

Report No.: ZR/2019/7002104 Page: 1 of 57

# **FCC TEST REPORT**

Application No:	ZR/2019/60038
Applicant:	LG Electronics USA, Inc.
Address of Applicant	1000 Sylvan Ave. Englewood Cliffs, New Jersey, United States 07632
Manufacturer:	Huaqin Telecom Technology Co., Ltd.
Address of Manufacturer	No.1 Building,No.9 Building,No.399,Keyuan Road, Zhangjiang Hi-tech Park,Shanghai,P.R.China
Factory:	Dong Guan Huabel Electronic Technology Co.,Ltd
Address of Factory	No.9 Industrial Northern Road,National High-Tech Industrial Development Zone,SongShan Lake,Dong Guan
EUT Description:	Mobile Handset
Model No.:	LM-X430FMW,LM-X430HM
Trade Mark:	LG
FCC ID:	ZNFX430HM
Standards:	47 CFR FCC Part 2, Subpart J
	47 CFR Part 15, Subpart C
Test Method	KDB558074 D01 15.247 Meas Guidance v05r02
	ANSI C63.10 (2013)
Date of Receipt:	2019/7/31
Date of Test:	2019/7/31 to 2019/8/26
Date of Issue:	2019/8/26
Test Result:	PASS *

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

Authorized Signature:

Derde yang

Derek Yang Wireless Laboratory Manager



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# 1 Version

	Revision Record					
Version	Chapter	napter Date Modifier Remark				
00		2019/8/26		Original		

Authorized for issue by:		
Tested By	Mike Mu	2019/8/26
	(Mike Hu) /Project Engineer	Date
Checked By	David Chen	2019/8/26
	(David Chen) /Reviewer	Date



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

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Remark:

The difference between LM-X430FMW, LM-X430HM and LM-X430EMW is show in the below table:				
		LM-X430FMW (Updated approval)	LM-X430HM (Updated approval)	LM-X430EMW (Full approval)
	Software version	different	different	different
	LTE	B1/ B2/B3/ B4/B5/B7/B8/B12/ B13/B17/B28/B38/B4 0/B66	B1/ B2/B3/ B4/B5/B7/B8/B12/ B13/B17/B28/B38/B4 0/B66	B1/ B3/ B7/B8/B20/ B38
Licensed	CA	Not support	Not support	Not support
Frequency	UMTS	B1,B2,B4,B5,B8	B1,B2,B4,B5,B8	B1,B2,B5,B8
	GSM	the same	the same	the same
	IC	the same	the same	the same
	Antenna	the same	the same	the same
	Bluetooth	the same	the same	the same
Unlicensed	2.4G Wi-Fi	the same	the same	the same
Frequency	IC	the same	the same	the same
	Antenna	the same	the same	the same
	Ram / Rom	2G/32G	2G/32G	2G/32G
Llaushuraua	Camera	the same	the same	the same
Hardware	PCB	the same	the same	the same
	USB Port	the same	the same	the same
	NFC	Not support	Not support	support
	FM	support	support	Not support
Appeorance	Dimension	the same	the same	the same
Appearance	Color	the same	the same	the same
	Battery	the same	the same	the same
Accessory	External Charger	the same	the same	the same
	USB Cable	the same	the same	the same
other	SIM card	Double SIM	Single SIM	Double SIM

According to the difference above, there were no test on LM-X430FMW, LM-X430HM, the data were copied from the report of LM-X430EMW (ZR/2019/7002104), and the worst case data spot check on LM-X430FMW, LM-X430HM, and the data displayed in the sport check attachment.



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# 2 Test Summary

SG

Test Item	Test Requirement	Test method	Test Result	Result
AC Power Line Conducted Emission	15.207	ANSI C63.10 2013	Clause 4.2	PASS
Conducted Output Power	15.247 (b)(3)	ANSI C63.10 2013	Clause 4.3	PASS
DTS (6 dB) Bandwidth & 99% Occupied Bandwidth	15.247 (a)(2)	ANSI C63.10 2013	Clause 4.4	PASS
Power Spectral Density	15.247 (e)	ANSI C63.10 2013	Clause 4.5	PASS
Band-edge for RF Conducted Emissions	15.247(d)	ANSI C63.10 2013	Clause 4.6	PASS
RF Conducted Spurious Emissions	15.247(d)	ANSI C63.10 2013	Clause 4.7	PASS
Radiated Spurious Emissions	15.205/15.209	ANSI C63.10 2013	Clause 4.8	PASS
Restricted bands around fundamental frequency (Radiated Emission)	15.205/15.209	ANSI C63.10 2013	Clause 4.9	PASS



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# **3** General Information

# 3.1 Client Information

Applicant:	LG Electronics USA, Inc.		
Address of Applicant:	1000 Sylvan Ave. Englewood Cliffs, New Jersey, United States 07632		
Manufacturer:	uaqin Telecom Technology Co., Ltd.		
Address of Manufacturer:	No.1 Building,No.9 Building,No.399,Keyuan Road, Zhangjiang Hi-tech Park,Shanghai,P.R.China		
Factory:	Dong Guan Huabel Electronic Technology Co.,Ltd		
Address of Factory:	No.9 Industrial Northern Road,National High-Tech Industrial Development Zone,SongShan Lake,Dong Guan		

# 3.2 Test Location

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
Telephone:	+86 (0) 755 2601 2053
Fax:	+86 (0) 755 2671 0594
E-mail:	ee.shenzhen@sgs.com

# 3.3 Test Facility

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

#### • CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### • 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.

#### Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.



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# 3.4 General Description of EUT

EUT Description:	Mobile Handset
Model No.:	LM-X430FMW, LM-X430HM
Trade Mark:	LG
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 V4.0 LE
Modulation Type:	GFSK
Number of Channel:	40
Sample Type:	⊠ Portable Device, □Module
Antenna Type:	External, 🛛 Integrated
Antenna Gain:	-2.0dBi
Power Supply	AC/DC Adapter; Battery; PoE:; Other:

	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

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



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# 3.5 Test Environment

Operating Environment					
Temperature:	25.0 °C				
Humidity:	50 % RH				
Atmospheric Pressure:	101.32 KPa				

# 3.6 Description of Support Units

The EUT has been tested independent unit.



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# 4 Test results and Measurement Data

# 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 -2.0dBi.



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Test Requirement:	47 CFR Part 15C Section 15.207						
Test Method:	ANSI C63.10: 2013						
Test Frequency Range:	150kHz to 30MHz						
		Limit (dBuV)					
	Frequency range (MHz)	Quasi-peak	Average				
	0.15-0.5	66 to 56*	56 to 46*				
Limit:	0.5-5	56	46				
	5-30	60	50				
	* Decreases with the logarith	nm of the frequency.					
Test Procedure:	<ol> <li>1) The mains terminal disturbance voltage test was conducted in a shielded room.</li> <li>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50µH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.</li> <li>3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.</li> <li>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.</li> <li>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</li> </ol>						
Test Setup:	Shielding Room		est Receiver				

# 4.2 AC Power Line Conducted Emissions

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Test Mode:	Transmitting with GFSK modulation. Charge +Transmitting mode.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass



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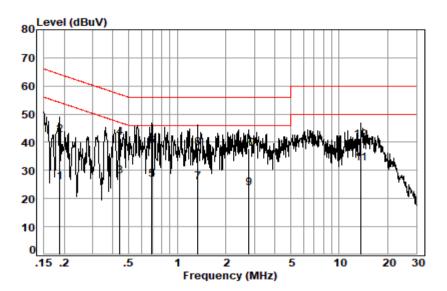
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#### **Measurement Data**

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:



Site : Shielding Room Condition: Line Job No. : 16976CR Test mode: d

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1884	0.02	9.66	16.31	25.99	54.11	-28.12	Average
2	0.1884	0.02	9.66	32.99	42.67	64.11	-21.44	QP
3	0.4421	0.06	9.67	18.27	28.00	47.02	-19.02	Average
4	0.4421	0.06	9.67	32.04	41.77	57.02	-15.25	QP
5	0.6973	0.07	9.68	17.04	26.79	46.00	-19.21	Average
6	0.6973	0.07	9.68	28.97	38.72	56.00	-17.28	QP
7	1.3379	0.12	9.73	16.10	25.95	46.00	-20.05	Average
8	1.3379	0.12	9.73	28.07	37.92	56.00	-18.08	QP
9	2.7794	0.16	9.71	13.81	23.68	46.00	-22.32	Average
10	2.7794	0.16	9.71	27.99	37.86	56.00	-18.14	QP
11	13.6228	0.20	10.23	22.19	32.62	50.00	-17.38	Average
12	13.6228	0.20	10.23	30.41	40.84	60.00	-19.16	QP

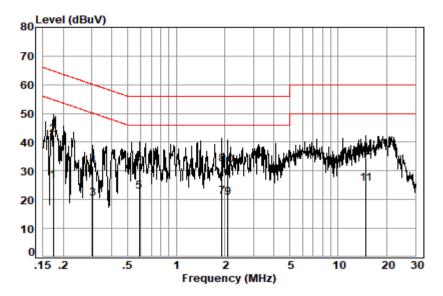


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Neutral line:



Site : Shielding Room Condition: Neutral Job No. : 16976CR Test mode: d

		Cable	LISN	Read		Limit	0ver	
	Freq	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
	PIITZ	ub	ub	ubuv	ubuv	ubuv	ub	
1	0.1740	0.02	9.64	16.85	26.51	54.77	-28.26	Average
2	0.1740	0.02	9.64	32.80	42.46	64.77	-22.31	QP
3	0.3051	0.04	9.64	10.61	20.29	50.10	-29.81	Average
4	0.3051	0.04	9.64	22.00	31.68	60.10	-28.42	QP
5	0.5916	0.07	9.64	12.97	22.68	46.00	-23.32	Average
6	0.5916	0.07	9.64	23.05	32.76	56.00	-23.24	QP
7	1.9182	0.16	9.69	11.04	20.89	46.00	-25.11	Average
8	1.9182	0.16	9.69	22.46	32.31	56.00	-23.69	QP
9	2.0768	0.16	9.69	10.83	20.68	46.00	-25.32	Average
10	2.0768	0.16	9.69	22.05	31.90	56.00	-24.10	QP
11	14.9068	0.21	10.37	14.90	25.48	50.00	-24.52	Average
12	14.9068	0.21	10.37	23.99	34.57	60.00	-25.43	QP

