answer, etc.) of the designated control station. If the call forwards to voice mail, it is sent to the mailbox of the Call Forward controlling telephone's PDN or designated PhDN. This feature does not apply to Tie, DID, ANI, or DNIS lines which ring to a particular DN and follow the call forward setting of the DN.

Call Forward can be assigned to PhDNs–the type and destination can be different from the PDNs. Up to eight PhDNs can be call forward controlled from one station by the PhDN owner. A station can have up to four PhDN MW button/LEDs.

When Call Forward No Answer is active on a Handsfree Call, this option prevents a handsfree (internal call) from forwarding while engaged in a handsfree (internal call) with a station that has Call Forward No Answer or Busy/No Answer activated. This occurs even if the answering station does not press the Internal Call button to answer the call within the 12-second forwarding time. Call forwarding still occurs when the caller forces the call from Handsfree mode to Ring mode. Each station can be individually set in programming to enable or disable this feature.

The system can be programmed so that the Attendant station/DSS console can either override call forwarding and ring station users, or follow the call forwarding of called stations. If set for override, calls placed or transferred via buttons on the DSS console overrides call forwarding and ring the called station. In this case, calls placed via the dial pad of the associated digital or electronic telephone does not override, and forwards, thus giving the operator the ability to either override or forward a call. If override is not selected in programming, calls placed or transferred via buttons on the DSS console are forwarded.

Call Forwarding takes precedence over Station Hunting but not over Distributed Hunting (DH). If a station in a DH group activates call forward, calls to the DH-DN that ring that station do not forward. Calls to the station's DN do forward.

When a station is in any Call Forward mode, outgoing calls can still be made from that station. If system power is lost, Call Forward remains on stations when the power is restored.

Call Forward Modes

There are several available Call Forward modes. Each can be set and canceled by the station user. They are:

All Calls

When a station is idle or busy, all calls to the station forward immediately. The station does not ring.

Busy

When this mode is set, all calls to a busy DN immediately forwards. If a station has an idle PDN, but is busy on another DN or CO line call, calls to the PDN do not forward if the system has Ring First signaling, but do forward if the system has Voice First Signaling. If all the station's PDNs are in use, then calls to the PDN forward immediately. When a station is in the DND mode, all calls to the station's PDN forward immediately.

No Answer

When a station does not answer, the call forwards. No Answer time is flexible, 8 to 60 seconds. When the station is busy, incoming calls get busy tone. Call Forward No Answer is optional on Handsfree Answerback. OCA calls do not Call Forward. Handsfree internal calls can be programmed to automatically forward or not forward if there is no answer. If they are programmed to not forward, callers can force Call Forward with a one-digit entry.

Busy/No Answer

When a station is idle and in this mode, calls ring for 8 to 60 seconds and then forward. The Ring No Answer time can be set by the telephone user. When all the stations's DNs are busy or when the station is in the DND mode, the call will "Call Forward-Busy" immediately.

On ring first systems, if the station is busy on a call but has an idle DN, calls mute-ring the idle DN until the Call Forward No Answer timer expires and then the call forwards. This enables other users (such as a secretary) to answer the call if the called DN appears on their telephones. On Voice First systems, calls immediately Call Forward-Busy when the station is busy on a call, even if it has an idle PDN. A station in the DND mode call forwards immediately.

Fixed

A feature button can be programmed on a digital or electronic telephone to put that station in Call Forward mode to a fixed destination. The destination can be a PDN, PhDN, or Distributed Hunt DN. For example, the station may be programmed to forward to the Attendant station or a voice mail system. The destination is fixed in programming and cannot be changed by the station user. A station user with fixed Call Forward registration can also have standard call forwarding.

External

Call Forward External with remote change capability permits incoming CO line calls to be routed over an outgoing CO line to an outside directory number, increasing availability to receive incoming calls and making it efficient and easy to control.

Only incoming calls on DID or private lines can be forwarded to numbers outside the Strata DK system. Internal, Tie line, and transferred calls do not call forward externally, but do forward internally if another Call Forward mode is set simultaneously with Call Forward-External. The intention is that CO line calls ringing at multiple stations, or that can be answered by other stations internally, should be answered rather than be forwarded externally. Call Forwarding can be set for PDNs and PhDNs individually, with the exception of Call Forward External and fixed Call Forward which applies only to PDNs.

The station user has the ability to cancel or change the destination of forwarded CO line calls. This is done remotely via DISA. Toll restriction applied by DISA is also applied to externally forwarded calls. A DTMF receiver (RRCS) is required to change call forwarding remotely. External Call forward establishes a trunk-to-trunk connection.

Benefits

More efficient call handling and better service to callers is possible with the Call Forward feature. It is more likely that calls to a station are answered promptly. By providing more efficient handling of calls, this feature can help a company project a professional and courteous image, both internally and externally.

Station users can work in locations other than at their desks and not miss their telephone calls. They can forward their calls to a nearby phone.

Used in conjunction with voice mail, Call Forward can help ensure that calls are not lost and callers have the opportunity to leave complete and detailed messages.

Call Forwarding can be set up by department or special mailbox or destination with the use of PhDNs.

Using PhDNs, Call Forwarding can be set up by department, special mailbox or destination.

Call Park

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

When a CO line does not have a button appearance on a station, that station can use the Park in Orbit button or a feature code to put the call on hold, and then make a second call. The second call can be an internal call, a page, or a CO line call. After completing the second call, the original call can be retrieved using the Park in Orbit button or a feature code. External CO calls and internal station to station calls can be parked.

Any station user can page for someone else to pick up a call that is “parked” at their station. The person who was paged can selectively retrieve the call from the park orbit by dialing an access code plus the park orbit number.

If a parked call is not retrieved within a pre-designated time, the call recalls the parking telephone or Attendant Console. The park recall time can be individually set for each station (from 11 seconds to 15 minutes.).

Park Orbits

There are 20 general Park Orbits available. General Park Orbits are selected in order as they are available. They should only be used by LCD telephones or Attendant Consoles, because the selected Park Orbit number is displayed when a call is parked. In addition to general Park Orbits, each station user can park a call on its personal Park Orbit (one per station). All types of telephones can use the personal Park Orbit including standard telephones. Call Pickup is available from any station.

Park and Page

A station user can park a call in any of the general Park Orbits or in a personal Park Orbit, then enter a Page Zone or Group access code and announce to the paged party the orbit number of the waiting call. The user’s telephone can be connected to a predesignated external paging circuit, a telephone paging group, or both.

Auto Park

This feature is only available to LCD telephones. When a telephone user parks a call, the user can enter 999 instead of a specific Orbit Number. The system automatically selects the next available general Park Orbit and park the call. The parking telephone’s LCD shows the Park Orbit that has been automatically selected for the parked call.

Benefits

Call Park enables convenient “consultation” calling for stations that do not have direct CO line appearances. Without Call Park, these stations have no way to retrieve the call after putting it on hold. Call Park enables the station user to keep one call on hold while placing another call, and to return directly to the first call. It saves time and can facilitate business transactions.

Call Park Orbits make the paging and call pickup functions much easier. Employees who wander can easily pick up their calls from their personal park orbit. Attendant Console operators use the Park and Page button extensively.

The Park and Page feature combines two functions into one quick-and-easy operation. This is very valuable in high-traffic applications when paging is used extensively.

Call Pickup

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

By pressing a button or going off-hook and dialing an access code, any station can pick up the following types of calls:

- PDN or PhDN calls on hold or ringing at other stations
- CO/DID/Tie line calls ringing at other stations, either all lines or designated lines. (See “Tenant Service” in the System Features section for more information.)
- External or Station Group Page
- CO line ringing during the Night mode over External Page or night bell
- Door phone calls
- Incoming CO line calls
- Parked calls
- Any ringing line or designated Tenant Group lines
- Tandem CO line connections (by tandem origination telephone)

Station Call Pickup

To pick up a call, the station user dials a code and the number of the ringing station or uses the Directed Pickup button and the Primary Directory Number (see the “Call Pickup Groups” for additional capabilities).

CO Line Call Pickup

A station user can also pick up CO line calls when the ringing station number is not known by dialing a specific code number. See “Computer Telephony Integration (CTI)” in the System Features section for more information on call pickup by CO line group.

DN Call Pickup

To pick up a call at any DN on another station, the user dials a code and the DN (the code can also be programmed on a button). In a multiple DN environment, DN Call Pickup is more capable than Station Call Pickup, because held or ringing calls can be picked up by specific PDN or PhDN.

Selective Pickup on All Call Page (DK424 only)

This feature enables pickup of All Call Page (and External Page depending on programming) exclusive of internal station-to-station ringing call pickup. If this option is on, the pickup code picks up All Call and External Page only, and does not pick up ringing DNs.

Note On DK14 and DK40 systems, the pickup code picks up a ringing DN as a priority over All Call Page if the internal station-to-station call rings at the same time the All Call or External Page needs to be picked up.

Benefits

Call Pickup provides a convenience to station users by enabling them to answer their calls from another station in the area. Employees in the same work area can answer calls for others who are away from their desks, minimizing long ringing times and reducing disturbances in the work area.

Call Pickup Groups

System Availability

Standard on DK14, DK40, and DK424 systems.

Description

Call Pickup Groups enable you to pick up all types of calls including intercom or PDN calls ringing at other stations, or station groups. Calls can be picked up using programmable buttons (Group Pickup), or brief access codes that are easy to use and remember.

Station users can pick up incoming calls at any station in their own group, and can pick up calls to stations in other groups. Up to 20 Call Pickup Groups can be created to provide maximum call coverage. A station can be in more than one group. One group can have all stations.

Benefits

Provides a convenience to station users by enabling them to answer their intercom and CO line calls from another station in the area. Employees in the same work area can answer calls for others who are away from their desks, minimizing long ringing times and reducing disturbances in the work area.

Call Transfer with Camp-on

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Calls can be transferred to another station on either an announced or unannounced (immediate) basis. Immediate transfers initiated with a designated feature prompting soft key on LCD-equipped digital telephones transfer immediately after the final digit of the destination is dialed.

If the called station is not available or is busy, the call automatically camps onto it. This feature is important for stations that process a large number of calls with no time to wait for transferred calls to be answered. A “camp-on” tone (two tone bursts) is heard at the called station. The tone can be enabled or disabled for each station.

A station user can transfer a CO, DID, Tie line, or internal call to a station that is idle or busy. The call can be transferred even if the CO line does not appear on the station to which the call is transferred. An internal call, as well as a CO line call, can be transferred to another internal station.

If the transferred call is not answered, it recalls to the originating station within a pre-programmed time from 16 to 64 seconds. The recall time can be individually set for each transferring station.

As an option, the system can be programmed so that a CO button transferred call can only be picked up by the station to which it was transferred or by a station using Directed Call Pickup. See “Transfer Privacy” for more information.

Benefits

Provides an easy and convenient way to transfer calls to the appropriate people and to alert a busy station to a waiting call resulting in better service to callers.

Internal station-to-station transfer is useful for Attendant Console operators who get lots of internal calls asking for other station users.

Centrex/PBX Feature Buttons

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Feature access codes, including pauses and flashes, which access features in a host CO, Centrex, or PBX system can be programmed as if they were system speed dial numbers. Such codes can then be assigned to system Speed Dial (SD) buttons on all stations, and used for one-button access to the CO, Centrex, or PBX feature. A SD button that is programmed in this way is called a “locked” SD button.

Each feature access code can have up to 16 digits, including pauses and flashes. Buttons are assigned to system speed dial numbers in system programming.

Benefits

Provides users easy, one-button access to features that would otherwise require more complicated access procedures. Features that must be accessed through the CO/Centrex/PBX can be used more easily.

Since users do not have to look up feature access codes, SD buttons save time. Dialing errors can also be eliminated.

Continuous DTMF Signal Time

System Availability

Standard on Strata DK14, DK40, and DK424 systems with 2000-series digital telephones.

Description

Dual Tone Multi-Frequency (DTMF) dial signal is transmitted to the CO line or voice mail/ Auto Attendant device for as long as the telephone user presses a button on the dial pad. This feature operates on 2000-series digital telephones only.

The maximum DTMF duration is determined by the length of time the user presses a button on the dial pad. The minimum DTMF duration is determined by system programming. A minimum DTMF duration, either 80 or 160 ms, is required when using Speed Dial and when sending voice mail integraton digits to a voice mail machine.

Benefits

Provides compatibility with a variety of outside services and devices, which require manually dialing DTMF tones of varying lengths. Application examples are MCI credit card calling, which requires holding down a button (to create a tone) for one second to make another call, or remotely signaling an answering machine to rewind by holding down a button for a specified amount of time.

Data Buttons

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Flexible buttons on 2000-series digital telephones can be programmed for data functions if equipped with the Integrated PC Interface Unit (RPCI-DI).

Data Call Button

A flexible button on a digital telephone can be assigned as a Data Call button, which can be used to dial internal data calls. The telephone must be equipped with an RPCI-DI for Data Call button applications.

Modem Button

This button enables a digital telephone user to reserve a modem from a pool or to switch from a voice to a data call. Its LED indicates the availability of modems. The telephone must be equipped with an Integrated PC Interface Unit (RPCI-DI) for modem button applications.

Benefits

Provides programming with the touch of one button for speed and convenience.

Direct Station Selection (DSS) Buttons

System Availability

Standard on Strata DK14, DK40, and DK424 systems. Programmable on digital and electronic telephones, Add-on Modules, and DSS Consoles.

Description

Any available button on a 10-button or 20-button digital or electronic telephone can be programmed to provide a direct connection to any other telephone in the system. The LED associated with each button serves as a Busy Lamp Indicator that lights when the station named on the button is busy. Pressing the DSS button immediately rings the station assigned to that button.

Calls made with station DSS buttons will forward if the station assigned to the DSS button is in Call Forward mode.

Benefits

Provides instant, one-button access to other stations, eliminating the need to repeatedly look up extension numbers to place internal calls, and show the status of the extension. This feature provides quick communication between two people who work cooperatively, such as an executive and the executive's secretary.

Distinctive LED Indicators

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

Each line/feature button on a digital telephone has an associated LED. When a button is assigned to a CO/PBX line, this LED flashes at different rates to indicate the status of that line.

The in-use flash rate appears on the LED when the line is in use by that station. Other stations show a steady LED on that line. The incoming call flash rate appears when a call (internal or CO/PBX) is ringing in on that line. The on-hold flash rate appears on a station when the station puts a call on hold. Other stations show the usual system hold flash rate. The camp-on and busy station ringing flash rate appears when an incoming call is camped-on or ringing at a busy station. Other distinctive flash rates appear on LEDs associated with a CO/PBX line when that line is on exclusive hold, is being recalled from hold, or has a conference call in progress.

When a line/feature button is assigned to a feature, the LED indicates the status of the feature. For example, when the "Message Waiting/Flash" button indicates that a message is waiting for that station.

LEDs are also distinctive LED indicators with certain dedicated feature buttons, such as Spkr, Mic, and Msg. The Spkr LED indicates the on/off status of the speaker or background music. The Mic LED indicates the on/off status of the station's microphone when the station is in Speakerphone mode. The Msg LED indicates there is a message waiting.

An LED associated with the DSS button functions as a busy lamp for the station assigned to the DSS button.

Digital telephones have dual-color LED indicators. Green indicates CO line or intercom buttons you are using. Red indicates use by someone else.

Benefits

Provides quick status of a line or feature by looking at the LED.

Distinctive Station Ringing

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Stations in close proximity to one another can be programmed to ring differently. Three different tones are available for incoming CO and DID line calls that are transferred to a station or ring directly to a station.

Benefits

Provides quick recognition of the ringing telephone when the user is away from their desks.

Do Not Disturb (DND)

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

After DND is activated by a station, internal calls and transferred calls do not ring at the station, and voice announcements do not come through. Off-hook Call Announce is also blocked. The station user can still place outgoing calls, however.

Incoming internal and CO line calls to stations in DND do not ring the station but the DN flashes. Incoming CO line callers hear ringing until forwarded or answered by another station. Also, if a station is not in DND when an incoming internal and CO line call rings the station, the DND button can be pressed during ringing to turn off the ringing at the station, and the caller continues to hear ringing until forwarded or answered by another station.

If an internal call is placed to a station that is in the DND mode, and all the appearances of the station's PDN are in-use, the caller hears a fast busy tone. DND can be overridden by any station that has the DND Override feature or the Alert Signal button assigned to the DND telephone. Incoming CO line callers hears busy tone, unless forwarded or recalled to another station.

If a station is in the DND mode and if the station's PDN appears on another station as an SDN, the callers ring the secondary DNs providing the SDN appearance is idle and the telephone having the secondary DN is not in DND. The caller receives ring back tone. If all stations having a particular DN (PDN, PhDN, or SDN) are in the DND mode, internal callers receive fast busy tone when calling the DN.

DND can be assigned selectively on a station-by-station basis. DND can only be activated by electronic telephone or digital telephone stations, not by standard single-line telephones.

Benefits

Improves employees' time management and productivity by dedicating uninterrupted blocks of time to projects or meetings.

Do Not Disturb (DND) Override

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

After dialing an internal station and receiving a DND signal, a caller with the DND Override feature can dial an access code. The called station is signaled with a tone burst, indicating that a call is waiting. If the called party has an LCD phone, the number of the calling station is displayed.

This feature can be assigned on a station-by-station basis.

Benefits

Provides convenience and efficient calling by enabling selected users access to stations which are in DND. A priority message or announcement is given about important callers or guests.

Dial Pulse/DTMF Mode Change

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

If the Tone button has been assigned to a station, that station user can change the outpulsing mode on the CO/PBX line in use from dial pulse to DTMF with the touch of a feature button.

Benefits

Enables users to outpulse DTMF tones at any time. This is especially useful for the remote operation of equipment that requires DTMF tones for operation, such as answering machines, bank-by-telephone systems, dictation machines, and voice mail systems.

With some other electronic key systems, DTMF tones are generated by the Key Service Unit (KSU) only while an external number is being outpulsed. After that, the tone generator is no longer engaged, and the system simply “passes through” the electronic pulses generated by the user’s dial pad. Since these electronic pulses are neither rotary nor DTMF, the user is unable to remotely operate any systems requiring DTMF tones.

The Tone button on Strata systems enables the user to tell the system to switch from rotary outpulse to DTMF tone outpulse when required. It also enables users who are in a location served by a rotary-only CO to generate DTMF tones for the remote operation of answering machines and other devices.

Exclusive Hold

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Exclusive Hold enables a station user to put a call on hold so that the call can be picked up at that station only or at another station using Directed Call Pickup. No other station can pick up the call by simply pressing the DN or the Line button . A distinctive LED flashes indicating that the line is on Exclusive Hold.

In order for the feature to work, there must be an appearance of the CO line or DN on the station activating Exclusive Hold. To activate, the user presses the Hold button twice. Each system uses the feature as follows:

- **DK14** – if a DN receives a call while it is on hold, there is no audible or visual indication that another call is camped onto the DN. This assumes that there are no idle appearances of the DN, which would ring if called while another appearance of the DN is on hold.
- **DK40** – if a DN receives a call while it is on hold, there is no audible or visual indication that another call is camped onto the DN. This assumes that there are no idle appearances of the DN, which would ring if called while another appearance of the DN is on hold.
- **DK424** – if a telephone receives a call of any type and the DN that should receive the call is on hold, the camp-on tone is sent to that telephone. The camp-on tone consists of two muted ring tones three seconds apart.

Benefits

Enhances efficient call handling by providing a way for a station to secure a call on hold. It eliminates any annoyance to a caller caused by being accidentally picked up by another party.

Executive Override

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Executive Override can be selectively assigned to enable a station user to “break into” a conversation of a busy station. Stations with this feature programmed can enter any conversation in the system by dialing an access code or by pressing a feature prompting Soft Key. An optional warning tone signal is heard through the handset which indicates to the conversing parties that another station is about to enter the conversation. After the “break-in,” a three-way conference is in effect until one of the parties hangs up.

This feature can be assigned to any station in the system. The maximum number of simultaneous Executive Override calls is the same as the number of simultaneous conferences enabled.

Executive Override to any station can be blocked selectively in system programming providing security for modem (data) calls, voice mail calls, fax machine calls, etc.

Benefits

Enables selected stations to access a busy station for an emergency or a high-priority message.

Flash Button

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

The Flash button serves one of two purposes:

- Disconnect a line and get CO dial tone again

  If the Flash button is pressed when a station is connected to an outside loop start line, a “flash” signal is sent to the CO that is long enough to disconnect the line and get CO dial tone again.

- Operate features on a PBX or Centrex

  If the Flash button is pressed when a station is connected to a PBX, the station can use the features on the PBX or Centrex.

Different flash times are usually required for each purpose. If the flash is programmed with one value only, it can perform only one of these two functions, but not both.

Benefits

Enables the user to disconnect the line and get CO dial tone again on the same CO line with one touch of a button. When a station user is making a series of CO calls or is redialing a busy number, it is inconvenient to have to press the hookswitch, release it, and access a CO line again.

When the system is installed behind a PBX, users can access PBX features that require a "flash" to operate, enabling stations to function more fully as a part of the PBX, and to take advantage of the PBX features.

Handsfree Answerback on Intercom

System Availability

Standard on Strata DK14, DK40, and DK424, programmable on all digital and electronic telephones.

Description

When a voice-announced internal DN call comes into a digital or electronic telephone, users can answer without lifting the handset. All Toshiba digital key telephones are equipped with either Handsfree Answerback or a full speakerphone.

The Handsfree Answerback feature can be enabled or blocked on a station-by-station basis. If enabled, a station user can answer a voice call without lifting the handset by simply speaking in the direction of the phone. If the call is a tone call, the user must first press the Spkr button and then begin to talk.

The Microphn Cut-off button can be assigned to a digital telephone and used to disable the Handsfree Answerback feature to ensure private office conversation.

The Cordless DKT-2004-CT and standard telephones are not compatible with this feature.

Benefits

Provides convenience, efficient calling, and increased productivity. People who are engaged in "hands-on" work, such as engineers, architects, designers, and PC users, can carry on short conversations without having to pick up the handset.

Hearing-aid Compatible

System Availability

Standard on Toshiba digital key telephones that are hearing-aid compatible.

Description

All Toshiba digital key telephones are hearing-aid compatible and do not interfere with the operation of a hearing device.

The Federal Communications Commission (FCC) requires that telephones in certain locations are hearing-aid compatible. For example, emergency phones, hotel room phones, and phones in lobbies must be hearing-aid compatible.

Benefits

Provides use with hearing aid devices. Customers who install the Toshiba digital key telephones are in compliance with FCC regulations.

LCD - Alphanumeric Messaging

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

If a station is equipped with a 20-button LCD telephone, system messages and personal messages can be displayed on the 32-character LCD. Forty system messages can be created, each of which can be up to thirty-two characters long. System messages can be used by all LCD telephones. For example, a system message might be: “Out to lunch,” or “Back at _____.”

A specific number of LCD stations can also create up to 10 personal messages. Each DK system had its own maximum number which are:

- **DK14** – 8 stations
- **DK40** (RCTUA) – 16 stations
- **DK424**:
  - RCTUA – 16 stations
  - RCTUBA/BB – 32 stations
  - RCTUC/D and RCTUE/F – 96 stations

Stations that are enabled for personal messages are also enabled for the personal speed dial memo feature.

System and personal messages are used with the following features:

- Busy Station Messaging
- Called Station Messaging
- Calling Station Messaging
- Remote/Group Station Messaging

- Timed Reminders

Note Busy Station Messaging and Called Station Messaging are not available when using feature prompting Soft Key operation.

Benefits

Enables station users to leave quick messages for people they call as well as for people who call them. It saves time by eliminating the need to walk to another office to leave a note or give a message to a secretary or Attendant.

LCD - Automatic Callback Number Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

A station user makes an internal call and finds the called station is busy or in DND mode. By dialing a code, the caller activates the Automatic Callback feature. When the called station is free, the system rings the caller with a tone. When the caller answers, the system automatically rings the called party again, and display the station number of the called party.

This feature is not compatible with Call Forward-Busy. If Call Forward is required, use Call Forward-No Answer.

Benefits

Sometimes the called station is busy for a long time. If the calling station user forgets who they called and activated the Automatic Callback feature, the LCD displays the station directory number of whom they are calling.

LCD - Busy Lamp Field Indication

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

The LCD indicates the status of all telephones in the system. Each 16-character LCD line displays the status of 10 stations. Figure 6 shows the two LCD lines that can display 20 stations or port group numbers at a time.

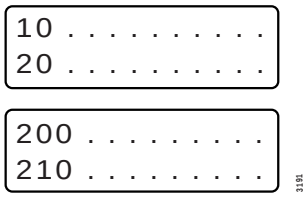


Figure 6 Station/port Group Numbers

The DK14 or DK40 has two-digit internal DNs (shown as the top LCD in Figure 6, and DK424 has three-digit internal DNs (shown as the bottom LCD in Figure 6).

On DK14 and DK40 systems, the “10” stands for group 10, and each dot following represents a station number–10, 11, 12, 13, 14, and so on. Likewise, the “20” stands for station group 20, and each dot following represents the station numbers–20, 21, 22, 23, 24, and so on.

On DK424 systems, stations are usually numbered from 200-439. On the BLF, the first Primary Directory Number PDN of 210 is shown as 0210, and each dot following represents a four-digit station number that starts with “2”–201, 202, 203, 204, and so on. Likewise, primary 0 210 is shown as 0210, and each dot following represents the station numbers 211, 212, 213, 214, and so on.

If there are more than 20 stations in the continued system, other station numbers can be displayed by pressing the Page button. Figure 7 shows the station numbering when the Page button is pressed once.

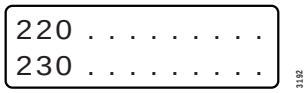


Figure 7 Display of Stations using Page

Figure 8 shows more stations when the Page button is pressed again.

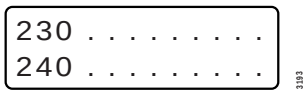


Figure 8 Using the Page Button

When a station is on-hook (free), a dot appears in the location of the station number. If a station becomes busy, the last number of that station replaces the dot.

Figure 9 shows what the LCD displays if stations 20, 24, and 37 are busy (DK14 or DK40).

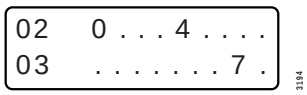


Figure 9 Busy Stations

When BLF is activated, no other LCD features are displayed.

Benefits

The BLF feature on the LCD telephone enables the customer to have as many Busy Lamp Fields as needed in the business without the expense of additional Key Service Unit (KSU) hardware or extra station equipment.

LCD - Busy Station Messaging

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

When one LCD station calls another and the called station is busy, the caller can send a pre-programmed LCD message (system or personal) to the busy station. A tone is heard at the called station and the message appears on the called station's LCD.

The busy station can respond with another pre-programmed message which appears on the caller's LCD. The two stations can exchange messages back and forth, creating an interactive silent "conversation."

See "LCD - Alphanumeric Messaging" for a general description of Alphanumeric Messaging.

Note Busy Station Messaging and Called Station Messaging are not available when using feature prompting Soft Key operation.

Benefits

Enables silent communication with an LCD station user who is engaged in another telephone conversation. The caller can send a message without creating background conversation (as would be the case with Off-hook Call Announce). Busy Station Messaging also ensures the privacy of the message since it can not be seen by the distant party.

LCD - Call Duration Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

When an LCD station user is on an outgoing or incoming CO line call, the LCD displays the elapsed time of a call. Call duration may be toggled with time and date using the Page button when not in feature prompting Soft Key mode.

Benefits

Provides accurate call duration information. This is useful in applications where outside parties are billed for professional services which include telephone consultation. It also makes station users aware of how long they have been on long distance calls. This makes them more conscious of controlling telephone costs.

LCD - Call Forward Source/Destination Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

When call forwarding is set at your telephone, all of your calls are forwarded to the destination you selected. The LCD displays the DN to which your calls are forwarded. It also shows the type of call forwarding set, which can be Call Foward Busy, Call Forward Busy/No Answer, etc.

When you call a DN, if that station is forwarded to another, your LCD display changes to the DN to which your call is being forwarded.

When an internal call is forwarded to your telephone from another station, both the calling DN and the number of the station called is displayed.

The LCD displays the “forwarded from” DN and the “forwarded to” DN if more than one DN is forwarded, a “+” sign displays, the user can press the Scroll button to scan all DNs that have Call Forward set on his/her telephone.

Benefits

Internal callers can see their call’s destination and the origin of calls received.

LCD - Calling/Called Number Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

When an idle LCD station user receives an internal call, the LCD displays the PDN of the station that is calling, even if the call is made from a PhDN. When the user places an internal call, the LCD displays the number of the station that was dialed by the user. For incoming or outgoing CO line calls, the LCD displays the CO line in use. If user name is set, it displays in place of the station number.

Benefits

Called station users know which station is calling them on internal calls. When making internal calls, they can see who they are calling in case they are momentarily distracted. Knowing the CO line an incoming call is using is useful in paging applications.

LCD - Called Station Messaging

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

An LCD telephone user can leave his or her station number and a message indication at another LCD telephone. When the called party accesses the message, the complete LCD message automatically appears on the LCD.

See “LCD - Alphanumeric Messaging” for a general description of Alphanumeric Messaging.

Note Called Station Messaging and Busy Station Messaging are not available when using feature prompting Soft Key operation.

Benefits

Enables users to leave private messages at another LCD telephone.

LCD - Calling Station Messaging

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

An LCD telephone user can set a message on his or her telephone. Whenever another LCD user calls that station, the pre-selected message is displayed on the LCD of the calling station.

