ERICSSON

SECTION 7700-GD
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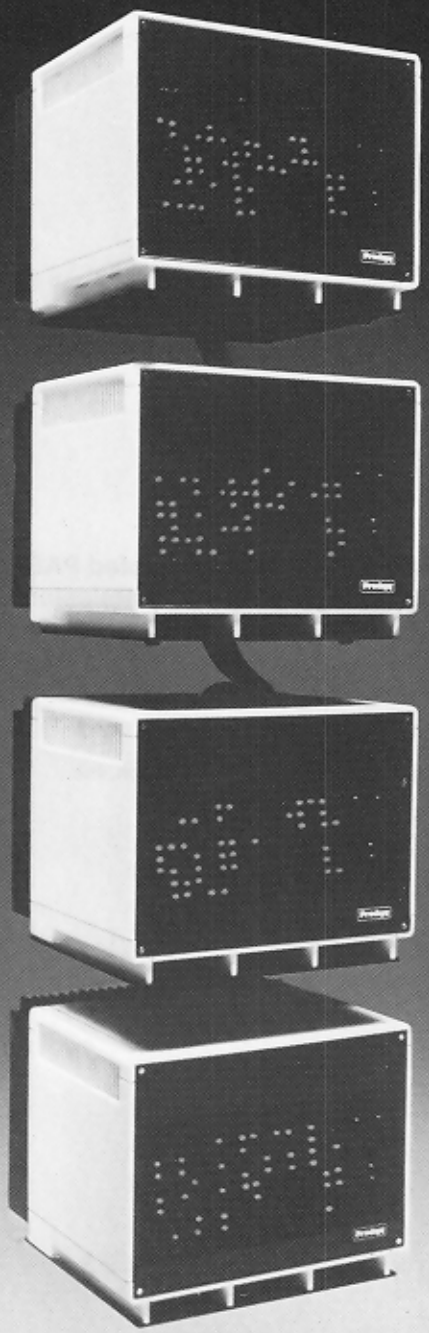
Prodigy™ PABX General Description



Prodigy™

Ericsson Communications, 7465 Lampson Avenue, Garden Grove, CA 92641 (714) 895-3962

Prodigy™ is registered as a fully protected PABX system by the Federal Communications Commission (FCC). FCC Registration Number: ABB978-68863-PF-E

Prodigy is a trademark of Ericsson, Inc.

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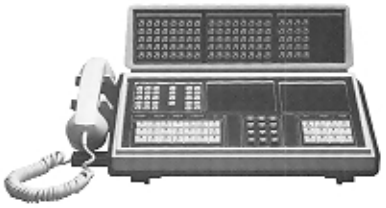
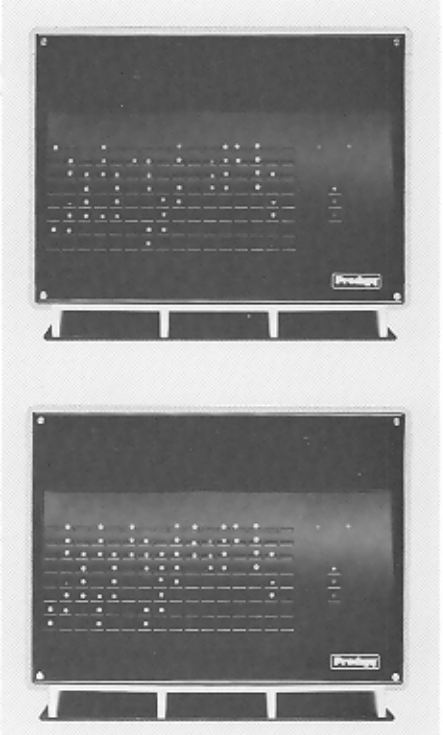
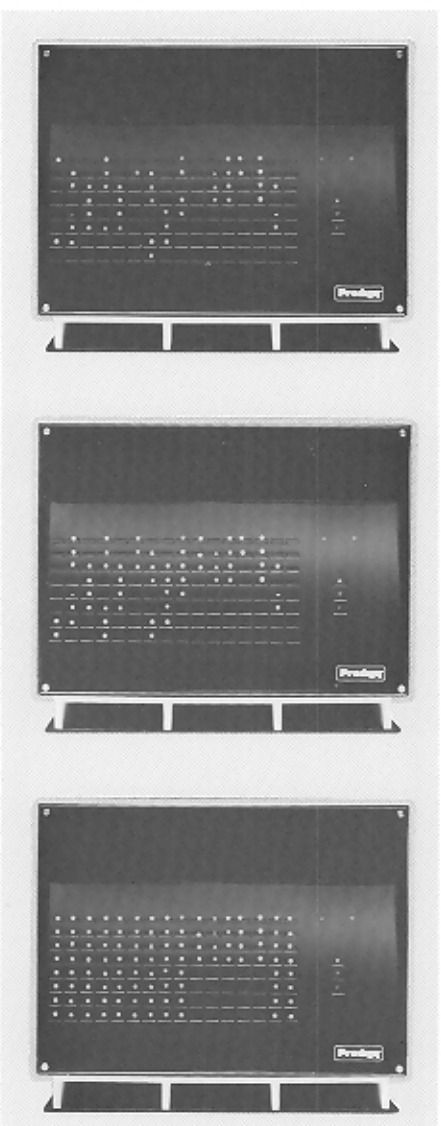




b. 200-line system



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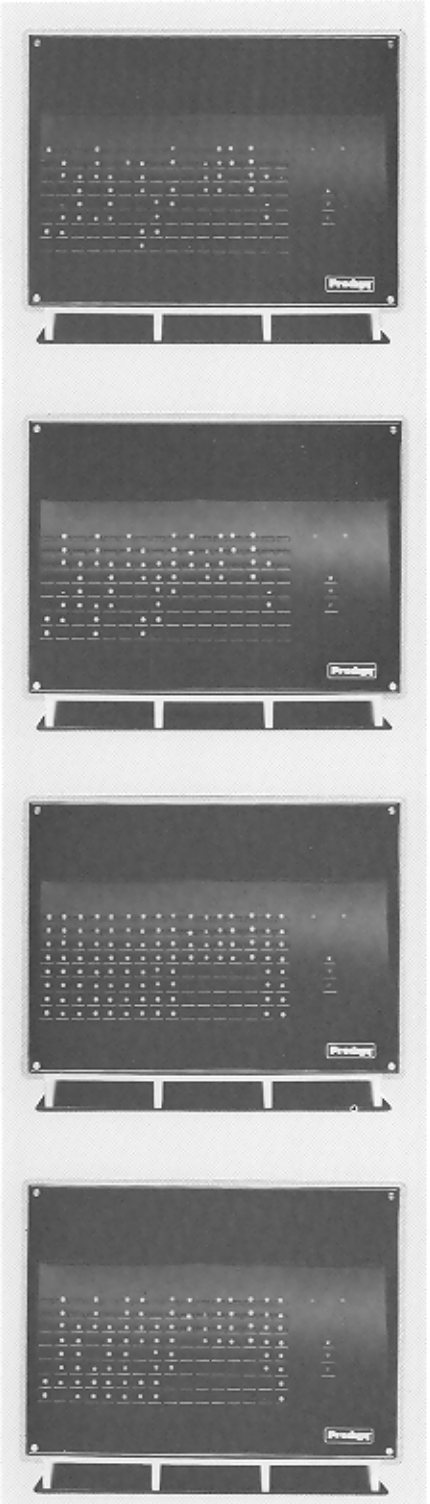


d. 400-line system

Frontispiece. Prodigy PABX System

1. INTRODUCTION

1.01 GENERAL.

This practice provides the general description for the Prodigy™ Private Automatic Branch Exchange (PABX) manufactured by Ericsson Communications.

The Prodigy PABX is a digital, stored-program controlled, microprocessor driven PABX, capable of governing 128 communication ports per equipment cabinet. Due to the physical compactness of the design, the Prodigy may be positioned at virtually any convenient location. Reliability, economy and system adaptability are provided within the Prodigy PABX through continuously self-executing diagnostics, board level maintenance, non-volatile memory and low power components.

1.02 DESIGN CONCEPTS.

The modular design of the Prodigy PABX provides system configuration flexibility and expandibility as requirements increase. Within this flexible design concept, each Prodigy cabinet provides up to 128 ports for assignment to user-defined services. Typically, these 128 ports are assigned as lines and trunks. However, certain ports may be selected by the user as dedicated-port assignment for functions such as test and night answer. Installation of the following equipment/features requires the assignment of a dedicated port, thereby reducing the total line port availability by one port per dedicated feature:

- Attendant console (one dedicated port per console)
- Paging
- UNA

1.03 APPLICATIONS.

The Prodigy PABX offers a wide range of user-oriented features and is compatible with most standard central office and station equipment. Typical applications include: industrial and manufacturing facilities, hotels, motels, hospitals and government operations. Prodigy is also compatible with most key system applications. Contact Ericsson Communications engineering for product compatibility matters.

1.04 TRAFFIC CAPACITY.

The Prodigy features 64 speech paths and is internally non-blocking, thus ensuring that each originating subscriber has access to any idle subscriber. In multi-cabinet installations, each cabinet has access to all 64 intracabinet speech paths. Individual cabinets still maintain their own 64 speech paths for intercabinet calls. Worst case CCS ratings for the Prodigy system are typically 36 CCS intracabinet, 9 CCS intercabinet.

1.05 SYSTEM EXPANSION.

Line and/or trunk increases beyond the capacity of a single cabinet can be accommodated by expanding the single-cabinet into a multi-cabinet system. Such a multi-cabinet system can comprise up to four single cabinets. Interface between the cabinets constituting the multi-cabinet system is implemented by an interprocessor board within each of the participant cabinets. Intercabinet cabling is then from one cabinet to another in daisy-chain fashion.

1.06 CLASS OF SERVICE.

The Prodigy PABX has a flexible Class of Service control function. Trunk Group access, as well as service feature access, are determined by the Class of Service assigned to each individual station within the system. Sixteen classes of service are available. Each Class of Service may be uniquely defined to match specific installation requirements, thereby providing a variety of application-defined combinations of station authorizations and restrictions. Changes to the Class of Service may be made either from the attendant console or from a standard 12-key DTMF (type 2500) station set (located either on-premise or in a remote facility).

1.07 DATA ENTRY.

The advanced design of the Prodigy PABX permits Moves and Changes data to be entered from the console by the attendant, without hardware modifications. However, initial PABX configurations require factory-trained service personnel and the use of a Prodigy Programmer.

1.08 SYSTEM SPECIFICATIONS.

The System Specifications are listed in Table 1-1.

