



RF TEST REPORT

Product Name: DTEN D7X 75"

Model Name: DBR1475, DBR1475-S1

FCC ID: 2AQ7Q-DBR1475

Issued For : DTEN Inc

97 E Brokaw Road suite 180 San Jose CA 95112

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

Room 205, Building 13, Zone B, Chen Hsong Industrial Park,
No.177 Renmin West Road, Jinsha Community, Kengzi
Street, Pingshan New District, Shenzhen, China

Report Number: LGT22L023RF06

Sample Received Date: Sep. 28, 2022

Date of Test: Sep. 28, 2022 – Feb. 17, 2023

Date of Issue: Feb. 17, 2023

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TEST REPORT CERTIFICATION

Applicant DTEN Inc
Address 97 E Brokaw Road suite 180 San Jose CA 95112
Manufacturer DTEN Inc
Address 97 E Brokaw Road suite 180 San Jose CA 95112
Product Name DTEN D7X 75"
Trade Mark DTEN
Model Name DBR1475, DBR1475-S1
Sample Status: Normal

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

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Revision History

Rev.	Issue Date	Contents
00	Feb. 17, 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.

(3) For model DBR1475 and DBR1475-S1, the TP control board have two types of A and B, this do not affect RF parameters. DBR1475 with type A was selected as the typical model for all necessary tests performed. For the details of type A&B, please refer to the EUT photos.



1.1 TEST FACTORY

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

1.2 MEASUREMENT UNCERTAINTY

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

Parameter	Uncertainty
Occupied Channel Bandwidth	± 3.2 %
RF Output Power, Conducted	± 0.71 dB
Power Spectral Density, Conducted	± 1.57 dB
Unwanted Emission, Conducted	± 0.63 dB
Conducted emission	± 2.80 dB
All Emissions, Radiated (0.009-30MHz)	± 2.16 dB
All Emissions, Radiated (30MHz-1GHz)	± 4.40 dB
All Emissions, Radiated (1GHz-18GHz)	± 5.49 dB
Temperature	$\pm 0.5^{\circ}\text{C}$
Humidity	$\pm 2\%$
Duty Cycle	$\pm 2.3\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

GENERAL DESCRIPTION OF THE EUT		
Product Name	DTEN D7X 75"	
Trademark	DTEN	
Model Name	DBR1475	
Series Model	DBR1475-S1	
Model Difference	Only the model name and shipping packaging method are different.	
Product Description	The EUT is a DTEN D7X 75"	
	Operation Frequency:	IEEE 802.11 a/n/ac/ax(20MHz): 5.180GHz-5.240GHz IEEE 802.11 n/ac/ax(40MHz): 5.190GHz-5.230GHz IEEE 802.11 ac/ax(80MHz): 5.210GHz
		IEEE 802.11 a/n/ac/ax(20MHz): 5.260GHz-5.320GHz IEEE 802.11 n/ac/ax(40MHz): 5.270GHz-5.310GHz IEEE 802.11 ac/ax(80MHz): 5.290GHz
		IEEE 802.11 a/n/ac/ax(20MHz): 5.500GHz-5.700GHz IEEE 802.11 n/ac/ax(40MHz): 5.510GHz-5.670GHz IEEE 802.11 ac/ax(80MHz): 5.530GHz-5.610GHz
		IEEE 802.11 a/n/ac/ax(20MHz): 5.745GHz-5.825GHz IEEE 802.11 n/ac/ax(40MHz): 5.755GHz-5.795GHz IEEE 802.11 ac/ax(80MHz): 5.775GHz
	Modulation Type:	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):BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024-QAM
	Antenna Designation:	Please refer to the Note 3.
	Antenna Gain(dBi)	ANT 1: 4.18dBi ANT 2: 4.18dBi MIMO: 7.19dBi
More details of EUT technical specification, please refer to the User Manual.		
Test Channel	Please refer to the Note 2.	
Rating	Input: AC 100-240V~ 50/60Hz 4.0A	
Hardware Version	RK3588.6 Ver:1.3	
Software Version	0.6.4	
Connecting I/O Port(s)	Please refer to the Note 1.	

Note

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.



2.

Operation Frequency of channel			
5.180GHz-5.240GHz		5.500GHz-5.720GHz	
Channel	Frequency	Channel	Frequency
36	5180	100	5500
38	5190	102	5510
40	5200	104	5520
42	5210	106	5530
44	5220	108	5540
46	5230	110	5550
48	5240	112	5560
		116	5580
		118	5590
5.260GHz-5.320GHz		120	5600
Channel	Frequency	122	5610
52	5260	124	5620
54	5270	126	5630
56	5280	128	5640
58	5290	132	5660
60	5300	134	5670
62	5310	136	5680
64	5320	140	5700
5.745GHz-5.825GHz			
Channel	Frequency		
149	5745		
151	5755		
153	5765		
157	5785		
159	5795		
161	5805		
165	5825		

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

5GHz:

For 802.11a/n(HT20)/ac(VHT20)/ax(HE20)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
36	5180	52	5260
40	5200	60	5300
48	5240	64	5320

For 802.11a/n(HT20)/ac(VHT20)/ac(HE20)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
100	5500	149	5745
116	5580	157	5785
140	5700	165	5825



For 802.11 n(HT40)/ac(VHT40)/ax(HE40)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
38	5190	54	5270
46	5230	62	5310

For 802.11 n(HT40)/ac(VHT40)/ax(HE40)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
102	5510	151	5755
110	5550	159	5795
134	5670		

For 802.11 ac(VHT80)/ax(HE80)			
Channel	Freq.(MHz)	Channel	Freq.(MHz)
42	5210	58	5290

3. KDB 662911 D01 Multiple Transmitter Output v02r01

2) Directional Gain Calculations for In-Band Measurements

a) Basic methodology with NANT transmit antennas, each with the same directional gain G_{ANT} dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be computed

Ant	Brand	Model Name	Ant Type	Connector	Gain (dBi)	NOTE
A	DTEN	MAW-105-0104	Dipole Antenna	N/A	ANT 1: 4.18dBi ANT 2: 4.18dBi MIMO: 7.19dBi	5G WLAN Ant

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.



2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly 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 CH100&CH116&CH140	6 Mbps
Mode 4	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 5	TX IEEE 802.11n HT20 ax HE40CH36&CH40&CH48	MCS 0
Mode 6	TX IEEE 802.11ac HT20 ax HE40CH36&CH40&CH48	NSS1 MCS0
Mode 7	TX IEEE 802.11n HT20 ax HE40CH52&CH60&CH64	MCS 0
Mode 8	TX IEEE 802.11ac HT20 ax HE40CH52&CH60&CH64	NSS1 MCS0
Mode 9	TX IEEE 802.11n HT20 ax HE40 CH100&CH116&CH140	MCS 0
Mode 10	TX IEEE 802.11ac HT20 ax HE40 CH100&CH116&CH140	NSS1 MCS0
Mode 11	TX IEEE 802.11n HT20 ax HE40 CH149&CH157&CH165	MCS 0
Mode 12	TX IEEE 802.11ac HT20/ ax HE 20CH149&CH157&CH165	NSS1 MCS0
Mode 13	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 14	TX IEEE 802.11 ax HE40 CH38&CH46	NSS1 MCS0
Mode 15	TX IEEE 802.11n HT40 CH54 &CH62	MCS 0
Mode 16	TX IEEE 802.11 ax HE40 CH54 &CH62	NSS1 MCS0
Mode 17	TX IEEE 802.11n ax HE40 CH102&CH110&CH134	MCS 0
Mode 18	TX IEEE 802.11 ax HE40 CH102&CH110&CH134	NSS1 MCS0
Mode 19	TX IEEE 802.11 ax HE40 CH151&CH159	MCS 0
Mode 20	TX IEEE 802.11ax HE40 CH151&CH159	NSS1 MCS0
Mode 21	TX IEEE 802.11ac HT80 CH42	NSS1 MCS0
Mode 22	TX IEEE 802.11ac HT80 CH58	NSS1 MCS0
Mode 23	TX IEEE 802.11ac HT80/ax HE80 CH106&122	NSS1 MCS0
Mode 24	TX IEEE 802.11ac HT80 /ax HE80 CH155	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 avaialbe U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 25: 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		
CMD	a	SISO	19
	n20	SISO	19
	n20	MIMO	15
	n40	SISO	19
	n40	MIMO	15
	ac80	SISO	19
	ac80	MIMO	15

Test software Version	Test program: 5G WIFI B2		
CMD	a	SISO	19
	n20	SISO	19
	n20	MIMO	15
	n40	SISO	19
	n40	MIMO	15
	ac80	SISO	19
	ac80	MIMO	15

Test software Version	Test program: 5G WIFI B3		
CMD	a	SISO	19
	n20	SISO	19
	n20	MIMO	15
	n40	SISO	19
	n40	MIMO	15
	ac80	SISO	19
	ac80	MIMO	15
Test software Version	Test program: 5G WIFI B4		
CMD	a	SISO	19
	n20	SISO	19
	n20	MIMO	15
	n40	SISO	19
	n40	MIMO	15
	ac80	SISO	19
	ac80	MIMO	15



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
USB C-to-C cable	DTEN	N/A	N/A	1.9m, shielded
stylus	DTEN	N/A	N/A	N/A
Power cord	XIEKANG ELECTRONIC	N/A	N/A	3m, US plug
Camera	DTEN	N/A	N/A	2pcs

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	HUAWEI	HKF-16	N/A	N/A

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	2022.04.12	2023.04.11
LISN	COM-POWER	LI-115	02032	2022.04.13	2023.04.12
LISN	SCHWARZBECK	NNLK 8121	00847	2022.08.19	2023.08.18
CE Cable	N.A	C01	N.A	2022.05.05	2023.05.04
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2022.08.19	2023.08.18
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Radiated Test equipment					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2022.04.12	2023.04.11
Active loop Antenna	R&S	HFH2-Z2	POS871398181	2022.06.02	2024.06.01
Spectrum Analyzer	Kesight	N9010B	MY60242508	2022.04.29	2023.04.28
Bilog Antenna	SCHAFFNER	CBL6112B	2705	2022.06.05	2024.06.04
Bilog Antenna	SCHAFFNER	VULB 9168	01447	2022.12.12	2023.12.11
Horn Antenna	Schwarzbeck	3115	10SL0060	2022.06.02	2024.06.01
Pre-amplifier(0.1M -3GHz)	HP	8447D	2727A05655	2022.04.11	2023.04.10
Pre-amplifier(1-26 .5G)	Agilent	8449B	3008A4722	2022.04.13	2023.04.12
RE Cable (9K-1G)	N.A	R01	N.A	2022.05.05	2023.05.04
RE Cable (1-26G)	N.A	R02	N.A	2022.05.05	2023.05.04
Wireless Communications Test Set	R&S	CMW 500	137737	2022.04.29	2023.04.28
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
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	2022.04.29	2023.04.28
RF Automatic Test system	MW	MW200-RFCB	MW220322LG	2022.04.29	2023.04.28
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2022.06.02	2023.06.01
Temperature & Humidity test chamber	AISRY	LX-1000L	171200018	2022.05.10	2023.05.09
Attenuator	eastsheep	90db	N.A	2022.04.29	2023.04.28
Router	TP-LINK(FCC ID:Q87-WRT320 0ACM)	TL-WR885N	1125074010735	N.C.R	N.C.R
Temperature & Humidity	KTJ	TA218B	N.A	2022.05.05	2023.05.04
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