#### 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



Test Mode	TX Freq. [MHz]	Duty cycle [%]
BLE	CH0	61.06

# 4.3.1 Test Plots



		3L	E								
Agilent	Spectru	ım An	alyzer - Swept SA								
<mark>IXI</mark>	(	RF	50 Ω AC 1500 ms		SENSE		ALIGN OFF		Jan 01, 1988	Marker	
Mar	(er 5	1.54	PI	NO:Fast ↔→	Trig: Free R	un Avg	Hold: 1/1	TYP			
1			IFO	Gain:Low	Atten: 30 dE	3				Marker Tab	
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				#VDVV							
MKR N	10DE TR	C SCL		1.0 µs	Y 5.514 dBm	FUNCTION	FUNCTION WIDTH	FUNCTIO	N VALUE		
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# 4.4 Conducted Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)						
Test Method:	ANSI C63.10 :2013 Section 11.9.1.1						
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane						
Limit:	30dBm						
Test Mode:	Transmitting with GFSK modulation.						
Instruments Used:	Refer to section 5.10 for details.						
Test Results:	Pass						

# 4.4.1 Test Results

#### Measurement Data of Peak Power :

GFSK mode									
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result						
Lowest	11.18	30.00	Pass						
Middle	12.44	30.00	Pass						
Highest	11.76	30.00	Pass						



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### 4.4.2 Test plots:

# 4.4.2.1 GFSK \_Lowest Channel



#### 4.4.2.2

# **GFSK** \_Middle Channel





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4.4.2.3 GFSK \_Highest Channel



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# 4.5 DTS (6 dB) Bandwidth & 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10: 2013 Section 11.8 Option 2
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Limit:	≥ 500 kHz
Test Mode:	Transmitting with GFSK modulation.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass

# 4.5.1 Test Results

Mode	Test Channel	99% Occupied Bandwidth (MHz)	6dB Emission Bandwidth (MHz)	Limit (kHz)	Result
	Lowest	1.05	1.06	≥500	Pass
GFSK	Middle	1.04	1.06	≥500	Pass
	Highest	1.04	1.06	≥500	Pass



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#### 4.5.2 Test plots

# 4.5.2.1 GFSK \_Lowest Channel







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# 4.5.2.2 GFSK \_Middle Channel







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# 4.5.2.3 GFSK \_Highest Channel







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#### Test Requirement: 47 CFR Part 15C Section 15.247 (e) Test Method: ANSI C63.10 :2013 Section 11.10.2 Spectrum Analyzer E.U.T 6 Test Setup: Non-Conducted Table **Ground Reference Plane** Limit: ≤8.00dBm/3kHz Test Mode: Transmitting with GFSK modulation. Instruments Used: Refer to section 5.10 for details. Test Results: Pass

# 4.6 Power Spectral Density

# 4.6.1 Test Results

Mode	Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
	Lowest	-9.40	≤8.00	Pass
GFSK	Middle	-8.07	≤8.00	Pass
	Highest	-8.82	≤8.00	Pass



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#### 4.6.2 Test plots

4.6.2.1 GFSK \_Lowest Channel



#### 4.6.2.2

# **GFSK** \_Middle Channel





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# 4.7 Band-edge for RF Conducted Emissions

SG

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
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 Mode:	Transmitting with GFSK modulation.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass



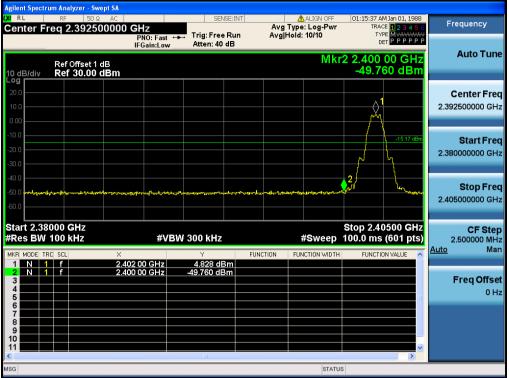
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# 4.7.1 Test plots

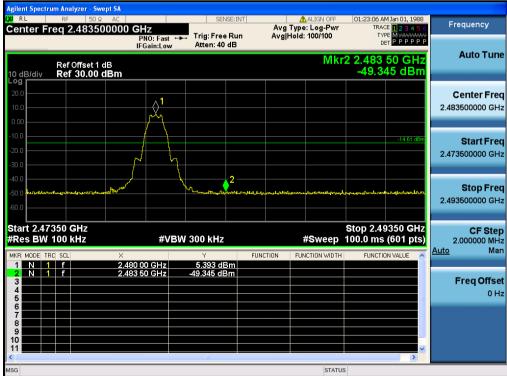
# 4.7.1.1 GFSK \_Lowest Channel



#### 4.7.1.2

# **GFSK**\_Highest Channel

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# 4.8 Spurious RF Conducted Emissions

SG

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
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 Mode:	Transmitting with GFSK modulation.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass



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#### 4.8.1 Test plots:

4.8.1.1 GFSK \_Lowest Channel



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	rum Analyzer - S RF 50			CEN	ISE:INT		ALIGN OFF	01-14-04-01	M Jan 01, 1988	
	req 15.075	5000 MHz	PNO: Fast 🔾	Tailor France	Run		e: Log-Pwr	TRAC	CE 1 2 3 4 5 6 PE MWWWWW ET P P P P P P	Frequency
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itart 150									0.00 MHz	
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Res BW	10 kHz		#VBW	V 30 kHz			_		3001 pts)	
Res BW sg gilent Spectr	10 kHz rum Analyzer - S RF 50	Ω AC			SE:INT	<u> </u>	STATUS	85.4 ms (	3001 pts) upled MJan 01, 1988	Frequency
Res BW 3G gilent Spectr RL	10 KHz rum Analyzer - S	Ω AC D00000 G	Hz PNO: Fast G	SEN	Run	<u> </u>		85.4 ms ( DC Cou 01:14:25 Al TRAC	( <b>3001 pts)</b> upled	Frequency
Res BW gilent Spectr RL enter F	10 kHz rum Analyzer - S RF 50 req 1.1650 Ref Offset 1	Ω AC 000000 G I I dB	Hz	SEN	Run	Avg Type	ALIGN OFF : Log-Pwr :>50/50	85.4 ms ( DC Cou 01:14:25 A TRAC TY M Kr1 828.	3001 pts) apled MJan 01, 1988 E 1 2 3 4 5 6 MWWWWW P P P P P P 76 MHz	
Res BW gilent Spectr RL enter F	10 kHz rum Analyzer - S RF 50 req 1.1650	Ω AC 000000 G I I dB	Hz PNO: Fast G	SEN	Run	Avg Type	ALIGN OFF : Log-Pwr :>50/50	85.4 ms ( DC Cou 01:14:25 A TRAC TY M Kr1 828.	3001 pts) upled MJan 01, 1988 E 1 2 3 4 5 6 MWWWWW ET P P P P P P	Auto Tui
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Res BW glient Spectr RL RL Cod B/div Cod B/d	10 kHz rum Analyzer - S RF So req 1.1650 Ref Offset 1 Ref 20.00	Ω AC   D00000 G I dB I dB	Hz PNO: Fast FGain:Low	SEN		Avg Type Avg Hold:	ALIGN OFF 2: Log-Pwr >50/50 MI	85.4 ms ( DC Cou 01:14:25 A TRAC TRAC TRAC 10 10 10 10 10 10 10 10 10 10	(3001 pts) apled Mian 01, 1983 E 12 3 4 5 6 F P P P P P P 76 MHz 68 dBm	Auto Tur Center Fro 1.165000000 Gl Start Fro 30.000000 Ml Stop Fro 2.300000000 Gl CF Sto 227.000000 Ml Auto M Freq Offs
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Res BW           33           gilent Spectr           RL           RL           Senter Fi           99           10.0           90           90           90           910.0           90           90           90           90           90           90           90           90           90           90           90           90           90           90           910,0           92,0           93,0           93,0           94,0           95,0           95,0           96,0           97,0           97,0           97,0           97,0           97,0           97,0           97,0           97,0           97,0	10 kHz	Ω AC   D00000 G I dB I dB	Hz PNO: Fast FGain:Low	SEN			ALIGN OFF 2: Log-Pwr >50/50 MI hits off g threads hits off g threads 	85.4 ms ( DC Cou 101:14:25 Al TRAC TRA	(3001 pts) apled Mian 01, 1983 E 12 3 4 5 6 F P P P P P P 76 MHz 68 dBm	Auto Tur Center Fro 1.165000000 Gl Start Fro 30.000000 Ml Stop Fro 2.300000000 Gl CF Sto 227.000000 Ml Auto M Freq Offs

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	um Analyzer - Swe										
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			#VBW	300 kHz			Sweep 9	.600 ms (	1001 pts)		
Res BW	100 kHz um Analyzer - Swe		#VBW				STATUS	.600 ms (	1001 pts)		
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Res BW G G G G G G G G G G G G G G G G G G G	100 kHz um Analyzer - Swo Ref 2.49175 Ref 20.00 c	IB IB IB IB IB IB IB IB IB	IZ NO: Fast C Gain:Low	Trig: Free #Atten: 40	ise int Run dB	Avg Type AvgHold	STATUS STATUS SALIGN OFF E: Leg-Pwr >200/200 Mkr1 2	01:14:47 AM TRAG TYP 242 -47.21	4Jan01, 1988 E 1, 2 3 4 5 6 E 1, 2 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	A Cei 2.49176 S 2.48350 S 2.50000	uto Tu nter Fr 50000 G start Fr 50000 G Stop Fr 50000 G
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	100 kHz um Analyzer - Swo Ref 2.49175 Ref 20.00 c	IB IB IB IB IB IB IB IB IB	IZ NO: Fast C Gain:Low	Trig: Free #Atten: 40	ise int Run dB	Avg Type AvgHold	STATUS STATUS SALIGN OFF E: Leg-Pwr >200/200 Mkr1 2	01:14:47 AM TRAG TYP 242 -47.21	4Jan01, 1988 E 1, 2 3 4 5 6 E 1, 2 4 5 6 6 E 1, 2 4 5 6 6 E 1, 2 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	A Cei 2.49178 S 2.48350 S 2.50000 Auto	uto Tu nter Fr 50000 G start Fr 50000 G stop Fr 50000 G CF St 50000 M M
Res BW G G G G G G G G G G G G G G G G G G G	100 kHz um Analyzer - Swo Ref 2.49175 Ref 20.00 c	IB IB IB IB IB IB IB IB IB	IZ NO: Fast C Gain:Low	Trig: Free #Atten: 40	ise int Run dB	Avg Type AvgHold	STATUS STATUS SALIGN OFF E: Leg-Pwr >200/200 Mkr1 2	01:14:47 AM TRAG TYP 242 -47.21	4Jan01, 1988 E 1, 2 3 4 5 6 E 1, 2 4 5 6 6 E 1, 2 4 5 6 6 E 1, 2 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	A Cei 2.49178 S 2.48350 S 2.50000 Auto	uto Tur nter Fri 50000 G start Fri 50000 G stop Fri 50000 G CF Ste 50000 M M
Res BW ig iglent Spectr RL enter F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 kHz	IB IB IB IB IB IB IB IB IB	IZ NO: Fast C Gain:Low	Trig: Free #Atten: 40	ise int Run dB	Avg Type AvgHold	STATUS	01:14:47 AN TRAC TYP 242 -47.23	4Jan 01, 1988 4Jan 01, 1988 E 1, 23 4 5 6 H M M M M M M T P P P P P P P 2 5 GHz 32 dBm 	A Cei 2.49178 S 2.48350 S 2.50000 Auto	uto Tur nter Fri 50000 G start Fri 50000 G stop Fri 50000 G CF Ste 50000 M M
Res BW ig iglent Spectr RL enter F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 kHz um Analyzer - Swo Ref 2.49175 Ref 20.00 c	IB IB IB IB IB IB IB IB IB	z NO: Fast Gain:Low	Trig: Free #Atten: 40	ise int Run dB	Avg Type AvgHold	אונא סרד בופק-Pwr >200/200 <b>Mkr1 2</b>	01:14:47 AM TRAG TYP 242 -47.21	4Jan01, 1988 4Jan01, 1988 E 1, 23 4 5 6 H MANAGEMENT T P P P P P P 2 5 GHZ 32 dBm -1518 dBm -1518 dBm -1518 dBm	A Cei 2.49178 S 2.48350 S 2.50000 Auto	uency uto Tui nter Fro 50000 Gi start Fro 50000 Gi Stop Fro 50000 Gi CF Ste 50000 Mi Mi eq Offs 0 I

