

# **iDCS 100**

## **General Description Guide**

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# PREFACE

## About This Manual

*i*DCS 100, Digital Communication System, is a digital telephone system designed for small to medium-sized businesses.

This manual provides an overview of the Samsung *i*DCS 100, Digital Communication System, including system structure and hardware, features and facilities and specifications.

This guide consists of the following chapters.

- Introduction to System
- Hardware Descriptions
- Specifications
- Business Feature Package
- General User Information

## Supporting Documents

Further detail on all of the aspects covered in this manual is included in the system Installation and Programming guide.

The *i*DCS 100 system provides the following manuals for more information:

- **General Description Guide**  
This manual provides an overview of the Samsung *i*DCS 100, Digital Communication System, including system structure and hardware, features and facilities and specifications.
- **Installation Guide**  
This manual provides the information about installation of the Samsung *i*DCS 100, Digital Communication System, including information about connecting the equipments.
- **Programming Guide**  
*i*DCS 100 system provides MMC(Man Machine Communication) program. Users can configure the system using the MMC program at the digital telephone.  
The Programming Guide describes how to use the MMC program.

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# Chapter 1

## Introduction To System

# Chapter 1 Introduction To System

This chapter describes the introduction to *i*DCS 100 system as follows.

- General Description
- Size and Configuration
- Technology
- Programming

## General Description

*i*DCS 100, Digital Communication System, is a digital telephone system designed for small to medium-sized businesses. It can operate with the functionality of a square key system, PABX or a combination of both (hybrid). *i*DCS 100 employs the very latest DSP technology (Digital Signal Processors).

*i*DCS 100 offers a variety of interface cards that allow connection to the public telephone network or private networks. These are generally referred to as trunk cards. Two types of telephones can be connected to the systems. Proprietary digital phones called "Keysets" connect to digital line interface cards (DLI). Standard telephone sets generally called "single line telephones" connect to single line interface cards (SLI). In addition, DLI station ports are used to connect peripheral devices such as door phones and add-on modules. Miscellaneous circuits are provided to allow such optional features as external paging, music on hold, background music, common audible devices, alarms and emergency power failure telephones.

All DCS keysets utilize a single PCB with surface-mounted components assuring the highest product quality and long life. Samsung's customary large, easy-to-read displays and LEDs in the button design make them much easier to use. In many instances, sophisticated features are made simple through the use of friendly display prompts or push-on/push-off feature keys.



1. 'DCS' is the general term used in the text to refer to all systems. Any differences between the systems are indicated under separate headings '*i*DCS 100' and 'DCS'.
2. It is not possible to expand from *i*DCS 100 to a DCS system nor to expand from DCS Compact II to *i*DCS 100.



# Size and Configuration

The *i*DCS 100 system consists of the basic Key Service Unit, an Expansion cabinet, Interface cards and Digital keysets. The Key Service Unit begins with eight (8) keyset ports expandable to 18 analogue C.O. line ports, or 24 lines if 4 BRI cards are used, or 32 stations. In addition, up to 8 keyset daughter boards may be added to the system along with the optional 2 SLI card.

The Expansion cabinet A type has three Universal slots and one DCS slot for TEPRI(PRI) or VM service, which provides the maximum configuration of 66 ports with analogue trunk lines or 96 ports with Digital trunk lines.

The Expansion cabinet B type has two Universal slots and two DCS slot for TEPRI(PRI) or VM service, which provides the maximum configuration of 58 ports with analogue trunk lines or 88 ports with Digital trunk lines.

Two types of telephones can be connected to the system: proprietary digital stations called "keysets" that connect to DLI (Digital Line Interface) ports and standard telephone sets, generally called "single line telephones", that connect to SLI (Single Line Interface) ports.

The system also has an optional MISC card which provides Music on Hold facilities, two serial I/O ports and other useful facilities.

The following charts (Figures 1-1, 1-2, 1-3, 1-4) describe configurations using the basic Key Service Unit (KSU), an Expansion cabinet and expansion cards. However, by using the DCS's unique keyset daughter boards (KDBs), which are installed in the base of a digital keyset, the capacity of the system can be increased by one station per KDb. Installing a KDb-DLI adds another digital port while a KDb-SLI adds a single line port. Mix and match these two types of KDb to get up to a total of 8 KDBs in the system. Using this method allows the *i*DCS 100 to expand to a maximum of 64 stations. Adding the optional 2 SLI card to the KSU provides a further two SLI ports. The combination of the basic 008 KSU plus three expansion cards in the KSU plus three expansion cards and one DCS card in the Expansion cabinet plus 8 KDBs plus a 2 SLI card provides a maximum configuration of 96 ports plus Miscellaneous card.



- 
1. Only one 2 SLI card can be installed in the system.
  2. Only one MISC card can be installed in the system.
  3. Only three expansion cards can be installed in the Key Service Unit.
  4. Expansion A type consists of three universal expansion slots and one DCS card slot for TEPRI(PRI) or SVMi-8.  
Expansion B type consists of two universal expansion slots and two DCS card slot for TEPRI(PRI) and SVMi-8.
  5. Only 8 KDBs can be installed in the keysets connected to the 008 Basic KSU
  6. *i*DCS 100 system can have up to 48 stations if SVMi-8 is not used up to 40 stations if SVMi-8 is used.
-

Figure 1-1 iDCS 100 Configuration Matrix Table (with Analogue Trunks) – Expansion A type

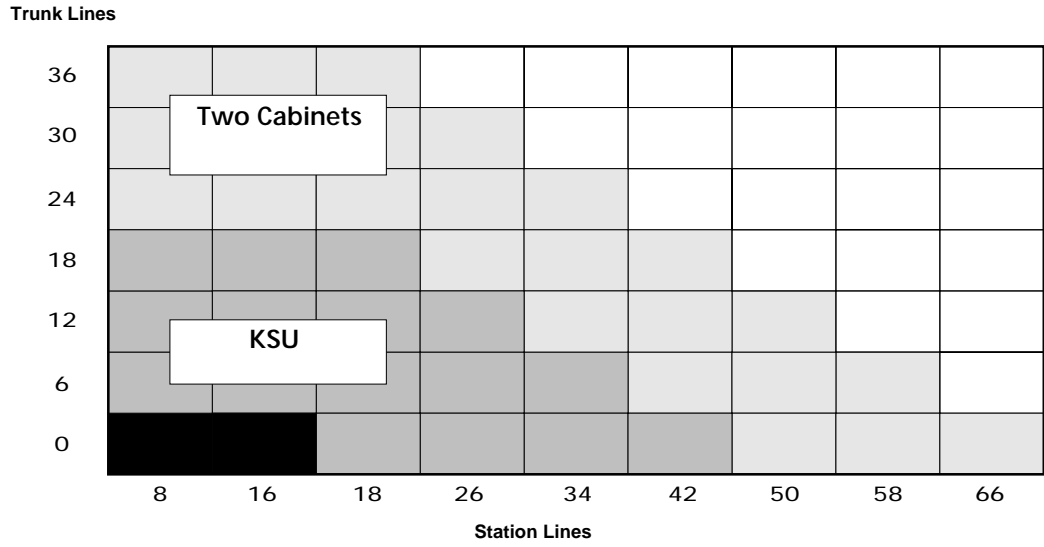


Figure 1-2 iDCS 100 Configuration Matrix Table (with Digital Trunks) – Expansion A type

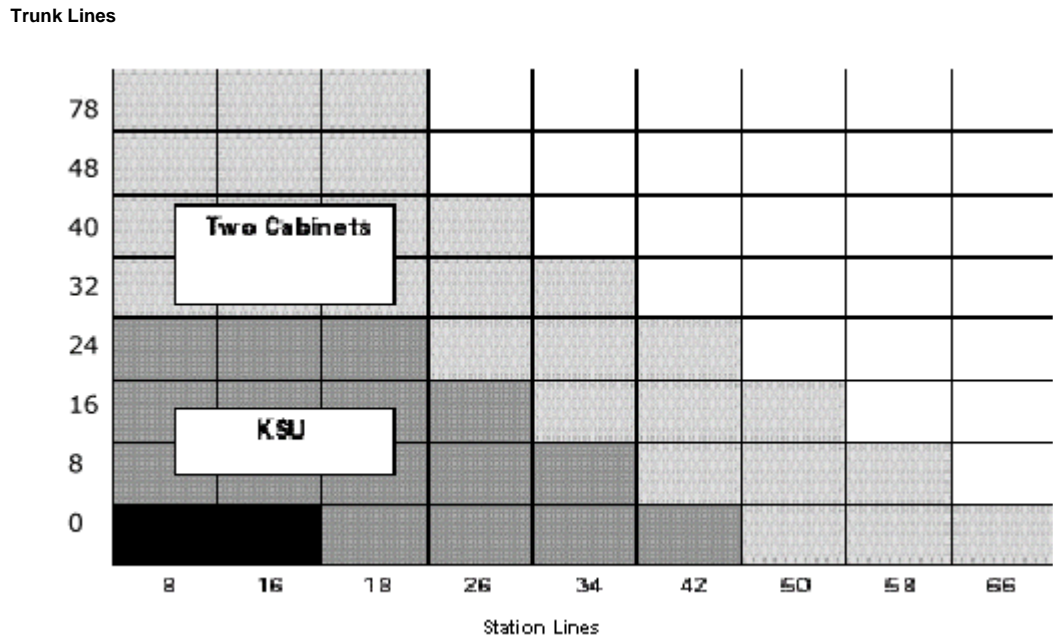


Figure 1-3 iDCS 100 Configuration Matrix Table (with Analogue Trunks) – Expansion B type

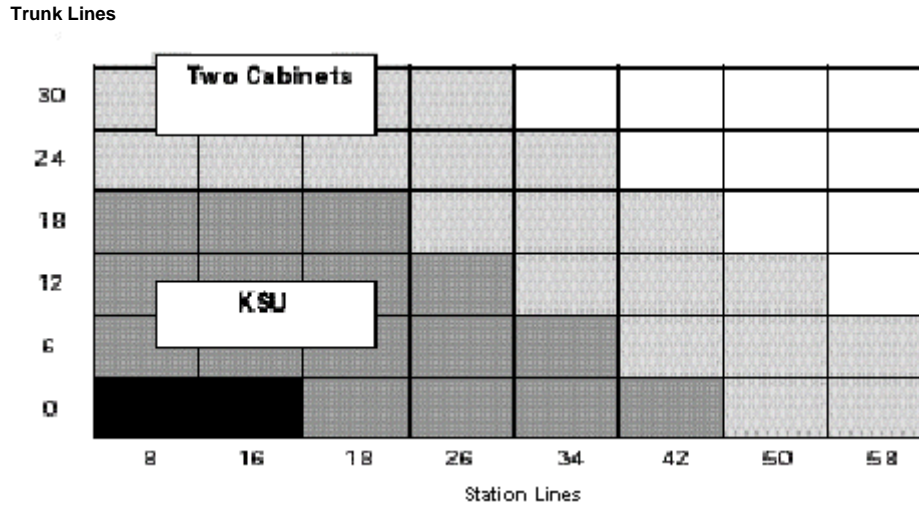
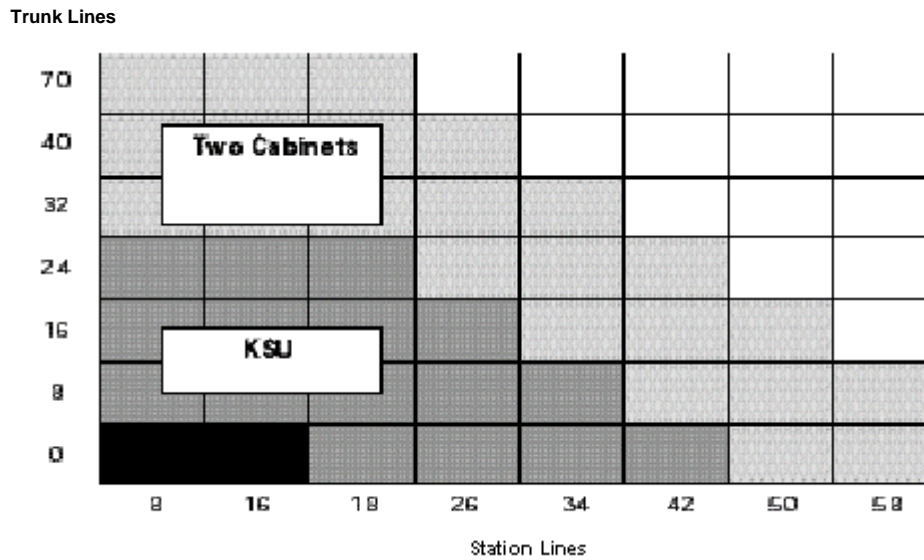


Figure 1-4 iDCS 100 Configuration Matrix Table (with Digital Trunks) – Expansion B type



The Figure 1-5 describes iDCS 100 system configuration using the Basic Key Service Unit (KSU) and Expansion A type cabinet.  
 The Figure 1-6 describes iDCS 100 system configuration using the Basic Key Service Unit (KSU) and Expansion B type cabinet.

Figure 1-5 iDCS 100 System Configuration (Basic KSU + Expansion A )

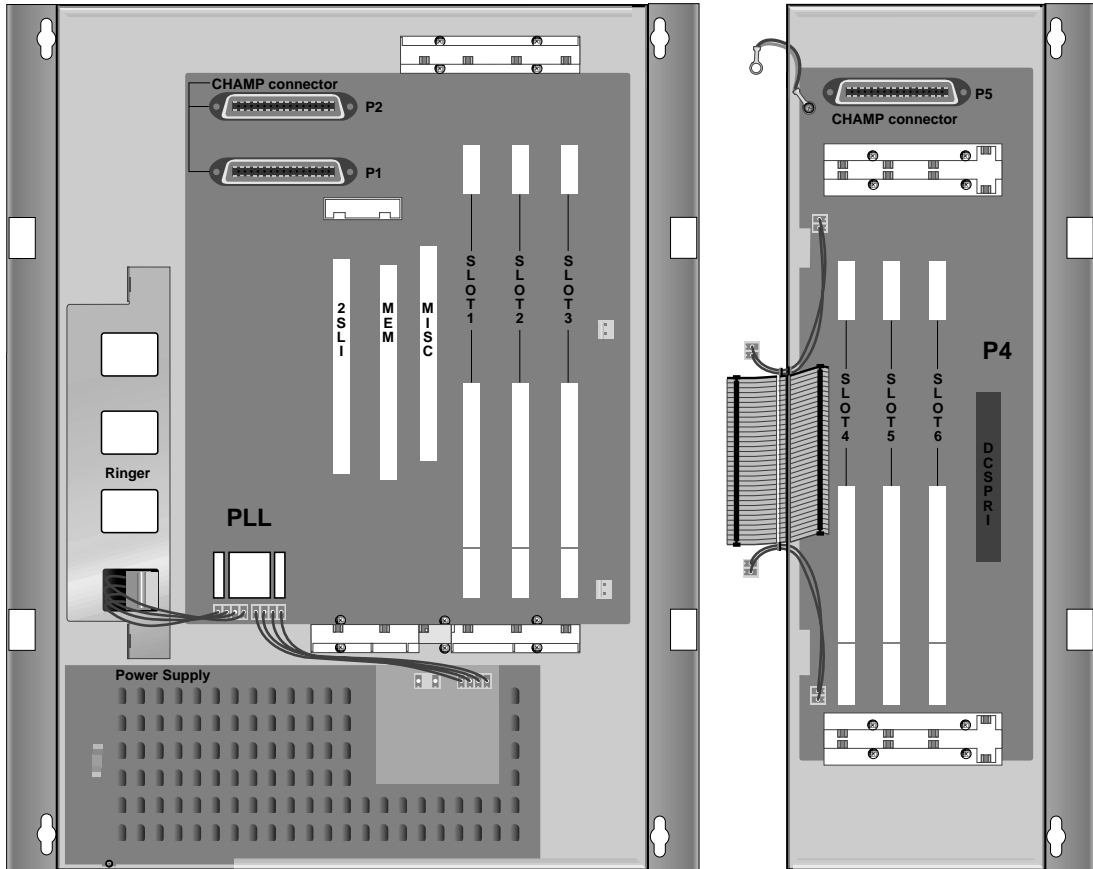
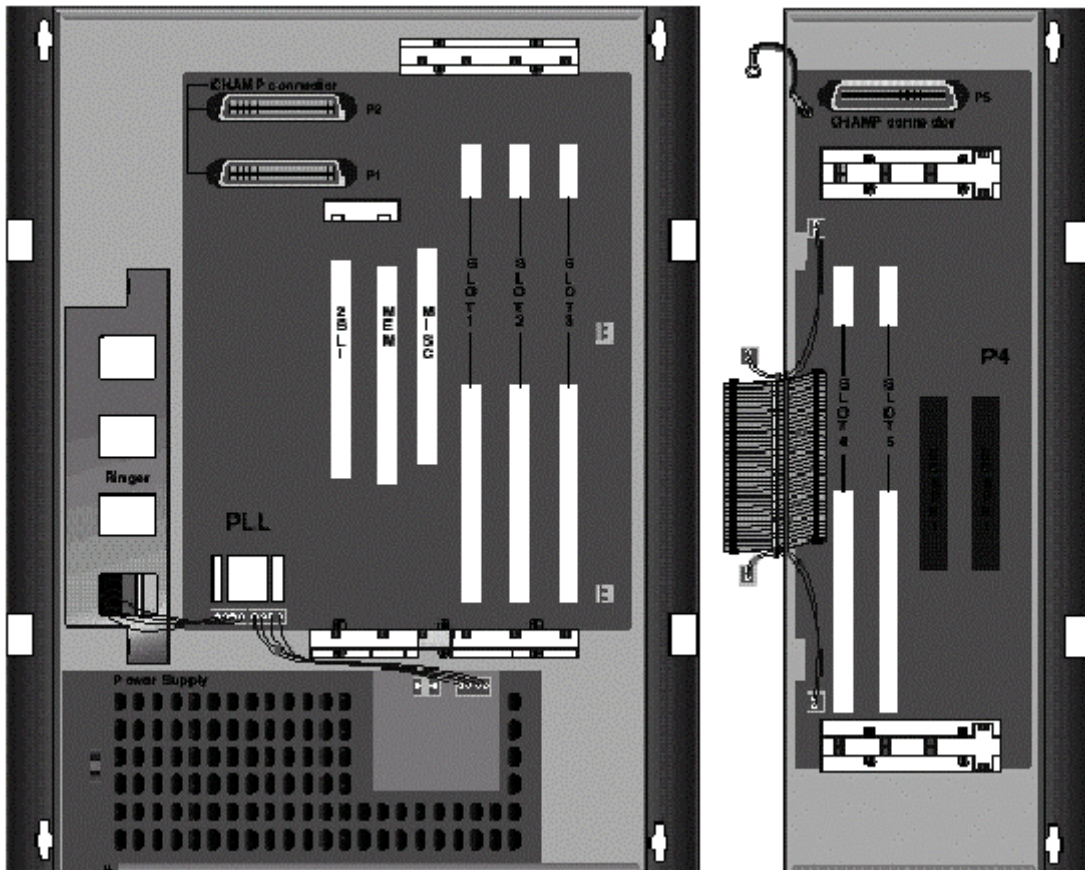


Figure 1-6 iDCS 100 System Configuration (Basic KSU + Expansion B )





- 
1. Only one 2 SLI card can be installed in the KSU.
  2. Only one MISC card can be installed in the KSU.
  3. Only three expansion cards can be installed in the KSU and the additional can be added in the Expansion cabinet when expanded.
  4. Only 8 KDBs can be installed in the keysets connected to the Basic KSU.
  5. ISDN cards(BRI, PRI and TEPRI) require a PLL card installed in the KSU.
-

# Technology

## *Switching*

System switching is accomplished by means of a custom IC "engine" that provides 256 switchable digital channels. The engine is controlled by its own 16-bit Motorola® MC 68000 microprocessor and switching control program. Each of the 256 digital channels is automatically assigned to carry voice or data as required by system operation in a PCM format.

