Anybus® Wireless Bridge

Ethernet-Bluetooth®

Important User Information

Liability

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Anybus® Wireless Bridge Ethernet-Bluetooth® Installation Guide

1   Installation

> ⚠ **Caution**
> This equipment emits RF energy in the ISM (Industrial, Scientific, Medical) band. Make sure that all medical devices used in proximity to this device meet appropriate susceptibility specifications for this type of RF energy.

> ❗ This product contains parts that can be damaged by electrostatic discharge (ESD). Use ESD protective measures to avoid equipment damage.

Make sure that you have all the necessary information about the capabilities and restrictions of your local network environment before installing the Anybus Wireless Bridge. Contact your network administrator if in doubt.
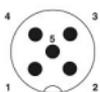
For optimal reception devices should be oriented front-to-front with a line of sight between them clear of obstructions. A minimum distance of 50 cm between the devices should be observed to avoid interference.
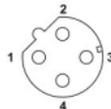
Internal Antenna Characteristics
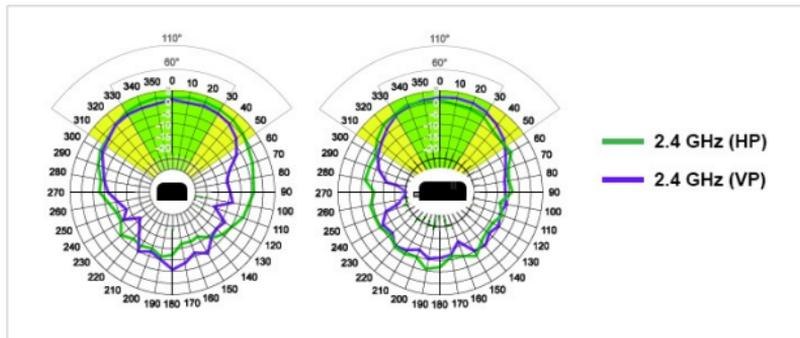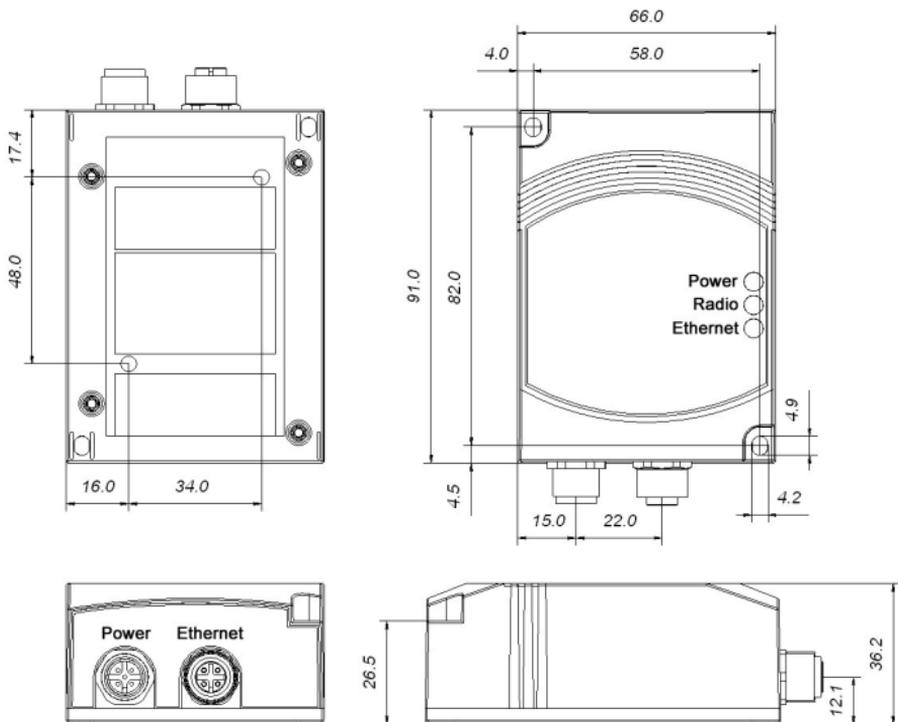
Power connector pinning
A-coded male M12