Table 1-1
Performance Specifications

ITEM	PARAMETERS
Station Loop Resistance	650 Ohms (max) Including Instrument
Leak Resistance	15,000 Ohms (min) for station lines 19,000 Ohms (min) for trunk lines
Trunk Loop Limit	1740 Ohm Loop including CO
Maximum Distance of Consoles from Equipment	1,000 feet (DC Pwr Path Loop Resistance 2 Ohm max)
Ringing	20 Hz multiple ringing 1 second on, 3 seconds off
Rotary Dial	8-12 pps, 48% to 67% Make/Break Ratio
DTMF Dial	Bell System Touch-Tone*
Audible Tones	Bell System Precise Tone Plan*
System Impedance, Trunk	600/900 Ohms and 2.2 MF (strappable)
System Impedance, Line	600 Ohms and 2.2 MF
Frequency Response	200-3400 Hz, +1 dB, −1.5 dB referenced to 1 kHz, @ −6 dBm
Insertion Loss	
Line to Line	1.0 dB ± 0.8 dB @ 1000 Hz, −6 dBm
Line to Trunk	0.5 dB ± 0.5 dB @ 1000 Hz, −6 dBm
Harmonic Distortion	less than 40 dBm @ −6 dBm
Crosstalk	60 dB (min)
Idle Channel Noise	23 dBrnC, (max), any VF port
Impulse Noise	none exceeding 60 dBrnC
Longitudinal Balance	better than 58 dB
Traffic Capacity	36 CCS/Line, non-blocking, within cabinet
Environmental at Maximum Capacity	
Temperature	41°F (5°C) to 95°F (35°C) measured at 1½" from outside center of equipment cabinet
Relative Humidity	20% — 80% without condensation

*Registered trademark of American Telephone and Telegraph Co.

1.09 **EQUIPMENT CABINET.**

Each Prodigy equipment (Figure 1-1) cabinet has a self-contained power supply and provisions for all switching circuitry. Each equipment cabinet can support up to three (3) attendant consoles. Cable connection between the equipment cabinet and attendant consoles is provided by a plug-ended cable. Multiple consoles per cabinet are daisy-chained together. Access to the interior of the equipment cabinet is gained through a removable transparent front panel. Diagnostic/Status indicators located on the printed circuit boards in the cabinet can be monitored through the front panel.

The cabinet houses the PC boards and can accommodate 128 lines or 64 trunks, or a combination thereof, by selecting the proper line and trunk printed circuit (PC board) complement in accordance with the system configuration requirements. Line PC boards can accommodate 8 lines per board, trunk PC boards have 4 trunks per board, while the equipment cabinet can contain a maximum of 16 PC boards of either type.

1.10 **PHYSICAL DATA.** The physical data for the equipment cabinet are as follows:

Height: 13 5/8 Inches (34.6 cm)
Width: 16 3/4 Inches (42.6 cm)
Depth: 17 Inches (43.2 cm)
Weight: Approximately 50 pounds (22.56 kg) fully equipped
Power Requirements: 110 VAC, 60 Hz
Power Consumption: 350 W

1.11 **ATTENDANT CONSOLE.**

The Attendant Console (Figure 1-1) provides, in addition to its regular call processing service, all of the functions required to configure the Prodigy system. When placed in Service mode, the attendant console can be used to change Class of Service and/or station numbers for given extensions. The console employs an LED implemented alphanumeric display to enable the attendant to monitor the status of the calls in process. Interfacing between the console and the cabinet is accomplished through a digital serial data link, in the form of a single plug-ended cable.

1.12 **PHYSICAL DATA.** The physical data for the attendant console are as follows:

Height: 4.25 Inches (10.6 cm), without Busy Lamp option
8.00 Inches (20.3 cm), with Busy Lamp option
Width: 15.5 Inches (38.8 cm)
Depth: 11.7 Inches (29.3 cm)
Weight: 8.25 Pounds (3.7 kg), without Busy Lamp option
10.5 Pounds (4.7 kg), with Busy Lamp option

Power Requirements: The console is powered from the PABX (−24 Vdc) through the cabinet-to-console system cabling.

Figure 1-1. Prodigy Cabinet and Console

1.13 CUSTOMER ASSISTANCE.

Customer assistance in ordering and applications procedures is available through the Ericsson Communications Marketing Department. Direct all inquiries for applications engineering to:

Ericsson Communications
1900 Crescent Avenue/P.O. Box 3772
Anaheim, CA 92803-3772

Telephone: (714) 635-0150
(8 am to 5 pm, Pacific Time)
and
(714) 761-4911
(24-hour emergency service only)

Direct inquiries for customer service to:

Ericsson Communications
1000 E. Ball Road
Anaheim, CA 92805

Telephone: (714) 999-1521
(8 am to 5 pm, Pacific Time)
TWX (910) 591-1708,
Answer Back: ERICS ANA

1.14 MAIL ORDERS OR MAIL INQUIRIES.

Mail orders or inquiries should be addressed as follows:

Ericsson Communications
Customer Service Department
Post Office Box 3772
Anaheim, CA 92803

1.15 DOCUMENTATION.

The Prodigy PABX system is supported by a documentation set consisting of the following manuals:

- Attendant Manual
  Pub. No. 7700-AT
- General Description Manual
  Pub. No. 7700-GD
- Feature Definition Manual
  Pub. No. 7700-FD
- Station User's Manual
  Pub. No. 7700-SU
- System Configuration Manual
  Pub. No. 7700-SC
- Programming Forms
  Pub. No. 7700-PF
- System Installation Manual
  Pub. No. 7700-SI
- System Maintenance Manual
  Pub. No. 7700-SM
- Ordering Information
  Pub. No. 7700-OI

A complete set of reference materials is shipped with each Prodigy system.

2. SYSTEM DESCRIPTION

2.01 GENERAL.

Through the use of advanced large scale integration (LSI) circuitry, the Prodigy PABX provides the low-to-medium line PABX user with features previously found only in larger PABX systems. In addition to the 128-port per cabinet voice switching facilities of the system, the Prodigy system, equipped with the proper modem can switch data at up to 4800 baud.

2.02 SYSTEM OVERVIEW.

The system is self-contained and requires no special station equipment. Interfacing between internal stations, and to the telephone network, is accomplished through line and trunk PCBs. Fundamentally, the analog-to-digital and digital-to-analog conversion is accomplished through the use of continuously variable slope delta modulation (CVSD). A simplified system block diagram is presented in Figure 2-1, and a functional block diagram in Figure 2-2.

A single cabinet Prodigy system consists of the following:

BASIC

- Equipment Cabinet Module (including Power Supply)
- One (1) Switchtone PCB
- One (1) Processor PCB
- One (1) Memory Expansion PCB
- One (1) Configuration ROM PCB
- Line PCBs (eight [8] lines per PCB)
- Trunk PCBs (four [4] trunks per PCB)

OPTIONAL

- DTMF PCB
- Interprocessor PCB
- Attendant Console
- Wall Mount Bracket
- Relay Rack Mounting Bracket

NOTE: The combined total of line and trunk PCBs may not exceed 16 PCBs.

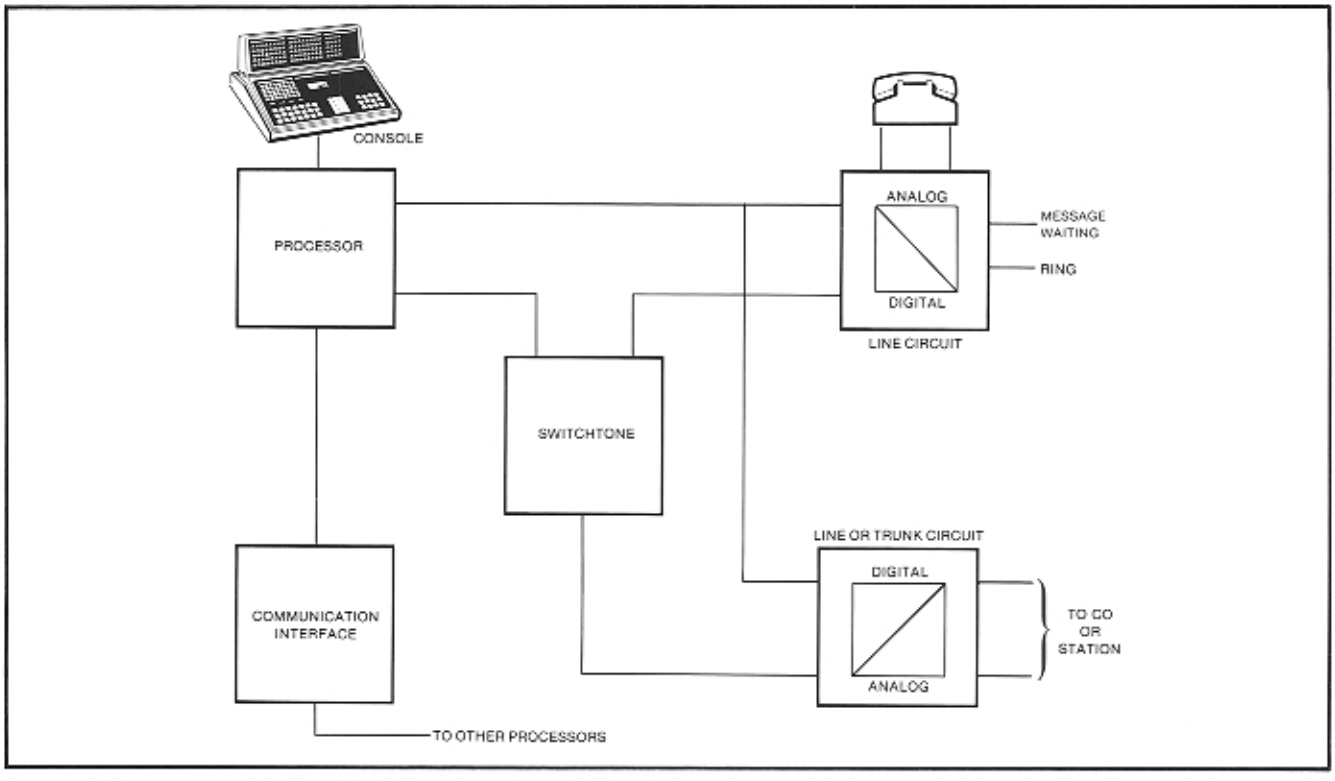


Figure 2-1. Prodigy PABX System, Simplified Block Diagram

2.03 FUNCTIONAL DESCRIPTION.

The Prodigy PABX system accepts analog voice signals entering on a tip-ring pair and terminates these voice signals on a line or trunk card (see Figure 2-1). The received analog voice signals are converted to digital pulse streams, which are time division multiplexed into one of 64 time slots on the Prodigy's two high-speed digital busses. (See Figure 2-2). The receiving circuit accepts the digital pulse stream and reconverts the pulse stream to an analog signal. The reconverted analog signal is then output on the tip-ring circuit of the receiving line or trunk. A voice connection is established between two lines, two trunks, or a line and a trunk, by gating the signals from and to their corresponding transmitting and receiving circuits, onto the digital bus during the appropriate time slot.

Time slot addresses on the dual high speed digital busses, are derived from off-hook signals and detected by the microprocessor and then transmitted to memory over the processor data buss. This address information is then utilized in the assignment of the line or trunk to one of the available 64 time slots.

The system can accept and interpret dial pulses and DTMF signals, detect ringing from an incoming trunk, and is capable of generating and outputting all DTMF signals and call progress tones. The call progress tones are generated in digital form by internal circuitry.