In addition to the 256 channels mentioned above, the systems also utilize Digital Signal Processors (DSPs). Each DSP may be configured by the switching control program as a DTMF sender, a DTMF receiver or as a C.O. tone detector on a per-call basis. Each engine chip contains 4 DSP channels.

Four additional DSPs are added when a MISC card is installed. This means that the system contains a total of 8 DSP channels when fully expanded. The DSP channels are fully shared throughout the system as a common resource.

## *Memory*

The systems operate using stored program control. This program is stored in EPROM chips or flash memory. All specific customer data is stored in RAM(Random Access Memory) which is protected against the loss of AC power to the system by an on-board battery backup system.

## *Microprocessors*

iDCS 100 uses distributed processing. The primary processor of the system is a 16-bit Motorola® MC68000 operating at a clock speed of 16 MHz. Secondary processing is in the some special cards like as BRI and also done in the keysets. The digital keyset uses a Hitachi H8 processor for data communication within the iDCS 100.

# Programming

The iDCS 100 system arrives from the factory with default data.

Connect it to trunks, stations and power.

Turn the system on and it is fully operational.

The only thing left to do is customize the data to fit the customer's needs. This is called programming the system.

MMC stands for Man Machine Communication and each program is assigned a different three digit code(e.g. 100). These MMC codes are used to view, create or change customer data. Programming is simply deciding what needs to be done and knowing which MMC is used to do it. For example: use MMC 601 to designate a station group; enter system speed dial numbers in MMC 705.

## *Programming Levels*

There are three levels of programming: System, Customer and Station.

System and Customer are under passcode protection while Station programming does not require a passcode.

To prevent conflicting data from being entered, only one person at a time can enter programming code with the passcode for technician or customer. While programming is in progress, normal system operation is not affected. For your convenience, the system displays [xxx PGM MODE] when another keyset is in the program mode.

### System Level

This level is entered via MMC 800 and requires the technician's passcode. It allows access to all system programs, station programs and maintenance programs.

### Customer Level

This level is entered via MMC 200 and requires the customer's passcode. It allows access to station programs and system programs permitted by the technician in MMC 802. When using the customer's passcode to access station programs, data for all stations can be viewed or changed.

After opening programming with the customer's passcode, you must press TRSF key to exit. Then press TRSF key followed by the MMC number you wish to access.

### Station Level

All keysets can access station programs 102~119 without using a passcode.

Each user can only change station data for his/her own keyset.

The iDCS 100 also allows the use of a proprietary computer program called SAPM-PCMMC. This permits a technician to program the system using a personal computer. SAPM-PCMMC can be used on-site to modify the customer database or to download (save) the entire customer database to a file. This file can then be saved as a backup and be uploaded when required to restore the database.

Through the use of SIO, SAPM-PCMMC can access the iDCS 100 system remotely (off-site) to make database changes or perform uploads or downloads of the customer database as if the technician were on-site.





# Chapter 2

## Hardware Descriptions

# Chapter 2 Hardware Descriptions

This chapter describes the hardware of the *i*DCS 100 system as follows.

- Key Service Unit
- Interface Cards
- Station Equipment

## Key Service Unit

The *i*DCS 100 Key Service Unit (KSU, Figure 2-1) is a single metal cabinet containing the following:

- A power supply
  - Processing and switching
  - Eight 2B+D digital keyset interfaces
  - Memory Card
    - MEM3: A removable MEM3 card, containing 3Myte Program memory, 1Mbyte Data memory with a back-up super capacitor, real time clock, a monitor LED and a RAM clear switch
    - MEM4: A removable MEM4 card, containing 3Myte Program memory, 1Mbyte Data memory (only 512Kbyte is back-uped), 512Kbyte common memory, real time clock, a monitor LED, a RAM clear switch, and LAN interface
  - One Internal Music source or an External Music interface for Music-on-Hold and Back-ground Music
  - One External Page interfaces
  - One general-purpose Dry contact
  - Three universal expansion slots, a MEM3 or MEM4 card slot, a 2 SLI card slot and a MISC card slot
- 2 Champ connectors for external connections and other connectors for the Expansion cabinet and the Ring Generator Unit

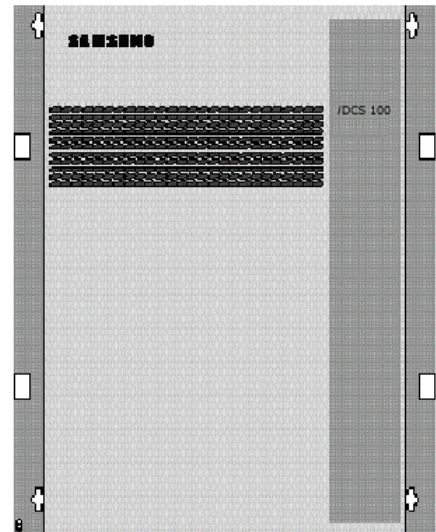


Figure 2-1 KSU

### Ring Generator Unit RGU1 or RGU2

Two kinds of sinusoidal-waveform Ring Generator Units are available. RGU1 drives 3W ring signals while the other provides 20W ring signals. The larger unit is required when a large number of single line telephones are operation behind the system.

### MISC card MISC 1 or MISC 2

One dedicated slot in the Basic KSU is for an MISC card and two kinds of MISC cards are available. The MISC 1 card contains one additional External Music Interface for MOH or BGM, one additional External Page Interface, one Alarm Sensor Detection circuitry, 4 channels DTMF receiver, three General-purpose Dry contact relays, two RS232C Serial interfaces with connectors for PCMMC and SMDR and MODEM card interface. The MISC 2 card is similar to the MISC 1 card but is also equipped with a built-in 4-ch AA function.

It is strongly recommended that this card be used in situations requiring heavy single line telephone use.

### MODEM card

One built-in MODEM card can be installed in a MISC card.

### PLL card

Any ISDN card, that is a BRI or a PRI, requires the PLL card which can be installed in a dedicated place on the KSU motherboard.

### MEM3 card

MEM3 card has EPROM memory to support new features Window PC-MMC, ITM3 & TEPRI cards

### MEM4 card

MEM4 card with LAN interface module, no selectable options. The LAN module is required to expand the system memory, to provide SIO ports 1EA, and a 10/100 base T LAN interface processor.

MEM4 card has Flash memory to support new features Window PC-MMC, ITM3, TEPRI cards and Networking solution by TE/PRI, Program/Database up/download by LAN interface.

## Expansion Cabinet

One metal Expansion cabinet can be attached to the Key Service Unit for expansion. Expansion A type consists of three Universal expansion slots and one DCS card slot for PRI(TEPRI) or SVMi-8.

Expansion B type consists of two Universal expansion slots and two DCS card slot for PRI(TEPRI) or SVMi-8. The Expansion cabinet connects to the KSU via a 64-pin flat cable, two 2-wire power connections and a F-GND connection. It contains a 50-pin champ connector for external connections. Please be noticed that a DCS card has its own connector.

# Interface Cards

## 2 SLI card

The 2 SLI card is installed in a dedicated slot on the KSU motherboard. The card provides two single line telephone interfaces equipped with Long Line protection and the ability to provide a loop disconnect signal.

## 3 TRK card

The 3 TRK card provides three loop start C.O. interfaces with optional Caller ID relays. The first two C.O. interfaces are equipped with PFT relays. Each interface contains an interface for MPD or PRS which is optional. The MPD or PRS hybrid chips of the DCS system can be used.

## 6 TRK card

The 6 TRK card provides six loop start C.O. interfaces. The first two C.O. interfaces are equipped with PFT relays. Each interface contains an interface for MPD or PRS which is optional. The MPD or PRS hybrid chips of the DCS system can be used.

## 4 BRI card

The 4 BRI card contains four Basic Rate access ports, i.e. eight ISDN channels. Protocol is compatible for Euro-ISDN BRI. For S0 application, power feeding to ports is selectable by programming.

## 2 BRI card

The 2 BRI card contains two Basic Rate access ports, i.e. four ISDN channels. Protocol is compatible for Euro-ISDN BRI. For S0 application, power feeding to ports is selectable by programming.

## TEPRI or PRI card

The PRI card contains one Primary Rate access ports, i.e. thirty ISDN channels. Protocol is compatible for Euro-ISDN PRI. TEPRI card must be equipped into the last slot of the expansion cabinet. When programmed as a E1 this card provides up to 30 trunk circuits in any combination of the following:

- Loop start lines
- DID(Direct Inward Dialing)
- Ground start lines
- E & M tie lines or two way DID calling

## 8 DLI card

The 8 DLI card provides eight DLI ports.

## 8 SLI card

The 8 SLI card provides eight SLI ports for industry-standard single line telephones and the ability to provide a loop disconnect signal. Please note that this card does not provide Long Line protection.

## 6 MWSLI card

The 6 MWSLI card provides six SLI ports for industry-standard single line telephones and the ability to provide a loop disconnect signal and a message waiting signal. Please note that this card does not provide Long Line protection.

## KDb-DLI, KDb-SLI card

The KDb–DLI board or KDb–SLI board, if installed in a digital keyset connecting to the 008 Basic KSU, provides a second DLI or SLI port. Only 8 KDBs can be installed in the keysets connected to the basic KSU.

### ITM3 card

The number of the installed ITM3 card is limited to one in the iDCS 100 system. The ITM3 card supports 8 VoIP channels. These channels are H.323 compliant and are used in conjunction with either the G.723 or G.729 voice compression protocols. The ITM3 card can be installed in the universal slot on the Basic KSU.

### SVMi-4 Card

The SVMi-4 is a self contained plug in voice mail and auto attendant card for the iDCS 100. It is designed to meet the demands of the sophisticated voice mail user without sacrificing simplicity.

The SVMi-4 may act as an Auto Attendant system only, a Voice Mail System only or both.

Out of the box the SVMi-4 can handle 2 calls simultaneously. It can be easily upgraded to handle up to 4 calls simultaneously. No external line or power connections and necessary, these are accomplished directly through phone system

At this time of this writing the memory capacity is about 5 hours, although change in technology will allow for additional storage as time go on. Only one card is permitted per system and it can be installed in any universal card slot.

### CADENCE (SVMi-8) card

The CADENCE Voice Mail system is a fully integrated Auto Attendant/Voice Mail/Fax System on a single DCS circuit card. This optional card is designated the SVMi-8 and provides 4 or 8 channels of communication. Only one card is permitted per system and it can be installed in DCS slot on the expansion cabinet.

This fully featured self contained system is connected directly to the DCS data bus and communicates with the DCS Processor. This design means that installation time is minimized, operation is streamlined and many features can be implemented that are not normally possible with older conventional stand alone Voice Mail/Auto Attendant systems.

All power to run this self contained system comes from the power supply. Each of the power supply is rated according to the number of stations it will support. When CADENCE is installed it counts as (8) eight stations of the PSU rating regardless of the number of Voice Processing Modules installed

# Station Equipment

## iDCS SERIES EQUIPMENT

### *28 Button iDCS Keypad*

- 32 character display (2 x 16) with three associated soft keys and a scroll key
- 28 programmable keys with tri-colored lights
- Four fixed function keys
- Terminal Status Indicator
- Built-in speakerphone
- Eight selectable ring tones
- UP/DOWN buttons for digital control of speaker, handset and ringer volumes
- Desk- or wall-mounted
- Available in dark gray or light gray

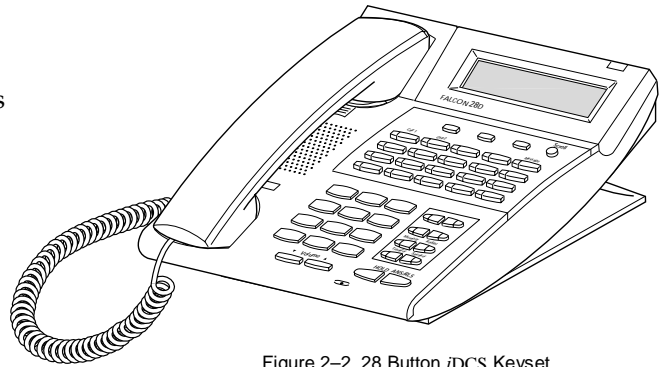


Figure 2-2 28 Button iDCS Keypad

### *18 Button iDCS Keypad*

- 32 character display (2 x 16) with three associated soft keys and a scroll key
- 18 programmable keys with tri-colored lights
- Four fixed function keys
- Terminal Status Indicator
- Built-in speakerphone
- Eight selectable ring tones
- UP/DOWN buttons for digital control of speaker, handset and ringer volumes
- Desk- or wall-mounted Available in dark gray or light gray

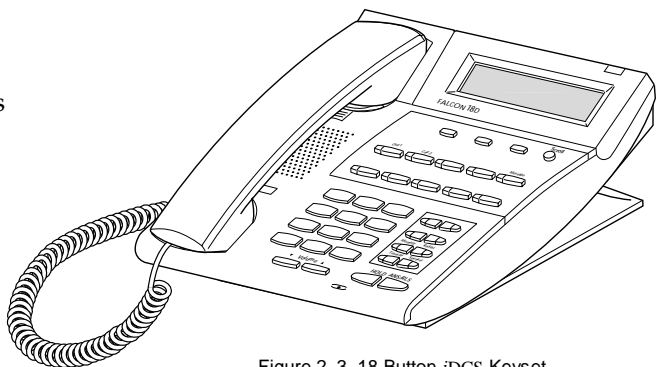


Figure 2-3 18 Button iDCS Keypad

### *8 Button iDCS Keypad*

- 32 character display (2 x 16) with three associated soft keys and a scroll key
- 8 programmable keys with tri-colored lights
- Four fixed function keys
- Terminal Status Indicator
- Built-in speakerphone
- Eight selectable ring tones
- UP/DOWN buttons for digital control of speaker, handset and ringer volumes
- Desk- or wall-mounted
- Available in dark gray or light gray

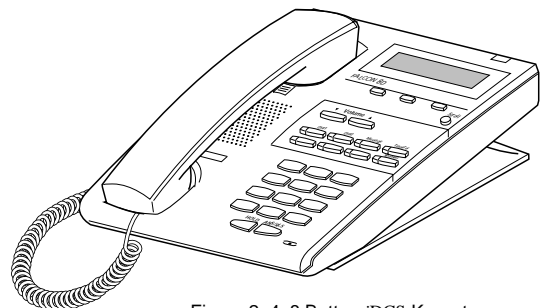


Figure 2-4 8 Button iDCS Keypad

## 64 Button iDCS AOM

- 64 programmable keys with red lights
- A maximum of 2 can be assigned to any keyset to provide additional programmable keys
- A maximum of 4 per DCS System
- Available in dark gray or light gray

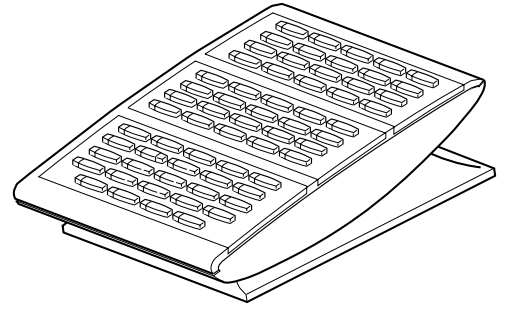


Figure 2-5 64 Button iDCS AOM

## 14 Button iDCS AOM

- 14 programmable keys with red lights
- A maximum of one can be assigned to any keyset to provide additional programmable keys

Available in dark gray or light gray

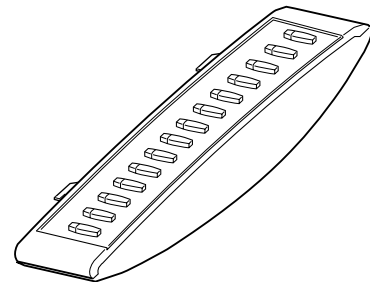


Figure 2-6 14 Button iDCS AOM

## DCS SERIES EQUIPMENT

### *LCD 24B Keypad*

- Built-in speakerphone
- 24 programmable keys (16 with tri-colored LEDs)
- Four fixed function keys
- 32 character display (2 x 16) with three associated soft keys and a scroll key
- UP/DOWN buttons for digital control of speaker, handset and ringer volumes
- Eight selectable ring tones
- Desk- or wall-mounted
- Available in almond or charcoal



Figure 2-7 LCD 24B Euro Keypad

### *STD 24B Keypad*

- Built-in speakerphone
- 24 programmable soft keys (16 with tri-colored LEDs)
- Four fixed function keys
- UP/DOWN buttons for digital control of speaker, handset and ringer volumes
- Eight selectable ring tones per keypad
- Desk- or wall-mounted
- Available in almond or charcoal



Figure 2-8 STD 24B Keypad

### *STD 12B Keypad*

- Built-in speakerphone
- 12 programmable soft keys (16 with tri-colored LEDs)
- Four fixed function keys
- UP/DOWN buttons for digital control of speaker, handset and ringer volumes
- Eight selectable ring tones per keypad
- Desk- or wall-mounted
- Available in almond or charcoal



Figure 2-9 STD 12B Keypad



## 6B LCD Model Keypad

- Built-in speakerphone
  - 6 programmable keys
  - Four fixed function keys
  - UP/DOWN buttons for digital control of speaker, handset and ringer volumes
  - Eight selectable ring tones per keypad
  - Desk- or wall-mounted
- Available in almond or charcoal



Figure 2-10 6B LCD Model Keypad

## 48 Button AOM

- 48 programmable keys
- Available in almond or charcoal
- One or two can be assigned to any DCS keypad to provide additional programmable keys

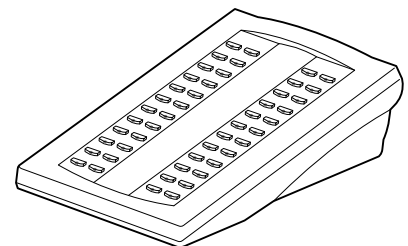


Figure 2-11 48 Button AOM

## S-Phone

### DS 24S Keypad

- 8 programmable keys with tri-colored lights: Used to call stations directly, to indicate busy conditions of other stations, for One Touch dialing and many other system features.
- Volume Control Keys: Used to set independent levels for handset, speaker, background music, ring and page volumes.
- Transfer Key
- Redial Key
- Microphone: For handsfree operation.
- Hold Key
- Speaker Key
- 16 programmable keys with red lights: Used to call stations directly, to indicate busy conditions of other stations, for One Touch dialing and many other system features.
- Speaker: For handsfree operation and ringing.

