FCC - TEST REPORT

Report Number	:	**709502402525-00B**	Date of Issue:	May 14, 2024
Model	:	Refer to the page 4		
Product Type	:	T8 Tube		
Applicant	:	Zhejiang Lingzhu Technology CO., Ltd		
Address	:	Room 302, No 1 Building Huace Center, Xihu District, Hangzhou City, Zhejiang Province, China		
Manufacturer	:	Zhejiang Lingzhu Technology CO., Ltd		
Address	:	Room 302, No 1 Building Huace Center, Xihu District, Hangzhou City, Zhejiang Province, China		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	29		

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1 Table of Contents

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2 Details about the Test Laboratory

Details about the Test Laboratory
Test Site 1

Company name:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch No.16 Lane, 1951 Du Hui Road, Shanghai 201108, P.R. China
Telephone:	+86 21 6141 0123
Fax:	+86 21 6140 8600
FCC Registration No.:	820234
FCC Designation Number:	CN1183
ISED CAB identifier	CN0101
IC Registration No.:	31668

3 Description of the Equipment Under Test

Product: T8 Tube

Model no.: U2CL1800-865 G13 1200-2, U2CL1800-860 G13 1200-2, U2CL1800-850 G13 1200-2, U2CL1800-840 G13 1200-2, U2CL1800-830 G13 1200-2, U5CL1800-865 G13 1200-2, U5CL1800-860 G13 1200-2, U5CL1800-850 G13 1200-2, U5CL1800-840 G13 1200-2, U5CL1800-830 G13 1200-2, U2CL2250-865 G13 1200-2, U2CL2250-860 G13 1200-2, U2CL2250-850 G13 1200-2, U2CL2250-840 G13 1200-2, U2CL2250-830 G13 1200-2, U5CL2250-865 G13 1200-2, U5CL2250-860 G13 1200-2, U5CL2250-850 G13 1200-2, U5CL2250-840 G13 1200-2, U5CL2250-830 G13 1200-2, U2CL1500-865 G13 1200-2, U2CL1500-860 G13 1200-2, U2CL1500-850 G13 1200-2, U2CL1500-840 G13 1200-2, U2CL1500-830 G13 1200-2, U5CL1500-865 G13 1200-2, U5CL1500-860 G13 1200-2, U5CL1500-850 G13 1200-2, U5CL1500-840 G13 1200-2, U5CL1500-830 G13 1200-2, U2CL1200-865 G13 1200-2, U2CL1200-860 G13 1200-2, U2CL1200-850 G13 1200-2, U2CL1200-840 G13 1200-2, U2CL1200-830 G13 1200-2, U5CL1200-865 G13 1200-2, U5CL1200-860 G13 1200-2, U5CL1200-850 G13 1200-2, U5CL1200-840 G13 1200-2, U5CL1200-830 G13 1200-2

FCC ID: 2BEWX-UXCLT8

Rating: 100-240V, 50/60Hz

RF Transmission Frequency: BLE: 2402~2480 MHz (LE 5.0)

5.8GHz SRD: 5735-5840MHz

No. of Operated Channel: BLE: 40

5.8GHz SRD: 36

Modulation: BLE: GFSK

5.8GHz SRD: CW

Channel list:

Bluetooth Low Energy							
Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474

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7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

5.8GHz SRD							
Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)
1	5735	10	5762	19	5789	28	5816
2	5738	11	5765	20	5792	29	5819
3	5741	12	5768	21	5795	30	5822
4	5744	13	5771	22	5798	31	5825
5	5747	14	5774	23	5801	32	5828
6	5750	15	5777	24	5804	33	5831
7	5753	16	5780	25	5807	34	5834
8	5756	17	5783	26	5810	35	5837
9	5759	18	5786	27	5813	36	5840

Antenna Type: PCB

Antenna Gain: For BLE: -14.62dBi

Description of the EUT: The Equipment Under Test (EUT) is a T8 Tube which have 2.4GHz BLE (support 1Mbps and 2Mbps data rate) and 5.8GHz. We tested it and listed the worst data in this report.

Test sample no.: SHA-808518-3 (Radiated sample for 5735MHz)
SHA-808518-4 (Radiated sample for 5786MHz)
SHA-808518-5 (Radiated sample for 5840MHz)

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment, antenna gain or any information supplied.

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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2023 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to ANSI C63.10-2013.

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5 Summary of Test Results

Technical Requirements				
FCC Part 15 Subpart C				
Test Condition		Pages	Test Site	Test Result
§15.207	Conducted emission AC power port	13-17	Site 1	Pass
§15.249(a)	Field Strength of the Fundamental Signal	21	Site 1	Pass
§15.205(a), §15.209(a), §15.249(a), §15.249(c) §15.249(d)	Radiated Spurious Emissions and Band-edge	18-22	Site 1	Pass
§15.215(c)	20dB bandwidth	23-25	Site 1	Pass
§15.203	Antenna requirement	--	See Note 2	Pass

Note 1: N/A – Not Applicable. Conducted emission is not apply for battery operated device.
Note 2: The EUT uses a PCB Antenna, which gain is for BLE: -14.62dBi, for 5.8GHz: 1.85 dBi. In accordance to §15.203, It is considered sufficiently to comply with the provisions of this section.

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6 General Remarks

Remarks
This submittal(s) (test report) is intended for FCC ID: 2BEWX-UXCLT8, complies with Section 15.205, 15.209, 15.249 of the FCC Part 15, Subpart C Rules.

This report is only for the 5.8GHz SRD test report, for the 2.4GHz BLE test report please refer to 709502402525-00A.

According to the client's declaration, all models have the same technical construction including circuit diagram, PCB Layout, components and component layout. The LED tubes have same construction, only difference in power and CCT(color temperatures). Different powers are achieved by adjusting the power output power of the same LED drive. The models, electrical parameters, and structures of lamp beads with different color temperatures are exactly the same. Lamp beads with different color temperatures only use different phosphors and do not affect electromagnetic radiation.
Detail model as follow.