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		n Analyzer - Sv									
<mark>.x/</mark> ℝ Cen	-		Ω AC 000000 0	SHz				ALIGN OFF	TRAC	4 Jan 01, 1988 E 1 2 3 4 5 6 E MAAAAAAA	Frequency
_			IF	NO: Fast 🕞 Gain:Low	#Atten: 40		Avginoia.		bi kr1 26.4	ТРРРРР	Auto Tune
10 di Log		Ref Offset 1 Ref 20.00								82 dBm	
10.0											Center Freq 14.500000000 GHz
0.00 -10.0										-15.18 dBm	Start Freq 2.50000000 GHz
-20.0										-13,10 001	<b>Stop Freq</b> 26.500000000 GHz
-40.0	an a shi ku sa a	و المعالية المراجع	ation of the second black	a ny farang karang k		at alternation					CF Step 2.40000000 GHz <u>Auto</u> Man
-60.0	de dis eta per										Freq Offset 0 Hz
-70.0											
	t 2.50 G s BW 10			#VBW	300 kHz	~		Sweep	Stop 2 2.294 s (	6.50 GHz 8001 pts)	
MSG								STATUS	5		

#### 4.8.1.2

#### **GFSK \_Middle Channel**





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	rum Analyzer - Swept SA RF 50 Ω <u>A</u> DC		SENSE:INT	ALIGN OFF	01:17:19 AM Jan 01, 1988	
	req 79.500 kHz	PNO: Wide 🖵	Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>50/50	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P P P P P P	Frequency
		IFGain:Low	#Atten: 26 dB		Mkr1 9.235 kHz	Auto Tun
0 dB/div	Ref Offset 1 dB Ref 0.00 dBm				-51.875 dBm	
.og						Contor Fro
10.0						Center Fre 79.500 kH
20.0						Start Fre
30.0						9.000 kH
					-33,94 dBm	
40.0						Stop Fre
50.0						150.000 kH
$\gamma_{n_{n_{n_{n_{n_{n_{n_{n_{n_{n_{n_{n_{n_$						CF Ste
60.0	WHY WIND MAR					14.100 kł
70.0		mall working				<u>Auto</u> Ma
			<sup>አ</sup> ፣ የሌላም <b>አ</b> ለፈክትን ብታ <sub>ለው</sub>	u Munaualay	WWWWWWWWWWWWW	Freq Offs
80.0						0H
90.0						
Start 9.0		-43 (5334)	3.0 kHz	0	Stop 150.00 kHz 134.8 ms (601 pts)	
Res BW	1.0 kHz	#VBVV	J.U KHZ		1.14.X ms (but bis)	
ISG						
ISG	trum Analyzer - Swept SA				DC Coupled	
gilent Spect <mark>(</mark> RL	trum Analyzer - Swept SA RF 50 Ω (Δ) DC		SENSE:INT	STATUS	DC Coupled	Frequency
<mark>gilent Spec</mark> t <mark>0</mark> RL		Hz PNO: Fast C	SENSE:INT	STATUS	DC Coupled	Frequency
<mark>gilent Spec</mark> t <mark>0</mark> RL	ռ⊧ ∣50 Ջ <u>4</u> Ն D⊂ Freq 15.075000 M	Hz	SENSE:INT	STATU:	DC Coupled	
gilent Spect RL Senter F 0 dB/div	RF 50 Ω 🚹 DC	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	
gilent Spect a RL Center F O dB/div	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur
gilent Spect RL Center F O dB/div	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre
gilent Spect RL Center F O dB/div O dB/div	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre
gilent Spect 7 RL Center F 0 dB/div 9 10.0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre
o dB/div	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre
gilent Spect a RL Center F 0 dB/div 0 dB/div 0 0 10.0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre 150.000 kH
<mark>gilent Spec</mark> t <mark>0</mark> RL	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre 150.000 kH Stop Fre
gilent Spect a RL Center F 0 dB/div 0 dB/div 0 0 10.0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre 150.000 kH Stop Fre
gilent Spect RL Center F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre 150.000 kH Stop Fre 30.000000 MH
gilent Spect Q RL Center F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 M Start Fre 150.000 k Stop Fre 30.000000 M CF Ste 2.985000 M
gilent Spect Q RL Center F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast C	SENSE:INT	STATU:	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre 150.000 kH Stop Fre 30.000000 MH 2.985000 MH Auto Ma
gilent Spect Q RL Center F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 2 A DC Freq 15.075000 M Ref Offset 1 dB Ref 20.00 dBm	Hz PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr Avg Hold>50/50	DC Coupled 01:17:41 AM3n 01, 1988 TRACE 2 3 4 5 6 TYPE MAXIMUM DEP P P P P Mkr1 170 kHz -43.355 dBm -23.94 dBm	Auto Tur Center Fre 15.075000 MH Start Fre 150.000 kH Stop Fre 30.000000 MH 2.985000 MH Auto Ma Freq Offs
gilent Spect Center F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr Avg Hold>50/50	DC Coupled 01:17:41 AM3n 01, 1988 TRACE 2 3 4 5 6 TYPE MAXIMUM DEP P P P P Mkr1 170 kHz -43.355 dBm -23.94 dBm	Auto Tur Center Fre 15.075000 MF Start Fre 150.000 kF Stop Fre 30.000000 MF 2.985000 MF Auto Ma
gilent Spect Q RL Center F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 2 A DC Freq 15.075000 M Ref Offset 1 dB Ref 20.00 dBm	Hz PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr Avg Hold>50/50	DC Coupled 01:17:41 AM3n 01, 1988 TRACE 2 3 4 5 6 TYPE MAXIMUM DEP P P P P Mkr1 170 kHz -43.355 dBm -23.94 dBm	Auto Tur Center Fre 15.075000 MF Start Fre 150.000 kF Stop Fre 30.000000 MF 2.985000 MF Auto Ma
gilent Spect ( RL center F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 2 A DC Freq 15.075000 M Ref Offset 1 dB Ref 20.00 dBm	Hz PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr Avg Hold>50/50	DC Coupled	Auto Tur Center Fre 15.075000 MH Start Fre 150.000 kH Stop Fre 30.000000 MH 2.985000 MH Auto Ma Freq Offs
gilent Spect           RL           center F           0 dB/div           9           10.0           9           10.0           9           10.0           9           10.0           9           10.0           9           10.0           9           10.0	RF 50 2 A DC Freq 15.075000 M Ref Offset 1 dB Ref 20.00 dBm	Hz PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr AvgHold>50/50	DC Coupled 01:17:41 AM3n 01, 1988 TRACE 2 3 4 5 6 TYPE MAXIMUM DEP P P P P Mkr1 170 kHz -43.355 dBm -23.94 dBm	Auto Tur Center Fre 15.075000 MF Start Fre 150.000 kF 30.000000 MF Stop Fre 30.000000 MF

