



May 2020

rf IDEAS WaveID Mobile Configurator

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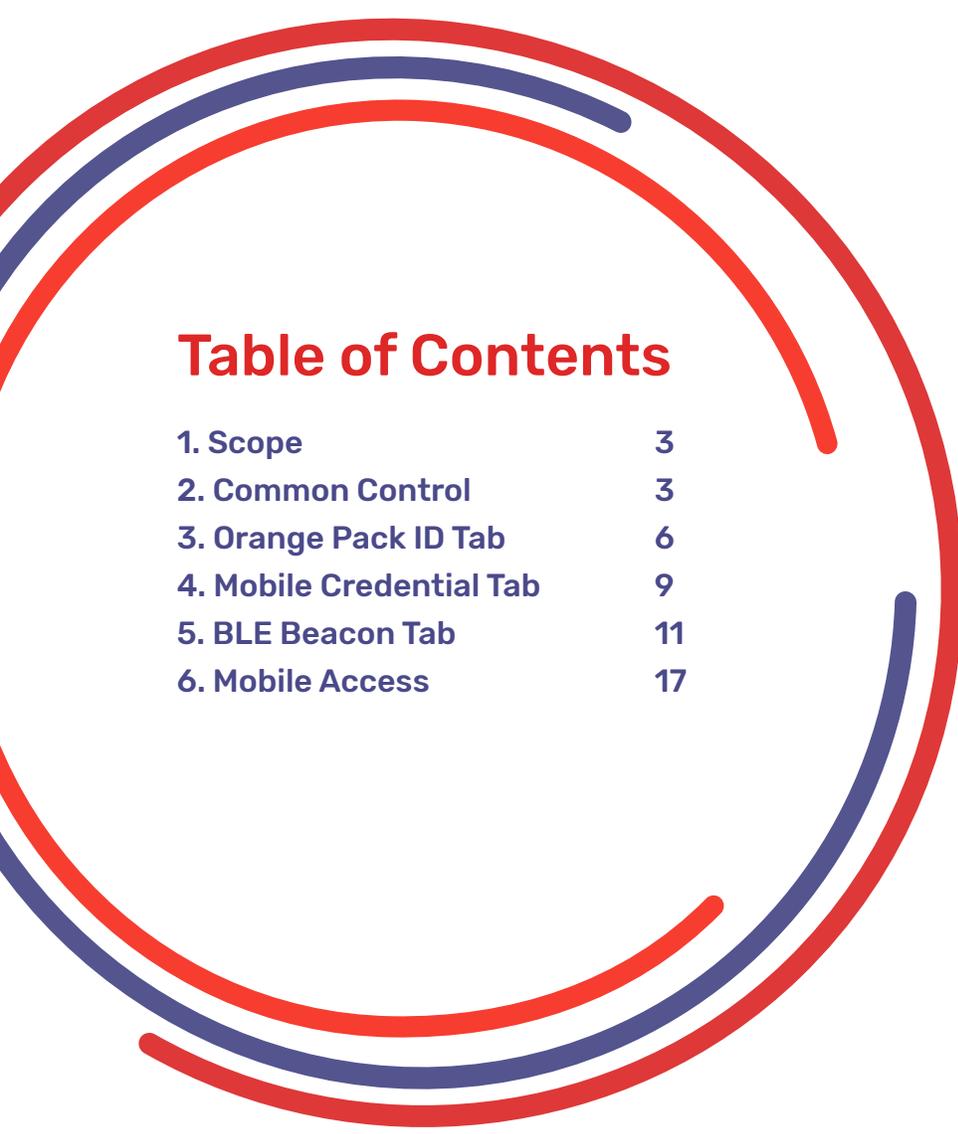


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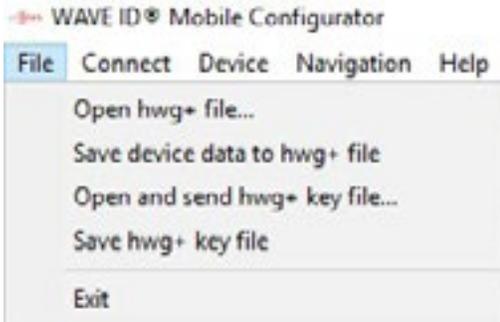
1 Scope

The document covers the functionality of the WaveID Mobile Configurator application used in conjunction with the WAVE ID Mobile reader.

