W315A/325A

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

W315A W325A

- 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 50g 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

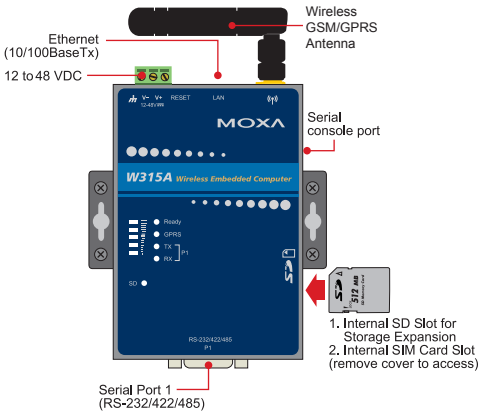
The W315A/325A are embedded Linux computers that feature 1, 2, or 4 software selectable RS-232/422/485 ports, 1 Ethernet port, and quad-band GSM/GPRS 850/900/1800/1900 MHz for cellular communication. Both the W325A and W345A come with an SD socket for external storage expansion. The W315A/325A computers' 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:

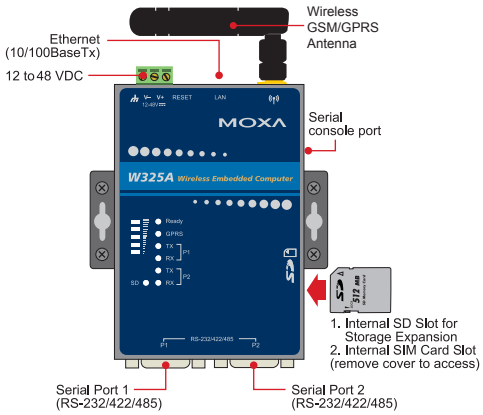
1. Users can execute commands while GPRS is connected
2. Application program development is much easier using the Rcore package

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
• 540 mA @ 24 VDC
• 1000 mA @ 12 VDC
• 200 mA @ 24 VDC
• 400 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

Software Specifications

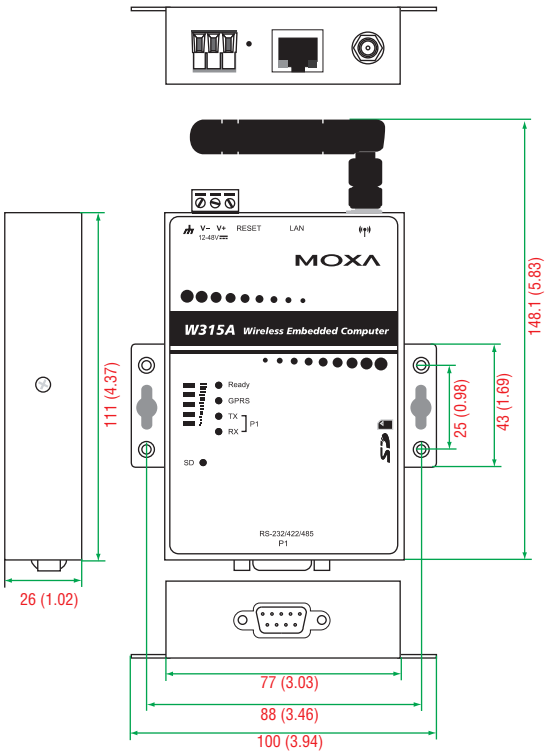
Linux
OS: Linux 2.6.9
File System: JFFS2 (for on-board flash)
Internet Protocol Suite: TCP, UDP, IPv4, SNMPv1, ICMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPPoE
Internet Security: OpenVPN, iptables firewall
Web Server (Apache): Allows you to create and manage 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)

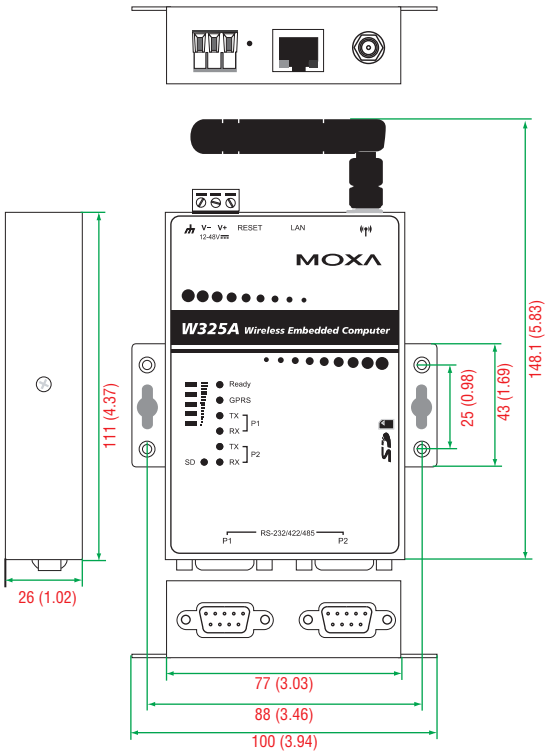
Dimensions

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