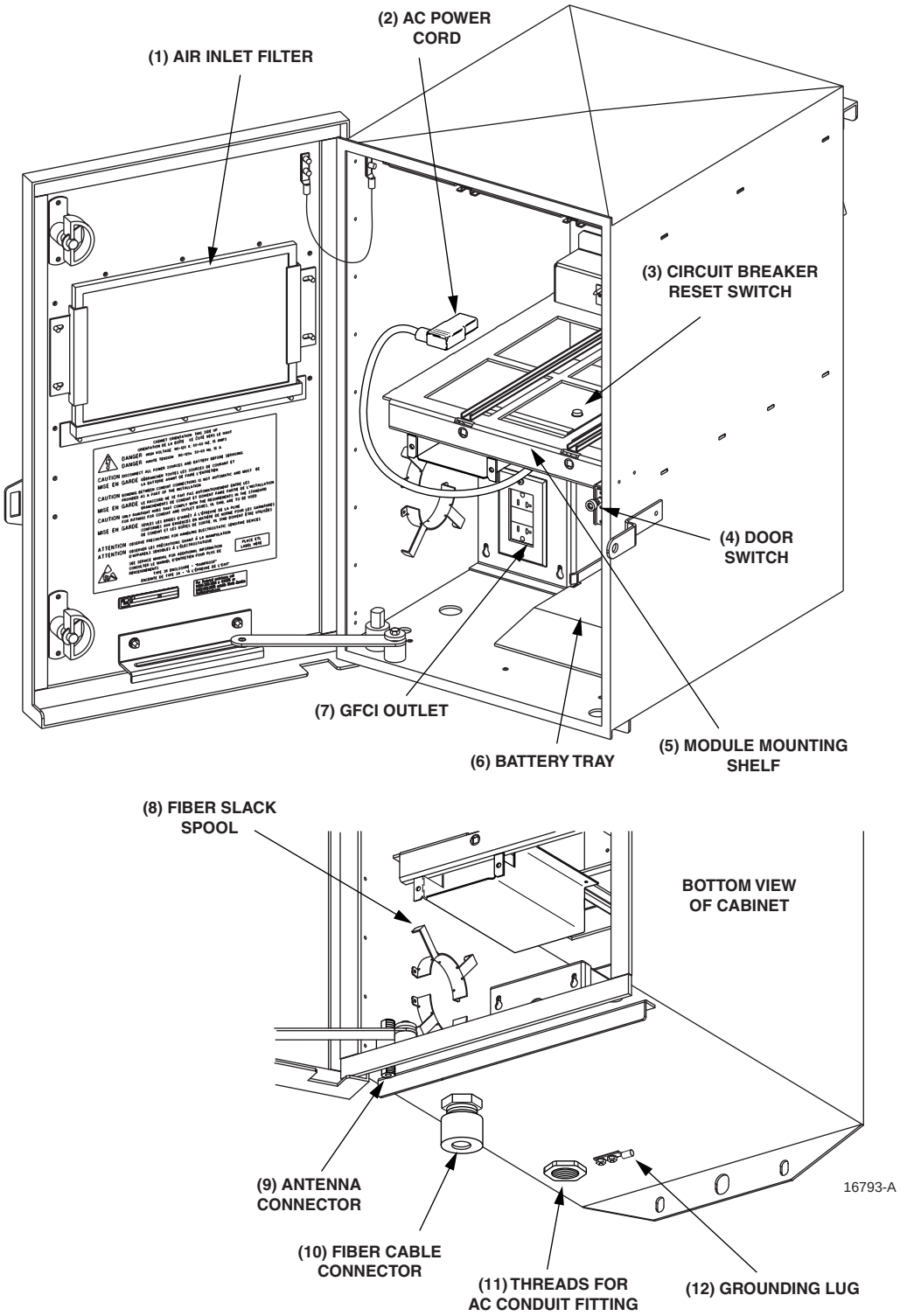

Figure 2-4. Remote Unit Cabinet User Interface

Table 2-2. Remote Unit Cabinet User Interface

REF NO	DEVICE	FUNCTIONAL DESCRIPTION
1	Air inlet filter	A reusable filter that prevents the entry of dirt particles when outside air is pulled into the cabinet for cooling.
2	AC power cord	Provides AC power to the STM.
3	Circuit breaker reset switch	Used to reset the battery heater circuit following correction of an overcurrent condition.
4	Door switch	Indicates to the fault detection and alarm reporting system if the cabinet door is open (major alarm) or closed.
5	Module mounting shelf	Provides a mounting point for the STM and LPA modules.
6	Battery tray	Provides a mounting point for the back-up battery (when used).
7	120 Vac GFCI outlet (standard)	Standard 120 Vac GFCI outlet for connecting AC power tools or test equipment.
8	Fiber slack spool	Provides a storage place for excess fiber pigtail slack.
9	Antenna connector	Provides lightning surge protection for the antenna connection.
10	Fiber cable connector	Provides both an entry point and strain relief for the fiber optic cable.
11	3/4-inch NPT threaded hole	Provides a connection point for a 3/4-inch AC conduit fitting.
12	Grounding lug	Provides a connection point for an external grounding cable.

4 SPECTRUM TRANSPORT MODULE

The Spectrum Transport Module (STM), shown in Figure 2-5, serves as the handset servicing device for the Digivance LRCS. The STM provides the following basic functions:

- Provides RF transmit and receive connections to the Dual Duplexer/Splitter.
- Provides optical connections to the HU.
- Converts the digitized forward path optical signal to a digitized RF signal.
- Converts the digitized RF signal to a composite RF signal.
- Digitizes the reverse path composite RF signal.
- Converts the digitized reverse path RF signal to a digitized optical signal.
- Provides an RS-232 connection to a local EMS computer.
- Transports alarm, control, and monitoring information via the optical fibers.
- Provides an AC power connection and battery power connection.
- Provides external alarm connection.

