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# ***UNIVERGE<sup>®</sup> SV8100***

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## **General Description Manual**



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Communications Technology Group



# *Preface*

## **GENERAL INFORMATION**

The UNIVERGE SV8100 system is a feature-rich key system that provides over 170 features including Computer Telephony Integration, Automatic Call Distribution, Uniform Call Distribution, ISDN-BRI Voice Trunks, ISDN-PRI Voice Trunks, IP Telephony, Voice over Internet Protocol (VoIP) trunks and stations, and many others.

The UNIVERGE SV8100 system provides what the customer needs today and, as business expands, the system can be expanded to grow as well.

The UNIVERGE SV8100 system has a set of manuals that provide all the information necessary to install and support the system. The manuals are described in this preface.

## **THIS MANUAL**

This manual provides general information about the system, its features, system configuration, and standards. This manual provides an overview of the UNIVERGE SV8100 system and is useful when presenting information to potential customers.

### **Chapter 1 – Introduction**

This chapter provides an overview and a brief description of the system.

### **Chapter 2 – Features**

This chapter provides a list of features that are available with the system. Each feature is briefly described.

### **Chapter 3 – Equipment**

This chapter provides a list and brief description of the equipment that is available with the system.

### **Chapter 4 – Installation, Programming, and Maintenance Overview**

This chapter briefly describes the installation, programming functions, and maintenance of the system.

## **Chapter 5 – Hardware Specifications**

This chapter provides requirements and specifications relating to the system hardware. This chapter is helpful to those that install the system.

### **SUPPORTING DOCUMENTS**

#### **UNIVERGE SV8100 Features and Specifications Manual**

This manual provides detailed information concerning every feature available in the system.

#### **UNIVERGE SV8100 System Hardware Manual**

The System Hardware Manual is provided for the system installer. This manual has detailed instructions for installing the UNIVERGE SV8100 chassis, blades, multiline terminals, and optional equipment.

#### **UNIVERGE SV8100 Programming Manual**

This manual provides instructions for programming the UNIVERGE SV8100 system using a multiline terminal or PC.

#### **UNIVERGE SV8100 PC Programming Manual**

This manual describes the operation of the PCPro program for the UNIVERGE SV8100 system. This program is a user-friendly Windows® application that allows the user to program and configure features of the UNIVERGE SV8100 system from the PC environment.

# *Regulatory*

## **GENERAL INFORMATION**

This equipment complies with Part 68 of the FCC Rules and the requirements adopted by the ACTA. On the equipment is a label that contains, among other information, a product identifier in the format: **US:AAAEQ##TXXXX**. If requested, this number must be provided to the telephone company.

The telephone company may change its technical operations and procedures. When such changes affect the compatibility or use of the UNIVERGE SV8100 system, the telephone company is required to give adequate notice of the changes for you to maintain uninterrupted service.

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is the product identifier in format: **US:AAAEQ##TXXXX**. The digits represented by **##** are the REN without a decimal point (e.g., 03 is a REN of 0.3).

Connection to party line service is subject to state tariffs. Contact the state public utilities commission, public service commission or corporation commission for information.

For single and two-line equipment that connects to the telephone network via a plug and jack, the plug and jack used with this equipment must comply with FCC Part 68 rules.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It must be connected to a compatible modular jack that is also compliant.

## TELEPHONE/SERVICE PROVIDER COMPANY NOTIFICATION

Before connecting this telephone system to the telephone network, the following information must be provided to the telephone company:

1. Your telephone number.
2. FCC registration number:

For the SV8100 CHS2U-US use SN1750 CYGMA:

- When the system is to be installed as a Key Function system (no dial access to Trunk Groups/Route Advance Blocks), use the following number:

**US:NIFKF07BSN1750**

- When the system is to be installed as a Multifunction system, use the following number:

**US:NIFMF07BSN1750**

- When the system is to be installed as a PBX system, use the following number:

**US:NIFPF07BSN1750**

Ringer Equivalence Number (REN): **0.7B**

USOC jacks required: **RJ11C, RJEX, RJ2FX, RJ2HX, RJ48C, RJ21X**

## INCIDENCE OF HARM

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may change its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice for you to make necessary modifications to maintain interrupted service.

## REPAIR SERVICE REQUIREMENTS

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

If equipment malfunctions, all repairs must be performed by an authorized agent of NEC Corporation of America. The user requiring service is responsible for reporting the need for service to an authorized agent or to NEC Corporation of America.

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## PRIVATE (LEASED) LINES

For Private (Leased) Line (Analog Data Format) equipment, type JM8 jack is required. Refer to ATIS Technical Report No. 5 for details on this connector.

The Facility Interface Code (FIC) associated with each private line application represents the type of service that is provided by the telephone company. The user instructions must contain a detailed list of private line ports and the associated FICs for which the equipment has been approved. In addition, the Service Order Code (SOC) must also be included for analog systems. The SOC indicates the degree of network protection provided by the equipment.

For Private (Leased) Line (Digital Format) equipment, in addition to the general requirements for all equipment, certain digital connections require that an encoded analog content and billing protection affidavit be provided the telephone company. Customer instructions must contain information on the preparation and submission of the affidavit.

To comply with state tariffs, the telephone company must be given notification prior to connection. In some states, the state public utility commission, public service commission or corporation commission must give prior approval of connection.

## TOLL RESTRICTION AND LEAST COST ROUTING EQUIPMENT

The consumer/purchaser/supplier instructions accompanying this equipment and/or software features must contain the following notice:

- The software contained in the UNIVERGE SV8100 to allow user access to the network must be upgraded to recognize newly established network area codes and exchange codes as they are placed into service.
- Failure to upgrade the premises systems or peripheral equipment to recognize the new codes as they are established will restrict the customer and the customer's employees from gaining access to the network and these codes.

## DIRECT INWARD DIALING

**ALLOWING THIS EQUIPMENT TO BE OPERATED IN SUCH A MANNER AS TO NOT PROVIDE FOR PROPER ANSWER SUPERVISION IS A VIOLATION OF PART 68 OF THE FCC RULES.**

Direct Inward Dialing (DID) must contain the following:

Proper Answer Supervision is when:

- This equipment returns answer supervision to the Public Switched Telephone Network (PSTN) when Direct Inward Dialing (DID) calls are:
  - Answered by the called station.
  - Answered by the Attendant.

- Routed to a recorded announcement that can be administered by the Customer Premise Equipment (CPE) user.
- Routed to a dial prompt.
- This equipment returns answer supervision on all DID calls forwarded to the Public Switched Telephone Network (PSTN). Permissible exceptions are:
  - A call is unanswered.
  - A busy tone is received.
  - A reorder tone is received.

## VOICE ANNOUNCEMENT/MONITORING OVER DID LINES

When using voice announcement or monitoring over DID Lines, observe the following.

### CAUTION

*Using the Voice Announcement feature to eavesdrop or record sound activities at the other end of the telephone line may be illegal under certain circumstances and laws. Consult a legal advisor before implementing any practice to monitor or record a telephone conversation. Some federal and state laws require a party monitoring or recording a telephone to use a beep-tone(s), notify all parties to the telephone conversation and/or obtain consent of all parties to the telephone conversation. In monitoring or recording sound activities at the other end of the telephone line using the Voice Announcement feature, the sound of the alert tone at the beginning of the Voice Announcement may or may not be considered sufficient under applicable laws. Some of the applicable laws provide for strict penalties for illegal monitoring or recording of telephone conversations.*

## EQUAL ACCESS REQUIREMENTS

If equipment such as Private Branch Exchanges (PBX), key systems or customer-owned coin/credit card telephones is sold to a call aggregator, it must be able to provide users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

## ELECTRICAL SAFETY ADVISORY

Parties responsible for equipment requiring AC power should consider including an advisory notice in their customer information suggesting the customer use a surge arrestor. Telephone companies report that electrical surges, typically lightening transients, are very destructive to customer terminal equipment connected to AC power sources. This has been identified as a major nationwide problem.

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## HEARING AID COMPATIBILITY

NEC Multiline Terminals and NEC Single Line Telephones that are provided for this system are hearing aid compatible. The manufacturer of other Single Line Telephones for use with the system must provide notice of hearing aid compatibility to comply with FCC rules that now prohibit the use of non-hearing aid compatible telephones.

## MUSIC ON HOLD

### IMPORTANT NOTE

*"In accordance with U.S. Copyright Law, a license may be required from the American Society of Composers, Authors and Publishers, or other similar organization, if radio or TV broadcasts are transmitted through the Music On Hold feature of this telecommunication system. NEC Corporation of America hereby disclaims any liability arising out of the failure to obtain such a license."*

## RADIO FREQUENCY INTERFERENCE

In compliance with FCC Part 15 rules, the following statement is provided:

### IMPORTANT NOTE

*"This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the System Hardware Manual, may cause interference to radio communications. This equipment has been tested and approved for compliance with the limits for a Class B (except as noted below) computing device pursuant to subpart J of Part 15 of FCC Rules, that are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this telephone system in a residential area is likely to cause interference, in which case, the user, at his or her own expense, is required to take whatever measures may be required to correct the interference."*

When equipped with the CHS2U-US Chassis and MPS7101 PSU, the UNIVERGE SV8100 can be operated as a Class B device except when using one of the items in the following table. The system then becomes a Class A device that may not be used in a residential area.

CD-PVAA	CD-CCTA	CD-VM00	PZ-VM21	CD-ETIA
PZ-32IPLA/ PZ-32IPLB	PZ-64IPLA/ PZ-64IPLB	PZ-128IPLA/ PZ-128IPLB		

## SAFETY INFORMATION

This equipment has been certified by Canadian Standards Association and found to comply with all applicable requirements:

- CAN/CSA C22.2 No. 0-M – General Requirements – Canadian Electrical Code, Part II
- CAN/CSA C22.2 No. 60950-1-07 – Safety of Information Technology Equipment – Part I: General Requirements
- UL 60950-1-SAFETY, 2nd Edition – Safety of Information Technology Equipment – Part I: General Requirements

## INDUSTRY CANADA REQUIREMENTS

Industry Canada has established rules that permit this telephone system to be directly connected to the telephone network. Prior to the connection or disconnection of this telephone system to or from the telephone network, the telephone company must be provided with the following information.

This product meets the applicable Industry Canada Technical Specifications/Le présent matériel est conforme aux spécifications techniques applicables d'industrie Canada.

1. Your telephone number.
2. IC registration number:      IC: 140L-SN1750
3. Ringer Equivalence Number (REN) of the equipment: **0.7**

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, when present, are connected together. This precaution may be particularly important in rural areas.

## CAUTION

Users should not attempt to make such connections themselves, but should contact the applicable electrical inspection authority or electrician.

The Ringer Equivalence Number (REN) is an indication of the maximum number of devices allowed to be connected to the telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of RENs of all the devices does not exceed five/L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'exécède pas 5.

This equipment has been certified by the Canadian Standards Association and found to comply with all applicable requirements of the standard for telephone equipment **C 22.2 No. 225**.

This equipment meets IC requirements **CS03, PART II, PART III, PART VI**.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada/Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

## BATTERY DISPOSAL

The UNIVERGE SV8100 system includes the batteries listed below. When disposing of these batteries, you must comply with applicable federal and state regulations regarding proper disposal procedures.

**Table R-1 Battery Types and Quantities for Chassis and Blades**

Unit Name	Type of Battery	Quantity
CD-CP00-US	Lithium	1
CC-CP00	Lithium	1
CT-12 Headset Cordless	Ni MH	1
DTH-4R-(1)/(2)	Ni MH	1
DTL-8R-1	Ni MH	1
DTR-1HM-1 TEL	Lithium	1
DTR-1R-2	Nickel-Cadmium	1
DTR-4R-(1)/(2) TEL	Nickel-Cadmium	1
DTU-4R-1 TEL	Lead Acid	1
C124 (SIP DECT Wireless)	Ni MH	1

**Table R-1 Battery Types and Quantities for Chassis and Blades (Continued)**

Unit Name	Type of Battery	Quantity
CHS LARGE BATT SET	Sealed Lead	6
Headset Cordless II	Ni MH	1
Internal Batteries	Sealed Lead	2
BCH-L	Lithium-ion	1
G955 Wireless	Lithium-ion	1
CHSGW SMALL BATT SET	Sealed Lead	2
MH240 Wireless	Lithium-ion	1

The SV8100 CD-CP00-US provides memory backup for approximately three years. The Lithium battery should be replaced every two years.

#### **IMPORTANT SAFEGUARDS FOR BATTERY DISPOSAL**

DO NOT PLACE USED BATTERIES IN YOUR REGULAR TRASH! THE PRODUCT YOU PURCHASED CONTAINS LITHIUM, NICKEL-CADMIUM OR SEALED LEAD BATTERIES. LITHIUM, NICKEL-CADMIUM OR SEALED LEAD BATTERIES MUST BE COLLECTED, RECYCLED, OR DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER.

The incineration, landfilling or mixing of nickel-cadmium or sealed lead batteries with the municipal solid waste stream is PROHIBITED BY LAW in most areas. Contact your local solid waste management officials for other information regarding the environmentally sound collection, recycling, and disposal of the battery.

Nickel-Cadmium (or sealed lead) batteries must be returned to a federal or state approved nickel-cadmium (or sealed lead) battery recycler. This may be where the batteries were originally sold or a local seller of automotive batteries. Contact your local waste management officials for other information regarding the environmentally sound collection, recycling and disposal of the battery contained in this product. For Ni-Cd batteries, you can also call 1-800-8-BATTERY<sup>SM</sup> when further information is required.

The packaging for the UNIVERGE SV8100 system contains the following labels regarding proper disposal.

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**PRODUCT PACKAGE LABELING****Ni-Cd**

CONTAINS NICKEL-CADMIUM BATTERY.  
BATTERY MUST BE RECYCLED OR  
DISPOSED OF PROPERLY. MUST NOT BE  
DISPOSED OF IN MUNICIPAL WASTE.

**Pb**

CONTAINS SEALED LEAD BATTERY.  
BATTERY MUST BE RECYCLED. MUST NOT  
BE DISPOSED OF IN MUNICIPAL WASTE.

**Ni-MH**

CONTAINS NICKEL-METAL HYDRIDE  
BATTERY. BATTERY MUST BE RECYCLED  
OR DISPOSED OF PROPERLY. MUST NOT  
BE DISPOSED OF IN MUNICIPAL WASTE.

## EUROPEAN UNION INFORMATION

### Notice to the user

The system described in this manual is intended to be connected to analog and digital networks and supports a wide range of peripheral equipment. The following interfaces are available for connection to public analog and digital telecommunication networks:

- TBR3 ISDN basic rate interface
- TBR4 ISDN primary rate interface
- ES203-021 Analogue interface

To take advantage of all features of this system and the connected equipment, the country or network specific features should match the supported features of the system. For an overview of the supported features, refer to the detailed documentation that comes with this system, contact your local NEC Unified Solutions B.V. representative or the support desk of NEC Unified Solutions B.V.

### Declaration of conformity

Hereby, NEC Unified Solutions, declares that the SV8100 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

For the Declaration of Conformity, visit:

<http://www.nec-unified.com/company/256-109/Declaration-of-Conformity.html>



### Electromagnetic Compatibility

For the SV8100 system the following warning is applicable:

#### Warning

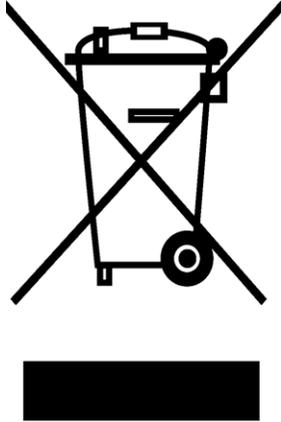
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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## PRODUCT DISPOSAL INFORMATION

### For Countries in the European Union



The symbol depicted here has been affixed to your product to inform you that electrical and electronic products should not be disposed of as municipal waste.

Electrical and electronic products including the cables, plugs and accessories should be disposed of separately in order to allow proper treatment, recovery and recycling. These products should be taken to a designated facility where the best available treatment, recovery and recycling techniques are available. Separate disposal has significant advantages: valuable materials can be re-used and it prevents the dispersion of unwanted substances into the municipal waste stream. This contributes to the protection of human health and the environment.

Please be informed that a fine may be imposed for illegal disposal of electrical and electronic products via the general municipal waste stream.

To facilitate separate disposal and environmentally sound recycling arrangements have been made for local collection and recycling. In case your electrical and electronic products need to be disposed of please refer to your supplier or the contractual agreements that your company has made upon acquisition of these products.

At [www.nec-unified.com/weee](http://www.nec-unified.com/weee) you can find information about separate disposal and environmentally sound recycling.

### Battery information

Defective or exhausted batteries should never be disposed of as municipal waste. Return old batteries to the battery supplier, a licensed battery dealer or a designated collection facility. Do not incinerate batteries. This product uses Lithium batteries. Do not use any other type.

For an overview of the location of batteries used in these systems, the battery replacement or removal instructions, please refer to the UNIVERGE SV8100 System Hardware Manual.

**- - NOTES - -**

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# *Introduction to UNIVERGE SV8100*

## **SECTION 1      SYSTEM OVERVIEW**

UNIVERGE SV8100 is an NEC IP system that offers TDM capability, at a competitive price. UNIVERGE SV8100 keeps a majority of the existing Electra Elite IPK II features with a few newly added features as well. UNIVERGE SV8100 is easy to install and provides remote maintenance capability. A new line up of modular telephones include snap on color panels for a customized look, large LCDs, a large color touch panel LCD, IP capability, an information protection button, just to name a few of the new design concepts.

The 9.5" Gateway or Base chassis provides 48 total ports (32 digital terminals) and can include any combination of stations and trunks below this number.

The new compact 19" chassis provides 104 total ports (80 digital terminals) and can be expanded, using three additional 19" chassis, for a total of 416 ports (368 digital terminals). Through IP connection and four additional 19" chassis, the system can be expanded to a maximum of 512 station ports.

The 9.5" Base and Expansion (Combined) chassis provides 104 total ports (80 digital terminals) and can be expanded, using three additional combined chassis, for a maximum of 416 ports (368 digital terminals). Through IP connection and four additional combined chassis, the system can be expanded to a maximum of 512 ports for SV8100.

The interface boards are redesigned. The boards are smaller and are front loaded in the UNIVERGE SV8100 chassis. The boards come with two screw pins that easily screw into the chassis. The connectors face the front of the chassis for easy access. The connector wires run through the front of the chassis, providing easier installation.

Migration from an IPK/IPK II system is as simple as inserting a conversion card into the old system and connecting it to the SV8100 with a cable. The features of the SV8100 are ready to use. Migrating to the SV8100 protects your initial investment by providing a simple, economic way of adding more up-to-date features that help you become more agile and improve customer satisfaction.

## SECTION 2 UNIVERGE SV8100 SYSTEM CAPACITIES

The UNIVERGE SV8100 CHS2U GW-US is a 9.5” chassis that has three universal slots and one PSU. The standalone module provides 48 total ports (32 digital terminals) and can include any combination of stations and trunks below this number. Refer to [Figure 1-1 UNIVERGE SV8100 CHS2U GW-US 9.5” Chassis on page 1-2](#).



Figure 1-1 UNIVERGE SV8100 CHS2U GW-US 9.5” Chassis

The UNIVERGE SV8100 CHS2U-US chassis is a compact 19” module that has six slots and one PSU. One chassis supports a maximum of 80 station ports/40 analog trunks. The system can be expanded to 320 station ports/184 trunks by adding three chassis (a total of four chassis). By using IP connection a maximum of 512 station ports/200 trunks are provided by adding an additional four 19” chassis. Refer to [Figure 1-2 UNIVERGE SV8100 CHS2U-US 19” Chassis Expandability](#).



Figure 1-2 UNIVERGE SV8100 CHS2U-US 19” Chassis Expandability

The UNIVERGE SV8100 9.5" Base chassis provides up to 16 trunk ports or 32 extension ports. An Expansion Chassis can be installed to the right of the Controlling or Base Chassis providing an additional 48 ports (40 trunk/ 80 stations maximum) and can include any combination of stations and trunks below this number. With a maximum of four Base and four Expansion chassis the system will provide up to 184 trunks and 320 extensions. With IP connections, a maximum of 200 trunk ports (maximum of 32/64/128 talk paths supported depending on IPLA blade installed) and 512 station ports is possible. Refer to [Figure 1-3 UNIVERGE SV8100 CHS2U B-US and CHS2U E Chassis Expandability](#).

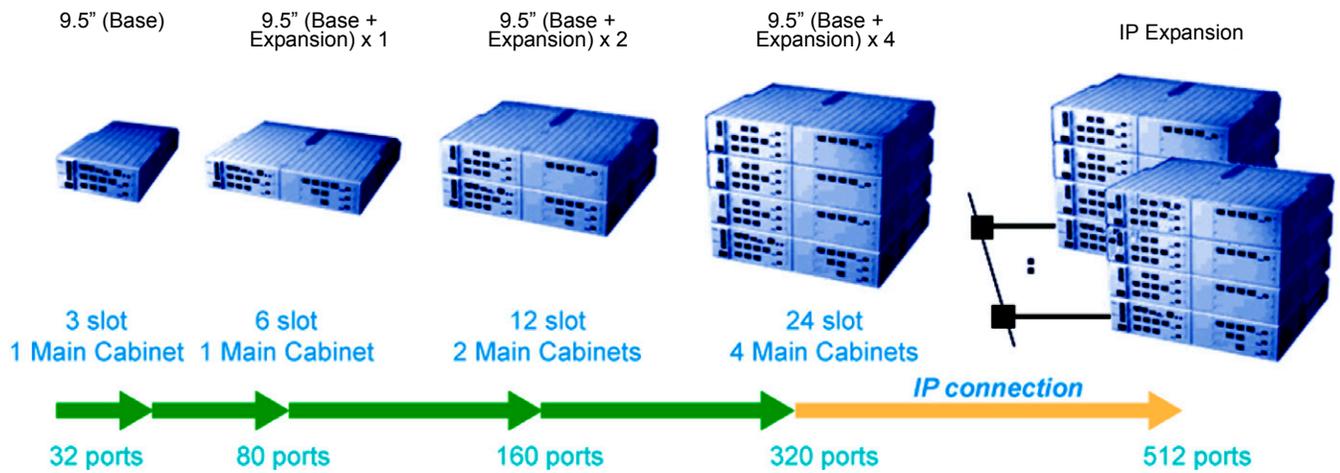


Figure 1-3 UNIVERGE SV8100 CHS2U B-US and CHS2U E Chassis Expandability

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## SECTION 3 SV8100 DIGITAL AND IP MULTILINE TELEPHONE LINE UP

### 3.1 Modular Design

The UNIVERGE SV8100 offers a new exciting line up of modular telephones. This modular design allows the telephones to be upgraded and customized. Optional LCD panels, dial pads, handset cradles, face plates and colored side panels can easily be snapped on and off to upgrade and customize as the customer desires.

The easy-to-use adjustable footplate allows the customer to choose from a variety of height positions that are right for them and their environment.

Only the DT300/DT700, *D<sup>term</sup>* Series i telephones, single line telephones, cordless telephones and wireless telephones discussed in the document can be installed on the SV8100 system.



*To avoid damage to equipment, do not install the *D<sup>term</sup> 70* on the SV8100 system. The *D<sup>term</sup> 70* (DTU/DTP) terminal uses -24V and has no protection from the -48V power supply used by the SV8100 system.*

Several easy-to-read LCD displays are available, including a new large color touch panel LCD.



Figure 1-4 UNIVERGE SV8100 Telephone Modular Design

## 3.2 Digital and IP Telephones

The UNIVERGE SV8100 system offers a variety of digital and IP multiline telephones that are compatible with the system. All telephone models are offered in both black and white.



### 3.2.1 Digital Telephones

The digital telephones offer two terminal types in its line up: Value and Economy.

- Economy Telephones*** – the economy telephones are offered in a 2-button non-display, a 6-button with display and a 12-button with display model. The LCD is a full dot black and white display with cursor keys. The 10-key dial pad is backlit for easy viewing. The 12-button, 6-button and 2-button telephones are not upgradeable.



2-Button Non-Display



6-Button with Display



12-Button with Display

- Value Telephones*** – the value telephones are offered in a 12-button, 24-button and 32-button display model as well as a DESI-less model. The LCD is a full dot black and white display with cursor keys. The 10-key dial pad is backlit for easy viewing. The 12-button and 24-button are upgradeable to the 32 button or 8LD (DesiLess). Refer to [Table 1-2 Connectivity of Options on page 1-10](#) for a list of upgrade options.



12-button



24-Button



32-Button



DESI-less

### 3.2.2 IP Telephones

The IP telephones offer three terminal types in its line up: Economy, Value, and Sophisticated.

- Economy Telephones*** – the economy telephones are offered in a 2-button non-display, a 6-button with display and a 8-button with display model. The LCD is a full dot black and white display with cursor keys. The 10-key dial pad is backlit for easy viewing. XML open interface and 10/100 ethernet connectivity is supported. The 6-button and 2-button telephones are not upgradeable.



2-Button Non-Display



6-Button with Display



8-Button with Display

- IP Value Telephones*** – the value telephones are offered in 12-button, 24-button and 32-button display models as well as a DESI-less model. The LCD is a full dot black and white display with cursor keys. The 10-key dial pad is backlit for easy viewing. The 12-button and 24-button are upgradeable to the 32 button or 8LD (DesiLess). Menu/softkey operation is provided on the LCD. XML open interface and 10/100 ethernet connectivity are also provided with. The ITL-12CG/ITL-12DG terminals (in black only) both support Gigabit Ethernet. The ITL-12CG is equipped with a color LCD display. Refer to [Table 1-2 Connectivity of Options on page 1-10](#) for a list of upgrade options.



12-button



24-Button



32-Button



DESI-less

- ***IP Sophisticated Telephones*** – the feature that sets this telephone apart as the flagship model is the large color touch panel LCD. The 10-key dial pad is backlit for easy viewing. The telephone supports full-duplex handsfree operation and PSTN (Public Switched Telephone Network) adapter for analog operation. XML open interface and 10/100 ethernet connectivity are also provided with this telephone. An important feature of this IP telephone is the Information Protection Button. Options include a 60-button DDS console, Analog Recording Adapter (ARA). Refer to [Table 1-2 Connectivity of Options on page 1-10](#) for a list of upgrade options.



Sophisticated

### 3.2.3 Terminal Category Reference

[Table 1-1 Terminal Category Reference Chart \(DT300/DT700\)](#) provides a quick reference of the DT300/DT700 terminals.

**Table 1-1 Terminal Category Reference Chart (DT300/DT700)**

Series Name		Equipment ID	System Compatibility SV8100	Comments
DT 300 Series Digital Terminal (TDM)	DT 310 (Economy)	DTL-2E-( ) DTL-6DE-( ) DTL-12E-( )	✓	<ul style="list-style-type: none"> <li>○ Economical terminal providing access to basic telephony and messaging service</li> <li>○ Fully functional keypad providing standard business functions such as hold, transfer, speaker, microphone and other features</li> <li>○ 2-button terminal is non-display</li> <li>○ 6-button terminal equipped with LCD and full-featured keypad</li> <li>○ 12-button terminal is non-display</li> <li>○ Available in black</li> </ul>
	DT 330 (Value)	DTL-8LD-( ) DTL-12D-( ) DTL-24D-( ) DTL-32-D-( )	✓	<ul style="list-style-type: none"> <li>○ 8-button DESI-Less LCD telephone</li> <li>○ Also available are 12-, 24-, 32-button LCD telephones</li> <li>○ Provides access to more sophisticated system features and allowing room for growth</li> <li>○ All DT 330s come with a standard LCD display, full duplex speakerphone capability, module support for expansion and feature add-on capability</li> <li>○ Optional 60-button DSS Console provides 60 programmable keys and provides users a Busy Lamp Field (BLF) and 1-button access to extensions, trunks, and system features</li> <li>○ Available in black and white</li> </ul>
		DTL-12BT( )	✓	○ Bluetooth available in black
		DTL-12PA( )	✓	○ Power Save Adapter provides backup for analog trunk connection

Table 1-1 Terminal Category Reference Chart (DT300/DT700) (Continued)

Series Name		Equipment ID	System Compatibility SV8100	Comments
DT 700 Series IP Terminals	DT 710 (Economy)	ITL-2-( ) ITL-6D-( ) ITL-8LDE-( )	✓	<ul style="list-style-type: none"> <li>○ Economical terminal providing access to basic telephony and messaging service</li> <li>○ Fully functional keypad providing standard business functions such as hold, transfer, speaker, microphone and other features</li> <li>○ 2-button terminal is non-display</li> <li>○ 6-button terminal equipped with LCD and full-featured keypad</li> <li>○ 8-button terminal equipped with LCD and full-featured keypad</li> <li>○ Available in black</li> <li>○ IP formatted terminal has a dual port, supports compression, full-duplex handsfree operation</li> </ul>
	DT 730 (Value)	ITL-8LD-( ) ITL-12D-( ) ITL-24D-( ) ITL-32-D-( )	✓	<ul style="list-style-type: none"> <li>○ 8-button DESI-Less LCD telephone</li> <li>○ Also available are 12-, 24-, 32-button LCD telephones</li> <li>○ Provides access to more sophisticated system features allowing room for growth</li> <li>○ All DT 730s come with a standard backlit LCD display, full duplex speakerphone capability, module support for expansion and feature add-on capability</li> <li>○ Available in black and white</li> <li>○ Expands the capability by providing XML display to provide more productivity enhanced applications to the users</li> <li>○ Optional 60-button DSS Console provides 60 programmable keys and provides users a Busy Lamp Field (BLF) and 1-button access to extensions, trunks, and system features</li> </ul>
		ITL-12PA( )	✓	<ul style="list-style-type: none"> <li>○ Power Save Adapter provides backup for analog trunk connection</li> </ul>
	DT 730G (Value)	ITL-12CG-( ) ITL-12DG-( )	✓	<ul style="list-style-type: none"> <li>○ Provides access to more sophisticated system features allowing room for growth</li> <li>○ DT 730G terminals come with a standard backlit LCD display, full duplex speakerphone capability, module support for expansion and feature add-on capability</li> <li>○ Available in black only</li> <li>○ Expands the capability by providing XML display to provide more productivity enhanced applications to the users</li> <li>○ 12CG equipped with color LCD display</li> <li>○ 12CG/12DG support Gigabit Ethernet</li> </ul>
	DT 750 (Sophisticated)	ITL-320C-( )	✓	<ul style="list-style-type: none"> <li>○ IP terminal provides a 5" color touch panel</li> <li>○ Features of the telephone provide easy use of NEC Unified communications and third-party telephony XML applications</li> <li>○ Access to 32 telephony feature lines across an IP backbone, built-in full duplex speakerphone and DESI-Less line key labeling are standard</li> <li>○ Optional 60-button DSS Console provides 60 programmable keys and provides users a Busy Lamp Field (BLF) and one-button access to extensions, trunks, and system features</li> </ul>
Wireless Handset	C124	✓	SIP DECT	
	G955	✓	SIP DECT	
Cordless	DTH-4R-1	✓	Cordless II Lite	
	DTL-8R-1	✓	Cordless DECT	

### 3.2.4 Upgradeable Telephone Options

The following charts provide a quick overview of the upgrade options available with the UNIVERGE SV8100 telephones.

**Table 1-2 Connectivity of Options**

Terminal Options		IP Terminals			Digital Terminals	
		Sophisticated ITL-320C-1 TEL	Value ITL-8LD-1 ITL-12D-1 ITL-12CG-3 ITL-12DG-3 ITL-24D-1 ITL-32D-1	Economy ITL-2E-1 ITL-6DE-1 ITL-8LDE-1	Value DTL-8LD-1 DTL-12D-1 DTL-24D-1 DTL-32D-1	Economy DTL-2E-1 DTL-6DE-1 DTL-12E-1
Key Kit	Ten Key Kit	✓	✓	✓	✓	✓
	12LK Kit	N/A (Built in)	✓	N/A	✓	N/A
	8LK Unit	✓	✓ (Except 8LD-1 Unit)	N/A	✓ (Except 8LD-1 Unit)	N/A
Common	ADA: Analog Recording Adapter	✓	✓	N/A	✓	N/A
	PSA: PSTN Adapter for analog	✓	✓	N/A	✓	N/A
	DSS: 60-Button DSS Console	✓	✓	N/A	Connect to Digital Port on KTS	
Digital	APR: Analog Port adapter with Ringer				✓	N/A
	DESI-Less LK/LCD Unit				✓ (Except 8LD-1 Unit)	N/A
	Backlit LCD				✓ (Except 8LD-1 Unit)	N/A
IP	DESI-Less LK/LCD Unit	N/A (Built in)	✓	N/A	N/A	

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### 3.3 Equipment and Applications Overview

The primary target of the UNIVERGE SV8100 system is the small to medium-sized business. As such, it supports a number of robust applications and additional equipment that add value to the system. These include:

- Automatic Call Distribution (ACD)
- Voice Mail
- Computer Telephone Integration (CTI)
- Unified Messaging
- Wireless Handsets
- Station Message Detail Recording (SMDR)
- Single Line Telephones
- External Speakerphones
- Doorphones
- External Speakers
- Wireless DECT SIP
- CO/PBX lines, Centrex lines, Direct Inward Dialing (DID), Tie lines, FT1 lines, ISDN-BRI and ISDN-PRI line

Communications between legacy stations/trunks and DT700 series telephones/IP networks are made using a VoIP daughter board, which converts packet-based voice data to TDM-based voice data, and vice versa. Both peer-to-peer connections and TDM-based connections are controlled by the CPU blade. The CPU incorporates a built-in Device Registration Server (DRS) and a single interface point of IP connection to IP telephone, PCPro and OAI / ACD servers. [Figure 1-5 Simplified SV8100 System \(9.5" Gateway and Base\) Connectivity](#), [Figure 1-6 Simplified SV8100 System \(19" Connectivity on page 1-12](#) and [Figure 1-7 Simplified SV8100 System \(9.5" Base and Expansion\) Connectivity on page 1-13](#) are simplified views of the SV8100 system connectivity.

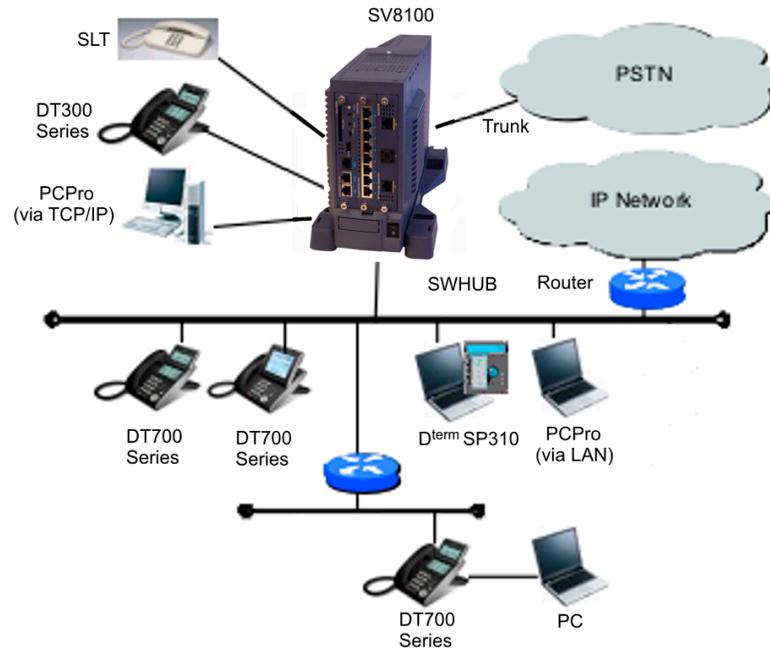


Figure 1-5 Simplified SV8100 System (9.5" Gateway and Base) Connectivity

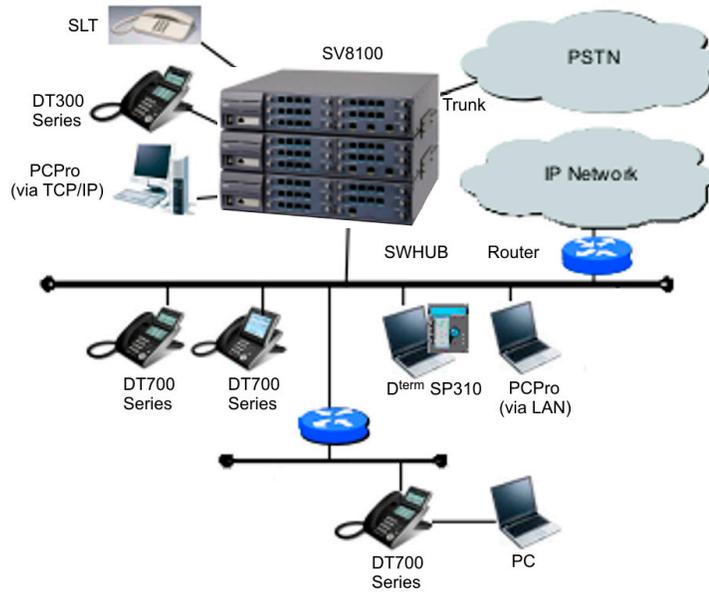
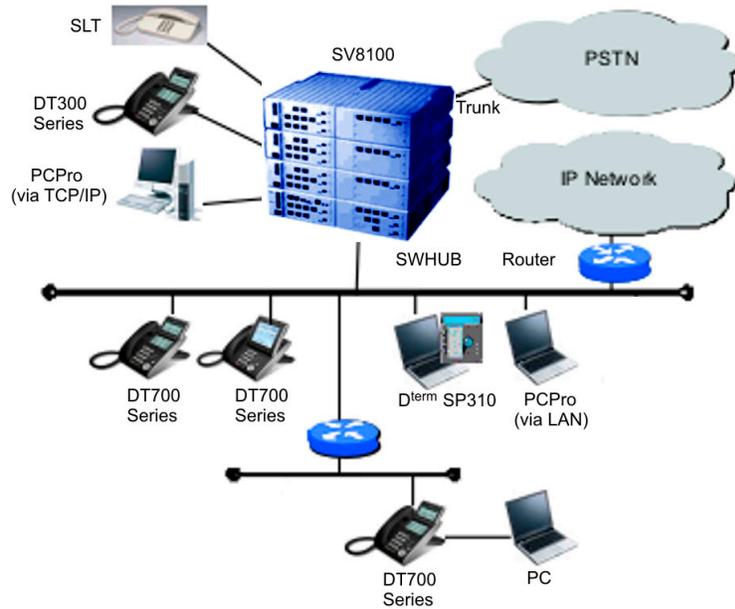


Figure 1-6 Simplified SV8100 System (19") Connectivity



**Figure 1-7 Simplified SV8100 System (9.5" Base and Expansion) Connectivity**

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# Features

## SECTION 1 OVERVIEW

This chapter provides a feature comparison list, which compares the IPK II and UNIVERGE SV8100 feature names.

The remainder of the chapter provides a list of all UNIVERGE SV8100 features and a brief description. For a more detailed description of the feature, refer to the UNIVERGE SV8100 Features and Specifications Manual.

## SECTION 2 IPK II TO UNIVERGE SV8100 FEATURE COMPARISON LIST

[Table 2-1 Feature Comparison List](#) provides a cross-reference between the Electra Elite IPK II and the UNIVERGE SV8100 features.

