

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, Sntp, 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

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)

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

Ambient Relative Humidity: 5 to 95% (non-condensing)

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

Standards and Certifications

Safety: UL 60950-1, EN 60950-1

EMC: CE, FCC

EMI: EN 55022 Class A, FCC Part 15 Subpart B Class A

EMS:

EN 55024,

EN 61000-4-2 (ESD),

EN 61000-4-3 (RS),

EN 61000-4-4 (EFT),

EN 61000-4-5 (Surge),

EN 61000-4-6 (CS),

EN 61000-4-11

Radio: EN 300 328, EN 301 489-1, EN 301 489-17, EN 301 893

Green Product: RoHS, CRoHS, WEEE

Reliability

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

MTBF (mean time between failures):

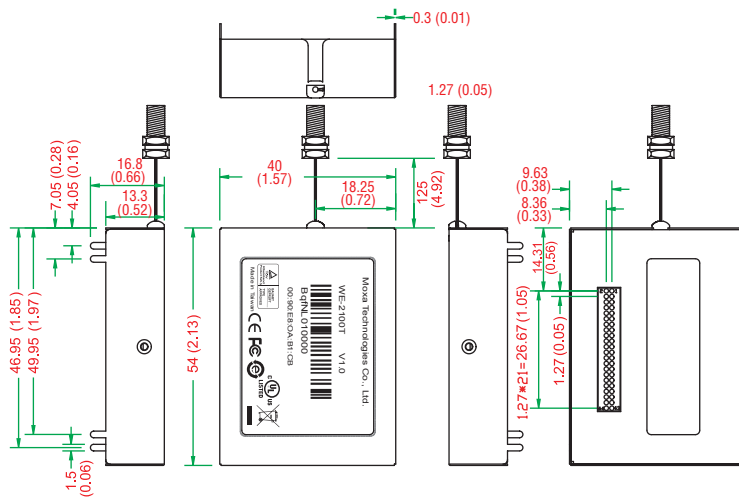
WE-2100T: 505288 hrs

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 (module not included)

Note: Starter kits do not include the WE-2100T module. Please order modules and evaluation kits separately.

Package Checklist (modules)

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

Package Checklist (starter kits)

- WE-2100T-ST evaluation board
- Power adaptor
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card