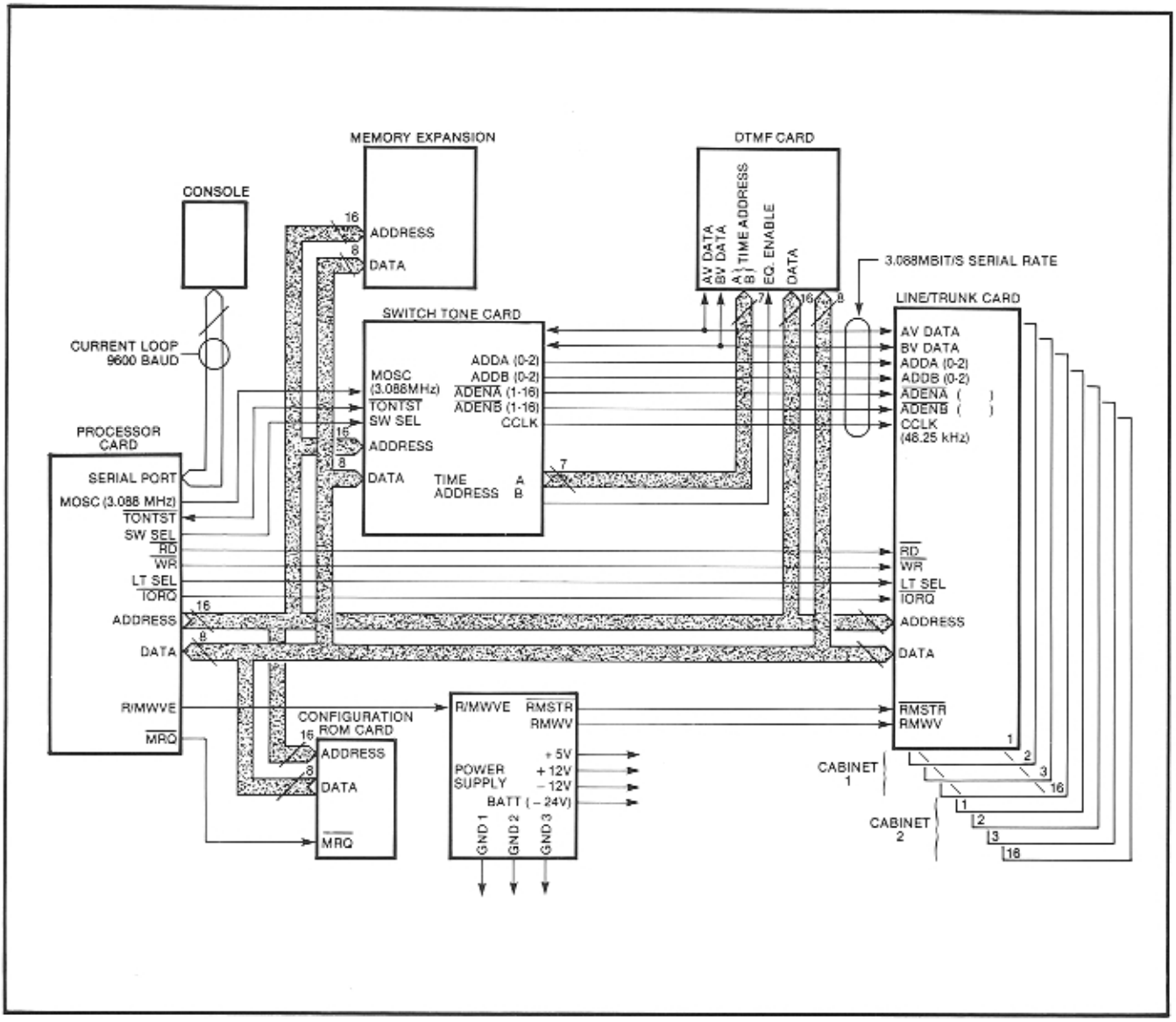


Figure 2-2. Prodigy PABX System, Functional Block Diagram

2.04 PHYSICAL DESCRIPTION.

The physical description describes the equipment cabinet and its printed circuit board components, and the attendant console and its system controlling and monitoring functions.

2.05 EQUIPMENT CABINET. The equipment cabinet is shown in Figures 2-3 through 2-5. With the exception of the Configuration ROM card, all printed circuit boards are installed by inserting them from the front into the equipment cabinet, as shown in Figure 2-4. The Configuration PROM card plugs into the power supply housing from the rear of the equipment cabinet, as shown in Figure 2-5.

The equipment cabinet accommodates up to 23 printed circuit boards. Printed circuit board locations 1 through 16 are reserved for line or trunk cards. Positions 17, 18, 19 and 22 are reserved for control functions. Positions 20, 21 and 22 are reserved for feature option cards and position 23, located at the top rear center of the cabinet, is provided for the Configuration ROM (See Figure 2-6).

2.06 Line PCB. Each line PCB contains eight (8) line circuits. Each line circuit provides the interface between the subscriber station equipment and the PABX switching circuitry. LEDs contained on the PCB present a visual indication of the status of each line. Up to sixteen line PCBs may be installed in each equipment cabinet.

2.07 Trunk PCB. The trunk PCB provides the interface between the central office and the PABX switching circuitry for 4 trunks. Additionally, the trunk PCB provides message registration for instructions such as hotel/motel registration systems. The trunk PCBs must be strapped for 600 Ohms or 900 Ohms impedance and for loop start or ground start operation. LEDs located on the PCB indicate the status of each trunk. Up to 16 Trunk PCBs may be installed in each equipment cabinet.

2.08 Switchtone PCB. The switchtone PCB provides three major functions within the PABX system, as follows:

Figure 2-3. Prodigy PABX Cabinet, Front View

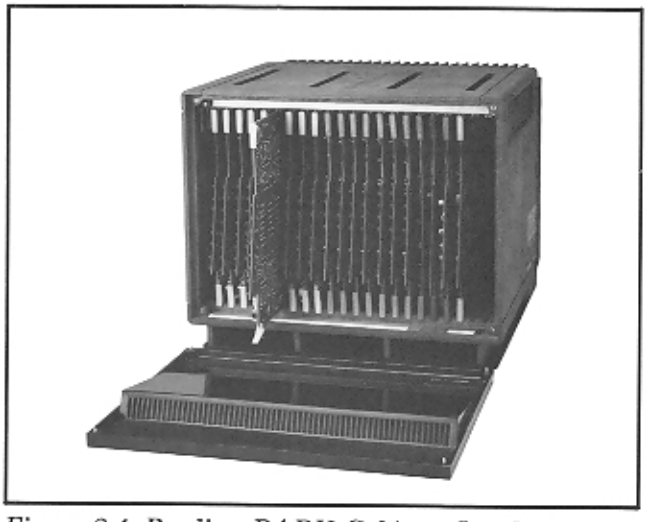


Figure 2-4. Prodigy PABX Cabinet, Inside View Front Cover Removal — PCB Insertion

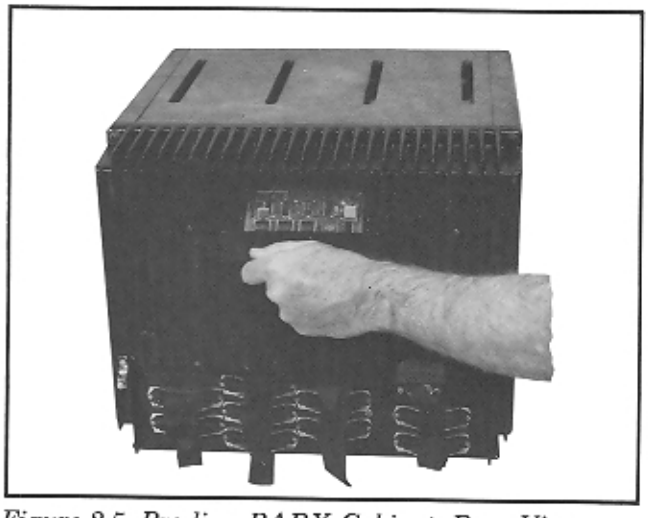


Figure 2-5. Prodigy PABX Cabinet, Rear View Configuration ROM Card Insertion

PCB IDENTIFICATION

SLOT NUMBER	TYPE OF CARD	MODEL NUMBER	COLOR CODE
1-16	a. LINE b. TRUNK	7700-62 7700-61	WHITE ORANGE
17	SWITCHTONE	7700-64	BLUE
18	MEMORY EXPANSION	7700-70	RED
19	PROCESSOR	7700-63	GREEN
20/21	DTMF	7700-67	YELLOW
22	INTERPROCESSOR	7700-73	BLACK
23	CONFIGURATION	7700-66	NONE

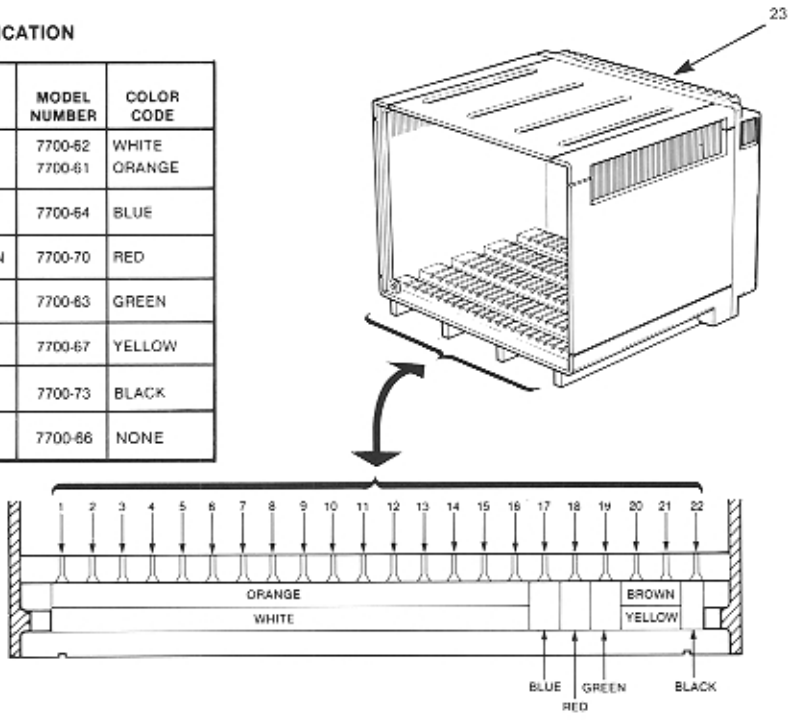


Figure 2-6. Prodigy PABX, Cabinet PCB Identification

1. The switching matrix used to establish the speech paths within the system.
2. All call progress tones used to signal the user.
3. The special clock signals used within the system.

The switchtone card is also used to provide music on hold to the system, from an external music source.

One switchtone card is required per cabinet and is installed in cabinet position 17.

2.09 **Memory Expansion PCB.** The Memory Expansion PCB is used to accommodate the system feature packages. Each Memory Expansion PCB contains up to 32K bytes of Erasable Programmable Read Only Memory (EPROM), containing the feature packages, and 2K bytes of CMOS Random Access Memory (RAM), with battery backup. Additionally, the real-time clock circuitry is contained on the Memory Expansion PCB.

One Memory Expansion PCB is required per cabinet and is installed in position 18 of the PABX cabinet.

2.10 **Processor PCB.** The Processor PCB acts as the master control for the Prodigy system. Additionally, the Processor PCB performs the system diagnostics and outputs alarms in the event of a failure. The Processor PCB contains a Z80 microprocessor, 28K bytes of erasable PROM program store memory, 16K bytes of dynamic read/write memory (RAM), 512-word by 4-bit directory PROM, a dual channel serial communications link and decoding and control lines for system control.