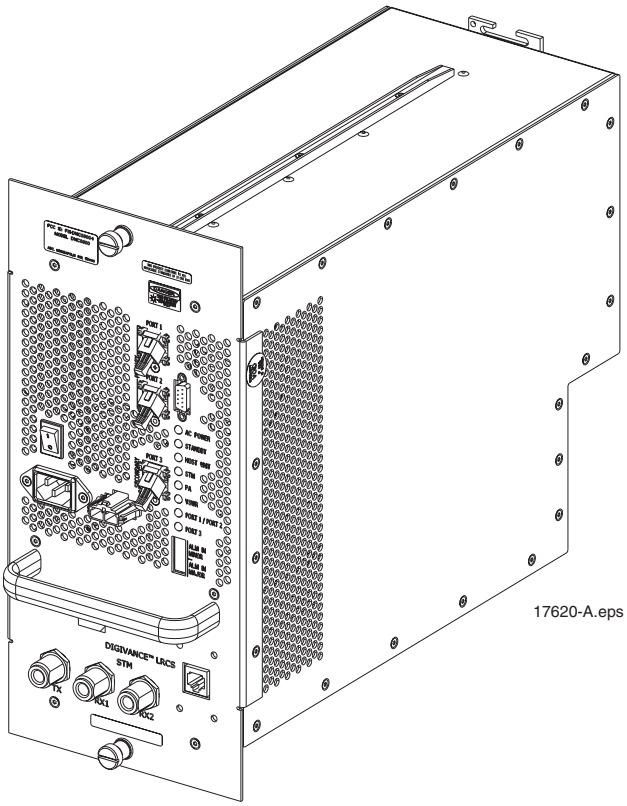

Figure 2-5. Spectrum Transport Module

4.1 Primary Components

The STM consists of an electronic circuit board assembly, power supply, and fan assembly that are mounted within a powder-coated sheet metal enclosure. The metal enclosure provides a mounting point for the electronic components and controls RF emissions. Except for the fan unit, the electronic components are not user replaceable. The STM is designed for use within the RU cabinet. Except for the LPA interface connector, all controls, connectors, indicators, and switches are mounted on the STM front panel for easy access. A carrying handle is provided on the front of the STM to facilitate installation and transport.

4.2 Mounting

The STM mounts on a shelf within the RU cabinet. A runner on the bottom of the STM meshes with a track on the mounting shelf. The runner and track guide the STM into the installed position. The electrical interface between the STM and LPA is supported by a D-sub female connector located on the rear side of the STM. A corresponding D-sub male connector mounted at the rear of the RU cabinet mounting shelf mates with the STM connector. Captive screws are provided for securing the STM to the mounting shelf.

4.3 Fault Detection and Alarm Reporting

The STM detects and reports the following faults: remote unit fault, optical fault, power fault, temperature fault, power amplifier fault, and external (door open) fault. Various front panel Light Emitting Diode (LED) indicators turn from green to red or yellow if a fault is detected. The status of the STM, the alarm state (major or minor), and other more detailed alarm information is summarized and reported over the fiber optic link to the HU and also over the service interface. In addition, the alarm state of the HU is received over the fiber optic link and reported to the service interface. This detailed information may be accessed remotely through the NOC/NEM interface or locally through the EMS software MI.

4.4 RF Signal Cable Connections

Transmit and receive coaxial cable connections between the STM and the DDS are supported through three N-type female connectors. The TX connector is used for the RF forward path transmit signal connection. The RX1 connector is used for the RF reverse path primary receive signal connection. The RX2 connector is used for the RF reverse path diversity receive signal connection. All coaxial jumper cables are provided with the DDS.

4.5 RF Signal Level Adjustment

The STM is equipped with a digital attenuator for adjusting the signal level of the forward path RF **output** signal. The **remote forward path** attenuator adjusts the level of the output RF signal at the RU antenna port and will add from 0 to 20 dB of attenuation to the output signal level. The attenuator can be set in 1 dB increments. The attenuator is software controlled and is adjusted through the NOC/NEM interface or the EMS software MI.

4.6 Optical Signal Connections

Optical connections between the STM and the HU are supported through three SC-type optical connector ports. Port 1 is used for the forward path optical signal connection. Port 2 is used for the reverse path primary optical signal connection. Port 3 is used for the reverse path diversity optical signal connection.

4.7 Service Interface Connection

The service interface connection between the STM and a local laptop computer loaded with the EMS software is supported by a single DB-9 female connector. The service interface connector provides an RS-232 DTE interface. The STM service interface connector supports local communications with both the STM and the corresponding HU.

4.8 Powering

The STM is powered by 120 or 240 Vac (50 or 60 Hz) power which is supplied through a three-conductor AC power cord. The power cord is provided with the RU cabinet. One end of the cord is hard-wired to the AC power outlet box and the other end is terminated with a molded-on plug

cap. The power cord connects to a 3-wire AC cord connector mounted on the STM front panel. A switch on the STM front panel provides AC power On/Off control.

The STM (and the connected LPA) may be powered by a 24 Vdc back-up battery system which is available as an accessory kit. A connector is provided on the STM front panel for connecting the wiring harness for the back-up battery system.

4.9 Cooling

Continuous air-flow for cooling is provided by a single fan mounted on the rear side of the STM housing. An alarm is provided that indicates if a high temperature condition (>50º C/122º F) occurs. If the temperature falls below 32º F (0º C), the fan automatically shuts off. The fan may be field replaced if it fails.

4.10 User Interface

The STM user interface consists of the various connectors, switches, and LEDs that are provided on the STM front panel. The STM user interface points are indicated in Figure 2-6 and described in Table 2-3.