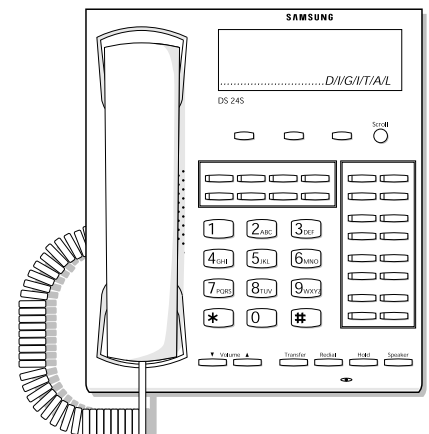


Figure 2-12A DS 24S Keypad

## DS 24D Keypad

- 8 programmable keys with tri-colored lights: Used to call stations directly, to indicate busy conditions of other stations, for One Touch dialing and many other system features.
- Volume Control Keys: Used to set independent levels for handset, speaker, background music, ring and page volumes.
- Transfer Key
- Redial Key
- Microphone: For handsfree operation.
- Hold Key
- Speaker Key
- 16 programmable keys with red lights: Used to call stations directly, to indicate busy conditions of other stations, for One Touch dialing and many other system features.
- Speaker: For handsfree operation and ringing.
- Scroll Key: Used to scroll through displays.

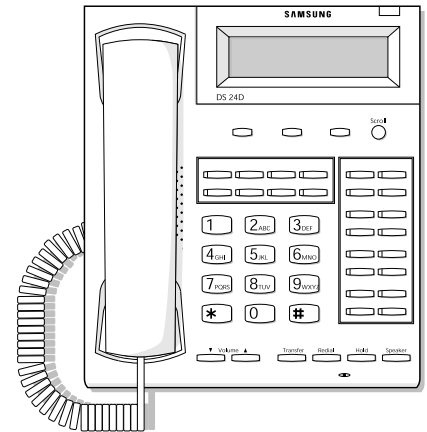


Figure 2-12B DS 24D Keypad

## *Economic Keypad*

- VOLUME CONTROL KEYS: Used to set independent levels for handset, speaker, background music, ring and page volumes.
- TRANSFER KEY
- REDIAL KEY
- MICROPHONE: For handsfree operation.
- HOLD KEY
- SPEAKER KEY
- SPEAKER: For handsfree operation and ringing.

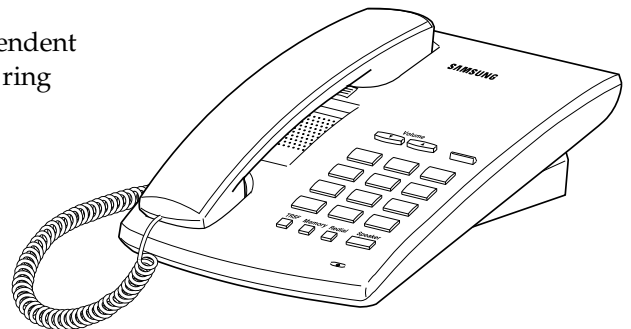


Figure 2-13 Economic Keypad

## Door Phone Interface Module (DPIM) & Door Phone

- The DPIM adapts any DLI circuit for use with the door phone unit
- Commonly used to request entry through locked doors (interior or exterior) or as a room monitoring box
- Provides contact control to be used with customer-provided electric door lock
- Door phone is wall-mounted
- Door phone is weather resistant

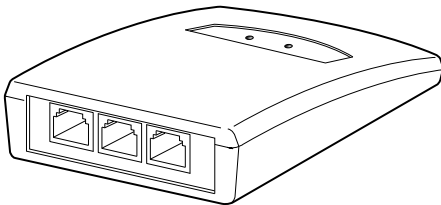


Figure 2-14 Door Phone Interface Module

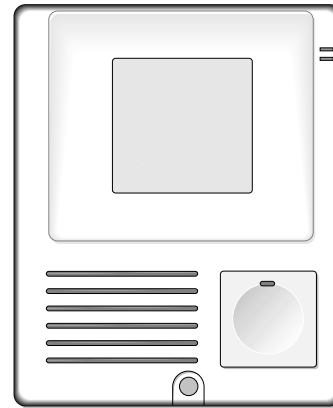


Figure 2-15 Door Phone

## Single Line Telephone

- Data Port: selectable to share station extension or utilize a separate extension
- On hook dialing
- Message Waiting/Ring Indicator
- Desk or wall mounted
- Ring volume control,
- Four available ring tones.
- Available in almond and black

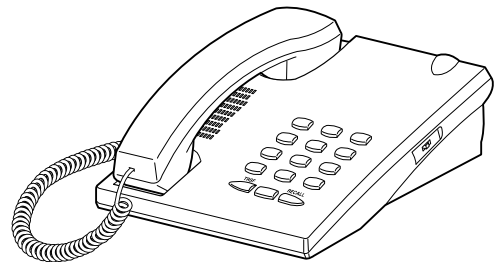


Figure 2-16 Single Line Telephone



This single line telephone set is FCC approved for direct connection to the public telephone network.

FCC # A3LKOR-24627-TE-T REN 0.9B UL LISTED 19X9 FILE # ETI 8093

## Serial Interface Module (SIM)

Provides an RS232 connection required for SMDR and PC programming features connects to any DLI circuit

## ***KDb-DLI***

This is a small daughterboard that can be installed only in the 12 or 24 button keyset. The KDb-DLI will provide one additional DLI circuit for the connection of any digital station device such as a keyset, add-on module or DPIM. This KDb-DLI will only operate when the keyset is connected to an 8 port DLI card so it can use the second B channel. Each port on this card is intended for connection to one telephone. Connecting multiple telephones to a port may result in incorrect operation or damage to the card. See the installation manual Chapter 8 for details.

## ***KDb-SLI***

This is a daughter board that can be installed only in the 12 or 24 button keyset. The KDb-SLI will provide one additional SLI circuit for the connection of any standard telephone device. This KDb-SLI will only operate when the keyset is connected to an 8 port DLI card it can use the second B channel. Each port on this card is intended for connection to one telephone. Connecting multiple telephones to a port may result in incorrect operation or damage to the card. See the installation manual Chapter 8 for details.



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The circuitry on a KDb-SLI does not provide a loop open disconnect signal or have the over-voltage protection necessary for OPX operation.

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# Chapter 3

## Specifications

# Chapter 3 Specifications

This chapter describes the technical data for the iDCS 100 hybrid/key telephone system as follows.

- Electrical Specifications Key Service Unit
- Interface Cards
- Station Equipment

## Electrical Specifications

<b>AC INPUT</b>	220~240VAC, 50Hz, 3.0A
<b>POWER CONSUMPTION (MAX)</b>	140 WATTS MAX
<b>DC OUTPUT</b>	FUSE RATING 2AMP
	+5 VOLTS 4.0 AMPS MAX
	- 55 VOLTS 1.7 AMPS MAX (for SLT/KTS Feeding voltage)
	- 54 VOLTS 0.4 AMPS MAX (for Battery charge)

## Dimensions and Weights

	Height(mm)	Width(mm)	Depth(mm)	Weight(kg)
<b>SINGLE CABINET</b>	464	365	148	7.5
<b>TWO CABINETS</b>	464	467	148	12.5
<b>DIGITAL KEYSSET (ALL MODELS)</b>	75	243	220	1.1
<b>ADD-ON MODULE</b>	71	133	220	0.4
<b>DPIM</b>	120	91	28	0.2
<b>DOOR PHONE</b>	127	99	30	0.2

## Environments

<b>OPERATING TEMPERATURE</b>	0 – 40 °C
<b>STORAGE TEMPERATURE</b>	-10.5 – 70 °C

## Cable Requirements

EQUIPMENT	CABLE	AWG	MAX FEET	MAX METERS
<b>DIGITAL KEYSSETS</b>	1 PR. TWISTED	24	1300	400
<b>ADD-ON MODULES</b>	1 PR. TWISTED	24	1300	400
<b>SINGLE-LINE STATION</b>	1 PR. TWISTED	24	3000	1 KM
<b>DOOR PHONE</b>	2 PR. TWISTED	24	330*	100





This is the maximum length of the cable between the door phone and the DPIM. The DPIM can be installed up to 274 cable meters from the KSU.

## System Tones

Tone	Frequencies	Cadence
Dial Tone	350 + 440 Hz	CONTINUOUS
Ring Back Tone	440 + 480 Hz	1 sec on + 3 sec off
Busy Tone	480 + 620 Hz	0.5 sec on + 0.5 sec off
DND/No More Tone	480 + 620 Hz	0.25 sec on + 0.25 sec off
Error Tone	480 + 620 Hz	0.25 sec of each tone
Confirmation Tone	350 + 440 Hz	Three bursts of tone 0.1 sec on + 0.1 sec
Transfer/CONF	350 + 440 Hz	0.1 sec on + 0.1 sec off



The details of system tones may vary according to the specifications of each country.

## Keypad LEDs

Condition	LED Color	LED On	LED Off
Line Idle	Off	–	Off
Line In Use	Red/Green	Steady	–
Recall	Amber	500 ms	500 ms
Call On Hold	Red/Green	500 ms	500 ms
Ringing C.O. Call	Red/Green	100 ms	100 ms
Ringing Internal Call	Green	100 ms	100 ms
DND Indication	Red	100 ms ON/100 ms OFF for 500 ms	500 ms



# Chapter 4

## Business Feature Package

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# Chapter 4 Business Feature Package

This chapter describes various features of the *i*DCS 100 system as follows.

- System Features
- Station Features
- Display Features
- Sample SMDR Printout without Caller ID
- Sample SMDR Printout with Caller ID
- Sample UCD Report
- UCD Call Statistics
- UCD Agent Statistics
- Sample Traffic Report
- Traffic Report Overview
- Sample Alarm Report
- DECT Service

# SYSTEM FEATURES

Account Code Entry	Centrex/PBX Use	Override Code
Forced - Verified	Chain Dialing	Paging
Forced - Not Verified	Class of Service	Internal Zones (4)
Voluntary	Common Bell Control	External Zones (4)
Account Code Key	Conference	All Internal
All Call Voice Page	Add On (5 Party)	All External
Attention Tone	Unsupervised	Page All
Authorization Codes	Computer Telephony Integration (CTI)	Park Orbits
Forced	TAPI 2.1	Primeline Selection
Voluntary	Customer Set Relocation	Private Lines
Auto Attendant†	Data Security	Programmable Line Privacy
Automatic Hold	Database Printout	Programmable Timers
Background Music	Dialed Number Identification Service (DNIS)	Recalls
Cadence—Integrated Voice Mail	Direct In Lines	Remote Programming—PC
Call Activity Display	Direct Inward Dialing (DID)	Ring Modes
Call Costing	E1/Copper	Time Based Routing—Plans
Caller Identification†	Day/Night Routing	Automatic / Manual
Caller ID	Busy or Camp-On Option	Holiday Schedule
Calling Line Identification (CLI)	Direct Inward System Access (DISA)	Temporary Override
Calling ID Features	Direct Trunk Selection	Ring Over Page
Name/Number Display	Directory Names	Secretary Pooling
Next Call	DISA Security	Single Line Connections
Save Caller ID Number	Distinctive Ringing	Speed Dial Numbers
Store Caller ID Number	Door Lock Release (Programmable)	Station List (50 Max)
Inquire Park/Hold	Door Phones	System List (500 Max)
Caller ID Review List	E & M Tie Lines E1/Copper	Speed Dial by Directory
Investigate	Executive Barge-In (Override)	Station Hunt Groups (20)
Abandon Call List	With Warning Tone	Distributed
Caller ID on SMDR	Without Warning Tone	Sequential
Number to Name Translation	Trunk Monitor or Service Observing	Unconditional
Call Forwarding	External Music Interfaces	Station Message Detail Recording (SMDR)
All Calls	External Page Interfaces	System Alarms
Busy	Flash Key Operation	System Maintenance Alarms
No Answer	Flexible Numbering	System Directory
Busy/No Answer	Hot Line	Toll Restriction
Forward DND	In Group/Out of Group	By Day or Night
Follow Me	Incoming Call Distribution	By Line or Station
External	Incoming/Outgoing Service	Eight Dialing Classes
To Voice Mail	Individual Line Control	Special Code Table
Preset Destination	ISDN Service	Toll Restriction Override
Call Forward Busy (CFB - Networking)	Primary Rate Interface (PRI)	Tone or Pulse Dialing
Call Forward No Response	Basic Rate Interface (BRI)	Traffic Reporting
(CFNR - Networking)	Least Cost Routing	Transfer
Call Forward Unconditional	Live System Programming	Screened/Unscreened
(CFU - LE Version)	From any Display Keypad	Voice Mail Transfer Key
Call Hold	With a Personal Computer	With Camp-On
Exclusive	Meet Me Page and Answer	Trunk Groups (11)
System	Memory Protection	Uniform Call Distribution (UCD)†
Remote	Message Waiting Indications	UCD Groups
Call Park and Page	Microphone On/Off per Station	Call Statistics
Call Pickup	Music on Hold—Flexible	Agent Statistics
Directed	Music on Hold—Sources	Group Supervisors
Groups	Off Premises Extensions (OPX)	Printed Reports
Call Waiting/Camp-On	Operator Group	Universal Answer
	Overflow	Voice Mail – Inband Integration
	Operator	Walking Class of Service
	Station Group	



Requires optional hardware and/or software. Ask your dealer for details.

## SYSTEM FEATURE DESCRIPTIONS

### ***ACCOUNT CODE ENTRY***

Station users may enter an account code (maximum 12 digits) before hanging up from a call. This account code will appear in the SMDR printout for that call record. Keypad users may enter this code using an account code key without interrupting a conversation. Single line telephone users must temporarily interrupt the call by hook-flashing and dialing the feature access code. Manually entered account codes can be up to 12 digits long. In some cases users can be forced to enter an account code and this account code may or may not be verified as described below.

#### Forced - Verified

When set for this option the user must enter an account code for all outgoing calls. The account code entered will be verified from a system list of 500 entries. Forced Verified codes can contain the digits 0~9.

#### Forced - Not Verified

When set for this option the user must enter an account code for all outgoing calls, but the account code is not verified against the system list. Non verified account codes can contain the digits 0~9, and #.

#### Voluntary

In this case account codes are not required to make outgoing calls but may be used if desired. This is also the method used to assign an account code to incoming calls. These account codes can contain the digits 0~9, \* and #.

### ***ACCOUNT CODE KEY***

The account code (ACCT) key can be programmed on any keypad and will appear as a soft key on display keysets. This key allows the user to enter account codes without interrupting a call.

### ***ALL CALL VOICE PAGE***

Users can page all internal and all external paging zones at the same time by dialing the All Page code. Keypads may be restricted from making or receiving pages in system programming. A maximum of 40 keysets can be programmed in each internal page zone to receive page announcements.

### ***ATTENTION TONE***

To get your attention, a brief tone precedes all page announcements and intercom voice calls. There are separate programmable duration timers for page and voice announce tones.

### ***AUTHORIZATION CODES***

Authorization codes are used to give permission to make a call. A maximum of 250 four digit authorization codes can be either forced or voluntary for iDCS 100. When used, authorization codes will automatically change the dialing station's class of service to the level assigned to the authorization code. Authorization codes may be programmed to print or not print on SMDR.

#### FORCED

When a station is programmed for forced authorization, the user must always enter this code before dialing is allowed. The dialed authorization code is verified from the system list of 250 authorization codes on an iDCS 100.