2 Common Control

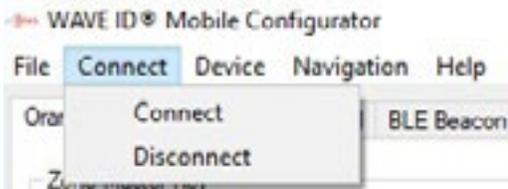
2.1 File Tab

This tab contains selection to open hwg+ files, save device data data to hwg+ files, open and send as well as save a hwg+ key file, and exit the application.



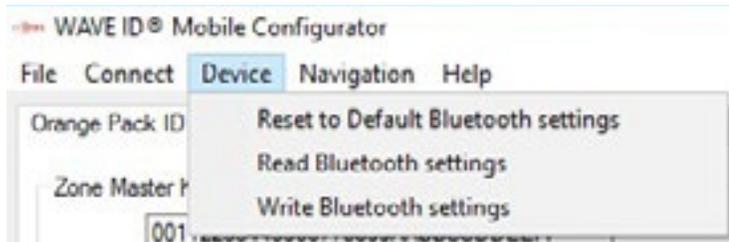
2.2 Connect Tab

This tab contains selections to connect and disconnect from the reader.



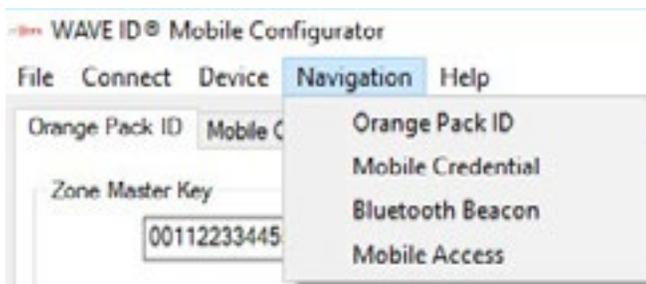
2.3 Device Tab

This tab contains selections to reset to default Bluetooth settings (does not affect non-Bluetooth settings), read Bluetooth settings and write Bluetooth settings.



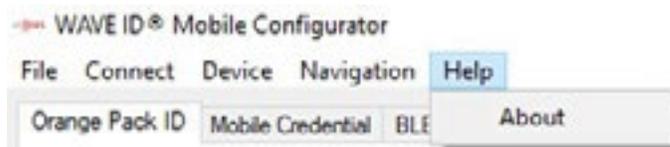
2.4 Navigation Tab

This tab selects between the Orange Pack ID, Mobile Credential, Bluetooth Beacon, and Mobile Access tabs.



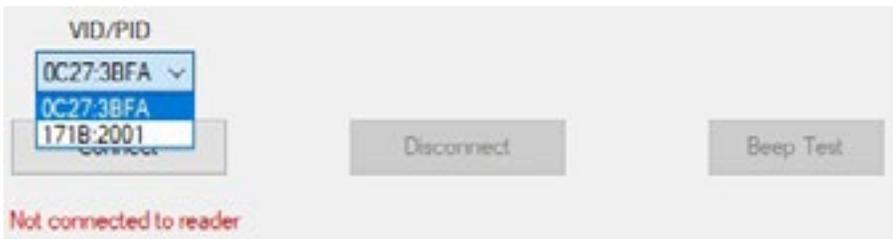
2.5 Help Tab

This tab selects the About box which contains the application version number and firmware version numbers of the three reader microprocessors. CPU0 is the control microprocessor, CPU1 is the radio microprocessor and CPU2 is the Bluetooth microprocessor.



2.6 VID/PID

This drop down box sets the VID/PID setting



2.7 Connect Button

Connects to the reader.



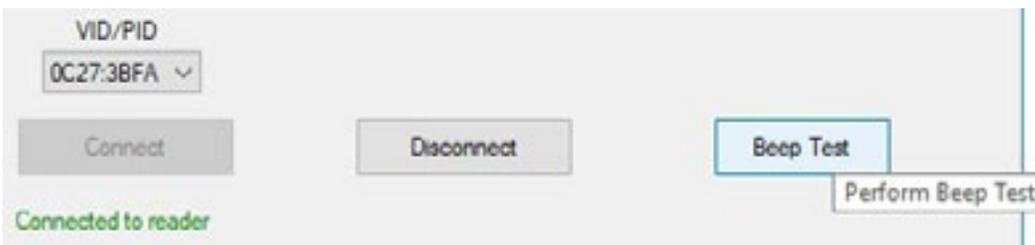
2.8 Disconnect Button

Disconnects from the reader.