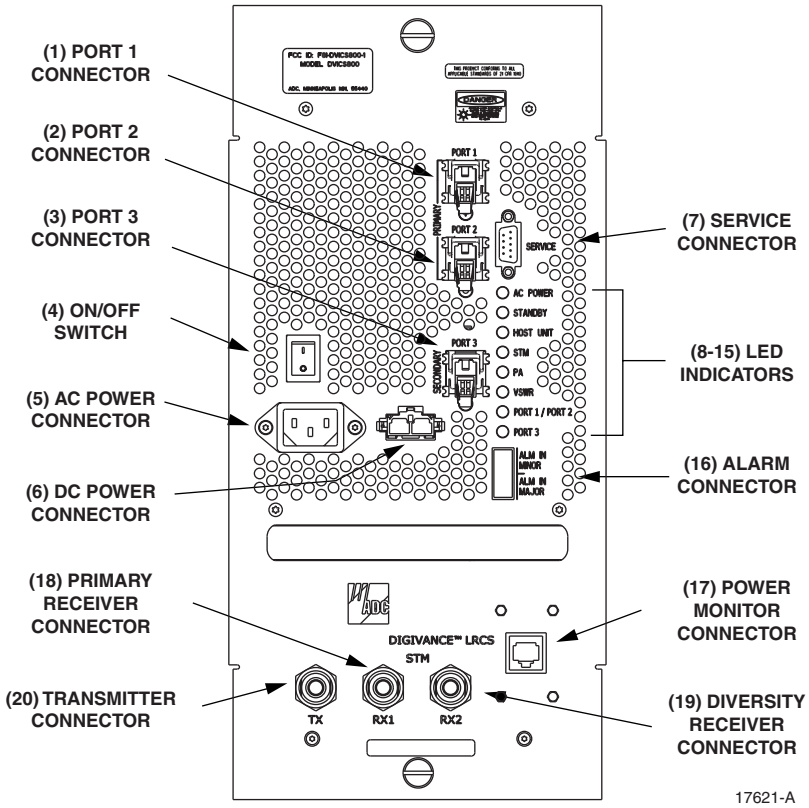

Figure 2-6. Spectrum Transport Module User Interface

Table 2-3. Spectrum Transport Module User Interface

REF NO	USER INTERFACE DESIGNATION	DEVICE	FUNCTIONAL DESCRIPTION
1	PORT 1	SC connector (single-mode)	Connection point for the forward path optical fiber.
2	PORT 2	SC connector (single-mode)	Connection point for the reverse path primary optical fiber.
3	PORT 3 (diversity unit only)	SC connector (single-mode)	Connection point for the reverse path diversity optical fiber.
4	1/0	On/Off rocker switch	Provides AC power on/off control.
5	No designation	3-wire AC power cord connector	Connection point for the AC power cord.
6	No designation	2- wire DC power cord connector	Connection point for the back-up battery power cord.
7	SERVICE	DB-9 connector (female)	Connection point for the RS-232 service interface cable.
8	AC POWER	Multi-colored LED (green/red)	Indicates if the STM is powered by the AC power source (green) or the back-up battery system (red). See Note.
9	STANDBY	Multi-colored LED (green/yellow/red)	Indicates if the system is in the Normal state (off) Standby state (blinking green), Test state (blinking red), or Program Load state (blinking yellow). See Note.
10	HOST UNIT	Multi-colored LED (green/yellow/red)	Indicates if no alarms (green), a minor alarm (yellow), or a major alarm (red) is detected at the HU. See Note.
11	STM	Multi-colored LED (green/yellow/red)	Indicates if the STM is normal (green) or faulty (red). See Note.
12	PA	Multi-colored LED (green/yellow/red)	Indicates if the power amplifier is normal (green), over temperature (yellow), has a fan failure (yellow), or is faulty (red). See Note.
13	VSWR	Multi-colored LED (green/yellow/red)	Indicates if the forward path VSWR is above (red) or below (green) the fault threshold.
14	PORT 1/PORT 2	Multi-colored LED (green/yellow/red)	Indicates if the forward path optical signal received from the HU is normal (green), if no signal is detected (red), or if errors are detected (red). See Note.
15	PORT 3 (diversity unit only)	Multi-colored LED (green/yellow)	Indicates if the diversity reverse path optical signal received by the HU is normal (green), if no signal is detected (yellow), or if errors are detected (yellow). See Note.
16	ALARM IN MINOR ALARM IN MAJOR	Screw-type terminal connector (14–26 AWG)	Connection point for two external alarm inputs. The door-open switch lead wires are typically connected to the major alarm terminals.
17	No designation	RJ-45 jack	Connection point for the power monitor cable.

Table 2-3. Spectrum Transport Module User Interface, continued

REF NO	USER INTERFACE DESIGNATION	DEVICE	FUNCTIONAL DESCRIPTION
18	TX	N-type female RF coaxial connector	Connection point for the DDS forward path transmitter cable.
19	RX1	N-type female RF coaxial connector	Connection point for the DDS reverse path primary receiver cable.
20	RX2	N-type female RF coaxial connector	Connection point for the DDS reverse path diversity receiver cable.
Note: A more detailed description of LED operation is provided in Section 5.			

5 LINEAR POWER AMPLIFIER

The Linear Power Amplifier (LPA), shown in Figure 2-7, works is conjunction with the STM to amplify the forward path RF output signal. The STM is interfaced with the LPA through the D-sub connectors and wiring harness located at the rear of the RU cabinet. The RF signal is passed to the LPA for amplification and then passed back to the STM for output via the STM's transmitter (TX) port. The STM also supplies DC power to the LPA through the same interface.

