

Go Beyond Normal Limits...™



# Wireless Radio Modem

High Performance, Low Cost Wireless Connectivity



## DTXM RadioModem



### Features

- Ultra Narrow Band (6.25 kHz)  
Narrow Band (12.5 kHz)  
Wide Band (25 kHz) models
- 4800 bps Ultra Narrow Band  
9600 bps Narrow Band  
19,200 bps Wide Band
- Broadband TX/RX Design:  
-26 MHz VHF  
-28 MHz 220 MHz  
-20 MHz UHF
- 6 Watt Models
- Frequency Ranges:  
-136-162 MHz VHF  
-148-174 MHz VHF  
-217-245 MHz  
-400-420 MHz UHF  
-450-470 MHz UHF
- Compact Size (only 3.6" L x 2.3" W x 1.0" H)
- Frequency Stability Standard @ 1.0 ppm
- Ultra Fast TX/RX Attack Times
- Controlled Envelope<sup>SM</sup> TX Keying
- RS-232 Interface
- Meets FCC and IC (Canada) Standards
- Programmable Electronic Settings and Adjustments
- Programmable High/Low Output Power
- SMD Component Design
- Custom Frequency Ranges Available
- Designed and Manufactured in the USA

The DTXM RadioModem is a high performance Wireless Modem family which supports over-the-air data rates of 19,200 bps in a 25 kHz channel, 9600 bps in a 12.5 kHz channel or 4800 bps in a 6.25 kHz channel. High specifications permit integration into systems demanding the utmost performance in congested frequency environments. The complete modem transceiver occupies the same small foot print, 3.6"L x 2.3"W x 1.0"H, as the DTX<sup>Plus</sup> RF transceiver, resulting in a small, compact package.

Direct modulation with low distortion and low group delay result in a low bit-error rate (BER) for enhanced system integrity and reliability. The DTXM RadioModem retains the same Swift Lock<sup>TM</sup> synthesizer loading algorithm as the DTX<sup>Plus</sup> RF transceiver for transmit and receive attack times of 15 ms or less for high-speed data throughput. Controlled Envelope<sup>TM</sup> keying reduces adjacent channel "keyclicks" resulting in spectrum-friendly operation.

Capable of quarter, half, and full channel spacing operation, the DTXM RadioModem can be installed in systems where re-farming compliant narrow band frequencies have been assigned.

If dependability, reliability, and low-cost are important factors in selecting your RF data requirements, then call Ritron at **800-USA-1-USA** (800-872-1-872).

**AVAILABLE MODELS**

DTX Modem Module

Model	Frequency
DTXM-154-G	136-162 MHz
DTXM-154-O	148-174 MHz
DTXM-254-O	217-245 MHz
DTXM-454-G	400-420 MHz
DTXM-454-O	450-470 MHz

Various power and voltage options are available.

Please contact the Ritron Sales Department for your specific requirements.

**DTX MODEM SPECIFICATIONS**

**GENERAL**

	VHF	220 MHz	UHF
FCC Identifier	AIERIT25-150	AIERIT25-250	AIERIT25-450
Industry Canada Identifier	1084A-25150	1084A-25250	1084A-25450
Baud Rate (over-the-air)			
Ultra Narrow Mode	4800 bps	4800 bps	4800 bps
Narrow Mode	9600 bps	9600 bps	9600 bps
Wide Mode	19200 bps	19200 bps	19200 bps
Number of Channels	2	2	2
TX/RX Spacing (w/in frequency range)	26 MHz max.	28 MHz max.	20 MHz max.
Mode of Operation	Simplex/Half Duplex	Simplex/Half Duplex	Simplex/Half Duplex
Channel Increment (Synthesizer step size)	2.5 kHz	2.5/3.125 kHz	5/6.25 kHz
Emissions Bandwidth			
Ultra Narrow Mode	4.8 kHz	4.8 kHz	4.8 kHz
Narrow Mode	11 kHz	11 kHz	11 kHz
Wide Mode	16 kHz	16 kHz	16 kHz
Frequency Stability (-30° to +55° C)	1.0 ppm	1.0 ppm	1.0 ppm
Supply Voltage (VDC) w/ internal regulator	7.5 or 11-16	7.5 or 11-16	7.5 or 11-16
RF Input/Output Connector	BNC	BNC	BNC
Power/Data Interface	15 pin sub D	15 pin sub D	15 pin sub D
Operating Temperature	-30° to +55° C	-30° to +55° C	-30° to +55° C
Maximum Dimensions (L x W x H)	3.6 x 2.3 x 1.0	3.6 x 2.3 x 1.0	3.6 x 2.3 x 1.0
Weight	6 oz	6 oz	6 oz