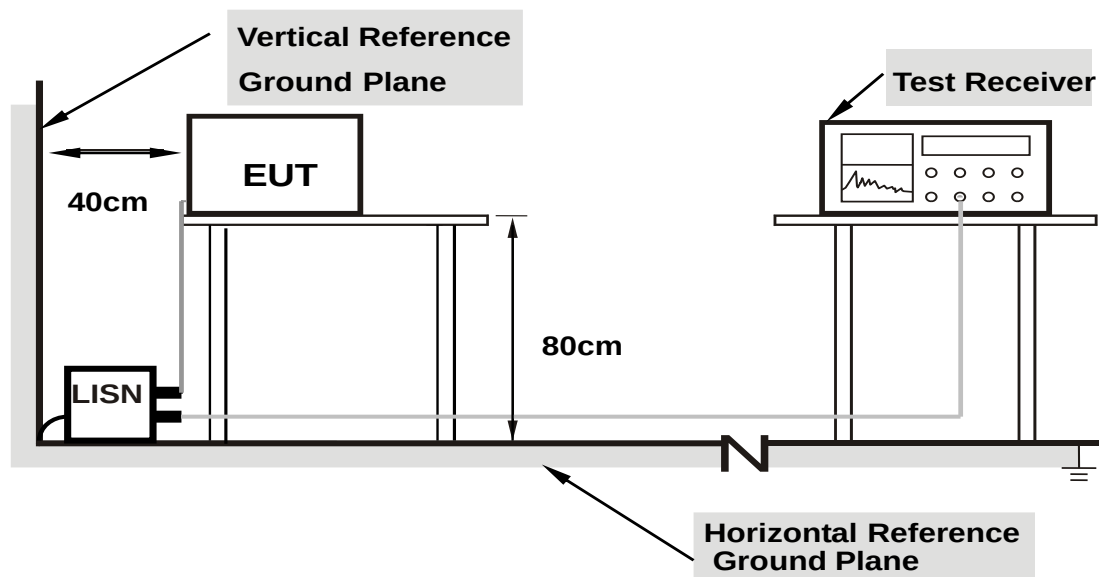
3.1.2 TEST PROCEDURE

- 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.
- 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.
- 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.
- LISN is at least 80 cm from the nearest part of EUT chassis.
- 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.

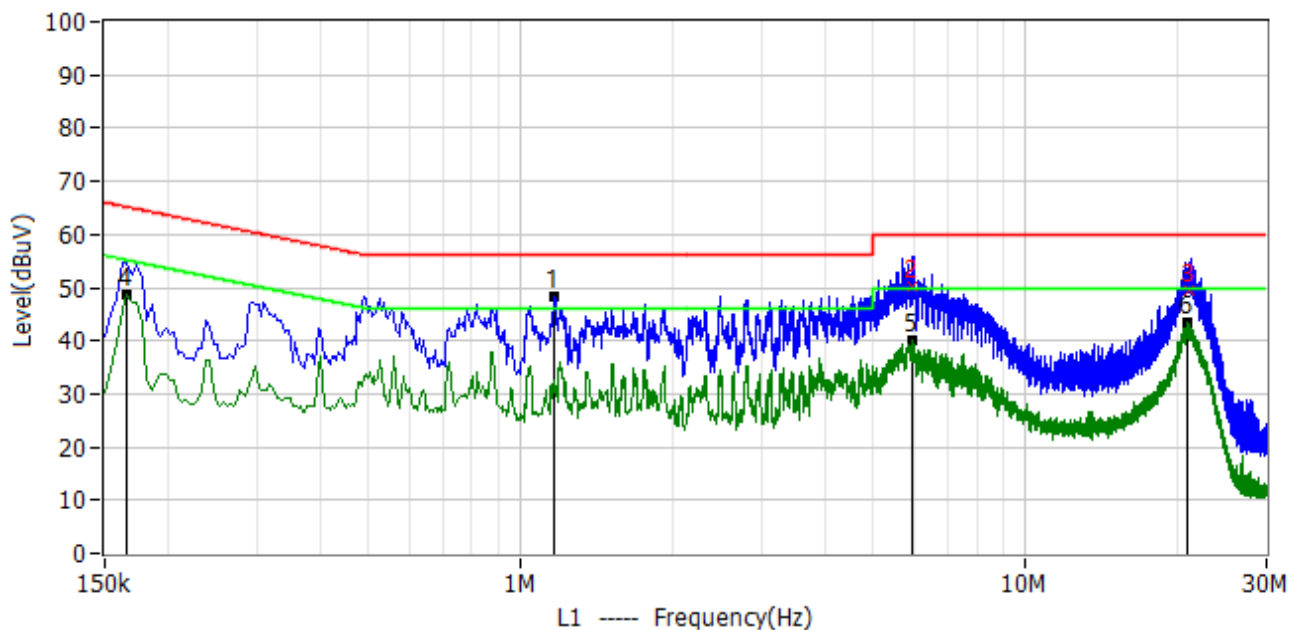
3.1.5 EUT OPERATING CONDITIONS

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

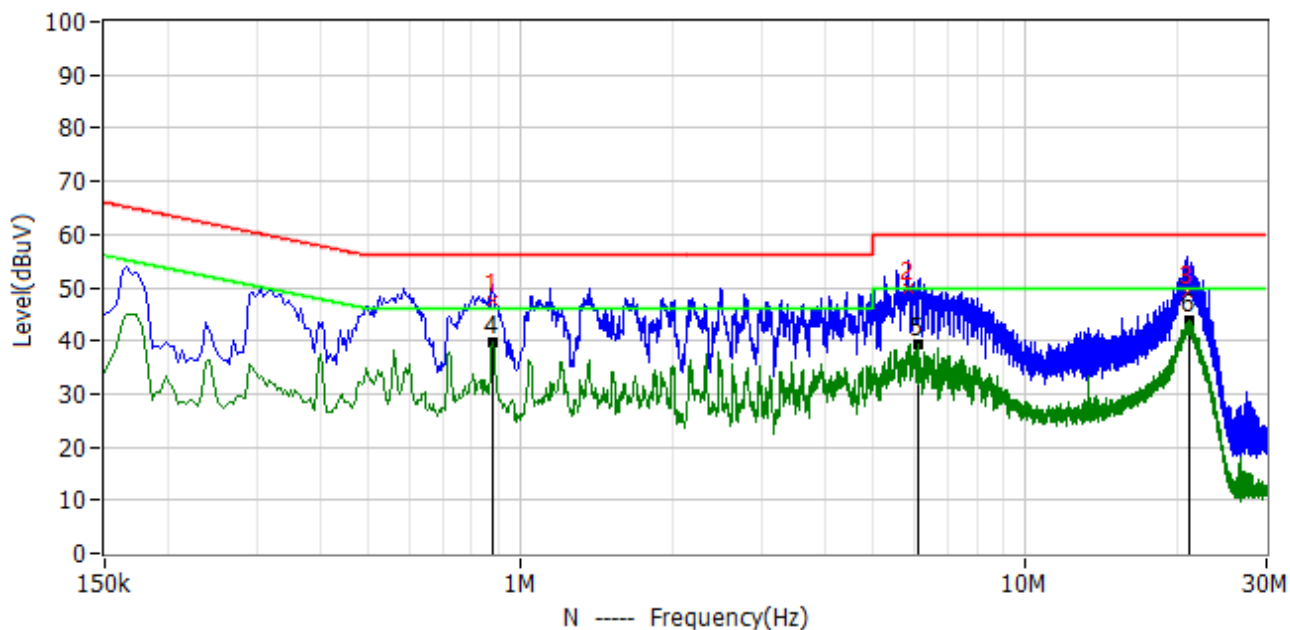
Project: LGT22L023	Test Engineer: Dylan.shi
EUT: EUT: DTEN D7X 75"	Temperature: 17.2°C
M/N: DBR1475	Humidity: 55%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-03
Test Mode: TX 5GHz	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	1.166MHz	37.78	10.56	48.34	56.00	-7.66	PK	L1
2	5.982MHz	39.35	10.80	50.15	60.00	-9.85	QP	L1
3	21.146MHz	38.20	11.10	49.30	60.00	-10.70	QP	L1
4*	166.000kHz	38.03	10.50	48.53	55.16	-6.63	AV	L1
5*	5.970MHz	29.07	10.84	39.91	50.00	-10.09	AV	L1
6*	20.926MHz	32.25	11.10	43.35	50.00	-6.65	AV	L1



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 17.2°C
M/N: DBR1475	Humidity: 55%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-03
Test Mode: TX 5GHz	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1	878.000kHz	37.16	10.50	47.66	56.00	-8.34	QP	N
2	5.846MHz	39.09	10.80	49.89	60.00	-10.11	QP	N
3	20.894MHz	37.89	11.10	48.99	60.00	-11.01	QP	N
4*	878.000kHz	29.18	10.52	39.70	46.00	-6.30	AV	N
5*	6.142MHz	28.52	10.85	39.37	50.00	-10.63	AV	N
6*	21.174MHz	32.87	11.12	43.99	50.00	-6.01	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: $\text{dBuV/m(at 3M)} = \text{EIRP(dBm)} + 95.3$.

Peak Limit = $-27\text{dBm/MHz} + 95.3 = 68.3 \text{ dBuV/m}$.