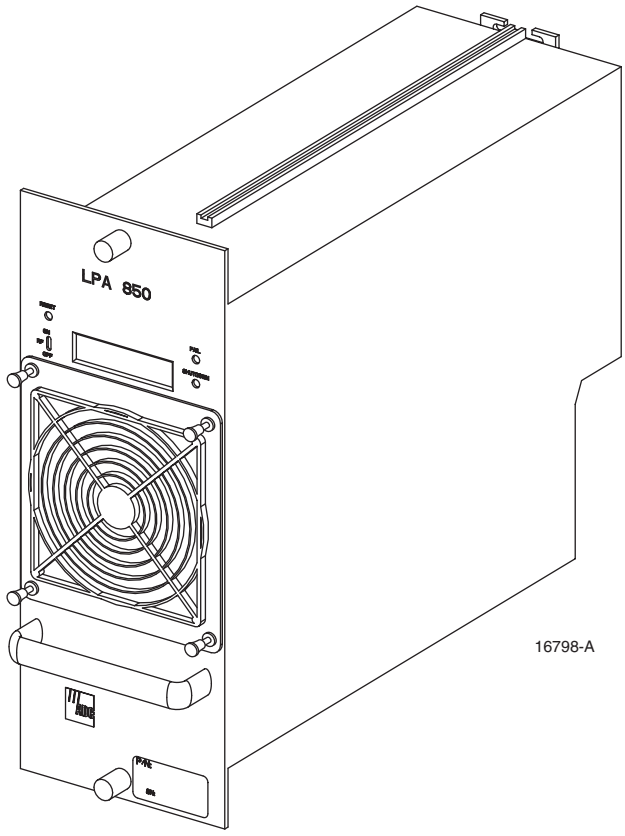

Figure 2-7. Linear Power Amplifier

5.1 Primary Components

The LPA consists of several electronic circuit board assemblies and two fan assemblies that are mounted within a powder-coated sheet metal enclosure. The metal enclosure provides a mounting point for the electronic components and controls RF emissions. Except for the fan units, the electronic components are not user replaceable. The LPA is designed for use within the RU cabinet. Except for the STM interface connector, all controls, indicators, and switches are mounted on the LPA front panel for easy access. A carrying handle is provided on the front of the LPA to facilitate installation and transport.

5.2 Mounting

The LPA mounts on a shelf within the RU cabinet. Runners on the top and bottom of the LPA mesh with tracks on the mounting shelf. The runners and tracks guide the LPA into the installed position. The electrical interface between the STM and LPA is supported by a D-sub female connector located on the rear side of the LPA. A corresponding D-sub male connector mounted at the rear of the RU cabinet mounting shelf mates with the LPA connector. Captive screws are provided for securing the LPA to the mounting shelf.

5.3 Fault Detection and Alarm Reporting

The LPA in conjunction with the STM detects and reports the following faults: power amplifier fault, output power fault, temperature fault, and fan fault. Various Light Emitting Diode (LED) indicators located on the front panels of both the STM and LPA turn from green to red or yellow if an LPA fault is detected. In addition, a digital display located on the LPA front panel provides various fault messages. The status of the LPA, the alarm state (major or minor), and other more detailed information is summarized and reported (by the STM) over the fiber optic link to the HU and also to the service interface. This detailed information may be accessed remotely through the NOC/NEM interface or locally through the EMU software MI.

5.4 Powering

The LPA is powered by various DC voltages which are supplied by the STM over the electrical interface provided by the D-sub connectors and wiring harness mounted within the RU cabinet.

5.5 Cooling

Continuous air-flow for cooling is provided by a pair of fans mounted at the front and the rear side of the LPA housing. The front fan pulls cool air into the module and the rear fan exhausts heated air out of the module. An alarm is provided that indicates if a high temperature condition (>50º C/122º F) occurs or if a fan failure occurs. Either fan may be field replaced if it fails.

5.6 User Interface

The LPA user interface consists of the various LEDs, message displays, and switches that are provided on the LPA front panel. The LPA user interface points are described in Table 2-4 and indicated in Figure 2-8.

Table 2-4. Linear Power Amplifier User Interface

REF NO	USER INTERFACE DESIGNATION	DEVICE	FUNCTIONAL DESCRIPTION
1	RESET	Momentary contact push button switch	Momentarily pressing the switch push button clears all alarms and restarts the amplifier
2	RF ON OFF	2-position switch	Placing the switch in the OFF position puts the LPA in a standby state with RF output disabled. Placing the switch in the ON position puts the LPA in the normal state with RF output enabled.
3	FAIL	LED indicator (yellow)	Indicates the LPA is normal (off) or faulty (yellow).
4	SHUTDOWN	LED indicator (red)	Indicates the LPA is in service (off) or shutdown (red).
5	No designation	Digital display	Provides status and alarm messages. See Note.
Note: A more detailed description of the digital display messages is provided in Section 5.			

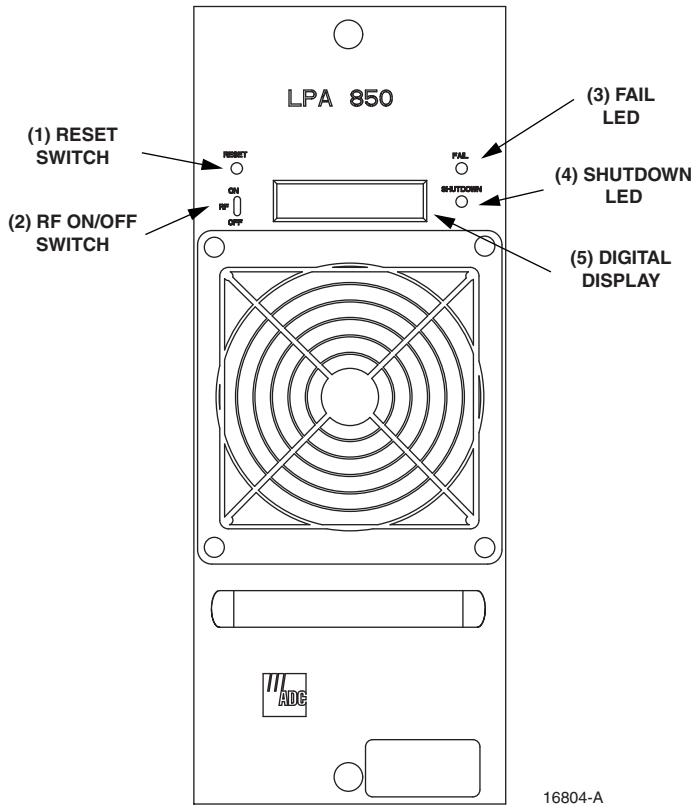

Figure 2-8. Linear Power Amplifier User Interface

6 DUAL DUPLEXER/SPLITTER

The Dual Duplexer/Splitter (DDS), shown in Figure 9, serves as an interface device between the STM and the primary and diversity antennas. The DDS provides the following basic functions:

- Provides a forward path RF transmit signal connection for the STM.
- Splits the forward path RF transmit signal for distribution to the two duplex filters.
- Provides a primary and diversity reverse path RF receive signal connection for the STM.
- Duplexes the forward transmit and primary reverse path signals for connection to the primary antenna.
- Duplexes the forward transmit and diversity reverse path signals for connection to the diversity antenna.
- Provides RF signal connections to the primary and diversity remote antennas
- Provides switch selectable power level monitoring of the transmit signal at the primary and diversity antenna ports.

