SPECIFICATION SHEET

bluvision
part of HID Global

BLUFI™
VER 1.3

HARDWARE SPECIFICATION

AC Input	100-240 VAC, 50/60 Hz
AC Plugs	US type: NEMA 1-15 ungrounded (Type A) European: CEE 7/16 "Europlug" (Type C) British Standard BS 1363 (Type G) China/Australia: AS/NZS 3112 (Type I ungrounded)
Size	Ultra Small: 2" x 1.5" x 1.5" (50mm x 38mm x 38mm)
Temperature Range	-25°C to 65°C
Bluetooth Type	Bluetooth Low Energy 4.1
Bluetooth Sensitivity	-98dBm
Bluetooth Max Power Output	+5dBm
Bluetooth Antenna	-3dBm Single Antenna, Omni Directional
Frequency Supported	• 2.4 Ghz ISM • Bluetooth LE channels: 1-40 & Adv Ch: 37;38;39 • Non Bluetooth Channels: SDR from 2400Mhz to 2500Mhz
Bluetooth Data Rate	1Mbit/s (2Mbit/s)
Bluetooth Security	128 bit AES
WiFi Type	802.11 b/g/n

WiFi Security	WPA2 Personal and Enterprise Security
WiFi TX Power	20.5dBm @ 1DSSS and 11 CCK 15.0dBm @ 54 OFDM
WiFi RX Sensitivity	-97.5dBm @ 1DSSS -88.5dBm @ 11 CCK
WiFi Frequency	2.4 Ghz with coexistence built-in with Bluetooth
WiFi Antenna	0dBm Single Antenna, Omni Directional
Power Consumption	200mA when TX 20mA on sleep
Power Consumption - TX	9mA at 0dBm
Power Consumption – Sleep	1.2 µA (SRAM retention and RTC running)
CPU	ARM Cortex M4 and ARM Cortex M3
Memory	256KB Flash (100KB free for custom applications)
Manage services	Cloud realtime managed
Data ouput to cloud	0.1 to 1Mbit Up data
Certifications	FCC/CE/UL/FRE

SOFTWARE SPECIFICATION

Embedded RTOS running on both ARM Cortex M4 and M3

WiFi:
- Real-time RAW sockets to Bluzone cloud
- Easy to setup WiFi Security Key. No need for ad hoc setup; rapid setup and wireless provisioning

Bluetooth:
- Simultaneous support iBeacon + full Eddystone frames
- Bluetooth band support and Out-Of-Band (2.4Ghz ISM) support with auto scan for noise
- Fully compliant with Bluetooth Smart 4.1
- Dual Mode Support: Central and Peripheral
- Central supports multiple BLE connections at the same time with peripherals (Supports connecting at the same time to multiple beacons)

SOFTWARE SPECIFICATION

- Peripheral supports multiple BLE connections at the same time with Central devices (Supports connecting at the same time to multiple phones)
- Supports Multiple Peripheral Protocols (iBeacon, Eddystone, sBeacon,etc. in same frames)
- Supports Peripheral Reverse RSSI
- Fully configurable

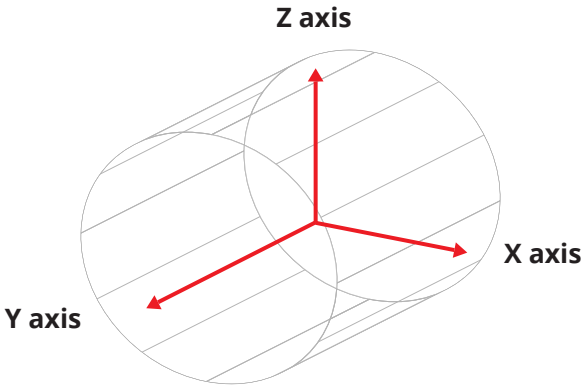
Security

- Bluzone Cloud – Key-vault managed security
- Unique internal key per individual beacon
- Unique Device ID per individual beacon (sBV2 ID)
- Internal Unix time clock/timer since 'On' (Manufacture)
- RSA Private/Public (With Bluzone Cloud Key-vault) - Communication from/to beacon encrypted using RSA

RTLS Mode:

- RTLS Mode with per beacon advertisement millisecond Unix time
- Out-Of-Band adaptive scan advertisement
- 1dB TX Output Accuracy

BLUFI ANTENNA CHARACTERISTICS



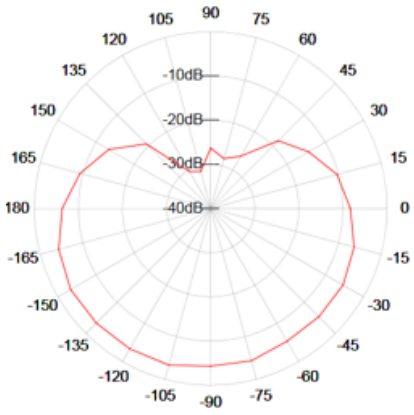
Summary

1. Antenna Specification

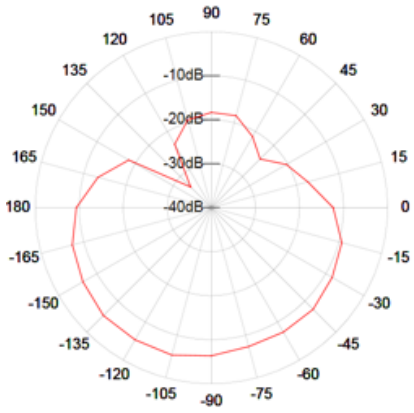
Items	Spec	
Model Number		
Center Frequency	2402MHz	-3.34dBi
	2438MHz	-5.34dBi
	2478MHz	-6.34dBi
Max Gain	-3.34dBi	

1. Orientation 1, Beacon - XY

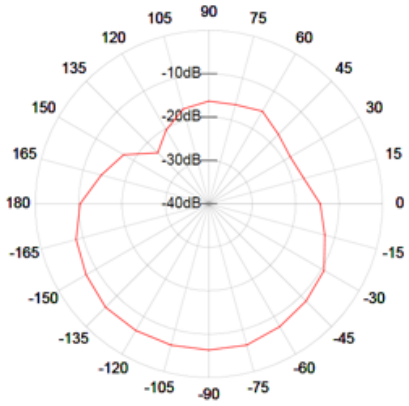
1.1 Antenna Polarity - H



Frequency (Mhz): 2402
Maximum Gain (dBi): -3.34
Minimum Gain (dBi): -31.34
Average Gain (dBi): -12.13

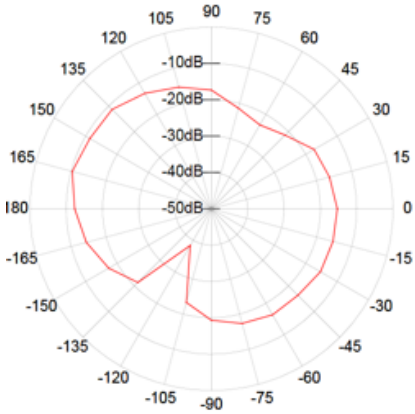


Frequency (Mhz): 2438
Maximum Gain (dBi): -5.34
Minimum Gain (dBi): -33.34
Average Gain (dBi): -13.54

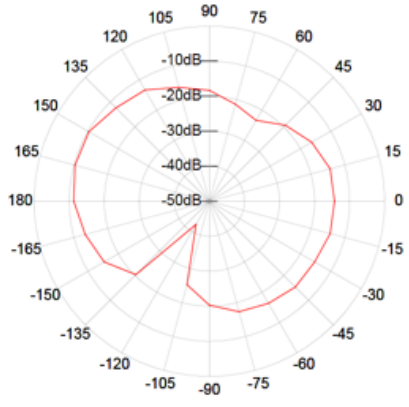


Frequency (Mhz): 2478
Maximum Gain (dBi): -6.34
Minimum Gain (dBi): -23.34
Average Gain (dBi): -12.63

