



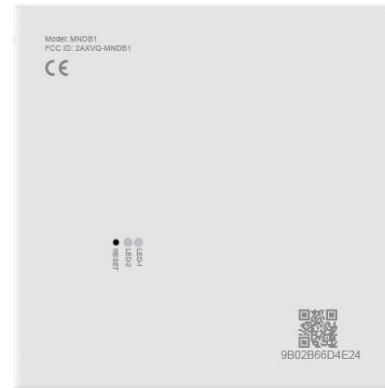
MNDB1 Dual Band Bridge

Datasheet



PRODUCT OVERVIEW

Wiliot bridges serve 3 operational tasks: energizing Wiliot IOT Pixels, receiving and filtering packets from Pixels, and echoing the filtered packets to gateways. The Minew Dual Band Reference Bridge runs Wiliot firmware and is optimized for Wiliot deployments. It features a Sub-1 GHz antenna for energizing Pixels and a 2.4 GHz antenna for echoing Wiliot Bluetooth packets.



DETAILED SPECIFICATION

	Parameter	Description
Functionality	Common Uses	Asset Tracking, Inventory, Temperature Sensing, Proximity
	Supported Products	Dual Band Pixel, Single Band Pixel, Battery Assisted Pixel
	Key Functions	Energizing Pixels, Rebroadcast (Echo) Pixel Packets to gateway, Pacing Data
Hardware	Antennas	2.4GHz: 2dBi, dual linear polarization, 80*80deg beamwidth (3dB) 915MHz: 2.5dBic, circular polarization (right hand) 100*100deg beamwidth (3dB)
	LED Indicators	Blue and Red (Power and Data)
	Firmware	Firmware provided by Wiliot
Power	Power	5 volt, 1 amp, USB C * 3.7 volt Battery
	Detailed Dimensions	12.3 x 12 x 3.1 cm
	Weight	7.7 oz
Package	Installation	1Screw sockets, cable tie slots, 1/4-20 threaded insert
	Certifications	CE FCC IC RoHS REACH RCM BQB
	Operating temperature	-20~65°C

* **Tips:** The package includes a 1-meter USB-A to Type-C charging cable. Adapter must be purchased separately. It is recommended to use a certified 5V1A or 5V2A adapter without fast charging and not specifically designed for Apple computers.

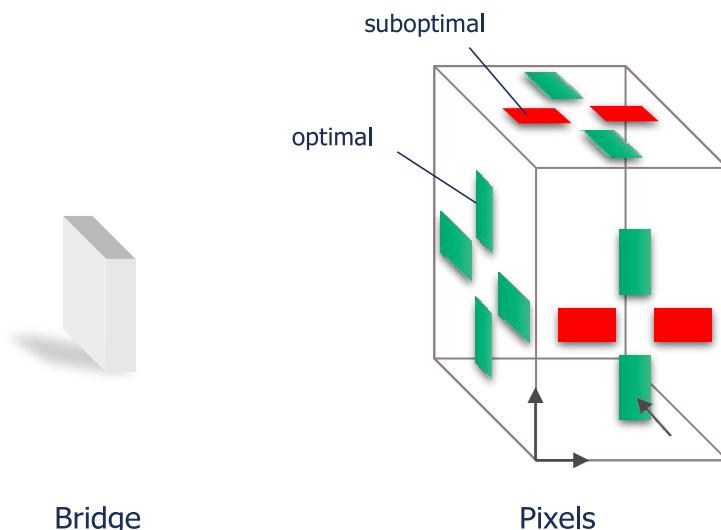
DETAILED SPECIFICATION

RADIO

Parameter	Pixel Packet Echo	Pixel Energizing
Broadcast	Function	Retransmit Wiliot Pixel packets, calibrate nearby Wiliot Pixels
	Signal Protocol	Bluetooth® Low Energy (LE) 5.2 (2.4 GHz)
	Signal Strength	EIRP +20dBm@2.4GHz Max
Payload	Range	50-100 meters to gateway
	Broadcast Packet	Standard Bluetooth Low Energy Packet (PDU), payload: Wiliot Ephemeral ID (WEID)
	Security	AES-128, encryption and authentication
	Pixel Calibration Beacons	3 BLE advertisements every 90ms (default)
	Default Echo Pacing Interval	15 s (configurable)

