TEST REPORT

Application No.:	GZEM2001010039CR
Applicant:	GREE Electric Appliances,Inc. of Zhuhai
Address of Applicant:	West Jinji Rd, Qianshan, Zhuhai, Guangdong, China 519070
Manufacturer:	GREE Electric Appliances,Inc. of Zhuhai
Address of Manufacturer:	West Jinji Rd, Qianshan, Zhuhai, Guangdong, China 519070
Factory:	GREE Electric Appliances,Inc. of Zhuhai
Address of Factory:	West Jinji Rd, Qianshan, Zhuhai, Guangdong, China 519070
Equipment Under Test (EUT):	
FCC ID:	2ADAP-LYMF-01
EUT Name:	GREE CUBE CONTROLLER, GREE SCENE CUBE CONTROLLER
Model No.:	LYMF-02, COB-02. ¤
¤	Please refer to section 2 of this report for more details.
Trade Mark:	GREE
Standard(s):	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2020-01-07
Date of Test:	2020-01-21
Date of Issue:	2019-12-10 (for original report GZEM190701432701) 2020-03-02 (for the report GZEM190701432705)
Test Result:	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian
EMC Laboratory Manager

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2019-12-10		Original
02		2020-01-14		Copy report: Added new model.
03		2020-03-02		Copy report: Alternated PCB for model LYMF-02.

Authorized for issue by:				
Tested By		 **Curry_Wu /Project Engineer**		2020-01-21 **Date**
Checked By		 **Jerry_Chan /Reviewer**		2020-03-02 **Date**

No.198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

2 Test Summary

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass

¤ Remark for the report GZEM190701432705:

This test report (Ref. No.: GZEM190701432705) is only valid with the original test report (Ref. No.: GZEM190701432701), only alternated PCBA.

According to the declaration from the applicant, the model LYMF-02 added in report GZEM190701432705 and model LYMF-02 in original report are identical, only difference being as below in the PCB layout.

1. Change resistance packaging in Infrared transmitter circuit;
2. Cancel temperature detection circuit;
3. Cancel 32.768KHz crystal oscillator circuit.

Considering the difference, Conducted Peak Output Power and Radiated Spurious Emissions test were performed on the model LYMF-02.

Therefore, only new data was kept in this report GZEM190701432705, for original data please refer to report GZEM190701432701.

3 Contents

No.198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 3V = 2 x DC 1.5V size of 'AAA' battery
Test Voltage:	DC3V
Antenna Gain	0dBi
Antenna Type	PCB antenna
Channel Spacing	2MHz
Modulation Type	GFSK
Number of Channels	40
Operation Frequency	2402MHz to 2480MHz

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

RF

No.	Item	Measurement Uncertainty
1	Radio Frequency	±5.5 x 10^{-8}
2	Duty cycle	±0.57%
3	Occupied Bandwidth	±3%
4	RF Conducted power	±0.68dB
5	RF Power Density	±1.50dB
6	Conducted Spurious Emissions	±1.04dB
7	RF Radiated Power	±4.5dB (below 1GHz)
		±4.8dB (above 1GHz)
8	Radiated Spurious Emission Test	±4.5dB (30MHz-1GHz)
		±4.8dB (1GHz-18GHz)
9	Temperature	±0.4℃
10	Humidity	±1.3%
11	Supply Voltages	±1.5%
12	Time	±3%

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The 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.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services 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 282399, May 31, 2002.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited 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 Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

- **Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584，G-10449 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

No.198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Radiated Spurious Emissions					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI Test Receiver	Rohde & Schwarz	ESIB26	EMC0522	2020-01-10	2021-01-09
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC0056	2020-01-10	2021-01-09
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Trilog Broadband Antenna 25MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	EMC2174	2018-09-06	2021-09-05
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKMESS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Bi-log Type Antenna	Schaffner -Chase	CBL6143	EMC0519	2017-05-04	2020-05-03
Horn Antenna 1GHz-18GHz	R & S	HF906	EMC0518	2018-09-02	2021-09-01
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2020-01-10	2021-01-09
Amplifier	HP	8447F	EMC2065	2019-05-29	2020-05-28
Pre-Amplifier MH648A	ANRITSU CORP	MH648A	EMC2086	2019-11-18	2020-11-17
Active Loop Antenna	EMCO	6502	EMC0523	2018-03-05	2020-03-04
High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	EMC2079	2020-01-10	2021-01-09
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2020-01-10	2021-01-09
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2017-12-19	2020-12-18
MXE EMI Receiver	Keysight	N9038A	EMC2139	2019-11-18	2020-11-17
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2019-11-18	2020-11-17
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Conducted Peak Output Power					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EXA Signal Analzer	AgilentTechnologies	N9010A	EMC2138	2019-11-19	2020-11-18
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A
MI CABLE	SGS	0.8M	EMC2136	2019-11-02	2020-11-01
MI CABLE	SGS	0.8M	EMC2137	2019-11-02	2020-11-01

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DMM	Fluke	73	EMC0006	2019-07-16	2020-07-15
DMM	Fluke	73	EMC0007	2019-07-16	2020-07-15

6 Radio Spectrum Matter Test Results

6.1 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)
Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

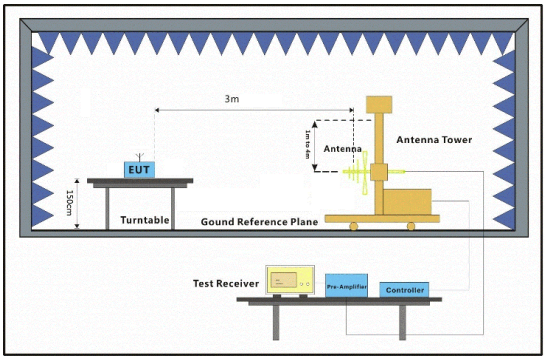
6.1.1 E.U.T. Operation

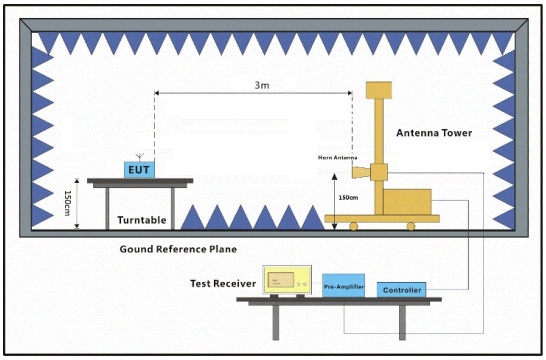
Operating Environment:

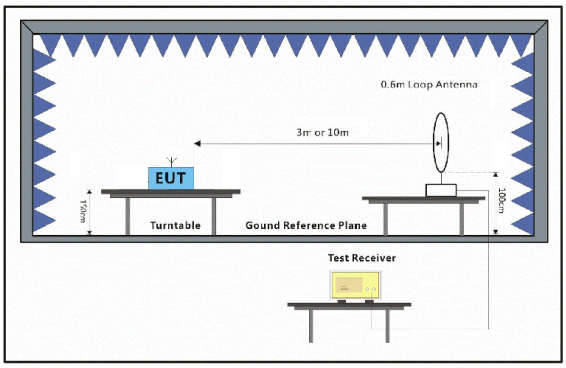
Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Test mode c:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

6.1.2 Test Setup Diagram







6.1.3 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark:

1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

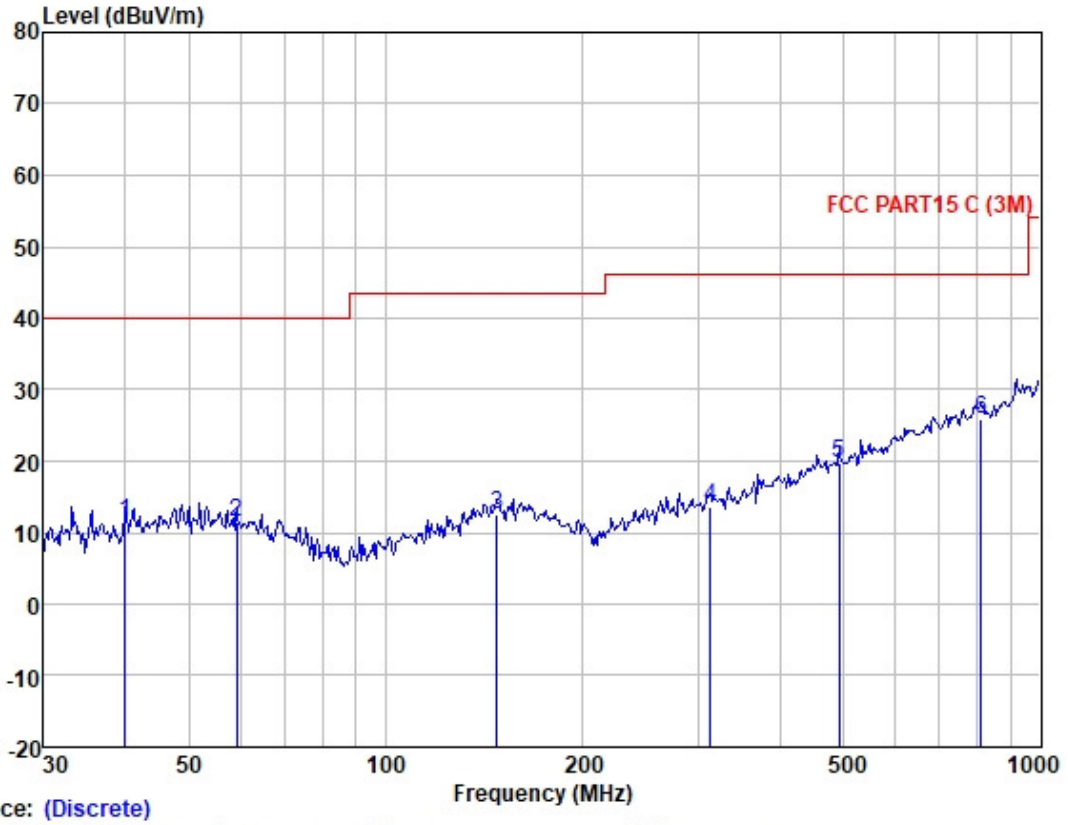
2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown

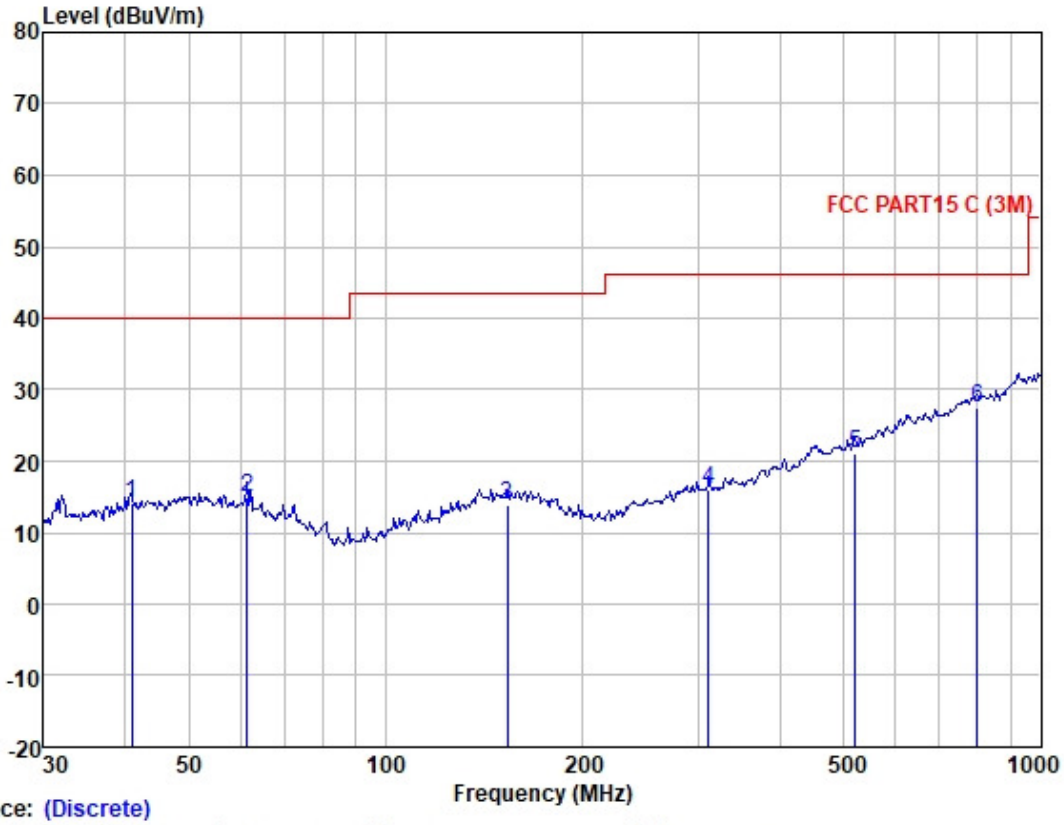
Below 1GHz;low channel



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	39.994	24.20	13.50	1.06	27.18	11.58	40.00	-28.42	HORIZONTAL	QP
2	59.232	23.87	13.48	1.32	27.16	11.51	40.00	-28.49	HORIZONTAL	QP
3	147.921	23.69	13.70	2.05	26.89	12.55	43.50	-30.95	HORIZONTAL	QP
4	313.276	23.85	14.04	2.99	27.35	13.53	46.00	-32.47	HORIZONTAL	QP
5	492.469	25.95	17.85	4.05	28.04	19.81	46.00	-26.19	HORIZONTAL	QP
6	810.265	25.40	22.70	5.90	28.11	25.89	46.00	-20.11	HORIZONTAL	QP

