TEST REPORT

Applicant:	SZ DJI TECHNOLOGY CO., LTD.
Address:	Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, 518055 Shenzhen, China
Equipment Type:	DJI RC Mini
Model Name:	TKMI1
Brand Name:	DJI
FCC ID:	SS3-TKMI2507
Test Standard:	47 CFR Part 15 Subpart C (refer to section 3.1)
Sample Arrival Date:	Oct. 29, 2025
Test Date:	Nov. 10, 2025 - Dec. 18, 2025
Date of Issue:	Dec. 19, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Julie Zhu

Checked by: Ye Hongji

Approved by: Tolan Tu

(Testing Director)

Revision History

Version	Issue Date	Revisions
Rev. 01	Dec. 19, 2025	Initial Issue

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Contact Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☑ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ Building 2, Intelligent Connected Vehicle Industrial Park, No. 55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	SZ DJI TECHNOLOGY CO., LTD.
Address	Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, 518055 Shenzhen, China

2.2 Manufacturer Information

Manufacturer	SZ DJI TECHNOLOGY CO., LTD.
Address	Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, 518055 Shenzhen, China

2.3 General Description for Equipment under Test (EUT)

EUT Name	DJI RC Mini
Model Name Under Test	TKMI1
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	2.4G SDR, 5.2G SDR, 5.8G SDR, GPS, BDS, Galileo, GLONASS

The requirement for the following technical information of the EUT was tested in this report:

Frequency Range		2.400 GHz - 2.4835 GHz
Modulation Technology		OFDM
Product Type		☐ Mobile ☒ Portable ☐ Fix Location
Antenna System (eg., MIMO, Smart Antenna)		N/A
Categorization as Correlated or Completely Uncorrelated		N/A
Antenna Type	ANT0	UAV Antenna
	ANT1	
Antenna Gain	ANT0	-2.0 dBi
	ANT1	

Mode	Antenna	
	ANT0	ANT1
1.4 MHz	√	√
3 MHz	√	√
5 MHz	√	√
10 MHz	√	√
20 MHz	√	√
40 MHz	√	√
60 MHz	√	√
Note: All the configurations were tested, but only the worst case was reported in this report.		

1.4 MHz Channel List:

Mode A:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	**2403.5**	10	2421.5	19	2439.5	28	2457.5
2	2405.5	11	2423.5	20	2441.5	29	2459.5
3	2407.5	12	2425.5	21	2443.5	30	2461.5
4	2409.5	13	2427.5	22	2445.5	31	2463.5
5	2411.5	14	2429.5	23	2447.5	32	2465.5
6	2413.5	15	2431.5	24	2449.5	33	2467.5
7	2415.5	16	2433.5	25	2451.5		
8	2417.5	**17**	**2435.5**	26	2453.5		
9	2419.5	18	2437.5	27	2455.5		

Mode B:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2405.12	10	2423.12	19	2441.12	28	2459.12
2	2407.12	11	2425.12	20	2443.12	29	2461.12
3	2409.12	12	2427.12	21	2445.12	30	2463.12
4	2411.12	13	2429.12	22	2447.12	31	2465.12
5	2413.12	14	2431.12	23	2449.12	32	2467.12
6	2415.12	15	2433.12	24	2451.12	**33**	**2469.12**
7	2417.12	16	2435.12	25	2453.12		
8	2419.12	17	2437.12	26	2455.12		
9	2421.12	18	2439.12	27	2457.12		

Mode C:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2404.69	7	2422.69	13	2440.69	19	2458.69
2	2407.69	8	2425.69	14	2443.69	20	2461.69
3	2410.69	9	2428.69	15	2446.69	21	2464.69
4	2413.69	10	2431.69	16	2449.69		
5	2416.69	11	2434.69	17	2452.69		
6	2419.69	12	2437.69	18	2455.69		

Mode D:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2406.31	7	2424.31	13	2442.31	19	2460.31
2	2409.31	8	2427.31	14	2445.31	20	2463.31
3	2412.31	9	2430.31	15	2448.31	21	2466.31
4	2415.31	10	2433.31	16	2451.31		
5	2418.31	11	2436.31	17	2454.31		
6	2421.31	12	2439.31	18	2457.31		

3 MHz Channel List:

Mode A:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	**2405.5**	7	2423.5	13	2441.5	19	2459.5
2	2408.5	8	2426.5	14	2444.5	20	2462.5
3	2411.5	9	2429.5	15	2447.5	21	2465.5
4	2414.5	10	2432.5	16	2450.5		
5	2417.5	**11**	**2435.5**	17	2453.5		
6	2420.5	12	2438.5	18	2456.5		

Mode B:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2408.2	7	2426.2	13	2444.2	19	2462.2
2	2411.2	8	2429.2	14	2447.2	20	2465.2
3	2414.2	9	2432.2	15	2450.2	**21**	**2468.2**
4	2417.2	10	2435.2	16	2453.2		
5	2420.2	11	2438.2	17	2456.2		
6	2423.2	12	2441.2	18	2459.2		

Mode C:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2407.88	4	2422.88	7	2437.88	10	2452.88
2	2412.88	5	2427.88	8	2442.88	11	2457.88
3	2417.88	6	2432.88	9	2447.88		

Mode D:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2411.12	4	2426.12	7	2441.12	10	2456.12
2	2416.12	5	2431.12	8	2446.12	11	2461.12
3	2421.12	6	2436.12	9	2451.12		

5 MHz Channel List:

Mode A:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	**2404.5**	5	2424.5	9	2444.5	13	2464.5
2	2409.5	6	2429.5	10	2449.5	**14**	**2469.5**
3	2414.5	**7**	**2434.5**	11	2454.5		
4	2419.5	8	2439.5	12	2459.5		

Mode C:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2405.26	16	2420.26	31	2435.26	46	2450.26
2	2406.26	17	2421.26	32	2436.26	47	2451.26
3	2407.26	18	2422.26	33	2437.26	48	2452.26
4	2408.26	19	2423.26	34	2438.26	49	2453.26
5	2409.26	20	2424.26	35	2439.26	50	2454.26
6	2410.26	21	2425.26	36	2440.26	51	2455.26
7	2411.26	22	2426.26	37	2441.26	52	2456.26
8	2412.26	23	2427.26	38	2442.26	53	2457.26
9	2413.26	24	2428.26	39	2443.26	54	2458.26
10	2414.26	25	2429.26	40	2444.26	55	2459.26
11	2415.26	26	2430.26	41	2445.26	56	2460.26
12	2416.26	27	2431.26	42	2446.26	57	2461.26
13	2417.26	28	2432.26	43	2447.26	58	2462.26
14	2418.26	29	2433.26	44	2448.26		
15	2419.26	30	2434.26	45	2449.26		

Mode D:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2411.74	16	2426.74	31	2441.74	46	2456.74
2	2412.74	17	2427.74	32	2442.74	47	2457.74
3	2413.74	18	2428.74	33	2443.74	48	2458.74
4	2414.74	19	2429.74	34	2444.74	49	2459.74
5	2415.74	20	2430.74	35	2445.74	50	2460.74
6	2416.74	21	2431.74	36	2446.74	51	2461.74
7	2417.74	22	2432.74	37	2447.74	52	2462.74
8	2418.74	23	2433.74	38	2448.74	53	2463.74
9	2419.74	24	2434.74	39	2449.74	54	2464.74
10	2420.74	25	2435.74	40	2450.74	55	2465.74
11	2421.74	26	2436.74	41	2451.74	56	2466.74
12	2422.74	27	2437.74	42	2452.74	57	2467.74
13	2423.74	28	2438.74	43	2453.74	58	2468.74
14	2424.74	29	2439.74	44	2454.74		
15	2425.74	30	2440.74	45	2455.74		

10 MHz Channel List:

Mode A:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	**2407.5**	17	2423.5	33	2439.5	49	2455.5
2	2408.5	18	2424.5	34	2440.5	50	2456.5
3	2409.5	19	2425.5	35	2441.5	51	2457.5
4	2410.5	20	2426.5	36	2442.5	52	2458.5
5	2411.5	21	2427.5	37	2443.5	53	2459.5
6	2412.5	22	2428.5	38	2444.5	54	2460.5
7	2413.5	23	2429.5	39	2445.5	55	2461.5
8	2414.5	24	2430.5	40	2446.5	56	2462.5
9	2415.5	25	2431.5	41	2447.5	57	2463.5
10	2416.5	26	2432.5	42	2448.5	58	2464.5
11	2417.5	27	2433.5	43	2449.5	59	2465.5
12	2418.5	28	2434.5	44	2450.5	60	2466.5
13	2419.5	29	2435.5	45	2451.5	**61**	**2467.5**
14	2420.5	30	2436.5	46	2452.5		
15	2421.5	**31**	**2437.5**	47	2453.5		
16	2422.5	32	2438.5	48	2454.5		

Mode C:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2407.75	13	2419.75	25	2431.75	37	2443.75
2	2408.75	14	2420.75	26	2432.75	38	2444.75
3	2409.75	15	2421.75	27	2433.75	39	2445.75
4	2410.75	16	2422.75	28	2434.75	40	2446.75
5	2411.75	17	2423.75	29	2435.75	41	2447.75
6	2412.75	18	2424.75	30	2436.75	42	2448.75
7	2413.75	19	2425.75	31	2437.75	43	2449.75
8	2414.75	20	2426.75	32	2438.75	44	2450.75
9	2415.75	21	2427.75	33	2439.75	45	2451.75
10	2416.75	22	2428.75	34	2440.75	46	2452.75
11	2417.75	23	2429.75	35	2441.75	47	2453.75
12	2418.75	24	2430.75	36	2442.75		

Mode D:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2421.25	13	2433.25	25	2445.25	37	2457.25
2	2422.25	14	2434.25	26	2446.25	38	2458.25
3	2423.25	15	2435.25	27	2447.25	39	2459.25
4	2424.25	16	2436.25	28	2448.25	40	2460.25
5	2425.25	17	2437.25	29	2449.25	41	2461.25
6	2426.25	18	2438.25	30	2450.25	42	2462.25
7	2427.25	19	2439.25	31	2451.25	43	2463.25
8	2428.25	20	2440.25	32	2452.25	44	2464.25
9	2429.25	21	2441.25	33	2453.25	45	2465.25
10	2430.25	22	2442.25	34	2454.25	46	2466.25
11	2431.25	23	2443.25	35	2455.25	47	2467.25
12	2432.25	24	2444.25	36	2456.25		

20 MHz Channel List:

Mode A:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	**2412.5**	14	2425.5	27	2438.5	40	2451.5
2	2413.5	15	2426.5	28	2439.5	41	2452.5
3	2414.5	**16**	**2427.5**	29	2440.5	42	2453.5
4	2415.5	17	2428.5	30	2441.5	43	2454.5
5	2416.5	18	2429.5	31	2442.5	44	2455.5
6	2417.5	19	2430.5	32	2443.5	45	2456.5
7	2418.5	20	2431.5	33	2444.5	46	2457.5
8	2419.5	21	2432.5	34	2445.5	47	2458.5
9	2420.5	22	2433.5	35	2446.5	48	2459.5
10	2421.5	23	2434.5	36	2447.5	49	2460.5
11	2422.5	24	2435.5	37	2448.5	50	2461.5
12	2423.5	25	2436.5	38	2449.5	**51**	**2462.5**
13	2424.5	26	2437.5	39	2450.5		