Frequency (Mhz): 2402
Maximum Gain (dBi): -9.34
Minimum Gain (dBi): -47.34
Average Gain (dBi): -16.63



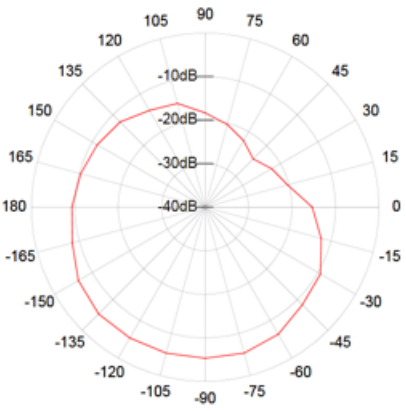
Frequency (Mhz): 2438
Maximum Gain (dBi): -10.34
Minimum Gain (dBi): -38.34
Average Gain (dBi): -17.54



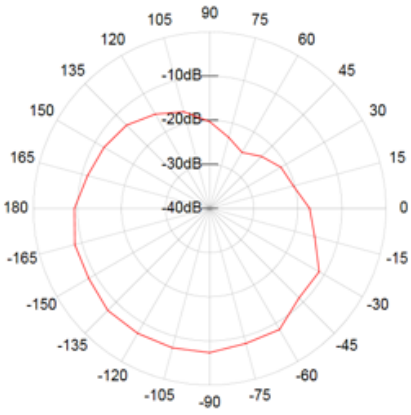
Frequency (Mhz): 2478
Maximum Gain (dBi): -10.34
Minimum Gain (dBi): -42.34
Average Gain (dBi): -17.38

2. Orientation 2, Beacon - YZ

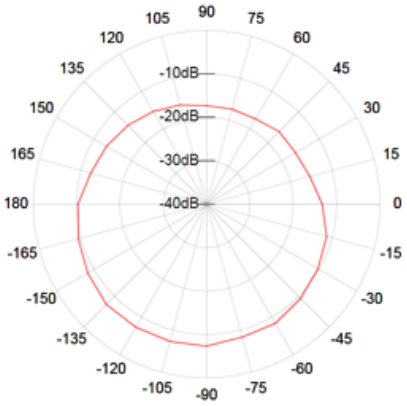
2.1 Antenna Polarity - H



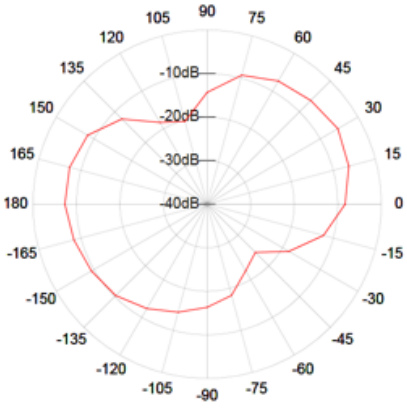
Frequency (Mhz): 2402
Maximum Gain (dBi): -5.34
Minimum Gain (dBi): -24.34
Average Gain (dBi): -12.25



Frequency (Mhz): 2438
Maximum Gain (dBi): -7.34
Minimum Gain (dBi): -25.34
Average Gain (dBi): -13.79

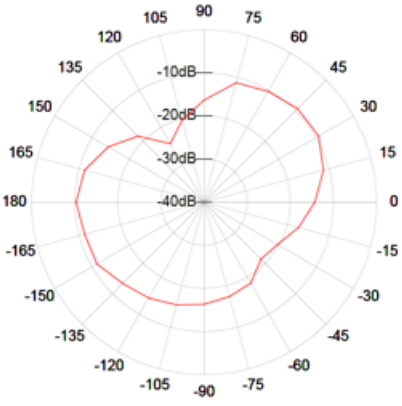


Frequency (Mhz): 2478
Maximum Gain (dBi): -7.34
Minimum Gain (dBi): -17.34
Average Gain (dBi): -12.09