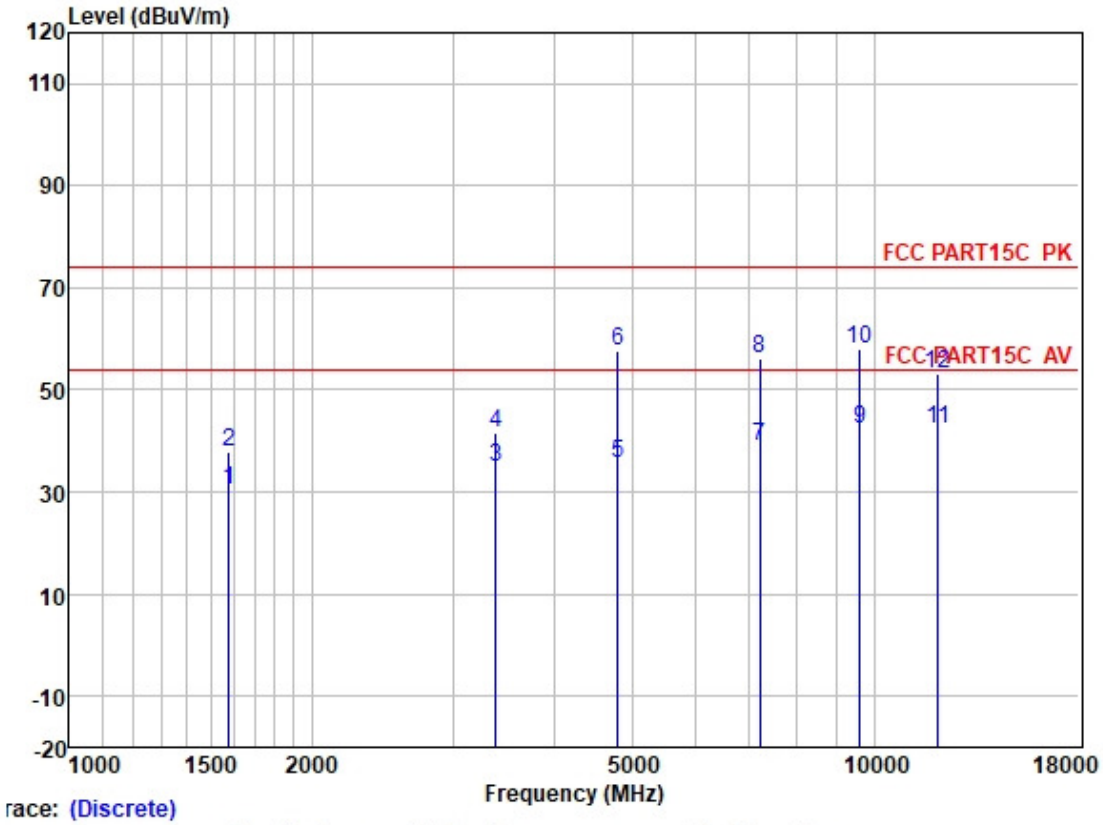
Below 1GHz;low channel



Trace: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	40.845	26.54	13.58	1.08	27.18	14.02	40.00	-25.98	VERTICAL	QP
2	61.346	27.72	13.18	1.32	27.16	15.06	40.00	-24.94	VERTICAL	QP
3	153.200	24.94	13.80	2.09	26.87	13.96	43.50	-29.54	VERTICAL	QP
4	311.087	26.34	13.95	2.99	27.34	15.94	46.00	-30.06	VERTICAL	QP
5	520.888	27.07	18.20	3.93	28.05	21.15	46.00	-24.85	VERTICAL	QP
6	798.980	26.97	22.60	5.99	28.12	27.44	46.00	-18.56	VERTICAL	QP

