



# MPact Platform

## Comprehensive hybrid solution for indoor / outdoor locationing and analytics

Zebra Technologies' MPact Platform is a unified locationing solution leveraging both Wi-Fi and Bluetooth® Smart technology to help organizations meet the demand for countless location based services across various vertical markets. MPact's comprehensive suite of components include:

### Bluetooth® Smart Beacons

Available in various form factors for indoor and outdoor use, the configurable Bluetooth® Smart beacons operate with various modes that enable the ability to remotely monitor beacon battery status for easy and low cost management. SecureCast™ protects user privacy and ensures beacon security by encrypting beacon data with AES 128, an industry-standard key-based encryption algorithm.

### Location and Analytics Software

MPact includes cloud-ready software that aggregates location data from Wi-Fi access points and Bluetooth® Smart beacons, providing insightful analytics on customer visits, as well as visibility into the health of the beacon network. MPact integrates an HTML5 front end with an Apache™ Hadoop® backend for big data to crunch through the millions of client end points. MPact is scalable and ready for any IT architecture, from the corporate data center to the private cloud. MPact's REST Application Programming Interfaces (APIs) provide the ultimate flexibility, allowing developers to access and utilize MPact data in other systems, expanding the reach and the value of MPact location information. For example, MPact reveals the volume of foot traffic at promotional displays. When combined with Point of Sale (POS) information, you can easily discern whether customers are just looking or are buying — and what time and day most of the sales occur.

The MPact analytics platform provides intuitive interfaces to see historic data for heatmaps as well as motion paths of individuals for track and trace use cases. The machine-learning algorithms

automatically classify detected devices into customers, associates and assets, and can further segment customer data into repeat and new customers, as well as, specific to retail and hospitality — provide insights into passing-by customers vs. bounce and those truly engaged.

The sophisticated business rules engine allows for meaningful action to be taken on location events, for example: a welcome message for a shopper or guest when entry is first detected, or a trip wire alert when an asset moves between locations or notifications to store manager/supervisors when dwell time and count of assets or people crosses a certain threshold necessitating relevant action to be taken in real time. The MPact platform not only provides complete visibility via Wi-Fi and Bluetooth low energy technology into the movement of assets and people, but also enables real time relevant action to be taken based on the useful insights gathered on the location visibility.

### Software Development Kit

The Software Development Kit (SDK) enables easy integration of location features into iOS and Android smart phones as well as Zebra portfolio of ruggedized Android and Windows Mobile CE7 based mobile computing devices.

### Installation and Maintenance Toolbox

With the MPact toolbox, staging beacons is simple. Easy-to-deploy software allows you to select beacon frequency, range and transmission modes in an instant, as well as manage the beacons, including over-the-air configuration and firmware updates.

**LET MPACT CONNECT YOU TO ASSETS AND PEOPLE IN EVERY CORNER OF YOUR FACILITY.  
FOR MORE INFORMATION, PLEASE VISIT US AT [WWW.ZEBRA.COM/MPACT](http://WWW.ZEBRA.COM/MPACT)**

## MPact Beacon Specifications

### MB1000 INDOOR BEACON



These coin-cell-powered beacons easily attach to any standard shelving and are ideal for retail and Point of Sale displays inside the four walls, as well as tagging assets.

