

Report No.: ZR/2020/C003403

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FCC TEST REPORT

Application No.: ZR/2020/C0034

Applicant: Sony Mobile Communications, Inc.

Address of Applicant 4-12-3 Higashi-shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan

Manufacturer: Sony Mobile Communications, Inc.

Address of Manufacturer 4-12-3 Higashi-shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan **EUT Description:** GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, GPS and NFC

Trade Mark: Sony

PY7-54955X FCC ID:

47 CFR FCC Part 2, Subpart J Standards:

47 CFR Part 15, Subpart C

Date of Receipt: 2020/12/11

Date of Test: 2020/12/11 to 2021/1/12

Date of Issue: 2021/4/21

Test Result: PASS *

In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:

Derek Yang Wireless Laboratory Manager

Derete yang



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Version 1

Revision Record						
Version	Chapter	Date	Modifier	Remark		
01		2021-03-03		Original		
02		2021-03-16		Comment Revised		
03		2021-03-18		Comment Revised		
04		2021-04-21		Modify equipment list		

Authorized for issue by:		
Tested By	(Mike Hu) /Project Engineer	
Checked By	Dand Chen (David Chen) /Reviewer	



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2 **Test Summary**

Test Item	Test Requirement	Test Method	Result	Test Lab*
AC Power Line Conducted Emission	15.207	ANSI C63.10 2013	PASS	В
Conducted Output Power	15.247 (b)(3)	ANSI C63.10 2013	PASS	Α
DTS (6 dB) Bandwidth	15.247 (a)(2)	ANSI C63.10 2013	PASS	Α
Power Spectral Density	15.247 (e)	ANSI C63.10 2013	PASS	Α
Band-edge for RF Conducted Emissions	15.247(d)	ANSI C63.10 2013	PASS	А
RF Conducted Spurious Emissions	15.247(d)	ANSI C63.10 2013	PASS	А
Radiated Spurious Emissions	15.205/15.209	ANSI C63.10 2013	PASS	В
Restricted bands around fundamental frequency (Radiated Emission)	15.205/15.209	ANSI C63.10 2013	PASS	В



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SGS-CSTC Standards Technical Services Co., Ltd. **Shenzhen Branch**

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General Information 3

3.1 Details of Client

Applicant:	Sony Mobile Communications, Inc.	
Address of Applicant	4-12-3 Higashi-shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan	
Manufacturer:	Sony Mobile Communications, Inc.	
Address of Manufacturer	4-12-3 Higashi-shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan	

3.2 Test Location

Lab A:

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
Post code:	518057

I ab B:

Company:	SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD.		
Address:	1/F, Unit D, Building 1, Kanghong Orange Technology Park, No.137, Keyuan 3rd Road, Fengdong New City, Xi'an, Shaanxi China		
Post code:	710086		





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3.3 Test Facility

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

Lab A:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC -Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

Lab B:

A2LA (Certificate No. 4854.01)

SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

Designation Number: CN1271.





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3.4 General Description of EUT

EUT Description:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, GPS and NFC		
Trade Mark:	Sony		
S/N:	005059ADNVM2		
Operation Frequency:	2400MHz~2483.5MHz fc = 2402 MHz + N * 2 MHz, where: -fc = "Operating Frequency" in MHz, -N = "Channel Number" with the range from 0 to 39.		
Bluetooth version:	Bluetooth V5.1		
Modulation Type:	GFSK		
Number of Channel:	40		
Sample Type:	⊠ Portable Device,		
Antenna Type:	☐ External, ☑ Integrated		
Antenna Gain:	2.0 dBi		

Operation Frequency of each channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz



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Remark:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The Lowest channel(CH0)	2402MHz
The Middle channel(CH19)	2440MHz
The Highest channel(CH39)	2480MHz

3.5 Test Environment

Operating Environment:		
Temperature:	25.0 °C	
Humidity:	50 % RH	
Atmospheric Pressure:	101.30 KPa	

3.6 Description of Support Units

The EUT has been tested independent unit.





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Test results and Measurement Data 4

4.1 Antenna Requirement

Standard requirement: 47 CFR Part 15C Section 15.203 /247(c)

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.0 dBi.



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4.2 AC Power Line Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207			
Test Method:	ANSI C63.10: 2013			
Test Frequency Range:	150kHz to 30MHz			
Limit:	Fraguency range (MHz)	Limit (dl	BuV)	
	Frequency range (MHz)	Quasi-peak	Average	
	0.15-0.5	66 to 56*	56 to 46*	
	0.5-5	56	46	
	5-30	60	50	
	* Decreases with the log	arithm of the frequency.		
Test Procedure:	The mains terminal d room.	isturbance voltage test was o	conducted in a shielded	
	Impedance Stabilizat impedance. The porconnected to a secon plane in the same with multiple socket outlet single LISN provided. 3) The tabletop EUT was ground reference planglaced on the horizor. 4) The test was performed the EUT shall be 0. vertical ground reference plane. The unit under test and mounted on top of the the closest points of and associated equip. 5) In order to find the minumed and all of the interface.	ected to AC power source to ion Network) which provides a liver cables of all other und LISN 2, which was bonded way as the LISN 1 for the understrip was used to connect must the rating of the LISN was not as placed upon a non-metalline. And for floor-standing arrantal ground reference plane. The work of the vertical ground reference plane was bonded to a ground reference plane was placed 0.8 m from the LISN 1 was placed 0.8 m from the LISN 1 and the EUT. Allowent was at least 0.8 m from aximum emission, the relative called the conducted measurement.	a 50Ω/50μH + 5Ω linear nits of the EUT were to the ground reference unit being measured. A ultiple power cables to a of exceeded. c table 0.8m above the angement, the EUT was rence plane. The rear of d reference plane. The the horizontal ground from the boundary of the rence plane for LISNs is distance was between a other units of the EUT the LISN 2.	



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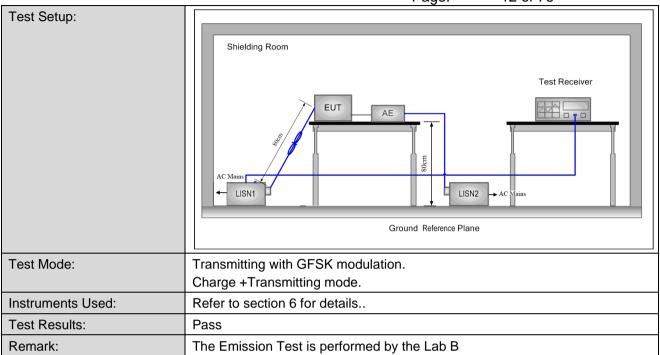
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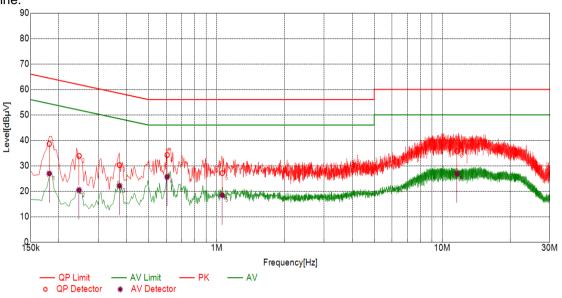
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Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:



Test Graph

Final	Final Data List							
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]
1	0.1814	10.10	38.59	64.42	25.83	26.93	54.42	27.49
2	0.2460	10.10	33.90	61.89	27.99	20.43	51.89	31.46
3	0.3715	10.10	30.26	58.47	28.21	22.13	48.47	26.34
4	0.6039	10.10	34.24	56.00	21.76	25.65	46.00	20.35
5	1.0604	10.10	27.14	56.00	28.86	18.44	46.00	27.56
6	11.6387	10.10	35.74	60.00	24.26	26.93	50.00	23.07



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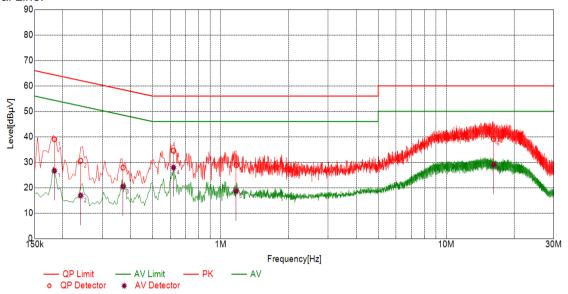
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Test Graph

Final	Final Data List							
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]
1	0.1836	10.10	39.04	64.32	25.28	26.65	54.32	27.67
2	0.2400	10.10	30.56	62.10	31.54	16.92	52.10	35.18
3	0.3699	10.10	27.90	58.50	30.60	20.43	48.50	28.07
4	0.6189	10.10	34.55	56.00	21.45	27.93	46.00	18.07
5	1.1729	10.10	28.84	56.00	27.16	18.63	46.00	27.37
6	16.2290	10.11	39.11	60.00	20.89	28.99	50.00	21.01

Remarks:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.



