



816 PLUS

TECHNICAL MANUAL

INCLUDES:

GENERAL DESCRIPTION SECTION

USER INSTRUCTIONS SECTION

INSTALLATION SECTION

PROGRAMMING SECTION

REMOTE ACCESS SECTION

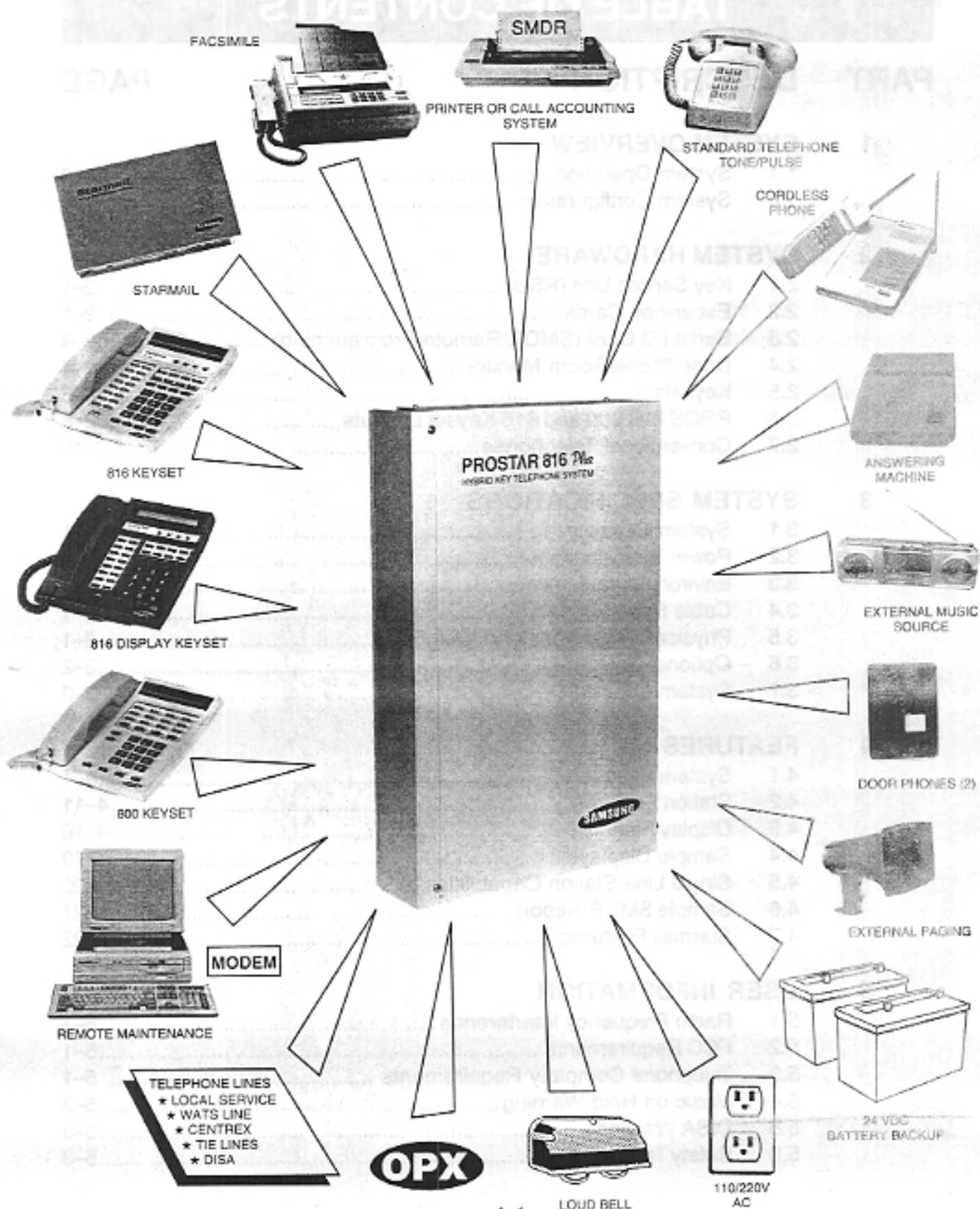
BULLETINS SECTION

Every effort has been made to eliminate errors and ambiguities in the information contained in this manual. Any questions concerning information presented here should be directed to SAMSUNG TELECOMMUNICATIONS AMERICA, INC., 1350 East Newport Center Drive, Suite 110, Deerfield Beach, Florida 33442, telephone (305) 426-4100. SAMSUNG TELECOMMUNICATIONS AMERICA, INC. disclaims all liabilities for damages arising from the erroneous interpretation or use of information presented in this manual.

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PROSTAR 816 PLUS GENERAL SYSTEM DIAGRAM



PART 1. SYSTEM OVERVIEW

1.1 SYSTEM OPERATION

The PROSTAR 816 PLUS is a stored program-controlled electronic key/hybrid telephone system that is ready to use as soon as it is turned on. A powerful Z80180 microprocessor operating at 6.144 MHz digitally controls all speech paths and system functions. The operating program with default memory is stored in non-volatile ROM. Customer data is stored in RAM and protected by a NICAD battery for up to thirty days of continuous loss of system power. When AC power is restored, the NICAD battery is recharged. The PROSTAR 816 PLUS employs a real time clock and space division switching of 12 audio channels. Of these, nine flexible channels are for speech paths. The other three are used for tones, music and DTMF source. See Figure 1-1.

All system hardware has Federal Communications Commission (FCC) registration. The PROSTAR 816 PLUS also proudly carries consumer safety approval from Underwriters Laboratories (UL).

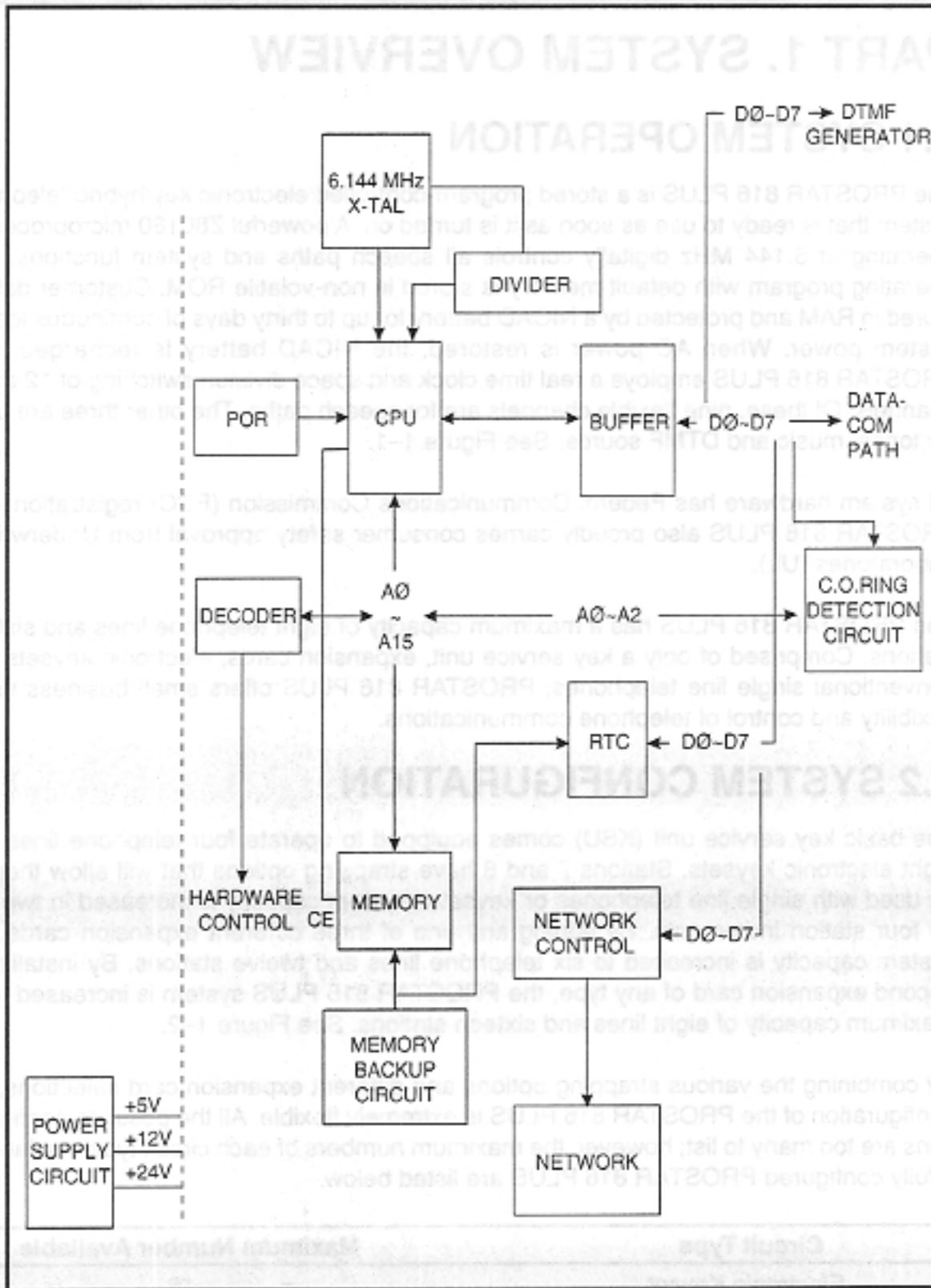
The PROSTAR 816 PLUS has a maximum capacity of eight telephone lines and sixteen stations. Comprised of only a key service unit, expansion cards, electronic keysets and conventional single line telephones, PROSTAR 816 PLUS offers small business users flexibility and control of telephone communications.

1.2 SYSTEM CONFIGURATION

The basic key service unit (KSU) comes equipped to operate four telephone lines and eight electronic keysets. Stations 7 and 8 have strapping options that will allow them to be used with single line telephones or keysets. System capacity is increased in two line by four station increments. By adding any one of three different expansion cards, the system capacity is increased to six telephone lines and twelve stations. By installing a second expansion card of any type, the PROSTAR 816 PLUS system is increased to its maximum capacity of eight lines and sixteen stations. See Figure 1-2.

