RF TEST REPORT

Product Name: Smartphone

Model Name: Vortex CM62

FCC ID: 2ADLJ-CM62

Issued For : Xwireless LLC

11565 0ld Georgetown Road, Rockville, MD, USA

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China

Report Number:	LGT23G101RF04
Sample Received Date:	Jul. 28, 2023
Date of Test:	Jul. 28, 2023 – Aug. 18, 2023
Date of Issue:	Aug. 18, 2023

TEST REPORT CERTIFICATION

Applicant:	Xwireless LLC
Address:	11565 0ld Georgetown Road, Rockville, MD, USA
Manufacturer:	Xwireless LLC
Address:	11565 0ld Georgetown Road, Rockville, MD, USA
Product Name:	Smartphone
Trademark:	N/A
Model Name:	Vortex CM62
Sample Status:	Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15.407, Subpart E ANSI C63.10-2013	PASS

Prepared by:

Zane Shan

Zane Shan
Engineer

Approved by:

Vita Li
Technical Director

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Revision History

Rev.	Issue Date	Contents
00	Aug. 18, 2023	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
Part 15.407,KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

FCC Part 15.407		
FCC standard	Test Item	Results
15.207	AC Conducted Emission	PASS
15.407 (a) /15.407 (e)	26dB/6dB &99% Bandwidth	PASS
15.407(a)	Maximum Conducted Output Power	PASS
15.407(b)/15.205/15.209	Radiated Emission And (bandedge Emissions) Measurement	PASS
15.407(a)	Power Spectral Density	PASS
15.407(c)	Automatically Discontinue Transmission	PASS
15.203/15.204	Antenna Requirement	PASS

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report.

(2) All tests are according to ANSI C63.10-2013.

1.1 TEST FACTORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate:	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	RF output power, conducted	±0.68dB
2	Unwanted Emissions, conducted	±2.988dB
3	All emissions, radiated 9K-30MHz	±2.84dB
4	All emissions, radiated 30M-1GHz	±4.39dB
5	All emissions, radiated 1G-6GHz	±5.10dB
6	All emissions, radiated>6G	±5.48dB
7	Conducted Emission (9KHz-150KHz)	±2.79dB
8	Conducted Emission (150KHz-30MHz)	±2.80dB

Note: The measurement uncertainty is not included in the test result.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

<table>
<tr><td>Product Name:</td><td>Smartphone</td></tr>
<tr><td>Model Name:</td><td>Vortex CM62</td></tr>
<tr><td>Series Model:</td><td>N/A</td></tr>
<tr><td>Model Difference:</td><td>N/A</td></tr>
<tr><td>Product Description:</td><td>
<table>
<tr><td rowspan="3">Operation Frequency:</td><td>IEEE 802.11a/n(HT20)/ac(VHT20): 5.180GHz-5.240GHz
IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz</td></tr>
<tr><td>IEEE 802.11a/n(HT20)/ac(VHT20): 5.260GHz-5.320GHz
IEEE 802.11 n(HT40)/ac(VHT40): 5.270GHz-5.310GHz</td></tr>
<tr><td>I IEEE 802.11a/n(HT20)/ac(VHT20): 5.745GHz-5.825GHz
IEEE 802.11a/n(HT40)/ac(VHT40): 5.755GHz-5.795GHz</td></tr>
<tr><td>Modulation Type:</td><td>802.11a(OFDM): BPSK, QPSK, 16-QAM, 64-QAM
802.11n(OFDM): BPSK, QPSK, 16-QAM, 64-QAM
802.11ac (OFDM): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM</td></tr>
<tr><td>Antenna Designation:</td><td>FPC</td></tr>
<tr><td>Antenna Gain(dBi)</td><td>2.4</td></tr>
</table>
More details of EUT technical specification, please refer to the User Manual.
</td></tr>
<tr><td>Test Channel:</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Adapter:</td><td>Input: 100-240V, 50/60Hz 0.2A
Output: 5V, 1.0A, 5.0W</td></tr>
<tr><td>Battery:</td><td>Capacity: 3000mAh
Rated Voltage: 3.8V, 11.40Wh
Maximum Chargeable Voltage: 4.35V</td></tr>
<tr><td>Hardware Version:</td><td>N/A</td></tr>
<tr><td>Software Version:</td><td>N/A</td></tr>
<tr><td>Connecting I/O Port(s):</td><td>Please refer to the Note 1.</td></tr>
</table>

Note

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
2. The antenna information refers to the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.

3.

Operation Frequency of channel			
5.180GHz-5.240GHz		5.260GHz-5.320GHz	
Channel	Frequency	Channel	Frequency
36	5180	52	5260
38	5190	54	5270
40	5200	56	5280
42	5210	58	5290
44	5220	60	5300
46	5230	62	5310
48	5240	64	5320
--		5.745GHz-5.825GHz	
--	--	Channel	Frequency
--	--	149	5745
--	--	151	5755
--	--	153	5765
--	--	157	5785
--	--	159	5795
--	--	161	5805
--	--	165	5825
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Note:
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:
Carrier Frequency Channel

Channel List for 802.11a/n/ac(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	52	5260	149	5745	--	--
40	5200	60	5300	157	5785	--	--
48	5240	64	5320	165	5825	--	--

Channel List for 802.11n/ac(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	54	5270	151	5755	--	--
46	5230	62	5310	159	5795	--	--
134	5670	--	--	--	--	--	--

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11a HT20 CH36&CH40&CH48	6 Mbps
Mode 2	TX IEEE 802.11a HT20 CH52&CH60&CH64	6 Mbps
Mode 3	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 4	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 5	TX IEEE 802.11ac VHT20 CH36&CH40&CH48	NSS1 MCS0
Mode 6	TX IEEE 802.11n HT20 CH52&CH60&CH64	MCS 0
Mode 7	TX IEEE 802.11ac VHT20 CH52&CH60&CH64	NSS1 MCS0
Mode 8	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 9	TX IEEE 802.11ac VHT20 CH149&CH157&CH165	NSS1 MCS0
Mode 10	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 11	TX IEEE 802.11ac VHT40 CH38&CH46	NSS1 MCS0
Mode 12	TX IEEE 802.11n HT40 CH54 &CH62	MCS 0
Mode 13	TX IEEE 802.11ac VHT40 CH54 &CH62	NSS1 MCS0
Mode 14	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 15	TX IEEE 802.11ac VHT40 CH151&CH159	NSS1 MCS0

Note: (1) The measurements are performed at the highest, middle, lowest available channels.

(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

(3) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.

(4) The battery is fully-charged during the radited and RF conducted test.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 16: TX Mode

2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test software Version	Test program: 5G WIFI B1	
Engineering Mode	Mode Or Modulation type	Power setting
	a	17
	n20	17
	n40	17
	ac20	17
	ac40	17
Test software Version	Test program: 5G WIFI B2	
Engineering Mode	Mode Or Modulation type	Power setting
	a	17
	n20	17
	n40	17
	ac20	17
	ac40	17
Test software Version	Test program: 5G WIFI B4	
Engineering Mode	Mode Or Modulation type	Power setting
	a	17
	n20	17
	n40	17
	ac20	17
	ac40	17

2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Accessories Equipment

Description	Manufacturer	Model	S/N	Rating
Adapter	Xwireless LLC	Vortex CM62	N/A	Input: 100-240V ~ 50/60Hz 0.2A Output: 5V, 1A
USB-A to USB-C Cable	N/A	N/A	N/A	1m, unshielded, without ferrite core

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating

Note:

(1) For detachable type I/O cable should be specified the length in cm in『Length』column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Conducted Emission					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Cal. Until**
EMI Test Receiver	R&S	ESU8	100372	2023.04.13	2024.04.12
LISN	COM-POWER	LI-115	02032	2023.04.07	2024.04.06
LISN	SCHWARZBECK	NNLK 8121	00847	2023.04.07	2024.04.06
LISN	SCHWARZBECK	NNLK 8122	00160	2023.04.07	2024.04.06
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2023.04.07	2024.04.06
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Testing Software	EMC-I_V1.4.0.3_SKET				

Radiated Test equipment					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Cal. Until**
EMI Test Receiver	R&S	ESU8	100372	2023.04.13	2024.04.12
Active loop Antenna	ETS	6502	00049544	2022.06.02	2025.06.01
Spectrum Analyzer	Keysight	N9010B	MY60242508	2023.04.10	2024.04.09
Bilog Antenna(30M-1G)	SCHWARZBECK	VULB 9168	2705	2022.06.05	2025.06.04
Horn Antenna(1-18G)	SCHWARZBECK	3115	10SL0060	2022.06.02	2025.06.01
Horn Antenna(18-40G)	A-INFO	LB-180400-KF	J211060273	2022.06.08	2025.06.07
Pre-amplifier(30M-1G)	EMtrace	RP01A	02019	2023.04.07	2024.04.06
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A4722	2023.04.07	2024.04.06
Pre-amplifier(18-40G)	com-mw	LNPA_18-40-01	18050003	2023.04.07	2024.04.06
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Testing Software	EMC-I_V1.4.0.3_SKET				

Conducted Test equipment					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Cal. Until**
Signal Analyzer	Keysight	N9010B	MY60242508	2023.04.10	2024.04.09
Wireless Communications Test Set	R&S	CMW 500	137737	2023.04.13	2024.04.12
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2023.04.07	2024.04.06
Power Sensor	MW	MW100-RFCB	MW220324LG-33	2023.04.13	2024.04.12
Temperature & Humidity	KTJ	TA218B	N.A	2023.04.24	2024.04.23
Temperature& Humidity test chamber	AISRY	LX-1000L	171200018	2023.05.10	2024.05.09
Attenuator	eastsheep	90db	N.A	2023.04.10	2024.04.09
Testing Software	MTS8200_ V2.0.0.0_MW				

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

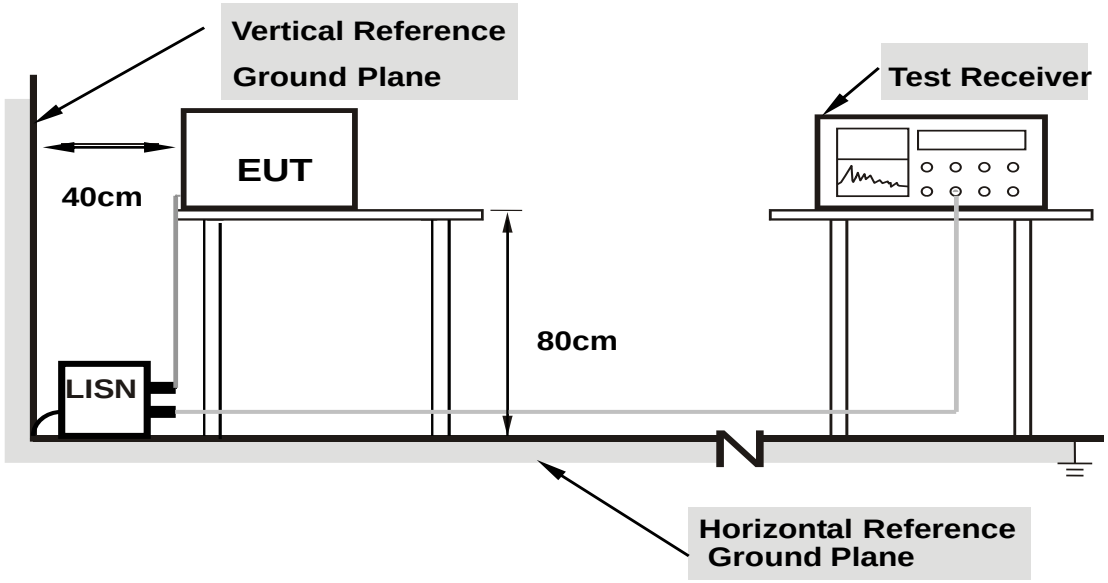
3.1.2 TEST PROCEDURE

a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN is at least 80 cm from the nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1. Support units were connected to second LISN.

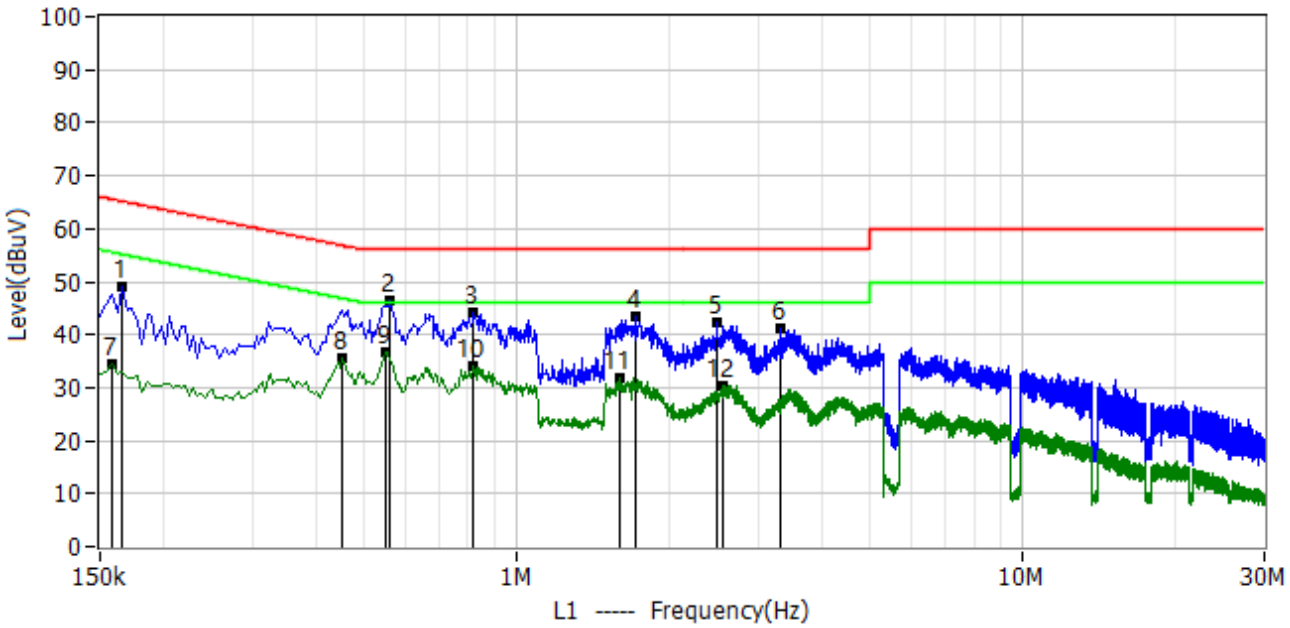
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

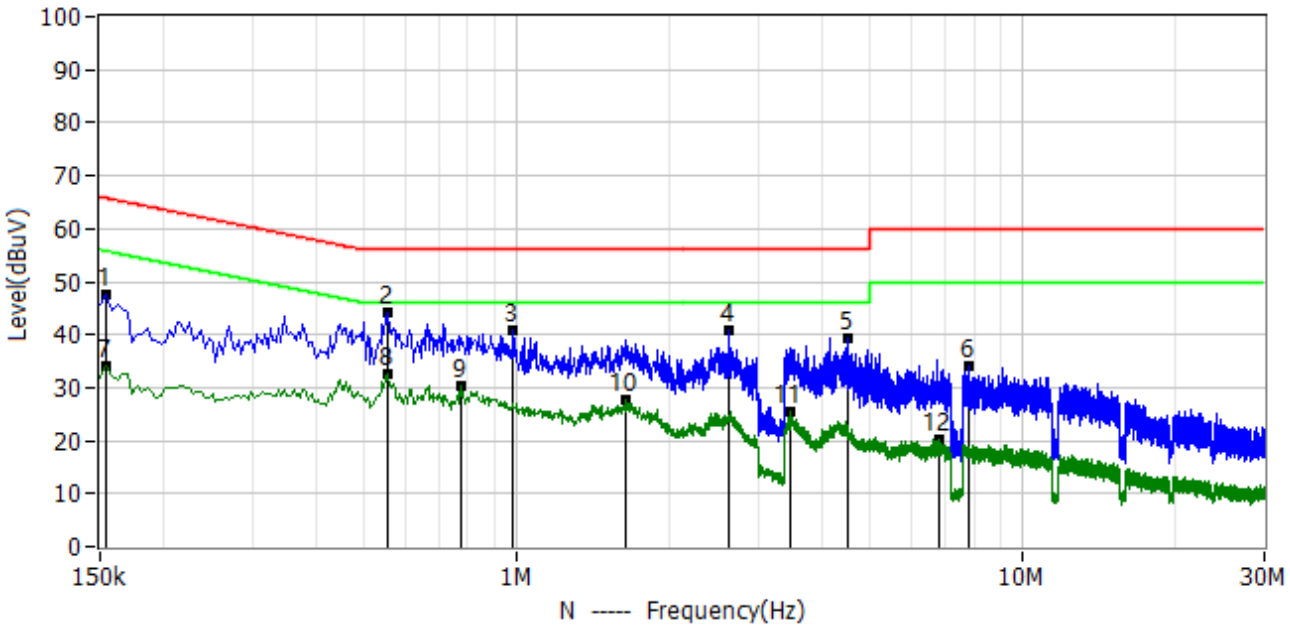
3.1.6 TEST RESULTS

Project: LGT23G101	Test Engineer: LiuH
EUT: Smartphone	Temperature: 27.5℃
M/N: Vortex CM62	Humidity: 49%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-07-31
Test Mode: 5G Wi-Fi TX	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.166	38.45	10.57	49.02	65.16	-16.14	QP	L1
2*	0.562	35.70	10.58	46.28	56.00	-9.72	QP	L1
3*	0.822	33.54	10.58	44.12	56.00	-11.88	QP	L1
4*	1.710	32.71	10.70	43.41	56.00	-12.59	QP	L1
5*	2.486	31.42	10.74	42.16	56.00	-13.84	QP	L1
6*	3.314	30.40	10.73	41.13	56.00	-14.87	QP	L1
7*	0.158	23.97	10.57	34.54	55.57	-21.03	AV	L1
8*	0.450	25.11	10.58	35.69	46.88	-11.19	AV	L1
9*	0.550	26.29	10.58	36.87	46.00	-9.13	AV	L1
10*	0.822	23.66	10.58	34.24	46.00	-11.76	AV	L1
11*	1.590	21.22	10.68	31.90	46.00	-14.10	AV	L1
12*	2.554	19.75	10.74	30.49	46.00	-15.51	AV	L1

Project: LGT23G101	Test Engineer: LiuH
EUT: Smartphone	Temperature: 27.5℃
M/N: Vortex CM62	Humidity: 49%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-07-31
Test Mode: 5G Wi-Fi TX	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.154	36.83	10.56	47.39	65.78	-18.39	QP	N
2*	0.554	33.74	10.58	44.32	56.00	-11.68	QP	N
3*	0.982	30.17	10.59	40.76	56.00	-15.24	QP	N
4*	2.618	30.26	10.74	41.00	56.00	-15.00	QP	N
5*	4.502	28.79	10.71	39.50	56.00	-16.50	QP	N
6*	7.794	23.22	10.79	34.01	60.00	-25.99	QP	N
7*	0.154	23.42	10.56	33.98	55.78	-21.81	AV	N
8*	0.554	21.91	10.58	32.49	46.00	-13.51	AV	N
9*	0.778	19.77	10.58	30.35	46.00	-15.65	AV	N
10*	1.646	16.91	10.69	27.60	46.00	-18.40	AV	N
11*	3.474	14.63	10.73	25.36	46.00	-20.64	AV	N
12*	6.858	9.37	10.76	20.13	50.00	-29.87	AV	N

3.2 RADIATED EMISSION AND (BANDEDGE) MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

In case the emission fall within the restricted band specified on 15.407(b)7&15.205/209(a), then the limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	68.2	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15E.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Note: In case the emission radiated emission above 1000MHz fall within the restricted band the restricted frequency bands, the peak limit is 74 dBuV/m.

LIMITS OF EMISSIONS OUTSIDE OF THE FREQUENCY BANDS

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note: dBuV/m(at 3M) = EIRP(dBm) + 95.3.

Peak Limit = -27dBm/MHz + 95.3 = 68.3 dBuV/m.

