



FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

HANSHOW TECHNOLOGY CO., LTD.

DIGITAL SIGNAGE

Model Number: Lumina Pro 1010-D2

FCC ID: 2AYMH-LUMINAD2

Applicant:	HANSHOW TECHNOLOGY CO., LTD.
Address:	Building 1 (IF podium building and 4F) and Building 5 (7F) in Jiaxing
	Photovoltaic High-tech Park, No.1288 Kanghe Rd., Xiuzhou
	District, Jiaxing Zhejiang, China
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R2608132
Date of Test:	Jul. 11, 2026 to Aug. 15, 2026
Date of Report:	Aug. 21, 2026

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Applicant: Address:	HANSHOW TECHNOLOGY CO., LTD. Building 1(IF podium building and 4F) and Building 5 (7F) in Jiaxing Photovolta High-tech Park, No. 1288 Kanghe Rd., Xiuzhou District, Jiaxing, Zhejiang, China		
Manufacturer: Address:	HANSHOW TECHNOLOGY CO., LTD. Building 1(IF podium building and 4F) and Building 5 (7F) in Jiaxing Photovolta High-tech Park, No. 1288 Kanghe Rd., Xiuzhou District, Jiaxing, Zhejiang, China		
E.U.T:	DIGITAL SIGNAGE		
Model Number:	Lumina Pro 1010-D2		
Power Supply:	DC 12-24V		
Trade Name:	N/A	Sample No.:	EST-260703012-002
Date of Receipt:	Jul. 11, 2026	Date of Test:	Jul. 11, 2026 to Aug. 15, 2026
Test Specification:	FCC Part 15 Subpart C (15.249) ANSI C63.10:2020		
Test Result:	The device described above is tested by EST Technology Co., Ltd. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: Aug. 24, 2026		

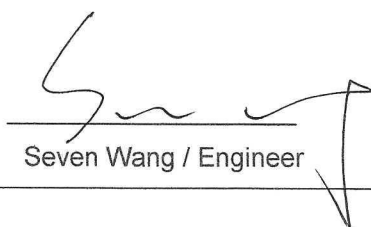
Prepared by:

Reviewed by:

Approved by:

Zephyr Zhu

Zephyr Zhu / Assistant



Seven Wang / Engineer



Iceman Hu / Manager

Other Aspects:
None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products, It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd. The statement of compliance in this report is based on the limit in the test standard, the measurement uncertainty is not considered.

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name	:	DIGITAL SIGNAGE
Model Number	:	Lumina Pro 1010-D2
Software Version	:	N/A
Hardware Version	:	N/A
Operation frequency	:	2402MHz-2480MHz
Number of channel	:	157
Field Strength of Fundamental	:	59.57 dB μ V/m@3m
Modulation Type	:	GFSK
Sample Type	:	Prototype production
Note: The product information is provided by the manufacturer. The laboratory is not responsible for this data.		

1.2. Antenna Information

Ant No.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	-	PCB	-	-0.07
Note:					
1.The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain.					
2.The test results of this report only apply to the sample as received.					

1.3. Information of RF Cable

Cable Loss(dB)	Provided by
1.0	Vesync (US) Corporation
Note:	
1.The customer declared the loss value of the RF Cable. and the test results of this report only apply to the sample as received.	
2.The laboratory is not responsible for the accuracy of the cable loss.	

2. SUMMARY OF TEST

2.1. Summary of test result

No.	Description of Test Item	FCC Standard Section	Results
1	Field Strength of Fundamental	15.249(a)	PASS
2	Radiated Spurious Emissions and Band Edge	15.205 15.209 15.249(a)(c)(d)(e) 15.35(b)	PASS
3	20dB Bandwidth	15.215	PASS
4	AC Power Line Conducted Emissions	15.207	PASS
5	Antenna Requirement	15.203	PASS

Note: "N/A" denotes test is not applicable in this test report.

2.2. Test Facilities

EMC Lab : Accredited by CNAS, CHINA
Registration No.: L5288
This Accreditation is valid until: November 12, 2029

Recognized by FCC, USA
Designation Number: CN1215
This Recognition is valid until: January 31, 2028

Accredited by A2LA, USA
Registration No.: 4366.01
This Accreditation is valid until: January 31, 2028

Recognized by Industry Canada
CAB identifier No.: CN0035
This Recognition is valid until: January 31, 2028

Recognized by VCCI, Japan
Registration No.:C-14103; T-20073; R-13663;
R-20103; G-20097
Date of registration: Apr. 20, 2026
This Recognition is valid until: Apr. 19, 2029

Recognized by TUV Rheinland, Germany
Registration No.: UA 50413872 0001
Date of registration: July 31, 2018

Recognized by Intertek
Registration No.: 2011-RTL-L2-64
Date of registration: November 08, 2018

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,
Guangdong, China

2.3. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for conducted RF Power	0.53dB
Uncertainty for Conduction emission test	0.46dB
Uncertainty for Power density test	0.46dB
Uncertainty for radio frequency	2×10^{-5}
Uncertainty for spurious emissions test (9kHz-30MHz)	± 2.88

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

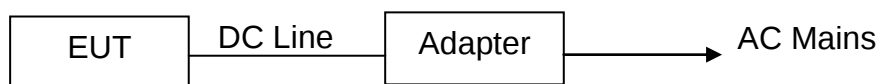
2.4. Assistant Equipment Used For Test

Item	Equipment	Brand	Model Name/Type No.	FCC ID	Series No.
A1	Adapter 1	-	20102M-120300C	-	-
A2	Adapter 2	-	ADP-96H24	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.1m	DC Cable
2	NO	NO	1.0m	DC Cable

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was beset into test mode by software before test.



DC 24V/12V From Adapter Input AC 120V/60Hz

(EUT: DIGITAL SIGNAGE)

2.6. Test Mode

The test mode was selected for the final test as listed below.

Test Item	Test Mode	Test Channel
Field Strength of Fundamental	TX	Low/Middle/High
Radiated Spurious Emissions	TX	Low/Middle/High
20dB Bandwidth	TX	Low/Middle/High
AC Power Line Conducted Emissions	TX	Low/Middle/High

Note: In radiated measurement, the EUT had been pre-scan on the positioned of each 3 axis(X,Y,Z), the worst case was found when positioned on **X-plane**.

2.7. Power Setting of Test Software

Software Name	N/A		
Frequency(MHz)	2402	2441	2480
Setting	default	default	default

Note: This information is provided by the applicant.

2.8. Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
4	2402	44	2422	84	2442	124	2462
5	2402.5	45	2422.5	85	2442.5	125	2462.5
6	2403	46	2423	86	2443	126	2463
7	2403.5	47	2423.5	87	2443.5	127	2463.5
8	2404	48	2424	88	2444	128	2464
9	2404.5	49	2424.5	89	2444.5	129	2464.5
10	2405	50	2425	90	2445	130	2465
11	2405.5	51	2425.5	91	2445.5	131	2465.5
12	2406	52	2426	92	2446	132	2466
13	2406.5	53	2426.5	93	2446.5	133	2466.5
14	2407	54	2427	94	2447	134	2467
15	2407.5	55	2427.5	95	2447.5	135	2467.5
16	2408	56	2428	96	2448	136	2468
17	2408.5	57	2428.5	97	2448.5	137	2468.5
18	2409	58	2429	98	2449	138	2469
19	2409.5	59	2429.5	99	2449.5	139	2469.5
20	2410	60	2430	100	2450	140	2470
21	2410.5	61	2430.5	101	2450.5	141	2470.5
22	2411	62	2431	102	2451	142	2471
23	2411.5	63	2431.5	103	2451.5	143	2471.5
24	2412	64	2432	104	2452	144	2472
25	2412.5	65	2432.5	105	2452.5	145	2472.5
26	2413	66	2433	106	2453	146	2473
27	2413.5	67	2433.5	107	2453.5	147	2473.5
28	2414	68	2434	108	2454	148	2474
29	2414.5	69	2434.5	109	2454.5	149	2474.5
30	2415	70	2435	110	2455	150	2475
31	2415.5	71	2435.5	111	2455.5	151	2475.5
32	2416	72	2436	112	2456	152	2476
33	2416.5	73	2436.5	113	2456.5	153	2476.5
34	2417	74	2437	114	2457	154	2477
35	2417.5	75	2437.5	115	2457.5	155	2477.5
36	2418	76	2438	116	2458	156	2478
37	2418.5	77	2438.5	117	2458.5	157	2478.5
38	2419	78	2439	118	2459	158	2479
39	2419.5	79	2439.5	119	2459.5	159	2479.5
40	2420	80	2440	120	2460	160	2480
41	2420.5	81	2440.5	121	2460.5	-	-
42	2421	82	2441	122	2461	-	-
43	2421.5	83	2441.5	123	2461.5	-	-

2.9. Test Equipment List

For conducted emission test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR3	EST-E141	Jun. 11, 2026	Jun. 10, 2027
Artificial Mains Network	Rohde & Schwarz	ENV216	EST-E145	Jun. 11, 2026	Jun. 10, 2027
V-LISN	SCHWARZBECK	NNLK 8121	EST-E159	Jun. 11, 2026	Jun. 10, 2027
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	EST-E147	Jun. 11, 2026	Jun. 10, 2027
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A

NOTE: Test uncertainty: $\pm 3.38\text{dB}$ at a level of confidence of 95%. (3#CE)

For radiated emission test(9kHz-30MHz)					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR3	EST-E049	Jun. 11, 2026	Jun. 10, 2027
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	EST-E054	Jun. 11, 2026	Jun. 10, 2027
Cable	/	/	EST-E314	Jun. 11, 2026	Jun. 10, 2027
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A

For radiated emissions test (30MHz-1000MHz)					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E105	Jun. 11, 2026	Jun. 10, 2027
Bilog Antenna	Teseq	CBL 6111D	EST-E104	Jun. 11, 2026	Jun. 10, 2027
Cable	/	/	EST-E327	Jun. 11, 2026	Jun. 10, 2027
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A

Note: Test uncertainty: $\pm 4.74\text{ dB (H)}$; $\pm 4.98\text{ dB (V)}$ at a level of confidence of 95%. (5#966)

For radiated emission test(Above 1000MHz)					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	SCHWARZBECK	BBHA9120D	EST-E144	Jun. 11, 2026	Jun. 10, 2027
Horn Antenna	Com-Power	AHA-840	EST-E133	Jun. 11, 2026	Jun. 10, 2027
Low Noise Amplifier	RF	TRLA-010180G45N	EST-E142	Jun. 11, 2026	Jun. 10, 2027
Spectrum Analyzer	Rohde & Schwarz	FSV40	EST-E069	Jun. 11, 2026	Jun. 10, 2027
5#966Cable	/	/	EST-E310	Jun. 11, 2026	Jun. 10, 2027
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A

Note: Test uncertainty: $\pm 5.08\text{ dB (1GHz-18GHz)}$; $\pm 5.10\text{ dB (18GHz-40GHz)}$ at a level of confidence of 95%.

