

802.11a/b/g Ethernet Radios with IEEE 802.11i Security

RAD-80211-XD 2885728

RAD-80211-XD-WM 2885715

Data Sheet 2181D

June 2006

Features

- IP67 wall mount and IP20 DIN-rail mount packages for use on the factory floor or in a control cabinet.
- 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 in both 5 GHz (802.11a) and 2.4 GHz (802.11b/g) bands creating more versatility for the wireless network.
- Security features WEP, WPA, 802.11i (WPA2) 128 bit AES encryption providing for a trusted connection.
- RS-232 and RS-422/485 ports allow integration of serial devices onto Ethernet network (built-in device server).
- Receive antenna diversity to improve radio performance and reliability.
- Programming and network diagnostics are accessed via integrated IT-friendly web server; no additional software needed.
- Modbus RTU/TCP compatible for process and industrial applications.

General Description

The RAD-80211-XD and RAD-80211-XD-WM are industrial radio transceivers that conform to IEEE standards 802.11a/b/g. The RAD-80211-XD/-WM allows 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 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



Figure 1. Ethernet Radios RAD-80211-XD 2885728 and RAD-80211-XD-WM 2885715

firmware. The RAD-80211 transceivers can be used on the license-free 2.4 GHz or 5 GHz bands. The RAD-80211-XD also features an integrated serial port for broadcasting RS-232/422/485 protocols to serial clients. It can also be used as a Modbus RTU/TCP converter.

Applications

- Video surveillance
- PC/PLC/RTU Ethernet connectivity interface
- Pipeline monitoring
- Factory floor network
- Perimeter security
- Quality control
- Homeland security
- RFID (Active)
- VoWiFi
- Mobile computing
- Factory networking

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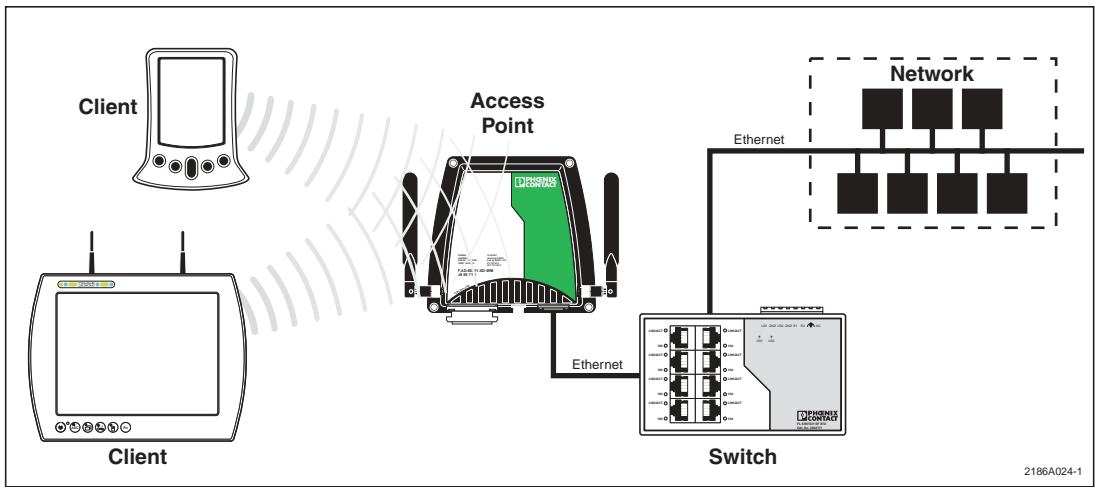


