technical datasheet

WLN-2000 Series

Industrial Wireless Ethernet Range

- Ethernet and serial data over 802.11 a/b/g wireless network
- High wireless data rate (108Mbps turbo mode)
- Configurable transmit power (15mW – 400mW) for superior radio range
- Bridge /Router, Access Point /Client in one, reduces inventory costs
- Online diagnostics and configuration throughout the network
- Modbus protocol support

Product Overview

The MTL WLN-2000 range forms part of MTL's industrial wireless Ethernet product series, providing reliable and secure distance communication solutions.

Comprising the WLN-2400ES (2.4GHz, 400mW) and the WLN-2500ES (5GHz, 400mW), the WLN-2000 products provide up to 108Mbps, encrypted, repeatable, meshed Ethernet connectivity to link industrial process and automation applications.

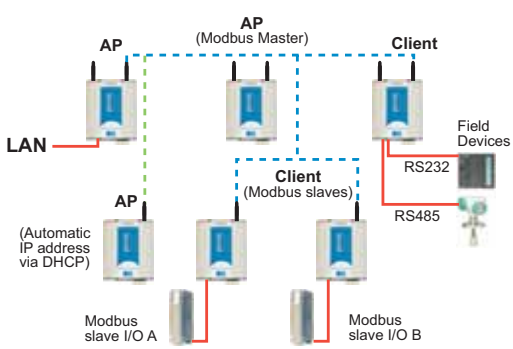
Features and Benefits

- 802.11 a, b, g (2.412 - 2.472GHz: 5.18 – 5.825GHz) option availability
- WDS (AP - AP) multi-hop repeater function to extend radio coverage
- Spanning Tree functionality enabling self healing of network
- Serial client /server /multicast functionality (point-point; point-multipoint)
- Modbus TCP to Modbus RTU Gateway / Modbus Master for I/O transfer
- Hardware encryption ensuring no reduction in data throughput
- Security to WPA2 PSK /802.11i - 802.1x military grade encryption
- MAC address and IP filtering to reduce unnecessary network traffic

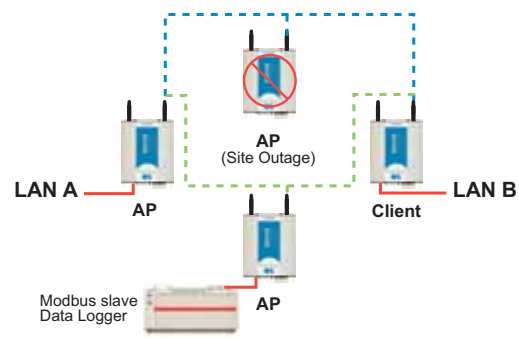
Applications

- Monitoring, control and reporting for:
  - -Oil /Gas field production /distribution
  - -Mine vehicle diagnostics
  - -Traffic management
  - -Water / Waste water to SCADA
  - -PLC to PLC / SCADA / DCS connection
  - -Serial field devices to LAN (serial server)
- Video surveillance /monitoring
- Linking process /automation networks.

WDS, Modbus Master - Slave, DHCP



WDS and Self Heal Mesh



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SPECIFICATION

WIRELESS

Frequency band

WLN-2400ES 2.412 - 2.472GHz 1 - 108 Mbps (Configurable)
WLN-2500ES 5.18 - 5.825GHz 6 - 108 Mbps (Configurable)
'Auto mode' determines fastest rate, relative to signal strength.

Receiver sensitivity

WLN-2400ES -97dBm @ 1Mbps to -74dBm @ 108Mbps (8% FER)
WLN-2500ES -94dBm @ 6Mbps to -74dBm @ 108Mbps (8% FER)

Channel Spacing

WLN-2400ES 5MHz (13 channels, 2.412 - 2.472GHz*)
WLN-2500ES 20MHz (27 channels, 5.150 - 5.8GHz*)
*country regulation dependant

WLN-2400ES 1-24 Mbps: 400mW (+26 dBm) to
108 Mbps: 125mW (+21 dBm)
WLN-2500ES 6-24 Mbps: 400mW (+26 dBm) to
108 Mbps: 125mW (+21 dBm)

