TEST REPORT

Reference No.	:	WTF18F11129223E
FCC ID	:	2ASWN-TAP
Applicant	:	AnyCARE Corp.
Address	:	18023-L Skypark Circle, Irvine, CA 92614
Manufacturer	:	AnyCARE Corp.
Address	:	18023-L Skypark Circle, Irvine, CA 92614
Product Name	:	Smart tracker / Fitness tracker / Smart bracelet
Model No.	:	Tap
Standards	:	FCC CFR47 Part 15 Subpart C (Section 15.247): 2017
Date of Receipt sample	:	2018-11-16
Date of Test	:	2019-02-28
Date of Issue	:	2019-03-15
Test Result	:	Pass

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.
The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Tested by: Approved by:

Roy Hong / Project Engineer

Yellow Huang / Manager

1 Test Summary

Test Items	Test Requirement	Result
Radiated Emissions	15.247 15.205(a) 15.209(a)	Pass
Conducted Emissions	15.207(a)	N/A
6dB Bandwidth	15.247(a)(2)	Pass
Maximum Peak Output Power	15.247(b)(3),(4)	Pass
Power Spectral Density	15.247(e)	Pass
Band Edge	15.247(d)	Pass
Antenna Requirement	15.203	Pass
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	Pass

Remark:

Pass	Test item meets the requirement
Fail	Test item does not meet the requirement
N/A	Test case does not apply to the test object

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3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTF18F11129223E	2018-11-16	2019-02-28	2019-03-15	Original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product Name .....: Smart tracker / Fitness tracker / Smart bracelet

Model No. .....: Tap

Model Description .....: ---

Operation Frequency .....: 2402MHz ~ 2480MHz, separated by 2MHz, 40 channels in total

Modulation Type .....: GFSK(BLE only)

Antenna Type Film printed antenna

The Lowest Oscillator .....: 32.768kHz

Antenna Gain .....: 0dBi

4.2 Details of E.U.T.

Technical Data .....: Volume of Battery: 150mAh
Charging Voltage: DC 5V, 100mA

4.3 Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2402	2	2404	3	2406	4	2408
5	2410	6	2412	7	2414	8	2416
9	2418	10	2420	11	2422	12	2424
13	2426	14	2428	15	2430	16	2432
17	2434	18	2436	19	2438	20	2440
21	2442	22	2444	23	2446	24	2448
25	2450	26	2452	27	2454	28	2456
29	2458	30	2460	31	2462	32	2464
33	2466	34	2468	35	2470	36	2472
37	2474	38	2476	39	2478	40	2480

4.4 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Test mode	Low channel	Middle channel	High channel
Transmitting	2402MHz	2440MHz	2480MHz

4.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 21895-1**

Waltek Services (Foshan) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration IC number:21895-1, Nov. 14, 2016.

- **FCC – Registration No.: 820106**

Waltek Services (Foshan) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 820106, August 16, 2018

- **FCC – Designation No.: CN5034**

Waltek Services (Foshan) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation No. CN5034.

- **NVLAP – Lab Code: 600191-0**

Waltek Services (Foshan) Co., Ltd. EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 600191-0.
This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal Date**	**Cal Due Date**
1.	EMI Test Receiver	RS	ESCI	101178	2019-01-18	2020-01-17
2.	LISN	RS	ENV216	101215	2019-01-10	2020-01-09
3.	Cable	HUBER+SUHNER	CBL2-NN-3M	223NN322	2019-01-10	2020-01-09
4.	Test Software	FARATRONIC	EZ-EMC	EMEC-3AA	-	-
3m Semi-anechoic Chamber for Radiation Emissions						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer	Agilent	N9020A	MY48011796	2019-01-26	2020-01-25
2.	Active Loop Antenna	SCHWARZBECK	FMZB1519B	00004	2019-03-10	2020-03-09
3.	Trilog Broadband Antenna	SCHWARZBECK	VULB 9162	9162-117	2019-01-26	2020-01-25
4.	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	01561	2018-05-05	2019-05-04
5.	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	2018-10-25	2019-10-24
6.	Amplifier	Lunar E M	LNA1G18-40	20160501002	2018-04-26	2019-04-25
7.	Coaxial Cable (below 1GHz)	H+S	CBL3-NN-12+3 m	214NN320	2019-01-10	2020-01-09
8.	Coaxial Cable (above 1GHz)	Times-Micorwave	CBL5-NN	-	2019-01-10	2020-01-09
9.	Test Software	FARATRONIC	EZ-EMC	EMEC-3AA	-	-
RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	Spectrum Analyzer	Agilent	N9020A	MY48011796	2019-01-26	2020-01-25
2.	Spectrum Analyzer	R&S	FSP40	100501	2018-11-13	2019-11-12
3.	Vector Signal Generator	Agilent	N5182A	MY50141533	2019-03-03	2020-03-02
4.	Analog Signal Generator	Agilent	N5181A	MY48180720	2019-01-26	2020-01-26
5.	Environmental Chamber	KSON	THS-D4C-100	5244K	2019-01-26	2020-01-26
6.	Test Software	FARATRONIC	EZ-EMC	EMEC-3AA	-	-

5.2 Measurement Uncertainty

Conducted Emission (150kHz-30MHz)

Input quantity	X_i	Uncertainty of x_i		$u(X_i)$	C_i	$C_i u(X_i)$ (dB)
		dB	Probability distribution function			
Receiver reading	V_r	±0.36	K=2	0.18	1	0.18
Attenuation: AMN-receiver	a_c	±0.20	K=2	0.10	1	0.10
AMN voltage division factor	F_{AMN}	±0.20	K=2	0.10	1	0.10
Receiver corrections:						
Sine wave voltage	δV_{sw}	±1.0	K=2	0.50	1	0.50
Pulse amplitude response	δV_{pa}	±0.0		0.00	1	0.00
Pulse repetition rate response	δV_{pr}	±0.0		0.00	1	0.00
Noise floor proximity	δV_{nf}	±0.05		0.00	1	0.00
Mismatch: AMN-receiver	δM	+0.7/-0.8	U-shaped	0.53	1	0.53
AMN impedance	δZ	+2.6/-2.7	Triangular	1.08	1	1.08
Note: $V = V_r + a_c + F_{AMN} + \delta F_{AMN} + \delta V_{sw} + \delta V_{pa} + \delta V_{pr} + \delta V_{nf} + \delta M + \delta Z$ $U(V)=2u_c(V)=$ ***2.66*** *dB*						

Radiated Emission (30MHz-1GHz)

Input quantity	X_i	Uncertainty of x_i		$u(X_i)$	C_i	$C_i u(X_i)$ (dB)
		dB	Probability distribution function			
Receiver reading	V_r	±0.36	K=2	0.18	1	0.18
Attenuation: antenna-receiver	a_c	±0.10	K=2	0.05	1	0.05
Antenna facotr	F_a	±1.6	K=2	0.8	1	0.8
Receiver corrections:						
Sine wave voltage	δV_{sw}	±1.0	K=2	0.5	1	0.5
Pulse amplitude response	δV_{pa}	±0.6	Rectangular	0.35	1	0.35
Pulse repetition rate response	δV_{pr}	±1.5	Rectangular	0.87	1	0.87
Noise floor proximity	δV_{nf}	±0.5	K=2	0.25	1	0.25
Mismatch: antenna-receiver	δM	+0.9/-1.0	U-shaped	0.67	1	0.67
Antenna corrections:						
AF frequency interpolation	δF_{af}	±0.3	Rectangular	0.17	1	0.17
AF variation due to FAR influence	δF_{ah}	±0.5	Rectangular	0.29	1	0.29
Directivity difference	δF_{adir}	±0.0		0.00	1	0.00
Phase centre location	δF_{aph}	±0.0		0.00	1	0.00
Cross-polarization	δF_{acp}	±0.0		0.00	1	0.00
Balance	δF_{abal}	±0.3	Rectangular	0.17	1	0.17
Site corrections:						
Site imperfections	δA_N	±4.0	Triangular	1.63	1	1.63
Separation distance	δd	±0.3	Rectangular	0.17	1	0.17
Table height	δh	±0.1	K=2	0.05	1	0.05
Note: E= $V_r + a_c + F_a + \delta V_{sw} + \delta V_{pa} + \delta V_{pr} + \delta V_{nf} + \delta M + \delta F_{af} + \delta F_{ah} + \delta F_{adir} + \delta F_{aph} + \delta F_{acp} + \delta F_{abal} + \delta A_N + \delta d + \delta h$ $U(E)=2u_c(E)=$**4.56**dB						