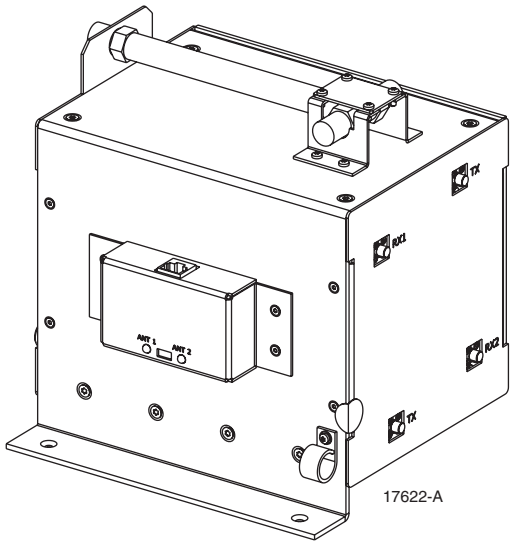

Figure 2-9. Dual Duplexer/Splitter

6.1 Primary Components

The DDS consists of an RF signal splitter, a pair of duplex filters, RF power monitor interface, and a sheet metal enclosure with integral mounting bracket. The DDS is designed for use within the RU cabinet. The sheet metal enclosure provides a mounting point for the DDS components and a means for securing the DDS within the cabinet. Cable connectors are mounted on the top, front, left, and right sides of the DDS. The RF power monitor interface is mounted on the front side of the DDS for easy access. The various components of the DDS are not user replaceable.

6.2 Mounting

The DDS mounts within the RU cabinet just below the STM and LPA modules and in front of the battery tray. Screws are provided with the DDS for securing the DDS mounting bracket to the bottom of the cabinet.

6.3 Transmit Signal Connections

The transmit signal connection to the DDS is through the RF signal splitter which is mounted on top of the DDS enclosure. The splitter is equipped with N-type female connectors for both the input and the output connections. The forward path transmit signal is supplied to the splitter input connector over a coaxial jumper cable. The signals from the splitter output connectors are supplied to the duplex filters. The duplex filters are equipped with SMA-type female connectors for the transmit signal connections. A pair of hybrid-type coaxial jumper cables are used to link the splitter output connectors to the duplexer input connectors. All cables required for the transmit signal connections are provided with the DDS.

6.4 Receive Signal Connections

The receive signal connections to the DDS are through a pair of SMA-type female connectors. A separate connector is mounted on each duplex filter. The primary receive signal is supplied to duplexer 1. The diversity receive signal is supplied to duplexer 2. A pair of hybrid-type coaxial jumper cables are used to link the STM receiver connectors to the duplexer receive connectors. All cables required for the receive signal connections are provided with the DDS.

6.5 Antenna Cable Connections

The antenna cable connections to the DDS are through a pair of N-type female connectors. A separate connector is mounted on each duplex filter. Duplexer 1 connects to the primary (1) antenna. Duplexer 2 connects to the diversity (2) antenna. The DDS does not connect directly to the antennas but instead connects to a pair of lightning protectors that are mounted on the bottom of the RU cabinet (see Section 3.5). A pair of coaxial jumper cables are provided (included with the DDS) for connecting the duplexer connectors to the lightning protectors.

6.6 RF Power Level Monitor

The DDS provides a pair of LED indicators that show when the antenna ports are being monitored for the RF power level and also a switch for selecting which port (ANT 1 or ANT 2) will be monitored or if both ports will be monitored. Each LED indicator turns on (green) to indicate when the monitor function is active and off to indicate when the monitor function is inactive. The power monitor switch is used to manually select whether both antenna ports will be monitored (switch in center position) or if only one port will be monitored (switch in either ANT 1 or ANT 2 position). When both ports are monitored, the STM will monitor one port for 10 seconds and then monitor the other port for ten seconds.

6.7 User Interface

The DDS user interface consists of the various connectors, LEDs, and switches that are provided on the exterior of the DDS. The DDs user interface points are indicated in Figure 2-10 and described in Table 2-5.