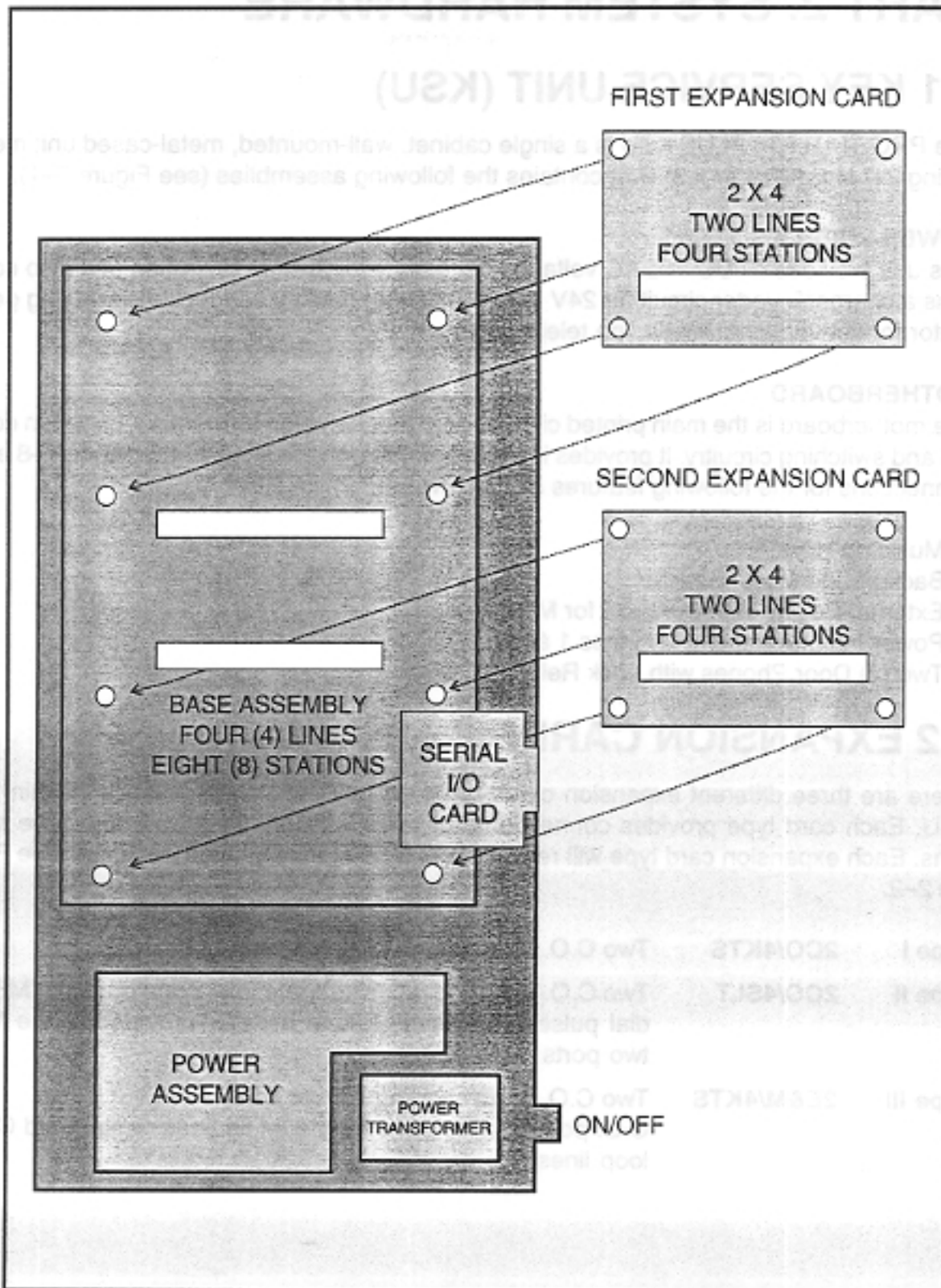
By combining the various strapping options and different expansion card selections, the configuration of the PROSTAR 816 PLUS is extremely flexible. All the possible configurations are too many to list; however, the maximum numbers of each circuit type available in a fully configured PROSTAR 816 PLUS are listed below.

Circuit Type	Maximum Number Available
Electronic Keypad	16
Single Line Telephone	10
C.O. Line (Loop Start)	8
E & M Tie Line	4



SYSTEM BLOCK DIAGRAM

FIGURE 1-1



KEY SERVICE UNIT LAYOUT

FIGURE 1-2

PART 2. SYSTEM HARDWARE

2.1 KEY SERVICE UNIT (KSU)

The PROSTAR 816 PLUS KSU is a single cabinet, wall-mounted, metal-cased unit measuring 21" H x 13^{7/8}" W x 3" D. It contains the following assemblies (see Figure 2-1).

POWER SUPPLY

This unit provides all DC and AC voltages necessary for system operation and also contains a charger/inverter circuit for 24V external battery backup connections and ring generator for conventional single line telephones.

MOTHERBOARD

The motherboard is the main printed circuit board that contains all memory, common control and switching circuitry. It provides interfaces for telephone lines 1-4, stations 1-8 and connections for the following features and hardware:

- Music on Hold
- Background Music Source
- External Paging with Contacts for Mute Option
- Power Failure Transfer for Lines 1 and 2
- Two (2) Door Phones with Lock Release Contacts

2.2 EXPANSION CARDS

There are three different expansion cards of which any two can be installed within the KSU. Each card type provides connections for two additional lines and four more stations. Each expansion card type will recognize C.O. disconnect when provided. See Figure 2-2.

Type I	2CO/4KTS	Two C.O. lines and four keyset ports
Type II	2CO/4SLT	Two C.O. lines and four single line telephone ports (DTMF or dial pulse) with power failure transfer provided to the first two ports
Type III	2E&M/4KTS	Two C.O. ports and four keyset ports C.O. ports can be used for E & M tie lines or standard C.O. loop lines

FIGURE 1-5

KEY SERVICE UNIT LAYOUT

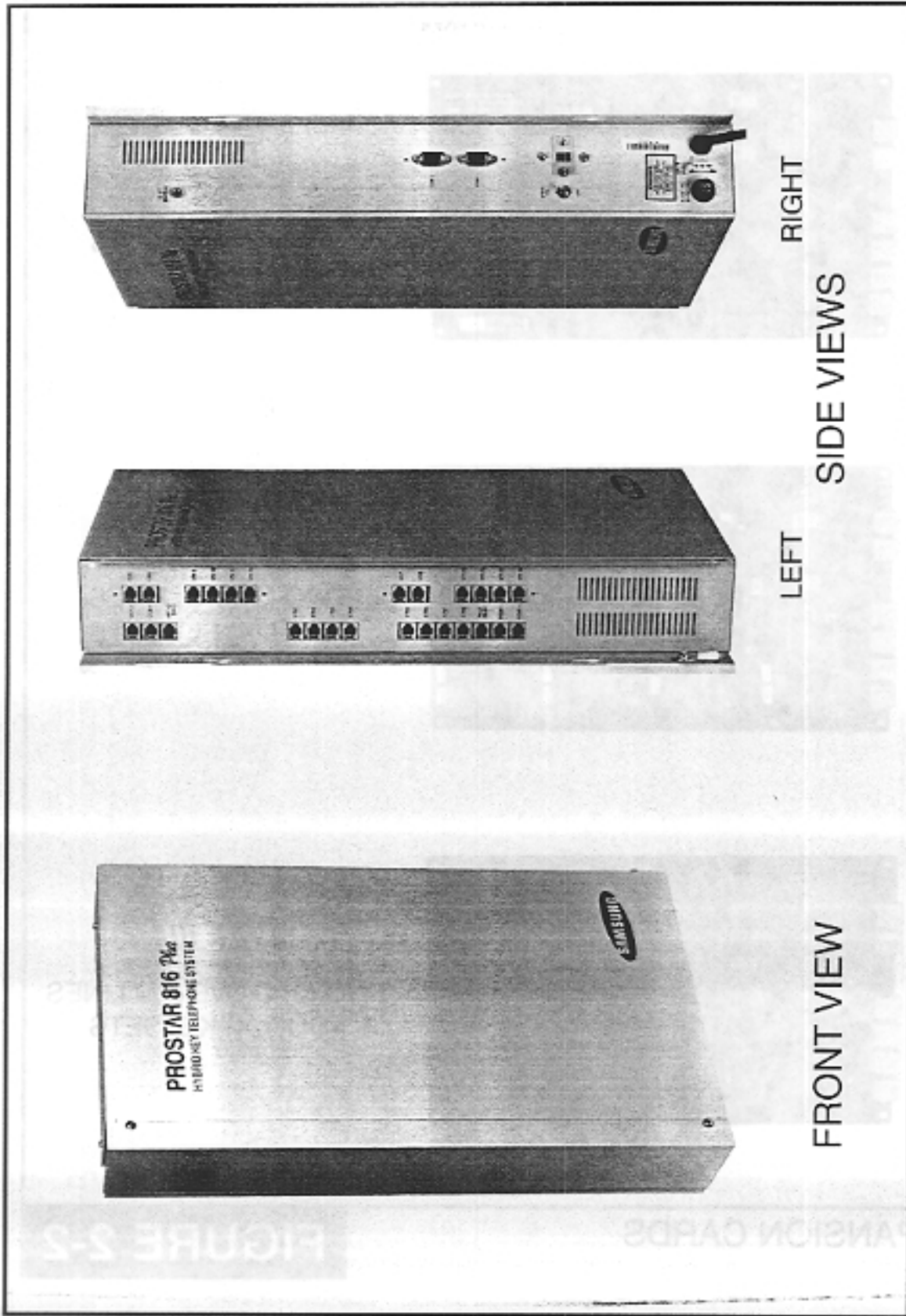
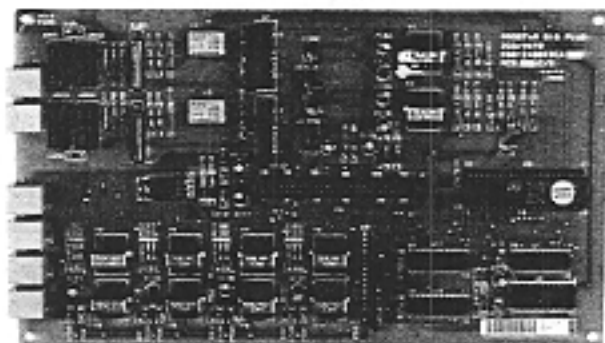


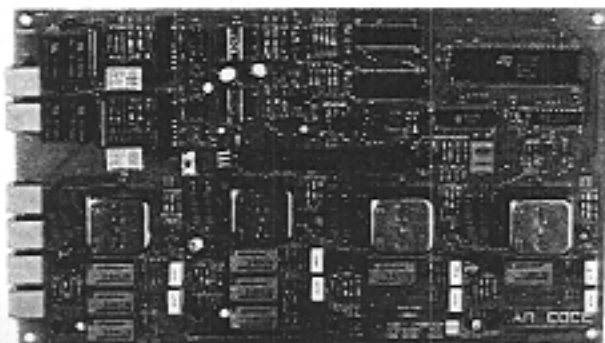
FIGURE 2-1

KEY SERVICE UNIT



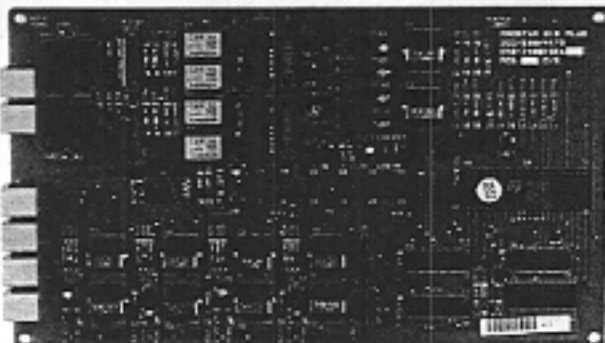
TYPE I

TWO (2) C.O. LINES
FOUR (4) KEYSETS



TYPE II

TWO (2) C.O. LINES
FOUR (4) SLT SETS



TYPE III

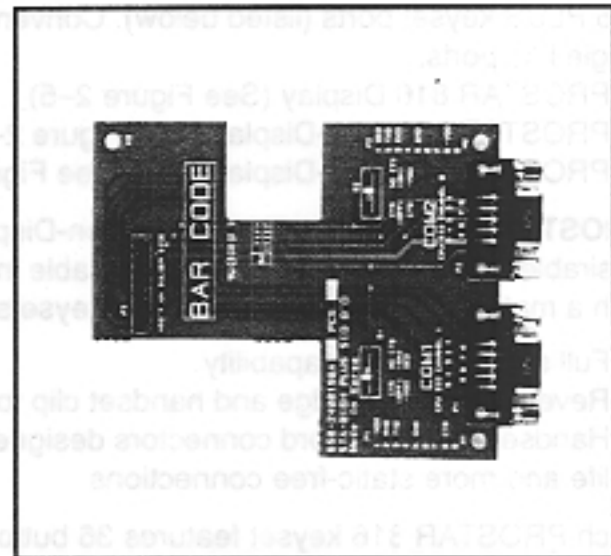
TWO (2) C.O./E & M LINES
FOUR (4) KEYSETS

EXPANSION CARDS

FIGURE 2-2

2.3 SERIAL I/O CARD (SMDR/REMOTE PROGRAMMING)

An optional PCB mounted within the KSU provides data output to two RS232 connectors. One is dedicated for connection to a customer-provided serial device such as a printer, data buffer or call accounting system to be used with the Station Message Detail Recording (SMDR) feature. The other is dedicated for connection to a customer-provided personal computer for on-site programming or a customer-provided modem for remote programming. Both ports have an adjustable rate of 300, 600, 1200, 2400, 4800 or 9600 baud. See Figure 2-3.

