

Pattern Select

Pos	Pattern
0	QRW
1	2 ⁷
2	2 ⁹
3	2 ¹⁵
4	2 ²⁰
5	2 ²³
6	1 in 8
7	3 in 24
9	PROM Download

Front Panel Description

1	Status: The green LED lights when the unit is powered and operation is normal. The red LED lights if an alarm exceeding thresholds is detected.
2	Alarm Cut Off: This yellow LED lights if the Alarm Cut Off switch is placed in the left 'ON' position. It indicates that the alarm relay contacts are disabled.
3	ACO Switch: This switch controls the alarm relay circuitry. If the switch is placed in the left 'ON' position, this circuitry is deactivated.
4	BV/CR/FE: This LED lights 1 second for each second that has an occurrence of bipolar violations, cyclic redundancy check errors, or frame bit errors.
5	LOS/LOF: This LED blinks with loss of signal (LOS) from the network or DTE. It lights constantly when a loss of frame (LOF) condition is detected.
6	AIS: This LED lights if an unframed all ones condition (alarm indication signal) is detected from the network or equipment.
7	Remote Alarm: This LED lights constantly when a remote (yellow) alarm signal is received from the far end.
8	Local Alarm: This LED lights when a local alarm exceeding alarm thresholds exists. It remains lit until the Alarm Reset Timer period ends.
9	LLB: This LED lights continuously when the network interface is in a line loopback. It flashes when the DTE interface is in a line loopback.
10	PLB: This LED lights continuously when the network interface is in a payload loopback.
11	TST: This LED lights continuously during a far or local test. It flashes when loop codes are transmitted at the start of a 'far' test and when unloop codes are transmitted at the end of a 'far' test.
12	ERR: This LED lights for 1 second when BERT pattern errors are received during a 'Far' test.
13	Test Switch: This switch is used for local testing. If transmitting IBLC, the test LED blinks. If transmitting a test pattern, it lights continuously.
14	Test Jacks: These jacks provide access to the T1 line on the DTE side – the top 2 jacks break connection to the DTE and make connection to the unit in the direction of the network, the middle 2 ports monitor the signals passing through the unit, and the bottom 2 ports break connection to the unit and make connection to the DTE.
15	Activity LEDs: These 2 small, recessed LEDs are provided to indicate supervisory and NMS port activity.
16	SUPV: This 6-pin supervisory jack provides direct terminal access for PMU control and to gather status/facility performance data.
17	Pattern Select: This rotary switch determines the BERT pattern sent by the unit when the test switch (Item 14) is in the 'FAR' position. Refer to the table above.

Specifications

Network Interface

Line Rate:	2.048 Mb/s, ± 50 ppm, PCM-30
Multi-frame Type:	CAS and/or CRC4, or none
Line Code:	AMI or HDB3
Connection:	120 ¾ balanced or 75 ¾ unbal.
Backplane:	DB15, Twin-axial, and BNC
Output Signal:	75 ¾ mark 2.37 V, space 0±0.237 V (per G.703) 120 ¾ Mark 3 V, Space 0 ± 0.3 V
Line Build Out:	0, -7.5, -15 dB switch settings
Input Signal:	75 ¾ mark 2.37V, space 0 ± 0.237 V (per G.703) 120 ¾ Mark 3 V, Space 0 ± 0.3 V attenuated by 0 to -27 dB (ALBO)
Jitter Attenuation:	per CCITT G.823
AIS:	Unframed or framed all ones, or (user selectable) line loopback
Overvoltage:	1000 V minimum protection

Equipment Interface

Line Rate:	2.048 Mb/s, ± 50 ppm, PCM-30
Multi-frame Type:	CAS and/or CRC4, or none

Line Code:	AMI or HDB3
Output Signal:	75 ¾ mark 2.37 V, space 0±0.237 V (per G.703) 120 ¾ Mark 3 V, Space 0 ± 0.3 V
Pulse Width:	244 ns, nominal
DTE Input Signal:	75 ¾ mark 2.37V, space 0 ± 0.237 V (per G.703) 120 ¾ Mark 3 V, Space 0 ± 0.3 V attenuated by 0-6 dB @ 1024 kHz
Connection:	120 ¾ balanced or 75 ¾ unbalanced
Backplane:	DB15, Twin-axial, and BNC
AIS:	Unframed or framed all ones, LLB
Overvoltage:	1000 V minimum protection
Diagnostics	
Line Loopback:	Signal regeneration only
Payload Loopback:	Signal regenerated with new frame synchronization and CRC4
BERT:	63, 511, 2047, 2 ¹⁵ (default), 2 ²⁰ , 2 ²³ , QRW, and ALT
BERT Activation:	Front panel switch, user selection of patterns via command. Pattern sync /bit errors reported via command.