**TRANSMITTER**

	VHF	220 MHz	UHF
Operating Bandwidth	26 MHz	28 MHz	20 MHz
RF Output Power	1-6 watts	1-6 watts	1-3/6/9 watts
Duty Cycle	5% - 100 %	5% - 100 %	5% - 100 %
RF Load Impedance	50 ohms	50 ohms	50 ohms
Transmitter Attack Time:	<15 ms	<15 ms	<15 ms
Spurious and Harmonics:	<-26 dBm	<-26 dBm	<-26 dBm
FM Hum and Noise			
6.25 kHz channel operation	>35 dB	>35 dB	>35 dB
12.5 kHz channel operation	>40 dB	>40 dB	>40 dB
25 kHz channel operation	>45 dB	>45 dB	>45 dB
Current Drain			
1 watt	<1.0 A	<1.0 A	<1.0 A
6 watt	<2.4 A	<2.4 A	<2.4 A

**RECEIVER**

	VHF	220 MHz	UHF
Operating Bandwidth	26 MHz	28 MHz	20 MHz
Sensitivity (10-5 BER)	<0.28 uV	<0.28 uV	<0.28 uV
RF Input Impedance	50 ohms	50 ohms	50 ohms
Adjacent Channel Selectivity			
+/- 6.25 kHz w/ultra narrow IF	>50 dB	>50 dB	>50 dB
+/- 12.5 kHz w/narrow IF	>60 dB	>60 dB	>60 dB
+/- 25 kHz w/wide IF	>70 dB	>70 dB	>70 dB
Spurious and Image Rejection	>70 dB	>70 dB	>70 dB
Intermodulation Rejection	>67 dB	>67 dB	>67 dB
FM Hum and Noise			
6.25 kHz channel operation	>35 dB	>35 dB	>35 dB
12.5 kHz channel operation	>40 dB	>40 dB	>40 dB
25 kHz channel operation	>45 dB	>45 dB	>45 dB
Conducted Spurious	<-57 dBm	<-57 dBm	<-57 dBm
Receive Attack Time	<15 ms	<15 ms	<15 ms
Noise Squelch Attack Time	<13 ms	<13 ms	<13 ms
RSSI Squelch Attack Time	<5 ms	<5 ms	<5 ms
Receive Current Drain	<100 mA	<100 mA	<100 mA

**INPUT/OUTPUT CONNECTOR**

Pin #	Description	Pin #	Description
1	Audio Input	8	RD
2	Audio Output	9	TD
3	Speaker Output	10	CTS
4	A/B	11	DSR
5	N/C	12	Test (PTT)
6	Power Supply	13	Carrier Detect
7	N/C	14	RTS
		15	GND

Note: RD, TD, CTS, DSR and RTS are at RS-232 levels.

**Your Local Dealer**

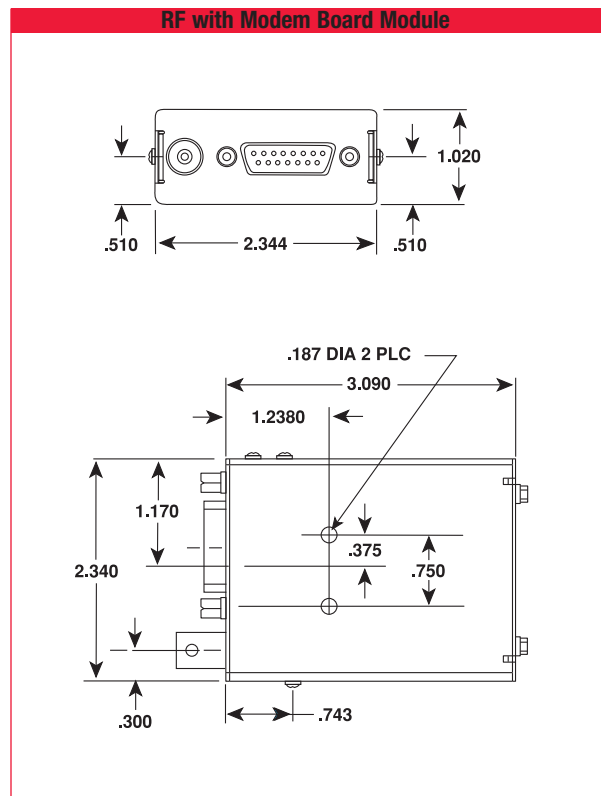


**DTXM RadioModem**

Programmable RF transceivers

and radio modems for integrator

and OEM applications.



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