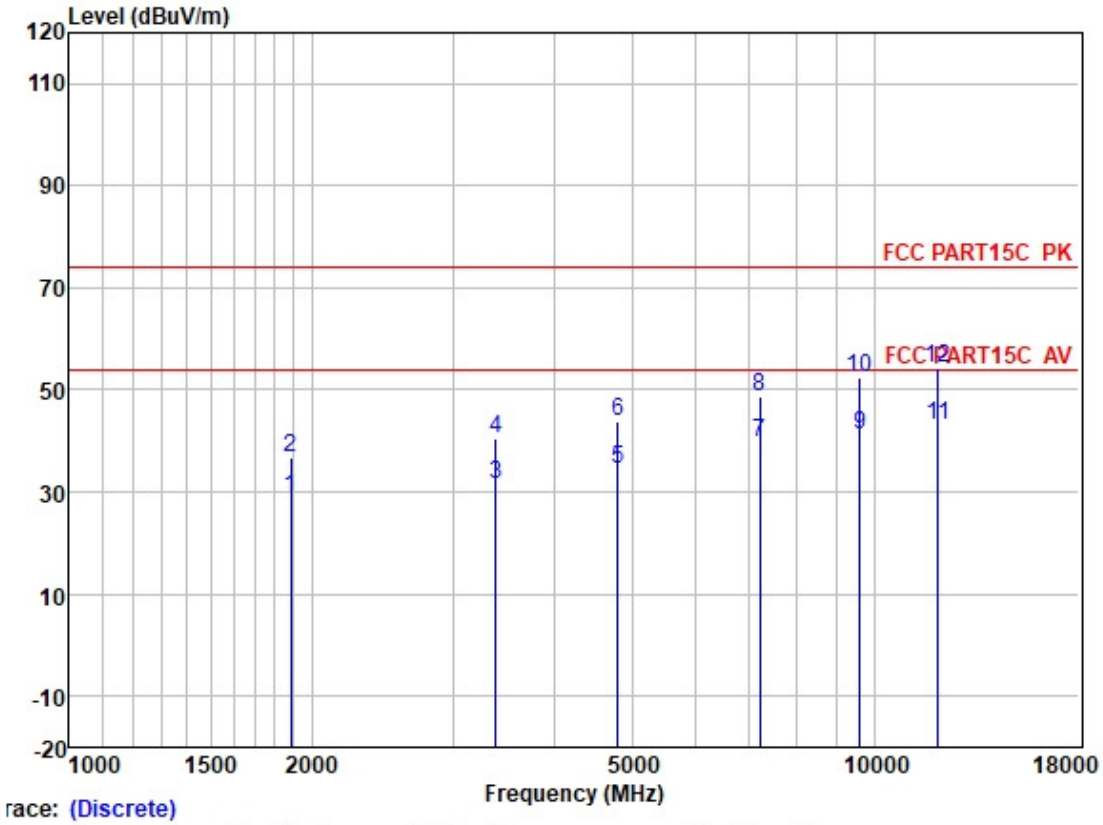
Above 1GHz;low channel



race: (Discrete)

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1578.822	40.25	25.02	2.80	37.66	30.41	54.00	-23.59	VERTICAL	Average
2	1578.822	47.62	25.02	2.80	37.66	37.78	74.00	-36.22	VERTICAL	Peak
3	3386.297	39.74	27.90	4.10	36.97	34.77	54.00	-19.23	VERTICAL	Average
4	3386.297	46.45	27.90	4.10	36.97	41.48	74.00	-32.52	VERTICAL	Peak
5	4804.975	36.22	30.79	5.40	36.94	35.47	54.00	-18.53	VERTICAL	Average
6	4804.975	58.53	30.79	5.40	36.94	57.78	74.00	-16.22	VERTICAL	Peak
7	7206.150	34.47	35.45	5.98	36.93	38.97	54.00	-15.03	VERTICAL	Average
8	7206.150	51.79	35.45	5.98	36.93	56.29	74.00	-17.71	VERTICAL	Peak
9	9608.164	34.69	37.51	7.07	37.08	42.19	54.00	-11.81	VERTICAL	Average
10	9608.164	50.59	37.51	7.07	37.08	58.09	74.00	-15.91	VERTICAL	Peak
11	12010.350	32.02	39.50	8.19	37.20	42.51	54.00	-11.49	VERTICAL	Average
12	12010.350	42.56	39.50	8.19	37.20	53.05	74.00	-20.95	VERTICAL	Peak

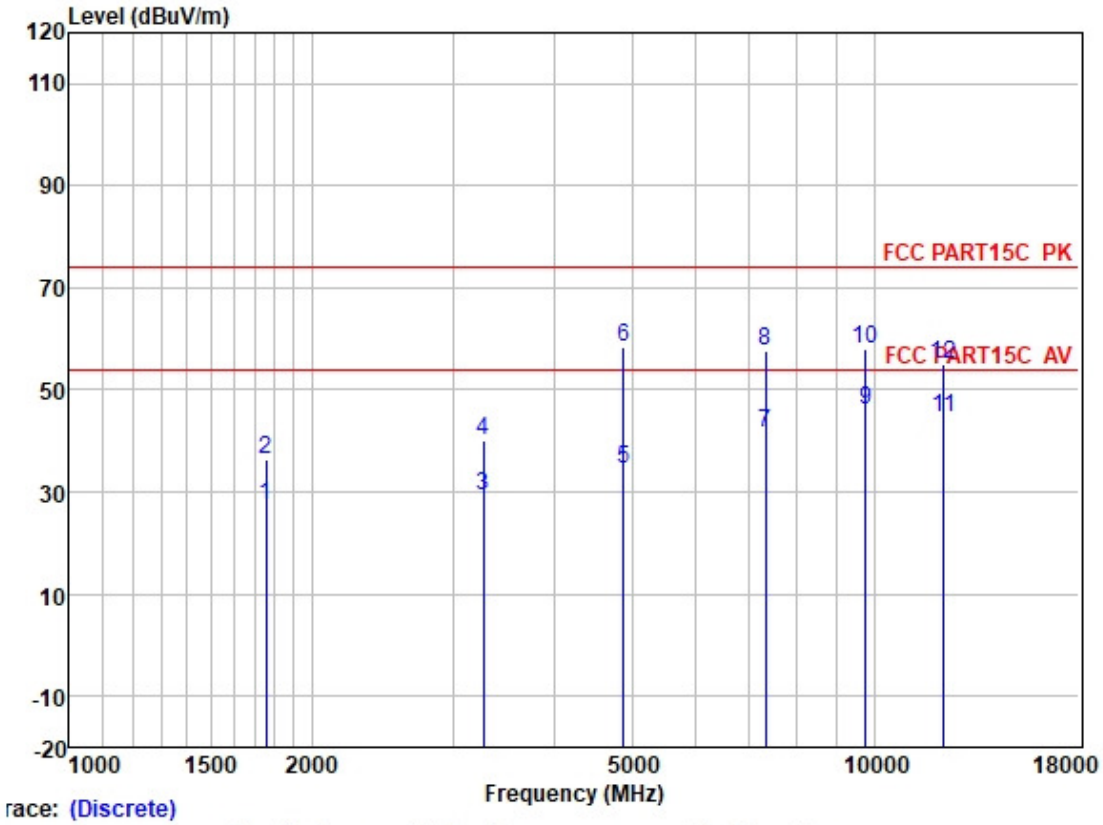
Above 1GHz;low channel



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1883.236	38.47	25.18	2.91	37.53	29.03	54.00	-24.97	HORIZONTAL	Average
2	1883.236	46.25	25.18	2.91	37.53	36.81	74.00	-37.19	HORIZONTAL	Peak
3	3386.297	36.59	27.90	4.10	36.97	31.62	54.00	-22.38	HORIZONTAL	Average
4	3386.297	45.34	27.90	4.10	36.97	40.37	74.00	-33.63	HORIZONTAL	Peak
5	4804.043	35.17	30.79	5.40	36.94	34.42	54.00	-19.58	HORIZONTAL	Average
6	4804.043	44.52	30.79	5.40	36.94	43.77	74.00	-30.23	HORIZONTAL	Peak
7	7206.122	35.13	35.45	5.98	36.93	39.63	54.00	-14.37	HORIZONTAL	Average
8	7206.122	44.35	35.45	5.98	36.93	48.85	74.00	-25.15	HORIZONTAL	Peak
9	9608.151	33.86	37.51	7.07	37.08	41.36	54.00	-12.64	HORIZONTAL	Average
10	9608.151	44.88	37.51	7.07	37.08	52.38	74.00	-21.62	HORIZONTAL	Peak
11	12010.580	32.46	39.50	8.19	37.20	42.95	54.00	-11.05	HORIZONTAL	Average
12	12010.580	43.97	39.50	8.19	37.20	54.46	74.00	-19.54	HORIZONTAL	Peak