Mode C:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2413	7	2419	13	2425	19	2431
2	2414	8	2420	14	2426	20	2432
3	2415	9	2421	15	2427	21	2433
4	2416	10	2422	16	2428	22	2434
5	2417	11	2423	17	2429	23	2435
6	2418	12	2424	18	2430		

Mode D:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	2440	7	2446	13	2452	19	2458
2	2441	8	2447	14	2453	20	2459
3	2442	9	2448	15	2454	21	2460
4	2443	10	2449	16	2455	22	2461
5	2444	11	2450	17	2456	23	2462
6	2445	12	2451	18	2457		

40 MHz Channel List:

Mode A:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	**2422.5**	9	2430.5	17	2438.5	25	2446.5
2	2423.5	10	2431.5	18	2439.5	26	2447.5
3	2424.5	11	2432.5	19	2440.5	27	2448.5
4	2425.5	12	2433.5	20	2441.5	28	2449.5
5	2426.5	13	2434.5	21	2442.5	29	2450.5
6	2427.5	14	2435.5	22	2443.5	30	2451.5
7	2428.5	15	2436.5	23	2444.5	**31**	**2452.5**
8	2429.5	**16**	**2437.5**	24	2445.5		

60 MHz Channel List:

Mode A:

Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)	Channel number	Freq. (MHz)
1	**2432.5**	4	2435.5	7	2438.5	10	2441.5
2	2433.5	5	2436.5	8	2439.5	**11**	**2442.5**
3	2434.5	**6**	**2437.5**	9	2440.5		

Test Items	Mode	Channel			
Output Power	1.4M/3M/5M	1/17/33	1/11/21	1/7/14	/
	10M/20M/40M/60M	1/31/61	1/26/51	1/16/31	1/6/11
Occupied Bandwidth	1.4M/3M/5M	1/17/33	1/11/21	1/7/14	/
	10M/20M/40M/60M	1/31/61	1/26/51	1/16/31	1/6/11
Conducted Spurious Emission	1.4M/3M/5M	1/17/33	1/11/21	1/7/14	/
	10M/20M/40M/60M	1/31/61	1/26/51	1/16/31	1/6/11
Conducted Emission	1.4M/3M/5M	1/17/33	1/11/21	1/7/14	/
	10M/20M/40M/60M	1/31/61	1/26/51	1/16/31	1/6/11
Radiated Spurious Emission	1.4M/3M/5M	1/17/33	1/11/21	1/7/14	/
	10M/20M/40M/60M	1/31/61	1/26/51	1/16/31	1/6/11
Band Edge	1.4M/3M/5M	1/33	1/21	1/14	/
	10M/20M/40M/60M	1/61	1/51	1/16/31	1/6/11
Power spectral density (PSD)	1.4M/3M/5M	1/17/33	1/11/21	1/7/14	/
	10M/20M/40M/60M	1/31/61	1/26/51	1/16/31	1/6/11

Note: The above EUT information in section 2.4 was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C	Intentional radiators of radio frequency equipment
2	ANSI C63.10-2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
3	KDB Publication 558074 D01v05r02	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES

3.2 Test Verdict

No.	Description	FCC PART No.	Test Result	Verdict
1	Antenna Requirement	15.203	N/A	Pass[Note]
2	Output Power	15.247 (b)	ANNEX A.1	Pass
3	Occupied Bandwidth	15.247 (a)	ANNEX A.2	Pass
4	Conducted Spurious Emission	15.247 (d)	ANNEX A.3	Pass
5	Band Edge(Authorized-band band-edge)	15.247 (d)	ANNEX A.4	Pass
6	Conducted Emission	15.207	ANNEX A.5	Pass
7	Radiated Spurious Emission	15.209; 15.247 (d)	ANNEX A.6	Pass
8	Band Edge(Restricted-band band-edge)	15.209; 15.247 (d)	ANNEX A.7	Pass
9	Power spectral density (PSD)	15.247 (e)	ANNEX A.8	Pass
Note: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.				

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	34% to 67%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+19.8℃ to +25.7℃
Working Voltage of the EUT	NV (Normal Voltage)	3.87V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	KEYSIGHT	N9020A	MY54420186	2025.05.21	2026.05.20
Power meter	R&S	NRP8S	101498	2025.07.07	2026.07.06
Spectrum Analyzer	KEYSIGHT	N9020A	MY56060127	2025.02.27	2026.02.26
Test Antenna-Horn	A-INFO	LB-180400KF	J211060273	2024.06.15	2027.06.14
Test Antenna-Bi-Log	Schwarzbeck	VULB 9163	01414	2023.11.03	2026.11.02
Test Antenna-Horn	Schwarzbeck	BBHA 9120D	02459	2023.10.26	2026.10.25
Test Antenna-Loop	Schwarzbeck	FMZB 1513-60	00015	2024.05.07	2026.05.06
Anechoic Chamber	YIHENG	C8-966	N/A	2024.05.15	2027.05.11
EMI Receiver	Keysight	N9038A	MY55330121	2025.04.16	2026.04.15
EMI Receiver	keysight	N9038B	MY61380132	2025.04.01	2026.03.31
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK8127	01009	2025.07.15	2026.07.14
Shielded Enclosure	YiHeng Electronic Co., Ltd	4.3m*2.9m*2.4 m	235	2024.11.05	2027.11.04

4.3 Test Software List

Description	Manufacturer	Software Version	Serial No.	Applicable test Setup
BL410R	BALUN	V2.1.1.488	N/A	The section 4.5.1
BL410E	BALUN	V22.930	N/A	The section 4.5.2&4.5.3&4.5.4&4.5.5

4.4 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

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

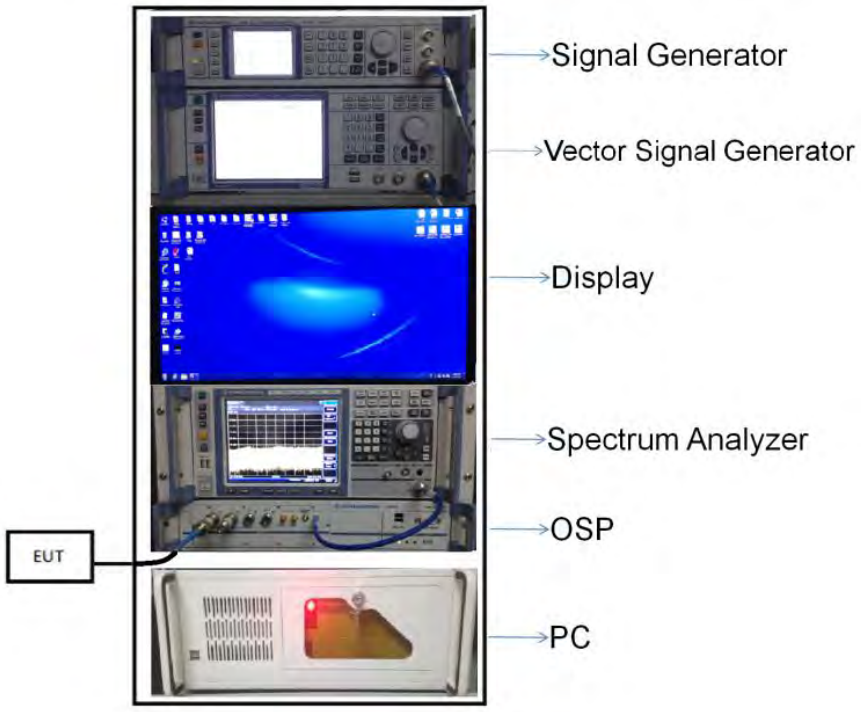
Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.8°C
Humidity	4%

4.5 Description of Test Setup

4.5.1 For Antenna Port Test

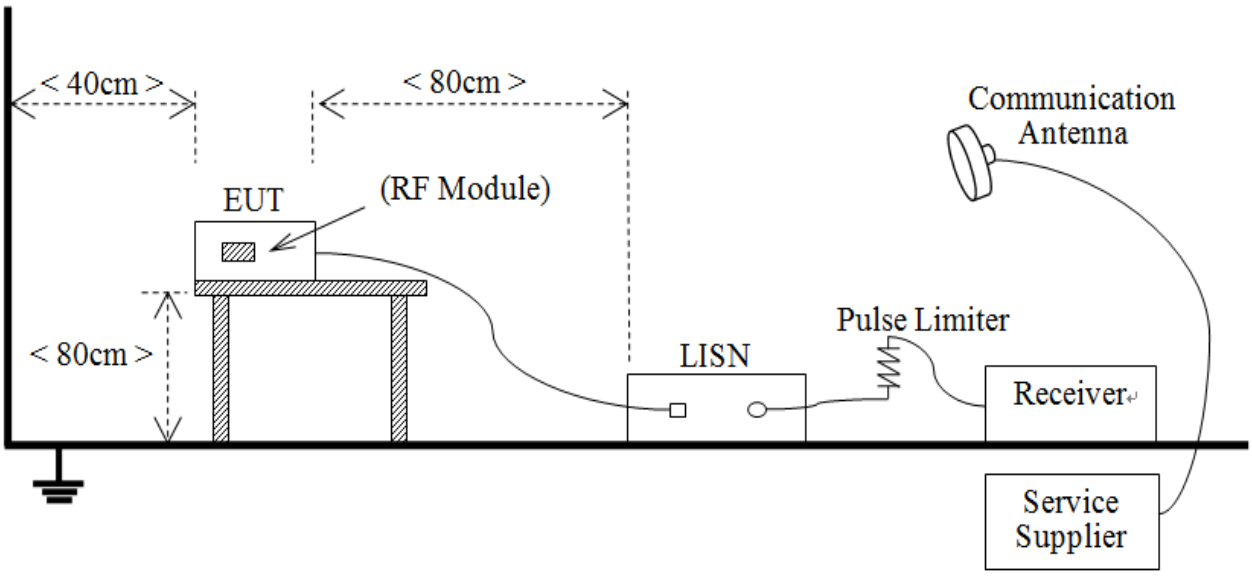
Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT:
Conducted value (dBm) = 10 dBm + 0.5 dB = 10.5 dBm



