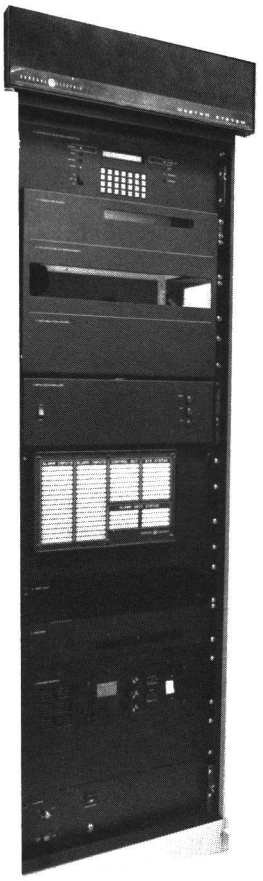
GE Mobile Communications



16PLUS™ SITE CONTROLLER

Installation Manual

TABLE OF CONTENTS

SITE CONTROLLER INTRODUCTION

The Site Controller station cabinet houses the Site Controller computer, Trunking Card (GETC), power supply, and may contain one or all of the following: Test and Alarm Unit (TAU), Telephone Interconnect, and Power Monitor. A standard EIA 69-inch equipment cabinet is used. A typical Site Controller cabinet is shown in Figure 1

This manual describes installation and connections of a typical Site Controller used as part of a 16PLUS ™ system. Additional information can be found in the system manuals and maintenance manuals for the particular equipment.

Some related documents are listed below:

Telephone Interconnect Maintenance Manual

Test and Alarm Unit (TAU) Maintenance Manual

GETC Shelf Maintenance Manual

Power Monitor Maintenance Manual

Site Controller Maintenance Manual(s)

Power Supply Maintenance Manual

ENVIRONMENTAL REQUIREMENTS

The environmental requirements for the equipment in the Site Controller cabinet are listed in Table 1. It is recommended that the Site Controller Cabinet be operated in a controlled environment with temperatures between +17 and +27°C and a relative humidity of 50%.

UNPACKING AND CHECKING EQUIPMENT

As you unpack the Site Controller, carefully inspect each item. If any damage has occurred to the equipment during shipment, file a claim with the freight carrier immediately. Required ac power adequate to meet system requirements, environmental control, and digital or voice-grade lines must be available at the site prior to installation.

SITE CONTROLLER CABINET INSTALLATION

The following paragraphs give an overview of the Site Controller equipment interconnections. Details on the connection points and cabling can be found in the interconnection diagrams at the back of this manual. Additional information is available in the individual equipment manuals. Figures 2 and 3 show a rear of a typical Site Controller cabinet.

CABINET INSTALLATION

Allow sufficient space in front of and behind the cabinet to permit front and rear doors to open completely. Either door may be removed or inverted and hinged on the opposite side if desired.

Three knockouts are located along the rear bottom edge of the cabinet for cable entry. It is normally desirable to bring the cables up through the floor and situate the cabinet over power receptacles or cable holes on the floor.

Conduit may be extended into the cabinet through one of the two 7 x 7 inch base plate openings in the cabinet bottom. Holes are located on the bottom of the cabinet for bolting the cabinet securely to the floor with 1/2-inch bolts.

TABLE 1 - ENVIRONMENTAL REQUIREMENTS

SITE CONTROLLER EQUIPMENT	SPECIFICATION
Site Controller Computer	
Humidity	20 to 80%
Temperature	+5 to +50°C
Power Monitor	
Humidity	95%
Temperature	0 to 60°C
Test and Alarm Unit (TAU)	
Humidity	95%
Temperature	-30 to +60°C

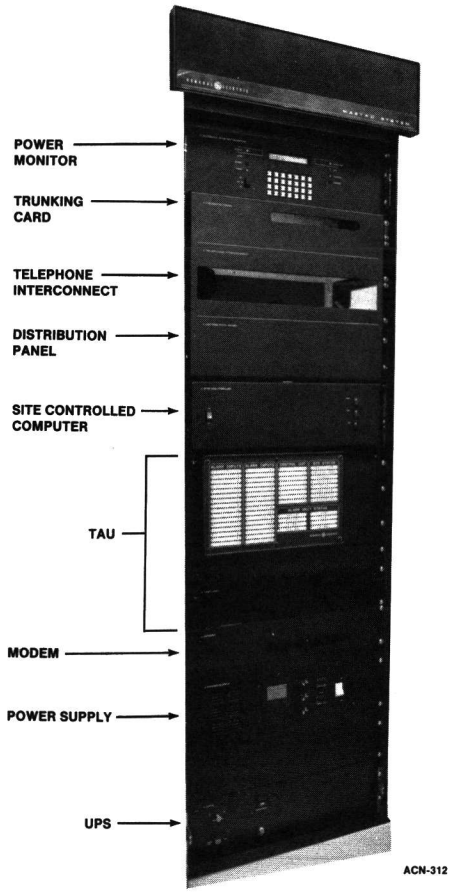


FIGURE 1 - SITE CONTROLLER FRONT VIEW

The front and back sides of the station must always be accessible for servicing.

POWER AND GROUND CONNECTIONS

A 15-foot power cord, equipped with a standard three-prong plug, is supplied with the Site Controller. One of the prongs grounds the equipment to protect personnel. Check to be sure the power outlet complies with local ordinances.

If a 242-Volt source is used for station power, the power supply must be configured properly. Refer to the power supply maintenance manual for details. The plug on the power cable must also be obtained and changed to mate with the 242 Vac outlet. A power cord plug is not supplied with the 50 Hz power supply.

The equipment should be connected to a good earth ground using a ground wire of adequate size. A ground stud is provided for a separate cabinet ground. Use No. 14 or larger wire (depending on local ordinances and system requirements) for connecting the cabinet to a good building ground. After the ground lead from the power cable is connected to the building ground, check for continuity between building ground and the cabinet.