Frequency (Mhz): 2402
Maximum Gain (dBi): -5.34
Minimum Gain (dBi): -24.34
Average Gain (dBi): -12.42

Frequency (Mhz): 2438
Maximum Gain (dBi): -8.34
Minimum Gain (dBi): -31.34
Average Gain (dBi): -15.09



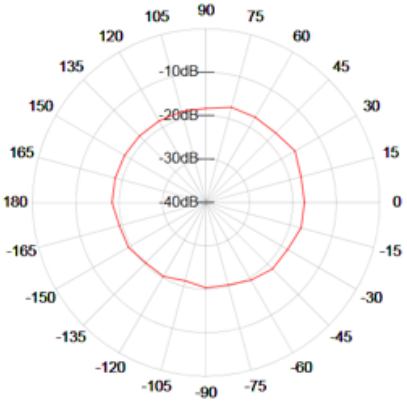
Frequency (Mhz): 2478
Maximum Gain (dBi): -9.34
Minimum Gain (dBi): -24.34
Average Gain (dBi): -14.92

3. Orientation 2, Beacon - ZX

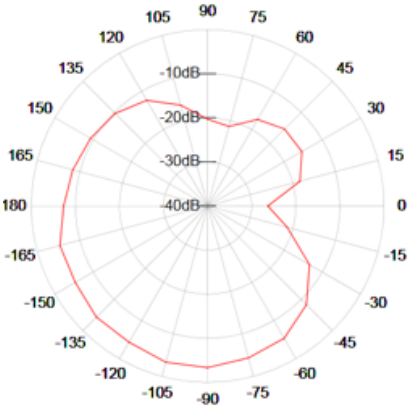
3.1 Antenna Polarity - H

Frequency (Mhz): 2402
Maximum Gain (dBi): -12.34
Minimum Gain (dBi): -21.34
Average Gain (dBi): -16.88

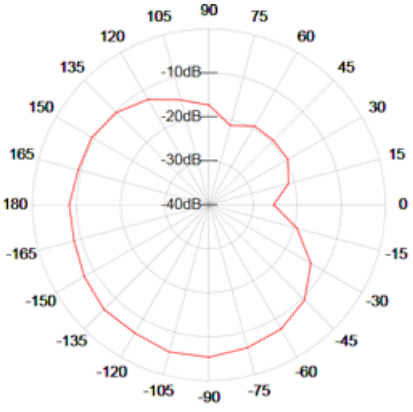
Frequency (Mhz): 2438
Maximum Gain (dBi): -15.34
Minimum Gain (dBi): -22.34
Average Gain (dBi): -18.63



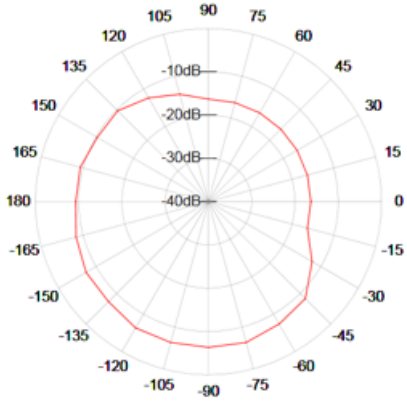
Frequency (Mhz): 2478
Maximum Gain (dBi): -16.34
Minimum Gain (dBi): -21.34
Average Gain (dBi): -18.59



Frequency (Mhz): 2402
Maximum Gain (dBi): -3.34
Minimum Gain (dBi): -26.34
Average Gain (dBi): -11.54



Frequency (Mhz): 2438
Maximum Gain (dBi): -5.34
Minimum Gain (dBi): -25.34
Average Gain (dBi): -12.63



Frequency (Mhz): 2478
Maximum Gain (dBi): -6.34
Minimum Gain (dBi): -16.34
Average Gain (dBi): -11.38