MDS TransIt® NR-100

Licensed Band Multi-Protocol Remote Radio

Features

- Long Range - Up to 30 Miles
- High Power/Licensed Band - Reduced Interference
- Multiple Protocols - Two Serial Ports or One Ethernet and One Serial
- Serial Pass-Through or Encapsulation of Serial Data Over TCP or UDP.
- Filtering of IP Traffic at Ethernet remotes - Optimizes Traffic Over the Radio Link
- Controlled Access of Remotes - a Restricted Access List is Kept by the Master Station

Low Traffic Applications in:

- Oil and Gas SCADA
- Electric Distribution Automation
- Water Management
- Lottery Networks
- Automated Teller Machines (ATM)
- Point of Sale (POS)

GE MDS

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

For more than two decades, GE 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,
GE MDS offers both licensed and license-free solutions with applications in SCADA, telemetry, public safety, telecommunications, and online transaction markets.

MDS TransIt® System Overview

An MDS Transit point-to-multipoint system is organized in cells. Each cell consists of one NM-200 master station and multiple NR-100 remote radios managed by Transit NMS (Network Management System) software. Multiple master stations are typically connected through a TCP/IP WAN to one or multiple processing centers.

Transit integrates into existing customer networks allowing the wireless network to seamlessly coexist with a wired network infrastructure.

The NR-100 Remote

The TransIt NR-100 family of radios utilizes DSP technology to offer a highly efficient radio network with extended range capability to support bursty data applications.

TransIt NR-100 is based on our reliable family of licensed narrowband radios (200 MHz to 960 MHz) that have made GE MDS a leader in the wireless industry.

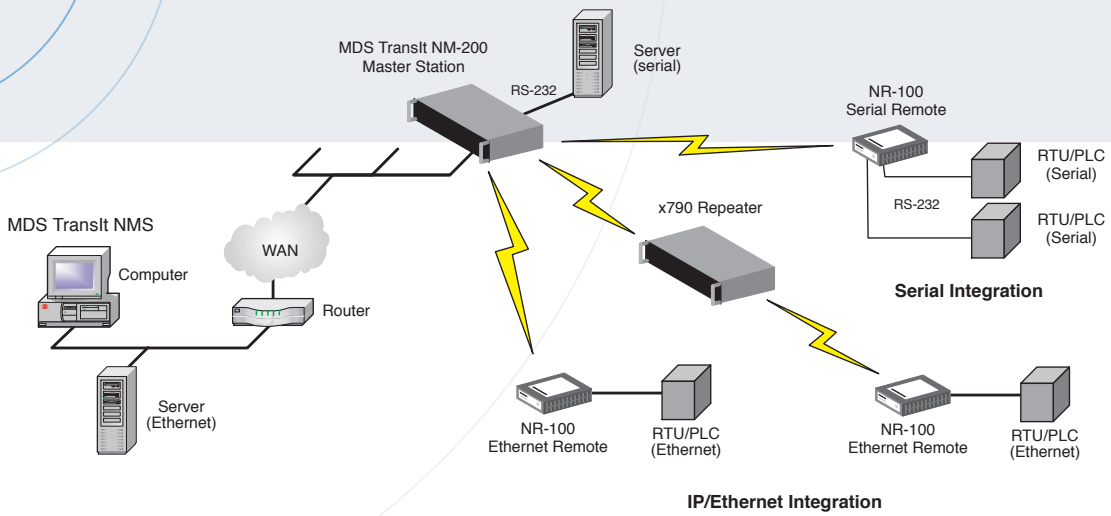
The NR-100 Ethernet option provides one Ethernet and one serial port, while the NR-100 serial option provides two serial ports. The ports operate independent from one another and can pass data up to 19,200 bps.

The proprietary wireless MAC runs simultaneously and independently from the user data port protocol. The wireless MAC ensures fair and immediate access to all remotes sharing the wireless media. It also has the functionality required to provide a reliable data delivery service in a potentially noisy radio environment. With its collision avoidance mechanism the wireless MAC virtually eliminates unnecessary retries and maximizes user data throughput.

Why Consider a MDS TransIt Solution?

- **Reliable** – Designed and built for low failure rates and reduced maintenance costs.
- **Resilient** – TransIt architecture offers a redundancy option at the master station for increased availability in mission-critical systems.
- **Flexible** – TransIt supports multiple users connecting to multiple applications via multiple protocols on the same MDS TransIt unit or the same network - simultaneously!
- **Comprehensive Network Management** – manage the radios using Telnet and the embedded menu interface. Use SNMP to monitor traps and alarms. Use the Windows based GUI to manage alarms, statistics, diagnostic tools and remote control functionality.

MDS TransIt® NR-100 Remote Radio Specifications



Serial Integration

IP/Ethernet Integration

General
- Data Rate: 9,600 bps @ 12.5 kHz
- Frequency Band: 900, 400, 200 MHz Licensed

Radio
- Carrier Power: 0.1 to 5 watts (20 to 37 dBm)
- Modulation: CPFSK
- Transceiver Options:

Model	Transceiver	Frequency Range	Rate (kbps)
NR-102L	MDS 2710	220-240 MHz	3.2 - 19.2
NR-104L	MDS 4710	330-512 MHz	4.8 - 19.2
NR-109L	MDS 9710	800-960 MHz	9.6

(Consult transceiver specifications for additional details)

Physical Interface
- Serial: Com 1: RS-232/V24[2] (DB-25F, DCE)
  Com 2: RS-232 (DB-11, DCE)
- Ethernet[1]: 10 BaseT (RJ-45, DTE)
- Antenna: N-Type (female)

Protocols
- Wireless: proprietary sloted Aloha with collision avoidance.
- Ethernet[1]: IEEE 802.3, Ethernet II
- TCP/IP[1]: IPv4, TCP, UDP, ICMP, DHCP, Multicast
- Serial:
  - async pass-through
  - encapsulation over IP (tunneling) of serial async multidrop protocols including Modbus, DNP.3, DF1, BSAP
  - SLIP
  - X.25
  - X.28 Async PAD (X.3/X.28/X.29)

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

Electrical
- Input Power: 13.6 Vdc nominal
- Current: Tx: 2.1 A at 5 Watts, Rx: < 205 mA, (add 0.2 A when using Ethernet)

Mechanical
- Case: 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: 1.27 kg. (2.8 lbs.)
- Mounting options: Flat surface mount brackets

Management
- Local Console
- Telnet
- SNMP v1, MIB-II, Enterpriose MIB
- TransIt NMS. Windows 95, 98 or Windows NT™ compatible system for configuration, fault and performance management over TCP/IP.

Agency Approvals
- FCC part 101 (licensed)
- IC/UL
- ETSI[3]
- CE Mark
- MPT 1411[4]

[1] *On units with Ethernet option.*
[2] *On units with Serial option.*
[3] *NR-104L with MDS 4710E transceiver @ 4.8 Kbps*
[4] *NR-104L with MDS 4710M transceiver @ 4.8 Kbps*

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