BRIDGE AND TAG ORIENTATION

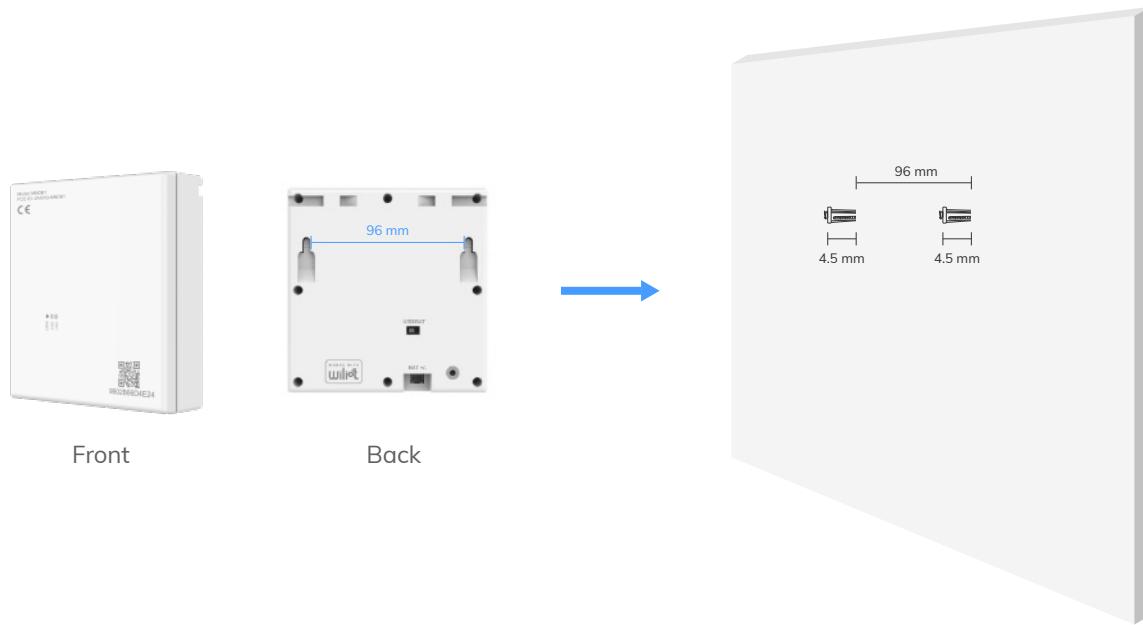
The relative orientation of the bridge and tag antenna will affect energizing and broadcasting performance. The Dual Linear antenna in the Minew Dual Band Bridge makes it agnostic to in-plane (zy) tag orientation, and more capable of out-of-plane tag (xz and xy) energizing.



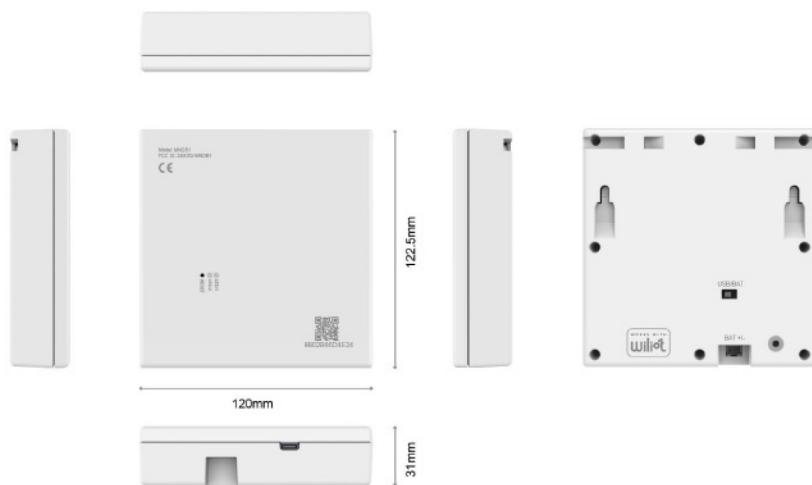
Optimal pixel orientation shown in **green**, and suboptimal in **red**, relative to the energizing bridge antenna. In the drawing, the antenna's dual linear polarizations are aligned with the y axis and z axis.

FLEXIBLE DEPLOYMENT

Please screw two screws into the wall or wooden board, ensuring they protrude from the surface by at least 4.5mm. The distance between the centers of the two screws should be 96mm. Then, align the mounting holes of the MNDB1 with the screws and gently hang it down.



DETAILED DRAWINGS



QUALITY ASSURANCE

The factory has already obtained the certification of ISO9001 Quality System. Each product has been strictly tested (tests include transmission power, sensitivity, power consumption, stability, aging, etc.).

Warranty Period: 12 months from the date of shipping (other accessories excluded).

DECLARATION

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