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

- The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- 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.
- 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.
- 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.
- 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.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

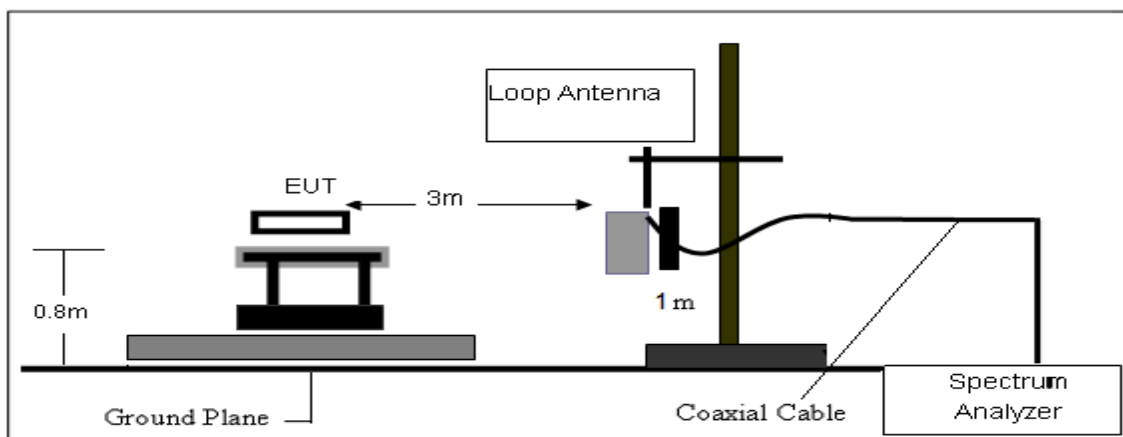
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

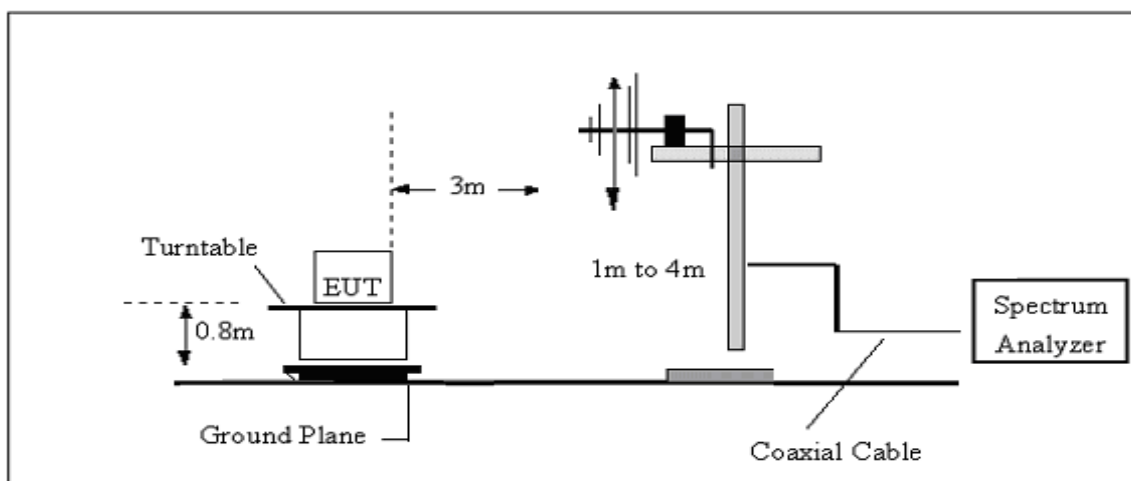
No deviation

3.2.3 TEST SETUP

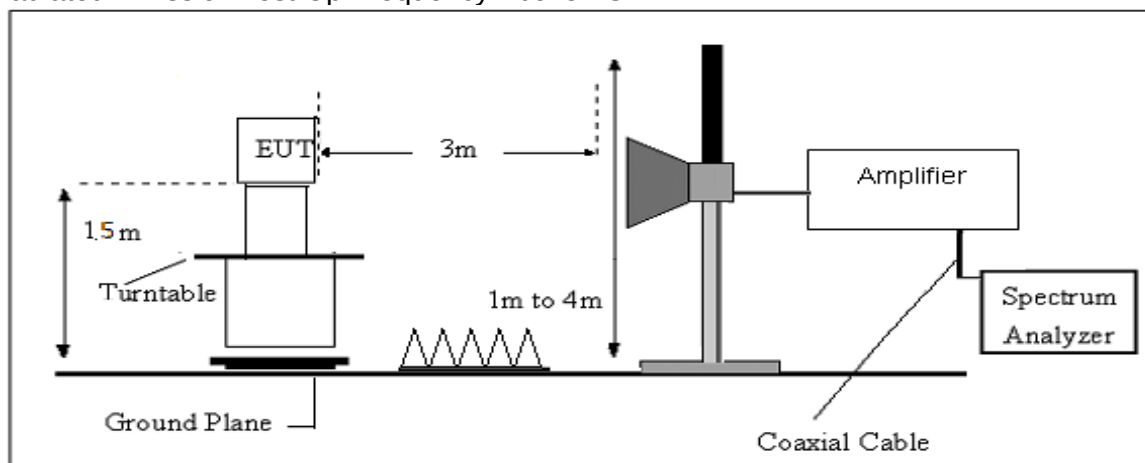
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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

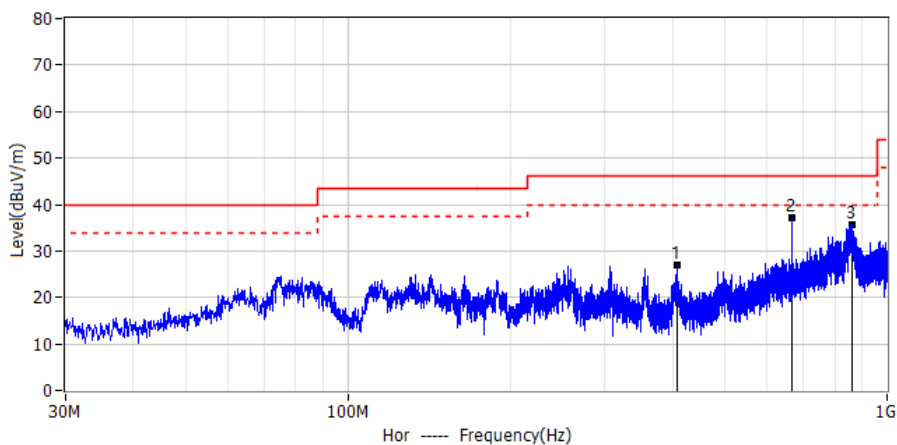
Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$

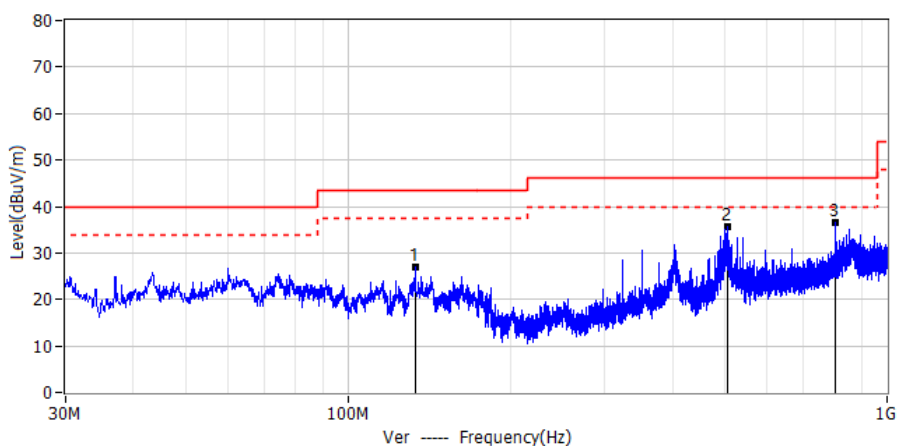


3.2.6 TEST RESULTS

Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 21.5°C
M/N: DBR1475	Humidity: 48%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-03
Test Mode: TX 5GHz	
Note:	



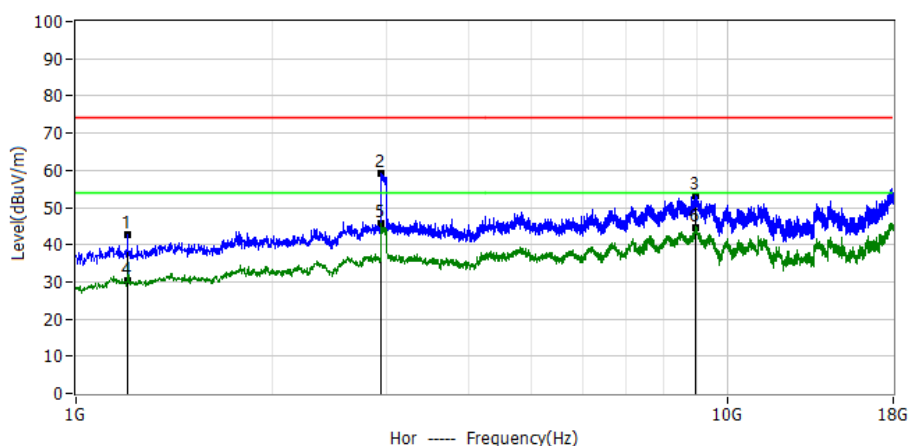
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	409.028MHz	9.74	17.30	27.04	46.00	-18.96	PK	Hor
2*	666.563MHz	13.90	23.14	37.04	46.00	-8.96	PK	Hor
3*	859.714MHz	9.48	26.21	35.69	46.00	-10.31	PK	Hor



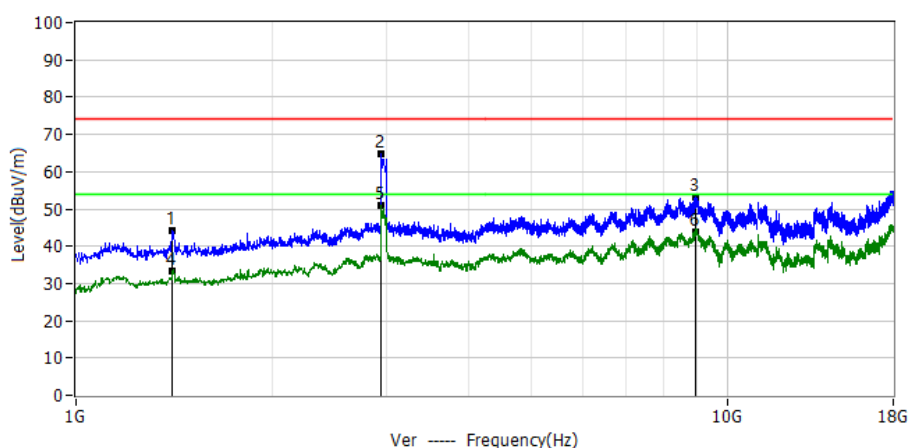
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	133.305MHz	13.79	13.07	26.86	43.50	-16.64	PK	Ver
2*	506.755MHz	16.35	19.42	35.77	46.00	-10.23	PK	Ver
3*	804.060MHz	10.77	25.69	36.46	46.00	-9.54	PK	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 15.2°C
M/N: DBR1475	Humidity: 35%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11ac80 5210(ANT2)	
Note:	