See "LCD - Alphanumeric Messaging" for a general description of Alphanumeric Messaging.

Note Calling Station Messaging can be used when using feature prompting Soft Key operation.

Benefits

Enables users to leave information for other LCD callers about where they can be reached or when they will return. It eliminates the need for callers to disturb a secretary or Attendant to find out where someone is, how to reach them, or when they will be back.

LCD - Clock/Calendar Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

The date and time are continuously displayed when the LCD station is idle. Date and time can be adjusted on a system-wide basis from station port 00 for DK14/DK40 and station port 000 for DK424 or the Attendant Console. The clock/calendar can be alternated with call duration on the display during a CO line call by pressing the Page button when not in feature prompting Soft Key mode.

Benefits

This provides convenience to the user. They can see both the date and time at a glance.

LCD - CO Line Identification

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

Each CO line can be identified by a 16-character name. When a user with an LCD telephone selects a CO line or receives a CO line call, the name of the CO line is displayed instead of the number. Names are assigned to the CO lines in system programming. DNIS and ANI displays have priority over CO line ID displays.

Benefits

Provides the convenience of being able to quickly verify that they are using the appropriate CO line for the current call.

When used in conjunction with the Least Cost Routing feature, the CO Line Identification feature lets the LCD user know what type of line is being used for the call. If the user sees that the call is being routed on an expensive route and the call is not urgent, he or she can choose to place it at another time. This can result in cost savings to the customer.

When used in conjunction with the Pooled Line button feature, CO Line Identification helps users identify the specific line they are using.

LCD - Dialed Number Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

When an LCD station places a call on a CO line, the LCD displays the digits dialed. The display automatically changes from dialed number to elapsed time after a programmed period of time (system-wide choice: either 15 seconds or one minute).

Benefits

Provides verification of a dialed telephone number, so the user can see if they have misdialed. They can hang up and dial again before the party answers. If they are calling long distance, this can save money as well as aggravation.

LCD - Feature Prompting with Soft Key Operation

System Availability

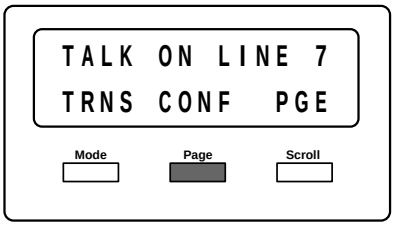
Standard on Strata DK14, DK40, and DK424 systems with digital LCD telephones.

Description

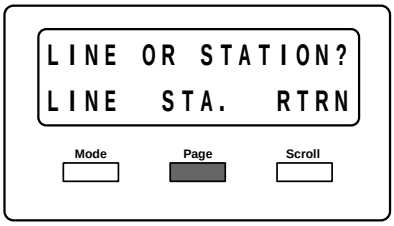
Feature access is made easier with feature prompting instructions appearing on the LCD. Station users do not have to use or remember access codes or operational sequences to access commonly used features. While on a call or using a ringing phone, users can access these features by pressing one of the Soft Keys that correspond to labels displayed on the LCD. Some displays prompt users to dial a station or telephone number. As a call progresses, the labels change to provide the most logical options enabled by the user's class of service.

The example below shows a typical sequence of Soft Key LCD prompts which display if Soft Keys are enabled while you are using the Conference feature. Gray is used to indicate which button to push in each step of the Conferencing sequence.

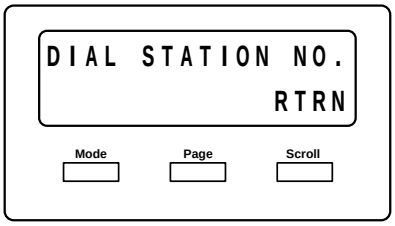
1. While talking on a CO line, the Soft Keys **TRNS**, **CONF**, and **PGE** appear:



2. After pressing the button under **CONF**, the following display appears. In this example, you would press the **STA**. Soft Key to conference to another station.



3. The LCD prompts you to dial the station number with which you wish to conference. Pressing the Soft Key, **RTRN,** cancels the conference operation and returns you to the display in Step 1.



Station users can still use access codes, and fixed and flexible feature buttons, instead of the Prompting/Soft Key mode, to access features. The Prompting/Soft Key feature can be turned on and off with an access code also. When Soft Key prompting is turned off, the buttons otherwise used as Soft Keys function as Mode, Page, and Scroll while in the idle state or when on a call.

Benefits

Features are much easier to use. This makes call processing quicker and more efficient. Customers can use sophisticated features without being intimidated by seemingly complex procedures. Provides a user-friendly initial installation for the occasional feature user who forgets how to make a conference call or is afraid of dropping a call during one.

LCD - Message Waiting Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

When an LCD station user activates message waiting at another LCD station, the calling LCD shows the DN of the station at which the message was left. When an LCD station user receives a message waiting signal, the display shows up to four DNs that left messages.

The messages are scrolled, right to left, by pressing the Scroll button. The fourth “message” is always reserved for a message from the message center. This means that a maximum of three stations other than the message center can leave a message on an LCD. A “V” indicates a message from voice mail. An “M” indicates a silent LCD message.

The station DNs indicating message waiting activations that can be displayed on an LCD phone depends on the length of the station DNs. Up to eight LCD characters can be used for all of the station DNs. Therefore, if station DNs are two digits long, up to four station DNs can be displayed.

Benefits

Improves interoffice communications. The station user readily sees that they have messages because the LED is lit. The LCD also displays the message information.

LCD - Recalling Station Identification

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

If a transferred call goes unanswered, it recalls the station that originated the transfer, displaying both the CO line number and the station from which it is recalling.

In the DK40 and DK424 systems, if a Tie line transferred call goes unanswered, it recalls the station that originates the transfer, displaying the line number, CO line number, and the called station DN.

Benefits

Notifies the recalled station user that the call is coming back. Knowing the station and line number enables them to answer appropriately, and either transfer the call elsewhere, or provide any required special handling.

LCD - Remote/Group Station Messaging

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

Remote/Group Station Messaging enables any station to set a Called Station Message for another station or group of stations. See "LCD - Alphanumeric Messaging" for a general description of Alphanumeric Messaging.

Notes

- Calling station messages can be set remotely by one station for another station, but not by one station for a group of stations.
- Remote/Group Station Messaging can be used when using feature prompting Soft Key operation.

Benefits

Saves time because the user can set the same message for an entire group at one time.

LCD - Speed Dial Memo Directory Dialing

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

Station users can program a 12-character name for each of their 40 personal speed dial numbers. These are the same stations that can create personal messages. The number of stations on a Strata system that can have these features are:

DK14	8 stations
DK40	16 stations
DK424 with RCTUA	16 stations
DK424 with RCTUBA/BB	32 stations

DK424 with RCTUC/D or RCTUE/F	96 stations

The station assigned to port 00 on DK14 and DK40 systems, or port 000 for DK424 systems or Attendant Consoles, can program 12-character names for the system speed dial numbers.

The LCD telephone user can scroll through the “memo pad” of names and numbers, including system speed names and numbers. When the desired name and number appears on the LCD, the user can press a CO Line button to automatically dial the number.

Benefits

Provides ease and convenience of always having a speed dial directory at their fingertips. Speed dial numbers are identified by the name of the person or company associated with the number. This ensures that the correct speed dial number is selected, and can eliminate charges for calls placed to a wrong speed dial number.

LCD - Station Identification

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

When the handset is on-hook, the LCD displays the station’s primary directory number as well as the time and date. If a title is programmed for the station, the station user can toggle between the title and the station number by using an access code.

Benefits

The station number is always visible. Guests or employees working in areas other than their usual workstation can conveniently reference their extension if they need to have someone call them. Station identification is also useful for technicians when troubleshooting.

LCD - Timed Reminders

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

LCD telephone users can define up to five separate messages and have each message appear on their LCD at a specific time. When the message appears, the station user hears a muted ring for 30 seconds, or until the handset is lifted or the Mode button is pressed.

The user can program a message to appear just once, or to appear at the same time each day. The number of stations that can have these features are:

DK14	8 stations
DK40	16 stations
DK424 with RCTUA	16 stations
DK424 with RCTUBA/BB	32 stations
DK424 with RCTUC/D or RCTUE/F	96 stations

A variation on this feature is available on all digital telephones even without an LCD. Digital telephone users can program up to five timed “alarm” reminders. At the appointed times, the user gets a 30-second muted ring.

Benefits

Provides a convenient, simple way to remind users of appointments or other responsibilities. It can help eliminate the need to “write notes to oneself,” which often get misplaced on a busy desk.

LCD - User Name/Number Display

System Availability

Standard on Strata DK14, DK40, and DK424 systems with LCD telephones.

Description

Station users with LCD telephones can program a title (name, location, etc.) of up to 16 characters in station memory. When the station is idle, the name displays on the top line of the station’s LCD. The station user has the option of using a simple access code to “toggle” between the title display and the usual station number display.

When the station calls another LCD station, whichever display is on the calling station appears on the bottom line of the called station. When feature prompting Soft Key mode is on, the name of a called station appears on the calling station’s LCD.

Non-LCD stations, including standard telephones, electronic telephones, and voice mail ports, can be programmed to send a name to LCD stations that they call.

Benefits

Called station users know at a glance who is calling, without having to recognize the station directory number.

Message Waiting

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones. Standard on DK40 and DK424 systems using standard telephones and the RSTU2 card. Unavailable on DK14 with standard telephones.

Description

If you call a station and the user does not answer, you can leave a message waiting indication by pressing the Msg button. The Msg LED at the called station flashes for message notification. If an LCD phone is used, message information is also displayed. Voice mail devices can also leave message waiting indications. The called station user can call you back by pressing the Msg button with the flashing LED.

The Message Waiting feature on DK40 and DK424 systems also applies to standard telephones with a message waiting lamp. The standard station user enters an access code to retrieve messages or initiate a callback. A standard telephone with message waiting lamp must be connected to an RSTU2 station card in the Strata DK system. Message waiting features on DK14 systems do not apply to standard telephones.

Up to four Message Waiting indications may be left at a station at one time. One of the indications is reserved for the Message Center set in system programming.

Benefits

Improves interoffice communications because the user readily sees they have messages (LED is lit and flashing). The LCD, if used, also displays message information.

Standard telephone applications are more feasible with Call Waiting lamp activation, especially in voice mail applications. This can be important when selling a DK424 to a customer who wants to reuse a substantial number of existing standard single-line telephones.

With Multiple DNs, up to four flexible buttons function the same as, in addition to, the fixed Msg button LED. These four button LEDs can only appear on the station that owns the PhDNs.

Microphone Control Buttons

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

Digital telephones can be programmed with a Microphn Cut-off button, which turns the microphone inside the telephone on and off while idle.

If a Microphn Cut-off button is assigned on a station, the station user can enable or disable the Handsfree Answerback microphone for that station when the station is in the idle state. This is used for station security and ensures that a private office conversation is not heard when the Handsfree Answerback is enabled. This function also blocks room monitoring.

The operation of the Microphn Cut-off button can be assigned as either auto-on or auto-off in programming. This enables each station user to use the Microphn Cut-off button whichever way is best for them.

When used during a speakerphone conversation, a fixed Mic button disables and enables the station's microphone. This enables the station user to temporarily block the other party from hearing the conversation.

Benefits

Ensures that no intercom callers can hear private office conversations (if the system is programmed for voice signaling) when the caller is using Handsfree Answerback feature. The Microphn Cut-off button disables Handsfree Answerback.

The Mic button is especially helpful when multiple people are talking through the speakerphone to the party on the other end. Using the Mic button, they can confer among themselves while preventing the other party from hearing their conversation.

Modular Handset and Line Cords

System Availability

Standard on all Toshiba digital telephones.

Description

All Toshiba digital key telephones have modular handsets and can connect to the system by standard one or two-pair modular line cords. Handsets and/or cords can be interchanged by the end user as desired. Line cords come in three different lengths; handset cords are available in 6 or 13 feet lengths.

Benefits

Gives the customer the flexibility to use long coil or line cords, as required. Modular cords also simplify maintenance; reducing the time and cost of repair.

Modular Headset Interface

System Availability

Optional on all Toshiba digital key telephones.

Description

Every 10-button and 20-button telephone can be upgraded to provide a modular headset jack and a loud ringing bell interface. An upgrade assembly (HHEU2) is installed inside the phone.

Most standard carbon-type headsets plug into the HHEU2 jack and are compatible with the electronic telephone. Both options may be installed simultaneously. If a 2000-series digital telephone is upgraded with a data interface unit, it can also have the HHEU2 assembly.

Benefits

Simplifies the use of headsets for customers who want them for convenience or productivity.

Off-hook Call Announce (OCA)

System Availability

Speaker OCA is optional on Strata DK14, DK40, and DK424 systems using digital telephones and requires a DVSU in each telephone receiving OCA. Handset OCA is available on digital telephones on DK14, DK40, and DK424 systems (standard feature) and does not require the DVSU.

Description

A station user can send an announcement to a busy digital/electronic telephone. The internal call must be directed to a station's PDN (or PhDN, if it is the PhDN owner). Only the PhDN owner telephone can receive OCA on calls to the PhDN. OCA does not occur when calling SDNs.

OCA uses two different methods of operation, which are handset/headset or speaker mode. It can be set individually for each telephone that receives OCA.

Any telephone may originate OCA using intercom dialing, transfer/conference dialing, or DSS. There are no special requirements to enable a digital, electronic, or conventional

single-line telephone to make OCA calls. The feature is activated automatically or by dialing 2, depending on how the station is programmed.

Stations receiving OCA must be assigned with OCA-receiving capability in system programming and be a proprietary digital/electronic telephone. Standard single-line telephones cannot receive OCA.

The digital telephone only requires standard one-pair cabling.

Handset Mode

The OCA is sent to the called telephone's handset or headset receiver. The OCA called station user, while off-hook and engaged in a conversation, hears an OCA warning tone (optional) and announcement over the handset. The Cordless DKT-2004-CT also receives the warning tone and announcement.

The called station hears the original and the OCA calling party. The called station user responds to the OCA calling party by holding down the Mic button and talking into the telephone handset or headset transmitter. The original outside talking party does not hear the OCA calling party or the station user's response, so this is a more private method of OCA than the speaker OCA mode.

A HS OCA Talkback button can be programmed on a digital telephone feature button to operate with "push-on" and "push-off" mode for each individual telephone that receives OCA. When the OCA button is pressed on, the outside caller hears Music-on-Hold, and the internal parties are in a two-way, dedicated conversation.

This handset method of OCA operation does not require the DVSU in the digital telephone set.

Speaker Mode

The OCA is sent to the called telephone's speaker. The OCA called station user, while off-hook and engaged in a conversation, hears an OCA announcement over the speaker. The called station user can respond to the OCA caller by talking into the telephone microphone. There exists two simultaneous two-way conversations, so the OCA call is heard by other people near by, or by the outside original talking party, depending upon the speaker volume setting.

If the called station is using the speakerphone or the Handsfree Answerback feature, the caller gets a busy signal. If the called station is in Do Not Disturb mode, OCA is blocked.

This method of operation is available on all Strata DK systems, and it requires a DVSU in the digital telephone set receiving OCA.

Note The PC Data Interface (RPCI-DI) cannot be used if speaker mode OCA is installed, or vice versa. The Cordless DKT-2004-CT telephone is not compatible with Speaker OCA.

Benefits

Off-Hook Call Announce ensures that users get important telephone calls. A caller with an important message gets through to the called party, even if the called party is using the telephone. The caller contacts the called party directly rather than through an anonymous "camp-on" tone, which is often ignored.

On-hook Dialing

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

A station user can dial any call without lifting the handset and hear the progress of the call (outpulsing, ringing, busy signal, and intercept announcements) through the speaker. The user must lift the handset in order to converse with the called party unless the telephone is a full speakerphone. On-hook Dialing is available on all digital telephones.

Benefits

Provides convenience and comfort to the station user. Often a station user makes a call, only to get a recording, and a request to "wait for the next available agent." Not wanting to waste time, the user holds the phone with his/her shoulder, to free his hands to do something else. Being able to monitor the call with the handset on-hook eliminates the discomfort of "shoulder hold."

On-hook Dialing also provides monitoring capability without the expense of a full speakerphone.

Personal Computer Interface (RPCI-DI)

System Availability

Optional on Strata DK14, DK40, and DK424 systems with 2000-series digital telephones. Requires the Integrated Personal Computer Interface Unit (RPCI-DI).

Description

Digital telephones that are equipped with an RPCI-DI connect to a PC or ASCII terminal to make data calls to printers, PCs, and other data devices. Users also make voice calls using PC directory dialing software without the need of a modem or an extra outgoing line. The system is programmed with 1~4 security groups and restricts calls between groups. It also supports modem pooling and printer sharing.

These digital telephones are connected to a computer with application software using the Microsoft Telephony Application Programming Interface (TAPI) to provide customized functionality through Computer Telephony Integration (CTI). Any TAPI enabled PC software is compatible with Strata DK systems.

The most common example of this type of application is using the computer for database lookup and pop-up screens containing information on the calling party. Caller ID, Automatic Number Identification (ANI), Dialed Number Identification Service (DNIS), and call processing information can be passed from the digital telephone to the application computer to provide the information necessary for the application's database lookup and pop-up screens. This is especially useful with ACD applications (DK424 only).

See "Computer Telephony Integration (CTI)" for more information.

Benefits

CTI provides an efficient and convenient custom functionality to the user's business telephone system. By combining the two technologies, users gain functionality that is not provided by either the telephone or the computer. Users choose among many TAPI enabled PC software packages that provide custom functions for their specific needs.

Simultaneous voice and data transmission over a single-wire pair eliminates additional wiring requirements and minimizes port usage on the system.

Modem pooling and printer sharing enables multiple users to maximize efficient usage of expensive peripheral devices.

PC keyboard dialing of data or voice calls increases user efficiency. An example is auto dialing by name or initial from directories stored in PCs equipped with inexpensive desk organizer-type software (modem not required).

Security groups help control who is authorized to make outside data calls, which can get expensive if linked to databases which charge for access.

Pooled CO Line Buttons

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

Pooled Line Group buttons enable a group of CO lines to “appear” under one button. Pooled and single appearing line buttons are designed for use with loop and ground start lines, not Tie, DID, DNIS or ANI lines.

A maximum of eight CO line groups can be defined on a system (16 CO line groups on a DK424 with RCTUC/D and RCTUE/F processor). A CO line group can be assigned to up to four Pooled Line Grp buttons on a digital telephone. Multiple appearances of the CO line group can facilitate handling several calls on lines in the same group.

If a station user regularly processes more than one call at a time, it is recommended that the station be assigned more than one Pooled Line Grp button. It is also recommended to separate incoming and outgoing CO lines into separate groups. This prevents the accidental pickup of incoming calls when making outgoing calls.

A CO line group is accessed for an outgoing call by pressing the Pooled Line Grp button, or by using an assigned access code.

Benefits

Saves money for the customer, since the less expensive 10-button telephones can be used instead of 20-button telephones to provide access to the same number of lines. They also offer a “hybrid” type operation enabling the Strata DK to compete more effectively against other hybrids.

Privacy Button

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital and electronic telephones. See “Privacy Release Button” for related information.

Description

If a Strata DK system has been programmed to be non-private, a button is assigned to a station that activates privacy on the CO lines and the intercom for that station. Privacy prevents other stations from breaking in on calls using common CO Line buttons. It does not prevent alternate point answer of transferred calls if the system is set for it. The privacy remains in effect until the button is pressed again, even if the user makes several other calls.

A Privacy button can be assigned to any station on Strata DK. By pressing the Privacy button, the station user prevents Privacy Override. Privacy remains in effect on that station until the user presses the Privacy button again to release privacy.

Please note that privacy features apply to CO lines and CO Line button appearances on telephones used in all Strata DK systems. Privacy does not apply to multiple DN appearances on telephones used in Strata DK systems because multiple DN buttons are always private.

Benefits

Adds flexibility to the system because selected users can make private calls, even when the system is programmed to be non-private. Organizations can use Privacy Override on CO lines for quick conferencing or for training purposes and still enable private, confidential calls.

Privacy Override

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

Privacy Override enables a station user to break into any ongoing CO line call by pressing that CO Line button on the phone. Any number of stations can have the feature. If the system is programmed to be private, this feature overrides the system privacy.

When the overriding station breaks into a call, the conversing parties hear a single tone and a three-way conference is immediately in effect. No periodic warning tones are heard after the optional initial tone.

Note Privacy features apply to CO lines and CO Line button appearances on telephones. Privacy Override does not apply to multiple DN appearances on telephones. Multiple DNs are always private with no Privacy Override allowed.

Benefits

Provides a way to instantly contact any station that is engaged in a CO line conversation to deliver an important message.

Privacy Release Button

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones. See “Privacy Button” for related information.

Description

All Strata DK CO lines are in private mode by default. Individual CO lines are changed to non-private and back to private by pressing the Privacy Release button while the CO line is selected. The telephone automatically reverts back to the private mode (Privacy LED turns OFF) after each non-private call.

A maximum of four parties, including the distant parties on the CO line, participate in a "non-private" call.

Note Privacy features apply to CO lines and CO Line button appearances on telephones. Privacy Release features do not apply to multiple DN appearances on telephones. DN buttons are always private.

Benefits

Users conveniently and easily release the privacy on a CO line when they want to set up a "quick conference."

Private CO Lines

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

All systems are programmed to enable certain CO lines to appear only on one station and can be accessed only by that station. This effectively provides a "private" CO line. If the station is in the Call Forward mode, calls on the private CO line are forwarded.

Benefits

Provides the privacy, prestige, and convenience of a private line to selected employees. Private lines ensure that a CO line is always available to the user. Private lines are also used to help a business manage costs by billing back the full cost of the private line to the user.

Pushbutton Dialing

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

The dialpads on all Toshiba digital key telephones are pushbutton style. Electronic signals generated by the dialpad are neither DTMF nor rotary dial signals. On outgoing calls, the system converts the station signals to DTMF or rotary before they are outpulsed according to the requirements of the CO.

The DTMF receiver provides end-to-end signaling, and is required whenever devices, which send DTMF signals, are connected to standard telephone circuits in the system.

Benefits

Provides ease and convenience of a pushbutton phone regardless of the serving CO.

Release Button

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

A Release button can be programmed on a digital telephone. The user presses the Release button to disconnect an existing call and does not have to press the hookswitch. It puts the telephone into an idle state. For automatic off-hook selection, use the Release/Answer button.

Benefits

Provides convenient, quick and smooth disconnects from calls by eliminating the fumbling with the hookswitch. Users often waste time and become irritated when using the hookswitch to disconnect calls. They press it too quickly to send a clear disconnect signal and have to try several times to actually disconnect.

With one touch of the Relase button, a user can conveniently, quickly and smoothly disconnect from a call. The Release button is especially useful in headset applications.

Release/Answer Button

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

The Release/Answer button provides an efficient way to handle multiple incoming calls. A station user who is talking on a call can release and transfer or disconnect the active call, and automatically answer a new incoming call with Incoming Auto Selection. Calls can be received on the CO Line, Pooled Line, or DN buttons.

This provides convenient release and answer capabilities with the press of one button. The Release/Answer button is especially useful for telephones or Attendant Consoles that must answer calls in heavy traffic situations.

Benefits

Enables the answering of calls quickly and efficiently in heavy traffic applications. This feature enables users to streamline the call handling process with the touch of one button that disconnects or transfers the current call, and answers the next. Operators can process more calls and provide better service to callers.

Remote Retrieval of Held Calls

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Remote Retrieval of Held Calls enables any station user to retrieve a call that has been put on hold by another station by pressing a feature button or dialing an access code.

This feature is particularly useful if the call to be retrieved is held on a CO line that does not appear on the station from which it is retrieved.

If more than one call is on hold at a station, the lowest number CO line is picked up first. Also see “Call Pickup”.

Benefits

Improves call handling by providing complete call retrieval flexibility. A user can easily pick up a call that was held at a different station without having to physically go to that station. Time is saved, and calls are handled promptly.

Repeat Last Number Dialed

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

This feature enables a digital or electronic station to automatically redial the last number dialed from their station by selecting an outgoing line and pressing the Redial button or by dialing an access code. Digital key telephones have a fixed Redial button for automatic redialing of the last number dialed.

Benefits

Ensures accurate and speedy redial of the last number which reduces dialing errors and eliminated the wasted time involved in redialing a number that is busy or not answering.

Ringing Line Preference

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

If an incoming CO, DID, or Tie line is ringing at a station, the station user who has this feature answers the line by simply lifting the handset or pressing the Spkr button. The station user is automatically connected to the line that is ringing, without having to press the specific line button for the call.

Benefits

Enables quick and convenient answering of calls because the user does not have to look at the line buttons or think about which line button to press.

Saved Number Redial

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

A station user with this feature saves a dialed number for redial at a later time by pressing an optional feature button. The number is saved before the called number rings, during a conversation, or after the call has ended.

This feature is independent of the Repeat Last Number Dialed feature and enables the saved number to be redialed at any time by selecting a DN or CO line and pressing the Save button.

The user can make other calls and then redial the saved number. The number is saved until the Save button is used to save another number.

Benefits

Saves a number for redialing at a later more convenient time even if additional calls have been made. The station user saves time because the number does not have to be looked up and redialed. Repeat Last Number Dialed feature cannot be used to redial the number because more calls have been made.

Speed Dial (SD) Button

System Availability

Standard on all Strata DK41, DK40, and DK424 systems with digital and electronic telephones.

Description

Buttons on a digital key telephone can be assigned as Speed Dial (SD) buttons. Each button stores a pre-programmed telephone number, providing “one-touch” dialing for frequently called numbers. Telephone numbers can be up to 20 digits on Strata DK systems.

SD buttons also store feature sequences creating User Programmable Feature Buttons. Refer to the “User Programmable Feature Buttons”. Each SD button that is programmed on a digital telephone reduces by one the number of station automatic dialing numbers available to that station.

Station Speed Dial

Station users store their own personal telephone numbers on Station SD buttons. Each button uses one of the assigned 40 station speed dial number storage locations.

System Speed Dial

A designated station user stores numbers for System SD buttons, which can be assigned to any digital or electronic telephone. For the number of available system speed dial numbers, see “Tandem CO Line Connection (Trunk-to-Trunk)” in the System Features section.

Locked Speed Dial

SD buttons can also be used to store CO/Centrex/PBX feature access codes in system speed dial locations. Those system speed dial codes can then be assigned in system programming to a button on any digital telephone using the Flexible Button Assignment feature. When a SD button is used in this way, it is referred to as a “locked” SD button. The station assigned to port 00 or 000 is the only station that can program or change the numbers programmed for a “locked” SD button providing security and control.

Benefits

Provides instant, one-button access to personal speed dial numbers eliminating dialing errors and saving time used to look up frequently called numbers.

Timed Reminder

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital telephones.

Description

A digital telephone station user can set five separate reminders on his/her station even if the digital telephone has no LCD. The reminder tone sounds at the preset time. The user hear a 30-second muted ring. Each reminder may be set to ring only once, or at the same time daily.

For expanded Timed Reminder capabilities with display information, see “LCD - Timed Reminders”.

Benefits

Provides a convenient, built-in tone reminder system.

Toll Restriction Override Code Revision

System Availability

Standard on Strata DK14, DK40, and DK424 systems.

Description

Two special codes can be defined to override toll restriction. Each code can have up to four digits. Access to these override codes can be assigned to individual employees as required. Any person who knows either code can override toll restriction at any station.

The toll restriction override check method is very sophisticated and makes it almost impossible for anyone to break the override code.

These codes can be changed from any station that is enabled to do so in system programming. They are changed by dialing a special feature code and entering the new override code. This makes it simple for selected executives to change the override codes without having to call the service company.

Benefits

Ensures that certain non-restricted users (such as the executives) can make calls from any telephone in the system and not be subject to the toll restriction on the station used to place the call.

User Programmable Feature Buttons

System Availability

Standard on Strata DK14, DK40, and DK424 systems with digital or electronic telephones.

Description

Enables digital telephone users to program their own flexible buttons to perform sequences of operation. The user uses the station speed dial function to dial features as well as station numbers or outside telephone numbers.

As many as 20 digits can be stored on a button, and fixed feature button functions (such as PDN, Intercom, Conference/Transfer, and Hold) can also be stored. In addition, several features can be linked together. For example, a user can program a button to place the call on hold, access intercom and dial a page access code, so that with one push of a button the user is ready to make an announcement.

In addition to being stored on speed dial buttons, feature sequences can also be stored in speed dial numbers.

Benefits

Enables fast and simple access to features because users don’t have to remember or look up instructions or follow prompting instructions. Multi-step feature operation is stored and activated at the touch of one button.

Individual station users use flexible buttons to tailor their phones to fit their special needs. They can use access codes if they do not have buttons available.

Strata AirLink 3

System Availability

The Strata AirLink Wireless system adds wireless telephone service to new or existing Private Branch Exchanges (PBXs) or key/hybrid telephone systems. The Strata AirLink controller (BSIA) connects to the host telephone system through standard analog station ports. The digital wireless system (future release) interfaces with the Toshiba Strata DK40 and DK424 using its own digital Printed Circuit Board (PCB)—RWIU.

Description

The Strata AirLink wireless systems operate in single building and campus environments in the 1920~1930 MHz bandwidth. This bandwidth is designated by the Federal Communication Commission (FCC) for unlicensed operation in the United States.

The Strata AirLink Analog Wireless system has Base Stations, handsets, Base Station Interface Adapters (BSIAs) or controllers, and the Strata AirLink Manager software. The BSIAs interface with the standard analog telephone PCB (RSTU2) to support up to two Base Stations.

The Strata AirLink Digital Wireless system (future release) has Base Stations and handsets, but interfaces directly to the Strata DK40 and DK424 using its own digital PCB (RWIU) instead of the BSIA. The card functions as a protocol converter between the Base Stations and the telephone system. It has four digital circuits that connect to four Base Stations using the industry standard RJ11 jack. Multiple RWIUs can be installed to increase the capacity.

System Components

Figure 10 shows the analog wireless telephone system connected to a PBX. Analog lines in the PBX connect to the BSIA and provide a signal to the Base Stations. The Base Stations convert the analog signal to an RF signal for transmission to the handsets. The same lines can be connected to wired extensions for users that have both wireless and wired extensions.

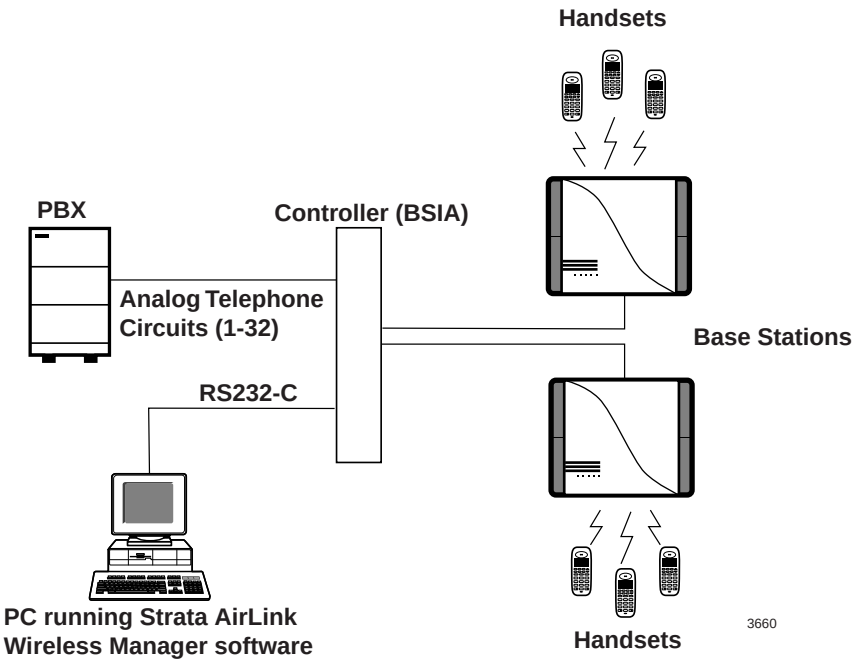


Figure 10 External Analog Wireless System Components

Figure 11 shows the digital wireless system (future release) interfacing to the PBX using the RWIU PCB that supports four Base Stations.

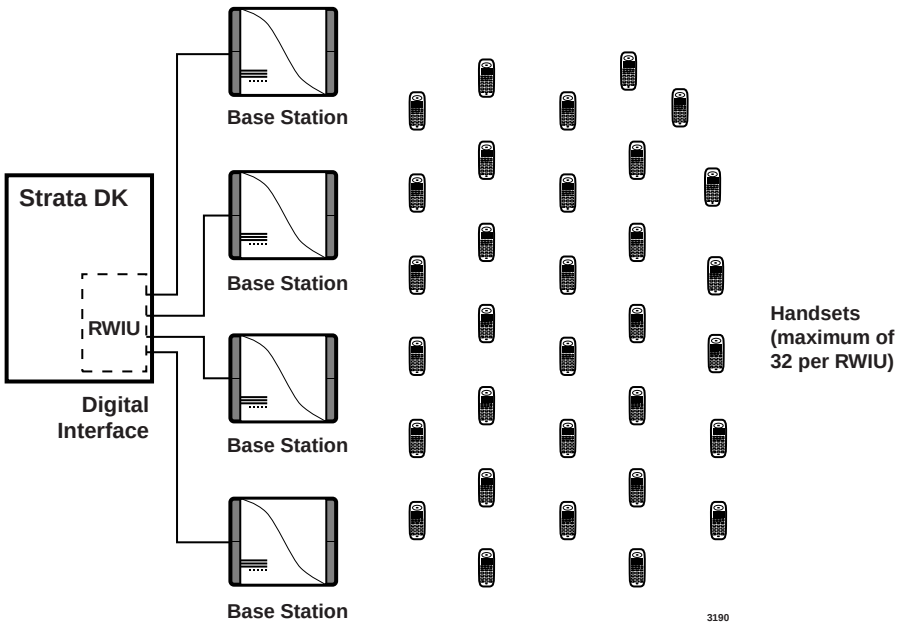


Figure 11 Integrated Digital Wireless System Components

Base Station Interface Adapter (BSIA)

The BSIA interfaces the wireless system to the office telephone system. It supports up to two Base Stations and is designed for wall or rack mounting. Information stored in the BSIA assigns handsets to Base Stations and defines the handset feature operation.

The BSIA sends information about system operation and alarm conditions to a PC using its RS-232-C port and the Strata AirLink Manager software.

Base Stations

Base Stations (shown in Figure 12) have radio transmitters and receivers that handle communication with the handsets.

The Base Stations relay calls between the handsets and other telephones and trunks connected to the office telephone system. LEDs on the Base Station provide diagnostic information for System Administrators.

Each Base Station provides coverage for a particular area and supports eight simultaneous conversations.

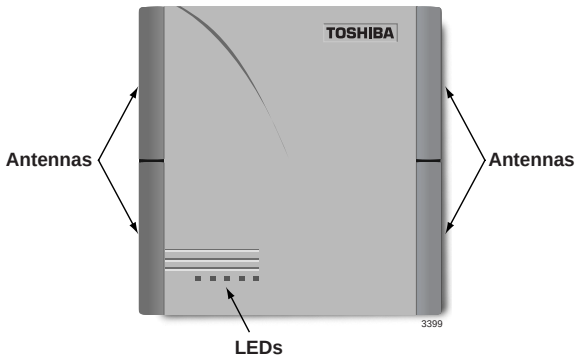


Figure 12 Wireless System Base Station

In typical office environments, each Base Station, using four antennas for the best possible signal reception, has a broadcast range of up to 328 feet and supports an area of 320,000 square feet. To increase traffic capacity without interference, the Base Stations can be placed in the same coverage area (co-location).

Wireless Test Stand

The Strata AirLink Wireless Test Stand easily determines proper Base Station positioning prior to permanent installation. The test stand is mobile, enabling quick identification of the best possible locations for each Base Station. It generates set frequencies for the handset to lock onto and verifies Bit Error Rate (BER) status.

Strata AirLink Manager Software

The Strata AirLink Manager software is a Windows 95 application that includes:

- Easy-to-use Desktop Toolbar for navigation
- Configuration Window for setting system parameters and handset features
- Status Window to view system alarms
- Upgrade icon for immediate upgrades to the BSIA and Base Stations
- Viewable or printable log files
- Online Help

PC Hardware and Software Requirements

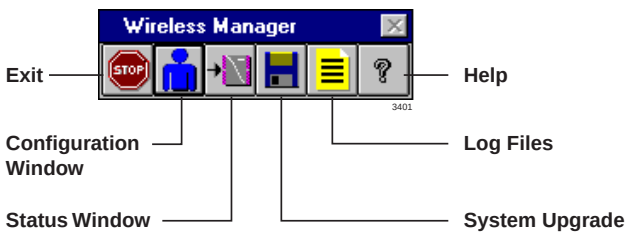
Table 13 lists the minimum hardware and software that your PC must have to use the Strata AirLink Manager software.

Table 13 PC Hardware and Software Requirements

	Minimum	Recommended
Processor	386DX 33 MHz	486DX2 66 MHz
Hard Drive	1.5MB	3MB
RAM	4MB	8MB
Video	VGA	SVGA
Mouse	Any supported by Windows	Same
Floppy Drive	1.44 MB 3.5 inch	Same
Software	Microsoft Windows 3.1/3.11	Windows 95

Desktop Toolbar

When you open the Strata AirLink Manager software from its Program Group, the Desktop Toolbar displays (shown at the right).



Use this toolbar to easily configure the system, access the Status Window, upgrade the system, edit and save log files, access online Help, and exit the program. The toolbar can be placed anywhere on your desktop.

Configuration Window

The Configuration Window accesses the databases that set system parameters, user settings, and feature button sequences. The button sequences enable the handsets to use the office telephone system features.

Status Window

The Status Window, accessed from the Desktop Toolbar, gives you valuable system activity information. It is an excellent troubleshooting tool. You can check the status of Base Stations, lines, and calls. You can also clear critical alarms and make a software version inquiry.

Handsets

The Strata AirLink wireless handset (Figure 13) is small, lightweight, easy to use, and operates the same in the analog or digital wireless system.

Feature access depends on the office telephone system. The System Administrator can provide information specific to the telephone system.

Electronic Serial Numbers (ESNs) are programmed into the handsets at the factory and are automatically configured the first time a call is made. They are unique to each handset.

There is a Liquid Crystal Display (LCD) for alphanumeric information and icons that report handset status. Table 14 briefly describes the functions of the LCD fields, fixed buttons, and icons.

Figure 13 Strata AirLink Wireless Handset

Table 14 LCD Fields, Fixed Buttons, and Icons Descriptions

Handset		Description
LCD Fields	**Idle Message**	Displays an idle message.
	Date	Displays the current date.
	Time/Call Duration	Displays the call duration.
	Icon Display Area	Displays icons that represent different battery and handset conditions.

Table 14 LCD Fields, Fixed Buttons, and Icons Descriptions *(continued)*

Handset		Description
Fixed Buttons	**PWR**	Turns the power ON and OFF.
	FLSH	Performs hookflash functions.
	FCN	Enables features with the use of other buttons; for example, Call Forward, Transfer, Speed Dial, and Conference.
	▲	Increases listening volume and scrolls forward through menu options.
	▼	Decreases listening volume and scrolls backward through menu options.
	ABC	Toggles handset between alpha and numeric modes.
	RCL	Recalls numbers stored in memory.
	STO	Stores Speed Dial numbers/names and the idle message.
	CALL	Places the handset off-hook to enable calling.
	END	Places the handset on-hook and exits from **RCL**, **FCN**, **STO**, and **ABC** modes.
	CLR	Erases one or more digits in the display.
	*↑	Scrolls backwards through the Speed Dial list.
	#↓	Scrolls forward through the Speed Dial list and locks/unlocks the dial pad.
Icons		Off-hook or ringing handset.
		Indicates battery strength—one bar is low and four is high.
		Indicates the currently configured ring volume.
	ABC	Indicates alpha mode—you can use the dial pad to enter letters in the display.
		Indicates signal strength.

Charger Base

The handset comes with a charger base that has two slots (see Figure 14). The rear slot, for a spare battery, automatically starts its discharge function when it detects that discharging is necessary.

The front slot functions as a cradle for the handset and a charger for its battery. It provides rapid charging only.

The unit has LEDs that indicate battery status while charging. The LEDs flash and use the colors red, green, and amber to indicate different conditions.

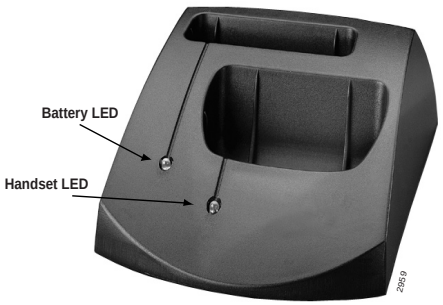


Figure 14 Charger Base

Handset Features

This section describes the specific handset features available to Strata AirLink Wireless handset users. The handset can also access the system and station features provided by the host telephone system.

FCN Feature Access

System Availability

Standard feature of the wireless handset.

Description

Pressing the FCN button with other buttons enables access to office telephone system features, such as Automatic Call Back, Speed Dialing, and Call Forward. Some features require a few steps before you use the FCN button. For example, to establish a conference, you must be in conversation with one party and have another party on hold before you press FCN + 4.

Note Access to system features using the FCN button requires system programming and can vary depending on your office telephone system. Your System Administrator can provide information specific to your telephone system.

Benefits

Provides easy access to certain system features using the handset.

Flash Button

System Availability

Standard feature of the wireless handset.

Description

The ordinary telephone hookswitch is located in the handset cradle of your telephone. The wireless telephone has a special button (FLSH) that flashes the hookswitch. The FLSH button enables a number of features.

Conferencing, Centrex, or behind PBX operation, which are CO line features, require “flashing a CO Line” to enable Centrex/PBX access codes or extension numbers.

Benefits

Convenient way to make a series of CO calls or redial a busy number. The Flash button enables the user to easily disconnect and reconnect to the same CO line with one touch of a button.

When the system is installed behind a PBX, the features that require a “flash” to operate can be easily accessed, enabling stations to function more fully and take advantage of the PBX features.

Lock/Unlock the Dial Pad

System Availability

Standard feature of the wireless handset.

Description

You can lock the handset dial pad to avoid the accidental pressing of buttons. The dial pad automatically unlocks when you receive an incoming call and then relocks when the call ends.

Benefits

Prevents inadvertent calling or making busy of the handset.

Menu Operation

System Availability

Standard feature of the wireless handset.

Description

You can configure some aspects of handset operation using the Liquid Crystal Display (LCD) menu, such as:

- Auto Answer
- Change Idle Message
- Click Volume
- Del All Speed Dial Numbers
- Del Last Number Dialed
- Display Contrast
- Display Test Option

- Ringer Type Option
- Ringer Volume
- Time Format

Benefits

Provides flexibility according to individual user requirements.

Mute

System Availability

Standard feature of the wireless handset.

Description

The handset has two types of mute:

- Voice – the handset microphone temporarily disconnects, so the other party cannot hear you.
- Ring – the ringer temporarily disconnects during an incoming call without affecting the call.

Benefits

Enables the station user to control what the other party hears during conversations (voice mute) or ensures that others are not disturbed in meetings or in the immediate area of the handset (ring mute).

Speed Dial

System Availability

Standard feature of the wireless handset.

Description

Your handset stores 70 speed dial numbers, 10 of which can be dialed by pressing one button. You can also assign memory locations or names. Before you store any numbers or names, you need to know how many locations are available.

You can easily find available locations, search for a number or name, program a pause or “wait.”

Benefits

Saves time when looking up and dialing telephone numbers. It also avoids costly long distance dialing errors.

Volume Adjustment

System Availability

Standard feature of the wireless handset.

Description

The Strata AirLink wireless handset has 13 volume settings that adjust the calling party voice level. To adjust the volume, press the scroll up or down button until you reach the level you want.

Benefits

Sets the volume to individual user requirements.

PC Attendant Console 4

This chapter overviews the PC Attendant Console and includes a description of the hardware requirements, available software screens, operation, and specific console features available to the user.

System Availability

The Strata PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Strata PC Attendant Console combines the DK424 with easy-to-use Microsoft® Windows®. Attendants can process a heavy load of incoming calls quickly and efficiently using the PC Attendant Console. Figure 15 shows the components of the PC Attendant Console.

Figure 15 PC Attendant Console

The console's streamlined functions can be operated by clicking the mouse on screen buttons or using equivalent keys on the keyboard. This enables Attendants to use whichever method is most comfortable for them. The mouse and keyboard can be used together interchangeably.

The monitor displays detailed call information including:

- Call identification
- Calling/called numbers and name indications
- Answer prompting
- Call waiting count
- Hold timer
- Advisory messages and much more

Figure 16 shows the call information fields in the Main Display screen.

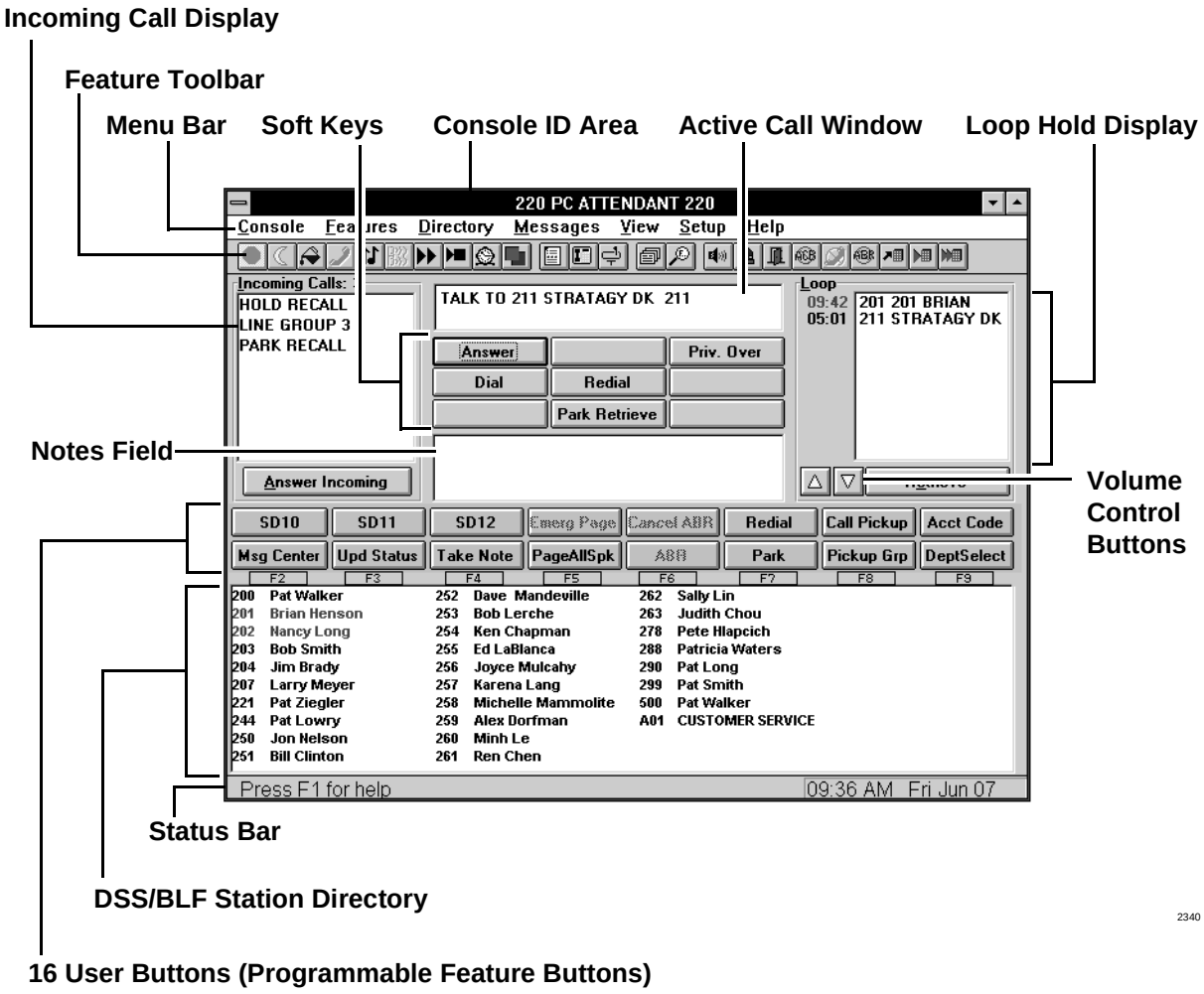


Figure 16 Main Display Screen Layout

The display also provides a name/extension directory, an outgoing Speed Dial directory, and a Busy Lamp Field (BLF), which enables the Attendant to see station status at a glance. Various colors indicate different statuses or conditions, making them more distinguishable to the Attendant. Call progress messages and Soft Key prompts are displayed also, making the PC Attendant Console very easy to use.

Other powerful features include Call Answer Priority and Queuing, Direct Station Selection (DSS), DTMF Tone Signaling from the dialpad, Emergency Calling, flexible programmable buttons, Loop Hold display with timer, and headset/handset operation with volume control.

The PC Attendant Console also enables efficient outgoing calling using DTMF and flash signaling, individual trunk access or trunk group access by programmable button, and system Speed Dial access.

These features make outgoing calls easier and more functional on the PC Attendant Console than on many Attendant Consoles provided by the competition. The features are described in detail later in this section. It also uses many of the station features detailed in the Station Features chapter.

The PC Attendant Console is sold as a kit that includes:

- RATI interface
- RATHC handset/cradle
- Custom keyboard (see Figure 17)
- Toshiba-proprietary software
- User guide

Note The RATU and PC are not included in the kit.

The RATI interface connects to an RATU card in the DK424 system cabinet via a single pair of wires.

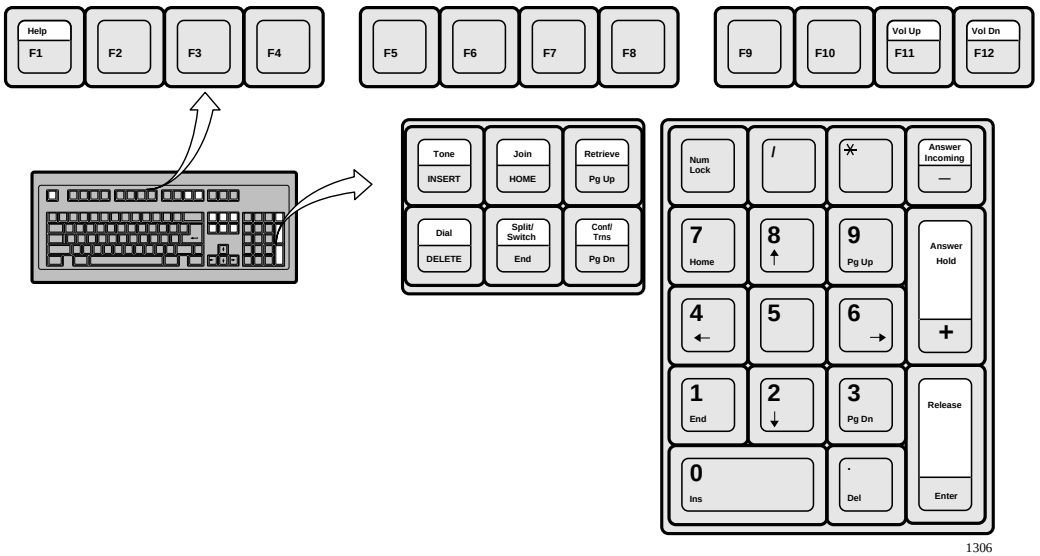


Figure 17 Custom Keyboard Layout

Operation

The Strata PC Attendant Console software runs as an application within Windows on the PC. It is recommended the PC be dedicated to the console function.

Other applications can also run simultaneously on the same PC. The Attendant can toggle from Attendant Console mode and enter some other application. If a call is received while in another application, the PC can automatically switch to Attendant Console mode to handle the incoming call. When incoming traffic is light, the Attendant can quickly and easily toggle back and forth between another application and Attendant Console mode at the touch of a keyboard button.

PC Requirements

The PC is customer supplied and should have the following recommended minimum PC requirements:

- Pentium® processor, 100 MHz
- 16MB RAM
- 200MB drive (PC Attendant Console uses about 5MB)
- 2 COM ports (one for PC Attendant Console and one for general use)
- 1 printer port
- SVGA color monitor
- Mouse
- Windows 95 (recommended) or Windows 3.1
- Windows Graphics Accelerator (recommended)

Windows PC Operation

The Strata PC Attendant Console software runs as a Windows-based application on a PC. The commands operate and look like other Windows applications. It is recommended the PC be dedicated to the console function, but other applications can run simultaneously with the console software.

The PC toggles from Attendant Console mode to other applications. If a call is received while in an application, the PC automatically switches to Attendant Console mode. When calling traffic is light, the Attendant can quickly and easily toggle back and forth between applications and the Attendant Console mode.

Operating in a Windows environment maximizes the use of the computer as a multi-purpose workstation during non-peak traffic periods. The console application is easy to learn and use, because its commands look and operate similar to other Windows applications.

Applications

In DK424 answer position applications, you can offer flexibility by providing a choice that meets the specific customer requirement. Choose between add-on modules, DSS consoles, or Attendant Consoles to best serve their needs. Complemented by ACD, Auto Attendant and Voice Mail, you can offer the most complete call answering solution available today.

Attendant Consoles process calls faster than DSS consoles and add-on modules. Table 15 describes guidelines for choosing which equipment to use.

Table 15 Comparison of Attendant Consoles, DSS Consoles, and Add-on Modules

Use the Attendant Console When:	Use the DSS Console When:	Use the Add-on Module When:
There is a very high volume of incoming call traffic.	The volume of incoming call traffic is moderate.	Smaller departmental answer positions are needed.
Too many stations appear on a DSS console – the directory display is a more efficient tool.	The Attendant needs individual button access to all CO Lines.	20 or 40 DSS/BLF buttons are sufficient.
Multiple Attendants simultaneously share the Call Answering function. Multiple consoles work well together, automatically sharing the load of incoming calls on a call-by-call rotation basis.	Simple BLF display and DSS transfer are the main applications.	A DKT needs more buttons for general feature use.
Many calls of different types (incoming, transfers, recalls, etc.) are received by the Attendant.		Additional station ports may not be available for DSS console connection. Add-on modules share the station port of the attached DKT and do not require their own station port.
Answer prompting is needed to provide the Attendant important information to answer properly, such as multiple product lines, departments, or tenants.		
Features are required which the DSS console does not provide, for example, Load Sharing, Answer Priority, Emergency Calls, Overflow, and Dialing-by-Name.		
A multi-purpose work station is required to provide a high level of answered calls and other processing capabilities in a Windows PC environment.		

PC Attendant Console Features

This section describes the specific console features available to PC Attendant Console users.

Answer Button

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Pressing the Answer button automatically answers any incoming call regardless of the type (incoming CO, internal DN, transferred, recall, etc.). Multiple calls are automatically queued and answered on a first-in, first-out basis, or according to the priority defined by the user with the “Answer Priority” feature.

Benefits

Enables quick and efficient answering of calls by clicking or pressing one button. The Attendant does not have to find and select the ringing line. This greatly streamlines the process and reduces Attendant stress in high-volume applications.

Answer Priority

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Answer Priority enables the Answer button to queue and answer multiple incoming calls in a priority sequence. The priority sequence is programmable except for emergency calls, which are always the highest priority. The program default priority sequence (highest to lowest) is Park Orbit Recall, Transfer Recall, Hold Recall, Transferred to “0” Call, Incoming CO Line call, Internal “Dial 0” Attendant Call, and Internal to Attendant Directory Number call.

Benefits

Ensures that the most important calls are answered first without the Attendant having to decide which call should be answered. This makes it easy for the Attendant and streamlines the process prioritizing all incoming calls.

Answer Prompting

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Answer Prompting by CO Line or Dialed Number Identification Service (DNIS) information makes it easy for the Attendant to answer calls appropriately for different product lines, departments, tenants, etc. The CO line identification or DNIS information causes the ringing console's screen to display a prompted greeting up to 100 characters long, according to the line called or number dialed. Programming DID lines to use DNIS routing enables for personalized answering of DID calls.

Benefits

Answering for multiple tenants, product lines, or departments is easy for the Attendant who only has to look at the screen to see how to greet each caller. This not only makes appropriate answering easy, but provides a professional image to callers.

Attendant Conference Setup

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Attendant Conference Setup enables the Attendant to setup a conference call with up to four members. Conference members can be either another console, stations, or CO lines. The conference can be originated by the Attendant or requested by a station user or outside party.

Benefits

Provides convenience to station users who can request the Attendant to set up a conference call.

Auto Day/Night Mode Switching

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Auto Day/Night Mode Switching enables automatic switching of the DK424 system between Day, Day 2, and Night modes according to the time of day and day of the week. Parameters are programmable by the console Attendant.

This provides automatic mode switching without having to manually press the Night Transfer button.This automatic mode switching feature is only available with a PC Attendant Console installed, and is not a standard system feature of the DK424.

Benefits

Provides automatic switching between day and night modes. No one has to remember to push the Night button to place the system into Night mode at the end of the business day, because the system clock sends the appropriate commands to the DK424 to change the modes.

Auto Dialing

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The PC Attendant Console has a name/number search function that automatically dials the number of the matched name/number when the Auto Dial option is on. If Auto Dial is off or no match is found, the Attendant can still use the directory and press a button to call the party or enter a number to be dialed.

The Attendant can call anyone listed in the directory by typing their name (first, last, or both). A directory listing is displayed and continually updated as characters are entered until a match is found. If several entries in the listing are similar, the use of the up and down arrow keys allow a specific name to be called or have a call transferred to.

Benefits

Facilitates quick and easy call processing, primarily for call transfer. The Attendant can quickly dial a desired party by a name search, making number finding easy.

Busy Lamp Field (BLF)

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The BLF on the screen displays the busy/idle status of stations so the Attendant can see who is busy or idle at a glance. The BLF data is displayed in the directory area of the screen either with or without station users' names. The choice of display options is set by the console Attendant.

Benefits

Enables quick identification of station status (busy and idle) and provides faster service. The Attendant can immediately inform the caller that their party is not available or route the call to another station. It saves the Attendant time by only handling the call once, rather than a second time if it recalls after being transferred to a busy station.

Call Waiting Count

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

This feature displays, on screen, the number of calls in the answer queue. The list is continuously updated for the Attendant.

Benefits

Facilitates fast call processing by activating Call Overflow or notifying someone that an additional Attendant is needed during peak calling periods because it lets the Attendant know when call traffic is getting too heavy for efficient handling.

Color CRT Display

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Console text information is displayed on the monitor screen in full color. Various colors indicate different status of conditions, making them more distinguishable to the Attendant.

