MDS Master Station Series

MDS 4790 Master Station Transceiver 330-512 MHz
MDS 9790 Master Station Transceiver 800-960 MHz
MDS P20 Redundant Station DSP Radio Chassis

MDS 4790/9790 Features

- Digital Signal Processing (DSP) Engine
- Software Configurable Modems
- Modular Design with Swappable Power Supply

P20 Features

- Increased Reliability
- Uses Two std. MDS Transceivers
- Automatic Switchover to Redundant Transceiver
- Indicator Shows Active Transceiver
- Internal Back-up for AC-powered Models

Applications

- SCADA Telemetry Systems
- Multiple Address Communications
- 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 nearly two decades, Microwave Data Systems (MDS) has been providing highly secure, industrial strength mission critical wireless communications solutions for a broad spectrum of public and private sector clients worldwide. With an installed base approaching 1,000,000 radios in 110 countries, MDS offers both licensed and license-free solutions with applications in SCADA, telemetry, public safety, telecommunications, and online transaction markets.

MDS Master Station Series Product Overview

The MDS Redundant, Full-Duplex Master Station Series offers the ultimate in reliability and simplicity for ease of configuration and operation.

The MDS Master Station Series is the price/performance leader in licensed microwave radio in the 330-512 MHz and 800-960 MHz frequency range. It gives increased throughput, longer-range alternatives for our customers' Multiple Address Systems needs. Transparent and direct asynchronous communication offer real-time communication. No extra software or programming is needed to implement communications from standard asynchronous protocols.

The MDS Master Station Series may operate as a full duplex, half-duplex or simplex radio and is configurable as a redundant master station or remote radio. When operating as a master station it controls all network parameters of the remotes. The MDS 4790 and MDS 4710 or the MDS 9790 and MDS 9710 remote transceivers together offer a new level of ease of integration, reliability and performance for our customers' data network systems.

MDS P20 Product Overview

The MDS P20 incorporates two MDS transceivers and power supplies with automatic or manual switch-over capability. On detection of a failure, the MDS P20 switches immediately to the standby transceiver. The switch-over occurs for selectable transceiver alarm conditions. Switch-over also occurs when no valid packets are received in a programmable time-frame of 1 to 30 minutes, or upon loss of power to the operating radio. An internal back-up battery is provided in AC-powered models for continued operation during a loss of primary power.

The MDS P20 Redundant Station is easily maintained with Standard MDS transceivers that are field-replaceable. The MDS P20 is packaged in a low-profile (2U) metal case that may be placed on a tabletop or rack mounted.

Why Consider a MDS Master Station Series Solution?

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

Reliability! For mission critical needs, system back-up capability is built-in.

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. Will accept external bypass high performance duplexers or receive filters.

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

MDS

INDUSTRIAL WIRELESS PERFORMANCE

MDS Master Station Series & P20 Specifications

General

- Frequency Range: MDS 4790: 330 to 512 MHz
  MDS 9790: 800 to 960 MHz
- Tx / Rx Split: MDS 4790: Simplex to 132 MHz
  MDS 9790: Simplex to 160 MHz
- Data Interface: RS-232, DB-25 Female Connector, Supports: TXD, RXD, RTS, CTS, DCD, RUS, AUX POWER, DSR, and GND
- Frequency Programmability: 6.25 kHz increments to any MAS channel pair
- Operational Modes: Asynchronous - Simplex, half-duplex, full- duplex (synchronous available in MDS 4790B, and MDS 9790B)

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: 100-240 Vac (50/60 Hz), 24/48 Vdc (21 to 60 Vdc), 125 Vdc external, 12 Vdc external
- Power Required : < 60 Watts nominal

Mode / Diagnostics

- Modulation: Digital / CPFSK
- Latency (Rx-Tx-Rx): 10 ms including RTS/CTS delay
- CTS Delay: 0-255 msec programmable in 1 msec increments
- PTT Delay: 0-255 msec programmable in 1 msec increments
- Data Rate (rf): MDS 4790E: 4800 bps
  MDS 9790E: 4800 bps
  MDS 4790P: 9600 bps
  MDS 4790A: 9600 bps
  MDS 9790A: 9600 bps
  MDS 4790C: 19,200 bps
  MDS 9790C: 19,200 bps
- Data Rate (data): 110 bps - 38.4 kbps
- Bit Error Rate Sens: MDS 4790E: 4800 bps: BER $1x10^{-6}$ @-114 dBm typical
  MDS 9790E: 4800 bps: BER $1x10^{-6}$ @-113 dBm typical
  MDS 4790S: 9600 bps: BER $1x10^{-6}$ @-102 dBm typical
  MDS 4790A: 9600 bps: BER $1x10^{-6}$ @-110 dBm typical
  MDS 9790A: 9600 bps: BER $1x10^{-6}$ @-110 dBm typical
  MDS 4790C: 19.2 kbps BER $1x10^{-6}$ @-105 dBm typical
  MDS 9790C: 19.2 kbps BER $1x10^{-6}$ @-105 dBm typical
- Local Diagnostics: Included in all models
- Network-wide Diagnostics: InSite™ Radio System Management software (optional)

Physical

- Dimensions: 8.8 H (2U) x 43.7 W x 36.3 D cm. (3.5 H x 14.3 W x 14.3 D in.)
- Weight: 9 kg (19.8 lbs)
- Front Panel: Detachable for convenient location of Keypad/LCD panel
- Rack Mount: Flush or 5 inch offset

Environmental

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

Agency Approvals

- MDS 4790A: FCC Part 90, Industry Canada & ENTELA (safety)
- MDS 4790E and MDS 4790P: ETSI: ETS 300 113, EMC: EN 300 279, CE Mark & ENTELA (safety)
- MDS 9790A: FCC Part 101, Industry Canada & ENTELA (safety)

For additional approval info, visit www.microwavedata.com

MDS P20 Specifications

Physical

- Case: Steel (rack mountable 2U)
- Dimensions: 8.9 H x 48.3 W x 35.6 D cm. (3.5 H x 19 W x 14 D in.)
- Weight: 5.74 kg (12.65 lbs) w/o transceivers
  1 kg (2.2 lbs) additional for each MDS DSP transceiver

Environmental

- Temperature Range: with DC input –30° to + 60°C (-22° to 140°F), with AC input 0° to + 60°C (32° to 140°F)
- Humidity: 95% at 40°C (104°F), Non-Condensing

Power Supplies

- 115/230 Vac with battery backup: 12 Vdc (10.5 - 15 Oper. Range), 24 Vdc (18 - 36 Oper. Range), 48 Vdc (36 - 72 Oper. Range)

General

- Frequency Range: Dependent on MDS DSP transceivers utilized (ordering info shown below)
- Data Interface: RS-232, DB-25 Female Connector, Supports: TXD, RXD, RTS, CTS, DCD, RUS, AUX POWER, DSR, Remote switch-over and GND
- Alarm Output: Terminals – dry contacts for AC fail or transceiver switch-over

Transceiver Ordering Options

- XCVR Complement: 1, 2 or no MDS xx10 transceivers mounted in the chassis

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