RF TEST REPORT

Product Name: WiFi6 Extender

Model Name: Z04

FCC ID: 2BF65-Z04

Issued For : Shenzhen Shenshui Innovation Technology Co., Ltd.

No. 607, No. 6, Tongwei Industrial Avenue, Fuhai Street, Baoan District, Shenzhen

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:	LGT24D151RF02
Sample Received Date:	Apr. 26, 2024
Date of Test:	Apr. 26, 2024 – June 04, 2024
Date of Issue:	June 05, 2024

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TEST REPORT CERTIFICATION

Applicant:	Shenzhen Shenshui Innovation Technology Co., Ltd.
Address:	No. 607, No. 6, Tongwei Industrial Avenue, Fuhai Street, Baoan District, Shenzhen
Manufacturer:	Shenzhen Shenshui Innovation Technology Co., Ltd.
Address:	No. 607, No. 6, Tongwei Industrial Avenue, Fuhai Street, Baoan District, Shenzhen
Product Name:	WiFi6 Extender
Trademark:	N/A
Model Name:	Z04
Sample Status:	Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15.407, Subpart E ANSI C63.10-2013 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01	PASS

Prepared by:

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Engineer

Approved by:

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Technical Director

SHENZHEN LGT TEST SERVICE CO., LTD. LGT 领冠检测

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Revision History

Rev.	Issue Date	Contents
00	June 05, 2024	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>WiFi6 Extender</td></tr>
<tr><td>Trademark:</td><td>N/A</td></tr>
<tr><td>Model Name:</td><td>Z04</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="4">Operation Frequency:</td><td>IEEE 802.11a/n(HT20)/ac/ax(VHT20/HE20): 5.180GHz-5.240GHz
IEEE 802.11n(HT40)/ac/ax(VHT40/HE40): 5.190GHz-5.230GHz
IEEE 802.11ac/ax(VHT80/HE80): 5.210GHz
IEEE 802.11ac/ax(VHT160/HE160): 5.250GHz</td></tr>
<tr><td>IEEE 802.11a/n(HT20)/ac/ax(VHT20): 5.260GHz-5.320GHz
IEEE 802.11 n(HT40)/ac/ax(VHT40 VHT40/HE40): 5.270GHz-5.310GHz
IEEE 802.11ac/ax(VHT80/HE80): 5.290GHz</td></tr>
<tr><td>IEEE 802.11a/n(HT20)/ac/ax(VHT20/HE20): 5.500GHz-5.700GHz
IEEE 802.11 n(HT40)/ac/ax(VHT40): 5.510GHz-5.670GHz
IEEE 802.11ac/ax(VHT80/HE80): 5.530GHz-5.610GHz
IEEE 802.11ac/ax(VHT160/HE160): 5.570GHz</td></tr>
<tr><td>I IEEE 802.11a/n(HT20)/ac/ax(VHT20/HE20): 5.745GHz-5.825GHz
IEEE 802.11a/n(HT40)/ac/ax(VHT40/HE40): 5.755GHz-5.795GHz
IEEE 802.11ac/ax(VHT80/HE80): 5.775GHz</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
802.11ax(OFDM, OFDMA): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024QAM</td></tr>
<tr><td>Antenna Designation:</td><td>PIFA</td></tr>
<tr><td>Antenna Gain(dBi)</td><td>ANT1: 2.15
ANT2: 2.27</td></tr>
<tr><td colspan="2">More details of EUT technical specification, please refer to the User Manual.</td></tr>
</table>
</td></tr>
<tr><td>Test Channel:</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Rating:</td><td>Input: AC 100-240V, 50/60Hz, 0.5A</td></tr>
<tr><td>Hardware Version:</td><td>V1.3</td></tr>
<tr><td>Software Version:</td><td>V1.0.0</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
50	5250		
5.500GHz-5.720GHz		5.745GHz-5.825GHz	
Channel	Frequency	Channel	Frequency
100	5500	149	5745
102	5510	151	5755
104	5520	153	5765
108	5540	157	5785
110	5550	159	5795
112	5560	161	5805
114	5570	165	5825
116	5580		
118	5590		
120	5600		
124	5620		
126	5630		
128	5640		
132	5660		
134	5670		
136	5680		
140	5700		
142	5710		
144	5720		

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/ax(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	52	5260	100	5500	149	5745
40	5200	60	5300	116	5580	157	5785
48	5240	64	5320	140	5700	165	5825

Channel List for 802.11n/ac/ax(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	54	5270	102	5510	151	5755
46	5230	62	5310	110	5550	159	5795
134	5670						

Channel List for 802.11ac/ax(80MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	58	5290	106	5530	155	5775
122	5610						

For 802.11ac/ax 160MHz			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
50	5250	114	5570

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/ax VHT20/HE20 CH36&CH40&CH48	NSS1 MCS0
Mode 6	TX IEEE 802.11n HT20 CH52&CH60&CH64	MCS 0
Mode 7	TX IEEE 802.11ac/ax VHT20/HE20 CH52&CH60&CH64	NSS1 MCS0
Mode 8	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 9	TX IEEE 802.11ac/ax VHT20/HE20 CH149&CH157&CH165	NSS1 MCS0
Mode 10	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 11	TX IEEE 802.11ac/ax VHT40/HE40 CH38&CH46	NSS1 MCS0
Mode 12	TX IEEE 802.11n HT40 CH54 &CH62	MCS 0
Mode 13	TX IEEE 802.11ac/ax VHT40/HE40 CH54 &CH62	NSS1 MCS0
Mode 14	TX IEEE 802.11n HT40 CH151&CH159	MCS 0
Mode 15	TX IEEE 802.11ac/ax VHT40/HE40 CH151&CH159	NSS1 MCS0
Mode 16	TX IEEE 802.11ac/ax VHT80/HE80 CH42	NSS1 MCS0
Mode 17	TX IEEE 802.11ac/ax VHT80/HE80 CH58	NSS1 MCS0
Mode 18	TX IEEE 802.11ac/ax VHT80 CH155	NSS1 MCS0
Mode 19	TX IEEE 802.11ac/ax VHT160/HE160 CH50	NSS1 MCS0
Mode 20	TX IEEE 802.11ac/ax VHT160/HE160 CH114	NSS1 MCS0

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 21: TX Mode

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.
(5). Product have 2 power board configurations, Each configuration test AC Conducted

Emission and Radiated Spurious Emission below 1GHz.

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		
CMD Command	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	38	-
	n20	38	32
	n40	38	32
	ac20	35	10
	ac40	35	10
	ac80	35	10
	ac160	35	10
	ax20	30	10
	ax40	30	10
	ax80	30	10
	ax160	30	10
Test software Version	Test program: 5G WIFI B2		
CMD Command	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	38	-
	n20	38	32
	n40	38	32
	ac20	35	10
	ac40	35	10
	ac80	35	10
	ax20	30	10
	ax40	30	10
	ax80	30	10
Test software Version	Test program: 5G WIFI B3		
CMD Command	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	38	-
	n20	38	32
	n40	38	32
	ac20	35	10
	ac40	35	10
	ac80	35	10
	ac160	35	10
	ax20	30	10
	ax40	30	10
	ax80	30	10
	ax160	30	10
Test software Version	Test program: 5G WIFI B4		
CMD Command	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	38	-
	n20	38	32
	n40	38	32
	ac20	35	10
	ac40	35	10
	ac80	35	10
	ax20	30	10
	ax40	30	10
	ax80	30	10

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

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	2024.03.09	2025.03.08
LISN	COM-POWER	LI-115	02032	2024.03.09	2025.03.08
LISN	SCHWARZBECK	NNLK 8122	00160	2024.03.09	2025.03.08
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2024.03.09	2025.03.08
Temperature & Humidity	KTJ	TA218B	N.A	2024.03.09	2025.03.08
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	2024.03.09	2025.03.08
Active loop Antenna	ETS	6502	00049544	2023.10.13	2025.10.12
Spectrum Analyzer	Keysight	N9010B	MY60242508	2023.08.14	2024.08.13
Bilog Antenna(30M-1G)	SCHWARZBECK	VULB 9168	2705	2022.12.12	2025.12.11
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	2024.03.09	2025.03.08
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A4722	2024.03.09	2025.03.08
Pre-amplifier(18-40G)	com-mw	LNPA_18-40-01	18050003	2024.03.09	2025.03.08
Wireless Communications Test Set	R&S	CMW 500	137737	2024.03.09	2025.03.08
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2024.03.11	2025.03.10
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Conducted Test equipment					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Cal. Until**
Signal Analyzer	Keysight	N9010B	MY60242508	2023.08.14	2024.08.13
Signal Analyzer	Keysight	N9020A	MY50530994	2024.03.09	2025.03.08
RF Automatic Test system	MW	MW100-RFCB	MW220322LG-033	2024.03.09	2025.03.08
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2024.03.09	2025.03.08
Temperature& Humidity test chamber	AISRY	LX-1000L	171200018	2024.03.09	2025.03.08
Attenuator	eastsheep	90db	N.A	2024.03.09	2025.03.08
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2024.03.11	2025.03.10
Digital multimeter	MASTECH	MS8261	MBGBC83053	2024.03.09	2025.03.08
Testing Software	MTS8310_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

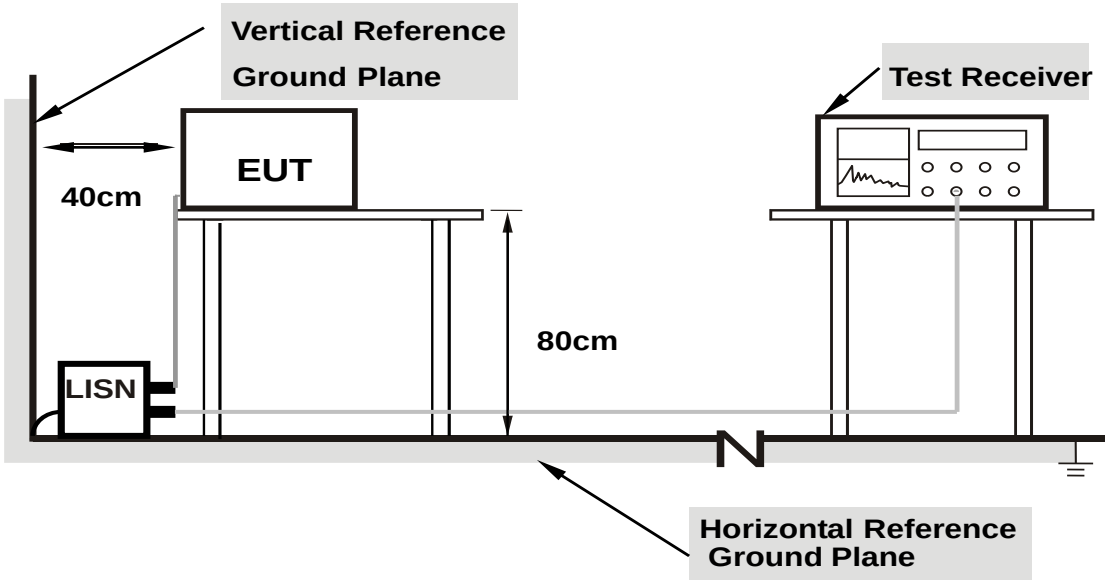
3.1.2 TEST PROCEDURE

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.

