Digital Energy
MDS

x710 Series

Narrowband Connectivity
1710, 2710, 4710, 9710

Data Acquisition | Serial Transceiver

The MDS x710 Series is a price and performance leader in licensed microwave radios in the 130-174 MHz, 216-220 MHz, 220-235 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 x710 Series is field configurable as a master station or remote radio. The MDS x710 can operate as a half-duplex or simplex radio, and supports 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.

Key Benefits

- High system performance and data integrity with robust construction and digital signal processing technology (DSP) providing up to 19.2 Kbps data throughput
- 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 programming.
- Exceptional design provides excellent performance in the face of interference or difficult signal paths
- Network management software simplifies maintenance tasks, reduces the cost of managing the network infrastructure, and provides a non-intrusive means of maintenance and link monitoring

Application Specific Wireless Solution

Oil & Gas

- Monitor and transmit wellhead pressure and tank levels collected by RTUs

Water & Wastewater

- Monitor lift stations across multiple sites from control room

Energy

- Condition monitoring for pole-top circuit breakers and capacitor banks

Heavy Industrial

- Monitor and control remote pumps and compressors

Industrially Hardened

- Operational temperature range from –30°C to 60°C
- CSA Class I, Div. 2 groups A, B, C, D for hazardous locations

Application Flexibility

- Low power consumption for solar powered applications
- Long range wireless communication, up to 50 miles
- Fully compatible with first generation MDS radios

Reliable & Scalable

- Exclusive-use, non-shared licensed band operation in 400 MHz
- Point-to-multipoint 2-way communication
- High receive sensitivity for long distances
- Compatible with multiple industry protocols including Modbus and DNP3

High Performance

- Digital signal processing (DSP) engine
- Single unit configurable as master or remote radio
- Inter-operable "B" versions available for use with existing MDS 2000, MDS 4000 series radios

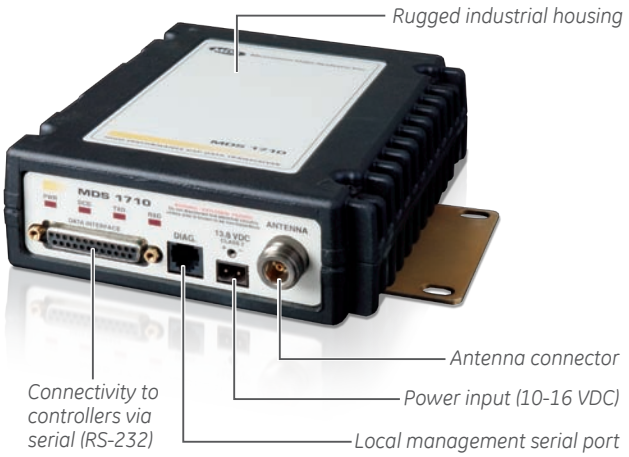
imagination at work

Remote & Master Station

The x710 radio operates in the 200, 400 or 900 MHz licensed frequency bands.

A radio system is built with a master station and remote radios. Additionally, the use of repeater stations helps to overcome obstructions and extend coverage.

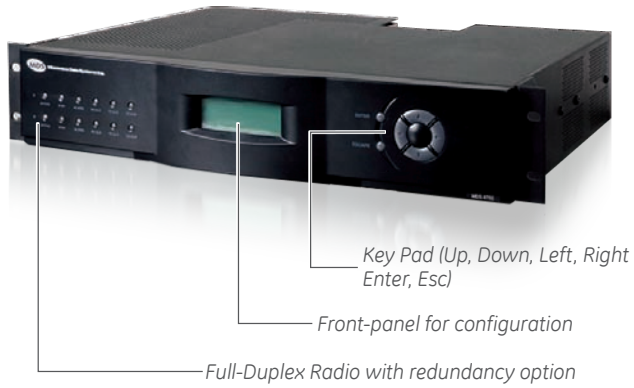
x710 radios operate on a specific frequency band, and are tuned at the factory to the ordered operational range. No field adjustments are necessary for normal operation.



Protected Master and Repeater Station

Mission critical applications demand that no single point of failure can stop the communications system. In wireless applications the master station serves as the central hub to all remote radios. The x790 Master Station with redundancy option increases the availability of a system with a hot-standby configuration. The standby radio activates automatically whenever a fault condition is detected by the active radio.

For repeater locations, the full-duplex capability of the x790 maximizes the speed of data traffic relays, for a system with better overall performance.



Specifications

GENERAL	
Operational modes	Simplex, half-duplex
Modulation	Digital / CPFSK
Range	Up to 50 miles
1710	
RF Data Rate & bandwidth	3200 @ 6.25 kHz 9600 @ 12.5 kHz 19200 @ 25 kHz
Frequency band	130 - 174 MHz
2710	
RF Data Rate & bandwidth	3200 @ 5 kHz 9600 @ 12.5 kHz 19200 @ 25 kHz
Frequency band	216-235 MHz
4710	
RF Data Rate & bandwidth	4800 @ 12.5 kHz 9600 @ 12.5 kHz 19200 @ 25 kHz
Frequency band	330-512 MHz
9710	
RF Data Rate & bandwidth	9600 @ 12.5 kHz 19200 @ 25 kHz
Frequency band	800-960 MHz

TRANSMITTER	
Frequency Stability	+/- 1.5 ppm
Carrier power	0.1 to 5 Watts Programmable
Accuracy	Normal +/- 1.5 dB
Duty Cycle	Continuous
Output Impedance	50 Ohms
RECEIVER	
Type	Double Conversion Superheterodyne
Selectivity	>70dB
Bit Error Rate	1x10-6 @ -110 dBm typical
INTERFACES	
Serial	RS232, DCE, DB25 Female
Diagnostic	RS232, DCE, RJ11 Female
Antenna	N-Type Female
MANAGEMENT	
MDS InSite software	
MDS NetView software	
MDS Radio Configuration software	

ENVIRONMENTAL	
Temperature	-30°C to +60°C (-22°F to +140°F)
Humidity	95% at 40°C (104°F) non-condensing
ELECTRICAL	
Primary power	(10.5 to 16 Vdc) 13.8 Vdc nominal
Tx Current	2A Typical at 5 Watts
Rx Current	<125 mA
Sleep mode	15 mA nominal
MECHANICAL	
Case	Rugged die-cast aluminum
Dimensions	5.08 H x 14.29 W x 18.4 D cm. (2.0 H x 5.625 W x 7.25 D in.)
Weight	1 kg (2.2 lb.)
AGENCY APPROVALS	
CSA Class 1 Div 2 for hazardous locations	
FCC Part 90	
Industry Canada & ENTELA	
ETSI, EMC, CE MARK (ETSI: ETS 300 113, EMC: EN 300 279)	

Accessories for the x710

Fixed Remote Kits with Yagi	KFR-L04-C1 (406-430 MHz)
	KFR-L04-C2 (430-450 MHz)
	KFR-L04-C3 (450-470 MHz)
	KFR-L09-D1 (900 MHz)

View Accessories catalog at www.gemds.com

Visit www.GEMDS.com/x710 to:

- Buy x710 through the online store
- Download guideform specifications
- Download user documentation
- Read application notes and white papers