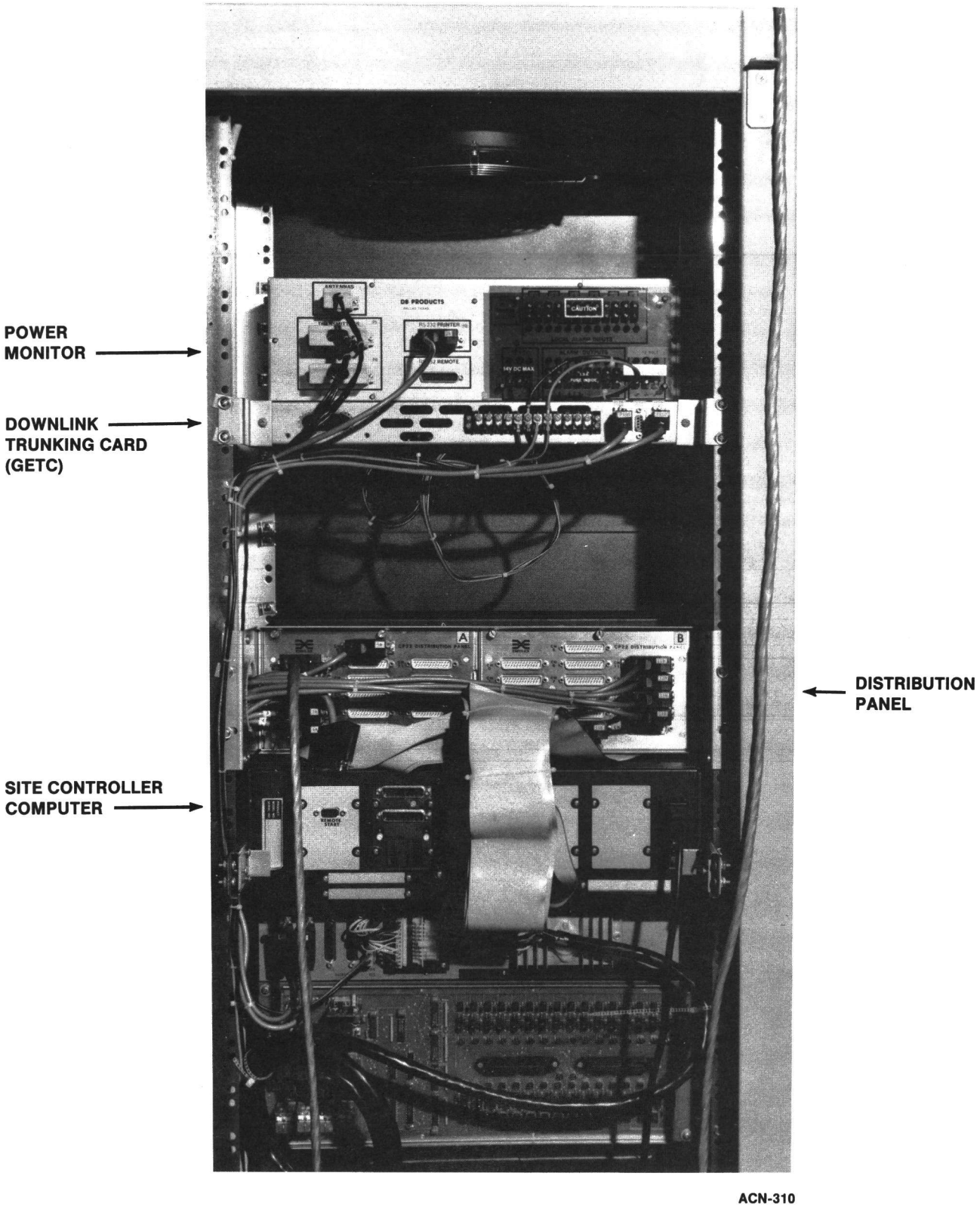


FIGURE 2 - SITE CONTROLLER REAR VIEW (TOP)

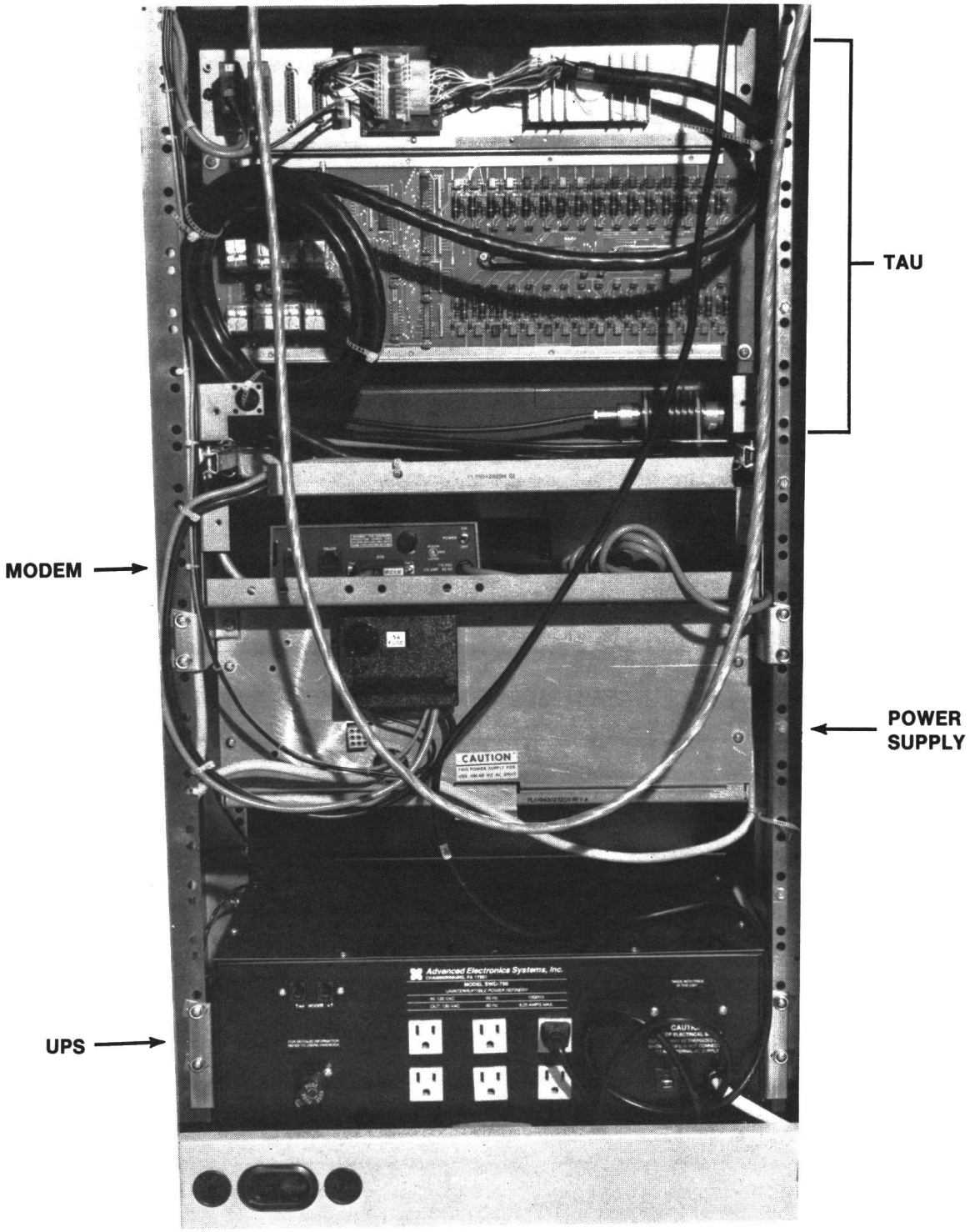


FIGURE 3 - SITE CONTROLLER REAR VIEW (BOTTOM)

GETC CONNECTIONS

Connections to the GE Trunking Card (GETC) shelf consist of a main site controller cable, a backup site controller (if used) cable, power, and data connections. Connections are made to the GETC shelf as follows:

GETC CONNECTOR	CONNECTING CABLE
J100	Downlink
J102	Failsoft
TB10	Power Connections
TB10	Downlink data connections

Refer to Figure 2 and the Trunking Hardware at Repeater Site Interconnection Diagram for connections and cable requirements. Additional information may be found in the GETC.Maintenance Manual.

