

Figure 3-10. Configuring CAN Connections with Multiple Host Units

9 EMS COMPUTER CONNECTION

The service interface connection between the HU and the EMS computer is supported by a single DB-9 female connector. The service connector provides an RS-232 DTE interface. A three meter long straight-through RS-232 interface cable is available (accessory) for connecting the EMS computer to the HU. Use the following procedure to install the service interface cable:

1. Connect one end of the service interface cable (accessory) to the SERVICE port as shown in [Figure 3-11](#).
2. Route the service interface cable to the EMS computer and connect the free end of the cable to the computer’s RS-232 DCE port. Refer to the user manual provided with the computer to locate and configure the specified port.

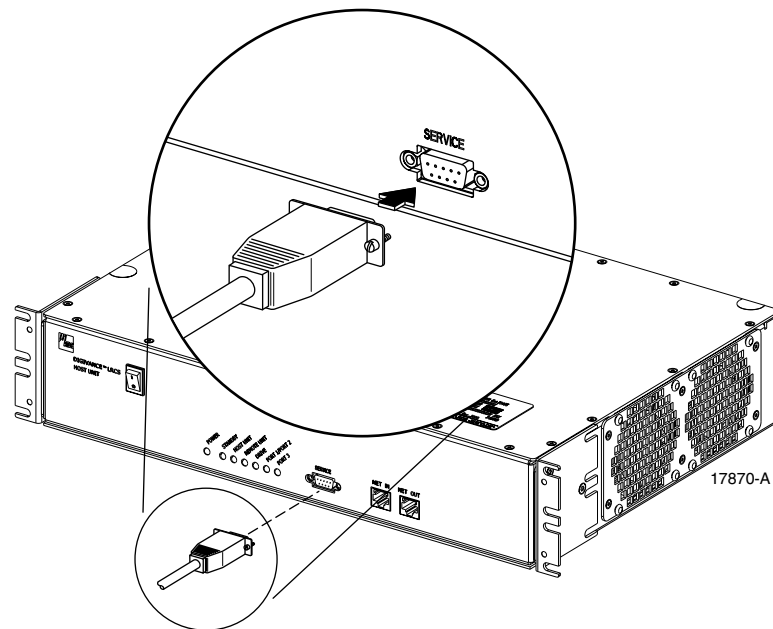


Figure 3-11. Service Interface Connection

10 EXTERNAL ALARM SYSTEM CONNECTIONS

The alarm interface between the HU and an external alarm system is supported by a six-terminal plug (with screw-type terminals) that connects to a receptacle mounted on the HU rear panel. The terminal plug provides connections to normally open (NO) and normally closed (NC) dry type alarm contacts for both major and minor alarms. A category 3 or 5 cable is typically used to connect the HU to the external alarm system. Use the following procedure to install the alarm wiring and connect it to the HU:

1. Obtain the required length of category 3 or 5 cable.
2. Route the cable between the HU and the external alarm system (if not already routed) and then cut to the required length. Allow sufficient slack for dressing and organizing the cable at the HU.
3. Strip back the outer cable sheath and insulation to expose the wires at both ends of the cable and strip back 0.2 inches (5 mm) of insulation from each wire.
4. Connect the Major alarm wire pair to the MAJOR COM/NC or MAJOR COM/NO terminals (whichever is required by the external alarm system) on the HU alarm terminal connector (supplied with HU) as shown in [Figure 3-12](#).

