

REFARMED T-96SR HI SPEC 19.2 KBPS WIRELESS MODEM

380-512 MHz
132-174 MHz



The **T-96SR** wireless modem provides a high-speed refarming compliant data link suitable for a wide variety of applications with system security of diagnostics reporting.

The **T-96SR** supports the Dataradio Inter-Operability Standard (DI-OS) to provide compatibility with the T-96S, RNet™ 9600 & 9600S, and the Dataradio T-Modem. If your application requires a base station or repeater configuration, the T-96SR is designed to work with the T-Base base station / repeater. The T-96SR is available in UHF and VHF bands.

Designed for speed and efficiency, the T-96SR provides over-the-air rates of 19200, 9600, or 4800 bps in a 25 kHz channel and 9600 or 4800 bps in a 12.5 kHz channel.

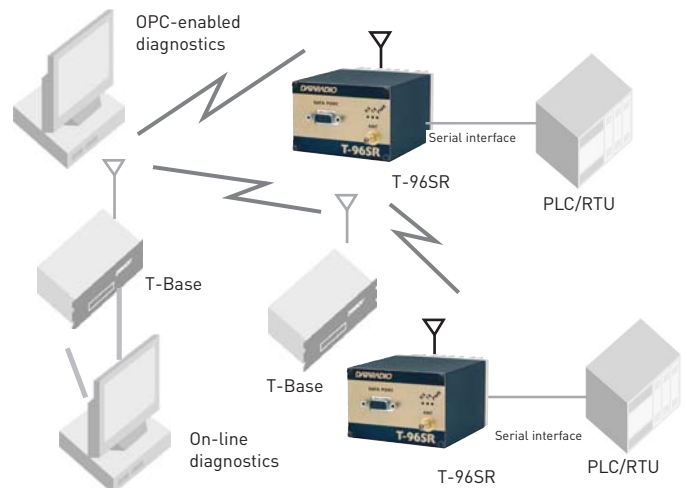
Selectable operating modes provide flexibility: RS-232 compatible, simplex or half-duplex operation, RTS-CTS handshake protocol with the option for configuring any two units as a digital repeater. Transparent, asynchronous serial data formats are supported, such as Modbus™, Modbus-RTU™, DNP 3.0™, AB DF1™ and various other protocol formats.

Front panel LEDs provide visual indication of transmit, receive and power. Easy-to-use Windows®-based Field Programming Software provides T-96SR's programming and diagnostics interface. Programming Software setup provides a unique programming ID that allows diagnostic reporting both locally and over-the-air from any location.

Real-time, non-intrusive online diagnostics report received signal strength (RSSI), RF power output, supply voltage, and other radio performance statistics. Offline diagnostics offer unit programming, link testing and RF path verification. The T-96SR's diagnostic output supports Dataradio's OPC Enabled Diagnostics.

The **T-96SR** was designed specifically for data transmission to provide an economical solution without the necessity of expensive options. Low cost options include DIN rail mounting and the SPS 2412/75 24VDC to 12VDC voltage converting power supply. Contact your sales representative for T-96SR options. Dataradio products are covered by a standard two-year warranty.

System Diagram



T-96SR SPECIFICATIONS

MODEM

| | | |
|-----------------------------|--|---|
| Channel Bandwidth | 12.5 kHz | 25 kHz |
| Data rate [PC programmable] | 4800, 9600 bps | 4800, 9600, 19200 bps ¹ |
| Modulation | DRCMSK | |
| Signal Level | EIA RS-232C | |
| Data Format | Transparent asynchronous serial | |
| Word Length | 7 or 8 bit words, 1 or 2 stop bits | |
| Parity ² | Even, odd, or none | |
| Handshake | RTS-CTS | |
| RTS/CTS Delay ³ | 30 msec | |
| Bit error rate | 1 x 10 ⁻⁵ @ 1.0 μV (9600 bps) | 1 x 10 ⁻⁶ @ 1.0 μV (4800, 9600 bps) 2 x 10 ⁻⁵ @ 1.7 μV (19200 bps) |

