ADTRAN®
Quick Start Guide

TRACER 64x0 Integrated System

SYSTEM DESCRIPTION

The TRACER 64x0 provides license-free scalable connectivity for service providers and corporate networks. These radios feature two modular network interface slots that can accommodate various combinations of T1, E1, and Ethernet option cards up to 8x T1/E1 (16.384 Mbps). The TRACER 6410 and TRACER 6420 provide carrier class point-to-point connectivity up to thirty miles in the 2.4 GHz and 5.8 GHz license-free Industrial, Scientific, and Medical (ISM) bands, respectively. The following interface modules are available for use in the TRACER 64x0 system:

- Quad T1 Module (P/N 1280040L1) – Provides four T1 circuits through four RJ-45 connectors.
- Quad E1 Module with 120Ω Interface (P/N 1280044L1) – Provides four E1 circuits through four RJ-45 connectors.
- Quad E1 Module with 75Ω Interface (P/N 1280044L2) – Provides four E1 circuits through a single DB-25, 75Ω connector. An optional breakout panel (P/N 1280060L1) can be used to provide BNC interfaces for E1 connections.
- Quad Ethernet Switch Module (P/N 1280050L1) – Provides four 10/100BaseT/TX interfaces through four RJ-45 connectors.

NETWORK TURNUP PROCEDURE

1. After unpacking the unit, inspect it for possible shipping damage. If the equipment has been damaged in transit, immediately file a claim with the carrier; then contact ADTRAN Customer Service.
2. Install modules into module slots before powering the unit. TRACER 64x0 modules are not hot-swappable. Cover any unused module slots with cover plates.

> **CAUTION** *Open module slots (slots without installed modules or covers) must be covered for proper airflow through the TRACER 64x0 system. Do not operate the unit with open module slots.*

3. Connect an antenna or attenuator to the N-type **ANTENNA** connector located on the rear panel of the unit. The TRACER 64x0 is designed for operation with 50Ω of impedance on the RF connection. Operating the unit without proper termination can result in transmitter damage. Additionally, ensure that the RF signal level at the TRACER 64x0 receiver is below -30 dBm. When bench testing TRACER 64x0 systems back to back at full power, 60 dBm attenuation is required between units. A powerful signal without the proper attenuation can damage the receiver.
4. Properly ground your system and connect it to an appropriate power source. For more details on grounding and connecting the TRACER 64x0 to a power source, refer to the power and grounding Quick Start Guide provided with your system.

NETWORK TURNUP PROCEDURE (*continued*)

5. To configure the TRACER 64x0 system, connect using a VT100 terminal to the CRAFT port (located on the front panel) or a 10/100BaseT/TX Ethernet connection to the MGMT port (located on the rear panel).

> **NOTE** *The TRACER 64x0 menu system is not available using the* **AUX RS232** *interface located on the front panel. Refer to the* ***TRACER 64x0 Integrated System Manual*** *for more details on the* **AUX RS232** *interface.*

Using the Front Panel CRAFT Port

To configure the TRACER 64x0 system using the front panel **CRAFT** port, you will need a VT100 terminal (or PC with VT100 terminal emulation software) and a straight-through serial cable with a DB-9 (male) connector on one end and the appropriate interface for your terminal or PC on the other end. Use the serial cable to connect the **CRAFT** port on the front panel of the unit to the VT100 terminal or PC. Configure the VT100 terminal or PC for 9600 baud, 8 data bits, no parity bits, and 1 stop bit. Press <**Enter**> until the **login password** prompt appears. The default password is **password** (lowercase).

Using the Rear Panel MGMT Port

To configure the TRACER 64x0 system using the rear panel **MGMT** port, you will need a 10/100BaseT/TX Ethernet cross-over cable or a straight-through Ethernet cable and a hub. The TRACER 64x0 default IP address is 192.168.0.10. To establish a Telnet connection between your PC and the TRACER system, be certain that the IP address of your PC is on the same subnet as the TRACER **MGMT** interface (192.168.0.0 /24). Telnet to the TRACER system (192.168.0.10) and press <**Enter**> until the **login password** prompt appears. The default password is **password** (lowercase).