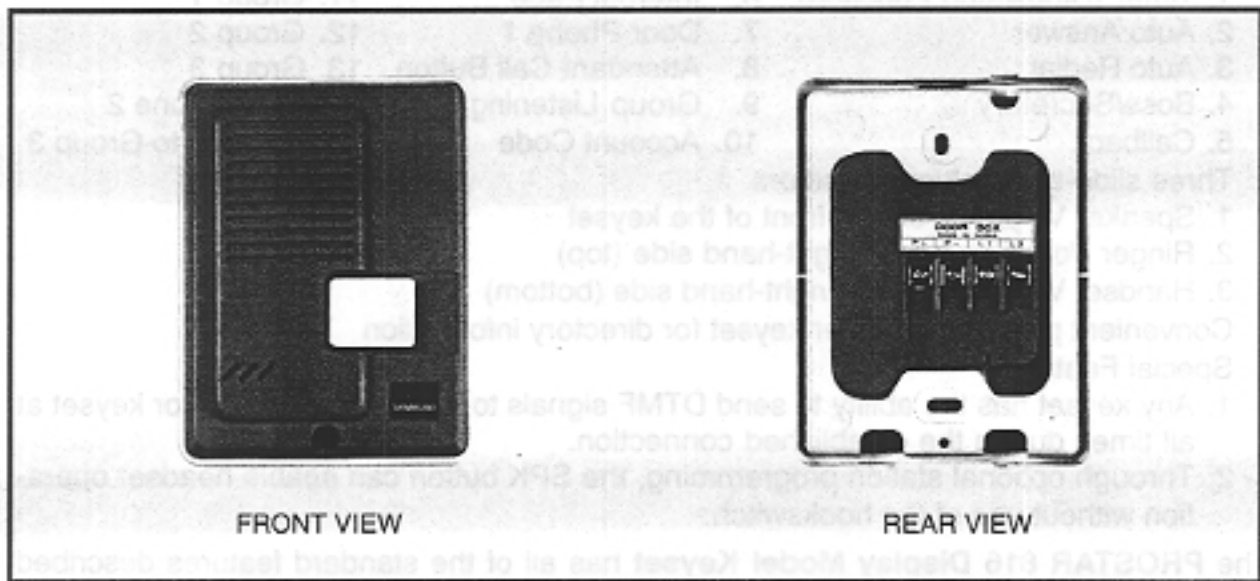


SERIAL I/O CARD

FIGURE 2-3

2.4 DOOR PHONE/ROOM MONITOR

A maximum of two door phones may be installed per system. Each optional wall-mounted door phone unit contains a call button and speaker. The door phone connects to the KSU via two pairs twisted wiring. Door phones do not take up a C.O. line or station port. See Figure 2-4.



FRONT VIEW

REAR VIEW

DOOR PHONE/ROOM MONITOR

FIGURE 2-4

2.5 KEYSSETS

There are three proprietary electronic keysets that can be connected to the PROSTAR 816 PLUS keyset ports (listed below). Conventional single line telephone sets connect to single line ports.

- PROSTAR 816 Display (See Figure 2-5)
- PROSTAR 816 Non-Display (See Figure 2-5)
- PROSTAR 800 Non-Display Only (See Figure 2-6)

PROSTAR 816 Keysets (Display or Non-Display) provide every user with all of the most desirable features built-in. Each is available in either almond with a glossy finish or black with a matte finish. All PROSTAR 816 keysets also feature the following:

- Full speakerphone capability
- Reversible base wedge and handset clip for wall-mounting at no extra cost
- Handset and base cord connectors designed with strain relief channels for longer cord life and more static-free connections

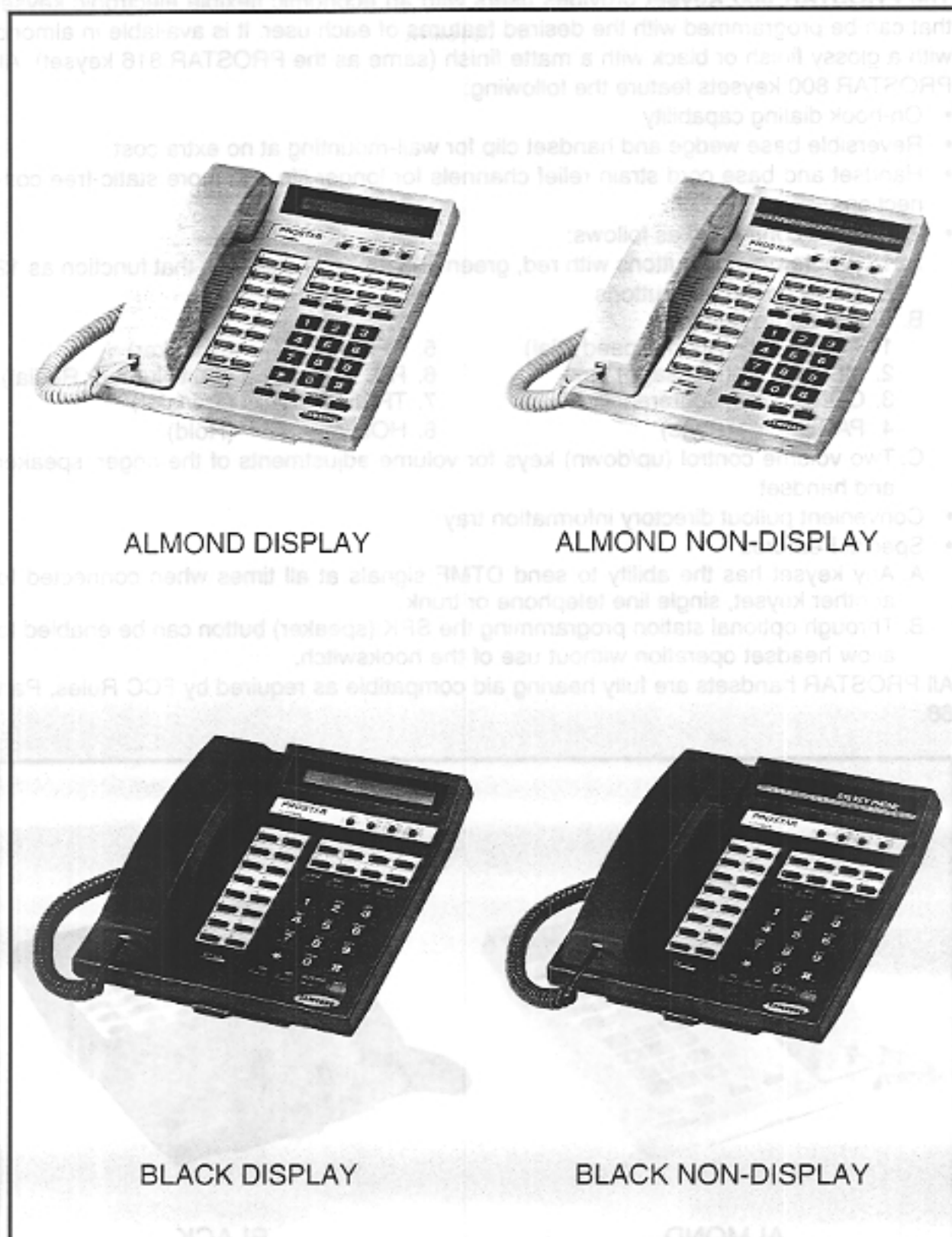
Each PROSTAR 816 keyset features 36 buttons configured as follows:

- Eight C.O. line buttons with red, green and amber indications
- 16 DSS/BLF (Direct Station Selection/Busy Lamp Field) buttons that also function as 16 personal speed dial buttons
- Eight Feature Buttons

1. Alarm/Speed Dial (ALM/SD)	5. Speaker (SPK)
2. Message (MSG)	6. Last Number Redial (RD)
3. Conference (CONF)	7. Mute/Do Not Disturb (MUTE/DND)
4. Page (PAGE)	8. Hold (HOLD)
- Four Round Programmable Buttons—May be assigned any of the following functions on a per-keyset basis

1. Timer (Stopwatch Function)	6. Internal Page	11. Group 1
2. Auto Answer	7. Door Phone 1	12. Group 2
3. Auto Redial	8. Attendant Call Button	13. Group 3
4. Boss/Secretary	9. Group Listening	14. Door Phone 2
5. Callback	10. Account Code	15. Forward to Group 3
- Three slide-type volume selectors
 1. Speaker Volume—on the front of the keyset
 2. Ringer Volume—on the right-hand side (top)
 3. Handset Volume—on the right-hand side (bottom)
- Convenient pullout tray under keyset for directory information
- Special Features
 1. Any keyset has the ability to send DTMF signals to a single line station or keyset at all times during the established connection.
 2. Through optional station programming, the SPK button can enable headset operation without use of the hookswitch.

The **PROSTAR 816 Display Model Keyset** has all of the standard features described above plus a large four-inch, 16 character liquid crystal display (LCD) with easy-to-read half inch high letters.