Spectrum Parameter	**Setting**
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic (Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

Receiver Parameter	**Setting**
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.
e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

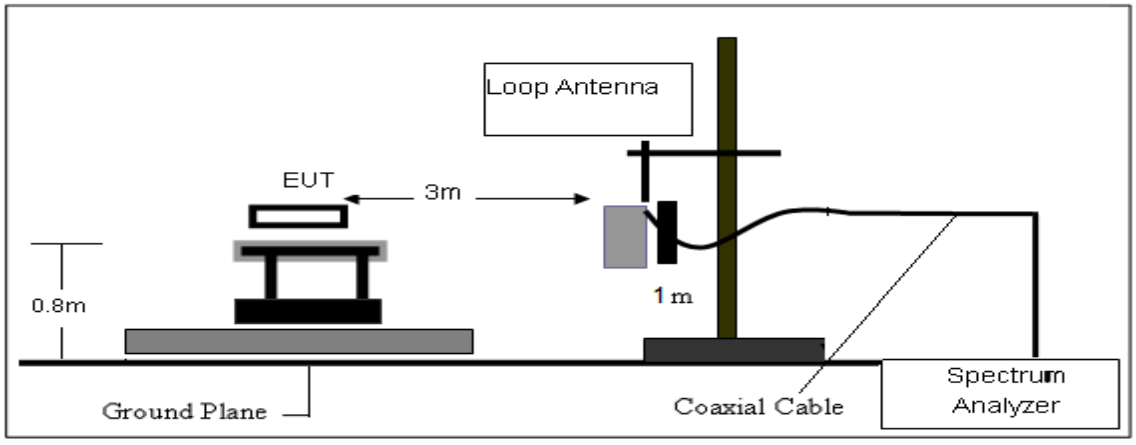
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

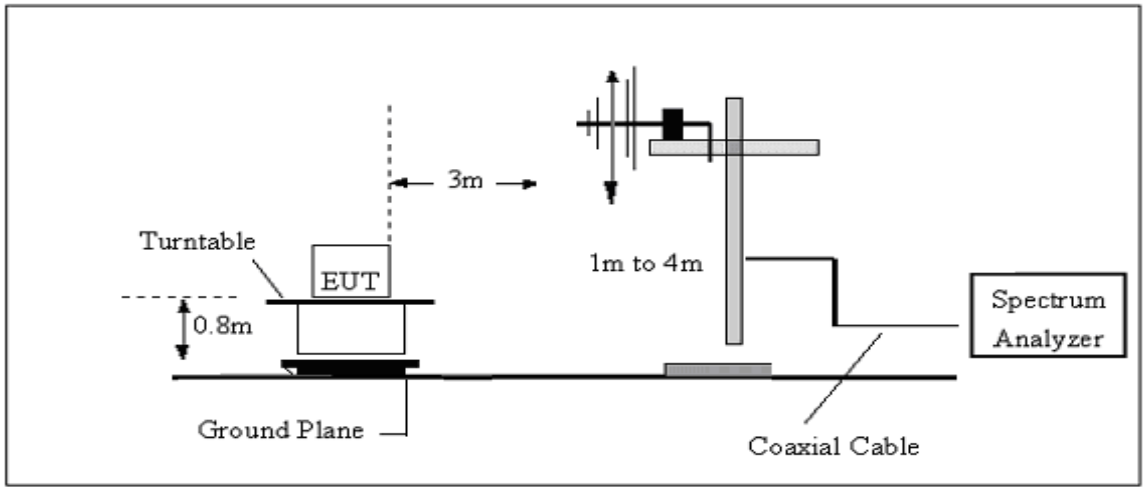
No deviation

3.2.3 TEST SETUP

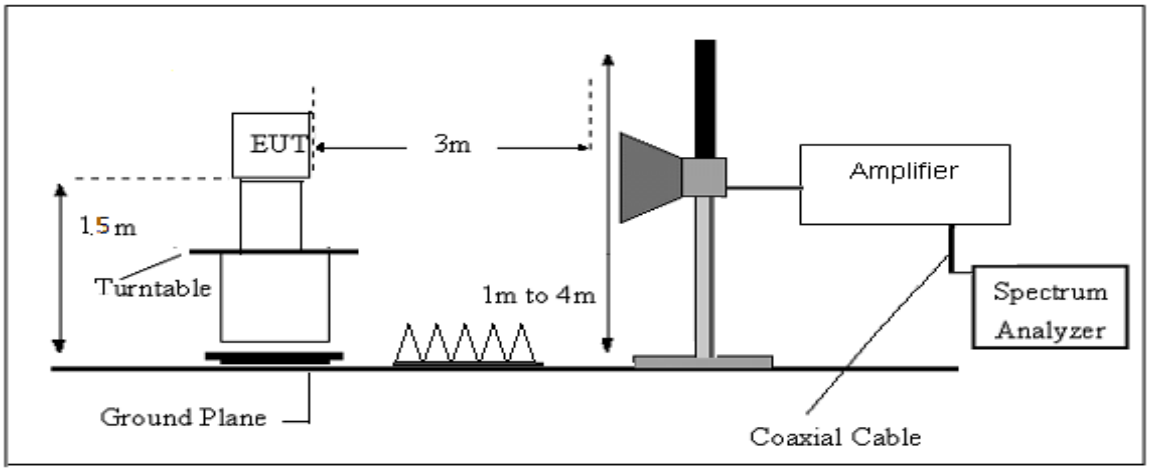
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:
FS = RA + AF + CL - AG
Where
FS = Field Strength
CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude
AG = Amplifier Gain
AF = Antenna Factor
For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.6 TEST RESULTS

Results of Radiated Emissions (9 KHz~30MHz)

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Remark
1*	-	-	-	-	-	-	-	See Note

Note:

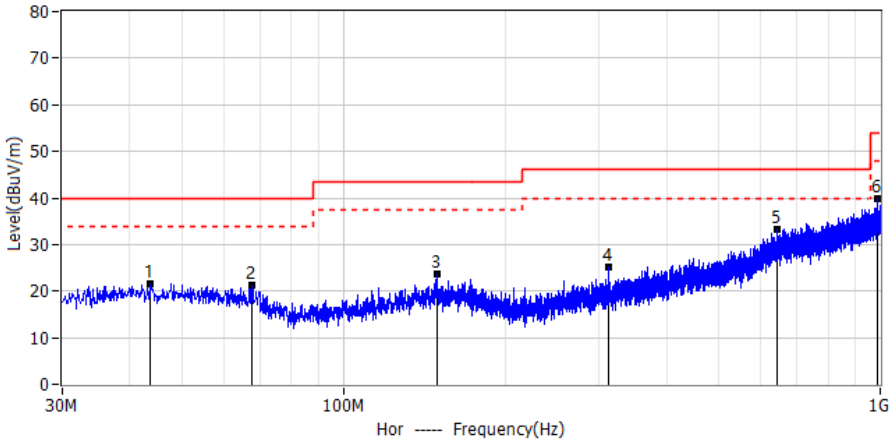
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

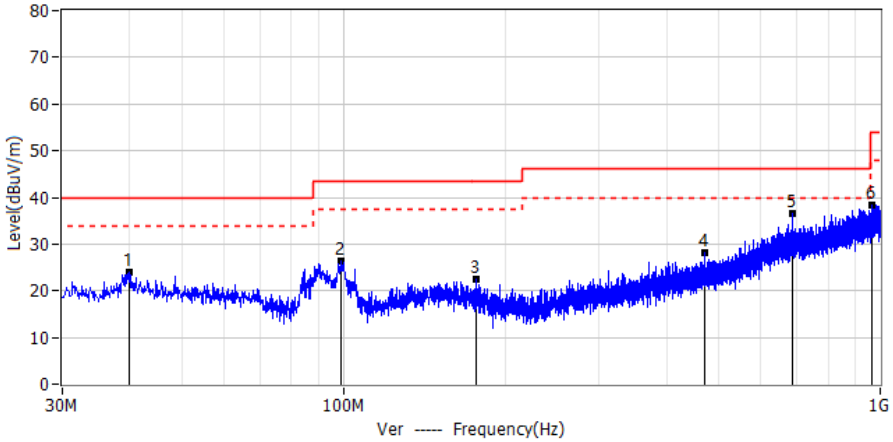
Limit line = specific limits (dBuV) + distance extrapolation factor.

Results of Radiated Emissions (30MHz~1000MHz)

Project: LGT23G101	Test Engineer: LiuH
EUT: Smartphone	Temperature: 29.5℃
M/N: Vortex CM62	Humidity: 49%RH
Test Voltage: Battery	Test Data: 2023-08-02
Test Mode: 5G Wi-Fi TX	
Note:	



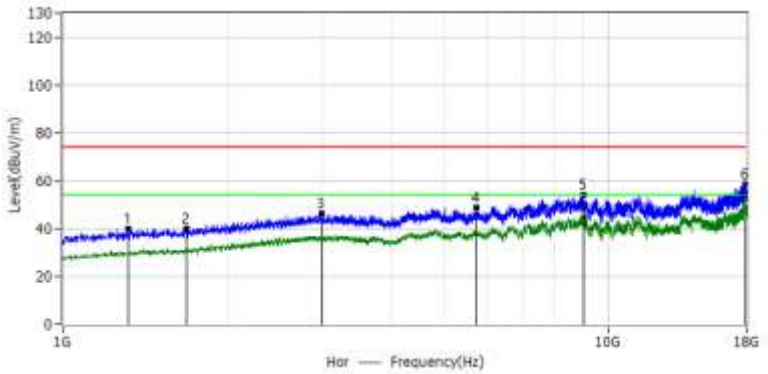
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	43.580MHz	2.22	19.27	21.49	40.00	-18.51	QP	Hor
2*	67.466MHz	3.20	18.18	21.38	40.00	-18.62	QP	Hor
3*	149.431MHz	3.80	19.94	23.74	43.50	-19.76	QP	Hor
4*	312.028MHz	4.80	20.29	25.09	46.00	-20.91	QP	Hor
5*	641.464MHz	4.34	29.02	33.36	46.00	-12.64	QP	Hor
6*	985.329MHz	5.46	34.50	39.96	54.00	-14.04	QP	Hor



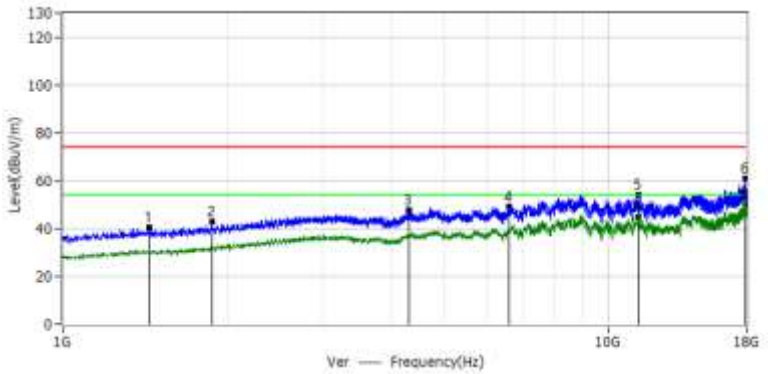
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	40.064MHz	4.45	19.38	23.83	40.00	-16.17	QP	Ver
2*	99.113MHz	10.71	15.57	26.28	43.50	-17.22	QP	Ver
3*	177.076MHz	3.27	19.11	22.38	43.50	-21.12	QP	Ver
4*	471.108MHz	3.83	24.37	28.20	46.00	-17.80	QP	Ver
5*	687.539MHz	6.98	29.69	36.67	46.00	-9.33	QP	Ver
6*	967.505MHz	4.12	34.30	38.42	54.00	-15.58	QP	Ver

Results of Radiated Emissions (Above 1000MHz)

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5180	
Note:	

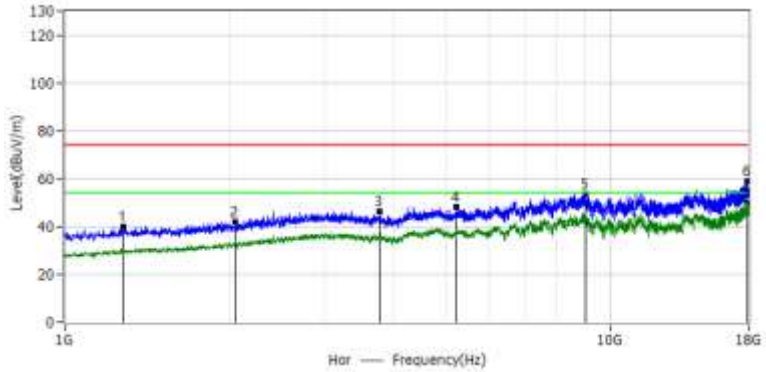


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.3166GHz	62.07	-22.04	40.03	74.00	-33.97	PK	Hor
2*	1.6842GHz	59.41	-19.37	40.04	74.00	-33.96	PK	Hor
3*	2.9784GHz	54.69	-8.45	46.24	74.00	-27.76	PK	Hor
4*	5.7366GHz	56.34	-7.65	48.69	74.00	-25.31	PK	Hor
5*	9.0176GHz	55.32	-1.17	54.15	74.00	-19.85	PK	Hor
6*	17.9299GHz	50.01	8.47	58.48	74.00	-15.52	PK	Hor
7*	9.0176GHz	45.27	-1.17	44.10	54.00	-9.90	AV	Hor
8*	17.9299GHz	40.23	8.47	48.70	54.00	-5.30	AV	Hor

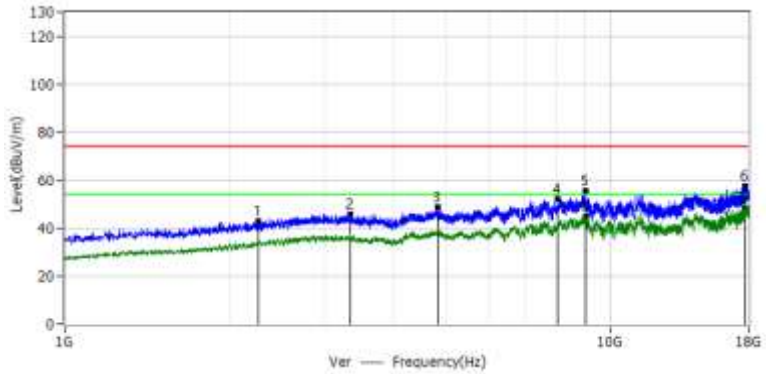


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.4420GHz	61.51	-21.15	40.36	74.00	-33.64	PK	Ver
2*	1.8755GHz	60.22	-17.49	42.73	74.00	-31.27	PK	Ver
3*	4.3150GHz	54.04	-6.54	47.50	74.00	-26.50	PK	Ver
4*	6.5802GHz	55.43	-6.42	49.01	74.00	-24.99	PK	Ver
5*	11.3891GHz	52.36	1.86	54.22	74.00	-19.78	PK	Ver
6*	17.9405GHz	52.62	8.48	61.10	74.00	-12.90	PK	Ver
7*	11.3891GHz	43.14	1.86	45.00	54.00	-9.00	AV	Ver
8*	17.9405GHz	41.22	8.48	49.70	54.00	-4.30	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5200	
Note:	

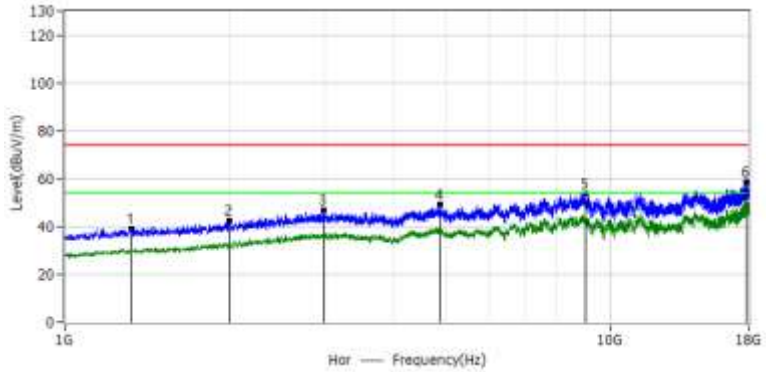


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.2784GHz	62.06	-22.35	39.71	74.00	-34.29	PK	Hor
2*	2.0540GHz	57.71	-15.66	42.05	74.00	-31.95	PK	Hor
3*	3.7731GHz	54.50	-8.16	46.34	74.00	-27.66	PK	Hor
4*	5.2245GHz	55.21	-6.86	48.35	74.00	-25.65	PK	Hor
5*	9.0240GHz	54.57	-1.17	53.40	74.00	-20.60	PK	Hor
6*	17.9469GHz	50.21	8.48	58.69	74.00	-15.31	PK	Hor
7*	17.9469GHz	41.22	8.48	49.70	54.00	-4.30	AV	Hor

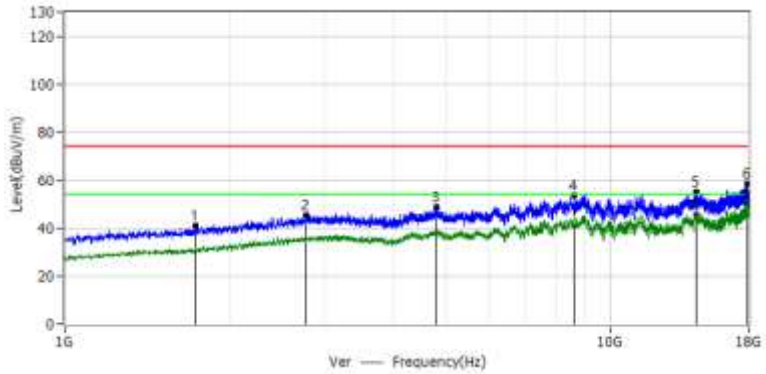


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	2.2644GHz	56.25	-13.46	42.79	74.00	-31.21	PK	Ver
2*	3.3417GHz	54.33	-8.45	45.88	74.00	-28.12	PK	Ver
3*	4.8335GHz	54.76	-6.01	48.75	74.00	-25.25	PK	Ver
4*	8.0274GHz	55.86	-3.92	51.94	74.00	-22.06	PK	Ver
5*	9.0325GHz	56.76	-1.17	55.59	74.00	-18.41	PK	Ver
6*	17.7131GHz	49.09	8.32	57.41	74.00	-16.59	PK	Ver
7*	9.0325GHz	45.77	-1.17	44.60	54.00	-9.40	AV	Ver
8*	17.7131GHz	39.88	8.32	48.20	54.00	-5.80	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5240	
Note:	

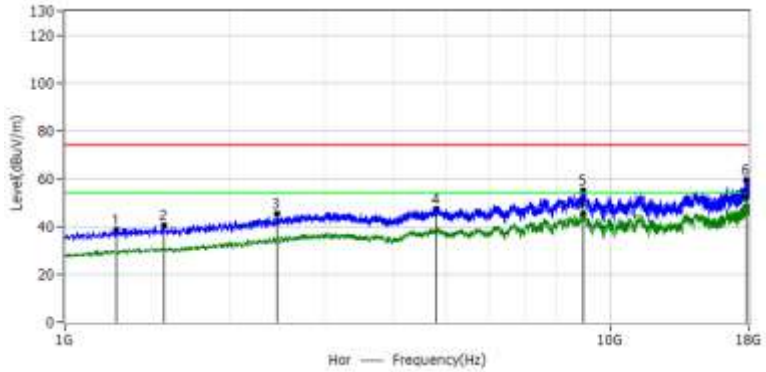


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.3272GHz	61.07	-21.96	39.11	74.00	-34.89	PK	Hor
2*	2.0009GHz	58.82	-16.22	42.60	74.00	-31.40	PK	Hor
3*	2.9869GHz	55.30	-8.41	46.89	74.00	-27.11	PK	Hor
4*	4.8930GHz	55.46	-6.06	49.40	74.00	-24.60	PK	Hor
5*	9.0219GHz	54.96	-1.17	53.79	74.00	-20.21	PK	Hor
6*	17.8236GHz	49.83	8.40	58.23	74.00	-15.77	PK	Hor
7*	17.8236GHz	40.20	8.40	48.60	54.00	-5.40	AV	Hor

