



DH3 - ETHERNET WIRELESS GATEWAY



PRODUCT HIGHLIGHTS

- Wireless Gateway (900 MHz or 2.4 GHz ISM Band)
 - Serves as a Primary Data Collection Point in OleumTech™ Wireless Sensor and I/O Network
 - Advanced Networking Architecture: Point-to-Multipoint/Star (Gateway-to-End Nodes) & Peer-to-Peer/Repeater (Gateway-to-Gateway)
 - Works with Gateways / Transmitters / Wireless I/O Modules / RS485 I/O Expansion System
 - Secure AES Encryption Option and Enhanced Site Security Protection
- Data Logger
 - Event and System Logging
 - Supports Trending (Up to 1 Sec Sampling Rate/Up to 4 Axes per Trend)
 - Exportable to .CSV File Using Local Display or BreeZ® 5.x Software
- Web Server
 - Remotely View Modbus Data, Trends, Event/System Logs, Network and Device Settings
 - SSL/TLS Encryption, Role-based Authentication (Admin/User/Guest)
- Ethernet RJ-45 Port (10/100/1000 Mbps)
 - Modbus TCP/IP (Master/Slave)
 - DHCP Client/Static IP Addressing
- USB Interfaces
 - 2x USB 2.0 Host Ports for Data Logging and Firmware Upgrade
 - 1x Mini-USB Port for PC Connectivity (BreeZ® Software) and Firmware Upgrade
- 2x Serial Ports - RS232 or RS485 (Software Configurable)
 - Modbus Master or Slave
 - LevelMaster ASCII Slave
 - ROC-Link Master (Opcode 10 and 17)
- Secure Local (Mini-USB) and Remote (IP) Device Configuration Option
 - Configurable Using BreeZ® 5.x Software
 - SSL/TLS Encryption, Role-based Authentication (Admin/User)
- Optional Local RS485 I/O Expansion Solution (Digital, 4-20mA, 0-10V)
- Optional 5.7" Local LCD Display: Zero Configuration, Touchscreen (WX-1000-LCD)
 - Access Modbus Data, Event and System Logs, Network and Device Settings, Export Logs to .CSV, and More

Multi-Function Wireless Gateway	Data Logger Trends/Events/System	Modbus Master/Slave LevelMaster Slave
Ethernet Port Modbus TCP/IP	Secure AES Encryption Site Security Protection	2x Serial Ports (RS232/RS485)
Optional RS485 I/O Expansion	Optional Local LCD Display	Web Server

WIRELESS SENSOR NETWORK

- Reliable, Robust Wireless Performance
- Eliminates Costly Conduits and Wiring
- Monitor / Control Process Conditions 24/7
- Reduces Labor, Installation and Maintenance Costs
- Helps Meet Regulatory Requirements
- Industrial Strength Performance and Durability



APPLICATIONS

- Oil & Gas, Pipeline, Petro-Chem, Water/Wastewater, Utilities, Irrigation Systems, Mining, SCADA Systems, 3A Sanitary, Food & Beverage, Pharmaceuticals, Biotechnology, and Much More

TECHNICAL SPECIFICATIONS

HARDWARE FEATURES

Device Functionality	Wireless Gateway, Data Logger, Modbus Master/Slave, LevelMaster Slave, ROC-Link Master
Embedded Controller	32-Bit Power ARM Cortex - A9core Microprocessor, Up to 800 MHz CPU Speed
Memory	Flash Memory: 4 GB / SD RAM Memory: 512 MB
Ethernet	Modbus TCP/IP Master/Slave, DHCP Client/Static IP (Device Designed to Work Behind Firewall)
Serial Interfaces	2x RTU Ports (RS232/RS485 Software Configurable) Modbus Master/Slave, LevelMaster ASCII Slave, ROC -Link Master (Supports Opcode 10 and 17) ROC: Read up to 10 User Configurable (TLP) Points, INT16 (signed or unsigned) or FL(QAT)
2x USB 2.0 Host Ports	Supports Firmware Upgrade Function (USB Flash Drive Required)
1x Mini-USB (OTG)	Supports Local Device Configuration Using BreeZ® 5.x or Higher, Firmware Upgrade

DATA LOGGING

Trending (RAM Only)	Up to 5 Days @ 1 Second Interval; Supports Multiple Trends; Exportable to .CSV
Event Logging (RAM Only)	Event Types: Rising or Falling Edge; Event Control: Deadband or On-Delay; Exportable to .CSV
System Logging (RAM Only)	Viewable on Web Server or Local Display

WEB SERVER

Features	View Modbus Data, Trends, Event and System Logs, Device/Network Settings, and More
Security	SSL/TLS Encryption, Role-based Authentication (Admin/User/Guest)

SOFTWARE INTERFACE (PC APPLICATION)

BreeZ Software	Version 5.x or Higher; PC with Windows® Vista or Higher
Connectivity	Configurable Locally (Mini-USB to USB) and Remotely (Ethernet)
Security	SSL/TLS Encryption, Role-based Authentication (Admin/User)

