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
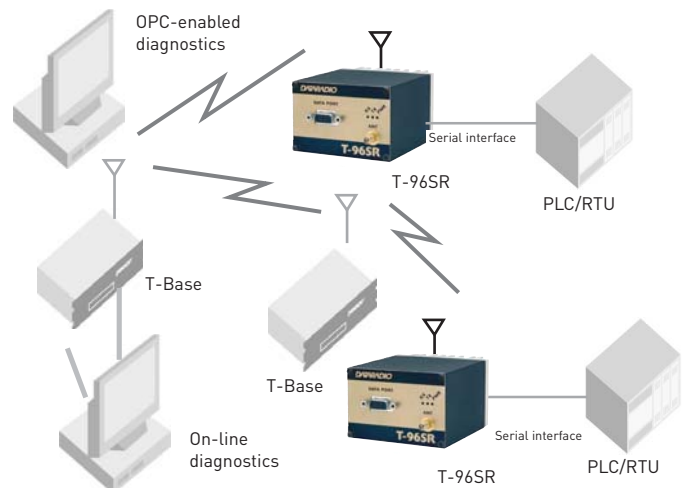
T-96SR SPECIFICATIONS

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	1×10^{-5} @ 1.0 µV (9600 bps)	1×10^{-6} @ 1.0 µV (4800, 9600 bps) 2×10^{-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, 15K3FID	
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	-30º C to + 60ºC		
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 all other bands: 16 MHz	132-150: 18 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

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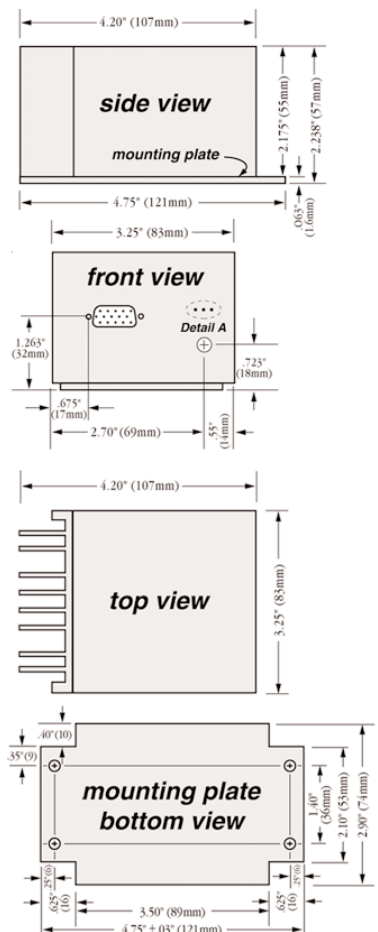
[1] 19200 requires 25 kHz channel. [2] 7-bit no parity is not supported. [3] Extended RTS/CTS time options for repeater use. [4] 380-403 MHz frequency band is not FCC or IC type approved.
[5] CE approval is limited to 4800 bps in a 12.5 kHz channel.