**Table 2-1 Feature Comparison List**

IPK II Feature Name	UNIVERGE SV8100 Feature Name
Account Code – Forced/Verified/Unverified	Account Code – Forced/Verified/Unverified
Account Code Entry	Account Code Entry
Alarm	Alarm
Alarm Reports	Alarm Reports
Alphanumeric Display	Alphanumeric Display
Analog Communications Interface (ACI)	Analog Communications Interface (ACI)
Ancillary Device Connection	Ancillary Device Connection
Answer Hold	Answer Hold
Answer Key	Answer Key
Attendant Call Queuing	Attendant Call Queuing
Automatic Call Distribution (ACD)	Automatic Call Distribution (ACD)
Automatic Release	Automatic Release

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
Automatic Route Selection	Automatic Route Selection
Background Music	Background Music
Barge-In	Barge-In
Battery Backup – System Memory	Battery Backup – System Memory
Battery Backup – System Power	Battery Backup – System Power
Call Appearance (CAP) Keys	Call Appearance (CAP) Keys
Call Arrival (CAR) Keys	Call Arrival (CAR) Keys
Call Duration Timer	Call Duration Timer
Call Forwarding – Centrex	Call Forwarding – Centrex
Call Forwarding – Park and Page	Voice Response System (VRS) – Call Forwarding – Park and Page
Call Forwarding	Call Forwarding
Call Forwarding with Follow Me	Call Forwarding with Follow Me
Call Forwarding, Off-Premise	Call Forwarding, Off-Premise
Call Forwarding/Do Not Disturb Override	Call Forwarding/Do Not Disturb Override
Call Monitoring	Call Monitoring
Call Redirect	Call Redirect
Call Waiting/Camp-On	Call Waiting/Camp-On
Callback	Callback
Caller ID Call Return	Caller ID Call Return
Caller ID	Caller ID
<i>Not Supported</i>	Caller ID – Flexible Ringing
Central Office Calls, Answering	Central Office Calls, Answering
Central Office Calls, Placing	Central Office Calls, Placing
Class of Service	Class of Service
Clock/Calendar Display	Clock/Calendar Display
CO Message Waiting Indication	CO Message Waiting Indication
Code Restriction	Code Restriction
Code Restriction Override	Code Restriction Override

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
Code Restriction, Dial Block	Code Restriction, Dial Block
Computer Telephony Integration (CTI) Applications	TAPI Compatibility
Conference	Conference
Conference, Voice Call/Privacy Release	Conference, Voice Call/Privacy Release
Continued Dialing	Continued Dialing
<i>Not Supported</i>	Cordless DECT Terminals
Cordless Telephone Connection	Cordless Telephone Connection
Data Line Security	Data Line Security
Delayed Ringing	Delayed Ringing
Department Calling	Department Calling
Department Step Calling	Department Step Calling
Dial Pad Confirmation Tone	Dial Pad Confirmation Tone
Dial Tone Detection	Dial Tone Detection
Dialing Number Preview	Dialing Number Preview
Digital Trunk Clocking	Digital Trunk Clocking
Digital Voice Mail	VM8000 InMail
Direct Inward Dialing (DID)	Direct Inward Dialing (DID)
Direct Inward Line (DIL)	Direct Inward Line (DIL)
Direct Inward System Access (DISA)	Direct Inward System Access (DISA)
Direct Station Selection (DSS) Console	Direct Station Selection (DSS) Console
Directed Call Pickup	Directed Call Pickup
Directory Dialing	Directory Dialing
Distinctive Ringing, Tones and Flash Patterns	Distinctive Ringing, Tones and Flash Patterns
Do Not Disturb	Do Not Disturb
Door Box	Door Box
Drop Key	Drop Key
$D^{term}$ Cordless II Terminal	$D^{term}$ Cordless II Terminal
$D^{term}$ Cordless Lite II Terminal	$D^{term}$ Cordless Lite II Terminal

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
<i>Not Supported</i>	DTPlusWare
<i>D<sup>term</sup></i> Handset Cordless	SV8100/SV8300 Terminals
<i>D<sup>term</sup></i> IP Gateway System	<i>Not Supported</i>
<i>Not Supported</i>	Ecology
E911 Compatibility	E911 Compatibility
Electra Elite IPK Terminals	Electra Elite IPK Terminals
Electra Elite Terminal Migration	IPK/IPK II Migration
EliteApps – Interactive Voice Response	IVR – Appointment Reminder Server
<i>Not Supported</i>	IVR – Broadcast Server
Elite CallAnalyst	SMB8000 Communications Analyst
Facsimile CO Branch Connection	Facsimile CO Branch Connection
Flash	Flash
Flexible System Numbering	Flexible System Numbering
Flexible Timeouts	Flexible Timeouts
Forced Trunk Disconnect	Forced Trunk Disconnect
<i>Not Supported</i>	General Purpose Relay
Group Call Pickup	Group Call Pickup
Group Listen	Group Listen
Handset Mute	Handset Mute
Handsfree and Monitor	Handsfree and Monitor
Handsfree Answerback/Forced Intercom Ringing	Handsfree Answerback/Forced Intercom Ringing
Headset Operation	Headset Operation
Hold	Hold
Hot Key-Pad	Hot Key-Pad
Hotel/Motel	Hotel/Motel
Hotline	Hotline
Howler Tone Service	Howler Tone Service
Intercom	Intercom

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
Internal Hub	SV8100 PoE Gigabit Switch
IP Extenders/Mobile ConneX	<i>Not Supported</i>
IP Station (MEGACO) – IAD Integrated Access Device	IP Multiline Station (SIP)
IP Station (MEGACO) – MG 16	IP Multiline Station (SIP)
<i>Not Supported</i>	IP Multiline Station (SIP) – ML440 Cordless
IP Station (SIP) – MG16	IP Single Line Telephone (SIP)
IP Trunk – (SIP) Session Initiation Protocol	IP Trunk – (SIP) Session Initiation Protocol
IP Trunk – H.323 Protocol	IP Trunk – H.323
IP Trunk (SIP) – MG16	IP Trunk – (SIP) Session Initiation Protocol
IPK II – PC Assistant	SV8100 UC Desktop Suite Applications
IPK II – PC Attendant	SV8100 UC Desktop Suite Applications
IPK II In-Mail	VM8000 InMail
IPK II VoIP Management System	<i>Not Supported</i>
<i>Not Supported</i>	IP/Digital Call Logging
ISDN Compatibility	ISDN Compatibility
<i>Not Supported</i>	K-CCIS – IP
K-CCIS - IP with IAD	<i>Not Supported</i>
K-CCIS - IP with PVA	K-CCIS – IP with PVA
K-CCIS - T1	K-CCIS – T1
Last Number Redial	Last Number Redial
Licensing	Licensing
Line Preference	Line Preference
Long Conversation Cutoff	Long Conversation Cutoff
<i>Not Supported</i>	Loop Keys
<i>Not Supported</i>	Maintenance
Meet Me Conference	Meet Me Conference
Meet Me Paging	Meet Me Paging
Meet Me Paging Transfer	Meet Me Paging Transfer

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
Memo Dial	Memo Dial
Message Waiting	Message Waiting
<i>Not Supported</i>	MH240 Wireless IP Telephone
Microphone Cutoff	Microphone Cutoff
<i>Not Supported</i>	Mobile Extension
Multiline Conference Bridge	SMB8000 Conference Bridge
Multimedia Conference Bridge	SMB8000 Conference Bridge
Multiple Trunk Types	Multiple Trunk Types
Music on Hold	Music on Hold
Name Storing	Name Storing
Night Service	Night Service
Off-Hook Signaling	Off-Hook Signaling
One-Digit Dial Option	Automatic Call Distribution (ACD)
One-Touch Calling	One-Touch Calling
Operator	Operator
(OPX) Off-Premise Extension	(OPX) Off-Premise Extension
Paging, External	Paging, External
<i>Not Supported</i>	Paging, External (VRS)
Paging, Internal	Paging, Internal
Park	Park
PBX Compatibility	PBX Compatibility
PC Programming	PC Programming
Power Failure Transfer	Power Failure Transfer
Prime Line Selection	Prime Line Selection
Private Line	Private Line
Programmable Function Keys	Programmable Function Keys
Programming from a Multiline Terminal	Programming from a Multiline Terminal
Pulse to Tone Conversion	Pulse to Tone Conversion
Quick Transfer to Voice Mail	VM8000 InMail

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
Redial Key	Redial Function
Remote (System) Upgrade	Remote (System) Upgrade
Repeat Redial	Repeat Redial
Resident System Program	Resident System Program
Reverse Voice Over	Reverse Voice Over
Ring Groups	Ring Groups
Ringdown Extension, Internal/External	Ringdown Extension, Internal/External
Room Monitor	Room Monitor
Save Number Dialed	Save Number Dialed
Secondary Incoming Extension	Secondary Incoming Extension
Secretary Call (Buzzer)	Secretary Call (Buzzer)
Secretary Call Pickup	Secretary Call Pickup
<i>Not Supported</i>	Security
Selectable Display Messaging	Selectable Display Messaging
Selectable Ring Tones	Selectable Ring Tones
Serial Call	Serial Call
Single Line Telephones, Analog 500/2500 Sets	Single Line Telephones, Analog 500/2500 Sets
SLT Adapter	SLT Adapter
SNMP Simple Network Management Protocol	<i>Not Supported</i>
Softkeys	Softkeys
Speed Dial – System/Group/Station	Speed Dial – System/Group/Station
<i>Not Supported</i>	Speed Dial – Telephone Book
Station Add-On Console	SV8100/SV8300 Terminals
Station Hunt	Station Hunt
Station Message Detail Recording	Station Message Detail Recording
Station Name Assignment-User Programmable	Station Name Assignment – User Programmable
Station Relocation	Station Relocation
<i>Not Supported</i>	SV8100 Internal Router

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
<i>Not Supported</i>	SV8100 NetLink
Synchronous Ringing	Synchronous Ringing
T1 Trunking (with ANI/DNIS Compatibility)	T1 Trunking (with ANI/DNIS Compatibility)
Tandem Ringing	Tandem Ringing
Tandem Trunking (Unsupervised Conference)	Tandem Trunking (Unsupervised Conference)
TAPI Compatibility	TAPI Compatibility
Tone Override	Tone Override
Traffic Reports	Traffic Reports
Transfer	Transfer
Trunk Group Routing	Trunk Group Routing
Trunk Groups	Trunk Groups
Trunk Queuing/Camp-On	Trunk Queuing/Camp-On
<i>Not Supported</i>	UCB (Unified Communications for Business)
Unified Messaging	UM8000 Mail
<i>Not Supported</i>	uMobility
<i>Not Supported</i>	Unicast/Multicast Paging Mode
Uniform Call Distribution (UCD)	Uniform Call Distribution (UCD)
Uniform Numbering Network	Uniform Numbering Network
Universal Slots	Universal Slots
User Programming Ability	User Programming Ability
Virtual Extensions	Virtual Extensions
<i>Not Supported</i>	VM8000 InMail Park and Page
<i>Not Supported</i>	Voice Response System (VRS) Embedded VRS
<i>Not Supported</i>	VM8000 InMail Upload Download Audio
<i>Not Supported</i>	VM8000 InMail – Automatic Access to VM by Caller ID
<i>Not Supported</i>	VM8000 InMail – Cascade Message Notification
<i>Not Supported</i>	VM8000 InMail – Email Notification
<i>Not Supported</i>	VM8000 InMail – Find-Me Follow-Me

**Table 2-1 Feature Comparison List (Continued)**

<b>IPK II Feature Name</b>	<b>UNIVERGE SV8100 Feature Name</b>
<i>Not Supported</i>	VM8000 InMail – Language Setting
<i>Not Supported</i>	Voice Call Recording
Voice Mail Integration (Analog)	Voice Mail Integration (Analog)
Voice Mail Message Indication on Line Keys	Voice Mail Message Indication on Line Keys
Voice Over	Voice Over
Voice Over Internet Protocol (VoIP)	<i>Not Supported</i>
Voice Response System (VRS)	Voice Response System (VRS)
<i>Not Supported</i>	Voice Response System (VRS) Embedded VRS
<i>Not Supported</i>	Voice Response System (VRS) Upload Download Audio
Volume Controls	Volume Controls
Warning Tone For Long Conversation	Warning Tone for Long Conversation
Wireless – DECT	Wireless DECT (SIP)

## SECTION 3 FEATURES DESCRIPTIONS

### ***Account Code – Forced/Verified/Unverified***

Account Codes are user-dialed codes that help the system administrator categorize and/or restrict trunk calls. The system has two types of Forced Account Codes:

- Forced Account Codes (Unverified)
- Verified Account Codes

### ***Account Code Entry***

Account Codes are user-dialed codes that help the system administrator categorize and/or restrict trunk calls. Optional Account Codes allow a user to enter an Account Code while placing a trunk call or anytime while on a call. The system **does not** require the user to enter the optional account code.

## ***Alarm***

Alarm lets any station extension work like an Alarm clock. An extension user can have an Alarm remind them of a meeting or an appointment. There are two types of Alarms:

- Alarm 1 (sounds only once at the preset time)
- Alarm 2 (sounds every day at the preset time)

## ***Alarm Reports***

### **Enhancements**

When attempting a call requiring an IP to TDM conversion and no DSP resource is available, the system displays a message on the multiline terminal and can generate an alarm via the Alarm Report (system software **Version 3000 or higher** required).

With **Version 5000 or higher** CPU software, the Alarm Reports feature has been enhanced to include an alarm for IP duplication. With **Version 4000 or lower** CPU software, the SV8100 had no alarm function for an IP address duplication. With this enhancement, the SV8100 is able to detect another device on the same subnet having an IP address that conflicts with those assigned to the CPU, IPLA/ IPLB, and DSP resources to make troubleshooting easy when IP packets are not sent.

With **Version 7000 or higher** software, the SV8100 can be configured to send an email notification of a system event that causes a reset and DIMLast and DIMDump files to be created. The system can also be configured to email the DIMLast and DIMDump text files by using the SMTP email settings in the 47-18-xx programs and mounting a PZ-ME50-US to the CCPU. This enhancement requires the **V7000 Enhancement License (0036)** and **Maintenance License (0043)**.

The UNIVERGE SV8100 system logs various errors and reports information about the operation that can be used to determine the cause of a problem. The system can indicate several errors on the multiline telephone display, output to a USB stick on the CD-CP00-US, or be downloaded in PCPro. The report data can also be sent via email.

## ***Alphanumeric Display***

Multibutton display telephones have a 3-line, 24 character per line alphanumeric display that provides various feature status messages. These messages help the display telephone user process calls, identify callers and customize features.

The contrast is not adjustable when the telephone has background music enabled.

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## ***Analog Communications Interface (ACI)***

The Analog Communications Interface (ACI) feature uses a PGD(2)-U10 ADP (Door Phone/Paging) adapter to provide two analog ports (with associated relays) for Music on Hold, External Paging, Door Boxes and auxiliary devices such as tape recorders and loud bells. The system allows up to 48 PGD(2)-U10 ADPs (when used for ACI ports) for a maximum of 96 analog ports. Each PGD(2)-U10 ADP requires an unused port on a CD-8DLCA/CD-16DLCA blade.

## ***Ancillary Device Connection***

Ancillary Device Connection allows installation of selected peripheral (ancillary) devices to a multiline terminal. This feature enhances peripheral device objectives.

An UNIVERGE SV8100 multiline terminal user can accomplish this by using the AP(R)-R/APR-L Unit (Analog Port Adapter with Ringer) or AP(A)-R Unit (Analog Port Adapter without Ringer) for analog telephone devices, or installing the AD(A)-R/ APA-L Unit to connect devices such as tape recorders.

The AP(A)-R/AP(R)-R/APA-L Units are the interface for installing a single line telephone, Modem, credit card reader, wireless headset, NEC Conference Max Conferencing unit or other compatible analog device.

The PSA-L Unit (Power Save Adapter), an optional adapter for the ITL/DTL Terminals, is used to make or receive a call using the Public Switched Telephone Network (PSTN) when a call cannot be made with the ITL/DLT extension.

## ***Answer Hold***

Answer Hold allows a multiline terminal user to press the flashing Answer key to answer an incoming ringing call or a Camp-on call. When the multiline terminal user is already answering a call, the first call is automatically placed on hold, depending on the user setting in Program 15-02-06.

## ***Answer Key***

Multiline terminals have an Answer Key with an LED that flashes when the multiline terminal user receives an incoming CO/PBX, Tie/DID transfer, or CO/PBX transfer call. When multiple calls are received, the Answer Key is used to pick up calls and continues flashing until the last unanswered call is answered. Press the Answer Key during a call to hold the current call and allow the next call to be answered.

## ***Attendant Call Queuing***

Attendant extensions can have up to 32 incoming calls queued before additional callers hear a busy tone. This helps minimize call congestion in systems that use the attendant as the overflow destination for unanswered calls. For example, you can program Direct Inward Lines and Voice Mail calls to route to the attendant when their primary destination is busy. With Attendant Call Queuing, these unanswered calls would normally “stack up” for the attendant until they can be processed.

The 32 call queue total includes Intercom, DISA, DID, DIL, tie line and transferred calls. If the attendant does not have an appearance for the queued call, it waits in line to be answered. If the attendant has more than 32 calls queued, an extension can transfer a call to the attendant only if they have Busy Transfer enabled.

Attendant Call Queuing is a permanent, non-programmable system feature.

## ***Automatic Call Distribution (ACD)***

### **Enhancements**

With **Version 5000 or higher** software, ACD calls can be routed based on agent skill levels.

With **Version 7000 or higher** software, the number of ACD MIS Monitoring programs that can run simultaneously increases from five to a maximum of 16.

With **Version 8000 or higher** software, ACD calls can be marked so that the next time the same Caller ID calls back in the call will attempt to return to the original agent first.

Automatic Call Distribution (ACD) uniformly distributes calls among agents of a programmed ACD Group. When a call rings into an ACD Group, the system automatically routes the call to the agent that has been idle the longest. Automatic Call Distribution (ACD) is much more sophisticated and comprehensive than Department Calling and other group services – it can accurately judge the work load at each agent and distribute calls accordingly. The system allows up to 64 ACD Groups and 512 ACD agents.

You can put any agent in any group. An agent can be in more than one group only when using AICs. This allows, for example, a Technical Service representative to answer customer service calls at lunch time when many of the Customer Service representatives are unavailable.

The ACD Master Number is the extension number of the whole group. Calls directly ringing or transferred to the ACD Master number enter the group and are routed accordingly. Although the master number can be any valid extension number, you should choose a number that is out of the normal extension range.

### ***Automatic Release***

Automatic Release drops the line circuit when an outside party abandons the call. For this feature to work with Loop Start Trunks, the CO/PBX providing the outside line must provide a timed disconnect signal. Automatic Release is normally provided on Ground Start, DID, ISDN, and Tie Line trunks.

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## ***Automatic Route Selection***

### **Enhancements**

With **Version 7000 or higher** software:

- The Dial Analysis table has expanded from 400 to 800 tables (**V7000 Enhancement License (0036)** required).
- The SV8100 can recognize each system where the DT700 extension(s) are connected and provide an Automatic Route Selection COS based on the System (System ID) when using NetLink.

Automatic Route Selection (ARS) provides call routing and call restriction based on the digits a user dials. ARS gives the system the most cost-effective use of the connected long distance carriers.

ARS is an on-line call routing program that you can customize (like other system options) from a display telephone. ARS accommodates 400 call routing choices – without a custom-ordered rate structure database. With ARS, you can modify the system routing choices quickly and easily. This is often necessary in the telecommunications world of today where the cost structure and service choices frequently change.

The ARS feature can add or delete digits and route calls according to predetermined levels. When UNIVERGE SV8100 systems are networked together by Tie lines or K-CCIS, the networked systems can be called by a system number and a user extension number, just an extension number, or by using a trunk access code.

### ***Recognize Extension Location when Logging in with NetLink***

With **Version 7000 or higher** software, the SV8100 can recognize each system where the DT700 extension(s) are connected then provide an Automatic Route Selection COS based on the System (System ID) when using NetLink.

### ***Background Music***

Background Music (BGM) sends music from a customer-provided music source to the speaker of the multiline telephone when the station is idle.

### ***Barge-In***

Barge-In permits an extension user to break into another extension user's established call, including Conference calls. This sets up a Conference-type conversation between the intruding extension and the parties on the initial call. With Barge-In, an extension user can get a message through to a busy co-worker right away.

There are two Barge-In modes: Monitor Mode (Silent Monitor) and Speech Mode. With Monitor Mode, the caller Barging In can listen to another user conversation but cannot participate. With Speech Mode, the caller Barging In can listen and join another user conversation.



*The use of monitoring, recording, or listening devices to eavesdrop, monitor, retrieve, or record telephone conversation or other sound activities, whether or not contemporaneous with transmission, may be illegal in certain circumstances under federal or state laws. Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some federal and state laws require some form of notification to all parties to a telephone conversation, such as using a beep tone or other notification methods or requiring the consent of all parties to the telephone conversation, prior to monitoring or recording the telephone conversation. Some of these laws incorporate strict penalties.*

### **Battery Backup – System Memory**

The battery on the CD-CP00-US retains the Clock/Calendar and Last Number Redial (LNR) buffers for each station when the CD-CP00-US encounters a power loss. With a fully charged battery, the settings are retained for approximately three years.

The system programmed memory (Customer Database) is stored in Nonvolatile Memory and can be erased only by performing a First Initialization.

 For additional storage time, the database and Caller ID History can be copied to the Compact Flash card on the CD-CP00-US.

### **Battery Backup – System Power**

A built-in battery provides complete system operating power for approximately 30 minutes during commercial power outages. When optional (locally provided) batteries are connected and fully charged, full system operation can be maintained for an extended time. Actual time depends on system configuration, traffic conditions, and the battery capacity.

### **Call Appearance (CAP) Keys**

This feature automatically places an outside call on a Call Appearance key when the system is operated as a hybrid (Multifunction) system. These keys can be assigned on any multiline terminal or the same key can appear on multiple terminals. This feature allows efficient call handling when numerous CO calls are received and a limited number of CO line key appearances are available.

Once a Call Appearance (CAP) Key call is set up, the user can handle it like any other trunk call. For example, the user can place the call on hold, transfer it to a co-worker or send it to a park orbit. An incoming call is answered on the first available CAP key, beginning with the lowest numbered key. If keys 1~3 are Call Appearance (CAP) Keys, for example, the first incoming call is answered on key 1. If key 1 is busy, the next call is answered on key 2. If keys 1 and 2 are busy, the next call is answered on key 3. If all three keys are busy, additional incoming calls queue for the first available key.

## ***Call Arrival (CAR) Keys***

### **Enhancements**

With **Version 3000 or higher** system software, the appropriate line key page automatically displays for incoming calls on the DTL-8LD-1 (DESI-Less) and ITL-320C-1 terminals.

Call Arrival (CAR) Keys are software extensions available on the Basic and Expanded Port Packages. A Call Arrival Extension assigned to a line key, can appear and ring on an individual station or multiple stations. Call Arrival (CAR) Keys are busy only when in the ringing state and are not used during the talking state.

Call Arrival (CAR) Keys are shared with the Virtual Extensions (VE). In virtual extension mode, the key acts as a secondary extension. Up to 256 CAR/VE keys are provided.

## ***Call Duration Timer***

Call Duration Timer lets a multiline terminal with an LCD time their trunk calls on the telephone display. This helps users that must keep track of their time on the telephone. For incoming trunk calls, the Call Time begins as soon as the user answers the call.

## ***Call Forwarding – Centrex***

The Call Forwarding – Centrex feature allows a station user to forward an incoming PBX/Centrex CO call to an outside location using the same PBX/Centrex CO line to free the line for additional use.

Call Forwarding – Centrex supports the following:

- Call Forwarding – Immediate
- Call Forwarding – Busy
- Call Forwarding – No Answer
- Call Forwarding – Busy/No Answer

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## *Call Forwarding*

### Enhancements

With **Version 3000 or higher** system software, the Desktop terminal and the Mobile Extension can both ring. If neither extension answers, the call is forwarded to Voice Mail.

Call Forwarding permits an extension user to redirect their calls to another extension or an off-premise number. Call Forwarding ensures that the user calls are covered when a user is away from their work area.

The types of Call Forwarding are:

- Call Forwarding when Busy or Unanswered  
Calls to the extension forward when busy or unanswered.
- Call Forwarding – Centrex  
When using PBX/Centrex trunks, calls to the extension perform a Centrex transfer using Immediate, Busy, and No Answer Forwarding.
- Call Forwarding Immediate  
All calls forward immediately to the destination, and only the destination rings.
- Call Forwarding with both Ringing  
All calls forward immediately to the destination, and both the destination and the forwarded extension ring (not for Voice Mail).
- Call Forwarding when Unanswered  
Calls forward only if they are unanswered (Ring No Answer).
- Call Forwarding Follow Me  
Refer to [Call Forwarding with Follow Me on page 2-17](#) for more information.
- Live Monitor  
Allows the extension to emulate an answering machine. Refer to VM8000 InMail System Guide for more information.

Call Forwarding reroutes calls ringing an extension, including calls transferred from another extension. Call Forwarding can also be split, allowing internal and external calls to forward to different destinations. The extension user can enable Call Forwarding from their telephone. An extension user can also set the forwarding for another extension by using Call Forward for any Extension to Destination. To redirect calls while a user is at another telephone, use Call Forwarding with Follow Me. A periodic VRS announcement can remind users that their calls are forwarded.

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### ***Call Forwarding with Follow Me***

While at a co-worker's desk, a user can have Call Forwarding with Follow Me redirect their calls to the co-worker's extension. This helps an employee who gets detained at a co-worker's desk longer than expected. To prevent losing important calls, the employee can activate Call Forwarding with Follow Me from the co-worker's telephone.

Call Forwarding with Follow Me reroutes calls from the destination extension. To reroute calls from the initiating (forwarding) extension, use Call Forwarding.

### ***Call Forwarding, Off-Premise***

Off-Premise Call Forwarding allows an extension user to forward their calls to an off-site location. By enabling Call Forwarding, Off-Premise, the user can stay in touch by having the system forward their calls while they are away from the office. The forwarding destination can be any telephone number the user enters, such as a mobile phone, home office, hotel or meeting room. Off-Premise Call Forwarding can route the off-site telephone number over a specific trunk or through a trunk group, Automatic Route Selection or Trunk Group Routing.

### ***Call Forwarding/Do Not Disturb Override***

An extension user can override Call Forwarding or Do Not Disturb at another extension. This is helpful, for example, to dispatchers and office managers that always need to get through.

### ***Call Monitoring***

Call Monitoring allows selected multiline terminal users to monitor another user's conversation without participating. A programmable audible alert tone can be sent to that station user. Without the audible alert (silent monitor), no indication is provided to either the monitored station or the outside party.



***The use of monitoring, recording, or listening devices to eavesdrop, monitor, retrieve, or record telephone conversation or other sound activities, whether or not contemporaneous with transmission, may be illegal in certain circumstances under federal or state laws.***

***Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some federal and state laws require some form of notification to all parties to a telephone conversation, such as using a beep tone or other notification methods or requiring the consent of all parties to the telephone conversation, prior to monitoring or recording the telephone conversation. Some of these laws incorporate strict penalties.***

### ***Call Redirect***

Call Redirect allows a multiline terminal user to transfer a call to a predefined destination (such as an operator, Voice Mail, or another extension) without answering the call. This can be useful if you are on a call and another rings in to your extension. When you press the Call Redirect key, the call is transferred, allowing you to continue with your current call.

This feature works with the following calls:

- Normal trunk call
- DID
- DISA
- DIL
- E&M
- ICM

The following calls *cannot* be redirected with this feature:

- ACD
- Transferred
- Department Group (all ring mode)
- Door Box
- Virtual Extension

### ***Call Waiting/Camp-On***

With Call Waiting, an extension user may call a busy extension and wait in line (Camp-On) without hanging up. When the user Camps-On, the system signals the busy extension with two beeps indicating the waiting call. The call goes through when the busy extension becomes free. Call Waiting helps busy extension users know when they have additional waiting calls. It also lets callers wait in queue for a busy extension without being forgotten.

### ***Callback***

When an extension user calls a co-worker that does not answer or is busy, they can leave a Callback request for a return call. The user does not have to repeatedly call the unanswered extension back, hoping to find it idle.

### ***Caller ID Call Return***

The Caller ID Call Return feature allows the voice mail system to use Caller ID information captured with the message to call and connect the person that left the message with the voice mail user that is checking messages.

## Caller ID

### Enhancements

Pressing the **Left Cursor Key** twice (on equipped terminals) displays the Incoming Call History (**Version 3000 or higher** software).

With **Version 4000 (4.01 or higher)** software, calls to a busy extension or busy tones returned to the caller are logged in the Caller ID List. When a busy call is logged, the Caller ID List key flashes the same as it does with a new missed call.

#### Memo Display Function

With **Version 4000 or lower** software, the SV8100 can display matching Caller ID but is limited to 12 characters. With **Version 5000 or higher** software, it can display up to 28 Characters per line and up to three lines of information for a total of 84 characters (Maximum 28 digits x 3 lines). If needed, the system can be set to use any one of three available display lines. Additionally, the original CID information can be seen while on the call by pressing the right cursor button on the phone. The Memo Display Function requires **Version 5000 or higher** software and the **Version 5000 Enhancement** license.

Caller ID allows a display terminal to show an incoming caller's telephone number (called the Directory Number or DN) and optional name. The Caller ID information is available as pre-answer display. With the pre-answer display, the user previews the caller's number before picking up the ringing line.

 *On the CD-CP00-US for Caller ID (also used for DTMF receivers and Call Progress Tone Detection) 32 resources are available. The PZ-BS10 provides an additional 64 resources.*

### Memo Display Function

With **Version 4000 or lower** software, the SV8100 can display matching Caller ID but is limited to 12 characters. With **Version 5000 or higher** software, it can now display up to 28 Characters per line and up to three lines of information for a total of 84 characters (Maximum 28 digits x 3 lines). If needed, the system can be set to use any one of three available display lines. Additionally, the original CID information can be seen while on the call by pressing the right cursor button on the phone.

## Caller ID – Flexible Ringing

### Enhancements

Flexible Ringing by Caller ID feature added with **Version 3000 or higher** software.

With **Version 8000 or higher** software, the number of Tone Patterns has increased from four to eight.

The Caller ID – Flexible Ringing feature provides several different options for rerouting calls based on the Caller ID received.

### ***Central Office Calls, Answering***

#### **Enhancements**

With **Version 3000 or higher** system software, the appropriate line key page automatically displays for incoming calls on the DTL-8LD-1 (DESI-Less) and ITL-320C-1 terminals.

With **Version 7000 or higher** software, the Side Tone Auto Setup feature has been added.

The system provides flexible routing of incoming CO (trunks) calls to meet the exact site requirements. This lets trunk calls ring and be answered at any combination of system extensions. A maximum of 200 trunks are available.

### ***Central Office Calls, Placing***

#### **Enhancements**

With **Version 7000 or higher** software, the Side Tone Auto Setup feature has been added.

The system provides flexibility in the way each extension user can place outgoing trunk calls. This lets you customize the call placing options to meet site requirements and individual needs. To place a call, a user can:

- Press Line Keys
- Press a Trunk Group Key
- Press a Trunk Group Routing (dial 9) Key
- Dial a code for a specific trunk (#9 + the trunk number)
- Dial a code for a Trunk Group (704 + group number)
- Dial a code for Trunk Group Routing or ARS (9)
- Dial an Alternate Trunk Route Access Code (which you must define)
- Press or Use a Speed Dial bin

There are 200 available trunks.

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## ***Class of Service***

Class of Service (COS) sets various features and dialing options (called items) for extensions. The system allows any number of extensions to share the same Class of Service. An extension can have a different Class of Service for each Night Service mode. This lets you program a different set of dialing options for daytime operation, nighttime operation and even during lunch breaks. An extension Class of Service can be changed in system programming or via a Service Code (normally 677). There are 15 available Classes of Service.

## ***Clock/Calendar Display***

The system uses Clock/Calendar Display for:

- |   |   |
|---|---|
| <input type="checkbox"/> Central Office Calls (Access Maps) | <input type="checkbox"/> Station Message Detail Recording |
| <input type="checkbox"/> Class of Service (Class)           | <input type="checkbox"/> System Reports                   |
| <input type="checkbox"/> Direct Inward Lines                | <input type="checkbox"/> Toll Restriction (Class)         |
| <input type="checkbox"/> Display Telephones                 | <input type="checkbox"/> Trunk Group Routing              |
| <input type="checkbox"/> Night Service (Automatic)          | <input type="checkbox"/> Voice Mail                       |
| <input type="checkbox"/> Programmable Trunk Parameters      | <input type="checkbox"/> Voice Response System            |
| <input type="checkbox"/> Ring Groups                        |   |

Using the Daylight Savings Setup program, you can determine whether the system should automatically adjust the system time for daylight savings time/standard time changes.

## ***Clock Adjustment***

The system can be programmed to automatically adjust the system clock nightly. This feature allows you to make adjustments should the system cabinet regularly lose or gain time.

## ***CO Message Waiting Indication***

This feature provides a Message Waiting indication when Voice Mail from the Central Office is used. The CO provides this feature using Visual Message Waiting Indication (VMWI) standards. Visual Message Waiting Indication visually indicates to a user that a message is present in their voice mail box. When VMWI is provided, the UNIVERGE SV8100 provides a flashing LED on a line key assigned with the trunk appearance.

The VMWI standard supported by the UNIVERGE SV8100 includes:

- Type 1 Caller ID, FSK without power ringing using the MDMF protocol
- Type 1 Caller ID, FSK without power ringing using the SDMF protocol

## ***Code Restriction***

Code Restriction limits the numbers an extension user may dial. By allowing extensions to place only certain types of calls, you can better control long distance costs. The system applies Code Restriction according to the Code Restriction Class. The system allows for up to 15 Code Restriction Classes and 416 extensions.

## ***Code Restriction Override***

Code Restriction Override lets a user temporarily bypass the Code Restriction for an extension. This helps a user that must place an important call that Code Restriction normally prevents. For example, you could set up Code Restriction to block 900 calls and then provide a Code Restriction Override code to your attendant and executives. When the attendant or executive needs to place a 900 call, they just:

- Press **Speaker**, dial a service code and enter their override code.
- Press **Speaker**, and dial a trunk access code (e.g., 9 or #9 002).
- Place the 900 call without restriction.

You can assign a different Code Restriction Override code to each extension. Or, extensions can share the same override code.

This feature overrides *all* Code Restriction programming. Walking Code Restriction allows you to assign a Code Restriction level for each user. When a call is placed using Walking Code Restriction, the restriction for the call is based on the Code Restriction level defined in Programs 21-05-xx and 21-06-xx.

## ***Code Restriction, Dial Block***

Code Restriction, Dial Block lets a user temporarily block dialing on an extension. This lets a user block their telephone from being used by another person while they are away from their desk. A user must enter a 4-digit personal code to enable/disable this feature.

Dial Block can also be set by using the supervisor access code. If Dial Block is set by an extension user, the supervisor cannot release it. If Dial Block is set using the supervisor code, the extension user cannot release it.

***Important:*** This function works by password and Class of Service control (the supervisor is not an assigned extension). If Dial Block is available for all Classes of Service, everyone may become a supervisor if they know the Dial Block password.

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## **Conference**

Conference lets an extension user add additional inside and outside callers to their conversation. With Conference, a user may set up a multiple-party telephone meeting without leaving the office. The CD-CP00-US provides 64 Conference ports, allowing any number of internal or external parties to be conferenced together up to a limit of 32 parties. This means that one extension can conference up to 31 internal and/or external parties together (the originator would be the 32nd party reaching the maximum of 32). While this Conference call is active, another user can initiate a separate Conference also for a limit of 32 parties, or any number of conferences can be initiated with a number of parties (up to 32) until all 64 Conference ports are busy.

 *64 conference ports are available with a PZ-ME50-US mounted on the CD-CP00-US and a second cabinet installed. Without the second cabinet and PZ-ME50-US installed, the CD-CP00-US provides a maximum of 32 conference ports.*

## **Conference, Voice Call/Privacy Release**

Voice Call Conference lets an extension user in the same work area join in a trunk Conference. To initiate a Voice Call Conference, an extension user presses the Meet-Me Conference key and tells their co-workers to join the call. The system releases the privacy on the trunk, and other users can press the trunk line key to join the call. Line keys assigned for the trunk blink to indicate that privacy is released, and others can join the current call.

Voice Call Conference does not use the telephone system features to announce the call. The person initiating the Voice Call Conference announces it verbally. A tone, indicating others have joined the conference, can be provided.

The CD-CPOO-US provides 64 conference circuits to allow internal or external parties to be conferenced together up to a limit of 32.

## **Privacy Mode Toggle Option**

The Privacy Mode Toggle option allows an extension user to quickly change an outside call from non-private to private mode. If the outside call is on a line key, the user presses the line key to switch from non-private mode to private mode. For systems using the Privacy Mode Toggle option, trunks initially have the privacy released. The remainder of the call is private. If the call is on a Call Appearance (CAP) Key, the user presses their Meet-Me Conference function key instead. Unlike pressing the line key, pressing the Meet-Me Conference key toggles back and forth between private and non-private mode for the call.

## **Continued Dialing**

Continued Dialing allows an extension user to dial a call, wait for the called party to answer and then dial additional digits. This helps users that need services like Voice Mail, automatic banking and Other Common Carriers (OCCs).

There are two types of Continued Dialing:

### Continued Dialing for Intercom Calls

Depending on the Class of Service for an extension, a multiline terminal user may be able to dial additional digits after their Intercom call connects. In systems with Voice Mail, for example, Continued Dialing lets extension users dial the different options after the Voice Mail answers. Without Continued Dialing, extension users cannot access these Voice Mail options.

### Continued Dialing for Trunk Calls

Continued Dialing gives a user access to outside services like automatic banking, an outside Automated Attendant, bulletin boards and Other Common Carriers (OCCs). After the outside service answers, the user can dial digits for whatever options the services allow. Without Continued Dialing, the system Toll Restriction cuts off the call after a specific number of dialed digits.



*Continued Dialing may make the system more susceptible to toll fraud.*

## Cordless DECT Terminals

### Enhancements

With **Version 4000 or higher software**, a Flash (Recall) key can be placed on a line key.

With **Version 4000 or higher software**, the door strike relay can be activated from the MH240 or Cordless DECT terminal by a Flash Key assigned to a line key in Program 15-07 (751: 62).

The Cordless DECT Terminals may be used with the UNIVERGE SV8100 system. The DTL-8R-1 TEL uses 1.9 GHz DECT 6.0 FM Technology and is connected in tandem to a multiline terminal. The ITL-8R-1 TEL uses 1.9 GHz DECT 6.0 FM Technology and is connected using the local network to the SV8100 as a stand alone terminal.

Press the applicable key on the Base Unit to Switch between Cordless operation and multiline terminal operation.

### Cordless Telephone Connection

Using an AP(R)-R/AP(A)-R Unit for DTH/DTR telephones or an APR-L for DTL telephones a cordless telephone (2500-type) can be connected to a multiline terminal.

The CD-4LCA, PZ-4LCA, CD-8LCA, PZ-8LCE and the SLTII(1)-U( ) ADP also support cordless telephones, but this feature refers to multiline terminal cordless connection.

### ***Data Line Security***

Data Line Security protects any station port from receiving audible tones (such as Camp-On or Override) and denies a station from barging in while busy to prevent disruption of data transmission when using a modem or facsimile machine.

### ***Delayed Ringing***

Delayed Ringing allows programmed secondary answering positions to ring on incoming calls after a programmed time. This feature applies to CO/PBX lines, Secondary Incoming Extensions, Virtual Extensions, and Call Arrival Keys.

### ***Department Calling***

With Department Calling, an extension user can call an idle extension in a programmed Department Group (64 Department Groups available) by dialing the group pilot number. For example, this would let a caller dial the Sales department just by knowing the Sales department pilot number. The caller would not have to know any Sales department extension number.

Two types of routing are available with Department Calling: Priority Routing and Circular Routing. With Priority Routing, an incoming call routes to the highest priority extensions first. Lower priority extensions ring only if all higher priority extensions are busy. With Circular Routing, each call rings a new extension.

### ***Department Step Calling***

After calling a busy Department Calling Group member, an extension user can have Department Step Calling quickly call another member in the group. The caller does not have to hang up and place another Intercom call if the first extension called is unavailable. Department Step Calling also allows an extension user to cycle through the members of a Department Group.

### ***Dial Pad Confirmation Tone***

For an extension with Dial Pad Confirmation Tone enabled, the user hears a beep each time they press a key. This is helpful for Intercom calls and Dial Pulse trunk calls, since these calls provide no Call Progress tones.

### ***Dial Tone Detection***

If a trunk has Dial Tone Detection enabled, the system monitors for dial tone from the Telco or PBX when a user places a call on that trunk. If the user accesses the trunk directly (by pressing a line key or dialing #9 and the trunk number), the system drops the trunk if dial tone does not occur. If the user accesses the trunk via a Trunk Group (by dialing a trunk group code or automatically through a feature like Last Number Redial), the system can drop the trunk or optionally skip to the next trunk in the group.

## ***Dialing Number Preview***

Dialing Number Preview lets a display multiline terminal user dial and review a number before the system dials it. Dialing Number Preview helps the user avoid dialing errors.

## ***Digital Trunk Clocking***

The UNIVERGE SV8100 CD-CP00-US has a built-in clock source for all digital trunk blades. Digital trunk blades are connected via an internal PLO (Phase Locked Oscillator) to derive Primary Clock from the network in priority order. If priority is set up incorrectly, or if two primary clocks are coming in, slips may occur causing improper data synchronization. The PLO, equipped with the UNIVERGE SV8100 CD-CP00-US is the timing source for all digital trunk blades in the system. The PLO synchronizes the system and clocks signals from another office. When the UNIVERGE SV8100 is a clock receiver office, the PLO generates the clock signal according to the source clock signals received from the source office in the network. The source clock signals are extracted from digital trunk blades and are supplied to the PLO.

## ***Direct Inward Dialing (DID)***

### **Enhancements**

With **Version 7000 or higher** system software, more flexible schedule settings in the DID Conversion table are provided

- Direct Inward Dialing supports day of week and time of day scheduling.
- The Dial-In Conversion table can support a maximum of 500 tables.
- V7000 Enhancement License (0036)** required.

Direct Inward Dialing (DID) lets outside callers directly dial a system extension. DID saves time for callers who know the extension number they want to reach. To place a DID call, the outside caller dials the local exchange (NNX) and additional digits to ring the telephone system extension. For example, DID number 926-5400 can directly dial extension 400. The caller does not have to rely on attendant or secretary call screening to complete the call.

 *Direct Inward Dialing requires DID service from Telco.*

In addition to direct dialing of system extensions, DID provides:

- DID Dialed Number Translation
- Flexible DID Service Compatibility
- DID Intercept
- DID Camp-On

There are 20 DID Translation tables that can be divided between 2000 entries.

## ***Direct Inward Line (DIL)***

A Direct Inward Line (DIL) is a trunk that rings an extension, virtual extension or Department Group directly. Since DILs only ring one extension or group (i.e., the DIL destination), employees always know which calls are for them. For example, a company operator can have a Direct Inward Line for International Sales Information. When outside callers dial the DIL telephone number, the call rings the operator on the International Sales line key. The DIL does not ring other extensions.

There are 200 available trunks, 64 Department Groups, 512 extensions and 256 Virtual Extensions.

### **DIL Delayed Ringing**

Extensions in a Ring Group can have delayed ringing for another extension DIL. If the DIL is not answered at its original destination, it rings the DIL No Answer Ring Group. This could help a Technical Service department, for example, that covers calls for an Inside Sales department. If the Inside Sales calls are not answered, they ring to the Technical Service department.

## ***Direct Inward System Access (DISA)***

### **Enhancements**

With **Version 3000 or higher** system software, if an outside caller dials an invalid extension number when connected to the VRS Automated Attendant or calling in on a DISA trunk, the following new options are available to route these calls:

- Extension Number (e.g., operator)
- F-Route Dial (e.g., outside phone number)

DISA permits outside callers to directly dial system extensions, trunks and selected features. This could help an employee away from the office that wants to directly dial co-workers or use the company trunks for long distance calls. To use DISA, the employee:

- Dials the telephone number that rings the DISA trunk.
- Waits for the DISA trunk to automatically answer with a unique dial tone.
- Dials the 6-digit DISA password (access code).
- Waits for a second unique dial tone.
- Accesses a system trunk, uses a selected feature or dials a system extension.

DISA calls ring system extensions like other outside calls. If an extension has a line key for the DISA trunk, the call rings that key. If the extension does not have a line key, the extension must have a Call Appearance (CAP) key to answer the call.

You can set DISA operation differently for each Night Service mode. For example, a trunk can be a normal trunk during the day and a DISA trunk at night. You can also set the routing for DISA trunks when the caller dials a busy or unanswered extension, dials incorrectly, or forgets to dial.

DISA allows 15 users, 15 DISA Classes of Service and 200 trunks.

### ***Direct Station Selection (DSS) Console***

The DSS Console gives a multiline terminal user a Busy Lamp Field (BLF) and one-button access to extensions, trunks and system features. This saves time for users that do a lot of call processing (e.g., attendants, operators or dispatchers). The DSS Console simplifies:

- Calling extensions and door boxes
- Placing, answering and transferring outside calls
- Making an External or Internal Page
- Switching the Night Service mode
- Activating DSS Console Alternate Answer

The DSS Console also provides DSS Console Alternate Answer. This lets a multiline terminal user with a DSS Console quickly reroute their calls to a co-worker.

Transferred and dial 0 calls ring both DSS Consoles and, if the VRS is installed, the main operator hears the message, "Your calls have been forwarded". Central office calls ring both consoles and no message is heard by the operator.

### ***Directed Call Pickup***

Directed Call Pickup permits an extension user to intercept a call ringing another extension. This allows a user to conveniently answer a co-worker call from their own telephone. With Directed Call Pickup, an extension user can pick up:

- Trunk calls (i.e., Ring Group calls)
- Direct Inward Lines
- Transferred trunk calls
- Transferred Intercom calls
- Ringing and voice-announced Intercom calls

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## ***Directory Dialing***

### **Enhancements**

Directory Dialing with main CPU software **Version 3000 or higher** provides the following enhancements:

- Pressing the **Right Cursor Key** twice (on equipped terminals) displays the Common/ Group Speed Dial directory.
- Pressing the **Right Cursor Key** three times (on equipped terminals) displays the Extension Name directory.

Directory Dialing allows a multiline terminal user to select a co-worker or outside caller from a list of names, rather than dialing the telephone number. There are four types of Directory Dialing:

- SPD – Speed Dials
- EXT – Co-worker’s Extensions
- STA – Personal Speed Dials
- TELBK – Telephone Book

## ***Distinctive Ringing, Tones and Flash Patterns***

### **Enhancements**

With **Version 8000 or higher** software, the number of Tone Patterns has increased from four to eight.

Distinctive Ringing, Tones and Flash Patterns provide extension users with audible and visual call status signals. This lets users tell the type of call by listening to the ringing/tones and watching the keys. It also helps users monitor the progress of their calls. In addition, Distinctive Ringing lets multiline terminal users customize their Intercom and trunk call ringing. This is helpful for users that work together closely. For example, if several co-workers set their multiline terminals to ring at different pitches, each co-worker can always tell which calls are for them. You can also customize the tones the system uses for splash tone, confirmation tone, trunk ring tone, Intercom ring tone and Alarm ring tone. Refer to the UNIVERGE SV8100 Programming Manual for more details.