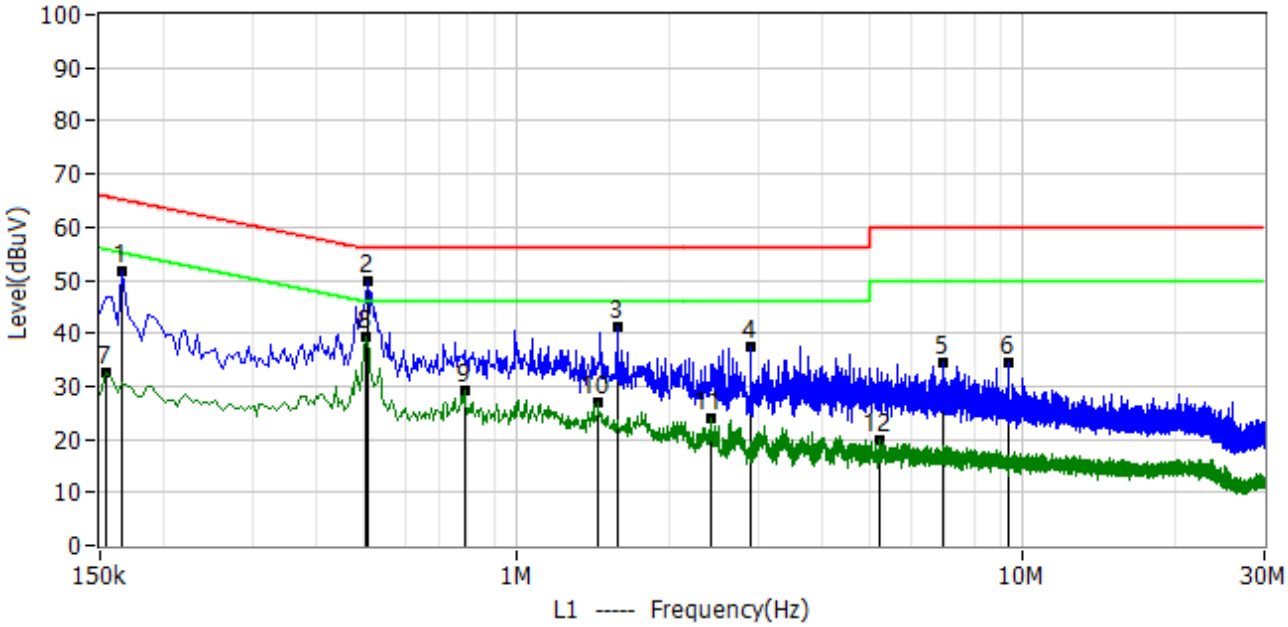
3.1.5 EUT OPERATING CONDITIONS

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

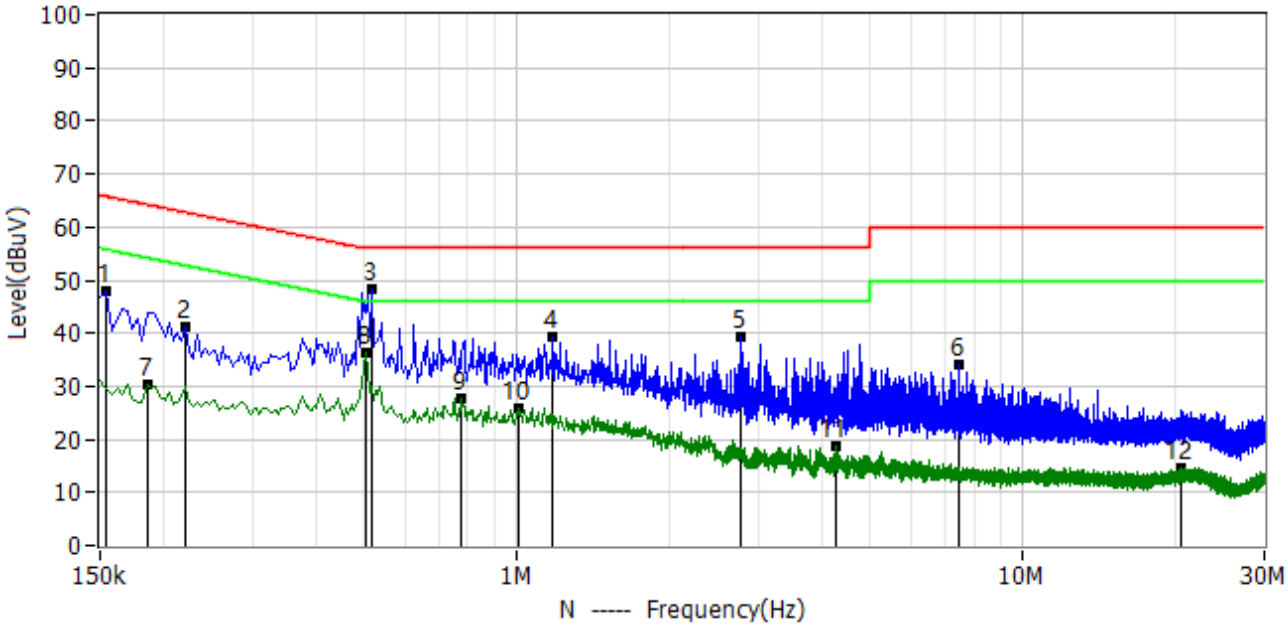
Note: We had performed this test on ANT 1, 2 and the MIMO mode, and only show the worst case in test report.

Project: LGT24D151	Test Engineer: LiuH
EUT: WiFi6 Extender	Temperature: 22.8℃
M/N: Z04	Humidity: 60%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-06
Test Mode: TX 802.11n20 5180 MIMO worst case	
Note: Power board A	



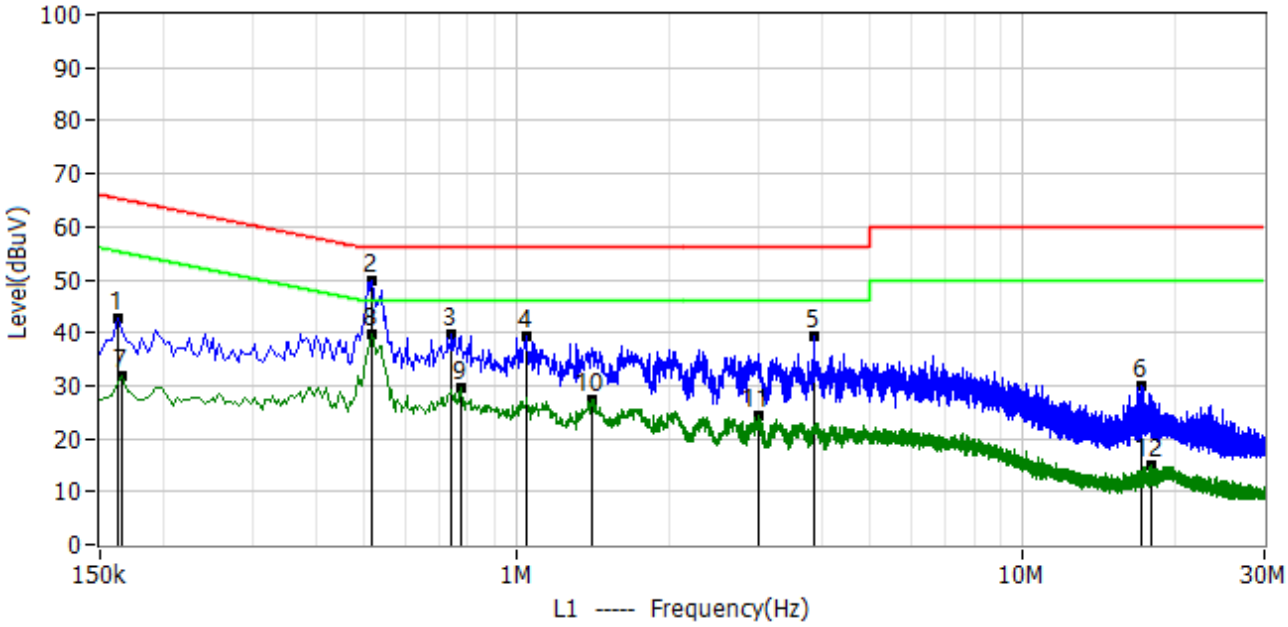
No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.166	41.06	10.49	51.55	65.16	-13.60	QP	L1
2*	0.506	39.16	10.50	49.66	56.00	-6.34	QP	L1
3*	1.578	30.50	10.64	41.14	56.00	-14.86	QP	L1
4*	2.894	26.87	10.74	37.61	56.00	-18.39	QP	L1
5*	6.930	23.46	10.86	34.32	60.00	-25.68	QP	L1
6*	9.382	23.66	10.97	34.63	60.00	-25.37	QP	L1
7*	0.154	22.21	10.49	32.70	55.78	-23.08	AV	L1
8*	0.502	28.96	10.50	39.46	46.00	-6.54	AV	L1
9*	0.786	18.74	10.51	29.25	46.00	-16.75	AV	L1
10*	1.446	16.23	10.61	26.84	46.00	-19.16	AV	L1
11*	2.422	13.34	10.73	24.07	46.00	-21.93	AV	L1
12*	5.194	8.97	10.81	19.78	50.00	-30.22	AV	L1

Project: LGT24D151	Test Engineer: LiuH
EUT: WiFi6 Extender	Temperature: 22.8℃
M/N: Z04	Humidity: 60%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-06
Test Mode: TX 802.11n20 5180 MIMO worst case	
Note: Power board A	



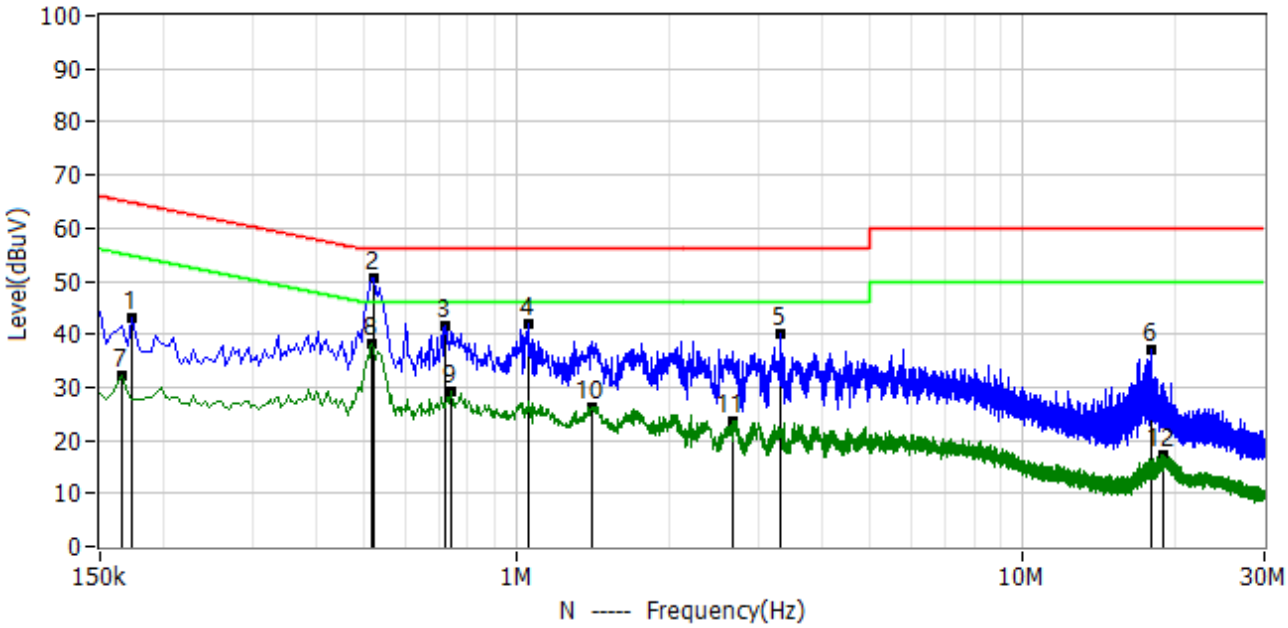
No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.154	37.34	10.49	47.83	65.78	-17.95	QP	N
2*	0.222	30.69	10.49	41.18	62.74	-21.56	QP	N
3*	0.518	37.92	10.50	48.42	56.00	-7.58	QP	N
4*	1.178	28.70	10.55	39.25	56.00	-16.75	QP	N
5*	2.766	28.41	10.74	39.15	56.00	-16.85	QP	N
6*	7.502	23.26	10.89	34.15	60.00	-25.85	QP	N
7*	0.186	19.82	10.49	30.31	54.21	-23.90	AV	N
8*	0.502	25.66	10.50	36.16	46.00	-9.84	AV	N
9*	0.778	17.05	10.51	27.56	46.00	-18.44	AV	N
10*	1.006	15.47	10.52	25.99	46.00	-20.01	AV	N
11*	4.274	8.00	10.78	18.78	46.00	-27.22	AV	N
12*	20.482	3.50	11.19	14.69	50.00	-35.31	AV	N

Project: LGT24D151	Test Engineer: LiuH
EUT: WiFi6 Extender	Temperature: 23.5℃
M/N: Z04	Humidity: 60%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-06-03
Test Mode: TX 802.11n20 5180 MIMO worst case	
Note: Power board B	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.162	32.20	10.59	42.79	65.36	-22.57	QP	L1
2*	0.518	39.15	10.57	49.72	56.00	-6.28	QP	L1
3*	0.742	29.23	10.58	39.81	56.00	-16.19	QP	L1
4*	1.046	28.71	10.70	39.41	56.00	-16.59	QP	L1
5*	3.878	28.01	11.14	39.15	56.00	-16.85	QP	L1
6*	17.134	18.39	11.49	29.88	60.00	-30.12	QP	L1
7*	0.166	21.14	10.59	31.73	55.16	-23.43	AV	L1
8*	0.518	28.96	10.57	39.53	46.00	-6.47	AV	L1
9*	0.774	18.95	10.60	29.55	46.00	-16.45	AV	L1
10*	1.402	16.62	10.81	27.43	46.00	-18.57	AV	L1
11*	3.010	13.11	11.19	24.30	46.00	-21.70	AV	L1
12*	17.926	3.54	11.53	15.07	50.00	-34.93	AV	L1

Project: LGT24D151	Test Engineer: LiuH
EUT: WiFi6 Extender	Temperature: 23.5℃
M/N: Z04	Humidity: 60%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-06-03
Test Mode: TX 802.11n20 5180 MIMO worst case	
Note: Power board B	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.174	32.40	10.56	42.96	64.77	-21.81	QP	N
2*	0.522	39.93	10.54	50.47	56.00	-5.53	QP	N
3*	0.722	31.06	10.56	41.62	56.00	-14.38	QP	N
4*	1.050	31.30	10.55	41.85	56.00	-14.15	QP	N
5*	3.330	29.37	10.79	40.16	56.00	-15.84	QP	N
6*	17.914	25.52	11.53	37.05	60.00	-22.95	QP	N
7*	0.166	21.82	10.56	32.38	55.16	-22.78	AV	N
8*	0.518	27.48	10.54	38.02	46.00	-7.98	AV	N
9*	0.738	18.52	10.56	29.08	46.00	-16.92	AV	N
10*	1.402	15.66	10.63	26.29	46.00	-19.71	AV	N
11*	2.678	12.91	10.78	23.69	46.00	-22.31	AV	N
12*	19.010	5.66	11.58	17.24	50.00	-32.76	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:

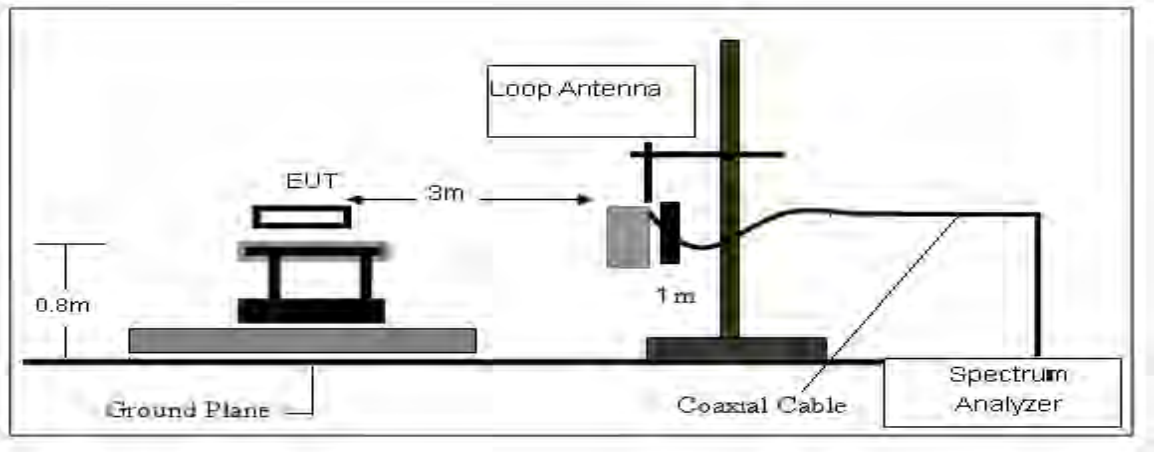
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