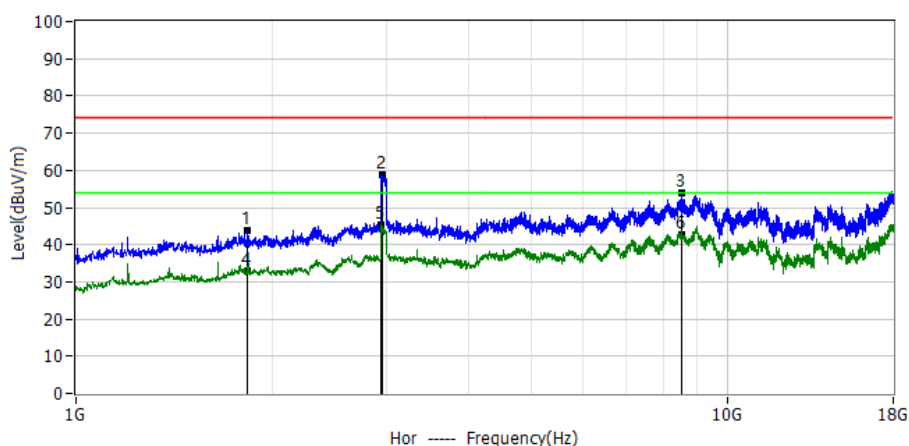
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.200GHz	65.51	-22.97	42.54	74.00	-31.46	PK	Hor
2*	2.940GHz	67.78	-8.66	59.12	74.00	-14.88	PK	Hor
3*	8.935GHz	54.39	-1.35	53.04	74.00	-20.96	PK	Hor
4*	1.200GHz	53.47	-22.97	30.50	54.00	-23.50	AV	Hor
5*	2.944GHz	54.35	-8.63	45.72	54.00	-8.28	AV	Hor
6*	8.935GHz	45.75	-1.35	44.40	54.00	-9.60	AV	Hor



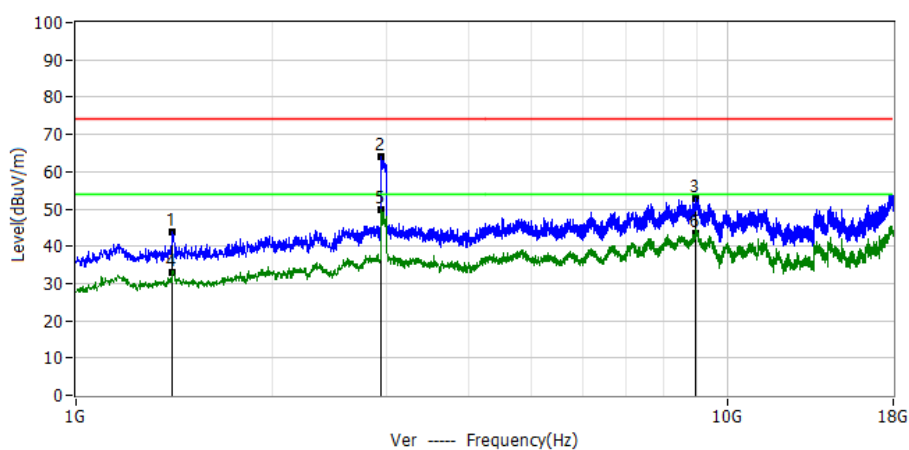
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.408GHz	65.35	-21.34	44.01	74.00	-29.99	PK	Ver
2*	2.940GHz	73.35	-8.66	64.69	74.00	-9.31	PK	Ver
3*	8.931GHz	54.61	-1.37	53.24	74.00	-20.76	PK	Ver
4*	1.408GHz	54.64	-21.34	33.30	54.00	-20.70	AV	Ver
5*	2.944GHz	59.47	-8.63	50.84	54.00	-3.16	AV	Ver
6*	8.931GHz	45.07	-1.37	43.70	54.00	-10.30	AV	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 15.2°C
M/N: DBR1475	Humidity: 35%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11ac80 5290(ANT2)	
Note:	



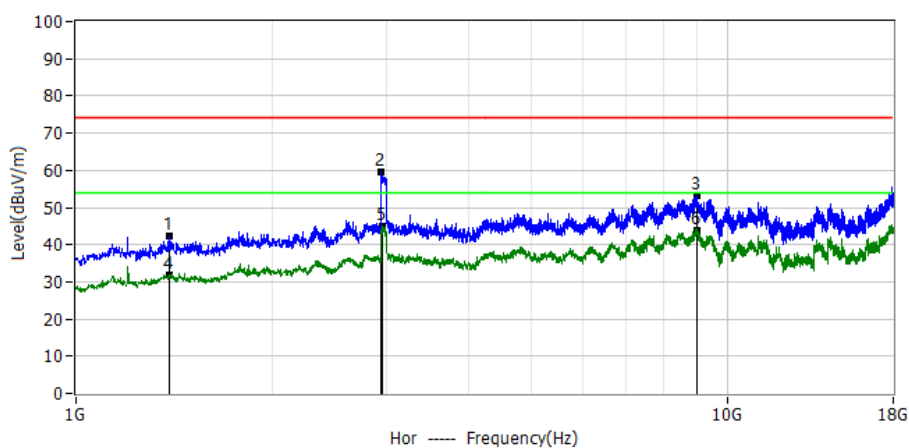
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.835GHz	61.79	-17.90	43.89	74.00	-30.11	PK	Hor
2*	2.951GHz	67.22	-8.60	58.62	74.00	-15.38	PK	Hor
3*	8.520GHz	56.53	-2.53	54.00	74.00	-20.00	PK	Hor
4*	1.835GHz	51.00	-17.90	33.10	54.00	-20.90	AV	Hor
5*	2.944GHz	53.79	-8.63	45.16	54.00	-8.84	AV	Hor
6*	8.520GHz	45.13	-2.53	42.60	54.00	-11.40	AV	Hor



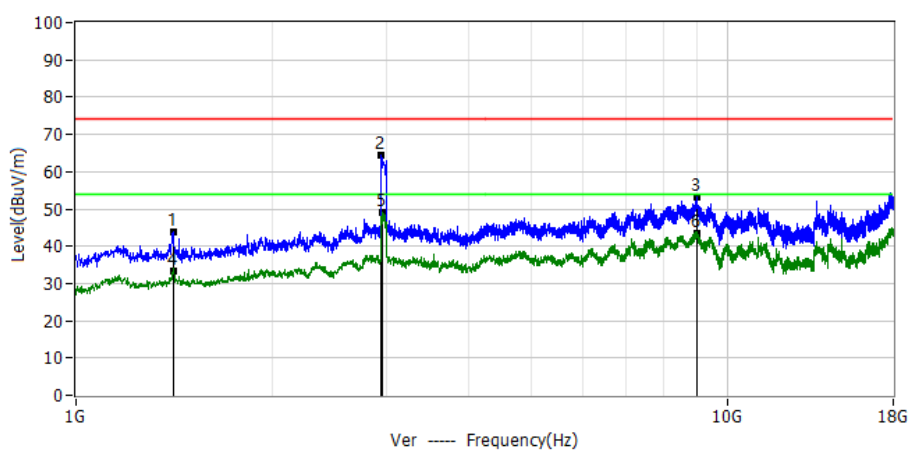
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.406GHz	65.26	-21.35	43.91	74.00	-30.09	PK	Ver
2*	2.940GHz	72.82	-8.66	64.16	74.00	-9.84	PK	Ver
3*	8.941GHz	54.25	-1.34	52.91	74.00	-21.09	PK	Ver
4*	1.406GHz	54.35	-21.35	33.00	54.00	-21.00	AV	Ver
5*	2.944GHz	58.63	-8.63	50.00	54.00	-4.00	AV	Ver
6*	8.941GHz	44.74	-1.34	43.40	54.00	-10.60	AV	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 15.2°C
M/N: DBR1475	Humidity: 35%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5510(ANT1)	
Note:	



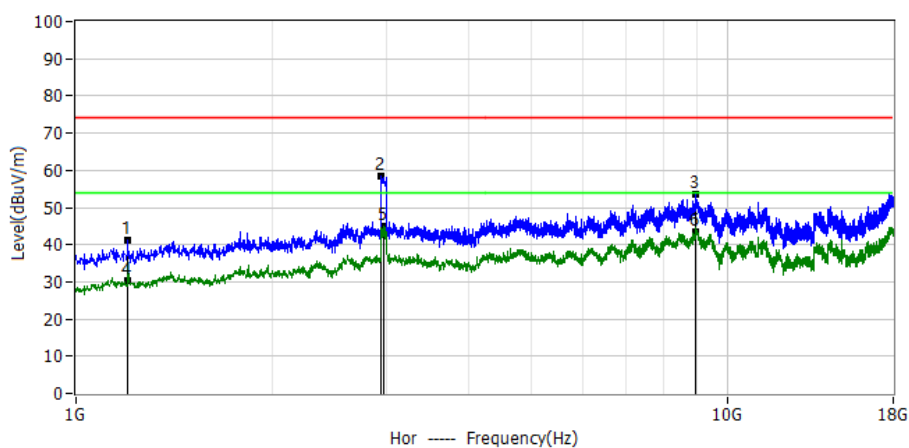
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.389GHz	63.63	-21.47	42.16	74.00	-31.84	PK	Hor
2*	2.940GHz	68.24	-8.66	59.58	74.00	-14.42	PK	Hor
3*	8.984GHz	54.25	-1.22	53.03	74.00	-20.97	PK	Hor
4*	1.389GHz	53.27	-21.47	31.80	54.00	-22.20	AV	Hor
5*	2.955GHz	53.62	-8.58	45.04	54.00	-8.96	AV	Hor
6*	8.984GHz	45.12	-1.22	43.90	54.00	-10.10	AV	Hor



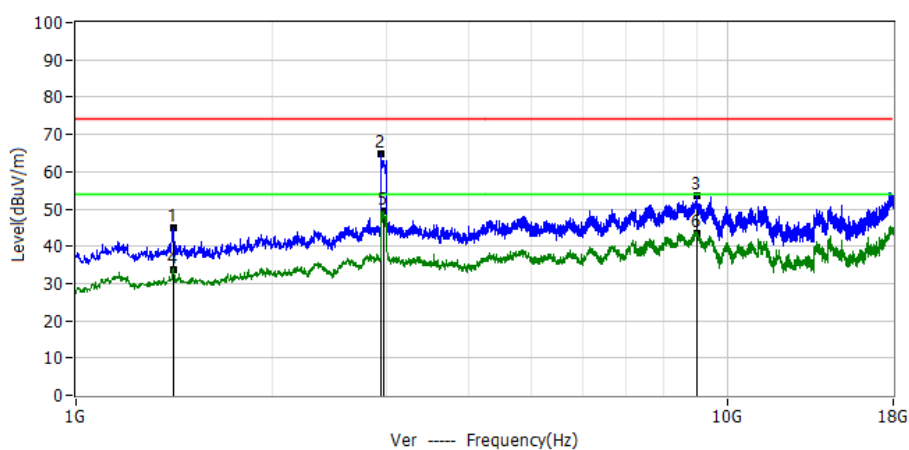
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.410GHz	65.00	-21.33	43.67	74.00	-30.33	PK	Ver
2*	2.940GHz	73.26	-8.66	64.60	74.00	-9.40	PK	Ver
3*	8.979GHz	54.58	-1.23	53.35	74.00	-20.65	PK	Ver
4*	1.410GHz	54.73	-21.33	33.40	54.00	-20.60	AV	Ver
5*	2.961GHz	57.45	-8.54	48.91	54.00	-5.09	AV	Ver
6*	8.979GHz	44.53	-1.23	43.30	54.00	-10.70	AV	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 15.2°C
M/N: DBR1475	Humidity: 35%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5550	
Note:	



