

# W315A/325A

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



- > MOXA ART ARM9 32-bit 192 MHz processor
- > 32 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 or 2 software-selectable RS-232/422/485 serial ports
- > 10/100 Mbps Ethernet for network redundancy
- > Designed to withstand a continuous 5-g vibration and 50-g shocks
- > SD slot for storage expansion
- > Ready-to-run Linux Kernel 2.6 platform
- > DIN-Rail or wall mount installation
- > Robust, fanless design



## Overview

The W315A/325A 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. Both the W325A and W345A come with an SD socket for external storage expansion. The W315A/325A 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

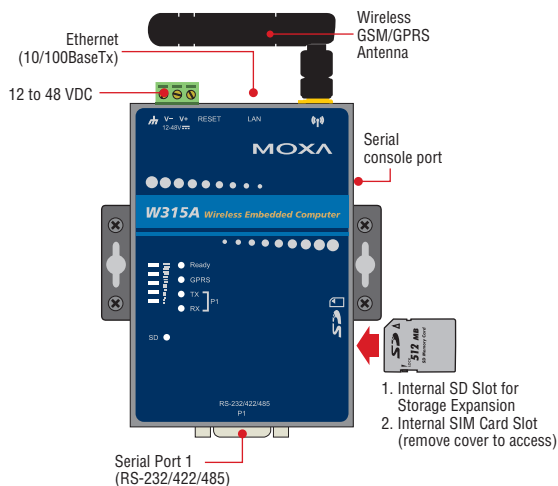
applications, including data acquisition, protocol conversion, and remote device control and monitoring.

The W315A and W325A, which are upgrades of the W315 and W325, provide the following benefits not provided by the W315 and W325:

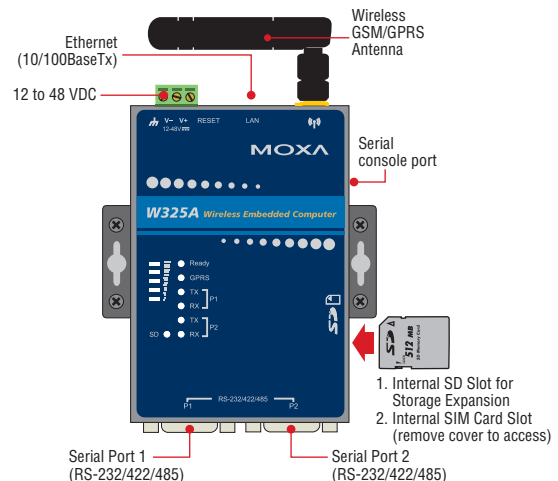
1. Users can execute commands while GPRS is connected
2. Application program development is much easier using the Rcore package

## Appearance

### W315A



### W325A



## Hardware Specifications

### Computer

**CPU:** MOXA ART ARM9 32-bit RISC CPU, 192 MHz  
**OS (pre-installed):** Embedded Linux with MMU support  
**DRAM:** 32 MB  
**Flash:** 16 MB

### 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 or 2 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:** 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:** 195 g  
**Dimensions:** (without ears or antenna)  
 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)  
**Mounting:** DIN-rail (requires optional DK-35A DIN-rail kit), wall  
**Antenna Length:** 84 mm

### Environmental Limits

**Operating Temperature:** -10 to 60°C (14 to 140°F)  
**Storage Temperature:** -20 to 80°C (-4 to 176°F)  
**Ambient Relative Humidity:** 5 to 95% (non-condensing)  
**Anti-vibration:** 5 g's @ IEC-68-2-6, sine wave, 5-500 Hz, 1 Oct./min, 1 hr/axis  
**Anti-shock:** 50 g's @ IEC-68-2-6, half-sine wave, 30 ms

### Power Requirements

**Input Voltage:** 12 to 48 VDC  
**Power Consumption:**  
 Without GPRS loading: 4.8 W  
 • 100 mA @ 48 VDC  
 • 200 mA @ 24 VDC  
 • 400 mA @ 12 VDC  
 With GPRS loading: 12 W  
 • 330 mA @ 48 VDC  
 • 534 mA @ 24 VDC  
 • 970 mA @ 12 VDC

### Standards and Certifications

**Safety:** UL 60950-1, EN 60950-1, CSA C22.2 No. 60950-1-03  
**EMC:** EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A  
**Radio:** EN 301 489-1, EN 301 489-7, EN 301 511  
**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)  
**MTBF (mean time between failures):** 674,725 hrs