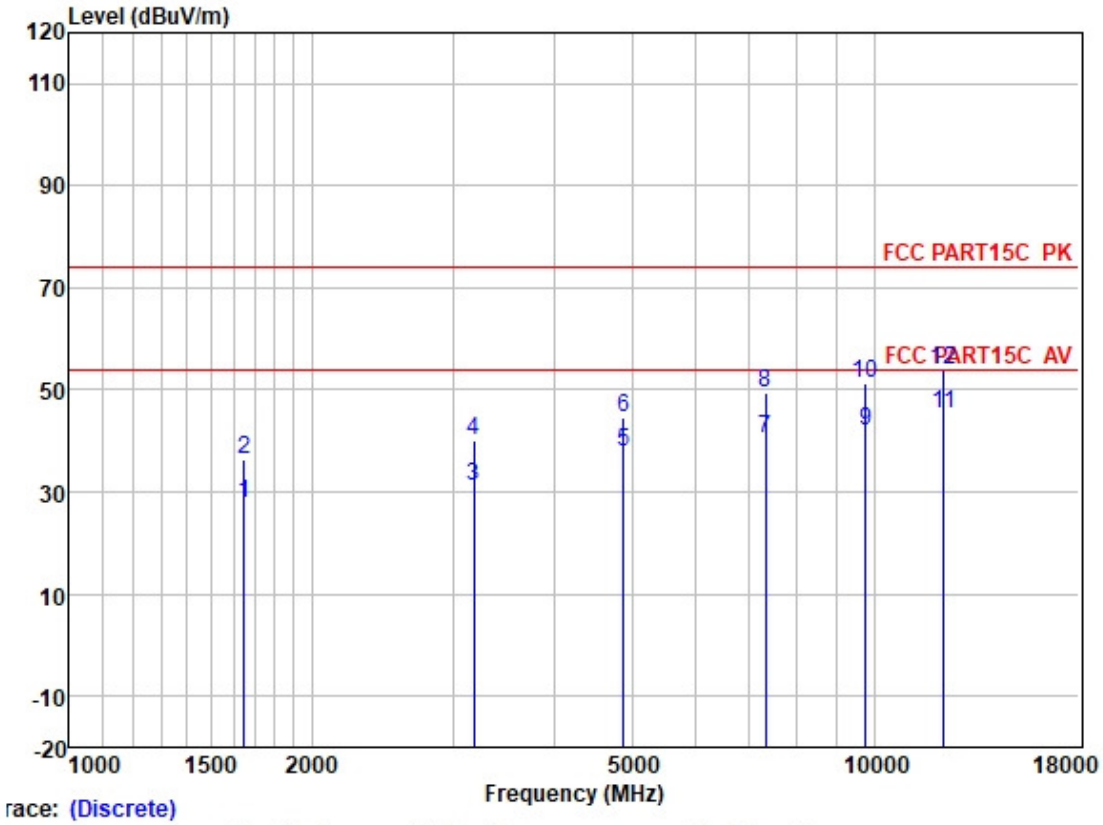
Above 1GHz;middle channel



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1757.026	36.91	25.12	2.91	37.57	27.37	54.00	-26.63	VERTICAL	Average
2	1757.026	45.89	25.12	2.91	37.57	36.35	74.00	-37.65	VERTICAL	Peak
3	3270.858	34.17	27.90	4.04	36.99	29.12	54.00	-24.88	VERTICAL	Average
4	3270.858	45.06	27.90	4.04	36.99	40.01	74.00	-33.99	VERTICAL	Peak
5	4884.151	35.03	30.95	5.52	36.95	34.55	54.00	-19.45	VERTICAL	Average
6	4884.151	58.95	30.95	5.52	36.95	58.47	74.00	-15.53	VERTICAL	Peak
7	7326.006	36.75	35.74	6.13	36.92	41.70	54.00	-12.30	VERTICAL	Average
8	7326.006	52.87	35.74	6.13	36.92	57.82	74.00	-16.18	VERTICAL	Peak
9	9768.149	38.29	37.74	7.01	37.09	45.95	54.00	-8.05	VERTICAL	Average
10	9768.149	50.47	37.74	7.01	37.09	58.13	74.00	-15.87	VERTICAL	Peak
11	12210.760	34.21	39.21	8.08	37.06	44.44	54.00	-9.56	VERTICAL	Average
12	12210.760	44.74	39.21	8.08	37.06	54.97	74.00	-19.03	VERTICAL	Peak