GENERAL

| | | |
|--------------------------|--|--|
| Band | UHF | VHF |
| Frequency Range | 380-512 MHz ⁴ | 132-174 MHz |
| Channel Bandwidth | 12.5 or 25 kHz | 12.5 or 25 kHz |
| FCC Type Acceptance | NP42424046-001 | NP42424016-001 |
| FCC Emission Designators | 9K30F1D, 15K3F1D | 9K30F1D, 15K3F1D |
| IC Type Acceptance | 2984195432A | 2984195430A 2984195431A |
| IC Emission Designators | 9K30F1D, 11K0F1D, 15K3F1D, 16K0F1D | 9K30F1D, 11K0F1D, 15K0F1D, 16K0F1D 9K30F1D, 11K0F1D, 15K3F1D, 16K0F1D |
| European Approval | CE Mark (403-470 MHz) ⁵ | CE Mark |
| ETSI | 300.113 (403-470) | 300.113 |
| Current Drain | | |
| Transmit @ 13.3 VDC | 2.1 A | 2.1 A |
| Receive @ 13.3 VDC | 150 mA | 150 mA |
| Frequency Tolerance | 1.5 ppm | 2.5 ppm |
| Operating Voltage | 10-16 VDC | |
| Operating Temperature | -30° C to + 60°C | |
| Dimensions (W x H x D) | 4.5" x 3.25" x 2.12" [11.4 cm x 8.3 cm x 5.4 cm] | |
| Shipping Weight | 1.18 lbs. (0.54 kg) | |
| Operating Mode | Simplex or half-duplex | |
| RF Connector | SMA | |
| Data I/O Connector | DE-15 female | |
| Front Panel Indicators | Power, transmit, receive | |
| Timeout Timer | 120 seconds switchable on/off | |
| Diagnostics Online | Supply voltage, internal temperature, forward and reverse power, RSSI | |
| Diagnostics Offline | Same as diagnostics online plus: Tx B+ voltage, analog supply voltage, & Tx test tones | |
| Bandwidth without tuning | 450-470: 20 MHz | 132-150: 18 MHz |
| | all other bands: 16 MHz | 150-174: 24 MHz |

RECEIVER

| | |
|-------------------|---------------------------------|
| Receive Operation | Continuous (no tuning required) |
|-------------------|---------------------------------|

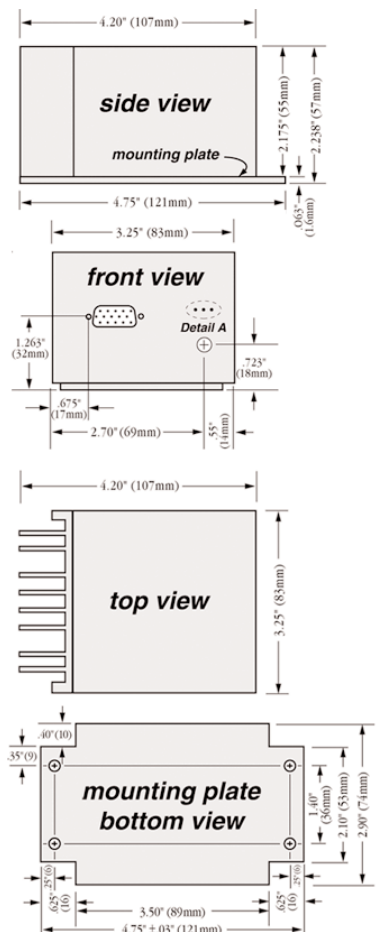
TRANSMITTER

| | |
|--------------------|--|
| Transmit Operation | Continuous (no tuning required) |
| RF Output Power | 1-5 watts, software adjustable |
| Duty Cycle | 50% @ 5 watts, 30 seconds maximum transmit - extended transmit with cooling fan option |

DATA INTERFACE CONNECTOR: DE-15

| Pin | Description |
|-----|--|
| 1 | Ground |
| 2 | RXD: Receive Data |
| 3 | TXD: Transmit Data |
| 4 | Test Audio |
| 5 | +V Supply |
| 6 | Ground |
| 7 | CTS: Clear to Send |
| 8 | RTS: Request to Send |
| 9 | DCD: Data Carrier Detect |
| 10 | +V Supply |
| 11 | CS0 Channel Select bit 0 |
| 12 | CS1 Channel Select bit 1 |
| 13 | CS2 Channel Select bit 2 |
| 14 | RSSI Receive Signal Strength Indicator |
| 15 | PGM Program Mode Select |

MECHANICAL LAYOUT



¹ 19200 requires 25 kHz channel. ² 7-bit no parity is not supported. ³ Extended RTS/CTS time options for repeater use. ⁴ 380-403 MHz frequency band is not FCC or IC type approved.

⁵ CE approval is limited to 4800 bps in a 12.5 kHz channel.