## VOLUNTARY

Any station user can always enter an authorization code before they begin dialing. The dialed authorization code is verified from a system list of 250 authorization codes for iDCS 100.

## ***AUTO ATTENDANT***

The integrated digital automated attendant feature (AA) provides six ports per AA card and four ports at MISC2 for simultaneous answering and call processing. A maximum of five cards can be installed in one system. Each sixteen professionally recorded announcements inform callers of the progress of their calls. Several examples are the following: "I'm sorry. There is no answer", "That station is busy", and "Invalid Number. Please try again". A maximum of four minutes of super capacitor backed (100 hours) random access memory (RAM) provide up to 48 customer recordings for announcements or greetings. Twelve individual announcements (boxes), each with its own dialing options, allow you to build call routing branches as needed. Callers are routed through the branches by dialing extension numbers or single digits. This system is compatible with Starmail and Cadence.



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Announcements recorded on one AA card can not be played to callers on another AA card.

---

## ***AUTOMATIC HOLD***

While a keyset user is engaged on an outside (C.O.) call, pressing another trunk key, route key or CALL button automatically places the call on hold when Automatic Hold is enabled. Pressing TRSF, CONFERENCE, PAGE or a DSS key always automatically places a C.O. call on hold. Intercom calls can be automatically held only by pressing TRSF or CONFERENCE. Each keyset user can enable or disable Automatic Hold.

## ***BACKGROUND MUSIC***

Keyset users may choose to hear music through their keyset speakers when optional external sources are installed. Each user may adjust this level by the use of a volume control program at the selected keyset.

## ***CADENCE-INTEGRATED VOICE MAIL***

The iDCS 100 can be equipped with Samsung's proprietary integrated voice mail and auto attendant card (SVMi Series). It provides 4–8 (2-4) ports of voice processing, expandable in four (two) port increments. Because it is built into the system it provides such feature as one touch Call Record, Answering Machine Emulation and Voice Mailbox Administration with interactive keyset displays. Ask your dealer for literature on Cadence.

## ***CALL ACTIVITY DISPLAY***

The iDCS 100 will record and buffer all calling activity within the system. With a Call Activity Display (CAD) key, the iDCS 100 will display a "snapshot" of the following information:

- The maximum number of ports that have been used
- The maximum number of trunks that have been used
- The maximum number of stations that have been used
- The current number of ports in use
- The current number of trunks in use
- The current number of stations in use



.....  
 This feature is only available on an iDCS 100 with a LAN module.  
 .....

## ***CALL COSTING***

The iDCS 100 provides programmable call costing tables to calculate the cost of incoming and outgoing calls. Rates are calculated by the number dialed, and may include surcharges. Display keysets can be set to show the call duration timer or the call cost. The SMDR report will show either the call duration or the call cost depending on the station selection. One call handled by multiple callers will cost each call segment separately.

## ***CALLER IDENTIFICATION***

The iDCS 100 supports two methods of identifying an incoming caller depending on the circuit type as described below.

### Caller ID

On an analog, loop start C.O. Line, calling party information is called Caller ID and is available from the telephone company in two formats, Number only and Name and Number, sometimes called Deluxe. The iDCS 100 is compatible with both formats. Even if the telephone company only offers the number only, a name can be attached to the telephone number of frequent callers via the CLIP translation table.



## Calling Line Identification (CLI)

On ISDN circuits, calling party information is called CLI and is supported on both BRI and PRI type circuits. The iDCS 100 only supports Number delivery and a name can be attached the telephone number of frequent callers via the CLIP translation table.

## ***CALLER ID FEATURES***

The following features apply to all forms of Caller Identification, however, to make them easier to read caller identification is referred to as Caller ID.

### NAME/NUMBER DISPLAY

Each LCD keyset user can decide if he/she wants to see the name or number in the display. Regardless of which one is selected to be seen first, the NND key is pressed to view the other pieces of information.

### NEXT CALL

In the event that you have a call waiting or a camped-on call at your keyset, you can press the NEXT key to display the Caller ID information associated with this next call in queue at your station. Either the Caller ID name or number will show in the display depending on your selection.

### SAVE CALLER ID NUMBER

At any time during an incoming call that provides Caller ID information, you may press the SAVE key. This saves the Caller ID number in the Save Number feature. Pressing the SAVE number redial key will dial the Caller ID number. The system must be using Least Cost Routing (LCR) to dial the saved number.

### STORE CALLER ID NUMBER

At any time during an incoming call that provides Caller ID information, you may press the STORE key. This saves the Caller ID number as a speed dial number in your personal speed dial list. The system must be using LCR to dial the stored number.

### INQUIRE PARK/HOLD

Having been informed that an incoming call is on hold or has been parked, you may view the Caller ID information before you retrieve the call. This will influence how you choose to handle the call.

### CALLER ID REVIEW LIST

This feature allows display keyset users to review Caller ID information for calls sent to their stations. This list can be from ten to fifty calls in a first in, first out basis. The list includes calls that you answered and calls that rang your station but that you did not answer. When reviewing this list, you can press one button to dial the person back. The system must be using LCR to dial the stored number.

## INVESTIGATE

This feature allows selected stations with a special class of service to investigate any call in progress. If Caller ID information is available for an incoming call, you will know to whom this station user is speaking. On outgoing calls, you can see who was called. After investigating, you may barge-in on the conversation, disconnect the call or hang up.

## ABANDON CALL LIST

The system has a system-wide abandon call list that stores Caller ID information for calls that rang but were not answered. The list is accessed using the administrator's passcode. When reviewing this list, you are provided options to CLEAR the entry or DIAL the number. You can see the NND key to toggle between the Caller ID name, number and the date and time the call came in. The system must be using LCR to dial numbers from the abandon call list. The abandoned call list will store up to 50 unanswered calls on iDCS 100.

## Caller ID ON SMDR

The Station Message Detail Records report can be set to include Caller ID name and Caller ID number for incoming calls. This format expands the printout to 113 characters. Use a wide carriage printer or an 80 column printer set for condensed print.

## NUMBER TO NAME TRANSLATION

The system provides a translation table for 350 entries on iDCS 100. When the Caller ID number is received, the table is searched. When a match is found, the system will display the corresponding name.

## **CALL FORWARDING**

This feature allows the user to redirect (forward) incoming calls. The calls can be redirected to the attendant, a hunt group, voice mail, external number or another station user. If the destination station is in Do Not Disturb (DND), the calling party will receive DND/Reorder tone. Calls cannot be forwarded to a door phone.

## ALL CALLS

This type of forwarding is not affected by the condition of the station. All calls are immediately redirected to the designated destination. If desired, the destination station may redirect the call back to the forwarded station by using the transfer feature. The forwarded station user can continue to originate calls as usual. If no key is programmed as Forward All, the TRSF key lights steady when a Forward All condition is set.

## BUSY

This feature forwards all calls only when the station set is busy. The station user can originate calls as usual.

## NO ANSWER

This feature forwards calls that are not answered within a preprogrammed time. The user can originate calls as usual and receive call if present. The timer is programmable on a per-station basis to allow for differences in individual work habits.

## BUSY/NO ANSWER

This feature allows the station user to use both types of forwarding simultaneously, provided the destinations have already been entered in the usual manner.

## FORWARD DND

This feature works with the Do Not Disturb feature. This allows calls directed to a station in Do Not Disturb or One Time Do Not Disturb to forward immediately to another destination.

## FOLLOW ME

This feature allows the user to forward all calls from another station to the user's station or change the forward destination to the user's current location.

## EXTERNAL

This feature forwards C.O. calls to an external number via a central office trunk if allowed by class of service. Intercom calls may also be programmed to forward to an external number via a central office trunk. These calls will forward only after the programmable external call forward delay timer expires.

## TO VOICE MAIL

Each station may be programmed to allow or deny the ability to forward intercom calls to voice mail. When denied, valuable message time in the voice mail system can be saved.

## PRESET DESTINATION

If desired this feature provides for a permanent (preset) forward no answer destination for each extension. It can only be programmed by the system technician or system administrator. When any station does not have FWD/NO-ANSWER set, the call will ring this preset destination if one is programmed.

## Call Forward Busy (CFB) (Networking Enabled only)

This is a different feature from the normal call forward busy and is only used when the forward destination is in a different node of the network. The operation of the feature is the same as the normal forward busy where when the forwarded station is busy a calling station will be forwarded to the forward destination.

## Call Forward No Response (CFNR) (Networking Enabled only)

This is a different feature from the normal call forward no answer and is only used when the forward destination is in a different node of the network. The operation of the feature is the same as the normal forward no answer where when the forwarded station does not answer after a programmed amount of time a calling station will be forwarded to the forward destination.

## Call Forward Unconditional (CFU)(Networking Enabled only)

This is a different feature from the normal call forward all and is only used when the forward destination is in a different node of the network. The operation of the feature is the same as the normal forward all where all calls to the forwarded station will be forwarded to the forward destination.

## ***CALL HOLD (EXCLUSIVE)***

Outside calls can be placed on exclusive hold at any keyset by pressing HOLD twice during a call. Calls placed on exclusive hold can only be retrieved at the keyset that placed the call on hold. Intercom calls are always placed on exclusive hold.

## ***CALL HOLD (SYSTEM)***

Outside calls can be placed on system hold at any station. Users may dial the access code or press the HOLD button. Calls on system hold may be retrieved at any station.

## ***CALL HOLD (REMOTE)***

Outside calls can be placed on hold at a remote station. This feature allows calls to be answered at one keyset and placed on hold at another station. This allows time for the user to proceed to that station or allows the party that the call was intended for to have that call placed at their station. The call or trunk button will flash at the remote hold station.



Intercom calls cannot be remote held.

## ***CALL PARK AND PAGE***

Each C.O. line has its own park zone. This simple method eliminates confusion and ensures that a park zone is always available. Pressing the PAGE key parks the call automatically. There are no extra buttons to press and there is no lost time looking for a free zone.

## ***CALL PICKUP***

### **DIRECTED**

With directed call pickup, users can answer calls ringing at any station by dialing a code plus that station's extension number or by pressing the feature button and then dialing the extension.

### **GROUPS**

In addition, calls can be picked up from a station group in a similar manner. The group pickup feature allows users to answer any call ringing within any pickup group. There are 20 pickup groups available on iDCS 100. A station cannot be in more than one pickup group. To use this feature, station users either dial the access code or press the assigned feature button followed by the pickup group number.

## ***CALL WAITING/CAMP-ON***

Busy stations are notified that a call is waiting (camped-on) when they receive a tone. The tone is repeated at a programmable interval. Keysets receive an off-hook ring signal through the speaker and single line stations receive a tone in the handset. The volume of the camp-on tone can be set by the station user. Camped-on calls follow Forward No Answer if a Forward No Answer destination has been set.

Optionally any station can be programmed to automatically camp-on to a busy station instead of having to press the camp-on button or dial a camp-on code.

## ***CENTREX/PBX USE***

CENTREX and PBX lines can be installed in lieu of central office trunks. CENTREX and PBX feature access codes including the command for hook-flash (FLASH) can be stored under one touch buttons. Toll restriction programming can ignore PBX or CENTREX access codes so that toll calls can be controlled when using these services.

## **CHAIN DIALING**

Keyset users may manually dial additional digits following a speed dial call or chain together as many speed dial numbers as are required.

## **CLASS OF SERVICE**

The system allows a maximum of 30 station classes of service. Each class of service can be customized in memory to allow or deny access to features and to define a station's dialing class. Each station can be assigned different classes of service for day and night operation.

## **COMMON BELL CONTROL**

The MISC card provides relays that may be programmed to control a customer-provided common bell or common audible device. These contacts must be programmed as members of a station group and may provide steady or interrupted closure.

## **CONFERENCE**

The system allows six simultaneous conferences up to 5 parties each.

### **ADD-ON (5 PARTY)**

Any combination of up to five parties (stations or outside lines) can be joined together in an add-on conference. Parties may be eliminated or added after a conference has been established.

### **UNSUPERVISE**

A station user may set up a conference with two or more outside lines and then exit the conference leaving the outside lines connected in an unsupervised (trunk to trunk) conference.



.....  
This feature requires individual trunk buttons and auto-hold must be enabled.  
.....

## **COMPUTER TELEPHONY INTEGRATION (CTI)**

Computer Telephone Integration (CTI) allows integration between the *i*DCS 100 and a personal computer system (PC) or a local area network (LAN). Caller ID service is required for TAPI inbound call applications that use the CID information to display computer records in conjunction with the presentation of the call to the station on the *i*DCS 100.

### **TAPI 2.1**

TAPI 2.1 is the method of integrating the *i*DCS 100 system to a computer. TAPI 2.1 is a LAN based solution allowing computers to communicate directly to the telephone system over the network system. This establishes a logical connection rather than a physical connection between telephone and computer. It eliminates the cost and administrative overhead of connecting every PC to a desktop phone. It emphasizes third-party call control. (Example: calls can be tracked as they are transferred, making it more suited to large office applications). TAPI 2.1 can emulate first-party type call control for the *i*DCS 100 system, rather than from the telephone as TAPI 2.0 does. For example, to make a call the *i*DCS 100, rather than the telephone would dial the phone number, and the call would be then transferred to the telephone.

## ***CUSTOMER SET RELOCATION***

Customer Set Relocation allows the customer to exchange or swap similar stations in the iDCS 100 without wiring changes. All individual station assignments such as trunk ring, station group, station COS, station speed dial, button appearances, call forwarding, etc. will follow the Customer Set Relocation program.

## ***DATA SECURITY***

Single line extensions used with modems and facsimile machines can be programmed so that they will not receive any system-generated tones that would disrupt data transmissions. In addition, these devices receive DCS C.O. ringing pattern instead of intercom ring pattern. Devices connected to an SLI card receive a disconnect signal upon termination.

## ***DATABASE PRINTOUT***

A copy of the customer database can be obtained by using PCMMC. This information can be directed to a printer or the PC screen and may be done either on-site or remotely. A complete database or specific data blocks may be obtained.

## ***DECT Service***

The iDCS 100 system provides DECT cordless communications in a single office or throughout a large commercial or industrial complex. To implement this service, you need BSI card, DBS card and DECT handsets. Users of this service meet improved overall efficiency, since staff can be reached or make calls wherever they are.

## ***DIALED NUMBER IDENTIFICATION SERVICE (DNIS)***

When DNIS service is provided on an incoming trunk the iDCS 100 can route calls based on the numbers received.

## ***DIRECT IN LINES***

Outside lines may be programmed to bypass the operator(s) and ring directly at any station or group of stations.

## ***DIRECT INWARD DIALING (DID) E1/COPPER***

The term Direct Inward Dialing or DID refers to four types of digit steered inbound call handling. These are DID, Both Way DID, Dialed Number Identification service (DNIS and Direct Dial In (DDI). The *iDCS 100* supports all four types as described below.

DID is an inbound only service where multiple telephone numbers are assigned, usually in blocks of twenty, to a single circuit or small group of circuits. These circuits can be single pair analog circuits that will terminate on a DID card. The *iDCS 100* DID card supports up to four circuits. In addition the DID circuit can be a channel on a digital E1 service terminating on an *iDCS 100* TEPRI card.

Both way DID is a service that combines DID service with normal outbound local telephone service. This service is provided over E&M tie line circuits. These E&M tie line circuits can terminate on either the *iDCS* E&M card or on a channel of a digital E1 circuit on an *iDCS* TEPRI card.

Dialed Number Identification service (DNIS) is a feature of 800 or 900 type numbers that allows the number dialed by the caller to be identified in the telephone system by means of a sequence of DTMF digits (usually four). This service terminates on E&M tie lines. These E&M tie line circuits can terminate on either the *iDCS* E&M card or on a channel of a digital E1 circuit on an *iDCS* TEPRI card.

Direct Dial In (DDI). This is the name given to the above three services when they are provided over an ISDN PRI circuit.

## ***DIRECT INWARD SYSTEM ACCESS (DISA)***

Users can call in on specific DISA lines at any time, input a security code and receive system dial tone. Users can now place internal calls or if permitted, calls using C.O. lines. The caller must have a tone dial phone and know his/her DISA security code. DISA lines can be used as both way lines or incoming only and may be active in day mode, night mode or both. The C.O. lines used for DISA must have disconnect supervision.

## ***DIRECT TRUNK SELECTION***

Each station can be allowed access to or denied access from a trunk or trunk group by access code when LCR is activated. When restricted, the station user must use a trunk key or a route key.

## ***DIRECTORY NAMES***

Each station, station group and C.O. line may be assigned a directory name (maximum 11 characters). In addition, each personal speed dial number, system speed dial number and entry in the DID translation table may be assigned a name (maximum 11 characters). These names are displayed during calls with these ports and in the case of station and speed dial names, can be used to originate calls. See the Dial by Name feature (Station Features).

## ***DISA SECURITY***

Telephone fraud and long distance theft are a serious concern. The *iDCS 100* provides a strong DISA security system. If an incorrect DISA passcode is entered repeatedly (as is the case with "hackers"), the DISA system can be automatically disabled temporarily. Both the number of incorrect passcode attempts and the time that DISA is disabled are programmable. In addition, all failed attempts to access DISA print on SMDR (if provided) with a "DE" DISA error flag.

## ***DISTINCTIVE RINGING***

A user knows the type of call received by the type of ring heard. Outside calls have a single ring repeated while internal calls have a double ring repeated.

In addition any trunk or station can be programmed to ring a keyset with a predefined ring tone (1–8) or a single line port with a predefined cadence (1–5) selection. This provides for easy identification of special lines or extensions that ring your phone.

## ***DOOR LOCK RELEASE (PROGRAMMABLE)***

After answering a call from the door phone, users can dial a code to activate a contact closure. This can be used to operate a customer-provided electric door lock release mechanism. The contact closure timer is programmable from 100–2500 ms.