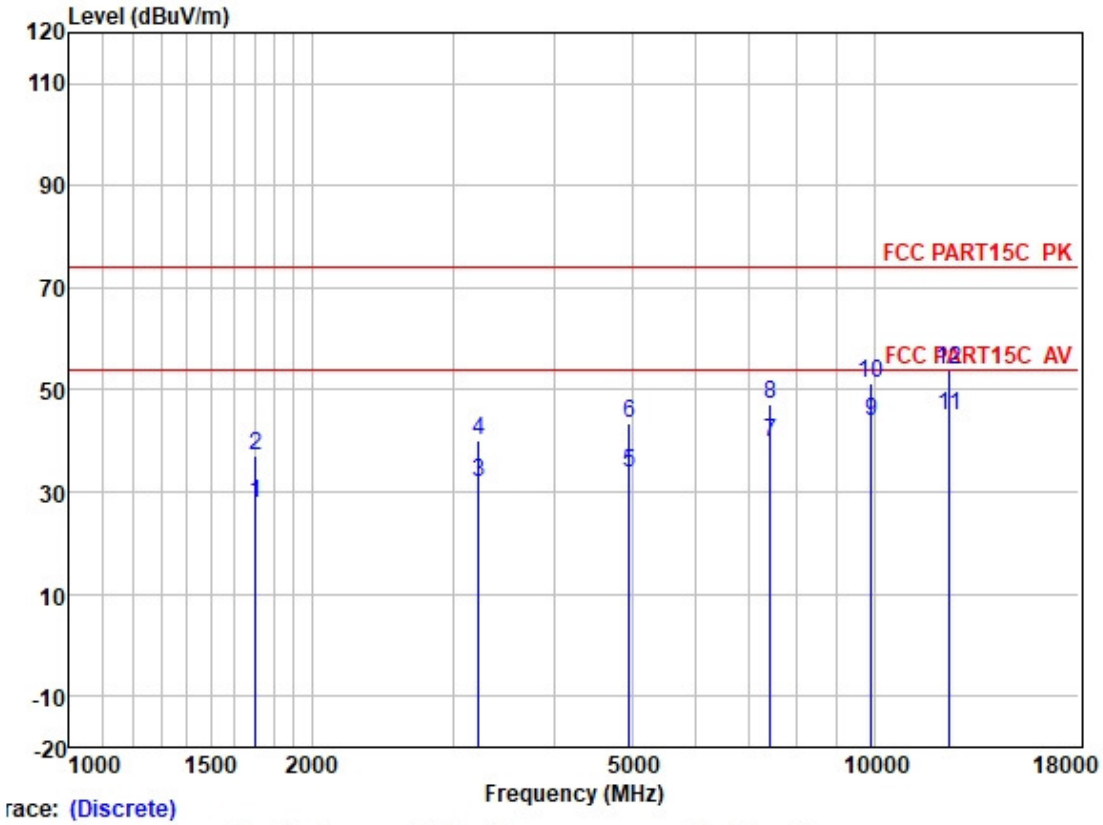
Above 1GHz;middle channel



race: (Discrete)

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1648.778	37.56	25.04	2.80	37.62	27.78	54.00	-26.22	HORIZONTAL	Average
2	1648.778	46.18	25.04	2.80	37.62	36.40	74.00	-37.60	HORIZONTAL	Peak
3	3177.672	36.28	27.90	3.99	37.01	31.16	54.00	-22.84	HORIZONTAL	Average
4	3177.672	45.20	27.90	3.99	37.01	40.08	74.00	-33.92	HORIZONTAL	Peak
5	4884.888	38.17	30.95	5.52	36.95	37.69	54.00	-16.31	HORIZONTAL	Average
6	4884.888	44.97	30.95	5.52	36.95	44.49	74.00	-29.51	HORIZONTAL	Peak
7	7326.788	35.58	35.74	6.13	36.92	40.53	54.00	-13.47	HORIZONTAL	Average
8	7326.788	44.34	35.74	6.13	36.92	49.29	74.00	-24.71	HORIZONTAL	Peak
9	9768.497	34.46	37.74	7.01	37.09	42.12	54.00	-11.88	HORIZONTAL	Average
10	9768.497	43.58	37.74	7.01	37.09	51.24	74.00	-22.76	HORIZONTAL	Peak
11	12210.210	35.02	39.21	8.08	37.06	45.25	54.00	-8.75	HORIZONTAL	Average
12	12210.210	43.55	39.21	8.08	37.06	53.78	74.00	-20.22	HORIZONTAL	Peak

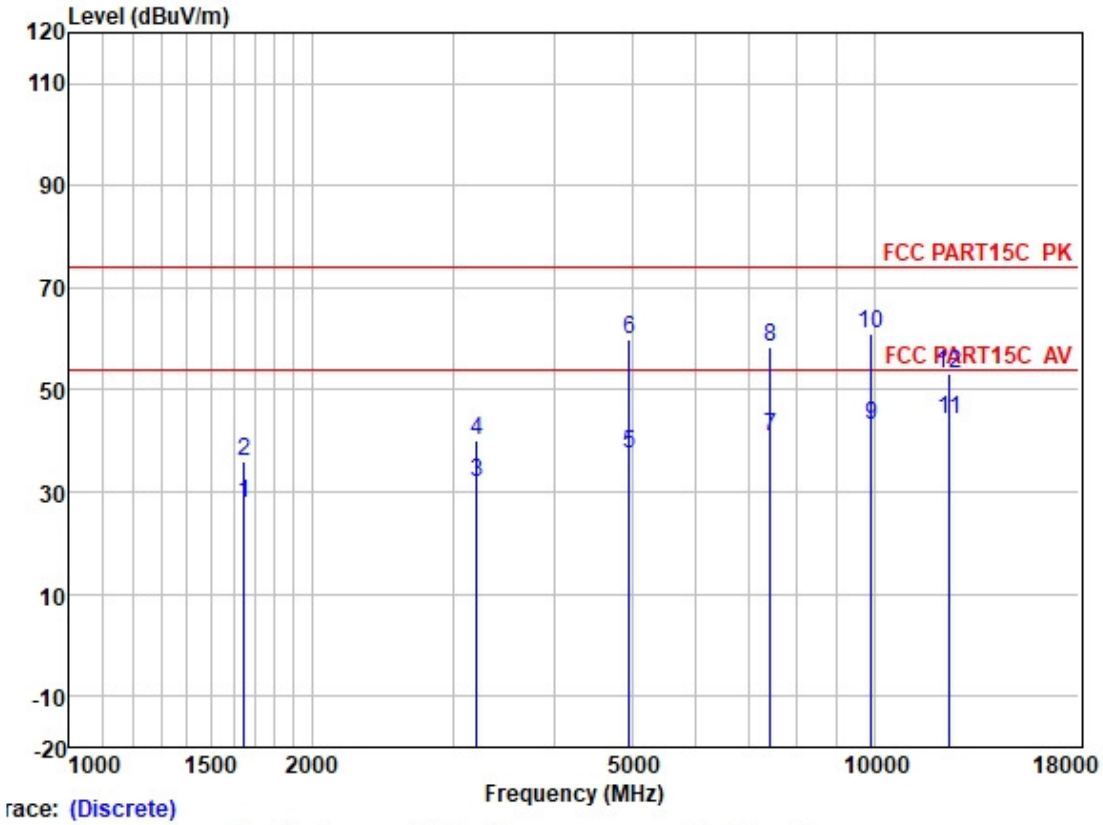
Above 1GHz;high channel



race: (Discrete)