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4.3 Duty Cycle

4.3.1 **Test Results**

Test Mode	TX Freq. [MHz]	Duty cycle [%]	T(ms)	1/T(kHz)	VBW(kHz)
BLE_1M	CH0, CH19, CH39	61.66	0.386	2.591	3
BLE_2M	CH0, CH19, CH39	31.94	0.199	5.025	10





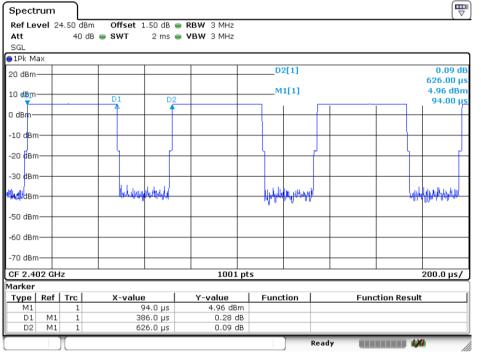
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4.3.2 **Test Plots**

4.3.2.1 ANT1

4.3.2.1.1 BLE 1M



Date: 11.JAN.2021 10:37:51

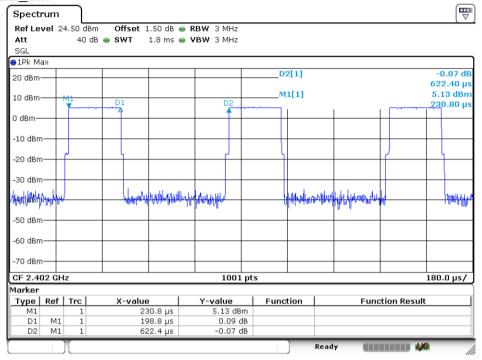




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4.3.2.1.2 BLE 2M



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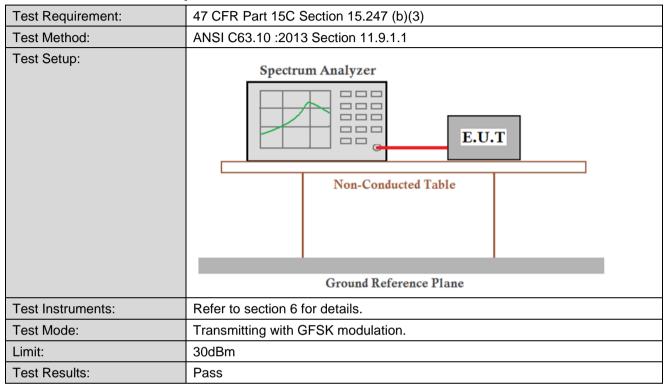




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4.4 Conducted Output Power







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4.4.1 **Test Results**

Measurement Data of Peak Power:

GFSK_1M mode					
Test Channel	Peak Output Power (dBm)	Limit (dBm)	Result		
Lowest	5.32	30.00	Pass		
Middle	7.98	30.00	Pass		
Highest	7.54	30.00	Pass		

GFSK_2M mode					
Test Channel Peak Output Power (dBm) Limit (dBm)			Result		
Lowest	5.49	30.00	Pass		
Middle	7.99	30.00	Pass		
Highest	7.72	30.00	Pass		

4.4.2 **Test Plots**

4.4.2.1 **GFSK 1M Lowest Channel**



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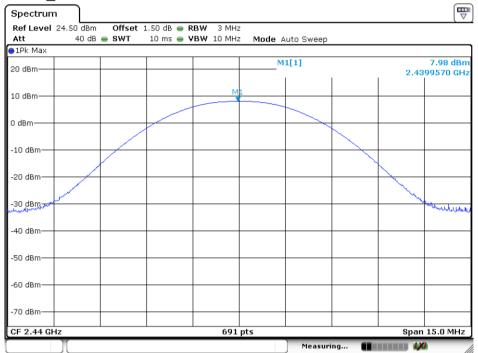
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4.4.2.2 GFSK 1M Middle Channel



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4.4.2.3 GFSK 1M_Highest Channel



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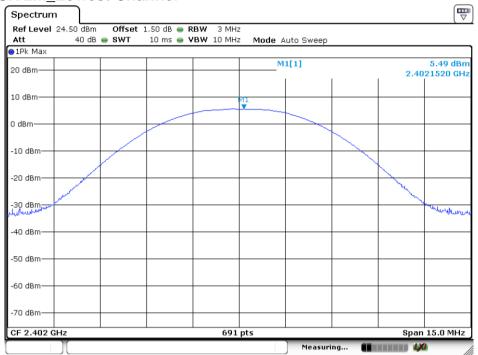
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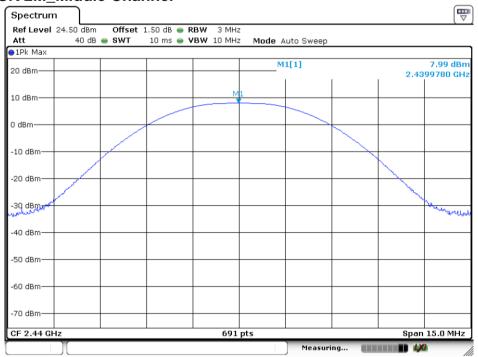
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GFSK 2M Lowest Channel 4.4.2.4



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GFSK 2M Middle Channel 4.4.2.5



Date: 11 JAN 2021 10:19:07



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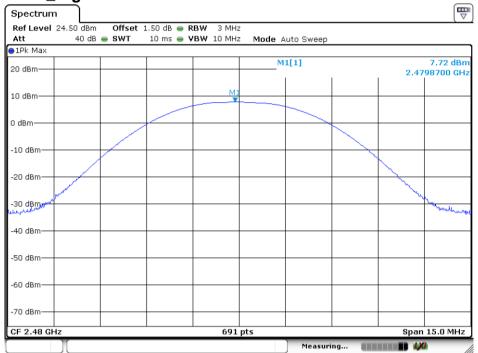
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GFSK 2M_Highest Channel 4.4.2.6



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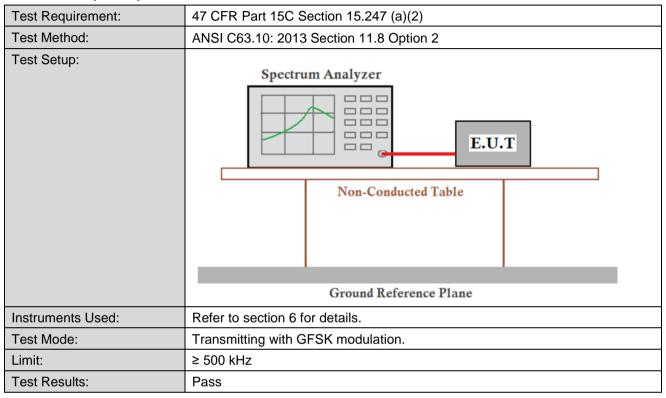




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4.5 DTS (6 dB) Bandwidth







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4.5.1 **Test Results**

Mode	Test Channel	6dB Emission Bandwidth (MHz)	Limit (kHz)	Result
	Lowest	0.6686	≥500	Pass
GFSK_1M	Middle	0.6773	≥500	Pass
	Highest	0.6860	≥500	Pass

Mode	Test Channel	6dB Emission Bandwidth (MHz)	Limit (kHz)	Result
	Lowest	1.1433	≥500	Pass
GFSK_2M	Middle	1.1577	≥500	Pass
	Highest	1.1563	≥500	Pass



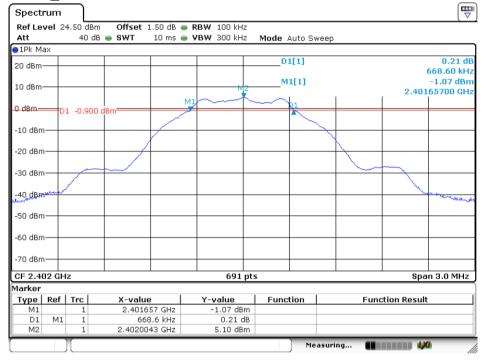


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4.5.2 **Test Plots**

GFSK 1M Lowest Channel 4.5.2.1



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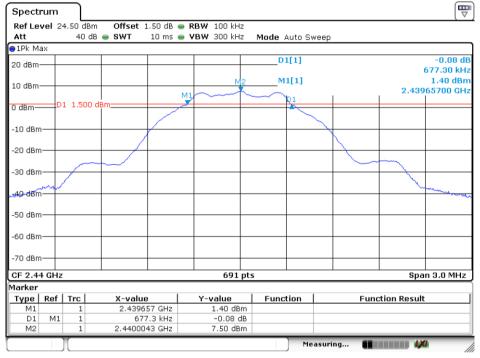