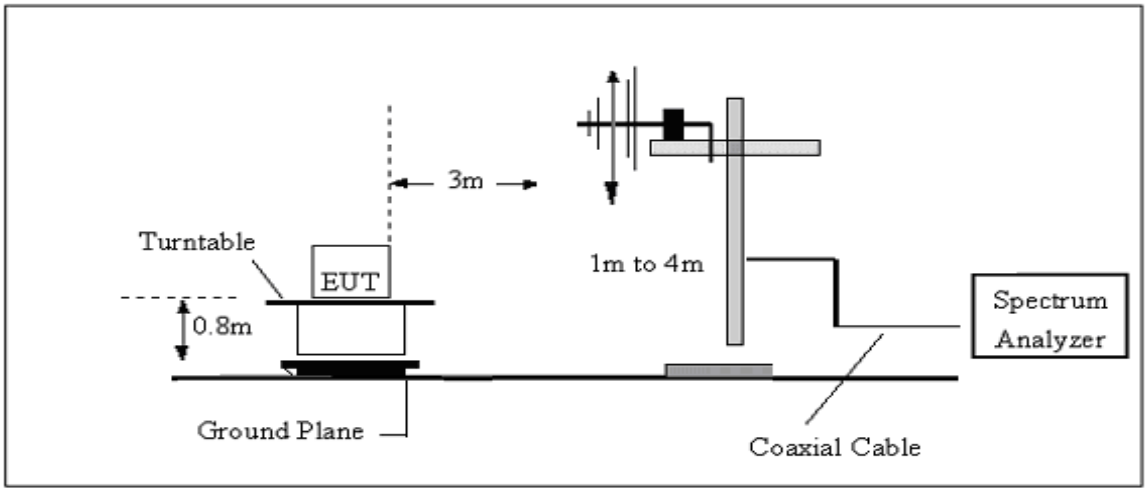
No deviation

3.2.3 TEST SETUP

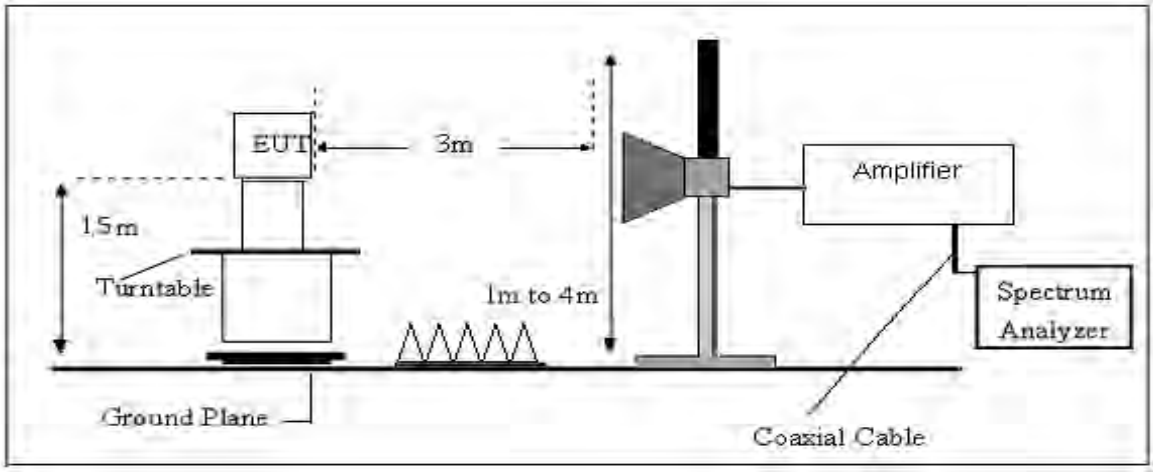
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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.

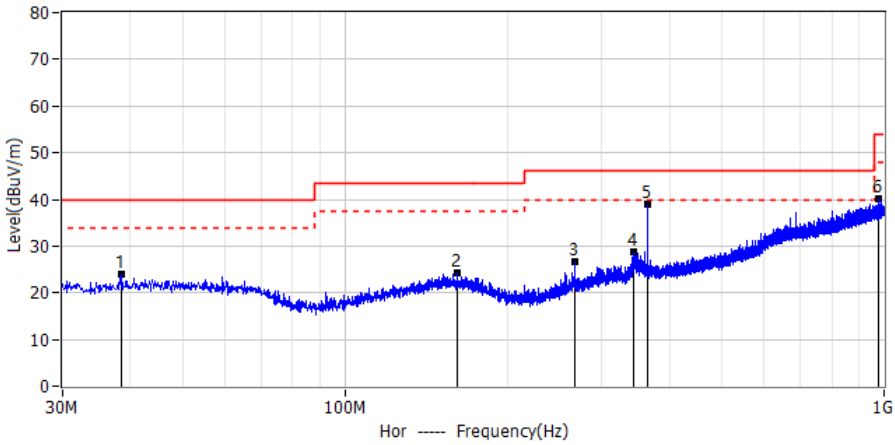
Results of Radiated Emissions (30MHz~1000MHz)

Note:1. All mode has been tested, only shown the worst case data,

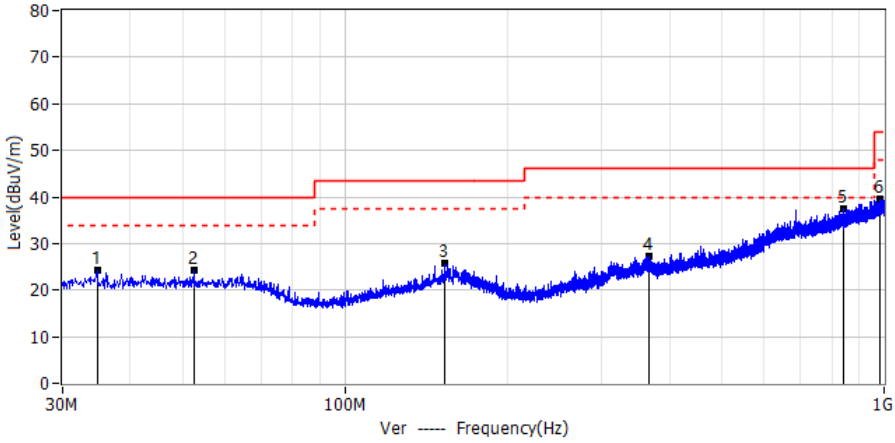
2. We had performed this test on ANT 1, 2 and the MIMO mode, and only show the worst case in test report.

3. The peak value is less than the AV limit, so no AV data is displayed.

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-11
Test Mode: TX 802.11n20 5180 MIMO worst case	
Note: Power board A	

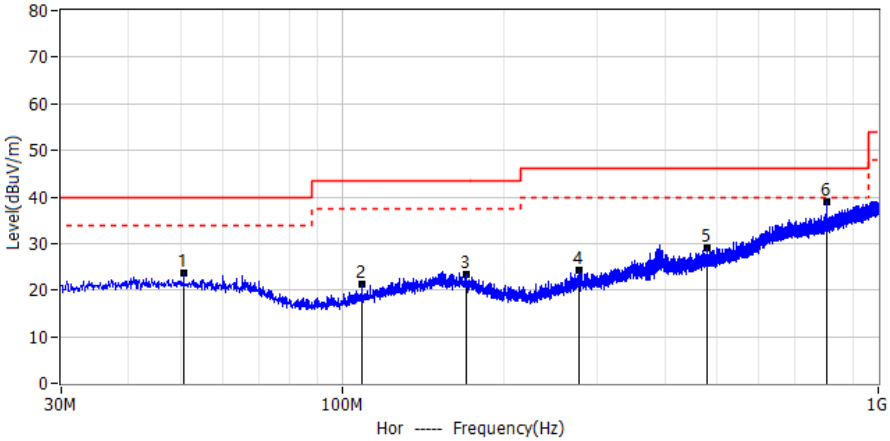


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	38.609	4.81	19.15	23.96	40.00	-16.04	PK	Hor
2*	161.799	4.41	19.83	24.24	43.50	-19.26	PK	Hor
3*	266.438	7.67	19.01	26.68	46.00	-19.32	PK	Hor
4*	342.583	7.69	21.04	28.73	46.00	-17.27	PK	Hor
5*	363.923	17.32	21.68	39.00	46.00	-7.00	PK	Hor
6*	978.539	5.58	34.47	40.05	54.00	-13.95	PK	Hor

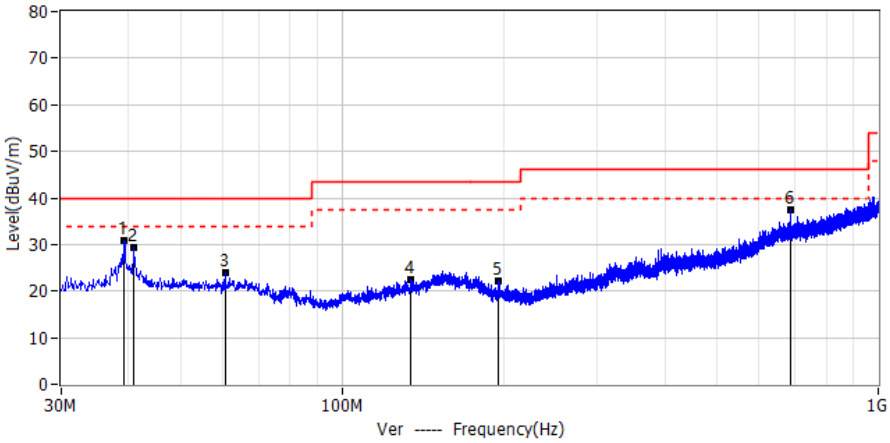


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	34.729	5.81	18.52	24.33	40.00	-15.67	PK	Ver
2*	52.553	5.11	19.18	24.29	40.00	-15.71	PK	Ver
3*	152.948	5.67	19.95	25.62	43.50	-17.88	PK	Ver
4*	365.741	5.53	21.75	27.28	46.00	-18.72	PK	Ver
5*	840.435	5.37	32.11	37.48	46.00	-8.52	PK	Ver
6*	984.723	5.07	34.50	39.57	54.00	-14.43	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 29.4℃
M/N: Z04	Humidity: 45%RH
Test Voltage: Battery	Test Data: 2024-06-03
Test Mode: TX 802.11n20 5180 MIMO worst case	
Note: Power board B	



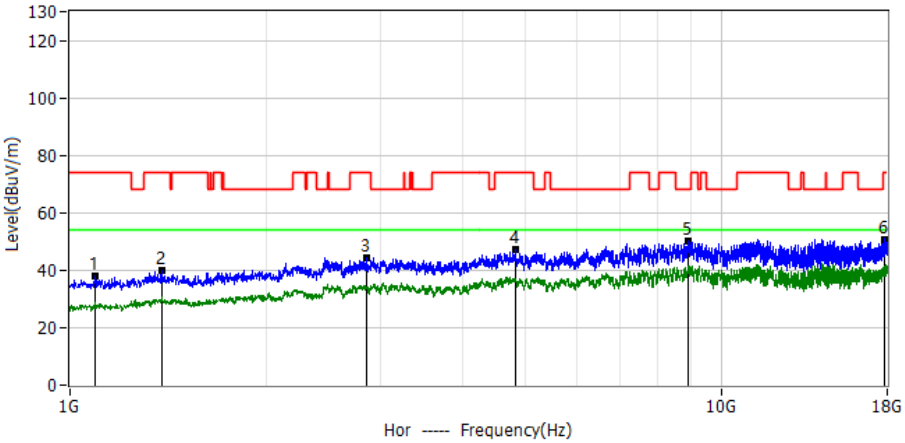
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	50.734	4.39	19.31	23.70	40.00	-16.30	PK	Hor
2*	108.934	4.74	16.66	21.40	43.50	-22.10	PK	Hor
3*	170.893	3.56	19.70	23.26	43.50	-20.24	PK	Hor
4*	276.380	4.92	19.45	24.37	46.00	-21.63	PK	Hor
5*	478.261	4.47	24.52	28.99	46.00	-17.01	PK	Hor
6*	799.574	7.75	31.10	38.85	46.00	-7.15	PK	Hor



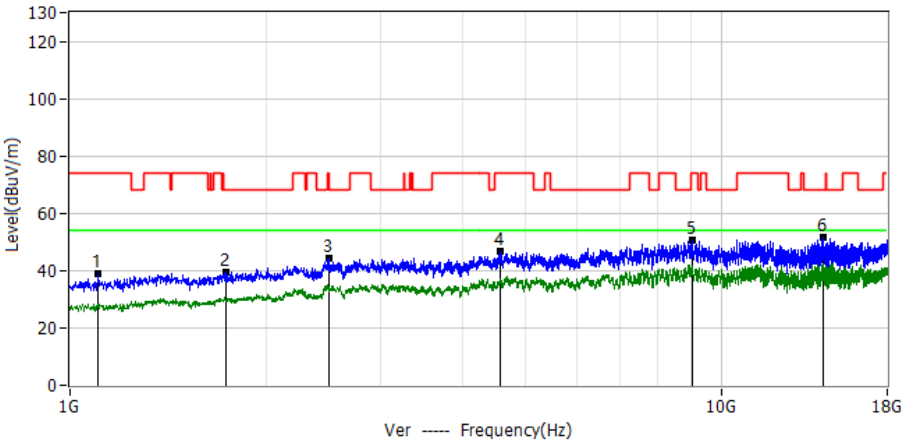
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	39.336	11.73	19.27	31.00	40.00	-9.00	PK	Ver
2*	41.034	9.96	19.35	29.31	40.00	-10.69	PK	Ver
3*	60.555	5.33	18.61	23.94	40.00	-16.06	PK	Ver
4*	134.760	3.75	18.76	22.51	43.50	-20.99	PK	Ver
5*	195.870	4.79	17.35	22.14	43.50	-21.36	PK	Ver
6*	687.539	7.78	29.69	37.47	46.00	-8.53	PK	Ver

