

WE-2100T Series

Wireless LAN embedded serial device servers



- > Connects serial devices to IEEE 802.11a/b/g networks
- > Choice of operation modes: Real COM, TCP Server, TCP Client, UDP, and RFC2217
- > Windows real COM and Linux fixed TTY drivers provided
- > Wireless security with WEP, WPA, and WPA2
- > Select any baudrate between 50 bps and 921.6 Kbps
- > 9 programmable digital I/O channels
- > SSL/SSH encryption for configuration
- > Compact size and easily mounted housing



Overview

The WE-2100T is a secure and compact embedded wireless module for connecting serial devices to access points in infrastructure mode, or to other WE-2100T's in ad-hoc mode. When using the WE-2100T,

complex RF know-how is not needed to connect serial devices to a wireless Ethernet network. Encryption for secure data transfer is supported, along with the 802.11a/b/g radio specifications.

Operation Modes for Embedded Applications

The WE-2100T supports Real COM, TCP Server, TCP Client, UDP, and RFC 2217 operation modes, which are designed to fulfill the

requirements of embedded module applications. Complete driver support for Real COM mode is included and easy to install.

On-site Configuration with Serial Command Mode

- Easy on-site configuration of network settings
- Simple command frame format
- Comprehensive command set for serial and network configuration
- Easily switch between software and hardware triggers
- Software reset

Specifications

Form Factor

Type: Small metal housing that encloses advanced ARM-based 32-bit processor; supports both wireless and Ethernet connections

Dimensions: 54 x 40 x 13.3 mm (2.13 x 1.57 x 0.52 in)

Weight: 100 g

Automatic Network Selection

Wireless or Ethernet: The WE-2100T will activate the Ethernet connection if detected at boot-up. If an Ethernet connection is not detected, the WE-2100T will choose wireless as the communication interface. Which interface to use can also be configured with the WE-2100T's configuration utilities.

Ethernet Interface

Number of Ports: 1

Speed: 10/100 Mbps, auto MDI/MDIX

Connector: 44-pin dual-in-line

Magnetic Isolation Protection: 1.5 KV built-in

WLAN Interface

Standard Compliance: IEEE 802.11a/b/g

Network Modes: Infrastructure mode (a/b/g), Ad-Hoc mode (b/g)

Spread Spectrum Technology: DSSS, CCK, OFDM

Transmit Power:

5.15 to 5.25 GHz: 15 dBm @ 6 Mbps; 12 dBm @ 54 Mbps

5.825 GHz: 15 dBm @ 6 Mbps; 12 dBm @ 54 Mbps

2.412 to 2.483 GHz: 17 dBm @ 6 Mbps; 15 dBm @ 54 Mbps

2.412 to 2.472 GHz: 18 dBm @ 1 to 11 Mbps

Receive Sensitivity:

5.15 to 5.25 GHz: 6 Mbps @ -90 dBm; 54 Mbps @ -72 dBm

5.725 to 5.825 GHz: 6 Mbps @ -89 dBm; 54 Mbps @ -72 dBm

2.412 to 2.483 GHz: 6 Mbps @ -90 dBm; 54 Mbps @ -73 dBm

2.412 to 2.472 GHz: 11 Mbps @ -87 dBm; 1 Mbps @ -94 dBm

Transmission Rate:

802.11a: 54 Mbps

802.11b: 11 Mbps

802.11g: 54 Mbps

Transmission Distance: Up to 100 meters (in open areas)

Wireless Security: AES, WEP 64/128-bit, WPA, WPA2, PSK, 802.11i

802.11i Authentication: TLS, PEAP/GTC, PEAP/MD5, PEAP/MSCHAPv2, TTLS/PAP, TTLS/CHAP, TTLS/MSCHAP, TTLS/MSCHAPv2, TTLS/EAP-MSCHAPv2, TTLS/EAP-GTC, TTLS/EAP-MD5, LEAP

Channels:

North America: CH1 to CH11, 5150-5825 MHz

Europe: CH1 to CH13, 5150-5875 MHz

Japan: CH1 to CH14, 5150-5350 MHz

Antenna Connector: Reverse SMA

Antenna Gain: 2 DBi

Serial Interface

Number of Ports: 1

Serial Standards:

- Port 1: TTL
- Port 2: TTL console port

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF

Baudrate: 50 bps to 921.6 Kbps (non-standard baudrates supported)

Serial Signals

TTL:

- Port 1: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
- Port 2: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c, HTTP, SMTP, SNMP, SSH, HTTPS

Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility, Serial command mode (configured through the data port)

