

Applications:

- Monitoring / Asset Management
- Networking / Control
- Alarm / Annunciation

Features by Model	BU-245U-E-G	BU-245U-E-A	BU-945U-E
Frequency	2.412 - 2.472GHz	5.18 - 5.825GHz ⁽¹⁾	902-928MHz ⁽¹⁾
Modulation	802.11b/g	802.11a	802.11 g
TX Power	15 - 400mW ⁽²⁾	15 - 400mW ⁽²⁾	15 - 630mW
Data Rate	108Mbps	108Mbps	54Mbps
WDS (AP-AP)	Yes	Yes	Yes
Self-Healing (Spanning Tree)	Yes	Yes	Yes
Serial Client/Server/Multicast	Yes	Yes	Yes
Encryption Security Level (maximum level highlighted)	WPA2 /802.11i	WPA2 /802.11i	WPA2 /802.11i
MAC / IP Filtering	Yes	Yes	Yes
Network Function	AP/Client Bridge/Router	AP/Client Bridge/Router	AP/Client Bridge/Router
Online Diagnostics	Yes	Yes	Yes
Online Configuration	Yes	Yes	Yes

Footnote:

(1) Frequency availability - country regulatory dependant.

(2) Configurable TX Power option available - country regulations apply.

Wireless Benefits:

	Economic Impact	Remarks
Safety	Very High (> \$10M's/incident)	Fines, loss of life, injury risk. Regulatory compliance.
Productivity	High (> \$1M's/annually)	Single digit % efficiency improvements on large scale operations (e.g. refining). Process optimization. Condition monitoring.
Capex Savings	Low (\$10,000's - \$100,000's/install)	IW only. Savings of labor and material costs. Cable/conduit replacement. Asset management.

Note: Specifications subject to change

*Country Regulation Dependent. Specify country of application on ordering.

RF power and frequency may vary depending on country of application.

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Wireless Ethernet Made Simple™

COOPER Bussmann

Increase Plant Productivity by Improving Access to Critical Process Data

- Link industrial process and automation applications with encrypted, repeatable meshed Ethernet connectivity.
- 802.11 based wireless Ethernet modem range for secure long distance communications.
- Up to 108Mbps turbo mode for large data transfer.
- Spanning Tree functionality to enable self-healing network, plus get online diagnostics and configuration.
- Bridge/Router, Access Point/Client in one unit reduces inventory costs.



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BU-945U-E



Wireless Specifications

Frequency band

USA: 902-928MHz; 1 - 54Mbps (configurable) AUS: 915-928MHz; 0.25 - 13.5Mbps (configurable) 'Auto mode' determines fastest rate possible relative to RSSI.

Receiver sensitivity

USA: -95 dBm @ 1 Mbps - 72 dBm @ 54 Mbps

Channel Spacing

4 x 5MHz; 4 x 10MHz; 2 x 20MHz channels*.
*country regulation dependent

Transmit Power

USA: 1-24 Mbps:630mW (28dBm) - 54Mbps:250mW (24dBm)

Line of sight range

6+ miles/ 10+ km @ 630 mW (Range may be extended using WDS, antenna diversity)

Antenna connector

USA/AUS: 2 x Female SMA (Surge diverter: CSD-SMA-2500) (2 x antennas for signal diversity or high gain receive antenna)

System Configuration Parameters

System address (ESSID)

1 - 31 character text string

Security

- Data encryption – To WPA2 PSK - 802.11i - 802.1x
- Password – https accessibility

Bandwidth Protection

- MAC Address – Whitelist/ Blacklist
- IP Filtering – Whitelist/ Blacklist
- ARP Filtering – Whitelist/ Blacklist

Configurable

Access Point or Client/ Bridge or Router Broadcast or Control. Mode - Point to Point, Point to Multi-point. WDS Wireless Distribution System (AP - AP repeater functionality). Modbus TCP/ RTU Gateway. Serial client/ server/ multicast, simultaneous RS232/ 485 connection. On-board Modbus Master for I/O transfer.

Protocols supported

TCP/ IP, UDP, ARP, SNMP, RADIUS/ 802.1x, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET, MODBUS and MODBUS-TCP.

User Configuration

Embedded web page default URL.

Discrete I/O

Input voltage-free contact/ output FET 30VDC 500mA. Used to transfer input/output status: communications failure output.

Diagnostics

Diagnostics/ LED indication

Power /OK; RX; TX /Link; RS232; LAN; RS485; Digital I/O status

Reported diagnostics

RSSI measurement in dBm. Connectivity information/ statistics. System Log file.

Ethernet Port Indication

Link/ 100 Mbps

BU-945U-E

Ethernet Port

Standard

10/ 100 BaseT; RJ45 - IEEE 802.3

Serial Port

RS232

DB9 female DCE; RTS/ CTS/ DTR/ DCD (hardware signals provided)

RS485

2 pin terminal block (max distance 4000'/1.2km - non isolated)

Data rate (bps) configurable

1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200, 230400. 7 or 8 data bits, Stop/ start/ parity bits configurable.