Line of sight range

WLN-2400ES 802.11 b/g - 1.6miles/2km @ 100mW EIRP (Europe)
802.11 b/g - 6miles/10km @ 4W EIRP (Americas/Australia)
WLN-2500ES 802.11a - 1.8miles/3km @ 500mW EIRP (Europe)
802.11a - 3miles/5km @ 1W EIRP (Americas/Australia)
(DFS dependant) (Range extendable using WDS: AP - AP)

Antenna connector

2 x Female SMA - standard polarity
(Signal diversity or high gain receive antenna)

SYSTEM CONFIGURATION PARAMETERS

System address

(ESSID) 1 - 31 character text string

Security

Data encryption: 64 /128 bit WEP - WPA2 PSK - 802.11i - 802.1x
Password: https accessibility

Bandwidth Protection

MAC Address: - Whitelist/Blacklist
IP Filtering: - Whitelist/Blacklist
ARP Filtering: - Whitelist/Blacklist

Configurable

Access Point or Client/ Bridge or Router
Broadcast or Control Mode - Point to Point, Point to Multipoint,
WDS Wireless Distribution System: AP - AP repeater functionality
Modbus TCP /RTU Gateway
Serial client /server /multicast (simultaneous RS232 /485 connections)
On-board Modbus Master for I/O transfer

Protocols supported

TCP /IP, UDP, ARP, SNMP, RADIUS /802.1X, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET

User Configuration

Embedded web page default URL

DISCRETE I/O

Input: Volt-free contact
Output: FET - 30V DC 500mA.
(Used to transfer input /output status or communications failure output).

ETHERNET PORT

Standard 10 /100 BaseT; RJ45 - IEEE 802.3

SERIAL PORT

RS232

DB9 female DCE ; RTS /CTS /DTR /DCD
(hardware signals provided)

RS485

2 pin terminal block (max distance 4000'/1.2km -non-isolated)

Data rate (bps) configurable

1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400.

Data format

7 or 8 data bits - stop /start /parity bits.

DIAGNOSTICS INDICATION

Diagnostics/ LED

Power /OK; RX; TX /Link; RS232; LAN; RS485; Digital I/O status

Reported diagnostics

RSSI measurement in dBm;
Connectivity information / statistics; System Log file

Ethernet Port

Link /100Mbps

STANDARDS COMPLIANCE

Radio: EN 300 328 ; FCC Part 15.247, RSS 210
EMC: EN 301 489 - 17; FCC Part 15
Electrical: EN 60950

GENERAL

Hazardous area approvals

Class 1 Div 2 (USA/Canada) – pending

Environmental

Temperature: -40 to +60°C
Humidity: 0 – 99% RH non-condensing

Housing

Powder-coated, extruded aluminium

Dimensions

114 x 140 x 30 mm

Mounting

'T' section 35mm DIN rail to EN 50022

Weight

< 0.5kg

Terminal blocks

Removable, 12 AWG (2.5mm^2)

Power Supply

9 to 30V DC - under /over voltage protection

Current

Average current: Idle 12V - 270mA; Idle 24V - 140mA
Transmit current: Full TX (400mW) 12V - 470mA;
Full TX (400mW) 24V - 250mA

ORDERING INFORMATION

WLN-2400ES-US	802.11bg serial/Ethernet AP/client 400mW
WLN-2400ES-AU	802.11bg serial/Ethernet AP/client 400mW
WLN-2400ES-NZ	802.11bg serial/Ethernet AP/client 400mW
WLN-2400ES-EU	802.11bg serial/Ethernet AP/client 100mW
WLN-2500ES-US	802.11a serial/Ethernet AP/client 400mW
WLN-2500ES-AU	802.11a serial/Ethernet AP/client 400mW
WLN-2500ES-NZ	802.11a serial/Ethernet AP/client 400mW
WLN-2500ES-EU	802.11a serial/Ethernet AP/client 100mW

Specify country of use when ordering.

RF power and frequency subject to country regulatory requirements.

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