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	um Analyzer - Swept S RF 50 Ω AG		SENSE:INT	ALIGN OFF	01:18:02 AM Jan 01, 1988	
Center Fr	req 1.1650000	00 GHz PNO: Fast 🖵	Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>50/50	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P P P P P	Frequency
		IFGain:Low	#Atten: 40 dB	Mke	1 2.240 41 GHz	Auto Tui
0 dB/div	Ref Offset 1 dB Ref 20.00 dBn	n		IVIKI	-46.292 dBm	
	Kei 20.00 dBii					
						Center Fre
10.0						1.165000000 GI
0.00						
						Start Fre
10.0					-13.94 dBm	30.000000 M
20.0						Stop Fre
30.0						2.30000000 GI
40.0					1	CF Ste 227.000000 MI
					ويتوار والتاريخ والمتركب أحوار التروي	Auto M
50.0 <mark></mark>	internet des the distant			literander og som som en stander at her her her her her her her som en som en som en som en som en som en som e Norse som en s		
50.0						Freq Offs
						01
70.0						
					Stop 2.300 GHz	
Start 30 № ≉Res BW		#VBW	300 kHz		17.1 ms (8001 pts)	
		#VBW	300 kHz	Sweep 2	17.1 ms (8001 pts)	
FRes BW sg gilent Spectr	100 KHz um Analyzer - Swept S	A		STATUS	17.1 ms (8001 pts)	
Res BW sg gilent Spectr	100 kHz	A 00 GHz	SENSE:INT	STATUS	17.1 ms (8001 pts)	Frequency
Res BW sg gilent Spectr	100 kHz um Analyzer - Swept S RF 50 Ω A(	<b>A</b>		STATUS	17.1 ms (8001 pts)	
Res BW sg gilent Spectro RL	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	
Res BW sa gilent Spectri RL Center Fr 0 dB/div	100 kHz um Analyzer - Swept S RF 50 Ω Ac req 2.3500000	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts) 01:18:13 AMJan 01, 1968 TRACE 12 3 4 5 6 TYPE MANAGANA DET P P P P P	
Res BW sg gilent Spectri RL Center Fr	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur
Res BW sa gilent Spectri RL Center Fr Center Fr 0 dB/div	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fro
Res BW sg glent Spectri Center Fr Center Fr	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fro
Res BW sg glent Spectri Center Fr Center Fr	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fr 2.35000000 G
Res BW ss glient Spectr RL RL 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fra 2.35000000 Gi Start Fra
Res BW sa gilent Spectr R L Center Fr 0 dB/div 0 dB/div	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fra 2.35000000 Gi Start Fra
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Res BW so gilent Spectr i RL center Fr conter Fr to dB/div og to dB/div og to dB/div og to dB/div og to dB/div to dB	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fra 2.35000000 Gl Start Fra 2.30000000 Gl Stop Fra
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Res BW s g ilent Spectr R C G d B/div 9 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fra 2.350000000 Gl Start Fra 2.300000000 Gl Stop Fra 2.400000000 Gl
Res         BW/           sa         gilent Spectru           gilent Spectru         Center Fi           Center Fi         Center Fi           0 dB/div         9           0 dB/div         9           10 0	100 kHz um Analyzer - Swept S RF 50 Q At req 2.3500000 Ref Offset 1 dB	A OU GHZ PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200 MIK	17.1 ms (8001 pts)	Auto Tur Center Fra 2.35000000 Gl Start Fra 2.30000000 Gl Stop Fra 2.400000000 Gl
Res         BW/           sa         gilent Spectru           gilent Spectru         Center Fi           Center Fi         Center Fi           0 dB/div         9           0 dB/div         9           10 0	100 kHz	A OU GHZ PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold>200/200	17.1 ms (8001 pts)	Auto Tur Center Fra 2.35000000 Gl Start Fra 2.30000000 Gl Stop Fra 2.400000000 Gl
O         dB/div           0         RL         I           Center Fi         I         I           0         0.00         I	100 kHz um Analyzer Swept S RF  S0 Ω A req 2.3500000 Ref 20.00 dBn Ref 20.00 dBn 	A OU GHZ PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200 MIK	17.1 ms (8001 pts)	Auto Tur Center Fra 2.350000000 Gi Start Fra 2.300000000 Gi Stop Fra 2.400000000 Gi CF Ste 10.000000 Mi Auto Mi
O         dB/div           0         RL         I           Center Fi         I         I           0         0.00         I	100 kHz um Analyzer Swept S RF  S0 Ω A req 2.3500000 Ref 20.00 dBn Ref 20.00 dBn 	A OU GHZ PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200 MIK	17.1 ms (8001 pts)	Auto Tur Center Fra 2.350000000 Gi Start Fra 2.300000000 Gi Stop Fra 2.400000000 Gi CF Sta 10.000000 Mi Auto Mi
Content         Content <t< td=""><td>100 kHz um Analyzer Swept S RF  S0 Ω A req 2.3500000 Ref 20.00 dBn Ref 20.00 dBn                                      </td><td>A OU GHZ PN0: Fast IFGain:Low</td><td>SENSE:INT</td><td>ALIGN OFF Avg Type: Log-Pwr Avg Hold:&gt;200/200 MIK</td><td>17.1 ms (8001 pts)</td><td>Auto Tur Center Fra 2.350000000 Gi Start Fra 2.300000000 Gi Stop Fra 2.400000000 Gi CF Sta 10.000000 Mi Auto Mi</td></t<>	100 kHz um Analyzer Swept S RF  S0 Ω A req 2.3500000 Ref 20.00 dBn Ref 20.00 dBn 	A OU GHZ PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200 MIK	17.1 ms (8001 pts)	Auto Tur Center Fra 2.350000000 Gi Start Fra 2.300000000 Gi Stop Fra 2.400000000 Gi CF Sta 10.000000 Mi Auto Mi
Content         Content <t< td=""><td>100 kHz um Analyzer Swept S RF  S0 Ω A req 2.3500000 Ref 20.00 dBn Ref 20.00 dBn                                      </td><td>A OU GHZ PN0: Fast IFGain:Low</td><td>SENSE:INT</td><td>ALIGN OFF Avg Type: Log-Pwr Avg Hold:&gt;200/200 MIK</td><td>17.1 ms (8001 pts)</td><td>Auto Tur Center Fre 2.350000000 GH Start Fre 2.300000000 GH 2.400000000 GH CF Ste 10.000000 MH Auto Mi Freq Offs</td></t<>	100 kHz um Analyzer Swept S RF  S0 Ω A req 2.3500000 Ref 20.00 dBn Ref 20.00 dBn 	A OU GHZ PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200 MIK	17.1 ms (8001 pts)	Auto Tur Center Fre 2.350000000 GH Start Fre 2.300000000 GH 2.400000000 GH CF Ste 10.000000 MH Auto Mi Freq Offs
G         G           gjlent Spectri         G           gjlent Spectri         G           RL         -           Center Fi         -           Code/div         -           O         -           O         -           Code/div         -           O         -	100 kHz um Analyzer Swept S RF 50 Ω A req 2.3500000 Ref 20.00 dBn 	A OU GHZ PN0: Fast IFGain:Low	SENSE:INT	ALION OFF Avg Type: Log-Pwr AvgHold:>200/200 Mik	17.1 ms (8001 pts)	Auto Tur Center Fre 2.350000000 GH Start Fre 2.300000000 GH 2.400000000 GH CF Ste 10.000000 MH Auto Mi Freq Offs
Content         Content <t< td=""><td>100 kHz</td><td>A OU GHZ PN0: Fast IFGain:Low ∩</td><td>SENSE:INT</td><td>ALIGN OFF Avg Type: Log-Pwr AvgHold:&gt;200/200 MIK</td><td>17.1 ms (8001 pts)</td><td>Auto Tur Center Fre 2.35000000 GF Start Fre 2.30000000 GF 2.40000000 GF CF Ste 10.00000 MF</td></t<>	100 kHz	A OU GHZ PN0: Fast IFGain:Low ∩	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr AvgHold:>200/200 MIK	17.1 ms (8001 pts)	Auto Tur Center Fre 2.35000000 GF Start Fre 2.30000000 GF 2.40000000 GF CF Ste 10.00000 MF

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	rum Analyzer - Swept		og or wet	A stratt are	01.40.00.002	
	RF 50 Ω Treq 2.491750	000 GHz PNO: Fast 🖵	SENSE:INT	Avg Type: Log-Pwr Avg Hold:>200/200	01:18:23 AM Jan 01, 1988 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P P P P P P	Frequency
0 dB/div	Ref Offset 1 dB Ref 20.00 dB	IFGain:Low	#Atten: 40 dB	Mkr1 2	498 927 5 GHz -48.554 dBm	Auto Tur
og						Center Fre
10.0						2.491750000 GH
0.00						
10.0						Start Fre 2.483500000 Gi
					-13.94 dBm	
0.0						<b>Stop Fr</b> 2.500000000 G
10.0						CF Ste 1.650000 MI
i0.0	11/1 of -12 on + + Proventi	1	where the first sector of the	ᡥ᠋ᡎᡀᡎᡀᡀᡡᡟᠧᠬᡟᠧᠬᡟᠧᠬᡟᡞᡞᠬᡟ		Auto M
50.0	an M M Re. overlage - her t	1000 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			de le la de la parte de la deservación	Freq Offs
70.0						01
					4	
	3500 GHz 100 kHz	#VBW	300 kHz	Sweep	top 2.500000 GHz 1.600 ms (601 pts)	
Res BW	33500 GHz 100 kHz	#VBW	300 kHz	Sweep status	1.600 ms (601 pts)	
Res BW	100 KHz rum Analyzer - Swept	SA		Sweep status	1.600 ms (601 pts)	
Res BW ig gilent Specti RL	100 kHz	AC 0000 GHz PN0: Fast C	SENSE:INT	Sweep	01:18:56 AM Jan 01, 1988	Frequency
Res BW gilent Spectr RL Center F	100 kHz rum Analyzer - Swept RF 50 Q ireq 14.50000 Ref Offset 1 dB	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	1.600 ms (601 pts)	
Res BW gilent Spectr RL enter F	100 kHz rum Analyzer - Swept RF 50 Ω req 14.50000	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	01:18:56 AM Jan 01, 1988 TRACE 12 3 4 5 6 TRACE 12 3 4 5 6 TPP P P P	Auto Tu
Res BW glient Spectr RL enter F	100 kHz rum Analyzer - Swept RF 50 Q ireq 14.50000 Ref Offset 1 dB	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fr
Res BW scient Spectron RL Senter F 0 dB/div	100 kHz rum Analyzer - Swept RF 50 Q ireq 14.50000 Ref Offset 1 dB	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fra 14.50000000 Gi
Res BW igilent Spectr RL enter F 0 dB/div og 0.00	100 kHz rum Analyzer - Swept RF 50 Q ireq 14.50000 Ref Offset 1 dB	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fra 14.50000000 Gi Start Fra
Res BW General Spectre RL General F General Spectre General Sp	100 kHz rum Analyzer - Swept RF 50 Q ireq 14.50000 Ref Offset 1 dB	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fra 14.50000000 Gi Start Fra 2.50000000 Gi Stop Fra
Res BW sg gilent Spectr	100 kHz rum Analyzer - Swept RF 50 Q ireq 14.50000 Ref Offset 1 dB	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fra 14.50000000 Gi Start Fra 2.50000000 Gi Stop Fra
Res BW a gilent Spectr RL C C C C C C C C C C C C C C C C C C	100 kHz	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Avg Type: Log-Pwr AvgHold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fra 14.50000000 Gi Start Fra 2.50000000 Gi Stop Fra 26.50000000 Gi
Res BW a glient Spectr RL	100 kHz rum Analyzer - Swept RF 50 Q ireq 14.50000 Ref Offset 1 dB	SA AC 00000 GHz PNO: Fast IFGain:Low	SENSE:INT	Sweep status Aug Type: Log-Pwr Avg Hold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fro 14.50000000 Gl Start Fro 2.50000000 Gl Stop Fro 26.50000000 Gl CF Ste 2.40000000 Gl
Res BW s gilent Spect RL RL GdB/div g gl 0.00	100 kHz	SA AC PNO: Fast IFGain:Low	SENSE:INT	Sweep status Avg Type: Log-Pwr AvgHold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fr 14.50000000 Gl Start Fr 2.50000000 Gl Stop Fr 26.50000000 Gl CF Ste 2.40000000 Gl Auto M
Res BW           3G           gilent Spectr           RL           RL           CodB/div           99           100           90           100	100 kHz	SA AC PNO: Fast IFGain:Low	SENSE:INT	Sweep status Avg Type: Log-Pwr AvgHold: 10/10	1.600 ms (601 pts)	Auto Tur Center Fr 14.50000000 Gl Start Fr 2.50000000 Gl Stop Fr 26.50000000 Gl CF Ste 2.40000000 Gl Auto M
Res BW           33           gilent Spectr           RL           RL           CodB/div           99           10.0           90           10.0           90	100 kHz rum Analyzer, Swept RF S0 Ω ireq 14.50000 Ref Offset 1 dB Ref 20.00 dB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SA AC PNO: Fast IFGain:Low Sm Sm Sm	SENSE:INT	Sweep	1.600 ms (601 pts)	Auto Tur Center Fra 14.50000000 Gi Start Fra 2.50000000 Gi Stop Fra 26.50000000 Gi

