W315A/325A

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

W325A

W315A

› 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 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
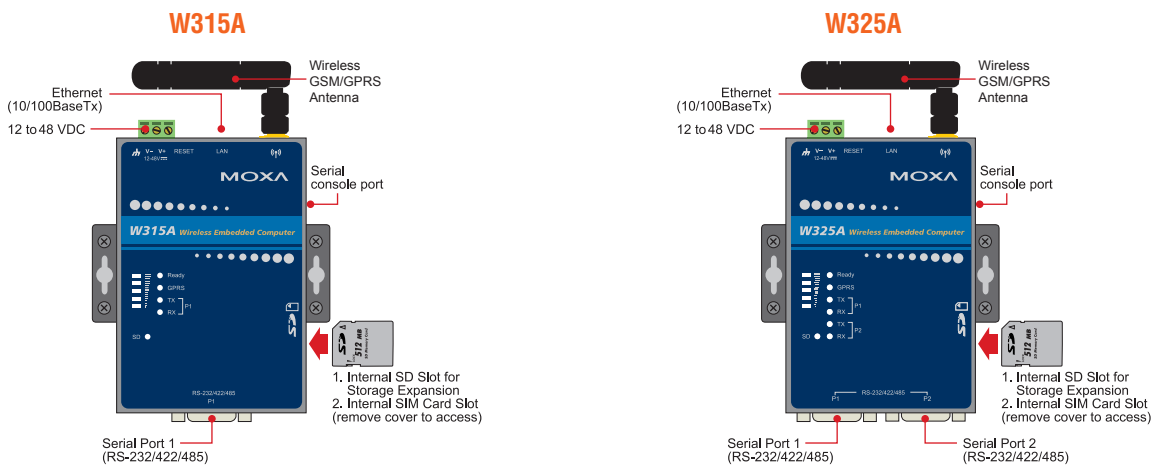› Robust, fanless design

Overview

The 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:

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

Appearance

W315A

Ethernet (10/100BaseTx)
12 to 48 VDC
Wireless GSM/GPRS Antenna
Serial console port
1. Internal SD Slot for Storage Expansion
2. Internal SIM Card Slot (remove cover to access)
Serial Port 1 (RS-232/422/485)

W325A

Ethernet (10/100BaseTx)
12 to 48 VDC
Wireless GSM/GPRS Antenna
Serial console port
1. Internal SD Slot for Storage Expansion
2. Internal SIM Card Slot (remove cover to access)
Serial Port 1 (RS-232/422/485)
Serial Port 2 (RS-232/422/485)

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)
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: 4.8 W
• 200 mA @ 24 VDC
• 400 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 Software:
• MOXA Linux API Library
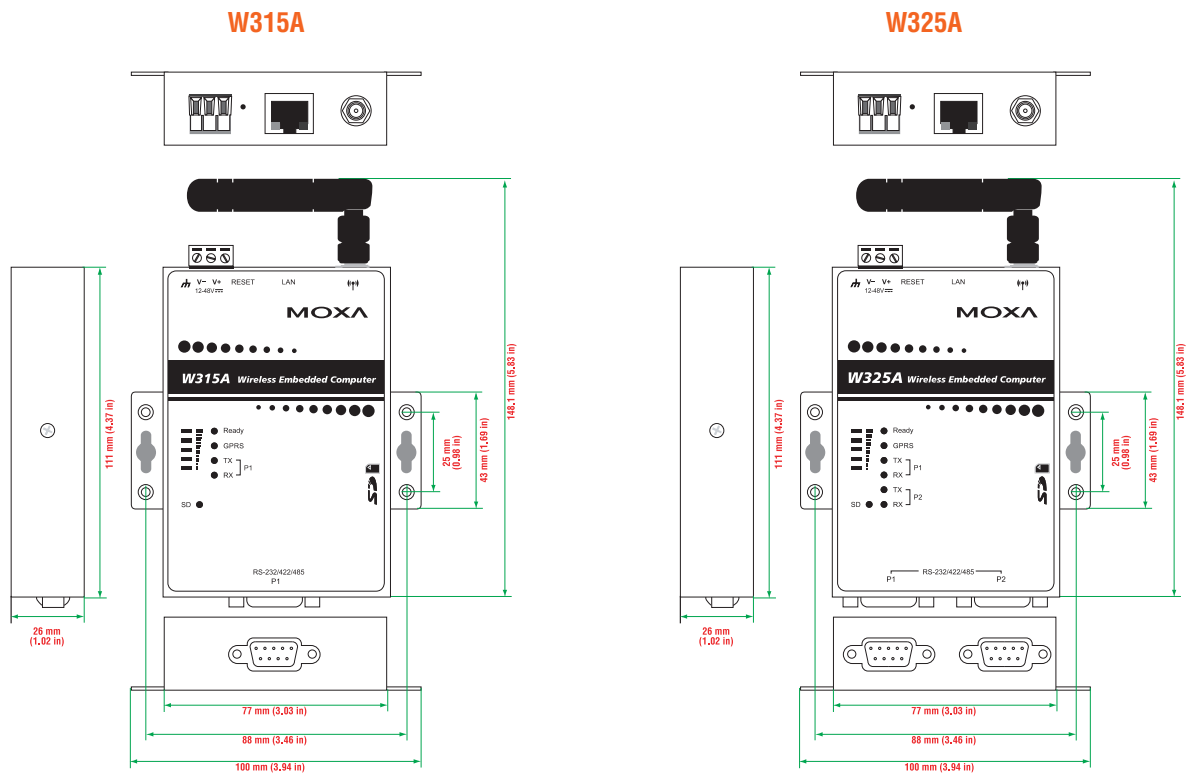• Linux Tool Chain: Gcc, Glibc, GDB
• BINEncryptor: Encryption tool for binary files, based on "Moxa Intellectual Protection Technology" (Patented)
Device Drivers: UART, RTC, Buzzer, SD Card
Software Encryption Lock:
BINEncryptor: Encryption tool for binary files (based on patented Moxa technology)

MOXA®

Dimensions (unit = mm)

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 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
- Terminal block to power jack converter
- GSM/GPRS Antenna
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card