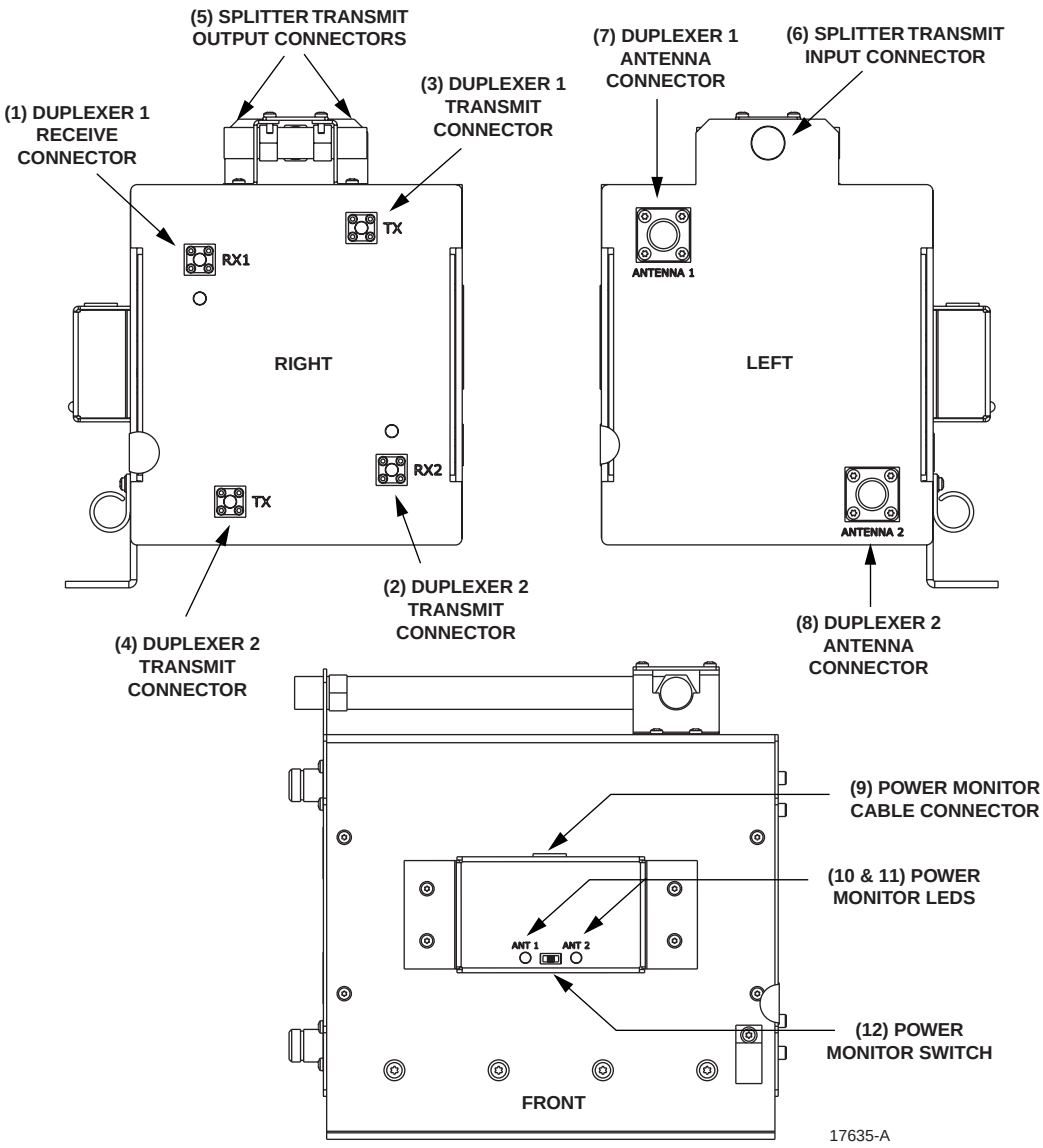

Figure 2-10. Dual Duplexer/Splitter User Interface

Table 2-5. Dual Duplexer/Splitter User Interface

REF NO	USER INTERFACE DESIGNATION	DEVICE	FUNCTIONAL DESCRIPTION
1	RX1	SMA connector (female)	Connection point for the reverse path receive coaxial cable.
2	RX2	SMA connector (female)	Connection point for the reverse path diversity receive coaxial cable.
3	TX	SMA connector (female)	Connection point for the duplexer 1 forward path transmit coaxial cable.
4	TX	SMA connector (female)	Connection point for the duplexer 2 forward path transmit coaxial cable.
5	No designation	N-type connector (female)	Connection point for the duplexer 1 forward path transmit coaxial cable.
6	No designation	N-type connector (female)	Connection point for the duplexer 2 forward path transmit coaxial cable.
7	ANTENNA 1	N-type connector (female)	Connection point for the antenna 1 (primary) coaxial cable.
8	ANTENNA 2	N-type connector (female)	Connection point for the antenna 2 (diversity) coaxial cable
9	No designation	RJ-45 connector (female)	Connection point for the power monitor cable.
10	ANT 1	LED indicator (green)	Indicates if antenna port 1 is being monitored (green) or not (off).
11	ANT 2	LED indicator (green)	Indicates if antenna port 2 is being monitored (green) or not (off).
12	No designation	3-position switch	Switch to select whether antenna port 1 (ANT 1), antenna port 2 (ANT 2), or both antenna ports (center) will be monitored.

7 DIGIVANCE ELEMENT MANAGEMENT SYSTEM

The Digivance Element Management System (EMS) is a network management tool that provides control and monitoring functions for the Digivance LRCS system. The EMS is used to provision and configure new systems for operation, set system operating parameters, get system alarm and status messages, and upgrade the system software. The EMS supports both local control by an on-site service technician and remote control by a Network Operations Center (NOC).

7.1 Primary Components

The EMS, shown in Figure 2-11, consists of a PC-type desk-top computer (not provided) that is loaded with the EMS software. The EMS software is stored on a CD-ROM that is shipped with the HU. The EMS software must be installed on the EMS computer along with the Java 2 Version 1.3.1 Runtime Environment software which is also provided. Installation consists of inserting the CD-ROM into the computer's CD-ROM drive and then running the software install programs. This places the Java 2 Runtime Environment and EMS software files in assigned folders on the computer's hard drive.