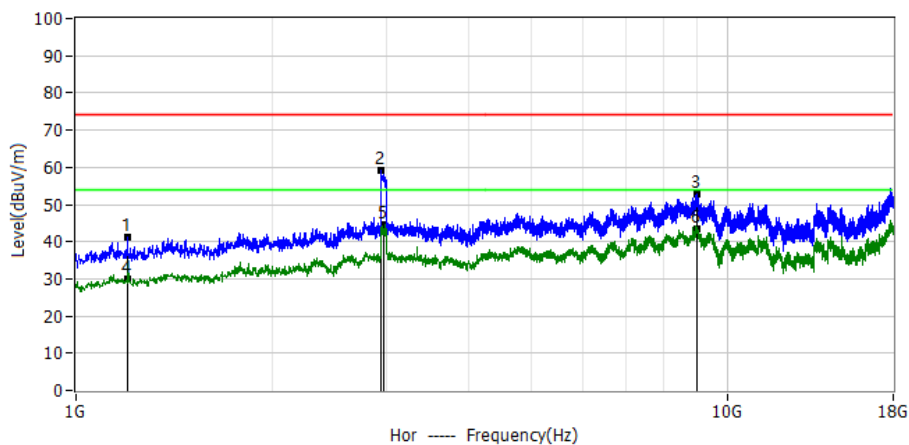
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.200GHz	64.26	-22.97	41.29	74.00	-32.71	PK	Hor
2*	2.940GHz	67.23	-8.66	58.57	74.00	-15.43	PK	Hor
3*	8.931GHz	54.85	-1.37	53.48	74.00	-20.52	PK	Hor
4*	1.200GHz	53.27	-22.97	30.30	54.00	-23.70	AV	Hor
5*	2.974GHz	53.37	-8.48	44.89	54.00	-9.11	AV	Hor
6*	8.931GHz	44.67	-1.37	43.30	54.00	-10.70	AV	Hor



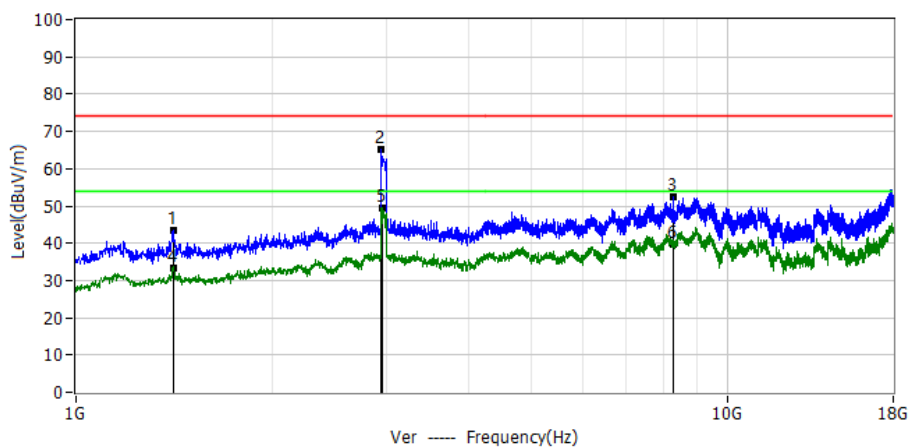
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.410GHz	66.31	-21.33	44.98	74.00	-29.02	PK	Ver
2*	2.940GHz	73.46	-8.66	64.80	74.00	-9.20	PK	Ver
3*	8.996GHz	54.56	-1.18	53.38	74.00	-20.62	PK	Ver
4*	1.410GHz	55.13	-21.33	33.80	54.00	-20.20	AV	Ver
5*	2.966GHz	57.82	-8.52	49.30	54.00	-4.70	AV	Ver
6*	8.996GHz	44.68	-1.18	43.50	54.00	-10.50	AV	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 15.2°C
M/N: DBR1475	Humidity: 35%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5670	
Note:	



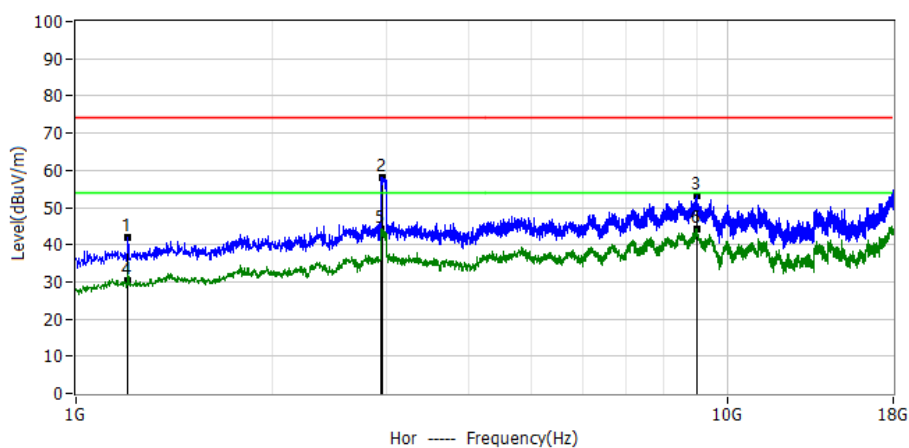
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.200GHz	64.07	-22.97	41.10	74.00	-32.90	PK	Hor
2*	2.940GHz	67.87	-8.66	59.21	74.00	-14.79	PK	Hor
3*	8.999GHz	54.15	-1.17	52.98	74.00	-21.02	PK	Hor
4*	1.200GHz	52.97	-22.97	30.00	54.00	-24.00	AV	Hor
5*	2.976GHz	52.88	-8.47	44.41	54.00	-9.59	AV	Hor
6*	8.999GHz	44.77	-1.17	43.60	54.00	-10.40	AV	Hor



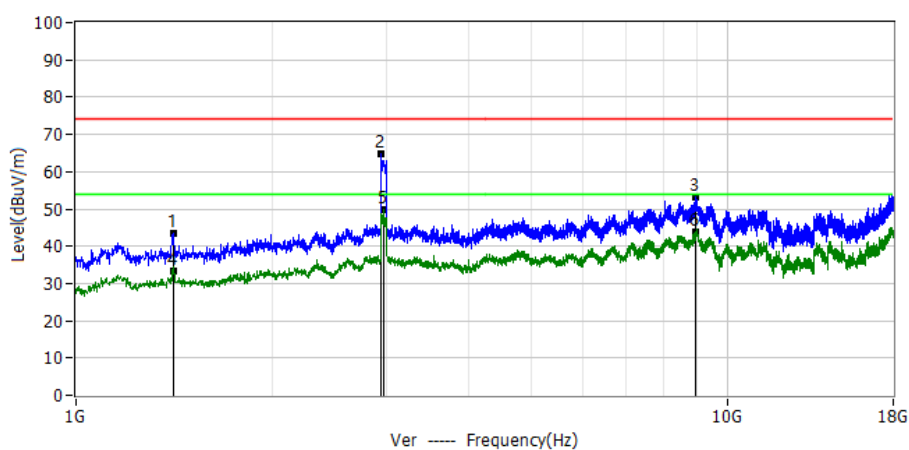
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.412GHz	64.88	-21.32	43.56	74.00	-30.44	PK	Ver
2*	2.940GHz	73.67	-8.66	65.01	74.00	-8.99	PK	Ver
3*	8.259GHz	55.62	-3.27	52.35	74.00	-21.65	PK	Ver
4*	1.412GHz	54.82	-21.32	33.50	54.00	-20.50	AV	Ver
5*	2.959GHz	58.09	-8.56	49.53	54.00	-4.47	AV	Ver
6*	8.259GHz	43.07	-3.27	39.80	54.00	-14.20	AV	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 15.2°C
M/N: DBR1475	Humidity: 35%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5755(ANT1)	
Note:	



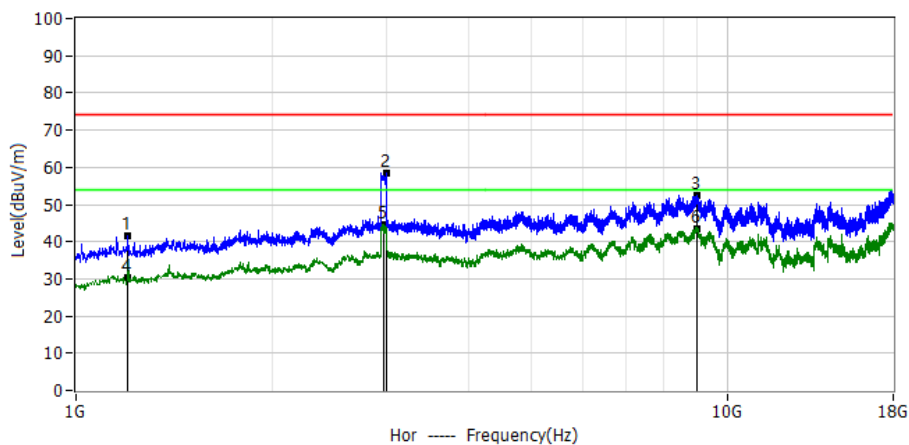
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.200GHz	64.84	-22.97	41.87	74.00	-32.13	PK	Hor
2*	2.949GHz	66.80	-8.61	58.19	74.00	-15.81	PK	Hor
3*	8.988GHz	54.47	-1.20	53.27	74.00	-20.73	PK	Hor
4*	1.200GHz	53.27	-22.97	30.30	54.00	-23.70	AV	Hor
5*	2.944GHz	53.01	-8.63	44.38	54.00	-9.62	AV	Hor
6*	8.988GHz	45.30	-1.20	44.10	54.00	-9.90	AV	Hor



