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RAD-80211-XD/HP(-BUS)

802.11 b/g High-Power Ethernet Radio

INTERFACE

Data Sheet
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1 Description

The RAD-80211-XD/HP(-BUS) are industrial radio transceivers that conform to IEEE standards 802.11 b/g. These models allow users to configure access point, bridge or client modes for use in a wireless Ethernet network. They feature the latest high-security IEEE standard 802.11i with AES encryption and optional 802.1x authentication.

The RAD-80211-XD/HP(-BUS) products support TCP/IP, UDP and IP v4 protocols with all programming and radio diagnostics accessible via a simple integrated web server. The devices also feature user upgradeable firmware.

Integrating 802.11 networks with new and existing PLC networks is now easier than ever through the use of integrated serial ports. RS-232 and RS-422/485 ports allow integration of legacy serial devices onto Ethernet network. With protocol conversion, legacy Modbus® RTU devices can now be accessed using Modbus TCP with no additional hardware.

The integrated bus on the RAD-80211-XD/HP-BUS allows connection of expansion I/O modules. Up to 64 digital or 32 analog signals can be accessed via XML and controlled using Modbus RTU/TCP protocol.

2 Applications

- Video surveillance
- PC/PLC/RTU connectivity
- Perimeter security
- Homeland security
- RFID (Active)
- Mobile computing

3 Features

- 400 mW transmission power.
- Functions as an access point, client or bridge allowing the devices to work in a variety of applications.
- Supports data rates up to 54 Mbps over 2.4 GHz (802.11 b/g) frequency bands.
- Security features WEP, WPA, 802.11i (WPA2) 128-bit AES encryption and MAC Address checking provide for a trusted connection.
- RS-232 and RS-422/485 ports allow integration of serial devices onto Ethernet network (built-in device server).
- Supports mesh networking for secure routing in the event of a link failure.
- Receive antenna diversity to improve radio performance and reliability.
- Programming and network diagnostics are accessed via embedded web server and IT-friendly SNMP; no additional software needed.
- Modbus RTU/TCP compatible for process and industrial applications.
- I/O bus (RAD-80211-XD/HP-BUS version only) allows control of up to eight I/O expansion modules via Modbus RTU/TCP over a wireless 802.11 network.

> **i** Make sure you always use the latest documentation.
> It can be downloaded at www.download.phoenixcontact.com.
>
> A conversion table is available on the Internet at
> www.download.phoenixcontact.com/general/7000_en_00.pdf.

> **i** This data sheet is valid for all products listed on the following page:

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INSPIRING INNOVATIONS

4 Ordering Data

Products

Description	Type	Order No.	Pcs./Pkt
Radio, Industrial wireless Ethernet, 802.11 b/g with IEEE 802.11i security, IP20, rail mount	RAD-80211-XD/HP	2900046	1
Radio, Industrial wireless Ethernet, 802.11 b/g with IEEE 802.11i security, IP20, rail mount with I/O bus connection	RAD-80211-XD/HP-BUS	2900047	1

Accessories

Description	Type	Order No.	Pcs./Pkt
Module, 8-channel digital input	RAD-IN-8D	2867144	1
Module, 8-channel digital output with relays	RAD-OUT-8D-REL	2867157	1
Module, 4-channel analog input	RAD-IN-4A-I	2867115	1
Module, 4-channel analog output	RAD-OUT-4A-I	2867128	1
Module, 8-channel digital input and 2-channel analog output	RAD-IN+OUT-2D-1A-I	2867322	1
Module, pulse input	RAD-IN-2D-CNT	2885223	1
Module, pulse output	RAD-OUT-2D-CNT	2885236	1

5 Technical Data

General Data	
Power supply	12-30 V DC
Power Typical Maximum	5.52 W 6.72 W
RF Link Contact	2 A@30 V DC
Wiring Connections	Power: screw-type terminals, 12-24 AWG RS-232 port: DB-9 female RS-422/485 port: screw-type terminals, 12-24 AWG Ethernet port: RJ45
Mounting	EN 60715 mounting rail
Dimensions (L x W x H)	99 x 45 x 115 mm (3.90 x 1.77 x 4.5 in.)
Frequency	2.4 - 2.4835 GHz
Transmit Power	400 mW
Channel Selection	1-11
Case Material	plastic
Temperature Range	-40 to 60°C (-40 to 140°F)
Environmental Rating	IP20
Approvals	UL Class I, Div. 2 Groups A, B, C, D; WiFi compliant
FCC ID (USA)	SWX-SR2
LED Indicators	Power: solid when 12-30 V DC applied RS-485TX: flashes when RS-422/485 data is transmitted RS-485RX: flashes when RS-422/485 data is received RS-232TX: flashes when RS-232 data is transmitted RS-232RX: flashes when RS-232 data is received RF DATA: flashes when data is sent/received RF LINK: solid when RF link is established WAN LINK: flashes when data is detected on Ethernet port WAN SPEED: solid when 100Base-T connection exists WAN SPEED: off when no 100Base-T connected
Antenna Connector	MCX female (2x)

Receive Sensitivity Throughput

802.11b	1 Mbps -97 dBm 2 Mbps -96 dBm 5.5 Mbps -95 dBm 11 Mbps -92 dBm
802.11g	6 Mbps -94 dBm 9 Mbps -93 dBm 12 Mbps -91 dBm 18 Mbps -90 dBm 24 Mbps -86 dBm 36 Mbps -83 dBm 48 Mbps -77 dBm 54 Mbps -74 dBm

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