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1702.042	37.58	25.07	2.80	37.59	27.86	54.00	-26.14	VERTICAL	Average
2	1702.042	46.77	25.07	2.80	37.59	37.05	74.00	-36.95	VERTICAL	Peak
3	3223.928	36.98	27.90	4.01	37.00	31.89	54.00	-22.11	VERTICAL	Average
4	3223.928	45.15	27.90	4.01	37.00	40.06	74.00	-33.94	VERTICAL	Peak
5	4960.751	34.17	31.05	5.65	36.96	33.91	54.00	-20.09	VERTICAL	Average
6	4960.751	43.55	31.05	5.65	36.96	43.29	74.00	-30.71	VERTICAL	Peak
7	7440.265	34.59	35.92	6.22	36.92	39.81	54.00	-14.19	VERTICAL	Average
8	7440.265	42.08	35.92	6.22	36.92	47.30	74.00	-26.70	VERTICAL	Peak
9	9920.479	36.03	37.92	6.96	37.10	43.81	54.00	-10.19	VERTICAL	Average
10	9920.479	43.47	37.92	6.96	37.10	51.25	74.00	-22.75	VERTICAL	Peak
11	12400.760	35.11	38.93	7.97	36.90	45.11	54.00	-8.89	VERTICAL	Average
12	12400.760	44.10	38.93	7.97	36.90	54.10	74.00	-19.90	VERTICAL	Peak

Above 1GHz;high channel



race: (Discrete)

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1648.778	37.47	25.04	2.80	37.62	27.69	54.00	-26.31	HORIZONTAL	Average
2	1648.778	45.94	25.04	2.80	37.62	36.16	74.00	-37.84	HORIZONTAL	Peak
3	3205.345	37.01	27.90	4.00	37.01	31.90	54.00	-22.10	HORIZONTAL	Average
4	3205.345	45.23	27.90	4.00	37.01	40.12	74.00	-33.88	HORIZONTAL	Peak
5	4960.151	37.75	31.05	5.65	36.96	37.49	54.00	-16.51	HORIZONTAL	Average
6	4960.151	60.29	31.05	5.65	36.96	60.03	74.00	-13.97	HORIZONTAL	Peak
7	7440.144	35.61	35.92	6.22	36.92	40.83	54.00	-13.17	HORIZONTAL	Average
8	7440.144	53.22	35.92	6.22	36.92	58.44	74.00	-15.56	HORIZONTAL	Peak
9	9920.588	35.29	37.92	6.96	37.10	43.07	54.00	-10.93	HORIZONTAL	Average
10	9920.588	53.18	37.92	6.96	37.10	60.96	74.00	-13.04	HORIZONTAL	Peak
11	12400.710	34.06	38.93	7.97	36.90	44.06	54.00	-9.94	HORIZONTAL	Average
12	12400.710	43.24	38.93	7.97	36.90	53.24	74.00	-20.76	HORIZONTAL	Peak

6.2 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)

Test Method: ANSI C63.10 (2013) Section 11.9.1

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥50 hopping channels
	0.25 for 25≤ hopping channels <50
	1 for digital modulation
2400-2483.5	1 for ≥75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

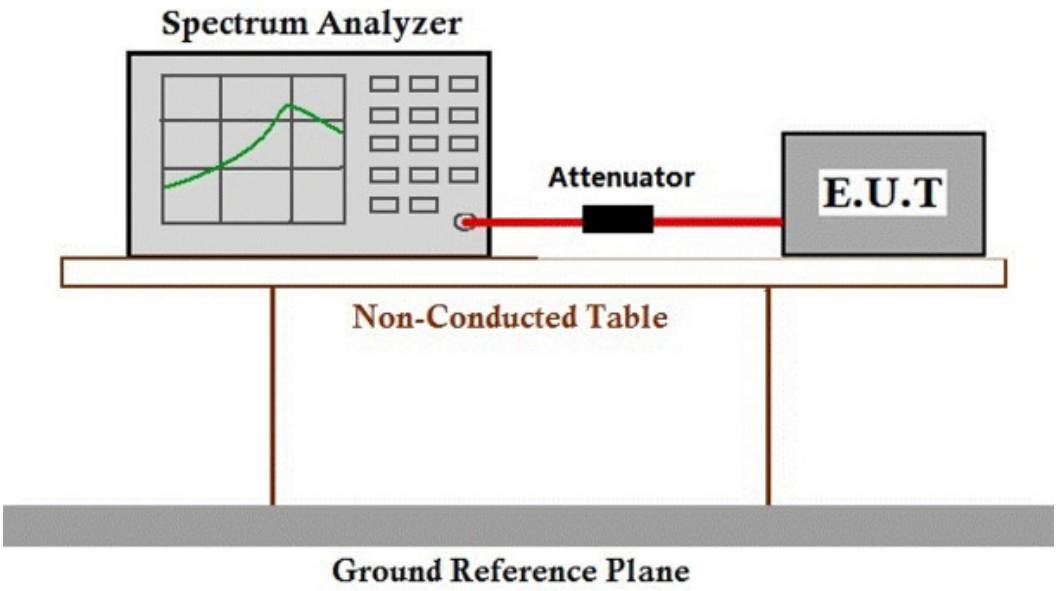
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 49.7 % RH Atmospheric Pressure: 1020 mbar