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Derek Yang Wireless Laboratory Manager



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gilent Spect	rum Analyzer - Swept SA RF 50 Ω <u>A</u> DC		SENSE:INT	ALIGN OFF	01:21:03 AM Jan 01, 1988	
	req 79.500 kHz	PNO: Wide 😱	Trig: Free Run #Atten: 26 dB	Avg Type: Log-Pwr Avg Hold:>50/50	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P P P P P P	Frequency
0 dB/div	Ref Offset 1 dB Ref 0.00 dBm	IFGain:Low	PAREN. 20 MB	Ν	/kr1 10.410 kHz -51.057 dBm	Auto Tur
.og						Center Fre
10.0						79.500 k⊦
30.0						<b>Start Fre</b> 9.000 kł
					-34.56 dBm	
40.0 50.0 <b>1</b>						<b>Stop Fre</b> 150.000 ki
0.0   <sup>۲</sup> ۰٬۱٫۲	Mr. National Contraction					CF Ste 14.100 ki
70.0	" VUMpymyny	Lulinghon And	• D • I • • • • •			<u>Auto</u> Ma
80.0				Mr Mr Markellow Marken	ᡀᢦᡁᢄᠰᢦᠬᢧᠧᢪ <sub>ᢦᡆᡗᢦᡘ</sub> ᡕ	Freq Offs
90.0						
itart 9.00	) kHz				Stop 150.00 kHz	
Res BW	1.0 kHz	#VBW	3.0 kHz	Sween	134.8 ms (601 pts)	
SG					s 1. DC Coupled	
gilent Spect	rum Analyzer - Swept SA RF 50 Ω <u>A</u> DC		SENSE:INT	STATU	DC Coupled	Frequency
gilent Spect		Hz PN0: Fast	SENSE:INT	STATU	s <u>1</u> DC Coupled	Frequency
gilent Spect RL Center F	RF 50 Ω 🚹 DC	IHz	SENSE:INT	ALIGN OFF	DC Coupled	
gilent Spect RL Center F	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF	DC Coupled	Auto Tu
gilent Spect	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF	DC Coupled	Auto Tur Center Fro
gilent Spect	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	DC Coupled	Auto Tur Center Fra 15.075000 Mi
o dB/div	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	DC Coupled	Auto Tur Center Fra 15.075000 MI Start Fra
enter F enter F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	DC Coupled	Auto Tur Center Fro 15.075000 M Start Fro 150.000 kl Stop Fro
enter F enter F 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	© 121:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNUM DT P P P P P Mkr1 150 kHz -42.975 dBm	Auto Tur Center Fro 15.075000 M Start Fro 150.000 kl Stop Fro
gilent Spect RL Center F 0 dB/div 9 0 10.0 10.0 20.0	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	© 121:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNUM DT P P P P P Mkr1 150 kHz -42.975 dBm	Auto Tur Center Fro 15.075000 Mi Start Fro 150.000 ki Stop Fro 30.000000 Mi
O         dB/div           0         dB/div           0         g	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	© 121:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNUM DT P P P P P Mkr1 150 kHz -42.975 dBm	Auto Tur Center Fro 15.075000 Mi Start Fro 150.000 ki Stop Fro 30.000000 Mi
O         dB/div           0         dB/div           0         g	RF 50 Ω <u>A</u> DC Freq 15.075000 M Ref Offset 1 dB	Hz PN0: Fast	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	© 121:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNUM DT P P P P P Mkr1 150 kHz -42.975 dBm	Auto Tur Center Fro 15.075000 Mi Start Fro 150.000 ki Stop Fro 30.000000 Mi 2.985000 Mi Auto M
gilent Spect           RL           center F           0 dB/div	Ref Offset 1 dB Ref 20.00 dBm	Hz PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr Avg Hold:>50/50	© DC Coupled 01:21:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNAN DET P P P P P Mkr1 150 kHz -42.975 dBm -24.56 dBm	Auto Tur Center Fro 15.075000 Mi Start Fro 150.000 ki Stop Fro 30.000000 Mi 2.985000 Mi Auto Mi Freq Offs
gilent Spect           RL           center F           0 dB/div	Ref Offset 1 dB Ref 20.00 dBm	Hz PNO: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr	© DC Coupled 01:21:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNAN DET P P P P P Mkr1 150 kHz -42.975 dBm -24.56 dBm	Auto Tur Center Fro 15.075000 Mi Start Fro 150.000 ki Stop Fro 30.000000 Mi 2.985000 Mi Auto Mi Freq Offs
gilent Spect           RL           RL           eenter F           0         dB/div           0         dB/div         dB/div         dB/div	Ref Offset 1 dB Ref 20.00 dBm	Hz PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr Avg Hold:>50/50	C Coupled 01:21:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNAN DT P P P P Mkr1 150 kHz -42.975 dBm -24.58 dBm -24.58 dBm	Auto Tur Center Fro 15.075000 Mi Start Fro 150.000 ki Stop Fro 30.000000 Mi 2.985000 Mi Auto Mi Freq Offs
gilent Spect           RL           enter F           0 dB/div           1 div           1	Ref Offset 1 dB Ref 20.00 dBm	HZ PNO: Fast IFGain:Low	SENSE:INT	Avg Type: Log-Pwr Avg Type: Log-Pwr AvgHold:>50/60	© DC Coupled 01:21:26 AM Jan 01, 1988 TRACE 2 3 4 5 0 TYPE MANNAN DET P P P P P Mkr1 150 kHz -42.975 dBm -24.56 dBm	Auto Tur Center Fra 15.075000 Mi Start Fra 150.000 ki Stop Fra 30.000000 Mi