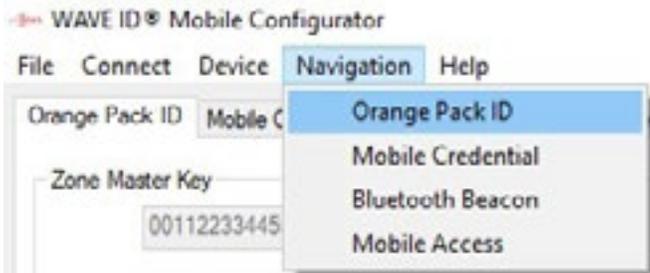


2.9 Beep Test Button

If the reader is connected, allows performing a beep test to verify connection.



3.0 Orange Pack ID Tab



3.1 Zone Master Key

3.1.1 Write Key Button

The Zone Master Key is set by each client to ensure confidentiality during contactless exchanges. This 128-bit AES key will match the value configured when the Pack ID web application is set up. The Write Key button will store the value entered in the edit box above this button.



3.1.2 Write Default Key Button

The Write Default Key button will restore the factory default rf IDEAS Zone Master Key value. The Zone Master Key is unique in that it cannot be read and is unaffected by the other Write Default buttons.



3.2 Configuration

3.2.1 Tx Power

This drop down box sets the transmit power in the range of -26dBm to +3dBm.

The screenshot shows a configuration window titled "Configuration" with four columns: Tx Power, Contactless ID, Zone ID, and Result Message. The Tx Power dropdown is open, showing options from 0dBm to -26dBm. The Contactless ID field contains "00000001", the Zone ID field contains "010203040506", and the Result Message field contains "Access valid". Below the fields are buttons for "Read Config", "Write Config", and "Write Default Config".

3.2.2 Contactless ID

Each Pack ID client is assigned a contactless ID. This edit box allows setting the four byte contactless ID identifier.

The screenshot shows a configuration window titled "Configuration" with four columns: Tx Power, Contactless ID, Zone ID, and Result Message. The Tx Power dropdown is set to "0dBm". The Contactless ID field contains "00000000" and is highlighted with a blue selection box. The Zone ID field contains "000000000000". The Result Message field is empty. Below the fields are buttons for "Read Config", "Write Config", and "Write Default Config".

3.2.3 Zone ID

Each Pack ID client can administrate zones (groups of readers such as Credential RF IDEas, Parking or Printing) identified by a zone ID. This edit box allows setting the six byte zone ID identifier.

The screenshot shows a configuration window titled "Configuration" with four columns: Tx Power, Contactless ID, Zone ID, and Result Message. The Tx Power dropdown is set to "0dBm". The Contactless ID field contains "00000001". The Zone ID field contains "010203040506" and is highlighted with a blue selection box. The Result Message field contains "Access valid". Below the fields are buttons for "Read Config", "Write Config", and "Write Default Config".

3.2.4 Result Message

A client can set the message that is displayed on the icon and the mobile device at the end of a BLE exchange. The default value is "Access valid". This edit box allows setting a message up to sixteen characters long.

The screenshot shows a configuration interface with four columns: Tx Power, Contactless ID, Zone ID, and Result Message. Tx Power is a dropdown menu set to '0dBm'. Contactless ID is a text box containing '00000001'. Zone ID is a text box containing '010203040506'. Result Message is a text box containing 'Access valid'. Below these fields are three buttons: 'Read Config', 'Write Config', and 'Write Default Config'.

3.2.5 Read Config Button

This button reads all Bluetooth configurations from the reader and updates the values displayed by the Wave ID Mobile Configurator.

This screenshot is identical to the previous one, but the 'Read Config' button is highlighted in blue. A callout box below the button contains the text 'Reads configuration from reader'.

3.2.6 Write Config Button

This button writes all Bluetooth configurations from the Wave ID Mobile Configurator to the reader with the exception of the Zone Master Key.

