



# Zebra Bluetooth® Bridges

Zebra Bluetooth IoT Bridges gather critical location data for actionable business insights

Edge-data and IoT technologies are transforming today's industrial networks. Zebra Bluetooth Low-Energy products are inexpensive relative to other active beacon solutions while providing all the capabilities of these technologies in an easy-to-manage solution. Zebra Bluetooth IoT bridges and transceivers leverage Bluetooth low-energy and Wi-Fi™ technologies and work in tandem with Zebra Bluetooth Beacons to provide near real-time location data to help companies maximize business efficiencies.



## The Zebra SB5200 Fixed-Location IoT Bridge

Zebra's SB5200 is an enhanced, higher performance IoT bridge in the same physical package as the MB5000. This device more efficiently receives and processes BLE beacons. It has expanded memory and operates over an expanded temperature range. The SB5200 will process more BLE beacons faster and is ideal for capturing BLE beacons in environments where there are large numbers of beacons.

## The Zebra MB5000 Fixed-Location IoT Bridge

### Easy to Deploy and Manage

Zebra MB5000 Fixed-Location IoT Bridges are easy to configure, install and manage, and can be deployed on pre-existing Wi-Fi networks. They capture Bluetooth low-energy beacon signals then filter and backhaul over Wi-Fi.

### Fully Configurable

Fully configurable to meet custom requirements, Zebra Bluetooth IoT bridges and transceivers deliver critical data to identify asset location, improve workflows and optimize productivity and profitability.

### Secure and Convenient

Protected with the best-of-breed security protocols, Zebra IoT bridges are easy to manage securely using 2.5GHz and 5GHz Wi-Fi with WPA2 personal and enterprise encryption. This allows configuration changes and network updates to be pushed remotely over the air and en masse from a server securely without needing on-site support.

**Zebra Bluetooth Bridges deliver the data your enterprise can use to give your operations a performance edge over the competition. For more information, visit [www.zebra.com/bluetooth](http://www.zebra.com/bluetooth)**

### **The Zebra MB6000 Mobile IoT Bridge**

#### **Mobile and Wearable to Extend Asset Visibility**

Zebra MB6000 Mobile IoT Bridges work with fixed-location bridges to form a comprehensive location-data solution configurable to your unique requirements. They are secure, run automatically and extend your visibility.

### **The Zebra SB2000 Enhanced Indoor Beacon**

The enhanced indoor beacon is a BLE bridge that can periodically listen for nearby BLE beacons and then broadcast BLE packets containing its own ID and the IDs for any nearby beacons. The enhanced indoor beacon is infrastructure installed in specific locations throughout a facility. The device self-locates nearby assets and enables improved location performance via data crowdsourcing using a minimum of fixed infrastructure which can be complimented with BLE-enabled mobile computers, printers or other bridges. The enhanced indoor beacon is compatible with the Bluetooth® low energy standard.

### **The Zebra SB2100 Dual-Stream Enhanced Indoor Beacon**

The dual-stream enhanced indoor beacon is two beacons in one. It performs all the proximity and forwarding functions of the SB2000 Enhanced Indoor Beacon while at the same time performing like a regular, stand-alone MB2000 Indoor Beacon. The Dual-Stream SB2100 can be installed as fixed infrastructure for non real-time asset visibility while also serving as a waypoint beacon to assist locating mobile BLE bridges, mobile phones, or enabling wayfinding applications. Combining the functionality of the Enhanced Indoor Beacon with the functionality of a fixed indoor beacon provides a new level of value. Initial hardware infrastructure costs are reduced while the associated system capability is dramatically expanded. Solution providers can now leverage all of the benefits of a hybrid BLE architecture using fewer costly bridge devices and fewer fixed beacons while getting the performance and functionality of two beacons in one.