One Processor PCB is required per system and is installed in position 19 of the PABX cabinet.

2.11 **Configuration EPROM Card.** The Configuration Erasable Programmable Read Only Memory (EPROM) card contains all customer-unique configuration data. Data contained within the Configuration EPROM consists of:

- The number of lines and trunks within the system
- The card-slot addresses of the Line and Trunk Cards

- The type of Trunk Card (ground-start or loop-start) contained within each Trunk Card slot
- The Directory Table
- The Class of Service data for that specific customer
- System Timing Parameters

The data contained on the EPROM card informs the Processor of the proper operations for each customized application.

One Configuration EPROM card is required per cabinet and is installed in slot 23, at the top rear center of the PABX cabinet (See Figure 2-6). Ultraviolet light is used to erase the EPROMs on the Configuration cards.

2.12 DTMF PCB. The Dual Tone Multi-Frequency (DTMF) PCB translates the digital tone signals into hexadecimal representations of the dialed digit. Additionally, each DTMF PCB provides a dial tone detector and two tone generator circuits for use with features such as call diversion. The deltamodulation encoder on the DTMF PCB is used to encode the tones utilized in interfacing with the voice data busses. Each DTMF PCB contains three DTMF decoders for use during normal call processing.

The DTMF PCB may be installed in the PABX cabinet in position 20 or 21 or both.

2.13 Interprocessor PCB. The Interprocessor PCB supplies the logic circuitry to enable and support intercabinet communication of both processor and voice data in a multi-cabinet system. The Interprocessor PCB is installed in cabinet position 22.

2.14 ATTENDANT CONSOLE. The attendant console is shown in Figures 2-7 through 2-9. Up to three consoles can be connected to a single equipment cabinet, i.e., a 400-line Prodigy system comprising four equipment cabinets, can have a full complement of maximally twelve attendant consoles.

2.15 Controls and Indicators. The attendant console, as shown in Figure 2-10, contains the attendant keyboard, indicators, and LED alphanumeric display, as follows:

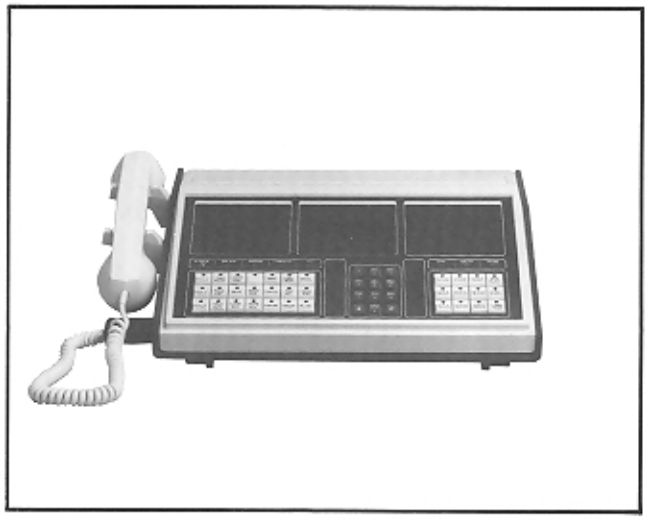


Figure 2-7. Attendant Console, Front View

Figure 2-8. Attendant Console with BLF/DSS and DTGS Options

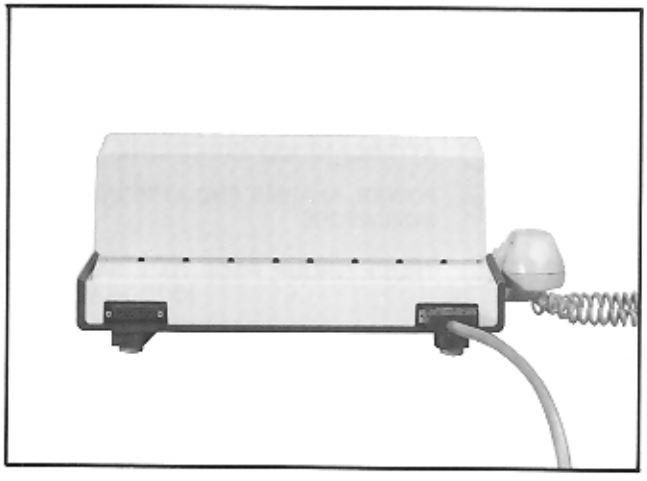
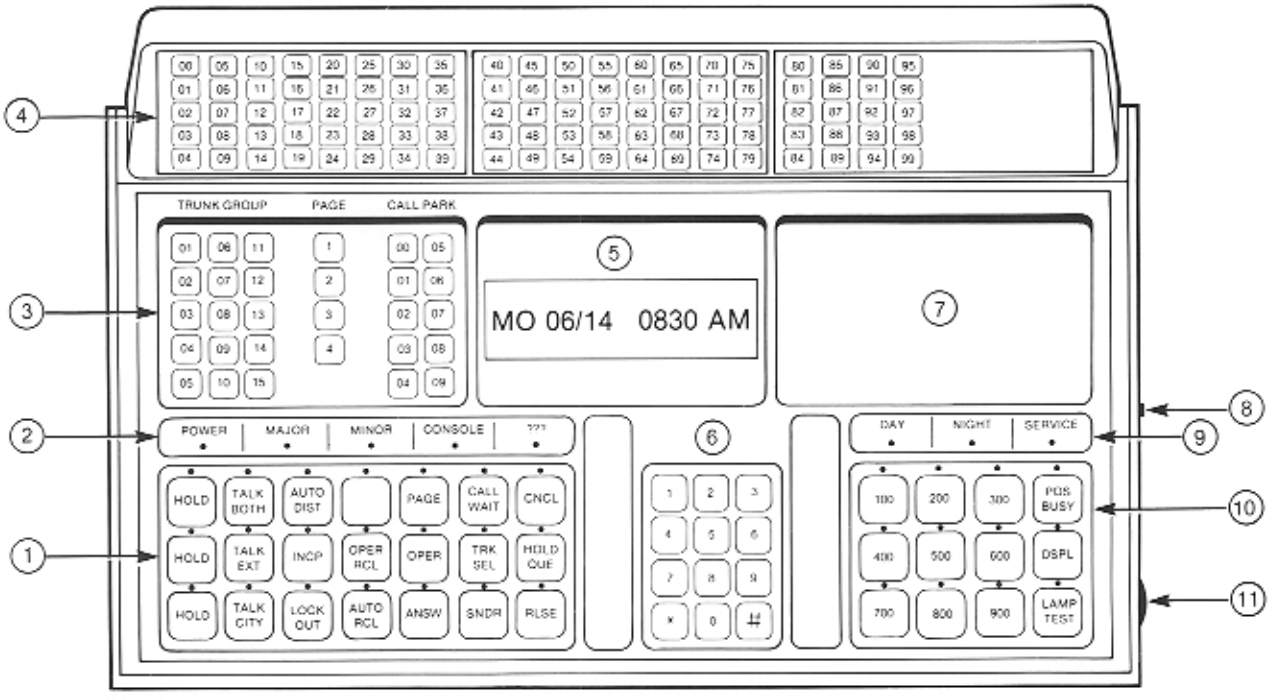


Figure 2-9. Attendant Console, Rear View

- Attendant function keys
- Power, Alarm and Attendant Error indicators
- Trunk Group, Page and Call Park selectors (optional)
- Busy Lamp Field/Direct Station Select Keys (optional)
- 16-Digit Alphanumeric Display
- 12-Key Keypad
- Hundreds Group access keys with Position Busy, Display and Lamp Test selection keys
- Operational Mode indicators
- Operational Mode Selector Switch
- Attendant Console Call Signal Volume Control

The attendant console display area provides specific call-in-process data and general information relative to the time-of-day and the busy/idle status of the PABX lines and trunks.



CONSOLE IDENTIFICATION

1. ATTENDANT KEY FUNCTIONS
2. POWER, ALARMS AND ATTENDANT ERROR INDICATORS
3. TRUNK GROUP, PAGE, CALL PARK (OPTIONAL)
4. BUSY LAMP FIELD/DIRECT STATION SELECT (OPTIONAL)
5. 16-DIGIT ALPHANUMERIC DISPLAY
6. KEYPAD
7. BLANK PANEL
8. OPERATION MODE SWITCH
9. OPERATION MODE INDICATORS
10. HUNDREDS GROUP WITH POS BUSY, DSPL AND LAMP TEST
11. VOLUME CONTROL

Figure 2-10. Attendant Console, Controls and Indicators

2.16 CONSOLE INTERFACE. All communication between the Attendant Console and the processor is conducted via a two-wire serial data link, operating at 9600 baud. In installations with more than one attendant console, the operational software performs all housekeeping activities to ensure that the proper console is addressed at the correct time.

Consoles are connected to the Prodigy cabinet through 25-pair male/female connectorized cables. Consoles do not need to be terminated. In multiconsole systems, the first console is connected to the cabinet, subsequent consoles are daisy-chained together, as shown in Figure 2-11.