This screenshot is identical to the previous ones, but the 'Write Config' button is highlighted in blue. A callout box below the button contains the text 'Stores above configuration in reader'.

3.2.7 Write Default Config Button

This button writes the factory default Bluetooth configuration to the reader with the exception of the Zone Master Key.

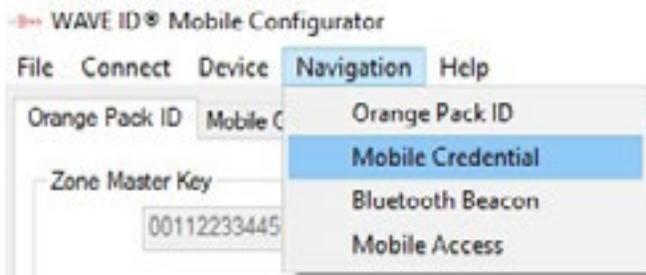
The screenshot shows a configuration interface with the following fields and buttons:

Tx Power	Contactless ID	Zone ID	Result Message
0dBm	00000001	010203040506	Access valid

Buttons: Read Config, Write Config, Write Default Config

Annotation: Restores factory

4 Mobile Credential Tab



4.1.1 128-bit ID

The 128-bit ID is used to identify the reader of a specific client. The 128-bit ID is part of the Bluetooth advertisement and is used by a mobile application to filter the reader of a specific client from other clients using rf IDEAS readers.

The screenshot shows a configuration interface with the following fields:

128-bit ID	Major	Minor
00112233445566778899AABBCCDDEEFF	0	1

4.1.2 Major

The major number identifies a subset of a clients' readers within a large group, such as printers in a department of a company. This edit box allows setting the one byte major number.



Configuration

128-bit ID	Major	Minor
00112233445566778899AABBCCDDEEFF	0	1

4.1.3 Minor

The minor number identifies a specific client reader, such a specific printer in a department of a company. This edit box allows setting the one byte minor number.



Configuration

128-bit ID	Major	Minor
00112233445566778899AABBCCDDEEFF	0	1

4.1.4 Tx Power

This drop down box sets the transmit power in the range of -26dBm to +3dBm.



Configuration

128-bit ID	Major	Minor
00112233445566778899AABBCCDDEEFF	0	1

Tx Power: 0dBm

Result Message: Access valid

4.1.5 Result Message

A client can set the message that is displayed on the mobile device at the end of a BLE exchange. The default value is "Access valid". This edit box allows setting a message up to sixteen characters long.



Tx Power: 0dBm

Result Message: Access valid

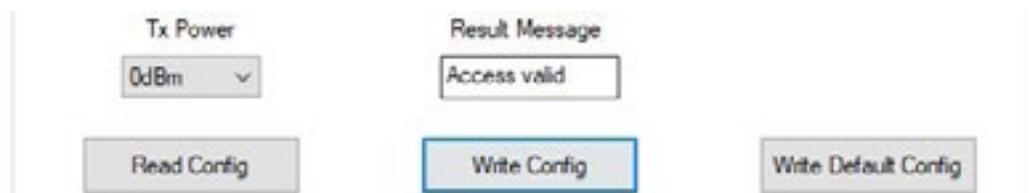
4.1.6 Read Config Button

This button reads all Bluetooth configurations from the reader and updates the values displayed by the Wave ID Mobile Configurator.



4.1.7 Write Config Button

This button writes all Bluetooth configurations from the Wave ID Mobile Configurator to the reader with the exception of the Zone Master Key.

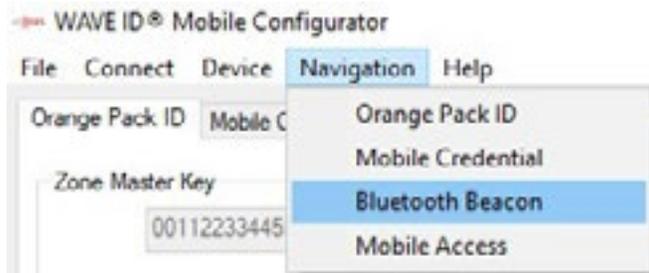


4.1.8 Write Default Config Button

This button writes factory default Bluetooth configuration to the reader with the exception of the Zone Master Key.



5 BLE Beacon Tab



5.1 All Beacons

5.1.1 Tx Power

This drop down box sets the transmit power in the range of -26dBm to +3dBm.

