

# MDS Transceiver Series

Fixed Frequency  
Licensed Solutions

# industrial wireless PERFORMANCE



## FEATURES

- High Performance – Digital Signal Processing (DSP) Engine
- Flexibility – Single Unit Configurable as Master or Remote Radio
- Compatibility – Inter-Operable Versions Available for use with Existing MDS 2000, MDS 4000 Series Radios

## APPLICATIONS

- Gas/oil production and distribution
- Water, gas and electric utilities
- Lotteries
- Traffic control
- Industrial process control
- Railroad communication systems

## MDS...Global wireless solutions. Industrial Wireless Performance.

For over 15 years, Microwave Data Systems (MDS) has been providing wireless networking solutions with applications in SCADA, telemetry, telecommunications, and online transaction markets. MDS provides licensed and unlicensed solutions, with more than 500,000 radios installed in over 110 countries.

## MDS Transceiver Series Overview

The MDS Transceiver Series is a price/performance leader in licensed microwave radios in the 220-222 MHz, 220-240 MHz, 330-512 MHz, and 800-960 MHz frequency ranges. They provide increased throughput, and longer-range for multiple address systems. Transparent and direct asynchronous communication offers real-time communication. No extra software or programming is needed to implement communications using standard asynchronous protocols. A general purpose (unconditioned) digital output is available.

The MDS Transceiver Series is field configurable as a master station or remote radio. They can operate as a half-duplex or simplex radio. They support all splits in duplex frequencies. When operating as a master station, full network diagnostics are available. Simplex mode permits peer-to-peer radio communications. This product is available for use in Class I, Division 2, Groups A, B, C & D hazardous locations.\*

## Why Consider a MDS Transceiver Series Solution?

High system performance and data integrity! Through robust construction, digital signal processing technology (DSP) and we offer up to 19.2 kbps data throughput.

Rapid Installation! Quick return on investment due to ease of wireless installation. This licensed radio offers the ability to communicate with any asynchronous protocol without extra software or extra programming.

Performance under the most adverse conditions! Exceptional design provides excellent performance in the face of interference or difficult signal paths.

Network Wide Diagnostics! InSite Network Management software simplifies maintenance tasks and reduces the cost of managing the network infrastructure. Provides a non-intrusive means of maintenance and link monitoring.

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# MDS Transceiver Series Specifications