Results of Radiated Emissions (Above 1000MHz)

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5180 MIMO worst case	
Note: Worst Case	

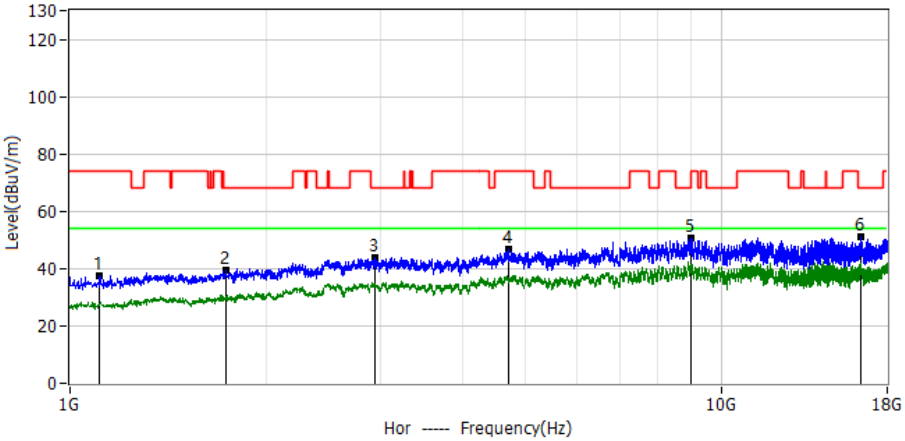


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1091.4000	61.86	-23.95	37.91	74.00	-36.09	PK	Hor
2*	1382.5000	61.42	-21.60	39.82	74.00	-34.18	PK	Hor
3*	2850.9000	54.00	-9.53	44.47	74.00	-29.53	PK	Hor
4*	4842.0000	53.90	-6.84	47.06	74.00	-26.94	PK	Hor
5*	8905.0000	53.78	-3.84	49.94	68.20	-18.26	PK	Hor
6*	17857.6000	48.92	1.96	50.88	74.00	-23.12	PK	Hor

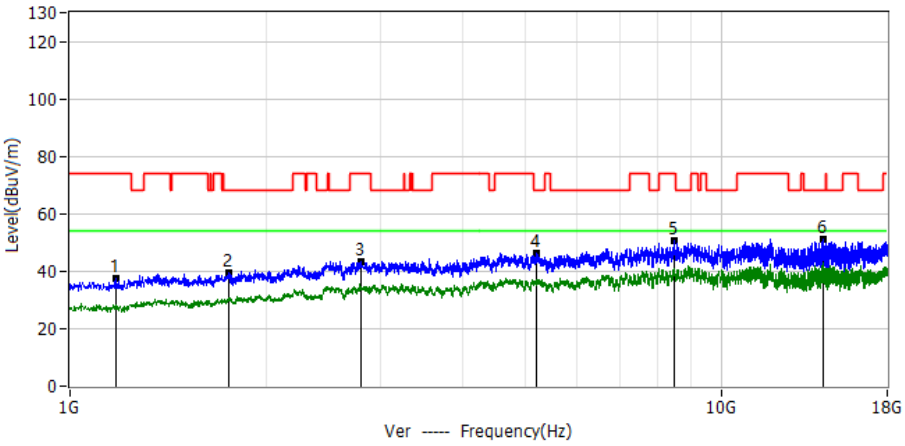


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1104.1000	62.66	-23.84	38.82	74.00	-35.18	PK	Ver
2*	1739.5000	58.64	-18.99	39.65	68.20	-28.55	PK	Ver
3*	2496.0000	55.51	-11.35	44.16	74.00	-29.84	PK	Ver
4*	4584.9000	53.18	-6.59	46.59	74.00	-27.41	PK	Ver
5*	9017.6000	54.35	-3.68	50.67	74.00	-23.33	PK	Ver
6*	14370.5000	50.84	0.72	51.56	68.20	-16.64	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5200 MIMO worst case	
Note: Worst Case	

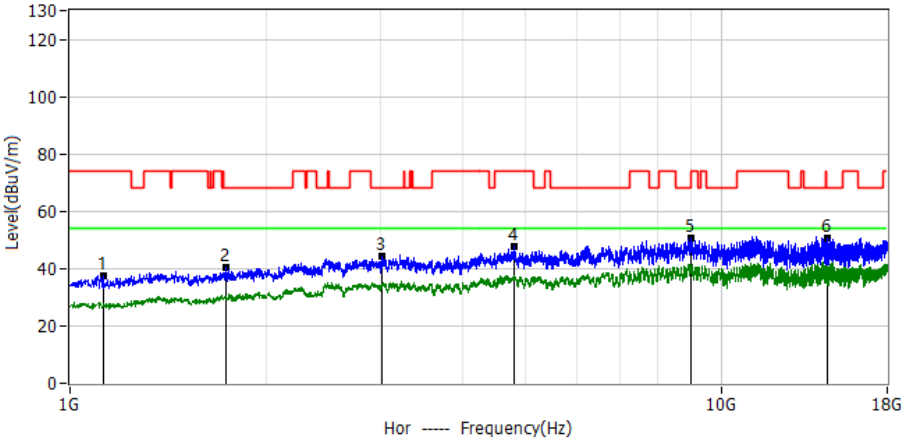


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1110.5000	61.31	-23.79	37.52	74.00	-36.48	PK	Hor
2*	1735.2000	58.53	-19.03	39.50	68.20	-28.70	PK	Hor
3*	2942.2000	52.90	-9.06	43.84	68.20	-24.36	PK	Hor
4*	4708.1000	53.44	-6.71	46.73	74.00	-27.27	PK	Hor
5*	9004.9000	54.46	-3.67	50.79	74.00	-23.21	PK	Hor
6*	16385.0000	50.42	0.76	51.18	68.20	-17.02	PK	Hor

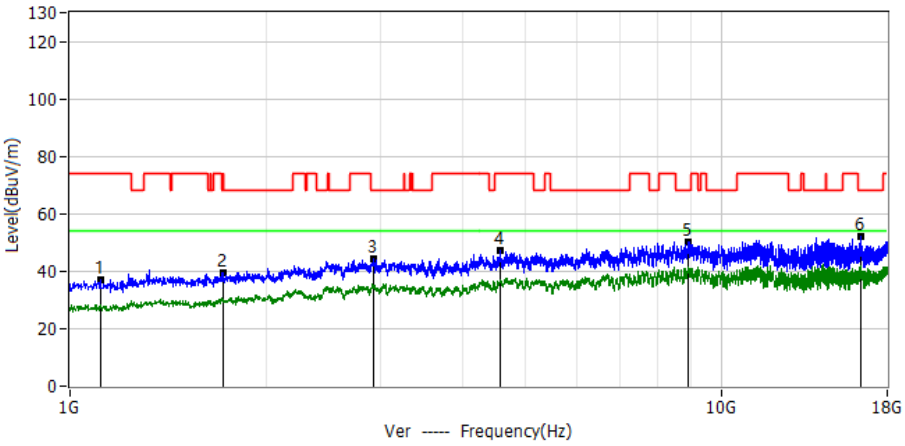


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1174.2000	60.65	-23.23	37.42	74.00	-36.58	PK	Ver
2*	1752.2000	58.30	-18.87	39.43	68.20	-28.77	PK	Ver
3*	2802.0000	53.21	-9.77	43.44	74.00	-30.56	PK	Ver
4*	5196.9000	54.12	-7.67	46.45	68.20	-21.75	PK	Ver
5*	8465.1000	55.41	-4.65	50.76	74.00	-23.24	PK	Ver
6*	14379.0000	50.30	0.71	51.01	68.20	-17.19	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5240MIMO worst case	
Note: Worst Case	

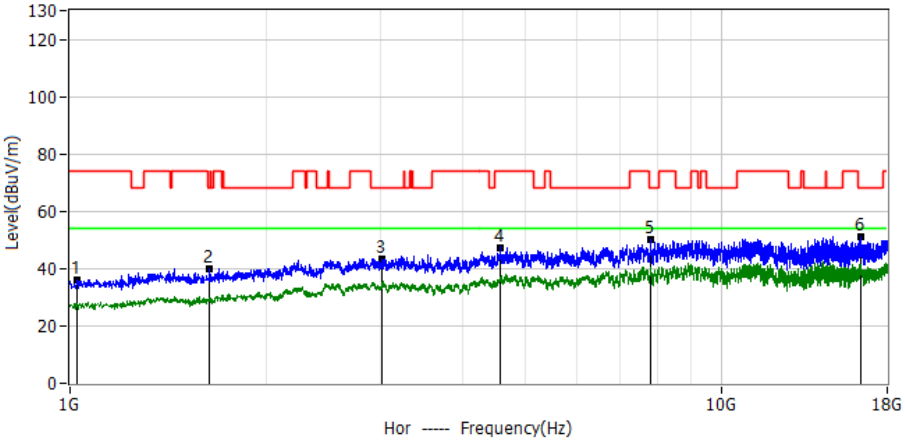


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1123.2000	61.34	-23.68	37.66	74.00	-36.34	PK	Hor
2*	1739.5000	59.38	-18.99	40.39	68.20	-27.81	PK	Hor
3*	3016.6000	53.05	-8.78	44.27	68.20	-23.93	PK	Hor
4*	4808.0000	54.47	-6.81	47.66	74.00	-26.34	PK	Hor
5*	9009.1000	54.28	-3.67	50.61	74.00	-23.39	PK	Hor
6*	14597.9000	49.92	0.62	50.54	68.20	-17.66	PK	Hor

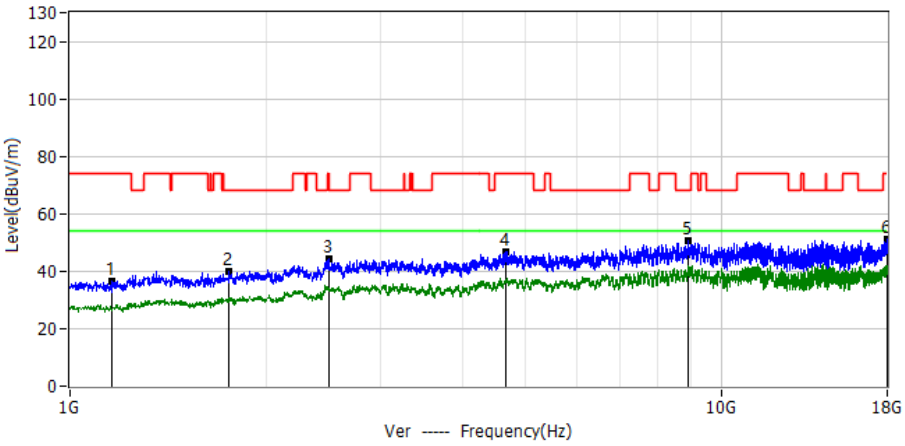


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1114.7000	60.86	-23.75	37.11	74.00	-36.89	PK	Ver
2*	1718.2000	58.72	-19.19	39.53	68.20	-28.67	PK	Ver
3*	2931.6000	53.41	-9.12	44.29	68.20	-23.91	PK	Ver
4*	4584.9000	53.83	-6.59	47.24	74.00	-26.76	PK	Ver
5*	8917.7000	54.07	-3.82	50.25	68.20	-17.95	PK	Ver
6*	16378.6000	51.11	0.76	51.87	68.20	-16.33	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5260 MIMO worst case	
Note: Worst Case	

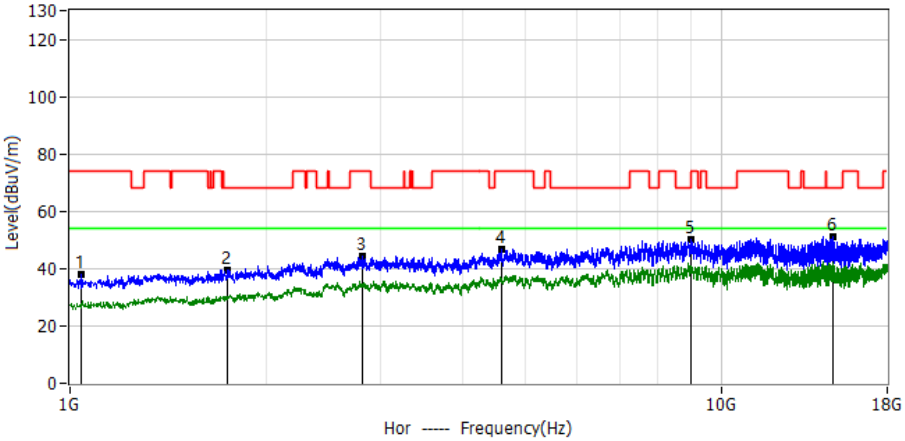


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1025.5000	60.51	-24.53	35.98	74.00	-38.02	PK	Hor
2*	1637.5000	59.99	-19.95	40.04	68.20	-28.16	PK	Hor
3*	3018.7000	52.28	-8.78	43.50	68.20	-24.70	PK	Hor
4*	4582.7000	54.06	-6.59	47.47	74.00	-26.53	PK	Hor
5*	7797.9000	55.75	-5.58	50.17	68.20	-18.03	PK	Hor
6*	16387.1000	50.30	0.77	51.07	68.20	-17.13	PK	Hor