Figure 2. Access Point Mode

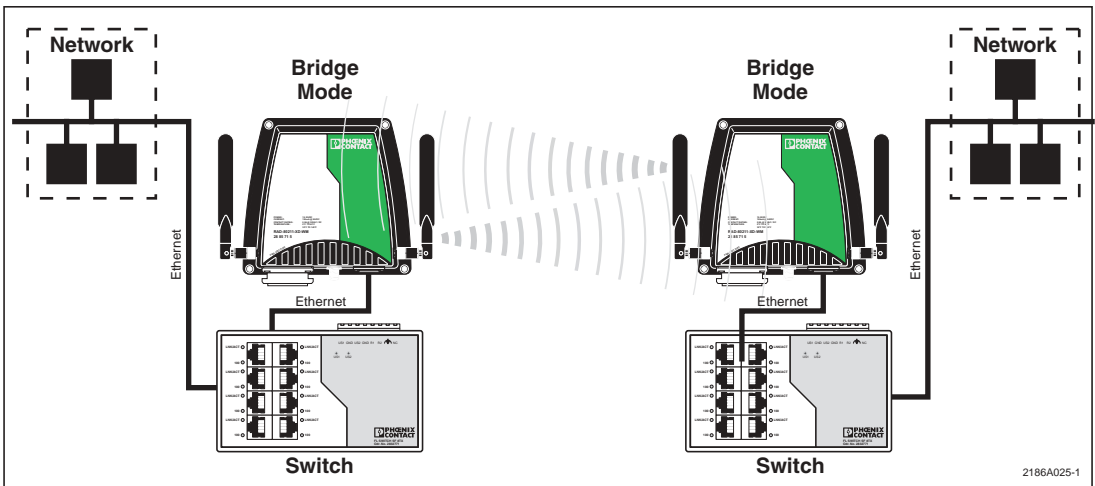


Figure 3. Bridge Mode

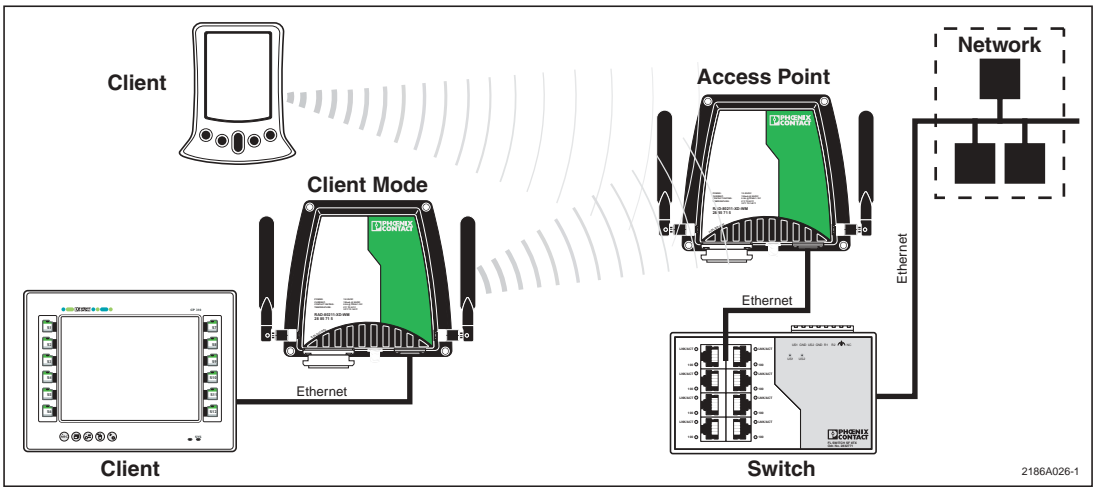


Figure 4. Client Mode

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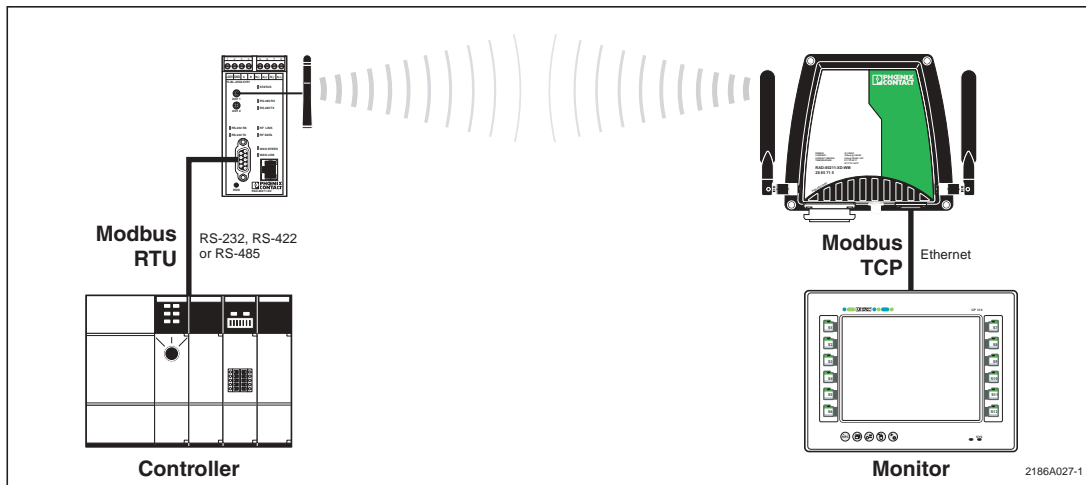


Figure 5. Modbus RTU to Modbus TCP Application

Table 1. RAD-80211-XD-WM Specifications

Power	Power-over-Ethernet (PoE) or 12-30 V dc
Wiring connections	power: M12 RF link contact: M12 RS-232 port: IP67 DB9 female Ethernet port: IP67 RJ45 Variosub
Mounting	wall mount
Dimensions (L x W)	7.00 in. x 6.49 in. (178 mm x 165 mm)
Case material	Xenoy 5220U plastic
Temperature range	-0°C to +55°C (32°F to 131°F)
Environmental rating	IP67
Approvals	Class I, Div. 2 Groups A, B, C, D; UL and CSA (pending) WiFi compliant
LED indicators	TX: flashes when RS-232 data is being transmitted RX: flashes when RS-232 data is being received ST: on when the WLAN is operating normally flashes when there is an internal error EN: on when the WiFi transceiver has a valid RF link with another WiFi transceiver
Antenna connector	2 X RPSMA (female)

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Table 2. RAD-80211-XD Specifications

Power	12-30 V dc