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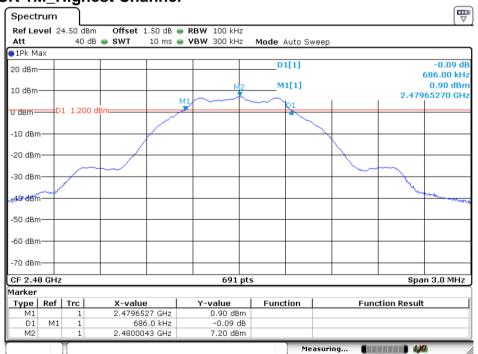
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GFSK 1M Middle Channel 4.5.2.2



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GFSK 1M_Highest Channel 4.5.2.3



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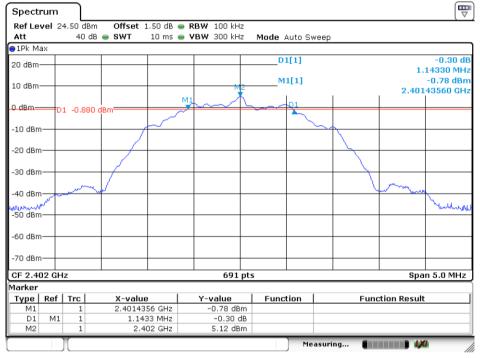
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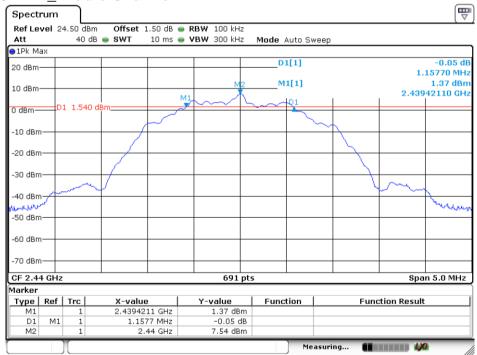
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GFSK 2M Lowest Channel 4.5.2.4



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GFSK 2M Middle Channel 4.5.2.5



Date: 11 JAN 2021 10:24:51



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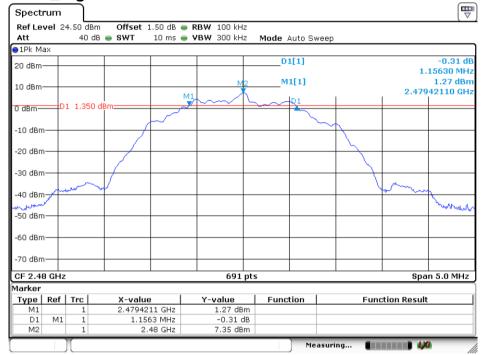
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GFSK 2M_Highest Channel 4.5.2.6



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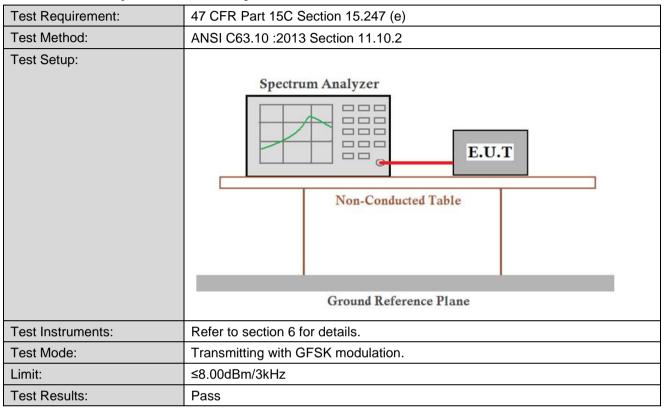




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4.6 Power Spectral Density



4.6.1 **Test Results**

Mode	Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
	Lowest	-9.67	≤8.00	Pass
GFSK_1M	Middle	-7.17	≤8.00	Pass
_	Highest	-7.17	≤8.00	Pass

Mode	Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
	Lowest	-12.67	≤8.00	Pass
GFSK_2M	Middle	-10.02	≤8.00	Pass
	Highest	-10.32	≤8.00	Pass



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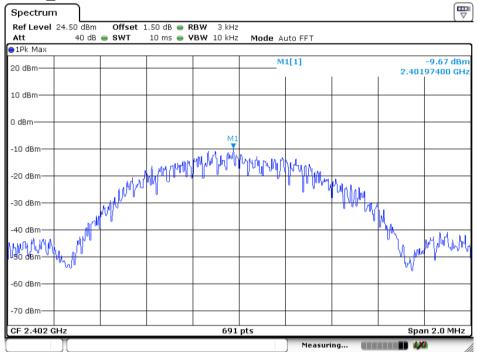


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4.6.2 **Test Plots**

4.6.2.1 **GFSK 1M Lowest Channel**



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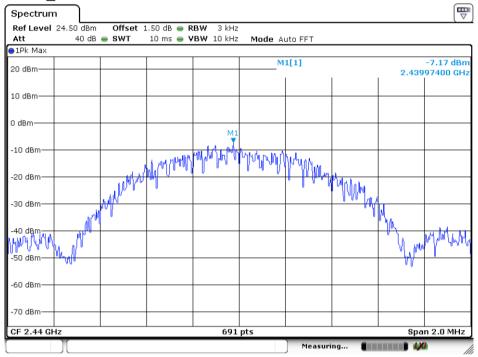




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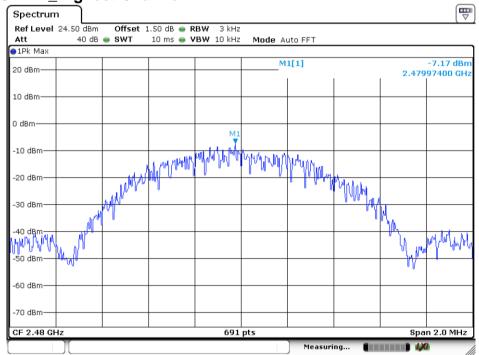
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GFSK 1M Middle Channel 4.6.2.2



Date: 11.JAN.2021 10:22:08

GFSK 1M_Highest Channel 4.6.2.3



Date: 11.JAN.2021 10:21:53

GFSK 2M Lowest Channel 4.6.2.4



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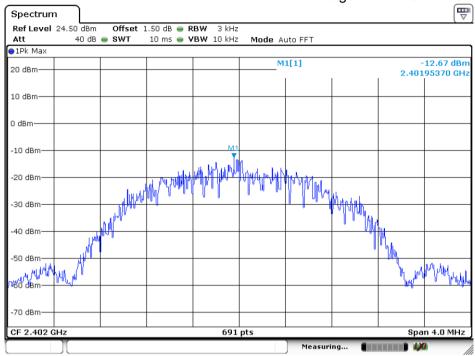
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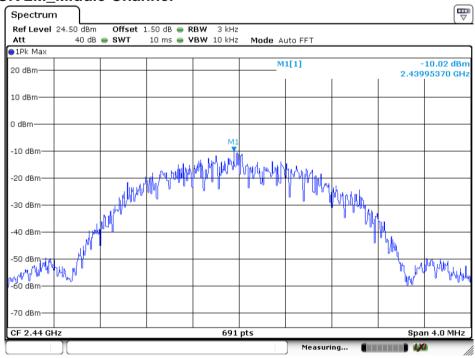
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GFSK 2M Middle Channel 4.6.2.5



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GFSK 2M_Highest Channel



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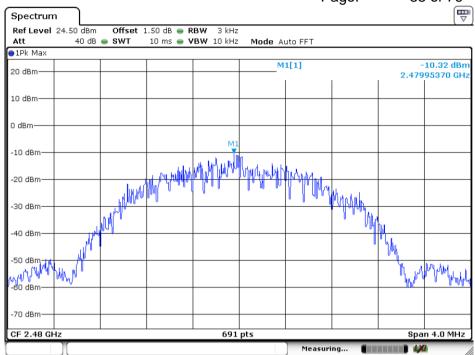
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4.7 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2013 Section 11.13
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Instruments Used:	Refer to section 6 for details.
Test Mode:	Transmitting with GFSK modulation.
Limit:	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 either an RF conducted or a radiated measurement.
Test Results:	Pass



