



# 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.

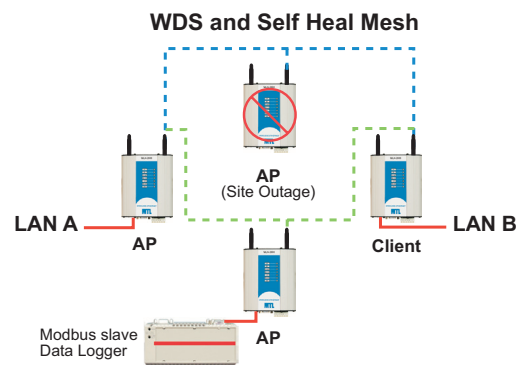
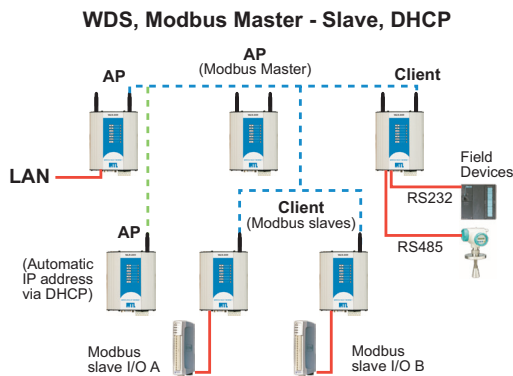
### Features and Benefits

- 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.



## 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<sup>2</sup>)

#### 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.

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



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