Model NO.	rated power(W)	Lamp Cap	CCT(K)
U2CL1800-865 G13 1200-2	12W	G13	6500
U2CL1800-860 G13 1200-2	12W	G13	6000
U2CL1800-850 G13 1200-2	12W	G13	5000
U2CL1800-840 G13 1200-2	12W	G13	4000
U2CL1800-830 G13 1200-2	12W	G13	3000
U5CL1800-865 G13 1200-2	12W	G13	6500
U5CL1800-860 G13 1200-2	12W	G13	6000
U5CL1800-850 G13 1200-2	12W	G13	5000
U5CL1800-840 G13 1200-2	12W	G13	4000
U5CL1800-830 G13 1200-2	12W	G13	3000
U2CL2250-865 G13 1200-2	15W	G13	6500
U2CL2250-860 G13 1200-2	15W	G13	6000
U2CL2250-850 G13 1200-2	15W	G13	5000
U2CL2250-840 G13 1200-2	15W	G13	4000
U2CL2250-830 G13 1200-2	15W	G13	3000
U5CL2250-865 G13 1200-2	15W	G13	6500
U5CL2250-860 G13 1200-2	15W	G13	6000
U5CL2250-850 G13 1200-2	15W	G13	5000
U5CL2250-840 G13 1200-2	15W	G13	4000
U5CL2250-830 G13 1200-2	15W	G13	3000
U2CL1500-865 G13 1200-2	10W	G13	6500
U2CL1500-860 G13 1200-2	10W	G13	6000
U2CL1500-850 G13 1200-2	10W	G13	5000
U2CL1500-840 G13 1200-2	10W	G13	4000
U2CL1500-830 G13 1200-2	10W	G13	3000
U5CL1500-865 G13 1200-2	10W	G13	6500

U5CL1500-860 G13 1200-2	10W	G13	6000
U5CL1500-850 G13 1200-2	10W	G13	5000
U5CL1500-840 G13 1200-2	10W	G13	4000
U5CL1500-830 G13 1200-2	10W	G13	3000
U2CL1200-865 G13 1200-2	8W	G13	6500
U2CL1200-860 G13 1200-2	8W	G13	6000
U2CL1200-850 G13 1200-2	8W	G13	5000
U2CL1200-840 G13 1200-2	8W	G13	4000
U2CL1200-830 G13 1200-2	8W	G13	3000
U5CL1200-865 G13 1200-2	8W	G13	6500
U5CL1200-860 G13 1200-2	8W	G13	6000
U5CL1200-850 G13 1200-2	8W	G13	5000
U5CL1200-840 G13 1200-2	8W	G13	4000
U5CL1200-830 G13 1200-2	8W	G13	3000

So model U2CL2250-830 G13 1200-2 was chosen to perform all the tests. We listed the worst data in this report.

SUMMARY:

All tests according to the regulations cited on page 5 were.

■ - Performed
☐ - **Not** Performed
The Equipment Under Test
■ - **Fulfills** the general approval requirements.
☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: April 24, 2024

Testing Start Date: April 30, 2024

Testing End Date: May 17, 2024

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Reviewed by:	Prepared by:	Tested by:
Hui TONG	Wenqiang LU	Huali CHENG
Review Engineer	Project Engineer	Test Engineer

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7 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenove	E470	PF-OU5TS7 17/09

Test software: NA

The system was configured to channel 1, 18, and 36 for the test.

Non-hopping mode: The system was configured to operate at a signal channel transmitting. The test software allows the configuration and operation at the worst-case duty and the highest transmit power.

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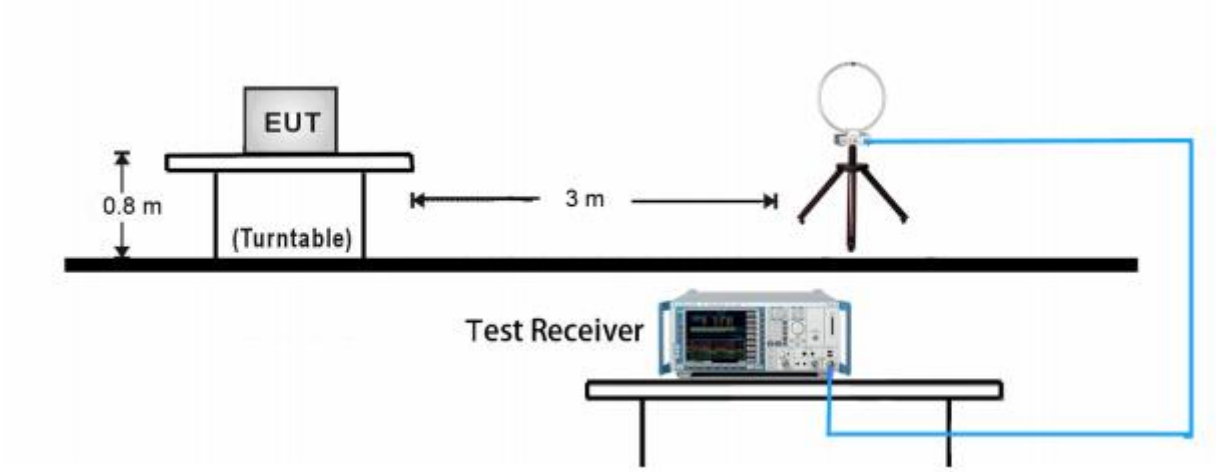
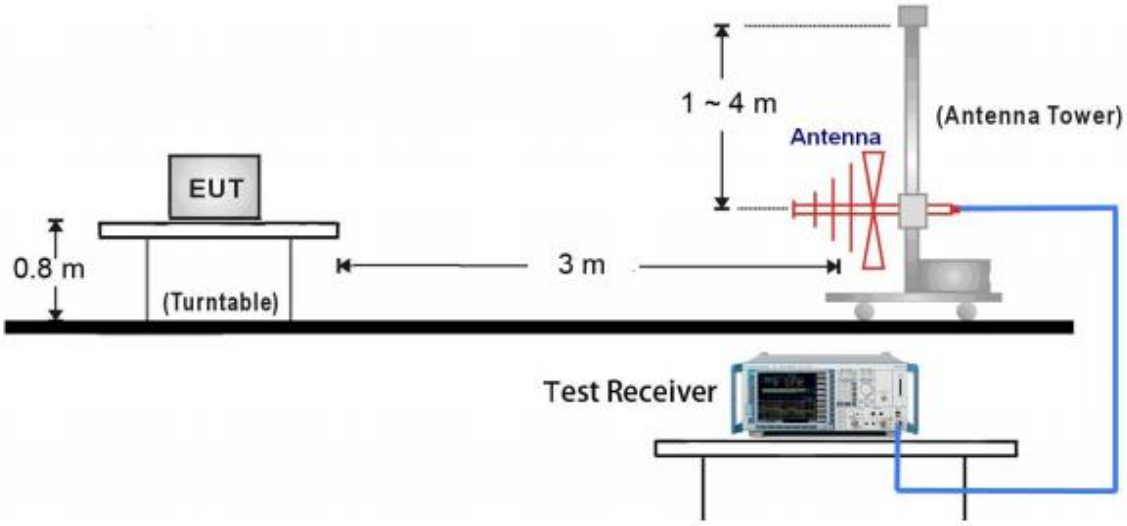
8 Test setups