|                                   |  |
|-----------------------------------|--|
| <b>Wireless</b>                   | Bluetooth 4.0 (Bluetooth Smart)  |
| <b>Modes</b>                      | Battery Save, iBeacon, MPact   |
| <b>Beacon Interval</b>            | Configurable in 100ms intervals  |
| <b>Dimensions</b>                 | 1.83" x 1.25" x 0.47"  |
| <b>Battery</b>                    | Replaceable, Coin Cell CR 2450   |
| <b>Transmit Power</b>             | Actual output power is -10 dBm to -33 dBm<br>Configurable to 0 dBm to -23 dBm  |
| <b>Antenna Type</b>               | Omnidirectional Antenna  |
| <b>Operating Temp.</b>            | 32° F to 104° F / 0° C to 40° C  |
| <b>Power Change</b>               | 1 dB increments  |
| <b>Estimated Operational Life</b> | Battery Save mode: ~2 years @ 600ms<br>iBeacon mode: ~1 year @ 600ms<br>MPact mode: ~1 year @ 600ms<br>SecureCast: ~1 year @ 600ms |
| <b>Weight</b>                     | 14g  |
| <b>Bluetooth Frequency</b>        | 2.4 Ghz  |
| <b>Bluetooth Security</b>         | 128 bit AES  |
| <b>Sensors</b>                    | Temperature  |
| <b>LED</b>                        | N/A  |
| <b>On / Off switch</b>            | Battery tray removal   |
| <b>Environ. Resistance</b>        | Indoor environments  |
| <b>Installation Options</b>       | Sticky Tape, Secure Mounting brackets, Tie Wrap  |

### MB2000 INDOOR BEACON



Built to easily attach to shelving inside the four walls, this beacon offers two unique features: a next generation chipset that draws minimal power and two standard AA batteries. The result is greatly improved battery life.

|                                   |  |
|-----------------------------------|--|
| <b>Wireless</b>                   | Bluetooth 4.1 (Bluetooth Smart)  |
| <b>Modes</b>                      | Battery Save, iBeacon, MPact, SecureCast, Eddystone*   |
| <b>Beacon Interval</b>            | Configurable in 100ms intervals  |
| <b>Dimensions</b>                 | 3.12" x 1.76" x 0.96"  |
| <b>Battery</b>                    | Two replaceable, standard AA batteries   |
| <b>Transmit Power</b>             | Actual output power is 5 dBm to -23 dBm<br>Configurable from 2 dBm to -21 dBm  |
| <b>Antenna Type</b>               | Directional antenna with 120° beamwidth  |
| <b>Operating Temp.</b>            | 32° F to 104° F / 0° C to 40° C  |
| <b>Power Change</b>               | 1 dB increments  |
| <b>Estimated Operational Life</b> | Battery Save mode: ~4 years @ 100ms<br>iBeacon mode: ~2 year @ 100ms<br>MPact mode: ~2 year @ 100ms<br>SecureCast: ~2 year @ 100ms |
| <b>Weight</b>                     | 86g  |
| <b>Bluetooth Frequency</b>        | 2.4 Ghz  |
| <b>Bluetooth Security</b>         | 128 bit AES  |
| <b>Sensors</b>                    | Temperature  |
| <b>LED</b>                        | Yes, with blink patterns representing various modes of operation   |
| <b>On / Off switch</b>            | Yes  |
| <b>Environ. Resistance</b>        | Indoor environment   |
| <b>Installation Options</b>       | Sticky Tape, Secure Mounting brackets, Tie Wrap  |

### MB3000 INDOOR BEACON



The USB beacon is ideal wherever you have the option to provide power via a USB port or a standard AC plug (requires a USB adaptor), such as retail kiosk — there is no battery to monitor or replace.

|                                   |   |
|-----------------------------------|---|
| <b>Wireless</b>                   | Bluetooth 4.0 (Bluetooth Smart)   |
| <b>Modes</b>                      | iBeacon, MPact, SecureCast  |
| <b>Beacon Interval</b>            | Configurable in 100ms intervals   |
| <b>Dimensions</b>                 | 0.57" x 0.27" x .080"   |
| <b>Battery</b>                    | Powered by any USB adaptor  |
| <b>Transmit Power</b>             | Actual output power is 4 dBm to -23 dBm<br>Configurable from 4 dBm to -23 dBm |
| <b>Antenna Type</b>               | Omnidirectional Antenna   |
| <b>Operating Temp.</b>            | 32° F to 104° F / 0° C to 40° C   |
| <b>Power Change</b>               | 1 dB increments   |
| <b>Estimated Operational Life</b> | N/A - Powered by USB  |
| <b>Weight</b>                     | 2g  |
| <b>Bluetooth Frequency</b>        | 2.4 Ghz   |
| <b>Bluetooth Security</b>         | 128 bit AES   |
| <b>Sensors</b>                    | N/A   |
| <b>LED</b>                        | N/A   |
| <b>On / Off switch</b>            | Pull out USB  |
| <b>Environ. Resistance</b>        | Indoor environment  |
| <b>Installation Options</b>       | USB port  |