Windows Real COM Drivers: Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Embedded CE 5.0/6.0, XP Embedded

Fixed TTY Drivers: SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i

Linux Real TTY Drivers: Linux kernel 2.4.x, 2.6.x

Operation Modes: Real COM, TCP Server, TCP Client, UDP, RFC2217

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 70°C (-4 to 158°F)

Surface Temperature (at full baudrate of 921.6 Kbps)

Top Panel:

43.0°C, when air temp = 25°C

55.0°C, when air temp = 55°C

Bottom Panel:

44.5°C, when air temp = 25°C

67.0°C, when air temp = 55°C

Power Requirements

Input Voltage: 3.3 VDC (±5%)

Power Consumption:

921.6 Kbps (full speed): 540 mA

Idle: 190 mA

Ethernet mode: 670 mA

Inrush current: 2100 mA

Regulatory Approvals

EMC: CE (EN55022 and EN55024 Class A, ETSI EN 301 489-17, ETSI EN 301 489-1)

Safety: UL (UL60950-1), TÜV (EN60950-1)

EMI: FCC Part 15 (Subpart B Class A, Subpart C, Subpart E)

Radio: CE (ETSI EN 301 893, ETSI EN 300 328), ARIB STD-33, ARIB STD-T66, ARIB STD-T71

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

MTBF (meantime between failures):

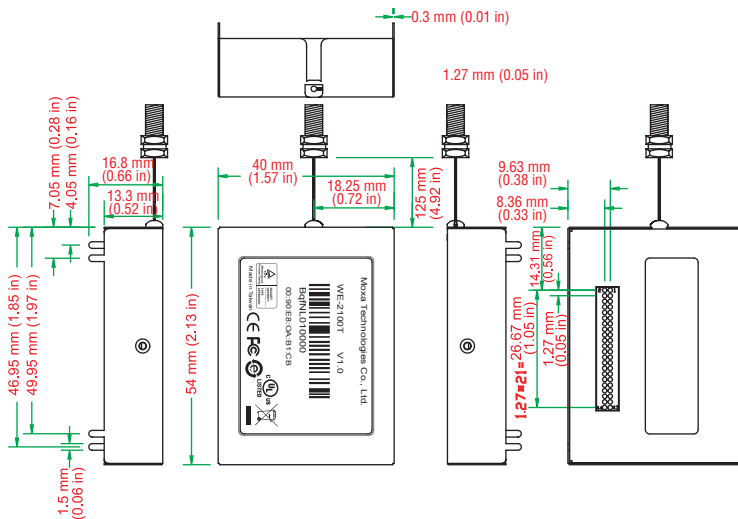
WE-2100T: 505288 hrs

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions and Pin Assignment



| | | | |
|-----------------------|----|----|-----------------------|
| 3.3V | 1 | 2 | GND |
| 3.3V | 3 | 4 | GND |
| 3.3V | 5 | 6 | GND |
| Console_TxD | 7 | 8 | Console_RxD |
| Console_RTS | 9 | 10 | Console_CTS |
| Console_DTR | 11 | 12 | Console_DSR |
| PIO0 | 13 | 14 | Console_DCD |
| PIO1 | 15 | 16 | PIO4(WLAN strength 1) |
| PIO2 | 17 | 18 | PIO5(WLAN strength 2) |
| PIO3 | 19 | 20 | PIO6(WLAN strength 3) |
| Data_TxD | 21 | 22 | PIO7(WLAN strength 4) |
| Data_RTS | 23 | 24 | Data_RxD |
| Data_DTR | 25 | 26 | Data_CTS |
| Ready_LED | 27 | 28 | Data_DSR |
| Fault_LED | 29 | 30 | Data_DCD |
| Eth_Tx+ | 31 | 32 | WLAN_Active_LED |
| Eth_Tx- | 33 | 34 | SW_RESET |
| Eth_Center_TAP | 35 | 36 | HW_RESET |
| Eth_Center_TAP | 37 | 38 | Eth_100M_LED |
| Eth_Rx+ | 39 | 40 | Eth_10M_LED |
| Eth_Rx- | 41 | 42 | Reserved |
| PIO8(WLAN strength 0) | 43 | 44 | Reserved |

Ordering Information

Available Modules

WE-2100T: 1-port wireless module supporting IEEE 802.11a/b/g

Available Starter Kits

WE-2100T-ST: Starter Kit for the WE-2100T

Package Checklist (module)

- WE-2100T wireless module
- IEEE 802.11a/b/g Antenna

Package Checklist (starter kit)

- WE-2100T-ST evaluation board
- Power adaptor
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card