The screenshot shows the 'BLE Beacon' configuration tab. Under the 'All Beacons' section, there are three main settings: 'Tx Power' with a dropdown menu showing '0dBm', '3dBm', '2dBm', and '1dBm'; 'Advertising Min Interval' with a dropdown menu showing '100ms'; and 'Advertising Max Interval' with a dropdown menu showing '200ms'. Below these, there is a radio button for 'Public Address' and a 'Public Addr' field with the value '00:00:00:00:00:00'.

5.1.2 Advertising Min Interval

This drop down box sets the Advertising Min interval in the range of 20ms to 10 seconds.

The screenshot shows the 'BLE Beacon' configuration tab. Under the 'All Beacons' section, there are three main settings: 'Tx Power' with a dropdown menu showing '0dBm'; 'Advertising Min Interval' with a dropdown menu showing '100ms', '20ms', '100ms', and '200ms'; and 'Advertising Max Interval' with a dropdown menu showing '200ms'. Below these, there is a radio button for 'Random Address' (which is selected) and a 'Public Addr' field with the value '00:00:00:00:00:00'.

5.1.3 Advertising Max Interval

This drop down box sets the Advertising Max Interval in the range of 20ms to 10 seconds.

The screenshot shows the 'BLE Beacon' configuration tab. Under the 'All Beacons' section, there are three main settings: 'Tx Power' with a dropdown menu showing '0dBm'; 'Advertising Min Interval' with a dropdown menu showing '100ms'; and 'Advertising Max Interval' with a dropdown menu showing '200ms', '20ms', '100ms', and '200ms'. Below these, there is a radio button for 'Random Address' (which is selected) and a radio button for 'Public Address'. The 'Public Addr' field is partially visible with the value '00:00:00:00:00:00'.

5.1.4 Random Address

This selection sets the beacon address to a randomly generated value. This value will be different each time the reader is powered.

All Beacons

Tx Power	Advertising Min Interval	Advertising Max Interval
0dBm	100ms	200ms
<input checked="" type="radio"/> Random Address	<input type="radio"/> Public Address	Public Addr: 00:00:00:00:00:00

5.1.5 Public Address

This selection sets the beacon address to a fixed value assigned at the factory to each Bluetooth reader. Each reader has a different address.

All Beacons

Tx Power	Advertising Min Interval	Advertising Max Interval
0dBm	100ms	200ms
<input type="radio"/> Random Address	<input checked="" type="radio"/> Public Address	Public Addr: 00:00:00:00:00:00

5.1.6 Read Config Button

This button reads all Bluetooth configurations from the reader and updates the values displayed by the Wave ID Mobile Configurator.

Read Config	Write Config	Write Default Config
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5.1.7 Write Config Button

This button writes all Bluetooths configuration from the Wave ID Mobile Configurator to the reader with the exception of the Zone Master Key.

Read Config	Write Config	Write Default Config
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5.1.8 Write Default Config Button

This button writes factory default Bluetooth configuration to the reader with the exception of the Zone Master Key.



5.2 iBeacon

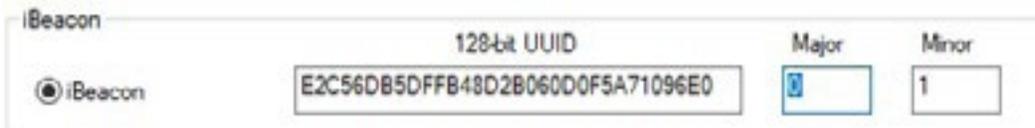
5.2.1 128-bit UUID

This edit box allows setting the iBeacon 128-bit UUID that identifies a specific beacon.



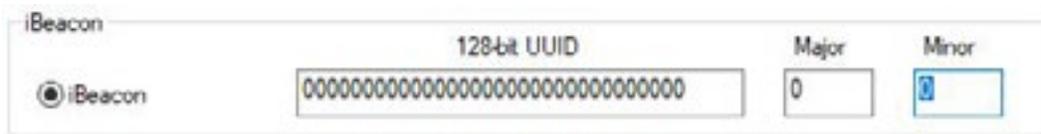
5.2.2 Major

This edit box allows setting the iBeacon two-byte major number that allows identification of a subset of beacons within a large group.