TEST AND ALARM UNIT (TAU) CONNECTIONS

Two connections are made between the Emulex distribution panel and the TAU, in addition to station power. Station power connections are shown separately in the Power Interconnection diagram.

Two identical cables run between J1 and J2 of the TAU and the Emulex distribution panel. Refer to the Trunking Hardware at Repeater Site Interconnection Diagram and the TAU Maintenance Manual for connection details.

POWER MONITOR UNIT CONNECTIONS

The Power Monitor keeps track of the performance of the antenna system. This information is displayed locally at the Site Controller cabinet and also sent to the Site Controller Computer for display at the System Manager.

Connections are made between the remote power sensors and the Power Monitor, and between the Power Monitor and the Emulex distribution panel. Details on these connections and cabling can be found in the Trunking Hardware at Repeater Site Interconnection Diagram, Power Monitor Interconnection Diagram, and the Power Monitor technical manual(s).

The Power Monitor Interconnection Diagram shows a 10-channel system, however, the Power Monitor is capable of monitoring up to 18 transmitters and four antennas. Antenna and transmitter connections to the Power Monitor are listed in Table 2.

MODEM CONNECTIONS

A modem may be used to communicate between the Site Controller cabinet and a System Manager. One cable connection is required between the modem DTE connector and port OA on the Emulex distribution panel. See the Trunking Hardware at Repeater Site Interconnection Diagram for details.

EMULEX DISTRIBUTION PANEL CONNECTIONS

The central connection point in the Site Controller cabinet is the Emulex Distribution Panel. This panel accepts cable connections from the downlink GETC, TAU, Power Monitor, and the Telephone Interconnect (LIX) mother board. Connections to the Emulex distribution panel are shown in the Trunking Hardware at Repeater Site Interconnection Diagram.

TELEPHONE INTERCONNECT CONNECTIONS

When the system supports interconnect calls between radio units and telephone lines, a Telephone Interconnect system will be present in the Site Controller cabinet. Connections are needed between the LIX Mother Board (part of the Telephone Interconnect System) and up to 20 repeaters. A connection is also made between the LIX Mother Board and the Emulex panel. Station power is also supplied to the LIX Mother Board.

Details on these connection can be found in the Trunking Hardware at Repeater Site Interconnect Diagram and the Telephone Interconnect Maintenance Manual. Power connections are shown in the Power Interconnect Diagram.

TABLE 2 - POWER MONITOR CONNECTIONS

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
ANTENNA 1	P4	1	Forward output power (OPF)
	P4	9	Forward output power ground (OPF GND)
	P4	2	Reflected output power (OPR)
	P4	10	Reflected output power ground (OPR GND)
ANTENNA 2	P4	3	Forward output power (OPF)
	P4	11	Forward output power ground (OPF GND)
	P4	4	Reflected output power (OPR)
	P4	12	Reflected output power ground (OPR GND)
ANTENNA 3	P4	5	Forward output power (OPF)
	P4	13	Forward output power ground (OPF GND)
	P4	6	Reflected output power (OPR)
	P4	14	Reflected output power ground (OPR GND)

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
ANTENNA 4	P4	7	Forward output power (OPF)
	P4	15	Forward output power ground (OPF GND)
	P4	8	Reflected output power (OPR)
	P4	14	Reflected output power ground (OPR GND)
TRANSMITTER 1	P5	1	Forward input power (IPF)
	P5	20	Forward input power ground (IPF GND)
	P5	2	Reflected input power (IPR)
	P5	21	Reflected input power ground (IPR GND)
TRANSMITTER 2	P5	3	Forward input power (IPF)
	P5	22	Forward input power ground (IPF GND)
	P5	4	Reflected input power (IPR)
	P5	23	Reflected input power ground (IPR GND)

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
TRANSMITTER 3	P5	5	Forward input power (IPF)
	P5	24	Forward input power ground (IPF GND)
	P5	6	Reflected input power (IPR)
	P5	25	Reflected input power ground (IPR GND)
TRANSMITTER 4	P5	7	Forward input power (IPF)
	P5	26	Forward input power ground (IPF GND)
	P5	8	Reflected input power (IPR)
	P5	27	Reflected input power ground (IPR GND)
TRANSMITTER 5	P5	9	Forward input power (IPF)
	P5	28	Forward input power ground (IPF GND)
	P5	10	Reflected input power (IPR)
	P5	29	Reflected input power ground (IPR GND)

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
TRANSMITTER 6	P5	11	Forward input power (IPF)
	P5	30	Forward input power ground (IPF GND)
	P5	12	Reflected input power (IPR)
	P5	31	Reflected input power ground (IPR GND)
TRANSMITTER 7	P5	13	Forward input power (IPF)
	P5	32	Forward input power ground (IPF GND)
	P5	14	Reflected input power (IPR)
	P5	33	Reflected input power ground (IPR GND)
TRANSMITTER 8	P5	15	Forward input power (IPF)
	P5	34	Forward input power ground (IPF GND)
	P5	16	Reflected input power (IPR)
	P5	35	Reflected input power ground (IPR GND)

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
TRANSMITTER 9	P5	17	Forward input power (IPF)
	P5	36	Forward input power ground (IPF GND)
	P5	18	Reflected input power (IPR)
	P5	37	Reflected input power ground (IPR GND)
TRANSMITTER 10	P6	1	Forward input power (IPF)
	P6	20	Forward input power ground (IPF GND)
	P6	2	Reflected input power (IPR)
	P6	21	Reflected input power ground (IPF GND)
TRANSMITTER 11	P6	3	Forward input power (IPF)
	P6	22	Forward input power ground (IPF GND)
	P6	4	Reflected input power (IPR)
	P6	23	Reflected input power ground (IPR GND)

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
TRANSMITTER 12	P6	5	Forward input power (IPF)
	P6	24	Forward input power ground (IPF GND)
	P6	6	Reflected input power (IPR)
	P6	25	Reflected input power ground (IPR GND)
TRANSMITTER 13	P6	7	Forward input power (IPF)
	P6	26	Forward input power ground
	P6	8	Reflected input power (IPR)
	P6	27	Reflected input power ground (IPR GND)
TRANSMITTER 14	P6	9	Forward input power (IPF)
	P6	28	Forward input power ground (IPF GND)
	P6	10	Reflected input power (IPR)
	P6	29	Reflected input power ground (IPR GND)