For connect EUT antenna terminal test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
TS 1120	Tonscend	/	/	/	/
Test Software	Tonscend	TS1120-3	3.5.39	/	/
RF Control Unit	Tonscend	JS0806-2	EST-E134	Jun. 11, 2026	Jun. 10, 2027
Signal and Spectrum Analyzer	Keysight	N9010B	EST-E143	Jun. 11, 2026	Jun. 10, 2027

Note: All calibration reports of the equipment were provided by LiSai calibration and Testing

3. FIELD STRENGTH OF FUNDAMENTAL

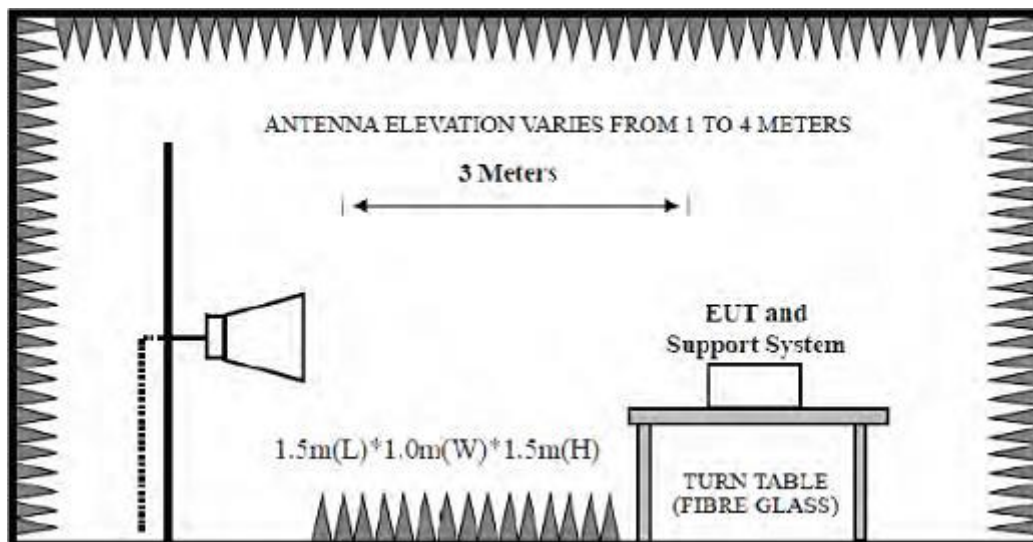
3.1. Limit

Fundamental frequency	Field strength of fundamental@3m (millivolts/meter)	Average Limit@3m dBμV/m	Peak Limit@3m dBμV/m
902-928MHz	50	94	114
2400-2483.5MHz	50	94	114
5725-5875MHz	50	94	114
24.0-24.25	250	108	128

Note:

1. Average Limit (dBμV/m)= $20 \times \log[1000 \times \text{Field Strength (mV/m)}]$.
2. Peak Limit (dBμV/m)= Average Limit (dBμV/m)+20dB

3.2. Test Setup



3.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	≥OBW
VBW	3×RBW
Start frequency	2400MHz
Stop frequency	2483.5MHz
Sweep Time	Auto
Detector	PEAK/AVG
Trace Mode	Max Hold

3.4. Test Procedure

- a. EUT was placed on a turn table, which is 1.5 meter high above the ground.
- b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- c. Spectrum analyzer setting parameters in accordance with section 3.3.
- d. Set the EUT transmit continuously with maximum output power.
- e. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- f. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test,record the average and peak value.
- g. Repeat above procedures until all channels were measured.
- h. Record the results in the test report.

3.5. Test Result

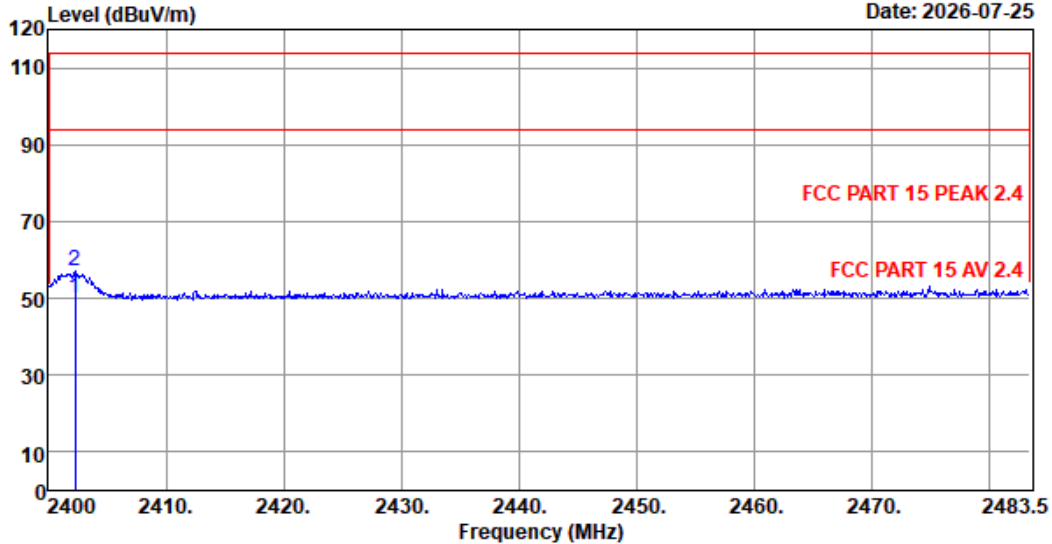
Test frequency (MHz)	Fundamental frequency (MHz)	Field strength of fundamental level (dB μ V/m)		Limit (dB μ V/m)		Result	Antenna Pole (H/V)
		Avg	Peak	Avg	Peak		
2402	2402.42	50.83	59.57	94	114	Pass	V
	2402.25	49.97	56.97	94	114	Pass	H
2441	2441.42	49.51	58.53	94	114	Pass	V
	2441.33	49.48	56.82	94	114	Pass	H
2480	2479.91	49.52	58.94	94	114	Pass	V
	2480.24	51.51	55.70	94	114	Pass	H

Low Channel(2402MHz)

EST Technology

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Data: 23 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 23
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2402MHz
Sample No. : EST-260703012-002

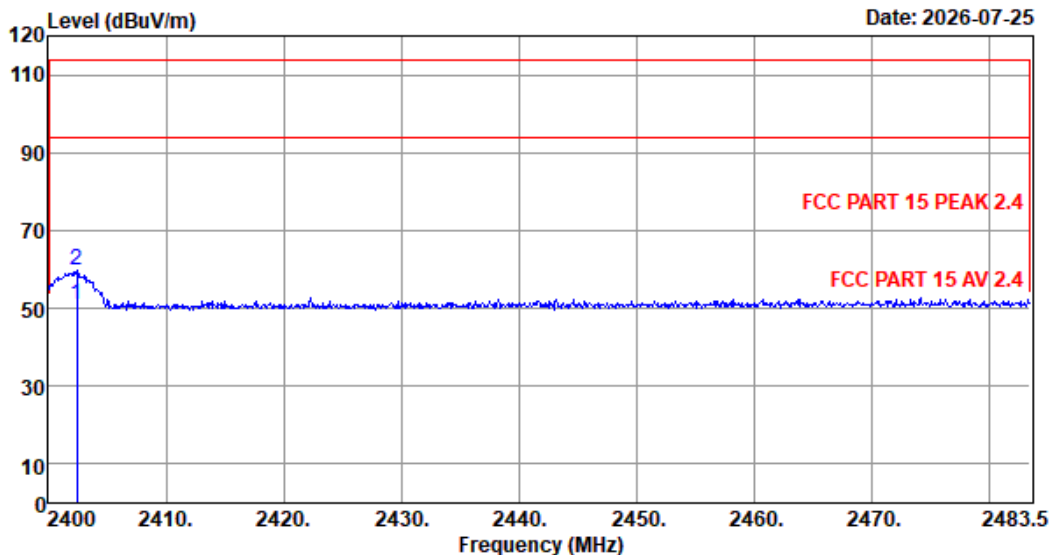
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2402.25	27.60	4.40	62.10	49.97	94.00	44.03	Average
2	2402.25	27.60	4.40	69.10	56.97	114.00	57.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 24 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 24
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2402MHz
Sample No. : EST-260703012-002

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2402.42	27.60	4.40	62.96	50.83	94.00	43.17	Average
2	2402.42	27.60	4.40	71.70	59.57	114.00	54.43	Peak

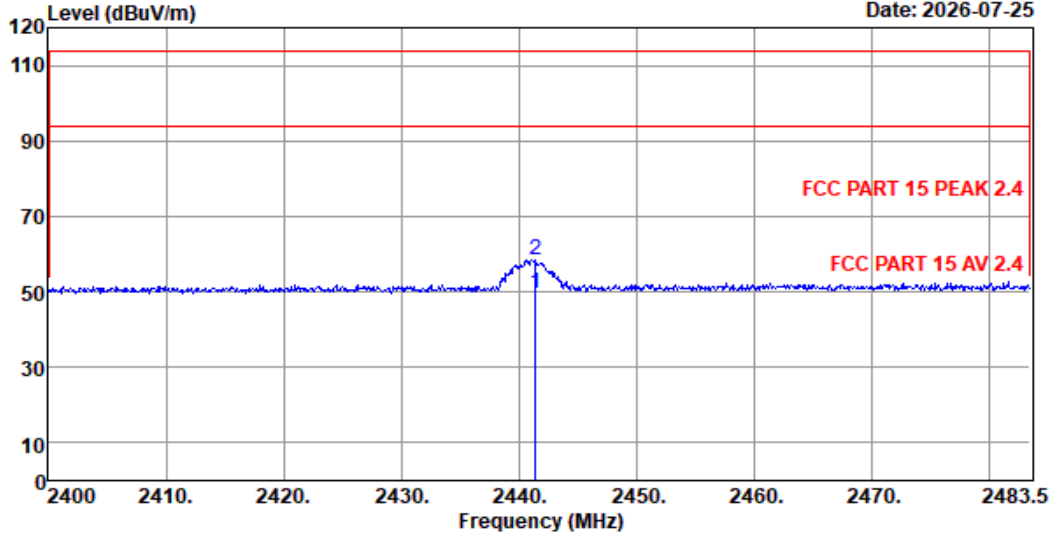
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