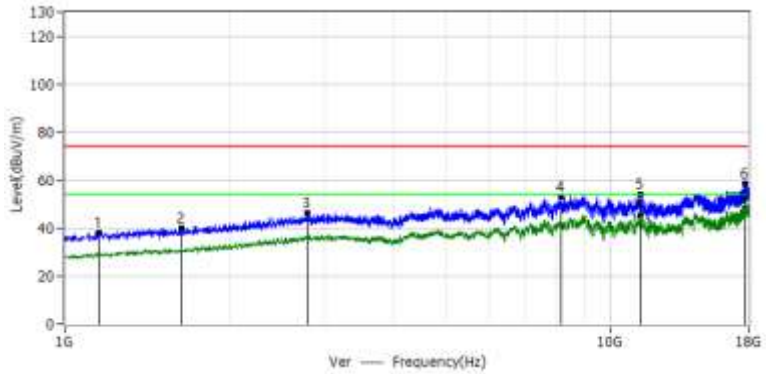


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.7352GHz	59.57	-18.88	40.69	74.00	-33.31	PK	Ver
2*	2.7701GHz	55.01	-9.56	45.45	74.00	-28.55	PK	Ver
3*	4.8059GHz	54.70	-5.99	48.71	74.00	-25.29	PK	Ver
4*	8.5947GHz	56.10	-2.32	53.78	74.00	-20.22	PK	Ver
5*	14.4215GHz	48.89	5.91	54.80	74.00	-19.20	PK	Ver
6*	17.9447GHz	50.19	8.48	58.67	74.00	-15.33	PK	Ver
7*	14.4215GHz	39.49	5.91	45.40	54.00	-8.60	AV	Ver
8*	17.9447GHz	41.02	8.48	49.50	54.00	-4.50	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5260	
Note:	

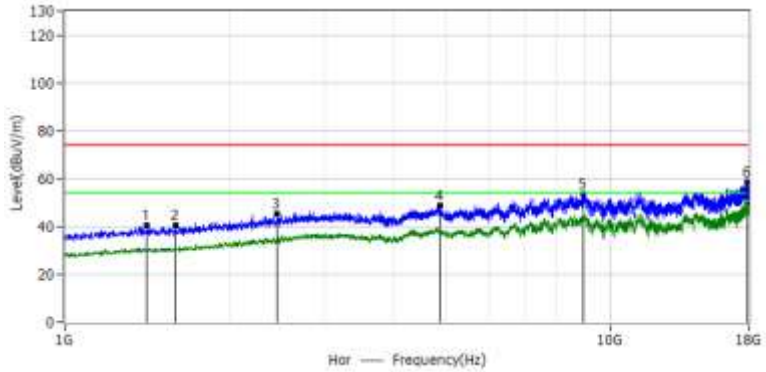


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.2422GHz	61.17	-22.63	38.54	74.00	-35.46	PK	Hor
2*	1.5164GHz	61.13	-20.73	40.40	74.00	-33.60	PK	Hor
3*	2.4514GHz	56.75	-11.50	45.25	74.00	-28.75	PK	Hor
4*	4.7995GHz	53.31	-5.99	47.32	74.00	-26.68	PK	Hor
5*	8.9347GHz	56.51	-1.35	55.16	74.00	-18.84	PK	Hor
6*	17.8194GHz	50.99	8.39	59.38	74.00	-14.62	PK	Hor
7*	8.9347GHz	46.65	-1.35	45.30	54.00	-8.70	AV	Hor
8*	17.8194GHz	39.61	8.39	48.00	54.00	-6.00	AV	Hor

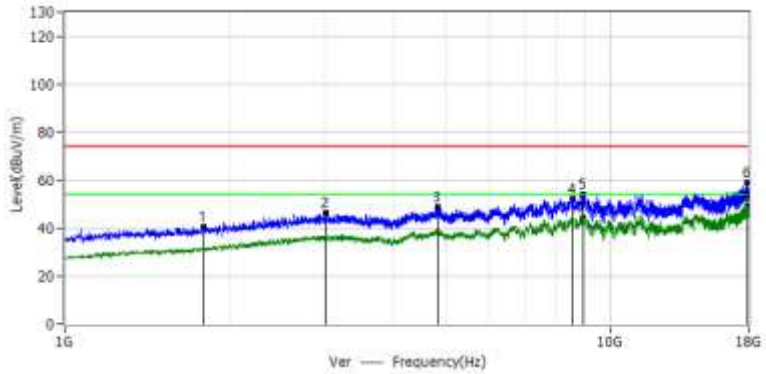


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.1530GHz	61.40	-23.39	38.01	74.00	-35.99	PK	Ver
2*	1.6375GHz	59.81	-19.82	39.99	74.00	-34.01	PK	Ver
3*	2.7829GHz	55.52	-9.49	46.03	74.00	-27.97	PK	Ver
4*	8.1400GHz	56.64	-3.60	53.04	74.00	-20.96	PK	Ver
5*	11.3912GHz	52.40	1.86	54.26	74.00	-19.74	PK	Ver
6*	17.7110GHz	50.23	8.32	58.55	74.00	-15.45	PK	Ver
7*	11.3912GHz	43.24	1.86	45.10	54.00	-8.90	AV	Ver
8*	17.7110GHz	39.88	8.32	48.20	54.00	-5.80	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5300	
Note:	

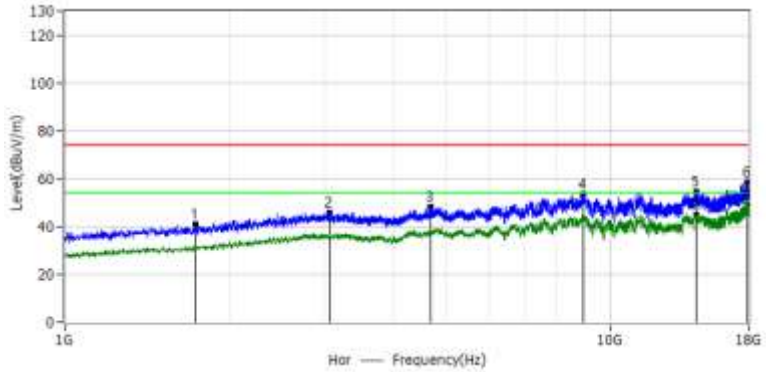


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.4122GHz	61.49	-21.32	40.17	74.00	-33.83	PK	Hor
2*	1.5992GHz	60.54	-20.18	40.36	74.00	-33.64	PK	Hor
3*	2.4556GHz	56.88	-11.45	45.43	74.00	-28.57	PK	Hor
4*	4.8824GHz	54.51	-6.05	48.46	74.00	-25.54	PK	Hor
5*	8.9284GHz	54.99	-1.37	53.62	74.00	-20.38	PK	Hor
6*	17.9426GHz	49.80	8.48	58.28	74.00	-15.72	PK	Hor
7*	17.9426GHz	40.62	8.48	49.10	54.00	-4.90	AV	Hor

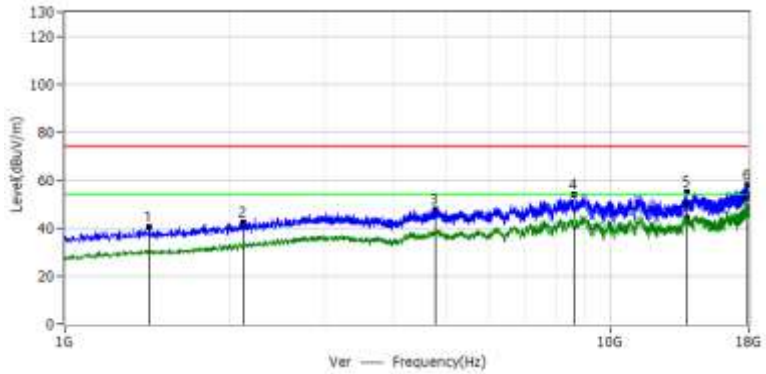


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.7969GHz	58.93	-18.28	40.65	74.00	-33.35	PK	Ver
2*	3.0145GHz	54.77	-8.34	46.43	74.00	-27.57	PK	Ver
3*	4.8229GHz	54.66	-6.00	48.66	74.00	-25.34	PK	Ver
4*	8.5777GHz	54.55	-2.36	52.19	74.00	-21.81	PK	Ver
5*	8.9284GHz	55.52	-1.37	54.15	74.00	-19.85	PK	Ver
6*	17.9405GHz	50.27	8.48	58.75	74.00	-15.25	PK	Ver
7*	8.9284GHz	45.77	-1.37	44.40	54.00	-9.60	AV	Ver
8*	17.9405GHz	40.62	8.48	49.10	54.00	-4.90	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5320	
Note:	

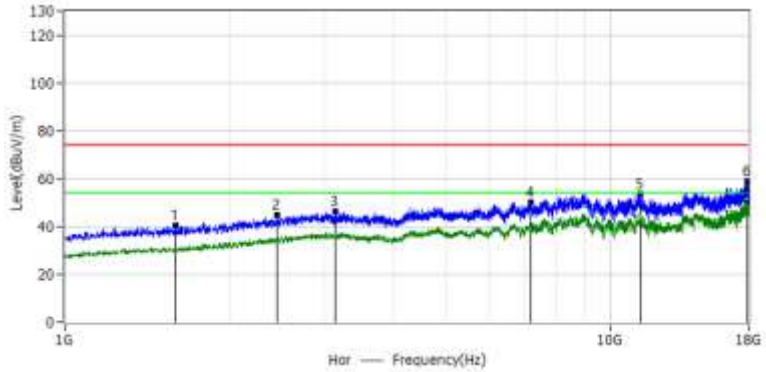


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.7331GHz	59.63	-18.90	40.73	74.00	-33.27	PK	Hor
2*	3.0506GHz	54.21	-8.36	45.85	74.00	-28.15	PK	Hor
3*	4.6911GHz	53.96	-5.90	48.06	74.00	-25.94	PK	Hor
4*	8.9305GHz	54.80	-1.37	53.43	74.00	-20.57	PK	Hor
5*	14.4257GHz	48.61	5.91	54.52	74.00	-19.48	PK	Hor
6*	17.9299GHz	49.94	8.47	58.41	74.00	-15.59	PK	Hor
7*	14.4257GHz	38.79	5.91	44.70	54.00	-9.30	AV	Hor
8*	17.9299GHz	40.93	8.47	49.40	54.00	-4.60	AV	Hor

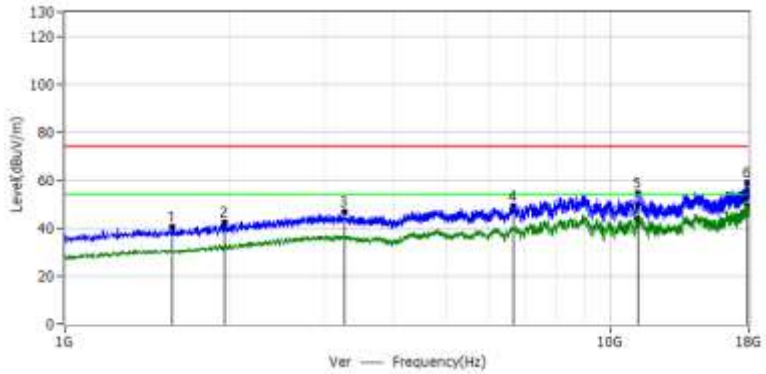


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.4271GHz	61.68	-21.23	40.45	74.00	-33.55	PK	Ver
2*	2.1199GHz	57.29	-14.97	42.32	74.00	-31.68	PK	Ver
3*	4.7889GHz	53.68	-5.98	47.70	74.00	-26.30	PK	Ver
4*	8.5926GHz	56.52	-2.32	54.20	74.00	-19.80	PK	Ver
5*	13.8690GHz	49.70	5.42	55.12	74.00	-18.88	PK	Ver
6*	17.9447GHz	49.27	8.48	57.75	74.00	-16.25	PK	Ver
7*	13.8690GHz	38.68	5.42	44.10	54.00	-9.90	AV	Ver
8*	17.9447GHz	40.42	8.48	48.90	54.00	-5.10	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5500	
Note:	

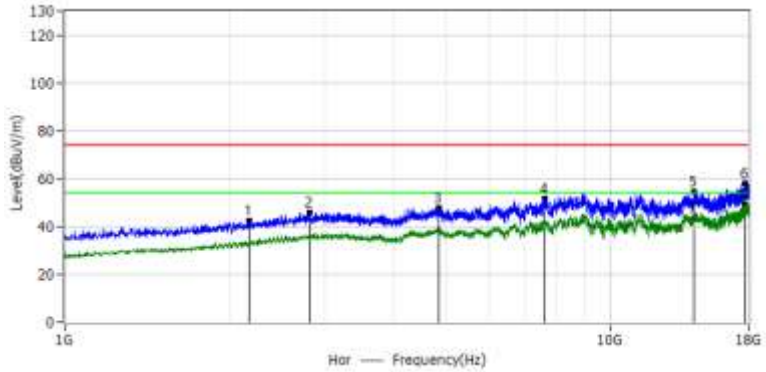


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.5950GHz	60.59	-20.21	40.38	74.00	-33.62	PK	Hor
2*	2.4556GHz	56.13	-11.45	44.68	74.00	-29.32	PK	Hor
3*	3.1292GHz	54.75	-8.38	46.37	74.00	-27.63	PK	Hor
4*	7.1689GHz	55.54	-5.22	50.32	74.00	-23.68	PK	Hor
5*	11.3891GHz	51.82	1.86	53.68	74.00	-20.32	PK	Hor
6*	17.9469GHz	50.52	8.48	59.00	74.00	-15.00	PK	Hor
7*	17.9469GHz	41.42	8.48	49.90	54.00	-4.10	AV	Hor

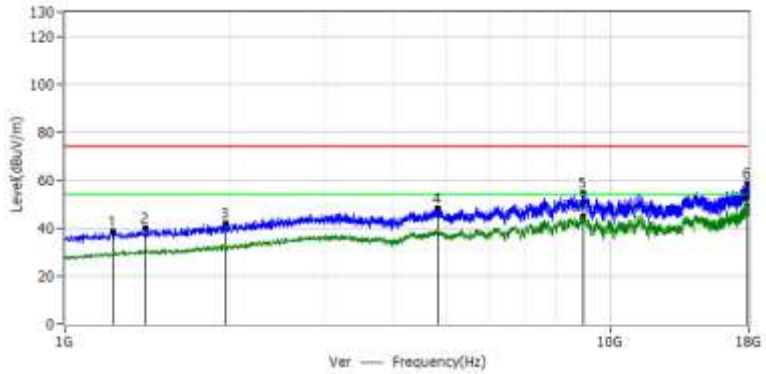


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.5695GHz	60.72	-20.38	40.34	74.00	-33.66	PK	Ver
2*	1.9626GHz	59.00	-16.61	42.39	74.00	-31.61	PK	Ver
3*	3.2631GHz	54.93	-8.43	46.50	74.00	-27.50	PK	Ver
4*	6.6610GHz	55.26	-6.28	48.98	74.00	-25.02	PK	Ver
5*	11.2786GHz	52.84	1.79	54.63	74.00	-19.37	PK	Ver
6*	17.9532GHz	50.46	8.49	58.95	74.00	-15.05	PK	Ver
7*	11.2786GHz	42.01	1.79	43.80	54.00	-10.20	AV	Ver
8*	17.9532GHz	40.61	8.49	49.10	54.00	-4.90	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5580	
Note:	

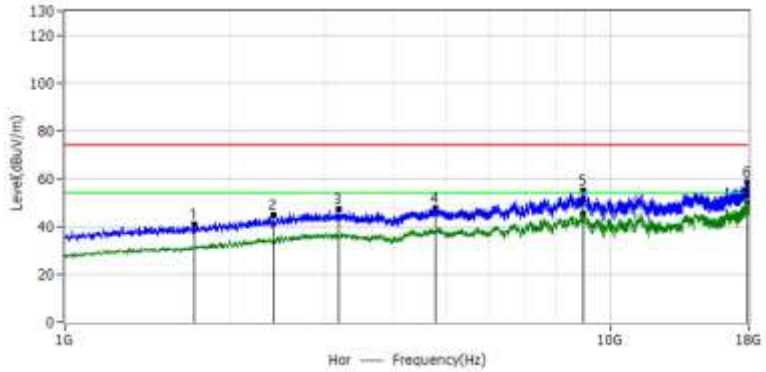


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	2.1730GHz	56.92	-14.42	42.50	74.00	-31.50	PK	Hor
2*	2.8190GHz	55.06	-9.30	45.76	74.00	-28.24	PK	Hor
3*	4.8569GHz	53.87	-6.03	47.84	74.00	-26.16	PK	Hor
4*	7.5917GHz	55.67	-4.24	51.43	74.00	-22.57	PK	Hor
5*	14.2961GHz	48.77	5.90	54.67	74.00	-19.33	PK	Hor
6*	17.7195GHz	49.42	8.32	57.74	74.00	-16.26	PK	Hor
7*	14.2961GHz	37.20	5.90	43.10	54.00	-10.90	AV	Hor
8*	17.7195GHz	40.78	8.32	49.10	54.00	-4.90	AV	Hor

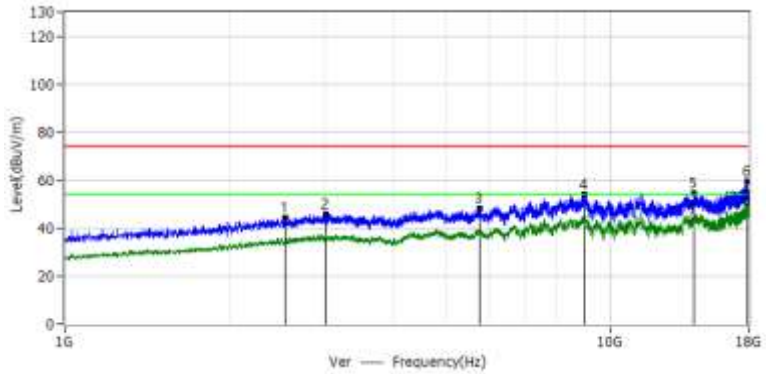


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.2252GHz	61.02	-22.77	38.25	74.00	-35.75	PK	Ver
2*	1.4037GHz	61.12	-21.36	39.76	74.00	-34.24	PK	Ver
3*	1.9775GHz	58.44	-16.46	41.98	74.00	-32.02	PK	Ver
4*	4.8314GHz	54.01	-6.01	48.00	74.00	-26.00	PK	Ver
5*	8.9305GHz	55.97	-1.37	54.60	74.00	-19.40	PK	Ver
6*	17.9320GHz	49.73	8.47	58.20	74.00	-15.80	PK	Ver
7*	8.9305GHz	46.17	-1.37	44.80	54.00	-9.20	AV	Ver
8*	17.9320GHz	40.63	8.47	49.10	54.00	-4.90	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5700	
Note:	

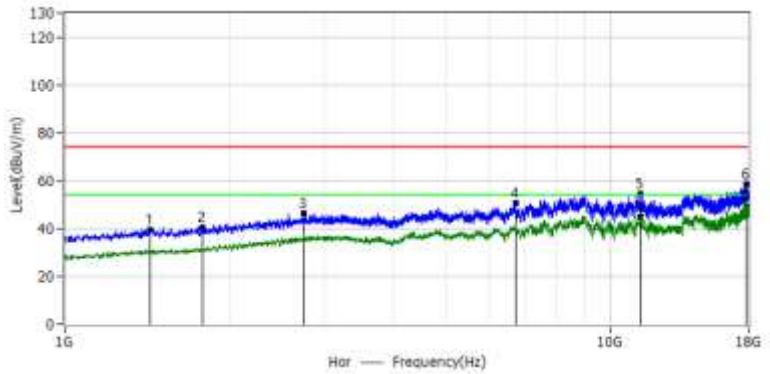


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.7310GHz	59.95	-18.92	41.03	74.00	-32.97	PK	Hor
2*	2.4110GHz	56.77	-11.92	44.85	74.00	-29.15	PK	Hor
3*	3.1760GHz	55.75	-8.40	47.35	74.00	-26.65	PK	Hor
4*	4.7931GHz	53.91	-5.98	47.93	74.00	-26.07	PK	Hor
5*	8.9305GHz	56.30	-1.37	54.93	74.00	-19.07	PK	Hor
6*	17.9384GHz	50.03	8.48	58.51	74.00	-15.49	PK	Hor
7*	8.9305GHz	46.77	-1.37	45.40	54.00	-8.60	AV	Hor
8*	17.9384GHz	41.42	8.48	49.90	54.00	-4.10	AV	Hor