1. Vin + (9-30V)
2. Digital Input Ground
3. Vin Ground
4. Digital Input + (9-30V) or digital output
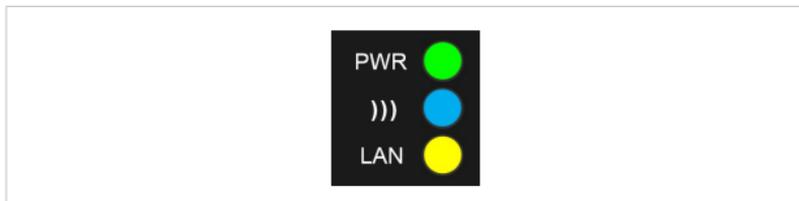5. N/C (May be used for shield ground)

Ethernet connector pinning
D-coded female M12

1. Transmit +
2. Receive +
3. Transmit -
4. Receive -

2 LED Indicators

Status LED Indicators

| LED Indication		Meaning
PWR	OFF	No power/application not running
	Steady Green	Application is running
)))	OFF	No wireless activity
	Steady Blue	Wireless connection established
	Flashing Blue	Wireless data activity
	Steady Purple	Attempting wireless connection
	Steady Red	Error
LAN	OFF	No Ethernet connection
	Steady Yellow	Ethernet link is present
	Flashing Yellow	Ethernet data activity

A-B-C-D LED indicators
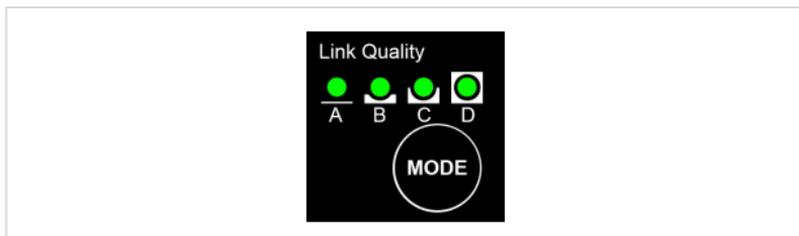
The **A-B-C-D** LEDs are multi-functional. On a client operating in PANU mode they indicate the wireless link quality: 4 LEDs lit = excellent signal. On the Access Point model they instead indicate the number of connected clients.

The LEDs are also used when selecting a SMART configuration mode.

3   Configuration

SMART Configuration Modes
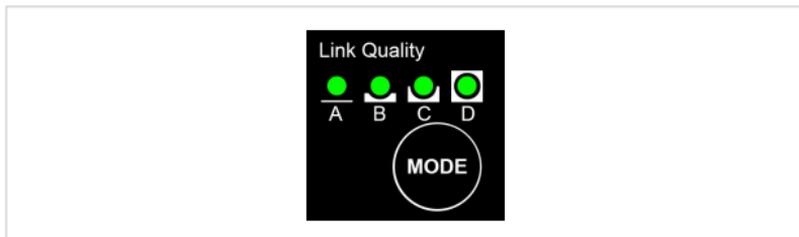
The most common configurations can be set up quickly by using the **MODE** button and the **A-B-C-D** LEDs to select one of the SMART modes.

1.   Power on the Wireless Bridge, then immediately press and release **MODE**.

2.   Press **MODE** repeatedly to cycle through the configuration modes until the desired mode is indicated.

3.   Press and hold **MODE** until the LEDs go out or blink, then release it. The unit will restart in the selected configuration mode.

> *If the unit is not restarted within 20 seconds of selecting a configuration mode it will exit SMART configuration and return to the previous settings.*

PANU	PAN User mode – the device can connect to another single Bluetooth device or to a Bluetooth access point.
NAP	Network Access Point mode – the device operates as a Bluetooth access point.
EDR	Enhanced Data Rates (not supported by all devices)
Enable DHCP Server	Activates a built-in DHCP server, which makes it possible to access the Wireless Bridge without manually configuring the IP address of the connecting computer. The computer must be set up for DHCP and be connected directly to the unit, not through a network. The DHCP server will stay enabled until the unit is restarted.
PROFINET priority	PROFINET network traffic will be prioritized.

SMART Configuration Modes

MODE	Operation	Description	LED			
			A	B	C	D
1	—	Enable DHCP server	🟢			
2	—	Reset to factory defaults		🟢		
3	—	Reset IP settings	🟢	🟢		
4	PANU-PANU	Wait for auto configuration			🟢	
5	PANU-PANU	Initiate auto configuration	🟢		🟢	
6	PANU-PANU	Wait for auto configuration (PROFINET priority)		🟢	🟢	
7	PANU-NAP	Initiate auto configuration	🟢	🟢	🟢	
8	PANU-PANU + EDR	Wait for auto configuration				🟢
9	PANU-PANU + EDR	Initiate auto configuration (PROFINET priority)	🟢			🟢
10	NAP-PANU	Wait for auto configuration		🟢		🟢

ⓘ *SMART modes 4–9 cannot be used in the Access Point model.*

Advanced Configuration

Advanced configuration can be carried out using the settings in the built-in web interface and/or by issuing AT commands. For more information, see the *Anybus Wireless Bridge User Manual* available at www.anybus.com/support.