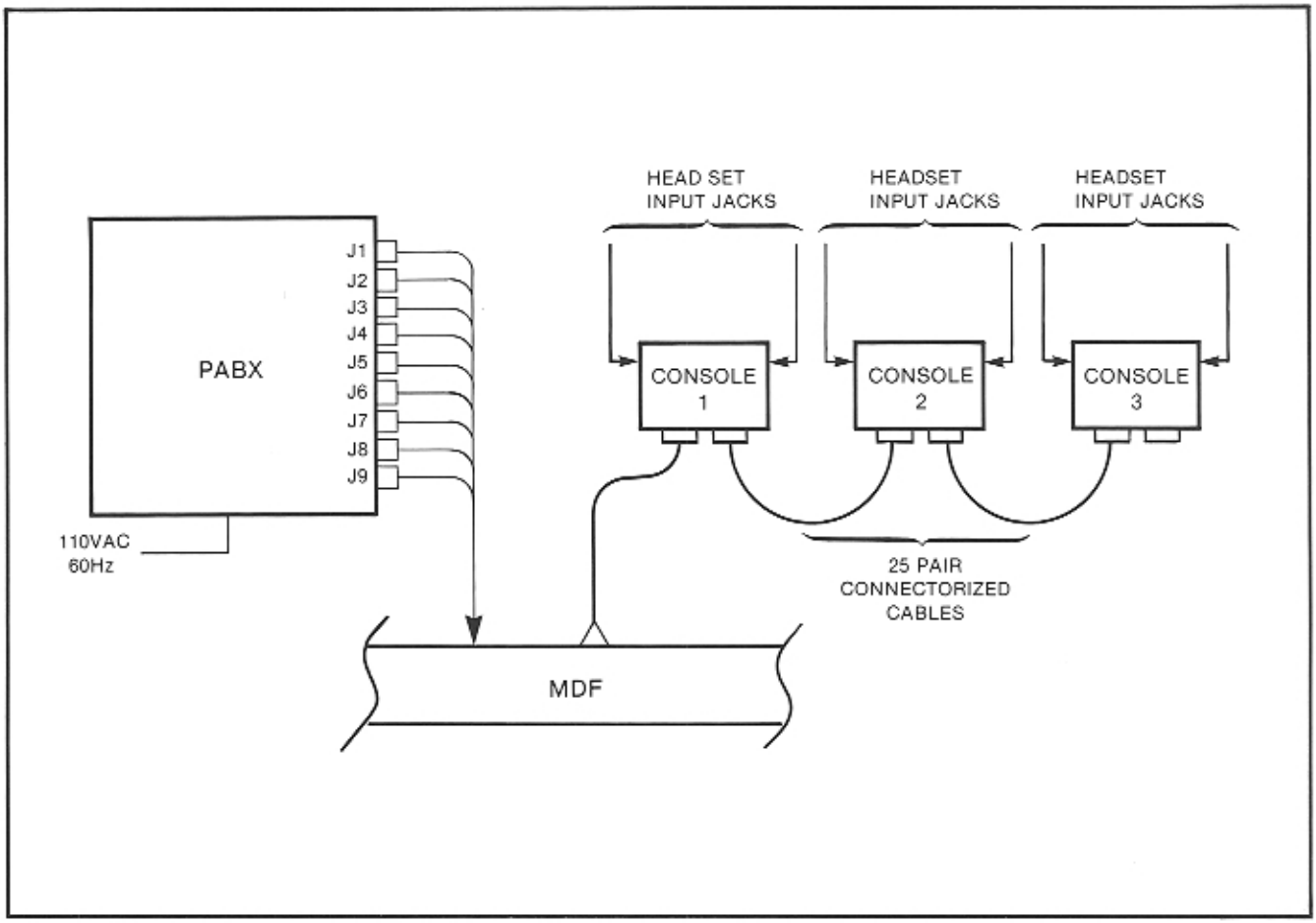


Figure 2-11. Multi-console Configuration

2.17 OPERATIONAL FEATURE PACKAGE. Due to the advanced stored program control design of the Prodigy PABX, various service features are available. The Prodigy comes standard with a basic set of features to which several optional feature packages may be added when required. Both the standard feature package and the optional feature packages are listed in Tables 2-1 and 2-2.

2.18 FUTURE CAPABILITIES. The stored program control design of the Prodigy enables easy introduction of new or enhanced features as they become available. The system design also simplifies any on-site reconfiguration of features as they become available. The system design also simplifies any on-site reconfiguration of features to meet future expansion or relocation requirements. Future modifications to the PABX customer data base will be accomplished by simple commands entered through the attendant console. More specialized features, such as Station Message Detail Recording and Automatic Route Selection will be made available in the future.

TABLE 2-1
Primary Features Identification

FEATURE DESIGNATION	FEATURE TYPE	FEATURE NUMBER	DESCRIPTION PARAGRAPH
Alarm Indications	Attendant	0010	3.04
Alphanumeric Display	Attendant	0020	3.05
Attendant Call Waiting	Attendant	0311	3.07
Attendant Console	Attendant	0060	3.10
Attendant Direct Station Select (DSS)	Attendant	0080	3.12
Attendant Intercept	Attendant	0851	3.13
Attendant Originating Call Waiting	Attendant	0312	3.15
Attendant Overflow Facility	Attendant	0110	3.16
Attendant Position	Attendant	0120	3.17
Attendant Restriction	Attendant	0130	3.18
Attendant Transfer, All Calls	Attendant	0140	3.19
Attendant Voice Paging Access	Attendant	0941	3.20
Automatic Call Distribution To Attendant	Attendant	0150	3.22
Automatic Queueing To Attendant	Attendant	0180	3.23
Calling Number Display To Attendant	Attendant	0320	3.36
Call Waiting Indication At Attendant Position	Attendant	0340	3.35
Class of Service Display To Attendant	Attendant	0390	3.40
Digital Clock, Attendant	Attendant	0540	3.42
Direct Termination of Miscellaneous Circuits	Attendant	0590	3.45
DTMF and/or Key Pulsing	Attendant	0641	3.53
Forced Release, Attendant	Attendant	0720	3.59
Incoming Call Identification	Attendant	0820	3.63
Message Waiting	Attendant	0980	3.70
Priority Queue	Attendant	1180	3.85
Straightforward Outward Completion	Attendant	1490	3.99
Switched Loop Operation	Attendant	1510	3.100
Timed Reminders	Attendant	1580	3.104
Trunk-to-trunk Connection	Attendant	1680	3.111
Two-party Hold, Console	Attendant	1710	3.112
Abbreviated Local Dialing	Station	0001	3.03
Call Hold	Station	0290	3.30
Dial Access To Attendant	Station	0530	3.41
Direct Outward Dialing	Station	0580	3.44
Distinctive Ringing	Station	0630	3.50
Distinctive Tone Signals	Station	0315	3.51
DTMF Calling	Station	0650	3.52
Executive Feature Access	Station	0690	3.55
First Party Release	Station	0700	3.57

TABLE 2-1
Primary Features Identification (Cont'd)

FEATURE DESIGNATION	FEATURE TYPE	FEATURE NUMBER	DESCRIPTION PARAGRAPH
Hotline Stations	Station	0790	3.61
Immediate Ring and Ringback	Station	0810	3.62
Line Lockout With Warning	Station	0900	3.66
Recall Dial Tone	Station	1210	3.87
Rotary Dial Calling	Station	1280	3.88
Single Digit Dialing	Station	1370	3.91
Station-to-Station Calling	Station	1480	3.98
Three-way Conference Transfer	Station	1540	3.102
Through Dialing	Station	1550	3.103
Voice Paging Access	Station	0940	3.115
Class of Service	System	0400	3.39
Direct-in Lines	System	0570	3.48
DTMF to Dial Pulse Conversion	System	0670	3.54
Flexible Numbering of Stations	System	0710	3.58
Inward Restriction	System	0880	3.65
Listed Directory Number Service	System	0920	3.67
Maintenance Facility	System	2000	3.68
Multiple Listed Directory Numbers	System	1000	3.72
Multiple Trunk Groups	System	1010	3.73
Night Station Service (Fixed)	System	1070	3.74
Outward Restriction	System	1130	3.78
Overload Protection	System	1140	3.79
Power Failure Restart — ROM/PROM	System	2010	3.81
Power Failure Transfer, Attendant	System	1150	3.82
Power Failure Transfer, Station	System	1160	3.83
Sharing Tenant Service	System	1350	3.90
Tone Characteristics	System	2240	3.108

TABLE 2-2
Optional Features Identification

OPTION	PACKAGE	FEATURE DESIGNATION	FEATURE TYPE	FEATURE NUMBER	DESCRIPTION PARAGRAPH
Business	1	Attendant Control of Trunk Group Access	Attendant	0070	3.11
Business	1	Controlled Total Restriction	Attendant	0480	3.38
Business	1	Message Waiting	Station	0980	3.70
Business	1	Station Forced Busy	Station	1410	3.93
Business	1	Trunk Forced Busy	Station	1640	3.109
Business	1	Code Restrictions	System	0420	3.37
Business	1	Miscellaneous Trunk Restrictions	System	0990	3.71
Business	1	Station Hunt Group	System	1420	3.94
Business	1	Circular Hunting	System	1422	3.95
Business	1	Terminal Hunting	System	1421	3.96
Business	1	Termination Restriction	System	1530	3.101
Business	1	Toll Restriction 0/1 Access	System	1592	3.105
Business	1	Toll Restriction 3-Digits	System	1593/94	3.106
Business	1	Toll Restriction 6-Digits	System	1595	3.107
Business	1	Absorb Digit	System	1596	3.08
Business	1	Ignore Digit	System	1597	3.64
Business	1	Deny Digit	System	1598	3.43
Business	1	Allow Digit	System	1599	3.09
Business	2	Direct Trunk Group Selection, Attendant	Attendant	0600	3.46
Business	2	Selective Cancellation	Attendant	1320	3.89
Business	2	Trunk Group, Status Field	Attendant	1650	3.110
Business	2	Automatic Callback, Calling	Station	0160	3.21
Business	2	Call Forwarding, All Calls	Station	0240	3.25
Business	2	Call Forwarding, Busy Line, Don't Answer	Station	0250	3.26
Business	2	Call Forwarding, Busy Line	Station	0260	3.27
Business	2	Call Forwarding, No Answer	Station	0270	3.28
Business	2	Call Forwarding, Secretary Call Back	Station	0280	3.29
Business	2	Call Pickup (Group)	Station	0300	3.31
Business	2	Direct Trunk Group Selection (DTGS)	Station	0600	3.46
Business	2	Selective Call Pickup	Station	0620	3.47
Business	2	Hold For Pickup	Station	0621	3.60
Business	2	Originating Call Waiting	Station	0313	3.75
Business	2	Page Answer	Station	0944	3.80

TABLE 2-2
Optional Features Identification (Cont'd)

OPTION	PACKAGE	FEATURE DESIGNATION	FEATURE TYPE	FEATURE NUMBER	DESCRIPTION PARAGRAPH
Business	2	Outgoing Trunk, Call Waiting	System	1121	3.76
Business	2	Outgoing Trunk, Queueing	System	1120	3.77
Business	3	Attendant Lockout	Attendant	0100	3.14
Business	3	Busy Verification of Station Line	Station	0220	3.24
Business	3	Executive Override	Station	0680	3.56
Business	3	Call Splitting One-/Two-Way	Station	1390	3.32
Business	3	Call Splitting, One-Way Automanual	Station	1394	3.34
Business	3	Call Splitting, Two-Way Automanual	Station	1395	3.35
Business	3	Priority Call	System	1175	3.84
Business	3	Privacy and Lockout	System	1190	3.86
Business	3	Trunk Verification by Customer	System	1690	3.113
Business	3	Trunk Verification by Station	System	1700	3.114
Remote Access		Minor Alarm Display		0985	3.05
Remote Access		Directory Number/COS Changes		2020	3.49
Remote Access		Remote Maintenance Facility		2050	3.69
SMDR		Station Message Detail Recording		1430	3.97
Speed Call		Speed Calling		1380	3.92
Enhancement		Automatic Route Selection	System	0190	3.116
Enhancement		Calling Number Display to Station	System	0325	3.117
Enhancement		Check In/Check Out	System	0380	3.118
Enhancement		Direct Inward System Access	System	1820	3.119
Enhancement		Room Status Audit	System	1810	3.120
Enhancement		Room Status Update	System	1800	3.121
Enhancement		Station Message Detail Recording	System	1430	3.122
Enhancement		Traffic Measurement	System	1610	3.123
Enhancement		Wake-up Service, Automatic	System	1730	3.124

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FEATURE IDENTIFICATION

3.01 GENERAL.
This section provides brief descriptions identifying each feature listed in the preceding Tables 2-1 and 2-2. For a complete listing and in-depth descriptions of each feature available to the Prodigy PABX system, refer to the Feature Definition manual, Publication No. 7700-FD.

3.02 DESCRIPTION.
Following in alphabetical sequence, are the per paragraph descriptions of the current Prodigy features.

3.03 ABBREVIATED LOCAL DIALING. The Abbreviated Local Dialing feature enables a station or attendant to shorten dialing time by using an abbreviated code consisting of from one to four digits. Up to eight (8) abbreviated codes may be assigned per PABX system. The abbreviated code zero (0) is normally assigned for access to the attendant console.

