

# TRACER 4103/4203



## Compact License-free Dual T1 Radios

### Product Features

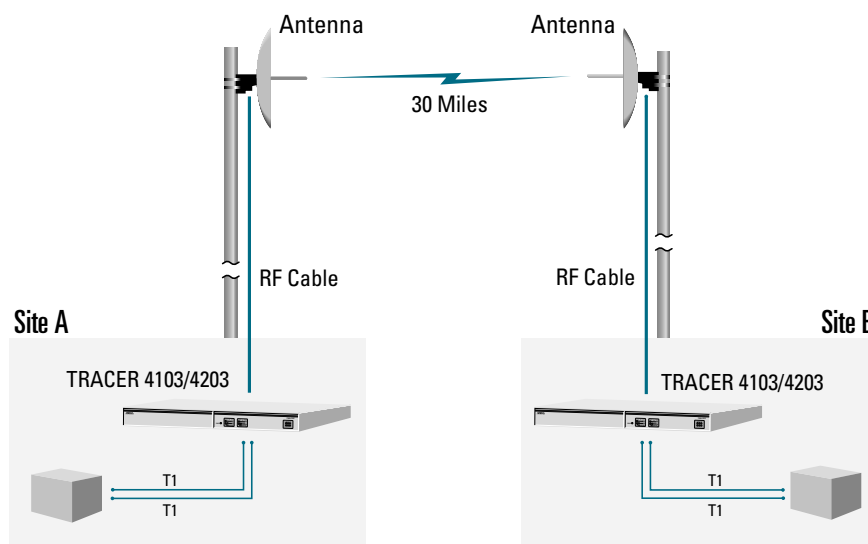
- Small footprint, 1U, 19-inch rack space
- Digital microwave radio
- Dual T1s
- No license required per FCC Rules Part 15.247
- Direct-sequence spread spectrum
- 2.4 to 2.4835 GHz and 5.725 to 5.850 GHz ISM band
- Remote Loopback
- Point-to-point, up to 30 miles
- Industry-leading five-year warranty

ADTRAN's TRACER® 4103 and TRACER 4203 are license-free spread spectrum digital microwave radios designed to deliver dual T1 capacity from a single compact platform at an extremely economical price. These radios combine the functionality of Baseband Processing and Radio Frequency Conversion into a single 1U (1.75") x 19" chassis. TRACER 4000 Series radios are excellent wireless connectivity solutions for applications where cabinet or rack space is limited.

Exciting additions to ADTRAN's widely deployed TRACER Series, the TRACER 4103 and 4203 transport two independent T1 digital signals up to 30 miles point-to-point. TRACER 4103 operates at 2.4 GHz and TRACER 4203 operates at 5.8 GHz in the Industrial, Scientific, and Medical (ISM)

frequency band as authorized under Part 15.247 of the FCC rules. These radios support any T1 framing and line-code format and provide two DS-1/DSX-1 interfaces. A separate maintenance channel is embedded in the TRACER radio frequency (RF) data stream to provide remote configuration and monitoring functionality. This maintenance channel is provided with no impact to the T1 bandwidth capacity.

By using the latest technology and incorporating ISO 9001 manufacturing processes, ADTRAN has designed the TRACER Series to provide the highest levels of reliability and durability. As a result, TRACER Series products are supported by an industry-leading five-year warranty and an award-winning technical support team.





# TRACER 4103/4203

## Compact License-free Dual T1 Radios

### Product Specifications

#### Transmitter

- **Output Power:** +20 dBm maximum
- **Frequency Band:** 2.4 to 2.4835 GHz (TRACER 4103), 5.725 to 5.850 GHz (TRACER 4203)
- **Channel Bandwidth:** 40 MHz

#### Receiver

- **Receive Level Threshold (10<sup>-6</sup> BER):** -93 dBm (TRACER 4103), -90 dBm (TRACER 4203)
- **Receive Level Max:** -30 dBm
- **Frequency Range:** 2.4 to 2.4835 GHz, (TRACER 4103), 5.725 to 5.850 GHz (TRACER 4203)
- **Channel Bandwidth:** 40 MHz

#### Frequency Plan

##### 4103

- **A:** TX 2.422 GHz, RX 2.462 GHz
- **B:** TX 2.462 GHz, RX 2.422 GHz

##### 4203

- **A:** TX 5.747 GHz, RX 5.827 GHz
- **B:** TX 5.827 GHz, RX 5.747 GHz

#### Spread Spectrum Data Pump

- **Modulation:** QPSK
- **Spreading Method:** Direct sequence
- **Codes:** 10
- **Code Length:** 120
- **Processing Gain:** >12 dB
- **Spreading Rate:** 12 times

#### Radio Frequency Interface

- **Preselector Filter:** Capacity-tuned
- **Antenna Port:** N-type, female
- **Impedance:** 50 ohms

#### Digital Interface

- **Capacity:** 2 x T1
- **Data Rate:** 2 x 1.544 Mbps
- **Digital Interface:** DS-1/DSX-1
- **Connection:** RJ-48C, Bantam
- **Monitor:** Bantam
- **Line Code:** AMI, B8ZS
- **Framing:** SF, ESF
- **Alarms:** YEL/AIS, Red, BPV
- **Loopbacks:** Local and remote

#### User Interface

- **Front Panel:** Status LEDs, T1 loopback
- **Diagnostics:** T1 loopback, self-test
- **Test Points:** RSSI, transmit power, I&Q
- **Alarm Contacts:** Normally open or closed

#### Terminal Interface

- **Function:** Menu-driven user interface, password-protected, event history
- **Data Rate:** 9600 bps
- **Emulation:** VT100
- **Connection:** DB-25 (RS-232)

#### Mechanical and Environmental

- **Operating Temperature:** -25° to 65° C
- **Width:** 16.75" (for 19" EIA rackmounting)
- **Height:** 1.75" (1U)
- **Depth:** 9.5"
- **Humidity:** 95%, non-condensing
- **Weight:** 6 lbs.

#### Power

- **Input Voltage:** 21–63 vDC, either polarity referenced to ground
- **Power Consumption:** 16 watts (amperage=16 watts/voltage)
- **DC Connector:** 2-pin plug-in

### Ordering Information

Equipment	2.4 GHz Part #
TRACER 4103, Freq A	1280TRC242T1R1A
TRACER 4103, Freq B	1280TRC242T1R1B
AC Power Supply	1280650L1

Equipment	5.8 GHz Part #
TRACER 4203, Freq A	1280TRC582T1R1A
TRACER 4203, Freq B	1280TRC582T1R1B
AC Power Supply	1280650L1

Specifications subject to change without notice.  
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