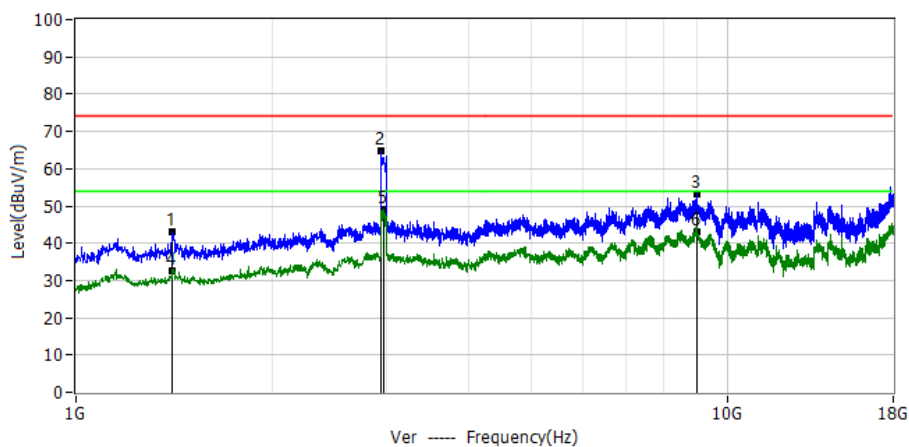
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.412GHz	64.89	-21.32	43.57	74.00	-30.43	PK	Ver
2*	2.940GHz	73.56	-8.66	64.90	74.00	-9.10	PK	Ver
3*	8.937GHz	54.47	-1.35	53.12	74.00	-20.88	PK	Ver
4*	1.412GHz	54.52	-21.32	33.20	54.00	-20.80	AV	Ver
5*	2.966GHz	58.23	-8.52	49.71	54.00	-4.29	AV	Ver
6*	8.937GHz	45.05	-1.35	43.70	54.00	-10.30	AV	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 15.2°C
M/N: DBR1475	Humidity: 35%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5795	
Note:	



No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.200GHz	64.48	-22.97	41.51	74.00	-32.49	PK	Hor
2*	3.000GHz	66.89	-8.34	58.55	74.00	-15.45	PK	Hor
3*	9.011GHz	53.73	-1.17	52.56	74.00	-21.44	PK	Hor
4*	1.200GHz	53.37	-22.97	30.40	54.00	-23.60	AV	Hor
5*	2.974GHz	53.15	-8.48	44.67	54.00	-9.33	AV	Hor
6*	9.011GHz	44.47	-1.17	43.30	54.00	-10.70	AV	Hor

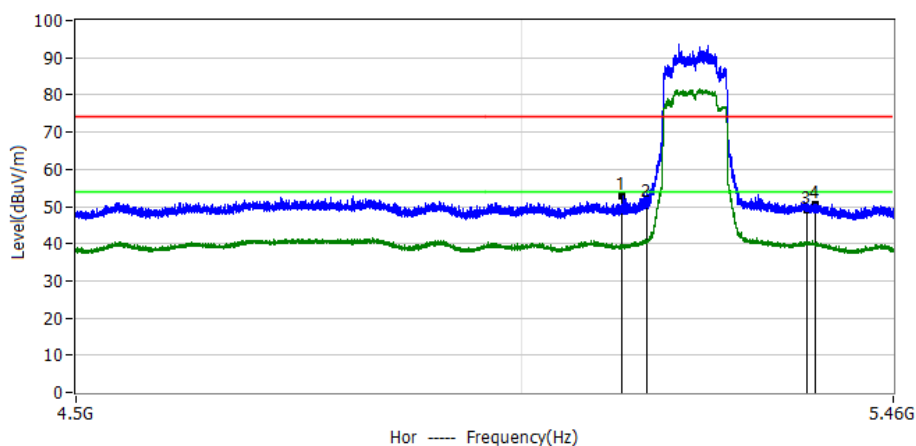


No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1.408GHz	64.32	-21.34	42.98	74.00	-31.02	PK	Ver
2*	2.940GHz	73.60	-8.66	64.94	74.00	-9.06	PK	Ver
3*	8.982GHz	54.35	-1.22	53.13	74.00	-20.87	PK	Ver
4*	1.408GHz	54.04	-21.34	32.70	54.00	-21.30	AV	Ver
5*	2.966GHz	57.67	-8.52	49.15	54.00	-4.85	AV	Ver
6*	8.982GHz	44.22	-1.22	43.00	54.00	-11.00	AV	Ver

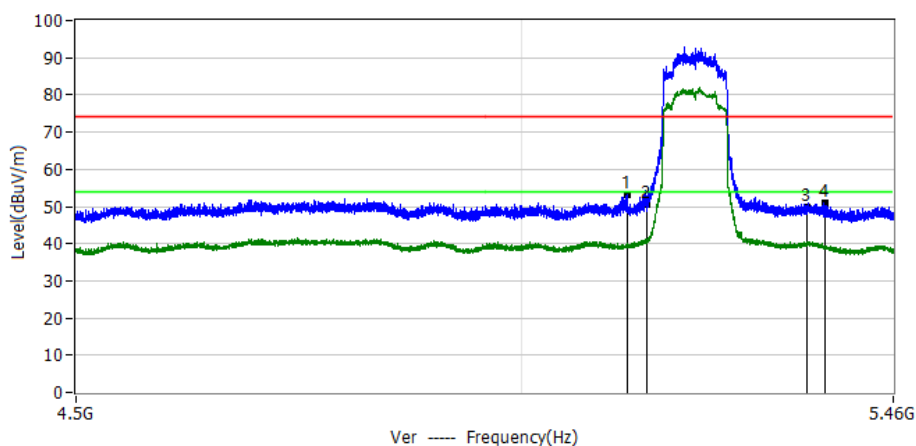


3.2.7 Radiated Band Edge

Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 20°C
M/N: DBR1475	Humidity: 34%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11ac80 5210	
Note:	



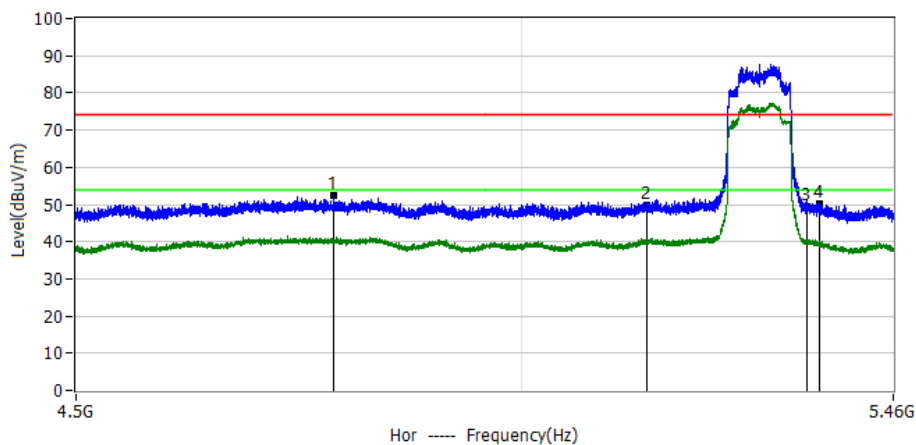
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.121GHz	59.30	-6.53	52.77	74.00	-21.23	PK	Hor
2*	5.150GHz	57.72	-6.62	51.10	74.00	-22.90	PK	Hor
3*	5.350GHz	56.46	-7.26	49.20	74.00	-24.80	PK	Hor
4*	5.361GHz	57.98	-7.30	50.68	74.00	-23.32	PK	Hor



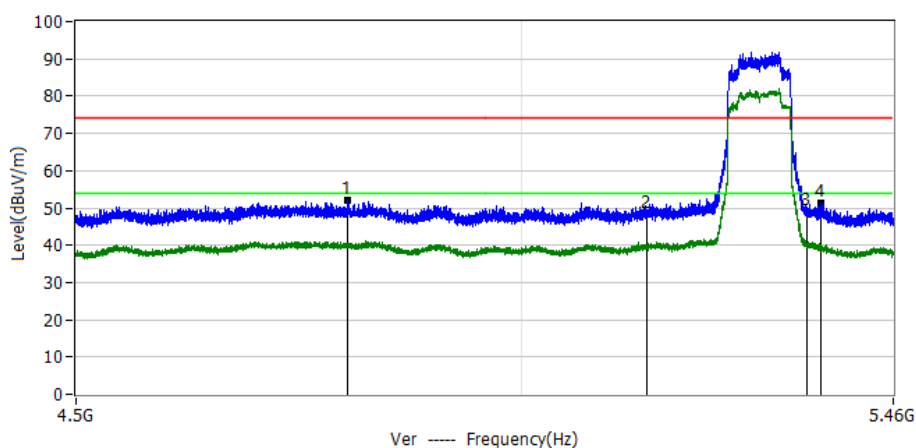
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.127GHz	59.73	-6.55	53.18	74.00	-20.82	PK	Ver
2*	5.150GHz	57.22	-6.62	50.60	74.00	-23.40	PK	Ver
3*	5.350GHz	57.16	-7.26	49.90	74.00	-24.10	PK	Ver
4*	5.372GHz	58.11	-7.33	50.78	74.00	-23.22	PK	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 20°C
M/N: DBR1475	Humidity: 34%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11ac80 5290	
Note:	



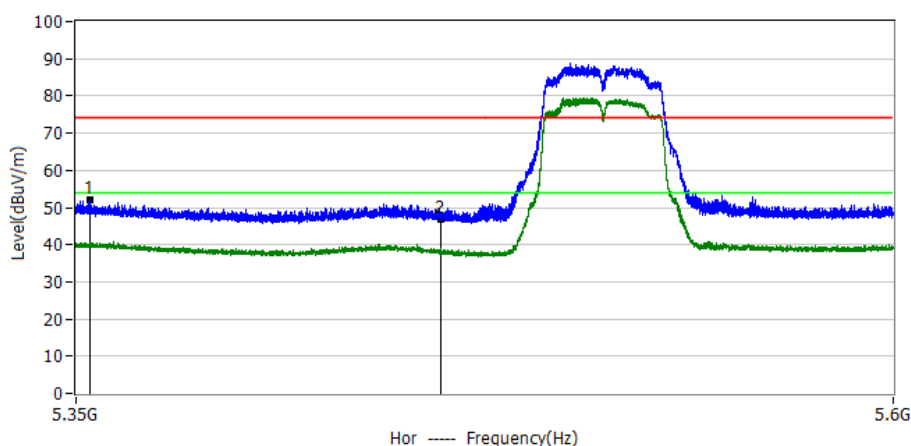
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.782GHz	58.41	-5.97	52.44	74.00	-21.56	PK	Hor
2*	5.150GHz	56.42	-6.62	49.80	74.00	-24.20	PK	Hor
3*	5.350GHz	56.76	-7.26	49.50	74.00	-24.50	PK	Hor
4*	5.365GHz	57.45	-7.31	50.14	74.00	-23.86	PK	Hor