5.2.3 Minor

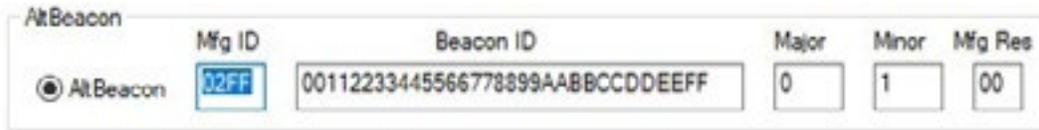
This edit box allows setting the iBeacon two-byte minor number that allows identification of a specific beacon.



5.3 AltBeacon

5.3.1 Mfg ID

This edit box allows setting the two-byte manufacturer's company code from the Bluetooth SIG assigned numbers database. The default value is the Silicon Labs code of 02FF.



The screenshot shows the AltBeacon configuration interface. The 'AltBeacon' radio button is selected. The 'Mfg ID' field is highlighted in blue and contains the value '02FF'. The 'Beacon ID' field contains the value '00112233445566778899AABBCCDDEEFF'. The 'Major' field contains '0', the 'Minor' field contains '1', and the 'Mfg Res' field contains '00'.

5.3.2 Beacon ID

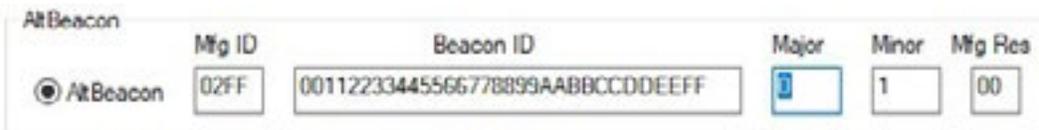
This edit box allows setting the first sixteen bytes of the beacon identifier. The sixteen bytes should be unique to the advertiser's organizational unit.



The screenshot shows the AltBeacon configuration interface. The 'AltBeacon' radio button is selected. The 'Mfg ID' field contains the value '02FF'. The 'Beacon ID' field is highlighted in blue and contains the value '00112233445566778899AABBCCDDEEFF'. The 'Major' field contains '0', the 'Minor' field contains '1', and the 'Mfg Res' field contains '00'.

5.3.3 Major

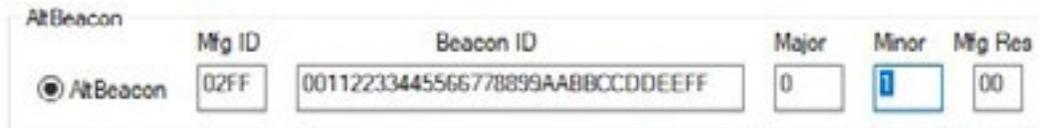
This edit box allows setting a two-byte major number to identify a subset of beacons within a large group. The major value is bytes seventeen and eighteen of the beacon identifier.



The screenshot shows the AltBeacon configuration interface. The 'AltBeacon' radio button is selected. The 'Mfg ID' field contains the value '02FF'. The 'Beacon ID' field contains the value '00112233445566778899AABBCCDDEEFF'. The 'Major' field is highlighted in blue and contains the value '1'. The 'Minor' field contains '1' and the 'Mfg Res' field contains '00'.

5.3.4 Minor

This edit box allows setting a two-byte minor number to identify a specific beacon. The minor value is bytes nineteen and twenty of the beacon identifier.



The screenshot shows the AltBeacon configuration interface. The 'AltBeacon' radio button is selected. The 'Mfg ID' field contains the value '02FF'. The 'Beacon ID' field contains the value '00112233445566778899AABBCCDDEEFF'. The 'Major' field contains '0'. The 'Minor' field is highlighted in blue and contains the value '1'. The 'Mfg Res' field contains '00'.

5.3.5 Mfg Res

This edit box allows setting the one-byte manufacturing reserved value. This value is defined by the manufacturer for special features.

AltBeacon	Mfg ID	Beacon ID	Major	Minor	Mfg Res
<input checked="" type="radio"/> AltBeacon	02FF	00112233445566778899AABBCCDDEEFF	0	1	00

5.4 Eddystone UID Beacon

5.4.1 Namespace

This edit box allows setting the ten-byte namespace value. The namespace may be used to group a particular set of beacons.