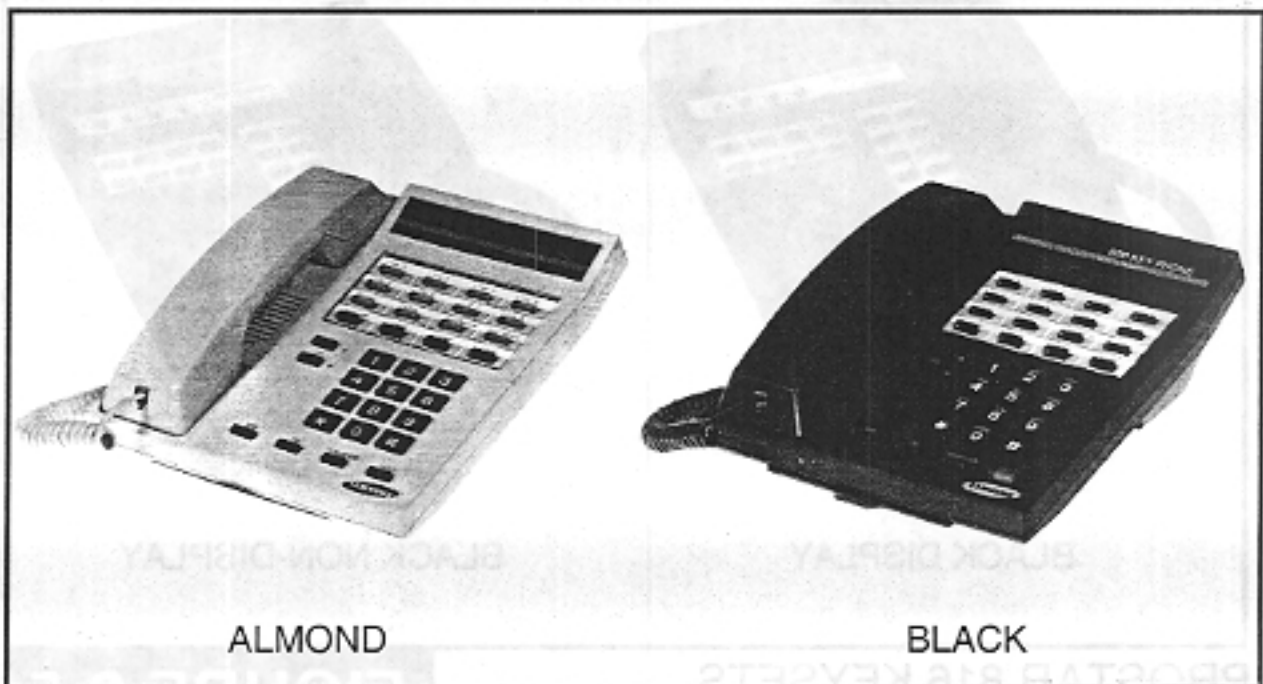
PROSTAR 816 KEYSETS

FIGURE 2-5

The **PROSTAR 800 Keypad** provides users with an economic flexible electronic keypad that can be programmed with the desired features of each user. It is available in almond with a glossy finish or black with a matte finish (same as the PROSTAR 816 keypad). All PROSTAR 800 keypads feature the following:

- On-hook dialing capability
- Reversible base wedge and handset clip for wall-mounting at no extra cost
- Handset and base cord strain relief channels for longer life and more static-free connections
- 22 buttons configured as follows:
 - A. 12 programmable buttons with red, green and amber indications that function as 12 personal speed dial buttons
 - B. Eight feature buttons
 - 1. ALM/SD (Alarm/Speed Dial)
 - 2. MSG (Message)
 - 3. CONF (Conference)
 - 4. PAGE (Page)
 - 5. SPK (Speaker)
 - 6. RD (Last Number Redial)
 - 7. TRANSFER (Transfer)
 - 8. HOLD (Hold)
 - C. Two volume control (up/down) keys for volume adjustments of the ringer, speaker and handset
- Convenient pullout directory information tray
- Special Features
 - A. Any keypad has the ability to send DTMF signals at all times when connected to another keypad, single line telephone or trunk.
 - B. Through optional station programming the SPK (speaker) button can be enabled to allow headset operation without use of the hookswitch.

All PROSTAR handsets are fully hearing aid compatible as required by FCC Rules, Part 68.



PROSTAR 800 KEYPADS

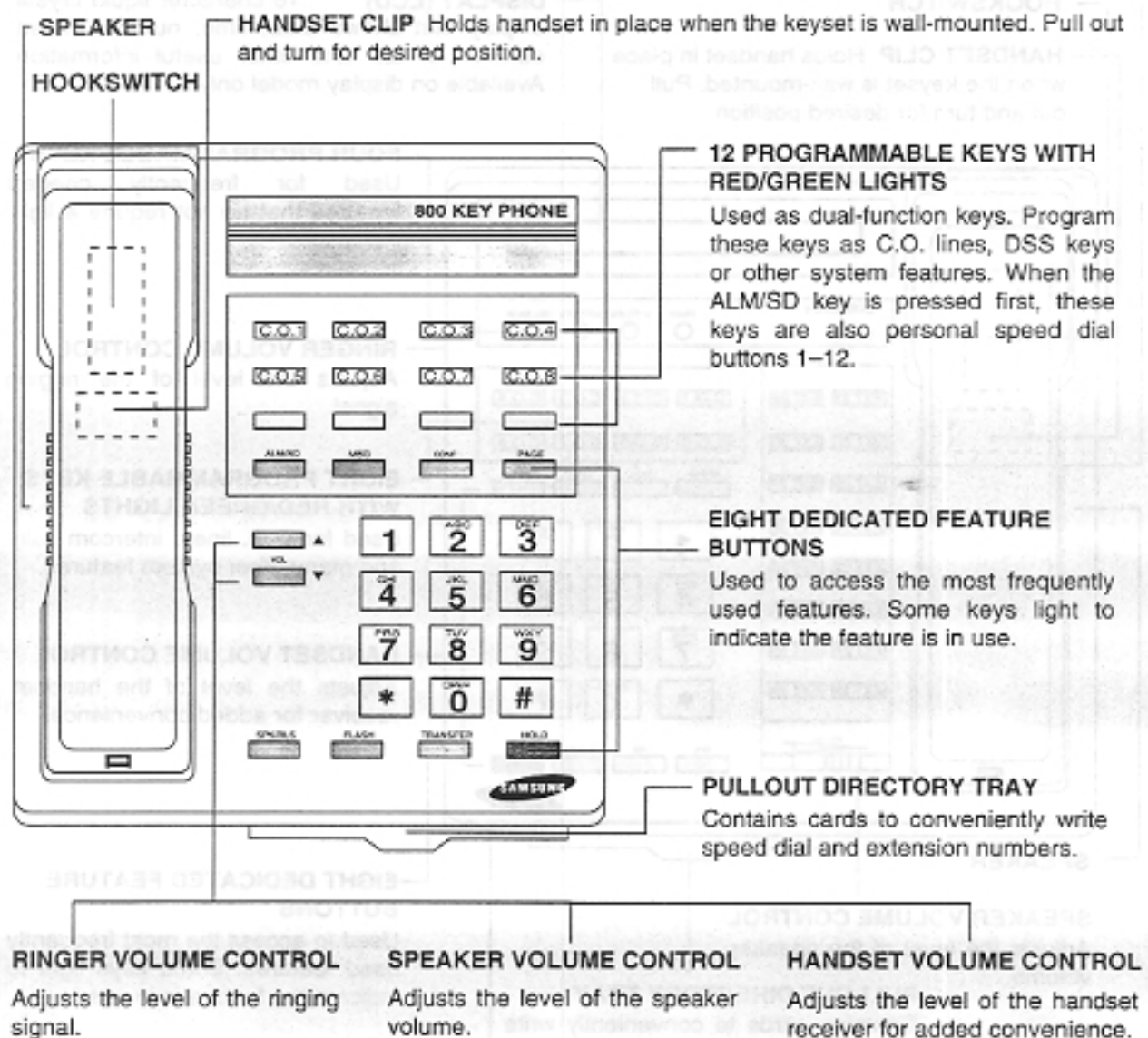
FIGURE 2-6

2.6 PROSTAR 800 AND 816 KEYSSET LAYOUTS

PROSTAR 800 KEYSSET LAYOUT

LABELING PROGRAMMABLE KEYS

Insert the end of a paper clip into the notch of the clear cover. Push the cover sideways. Lift the cover and remove the designation strip. Label the designation strip. Replace the strip and cover. Illustrated below are the factory-programmed settings for each key for operation right out of the box.

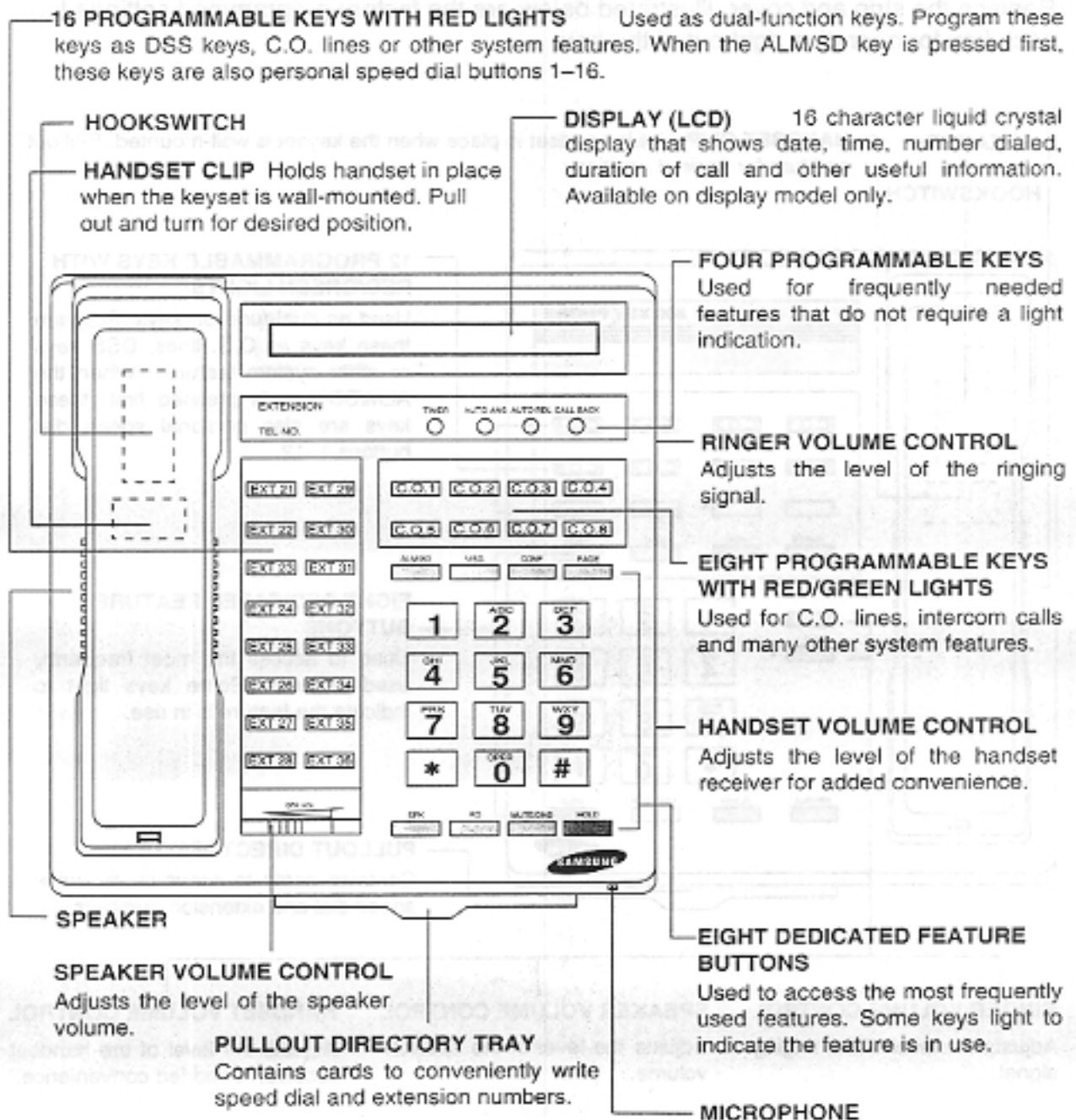


NOTE: There is no microphone on the 800 keypad. You must lift the handset to speak.

PROSTAR 816 KEYSSET LAYOUT

LABELING PROGRAMMABLE KEYS

Insert the end of a paper clip into the notch of the clear cover. Push the cover sideways. Lift the cover and remove the designation strip. Label the designation strip. Replace the strip and cover. Illustrated below are the factory-programmed settings for each key for operation right out of the box.



2.7 CONVENTIONAL TELEPHONES

Any industry-approved single line telephone using one pair (two wire) tip and ring circuitry may be connected to a single line station port in the system. The ringer equivalency number (REN) of any such telephone must not exceed 5.0B or damage to the system may result.