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	rum Analyzer - Swept S RF 50 Ω A		SENSE:INT	ALIGN OFF	01:21:47 AM Jan 01, 1988	
	req 1.1650000			Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P P P P P P	Frequency
		PNO: Fast 😱 IFGain:Low	Trig: Free Run #Atten: 40 dB	Avg Hold:>50/50	DET P P P P P	
	Ref Offset 1 dB			Mkr	1 2.169 19 GHz	Auto Tui
0 dB/div	Ref 20.00 dBn	n			-46.322 dBm	
.og						Center Fre
10.0						1.165000000 GH
0.00						01
						Start Fre 30.000000 Mi
10.0					-14.56 dBm	00.000000
20.0						
						Stop Fre 2.300000000 GI
30.0						2.50000000 Gi
						CF Ste
40.0					1	227.000000 Mi
50.0			L	والمراجع أوريب المراجع والمراجع والمراجع والمراجع	and provident de la constitución de la const	Auto Ma
in a bains	an a			and the second		_
60.0						Freq Offs
						01
70.0						
					Of	
Start 30 N		40 (B) (A)	000 1.11-	<b>a</b>	Stop 2.300 GHz	
fRes BW		#VBW	300 kHz		217.1 ms (8001 pts)	
Res BW	100 kHz		300 kHz	Sweep 2	217.1 ms (8001 pts)	
Res BW		A	300 kHz		217.1 ms (8001 pts)	
Res BW sg gilent Spectr t RL	100 kHz um Analyzer - Swept S	A 00 GHz	SENSE:INT	STATU:	217.1 ms (8001 pts) s 01:21:59 AM3m 01, 1988 TRACE 234 5 6 TYPE MWWWW	Frequency
Res BW sg gilent Spectr t RL	100 kHz um Analyzer - Swept S RF 50 Ω A4	A 2		ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM1an 01, 1988 TRACE 1 2 3 4 5 G TYPE MWWWW DET P.P.P.P.P.P.P.	
Res BW sg gilent Spectr RL Center F	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM Jan 01, 1988 TRACE 0 2 3 4 5 6 TYPE MANAGEMENT DET P P P P P P (r1 2.373 7 GHz	
Res BW sg gilent Spectr RL Center F	100 kHz um Analyzer - Swept S RF 50 Ω A4 req 2.3500000	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM1an 01, 1988 TRACE 1 2 3 4 5 G TYPE MWWWW DET P.P.P.P.P.P.P.	
Res BW sg gilent Spectr RL Center F Center F 0 dB/div	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM Jan 01, 1988 TRACE 0 2 3 4 5 6 TYPE MANAGEMENT DET P P P P P P (r1 2.373 7 GHz	Auto Tur
Res BW sg gilent Spectr RL Center F Center F 0 dB/div	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM Jan 01, 1988 TRACE 0 2 3 4 5 6 TYPE MANAGEMENT DET P P P P P P (r1 2.373 7 GHz	Auto Tur Center Fre
Res BW sg glent Spectr RL Center F	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM Jan 01, 1988 TRACE 0 2 3 4 5 6 TYPE MANAGEMENT DET P P P P P P (r1 2.373 7 GHz	Auto Tur Center Fre
Res BW sg glent Spectr RL Center F	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM Jan 01, 1988 TRACE 0 2 3 4 5 6 TYPE MANAGEMENT DET P P P P P P (r1 2.373 7 GHz	Auto Tur Center Fra 2.35000000 Gi
Res BW gilent Spectr gilent Spectr RL Center F Center F 0 dB/div 0 dB/div	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm	Auto Tur Center Fra 2.35000000 Gi Start Fra
Res BW s glent Spectr glent Spectr RL Center F	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) 3 01:21:59 AM Jan 01, 1988 TRACE 0 2 3 4 5 6 TYPE MANAGEMENT DET P P P P P P (r1 2.373 7 GHz	Auto Tur Center Fre 2.35000000 GH Start Fre
Res BW s glent Spectr glent Spectr RL Center F	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm	Auto Tur Center Fra 2.35000000 Gi Start Fra 2.300000000 Gi
Res BW gilent Spectr RL Center F 0 dB/div 0 0 10.0 10.0 10.0	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm	Auto Tur Center Fra 2.35000000 Gi Start Fra 2.30000000 Gi Stop Fra
Res BW gilent Spectr RL Center F 0 dB/div 0 0 10.0 10.0 10.0	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm	Auto Tur Center Fra 2.35000000 Gi Start Fra 2.30000000 Gi Stop Fra
Res BW           gilent Spectric           RL           RL           Center F           0 dB/div           0 dB/	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm	Auto Tur Center Fra 2.350000000 Gi Start Fra 2.300000000 Gi Stop Fra 2.400000000 Gi
#Res BW           gilent Spectric           @RL           @RL           Center F           0 dB/div           0 0	100 kHz um Analyzer - Swept S RF 50 Q Av req 2.3500000 Ref Offset 1 dB	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold:>200/200	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm	Auto Tur Center Fre 2.350000000 GH Start Fre 2.30000000 GH 2.40000000 GH CF Ste 10.00000 MH
Ges BW           gilent Spectr           gilent Spectr           Code/div           O	100 kHz um Analyzer - Swept S RF   50 Ω An req 2.3500000 Ref Offset 1 dB Ref 20.00 dBr 	A OO GHz PN0: Fast IFGain:Low	SENSE:INT	STATU: Avg Type: Log-Pwr Avg Hold:>200/200 M!	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm	Auto Tur Center Fre 2.350000000 GH Start Fre 2.30000000 GH 2.40000000 GH CF Ste 10.00000 MH
G         BW           gilent Spectri         RL           gilent Spectri         RL           CodE/div         Senter F           CodE/div         Senter F           CodE/div         Senter F           Senter F         Senter	100 kHz um Analyzer - Swept S RF   50 Ω An req 2.3500000 Ref Offset 1 dB Ref 20.00 dBr 	A OO GHZ PNO: Fast IFGain:Low	SENSE:INT	STATU: Avg Type: Log-Pwr Avg Hold:>200/200 M!	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm -14 56 dBm	Auto Tur Center Fre 2.350000000 GH 2.30000000 GH 2.400000000 GH 2.40000000 GH CF Ste 10.000000 MH Auto Mi
Res BW scient Spectre gilent Spectre RL Center F Center F 200 0.00 0.00 0.00 0.00 0.00 0.00 0.00	100 kHz um Analyzer - Swept S RF   50 Ω An req 2.3500000 Ref Offset 1 dB Ref 20.00 dBr 	A OO GHZ PNO: Fast IFGain:Low	SENSE:INT	STATU: Avg Type: Log-Pwr Avg Hold:>200/200 M!	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm -14 56 dBm	Auto Tur Center Fra 2.350000000 Gi Start Fra 2.300000000 Gi Stop Fra 2.400000000 Gi CF Sta 10.000000 Mi Auto Mi
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G         BW           gilent Spectri         RL           gilent Spectri         RL           CodE/div         Senter F           CodE/div         Senter F           CodE/div         Senter F           Senter F         Senter	100 kHz um Analyzer - Swept S RF   50 Ω An req 2.3500000 Ref Offset 1 dB Ref 20.00 dBr 	A OO GHZ PNO: Fast IFGain:Low	SENSE:INT	STATU: Avg Type: Log-Pwr Avg Hold:>200/200 M!	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm -14 56 dBm	Auto Tur Center Fre 2.350000000 GH Start Fre 2.300000000 GH 2.400000000 GH CF Ste 10.000000 MH Auto Mi Freq Offs
Res         BW           gilent Spectr         RL           gilent Spectr         RL           enter F         Image: Spectr           code/div         Spectr           so         Spectr           code/div         Spectr           so         Spectr	100 kHz um Analyzer - Swept S RF   50 Ω An req 2.3500000 Ref 20.00 dBm Alter 20.00 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A OO GHZ PNO: Fast IFGain:Low	SENSE:INT	STATU: Avg Type: Log-Pwr Avg Hold:>200/200 M!	217.1 ms (8001 pts) (01:21:59 AM Jan 01, 1988 TRACE 2 23 4 5 6 TYPE P P P P P (r1 2.373 7 GHz -48.288 dBm -14.56 dBm -14.56 dBm	Auto Tur Center Fra 2.350000000 Gi Start Fra 2.300000000 Gi Stop Fra 2.400000000 Gi CF Sta 10.000000 Mi Auto Mi
Ges BW           gilent Spectri           gilent Spectri           RL           CodeJ/div           O	100 kHz um Analyzer - Swept S RF 50 Ω An req 2.3500000 Ref 20.00 dBr 	A OO GHZ PNO: Fast IFGain:Low n	SENSE:INT	STATU:	217.1 ms (8001 pts) a 01:21:59 AM Jan 01, 1988 TRACE 2 23 45 6 TYPE MWWWWW DET P P P P P P cr1 2.373 7 GHz -48.288 dBm -14 56 dBm	Auto Tur Center Fre 2.350000000 GH Start Fre 2.300000000 GH Stop Fre 2.400000000 GH

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	RF 50 Ω req 2.49175	0000 GHz PNO: Fast	t 😱 Trig: Free		Avg Type: Avg Hold:>		TRAC	4 Jan 01, 1988 E <mark>1 2 3 4 5 6</mark> PE M WWWWWW T P P P P P P P	Frequer	псу
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Center Fi 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RF 50 Q req 14.5000 Ref Offset 1 d Ref 20.00 d	AC 00000 GH2 PNO: Fast IFGain:Loo B B B Comparison Compari	Trig: Free #Atten: 40	e Run ) dB	Avg Type: Avg Hold: /	Log-Pwr 10/10 MI	TRAC           TYPE           KIT1 26.4           -38.33	14.55 dBm	Auto Cente 14.5000000 Star 2.5000000 26.5000000 CI 2.4000000 Auto	o Tun er Fre 00 GH tr Fre 00 GH F Ste Ma
O dB/div           0 dB/div           0 dB/div           0 dB/div           0 dD           0 dD <t< td=""><td>RF 50 Q req 14.5000 Ref Offset 1 d Ref 20.00 d</td><td>AC 00000 GH2 PNO: Fast IFGain:Loo B B B Comparison Compari</td><td>Trig: Free WAtten: 40</td><td>e Run ) dB</td><td>Avg Type: Avg Hold: /</td><td>Log-Pwr 10/10 MI</td><td>(r1 26.4 -38.3</td><td>1 -14 56 dBm</td><td>Auto Cente 14.5000000 Star 2.5000000 26.5000000 CI 2.4000000 Auto</td><td>er Fre 00 GH er Fre 00 GH F Ste 00 GH Ma</td></t<>	RF 50 Q req 14.5000 Ref Offset 1 d Ref 20.00 d	AC 00000 GH2 PNO: Fast IFGain:Loo B B B Comparison Compari	Trig: Free WAtten: 40	e Run ) dB	Avg Type: Avg Hold: /	Log-Pwr 10/10 MI	(r1 26.4 -38.3	1 -14 56 dBm	Auto Cente 14.5000000 Star 2.5000000 26.5000000 CI 2.4000000 Auto	er Fre 00 GH er Fre 00 GH F Ste 00 GH Ma

### 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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Test Requirement:	47 CFR Part 15C Sectio	n 15.209 and 15.2	205							
Test Method:	47 CFR Part 15C Section 15.209 and 15.205 ANSI C63.10 :2013 Section 11.12									
Test Site:	Aeasurement Distance: 3m (Semi-Anechoic Chamber)									
	Frequency	Detector	RBW	VBW	Remark					
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak					
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average					
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak					
Dessiver Setup	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak					
Receiver Setup:	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average					
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak					
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak					
		Peak	1MHz	3MHz	Peak					
	Above 1GHz	Peak	1MHz	10Hz	Average					
	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	30	-	-	30					
	30MHz-88MHz	100	40.0	Quasi-peak	3					
Limit:	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), Unles emissions is 20dB above to the equipment under radiated by the device.	e the maximum pe	ermitted ave	rage emission	limit applicable					

### 4.9 Radiated Spurious Emission

SG

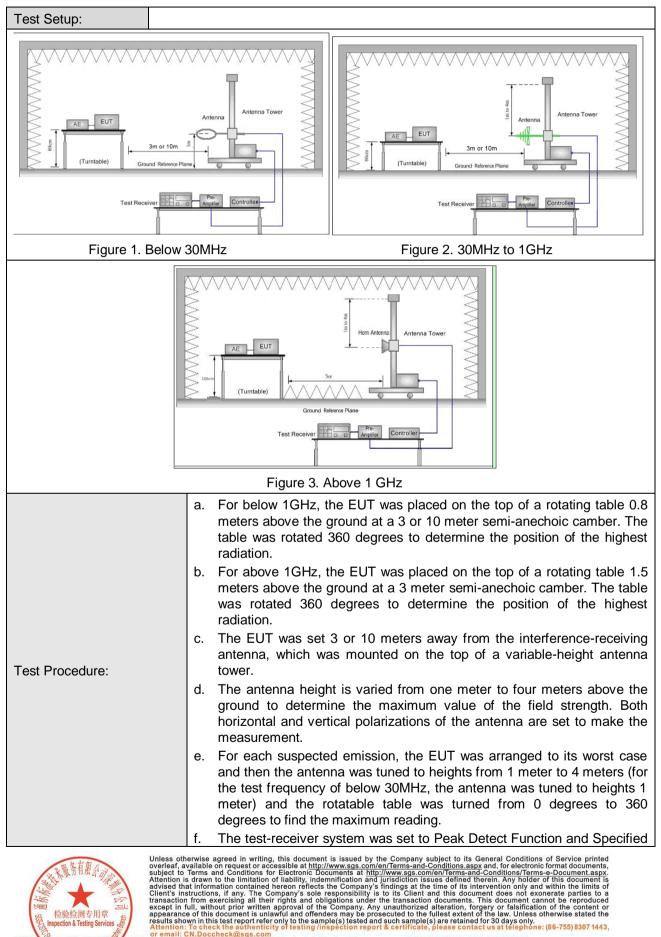


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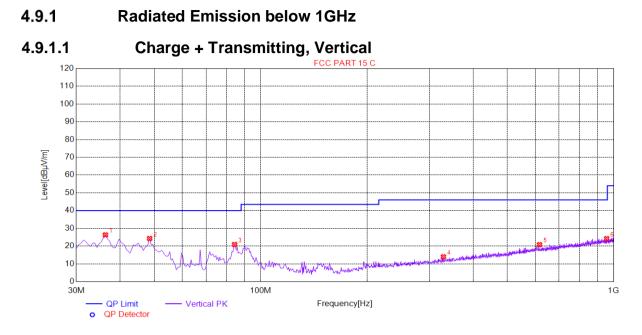
	Bandwidth with Maximum Hold Mode.
	<ul> <li>g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> <li>h. Test the EUT in the lowest channel (2402MHz),the middle channel (2400HHz),the Highest channel (2480MHz)</li> </ul>
	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.
Exploratory Test Mode:	Transmitting with GFSK modulation. Charge + Transmitting mode.
	Transmitting with GFSK modulation.
Final Test Mode:	Pretest the EUT at Charge + Transmitting mode,
Tina Test Node.	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 5.10 for details.
Test Results:	Pass