Eddystone UID Beacon	Namespace	Instance
<input checked="" type="radio"/> Eddystone UID	00112233445566778899	000000000001

5.4.2 Instance

This edit box allows setting a six-byte instance value. The instance may be used to identify individual devices in a group.

Eddystone UID Beacon	Namespace	Instance
<input checked="" type="radio"/> Eddystone UID	00112233445566778899	000000000001

5.5 Eddystone URL Beacon

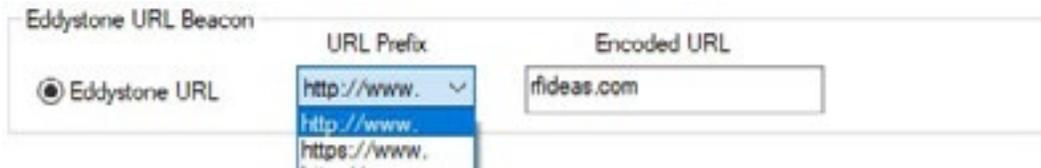
The Eddystone-URL frame broadcasts a URL using a compressed encoding format in order to fit more within the limited advertisement packet.

Once decoded, the URL can be used by any client with access to the internet. For example, if an Eddystone-URL beacon were to broadcast the URL <http://www.rfideas.com>, then any client that received this packet could choose to visit that URL.

The Eddystone-URL frame forms the backbone of the Physical Web an effort to enable frictionless discovery of web content relating to one's surroundings.

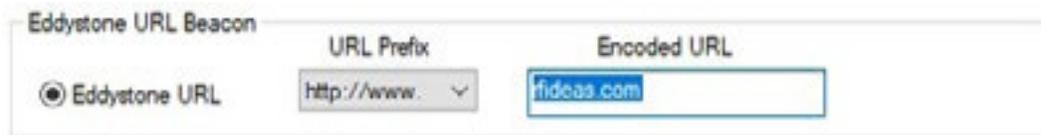
5.5.1 URL Prefix

This drop down box allows selecting four different URL prefixes. They are: (1) http://www. (2) https://www. (3) http:// and (4) https://.

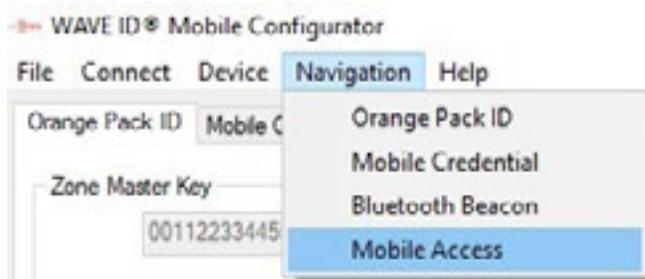


5.5.2 Encoded URL

This edit box allows setting the remainder of the URL address after the prefix, such as "rideas.com".



6 Mobile Access



6.1 Configuration

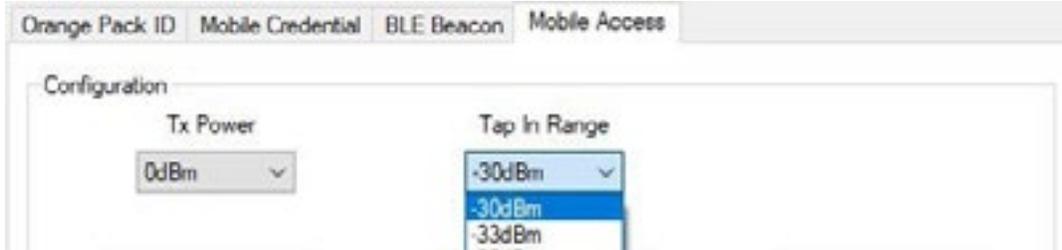
6.1.1 Tx Power Configuration

This drop down box sets the transmit power in the range of -30dBm to +4dBm



6.1.2 Tap In Range

This drop down box has a range of -30dBm to +4dBm which sets the RSSI threshold to determine the reader's distance to recognize a smartphone running the HID Mobile Access App and transmit its UID.



6.1.3 Read Config Button

This button reads the Bluetooth configuration from the reader.



6.1.4 Write Config Button

This button writes the Bluetooth configuration from the Wave ID Mobile Configurator to the reader.



6.1.5 Write Default Button

This button writes the default Bluetooth configuration to the reader.