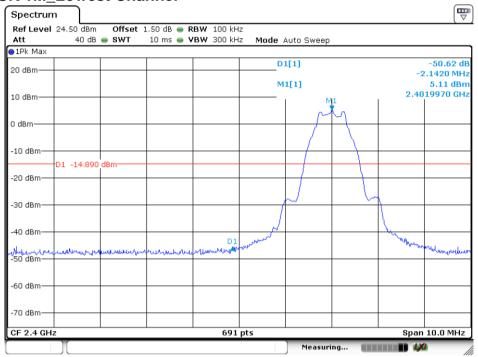


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Test Plots 4.7.1

4.7.1.1 **GFSK 1M_Lowest Channel**



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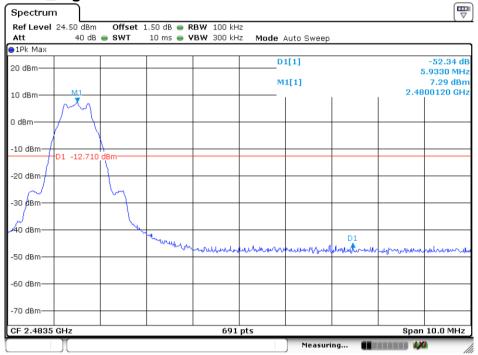




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GFSK 1M Highest Channel 4.7.1.2



Date: 11.JAN.2021 10:31:24

GFSK 2M Lowest Channel 4.7.1.3



Date: 11 JAN 2021 10:30:03



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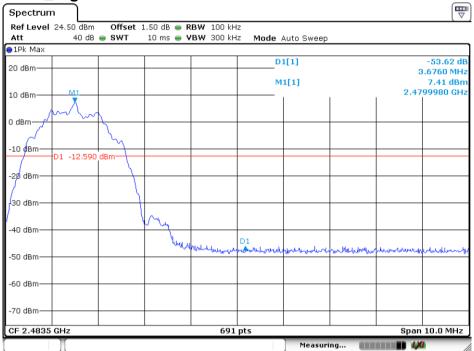
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GFSK 2M_Highest Channel 4.7.1.4



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4.8 RF Conducted Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)				
Test Method:	ANSI C63.10: 2013 Section 11.11				
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Instruments Used:	Refer to section 6 for details.				
Test Mode:	Transmitting with GFSK modulation.				
Limit:	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 either an RF conducted or a radiated measurement.				
Test Results:	Pass				



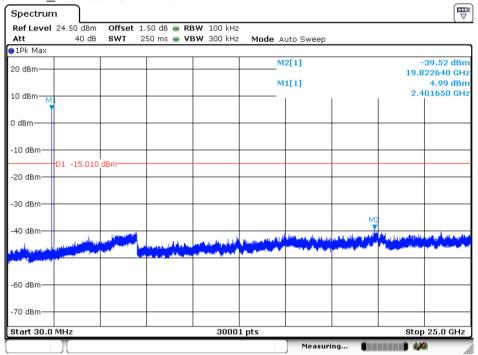


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Test Plots 4.8.1

GFSK 1M_Lowest Channel 4.8.1.1



Date: 11 JAN 2021 10:36:14

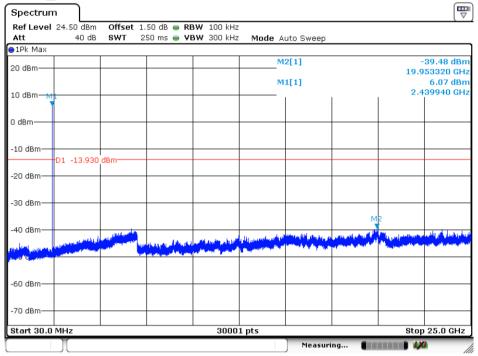




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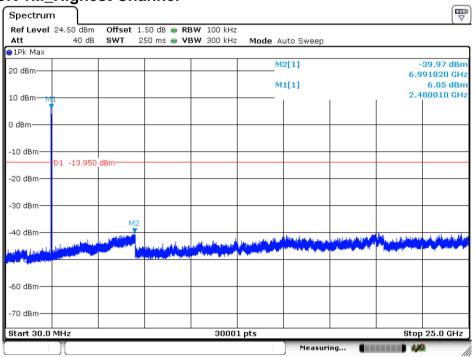
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GFSK 1M Middle Channel 4.8.1.2



Date: 11.JAN.2021 10:35:12

GFSK 1M_Highest Channel 4.8.1.3



Date: 11 JAN 2021 10:32:42



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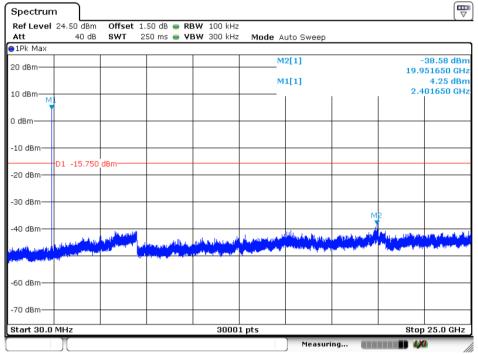
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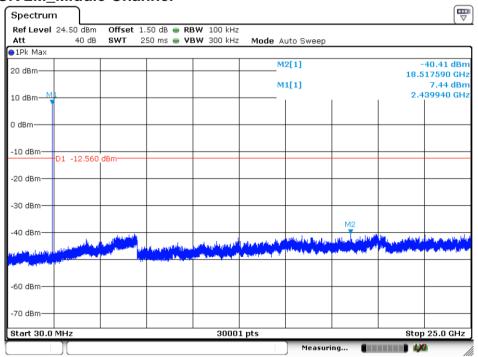
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GFSK 2M Lowest Channel 4.8.1.4



Date: 11.JAN.2021 10:36:56

GFSK 2M Middle Channel 4.8.1.5



Date: 11 JAN 2021 10:33:43



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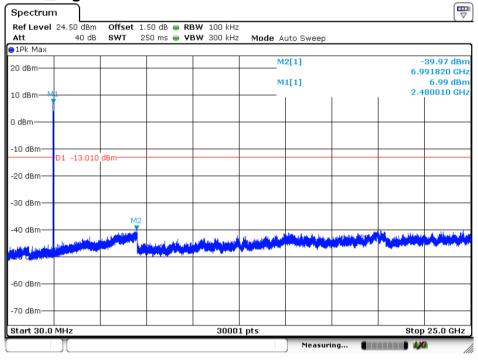
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GFSK 2M_Highest Channel 4.8.1.6



Date: 11.JAN.2021 10:33:01

Remark:

Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.





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4.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section	n 15.209 and 15.2	05								
Test Method:	ANSI C63.10 :2013 Sect	ion 11.12									
Test Site:	Measurement Distance:	3m (Semi-Anecho	ic Chamber)								
Limit:	Frequency Field strength (microvolt/meter) Limit (dBuV/m) Remark Measurement distance (m)										
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300						
	0.490MHz-1.705MHz 24000/F(kHz) 30										
	1.705MHz-30MHz	1.705MHz-30MHz 30 30									
	30MHz-88MHz	100	40.0	Quasi-peak	3						
	88MHz-216MHz	150	43.5	Quasi-peak	3						
	216MHz-960MHz	200	46.0	Quasi-peak	3						
	960MHz-1GHz	500	54.0	Quasi-peak	3						
	Above 1GHz	500	54.0	Average	3						
	Remark: 15.35(b),Unless	s otherwise specifi	ed, the limit of	on peak radio fi	equency						
	emissions is 20dB above applicable to the equipm emission level radiated b	ent under test. Thi		•							



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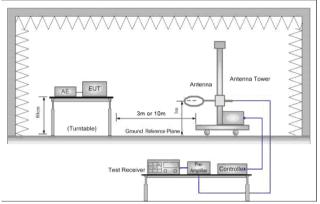
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Test Setup:



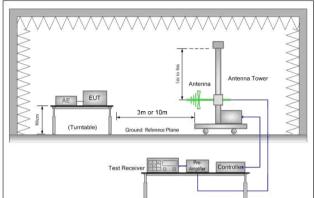


Figure 1. Below 30MHz

Figure 2. 30MHz to 1GHz

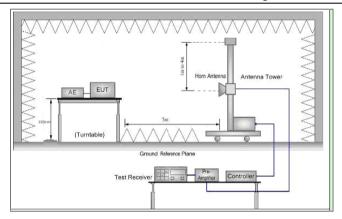


Figure 3. Above 1 GHz

Test Procedure:

- 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 camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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



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	 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 worse case. j. Repeat above procedures until all frequencies measured was complete.
Test Configuration:	Measurements Below 1000MHz
	• RBW = 120 kHz
	• VBW = 300 kHz
	Detector = Peak
	Trace mode = max hold
	Peak Measurements Above 1000 MHz
	• RBW = 1 MHz
	VBW ≥ 3 MHz
	Detector = Peak
	Sweep time = auto
	Trace mode = max hold
	Average Measurements Above 1000MHz
	• RBW = 1 MHz
	VBW = 10 Hz, when duty cycle is no less than 98 percent.
	VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum
	transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with GFSK modulation.
	Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation.
	Pretest the EUT at Charge + Transmitting mode,
	For below 1GHz part, through pre-scan, the worst case is the lowest channel. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 6 for details.
Test Results:	Pass
Remark:	The Emission Test is performed by the Lab B



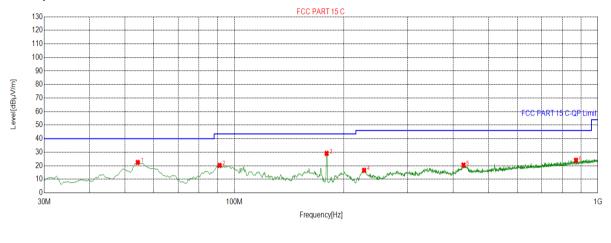


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4.9.1 **Radiated Emission below 1GHz Charge + Transmitting** 4.9.1.1

Test Graph



- Horizontal PK QP Detector

Suspected List

Suspe	Suspected List									
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity		
1	54.2621	22.44	-30.82	40.00	17.56	175	230	Horizontal		
2	91.1406	20.25	-33.23	43.50	23.25	254	106	Horizontal		
3	179.454	29.14	-32.95	43.50	14.36	315	90	Horizontal		
4	227.493	16.65	-30.05	46.00	29.35	150	109	Horizontal		
5	426.928	20.52	-24.31	46.00	25.48	246	109	Horizontal		
6	870.925	24.08	-15.70	46.00	21.92	179	47	Horizontal		

Final Data List

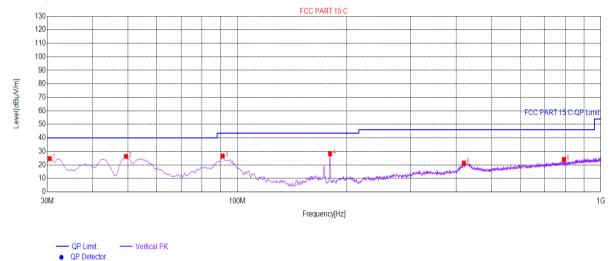




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Test Graph



Suspected List

<u> </u>	otou Liot							
Suspe	ected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	30.4852	24.66	-32.83	40.00	15.34	178	12	Vertical
2	49.4097	26.28	-30.18	40.00	13.72	136	329	Vertical
3	91.1406	26.57	-33.23	43.50	16.93	342	95	Vertical
4	179.940	28.21	-32.91	43.50	15.29	149	24	Vertical
5	420.135	21.41	-24.44	46.00	24.59	274	126	Vertical
6	790.860	23.98	-17.07	46.00	22.02	165	278	Vertical

Final Data List

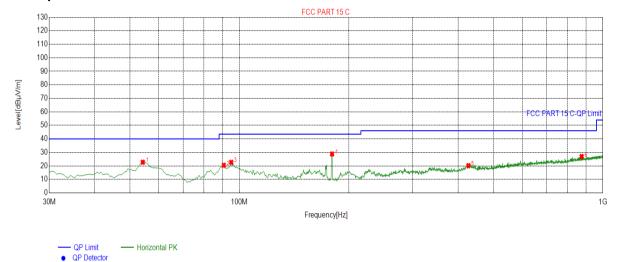




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Test Graph



Suspected List

- a p	tca List							
Suspe	ected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	54.2621	22.75	-31.01	40.00	17.25	185	207	Horizontal
2	90.6553	20.45	-33.60	43.50	23.05	245	255	Horizontal
3	95.0225	22.69	-32.89	43.50	20.81	177	247	Horizontal
4	179.940	28.85	-33.29	43.50	14.65	136	86	Horizontal
5	426.928	20.20	-24.96	46.00	25.80	278	302	Horizontal
6	874.322	26.98	-16.47	46.00	19.02	354	195	Horizontal

Final Data List

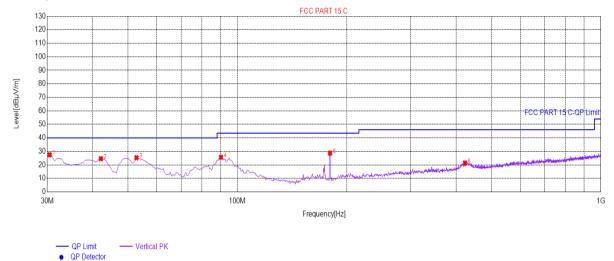




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Test Graph



Suspected List

- aopo	otou Liot							
Suspe	ected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	30.4852	27.51	-30.07	40.00	12.49	222	26	Vertical
2	42.1311	24.59	-29.23	40.00	15.41	247	346	Vertical
3	52.8064	25.31	-30.79	40.00	14.69	150	339	Vertical
4	90.1701	25.64	-33.68	43.50	17.86	178	80	Vertical
5	179.940	28.76	-33.29	43.50	14.74	253	346	Vertical
6	423.046	21.46	-25.09	46.00	24.54	256	128	Vertical

Final Data List



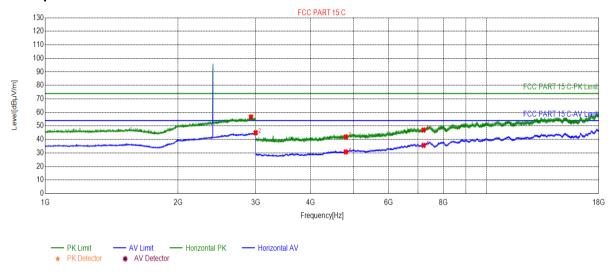


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4.9.2 **Transmitter Emission above 1GHz** BLE 1M_Channel 0 4.9.2.1

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2927.98	56.68	10.70	74.00	17.32	150	341	Horizontal			
2	3000.00	44.97	10.78	54.00	9.03	150	91	Horizontal			
3	4804.00	41.82	-17.18	74.00	32.18	150	176	Horizontal			
4	4804.00	30.77	-17.18	54.00	23.23	150	262	Horizontal			
5	7206.00	35.63	-9.48	54.00	18.37	150	6	Horizontal			
6	7206.00	46.97	-9.48	74.00	27.03	150	262	Horizontal			

Final Data List



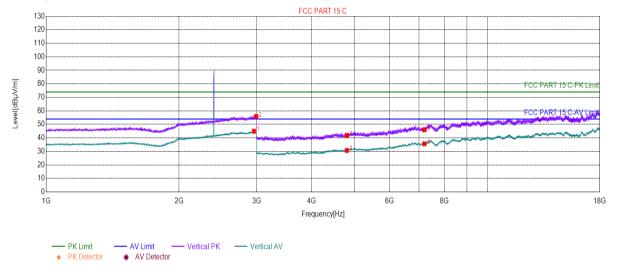


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BLE 1M_Channel 0 4.9.2.2

Test Graph



Suspected List

Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2956.98	44.94	10.66	54.00	9.06	215	259	Vertical				
2	2993.49	55.84	10.66	74.00	18.16	199	97	Vertical				
3	4804.00	30.73	-17.18	54.00	23.27	163	71	Vertical				
4	4804.00	41.85	-17.18	74.00	32.15	178	224	Vertical				
5	7206.00	35.65	-9.48	54.00	18.35	221	37	Vertical				
6	7206.00	45.98	-9.48	74.00	28.02	198	275	Vertical				