Middle Channel(2441MHz)

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Data: 25 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 25
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2441MHz
Sample No. : EST-260703012-002

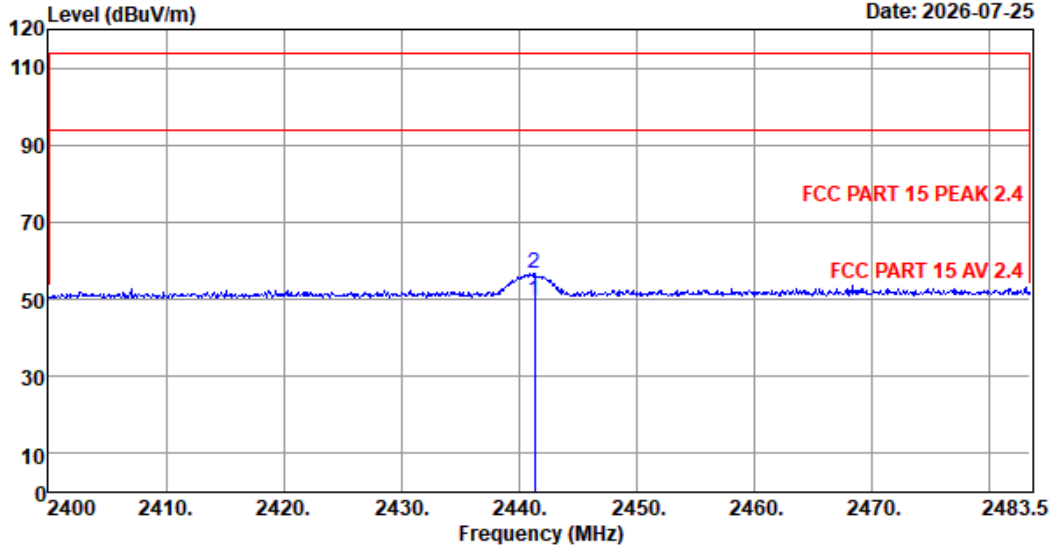
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2441.42	27.80	4.44	61.34	49.51	94.00	44.49	Average
2	2441.42	27.80	4.44	70.36	58.53	114.00	55.47	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 26 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 26
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2441MHz
Sample No. : EST-260703012-002

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2441.33	27.80	4.44	61.31	49.48	94.00	44.52	Average
2	2441.33	27.80	4.44	68.65	56.82	114.00	57.18	Peak

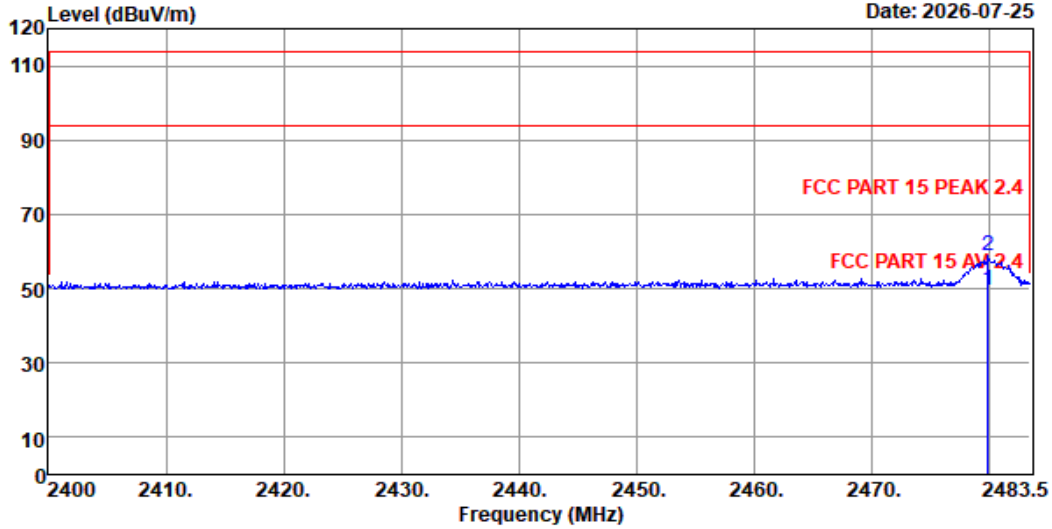
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

High Channel(2480MHz)

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Data: 21 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 21
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2480MHz
Sample No. : EST-260703012-002

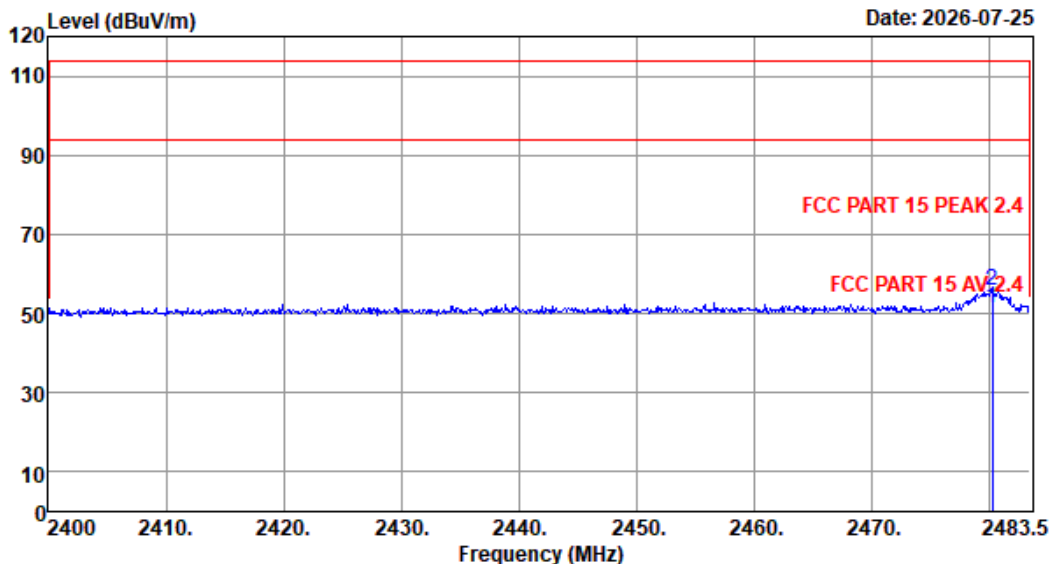
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2479.91	27.93	4.47	61.15	49.52	94.00	44.48	Average
2	2479.91	27.93	4.47	70.57	58.94	114.00	55.06	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 22 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 22
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2480MHz
Sample No. : EST-260703012-002

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.24	27.93	4.47	63.14	51.51	94.00	42.49	Average
2	2480.24	27.93	4.47	67.33	55.70	114.00	58.30	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

4. RADIATED SPURIOUS EMISSIONS AND BAND EDGE

4.1. Limit

- (a) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of harmonics@3m (microvolts/meter)	Average Limit@3m dBμV/m	Peak Limit@3m dBμV/m
902-928MHz	500	54	74
2400-2483.5MHz	500	54	74
5725-5875MHz	500	54	74
24.0-24.25	2500	68	88

- (b) Field strength limits are specified at a distance of 3 meters.
(c) 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.

15.209 Radiated emission limits

Frequency (MHz)	Field Strength(μV/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 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	(²)

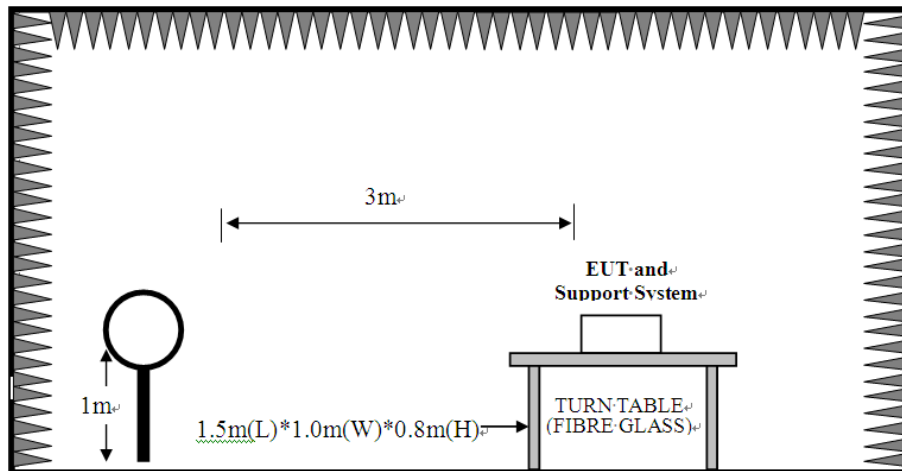
- (d) As shown in §15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation

Note:

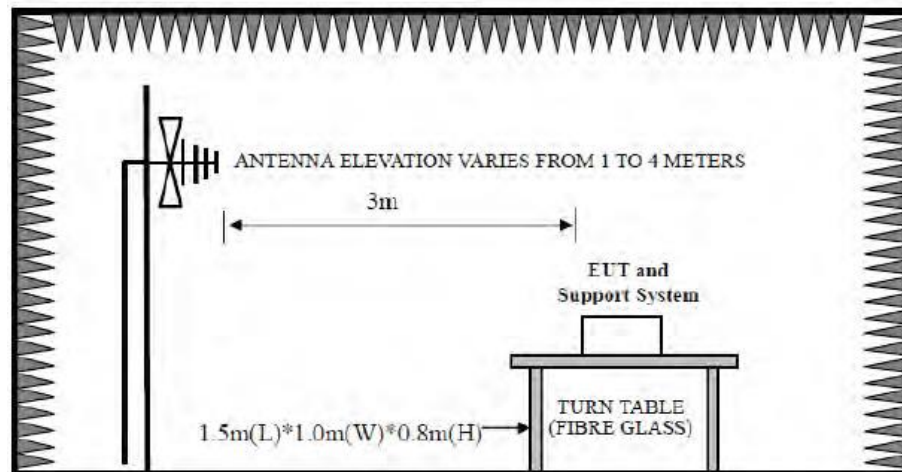
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$.
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.2. Test Setup