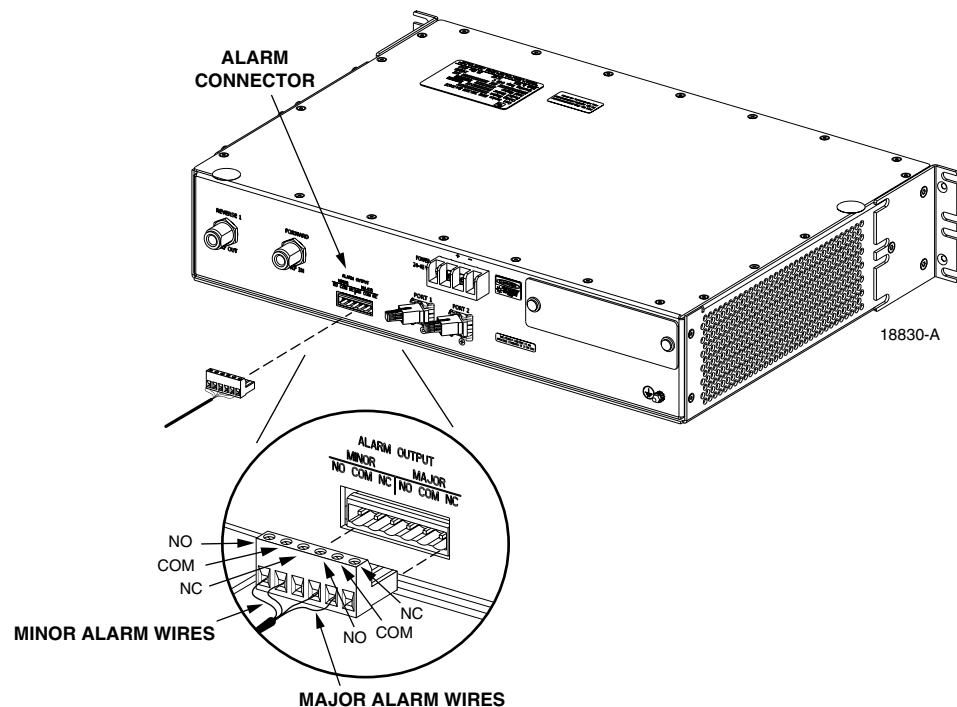


Figure 3-12. External Alarm System Connections

5. Connect the Minor alarm wire pair to the MINOR COM/NC or MINOR COM/NO terminals (whichever is required by the external alarm system) on the HU alarm terminal connector (see [Figure 3-12](#)).

6. Connect the Major and Minor alarm wire pairs to the appropriate terminals on the external alarm system.
7. Dress and secure cable per standard industry practice.

11 DC POWER CONNECTIONS

The HU is powered by ± 21 to ± 60 VDC power (nominal ± 24 or ± 48 VDC). The power is fed to the HU through a screw-down type terminal strip located on the rear side of the unit. Power to the HU must be supplied through a fuse panel such as the 20 position PowerWorx GMT Fuse Panel (available separately) and the power must be protected with a 3 Amp GMT fuse. Use the following procedure to install the power wiring:

1. Obtain one pair of #18 AWG (1.00 mm) red and black insulated copper wire for use as the power wiring.
2. Terminate one end of each wire with a fork terminal as shown in [Figure 3-13](#).

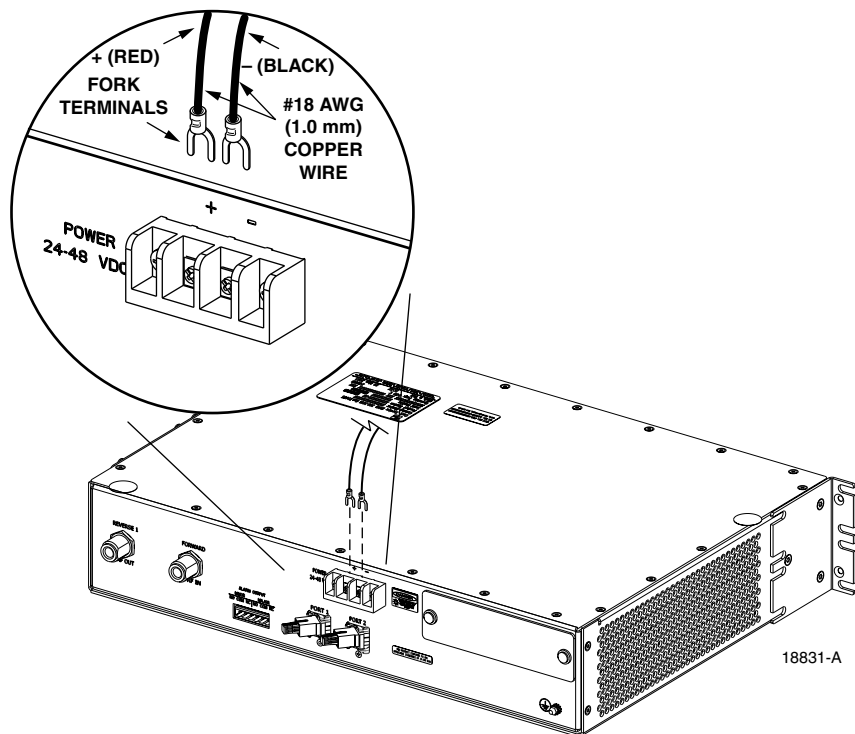


Figure 3-13. DC Power Connections

3. Connect the power wires to the power terminal strip at the rear of the HU.
4. Route the free ends of the wires to the fuse panel and locate the terminals that will be used for the power feed. Refer to the user manual provided with the fuse panel for specific information.

5. Remove the fuse from the circuit that will power the HU.
6. Connect the power wires to the appropriate terminals as specified in the fuse panel user manual.
7. Dress and secure the power wiring at the fuse panel and the HU. The procedure for checking the voltage level and verifying that the HU is ready to power up is provided in SECTION 4: OPERATION.