Test mode b: TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation

6.2.2 Test Setup Diagram

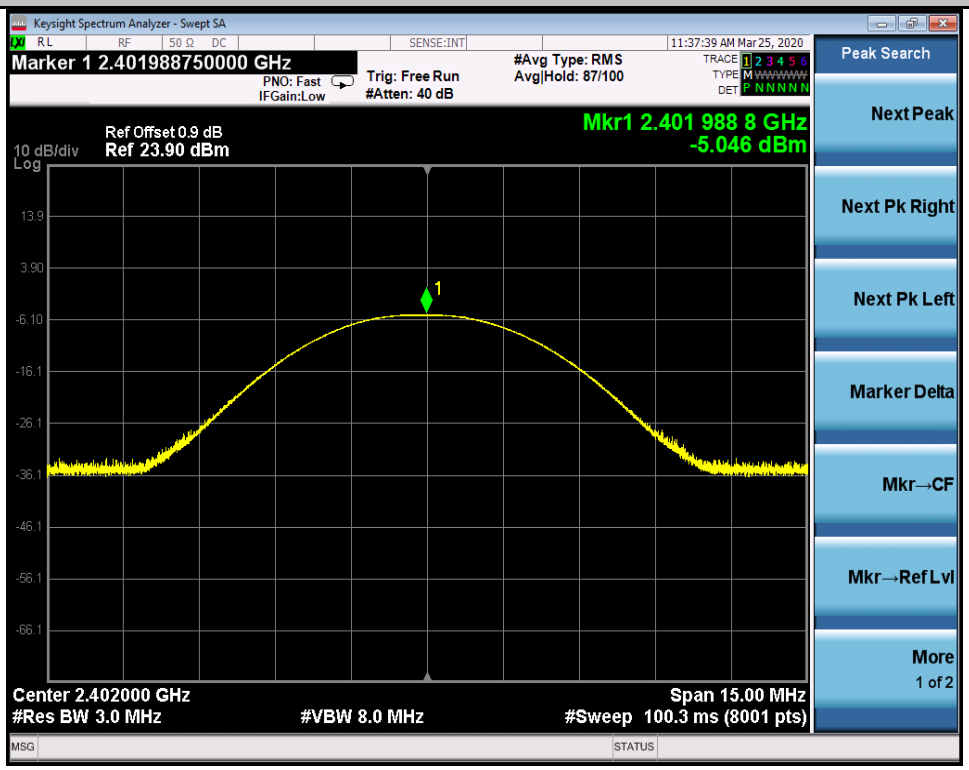


6.2.3 Measurement Procedure and Data

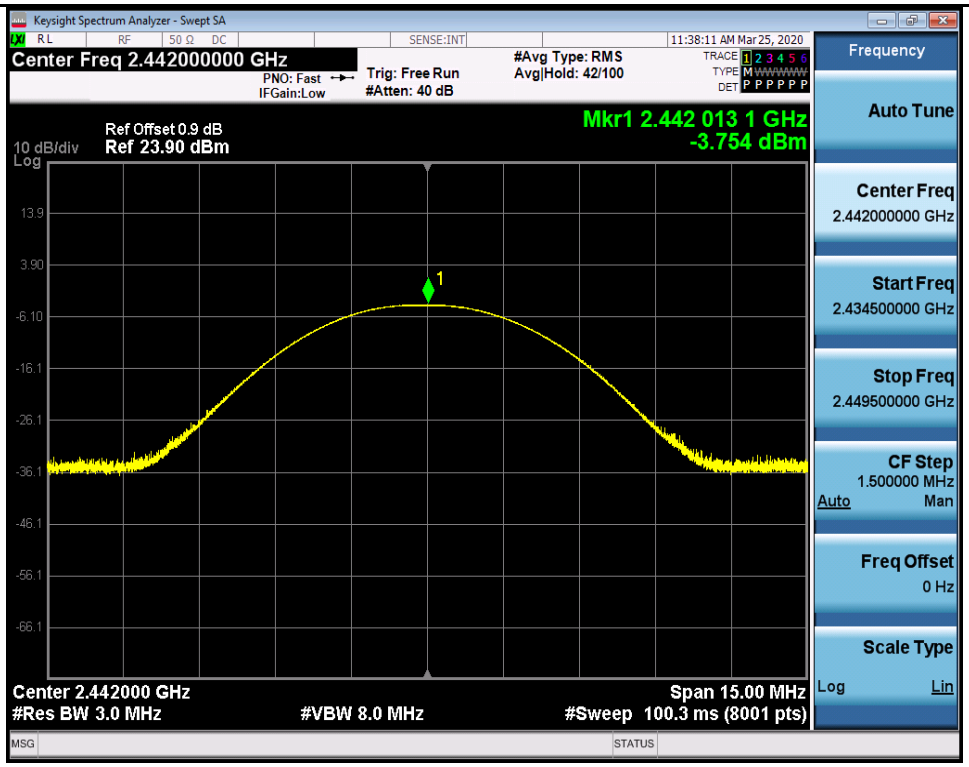
Test Mode	Test Channel	Ant	Power[dBm]	Limit[dBm]	Verdict
BLE	2402	Ant1	-5.046	30	PASS
BLE	2442	Ant1	-3.754	30	PASS
BLE	2480	Ant1	-4.601	30	PASS

TEST PLOT

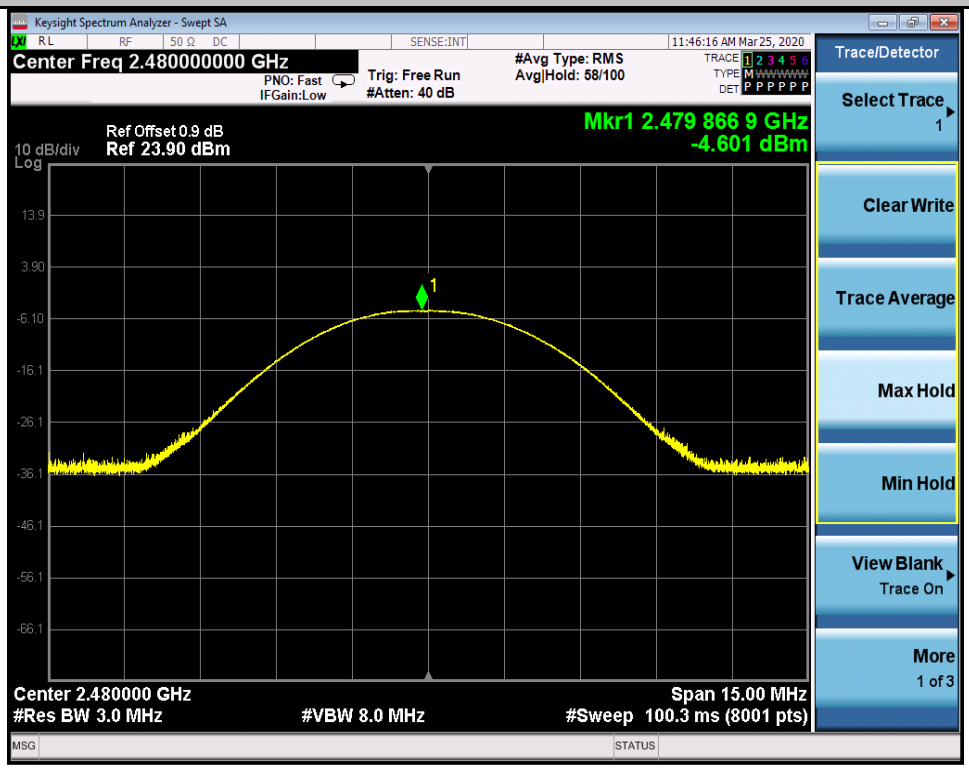
Maximum peak conducted output power_BLE_2402_Ant1



Maximum peak conducted output power_BLE_2442_Ant1



Maximum peak conducted output power_BLE_2480_Ant1



--End of Report--

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
No.198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com