8.1 Radiated test setups

9kHz ~ 30MHz Test Setup:



30MHz ~ 1GHz Test Setup:



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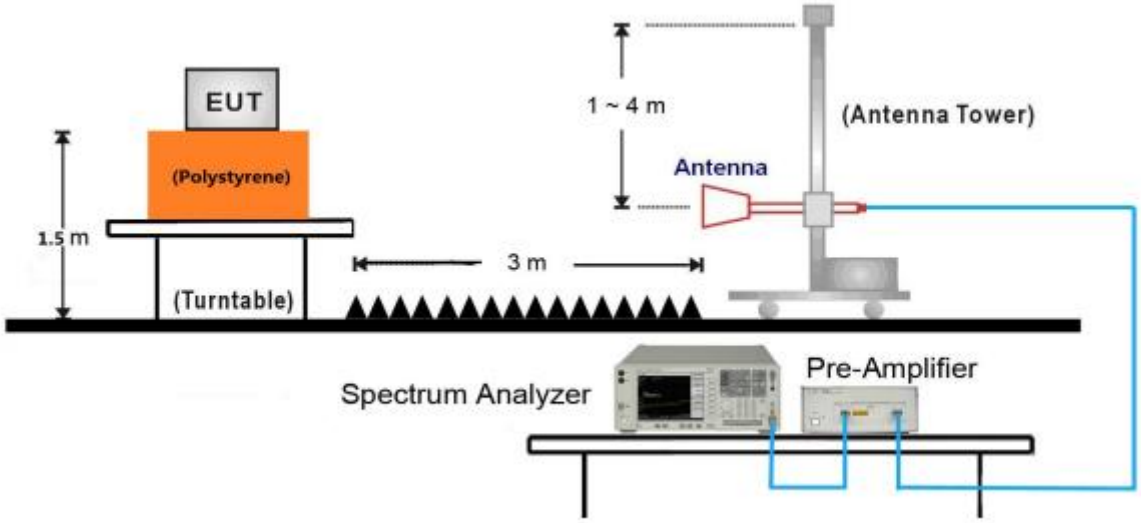
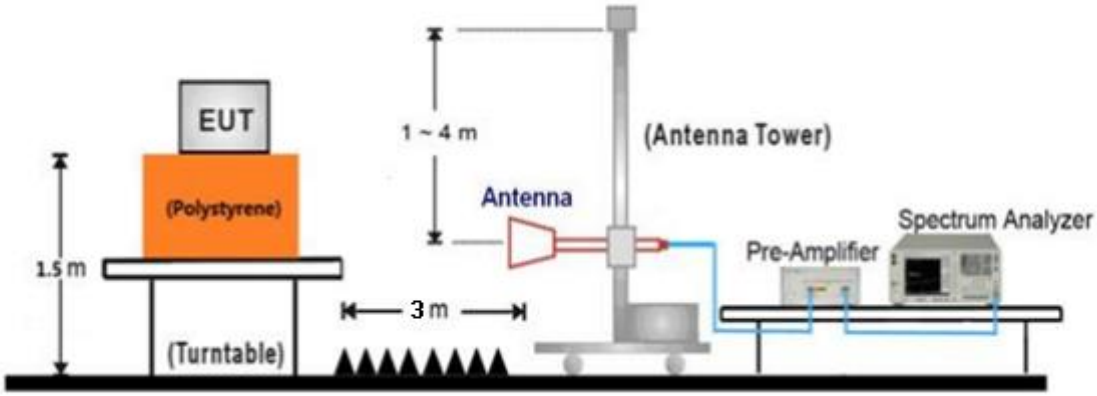
1GHz ~ 18GHz Test Setup:



18GHz ~ 40GHz Test Setup:



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9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. An EMI test receiver is used to test the emissions from both sides of AC line

Limits:

Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

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Conducted Emission

150k-30MHz Conducted Emission Test

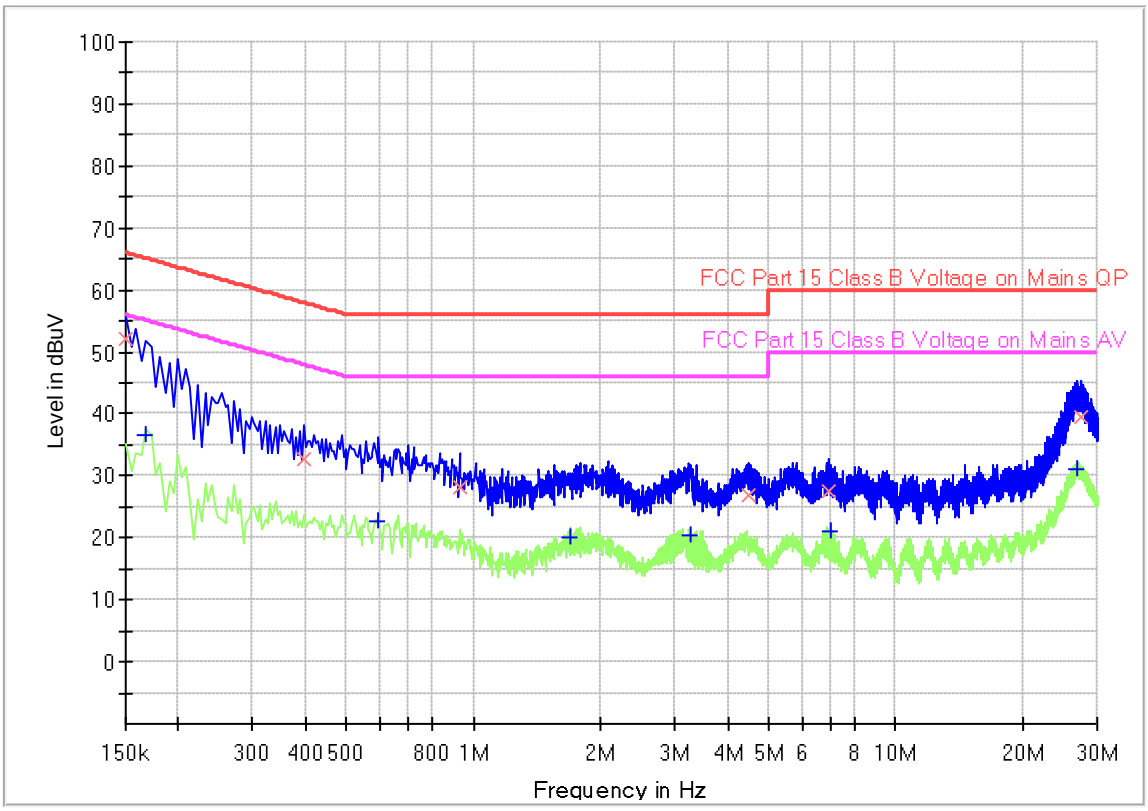
EUT Information

EUT Name:	T8 Tube
Model	U2CL2250-830 G13 1200-2
Client:	Zhejiang Lingzhu Technology CO., Ltd
Op Cond	Power on, TX_5840, AC 120V/60Hz, T21.2, H51.6%, P103.1kPa
Operator:	Huali CHENG
Standard	FCC 15.207(a)
Comment:	Phase L
Sample No.:	SHA-808518-5

Scan Setup: Voltage with 2-Line-LISN pre [EMI conducted]

Hardware Setup:	Voltage with 2-Line-LISN
Receiver:	[ESR 3]
Level Unit:	dBuV

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	100 Hz	PK+	200 Hz	0.02 s	0 dB
150 kHz - 30 MHz	4.5 kHz	PK+; AVG	9 kHz	0.01 s	0 dB



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Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	52.03	---	66.00	13.97	1000.0	9.000	L1	19.4
0.168000	---	36.43	55.06	18.63	1000.0	9.000	L1	19.4
0.397500	32.68	---	57.91	25.23	1000.0	9.000	L1	19.5
0.595500	---	22.80	46.00	23.20	1000.0	9.000	L1	19.4
0.928500	28.33	---	56.00	27.67	1000.0	9.000	L1	19.5
1.702500	---	20.23	46.00	25.77	1000.0	9.000	L1	19.5
3.277500	---	20.42	46.00	25.58	1000.0	9.000	L1	19.5
4.488000	26.74	---	56.00	29.26	1000.0	9.000	L1	19.6
6.913500	27.41	---	60.00	32.59	1000.0	9.000	L1	19.7
6.985500	---	21.15	50.00	28.85	1000.0	9.000	L1	19.7
26.952000	---	31.23	50.00	18.77	1000.0	9.000	L1	21.1
27.460500	39.41	---	60.00	20.59	1000.0	9.000	L1	21.1

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150k-30MHz Conducted Emission Test