## ***DOOR PHONES***

The door phone interface module (DPIM) provides for connection of a door phone to a DLI port. Pressing the button on the door phone produces a distinctive ring (three short rings repeated) at the assigned station or station group. If not answered within a programmable time, the system releases the door phone and stops the ringing. Stations may call the door phone directly and monitor the surrounding areas. Door phones follow the system ring mode plan.

## ***E & M TIE LINES (E1/COPPER)***

Your office can be connected to another office with a tie line. Use it to make calls to stations in the other system. If programming allows, you can access lines in the other system to make outside calls. Tie line calls can be put on hold, transferred and conferenced in the same way as are other outside calls. Users accessing the tie line from the other system can get a line in your system and make outgoing calls. These calls can be controlled by assigning a dialing class to the tie line. Your local telephone company may use E&M tie lines to provide DID service. In this case these tie lines can be programmed to follow the DID translation table. See DID. Translated E & M tie line calls have Day and Night routing capabilities.

## ***EXECUTIVE BARGE-IN (OVERRIDE)***

The feature allows specially programmed stations with a barge-in key to override the automatic privacy of another station or outside trunk. Programming allows barge-in with or without a warning tone. Stations may also be programmed as “secure” so that they cannot be barged-in on.

### **WITH WARNING TONE**

When the barge-in with tone option is set, the barging-in keyset has its microphone on and the barged-in on station receives an override display. A double burst of warning tone sounds and repeats every ten seconds. This feature does not work from single line sets.

### **WITHOUT WARNING TONE**

When the barge-in without tone option is set, the barging-in keyset has its microphone muted and the barged-in on station does not receive an override display. This feature does not work from single line sets.

### **TRUNK MONITOR or SERVICE OBSERVING**

This feature allows the user who barged-in to retain the trunk call after the original station has hung up.



## ***EXTERNAL MUSIC INTERFACES***

The iDCS 100 MISC card provides up to two inputs for connecting to customer provided external music sources. One is located on iDCS 100 base board which is selectable using internal music source or external music source by shunt pin setting. Another is located on the MISC card. These sources can be used to provide background music, or any of the varied Music On Hold (MOH) uses.

## ***EXTERNAL PAGE INTERFACES***

The iDCS 100 base board provides one external page output and the iDCS 100 MISC card provides an additional external page output and three relays which can be used to control the page zone control. Multiple relays may be assigned to each zone.

## ***FLASH KEY OPERATION***

While a user is on an outside line, pressing the FLASH key will flash the central office or PBX. This is used for custom calling features on C.O. lines or in conjunction with CENTREX/PBX operation. System programming allows individual flash times for C.O. and PBX lines. When C.O. or PBX flash is not required, setting the timers for two seconds releases the existing call and returns dial tone to make a new call.

## ***FLEXIBLE NUMBERING***

System programming allows stations to have two, three or four digit extension numbers beginning with the digit 2 or 3. Default extension numbers begin with 201. Station group numbers can be two or three digits beginning with the digit 5.

Using digits other than 2, 3 or 5 will require the technician to change other feature access codes in the system default numbering plan. User guides will need to be modified as these are all written using the iDCS 100 default numbering plan.

## ***HOT LINE***

Stations can be programmed to call a pre-defined station or station group whenever that station goes off-hook. A hot line delay timer of 0–250 seconds can be programmed to allow sufficient time to make a different call.

## ***IN GROUP/OUT OF GROUP***

Individuals assigned to a station hunt group may temporarily remove their telephones from the group by pressing the In/Out of Group button providing that there is someone still in the group. The L version of software has a system wide option to allow all members to log out of a station group. Stations out of a group will not receive calls to that group but will continue to receive calls to their individual extension numbers. When desired, the user may put him/herself back into the group by pressing the button again. Users who do not have this button may dial the access code and the group desired. A station user is allowed to be in several groups, providing a key and the extender of that group are assigned for each group on the user's phone.

## ***INCOMING CALL DISTRIBUTION***

Incoming calls can be assigned to ring a distributed station hunt group. This allows all members of the group to share the call load.

## ***INCOMING/OUTGOING SERVICE***

Outside lines are available for incoming or outgoing service. Programming allows any outside line to be used for incoming calls only, outgoing calls only or both way service.

## ***INDIVIDUAL LINE CONTROL***

Each station in the system can be individually programmed to allow or deny dialing out as well as allow or deny answering for each outside line.

## ***ISDN SERVICE***

### **PRIMARY RATE INTERFACE (PRI)**

The *iDCS* 100 supports Primary Rate Interface ISDN. PRI allows simultaneous data calls, calling party and calling line identification, high speed call setup and disconnect are among the benefits of ISDN calling. The 30+D configuration of ISDN allows call information to be delivered via the data channel (the "D" of 30B+D) thus leaving the bearer channels (the "B" of 30B+D) available for single use or combined use to provide a wider bandwidth for data and video.

### **BASIC RATE INTERFACE (BRI)**

The *iDCS* 100 BRI card supports trunk or station level Basic Rate Interface services (BRI). Trunk or station BRI use is software programmable. BRI allows simultaneous data calls, called party and calling number identification, high speed call setup and disconnect are among the benefits of ISDN calling. The 2B+D configuration of ISDN allows call information to be delivered via the data channel (the "D" of 2B+D) thus leaving the bearer channels (the "B" of 2B+D) available for single use or combined use to provide a wider bandwidth for data and video.

## ***LEAST COST ROUTING***

Least Cost Routing (LCR) is the ability to automatically select the most cost effective central office route for the outside number dialed by any station. The *iDCS* 100 LCR program includes the following features:

- Option to use or not use LCR on a tenant basis
- Programmable LCR access code
- Digit analysis table 1000 entries each with ten digits for an *iDCS* 100
- Routing by time of day and day of week (4 time bands per day)
- Routing according to individual station class
- Modify digits table 100 entries for an *iDCS* 100.
- Flexible trunk group advance timer
- Option to use or not use trunk group advance warning tones

## ***LIVE SYSTEM PROGRAMMING***

The system can be programmed from any display keyset or personal computer without interrupting normal system operation. There are three levels of programming: technician, customer and station. The technician level has access to all programs and can allow the customer access to system programs as needed. Technician and customer access are controlled by different security passcodes. Programming from a PC requires the PCMMC program.

## ***MEET ME PAGE AND ANSWER***

After a user makes a Meet Me Page, the user may remain off-hook to allow the paged party to meet the user for a private conversation.

## ***MEMORY PROTECTION***

In the event that power is lost to the system, all customer data contained in memory is retained by the use of a "super capacitor" for approximately 7 days. In addition, the PCMMC computer program may be used to produce a backup copy of the customer data. Additionally, the Smart Media card may be used to store the system database.

## ***MESSAGE WAITING INDICATIONS***

When calling a station and receiving a busy signal or the no answer condition, the caller can leave an indication that a message is waiting. The message button will flash red at the messaged keyset. A single line phone will receive a distinctive message waiting dial tone. Five message waiting indications can be left at any station.

## ***MICROPHONE ON/OFF PER STATION***

The microphone can be disabled at any keyset. When the microphone is disabled, the keyset cannot use the speakerphone, although on-hook dialing and group listening are still possible.

## ***MUSIC ON HOLD—FLEXIBLE***

The iDCS 100 allows its music sources to be used in a very flexible manner as follows:

- Each keyset can have a designated music source for playing as Background Music (BGM) through the keyset speaker.
- Each Station can have a designated music source for playing to callers placed on Exclusive hold at that station.
- Each Trunk can have a designated music source for playing to callers placed on hold. This setting is overridden by some of the other settings such as station music on hold, and UCD MOH.
- Each UCD group can have a designated music source to be played while a caller is in queue.

## ***MUSIC ON HOLD - SOURCES***

The iDCS 100 provides for up to six different types of Music on Hold source including silence or "NONE" as listed below:

- **None:** No audio is played to the listener
- **Tone:** A tone or "beep" is repeated at a programmable interval
- **Chime:** A music chime source located on the Base board is played to the listener.
- **External source:** An external source connected to a MISC card, such as a digital announcer or radio, is played to the listener.
- **Digital Announcement on AA card:** If the system is equipped with an AA card the last port of this card can be flagged as a MOH source and used to repeatedly play a message recorded on the AA card to the listener.
- **Voicemail Sound File:** If the iDCS 100 system has an optional CADENCE card installed, up to 100 custom recorded sound files from the Voice Mail card can be used for MOH sources. For information on creating the sound files see CADENCE System Administrator Manual-Recording greeting by number. If you select this option be advised that each VMMOH source requires a dedicated CADENCE port/channel.

## ***NETWORKING***

The iDCS 100 networking feature package allows an iDCS 500 system to be connected together with some basic feature transparency. The physical connection between the systems is via a proprietary PRI connection (TEPRI card must be used) and is based on the Q-SIG specification. The following features are supported between two networked systems.

Call Completion, Busy Station (CCBS) also known as Callback or Busy Station Callback. When a station in one system calls a station in another system across the network link and the destination station is busy the calling station can set a Callback to the busy station. When the busy station becomes idle the system will notify the callback originating station by ringing that station and when the originating station answers, the system will call the destination station.

Call Completion, No Response (CCNR) also known as Callback or No Answer Callback. When a station in one system calls a station in another system across the network link and the destination station does not answer the calling station can set a Callback to the called station. When that station indicates the user is present by becoming busy then idle the system will notify the callback originating station by ringing that station and when the originating station answers, the system will call the destination station.

Call Forward Busy (CFB). This is a different feature from the normal call forward busy and is only used when the forward destination is in a different node of the network. The operation of the feature is the same as the normal forward busy where when the forwarded station is busy a calling station will be forwarded to the forward destination.

Call Forward No Response (CFNR). This is a different feature from the normal call forward no answer and is only used when the forward destination is in a different node of the network. The operation of the feature is the same as the normal forward no answer where when the forwarded station does not answer after a programmed amount of time a calling station will be forwarded to the forward destination.

Call Forward Unconditional (CFU). This is a different feature from the normal call forward all and is only used when the forward destination is in a different node of the network. The operation of the feature is the same as the normal forward all where all calls to the forwarded station will be forwarded to the forward destination.

Forward External. This feature operates in the same manner as a non networked system with the exception that, because calls across a network link are trunk calls, network calls do not follow the ICM FWD EXT ON/OFF setting in MMC 210. It is therefore suggested that this setting be set to ON in a networked switch to avoid confusion in operation between networked and non networked calls.

Call Intrusion (Barge In). This feature operates in the same manner as in a non networked switch.

Call Offer/Call Waiting (Camp On). This feature operates in the same manner as in a non networked switch. When a called station is busy the caller can press a camp on key and appear as a ringing call on the second call button. The Auto camp on feature will not work on calls across a network link if set to ON in MMC 110.

Call Transfer. Calls answered in one network node can be transferred to a station or station group in another network node.

Transfer Retrieve. Calls on Transfer Hold during a screened transfer can be retrieved by pressing the call button for that call.

Transfer Recall. Calls transferred across a network link will recall to the transferring station after the originating systems transfer recall timer expires. After recalling, if not answered prior to that systems attendant recall timer expiring, the call will recall to that systems designated operator group. Attendant recalls will not recall to a 'Centralized Attendant'.

DID with Pass Through. Incoming DID, DNIS or DDI calls can be routed through one switch across a network link to be processed by the DID table of the destination switch.

Do Not Disturb (DND). This feature operates in the same manner as in a non networked switch. There is an option in MMC 823 to determine the type of DND tone sent across the network link.

Caller ID. Caller ID in its various forms that are currently available (Analog CID Name and Number, ANI Number, PRI Name and Number and BRI number) will be transported across the network link with the original call.

Centralized Attendant. This feature basically allows a user in any switch to dial "0" and ring at the designated Central attendant group. Each system on the network requires its own designated attendant group for local usage, recalls and the like.

Intercom Calling/Uniform dialing plan. Station to station and station to group calls can be made across the network link without having to dial an access code for a call within the network. LCR can also be programmed to route calls across a network link to access local trunks in another networked system.

Centralized Voice Mail with Message Waiting Lights. This feature will only operate with Cadence and/or SVMi voicemail systems only. Users in one node can call forward (CFNR, CFB & CFU) to the Cadence group in a different switch and messages left in that switch will be indicated on the VMSG key in the origination switch. Messages can be returned to the Cadence or SVMi voice mail system.

## **OFF PREMISES EXTENSIONS (OPX)**

A single line (tip and ring) extension from an 4SLI card may be connected to telephone company-provided OPX circuits to remote locations. 8SLI cards and KDb-SLIs do not support off premises extensions.

## ***OPERATOR GROUP***

The operator group can contain 32 stations to answer incoming calls. Calls to this group can be set for distributed, sequential or unconditional ringing. Operators can use the In/Out of Group feature to meet flexible operator requirements. Operator groups are selectable per ring plan.

## ***OVERFLOW***

### **OPERATOR**

When calls ringing a operator group go unanswered, they can overflow to another destination after a programmed period of time. The operator group has its own timer. The overflow destination can be a station or station group.

### **STATION GROUP**

When calls ringing a station group go unanswered, they can overflow to another destination after a programmed period of time. Each station group has its own timer. The overflow destination can be a station or station group.

## ***OVERRIDE CODE***

This feature allows users to make emergency outside calls from a station that has a forced code such as Account code or authorization code enabled but without requiring them to enter a forced code. The basis of this feature is an override code table containing 5 entries of up to 11 digits each. The iDCS 100 will examine digits that are dialed from a station to see if they match any entry in the Emergency Number table. If the digits match the table, the system will process the call without requiring a forced code.

## ***PAGING***

System software allows the use of four internal and four external paging zones. Stations can page any individual zone, all internal zones, all external zones or all zones simultaneously. Using system programming, each station may be allowed or denied the abilities to make and/or receive page announcements to any zone or combination of zones.

## ***PARK ORBITS***

The system has 10 park orbits (0–9). These orbits can be used to park calls prior to paging and allows the call to be retrieved by dialing a park code plus the orbit number. Calls parked in this manner can also be retrieved by dialing the park pickup code (10) plus the station or trunk number. This feature is in addition to Call Park and Page.

## ***PRIME LINE SELECTION***

Any station can be programmed to select a specific line, trunk group, telephone number, station or station group when the handset is lifted or the speaker key is pressed (same as Hot Line feature).

## ***PRIVATE LINES***

For private line use, stations can be prevented from dialing and/or answering any line.

## ***PROGRAMMABLE LINE PRIVACY***

Each outside line can be programmed to ignore the automatic line privacy. This allows up to four other parties to join your conversation by simply pressing the line button. This is similar to 1A2 key telephone operation.

## ***PROGRAMMABLE TIMERS***

There are over 50 programmable system timers to allow each installation to be customized to best fit the end user's application.

## ***RECALLS***

Calls put on hold, transferred or camped-on to any station will recall to the originating station if not answered within a programmable time. A recall that goes unanswered for the duration of the attendant recall timer will recall to the system operator group. Hold, transfer, camp-on and attendant recalls have individual programmable timers. Calls recalling to buttons with tri-colored LEDs will flash amber.

## ***REMOTE PROGRAMMING—PC***

Remote programming allows the technician to access the system database from a remote location for the purpose of making changes to the customer data. Customer-provided modems and a PC using an optional software package will be needed to implement this feature.

## ***RING MODES***

### **TIME BASED ROUTING - PLANS**

Each C.O. line can be programmed to ring at any station or station group. Each line can be assigned a ring destination based on six (6) different ring plans based on time of day and the day of the week.

### **AUTOMATIC / MANUAL**

Ring destinations will automatically change based on time of day and day of week. At any time the system can be manually forced into a specific ring plan. It will remain in this ring plan until manually taken out.

### **HOLIDAY SCHEDULE**

The system has a table of 20 dates that are used to define holidays. On a date designed as a holiday the system will remain in a ring plan for that calendar day providing the system was already in night service. This feature will override the ring plan time table.

### **TEMPORARY OVERRIDE**

At any time the system can be forced into a specific ring plan for a temporary period of time until the next scheduled ring plan automatically takes effect.

## ***RING OVER PAGE***

Any outside line can be programmed to ring over a customer-provided paging system. Outside lines, door phones and station groups may ring over page in the day or night mode.

## ***SECRETARY POOLING***

Each keyset may be defined as an executive (BOSS in programming) or a secretary (SEC in programming) in system programming. Each executive can have up to four secretaries and each secretary can have up to four executives. These arrangements are known as executive/secretary pools. There can be multiple pools in a system. When an executive is in DND, all calls to the executive ring the first secretary assigned to that executive; if that secretary is busy, the call hunt to the next available secretary assigned to that executive. If the secretary must communicate with the executive while he/she is in DND, pressing the corresponding executive button on the secretary's keyset results in an Auto Answer intercom call being made to the executive (providing the executive is free). The iDCS 100 has a system wide option to allow the stations to ring rather than auto announce the executive secretary calls. A station can only be the executive of one secretary pool. In addition, a station cannot be in more than one pool.

## ***SINGLE LINE CONNECTIONS***

Single line ports allow connection of a variety of single line telephones plus facsimile machines, answering machines, loud bells, computer modems, cordless phones and credit card machines. When connecting customer-provided equipment to these extensions, compatibility should be checked out before purchase to ensure correct operation. Central office ring cadence can be selected for SLT stations. This is helpful when optional devices cannot detect iDCS 100 intercom ring cadence.

## ***SPEED DIAL NUMBERS***

A library of 1500 speed dial numbers may be allocated as needed for iDCS 100. The system list can have up to 500 numbers and each station can have up to 50 numbers. Speed dial numbers are assigned in blocks of ten. Each speed dial number may contain up to 24 digits.

## ***SPEED DIAL BY DIRECTORY***

The iDCS 100 system provides the user with the ability to look up a speed dial number and place the call. There are three speed dial selections: personal, system and station. This feature requires a display keyset.

## ***STATION HUNT GROUPS***

System programming allows up to 20 station hunt groups on an iDCS 100. One of three ring patterns—sequential, distributed and unconditional—is available for each group. Each unconditional group may contain a maximum of 32 stations and each sequential and distributed group may contain a maximum of 48 stations. A station may be assigned to more than one group. Each station group has its own recall timer for calls transferred to that group.