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
TRANSMITTER 15	P6	11	Forward input power (IPF)
	P6	30	Forward input power ground (IPF GND)
	P6	12	Reflected input power (IPR)
	P6	31	Reflected input power ground (IPR GND)
TRANSMITTER 16	P6	13	Forward input power (IPF)
	P6	32	Forward input power ground (IPF GND)
	P6	14	Reflected input power (IPR)
	P6	33	Reflected input power ground (IPR GND)
TRANSMITTER 17	P6	15	Forward input power (IPF)
	P6	34	Forward input power ground (IPF GND)
	P6	16	Reflected input power (IPR)
	P6	35	Reflected input power ground (IPR GND)

ANTENNA/ TRANSMITTER	CONNECTOR	PIN	DESCRIPTION
TRANSMITTER 18	P6	17	Forward input power (IPF)
	P6	36	Forward input power ground (IPF GND)
	P6	18	Reflected input power (IPR)
	P6	37	Reflected input power ground (IPR GND)

NOTE

Use shielded cable on all connections from the power sensors to the Power Monitor. Antennas 3 and 4 share a common ground.

GE Mobile Communications

General Electric Company
Lynchburg, Virginia 24502

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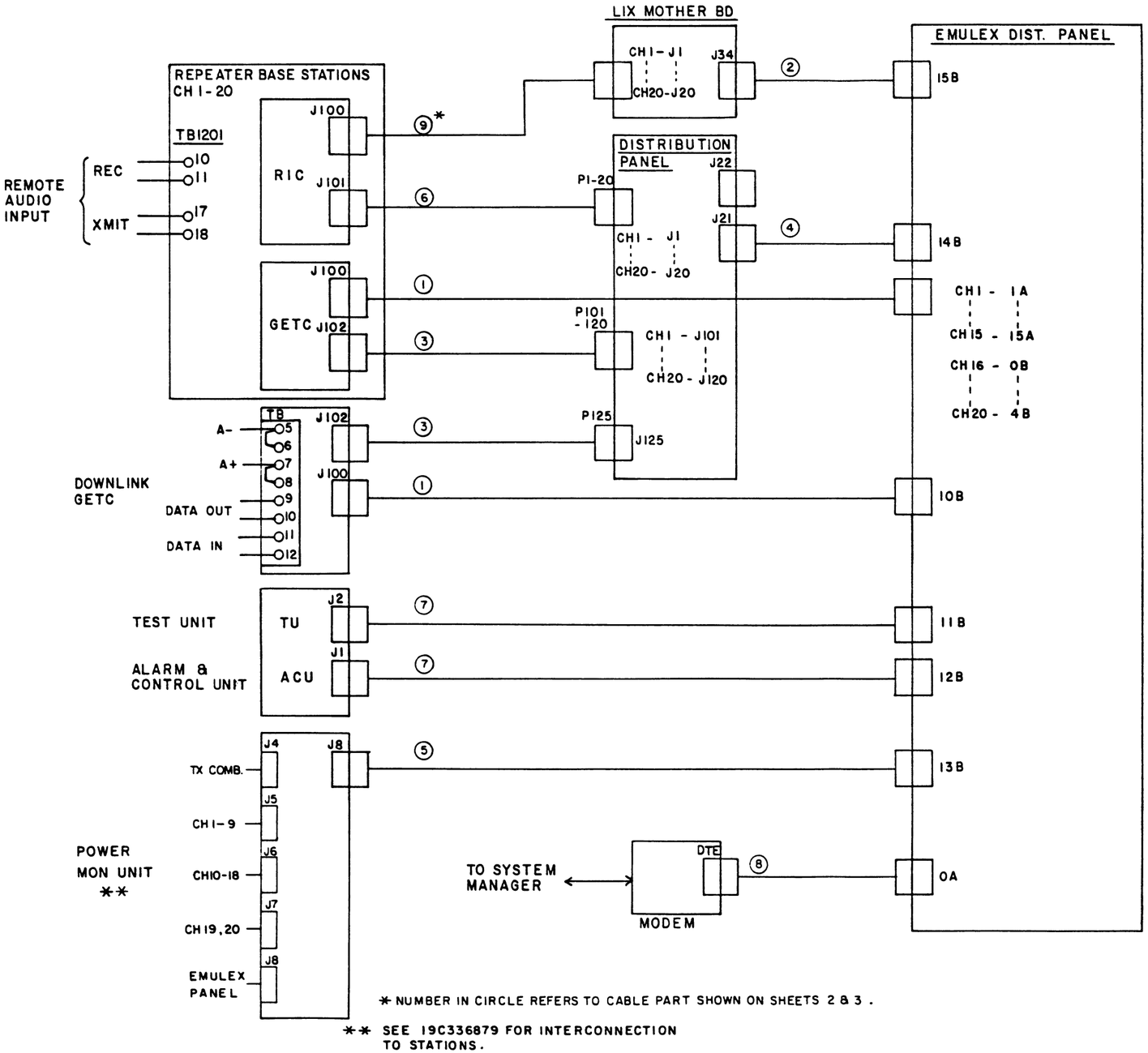
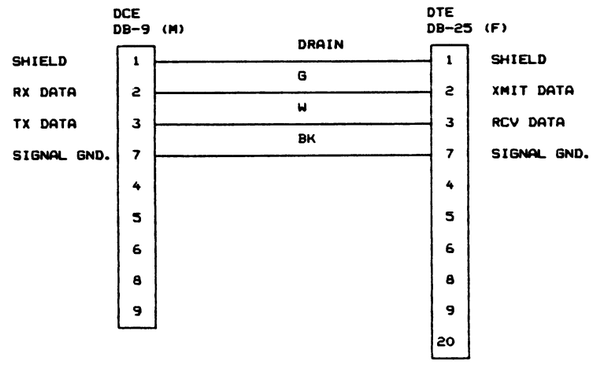


TRUNKING HARDWARE AT REPEATER SITE (SHEET 1 OF 3)

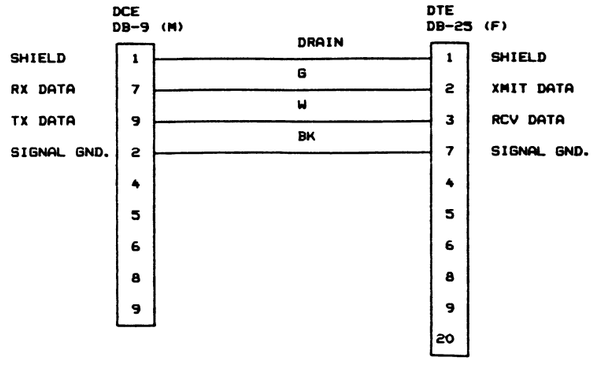
(19C336882, Sh. 1, Rev. 1)