- Maximum Ten (10) Single Line Ports
- Maximum of Four (4) E & M Tr Lines
- Maximum Six (6) Automatic Power Failure Transfer Circuits
- Two (2) Serial NO Boards
- Two (2) Door Phones
- One (1) Audio Channel for DTMF Source
- One (1) Audio Channel for Music
- One (1) Audio Channel for System Tones
- Minimum Two (2) Station Ports

3.2 POWER SPECIFICATIONS

AC Input:	Switchable 110 VAC or 220 VAC at 60 Hz
Power Consumption:	80.5 watts maximum
Maximum Current Draw:	1.0 amps
Ring Generator:	90 VRMS at 20 Hz
Battery Backup Supply:	24 VDC batteries rating not less than 6 AH but not more than 40 AH

3.3 ENVIRONMENTAL LIMITS

Operating Temperature:	35°-125° F (3°-52° C)
Operating Humidity:	10%-90% (without condensation)

3.4 CABLE REQUIREMENTS

Electronic Set:	2 pair twisted, 1500 ft. (400 m) 28 AWG or 485 ft. (150 m) 24 AWG
Single Line Station:	1 pair twisted, approx. 5000 ft. (1.5 km) 24 AWG, station loop not to exceed 400 ohms including telephone
Door Phone:	2 pair twisted, 300 ft. (100 m) 24 AWG

3.5 PHYSICAL DIMENSIONS AND WEIGHTS

Door Phone:	2 H x 4 W x 1 1/2 D	8 lbs.
Keypad:	9 H x 7 1/2 W x 3 1/4 D	2.3 lb.
KSU:	27 H x 13 W x 3 D	22.5 lb.

PART 3. SYSTEM SPECIFICATIONS

3.1 SYSTEM CAPACITY

- Eight (8) C.O./PBX Lines (Loop Start/600 ohms)
- Sixteen (16) Station Ports
- Nine (9) Flexible Speech Paths
- One (1) Audio Channel for System Tones
- One (1) Audio Channel for Music
- One (1) Audio Channel for DTMF Source
- Two (2) Door Phones
- Two (2) Serial I/O Boards
- Maximum Six (6) Automatic Power Failure Transfer Circuits
- Maximum of Four (4) E & M Tie Lines
- Maximum Ten (10) Single Line Ports

3.2 POWER SPECIFICATIONS

AC Input:	Switchable 110 VAC or 220 VAC at 60 Hz
Power Consumption:	60.5 watts maximum
Maximum Current Draw:	1.0 amps
Ring Generator:	80 VRMS at 20 Hz
Battery Backup Supply:	24 VDC batteries rating not less than 6 AH but not more than 40 AH

3.3 ENVIRONMENTAL LIMITS

Operating Temperature:	32°–113°F/0°–45°C
Operating Humidity:	10%–90% (without condensation)

3.4 CABLE REQUIREMENTS

Electronic Set:	2 pair twisted, 1300 ft. (400 m) 26 AWG or 485 ft. (450 m) 24 AWG
Single Line Station:	1 pair twisted, approx. 5000 ft. (2 km) 24 AWG; station loop not to exceed 480 ohms including telephone
Door Phone:	2 pair twisted, 300 ft. (100 m) 24 AWG

3.5 PHYSICAL DIMENSIONS AND WEIGHTS

KSU:	21" H x 13 ⁷ / ₈ " W x 3" D	22.5 lb.
Keypad:	9" H x 7 ³ / ₄ " W x 3 ¹ / ₂ " D	2.3 lb.
Door Phone:	5" H x 4" W x 1 ¹ / ₂ " D	6 oz.

3.6 OPTIONAL EQUIPMENT

SIO RS232 Connector:	Serial Interface: 8 bits, no parity—1 stop (8N1)
External Music Source Input:	Impedance 600 ohms, 350 mV
External Amplifier Output:	Impedance 600 ohms, 1.24 V RMS

3.7 SYSTEM INDICATORS

Lights	Status	Condition
DSS	OFF	Idle
	Flash every 0.25 sec.	Station calling
C.O. Line	Flash every 0.5 sec.	Station is on hold
	ON	Busy
	OFF	Idle
	Flashing green every 0.25 sec.	Incoming call
	Flashing green every 0.5 sec.	On hold your station
	Flashing red every 0.5 sec.	On hold other station
	Steady red	In use other station
	Steady green	In use your station

Progress Tones

Dial Tone	Steady tone
Busy Tone	0.5 sec. ON/0.5 sec. OFF
Ringback Tone	1 sec. ON/2 sec. OFF
Transfer Tone	0.2 sec. ON/0.2 sec. OFF
Conference	0.2 sec. ON/0.2 sec. OFF
Confirmation	0.2 sec. ON/0.2 sec. OFF
Error Tone	0.5 sec. ON/2.5 sec. OFF

Ringing Signals

C.O. Line Ring	1 sec. ON/3 sec. OFF
Station Ring	0.4 sec. ON/0.2 sec. OFF/0.4 sec. ON/3 sec. OFF
Door Phone Ring	0.5 sec. ON/0.5 sec. OFF
Alarm Ring	0.5 sec. ON/0.5 sec. OFF

PART 4. FEATURES

4.1 SYSTEM FEATURES

Account Code Entry	Hot Line
All Call Voice Page	Incoming Call Distribution
Any Station Programming	Incoming/Outgoing Service
Attention Tone	Individual Line Access
Automatic Hold	Internal Page (Three Zones)
Automatic Recall	Line Restriction
Background Music	Live System Programming (Two Levels)
Battery Backup (Memory)	Loud Bell Control
Battery Backup (System)	Meet Me Answer
Call Forwarding (Trunk to Trunk)	Message Waiting Indications
Call Pickup	Modular Connections
Call Waiting (Camp-on)	Music on Hold
Centrex Compatible	Night Mode Class of Service
Chain Dialing	Non-Private Lines/1A2 Operation
Classes of Service	Off-Hook Call Alert
Common Bell Control	Off Premise Extension (OPX)
Conference	Outgoing Call Restriction
Add-on (Five Party)	Power Failure Transfer
Unsupervised	Private Line Assignment
Data Security	Programmable Timers
Database Printout	Recall/Flash
Day/Night Ring Assignments	Recall Identification
DIL to a Hunt Group	Remote Programming
Direct Inward System Access (DISA)	Ring Generator
Directory Names (Line and Station)	Ring Over Page
Distinctive Ringing	Station Message Detail Recording (SMDR)
Door Lock Release (2)	Speed Dialing (System)
Door Phone/Room Monitor (2)	Station Hunt Groups (3)
E & M Tie Line	Toll Restriction
Enable or Disable C.O. Line	Toll Restriction Override
Executive Barge-in (Override)	Tone or Pulse Dialing
External Music Interface	Transfer with Camp-on
External Page Interface	Traveling Class of Service
FAX Compatibility	Trunk Groups
Flexible Button Assignment	Unlisted Speed Dial Numbers
Flexible Ringing Assignment	Voice Mail Integration (Starmail)
Hold Recall to Operator	

SYSTEM FEATURE DESCRIPTIONS

ACCOUNT CODE ENTRY

When the system is equipped with an optional SIO card, keyset users may enter an account code (maximum twelve digits) before releasing the call. This account code will appear in the last column of the SMDR printout for that call record.

ALL CALL VOICE PAGE

Users may page all keysets and external paging system at the same time. Stations may be excluded in system programming from receiving page announcements.

ANY STATION PROGRAMMING

The system may be programmed at any station with a display phone and private passcode. Multiple stations may be in programming at the same time.

ATTENTION TONE

A brief tone will sound before page announcements or intercom voice calls to get your attention.

AUTOMATIC HOLD

While engaged on an outside call, pressing the PAGE, CONF or any DSS button automatically puts the call on hold.

AUTOMATIC RECALL

Held, transferred and camped-on calls not answered in a programmable period of time will automatically recall the originating station. If not answered at the originating station, they will recall to the operator.

BACKGROUND MUSIC

Users may listen to music through their keyset speakers when an optional source is supplied. Each person may turn it on or off and control the volume at the individual keyset. Background music can be provided over the customer-provided external paging system.

BATTERY BACKUP (MEMORY)

In the event that power is lost to the system, all customer data in memory is backed up by a NICAD battery for approximately 30 days. When power is restored, the system will recharge the NICAD battery.

BATTERY BACKUP (SYSTEM)

Connect a customer-provided 24 VDC battery source and the system is fully operational when AC power is interrupted. When power is restored, the system recharges the batteries. Calls in progress are not interrupted when the system switches to batteries.

CALL FORWARDING (TRUNK TO TRUNK)

Selected trunks may be set up to send incoming calls out over a second trunk to a preprogrammed telephone number (speed dial #99). The trunk to trunk connection will be released in a preprogrammed period of time, allowing both lines to be free for other calls. This is useful when telephone company call forward is not available or not assigned to the line to be forwarded. An incoming call can be programmed to delay up to 200 seconds before the system will forward it. A warning tone will be sent to both parties approximately five seconds before disconnect. At this time, either party may reset the timer by pressing the star (*) button on the dial pad.

CALL PICKUP

The system will allow calls ringing at one station to be answered at another station by dialing the system pickup code.

CALL WAITING (CAMP-ON)

System operation will send a call waiting tone to the keyset speaker, indicating that an outside call is waiting at this station. This tone reminder can be programmed for a single tone at the beginning or a repeated tone every 10-99 seconds.

CENTREX COMPATIBLE

C.O. lines may be programmed for behind PBX use to allow for hookflash on Centrex lines. Centrex feature codes and hookflash command can be stored as speed dial numbers. System allows for Centrex trunk access codes to be ignored and apply station toll restrictions to remaining digits.

CHAIN DIALING

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

CLASSES OF SERVICE

System programming allows stations to be assigned one of six outgoing call restriction levels.

COMMON BELL CONTROL

The control contacts can operate a customer-provided loud ringing device for large or

noisy areas. Individual trunks and door phones may be assigned for interrupted or continuous operation.

CONFERENCE

ADD-ON (FIVE PARTY)

Any combination of up to five parties (internal or external) may be joined together in a non-amplified conference. The person setting up the conference may release other parties and rejoin the conference. A maximum of three simultaneous conferences may exist in the system.

UNSUPERVISED

A station user may set up a non-amplified conference with two or more outside lines and then exit the conference leaving the outside lines connected in an unsupervised (trunk to trunk) conference. The system will release all lines in a predetermined amount of time. This timer may be reset by any of the connected parties from a tone dialing phone by pressing the star (*) key on the dial pad.

DATA SECURITY

Single line extensions used with modems and facsimile machines can be programmed so that they will not receive any camp-on tone that will disrupt data transmissions.

DATABASE PRINTOUT

When an optional serial I/O (input/output) board is installed, a complete list of the customer database may be printed to a customer-provided serial printer or to a file of a customer-provided personal computer.

DAY/NIGHT RING ASSIGNMENTS

Each C.O. line may be programmed to ring selected stations during day operation and different stations when the systems is placed in night service.

DIL TO A HUNT GROUP

Lines may be programmed as direct in lines (DIL) to a station hunt group. For example, service parts or sales lines can ring directly to the designated departments for immediate answer.

DIRECT INWARD SYSTEM ACCESS (DISA)

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

mode, night mode or both. The C.O. lines used for DISA must have disconnect supervision.

DIRECTORY NAMES (LINE AND STATION)

Each station and C.O. line can be assigned a ten character ID that will show at all display keysets. When an internal call is answered the calling station's directory ID will be displayed. Stations assigned C.O. line ringing will display this line ID before answering the call.

DISTINCTIVE RINGING

C.O. lines have a single ring repeated while intercom calls have a double ring repeated. You will know what type of call you are receiving by the sound of the ring signal.

