



RF EXPOSURE EVALUATION REPORT

FCC ID : 2AZIR52840BG95NN
Equipment : BeWhere Asset Tracker
Brand Name : BeWhere
Model Name : B4-MIOT-MR BSP
 B4-MIOT-MR BTP
 B4-MIOT-MR BTW
Applicant : BeWhere Inc
 3264 Lakeshore Blvd West Etobicoke, Ontario M8V 1M4
Manufacturer : BeWhere Inc
 3264 Lakeshore Blvd West Etobicoke, Ontario M8V 1M4
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full

Cona Huang

Approved by: Cona Huang / Deputy Manager



SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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History of this test report



1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	BeWhere Asset Tracker
Brand Name	BeWhere
Model Name	B4-MIOT-MR BSP B4-MIOT-MR BTP B4-MIOT-MR BTW
Sample 1	B4-BeSol +
Sample 2	B4-BeTen +
Sample 3	B4-Bewired
FCC ID	2AZIR52840BG95NN
Wireless Technology and Frequency Range	Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	Bluetooth LE

Pre-certified Module Integrated into the Host	
FCC ID	XMR201910BG95M3
Wireless Technology and Frequency Range	LTE Cat M1 Band 2: 1850 MHz ~ 1910 MHz LTE Cat M1 Band 4: 1710 MHz ~ 1755 MHz LTE Cat M1 Band 5: 824 MHz ~ 849 MHz LTE Cat M1 Band 12: 699 MHz ~ 716 MHz
Mode	LTE: QPSK, 16QAM

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Manufacturer's Declaration of Model Equivalence and Variation

The manufacturer declares that device model numbers B4-MIOT-MR BSP, B4-MIOT-MR BTP and B4-MIOT-MR BTW are electrically equivalent in PCB Version, BLE Chipset, Cellular Modem and Antennas. The models listed in this test report share the identical circuit design and topology, electrical components and physical layout. The only differences in between are charging method and components, battery capacity and enclosure dimensions. For more details please refer to the Declaration of Product Equivalence Letter issued by the manufacturer.

3. Maximum RF average output power among production units

Mode		Maximum Average power(dBm)
LTE	Band 2	22.0
	Band 4	22.0
	Band 5	22.0
	Band 12	22.0
Bluetooth		4.0



4. Determination of exemption

Per 1.1307(b)(3), (i) For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th} \text{ (mW)} = \text{ERP}_{20\text{cm}} (d / 20)^x \text{ for distance } d \leq 20\text{cm}$$

$$P_{th} \text{ (mW)} = \text{ERP}_{20\text{cm}} \text{ for distance } 20\text{cm} < d \leq 40\text{cm}$$

$$x = -\log_{10} \left(\frac{60}{\text{ERP}_{20\text{cm}} \sqrt{f}} \right)$$

$\text{ERP}_{20\text{cm}} \text{ (mW)}$	$0.3 \text{ GHz} \leq f < 1.5 \text{ GHz}$:	2040
	$1.5 \text{ GHz} \leq f \leq 6 \text{ GHz}$:	3060

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2R^2$.



5. RF Exposure Evaluation

5.1. Standalone assessment

General Note:

1. P_i is mean the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm
2. P_{th} is mean the exemption threshold power (P_{th}) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i .
3. In this report was used Part1.1307(b)(3)(i)(B) perfrom RF Exposure evaluation
4. The distance of 20cm is for this device

Band	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Maximum EIRP (dBm)	Maximum ERP (dBm)	Maximum EIRP (mW)	Maximum ERP (mW)	P_i (dBm)	P_i (mW)	Part1.1307 option(b) Threshold (mW)	Part1.1307 option(b) P_i/P_{th}
LTE Cat M1 Band 2	3.07	22.00	25.1	22.92	321.37	195.88	22.92	195.88	3060.000	0.064
LTE Cat M1 Band 4	3.68	22.00	25.7	23.53	369.83	225.42	23.53	225.42	3060.000	0.074
LTE Cat M1 Band 5	3.70	22.00	25.7	23.55	371.54	226.46	23.55	226.46	1680.960	0.135
LTE Cat M1 Band 12	0.36	22.00	22.4	20.21	172.19	104.95	22.00	158.49	1425.960	0.111
Bluetooth	1.00	4.00	5.0	2.85	3.16	1.93	4.00	2.51	3060.000	0.001

5.2. Collocated assessment

General Note:

1. Either MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (*Evaluated_k* term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1).
2. The sum of the ratios of the applicable terms for MPE-based and MPE shall be less than 1, to determine LTE Cat M1 + BT simultaneous transmission exposure compliance.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1 \quad (C.1)$$

Maximum LTE Cat M1 P_i/P_{th} Ratio	Bluetooth P_i/P_{th} Ratio	Σ (P_i/P_{th} Ratio) of LTE + Bluetooth
0.135	0.001	0.136

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.