TRACER SIGNAL LEVEL VERIFICATION

Real-time signal levels (transmit and received power) for both the local and remote units are available in dBm on the **System Status** screen and the **RF Link Configuration** screen of the TRACER 64x0 menu system. The received power signal level is displayed within ±5 dBm accuracy and the transmit power signal level is displayed within ±1 dBm accuracy. The TRACER 64x0 also provides two bantam interfaces (**RSSI** and **GND**) for Receive Signal Strength Indicator (RSSI) monitoring from the front panel of the unit. The RSSI voltage is a function of the signal strength at the receiver and is used to measure the received signal strength. RSSI varies from approximately 0 to 5 VDC. An RSSI calibration sheet is shipped with the system to provide the installer a cross-reference between actual received signal level (in dBm) and RSSI voltage. This sheet is useful for verifying link budget calculations and ensuring proper equipment installation.

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FRONT PANEL LEDs

With the TRACER 64x0 system powered on, the front panel LEDs provide visual information about the status of the system. The following table describes the LED operation.

For these LEDs...	This color light...	Indicates that...
PWR	Green (solid)	the TRACER is connected to a power source.
	Off	the TRACER is not currently powered up.
TEMP **TRACER 64x0 high power systems only*	Green (solid)	the TRACER 64x0 high power system temperature is within normal range.
	Red (solid)	the TRACER 64x0 high power system has an active temperature alarm.
FAN **TRACER 64x0 high power systems only*	Green (solid)	the TRACER 64x0 high power system fans are working properly.
	Red (solid)	one or more of the TRACER 64x0 high power system fans are not functioning.
TST **TRACER 6420 (L1) only*	Amber (flashes once)	power-up self-test is in progress. If the LED continuously flashes or remains on (solid) after 10 seconds, the unit has failed self-test.
STATUS MOD1 and MOD2	Green (solid)	the module is installed and functioning properly.
	Red (solid)	at least one port on the installed module is currently in alarm.
	Off	no module occupies the slot.
PLAN A	Green (solid)	the TRACER is transmitting on Frequency Plan A.
	Off	the TRACER is not transmitting on Frequency Plan A.
PLAN B	Green (solid)	the TRACER is transmitting on Frequency Plan B.
	Off	the TRACER is not transmitting on Frequency Plan B.
RF LO	Red (solid)	the RSSI level is below suggested minimum threshold (approximately 10 dBm above the minimum receive sensitivity).
RF DOWN	Red (solid)	there is a communication problem between the local and remote TRACER systems.

TRACER 64x0 MENU TREE

- Main Menu (M)
  - System Status (0)
  - System Configuration (1)
    - Frequency Plan
    - Rx Quality
    - Rx Power
    - Tx Power
    - Site Name
    - Serial Number
    - System Time
    - System Date
    - Elapsed Time
    - Craft Port Baud
      - 9600
      - 19200
      - 38400
      - 57600
      - 115200
    - Inactivity Logout
      - off
      - 5 min
      - 10 min
      - 15 min
      - 30 min
      - 45 min
      - 60 min
    - Password
    - Performance Stats Clear
    - Factory Default
  - RF Link Configuration (2)
    - Rx Power
    - Tx Power
    - RF Band Plan
    - Link Encryption
      - Band 1
      - Band 2
      - Band 3
    - Subkey (0 - 2)
  - RF Link Performance History (3)
    - Link Error History
    - Received Power History
    - Signal Quality History
  - Datapath Provisioning (4)
    - Total Active Channels
    - Module 1 Channels
    - Module 2 Channels
  - Module 1 Menus (5)
  - Module 2 Menus (6)
  - Management/Utilities (7)
    - Management/SNMP Port Configuration (0)
      - IP Address
      - Net Mask
      - Gateway
      - MAC Address
      - SNMP Mgmt
      - SNMP Get Community
      - SNMP Set Community
      - SNMP Trap Community
      - SNMP Trap Hose (0 - 4)
    - Ping Utility (1)
      - Ping Address
      - Number of Packets
      - Packet Size
      - Timeout
      - Ping Command
    - Firmware Upgrade (2)
      - File Xfer Method
      - TFTP Server
      - Filename
      - Upgrade Destination
      - Command (..., Start, Abort)
      - Local Current Status
      - Previous Status
      - Remote Current Status
      - Previous Status
      - Progress
    - RF Link Management Bridge Configuration (3)
      - Bridge Operation
      - Inactivity Timeout
  - System Alarms (8)
    - Link Alarm
    - Local Unit
    - Remote Unit
    - Fan Alarms
    - Temp Alarms
    - Persistent Alarms Clear
      - Delay
      - Packets (Tx, Rx, Lost)