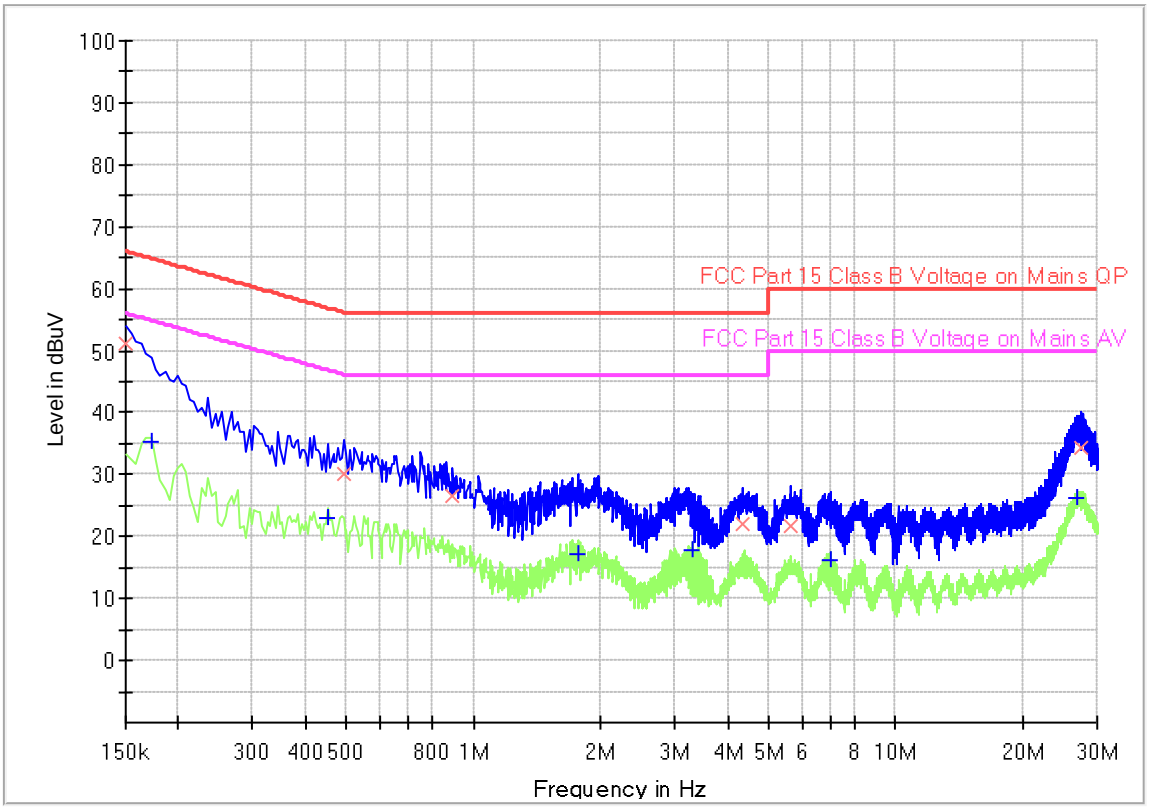
EUT Information

EUT Name:	T8 Tube
Model	U2CL2250-830 G13 1200-2
Client:	Zhejiang Lingzhu Technology CO., Ltd
Op Cond	Power on, TX_5840, AC 120V/60Hz, T21.2, H51.6%, P103.1kPa
Operator:	Huali CHENG
Standard	FCC 15.207(a)
Comment:	Phase N
Sample No.:	SHA-808518-5

Scan Setup: Voltage with 2-Line-LISN pre [EMI conducted]

Hardware Setup:	Voltage with 2-Line-LISN
Receiver:	[ESR 3]
Level Unit:	dBuV

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	100 Hz	PK+	200 Hz	0.02 s	0 dB
150 kHz - 30 MHz	4.5 kHz	PK+; AVG	9 kHz	0.01 s	0 dB



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Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	51.01	---	66.00	14.99	1000.0	9.000	N	19.4
0.172500	---	35.44	54.84	19.40	1000.0	9.000	N	19.4
0.451500	---	23.12	46.85	23.73	1000.0	9.000	N	19.5
0.492000	30.13	---	56.13	26.00	1000.0	9.000	N	19.5
0.892500	26.40	---	56.00	29.60	1000.0	9.000	N	19.5
1.765500	---	17.31	46.00	28.69	1000.0	9.000	N	19.5
3.300000	---	17.68	46.00	28.32	1000.0	9.000	N	19.5
4.353000	22.07	---	56.00	33.93	1000.0	9.000	N	19.6
5.617500	21.85	---	60.00	38.15	1000.0	9.000	N	19.6
7.003500	---	16.19	50.00	33.81	1000.0	9.000	N	19.6
26.920500	---	26.20	50.00	23.80	1000.0	9.000	N	20.6
27.397500	34.27	---	60.00	25.73	1000.0	9.000	N	20.7

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)
Factor (dB) = Cable Loss (dB) + LISN Factor (dB) + 10dB Attenuator

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9.2 Field Strength of the Fundamental Signal, Radiated Spurious Emissions and Band-edge

Test Method

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
3. Use the following spectrum analyzer settings:
   Span = wide enough to fully capture the emission being measured ,RBW = 1 MHz for f ≥ 1GHz, 100 kHz for f < 1 GHz, VBW ≥ RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the duty cycle per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log(duty cycle/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Limits

According to §15.249 (a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

According to §15.249 (c), Field strength limits are specified at a distance of 3 meters.
According to §15.249 (d), Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.
According to §15.205 and Unwanted emissions falling into restricted bands in §15.205 (a) Table 3 shall comply with the limits specified in §15.209.

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30MHz-1GHz:

30-1000MHz Radiated Emission Test

EUT Information

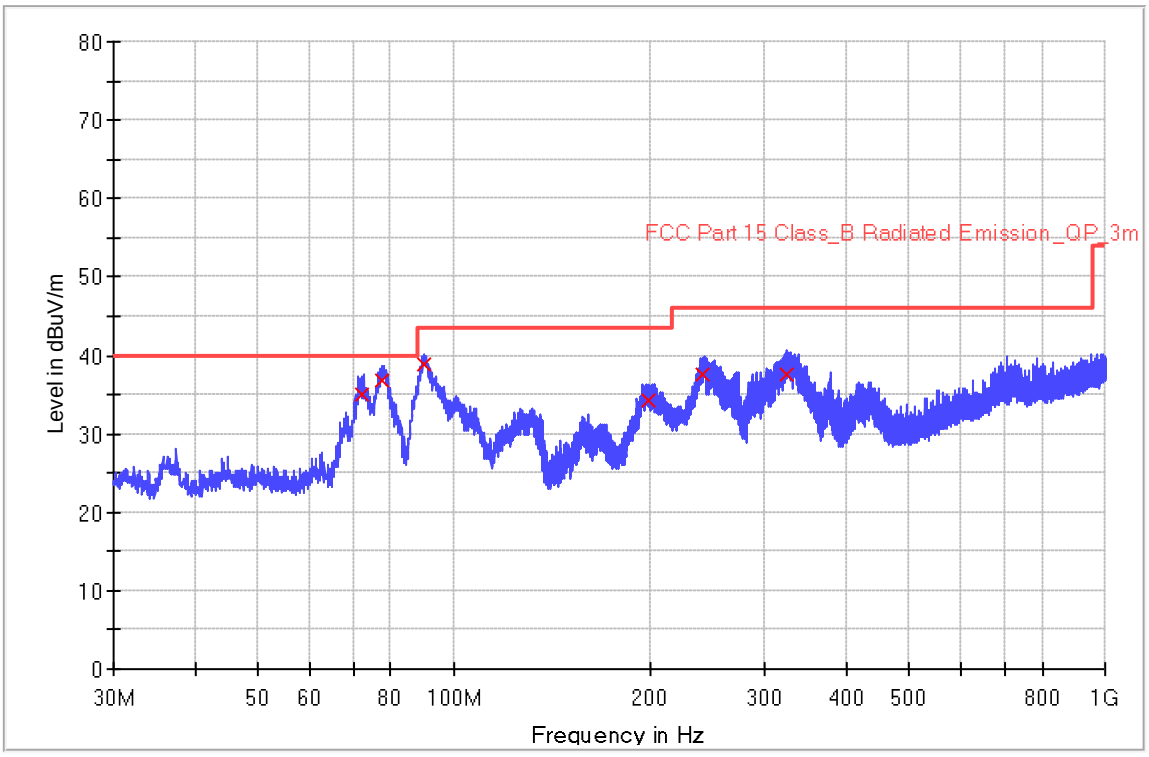
EUT Name:	T8 Tube
Model:	U2CL2250-830 G13 1200-2
Client:	Zhejiang Lingzhu Technology CO., Ltd
Op Cond:	Power on and TX_5840, AC 120V, 60Hz, T22.1, H53.3%, P101.2kPa
Operator:	Huali CHENG
Test Spec:	FCC Part 15
Comment:	Horizontal
Sample No:	SHA-808518-5