## ***Do Not Disturb***

### **Enhancements**

With **Version 8000 or higher** software, when a call is ringing on an extension and Do Not Disturb (DND) is set, the DND can be enforced immediately or on the next call.

Do Not Disturb blocks incoming calls and Paging announcements. DND permits an extension user to work by the telephone undisturbed by incoming calls and announcements. The user can activate DND while their telephone is idle or while on a call. Once activated, incoming trunk calls still flash the line keys. The user may use the telephone in the normal manner for placing and processing calls.

Five Do Not Disturb options are available at each extension. These options can be accessed via multiline terminal Softkeys, DND feature key or DND system access code.

- 1 = Incoming trunk calls blocked
- 2 = Paging, incoming Intercom, Call Forwards and transferred trunk calls blocked
- 3 = All calls blocked
- 4 = Incoming Call Forwards blocked
- 0 = Do Not Disturb canceled

### ***Door Box***

The Door Box is a self-contained Intercom unit typically used to monitor an entrance door. A visitor at the door can press the Door Box call button (like a door bell). The Door Box then sends chime tones to all extensions programmed to receive chimes. To answer the chime, the called extension user lifts the handset. This lets the extension user talk to the visitor at the Door Box. The Door Box is convenient to have at a delivery entrance, for example. It is not necessary to have company personnel monitor the delivery entrance; they answer the Door Box chimes instead. Any number of system extensions can receive Door Box chime tones.

Each Door Box has a pair of normally open relay contacts that can connect to an electric door strike. Use these contacts to remotely control the entrance door. After answering the Door Box chimes, a multiline terminal user can press Recall to activate the Door Box contacts. This in turn releases the electric strike on the entrance door. The device connected to the Door Box contacts cannot exceed the contact ratings shown in the following table:

Door Box Specifications	
Contact Configuration	Normally Open
Maximum Load	60mA @ 30 VDC 10mA @ 90 VDC
Maximum Initial Contact Resistance	50m Ohms

The system can have up to eight Door Boxes. Six chime tones are available.

### ***Drop Key***

The Drop Key abandons a call while retaining the PBX/Centrex line to originate another call. The Drop Key is provided by programming a Function Key. This feature allows Recall to be used to provide a hookflash to the PBX or Central Office. A single line telephone user can use the Drop Key function with an access code.

### ***D<sup>term</sup> Cordless II Terminal***

The NEC *D<sup>term</sup>* Cordless II Terminal may be used with the UNIVERGE SV8100 system. The DTR-4R-1 TEL uses 900 MHz Digital Spread Spectrum (DSS) Technology and must be connected in tandem to a multiline terminal.

 *The D<sup>term</sup> Cordless II Terminal cannot be used as standalone.*

Press the applicable key on the Base Unit to Switch between Cordless operation and multiline terminal operation.

Feature	<i>D<sup>term</sup></i> Cordless II (DTR-4R-1)
Digital Technology	900 MHz Spread Spectrum
LCD	2-line, 16-digit LCD Display
Silent Alarm	Yes
Dedicated Keys	TALK, TRANSFER, HOLD, CONF, CHAN, REDIAL, MUTE, R/VOL
Programmable Line Keys	4
Operational Range*	50~350 feet
Message Waiting Indication	 Icon
Headset Connection	Yes
Channels	10

\* Determined by environmental conditions

## ***D<sup>term</sup> Cordless Lite II Terminal***

The NEC *D<sup>term</sup>* Cordless Lite II Terminal may be used with the UNIVERGE SV8100 system. The DTH-4R-1 TEL uses 900 MHz FM with ADPCM (digital) Technology and is connected in tandem to a multiline terminal.

Press the applicable key on the Base Unit to Switch between Cordless operation and multiline terminal operation.

<b>Feature</b>	<b><i>D<sup>term</sup></i> Cordless Lite II (DTH-4R-1)</b>
Digital Technology	900 MHz FM with ADPCM (digital)
LCD	2-line, 16-digit LCD Display
Silent Alarm	Yes
Dedicated Keys	TALK, TRANSFER, HOLD, CONF, CHAN, REDIAL, MUTE, R/VOL
Programmable Line Keys	4
Operational Range *	50~150 feet
Message Waiting Indication	Yes (Icon)
Headset Connection	Yes
Channels	30

\* Determined by environmental conditions. These are cordless RF devices and, therefore, some interference may take place when operating in the same environment as other wireless devices which operate in the same frequency spectrum.

## ***DTPlusWare***

DTPlusWare is a server based XML application that allows NEC IP display phones (DT710/730/750) access to the following features and options:

- View list of received, missed and outgoing calls.
- Send and receive Instant Messages to other DTPlusWare client phones.
- For the DT750 phone:
  - Store and display photos.
  - Store a photo to be used as a screen saver.
  - View Calendar one month at a time.
- Set Presence status for other DTPlusWare client phones to see (requires SV8100 TAPI license).
- View list of contacts set in DTPlusWare and on Corporate Active Directory if available.
- View current weather for any US city.
- Receive bulletins broadcast from DTPlusWare server.

- Display World Clock for predefined cities.
- When system is equipped with the SMB8000 Multimedia Conference Bridge you can create, view and change conferences from a client IP desk phone and iPhone.
- Change DTPlusWare client login password.
- For iPhone users DTPlusWare is available via a local Wi-Fi connection with the following features:
  - Uses same login credentials as desk phone.
  - Set Presence status.
  - View list of contacts set in DTPlusWare and on Corporate Active Directory.
  - Receive bulletins broadcast from DTPlusWare server.
  - View list of received, missed and outgoing calls.
  - Send Instant Messages to other DTPlusWare client phones.
  - Call the office desk phone.
  - Change DTPlusWare login password.

### ***Ecology***

#### **Enhancements**

This feature added with **Version 7000**.

Environmental issues, such as global warming or ecology are one of the most important themes in today's world. The following energy saving features are implemented in this system:

- Power Cut Off Mode
- Power Saving Mode
- Power Failure Saving Mode

### ***E911 Compatibility***

#### **Enhancements**

With **Version 4000 or higher** system software, the 911 Cut Through feature works when dialing trunk Access+911.

With **Version 4000 or higher** system software, the Calling Party Number (CPN) sent out has been enhanced.

<b>IMPORTANT - PLEASE NOTE THE FOLLOWING!</b>	
1.	<b>When ARS is NOT enabled and the system allows trunk access by dialing 9</b> , single line telephones disregard Program 20-03-03 – System Options for Single Lines Telephones – SLT DTMF Dial to Trunk Lines. This prevents the system from connecting to a trunk until all the digits are dialed. This can be avoided by using either 8 or 9x (but not 91) as the trunk access code. Be aware that this change requires additional programming changes.
2.	<b>Do not use an asterisk within a PBX access code if the Account Code feature is used.</b> With the Account Code feature enabled, if * is used in the access code, the trunk stops sending digits to the central office after the * is sent.
3.	<b>Finally, but most importantly, TEST - TEST - TEST!!</b> Due to the nature of the E911 feature, it is imperative that when programming this, or any other feature, to be aware of the consequences. Make sure to test the extensions with the E911 feature to confirm that other features do not prevent the call from being completed. When using external equipment, make sure the dial treatment tables are working properly.

E911 Compatibility ensures that emergency calls always get through. If an emergency occurs, a user goes to any telephone, lifts the handset and dials 911. The system built-in E911 compatibility places the emergency call even if the user forgets to dial an access code or press a line key. The E911 abilities include:

- Attendant Notification
- Emergency Routing
- Calling Party Identification

### ***Electra Elite IPK Terminals***

The Electra Elite IPK terminals provide ergonomic form and user-friendly functions. With advanced digital circuitry, the IPK terminals consists of distinct models to meet diverse user telephone terminal needs.

The UNIVERGE SV8100 system allows a maximum of 240 Electra Elite IPK terminals to be attached to the system.

### ***Facsimile CO Branch Connection***

The UNIVERGE SV8100 system provides branch connection of locally provided facsimile machines to CO/PBX lines. Additional dedicated CO/PBX lines are not required for a facsimile to operate. The facsimile shares any CO/PBX line on the COI Package and Power Failure (PF) circuit.

## ***Flash***

### **Enhancements**

With **Version 4000 or higher software**, a Flash (Recall) key can be placed on a line key.

With **Version 4000 or higher software**, the door strike relay can be activated from the MH240 or Cordless DECT terminal by a Flash Key assigned to a line key in Program 15-07 (751: 62).

Flash allows an extension user to access certain CO and PBX features by interrupting the trunk loop current. Flash lets an extension user take full advantage of whatever features the connected Telco or PBX offers. You must set the Flash parameters for compatibility with the connected Telco or PBX.

## ***Flexible System Numbering***

Flexible System Numbering lets you reassign the system port-to-extension assignments. This allows an employee to retain their extension number if they move to a different office. In addition, factory technicians can make comprehensive changes to your system number plan. You can have factory technicians:

- Set the number of digits in internal (Intercom) functions. For example, extension numbers can have up to eight digits.
- Change your system Service Code numbers.
- Assign single digit access to selected Service Codes.

Talk to your sales representative to find out if this program is available to you.

You can also use Flexible System Numbering to change the system Trunk Group Routing code. Although the default code of 9 is suitable for most applications, you can alter the code if needed.

## ***Flexible Timeouts***

The Flexible Timeouts feature provides a variety of timers in the Resident System Program to allow the system to operate without initial programming. The system timers can be changed to meet customer needs according to the system application requirements.

### ***Forced Trunk Disconnect***

Forced Trunk Disconnect allows an extension user to disconnect (release) another extension active outside call. The user can then place a call on the released trunk. Forced Trunk Disconnect lets a user access a busy trunk in an emergency, when no other trunks are available. Maintenance technicians can also use Forced Trunk Disconnect to release a trunk on which there is no conversation. This can happen if a trunk does not properly disconnect when the outside party hangs up.



***Forced Trunk Disconnect abruptly terminates the active call on the line. Only use this feature in an emergency and when no other line is available.***

### ***General Purpose Relay***

The system allows up to eight general purpose relays using PGD(2)-U10 ADP's (four relays per PGD unit) and one general purpose relay built into the CD-CP00-US for a maximum of nine relays. These relays are normally opened and can be closed by dialing an access code on any terminal or pressing a pre programmed function key on any multiline terminal.

The relays can then be set back to an open state by dialing an access code on any terminal or by pressing a pre programmed function key on any multiline terminal. A relay can also be set back to an open state after a drive timer expires. Each relay can have a separate drive timer, when the relay is in a closed state, and this timer expires, the relay is automatically placed back into an open state.

### ***Group Call Pickup***

Group Call Pickup allows an extension user to answer a call ringing another extension in a Pickup Group. This permits co-workers in the same work area to easily answer others calls. The user can dial a code or press a programmed Group Call Pickup key to intercept the ringing call. If several extensions in the group are ringing at the same time, Group Call Pickup intercepts the call based on the extension priority in the Pickup Group.

With Group Call Pickup, a user can intercept the following calls:

- A call ringing the user's own pickup group
- A call ringing another pickup group when the user knows the group number
- A call ringing another pickup group when the user does not know the group number

There are 64 Call Pickup Groups available.

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### ***Group Listen***

Group Listen permits a multiline terminal user to talk on the handset and have their voice broadcast over the telephone speaker. This lets the multiline terminal user's co-workers listen to the conversation. Group Listen turns off the multiline terminal handsfree microphone so the caller does not pick the co-worker's voices during a Group Listen.

### ***Handset Mute***

Handset Mute is provided to most terminals connected to the UNIVERGE SV8100 system. While talking on the multiline terminal handset, a station user can dial a feature code or press Mic to mute the transmit speech path. The station user can still hear the outside (or intercom) voice.

### ***Handsfree and Monitor***

Handsfree allows a multiline terminal user to process calls using the speaker and microphone in the telephone instead of the handset. Handsfree is a convenience for workers who do not have a free hand to pick up the handset. For example, a terminal operator could continue to enter data with both hands while talking on the telephone.

Three variations of Handsfree are available.

- Handsfree  
The user can press Speaker to place and answer calls instead of using the handset.
- Automatic Handsfree  
The user can press a trunk line key or virtual extension key without lifting the handset or pressing Speaker. An extension can have Automatic Handsfree for only outgoing calls or both outgoing and incoming calls.
- Monitor  
User can place a call without lifting the handset, but must lift the handset to speak.

### ***Handsfree Answerback/Forced Intercom Ringing***

Handsfree Answerback permits an extension user to respond to a voice-announced Intercom call by speaking toward the telephone, without lifting the handset. Like Handsfree, this is a convenience for workers who do not have a free hand to pick up the handset.

### ***Headset Operation***

A multiline terminal user can use a customer-provided headset in place of the handset. Like using Handsfree, using the headset frees up hands for other work. Headset Operation also provides privacy not available from Handsfree.

As the headset plugs into a separate jack on the bottom of the telephone, the handset can still be connected to the telephone. This provides an option to use the handset, headset or the speakerphone for calls.

### ***Hold***

Hold lets an extension user put a call in a temporary wait state. The caller on Hold hears silence or Music on Hold, not conversation in the extension user work area. While the call waits on Hold, the extension user may process calls or use a system feature. Calls left on Hold too long recall the extension that placed them on Hold.

There are four types of Hold:

- System Hold**

An outside call a user places on Hold flashes the line key (if programmed) at all other multiline terminals. Any multiline terminal user with the flashing line key can pick up the call.
- Exclusive Hold**

When a user places a call on Exclusive Hold, only that user can pick up the call from Hold. The trunk appears busy to all other multiline terminals that have a key for the trunk. Exclusive hold is important if a user does not want a co-worker picking up their call on Hold.
- Group Hold**

If a user places a call on Group Hold, another user in the Department Group can dial a code to pick up the call. This lets members of a department easily pick up others calls.
- Intercom Hold**

A user can place an Intercom call on Hold. The Intercom call on Hold does not indicate at any other extension.

### ***Hot Key-Pad***

The Hot Key-Pad feature allows the user to place a call without lifting the handset or pressing Speaker. When the user dials another extension number on an idle telephone with Hot Key-Pad enabled, Speaker lights and the internal call is made. When the user dials the trunk access code from a telephone with Hot Key-Pad enabled, Speaker lights, a trunk is seized and the outgoing call is made.

### ***Hotel/Motel***

#### **Enhancements**

PVA PMS replaces the PMS-U10 for the application blade for PMS integration to SV8100. This new blade provides the following features:

- Programming is supported using HTML interface.

## Enhancements (Continued)

- PVA PMS supports NEAX-90K, NEAX-60K, KTSi and KTSi w/ENQ protocols.
- The PVA PMS IP address is assigned in system programming, similar to other blades, and the CPU IP address is populated automatically.
- The Mask feature allows the masking of the following PMS messages if not supported by the PMS application:
  - Checkin
  - Checkout
  - Edit Room
  - Wakeup Call
  - Message Waiting Set/Cancel
  - DND Set/Cancel
  - Room Status
  - Room Restriction

With **Version 7000 or higher** software, the following features were added:

- View current room status in Web Pro and Phone Pro.
- The ability to change from any room status to any other room status.
- Automatically set room status on check out to any valid room status option.

Your UNIVERGE SV8100 telephone system provides Hotel/Motel services in addition to the many features available to business users. These Hotel/Motel services help you run your facility more efficiently, save you time and money, **and** provide your guests with more responsive service.

Hotel/Motel features include:

- Wake Up Call
- Single Digit Dialing
- A Department Calling Group
- Message Waiting
- PMS Integration
- PMS Configurator Software
- Room to Room Calling Restriction
- Toll Restriction (When Checked In)
- Room Status
- Room Status Printouts
- DSS Console Monitoring
- Do Not Disturb
- Flexible Numbering Plan

## ***Hotline***

Hotline gives a multiline terminal user one-button calling and Transfer to another extension (the Hotline partner). Hotline helps co-workers that work closely together. The Hotline partners can call or Transfer calls to each other by pressing a single key.

The Hotline feature has two applications.

- Hotline (Hotline partner)
- Ringdown Extension, Internal/External (Refer to [Ringdown Extension, Internal/External on page 2-72.](#))

In addition, the Hotline key shows the status of the partner extension.

<b>When the key is . . .</b>	<b>The extension is . . .</b>
Off	Idle
On	Busy or ringing
Fast Flash	DND – All calls (option 3) or Intercom calls (option 2)
Double Wink On	ACD Agent logged on the group
Wink Off	ACD Agent logged off

There are 512 internal Hotline extensions available.

## ***Howler Tone Service***

Howler Tone Service provides a Howler Tone when a station remains off-hook after a call is completed or when a station is off-hook and digits are not dialed in a programmed time.

## ***Intercom***

### **Enhancements**

With **Version 7000 or higher** software, a special ringtone is provided when a pre-assigned extension places an Intercom call.

Intercom gives extension users access to other extensions. This provides the system with complete internal calling ability.

### **Handsfree Answerback/Forced Intercom Ringing**

Handsfree Answerback permits an extension user to respond to a voice-announced Intercom call by speaking toward the telephone, without lifting the handset. Like Handsfree, this is a convenience for workers who do not have a free hand to pick up the handset.

## Busy Status Display

When a display multiline terminal user places an Intercom call to a busy extension, the details of the busy status (who is talking to the extension or which line is in use by the extension) can be displayed. The details of the trunk busy status (the extension using the line) can be displayed after trying to access the trunk. This feature provides a user information which can determine whether or not they should use Barge-In for the extension or trunk. This information automatically displays for a multiline terminal when programmed.

## IP Multiline Station (SIP)

### Enhancements

The same user name and password can be assigned to IP Multiline Station, MH240 and Desktop ports when automatic or manual registration is used (**Version 3000 or higher** software).

With **Version 3000 or higher** system software, the Registration Override feature is enhanced to allow IP Multiline Stations (SIP) using 1st Party CTI application or Multiline Stations (SIP) in a system using 3rd Party CTI applications (Desktop Shared Services or UCB) to be overridden giving users access to their IP telephone from any location. By utilizing the override login function, users have the flexibility of logging into their IP Station in the office as well as remotely at the home office.

NAPT (Network Address Port Translation) - With **Version 3000 ~ Version 5000** system software, DT700 series terminals can be installed at remote locations, however Plug and Play is not supported. Some configuration in the **remote router is required**, and terminal firmware must be upgraded to **Version 3.0.0.0 or higher**.

 *Continue below for additional NAPT enhancements.*

When upgrading to **Version 3100 or higher** software, four IP Terminal Basic licenses are provided. If a system with **Version 3000 (3.01 or lower)** is upgraded to **Version 3100** software, the system gains four IP Terminal licenses as soon as it is upgraded.

With **Version 5.0.0.0 firmware**, the following features are supported.

- Link Layer Discovery Protocol (LLDP): Standard used to transmit and receive information about neighboring network devices using Layer 2 Multicast frames.
- XML Multi-Window Support – the multi-window service adds the following:
  - Multiple XML applications can be displayed and accessed through the NEC terminal XML menu.
  - Line key operation can be performed without closing the active XML application window.

Refer to the DT700 Resource manual for detailed information.

## Enhancements (Continued)

For troubleshooting purposes, a managed switch capable of port mirroring is required to capture packet data from the SV8100 IPLB Ethernet port.

With **Version 6000 or higher** the NAPT feature is enhanced. The remote side router may not require having port forwarding set up. However, due to the fact that many manufacturers are producing routers, port forwarding may still be needed. The **Version 3000 Enhancement** license is required for this feature and Program 15-05-45 must be enabled on a per station basis. This feature requires installation of a PZ-( )IPLB.

When installing the DT730G terminals (ITL-12CG-3 and ITL-12DG-3), **Version 7000 or higher** software is required.

The UNIVERGE SV8100 system supports IP extensions using a variety of multiline terminals. These telephones have the same look and functionality of typical multiline telephones, but they are connected to the CCPU via IP rather than by a hardwired connection to a DLC port.

The following DT700 IP Multiline Telephones (ITL) support IP extensions:

- ITL-2E-1 (BK) TEL
- ITL-6DE-1 (BK) TEL
- ITL-8LDE-1 (BK) TEL
- ITL-8LD-1 (BK) TEL/ITL-8LD-1 (WH) TEL
- ITL-12D-1 (BK) TEL/ITL-12D-1 (WH) TEL
- ITL-12CG-3 (BK) TEL
- ITL-12DG-3 (BK) TEL
- ITL-12PA-1 (BK) TEL
- ITL-24D-1 (BK) TEL/ITL-24D-1 (WH) TEL
- ITL-32D-1 (BK) TEL/ITL-32D-1 (WH) TEL
- ITL-32OC-1 (BK) TEL

### ***NAPT Traversal***

NAPT (**N**etwork **A**ddress **P**ort **T**ranslation), is a method by which a private address or addresses and their TCP/UDP ports are translated into a single public address and its TCP/UDP ports. The NAPT feature gives the SV8100 the ability to “traverse” its own subnet. With NAPT, the network administrator can place the CD-CP00-US and the IPLA/IPLB (VoIPDB) in the customers LAN while still making it accessible to users outside the local LAN. The NAPT Feature also allows the IP terminals to be placed in a local LAN in a remote network and be able to communicate back to the SV8100.

With **Version 3000 ~ Version 5000** software, Port forwarding statements are required in the router that the SV8100 resides behind as well as the router that the IP terminal/terminals resides behind. A PZ-( )IPLA or PZ-( )IPLB can be used for NATP transversal.

With **Version 6000 or higher** software, improvements have been made to the NATP feature. The router that the SV8100 resides behind still requires Port Forwarding statements. However the router that the IP terminal/terminals reside behind may not require any port forwarding. This feature is only available when using a PZ-( )IPLB (IPLA does not support this feature). Due to the fact that there are many manufacturers producing routers there may still be times when port forwarding is required.

### ***IP Multiline Station (SIP) – ML440 Cordless***

Many SMB businesses, understanding the impact of a mobile workforce, are rapidly defining their requirements for enabling effective communications and information access for mobile users. SMB Mobility will allow the individual staff member to be instantly accessible- thus becoming more productive.

The ML440 IP Wireless Handset is an ergonomically designed compact wireless handset for business users who are mobile in the office and want to make and receive wireless calls while in the office. The DECT protocol operates in the 1.9 GHZ frequency band that has been cleared specifically for voice applications, thus avoiding any interference problems and delivering crystal clear and secure voice conversations.

The ML440 provides numerous features and conveniences for optimal comfort. Its illuminated graphic color LCD display enables use in poorly lit environments, while its internal loudspeaker provides Handsfree operation with excellent sound quality. Powerful encryption techniques ensure secure communication, and it can also provide the subscriber with most of the features available for a wired phone, in addition to its roaming and handover capabilities.

### ***IP Single Line Telephone (SIP)***

#### **Enhancements**

With **Version 4000** software, FoIP (Fax over Internet Protocol) with T.38 is supported.

The **SV8100 Version 4000** Enhancement license is required for T.38 to function.

With **Version 4000 (4.01 or higher)** software video codecs H.264, H.263 and H.261 are supported.

The **SV8100 Version 4000** Enhancement license is required for video support.

For Standard SIP video support, one SV8100 SIP video license is required per system.

## Enhancements (Continued)

With SV8100 **Version 5000 (5.00 or higher)** software and PZ-IPLB daughter board installed, half duplex connections are not supported. For troubleshooting purposes, a managed switch capable of port mirroring is required to capture packet data from the SV8100 IPLB Ethernet port.

With **Version 6000 (6.00 or higher)**, the SV8100 now supports both Attended and Unattended transfers. In previous versions, the SV8100 only supported Attended transfer.

SIP (Session Initiation Protocol) is used for Voice over Internet Protocol. It is defined by the IETF (Internet Engineering Task Force) RFC3261. Other RFC designations, such as RFC3842, refer to a later implementation of SIP and may be supported by the UNIVERGE SV8100. Commonly called SIP Station, this feature is used for IP Stations using SIP.

SIP analyzes requests from clients and retrieves responses from servers, then sets call parameters at either end of the communication, handles call transfer, and terminates. Typically, such features, including but not limited to Voice over IP services, are available from an SIP service provider.

### *STD SIP Transfer–Unattended*

With **Version 6000 or higher** software, any standard SIP terminal can perform an Unattended (Blind/Unsupervised) transfer.

## *IP Trunk – (SIP) Session Initiation Protocol*

### Enhancements

With **Version 4000** software, FoIP (Fax over Internet Protocol) with T.38 is supported.

The **SV8100 Version 4000** Enhancement license is required for T.38 to function.

With SV8100 **Version 5000 (5.00 or higher)** software and PZ-IPLB daughter board installed, half duplex connections are not supported. For troubleshooting purposes, a managed switch capable of port mirroring is required to capture packet data from the SV8100 IPLB Ethernet port.

The SV8100 **Version 5000 (5.00 or higher)** software enhancement enables multiple SIP trunk carriers to be utilized when NetLink is configured.

With **Version 7000 or higher**, when + is added to the country code of an incoming SIP trunk call, it is recognized as an international call, simplifying outgoing calls from the incoming call list.

The UNIVERGE SV8100 IP Trunk SIP package sends the real time voice over the corporate LAN or WAN. The voice from the telephone is digitized and then put in frames to be sent over a network using Internet protocol.

Using VoIP equipment at a gateway (a network point that acts as an entrance to another network), the packetized voice transmissions from users in the company are received and routed to other parts of the company intranet (local area or wide area network) or they can be sent over the Internet using CO lines to another gateway.

The PZ-32IPLA/IPLB, PZ-64IPLA/IPLB or PZ-128IPLA/IPLB Daughter Board interface can provide IP trunks and Tie Lines that can operate in the following modes:

- COI
- COID
- DID
- TLI
- DTI

### ***SIP Trunk E.164 Support***

With SIP Trunk E.164 Support enabled, the PBX is able to support SIP configurations where the number presentation within the SIP messages is formatted using the E.164 international numbering scheme. Specifically the system is able to handle the + digit when required as the International Access Code.

### ***SIP Trunk E.164 CLIP Enhancement***

With the SIP Trunk E.164 CLIP Enhancement enabled, when an incoming SIP call from an external ITSP is presented at the system with a + in the From header field as the international access code, it is recognized and displayed as an international call at the terminal display and also logged in the terminals incoming caller history, allowing any outbound calls made from a multiline terminals caller history possible using this numbering scheme.

This presentation can be a requirement of certain SIP ITSPs (Internet Telephony Service Providers) so it is necessary the PBX can handle these calls and modify any SIP messages to the correct format accordingly.

## ***IP Trunk – H.323***

### **Enhancements**

With SV8100 **Version 5000 (5.00 or higher)** software and PZ-IPLB daughter board installed, half duplex connections are not supported. For troubleshooting purposes, a managed switch capable of port mirroring is required to capture packet data from the SV8100 IPLB Ethernet port.

H.323 is an International Telecommunication Union (ITU) standard for Packet Based Multimedia Communication Systems. The UNIVERGE SV8100 can use H.323 to connect to another UNIVERGE SV8100 system or a third-party product.

The feature set is limited. When using H.323, it is not possible to use the advanced networking features. If these features are required, use IP KCCIS. The UNIVERGE SV8100 Voice over IP Trunk blade H.323 package sends the real-time voice over the corporate LAN or WAN. The voice from the telephone is digitized and then put in frames to be sent over a network using Internet Protocol.

The UNIVERGE SV8100 Voice over IP Trunk – H.323 blade package allows communication using standard H.323 (Normal and Fast Start) Protocol and allows connectivity to any H.323 standards compliant voice gateway and gatekeeper. This VoIP Trunk blade also allows Registration and Authentication Server (RAS) support to register with an RAS Server and use Gatekeeper for dynamic call routing.

The PZ-(x)IPLA/IPLB – H.323 is an optional interface that can provide IP trunks and Tie Lines. It can operate in the following modes:

- COI
- COID
- DID
- TLI
- DTI

Depending on the requirements and resource allocation in the LAN/WAN/Internet, the PZ-(x)IPLA/IPLB – H.323 can be configured to use any of the following voice compressions:

- G.729 Low bandwidth requirement used on most Wide Area Network links.
- G.711 High bandwidth requirement – usually used on Local Area Networks.
- G.722 codec is useful in fixed network, Voice over IP applications, where the required bandwidth is typically not prohibitive.
- G.723 is an ITU-T standard wide band speech codec. This is an extension of Recommendation G.721 adaptive differential pulse code modulation to 24 and 40 kbit/s for digital circuit multiplication equipment application.

## ***IPK/IPK II Migration***

### **Enhancements**

This feature added with **Version 2500**.

DTU/DTP terminal support is available with **Version 2500 (2.51 or higher)**.

With **Version 4000 (4.01 or higher)** software, a combination of IPK/IPK II cabinets and SV8100 chassis are supported.

The IPK/IPK II Migration package allows the user of an existing NEC IPK/IPK II platform to use the enhanced abilities of the SV8100.

## ***IP/Digital Call Logging***

### **Enhancements**

The NEC Call Logging Unit now supports licensing via LMS which in most cases can eliminate the need for a license dongle.

When using NEC DT300 and DT700 desktop terminals, telephone calls can be monitored, recorded and stored. For single phone applications, the NEC 1-Port Digital Call Logging Unit can be used. This will only support digital DT300 phone applications. For up to 16 digital ports or VoIP traffic the NEC IP/Digital Back Office call logging unit can be used.

The back bone of NEC's higher volume call recording software is the NEC IP/Digital BackOffice software which is PC based and is capable of recording calls from both VoIP (DT700) and digital (DT300) phones. NEC's BackOffice software works in conjunction with a 4-Port Digital Logging Unit for recording of TDM type calls. Three options are available for playing back of the recorded calls. For playback and management of recorded calls NEC offers the NEC Player/Recorder, Manager and Reporter Pro. All of these perform the playback function but offer increasing levels of additional features.



***The use of monitoring, recording, or listening devices to eavesdrop, monitor, retrieve, or record telephone conversation or other sound activities, whether or not contemporaneous with transmission, may be illegal in certain circumstances under federal or state laws.***

***Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some federal and state laws require some form of notification to all parties to a telephone conversation, such as using a beep tone or other notification methods or requiring the consent of all parties to the telephone conversation, prior to monitoring or recording the telephone conversation. Some of these laws incorporate strict penalties.***

## ***ISDN Compatibility***

### **Enhancements**

Calling Party Name can be sent on outgoing ISDN calls (**Version 3000 or higher** software).

With **Version 4000 (4.01 or higher)** CPU software, 2 B-Channel Transfer is supported.

### **ISDN-BRI**

Integrated Service Digital Network – Basic Rate Interface (ISDN-BRI) is a Public Switched Telephone Network (PSTN) service that provides two B channels and a D channel (2B + D) for voice call trunking. The B channels provide two voice path connections. Caller ID is usually a standard feature on ISDN-BRI provided trunks. Caller ID indication displays the calling party telephone number on the LCD of the multiline terminal for CO incoming calls. This interface provides voice communication path only.

With ISDN BRI the SV8100 only supports the following protocol:

- National ISDN-1 (NI-1)

### **ISDN-PRI**

ISDN-PRI (Integrated Service Digital Network – Primary Rate Interface) is a Public Switched Telephone Network (PSTN) service that provides 23 B channels and a single D channel (23B+1D) for trunking. The UNIVERGE SV8100 supports it. Caller ID indication displays the calling party telephone number on the LCD of the multiline terminal for CO incoming calls. This interface provides voice communication path only.

With ISDN PRI the SV8100 supports the following protocols:

- NI-2
- 4ESS (AT&T Custom)
- AT&T 5ESS (Lucent Custom)
- DMS-100 Custom (Nortel Spec NIX-A211-1)
- DMS-100 National ISDN (Nortel Spec NIX-A233-1)

### **ISDN – BRI/PRI Features**

- DID Line Service
- Calling Line Identification Presentation (CLIP)
- Calling Party Number (CPN) Presentation from Station
- Calling Party Name

- SMDR Includes Dialed Number
- Display Shows Why Caller ID is Not Available

### ***ISDN 2 B-Channel Transfer***

The ISDN PRI 2 B-Channel Transfer feature allows the UNIVERGE SV8100 to receive a call on one B-Channel and transfer it back out on a second B-Channel (Trunk-to-Trunk transfer on the telco side). When the transferred call connects, both of the B-Channels are then released and available for either making or receiving another call. This feature provides more efficient use of B Channels on an ISDN PRI by allowing a customer to transfer calls without tying up their B Channels for the duration of the call.

## ***IVR – Appointment Reminder Server***

### **Enhancements**

With **Version 6000 (6.02 or higher)** software, IVR – Appointment Reminder Server is supported.

The IVR – Appointment Reminder Server solution is designed to provide a knowledge-based, intelligent distributed application to optimize the scheduling and reminder of appointments. The IVR – Appointment Reminder Server is an external software application that connects to the SV8100 through Standard SIP Ports. The IVR – Appointment Reminder Server can be configured for 8 – 16 ports using SV8100 licensing.

This IVR – Appointment Reminder Server enables the phone system to automatically call customers and remind them of their upcoming appointment. The Appointment Reminder automatically dials based on a configurable schedule and upon detection of a “live voice” or answering device, delivers one of your pre-recorded messages. The customer is then provided options to confirm the appointment or, if they desire, to be able to talk to a customer service representative.

The Appointment Reminder was designed for the following verticals:

- Dentist office
- Doctor’s office
- Optometrist’s office and other medical offices where scheduling is in common use.
- Any other office where appointments are made and need to be reminded.

## ***IVR – Broadcast Server***

### **Enhancements**

With **Version 6000 (6.02 or higher)** software, IVR – Broadcast Server is supported.

The IVR – Broadcast Server solution is designed to provide a knowledge based, intelligent distributed application which provides the most cost effective form of contacting your customers, employees, and prospects. The IVR – Broadcast Server is an external software application that connects to the SV8100 through Standard SIP Ports. The IVR – Broadcast Server can be configured for 8 – 16 ports using SV8100 licensing. Each IVR – Broadcast Server port requires the following license in the SV8100: LK-SYS-IP-TERMINAL-SIP1-LIC (e.g. For 16 ports of Broadcast Server (16) LK-SYS-IP-TERMINAL-SIP1-LIC's must be purchased.)

This solution provides an effective way of communicating corporate voice messages, informational messages, past due notices, reminders, and verifications. The IVR – Broadcast Message solution is designed to call numbers from a managed list and plays a pre-recorded message to the call recipient or answering machine.

Broadcast was designed for the following verticals:

- Medical Offices
- Utility Companies
- Emergency Centers
- Any other office where messages are to be Broadcast to users.

## ***K-CCIS – IP***

### **Enhancements**

With **Version 4000 (4.01 or higher)** CPU software, K-CCIS – IP has been improved to support Peer-to-Peer calls between IP Terminals residing in different offices, without using DSP resources. With software **lower than Version 4000**, two DSP resources in each office/system were consumed for calls between IP Terminals.

With **Version 5000 or higher CPU** software, the SV8100 supports FAX over IP (T.38) between SV8100 and to the SV8500 and SV8300. This feature enables the system to change to the specified CODEC for FAX when the system detects a FAX Tone during conversation. Consequently, the quality of FAX calls can be secured even if the system uses a low quality CODEC on the call. This feature requires the **Version 5000 or higher** software, the PZ-IPLB32/64/128 VoIPDB and **Version 5000 Enhancement** license.

## Enhancements (Continued)

With **Version 5000 or higher** CPU software, the CCIS Call Back feature has been added. This allows a station to set a CCIS Call Back request when a station dialed across CCIS is busy. When this feature has been set, the setting station will receive a call back as soon as the busy station becomes available. This feature requires the **Version 5000 or higher** software and **Version 5000 Enhancement** license.

When using **Version 5000 or higher** software, InMail is supported in a CCIS network for centralized voice mail.

With SV8100 **Version 5000 (5.00 or higher)** software and PZ-IPLB daughter board installed, half duplex connections are not supported. For troubleshooting purposes, a managed switch capable of port mirroring is required to capture packet data from the SV8100 IPLB Ethernet port.

The system uses the PZ-32IPLA/IPLB, PZ-64IPLA/IPLB or PZ-128IPLA/IPLB daughter board to connect multiple systems together over a Data Communication IP Network (Intranet). Key-Common Channel Interoffice Signaling (KCCIS) is used to provide telephony services between the UNIVERGE SV8100 and another UNIVERGE SV8100 or a NEAX PBX system.

### CCIS Networking via IP (Non Peer-to-Peer Connections Basis).

- IP trunk connections over CCIS Networking via IP provide telephony services between UNIVERGE SV8100 and UNIVERGE SV8100 and a NEAX IPS, IPX, SV7000, UNIVERGE SV8300 and UNIVERGE SV8500.
- The UNIVERGE SV8100 uses the NEC proprietary CCIS Peer to Peer protocol over IP to communicate from system to system.
- The PZ-(X)IPLA/IPLB is required for connections between IP terminals and IP trunks. Only one PZ-(X)IPLA/IPLB daughter board can be accommodated per system with a maximum of 128 DSP resources per system.

The PZ-(X)IPLA/IPLB daughter board is an optional interface package for converting the Real Time Transfer Protocol (RTP) packets on the IP network to PCM highway. IP telephones must be connected directly to the IP bus. When IP telephones are required to be connected to conventional PCM based digital circuit, the PZ-(X)IPLA/IPLB converts IP packet signals. The PZ-(X)IPLA/IPLB provides the digital signal processors (DSPs) for IP stations and trunks.

A DSP provides format conversion from circuit switched networks (TDM) to packet switched networks (IP). Each voice channel from the circuit switched network is compressed and packetized for transmission over the packet network. In the reverse direction, each packet is buffered for de-jittering, decompressed, and sent to the circuit switched network. Each DSP converts a single speech channel from IP to TDM and vice versa.

### ***CCIS Networking via IP (Peer-to-Peer Connections Basis)***

IP-KCCIS has been improved to support Peer-to-Peer calls between IP Terminals residing in different offices, without using DSP resources. With **Version 4000 or lower** software, two DSP resources in each office/system were consumed for calls between an IP Terminal and an IP Terminal.

### ***K-CCIS – IP with PVA***

#### **Enhancements**

**Version 3000 (3.01 or higher) CPU software and K-CCIS – IP Compact Flash with PVA License** is required.

When using **Version 5000 or higher** software, InMail is supported in a CCIS network for centralized voice mail.

The K-CCIS – IP with PVA feature provides the benefits and additional feature compatibility of Key-Common Channel Interoffice Signaling (K-CCIS) between multiple systems including NEAX PBX systems connected together over a Data Communication IP Network (Intranet). Voice Signals and common signaling from and to distant offices are converted into IP packets and transmitted through the Data IP Network. When using this feature, both Voice and Data Communication lines are integrated into one network and communication costs can be reduced.

This feature is available between UNIVERGE SV8100, Electra Elite IPK II, Electra Elite IPK and NEAX PBX systems.

The following features are provided:

- Automatic Recall\*\*\*
- Brokerage Hotline
- Call Forwarding – All Calls
- Call Forwarding – Busy/No Answer
- Call Park Retrieve
- Call Transfer – All Calls
- Calling Name Display
- Calling Number Display
- Calling Party Number (CPN) Presentation from Station
- Centralized Billing
- Centralized BLF (K-CCIS)\*\*
- Centralized Day/Night Mode Change
- Centralized E911

- Dial Access to Attendant
- Direct Inward Dialing
- Dual Hold
- Elapsed Time Display
- Flexible Numbering of Stations
- Hands-Free Answerback
- Hot Line
- Link Reconnect
- Multiple Call Forwarding – All Calls
- Multiple Call Forwarding – Busy/No Answer
- Paging Access
- Quick Transfer to Voice Mail
- Station-to-Station Calling
- Uniform Numbering Plan
- Voice Call
- Voice Mail Integration\*

\* Not supported with VM8000 InMail.

\*\* Not supported with NEAX PBX.

\*\*\* Not supported with IPK/IPK II.

## ***K-CCIS – T1***

### **Enhancements**

With **Version 5000 or higher** CPU software, the CCIS Call Back feature has been added. This allows a station to set a CCIS Call Back request when a station dialed across CCIS is busy. When this feature has been set, the setting station will receive a call back as soon as the busy station becomes available. This feature requires the **Version 5000 or higher** software and **Version 5000 Enhancement** license.

When using **Version 5000 or higher** software, InMail is supported in a CCIS network for centralized voice mail.

Key-Common Channel Interoffice Signaling (K-CCIS) allows multiple systems to be connected to provide additional feature compatibility, above what normal Tie Lines provide. The system is configured with a 24 channel T1 Connection and CD-CCTA for receiving or transmitting common signaling data from/to a distant office. The system can provide a variety of interoffice service features such as Calling Name display, Centralized Voice Mail Integration, or Link Reconnect.

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The following features are provided:

- Call Forwarding – All Calls – K-CCIS
- Call Forwarding – Busy/No Answer – K-CCIS
- Call Park Retrieve – K-CCIS
- Call Transfer – All Calls – K-CCIS
- Calling Name Display – K-CCIS
- Calling Number Display – K-CCIS
- Calling Party Number (CPN) Presentation from Station – K-CCIS
- Centralized Billing – K-CCIS
- Centralized BLF (K-CCIS)
- Centralized Day/Night Mode Change – K-CCIS
- Centralized E911 (K-CCIS)
- Dial Access to Attendant – K-CCIS
- Direct Inward Dialing – K-CCIS
- Dual Hold – K-CCIS
- Elapsed Time Display – K-CCIS
- Flexible Numbering of Stations – K-CCIS
- Hands-Free Answerback – K-CCIS
- Hot Line – K-CCIS
- IP (K-CCIS)
- IP (K-CCIS) to NEAX (Point-to-Multipoint)
- Link Reconnect – K-CCIS
- Multiple Call Forwarding – All Calls – K-CCIS
- Multiple Call Forwarding – Busy/No Answer – K-CCIS
- Paging Access – K-CCIS
- Quick Transfer to Voice Mail – K-CCIS
- Station-to-Station Calling – K-CCIS
- Uniform Numbering Plan – K-CCIS
- Voice Call – K-CCIS
- Voice Mail Integration – K-CCIS \*

\* Not supported with VM8000 InMail.

## ***Last Number Redial***

### **Enhancements**

Improved Cursor Key operation (**Version 3000 or higher** software).

Last Number Redial allows an extension user to quickly redial the last number dialed. For example, a user may quickly recall a busy or unanswered number without manually dialing the digits.

Last Number Redial saves the last 24 digits a user dials in system memory. The number can be any combination of digits 0~9, # and \*. The system remembers the digits regardless of whether the call was answered, unanswered or busy. The system normally uses the same trunk group as for the initial call. However, the extension user can preselect a specific trunk if desired.

When the Redial key is pressed, the display indicates REDIAL [#] / SYS. The user can then press # to redial the number displayed, or enter a System Speed Dialing bin number to be dialed. Pressing Redial repeatedly scrolls through the last 10 numbers dialed.

## ***Licensing***

### **Enhancements**

The NAPT feature requires a **Version 3000 or higher** system license in order to be activated.

A CD-CP00-US (CPU) can be upgrade to a **Version 3000 or higher** system software however, the NAPT feature will not function unless a **Version 3000 or higher** system license is applied.

When upgrading to **Version 3100 or higher** software, four IP Terminal Basic licenses are provided. If a system with **Version 3000 (3.01 or lower)** is upgraded to **Version 3100** software, the system gains four IP Terminal licenses as soon as it is upgraded.