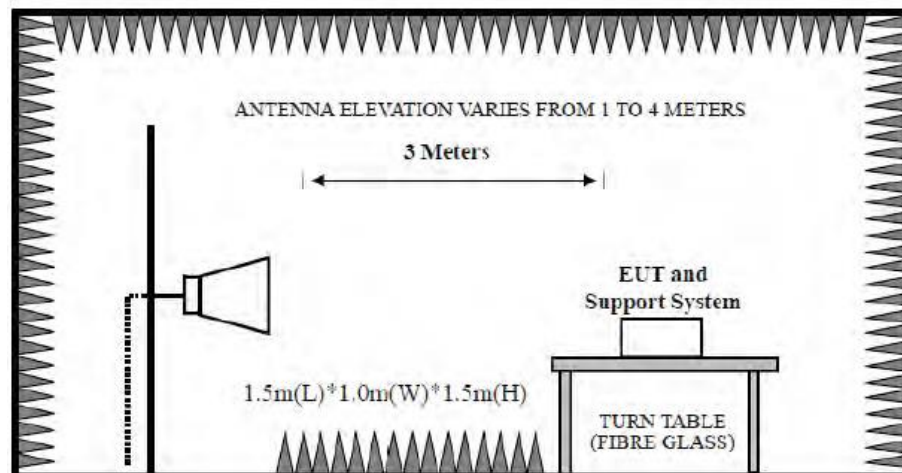
9kHz~30MHz



30~1000MHz



Above 1GHz



4.3. Spectrum Analyzer Setting

For 9KHz-150KHz

Spectrum Parameters	Setting
RBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
VBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
Start frequency	9KHz
Stop frequency	150KHz
Sweep Time	Auto
Detector	PEAK/QP/AVG
Trace Mode	Max Hold

For 150KHz-30MHz

Spectrum Parameters	Setting
RBW	9KHz
VBW	9KHz
Start frequency	150KHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

For 30MHz-1000MHz

Spectrum Parameters	Setting
RBW	120KHz
VBW	300KHz
Start frequency	30MHz
Stop frequency	1000MHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

For Above 1GHz

Spectrum Parameters	Setting
RBW	1MHz
VBW	3MHz
Start frequency	1GHz
Stop frequency	10 Times Carrier Frequency
Sweep Time	Auto
Detector	PEAK
Trace Mode	Max Hold

4.4. Test Procedure

- a. EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test, and which is 1.5 meter high above ground for above 1GHz test.
- b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- c. Set the EUT transmit continuously with maximum output power.
- d. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- e. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- f. Spectrum analyzer setting parameters in accordance with section 4.3.
- g. Repeat above procedures until all channels were measured.
- h. Record the results in the test report.

Note:

1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
2. The frequency 2402MHz/2441MHz/2480MHz are fundamental frequency.

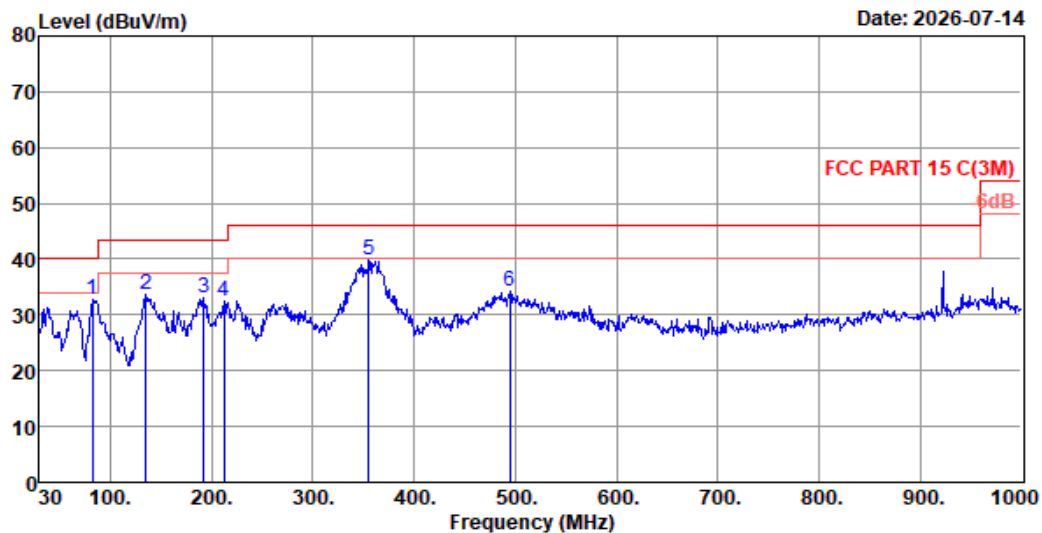
4.5. Test Result

Radiated Emissions Below 1GHz

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Data: 37 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 37
Dis. / Ant. : 3m 54681 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:20.3°C;Humi:49%;Press:101.55kPa
Engineer : Luke Zhu
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX Mode
Sample No. : EST-260703012-002

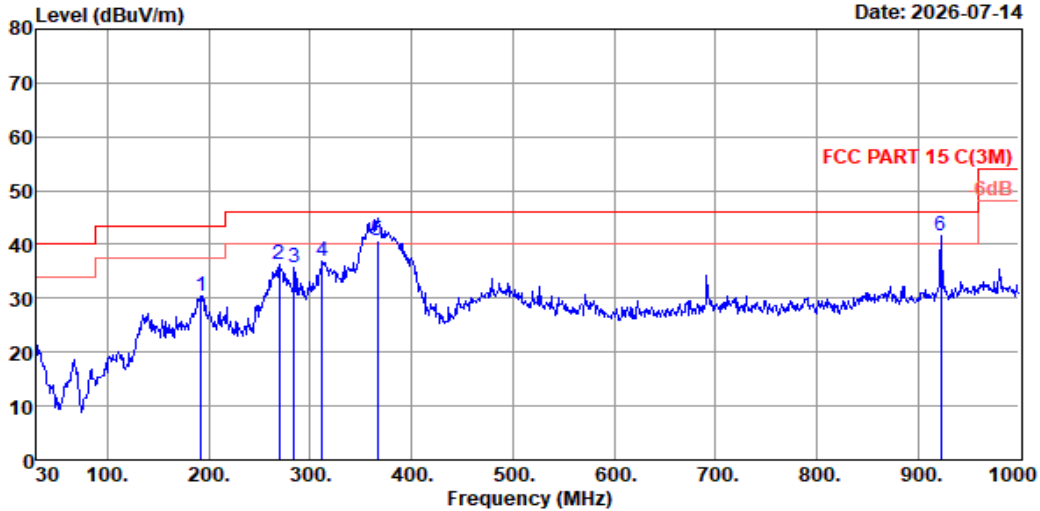
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	82.38	8.20	1.55	23.14	32.89	40.00	7.11	QP
2	134.76	12.00	2.00	19.75	33.75	43.50	9.75	QP
3	191.99	9.30	2.43	21.39	33.12	43.50	10.38	QP
4	212.36	9.32	2.56	20.56	32.44	43.50	11.06	QP
5	354.95	14.39	3.38	22.22	39.99	46.00	6.01	QP
6	494.63	17.55	4.04	12.74	34.33	46.00	11.67	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 38 File: \\EMC-966-5\Test Data\2026\Report\RF\Hhan Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 38
Dis. / Ant. : 3m 54681 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:20.3°C;Humi:49%;Press:101.55kPa
Engineer : Luke Zhu
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX Mode
Sample No. : EST-260703012-002

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	191.99	9.30	2.43	18.71	30.44	43.50	13.06	QP
2	269.59	13.40	2.91	19.90	36.21	46.00	9.79	QP
3	284.14	12.80	2.99	19.97	35.76	46.00	10.24	QP
4	312.27	12.93	3.15	20.69	36.77	46.00	9.23	QP
5	366.59	14.62	3.45	22.70	40.77	46.00	5.23	QP
6	922.40	23.08	5.66	12.81	41.55	46.00	4.45	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

Note:

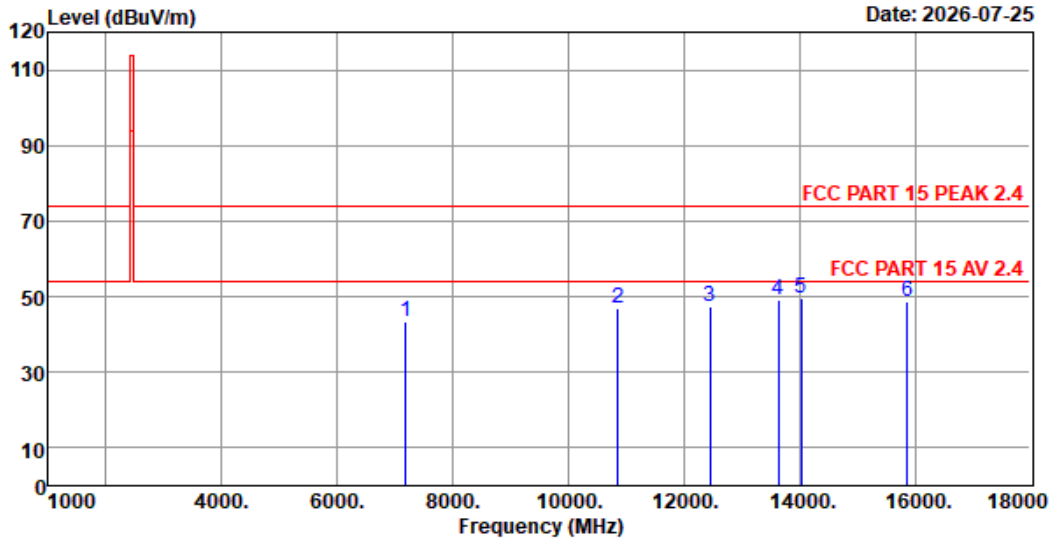
- The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
- All channels had been pre-test, only the worst case was reported.

