FIVE Series

High Capacity Unlicensed Point-to-Point Solution

Backhaul | Indoor and Outdoor

The MDS FIVE Series consists of an open front/rear Software Defined Indoor Unit (IDU) and Outdoor Unit (ODU). MDS FIVE Series devices are spectrum and data rate scalable, enabling utilities and other industrial organizations to trade-off system gain with spectral efficiency (range versus speed) and channel availability for optimal network connectivity. The MDS FIVE Series delivers aggregate data rates up to 200 Mbps in the 5.8 GHz ISM band. A common platform supports plug-in 100 Mbps Ethernet.

Key Benefits

- Throughput options from 50 Mbps to 100 Mbps full duplex, depending on signal strength
- Range up to 20 miles
- Multiple deployment configuration options to maximize equipment and RF redundancy or minimize infrastructure cost
- Ring architecture with self-healing rerouting/redundancy
- Quick return on investment
- Easily deployed and activated

Application Specific Wireless Solution

Energy & Utilities

- SCADA and substation backhaul, fiber extensions, voice/PBX, video surveillance, and LAN/WAN backhaul, building connectivity, and cellular/carrier backhaul

Water & Wastewater

- SCADA and water monitoring facility backhaul, fiber extensions, video surveillance and LAN/WAN backhaul, building connectivity

Oil & Gas

- Pump on and pump off SCADA control backhaul, WAN networks for Oil company remote offices, backhaul for oil field, backhaul for disaster recovery, video surveillance, and voice/PBX connectivity

Private Network

- One time investment; no recurring leased fees
- Single, cost-effective solution for voice and data (E1/T1 and Ethernet)
- Dedicated bandwidth—not sharing with other outside users
- Network Operations Center (NOC) "chain of custody" control—not dependent on external NOC

Native Interface Implementation

- No mapping of Ethernet over TDM circuits is required
- Both Ethernet and TDM interfaces provide highest possible throughput and lowest possible latencies
- Both interfaces maximize spectral efficiency to assist in reducing required channel sizes

Full Duplex

- Dedicated throughput in both directions for deterministic application planning
- Fast Ethernet - scalable from 25 to 100 Mbps

Choice of Interfaces

- Fast Ethernet
- Multiple E1/T1 circuits

imagination at work

FIVE Series Indoor Unit

FIVE Series Outdoor Unit

Specifications

GENERAL	
Frequency bands	5,725 – 5,850 MHz
Average Output Power	-8 to 23 dBm RMS
Max EIRP	+46 dBm RMS (with integrated antenna)
Capacity Options	Ethernet: Spectrum scalable from 25 Mbps to 100 Mbps full duplex +2 T1/E1 Wayside Channels
Modulation	QPSK, 16-QAM, 32-QAM, 64-QAM
FEC	Trellis Coded Modulation concatenated with Reed-Solomon Coding
Receive Sensitivity	100 Mbps 25 MHz: 67 dBm 50 Mbps 25 MHz (50FE2): 73 dBm 25 Mbps 25 MHz (25FE2): 79 dBm 16 T1 25 MHz: 79 dBm 16 E1 25 MHz: 77 dBm
Antenna Gain	23 dBi (integrated antenna)
Antenna Connector	N-Type Female for optional external antenna

Distance	Up to 20 miles (or greater, depending on antenna)
Protected Option	Configurable for 1+1, hot standby, hitless switching, spacial diversity (not for diversity combining)

DATA INTERFACES	
Physical	100BaseTX, Full duplex E1/T1
Connector	Ethernet: RJ-45 NxE1/T1: 2×RJ-48C, HD60
Compliance	Ethernet: IEEE 802.3 NxE1/T1: ITU-T
AUX Connections	Wayside Channels T1/E1 - Interface DSX-1 - Connector RJ-48C Alarm Port - 2 Form C relay alarm outputs, 2 TTL outputs Voice Service Channel - 6 wire, PTT handset

MANAGEMENT	
Support	Network management config. tool SNMP v1, 2, 3, and web-based config. Built-in Web browser
Connector	RJ-45, 10/100BaseTX

ENVIRONMENTAL	
Temperature	IDU -5° to 55°C ODU -30° to 55°C
Humidity	IDU: 0 to 95%, non-condensing ODU: Up to 100% at 45°C
Altitude	IDU/ODU: 4500 m (14,100 ft.)

ELECTRICAL	
Primary power	-48 volts +/- 10%, <70 watts; Optional 100–240 Volts AC, 47–63 Hz power supply

MECHANICAL	
Case	Rugged die cast aluminum
Dimensions	IDU: 1RU, ETSI Compliant17.5 x 9.4 x1.75 inches (445×238.5x44.5mm)rack mount 19 inches, (48.2 cm) ODU: 15.7 x 14.5 x 2.1 inches (39.9x36.8x5.33cm)
Weight	IDU: 7 lbs. (3.17 kg) ODU: 15 lbs. (6.8 kg)

AGENCY APPROVALS	
FCC approved	
IC approved	

MODEL	THROUGHPUT DATA	INTERFACE	WAYSIDE
MDS FIVE Series - 050	100 Mbps Aggregate (50 Mbps full-duplex)	100 Base TX	Two T1/E1s
MDS FIVE Series - 100	200 Mbps Aggregate (100 Mbps full-duplex)	100 Base TX	Two T1/E1s
MDS FIVE Series – 160	70-200 Mbps Aggregate (35 - 100 Mbps full duplex)	1-16 x T1/E1	Scalable Ethernet

Ordering

FIVE Series Indoor Unit

SDIDU-MD-000	*	
Setup	3	1+0, 50 Mbps
	4	1+0, 100 Mbps
	7	1+1 2+0, 50 Mbps
	8	1+1 2+0, 100 Mbps

FIVE Series Outdoor Unit

ODU5800M	*	DPP	
Antenna	I		Internal
	E		External

Accessories for the FIVE Series

Antenna Kit	KFR-L04-C2
RTU Simulator Assembly	02-2094A01

View Accessories catalog at www.gemds.com

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- Download user documentation
- Read application notes and white papers