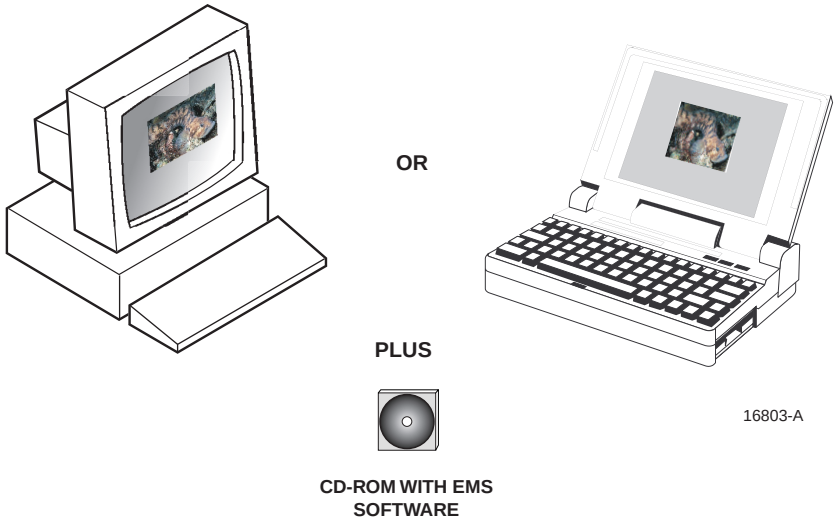

Figure 2-11. Alarm Network Unit

The EMS software may also be installed on a PC-type lap-top computer (not provided). A lap-top version of the EMS computer can be used as a portable network management tool for service and maintenance purposes. A laptop EMS can be connected temporarily to a system to enter the initial configuration data or to trouble-shoot problems and then removed when the task is completed. Permanent control and monitoring functions would be provided by the desk-top EMS computer.

7.2 Service Interface Connection

The service interface connection between the EMS computer and the HU or RU requires that the EMS computer be equipped with a DB-9 connector that is configured to provide an RS-232 DCE interface. A straight-through RS-232 interface cable (accessory item) equipped with a male DB-9 connector on one end and a PC-compatible connector on the other end is required to link the EMS computer to the HU. When multiple HUs are networked together, the EMS computer may be connected to the service connector on any one of the networked HUs.

7.3 NOC Interface Connection

The NOC interface connection between the EMS computer and the NOC requires that the EMS computer be equipped with a connector that is configured to provide an RS-232 ASCII interface. The link between the EMS computer and the NOC would generally be supported by a data network or dial-up modem. Cables and equipment (not provided) to support the RS-232 interface connection between the EMS computer and the data network or dial-up modem are required.

7.4 EMS Software User Interface

The EMS software provides two user interfaces: the Maintenance Interface (MI) and the Network Operation Center-Network Element Manager (NOC/NEM) interface. Both interfaces provide essentially the same functionality except only the MI can upgrade the HU/RU system with new system software. In addition, only the NOC/NEM interface can record and playback alarm data.

The MI is a graphical user interface that is presented at the EMS computer or on a laptop computer. The MI is used for **local** control and monitoring operations. The MI presents a series of displays and screens, such as the one shown in Figure 2-12, to provide the user with alarm and status information and to allow the user to set various operating parameters.

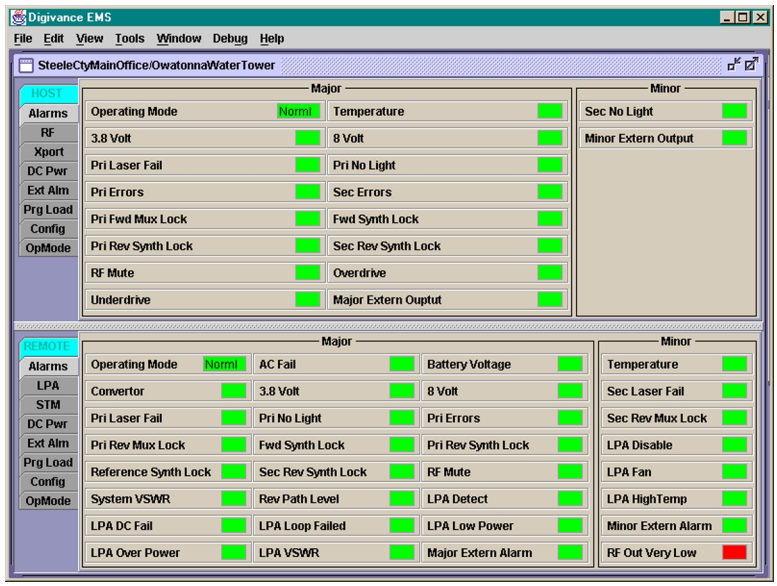

Figure 2-12. EMS Maintenance Interface Host/Remote Display

The NOC/NEM interface is a command line interface that is presented at an NOC terminal. The NOC/NEM interface is used for **remote** control and monitoring operations. The NOC/NEM interface consists of ASCII text strings that are input as SET or GET commands which are followed by the action or information required. A text string response is received from the specified system or systems to confirm the requested action or to report the requested information. Examples of several typical NOC-MEM interface commands and the responses received are shown in Figure 2-13. The NOC/NEM interface requires only a VT100 terminal/ emulator or a PC-type computer that is loaded with a communication software such as Procomm Plus. While primarily intended for use at the NOC, the NOC/NEM interface commands may also be input from the EMS computer.

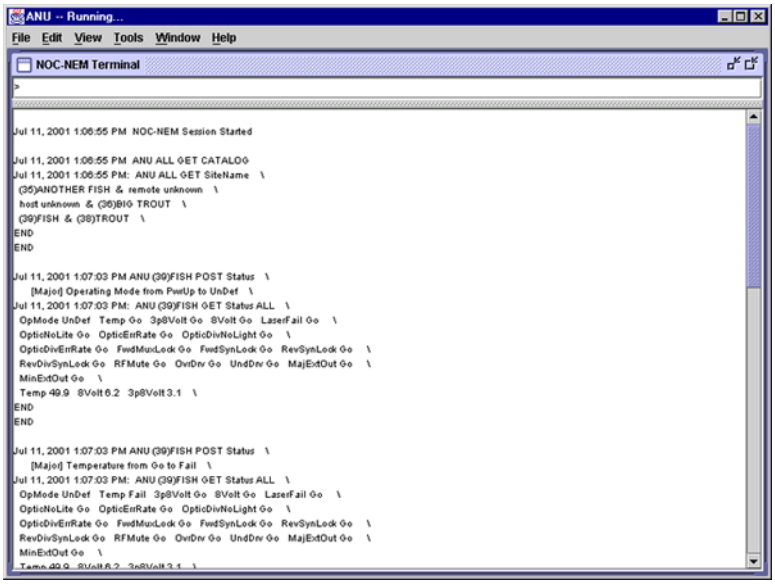

Figure 2-13. NOC/NEM Interface Typical Commands

8 SPECIFICATIONS

Refer to Table 2-6 for the Digivance LRCS system typical specifications. All specifications apply after a five minute warm-up period.