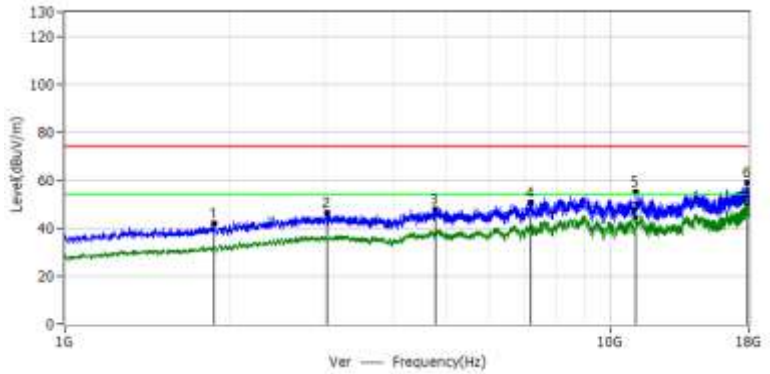


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	2.5385GHz	55.10	-10.78	44.32	74.00	-29.68	PK	Ver
2*	3.0060GHz	53.95	-8.34	45.61	74.00	-28.39	PK	Ver
3*	5.7834GHz	55.77	-7.63	48.14	74.00	-25.86	PK	Ver
4*	9.0070GHz	55.06	-1.17	53.89	74.00	-20.11	PK	Ver
5*	14.3004GHz	48.73	5.90	54.63	74.00	-19.37	PK	Ver
6*	17.9426GHz	50.77	8.48	59.25	74.00	-14.75	PK	Ver
7*	14.3004GHz	37.40	5.90	43.30	54.00	-10.70	AV	Ver
8*	17.9426GHz	40.52	8.48	49.00	54.00	-5.00	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5745	
Note:	

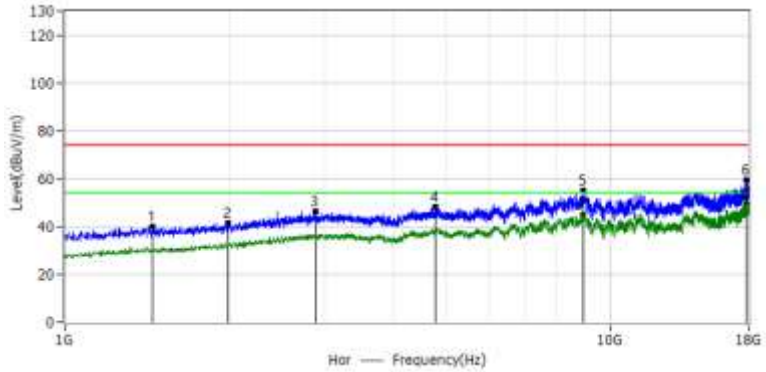


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.4314GHz	60.72	-21.21	39.51	74.00	-34.49	PK	Hor
2*	1.7841GHz	58.97	-18.41	40.56	74.00	-33.44	PK	Hor
3*	2.7382GHz	56.11	-9.72	46.39	74.00	-27.61	PK	Hor
4*	6.7099GHz	56.63	-6.20	50.43	74.00	-23.57	PK	Hor
5*	11.3934GHz	52.55	1.86	54.41	74.00	-19.59	PK	Hor
6*	17.8279GHz	49.79	8.40	58.19	74.00	-15.81	PK	Hor
7*	11.3934GHz	42.94	1.86	44.80	54.00	-9.20	AV	Hor
8*	17.8279GHz	40.80	8.40	49.20	54.00	-4.80	AV	Hor

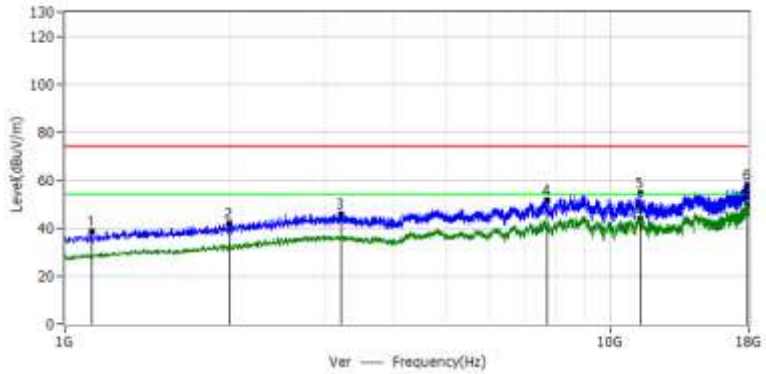


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.8776GHz	59.14	-17.47	41.67	74.00	-32.33	PK	Ver
2*	3.0251GHz	54.38	-8.35	46.03	74.00	-27.97	PK	Ver
3*	4.7846GHz	53.66	-5.97	47.69	74.00	-26.31	PK	Ver
4*	7.1604GHz	55.80	-5.24	50.56	74.00	-23.44	PK	Ver
5*	11.1554GHz	53.19	1.72	54.91	74.00	-19.09	PK	Ver
6*	17.9490GHz	50.20	8.48	58.68	74.00	-15.32	PK	Ver
7*	11.1554GHz	42.78	1.72	44.50	54.00	-9.50	AV	Ver
8*	17.9490GHz	40.52	8.48	49.00	54.00	-5.00	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5785	
Note:	

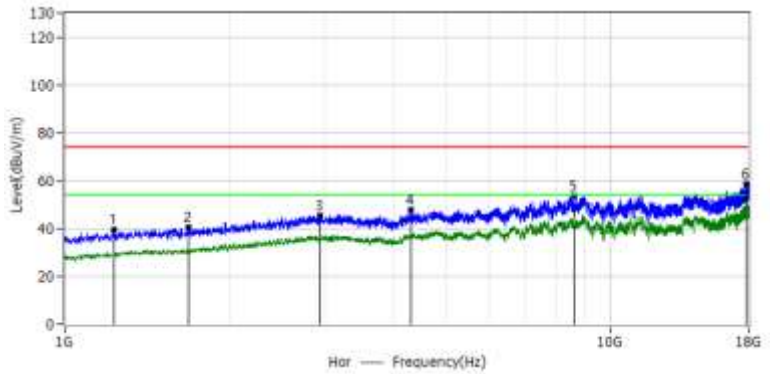


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.4462GHz	61.25	-21.13	40.12	74.00	-33.88	PK	Hor
2*	1.9945GHz	57.64	-16.29	41.35	74.00	-32.65	PK	Hor
3*	2.8827GHz	55.15	-8.96	46.19	74.00	-27.81	PK	Hor
4*	4.7931GHz	54.32	-5.98	48.34	74.00	-25.66	PK	Hor
5*	8.9326GHz	56.26	-1.36	54.90	74.00	-19.10	PK	Hor
6*	17.8342GHz	50.92	8.40	59.32	74.00	-14.68	PK	Hor
7*	8.9326GHz	45.96	-1.36	44.60	54.00	-9.40	AV	Hor
8*	17.8342GHz	40.70	8.40	49.10	54.00	-4.90	AV	Hor

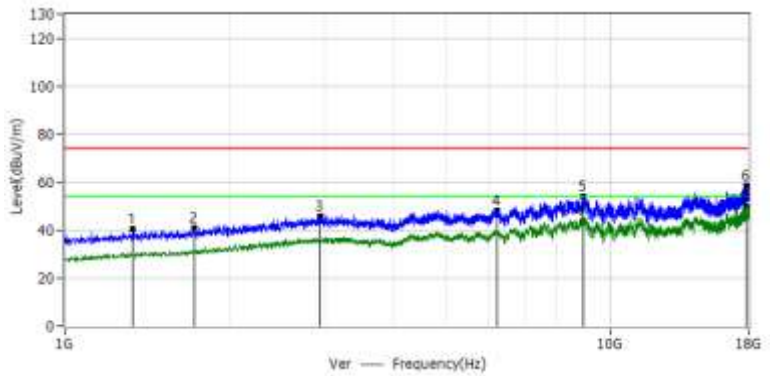


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.1190GHz	62.28	-23.69	38.59	74.00	-35.41	PK	Ver
2*	2.0051GHz	58.09	-16.18	41.91	74.00	-32.09	PK	Ver
3*	3.2142GHz	54.24	-8.41	45.83	74.00	-28.17	PK	Ver
4*	7.6661GHz	55.72	-4.20	51.52	74.00	-22.48	PK	Ver
5*	11.3976GHz	52.69	1.86	54.55	74.00	-19.45	PK	Ver
6*	17.9405GHz	49.58	8.48	58.06	74.00	-15.94	PK	Ver
7*	11.3976GHz	42.14	1.86	44.00	54.00	-10.00	AV	Ver
8*	17.9405GHz	41.22	8.48	49.70	54.00	-4.30	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5825	
Note:	



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.2295GHz	62.37	-22.73	39.64	74.00	-34.36	PK	Hor
2*	1.6821GHz	59.77	-19.39	40.38	74.00	-33.62	PK	Hor
3*	2.9444GHz	53.97	-8.63	45.34	74.00	-28.66	PK	Hor
4*	4.3192GHz	54.30	-6.52	47.78	74.00	-26.22	PK	Hor
5*	8.6011GHz	55.64	-2.30	53.34	74.00	-20.66	PK	Hor
6*	17.8385GHz	49.92	8.41	58.33	74.00	-15.67	PK	Hor
7*	17.8385GHz	39.99	8.41	48.40	54.00	-5.60	AV	Hor

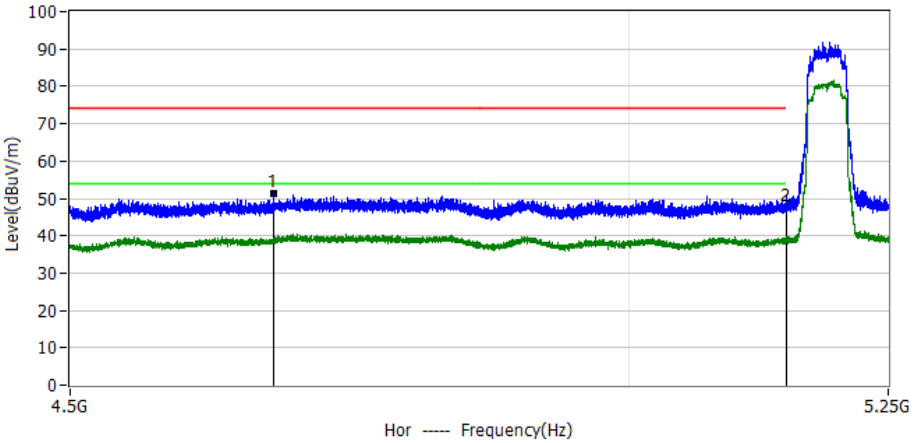


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.3336GHz	62.13	-21.91	40.22	74.00	-33.78	PK	Ver
2*	1.7310GHz	59.64	-18.92	40.72	74.00	-33.28	PK	Ver
3*	2.9465GHz	54.22	-8.62	45.60	74.00	-28.40	PK	Ver
4*	6.2126GHz	55.48	-7.13	48.35	74.00	-25.65	PK	Ver
5*	8.9496GHz	55.42	-1.31	54.11	74.00	-19.89	PK	Ver
6*	17.8300GHz	49.95	8.40	58.35	74.00	-15.65	PK	Ver
7*	8.9496GHz	44.91	-1.31	43.60	54.00	-10.40	AV	Ver
8*	17.8300GHz	41.20	8.40	49.60	54.00	-4.40	AV	Ver

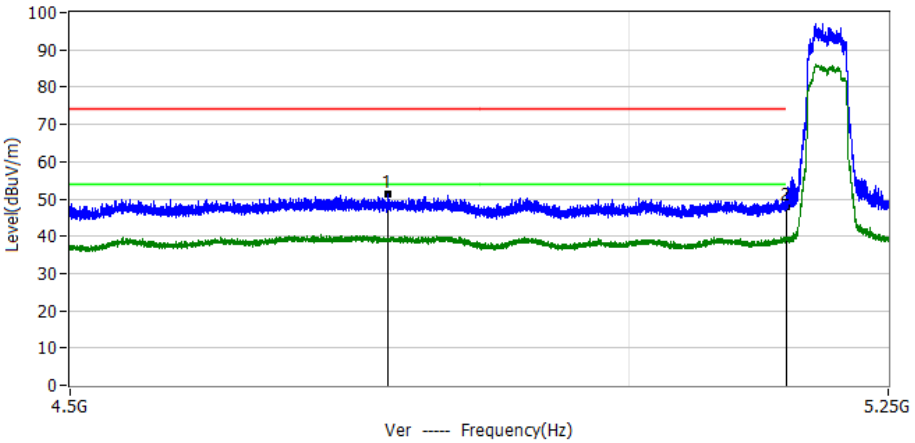
Remark:
In frequency ranges 18~25GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report. No any other emissions level which are attenuated less than 20dB below the limit. No recording in the test report.

3.2.7 TEST RESULTS(Band edge Requirements)

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5190	
Note:	

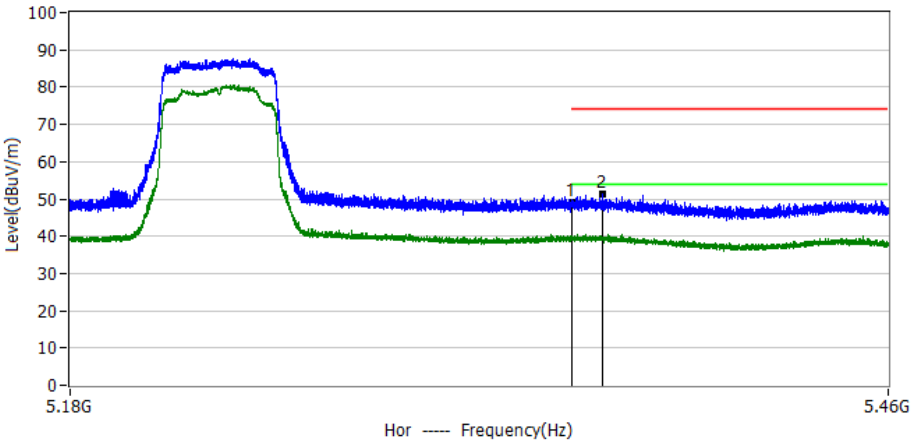


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.6759GHz	57.12	-5.89	51.23	74.00	-22.77	PK	Hor
2*	5.1500GHz	54.02	-6.62	47.40	74.00	-26.60	PK	Hor

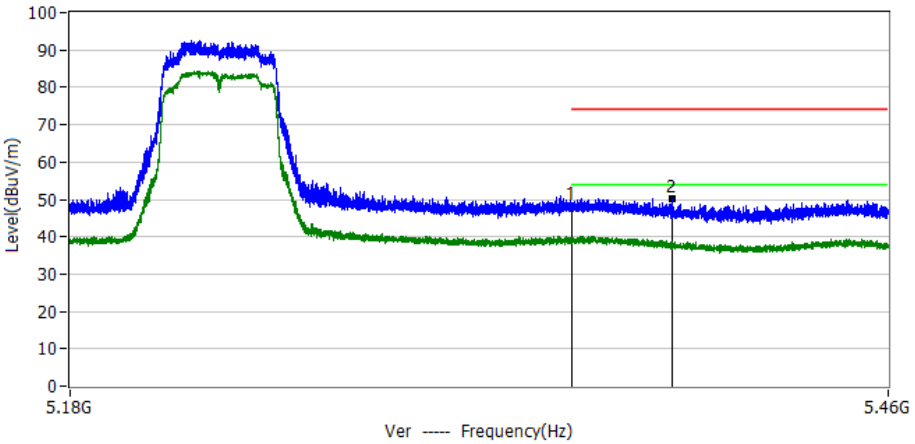


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.7776GHz	57.23	-5.97	51.26	74.00	-22.74	PK	Ver
2*	5.1500GHz	54.72	-6.62	48.10	74.00	-25.90	PK	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5230	
Note:	

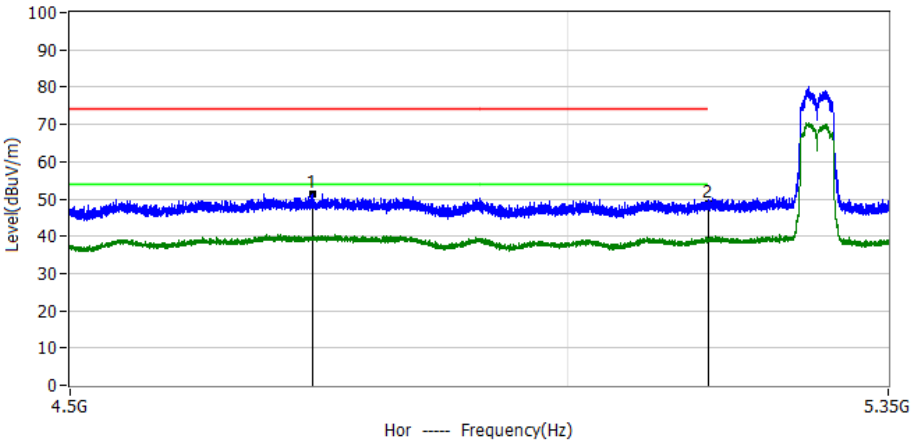


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.3500GHz	56.46	-7.26	49.20	74.00	-24.80	PK	Hor
2*	5.3607GHz	58.59	-7.29	51.30	74.00	-22.70	PK	Hor

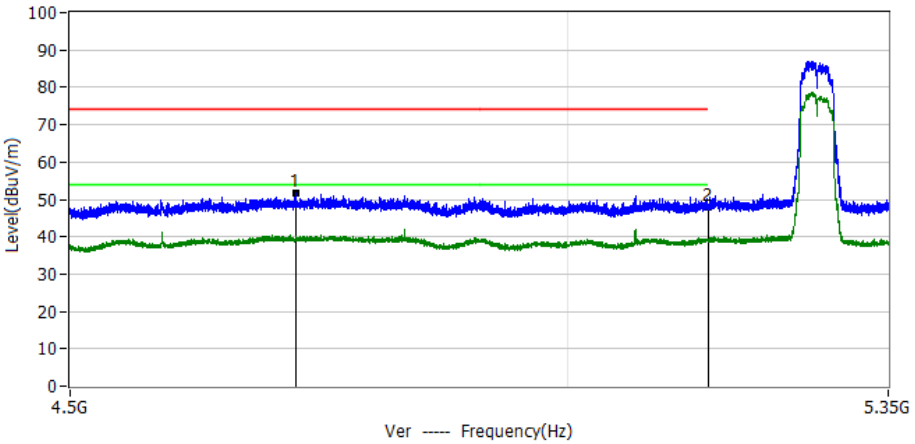


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.3500GHz	55.76	-7.26	48.50	74.00	-25.50	PK	Ver
2*	5.3848GHz	57.68	-7.37	50.31	74.00	-23.69	PK	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5270	
Note:	

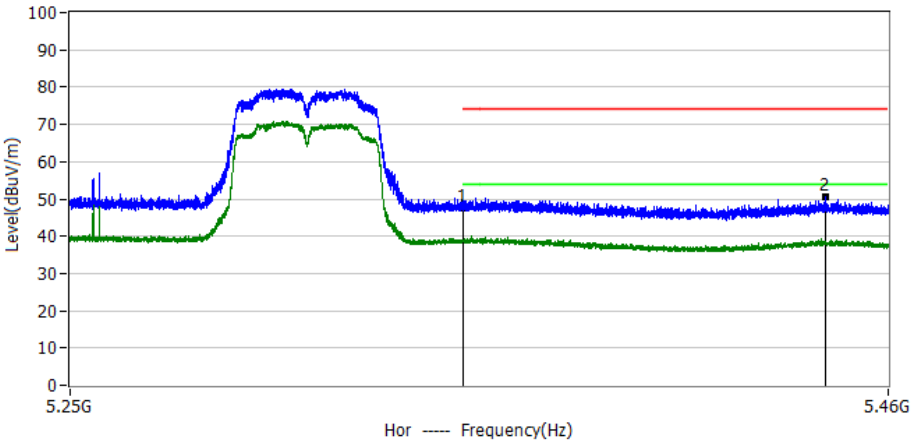


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.7368GHz	57.32	-5.94	51.38	74.00	-22.62	PK	Hor
2*	5.1500GHz	55.22	-6.62	48.60	74.00	-25.40	PK	Hor