Benefits

Makes certain features and status of conditions stand out to the Attendant, because they are in color. Many of the colors are similar to other Windows applications. This makes the console easier to use for Attendants who are familiar with the standard Windows environment.

Dial “0” for Attendant

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Up to four Attendant Consoles can be installed per system, and this feature enables a user to call any available console by simply dialing “0”. The system routes their call to any available Attendant. To call a specific console, dial the console directory number.

Benefits

Enables automatic routing of calls to any available Attendant. Station users who want to reach an Attendant only have to dial “0;” they don’t have to know the DN. In a multiple console

application, they do not have to keep dialing different attendants until they reach one that isn't busy.

Dial Outside Number for Station User

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant can access a CO line and dial an outside destination number for a station user. To perform this operation, the Attendant must be in the talking state with either a station user, an outside caller, or a caller on an incoming Tie trunk.

Benefits

Provides convenience and saves time for station users.

Direct Station Selection (DSS)

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant can click on the station DN on the internal directory screen to perform direct station calling or transfer operation.

Benefits

Provides rapid and easy DSS calling, because the DN and name directory is on-screen. This provides the convenience and functionality of having a DSS module with the Attendant Console.

Directory Display and Dialing

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The directory listing area of the screen can display both names and DNs of internal station users. The Attendant can point and click on a name or DN, or use the keyboard to automatically dial the number. These may be accessed using Name Dialing or Department Dialing.

The directory includes each employee's name and DN. The directory display also includes busy/idle status of each name and/or DN. A scroll bar enables the Attendant to quickly scan all names in the directory listing. This information facilitates quick and easy call processing, primarily the transfer of incoming calls.

Benefits

Enables quick recognition of who is busy or idle and makes it easy to find requested employee names and/or DNs. It facilitates quick and easy call processing, primarily the transfer of incoming calls.

DTMF Tone Signaling from Dial Pad

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant Console can generate DTMF tones from the dial pad to signal external devices such as voice mail, auto attendants, and answering machines on outgoing calls. This makes the Attendant Console efficient to use for both outgoing and incoming calls.

Both the Strata DK424 and the PC Attendant Console work with DTMF or dial pulse CO lines. The Attendant can change the CO line out-dialing signal mode from Dial Pulse to DTMF by clicking or pressing a button.

Benefits

Saves inconvenient use of another station to make outgoing calls by the Attendant. The Attendant can use the console for all types of outgoing calls, including those calls that require tone responses to external devices.

Emergency Calls

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Emergency Calls from internal stations to an Attendant Console always receive the highest answer priority. They have priority over the first in, first out or priority sequence established in programming. Emergency calls are initiated by station users by dialing a special number. They display on the screen in the incoming call area. If the call is placed on hold, the hold time appears in red to highlight this call for easy identification and retrieval.

Benefits

Enables station users an immediate way to get through to the Attendant. This is very important in emergency situations or anytime a station user needs priority access to the Attendant.

Emergency Page

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

An Attendant Console equipped with an assigned Emergency Page button can page the All Call Telephone Page Group. The page sounds over the speakers of all idle telephones in the All Call Page Group, but does not sound over the external paging speakers. An Emergency Page pre-empts an existing page connection.

Benefits

Provides quick and easy access to station paging, either for emergency situations or anytime an announcement needs to be made. This feature also provides more private paging than external speaker paging, since Emergency Page goes only through telephone speakers. This is important if the page desires not to alarm customers or others in the general area.

Employee Profile Information

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

By typing a name (first, last, or both) or a directory number, the console Attendant can display a complete profile for an employee. A special search by department can also be used to direct a caller to the appropriate person available to handle the call. Calls for employees not on-site can have information displayed on how they can be reached, or the Attendant can use the Transfer to Voice Mail feature to allow callers to leave a message for these employees who are not available for call transfer.

Benefits

Provides useful information about employees and assists proper alternate routing of calls. This enables the Attendant to provide better service to callers.

Feature Online Help

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Feature On-Line Help provides feature user instructions at the touch of a button or click of the mouse. This functions the same as other Windows PC applications. On-line help provides information that is more detailed than routine feature prompting Soft Key instructions, but less detailed than the examples and instructions contained in the PC Attendant Console User

Guide. On-line Help is context oriented, providing information for the operation at hand on the console. Help can also be accessed using a table of contents or word search function.

Benefits

Makes the console easy to use by providing a quick and simple way of looking up needed information. Also, the on-line help function of the PC Attendant Console is similar to other Windows applications. This makes the PC Attendant Console easier to use for Attendants familiar with the standard Windows environment.

Feature Prompting with Soft Keys

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Feature prompting with Soft Key operation provides access to various console features. On-screen instructions and Soft Key functions and choices change according to the state of the Attendant Console, making the console easy to use.

Examples:

- Sending a message waiting indication to a station
- Breaking into an ongoing conversation
- Performing a transfer, conference, or voice page

Benefits

Makes call processing quicker and more efficient. Attendants are not intimidated by sophisticated features and can use them simply by following the instructions on the screen.

Flexible Programmable Buttons

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The console has 16 buttons on the display screen that can be programmed by the Attendant with a variety of feature assignments, trunk access, or as Incoming Call (In) buttons.

Benefits

Provides customization by the Attendant. Commonly used functions can be programmed on flexible buttons to provide one-touch access to these features, making the console easy and efficient to use.

Headset Operation

System Availability

Optional PC Attendant Console feature (headset not included with the kit). The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

In addition to the handset, the console can be used with a headset. The headset can be plugged into the Attendant Console Interface Unit (RATI).

Benefits

Provides both comfort and convenience to the Attendant. The Attendant does not end the day with a sore ear. Both hands are free to operate the keyboard and mouse.

Hold Button

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Pressing or clicking the Hold button places the current call on hold. The loop hold display area on screen shows held calls waiting for assistance.

A reminder note can be entered for a call with the name field displayed in the loop hold. This can be used to remind the Attendant who is holding or who they are holding for (see the Reminder Notes feature for more details).

The amount of time each call has been on hold is also displayed. If the call is not answered within a preprogrammed time period, the Attendant is reminded by a ring indicator and the recall information is moved from the loop hold display area to the incoming call display area on the screen.

The Attendant can operate with Auto Hold, which automatically places an existing CO line or internal call on hold (when another call is answered) or the dialing process is started.

Benefits

Provides customized functionality that helps the Attendant know the status of holding calls. The timer display serves as a reminder of calls needing attention, so the Attendant can provide better service to callers.

Hold Timer Display

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Hold Timer Display shows the amount of time each call has been on hold. This information is shown in the loop hold display area on screen. This serves as a reminder for the Attendant, ensuring that the held calls are not be ignored or forgotten. If the call is not answered within a preprogrammed time period, the call is recalled with a ring indication in the incoming call display area on the screen. Also, the color indicates whether the call is on Hard Hold, Consultation Hold, Supervised Hold, or Emergency Call Hold.

Benefits

Serves as a reminder of calls needing attention, so the Attendant provides better service to callers. The recall function provides an automatic reminder so holding callers are not be forgotten.

Incoming Call Identification

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Incoming Call Identification provides selective answering of all categories of calls to the Attendant (internal DN, transferred, park recall, hold recall, transfer recall, emergency, Attendant, and incoming CO for all 16 CO line groups). Selecting and answering the desired ringing call in the incoming call display area, instead of using the Answer button to answer the next call in order, enables the Attendant to specifically answer a certain type of call and override the FIFO or priority order established by the Answer button and the Answer Priority feature.

Benefits

Provides better service to priority calls or calls that have been waiting a long time, because the Attendant has total control of call handling. The Attendant decides which call to answer and selects by type.

Incoming Call Statistics

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Incoming call statistics are collected by the PC on incoming calls received at the console. Information included is number of calls received per hour, total talk time (in seconds) per hour, total waiting time (in seconds) in queue per hour, and maximum number of calls in queue each 15-minute interval. The data is stored on disk for display or printing. This information can be displayed on the console screen or sent to an attached printer from selections available on the Menu bar.

The call statistics information can be displayed or printed for any of the following time periods: hourly, daily, weekly, or monthly (up to 2 months data stored). The top of the display/report indicates the time frame used to compile the information.

This built-in capability is only designed to collect a few basic statistics. A separate, more complete Call Accounting application would be required for more extensive data collection and reporting. For example, the console can send the data to a separate call accounting application also resident on the same computer.

If the PC is running a separate call accounting application, in addition to the Attendant Console application, the PC can temporarily exit Attendant Console mode and enter Call Accounting mode using the Windows Alt-Tab command. The Attendant can easily toggle back and forth between the call accounting application and the Attendant Console application using Alt-Tab on the keyboard. If a call rings to the console when the PC is in Call Accounting display mode, an interrupt capability may or may not immediately switch back to console mode to answer the call, depending upon the setting of the Auto Incoming option.

Benefits

Evaluates traffic patterns and call answering requirements, so a more expensive call accounting package is not required for simple statistical gathering applications.

Interposition Call Transfer

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Interposition Call Transfer enables calls to be transferred from one Attendant Console to another, as well as transferring a call to a station.

Benefits

Enables one console to transfer a call to another console with a simple and streamlined procedure.

Join Button

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Join button enables the Attendant to connect an existing call with either an outside held party or an internal station. Rather than transferring the call, the Attendant presses the Join button to create a temporary conference from which the Attendant can then drop out.

Benefits

Ensures that two parties connect before dropping out of the conversation. This is sometimes more appropriate than using transfer, since the Attendant can provide more personalized service.

Keyboard or Mouse Operation

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Keyboard or mouse operation is available. Most functions of the PC Attendant Console can be operated either from clicking the mouse on screen buttons or pressing equivalent buttons on the keyboard. This enables Attendants to use whichever method is easiest for them. The mouse and keyboard may be used together interchangeably.

Benefits

Enables the most comfortable use of each individual Attendant Console – either by using the keyboard or the mouse for operations. Most Attendants use a combination of both the keyboard and the mouse for optimum efficiency and ease of use.

Load Sharing

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

In a multiple console application, Load Sharing distributes incoming calls among available Attendant Consoles (up to four) on a call by call rotation basis. This is better than ringing all calls to all consoles. Individual Attendants only get their fair share of calls and answer only those ringing at their console. The Attendants also have other features such as Call Pickup, overflow, etc. to handle calls during heavy traffic periods.

Benefits

Provides the most efficient way of handling calls among multiple consoles by enabling an even distribution of calls. Along with other features, it provides methods of handling calls whenever an Attendant is tied up with a long call.

Loop Hold Display

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The loop hold display area on screen shows held calls waiting for assistance, either on a supervised or released loop basis. Supervised loop operation retains a transferred call in the loop display area, enabling the Attendant to visibly monitor it, or re-enter the conversation. Release loop operation briefly displays the held call in the loop display area, while it is being transferred and until it is answered by the station receiving the transferred call, at which time it disappears from the loop hold display area.

A reminder note can be entered for a call with the name field displayed in the Loop Hold. This can be used to remind the Attendant who is holding or who they are holding for (see the Reminder Notes feature for more details).

The amount of time each call has been on hold is also displayed in the loop hold area. If the call is not answered within a preprogrammed time period, the call is recalled with a ring indicator, and the recall information is shown in the incoming call display area on the screen.

Benefits

Provides the status of holding calls to the Attendant. The timer display serves as a reminder of calls needing attention, so the Attendant can provide better service to callers. The recall function provides an automatic reminder so the holding callers are not forgotten.

Message Center

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant can type a message for anyone entered into the directory by entering the message database from the keyboard. When a message is entered, it automatically sets the message light at the receiving message station. The station user can press the Msg button to call the Attendant that has the message. If the station is an LCD telephone, the message to call the Attendant is displayed on the LCD. The Attendant can display a list of messages for the caller and read them back.

Messages can be taken for any person entered into the directory of the Attendant Console. By entering important guests into the directory, messages can be taken for visitors as well as employees.

Benefits

Provides a message center capability in applications not using voice mail, or situations in which messages are not generated from a telephone call. Specialized message centers for guests can be set up for functions such as training seminars, client visitations, etc.

Multitasking

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Strata PC Attendant Console software runs as a Windows application on a personal computer. It is recommended that the PC be dedicated to the console function to maximize PC response time and efficiency for the console function. However, other applications can also run simultaneously on the same PC. This enables both the console Attendant and the PC to multi-task between the call answering function and other PC applications.

The PC can toggle from Attendant Console mode to some other application, and back to the console mode. If a call is received while in another application, the PC can immediately switch back to the Attendant Console mode to handle the ringing call. This can be done either

automatically with the Auto Activate option set to on or manually if it is set to off. Thus, when calling traffic is light, the Attendant can quickly and easily toggle back and forth between the Attendant Console mode and another application, automatically or at the touch of a button on the keyboard.

Benefits

Makes the PC a multi-purpose workstation during non-peak traffic periods. The Attendant uses time more efficiently between calls and maximizes the use of the computer.

Name or Number Dialing

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant can call anyone listed in the dial directory by typing their name (first, last, or both). This can be internal stations or external numbers. The dial directory searches the listing as characters are entered until a match is found. If several entries in the listing are similar, the use of the Up and Down arrow keys enable a call or transfer to a specific name.

Name dialing can also be used for finding departments as well as individuals. Many incoming calls are not for a specific person, but for a departmental feature or department. Callers requesting help by function may not know the name of an employee to ask for in the department they are requesting, i.e. “May I speak to someone in Customer Service.” Dialing by function or department enables the Attendant to display a list of employee names and directory numbers, sorted by their function or department, and select the person or group (ACD or Distributed Hunt) that can best handle the call.

Benefits

Facilitates efficiency because the Attendant has internal and external numbers listed in a directory screen, or can use the name/number lookup and speed dialing. It’s as easy as pressing a button or clicking the mouse. Time waste and errors can be easily avoided.

Overflow

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Overflow mode re-routes calls, which have been waiting in the ringing queue too long, to another console, station, or answering device as assigned in programming. This feature is controlled by the overflow timer and can be manually activated by the Attendant during high-traffic conditions via the Overflow button.

Benefits

Provides backup for the Attendant during busy periods when it is difficult to keep up with heavy incoming call traffic. Overflow serves as another efficient way of providing call coverage.

Override

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

There are three ways to override calls:

- Busy Override lets the Attendant send a tone to a busy station to signal a call is waiting.
- Do Not Disturb (DND) Override lets the Attendant send a tone to an idle station in the DND mode to indicate that an important call is coming in.
- Executive Override lets the Attendant enter an established conversation.

Each of these can be enabled or disabled by programming.

Benefits

Enables the Attendant to access stations for emergency messages or high-priority calls.

Park and Page

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant can combine the Park and Page functions into one quick and easy function. The Park and Page feature enables the Attendant to park a call in one of the Park Orbits, enter a Page Zone or Group access code if desired, and announce the page. The console can be connected to a predesignated External Paging circuit, a Telephone Page group, or both. See Call Park in the Station Features chapter of this manual for more details on this feature.

Benefits

Provides quick and easy access to station paging by combining two functions into one. This saves the Attendant valuable time in high-traffic applications.

Position Busy

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Position Busy feature makes it easy to place the console in unattended mode or re-enter the normal call processing mode. When in Position Busy mode, calls to the Attendant Console are routed to other attendants on the system.

This feature is intended for use only when more than one Attendant Console shares the load of incoming calls. In this mode, new calls are sent to other consoles. Held and unanswered transferred calls continue to recall to the console that processed them. When the last console in the Attendant group is placed in Position Busy mode, the entire group is considered unattended, and consoles must set Call Forward and/or Night Transfer to cause Attendant Console calls to be re-routed to another destination.

Benefits

Makes it easy for Attendants to leave for breaks at the touch or click of one button. In addition to procedural efficiency, call coverage provides smooth continuation of call answering by other consoles. Returning to service is just as easy, by pressing or clicking the Position Busy button.

Release Button

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant can click or press the Release button to release the console from any connection by disconnecting or transferring the call and placing the console in the idle state.

Benefits

Increases speed and efficiency by enabling the console Attendant to complete the call transfer and go idle with the click or press of one button.

Reminder Notes

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant has the option of entering a reminder note for an incoming call that is about to be transferred or placed on hold. The note is typically the name of the calling and/or called party. This note is displayed on hold calls in the Loop Hold display area, and in the message window whenever the call recalls to the console.

The reminder note is typically used to remind the Attendant who is holding or who they are holding for if the Attendant has to handle the call a second time. This secondary handling usually results from a transferred call recalling to the Attendant, or if the call has been on hold waiting for a page pickup and recalls to the Attendant. This makes it quick and easy to offer alternative call processing without having to start over with the caller.

Benefits

Enables a more personalized response to the caller when they have been put on hold, parked, or transferred. The Attendant can be reminded of who is calling and from whom they are holding when the call recalls to the Attendant. This saves time for the Attendant, because they don't have to ask a second time for whom the call is. It also gives the caller better service.

Split/Switch Button

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Attendant can alternate between source and destination parties on hold, by clicking or pressing the Split/Switch button, while keeping the two parties separate on the console. This can only be performed when the console is involved in a three-way conference with a source and destination party. The parties can either be connected on outside lines only, on directory number DN lines only, or on a combination of outside and internal lines. The Split/Switch button does not function on four-party conference calls.

Benefits

Makes it quick and easy for the Attendant to talk to either of the other two parties. This is especially useful when the Attendant alternates between parties.

Speed Dial Calling

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Through the use of an "active keyboard," the Attendant can access speed dial names or speed dial location numbers when dialing or transferring a call. When the Attendant types in a speed dial name or location number, the speed dial information is displayed for quick access. Up to 40 personal numbers and 100 (800 with RCTUE/F) system numbers can be stored in the speed dial list.

The Attendant enters the names for the speed dial numbers on the console. Names entered from the console can be different from those entered in the system records, so the Attendant can customize the names list for easy use.

Benefits

Provides a more efficient method of making calls by using the name/number lookup and speed dialing. It's as easy as pressing a button or clicking the mouse.

Three-way Calling

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Three-Way Calling lets the Attendant talk with the source and destination parties simultaneously. This requires a connection with a station user or outside caller and a party on Consultation Hold. After placing a party on Consultation Hold and connecting to another party, the Attendant is engaged in a three-way conversation. The console display indicates the connection to both the source and destination parties. The Attendant can disconnect from the conference, leaving the other parties connected, or can add another party to the conference.

Benefits

Provides the flexibility of connecting calls together in more ways than the typical conferencing. The console Attendant can ensure the two parties get together before dropping out of the conversation. This is often more appropriate than using transfer, because the Attendant can provide more personalized service.

Through Dialing

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Through Dialing enables an Attendant to provide a restricted station user with temporary outgoing call privileges. On a call-by-call basis, the Attendant can access otherwise denied trunks and then pass the dial tone to the station user. The station user can then complete the call dialing procedure. Through Dialing can be applied to callers using DISA and incoming Tie trunks, as well as to station users. To access a specific trunk group, the Attendant's Class of Service must permit such access.

Benefits

Enables toll-restricted station users temporary access to outside lines through the Attendant on a per-call basis. This maintains the integrity of toll restriction, while still extending outgoing calling privileges when necessary.

Transfer Direct to Voice Mail

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Transfer Direct to Voice Mail Box provides the Attendant Console Attendant a Transfer to Voice Mail (TVM) button, on screen and on keyboard, to transfer outside callers directly to a station user's voice mailbox, rather than to their station which would forward to voice mail if busy or not answered.

This direct transfer to voice mail box function is used when the Attendant looks at the BLF or knows the requested station user is either busy or not available. This feature works the same regardless of the status of the destination station (busy, DND, idle, forward). It provides a way to transfer calls to the desired mailbox without relying upon proper forwarding set at the station. This is also useful for internal calling directly to a station's mailbox when you know they are not going to answer, or for transferring calls to mailboxes that do not have stations on the Strata DK system. The Attendant can release the call immediately after a voice mail port answers.

Benefits

Provides better service to callers by transferring a call directly to a busy or absent station user's mailbox. They can leave a message sooner without having to listen to ringing while forwarding. This is also more efficient for the console Attendant who will not get transfer recalls from stations that do not answer and may not be forwarded to voice mail.

Using this feature to reach Audiotext messages of VM gives the Attendant an efficient way to handle routine information requests, such as directions to the business location.

Trunk Group Control

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

Trunk Group Control enables the Attendant to restrict access to outgoing CO line groups on an as-needed basis. This feature also lets the Attendant restrict outgoing calls on two-way CO line groups.

The display shows the group number of all trunk groups in which all lines within that group are currently in use. Trunk groups with no members are always shown busy.

These capabilities enable control of outgoing traffic on heavily used line groups during busy hours.

Benefits

Provides maximum availability for incoming calls and better service to callers because the trunk groups are as free as possible during peak traffic periods.

Volume Control

System Availability

Standard PC Attendant Console feature. The PC Attendant Console is optional on Strata DK424 systems with RCTUBA/BB, RCTUC/D, or RCTUE/F processors. Unavailable on DK424 RCTUA, DK40, or DK14 systems.

Description

The Volume Control buttons on screen adjust the Attendant Console’s ringing volume and handset/headset volume. The ringing volume and the handset/headset volume are adjusted separately. The Volume Up button increases the volume, while the Volume Down button decreases the volume.

Benefits

Provides volume adjustments according to the Attendant's needs.

Automatic Call Distribution (ACD) 5

System Availability

Strata DK424 ACD capability is provided as a value-added option with the RCTUBA/BB, RCTUC/D, and RCTUE/F processor versions. It is not available with the DK424 RCTUA or DK40 and DK14 systems. Each DK424 processor supports the following number of stations and CO lines.

- **RCTUBA/BB** – combination of up to 80 stations or 48 CO lines (up to 2 cabinets).
- **RCTUC/D** – combination of up to 240 stations or 144 CO lines (up to 6 cabinets).
- **RCTUE/F** – combination of up to 336 stations or 200 CO lines (up to 7 cabinets).

The ACD feature can accommodate up to 16 ACD groups, 120 individual Agent stations, 256 Agent identification codes, and 16 Supervisor identification codes (see Table 16).

Table 16 Strata DK System ACD Capacities

ACD Maximum Capacities for Strata DK424 Systems	RCTUBA/BB	RCTUC/D RCTUE/F
Number of Groups	8	16
Number of Supervisor Positions	8	16
Number of Agent ID Codes	200	256

Note See the *Strata DK General Description* for more information on common control units.

Description

Call centers need an efficient method for the automatic distribution of a large number of incoming calls to prearranged groups of Agent positions. ACD in the Strata DK is the most cost-effective method for distributing incoming calls to call centers. The calls are served in the order of their arrival and are evenly distributed among the Agents (see Figure 18).

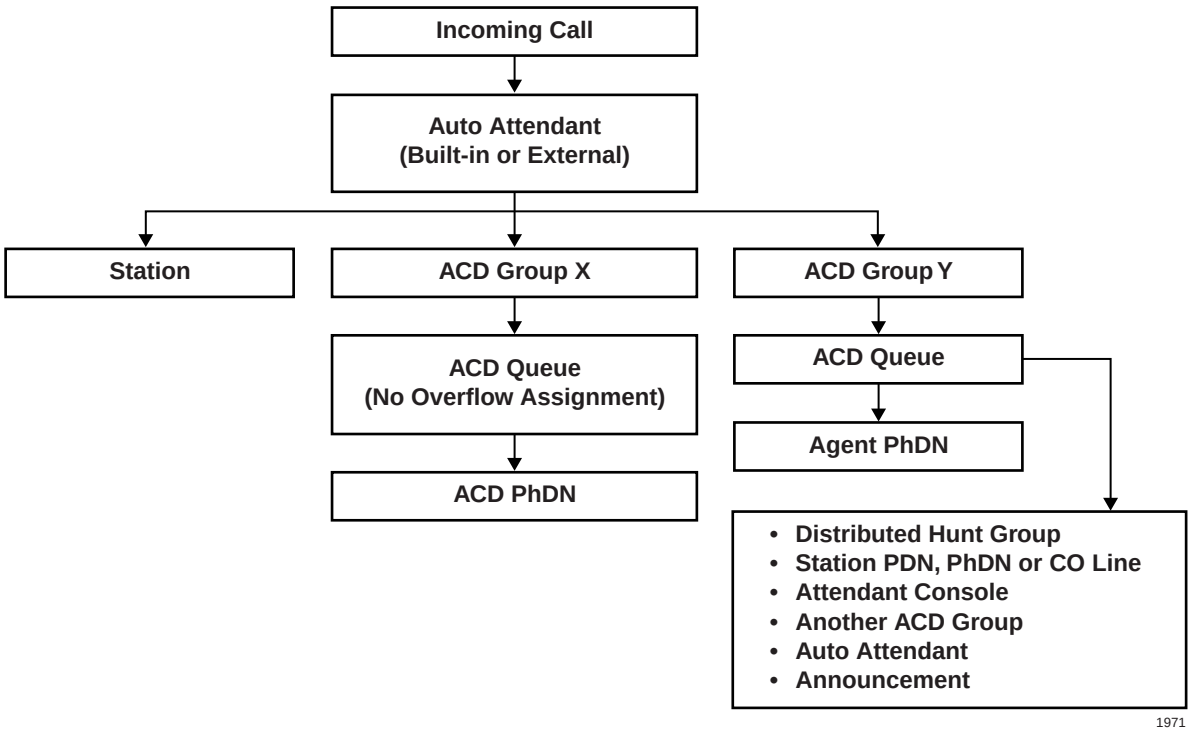


Figure 18 ACD and Auto Attendant Application Flow Diagram

ACD call centers can be telemarketing, inside sales, customer service, technical support, or any other group that handles a large number of incoming calls (see Figure 19).

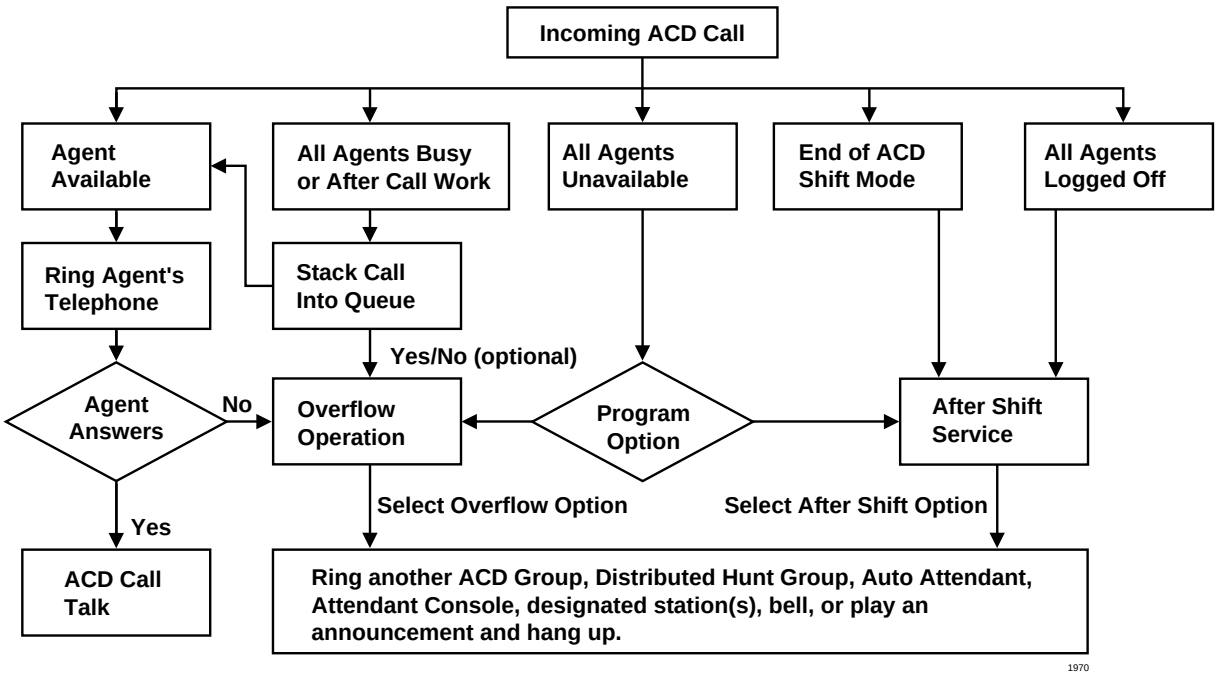


Figure 19 Typical ACD Interaction

ACD can distribute calls to all Agents in the group on a “Most Idle Agent Next”, so that over a given period of time, each Agent spends approximately the same amount of work time on ACD calls. Alternatively, ACD can distribute calls on a “First Available Agent Next” (rotation) basis, so over a given period of time, each Agent receives an equal number of ACD calls.

Callers waiting in queue can hear up to three different announcements per ACD group. A flexible sequence is provided to play these announcements for incoming calls when no Agent is currently available to handle the call. Between announcements, callers can hear music and/or company promotional/advertising messages provided by external equipment.

Additionally, calls that have been in queue for a predetermined time can be forwarded to another ACD group or other selected destination for immediate service.

Calls received after a group’s shift has ended (After Shift mode) are routed to an alternate answer point, such as another telephone’s DN, an Attendant, an Auto Attendant, a voice mail box, another ACD group or a Distributed Hunt (DH) group for call handling. In the After Shift mode, a different announcement can be used.

The DK424 transmits data about the operation of the ACD system to the Management Information System (MIS) processor, where it can be stored on hard disk. This data is manipulated by the MIS processor and organized into real-time displays and reports, and historical reports. The displays are provided to the ACD group supervisor via the MIS processor display screen. The reports can be called up by shift, hourly, daily, weekly, monthly, or annual periods. They can be either displayed at the supervisor terminal or printed on a printer connected to the MIS processor.