Radiated Spurious Emissions (25MHz-1GHz)

Input quantity	X_i	Uncertainty of x_i		$u(x_i)$ dB	c_i	$c_iu(x_i)$ dB
		dB	Probability distribution function			
Receiver reading	V_r	±0.4	k=2	0.20	1	0.20
Attenuation: antenna-receiver	a_c	±0.5	k=2	0.25	1	0.25
Cable loss and correction	L_{ac}	±1.6	k=2	0.80	1	0.80
Receiver corrections:						
Sine wave voltage	δV_{sw}	±0.9	k=2	0.45	1	0.45
Pulse amplitude response	δV_{pa}	±0.6	Rectangular	0.35	1	0.35
Pulse repetition rate response	δV_{pr}	±0.6	Rectangular	0.35	1	0.35
Noise floor proximity	δV_{nf}	+1.0/0.0	U-shaped	0.58	1	0.58
Mismatch: antenna-receiver	δM	+0.9/--1.0	U-shaped	0.67	1	0.67
Site imperfections	δMD	±3.0	Triangular	1.14	1	1.23
Reproducibility of measurement operation	δp	±0.60	k=2	0.30	1	0.30
Separation distance	δd	±0.3	Rectangular	0.17	1	0.17
Table height	δh	±0.1	k=2	0.05	1	0.05
Note: $E= V_r+ a_c+L_{ac}+\delta V_{sw} +\delta V_{pa} +\delta V_{pr} +\delta V_{nf} +\delta M +\delta MD +\delta p+\delta d+\delta h$ $U(E) =2u_c(E)=$**3.80**dB						

Radiated Spurious Emissions (1GHz-18GHz)

Input quantity	X_i	Uncertainty of x_i		$u(x_i)$ dB	c_i	$c_iu(x_i)$ dB
		dB	Probability distribution function			
Receiver reading	V_r	±0.40	k=2	0.20	1	0.20
Attenuation: antenna-receiver	a_c	±0.80	k=2	0.40	1	0.40
Cable loss and correction	L_{ac}	±2.40	k=2	1.20	1	1.20
Mismatch: Preamplifiers - Signal Analyzers	δM_{ps}	+1.2/-1.4	U-shaped	0.92	1	0.92
Mismatch:antenna-receiver	δM_{ac}	+1.3/-1.5	U-shaped	1.00	1	1.00
Receiver corrections:						
Sine wave voltage	δV_{sw}	±0.9	k=2	0.45	1	0.45
Pulse amplitude response	δV_{pa}	±0.6	Rectangular	0.35	1	0.35
Pulse repetition rate response	δV_{pr}	±0.6	Rectangular	0.35	1	0.35
Noise floor proximity	δV_{nf}	+1.0/0.0	U-shaped	0.58	1	0.58
Site imperfections	$\delta Svswr$	±3.0	Triangular	1.22	1	1.22
Effect of setup table material	δANT	±1.0	Rectangular	0.58	1	0.58
Reproducibility of measurement operation	δp	±0.60	k=2	0.30	1	0.30
Note: $E= V_r+ a_c+L_{ac}+\delta M_{ps}+\delta M_{ac}+\delta V_{sw} +\delta V_{pa} +\delta V_{pr} +\delta V_{nf} +\delta Svswr +\delta ANT +\delta p$ $U(E) =2u_c(E)=$**4.97**dB						

6 Radiated Emissions

Test Requirement .....: FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method .....: ANSI C63.10:2013

Test Result .....: PASS

Measurement Distance .....: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1 EUT Operation

Operating Environment:

Temperature.....: 23.5 °C

Humidity .....: 52.1 % RH

Atmospheric Pressure .....: 101.2kPa

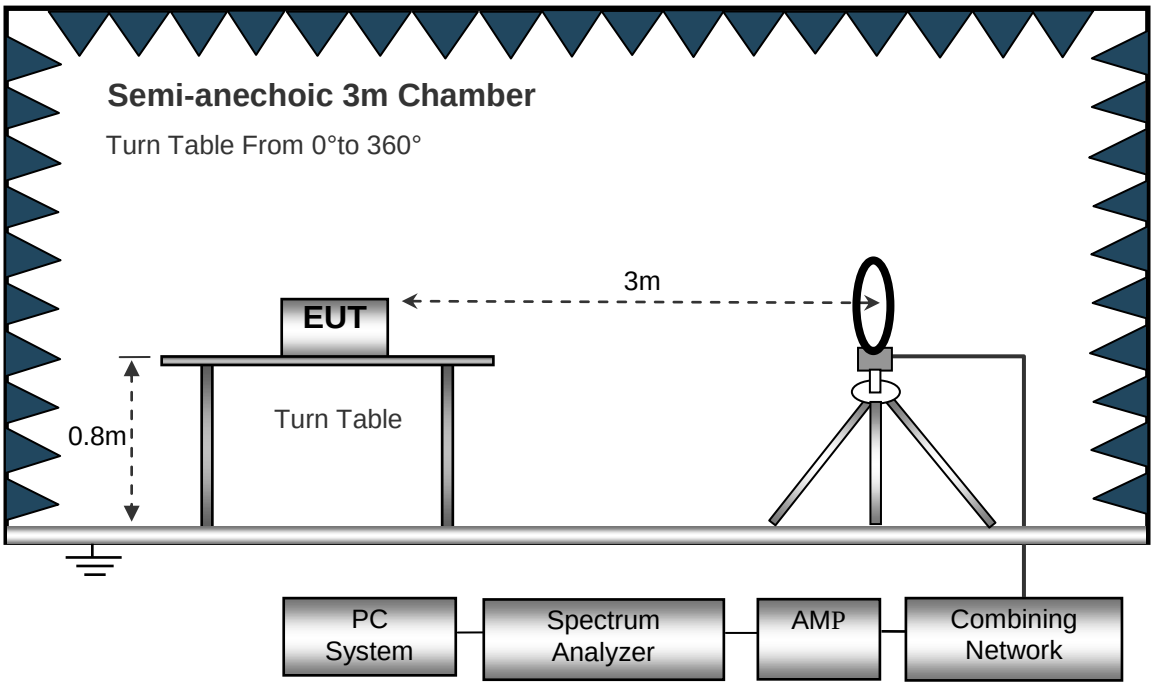
EUT Operation:

The test was performed in transmitting GFSK(BLE) Low/High Channel mode, the test data were shown in the report.

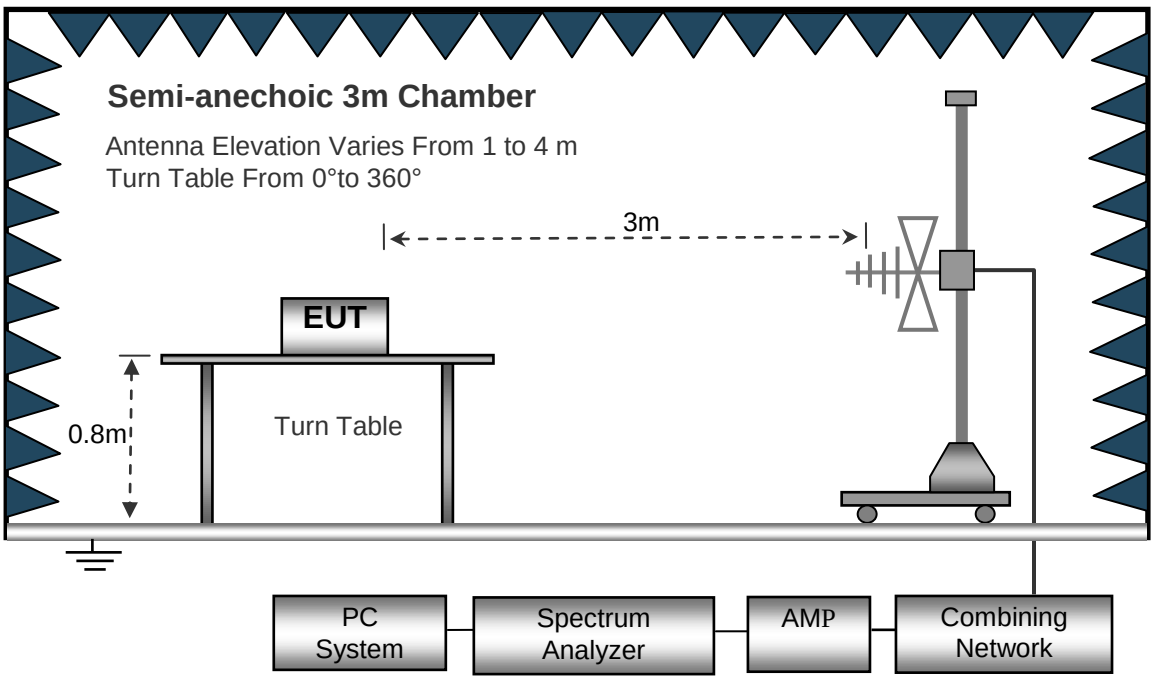
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10:2013.

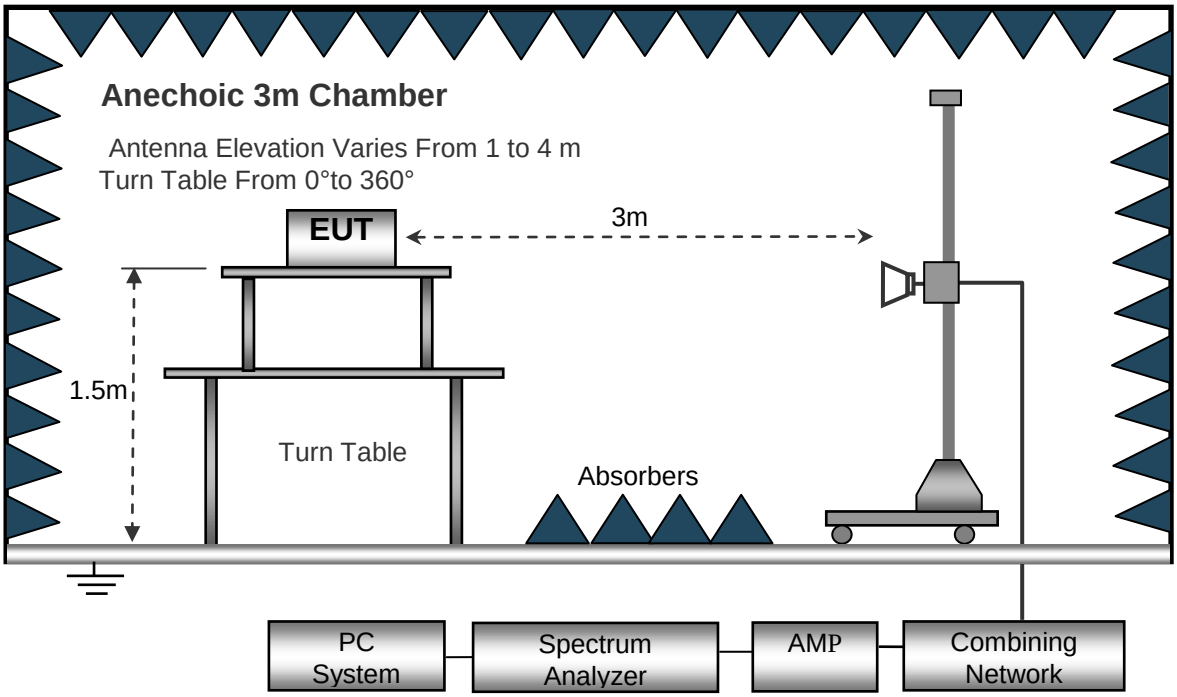
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



6.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed	:	Auto
IF Bandwidth	:	10kHz
Video Bandwidth	:	10kHz
Resolution Bandwidth	:	10kHz

30MHz ~ 1GHz

Sweep Speed	:	Auto
Detector	:	PK
Resolution Bandwidth	:	100kHz
Video Bandwidth	:	300kHz

Above 1GHz

Sweep Speed	:	Auto
Detector	:	PK
Resolution Bandwidth	:	1MHz
Video Bandwidth	:	3MHz
Detector	:	Ave.
Resolution Bandwidth	:	1MHz
Video Bandwidth	:	10Hz

6.4 Test Procedure

1) The EUT is placed on a turntable, which is above ground plane.
2) The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3) EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4) Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5) And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6) Repeat above procedures until the measurements for all frequencies are complete.
7) The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in X axis,so the worst data were shown as follow.
8) A 2.4GHz high –pass filter is used druing radiated emissions above 1GHz measurement.

6.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Limit

6.6 Summary of Test Results

Test Frequency : 26KHz to 30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency : 30MHz ~ 18GHz

Frequency (MHz)	Receiver Reading (dBμV/m)	Detector (PK/QP/AVG)	Turn table Angle (°)	RX Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247	
				Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
GFSK_Low Channel_2402MHz									
43.20	2.44	QP	144	1.1	H	15.94	18.38	40	-21.62
43.20	5.13	QP	161	1.2	V	15.94	21.07	40	-18.93
4848.13	46.64	PK	201	1.4	H	-2.73	43.91	74	-30.09
4848.13	32.55	AVG	124	1.0	H	-2.73	29.82	54	-24.18
2468.75	49.61	PK	111	1.6	V	-10.59	39.02	74	-34.98
2468.75	36.25	AVG	184	1.5	V	-10.59	25.66	54	-28.34
6434.38	45.31	PK	164	1.8	H	-1.47	46.78	74	-27.22
6434.38	30.24	AVG	127	1.7	H	-1.47	31.71	54	-22.29
7844.38	46.32	PK	168	1.6	V	4.24	50.56	74	-23.44
7844.38	31.21	AVG	125	1.5	V	4.24	35.45	54	-18.55
10870.00	46.13	PK	179	1.1	H	7.85	53.98	74	-20.02
10870.00	35.58	AVG	129	1.8	H	7.85	43.23	54	-10.77

Frequency (MHz)	Receiver Reading (dBμV/m)	Detector (PK/QP/AVG)	Turn table Angle (°)	RX Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247	
				Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
GFSK_Middle Channel_2442MHz									
706.70	1.15	QP	115	1.4	H	24.64	25.79	40	-14.21
706.70	0.35	QP	196	1.7	V	24.64	24.99	40	-15.01
2292.50	49.21	PK	190	1.2	H	-11.39	37.82	74	-36.18
2292.50	37.18	AVG	210	1.3	H	-11.39	25.79	54	-28.21
4789.38	47.98	PK	111	1.6	V	-6.71	41.27	74	-32.73
4789.38	37.27	AVG	155	1.9	V	-6.71	30.56	54	-23.44
11075.63	45.25	PK	127	1.1	H	8.42	53.67	74	-20.33
11075.63	34.88	AVG	282	1.2	H	8.42	43.30	54	-10.70
4730.63	47.65	PK	124	1.8	V	-3.24	44.41	74	-29.59
4730.63	33.30	AVG	182	1.5	V	-3.24	30.06	54	-23.94
7168.75	45.91	PK	246	1.7	H	3.12	49.03	74	-24.97
7168.75	31.26	AVG	130	1.5	H	3.12	34.48	54	-19.52

Frequency (MHz)	Receiver Reading (dBμV/m)	Detector (PK/QP/AVG)	Turn table Angle (°)	RX Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247	
				Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
GFSK_High Channel_2480MHz									
935.55	1.84	QP	120	1.2	H	27.68	29.52	40	-10.48
935.55	1.70	QP	149	1.9	V	27.68	29.38	40	-10.62
2145.63	49.16	PK	119	1.6	H	-12.05	37.11	74	-36.89
2145.63	37.53	AVG	170	1.7	H	-12.05	25.48	54	-28.52
4436.88	48.14	PK	181	1.1	V	-4.47	43.67	74	-30.33
4436.88	34.14	AVG	215	1.2	V	-4.47	29.67	54	-24.33
8637.50	45.42	PK	166	1.5	H	4.62	50.04	74	-23.96
8637.50	32.72	AVG	171	1.1	H	4.62	37.34	54	-16.66
10723.13	45.13	PK	191	1.9	V	7.99	53.12	74	-20.88
10723.13	34.98	AVG	134	1.4	V	7.99	42.97	54	-11.03
6698.75	46.44	PK	191	1.4	H	2.07	48.51	74	-25.49
6698.75	30.67	AVG	123	1.5	H	2.07	32.74	54	-21.26

Test Frequency: 18GHz~25GHz

The measurements were more than 20 dB below the limit and not reported.

7 Band Edge Measurement

Test Requirement .....: FCC CFR47 Part 15 Section 15.247

Test Method .....: 558074 D01 DTS Meas Guidance v03r05

Test Result .....: Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Mode.....: Transmitting

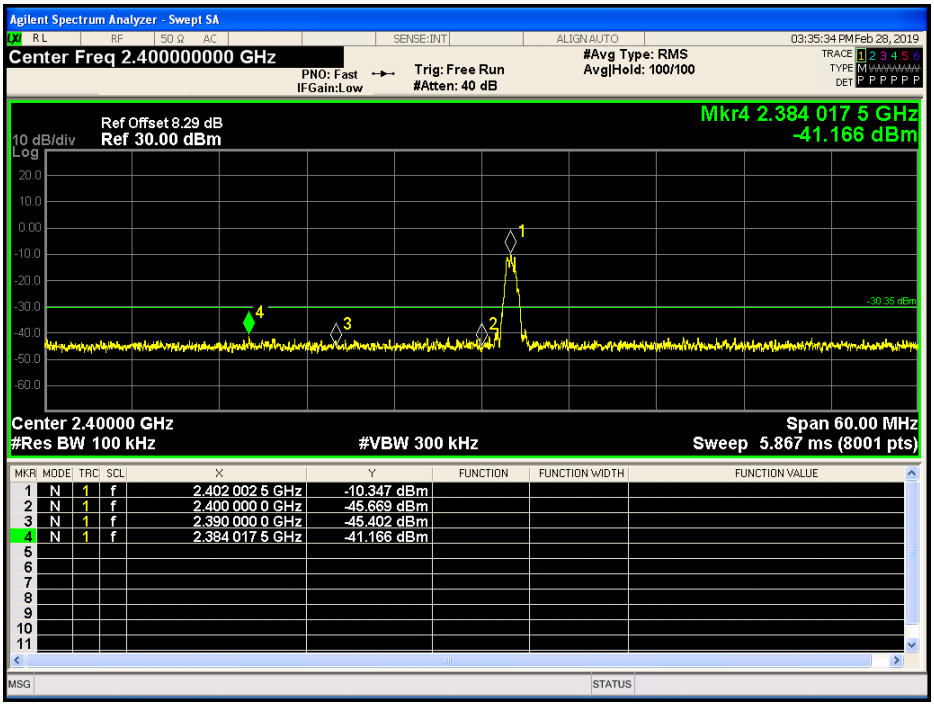
7.1 Test Produce

1) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5) Repeat above procedures until all measured frequencies were complete.

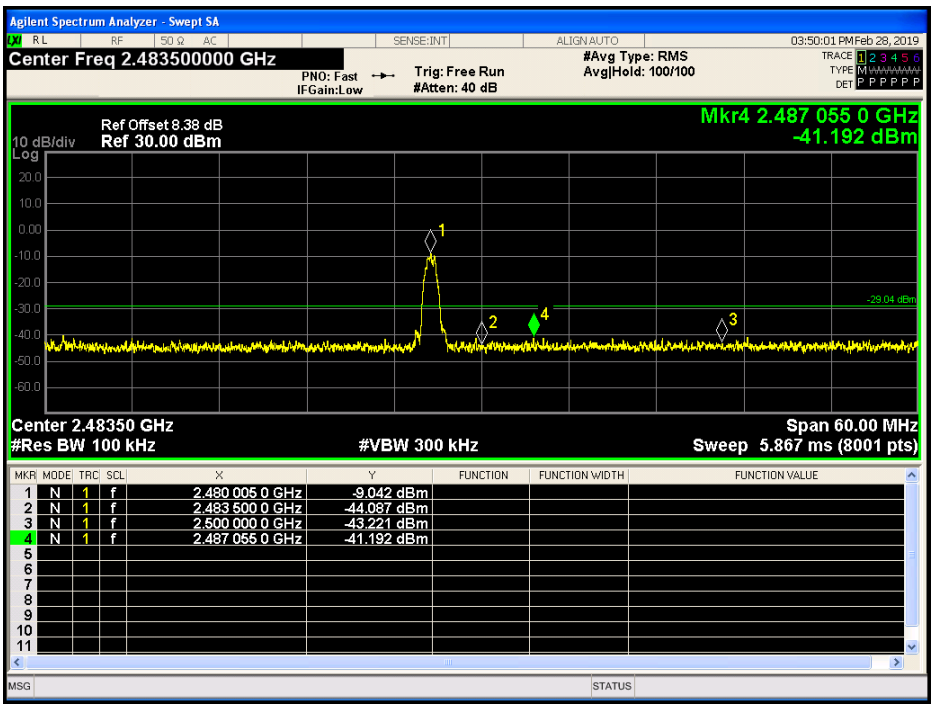
7.2 Test Result

Test result plots as follows:

TX: Band edge-left side



TX: Band edge-right side



8 6 dB Bandwidth Measurement

Test Requirement .....: FCC CFR47 Part 15 Section 15.247

Test Method .....: 558074 D01 DTS Meas Guidance v03r05

8.1 Test Procedure

1) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

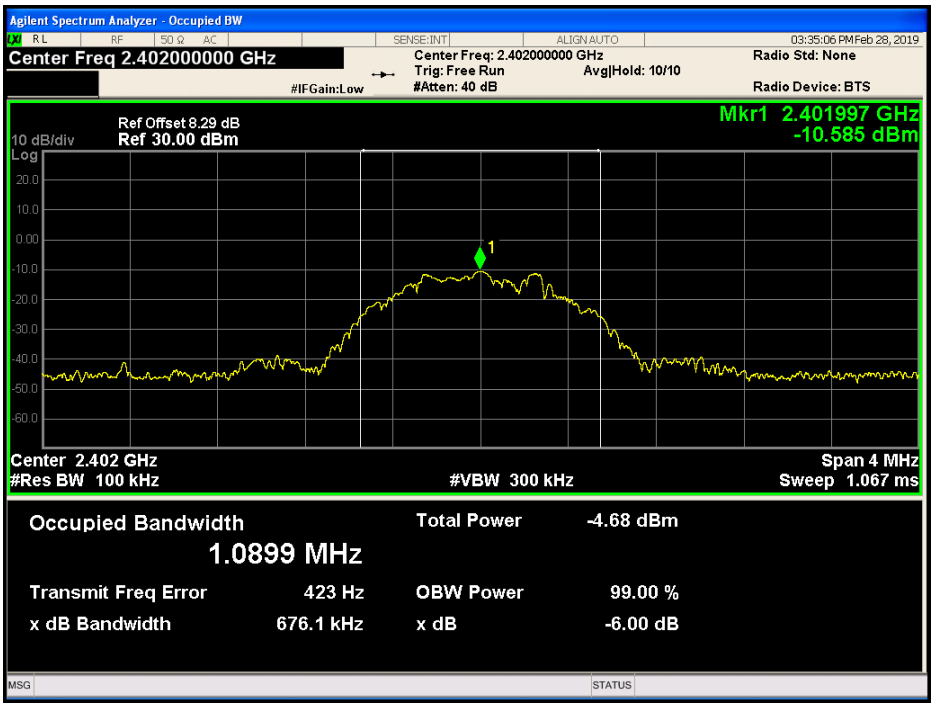
2) Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

8.2 Test Result

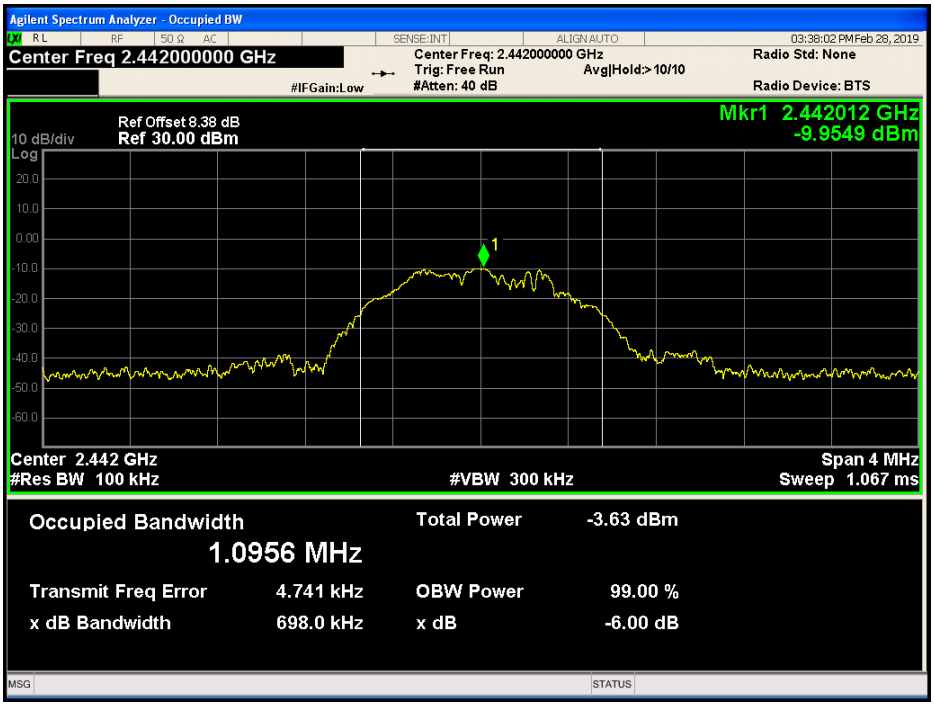
Operation mode	Bandwidth (MHz)		
BLE	Low Channel	Middle Channel	High Channel
	0.6761	0.6980	0.6972

Test result plot as follows:

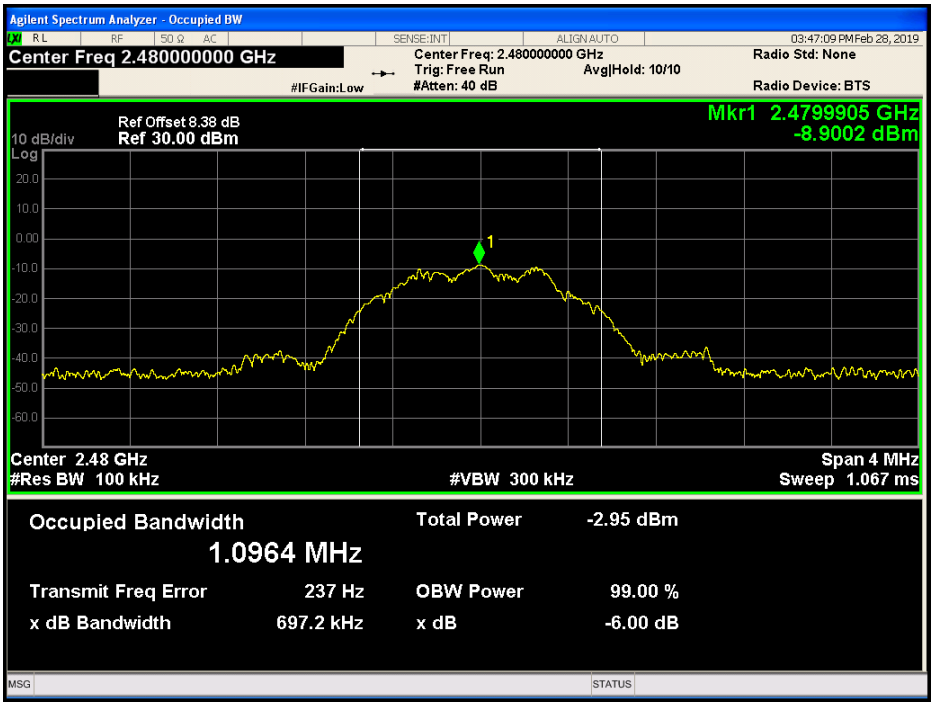
Mode: TX Low Channel



Mode: TX Middle Channel



Mode: TX High Channel



9 Maximum Peak Output Power

Test Requirement .....: FCC CFR47 Part 15 Section 15.247

Test Method .....: 558074 D01 DTS Meas Guidance v03r05

9.1 Test Procedure

558074 D01 DTS Meas Guidance v03r05 section 9.1.2

1) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2) Set the spectrum analyzer: RBW = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak, Set the span to fully encompass the DTS bandwidth.

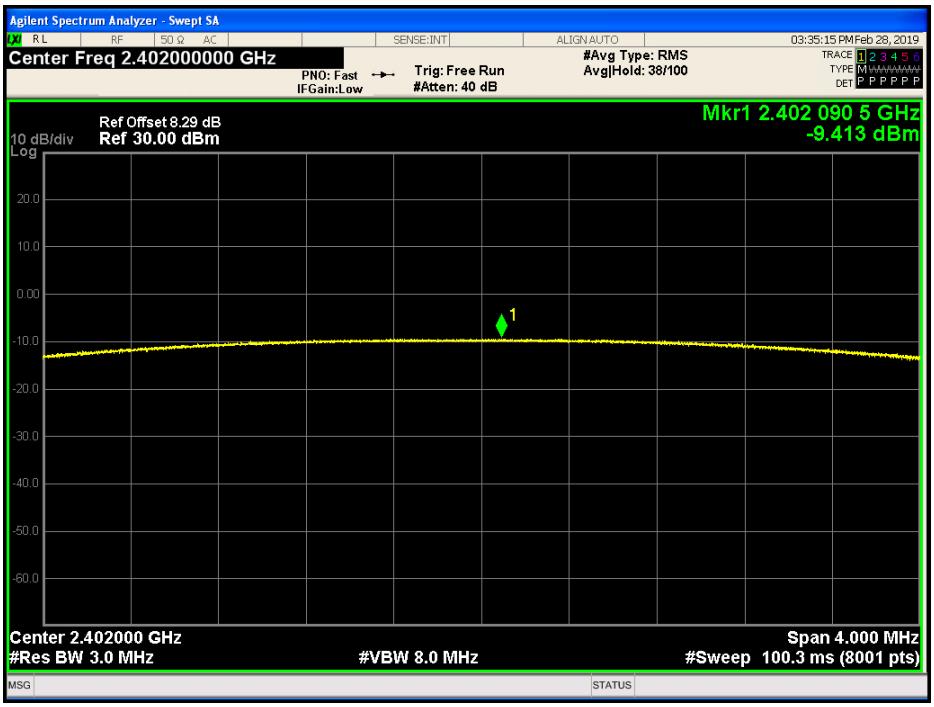
3) Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

9.2 Test Result

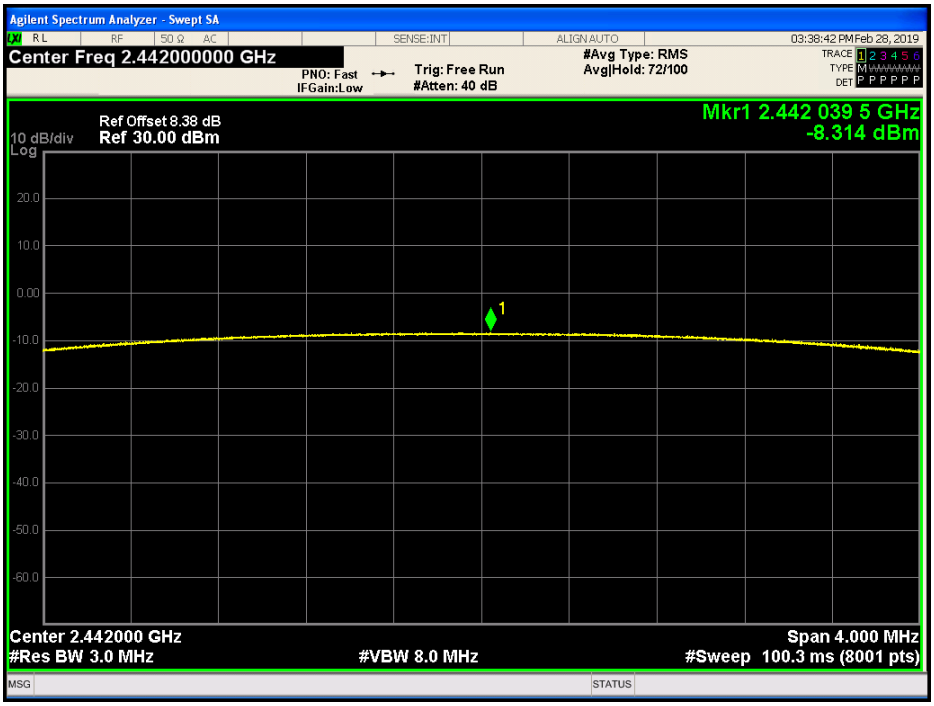
Test mode	Maximum Peak Output Power (dBm)			Limit
BLE	Low Channel	Middle Channel	High Channel	1W/30dBm
	-9.413	-8.314	-7.803	

Test result plot as follows:

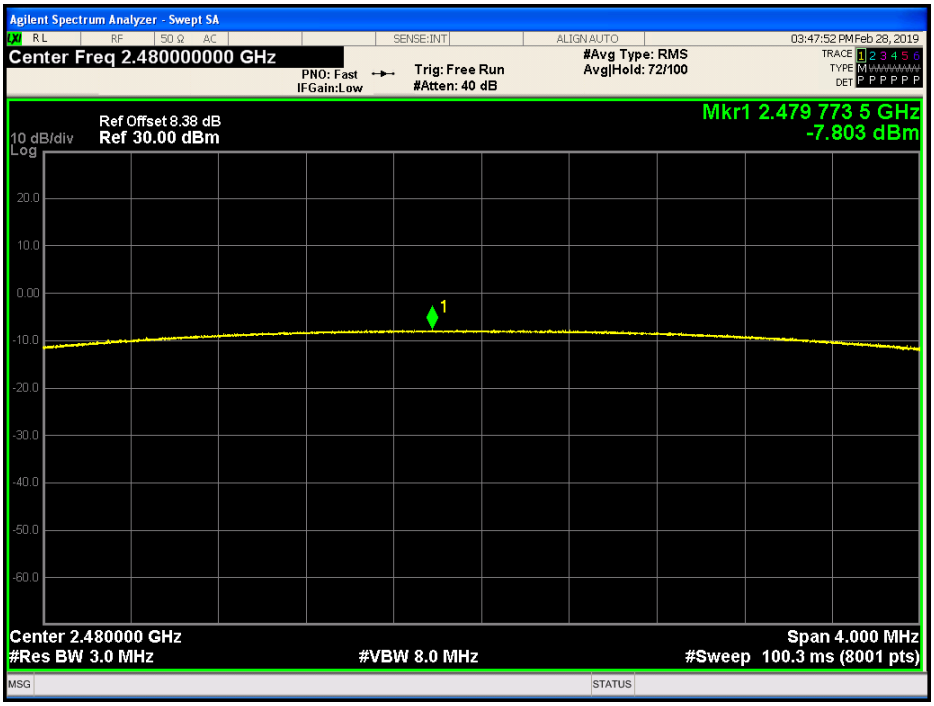
Mode: TX Low Channel



Mode: TX Middle Channel



Mode: TX High Channel



10 Power Spectral density

Test Requirement .....: FCC CFR47 Part 15 Section 15.247

Test Method .....: 558074 D01 DTS Meas Guidance v03r05

10.1 Test Procedure

558074 D01 DTS Meas Guidance v03r05 section 10.2

1) Remove the antenna from the EUT and then connect a low RF cable from the antenna port
2) to the spectrum.
3) Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.
4) Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

10.2 Test Result

Test mode	Power Spectral (dBm per 3kHz)			Limit
BLE	Low Channel	Middle Channel	High Channel	8dBm per 3kHz
	-10.522	-9.341	-8.755	

Test result plot as follows:

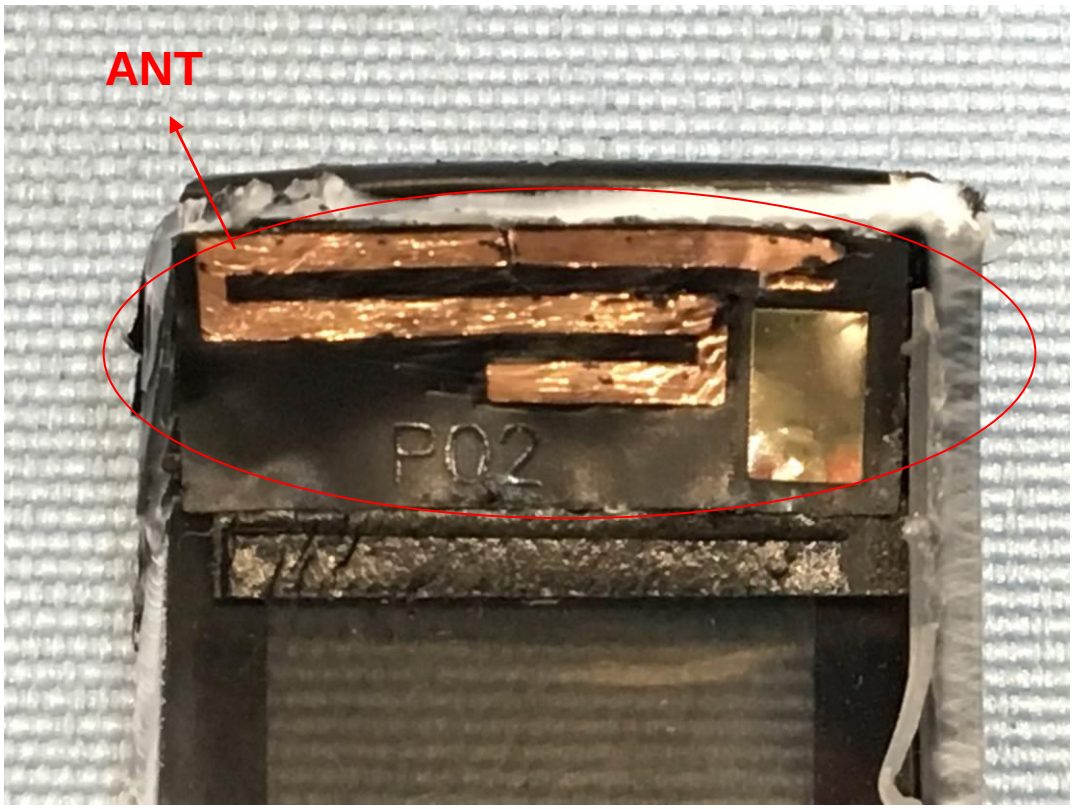
Mode: TX Low Channel

Mode: TX Middle Channel

Mode: TX High Channel

11 Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. This product has a Internal integrated PCB printed Antenna fulfill the requirement of this section.



12 RF Exposure

Test Requirement .....: FCC Part 1.1307

Test Method .....: FCC Part 2.1093 & KDB 447498 D01 General RF Exposure Guidance v06

12.1 Requirements

The 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances≤50mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] ≤3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR where

1.f(GHz) is the RF channel transmit frequency in GHz

2.Power and distance are rounded to the nearest mW and mm before calculation

3.The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation

distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

12.2 The procedures / limit

Conducted Peak power (dBm)	Conducted Peak power (mW)	Source-based time-averaged maximum conducted output power (mW)	Minimum test separation distance required for the exposure conditions (mm)	SAR Test Exclusion Thresholds Calculation Value	SAR Test Exclusion Thresholds Limit	Result
-7.803	0.166	0.166	5	0.5229	3.0	Compliance

Remark: Max. duty factor is 100%;

f=2480MHz=2.480GHz, so √f(GHz)=1.575

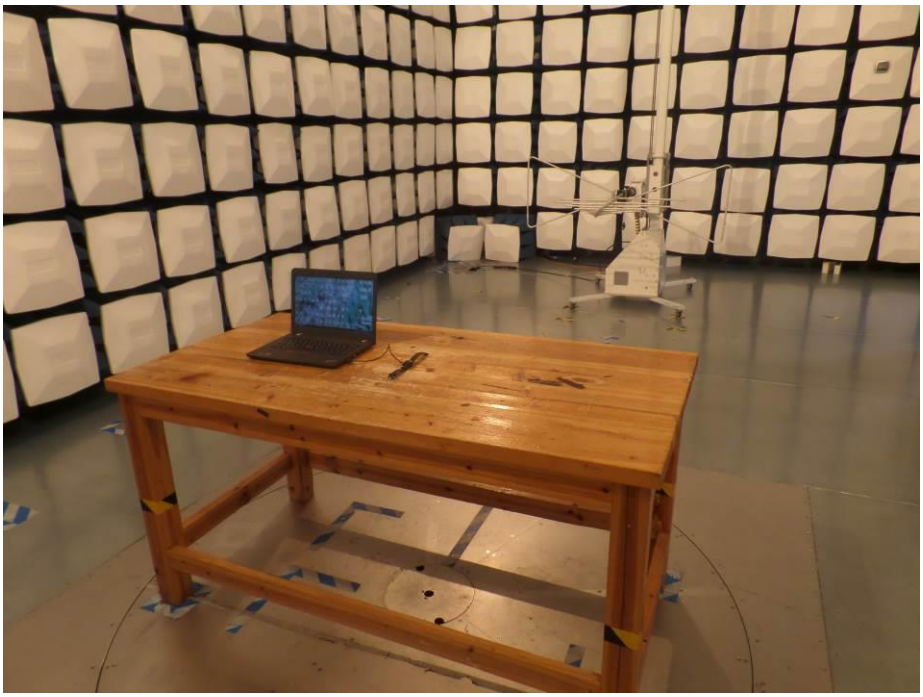
12.3 Result: Compliance

No SAR measurement is required.

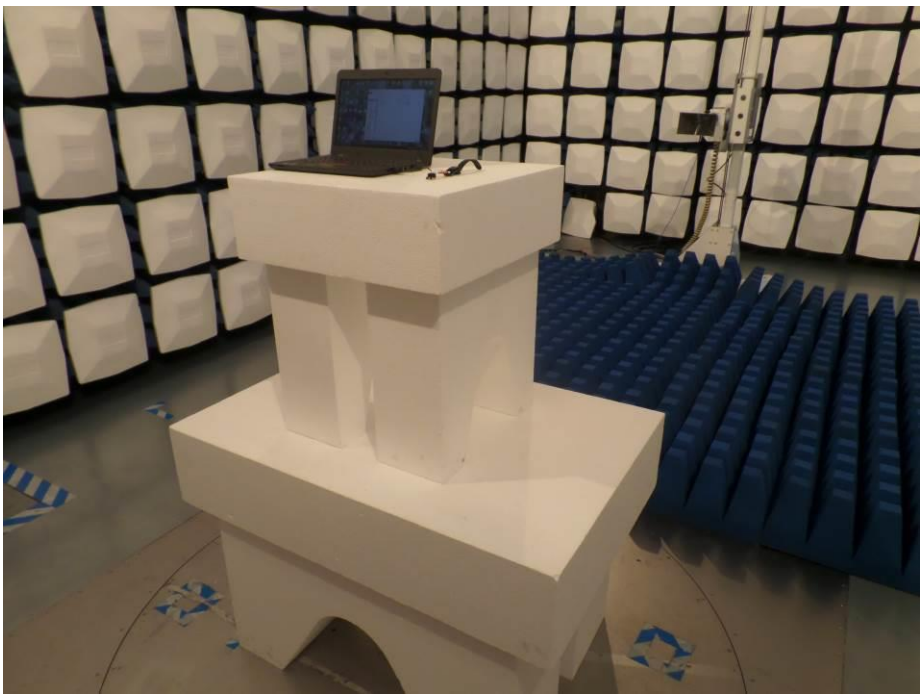
13 Photographs - Test Setup

13.1 Photographs - Radiated Emission

Test frequency from 30MHz to 1GHz



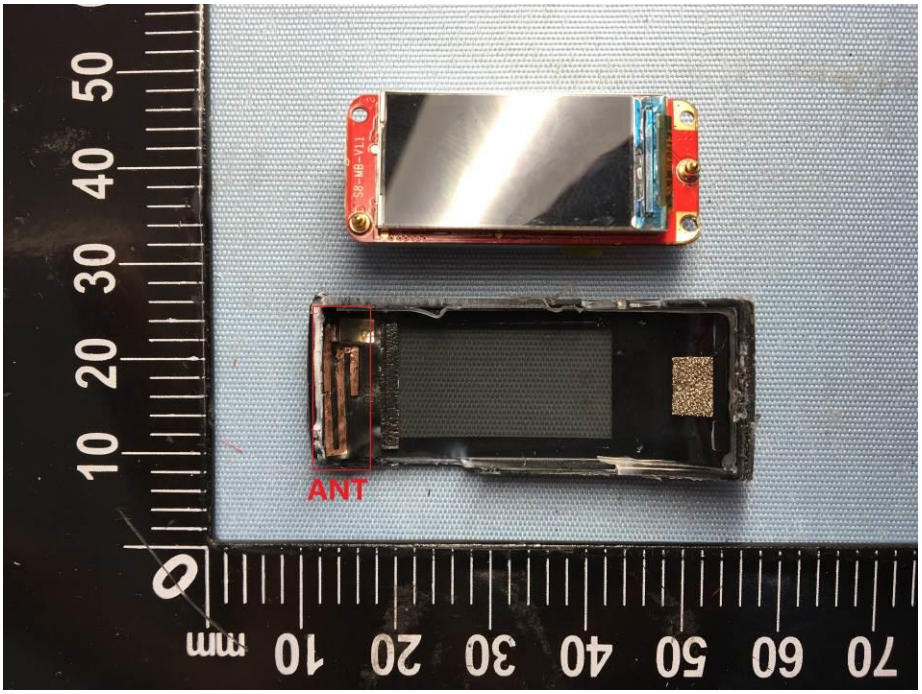
Test frequency above 1GHz

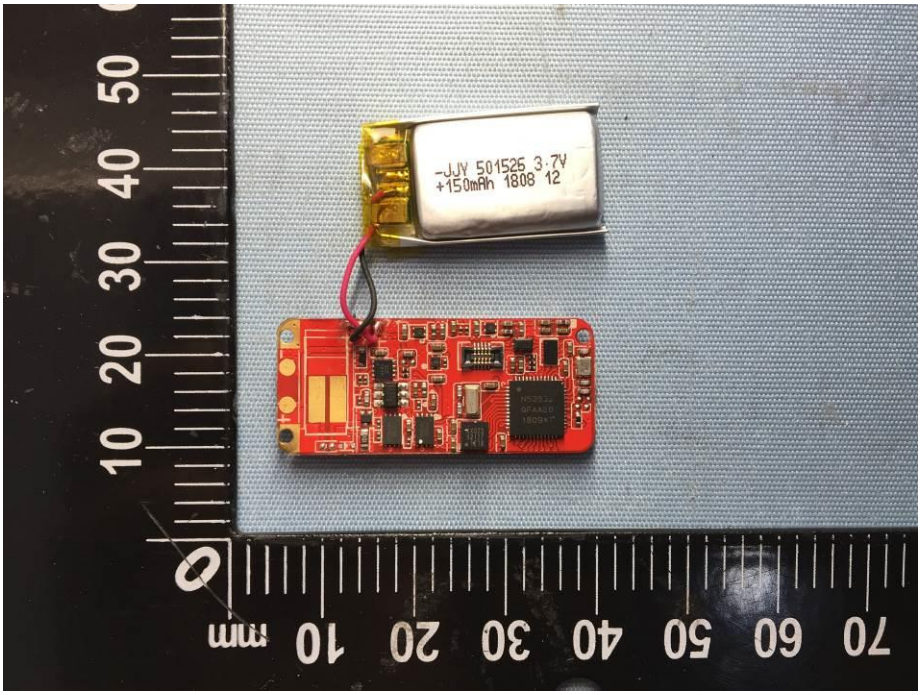


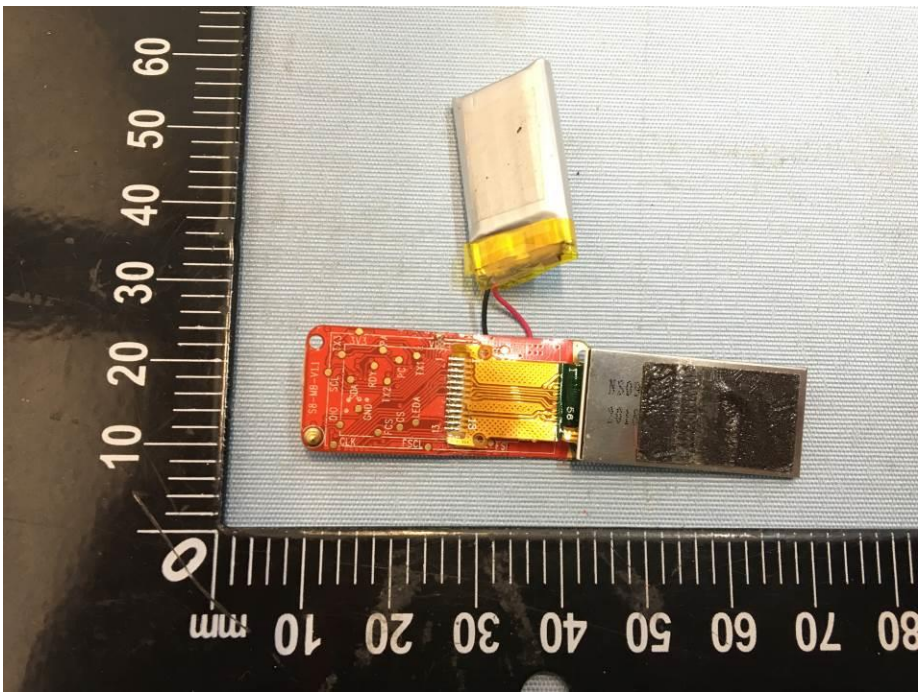
14 Photographs - Constructional Details

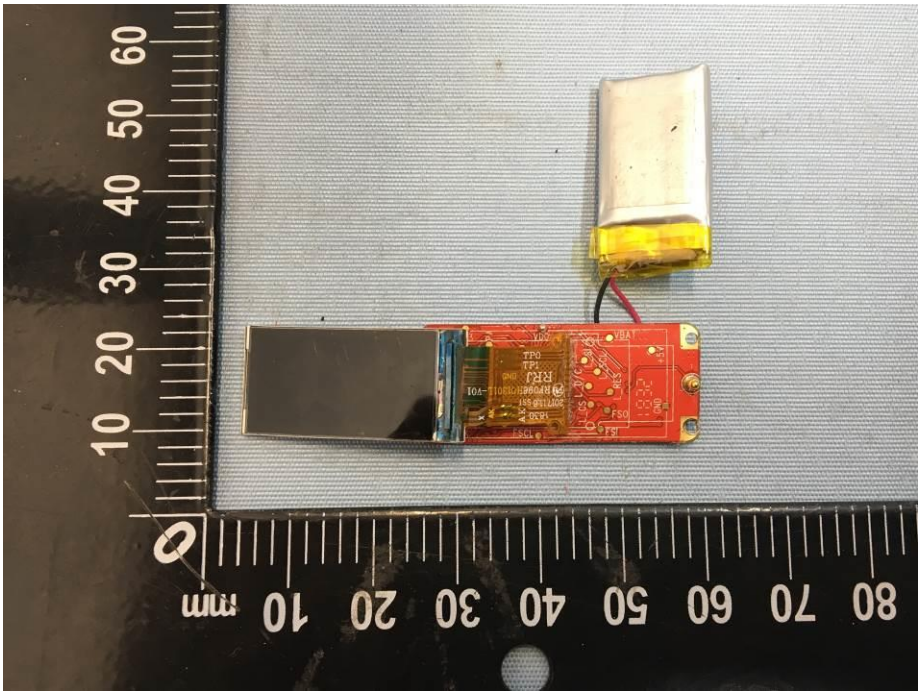
14.1 EUT – External Photos

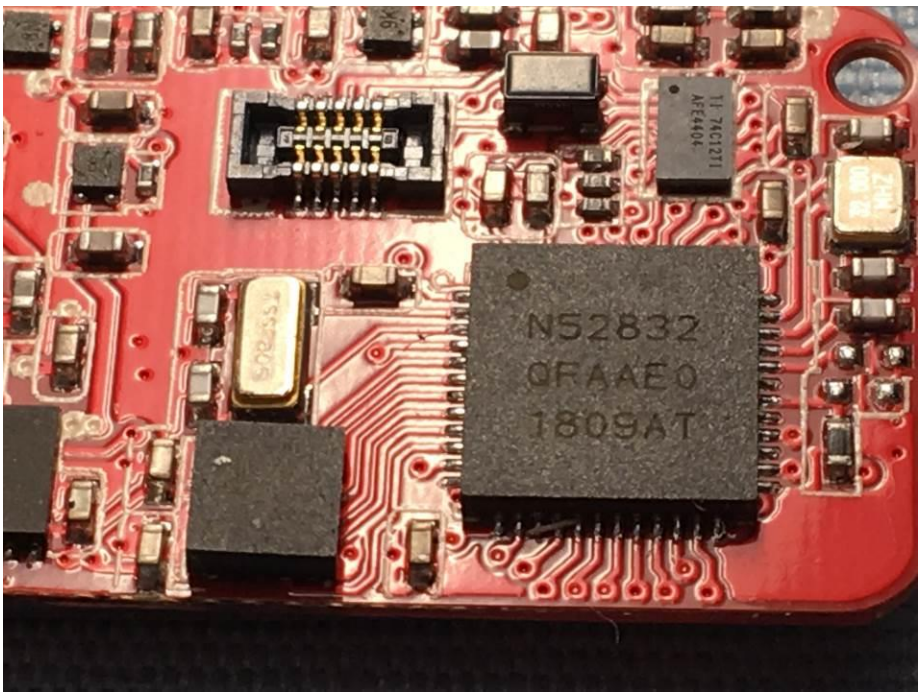
14.2 EUT – Internal Photos

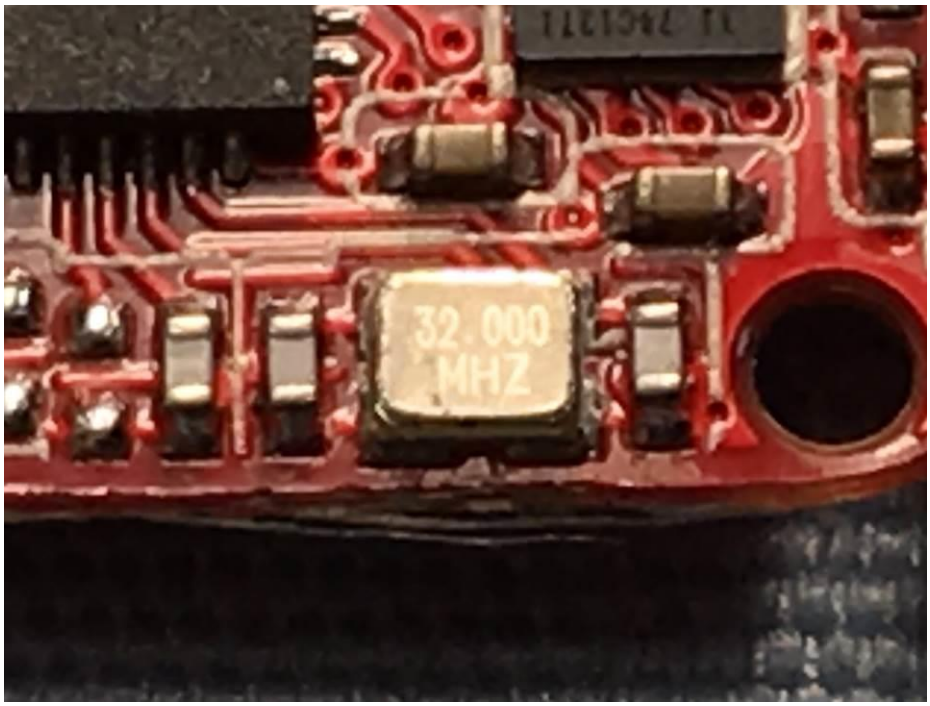












======End of Report======