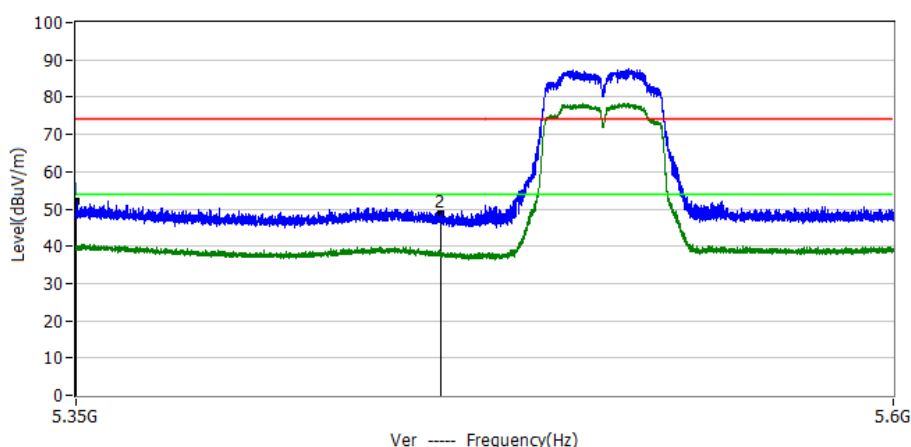
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	4.798GHz	58.02	-5.98	52.04	74.00	-21.96	PK	Ver
2*	5.150GHz	54.82	-6.62	48.20	74.00	-25.80	PK	Ver
3*	5.350GHz	56.26	-7.26	49.00	74.00	-25.00	PK	Ver
4*	5.368GHz	58.74	-7.32	51.42	74.00	-22.58	PK	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 20°C
M/N: DBR1475	Humidity: 34%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5510	
Note:	



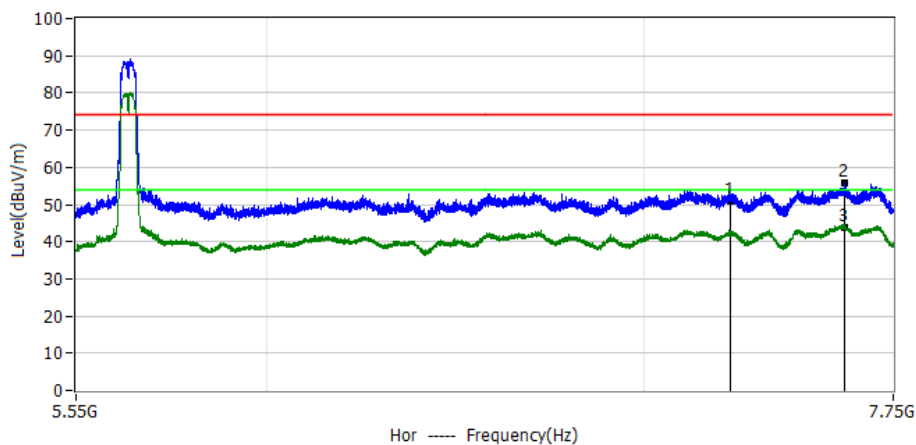
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.354GHz	59.42	-7.27	52.15	74.00	-21.85	PK	Hor
2*	5.460GHz	54.61	-7.61	47.00	74.00	-27.00	PK	Hor



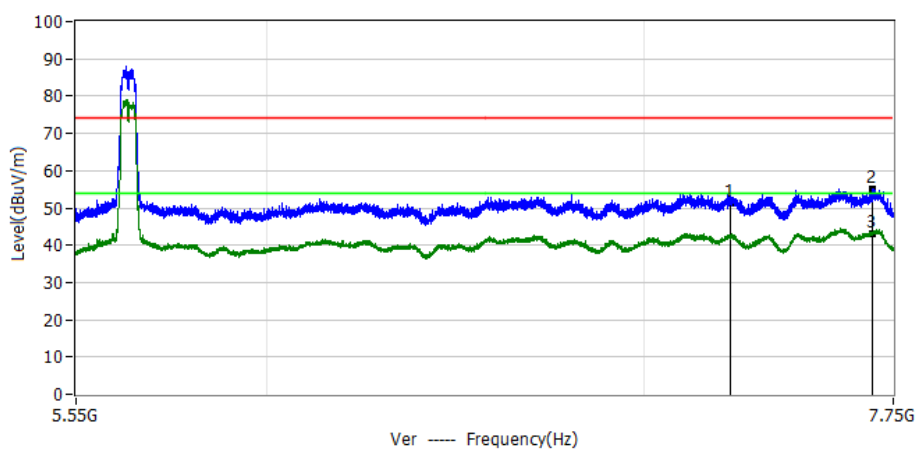
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	5.350GHz	59.32	-7.26	52.06	74.00	-21.94	PK	Ver
2*	5.460GHz	56.31	-7.61	48.70	74.00	-25.30	PK	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 20°C
M/N: DBR1475	Humidity: 34%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5670	
Note:	



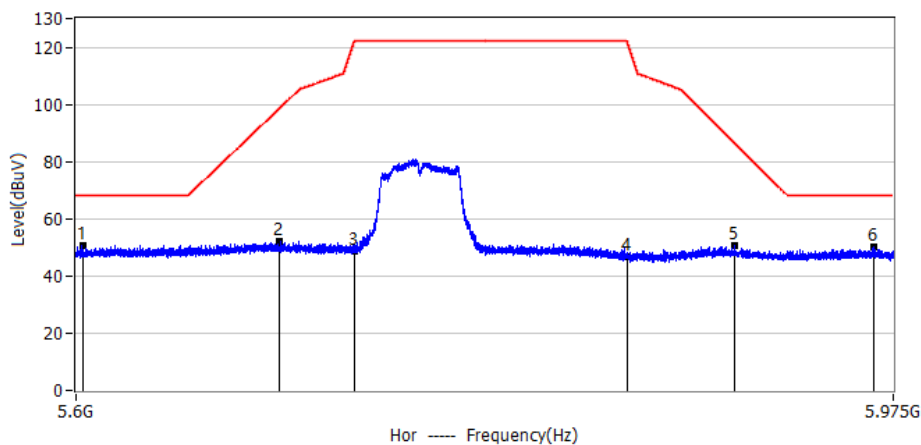
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	7.250GHz	56.09	-4.99	51.10	74.00	-22.90	PK	Hor
2*	7.597GHz	59.96	-4.24	55.72	74.00	-18.28	PK	Hor
3*	7.597GHz	47.94	-4.24	43.70	54.00	-10.30	AV	Hor



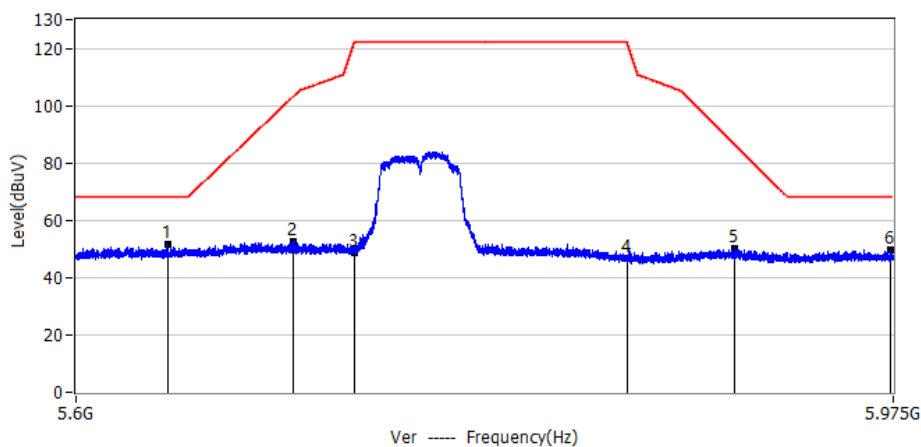
No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	7.250GHz	56.39	-4.99	51.40	74.00	-22.60	PK	Ver
2*	7.685GHz	59.41	-4.19	55.22	74.00	-18.78	PK	Ver
3*	7.685GHz	47.29	-4.19	43.10	54.00	-10.90	AV	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 20°C
M/N: DBR1475	Humidity: 34%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5755	
Note:	



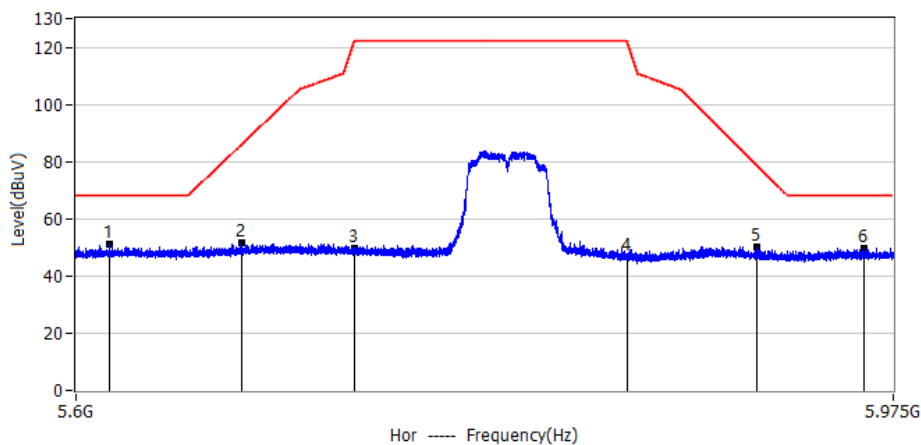
No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.603GHz	58.41	-7.70	50.71	68.20	-17.49	PK	Hor
2*	5.691GHz	59.75	-7.66	52.09	98.83	-46.74	PK	Hor
3*	5.725GHz	56.35	-7.65	48.70	122.20	-73.50	PK	Hor
4*	5.850GHz	54.30	-7.60	46.70	122.20	-75.40	PK	Hor
5*	5.900GHz	58.04	-7.58	50.46	86.59	-36.13	PK	Hor
6*	5.966GHz	57.64	-7.55	50.09	68.20	-18.11	PK	Hor



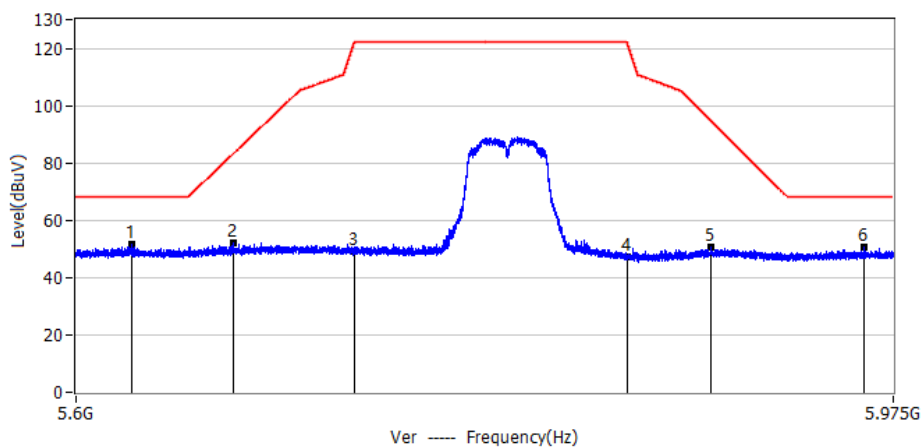
No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.641GHz	59.12	-7.68	51.44	68.20	-16.76	PK	Ver
2*	5.697GHz	60.24	-7.66	52.58	103.22	-50.64	PK	Ver
3*	5.725GHz	56.55	-7.65	48.90	122.20	-73.30	PK	Ver
4*	5.850GHz	54.50	-7.60	46.90	122.20	-75.30	PK	Ver
5*	5.900GHz	57.78	-7.58	50.20	86.52	-36.32	PK	Ver
6*	5.974GHz	57.45	-7.55	49.90	68.20	-18.30	PK	Ver



