

MDS TRANSNEXT

Long-range, Ethernet, and Unlicensed Serial Communications

The MDS TransNEXT™ represents the evolution of wireless communication, building upon the legacy of the MDS TransNET™ 900 MHz unlicensed radio. This advanced solution offers secure Ethernet bridging over the air through its innovative Bridge Mode, facilitating seamless migration to modern IP protocols with AES 256 encryption for enhanced data security. TransNEXT ensures reliable communication performance and flexibility, supporting both Ethernet and serial connectivity at the network edge. With backwards compatibility, it allows for a smooth transition from legacy serial networks to secure Ethernet environments, empowering users to connect remote assets efficiently and securely.

Key Benefits

- With the introduction of bridging, there is a seamless upgrade path from legacy serial networks to a more secure and robust IP/Ethernet infrastructure
- Maintain strong, consistent communication over unlicensed 900 MHz spectrum, even in noisy environments
- Preserve your existing network with full backwards-compatibility to TransNET networks with similar or better RF performance in real-world field installations
- Protect your critical infrastructure with AES-256 encryption and built-in packet filtering
- Optimized for remote sites, energy-efficient sleep mode supports solar or battery power with periodic sync

Applications



Energy

- Remote control of IED and PLC at distribution substations
- Condition monitoring for pole-top circuit breakers and capacitor banks



Oil & Gas

- Remote monitoring of pipeline flow and status signals
- Monitor and transmit wellhead pressure and tank levels collected by RTUs



Heavy Industry

- Activation of perimeter gates based on detection of vehicle
- Monitor and control remote pumps and compressors



Water & Wastewater

- Monitor lift stations across multiple sites from control room



What's New

- Over-the-Air L2 Bridging with Bridge Mode* to enable migration to IP networks
- Simultaneous IP/Ethernet and serial communication
- High performance Media Access Control (MAC) to prevent data collision
- TransNET compatible support for Mirrored Bits protocol (MB8)
- Low power consumption suitable for power sensitive applications
- Over-the-Air Compression for maximized throughput
- SSH and HTTPs for secure remote device management

Flexible

- Optional always on e-ink display for zero-power diagnostics, antenna alignment, spectrum analyzer
- Serial and Ethernet traffic capture for enhanced diagnostics
- Backward compatible with legacy MDS TransNET
- IP Payload Ethernet to Serial conversion for efficient serial data over the air
- Built-in Ethernet to Serial Terminal Server
- Compatible with most SCADA, Telemetry, and EFM protocols including ModBus and DNP3

Reliable

- Industry leading interference performance with patented low latency fast frequency hopping
- Extended range up to 30 miles
- auto-corrects and avoids jammed frequencies
- Over-the-Air (OTA) firmware updates

Secure

- Unique passwords, signed FW, and secure boot
- Role Based Access Control (RBAC), activity loggings and alarms
- Bridge Mode* includes key-based device authentication, AES 256 encryption of payload data, ingress packet filtering

Industrially Hardened

- CSA Class I, Div. 2 groups A,B,C,D for Hazardous Locations
- Operational temperature range from -40°C to 70°C
- IP Performance in high noise environments
- Electromagnetic pulse (EMP) hardened



Technical Specifications

MECHANICAL

Case	Rugged die-cast aluminum
Dimensions	3.6 D x 5.3 W x 1.5 H in., 9.14 D x 13.46 W x 3.81 H cm
Weight	1.25 lbs. (0.57kg)
Mounting Options	Flat mounting brackets, integrated DIN Rail mount, Horizontal DIN mount

GENERAL

Operating Modes	Simulated Full duplex* half duplex
Frequency Bands	902-928 MHz ISM Band
Modulation	2 Level FSK
Range	Up to 30 miles

POWER USAGE

Input Power	6 to 36 Vdc		
Power Consumption (At 13.8V)	Model	NET9B / NET9L	NET 9S
	Transmit	435mA	695mA
	Receive	48mA	70mA
	Sleep	< 4mA	2.90mA