Table 2-6. System Typical Specifications

PARAMETER	SPECIFICATION	REMARKS
Optical - All Units Fiber type	 9/125, single-mode, dark	
Number of fibers required Non-diversity with WDM Diversity with WDM Non-diversity without WDM Diversity without WDM	 1 2 2 3	The wavelength division multiplexer (WDM) is an accessory item.
Forward path wavelength	1550 ± 20 nm	
Reverse path wavelength	1310 ± 20 nm	
Diversity path wavelength	1310 ± 20 nm	
Optical budget	17 dB typical	
System optical maximum	–7 dBm	
Optical connectors	Industry standard SC	Host, remote, and WDM

Table 2-6. System Typical Specifications, continued

PARAMETER	SPECIFICATION	REMARKS
RF Forward Path - SMR 800 MHz System bandwidth	15 MHz	
Frequency range	851 to 866 MHz	
Gain of host/remote link	80.85 dB at band center and room temperature	Includes power amplifier.
Gain flatness	1.5 dB across freq. range 1 dB variation across any 1.25 MHz channel	
Gain variation	1.5 dB over temp and unit-to-unit	
Gain adjustment	Software adjustable in 20 steps of 1 dB	
Out-of-band rejection	–40 dB bandwidth ≤ 30 MHz	
Propagation delay	< 6 µs maximum	Excludes fiber delay.
Variable propagation delay adjustability	Software adjustable in 1µs increments over a 0 to 63 µs range	
Spurious free dynamic range	–60 dBc	
Tx peak to average	10 dB	
Intermodulation	–55 dBc at remote output	
Maximum composite RF input signal level	–20 to –40 dBm, adjustable in 1 dB increments (The host requires a–40 dB input signal level)	–40 dBm with host attenuator at 0 dB –20 dBm with host attenuator at 20 dB
Tx path insertion loss	6.0 dB	
Output power	50 Watts at power amplifier output 12 Watts (40.85 dBm) at each DDS antenna port	
RF Reverse Path - SMR 800 MHz System bandwidth	15 MHz	
Frequency range	806 to 821 MHz	
Gain	30 dB at band center	
Gain flatness	1.5 dB across frequency range ≤ 1 dB variation across any 1.25 MHz channel	
Gain variation	3 dB over temperature and unit-to-unit	
Out-of-band rejection	–40 dB bandwidth ≤ 30 MHz	
Propagation delay	< 6 µs maximum	Excludes fiber delay
Variable propagation delay adjustability	Software adjustable in 1µs increments over a 0 to 63 µs range	

Table 2-6. System Typical Specifications, continued

PARAMETER	SPECIFICATION	REMARKS
Intermodulation	–62 dBc	
System noise figure	8 dB	
Composite RF output level	–10 to –30 dBm, adjustable in 20 steps of 1 ± 0.25 dB increments	With –40 dBm maximum composite input signal level at the remote unit.
Dynamic range	70 dB (two carriers)	
Physical/Environmental/ Electrical - Host Unit Dimensions (H×W×D)	3.5 × 17.2 × 15.3 inches (89 × 437 × 389 mm)	Dimension for width does not include the mounting brackets which can be installed for either 19- or 23-inch racks.
Mounting	19- or 23-inch rack	EIA or WECO
Weight	18 lbs. (8.2 kg)	
Weather resistance	Indoor installation only	
Operating temperature	0º to 50º C (32º to 122º F)	
Storage temperature	–40º to 70º C (–40º to 158ºF)	
Humidity	10% to 90%	No condensation
External alarm connector	Screw-type terminals	NO and NC relay contacts
DC power connector	Screw-type terminal strip	
RF coaxial cable connectors	N-type (female)	
Service connector	DB-9 (female)	RS-232 DTE interface
CAN connectors	RJ-45 jack	
Power input	± 24 or ± 48 Vdc	
Power consumption	55 watts	
Current rating	1 Amp at –48 Vdc	
Reliability at 25ºC	MTBF 80,000 hours	Excluding fans
Physical/Environmental/ Electrical - Remote Unit Cabinet dimensions (H×W×D)	28.4 × 17.4 × 24.9 inches (721 × 442 × 632 mm)	
Mounting	Wall or pole	Pole mounting requires the pole mount kit. (accessory)
Weight	120 lbs (54.4 kg)	Includes modules but not battery
Weather resistance	NEMA-3R, removable dust filter	
Operating temperature	–30º to 50º C (–22º to 122º F)	
Storage temperature	–40º to 70º C (–40º to 158ºF)	
Humidity	10% to 90%	No condensation
External alarm connector	Screw-type terminals	External alarm inputs

Table 2-6. System Typical Specifications, continued

PARAMETER	SPECIFICATION	REMARKS
AC power connection	3/4- or 1/2-inch conduit	Per local code or practice.
Antenna cable connector	N-type (female)	
Fiber optic cable size	0.375 to 0.875 inch (10 to 22 mm) diameter cable	9/125, single-mode, dark
Lightning protection	20 kA IEC 1000-4-5 8/20 µs waveform	
Service connector	DB-9 (female)	RS-232 DTE interface
Battery backup operation	1 hour	
Power input	120 or 240 VAC, 50 or 60 Hz	Operation on 240 VAC requires removal of the 120 VAC outlet.
Power consumption	1200 watts	
Current rating	9 Amps at 120 Vac	
Reliability at 25ºC	MTBF 50,000 hours	Excluding fans, battery, and air filter

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