# Specifications

MPACT-SB5200-01-WR	
<b>Physical Characteristics</b>	
<b>Dimensions</b>	5.2 in. (132.3 mm) x 3.67 in. (93.3 mm) x 1.19 in. (30.2 mm) including 3M® VHB tape
<b>Performance Characteristics</b>	
<b>Wireless Compatibility</b>	Wi-Fi 2.4GHz 802.11 b/g/n Wi-Fi 5GHz 802.11 a/n Bluetooth Low Energy (5.1)
<b>Beacon Processing</b>	Typically 2-3 times more than the MB5000
<b>Wi-Fi Security Compatibility</b>	WPA/WPA2 Personal (PSK: TKIP/AES) WPA/WPA2 Enterprise (TKIP and AES: PEAP-MSCHAPv2)
<b>Antenna Type(s)</b>	Wi-Fi omni-directional Bluetooth directional patch
<b>Compatible Beacon Modes</b>	iBeacon™, MPACT, Battery Save and SecureCast
<b>Location Capability</b>	Proximity or full x,y location with Zebra's Location Engine used depending on the location engine
<b>Location Engine/ Solution</b>	Zebra Location Engine/Zebra Motion Works Solutions or similar solutions
<b>Availability</b>	Available only as part of Zebra solutions and approved Zebra partner solutions
<b>User Environment</b>	
<b>Operating Temp.</b>	5°F to 131°F/-15°C to 55°C
<b>Power</b>	5V dc USB cable and power adapter connected to a standard A/C wall outlet (use only Zebra-qualified USB cable and adapters, sold separately)
<b>MPACT-MB5000-01-WR</b>	
<b>Physical Characteristics</b>	
<b>Dimensions</b>	5.2 in. (132.3 mm) x 3.67 in. (93.3 mm) x 1.19 in. (30.2 mm) including 3M VHB tape
<b>Performance Characteristics</b>	
<b>Wireless Compatibility</b>	Wi-Fi 2.4GHz 802.11 b/g/n Wi-Fi 5GHz 802.11 a/n Bluetooth Low Energy (4.0 and 4.1)
<b>Wi-Fi Security Compatibility</b>	WPA/WPA2 Personal (PSK: TKIP/AES) WPA/WPA2 Enterprise (TKIP and AES: PEAP-MSCHAPv2)
<b>Antenna Type(s)</b>	Wi-Fi omni-directional Bluetooth directional patch
<b>Compatible Beacon Modes</b>	iBeacon, MPACT, Battery Save and SecureCast
<b>Location Capability</b>	Proximity or full x,y location depending on the location engine used
<b>Location Engine/ Solution</b>	Zebra Location Engine/Zebra Motion Works Solutions or similar solutions
<b>Availability</b>	Available only as part of Zebra solutions and approved Zebra partner solutions
<b>User Environment</b>	
<b>Operating Temp.</b>	32°F to 104°F/0°C to 40°C
<b>Power</b>	5V dc USB cable and power adapter connected to a standard A/C wall outlet (use only Zebra-qualified USB cable and adapters, sold separately)
<b>Regulatory</b>	
<b>Classification</b>	EMI/EMC (FCC), safety (UL), and CE Contact Zebra for country certification details

MPACT-MB6000-01-WR	
<b>Physical Characteristics</b>	
<b>Dimensions</b>	2.52 in. (64 mm) x 1.73 in. (44 mm) x 0.91 in. (23.2 mm)
<b>Performance Characteristics</b>	
<b>Wireless Compatibility</b>	Wi-Fi 2.4GHz 802.11 b/g/n Wi-Fi 5GHz 802.11 a/n Bluetooth Low Energy (4.0 and 4.1)
<b>Wi-Fi Security</b>	WPA/WPA2 Personal (PSK: TKIP/AES) WPA/WPA2 Enterprise (TKIP and AES: PEAP-MSCHAPv2)
<b>Compatible Beacon Modes</b>	iBeacon, MPACT, Battery Save and SecureCast
<b>Antenna Type(s)</b>	Wi-Fi omni-directional Bluetooth directional patch
<b>I/O (input/output)</b>	Input: Two buttons for on/off and control Output: Two multi-color LEDs
<b>Availability</b>	Available only as part of Zebra solutions and approved Zebra partner solutions
<b>User Environment</b>	
<b>Operating Temperature</b>	32°F to 104°F/0°C to 40°C
<b>Battery Life Estimate</b>	18 hours on a full charge
<b>Battery Charging</b>	Requires the MB6000-CHRGR dock and A/C cable (sold separately, available from Zebra)
<b>MPACT-SB2000-01-WR</b>	
<b>Physical Characteristics</b>	
<b>Dimensions</b>	3.12 in. (79.2 mm) x 1.76 in. (44.7 mm) x 0.96 in. (24.4 mm)
<b>Weight</b>	86 g
<b>Performance Characteristics</b>	
<b>Wireless</b>	Bluetooth 5.1 (Bluetooth Low Energy)
<b>Beacon Interval</b>	Configurable in 100ms intervals
<b>Battery</b>	Two replaceable, standard AA batteries
<b>Transmit Power</b>	5dBm to -23dBm (EIRP) Configurable in 1dB steps
<b>Estimated Operational Life</b>	The approximate life is 2 yrs with the following settings: Receive period = 5 seconds once every 10 minutes Transmit/blink period = once every 2 seconds Actual battery life observed will depend on the actual configuration and transmit/receive periods used. The receive period is relatively large/slow to preserve battery life. This device is not intended for real-time asset visibility solutions
<b>Bluetooth Security</b>	128 bit AES