TRANSMITTER

Carrier Power	+30dBm to +10dBm programmable
Accuracy Normal	+/- 1.5 dB
Output Impedance	50 Ohm
VSWR >10:1 functional operation with Alarm indicator	

RECEIVER

Sensitivity	-108dBm (1x 10 ⁻⁶ BER) typical
Sensitivity	>70dB
Error Detection	CRC16; Resend on error
Adjacent Channel Rejection	45 dB nominal

SECURITY

Boot Security	Secureboot, digitally signed firmware
Authentication	Role Based Access Control (RBAC) and key-based device authentication
Encryption	AES 256 Data Encryption
Event Log	System Event logging and alarm output

PHYSICAL INTERFACE

Serial	RS-232/RS-485 (User Console/Serial Data)
USB	2.0 (USB-C) (User Console Only)
Ethernet	Ethernet 10/100 (RJ-45)
Antenna	TNC Female
Power/IO	6 pin Phoenix

DATA

Usable throughput	115.2 kbps
Serial Data Port Speeds	1.2 to 115.2 kbps
<ul style="list-style-type: none"> Native Serial Over the Air Layer 2 Ethernet Bridging Local Ethernet to Serial Conversion Over the Air 	

PHYSICAL INTERFACE

Serial	RS-232/RS-485 (RJ 45)
USB	Ethernet 10/100 (RJ-45)
Ethernet	USB-2.0 (USB-C)
Antenna	TNC
Power/IO	6 pin Phoenix

ACCESSORIES

- Standard Flat Brackets for TransNEXT (03-4123A15)
- Horizontal DIN for TransNEXT (84-4232A04)
- Vertical DIN kit for TransNEXT (03-4125A06)
- COM Port Adapter (73-2434A25)
- DC Power Plug, 6-pin, polarized (73-1194A85)
- Power Supply AC-12VDC for TransNEXT (01-3682A03)

NETWORK MANAGEMENT

- Protocols: DHCP, ICMP, UDP, TCP, ARP, 802.3 (Ethernet), SSH, HTTP/HTTPS
- Serial: TCP server, Modbus/TCP, Modbus RTU, TCP client, UDP Unicast
- Local and Remote Management via SSH (Should this be in Management section?)
- Network Management via MDS PulseNET

ENVIRONMENTAL

Operating Temp	-40 to +70 C
Operating Tempfor Display	-15 to +60 C
Humidity	<95% (Non-condensing)

AGENCY APPROVALS

- FCC Part 15B, C
- ISED RSS Gen Issue 5, RSS-247 Issue 2
- UL 121201:2017 / CSA C22.2 No. 213-17 Class 1 Div 2
- IEC 62368-1 CB Scheme
- NOM 019, 208
- ANATEL NCC 27602/25

OPERATING MODES

TransNEXT Mode

- TransNET backward compatible
- Master, Remote, Store and Forward (SAF)
- Sleep Mode (75 mS wake, RTU/line controlled)
- Network wide low power mode
- Master co-location

Bridge Mode

- Packetized Ethernet and Serial Over the Air
- Layer 2 Bridging, integrated terminal server
- Media Access Control (MAC) for collision avoidance
- Available authentication and encryption
- Master or Remote operation

Mirrored Bits Mode

- TransNET compatible support for Mirrored Bits (MBB)
- Point to Point Master or Remote

FEATURE SET OPTIONS

Feature Set	Authorized Operating Modes
Lite	<ul style="list-style-type: none"> TransNEXT
Bridge Mode Ready	<ul style="list-style-type: none"> Bridge Mode (Default) TransNEXT
Mirrored Bits	<ul style="list-style-type: none"> Mirrored Bits (Default) TransNEXT

**Feature Requires Authorization*

For more information
visit governova.com/grid-solutions

©2025 GE Grid Solutions, LLC, a GE Vernova company, and/or affiliates. All rights reserved. GE is a trademark of General Electric Company and is used under trademark license. GE, the GE monogram, GridBeats, Multilin, FlexLogic, and EnerVista are trademarks of GE Vernova. GE Vernova reserves the right to make changes to specifications of products described at any time without notice and without obligation to notify any person of such changes.