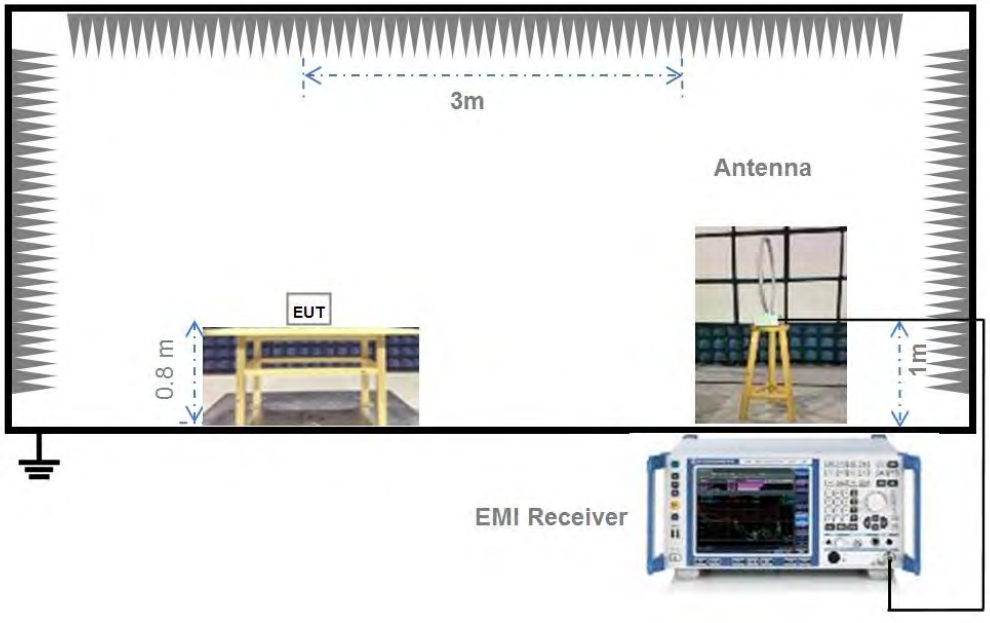
(Diagram 1)

4.5.2 For AC Power Supply Port Test



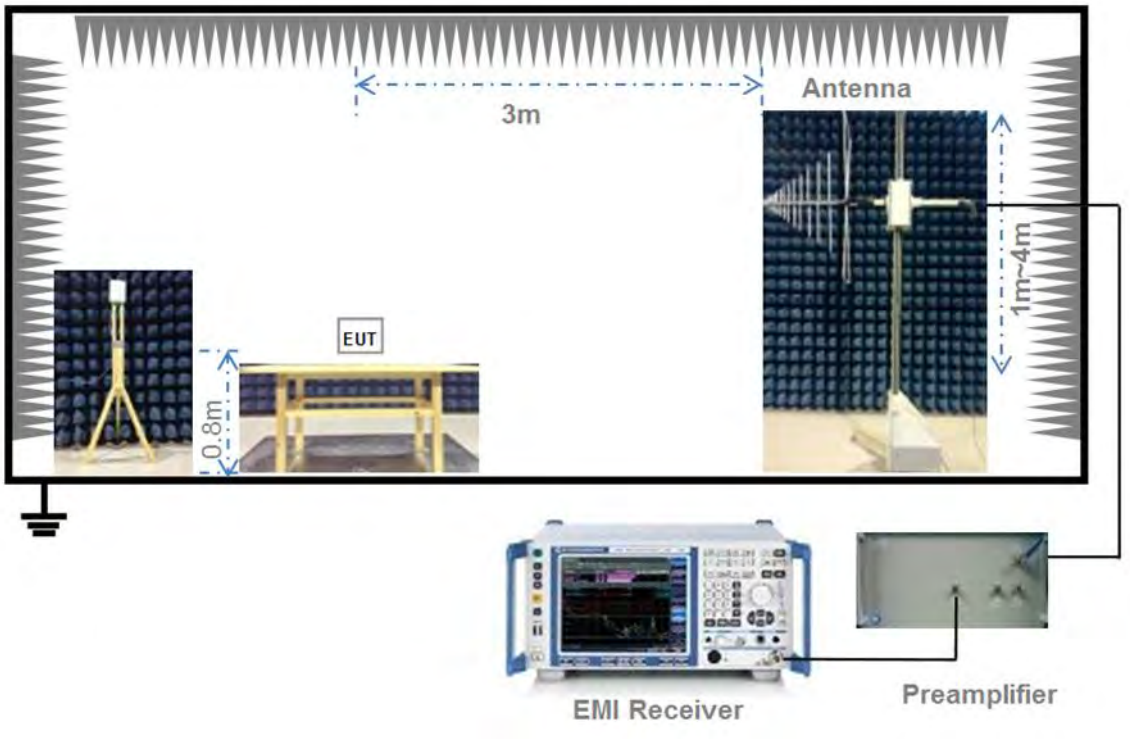
(Diagram 2)

4.5.3 For Radiated Test (Below 30 MHz)



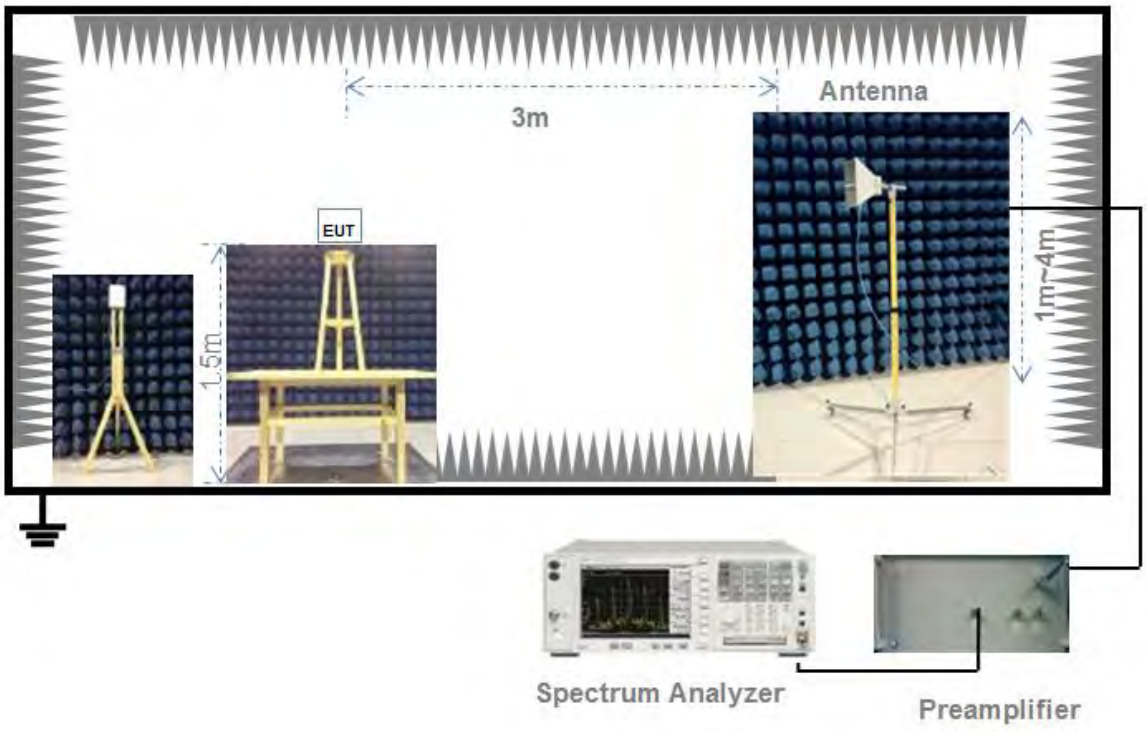
(Diagram 3)

4.5.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.5.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

4.6 Measurement Results Explanation Example

4.6.1 For conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.

4.6.2 For radiated band edges and spurious emission test:

E = EIRP – 20log D + 104.8

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

EIRP= Measure Conducted output power Value (dBm) + Maximum transmit antenna gain (dBi) + the appropriate maximum ground reflection factor (dB)

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §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. 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, or § 15.221. 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.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

Protected Method	Description
The antenna is embedded in the product.	An embedded-in antenna design is used.

Reference Documents	Item
Photo	Please refer to the EUT Photo documents.

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Output Power

5.2.1 Test Limit

FCC § 15.247(b)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements.

5.2.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Maximum peak conducted output power

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

The EUT shall be transmitted at its maximum power control level.

Maximum conducted (average) output power (Reporting Only)

a) As an alternative to spectrum analyzer or EMI receiver measurements, measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.

1) The EUT is configured to transmit continuously, or to transmit with a constant duty factor.

2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.

3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

b) If the transmitter does not transmit continuously, measure the duty cycle (x) of the transmitter output signal.

c) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

d) Adjust the measurement in dBm by adding 10log (1/x), where x is the duty cycle.

Measurements of duty cycle

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.

Set the center frequency of the instrument to the center frequency of the transmission.

Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.

Set VBW ≥ RBW. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)

5.2.4 Test Result

Please refer to ANNEX A.1.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC §15.247(a)

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.

5.3.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW) ⩾ 3 RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the 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 6 dB relative to the maximum level measured in the fundamental emission.

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Conducted Spurious Emission

5.4.1 Limit

FCC §15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.4.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The DTS rules specify that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

a) If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

b) If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

c) In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required.

The following procedures shall be used to demonstrate compliance to these limits. Note that these procedures can be used in either an antenna-port conducted or radiated test set-up. Radiated tests must conform to the test site requirements and utilize maximization procedures defined herein.

Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ≥ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW ≥ 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum PSD level.

Emission level measurement

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

Set the RBW = 100 kHz.

Set the VBW ⩾ 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in 11.1 a) or 11.1 b). Report the three highest emissions relative to the limit.

5.4.4 Test Result

Please refer to ANNEX A.3.

5.5 Band Edge (Authorized-band band-edge)

5.5.1 Limit

FCC §15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.5.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle $\geqslant$ 98%). Use the procedure described in 13.2.3 when using an average detector and the EUT cannot be configured to transmit continuously but the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent). Use the procedure described in 13.2.4 when using an average detector for those cases where the EUT cannot be configured to transmit continuously and the duty cycle is not constant (duty cycle variations equal or exceed 2 percent).

When using a peak detector to measure unwanted emissions at or near the band edge (within 2 MHz of the authorized band), the following integration procedure can be used.

Set instrument center frequency to the frequency of the emission to be measured (must be within 2 MHz of the authorized band edge).

Set span to 2 MHz

RBW = 100 kHz.

VBW $\geqslant$ 3 x RBW.

Detector = peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweep to continue until the trace stabilizes (required measurement time may increase for low duty cycle applications)

Compute the power by integrating the spectrum over 1 MHz using the analyzer's band power measurement function with band limits set equal to the emission frequency (femission) ± 0.5 MHz. If the instrument does not have a band power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by femission ± 0.5 MHz.

Standard method(The 99% OBW of the fundamental emission is without 2 MHz of the authorized band):

Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.

Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

Attenuation: Auto (at least 10 dB preferred).

Sweep time: Coupled.

Resolution bandwidth: 100 kHz.

Video bandwidth: 300 kHz.

Detector: Peak.

Trace: Max hold.