1. STATION GETC TO SITE CONTROLLER

DOWNLINK GETC TO SITE CONTROLLER

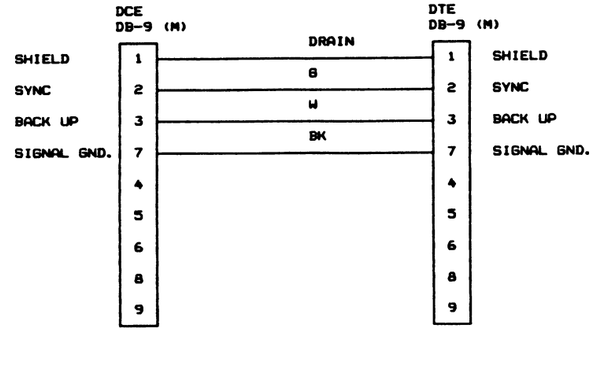


2. LIX TO SITE CONTROLLER

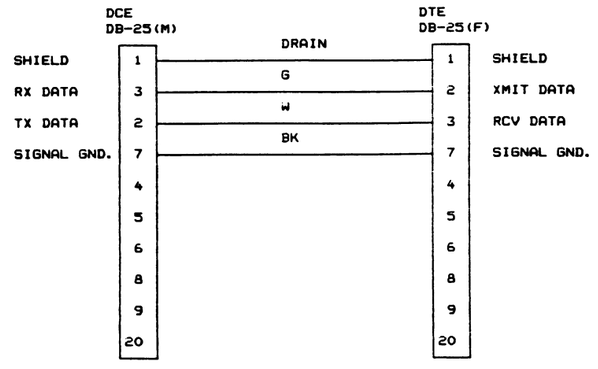


3. STATION GETC TO DISTRIBUTION PANEL (FAILSOFT GETC)

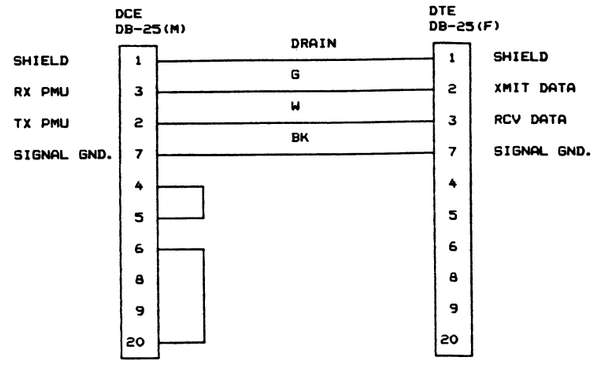
DOWNLINK GETC TO DISTRIBUTION PANEL (FAILSOFT GETC)



4. DISTRIBUTION PANEL (RIC) TO SITE CONTROLLER



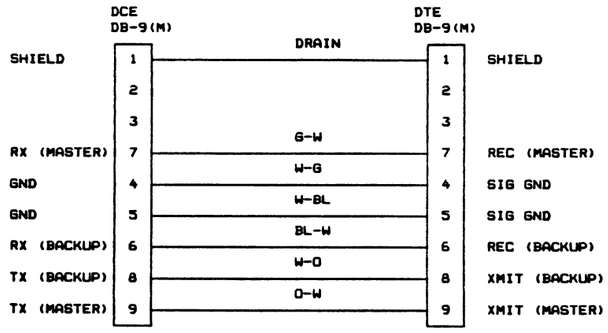
5. POWER MONITOR TO SITE CONTROLLER



(19C336882, Sh. 2, Rev. 0)

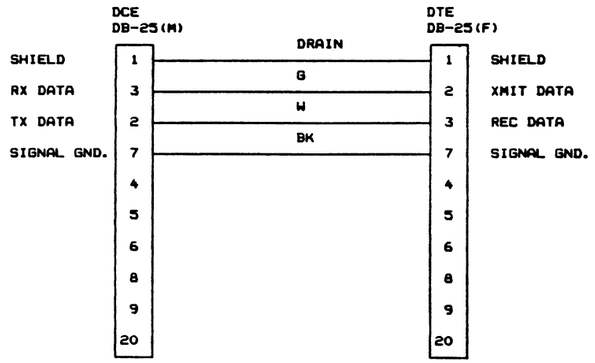
TRUNKING HARDWARE AT REPEATER SITE (SHEET 2 OF 3)

6. RIC TO DISTRIBUTION PANEL (RIC)

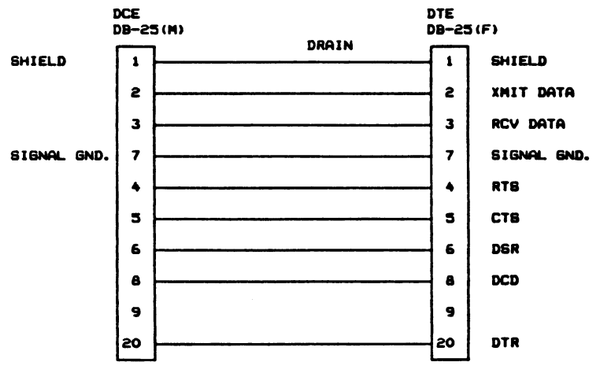


7. TEST UNIT TO SITE CONTROLLER

ALARM AND CONTROL UNIT TO SITE CONTROLLER



8. MODEM TO SITE CONTROLLER



9. RIC TO LIX

INTERCONNECTING CABLE FOR PST REPEATER SITE

NOTES

1. Connector ends are defined as Data Terminal Equipment (DTE) and Data Communication Equipment (DCE).

   DTE includes the Site Controller Emulex Panel and the Failsoft Distribution Panel Inputs.

   DCE includes the GETC, RIC, LIX, Failsoft Distribution Panel Output, Power Monitor, Test Unit, ACU and Modem.