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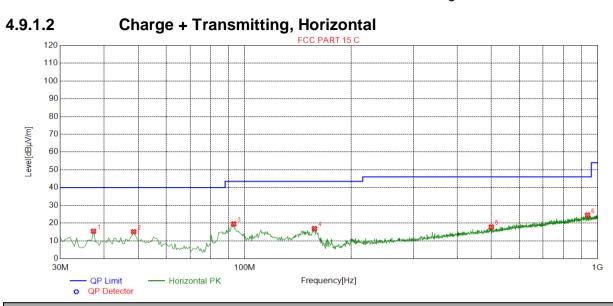
Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	36.3082	26.30	-32.34	40.00	13.70	100	91	Vertical			
2	48.4392	24.28	-30.19	40.00	15.72	100	310	Vertical			
3	84.3472	20.90	-34.79	40.00	19.10	100	126	Vertical			
4	329.3947	13.97	-27.01	46.00	32.03	200	86	Vertical			
5	616.6583	20.81	-19.85	46.00	25.19	200	98	Vertical			
6	955.8429	24.22	-14.40	46.00	21.78	200	20	Vertical			



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Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	37.2786	15.41	-32.03	40.00	24.59	200	248	Horizontal				
2	48.4392	15.10	-30.19	40.00	24.90	200	66	Horizontal				
3	93.0815	19.53	-32.89	43.50	23.97	200	112	Horizontal				
4	157.6188	16.92	-34.41	43.50	26.58	100	94	Horizontal				
5	499.7149	17.78	-22.68	46.00	28.22	100	210	Horizontal				
6	936.4332	24.50	-14.68	46.00	21.50	100	34	Horizontal				

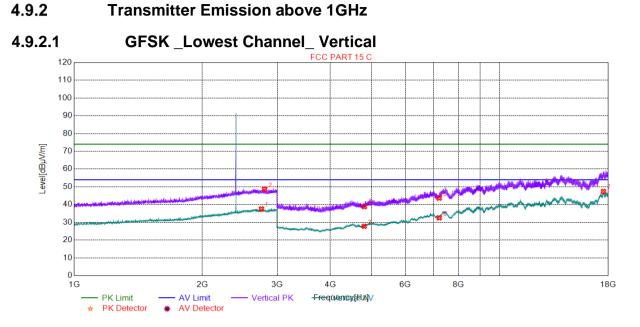


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Susp	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2754.4386	37.53	2.06	54.00	16.47	150	178	Vertical				
2	2801.9505	48.67	2.14	74.00	25.33	150	264	Vertical				
3	4804.0000	27.78	-20.38	54.00	26.22	150	148	Vertical				
4	4804.0000	38.85	-20.38	74.00	35.15	150	342	Vertical				
5	7206.0000	43.65	-12.76	74.00	30.35	150	180	Vertical				
6	7206.0000	32.52	-12.76	54.00	21.48	150	196	Vertical				
7	17533.9767	47.41	0.78	54.00	6.59	150	26	Vertical				

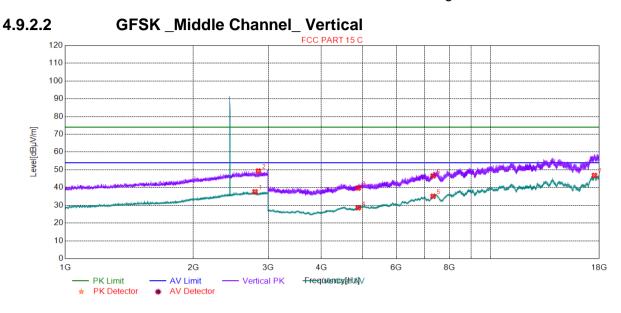


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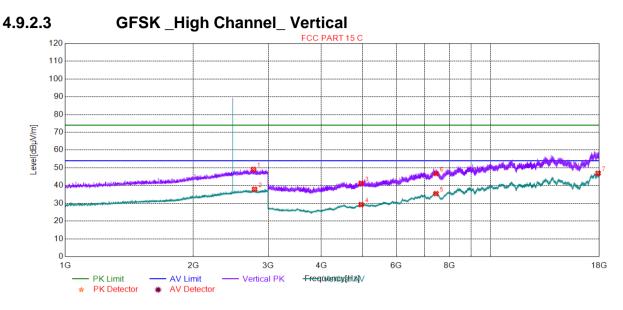
Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2793.4484	37.62	2.13	54.00	16.38	150	6	Vertical			
2	2843.9610	49.31	2.19	74.00	24.69	150	162	Vertical			
3	4882.0000	39.72	-19.26	74.00	34.28	150	180	Vertical			
4	4882.0000	28.61	-19.26	54.00	25.39	150	261	Vertical			
5	7323.0000	35.11	-11.38	54.00	18.89	150	326	Vertical			
6	7323.0000	46.58	-11.38	74.00	27.42	150	180	Vertical			
7	17528.4764	46.84	0.71	54.00	7.16	150	285	Vertical			



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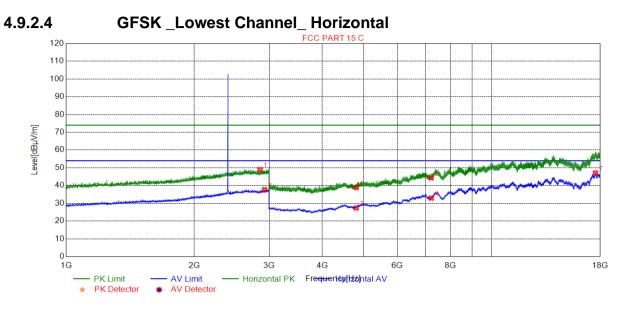


Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2769.4424	49.12	2.08	74.00	24.88	150	50	Vertical			
2	2786.4466	37.92	2.12	54.00	16.08	150	82	Vertical			
3	4960.0000	41.27	-18.67	74.00	32.73	150	277	Vertical			
4	4960.0000	29.28	-18.67	54.00	24.72	150	245	Vertical			
5	7440.0000	35.44	-10.72	54.00	18.56	150	326	Vertical			
6	7440.0000	46.76	-10.72	74.00	27.24	150	18	Vertical			
7	17880.4940	46.95	-1.04	54.00	7.05	150	313	Vertical			



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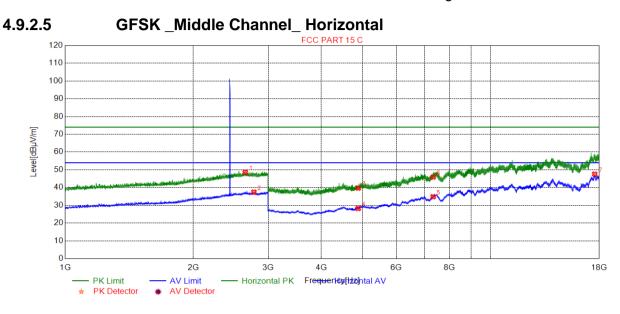
Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2855.4639	49.01	2.21	74.00	24.99	150	174	Horizontal			
2	2924.9812	37.71	2.28	54.00	16.29	150	64	Horizontal			
3	4804.0000	27.35	-20.38	54.00	26.65	150	116	Horizontal			
4	4804.0000	38.87	-20.38	74.00	35.13	150	196	Horizontal			
5	7206.0000	44.32	-12.76	74.00	29.68	150	310	Horizontal			
6	7206.0000	32.93	-12.76	54.00	21.07	150	35	Horizontal			
7	17531.9766	47.10	0.76	54.00	6.90	150	165	Horizontal			



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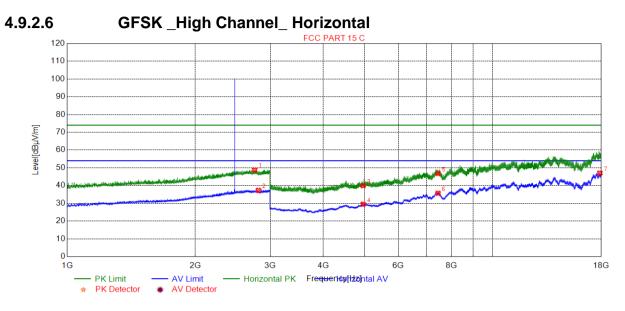
Suspe	Suspected List										
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity			
1	2649.4124	48.55	1.86	74.00	25.45	150	359	Horizontal			
2	2776.4441	37.45	2.10	54.00	16.55	150	260	Horizontal			
3	4882.0000	39.69	-19.26	74.00	34.31	150	99	Horizontal			
4	4882.0000	28.23	-19.26	54.00	25.77	150	132	Horizontal			
5	7323.0000	34.83	-11.38	54.00	19.17	150	50	Horizontal			
6	7323.0000	45.92	-11.38	74.00	28.08	150	261	Horizontal			
7	17555.4778	47.56	1.06	54.00	6.44	150	85	Horizontal			



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Suspe	Suspected List											
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity				
1	2757.4394	48.75	2.06	74.00	25.25	150	144	Horizontal				
2	2814.4536	37.31	2.16	54.00	16.69	150	33	Horizontal				
3	4960.0000	39.94	-18.67	74.00	34.06	150	285	Horizontal				
4	4960.0000	29.51	-18.67	54.00	24.49	150	93	Horizontal				
5	7440.0000	46.81	-10.72	74.00	27.19	150	349	Horizontal				
6	7440.0000	35.66	-10.72	54.00	18.34	150	74	Horizontal				
7	17856.9929	47.01	-0.96	54.00	6.99	150	227	Horizontal				