5.5.4 Test Result

Please refer to ANNEX A.4.

5.6 Conducted Emission

5.6.1 Limit

FCC §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.6.2 Test Setup

See section 4.5.2 for test setup description for the AC power supply port. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.
Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.6.4 Test Result

Please refer to ANNEX A.5.

5.7 Radiated Spurious Emission

5.7.1 Limit

FCC §15.209&15.247(d)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
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

Note:

1. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
2. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.7.2 Test Setup

See section 4.5.3 to 4.5.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

General Procedure for conducted measurements in restricted bands

a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).

e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$E = EIRP – 20\log D + 104.8$

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

f) Compare the resultant electric field strength level to the applicable limit.

g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

a) RBW = as specified in Table 1.

b) VBW ≥ 3 x RBW.

c) Detector = Peak.

d) Sweep time = auto.

e) Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be

longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then the following procedure shall be used:

a) The EUT shall be configured to operate at the maximum achievable duty cycle.

b) Measure the duty cycle, x, of the transmitter output signal as described in section 6.0.

c) RBW = 1 MHz (unless otherwise specified).

d) VBW ≥ 3 x RBW.

e) Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

f) Averaging type = power (i.e., RMS).

1) As an alternative, the detector and averaging type may be set for linear voltage averaging.

2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

g) Sweep time = auto.

h) Perform a trace average of at least 100 traces.

i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is 10 log(1/x), where x is the duty cycle.

2) If linear voltage averaging mode was used in step f), then the applicable correction factor is 20 log(1/x), where x is the duty cycle.

3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

5.7.4 Test Result

Please refer to ANNEX A.6.

5.8 Band Edge (Restricted-band band-edge)

5.8.1 Limit

FCC §15.209&15.247(d)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

5.8.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.8.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

For transmitters operating above 1 GHz repeat the measurement with an average detector.

5.8.4 Test Result

Please refer to ANNEX A.7.

5.9 Power Spectral density (PSD)

5.9.1 Limit

FCC §15.247(e)

The same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

5.9.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.9.3 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz $\leqslant$ RBW $\leqslant$ 100 kHz.

Set the VBW $\geqslant$ 3 RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.9.4 Test Result

Please refer to ANNEX A.8.

ANNEX A TEST RESULT

A.1 Output Power

Duty Cycle

Test Mode	On Time (ms)	On+Off time (ms)	Duty Cycle	Duty Factor
1.4 MHz	50	50	100.00%	0.00
3 MHz	50	50	100.00%	0.00
5 MHz	50	50	100.00%	0.00
10 MHz	50	50	100.00%	0.00
20 MHz	50	50	100.00%	0.00
40 MHz	50	50	100.00%	0.00
60 MHz	50	50	100.00%	0.00

Average Power Test Data

ANT0

1.4 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.98	250.03	30	1000	Pass
Middle	23.56	226.99			Pass
High	26.02	399.94			Pass

3 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.14	411.15	30	1000	Pass
Middle	23.76	237.68			Pass
High	26.18	414.95			Pass

5 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.75	473.15	30	1000	Pass
Middle	23.66	232.27			Pass
High	26.24	420.73			Pass

10 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.88	307.61	30	1000	Pass
Middle	26.22	418.79			Pass
High	25.38	345.14			Pass

20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	17.34	54.20	30	1000	Pass
Middle	26.85	484.17			Pass
High	21.39	137.72			Pass

40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	12.27	16.87	30	1000	Pass
Middle	24.23	264.85			Pass
High	15.81	38.11			Pass

60 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	6.79	4.78	30	1000	Pass
Middle	8.38	6.89			Pass
High	8.98	7.91			Pass

ANT1

1.4 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.51	447.71	30	1000	Pass
Middle	23.67	232.81			Pass
High	26.55	451.86			Pass

3 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.74	472.06	30	1000	Pass
Middle	23.73	236.05			Pass
High	26.29	425.60			Pass

5 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.64	461.32	30	1000	Pass
Middle	23.77	238.23			Pass
High	26.27	423.64			Pass

10 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.98	314.77	30	1000	Pass
Middle	26.38	434.51			Pass
High	25.89	388.15			Pass

20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	20.38	109.14	30	1000	Pass
Middle	26.49	445.66			Pass
High	21.77	150.31			Pass

40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	13.29	21.33	30	1000	Pass
Middle	24.49	281.19			Pass
High	15.22	33.27			Pass

60 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	7.19	5.24	30	1000	Pass
Middle	6.81	4.80			Pass
High	7.88	6.14			Pass

A.2 Occupied Bandwidth

Note: All antenna were pre tested, but only the worst case has been reported in this report.

ANT0

Test Data

1.4 MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	1.134000	1.126200	⩾500
Middle	1.134000	1.128100	⩾500
High	1.134000	1.138600	⩾500

3 MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	2.250000	2.185700	⩾500
Middle	2.250000	2.189800	⩾500
High	2.250000	2.186100	⩾500

5 MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	4.400000	4.319900	⩾500
Middle	4.400000	4.315800	⩾500
High	4.400000	4.345300	⩾500

10 MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	9.070000	9.349000	⩾500
Middle	9.070000	9.436000	⩾500
High	9.070000	9.464500	⩾500

20 MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	17.730000	17.779000	⩾500
Middle	17.730000	17.912000	⩾500
High	17.730000	17.793000	⩾500

40 MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	25.730000	32.731000	⩾500
Middle	25.730000	33.002000	⩾500
High	25.600000	32.631000	⩾500

60 MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	54.800000	53.256000	⩾500
Middle	54.600000	53.254000	⩾500
High	54.600000	53.252000	⩾500