### Warranty

**Warranty Period:** 5 years  
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Software Specifications

### Linux

**OS:** Linux 2.6.9  
**File System:** JFFS2 (for on-board flash)  
**Internet Protocol Suite:** TCP, UDP, IPv4, SNMPv1, ICMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPPoE  
**Internet Security:** OpenVPN, iptables firewall  
**Web Server (Apache):** Allows you to create and manage Web sites, supporting PHP and XML  
**Terminal Server (SSH):** Provides secure encrypted communications between two un-trusted hosts over an insecure network.  
**Dial-up Networking:** PPP Daemon for Linux allows Unix machines to connect to the internet through dialup lines, using the PPP protocol, as a PPP server or client. Works with 'chat', 'dip', and 'diald', among (many) others. Supports IP, TCP, UDP and (for Linux) IPX (Novell).  
**Watchdog:** Features a software function to trigger system reset in a user specified time interval. (MOXA API provided)

### Application Development:

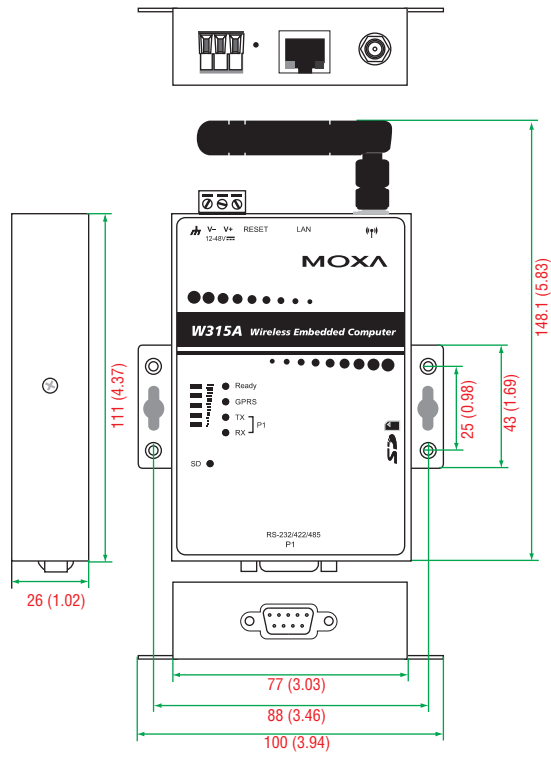
- Moxa API Library (Watchdog timer, Moxa serial I/O control, Moxa DI/DO API)
- GNU C/C++ Cross-Compiler
- GNU C library
- GDB source-level debugging server

**Software Protection:** Encryption tool for user executable files (based on patented Moxa technology)

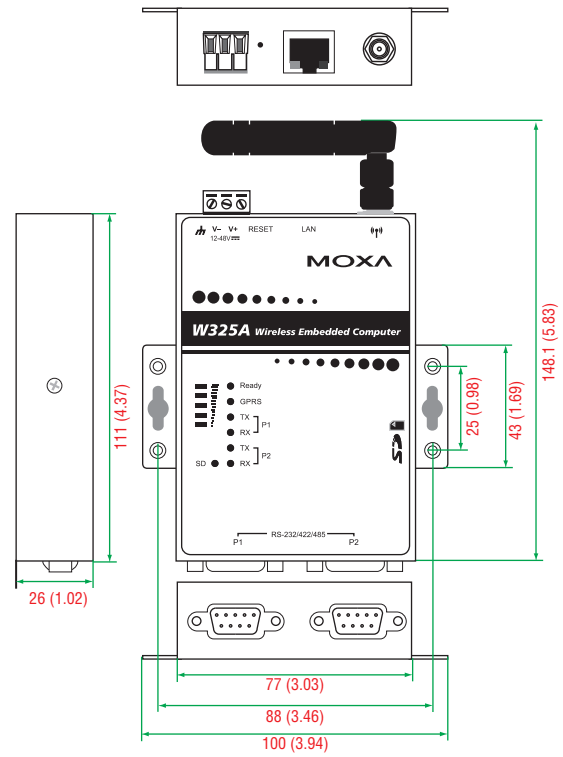
## Dimensions

Unit: mm (inch)

### W315A



### W325A



## Ordering Information

### Available Models

**W315A-LX:** RISC-based wireless embedded computer with GSM/GPRS, 1 serial port, LAN, and SD

**W325A-LX:** RISC-based wireless embedded computer with GSM/GPRS, 2 serial ports, LAN, and SD

**Optional Accessories** (can be purchased separately)

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

### Package Checklist

- W315A or W325A embedded 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
- GSM/GPRS antenna
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card