Sweep Setup: RE_VULB9168_pre_Cont_30-1000 [EMI radiated]

Hardware Setup:	RE_VULB9168
Receiver:	[ESR 3]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48.5 kHz	PK+	120 kHz	0.005 s	20 dB

RE_VULB9168_pre_Cont_30-1000



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
72.160000	35.1	1000.0	120.000	135.0	H	85.0	18.1	4.9	40.0
77.400000	36.8	1000.0	120.000	185.0	H	95.0	16.8	3.2	40.0
89.720000	38.8	1000.0	120.000	198.0	H	123.0	14.7	4.7	43.5
198.720000	34.2	1000.0	120.000	135.0	H	226.0	17.7	9.3	43.5
241.360000	37.6	1000.0	120.000	112.0	H	315.0	19.6	8.4	46.0
323.200000	37.7	1000.0	120.000	110.0	H	103.0	22.4	8.3	46.0

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30-1000MHz Radiated Emission Test

EUT Information

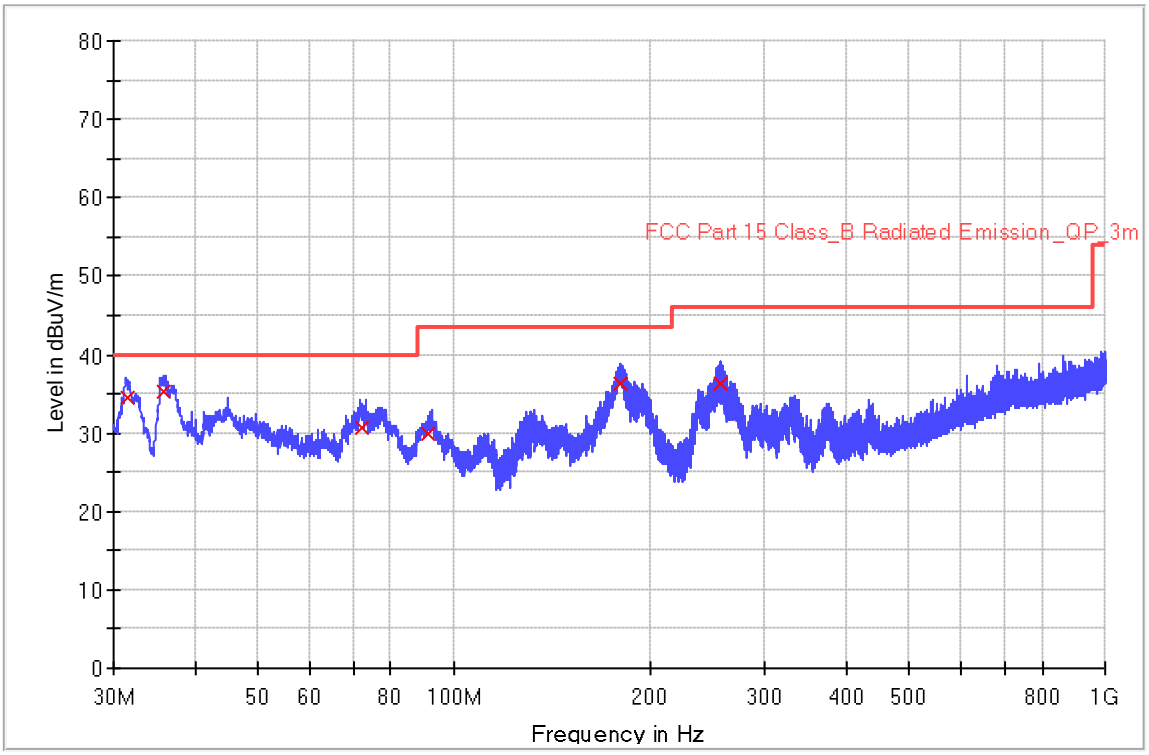
EUT Name:	T8 Tube
Model:	U2CL2250-830 G13 1200-2
Client:	Zhejiang Lingzhu Technology CO., Ltd
Op Cond:	Power on and TX_5840, AC 120V, 60Hz, T22.1, H53.3%, P101.2kPa
Operator:	Huali CHENG
Test Spec:	FCC Part 15
Comment:	Vertical
Sample No:	SHA-808518-5

Sweep Setup: RE_VULB9168_pre_Cont_30-1000 [EMI radiated]

Hardware Setup:	RE_VULB9168
Receiver:	[ESR 3]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48.5 kHz	PK+	120 kHz	0.005 s	20 dB

RE_VULB9168_pre_Cont_30-1000



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
31.440000	34.6	1000.0	120.000	101.0	V	21.0	19.4	5.4	40.0
35.800000	35.2	1000.0	120.000	100.0	V	11.0	19.7	4.8	40.0
71.960000	30.6	1000.0	120.000	123.0	V	109.0	18.2	9.4	40.0
91.440000	29.9	1000.0	120.000	110.0	V	95.0	15.0	13.6	43.5
179.480000	36.3	1000.0	120.000	102.0	V	325.0	19.4	7.2	43.5
256.360000	36.2	1000.0	120.000	121.0	V	240.0	19.9	9.8	46.0

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Above 1GHz:

Tx at channel 1: 5735MHz

Antenna polarization	Frequency (MHz)	Duty Cycle Factor(dB)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
H	#5737.1	0	87.67	114	26.33	PK
H	*11474.6	0	52.00	74	22.00	PK
V	#5737.1	0	85.35	114	28.65	PK
V	*11474.1	0	50.89	74	23.11	PK