Final Data List



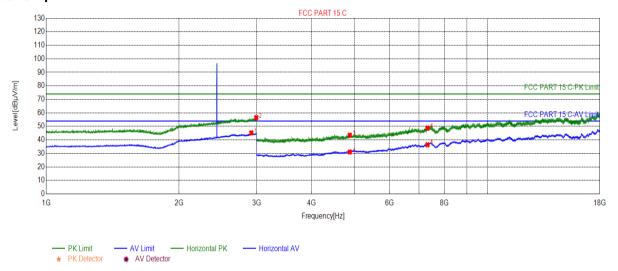


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BLE 1M_Channel 19 4.9.2.3

Test Graph



Suspected List

Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2916.97	45.21	10.49	54.00	8.79	156	269	Horizontal				
2	2993.49	56.50	10.66	74.00	17.50	179	289	Horizontal				
3	4880.00	43.52	-16.81	74.00	30.48	167	90	Horizontal				
4	4880.00	31.07	-16.81	54.00	22.93	189	192	Horizontal				
5	7320.00	36.42	-9.28	54.00	17.58	168	159	Horizontal				
6	7320.00	48.73	-9.28	74.00	25.27	198	330	Horizontal				

Final Data List



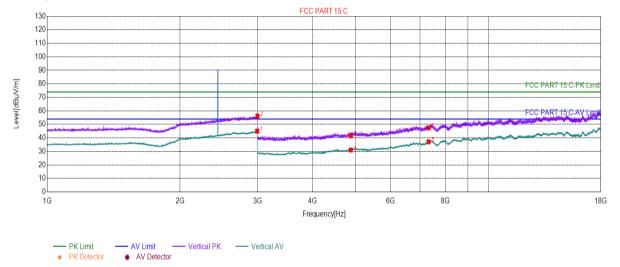


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BLE 1M_Channel 19 4.9.2.4

Test Graph



Suspected List

Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2993.49	45.07	10.66	54.00	8.93	168	254	Vertical				
2	2997.99	56.22	10.75	74.00	17.78	179	301	Vertical				
3	4880.00	41.59	-16.81	74.00	32.41	214	252	Vertical				
4	4880.00	31.07	-16.81	54.00	22.93	203	320	Vertical				
5	7320.00	37.11	-9.28	54.00	16.89	189	252	Vertical				
6	7320.00	47.39	-9.28	74.00	26.61	187	99	Vertical				

Final Data List



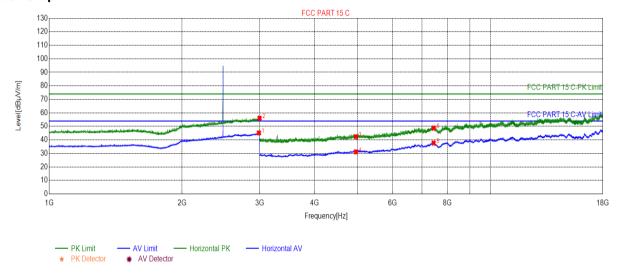


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BLE 1M_Channel 39 4.9.2.5

Test Graph



Suspected List

Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2988.49	45.18	10.58	54.00	8.82	186	18	Horizontal				
2	2998.49	56.05	10.75	74.00	17.95	189	331	Horizontal				
3	4960.00	42.33	-16.28	74.00	31.67	196	312	Horizontal				
4	4960.00	31.18	-16.28	54.00	22.82	176	346	Horizontal				
5	7440.00	37.69	-8.83	54.00	16.31	176	329	Horizontal				
6	7440.00	48.69	-8.83	74.00	25.31	185	126	Horizontal				

Final Data List



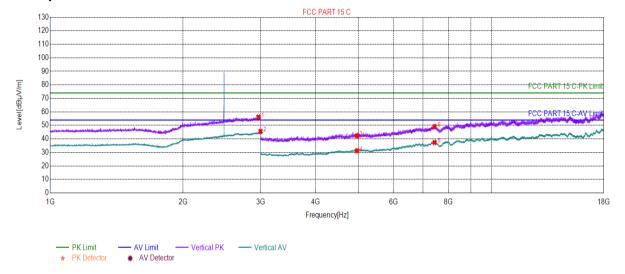


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BLE 1M_Channel 39 4.9.2.6

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2964.99	56.12	10.53	74.00	17.88	198	124	Vertical			
2	2997.99	45.51	10.75	54.00	8.49	176	118	Vertical			
3	4960.00	42.30	-16.28	74.00	31.70	163	200	Vertical			
4	4960.00	31.25	-16.28	54.00	22.75	175	302	Vertical			
5	7440.00	37.39	-8.83	54.00	16.61	162	234	Vertical			
6	7440.00	49.05	-8.83	74.00	24.95	186	82	Vertical			

Final Data List



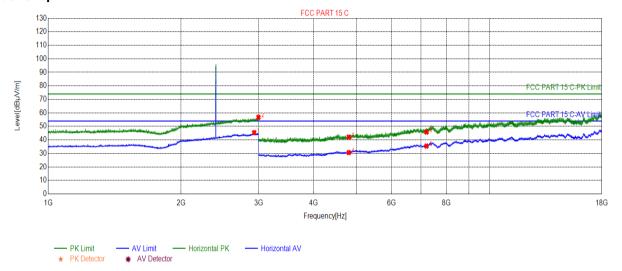


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BLE 2M_Channel 0 4.9.2.7

Test Graph



Suspected List

Suspe	ected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2930.48	45.40	10.71	54.00	8.60	199	346	Horizontal
2	2996.99	56.73	10.73	74.00	17.27	155	174	Horizontal
3	4804.00	42.12	-17.18	74.00	31.88	168	244	Horizontal
4	4804.00	30.64	-17.18	54.00	23.36	169	210	Horizontal
5	7206.00	35.44	-9.48	54.00	18.56	176	125	Horizontal
6	7206.00	45.81	-9.48	74.00	28.19	203	5	Horizontal

Final Data List



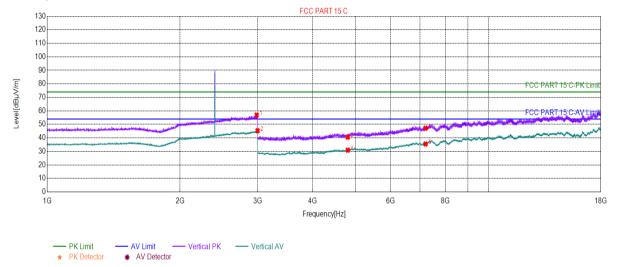


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BLE 2M_Channel 0 4.9.2.8

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2984.99	56.90	10.60	74.00	17.10	165	192	Vertical			
2	2999.49	45.31	10.77	54.00	8.69	203	103	Vertical			
3	4804.00	40.58	-17.18	74.00	33.42	178	356	Vertical			
4	4804.00	30.93	-17.18	54.00	23.07	196	339	Vertical			
5	7206.00	35.50	-9.48	54.00	18.50	213	48	Vertical			
6	7206.00	47.15	-9.48	74.00	26.85	195	253	Vertical			

Final Data List



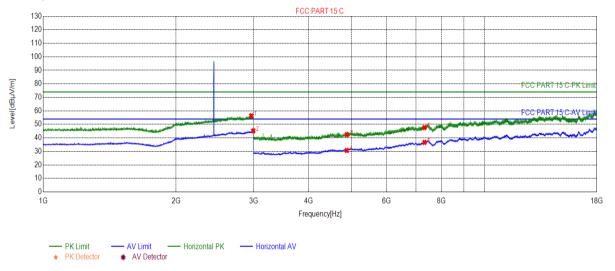


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BLE 2M_Channel 19 4.9.2.9

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2961.99	56.34	10.53	74.00	17.66	176	37	Horizontal			
2	2993.99	45.24	10.67	54.00	8.76	186	284	Horizontal			
3	4880.00	42.38	-16.81	74.00	31.62	198	193	Horizontal			
4	4880.00	30.74	-16.81	54.00	23.26	176	261	Horizontal			
5	7320.00	36.69	-9.28	54.00	17.31	185	261	Horizontal			
6	7320.00	47.61	-9.28	74.00	26.39	194	158	Horizontal			

Final Data List



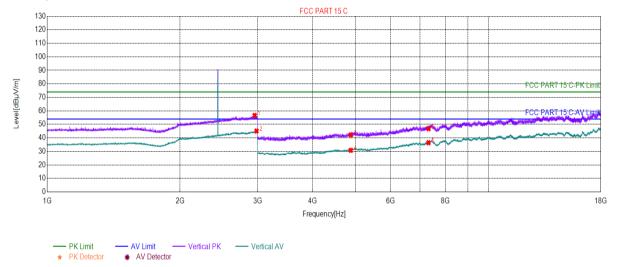


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BLE 2M_Channel 19 4.9.2.10

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2953.98	56.63	10.73	74.00	17.37	168	19	Vertical			
2	2982.49	45.11	10.62	54.00	8.89	175	296	Vertical			
3	4880.00	42.18	-16.81	74.00	31.82	169	64	Vertical			
4	4880.00	30.83	-16.81	54.00	23.17	195	303	Vertical			
5	7320.00	36.43	-9.28	54.00	17.57	175	64	Vertical			
6	7320.00	46.83	-9.28	74.00	27.17	163	320	Vertical			