DOOR LOCK RELEASE (2)

After answering a call from one of the two door phones, dialing 3 will give a contact closure to operate a customer-provided electronic door lock. The contact closure time is programmable from 1.5–10 seconds.

DOOR PHONE/ROOM MONITOR

Two optional door phone units provide distinctive ringing (three short rings repeated) to pre-selected stations. Any station calling a door phone establishes a monitoring circuit. The door phones may be used as room monitors. Calls from a door phone not answered within 30 seconds will stop ringing and be released.

E & M TIE LINE

With the appropriate expansion card, E & M tie lines may be installed providing station to station dialing between your system and another system with the same capability.

ENABLE OR DISABLE C.O. LINE

When desired, any C.O. line may be taken out of service and put back into service at a later time.

EXECUTIVE BARGE-IN (OVERRIDE)

Allows specially programmed stations to override the automatic privacy of another station and enter its conversation. Programming will allow barge-in with or without a warning tone. Stations may also be programmed so they cannot be barged-in on.

EXTERNAL MUSIC INTERFACE

A 0.125 inch mini phono jack is provided to connect a customer-provided music source for music on hold and background music to keysets.

EXTERNAL PAGE INTERFACE

A voice pair with 600 ohm impedance is provided for connection to a customer-provided paging system. A contact pair is provided for muting of external music when making a page announcement.

FAX COMPATIBILITY

By connecting the facsimile machine to any single line station port, there is no need for a dedicated FAX line. Incoming calls can be transferred to the facsimile machine. Any line in the system may be selected to send a FAX.

FLEXIBLE BUTTON ASSIGNMENT

The 16 DSS/BLF buttons and the eight C.O. line buttons may be reassigned in another configuration. Unused buttons may be assigned as function keys. Changing one of these buttons on any keyset changes that button on all keysets.

FLEXIBLE RINGING ASSIGNMENT

Each C.O. line can be individually programmed to ring up to 16 stations or 15 stations and a common bell. Each line can be assigned its own ring pattern as defined in system programming.

HOLD RECALL TO OPERATOR

Lines left on hold will recall the stations that put them on hold after a preprogrammed period of time. If the station does not answer the recall, it will return to the system operator.

HOT LINE

Stations can be programmed to call a station, station group, trunk, trunk group or system speed dial number whenever that station goes off-hook. A hot line delay timer of 1-250 seconds can be programmed to allow sufficient time to make a different call.

INCOMING CALL DISTRIBUTION

Stations programmed to receive incoming line ringing may be set up in a distributed hunt group. Incoming calls will be distributed to all members of the group, one after the other.

INCOMING/OUTGOING SERVICE

C.O. lines may be assigned for type of access. Stations may be programmed for no access, incoming service, outgoing service or both.

INDIVIDUAL LINE ACCESS

A specific C.O. line may be accessed from any telephone by dialing an individual line code 81-88.

INTERNAL PAGE (THREE ZONES)

Any keyset may be assigned to one of three internal page zones. Any station may page the keyset speakers in any zone using the corresponding access code.

LINE RESTRICTION

System programming allows each station the following options for each line: dial out yes/no and answer incoming call yes/no. This combination provides for complete individual line control. A line that is transferred to you no longer follows these restrictions.

LIVE SYSTEM PROGRAMMING (TWO LEVELS)

All programming can be accomplished without interruption of service from any display keyset. System programming is accessed by two different passcodes. The TECHNICIAN level passcode allows access to all system programs while the CUSTOMER level passcode provides access to limited programs.

LOUD BELL CONTROL

Connecting any audible device (that operates on a normal tip and ring circuit) to a single line station port will provide external loud ringing of incoming calls. For added flexibility, this station port may be programmed for both day and night ringing.

MEET ME ANSWER

After making an internal page or an all page, you may have the paged party meet you for a private conversation.

MESSAGE WAITING INDICATIONS

Any station can turn on the message LED on another keyset to indicate there is a message for that station. A maximum of four stations may leave message indications at any one keyset. Message waiting can be applied to a ringing, busy or auto answer condition.

MODULAR CONNECTIONS

All stations, lines and peripheral equipment connect to the KSU via modular connectors. Troubleshooting and expansion is quick and easy.

MUSIC ON HOLD

Six factory-installed melodies are provided for music on hold. The customer may provide an external music source rather than utilize these factory-installed melodies.

NIGHT MODE CLASS OF SERVICE

This feature allows all stations to be assigned a different dial restriction class when the system is put into night service. It is generally used to restrict calls after hours.

NON-PRIVATE LINES/1A2 OPERATION

Any C.O. line may be programmed as non-private. This allows other parties to easily join in on a call. Basic 1A2 key system operation is duplicated. A maximum of four stations may join a call in progress.

OFF-HOOK CALL ALERT

Users may call a busy keyset and offer it another call by sending an off-hook ring signal. Busy stations may also be alerted to important or emergency calls by receiving a ring burst each time the DSS key is pressed.

OFF PREMISE EXTENSION (OPX)

A single line (tip and ring) extension may be connected to telephone company off premise circuits for routing to a remote location.

OUTGOING CALL RESTRICTION

Selected stations may be restricted from placing outside calls. They can, however, receive calls.

POWER FAILURE TRANSFER

When power to the system is interrupted, outside lines are automatically switched to an external jack or to designated single line extensions.

PRIVATE LINE ASSIGNMENT

Any line may be programmed to allow only a single station to make outside calls. Incoming calls may be programmed to ring only that station.

PROGRAMMABLE TIMERS

System programming allows the following timer values to be adjusted: hold recall, transfer ring timer, camp-on recall, flash time, alarm indication, barge-in tone interval, C.O. to C.O. duration timer, door contact timer, external call forward delay timer, camp-on tone interval and auto timer start time.

RECALL/FLASH

While on an outside call, pressing the line button again will recall dial tone on C.O. lines or send hookflash on PBX lines. This is programmable per line.

RECALL IDENTIFICATION

Recalls to display station users will be identified as H-recall and T-recall.

REMOTE PROGRAMMING

An optional serial I/O (input/output) card connected in the KSU provides a link to a customer-provided personal computer for on-site system programming or connection via a customer-provided modem for remote programming.

RING GENERATOR

The system provides ringing voltage required for single line telephones and other tip and ring devices. The ring generator needed to ring single line telephones is built into the basic power supply so that there is no need for additional purchase of optional equipment. A maximum of ten single line telephones may ring simultaneously.

RING OVER PAGE

A system-generated ring tone can be programmed on a per-line basis to go out over an customer-provided external paging system when the system is in the night mode.

STATION MESSAGE DETAIL RECORDING (SMDR)

An optional card can be installed in the KSU to provide details about each C.O. call received, placed and transferred. Connecting a customer-provided printer or call accounting system to the RS232 port on this card will allow for collection of these call records. Each call record contains station number, C.O. line number, month/day, originate time, duration of call, number dialed and account code if entered. A 16 character ID may be programmed to appear at the top of each page.

SPEED DIALING (SYSTEM)

Allows 90 numbers to be stored in memory for use by dialing two digit speed code. A maximum of 30 digits may be stored in each speed dial number. Numbers 90-99 will not show on display keysets.

STATION HUNT GROUPS (3)

Three internal hunt groups are available. Each group may contain up to eight stations. Each group can be assigned its own ring pattern: sequential, collective or distributed. Unused buttons can be assigned as group buttons, used to call or transfer to the group. A ten character ID can be assigned for each group.

TOLL RESTRICTION

The 500 allow and 500 deny table entries make it possible to control telephone cost and abuse. Costly 976, 1-900, 411 and operator calls as well as specific area codes and C.O. prefixes can be permitted or restricted on a per-class of service basis. The flexible number of table entries allow the PROSTAR 816 PLUS to meet your present toll restriction needs and the future needs of the North American Numbering Plan (NANP).

Any outside line may be programmed to follow or not follow toll restriction.

TOLL RESTRICTION OVERRIDE

Long distance numbers stored in system speed dial may be programmed to override toll restriction. The system provides five entries that can be used for emergency type numbers such as the police, fire, etc.

tone OR PULSE DIALING

C.O. lines may be programmed for tone (DTMF) or pulse dialing.

TRANSFER WITH CAMP-ON

Outside calls may be transferred to any idle or busy station. Busy stations will receive a call waiting tone.

TRAVELING CLASS OF SERVICE

Users who are assigned class of service A, B, C, D or E may make calls at a restricted station by dialing a five digit override code. This secret code assigns either class of service A, B, C, D or E to a station that is normally restricted. Upon completion of the call, the station is restored to its toll-restricted status.

TRUNK GROUPS

C.O. lines can be assigned to one of two groups for outgoing access. Access codes are 9 and 80.

UNLISTED SPEED DIAL NUMBERS

System speed dial numbers 90-99 and each station user's personal speed dial numbers 1 and 2 will not be displayed when used. This will ensure the privacy of these telephone numbers and prevent unauthorized use. However, they will be printed out on the SMDR report.

VOICE MAIL INTEGRATION (STARMAIL)

Starmail, a proprietary Samsung voice mail system, offers a direct interface link to the PROSTAR 816 PLUS (via a keyset port) for complete voice mail operation. The inter-

face link of Starmail has been designed to work hand in hand with the PROSTAR 816 PLUS to provide a feature-rich voice mail system. See Section 4.7 STARMAIL FEATURES.

4.2 STATION FEATURES

Appointment Reminder	Line Queuing with Callback
Attendant Station	Line Skipping
Auto Answer	Message Waiting Light
Automatic Privacy	Microphone Mute
Automatic Redial of a Busy Number	On-Hook Dialing
Boss/Secretary Hot Line	PBX Feature Buttons
Busy Lamp Field (BLF)	Prime Line Selection
Call Forward	Pulse to Tone Changeover
All Calls	Ringer Volume Control
Busy	Ringing Line Preference
Call Pickup	Save Number Redial
Direct Station Selection (DSS)	Single Line Connections
Directory Tray	Soft Key Programming
Do Not Disturb (DND)	Speaker Volume Control
Door Lock Release	Speakerphone
Exclusive Hold	Speed Dial Buttons
Group Listen	Station Callback
Handset Volume Control	Strain Relief Channels
Headset Operation	Tri-Colored Lights
Hearing Aid Compatible	Wall-Mountable Keysets
Last Number Redial	

STATION FEATURE DESCRIPTIONS

APPOINTMENT REMINDER

Allows your telephone to be used like an alarm clock. Reminds you of meetings or appointments by ringing at the exact time for which you set it.

ATTENDANT STATION

Select the station of your choice to be the attendant. This station may be called by dialing 0. The attendant's DND button is used to place the system in night service.

AUTO ANSWER

When an 816 station is set into this mode, all intercom calls will automatically turn on the speaker and microphone for true hands-free answering. Each 816 keyset user may select either this mode or ring mode.

AUTOMATIC PRIVACY

All conversations on outside lines and intercom calls are automatically private. Special programming will allow this feature to be turned off when desired.

AUTOMATIC REDIAL OF A BUSY NUMBER

When selected, the system will reserve a C.O. line and redial a busy telephone number every 45 seconds for a maximum of three attempts.

BOSS/SECRETARY HOT LINE

An immediate communications link (handsfree if both BOSS and SECRETARY stations are 816 keysets) is established when this button is pressed. When the BOSS station is in the Do Not Disturb mode, all calls are forwarded to the SECRETARY station and only the SECRETARY station can call the BOSS station.