### 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.



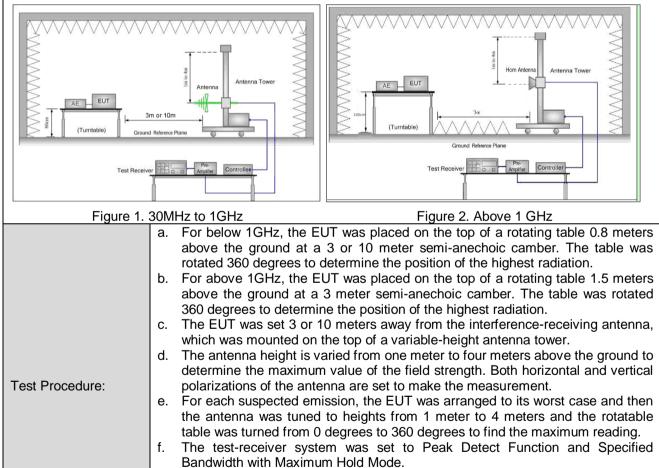
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#### 4.10 Restricted bands around fundamental frequency

• •								
Test Requirement:	47 CFR Part 15C Sectio	47 CFR Part 15C Section 15.209 and 15.205						
Test Method:	ANSI C63.10: 2013 Sec	ANSI C63.10: 2013 Section 11.12						
Test Site:	Measurement Distance:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)						
	Frequency	Limit (dBuV/m @3m)	Remark					
	30MHz-88MHz	40.0	Quasi-peak Value					
	88MHz-216MHz	43.5	Quasi-peak Value					
Limit:	216MHz-960MHz	46.0	Quasi-peak Value					
	960MHz-1GHz	54.0	Quasi-peak Value					
	Above 10Hz	54.0	Average Value					
	Above 1GHz	74.0	Peak Value					

Test Setup:



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

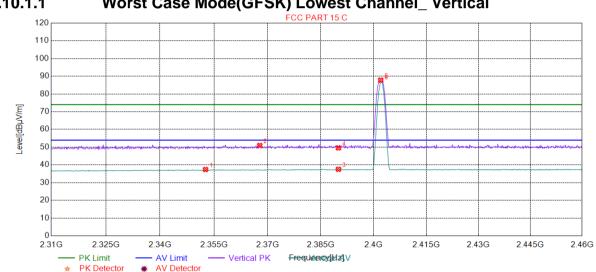




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	<ul> <li>The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.</li> <li>Repeat above procedures until all frequencies measured was complete.</li> </ul>
Exploratory Test Mode:	Transmitting with GFSK modulation. Charge + Transmitting mode.
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 5.10 for details.
Test Results:	Pass

#### 4.10.1 **Test plots**



#### 4.10.1.1 Worst Case Mode(GFSK) Lowest Channel\_ Vertical

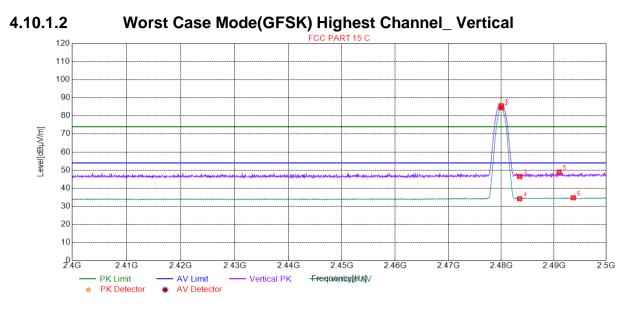
Suspe	Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	2352.6426	37.41	1.08	54.00	16.59	150	265	Vertical	
2	2367.8078	50.96	1.15	74.00	23.04	150	216	Vertical	
3	2390.0000	37.53	1.25	54.00	16.47	150	241	Vertical	
4	2390.0000	49.60	1.25	74.00	24.40	150	2	Vertical	
5	2402.0000	87.82	1.30	74.00	-13.82	150	26	Vertical	
6	2402.0000	87.14	1.30	54.00	-33.14	150	26	Vertical	



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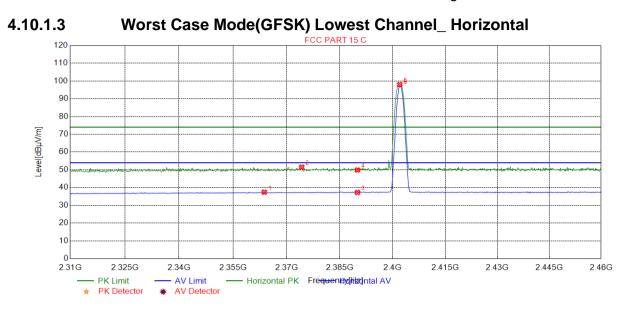
Susp	Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	2480.0000	85.62	1.51	74.00	-11.62	150	12	Vertical	
2	2480.0000	84.60	1.51	54.00	-30.60	150	312	Vertical	
3	2483.5000	46.45	1.52	74.00	27.55	150	165	Vertical	
4	2483.5000	34.19	1.52	54.00	19.81	150	275	Vertical	
5	2490.9955	48.94	1.54	74.00	25.06	150	324	Vertical	
6	2493.6968	34.75	1.55	54.00	19.25	150	312	Vertical	



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Suspe	Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	2363.7538	37.37	1.13	54.00	16.63	150	29	Horizontal	
2	2374.2643	51.51	1.18	74.00	22.49	150	346	Horizontal	
3	2390.0000	37.24	1.25	54.00	16.76	150	113	Horizontal	
4	2390.0000	49.87	1.25	74.00	24.13	150	14	Horizontal	
5	2402.0000	98.01	1.30	74.00	-24.01	150	216	Horizontal	
6	2402.0000	97.31	1.30	54.00	-43.31	150	212	Horizontal	

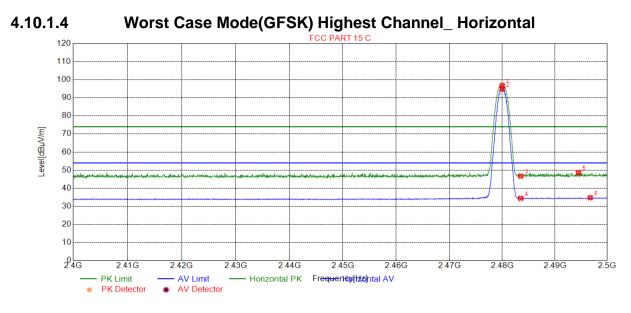


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Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.0000	96.75	1.51	74.00	-22.75	150	209	Horizontal
2	2480.0000	94.82	1.51	54.00	-40.82	150	216	Horizontal
3	2483.5000	46.70	1.52	74.00	27.30	150	209	Horizontal
4	2483.5000	34.44	1.52	54.00	19.56	150	296	Horizontal
5	2494.4972	48.64	1.55	74.00	25.36	150	338	Horizontal
6	2496.7484	34.77	1.56	54.00	19.23	150	190	Horizontal

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

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.75dB
2	RF power density, conducted	±2.84dB
3	Spurious emissions, conducted	±0.75dB
4	Radiated Spurious emission test	±4.5dB (30MHz-1GHz)
4	Radiated Spundus emission test	±4.8dB (1GHz-25GHz)
5	Conduct emission test	±3.12 dB(9KHz- 30MHz)
6	Temperature test	±1°C
7	Humidity test	±3%
8	DC and low frequency voltages	±0.5%



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## 6 Equipment List

	Condu	cted Emission			
				Cal. date	Cal.Duedate
Test Equipment	Manufacturer	Model No.	Inventory No.	(yyyy-mm-dd)	(yyyy-mm-dd)
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2017/5/10	2020/5/9
LISN	Rohde & Schwarz	ENV216	SEM007-01	2018/9/2	2019/9/2
LISN	ETS-LINDGREN	Feb-16	SEM007-02	2019/4/1	2020/3/31
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2019/6/12	2020/6/11
2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2019/2/11	2020/2/10
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2019/3/2	2020/3/1
	RF co	onducted test	l	T	T
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Duedate
			-	(yyyy-mm-dd)	(yyyy-mm-dd)
DC Power Supply	Agilent Technologies Inc	66311B	W009-09	2018/9/15	2019/9/15
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2019/1/13	2020/1/12
Coaxial Cable	SGS	N/A	SEM031-01	2019/6/12	2020/6/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018/9/2	2019/9/2
Temperature Chamber	GIANT FORCE	ICT-150-40-CP-AR	W027-03	2018/11/27	2019/11/27
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2018/9/2	2019/9/2
	RE	in Chamber			
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Due date
	manaraotarer	moder no.	inventory rto.	(yyyy-mm-dd)	(yyyy-mm-dd)
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017/8/5	2020/8/4
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2019/6/12	2020/6/11
MXE EMI Receiver (20Hz- 8.4GHz)	Agilent Technologies	N9038A	SEM004-05	2018/9/2	2019/9/2
BiConiLog Antenna (26- 3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017/6/27	2020/6/26
Pre-amplifier (0.1-1.3GHz)	Agilent Technologies	8447D	SEM005-01	2019/3/2	2020/3/1
	RE	in Chamber		0-1.1.4	0-10-11
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018/3/13	2021/3/12
Measurement Software	AUDIX	e3V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2019/6/12	2020/6/11
EXA Signal Analyzer (10Hz- 26.5GHz)	Agilent Technologies Inc	N9010A	SEM004-09	2019/3/12	2020/3/11
BiConiLog Antenna (26- 3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017/6/27	2020/6/26

26.5GHz)	· ·g····· · · · · · · · · · · · · · · ·				
BiConiLog Antenna (26- 3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017/6/27	2020/6/26
Horn Antenna (0.8-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018/4/13	2021/4/12
Pre-amplifier(0.1-1.3GHz)	HP	8447D	SEM005-02	2018/9/2	2019/9/2
Low Noise Amplifier(100MHz- 18GHz)	Black Diamond Series	BDLNA-0118- 352810	SEM005-05	2018/9/27	2019/9/27
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017/10/17	2020/10/16
Pre-amplifier(18-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2019/3/2	2020/3/1
Band filter	N/A	N/A	SEM023-01	N/A	N/A



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RE in Chamber								
Test Equipment	Manufacturer Model No.		Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)			
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2018/3/31	2021/3/30			
EMI Test Receiver (9k-7GHz)	Rohde & Schwarz	ESR	SEM004-03	2019/3/2	2020/3/1			
Trilog-Broadband Antenna(25M- 2GHz)	Schwarzbeck	VULB9168	SEM003-18	2018/3/15	2020/3/14			
Pre-amplifier (9k-1GHz)	Sonoma	310N	SEM005-03	2019/3/12	2020/3/11			
Loop Antenna (9kHz-30MHz)	ETS-Lindgren	6502	SEM003-08	2017/8/22	2020/8/21			
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A			
Coaxial Cable	SGS	N/A	SEM029-01	2019/6/12	2020/6/11			

## 7 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for ZR/2019/60038.

The End



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