Final Data List



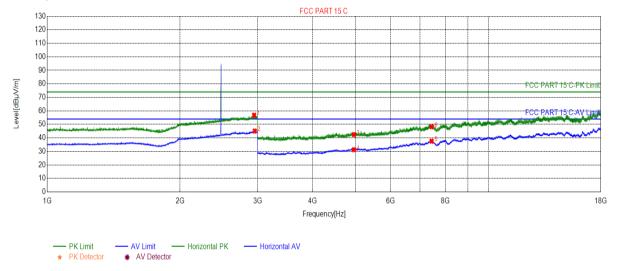


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BLE 2M_Channel 39 4.9.2.11

Test Graph



Suspected List

Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2945.48	56.80	10.64	74.00	17.20	196	253	Horizontal				
2	2955.48	45.09	10.72	54.00	8.91	163	12	Horizontal				
3	4960.00	42.42	-16.28	74.00	31.58	176	312	Horizontal				
4	4960.00	31.28	-16.28	54.00	22.72	185	329	Horizontal				
5	7440.00	37.60	-8.83	54.00	16.40	195	56	Horizontal				
6	7440.00	48.27	-8.83	74.00	25.73	176	346	Horizontal				

Final Data List



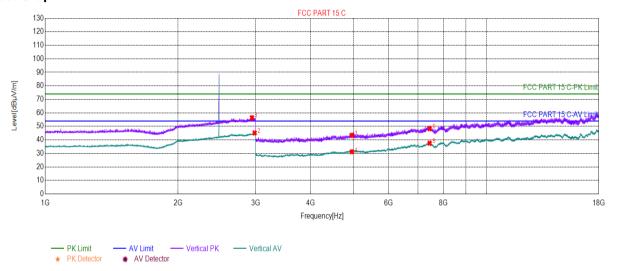


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BLE 2M_Channel 39 4.9.2.12

Test Graph



Suspected List

Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2942.98	56.44	10.58	74.00	17.56	163	170	Vertical				
2	2983.99	45.17	10.61	54.00	8.83	201	35	Vertical				
3	4960.00	43.47	-16.28	74.00	30.53	199	269	Vertical				
4	4960.00	31.25	-16.28	54.00	22.75	236	98	Vertical				
5	7440.00	37.58	-8.83	54.00	16.42	215	269	Vertical				
6	7440.00	48.31	-8.83	74.00	25.69	199	183	Vertical				

Final Data List

Remark:

- 1) 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
- 2) Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3) As shown in this section, 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. So, only the peak measurements were shown in the report.
- 4) All Modes have been tested, but only the worst case data displayed in this report.



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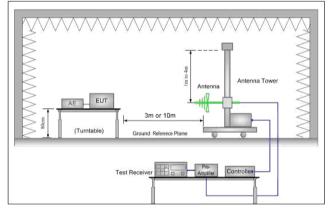


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4.10Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 1	5.209 and 15.205		
Test Method:	ANSI C63.10: 2013 Section	n 11.12		
Test Site:	Measurement Distance: 3m	n (Semi-Anechoic Cham	ber)	
Limit:	Frequency	Limit (dBuV/m)	Remark	
	30MHz-88MHz	40.0	Quasi-peak	
	88MHz-216MHz	43.5	Quasi-peak	
	216MHz-960MHz	46.0	Quasi-peak	
	960MHz-1GHz	54.0	Quasi-peak	
	Above 4011=	54.0	Average Value	
	Above 1GHz	74.0	Peak Value	
Test Setup:		-		



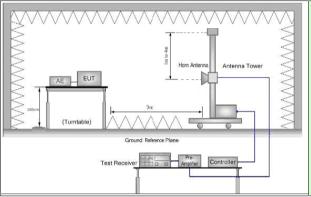


Figure 1. 30MHz to 1GHz

Figure 2. Above 1 GHz

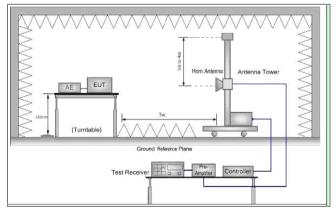


Figure 3. Above 1 GHz



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Test Procedure:	 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 camber. 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 semi-anechoic camber. 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 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. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel
	h. Test the EUT in the lowest channel, the Highest channel
	 The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.
	j. Repeat above procedures until all frequencies measured was complete.
Test Configuration:	Measurements Below 1000MHz RBW = 120 kHz
	• VBW = 300 kHz
	Detector = Peak
	Trace mode = max hold
	Peak Measurements Above 1000 MHz
	• RBW = 1 MHz
	VBW ≥ 3 MHz
	Detector = Peak
	Sweep time = auto
	Trace mode = max hold
	Average Measurements Above 1000MHz
	• RBW = 1 MHz
	 VBW = 10 Hz, when duty cycle is no less than 98 percent.
	 VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum
	 k. transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with GFSK modulation.
	Charge + Transmitting mode.



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Final Test Mode:	Transmitting with GFSK modulation.
	Pretest the EUT at Charge + Transmitting mode.
	Only the worst case is recorded in the report.
Instruments Used:	Refer to section 6 for details.
Test Results:	Pass
Remark:	The Emission Test is performed by the Lab B



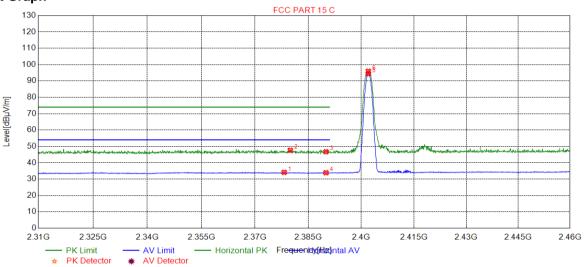


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4.10.1 **Test Plots** 4.10.1.1 BLE 1M Channel 0

Test Graph



Suspected List

Suspe	cted List						
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2378.209	34.15	54.00	19.85	189	238	Horizontal
2	2379.935	47.65	74.00	26.35	163	288	Horizontal
3	2390.000	46.75	74.00	27.25	179	346	Horizontal
4	2390.000	33.93	54.00	20.07	169	156	Horizontal
5	2402.000	94.40	0.00	-94.40	168	145	Horizontal
6	2402.000	95.96	0.00	-95.96	189	153	Horizontal

Final Data List



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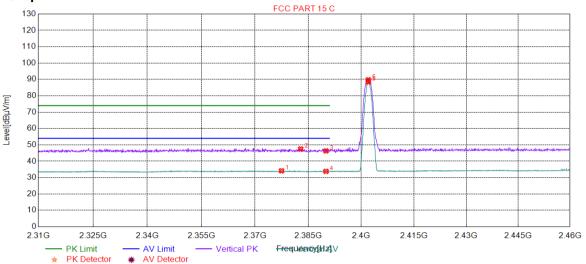


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4.10.1.2 BLE 1M Channel 0

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2377.458	34.16	54.00	19.84	189	37	Vertical				
2	2382.861	47.52	74.00	26.48	163	185	Vertical				
3	2390.000	46.31	74.00	27.69	179	212	Vertical				
4	2390.000	33.82	54.00	20.18	205	138	Vertical				
5	2402.000	88.46	0.00	-88.46	189	131	Vertical				
6	2402.000	89.79	0.00	-89.79	176	173	Vertical				

Final Data List



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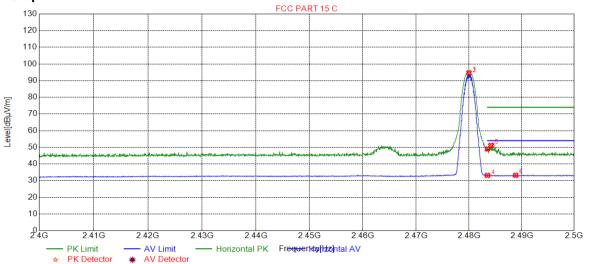


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4.10.1.3 BLE 1M Channel 39

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2480.000	94.68	0.00	-94.68	144	142	Horizontal				
2	2480.000	94.17	0.00	-94.17	153	142	Horizontal				
3	2483.500	49.04	74.00	24.96	165	134	Horizontal				
4	2483.500	33.19	54.00	20.81	178	138	Horizontal				
5	2484.142	51.12	74.00	22.88	201	142	Horizontal				
6	2488.844	33.22	54.00	20.78	198	169	Horizontal				