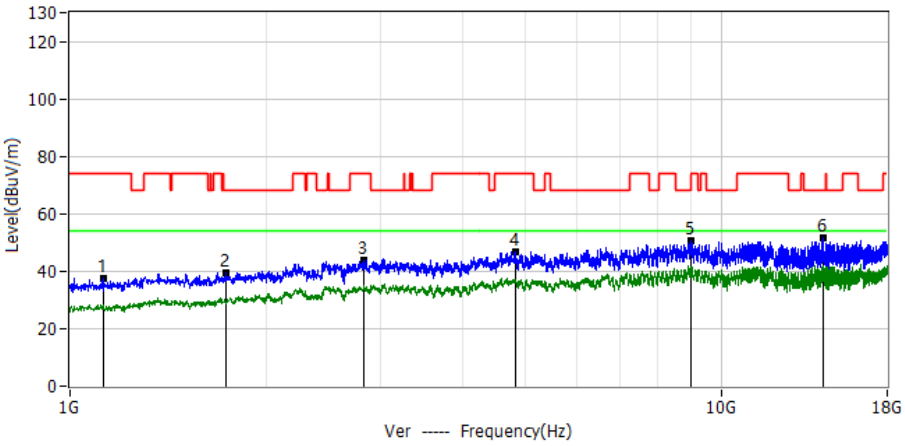


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1161.5000	59.71	-23.34	36.37	74.00	-37.63	PK	Ver
2*	1754.4000	58.92	-18.85	40.07	68.20	-28.13	PK	Ver
3*	2498.1000	55.86	-11.33	44.53	74.00	-29.47	PK	Ver
4*	4661.4000	53.22	-6.66	46.56	74.00	-27.44	PK	Ver
5*	8919.9000	54.30	-3.82	50.48	68.20	-17.72	PK	Ver
6*	17959.6000	48.96	2.00	50.96	74.00	-23.04	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5300 MIMO worst case	
Note: Worst Case	

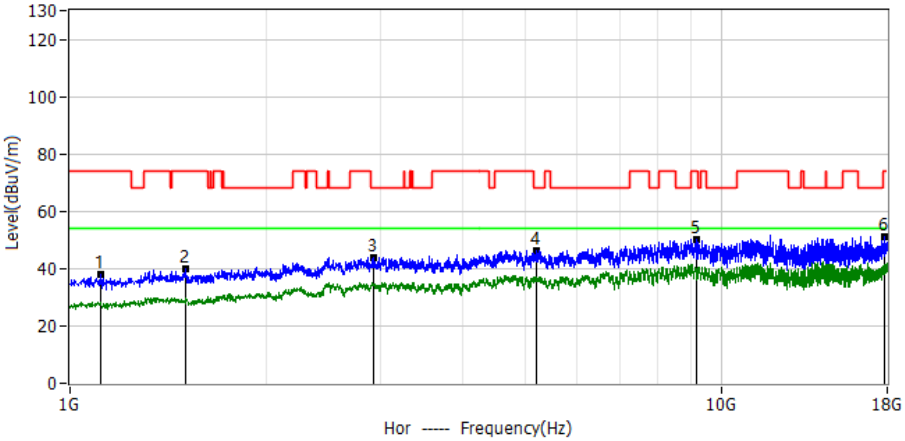


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1042.5000	62.33	-24.38	37.95	74.00	-36.05	PK	Hor
2*	1745.9000	58.36	-18.93	39.43	68.20	-28.77	PK	Hor
3*	2808.4000	53.95	-9.74	44.21	74.00	-29.79	PK	Hor
4*	4593.4000	53.24	-6.60	46.64	74.00	-27.36	PK	Hor
5*	9002.7000	53.68	-3.67	50.01	74.00	-23.99	PK	Hor
6*	14818.9000	50.61	0.53	51.14	68.20	-17.06	PK	Hor

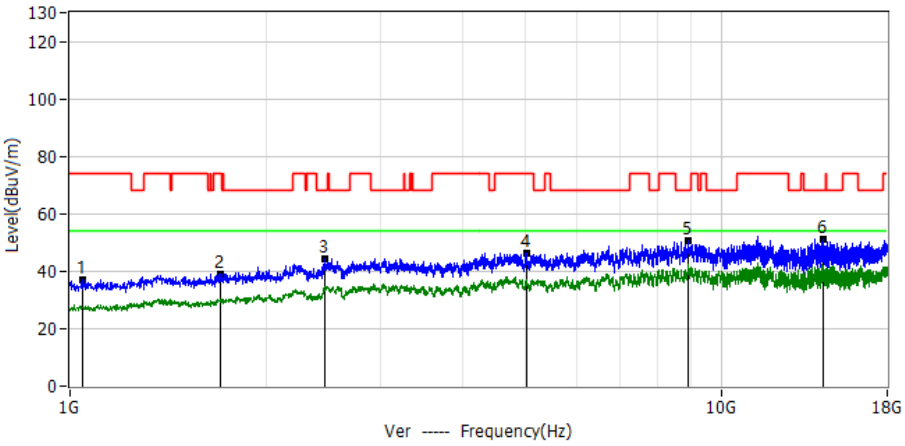


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1123.2000	61.14	-23.68	37.46	74.00	-36.54	PK	Ver
2*	1739.5000	58.39	-18.99	39.40	68.20	-28.80	PK	Ver
3*	2821.1000	53.46	-9.68	43.78	74.00	-30.22	PK	Ver
4*	4835.6000	53.68	-6.84	46.84	74.00	-27.16	PK	Ver
5*	9002.7000	54.46	-3.67	50.79	74.00	-23.21	PK	Ver
6*	14374.7000	50.65	0.72	51.37	68.20	-16.83	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5320 MIMO worst case	
Note: Worst Case	

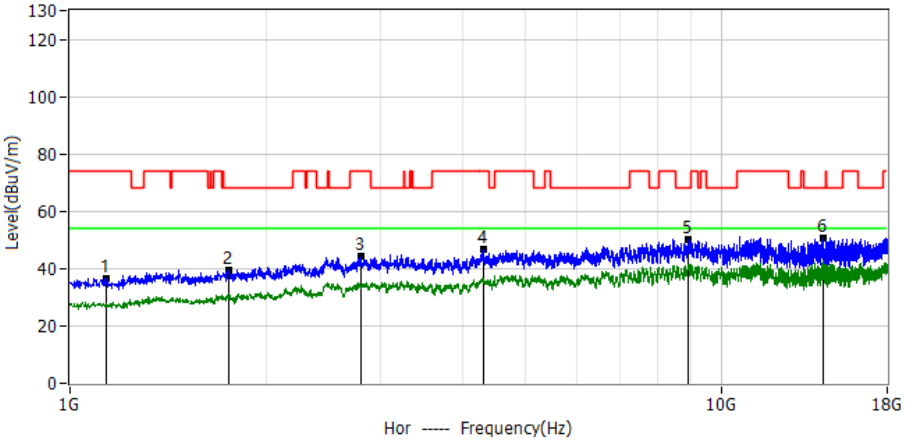


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1116.9000	61.55	-23.73	37.82	74.00	-36.18	PK	Hor
2*	1501.5000	60.90	-20.94	39.96	74.00	-34.04	PK	Hor
3*	2918.9000	53.19	-9.18	44.01	68.20	-24.19	PK	Hor
4*	5211.7000	54.11	-7.72	46.39	68.20	-21.81	PK	Hor
5*	9147.2000	53.70	-3.75	49.95	74.00	-24.05	PK	Hor
6*	17838.5000	49.01	1.95	50.96	74.00	-23.04	PK	Hor

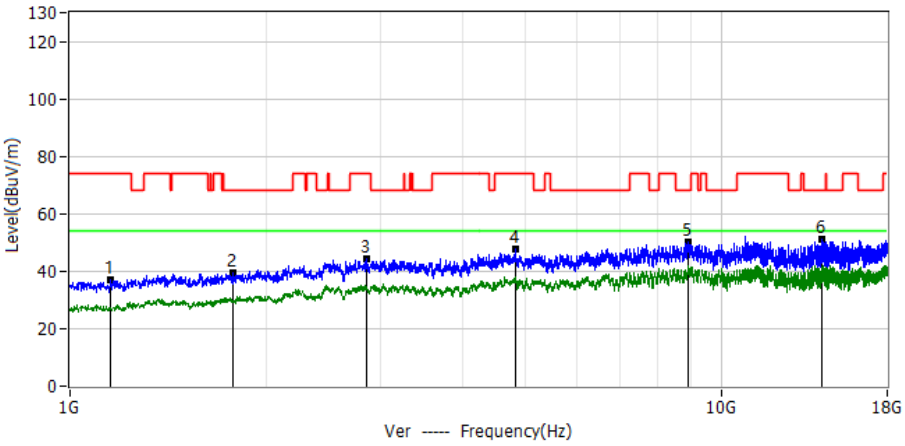


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1046.7000	61.52	-24.34	37.18	74.00	-36.82	PK	Ver
2*	1701.2000	58.35	-19.35	39.00	74.00	-35.00	PK	Ver
3*	2457.7000	56.10	-11.74	44.36	68.20	-23.84	PK	Ver
4*	5029.0000	53.52	-7.10	46.42	74.00	-27.58	PK	Ver
5*	8911.4000	54.42	-3.83	50.59	68.20	-17.61	PK	Ver
6*	14366.2000	50.35	0.72	51.07	68.20	-17.13	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5500 ANT 2 worst case	
Note: Worst Case	

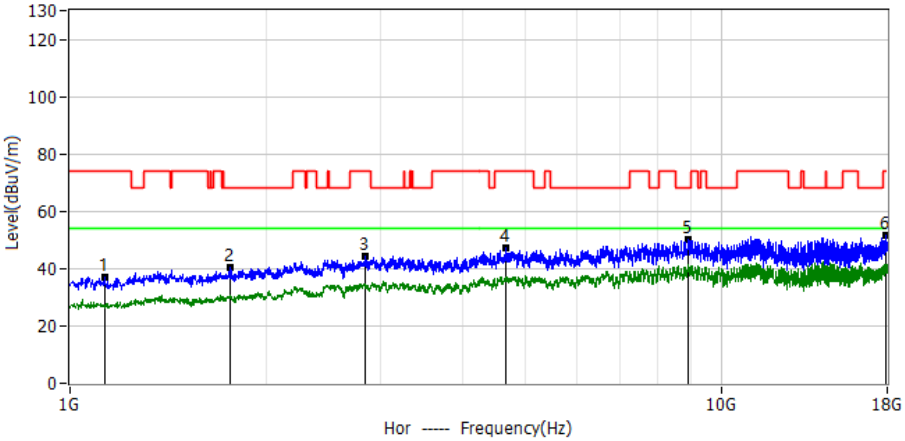


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1133.9000	60.33	-23.58	36.75	74.00	-37.25	PK	Hor
2*	1756.5000	58.51	-18.83	39.68	68.20	-28.52	PK	Hor
3*	2804.1000	54.06	-9.76	44.30	74.00	-29.70	PK	Hor
4*	4317.1000	53.80	-7.24	46.56	74.00	-27.44	PK	Hor
5*	8911.4000	54.13	-3.83	50.30	68.20	-17.90	PK	Hor
6*	14381.1000	49.75	0.71	50.46	68.20	-17.74	PK	Hor

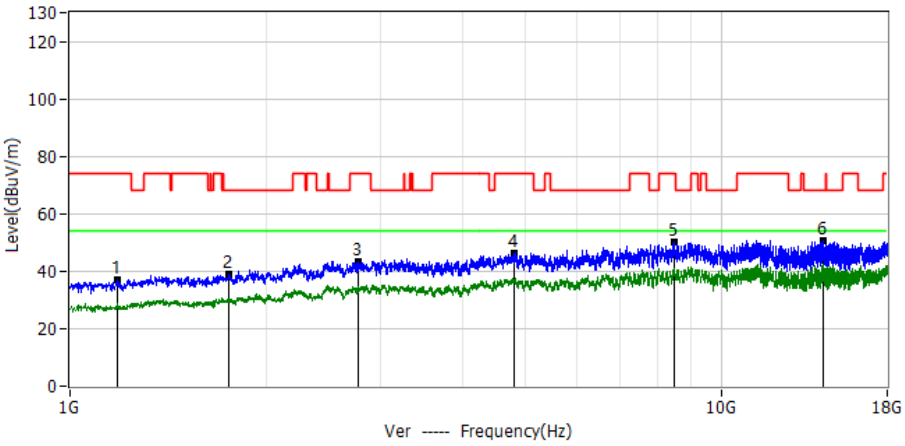


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1153.0000	60.22	-23.42	36.80	74.00	-37.20	PK	Ver
2*	1777.7000	57.89	-18.63	39.26	68.20	-28.94	PK	Ver
3*	2850.9000	53.90	-9.53	44.37	74.00	-29.63	PK	Ver
4*	4825.0000	54.57	-6.82	47.75	74.00	-26.25	PK	Ver
5*	8905.0000	53.98	-3.84	50.14	68.20	-18.06	PK	Ver
6*	14260.0000	50.42	0.76	51.18	68.20	-17.02	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5580 MIMO ANT 2 worst case	
Note: Worst Case	