Radiated Emissions Above 1G

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Data: 31 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 31
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2402MHz
Sample No. : EST-260703012-002

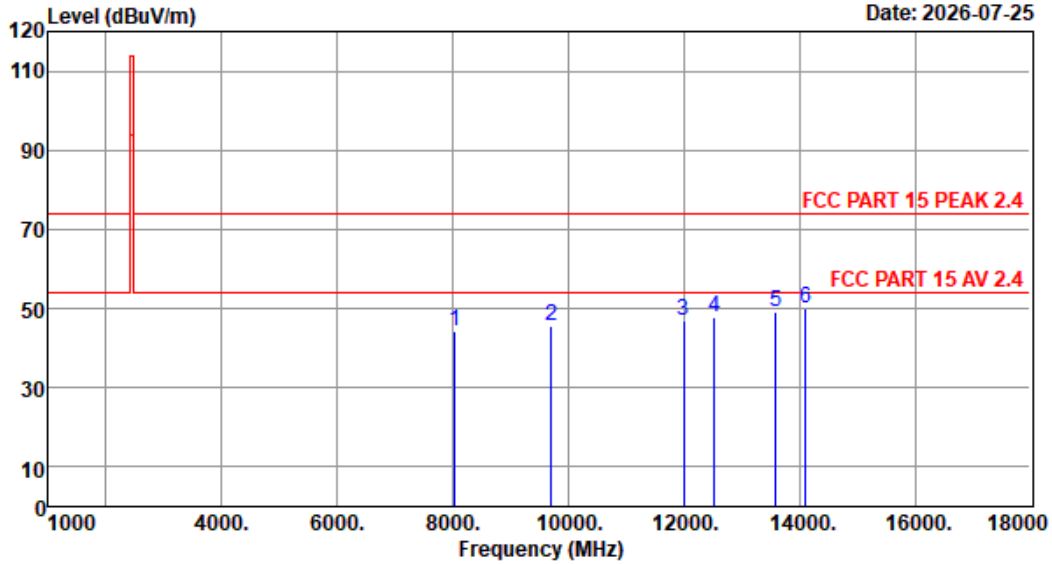
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7188.00	37.03	7.89	41.90	43.46	74.00	30.54	Peak
2	10860.00	39.43	9.73	39.75	46.82	74.00	27.18	Peak
3	12458.00	40.19	10.44	37.17	47.49	74.00	26.51	Peak
4	13631.00	41.43	10.90	36.73	49.31	74.00	24.69	Peak
5	14039.00	42.01	11.06	36.71	49.80	74.00	24.20	Peak
6	15875.00	38.88	11.86	40.42	48.52	74.00	25.48	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 32 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 32
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2402MHz
Sample No. : EST-260703012-002

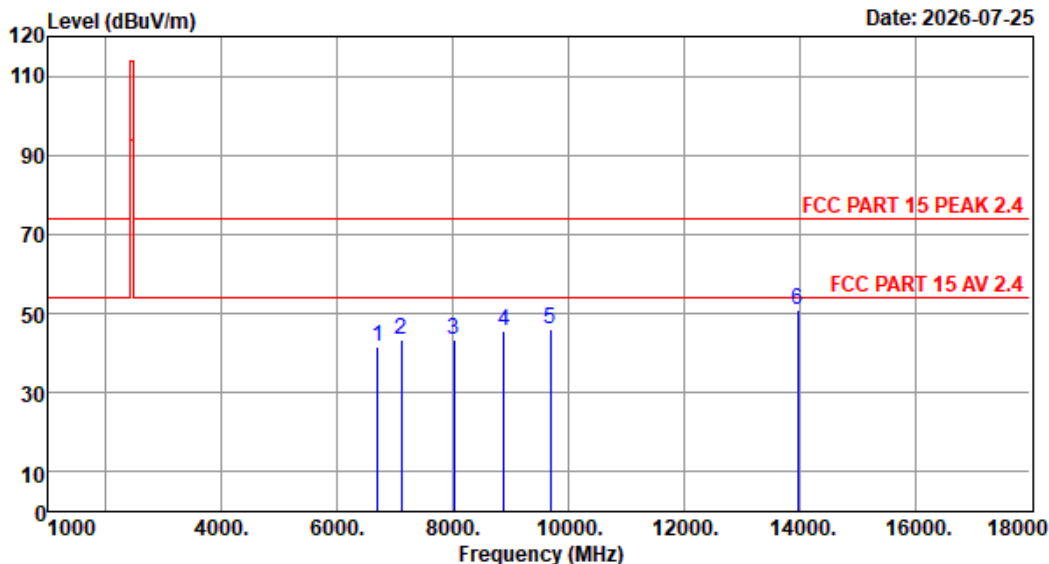
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8038.00	38.00	8.32	41.12	44.25	74.00	29.75	Peak
2	9704.00	40.40	9.15	38.88	45.64	74.00	28.36	Peak
3	11999.00	40.10	10.24	37.66	47.00	74.00	27.00	Peak
4	12526.00	40.21	10.47	37.50	47.97	74.00	26.03	Peak
5	13597.00	41.37	10.89	36.60	49.12	74.00	24.88	Peak
6	14107.00	41.84	11.09	37.03	49.83	74.00	24.17	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 33 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 33
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2441MHz
Sample No. : EST-260703012-002

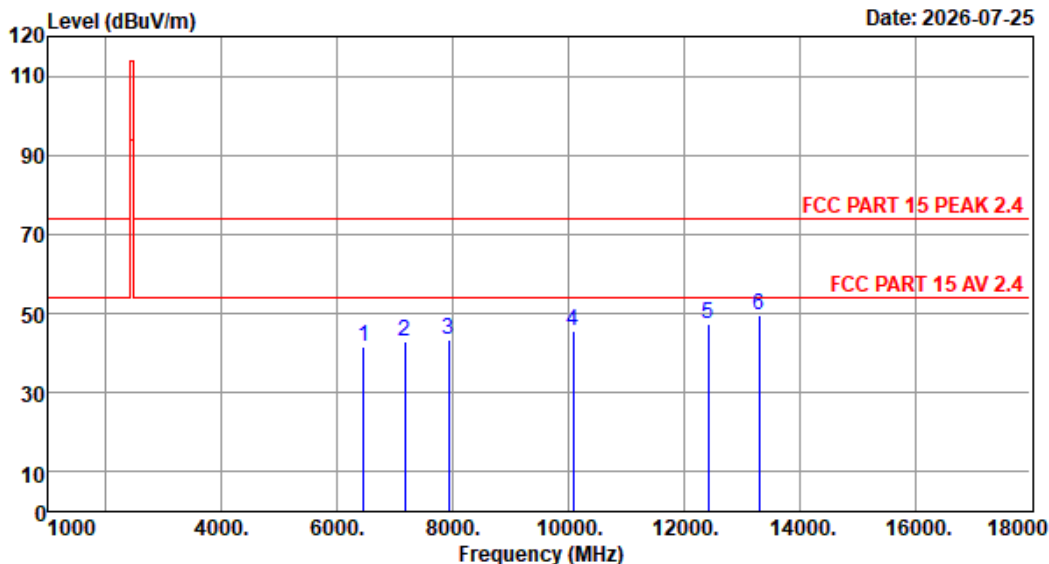
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6695.00	35.40	7.59	41.96	41.55	74.00	32.45	Peak
2	7103.00	36.70	7.84	42.36	43.52	74.00	30.48	Peak
3	8021.00	38.10	8.31	40.37	43.58	74.00	30.42	Peak
4	8888.00	38.90	8.74	41.17	45.79	74.00	28.21	Peak
5	9687.00	40.25	9.14	39.38	45.98	74.00	28.02	Peak
6	13971.00	42.04	11.03	37.52	50.70	74.00	23.30	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 34 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 34
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2441MHz
Sample No. : EST-260703012-002

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6457.00	35.90	7.44	41.87	41.81	74.00	32.19	Peak
2	7171.00	36.97	7.88	41.47	42.95	74.00	31.05	Peak
3	7936.00	37.73	8.27	40.52	43.31	74.00	30.69	Peak
4	10078.00	39.58	9.34	39.36	45.64	74.00	28.36	Peak
5	12424.00	40.18	10.42	37.15	47.39	74.00	26.61	Peak
6	13308.00	40.85	10.78	37.48	49.49	74.00	24.51	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

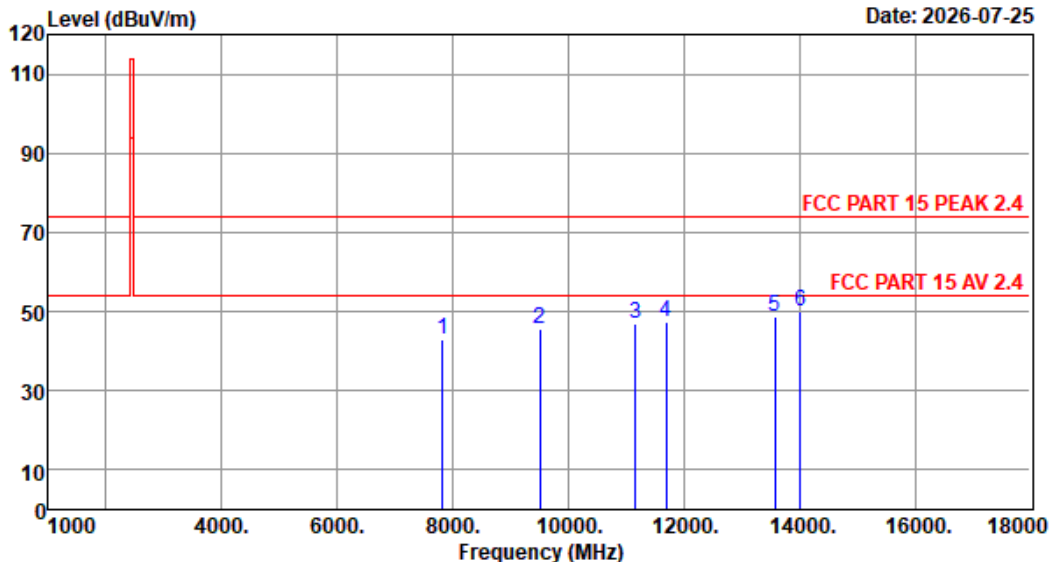
EST Technology

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Data: 35

File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)