Final Data List



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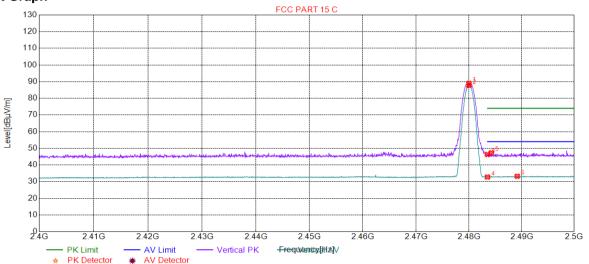


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4.10.1.4 BLE 1M Channel 39

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2480.000	88.99	0.00	-88.99	179	17	Vertical				
2	2480.000	87.80	0.00	-87.80	165	142	Vertical				
3	2483.500	46.32	74.00	27.68	178	17	Vertical				
4	2483.500	32.79	54.00	21.21	169	142	Vertical				
5	2484.242	47.30	74.00	26.70	176	14	Vertical				
6	2489.144	33.23	54.00	20.77	189	313	Vertical				

Final Data List



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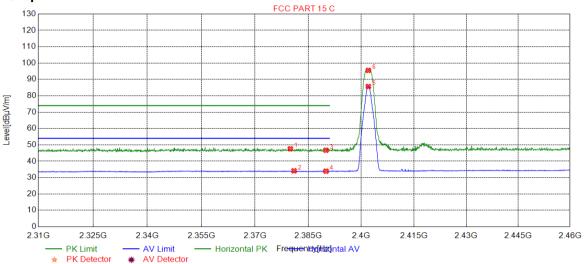


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4.10.1.5 BLE 2M Channel 0

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2379.935	47.62	74.00	26.38	159	14	Horizontal				
2	2380.985	34.15	54.00	19.85	175	140	Horizontal				
3	2390.000	46.73	74.00	27.27	189	102	Horizontal				
4	2390.000	33.94	54.00	20.06	165	14	Horizontal				
5	2402.000	85.69	0.00	-85.69	202	78	Horizontal				
6	2402.000	95.55	0.00	-95.55	199	144	Horizontal				

Final Data List



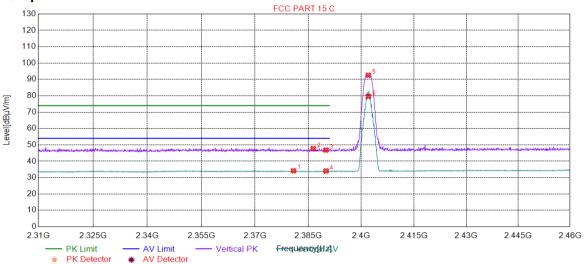


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4.10.1.6 BLE 2M Channel 0

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2380.835	34.21	54.00	19.79	202	250	Vertical				
2	2386.388	47.72	74.00	26.28	213	28	Vertical				
3	2390.000	46.85	74.00	27.15	199	160	Vertical				
4	2390.000	34.10	54.00	19.90	186	346	Vertical				
5	2402.000	92.57	0.00	-92.57	179	179	Vertical				
6	2402.000	79.67	0.00	-79.67	196	176	Vertical				

Final Data List



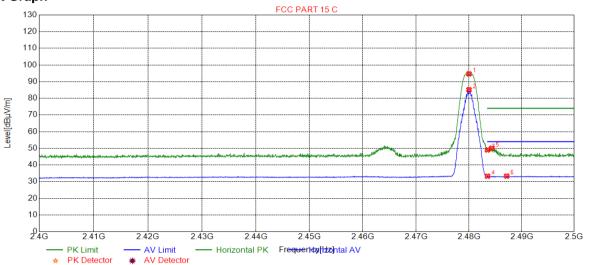


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4.10.1.7 BLE 2M Channel 39

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2480.000	94.68	0.00	-94.68	169	143	Horizontal				
2	2480.000	85.15	0.00	-85.15	159	150	Horizontal				
3	2483.500	49.03	74.00	24.97	198	143	Horizontal				
4	2483.500	33.29	54.00	20.71	169	21	Horizontal				
5	2484.342	50.10	74.00	23.90	204	147	Horizontal				
6	2487.143	33.34	54.00	20.66	198	246	Horizontal				

Final Data List



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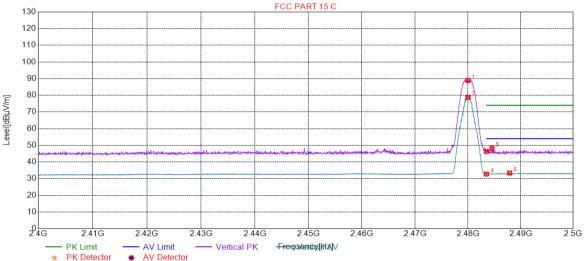


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4.10.1.8 BLE 2M Channel 39

Test Graph



Suspected List

Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2480.000	88.92	0.00	-88.92	176	21	Vertical				
2	2480.000	78.79	0.00	-78.79	205	343	Vertical				
3	2483.500	46.30	74.00	27.70	211	332	Vertical				
4	2483.500	32.76	54.00	21.24	156	339	Vertical				
5	2484.542	48.11	74.00	25.89	189	175	Vertical				
6	2487.893	33.36	54.00	20.64	199	60	Vertical				

Final Data List

Remark:

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 All Modes have been tested, but only the worst case data displayed in this report.





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Measurement Uncertainty (95% confidence levels, k=2)

Lab A:

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.41dB
2	RF power density, conducted	±1.96dB
3	Spurious emissions, conducted	±0.41dB
4	Radio Frequency	±7.10 x 10 ⁻⁸
5	Duty Cycle	±0.49%
6	Occupied Bandwidth	±0.2%

Lab B:

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.0dB (150kHz to 30MHz)
		± 4.8dB (Below 1GHz)
2	B # 4 15 1 1	± 4.8dB (1GHz to 6GHz)
2	Radiated Emission	± 4.5dB (6GHz to 18GHz)
	Radiated Emission	± 5.02dB (Above 18GHz)





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Equipment List

RF conducted					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2020/4/16	2021/4/15
DC Power Supply	Rohde & Schwarz	HMP2020	W009-08	2020/7/15	2021/7/15
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2020/7/14	2021/7/13
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	W006-17	2020/4/21	2021/4/20

		CE Test System			
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2020-09-11	2021-09-10
Artificial network	ROHDE&SCHWARZ	ENV216	XAW01-04-01	2020-08-04	2021-08-03
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2020-11-06	2021-11-05
Measurement Software	Tonscend	TS+ CE V2.5	XAW02-05-02	NCR	NCR





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RSE Test System									
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date				
Semi-Anechoic Chamber	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10				
MXA signal analyzer	Keysight	N9020A	XAW01-06-01	2020-04-02	2021-04-01				
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2020-09-11	2021-09-10				
Receiving antenna (30MHz-3GHz)	Schwarzbeck	VULB 9163	XAW01-09-01	2019-10-13	2021-10-12				
Receiving antenna (1GHz~18GHz)	Schwarzbeck	BBHA 9120D	XAW01-09-02	2019-10-13	2021-10-12				
Receiving antenna (15GHz~40GHz)	Schwarzbeck	BBHA 9170	XAW01-09-03	2019-10-13	2021-10-12				
Directional antenna rack controller	Max-Full	MF-7802BS	XAW03-03-01	NCR	NCR				
High-speed antenna rack controller	Max-Full	MF-7802	XAW03-04-01	NCR	NCR				
Filter bank	Tonscend	JS0806-F	XAW03-05-01	NCR	NCR				
Filter bank	Tonscend	JS0806s	XAW03-05-02	NCR	NCR				
Amplifier	Tonscend	TAP00903040	XAW01-41-01	2020-10-26	2021-10-25				
Amplifier	Tonscend	TAP01018048	XAW01-41-02	2020-10-26	2021-10-25				
Amplifier	Tonscend	TAP18040048	XAW01-41-03	2020-10-27	2021-10-26				
Amplifier	Shanghai Steed	YX28980930	XAW01-41-06	2020-10-26	2021-10-25				
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2020-11-06	2021-11-05				
Measurement Software	Tonscend	TS+ RSE V3.0.0.2	XAW02-05-01	NCR	NCR				



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7 **Photographs - EUT Constructional Details**

Refer to Appendix A PCE & NII & DTS & DSS Setup Photos.

The End