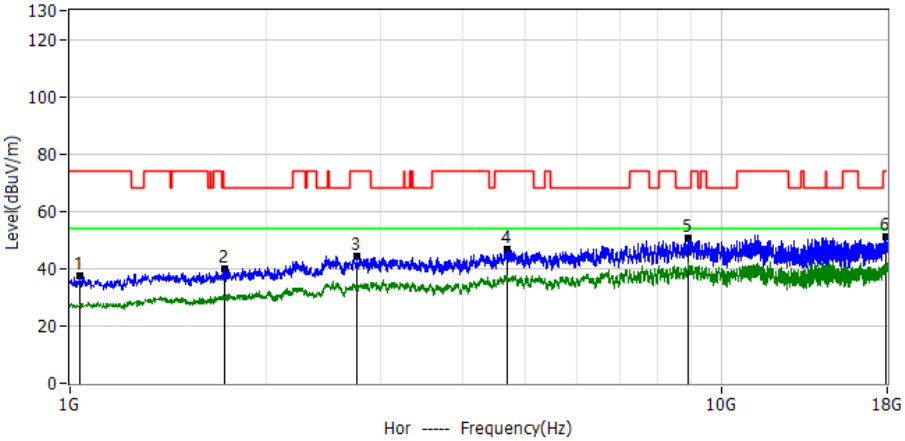


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1129.6000	60.62	-23.62	37.00	74.00	-37.00	PK	Hor
2*	1758.6000	59.32	-18.81	40.51	68.20	-27.69	PK	Hor
3*	2846.6000	53.91	-9.55	44.36	74.00	-29.64	PK	Hor
4*	4680.5000	53.76	-6.68	47.08	74.00	-26.92	PK	Hor
5*	8915.6000	53.96	-3.82	50.14	68.20	-18.06	PK	Hor
6*	17942.6000	49.62	1.99	51.61	74.00	-22.39	PK	Hor

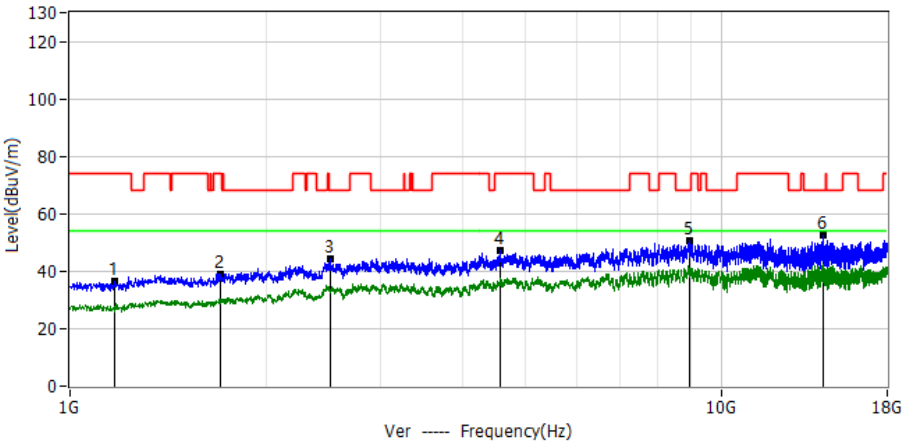


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1182.7000	59.99	-23.16	36.83	74.00	-37.17	PK	Ver
2*	1756.5000	57.82	-18.83	38.99	68.20	-29.21	PK	Ver
3*	2770.1000	53.31	-9.94	43.37	74.00	-30.63	PK	Ver
4*	4799.5000	53.26	-6.80	46.46	74.00	-27.54	PK	Ver
5*	8454.5000	54.63	-4.67	49.96	74.00	-24.04	PK	Ver
6*	14376.9000	49.79	0.72	50.51	68.20	-17.69	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5700 ANT 2 worst case	
Note: Worst Case	

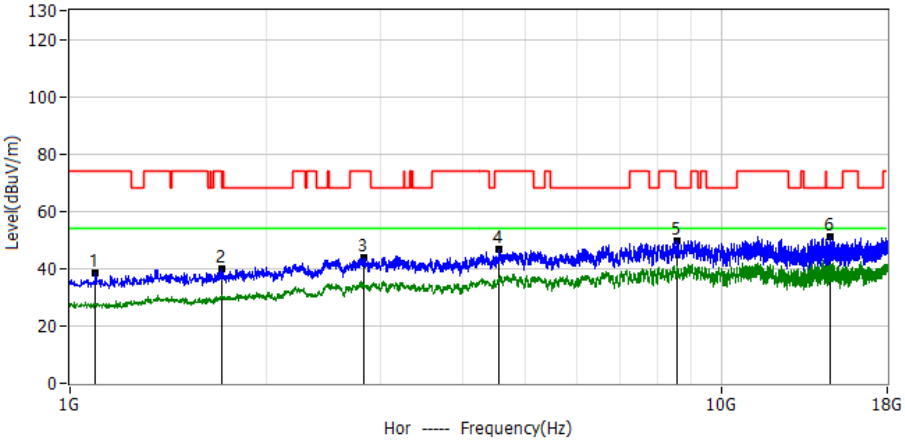


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1036.1000	61.82	-24.44	37.38	74.00	-36.62	PK	Hor
2*	1728.9000	59.18	-19.09	40.09	68.20	-28.11	PK	Hor
3*	2759.5000	54.29	-9.99	44.30	74.00	-29.70	PK	Hor
4*	4689.0000	53.43	-6.69	46.74	74.00	-27.26	PK	Hor
5*	8915.6000	54.45	-3.82	50.63	68.20	-17.57	PK	Hor
6*	17951.1000	48.96	2.00	50.96	74.00	-23.04	PK	Hor

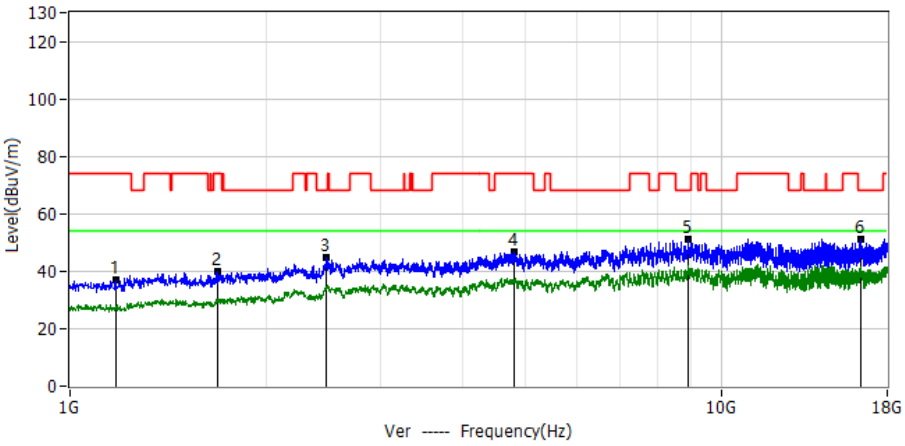


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1172.1000	59.93	-23.25	36.68	74.00	-37.32	PK	Ver
2*	1701.2000	58.33	-19.35	38.98	74.00	-35.02	PK	Ver
3*	2515.1000	55.54	-11.23	44.31	68.20	-23.89	PK	Ver
4*	4567.9000	53.59	-6.57	47.02	74.00	-26.98	PK	Ver
5*	8928.4000	54.23	-3.80	50.43	68.20	-17.77	PK	Ver
6*	14370.5000	51.64	0.72	52.36	68.20	-15.84	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5745 ANT 2 worst case	
Note: Worst Case	

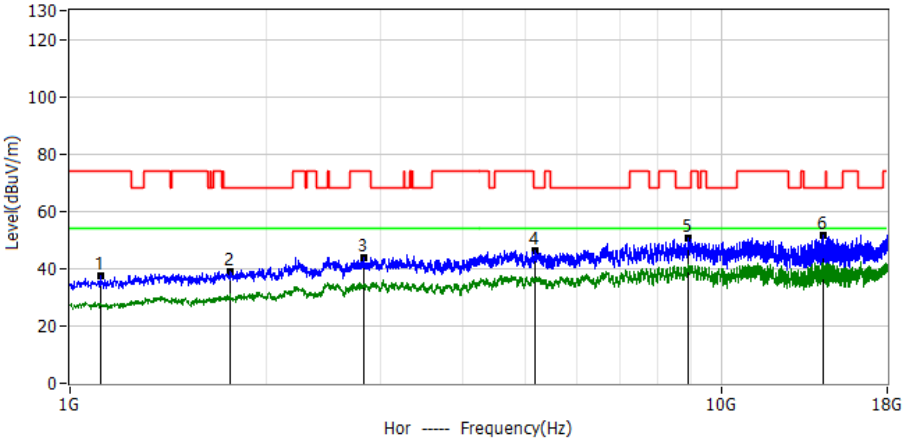


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1093.5000	62.45	-23.94	38.51	74.00	-35.49	PK	Hor
2*	1711.9000	59.02	-19.25	39.77	68.20	-28.43	PK	Hor
3*	2821.1000	53.51	-9.68	43.83	74.00	-30.17	PK	Hor
4*	4563.6000	53.50	-6.57	46.93	74.00	-27.07	PK	Hor
5*	8562.9000	54.08	-4.47	49.61	68.20	-18.59	PK	Hor
6*	14708.4000	50.67	0.58	51.25	68.20	-16.95	PK	Hor

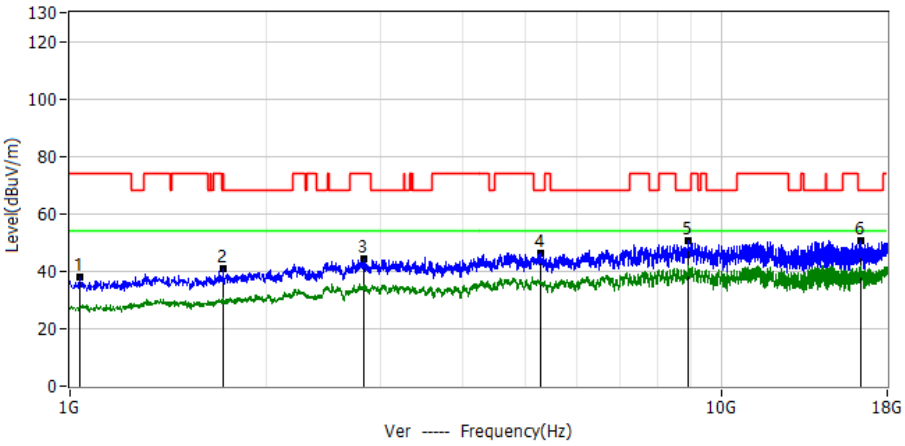


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1174.2000	60.08	-23.23	36.85	74.00	-37.15	PK	Ver
2*	1688.5000	59.39	-19.47	39.92	74.00	-34.08	PK	Ver
3*	2468.4000	56.34	-11.63	44.71	68.20	-23.49	PK	Ver
4*	4820.7000	53.42	-6.82	46.60	74.00	-27.40	PK	Ver
5*	8905.0000	54.78	-3.84	50.94	68.20	-17.26	PK	Ver
6*	16374.4000	50.45	0.75	51.20	68.20	-17.00	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5785 ANT 2 worst case	
Note: Worst Case	

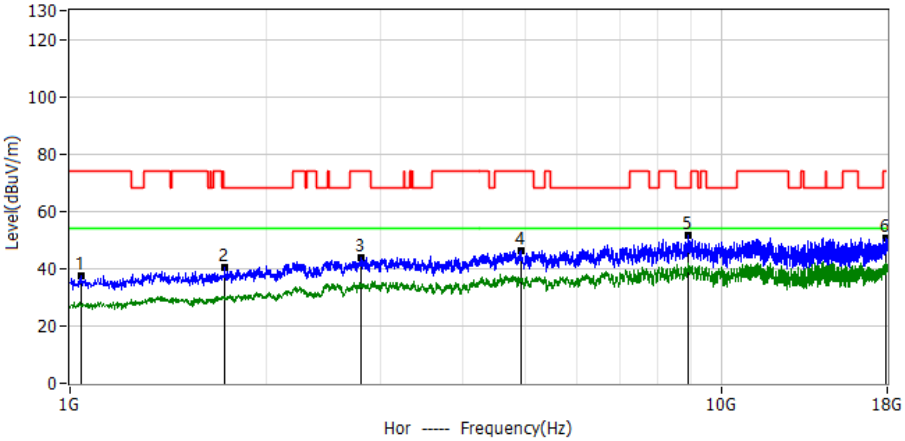


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1114.7000	61.33	-23.75	37.58	74.00	-36.42	PK	Hor
2*	1760.7000	57.79	-18.79	39.00	68.20	-29.20	PK	Hor
3*	2825.4000	53.51	-9.65	43.86	74.00	-30.14	PK	Hor
4*	5186.2000	54.04	-7.63	46.41	68.20	-21.79	PK	Hor
5*	8909.2000	54.27	-3.84	50.43	68.20	-17.77	PK	Hor
6*	14364.1000	51.07	0.72	51.79	68.20	-16.41	PK	Hor