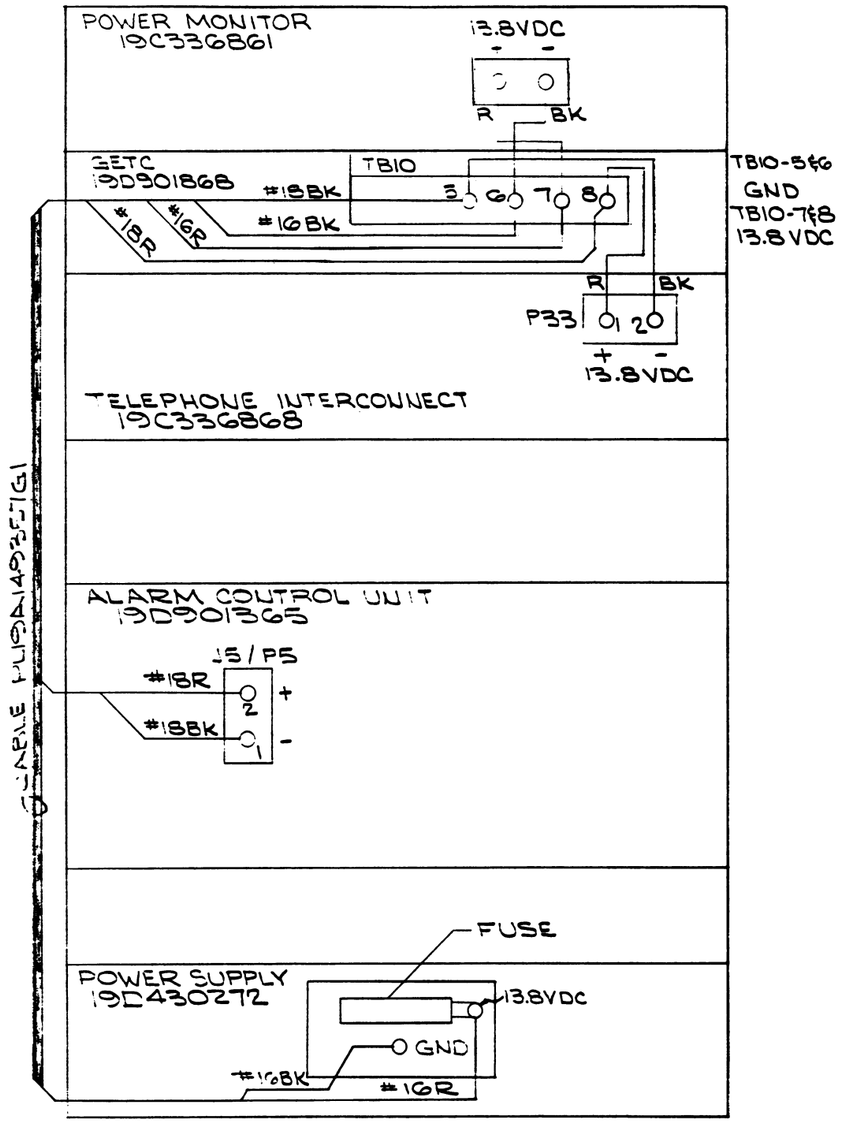
2. Cable model numbers are:
   Belden model 9927 - 4 wire with shield (Parts 1,2,3,4,5 & 7)
   Belden model 8133 - 6 wire with shield (Part 6)
   Belden model - wire with shield (Part 8)
   GE part 7147255P1 - 2 wire with shield (Part 9)

TRUNKING HARDWARE AT REPEATER SITE (SHEET 3 OF 3)

(19C336882, Sh. 3, Rev. 0)

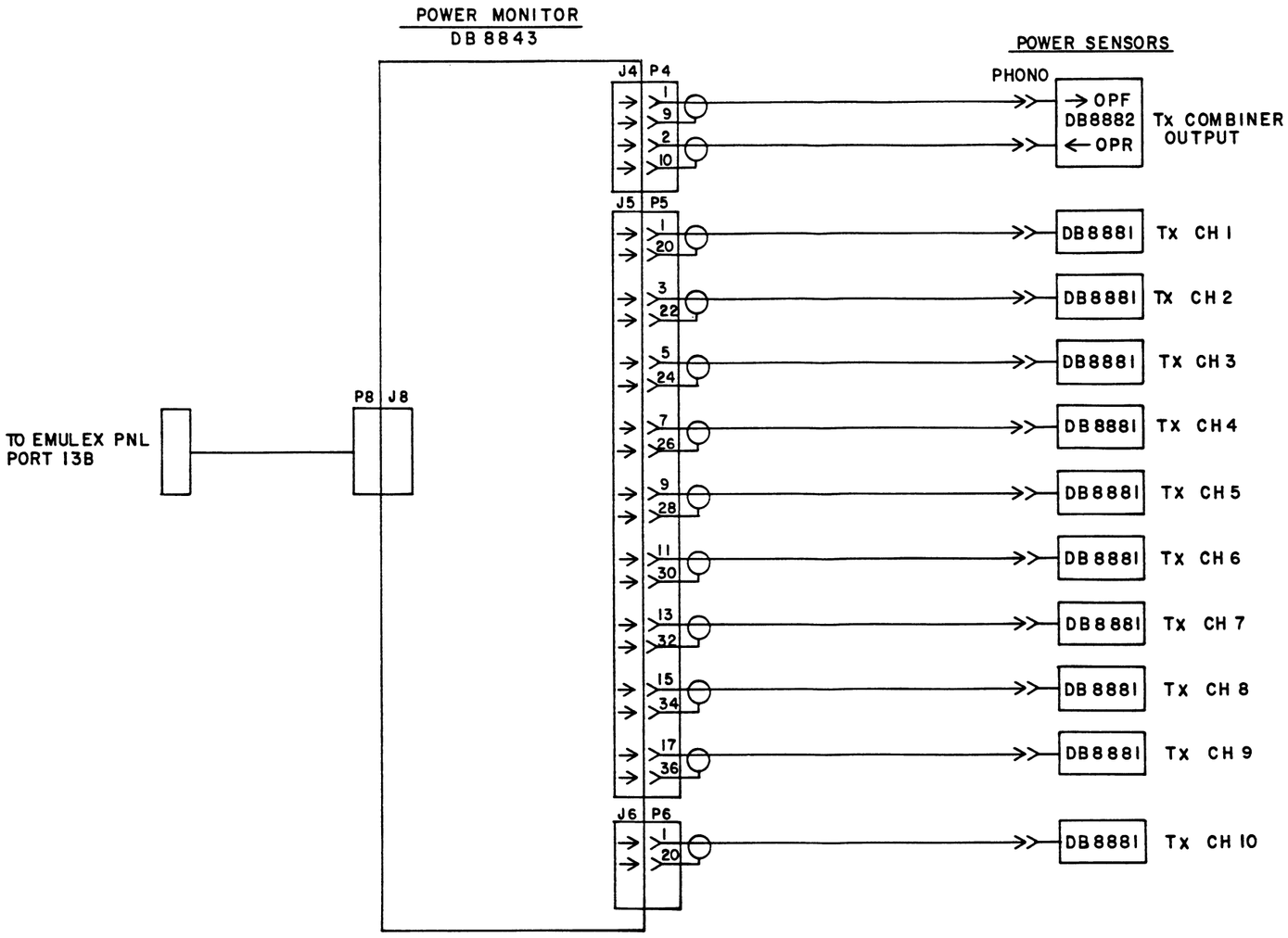
PIN IDENTIFICATION FOR P5

NOTES:
1. TERMINATE WIRES AT TB10 WITH 19B209260P102.
2. TERMINATE WIRES AT 19D402272 POWER SUPPLY WITH 19B209260P106.
3. TERMINATE WIRES AT P5 WITH 19B209288P1.



