

# Minew Single Band Reference Bridge

## Datasheet

### Overview

Model Name	Manufacturer	Max Range	Operating Frequency	Size
MNSB1	Minew	5 meters	2.4 GHz	6.6 x 8.7 x 2 cm



Wiliot bridges serve 3 operational tasks: energizing Wiliot Pixels, receiving and filtering packets from Pixels, and echoing the filtered packets to gateways.

The Minew Single Band Reference Bridge runs Wiliot firmware and is optimized for Wiliot deployments. It features a 2.4 GHz antenna for energizing Pixels and echoing Wiliot Bluetooth packets.

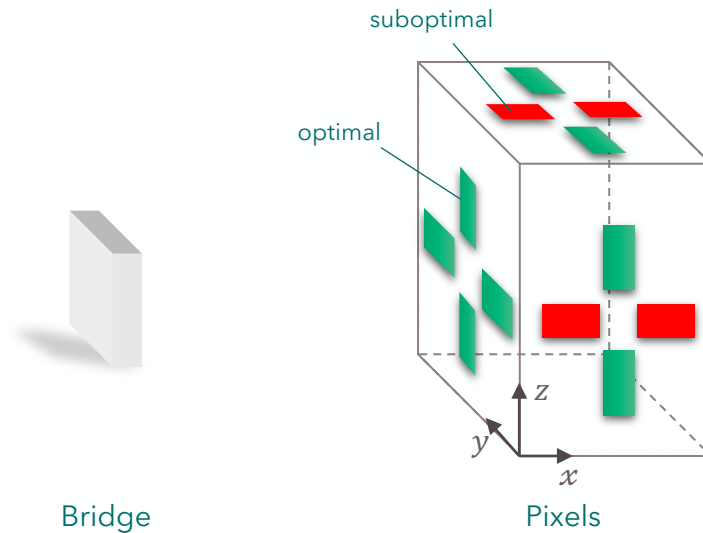
\*In addition to this bridge, Wiliot supports partners in selecting the best bridge for their application, or creating their own bridge and bridge firmware. Please contact a wiliot representative to learn more.

## Detailed Specification

	Parameter	Description	
Functionality	<b>Common Uses</b>	Asset Tracking, Inventory, Temperature Sensing, Proximity	
	<b>Supported Products</b>	Dual Band Pixel, Single Band Pixel, Battery Assisted Pixel	
	<b>Key Functions</b>	Energizing Pixels, Rebroadcast (Echo) Pixel Packets to gateway, Pacing Data	
Radio	Pixel Energizing	<b>Energizing Range</b>	Up to 5 meters (bridge to pixel)
		<b>Energizing Signal Protocol</b>	FSK (2.4 GHz)
		<b>Energizing Signal Strength</b>	EIRP +24.0 dBm Max
		<b>Pixel Calibration Beacons</b>	3 BLE advertisements every 90ms (default)
	Pixel Packet Echo	<b>Broadcast Signal Protocol</b>	Bluetooth® Low Energy (LE) 5.2 (2.4 GHz)
		<b>Broadcast Signal Strength</b>	EIRP +20dBm@2.4GHz
		<b>Broadcast Packet</b>	Standard Bluetooth Low Energy Packet (PDU), payload: Wiliot Ephemeral ID (WEID)
		<b>Security</b>	AES-128, encryption and authentication
		<b>Echo Function</b>	Scan for Wiliot beacons and re-transmit
		<b>Echo Range</b>	50 - 100 meters
		<b>Default Echo Pacing Interval</b>	300 s (configurable)
Hardware	<b>2.4 GHz Antenna</b>	4dBi, dual linear polarization	
	<b>LED Indicators</b>	Green and Red (Power and Data)	
	<b>Firmware</b>	Firmware provided by Wiliot	
	<b>Power</b>	5 volt, 1 amp, USB C 2x USB C ports, to allow daisy chaining power	
Package	<b>Detailed Dimensions</b>	6.6 x 8.7 x 2 cm	
	<b>Weight</b>	1.6 oz	
	<b>Certifications</b>	FCC, RCM, ROHS, REACH, SIG, IC / ISED In Progress: CE, Israel	

## 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 Single 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.

## Detailed Drawings