3.04 ALARM INDICATIONS. Three LED alarm indicators on the attendant console provide the attendant with an indication of a failure condition in the PABX, as follows:

1. Major Alarm indicator —
   this LED is lit when a major failure condition exists in the PABX.
2. Minor Alarm indicator —
   this LED is lit to indicate service degradation in the system.
3. Console Alarm indicator —
   this LED is lit when a minor failure condition exists in the console itself or in the link between console and cabinet.

3.05 ALARM DISPLAY, MINOR. The Minor Alarm Display feature enables minor alarm conditions associated with any PC board, feature package(s), and the PABX system, to be displayed on the attendant console.

3.06 ALPHANUMERIC DISPLAY. The attendant console, shown in Figures 2-7 and 2-8, is equipped with a fifteen-character alphanumeric display. This enables the Prodigy system to display numbers dialed by the attendant, the directory numbers of stations calling in, and the COS (class of service) data of each internal station.

3.07 ATTENDANT CALL WAITING. All calls extended by the attendant to a busy station, trunk, trunk group or equipment are queued and the busy unit receives an audible signal to indicate that a call is waiting. After a predetermined time period, if the station, trunk, trunk group or equipment is still busy, the calling trunk enters the attendant recall queue.

3.08 ABSORB DIGIT. Selected trunk groups can be set up to screen the dialed digits as part of the overall restriction scheme (see paragraphs 3.100 through 3.102), and absorb the dialed digits.

3.09 ALLOW DIGIT. Selected trunk groups can be set up to screen the dialed digits as part of the overall restriction scheme (see paragraphs 3.100 through 3.102), and allow the dialed digits.

3.10 ATTENDANT CONSOLE. The attendant console, (as shown in Figures 2-7 and 2-8), is provided with keys and indicators for each of the available control functions and for all attendant-selectable features. The attendant console visually and audibly alerts the attendant to incoming calls. All calls are processed one at a time. Overflow calls are placed in a queue while a Call Waiting indicator alerts to the overflow condition.

Up to three (3) attendant consoles may be used per PABX cabinet.

3.11 ATTENDANT CONTROL OF TRUNK GROUP ACCESS. The Attendant Control of Trunk Group Access feature enables the attendant to restrict internal stations from accessing specific outgoing trunk groups, i.e., OC, FX, WATS and tie trunk groups. Selective restriction of a trunk group is accomplished by dialing a unique code followed by the trunk group access code. Additionally, the feature is useful at times when a two-way trunk group is being reserved for incoming traffic only, or when WATS line usage must be regulated for maximum cost effectiveness.

3.12 ATTENDANT DIRECT STATION SELECT WITH BUSY LAMP FIELD. The Attendant Direct Station Select (DSS) with Busy Lamp Field (BLF) feature is an optional feature that enables the attendant to either place or complete calls to stations within the PABX system, by pressing a membrane switch associated with the

target line. The busy/idle status of each station is presented to the attendant through an associated indicator in the form of a LED incorporated into each membrane switch. A lit LED indicates busy status of the station associated with it. The DSS/BLF feature operates in conjunction with the Field Select keys to provide direct access to all stations within the system.

3.13 **ATTENDANT INTERCEPT.** The intercept by attendant feature allows a call that can not be completed to be routed to an attendant for further handling. These intercepted calls are answered by the attendant using the intercept (INCP) key on the attendant console.

3.14 **ATTENDANT LOCKOUT.** The Attendant Lockout feature prevents the attendant from breaking into an established connection.

3.15 **ATTENDANT ORIGINATING CALL WAITING.** The Attendant Originated Call Waiting feature enables the attendant to alert selected stations that are busy, through a special dual-burst tone signal, that a high priority, attendant originated call, is awaiting their attention.

3.16 **ATTENDANT OVERFLOW FACILITY.** Each trunk may have an associated station to which incoming calls are directed when the attendant group is in the busy/overflow condition. While the attendant group is operating in this mode, incoming calls ring the attendant(s) and the associated station. If there is no overflow station associated with a given trunk, the common alerting system is activated.

3.17 **ATTENDANT POSITION.** An attendant position is either a console or station from which listed directory number and other calls requiring assistance can be answered and completed by an attendant.

3.18 **ATTENDANT RESTRICTION.** The Attendant Restriction feature restricts the attendant from originating or completing any outgoing calls. Under normal conditions, the attendant may originate or complete outgoing calls by obtaining access to a trunk through the dialing of its, or its group access code. However, through this feature the system configuration data may be defined so as to prevent the attendant from dialing these codes.

3.19 **ATTENDANT TRANSFER, ALL CALLS.** The Attendant Transfer of All Calls feature enables a station user during a two-way connection, to call or recall the attendant to request transfer of the call. The attendant may be recalled in two ways:

1. Stations assigned a limited COS may recall the attendant through a hookswitch flash.
2. Stations not assigned a limited COS may recall the attendant through a three-way conference transfer or the executive access feature.

3.20 **ATTENDANT VOICE PAGING ACCESS.** This facility allows attendants direct access to paging equipment for the purpose of voice paging. The paging equipment, i.e., amplifiers and speakers, may be either customer owned or telephone company provided. All voice paging facilities make use of the telephone transmitter as a microphone. This feature provides all-zone paging where a separate access code or console key with direct access is provided for all regions within a customer complex.

3.21 **AUTOMATIC CALLBACK, CALLING.** The Automatic Callback, Calling feature enables a station user attempting to call a busy station to be automatically connected to that station once it becomes available. To activate this feature, the user, upon receiving a busy indication, must perform a hookswitch flash, dial the feature access code, then hang up. When both stations become idle, the calling station will ring, and when answered, the called station will ring.

3.22 **AUTOMATIC CALL DISTRIBUTION TO ATTENDANT.** The Automatic Call Distribution to Attendant feature enables the Prodigy system to uniformly distribute the incoming calls to all available attendant positions. The feature is activated by the attendant pressing the 'AUTO DIST key. This causes the system to place the incoming calls in a FIFO queue which is common to all attendants within that group.

3.23 **AUTOMATIC QUEUEING TO ATTENDANT POSITION.** The Automatic Queueing To Attendant Position feature determines the order in which incoming calls are processed. It accomplishes this by presenting the calls of a FIFO basis to each attendant position at a time.

3.24 BUSY VERIFICATION OF STATION LINE. An authorized attendant or station can establish a talking connection to an apparently busy station line to determine if the station is in working order.

3.25 CALL FORWARDING, ALL CALLS. The Call Forwarding of All Calls feature causes all calls directed to a station that has activated this feature, to be transferred to a designated alternate station or to an attendant console, regardless of whether the called station is busy or idle. This feature may be activated or cancelled by the station user or the attendant. A station activating this feature receives a splash ring before a call is forwarded.

3.26 CALL FORWARDING, BUSY, NO ANSWER. The Call Forwarding in case the Line is Busy or Doesn't Answer feature, causes all calls directed to a station that has activated this feature, to be transferred to a designated alternate station or to the attendant, if the station doesn't answer or remains busy for a predetermined amount of time.

3.27 CALL FORWARDING, BUSY LINE. The Call Forwarding in case Line is Busy feature, causes all calls directed to a station that has activated this feature, to be transferred to a designated alternate station or to the attendant, if the station is busy and remains so for a predetermined amount of time.

3.28 CALL FORWARDING, NO ANSWER. The Call Forwarding in case of No Answer feature, causes all calls directed to a station that has activated this feature, to be transferred to a designated alternate station or to the attendant, if the station does not answer within a predetermined period of time.

3.29 CALL FORWARDING, SECRETARY CALLBACK. The Call Forwarding, Secretary Callback feature, enables an authorized station user to call a station directly, overriding any call forwarding programmed for the called station. Hence, by using this feature, a secretary may call a station that has been programmed to forward calls to the secretary's station, in order to relay messages or to transfer calls.

3.30 CALL HOLD. The Call Hold feature enables a station user to place any call on hold by performing a hook switch flash and dialing the feature access code. The station placed on hold may not hook switch but can disconnect at any time. A call on hold may be retrieved by dialing the same feature access code used to put that call on hold. If the call is not retrieved within a predetermined period of time, the station user that placed the call on hold receives a splash ring every minute.

3.31 CALL PICKUP (GROUP). The Call Pickup feature enables a station user to answer other stations within a predefined pickup group, by dialing the appropriate access code. The participant stations must be software installed into each group. A station can belong to only one group at a time. Up to thirty-two (32) pickup groups can be configured into the PABX system.

3.32 CALL SPLITTING ONE/TWO-WAY. The Either-way or Both-way splitting feature enables the attendant, by using special keys on the attendant console, to talk to the source party, the destination party, or both in a three-way conference. When a call is split, the other party is placed on hold. The party on hold may disconnect at any time.

3.33 CALL SPLITTING, ONE-WAY AUTO-MANUAL. The One-way Automanual Splitting feature allows an authorized station, or the attendant, while on a call, to consult with another party without the original party being able to listen in. The feature takes effect automatically when an attendant starts to complete a call.

3.34 CALL SPLITTING, TWO-WAY AUTO-MANUAL. The Two-way Automanual Splitting feature allows an authorized station, or the attendant, while on a call, to consult with another party, and with the original party, while neither party can overhear the conversation with the other party. The feature takes effect automatically when an attendant starts to complete a call.

3.35 CALL WAITING INDICATION AT ATTENDANT POSITION. Each attendant console features both visual and audible means through which to inform the attendant that calls are waiting to be attended to.

3.36 CALLING NUMBER DISPLAY TO ATTENDANT. The Calling Number Display To the Attendant feature provides the attendant with a visual display of the directory number of stations requesting attendant assistance. In addition to the directory number, the COS of the station, as well as Message Waiting, Trunk Identification and Do Not Disturb indications will be displayed.

3.37 **CODE RESTRICTION.** The Prodigy system may be programmed to use specific three or six-digit area and/or office codes according to their dialed sequence, to selectively permit or deny calls on an individual originating station basis.

3.38 **CONTROLLED TOTAL RESTRICTION.** The Controlled Total Restriction feature enables the attendant to prevent selected stations from originating and receiving calls.

3.39 **CLASS OF SERVICE.** Class of Service definitions are used to define various sets of capabilities that define and limit the operational capabilities of Attendants, Stations and Incoming Trunks (when the latter are used in Remote System Access operations).

There may be up to 16 different sets of such capabilities each represented by a unique class of service.

3.40 **CLASS OF SERVICE DISPLAY TO ATTENDANT.** The Class Of Service Display To Attendant feature enables the COS of a station requesting attendant assistance, to be displayed on the alphanumeric LED display on the attendant console.

3.41 **DIAL ACCESS TO ATTENDANT.** The Dial Access To the Attendant feature permits station users to access the attendant by dialing a single digit, usually zero (0).

3.42 **DIGITAL CLOCK, ATTENDANT.** A digital clock on the attendant console provides the attendant with date and time-of-day information. In Hotel/Motel applications it can be used for wake-up calls.

3.43 **DENY DIGIT.** Selected trunk groups can be set up to screen the dialed digits as part of the overall restriction scheme (see paragraphs 3.100 through 3.102), and deny the dialed digits.

