

# SYNTHESIZED INTEGRA-TR INTEGRATED WIRELESS MODEM

132-174 MHz  
380-512 MHz  
928-960 MHz



**Dataradio's Integra-TR** is an integrated wireless modem that provides advanced features without complicated system setup and is available with optional DIN-rail mounting. With up to 5 watts RF output in UHF, VHF, and 900 MHz, the Integra-TR offers the most popular features required for telemetry and SCADA systems.

**Remote Online Diagnostics** Integra-TR's diagnostic feature provides the information to monitor and maintain your communications link. Power, temperature, voltage, signal strength, antenna/feedline condition, and data decode performance are transmitted online without application interruption. Integra-TR's diagnostic output supports the OPC Enabled Diagnostics feature.

**Digital I/O** The Integra-TR's Digital I/Os provide the interface to operate switches, relays and sensors.

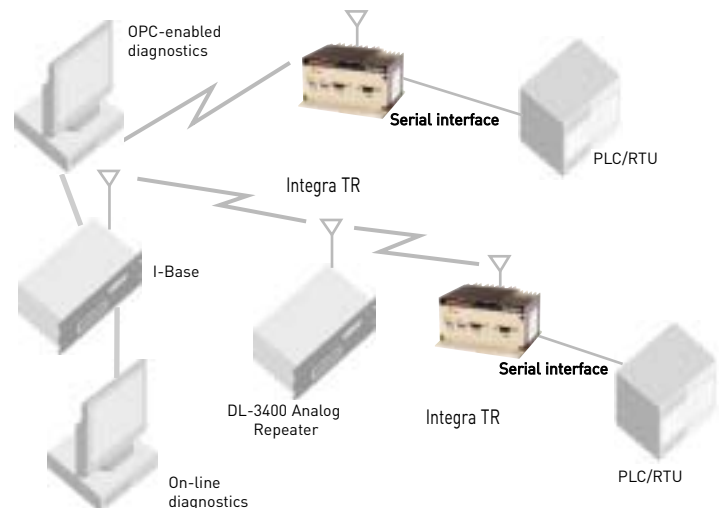
**Two-Year Warranty** The Integra-TR is backed by our standard two-year warranty.

**Programmable, transparent modem** The Integra-TR provides virtually real-time data transfer, superior to packetized data systems. Integra-TR's features include CWID for identification and CSMA to minimize retries and reduce channel interference. The Integra-TR delivers error-free data at up to 19200 bps over the air in a 25 kHz channel, 9600 bps in a 12.5 kHz channel, or 4800 bps in a 6.25 kHz channel.

**No dribble bits** The Integra-TR prevents transmission of any extraneous data bits to the terminal device. This makes the Integra-TR a perfect choice when working with various protocols that cannot tolerate any extra data bits.

**DOX** The data-activated transmit mode automatically activates the transmitter in the presence of data without needing an RTS handshake from the terminal equipment. Integra-TR supports CTS flow control for cases where the terminal rate exceeds the network rate.

**Low power consumption modes** The Integra-TR offers three ways to reduce power consumption for solar or battery-powered remote sites: sleep, suspend, and variable output power. Sleep and suspend modes typically draw less than 15 mA. In Sleep mode, Integra-TR wakes with activation of RTS, which enables the Integra-TR in less than 1/10th of a second. It won't miss a poll! In Suspend Mode, the Integra-TR wakes periodically to check for channel activity. Variable Output Power is PC programmable from 1 to 5 watts.



## INTEGRA-TR SPECIFICATIONS

### MODEM

Channel Bandwidth	6.25 kHz*	12.5 kHz	25 kHz
Data rate (PC programmable)	2400, 4800 bps	4800, 9600 bps	4800, 9600, 19200 bps
Modulation	DRCMSK		
RTS/CTS Delay	4 msec		
Bit error rate (1 x 10 <sup>-6</sup> )	@ .35 µV (2400 bps)	@ 1.4 µV (9600 bps)	@ 1.0 µV (9600 bps) @ 2.3 µV (19,200 bps)

### COM PORT

Interface	EIA RS-232C
Data Rate	1200 - 19200 bps
Protocol	Transparent: 7 or 8 data bits; 1 or 2 stop bits; even, odd or no parity
Setup / Diagnostic Port	
Data Format	Proprietary binary for setup, ASCII for diagnostics
Data Rate	9600 bps

### GENERAL

Band	UHF	VHF	900 MHz
Frequency Range	380-512 MHz †	132-174 MHz	928-960 MHz
Channel Bandwidth	6.25*, 12.5 or 25 kHz	6.25*, 12.5 or 25 kHz	12.5 or 25 kHz
FCC Type Acceptance	NP4MCUB5Q (6.25kHz) EOTMCUB5R	NP4MCUA5Q(6.25kHz) EOTMCUA5R	EOTMCUC5R
FCC Emission Designators	6K00FID (6.25kHz) 9K30F1D, 15K3F1D	6K00F1D (6.25kHz) 9K30F1D, 15K3F1D	9K30F1D, 15K3FD
IC Type Acceptance	773195561A	773195562A	773195611A
IC Emission Designators	9K30F1D, 15K3F1D	9K30F1D, 15K3F1D	9K30F1D, 15K0F1D
European Approval	CE Mark (403-470 MHz)!	CE Mark †	
ETSI	300.113 (403-470 MHz)!	300.113 †	
Current Drain			
Transmit @ 13.3 VDC	<2.6A		
Receive @ 13.3 VDC	< 220 mA (with a terminal connected to the COM port)		
Power Saving Mode	15 mA nominal		
Frequency Tolerance	0.5 ppm (6.25 kHz) 1.5 ppm	1.0 ppm (6.25 kHz) 2.5 ppm	1.5 ppm
Operating Voltage	10-16 VDC		
Operating Temperature	-30° C to + 60° C		
Dimensions (W x H x D)	4.5" x 2.4" x 4.75" (11.4 cm x 5.6 cm x 12.1 cm)		
Shipping Weight	1.60 lbs. (0.73 kg)		
Operating Mode	Simplex or half-duplex		
Bandwidth without tuning	450-470: 20 MHz all other ranges: 16 MHz	132-150: 18 MHz 150-174: 24 MHz	928-960: 32 MHz

### RECEIVER

Receive Operation	Continuous (no tuning required)
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### TRANSMITTER

Tx Attack Time	< 7 msec
RF Output Power	1-5 watts, PC programmable
Duty Cycle	50% @ 5 watts, 30 seconds maximum transmit - extended transmit with cooling fan option
Transmit Operation	Continuous (no tuning required)

† 380-403 MHz frequency band is not FCC or IC type approved. \* 6.25 operation @ 450-470 UHF or 150-174 VHF  
! CE approval is limited to 4800 bps in a 12.5 kHz channel.

### COM AND SETUP PORTS

#### Connectors:DE-9F

##### Pin Description

- 1 DCD: Data Carrier Detect
- 2 RXD: Receive Data
- 3 TXD: Transmit Data
- 4 DTR
- 5 Ground
- 6 DSR
- 7 RTS: Request to Send
- 8 CTS: Clear to Send
- 9 Not Used

### POWER - I/O CONNECTOR:

#### Snap and lock 4-pin

##### Pin Description

- 1 +13.3 VDC (red)
  - 2 Ground (black)
  - 3 Analog In / Digital Out 1 (green)
  - 4 Analog In / Digital Out 2 (white)
- Rx-TP

### MECHANICAL SPECIFICATIONS:

