

FCC Test Report

Product Name : Wireless power transmitter
Trade Name : Powerwow
Model No. : T1208C31CM, T1208C31TS, T1208C2CM,
T1208C2TS, T1208C3CM, T1208C3TS
FCC ID. : 2ALTR-PW1208

Applicant : Powerwow technology incorporation
Address : 2F., No.127, Chenggong 11th St., Zhubei City,
Hsinchu County 302, Taiwan

Date of Receipt : Apr. 06, 2017
Issued Date : Jun. 13, 2017
Report No. : 1740189R-RFUSP01V00
Report Version : V1.0



The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.

Test Report Certification

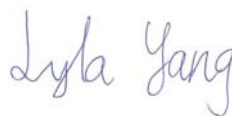
Issued Date : Jun. 13, 2017

Report No. : 1740189R-RFUSP01V00



Product Name : Wireless power transmitter
Applicant : Powerwow technology incorporation
Address : 2F., No.127, Chenggong 11th St., Zhubei City, Hsinchu County
302, Taiwan
Manufacturer : Shin Puu Technology Co., Ltd.
Model No. : T1208C31CM, T1208C31TS, T1208C2CM, T1208C2TS,
T1208C3CM, T1208C3TS
FCC ID. : 2ALTR-PW1208
EUT Voltage : AC 100-240V, 50-60Hz
Testing Voltage : AC 120V/60Hz
Trade Name : Powerwow
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2015
Laboratory Name : Hsin Chu Laboratory
Address : No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu
County 31061, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result : Complied

Documented By :



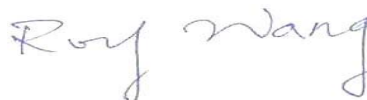
(Lyla Yang / Engineering Adm. Specialist)

Tested By :



(Carter Hsu / Senior Engineer)

Approved By :



(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1740189R-RFUSP01V00	V1.0	Initial issue of report	Jun. 13, 2017

Laboratory Information

We, **DEKRA Testing and Certification Co., Ltd.**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	: TAF, Accreditation Number: 3024
USA	: FCC, Designation Number of test firm: TW3024
Canada	: IC, Submission No: 181665 / IC Registration Number: 22397-1 / 22397-2 / 22397-3

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site : http://www.dekra.com.tw/index_en.aspx

If you have any comments, Please don't hesitate to contact us. Our test sites as below:

- 1 No. 75-2, 3rd Lin, WangYe Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan (R.O.C.)
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : info.tw@dekra.com
- 2 No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : info.tw@dekra.com
- 3 No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : info.tw@dekra.com

TABLE OF CONTENTS

Description	Page
1. General Information.....	7
1.1. EUT Description	7
1.2. Test Mode	9
1.3. Tested System Details	10
1.4. Configuration of tested System	10
1.5. EUT Exercise Software	10
1.6. Test Facility.....	11
2. Conducted Emission	12
2.1. Test Equipment.....	12
2.2. Test Setup	12
2.3. Limits	13
2.4. Test Procedure	13
2.5. Test Specification.....	13
2.6. Uncertainty	13
2.7. Test Result.....	14
3. Peak Power Output	20
3.1. Test Equipment.....	20
3.2. Test Setup	20
3.3. Test procedures	20
3.4. Limits	20
3.5. Test Specification.....	20
3.6. Test Result.....	21
4. Radiated Emission	22
4.1. Test Equipment.....	22
4.2. Test Setup	22
4.3. Limits	23
4.4. Test Procedure	23
4.5. Test Specification.....	23
4.6. Test Result.....	24
5. RF antenna conducted test	42
5.1. Test Equipment.....	42
5.2. Test Setup	42
5.3. Limits	43
5.4. Test Procedure	43
5.5. Test Specification.....	43
5.6. Test Result.....	44
6. Band Edge.....	49
6.1. Test Equipment.....	49
6.2. Test Setup	49
6.3. Limits	49
6.4. Test Procedure	50

6.5.	Test Specification.....	50
6.6.	Test Result.....	51
7.	Occupied Bandwidth	57
7.1.	Test Equipment.....	57
7.2.	Test Setup	57
7.3.	Limits	57
7.4.	Test Procedures	57
7.5.	Test Specification.....	57
7.6.	Test Result.....	58
8.	Power Density	61
8.1.	Test Equipment.....	61
8.2.	Test Setup	61
8.3.	Limits	61
8.4.	Test Procedures	61
8.5.	Test Specification.....	61
8.6.	Uncertainty	61
8.7.	Test Result.....	62
Attachment 1		65
	Test Setup Photograph.....	65
Attachment 2.....		72
	EUT External Photograph.....	72
Attachment 3.....		82
	EUT Internal Photograph.....	82

1. General Information

1.1. EUT Description

Product Name	Wireless power transmitter
Trade Name	Powerwow
Model No.	T1208C31CM, T1208C31TS, T1208C2CM, T1208C2TS, T1208C3CM, T1208C3TS
Frequency Range/Channel Number	2402~2480MHz / 40 Channels
Type of Modulation	Bluetooth 4.0 (GFSK)

Antenna Information	
MFR. / Model	Powerwow / nRF-nickPTU
Antenna Type	Soldered on PCB Antenna
Antenna Gain	3.98 dBi

Accessories Information	
Power Adapter	GOE, GS018-120 I/P: 100-240V~ 50/60Hz 0.5A O/P: 12V \equiv 1500mA Cable Out: Non-Shielded, 1.55m.
Power Adapter	Sunny, SYS1544-2412-T3 I/P: 100-240V~, 1.0A MAX, 50-60Hz O/P: +12V \equiv 2.0A Cable Out: Non-Shielded, 1.5m. Power Cord: Non-Shielded, 1.8m.
Power Adapter	Sunny, SYS1531-2412-W2 I/P: 100-240V~, 1.0A MAX, 50-60Hz O/P: 12V \equiv 2.0A Cable Out: Non-Shielded, 1.5m.

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00	2402 MHz	Channel 10	2422 MHz	Channel 20	2442 MHz	Channel 30	2462 MHz
Channel 01	2404 MHz	Channel 11	2424 MHz	Channel 21	2444 MHz	Channel 31	2464 MHz
Channel 02	2406 MHz	Channel 12	2426 MHz	Channel 22	2446 MHz	Channel 32	2466 MHz
Channel 03	2408 MHz	Channel 13	2428 MHz	Channel 23	2448 MHz	Channel 33	2468 MHz
Channel 04	2410 MHz	Channel 14	2430 MHz	Channel 24	2450 MHz	Channel 34	2470 MHz
Channel 05	2412 MHz	Channel 15	2432 MHz	Channel 25	2452 MHz	Channel 35	2472 MHz
Channel 06	2414 MHz	Channel 16	2434 MHz	Channel 26	2454 MHz	Channel 36	2474 MHz
Channel 07	2416MHz	Channel 17	2436 MHz	Channel 27	2456 MHz	Channel 37	2476 MHz
Channel 08	2418 MHz	Channel 18	2438 MHz	Channel 28	2458 MHz	Channel 38	2478 MHz
Channel 09	2420 MHz	Channel 19	2440 MHz	Channel 29	2460 MHz	Channel 39	2480 MHz

Note:

1. This device is a Wireless power transmitter including BT4.0 transmitting and receiving function.
2. The variation of model number is for different strategy of marketing.
3. The different of the each model is shown as below:

Model No	C2 (for adapter)	C3 (for adapter)	C31 (for adapter)	CM	TS
T1208C2CM	GS018120 adaptor			PCB module	
T1208C2TS	GS018120 adaptor				Plastic housing
T1208C3CM		SYS1531-2412-W2 adaptor		PCB module	
T1208C3TS		SYS1531-2412-W2 adaptor			Plastic housing
T1208C31CM			SYS1544-2412-T3 adaptor	PCB module	
T1208C31TS			SYS1544-2412-T3 adaptor		Plastic housing

4. Regards to the frequency band operation; the lowest 、middle and highest frequency of channel were selected to perform the test, and then shown on this report.

1.2. Test Mode

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Test Mode	Mode 1: TX (Adapter: GOE, GS018-120) Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) Mode 3: TX (Adapter: Sunny, SYS1531-2412-W2)
-----------	--

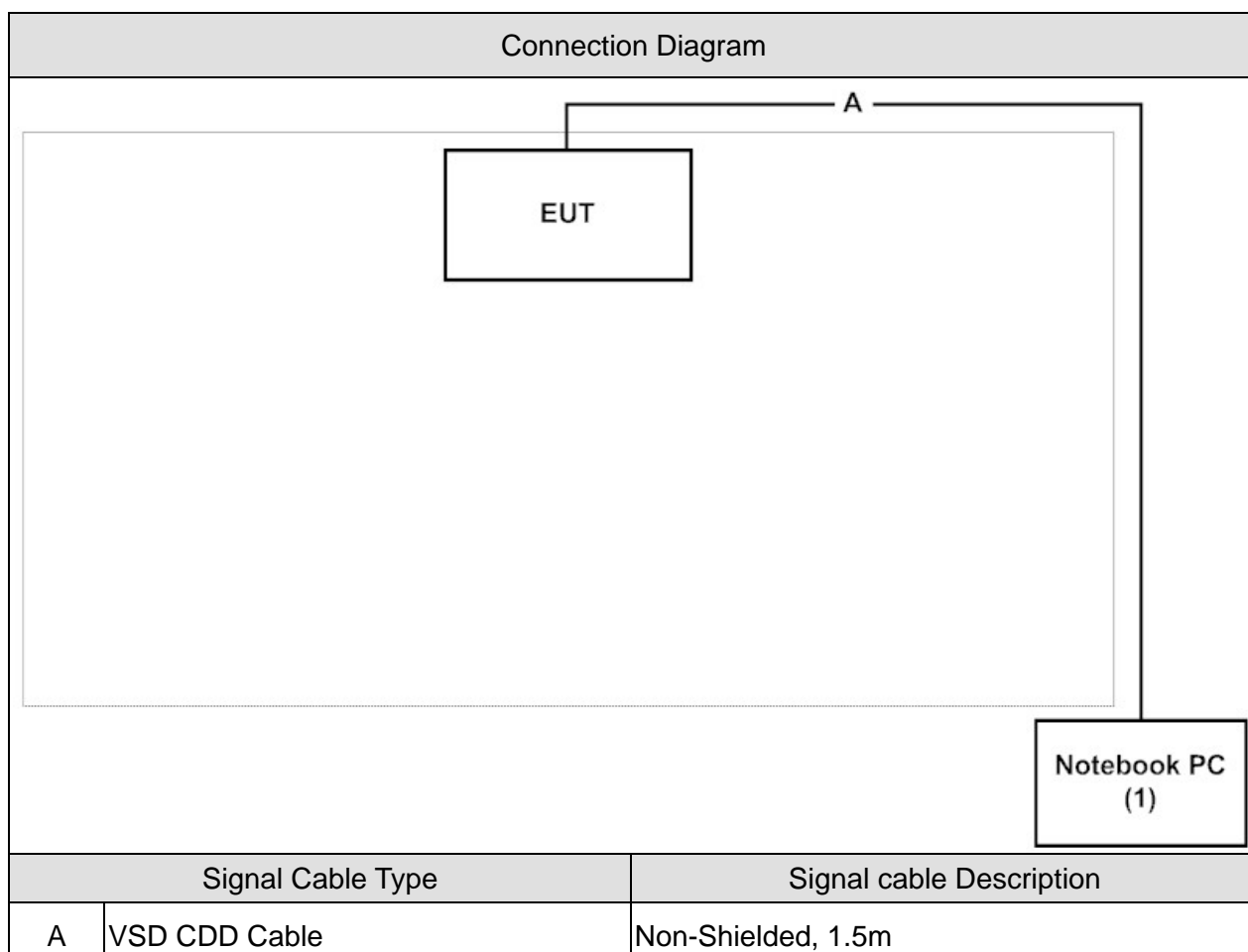
Test Items	Modulation	Channel	Antenna	Result
Conducted Emission	GFSK	19	0	Complies
Peak Power Output	GFSK	00/19/39	0	Complies
Radiated Emission	GFSK	00/19/39	0	Complies
RF antenna conducted test	GFSK	00/19/39	0	Complies
Radiated Emission Band Edge	GFSK	00/19/39	0	Complies
Occupied Bandwidth	GFSK	00/19/39	0	Complies
Power Density	GFSK	00/19/39	0	Complies

1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1 Notebook PC	ACER	Aspire V3-372	NXG7ATA0065 47014826600	DoC	Non-Shielded, 1.5m, one ferrite core bonded

1.4. Configuration of tested System



1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Execute the test program "nRFgo".
3	Configure the test mode, the test channel, and the data rate.
4	Press "Start TX" to start the continuous transmitting.
5	Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual	Test Site
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	20	3
Humidity (%RH)		25 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output	15 - 35	24	3
Humidity (%RH)		25 - 75	45	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission	15 - 35	25	2
Humidity (%RH)		25 - 75	54	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 C 15.247 RF antenna conducted test	15 - 35	24	3
Humidity (%RH)		25 - 75	45	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 C 15.247 Band Edge	15 - 35	25	2
Humidity (%RH)		25 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth	15 - 35	24	3
Humidity (%RH)		25 - 75	45	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 C 15.247 Power Density	15 - 35	24	3
Humidity (%RH)		25 - 75	45	
Barometric pressure (mbar)		860 - 1060	950-1000	

Note: Test site information refers to Laboratory Information.

2. Conducted Emission

2.1. Test Equipment

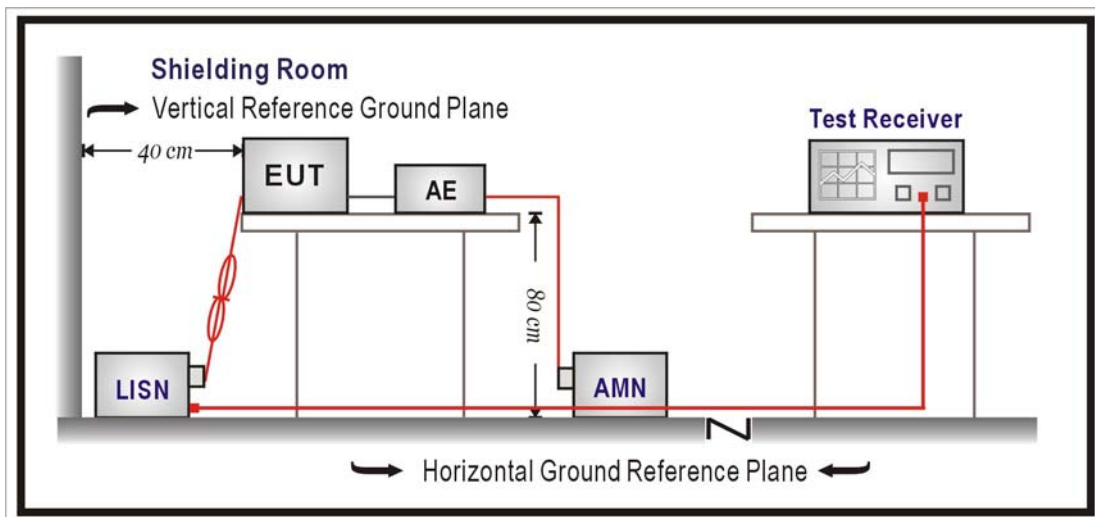
The following test equipment are used during the test:

Conducted Emission / SR2-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	2018/02/05
LISN	R&S	ENV216	100092	2017/08/16
Test Receiver	R&S	ESCS 30	836858/022	2018/01/14

Note: All equipment that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBUV)		
Frequency MHz	QP	AV
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

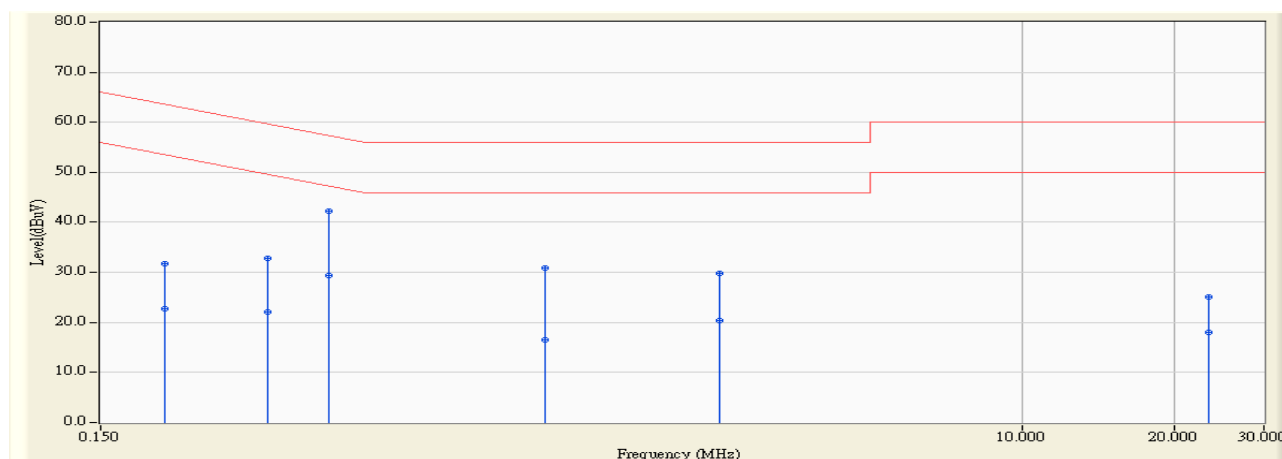
According to FCC Part 15 Subpart C Paragraph 15.207: 2015

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Site : SR2-H	Time : 2017/05/02
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line1	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 1: TX (Adapter: GOE, GS018-120) 802.15.1_BLE_2440MHz

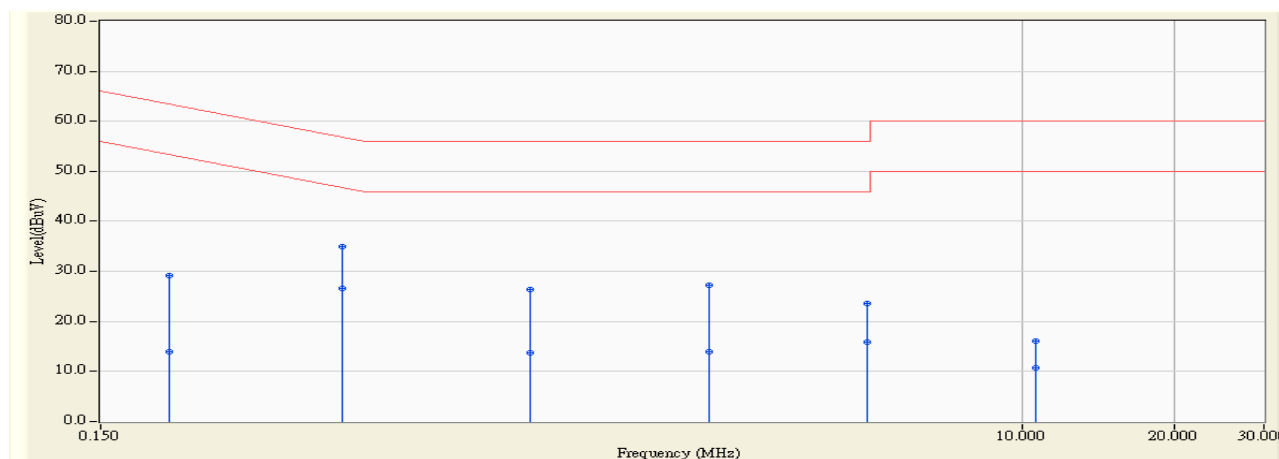


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.201	9.750	21.920	31.670	-31.908	63.578	QUASIPeAK
2		0.201	9.750	12.900	22.650	-30.928	53.578	AVERAGE
3		0.322	9.738	23.050	32.788	-26.870	59.658	QUASIPeAK
4		0.322	9.738	12.310	22.048	-27.610	49.658	AVERAGE
5	*	0.423	9.730	32.600	42.330	-15.051	57.380	QUASIPeAK
6		0.423	9.730	19.690	29.420	-17.961	47.380	AVERAGE
7		1.134	9.825	21.050	30.875	-25.125	56.000	QUASIPeAK
8		1.134	9.825	6.780	16.605	-29.395	46.000	AVERAGE
9		2.505	9.875	19.830	29.705	-26.295	56.000	QUASIPeAK
10		2.505	9.875	10.490	20.365	-25.635	46.000	AVERAGE
11		23.337	10.327	14.750	25.077	-34.923	60.000	QUASIPeAK
12		23.337	10.327	7.590	17.917	-32.083	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR2-H	Time : 2017/05/02
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line2	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 1: TX (Adapter: GOE, GS018-120) 802.15.1_BLE_2440MHz

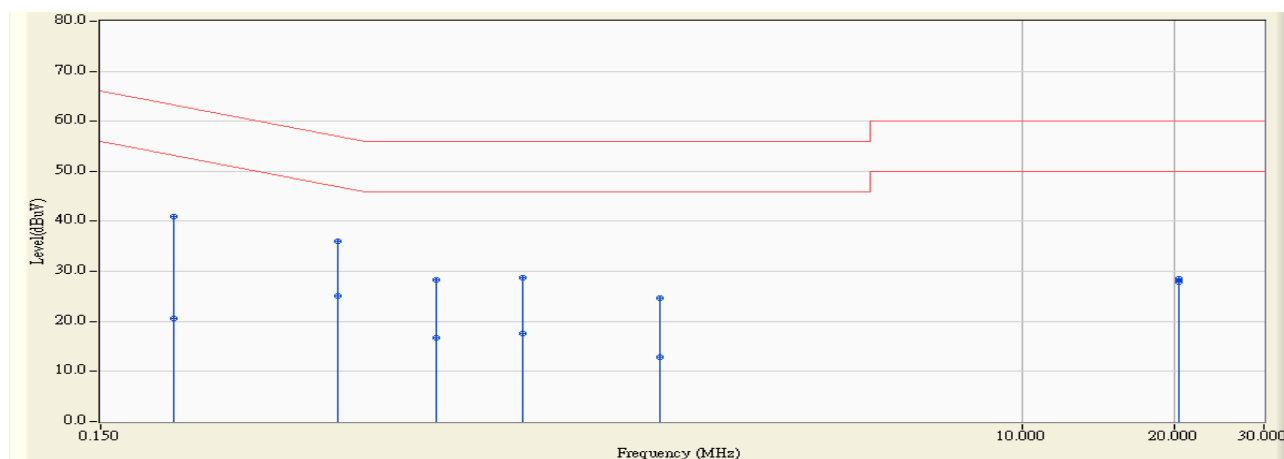


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.205	9.751	19.480	29.231	-34.188	63.418	QUASIPeAK
2		0.205	9.751	4.210	13.961	-39.458	53.418	AVERAGE
3		0.451	9.747	25.230	34.977	-21.883	56.861	QUASIPeAK
4	*	0.451	9.747	16.890	26.637	-20.223	46.861	AVERAGE
5		1.060	9.822	16.650	26.472	-29.528	56.000	QUASIPeAK
6		1.060	9.822	3.960	13.782	-32.218	46.000	AVERAGE
7		2.404	9.848	17.340	27.188	-28.812	56.000	QUASIPeAK
8		2.404	9.848	4.090	13.938	-32.062	46.000	AVERAGE
9		4.935	9.857	13.660	23.517	-32.483	56.000	QUASIPeAK
10		4.935	9.857	6.060	15.917	-30.083	46.000	AVERAGE
11		10.642	10.171	5.970	16.141	-43.859	60.000	QUASIPeAK
12		10.642	10.171	0.530	10.701	-39.299	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR2-H	Time : 2017/05/02
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line1	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2440MHz

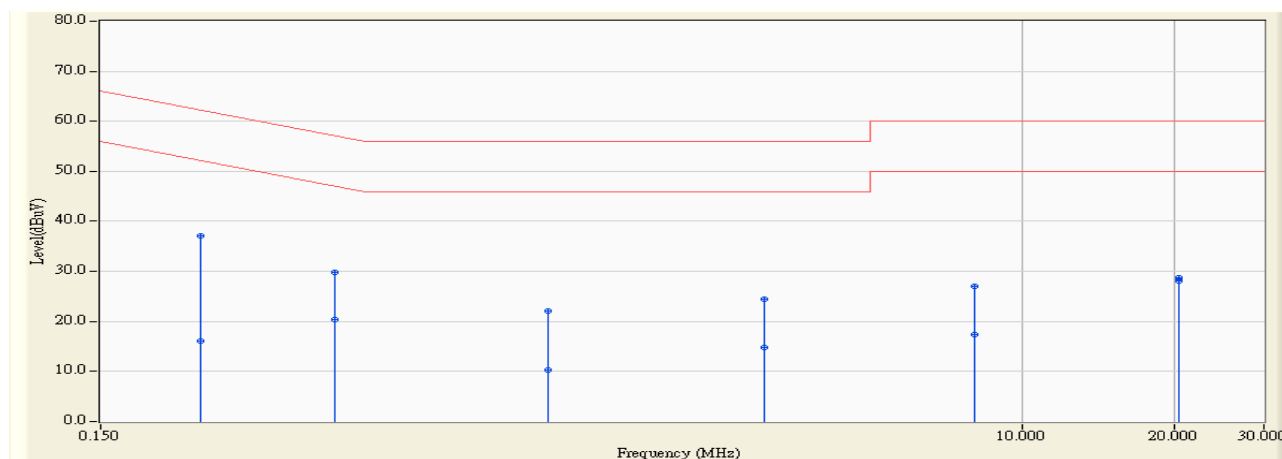


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.209	9.749	31.120	40.869	-22.392	63.261	QUASIPeAK
2		0.209	9.749	10.890	20.639	-32.622	53.261	AVERAGE
3	*	0.443	9.729	26.270	35.999	-21.007	57.006	QUASIPeAK
4		0.443	9.729	15.380	25.109	-21.897	47.006	AVERAGE
5		0.693	9.763	18.630	28.394	-27.606	56.000	QUASIPeAK
6		0.693	9.763	6.860	16.624	-29.376	46.000	AVERAGE
7		1.025	9.821	18.920	28.741	-27.259	56.000	QUASIPeAK
8		1.025	9.821	7.740	17.561	-28.439	46.000	AVERAGE
9		1.916	9.857	14.760	24.617	-31.383	56.000	QUASIPeAK
10		1.916	9.857	3.000	12.857	-33.143	46.000	AVERAGE
11		20.341	10.339	18.170	28.509	-31.491	60.000	QUASIPeAK
12		20.341	10.339	17.490	27.829	-22.171	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR2-H	Time : 2017/05/02
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line2	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2440MHz

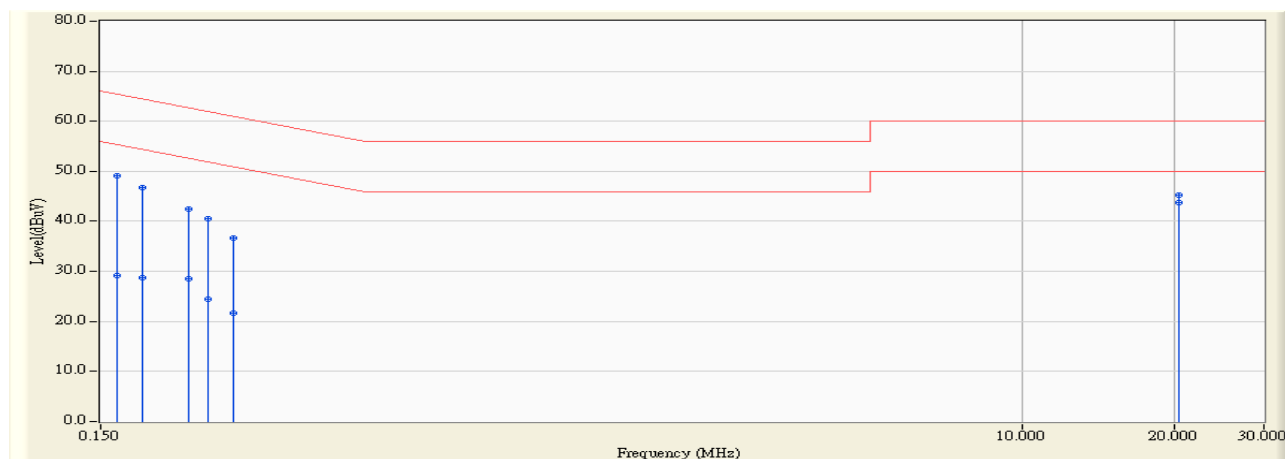


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.236	9.750	27.250	37.000	-25.238	62.238	QUASPEAK
2		0.236	9.750	6.430	16.180	-36.058	52.238	AVERAGE
3		0.435	9.748	19.990	29.738	-27.415	57.154	QUASPEAK
4		0.435	9.748	10.590	20.338	-26.815	47.154	AVERAGE
5		1.150	9.825	12.360	22.185	-33.815	56.000	QUASPEAK
6		1.150	9.825	0.370	10.195	-35.805	46.000	AVERAGE
7		3.087	9.845	14.570	24.415	-31.585	56.000	QUASPEAK
8		3.087	9.845	5.040	14.885	-31.115	46.000	AVERAGE
9		8.045	10.036	17.070	27.106	-32.894	60.000	QUASPEAK
10		8.045	10.036	7.240	17.276	-32.724	50.000	AVERAGE
11		20.341	10.502	18.330	28.832	-31.168	60.000	QUASPEAK
12	*	20.341	10.502	17.590	28.092	-21.908	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR2-H	Time : 2017/06/02
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line1	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 3: TX (Adapter: Sunny, SYS1531-2412-W2) _BLE_2440MHz

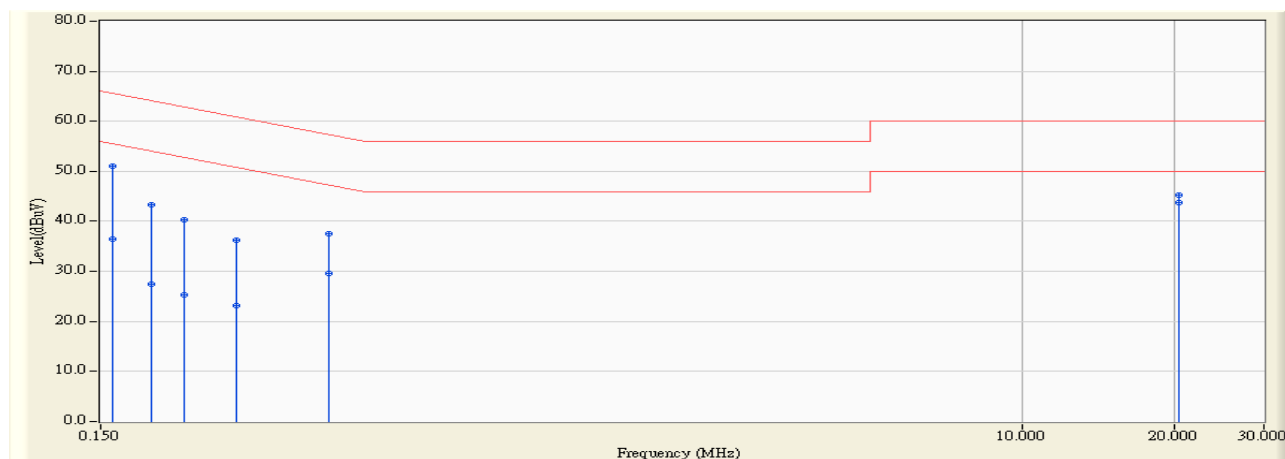


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	0.162	9.754	39.320	49.074	-16.301	65.375	QUASIPeAK
2	0.162	9.754	19.340	29.094	-26.281	55.375	AVERAGE
3	0.181	9.752	36.910	46.662	-17.766	64.428	QUASIPeAK
4	0.181	9.752	19.010	28.762	-25.666	54.428	AVERAGE
5	0.224	9.748	32.710	42.458	-20.204	62.661	QUASIPeAK
6	0.224	9.748	18.850	28.598	-24.064	52.661	AVERAGE
7	0.244	9.746	30.710	40.456	-21.512	61.967	QUASIPeAK
8	0.244	9.746	14.790	24.536	-27.432	51.967	AVERAGE
9	0.275	9.742	27.000	36.742	-24.223	60.966	QUASIPeAK
10	0.275	9.742	11.920	21.662	-29.303	50.966	AVERAGE
11	20.341	10.339	34.880	45.219	-14.781	60.000	QUASIPeAK
12	* 20.341	10.339	33.470	43.809	-6.191	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR2-H	Time : 2017/06/02
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line2	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 3: TX (Adapter: Sunny, SYS1531-2412-W2) _BLE_2440MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	0.158	9.751	41.270	51.021	-14.557	65.578	QUASIPeAK
2	0.158	9.751	26.740	36.491	-19.087	55.578	AVERAGE
3	0.189	9.751	33.580	43.331	-20.747	64.078	QUASIPeAK
4	0.189	9.751	17.600	27.351	-26.727	54.078	AVERAGE
5	0.220	9.750	30.500	40.250	-22.557	62.807	QUASIPeAK
6	0.220	9.750	15.560	25.310	-27.497	52.807	AVERAGE
7	0.279	9.750	26.580	36.330	-24.518	60.848	QUASIPeAK
8	0.279	9.750	13.340	23.090	-27.758	50.848	AVERAGE
9	0.423	9.749	27.770	37.519	-19.862	57.380	QUASIPeAK
10	0.423	9.749	19.760	29.509	-17.872	47.380	AVERAGE
11	20.341	10.502	34.660	45.162	-14.838	60.000	QUASIPeAK
12	*	10.502	33.220	43.722	-6.278	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

3. Peak Power Output

3.1. Test Equipment

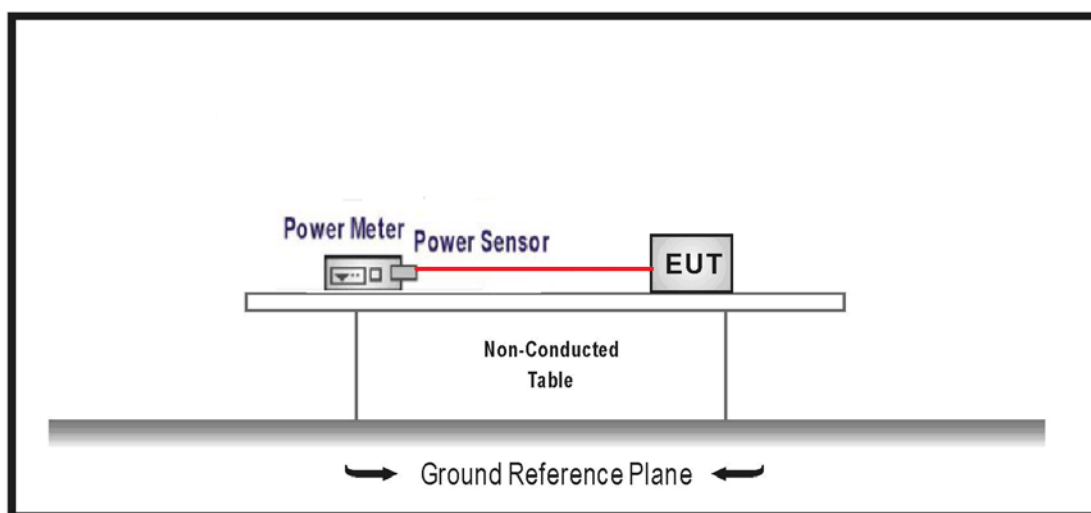
The following test equipment is used during the test:

Peak Power Output / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	2018/01/19
Pulse Power Sensor	Anritsu	MA2411B	1531043	2018/01/19
Pulse Power Sensor	Anritsu	MA2411B	1531044	2018/01/19

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

3.2. Test Setup



3.3. Test procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB558074 V03R02 for compliance to FCC 47CFR 15.247 requirements.

3.4. Limits

The maximum peak power shall be less 1 Watt.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247

3.6. Test Result

Product	Wireless power transmitter		
Test Item	Peak Power Output		
Test Mode	Mode 1: TX (Adapter: GOE, GS018-120)		
Date of Test	2017/05/03	Test Site	SR10-H

GFSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	0.19	30	Pass
19	2440	0.63	30	Pass
39	2480	0.68	30	Pass

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the test:

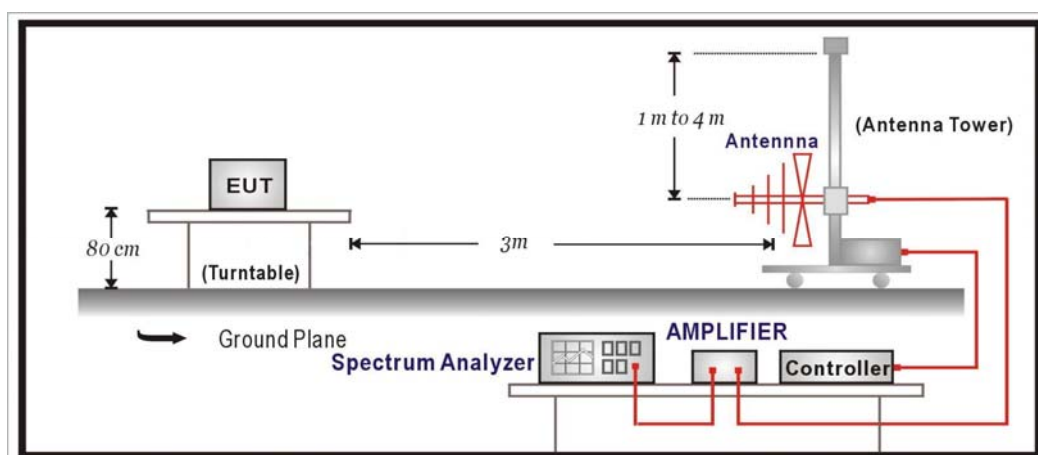
Radiated Emission / CB4-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2891	2017/08/14
Horn Antenna	Schwarzbeck	BBHA 9120	D312	2017/10/25
Pre-Amplifier	EMCI	EMC0031835	980233	2018/02/02
Pre-Amplifier	Schwarzbeck	DBL-1840N506	013	2017/09/29
Pre-Amplifier	Miteq	JS41-00104000 0-58-5P	1573954	2017/10/04
Horn Antenna	Schwarzbeck	BBHA 9170	203	2017/08/28
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22

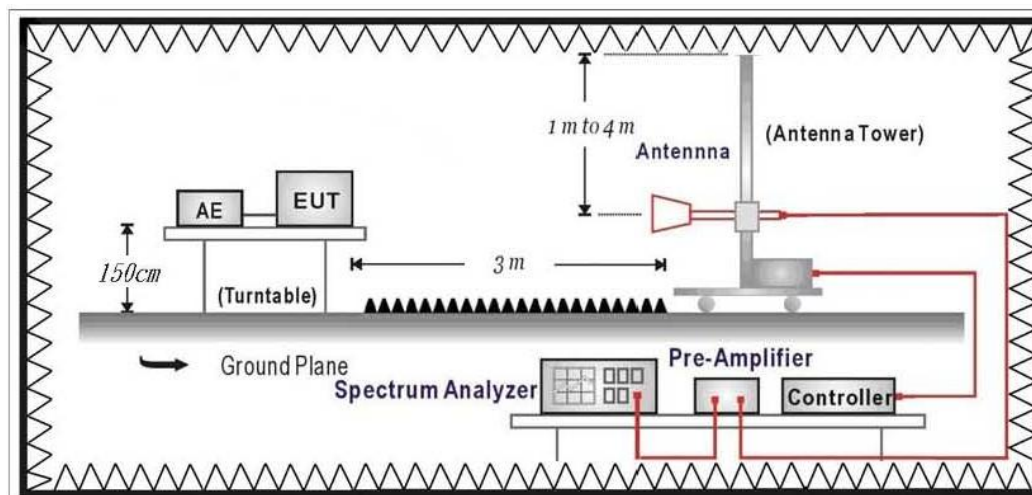
Note: All equipment that need to calibrate are with calibration period of 1 year.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m	dBuV/m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 V03R02 for compliance to FCC 47CFR 15.247 requirements. The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

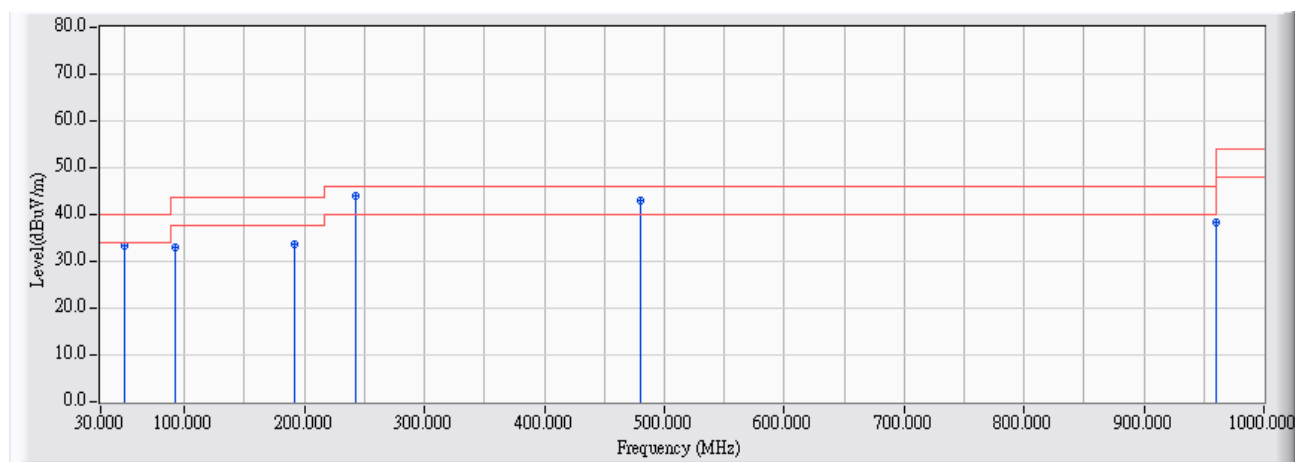
4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247

4.6. Test Result

30MHz-1GHz Spurious

Site : CB4-H	Time : 2017/04/26
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 1: TX (Adapter: GOE, GS018-120) 802.15.1_BLE_2440MHz

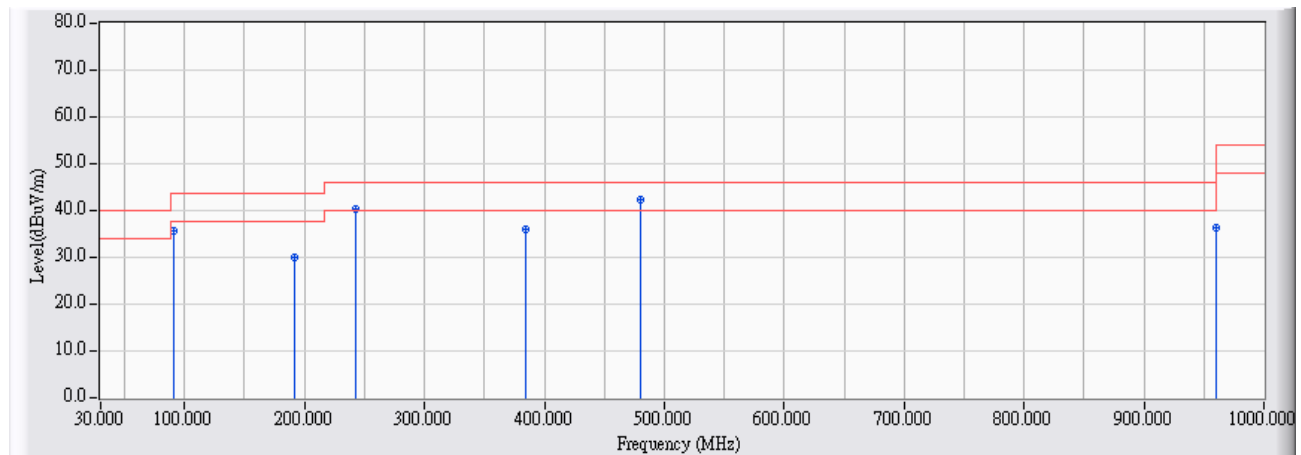


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	49.885	-25.443	58.668	33.224	-6.776	40.000	QUASIPeAK
2	92.565	-24.970	57.808	32.838	-10.662	43.500	QUASIPeAK
3	191.990	-23.520	57.242	33.721	-9.779	43.500	QUASIPeAK
4	* 242.915	-20.629	64.500	43.871	-2.129	46.000	QUASIPeAK
5	480.080	-14.513	57.662	43.149	-2.851	46.000	QUASIPeAK
6	959.745	-7.607	45.902	38.295	-7.705	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	Time : 2017/04/26
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 1: TX (Adapter: GOE, GS018-120) 802.15.1_BLE_2440MHz

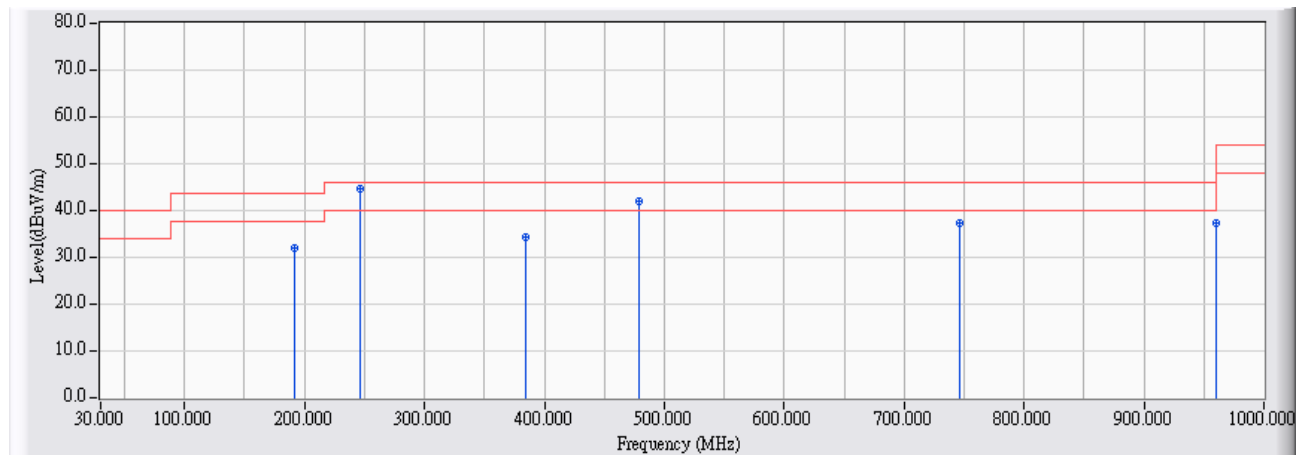


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	90.625	-25.385	60.963	35.578	-7.922	43.500	QUASIPeAK
2	191.990	-23.520	53.507	29.986	-13.514	43.500	QUASIPeAK
3	242.915	-20.629	61.031	40.402	-5.598	46.000	QUASIPeAK
4	384.050	-16.465	52.467	36.003	-9.997	46.000	QUASIPeAK
5	* 480.080	-14.513	56.743	42.230	-3.770	46.000	QUASIPeAK
6	960.230	-7.635	43.916	36.281	-17.719	54.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	Time : 2017/04/26
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2440MHz

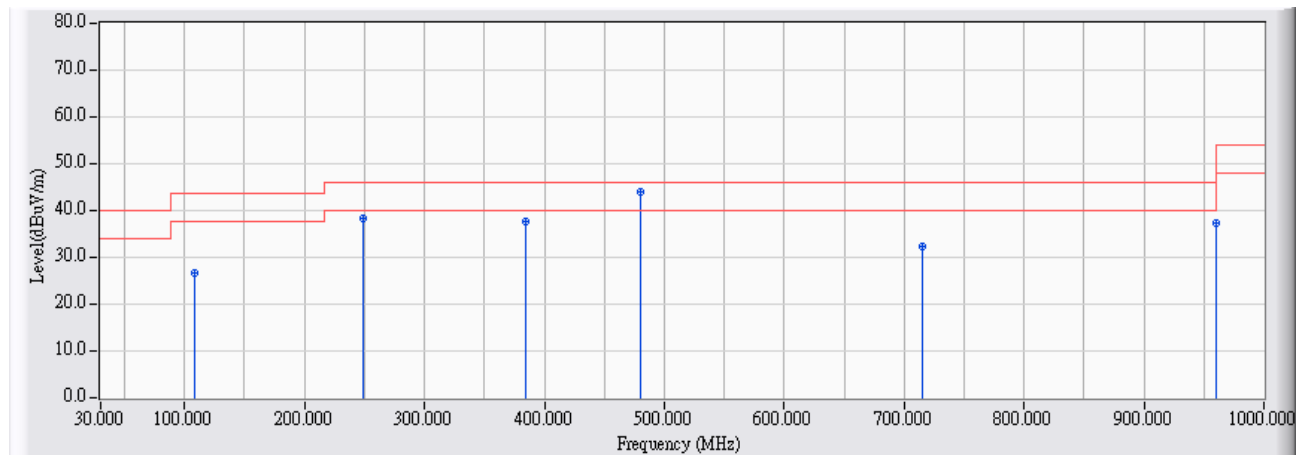


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		191.990	-23.520	55.385	31.864	-11.636	43.500	QUASIPeAK
2	*	245.825	-20.417	65.012	44.595	-1.405	46.000	QUASIPeAK
3		384.050	-16.465	50.727	34.263	-11.737	46.000	QUASIPeAK
4		478.625	-14.521	56.626	42.105	-3.895	46.000	QUASIPeAK
5		746.345	-11.109	48.335	37.226	-8.774	46.000	QUASIPeAK
6		959.745	-7.607	44.933	37.326	-8.674	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	Time : 2017/04/26
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2440MHz

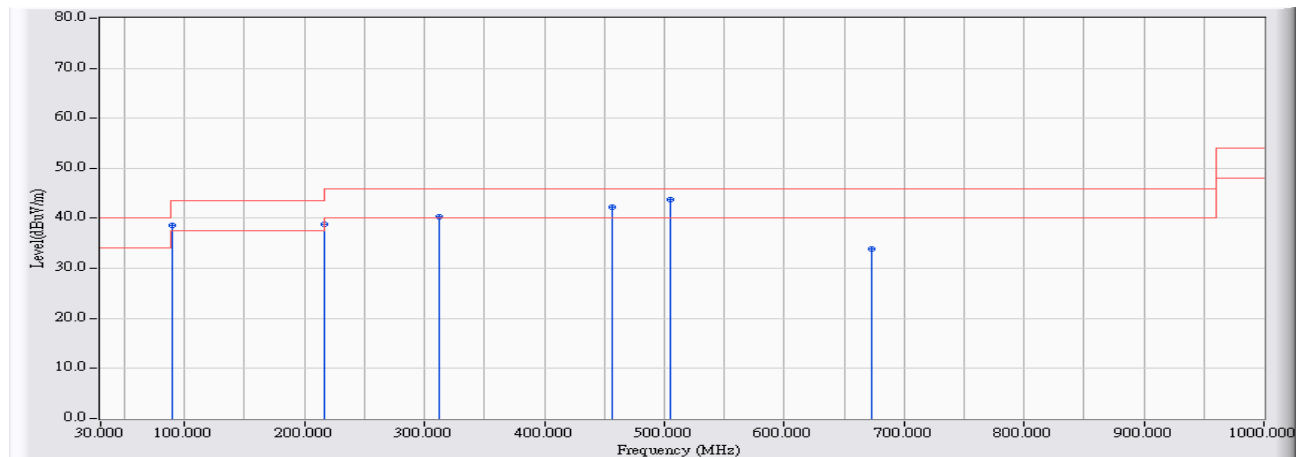


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	108.085	-22.456	49.170	26.714	-16.786	43.500	QUASIPeAK
2	248.250	-20.243	58.500	38.257	-7.743	46.000	QUASIPeAK
3	384.050	-16.465	54.128	37.664	-8.336	46.000	QUASIPeAK
4	* 480.080	-14.513	58.679	44.166	-1.834	46.000	QUASIPeAK
5	715.790	-11.434	43.606	32.172	-13.828	46.000	QUASIPeAK
6	959.745	-7.607	44.978	37.371	-8.629	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	Time : 2017/06/05
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 3: TX (Adapter: Sunny, SYS1531-2412-W2) 802.15.1_BLE_2440MHz

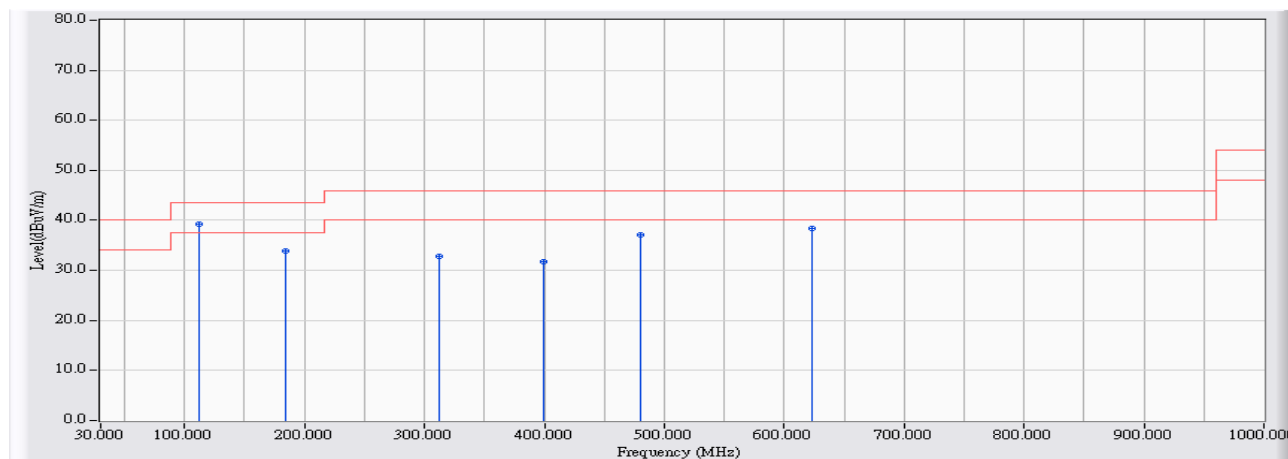


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		89.655	-25.567	64.254	38.687	-4.813	43.500	QUASIPeAK
2		216.240	-22.211	61.107	38.895	-7.105	46.000	QUASIPeAK
3		312.755	-19.150	59.375	40.225	-5.775	46.000	QUASIPeAK
4		456.800	-14.535	56.700	42.165	-3.835	46.000	QUASIPeAK
5	*	504.815	-13.827	57.685	43.859	-2.141	46.000	QUASIPeAK
6		673.110	-11.441	45.346	33.905	-12.095	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB4-H	Time : 2017/06/05
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 3: TX (Adapter: Sunny, SYS1531-2412-W2) 802.15.1_BLE_2440MHz



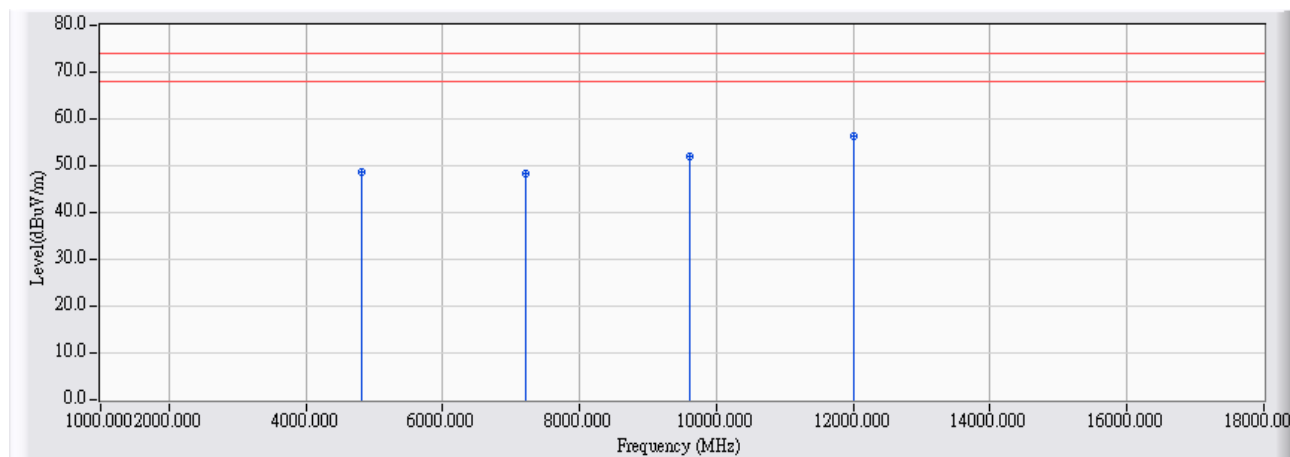
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	112.450	-21.968	61.152	39.184	-4.316	43.500	QUASIPeak
2		184.230	-23.892	57.875	33.982	-9.517	43.500	QUASIPeak
3		312.755	-19.150	51.942	32.792	-13.208	46.000	QUASIPeak
4		399.570	-15.764	47.431	31.668	-14.332	46.000	QUASIPeak
5		480.080	-14.513	51.672	37.160	-8.841	46.000	QUASIPeak
6		623.640	-11.930	50.231	38.300	-7.700	46.000	QUASIPeak

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Harmonic & Spurious:

Site : CB4-H	Time : 2017/04/26
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2402MHz



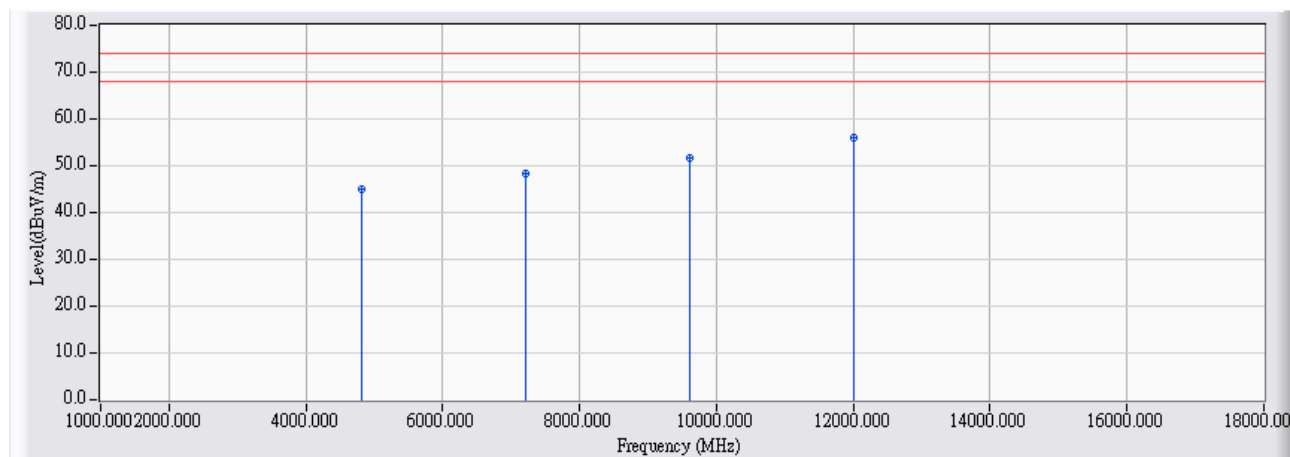
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4804.000	7.579	41.140	48.719	-25.281	74.000	PEAK
2		7206.000	16.160	32.110	48.271	-25.729	74.000	PEAK
3		9608.000	21.887	29.970	51.858	-22.142	74.000	PEAK
4	*	12010.000	26.454	29.820	56.273	-17.727	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Frequency	Peak	Duty Cycle	Measurement	Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Horizontal					
Average					
Detector:					
12010	56.273	-3.406	52.867	-1.133	54.000

Site : CB4-H	Time : 2017/04/26
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2402MHz



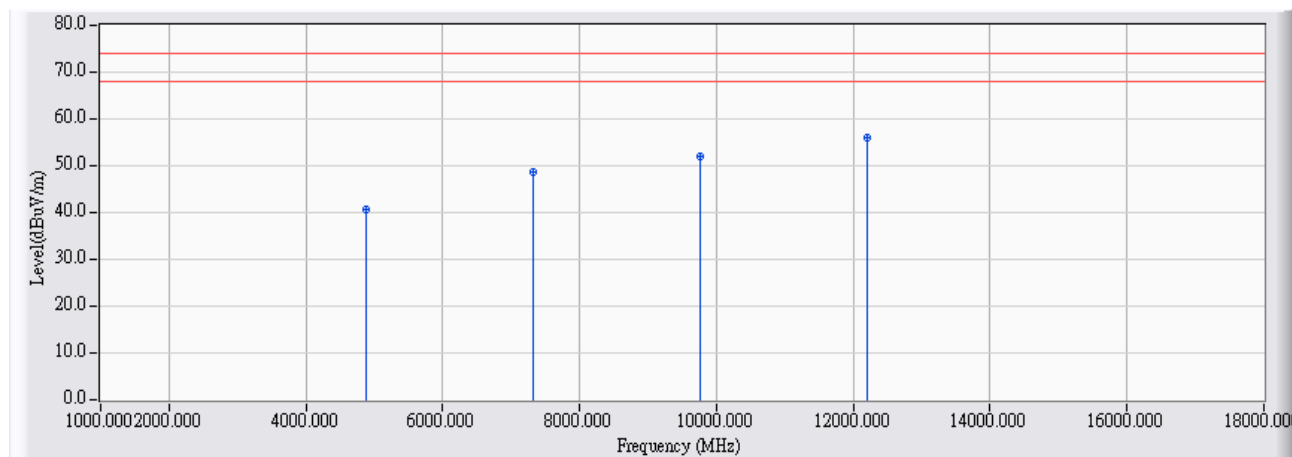
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4804.000	7.579	37.360	44.939	-29.061	74.000	PEAK
2		7206.000	16.160	32.130	48.291	-25.709	74.000	PEAK
3		9608.000	21.887	29.640	51.528	-22.472	74.000	PEAK
4	*	12010.000	26.454	29.430	55.883	-18.117	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Frequency	Peak	Duty Cycle	Measurement	Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Vertical					
Average Detector:					
12010	55.883	-3.406	52.477	-1.523	54.000

Site : CB4-H	Time : 2017/04/26
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2440MHz



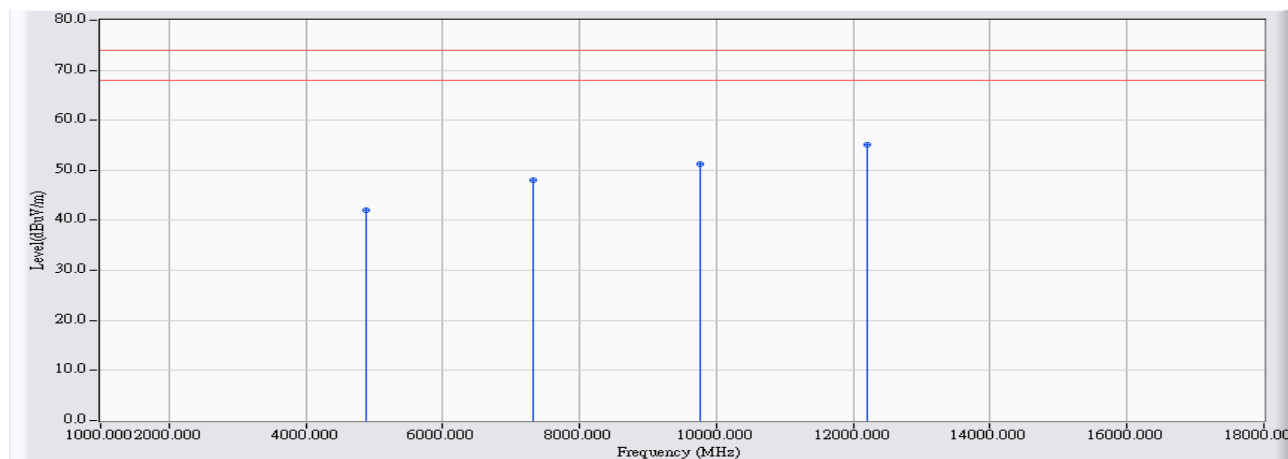
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4880.000	7.843	32.890	40.733	-33.267	74.000	PEAK
2		7320.000	16.716	32.000	48.715	-25.285	74.000	PEAK
3		9760.000	22.239	29.770	52.009	-21.991	74.000	PEAK
4	*	12200.000	26.301	29.690	55.991	-18.009	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Frequency	Peak	Duty Cycle	Measurement	Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Horizontal					
Average Detector:					
12200	55.991	-3.406	52.585	-1.415	54.000

Site : CB4-H	Time : 2017/04/26
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2440MHz



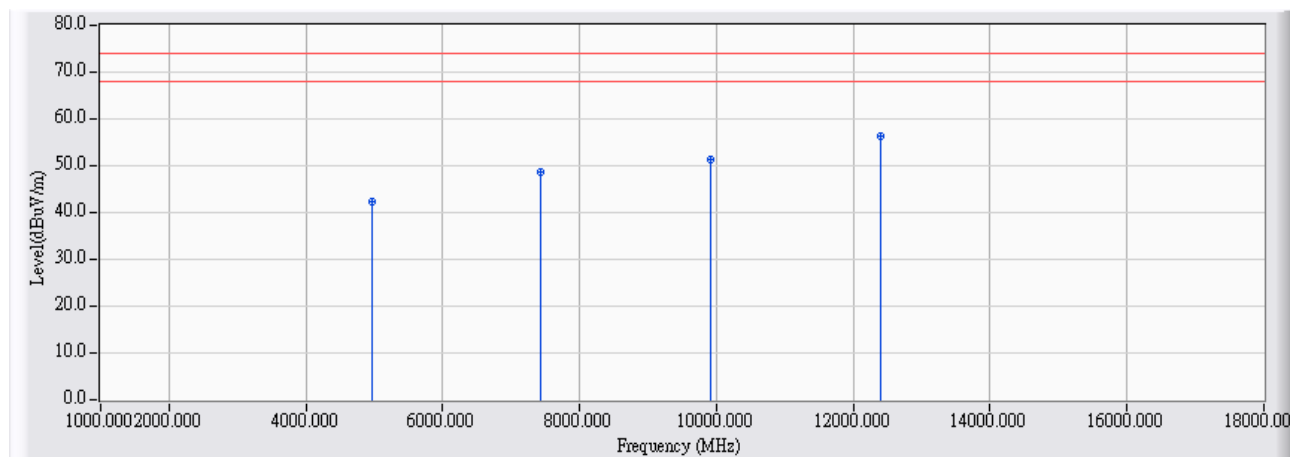
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4880.000	7.843	34.170	42.013	-31.987	74.000	PEAK
2		7320.000	16.716	31.360	48.075	-25.925	74.000	PEAK
3		9760.000	22.239	29.000	51.239	-22.761	74.000	PEAK
4	*	12200.000	26.301	28.840	55.141	-18.859	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Frequency	Peak	Duty Cycle	Measurement	Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Vertical					
Average Detector:					
12200	55.141	-3.406	51.735	-2.265	54.000

Site : CB4-H	Time : 2017/04/26
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2480MHz



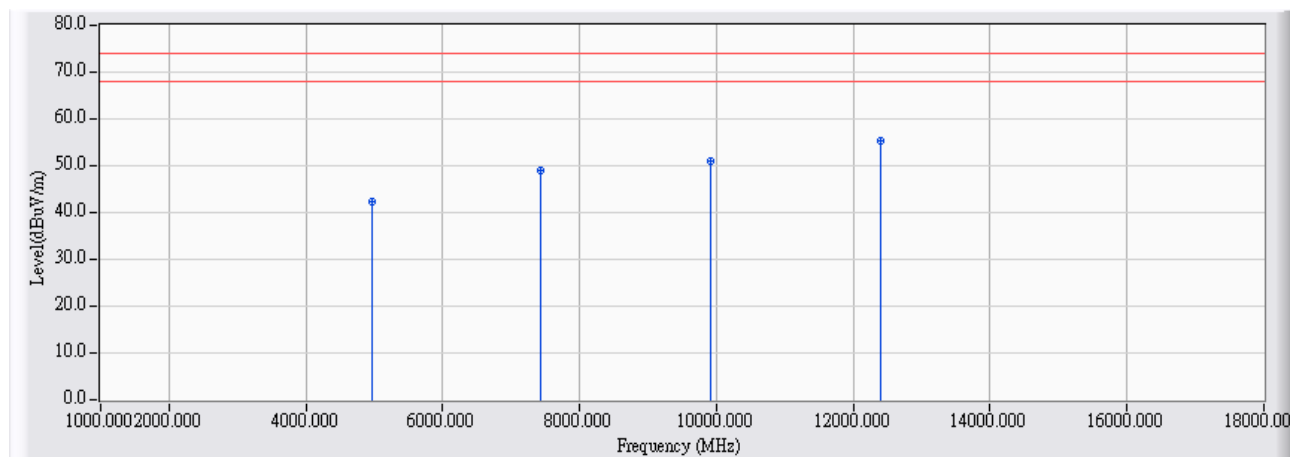
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4960.000	8.121	34.110	42.231	-31.769	74.000	PEAK
2		7440.000	17.278	31.550	48.827	-25.173	74.000	PEAK
3		9920.000	22.512	28.900	51.412	-22.588	74.000	PEAK
4	*	12400.000	26.150	30.160	56.310	-17.690	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Frequency	Peak	Duty Cycle	Measurement	Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Horizontal					
Average Detector:					
12400	56.31	-3.406	52.904	-1.096	54.000

Site : CB4-H	Time : 2017/04/26
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2480MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4960.000	8.121	34.300	42.421	-31.579	74.000	PEAK
2		7440.000	17.278	31.710	48.987	-25.013	74.000	PEAK
3		9920.000	22.512	28.630	51.142	-22.858	74.000	PEAK
4	*	12400.000	26.150	29.040	55.190	-18.810	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Frequency	Peak	Duty Cycle	Measurement	Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Vertical					
Average Detector:					
12400	55.19	-3.406	51.784	-2.216	54.000

5. RF antenna conducted test

5.1. Test Equipment

The following test equipment is used during the test:

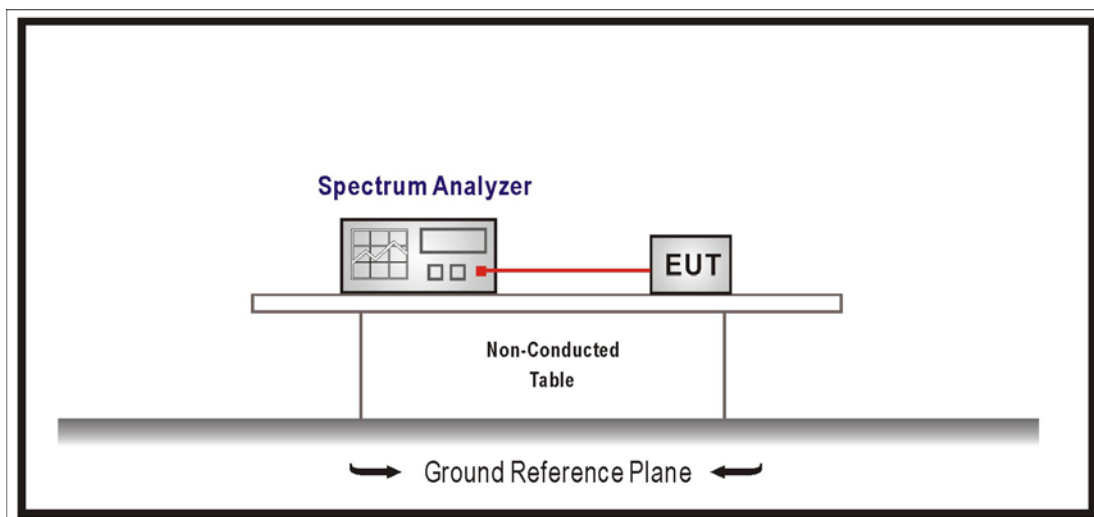
RF antenna conducted test / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2018/03/12

Note: All equipment that need to calibrate are with calibration period of 1 year.

5.2. Test Setup

RF Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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 an RF conducted or radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 V03R02 for compliance to FCC 47CFR 15.247 requirements. Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247

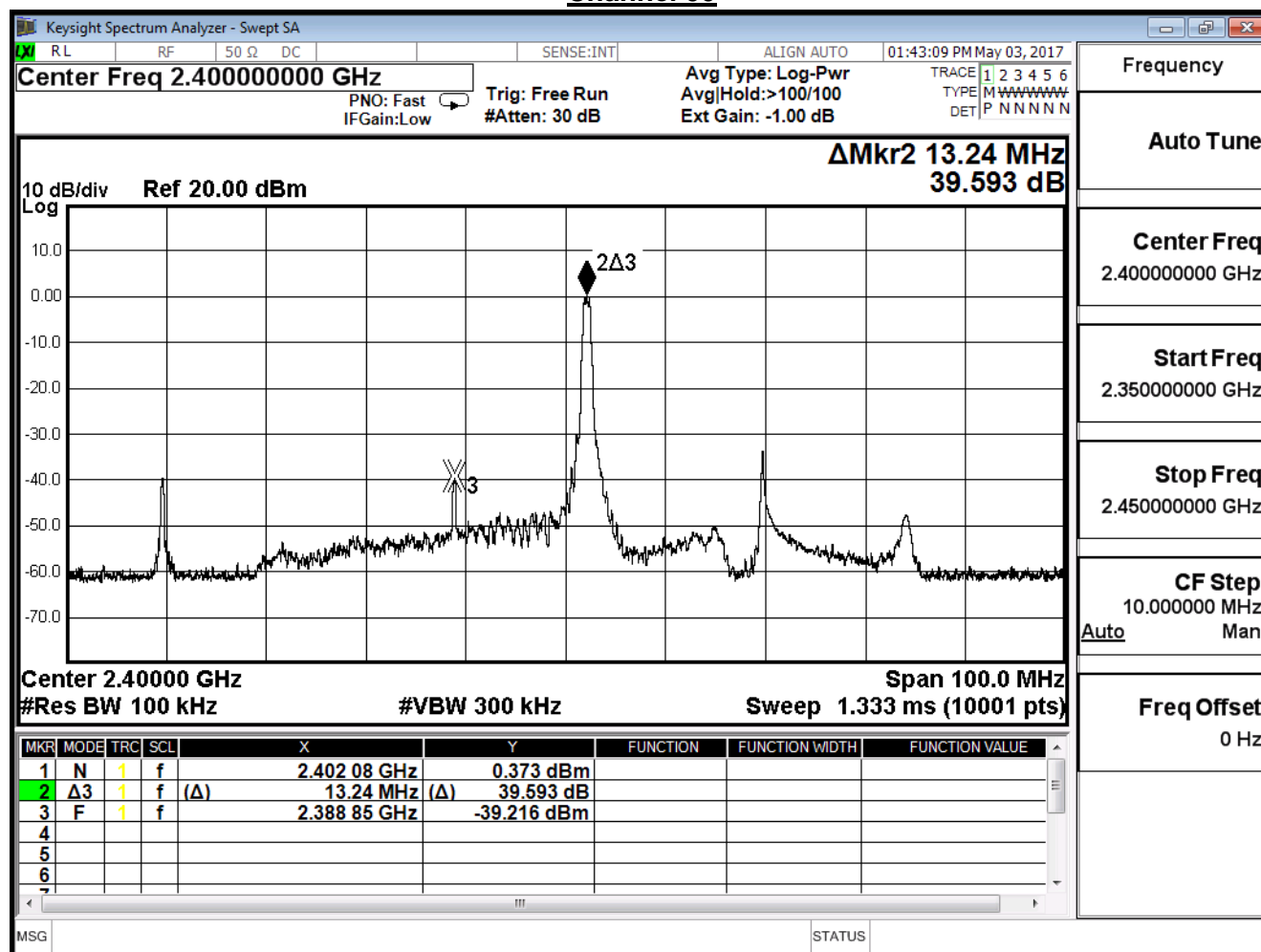
5.6. Test Result

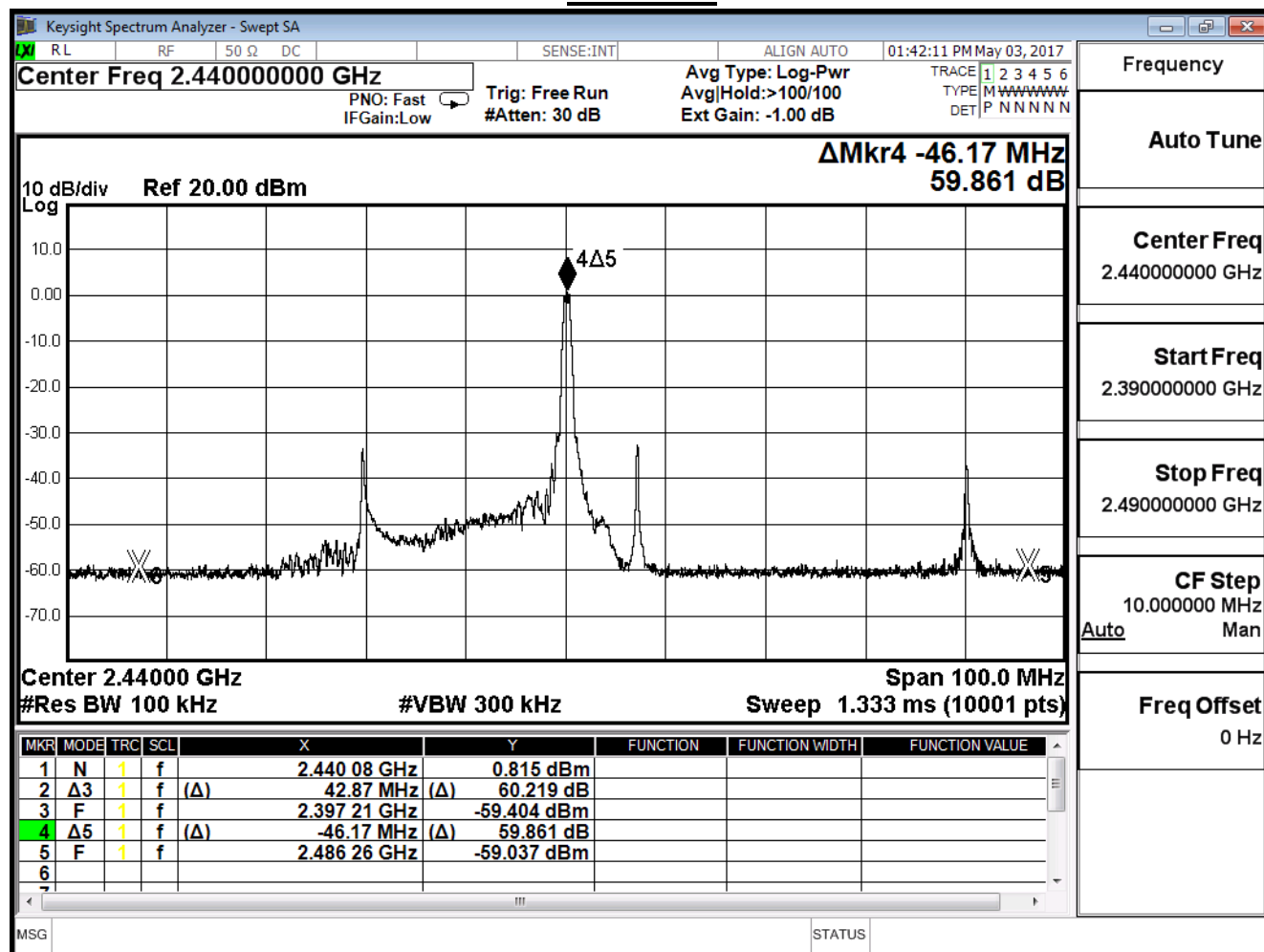
Product	Wireless power transmitter		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: TX (Adapter: GOE, GS018-120)		
Date of Test	2017/05/03	Test Site	SR10-H

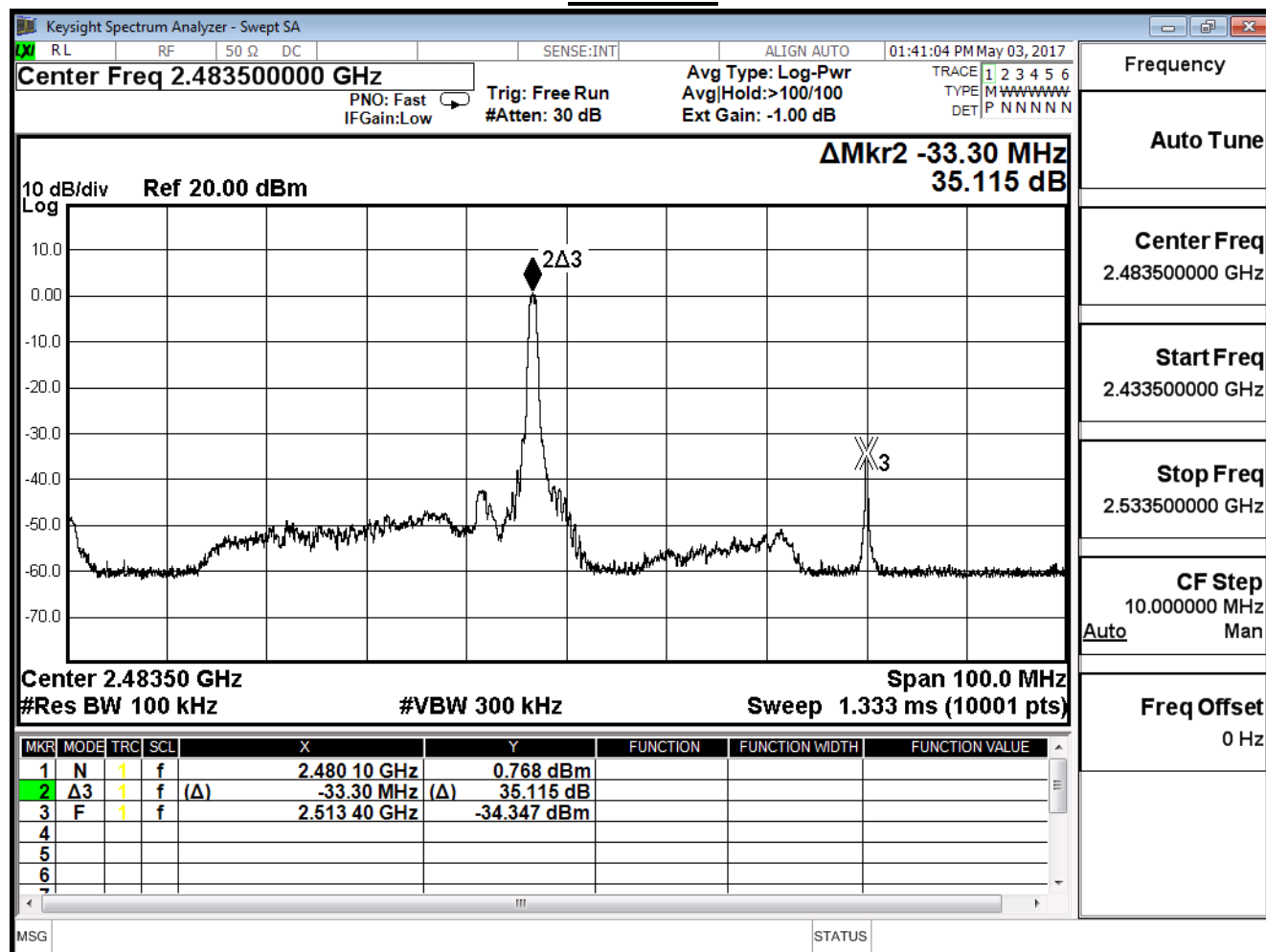
GFSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
00	2402	39.593	≥ 20	Pass
19	2440	59.861	≥ 20	Pass
39	2480	35.115	≥ 20	Pass

Channel 00

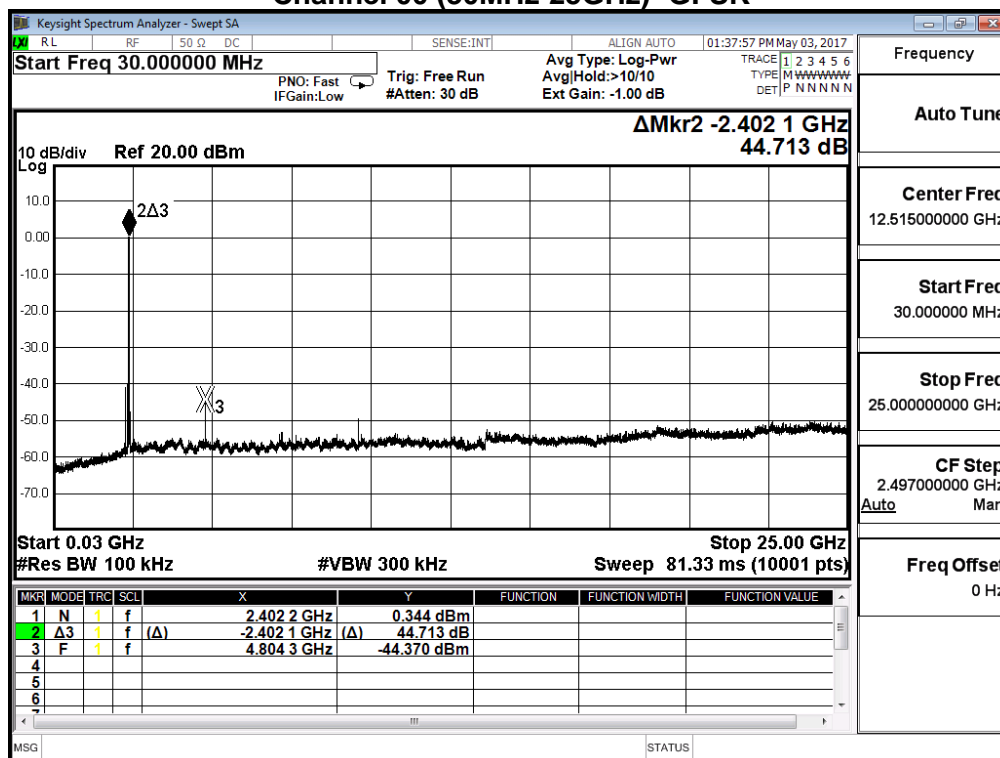


Channel 19

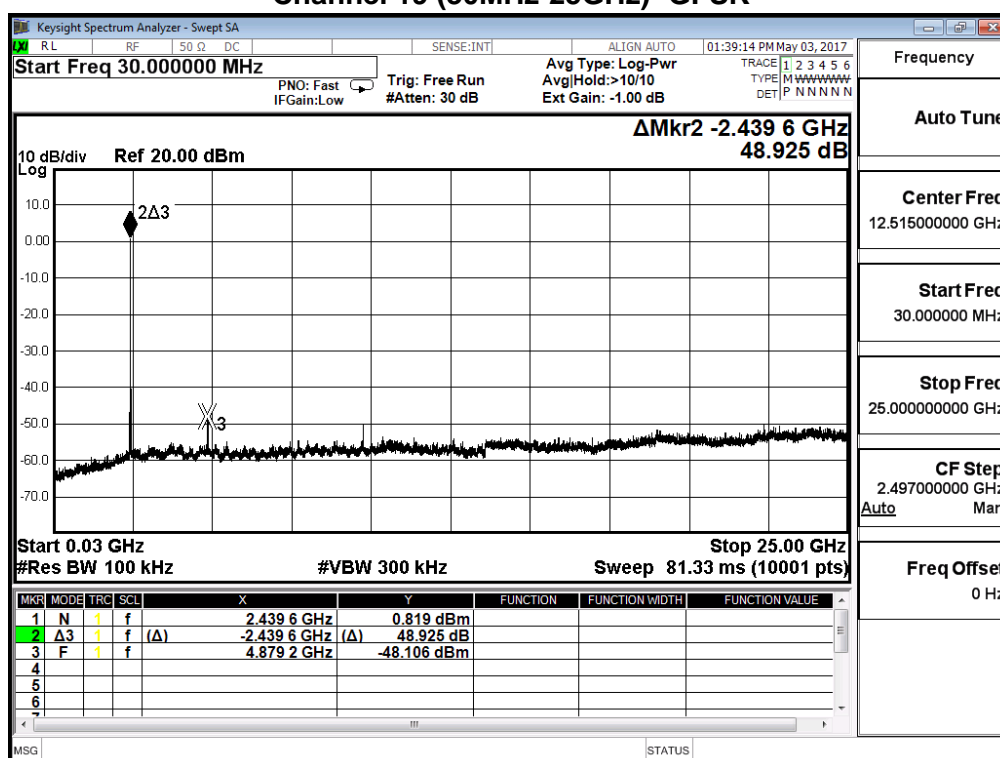
Channel 39

Product	Wireless power transmitter		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: TX (Adapter: GOE, GS018-120)		
Date of Test	2017/05/03	Test Site	SR10-H

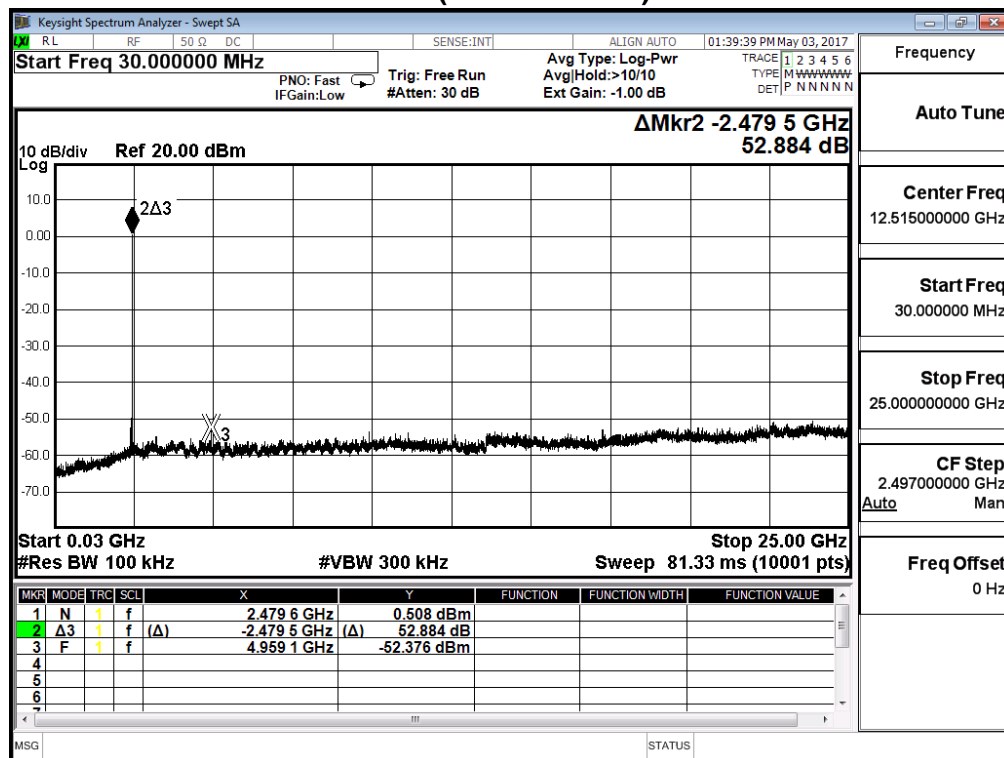
Channel 00 (30MHz-25GHz)- GFSK



Channel 19 (30MHz-25GHz)- GFSK



Channel 39 (30MHz-25GHz)- GFSK



6. Band Edge

6.1. Test Equipment

The following test equipment are used during the test:

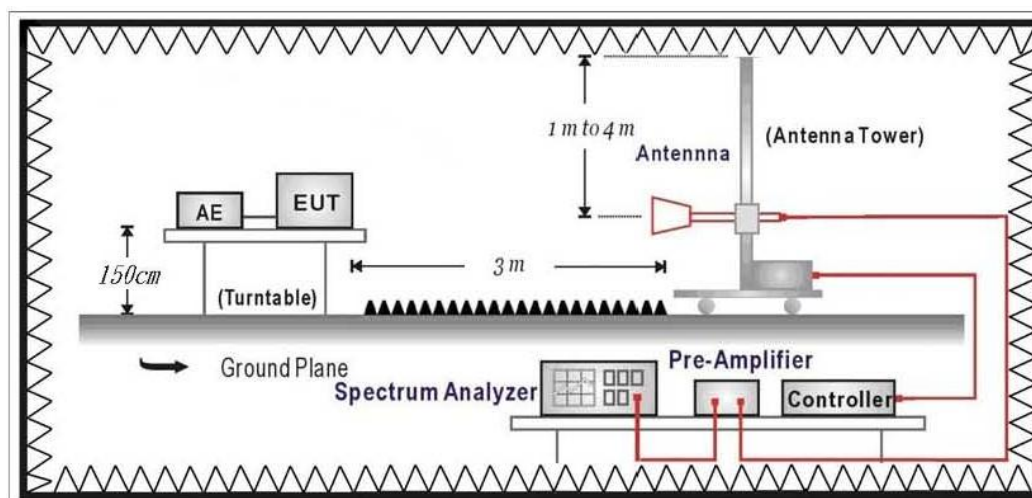
Band Edge / CB4-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2891	2017/08/14
Horn Antenna	Schwarzbeck	BBHA 9120	D312	2017/10/25
Pre-Amplifier	EMCI	EMC0031835	980233	2018/02/02
Pre-Amplifier	Schwarzbeck	DBL-1840N506	013	2017/09/29
Pre-Amplifier	Miteq	JS41-001040000-58-5P	1573954	2017/10/04
Horn Antenna	Schwarzbeck	BBHA 9170	203	2017/08/28
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22

Note: All equipment that need to calibrate are with calibration period of 1 year.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 V03R02 for compliance to FCC 47CFR 15.247 requirements. The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

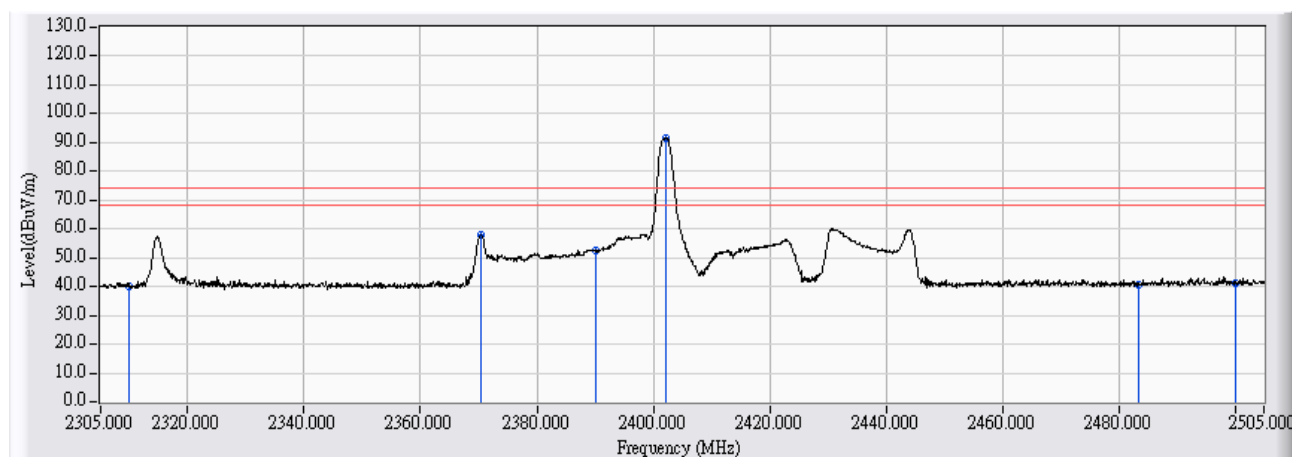
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247

6.6. Test Result

Site : CB4-H	Time : 2017/04/27
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2402MHz



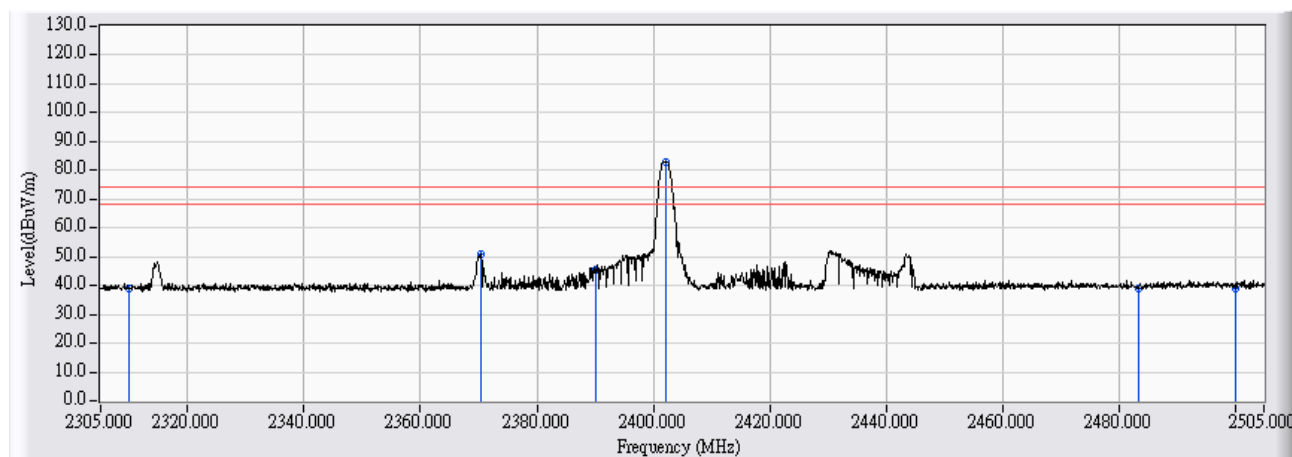
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	9.887	30.424	40.311	-33.689	74.000	PEAK
2	2370.300	10.038	47.911	57.949	-16.051	74.000	PEAK
3	2390.000	10.146	42.415	52.561	-21.439	74.000	PEAK
4	* 2402.300	10.098	81.221	91.319	17.319	74.000	PEAK
5	2483.500	10.634	30.107	40.741	-33.259	74.000	PEAK
6	2500.000	10.544	30.893	41.437	-32.563	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Frequency	Peak	Duty Cycle	Measurement	Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Horizontal					
Average Detector:					
2370.3	56.949	-3.406	53.543	-0.457	54.000

Site : CB4-H	Time : 2017/04/27
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2402MHz

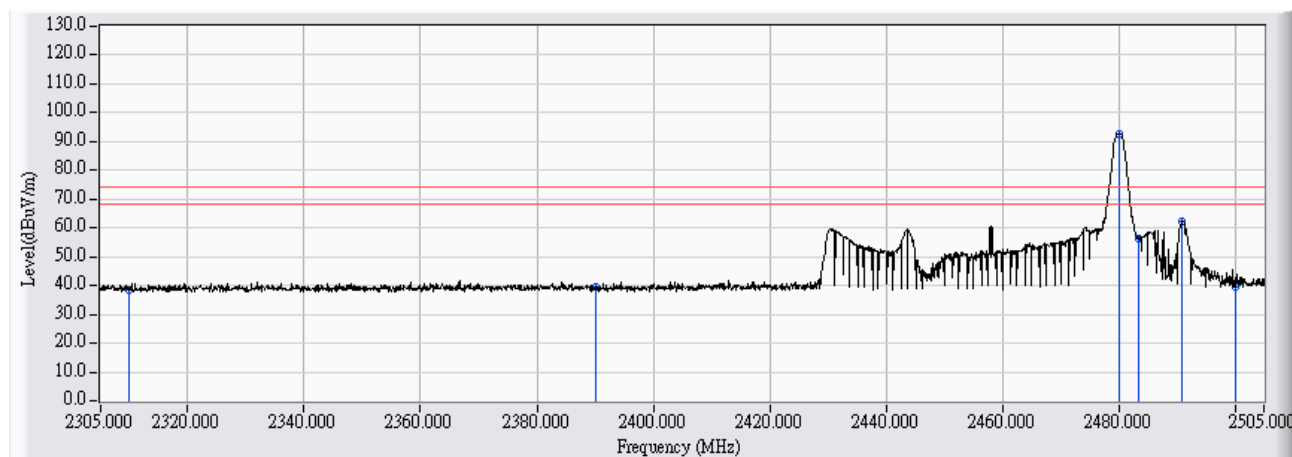


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	9.887	28.951	38.838	-35.162	74.000	PEAK
2	2370.300	10.038	40.618	50.656	-23.344	74.000	PEAK
3	2390.000	10.146	35.247	45.393	-28.607	74.000	PEAK
4	* 2402.300	10.098	72.957	83.055	9.055	74.000	PEAK
5	2483.500	10.634	28.349	38.983	-35.017	74.000	PEAK
6	2500.000	10.544	28.440	38.984	-35.016	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB4-H	Time : 2017/04/27
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2480MHz



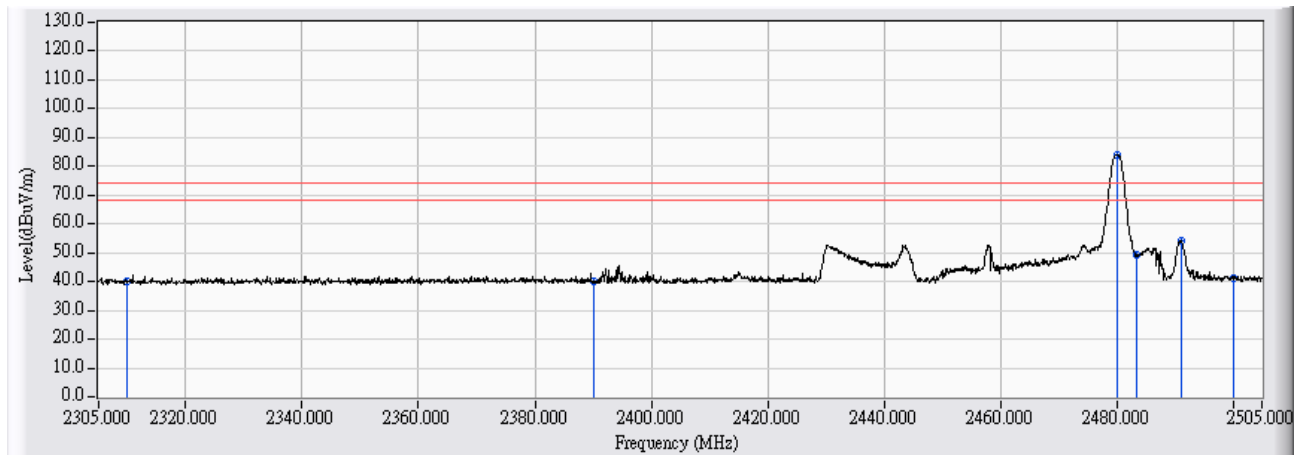
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	9.887	28.721	38.608	-35.392	74.000	PEAK
2	2390.000	10.146	29.208	39.354	-34.646	74.000	PEAK
3	* 2480.100	10.660	81.955	92.615	18.615	74.000	PEAK
4	2483.500	10.634	45.718	56.352	-17.648	74.000	PEAK
5	2491.000	10.587	51.754	62.341	-11.659	74.000	PEAK
6	2500.000	10.544	28.969	39.513	-34.487	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Frequency	Peak	Duty Cycle Measurement		Margin	Limit
	Measurement	Factor	Level		
MHz	dBuV/m	dB	dBuV/m	dB	dBuV/m
Horizontal					
Average					
Detector:					
2483.5	56.352	-3.406	52.946	-1.054	54.000

Site : CB4-H	Time : 2017/04/27
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 - VERTICAL	Power : AC 120V/60Hz
EUT : Wireless power transmitter	Note : Mode 2: TX (Adapter: Sunny, SYS1544-2412-T3) 802.15.1_BLE_2480MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	9.887	30.067	39.954	-34.046	74.000	PEAK
2	2390.000	10.146	30.072	40.218	-33.782	74.000	PEAK
3	* 2480.100	10.660	73.087	83.747	9.747	74.000	PEAK
4	2483.500	10.634	38.413	49.047	-24.953	74.000	PEAK
5	2491.100	10.587	43.365	53.952	-20.048	74.000	PEAK
6	2500.000	10.544	30.452	40.996	-33.004	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

7. Occupied Bandwidth

7.1. Test Equipment

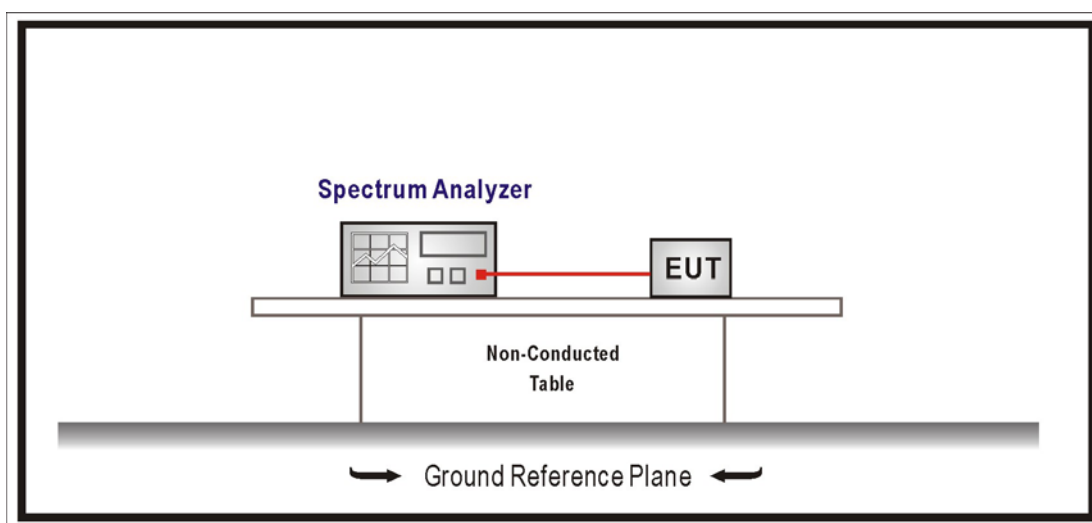
The following test equipment is used during the test:

Occupied Bandwidth / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2018/03/12

Note: All equipment that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

The 6 dB bandwidth must be greater than 500 kHz.

7.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB558074 V03R02 for compliance to FCC 47CFR 15.247 requirements.

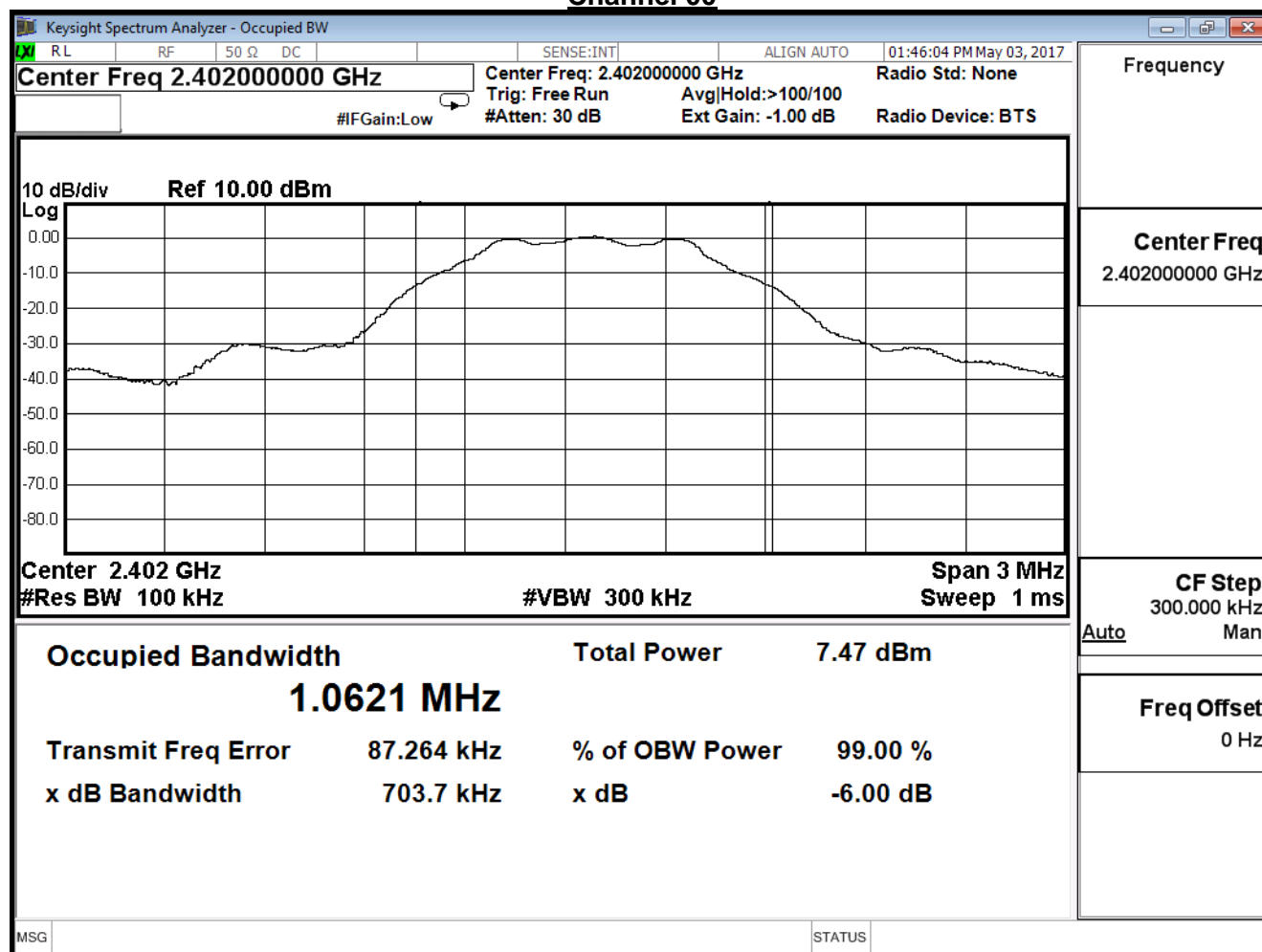
Set RBW = 1% of EBW, Span greater than RBW.

7.5. Test Specification

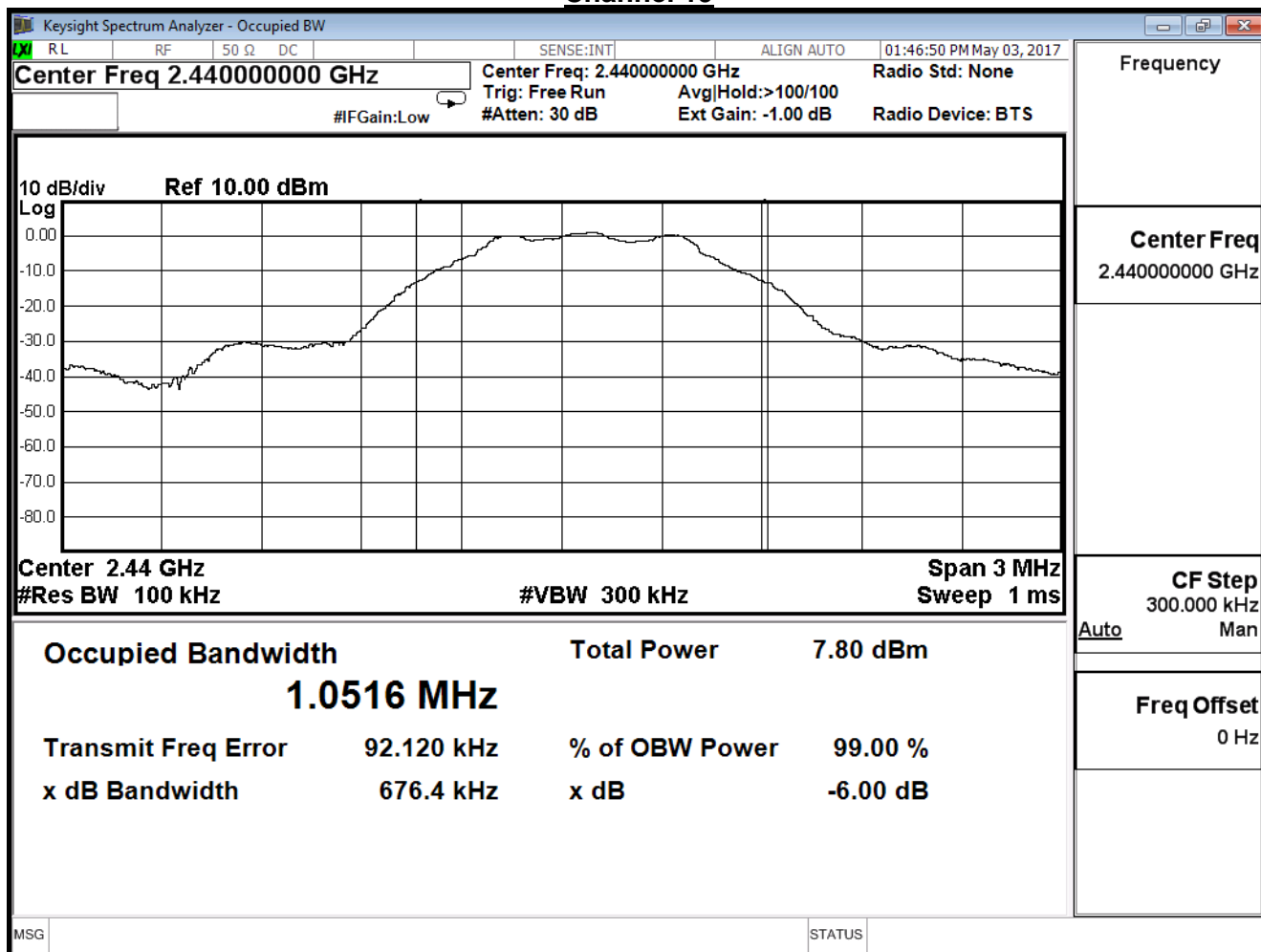
According to FCC Part 15 Subpart C Paragraph 15.247

Product	Wireless power transmitter		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: TX (Adapter: GOE, GS018-120)		
Date of Test	2017/05/03	Test Site	SR10-H

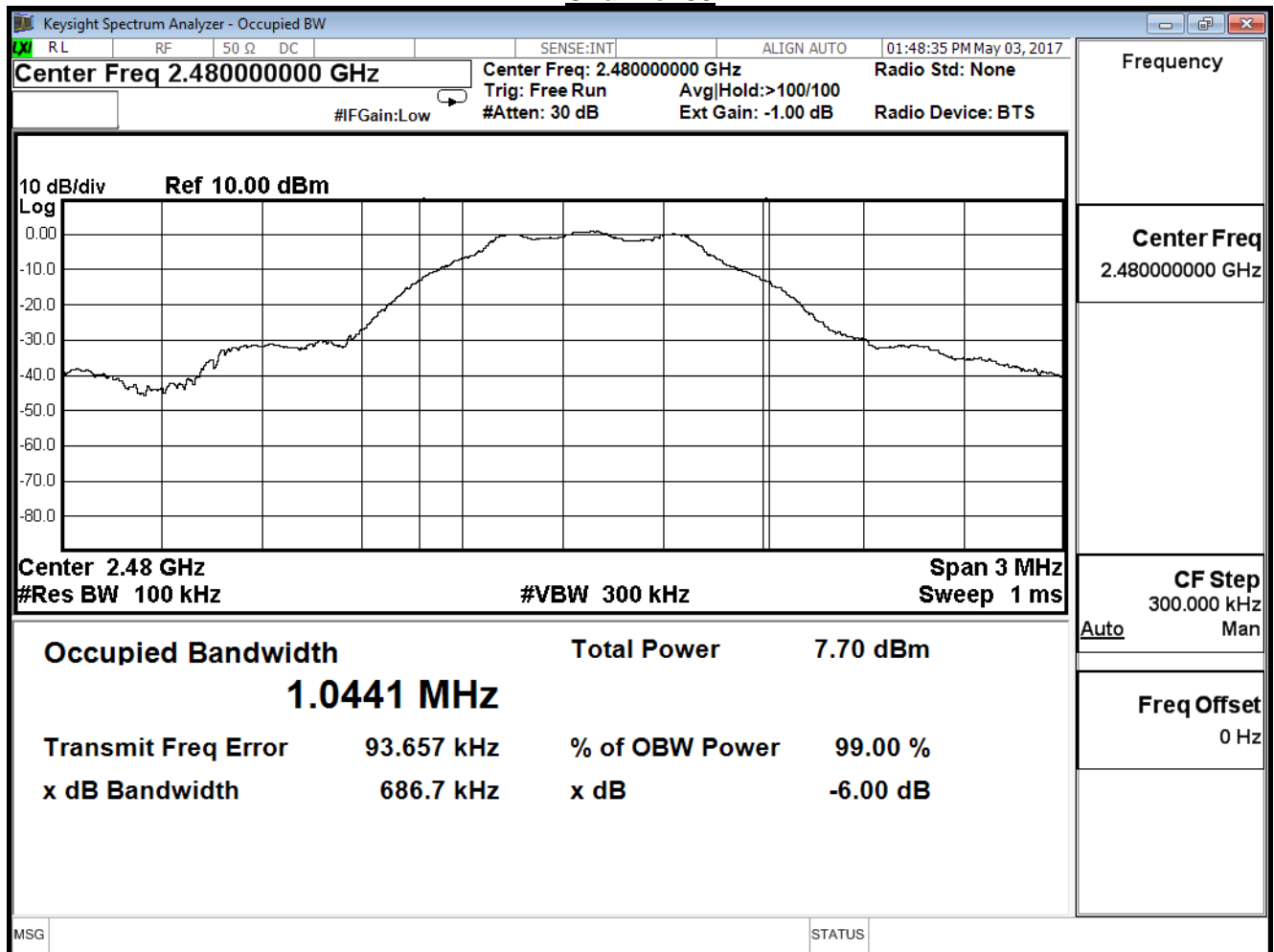
Channel No.	Frequency (MHz)	Measure Level (KHz)	Limit (KHz)	Result
00	2402	703.70	≥ 500	Pass
19	2440	676.40	≥ 500	Pass
39	2480	686.70	≥ 500	Pass



Channel 19



Channel 39



8. Power Density

8.1. Test Equipment

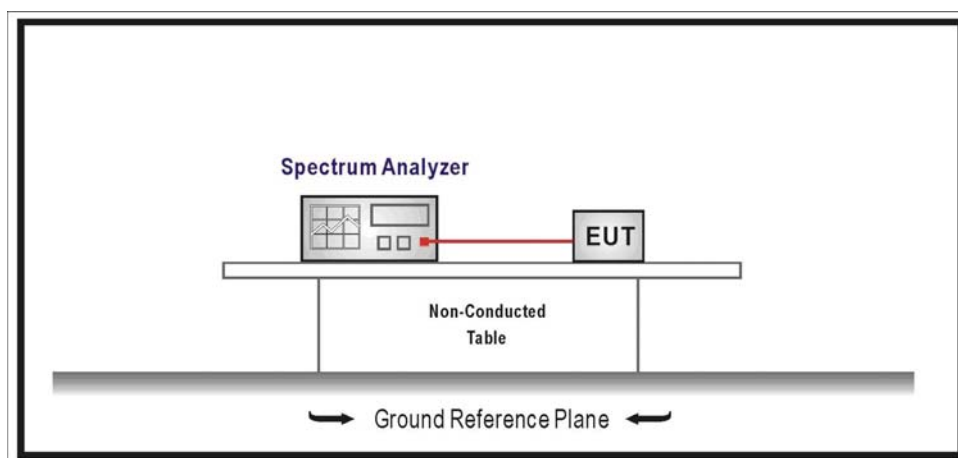
The following test equipment is used during the test:

Power Density / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2018/03/12

Note: All equipment that need to calibrate are with calibration period of 1 year.

8.2. Test Setup



8.3. Limits

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8dBm in any 3kHz band during any time interval of continuous transmission.

8.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB558074 V03R02 for compliance to FCC 47CFR 15.247 requirements.

8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247

8.6. Uncertainty

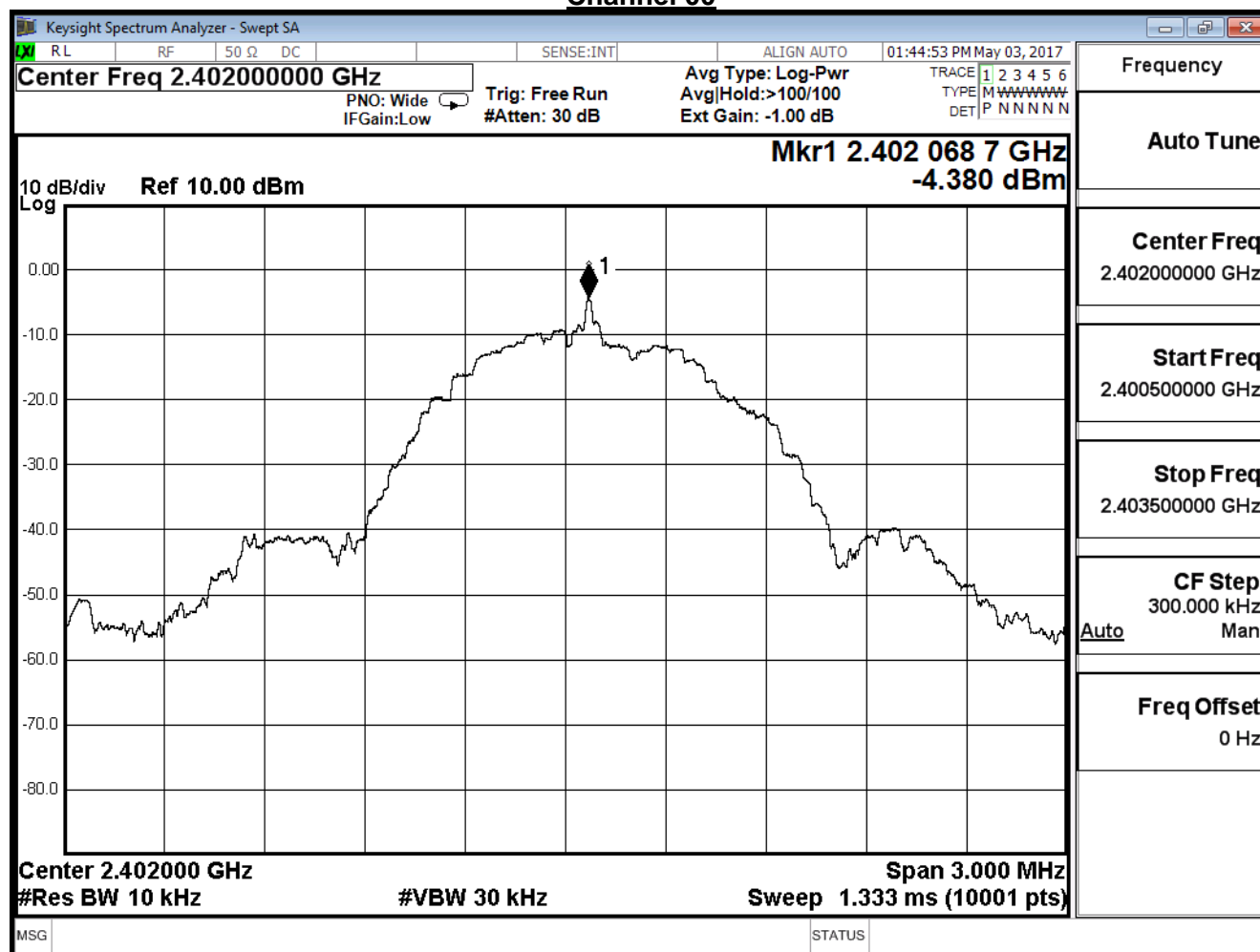
The measurement uncertainty is defined as $\pm 1.27\text{dB}$.

8.7. Test Result

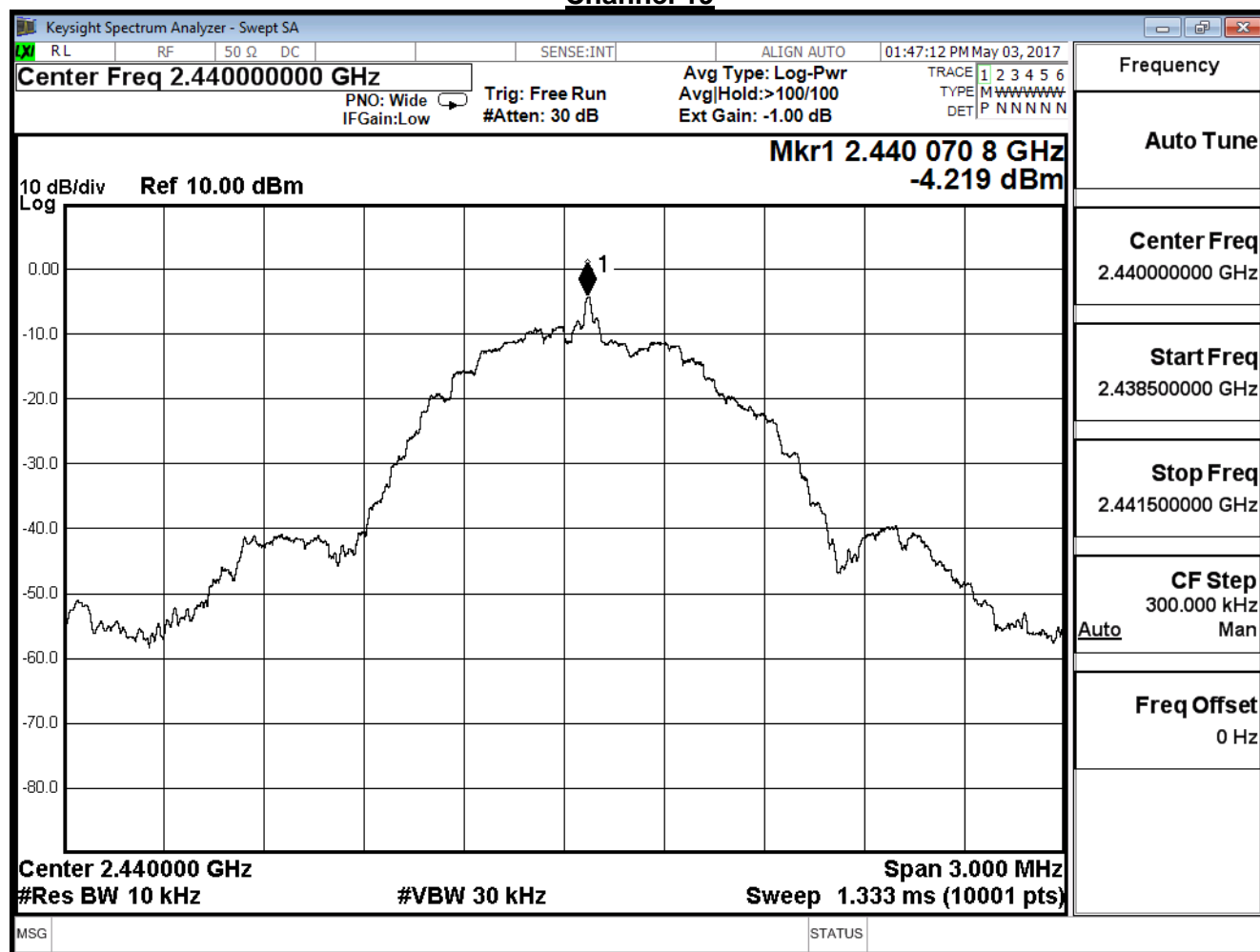
Product	Wireless power transmitter		
Test Item	Power Density		
Test Mode	Mode 1: TX (Adapter: GOE, GS018-120)		
Date of Test	2017/05/03	Test Site	SR10-H

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	-4.380	≤ 8	Pass
19	2440	-4.219	≤ 8	Pass
39	2480	-3.798	≤ 8	Pass

Channel 00



Channel 19



Channel 39