BUSY LAMP FIELD (BLF)

All PROSTAR 816 keysets have 16 buttons that light to indicate the busy condition of other stations in the system. A steady red light is used to indicate a station is in use and a flashing red light indicates that the station is ringing.

CALL FORWARD

Allows intercom calls and outside calls transferred to a station to be forwarded immediately (Forward All Calls) or when busy (Forward Busy) to another station or group of stations. Calls may originate from a station in the forward mode. Any lines assigned to ring at a forwarded station may be programmed to follow or to not follow call forwarding.

CALL PICKUP

Allows any station to dial 11 and answer outside or intercom calls ringing at another station. Pressing a flashing DSS button will answer intercom calls ringing at that station.

DIRECT STATION SELECTION (DSS)

To call another station, simply press the desired DSS button. All PROSTAR 816 keysets have sixteen DSS buttons, one for every station in the system.

DIRECTORY TRAY

Each PROSTAR keyset comes with a convenient pullout tray containing cards to record station and system speed dial numbers.

DO NOT DISTURB (DND)

Activating this feature at any station will stop all calls to that station. The attendant keyset is not allowed the DND feature. Any station may be allowed or denied use of this feature in programming.

DOOR LOCK RELEASE

After answering a call from the door phone, dialing 3 will give a contact closure to operate a customer-provided electronic door lock. The contact closure time is programmable from 1.5–10 seconds.

EXCLUSIVE HOLD

Depressing the HOLD button twice holds a call exclusively at that station. No other station may pick up that call.

GROUP LISTEN

Keysets assigned this feature button may turn on the speaker while using the handset or headset. This allows a group of people to listen to the distant party without being heard.

HANDSET VOLUME CONTROL

For added convenience and comfort, the volume of the handset receiver can be adjusted on every PROSTAR keyset.

HEADSET OPERATION

Every PROSTAR keyset user can easily turn on and off headset mode operation. In this mode, the hookswitch is disabled and the speaker button acts as an answer/release button.

HEARING AID COMPATIBLE

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

LAST NUMBER REDIAL

Allows a user to redial the last telephone number dialed with the push of a single button.

LINE QUEUING WITH CALLBACK

When the line you want to use is busy, the system will place your station in a queue. You will be called back when the line is available.

LINE SKIPPING

While on an outside line, you may directly press another line button without causing the first line to go on hold.

MESSAGE WAITING LIGHT

The MESSAGE button lights to indicate another station has a message for you. A maximum of four stations may leave a message indication at each keyset.

MICROPHONE MUTE

Allows the microphone to be turned on or off as desired by pressing the MUTE key when using the speakerphone. Microphones may be disabled on a per-station basis through system programming.

ON-HOOK DIALING

Calls can be placed with the handset on-hook (in the cradle). Dialing and ringing will be heard through the speaker. Pick up the handset for a private conversation or use the built-in speakerphone on 816 keysets (800 keyset users must pick up the handset).

PBX FEATURE BUTTONS

Speed dial buttons can be programmed with #, * and the hookflash command. This allows PBX feature access codes to be stored for easy use.

PRIME LINE SELECTION

Any station can be programmed to select a specific line, line group, system speed dial number, station or station group.

PULSE TO TONE CHANGEOVER

Allows callers using dial pulse lines to send tones (DTMF) after connection to another system or device.

RINGER VOLUME CONTROL

Each station user may adjust the ring volume level at the keyset.

RINGING LINE PREFERENCE

Stations programmed to receive ringing on outside lines will be automatically connected to an incoming call when the handset is lifted or the speaker button is pressed. This feature may be turned off in station programming at any keyset.

SAVE NUMBER REDIAL

Allows a dialed number to be saved for redial at a later time. Saving a second number replaces the previously saved number. It is not affected by last number redial.

SINGLE LINE CONNECTIONS

Up to ten of the 16 stations may be configured for conventional single line telephone connections. These standard telephone extensions may be used for many kinds of customer-provided telephone sets and such devices as the following: facsimile machines, answering machines, cordless telephones and dictation machines. When connecting ancillary devices to these extensions, compatibility should be checked out before purchase to ensure customer satisfaction.

SOFT KEY PROGRAMMING

The four round buttons below the display area on 816 keysets may be programmed for specific functions. Each 816 keyset user may select the functions needed independently of other keysets.

SPEAKER VOLUME CONTROL

A volume control is conveniently provided on every keyset to regulate the volume of the speaker.

SPEAKERPHONE

Every PROSTAR 816 keyset has a built-in speakerphone for handsfree conversations.

SPEED DIAL BUTTONS

Every PROSTAR 816 keyset has 16 buttons that can store frequently dialed numbers. PROSTAR 800 keysets have 12 personal speed dial buttons. Each station user can program personal numbers using these buttons. Speed dial buttons 1 and 2 on each 816 display keyset will not show the number dialed in the display. This keeps private numbers private while the speed dial feature is enjoyed.

STATION CALLBACK

When the user reaches a busy station, a callback may be requested. The system rings the calling station back when the called station becomes idle.

STRAIN RELIEF CHANNELS

Both the handset and line cords are routed through channels in the bottom of the keyset. Pulling and stretching the cords will not damage the modular plug or connector.

TRI-COLORED LIGHTS

Outside line buttons have red, green and amber light emitting diodes (LEDs). Calls in progress at a station will show green at that station and red at all others. A ringing outside line will show a green flashing light at all keysets until it is answered. Hold and transfer recalls flash amber.

WALL-MOUNTABLE KEYSETS

Every PROSTAR keyset comes ready to wall-mount with a reversible base wedge and built-in handset clip. Wall-mount is compatible with standard two pin telephone mounting bracket.

4.3 DISPLAY FEATURES

Call Duration Timer	Enhanced Station Programming
Call Processing Information	Identification of Recalls
Calling Party Name	Identification of Transferred Calls
Calling Party Station Number	Outside Line Identification
Conference Identification	Override Indication
Date and Time	Programmable Station Messages
Display Account Codes	Stopwatch Timer
Display Dialed Number	Unlisted Speed Dial Numbers
Display Message Waiting Caller Number	

DISPLAY FEATURE DESCRIPTIONS

CALL DURATION TIMER

The system will automatically time outgoing calls and show the duration in hours and minutes. Each station may turn automatic timing of calls ON or OFF with station programming. Stations may manually time calls by pressing the TIMER button.

CALL PROCESSING INFORMATION

During everyday use, the display will indicate the status of calls in progress such as the following: transfer to or from, hold, busy, callback, recalls and DND.

CALLING PARTY NAME

Immediately upon answering an internal call, the calling station's name is displayed.

CALLING PARTY STATION NUMBER

Before answering, you will know what station is calling.

CONFERENCE IDENTIFICATION

When setting up a conference, each station and line is indicated when it is connected. This is extremely helpful when adding or releasing parties from the conference. When added to a conference, your display will indicate CONF alerting you that other parties are in on your conversation.

DATE AND TIME

In the idle position, the current date and time is conveniently displayed for your use.

DISPLAY ACCOUNT CODES

In the event that an account code is to be entered for charging purposes, the display will indicate the digits entered. You can erase and redial if the account code entered was incorrect.

DISPLAY DIALED NUMBER

When making outside calls, the digits dialed are displayed as you dial them. If the display indicates that an incorrect number has been dialed, hang up and begin dialing again.

DISPLAY MESSAGE WAITING CALLER NUMBER

When the message indication is on, pressing the MSG button will display the station numbers of the persons who have messages for you (up to a maximum of four).

ENHANCED STATION PROGRAMMING

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

IDENTIFICATION OF RECALLS

Calls that you put on hold or transfer will be easily identified as T-recalls or H-recalls, allowing you to respond correctly.

IDENTIFICATION OF TRANSFERRED CALLS

The display will identify who transferred a call to you and when one is camped on to your station.

OUTSIDE LINE IDENTIFICATION

Each line can be identified with a name or ID. Incoming calls ringing at your station will display this ID before the call is answered. This is helpful when lines are answered with different greetings for different companies.

OVERRIDE INDICATION

If another station barges-in on your conversation, the display will alert you with an OVERRIDE CALL display.

PROGRAMMABLE STATION MESSAGES

Stations may select one of 20 preprogrammed messages to be displayed at the calling party's keyset. Customer can create ten messages and ten are factory-programmed. There is a maximum of 16 characters per message. The ten factory-programmed messages are the following:

- | | |
|---------------------|-----------------|
| 1. Do Not Disturb | 6. In a Meeting |
| 2. Out of Town | 7. On Vacation |
| 3. Out on a Call | 8. Out to Lunch |
| 4. In Tomorrow | 9. Page Me |
| 5. Return Afternoon | 10. Gone Home |

STOPWATCH TIMER

Display keyset users will find this feature very convenient to time meetings, calls and other functions. Just press to start timer and press again to stop timer.

UNLISTED SPEED DIAL NUMBERS

System speed dial numbers 90–99 and each station user's personal speed dial numbers 1 and 2 will not be displayed when used. This will ensure the privacy of these telephone numbers and prevent unauthorized use. However, they will be printed out on the SMDR report.

4.4 SAMPLE DISPLAYS

PROSTAR 816 display model keysets have a large, easy-to-read, 16 character liquid crystal display unit. Helpful call processing information is provided so everyday call handling is quick and easy. Here are just some of the displays you may see.

11/15 THU 09:17

Idle Condition

Date, day and time are shown for your convenience.

TRSF CAMP ON

Call Waiting/Camp-on

This indicates that a call has been transferred to you and is waiting at your station.

EXT CALL BACK

Callback Feature

Indicates that your phone is making the station call back you requested.

LINE2: 4264100

C.O. Line Indication

Shows the line used and the number dialed.

T RECALL EXT 24

Transfer Recall

Indicates that the line you transferred was not answered and is recalling you.

INTERNAL PAGE

Paging

Indicates that you are making an internal page. Keysets receiving this page show PAGE FROM EXT:24.

LINE5: IN WATS 3

Incoming C.O. Call

Indicates the line ringing and the line ID.

H RECALL LINE6

Hold Recall

Indicates that the call you put on hold is recalling and shows what line it is.

AUTO REDIAL

Auto Redial

This display appears while your keyset is redialing a busy number for you.

CALL FROM EXT28

Incoming Station Call

Extension 28 is calling.

CONF L1 29 L4

Conference Call

Shows that you have set up a conference with yourself, lines 1 and 4 and extension 29.

RESTRICTED CALL

Restricted Use

Indicates that you are accessing a line that is restricted from use at this time.

EXT28: STEVE

Station to Station Call

Shows the extension number and the name of the person with whom you are speaking.

12:25

Timer Function

May indicate the duration of a call or stopwatch time.

OFFER FROM EXT23

Call Offer

You are on the phone and extension 23 has an important message and needs to speak with you.

TRSF FROM EXT22

Transferred Call

Indicates that extension 22 has transferred a call to you.

MSG 21 22 25 29

Message Indications

Shows that these four extensions have messages for you.

IN A MEETING

Programmed Messages

Shows that the station you called is not available and has left this message.