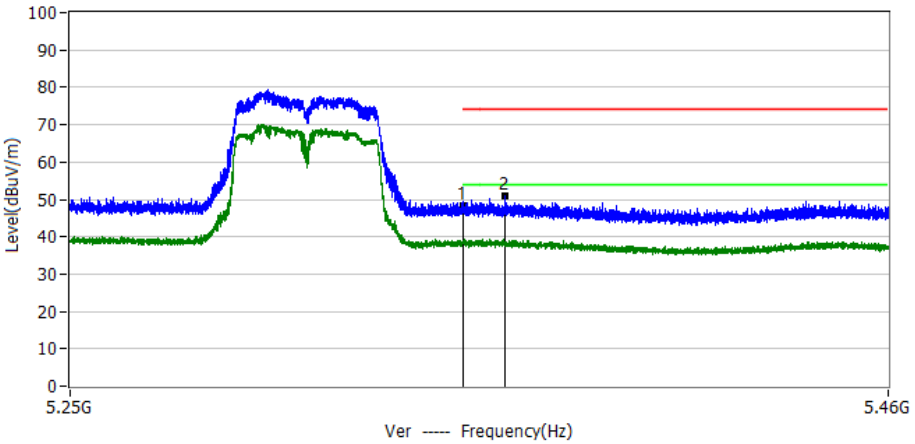


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.7205GHz	57.71	-5.92	51.79	74.00	-22.21	PK	Ver
2*	5.1500GHz	54.52	-6.62	47.90	74.00	-26.10	PK	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5310	
Note:	

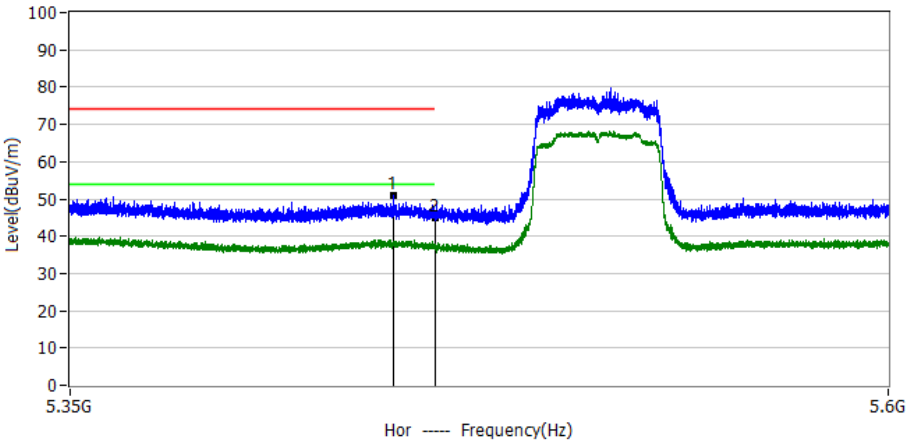


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.3500GHz	54.76	-7.26	47.50	74.00	-26.50	PK	Hor
2*	5.4437GHz	57.94	-7.56	50.38	74.00	-23.62	PK	Hor

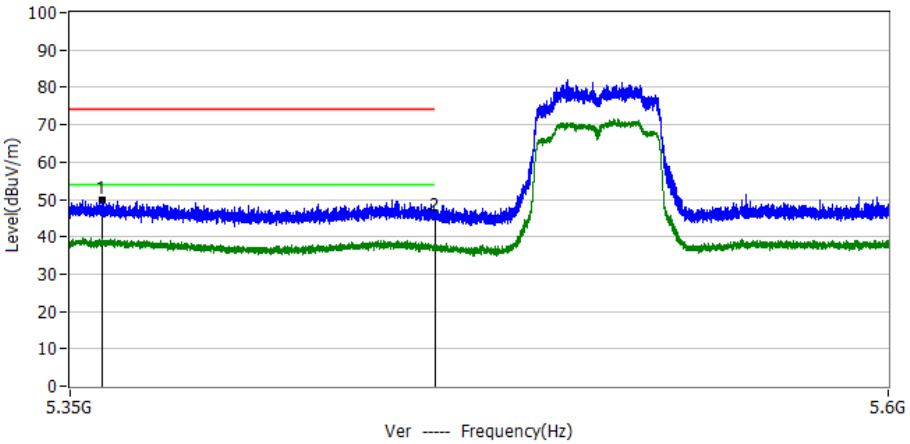


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.3500GHz	55.46	-7.26	48.20	74.00	-25.80	PK	Ver
2*	5.3607GHz	58.05	-7.29	50.76	74.00	-23.24	PK	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5510	
Note:	

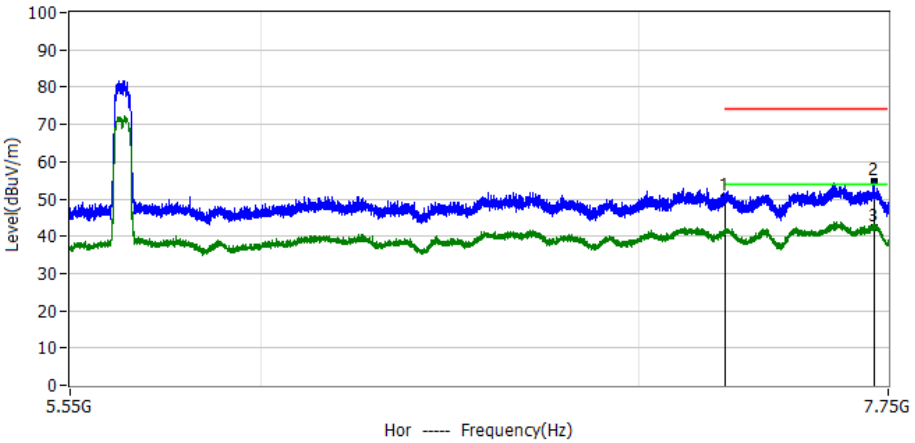


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.4476GHz	58.49	-7.57	50.92	74.00	-23.08	PK	Hor
2*	5.4600GHz	52.41	-7.61	44.80	74.00	-29.20	PK	Hor

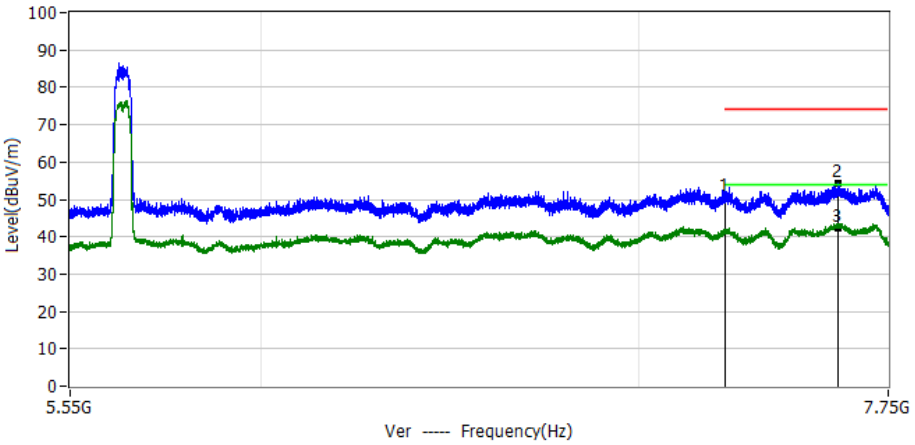


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.3594GHz	57.24	-7.29	49.95	74.00	-24.05	PK	Ver
2*	5.4600GHz	52.81	-7.61	45.20	74.00	-28.80	PK	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5670	
Note:	

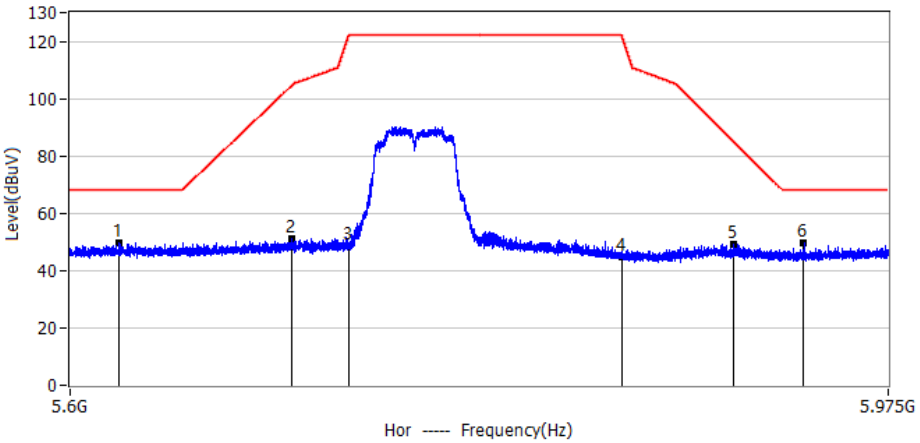


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	7.2500GHz	55.39	-4.99	50.40	74.00	-23.60	PK	Hor
2*	7.7060GHz	58.89	-4.17	54.72	74.00	-19.28	PK	Hor
3*	7.7060GHz	46.67	-4.17	42.50	54.00	-11.50	AV	Hor

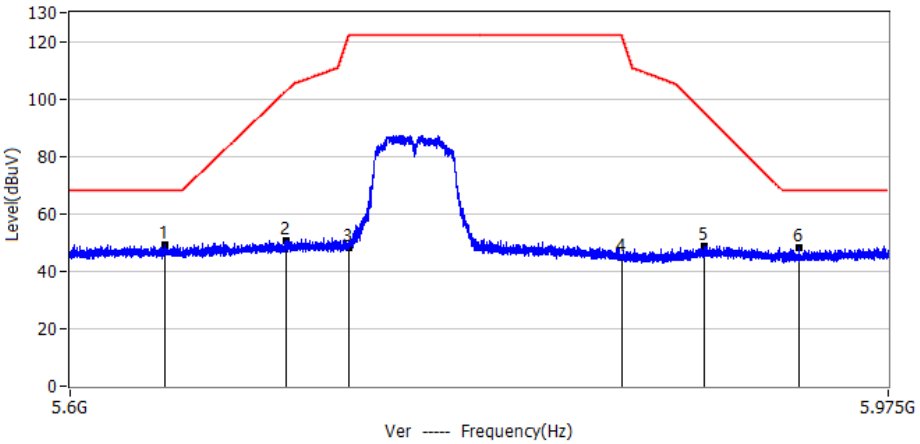


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	7.2500GHz	55.49	-4.99	50.50	74.00	-23.50	PK	Ver
2*	7.5943GHz	58.44	-4.24	54.20	74.00	-19.80	PK	Ver
3*	7.5943GHz	46.74	-4.24	42.50	54.00	-11.50	AV	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5755	
Note:	

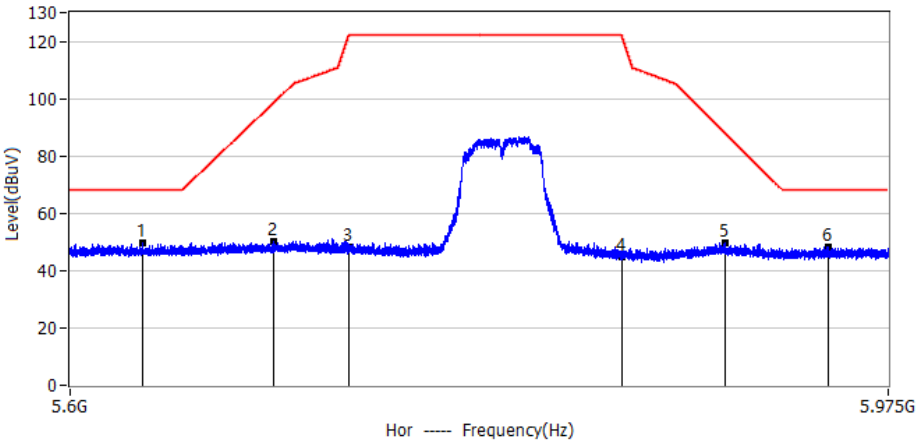


No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.6214GHz	57.52	-7.69	49.83	68.20	-18.37	PK	Hor
2*	5.6992GHz	58.92	-7.66	51.26	104.64	-53.37	PK	Hor
3*	5.7250GHz	56.45	-7.65	48.80	122.20	-73.40	PK	Hor
4*	5.8500GHz	52.50	-7.60	44.90	122.20	-77.20	PK	Hor
5*	5.9022GHz	56.86	-7.58	49.28	85.07	-35.79	PK	Hor
6*	5.9352GHz	57.44	-7.57	49.87	68.20	-18.33	PK	Hor

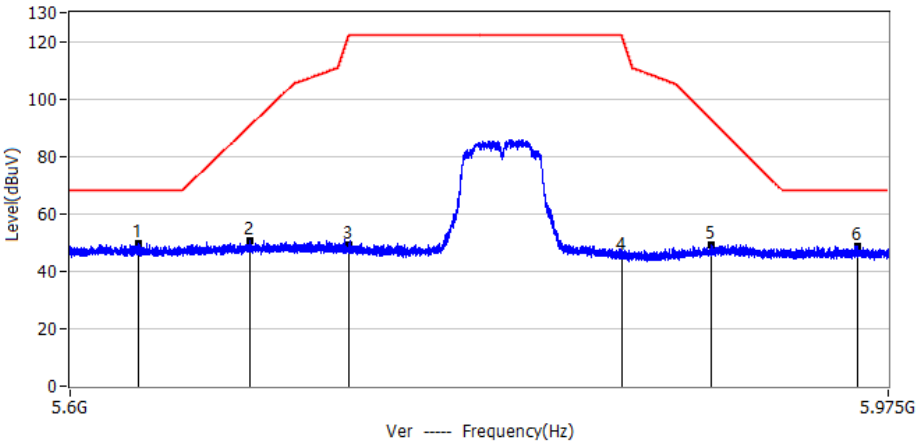


No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.6419GHz	56.88	-7.68	49.20	68.20	-19.00	PK	Ver
2*	5.6967GHz	58.53	-7.66	50.87	102.80	-51.94	PK	Ver
3*	5.7250GHz	56.05	-7.65	48.40	122.20	-73.80	PK	Ver
4*	5.8500GHz	52.30	-7.60	44.70	122.20	-77.50	PK	Ver
5*	5.8887GHz	56.46	-7.58	48.88	94.99	-46.11	PK	Ver
6*	5.9330GHz	55.85	-7.57	48.28	68.20	-19.92	PK	Ver

Project: LGT23G101	Test Engineer: Xiangdong Ma
EUT: Smartphone	Temperature: 26.5℃
M/N: Vortex CM62	Humidity: 47%RH
Test Voltage: Battery	Test Data: 2023-08-12
Test Mode: 802.11ac40 5795	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.6325GHz	57.18	-7.69	49.49	68.20	-18.71	PK	Hor
2*	5.6909GHz	57.87	-7.66	50.21	98.52	-48.31	PK	Hor
3*	5.7250GHz	55.95	-7.65	48.30	122.20	-73.80	PK	Hor
4*	5.8500GHz	52.60	-7.60	45.00	122.20	-77.20	PK	Hor
5*	5.8985GHz	57.44	-7.58	49.86	87.77	-37.91	PK	Hor
6*	5.9465GHz	55.90	-7.56	48.34	68.20	-19.86	PK	Hor



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.6303GHz	57.26	-7.69	49.57	68.20	-18.63	PK	Ver
2*	5.6801GHz	58.41	-7.67	50.74	90.49	-39.74	PK	Ver
3*	5.7250GHz	56.75	-7.65	49.10	122.20	-73.10	PK	Ver
4*	5.8500GHz	52.80	-7.60	45.20	122.20	-77.00	PK	Ver
5*	5.8918GHz	56.85	-7.58	49.27	92.74	-43.47	PK	Ver
6*	5.9607GHz	56.41	-7.56	48.85	68.20	-19.35	PK	Ver

4. POWER SPECTRAL DENSITY TEST

4.1 LIMIT

1. For mobile and portable client devices in the 5.15-5.25 GHz band, , the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.2 TEST PROCEDURE

1. The setting follows Method SA-1 of FCC KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

For devices operating in the band, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (*i.e.,* 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW ≥ 1/*T*, where *T* is defined in section II.B.l.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP

4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.6 TEST RESULTS

For the measurement records, refer to the appendix I.

5. BANDWIDTH MEASUREMENT

5.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT

The following procedure shall be used for measuring 26 bandwidth.

5.1.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > =RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP

5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

For the measurement records, refer to the appendix I.

5.2 OCCUPIED BANDWIDTH (99%) TEST APPLIED PROCEDURES / LIMIT

The following procedure shall be used for measuring (99 %) power bandwidth.

5.2.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v02r01.
The following procedure shall be used for measuring (99 %) power bandwidth:
1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

5.2.2 DEVIATION FROM STANDARD

No deviation.

5.2.3 TEST SETUP

5.2.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.2.5 TEST RESULTS

For the measurement records, refer to the appendix I.

5.3 MINIMUM EMISSION BANDWIDTH(6 DB) PROCEDURES / LIMIT

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth.

5.3.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v02r01.
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.3.2 DEVIATION FROM STANDARD

No deviation.

5.3.3 TEST SETUP

5.3.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.3.5 TEST RESULTS

For the measurement records, refer to the appendix I.

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1 LIMIT

For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz,If transmitting antennas of directional gain greater than 6 dBi are used.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used.

FCC Part15 (15.407) , Subpart E				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.407(a) (1) (iv)	Peak Output Power	0.25 watt	5150-5250	PASS
		The lesser of 250 mW or 11 dBm + 10 log (26 dB emission bandwidth)	5250-5350 5470-5725	
15.407(a) (3)		1 watt	5725-5825	

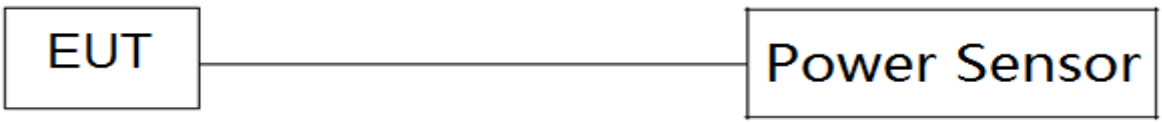
6.2 TEST PROCEDURE

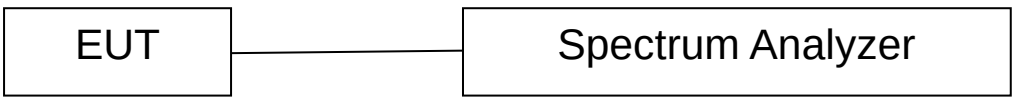
The EUT was directly connected to the Power Sensor&PC

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP





6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 5 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

For the measurement records, refer to the appendix I.