With **Version 4.0 or higher PcPro** and **Version 4000 or higher** CPU software, system license information is saved to the database.

With **Version 5000 or higher** software, Temporary License is supported up to 10 days.

With **Version 5000** software, the following features have been added:

- FAX Enhancement.
- Callback to cell phone.
- Memo Display Function.
- VM8000 InMail – Automatic Access to VM by Caller ID (CID).
- ACD Skill Based Routing.

## Enhancements (Continued)

Paging, External (VRS).

CCIS Call Back.

With **Version 6000** software, the following features have been added:

VM8000 InMail

Additionally, the following also require **Version 6000 Enhancement license (0035)**:

Automatic message playback of new messages.

Find-Me Follow-Me schedule by day of week in addition to time of day.

Cascade Message Notification schedule by day of week in addition to time of day.

Save message as new after listening.

With **Version 7000** software, the following features have been added:

Recognize Extension Location When Logging In With NetLink System.

Analog Trunk Codec Filter, Auto Adjustment.

E.164 Support.

Improved Hotel Room Status PMS Codes.

Incoming Ring Tone / Call Volume Enhancement.

Operation Improvement for General Purpose Relay.

Additionally, the following also require **Version 7000 Enhancement license(0036)**.

Expand ARS Table For NetLink.

Intercom SMDR.

Ecology feature.

Security feature.

Improvement for email notification. **Maintenance License (0043)** required.

DID Enhancement with Day of Week.

With **Version 8000** software, the following features have been added:

Warning tone for IP-DECT (Out of range/Power Off)

Additionally, the following also require **IP Terminal SIP Ext license (5111)**.

VM8000 InMail Enhancement

Answer Table

Dial Action Table

Message Notification Option

Softkey Disable feature

Virtual Extension Enhancement

Additionally, the following also require **Version 8000 Enhancement license (0037)**.

Do Not Disturb (DND) Enhancement

SMDR – Buffer Expansion with MEMDB

ACD – Caller ID based routing

## Enhancements (Continued)

- WebPro Improvement
  - USB backup
  - ISDN Layer Status Indication
- Indicate System/Station condition

Licenses are used to activate certain features and applications for the UNIVERGE SV8100. Refer to the UNIVERGE SV8100 Features and Specifications Manual for more details.

### *Temporary License*

With **Version 5000 or higher** software, Temporary License activates all valid feature licenses and all port maximum licenses. Temporary License is programmed using Telephone programming only. Web/PC pro can be used when verifying the settings.

The Temporary License can be set up to a maximum number of 10 days.

### *Line Preference*

Line Preference determines how a multiline terminal user places and answers calls. There are two types of Line Preference: Incoming Line Preference and Outgoing Line Preference.

#### **Incoming Line Preference**

Incoming Line Preference establishes how a multiline terminal user answers calls. When a call rings the multiline terminal, lifting the handset answers either the ringing call (for Ringing Line Preference) or seizes an idle line (for Idle Line Preference). The idle line can provide either Intercom or trunk dial tone (see Outgoing Line Preference below). Ringing Line Preference helps users whose primary function is to answer calls (such as a receptionist). Idle Line Preference is an aid to users whose primary function is to place calls (such as a telemarketer).

#### **Outgoing Line Preference**

Outgoing Line Preference sets how a multiline terminal user places calls. If a multiline terminal has Outgoing Intercom Line Preference, the user hears Intercom dial tone when the handset is lifted. If a multiline terminal has Outgoing Trunk Line Preference, the user hears trunk dial tone when the handset is lifted. Outgoing Line Preference also determines what happens at extensions with Idle Line Preference. The user hears either trunk (dial 9) or Intercom dial tone.

### **Auto-Answer of Non-Ringing Lines**

With Auto-Answer of Non-Ringing Lines, an extension user can automatically answer trunk calls that ring other extensions (not their own). This helps a user that has to answer calls for co-workers that are away from their desks. When the user lifts the handset, they automatically answer the ringing calls based on Trunk Group Routing programming. The extension user ringing calls, however, always have priority over calls ringing co-worker extensions.

### **Long Conversation Cutoff**

For incoming and outgoing central office calls, each trunk can be programmed to disconnect after a defined time. The time begins when the trunk is seized and disconnects the call after the time expires.

When used with the Warning Tone for Long Conversation feature, the system can provide a warning tone on outgoing trunks calls before the call is disconnected.

### **Loop Keys**

#### **Enhancements**

This feature added with <b>Version 4000</b> .
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Loop Keys are uniquely programmed function keys that simplify placing and answering trunk calls. There are three types of Loop Keys: Incoming Only, Outgoing Only and Both Ways.

- Incoming Only loop keys – answering trunk calls
- Outgoing Only loop keys – placing trunk calls
- Both Ways loop keys – combine the functions of both Incoming Only and Outgoing Only loop keys

### **Maintenance**

#### **Enhancements**

With <b>Version 7000 or higher</b> software, the Side Tone Auto Setup feature has been added.
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The UNIVERGE SV8100 system has several utilities to assist in troubleshooting and diagnosing problems both during and after installation.

PCPro can remotely access the UNIVERGE SV8100 for maintenance and diagnostics. Within PCPro, the debug terminal can be accessed to monitor the systems activity and logging. PCPro also has built-in reports that can display alarm data. If need be, an option in PCPro allows the technician to reset or initialize the system remotely. If the technician determines the problem is isolated to a specific slot, PCPro can reset only the slot in question.

The SV8100 Maintenance manual contains a number of flow charts to help technicians diagnose and resolve problems that may arise during and after the installation of the UNIVERGE SV8100 system.

### **Side Tone Auto Setup**

Per each analog trunk (or all analog trunks) the most suitable Codec Filter setting for Program 81-07 and Program 81-17 can be automatically adjusted using Programs 90-68-01 and 90-68-02.

### ***Meet Me Conference***

With Meet Me Conference, an extension user can set up a Conference with their current call and up to 31 other internal or external parties. Each party joins the Conference by dialing a Meet Me Conference code. Meet Me Conference lets extension users have a telephone meeting – without leaving the office.

The CD-CP00-US provides two blocks of 32 conference circuits, allowing each block to have any number of internal or external parties conferenced up to the block limit of 32.

### ***Meet Me Paging***

Meet Me Paging allows an extension user to Page a co-worker and privately meet with them on a Page zone. The Paging zone is busy to other users while the meeting takes place. While the co-workers meet on the zone, no one else can hear the conversation, join in, or make an announcement using that zone. Meet Me Paging is a good way to talk to a co-worker when their location is unknown. If the co-worker can hear the Page, they can join in the conversation.

### ***Meet Me Paging Transfer***

If a user wants to Transfer a call to a co-worker but does not know where the co-worker is, they can use Meet Me Paging Transfer. With Meet Me Paging Transfer, the user can Page the co-worker and have the call automatically Transfer when the co-worker answers the Page. Since Meet Me Paging Transfer works with both Internal and External Paging, a call can be quickly extended to a co-worker anywhere in the facility.

## ***Memo Dial***

While on an outside call, Memo Dial lets a multiline terminal user store an important number for easy redialing later on. The telephone can be like a notepad. For example, a user could dial Directory Assistance and ask for a client telephone number. When Directory Assistance plays back the requested number, the caller can use Memo Dial to jot the number down in the telephone memory. They can quickly call the Memo Dial number after hanging up.

When a user enters a Memo Dial number, the dialed digits do not output over the trunk. Dialing Memo Dial digits does not interfere with a call in progress.

## ***Message Waiting***

An extension user can leave a Message Waiting indication at a busy or unanswered extension requesting a return call. The indication is a flashing MW lamp at the called extension and a steadily lit MW lamp on the calling extension. Answering the Message Waiting automatically calls the extension that left the indication. Message Waiting ensures that a user does not have to recall an unanswered extension. It also ensures that a user does not miss calls when their extension is busy or unattended.

Additionally, Message Waiting lets extension users:

- View and selectively answer messages left at their extension (display multiline terminal only)
- Cancel all messages left at their extension
- Cancel messages they left at other extensions

An extension user can leave Messages Waiting at any number of extensions. Also, any number of extensions can leave a Message Waiting at the same extension. A periodic VRS announcement may remind users that they have Messages Waiting.

## ***MH240 Wireless IP Telephone***

### **Enhancements**

This feature added with **Version 2500**.

The same user name and password can be assigned to IP Multiline Station, MH240 and Desktop ports when automatic or manual registration is used (**Version 3000 or higher** software).

With **Version 4000 or higher software**, a Flash (Recall) key can be placed on a line key.

With **Version 4000 or higher software**, the door strike relay can be activated from the MH240 or Cordless DECT terminal by a Flash Key assigned to a line key in Program 15-07 (751: 62).

The MH240 Wireless IP Telephone is a wireless IP multiline terminal. The WL1700 Controller is the equipment that controls additional WL1500 Access Points (APs) and has its own internal AP. The WL1700 creates an IEEE802.11-standard wireless network. The MH240 complies with IEEE 802.11b/g specifications and uses a Wi-Fi network consisting of a WL1700 Controller and WL1500 APs distributed throughout an enterprise environment.

The MH240 is equipped with Conference, Directory, Disconnect, Enter (select), History, Hold, Menu, Talk, Transfer, Volume Up, and Volume Down keys as well as eight programmable function keys.

 *The MH240 Wireless IP Telephone supports some 3rd Party access points. For a list of the supported 3rd Party access points, please visit <http://www.necunifiedsolutions.com>.*

### ***Microphone Cutoff***

Microphone Cutoff lets a multiline terminal user turn off their telephone handsfree or handset microphone anytime. When activated, Microphone Mute prevents the caller from hearing conversations in the user's work area. The user may turn off the microphone while their telephone is idle, busy, or ringing. The microphone stays off until the user turns it back on.

### ***Mobile Extension***

#### **Enhancements**

With **Version 3000 or higher** system software, the Desktop terminal and the Mobile Extension can both ring. If neither extension answers, the call is forwarded to Voice Mail.

With **Version 3000 or higher** system software, the Calling Party Number (CPN) can be delivered to the Mobile Extension user.

 *Must be coordinated with local Telco.*

With **Version 3000 or higher** system software, the Mobile Extension feature supports analog trunks.

With **Version 5000** software, callback to cell phone has been added.

A mobile extension is an external telephone (preferably a mobile phone) linked to the UNIVERGE SV8100 via a Proxy Port to operate as an internal single line telephone extension. The extension sends DTMF signals to the system allowing access to the system features. A registered Mobile Extension uses one analog port (ports are reserved in groups of two), however, **no** PCB support (analog or digital) is required. The Mobile Extension port must be an unequipped extension port on the SV8100 system – no physical telephone is required on the SV8100 system.

### **Callback to Cell Phone**

Callback to Cell Phone allows the user to make an incoming call to a system then hang up before the system answers (like a one ring call), then the system calls back to the calling Cell Phone using a pre-programmed number. The advantage is to reduce Cell Phone charges for calls on a mobile extension system.

After receiving a call back on a Cell Phone, the user can call another extension or make an outgoing call via the system using the mobile extension function.

### **Multiple Trunk Types**

The UNIVERGE SV8100 supports many different Trunks in the system (DID, E&M Tie Lines, Loop Start, Ground Start, ISDN BRI, ISDN PRI, and T-1 trunks). The system supports up to 200 trunks in the expanded port package, and a maximum of 56 trunks in the basic port package.

### **Music on Hold**

Music on Hold (MOH) sends music to calls on Hold and parked calls. The music lets the caller know that his call is waiting, not forgotten. Without Music on Hold, the system provides silence to these types of calls. The Music on Hold source can be internal (tone) or from an external customer-provided music source (e.g., tape deck, or receiver, etc.). The customer-provided source can connect to a PGD(2)-U10 ADP analog port or to a connector on the CD-CP00-US.

### **Option Available for Using System Tone**

The Music on Hold feature is enhanced to allow callers to hear a system tone instead of playing the internal or external music.

 *In accordance with U.S. copyright law, a license may be required from the American Society of Composers, Authors and Publishers (ASCAP) or other similar organizations, if radio, television broadcasts or music other than material not in the public domain are transmitted through the Music on Hold feature of telecommunications systems. NEC Corporation of America and NEC Infrontia hereby disclaim any liability arising out of the failure to obtain such a license.*

### **Name Storing**

Extensions and trunks can have names instead of circuit numbers. These names show on a multiline terminal display when the user places or answers calls. Extension and trunk names make it easier to identify callers. The user does not have to refer to a directory when processing calls. A name can have up to 12 digits, consisting of alphanumeric characters, punctuation marks and spaces.

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### **Additional Characters Available**

When using the Name Storing feature, the system now provides additional characters which can be used. These characters are available with any option that allows Name Storing – Speed Dial – System/Group/Station, One-Touch Keys, Extension Name, Trunk Naming.

### ***Night Service***

Night Service lets system users activate one of the Night Service modes. Night Service redirects calls to their night mode destination, as determined by Assigned and Universal Night Answer programming. A user typically activates Night Service after normal working hours, when most employees are unavailable to answer calls. The system also provides external contacts to assign one of eight Night Service modes.

### ***Off-Hook Signaling***

Off-Hook Signaling alerts a multiline terminal user that an incoming outside call is ringing to the station during another call. Off-Hook Signaling helps important callers get through, without waiting in line for the called extension to become free. The system provides the following Off-Hook Signaling options:

- Called Extension Block
- Automatic Signaling
- Manual Signaling
- Selectable Off-Hook Signaling Mode
- Off-Hook Ringing
- DID Call Waiting
- Block Manual Off-Hook Signals
- Block Camp On

### ***One-Touch Calling***

One-Touch Calling gives a multiline terminal user one-button access to extensions, trunks, speed dial bins and selected system features. This saves time when accessing co-workers, clients, and features they use most often. Instead of dialing a series of codes, the user need only press the One-Touch key. An extension user can have One-Touch keys programmed for:

- Direct Station Selection** – one-button access to extensions
- Station Speed Dial** – one-button access to stored numbers (up to 24 digits)
- Speed Dial – System/Group/Station** – one-button access to stored speed dialing numbers
- Trunk Calling** – one-button access to trunks or trunk groups
- Service Codes** – one-button access to specific Service Codes

An extension user can chain dial with One-Touch Keys. For example, a user can store the number for a company Automated Attendant in key 1 and employee extension numbers in keys 2~5. The user can press key 1 to call the company, then one of keys 2~5 to ring the employee to whom they want to speak.

An extension user or system administrator can optionally store a Flash command under a One-Touch key. This is helpful for One-Touch Keys used as Station Speed Dial bins. The stored Flash may be helpful to access features of the connected Telco, PBX or Centrex.

### ***Operator***

When an extension user dials 0, calls are routed to a main system Operator. The Operator can answer and route outside calls or locate employees using the Page feature.

A maximum of eight Operators is available.

### ***(OPX) Off-Premise Extension***

Off-Premise Extension allows a single line telephone, located remotely from the main installation site, to access the system features with the same abilities as an on-premise single line telephone.

### ***Paging, External***

With External Paging, a user can broadcast announcements over paging equipment connected to external Paging zones. When a user pages one of these external zones, the system broadcasts the announcement over the speakers. Like Internal Paging, External Paging allows a user to locate another employee or make an announcement without calling each extension individually.

The UNIVERGE SV8100 system allows up to eight External Paging zones, or a common zone output provided by the CPU (Speaker 9). All other speakers (1~8) require a port on a PGD(2)-U10 ADP, with a maximum of two external paging circuits per module. You must have four PGD(2)-U10 ADPs to get the eight external zones. Each external zone has an associated relay contact. When a user pages to a zone, the corresponding contact activates (closes). This provides for Paging amplifier control.

### ***Combined Paging***

Use Combined Paging when you want to simultaneously Page into an internal and corresponding external zone. For example, you can Page your company warehouse and outside loading dock at the same time. Combined Paging is available for zones 1~8 and All Call. You can program a Function Key as a Combined Paging key. Using the External Page Function Key, when an All Call External Page Function Key is programmed, it includes both the external zones and the assigned internal zone(s). If the internal page zone is busy or there are no extensions in a page group, the announcement is made on the external zones only.

## ***Paging, External (VRS)***

### **Enhancements**

This feature added with **Version 5000**.

Paging, External (VRS) enables the use of prerecorded VRS messages for External Paging. The advantage of this feature is saving time for the users who regularly use External Paging with the same announcements.

## ***Paging, Internal***

Internal Paging lets extension users broadcast announcements to other multiline terminal users. When a user makes a Zone Paging announcement, the announcement broadcasts to all idle extensions in the zone dialed. With All Call Paging, the announcement broadcasts to all idle extensions programmed to receive All Call Paging. An extension can be a member of only one Internal Paging Zone. Like External Paging, Internal Paging allows a user to locate another employee or make an announcement without calling each extension individually.

### **Combined Paging**

Use Combined Paging when you want to simultaneously Page into an internal and corresponding external zone. For example, you can Page your company warehouse and outside loading dock at the same time. Combined Paging is available for Paging zones 1~8 and All Call. Optionally, you can change the Combined Paging assignments. For example, you can associate External Paging Zone 1 with Internal Paging Zone 4. You can program a Function Key as a Combined Paging key. When an All Call External Page Function Key is programmed, it includes both the external zones and the assigned internal zone(s). If the internal page zone is busy or there are no extensions in a page group, the announcement is made on the external zones only.

## ***Park***

### **Enhancements**

Calls can be parked from a virtual extension (**Version 3000 or higher** software).

With **Version 5000 or higher** software, calls can be parked at a co-worker's extension.

Park places a call in a wait state (called a Park Orbit) so that an extension user may pick it up. There are two types of Park: System and Personal. System Park allows a user to have a call wait in System Orbit. Personal Park allows a user to Park a call at their extension so a co-worker can pick it up. After parking a call in orbit, a user can Page the person receiving the call and hang up. The paged party can dial a code or press a programmed Park key to pick up the call. With Park, it is not necessary to locate a person to handle their calls. A call parked for too long recalls the extension that initially parked it, however the call remains in the park orbit until it is answered. There are 64 Park Orbits (1~64) available for use.

### **Extended Park**

An extension Class of Service determines whether it uses the normal Park Orbit Recall time or the Extended Park Orbit Recall time. The times are set in system programming. When an extension with Extended Park Recall Class of Service option parks a call, it recalls after the Extended Park Orbit Recall time. When an extension with the Normal Park Orbit Recall Class of Service option parks a call, it recalls after the normal Park Orbit Recall time, however the call remains in the park orbit until it is answered.

### **Programmable Function Key and Service Code Available for Personal Park**

The Personal Park feature is enhanced by using a Programmable Function Key or service code (3-digit or 1-digit) to place a call in Personal Park. This option is available for multiline terminals, single line sets, and UNIVERGE SV8100 Wireless telephones and can be used for analog or ISDN trunks.

#### ***Personal Park at a Co-Worker's Extension***

The Personal Park feature allows an extension user to place an outside call, which is on hold, on Personal Park at a co-worker's extension after placing an intercom call. This feature is available for keysets, SLTs, IP terminals and IP DECT terminals.

### ***PBX Compatibility***

You can connect your telephone system trunks to Centrex/PBX lines, rather than to Telco trunk circuits. This makes the trunk inputs into the system 500/2500 type compatible Centrex/PBX extensions, rather than Telco circuits. PBX Compatibility lets the system be a node (i.e., satellite) in a larger private telephone network. To place outside calls when the system is behind a PBX, telephone system users must first dial the PBX trunk access code (usually 9).

The system provides the following PBX Compatibility options:

#### PBX Trunk Access Code Screening

The system can monitor the numbers users dial and screen for PBX trunk access codes. The system can screen for up to four groups of trunk access codes. The codes can have one or two digits, consisting of the digits 0~9, # and \*. (You can use Line Key 1 as a wild card entry.)

- ❑ **PBX Trunk Toll Restriction**  
The system can provide the Toll Restriction for the PBX trunk, or restriction can be handled solely by the connected PBX. If the telephone system provides the restriction, it restricts the digits dialed after the PBX access code.
- ❑ **PBX Call Restriction**  
When the telephone system does the Toll Restriction, it can further restrict users from dialing PBX extensions. In this case, the only valid numbers are those dialed after the PBX trunk access code. The only PBX facilities telephone system users can access are the PBX outside trunks.
- ❑ **Automatic Pause**  
The system automatically pauses when it sees a PBX trunk access code during manual dialing, Speed Dialing, Last Number Redial, Repeat Redial and Save Number Dialed. This gives the connected PBX time to set up its trunk circuits.

## ***PC Programming***

### **Enhancements**

With **Version 4.00** software, PCPro can migrate a UX5000 database to a SV8100 database and set the database to UX5000 defaults. Also, PCPro can download the DIM logs from the system for engineering troubleshooting and save the license information for the system.

With **Version 4000 or higher**, WebPro is enhanced to include the Maintenance Debug option. This allows the WebPro user to enable and disable debug traces for troubleshooting.

With SV8100 **Version 5000 (5.00 or higher)** software and PZ-IPLB daughter board installed, half duplex connections are not supported. For troubleshooting purposes, a managed switch capable of port mirroring is required to capture packet data from the SV8100 IPLB Ethernet port.

With **Version 6000 or higher** software, Outbound IP Connection is supported.

With **Version 8000 or higher** software, the following are provided:

- ❑ PCPro and WebPro have been enhanced allowing T1/ISDN layer 1 status, System Alarms and SRAM information to be viewed. The SRAM displays Day/Night Mode information, Trunk information (Trunk to Trunk Transfer Set/Not Set, Trunk disabled), Read List, Department Group information (DND, Transfer settings) and Extension information (Forwarding settings, Alarm settings, DND, BGM and more). This feature requires **Version 8000 Enhanced (0037)** license and **Maintenance (0043)** license.

USB backup via WebPro is available.

The UNIVERGE SV8100 has three different methods for programming. The first is via the handset, the second is by PCPro and third by WebPro.

PCPro is a Microsoft Windows based application. It allows the technician/system administrator to download a database from the system, make changes, and then upload.

The WebPro application is a web server running on the CD-CP00-US blade of the SV8100 system. No special installation program is required. When programming the system, use Internet Explorer other web browsers are not currently supported.

### ***Outbound IP Connection***

Outbound IP Connection for PC Programming allows the system to make a PC Pro Connection via an outgoing call over IP, to a pre-programmed IP Address, upon receipt of an incoming CO call matching a pre-programmed CLI. When the target number of DID incoming call matches with the service code of 'Outbound IP Connection' the SV8100 compares the received CLI with the registered CLI (Program 90-69-03). When the received caller ID and registered caller ID match, the SV8100 sends a TCP establishment request to a waiting PCPro application. When the caller ID does not match, a busy tone is sent to the caller. Alternatively, via dialing service code from a Multiline Terminal, an outgoing IP connection can be made to a waiting PCPro terminal with a pre-programmed IP Address. This allows for a pre-authorized connection for programming purposes without using CO Lines and potentially reducing the cost of calls for maintenance. A fixed, encrypted, user ID and password are used to verify the connection.

### ***Power Failure Transfer***

Power Failure Transfer ensures that a customer has access to the Central Office network during a power outage. The CO/PBX tip and ring are automatically transferred to a DTH or ITH multiline terminal with a PSA-L adapter installed.

### ***Prime Line Selection***

Prime Line Selection allows a multiline terminal user to place or answer a call over a specific trunk by lifting the handset. The user does not have to press keys or dial codes. This simplifies handling calls on a frequently used trunk.

Prime Line Selection has the following two modes of operation:

**Outgoing Prime Line Preference**

Lifting the handset seizes the Prime Line. Outgoing Prime Line Preference would help a telemarketer who always needs a free line to call prospective clients. The telemarketer lifts the handset and the Prime Line is always available. (Outgoing Prime Line Preference may be affected by Incoming Prime Line Preference).

Incoming Prime Line Preference

When the Prime Line rings the extension, lifting the handset answers the call. Incoming Prime Line Preference could benefit the Service Department dispatcher who must quickly answer customer service calls and then dispatch repair technicians. When a customer calls in, the dispatcher lifts the handset to get their call. (Incoming Prime Line Preference can optionally seize an idle line appearance.)

### ***Private Line***

A Private Line is a trunk reserved for a multiline terminal for placing and answering calls. A user with a Private Line always knows when important calls are for them. Additionally, the user has their own trunk for placing calls that is not available to others in the system.

### ***Programmable Function Keys***

Each multiline terminal has Programmable Function Keys that simplify placing calls, answering calls, and using certain features. You can customize the function of a multiline terminal programmable key from each multiline terminal. Depending on your telephone style, you can have up to 48 Programmable Function Keys.

### ***Programming from a Multiline Terminal***

System Programming can be performed from any display multiline terminal. Most programming changes become effective immediately. Other programming changes become effective after the data is backed up from temporary memory to permanent memory.

### ***Pulse to Tone Conversion***

An extension user can use Pulse to Tone Conversion on trunk calls. Pulse to Tone Conversion lets a user change their extension dialing mode while placing a call. For systems in a Dial Pulse area, this permits users to access dial-up Other Common Carriers (OCCs) such as MCI from their DP area. The user can, for example:

- Place a call to an OCC over a DP trunk.
- Depending on programming:  
Manually implement Pulse to Tone Conversion.

- OR -

Wait 10 seconds.

- Dial the OCC security code and desired number. The system dials the DTMF digits after the conversion.

## ***Redial Function***

### **Enhancements**

With **Version 5000 (V5.00) or higher** software, names and numbers stored as a common or group speed dial can be displayed for redialed numbers. The **Version 5000 Enhancement** license is also required.

Users can press Redial to cycle through the last 10 outside numbers dialed. Pressing # redials the number displayed. Users can also press Redial and dial a System Speed Dial bin number to access System Speed Dial.

## ***Remote (System) Upgrade***

### **Enhancements**

To upgrade main system software from a remote requires the installation of USB. With **Version 6000 or higher** system software and using an MEMDB, installation of USB on the system is not required for remotely upgrading the system.

With PC Programming, the UNIVERGE SV8100 can be remotely upgraded to a newer version of main system software. When a new version of main system software is released, a firmware package file is provided. Using the PCPro application, a technician can remotely upgrade the firmware on the CD-CP00-US. The upgrade can be applied immediately, or at a scheduled date and time. Remote Upgrade is supported only via a LAN connection. A modem or serial connection is NOT supported for Remote Upgrade.

## ***Repeat Redial***

If a multiline terminal user places a trunk call that is busy or unanswered, they can have Repeat Redial try it again later on. The user does not continually have to try the number again – hoping it goes through. Repeat Redial automatically retries it until the called party answers (the number of retries is based on system programming).

## ***Resident System Program***

When power is applied to the system, the hardware configuration is scanned and Resident System Program default values are assigned including terminal types [e.g., PGD(2)-U10 ADP or DSS Console]. This enables immediate operation, even before the system is programmed to accommodate the individual site requirements.

## ***Reverse Voice Over***

While on a call, Reverse Voice Over lets a busy multiline terminal user make a private Intercom call to an idle co-worker. The idle co-worker can be at a multiline terminal or single line telephone. The busy user presses a programmed Reverse Voice Over key to make a private call to a specified co-worker. The initial caller cannot hear the Reverse Voice Over conversation. The private Intercom call continues until the Reverse Voice Over caller presses the key again. The initial call can be an outside call or an Intercom call.

Reverse Voice Over could help a salesman, for example, when placing a call to an important client. The salesman can talk with the client and give special instructions to a secretary – without interrupting the initial call.

When the multiline terminal is idle, the Reverse Voice Over key functions the same as a Hotline or One-Touch key. A multiline terminal Reverse Voice Over key also shows at a glance the status of the associated extension:

<b>When the key is. . .</b>	<b>The associated extension is. . .</b>
Off	Idle
On	Busy or call ringing
Fast Flash	In Do Not Disturb

 *When the destination extension is idle, the Reverse Voice Over provides one button calling to the associated extension (like a Hotline key). An extension user cannot, however, use the Reverse Voice Over key to Transfer calls by one-touch operation.*

## ***Ring Groups***

Ring Groups determine how trunks ring extensions. Generally, trunks ring extensions only if Ring Group programming allows. For example, to make a trunk ring an extension:

- Assign the trunk and the extension to the same Ring Group.
- In the extension Ring Group programming, assign ringing for the trunk.

Any number of extensions and trunks can be in a specific group.

The system allows:

- Ring Groups = 1~100
- In-Skin Voice Mail = 102
- Centralized Voice Mail = 103

If an extension has a line key for the trunk, Ring Group calls ring the line key. If the extension does not have a line key, the trunk rings the line appearance key. If an extension has a key for a trunk that is not in its ring group, the trunk follows Access Map programming.

### ***Ringdown Extension, Internal/External***

With a Ringdown Extension, a user can call another extension, outside number, or Speed Dialing number by lifting the handset. The call automatically goes through – there is no need for the user to dial digits or press additional keys. Ringdown Extensions are frequently used for lobby telephones, where the caller lifts the handset to get the information desk or off-site Reservation Desk.

After the Ringdown Extension user lifts the handset, ringdown occurs after a programmable interval. Depending on the setting of this interval, the extension user may be able to place other calls before the ringdown goes through.

### ***Room Monitor***

Room Monitor lets an extension user listen to the sounds in a co-worker's area. For example, the receptionist could listen for sounds in the warehouse when it is left unattended. To use Room Monitor, the initiating extension **and** the receiving extension must activate it.

When using multiline terminals for monitoring, an extension user can only monitor one extension at a time. Many extensions can monitor the same extension at the same time. However, only one single line telephone can monitor another single line telephone at a time.

#### **Room Monitor for Single Lines**

This option enables you to monitor the room status through your single line telephones. Between multiline terminals, the monitored room status is picked up by the telephone microphone and the activity is heard through the speaker of the monitoring multiline terminal. Between single line telephones, at the station to be monitored, a user goes off-hook and dials a service code and the extension number of the monitoring telephone. At the monitoring station, a user goes off-hook and dials a service code and the extension number of the monitored telephone.

The activity of the area where the monitored telephone is placed can then be heard at the monitoring telephone. This service is available until the handset of the monitored telephone is placed on-hook.



*The use of monitoring, recording, or listening devices to eavesdrop, monitor, retrieve, or record telephone conversation or other sound activities, whether or not contemporaneous with transmission, may be illegal in certain circumstances under federal or state laws. Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some federal and state laws require some form of notification to all parties to a telephone conversation, such as using a beep tone or other notification methods or requiring the consent of all parties to the telephone conversation, prior to monitoring or recording the telephone conversation. Some of these laws incorporate strict penalties.*

### ***Save Number Dialed***

Save Number Dialed allows an extension user to save their last outside number dialed and easily redial it later on. For example, an extension user can recall a busy or unanswered number without manually dialing the digits. The system retains the saved number until the user stores a new one in its place or clears the stored one.

Save Number Dialed saves in system memory a dialed number up to 24 digits. The number can be any combination of digits 0~9, # and \*. The system remembers the digits regardless of whether the call was answered, unanswered or busy. The system normally uses the same trunk group as for the initial call. However, the extension user can preselect a specific trunk if desired.

### ***Secondary Incoming Extension***

#### **Enhancements**

With **Version 3000 or higher** system software, the appropriate line key page automatically displays for incoming calls on the DTL-8LD-1 (DESI-Less) and ITL-320C-1 terminals.

Secondary Incoming Extensions (SIEs) are incoming appearance keys of actual stations assigned in the system. SIE keys are assigned to programmable function keys and can appear on an individual station, or multiple stations. Incoming internal calls, ringing DIL/Tie/DID/CO Transfer calls, or call forwarded calls can be picked up from an SIE.

### ***Secretary Call (Buzzer)***

Secretary Call lets two co-workers alert each other without disturbing their work. To have Secretary Call, both co-workers must have multiline terminals with Secretary Call buzzer keys. When a user presses their buzzer key, the system alerts the called extension by sending a splash tone and flashing the called extension buzzer key. The called user can respond by placing an Intercom call to the calling party.

The called extension buzzer key continues to flash and the splash tone is heard until either user cancels the Secretary Call. A secretary could use this feature, for example, to get a message through to the boss in an important meeting. After being alerted, the boss could call the secretary when it is most convenient.

An extension can have Secretary Call keys for any number of extensions, limited only by the available number of programmable keys.

### ***Secretary Call Pickup***

Secretary Call Pickup lets a multiline terminal user easily reroute calls intended for a co-worker to themselves. By pressing a Secretary Call Pickup key, the user can have all calls to a co-worker telephone ring or voice-announce theirs instead. Secretary Call Pickup is a simplified type of Call Forward with Follow Me for employees that work closely together. This feature is helpful to customer service representatives that must frequently cover other clients. When a representative leaves their desk, an associate could press the Secretary Call Pickup key to intercept all their calls.

An extension can have Secretary Call Pickup keys for any number of extensions, limited only by the available number of programmable keys.

## ***Security***

### **Enhancements**

Security feature added with <b>Version 7000 or higher</b> software and requires <b>Version 7000 Enhancement License (0036)</b> .
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This system supports the following built-in simple security features:

Warning Message (Watch Mode)

Automatically and periodically send the Watching (VRS) Message from built-In Speaker on Multiline Terminal or external paging adapter during nightmode.

Enable to accommodate with 3rd Party PIR (Passive Infrared Sensor) or Emergency Button to provide security feature such as Auto-Emergency Call with Warning (VRS) Message sending.

Remote Inspection

Automatically ring the terminal with pre-programmed schedule in order to check whether users answer or not. If not answered, Emergency Call is placed to predefined destination automatically.

### ***Selectable Display Messaging***

An extension user can select a programmed Selectable Display Message for their extension. Display multiline terminal callers see the selected message when they call the user extension. Selectable Display Messaging provides personalized messaging. For example, an extension user could select the message GONE FOR THE DAY. Any display multiline terminal user calling the extension may hear a DND signal and then see the message. See table below for a list of the standard messages.

An extension user can add digits for date, time or telephone number after messages 1~8 and 10 (up to 24 characters). For example, an extension user could select the message ON VACATION UNTIL and then enter the date. Callers see the original message followed by the appended date. They could then tell when the user was coming back from vacation. The system allows all telephones to use the Selectable Display Messaging feature at the same time.

All telephones can use Selectable Display Messaging at one time.

The default messages are:

**Table 2-2 Selectable Display Messaging Defaults**

<b>No.</b>	<b>Message</b>	<b>Change “#” to...</b>
1	IN MEETING UNTIL ##:##	Time (when meeting done)
2	MEETING ROOM - #####	Room Name or extension
3	COME BACK ##:##	Time (when returning)
4	PLEASE CALL #####	11 digits (telephone number)
5	BUSY CALL AFTER ##:##	Time (when returning)
6	OUT FOR LUNCH BACK ##:##	Time (when returning)
7	BUSINESS TRIP BACK ##/##	Date (when returning)
8	BUSINESS TRIP #####	10 digits (where reached)
9	GONE FOR THE DAY	
10	ON VACATION UNTIL ##/##	Date (when returning)
11~20	MESSAGE 11~20	

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## **Selectable Ring Tones**

### **Enhancements**

With **Version 8000 or higher** software, the number of Tone Patterns has increased from four to eight.

An extension user can change the way trunks or internal calls ring their telephone. Selectable Ring Tones allow an extension user to set up unique ringing for their calls. This is important in a crowded work area where several telephones are close together. Because their telephone has a characteristic ring, the user always can tell when their telephone is ringing.

### **Serial Call**

Serial Call transfers a call so it automatically returns to the transferring extension. Serial Calling saves transferring steps between users. For example, a Customer Service Representative (CSR) has a client on the telephone who needs technical advice. The CSR wants to send the call to Technical Service, but needs to advise the client of certain costs when Technical Service is done. Rather than transferring the call back and forth, the CSR can use Serial Call to Technical Service and announce, "I have Ted on the telephone. I need to talk to him again. Just hang up when you're done, and I'll get him back."

### **Single Line Telephones, Analog 500/2500 Sets**

The system is compatible with 500 type (Dial Pulse) and 2500 type (DTMF) analog single line telephones (SLTs). You can install single line telephones as On-Premise or Off-Premise extensions. Single line telephone users can dial codes to access many of the features available to multiline terminal users. With single line telephones, you can have your system simulate PBX operation.

There are 320 single line telephones available (this number may be restricted due to system power requirements).

When installing single line telephones you must have:

- A port on an LCA blade for each single line telephone installed.
- If you have 2500 sets, at least one block reserved on the CD-CP00-US for analog extension DTMF reception.

### **DTMF Dial Out Timer Added**

A program is added for DTMF dialing, Program 20-03-07 : System Options for Single Line Telephones – Trunk Call Dial Forced Sending Start Time (Forced Dial). When Program 20-03-03 : System Options for Single Line Telephones – SLT DTMF Dial to Trunk Lines is set to 0 (receive all digits before sending), the system follows the timers in Program 20-03-04 and Program 20-03-07.

The timer in Program 20-03-04 System Options for Single Line Telephones – Dial Sending Start Time for SLT or ARS resets when the user dials another digit.

The timer in Program 20-03-07 does not reset when a digit is dialed. The user must finish dialing all the digits before this timer expires (entries: 0~64800 seconds, default: 0).

### ***SLT Adapter***

The SLT (Single Line Telephone) Adapter allows a port of a CD-8DLCA, PZ-8DLCB, CD-16DLCA or CD-LTA to support a single line telephone. A single line telephone can be connected to the DLC port using the SLT Adapter and 2-wire cable. 64 SLTII(1)-U ADP Single Line Telephone Adapters can be installed in the UNIVERGE SV8100 system.

### ***SMB8000 Communications Analyst***

#### **Enhancements**

With **Version 3.1 (build # 5278)**, SMB8000 Communications Analyst is supported on Windows 7 32-bit platforms.

SMB8000 Communications Analyst is an easy to use, graphically oriented software package that allows you to monitor and analyze telephone calls, understand telephone usage, and cut costs. Incoming and outgoing calls are tracked accurately along with the date and time of the call. When the incoming telephone call must be tracked with name and/or telephone numbers, SMB8000 Communications Analyst requires Caller ID service from the local telephone company.

SMB8000 Communications Analyst increases productivity, facilitates billing, and helps detect toll fraud and telephone abuse. It also has powerful tabular (text) and graphic report generating ability. Reports include extension/line summaries, date, time, and department summaries, longest/most expensive calls, and most frequently called numbers. These reports can be used to analyze your telephone as a critical business communication tool, improve its business effectiveness, and reduce your telephone costs. A report can be generated showing calling patterns by volume or duration on a color-coded United States map. This can help a Customer Support, Sales Order, or Telemarketing business become more focused, more productive, and more cost effective.

#### **SMB8000 Communications Analyst keeps track of:**

- The date and time calls were made or received
- The duration of each call
- Which extension made or received the call
- The CID/ANI, DNIS of the caller

- The trunk or line numbers that handled the call
- Account codes and authorization codes used for the call
- CCIS calls are now logged with extension number and trunks used for CCIS. These trunks can be placed in a different line group to track usage across a CCIS link using the Traffic Analysis add-on feature.

### ***SMB8000 E911 Security Notification***

The SMB8000 E911 Security Notification (ESN) Application Suite, an easy-to-use yet powerful E911 notification solution. The E911 Security Notification solution offers robust features designed specifically for business users who want to make use of the Enhanced 911 call notification during emergencies.

 *This application requires the latest full build of SMB8000 Communications Analyst to be installed as a prerequisite.*

### ***SMB8000 Conference Bridge***

The CD-PVAA is a Conference Bridge that is used in the UNIVERGE SV8100. This ETU can be licensed to support a 8- or 16-port conference bridge. The SMB8000 Conference Bridge is configured using an Internet Browser. The Login page allows user name and password access to the web browser. Conferences can be setup to send Email notification to each participant.

The Conference Bridge Application functionalities include:

- Preset Conference
- Scheduled Conferences
- Two Authentication Levels:
  - Admin Group
  - User Group
- Phone XML Integration
- Update Firmware via Web Interface
- Export Conference Log Databases
- Import and Export Data
- Reports
- XL Meeting Link
- Telephone Dial Pad Help utilizing DTMF digits

### ***Softkeys***

Each display telephone provides interactive Softkeys for intuitive feature access. It is no longer necessary to remember feature codes to access the telephone advanced features because the function of the Softkeys change as the user processes calls.

Additional options allow you to fine tune the multiline terminal volume levels for handset receive and transmit, speaker volume, ringer and handset volume, and headset volume levels. You can also customize the point at which the built-in speakerphone switches from transmit to receive; a boon for noisy environments. The display telephones also have a contrast control for the LCD display.

## ***Speed Dial – System/Group/Station***

### **Enhancements**

Improved Cursor Key operation ( <b>Version 3000 or higher</b> software).
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Speed Dialing gives an extension user quick access to frequently called numbers. This saves time, for example, when calling a client with whom they deal often. Instead of dialing a long telephone number, the extension user dials the Speed Dialing code.

There are three types of Speed Dialing: System, Group and Station. All co-workers can share the System Speed Dialing numbers. All co-workers in the same Speed Dialing Group can share the Group Speed Dialing numbers. Station Speed Dialing numbers are available only at a user extension. The system has 2000 Speed Dialing bins that you can allocate between System and Group Speed Dialing and a maximum of 65 Speed Dialing Groups are available. Each extension has 10 Station Speed Dial bins.

Each Speed Dialing bin can store a number having up to 24 digits.

When placing a Speed Dialing call, the system normally routes the call through Trunk Group Routing or ARS (whichever is enabled). Or, the user can preselect a specific trunk for the call. In addition, the system can optionally force System Speed Dialing numbers to route over a specific Trunk Group. User preselection always overrides the system routing.

### **System Bins Limited to 1000 with Speaker Key or #2 Service Code**

Though there are 2000 Speed Dialing bins available in the system, once programmed, these bins can currently only be dialed using the Directory Dial feature (Press Directory key + SYS softkey + use arrow keys to locate number, or enter the Speed Dial bin name + Speaker to place call.)

The Speaker and service code #2 operations are not available for any 4-digit Speed Dial System bin number.

### DSS Console Chaining

DSS Console chaining allows an extension user with a DSS Console to chain to a Speed Dialing number stored under a DSS Console key. The stored number dials out (chains) to the initial call. This can, for example, simplify dialing when calling a company with an Automated Attendant. You can program the bin for the company number under one DSS Console key (e.g., #200) and the client extension number under the other (e.g., #201). The DSS Console user can press the first key to call the company, wait for the Automated Attendant to answer, then press the second key to call the client (extension 400).

The DSS Console user can also chain to a Speed Dialing number dialed manually, from a Programmable Function Key or a One-Touch Key.

### Storing a Flash

To enhance compatibility with connected Centrex and PBX lines, a Speed Dialing bin can have a stored Flash command. For example, storing 9 Flash 926 5400 causes the system to dial 9, flash the line, and then dial 926 5400. The Flash can be stored by the user from their telephone or by the system administrator during system programming.

### Using a Programmable Function Key

To streamline frequently-called numbers, a Speed Dialing Programmable Function Key can also store a Speed Dialing bin number. When the extension user presses the key, the telephone automatically dials out the stored number. This provides true one-touch calling via a telephone function key.

### Cursor Key Operation

By pressing the Right Cursor key, the user can access all directory menus. If the terminal is not allowed access to Speed Dial and/or Telephone Book numbers or no telephone numbers are programmed in those areas, they are skipped.