Date: 2026-07-25



Site no. : 5# 966 Chamber Data no. : 35
 Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
 Engineer : Aiden Yan
 EUT : DIGITAL SIGNAGE
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : Lumina Pro 1010-D2
 Test Mode : TX 2480MHz
 Sample No. : EST-260703012-002

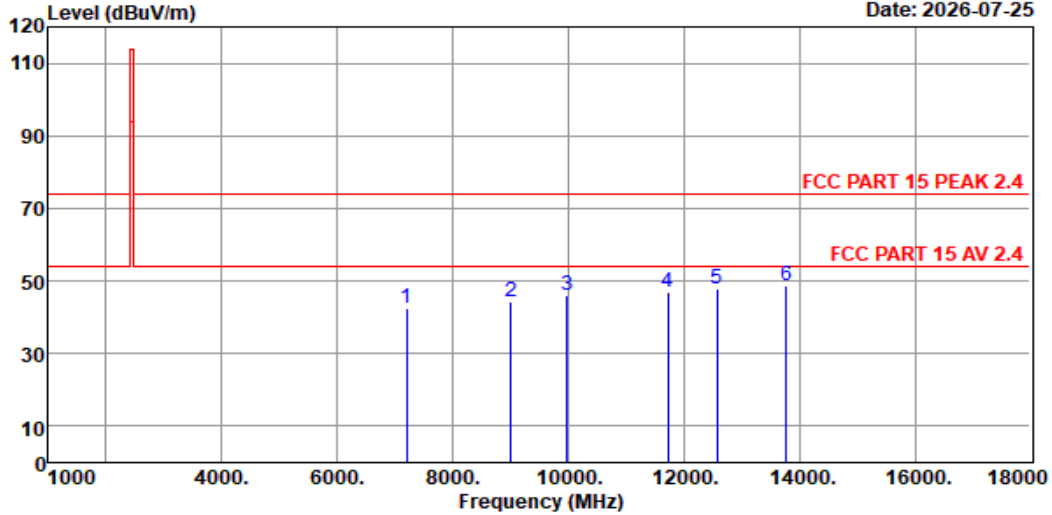
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7817.00	36.75	8.21	41.28	43.00	74.00	31.00	Peak
2	9500.00	39.20	9.05	40.04	45.44	74.00	28.56	Peak
3	11166.00	39.52	9.87	39.47	47.03	74.00	26.97	Peak
4	11693.00	39.89	10.10	38.50	47.18	74.00	26.82	Peak
5	13580.00	41.34	10.88	36.43	48.92	74.00	25.08	Peak
6	14022.00	42.06	11.05	36.83	50.00	74.00	24.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

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Data: 36 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 36
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2480MHz
Sample No. : EST-260703012-002

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7205.00	37.10	7.90	40.86	42.50	74.00	31.50	Peak
2	9007.00	38.30	8.80	40.26	44.36	74.00	29.64	Peak
3	9976.00	39.54	9.29	39.82	45.94	74.00	28.06	Peak
4	11727.00	39.91	10.12	38.35	47.11	74.00	26.89	Peak
5	12577.00	40.22	10.49	37.07	47.64	74.00	26.36	Peak
6	13767.00	41.67	10.96	35.94	48.76	74.00	25.24	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

Note:

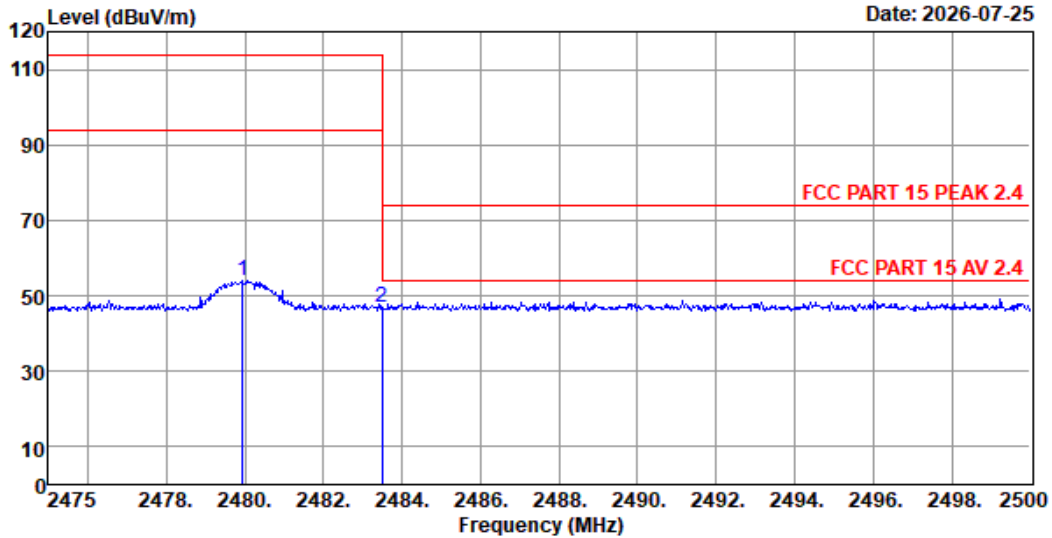
1. The amplitude of 18GHz to 25GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Radiated Band Edge

EST Technology

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Data: 27 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 27
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2480MHz
Sample No. : EST-260703012-002

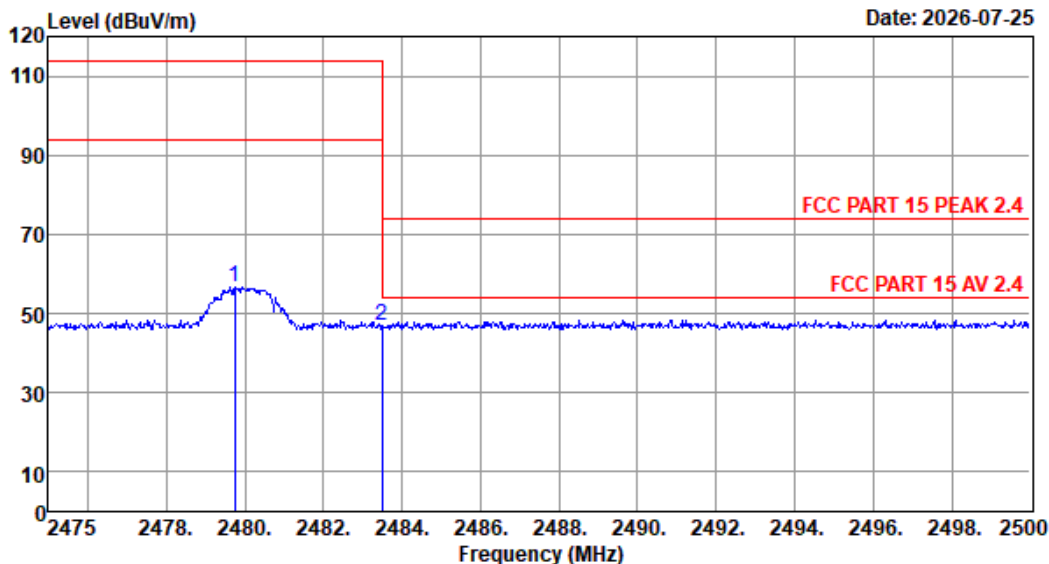
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2479.95	27.93	4.47	65.51	53.88	114.00	60.12	Peak
2	2483.50	27.93	4.47	58.49	46.86	74.00	27.14	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 28 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 28
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2480MHz
Sample No. : EST-260703012-002

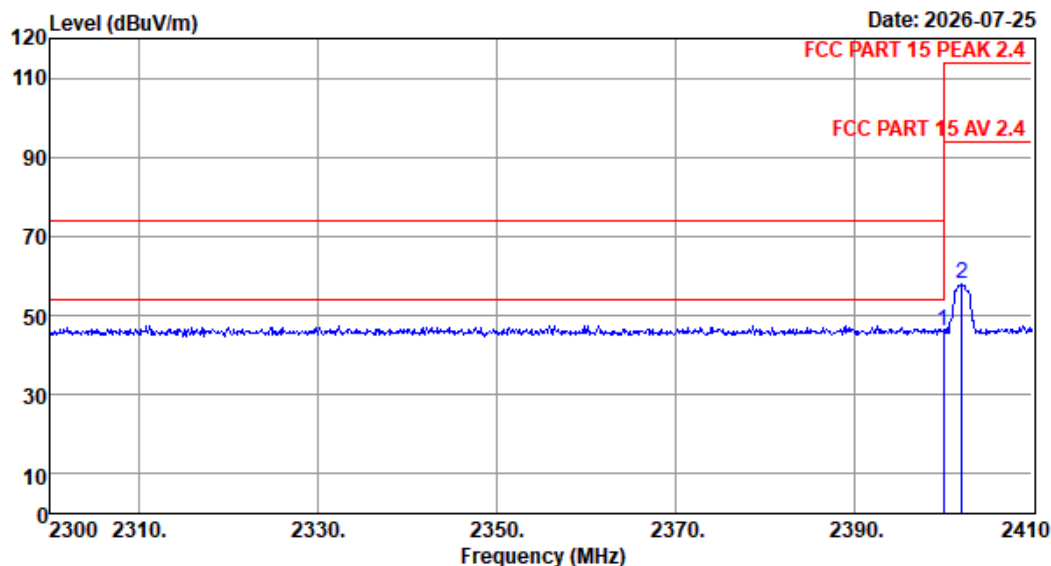
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2479.75	27.93	4.47	68.40	56.77	114.00	57.23	Peak
2	2483.50	27.93	4.47	58.71	47.08	74.00	26.92	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

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Data: 29 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 29
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2402MHz
Sample No. : EST-260703012-002