Test Plots

6 dB Bandwidth

1.4 MHz LOW CHANNEL

1.4 MHz MIDDLE CHANNEL

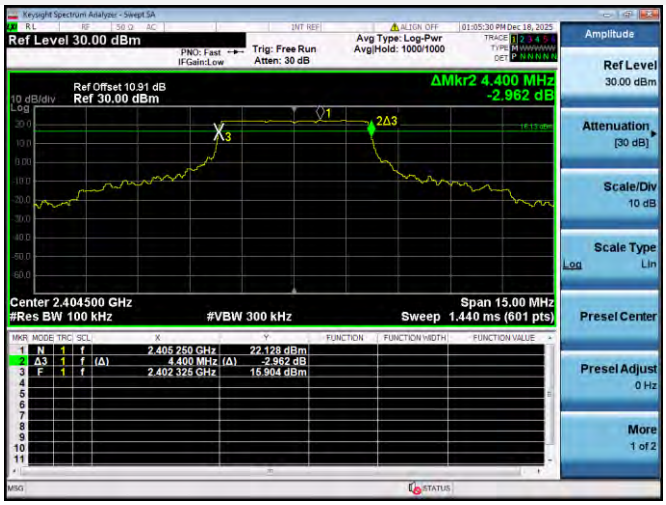
1.4 MHz HIGH CHANNEL

3 MHz LOW CHANNEL

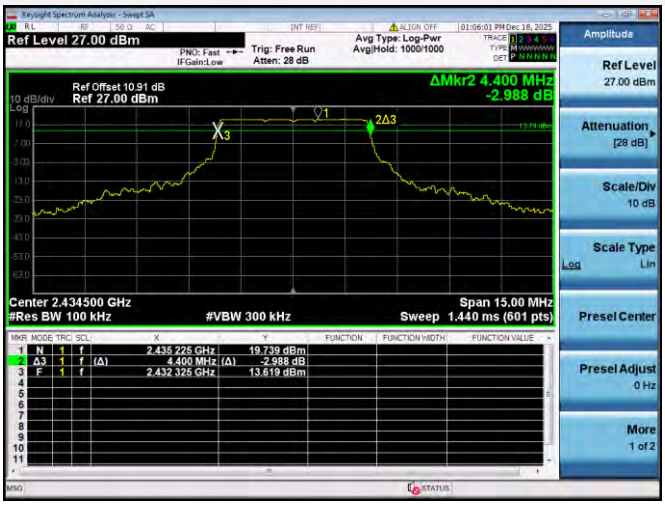
3 MHz MIDDLE CHANNEL

3 MHz HIGH CHANNEL

5 MHz LOW CHANNEL

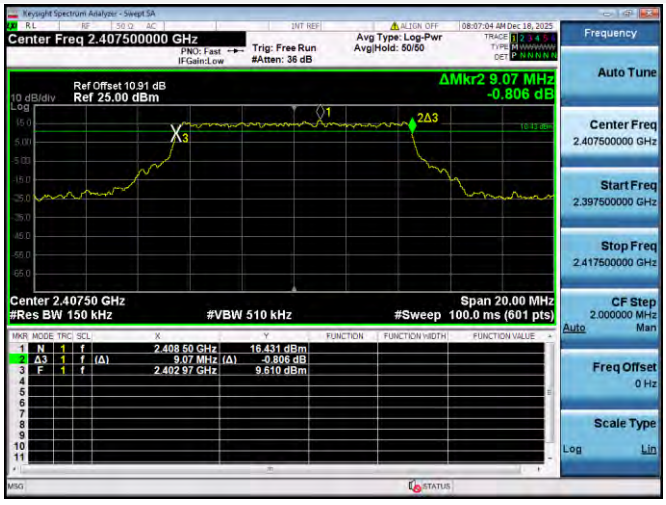


5MHz MIDDLE CHANNEL

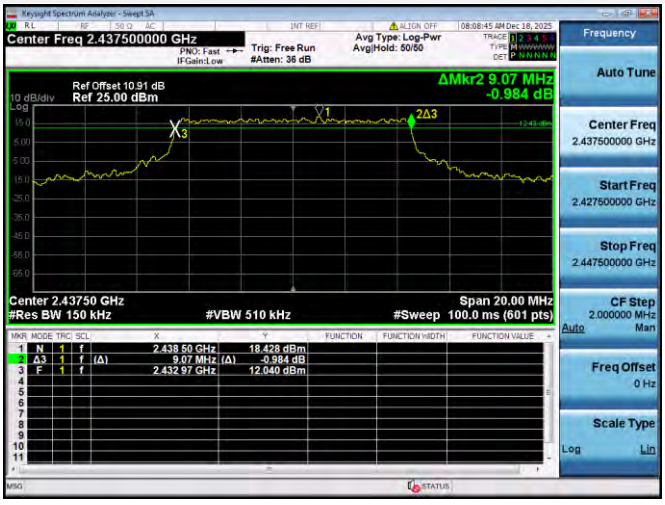


5 MHz HIGH CHANNEL

10 MHz LOW CHANNEL

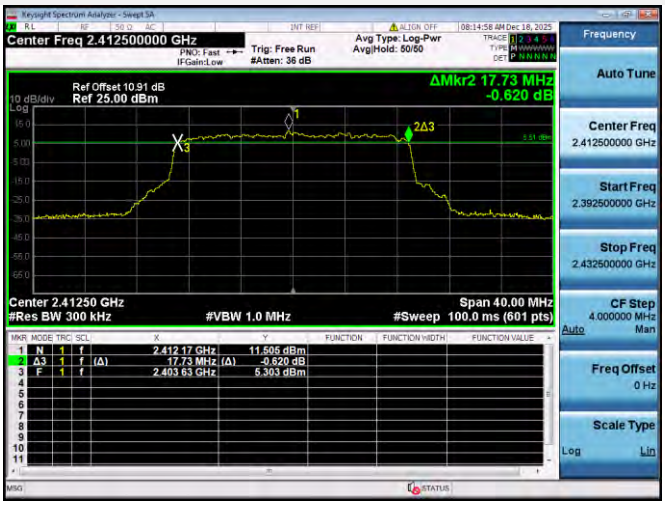


10 MHz MIDDLE CHANNEL



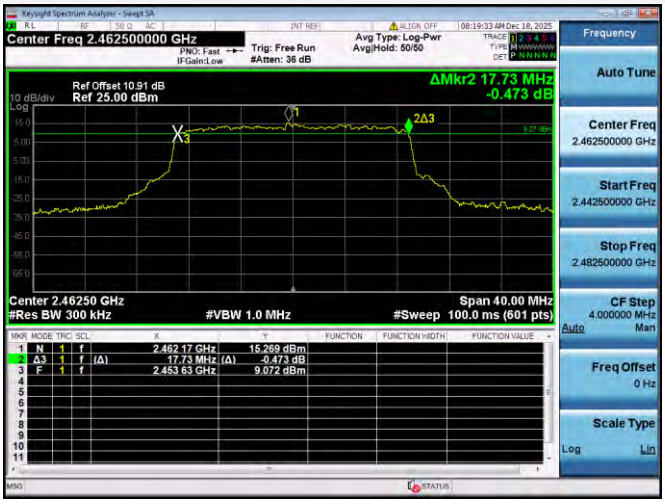
10 MHz HIGH CHANNEL

20 MHz LOW CHANNEL



20 MHz MIDDLE CHANNEL

20 MHz HIGH CHANNEL



40 MHz LOW CHANNEL

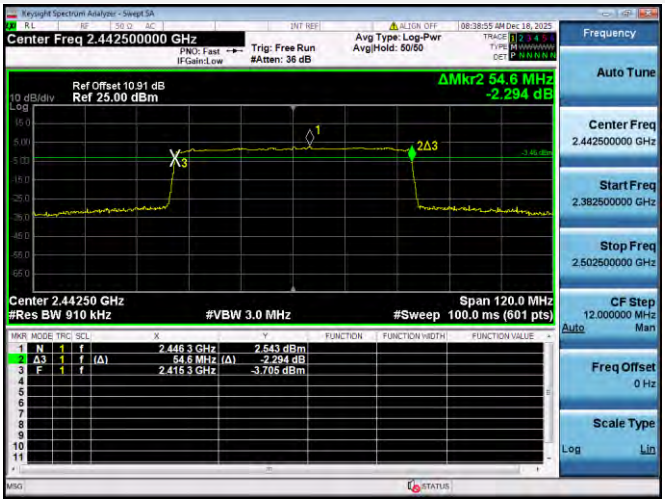
40 MHz MIDDLE CHANNEL

40 MHz HIGH CHANNEL

60 MHz LOW CHANNEL

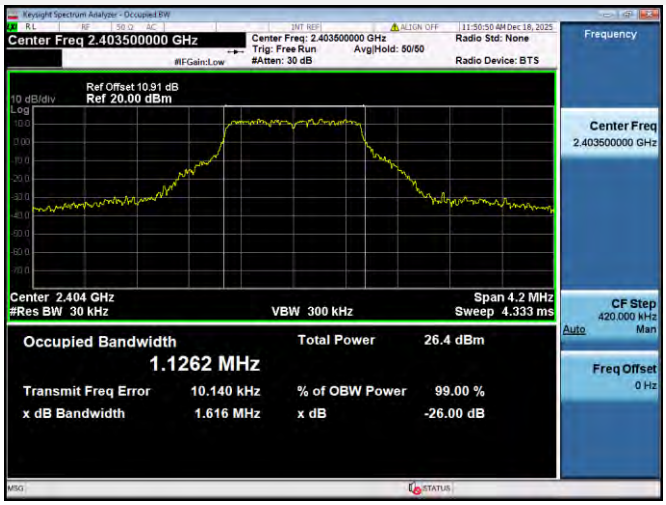
60 MHz MIDDLE CHANNEL

60 MHz HIGH CHANNEL

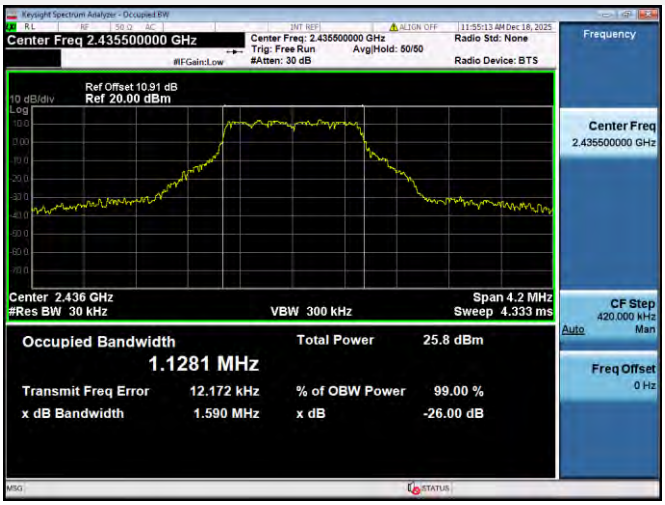


99% Bandwidth

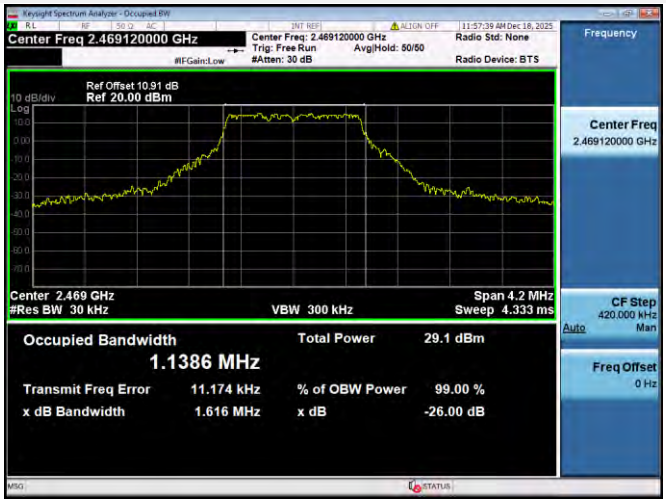
1.4 MHz LOW CHANNEL



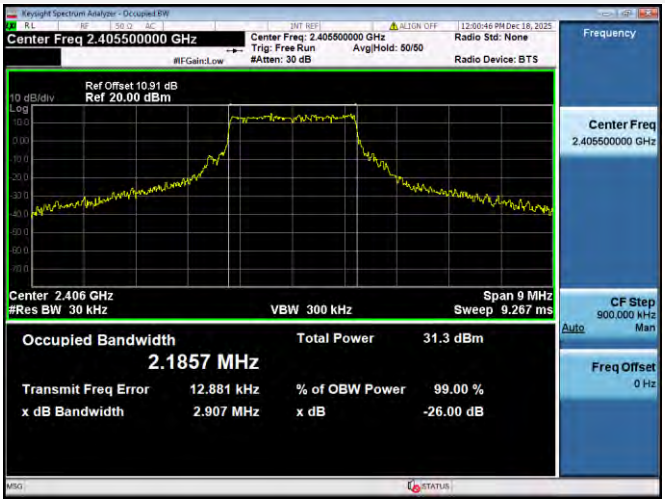
1.4 MHz MIDDLE CHANNEL



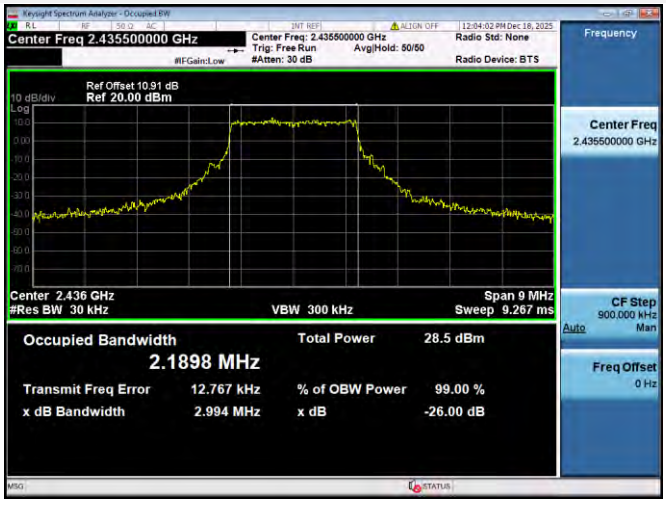
1.4 MHz HIGH CHANNEL



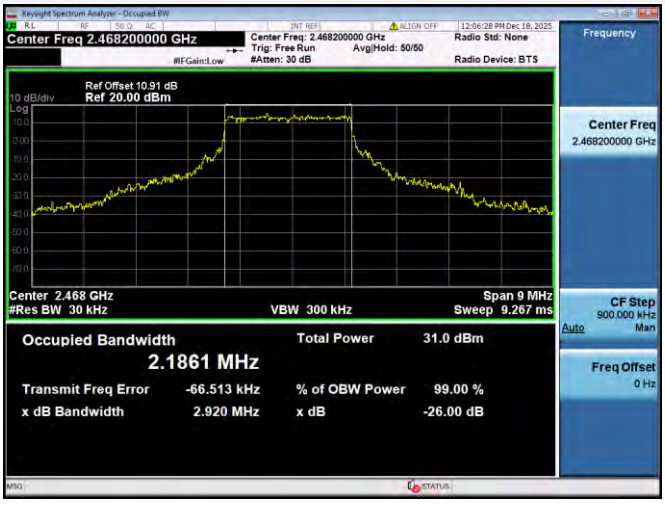
3 MHz LOW CHANNEL