Toshiba offers two types of MIS products that are ideal for use with DK424 ACD applications.

- Call Center Viewer provides real-time ACD status displays and connection of electronic wall boards.
- Software MIS (SMIS) provides real-time displays and historical reports.

The Call Center Viewer application organizes and displays ACD call center events received from the DK424 system. The data is displayed on your PC screen in easy to read full color format.

- Real-time supervisor displays provide information on call queue status, agent status, and other useful information for managing the ACD groups.
- Audible alarms alert you when thresholds you assign are exceeded for the number of calls waiting, longest call waiting, and unavailable agents.
- Electronic wall boards can be connected to the supervisor’s PC to display call center data over head from the Call Center Viewer application.

SMIS provides historical reports in a full featured and cost effective MIS package.

- Reports provide information and statistics on individual agents, ACD groups, or the system status.
- Reports can be generated over a selectable period of time for periods of minutes, shift, daily, weekly, monthly, and annually.
- Real-time supervisor displays provide agent statistics, agent status, call statistics, and system status.

The combination of Call Center Viewer and SMIS enables you to add ACD supervisory display and reporting capabilities as you need them. The Call Center Viewer application can work in conjunction with SMIS to provide the ideal solution for call centers needing historical reports, real-time displays, and electronic wall board messaging of call center ACD activity.

- The Call Center Viewer application can be used by itself in ACD applications needing PC screen ACD group status visibility but not MIS reports.
- Electronic wall boards can be connected to the PC running the Call Center Viewer application to provide over head message visibility.
- Additional Call Center Viewer applications can be added to support multiple ACD group and multiple ACD call center supervisor display applications.
- Software MIS (SMIS) can be used with Call Center Viewer for call centers needing historical reports as well as real-time displays for ACD group status visibility.

ACD agents may use either Toshiba-proprietary digital telephones or standard 2500-set telephones. The ACD supervisors will typically use digital LCD telephones. The use of digital telephones permits the end-user to assign agent features to flexible feature buttons for easier, more efficient operation. Use of LCD telephones is highly recommended, because it enables both supervisors and agents to use valuable display information such as the number of calls waiting in the group's queue and the length of time spent on each ACD call.

When applying the ACD function with the general use of the DK424, it is important to note that additional instruments are not needed for ACD agents. They can use that same telephone to make and receive regular system calls as well as receive calls into the ACD group. Outgoing calling privileges can be controlled by class of service and toll restriction.

Agent digital/electronic telephones require a unique, single appearing, PhDN button called the agent ACD Call button. Any single appearing PhDN can be used to log in to any ACD Group to receive ACD calls and to originate or receive PBX calls. Agents can also receive or make non-ACD calls from other DN buttons or CO line buttons.

ACD agents using digital/electronic telephones can answer and make various types of calls as defined below.

ACD Call: An incoming external line call that is routed or transferred to an ACD Group and then rings an agent ACD Call button.

PBX Call: An external or internal call that is routed or transferred directly to an ACD Call button directory number, and not routed through the ACD group. A PBX call is also a call originated from the ACD Call button on an agent telephone. When on a PBX call, an agent cannot receive ACD calls. When on an ACD call, an agent cannot receive PBX calls, but can originate and receive calls on CO or DN buttons other while on a ACD or PBX call is on hold.

Non-ACD Call: Any call received by or originated from a directory number button or CO line button that appears on an agent telephone, other than the agent ACD Call button. When on a non-ACD call, an agent can receive ACD calls because the ACD calls will ring on the idle ACD Call button.

Any type of CO line that is used with the DK424 is also compatible with the ACD function. Ground start, DID, or Tie lines are preferred, due to their superior disconnect supervision capability. If loop start is used, reliable Automatic Release from the CO must be provided.

The maximum ACD agents allowed within each system processor with and without MIS are outlined in Tables 17~20 below.

Table 17 Maximum Number of ACD Agents Allowed without MIS (RCTUBA/BB)

Light Traffic 15 calls per agent per hour		Medium Traffic 30 calls per agent per hour		Heavy Traffic 60 calls per agent per hour	
Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones
80	0	80	0	70	0
70	10	70	10	65	15
60	20	60	20	60	20
50	30	50	30	55	25
40	40	40	40	50	30
30	50	30	50	40	40
20	60	20	60	30	50
15	65	15	65	20	60
10	70	10	70	15	65
5	75	5	75	10	70
—	—	—	—	5	75

Table 18 Maximum Number of ACD Agents Allowed with MIS (RCTUBA/BB)

Light Traffic 15 calls per agent per hour		Medium Traffic 30 calls per agent per hour		Heavy Traffic 60 calls per agent per hour	
Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones
65	15	38	42	19	61
60	20	30	50	15	65
40	40	20	60	10	70
20	60	10	70	5	75
5	75	5	75	—	—

Table 19 Maximum Number of ACD Agents Allowed without MIS (RCTUC/D)(RCTUE/F)

Light Traffic 15 calls per agent per hour		Medium Traffic 30 calls per agent per hour		Heavy Traffic 60 calls per agent per hour	
Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones
120	120	120	24	70	0
108	132	118	30	65	30
80	160	108	60	60	60
60	180	98	90	55	90
40	200	88	120	50	110
30	210	78	150	45	140
20	220	68	172	40	170
15	225	60	180	35	200
10	230	50	190	30	210
5	235	40	200	25	215

Table 19 Maximum Number of ACD Agents Allowed without MIS (RCTUC/D)(RCTUE/F) *(continued)*

Light Traffic 15 calls per agent per hour		Medium Traffic 30 calls per agent per hour		Heavy Traffic 60 calls per agent per hour	
—	—	30	210	20	220
—	—	20	220	15	225
—	—	10	230	10	230
—	—	5	235	5	235

Table 20 Maximum Number of ACD Agents Allowed with MIS (RCTUC/D)(RCTUE/F)

Light Traffic 15 calls per agent per hour		Medium Traffic 30 calls per agent per hour		Heavy Traffic 60 calls per agent per hour	
Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones	Agent Telephones	Non-agent Telephones
65	175	38	202	19	221
60	180	30	210	15	225
40	200	20	220	10	230
20	220	10	230	5	235
5	235	5	235	—	—

Notes

- For the purpose of these tables, Agent calls are defined as ACD incoming, PBX incoming and outgoing, and external/internal calls. If an ACD call is transferred, then two calls are created, one ACD and one PBX.
- The maximum number of Agents shown in these tables is limited by the amount of MIS data traffic sent from Strata DK. If there are more than 1,000 Agent calls in a heavy-traffic hour, the MIS channel must be set higher than 1200 bps. The next higher speed, 2400 bps, can handle up to 1300 calls per hour. Strata DK allows the choice of 1200, 2400, 4800, or 9600 bps for the MIS channel. Based on a total system speed of 10,800 bps (9600 + 1200) for auxiliary serial channels and a requirement of one channel each for SMDI, TTY, SMDR, and MIS, the installation should use the lowest MIS channel speed for the expected amount of traffic.

Benefits

ACD gives the user a powerful tool for evenly distributing large volumes of inbound calls. It makes processing those calls easier and more efficient, saving money and increasing the productivity of the call handling Agents. This also improves the service provided to the outside caller.

ACD reports enable the Supervisors to monitor the performance of ACD groups and individual Agents within each group. This information makes it possible to configure the operation of the ACD system for maximum productivity and profitability. For more information about the reports, see “ACD Supervisor Log IN/Log OUT”.

A Work Unit code can be 1~15 digits. SMDR registers 1~15 digits, but SMIS only registers 1 or 2 digits.

ACD System Features

An ACD group is usually composed of a number of agents handling similar types of incoming calls. Each ACD group is identified by an ACD group number.

Agents in each ACD group are identified by agent ID numbers. Agents log into the system by entering their ID from any telephone. This means agents are not tied to particular telephone sets, providing the flexibility to serve most any applicaiton. Incoming ACD calls for the agent's group are then routed to that station, when available or next in line to receive calls.

The following features are available in the ACD environment. A full description begins on Page 278.

After Shift Service

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

When an ACD group is in the After Shift mode, callers calling the ACD group are routed to the group's designated After Shift destination. Each group can have the same or different After Shift destinations. The After Shift destinations can be any of the following:

- A designated station or group of stations
- Another ACD group
- An announcement
- An Auto Attendant
- An Attendant Console

- A signaling device, such as chimes or a bell

If the After Shift destination is a telephone or announcement device, and it is busy, calls camp onto the destination. They are answered as the destination becomes available. If the After Shift destination is another ACD group, the call rings an Agent in that group. If all the Agents are busy, the call is sent to the end of that group's queue.

After Shift Service can be initiated two ways:

- The ACD Supervisor can press the End of ACD Shift button.
- The ACD group is automatically placed into the After Shift mode after all Agents logout or (as a program option) when all Agents are in the Unavailable mode. Calls that are in an ACD group queue just prior to the After Shift mode follow the normal queue routing programmed for that ACD group. The After Shift mode is automatically cancelled when the first Agent logs into an ACD group making the group available to receive ACD calls.

Benefits

Routes after-hours calls quickly and efficiently without effecting customer service. The destination can be another ACD group, telephone, or announcement device.

Automatic Disconnect

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Loop start CO lines do not reliably and automatically release when a caller hangs up. With the Automatic Disconnect feature, the user has the option to automatically disconnect calls which have been waiting in queue for a certain length of time. Automatic Disconnect can be set at 1 to 60 minutes after the call comes into the system or it can be disabled.

An example of Automatic Disconnect is when an incoming call is sent to an ACD queue, either music or an announcement is played for the caller. The call waits in the queue until an Agent answers it. If the caller hangs up while in the queue (abandoned call) or an Agent does not answer the call within the programmed Automatic Disconnect time, the call is automatically disconnected.

Benefits

Enables the efficient handling of expensive incoming calls, such as inbound 800 WATS line calls, because they do not wait endlessly. They are answered or disconnected after they have exceeded the waiting period.

Automatic Number Identification (ANI)

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The telephone number of a calling party is displayed on the LCD of a ringing Agent telephone and sent to a PC. The system supports ANI on analog, digital (T1) DID, and Tie lines and provides useful call information to Agents.

ANI is usually associated with “1-800” type calls offered by various long distance carriers (except AT&T) through T1 facilities. However, the DK424 also provides ANI information received over analog DID and Tie line circuits.

ANI digits can be received independently or simultaneously with Dialed Number Identification Service (DNIS) called number digits. When received with DNIS digits, calls can be routed to unique ACD groups for each DNIS number. ANI data for answered calls can be displayed on SMDR reports.

ANI numbers that are abandoned before being answered, are stored in system memory so users know the calling party’s telephone number even if no message was left. Designated Agent or Supervisor LCD telephones can display and Auto Dial the abandoned call ANI numbers.

The system can store up to 2,000 ANI abandoned call numbers with the RCTUE/F processor, up to 1,000 with RCTUC/D, and up to 400 with RCTU-BA/BB. Individual stations can be programmed to store from 0 to 100 of the total ANI abandoned call numbers in increments of 10. DKAdmin can print a list of Abandoned Call numbers for all telephones that store lost call ANI numbers.

For computer applications, ANI and DNIS digits can be sent to an individual personal computer (PC) connected via an Integrated PC Interface Unit (RPCI-DI), or to a LAN computer with open architecture via the Serial Interface Unit (RSIU). This enables users to receive pop-up screens on their PC that provide information regarding the calling/called party before answering and during the call.

Benefits

Provides valuable information to agents as they answer calls. Computer applications enable users to receive pop-up screens on their PC, before answering and during the call, further enhancing service to callers. Abandoned call information provides the valuable ability to return calls to those callers who did not get through or did not leave a message.

Call Distribution

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Incoming ACD calls are automatically distributed in a uniform manner among available Agents in the group. The system offers two different methods for call distribution on a system-wide basis for all ACD groups in the system.

- Most-Idle-First – The first of these is true-ACD time-based routing. This algorithm attempts over a period of time to keep Agents in the group on ACD calls for approximately the same length of time.
- Next-Available First – The second algorithm, which is call-based, attempts to deliver an equal number of calls to the Agents in the group over a given time period.

Most-Idle-First routing is appropriate for most call distribution applications, since it tends to maximize the productivity of individual Agents and the overall efficiency of the entire group. However, some applications may need the specific capabilities of Next-Available-First routing. The end user can choose the call distribution method that best fits their application. In both cases, if all Agents are busy and calls are waiting in queue, the first Agent to become available will receive the call.

Benefits

Routes calls efficiently and effectively using the Agents in various groups and maximizes productivity. The overall efficiency of the entire Agent group is enhanced as well.

Caller ID

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The telephone number and name of a calling party is displayed on the LCD of a ringing Agent telephone and can be sent to a PC. A maximum of 10 telephone number digits and 15 name characters can be displayed or sent to a computer.

The Caller ID Interface (RCIU) PCB is required, in conjunction with the normal ground or loop start CO line PCBs to provide the Caller ID feature. It can be provided on analog loop start lines (RCOU/RCOS, PCOU) and analog ground start lines (RGLU) only. It is not available on any other type of analog lines, such as DID (RDDU), Tie (REMU, PEMU), or digital T1 lines (RDTU).

An RCIU/RCIS circuit must be available for each line that is to receive Caller ID. When ordered from the factory, the RCIU PCB comes equipped with four Caller ID circuits. An RCIS piggy-back PCB can be installed onto the RCIU to provide four more Caller ID circuits, for a maximum of eight Caller ID circuits per slot. Caller ID data for answered calls can be displayed on SMDR reports.

Caller ID data is stored in system memory for calls that are abandoned before being answered, so users know the name (if provided by the local CO) and telephone number of who called even if they did not leave a message. Designated Agent or Supervisor LCD telephones can display and Auto Dial the abandoned call numbers. The system can store numbers up to 2,000 with the RCTUE/F processor, 1,000 with the RCTUC/D processor, and 400 with the RCTUBA/BB processor. Individual stations can store from 0 to 100 in increments of 10.

DKAdmin can print a list of abandoned call numbers for all telephones that store abandoned call numbers.

For computer applications, Caller ID digits and names (if supplied by the local CO), can be sent to a PC connected via an RPCI-DI, or to a LAN computer with open architecture via the RSIU. This enables users to receive pop-up screens on their PC that provide information regarding the calling/called party before answering and during the call.

Benefits

Provides valuable information to agents as they answer calls. Computer applications enable users to receive pop-up screens on their PC, before answering and during the call, further enhancing service to callers. Abandoned call information provides the valuable ability to return calls to those callers who did not get through or did not leave a message.

Data Collection and Reporting

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The system collects real-time data and transfers it in packets to the MIS processor. The MIS processor organizes the information into real-time displays, statistics, and reports. The information collected includes ACD call activities (before and after answer), PBX call activity, Agent status, average wait times, lost calls, and ACD queue activities. Data can be displayed or printed. For more information, see “ACD Call Center Viewer” and “ACD Software MIS (SMIS)” later in this section.

Benefits

Effectively assists in managing call center operations.

Delay Announcements and Music

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Announcements and music are provided to calls in the queue at predetermined time intervals. The system provides flexible announcement patterns which can be assigned to each ACD group. Up to three different announcements can be programmed per group.

Each announcement can be recorded into an external customer-provided digital announcer. The message is synchronized to begin when a call is connected to the announcer.

Each ACD group can have its own announcements and/or music source, or groups can share the sources.

The lengths of the music intervals are selected when the feature is programmed.

Benefits

Provides valuable information to callers while they are on hold. It also keeps them occupied so they will continue to hold.

Dialed Number Identification Service (DNIS)

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

DNIS identifies the number dialed by the calling party regardless of which incoming line the call is on. A 16-character alphanumeric is displayed on the ringing Agent telephone's LCD. DNIS digits can also be sent to an application computer. DNIS names will display on direct, incoming, and transferred calls that overflow from the ACD group that cannot forward calls to the ACD group. This enables calls to be answered appropriately by type of call.

DNIS is supported on digital (T1), or analog (DID), and Tie lines. It is typically used with 1-800 calls using long-distance carriers over T1, but can be provided over analog DID and Tie line circuits. DNIS calls can be routed to unique ACD groups for each DNIS number, and each DNIS number can be routed to different destinations during Day/Day2/Night mode.

DNIS digits can be received independently or simultaneously with ANI digits.

The Strata DK424 supports the following DNIS maximums (see Table 21).

Table 21 Strata DK424 Maximums

	RCTUBA/BB	RCTUC/3	RCTUE/F
DNIS Numbers	350	500	500
Telephone Network Numbers	200	300	300

Benefits

Enables multiple calls to the same line or line group, providing optimum trunk usage as well as helpful called number/name identification information. This provides more efficient usage of CO lines than the traditional usage of 800 numbers. Traditionally, each 800 number was assigned to its own line group, often resulting in a large number of under-used lines. The DK424's DNIS capability solves this problem by using each DNIS line on an as-needed basis for different 800 number calls.

Inbound Call Routing

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Calls can be routed into the ACD queues from incoming CO lines, DID, or Tie lines. They can be transferred into the ACD queue from the Auto Attendant, answer position, or any station in the system, as well as through the DNIS routing table. See the Strata DK424 ACD/MIS General Description for more details.

Benefits

Routes calls to the appropriate ACD group from anywhere within the system.

Overflow

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

ACD calls are sent to the ACD group queue when all Agents in the group are busy. Calls in queue can be programmed to overflow to specified destinations or remain in queue and not overflow independently for each ACD group.

ACD calls in queue can be programmed to overflow to:

- A designated DN (PDN or PhDN) or group of stations
- Another ACD group
- An announcement
- An Attendant Console
- A signaling device such as chimes or a bell
- The DK424 built-in or external automated Attendant (ground/loop start lines only, not Tie, DID or DNIS lines)
- Voice mail
- Distributed Hunt group

An ACD group can have two overflow destinations programmed. The call overflows from the queue to one destination when the caller has received a specified number of announcements, with a maximum of three announcements. Calls are sent to the second destination when the caller has been in queue for a specified time up to a one hour maximum.

Overflow timing for each destination can be set independently so that overflow will occur at the first destination, if idle; but, if the first destination is busy, the call overflows to the second destination immediately or after a predetermined time delay.

Notes

- Tie and DID lines cannot be routed (overflow or otherwise) to the DK424 built-in Auto Attendant.
- Tie and DID lines can overflow to a single PDN, PhDN, or ACD group, but not to multiple stations.

Overflow-Idle Only

If an overflow destination is idle when a call's overflow time occurs, the call is immediately sent to the overflow destination. The destination can be a station or another ACD group. If both of these overflow destinations are busy, the call remains in the queue until either of these two overflow destinations become idle or an Agent in the original ACD group becomes idle.

The system continuously monitors the Agents and the overflow destinations for an idle condition and routes the call appropriately when one becomes idle.

- **Overflow to Another ACD Group**: An Overflow to Another ACD group sends the calls waiting in queue to another ACD group. Each ACD group can have an overflow group to act as a backup in the event that the original ACD group is unable to handle the call. Each ACD group can be the overflow point for multiple ACD groups. Each ACD group queue is associated with an overflow threshold which determines when the calls will overflow. Overflow can be set to occur after a user-specified time in queue and/or a particular point in queue. After the third "All Agents are Busy" announcement, for example.

  If the overflow group's Agents are all busy, the call will not overflow; it will remain in the original group's queue.

- **Look-ahead Operation**: If the Overflow-idle Only option is set at overflow time, the system "looks ahead" to verify that the overflow destination is not busy. If it is busy, the call remains in queue and does not overflow. The system looks ahead, continuously

checking the overflow destination, and sends the call to the overflow destination when it becomes idle.

- **Look-back Operation**: If the Overflow-idle Only option is set and the overflow destination is busy at overflow time, the system looks back continuously to check for an idle Agent in the ACD group while it simultaneously checks for an idle overflow destination. If either an overflow destination or an ACD Agent becomes idle, the system sends the call to that destination.

Overflow-Busy or Idle

The ACD call exits the queue and rings the overflow destination when it is idle or busy. The destination can be a station, a group of stations, an Attendant Console or the DK424 built-in Auto Attendant. If the overflow station is busy, it receives muted CO line ringing. If the DK424 Auto Attendant is busy, the overflowing call camps onto the Auto Attendant until it becomes idle at which time the Auto Attendant answers the call. Overflow to a busy destination is available on ground and loop start lines only – not on DID or Tie lines.

Benefits

Overflow provides callers better service when agents in the group are too busy to handle holding calls within a reasonable time frame. The various look-ahead and look-back options make sure that calls overflowing to another destination will be helped as soon as possible.

PBX Calls

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

A PBX call is any incoming call (direct, transferred, forwarded, etc.) to the Agent's ACD Call DN button (not to the ACD group number). A PBX call is also any outgoing call placed from the Agent's ACD Call button. When on a PBX call, an Agent cannot receive ACD calls. When on an ACD call, an Agent cannot receive PBX calls.

Benefits

Enables making and receiving non-ACD calls in addition to ACD calls. PBX calls are reported on MIS reports in addition to ACD calls.

Queuing

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Each ACD group has its own queue. If Agents are busy as calls arrive at an ACD group, the calls are placed in queue. As the Agents become available, calls are distributed from the queue on a first-in, first-out basis. While in the queue, callers may listen to music, announcements, or be directed to an overflow destination.

Some of the key features of queuing are:

- The announcements and music source for each group can be separate or groups can share announcements and music sources.
- Queue timing parameters and announcement sequences can be set independently for each ACD group.
- Up to three different announcements can be sent to callers in an ACD queue. One, two, or three announcements can be repeated at intervals or the announcements can be sent only once. ACD announcements are sent to callers via dealer-supplied digital announcement devices, which must be connected to standard telephone circuit ports.
- Each group can have a separate music source or no music at all. The music source can be the system's Music-On-Hold source or a music source connected to a designated electronic or standard telephone port.
- The maximum time a call can be in an ACD queue can be set at one-second intervals for up to one hour for each ACD group. The time can also be disabled, allowing a call to remain in queue indefinitely. After the queue timer expires, the call will overflow to the queue's overflow destination if it is idle, or, depending upon the destination and programming, if it is idle or busy (refer to "Overflow" at the beginning of this section).
- The auto-disconnect time automatically disconnects a call in an ACD queue. This time is set or disabled separately for each ACD group and is normally only used on loop-start type central office lines which may not provide reliable disconnection if a caller hangs up while in an ACD queue.

Benefits

Provides flexibility so each ACD group can treat calls holding in queue according to the requirements of that group.

Queue Alarm Timer

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The Queue Alarm Timer may be programmed to sound immediately at the Supervisor's station when the number of calls in queue exceed a specified quantity or for a specified period of time (up to 255 seconds). A second alarm may be programmed to sound at any interval up to 600 seconds from the first call alarm.

The alarm alerts the Supervisor immediately when the queue size exceeds a predetermined threshold (1~144 calls), or permits up to two alarms to sound after a programmable wait time has passed. The queue thresholds are:

- First queue, program from 0~255 seconds
- Second queue, program from 0~600 seconds

Alarms can be used in a maximum of 16 ACD groups (8 on RCTUBA/BB).

Benefits

Alerts the Supervisor when corrective action is required. This provides better service to callers.

ACD Agent Features

An Agent in an ACD group may use either a Toshiba-proprietary telephone or standard type telephone. Toshiba-proprietary telephones have feature buttons and may have a LCD. The feature buttons can be used to access Agent features. The LCD provides information about each ACD call and the ACD group.

The following are the features available to an ACD Agent.

ACD, PBX, and Non-ACD Calls

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Agent digital/electronic telephones require a unique, single appearing PhDN programmed on an ACD Call button. Any single appearing PhDN can be used to log in to any ACD group to receive ACD calls and to originate or receive PBX calls. Agents can also receive or make non-ACD calls from other DNs or CO Line buttons. ACD Agents can answer and make these various types of calls as defined below.

- **ACD Call** – An incoming external line call that is routed or transferred to an ACD group and then rings on the ACD Call button.
- **PBX Call** – An external or internal call that is routed or transferred directly to the ACD Call button and not routed through the ACD group. A PBX call is also a call originated from the ACD Call button on an Agent telephone. When on a PBX call, an Agent cannot receive ACD calls. When on an ACD call, an Agent cannot receive PBX calls.
- **Non-ACD Call** – Any call received by or originated from a DN or CO Line button that appears on an Agent telephone, other than the ACD Call button. When on a non-ACD call, an Agent can receive ACD calls, because the ACD calls will ring on the ACD Call button if idle.

Benefits

ACD agents can make and receive regular calls in addition to receiving ACD calls. PBX calls will be reported on MIS reports in addition to ACD calls.

ACD Call Pickup

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

ACD Call Pickup enables ACD Agents or Supervisors to answer ACD calls ringing to Agents within their group by pressing the ACD Pickup button. Only calls to Agents logged into the same ACD group can be picked up.

Benefits

Agents can answer calls for each other when needed.

ACD Display Information

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

This feature provides ACD Agents (using an LCD electronic/digital telephone) with a visual indication of ACD call progress information, in addition to the standard display operation. When an Agent position is in ACD mode, the number of ACD calls waiting in queue can be shown on the LCD. Caller ID, ANI, and DNIS can also be displayed for incoming calls.

Benefits

Agents have display information available to provide better service to callers.

ACD Help

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

This feature enables an ACD Agent to call the Supervisor position for assistance. Pressing the ACD Help button, while in the talk state, automatically places the current ACD call on hold and initiates an assistance call to the Supervisor position. As soon as the Supervisor answers the call, the Agent may establish a three-way conversation or may talk privately with the Supervisor, and then return to the caller, or transfer the call to the Supervisor.

Benefits

ACD agents can quickly and easily get supervisor assistance when they need it.

After Call Work Time

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Also known as Wrap-up Time, After Call Work Time gives the Agent a predetermined amount of time to complete work (paperwork, order processing, filing) regarding the last ACD call. After disconnecting from an ACD call, the Agent automatically enters After Call Work Time mode until the predetermined “After-Call Work Time” period expires, or until the Agent manually exits this mode by pressing the End After Call Work button.

When in “After-Call Work Time,” an Agent does not receive more ACD calls from the system. The Agent can receive or place a non-ACD or PBX call during After Call Work Time, but the call automatically cancels After Call Work Time Status.

Benefits

Agents have time to complete required actions before taking the next call.

Auto Answer with Zip Tone

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Auto answer will automatically connect an available Agent to an incoming ACD call without requiring the Agent to lift the handset or push a button. When an ACD Agent position is in auto-answer mode (electronic/digital telephone feature), the system will provide an audible burst of tone (zip tone) to the Agent position before connecting the Agent to the incoming ACD call. The zip tone will sound to the headset, if used, or to the telephone speaker.

Benefits

This feature enables ACD agents to answer calls faster.

Log IN/Log OUT

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Enables the Agent or Supervisor to log IN or OFF the ACD system by dialing an Agent or Supervisor identification (ID) code from any station. When an Agent logs into the system, the station is activated as an ACD Agent position and is available for incoming ACD calls. Operating statistics are collected for the Agent and output to an optional MIS processor until the Agent logs out (when the station leaves ACD mode).

If an Agent attempts to log OUT and if the Agent is the last one logged into an ACD group, the flashing Log IN/OUT LED notifies the Agent that additional calls are waiting. In this case, the Agent will not be able to log OUT until the calls are answered and the ACD group queue is empty.

Agent digital and electronic telephones must have a unique, single-appearing PhDN that is designated as the ACD Call button. Standard telephones receive ACD calls on their PhDN after logging into an ACD group.

Benefits

Any ACD agent can log into any group from any telephone on the system. This provides flexibility and convenience.

Unavailable Mode

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

This feature enables an Agent to become temporarily unavailable to ACD calls without having to log out. The Unavailable mode can be used for lunch and coffee breaks, extended work times, etc.

When Agent telephones are placed in the Unavailable mode by using a flexible feature button, dialing code, or when two successive ACD calls are sent to the Agent and are not answered (automatic).

All Agents Unavailable

If all Agents in a group are made unavailable at the same time, new calls to the group are directed to the normal overflow point destination or the end-of-ACD shift destination of the ACD group. This destination option is a system option, and it applies to all ACD groups. It can also be assigned independently.

If the end-of-ACD shift or “all Agents unavailable” overflow destination is a busy station or announcement device, the call camps onto the busy destination or routes to other designated telephone or announcement.

If the all-Agents-unavailable overflow destination is another ACD group, the call rings an Agent in that group. If all the Agents are busy in the overflow group, the call enters the overflow group’s queue. If the overflow group’s Agents are unavailable or the group is in the After Shift mode, the call follows the normal routing scheme programmed for the overflow ACD group.

ACD Calls Ring No Answer (RNA)

If a call is RNA to one Agent in the group, the call rings an idle Agent in the same group. The Ring Agent Timer program sets the time limit for answering a call. The time period can also be assigned independently for each ACD group.

If there isn’t another idle Agent telephone, the call is directed to the group’s normal overflow point destination. If the normal overflow point destination is busy when an RNA call is routed to it, the call is re-routed to ring or camp-on to other designated telephones or is sent to an announcement. All of these options are set in system programming.

Benefits

Agents can become temporarily unavailable for ACD calls without having to log out of the group, providing flexibility and convenience.

Work Unit

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The Work Unit button enables an Agent to use the dial pad to tag a current call for tracking purposes. Work Unit Identifiers may be used to track various data (response to sales campaigns, calls from a particular area, etc.). A Work Unit code can be 1~15 digits. SMDR registers 1~15 digits, but SMIS only registers 1 or 2 digits.