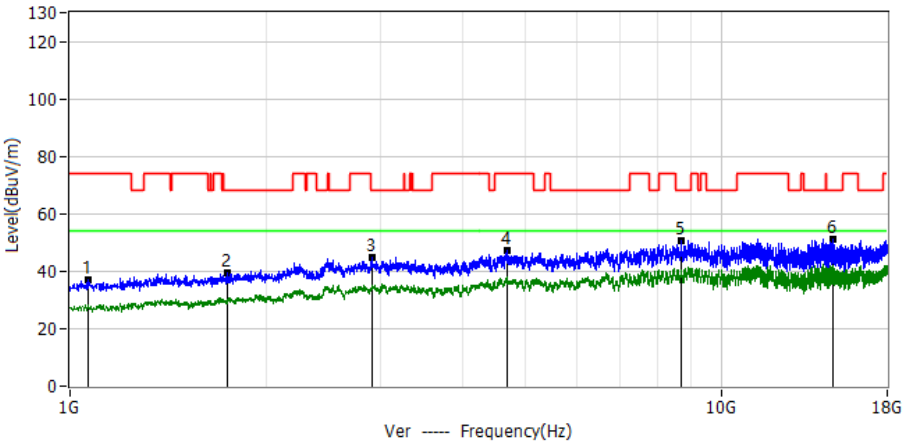


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1036.1000	62.34	-24.44	37.90	74.00	-36.10	PK	Ver
2*	1718.2000	59.87	-19.19	40.68	68.20	-27.52	PK	Ver
3*	2823.2000	53.76	-9.67	44.09	74.00	-29.91	PK	Ver
4*	5286.1000	54.08	-7.97	46.11	68.20	-22.09	PK	Ver
5*	8911.4000	54.47	-3.83	50.64	68.20	-17.56	PK	Ver
6*	16393.5000	49.99	0.78	50.77	68.20	-17.43	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5825 ANT2 worst case	
Note: Worst Case	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1042.5000	62.08	-24.38	37.70	74.00	-36.30	PK	Hor
2*	1731.0000	59.28	-19.07	40.21	68.20	-27.99	PK	Hor
3*	2804.1000	53.47	-9.76	43.71	74.00	-30.29	PK	Hor
4*	4933.4000	53.32	-6.93	46.39	74.00	-27.61	PK	Hor
5*	8896.5000	55.40	-3.86	51.54	68.20	-16.66	PK	Hor
6*	17885.2000	48.67	1.97	50.64	74.00	-23.36	PK	Hor

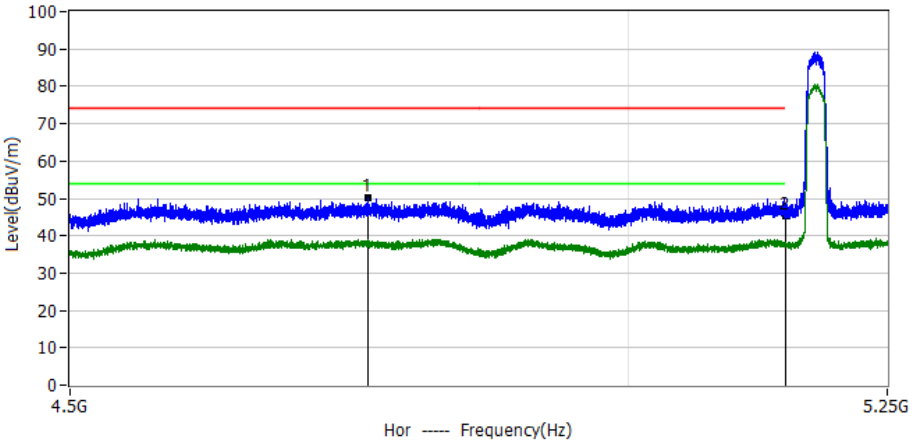


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1068.0000	61.01	-24.16	36.85	74.00	-37.15	PK	Ver
2*	1748.0000	58.17	-18.91	39.26	68.20	-28.94	PK	Ver
3*	2908.2000	53.89	-9.23	44.66	68.20	-23.54	PK	Ver
4*	4686.9000	53.74	-6.69	47.05	74.00	-26.95	PK	Ver
5*	8686.1000	55.01	-4.24	50.77	68.20	-17.43	PK	Ver
6*	14825.2000	50.83	0.53	51.36	68.20	-16.84	PK	Ver

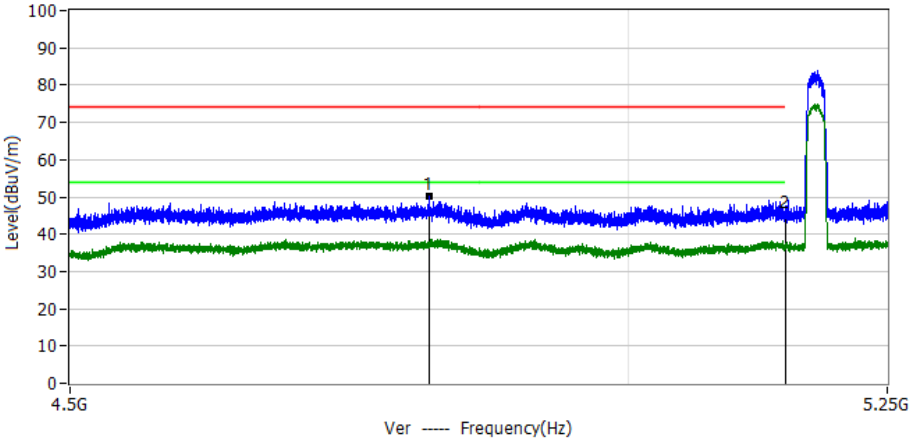
Remark:
In frequency ranges 18~40GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report. No any other emissions level which are attenuated less than 20dB below the limit. No recording in the test report.

3.2.7 TEST RESULTS(Band edge Requirements)

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5180 MIMO	
Note:	

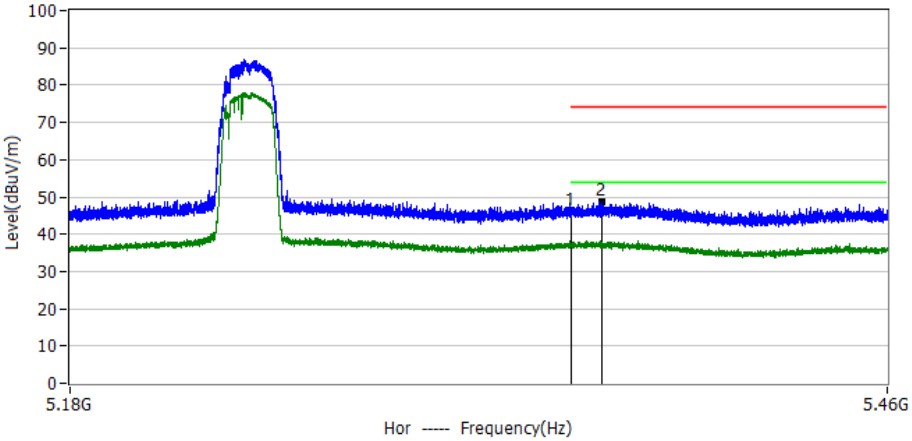


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4759.8000	56.91	-6.76	50.15	74.00	-23.85	PK	Hor
2*	5150.0000	52.81	-7.51	45.30	74.00	-28.70	PK	Hor

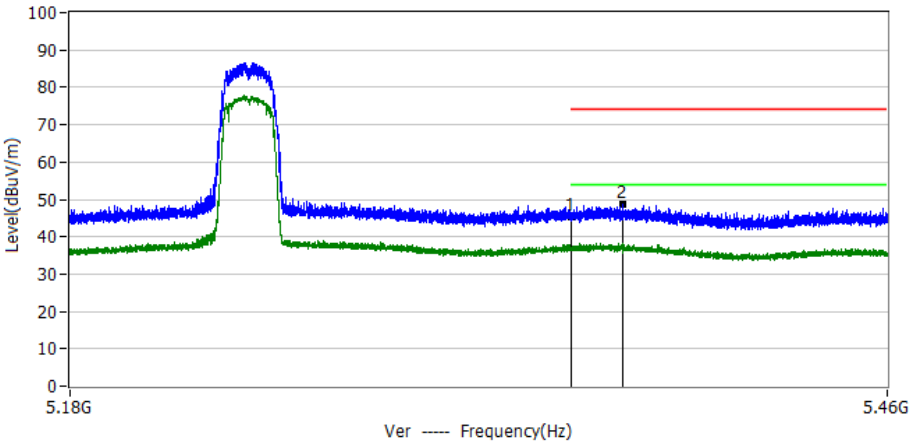


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4815.9000	56.98	-6.82	50.16	74.00	-23.84	PK	Ver
2*	5150.0000	53.01	-7.51	45.50	74.00	-28.50	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5240 MIMO	
Note:	

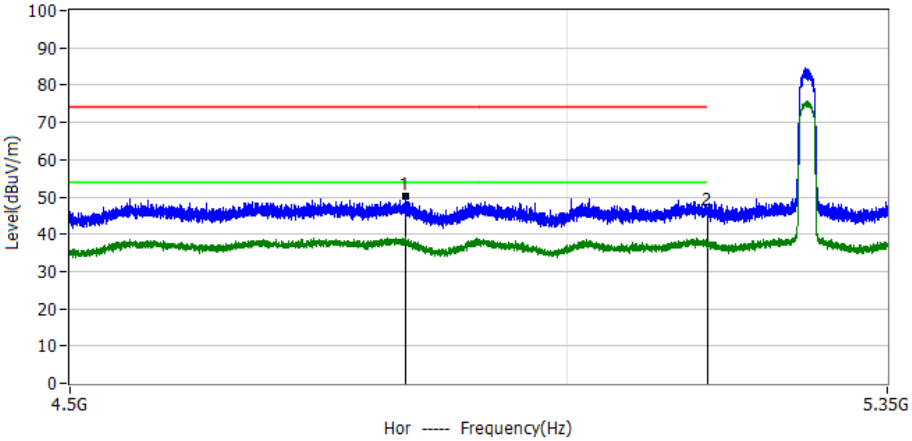


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5350.0000	54.39	-8.19	46.20	74.00	-27.80	PK	Hor
2*	5360.5000	56.91	-8.23	48.68	74.00	-25.32	PK	Hor

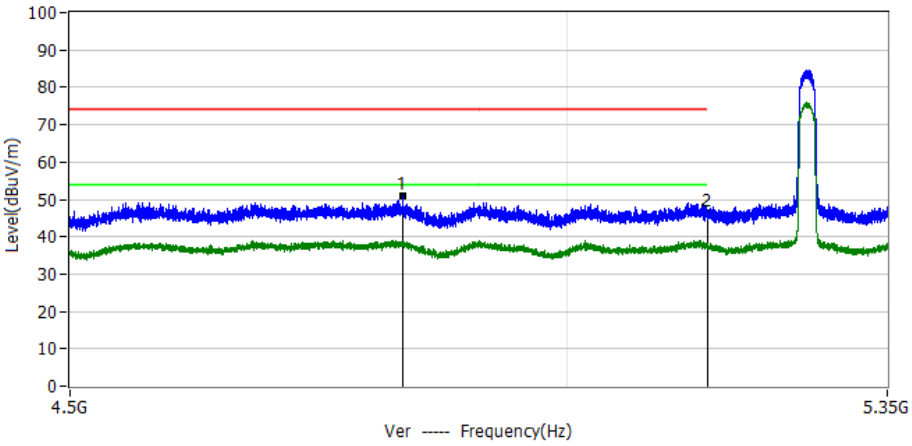


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5350.0000	53.49	-8.19	45.30	74.00	-28.70	PK	Ver
2*	5367.7000	56.93	-8.25	48.68	74.00	-25.32	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5260 MIMO	
Note:	

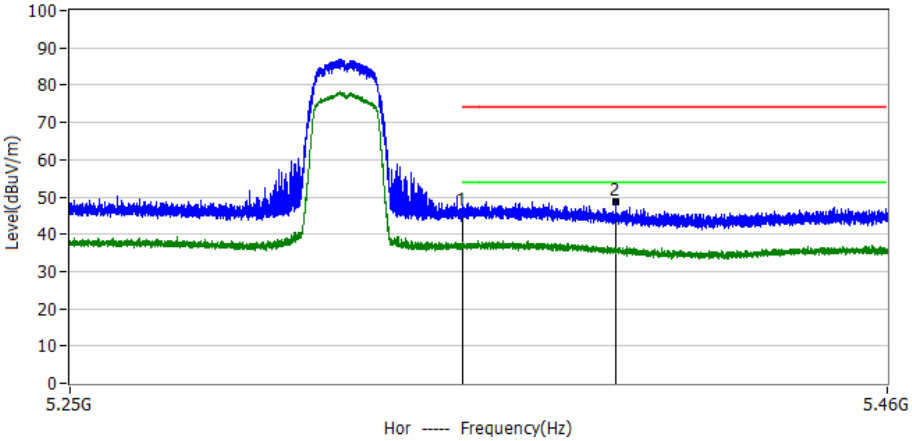


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4830.6000	57.14	-6.83	50.31	74.00	-23.69	PK	Hor
2*	5150.0000	53.41	-7.51	45.90	74.00	-28.10	PK	Hor

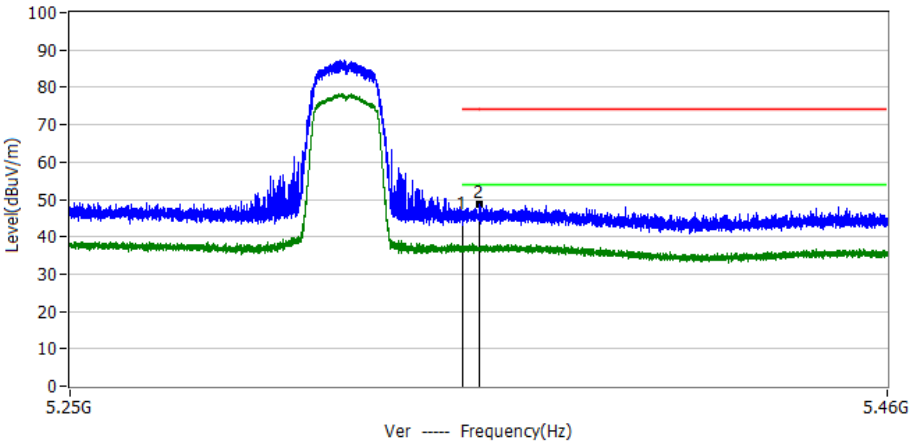


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4828.3000	57.80	-6.83	50.97	74.00	-23.03	PK	Ver
2*	5150.0000	53.91	-7.51	46.40	74.00	-27.60	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11n20 5320 MIMO	
Note:	

