

W315/325/345

RISC-based embedded computers with GSM/GPRS, LAN, and 1, 2, or 4 serial ports



- › MOXA ART ARM9 32-bit 192 MHz processor
- › 32 or 64 MB RAM, and 16 MB flash disk onboard
- › Built-in quad band GSM/GPRS 850/900/1800/1900 MHz
- › GPRS Class 10, coding scheme from CS1 to CS4 supported
- › 1, 2, or 4 software-selectable RS-232/422/485 serial ports
- › 10/100 Mbps Ethernet for network redundancy
- › Designed to withstand 5 g's of continuous vibration and 50-g shocks
- › Relay Output for external alarm connection (W345 only)
- › SD slot for storage expansion
- › Ready-to-run Linux Kernel 2.6 platform
- › DIN-rail or wall-mount installation
- › Robust, fanless design



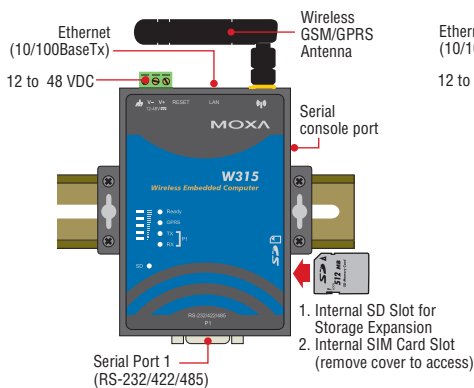
Overview

The W315/325/345 are embedded Linux computers that feature 1, 2, or 4 software selectable RS-232/422/485 ports, 1 Ethernet port, and quad-band GSM/GPRS 850/900/1800/1900 MHz for cellular communication. In addition, the W345 has 2 USB 2.0 hosts and 1 relay output, and the W325 and W345 come with an SD socket for external storage expansion. The W315/325/345 computers' Linux OS runs on

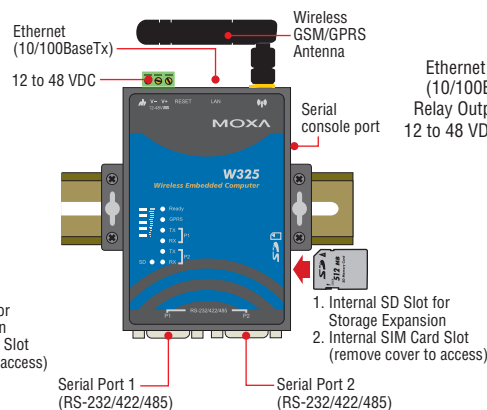
the MOXA ART 32-bit ARM9 processor, which provides a powerful and reliable platform for harsh, industrial environments. You will find these computers ideal for a variety of machine-to-machine applications, including data acquisition, protocol conversion, and remote device control and monitoring.

Appearance

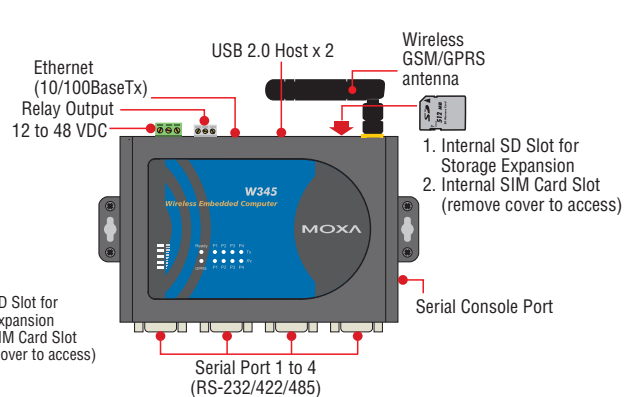
W315



W325



W345



Hardware Specifications

Computer

CPU: MOXA ART ARM9 32-bit RISC CPU, 192 MHz

OS (pre-installed): Embedded Linux with MMU support

DRAM:

W315/325: 32 MB

W345: 64 MB

Flash: 16 MB

USB: (W345 only) USB 2.0 compliant hosts x 2, type A connector

Relay Output: (W345 only)

- Form C, SPDT x 1
- Normal Switching Capacity: 2A @30 VDC
- Switching Power: 60 W max.
- Switching Voltage: 220 VDC max.
- Switching Current: 2 A max.
- Operating Time: 4 ms @ 20°C
- Initial Contact Resistance: 100 milli-ohm max.