## Markets and Applications

### Manufacturing

- Inventory management
- Asset and tool management
- Automated receipt and invoicing
- Locate raw-in-process and work-in-process

### Transportation and Logistics

- Parcel tracking
- Workflow management
- Resource optimization
- Load-in and load-out management
- Equipment and asset management

### Retail

- Customer engagement
- Mobile marketing campaigning
- Inventory/equipment management
- Workforce optimization
- Maintenance management

### Healthcare

- Asset visibility and tracking
- Physical inventory control
- Cleaning and disposal tracking
- Rental management
- Compliance control
- Equipment maintenance

**PRODUCT SPEC SHEET**

**ZEBRA BLUETOOTH® BRIDGES**

<b>User Environment</b>	
<b>Operating Temp.</b>	32°F to 104°F/0°C to 40°C
<b>On/Off Switch</b>	Yes
<b>LED</b>	Yes, with blink patterns representing various modes of operation
<b>Antenna Type</b>	Directional antenna with 120°
<b>Modes</b>	iBeacon, MPACT, Battery Save and SecureCast
<b>Installation Options</b>	Sticky Tape, Secure Mounting brackets, Tie Wrap
<b>Product Compatibility</b>	For use only with the MB5000 Bridge running firmware 2.7.6.0-038D or later and Zebra BLE beacons and SB5200
<b>Captured Beacon Quantity</b>	Up to approximately 50 nearby beacons

**MPACT-SB2100-01-WR**

**Physical Characteristics**

<b>Dimensions</b>	3.12 in. (79.2 mm) x 1.76 in. (44.7 mm) x 0.96 in. (24.4 mm)
<b>Weight</b>	86 g

**Captured Beacon Stream (CBS)**

<b>Wireless</b>	Bluetooth 5.1 (Bluetooth Low Energy)
<b>Beacon Interval</b>	Configurable in 100ms intervals
<b>Transmit Power</b>	5dBm to -23dBm (EIRP) Configurable in 1dB steps
<b>Estimated Operational Life</b>	The approximate life is 2 yrs with the following settings: Receive period = 5 seconds once every 10 minutes Transmit/blink period = once every 2 seconds Actual battery life observed will depend on the actual configuration and transmit/receive periods used. The receive period is relatively large/slow to preserve battery life. This device is not intended for real-time asset visibility solutions
<b>Bluetooth Frequency</b>	2.4 GHz, custom BLE packet

**Waypoint Beacon Stream (WBS)**

<b>Wireless</b>	Bluetooth 5.1 (Bluetooth Low Energy Technology)
<b>Modes</b>	iBeacon
<b>Beacon Interval</b>	Configurable in 100 ms intervals
<b>Transmit Power</b>	+5 dBm to -23 dBm (EIRP) configurable
<b>Estimated Operational Life</b>	2 years with 2 second blink period but dominated by CBS configuration

**User Environment**

<b>Operating Temp.</b>	32°F to 104°F/0°C to 40°C
<b>On/Off Switch</b>	Yes
<b>LED</b>	Yes, with blink patterns representing various modes of operation
<b>Installation Options</b>	Sticky Tape, Secure Mounting brackets, Tie Wrap

<b>Product Compatibility</b>	The custom BLE of the captured beacon stream only works with Zebra's BLE bridges. The iBeacon Waypoint Beacon Stream is compatible with iBeacon compatible products
<b>Captured Beacon Quantity</b>	Up to 15 nearby beacons depending on environment

**Warranty**

Subject to the terms of Zebra's hardware warranty statement, the SB5200, SB2000 and SB2100 are warranted against defects in workmanship and materials for a period of 90 days from the date of shipment. The MB6000 and MB5000 are warranted against defects in workmanship and materials for a period of 12 months from the date of shipment. For the complete Zebra hardware product warranty statement, go to: [www.zebra.com/warranty](http://www.zebra.com/warranty)

The specifications herein are subject to change without notice and actual performance will in some cases depend on product configuration, environment and actual usage



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