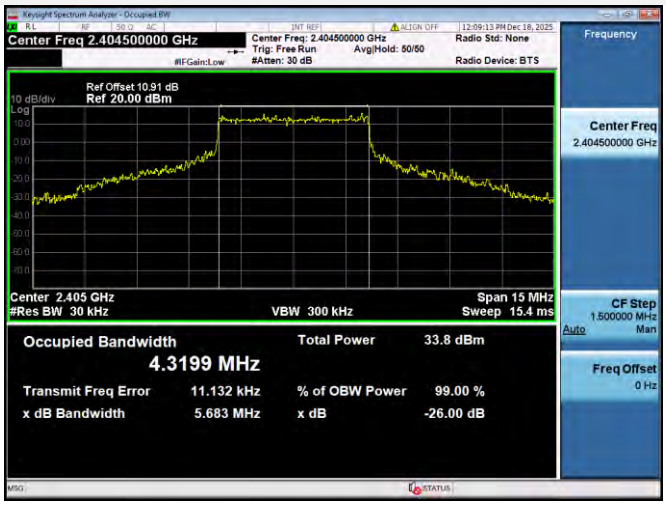
3 MHz MIDDLE CHANNEL



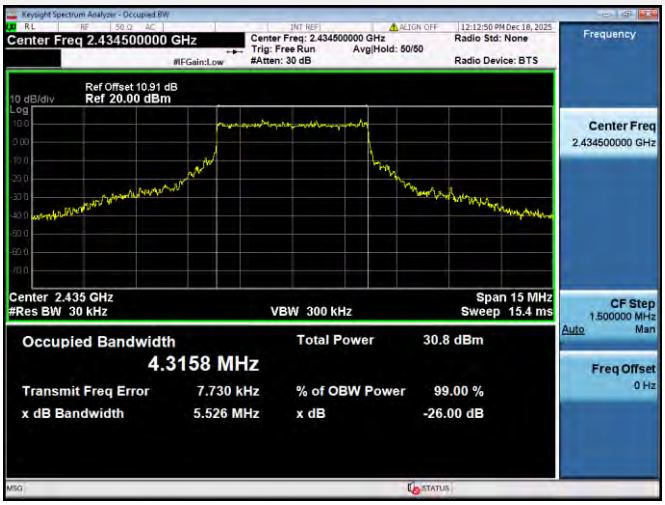
3 MHz HIGH CHANNEL



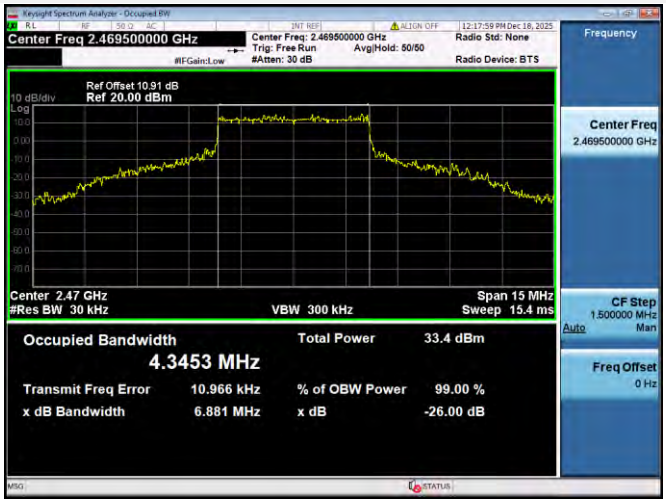
5 MHz LOW CHANNEL



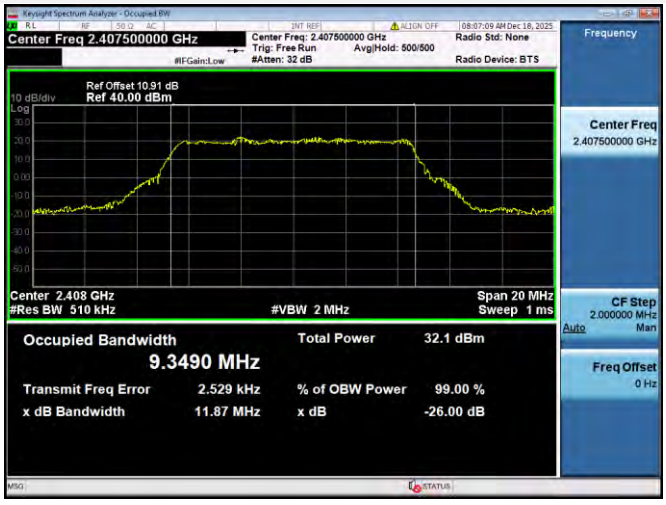
5MHz MIDDLE CHANNEL



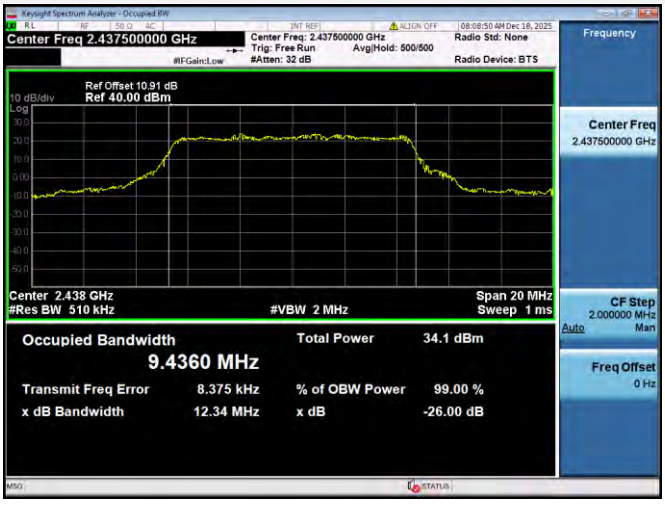
5 MHz HIGH CHANNEL



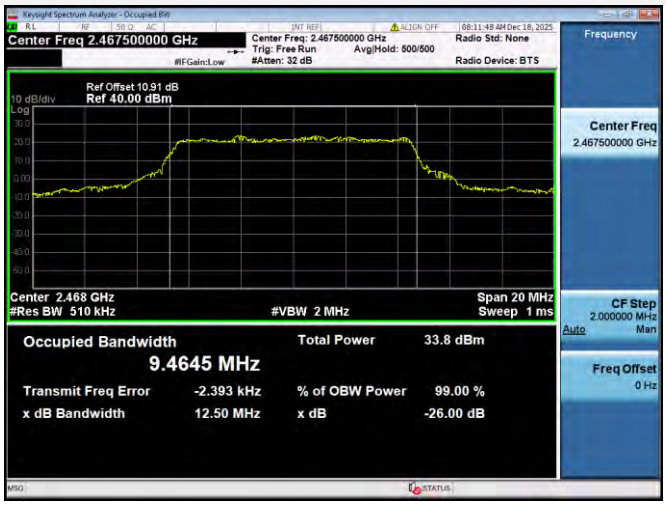
10 MHz LOW CHANNEL



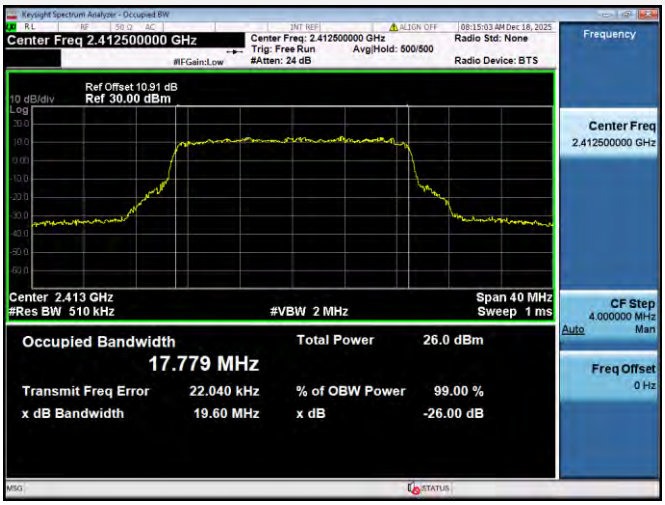
10 MHz MIDDLE CHANNEL



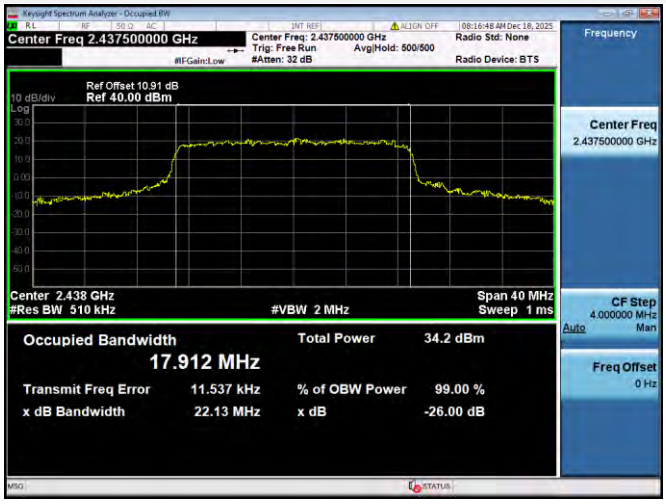
10 MHz HIGH CHANNEL



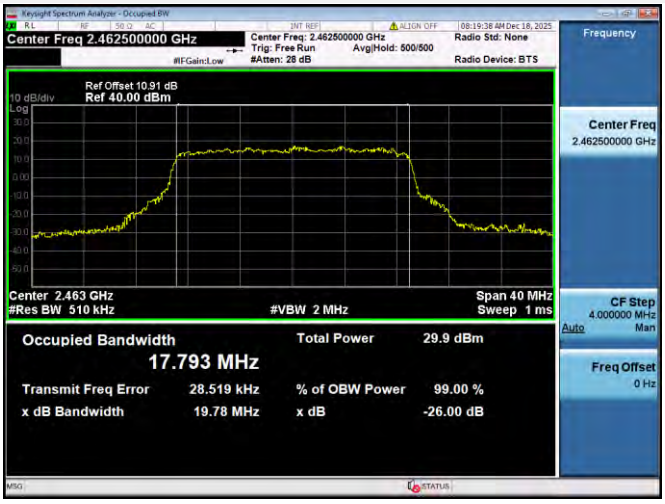
20 MHz LOW CHANNEL



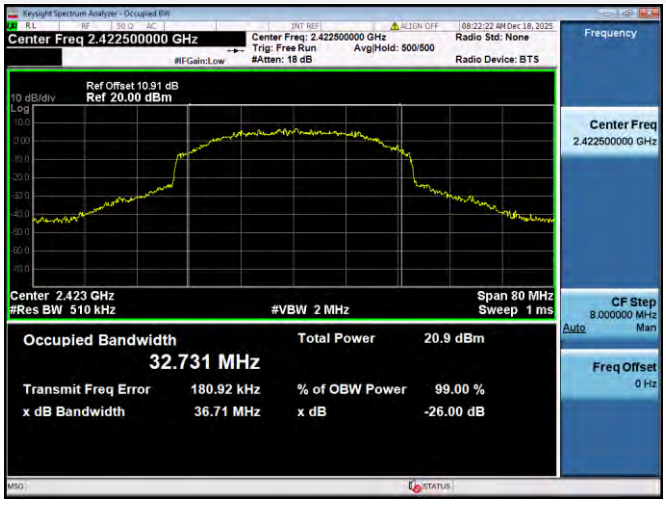
20 MHz MIDDLE CHANNEL



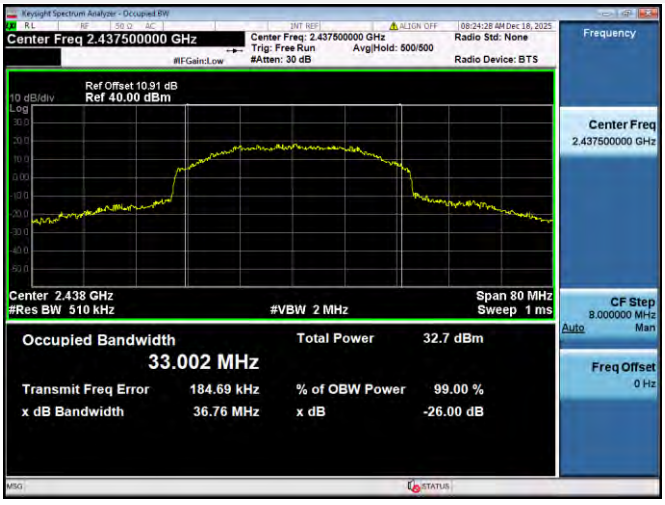
20 MHz HIGH CHANNEL



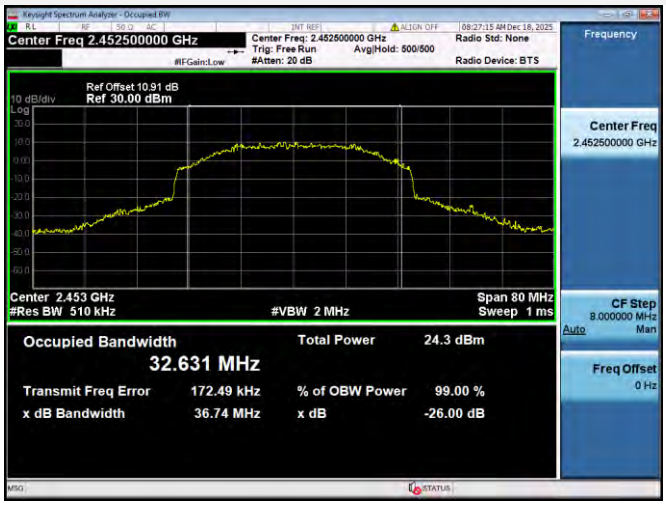
40 MHz LOW CHANNEL



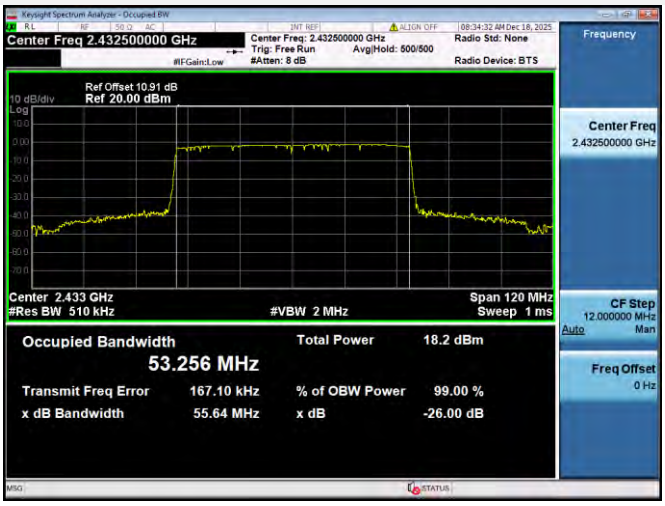
40 MHz MIDDLE CHANNEL



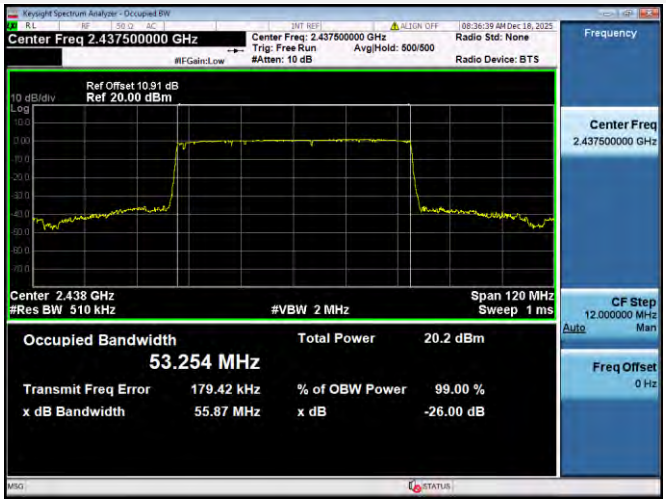
40 MHz HIGH CHANNEL



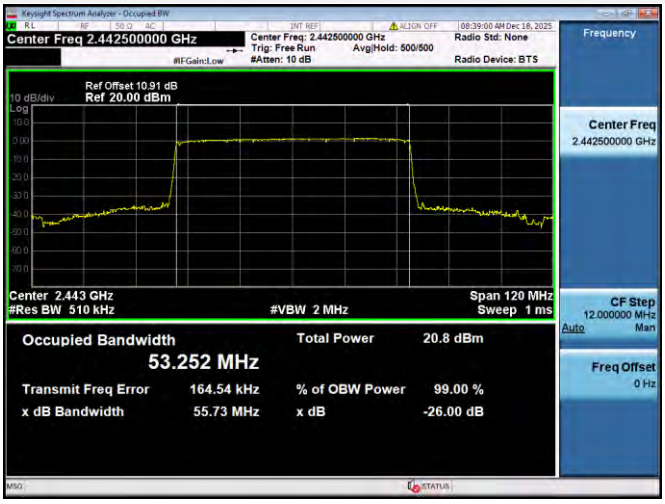
60 MHz LOW CHANNEL



60 MHz MIDDLE CHANNEL



60 MHz HIGH CHANNEL



A.3 Conducted Spurious Emissions

Note: All antenna were pre tested, but only the worst case has been reported in this report.