## ***STATION MESSAGE DETAIL RECORDING (SMDR)***

The system provides records of calls made, received and transferred. Connecting a customer-provided printer or call accounting system will allow collection of these records. Each call record provides the following details: station number, outside line number, start date, start time, duration of call, digits dialed (maximum 18) and an account code if entered. The system may print a header followed by 50 call records per page or send continuous records with no header for use with a call accounting machine. See the sample printouts.

The SMDR format contains many options that allow it to be customized for a company's individual needs. Options to print include incoming calls, outgoing calls, in and out of group status, change in DND status and authorization codes.



## **SYSTEM ALARMS**

A DISA alarm will warn the customer if the DISA security system has been triggered by too many incorrect password attempts. The alarm can ring any station or group of stations and show an appropriate display at the assigned stations.

## **SYSTEM MAINTENANCE ALARMS**

The iDCS 100 continuously performs internal system diagnostics. When either a major or minor fault is detected the system can ring stations with an ALARM KEY assigned. The keyset display shows information that includes the description, location and date and time stamp for each alarm.

A log of 100 alarms are stored in a buffer and can be reviewed at a display keyset or sent to a printer (see sample Alarm Report in section 4.11 of this document).



.....  
System Maintenance Alarms are only available and with a LAN module.  
.....

## **SYSTEM DIRECTORY**

Each station, station group and outside line can have an 11 character directory name. This name will appear on keyset displays to provide additional information about lines and stations.

## **TOLL RESTRICTION**

There are 250 allow and 250 deny entries of 11 digits each. Each of these entries can apply to dialing classes B, C, D, E, F and G. Expensive 976, 1-900, 411 and operator-assisted calls, as well as specific area and office codes, can be allowed or denied on a per-class basis. Class A stations have no dialing restrictions and Class H stations cannot make outside calls.

Any outside line may be programmed to follow station toll restriction or follow the toll restriction class assigned to it. Each station and trunk can have a day dialing class and a night dialing class.

## **SPECIAL CODE TABLE**

A Special Code Table of ten entries (four digits each) allows use of telephone company features such as CID blocking (\*67) or call waiting disable (\*70) without interference to toll restriction or LCR. The Special Code table allows use of these custom calling features on a per call basis.

## **TOLL RESTRICTION OVERRIDE**

Program options allow system speed dial numbers to follow or bypass a station's toll restriction class. In addition, users may make calls from a toll restricted station by using the walking class of service or authorization code feature.

## ***TONE OR PULSE DIALING***

Outside lines can be programmed for either tone or pulse dialing to meet local telephone company requirements.

## ***TRAFFIC REPORTING***

The iDCS 100 system can store peg counts for various types of calls. These peg counts can be printed on-demand, daily, hourly, or up to three separate programmable shifts. The report includes statistics for each trunk, trunk group, station, station groups and page announcements. For more details and explanations see sections 4.9 and 4.10 of this document.



.....  
Traffic Reporting is only available with a LAN module.  
.....

## ***TRANSFER***

System operation permits station users to transfer calls to other stations in the system. Transfers can be screened, unscreened or camped-on to a busy station.

## ***TRUNK GROUPS***

Outside lines can be grouped for easy access by dialing a code or pressing a button. There are 11 trunk groups available for iDCS 100.

## ***UNIFORM CALL DISTRIBUTION (UCD)***

UCD is used whenever the user expects to have more ringing calls than people to answer them. It prevents callers from receiving busy signals or lengthy delays before answering. Callers reaching a busy station group are held in queue for an available agent. First and second announcements reassure the caller until an agent becomes free. Programmable automatic logout removes a station from the group if a call is placed to an unattended station, thus preventing unanswered calls. A wrap-up timer prevents calls to a station for a programmable period of time to allow the agent to finish work associated with the call.



.....  
Requires optional hardware. Ask your dealer for details.  
.....

### **UCD GROUPS**

The UCD group option allows callers in queue at a UCD group to be temporarily diverted to an announcement device and then placed back in the queue. A wrap-up timer will allow agents to complete paperwork before receiving the next UCD call.

### **CALL STATISTICS**

UCD supervisor positions using a display keyset can monitor the number of calls in queue, the time that the oldest caller has been waiting, the total number of calls received for the current day and the average time a caller waits to be answered.

### **AGENT STATISTICS**

UCD supervisor positions using a display keyset can monitor the number of agents in a group and how many agents are currently logged in. Each station's status can be reviewed for the number of calls answered and the average call length of the current day.

## GROUP SUPERVISORS

Multiple supervisors can be assigned to each group or one station can be given supervisor status for multiple groups. The group supervisor (using a display keyset) can add and delete agents in real time from the group to handle the workload.

## PRINTED REPORTS

Agent supervisors may run printed reports to a customer-provided printer, showing the data available on the supervisor displays.

## ***UNIVERSAL ANSWER***

Station users may dial the Universal Answer code or press the UA key to answer any outside lines programmed to ring the UA device. The UA device can be a station, group of stations, common bell or ring over page.

## ***VOICE MAIL - INBAND INTEGRATION***

The iDCS 100 system uses DTMF tones (inband signaling) to communicate with any compatible voice mail system. Stations can call forward to a voice mail system. When answered, the system will send DTMF tones routing the caller directly to the called station user's mailbox. Keyset users can press one button to retrieve messages from the voice mail system. A Voice Mail Transfer key permits keyset users to easily transfer a caller directly to an individual voicemail box without navigating through menus.



Although most voice mail systems will work with the iDCS 100, the system data has default values set to work with the Starmail Voice Processing System. They may need to be changed if you are using another system.

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## ***WALKING CLASS OF SERVICE***

This feature allows users to make calls or use features from a station that is restricted. The users may either use the WCOS feature code or the authorization code feature. Both methods change the class of service to correspond with the station passcode or authorization code that is dialed. After the call is completed, the station returns to its programmed class of service.

# STATION FEATURES

ADD-ON MODULE	PROGRAMMABLE KEYS
APPOINTMENT REMINDER	PROGRAMMED STATION MESSAGES
AUTOMATIC HOLD	PROTECTION FROM BARGE-IN
AUTOMATIC PRIVACY	PULLOUT DIRECTORY TRAY
BACKGROUND MUSIC	PULSE TO TONE SWITCH OVER
BUSY STATION CALLBACK	REDIAL
BUSY STATION INDICATIONS (BLF)	AUTO RETRY
CALL FORWARDING	LAST NUMBER
CALL LOGS	MEMO REDIAL
CALL PICKUP	SAVE NUMBER
DIRECT STATION SELECTION (DSS)	REMOTE HOLD
DO NOT DISTURB (OVERRIDE)	RING MODES
DO NOT DISTURB (PROGRAMMABLE)	AUTO ANSWER
DOOR LOCK RELEASE	RING-EIGHT TONE CHOICES
EXCLUSIVE HOLD	VOICE ANNOUNCE
GROUP LISTENING	RINGING PREFERENCE
HEADSET OPERATION	SPEAKERPHONE
HEARING AID COMPATIBLE	STATION LOCK
LINE QUEUING WITH CALLBACK	TRI-COLORED LIGHTS
LINE SKIPPING	VOLUME SETTINGS
LOUD RINGING INTERFACE	HANDSET
MESSAGE WAITING LIGHT/INDICATION	BGM
MUTE MICROPHONE/HANDSET	RINGING
OFF-HOOK RINGING	PAGING
OFF-HOOK VOICE ANNOUNCE ( <i>STANDARD</i> )	SPEAKER
OFF-HOOK VOICE ANNOUNCE ( <i>EXECUTIVE</i> )	OFF-HOOK RING
ONE TIME DO NOT DISTURB	WALL-MOUNTABLE KEYSETS
ONE TOUCH DIALING KEYS	
ON-HOOK DIALING	



Requires optional hardware and/or software. Ask your dealer for details.

## STATION FEATURE DESCRIPTIONS

### ***ADD-ON MODULE***

#### 32 BUTTON AOM

The 32-button add-on module (AOM) adds to the capability of any keyset. The 32 programmable buttons with red buttons can be used for feature keys, DSS/BLF keys or one touch speed dial buttons. Because this AOM has a microphone and a speaker it can be used to provide executive off hook voice announce or as a stand alone unit whenever a handset and dial pad are not required.

#### 64 BUTTON MODULE

The 64-button module adds to the capability of any keyset. Up to four 64-button modules can be added to each keyset. The 64 programmable red LED buttons with red LED can be used for feature keys, DSS/BLF keys or one touch speed dial buttons. A maximum of 5 can be installed on an iDCS 100 system.

## ***APPOINTMENT REMINDER***

Keysets with an alarm key can be used like an alarm clock. When programmed for a specific time, the keyset will sound a distinctive ring to remind the user of meetings or appointments. Alarms can be set for “today only” or for every day at the same time. Up to three alarms may be set at each keyset. Display keysets can also show a programmed message when the alarm rings.

## ***AUTOMATIC HOLD***

Station users can enable or disable automatic hold at their keysets. While a user is engaged on an outside (C.O.) call, pressing another trunk key, route key or CALL button automatically puts the call on hold when this feature is enabled. Pressing TRSF, CONFERENCE, PAGE or a DSS key will always automatically place the call on hold. This type of automatic hold is not a user-selectable option.

## ***AUTOMATIC PRIVACY***

All conversations on outside lines and intercom calls are automatically private. The privacy feature can be turned off on a per-line basis.



.....  
Intercom calls cannot be automatically held.  
.....

## ***BACKGROUND MUSIC***

Keyset users may choose to hear music through their keyset speakers when optional external sources are installed. Each user may adjust this level by the use of a volume control program at the selected keyset.

## ***BUSY STATION CALLBACK***

When reaching a busy station, callers may request a callback by pressing one button or dialing a code. The system rings the caller back when that station becomes idle (a system-wide maximum of 100 callbacks are allowed at one time including busy station and busy trunk).

## ***BUSY STATION INDICATIONS (BLF)***

DSS/BLF keys may be assigned to any keyset or add-on module. These buttons will be off when the station is idle, light red when that station is in use and flash distinctively when that station is in the DND mode.

## ***CALL FORWARDING***

Station users can forward internal and outside calls to other destinations immediately (Forward All), when busy (Forward Busy) or if not answered in a programmable number of seconds (Forward No Answer). These forward destinations can all be different. Once a destination has been programmed, it can be turned on and off with a programmable key. Forward All takes priority over Busy and No Answer conditions.

In addition to the three usual methods of forwarding described above, a fourth option called Follow Me is available. This option allows a station user to set a Forward All condition from his/her station to another station while at the remote station. To display the Follow Me condition, the TRSF key lights steady red at the station that is forwarded. The TRSF key also lights if Forward All is set and no key is programmed for Forward All.

Keyset users can be given an external call forward button to forward their calls to an external phone

number. Each outside line may be programmed to either follow or ignore station call forwarding. A per-station option controls whether internal calls forward to voice mail or not. Single line telephones must have the system administrator program this feature for them.

## **CALL LOGS**

With the call log feature, a display keyset user can review up to 50 of the last incoming calls from the Caller ID review list or up to 50 of the last external telephone numbers that were dialed. The numbers can be viewed, stored and/or dialed using the associated soft keys. LCR must be enabled for dialing and storing numbers from the CID review list. Optional hardware and/or software may be needed for Caller ID.



Call Logs are only available with a LAN module.

## **CALL PICKUP**

With directed call pickup, a user can answer calls ringing at any station by dialing a code plus that extension number. The group pickup feature allows the user to answer any call ringing within a pickup group. Pickup keys may be customized with extenders to allow pickup from a specific station or pickup group. The *iDCS 100-M* version software has 20 programmable pickup groups and the *iDCS 100*.

## **DIRECT STATION SELECTION (DSS)**

Programmable keys can be assigned as DSS keys and associated with extension numbers. Users press these keys to call or transfer calls to the assigned stations.

## **DO NOT DISTURB (OVERRIDE)**

The DND Override feature allows a keyset with a DND Override key (DNDO) and the appropriate class of service to override the DND setting at a called keyset. This will allow a user to go into DND while waiting for an important call and have that call transferred to them via a screened transfer from a station (for example the users secretary) with a DNDO key.

## **DO NOT DISTURB (PROGRAMMABLE)**

The Do Not Disturb (DND) feature is used to stop all calls to a station. System programming can allow or deny use of the DND feature for each station. Parties calling a station in DND will receive reorder tone. When in DND mode, calls may be forwarded to another destination. See Forward DND option. A keyset without a DND button can activate DND via the feature access code. The ANS/RLS key will flash at 112 ipm (rapidly) when DND is set. There is a programmable option to allow a C.O. line to override DND at its ring destination if that destination is a single station.

## **DOOR LOCK RELEASE**

Stations programmed to receive calls from a door phone can dial a code to activate a contact closure for control of a customer-provided electronic door lock.

## **EXCLUSIVE HOLD**

Pressing HOLD twice will hold a call exclusively at a station so no other station can pick up that call. Intercom calls are automatically placed on exclusive hold.

## ***GROUP LISTENING***

This feature allows users to turn on the speaker while using the handset. It allows a group of people to listen to the distant party over the speaker without the microphone turned on.

## ***HEADSET OPERATION***

Every keyset can be programmed to allow the use of a headset. In the headset mode, the hookswitch is disabled and the ANS/RLS key is used to answer and release calls. Keyset users may turn headset operation ON/OFF by keyset programming or more easily by pressing the headset ON/OFF key. The headset key lights steady red when the keyset is in headset mode. The ANS/RLS key lights if headset mode is activated by keyset programming only.

## ***HEARING AID COMPATIBLE***

All iDCS 100 keysets are hearing aid compatible as required by Part 68 of the FCC requirements.

## ***LINE QUEUING WITH CALLBACK***

When the desired outside line is busy, the user can press the CALLBACK key or dial the access code to place his/her station in a queue. The user will be called back when the line is available (a maximum of 100 callbacks are allowed system-wide at one time including busy station and busy trunk).

## ***LINE SKIPPING***

When the user is talking on an outside line and the automatic hold feature is turned off, he/she may press an idle line key and skip to that line without causing the previous call to go on hold.

## ***LOUD RINGING INTERFACE***

The MISC board has 3 relays that can be programmed to provide a dry contact closure for control of a customer provided loud ringing device. Any of these relays can be programmed to operate with a specific station or station group.

## ***MESSAGE WAITING LIGHT/INDICATION***

When a message indication is left at a keyset, the MESSAGE button will slowly flash red. Single line telephones will receive a distinctive dial tone to notify them that a message is waiting. Message waiting indications can be left for any station or group of stations.

## ***MUTE MICROPHONE/HANDSET***

Any keyset user can mute the keyset's handset transmitter by pressing the MUTE key. In addition, keyset users can also mute the keyset microphone while the keyset is in speakerphone mode.

## ***OFF-HOOK RINGING***

When a keyset is in use, the system will provide an off-hook ring signal to indicate that another call is waiting. The ring signal is a single ring repeated. The interval is controlled by a system-wide timer. Single line stations will receive a tone burst through the handset receiver instead of a ring.

## ***OFF-HOOK VOICE ANNOUNCE (EXECUTIVE)***

A keyset associated with an add-on module may receive an executive off-hook voice announcement while on another call. The called keyset user may reply handsfree without interrupting the call in progress. Only keysets with an off-hook voice announce button (OHVA) can off-hook voice announce to keysets with AOMs.

## ***OFF-HOOK VOICE ANNOUNCE (STANDARD)***

Keysets may receive a voice announcement while on another call. The calling station must have an OHVA key. When transferring a call to a busy keyset or while listening to busy signal, the station user can press the OHVA key to make an OHVA call to the busy keyset. If the called keyset is in the DND mode, it cannot receive OHVA calls.

## ***ONE TIME DO NOT DISTURB***

The Do Not Disturb (One Time) feature is used to stop all calls to a station when the user is on an outside line and does not want to be disturbed for the duration of the call. Upon completion of the call, DND is canceled and the station is returned to normal service. This feature requires a programmed button.

## ***ONE TOUCH DIALING KEYS***

Frequently used speed numbers can be assigned to one touch dialing keys for fast accurate dialing.

## ***ON-HOOK DIALING***

Any keyset user can originate calls without lifting the handset. When the called party answers, the user may speak into the microphone or lift the handset for more privacy.

## ***PROGRAMMABLE KEYS***

LCD 24B and STD 24B keysets have 24 programmable keys, LCD 12B and Basic 12B keysets have 12, and 7B keysets have 12. Each key can be programmed for more than 25 different uses to personalize each phone. Examples of keys include individual outside line, individual station, group of lines, group of stations and one touch speed dial buttons. Using these keys eliminates dialing access codes.

The following feature keys have extenders that make them more specific: SPEED DIAL, SUPERVISOR, PAGE, DSS, DIRECTED PICKUP, GROUP PICKUP, DOOR PHONE, BOSS, PROGRAMMED MESSAGE, IN AND OUT OF GROUP, FORWARD and VOICE MAIL TRANSFER. The extender can be a station, a group or another identifying number.

## ***PROGRAMMED STATION MESSAGES***

Any station may select one of 20 to be displayed at a calling party's keyset. Ten messages are factory-programmed but may be reprogrammed.



.....  
 The calling party must have a display keyset to view these messages.  
 .....



## ***PROTECTION FROM BARGE-IN***

Each station can be programmed as secure or not secure. Secure stations cannot be barged-in on. A station that is not secure cannot be barged-in on when talking to a secure station.

## ***PULLOUT DIRECTORY TRAY***

A pullout directory tray is conveniently located beneath all keysets. It is used to record station directory names and speed dial numbers.

## ***PULSE TO TONE SWITCHOVER***

When dialing a number on a dial pulse network, a station user can dial # and the DCS system will begin to send DTMF.

## ***REDIAL***

There are three types of external redial available to all station users. Each type can redial up to a maximum of 18 digits.