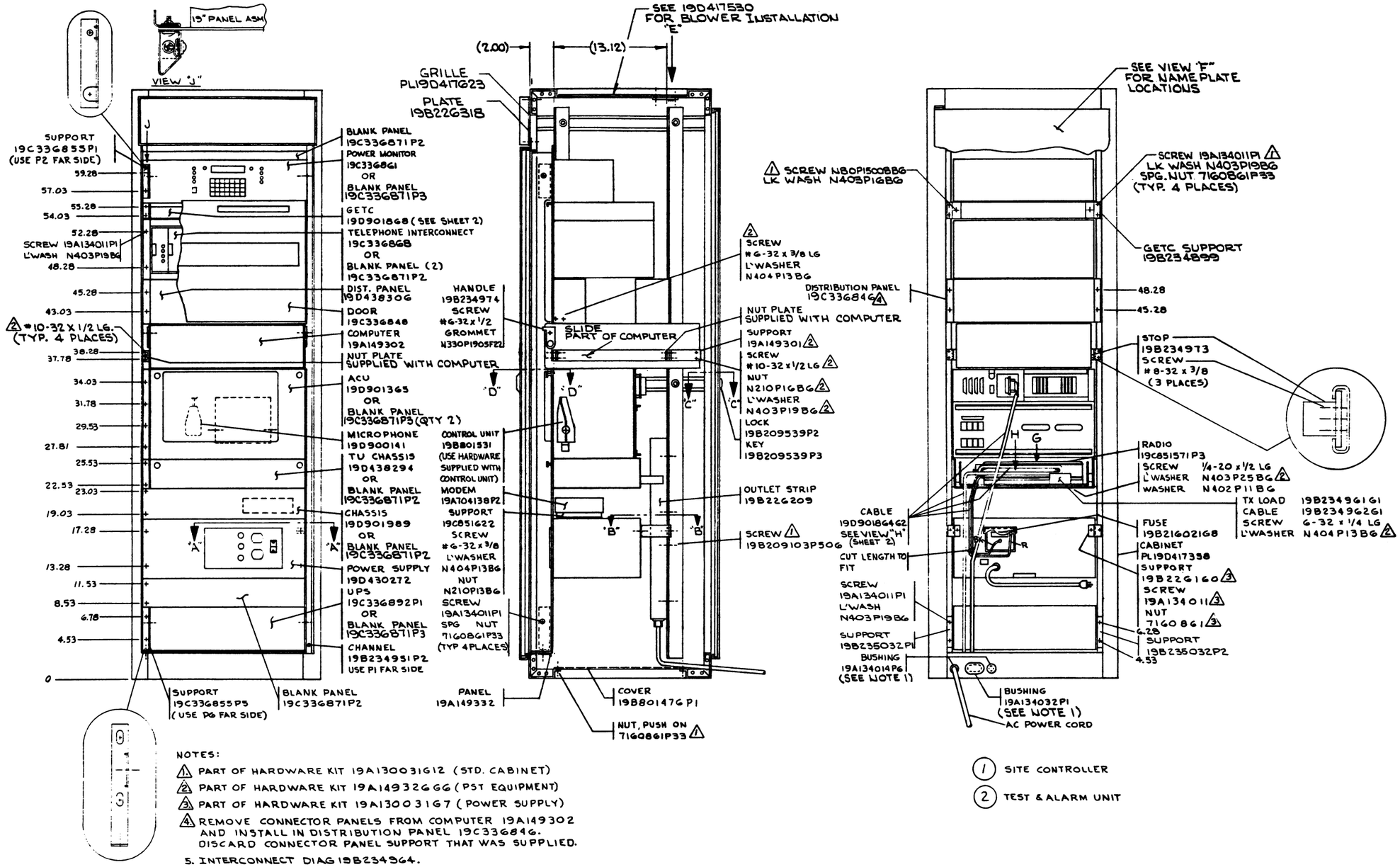
(19B234964, Sh. 1, Rev. 0)

POWER INTERCONNECTION DIAGRAM



(19C336879, Rev. 0)

POWER MONITOR



NOTES:

1. PART OF HARDWARE KIT 19A130031G12 (STD. CABINET)
2. PART OF HARDWARE KIT 19A149326G6 (PST EQUIPMENT)
3. PART OF HARDWARE KIT 19A130031G7 (POWER SUPPLY)
4. REMOVE CONNECTOR PANELS FROM COMPUTER 19A149302 AND INSTALL IN DISTRIBUTION PANEL 19C336846. DISCARD CONNECTOR PANEL SUPPORT THAT WAS SUPPLIED.
5. INTERCONNECT DIAG 19B234964.

(1) SITE CONTROLLER

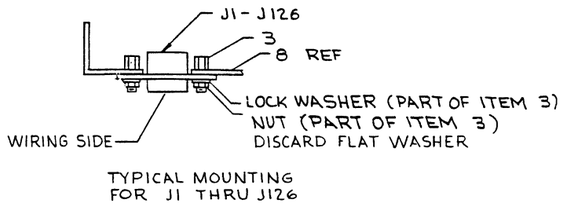
(2) TEST & ALARM UNIT

(19D438315, Sh. 1, Rev. 2)

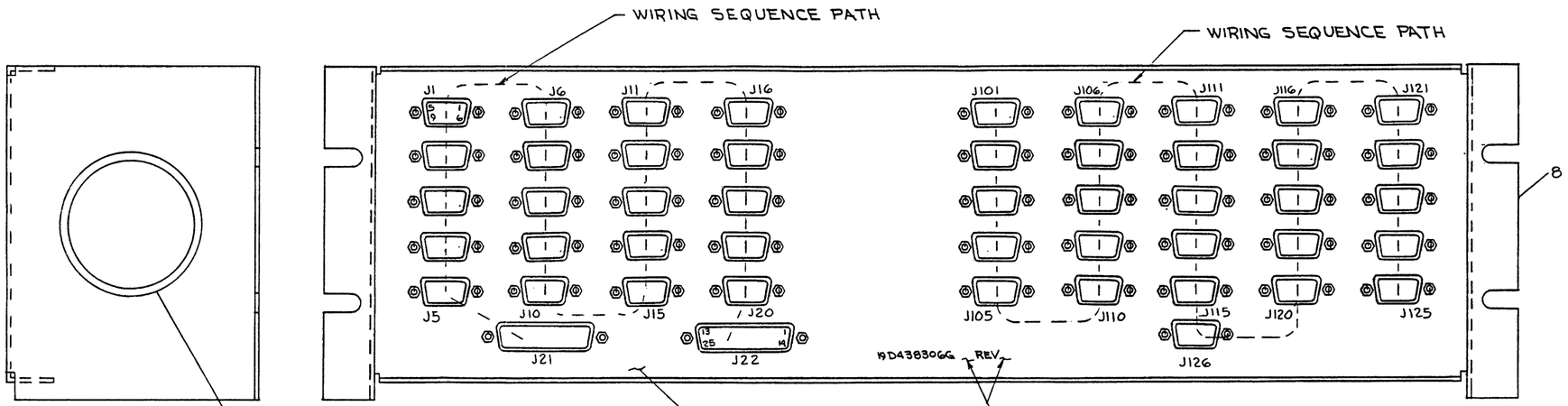
ADDENDUM NO. 1 TO LBI-38138
PCPS

This addendum provides information on the Emulex Distribution Panel and Distribution Panel 19D438306G1 & 2.