General

Compliances

- EMC – EN 301 489 or EN 300 328
- Radio – EN 300 328; FCC Part 15.247, RSS 210
- CSA – Class I, Division 2 (pending)
- Safety – EN 60950
- UL Listed pending

Size

4.5 x 6.7 x 1.2”/ 114 x 168 x 30 mm

Housing

Powder-coated, extruded aluminium

Mount

DIN rail

Terminal blocks

Removable; Max conductor 12 AWG (2.5 mm2)

Temperature

-40 to +60°C ; -40 to +140°F

Humidity

0 – 99% RH non-condensing

Weight

<0.5kg (<1lb)

Power Supply

Nominal supply

9 to 30VDC; under/ over voltage protection

Average current draw

Idle 12V - 270mA; Idle 24V - 140mA

Transmit current draw

Full TX (630mW) 12V - 470mA; Full TX (630mW) 24V - 250mA

ORDERING INFORMATION

When ordering, please specify the following:

Order Code

BU-945U-E

Description

Wireless Ethernet 802.11, 900MHz high speed.

Frequency

907-922MHz DSSS

RF Power

630mW

Please specify country when ordering

BU-245U-E



Wireless Specifications

Frequency band

- **BU-245U-E-G** – 2.412 - 2.472GHz 1 - 108 Mbps (Configurable)
 - **BU-245U-E-A** – 5.18 - 5.825GHz 6 - 108 Mbps (Configurable)
- 'Auto mode' determines fastest rate, relative to signal strength.

Receiver sensitivity

- **BU-245U-E-G** – 97dBm @ 1Mbps - 74dBm @ 108Mbps (8% FER)
- **BU-245U-E-A** – 94dBm @ 6Mbps - 74dBm @ 108Mbps (8% FER)

Channel Spacing

- **BU-245U-E-G** – 5MHz spacing (13 channels, 2.412 - 2.472GHz - see above*)
 - **BU-245U-E-A** – 20MHz spacing (27 channels, 5.150 - 5.8GHz - see above *)
- *country regulation dependent

Transmit Power

- **BU-245U-E-G** – 1-24 Mbps: 400mW (+26 dBm) - 108 Mbps: 125mW (+21 dBm)
- **BU-245U-E-A** – 6-24 Mbps: 400mW (+26 dBm) - 108 Mbps: 125mW (+21 dBm)

Line of sight range

- **BU-245U-E-G** – 802.11 b/g - 1.6miles/2km @ 100mW EIRP (Europe)
– 802.11 b/g - 6miles/10km @ 4W EIRP (Americas/Australia)
- **BU-245U-E-A** – 802.11a - 1.8miles/3km @ 500mW EIRP (Europe)
– 802.11a - 3miles/5km @ 1W EIRP (Americas/Australia)

(DFS dependant)

Antenna connector

2 x Female SMA standard polarity
(Signal diversity or high gain receive antenna)
(Surge diverter, use CSD-N-600 with CCTAIL-SMA-M)

System Configuration Parameters

System address

(ESSID) 1 - 31 character text string

Security

- Data encryption – 64 /128 bit WEP - WPA2 PSK - 802.11i - 802.1x
- Password – https accessibility

Bandwidth Protection

- MAC Address – Whitelist/Blacklist
- IP Filtering – Whitelist/Blacklist
- ARP Filtering – Whitelist/Blacklist

Configurable

- Access Point or Client/ Bridge or Router Broadcast or Control Mode - Point to Point, Point to Multipoint
- WDS Wireless Distribution System: AP - AP repeater functionality
- Modbus TCP /RTU Gateway
- Serial client /server /multicast (simultaneous RS232 /485 connections)
- On-board Modbus Master for I/O transfer

Protocols supported

TCP /IP, UDP, ARP, SNMP, RADIUS /802.1X, DHCP, DNS, PPP, ICMP, HTTP, FTP, TFTP, TELNET

User Configuration

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Discrete I/O

Input voltage-free contact /output FET 30VDC 500mA. (Used to transfer input /output status or communications failure output).

BU-245U-E

Diagnostics Indication

Diagnostics/ LED

Power /OK; RX; TX /Link; RS232; LAN; RS485; Digital I/O status

Reported diagnostics

RSSI measurement in dBm; Connectivity information / statistics; System Log file

Ethernet Port

Link /100Mbps

Ethernet Port

Standard 10 /100 BaseT; RJ45 - IEEE 802.3

Serial Port

RS232

DB9 female DCE ; RTS /CTS /DTR /DCD (hardware signals provided)

RS485

2 pin terminal block (max distance 4000'/1.2km -non-isolated)

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Transmit current draw

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ORDERING INFORMATION

Order Code

BU-245U-E-G

Description

Ethernet 802.11b,g 400mW, 2.4GHz

Frequency

2.4GHz DSSS

RF Power

400mW

Order Code

BU-245U-E-A

Description

Ethernet 802.11a, 400mW, 5GHz

Frequency

5GHz DSSS

RF Power

400mW

Please specify country when ordering