## *Speed Dial – Telephone Book*

### Enhancements

Speed Dial – Telephone Book feature added with <b>Version 3000 or higher</b> software.
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Speed Dial – Telephone Book is a part of the Speed Dialing system. A maximum of 100 Telephone Books are supported per system. Individual extensions can be assigned up to two Telephone Books. Each Telephone Book can contain up to 300 alphabetical entries. Each of the 100 Telephone Books can have the 300 entries separated into 20 different Telephone Book Groups providing a quicker search capability to the user.

For example, Telephone Book 1 represents equipment manufacturer ABC Corporation. The ABC Corporation is divided into three groups; Sales, Service, and Parts. When a user needs to search the ABC Corporation Telephone Book for a Sales number, the search from all 300 entries in the ABC Corporation Telephone Book can be narrowed to the entries in the Sales Group only.

### ***Station Hunt***

After calling a busy extension, a call immediately hunts to the next available member of the Hunt Group (Department Group). The caller does not have to hang up and place another Intercom call if the first extension called is unavailable.

### ***Station Message Detail Recording***

#### **Enhancements**

SMDR tracks when an extension transfers an active call to a trunk **Version 3100 (3.10 or higher)** software required).

With **Version 7000 or higher** software, SMDR can record/print both system trunk and internal calls. The **V7000 Enhancement License (0036)** and the **SMDR Feature License (0008)** is required.

With **Version 8000 or higher** software and the PZ-ME50-US installed, the SV8100 can buffer up to 4000 calls. The **V8000 Enhancement License (0037)** and the **SMDR Feature License (0008)** is required.

Station Message Detail Recording (SMDR) provides a record of both system trunk calls and internal calls. Typically, the record outputs to a customer-provided printer, terminal, or SMDR data collection device. SMDR allows you to monitor the usage at each extension and trunk. This makes charge-back and traffic management easier.

SMDR provides the following options:

- Abandoned Call Reporting
- Blocked Call Reporting
- Customized Date Format
- Transferred Call Tracking
- Data Call Tracking
- Digit Counting
- Digit Masking
- Duration Monitoring
- Extension Exclusion
- PBX Call Reporting

- Trunk Exclusion
- Usage Summaries
- Extension Name or Number

### ***Station Name Assignment – User Programmable***

This feature allows a user to program the Station Name for their telephone extension or any extension in the system. The name is displayed on the multiline terminal LCD when an intercom or K-CCIS call is placed.

### ***Station Relocation***

Station Relocation allows a station to be moved from one location to another, without having to reprogram the station data. The stations features and extension number are the same after it is moved to the new location.

### ***SV8100 Internal Router***

The SV8100 Internal Router converged network appliance is an intelligent, all-in-one networking solution for enterprises and service providers. It reduces costs by simplifying the deployment, management, and security of converged voice, video, and data networks. The Internal Router provides the following important functions for converged networks:

- T1 Wide Area Network (WAN) access router
- Manual payload loop through the GUI
- Security
- VoIP
- Quality of service
- Call quality monitoring
- Future-proof scalability

### ***SV8100 NetLink***

#### **Enhancements**

This feature added with **Version 1100 (1.12 or higher)**.

With **Version 4000** software, the failover process in a Netlink environment is improved. When network communication is down, an alarm is sent to the Attendant terminal informing of the communication error on the network. Improvements also allow for a defined number of network outages per clock hour before failing over.

## Enhancements (Continued)

With **Version 4000** software, DT700 terminals connected via NAPT can be registered to either the primary or a secondary system in a NetLink environment.

With **Version 5000** software, NetLink Multi-SIP carrier has been added.

With **Version 7000 or higher** software, the SV8100 can recognize each system where the DT700 extension(s) are connected and provide an Automatic Route Selection COS based on the System (System ID) when using NetLink.

The NetLink feature allows up to 16 sites to be linked together over a Data Communication IP NetLink that allows Remote Sites to have the same service features as the main site acting as one system. Systems can be installed separately in the same building or in remote offices connected via a qualified IP network.

With NetLink, the maximum system capacity still applies (200 Trunks and 512 Stations), but the ports can be distributed between sites using an SV8100 CHS2U-US chassis at each location.

Each site requires a PZ-(X)IPLA/IPLB daughter board and a PZ-ME50-US Memory Expansion daughter board installed on its CD-CP00-US blade. The CD-CP00-US blade at each Remote Site must have the same system data as the Main Site CD-CP00-US blade. The Main Site automatically uploads the system data to Remote Sites anytime the data is changed.

The main site requires a proper LK-SYS-NETLINKX-LIC license for each remote site.

When communication failure occurs between the Main Site and any Remote Site, The Main Site CD-CP00-US blade automatically changes to survival mode and operates as a stand-alone system. If multiple Remote Sites are installed, a Remote Site can be assigned as a temporary Main Site to control remaining connected sites.

### ***NetLink Multi-SIP Carrier***

The **Version 5000** enhancement enables multiple SIP Trunk carriers to be utilized when NetLink is configured.

The operation of SIP Trunk is described as follows when an existing **Version 4000 (V4.01 or lower)** NetLink system is configured. If the secondary system calls for using a SIP Trunk a total of three DSPs are required. One DSP from the secondary and two DSPs from the Primary system. Also, only 32 Register ID's are available which are programmed in the Primary system.

### ***SV8100 PoE Gigabit Switch***

The NEC PoE Gigabit Switch card (GSWU) is a fully managed switch which brings gigabit speeds to users while adding a whole new level of intelligence and security to networks.

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The eight 10/100/1000 Mbps ports enable users to take advantage of the Gigabit Ethernet interfaces. The NEC PoE Gigabit Switch Card supports the UNIVERGE SV8100 and SV8300 systems.

All user ports can support up to Gigabit Ethernet and may support the primary Layer 2 protocols also, with an emphasis on QoS features such as 802.1p and Diffserv.

The CD-ETIA blade has eight RJ45 ports for 10BASE-T, 100BASE-TX and 1000Base-T along the front. The CD-ETIA design is based on one card and one software build. However, all the cards in the system are managed as a Master/Slave configuration. The Master provides full distributed Layer 2 management to all Ethernet Switch cards in the system.

The CD-ETIA can be a standalone blade providing 8 Gigabit Ethernet PoE ports. However, the real advantage with this blade is that additional blades can be “stacked” by external “daisy chain” connections to provide up to 76 contiguous ports (all on the same managed domain/network). Below are the primary features of the card set.

Switches, unlike hubs, use *microsegmentation* to create collision domains, one per connected segment. This way, only the Ethernet devices which are directly connected via a point-to-point link, or directly connected hubs are contending for the medium. By eliminating collisions, full-duplex point-to-point connections on the switch are possible.

When multiple blades requiring Ethernet data connections are installed in a UNIVERGE SV8100 chassis, the CD-ETIA can provide a neat and simple installation.

The CD-ETIA is an in-skin, fast Ethernet switching hub unit that provides the following services:

- Eight 10/100/1000 Gigabit Ethernet ports
- PoE
  - 802.3af compliant, supplies up to IEEE standard maximum 15.4W on eight 10/100/1000 ports Link/ACT, POE System
- Simplified QoS management using 802.1p, Diffserv or ToS traffic prioritization specifications
- Granular security and QoS implementation
- 802.1Q based VLANs enable segmentation of networks for improved performance and security
- VLAN
  - Port Based and 802.1Q Tag-based VLANS Management VLAN
- Automatic configuration of VLANs across multiple switches through GVRP/GARP
- Auto MDI/MDIX
- Port Mirroring
  - Traffic on a port can be mirrored to another port for analysis with a network analyzer

- Firmware Upgrade
- Built in Web UI for easy browser-based configuration (HTTP)
- Rate Limiting
- Ingress Policer
- Egress rate control

## ***SV8100 UC Desktop Suite Applications***

### **Enhancements**

UC Desktop Applications **Version 2.0.0.0** or higher with main CPU software **Version 2000 or higher** provides the following enhancements:

- Support for the CallTo hyperlink within Microsoft Applications or web pages. Clicking a CallTo link will initiate a call to the number via the Desktop Application.
- DNIS display for incoming calls to the Desktop station when DNIS information is provided.
- IP Softphone support for wide band codec (G.722).
- Notification by Windows toast in the system tray for missed calls and new InMail voice messages.
- SIP/Audio RTP encryption for IP Softphone.
- Support for generic USB handsets for the IP Softphone.
- The toolbar has a new icon to bring up the phone image for an IP Softphone.
- The ability to choose Handset or Headset for incoming and outgoing calls.
- Shared Services is enhanced to include Presence. Presence indicates the Availability Status, Location, Expected Return Date and Time, Forward Settings for the users phone, and Special Instructions.
- Outlook Add-In is enhanced to also include the ability to transfer or conference from the Outlook Contacts Folder.
- Highlight Dial – Highlight a phone number within any Windows application and have it automatically dialed by the Desktop Application.
- Recalled calls to a Desktop Station show as recalled calls instead of a new ringing call.

The same user name and password can be assigned to IP Multiline Station, MH240 and Desktop ports when automatic or manual registration is used (**Version 3000 or higher** software).

UC Desktop Applications **Version 3.5.0.0 or higher** provides the following enhancements:

- Answering Center – The Answering Center module supports additional features to be utilized with the Attendant Module to provide efficient call handling in a multi-tenant environment.
- Presence Enhancements – Customized Presence states and the ability to schedule Presence events.

## Enhancements (Continued)

- Enhanced Outlook Integration – A Presence State can be associated with an Outlook Calendar Appointment. Telephone numbers from an Outlook Contact can be added to the Desktop Speed Dial list.
- Mobility Features – Provides the user the ability to view and set the Presence status and call forwarding rules while out of the office.
- Integration with the Salesforce.com website.
- TSP enhancements for additional CRM support.
- Attendant like features without Shared Services – The Desktop Client can have the full function of Window mode with the DSS/BLF panel without shared services similar to the way it worked in 1.0. The DSS/BLF panel will not show all devices in the system, but will show DSS/BLFs that are programmed on a physical button on the terminal or DSS console attached to the terminal.

UC Desktop Applications **Version 3.6.0.0 or higher** supports:

- Microsoft Windows 7 (32- and 64-bit platforms).
- Parked Calls can be monitored in the Active Call list.

With **Version 4000 or higher** software, SOAI and 3rd Party CTI can be used at the same time in the system. This allows systems at **Version 4000 or higher** to have Desktop Applications and DTPlusware or UCB and DTPlusware.

UC Desktop Applications **Version 3.7.0.0** software provides the following enhancements (**Version 5000 or higher** system software is required):

- Support for systems that have migrated from the UX5000 to the SV8100.
- Shared Services is supported on 64-bit Windows 7.
- Call Forward Both Ring can be set from Desktop via the toolbar or from a Presence State.
- Don't Change Forwarding is a Phone Settings option when setting a Presence State.

In previous versions of software, when a 3rd party CTI server has already been connected with a main device (when 3rd party CTI is used) other 3rd party CTI devices cannot connect to the main device.

With **Version 5000 or higher** CPU software, the IP Address of the CTI server currently connected is displayed in Program (20-23-06).

UC Desktop Applications **Version 4.0.0.0** software provides the following enhancements (**Version 5000 or higher** system software is required):

- New and improved Graphical User Interface (GUI) with new icons, BLF button size options, Presence animation, Presence State Indicator relocated, BLF Active Call Detail for other users and reformatted columns and menus.
- Collaboration support for Windows 7 via the Data Conference Module for Chat, Application Sharing and Video. Data Conference requires an Enhancement Bundle license (5303) and is not available in the Deskset Only configuration.
- Group Phone Messaging – adds the ability to send a phone message to multiple recipients.

## Enhancements (Continued)

- ❑ Group Quick Messaging – adds the ability to send a quick message to multiple recipients.
  - ❑ Name Extraction – Through the O&M interface the Desktop Application can retrieve the extension names from Program 15-01 and include this value as part of each entry in the Directory.
  - ❑ InACD Client – From the Desktop Application a user can Login, Log Out, Wrap Up, go into Off Duty, view real time Queue statistics, monitor ACD states of other agents and initiate Emergency Call functions.
    - ✎ *Part number 670184 – LK-DT Upgrade 4.0-LIC license (license code 5309 in Program 10-50-01) and SV8100 system software **Version 5.01 or higher** is required for the InACD Agent capability within Desktop.*
  - ❑ Mobility – From a web browser on a PC or mobile device, mobile users can view and set presence status and call forwarding options while away from the office.
    - ✎ *Part number 670981 – LK-SYS-Mobile Presence-LIC license (license code 5311 in Program 10-50-01) and SV8100 system software **Version 5.01 or higher** is required for Mobile Presence.*
  - ❑ InServer Blade – The InServer is an in-skin blade for the SV8100 designed to be an application server for several of the external applications available for the SV8100 product line. Initially, the InServer will come pre-installed with Windows Embedded Standard OS and will support the setup and deployment of the NEC Desktop Suite and InACD MIS.
  - ❑ With the InServer Blade, installation is made easier by allowing the technician to direct users to a URL where software files with preconfigured settings that automatically populate the configuration fields within the desktop can be downloaded.
- SV8100 UC Desktop Suite Applications **Version 5.0.0.0** software provides the following enhancements (**Version 7000 or higher** system software is required):
- ❑ Park Enhancement – monitoring of all 64 park orbits in the system, one-click park, drag and drop park, valet park.
  - ❑ InMail Integration with message count, message playback, archive, delete or dial number associated with message.
  - ❑ Profile Sharing – Shared Services is enhanced to allow users to create and share profiles consisting of commonly used preferences and configurations.
  - ❑ Salesforce.com Enhancement – Screen Pop support for Salesforce.com Professional Edition.
  - ❑ Integration Toolkit – A Developers Toolkit allowing users to develop interfaces integrating third-party applications with the Desktop Suite.
  - ❑ BLF Custom Layout – Drag and Drop BLFs in a custom order if the user prefers something other than extension or name order.
  - ❑ Instant Messenger (IM) – real time instant messaging between Desktop users with session history.

The SV8100 UC Desktop Suite Applications allows users to control their SV8100 terminal from their PC (Deskset mode) or the PC can become their SV8100 terminal (SP310 – IP Soft Phone Mode).

Through licensing control and user selection, the application can be tailored to meet the needs of a variety of end users. Additional utilities are provided as part of the Desktop Application suite:

- ❑ Answering Center – with UC Desktop Applications **Version 3.5.0.0 or higher**, the Answering Center supports additional features to be utilized with the Attendant Module to provide efficient call handling in a multi-tenant environment. For example, if a receptionist is required to answer calls for a variety of different businesses, the Answering Center module will identify the company being called and display information on the receptionist's screen to assist with handling the call.

 *Part number 670940 – LK-DT CRM Integration-LIC license (license code 5310 in Program 10-50-01) and SV8100 system software **Version 3100 or higher** is required for Answering Center.*

- ❑ Configuration Wizard – steps the user through the process of providing the settings that are required to start the desktop application.
- ❑ Outlook Add-In – allows the user to dial out, end call and perform screen pops through the Contacts folder within Microsoft Outlook. With UC Desktop Applications **Version 2.0.0.0** and main CPU software **Version 2500 or higher**, Outlook Add-In also allows the user to perform Conference and Transfer from the Contacts folder.

With UC Desktop Applications **Version 3.5.0.0 or higher**, the Outlook integration is enhanced to include the ability to associate a Presence State with an Outlook Calendar Appointment, and to add telephone numbers from an Outlook Contact to the Desktop Speed Dial list.

 *Part number 670939 – LK-DT Upgrade 3.0-LIC license (license code 5309 in Program 10-50-01) and SV8100 system software **Version 3100** is required for Presence Setting from Outlook Calendar.*

- ❑ Salesforce.com adaptor – with UC Desktop Applications **Version 3.5.0.0 or higher**, the Salesforce.com provides access to the following operations through the Salesforce.com interface:
  - Call contact phone number
  - Dial phone number directly
  - Answer incoming call
  - End active call
  - Hold active call
  - Retrieve a Held call
  - Transfer active call

Additionally, with an Enterprise or Unlimited account, the Salesforce integration module also provides the following feature:

- Pop contact on incoming call that matches phone number.

With UC Desktop Suite **Version 5.0.0.0 or higher**, Salesforce.com screen pops are also supported with the Professional edition.

The Salesforce.com integration module requires a Salesforce.com Professional, Enterprise, or Unlimited Edition account. The integration module is compatible with the following browsers: Internet Explorer 8 or later and Firefox 3.6. Firefox 4 is not currently supported.

 *Part number 670940 – LK-DT CRM Integration-LIC license (license code 5310 in Program 10-50-01) and SV8100 system software **Version 3100** are required for Salesforce.com integration.*

- ❑ **Telephony Service Provider (TSP)** – with UC Desktop Applications **Version 3.5.0.0 or higher**, the 1st Party TSP installed with Desktop supports additional functionality such as transfer, conference, hold and unhold.

 *Part number 670940 – LK-DT CRM Integration-LIC license (license code 5310 in Program 10-50-01) and SV8100 system software **Version 3100** are required for Time Matters integration.*

- ❑ **Video Test Tool** – Helps verify that the SP310 can communicate with and use the video camera connected to the PC.
- ❑ **Integration Toolkit** – The Desktop Suite has the ability to support integration with a variety of popular third-party CRM applications. These integrations typically allow the third-party software to dial numbers stored within the application and screen pop entries based upon Caller ID recognition. However, many companies use CRMs (Customer Resource Management) packages that are industry-specific or, in some cases, internally developed.

In order to provide another means to integrate with third-party applications, the Integration Developer's Toolkit allows users to develop their own interface to the Desktop Suite.

 *Part number 670940 – LK-DT CRM Integration-LIC license (license code 5310 in Program 10-50-01) and SV8100 system software **Version 7000** are required for the Integration Toolkit.*

## Desktop Client

The Desktop Client enhances the operation of the NEC digital telephone set by providing easy access to common, and not so common, UNIVERGE SV8100 voice control features. This software application provides a very intuitive user interface that can be conveniently located at the top or bottom of the PC screen. The user interface can even "shrink" into the edge of the screen and become visible when a call arrives, or when the user moves the mouse to the edge of the display.

In addition to quick access to these SV8100 features, the Desktop Client provides a call log for easy viewing of recent received, missed, or made calls – just like your cell phone. It also includes a directory to keep your commonly dialed numbers close at hand, and optional features like voice recording, personal greeting, and screen pops using Microsoft Outlook, ACT! 2005 or higher, Goldmine 6.7 or higher, Salesforce.com, or Time Matters.

 Part number 670940 – LK-DT CRM Integration-LIC license (license code 5310 in Program 10-50-01) and SV8100 system software **Version 3100** are required for Salesforce.com and Time Matters integration.

With UC Desktop Application **Version 4.0.0.0 or higher**, Desktop Users that are also ACD agents can perform ACD functions from within the Desktop Application. ACD functions included in the Desktop Application are Login, Logout, Off Duty, Wrap Up, view Agent Monitor, and view Queue Monitor.

 Part number 670184 – LK-DT Upgrade 4.0-LIC license (license code 5309 in Program 10-50-01) and SV8100 system software **Version 5.01 or higher** is required for the InACD Agent capability within Desktop.

Desktop Client has the following main components:

- SV8100 UC Desktop Suite Applications Software**  
This application runs on a PC and provides the PC-based GUI (Graphical User Interface) and features.
- Headset (Optional)**  
The headset can be plugged into the multiline telephone and used when making or receiving calls with the Desktop Client. Desktop Client runs on a PC and communicates with the UNIVERGE SV8100 through TCP/IP. The Desktop Client can be run for a physical deskset station or a softphone station. When calls come into the station, the Desktop Client displays it on the PC, and provides several features that allow the user to handle the call quickly. Desktop Client can be minimized to run in the background and pop to the front when call activity occurs. Calls can then be handled using either the keyboard or the mouse. The user speaks to the caller through the telephone handset, headset, or speakerphone of the multiline telephone the application is running on, or through a USB handset or headset connected to PC running the softphone.

## ***SV8100/SV8300 Terminals***

### **Enhancements**

With **Version 3000 or higher** system software, the appropriate line key page automatically displays for incoming calls on the DTL-8LD-1 (DESI-Less) and ITL-320C-1 terminals.

When installing the DT730G terminals (ITL-12CG-3 and ITL-12DG-3), **Version 7000 or higher** software is required.

The SV8100/SV8300 is a full-featured IP based communications system providing a rich feature set with pure Voice over IP (VoIP) communications, across corporate Local and Wide Area Networks (LAN and WAN).

The DT700 series telephones provide a converged infrastructure at the desktop, with a 10Base-T/100Base-TX connection to the LAN and built-in hub for a PC connection to the telephone itself. The system can provide peer-to-peer connections between the DT700 series telephones with voice compression, offering existing IP telephone features with an enhanced user interface. On the WAN side, the system can provide peer-to-peer connections over IP networks with the voice compression, on CCIS over IP or Remote Unit over IP.

 *Remote Unit over IP is available only for the SV8300.*

The SV8100/SV8300 can provide legacy line/trunk interfaces to support the existing Time Division Multiplexing (TDM) based infrastructure, such as analog telephones, digital telephones (DT300 series), analog networks and digital networks (T1/E1, ISDN, etc.).

### ***Synchronous Ringing***

Synchronous Ringing synchronizes CO/PBX incoming ringing with the incoming ringing pattern from a Central Office.

### ***T1 Trunking (with ANI/DNIS Compatibility)***

The T1/PRI Interface gives the system T1 trunking ability. This blade uses a single universal slot and provides up to 24 trunk circuits. In addition to providing digital-quality trunking, the T1/PRI Interface allows you to have maximum trunking ability with fewer blades. This in turn makes more universal slots available for other functions.

You can program each T1/PRI for any combination of the following trunks:

- CO loop start
- CO ground start
- Direct Inward Dialing
- Tie lines [Two-wire (four-lead) type 1 tie lines (FIC TL11M) only].

The CD-PRTA blade uses the first block of 24 consecutive trunks. For example, if you have CD-4COTB with PZ-4COTF installed for trunks 1~8, the T1/PRI Interface automatically uses trunks 9~32. If you have CD-4COTB with PZ-4COTF installed for trunks 1~8 and 17~24, the T1/PRI uses trunks 25~48. The T1/PRI Interface cannot use trunks 9~16 (even if available) since they are not part of a consecutive block of 24 trunks. Each T1/PRI requires that 24 consecutive ports be available in the system even if not all the ports are used, otherwise the blade does not function.

The CD-PRTA can be programmed as a 4/8/12/16/20/24 port Fractional T1PRI.

### ***ANI/DNIS Compatibility***

The system is compatible with Telco T1 Automatic Number Identification (ANI) and Dialed Number Information Service (DNIS) services. A compliment to Caller ID service, ANI/DNIS Compatibility provides:

- Receive Format
- Flexible Routing
- Route According to DID Translation Table or Speed Dial Bins

#### **ANI/DNIS Data Displayed as Caller ID Data**

- Data Error and Unanswered Call Handling

If a call cannot be completed, send it to a predetermined Ring Group or play supervisory tones to the caller.

#### ***Tandem Ringing***

Tandem Ringing allows an extension user to have two telephones with one telephone number. For example, extension 105 (the master telephone) sets Tandem Ringing with extension 106. When extension 105 receives an incoming call, both extensions 105 and 106 ring. Callers dial the master extension number (extension 105 in this example). When either the master telephone or slave telephone is in use, the other telephone cannot be used for outgoing calls or incoming calls.

A multiline terminal must be paired with a single line telephone. It cannot be paired with another multiline terminal.

A single line telephone must be paired with another single line telephone. It cannot be paired with a multiline telephone.

#### ***Tandem Trunking (Unsupervised Conference)***

Tandem Trunking allows an extension user to join two outside callers in a Trunk-to-Trunk Conference. The extension user can then drop out of the call, leaving the trunks in an Unsupervised Conference. The extension user that established the conference is not part of the conversation. The conference continues until either outside party hangs up. The extension user that set up the conference can end the tandem call anytime.

The number of simultaneous conference calls is limited by the number of conference circuits in the system. The maximum number of conference calls cannot exceed the limits defined below:

The CD-CP00-US provides two blocks of 32 conference circuits, allowing each block to have any number of conferences with any number of internal or external parties conferenced as long as the total number of conference channels used does not exceed 32.

Tandem Trunking could help an office manager put two outside sales people in touch. The office manager could:

- Answer a call from one salesperson
- Place a call to the second salesperson
- Set up the Trunk-to-Trunk Conference

- Drop out of the call

The office manager could terminate the conference anytime.

Four methods for Tandem Trunking are available:

- Method A – Tandem Trunking from Conference
- Method B – Tandem Trunking with Transfer Key
- Method C – Automatic Tandem Trunking on Hang Up
- Method D – Automatic Tandem Trunking Setup to Speed Dial Number

### **Trunk Continue/Disconnect Codes Added**

Software enhances the forced trunk release option with the Tandem Trunking and DISA features. Users can be allowed to use a Continue or Disconnect service code. The Continue service code extends the conversation a programmed time. If the user enters the Disconnect service code, the call is disconnected immediately.

## ***TAPI Compatibility***

### **Enhancements**

With **Version 4000 or higher** software, SOAI and 3rd Party CTI can be used at the same time in the system. This allows systems at **Version 4000 or higher** to have Desktop Applications and DTPlusware or UCB and DTPlusware.

The system has Telephony Applications Programming Interface (TAPI) compatibility that provides:

- Reduced TAPI Feature set
- Caller ID data to the PC for data base lookups and screen pops
- Telephone control (off-hook, on-hook and dialing)

The 1<sup>st</sup>-Party TAPI Ethernet driver provides an interface that allows the user personalized control of the telephone system from a desktop or laptop PC when used in conjunction with a TAPI-compliant application. The telephone system and PC are connected by installing an adapter on the telephone multiline terminal, allowing the PC user to access sophisticated communications services via the telephone lines.

### ***Tone Override***

The multiline terminal user that calls a busy station and receives a call waiting tone can generate a Tone Override that is heard by the originator and busy station. The busy station user can place the existing call on hold to answer the Override.

## ***Traffic Reports***

The system can send data to a PC connected to the UNIVERGE SV8100. The telephone call traffic data for each extension is captured for use with the Station Message Detail Recording (SMDR) feature.

### **Call Traffic**

The total of outgoing call frequency, outgoing call duration, incoming call frequency, answer frequency, incoming call duration, ringing duration for each line and extension, and abandon call frequency for each line is logged. The total of incoming calls, answer frequency, call duration for each line and extension, and abandon call frequency of each line is logged and the data is outputted to the PC. The system totals the hour, day, week, and month for each terminal and trunk number. This information is used by the SMDR feature. The extension which is totaled is determined by system programming. The system outputs this data to the PC for the total period.

## ***Transfer***

Transfer permits an extension user to send an active Intercom or outside call to any other extension in the system. With Transfer, any extension user can quickly send a call to the desired co-worker. A call a user transfers, automatically recalls if not picked up at the destination extension. This assures that users do not lose or inadvertently abandon their transfers. While a transferred call is ringing an extension the system can optionally play ringback tone or Music on Hold to the caller.

The system allows the following transfers:

- Screened
- Unscreened
- Extension (Department) Groups
- Without Holding

### **Automatic On-Hook Transfer Operation**

With Automatic On-Hook Transfer, a Transfer goes through as soon as the transferring user hangs up. Automatic On-Hook Transfer makes transferring calls easier.

### **Prevent Recall of Transferred Call**

The Class of Service program allows you to prevent a Transferred call from recalling the originating extension if the call is not answered.

### **Transfer Call into Conference/Existing Call**

This feature allows either a multiline terminal or single line telephone to Barge-In to transfer a call to an existing call. This call can be a 2-party call, a Conference call, or a Barge-In Conference. The system allows Intercom and trunk calls to be transferred into a Conference call.

### **Transfer to Trunk Ring Group Available**

It is possible to transfer a trunk call to the trunk ring group defined in Program 22-05-01: Incoming Trunk Ring Group Assignment. The trunk then rings the defined extensions for the ring group.

This also allows the transferred call to ring over the External Paging (Program 31-05: Universal Night Answer/Ring Over Page) so that an employee can answer the call from any available telephone.

### **Transfer Key Can Place Call on Hold**

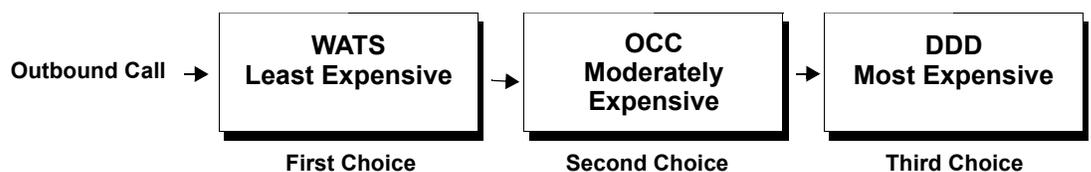
While on a call, you can press the Transfer key to place the call on hold.

### **Trunk Group Routing**

Trunk Group Routing sets outbound call routing options for users that dial the Trunk Group Routing code (9) for trunk calls. Trunk Group Routing routes calls in the order specified by system programming. If a user dials 9 and all trunks in the first group are busy, the system may route the call to another group.

When setting up your system, Trunk Group Routing helps you minimize the expense of toll calls. For example, if your system has outbound WATS lines, OCC lines and DDD lines, use Trunk Group Routing to route calls to the WATS lines first.

There are 100 available Trunk Groups and 100 Routes.



### **Trunk Groups**

Trunk Groups let you optimize trunk usage for incoming and outgoing calls. Each group can be accessed by an Access Code plus the group number. There are 100 available Trunk Groups and you set the access order in trunk group programming. Using Call Appearance (CAP) Keys gives an extension user more available function keys, since the user does not need a separate line key for each trunk.

Like Trunk Group Routing, Trunk Groups help you minimize the expense of toll calls. For example, if your system has outbound WATS lines, OCC lines and DDD lines, program the trunk group to route to the WATS lines first.

Priority	Type of Trunk
1	WATS
2	OCC
3	DDD

### ***Trunk Queuing/Camp-On***

Trunk Queuing permits an extension user to queue (wait in line) on hook for a busy trunk or trunk group to become free. The system recalls the queued extension as soon as the trunk is available. The user does not have to manually retry the trunk later. Trunk Queuing lets the caller know when the call can go through. If the extension user does not answer the Trunk Queuing ring, the system cancels the queue request.

With Trunk Camp-On, an extension user can queue (wait in line) *Off-Hook* for a busy trunk or trunk group to become free. The caller connects to the trunk when the trunk becomes free. As with Trunk Queuing, the user does not have to manually retry the trunk later.

Any number of extensions may simultaneously queue or Camp On for the same trunk or trunk group. When a trunk becomes free, the system connects the extensions in the order that the requests were left.

### ***UCB (Unified Communications for Business)***

#### **Enhancements**

This feature added with **Version 1100 (1.10 or higher)**.

UCB Fax is supported with UCB software **Version 5.00SP2**.

UCB functionality has been enhanced with SV8100 **Version 5000, UCB 5.1 and TSP 4.00 or higher** software.

- Virtual Extensions are supported for Queues (Agent and Operator) and pilot numbers (Voice Mail, Hold, & Executive Conference).
- Mobile Extension is supported in the same system as UCB.
- Application keys are used instead of Blank keys when programming the Dterm Keys for UCB.
- The TSP and UCB have been enhanced to limit when the TSP requires a reset and how it can be reset.

## Enhancements (Continued)

In previous versions of software, when a 3rd party CTI server has already been connected with a main device (when 3rd party CTI is used) other 3rd party CTI devices cannot connect to the main device.

With **Version 5000 or higher** CPU software, the IP Address of the CTI server currently connected is displayed in Program (20-23-06).

UCB is a modular multimedia Contact Center solution providing skills-based routing (SBR) and blending customer contacts using Telephone, Email, Web Callback, Web Chat, Voicemail and Fax. UCB provides much more than a conventional Automatic Call Distribution system.

UCB is licensed according to the modules required by the customer, and the number of concurrent users. For specific information regarding each module, refer to the separate product manuals. These manuals are common for all NEC platforms, and the feature restrictions described in the document may limit availability of some features for installations on the SV8100 telephone system.

Telephone calls (incoming DIT, ANA, DID, CO, or ring Transfer) terminate to a programmed queue. Each queue is programmed as an virtual extension so the number of queues depends on the total number of configured devices in the SV8100 system. A maximum of 512 extensions are supported, and the user must remember to count voicemail ports and Q-announce ports. Any agent can take calls from any queue, based on customer Caller ID, agent skills, or routing choices made using the UCB graphical user interface (GUI) administration tool. UCB delivers the incoming call either to the agent that has been idle the longest or in accordance with a programmed preference level. Consideration can be made for concurrent activity by the agent on other medias (for example, queue Telephone calls can be blocked when the agent is currently engaged in a Web Chat with another customer).

Refer to the Q-Control product manual for additional information.

### ***Call Processing***

Call Processing adds the following features to UCB:

- Abandoned Call Search
- Call Transfer to ACD Queue
- Queuing
- Pilot Numbers

### ***Agent and Supervisor Functions***

Agent and Supervisor Functions add the following to UCB:

- Assistance
- Break Mode

- Work Mode
- Logon/Logoff
- Non-ACD Call
- Headset Answer/Release
- Headset Volume Control
- Monitoring (Barge-In)

### ***Announcement Function***

There are no Default announcements, Progress announcements, or Position in Queue announcements for the UCB. Each announcement can be recorded either using the Administrator application audio editor with audio recorded from the telephone or PC microphone or by importing it from .WAV or .VOX files. Optimum recording settings for studio recordings are available in the online help. Each announcement can be used by any queue. Each announcement can be edited using the Administrator GUI .WAV editor to delete or paste audio content. All announcements are stored in the UCB internal database.

### ***Voicemail Function***

User mailboxes are assigned to a mailbox class that defines a maximum number of new, saved, and deleted messages that the mailbox can contain and the number of days before purging each type of message.

There are Company and User mailboxes. The company mailbox defines the main greeting, company schedule, and available default one touch keys. User mailboxes are for individuals and can have customized settings that can be changed anytime from the Administrator GUI, user computer desktop, or the telephone interface.

The following have settings that can be customized:

- Profiles
- Distribution Lists
- Schedule
- One-Touch Keys

### ***InUCB Blade***

InUCB is a Server Blade (CD-SVRU) with the UCB (Unified Communication for Business) installed with reduced capacities and functionalities. The CD-SVRU blade can be installed in any vacant slot within the SV8100. SV8100 **Version 5000, UCB 5.1, and TSP 4.00 or higher** software required.

## ***UM8000 Mail***

The UM8000 Mail voice mail system, using the UNIVERGE SV8100 system and a Local Area Network, provide Unified Messaging services for voice, fax and email messages with access at either the desktop PC or the telephone. Unified Messaging lets the PC control telephone calls and information about each inbound and outbound call.

Automated Attendant automatically answers the system incoming calls. After listening to a customized message, an outside caller can dial a system extension or use Voice Mail.

Integrated Voice Mail enhances the telephone system with the following features:

- Expanded Schedule
- Call Forwarding to Voice Mail
- Leaving a Message
- Transferring to Voice Mail
- Live Record
- Live Monitor
- Voice Mail Overflow
- Voice Mail Caller ID
- Quick Transfer to Voice Mail

### **Optional UM8000 Mail TeLANophy Module Features**

- Text-to-Speech Using Nuance<sup>®</sup> RealSpeak<sup>™</sup>
- ViewMail<sup>®</sup> with Live Record Module
- ViewFax<sup>®</sup>
- ViewCall<sup>®</sup> Plus
- Hospitality Package
- Additional Hospitality Languages
- Networking
- Multilingual Support

Supported Languages:

ar = Argentinean  
 au = Australian English  
 ca = Catalan Spanish  
 ct = Cantonese Chinese  
 de = German  
 dk = Danish

ja = Japanese (hospitality only)  
 la = Latin America Spanish  
 md = Mandarin Chinese  
 nl = Dutch  
 nz = New Zealand English  
 pi = Iberian Portuguese

ed = Madrid Spanish	pt = Portuguese
es = Mexican Spanish	se = Swedish
fc = Canadian French	uk = UK English
fr = Parisian French	us = US English
he = Hebrew	ru = Russian
it = Italian	

- EMail Integration

## ***uMobility***

### **Enhancements**

This feature added with **Version 3000**.

The uMobility system is designed to enhance the mobile user's experience by bringing features and functionality from office or residential services right to the smart phone. The uMobility system allows the user to:

- Answer the office desktop telephone directly from your smart phone – anytime, anywhere.
- Make calls from the smart phone that uses your office telephone system's default number.
- Enjoy greatly improved cellular phone coverage while inside the office.
- Never miss an important call again while away from your desk.
- Talk on the smart phone and not use any cellular network minutes when in a Wi-Fi hotspot, at the office, at home or at a public hotspot (VPN required).
- Access work voice mail directly from your smart phone.
- Stop juggling between the cell phone and the office desktop telephone or home telephone.

The uMC Server is the gateway for uMobility mobile devices to access the SV8100 system. It also knows when the mobile device is in the Wi-Fi or Cellular domain and will direct CO and internal calls to the mobile device using the appropriate method.

## ***Unicast/Multicast Paging Mode***

### **Enhancements**

This feature added with **Version 3000**.

With **Version 3000 or higher** software the IP terminals (DT7XX) can now receive an Internal Page via a Unicast or Multicast packet based upon system programming. This feature allows IP terminals (DT7XX) to be assigned to Unicast Mode, Multicast Mode, or Auto. Prior to Version 3000, Unicast paging was not an available option.

When the phone is set to **Unicast Mode** the internal paging is sent to the phone via a Unicast Packet.

When the phone is set to **Multicast Mode** the internal page is sent to the phone via a Multicast Packet.

When the phone is set to Auto, the internal page is sent to the phone either by Multicast or Unicast based on the subnet of the IP station. If the DT7XX terminal is in the same subnet as the IPLA then it will receive the Internal Page via a Multicast Packet. If the DT7XX terminal is in a different subnet than the IPLA the DT7XX will receive the Internal Page via a Unicast Packet.

When phones are set to receive Unicast packets the IPLA will send a separate RTP stream to each phone that is set to receive the page. E.g. If there are five DT7XX IP phones in the page group and they are all set to Unicast Page Mode the IPLA will send five separate RTP streams utilizing five DSP resources.

When the phones are set to receive Multicast packets the IPLA will send one RTP stream. Multicast is a protocol that allows one device to communicate to multiple devices without the need to stream to the individual end point. E.g. If there are five DT7XX IP phones in the page group that are set to Multicast Mode, the IPLA will send one RTP stream utilizing only one DSP resource.

### ***Uniform Call Distribution (UCD)***

With Uniform Call Distribution (UCD), an extension user can call an idle extension in a programmed UCD Group (Department Group – 64 Department Groups available) by dialing the group pilot number. For example, this would let a caller dial the Sales department just by knowing the Sales department pilot number. The caller would not have to know any Sales department extension numbers.

### **User Log Out/Log In**

An extension user can log out and log in to a UCD (Department) group. By logging out, the user removes their extension from the group. Once logged out, UCD (Department Calling) bypasses their extension. When they log back in, UCD (Department Calling) routes to their extension normally. All users can dial a code to log in or log out of their UCD (Department Calling) Group. A multiline terminal can optionally have a function key programmed for one-button log in and log out.

### **Enhanced Hunting**

UCD (Department Calling) is enhanced with expanded hunting abilities. Hunting defines how calls to a UCD (Department Group) pilot number cycle through the members of the group. The hunting choices are:

- Busy

- Not Answered
- Busy or Not Answered

If all members of the UCD (Department) group are busy, an incoming or transferred call to the group pilot number queues for an available member. Each group has a queue that can hold any number of waiting calls. If a display telephone is waiting in queue, the user sees: *WAITING (group name)*. If a transferred call in queue is an outside call, and the system has a DSP daughter board installed with the VRS compact flash, the queued caller hears, *“Please hold on. All lines are busy. Your call will be answered when a line becomes free.”*

The VRS can also transfer calls to UCD (Department) groups. Refer to the [Voice Response System \(VRS\) on page 2-114](#) feature for more information on setting up the VRS.

The system prevents hunting to a UCD (Department) group extension if it is:

- Busy on a call
- In Do Not Disturb
- Call Forwarded
- Logged Out

### ***Uniform Numbering Network***

Uniform Numbering Network allows multiple or compatible systems to be connected in a network using Tie Lines. A station user can dial a system number and a station number (open numbering) or dial the station number only (closed numbering) to access any station. When the calling and called systems are not directly connected, several Tie Lines may be accessed to route the call. Each system extends the call to the next system until the final destination is reached. Networking provides a seamless connection of multiple systems into a single “virtual” communications system using Tie Lines with a unified numbering plan. Networking allows many companies to connect their telephone systems so they appear as one. An extension user in the network can easily dial another extension or transfer a call in the Networking System. Calls are passed from network node to network node using a protocol that contains information about the source of the call, the type of call and the destination of the call.

## Flexible Network Routing

Use network routes to set up single-channel networking between many separate systems – or use multiple networking channels per system for greater network performance. Data tables in the system program define the routing for each extension in each network node. These tables are easily customized to meet the requirements of each networking configuration. Users may place an intercom call or transfer a call to any extension at any location by dialing an extension number. The system analyzes each extension number received and determines how to route the call to its final destination. The feature which handles this route selection is called Flexible Routing (F-Routing). F-Routing also can select alternate routes to the destination extension if the primary destination is busy. Up to 120 routes are available for networking. After an extension number is dialed, the system checks the routing, accesses the assigned trunk group and places the call. Each extension is assigned a route or routes that decide which trunk group to access and any modified dialed data if required.

## Universal Slots

### Enhancements

SV8100 **Version 2000** software now supports a 3-slot 9.5" chassis.

This feature added with **Version 2000** software.

The SV8100 now supports a 3-slot 9.5" base chassis and a 3-slot 9.5" expansion chassis that can be combined to make a 6-slot chassis.

This feature added with **Version 3000** software.

The SV8100 now supports two CD-LTA (Combo) blades installed in a single 9.5" Base chassis, a total of eight CD-LTA's in a four chassis system and 23 in a networked system. The PZ-ME50 is required for this configuration.

This feature added with **Version 3000**.

The UNIVERGE SV8100 has six universal slots, and up to four cabinets can be installed. The system uses the same chassis for the Controlling and Expansion and can support up to 24 Universal Slots.

Up to four combined CHS2U B-US/CHS2U E (3-Slot Base/3-Slot Expansion) or CHS2U-US (6-Slot) chassis can be connected locally to reach the system's maximum port capacity.

#### EXAMPLE:

0 CHS2U-US (19" Chassis) & 4 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

1 CHS2U-US (19" Chassis) & 3 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

2 CHS2U-US (19" Chassis) & 2 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

3 CHS2U-US (19" Chassis) & 1 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

4 CHS2U-US (19" Chassis) & 0 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

### ***User Programming Ability***

A station user can perform programming functions. Speed Group Dialing and Function Keys are just two features programmable from a station.

### ***Virtual Extensions***

#### **Enhancements**

With **Version 3000 or higher** system software, the appropriate line key page automatically displays for incoming calls on the DTL-8LD-1 (DESI-Less) and ITL-320C-1 terminals.

Calls can be parked from a virtual extension (**Version 3000 or higher** software).