7. AUTOMATICALLY DISCONTINUE TRANSMISSION

7.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

7.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission

8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

Part 15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

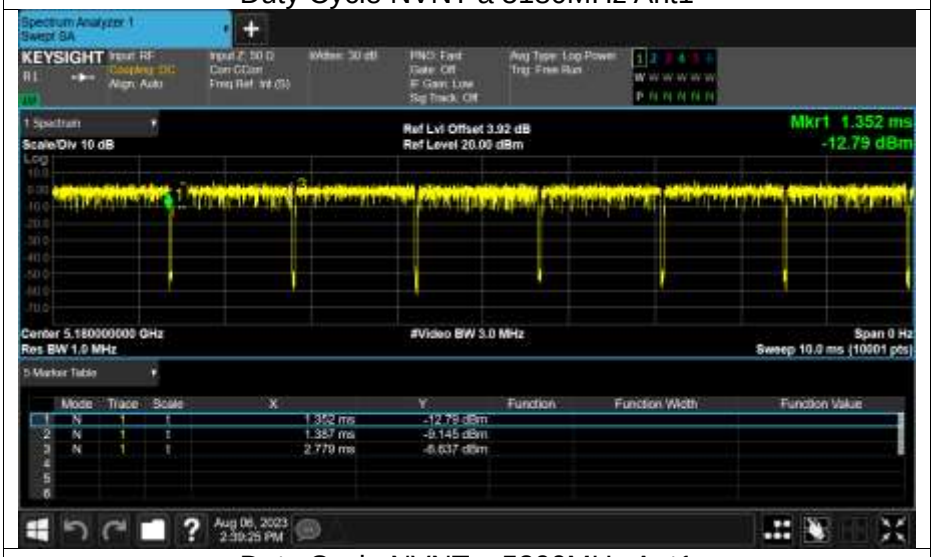
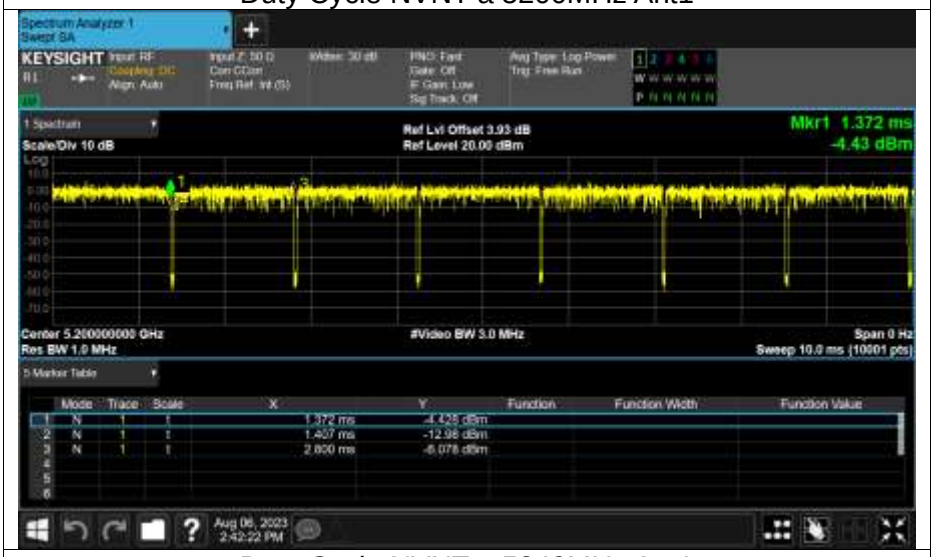
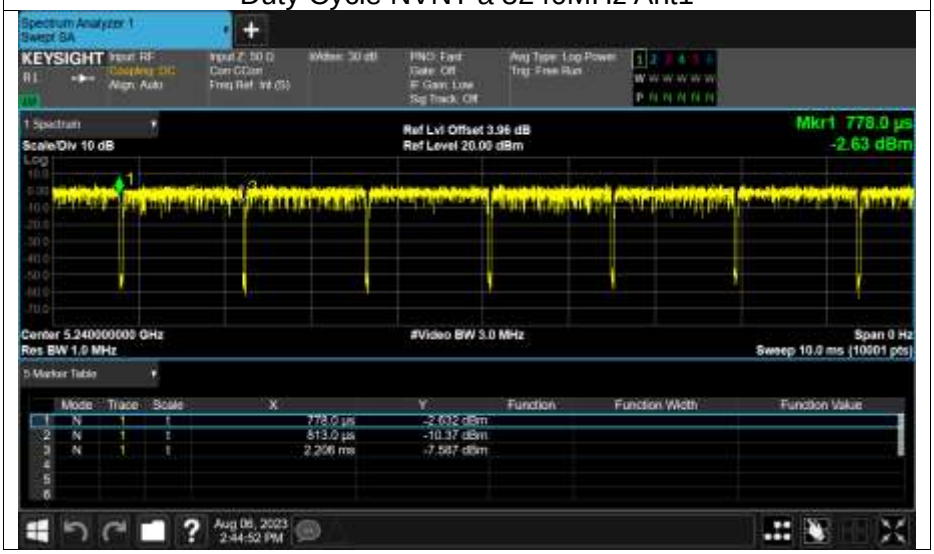
8.2 EUT ANTENNA

The EUT antenna is FPC Antenna. It comply with the standard requirement.

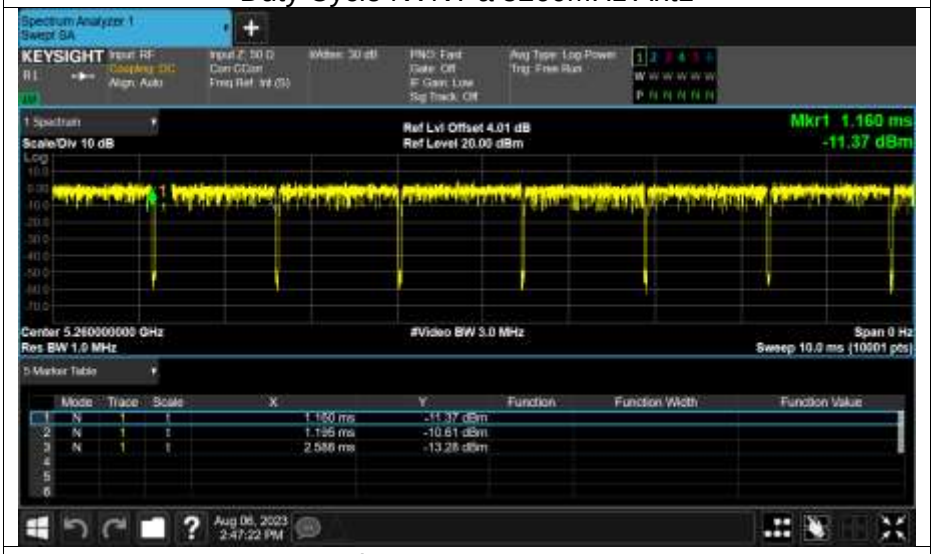
APPENDIX I:TEST RESULTS

Duty Cycle

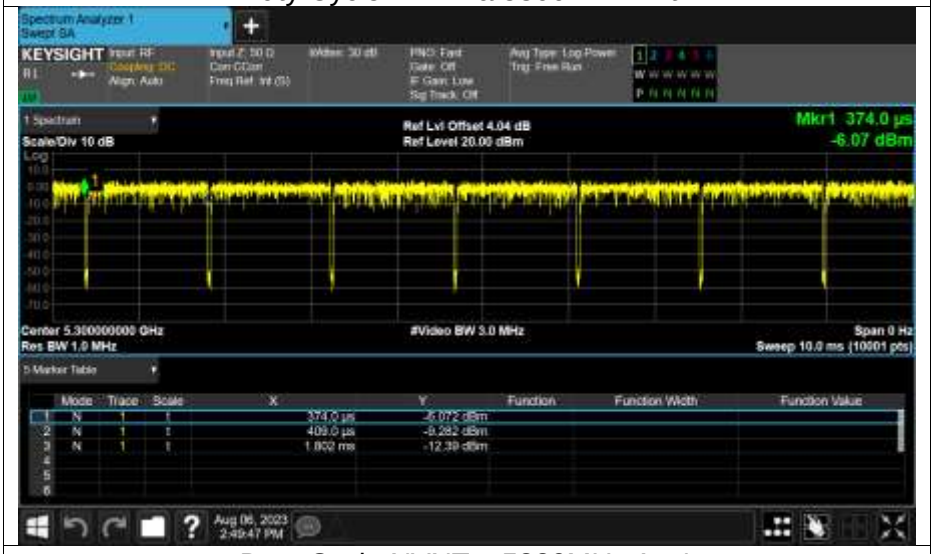
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	97.55	0.11	0.72
NVNT	a	5200	Ant1	97.55	0.11	0.72
NVNT	a	5240	Ant1	97.55	0.11	0.72
NVNT	a	5260	Ant1	97.55	0.11	0.72
NVNT	a	5300	Ant1	97.55	0.11	0.72
NVNT	a	5320	Ant1	97.55	0.11	0.72
NVNT	a	5745	Ant1	97.55	0.11	0.72
NVNT	a	5785	Ant1	97.55	0.11	0.72
NVNT	a	5825	Ant1	97.55	0.11	0.72
NVNT	n20	5180	Ant1	97.38	0.12	0.77
NVNT	n20	5200	Ant1	97.31	0.12	0.77
NVNT	n20	5240	Ant1	97.38	0.12	0.77
NVNT	n20	5260	Ant1	97.38	0.12	0.77
NVNT	n20	5300	Ant1	97.38	0.12	0.77
NVNT	n20	5320	Ant1	97.38	0.12	0.77
NVNT	n20	5745	Ant1	97.38	0.12	0.77
NVNT	n20	5785	Ant1	97.38	0.12	0.77
NVNT	n20	5825	Ant1	97.38	0.12	0.77
NVNT	n40	5190	Ant1	95.02	0.22	1.54
NVNT	n40	5230	Ant1	95.16	0.22	1.54
NVNT	n40	5270	Ant1	95.02	0.22	1.54
NVNT	n40	5310	Ant1	95.02	0.22	1.54
NVNT	n40	5755	Ant1	95.02	0.22	1.54
NVNT	n40	5795	Ant1	95.16	0.22	1.54
NVNT	ac20	5180	Ant1	97.38	0.12	0.77
NVNT	ac20	5200	Ant1	97.38	0.12	0.77
NVNT	ac20	5240	Ant1	97.38	0.12	0.77
NVNT	ac20	5260	Ant1	97.34	0.12	0.77
NVNT	ac20	5300	Ant1	97.38	0.12	0.77
NVNT	ac20	5320	Ant1	97.38	0.12	0.77
NVNT	ac20	5745	Ant1	97.38	0.12	0.77
NVNT	ac20	5785	Ant1	97.38	0.12	0.77
NVNT	ac20	5825	Ant1	97.38	0.12	0.77
NVNT	ac40	5190	Ant1	95.02	0.22	1.54
NVNT	ac40	5230	Ant1	95.08	0.22	1.54
NVNT	ac40	5270	Ant1	95.08	0.22	1.54
NVNT	ac40	5310	Ant1	95.02	0.22	1.54
NVNT	ac40	5755	Ant1	95.08	0.22	1.54
NVNT	ac40	5795	Ant1	95.08	0.22	1.54