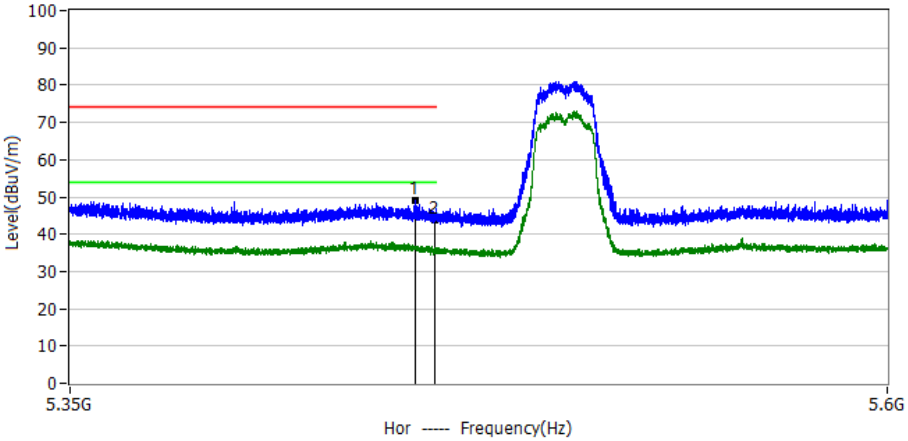


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5350.0000	54.09	-8.19	45.90	74.00	-28.10	PK	Hor
2*	5389.4000	57.12	-8.33	48.79	74.00	-25.21	PK	Hor

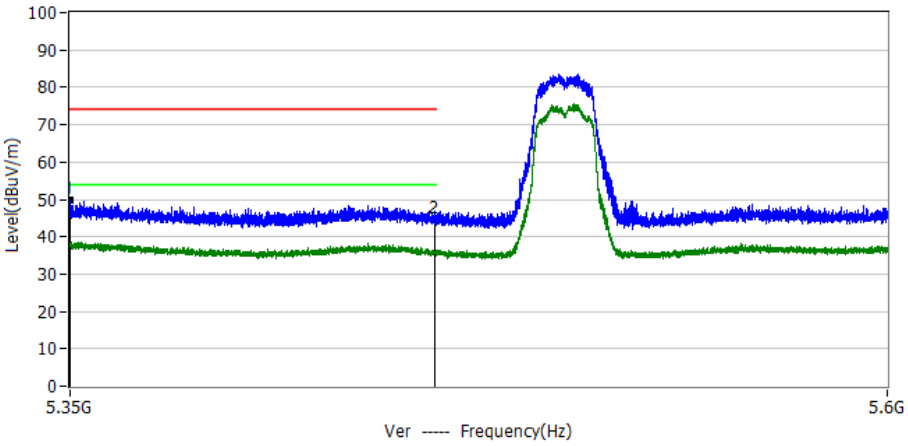


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5350.0000	53.99	-8.19	45.80	74.00	-28.20	PK	Ver
2*	5354.2000	56.96	-8.21	48.75	74.00	-25.25	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5500 ANT2	
Note:	

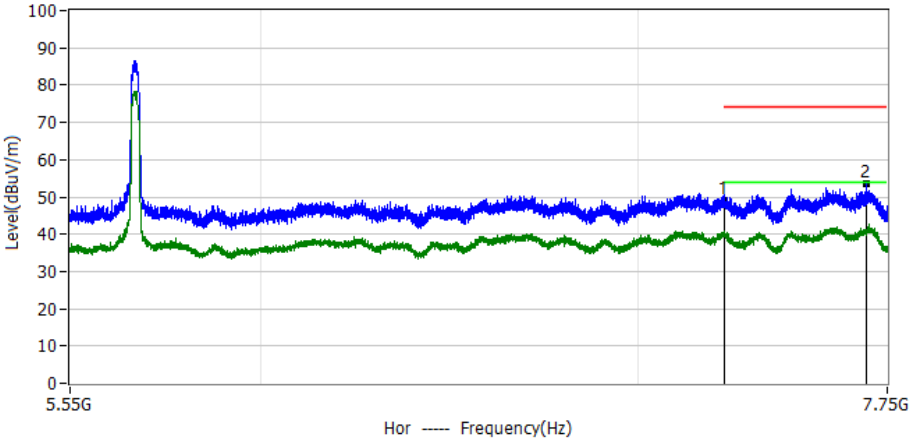


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5454.4000	57.58	-8.55	49.03	74.00	-24.97	PK	Hor
2*	5460.0000	52.47	-8.57	43.90	74.00	-30.10	PK	Hor

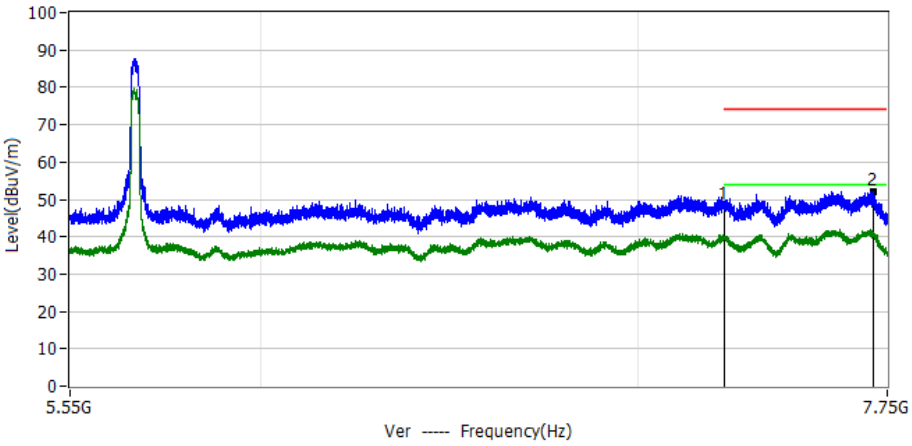


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5350.2000	57.90	-8.19	49.71	74.00	-24.29	PK	Ver
2*	5460.0000	52.97	-8.57	44.40	74.00	-29.60	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5700 ANT2	
Note:	

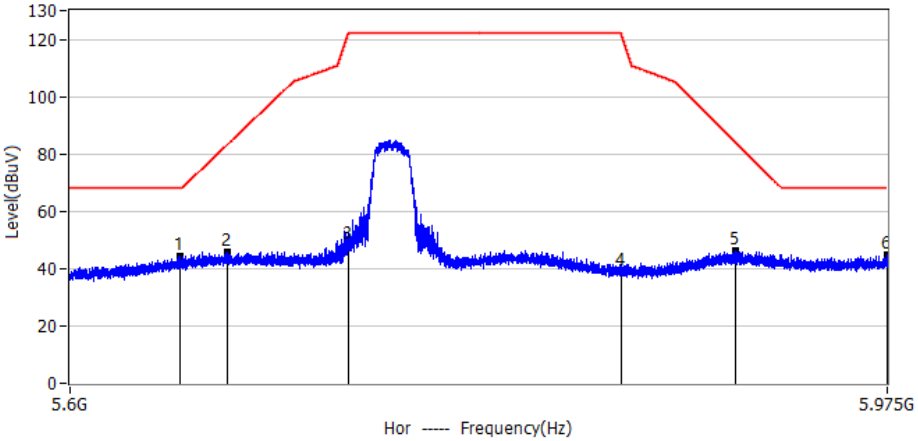


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	7250.0000	55.33	-6.33	49.00	74.00	-25.00	PK	Hor
2*	7686.2000	59.28	-5.62	53.66	74.00	-20.34	PK	Hor

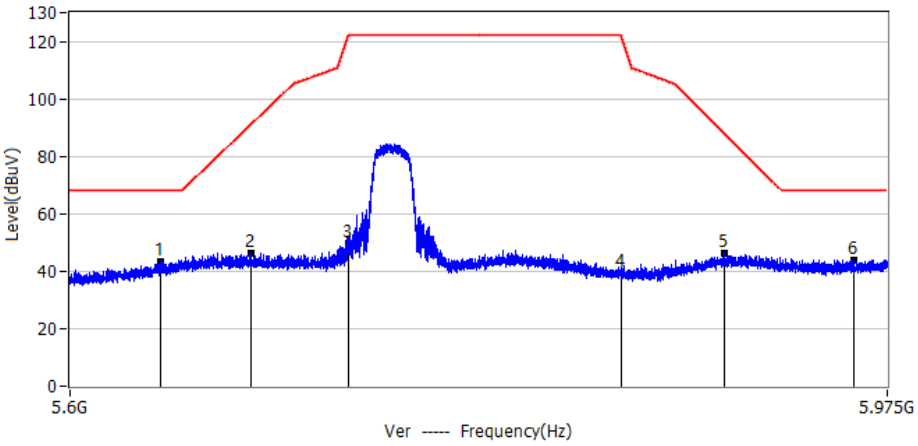


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	7250.0000	54.53	-6.33	48.20	74.00	-25.80	PK	Ver
2*	7704.1000	57.61	-5.61	52.00	74.00	-22.00	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5745 ANT2	
Note:	

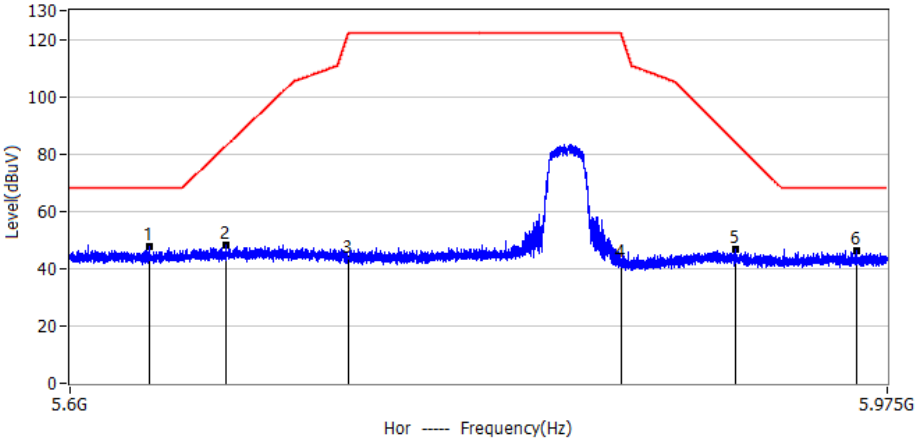


No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5649.0000	52.91	-8.68	44.23	68.20	-23.97	PK	Hor
2*	5670.0000	54.59	-8.67	45.92	83.06	-37.15	PK	Hor
3*	5725.0000	56.66	-8.66	48.00	122.20	-74.20	PK	Hor
4*	5850.0000	47.64	-8.64	39.00	122.20	-83.10	PK	Hor
5*	5903.4000	54.88	-8.63	46.25	84.13	-37.88	PK	Hor
6*	5975.0000	53.50	-8.62	44.88	68.20	-23.32	PK	Hor

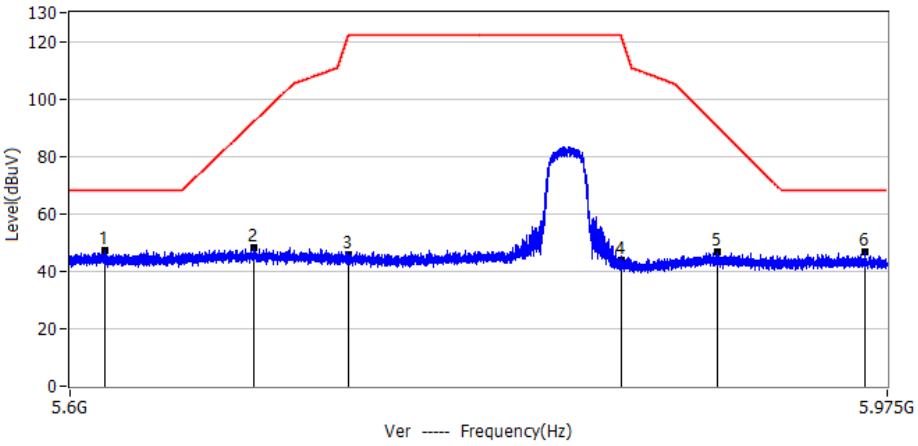


No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5640.5000	52.09	-8.68	43.41	68.20	-24.79	PK	Ver
2*	5680.7000	55.15	-8.67	46.48	90.94	-44.46	PK	Ver
3*	5725.0000	58.46	-8.66	49.80	122.20	-72.40	PK	Ver
4*	5850.0000	47.94	-8.64	39.30	122.20	-82.90	PK	Ver
5*	5898.3000	55.03	-8.63	46.40	87.94	-41.55	PK	Ver
6*	5959.2000	52.48	-8.62	43.86	68.20	-24.34	PK	Ver

Project: LGT24D151	Test Engineer: Xiangdong Ma
EUT: WiFi6 Extender	Temperature: 25.2℃
M/N: Z04	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-05-16
Test Mode: 802.11a 5825 ANT2	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5635.6000	56.31	-8.68	47.63	68.20	-20.57	PK	Hor
2*	5669.5000	56.73	-8.67	48.06	82.68	-34.62	PK	Hor
3*	5725.0000	52.06	-8.66	43.40	122.20	-78.70	PK	Hor
4*	5850.0000	50.54	-8.64	41.90	122.20	-80.30	PK	Hor
5*	5903.4000	55.43	-8.63	46.80	84.16	-37.36	PK	Hor
6*	5960.4000	54.98	-8.62	46.36	68.20	-21.84	PK	Hor



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5615.5000	55.99	-8.68	47.31	68.20	-20.89	PK	Ver
2*	5682.3000	56.93	-8.67	48.26	92.15	-43.89	PK	Ver
3*	5725.0000	54.46	-8.66	45.80	122.20	-76.40	PK	Ver
4*	5850.0000	52.44	-8.64	43.80	122.20	-78.40	PK	Ver
5*	5895.3000	55.36	-8.63	46.73	90.17	-43.44	PK	Ver
6*	5964.3000	55.47	-8.62	46.85	68.20	-21.35	PK	Ver

4. POWER SPECTRAL DENSITY TEST

4.1 LIMIT

1. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, 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.I.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.