- **AUTO RETRY**— When an outside number is dialed and a busy signal is received, the auto retry feature can be used to reserve the outside line and automatically redial the number for a programmable number of attempts (available to keyset users only).
- **LAST NUMBER**— The most recently dialed number on a C.O. line is saved and may be redialed by pressing the redial key or dialing the LNR access code.
- **MANUAL RETRY with LNR**— When you make an outside call and receive a busy signal you can press the LNR key to redial the same number again. This operation can be manually repeated for a limited number of attempts as defined by system programming (available to keyset users only).
- **SAVE NUMBER**— Any number dialed on a C.O. line may be saved for redial at a later time.

## ***REMOTE HOLD***

When you wish to place a call on hold at another station, press TRSF and dial the station number (or press the appropriate DSS key). Press the HOLD key. This will place the call on system hold on an available CALL button or Line Key at the remote station.

## ***RING MODES***

Each keyset user can select one of three distinct ways to receive intercom calls. The phone can automatically answer on the speakerphone, voice announce through the speaker or receive ringing. When the ring mode is selected, keyset users can choose one of eight distinct ring tones. Forced Auto Answer is invoked by the calling station and is controlled by the calling station's class of service.

## ***RINGING PREFERENCE***

Lifting the handset or pressing the speaker button automatically answers a call ringing at the keyset. Using this method, users are assured of answering the oldest call first. When ringing preference is turned off, the user must press the flashing button to answer. Users may answer ringing lines in any order by pressing the flashing button.

## ***SPEAKERPHONE***

DCS LCD 24B and DCS LCD 12B keysets have built-in speakerphone. The speakerphone enables calls to be made and received without the use of the handset. All iDCS keysets are speakerphones. The iDCS 28 Button and the iDCS 18 Button can have a Full Duplex Speakerphone Module added.

## ***STATION LOCK***

With a programmable personal station passcode, any keyset or single line station can be locked and unlocked to control use of each telephone. There are two lock options: 1=LOCKED OUTGOING and 2=LOCKED ALL CALLS. See the following table for more details.

## ***TRI-COLORED LIGHTS***

LCD 24B and STD 24B keysets have 16 keys equipped for tri-colored LED indications (green, red and amber). LCD 12B and Basic 12B models have six of these keys and 7 button keysets have three. To avoid confusion, your calls always light green, other calls show red and recalls light amber.

## ***VOLUME SETTINGS***

Each keyset user may separately adjust the volume of the ringer, speaker, handset receiver, background music, page announcement and off-hook ring tone.

## ***WALL-MOUNTABLE KEYSETS***

Each keyset, add on module and 64 button module can be wall mounted by reversing the base wedge. The newest base wedge may not fit all wall mounting scenarios so in these cases the original wall mount/base wedge unit should be used.

# DISPLAY FEATURES

ACCOUNT CODE DISPLAY	ENHANCED STATION PROGRAMMING
CALL DURATION TIMER	IDENTIFICATION OF RECALLS
CALL FOR GROUP IDENTIFICATION	IDENTIFICATION OF TRANSFERS
CALL PROCESSING INFORMATION	
MESSAGE WAITING CALLER NUMBER	
CALLER ID INFORMATION	OUTSIDE LINE IDENTIFICATION
CALLING PARTY NAME	OVERRIDE IDENTIFICATION
CALLING PARTY NUMBER	PROGRAMMED MESSAGE DISPLAY
CONFERENCE INFORMATION	SOFT KEYS
DATE AND TIME DISPLAY	STOPWATCH TIMER
DIALED BY NAME	DIALED NUMBERUCD SUPERVISOR DISPLAYS

## DISPLAY FEATURE DESCRIPTIONS

### ***ACCOUNT CODE DISPLAY***

Account codes are conveniently displayed for easy confirmation. If entered incorrectly, users may press the ACCOUNT key again and reenter the account code.

### ***CALL DURATION TIMER***

The system can automatically time outside calls and show the duration in minutes and seconds. Station users may manually time calls by pressing the TIMER button.

### ***CALL FOR GROUP IDENTIFICATION***

When a call is made to a station group, the display shows [CALL FOR GROUP] and the user's group number. These calls can be answered with a different greeting than calls to the user's extension number.

### ***CALL PROCESSING INFORMATION***

During everyday call handling, the keyset display will provide information that is helpful and in some cases invaluable. Displays such as [CALL FROM 203], [TRANSFER TO 202], [701: RINGING], [TRANSFER FM 203], [708 busy], [Camp on to 204], [Recall from 204], [Call for 501], [message from 204] and [FWD ALL to 204] keep users informed of what is happening and where they are. In some conditions, the user is prompted to take action and in other cases the user receives directory information.

### ***CALLER ID INFORMATION***

Caller ID information is dependent on the use of display keysets. The following list explains the displays that are used with Caller ID.

#### NAME/NUMBER DISPLAY

Each display keyset user can decide if he/she wants to see the Caller ID name or Caller ID number in the display. Regardless of which one is selected to be seen first, the NND key is pressed to view the other piece of CLIP information.

## NEXT CALL

In the event that there is a call waiting or a camped-on call at the user's keyset, the user can press the NEXT key to display the Caller ID information associated with the next call in queue at the station. Either the CLIP name or CLIP number will show in the display depending on the N/N selection.

## SAVE CLIP NUMBER

At any time during an incoming call that provides CLIP information, the user may press the SAVE key. This saves the CLIP number in the Save Number feature. Pressing the SAVE number redial key will dial the CLIP number. The system must be using LCR to dial the saved number.

## STORE CLIP/ANI NUMBER

At any time during an incoming call that provides CLIP information, the user may press the STORE key. This saves the CLIP number as a speed dial number in the personal speed dial list. The system must be using LCR to dial the stored number.

## INQUIRE PARK/HOLD

When a user is informed that an incoming call is on hold or has been parked, the user may view the Caller ID or ANI information before he/she retrieves the call. This will influence how the user chooses to handle the call.

## CLIP REVIEW LIST

This feature allows display keyset users to review CLIP information for calls sent to their stations. This list can be from ten to fifty calls in a first in, first out basis. The list includes calls that were answered and calls that rang the user's station but that were not answered. When reviewing this list, the user can press one button to dial the person back. The system must be using LCR to dial the stored number.

## INVESTIGATE

This feature allows selected stations with a special class of service to investigate any call in progress. If CLIP information is available for an incoming call, the selected stations can know to whom the iDCS 100 user is speaking. On outgoing calls, the selected stations can see who was called. After investigating, the selected stations may barge-in on the conversation, disconnect the call or hang up.

## ABANDON CALL LIST (50)

The system has a system-wide abandon call list that stores CLIP information for calls that rang but were not answered. The list is accessed using the operator's passcode. When reviewing this list, you are provided options to CLEAR the entry or DIAL the number. You can use the NND key to toggle between the CLIP name, CLIP number and the date and time the call came in. The system must be using LCR to dial numbers from the abandon call list. The abandoned call list will store up to 50.

## ***CALLING PARTY NAME***

For intercom calls, LCD 24B and LCD 12B keysets show the calling party's name before answering. The names must be stored in the system directory list and can be up to 11 characters long.

## ***CALLING PARTY NUMBER***

When an intercom call is received, all display stations show the calling party's extension number before the call is answered.

## ***CONFERENCE INFORMATION***

When a conference is set up, each extension and outside line number is displayed at the controlling station when it is added. When a station is added, its display shows [Conf with xxx] alerting the user that other parties are on the line.

## ***DATE AND TIME DISPLAY***

In the idle condition, the current date and time are conveniently displayed. Display keysets can have a 12 or 24 hour clock in either the ORIENTAL or WESTERN display format with information shown in upper case or lower case letters.

## ***DIAL BY NAME***

Each station and speed dial number can have an associated directory name. Any station or speed dial number can be selected by scrolling alphabetically through a directory list. There are three directories:

1. System wide speed dial list
2. Personal speed dial list
3. Station directory list

This online "phone book" allows display keyset users to look up and dial any speed dial number or station in seconds.

## ***DIALED NUMBER***

When an outside call is made, digits are displayed as the user dials them. If the display indicates an incorrect number was dialed, the user can quickly hang up before billing begins.

## ***ENHANCED STATION PROGRAMMING***

Personal programming options are easier to select and confirm with the help of the display.

## ***IDENTIFICATION OF RECALLS***

Hold recalls and transfer recalls are identified differently than other ringing calls. Hold recalls indicate the recalling line or station number and the associated name. Transfer recalls indicate the recalling line or station and where it is coming from.

## ***IDENTIFICATION OF TRANSFERS***

The display will identify who transferred a call to the user.

## ***MESSAGE WAITING CALLER NUMBER***

When the message indication is on, pressing the MESSAGE button displays the station number(s) of the person(s) who have messages for the user. Display keyset users can scroll up and down to view message indications.

## ***OUTSIDE LINE IDENTIFICATION***

Each line can be identified with an 11 character name. Incoming calls display this name before the call is answered. This feature is helpful when individual lines must be answered with different greetings.

## ***OVERRIDE IDENTIFICATION***

If another station barges-in on a user's conversation, the display will alert the user with a [Barge from 2xx] display if the system is set for barge-in with tone.

## ***PROGRAMMED MESSAGE DISPLAY***

Preprogrammed station messages set by other stations are displayed at the calling station's keyset.

## ***SOFT KEYS***

Below the display, there are three soft keys and a SCROLL button. These keys allow the user to access features in his/her class of service without requiring the keyset to have designated feature keys.

## ***STOPWATCH TIMER***

Display keyset users find this feature very convenient to time meetings, calls and other functions. Users simply press once to start the timer and press again to stop the timer.

## ***UCD SUPERVISOR DISPLAYS***

With the optional AA card, when UCD is used, multiple supervisors can view information about the UCD groups calls or agents.

### Call Screen

This allows the supervisor to view how many calls are in queue, the longest wait time, how many calls have been received today, what the average time in queue is and how many calls were abandoned.

### Agent Screen

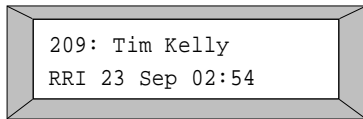
This allows the supervisor to monitor how many agents are logged in, check each agents status (IN GROUP, OUT OF GROUP, or DND), view each agents total number of calls, average call length or average ring time.



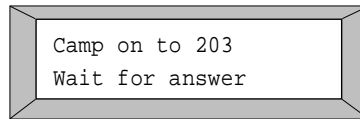
.....  
Accessing this screen will also allow a Supervisor to change the status of each agent (IN GROUP, OUT OF GROUP, or DND).  
.....

## SAMPLE DISPLAYS

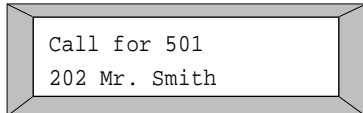
PROSTAR LCD 12B and LCD 24B display model keysets have a large, easy-to-read, 32 character liquid crystal display. Helpful call processing information is provided so everyday call handling is quick and easy. Here are just some of the displays you may see.



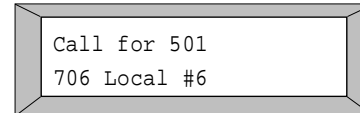
Idle display shows extension, name, day, date and time.



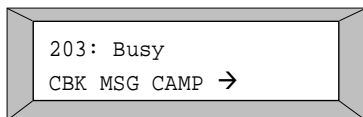
This station is camped-on to extension 203 and is waiting for 203 to answer.



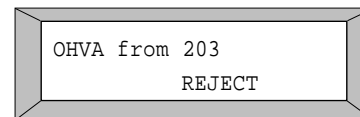
This station in the sales department is receiving a group call from Mr. Smith.



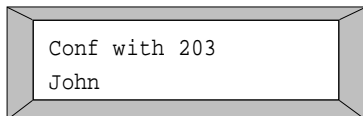
This display tells you this is a new incoming call to the sales department.



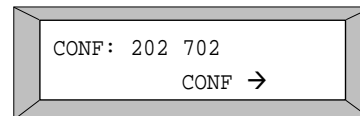
This station is calling station 203 which is currently busy.



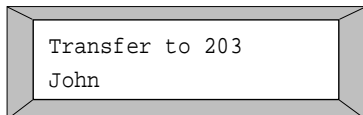
This station is receiving an off-hook voice announcement from station 203.



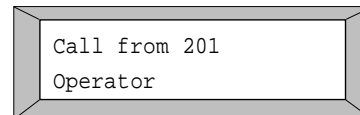
This station is on a conference call with John, extension 203. Assume other parties will hear your conversation.



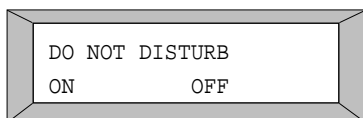
This station is on a conference call with extension 202 and trunk 702 and has the option to add two more parties.



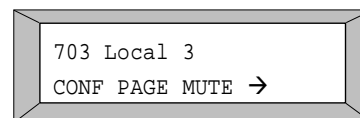
This station is transferring a call to John at extension 203.



This station is receiving a call from extension 201.

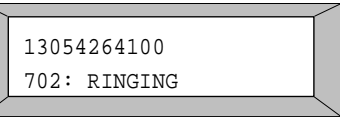


This station is setting the Do Not Disturb feature.



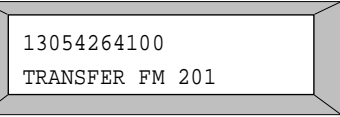
This station is receiving a call from extension 201.

## SAMPLE CALLER ID DISPLAYS



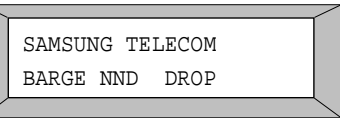
13054264100  
702: RINGING

This display shows an incoming call from 305-426-4100 on Line 702 ringing directly at your station.



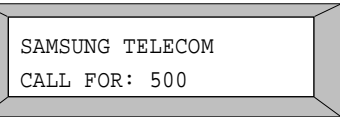
13054264100  
TRANSFER FM 201

This display shows an incoming call from 305-426-4100 on Line 702 ringing directly at your station.



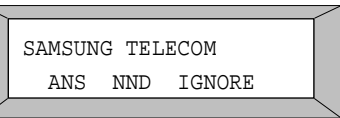
SAMSUNG TELECOM  
BARGE NND DROP

This display shows an investigation of a station that is talking to Samsung Telecom. Investigator can BARGE-in to the conversation, DROP the call from the system or examine further NND information.



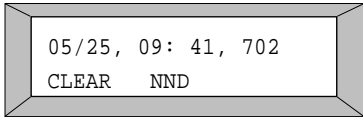
SAMSUNG TELECOM  
CALL FOR: 500

This display shows an incoming call from Samsung Telecom ringing at group 500.



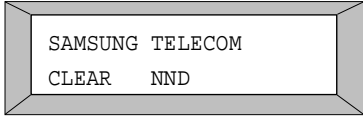
SAMSUNG TELECOM  
ANS NND IGNORE

This display is seen while using the REQUIRE feature. It shows the three options available while you are checking on a held or parked call.



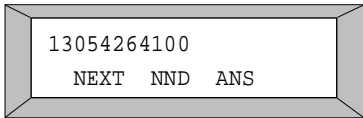
05/25, 09: 41, 702  
CLEAR NND

This display shows the information on the abandoned call list. This call came in on May 25 at 9:41 A.M on line 702. The user can CLEAR the entry, DIAL the caller back or examine further NND information.



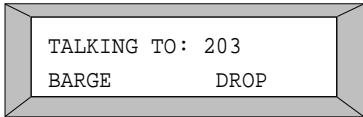
SAMSUNG TELECOM  
CLEAR NND

This display shows an entry in a station review list showing the three initial options. The arrow indicates other options available to you by pressing the SCROLL key.



13054264100  
NEXT NND ANS

This display is seen while examining calls in queue at your keyset.

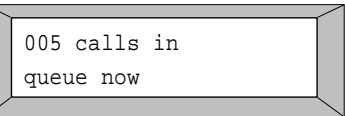


TALKING TO: 203  
BARGE DROP

This display can be seen when investigating an intercom call. The investigator can BARGE-in or DROP the connection.

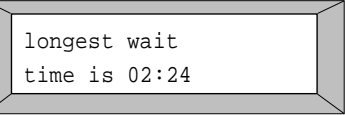


## SAMPLE UCD DISPLAYS



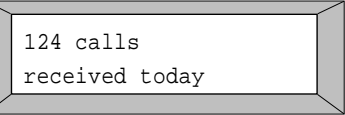
```
005 calls in  
queue now
```

There are five calls currently waiting to be answered by the UCD group.



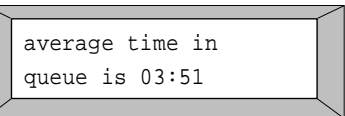
```
longest wait  
time is 02:24
```

The longest call on hold (waiting to be answered) was for two minutes, 24 seconds. This data applies to all calls since the supervisor data was last cleared. It does not necessarily represent calls currently in queue.



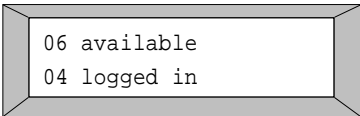
```
124 calls  
received today
```

The UCD group has received 124 calls today.



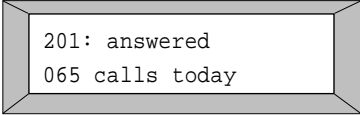
```
average time in  
queue is 03:51
```

The average time on hold (waiting to be answered) is three minutes and 51 seconds.



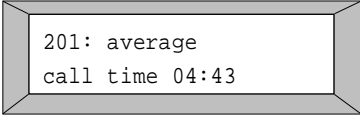
```
06 available  
04 logged in
```

There are six members in the group. Four of the members are currently logged in.



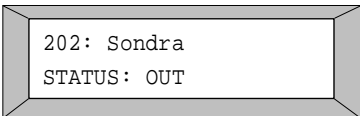
```
201: answered  
065 calls today
```

The agent at station 201 has answered 65 calls today.



```
201: average  
call time 04:43
```

The average call length for station 201 is four minutes and 43 seconds.



```
202: Sondra  
STATUS: OUT
```

Station 202 is currently out of the group. (The display can also show IN GROUP and DND.)