Test Graphs
Duty Cycle NVNT a 5180MHz Ant1

Duty Cycle NVNT a 5200MHz Ant1

Duty Cycle NVNT a 5240MHz Ant1


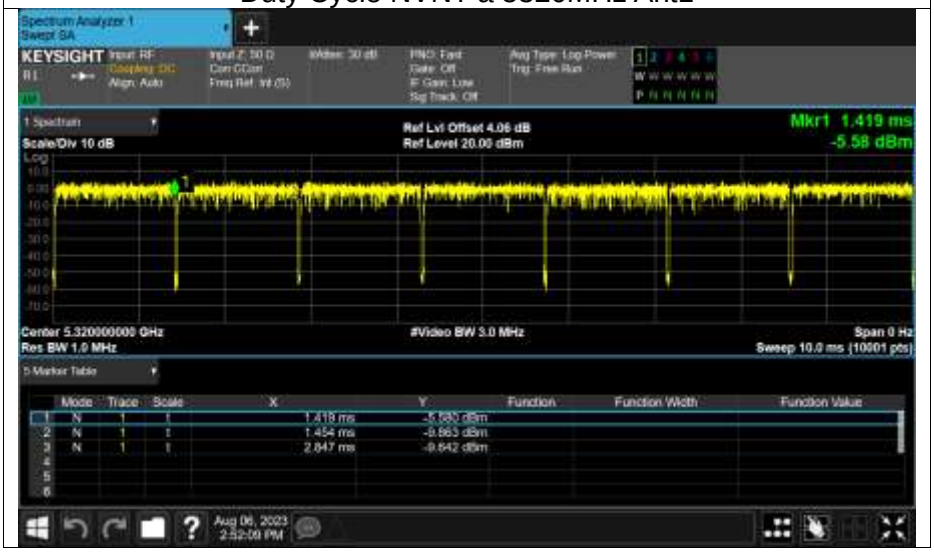
Duty Cycle NVNT a 5260MHz Ant1



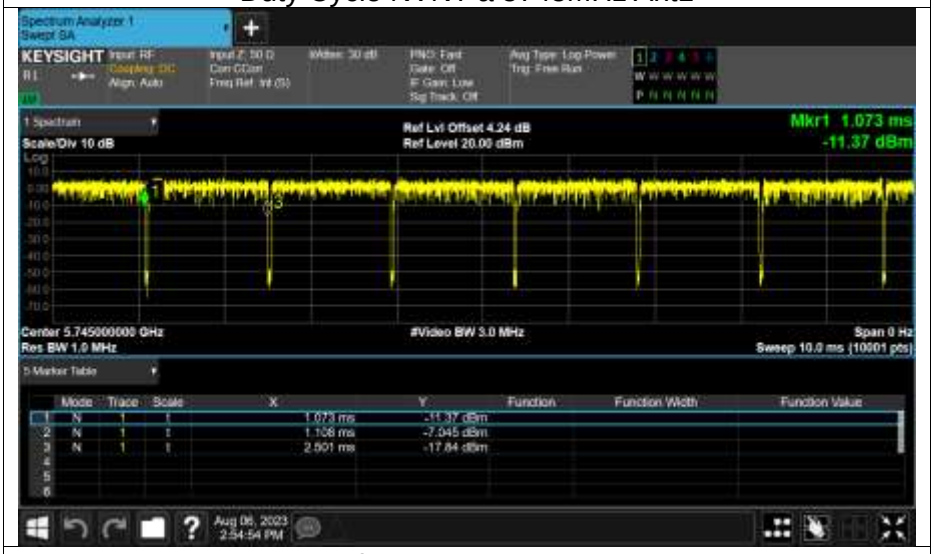
Duty Cycle NVNT a 5300MHz Ant1



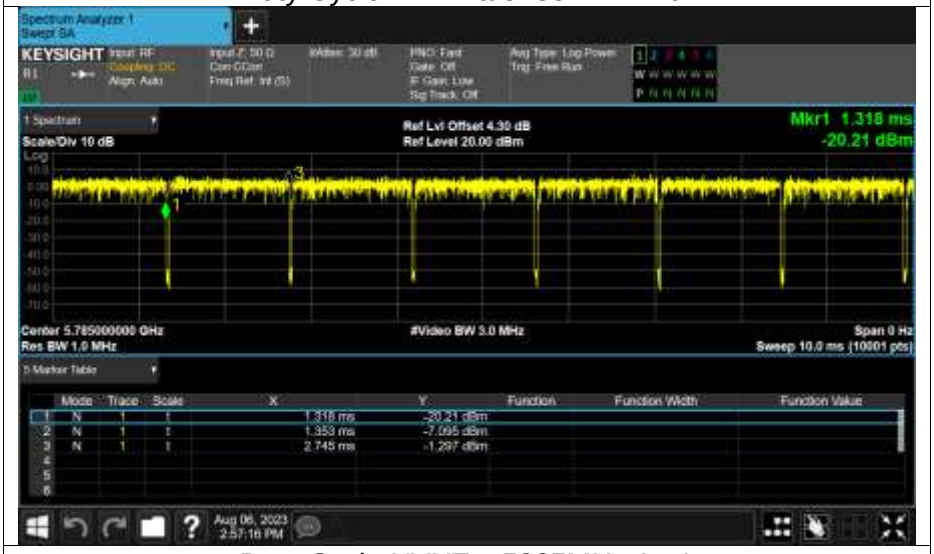
Duty Cycle NVNT a 5320MHz Ant1



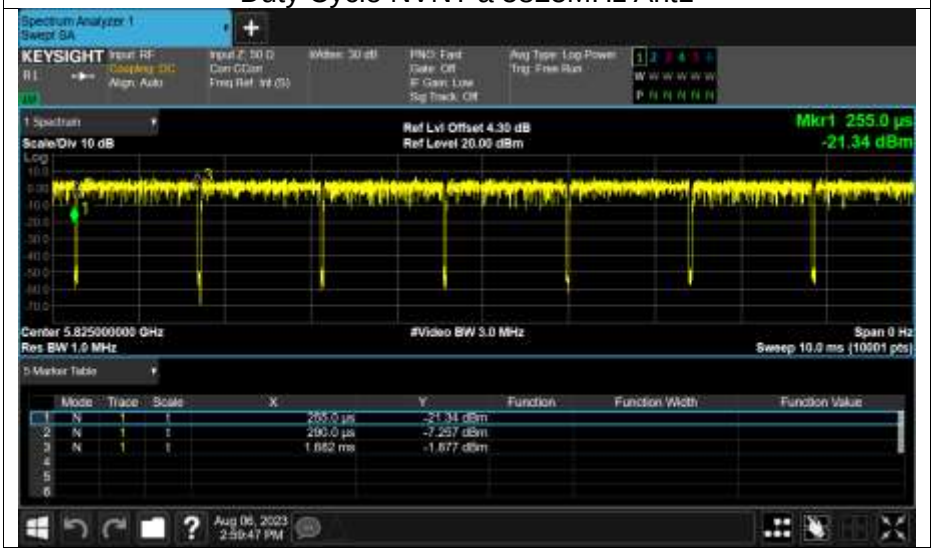
Duty Cycle NVNT a 5745MHz Ant1



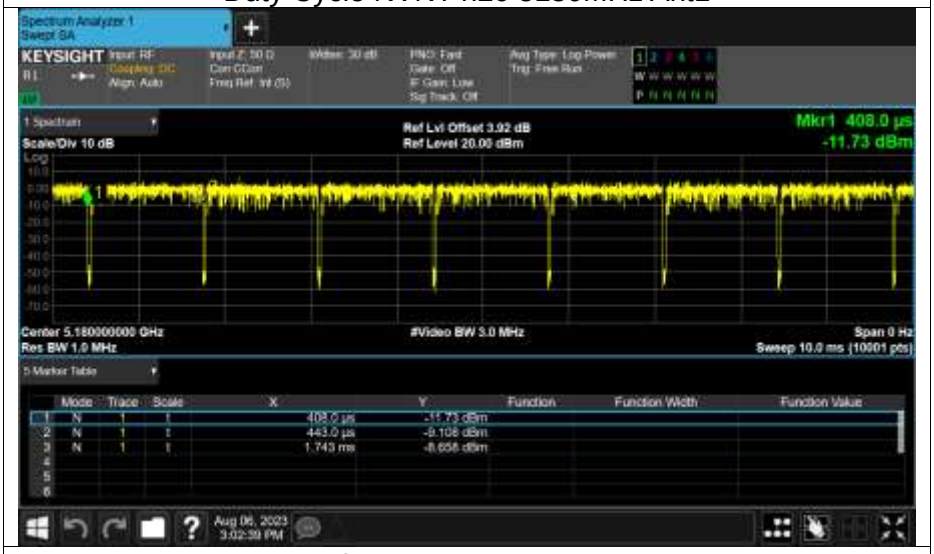
Duty Cycle NVNT a 5785MHz Ant1



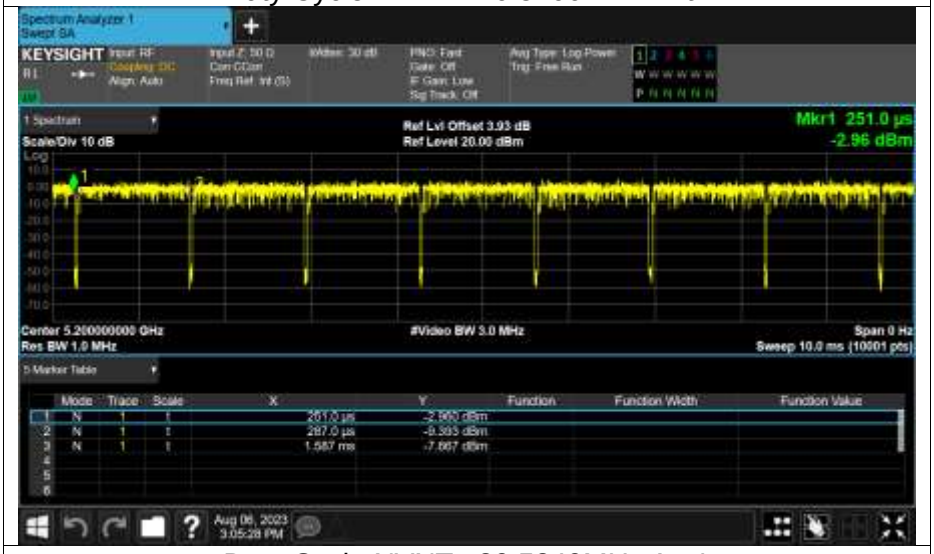
Duty Cycle NVNT a 5825MHz Ant1



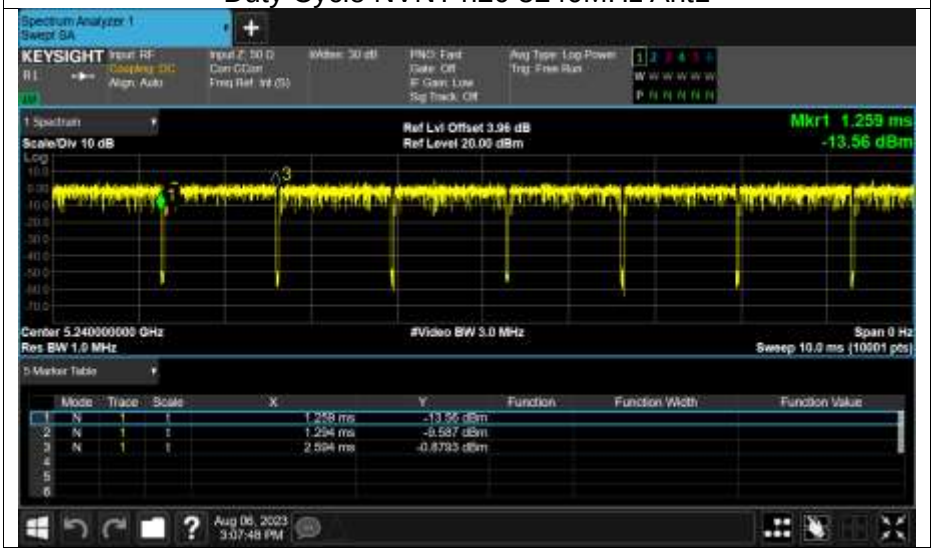
Duty Cycle NVNT n20 5180MHz Ant1



Duty Cycle NVNT n20 5200MHz Ant1



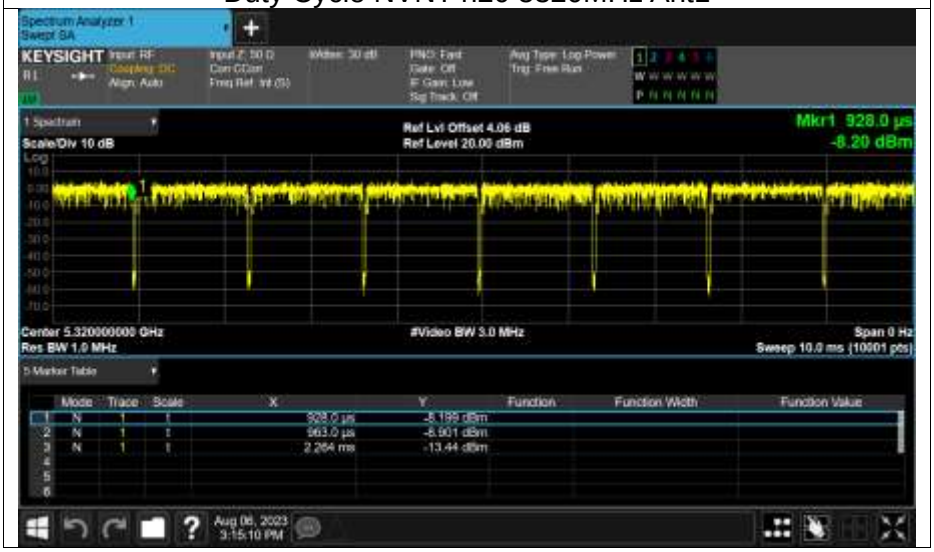
Duty Cycle NVNT n20 5240MHz Ant1



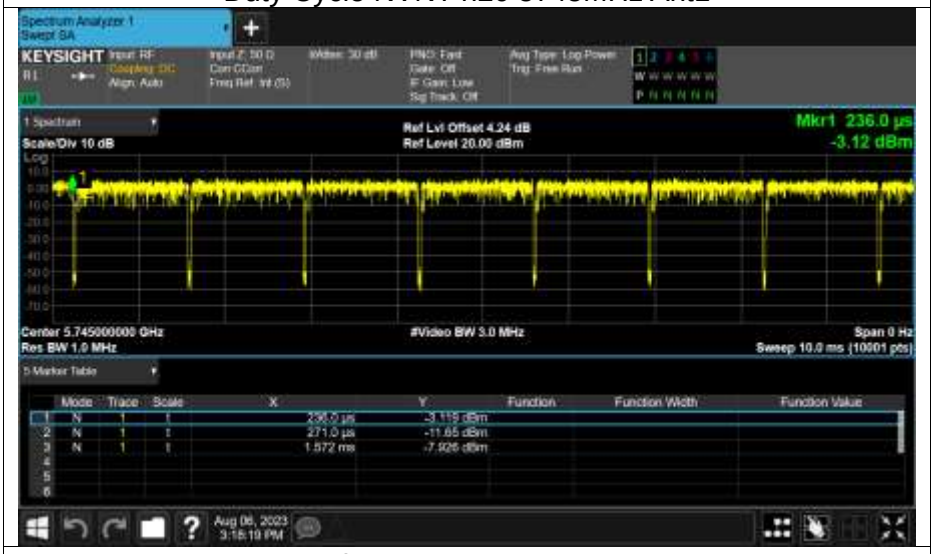
Duty Cycle NVNT n20 5260MHz Ant1

Duty Cycle NVNT n20 5300MHz Ant1

Duty Cycle NVNT n20 5320MHz Ant1



Duty Cycle NVNT n20 5745MHz Ant1



Duty Cycle NVNT n20 5785MHz Ant1

Duty Cycle NVNT n20 5825MHz Ant1

Duty Cycle NVNT n40 5190MHz Ant1

Duty Cycle NVNT n40 5230MHz Ant1

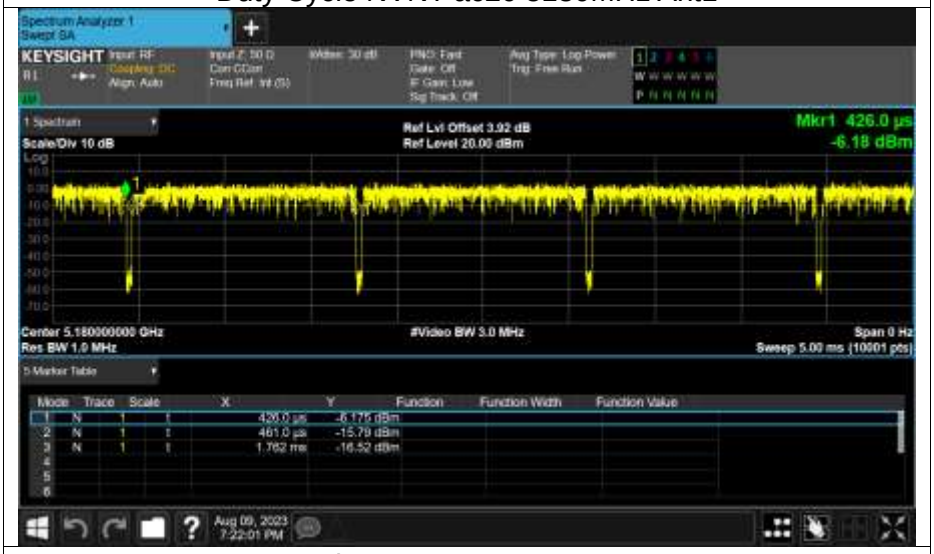
Duty Cycle NVNT n40 5270MHz Ant1

Duty Cycle NVNT n40 5310MHz Ant1

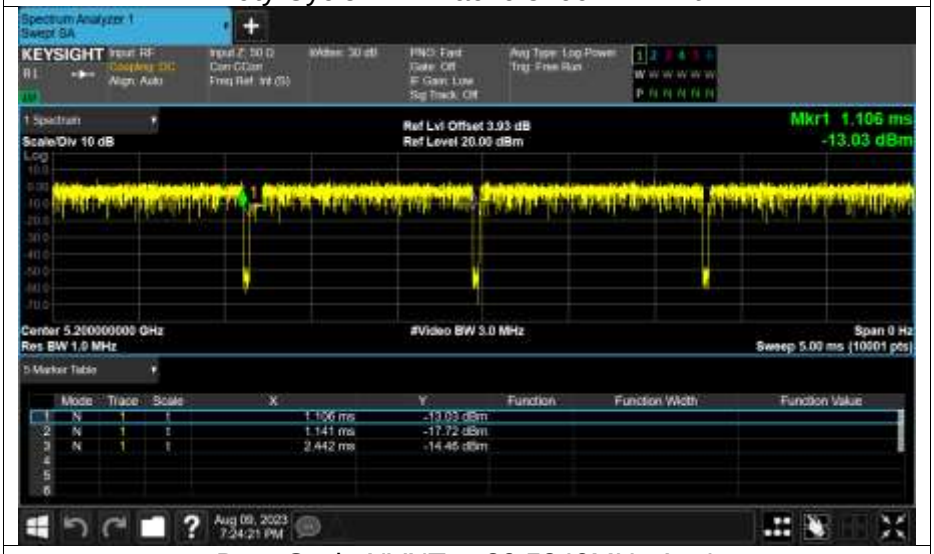
Duty Cycle NVNT n40 5755MHz Ant1

Duty Cycle NVNT n40 5795MHz Ant1


Duty Cycle NVNT ac20 5180MHz Ant1

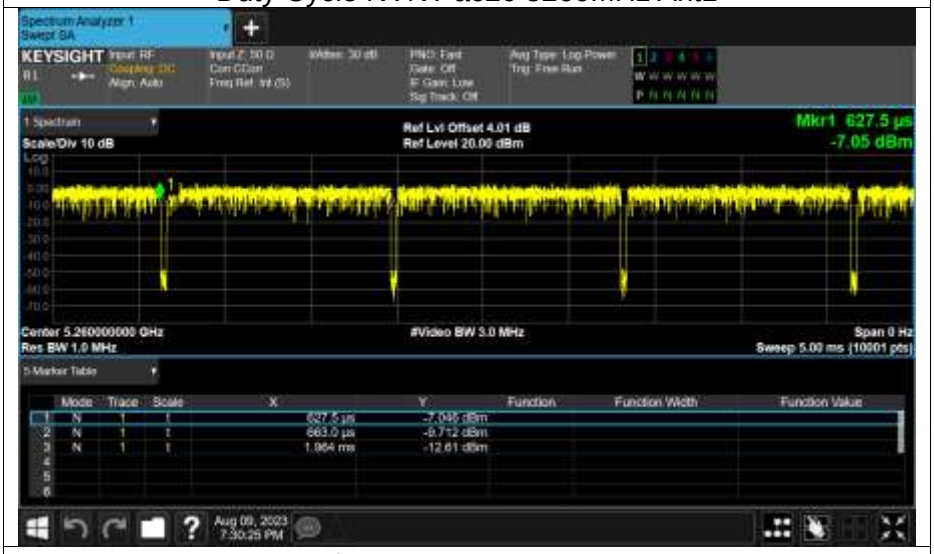


Duty Cycle NVNT ac20 5200MHz Ant1



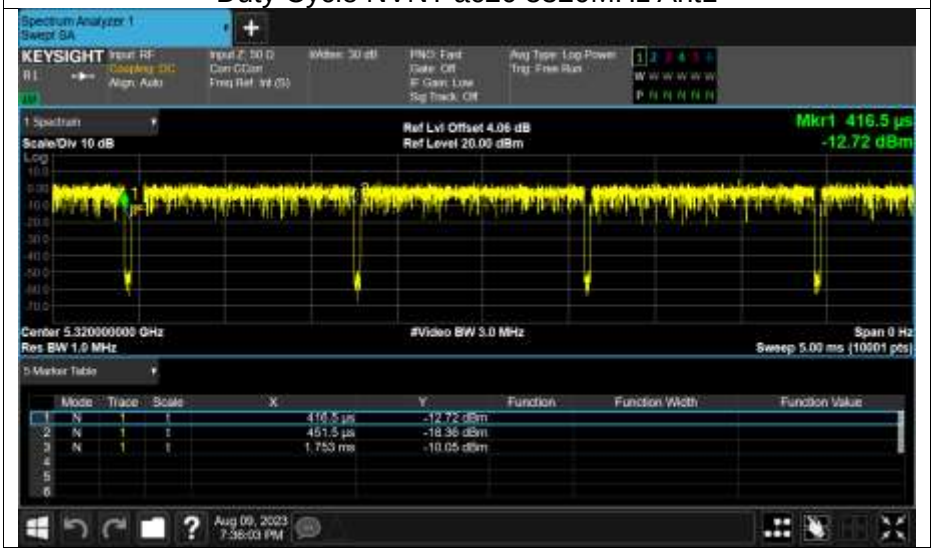
Duty Cycle NVNT ac20 5240MHz Ant1

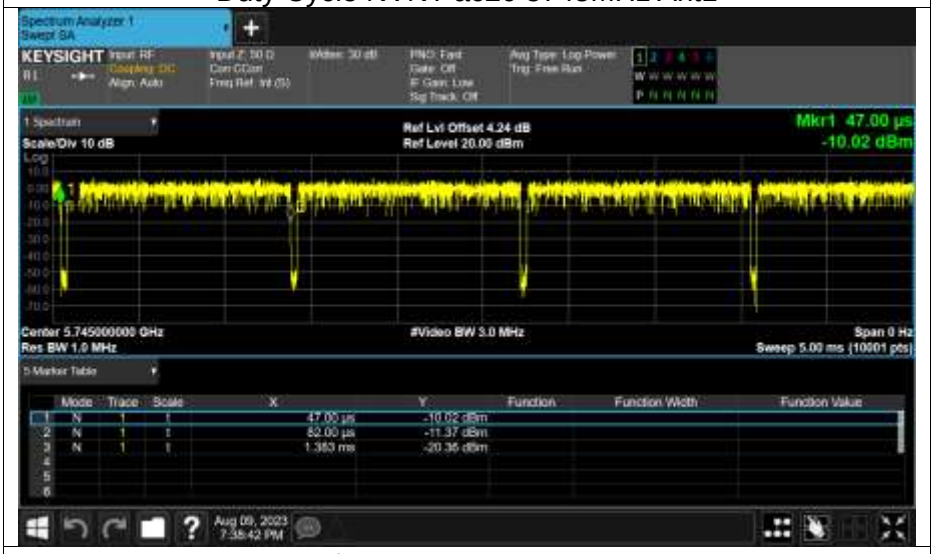
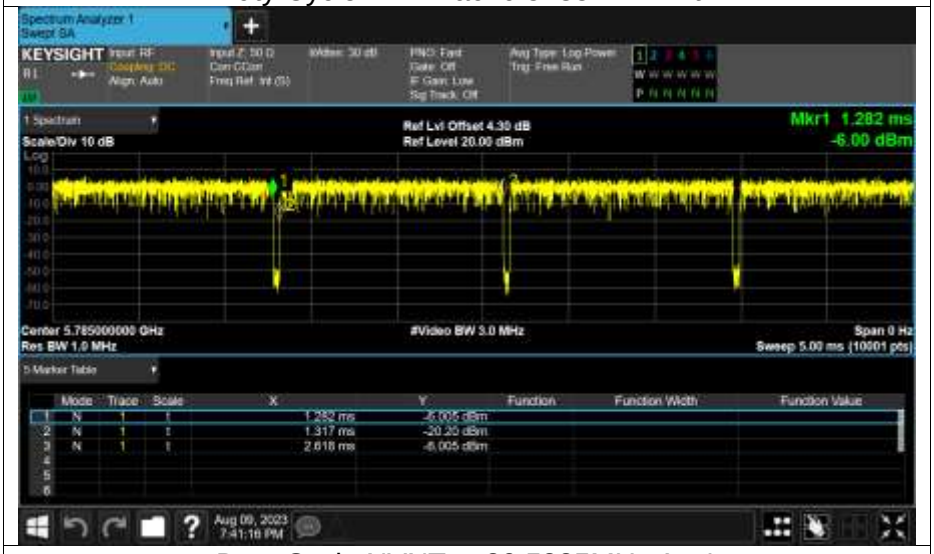
Duty Cycle NVNT ac20 5260MHz Ant1



Duty Cycle NVNT ac20 5300MHz Ant1

Duty Cycle NVNT ac20 5320MHz Ant1

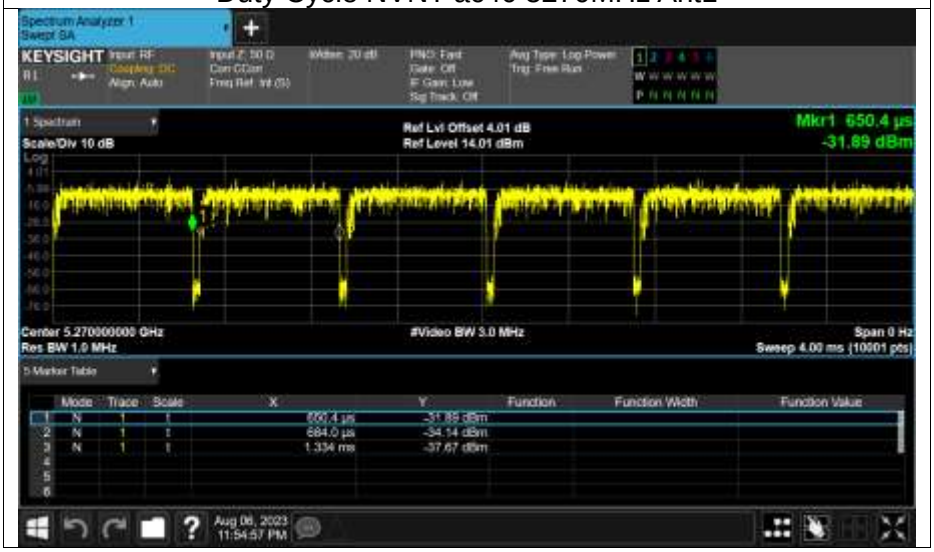


Duty Cycle NVNT ac20 5745MHz Ant1

Duty Cycle NVNT ac20 5785MHz Ant1

Duty Cycle NVNT ac20 5825MHz Ant1

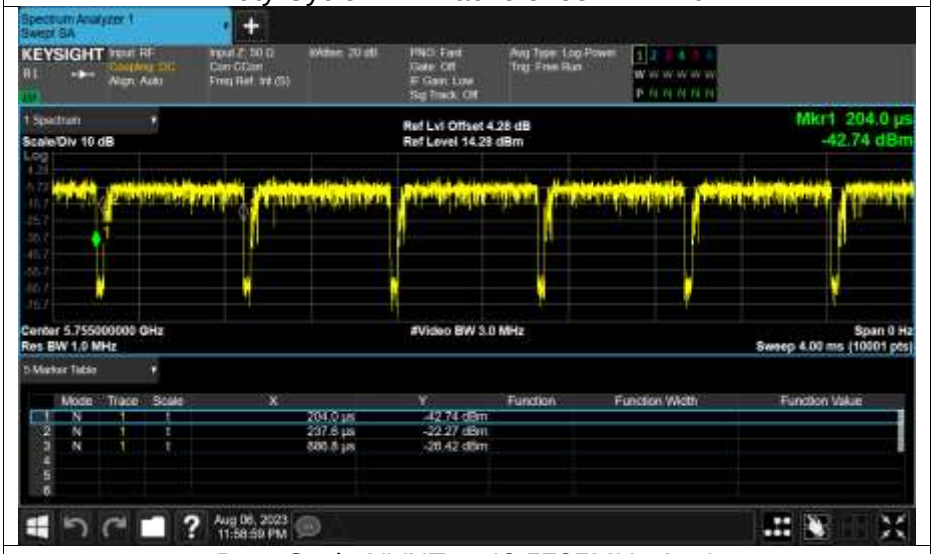

Duty Cycle NVNT ac40 5190MHz Ant1

Duty Cycle NVNT ac40 5230MHz Ant1

Duty Cycle NVNT ac40 5270MHz Ant1



Duty Cycle NVNT ac40 5310MHz Ant1

Duty Cycle NVNT ac40 5755MHz Ant1

Duty Cycle NVNT ac40 5795MHz Ant1


Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	8.74	0.11	8.85	24	Pass
NVNT	a	5200	Ant1	8.56	0.11	8.67	24	Pass
NVNT	a	5240	Ant1	8.07	0.11	8.18	24	Pass
NVNT	a	5260	Ant1	8.24	0.11	8.35	24	Pass
NVNT	a	5300	Ant1	8.48	0.11	8.59	24	Pass
NVNT	a	5320	Ant1	8.58	0.11	8.69	24	Pass
NVNT	a	5745	Ant1	11.12	0.11	11.23	30	Pass
NVNT	a	5785	Ant1	11.18	0.11	11.29	30	Pass
NVNT	a	5825	Ant1	10.91	0.11	11.02	30	Pass
NVNT	n20	5180	Ant1	8.64	0.12	8.76	24	Pass
NVNT	n20	5200	Ant1	8.51	0.12	8.63	24	Pass
NVNT	n20	5240	Ant1	8.06	0.12	8.18	24	Pass
NVNT	n20	5260	Ant1	8	0.12	8.12	24	Pass
NVNT	n20	5300	Ant1	8.48	0.12	8.6	24	Pass
NVNT	n20	5320	Ant1	8.68	0.12	8.8	24	Pass
NVNT	n20	5745	Ant1	11.03	0.12	11.15	30	Pass
NVNT	n20	5785	Ant1	11.31	0.12	11.43	30	Pass
NVNT	n20	5825	Ant1	10.83	0.12	10.95	30	Pass
NVNT	n40	5190	Ant1	8.88	0.22	9.1	24	Pass
NVNT	n40	5230	Ant1	8.5	0.22	8.72	24	Pass
NVNT	n40	5270	Ant1	8.36	0.22	8.58	24	Pass
NVNT	n40	5310	Ant1	8.88	0.22	9.1	24	Pass
NVNT	n40	5755	Ant1	11.21	0.22	11.43	30	Pass
NVNT	n40	5795	Ant1	11.52	0.22	11.74	30	Pass
NVNT	ac20	5180	Ant1	8.42	0.12	8.54	24	Pass
NVNT	ac20	5200	Ant1	8.29	0.12	8.41	24	Pass
NVNT	ac20	5240	Ant1	7.82	0.12	7.94	24	Pass
NVNT	ac20	5260	Ant1	7.73	0.12	7.85	23.05	Pass
NVNT	ac20	5300	Ant1	8.18	0.12	8.3	23.05	Pass
NVNT	ac20	5320	Ant1	8.26	0.12	8.38	23.04	Pass
NVNT	ac20	5745	Ant1	10.84	0.12	10.96	30	Pass
NVNT	ac20	5785	Ant1	10.67	0.12	10.79	30	Pass
NVNT	ac20	5825	Ant1	10.45	0.12	10.57	30	Pass
NVNT	ac40	5190	Ant1	9.02	0.22	9.24	24	Pass
NVNT	ac40	5230	Ant1	8.78	0.22	9	24	Pass
NVNT	ac40	5270	Ant1	8.69	0.22	8.91	24	Pass
NVNT	ac40	5310	Ant1	9.09	0.22	9.31	24	Pass
NVNT	ac40	5755	Ant1	11.6	0.22	11.82	30	Pass
NVNT	ac40	5795	Ant1	11.59	0.22	11.81	30	Pass

