RF Exposure Evaluation

FCC ID: 2AJVH-VIBELITEBT

1. Client Information

Applicant	:	3Plus International Inc.
Address	:	1502 Foothill Blvd Suite 103-260, La Verne, California, United States, 91750.
Manufacturer	:	3Plus International Inc.
Address	:	1502 Foothill Blvd Suite 103-260, La Verne, California, United States, 91750.

2. General Description of EUT

EUT Name	:	Smart Watch	
Model(s) No.	:	3Plus Vibe Lite BT, 3Plus Vibe Lite BT+, Vibe Lite BT, Vibe Lite BT+	
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance and color.	
Sample ID	:	RW-C-202301-0125-1-1#&RW-C-202301-0125-1-2#	
Product Description	:	Operation Frequency:	Bluetooth 5.3: 2402MHz~2480MHz
		Number of Channel:	BT: 79 channels BLE: 40 channels
		Antenna Gain:	0.17dBi Electronic Wire Antenna
Power Supply	:	Input: DC 5V DC 3.8V by 300mAh 1.14Wh rechargeable Li-ion battery	
Software Version	:	----	
Hardware Version	:	A12-W025-V1.1 PCBA	
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.			

Note: More test information about the EUT please refer the RF Test Report.

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The RF Exposure Evaluation for FCC:

SAR Test Exclusion Calculations

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{\text{th}}\ (\text{mW}) = \begin{cases} ERP_{20\ \text{cm}}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ \text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

where

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

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Calculation:

Test separation: 5mm					
Bluetooth Mode (GFSK)					
Frequency (GHz)	**Conducted Power (dBm)**	**Turn-up Power Tolerance (dB)**	**Max power of tune up tolerance (dBm)**	**Max power of tune up tolerance (mW)**	**Limit P_{th}(mW)**
2.402	0.79	0±1	1	1.259	3
2.441	-0.14	0±1	1	1.259	3
2.480	0.04	0±1	1	1.259	3
Bluetooth Mode (π /4-DQPSK)					
Frequency (GHz)	**Conducted Power (dBm)**	**Turn-up Power Tolerance (dB)**	**Max power of tune up tolerance (dBm)**	**Max power of tune up tolerance (mw)**	**Limit P_{th}(mW)**
2.402	0.80	0±1	1	1.259	3
2.441	-0.17	0±1	1	1.259	3
2.480	0.02	0±1	1	1.259	3
Bluetooth Mode (8-DPSK)					
2.402	0.80	0±1	1	1.259	3
2.441	-0.15	0±1	1	1.259	3
2.480	0.01	0±1	1	1.259	3
The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 D04, No SAR is required.					

Test separation: 5mm					
Bluetooth LE(1M) Mode					
Frequency (GHz)	**Conducted Power (dBm)**	**Turn-up Power Tolerance (dB)**	**Max power of tune up tolerance (dBm)**	**Max power of tune up tolerance (mW)**	**Limit P_{th}(mW)**
2.402	0.81	0±1	1	1.259	3
2.440	-0.13	0±1	1	1.259	3
2.480	0.07	0±1	1	1.259	3
Bluetooth LE(2M) Mode					
Frequency (GHz)	**Conducted Power (dBm)**	**Turn-up Power Tolerance (dB)**	**Max power of tune up tolerance (dBm)**	**Max power of tune up tolerance (mW)**	**Limit P_{th}(mW)**
2.402	0.56	0±1	1	1.259	3
2.440	-0.37	0±1	1	1.259	3
2.480	-0.18	0±1	1	1.259	3
The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 D04, No SAR is required.					

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