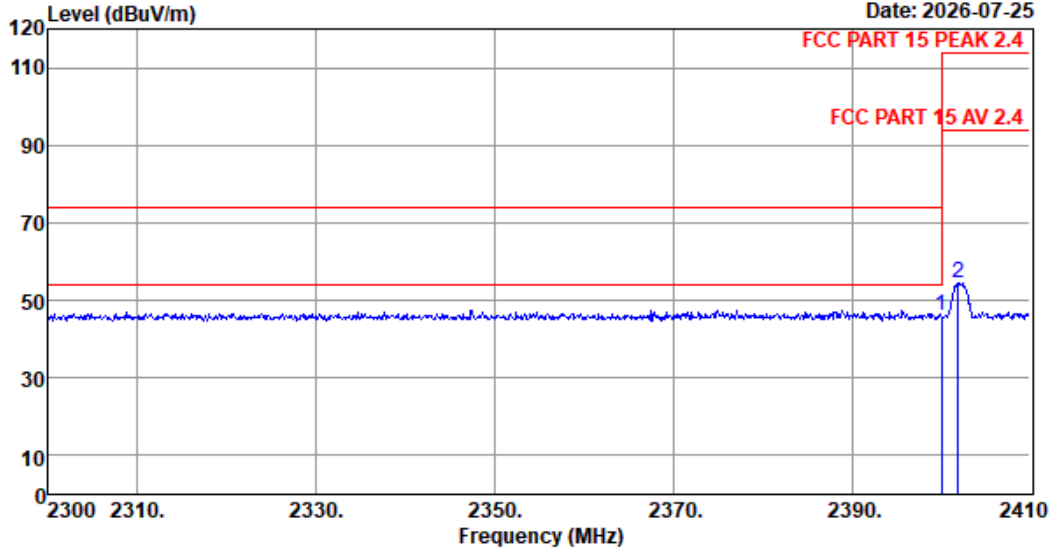
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2400.00	27.60	4.40	58.14	46.01	74.00	27.99	Peak
2	2402.08	27.60	4.40	70.05	57.92	114.00	56.08	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 30 File: \\EMC-966-5\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2-FCC.EM6 (42)



Site no. : 5# 966 Chamber Data no. : 30
Dis. / Ant. : 3m 9120D-1002 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : Temp:20.5°C;Humi:50%;Press:101.55kPa
Engineer : Aiden Yan
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX 2402MHz
Sample No. : EST-260703012-002

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2400.00	27.60	4.40	57.99	45.86	74.00	28.14	Peak
2	2401.86	27.60	4.40	66.49	54.36	114.00	59.64	Peak

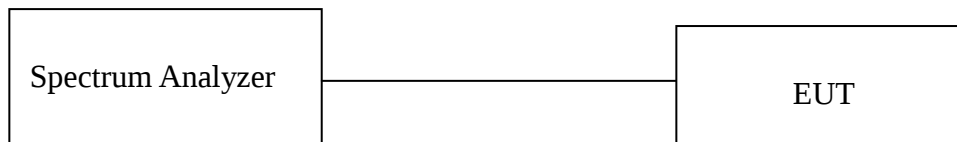
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

5. 20dB BANDWIDTH

5.1. Limit

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. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. 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.

5.2. Test Setup



5.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	1%~5% OBW
VBW	3×RBW
Span	two times and five times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

5.4. Test Procedure

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 5.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, 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 20 dB relative to the maximum level measured in the fundamental emission.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

5.5. Test Condition

Temperature	25°C	Relative Humidity	53%	Test Voltage	DC 24V
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5.6. Test Result

Test Frequency (MHz)	20dB Bandwidth (MHz)	Result
2402	1.068	Pass
2441	1.071	Pass
2480	1.119	Pass

Low Channel(2402MHz)



Middle Channel(2441MHz)



High Channel(2480MHz)



6. AC POWER LINE CONDUCTED EMISSIONS

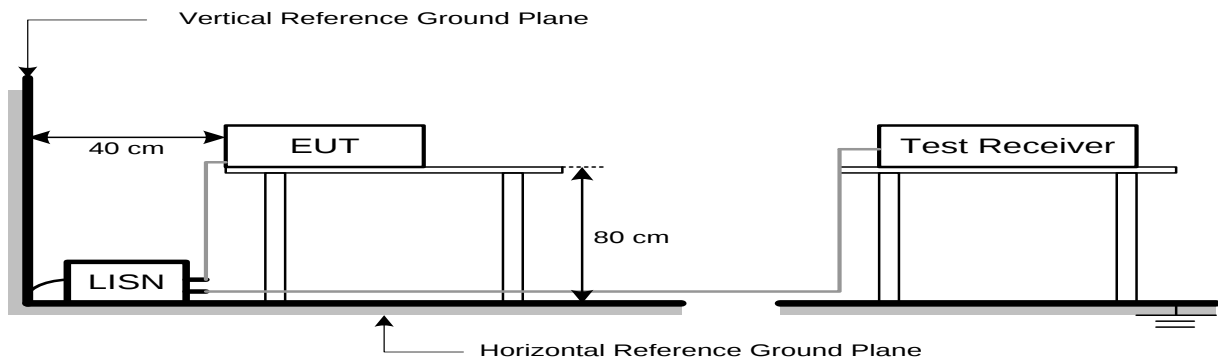
6.1. Limit

Frequency			Maximum RF Line Voltage	
			Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz	~	500kHz	66 ~ 56*	56 ~ 46*
500kHz	~	5MHz	56	46
5MHz	~	30MHz	60	50

Note:

- * Decreasing linearly with logarithm of frequency.
- The lower limit shall apply at the transition frequencies.

6.2. Test Setup



6.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	9KHz
VBW	9KHz
Start frequency	150KHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP/AVG
Trace Mode	Max Hold

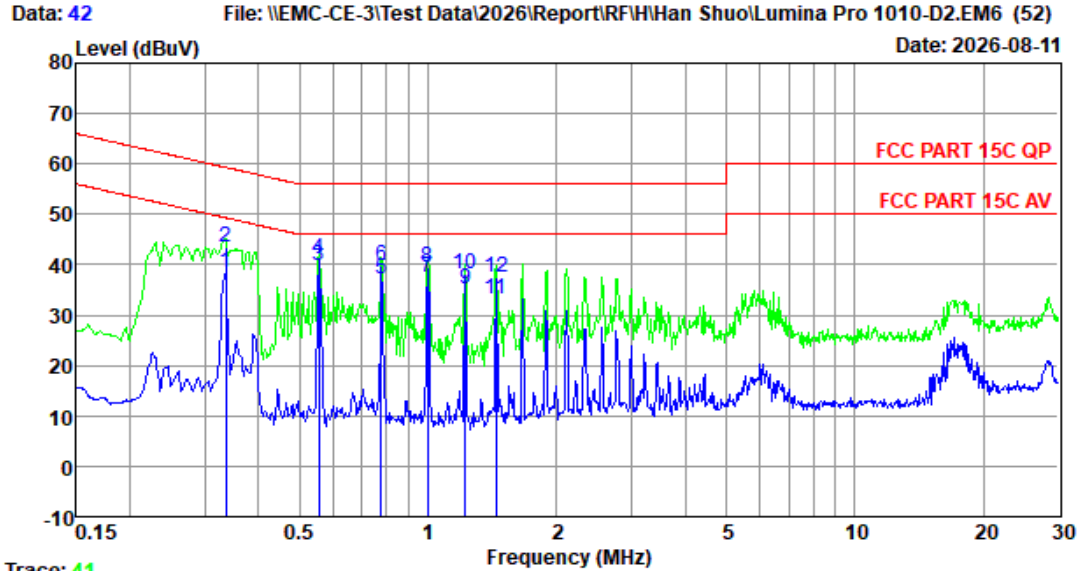
6.4. Test Procedure

- The EUT was placed on a non-metallic table, 80cm above the ground plane.
- The EUT Power connected to the power mains through a line impedance stabilization network.
- Provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs).
- Set the EUT transmit continuously with maximum output power.
- Spectrum analyzer setting parameters in accordance with section 6.3.
- The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2020 on Conducted Emission Test.
- Record the results in the test report.

6.5. Test Result

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Site no : 3#CE Shield Room Data no. : 42
Env. / Ins. : Temp:24.2°C;Humi:57%;Press:101.1kPa LINE Phase : NEUTRAL
Limit : FCC PART 15C QP
Engineer : Edison Chen
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX Mode
Sample No. : EST-260703012-002

	Freq. (MHz)	LISN Factor (db)	Cable Loss (db)	Reading dBuV	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.34	10.12	9.83	18.66	38.61	49.31	10.70	Average
2	0.34	10.12	9.83	23.58	43.53	59.31	15.78	QP
3	0.56	10.08	9.83	19.78	39.69	46.00	6.31	Average
4	0.56	10.08	9.83	21.11	41.02	56.00	14.98	QP
5	0.78	10.05	9.83	17.16	37.04	46.00	8.96	Average
6	0.78	10.05	9.83	19.95	39.83	56.00	16.17	QP
7	1.00	10.03	9.83	17.65	37.51	46.00	8.49	Average
8	1.00	10.03	9.83	19.46	39.32	56.00	16.68	QP
9	1.22	10.04	9.84	15.43	35.31	46.00	10.69	Average
10	1.22	10.04	9.84	18.30	38.18	56.00	17.82	QP
11	1.44	10.05	9.84	13.35	33.24	46.00	12.76	Average
12	1.44	10.05	9.84	17.58	37.47	56.00	18.53	QP