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Test Data

1.4 MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-28.04	18.10	-1.90	Pass
Middle	-25.83	17.83	-2.17	Pass
High	-26.08	20.78	0.78	Pass

3 MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-25.78	20.60	0.60	Pass
Middle	-25.90	18.00	-2.01	Pass
High	-25.79	20.38	0.38	Pass

5 MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-25.82	21.76	1.76	Pass
Middle	-25.36	18.78	-1.23	Pass
High	-25.70	21.48	1.48	Pass

10 MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-35.82	14.66	-5.34	Pass
Middle	-29.63	16.70	-3.30	Pass
High	-28.17	16.42	-3.58	Pass

20 MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-33.54	6.48	-13.52	Pass
Middle	-32.35	14.30	-5.70	Pass
High	-35.44	10.12	-9.88	Pass

40 MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-34.63	-0.46	-20.46	Pass
Middle	-36.01	11.30	-8.71	Pass
High	-34.54	2.95	-17.06	Pass

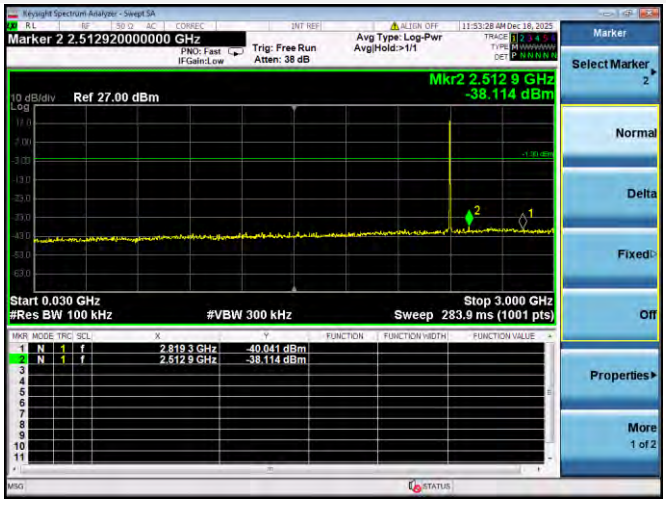
60 MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.39	-7.85	-27.85	Pass
Middle	-36.26	-5.97	-25.97	Pass
High	-35.27	-5.32	-25.32	Pass

