TRACER® 4208

Compact License-free Eight T1 Radio

Product Summary

- Key applications:
  - Cellular backhaul
  - Service provider network extension
  - Corporate networks and campus connectivity
  - Redundant link
  - Disaster recovery
- Scalable high-capacity wireless connectivity up to 8 T1s
- Rapid return on investment
- Economical and reliable alternative to wireline
- Small footprint – 1U, 19-inch rack space
- No license required per FCC rules part 15.247
- 5.725 to 5.850 GHz ISM band operation
- Remote loopback and configuration
- Point-to-point link distances up to 30 miles
- Multiple software selectable channel plans
- Industry-leading five-year North American warranty

The TRACER® 4208 is a scalable license-free digital microwave radio from ADTRAN™ that provides economical, wireless, high-capacity connectivity for service providers and corporate networks. The TRACER 4208 provides up to eight T1s allowing users to grow their networks as system requirements migrate. It operates in the 5.8 GHz ISM band to provide high bandwidth wireless solutions, at a significantly lower cost than competing products. The monthly cost savings of ADTRAN's license-free wireless solutions generate a rapid return on investment while lowering overall communications costs. Additionally, in applications where quick installation and time-to-market are essential, or where existing high bandwidth infrastructure is inadequate or nonexistent, the TRACER 4208 radio provides rapid deployment and reliable carrier-grade connectivity.

TRACER 8xT1 systems are ideally suited for many applications such as backhauling cellular traffic from high-capacity hub or cell sites, upgrading existing wireless links to support higher bandwidths, extending a service provider's network and presence, interconnecting corporate networks within a campus community, providing a redundant link, or rapid deployment for disaster recovery.

Because TRACER operates in the license-free ISM band, delays and expenses associated with frequency coordination and licensing are eliminated, allowing rapid delivery of high-bandwidth connectivity to those areas of the network that require it. Locations previously unreachable by existing copper or fiber networks can now be seamlessly integrated into both public and private networks.

The TRACER 4208 features Forward Error Correction (FEC) allowing the receiver to detect and correct any errors in the transmitted data stream. This radio also features dynamic receiver sensitivity that is scalable to meet existing bandwidth requirements. In situations where 8xT1 connectivity is not required initially, the bandwidth can be decreased to accommodate 4xT1 or 2xT1 applications, allowing for improved RX sensitivity at the lower data rates.

The TRACER 4208 supports multiple channel plans (three total) for flexible co-location at tower sites. TRACER channel plans are easily changed in the device configuration menus without the added expense of hardware upgrades. TRACER's outstanding performance enables excellent link distances with high confidence and less expensive infrastructure than other license-free T1 transport alternatives. Full-duplex data transmission is provided and 99.999% carrier-class reliability can be achieved with proper link engineering design.

TRACER 4000 series radios occupy only 1 RU and are excellent wireless connectivity solutions for applications where cabinet or rack space is limited.

The TRACER series is intended for use in point-to-point situations, and features VT100 management of both ends of the link without impacting throughput. Management functions include control, status, and alarm capabilities.

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 in North America and an award-winning technical support team.

ADTRAN®

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TL 9000
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Product Specifications

Transmitter
- **Output power:** +20 dBm (100 milliwatts) max
- **Frequency band:** 5.725 to 5.850 GHz
- **Channel bandwidth:** 15 MHz

Receiver
- **Receive level threshold (10^{-6} BER):**
  -85 dBm at 8xT1
  -89 dBm at 4xT1
  -92 dBm at 2xT1
- **Maximum receive level:** -30 dBm
- **Nominal receive level:** -55 dBm
- **Frequency range:** 5.725 to 5.850 GHz
- **Channel bandwidth:** 15 MHz

Frequency Plans
**Plan A Center Frequencies
TRACER 4208**
- A1 TX 5.742 GHz, RX 5.822 GHz
- A2 TX 5.747 GHz, RX 5.827 GHz
- A3 TX 5.753 GHz, RX 5.833 GHz

**Plan B Center Frequencies
TRACER 4208**
- B1 TX 5.822 GHz, RX 5.742 GHz
- B2 TX 5.827 GHz, RX 5.747 GHz
- B3 TX 5.833 GHz, RX 5.753 GHz

RF Interface
- **Antenna connector:** female type-N
- **Impedance:** 50 ohms

Digital Interface
- **Capacity:** 8xT1 (ANSI T1.403)
- **Data rate:** 8x1.544 Mbps
- **Interface type:** DSX-1
- **Connectors:** RJ-48C
- **Line code:** AMI, B8ZS
- **Framing:** SF, ESF
- **Alarms:** AIS, Red, Yellow, BPVs, LOS
- **Loopbacks:** Local line, local link, and remote link

User Interface
- **Front panel:** Status LEDS
- **Diagnostics:** Self-test LED, T1 loopback
- **Test points:** RSSI, transmit power
- **Alarm contacts:** RF carrier loss, normally open and closed

Terminal Interface
- **Function:** Menu-driven user interface, monitor and control of local and remote end of link, password protection, event history
- **Emulation:** VT100
- **Data rate:** 9600 bps
- **Physical interface:** Female DB25
- **Electrical interface:** RS-232

Mechanical and Environmental
- **Operating temperature:** -25ºC to 65ºC
- **Width:** 17.12" (for 19" EIA rackmounting – hardware accommodates both 19 and 23-inch bays)
- **Height:** 1.72" (1U)
- **Depth:** 10.80"
- **Humidity:** 95%, non-condensing
- **Weight:** 7 lbs.

Compliance
- FCC Part 15.247

Power
- **Input voltage:** 21-60 vDC, either polarity referenced to ground
- **Power consumption:** 18 Watts, maximum
- **DC connector:** 2-pin plug in

Ordering Information

Equipment	Part #
TRACER 4208, Freq A	12804208L1A
TRACER 4208, Freq B	12804208L1B
AC Power Supply	1280650L1