-26dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	22.14	Pass
NVNT	a	5200	Ant1	23.087	Pass
NVNT	a	5240	Ant1	20.46	Pass
NVNT	a	5260	Ant1	21.654	Pass
NVNT	a	5300	Ant1	22.785	Pass
NVNT	a	5320	Ant1	20.013	Pass
NVNT	n20	5180	Ant1	22.186	Pass
NVNT	n20	5200	Ant1	23.695	Pass
NVNT	n20	5240	Ant1	22.849	Pass
NVNT	n20	5260	Ant1	22.865	Pass
NVNT	n20	5300	Ant1	22.897	Pass
NVNT	n20	5320	Ant1	20.528	Pass
NVNT	n40	5190	Ant1	52.166	Pass
NVNT	n40	5230	Ant1	46.129	Pass
NVNT	n40	5270	Ant1	51.956	Pass
NVNT	n40	5310	Ant1	44.209	Pass
NVNT	ac20	5180	Ant1	24.43	Pass
NVNT	ac20	5200	Ant1	25.017	Pass
NVNT	ac20	5240	Ant1	21.4	Pass
NVNT	ac20	5260	Ant1	20.373	Pass
NVNT	ac20	5300	Ant1	20.309	Pass
NVNT	ac20	5320	Ant1	22.056	Pass
NVNT	ac40	5190	Ant1	48.945	Pass
NVNT	ac40	5230	Ant1	48.492	Pass
NVNT	ac40	5270	Ant1	45.175	Pass
NVNT	ac40	5310	Ant1	40.226	Pass

Test Graphs
-26dB Bandwidth NVNT a 5180MHz Ant1

-26dB Bandwidth NVNT a 5200MHz Ant1

-26dB Bandwidth NVNT a 5240MHz Ant1


-26dB Bandwidth NVNT a 5260MHz Ant1

-26dB Bandwidth NVNT a 5300MHz Ant1

-26dB Bandwidth NVNT a 5320MHz Ant1

-26dB Bandwidth NVNT n20 5180MHz Ant1

-26dB Bandwidth NVNT n20 5200MHz Ant1

-26dB Bandwidth NVNT n20 5240MHz Ant1

-26dB Bandwidth NVNT n20 5260MHz Ant1

-26dB Bandwidth NVNT n20 5300MHz Ant1

-26dB Bandwidth NVNT n20 5320MHz Ant1

-26dB Bandwidth NVNT n40 5190MHz Ant1

-26dB Bandwidth NVNT n40 5230MHz Ant1

-26dB Bandwidth NVNT n40 5270MHz Ant1

-26dB Bandwidth NVNT n40 5310MHz Ant1

-26dB Bandwidth NVNT ac20 5180MHz Ant1

-26dB Bandwidth NVNT ac20 5200MHz Ant1

-26dB Bandwidth NVNT ac20 5240MHz Ant1

-26dB Bandwidth NVNT ac20 5260MHz Ant1

-26dB Bandwidth NVNT ac20 5300MHz Ant1

-26dB Bandwidth NVNT ac20 5320MHz Ant1

-26dB Bandwidth NVNT ac40 5190MHz Ant1

-26dB Bandwidth NVNT ac40 5230MHz Ant1

-26dB Bandwidth NVNT ac40 5270MHz Ant1

-26dB Bandwidth NVNT ac40 5310MHz Ant1

Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.513
NVNT	a	5200	Ant1	16.566
NVNT	a	5240	Ant1	16.534
NVNT	a	5260	Ant1	16.508
NVNT	a	5300	Ant1	16.53
NVNT	a	5320	Ant1	16.519
NVNT	a	5745	Ant1	16.752
NVNT	a	5785	Ant1	16.721
NVNT	a	5825	Ant1	16.818
NVNT	n20	5180	Ant1	17.593
NVNT	n20	5200	Ant1	0
NVNT	n20	5240	Ant1	17.595
NVNT	n20	5260	Ant1	17.619
NVNT	n20	5300	Ant1	17.604
NVNT	n20	5320	Ant1	17.602
NVNT	n20	5745	Ant1	17.76
NVNT	n20	5785	Ant1	17.78
NVNT	n20	5825	Ant1	17.806
NVNT	n40	5190	Ant1	36.023
NVNT	n40	5230	Ant1	36.064
NVNT	n40	5270	Ant1	36.019
NVNT	n40	5310	Ant1	36.038
NVNT	n40	5755	Ant1	36.326
NVNT	n40	5795	Ant1	36.271
NVNT	ac20	5180	Ant1	17.59
NVNT	ac20	5200	Ant1	17.633
NVNT	ac20	5240	Ant1	17.604
NVNT	ac20	5260	Ant1	17.601
NVNT	ac20	5300	Ant1	17.586
NVNT	ac20	5320	Ant1	17.6
NVNT	ac20	5745	Ant1	17.77
NVNT	ac20	5785	Ant1	17.764
NVNT	ac20	5825	Ant1	17.775
NVNT	ac40	5190	Ant1	36.063
NVNT	ac40	5230	Ant1	36.02
NVNT	ac40	5270	Ant1	36.049
NVNT	ac40	5310	Ant1	36.007
NVNT	ac40	5755	Ant1	36.276
NVNT	ac40	5795	Ant1	36.252

Test Graphs
OBW NVNT a 5180MHz Ant1

OBW NVNT a 5200MHz Ant1

OBW NVNT a 5240MHz Ant1


OBW NVNT a 5260MHz Ant1

OBW NVNT a 5300MHz Ant1

OBW NVNT a 5320MHz Ant1

OBW NVNT a 5745MHz Ant1

OBW NVNT a 5785MHz Ant1

OBW NVNT a 5825MHz Ant1

OBW NVNT n20 5180MHz Ant1

OBW NVNT n20 5200MHz Ant1

OBW NVNT n20 5240MHz Ant1

OBW NVNT n20 5260MHz Ant1

OBW NVNT n20 5300MHz Ant1

OBW NVNT n20 5320MHz Ant1

OBW NVNT n20 5745MHz Ant1

OBW NVNT n20 5785MHz Ant1

OBW NVNT n20 5825MHz Ant1

OBW NVNT n40 5190MHz Ant1

OBW NVNT n40 5230MHz Ant1

OBW NVNT n40 5270MHz Ant1

OBW NVNT n40 5310MHz Ant1

OBW NVNT n40 5755MHz Ant1

OBW NVNT n40 5795MHz Ant1

OBW NVNT ac20 5180MHz Ant1

OBW NVNT ac20 5200MHz Ant1

OBW NVNT ac20 5240MHz Ant1

OBW NVNT ac20 5260MHz Ant1

OBW NVNT ac20 5300MHz Ant1

OBW NVNT ac20 5320MHz Ant1

OBW NVNT ac20 5745MHz Ant1

OBW NVNT ac20 5785MHz Ant1

OBW NVNT ac20 5825MHz Ant1

OBW NVNT ac40 5190MHz Ant1

OBW NVNT ac40 5230MHz Ant1

OBW NVNT ac40 5270MHz Ant1

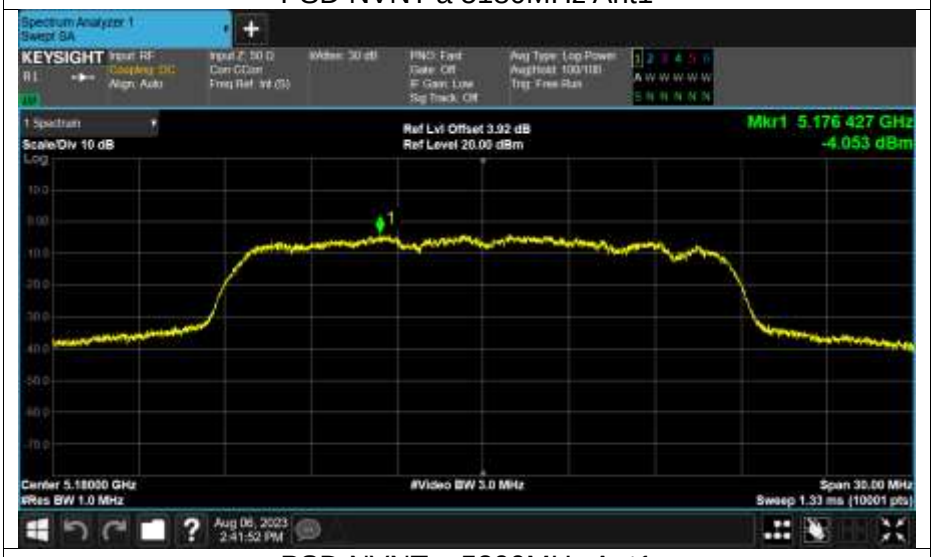
OBW NVNT ac40 5310MHz Ant1

OBW NVNT ac40 5755MHz Ant1

OBW NVNT ac40 5795MHz Ant1

Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	Ant1	-4.05	0.11	-3.94	11	Pass
NVNT	a	5200	Ant1	-3.7	0.11	-3.59	11	Pass
NVNT	a	5240	Ant1	-4.08	0.11	-3.97	11	Pass
NVNT	a	5260	Ant1	-3.53	0.11	-3.42	11	Pass
NVNT	a	5300	Ant1	-3.14	0.11	-3.03	11	Pass
NVNT	a	5320	Ant1	-2.79	0.11	-2.68	11	Pass
NVNT	a	5745	Ant1	-3.56	0.11	-3.45	30	Pass
NVNT	a	5785	Ant1	-4.43	0.11	-4.32	30	Pass
NVNT	a	5825	Ant1	-4.13	0.11	-4.02	30	Pass
NVNT	n20	5180	Ant1	-4.05	0.12	-3.93	11	Pass
NVNT	n20	5200	Ant1	-3.64	0.12	-3.52	11	Pass
NVNT	n20	5240	Ant1	-3.79	0.12	-3.67	11	Pass
NVNT	n20	5260	Ant1	-4.01	0.12	-3.89	11	Pass
NVNT	n20	5300	Ant1	-3.43	0.12	-3.31	11	Pass
NVNT	n20	5320	Ant1	-3.35	0.12	-3.23	11	Pass
NVNT	n20	5745	Ant1	-4.23	0.12	-4.11	30	Pass
NVNT	n20	5785	Ant1	-3.55	0.12	-3.43	30	Pass
NVNT	n20	5825	Ant1	-4.61	0.12	-4.49	30	Pass
NVNT	n40	5190	Ant1	-7.49	0.22	-7.27	11	Pass
NVNT	n40	5230	Ant1	-7.09	0.22	-6.87	11	Pass
NVNT	n40	5270	Ant1	-8.02	0.22	-7.8	11	Pass
NVNT	n40	5310	Ant1	-6.98	0.22	-6.76	11	Pass
NVNT	n40	5755	Ant1	-7.94	0.22	-7.72	30	Pass
NVNT	n40	5795	Ant1	-7.05	0.22	-6.83	30	Pass
NVNT	ac20	5180	Ant1	-3.59	0.12	-3.47	11	Pass
NVNT	ac20	5200	Ant1	-3.61	0.12	-3.49	11	Pass
NVNT	ac20	5240	Ant1	-4.48	0.12	-4.36	11	Pass
NVNT	ac20	5260	Ant1	-5.22	0.12	-5.1	11	Pass
NVNT	ac20	5300	Ant1	-4.3	0.12	-4.18	11	Pass
NVNT	ac20	5320	Ant1	-3.76	0.12	-3.64	11	Pass
NVNT	ac20	5745	Ant1	-4.53	0.12	-4.41	30	Pass
NVNT	ac20	5785	Ant1	-5.11	0.12	-4.99	30	Pass
NVNT	ac20	5825	Ant1	-4.86	0.12	-4.74	30	Pass
NVNT	ac40	5190	Ant1	-7.72	0.22	-7.5	11	Pass
NVNT	ac40	5230	Ant1	-7.63	0.22	-7.41	11	Pass
NVNT	ac40	5270	Ant1	-8.21	0.22	-7.99	11	Pass
NVNT	ac40	5310	Ant1	-7.01	0.22	-6.79	11	Pass
NVNT	ac40	5755	Ant1	-7.82	0.22	-7.6	30	Pass
NVNT	ac40	5795	Ant1	-7.74	0.22	-7.52	30	Pass

Test Graphs
PSD NVNT a 5180MHz Ant1

PSD NVNT a 5200MHz Ant1

PSD NVNT a 5240MHz Ant1


PSD NVNT a 5260MHz Ant1

PSD NVNT a 5300MHz Ant1

PSD NVNT a 5320MHz Ant1


PSD NVNT a 5745MHz Ant1

PSD NVNT a 5785MHz Ant1

PSD NVNT a 5825MHz Ant1


PSD NVNT n20 5180MHz Ant1

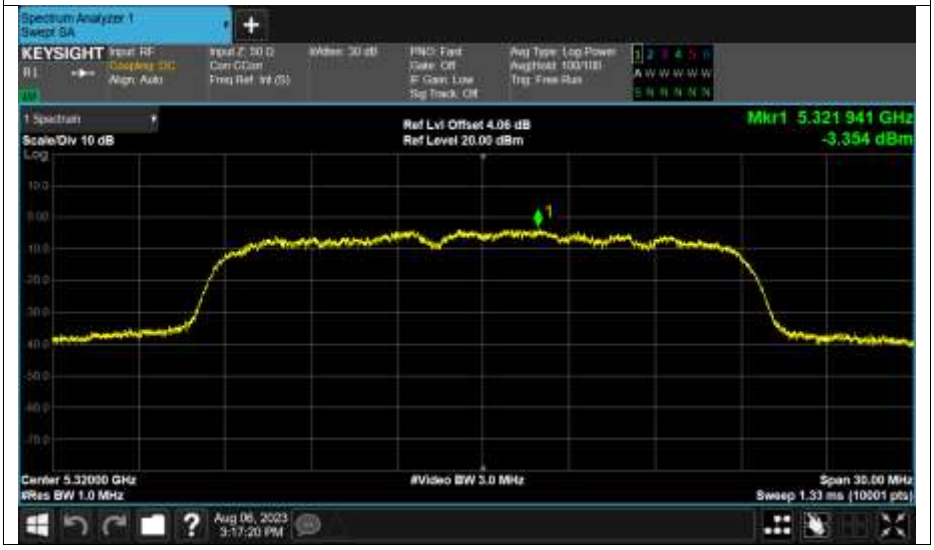
PSD NVNT n20 5200MHz Ant1

PSD NVNT n20 5240MHz Ant1


PSD NVNT n20 5260MHz Ant1

PSD NVNT n20 5300MHz Ant1

PSD NVNT n20 5320MHz Ant1



PSD NVNT n20 5745MHz Ant1

PSD NVNT n20 5785MHz Ant1

PSD NVNT n20 5825MHz Ant1


PSD NVNT n40 5190MHz Ant1

PSD NVNT n40 5230MHz Ant1

PSD NVNT n40 5270MHz Ant1


PSD NVNT n40 5310MHz Ant1

PSD NVNT n40 5755MHz Ant1

PSD NVNT n40 5795MHz Ant1

PSD NVNT ac20 5180MHz Ant1

PSD NVNT ac20 5200MHz Ant1

PSD NVNT ac20 5240MHz Ant1


PSD NVNT ac20 5260MHz Ant1

PSD NVNT ac20 5300MHz Ant1

PSD NVNT ac20 5320MHz Ant1


PSD NVNT ac20 5745MHz Ant1

PSD NVNT ac20 5785MHz Ant1

PSD NVNT ac20 5825MHz Ant1


PSD NVNT ac40 5190MHz Ant1

PSD NVNT ac40 5230MHz Ant1

PSD NVNT ac40 5270MHz Ant1


PSD NVNT ac40 5310MHz Ant1

PSD NVNT ac40 5755MHz Ant1

PSD NVNT ac40 5795MHz Ant1


-6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	15.655	0.5	Pass
NVNT	a	5785	Ant1	13.865	0.5	Pass
NVNT	a	5825	Ant1	15.091	0.5	Pass
NVNT	n20	5745	Ant1	16.03	0.5	Pass
NVNT	n20	5785	Ant1	15.07	0.5	Pass
NVNT	n20	5825	Ant1	15.01	0.5	Pass
NVNT	n40	5755	Ant1	35.018	0.5	Pass
NVNT	n40	5795	Ant1	35.061	0.5	Pass
NVNT	ac20	5745	Ant1	16.034	0.5	Pass
NVNT	ac20	5785	Ant1	15.136	0.5	Pass
NVNT	ac20	5825	Ant1	14.956	0.5	Pass
NVNT	ac40	5755	Ant1	35.155	0.5	Pass
NVNT	ac40	5795	Ant1	35.129	0.5	Pass

Test Graphs
-6dB Bandwidth NVNT a 5745MHz Ant1

-6dB Bandwidth NVNT a 5785MHz Ant1

-6dB Bandwidth NVNT a 5825MHz Ant1


-6dB Bandwidth NVNT n20 5745MHz Ant1

-6dB Bandwidth NVNT n20 5785MHz Ant1

-6dB Bandwidth NVNT n20 5825MHz Ant1

-6dB Bandwidth NVNT n40 5755MHz Ant1

-6dB Bandwidth NVNT n40 5795MHz Ant1

-6dB Bandwidth NVNT ac20 5745MHz Ant1

-6dB Bandwidth NVNT ac20 5785MHz Ant1

-6dB Bandwidth NVNT ac20 5825MHz Ant1

-6dB Bandwidth NVNT ac40 5755MHz Ant1

-6dB Bandwidth NVNT ac40 5795MHz Ant1


※※※※※END OF THE REPORT※※※※※