Wiring connections	power: screw-type terminals; 12-24 AWG RS-232 port: DB9 female RS-485/422 port: screw-type terminals; 12-24 AWG Ethernet port: RJ45
Mounting	DIN-rail
Dimensions (L x W x H)	3.90 in. x 0.88 in. x 4.5 in. (99 mm x 45 mm x 114.5 mm)
Case material	plastic
Temperature range	-0°C to +55°C (32°F to 131°F)
Environmental rating	IP20
Approvals	Class I, Div. 2 Groups A, B, C, D; UL and CSA (pending) WiFi compliant
LED indicators	Power: glows solid when 12-30 V dc is applied RS-485TX: flashes when RS-422/485 data is being transmitted RS-485RX: flashes when RS-422/485 data is being received RS-232TX: flashes when RS-232 data is being transmitted RS-232RX: flashes when RS-232 data is being received RF DATA: flashes when data is being sent/received RF LINK: glows solid when RF link is established WAN LINK: flashes when data is detected on Ethernet port WAN SPEED: glows solid when 100BaseT connection exists
Antenna connector	2 X MCX (female)

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Table 3. Wireless Specifications

Frequency	2.4-2.4835 GHz (802.11b/g) 5.25-5.815 GHz (802.11a)
Transmit power	100 mW maximum (adjustable to 1 mW)
Channel selection	1-11 (802.11b/g) 52, 56, 60, 64, 149, 153, 157, 161 (802.11a)
FCC ID (USA)	NKRCM9

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