4.5 SINGLE LINE STATION CAPABILITIES

The PROSTAR 816 PLUS system allows for connection of up to ten standard telephone sets with either tone or pulse dialing. Users of these types of telephones have all the following capabilities available to communicate effectively to other stations and lines in the system:

- All Page
- Answer Calls from All Stations and Lines
- Answer Door Phone Calls and Operate Door Lock Release
- Busy Station Callback
- Call Hold
- Call Offer
- Call Pickup
- Call Transfer
- Dial Access to All Outside Lines (Individually or by Group)
- Direct Dialing to All Stations, Station Groups and Door Phones
- External Page
- Internal Page
- Leave Message Indications at Keysets
- Send a Flash on C.O. Line
- Use System Speed Dial Numbers

4.6 SAMPLE SMDR REPORT

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

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

CALL TYPE FLAG DEFINITIONS

O	OUTGOING	DE	DISA CALL WITH ERROR
I	INCOMING	T	TRANSFER
DI	DISA CALL IN	IT	INCOMING TRANSFER
DO	DISA CALL OUT	FI	INCOMING CALL FORWARDED
FO	OUTGOING RECORD OF FORWARDED CALL	OT	TO AN EXTERNAL NUMBER OUTGOING TRANSFER

4.7 STARMAIL FEATURES

STARMAIL FEATURES

Starmail, a proprietary Samsung voice mail/automated attendant system, offers a direct interface link (via a keyset port) to the PROSTAR 816 PLUS telephone system. Integrating Starmail with your PROSTAR 816 PLUS telephone system is quick and easy.

Starmail may be used as an automated attendant only, for voice mail only or for both an automated attendant and voice mail. The flexibility of Starmail allows it to meet a company's current needs and adapt to meet the future needs of a growing business.

Having a good understanding of the differences between an automated attendant and voice mail can help you decide how your calls should be handled. This understanding will help avoid frustrated callers that can result in lost business. Avoid this mistake by better understanding the capabilities of an auto attendant and voice mail and when to use them, either independently or together.

AUTO ATTENDANT

An auto attendant is a machine that answers the phone with a recorded greeting and presents the caller with a number of options. These options usually include dialing the extension number if known, dialing a single digit to reach a certain department or selecting a name from a directory. This machine will *not* take messages if the selected party is unavailable.

VOICE MAIL

Voice mail is a sophisticated machine that takes messages for many people. Each person has a mailbox to which his/her messages are delivered. These messages can be retrieved when the person is in or out of the office, usually by entering a personal passcode. Both feature lists below are included in every Starmail system. Use the features of both the automated attendant and voice mail for a comprehensive call processing system.

Contact your Samsung dealer for more information on how Starmail can serve your business.

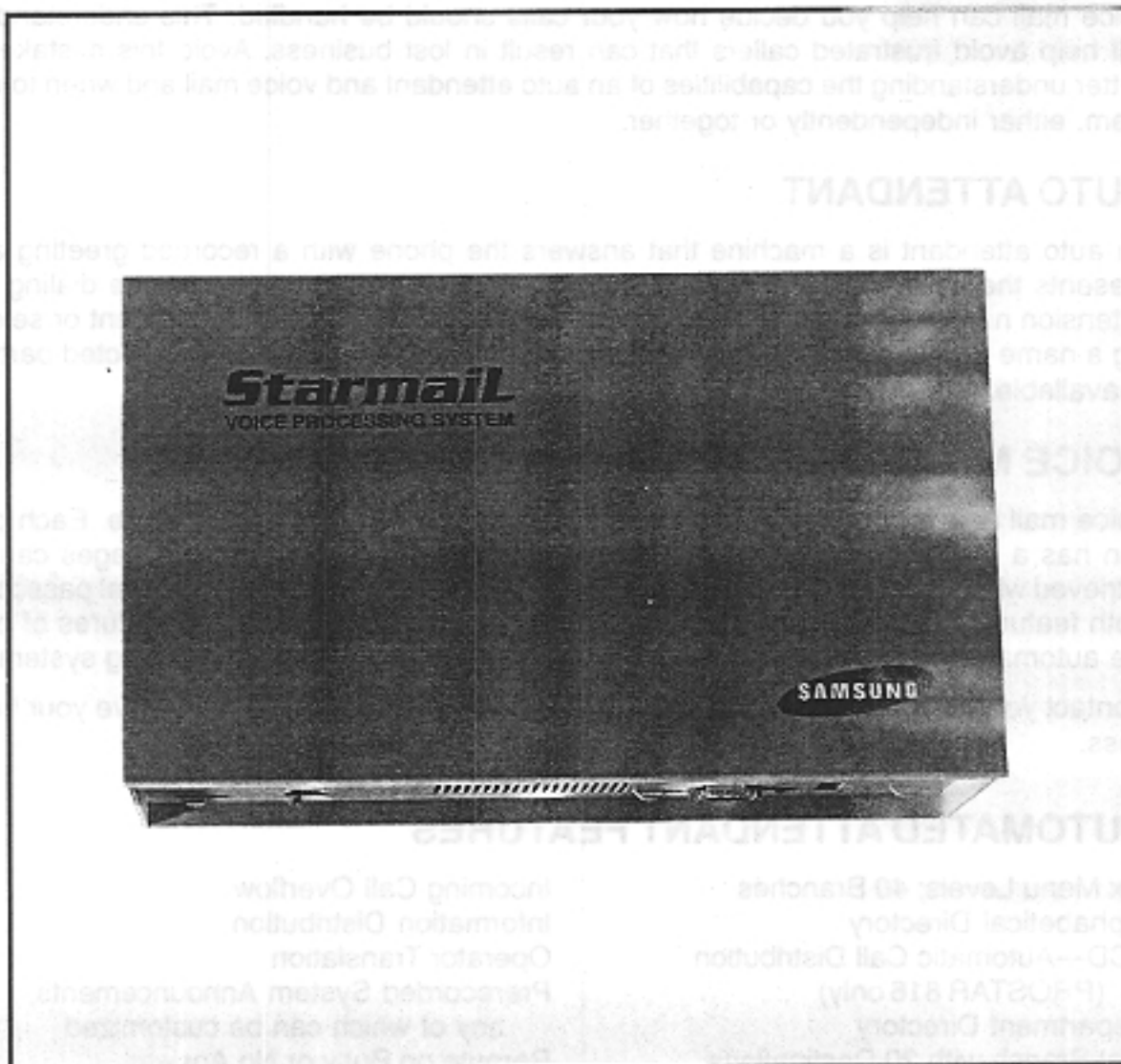
AUTOMATED ATTENDANT FEATURES

Six Menu Levels; 40 Branches
Alphabetical Directory
ACD—Automatic Call Distribution
(PROSTAR 816 only)
Department Directory
Dial Branch with 20 Destinations
Extension Number Confirmation
Extension Privacy
FAX Recognition

Incoming Call Overflow
Information Distribution
Operator Translation
Prerecorded System Announcements,
any of which can be customized
Reroute on Busy or No Answer
Separate Greetings for Day and Night
with Automatic Change
Single Digit Dialing

VOICE MAIL FEATURES

600 Individual Mailboxes	Individual Password Security for Each Mailbox
16 Group Mailboxes	Individual Personal Mailbox Greeting
Automatic Log In to Mailbox	Mailbox On/Off Option
Automatic Message Purging	Message Move
Broadcast Mailbox	Message Notification to Pager (Tone and Digital)
Call Forward to Voice Mail	Pause or Rewind
Control of Each Keyset's Message Waiting Light	Time and Date Stamp
Call Forward to Mailbox	
Delete and Save Messages	



STARMAIL VOICE PROCESSING
SYSTEM

FIGURE 4-1

PART 5. USER INFORMATION

5.1 RADIO FREQUENCY INTERFERENCE

WARNING: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and operated in accordance with the instruction manual, it may cause interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

5.2 FCC REQUIREMENTS

The PROSTAR 816 PLUS electronic telephone system complies with Part 68 of the FCC Rules and Regulations.

UNAUTHORIZED MODIFICATIONS

Any changes or modifications performed on this equipment that are not expressly approved by Samsung Telecommunications America can cause noncompliance with the FCC rules and void the user's authority to operate the equipment.

NOTIFICATION TO TELEPHONE COMPANY

The customer must notify the telephone company of the particular line to which the connection will be made and provide it with the FCC registration number and the Ringer Equivalence Number (REN) of the protective circuit. On the right side of the key service unit is a label that contains the FCC registration numbers and REN for this equipment.

FCC Registration Numbers: A3LK0R-20967-KF-E and A3LK0R-20966-MF-E

Ringer Equivalence Number: 2.5B

5.3 TELEPHONE COMPANY REQUIREMENTS

The FCC has established rules which permit the PROSTAR 816 PLUS to be connected directly to the telephone network using telephone company network access jacks.

TELEPHONE COMPANY INTERFACES

CIRCUIT TYPE	FACILITY INTERFACE CODE	USOC (NETWORK JACK)
C.O. LINE—LOOP START (BASE BOARD) (EXPANSION CARDS)	O2LS2	RJ14C RJ11C
E & M TIE LINE	TL11E	RJ2EX
OFF PREMISES EXTENSION	OL13A	RJ11C

NOTE: 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's rules.

RINGER EQUIVALENCE NUMBER (REN)

The REN is used to determine the quantity of devices which may be connected to your telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5). To be certain of the number of devices that may be connected to the line, as determined by the number of RENs, contact the telephone company to determine the maximum REN for the calling area.

INCIDENCE OF HARM

If the terminal equipment, PROSTAR 816 PLUS, 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.

CHANGES TO TELEPHONE COMPANY EQUIPMENT OR FACILITIES

The telephone company may make changes in its facilities, equipment, operations or procedures that can affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications so that you may maintain uninterrupted service.

SERVICE CENTER

If trouble is experienced with the PROSTAR 816 PLUS, please contact Samsung Telecommunications America at (305) 426-4100 for repair or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

FIELD REPAIRS

Only technicians certified on the PROSTAR 816 PLUS are authorized by Samsung Telecommunications America to perform system repairs. Certified technicians may replace modular parts of a system to repair or diagnose trouble. Defective modular parts can be returned to Samsung Telecommunications America for repair.

GENERAL

This equipment should not be used on coin telephone lines. Connection to party line service is subject to state tariffs.

HEARING AID COMPATIBILITY

All models of the PROSTAR 816 PLUS are hearing aid compatible as specified in Part 68 of the FCC Rules and Regulations.

5.4 MUSIC ON HOLD WARNING

IMPORTANT NOTICE: In accordance with US copyright laws, a license may be required from the American Society of Composers, Authors and Publishers (ASCAP) or other similar organizations if copyrighted music is transmitted through the Music on Hold feature. Samsung Telecommunications America hereby disclaims any liability arising out of failure to obtain such a license.

5.5 DISA WARNING

Lines that are used for the Direct Inward System Access (DISA) feature must have the disconnect supervision option provided by the telephone company. Insist that this is verified by your service company.

WARNING: As it is impossible to prevent unauthorized access to your telephone system by "hackers," we suggest that you do not turn the DISA feature on unless you intend to use it. If you do use this feature, it is good practice to frequently change passcodes and periodically review your telephone records for unauthorized use.

5.6 SAFETY TESTS

The PROSTAR 816 PLUS system has been tested to comply with safety standards in the United States.

CAUTION:

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed

for wet locations.

3. Never touch telephone wires or terminals that are not insulated unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.
5. Replace the power supply cord only with the same type having enough amperage capacity and similar construction to the original one.

UNDERWRITERS LABORATORIES

This system is listed with Underwriters Laboratories.

File #E118093
Control #83X3
Category WYQQ2



WARNING: As it is impossible to prevent unauthorized access to your telephone system by "hackers", we suggest that you do not use the DSA feature on a line you intend to use it. If you do use this feature, it is a good practice to frequently change passwords and periodically review your telephone records for unauthorized use.

5.8 SAFETY TESTS

The PROSTAR 816 PLUS system has been tested to comply with safety standards in the United States.

CAUTION:

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jacks are specifically designed

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