Storage

Storage Expansion: SD slot

Ethernet Interface

LAN: 1 auto-sensing 10/100 Mbps port (RJ45)

Magnetic Isolation Protection: 1.5 KV built-in

Cellular Interface

Cellular Modes: GSM, GPRS

Radio Frequency Bands: 850/900/1800/1900 MHz

GPRS Class: 10

Coding Schemes: CS1 to CS4

Serial Interface

Serial Standards: 1, 2, or 4 RS-232/422/485 ports, software-selectable (DB9 male)

ESD Protection: 15 KV ESD protection for all signals

Console Port: RS-232 interface (TxD, RxD, GND), with 4-pin pin header output

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF, ADDC™ (automatic data direction control) for RS-485

Baudrate: 50 bps to 921.6 Kbps (non-standard baudrates supported; see user's manual for details)

Serial Signals

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

LEDs

System:

W315: Ready, SD

W325: Ready, SD

W345: Ready, SD

LAN: 10M/Link, 100M/Link (on connector)

Cellular: GPRS Enabled, GSM Signal Strength

Serial: TxD, RxD

Switches and Buttons

Reset Button: Supports "Reset to Factory Default"

Physical Characteristics

Housing: Aluminum (1 mm)

Weight:

W315/325: 195 g

W345: 400 g

Dimensions: (without ears or antenna)

W315: 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)

W325: 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)

W345: 150 x 100 x 38 mm (5.91 x 3.94 x 1.50 in)

Mounting: DIN-rail (requires optional DK-35A DIN-rail kit), wall

Antenna Length: 110 mm

Environmental Limits

Operating Temperature: -10 to 60°C (14 to 140°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 80°C (-4 to 176°F)

Anti-vibration: 5 g @ IEC-68-2-6, sine wave, 5-500 Hz, 1 Oct./min, 1 hr/axis

Anti-shock: 50 g @ IEC-68-2-6, half-sine wave, 30 ms

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:

W315/325: 4.8 W

• 200 mA @ 24 VDC

• 400 mA @ 12 VDC

W345:

With no load on USB ports: 7.2 W

• 300 mA @ 24 VDC

• 600 mA @ 12 VDC

With full load on USB ports: 14.4 W

• 600 mA @ 24 VDC

• 1200 mA @ 12 VDC

Regulatory Approvals

EMC: CE (EN55022 Class A, EN61000-3-2, EN61000-3-3, EN55024),

FCC (Part 15 Subpart B, CISPR 22 Class A, ANSI C63.4)

Safety: UL/cUL (UL60950-1), LVD (EN 60950-1)

R&TTE: EN301 489-1, EN301 489-7, EN301 511

Safety: LVD: EN60950-1

UL/cUL: UL60950-1, CSA C22.2 No. 60950-1-03

Green Product: RoHS, CRoHS, WEEE

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock) with battery backup

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

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Software Specifications

Linux

Kernel Version: 2.6.9

Boot Loader: Redboot

Protocol Stack: TCP, UDP, IPv4, SNMP V1, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSH 1.0/ 2.0, SSL, DHCP, NTP, NFS, SMTP, Telnet, FTP, PPP, PPPoE

File System: JFFS2 (on-board flash)

System Utilities: bash, busybox, tinylogin, telnet, ftp, scp

telnetd: Telnet Server daemon

ftpd: FTP server daemon

sshd: Secure shell server

Apache: Web server daemon, supporting PHP and XML

openvpn: Virtual private network service manager

iptables: Firewall service manager

pppd: dial in/out over serial port daemon & PPPoE

snmpd: snmpd agent daemon

inetd: TCP server manager program

Application Development Environment:

- MOXA Linux API Library

- Linux Tool Chain: Gcc, Glibc, GDB

- BINEncryptor: Encryption tool for binary files, based on "Moxa Intellectual Protection Technology" (Patented)

Device Drivers:

W315/325: UART, RTC, Buzzer, SD Card

W345: UART, RTC, Buzzer, SD Card, USB (supports USB flash disk), DO

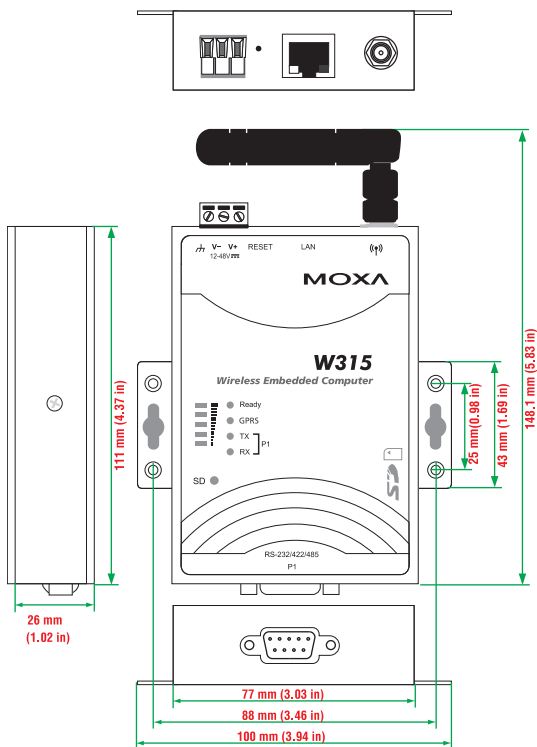
Software Encryption Lock:

BINEncryptor: Encryption tool for binary files (based on patented Moxa technology)

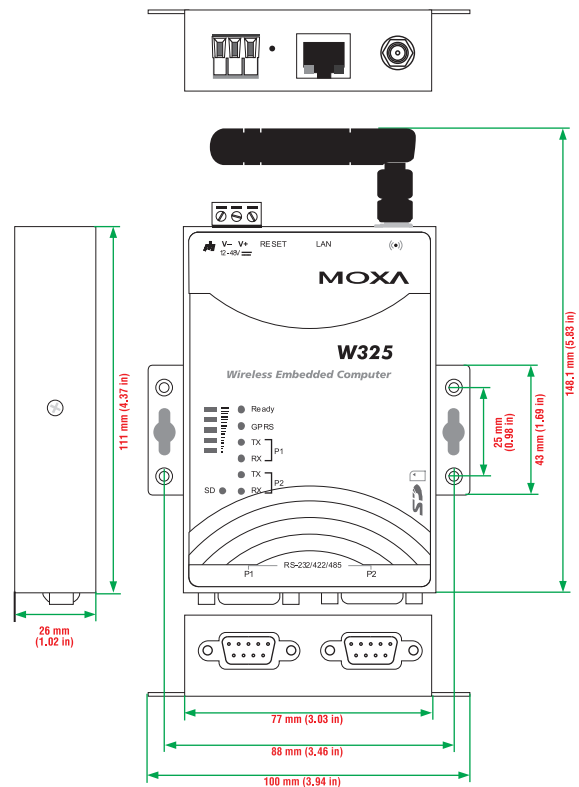
Model Name	Serial Ports	LAN Port	WLAN	Cellular	Relay Output	Storage		OS
	RS-232/422/485	10/100 Mbps	802.11a/b/g	GSM/GPRS Quad Band		SD	USB	
W315	1	1	–	✓	–	✓	–	Linux
W325	2	1	–	✓	–	✓	–	Linux
W345	4	1	–	✓	1	✓	2	Linux

Dimensions (unit = mm)

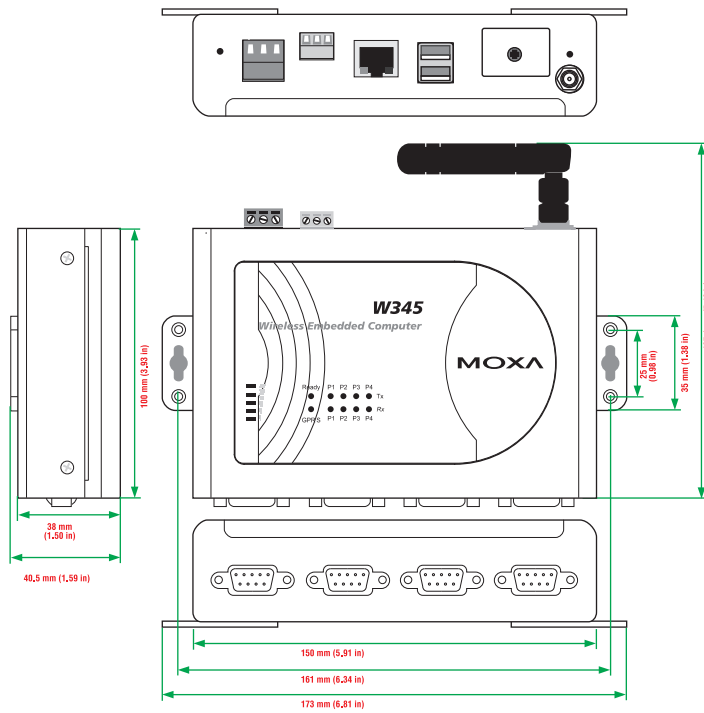
W315



W325



W345



: Ordering Information

Available Models

- W315-LX:** RISC-based wireless embedded computer with GSM/GPRS, 1 serial port, LAN, and SD
- W325-LX:** RISC-based wireless embedded computer with GSM/GPRS, 2 serial ports, LAN, and SD
- W345-LX:** RISC-based wireless embedded computer with GSM/GPRS, 4 serial ports, LAN, SD, USB, and relay output

Optional Accessories (can be purchased separately)

DK-35A: Mounting kit for 35-mm DIN-Rail

Package Checklist

- W315 or W325 or W345 computer
- Wall mounting kit
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- CBL-4PINDB9F-100: 4-pin pin header to DB9 female console port cable, 100 cm
- Universal power adaptor (including terminal block to power jack converter)
- GSM/GPRS Antenna
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card