The information is output to the system SMDR for printout and to MIS for reports. The Work Unit feature only applies to ACD calls, not to PBX or non-ACD calls.

Note SMDR only registers the last Work Unit code entered for each call; SMIS registers multiple work unit codes for a given call (e.g., 01 for Cookware, 02 for Furniture, etc.).

Benefits

Work unit codes help keep track of the type of calls received.

ACD Supervisor Features

The ACD group Supervisor can access all the standard Strata ACD features using the ACD Supervisor's ID code. When the Supervisor is not logged into the ACD system, full access to all of the standard DK telephone features is available.

It is recommended that the Supervisor use a Toshiba-proprietary telephone to monitor the operation of an ACD group with 10- or 20-feature buttons. It is also recommended that the Supervisor use an LCD telephone, because it provides important information about the ACD system and group, such as Queue and Agent Status.

Unlike Agent telephones, Supervisor telephones do not require a single appearing PhDN to operate ACD Supervisor features. However, it is recommended that a Supervisor telephone be equipped with at least two PDNs to answer Agent assistance request calls if the Supervisor is busy on another call.

Each Supervisor can supervise only one group at a time.

The following ACD features are available only to the Supervisor position.

- "ACD Agent Assistance"
- "ACD Call Pickup"
- "ACD Supervisor LCD Display"
- "ACD Supervisor Log IN/Log OUT"
- "Call Monitoring"
- "End of ACD Shift"
- "MIS Access"
- "Queue Alarm Indication"

ACD Agent Assistance

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

ACD Agent Assistance provides visual indication to the Supervisor position when an Agent assistance call takes place. When an Agent calls an idle Supervisor station by pressing the ACD Help button, the Supervisor station starts ringing and a message indicating the assistance call and the Agent ID is shown on the LCD. The Supervisor can connect directly to the Agent by pressing the flashing PhDN button.

The Agent can then speak privately with the Supervisor, or can initiate a three-way conference with the Supervisor and the ACD caller, or transfer the call to the Supervisor. When the Supervisor hangs up, during a conference call, the Agent remains connected to the ACD call. If the Agent hangs up, during a conference call, the Supervisor remains connected to the call.

Benefits

Provides quick and easy access to the supervisor.

ACD Call Pickup

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

ACD Call Pickup enables a Supervisor to pick up an Agent's ACD call within an ACD group. The call is considered a non-ACD call by the MIS system.

Benefits

Enables answering calls by the Supervisor when agents are unable to answer.

ACD Supervisor LCD Display

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The ACD Supervisor's LCD telephone can display the number of calls holding in the queue of a particular ACD group. By pressing the Queue Status button, the LCD displays the number of calls in queue. The Supervisor can also scroll through individual calls holding in queue, displaying the line number and how long the call has been in queue. Any ACD Supervisor can display queue information about the ACD group logged into or other ACD groups in the system. The queue status display is updated every five seconds.

The ACD Supervisor's LCD telephone can display the status of Agents within a particular ACD group. By pressing the Agent Status button, the LCD shows how many ACD Agents are logged into the group. The Supervisor can also scroll through individual Agents logged in, displaying the Agent ID number, telephone station number, and Agent status (available, unavailable, ACD call, PBX call, or After Call Work Time). The Agent status display is updated every five seconds.

Benefits

Provides valuable status information to the Supervisor on their LCD with or without an MIS processor.

ACD Supervisor Log IN/Log OUT

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The ACD group Supervisor logs into the group by pressing the Log IN/OUT button, followed by the Supervisor ID code. This station now has access to Supervisor features, but the station will not receive ACD calls.

Benefits

Makes convenient and easy monitoring of group activities by the Supervisor.

Call Monitoring

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

Call Monitoring enables a Supervisor to monitor a conversation between an ACD Agent and ACD caller. A one-way, listen-only path is established for the Supervisor while the Agent and the caller continue their conversation.

As a system-wide programming option, a periodic tone can be inserted into a conversation to indicate that the Supervisor is monitoring. The message is also displayed on the Agent telephone's LCD. Or, on a system-wide basis, the monitoring can be done without the tone being inserted into the conversation.

Once in the monitor state, the Supervisor continues to monitor each ACD call to the Agent and does not have to re-initiate the monitor function with each ACD call. Only ACD calls can be monitored, not PBX calls or non-ACD calls.

Benefits

Provides additional call monitoring flexibility and is a valuable training tool.

End of ACD Shift

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

The group Supervisor can use the End of ACD Shift button to activate the After Shift service of an ACD group shift.

If there are Agents logged in, the End of ACD Shift LED will flash until the last Agent logs off after all calls in queue have been answered. Then the LED will be steady on. All incoming calls to the ACD group after End of ACD Shift is engaged are directed to a preassigned After Shift destination.

Benefits

Enables routing of calls that occur after hours quickly and efficiently without affecting customer service. The destination can be another ACD group, telephone, or announcement device.

MIS Access

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

If the Call Center Viewer or SMIS option is installed, the ACD group Supervisor can access the MIS displays and reports using the MIS processor connected to the DK424 system. The Supervisor can call up displays and reports on the groups or individual Agents to monitor ongoing performance.

The Supervisor can also signal the system to print out reports using a printer connected to the MIS processor. The MIS processor provides Supervisors with a wide variety of status, statistics, and traffic displays used to monitor the performance of ACD groups and individual Agents.

Benefits

Provides important management tools to the ACD Group Supervisor. For more information, see the Call Center Viewer and Software MIS (SMIS) later in this section.

Queue Alarm Indication

System Availability

Standard on Strata DK424 systems that have ACD, except the RCTUA processor.

Description

An alarm is generated at the Supervisor's station when calls waiting in the queue exceed predetermined conditions. These conditions or queue thresholds (e.g., number of calls waiting, waiting time for the oldest call) are established in system programming independently for each ACD group. The audible alarm will continue at the station until the Supervisor acknowledges the alarm by pressing the Reset Queue Alarm button.

Benefits

Provides an alert to the ACD Group Supervisor when corrective action is required. This helps provide better service to callers.

ACD Feature Interaction

Strata DK424 provides the ACD features from system-resident software. Some station feature operations are altered when a station is activated as an ACD Agent or Supervisor station. Most all normal features are available to Supervisor and Agent telephone PDNs and PhDNs, except for the PhDN designated as the ACD Call button on an Agent telephone when it is logged into an ACD group.

The following features are described completely in the following pages.

Assistance From Busy Supervisor

System Availability

Strata DK424 provides the ACD features from system-resident software. Some station feature operations are altered when the station is activated as an Agent or Supervisor station.

Description

If a Supervisor telephone is busy and has an idle PhDN button (up to four PhDN buttons are available) and the Busy Station Transfer/Busy Station Ring feature option is enabled on the Agent/Supervisor telephones, an Agent can still ring the Supervisor telephone for assistance.

Benefits

Provides the Agent a means to get the Supervisor's attention for assistance, even when all the DNs on the Supervisor's telephone are in use.

Call Forwarding

System Availability

Strata DK424 provides the ACD features from system-resident software. Some station feature operations are altered when a station is activated as an ACD Agent or Supervisor station.

Description

ACD Agent and Supervisor Primary and non-ACD PhDNs can set Call Forwarding. This applies for all types of Call Forwarding enabled on PDNs and PhDNs. If an Agent telephone ACD Call PhDN button is forwarded, ACD calls will not forward, but other types of calls (PBX and non-ACD) will forward in the normal manner.

If a Supervisor telephone PhDN is Call Forwarded, Agent assistance calls will not forward but will ring the Supervisor's PhDN; other types of calls to the PhDN will forward normally.

Benefits

Provides flexibility of handling call forwarding differently for non-ACD calls, which should forward, and ACD calls which should get overflow handling.

Executive/Busy Override

System Availability

Strata DK424 provides the ACD features from system-resident software. Some station feature operations are altered when a station is activated as an ACD Agent or Supervisor station.

Description

If an Agent is talking on an ACD or PBX call, override is not enabled. However, the Agent can be called by dialing the Agent's PDN or an idle PhDN.

Benefits

Provides override only the ACD Group Supervisor and keeps ACD Agents from being disturbed except when the Supervisor deems it necessary.

Message and Display

System Availability

Strata DK424 provides the ACD features from system-resident software. Some station feature operations are altered when a station is activated as an ACD Agent or Supervisor station.

Description

When an Agent or Supervisor ID is entered, the LCD shows ACD-related messages. While the telephone is in the ACD state, Soft Key labels and standard LCD messages, unrelated to ACD, do not display.

Caller ID, ANI, or DNIS information displays on an Agent telephone and overwrites Calls In Queue information when an Agent receives a Caller ID, ANI, or DNIS call. The Agent can retrieve the Calls In Queue display by pressing the LCD Page button.

Benefits

Provides the ACD-specific display information that ACD Agents and Supervisors require for optimum efficiency.

Station Do Not Disturb (DND)

System Availability

Strata DK424 provides the ACD features from system-resident software. Some station feature operations are altered when a station is activated as an ACD Agent or Supervisor station.

Description

The Station DND feature is not applicable to ACD calls and only applies to non-ACD calls.

Benefits

Enables calls to ACD Agents to flow as normal and the DND feature to apply only to non-ACD calls.

ACD Call Center Viewer

The Toshiba Call Center Viewer application organizes and displays ACD events reported by the Strata DK424 MIS port. The data is displayed on a host PC screen in easy-to-read, full-color Microsoft® Windows® format. The call center Supervisor gets real-time information on call queue status, Agent status, and other useful information for managing the ACD groups.

The Call Center Viewer application runs concurrently with other Windows applications on the ACD Supervisor's PC. This enables ACD Supervisors to manage their ACD groups while working in other applications. Multiple Call Center Viewer applications can be used simultaneously on a DK424 system to accommodate multiple ACD Supervisors.

The data can also be displayed on optional Spectrum Electronic Wall Boards, which can be purchased from the Spectrum Corporation.

Call Center Viewer can be used on the same DK424 system in conjunction with the Toshiba Software MIS (SMIS), when historical reporting is required. Call Center Viewer provides the multiple displays and connection of electronic wall boards, while SMIS provides the historical ACD reports.

Computer Requirements

The Call Center Viewer application does not require a dedicated PC. When The Call Center Viewer application connects to the DK424, it functions as a machine-to-machine interface, constantly updating call center data. Toshiba recommends installing the Call Center Viewer application on a customer-supplied PC that meets the following recommended minimum requirements.

- IBM-compatible Pentium® 100 MHz PC
- Windows 95
- 16MB RAM
- 10MB available hard drive space for the application
- 3.5 1.44 MB floppy-disk drive
- 1 available serial communication ports (2 if using wall boards)
- Parallel printer port (for activation key)
- VGA color monitor
- Keyboard and mouse
- Windows Graphics Accelerator

Increasing the processor speed and adding more RAM improves the host PC's and the Call Center Viewer's performance.

Display Information

The Call Center Viewer displays the following information:

- Number of Agents
  - Logged in
  - Busy
  - Available
  - Unavailable
- Number of calls in the queue
- Longest call waiting
- Individual Agent status and status times (available on the host PC screen, but not on the wall board)
- Strata DK date/time
- User-defined messages to the wall boards

Main View

The Main View (shown below) displays the names and status of all active ACD groups. Columns can be sorted in ascending or descending order.

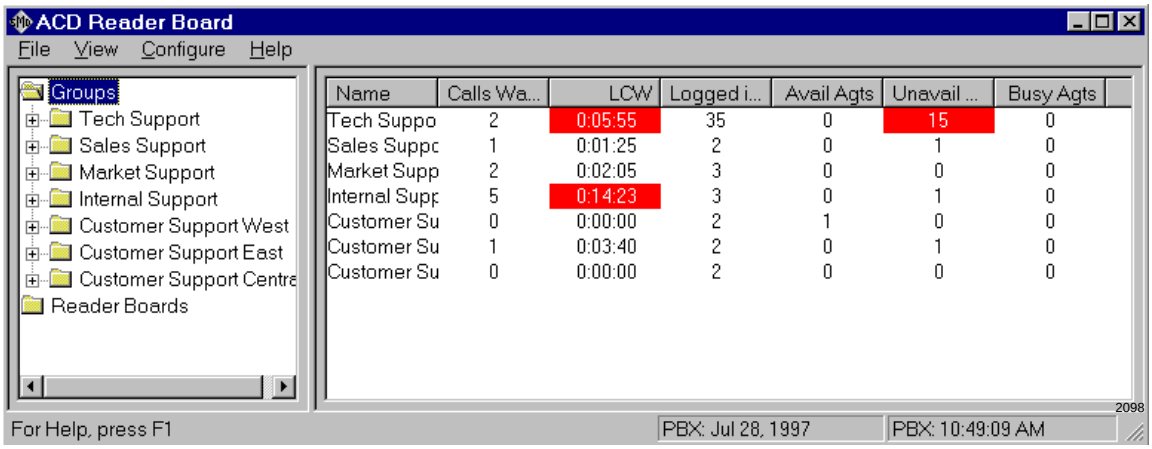


Figure 20 ACD Main View

Agent View

The Agent View (see Figure 21) displays the status of all Agents in a group. It also displays real-time ACD Agent status information across the top of the Agent listings (see "Button View Format" on Page 321 for a list of displayed information).

The window can be enlarged to fit more Agents. However, the number of Agents displayed on the screen depends in part upon monitor size and resolution. Agent names can be customized to be longer than the eight-character length provided by the Strata DK.

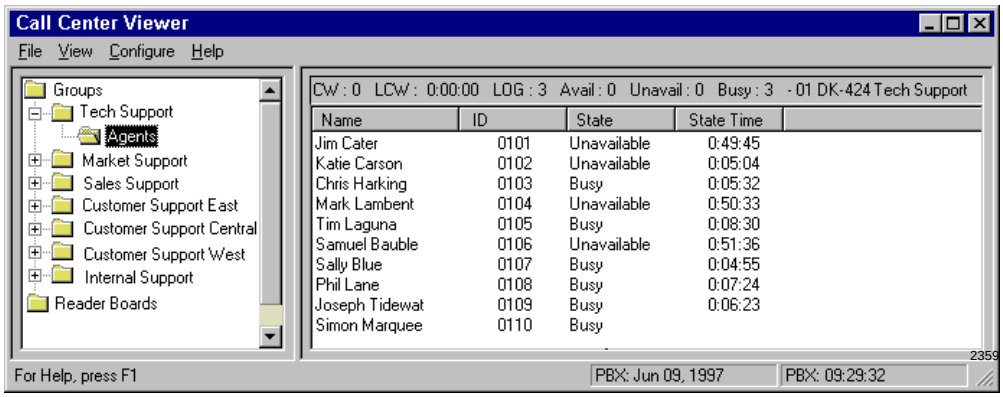


Figure 21 ACD Agent View

Alarms

Visual and audible alarms alert the call center Supervisor when certain thresholds are exceeded. The Supervisor can then take appropriate action. Visual alarms flash the screen or title bar. Audible alarms sound over the standard PC speaker or play a sound wave (.WAV) file through the PC's sound card and speakers. Alarm thresholds (see Figure 22) are user defined to enable flexible control of service levels.

Visual and audible alarms for each ACD group include:

- Calls in queue (number of calls waiting)
- Longest call waiting
- Unavailable Agents

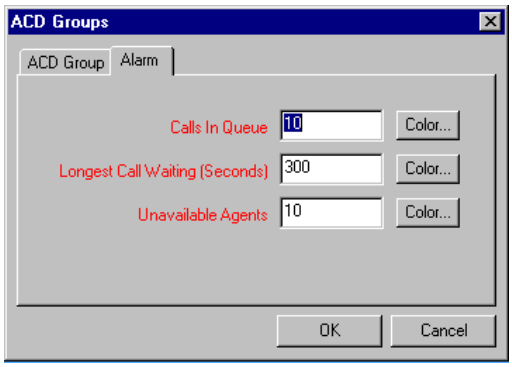


Figure 22 ACD AlarmThresholds

Title Bar

The title bar (see Figure 23) makes it easy to constantly monitor the ACD group's status while working in other applications. It fits conveniently into the unused area of most applications, at the top or bottom of the screen. It displays real-time ACD status information that is visible to the Supervisor at all times, and provides visual and audible alarms to alert the Supervisor when thresholds are exceeded.

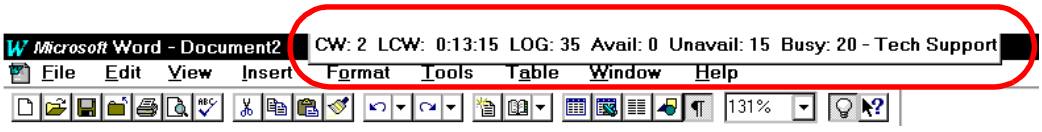


Figure 23 Title Bar Display

The title bar displays the following information:

- Number of calls waiting (CW)
- Longest call waiting (LCW)
- Number of Agents logged-in (LOG)
- Number of busy Agents (Busy)
- Number of Agents available (Avail)
- Number of Agents unavailable (Unavail)
- Group name (“Tech Support”)

Button View Format

The title bar can also be displayed in a condensed Button View format (see Figure 24). Button view displays as one of the open applications minimized on the Windows task bar line at the bottom of the screen. Clicking the mouse on the button expands the Button View to the full line display.

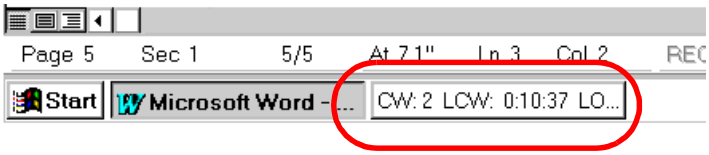


Figure 24 Button View

Configurations

The Call Center Viewer computer can connect directly to the DK424, to other Call Center Viewer computers, or to a Software MIS (SMIS) computer.

Direct Connection to DK424

The Call Center Viewer application host PC can connect directly to the DK424 MIS port on an RSIU, RSSU, PIOU, or PIOUS card (see Figure 25).

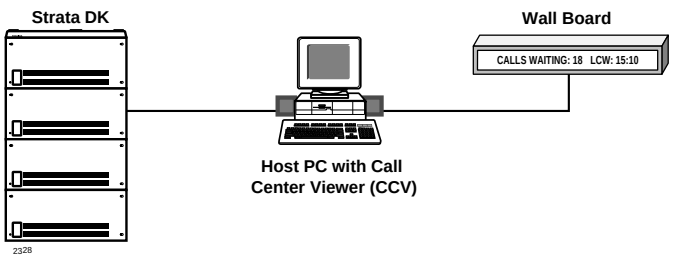


Figure 25 Direct Connection to DK424

Connection to SMIS

If a SMIS computer or MIS system is connected to the DK424 MIS port, the Call Center Viewer application host PC connects to it through a “Y” cable RS-232 splitter distribution box (see Figure 26). (Toshiba recommends model TL159A from Black Box® Corporation for this purpose.)

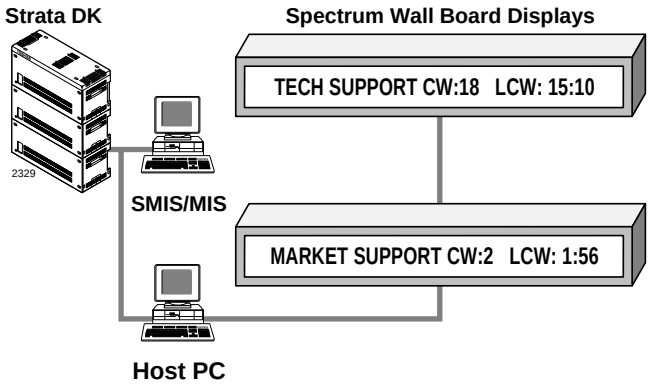


Figure 26 “Y” Splitter Connection

The Call Center Viewer monitors the connection between the Toshiba SMIS, MIS or another Call Center Viewer application PC. This enables the Call Center Viewer application PC to work in conjunction with the SMIS computer which is already connected to and controlling the DK424 MIS port.

The Call Center Viewer application and the SMIS application must reside on separate computers since SMIS requires a dedicated PC. The Call Center Viewer provides real-time status displays and connection of electronic Wall Boards, while SMIS provides historical ACD reports.

Multiple Supervisor Call Center Viewer Applications

By using RS-232 splitters in a “Y” cable distribution box connection (Toshiba recommends model TL159A from Black Box Corporation for this purpose), several PCs running the Call Center Viewer application can connect, in the monitor mode, to the DK424 MIS port (see Figure 27). This flexibility provides a variety of multiple Supervisor and electronic wall board connection configurations.

Each host PC Call Center Viewer application functions independently of the other connections. This functionality enables each group Supervisor to view real-time data associated with their particular group or all ACD groups.

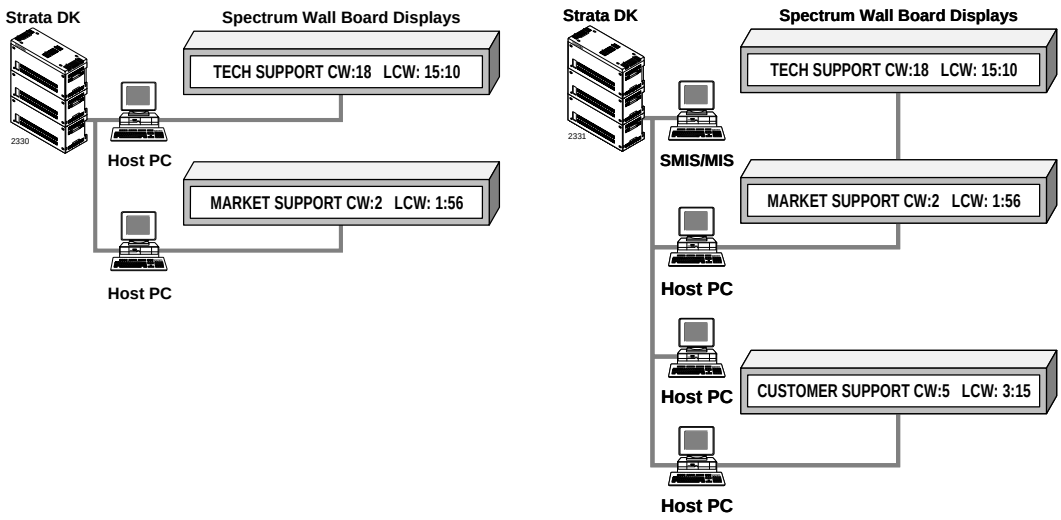


Figure 27 Multiple Supervisor Configurations

Spectrum Electronic Wall Boards

Electronic wall boards can be connected to the Supervisor's PC to display call center status data. This provides visibility of important call center event information to both Supervisors and Agents. The Supervisor can also send custom, user-defined text information to the electronic wall board which can be used for general information or motivational messages.

One copy of the Call Center Viewer application supports a wall board network which can cover all active ACD groups. The Call Center Viewer application works best with Spectrum 200 and 300 series wall boards.

Multiple Wall Boards

Multiple wall boards can be connected to the Call Center Viewer application PC. The boards can be assigned to individual ACD groups, to one ACD group, or multiple ACD groups can share one wall board.

Priority Text Messages

You can send Priority Text Messages from the Call Center Viewer application to an individual, a group, or all wall boards. You can use Priority Messaging for motivational messages (i.e., Congratulations We Made the Numbers) or informing the group of current priorities (i.e., Meeting at 2:00). When a Priority Message displays, all other messages including ACD information suspends for the duration of the Priority Message.

You can enter messages sent to the group at the host PC. When Priority Messaging is used frequently by a number of different Supervisors, we recommend configuring the Call Center Viewer application and wall board on each Supervisor's PC. This enables Supervisors to

access real-time data and eliminates the need for the Supervisor to access the host PC (which could be unavailable) when sending their group a Priority Message.

Product Line Strategy

Call Center Viewer is an addition to the Strata DK product line and does not replace SMIS. Call Center Viewer provides real-time ACD status displays but not reports. For call center customers not needing reports, Call Center Viewer is ideal, because of its easy-to-use Windows format and concurrent operation with other applications. It is also a very cost-effective way of accommodating multiple ACD Supervisors and connecting electronic wall boards. Add SMIS when historical reporting is needed.

Cost-effective Incremental Growth

A major advantage of the Call Center Viewer is the ability to add ACD supervisory display and reporting capabilities when needed. This enables call center expansion to progress at the same pace as business growth.

- The Call Center Viewer application can be used by itself for call centers needing PC screen ACD group status visibility but not MIS reports.
- Electronic wall boards can be connected to the PC running the Call Center Viewer application to provide overhead messages.
- Additional Call Center Viewer applications can be added to support multiple ACD group and ACD call center Supervisor display applications.
- The Call Center Viewer can be used with Software MIS (SMIS) for call centers needing historical reports as well as real-time ACD group status displays.

ACD Software MIS (SMIS)

SMIS was designed for small- to medium-sized ACD systems. It is entirely software-based, and can be run on an IBM 486 or compatible DOS computer. SMIS requires the Strata DK RKYS3 or RKYS4 feature key, PPTC9 adapter, and a TTY interface circuit card (typically an RSIU PCB).

SMIS provides Supervisors with a wide variety of status, statistics, and traffic displays and reports used to monitor the performance of ACD groups and individual Agents. Figure 28 shows the menu hierarchy of SMIS.

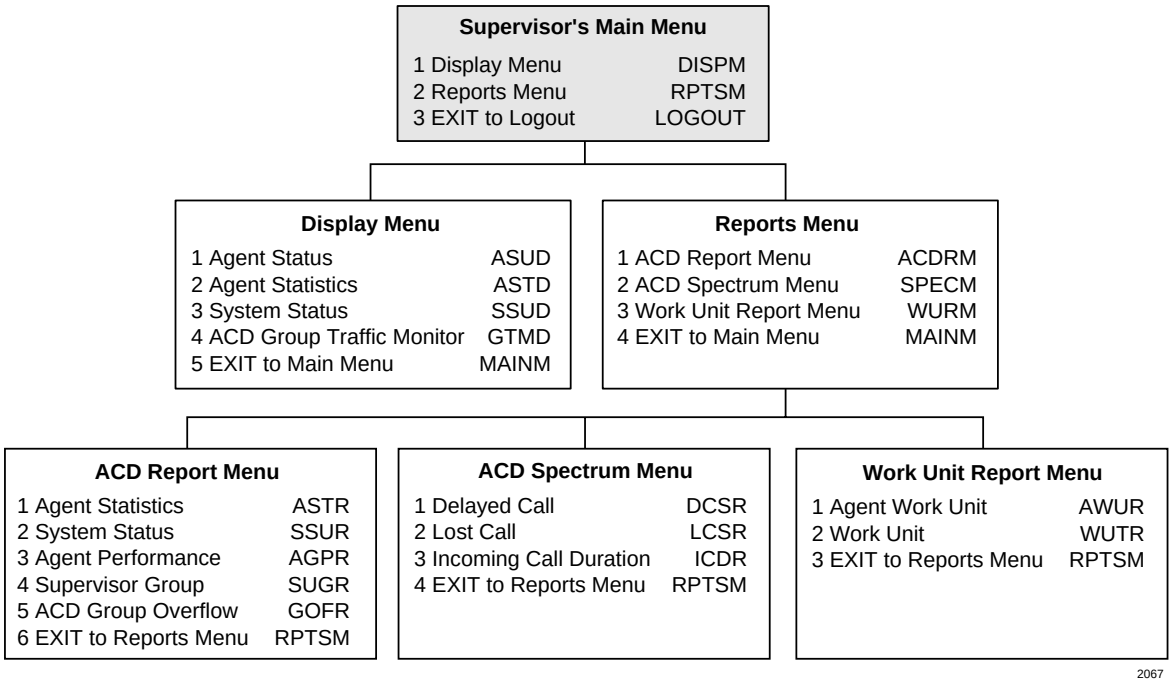


Figure 28 SMIS Menu Hierarchy

The following pages have brief descriptions of the displays and reports available which are:

- Displays
  - "Delayed Call"
  - "Agent Status"
  - "Incoming Call Duration"
  - "Supervisor Group"
- Reports
  - "SMIS Displays"
  - "Delayed Call"
  - "Delayed Call"
  - "Group Overflow"
  - "Incoming Call Duration"
  - "Lost Call"
  - "Work Unit"
  - "Supervisor Group"

SMIS Displays

Real-time displays show the Supervisor what type of work the Agents are involved in, how efficiently the group is handling incoming calls, how quickly calls are being answered, how

many calls were lost, and how many PBX calls have been placed and received during the requested reporting period. PBX calls are calls originated from the Agent ACD Call button, or calls that are directed to the Agent ACD Call button directory number and not the ACD group number. The real-time displays are updated every few seconds by the MIS processor. Supervisors use the MIS processor display screen to view this information.

Agent Statistics

Displays the current status of each Agent within the ACD group, plus the accumulative call-processing information for that period. Included are:

- Number of calls waiting
- Longest call waiting
- Number of calls handled
- Average talk time
- Average After Call Work Time
- Average handling time (talk plus After Call Work Time)
- Available time
- Number of PBX calls originated and received Name and ID number, ACD group number
- Productivity percentages
- Auxiliary work (non-ACD) time

The display shows the totals of each Agent's statistics. It also shows group statistics, including the group-productivity percentage, and warns if the service level of the group is falling below acceptable levels. Figure 29 is an example of the display.