Project: LGT22L023	Test Engineer: Dylan.shi
EUT: DTEN D7X 75"	Temperature: 20°C
M/N: DBR1475	Humidity: 34%RH
Test Voltage: AC 120V/60Hz	Test Data: 2023-01-30
Test Mode: 802.11n40 5795	
Note:	



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.615GHz	59.04	-7.69	51.35	68.20	-16.85	PK	Hor
2*	5.674GHz	59.23	-7.67	51.56	85.73	-34.18	PK	Hor
3*	5.725GHz	57.25	-7.65	49.60	122.20	-72.50	PK	Hor
4*	5.850GHz	54.10	-7.60	46.50	122.20	-75.60	PK	Hor
5*	5.911GHz	57.93	-7.58	50.35	78.76	-28.41	PK	Hor
6*	5.961GHz	57.33	-7.56	49.77	68.20	-18.43	PK	Hor



No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	5.625GHz	59.29	-7.69	51.60	68.20	-16.60	PK	Ver
2*	5.670GHz	59.98	-7.67	52.31	83.34	-31.03	PK	Ver
3*	5.725GHz	56.95	-7.65	49.30	122.20	-72.90	PK	Ver
4*	5.850GHz	54.60	-7.60	47.00	122.20	-75.20	PK	Ver
5*	5.889GHz	58.03	-7.58	50.45	94.72	-44.26	PK	Ver
6*	5.961GHz	58.04	-7.56	50.48	68.20	-17.72	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 $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3$ RBW.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log (500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ kHz})$ 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 $10 \log (1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ 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 $RBW=100 \text{ KHz}$ 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 $\geq$ 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 $\geq 3 \cdot$ 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) $\geq 3 \times$ 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 $11 \text{ dBm} + 10 \log B$, 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	

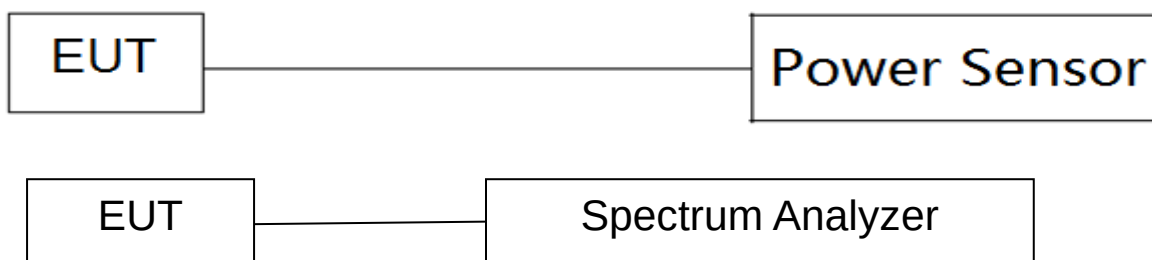
6.2 TEST PROCEDURE

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 Dipole Antenna with RP-SMA connector. 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	99.24	0	0.48
NVNT	a	5200	Ant1	99.2	0	0.48
NVNT	a	5240	Ant1	99.24	0	0.48
NVNT	a	5260	Ant1	99.24	0	0.48
NVNT	a	5300	Ant1	99.24	0	0.48
NVNT	a	5320	Ant1	99.24	0	0.48
NVNT	a	5500	Ant1	99.2	0	0.48
NVNT	a	5580	Ant1	99.24	0	0.48
NVNT	a	5700	Ant1	99.24	0	0.48
NVNT	a	5745	Ant1	99.24	0	0.48
NVNT	a	5785	Ant1	99.24	0	0.48
NVNT	a	5825	Ant1	99.24	0	0.48
NVNT	a	5180	Ant2	99.24	0	0.48
NVNT	a	5200	Ant2	99.24	0	0.48
NVNT	a	5240	Ant2	99.24	0	0.48
NVNT	a	5260	Ant2	99.24	0	0.48
NVNT	a	5300	Ant2	99.24	0	0.48
NVNT	a	5320	Ant2	99.24	0	0.48
NVNT	a	5500	Ant2	99.24	0	0.48
NVNT	a	5580	Ant2	99.24	0	0.48
NVNT	a	5700	Ant2	99.24	0	0.48
NVNT	a	5745	Ant2	99.24	0	0.48
NVNT	a	5785	Ant2	99.24	0	0.48
NVNT	a	5825	Ant2	99.24	0	0.48
NVNT	n20	5180	Ant1	99.71	0	0.18
NVNT	n20	5200	Ant1	99.71	0	0.18
NVNT	n20	5240	Ant1	99.71	0	0.18
NVNT	n20	5260	Ant1	99.71	0	0.18
NVNT	n20	5300	Ant1	99.71	0	0.18
NVNT	n20	5320	Ant1	99.71	0	0.18
NVNT	n20	5500	Ant1	99.71	0	0.18
NVNT	n20	5580	Ant1	99.71	0	0.18
NVNT	n20	5700	Ant1	99.71	0	0.18
NVNT	n20	5745	Ant1	99.71	0	0.18
NVNT	n20	5785	Ant1	99.71	0	0.18
NVNT	n20	5825	Ant1	99.71	0	0.18
NVNT	n20	5180	Ant2	99.71	0	0.18
NVNT	n20	5200	Ant2	99.71	0	0.18
NVNT	n20	5240	Ant2	99.71	0	0.18
NVNT	n20	5260	Ant2	99.71	0	0.18
NVNT	n20	5300	Ant2	99.71	0	0.18
NVNT	n20	5320	Ant2	99.69	0	0.18
NVNT	n20	5500	Ant2	99.71	0	0.18
NVNT	n20	5580	Ant2	99.71	0	0.18
NVNT	n20	5700	Ant2	99.71	0	0.18
NVNT	n20	5745	Ant2	99.71	0	0.18
NVNT	n20	5785	Ant2	99.71	0	0.18
NVNT	n20	5825	Ant2	99.71	0	0.18
NVNT	n20	5180	Sum	99.71	0	0.18
NVNT	n20	5200	Sum	99.71	0	0.18
NVNT	n20	5240	Sum	99.71	0	0.18
NVNT	n20	5260	Sum	99.71	0	0.18
NVNT	n20	5300	Sum	99.69	0	0.18
NVNT	n20	5320	Sum	99.71	0	0.18
NVNT	n20	5500	Sum	99.71	0	0.18
NVNT	n20	5580	Sum	99.71	0	0.18
NVNT	n20	5700	Sum	99.69	0	0.18
NVNT	n20	5745	Sum	99.71	0	0.18
NVNT	n20	5785	Sum	99.69	0	0.18
NVNT	n20	5825	Sum	99.69	0	0.18
NVNT	n40	5190	Ant1	99.72	0	0.18
NVNT	n40	5230	Ant1	99.74	0	0.18
NVNT	n40	5270	Ant1	99.74	0	0.18



NVNT	n40	5310	Ant1	99.71	0	0.18
NVNT	n40	5510	Ant1	99.71	0	0.18
NVNT	n40	5550	Ant1	99.71	0	0.18
NVNT	n40	5670	Ant1	99.74	0	0.18
NVNT	n40	5755	Ant1	99.72	0	0.18
NVNT	n40	5795	Ant1	99.71	0	0.18
NVNT	n40	5190	Ant2	99.74	0	0.18
NVNT	n40	5230	Ant2	99.71	0	0.18
NVNT	n40	5270	Ant2	99.71	0	0.18
NVNT	n40	5300	Ant2	99.71	0	0.18
NVNT	n40	5310	Ant2	99.71	0	0.18
NVNT	n40	5510	Ant2	99.71	0	0.18
NVNT	n40	5550	Ant2	99.74	0	0.18
NVNT	n40	5670	Ant2	99.71	0	0.18
NVNT	n40	5755	Ant2	99.71	0	0.18
NVNT	n40	5795	Ant2	99.74	0	0.18
NVNT	n40	5190	Sum	99.71	0	0.18
NVNT	n40	5230	Sum	99.71	0	0.18
NVNT	n40	5270	Sum	99.71	0	0.18
NVNT	n40	5300	Sum	99.71	0	0.18
NVNT	n40	5310	Sum	99.71	0	0.18
NVNT	n40	5510	Sum	99.74	0	0.18
NVNT	n40	5550	Sum	99.71	0	0.18
NVNT	n40	5670	Sum	99.71	0	0.18
NVNT	n40	5755	Sum	99.74	0	0.18
NVNT	n40	5795	Sum	99.74	0	0.18
NVNT	ac80	5210	Ant1	99.74	0	0.18
NVNT	ac80	5290	Ant1	99.74	0	0.18
NVNT	ac80	5530	Ant1	99.74	0	0.18
NVNT	ac80	5610	Ant1	99.71	0	0.18
NVNT	ac80	5775	Ant1	99.71	0	0.18
NVNT	ac80	5210	Ant2	99.74	0	0.18
NVNT	ac80	5290	Ant2	99.74	0	0.18
NVNT	ac80	5530	Ant2	99.74	0	0.18
NVNT	ac80	5610	Ant2	99.74	0	0.18
NVNT	ac80	5775	Ant2	99.74	0	0.18
NVNT	ac80	5210	Sum	99.74	0	0.18
NVNT	ac80	5290	Sum	99.74	0	0.18
NVNT	ac80	5530	Sum	99.74	0	0.18
NVNT	ac80	5610	Sum	99.74	0	0.18
NVNT	ac80	5775	Sum	99.74	0	0.18
NVNT	ax80	5210	Ant1	99.71	0	0.18
NVNT	ax80	5290	Ant1	99.71	0	0.18
NVNT	ax80	5530	Ant1	99.74	0	0.18
NVNT	ax80	5610	Ant1	99.74	0	0.18
NVNT	ax80	5775	Ant1	99.74	0	0.18
NVNT	ax80	5210	Ant2	99.71	0	0.18
NVNT	ax80	5290	Ant2	99.74	0	0.18
NVNT	ax80	5530	Ant2	99.74	0	0.18
NVNT	ax80	5610	Ant2	99.74	0	0.18
NVNT	ax80	5775	Ant2	99.74	0	0.18
NVNT	ax80	5210	Sum	99.74	0	0.18
NVNT	ax80	5290	Sum	99.71	0	0.18
NVNT	ax80	5530	Sum	99.71	0	0.18
NVNT	ax80	5610	Sum	99.71	0	0.18
NVNT	ax80	5775	Sum	99.71	0	0.18