Loopback Control:	Inband loop up, 00001 for Ý 5 sec Inband loop down, 001 for Ý 5 sec User enable/disable, Manual loop back switch, FDL loopback cmd.
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PTT and EM8000	Full ESF performance monitoring through 6-pin RJ11 terminal port, and via FDL in selected national bit
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Alarms

Contacts:	Normally Open or Normally Closed (screw terminal connection)
Activation:	Programmable
Reporting:	Through TxPORT EM8000
Cut Off:	Manual, 2-position switch

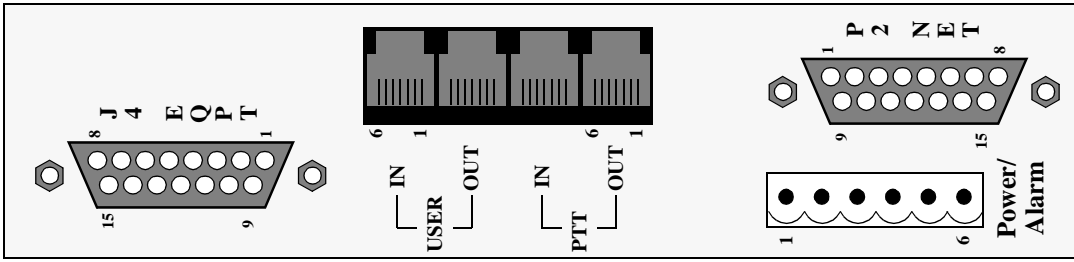
Local Power

-48 VDC (± 10%), 75 mA max (screw terminal)

Mechanical

Mounting:	Wall, horizontal or vertical rack
Dimensions:	1.75" W, 6.0" H, 11.75" D
Weight:	1 pound

2048 PMU Rear Panel (with DB15)



Equipment/Network Connection

Pin	EQPT DB15	NET DB15
1	Data In	Data Out
2	Frame Ground	Frame Ground
3	Data Out	Data In
4	Frame Ground	Frame Ground
9	Data In	Data Out
11	Data Out	Data In

Pin	EQPT RJ48	NET RJ48
1	Data Out	Data In
2	Data Out	Data In
3/6	Not Used	Not Used
4	Data In	Data Out
5	Data In	Data Out
7/8	Chassis Gnd	Chassis Gnd

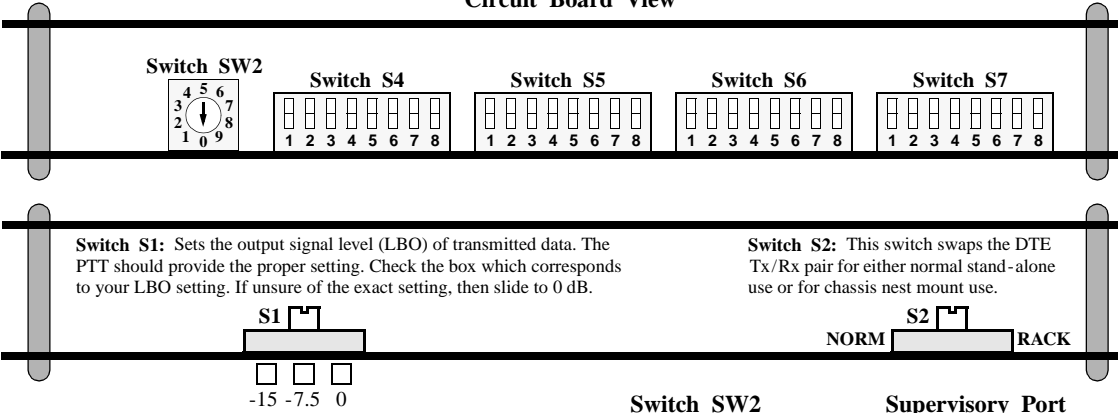
User/PTT Connection

Pin	NMS In/Out	NMS Out
1	Not Used	Not Used
2	Signal Gnd	Signal Gnd
3	Data Out	Data Out
4	Data In	Not Used
5	Signal Gnd	Signal Gnd
6	Not Used	Not Used

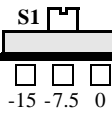
Power/Alarm

Pin	Function
1	48 VDC Return
2	Signal Ground
3	-48 VDC
4	Frame Ground
5	Alarm Contact
6	Alarm Common

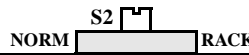
Circuit Board View



Switch S1: Sets the output signal level (LBO) of transmitted data. The PTT should provide the proper setting. Check the box which corresponds to your LBO setting. If unsure of the exact setting, then slide to 0 dB.