With **Version 7000 or higher** software:

- A special ringtone is provided when a pre-assigned extension places an Intercom call.
- Distinctive ringing on the Virtual Extension is supported which can distinguish external and internal calls.

With **Version 8000 or higher** software:

- A virtual extension can now display the caller ID of an internal caller (Callers station name is displayed, if station name is not available the extension number is displayed). Also, a virtual extension can now display the caller ID of an internal or external caller when the virtual is not set to ring (Previously the virtual extension must be set to ring or CID is not displayed).
- The number of Tone Patterns has increased from four to eight.

Virtual Extensions are available software extensions on the Basic and Expanded Port Packages. A Virtual Extension assigned to a line key, can appear and ring on an individual station or multiple stations and be used for outbound access.

Virtual Extensions (VE) are shared with Call Arrival (CAR) Keys. In virtual extension mode, the key acts as a secondary extension. Up to 256 CAR/VE keys are provided.

## **VM8000 InMail**

### **Enhancements**

**Version 4000 or higher** software provides the following:

- Security Code Enhancement. After a subscriber sets their Security Code, they can choose to make it required for all logons or just remote logons. When enabled for all logons, the subscriber must always enter their Security Code to access voice mail, even from their own extension. If enabled just for remote logons, the subscriber can go right into voice mail from their own telephone. However, the Security Code is still required from another extension or from outside the system.  
The Security Code logon option is a convenience for those who normally leave their office locked or otherwise secure. Those who work in open areas should normally set their mailbox to always require a Security Code.
- VM8000 InMail voice mail is supported for centralized voice mail in a Netlink network.
- VM8000 InMail supports a maximum of 16 ports.

**Version 5000 or higher** software provides the following:

- VM8000 InMail supported for Centralized Voice Mail in a CCIS Network.

**Version 6000 or higher** software provides the following:

- Find-Me Follow-Me supports day of week scheduling in addition to time of day. This applies to station and group subscriber mailboxes. This feature requires **Version 6000 Enhancement License (0035)**.
- Message Notification supports day of week scheduling in addition to time of day. This applies to station and group subscriber mailboxes. This feature requires **Version 6000 Enhancement License (0035)**.
- Email Notification supports options to Save, Delete or Keep as New any voice message forwarded to the email system. This applies to station and group subscriber mailboxes.
- Auto Play: Mailboxes can now be set to automatically start playing new messages on log in for station and group subscriber mailboxes. This applies when logging in remotely or from inside the system. This feature requires **Version 6000 Enhancement License (0035)**.
- Save as New: This allows users the ability to mark a message as "New" after play back has finished. InMail currently marks messages as "to be saved" (auto-save) or "to be deleted" (auto-erase) after listening has finished. This new feature allows users to override the "to be saved" or "to be deleted" setting and return the message back to the "New" state. This feature requires **Version 6000 Enhancement License (0035)**.

With **SV8100 Version 8000 or higher** software, the following are supported:

- 32 Dial Action Tables
- 16 Answer Schedules

The VM8000 InMail is a low cost voice mail solution that mounts onto the CD-CP00-US. Its programming is fully integrated with chassis programming. This system offers most voice mail system features customers expect.

Automated Attendant automatically answers the system incoming calls. After listening to a customized message, an outside caller can dial a system extension or use Voice Mail.

Up to 16 VM8000 InMail voice mail ports are available. Configurations available are 2-, 4- and 16-port. Each reduces the total station ports available by the same number of licensed VM8000 ports. Integrated Voice Mail enhances the telephone system with the following features:

- Call Forwarding to Voice Mail
- Leaving a Message
- Transferring to Voice Mail
- Live Record
- Live Monitor
- Voice Mail Overflow
- Message Center Mailbox
- Voice Mail Caller ID
- Voice Mail Queuing
- Message Key will Operate as Voice Mail Key
- VM8000 InMail Available
- VM8000 InMail: External Transfer Available
- VM8000 InMail: Softkey With Security Code Programming
- VM8000 InMail: Internal Message Notification Timer
- VM8000 InMail: Directory Dialing
- VM8000 InMail: Multiple Greetings
- VM8000 InMail: Message Playback Options

### ***VM8000 InMail Park and Page***

#### **Enhancements**

This feature added with <b>Version 1100</b> .
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VM8000 InMail Park and Page can automatically Park a call at an extension and Page the user with a prerecorded Paging Message announcing the parked call. The called extension user can then go to any telephone and implement Personal Park to pick up the call. With VM8000 InMail Park and Page, InMail tries to locate the person instead of just sending the call to their mailbox. Additionally, there is no need for an operator or receptionist to manually answer the call, park it, and then try to track down the employee.

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The Paging Message is usually recorded in the user's own voice and typically says something like, "Mike Smart, you have a call." If the Paging Message is not recorded for the extension, a built-in message announces the called party's name or extension number (if the name is not recorded).

VM8000 InMail Park and Page is available for all types of trunk calls that are redirected to voice mail via forwarding or overflow, including transferred calls, Direct Inward Lines, and Direct Inward Dialing. Park and Page is also available for Automated Attendant Screened (STRF) and Unscreened (UTRF) Transfers. Optionally, an extension can have calls from the Automated Attendant immediately Park and Page without trying their extension first.

When VM8000 InMail Park and Page intercepts the call, it normally offers the caller four options:

1. Dial **1** to leave a message in the called extension's mailbox.  
(The caller hears the mailbox greeting, if recorded.)
2. Dial **2** to Park and Page.  
(The caller returns to these options if the Park is not picked up.)
3. Dial **3** for other options.  
(Normally, this routes to the extension's Next Call Routing Mailbox.)
4. Dial **4** for other options.  
(Normally, this routes to the extensions Next Call Routing Mailbox).

VM8000 InMail Park and Page is available at Personal and Group Subscriber Mailboxes, and can be enabled through system programming or via the subscriber's Mailbox Options Menu. VM8000 InMail Park and Page is not applicable to Intercom calls.

### **Automated Attendant Direct to Voice Mail (DVM)**

When an extension has Automated Attendant Direct to Voice Mail (DVM) enabled, all calls from the Automated Attendant go directly to the subscriber's mailbox. The extension does not ring for Automated Attendant calls. The caller hears the mailbox greeting and can leave a message, but unlike Park and Page is not normally offered any other routing options. A subscriber typically turns on DVM when they need to work at their desk undisturbed by outside calls from the Automated Attendant.

DVM can be enabled by the installer from system programming or by the extension user from their Mailbox Options Menu.

Keep in mind that DVM does *not* block Intercom calls from co-workers or any other type of outside call not routed through the Automated Attendant.

## ***VM8000 InMail Upload Download Audio***

### **Enhancements**

This feature added with **Version 3000**.

With **Version 4000** software, the User Admin (UA Mode) can change Routing Mailbox greetings for the following Routing mailbox types: Instruction (Call Routing), Announcement and Group.

The VM8000 InMail Upload Download Audio feature allows the upload of mailbox greetings up to 1MB in size, recorded on a PC or professionally, to any valid subscriber mailbox in the system. It also allows users to listen to, download and/or delete voice mail messages from callers. Access to the InMail compact flash drive is via the HTML User Pro (Web Pro).

## ***VM8000 InMail – Automatic Access to VM by Caller ID***

### **Enhancements**

This feature added with **Version 5000**.

Before, when a user outside the system accessed their InMail mailbox, they dialed voice mail, then entered an access code followed by their mailbox number and password (if enabled). Starting with **Version 5000** software a VM8000 InMail mailbox can be associated with a specific caller ID (CID) number. When the CID number is presented to the InMail it will automatically log the user into their mailbox. This enhancement improves VM accessibility for outside callers, allowing them to simply dial the main voice mail number and be automatically logged into their mailbox.

## ***VM8000 InMail – Cascade Message Notification***

### **Enhancements**

This feature added with **Version 4000**.

**Version 6000 or higher** software provides the following:

- Message Notification supports day of week scheduling in addition to time of day. This applies to station and group subscriber mailboxes. This feature requires **Version 6000 Enhancement license (0035)**.
- Cascade Message Notification options can be configured from UserPro.
- In addition to User Pro, when language prompt **Version 2.30 or higher** is installed on the InMail CF, the Cascade Message Notification Day of Week schedule options can be set from the mailbox telephone interface.

## Enhancements (Continued)

With **Version 8000 or higher** software, the Message Notification can either Ignore or Queue notification requests for messages left when there is no active notification destination. Ignore is the common operation and operates the same as Message Notification in prior software releases. If a message is received outside an active schedule, the message is ignored when the schedule becomes active. The Queue feature stores the requests and will attempt to deliver the stored requests as soon as a destination becomes active. This feature requires **Version 8000 Enhancement license (0037)**.

If an extension user receives a new message in their mailbox, Cascading Message Notification will call them at up to five preset destinations to let them know a new voice mail message has arrived. A destination can be an outside number (such as a cell phone, pager, or home office) or a co-worker's extension.

The Cascading Message Notification destinations are set up in the Notification Schedule. Each of the five schedule entries can be individually enabled or disabled and provides options for:

- Type: Voice call or pager.
- Start Hour: The time the destinations become active.
- End Hour: The time the destinations become inactive.
- Number: The destination telephone, pager, or extension number.
- Busy Attempts: The number of times the system will try the destination when it is busy. The system cancels notification callouts for this entry when the Busy Attempts number is met.
- RNA Attempts: The number of times the system will try the destination when it is unanswered. The system cancels notification callouts for this entry when the RNA Attempts number is met.
- Security: Enables or disables the Security Code requirement for the notification destinations. For example, you may want to disable the Security Code when the destinations is your cell phone and it may be inconvenient to dial digits after answering the notification callout.

When the extension user enables Cascading Message Notification, the system will try each enabled destination that is active for the current day (**Version 6000 or higher**) and time (i.e., in-schedule). The system will not try any destinations that are disabled or are not in-schedule. When the retries for a particular destination have been met the system will immediately move to the next destination.

With **Version 8000 or higher** software, each mailbox can be set to queue notification options. When this feature is enabled, messages received when destinations are not in-schedule are queued until a destination is in-schedule at which time the notification process will start.

## ***VM8000 InMail – Email Notification***

### **Enhancements**

SV8100 software **Version 3000 or higher** is required to support this feature.

**Version 6000 or higher** software provides the following:

- Email Notification supports options to Save, Delete or Keep as New any voice message that is forwarded to the email system. This applies to station and group subscriber mailboxes. This feature requires **Version 6000 Enhancement License (0035)**.

Email Notification automatically sends an email notification when a Subscriber Mailbox receives a new message. The email can optionally include the recorded message as a wav file attachment. To hear the message, the email recipient double-clicks the wav attachment to have the message play in their wav player (such as Windows Media Player).

Email Notification uses SMTP (Simple Mail Transfer Protocol) to deliver messages to the recipient's email account. If the message recipient has a mobile telephone service provider with an SMS (Short Message Service) portal, they can optionally choose to have text messages delivered right to their cell phone. In either case, Email Notification does not provide synchronization – the email account and the voice mailbox operate independently. For example, deleting the voice mail message does not automatically delete the email and visa-versa.

If Email Notification tries to deliver an email and it doesn't go through because of a connection problem (i.e., no connection or a dropped connection), it will retry every 15 minutes for 24 hours. If the email still can't go through, Email Notification cancels the delivery. Email deliveries that fail because authentication fails or the encryption mode is incorrect are immediately cancelled.

## ***VM8000 InMail – Find-Me Follow-Me***

### **Enhancements**

This feature added with **Version 4000**.

**Version 6000 or higher** software provides the following:

- Find-Me Follow-Me supports day of week scheduling in addition to time of day. This applies to station and group subscriber mailboxes. Requires **Version 6000 Enhancement License (0035)**.
- Find-Me Follow-Me options can be configured from UserPro.
- In addition to User Pro, when language prompt **Version 2.30 or higher** is installed on the InMail CF, the Find-Me Follow-Me Day of Week schedule options can be set from the mailbox telephone interface.

Find-Me Follow-Me helps an Automated Attendant caller locate an extension user who is not at their desk. If their call is unanswered and is picked up by voice mail, the caller has the option of dialing a digit to try up to three alternate Find-Me Follow-Me destinations. A destination can be an outside number (such as a cell phone or home office) or a co-worker's extension.

The Find-Me Follow-Me destinations are set up in the Notification Schedule. Each of the three entries can be individually enabled or disabled and provides options for:

- Start Hour: Time the destinations become active.
- End Hour: Time the destinations become inactive.
- Number: The destination telephone, pager or extension number.
- Days of Week: Days of the week the destinations are active or inactive.

If the caller chooses the Find-Me Follow-Me option, the system will try each enabled entry that is active for the current date and time (i.e., in-schedule). The system will not try any entries that are disabled or are not in-schedule.

When trying the destinations, Find-Me Follow-Me skips an active, in-schedule number that is busy, in DND, or is unanswered. When all active in-schedule destinations have been tried the caller can then choose to try Find-Me Follow-Me again or select another option.

You can set up Find-Me Follow-Me for an extension in system programming. In addition, an extension user can set up Find-Me Follow-Me from their Mailbox Options.

## ***VM8000 InMail – Language Setting***

### **Enhancements**

This feature added with **Version 4000**.

The Language setting feature allows the telephone display language and the InMail mailbox language to be changed from the telephone. This can be used to change either the user's phone or another specified telephones display and InMail language if allowed in system programming. Either a dial access code or Softkey operation is available.

## ***Voice Call Recording***

### **Enhancements**

The NEC IP Recorder SonicView™ feature added with **Version 3000 or higher** software.

With **SonicView Version 2.7 or higher** software, Windows® 7 and Windows 2008 Server (32- and 64-bit) is supported.

When using NEC DT 300 and DT 700 desktop terminals, telephone calls can be monitored, recorded and stored. For DT 300 (TDM) terminals, the NEC 4-Port Digital Call Logging Unit – VSR (Voice Security Recorder) is used. For DT 700 (IP) terminals, the NEC SonicView IP Recorder is used.

### ***D<sup>term</sup>® Voice Security Recorder (VSR)***

The *D<sup>term</sup>®* Voice Security Recorder is a USB device that taps across the digital extension pair of the NEC telephone system allowing digital recording of the telephone user's conversation. The file created is saved either to the local PC or to a network location, depending on the application blade used. This adapter is for use with digital multiline terminals. It cannot be used to record VoIP phone conversations in a Netlink or CCIS configuration.

Two options are available for playing back calls recorded by your VSR(s). The first is the Desktop Player which is used by an individual user to play back their own archive of calls or to play back NEC Dterm VSR calls stored on their PC or network. It easily manages calls from one storage location. It does not offer many of the advanced functions of the VSR Manager, such as establishing preset shortcuts to any number of storage folders for quick and easy access.

The second player option is the **VSR Manager**. Take your call recording environment to the next level with NEC VSR application software. **VSR Manager** provides advanced visibility, access, retrieval, and playback tools for the VSR Recorder administrators. It provides an intuitive interface for establishing shortcuts to any number of storage folders and allows the supervisor to search across all storage folders for specific call information such as User, Time/Date, Length of Call, etc. The application can be used to access and manage VSR recordings whether created by the single port VSR or the 4-Port Digital Call Logging Unit. **VSR Manager** is built on the robust Microsoft.net frame-work and manipulates large volumes of recordings. It is a workhorse that delivers truly feature rich productivity tools in a familiar, ergonomic and easy to use MS Office style interface.

These two players can be combined in any number of configurations in the company, providing control and management where needed and simple playback in other locations.

### ***NEC SonicView™ IP Recorder (1.0)***

The NEC SonicView™ IP Recorder application is an easy-to-use yet powerful web-based call recording solution. The SonicView software offers robust features designed specifically for business users who want to make use of Enterprise call data for reporting, analysis and monitoring. The different components that make up the SonicView application are:

- Application Server
- Database Server
- Recording Engine
- Network Infrastructure to Enable Call Recording

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### ***NEC SonicView Recorder (TDM and IP) (2.0)***

The NEC SonicView™ Recorder application is an easy-to-use yet powerful web-based call recording solution use for both IP and TDM calls. The SonicView software offers robust features designed specifically for business users who want to make use of Enterprise call data for reporting, analysis and monitoring. The different components that make up the SonicView application are:

- Application Server
- Database Server
- Recording Engine
- Network Infrastructure to Enable Call Recording

### ***NEC SonicView Recorder (2.7)***

The NEC SonicView™ Recorder application is an easy-to-use yet powerful web-based call recording solution. The SonicView software offers robust features designed specifically for business users who want to make use of Enterprise call data for reporting, analysis and monitoring.

### ***Voice Mail Integration (Analog)***

The system provides telephone users with comprehensive Voice Mail features. Voice Mail ends the frustration and cost of missed calls, inaccurate written messages and telephone tag. This frees busy company receptionists and secretaries for more productive work.

External voice mail requires available analog station ports based on the number of voice mail ports connected.

Integrated voice mail enhances the telephone system with the following features:

- Call Forwarding to Voice Mail
- Leaving a Message
- Transferring to Voice Mail

### ***Voice Mail Queuing***

When accessing the voice mail, the system provides a voice mail queue. If all the voice mail ports are busy, any call trying to get to the voice mail is placed in queue. As the voice mail ports become available, the calls are connected to the voice mail in the order in which they were received.

As the Voice Mail Queue follows Department Hunting programming, the queue can hold a maximum of 10 calls. If the queue is full or if the voice mail ports are not assigned to a Department Group, the calls are handled as though no voice mail queuing feature is enabled. The calls either access voice mail if a port is available or they receive a busy signal.

The Voice Mail Queuing feature does not work with the Conversation Record feature.

### **MSG Key will Operate as Voice Mail Key**

The system enhances a telephone MSG key function when connected to a system which has Voice Mail installed. When an extension receives a Voice Mail, the MSG key can be used to check the number of messages in Voice Mail or call the Voice Mail to listen to the messages.

### **Voice Mail Message Indication on Line Keys**

Voice Mail Message Indication on Line Keys indicates a new Voice Mail message on Line Keys or DSS/BLF keys.

### **Voice Over**

Voice Over lets a user interrupt a busy station user that is on another call. With Voice Over, the busy extension user hears an alert tone followed by the voice of the interrupting party. The extension user receiving the Voice Over can respond to the interrupting party without being heard by the original caller. If desired, the user can easily switch between their original caller and the interrupting co-worker. The original caller and the interrupting party can never hear each other.

Voice Over could help a lawyer, for example, waiting for an urgent call. While on a call with another client, the lawyer paralegal could announce the urgent call as soon as it comes in. The lawyer could then give the paralegal instructions how to handle the situation – all without the original client hearing the conversation.

Both multiline terminal users and 500/2500 set users can initiate and receive a Voice Over.

To enable Voice Over, a multiline terminal can have a function key programmed for Voice Over. In addition to one-touch Voice Over operation, the key shows the Voice Over status as follows:

<b>When the key is . . .</b>	<b>You are . . .</b>
Off	Not using Voice Over
Flashing (Red)	Listening to the interrupting party
On (Green)	Responding to the interrupting party

### **Voice Response System (VRS)**

#### **Enhancements**

With **Version 3000 or higher** system software, if an outside caller dials an invalid extension number when connected to the VRS Automated Attendant or calling in on a DISA trunk, the following new options are available to route these calls:

- Extension Number (e.g., operator)
- F-Route Dial (e.g., outside phone number)

The PZ-VM21 daughter board provides the option for the Voice Response System (VRS) which gives the system voice recording and playback ability. The VRS CompactFlash card provides up to 100 system messages (General Message, Automated Attendant greetings, ACD messages, and the 900 Preamble).

- General Message** – provides a recorded message which any user can hear.
- Automated Attendant (Operator Assistance)** – answers incoming calls, plays a greeting to the caller, and then lets the caller directly dial a system extension.
- ACD Messages** – provides announcement and overflow messages for ACD groups.
- Transfer to the VRS** – any extension user can Transfer their outside call to the VRS.
- Voice Prompting Messages** – plays call and feature status messages to users.
- 900 Preamble** – alerts callers using 900 lines of the cost and features of the pay-per-call service.
- Time, Date and Station Number Check** – lets a multiline terminal extension user quickly hear a recording for the time, date, or the extension number.

### ***Voice Response System (VRS) Embedded VRS***

#### **Enhancements**

This feature added with **Version 4000 (4.01 or higher)**.

With **Version 8000 or higher** software, two ports of Embedded VRS are supported. The **Version 8000 Enhancement License (0037)** is required for this feature.

Embedded VRS provides one channel of VRS without having the PZ-VM21 (VMDB) and CompactFlash installed on the CPU, therefore allowing the voice prompt to be saved on flash memory on the CPU (Embedded VRS). This feature is disabled when the InMail CompactFlash is installed.

### ***Voice Response System (VRS) Upload Download Audio***

#### **Enhancements**

This feature added with **Version 3000**.

The Voice Response System (VRS) Upload Download Audio feature allows the upload of VRS greetings up to 1MB in size, recorded on a PC or professionally, to any valid VRS message in the system. It also allows users to listen to and delete VRS messages from callers. Access to the InMail/VRS compact flash drive is via the HTML User Pro (Web Pro).

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Starting with **Version 4000** software, the User Admin (UA Mode) can change Routing Mailbox greetings for the following Routing mailbox types: Instruction (Call Routing), Announcement and Group.

## ***Voice Response System (VRS) – Call Forwarding – Park and Page***

### **Enhancements**

<p>This feature previously supported as Call Forwarding - Park and Page, has been renamed Voice Response System (VRS) – Call Forwarding – Park and Page with <b>Version 1100</b>.</p>
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When an extension user is away from their phone, VRS Park and Page can let them know when they have a call waiting to be answered. The Personal Greeting and Park & Page options can have up to 200 messages total (note that the Park & Page feature uses two messages). To enable VRS Park and Page, the user records a Personal Greeting along with an additional Paging announcement. VRS Park and Page then answers an incoming call and plays the Personal Greeting to the caller. The caller then listens to Music on Hold (if available) while the system broadcasts the recorded Paging announcement. When the extension user hears the Page, they can go to any telephone and use Directed Call Pickup to intercept the call.

## ***Volume Controls***

### **Enhancements**

<p>With <b>Version 7000 or higher</b> software, the handset/speaker volume for intercom calls or outside calls can be adjusted.</p>
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Each multiline terminal user can control the volume of incoming ringing, splash tone, Paging, Background Music, Handsfree and your handset. Multiline terminals consolidate all adjustments into the volume buttons. Press the VOLUME ▲ or VOLUME ▼ to adjust the volume level for the active feature (e.g., outside call, ICM, ICM ringing, or paging). Press these keys when the telephone is idle to adjust the contrast level of the telephone display. The users should set the volumes for their most comfortable level.

## ***Warning Tone for Long Conversation***

The system can broadcast warning tones to a trunk caller warning the user that he has been on the call too long. If he chooses, the caller can disregard the tones and continue talking. The outside caller does not hear the warning tones. Warning tones do not occur for Intercom calls and most incoming trunk calls. DISA trunks can also have warning tones. Warning tones are not available to analog single line telephone (SLT) users.

There are two warning tones: Alarm Tone 1 and Alarm Tone 2. Alarm Tone 1 is the first set of tones that occur after the user initially places a trunk call. Alarm Tone 2 broadcasts periodically after Alarm Tone 1 as a continued reminder. Each alarm tone consists of three short beeps.

If programmed, DISA is disconnected unless the continue code is entered by the user. With the Long Conversation Cutoff feature, incoming or outgoing central office calls can also be disconnected.

## ***Warning Tone for DISA Callers***

For DISA callers, with this feature enabled, the warning tone time begins when an incoming DISA call places an outgoing call and either the inter-digit time expires or the outgoing call is answered.

If an outside call is transferred to forwarded off-premise using an outside trunk, the warning tone timer begins immediately. This occurs only if either trunk involved in the call is programmed for this feature (Program 14-01-17). To transfer a trunk call off-premise, Program 14-01-13 must be set to 1.

## ***Wireless DECT (SIP)***

### **Enhancements**

With **Version 4000 (4.01 or higher)** software, the SIP DECT handset can display the calling name on an inbound call. This priority is fixed in system programming. With **Version 4000**, Program 15-05-17 is no longer used.

With **Version 5000 (5.00 or higher)** software, Off-hook signaling and Caller ID display after a call transfer has been added.

With SV8100 **Version 5000 (5.00 or higher)** software and PZ-IPLB daughter board installed, half duplex connections are not supported. For troubleshooting purposes, a managed switch capable of port mirroring is required to capture packet data from the SV8100 IPLB Ethernet port.

The Wireless DECT (SIP) (Digital Enhanced Cordless Telecommunication) system allows using DECT 6.0 DECT (SIP) handsets. These handsets provide the freedom and convenience of a wireless telephone but also allow access to features provided by the UNIVERGE SV8100 system.

The number of Wireless DECT (SIP) handsets supported by the UNIVERGE SV8100 is dependant on the number of SIP Client licenses.

Components of the Wireless DECT (SIP) system include the following:

### **NEC C124 SIP DECT Handset**

The handset has the following features:

- Alphanumeric Display with Backlight
- LED Indication for Incoming Calls
- Telephone Book with 40 entries

While idle, dial the number to be stored, then press > and OK. Enter the name associated with the number using the dial pad, and press OK.

- Silent Mode (mute all sounds)
- Redial Function (last 10 numbers)

Press ▲ and continue to press ▼ to scroll through the numbers. Press Hook key to dial a number.

- Programming Pause

A long press on # adds a pause to pre-dial or phone book numbers.

- Adjustable Volume

Ring volume can be adjusted using ▲ and ▼ on the handset.

- Key Lock

Press OK and \* to lock the dial pad.

- Ten Different Ring Tones

Ring tones can be selected in the tone setup menu and press OK.

- Microphone Mute

Press ⊗ while the telephone is off-hook to mute the microphone.

- Caller ID Presentation

- Headset Connection

- R-Key for Transfer and Special Services

When off-hook, press R to Recall, transfer.

## NEC G955 SIP DECT Handset

Features	Description	
Call Handling Features	<ul style="list-style-type: none"> <li>○ Automatic Call answer</li> <li>○ Caller log</li> <li>○ CLI (name and number support): when available in a directory presented by name</li> <li>○ Last number redial</li> <li>○ Recall/hold (enquiry)</li> <li>○ Standby time: 120 hours</li> </ul>	<ul style="list-style-type: none"> <li>○ Call reject option</li> <li>○ Caller filter</li> <li>○ Crystal clear speech and seamless handover</li> <li>○ On-hook number preparation</li> <li>○ Silent charging</li> <li>○ Talk time: 12 hours</li> </ul>
Directory	<ul style="list-style-type: none"> <li>○ Phone book multiple numbers per contact</li> </ul>	<ul style="list-style-type: none"> <li>○ Personal phone book</li> </ul>
Display	<ul style="list-style-type: none"> <li>○ Color Graphic TFT display 160 X 128 pixels (262k)</li> </ul>	<ul style="list-style-type: none"> <li>○ Illuminated display: Incoming calls and messages</li> </ul>
Headset	<ul style="list-style-type: none"> <li>○ Headset support</li> </ul>	<ul style="list-style-type: none"> <li>○ Bluetooth headset support: via additional Bluetooth module</li> </ul>
Keys	<ul style="list-style-type: none"> <li>○ Function and keypad keys: 24 keys with 12 keypad keys (0 ~ 9, *, #), with text mode support</li> <li>○ Recall or enquiry key</li> <li>○ Menu navigation keys: programmable short keys, up, down, left, right</li> <li>○ Power On/Off key</li> </ul>	<ul style="list-style-type: none"> <li>○ On and off-hook key: 2 separate keys</li> <li>○ Increase and decrease volume</li> <li>○ OK/confirm key</li> <li>○ Programmable Soft keys (2 keys menu dependent function)</li> <li>○ Keypad lock</li> </ul>
Localization	<ul style="list-style-type: none"> <li>○ Multiple supported languages: 13</li> </ul>	<ul style="list-style-type: none"> <li>○ Triple frequency band</li> </ul>
Menu	<ul style="list-style-type: none"> <li>○ Easy menu programming</li> </ul>	
Mobility/ Other	<ul style="list-style-type: none"> <li>○ Multiple subscriptions DECT systems: 8 DECT systems</li> </ul>	
Sound/Audio	<ul style="list-style-type: none"> <li>○ Adjustable ringer volume</li> <li>○ Loudspeaker mode/hands free</li> <li>○ Adjustable earpiece/loudspeaker volume</li> </ul>	<ul style="list-style-type: none"> <li>○ Microphone mute</li> <li>○ Silent ring support</li> </ul>
Security	<ul style="list-style-type: none"> <li>○ Automatic encryption for secure calls</li> </ul>	
Service/ Maintenance	<ul style="list-style-type: none"> <li>○ Software upgrading via air interface</li> <li>○ Easy subscription to another handset: by transferring memory card to another handset</li> </ul>	<ul style="list-style-type: none"> <li>○ Backup of local data storage: via additional 64k memory card</li> </ul>
User Data	<ul style="list-style-type: none"> <li>○ Internal memory: for storage of local data</li> <li>○ Storage of local user data: personal phone book, caller log, caller filter and calendar entries</li> </ul>	<ul style="list-style-type: none"> <li>○ Memory card: the storage capacity can be doubled by adding a memory card. The memory card also contains the subscription information</li> </ul>
User Interface	<ul style="list-style-type: none"> <li>○ Visible indicators: Icon driven menu</li> <li>○ Distinctive melodies for messages and priorities</li> <li>○ Status line indicators in the display</li> </ul>	<ul style="list-style-type: none"> <li>○ Ringer tones/melodies: 20 distinctive melodies for external, internal calls</li> <li>○ Audible indicators are user selectable</li> </ul>

### Off-Hook Signaling

This feature enables the display of off-hook signaling on an IP DECT terminal while talking with the 1st call.

### ***Caller ID Display After a Call Transfer***

Previously in case of screened transfer, if a call was from a trunk line or legacy terminal, etc, the transferrer's calling party number was displayed in IP DECT. In case of an unscreened transfer, the calling party number from where the call was transferred is displayed on the IP DECT.

This feature enables the IP DECT terminal to display the calling party number of the original caller (Transferee) when making a screened or unscreened transfer to an IP DECT terminal.

### ***Out of Range Call Warning Notification***

With **Version 8000** software, it is possible to determine when a SIP-Dect terminal is Out of Range or powered off. When an internal caller calls the Out of Range SIP terminal, either a lock out tone or call forwarding can be performed.

# Equipment

## SECTION 1 EQUIPMENT LIST

The following tables list all equipment for the SV8100 system.

**Table 3-1 Chassis Equipment List**

Stock Number	Equipment Name	Equipment Description
670015	CHS2U-US	19" Chassis (6-slot)
670016	CHS2U GW-US	9.5" Gateway Chassis (3-slot)
670067	CHS2U B-US	9.5" Base Chassis (3-slot)
670068	CHS2U E	9.5" Expansion Chassis (3-slot)

**Table 3-2 Chassis Installation Equipment List**

Stock Number	Equipment Name	Equipment Description
670019	CHS BASE UNIT	Floor Mount Set for all chassis (CHS1U-US and CHS2U-US)
670500	CHS2U BLANK SLOT COVER KIT	Blank Slot Cover Set
670501	CHS2U JOINT BRACKET KIT	Upper Joint Bracket for 6-slot Chassis
670508	CHS2U RACK MOUNT KIT	Rack Mount for CHS2U-US Chassis
670510	CHS1U/2U WALL MOUNT KIT	Wall Mount Set for CHS2U-US Chassis
670513	CHS Stand Kit (K)	Stand Mount Kit for 2U Chassis
670522	CHS2U STAND KIT (EXT)	Expansion Plate for Stand Mount Kit for 6-blade Chassis, 2 sets
670523	CHS1U BLANK SLOT COVER KIT(BUS)	Blank Bus Cover
0910008	IP3-RACK MOUNT BAR SET	Rack Mount Set for CHS2U B-US and CHS2U E

**Table 3-3 Battery Mount Equipment List**

Stock Number	Equipment Name	Equipment Description
670511	CHSGW SMALL BATT BOX	Short-term battery box for 3-slot chassis Backup Time – 10 minutes
670505	CHS LARGE BATT BOX	Long Term Battery Box for CHS1U-US and CHS2U-US Chassis Cable between batteries – 9.06in/230mm Fuse Unit to Batteries – 18.11in/460mm Cable from chassis to battery box – 81.1in/2060mm
670509	CHS2U BATT MTG KIT	Battery Mount for CHS2U-US Chassis Backup time – 10 minutes
670511	CHSGW SMALL BATT SET	Short-term battery set for 3-slot chassis
670512	CHS LARGE BATT SET	Long term battery set (3) 12V 7Ah SLA Batteries with Faston 187 terminals
670533	CHS2U INT BATT SET	Internal battery set for CHS2U-US chassis 12V 2.3Ah SLA Battery with Faston 187

**Table 3-4 Blade Equipment List**

Stock Number	Equipment Name	Abbreviations	Equipment Description
670005	CD-CP00-US	CPU	Main Processor Blade for KTS
670100	PZ-BS10	BUS0	Expansion Chassis Interface Unit, 3-jack
670101	PZ-BS11	BUS1	Expansion Chassis Interface Unit, 1-jack
670103	PZ-VM21	VMDB	16 Channels for Voice Mail with a Single Channel V34 Modem
670104	PZ-32IPLA	VoIPDB	32-channel VOIP on CCPU
670105	PZ-64IPLA	VoIPDB	64-channel VOIP on CCPU
670106	PZ-128IPLA	VoIPDB	128-channel VOIP on CCPU
670107	CD-8DLCA	DLC	8-port Digital Station Interface
670108	PZ-8DLCB	DLCDB	8-port Digital Station Interface on CD-8DLCA
670109	CD-16DLCA	DLC	16-port Digital Station Interface
670110	CD-4COTB	COT	4-port Loop/ground Start Trunks
670111	PZ-4COTF	COTDB	4-port Loop/ground Start Trunks on CD-4COTB, CD-LTA
670112	CD-4LCA	LC	4-port Single Line Telephone Interface
670113	PZ-4LCA	LCDB	4-port Single Line Telephone Interface on CD-4LCA and CD-8LCA

**Table 3-4 Blade Equipment List (Continued)**

<b>Stock Number</b>	<b>Equipment Name</b>	<b>Abbreviations</b>	<b>Equipment Description</b>
670114	CD-8LCA	LC	8-port Single Line Telephone Interface
670115	PZ-8LCE	LCDB	8-port Single Line Telephone Interface on CD-4LCA and CD-8LCA
670116	CD-2BRIA	BRT	2 Basic Rate Interface
670117	PZ-2BRIA	BRTDB	2 Basic Rate Interface on CD-2BRIA, for SV8100 can also be mounted on the CD-LTA blade
670118	CD-PRTA	PRT	1 Primary Rate Interface
670119	CD-CCTA	CCT	Common Channel Interoffice Signalling Trunk Interface/Common Channel Handler
670120	CD-4DIOPA	DIOP	4 DID/OPX
670121	CD-4ODTA	ODT	4-port Tie Line Interface (E&M)
670122	CD-RTB	RTB	Router
670123	CD-VM00	VM00	Voice Mail and Server
670124	CD-ETIA	GSWU	PoE Gigabit Switch Unit
670127	PZ-ME50-US	MEM	Memory Expansion on CD-CP00-US
670128	CD-LTA	LTA	8 Digital Station/2SLT for CD-CP00-US only
670130	MGN-U10 ETU	MGN-U10 ETU	IPK/IPK II Migration
670131	CD-PVAA	CNF	Packet Voice Application
670168	PZ-32IPLB	VoIPDB	32-channel VOIP on CCPU
670169	PZ-64IPLB	VoIPDB	64-channel VOIP on CCPU
670170	PZ-128IPLB	VoIPDB	128-channel VOIP on CCPU
670213	CD-8COTBH	COT	8-port Loop and Ground Start
670214	CD-16LCAH	LC	16-port Analog Terminal Blade
670215	CD-LTDH	COMBO	8-Port Digital Station/2-Port Analog Station/4-Port Analog Trunk
670420	InUCB	InUCB	Supports InUCB
670421	CD-InServer	InServer	Supports Desktop Suite and ACD MIS

**Table 3-5 Cable Equipment List**

<b>Stock Number</b>	<b>Equipment Name</b>	<b>Equipment Description</b>
670516	RS CONSOLE CA-A	MAT (PCPro) Cable 6.6 ft. (2.0m)
670517	RS NORM-4S CA-F	RS-232C Cable (normal) 13.1 ft (4m)

**Table 3-5 Cable Equipment List (Continued)**

Stock Number	Equipment Name	Equipment Description
670518	RS RVS-15S CA-F	RS-232C Cable (reverse) 49.2 ft (15.0m)
670519	RS RVS-4S CA-F	RS 232C Cable (reverse) 13.1 ft (4.0m)
670520	RS RVS-4S CA-G	RS 232C Cable (reverse) 13.1 ft (4.0m)
670521	RS PRT-15S CA-F	RS-232C Cable (printer) 49.2 ft (15.0m)
670528	BUS CABLE	Bus Cable
670529	AC CORD	AC Power Cable for US
670530	CHS2U BATT CA INT	CHS2U-US Battery Cable for Internal Battery 2U Chassis Cable A – 18.9in/480mm Cable B – 3.15in/80mm
670531	CHS2U BATT CA EXT-A	Battery Cable for External Battery 6-slot Chassis

**Table 3-6 Digital Multiline Terminal (DT300 Series) Equipment List**

Stock Number	Equipment Name	Equipment Description
680000	DTL-2E-1 (BK) TEL	Economy Digital 2-button Telephone (No-Display)
680001	DTL-6DE-1 (BK) TEL	Economy Digital 6-button Display Telephone
680062	DTL-12E-1 (BK) TEL	Economy Digital 12-button Display Telephone
680002 680003	DTL-12D-1 (BK) TEL DTL-12D-1 (WH) TEL	Value Digital 12-button Display Telephone
680004 680005	DTL-24D-1 (BK) TEL DTL-24D-1 (WH) TEL	Value Digital 24-button Display Telephone
680006 680007	DTL-32D-1 (BK) TEL DTL-32D-1 (WH) TEL	Value Digital 32-button Display Telephone
680008	DTL-12BT-1 (BK) TEL	Value Digital 12-button Telephone with Bluetooth Cordless Headset
680009	DTL-12PA-1 (BK) TEL	Value Digital 12-button Telephone with Power Failure Adapter
680010 680011	DTL-8LD-1 (BK) TEL DTL-8LD-1 (WH) TEL	Value Digital 8-button Telephone (DESI-less)
680012 680013	DCL-60-1 (BK) CONSOLE DCL-60-1 (WH) CONSOLE	60-button Direct Station Selection (DSS) Console
680014 680015	8LK-L (BK) UNIT 8LK-L (WH) UNIT	8-button Line Key Unit
680016 680017	8LKD (LD)-L (BK) UNIT 8LKD (LD)-L (WH) UNIT	DESI-less 8-button Line Key Unit/LCD Unit for Digital Telephone

**Table 3-6 Digital Multiline Terminal (DT300 Series) Equipment List (Continued)**

Stock Number	Equipment Name	Equipment Description
680608 680609	LCD (BL)-L (BK) UNIT LCD (BL)-L (WH) UNIT	LCD Unit (Backlight LCD) for Digital Telephone

**Table 3-7 IP Multiline Terminal (DT700 Series) Equipment List**

Stock Number	Equipment Name	Equipment Description
690000	ITL-2E-1 (BK) TEL	Economy IP 2-button Telephone (No Display)
690001	ITL-6DE-1 (BK) TEL	Economy IP 6-button Display Telephone
690071	ITL-8LDE-1 (BK) TEL	Economy IP 8-button Display Telephone
690002 690003	ITL-12D-1 (BK) TEL ITL-12D-1 (WH) TEL	Value IP 12-button Display Telephone
690077	ITL-12CG-3 (BK) TEL	Value IP 12-button Display Telephone (Color)
690078	ITL-12DG-3 (BK) TEL	Value IP 12-button Display Telephone (Grayscale)
690004 690005	ITL-24D-1 (BK) TEL ITL-24D-1 (WH) TEL	Value IP 24-button Display Telephone
690006 690007	ITL-32D-1 (BK) TEL ITL-32D-1 (WH) TEL	Value IP 32-button Display Telephone
690009	ITL-12PA-1 (BK) TEL	Value IP 12-button Telephone with Power Failure Adapter
690010 690011	ITL-8LD-1 (BK) TEL ITL-8LD-1 (WH) TEL	Value IP 8 Line Key Display Telephone Value IP Telephone: DESI-less
690012	ITL-320C-1 (BK) TEL	Sophisticated Telephone
690013 690014	8LKI (LD)-L (BK) UNIT 8LKI (LD)-L (WH) UNIT	DESI-less LK/LCD Unit for IP
690019	ITL-320C-2 (BK) TEL	Sophisticated Telephone (Replacement for 690012)

**Table 3-8 SV8100 Optional Equipment List**

Stock Number	Equipment Name	Equipment Description
670201	Appointment Reminder	External Server
670203	Broadcast Server	External Server
670548	IPv6-Adapter	Converts IPv4 to IPv6 protocol
680600	APR-L UNIT	Analog Port Ringer (DT 300 only)

Table 3-8 SV8100 Optional Equipment List (Continued)

Stock Number	Equipment Name	Equipment Description
680601	ADA-L UNIT	Ancillary Device Adapter
680602	BHA-L UNIT	Bluetooth® Hub Adapter
680603 680604	PSA-L (BK) UNIT PSA-L (WH) UNIT	Power Save Adapter
680605	BCH-L (BK) UNIT	Bluetooth Cordless Handset
680606 680607	12LK-L (BK) KIT 12LK-L (WH) KIT	12-button Line Key Kit
680610	WM-L UNIT	Wall Mount Unit
680754	DSS WM-L UNIT	Wall Mount Unit for DCL-60-1
680650	DESI ITL/DTL-2E (25 PKG)	DESI Sheet for Economy 2-button Telephone (2 Part Sheet, 25 Package)
680651	DESI ITL/DTL-6DE (25 PKG)	DESI Sheet for Economy 6-button Display Telephone (2 Part Sheet, 25 Package)
680652	DESI ITL/DTL-12D (25 PKG)	DESI Sheet for Value 12-button Display Telephone (2 Part Sheet, 25 Package)
680653	DESI ITL/DTL-8LK (25 PKG)	DESI Sheet for 8-button Line Key (1 Part Sheet, 25 Package)
680654	DESI DCL-60 (25 PKG)	DESI Sheet for 60DSS (1 Part Sheet, 25 Package)
680655	DESI ITL/DTL-SIDE (25 PKG)	DESI Sheet for Clear Side Panel (Left and Right Part Sheet, 25 Package)
680656	DESI ITL/DTL-SIDE-LCDV (25 PKG)	DESI Sheet for Value Telephone LCD (Left and Right Part Sheet, 25 Package)
680657	DESI ITL/DTL-SIDE-LCDS (25 PKG)	DESI Sheet for Sophisticated Telephone LCD (Left and Right Part Sheet, 25 Package)
680658	DESI ITL/DTL Directory Card	Directory Card
680659	DESI ITL/DTL-24D (25 PKG)	DESI Sheet for Value 24-button Display Telephone (2 Part Sheet, 25 Package)
680700	Panel (Red-Base)-L UNIT	Color Side Panel for Base (Red)
680701	Panel (Red-VLCD)-L UNIT	Color Side Panel for Value Telephone LCD (Red)
680702	Panel (Red-SLCD)-L UNIT	Color Side Panel for Sophisticated Telephone LCD (Red)
680703	Panel (Blue-Base)-L UNIT	Color Side Panel for Base (Blue)
680704	Panel (Blue-VLCD)-L UNIT	Color Side Panel for Value Telephone LCD (Blue)
680705	Panel (Blue-SLCD)-L UNIT	Color Side Panel for Sophisticated Telephone LCD (Blue)
680706	Panel (Silver-Base)-L UNIT	Color Side Panel for Base (Silver)
680707	Panel (Silver-VLCD)-L UNIT	Color Side Panel for Value Telephone LCD (Silver)