Tx at channel 18: 5786MHz

Antenna polarization	Frequency (MHz)	Duty Cycle Factor(dB)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
H	#5784.9	0	85.50	114	28.50	PK
H	*11569.7	0	48.95	74	25.05	PK
V	#5784.9	0	87.78	114	26.22	PK
V	*11570.2	0	49.97	74	24.03	PK

Tx at channel 36: 5840MHz

Antenna polarization	Frequency (MHz)	Duty Cycle Factor(dB)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
H	#5840.2	0	87.90	114	26.10	PK
H	*11680.7	0	50.14	74	23.86	PK
V	#5840.2	0	87.14	114	26.86	PK
V	*11680.7	0	50.69	74	23.31	PK

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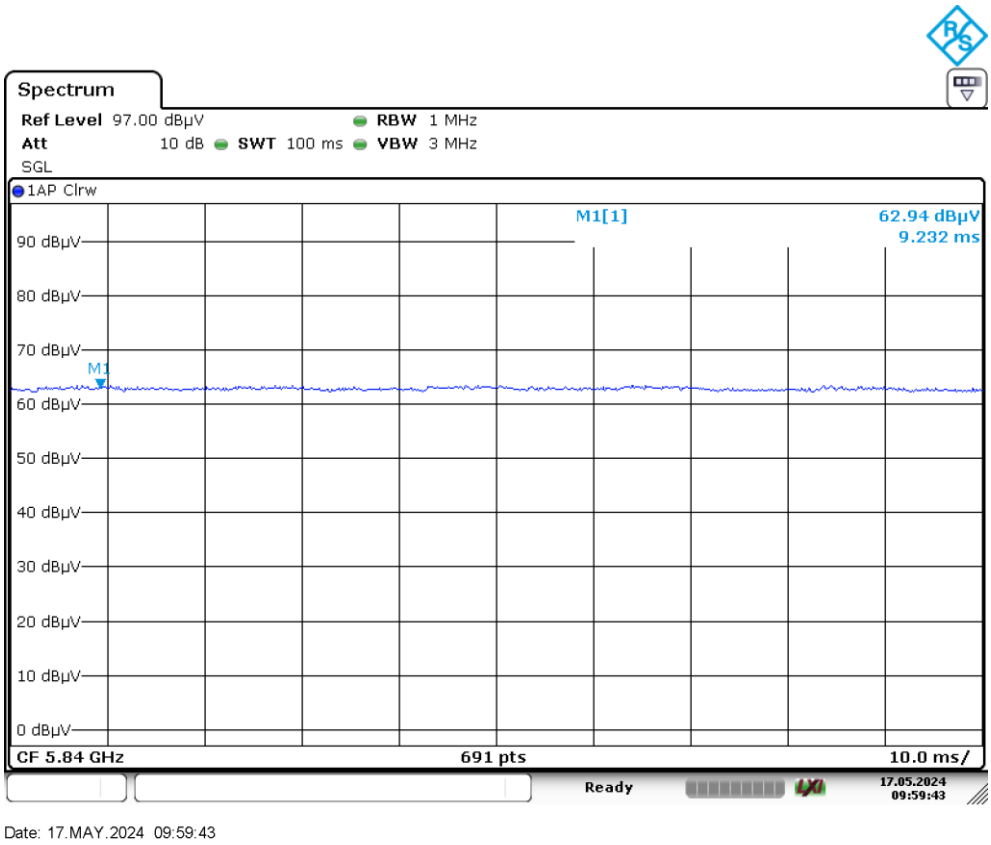
According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

The only worse case test result is listed in the report.

Remark:

1) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Pre-amplifier
   Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
   Emission Level =Reading level +Correction Factor
   (The Reading Level is recorded by software which is not shown in the sheet)
2) If the Peak value below the AV Limit, the AV test doesn't perform for this submission.
3) The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.
4) Average= Peak+ Duty Cycle factor.
5) "*" is spurious emissions frequency
6) "#" is fundamental frequency.

TX Duty cycle: 100 %.
Duty Cycle Factor =20log (Duty Cycle) = 0 db.



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9.3 20dB Bandwidth

Test Method

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.

Limits:

According to 15.215 (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

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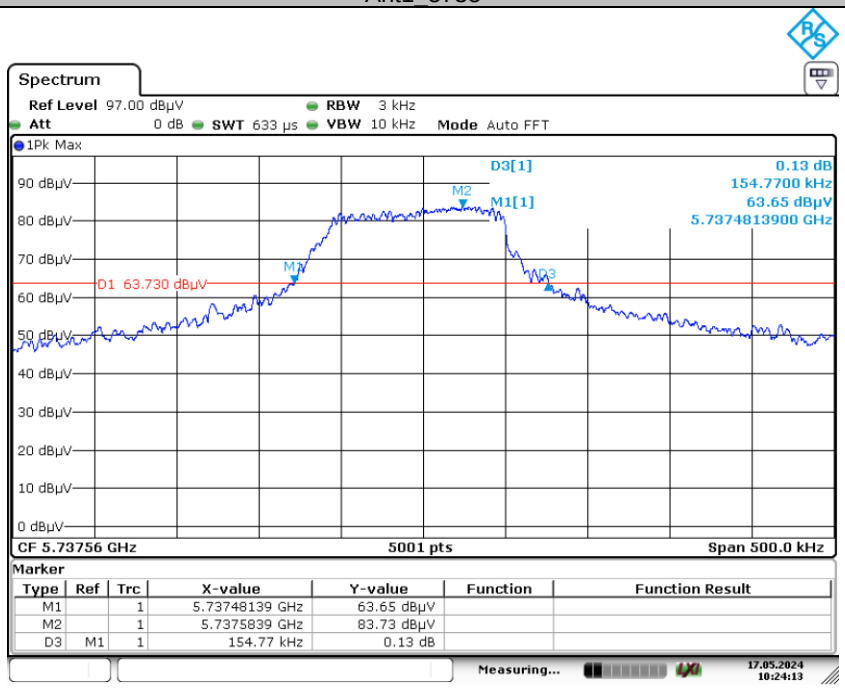
20dB Bandwidth