4   Example 1: Ethernet Bridge

This example describes two Wireless Bridges in PANU mode connecting two Ethernet network segments.

1. Reset both Wireless Bridges to the factory default settings using SMART configuration mode 2 (LED B).

2. On the first Wireless Bridge, activate SMART mode 4 (LED C). The LED will blink while the unit is waiting for a connection.
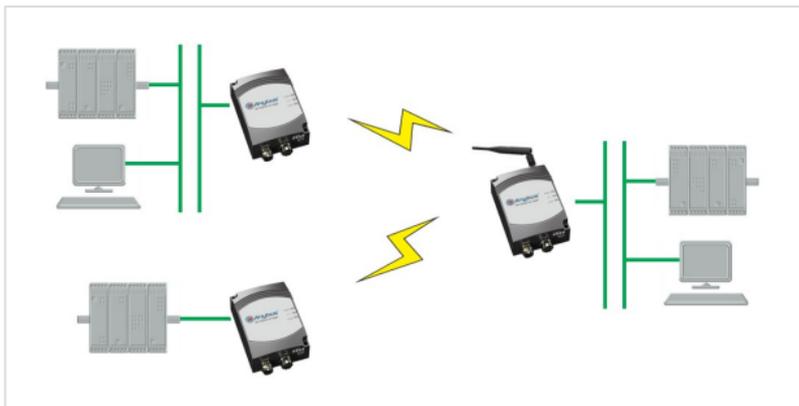

3. On the second Wireless Bridge, activate SMART mode 5 (LED A+C). The LEDs will blink until the units have connected.

4. When the Wireless Bridges have connected successfully the **)))** LED on both units will show a steady blue light. The first unit will have IP address 192.168.0.98 and the second 192.168.0.99.

5   Example 2: Access Point

This example describes two Wireless Bridges in PANU mode connecting to a Wireless Bridge access point.

1. Reset the Wireless Bridges to the factory default settings using SMART configuration mode 2 (LED B).

2. On the Wireless Bridge access point, activate SMART mode 10 (LED B+D). The LEDs will blink while the access point is waiting for clients to connect.

3. On the Wireless Bridge clients, activate SMART mode 7 (LED A+B+C). When the connection to the access point has been established, the **)))** LED on both units will show a steady blue light.

4. When all clients have been connected, press and hold the MODE button on the access point to reboot it. After rebooting, the A-B-C-D LEDs on the access point will indicate the number of connected clients.

For more use cases and advanced configuration examples, see the *Anybus Wireless Bridge User Manual* available at www.anybus.com/support.

6   Technical Data

Technical Specifications

Model	Ethernet Bridge	Access Point
Order code	023140-B	024130-B
Dimensions (LxWxH)	91 x 66 x 36.2 mm	
Weight	120 g	130 g
Operating temperature	-30 to +65 °C	
Storage temperature	-40 to +85 °C	
Humidity	RH 5–90 % non-condensing	
Input voltage	9–30 V DC (SELV)	
Power consumption	1.8 W (typical)	
Enclosure material	Plastic	
Mechanical rating	IP65	
Mounting	Screw holes for wall mounting	
Power connector	M12	
Ethernet connector	M12	
Antenna	Internal	External (RPSMA)
Transmission power	13 dBm max.	20 dBm max.
Receiver sensitivity	-92 dBm max.	
Maximum range	300 m	
Maximum throughput	1 Mbps	
Ethernet interface	10/100BASE-T with automatic MDI/MDIX cross-over	
Ethernet protocols	IP, TCP, UDP, LLDP, HTTP, ARP, DHCP, DNS, SNMP	
Default IP address	192.168.0.98	
Bluetooth specification	Bluetooth 4.0 Basic Rate/EDR Core	
Bluetooth profiles	Generic Attribute Profile (GATT), Personal Area Networking Profile (PAN), PANU and NAP roles (one connection)	
Bluetooth security	Simple pairing	
Number of clients	1	7
Certifications	ETSI, R&TTE, FCC/CFR 47 part 15, IC/RSS, MIC (2.4 GHz) CE, $_c$UL$_{US}$, Haz.Loc. Class 1 Div. 2	