WIRELESS COMMUNICATIONS

TYPE 900MHz/2.4GHz	ISM Band, FSK (Frequency-Shift Keying), AES Encryption 256-bit US, 128-bit Elsewhere 900 MHz: FHSS (Frequency Hopping Spread Spectrum) / 50 Freq Ch x 10 Hopping Tables Channel Size: 500 KHz for 1 W Radio 2.4 GHz: DSSS (Direct-Sequence Spread Spectrum), AES Encryption 128-bit Channel Size: 5 MHz, Utilizes 12 out of 802.15.4 Standard 16 Channels
Frequency	902 to 928 MHz (North Am); 915-928 MHz (Aus, Int'l) / 2.4 GHz US/Int'l
Bit Rate	900 MHz: 9600 bps / 115.2 kbps ; 2.4 GHz: 250 kbps
Output Power	900 MHz: 1 mW to 1 W / 2.4 GHz: 10 mW to 63 mW
Receiving Sensitivity	-110 dBm @ 9600 bps, -100 dBm @ 115.2 kbps, or -100 dBm @ 250 kbps
Range (Peer-to-Peer)	900 MHz: Up to 64.4 Km/; 2.4 GHz: Up to 9.3 Km
Antenna Connector	MMCX

CERTIFICATIONS

FCC	FCC Part 15
Industry Canada (IC)	ICES-003
Safety Class I;	Division 2 (Pending)

MECHANICAL SPECIFICATIONS

DH3 Dimensions	4.6" (W) x 3.3" (H) x 2.2" (D) / 115.2 mm (W) x 83.3 mm (H) x 55.4 mm (D)
Package Dimensions	8" (W) x 6" (H) x 2.5" (D) / 203 mm (W) x 152 mm (H) x 63 mm (D)
Weight, DH3	Net: 0.9 lbs/415 g; Packaging: 1.3 lbs/570 g
Mounting Hardware	DIN Rail Clip (Spring-Loaded)

ELECTRICAL SPECIFICATIONS

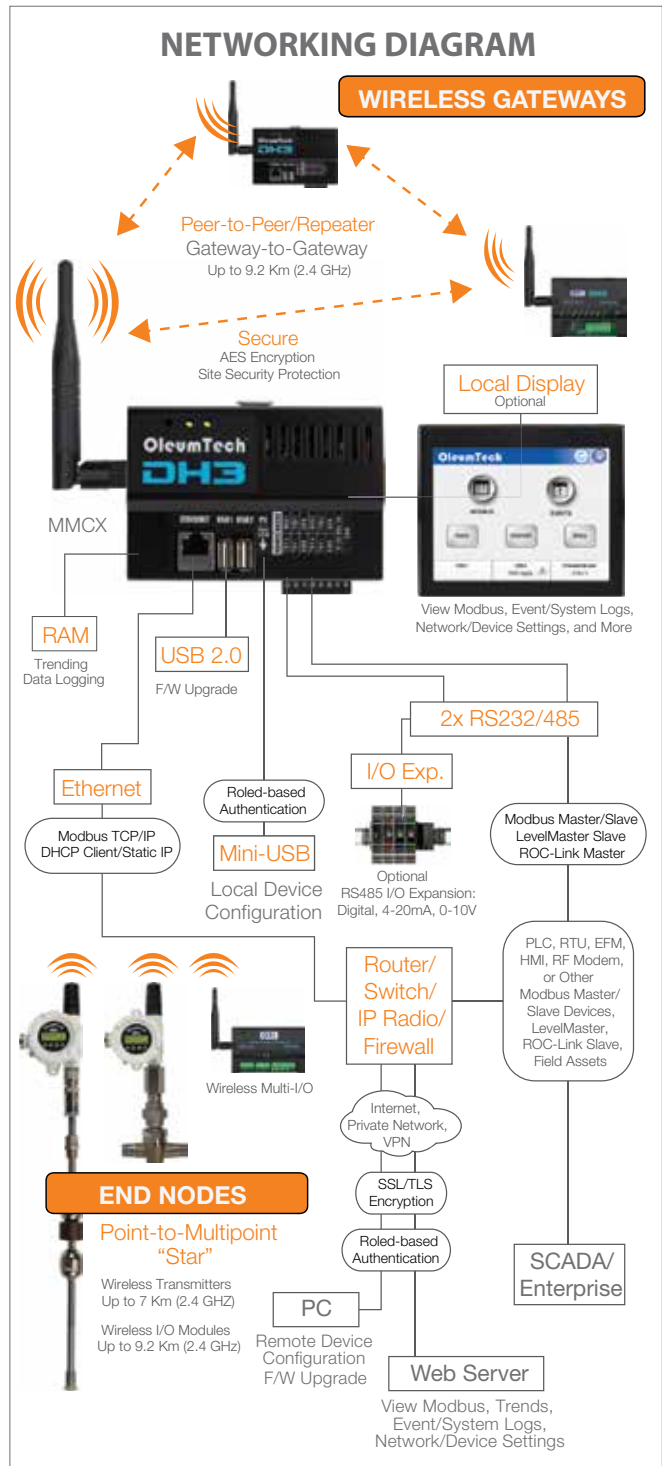
DC Power Input	30 VDC Maximum; 12 VDC Normal; 9 VDC Minimum
Average Power Input	Local Display Off: 3 Watt; Local Display On: 5 Watt
Power Consumption @ 12 V	LCD Unplugged: Idle 340mA (typ), Transmission @100mW 250mA (typ) LCD Plugged In, but Off: Idle 236mA (typ), Transmission @100mW 260mA (typ) LCD Plugged In, and On: Idle 350mA (typ), Transmission @100mW 380mA (typ)

GENERAL SPECIFICATIONS

Operating Conditions	Temperature: -40 °F to 176 °F (-40 °C to 80 °C) Humidity: 0 to 99 % , Non-Condensing
Warranty	2-Year Parts and Labor

ORDERING INFORMATION

Model Numbers	00 MHz: WG-0900-DH3 / WG-0915-DH3 (Australia) 2.4 GHz: WG-2400-DH3, 5.7" Local Display: WX-1000-LCD
Wirelessly Connects to	Base Unit, DH2, DH3, Wireless I/O Modules, Wireless Transmitters



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