09:25 6/10/97 Tuesday **Agent Statistics Display** ACD Group: 1

Number of Agents – Manned: 9 Busy: 4 Avail: 1 Unavail: 4

CW: 1 TM: 10

--- Agent ---		Current	Stat	Work	Call	--- Average ---			Avail	Aux.	Non-	%
No.	Name	Status	Time	Unit	Hndl	Talk	ACW	Hndl	Time	Work	ACD	Prod
401	Jane	Unavail	0:26		0	0	0	0	0:26	0:00	0	100
402	Robert	Talk	0:03	55	0	0	0	0	0:18	0:00	0	32
403	Alan	Unavail	6:33		1	565	44	609	1:30	0:00	0	64
404	Jeff	Unavail	9:40		2	240	25	265	0:00	0:00	0	48
405	Judy	Avail	2:36		1	465	44	509	0:00	0:00	0	100
406	Tom	Talk	3:15		1	189	67	256	2:48	0:00	0	75
407	Ted	Unavail	8:49		0	0	0	0	0:00	0:00	0	100
409	Ron	Aft Call	:45		2	485	0	485	1:53	0:00	0	93
414	Erin	Talk	4:45		3	320	23	343	4:40	0:00	0	81
				Totals	10	251	22	273	1:16	0:00	0	77

SMIS

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Figure 29 SMIS Agent Statistics Display

Agent Status

Displays the current availability of each Agent within the ACD group. Included are the Agent's ACD ID number, Agent's name, current status, and Work Unit code, if used. Figure 30 is an example of the SMIS display.

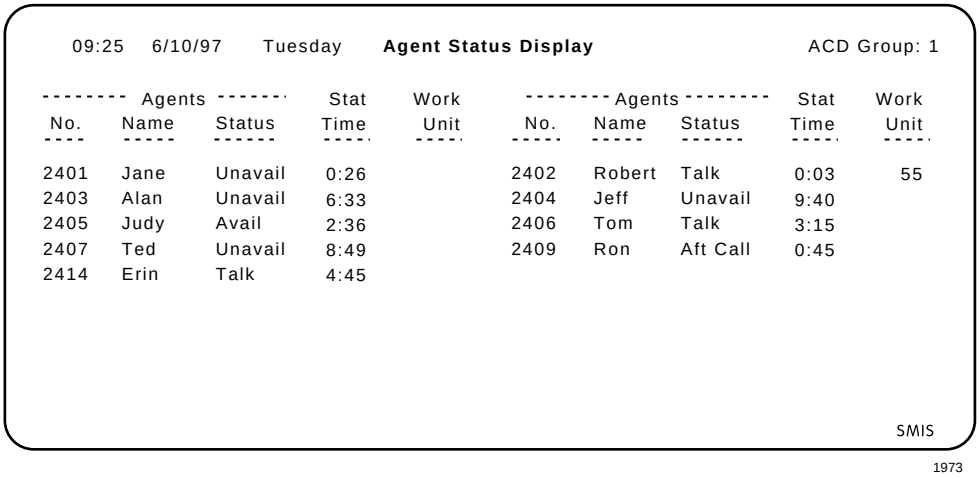

Figure 30 SMIS Agent Status Display

Group Traffic Monitor

Group Traffic Monitor displays real-time statistical information used by the Supervisor in evaluating ACD staffing requirements. Included are:

- Total calls offered, answered, overflowed, and lost
- Service-level percentage, average speed of answering, maximum delayed call (in seconds), current calls waiting
- Number of logged-in, busy, available, and unavailable stations

Three warning messages are displayed to indicate when the service level for a group is falling below the acceptable levels (e.g., service quality is low, bad, or unacceptable).

Figure 31 is an example of the display.

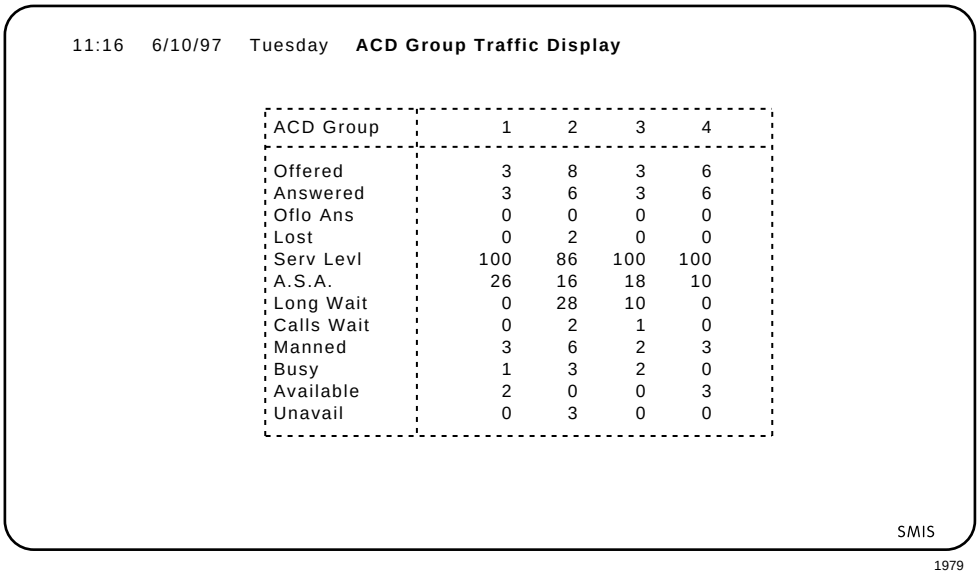

Figure 31 ACD Group Traffic Display

System Status

Accumulative totals are displayed for the ACD groups that the Supervisor is enabled to view. Included for these groups are:

- Total number of calls offered, answered, overflowed, and lost
- Average talk time, after-call time, and handling time
- Total number of calls delayed (held in queue)
- Overall service level percentage
- Total current number of calls waiting to be answered (queue)
- Maximum number of calls in queue at one time
- Longest time (in seconds) that a call waited to be answered

See Figure 32 for an example of the display.

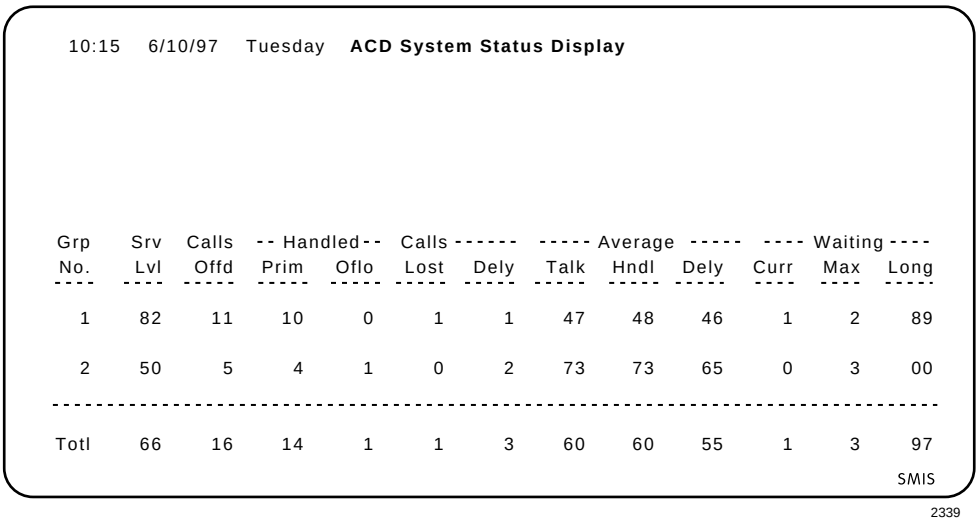

Figure 32 ACD System Status Display

SMIS Reports

A number of reports are available to the Supervisor which provide information and statistics about individual Agents, ACD groups, or the system over a selected period of time (minutes, shift, daily, weekly, monthly, and annually).

The top of each report indicates the exact time frame used to compile the report while at the end of the report are the overall totals (averages) for each item.

Agent Performance

The Agent Performance Report (see Figure 33) provides call processing and after-call-activity information for all Agents within an ACD group. This report can be used for evaluating the performance of each Agent in relation to other Agents in the group. Included on the report are:

- Agents' ID numbers and names
- Total log in times
- Number of ACD calls handled
- Number of PBX calls handled (DK424 Release 3)
- Average ACD talk, work-handling times, and available times

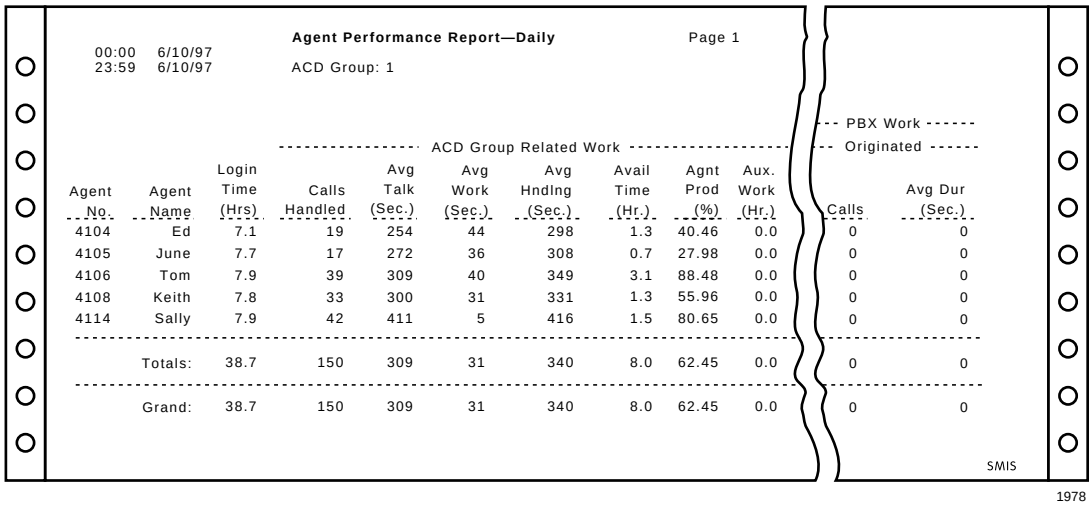

Figure 33 SMIS Agent Performance Report - Daily

Agent Statistics

This report summarizes the performance of individual Agents (see Figure 34). The information regarding the Agent includes:

- Name, ID number, and ACD group number
- Productivity percentage, number of calls per hour, number of work unit codes entered, and number of Supervisor assistance calls
- Total log in time, talk time, after call work time, available and unavailable time
- Number of ACD and PBX calls received and originated, and the average length of the calls

Note All Agent calls originated are reported in the “Internal” section of PBX calls. “Originated External is left blank.

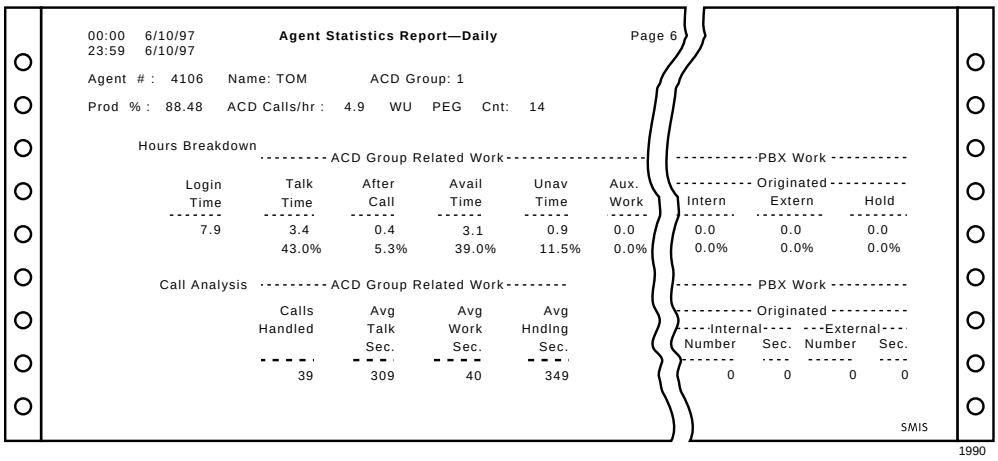

Figure 34 ACD Agent Statistics Report

Delayed Call

This report provides a summary of all calls offered to a group versus totals and percentages of calls handled, calls delayed, and percentages of calls answered within predefined time increments. See Figure 35 for an example.

This information can be compared to other reports, such as Agent Statistics and System Status Reports, to see if Agents are working efficiently, and if staffing is adequate.

00:00 6/10/97 **Delayed Call Spectrum – Daily** Page 1
23:59 6/10/97 ACD Group: 1

Time HHMM	No Calls Offrd	No Calls Hndld	No Calls Dlyd	% Dlyd	Avg Dly	Max Dly	Percent Calls Handled Within x sec. 2	4	6	8	13	18	23	28	33	43	53	63	63+
6:00	6	6	6	100	8	12	0	0	0	50	50	0	0	0	0	0	0	0	0
7:00	21	21	21	100	76	376	0	5	10	10	0	10	14	5	0	5	10	0	31
8:00	17	15	15	100	104	330	0	0	7	7	0	0	7	0	0	7	7	13	52
9:00	20	19	19	100	58	326	0	0	0	26	16	11	5	5	0	16	5	0	16
10:00	20	19	18	95	67	339	5	11	5	5	16	11	0	0	5	5	0	5	32
11:00	17	17	17	100	81	371	0	6	12	0	6	12	12	6	0	6	0	0	40
12:00	24	21	21	100	140	529	0	5	5	10	0	5	5	0	5	0	10	0	55
13:00	12	12	12	100	37	133	0	8	0	0	17	8	25	0	0	0	8	25	9
14:00	18	8	8	100	410	1284	0	0	0	0	0	13	0	0	0	13	0	0	74
15:00	13	10	10	100	1340	2132	0	0	0	0	0	0	0	10	0	0	0	0	90
Total	168	148	147	99	211	2132	1	4	5	9	8	7	7	3	1	5	5	4	41

SMIS

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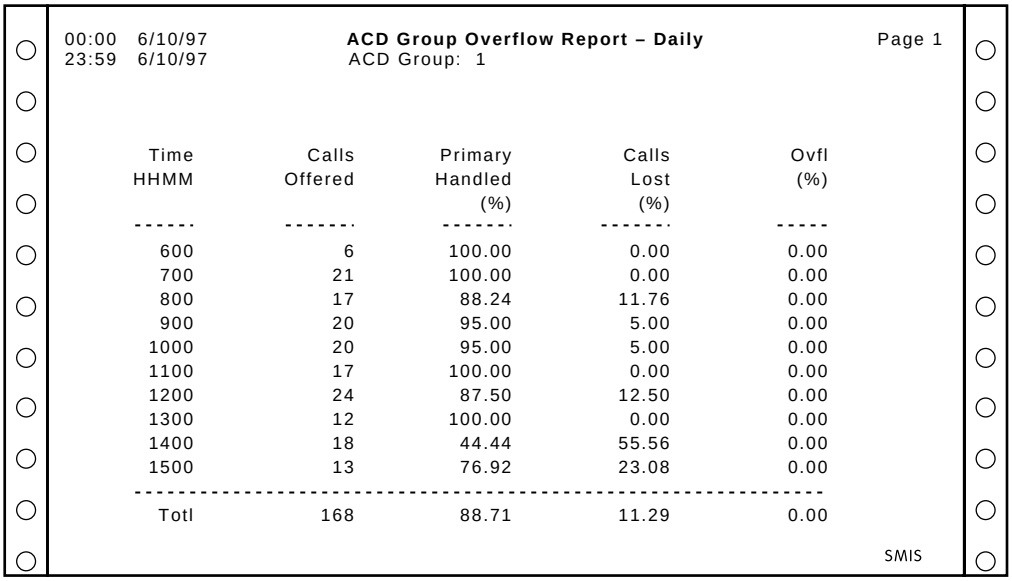
Figure 35 SMIS Delayed Call Spectrum - Daily

Group Overflow

Overflow information is used to determine under-staffing and over-staffing conditions. This report (see Figure 36) summarizes the calls to the group and displays primary and secondary traffic for comparison purposes. Included in the report are:

- ACD group number
- Number of calls offered
- Percentage of calls handled, lost, and overflowed to another group



00:00 6/10/97 — 23:59 6/10/97

ACD Group Overflow Report – Daily — Page 1

ACD Group: 1

Time HHMM	Calls Offered	Primary Handled (%)	Calls Lost (%)	Ovfl (%)
600	6	100.00	0.00	0.00
700	21	100.00	0.00	0.00
800	17	88.24	11.76	0.00
900	20	95.00	5.00	0.00
1000	20	95.00	5.00	0.00
1100	17	100.00	0.00	0.00
1200	24	87.50	12.50	0.00
1300	12	100.00	0.00	0.00
1400	18	44.44	55.56	0.00
1500	13	76.92	23.08	0.00
Totl	168	88.71	11.29	0.00

SMIS

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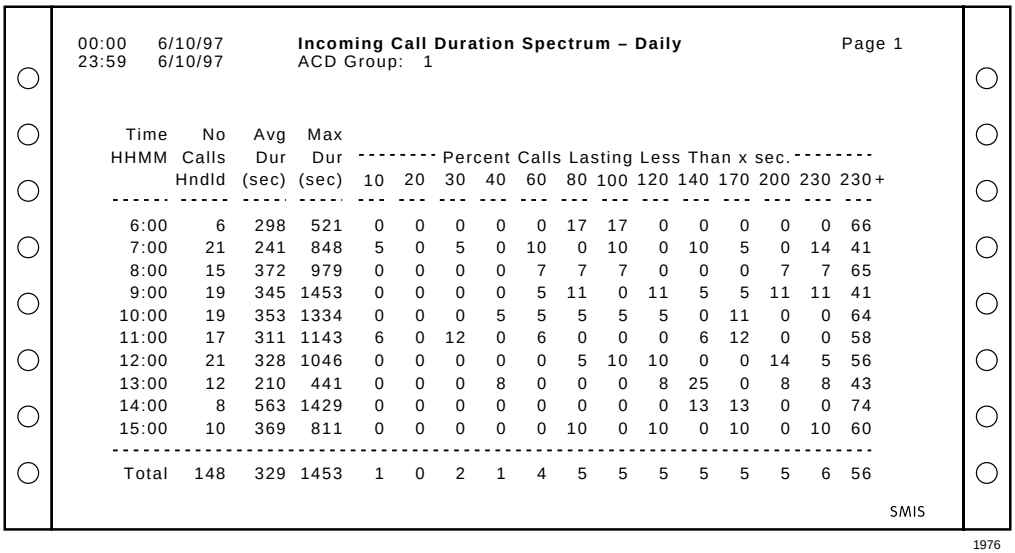
Figure 36 SMIS ACD Group Overflow Report - Daily

Incoming Call Duration

Call duration statistics for a specified ACD group are provided by this report (see Figure 37). The report is useful in determining staffing requirements and modifying acceptable service levels for each group. Information included is:

- Number of calls handled
- Average duration of calls
- Longest single-call duration
- Percentage of calls answered within predefined time periods (in seconds)



00:00 6/10/97 — 23:59 6/10/97

Incoming Call Duration Spectrum – Daily — Page 1

ACD Group: 1

Time HHMM	No Calls Hndld	Avg Dur (sec)	Max Dur (sec)	Percent Calls Lasting Less Than x sec. 10	20	30	40	60	80	100	120	140	170	200	230	230+
6:00	6	298	521	0	0	0	0	0	17	17	0	0	0	0	0	66
7:00	21	241	848	5	0	5	0	10	0	10	0	10	5	0	14	41
8:00	15	372	979	0	0	0	0	7	7	7	0	0	0	7	7	65
9:00	19	345	1453	0	0	0	0	5	11	0	11	5	5	11	11	41
10:00	19	353	1334	0	0	0	5	5	5	5	5	0	11	0	0	64
11:00	17	311	1143	6	0	12	0	6	0	0	0	6	12	0	0	58
12:00	21	328	1046	0	0	0	0	0	5	10	10	0	0	14	5	56
13:00	12	210	441	0	0	0	8	0	0	0	8	25	0	8	8	43
14:00	8	563	1429	0	0	0	0	0	0	0	0	13	13	0	0	74
15:00	10	369	811	0	0	0	0	0	10	0	10	0	10	0	10	60
Total	148	329	1453	1	0	2	1	4	5	5	5	5	5	5	6	56

SMIS

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Figure 37 SMIS Incoming Call Duration Spectrum - Daily

Lost Call

Provides a summary of calls that were disconnected before being answered or that left the queue after the queue timer period expired (see Figure 38). Percentages are calculated based on 13 time intervals (defined by the System Administrator).

This information is useful when determining the length of waiting periods before delay announcements are given, or ACD calls overflow into another group. The Caller ID and ANI numbers of callers that hang up while waiting in queue are not shown on the Lost Call report. These numbers are stored in system memory and can be displayed at a Supervisor telephone or other designated LCD telephone.

00:00 6/10/97 — 23:59 6/10/97 — **Lost Call Spectrum – Daily** — ACD Group: 1 — Page 1

Time HHMM	No Calls Offrd	No Calls Lost	% Lost	Avg Lost Dly	Max Lost Dly	Percent Calls Lost Within x Seconds 2	4	6	8	13	18	23	28	33	43	53	63	63+
6:00	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	17	2	12	69	121	0	0	0	0	0	50	0	0	0	0	0	0	50
9:00	20	1	5	32	32	0	0	0	0	0	0	0	0	100	0	0	0	0
10:00	20	1	5	98	98	0	0	0	0	0	0	0	0	0	0	0	0	100
11:00	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	24	3	13	280	445	0	0	0	0	0	0	0	0	0	0	0	0	100
13:00	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	18	10	56	333	609	0	0	0	0	0	0	0	10	0	0	0	0	90
15:00	13	3	23	386	852	0	0	0	0	0	0	0	0	0	0	0	0	100
Totl	168	20	12	109	852	0	0	0	0	0	5	0	5	5	0	0	0	85

SMIS

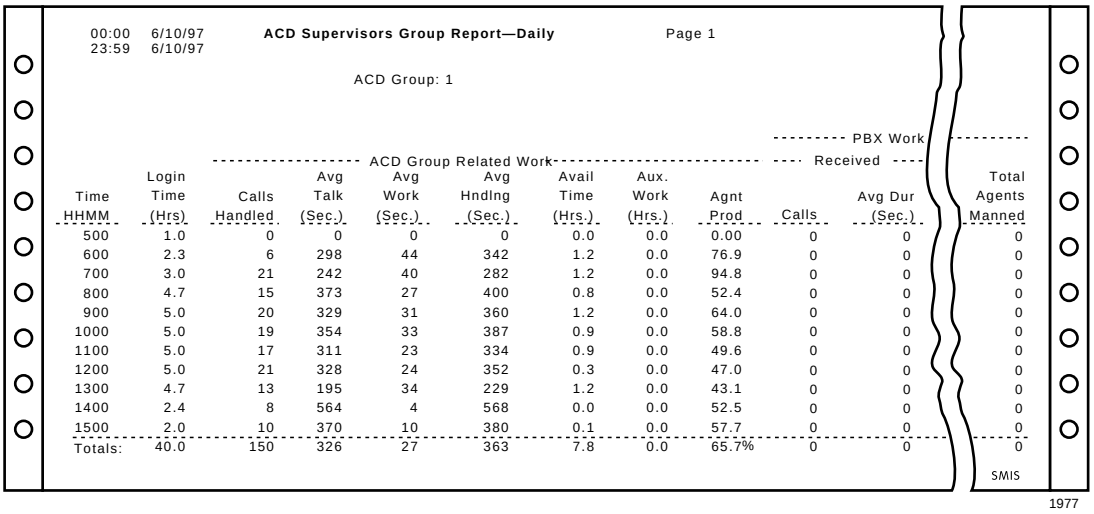
1993

Figure 38 SMIS Lost Call Spectrum - Daily

Supervisor Group

The Supervisor's Group report provides call processing and after-call activity information for ACD groups. The report is similar to the Agent Performance report except that instead of detailing each Agent's statistics, group totals based on a requested time frame are shown.

Daily reports reflect each hour in the day. Monthly reports reflect each day in the month. Yearly reports reflect each month in the year. All Agent calls originated are reported in the Internal section of PBX calls. Originated External is blank. See Figure 39 for an example.



00:00 6/10/97 — 23:59 6/10/97 — **ACD Supervisors Group Report—Daily** — Page 1

ACD Group: 1

Time HHMM	Login Time (Hrs)	ACD Group Related Work: Calls Handled	Avg Talk (Sec.)	Avg Work (Sec.)	Avg Hndlng (Sec.)	Avail Time (Hrs.)	Aux. Work (Hrs.)	Agnt Prod	PBX Work Received: Calls	Avg Dur (Sec.)	Total Agents Manned
500	1.0	0	0	0	0	0.0	0.0	0.00	0	0	0
600	2.3	6	298	44	342	1.2	0.0	76.9	0	0	0
700	3.0	21	242	40	282	1.2	0.0	94.8	0	0	0
800	4.7	15	373	27	400	0.8	0.0	52.4	0	0	0
900	5.0	20	329	31	360	1.2	0.0	64.0	0	0	0
1000	5.0	19	354	33	387	0.9	0.0	58.8	0	0	0
1100	5.0	17	311	23	334	0.9	0.0	49.6	0	0	0
1200	5.0	21	328	24	352	0.3	0.0	47.0	0	0	0
1300	4.7	13	195	34	229	1.2	0.0	43.1	0	0	0
1400	2.4	8	564	4	568	0.0	0.0	52.5	0	0	0
1500	2.0	10	370	10	380	0.1	0.0	57.7	0	0	0
Totals:	40.0	150	326	27	363	7.8	0.0	65.7%	0	0	0

SMIS

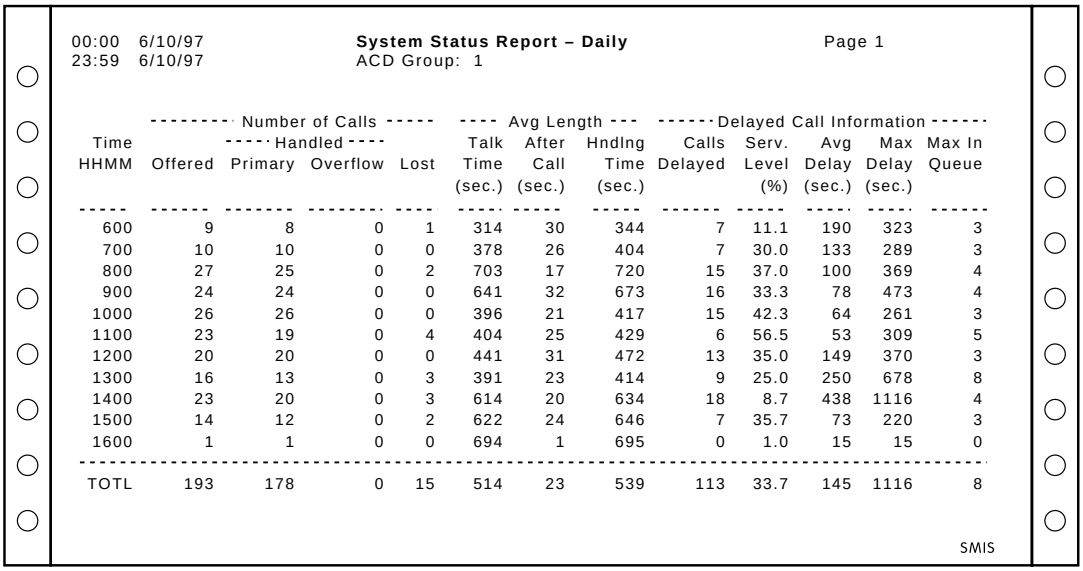
1977

Figure 39 SMIS ACD Supervisors Group Report - Daily

System Status

Figure 40 shows the system status report. It summarizes the call handling characteristics of a group during the current report interval. Statistics include:

- Number of calls offered, answered, overflowed, and lost
- Average talk time, after-call time, and handling time
- Number of calls delayed (held in queue)
- Service level percentage
- Average and maximum delay time
- Maximum number of calls in queue at one time.



00:00 6/10/97 — 23:59 6/10/97 — **System Status Report – Daily** — ACD Group: 1 — Page 1

Time HHMM	Number of Calls: Handled: Offered	Handled: Primary	Handled: Overflow	Lost	Avg Length: Talk Time (sec.)	Avg Length: After Call (sec.)	Avg Length: Hndlng Time (sec.)	Delayed Call Information: Calls Delayed	Serv. Level (%)	Avg Delay (sec.)	Max Delay (sec.)	Max In Queue
600	9	8	0	1	314	30	344	7	11.1	190	323	3
700	10	10	0	0	378	26	404	7	30.0	133	289	3
800	27	25	0	2	703	17	720	15	37.0	100	369	4
900	24	24	0	0	641	32	673	16	33.3	78	473	4
1000	26	26	0	0	396	21	417	15	42.3	64	261	3
1100	23	19	0	4	404	25	429	6	56.5	53	309	5
1200	20	20	0	0	441	31	472	13	35.0	149	370	3
1300	16	13	0	3	391	23	414	9	25.0	250	678	8
1400	23	20	0	3	614	20	634	18	8.7	438	1116	4
1500	14	12	0	2	622	24	646	7	35.7	73	220	3
1600	1	1	0	0	694	1	695	0	1.0	15	15	0
TOTL	193	178	0	15	514	23	539	113	33.7	145	1116	8

SMIS

1992

Figure 40 SMIS System Status Report - Daily

Work Unit

Work Unit codes are established by each customer to represent types of call activities that an Agent may be involved in. These two-digit codes are entered from the Agent's telephone dial pad during an ACD call. This information is helpful when modifying the distribution of certain types of calls. See Figure 41 for the Agent Work Unit report and Figure 42 for the ACD Work Unit report. Both reports are daily totals.