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SECTION 4: OPERATION

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1 BEFORE STARTING OPERATION

This section provides guidelines for turning-up the Digivance system, verifying that all units are operating properly, testing to ensure that all performance requirements are satisfied, and correcting any installation problems. This process assumes that the various units have been installed in accordance with the system design plan.

1.1 Tools and Materials

The following tools and materials are required in order to complete the procedures in this section:

- Portable spectrum analyzer or RF power meter
- AC/DC voltmeter
- External attenuators (if specified in system design plan)
- PC-type computer with Digivance Element Management System (EMS) Version 2.0 software installed
- Straight-through RS-232 DB-9 interface cable (ADC part # 1192835)
- Handset
- Pencil or pen
- Writing pad

1.2 Readiness Check

Before starting the turn-up process, inspect the complete Digivance system to verify that all components of the system are ready to be powered-up. This will ensure that no units of the system will be damaged during turn-up and that all existing systems will continue to function properly.

1.2.1 Host Unit Installation Checks

Complete the following checks at the HU prior to starting the turn-up process:

1. Verify that the ON/OFF switch on the HU is in the **OFF** position (press **0**).
2. At the fuse panel, install a 3 Amp GMT fuse in the circuit that supplies DC power to the HU.
3. Using a DC voltmeter, verify that the DC voltage level at the HU power terminals is between ± 21 to ± 60 VDC power (nominal ± 24 or ± 48 VDC). The DC power provided to the HU can be either polarity.
4. Verify that all electrical and optical connections have been completed and that all optical fibers, coaxial cables, and wires are properly routed and secured.

1.2.2 Remote Unit Installation Checks

Complete the following checks at the RU prior to starting the turn-up process:

1. Verify that the ON/OFF switch on the STM is in the **OFF** position (press **0**).
2. Verify that the MUTE/NORM/RESET switch on the LPA is in the **MUTE** position.
3. At the AC breaker box, close the circuit breaker for the circuit that supplies AC power to the RU.
4. Using an AC voltmeter, verify that the AC voltage level at the AC outlet is between 110 and 120 VAC (for 120 VAC powered systems) or between 220 and 240 VAC (for 240 VAC powered systems).
5. Verify that all electrical and optical connections have been completed and that all optical fibers, coaxial cables, and wires are properly routed and secured.

2 TURN-UP SYSTEM AND VERIFY OPERATION

The process of turning-up the system and verifying operation involves powering up the various system components, verifying that the LED indicators show normal operation, setting the site number and name, adjusting the RF signal levels, and adjusting the path delay.

2.1 Turn-Up Procedure

Each Digivance system should be turned-up separately before being networked together with multiple systems through the CAN interface. Use the following procedure to turn-up each Digivance system:

1. Temporarily disconnect the external alarm system or notify the alarm system provider that testing is in progress.
 2. If the HU is networked together with multiple HU's, temporarily disconnect the CAN cables from the NET IN and NET OUT ports of the HU.
- **Note:** By default, all HU's and RU's are programmed with the same site number and name. This can cause problems for the EMS if multiple HU's with the same site number and site name are networked together through the CAN interface. It is therefore necessary to temporarily disconnect the CAN interface cables from the HU when configuring the system for operation until a unique site number and name can be assigned.
3. Determine if the forward path composite input signal level at the Host Unit FORWARD RF IN port is appropriate for the required RF output signal level and adjust by installing an **external attenuator** if necessary. Refer to [Section 2.3](#) for the calculation and adjustment procedure.
 4. Connect the EMS computer (if not already connected) to the SERVICE connector on the HU or STM front panel. If necessary, a separate laptop computer loaded with the EMS Version 2.0 software can be temporarily connected and used to initially configure the system.
 5. Place the ON/OFF switch on the HU in the **ON** position (press **I**).
 6. Make sure the switch on the LPA is in the **MUTE** position and then place the ON/OFF switch on the STM in the **ON** position (press **I**).
 7. Wait 6 to 8 seconds for the HU and the RU modules to initialize and then observe the LED indicators on the HU, STM and LPA. Refer to Section 5 for the troubleshooting procedures if the indicators do not respond as specified.

HOST UNIT	SPECTRUM TRANSPORT MODULE	LINEAR POWER AMPLIFIER
POWER – Green	AC POWER – Green	STATUS – Steady green
STANDBY – Off	STANDBY – Off	
HOST UNIT – Green	HOST UNIT – Green	
REMOTE UNIT – Green	STM – Green	
DRIVE – Green, Yellow, or Red	PA – Green	
PORT 1/PORT 2 – Green	VSWR – Green	
	PORT 1/PORT 2 – Green	

8. Start up the EMS Version 2.0 software program. The EMS main window will open as shown in [Figure 4-1](#). Note: The EMS software should be installed on a PC-type computer and the PC's COM port should be configured to interface with the HU. For information about installing the EMS software and configuring the PC's COM port, refer to the Digivance Element Management System Software User Manual (ADCP-75-125).