Switch S2: This switch swaps the DTE Tx/Rx pair for either normal stand-alone use or for chassis nest mount use.



Switch SW2

Pos	Nat'l Bit
1	1
2	2
3	3
4	4
5	5

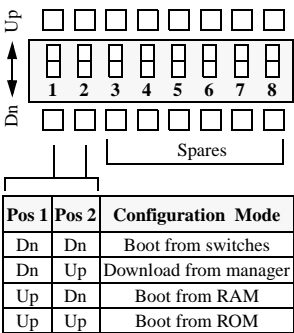
Supervisory Port (front panel)

1/6	Not Used
2	Signal Ground
3	Data Out
4	Data In
5	Signal Ground

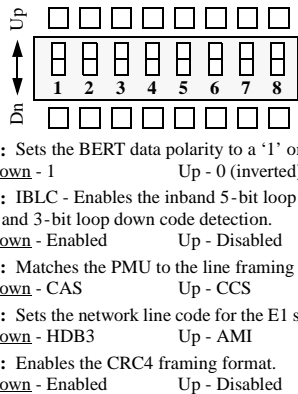
NOTE: For future reference, all DIP switches are provided with upper and lower boxes to check according to the particular user selection. Factory default settings are shown underlined.

NOTE: On all switches, the 'Up' or '1' position is OPEN and the 'Dn' or '0' position is CLOSED.

Configuration Switch S4



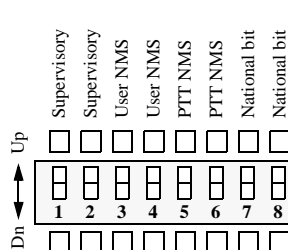
Configuration Switch S5



Pos 6	Pos 7	AIS/Keep Alive Selection
Dn	Dn	AIS is unframed all ones
Dn	Up	AIS is framed all ones
Up	Dn	Line Loopback (LLB)

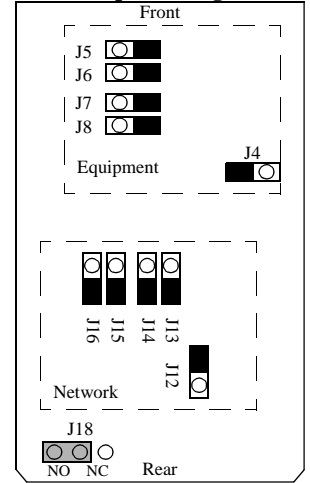
S5-8: Enables CRC4 Insert on the network side.
Down - Disabled Up - Enabled

Configuration Switch S6



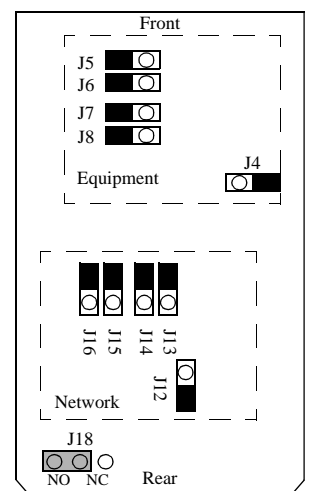
	1.2 kb/s	2.4 kb/s	9.6 kb/s	19.2 kb/s
SUPV - 1	Dn	Dn	Up	Up
- 2	Dn	Up	Dn	Up
User - 3	Dn	Dn	Up	Up
- 4	Dn	Up	Dn	Up
PTT - 5	Dn	Dn	Up	Up
- 6	Dn	Up	Dn	Up
Nat'l Bit - 7	Dn (0) = Pass		Up (1) = Select	
Bit - 8	Select Dn (0) or Up (1) for nat'l bit if S6-7 is set to 'Select'			

75 3/4 Jumper Configuration



Alarm Relay: Pin 5 on the Power/Alarm terminal strip is configured to operate either in a normally open (NO) or a normally closed (NC) mode as determined by Jumper J18.

120 3/4 Jumper Configuration



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