**Table 3-8 SV8100 Optional Equipment List (Continued)**

<b>Stock Number</b>	<b>Equipment Name</b>	<b>Equipment Description</b>
680708	Panel (Silver-SLCD)-L UNIT	Color Side Panel for Sophisticated Telephone LCD (Silver)
680709	Panel (Wood-Base)-L UNIT	Color Side Panel for Base (Wood)
680710	Panel (Wood-VLCD)-L UNIT	Color Side Panel for Value Telephone LCD (Wood)
680711	Panel (Wood-SLCD)-L UNIT	Color Side Panel for Sophisticated Telephone LCD (Wood)
680712	Panel( Logo-Base)-L UNIT	Color Side Panel for Base (Wood with Logo)
680713	Panel (Clear-Base)-L UNIT	Color Side Panel for Base (Clear)
680714	LKPANEL(2BTN)-L (BK) UNIT	Spare Plastic Cover Kit (2-button) (Black)
680715	LKPANEL(6BTN)-L (BK) UNIT	Spare Plastic Cover Kit (6-button) (Black)
680716 680717	LKPANEL(12BTN)-L (BK) UNIT LKPANEL(12BTN)-L (WH) UNIT	Spare Plastic Cover Kit (12-button)
680718 680719	LKPANEL(24BTN)-L (BK) UNIT LKPANEL(24BTN)-L (WH) UNIT	Spare Plastic Cover Kit (24-button)
680720 680721	LKPANEL(8BTN)-L (BK) UNIT LKPANEL(8BTN)-L (WH) UNIT	Spare Plastic Cover Kit (8-button)
680722 680723	LKPANEL(60BTN)-L (BK) UNIT LKPANEL(60BTN)-L (WH) UNIT	Spare Plastic Cover Kit (60-button)
680724	DTL (Value)-Base-1 unit	Digital Base
680725 680726	LCDD(S)-L (BK) UNIT LCDD(S)-L (WH) UNIT	Digital Standard Telephone LCD
680727	Ten Key (STD)-L Kit	10-Key Kit (Standard)
680728 680729	FNCKEY(STD)-L (BK) SET FNCKEY(STD)-L (WH) SET	Standard Function Key
680730 680731	12LKSoft-L (BK) SET 12LKSoft-L (WH) SET	12-button Kit without Softkey
680732 680733	12LK(STD)-L (BK) SET 12LK(STD)-L (WH) SET	12-button on 12D Terminal (Line #13~24)
680734 680735	TKPANEL(STD)-L (BK) UNIT TKPANEL(STD)-L (WH) UNIT	10-Key Panel
680736 680737	Cradle (STD)-L(BK) Cradle (STD)-L(WH)	Cradle
680738	VAL DIRECTORY CARD UNIT(L)	Directory Card Holder for Value Telephone
680739	ECO DIRECTORY CARD UNIT(L)	Directory Card Holder for Economy Telephone
680741	Panel (Clear-VLCD)-L UNIT	Color Side Panel for Value Telephone LCD (Clear)

Table 3-8 SV8100 Optional Equipment List (Continued)

Stock Number	Equipment Name	Equipment Description
680742	Panel (Clear-SLCD)-L UNIT	Color Side Panel for Sophisticated Telephone LCD (Clear)
680743 680744	LKPANEL(16BTN)-L (BK) UNIT LKPANEL(16BTN)-L (WH) UNIT	Spare Plastic Cover Kit (16-button)
680745 680746	KeyKitPanel (Value) (BK) Unit KeyKitPanel (Value) (WH) Unit	Spare Plastic Cover Key Kit for Value Telephone
680747 680748	KeyKitPanel (Retro) (BK) Unit KeyKitPanel (Retro) (WH) Unit	Spare Plastic Cover Key Kit for Retro Telephone
680749 680750	KeyKitPanel (Sophi) (BK) Unit KeyKitPanel (Sophi) (WH) Unit	Spare Plastic Cover Key Kit for Sophisticated Telephone
680756	KeyKitPanel(V)-L (M-Blue) Unit	Color face panel for Value (Metallic Blue) 1 set consists 10 of panels
680757	KeyKitPanel(V)-L (GUNMETA) Unit	Color face panel for Value (GunMetallic) 1 set consists 10 of panels
680758	KeyKitPanel(V)-L (L-Green-M) Unit	Color face panel for Value (Lime Green Metallic) 1 set consists 10 of panels
680759	KeyKitPanel(V)-L (Orange-M) Unit	Color face panel for Value (Orange Metallic) 1 set consists 10 of panels
680760	KeyKitPanel(V)-L (D-Brown-M) Unit	Color face panel for Value (Dark Brown Metallic) 1 set consists 10 of panels
680761	LKPANEL(12BTN)-L (M-Blue) UNIT	Color LK panel (12button) for Value (Metallic Blue) 1 set consists 10 of panels
680762	LKPANEL(12BTN)-L (GUNMETA) UNIT	Color LK panel (12button) for Value (GunMetallic) 1 set consists 10 of panels
680763	LKPANEL(12BTN)-L (L-Green-M) UNIT	Color LK panel (12button) for Value (Lime Green Metallic) 1 set consists 10 of panels
680764	LKPANEL(12BTN)-L (Orange-M) UNIT	Color LK panel (12button) for Value (Orange Metallic) 1 set consists 10 of panels
680765	LKPANEL(12BTN)-L (D-Brown-M) UNIT	Color LK panel (12button) for Value (Dark Brown Metallic) 1 set consists 10 of panels
680766	LKPANEL(24BTN)-L (M-Blue) UNIT	Color LK panel (24button) for Value (Metallic Blue) 1 set consists 10 of panels
680767	LKPANEL(24BTN)-L (GUNMETA) UNIT	Color LK panel (24button) for Value (GunMetallic) 1 set consists 10 of panels
680768	LKPANEL(24BTN)-L (L-Green-M) UNIT	Color LK panel (24button) for Value (Lime Green Metallic) 1 set consists 10 of panels
680769	LKPANEL(24BTN)-L (Orange-M) UNIT	Color LK panel (24button) for Value (Orange Metallic) 1 set consists 10 of panels
680770	LKPANEL(24BTN)-L (D-Brown-M) UNIT	Color LK panel(24button) for Value (Dark Brown Metallic) 1 set consists 10 of panels

**Table 3-8 SV8100 Optional Equipment List (Continued)**

<b>Stock Number</b>	<b>Equipment Name</b>	<b>Equipment Description</b>
680771	PANEL(Pink-Base)-L UNIT	Color side panel for Base (Pink) 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680772	PANEL(Pink-VLCD)-L UNIT	Color side panel for Value LCD (Pink) 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680773	PANEL(Pink-SLCD)-L UNIT	Color side panel for Sophi LCD (Pink) 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680774	PANEL(C Gold-Base)-L UNIT	Color side panel for Base (Champagne Gold) 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680775	PANEL(C Gold-VLCD)-L UNIT	Color side panel for Value LCD (Champagne Gold) 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680776	PANEL(C Gold-SLCD)-L UNIT	Color side panel for Sophi LCD (Champagne Gold) 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680777	PANEL(BIO-Base)-L UNIT	BIO side panel for Base 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680778	PANEL(BIO-VLCD)-L UNIT	BIO side panel for Value LCD 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
680779	PANEL(BIO-SLCD)-L UNIT	BIO side panel for Sophi LCD 1 set consist of 10 pair of panels. A pair includes (1) left and (1) right panel
690100	MH240	Wireless SIP telephone
690600 690601	BS (F)-L (BK) KIT BS (F)-L (WH) KIT	French Keypad
690602 690603	BS (S)-L (BK) KIT BS (S)-L (WH) KIT	Spanish Keypad
690606 690607	BS (ICON)-L (BK) KIT BS (ICON)-L (WH) KIT	ICON Support Keypad
690608 690609	BS (Retro)-L (BK) KIT BS (Retro)-L (WH) KIT	Retrofit Support Keypad
690610 690611	BS (RetroCON)-L (BK) KIT BS (RetroCON)-L (WH) KIT	Retrofit ICON Support Keypad
690612	BS (Braille)-L (BK) KIT	Braille Support Keypad Stickers

Table 3-8 SV8100 Optional Equipment List (Continued)

Stock Number	Equipment Name	Equipment Description
690614 690615	HANDSET(NARROW)-L (BK) UNIT HANDSET(NARROW)-L (WH) UNIT	Spare Narrowband Handset
690616 690617	HANDSET(WIDE)-L (BK) UNIT HANDSET(WIDE)-L (WH) UNIT	Spare Wideband Handset
690618 690619	HandsetCord(12FT)-L (BK) SET HandsetCord(12FT)-L (WH) SET	Spare Handset Cord 12 Feet
690620 690621	HandsetCord(25FT)-L (BK) SET HandsetCord(25FT)-L (WH) SET	Spare Handset Cord 25 Feet
690622 690623	HandsetHanger-L (BK) SET HandsetHanger-L (WH) SET	Spare Handset Hanger
690624	ITL (Value)-Base-1 unit	IP Base
690625 690626	LCDI(S)-L (BK) UNIT LCDI(S)-L (WH)) UNIT	IP LCD Unit (without Backlight)
690627	LineCord-L (BK) SET	Spare Line Cord (BK)
690628	ITL/DTL PTM Handset (BK)	Push to Mute Handset
690629	ITL/DTL PTT Handset (BK)	Push to Talk Handset
690630	GBA-L UNIT	Gigabit Adapter
690631	AC-L UNIT	AC Adapter for GBA-L UNIT
690632	BS(V-HOTEL)-L (BK) UNIT	Standard Hotel function keypad for Value (BK) with Blank D/F panel
690633	BS(S-HOTEL)-L (BK) UNIT	Standard Hotel function keypad for Sophi (BK) with Blank D/F panel
690638	CG Directory Card Holder	CG Directory Card Unit
730095	DTL-8R-1 Cordless DECT	Cordless Handset and Base Unit
730639	DTL-RPT-1 Repeater	Repeater for DTL-8R-1
730650	ML440	Wireless Handset
730651	AP20 Base Unit	Base Unit for ML440
750611	C124 SIP DECT Handset	SIP DECT wireless handset
750106	G955 SIP DECT Handset	SIP DECT wireless handset
780273	4-Port Digital Call Logging Unit	Digital Call Logging Unit
780275	1-Port Digital Call Logging Unit	Digital Call Logging Unit
780279	16-Port Digital Call Logging Unit	Digital Call Logging Unit

## SECTION 2 WEIGHTS AND DIMENSIONS

Table 3-9 SV8100 Weights and Dimensions on page 3-11 shows the shipping weight, height, width and depth of each SV8100 digital multiline terminal, IP multiline terminal,  $D^{term}$ , Series i multiline terminal, chassis, assorted blades and adapters.

**Table 3-9 SV8100 Weights and Dimensions**

Unit	Shipping Weight <sup>†</sup>	Height	Width	Depth
<b>SV8100</b>				
CHS2U-US	278.7 oz (7.9 kg)	3.47 in (88 mm)	16.9 in (430 mm)	14.17 in (360 mm)
CHS2U GW-US	158.7 oz (4.5 kg)	4.53 in (115 mm)	8.66 in (220 mm)	14.53 in (369 mm)
CHS2U B-US	158.7 oz (4.5 kg)	4.53 in (115 mm)	8.66 in (220 mm)	14.53 in (369 mm)
CHS2U E	158.7 oz (4.5 kg)	4.53 in (115 mm)	8.66 in (220 mm)	14.53 in (369 mm)
CD-CP00-US	7.06 oz (0.2 kg)	0.98 in (25 mm)	5.71 in (145 mm)	7.09 in (180 mm)
PZ-ME50-US	.353 oz (0.01 kg)	0.12 in (3 mm)	2.56 in (65 mm)	1.22 in (31 mm)
CD-LTA	6.70 oz (0.19 kg)	0.98 in (25 mm)	5.71 in (145 mm)	7.09 in (180 mm)
MGN-U10 ETU	14.6 oz (0.41 kg)	1.89 in (48 mm)	11.47 in (290 mm)	8.46 in (214 mm)
CHS LARGE BATT BOX	352.7 oz (10 kg)	23.23 in (590 mm)	17.72 in (450 mm)	10.43 in (265 mm)
CHS LARGE BATT SET	194 oz (5.5 kg)	6.69 in (170 mm)	5.91 in (150 mm)	4.33 in (110 mm)
CHSGW SMALL BATT BOX	59.97 oz (1.7 kg)	4.53 in (115 mm)	8.66 in (220 mm)	3.15 in (80 mm)
CHSGW SMALL BATT SET	31.2 oz (0.88 kg)	5 in (127 mm)	5.75 in (146 mm)	4.75 in (120.6 mm)
<b>Common</b>				
MPS7101	42.33 oz (1.2 kg)	2.36 in (60 mm)	7.08 in (180 mm)	6.10 in (155 mm)
PZ-BS10	2.29 oz (.065 kg)	0.91 in (23 mm)	2.17 in (55 mm)	7.28 in (185 mm)

Table 3-9 SV8100 Weights and Dimensions (Continued)

Unit	Shipping Weight <sup>1</sup>	Height	Width	Depth
PZ-BS11	1.975 oz (0.056 kg)	0.91 in (23 mm)	2.17 in (55 mm)	7.28 in (185 mm)
PZ-VM21	1.76 oz (0.05 kg)	0.60" (15 mm)	2.09 in (53 mm)	3.35 in (85 mm)
PZ-32IPLA	1.76 oz (0.05 kg)	0.60 in (15 mm)	3.15 in (80 mm)	6.3 in (160 mm)
PZ-64IPLA	1.76 oz (0.05 kg)	0.60 in (15 mm)	3.15 in (80 mm)	6.3 in (160 mm)
PZ-128IPLA	1.76 oz (0.05 kg)	0.60 in (15 mm)	3.15 in (80 mm)	6.3 in (160 mm)
PZ-32IPLB	1.76 oz (0.05 kg)	0.71 in (18 mm)	2.6 in (66 mm)	5.4 in (138 mm)
PZ-64IPLB	1.76 oz (0.05 kg)	0.71 in (18 mm)	2.6 in (66 mm)	5.4 in (138 mm)
PZ-128IPLB	1.76 oz (0.05 kg)	0.71 in (18 mm)	2.6 in (66 mm)	5.4 in (138 mm)
CD-8DLCA	5.89 oz (0.167 kg)	0.98 in (25 mm)	5.71 in (145 mm)	7.09 in (180 mm)
PZ-8DLCB	4.41 oz (0.125 kg)	0.60 in (15 mm)	4.72 in (120 mm)	5.12 in (130 mm)
CD-16DLCA	7.831 oz (0.222 kg)	1.89 in (48 mm)	9.45 in (240 mm)	7.68 in (195 mm)
CD-16LCAH	14.39 oz (0.41 kg)	0.98 in (25 mm)	5.5 in (140 mm)	7.67 in (195 mm)
CD-4COTB	6.35 oz (0.18 kg)	1.89 in (48 mm)	9.45 in (240 mm)	7.68 in (195 mm)
PZ-4COTF	3.53 oz (0.10 kg)	1.89 in (48 mm)	9.45 in (240 mm)	5.12 in (130 mm)
CD-8COTBH	13.97 oz (0.40 kg)	0.98 in (25 mm)	5.5 in (140 mm)	7.67 in (195 mm)
CD-4LCA	5.99 oz (0.17 kg)	0.98 in (25 mm)	9.45 in (240 mm)	7.68 in (195 mm)
PZ-4LCA	3.10 oz (0.09 kg)	0.60 in (15 mm)	9.45 in (240 mm)	7.68 in (195 mm)
CD-8LCA	6.46 oz (0.183 kg)	0.98 in (25 mm)	9.45 in (240 mm)	7.68 in (195 mm)
PZ-8LCE	3.70 oz (0.105 kg)	0.60 in (15 mm)	9.45 in (240 mm)	5.12 in (130 mm)

Table 3-9 SV8100 Weights and Dimensions (Continued)

Unit	Shipping Weight <sup>1</sup>	Height	Width	Depth
CD-2BRIA	5.99 oz (0.17 kg)	0.98 in (25 mm)	9.45 in (240 mm)	7.68 in (195 mm)
PZ-2BRIA	4.02 oz (0.114 kg)	0.60 in (15 mm)	4.72 in (120 mm)	7.68 in (195 mm)
CD-PRTA	5.5 oz (0.156 kg)	0.98 in (25 mm)	9.45 in (240 mm)	3.94 in (100 mm)
CD-CCTA	5.5 oz (0.156 kg)	0.98 in (25 mm)	9.45 in (240 mm)	7.68 in (195 mm)
CD-4ODTA	8.25 oz (0.234 kg)	0.98 in (25 mm)	9.45 in (240 mm)	7.68 in (195 mm)
CD-LTDH	13.05 oz (0.41 kg)	0.98 in (25 mm)	5.5 in (140 mm)	7.67 in (195 mm)
CD-RTB	12.17 oz (0.345 kg)	0.98 in (25 mm)	5.71 in (145 mm)	7.68 in (195 mm)
CD-VM00	7.76 oz (0.22 kg)	0.98 in (25 mm)	9.45 in (240 mm)	7.68 in (195 mm)
CD-PVAA	10.05 oz (0.285 kg)	0.98 in (25 mm)	5.71 in (145 mm)	7.68 in (195 mm)
CD-ETIA	12.17 oz (0.345 kg)	0.98 in (25 mm)	5.71 in (145 mm)	7.68 in (195 mm)
CD-4DIOPA	7.73 oz (0.219 kg)	0.98 in (25 mm)	9.45 in (240 mm)	7.68 in (195 mm)
CD-SVRU	9.8 oz (0.278 kg)	0.98 in (25 mm)	5.71 in (145 mm)	7.68 in (195 mm)
CHS BASE UNIT	352.7 oz (10 kg)	4.72 in (120 mm)	19.69 in (500 mm)	14.37 in (365 mm)
CHS2U BLANK SLOT COVER KIT	1.76 oz (0.05 kg)	2.32 in (60 mm)	1.57 in (40 mm)	1.57 in (40 mm)
CHS L BATT BOX RACK MOUNT BRACKET	352.7 oz (10 kg)	18.5 in (470 mm)	14.6 in (370 mm)	2.76 in (70 mm)
CHS2U INT BATT SET	95.24 oz (2.7 kg)	4.33 in (110 mm)	2.76 in (70 mm)	3.15 in (80 mm)
CHS2U RACK MOUNT KIT	17.6 oz (0.5 kg)	0.91 in (23 mm)	9.65 in (245 mm)	3.35 in (85 mm)
CHS1U/2U WALL MOUNT KIT	35.27 oz (1 kg)	1.18 in (30 mm)	13.8 in (350 mm)	1.77 in (45 mm)
CHS LARGE BATT BOX	458.6 oz (13 kg)	5.24 in (133 mm)	16.93 in (430 mm)	14.3 in (363 mm)

Table 3-9 SV8100 Weights and Dimensions (Continued)

Unit	Shipping Weight <sup>1</sup>	Height	Width	Depth
CHS2U JOINT BRACKET KIT	7.06 oz (0.2 kg)	0.19 in (3 mm)	5.91 in (150 mm)	1.7 in (43 mm)
CHS2U BATT MTG KIT 6 Slot	106 oz (3.0 kg)	2.95 in (75 mm)	4.45 in (113 mm)	4.13 in (105 mm)
IP3-RACK MOUNT BAR SET	45.86 oz (1.3 kg)	2.40 in (61 mm)	18.9 in (480 mm)	0.47 in (12 mm)
<b>Digital Multiline Terminal</b>				
DTL-2E-1 (BK) TEL	35.27 oz (1.0 kg)	4.41 in (112 mm)	7.05 in (179 mm)	8.86 in (225 mm)
DTL-6DE-1 (BK) TEL	38.8 oz (1.1 kg)	4.41 in (112 mm)	7.05 in (179 mm)	8.86 in (225 mm)
DTL-12E-1 (BK) TEL	35.27 oz (1.0 kg)	4.41 in (112 mm)	7.05 in (179 mm)	8.86 in (225 mm)
DTL-8LD-1 (BK) TEL DTL-8LD-1 (WH) TEL	45.6 oz (1.3 kg)	4.41 in (112 mm)	7.05 in (179 mm)	10.39 in (264 mm)
DTL-12BT-1 (BK) TEL	45.6 oz (1.3 kg)	4.29 in (109 mm)	7.6 in (183 mm)	10.16 in (258 mm)
DTL-12PA-1 (BK) TEL	45.6 oz (1.3 kg)	4.41 in (112 mm)	7.6 in (183 mm)	10.16 in (258 mm)
DTL-12D-1 (BK) TEL DTL-12D-1 (WH) TEL	42.33 oz (1.2 kg)	4.39 in (111.7 mm)	7.05 in (179 mm)	10.16 in (258 mm)
DTL-24D-1 (BK) TEL DTL-24D-1 (WH) TEL	42.33 oz (1.2 kg)	4.39 in (111.7 mm)	7.05 in (179 mm)	10.16 in (258 mm)
DTL-32D-1 (BK) TEL DTL-32D-1 (WH) TEL	45.6 oz (1.3 kg)	4.39 in (111.7 mm)	8.1 in (205.8 mm)	10.16 in (258 mm)
<b>IP Multiline Terminal</b>				
ITL-2E-1 (BK) TEL	35.27 oz (1.0 kg)	4.41 in (112 mm)	7.05 in (179 mm)	8.86 in (225 mm)
ITL-6DE-1 (BK) TEL	38.8 oz (1.1 kg)	4.41 in (112 mm)	7.05 in (179 mm)	8.86 in (225 mm)
ITL-8LDE-1 (BK) TEL	63.66 oz (1.98 kg)	4.41 in (112 mm)	7.05 in (179 mm)	8.86 in (225 mm)
ITL-8LD-1 (BK) TEL ITL-8LD-1 (WH) TEL	45.6 oz (1.3 kg)	4.41 in (112 mm)	7.05 in (179 mm)	10.39 in (264 mm)
ITL-12D-1 (BK) TEL ITL-12D-1 (WH) TEL	42.33 oz (1.2 kg)	4.41 in (112 mm)	7.05 in (179 mm)	10.16 in (258 mm)
ITL-12CG-3 (BK) TEL	49.38 oz (1.4 kg)	4.41 in (112 mm)	7.05 in (179 mm)	10.94 in (278 mm)

Table 3-9 SV8100 Weights and Dimensions (Continued)

Unit	Shipping Weight <sup>1</sup>	Height	Width	Depth
ITL-12DG-3 (BK) TEL	45.86 oz (1.3 kg)	4.41 in (112 mm)	7.05 in (179 mm)	10.16 in (258 mm)
ITL-12PA-1 (BK) TEL	45.6 oz (1.3 kg)	4.41 in (112 mm)	7.59 in (193 mm)	10.16 in (258 mm)
ITL-24D-1 (BK) TEL ITL-24D-1 (WH) TEL	42.33 oz (1.2 kg)	4.41 in (112 mm)	7.05 in (179 mm)	10.16 in (258 mm)
ITL-32D-1 (BK) TEL ITL-32D-1 (WH) TEL	45.6 oz (1.3 kg)	4.41 in (112 mm)	8.1 in (205.8 mm)	10.16 in (258 mm)
ITL-320C-1 (BK) TEL	56.44 oz (1.6 kg)	4.41 in (112 mm)	8.94 in (227 mm)	9.84 in (250 mm)
<b>Optional</b>				
8LK-L (BK) UNIT 8LK-L (WH) UNIT	7.05 oz (0.2 kg)	1.77 in (45 mm)	1.15 in (29.3 mm)	8.82 in (224 mm)
ADA-L UNIT	2.82 oz (0.08 kg)	0.98 in (25 mm)	2.56 in (65 mm)	2.84 in (72 mm)
APR-L UNIT	5.29 oz (0.15 kg)	0.98 in (25 mm)	2.56 in (65 mm)	2.84 in (72 mm)
BCH-L (BK) UNIT	31.75 oz (0.9 kg)	4.41 in (112 mm)	3.19 in (81 mm)	8.8 in (223 mm)
BHA-L UNIT	3.53 oz (0.1 kg)	0.98 in (25 mm)	2.56 in (65 mm)	2.84 in (72 mm)
IPLA-R UNIT	2.82 oz (0.08 kg)	0.98 in (25 mm)	2.24 in (57 mm)	3.94 in (100 mm)
IPv6-Adapter	2.82 oz (0.08 kg)	0.98 in (25 mm)	2.56 in (65 mm)	2.84 in (72 mm)
PGD(2)-U10 ADP	12.4 oz (0.35 kg)	1.58 in (40 mm)	6.81 in (173 mm)	4.13 in (105 mm)
DCL-60-1 (BK) CONSOLE DCL-60-1 (WH) CONSOLE	21.16 oz (0.6 kg)	3.23 in (82 mm)	5.39 in (137 mm)	8.82 in (224 mm)
PSA-L (BK) UNIT PSA-L (WH) UNIT	10.58 oz (0.3 kg)	3.15 in (80 mm)	2.91 in (74 mm)	8.8 in (223 mm)
GBA-L UNIT	23.99 oz (0.68 kg)	5.9 in (150 mm)	7.05 in (179 mm)	6.34 in (161 mm)
AC-L UNIT	12 oz (0.34 kg)	1.10 in (28 mm)	1.77 in (45 mm)	3.98 in (101 mm)

Table 3-9 SV8100 Weights and Dimensions (Continued)

Unit	Shipping Weight <sup>1</sup>	Height	Width	Depth
WM-L UNIT	1.58 oz (0.045 kg)	0.996 in (25.3 mm)	3.996 in (101.5 mm)	4.92 in (125 mm)
DSS WM-L UNIT	1.41 oz (0.04 kg)	0.99 in (25.3 mm)	3.4 in (86.5 mm)	4.92 in (125 mm)
G955 Wireless Handset	3.13 oz (0.08 kg)	4.96 in (126 mm)	1.77 in (45 mm)	0.78 in (20 mm)
MH240	3.53 oz (0.1001 kg)	5.31 in (135 mm)	1.89 in (48 mm)	0.63 in (16 mm)
1-Port Digital Call Logging Unit	3.53 oz (0.1 kg)	1.00 in (25 mm)	3.00 in (75 mm)	4.33 in (110 mm)
4-Port Digital Call Logging Unit	24 oz (0.680 kg)	0.984 in (25 mm)	2.835 in (72 mm)	3.30 in (84 mm)
ML440	169.6 oz (4.81 kg)	9.4 in (238.8 mm)	17.2 in (436.9 mm)	8.0 in (203.2 mm)
AP20 Base Unit	179.2 oz (5.08 kg)	9.5 in (241.3 mm)	12.6 in (320 mm)	14.0 in (355.6 mm)
IVR External Server	160.0 oz (4.54 kg)	1.7 in (43 mm)	17.2 in (437 mm)	9.8 in (249 mm)

<sup>1</sup> Shipping weight includes the shipping carton.

# *Installation, Programming, and Maintenance Overview*

## **SECTION 1      INSTALLATION AND TECHNICAL CONSIDERATIONS**

The compact UNIVERGE SV8100 chassis and front loading blades make installation easy. The system can be wall, floor or rack mounted as desired. The CD-CP00-US (Central Processing Unit) performs a number of functions and operations under the control of software programs on the CD-CP00-US package. These programs can be easily upgraded as new features and functionalities are added to the system.

The following functionalities are provided on the CD-CP00-US:

- Call Control Server
- Conference Bridge Server
- Voice Mail Server
- SIP Server
- RTP (Real-Time Transport Protocol) Forwarding
- VoCoder Conversion

The CD-CP00-US uses a 32-bit industrial standard CPU and associated memories to control the system. The CD-CP00-US bus is connected to the backplane of the chassis and provides control for other packages installed in the UNIVERGE SV8100 chassis. The CD-CP00-US is installed in the CD-CP00-US slot reserved for it in this chassis (no other board works in this slot).

The Tone Generator provides various audio signals such as dial tone, reorder tone, busy tone and DTMF (Dual Tone Multifrequency) signaling, which comply with industrial standard tone plans. The DTMF tone sender can resend the DTMF tone signal to a distant-end through the trunk or line circuits. The DTMF tone receiver can receive DTMF signals sent from industry standard telephones or distant locations.

The MF (Multifrequency) signal sender resends toll type multifrequency signals to a central office allowing for emergency (E911) ability.

Caller ID Receiver receives Caller ID signals from the central office and converts those signals for display on the UNIVERGE SV8100 telephones. Caller ID Generator generates industry standard Caller ID signals, based on the digital signal delivered from the CCPU and transmitted to the distant-end.

UNIVERGE SV8100 provides 64 conference circuits for conference calling.

The Power supply unit and the battery backup unit are installed in the SV8100 chassis and allow easy connection to extra battery backup units. All circuits installed in the chassis are located on blades that plug into the slots.

Connecting voice and data between more than one chassis is provided by a bus cable between the basic and expansion SV8100 chassis. Voice and data are transmitted between the chassis using PZ-BS10 and PZ-BS11 blades in the UNIVERGE SV8100 system.

Connecting the system to telephones, outside lines or other external devices is made using telephone cable connectors. A music source for Music on Hold is connected by standard audio equipment plugs.

Universal slots maximize flexibility by allowing installation of any blade in any interface slot (except slot 1 of chassis 1 reserved for the CD-CP00-US). Full use of each chassis, before adding another, reduces hardware requirements.

A Resident System Program is provided when the system first receives power. The CD-CP00-US scans the chassis and recognizes the blades and multiline terminals that are connected to the system. Standard (default) values are assigned in the System Program for all system and device parameters to allow the system to operate immediately after initialization, before programming is done.

The assignments provided by the Resident System Program can be altered to fit the requirements of a particular installation. Changing programming assignments is the function of multiline terminals or a personal computer. When programming from a multiline terminal, Flexible Line keys and the dial pad are used to enter new values, and the display provides the necessary information for programming.

### **Multiline Terminals and Single Line Telephones**

A variety of telephones can be connected to satisfy the requirements of a particular installation. All multiline terminals are fully modular and are powered from the central unit. Cabling is twisted 1-pair for proprietary multiline terminals and single line telephones.

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## SECTION 2      **PROGRAMMING**

### **From Multiline Terminals**

Programming is done using DTH/DTR-8D-1 TEL, DTH/DTR-16D-1 TEL, DTH/DTR-32D-1 TEL, or DTL-6/12/24/32D-1 TEL, DTL-8LD-1 TEL, ITL-6DE-1 TEL, ITL-12/24/32D-1 TEL, ITL-8LD-1 TEL, or ITL-320C-1 TEL multiline terminals.

When a programming multiline terminal is off-line in the Program Mode, the rest of the system continues to function. Most program changes can be entered anytime, but some changes take effect only when the affected stations and circuits are idle. This avoids disrupting calls in progress.

### **PC Programming**

System data can be transferred to/from a disk for backup. The System Program End User software allows end users to program several features for their multiline terminals, such as: Line Key Assignment, Telephone Names, Zone Paging Groups, or various timers.

### **Battery Backup**

The battery on the CD-CP00-US retains the Clock/Calendar and Last Number Redial (LNR) buffers for each station when the CD-CP00-US encounters a power loss. When the battery is fully charged, the settings are retained for approximately three years. The Lithium (CR2032) battery should be replaced every two years. The system programmed memory (Customer Database) is stored in nonvolatile Memory and can be erased only by a First Initialization.

The batteries, located in the SV8100 chassis, support system operation for up to 30 minutes during a power outage.

### **User Programmable Features**

Multiline terminal users can program the following features from their station:

- Ringing Line Preference
- Feature Access and/or One-Touch keys (e.g., Speed Dial or Direct Station Selection)
- Speed Dial

Multiline terminals without programmable One-Touch keys and single line telephones can be used to program Station Speed Dial memories. Attendant Positions can be used to program System Speed Dial memories and the System Clock/Calendar.

## **SECTION 3      MAINTENANCE**

### **Installing Interface Blades without Disrupting Ongoing Calls**

Each interface and optional blade has an LED indication of power status. An interface blade (except the CD-CP00-US) with this switch OFF can be removed or installed with the system power on.

The combination of status indication and blade replacement with power on allows the maintenance technician to replace suspect circuits without disrupting ongoing calls.

### **Up/Down Load of Data**

Using PC Programming, Station Speed Dial data, System Speed Dial data, and all System Data can be transferred from/to a PC. The Up/Down Load may be accomplished from a local or remote location.

# Hardware Specifications

## SECTION 1 SYSTEM CAPACITIES

### 1.1 System Chassis Capacities

The CHS2U-US UNIVERGE SV8100 system consists primarily of the base chassis and a maximum of three expansion chassis. Expansion chassis can be stacked vertically on the base chassis to expand the system capacity to 320 ports. By linking two UNIVERGE SV8100 systems via IP connection, the maximum capacity can be increased to 712 ports (512 station/ 200 trunks).

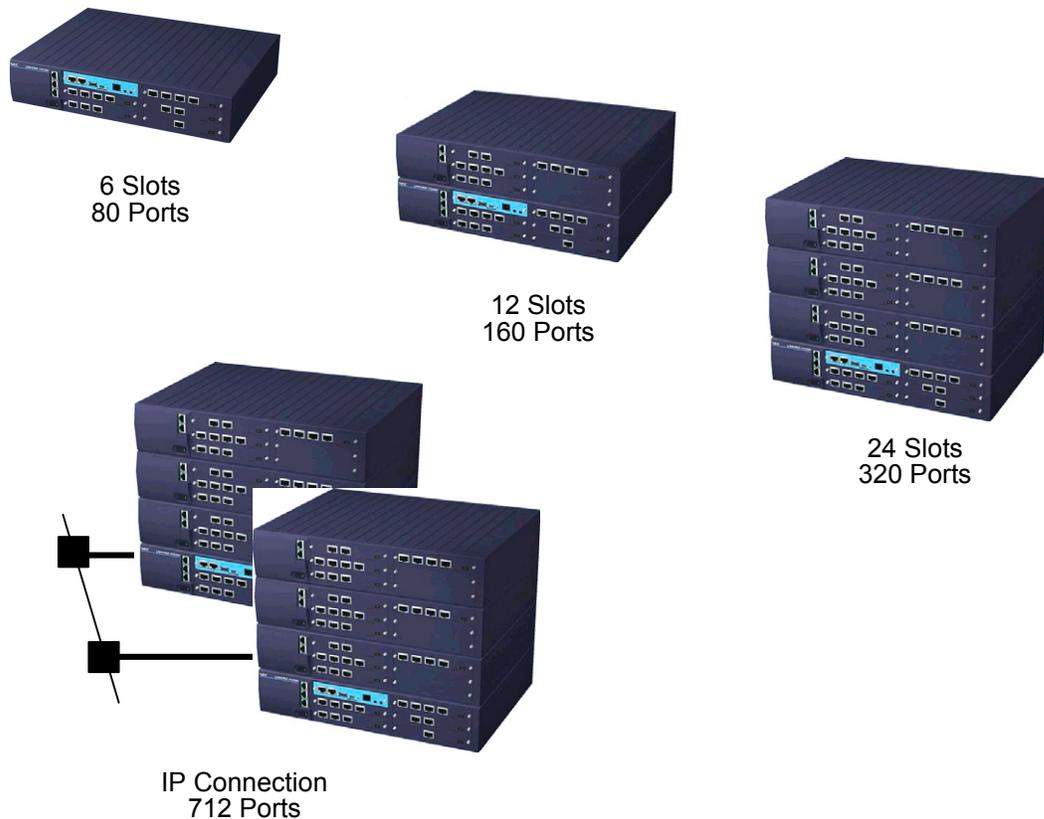


Figure 5-1 Base and Expansion Chassis

The UNIVERGE SV8100 CHS2U GW-US is a 9.5" chassis that has three universal slots and one PSU. The standalone module provides 48 total ports (32 digital terminals) and can include any combination of stations and trunks below this number.



3 Slots  
48 Ports

**Figure 5-2 UNIVERGE SV8100 CHS2U GW-US Chassis**

[Table 5-1 9.5" Gateway and 19" Maximum System Capacities – Chassis](#) shows the maximum number of chassis and related equipment that can be installed in a system.

**Table 5-1 9.5" Gateway and 19" Maximum System Capacities – Chassis**

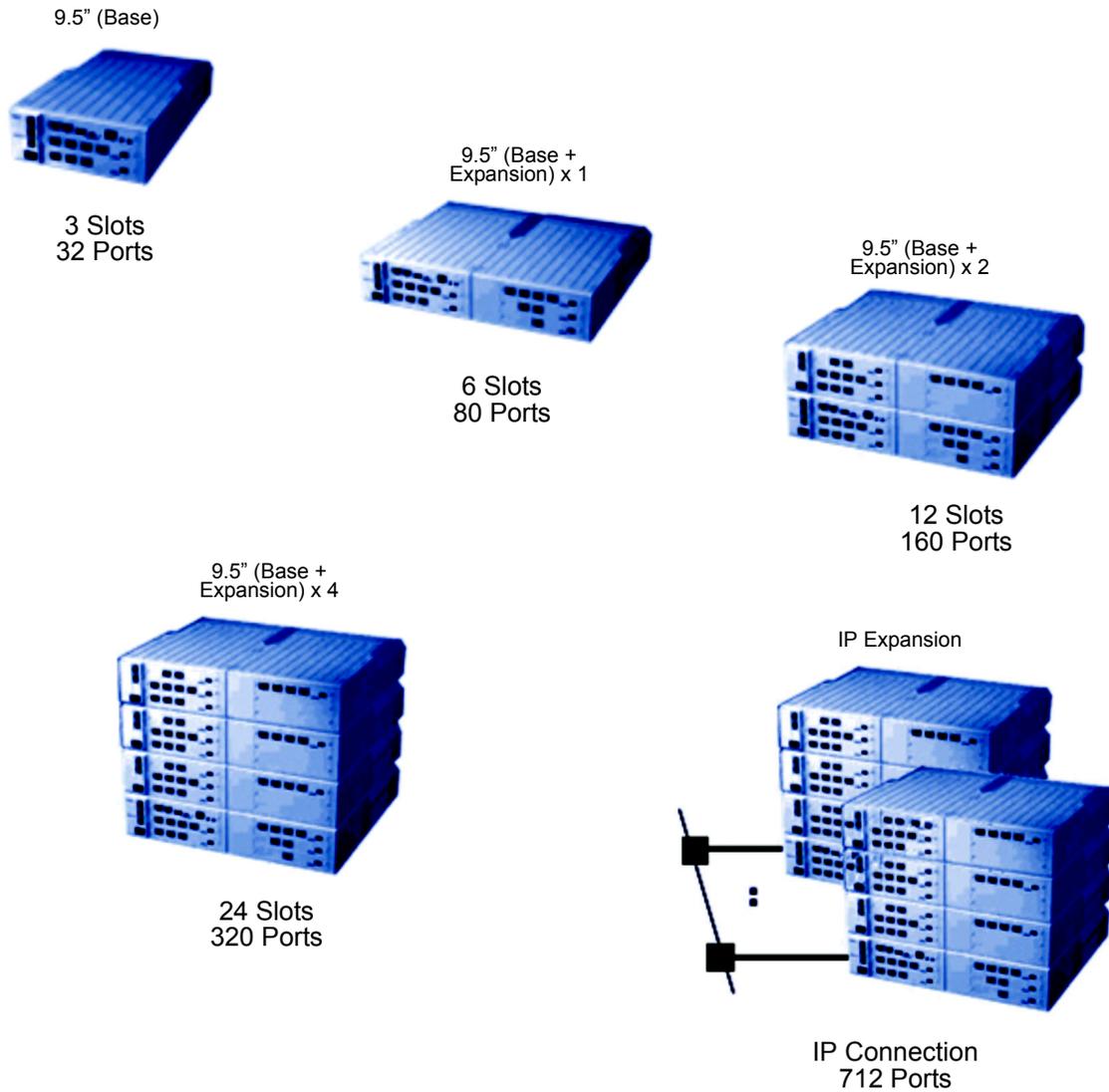
Hardware	9.5" Chassis	19" Chassis with CPU	19" Chassis without CPU	19" Chassis x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
<b>Chassis:</b>						
CHS2U GW-US (9.5" Chassis)	1	–	–	–	–	Gateway chassis
CHS2U-US (19" Chassis)	–	1	1	4	16 x (1+3)	Virtual slot in NetLink is limited to maximum of 240

**Table 5-1 9.5" Gateway and 19" Maximum System Capacities – Chassis (Continued)**

Hardware	9.5" Chassis	19" Chassis with CPU	19" Chassis without CPU	19" Chassis x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
<b>Expansion:</b>						
PZ-BS10 3-jack Expansion Board for Controlling Chassis	0	1	0	1	*	–
PZ-BS11 1-jack Expansion Board for Expansion Chassis	0	0	1	3	*	–
<b>Battery:</b>						
CHS LARGE BATT BOX (External Battery Box)	1	1	1	4	16 x (1+3)	–
CHSGW SMALL BATT BOX (Small Battery Box)	1	–	–	–	–	–
<b>Fan Box:</b>						
CHS2U FAN BOX SET	0	1	1	4	–	1 is factory installed with each chassis
<b>Power Supply:</b>						
MPS7101	1	1	1	4	–	1 is factory installed with each chassis

\* Dependent on size of system.

The UNIVERGE SV8100 9.5" CHS2U B-US and CHS2U E (Combined) system consists primarily of a base chassis and expansion chassis. Expansion chassis can be stacked vertically on the base chassis to expand the system capacity to 320 ports (refer to [Figure 5-3 CHS2U B-US Base and CHS2U E Expansion Chassis on page 5-4](#)). By linking two UNIVERGE SV8100 systems via IP connection, the maximum capacity can be increased to 712 ports (512 station/ 200 trunks).



**Figure 5-3 CHS2U B-US Base and CHS2U E Expansion Chassis**

Table 5-2 9.5" Base and Expansion Maximum System Capacities – Chassis on page 5-5 shows the maximum number of chassis and related equipment that can be installed in a 9.5" Base and Expansion system.

**Table 5-2 9.5" Base and Expansion Maximum System Capacities – Chassis**

Hardware	9.5" Base	9.5" Base + Expansion with CPU	9.5" Base + Expansion without CPU	9.5" Base + Expansion x4	Networked Chassis (NetLink)	Comments
<b>Number of Slot(s) for Interface Package</b>	<b>3 Slots</b>	<b>5 Slots</b>	<b>6 Slots</b>	<b>23 Slots</b>		
<b>Expansion:</b>						
PZ-BS10 3-port Expansion Board for Controlling Chassis	1	1	1	1	–	–
PZ-BS11 1-port Expansion Board for Expansion Chassis	1	1	1	3	–	–
<b>Battery:</b>						
CHS LARGE BATT BOX (External Battery Box)	1	1	1	4	16 x (1+3)	–
CHSGW SMALL BATT BOX (Small Battery Box)	1	1	1	4	16 x (1+3)	–
<b>Power Supply:</b>						
MPS7101	1	1	1	4	–	1 is factory installed with each chassis

## 1.2 System Blade Capacities

Table 5-3 SV8100 Maximum 9.5" Gateway and 19" System Capacities – Blades on page 5-6 and Table 5-4 SV8100 Maximum 9.5" Base and Expansion System Capacities – Blades on page 5-9 show the maximum number for each blade that can be installed in a system.