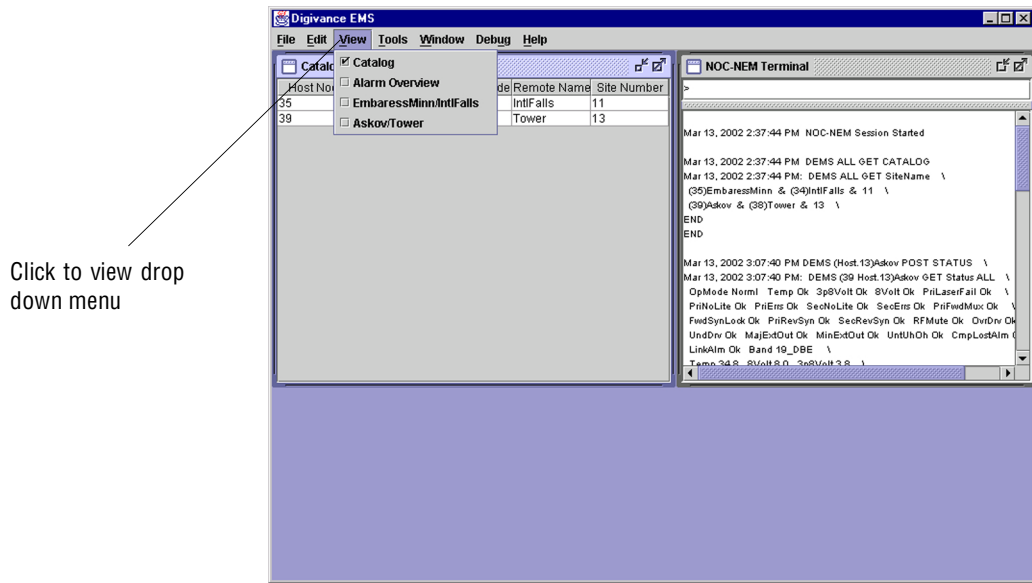


Figure 4-1. Digivance Element Management System Main Window

9. Open the **View** drop down menu and connect to the Host and Remote pair by selecting “NotNamed/NotNamed”. The HOST **Alarms** display and the REMOTE **Alarms** display will open within the main window as shown in [Figure 4-2](#).
10. Verify that the Host and Remote Unit are loaded with the current system software and download the current software to both the Host and the Remote unit if necessary. Refer to [Section 2.2](#) for details.

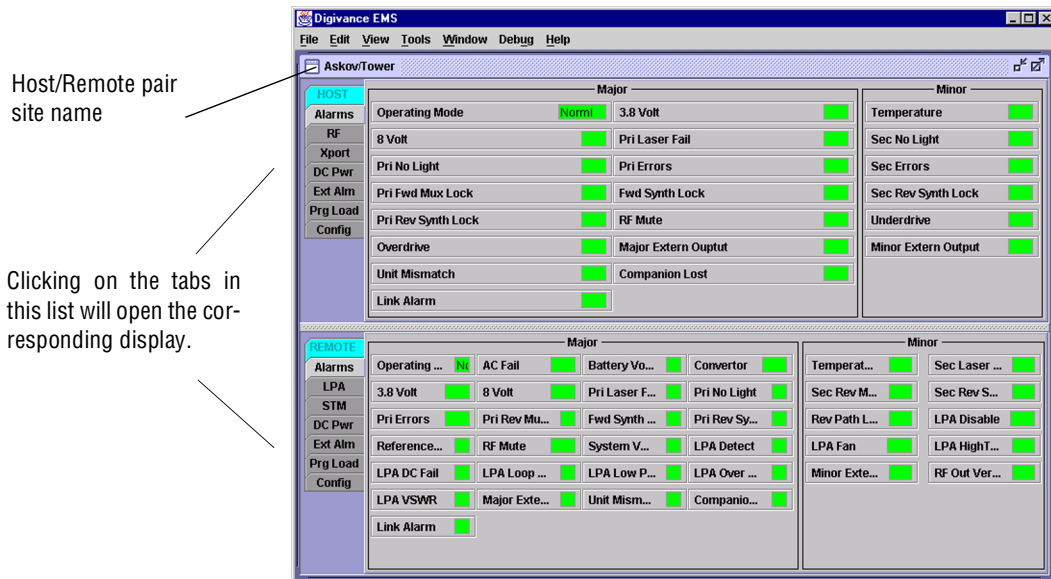


Figure 4-2. Selecting Display Tabs