

Go Beyond Normal Limits...™

**RITRON**  
WIRELESS SOLUTIONS

# 60 Series

# DTXM RadioModem

## High Performance, Low Cost Wireless Connectivity

### Features

- Ultra Narrow Band (6.25 kHz)  
Narrow Band (12.5 kHz)
  - 4800 bps Ultra Narrow Band  
9600 bps Narrow Band
  - Broadband TX/RX Design:
    - 26 MHz VHF
    - 28 MHz 220 MHz
    - 20 MHz UHF
  - Frequency Ranges:\*
  - 136-174 MHz VHF
  - 217-245 MHz\*\*
  - 380-400 MHz\*\*
  - 400-430 MHz UHF\*\*
  - 450-470 MHz UHF
- Compact Size (only 3.6" L x 2.3" W x 1.0" H)
  - Streaming and packet modes supported
  - Frequency Stability Standard @ 1.0 ppm
  - Ultra Fast TX/RX Attack Times
  - Controlled Envelope™ 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



## DTXM RadioModem

The 60 series radiomodem is the next generation in the high performance DTXM Wireless Modem family. The 60 series DTXM is protocol compatible with the legacy 54 series DTXM and capable of streaming, quasi-streaming, or packet protocols for optimum data throughput. The radiomodem will support over-the-air data rates of 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 and is ideal for use in systems where reforming compliant narrow band frequencies have been assigned. The complete modem and transceiver occupies the same small foot print, 3.6"L x 2.3"W x 1.0"H, as previous DTXM models and DTX+ transceivers. This results in a small, compact package that is easy to integrate into new systems or retrofit into existing systems.

Direct modulation with low distortion and low group delay result in a low bit-error rate (BER) for enhanced system integrity and reliability. The 60 series radiomodem retains the same Swift Lock™ synthesizer loading algorithm as previous DTXM's and the DTX+ transceiver for transmit and receive attack times of 10ms or less for high-speed data throughput. Controlled Envelope™ keying reduces adjacent channel "keyclicks" resulting in spectrum-friendly operation.

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

\*Contact Ritron with your specific frequency band requirement.

\*\*Certain models listed have not been approved by the FCC.



DTX+



DTX-Ls

**Need embedded Telemetry Transceivers?**

**Ask us about the DTX+ and Ls Transceivers.**

**AVAILABLE MODELS**

**DTXM Modem Module**

Model	Frequency
DTXM-160-0	136-174 MHz
DTXM-260-0	217-245 MHz
DTXM-360	340-360, 360-380, 380-400 MHz
DTXM-460-G	400-420 MHz
DTXM-460-0	450-470 MHz

Various power and voltage options are available.

Please contact the Ritron Sales Department for your specific requirements.

**DTXM SPECIFICATIONS**

GENERAL	VHF	220 MHz	UHF
FCC Identifier	AIERIT39-16006	Pending	AIERIT39-46006
Industry Canada Identifier	1084A-RIT3916006	Pending	1084A-RIT3946006
<b>Baud Rate (over-the-air)</b>			
Ultra Narrow Mode	4800 bps	4800 bps	4800 bps
Narrow Mode	9600 bps	9600 bps	9600 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
<b>Emissions Bandwidth</b>			
Ultra Narrow Mode	4.0 kHz	4.0 kHz	4.0 kHz
Narrow Mode	11 kHz	11 kHz	11 kHz
Frequency Stability (-30° to +60° C)	1.0 ppm	1.0 ppm	1.0 ppm
Supply Voltage (VDC)	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 +60° C	30° to +60° C	-30° to +60° 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:	<10 ms	<10 ms	<10 ms
Spurious and Harmonics:	<-25 dBm	<-25 dBm	<-25 dBm

FM Hum and Noise	VHF	220 MHz	UHF
6.25 kHz channel operation	>35 dB	>35 dB	>35 dB
12.5 kHz channel operation	>40 dB	>40 dB	>40 dB

Current Drain	VHF	220 MHz	UHF
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	VHF	220 MHz	UHF
+/- 6.25 kHz w/ultra narrow IF	>45 dB	>45 dB	>45 dB
+/- 12.5 kHz w/narrow IF	>60 dB	>60 dB	>60 dB

Spurious and Image Rejection	VHF	220 MHz	UHF
Spurious and Image Rejection	>60 dB	>60 dB	>60 dB
Intermodulation Rejection	>67 dB	>67 dB	>67 dB

FM Hum and Noise	VHF	220 MHz	UHF
6.25 kHz channel operation	>35 dB	>35 dB	>35 dB
12.5 kHz channel operation	>40 dB	>40 dB	>40 dB

Conducted Spurious	<-57 dBm	<-57 dBm	<-57 dBm
Receive Attack Time	<10 ms	<10 ms	<10 ms
RSSI Squelch Attack Time	<5 ms	<5 ms	<5 ms
Receive Current Drain	<120 mA	<120 mA	<120 mA

**INPUT/OUTPUT CONNECTOR**

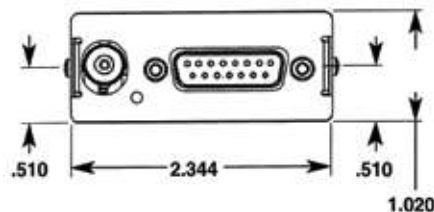
Pin #	Description	Pin #	Description
1	Audio In	8	RD
2	Audio Out	9	TD
3	Speaker	10	CTS
4	A/B	11	DSR
5	N/C	12	Test (PTT)
6	Power Supply	13	Carrier Detect
7	N/C	14	RTS
		15	GND

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

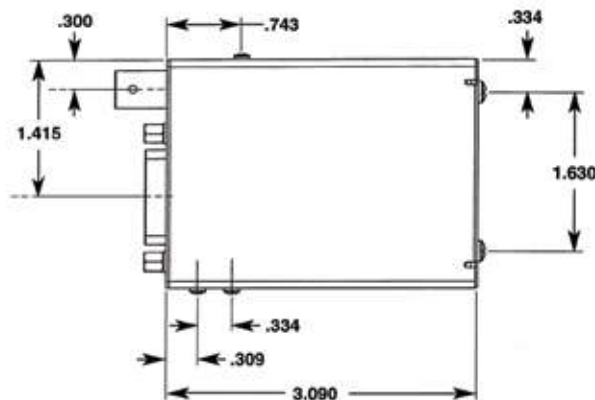
# 60 Series

# DTXM RadioModem

**Programmable RF transceivers and radio modems for integrator and embedded OEM applications.**



**RF with Modem Board Module**



*About Ritron Inc. - Founded in 1977, Ritron, Inc., is a privately held U.S. company specializing in the design and manufacture of RF wireless voice and data communication products. It offers wireless solutions for commercial, industrial, military, OEM and integrator markets.*



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PN# 14610035 Rev. E