## General

	<b>MDS 2710A</b>	<b>MDS 2710C</b>	<b>MDS 2710D</b>	<b>MDS 4710</b>	<b>MDS 9710</b>	
Frequency Bands:	220 to 240 MHz	220 to 240 MHz	220 to 222 MHz	330 to 512 MHz	800 to 960 MHz	
Freq. Programmability:	6.25 kHz increments to any MAS channel pair	12.5 kHz increments to any MAS channel pair	2.5 kHz	6.25 kHz increments to any MAS channel pair	6.25 kHz increments to any MAS channel pair	
<b>Model:</b>	<b>Agency Approval:</b>	<b>4 Wire Analog</b>	<b>Data Rate:</b>	<b>Port Speed:</b>	<b>Bit Error Rate:</b>	<b>Diagnostics</b>
<b>2710A</b>		Yes	9600 bps (rf)	300 bps-38.4 kbps (data) @ 12.5 kHz Channel Spacing	BER 1x10 <sup>-6</sup> @ -110 dBm typical	Network Wide Diagnostic Option
<b>2710C</b>	China	Yes	19,200 bps (rf)	110 bps-38.4 kbps (data) @ 25 kHz Channel Spacing	BER 1x10 <sup>-6</sup> @ -105 dBm typical	Network Wide Diagnostic Option
<b>2710D</b>	FCC Part 90	Yes	3200 bps (rf)	300 bps-38.4 kbps (data) @ 5 kHz Channel Spacing	BER 1x10 <sup>-6</sup> @ -108 dBm typical	Network Wide Diagnostic Option
<b>4710C</b>		Yes	19,200 bps (rf)	110 bps-38.4 kbps (data) @ 25 kHz Channel Spacing	BER 1x10 <sup>-6</sup> @ -105 dBm typical	Network Wide Diagnostic Option
<b>4710A</b>	FCC Part 90 Industry Canada & ENTELA	Yes	9600 bps (rf)	110 bps-38.4 kbps (data) @ 12.5 kHz Channel Spacing	BER 1x10 <sup>-6</sup> @ -110 dBm typical	Network Wide Diagnostic Option
<b>4710B</b>	FCC	Yes	9600 bps (rf)	300-9600 bps (rf and data) @ 12.5 kHz Channel Spacing	4800 bps: BER 1x10 <sup>-6</sup> @ -110 dBm typical 9600 bps: BER 1x10 <sup>-6</sup> @ -108 dBm typical	DTMF Diagnostic Option
<b>4710E</b>	ETSI: ETS 300 113 EMC: EN 300 279 CE Mark	N/A	4800 bps (rf)	110 bps-38.4 kbps (data) @ 12.5 kHz Channel Spacing	BER 1x10 <sup>-6</sup> @ -113 dBm typical	Network Wide Diagnostic Option
<b>4710</b>	UK MPT1411 (analog)	Yes	analog	N/A	N/A	N/A
<b>4710M</b>	MPT1411 (digital)	Yes	9600 bps (rf)	110 bps-38.4 kbps (data)	BER 1x10 <sup>-6</sup> @ -106 dBm typical	Network Wide Diagnostic Option
<b>9710A</b>	FCC E5MDS9710-1 Industry Canada & ENTELA	Yes	9600 bps (rf)	110 bps-38.4 kbps (data) @ 12.5 kHz Channel Spacing	BER 1x10 <sup>-6</sup> @ -110 dBm typical	Network Wide Diagnostic Option
<b>9710B</b>	FCC E5MDS9710	Yes	9600 bps (rf)	300-9600 bps (rf and data) @ 12.5 kHz Channel Spacing	4800 bps: BER 1x10 <sup>-6</sup> @ -110 dBm typical 9600 bps: BER 1x10 <sup>-6</sup> @ -108 dBm typical	DTMF Diagnostic Option

For additional agency approval info visit [www.microwavedata.com](http://www.microwavedata.com)

## ALL MODELS

Operational Modes: Async. - Simplex, half-duplex, (synchronous available (9600 bps only) in MDS 4710B, and MDS 9710B)  
Data Interface: RS-232, DB-25 Female Connector Supports: TXD, RXD, RTS, CTS, DCD, RUS, AUX POWER, DSR, and GND

## Transmitter

Frequency Stability: +/- 0.00015% 1.5 ppm  
Carrier Power: 0.1 to 5 Watts Programmable  
Carrier Power Accuracy: Normal +/- 1.5 dB  
Duty Cycle: Continuous  
Output Impedance: 50 Ohms

## Receiver

Type: Double Conversion Superheterodyne  
Frequency Stability: +/- 0.00015% (1.5 ppm)  
Adjacent Channel (EIA): 60 dB nominal

## Power Supplies

Primary Power: Voltage 13.8 Vdc nominal  
(10.5 to 16 Vdc operating range)  
Tx Current: <2A Typical at 5 Watts  
Rx Current: <125 mA  
Sleep Mode: 15 mA nominal

## Modem / Diagnostics

Modulation: Digital / CPFSK  
CTS Delay: 0-255 msec programmable in 1 msec increments  
PTT Delay: 0-255 msec programmable in 1 msec increments

## Physical

Case: Rugged Die Cast Aluminum  
Dimensions: 5.08 x 14.29 x 18.4 cm  
(2.0 x 5.625 x 7.25 inches)  
Weight: 1 kg (2.2 lbs)

## Environmental

Temperature Range: -30°C to +60°C (-22°F to +140°F)  
Humidity: 95% at 40C (104°F) non-condensing

## Additional Agency Approval

FM/UL/CSA: Approved\*  
(consult factory for country specific approvals)

\* The transceiver is not acceptable as a stand-alone unit for use in the hazardous locations described above. It must either be mounted within another piece of equipment, which is certified for hazardous locations, or installed within guidelines, or conditions of approval, as set forth by the approving agencies.

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MDS products are manufactured under a quality system certified to ISO 9001. MDS reserves the right to make changes to specifications of products described in this data sheet at any time without notice and without obligation to notify any person of such changes.  
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