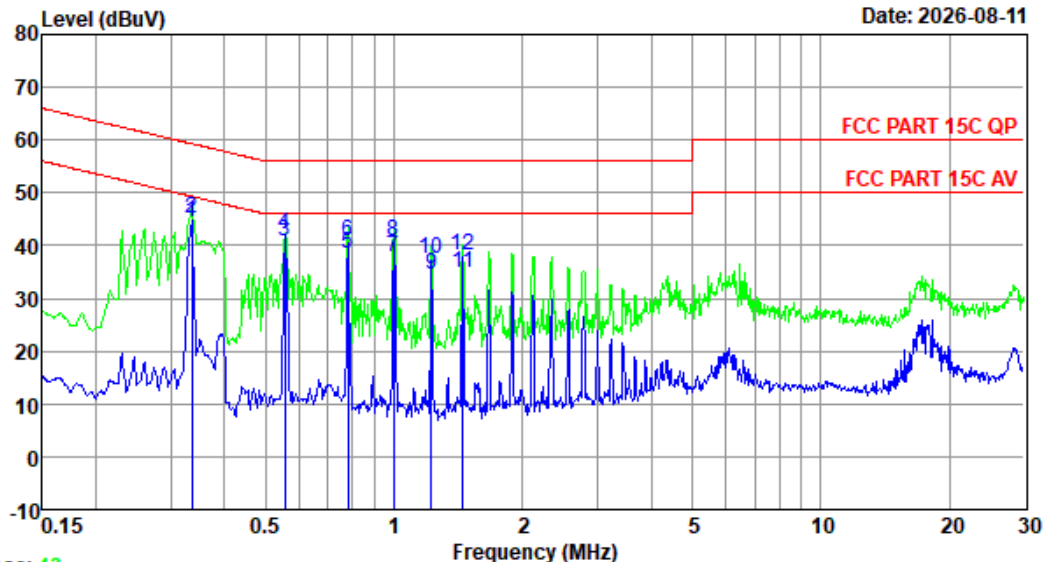
Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

EST Technology

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Data: 44 File: \\EMC-CE-3\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2.EM6 (52)

Date: 2026-08-11



Trace: 43

Site no : 3#CE Shield Room Data no. : 44
Env. / Ins. : Temp:24.2°C;Humi:57%;Press:101.1kPa LINE Phase : LINE
Limit : FCC PART 15C QP
Engineer : Edison Chen
EUT : DIGITAL SIGNAGE
Power : DC 24V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX Mode
Sample No. : EST-260703012-002

	Freq. (MHz)	LISN Factor (db)	Cable Loss (db)	Reading dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.34	10.04	9.83	24.55	44.42	49.31	4.89	Average
2	0.34	10.04	9.83	25.19	45.06	59.31	14.25	QP
3	0.56	10.10	9.83	21.02	40.95	46.00	5.05	Average
4	0.56	10.10	9.83	22.13	42.06	56.00	13.94	QP
5	0.78	9.99	9.83	18.76	38.58	46.00	7.42	Average
6	0.78	9.99	9.83	21.14	40.96	56.00	15.04	QP
7	1.00	9.96	9.83	18.09	37.88	46.00	8.12	Average
8	1.00	9.96	9.83	20.95	40.74	56.00	15.26	QP
9	1.22	9.96	9.84	14.59	34.39	46.00	11.61	Average
10	1.22	9.96	9.84	17.74	37.54	56.00	18.46	QP
11	1.45	9.95	9.84	15.15	34.94	46.00	11.06	Average
12	1.45	9.95	9.84	18.28	38.07	56.00	17.93	QP

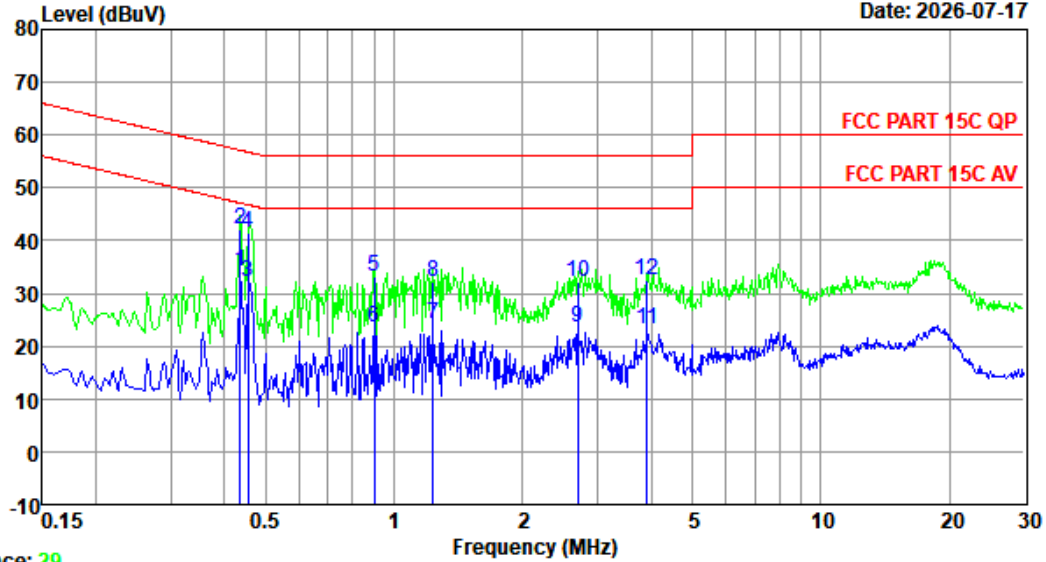
Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

EST Technology

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Data: 30 File: \\EMC-CE-3\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2.EM6 (92)

Date: 2026-07-17



Trace: 29

Site no : 3#CE Shield Room Data no. : 30
Env. / Ins. : Temp:24.2°C;Humi:57%;Press:101.1kPa LINE Phase : NEUTRAL
Limit : FCC PART 15C QP
Engineer : Edison Chen
EUT : DIGITAL SIGNAGE
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX Mode
Sample No. : EST-260703012-002

	Freq. (MHz)	LISN Factor (db)	Cable Loss (db)	Reading dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.44	9.93	9.84	14.45	34.22	47.15	12.93	Average
2	0.44	9.93	9.84	22.37	42.14	57.15	15.01	QP
3	0.45	9.93	9.84	12.33	32.10	46.80	14.70	Average
4	0.45	9.93	9.84	21.69	41.46	56.80	15.34	QP
5	0.90	9.73	9.84	13.58	33.15	56.00	22.85	QP
6	0.90	9.73	9.84	4.08	23.65	46.00	22.35	Average
7	1.24	9.84	9.84	4.60	24.28	46.00	21.72	Average
8	1.24	9.84	9.84	12.41	32.09	56.00	23.91	QP
9	2.69	9.87	9.84	3.73	23.44	46.00	22.56	Average
10	2.69	9.87	9.84	12.49	32.20	56.00	23.80	QP
11	3.92	9.85	9.85	3.47	23.17	46.00	22.83	Average
12	3.92	9.85	9.85	12.65	32.35	56.00	23.65	QP

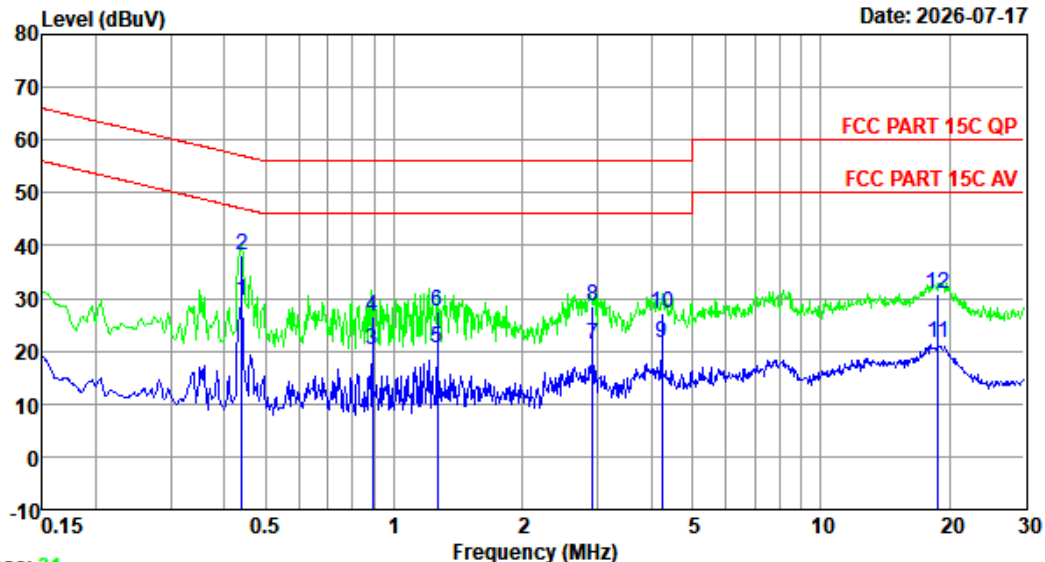
Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

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Data: 32 File: \\EMC-CE-3\Test Data\2026\Report\RF\H\Han Shuo\Lumina Pro 1010-D2.EM6 (92)

Date: 2026-07-17



Trace: 31

Site no : 3#CE Shield Room Data no. : 32
Env. / Ins. : Temp:24.2°C;Humi:57%;Press:101.1kPa LINE Phase : LINE
Limit : FCC PART 15C QP
Engineer : Edison Chen
EUT : DIGITAL SIGNAGE
Power : DC 12V From Adapter Input AC 120V/60Hz
M/N : Lumina Pro 1010-D2
Test Mode : TX Mode
Sample No. : EST-260703012-002

	Freq. (MHz)	LISN Factor (db)	Cable Loss (db)	Reading dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.44	9.80	9.84	9.78	29.42	47.07	17.65	Average
2	0.44	9.80	9.84	18.68	38.32	57.07	18.75	QP
3	0.89	9.76	9.84	0.75	20.35	46.00	25.65	Average
4	0.89	9.76	9.84	6.87	26.47	56.00	29.53	QP
5	1.26	9.72	9.84	0.86	20.42	46.00	25.58	Average
6	1.26	9.72	9.84	7.97	27.53	56.00	28.47	QP
7	2.92	9.89	9.84	1.54	21.27	46.00	24.73	Average
8	2.92	9.89	9.84	8.67	28.40	56.00	27.60	QP
9	4.25	10.00	9.85	1.55	21.40	46.00	24.60	Average
10	4.25	10.00	9.85	7.46	27.31	56.00	28.69	QP
11	18.82	10.11	10.05	1.29	21.45	50.00	28.55	Average
12	18.82	10.11	10.05	10.64	30.80	60.00	29.20	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

7. ANTENNA REQUIREMENTS

7.1. Limit

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

7.2. Test Result

The antennas used for this product is PCB antenna, so compliance with antenna requirements. (Please refer to the EUT photo for details)

8. TEST SETUP PHOTO

Refer to report no. ESTE-R2608148 (Appendix A)

9. EUT PHOTO

Refer to report no. ESTE-R2608149 (Appendix B)

End of Test Report