# SAMPLE SMDR PRINTOUT (WITHOUT CALLER ID)

SMDR REPORT FOR [Samsung R & D] 09/23/94 17:30

T	EXT	AUTH	TRK	NM/DD	STT.TIME	DURATION	FG	DIALED	DIGIT	ACCOUNT CODE
1	208		705	09/23	16:12:33	00:05:12	OT	12145551234	567	
1	226		703	09/23	16:13:31	00:00:29	IT			
1	202		703	09/23	16:14:00	00:00:25	TT			
1	210		704	09/23	16:15:28	00:01:52	O	4205069		1234567890*#
1	201		702	09/23	16:15:51	00:01:45	I			
1	211		703	09/23	16:19:53	00:00:25	T			987654321012
1	204	5555	703	09/23	16:18:16	00:01:57	O	4205068		
1	208		702	09/23	16:21:12	00:00:19	IT			
1	210			09/23	16:21:31	00:04:15				ALARM RINGING
1	211		706	09/23	16:20:59	00:02:43	O	18005551234		
1	208			09/23	17:04:10					DND ON
1	208			09/23	17:12:07					DND OFF
1	207			09/23	17:12:05					GROUP OUT
1	207			09/23	17:16:55					GROUP IN
1			735	09/23	17:17:15	00:00:11	DE	3833		
1	209		735	09/23	17:17:38	00:00:30	DI			
1	735		709	09/23	17:18:08	00:12:19	DO	13055551234		
1	706		701	09/23	17:25:15	00:00:28	FI			
1	701		706	09/23	17:25:15	00:10:25	FO	4205071		
1	312	2326	705	09/23	18:00:03	00:08:12	O	13054264100		232552779600

Call Type Flag Definitions

- O Outgoing
- I Incoming Call
- DI DISA call in
- DO DISA call out
- FO Outgoing record of forwarded call
- DE DISA call with error
- T Transferred call that was terminated
- TI Incoming transfer
- FI Incoming call forwarded to an external number
- OT Outgoing transfer-Outgoing call made and transferred
- TT Caller received a transferred call and transferred it again

# SAMPLE SMDR PRINTOUT (WITH CALLER ID)

SMDR REPORT FOR [Samsung R & D] 09/23/94 17:30

T	EXT	AUTH	TRK	MM/DD	STT.TIME	DURATION	FG	DIALED	DIGIT	ACCOUNT	CODE	CTD/ANI	NUMBER	CTD/ANI	NAME
1	201		701	01/02	17:15:13	00:00:28	IT					13054264100			SAMSUNG TELECOM
1	205		701	01/02	17:15:41	00:00:02	T					13054264100			SAMSUNG TELECOM
1	247		702	01/02	17:24:49	00:00:25	IT					1305557890			CURTIS SMITH
1	202		702	01/02	17:25:14	00:00:03	T					1305552354			SUSAN HOLLINS
1	202		702	01/02	17:25:56	00:00:00	O					4264100			
1	217		702	01/02	17:26:35	00:00:11	IT					13054264385			SAMSUNG TELECOM
1	203		702	01/02	17:26:46	00:00:16	T					13054264385			SAMSUNG TELECOM
1	203		702	01/02	17:27:13	00:00:20	O					4264385			
1	203		702	01/02	17:28:04	00:00:00	O					4264385			
1	201		701	01/02	17:28:34	00:00:04	IT					1305559748			JOAN LEVITN
1	203		701	01/02	17:28:38	00:00:14	T					1305558703			LENNY WILKINS
1	203		702	01/02	17:29:54	00:00:00	OT					5556420			
1	205		702	01/02	17:31:06	00:03:00	TT					1305556420			PIZZA DELIVERY
1	209		702	01/02	17:33:24	00:02:18	T					1305556420			PIZZA DELIVERY
1			701	01/02	17:41:45	00:00:30	A					1305553426			TERRY PRUITT
1			701	01/02	17:42:15	00:00:02	A					1305554676			BLANCHE MARKER
1	203		702	01/03	17:51:17	00:00:22	O					5555069			
1			701	01/03	17:56:02	00:00:05	A					1305556733			ALEX DAULTON
1			701	01/03	17:56:07	00:00:54	A					1305559723			CHAZ NEWMAN

Call Type Flag Definitions

- O Outgoing
- I Incoming Call
- DI DISA call in
- DO DISA call out
- FO Outgoing record FI of forwarded call
- DE DISA call with error
- T Transferred call that was
- TT Incoming transfer
- OT Outgoing transfer-Outgoing call made and transferred
- TT Caller received a transferred call and transferred it again

# SAMPLE UCD REPORT

UCD GROUP 529 : SALES

FROM: SUN 02 Feb 00:00  
TO : SUN 02 Feb 02:54

## CALL STATISTICS

```
=====
AVERAGE RING TIME(TIME TO ANSWER)..... 00:40
NUMBER OF TIMES ALL AGENTS BUSY..... 00002
AVERAGE TIME IN QUEUE..... 00:51
TOTAL CALLS RECEIVED..... 00011
LONGEST QUEUE TIME(TODAY)..... 02:14
TOTAL CALLS ABANDONED..... 00004
```

## AGENT STATISTICS

```
=====
```

MEMBER	AGENT	NAME	CALLS ANSWERED	AVERAGE CALL TIME	RING TIME
01	210	JOHN	0002	01:55	00:05
02	211	SAM	0001	02:18	00:06
03	208	MIKE	0003	01:22	00:04
04	207	PETER	0001	03:16	00:05

```
=====
UCD GROUP 515 : SUPPORT
```

FROM: MON 03 Jan 08:30  
TO : SUN 02 Jan 02:54

## CALL STATISTICS

```
=====
AVERAGE RING TIME(TIME TO ANSWER)..... 00:07
NUMBER OF TIMES ALL AGENTS BUSY..... 00005
AVERAGE TIME IN QUEUE..... 01:06
TOTAL CALLS RECEIVED..... 00023
LONGEST QUEUE TIME(TODAY)..... 01:02
TOTAL CALLS ABANDONED..... 00001
```

## AGENT STATISTICS

```
=====
```

MEMBER	AGENT	NAME	CALLS ANSWERED	AVERAGE CALL TIME	RING TIME
01	223	FRED	0012	02:33	00:08
02	213	JANE	0010	01:04	00:04

# UCD CALL STATISTICS

## ***CALLS IN QUEUE NOW***

How many calls are currently in queue.

This statistic is a real time statistic and so will not print on a report.

## ***ABANDONED CALLS***

This shows the number of callers that reached the UCD group, but hung up before being answered. A high number probably means that there are not enough agents available and the wait time is too long.

## ***AVERAGE RING TIME***

This is calculated from the time an agent begins to ring until the time an agent answers the call, this does not include ringing at an agent station that does not answer or is logged out because of the ring next option.

## ***NUMBER OF TIMES ALL AGENTS BUSY***

This is the number of times that a call is placed to an UCD group and all agents are busy or out of group. This check is made when the call is first placed to the group.

Example: If there are 5 members in a group, 3 are Out of Group one is busy and one is idle, and a call is placed to the group, because there is an idle station the all agents busy counter is not incremented.

If the idle station rings, does not answer and is logged out, although the condition of the group is now all agents busy, the check has been made and the agent busy statistic does not increment.

Also if a call comes into a group with all agents busy and then one becomes idle, the busy counter will increment because the check has been made.

## ***AVERAGE TIME IN QUEUE***

This is calculated as an average of all the calls that were in queue.

Note that this is ONLY an average of the calls that were in queue. The caller must have overflowed to the UCD recording to be considered in queue.

A call is considered in queue until it is answered or until it goes to the final destination.

## ***TOTAL CALLS RECEIVED***

The total number of times that calls were sent to a group. This includes calls that were answered by the group, calls that went to a group with all agents busy or out of group, calls that are abandoned and calls that go to UCD final destination. This includes intercom calls to the UCD group.

If this number is less than the total calls received by all the agents it is possible that calls were transferred from one agent to another.

If this number is more than the total calls received by all the agents it is possible that calls were unanswered by an agent and went to final destination or callers hung up while in queue.

This statistic includes:

- a) Calls answered by agent.
- b) Calls that are not answered by an agent and go to final destination.
- c) Calls that are sent to the UCD group but callers hang up before being answered.

### ***LONGEST QUEUE TIME TODAY***

This shows the longest call in queue today. The queue time is calculated as follows:

- a) Queue time begins when a caller starts to hear the first UCD message.
- b) Queue time ends when a caller is either
  - Answered by an agent
  - System gets disconnected from C.O. or
  - Caller is transferred to final destination

### ***LONGEST QUEUE TIME NOW***

This shows the longest call currently in queue. The queue time is calculated as follows:

- a) Queue time begins when a caller starts to hear the first UCD message.
- b) Queue time ends when a caller is either
  - Answered by an agent
  - System gets disconnected from C.O. or
  - Caller is transferred to final destination

# UCD AGENT STATISTICS

## ***LOGGED IN***

The number of stations programmed in the UCD group and the number of stations that are currently logged in.

This statistic is a real time statistic and so will not print on a report.

## ***STATUS***

This screen shows the agents name, extension number and status. The status can be In Group, Out of group or in DND.

This statistic is a real time statistic and so will not print on a report.

## ***CALLS ANSWERED***

The total number of calls answered by the agent. This does not include ring no answer to an agent station.

If this total number is less than the calls received by the group it is possible that calls were unanswered by an agent and went to final destination or that callers hung up while in queue.

If this total number is more than the calls received by the group it is possible that calls were transferred from one agent to another.

## ***AVERAGE CALL TIME***

This is an average of all the call durations for the agent.

## ***AVERAGE RING TIME***

This is an average of all the ring times for the agent. Ring times are previously explained.







## 9. TRUNK RECALLS TO STATION

These are trunk calls that were placed on any kind of hold and recalled a station. These are also trunk calls that were transferred and were not answered and recalled the transferring station. This includes members of the operator group that put calls on hold and then recall the operators station.

## 10. TRUNK RECALLS TO OPERATOR GROUP

These are any trunk calls that recalled to the operator group.

## 11. INTERNAL PAGE USED

Peg count of every time internal page was accessed.

## 12. EXTERNAL PAGE USED

Peg count for every time external page was accessed.

## 13. ALL PAGE USED

Peg count of every time the all page feature was accessed. This does not include internal or external page, only 55+ \* or PAGE \*.

B\*\*\*\*\* TRUNK GROUPS \*\*\*\*\*

1 GROUP	2 OUTGOING	3 BUSY
9	0000	0000
800	0000	0000
801	0000	0000

### 1. GROUP

A listing of all trunk groups assigned in the system.

### 2. OUTGOING

These are the number of outgoing trunk calls made using each trunk group. Pegged every time a member of this trunk group was used to make a valid outgoing call. A valid outgoing call is defined by the SMDR Start Time programmed in MMC 501.

### 3. BUSY

This is the number of times each trunk group was busy when someone attempts to access it.

C\*\*\*\*\* INDIVIDUAL TRUNKS \*\*\*\*\*

1TRUNK	2TRUNK-NAME	3ATTA	4ANSD	5NOT-ANSD	6OUTGOING	7BUSY
701		0000	0000	0000	0000	0000
702		0000	0000	0000	0000	0000
703		0000	0000	0000	0000	0000
704		0000	0000	0000	0000	0000
705		0000	0000	0000	0000	0000
706		0000	0000	0000	0000	0000
707		0000	0000	0000	0000	0000
708		0000	0000	0000	0000	0000
709		0000	0000	0000	0000	0000
710		0000	0000	0000	0000	0000

### 1. TRUNK

A listing of each trunk in the system.

### 2. TRUNK NAME

The names of each trunk as programmed in MMC 404.

### 3. ATTA

Average Time To Answer for trunks is counted in the number of seconds that ringing voltage is detected at the trunk interface and the timer stops when trunk is answered by station or device in the system. The ATTA is the sum of all answered times divided by the answered call count.

### 4. ANSD

This is the number of times this specific trunk was answered by any station or device whether it is a new call or a recall.

### 5. NOT-ANSD

This is the number of times this specific trunk rang the system but was not answered. These are the same calls that would be flagged as abandoned in SMDR.

### 6. OUTGOING

This is the number of times this trunk was used to make an outgoing call. A valid outgoing call is defined by the SMDR START TIME programmed in MMC 501.

### 7. BUSY

This is the number of times this trunk was busy when accessed by a button or dial code.

D\*\*\*\*\* STATION HUNT GROUPS \*\*\*\*\*

```

          <----- 1 OUTSIDE CALL -----> 5 <-
INTERCOM->
  2GROUP      3ANSD      4NOT-ANSD      6ANSD
    500        0000        0000          0000
    501        0000        0000          0000
    502        0000        0000          0000
    503        0000        0000          0000

```

### 1. OUTSIDE CALLS

These statistics are for outside calls that reach these station groups regardless how they arrive there.

### 2. GROUP

Listing of all station groups in the system.

### 3. ANSD

This column is a peg count of all answered trunk calls that rang to the specific group directory number regardless of how these arrived.

### 4. NOT-ANSD

The number of times any trunk call directed to the specific group number was not answered by any member of the group.

### 5. INTERCOM

An intercom call made from a station or device within the system to the specific group number.

### 6. ANSD

This is a count of how many times an intercom call was answered by any group member of that specific group.

```

E***** INDIVIDUAL STATIONS *****
                                                    1
11
      <----- OUTSIDE CALL -----> <-INTERCOM->
  2           3           4           5           6           7           8           9           10
12      13
EXT STATION-NAME ATTA ANSD NOT-ANSD DIALED ICM-TRSF TRK-TRK PICKUP ANSD DIALED
201           0000 0000   0000   0000   0000   0000   0000   0000 0000 0000
202           0000 0000   0000   0000   0000   0000   0000   0000 0000 0000
203           0000 0000   0000   0000   0000   0000   0000   0000 0000 0000

```

## 1. OUTSIDE CALLS

These statistics are for outside calls that in any way reach individual stations or devices.

## 2. EXT

Listing of all extension numbers in the system. This also includes AA, VM, and CADENCE ports.

## 3. STATION NAME

The name for each particular station as programmed in MMC 104.

## 4. ATTA

Average Time To Answer for stations is counted in the number of seconds that ringing signal is applied to a station for trunk calls and recalls. The ATTA is the sum of all answered times divided by the answered call count. Use the same calculation method as used for individual trunk ATTA.

## 5. ANSD

This is a count of how many times an outside call was answered by the specific station. Outside callers recalling a station are not counted again when they are answered.

## 6. NOT-ANSD

This is a count of how many times a trunk call was directed to the station but was not answered by this station.

## 7. DIALED

Peg count of how many times the station made a valid outside call. An outside call is defined by the SMDR start time in MMC 501.

## 8. ICM-TRSF

This is the number of times a trunk call was successfully transferred to another station using the intercom. It includes both screened and unscreened transfer.

## 9. TRK-TRK

This is the number of times a trunk call was transferred to another trunk (tie line) This is called a trunk-to-trunk transfer. This field gets pegged every time the station completes a trunk to trunk transfer.

## 10. PICKUP

This is a count of the outside calls that were picked up by the specific station. Picked-up calls are calls that are not ringing at your station but were answered by you. This peg count is separate from the number of answered call in #5 of Individual Stations section E.

**11.INTERCOM**

Statistics for intercom calls. An intercom call made from a station or a station device within the system to another station.

**12.ANSD**

This is the number of times an intercom call was answered by this specific station. Screened transfers count as an answered intercom call.

**13.DIALED**

The number of times the specific station dialed another station or station group. Screened transfers count as a dialed intercom call.

# SAMPLE ALARM REPORT

ALARM REPORT FOR [iDCS 100 SAMPLE ] MAR/24/1999 19:45

```
=====
MM/DD/YYYY  ERR.TIME  ERR.CODE  ERROR DISPLAY  POSITION
=====
03/14/1999  16:45:00  [MNF03]  IPC Error      C1-S01
03/14/1999  16:45:00  [MNF03]  IPC Error      C1-S04
03/14/1999  16:45:00  [MNF03]  IPC Error      C1-S01
03/14/1999  16:45:00  [MNF03]  IPC Error      C1-S04
03/14/1999  16:45:00  [MNF03]  IPC Error      C1-S01
03/14/1999  16:45:00  [MNF03]  IPC Error      C1-S04
03/14/1999  16:46:00  [MNF01]  Card Out       C1-S05
03/14/1999  16:46:00  [MNF02]  Card In        C1-S05
03/14/1999  16:47:00  [MJD01]  SYNC Failure   C1-S05
03/14/1999  16:47:00  [MJD02]  SYNC Recvry    C1-S05
03/16/1999  16:47:00  [MNF04]  Trunk Fault    C1-S06-P03
03/16/1999  16:48:00  [MNF05]  Trunk Recvry   C1-S06-P01
03/16/1999  16:48:00  [MNF05]  Trunk Recvry   C1-S06-P02
03/16/1999  16:48:00  [MNF05]  Trunk Recvry   C1-S06-P03
03/18/1999  16:51:00  [MNF01]  Card Out       C1-S02
03/18/1999  16:51:00  [MNF02]  Card In        C1-S02
03/19/1999  17:23:00  [MNF01]  Card Out       C1-S03
03/20/1999  17:24:00  [MJC01]  DTMF Fault     BASE
03/20/1999  17:24:00  [MNF03]  IPC Error      C1-S01
03/20/1999  17:24:00  [MNF03]  IPC Error      C1-S04
03/24/1999  17:24:00  [MJD19]  PRI Restart    C1-S07
=====
```

---

## DECT Service

*iDCS 100* system provides DECT cordless communications in a single office or throughout a large commercial or industrial complex. To implement this service, you need 8BSI card, DBS card and DECT handsets. Users of this service meet improved overall efficiency, since staff can be reached or make calls wherever they are.



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