ASSEMBLY DRAWING



TYPICAL MOUNTING
FOR J1 THRU J126



(19D438306, Sh. 2, Rev. 0)

7

NOTES:

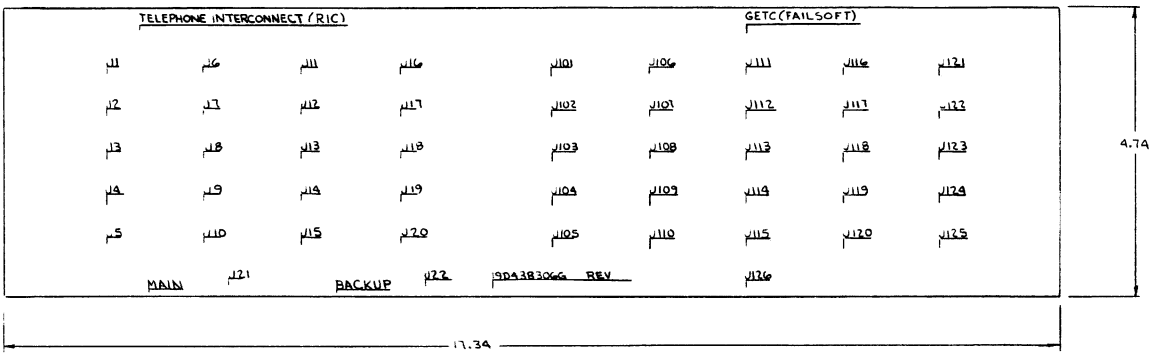
1. ALL WIRING IS ST24-W.
   USE AMP TOOL NO. 90302 TO CRIMP WIRE TO ITEM 5.
   USE AMP TOOL NO. 91067-2 TO REMOVE CONTACTS
   FROM HOUSING IF NECESSARY.

2. ALL WIRES TO BE 3 INCHES LONG EXCEPT WIRES TO J21
   WHICH ARE 4 INCHES LONG.

3. FOR J1 THRU J20:
   CONNECT ALL PIN 1'S TOGETHER AND CONNECT TO J21-1 AND J22-1.
   CONNECT ALL PIN 4'S TOGETHER AND CONNECT TO J21-7.
   CONNECT ALL PIN 5'S TOGETHER AND CONNECT TO J22-7.
   CONNECT ALL PIN 6'S TOGETHER AND CONNECT TO J22-3.
   CONNECT ALL PIN 7'S TOGETHER AND CONNECT TO J21-3.
   CONNECT ALL PIN 8'S TOGETHER AND CONNECT TO J22-2.
   CONNECT ALL PIN 9'S TOGETHER AND CONNECT TO J21-2.

4. FOR J101 THRU J126:
   CONNECT ALL PIN 1'S TOGETHER.
   CONNECT ALL PIN 2'S TOGETHER.
   CONNECT ALL PIN 3'S TOGETHER.
   CONNECT ALL PIN 7'S TOGETHER.

PANEL MARKING



MARKING FOR 19D438829GP2

(2) MARK AS SHOWN
CHARACTERS, 125 HIGH
COLOR : WHITE
PER 19A115740P1
APPLICATION TOL. ±.03

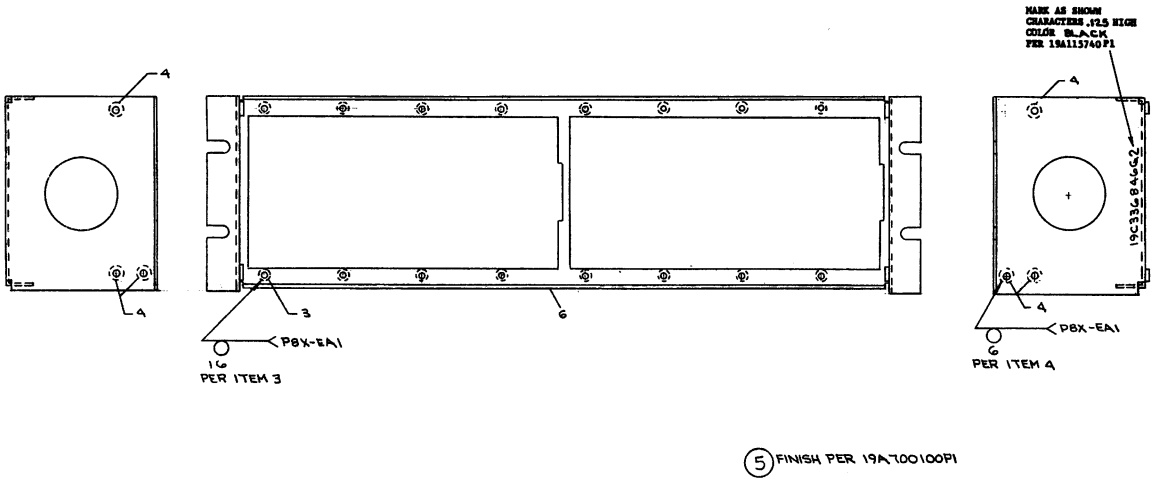
(19D438316, Sh. 2, Rev. 0)

PARTS LIST

PST DISTRIBUTION PANEL
(SITE CONTROLLER)
19D438306G2
ISSUE 1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - JACKS - - - - - - - - - - -
J1 thru J20	19B209727P18	Connector, plug, power: contacts 9; sim to AMP 205203-1.
J21 and J22	19B209727P2	Connector, plug, power: contacts 25; sim to AMP 205207-1.
J101 thru J126	19B209727P18	Connector, plug, power: contacts 9; sim to AMP 205203-1.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19B209727P10	Screwlock; female, sim to Amp 205817-1.
	19A115594P2	Grommet.
	19B209727P11	Contact, electrical: sim to AMP 1-66504-0.
	19C336846G3	Panel.

ASSEMBLY DRAWING



(19C336846, Sh. 2, Rev. 0)

EMULEX PANEL

PARTS LIST

EMULEX PANEL, REAR MOUNT
(16 PLUS SITE)
19C336846G2
ISSUE 1

SYMBOL	GE PART NO.	DESCRIPTION
	7160523P1	Nut. (Quantity 16).
	7160523P2	Nut. (Quantity 6).
	19D438295P2	Panel.