3.44 **DIRECT OUTWARD DIALING.** The Direct Outward Dialing (DOD) feature enables selected stations to originate outside calls without attendant assistance. The access code dialed in conjunction with the station's COS, determines the trunk group to be used. This structure enables a user to access different groups (e.g. WATS lines) and additionally, permits stations containing different COS restrictions to dial the same access code yet obtain different trunk groups.

3.45 **DIRECT TERMINATION OF MISCELLANEOUS CIRCUITS.** This feature provides capability for directly assigning a limited number of miscellaneous trunks on a switched-loop attendant position. This allows the attendant direct access to the trunks and visual supervision of the trunks at all times.

3.46 **DIRECT TRUNK GROUP SELECTION BY ATTENDANT.** The Direct Trunk Group Selection (DTGS) feature enables the attendant to access various trunk groups (WATS, FX, tie, etc.) directly by pressing an optional key on the attendant console. Although the system can accommodate 32 trunk groups, the maximum number of direct trunk groups permitted per console is fifteen. Each group is represented by a unique membrane switch and associated LED indicator.

3.47 **SELECTIVE CALL PICK-UP.** The Selective Call Pick-up feature permits a station user to answer calls directed to another station within the same PABX system, by dialing an access code and the called station's directory number.

3.48 **DIRECT-IN LINES.** Direct-in lines allow for the direct termination of separate CO lines to individual equipments bypassing the attendant console. Even though directly terminated, these lines maintain the capability to be transferred to other stations within the system and to access the call forwarding in case of no answer feature.

3.49 **DIRECTORY NUMBER/COS CHANGES.** The directory number/COS change feature enables alteration of directory numbers, class of service assignments, and clearing of temporary RAM Storage, from either a remote site using a common 12-key telephone set, or an attendant console.

The following operations can be accomplished using this feature:

- Specify class of service for a port, line or trunk
- Assign a station or trunk directory number to a particular port.
- Clear temporary RAM Storage.
- Permit entering of a pass code only from a remote site (Remote Access feature package is necessary).

The display occurs whenever the attendant answers a call.

3.50 DISTINCTIVE RINGING. Three distinctive ringing patterns enable the user to differentiate between three types of calls, as follows:

1. Internal station-to-station call — 1:3:1 pattern (see Figure 3-1a).
2. Incoming outside or attendant originated call — (4:2:4):3: (4:2:4) pattern (see Figure 3-1b).
3. Priority call — 1:1:1 pattern (see Figure 3-1c).

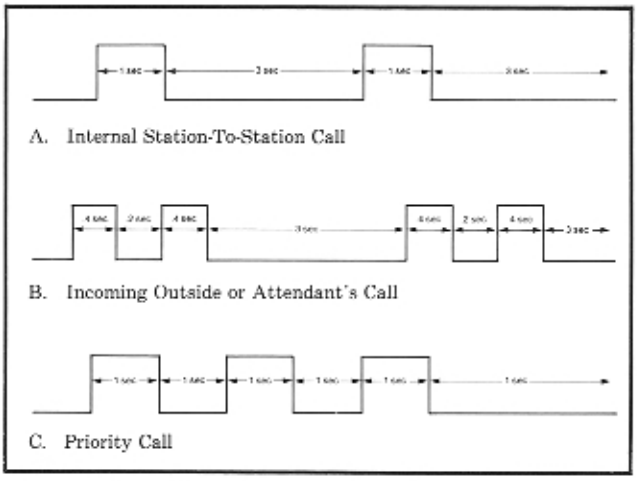

Figure 3-1. Distinctive Ringing Patterns

3.51 DISTINCTIVE TONE SIGNALS. Two distinctive call-waiting tone signals signify the source of a waiting call. One tone indicates a waiting station call, the other a waiting trunk or attendant.

3.52 DTMF CALLING. At a calling station, this feature utilizes pushbutton operated audible tones, a series of which represent either the address of a called facility or an instruction to a dial-controlled device.

3.53 DTMF AND/OR KEY PULSING. The Prodigy PABX accommodates both rotary and dual tone multifrequency dial stations. In networks that are associated with rotary dial only central offices, the Prodigy system will perform station-DTMF-to-CO-dial pulse conversion for all DTMF station equipments within the PABX systems.

3.54 DTMF TO DIAL PULSE CONVERSION. DTMF signals are converted to dial pulse signals, required when the distant end is not equipped to receive DTMF signals.

3.55 EXECUTIVE FEATURE ACCESS. An authorized station with executive class of service can switchhook during a ringing or talking call connection with a station or trunk to receive recall dial tone. The current call is held and the station may initiate any further authorized dialing operations.

3.56 EXECUTIVE OVERRIDE. The Executive Override feature enables any authorized station, or the attendant, to break into a connection unless one of the stations is in the Data Privacy mode. Prior to interrupting the connection, a distinctive tone is applied to the line to inform the parties involved of the forthcoming bridge.

3.57 FIRST PARTY RELEASE. A connection between two parties is released by the first party that hangs up.

3.58 FLEXIBLE STATION NUMBERING PLAN. The Flexible Station Numbering Plan enables station directory numbers to be assigned or changed according to the current customer specified directory plan, while the equipment can remain in full service. This feature permits easy personnel moves that do not necessitate the changing of assigned directory numbers. Directory numbers from 1 through 9999 may be assigned within the same PABX system.

3.59 FORCED RELEASE, ATTENDANT. The Forced Release by Attendant feature enables an authorized attendant to disconnect all parties to a given call in progress.

3.60 HOLD FOR PICKUP. With the Hold For Pickup feature, a station user or attendant may place a call on hold, then retrieve that call from any station within the PABX system. A trunk, placed on hold in this manner for a predetermined time, is routed to the attendant.

3.61 HOT LINE STATIONS. A Hot Line Station is directly connected to a preassigned port when going off-hook. No dialing is required. Hot Line calls may be directed to stations or attendant groups.

3.62 IMMEDIATE RING AND RING BACK. The start of the ringing cycle is synchronized to initiate ringing within 200 milliseconds after a line tests idle for all calls to stations within the PABX, except those where the ringing is generated by a source other than the PABX.

3.63 INCOMING CALL IDENTIFICATION. Through the use of the alphanumeric display on the attendant console, the attendant can visually identify the COS, directory number and specific active features of any station directing a call to the attendant console.

3.64 IGNORE DIGIT. Selected trunk groups can be set up to screen the dialed digits as part of the overall restriction scheme (see paragraphs 3.100 through 3.102), and ignore the dialed digits.

3.65 INWARD RESTRICTION. The Inward Restriction feature restricts selected stations from receiving incoming trunk calls. All incoming calls to such restricted stations receive intercept treatment. However, attendant transfers of incoming calls to restricted stations are permitted, whereas station transfers of incoming calls to these stations are not.

3.66 LINE LOCKOUT WITH WARNING. During call origination, the line lockout with warning feature provides a warning tone and keeps a line out of service whenever a station remains off-hook and no dialing activity takes place beyond a customer defined period of time. This condition does not affect call processing time or the operation of the switching facilities. It is automatically released when the station goes on-hook.

3.67 LISTED DIRECTORY NUMBER SERVICE. The Listed Directory Number (LDN) Service feature enables incoming calls to certain stations to be redirected to the attendant. The attendant in turn may then extend the call to the station in question, another station, or a trunk facility.

When DID trunks are not provided within the system, all incoming calls must be made on a listed directory number bases.

3.68 MAINTENANCE FACILITY. Self executing maintenance programs in the Prodigy continuously verify the correct operation of the PABX system and identify any faulty equipment(s). The maintenance software is activated automatically when the PABX is powered up and will be operational as long as the power remains on. The alphanumeric display on the attendant console enables service personnel to monitor the results of the self test routines through appropriate failure and/or alarm indications whenever faulty conditions are encountered.

3.69 MAINTENANCE FACILITY, REMOTE. The Remote Maintenance Facility feature enables minor alarm status information to be obtained, and maintenance tests to be activated, from a remote site, using a common 12-key telephone set.

3.70 MESSAGE WAITING. The Message Waiting feature provides the attendant with the ability to switch on a remote lamp located on or near a station telephone set, to inform the station user that a message is waiting.

3.71 MISCELLANEOUS TRUNK RESTRICTIONS. Preselected station lines and dial repeating tie trunks, may be denied access to predefined miscellaneous trunk groups. These predefined trunk groups may include FX, WATS, private switched networks such as CCSA, Tie Trunk, CODE CALL, recorded telephone dictation, and paging. Attempts to access restricted call features are subject to intercept treatment.

3.72 MULTIPLE LISTED DIRECTORY NUMBERS. The Multiple Listed Directory Numbers feature allows a single installation to be assigned more than one listed directory number (LDN). Each LDN in turn may be assigned a unique incoming call identification (ICI). With non-DID service, a separate trunk group is required for each LDN requiring a unique LDN.

3.73 MULTIPLE TRUNK GROUPS. The Prodigy can be configured with up to 32 trunk circuit groups. This provides the flexibility in the grouping of trunks needed to control their use. Each trunk group is individually accessed by dialing its designated access code.

3.74 NIGHT STATION SERVICE (FIXED). The Night Station Fixed Service feature enables incoming trunk calls that are normally directed to an attendant, to be routed to selected station lines within the system whenever the night service condition is activated.

All calls other than incoming trunk calls, that would normally be directed to the attendant, activate a common alerting system. They may then be answered from any authorized station via the Trunk Answer from any Station feature.

3.75 **ORIGINATING CALL WAITING.** A calling station is held while a tone burst is directed to the called busy station user. A calling station may also wait for a busy trunk or trunk group.

3.76 **OUTGOING TRUNK, CALL WAITING.** The Outgoing Trunk, Call Waiting (camp-on) feature enables a station user, upon encountering a busy trunk, to camp-on to the trunk group by performing a hook switch flash, dialing the appropriate access code, then going on-hook. Whenever a trunk within the group becomes available the station user is automatically recalled and after going off-hook, connected to the available trunk.

3.77 **OUTGOING TRUNK, QUEUEING.** The Outgoing Trunk Queueing feature enables the placement of attendants and authorized stations in a FIFO queue when they encounter a busy outgoing trunk. As long as either remains in contention by staying off-hook, connection will be made to the first available trunk.

3.78 **OUTWARD RESTRICTION.** Through the Outward Restriction feature, selected stations can be denied access to the exchange network without attendant assistance. Restricted call attempts are given a rejection tone.

3.79 **OVERLOAD PROTECTION.** The Overload Protection feature enables the Prodigy PABX to provide limited service when the traffic load exceeds projected volume. This extra-capability is typically implemented by reducing timeout intervals and disconnecting low priority sources of traffic.

3.80 **PAGE ANSWER.** Page Answer, in conjunction with Hold-for-Pickup and Direct Paging Access By Attendant, allows station users to answer calls using any authorized station in the PABX. The paged party can be connected to the calling party by dialing an access code from any station in the PABX.

3.81 **POWER FAILURE RESTART, ROM/-PROM.** The Prodigy operating program and configuration data are stored in non-volatile memory (ROM/PROM) and thus remain intact when a power failure occurs. The PABX system is automatically reinitialized and restarted when power is restored after a power break.

3.82 **POWER FAILURE TRANSFER, ATTENDANT.** This feature provides service to and from the central office for a single predetermined station during a power failure at the PABX customer location when Reserve Power is not provided or when the reserve depletes.