### MB4000 OUTDOOR BEACON



Sealed against the weather and ready for extreme heat and cold, these beacons are ideal in parking lots, theme parks, pools, outdoor areas in cruise ships and other harsh environments. The next generation energy-efficient chipset draws minimal power, greatly increasing battery life.

|  |  |
|--|--|
| <b>Wireless</b>                        | Bluetooth 4.1 (Bluetooth Smart)  |
| <b>Modes</b>                           | Battery Save, iBeacon, MPact, SecureCast, Eddystone*   |
| <b>Beacon Interval</b>                 | Configurable in 100ms intervals  |
| <b>Dimensions</b>                      | 7" x 1 7/8" x 1"   |
| <b>Battery</b>                         | Non-replaceable Lithium Magnesium batteries  |
| <b>Transmit Power</b>                  | Actual Output power is -10 dBm to -31dBm<br>Configurable 0 dBm to -21 dBm  |
| <b>Antenna Type</b>                    | Directional Antenna with 160 Degree Beamwidth / Downtilt   |
| <b>Operating Temp.</b>                 | -40° F to 140° F / -40° C to 60° C   |
| <b>Power Change</b>                    | 1 dB increments  |
| <b>Estimated Operational Life</b>      | Battery Save: ~ 6 years @100ms<br>MPact mode: ~4 year @ 100ms<br>iBeacon mode: ~4 year @ 100ms<br>SecureCast mode: ~4 year @ 100ms |
| <b>Weight</b>                          | 143 gms  |
| <b>Bluetooth Frequency</b>             | 2.4 Ghz  |
| <b>Bluetooth Security</b>              | 128 bit AES  |
| <b>Sensors</b>                         | Temperature  |
| <b>Touchpad Controller Temperature</b> | 0°C to 60°C  |
| <b>LED</b>                             | Yes, with blink patterns representing various modes of operation   |
| <b>On / Off switch</b>                 | Touch pad to control On / Off and Connectivity   |
| <b>Environ. Resistance</b>             | IP 67 for harsh and / or outdoor environments,<br>UV Resistant, Waterproof   |
| <b>Installation Options</b>            | Sticky Tape, Screws  |

\* Shipping in Q4 2016 — please see technical documentation for earlier availability.

# MPact Beacon Specifications

## MPACT LOCATION AND ANALYTICS SOFTWARE REQUIREMENTS

**Hardware** 12 cores, 36 GB RAM, 1 TB disk space  
(supports 3 months of data and analytics)

**Software** Debian 7.3 or later, Red Hat 6.5

## CLIENT DEVICE SUPPORT WITH SDK

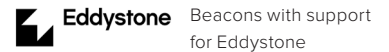
Requires both Bluetooth Smart hardware and OS support

- Apple® devices (iOS7 or later)
  - iPad® 3 or greater, iPad mini™ or greater
  - iPhone® 4s or greater, iPod® Touch 5th generation or greater
- Android™ devices that support Bluetooth Smart with following OS:
  - Android Jelly Bean (4.3), KitKat (4.4.x) or Lollipop (5.x)
  - Zebra devices (MC40, MC18 TC55, TC70, TC75, WT 41N0 with BLE support on the latest Android release / CE7 release)

## MPACT TOOLBOX

This application is required to install and configure the beacons. It works in conjunction with the MPact server software and is available for download on the Apple App Store® and Google Play™ store.

**Hardware** For iOS: iPad® 3, iPad® 4, iPad® Air, iPad Air® 2, iPad mini™ with iOS versions 7.1 or later  
For Android™: MC 67 (Android KitKat), TC55 (Android v4.4.3), TC70 (Android 4.4.2), Samsung S5 with Android 5 / Lollipop and Nexus 9 (Android 6.0.1)



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