This is determined by the maximum blade configuration allowed. When installing single line sets, DISA, or tie lines, CPU circuits must be allocated for DTMF receivers. To install single line sets with CO/PBX line access, or when installing immediate-start tie lines, CPU circuits must be allocated for dial tone detection.

Table 5-3 SV8100 Maximum 9.5" Gateway and 19" System Capacities – Blades

Hardware	9.5" Chassis	19" Chassis with CPU	19" Chassis without CPU	19" Chassis x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
<b>Common Control Blades:</b>						
CD-CP00-US	1	1	0	1	16	–
PZ-32IPLA (32-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 32 VOIP Gateway channels
PZ-64IPLA (64-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 64 VOIP Gateway channels
PZ-128IPLA (128-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 128 VOIP Gateway channels
PZ-32IPLB (32-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 32 VOIP Gateway channels
PZ-64IPLB (64-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 64 VOIP Gateway channels
PZ-128IPLB (128-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 128 VOIP Gateway channels
PZ-ME50-US (Memory Expansion Daughter Board)	1	1	0	1	16	–
PZ-VM21 (Voice Mail Daughter Board)	1	1	0	1	1	Does include modem
CD-SVRU (Server Blade)	1	1	1	1	1	
<b>Station Blades:</b>						
CD-4DIOPA (4 DID/OPX)	2	5	6	23	128	When installed as an OPX blade

**Table 5-3 SV8100 Maximum 9.5" Gateway and 19" System Capacities – Blades (Continued)**

Hardware	9.5" Chassis	19" Chassis with CPU	19" Chassis without CPU	19" Chassis x4	Networked Chassis (NetLink)	Comments
	Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots		
CD-4LCA (4 Single Line Telephone Interface)	2	5	6	23	32	–
CD-8LCA (8 Single Line Telephone Interface)	2	5	6	23	32	–
CD-8DLCA (8 Digital Station Interface)	2	5	6	23	32	–
CD-16DLCA (16 Digital Station Interface)	2	5	6	23	32	–
PZ-8DLCB (8 Digital Station Interface Daughter Board)	2	5	6	23	32	–
CD-16LCAH (Analog Terminal Blade)	2	5	6	23	32	–
PZ-4LCA (4 Single Line Telephone Interface Daughter Board)	2	5	6	23	32	–
PZ-8LCE (8 Single Line Telephone Interface Daughter Board)	2	5	6	23	32	–
CD-LTA* (8 Digital/2 Single Line)	2	2	2	8	23	An optional PZ-4COTF or PZ-2BR1A can be installed
<b>Trunk Blades:</b>						
CD-2BR1A (2 Basic Rate Interface)	2	5	6	23	25	–
PZ-2BR1A (2 Basic Rate Interface Daughter Board)	2	5	6	23	25	–
CD-4COTB (4 Loop/Ground Start Trunk)	2	5	6	23	25	–

**Table 5-3 SV8100 Maximum 9.5" Gateway and 19" System Capacities – Blades (Continued)**

Hardware	9.5" Chassis	19" Chassis with CPU	19" Chassis without CPU	19" Chassis x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
PZ-4COTF (4 Loop/Ground Start Trunk Daughter Board)	2	5	6	23	25	–
CD-8COTBH (8-Port Loop and Ground Start)	2	5	6	23	25	–
CD-4DIOPA (4 DID/OPX)	2	5	6	23	50	When installed as a DID blade
CD-4ODTA (4 E&M)	2	5	6	23	50	–
CD-PRTA (1 Primary Rate Interface)	2	4	4	16	8	Blade is used for Primary Rate Interface or T-1 Interface
<b>Station/Trunk Blades:</b>						
CD-LTDH (8-Port Digital Station/2-Port Analog Station/4-Port Analog Trunk)	2	2	2	8	23	–
<b>Optional Blades:</b>						
CD-PVAA (Interactive Voice Response, Multimedia Conference, PVA PMS)	1	1	1	1	1	–
CD-PVAA (CCIS Point-to-Multipoint)	2	5	6	23	32	–
CD-ETIA (Switching Hub with Power over Ethernet)	2	3	3	12	64	–
CD-CCTA (CCIS Trunk Interface/Common Channel Handler)	2	4	6	8	8	–
CD-RTB (Router)	1	1	2	7	50	–

**Table 5-3 SV8100 Maximum 9.5" Gateway and 19" System Capacities – Blades (Continued)**

Hardware	9.5" Chassis	19" Chassis with CPU	19" Chassis without CPU	19" Chassis x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
CD-VM00 (Voice Mail and Server)	1	1	1	1	1	Maximum of One per system

\* A PZ-ME50-US is required when more than one CD-LTA is installed. This feature added with **Version 3000**.

**Table 5-4 SV8100 Maximum 9.5" Base and Expansion System Capacities – Blades**

Hardware	9.5" Base	9.5" Base + Expansion with CPU	9.5" Base + Expansion without CPU	9.5" Base + Expansion with CPU x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
<b>Common Control Blades:</b>						
CD-CP00-US	1	1	0	1	16	–
PZ-32IPLA (32-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 32 VOIP Gateway channels
PZ-64IPLA (64-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 64 VOIP Gateway channels
PZ-128IPLA (128-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 128 VOIP Gateway channels
PZ-32IPLB (32-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 32 VOIP Gateway channels
PZ-64IPLB (64-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 64 VOIP Gateway channels
PZ-128IPLB (128-port VoIP Daughter Board)	1	1	0	1	16	This unit provides 128 VOIP Gateway channels

Table 5-4 SV8100 Maximum 9.5" Base and Expansion System Capacities – Blades (Continued)

Hardware	9.5" Base	9.5" Base + Expansion with CPU	9.5" Base + Expansion without CPU	9.5" Base + Expansion with CPU x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
PZ-ME50-US (Memory Expansion Daughter Board)	1	1	0	1	16	–
PZ-VM21 (Voice Mail Daughter Board)	1	1	0	1	1	Does include modem
CD-SVRU (Server Blade)	1	1	1	1	1	
<b>Station Blades:</b>						
CD-4DIOPA (4 DID/OPX)	2	5	6	23	128	When installed as an OPX blade
CD-4LCA (4 Single Line Telephone Interface)	2	5	6	23	32	–
CD-8LCA (8 Single Line Telephone Interface)	2	5	6	23	32	–
CD-8DLCA (8 Digital Station Interface)	2	5	6	23	32	–
CD-16DLCA (16 Digital Station Interface)	2	5	6	23	32	–
PZ-8DLCB (8 Digital Station Interface Daughter Board)	2	5	6	23	32	–
CD-16LCAH (Analog Terminal Blade)	2	5	6	23	32	–
PZ-4LCA (4 Single Line Telephone Interface Daughter Board)	2	5	6	23	32	–
PZ-8LCE (8 Single Line Telephone Interface Daughter Board)	2	5	6	23	32	–

Table 5-4 SV8100 Maximum 9.5" Base and Expansion System Capacities – Blades (Continued)

Hardware	9.5" Base	9.5" Base + Expansion with CPU	9.5" Base + Expansion without CPU	9.5" Base + Expansion with CPU x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
CD-LTA* (8 Digital/2 Single Line)	2	2	2	8	23	An optional PZ-4COTF or PZ-2BR1A can be installed
<b>Trunk Blades:</b>						
CD-2BR1A (2 Basic Rate Interface)	2	5	6	23	25	–
PZ-2BR1A (2 Basic Rate Interface Daughter Board)	2	5	6	23	25	–
CD-4COTB (4 Loop/Ground Start Trunk)	2	5	6	23	25	–
PZ-4COTF (4 Loop/Ground Start Trunk Daughter Board)	2	5	6	23	25	–
CD-8COTBH (8-Port Loop and Ground Start)	2	5	6	23	25	–
CD-4DIOPA (4 DID/OPX)	2	5	6	23	50	When installed as a DID blade
CD-4ODTA (4 E&M)	2	5	6	23	50	–
CD-PR1A (1 Primary Rate Interface)	2	4	4	16	8	Blade is used for Primary Rate Interface or T-1 Interface
<b>Station/Trunk Blades:</b>						
CD-LTDH (8-Port Digital Station/2-Port Analog Station/4-Port Analog Trunk)	2	2	2	8	23	–

Table 5-4 SV8100 Maximum 9.5" Base and Expansion System Capacities – Blades (Continued)

Hardware	9.5" Base	9.5" Base + Expansion with CPU	9.5" Base + Expansion without CPU	9.5" Base + Expansion with CPU x4	Networked Chassis (NetLink)	Comments
Number of Slot(s) for Interface Package	3 Slots	5 Slots	6 Slots	23 Slots		
<b>Optional Blades:</b>						
CD-PVAA (Interactive Voice Response, Multimedia Conference, PVA PMS)	1	1	1	1	1	–
CD-PVAA (CCIS Point-to-Multipoint)	2	5	6	23	32	–
CD-ETIA (Switching Hub with Power over Ethernet)	2	3	3	12	64	–
CD-CCTA (CCIS Trunk Interface/ Common Channel Handler)	2	4	8	8	8	–
CD-RTB (Router)	1	1	2	7	50	–
CD-VM00 (Voice Mail and Server)	1	1	1	1	1	Maximum of One per system

\* A PZ-ME50-US is required when more than one CD-LTA is installed. This feature added with **Version 3000**.

[Table 5-5 Daughter Board Combinations](#) shows each blade and associated daughter board combinations. The daughter boards that can be mounted on specific blades are indicated by a checkmark. For example, the CD-LTA can have a PZ-2BRIA or the PZ-4COTF daughter board mounted.

**Table 5-5 Daughter Board Combinations**

Blades	Daughter Board				
	PZ-2BRIA	PZ-4COTF	PZ-4LCA	PZ-8LCE	PZ-8DLCB
<b>CD-LTA</b> (8 Digital/2 Single Line)	✓	✓	–	–	–
<b>CD-4COTB</b> (4 Loop Ground Start)	–	✓	–	–	–
<b>CD-4LCA</b> (4 Single Line Interface)	–	–	✓	✓	–
<b>CD-8LCA</b> (8 Single Line Interface)	–	–	✓	✓	–
<b>CD-8DLCA</b> (8 Digital Station Interface)	–	–	–	–	✓
<b>CD-16DLCA</b> (16 Digital Station Interface)	–	–	–	–	–
<b>CD-2BRIA</b> (2 Basic Rate Interface)	✓	–	–	–	–

– = Does not apply

✓ = Does apply

### 1.3 System Trunk/Port/Channel Capacities

The maximum slot and channel capacities are listed in [Table 5-6 SV8100 9.5" Gateway and 19" Maximum System Capacities – Trunks/Ports/Channels](#) and [Table 5-6 SV8100 9.5" Gateway and 19" Maximum System Capacities – Trunks/Ports/Channels](#) on page 5-14.

Up to four combined CHS2U B-US/CHS2U E (3-Slot Base/3-Slot Expansion) or CHS2U-US (6-Slot) chassis can be connected locally to reach the system's maximum port capacity.

**EXAMPLE:**

0 CHS2U-US (19" Chassis) & 4 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

1 CHS2U-US (19" Chassis) & 3 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

2 CHS2U-US (19" Chassis) & 2 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

3 CHS2U-US (19" Chassis) & 1 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

4 CHS2U-US (19" Chassis) & 0 CHS2U B-US/CHS2U E (9.5" Base Chassis/9.5" Expansion Chassis)

**Table 5-6 SV8100 9.5" Gateway and 19" Maximum System Capacities – Trunks/Ports/Channels**

Number of:		9.5" Chassis	19" Chassis				System Maximum
		x 1 (CPU + 2 Slots)	x 1 (6 Slots)	x 2 (12 Slots)	x 3 (18 Slots)	X4 (24 Slots)	
Number of Timeslots *1	PCM	48	104	208	312	416	444
	Data	7	7	14	21	28	28
<i>D<sup>term</sup></i> (-48V)		32	80	176	272	368	Total 512
SLT (-28V)		32	80	176	272	368	
SLT (-48V)		8	20	44	68	92	
<i>D<sup>term</sup></i> IP		512					
Desktop Applications (Desktop Client, Desktop Client with Shared Services and SoftPhones)		128					Total 128
SIP/WLAN		512					Total 512
Analog Trunks (COT)		16	40	88	136	184	Total 200
BRI		16	40	88	136	184	
PRI (1.5M)		48	96	192	192	192	
IP Trunk (SIP/K-CCIS – IP)		200					
DTMF Receivers		32	32	32	32	32	96 *2
VoIP Channels		128					128
Voice Mail Channels on CPU		16 channels					16

**Table 5-6 SV8100 9.5" Gateway and 19" Maximum System Capacities – Trunks/Ports/Channels (Continued)**

Number of:	9.5" Chassis	19" Chassis				System Maximum
	x 1 (CPU + 2 Slots)	x 1 (6 Slots)	x 2 (12 Slots)	x 3 (18 Slots)	X4 (24 Slots)	
<b>V34 Modem</b>	1 channel					1

\*1 = For  $\mu$ -law countries 104 timeslots per chassis are assigned the G.711 PCM communications (e.g., voice communications) and 7 timeslots per chassis are assigned for the Data communications (e.g., HDLC over ISDN). Thus the simultaneous data communications are limited up to seven per chassis.

\*2 = An additional 64 DTMF Receivers are available when the PZ-BS10 is installed.

 An additional 64 DTMF Receivers are available when the PZ-BS10 is installed.

If using Caller ID to analog trunks and DSP resources are set to common, DSP resources will only be used for analog trunks and not analog stations.

**Table 5-7 SV8100 9.5" (Base and Expansion) Maximum System Capacities – Trunks/Ports/Channels**

Number of:		9.5" Base	9.5" Base + Expansion				System Maximum
		x 1 (CPU + 2 Slots)	x 1 (6 Slots)	x 2 (12 Slots)	x 3 (18 Slots)	X4 (24 Slots)	
<b>Number of Timeslots *1</b>	<b>PCM</b>	48	104	208	312	416	444
	<b>Data</b>	7	7	14	21	28	28
<b>D<sup>term</sup> (-48V)</b>		32	80	176	272	368	Total 512
<b>SLT (-28V)</b>		32	80	176	272	368	
<b>SLT (-48V)</b>		8	20	44	68	92	
<b>D<sup>term</sup> IP</b>		512	512				
<b>SIP/WLAN</b>		512					
<b>Analog Trunks (COT)</b>		16	40	88	136	184	Total 200
<b>BRI</b>		16	40	88	136	184	
<b>PRI (1.5M)</b>		48	96	192	192	192	
<b>IP Trunk (SIP/K-CCIS – IP)</b>		200					

**Table 5-7 SV8100 9.5" (Base and Expansion) Maximum System Capacities – Trunks/Ports/Channels (Continued)**

Number of:	9.5" Base	9.5" Base + Expansion				System Maximum
	x 1 (CPU + 2 Slots)	x 1 (6 Slots)	x 2 (12 Slots)	x 3 (18 Slots)	X4 (24 Slots)	
<b>DTMF Receivers</b>		32	32	32	32	96 *2
<b>VoIP Channels</b>	128					128
<b>Voice Mail Channels on CPU</b>	16 channels					16
<b>V34 Modem</b>	1 channel					1

\*1 = For  $\mu$ -law countries 104 timeslots per chassis are assigned the G.711 PCM communications (e.g., voice communications) and 7 timeslots per chassis are assigned for the Data communications (e.g., HDLC over ISDN). Thus the simultaneous data communications are limited up to seven per chassis.

\*2 = An additional 64 DTMF Receivers are available when the PZ-BS10 is installed.

 An additional 64 DTMF Receivers are available when the PZ-BS10 is installed.

*If using Caller ID to analog trunks and DSP resources are set to common, DSP resources will only be used for analog trunks and not analog stations.*

## SECTION 2 CHASSIS POWER BASED CALCULATOR CHART

The Univerge SV8100 system uses two types of power factors. For a single chassis chart refer to [Table 5-8 Board Power Factor](#). For the maximum number of specific blades per package, see [Table 5-9 Maximum Number of Packages Installed](#). Refer to [Table 5-10 Terminal Power Factor on page 5-18](#) for the Terminal/ Adapter power chart. Refer to [Table 5-11 IP Terminal Power Chart on page 5-19](#) for the IP Terminal Power chart and [Table 5-12 IEEE802.af Class Specifications on page 5-19](#) for the Class Specifications chart.

**Table 5-8 Board Power Factor**

Board Power Factor	
Total	=<7
Item	Power Factor
CD-CP00-US	1
CD-RTB	2
CD-VM00	2
CD-ETIA	2

**Table 5-8 Board Power Factor (Continued)**

<b>Board Power Factor</b>	
<b>Total</b>	<b>=&lt;7</b>
<b>Item</b>	<b>Power Factor</b>
CD-PVAA	1
PZ-32IPLA	1
PZ-64IPLA	2
PZ-128IPLA	2
PZ-32IPLB	1
PZ-64IPLB	2
PZ-128IPLB	2
CD-SVRU	2

**Table 5-9 Maximum Number of Packages Installed**

<b>Board (Power Factor)</b>	<b>Maximum Number of Package Installed</b>			
	<b>9.5 inch with CCPU</b>	<b>19 inch with CCPU</b>	<b>19 inch without CCPU</b>	<b>4 x 19 inch</b>
CD-ETIA (2)	2	3	3	12
CD-PVAA (1)	2	5	6	23
CD-RTB (2)	1	2	2	8
CD-SVRU	2	2	3	11



**Table 5-11 IP Terminal Power Chart**

IP Terminal	IEEE802.3af Class	Label Indication (Maximum Current with All Options)				Maximum Current Without Options			
		48VDC		24VDC		48VDC		24VDC	
ITL-12CG-3 TEL	Class 3	230mA	11.04W	450mA	10.8W	102mA	4.9W	192mA	4.62W
ITL-12DG-3 TEL	Class 3	230mA	11.04W	450mA	10.8W	102mA	4.9W	192mA	4.62W
ITL-320C-1 TEL/ ITL-320C-2 TEL	Class 3	160mA	7.7W	290mA	7.0W	111mA	5.3W	192mA	4.6W
ITL-32D-1 TEL	Class 2	130mA	6.2W	235mA	5.6W	90mA	4.3W	153mA	3.7W
ITL-8LD-1 TEL	Class 2	130mA	6.2W	235mA	5.6W	81mA	3.9W	137mA	3.3W
ITL-24D-1 TEL	Class 2	130mA	6.2W	235mA	5.6W	81mA	3.9W	137mA	3.3W
ITL-12D-1 TEL	Class 2	130mA	6.2W	235mA	5.6W	81mA	3.9W	137mA	3.3W
ITL-24PA-1 TEL	Class 2	130mA	6.2W	235mA	5.6W	–	0.0W	–	0.0W
ITL-24PD-1 TEL	Class 2	130mA	6.2W	235mA	5.6W	–	0.0W	–	0.0W
ITL-24BT-1 TEL	Class 2	130mA	6.2W	235mA	5.6W	–	0.0W	–	0.0W
ITL-6DE-1 TEL	Class 1	68mA	3.3W	122mA	2.9W	68mA	3.3W	122mA	2.9W
ITL-2E-1 TEL	Class 1	68mA	3.3W	122mA	2.9W	68mA	3.3W	122mA	2.9W

Label Indication:

IP Value/Sophisticated – Maximum watts when adding options or modular upgrades.

IP Value – Maximum watts when ITL-12D-1 TEL is changed to ITL-8LD-1 TEL or ITL-24D-1 TEL.

**Table 5-12 IEEE802.af Class Specifications**

IEEE802.3af	Minimum	Maximum
Class 4	–	–
Class 3	6.49W	12.95W
Class 2	3.84W	6.49W
Class 1	0.44W	3.84W
Class 0	0.44W	12.95W

## SECTION 3 TRAFFIC CAPACITY

Table 5-13 Traffic Capacity provides information about the traffic capacity for the basic system package and expanded system package.

**Table 5-13 Traffic Capacity**

Traffic Capacity	Basic System Package	Expanded System Package
Traffic Capacity (CD-CP00-US)	4800 BHCA	4800 BHCA

 4800 Busy-Hour Call Attempts (BHCA) is based on a 176Trunk/240 station configuration.

The CD-CP00-US provides:

- 200 trunk ports maximum
- 512 extension ports maximum
- 512 ports digital/IP extensions maximum
- 256 analog ports maximum
- 256 virtual extensions
- Connection for 32/64/128 VoIP Daughter Board PZ-32/64/128 IPLA **or** PZ-32/64/128 IPLB)
- Connection for Voice Mail Daughter Board (PZ-VM21)
- Connection for Expanded Memory (PZ-ME50-US)
- Supports TAPI 1.x
- One Green Status LED
- Four Red Status LEDs
- Five diagnostic LEDs which indicate the status of various system functions
- During normal operation, the RUN LED is flashing and the remaining LEDs are off.
- 700x700 Time Division Multiplex Switch (TDM Switch)
- Digital Phase Locked Loop (DPLL)

## SECTION 4 CABLING REQUIREMENTS AND SPECIFICATIONS

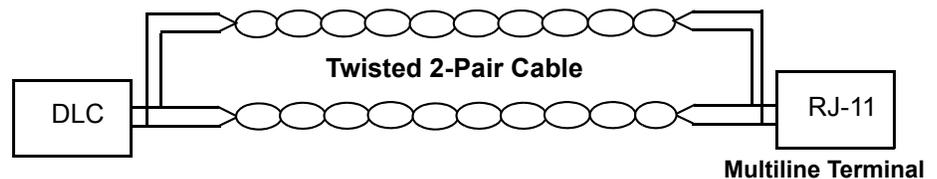
This section provides cabling requirements and specifications for various equipment used in the SV8100 system.

Only the DT300/DT700,  $D^{term}$  Series i telephones, single line telephones, cordless telephones and wireless telephones discussed in the document can be installed on the SV8100 system.



***To avoid damage to equipment, do not install the  $D^{term}$  70 on the SV8100 system. The  $D^{term}$  70 (DTU/DTP) terminal uses -24V and has no protection from the -48V power supply used by the SV8100 system.***

Figure 5-4 Connecting the DLC Using Twisted 2-Pair Cable is a diagram of the chassis connected with each of the multiline terminals and single line telephones by a separate twisted 1-pair cable or 2-pair cable (only for multiline terminals).



**Figure 5-4 Connecting the DLC Using Twisted 2-Pair Cable**

Refer to the following tables for cabling requirements and specifications:

- [Table 5-14 DT300 Series Loop Resistance and Cable Length](#)
- [Table 5-15 DT700 Series Loop Resistance and Cable Length](#)
- [Table 5-16  \$D^{term}\$  Series i or  \$D^{term}\$  IP Terminal Loop Resistance and Cable Length](#)
- [Table 5-17 Cable Connection Between the Analog Port and the Single Line Equipment](#)
- [Table 5-18 Cabling Requirements](#)

**Table 5-14 DT300 Series Loop Resistance and Cable Length**

<b>Terminal or Adapter</b>	<b>By Twisted 1-Pair Cable (without AC Adapter) 24 AWG</b>
DTL-2E-1 (BK) TEL	1,969 ft (600m)
DTL-6DE-1 (BK) TEL	1,969 ft (600m)
DTL-12E-1 (BK) TEL	1,969 ft (600m)
DTL-8LD-1 (BK) TEL DTL-8LD-1 (WH) TEL	1,969 ft (600m)
DTL-12BT-1 (BK) TEL	1,969 ft (600m)
DTL-12PA-1 (BK) TEL	1,969 ft (600m)
DTL-12D-1 (BK) TEL DTL-12D-1 (WH) TEL	1,969 ft (600m)
DTL-24D-1(BK) TEL DTL-24D-1(WH) TEL	1,969 ft (600m)
DTL-32D-1 (BK) TEL DTL-32D-1 (WH) TEL	1,969 ft (600m)
DCL-60-1 Console*	1,969 ft (600m)

\* An AC Adapter is required.

**Table 5-15 DT700 Series Loop Resistance and Cable Length**

<b>Terminal or Adapter</b>	<b>Ethernet Cable</b>
ITL-2E-1 (BK) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-6DE-1 (BK) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-8LDE-1 (BK) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-8LD-1 (BK) TEL ITL-8LD-1 (WH) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-12D-1 (BK) TEL ITL-12D-1 (WH) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-12CG-3 (BK) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-12DG-3 (BK) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-12PA-1 (BK) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)

**Table 5-15 DT700 Series Loop Resistance and Cable Length (Continued)**

Terminal or Adapter	Ethernet Cable
ITL-24D-1 (BK) TEL ITL-24D-1 (WH) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100 m)
ITL-32D-1 (BK) TEL ITL-32D-1 (WH) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)
ITL-320C-1 (BK) TEL/ ITL-320C-2 (BK) TEL	Cat 5/Cat 6 Ethernet 328.1 ft (100m)

**Table 5-16  $D^{term}$  Series i or  $D^{term}$  IP Terminal Loop Resistance and Cable Length**

Terminal or Adapter	Maximum Loop Resistance (without AC Adapter) (Ohms)	By Twisted 1-Pair Cable (without AC Adapter) 24 AWG	By Twisted 2-Pair Cable (without AC Adapter) 24 AWG	Maximum Loop Resistance (with AC Adapter) (Ohms)	By Twisted 1-Pair Cable (with AC Adapter) 24 AWG	By Twisted 2-Pair Cable (with AC Adapter) 24 AWG
DTH-8-1 TEL DTR-8-1 TEL	37	700	1400	107	2000	2000
DTH-8D-1 TEL DTR-8D-1 TEL	37	700	1400	107	2000	2000
DTH-16-1 TEL DTR-16-1 TEL	35	660	1320	107	2000	2000
DTH-16D-1 TEL DTR-16D-1 TEL	35	660	1320	107	2000	2000
DTH-32D-1 TEL DTR-32D-1 TEL	26	500	1000	107	2000	2000
DTH-16LD-1 TEL	37	700	1400	107	2000	2000
DCR-60-1 Console*	—	—	—	107	2000	2000

\* An AC Adapter is required.

**Table 5-17 Cable Connection Between the Analog Port and the Single Line Equipment**

Connected Equipment	Cable	Maximum Feet from Connected Equipment to Telephone
ADA-L UNIT	Twisted Pair	9.5 ft (2.89m)
APR-L UNIT	Twisted Pair	50 ft (15.24m)
PSA-L UNIT	Twisted Pair	1,700 ohms
GBA-L UNIT	Twisted Pair	N/A

**Table 5-17 Cable Connection Between the Analog Port and the Single Line Equipment**

Connected Equipment	Cable	Maximum Feet from Connected Equipment to Telephone
LCA	Twisted Pair	600 ohms (Including the SLT)
OPX	Twisted Pair	1500 ohms or less (Including the SLT)

 *Mixing digital and analog ports through the same 25-pair cable runs is not recommended.*

**Table 5-18 Cabling Requirements**

Connected Equipment	Cable
Music on Hold and Background Music Sources	Hi-Fi Shielded Audio Cable
External Amplifier	Hi-Fi Shielded Audio Cable
ITL Cabling	Cat 5 Straight Data Network Cable – 328.1 ft (100m) maximum distance.

## SECTION 5 POWER REQUIREMENTS

A dedicated 100VAC/120VAC/220VAC/230 – 240VAC 50Hz/60Hz circuit located within seven feet of the chassis is required. A separate dedicated outlet for each chassis should be installed.



***Double Pole/Neutral Fusing (power supply fuses are located at both the L and N side).***

### 5.1 Power Supply Specifications

AC Power Supply:

- Dedicated 15 Amp circuit
- Power Requirements: 120 VAC @ 15A Controlling/Base Chassis
- Power Consumption: Base Chassis=263VA, Expansion Chassis=263VA, total 1052VA
- Input Voltage: 90VAC to 264VAC (Rated Voltage: 100VAC/120VAC/220VAC - 240VAC)
- Frequency: 47Hz – 63Hz (Rated frequency: 50/60Hz)
- Phase and Wire: Single Phase, 2 Line + PE Type
- Grounding Requirements: No. 14 AWG copper wire

- Feeding Voltage:  $D^{term}/OPX/DID$ : -48V  
SLT: 25mA / -28V

With input voltage of 120 VAC and with full load conditions:

- Output Power: Base chassis=130W, Expansion chassis=130W, total 520W
- AC Input I: Base chassis=2.19A, Expansion chassis=2.19A, total 8.76A
- VA @ 120V: Base chassis=263VA, Expansion chassis=263VA, total 1052VA
- KWh @ AC Input I x 120V/1000: Base chassis=0.263 KWh, Expansion chassis=0.263 KWh, total 1.052 KWh
- BTU (KWh x 3413): Base chassis=898 BTU, Expansion chassis=898 BTU, total 3592 BTU
- A dedicated outlet, separately fused and grounded for each chassis should be installed



*Double Pole/Neutral Fusing (power supply fuses are located at both the L and N side).*

## 5.2 Power Supply Consumption

Table 5-19 Power Consumption

Chassis	Maximum RMS Current	Watts Used (Idle)	Watts Used (Maximum)
Basic Chassis – CD-CP00-US Chassis	2.19A	96	130
Basic Chassis + Expansion Chassis	4.38A	192	260
Basic Chassis + 2 Expansion Chassis	6.57A	288	390
Basic Chassis + 3 Expansion Chassis	8.76A	384	520

## SECTION 6 ENVIRONMENTAL CONDITIONS

### 6.1 Temperature and Humidity

#### Chassis, Telephones, BCH, BHA, 16LK, Console, ADA, APR

- Operating Temperature: +32°F ~ +104°F (0°C ~ 40°C)
- Recommended Long Term Temperature: -4°F ~ +140°F (-20°C ~ 60°C)
- Operating Humidity: 10 ~ 90% RH (non-condensing)
- Recommended Long Term Humidity: 10 ~ 90% RH

**Blades/Daughter Boards – PZ-BS10, PZ-BS11, PZ-VM21, PZ-ME50-US, CD-8DLCA, CD-16DLCA, PZ-8DLCB**

- Operating Temperature: +32°F ~ +104°F (0°C ~ 40°C)
- Recommended Long Term Temperature: -4°F ~ +140°F (-20°C ~ 60°C)
- Humidity: 10 ~ 90% RH (non-condensing)
- Recommended Long Term Humidity: 10 ~ 90% RH

**Blades/Daughter Boards – CD-4LCA, PZ-4LCA, CD-8LCA, PZ-8LCE, CD-4COTB, PZ-4COTF, CD-PRTA**

- Operating Temperature: +32°F ~ +104°F (0°C ~ 40°C)
- Recommended Long Term Temperature: -4°F ~ +140°F (-20°C ~ 60°C)
- Operating Humidity: 10 ~ 90% RH (non-condensing)
- Recommended Long Term Humidity: 20 ~ 90% RH

**Door Box**

- Operating Temperature: -4°F ~ +104°F (-20°C ~ 60°C)
- Operating Humidity: 20 ~ 80% (non-condensing)

**SV8100 Power Supply – MPS7101**

- Operating Temperature: +32°F ~ +104°F (0°C ~ +40°C)
- Recommended Long Term Temperature: -4°F ~ 167°F (-40°C ~ 75°C)
- Operating Humidity: 20 ~ 95% RH (non-condensing)
- Recommended Long Term Humidity: 10 ~ 95% RH

## 6.2 Outside Line Types

The following outside lines can be used with the UNIVERGE SV8100 system.

- 2-wire, Loop Start or Ground Start Trunks
- 2-wire, 2-way DID Lines (Dial Pulse or DTMF)
  - ✎ *DID feature is not available for European and Australian markets.*
- 4-wire, E&M Tie Lines (Type I or V, Dial Pulse, or DTMF)
- Digital Trunk T1/FT1 (Loop Start, Ground Start, Tie Line (E&M), or DID Signaling)
- ISDN-BRI Trunks
- ISDN-PRI Trunks
- VoIP Trunks (Internet Protocols)

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## 6.3 Transmission, Network, and Control Specifications

### 6.3.1 Transmission

- Data Length:
  - From multiline terminal to CD-8DLCA: 23 bits
  - From CD-8DLCA to multiline terminal: 23 bits
- Data Transmission Rates:
  - Between CD-8DLCA and multiline terminal: 184K bps (voice and signaling)
- Scanning Time for each multiline terminal: 32ms.

### 6.3.2 Network

Time Division Multiplexing (TDM) allows transmission of data and voice simultaneously over one communications medium. The specifications that the UNIVERGE SV8100 system uses for switching, clock, data bus, and timeframe are shown below.

- TDM Switching: PCM ( $\mu$  Law)
- TDM Clock: 2.048 MHz
- TDM Data Bus: 8-bit
- TDM Timeframe: 125  $\mu$ s.

### 6.3.3 Control

This section indicates the speed or capacity:

- Control: Stored program with distributed processing
- Central Processor: 32-bit microprocessor
- Clock: 266 MHz
- Interface Blade: 8- or 16-bit microprocessor
- Optional Blades: 16- or 32-bit microprocessor
- Multiline Terminal (TDM): 8-bit microprocessor
- Multiline Terminal (IP): 32-bit microprocessor
- IP Adapter: 32-bit microprocessor
- Attendant Console: 4-bit microprocessor
- SLT Adapter: 4-bit microprocessor

#### 6.3.4 Electra Elite IPK Terminals and Equipment

The voltage, current, and ring signal for the Electra Elite IPK multiline terminals, Single Line Telephone equipment, and AP(A)-R/AP(R)-R Units are listed below:

Multiline Terminal

Voltage: -11 ~ -26 Vdc

Maximum Current: 250 mA

Acoustical characteristics meet Electronic Industry Association (EIA) standard proposal SP-1286 and standard EIA RS-470.
--

Single Line Telephone

Standard 2500 Set: 500 type network

Nominal Current: 25 mA

Ring Signal: 56 Vac RMS @ 20 Hz

SLTII(1)-U( ) ADP

Standard 2500 Set: 500 type network

Nominal Current: 30 mA

Ring Signal: 56 Vac RMS @ 20 Hz

AP(A)-R Unit

Standard 2500 Set: 500 type network

Nominal Current: 30 mA

AP(R)-R Unit

Standard 2500 Set: 500 type network

Nominal Current: 30 mA

Ring Signal: 56 Vac RMS @ 20 Hz

### 6.3.5 Series i Terminals

- The voltage and current for the  $D^{term}$  Series i multiline terminals are listed below:

Voltage: -11 ~ -48 Vdc

Maximum Current: 250 mA

Acoustical characteristics meet Electronic Industry Association (EIA) standard proposal SP-1286 and standard EIA RS-470.

- Voltage, current, and ring signal information for Single Line Telephone equipment, AP(A)-R Unit, and AP(R)-R Unit are the same as those listed in the previous paragraph.

## 6.4 Dialing Specifications

### 6.4.1 Dial Pulse Address Signaling

Dial Pulse Address Signaling uses dial pulses (regular momentary interruptions) to signal the equipment. The following Dial Pulse specifications are used in the UNIVERGE SV8100 system.

- Pulse Rate:  $10 \pm 0.5$  pps/ $20 \pm 1.0$  pps
- Percent Break:  $60 \pm 1.5\%$
- Interdigit Interval: 0 pps/ $20$  pps 770ms. ~ 830ms.

### 6.4.2 Dual-Tone Multifrequency (DTMF) Address Signaling

DTMF signaling includes push button or Touchtone dialing. When a key on a telephone is pushed, two tones (one high frequency and one low frequency) are provided. In the UNIVERGE SV8100 system, the following DTMF specifications are used.

- Frequencies

Two sinusoidal frequencies are provided, one from the high frequency group and one from the low frequency group.

- Frequency Deviation: Less than  $\pm 1.5\%$

- Signal Level:

Nominal level per frequency: -6 ~ -4 dBm

Minimum level per frequency

Low Group: -10 dBm

High Group: -8 dBm

Maximum level per frequency: 0 dBm

- Rise Time: Within 5ms.
- Duration of Dual Frequency Signal:  
110 ms. default/60ms. minimum  
Interdigital Time: 140ms. default/45 ms. minimum

Nominal **High** Group  
Frequencies (Hz)

	1209	1336	1477
697	1	2	3
770	4	5	6
852	7	8	9
941	Q	0	#

Nominal **Low** Group  
Frequencies (Hz)

#### 6.4.3 External Equipment Connection

- Door Phone or TV Door Phone
- External Speaker via amplifier
- External music source for MOH and BGM
- Tape recorder for voice recording via PGD(2)-U10 ADP
- Door Lock/Release or General Purpose Relay via PGD(2)-U10 ADP
- Printer for SMDR by LAN
- PC by LAN

#### 6.4.4 Music Source for Music on Hold via Chassis

- Auxiliary Input: 0.6V PPS Signal Level
- Input Impedance: 600  $\Omega$

#### 6.4.5 Music Source for Station Background Music via ACI

- Auxiliary Input: 0.6V PPS Signal Level
- Input Impedance: 600  $\Omega$

#### 6.4.6 External Paging (Audio)

- Output Power: -10 dBm Signal Level
- Output Impedance: 600  $\Omega$
- Relay Contact Rating: 500 mA, 24 Vdc

- 6.4.7 External Tone Ringer/Night Chime Output
  - Output Level: -10 dBm
  - Output Impedance: 600  $\Omega$
  - Relay Contact Rating: 500 mA, 24 Vdc
- 6.4.8 SMDR Output
  - Female Connector (LAN) Standard DB-9 (straight)
- 6.4.9 PC Connection
  - Female Connector (LAN) Standard DB-9 (straight)
- 6.4.10 Relay Contact
  - All Relay Contact Ratings: 500 mA, 24Vdc

## SECTION 7 BATTERY BACKUP

The UNIVERGE SV8100 system has battery backup functions for system backup and for memory backup.

### 7.1 System Backup (Optional)

During a power failure, the system can be backed up using the CHS2U BATT MTG KIT for a backup time of 10 minutes or one of the CHS LARGE BATT SETs for a backup time ranging from 45~180 minutes. The CHS2U GW-US can be backed up using the CHSGW SMALL BATT BOX for a backup time of 10 minutes.

### 7.2 Memory Backup

The CD-CP00-US blade battery retains the Clock/Calender and Last Number redial (LNR) buffers for each station when the CD-CP00-US blade encounters a power loss. With a fully charged battery, the settings are retained for about three years. The System Programmed memory (Customer Database) is stored in nonvolatile Memory and can be erased only by a First Initialization. After power is restored, the system blade returns to normal operation.

## SECTION 8 SV8100 MIGRATION

### 8.1 Description

The MGN-U10 ETU is supported only in the B64-U10, U20 and U30 KSU's.

The MGN-U10 ETU is available only with the SV8100 system.

The MGN-U10 ETU provides a connection between the IPK/IPK II and the UNIVERGE SV8100 system. The MGN-U10 ETU is installed in the CPU/Ext slot of the IPK/IPK II KSU.

IPK/IPKII Migration is supported only with the CHS2U-US (6-slot) chassis. The CHS2U GW-US (3-slot) chassis is not supported.

A single SV8100 chassis is supported in an IPK/IPK II Migration system.

### 8.2 Conditions

- The IPK/IPKII systems are limited to 18 total card slots.
- An IPK system can support the migration card, provided the cards and terminals are listed below as being supported. It may be necessary to upgrade firmware as noted.
- MEGACO is not supported.

## SECTION 9 AUDIBLE AND VISUAL INDICATION

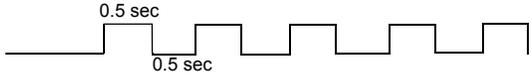
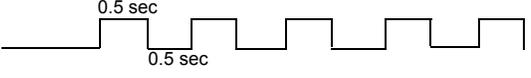
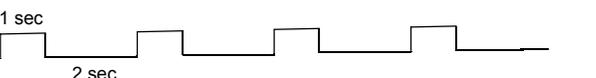
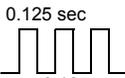
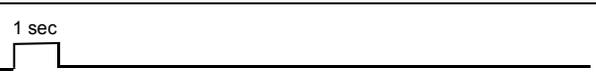
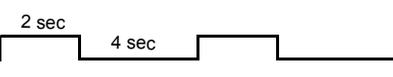
### 9.1 Tone Patterns

[Table 5-20 Tone Patterns](#) lists the frequency and the pattern for the tones. Tones are used to inform UNIVERGE SV8100 station users of system functions such as dial tone, busy tone, or ringback tone.

### 9.2 Multiline Terminal LED Flash Patterns

The UNIVERGE SV8100 system has 2-color LEDs. Green is used primarily for I-Use conditions and for outside calls. Red is used primarily for Other Use conditions and internal calls. Refer to [Table 5-21 Multiline Terminal LED Flash Pattern](#).

Table 5-20 Tone Patterns

System Tone (Fixed)	Frequency (Hz) (Fixed)	Intermit (Default)	Cycle
Busy Tone	480/620	60 IPM	
Call Waiting Tone	440	60 IPM	
Second Dial Tone	350/440	120 IPM	
Howler Tone	2400 Modulation (16 Hz)	Continuous	
Internal Dial Tone	350/440	Continuous	
Internal Ringback Tone	440/480	1 sec On 2 sec Off	
LCR Dial Tone	440	Continuous	
Reorder Tone	480/620	120 IPM	
Service Set Tone	440	Continuous	
Special Dial Tone	440	240 IPM	
Tone Burst 1 Tone	440	Continuous	
Tone Burst 2 Tone	620	Continuous	
Tie/DID Ringback Tone	440/480	2 sec On 4 sec Off	
Camp-On Tone Call Alert Notification Attendant Tone Override	440	Continuous	
DIT Alert Tone	480/620	Continuous	
Call Forward Alert Tone Call Forward Configuration Tone	350/440	120 IPM	

**Table 5-21 Multiline Terminal LED Flash Pattern**

LED	Condition	Color	Flash Patterns
Line Key	I-Use	Green	
	Busy	Red	
	Incoming Call	Red	
	I-Hold	Green	
	Call Hold	Red	
	Hold Recall	Green	
	Transfer Recall	Green	
	Live Monitoring Mode	Green	
	Message Waiting on Line Key	Red	
	Microphone	ON	Red
Mic	ON (Series i)	Red	
Large LED *1	Incoming Internal Call	Red	
	Incoming Outside Call	Green	
	Message from Attendant	Green	
	Voice Mail Message	Red	
Speaker	ON	Red	
	System Data Entry	Red	
Answer	Incoming Trunk	Red	
	Exclusive Hold	Green	
	User Ringing Line Preference	Red	
	Voice Over with Broker's Call	Green	
Feature	Callback Set	Red	
	Auto Repeat Set	Red	
	ON (to set function)	Red	
	Call FWD - All Calls Set	Red	
BLF or DSS Key	Use, Hold	Red	
	DND, Call FWD-All Calls Set	Red	
	Special Mode (while pressing Feature or going off-line)	Red	

0      0.5      1.0      1.5      2.0 sec.

\*1 = The Large LED provides the user a variety of programmable colors and preferences.



# ***UNIVERGE<sup>®</sup> SV8100***

## **GENERAL DESCRIPTION MANUAL**

NEC Corporation of America

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