3.83 **POWER FAILURE TRANSFER, STATION.** The Power Failure Transfer for one Station provides service to and/or from the exchange network (non-FX and WATS) for one (1) assigned station during a commercial power failure at a PABX customer site. This feature is provided when reserve power is not available or, in the case of battery backup, when the battery reserve is depleted.

Incoming service is not available for direct inward calling.

If ground start trunks are used, the designated station must be equipped with a ground start button to originate calls when operating in the power failure mode. This feature may optionally be implemented for more than one station.

3.84 **PRIORITY CALL.** Any station with the Priority Call bit set is automatically placed in Call Waiting whenever a busy party is called. The called party receives three short tone signals to indicate that a priority call is waiting.

3.85 **PRIORITY QUEUE.** The Priority Queue feature enables assignment of priority levels to certain calls, so that they can be given preference over other calls waiting for attendant service when the attendant console is in automatic distribution mode. The feature accomplishes this by placing the selected calls into priority queues. Priority levels of the queues are specified in the configuration, or through subsequent reconfiguration operations.

3.86 **PRIVACY AND LOCKOUT.** The Privacy And Lockout feature enables the connection to be split whenever an attendant would otherwise be bridged during a call with more than one facility, e.g., as in a three-way conference with a calling and called party. When the privacy feature is invoked the Lock and feature is simultaneously in effect too.

3.87 **RECALL DIAL TONE.** The Recall Dial Tone feature provides the means of indicating to an authorized station user that during a required call, a hook switch flash has been accepted by the PABX as a request for a dial tone.

3.88 **ROTARY DIAL CALLING.** If no DTMF decoders are installed in the system, the calling station utilizes a rotary dial to generate dc pulses representing the dialed digits. In this type of installation, the trunks connected to the PABX must be dialed pulse signaling trunks.

3.89 **SELECTIVE CANCELLATION.** The Selective Cancellation feature allows an attendant to cancel features of other stations. The features that may be canceled are the following:

- Call Diversion
- Call Forwarding

3.90 **SHARING TENANT SERVICE.** The Sharing Tenant Service feature enables two or more customers (tenants) located in proximity, to be served separately by the same PABX. Each tenant may have separate attendant facilities, trunk groups, station numbering plans and COS assignments. Up to eight (8) tenants may be served by the same PABX, as defined by the configuration data.

3.91 **SINGLE DIGIT DIALING.** The Single Digit Dialing feature enables authorized station users to access selected groups of stations by dialing single-digit codes.

3.92 **SPEED CALLING.** The Speed Call feature greatly expedites the dialing process for outside numbers by enabling an authorized user to assign speed call numbers to certain outside numbers. Thus, simply dialing the short code number accomplishes what otherwise required the dialing of the entire directory number sequence.

3.93 **STATION FORCED BUSY.** The Station Forced Busy feature allows an authorized station to busy-out all internal station and incoming trunk calls. This feature, when activated, does not prevent the station from initiating calls.

3.94 **STATION HUNTING.** The Station Hunting feature enables an incoming call, when the called station is busy, to be automatically routed to an idle station within a predefined group.

Station hunting groups are designated as masters/slaves. A call to a busy master initiates the station hunting process by routing the call to the first idle slave member of the group. A call initially directed to a slave member of the group will not initiate a hunt, if that slave is busy.

The Prodigy PABX system can contain up to 31 hunt groups.

3.95 **STATION HUNTING, CIRCULAR.** Circular hunting begins with the called station master, and tests all slaves in the group in the order defined by the configuration data, completing the call to the first slave station encountered. The process is continued until an idle slave station is reached.

3.96 **STATION HUNTING, TERMINAL.** Terminal hunting begins with the called station master and ends with the last station in the group, completing the call to the first idle slave station encountered. Unless the first station in a group is called, only a portion of the slave stations may be tested since the process is not repeated but executed only once.

3.97 **STATION MESSAGE DETAIL RECORDING (SMDR).** The Station Message Detail Recording (SMDR) feature logs vital telephone statistics, providing the information needed to bill individual profit centers and monitor overall telephone usage patterns. By providing detailed accounting of all phone activity, it enables company wide phone system control and prevention through early detection of phone abuse.

3.98 **STATION-TO-STATION CALLING.** The Station-To-Station feature allows stations within the PABX system to directly access other stations within the system, without attendant intervention. The number of digits required depends upon the station numbering plan established by the customer.

3.99 **STRAIGHTFORWARD OUTWARD COMPLETION.** The Straight Forward Outward Completion feature allows the attendant to complete outgoing calls without requiring the calling station user to hang up and be called back. The attendant can either dial the called number for the station user, or permit the station user to complete the dialing, once the outgoing trunk has been seized.

3.100 SWITCHED LOOP OPERATION. With this attendant position arrangement, each call requiring assistance is switched to an idle loop on an attendant position. Queuing provides an idle loop for each call.

3.101 TERMINATION RESTRICTION. The Termination Restriction feature enables selected station lines to be blocked from receiving calls. Calls may be originated from these stations. Attempted calls to these stations are given Intercept Treatment. Calls to restricted stations are routed to an attendant whose busy lamp field flashes in the Do Not Disturb mode.

3.102 THREE-WAY CONFERENCE TRANSFER. The Three-way Conference Transfer feature enables a station user involved in a two-party call, to effect a three-way conference and transfer by performing a hook switch flash. After the hook switch flash, the station attempting the three-way transfer, dials the third party (station or trunk) for private consultation while the second party is placed on hold. By performing a second hook switch flash once again, the second party is now merged into a three-way conference. A transfer is accomplished whenever the original party goes on-hook.

3.103 THROUGH DIALING. By using the Through Dialing feature, the attendant may select a trunk and allow the station user to complete dialing directly.

3.104 TIMED REMINDERS. After a prescribed time interval on an unanswered call or call waiting call, the attendant is automatically recalled (Automatic Recall on Attendant Console). The automatic recall is provided in order that the attendant may give further assistance to the calling party.

3.105 TOLL RESTRICTION, 0/1 ACCESS. If this method of restriction is specified, the PABX screens the first digit dialed following the Direct Outward Dialing access code. Direct toll calls and calls to the toll operator can then be selectively permitted or denied.

3.106 TOLL RESTRICTION, 3-DIGIT CODE. In this form of toll restriction, the PABX screens the first three digits dialed following the direct Outward Dialing access code and allows or denies the call, based on these three digits.

There are two types of three-digit restriction schemes:

a. Restriction by central office codes.

b. Restriction by area codes.

In a local call, 3-digit C.O. restriction is used. This method applies to 7-digit calls and 1 + 7-digit calls.

If a call is a long distance call, the area code restriction is applied. This applies to 10-digit (no prefix) and to 1 + 10-digit sequences.

3.107 TOLL RESTRICTION, 6-DIGIT CODE. In this form of restriction, the PABX determines if the area code is allowed or denied. If allowed, the C.O. code for this particular Area Code is examined for the restriction. If either restricted code is determined, a rejection tone is provided to the caller.

3.108 TONE CHARACTERISTICS ON LINE/-TRUNK CIRCUITS. The PABX system provides the following tones:

- Dial
- Ring Back
- Busy
- Rejection
- Intercept
- Override
- Busy Verification
- Howler
- Call Waiting
- Confirmation
- Recall Dial
- Hold and Test

3.109 TRUNK FORCED BUSY. The Trunk Forced Busy feature enables an authorized station or attendant to either force a trunk busy, or to release a forced busy trunk, by dialing a feature access code.

Whenever a trunk is forced busy, all calls in process are allowed to complete. Once the trunk is idle it is taken out-of-service.

3.110 TRUNK GROUP, STATUS FIELD. A distinctive visual signal is provided on the attendant console(s) when all trunks in a trunk group are busy.

3.111 TRUNK-TO-TRUNK CONNECTION. With the Trunk-To-Trunk feature, authorized stations or attendants are able to extend an incoming or outgoing call to another outgoing trunk. Typical trunk-to-trunk connections include CO, WATS, TIE and FX.

3.112 TWO PARTY HOLD, CONSOLE. The Two Party Hold from the Console feature enables the attendant to place both parties to a station or trunk on hold, subject to later retrieval. In this manner, the attendant can take care of other, more urgent operations.

3.113 TRUNK VERIFICATION BY CUSTOMER. This feature enables an authorized attendant to access individual trunks of a group for the purpose of making test calls to verify supervision and transmission. In the event a busy trunk is encountered, an automatic break-in is performed to verify trunk use, unless the trunk has Data Privacy or Data Restriction in effect.

3.114 TRUNK VERIFICATION BY STATION. This feature enables an authorized station to access individual trunks of a group for the purpose of making test calls to verify supervision and transmission. In the event a busy trunk is encountered, an automatic break-in is performed to verify trunk use, unless the trunk has Data Privacy or Data Restriction in effect.

3.115 VOICE PAGING ACCESS. The paging by loudspeaker feature gives attendants direct access, and station users dial access, to paging equipment for the purpose of voice paging. The paging equipment, i.e., amplifiers and speakers may be customer owned or provided by the telephone company. All voice paging facilities make use of the telephone transmitter as a microphone. Optional arrangements provide multizone paging where a separate code or console key is provided for each region within a customer complex. The access arrangements are defined as follows:

a. Direct access by attendant, in which attendants can access voice paging equipment directly by means of the PAGE key on the attendant console.

b. Dial access, in which station users can access the voice paging equipment by dialing an access code or codes.

c. Multizone paging, in which attendants and station users can page more than one location or region within a customer complex. A separate access code, or console key with direct access is provided for each zone. An all-zones page access code and key is also provided.

3.116 AUTOMATIC ROUTE SELECTION. This feature enables the Prodigy PABX to direct outgoing calls to the least expensive trunk route.

3.117 CALLING NUMBER DISPLAY TO STATION. This feature provides the called station (through a proprietary station instrument's alphanumeric display) with the calling internal station's number.

3.118 CHECK IN/CHECK OUT. This feature enables an authorized station or attendant to set or reset various system controls according to the vacancy or new occupancy of a hotel/motel guest room.

3.119 DIRECT INWARD SYSTEM ACCESS. This feature enables an authorized caller to dial directly into the Prodigy system via selected trunk or trunks, then gain access to the various features of the system. These features include dialing an internal station, access to external trunks, speed calling, and other features which do not require hookflashing.

3.120 ROOM STATUS AUDIT. This feature provides an authorized station or attendant with a printout stating the status of all rooms, a specific room, and all rooms with a specific status.

3.121 ROOM STATUS UPDATE. This feature enables an authorized station user or attendant to change and update the status of hotel/motel guest rooms by dialing the appropriate Room Status Code.

3.122 STATION MESSAGE DETAIL RECORDING. This feature enables data to be collected and printed for each outgoing and, optionally, incoming trunk call.

3.123 **TRAFFIC MEASUREMENT.** This feature enables the identification of the adequacies and deficiencies of the system configuration and usage. This process is done via the attendant console and/or authorized station.

3.124 **WAKE-UP SERVICE, AUTOMATIC.** Through this feature, an authorized station or attendant can program into the system the time of day that a specific station is to be automatically alerted for a Wake-up Call. The Wake-up Call is announced either by music or a recorded message.

Note: Ericsson Communications reserves the right to change the Prodigy PABX operating specifications or product characteristics without prior notice.

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