Frequency MHz	20dB Bandwidth MHz	Result
5735	0.15477	Pass
5786	0.15563	Pass
5840	0.17120	Pass

Ant1_5735



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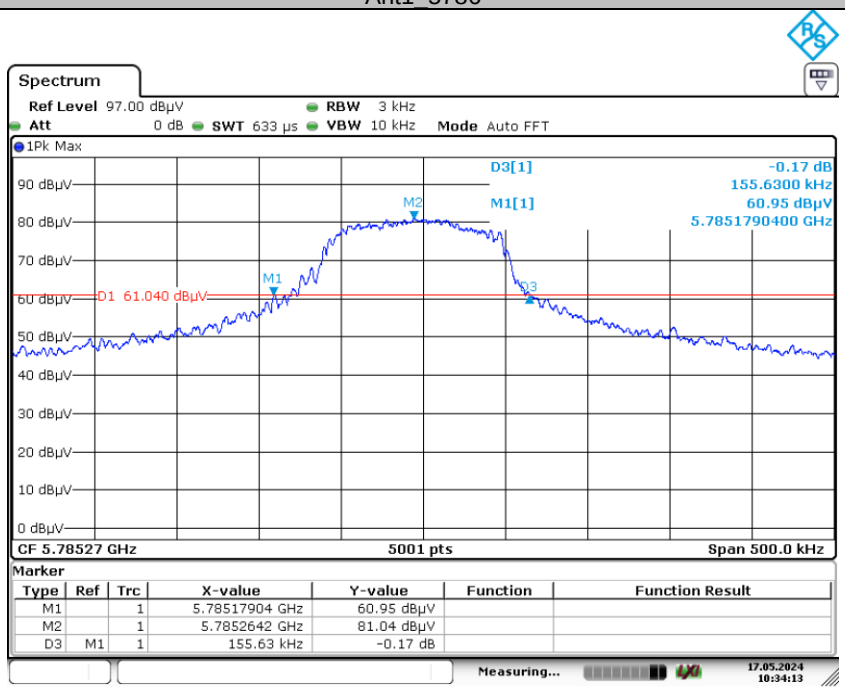
Ant1_5786



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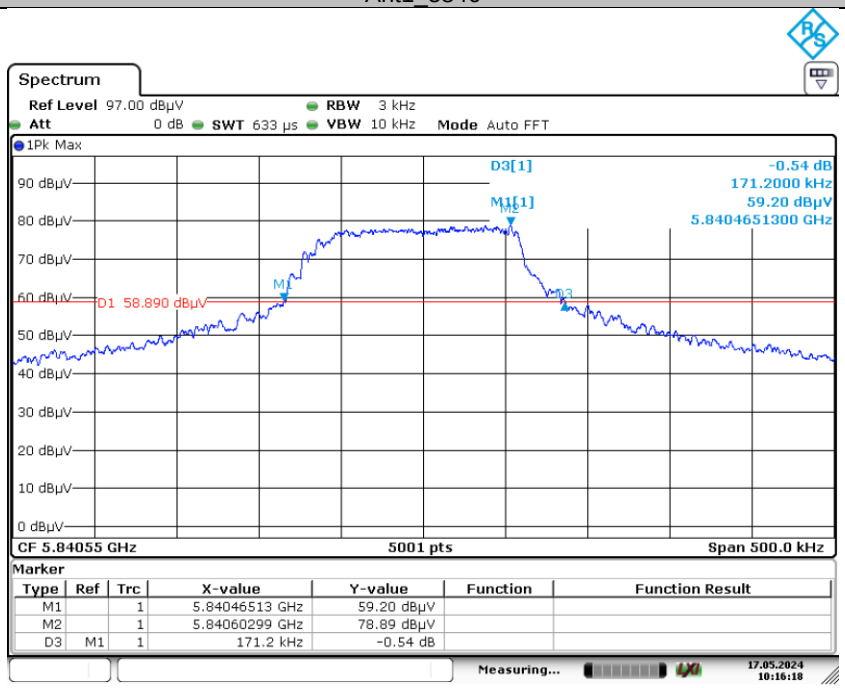
Ant1_5840



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10 Test equipment list

List of Test Instruments

Test Site1

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
RE	EMI Test Receiver	Rohde & Schwarz	ESR3	101906	2023-8-1	2024-7-31
	Signal Analyzer	Rohde & Schwarz	FSV40	101091	2023-8-1	2024-7-31
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	961	2019-9-23	2024-9-22
	Horn Antenna	Rohde & Schwarz	HF907	102393	2024-4-14	2027-4-13
	Pre-amplifier	Rohde & Schwarz	SCU-18D	19006451	2023-8-1	2024-7-31
	Loop antenna	Rohde & Schwarz	HFH2-Z2	100443	2023-6-15	2024-6-14
	DOUBLE-RIDGED WAVEGUIDE HORN WITH PRE-AMPLIFIER (18 GHZ - 40 GHZ)	ETS-Lindgren	3116C-PA	002222727	2023-7-7	2026-7-6
	3m Semi-anechoic chamber	TDK	9X6X6	----	2021-5-8	2024-5-7
	3m Semi-anechoic chamber	TDK	9X6X6	----	2024-5-8	2027-5-7

Measurement Software Information			
Test Item	Software	Manufacturer	Version
RE	EMC 32	Rohde & Schwarz	V10.50.40

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11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Conducted Disturbance at Mains Terminals	150kHz to 30MHz, LISN, 3.16dB
Radiated Disturbance	30MHz to 1GHz, 5.03dB (Horizontal) 5.12dB (Vertical) 1GHz to 18GHz, 5.49dB 18GHz to 40GHz, 5.63dB
Carrier power conducted measurement	50MHz~18GHz, 1.238dB
Spurious Emission Conducted Measurement	9kHz ~40GHz, 1.224dB

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.

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12 Photographs of Test Set-ups

Refer to report 709502402525-00A.

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13 Photographs of EUT

Refer to report 709502402525-00A.

----------End of Test Report----------

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