00:00 6/10/97
23:59 6/10/97

Agent Work Unit Report—Daily Page 2

ACD Group: 1

Agent No.	Agent Name	Work Unit	PEG Count	Calls Handled
2522	ROBERT	07	3	1
2522	ROBERT	08	1	1
2522	ROBERT	12	4	1
2522	ROBERT	88	1	1
2522	ROBERT	99	1	0
	Agent Total:		10	4
	Group Total:		27	7
	Grand Total:		27	7

SMIS

1980

Figure 41 SMIS Agent Work Unit Report - Daily

00:00 6/10/97
23:59 6/10/97

ACD Work Unit Report—Daily Page 1

ACD Group: 1

Work Unit	PEG Count	Calls Handled
01	1	0
03	1	0
07	3	0
08	1	0
09	1	0
11	2	1
12	5	2
14	1	0
15	1	0
41	1	0
45	1	0
50	1	0
52	2	2
53	1	0
55	1	0
66	1	0
88	1	0
99	2	2
Total:	27	7

SMIS

1989

Figure 42 SMIS ACD Work Unit Report - Daily

Hospitality Management Information System (HMIS) 6

System Availability

HMIS is optional with Strata DK40 and DK424 systems. HMIS cannot be connected to the Strata DK14.

Description

The Toshiba Strata DK HMIS is a PC-based solution, designed to meet the specific operational needs of small- to medium-sized hotel/motels. HMIS tightly integrates with the Strata DK Digital Telephone System, Release 3.1 or higher, and the Stratagy Voice Processing System, providing a complete and fully-integrated hospitality package.

HMIS is a turnkey package that includes both the PC and software (printer is not included). The packaged product includes:

- PC with a Pentium® 133 MHz processor
- 2GB hard drive
- 3 serial ports
- Keyboard and mouse
- SVGA color monitor
- Software

HMIS software is a Microsoft® Windows® 95-based application (see Table 22 for specific HMIS PC/software specifications).

The HMIS PC is dedicated to running the HMIS server program and functions as a front desk terminal. Other programs *should not* be installed and run on the HMIS PC. In applications requiring multiple front desk terminals, PC HMIS workstations can be networked together to share a common database.

The HMIS application provides hotel/motel features and property management capabilities that are not resident within the Strata DK telephone system. The HMIS is well integrated with the telephony features of the Strata DK telephone system to which it is attached.

The Strata HMIS provides guest check-in/check-out, up to 20-year reservation capacity, automatic wake-up calls, SMDR telephone call tracking and costing, billing, telephone system control, and many other features (see Figure 43).

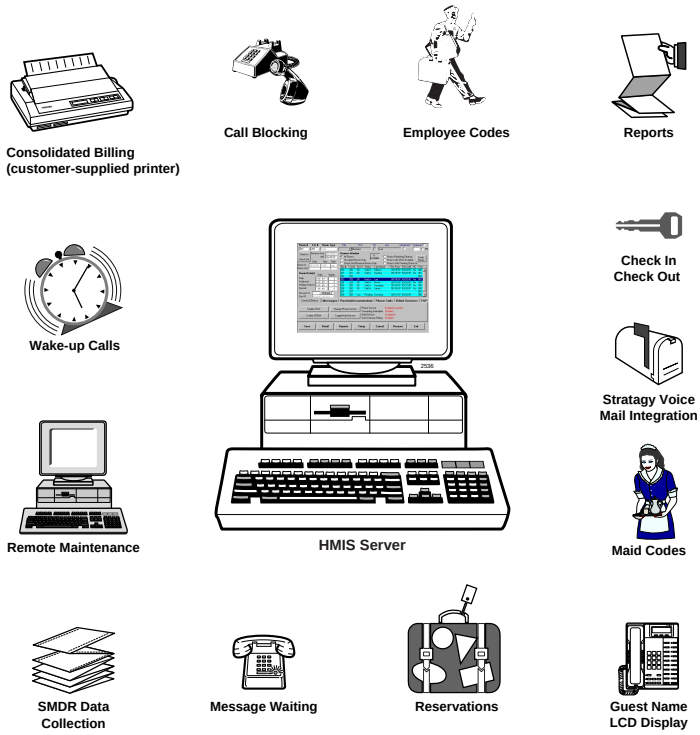


Figure 43 HMIS Applications

Hardware Configurations

There are two configurations of the HMIS product:

- An HMIS server acting as a single front desk terminal (see Figure 44 below).

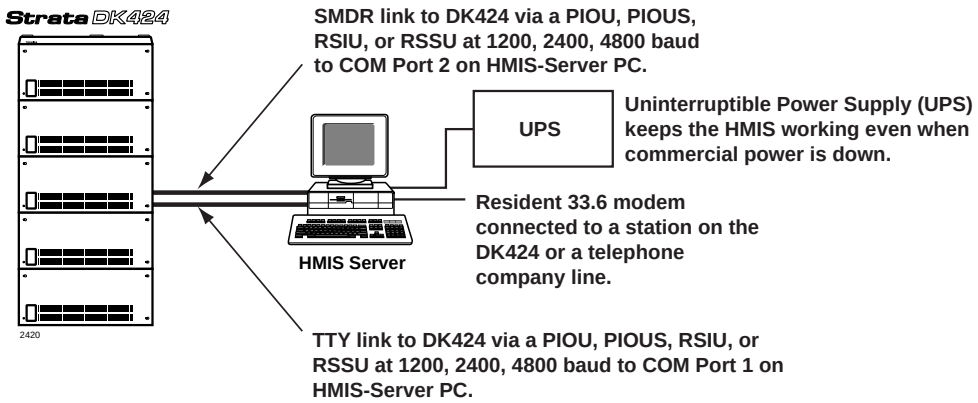


Figure 44 HMIS Server PC

- An HMIS server with HMIS workstation PCs networked on a LAN to function as multiple front desk terminals (see Figure 45 below and "Multiple Front Desk PC Terminals" in the HMIS General Description). The configuration includes a five-port network hub which can support up to four workstations. Up to nine workstations can be connected using either a larger or multiple hubs.

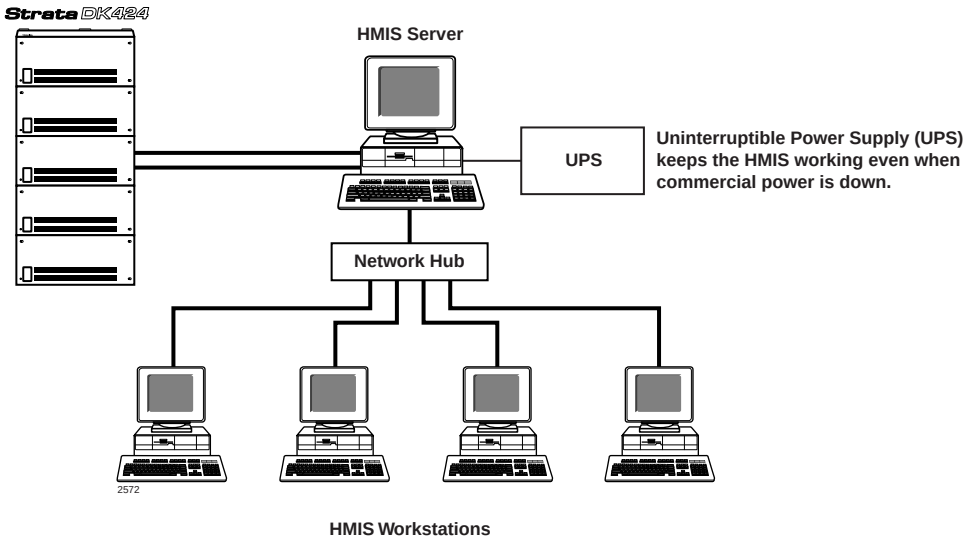


Figure 45 Server PC with Workstations

The hardware/software included with the server and workstation are well-adapted for their specific uses. Using a powerful PC provides excellent processor speed and performance of the HMIS application.

Table 22 HMIS PC/Software Specifications

Server PC	Workstation PC
IBM-compatible Pentium 133 MHz Processor	IBM-compatible Pentium 133 MHz Processor
Windows 95	Windows 95
16MB RAM	16MB RAM
2GB Hard Drive	2GB Hard Drive
3.5" 1.44 MB Floppy-disk Drive	3.5" 1.44 MB Floppy-disk Drive
3 Serial Communication Ports	3 Serial Communication Ports
10Base-T Network Card	10Base-T Network Card
14" SVGA Color Monitor	14" SVGA Color Monitor
Windows 95 Keyboard and PS/2 Mouse	Windows 95 Keyboard and PS/2 Mouse
Windows Graphics Accelerator	Windows Graphics Accelerator
8-speed CD ROM Drive	
33.6 Internal Modem (used for remote access to the HMIS for troubleshooting)	
Symantec™ pcANYWHERE™ software	
Uninterruptible Power Supply (UPS)	

Connection Requirements

The HMIS connects to the Strata DK using two connections, the TTY port and SMDR port on a PIOU, PIOUS, RSIU, or RSSU at 1200, 2400, or 4800 baud. If SMDR is also used for general purposes, in addition to hotel guest billing records, it requires a customer-supplied Y-connector to the general purpose printer or call accounting device.

The Automatic Wake-up Call function provided by HMIS has some specific Strata DK system requirements. They are:

- One digital station port must be available for connection to a digital telephone that is dedicated to the auto wake-up function. This telephone and port is not used for any other purpose. The customer's system must provide the available digital station port.
- An external music or message source is required to play the optional music or greeting to guests who receive auto wake-up calls. This requires a customer-supplied music source or digital announcer to play the greeting, and a standard station port on an RSTU2 or RDSU card.

Main Screen

All screens and pop-up dialog boxes are accessed from the Main screen which serves as the central point for the system. To make a reservation or check in/check out a guest, simply click on a button from this screen to start the process. Entries made on other screens are automatically incorporated into the HMIS databases and immediately displayed on the Main screen, providing a complete and up-to-date record of business activity.

On-screen Guest Directory

The HMIS Main screen provides an on-screen guest directory (see Figure 47). The information displayed includes the room number, room telephone extension, room type, reservation dates, room rates, handicap indicator, check-in date/time/clerk ID, and confirmation number.

Browse Window

The Browse Window (see Figure 46) enables the authorized user to search the HMIS quickly and easily. By clicking on the column heading, information can be sorted by any column displayed on the screen. Or, you can sort the Window by any of the following categories:

- All rooms (list of all rooms–designates occupied rooms and reserved rooms with pending check-in).
- Occupied rooms only (list of rooms with checked-in guests).
- Check-out/renewal rooms only (list of rooms due for check-out or renewal on current date).
- Rooms requiring cleanup (list of rooms scheduled for cleanup).

- Rooms with DND enabled (list of rooms where call blocking is enabled)

  ...or, where Stratagy is installed, rooms with CFAC enabled (list of rooms where all calls are forwarded to Stratagy).

- Rooms with pending check-in (list of reserved rooms due for check-in on current date).

The operator can browse room availability or status such as a list of all rooms, occupied rooms, rooms requiring check-out, rooms requiring cleanup, rooms pending check-in, rooms with DND or Call Forward – All Calls (CFAC) set. There is a Swap Room button (see "Room Change (Swap)" in the HMIS General Description) for changing a guest's room quickly and easily.

When the All Rooms option is selected, the window displays the entire hotel guest list. The Browse function is very useful during check-in for locating guest reservations.

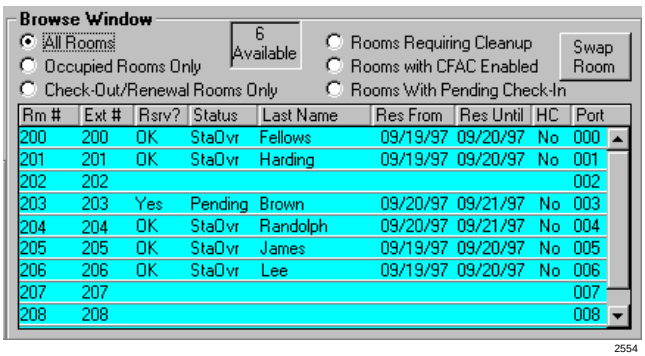


Figure 46 Browse Window (with sample data)

Customer Detail Window

The Detail button at the bottom of the screen provides a toggle feature between the Browse and Customer Detail Windows. The Customer Detail Window displays the following information about the guest:

- Home address/telephone number
- Auto make/model
- Auto tag #
- Company affiliation (name/telephone number)
- Number of adults/children in party
- Any special comments

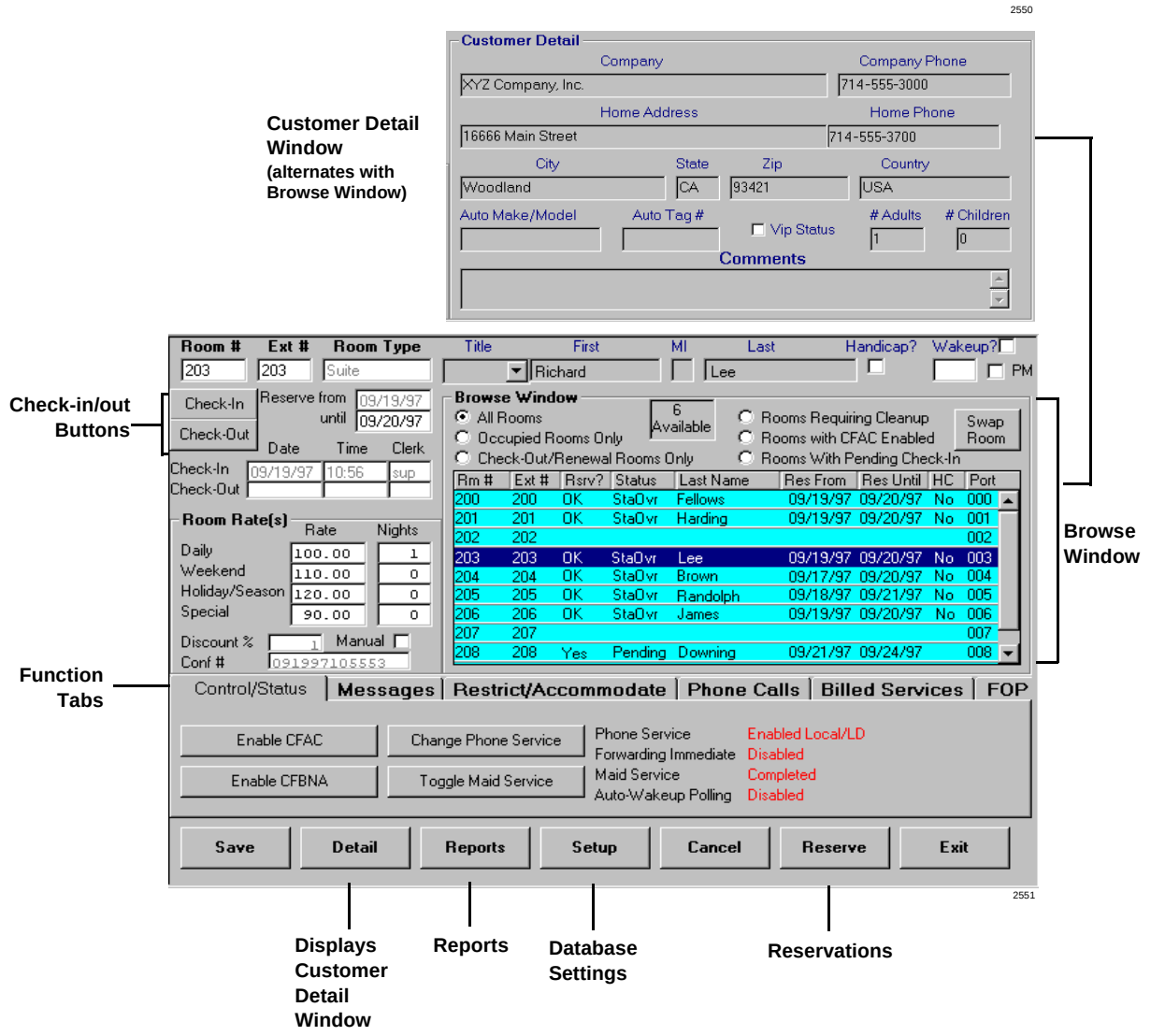


Figure 47 HMIS Main Screen (with sample data)

Function Tabs

Dialog boxes are provided in the bottom half of the Main screen. The tabs enable the front desk clerk to enter guest or room information during the guest's stay and view the data, whenever necessary. The tabs are described below.

- **Control/Status** – Manually controls and displays telephone service, call forwarding or Do Not Disturb (DND), maid service and wake-up call settings for the room.
- **Messages** – Enables entry of messages and tracks wake-up calls for each room. Messages can be printed at any time and remain in the database until the Clear Msgs/Wakeup Logs button is selected or the guest checks out. A log of wake-up calls is also displayed and can be cleared with the same button.
- **Restrict/Accommodate** – Displays amenities (cable, TV, etc.) and special conditions (baby crib, etc.).

- **Phone Calls** – Tracks telephone calls/charges on a per room basis.
- **Billed Services** – Enables entry of billed service charges for room service, movies, etc. to the guest's account and displays all entries during the guest's stay.
- **FOP** – Registers and displays the Form of Payment (FOP) that is being used by the guest (cash, check or credit card) and room deposit payment.

Convenient Access to Screens/Functions

The HMIS Main screen provides button access to the functions and menus required to run the hospitality facilities.

- **Check-in** – Displays the Check-in screen. The screen enables the front desk staff to check in either a walk-in or reservation guest (see "Check-in" in the HMIS General Description for details). An Available Room Selection pop-up dialog box provides a list of rooms from which to choose.
- **Check-out** – Displays the Billing Statement screen. By highlighting a guest's name in the Browse Window and clicking on this button, front desk staff can view/print the guest's consolidated billing statement. Clicking on the Payment Received button clears the account and the database of guest information, sets the Maid Service to "Required" and the telephone service to "outgoing call restriction" (see "Check-out with Billing" in the HMIS General Description for details).
- **Reserve** – Displays the Reservation screen. This screen enables the front desk clerk to make guest reservations. An Available Room Selection pop-up dialog box provides a list of rooms from which to choose (see "Reprinting Processed Billing Statements" in the HMIS General Description for details). During System Setup, the authorized user can choose between reservation databases that can store 4, 8, 12, 16, or 20 years of reservation records.
- **Reports** – Displays the Report Menu screen. This screen enables authorized personnel to view/print a list of seven reports: Hotel Guest List, Maid Activity Report, Reservation List, Uncleared Outgoing Phone Calls Made, Morning Check Out List, All Active Balance Statements, and Consolidated Detail Night Audit Report (see "Reports" in the HMIS General Description for detailed information).
- **Setup** – Displays the Setup Menu screen. This screen enables authorized personnel to access a group of six setup screens that must be completed before HMIS can be used. The screens consist of: Master Room and AutoGen Setup screens for room record entries, Company for entry of company information (name, address, etc.), Employee Codes for entry of staff names/category/employee ID, Settings for telephone/tax settings, and Statement for customizing the billing statement printout.

User-definable Settings

The HMIS application has user-definable settings, enabling the hotel/motel management to tailor-make the application to suit the business' individual needs.

For more information, refer to *Hospitality Management Information System (HMIS) User Guide* and *General Description*.

Glossary

Term	Definition
AA	Auto Attendant (built-in or external) – acts as an automatic operator that directs incoming callers to stations by offering a menu of dialing prompts.
ABR	Automatic Busy Redial – enables a station user to automatically redial a busy outside number up to 15 times at pre-programmed intervals.
ACB	Automatic Callback – enables the station user, using a flexible button or dialing a special code, to call back a station that was previously busy or in DND mode. When the called station is free, the system rings the caller with a special tone.
ACD	Automatic Call Distribution – enables incoming calls to be distributed to a group of ACD agents. The ACD Supervisor's LCD telephone displays ACD Agent and Group information which allows the Supervisor to monitor calls and assist agents.
ADM	Add-on Module – *See DADM.*
AMI	Alternate Mark Inversion.
ANI	Automatic Number Identification – sends the phone number of the calling party to the Strata DK system over incoming DID or tie lines. This feature is provided by some long distance telephone service companies.
B Channel	Bearer Channel – ISDN data or voice channel which transmits at 64kpbs. It refers to the frequency range of transmissions on a copper pair and is a logical, rather than a physical channel. Also see BRI and PRI.
B8ZS	Bipolar 8 Zero Substitution.
BGM	Background Music – enables customer-supplied music to be sent to telephone speakers and external speakers.
BLF	Busy Lamp Field.
BPS	Bits Per Second – unit of measure that refers to the transmission speed (baud rate) of electronic signals. It describes the Data Interface Unit (DIU) and modem operation.
BRI	Basic Rate Interface – ISDN line with 2B + 1D channel. BRI lines can have a U-interface with RJ-11 jacks and single twisted pair wiring, or RJ-45 four pair S/T interface wiring. BRI is the a smaller ISDN interface than PRI.
BSIA	Base Station Interface Adapter – Strata AirLink Wireless Controller.
CESID	Caller's Emergency Service Identification – phone number for specific station or station location which is sent to the CAMA trunk.
CFAC	Call Forward-All Calls – forwards all calls when a station is idle or busy. The station does not ring.
CFB	Call Forward-Busy – forwards all calls when a station is busy.
CFNA	Call Forward-No Answer – forwards all calls when a station does not answer. The "No Answer" time is flexible, 8 to 60 seconds.
CFBNA	Call Forward-Busy/No Answer – forwards all calls when a station is busy or doesn't answer. Calls ring for 8 to 60 seconds and then forward.
CLASS	Custom Local Area Signaling Services – defines a number of features offered by local telephone companies.

Term	Definition
CLID or CND	Calling Line Identification or Calling Number Delivery – phone number or name of the calling party sent to the Strata DK system over incoming ground or loop start CO lines. This feature is one of the “CLASS” features offered by some local telephone companies.
CNIS	Calling Number Identification Services – caller ID for ISDN. CNIS is calling party information for outgoing and incoming calls sent to the ISDN network.
CO	Central Office – facility which houses switching equipment that provides phone service (CO lines, E & M tie lines, DID lines, Centrex lines) for the immediate geographical area.
CODECs	Coder/Decoder – semiconductors that process analog-to-digital and digital-to-analog conversions.
CSU	Channel Service Unit – required between the DK PRI interface and the PRI line provider interface in most locations of the U.S.
CTI	Computer Telephony Interface – combines the capabilities of the Strata DK digital business telephone system with custom functionality provided by computer applications. The PC must be running Microsoft Windows software.
D Channel	ISDN Data Channel – transmits call control information (out-of-band signaling) for B-channels. The D-channel is a logical, not physical channel.
DADM	Digital Add-on-Module – provides 20 flexible feature buttons that can be assigned individually for Direct Station Selection, System and Personal Speed Dial, and CO line access. Connects to 2000-series digital telephones.
DDCB	Digital Door Phone/Lock Control Unit – supports optional door phones (MDFBs) and provides door lock control. A peripheral hardware unit compatible with designated digital telephone circuits.
DDSS	Digital Direct Station Selection Console – facilitates the processing of heavy loads of incoming calls. The DDSS connects only to designated digital telephone circuits and is associated with a digital telephone.
DH	Distributed Hunt.
DID	Direct Inward Dialing line – enables external callers to dial directly to an internal number.
DIL	Direct In Line – refers to two-way, standard CO trunk lines that are assigned to a particular extension or hunt group.
DISA	Direct Inward System Access – enables an outside party to access the Strata DK system internal stations or outgoing CO lines without having to go through an operator or automated attendant. An optional security code may be set to prevent unauthorized access to outgoing CO lines for through system calling.
DIU	Data Interface Unit.
DKT	Digital Key Telephone.
DN	Directory Number.
DND	Do Not Disturb – enables a station user to block incoming calls. After DND is activated, internal calls and transferred calls do not ring at the station, and voice announcements do not come through. Off-hook Call Announce is also blocked. The station user can still place outgoing calls.
DNIS	Dialed Number Identification Service – sends the phone number of called party over incoming DID or tie lines to the Strata DK system. This feature is provided by some long distance telephone companies.
DP	Dial Pulse – signals sent to the Central Office which are regular momentary interruptions of direct or alternating current and correspond to the value of the phone digit. It is the same as rotary dialing.
DSS	Direct Station Selection – enables a phone user (as well as a DSS console and ADM user) to call another station with the touch of a flexible feature button.
DTMF	Dual-tone Multi-frequency – pushbutton tone dialing.

Term	Definition
DVSU	A subassembly that equips a digital telephone with the capability to receive Speaker Off-hook Call Announce (OCA) calls. DVSU is not required to receive Handset OCA (HS-OCA).
EKT	Electronic Key Telephone.
ESF	Extended Super Frame.
FIFO	First-In, First-Out.
FOP	Form of Payment – enables the front desk clerk to enter the form of payment (cash, check or credit card) and amount and type of deposit paid using the FOP Tab screen
HDCB	Electronic Door Phone/Lock Control Unit – supports optional door phones (MDFBs) and provides door lock control. A peripheral hardware unit compatible with designated electronic telephone circuits.
HDSS	Electronic Direct Station Selection Console – facilitates the processing of heavy loads of incoming calls. The HDSS console connects only to designated electronic telephone circuits and is associated with electronic telephones.
HESB	External Speaker Box – provides paging speaker and/ or a background music speaker, etc. It is a speaker/amplifier that is configured with the system.
HHEU	Headset/Loud Ringing Bell Interface – connects a headset or external speaker box (HESB) to the phone. It is a subassembly that fits inside a digital telephone or a 6500-series electronic telephone.
ISDN	Integrated Services Digital Network – enables the exchange of digital information at each end of the line without converting analog-to-digital signals. Connection speeds are faster and audio quality is superior. ISDN service requires service subscription from a telco with ISDN equipment.
LATA	Local Access and Transport Area.
LCD	Liquid Crystal Display – displays call information. It is supported by digital and electronic telephones.
LCR	Least Cost Routing.
LSI	Large Scale Integration – related to circuit design technology. Strata DK system printed circuit boards (PCBs) use LSI circuit design.
MDF	Main Distribution Frame – wiring frame usually located in a phone closet.
MDFB	Door Phone Box – two-way speaker box.
MOH	Music-on-Hold – music (customer-supplied) or announcements sent to parties on-hold on CO lines or the intercom.
NFAS	Non-facility Associated Signaling – provides ISDN trunk groups beyond the 23 channels available with a single Primary Rate Interface.
NT-1	ISDN Network Termination device – powers a U-interface ISDN line and enables multiple S/T ISDN devices to connect to it. The NT-1 must be UL-listed (U.S.) or CSA-certified (Canada).
OAI	Open Architecture Interface – enables the computer to command the phone system to answer, delay, switch, hold, etc., calls.
OCA	Off-hook Call Announce. There are two types: Handset OCA and Speaker OCA.
OPS	Off-premises Station.
PBX	Private Branch Exchange – industry-standard term that refers to a telephone switch, usually on-premises, which serves an individual company, and is connected to a public telephone exchange through the Central Office (CO).
PC	Personal Computer.
PCB	Printed Circuit Board.
PDN	Primary Directory Number.
PFT	Power Failure Transfer – automatically switches CO lines directly to a standard single-line telephone and provides emergency service if commercial AC power fails.

Term	Definition
PhDN	Phantom Directory Number.
PRI	Primary Rate Interface – trunk interface to the ISDN network, which enables multiple use of channels for DID, tie, FX, WATS, 800, etc. It supports multiple services and dynamic channel allocation. PRI is the larger ISDN interface (via the RPTU) with 23B+D transmission format. Channels are 64-kbps. Also see BRI.
PSAP	Public Safety Answering Point – used for E911 calls.
PSTN	Public Switched Telephone Network
RAM	Random Access Memory – refers to the type of system memory that holds individual system configuration and feature programming. RAM is read/write memory, and can be easily revised in programming.
ROM	Read Only Memory – refers to the type of system memory that holds static software that comprises the mechanics of the features' functions. ROM is only revised by Toshiba software engineers.
RPCI-DI	Personal Computer Interface Unit – enables digital telephones to connect to a PC or ASCII terminal to make data calls to printers, PCs, and other data devices.
S/T Interface	Reference interface points ("S" or "T") of an ISDN network. S/T interfaces are RJ-45, 8-wire connection interfaces for ISDN equipment. An NT-1 is needed to network U-type BRI lines to S/T type interfaces.
SDN	Secondary Directory Number.
SD	Speed Dial – enables dialing of frequently called phone numbers by using a Speed Dial button or codes.
SF	Super Frame.
SLT	Single-line Telephone.
SMDI	Simplified Message Desk Interface – RS-232 link from PIOU, PIOUS, RSSU, RSIS, or RSIU modular jack connected to a voice mail machine to provide Strata DK voice mail integration.
SMDR	Station Message Detail Reporting.
SMIS	Software Management Information System (SMIS).
SS7	Signaling System 7
TA	Terminal Adapter or ISDN modem that converts PC and other types of protocol into a signal that works with ISDN. Generally, TAs support RJ-11 voice ports and RS-232C or V.35 or V.449 data interfaces.
TAPI	Telephone Application Programming Interface.
TE	Terminal Equipment. This refers to devices using ISDN service (telephones, faxes, computers, etc.). TE1 supports ISDN formats with S/T or U-type interfaces.
TSPI	Telephony Service Provider Interface.
U Interface	A single twisted pair of copper wire on an RJ-11 jack. The wiring is identical to POTS, with different signaling. Only one U-interface device can be attached per line.

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