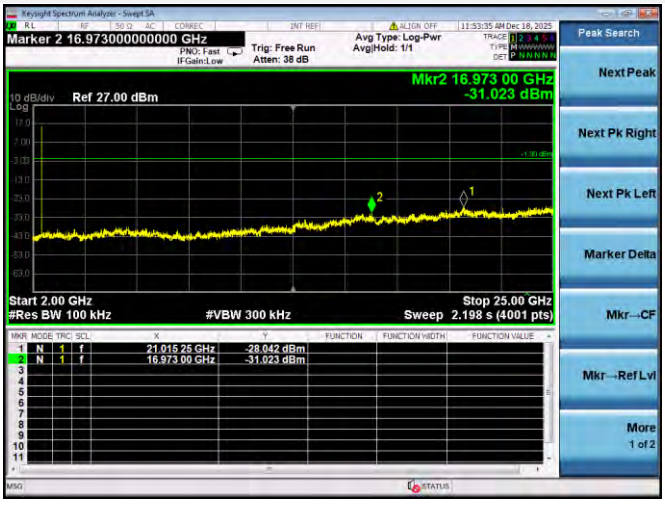
Test Plots

1.4 MHz LOW CHANNEL CARRIER LEVEL

1.4 MHz LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

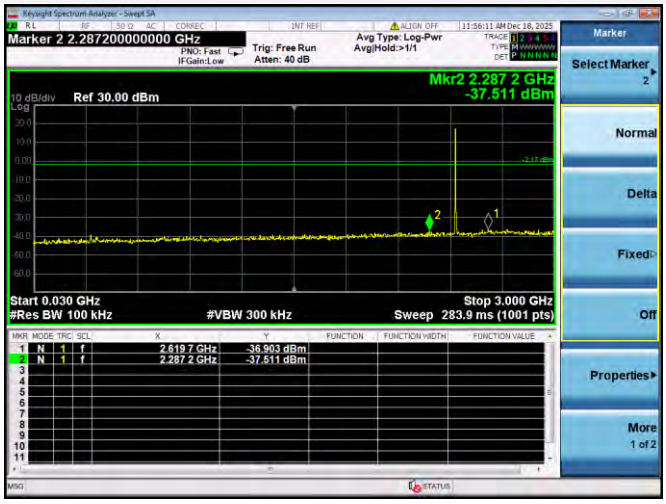


1.4 MHz LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

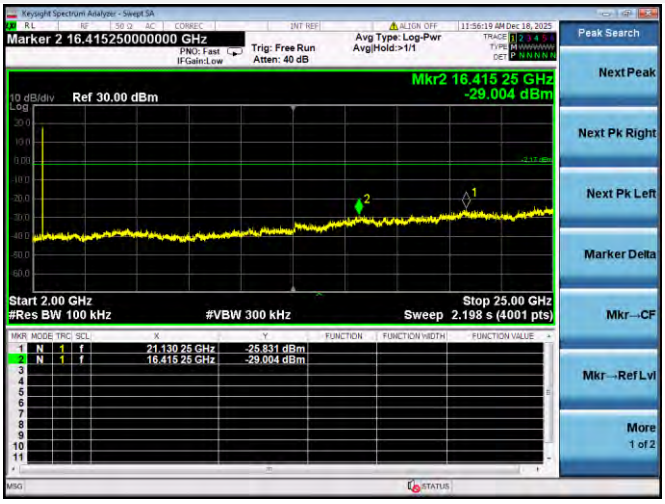


1.4 MHz MIDDLE CHANNEL CARRIER LEVEL

1.4 MHz MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

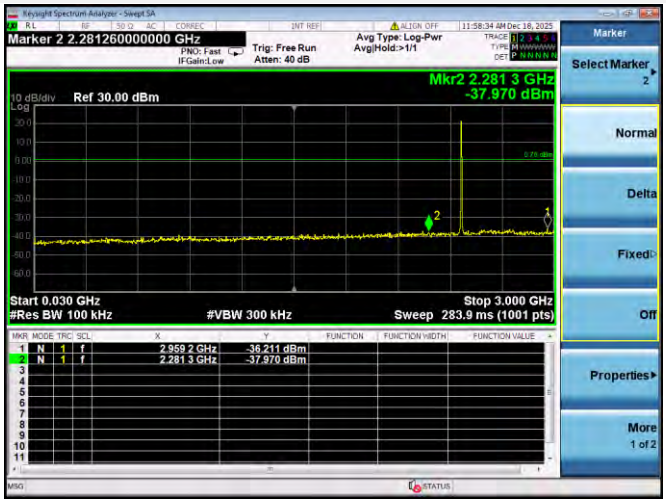


1.4 MHz MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

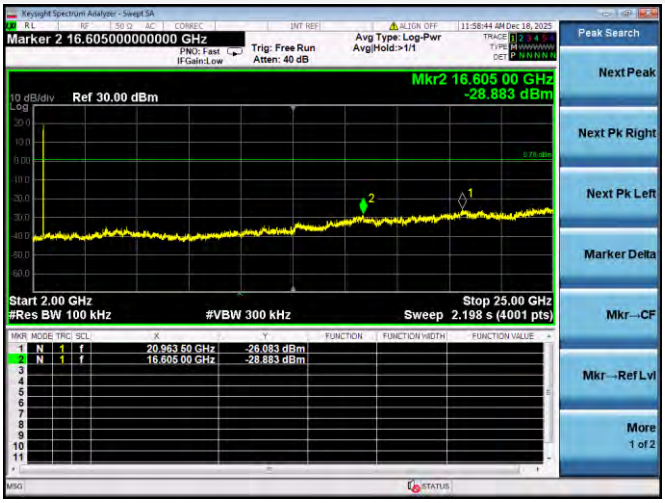


1.4 MHz HIGH CHANNEL CARRIER LEVEL

1.4 MHz HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

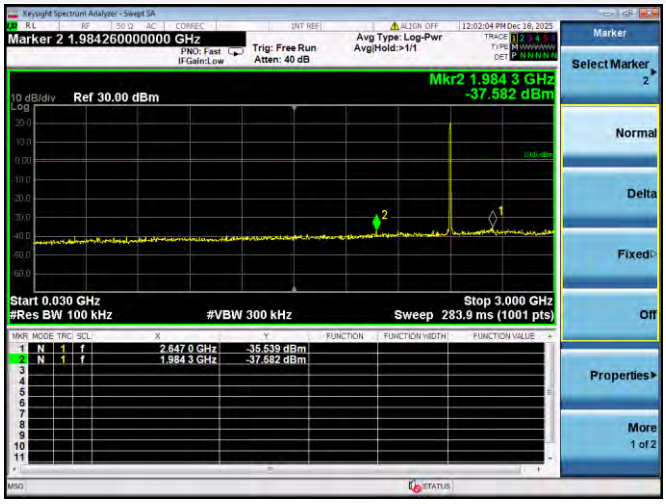


1.4 MHz HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

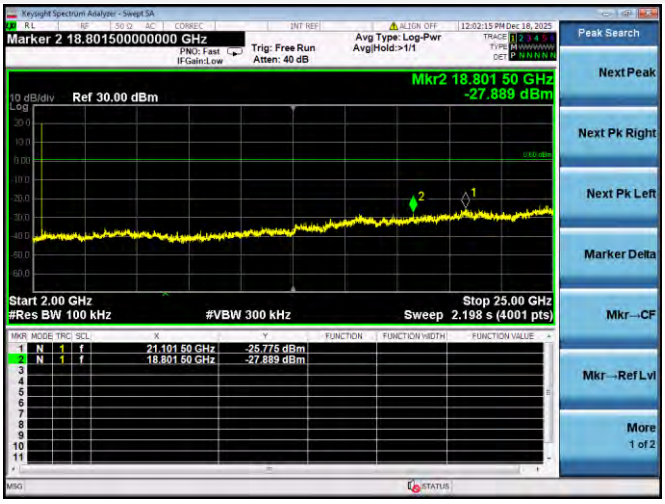


3 MHz LOW CHANNEL CARRIER LEVEL

3 MHz LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



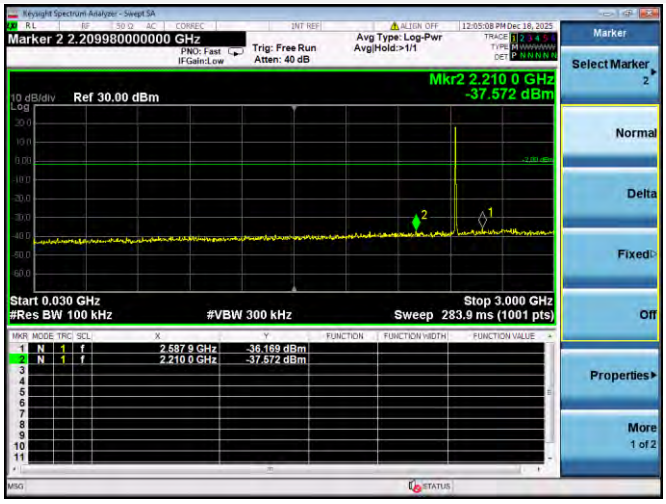
3 MHz LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



3 MHz MIDDLE CHANNEL CARRIER LEVEL

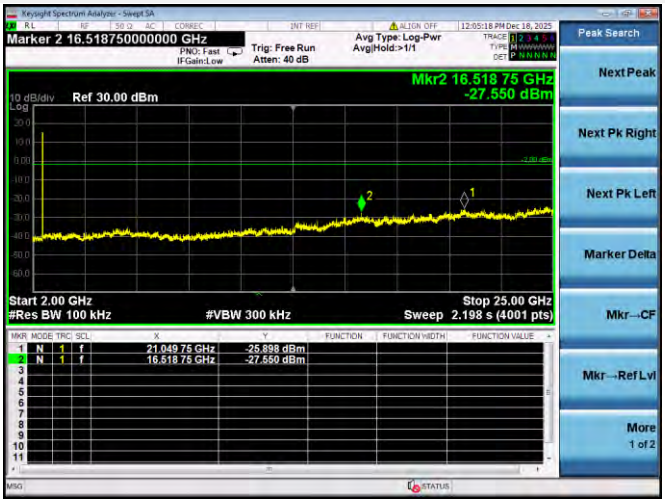
3 MHz MIDDLE CHANNEL, SPURIOUS

30 MHz ~ 3 GHz

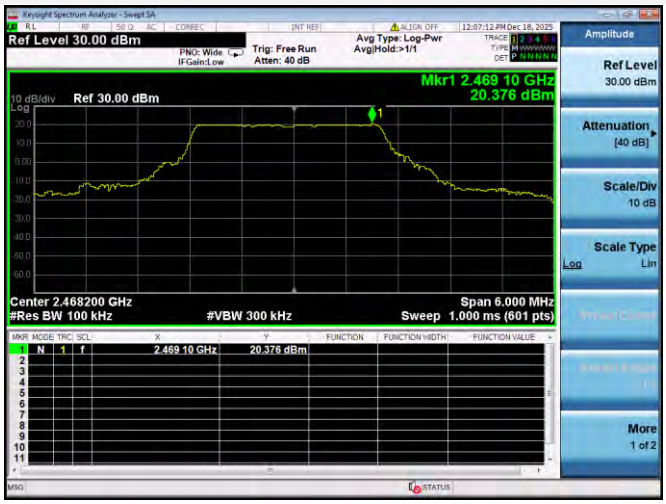


3 MHz MIDDLE CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

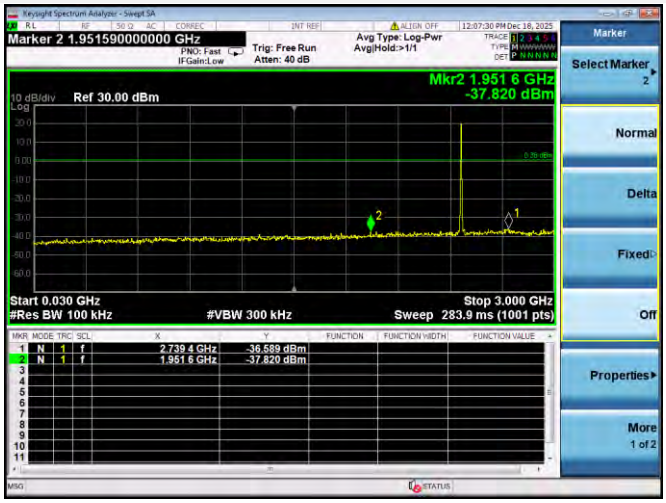


3 MHz HIGH CHANNEL CARRIER LEVEL



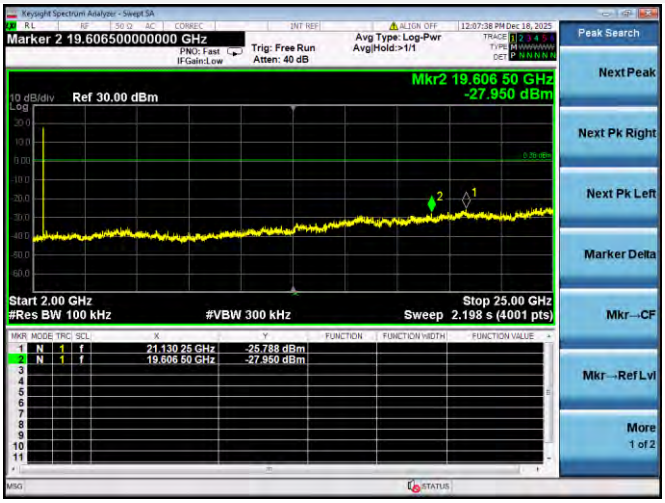
3 MHz HIGH CHANNEL, SPURIOUS

30 MHz ~ 3 GHz

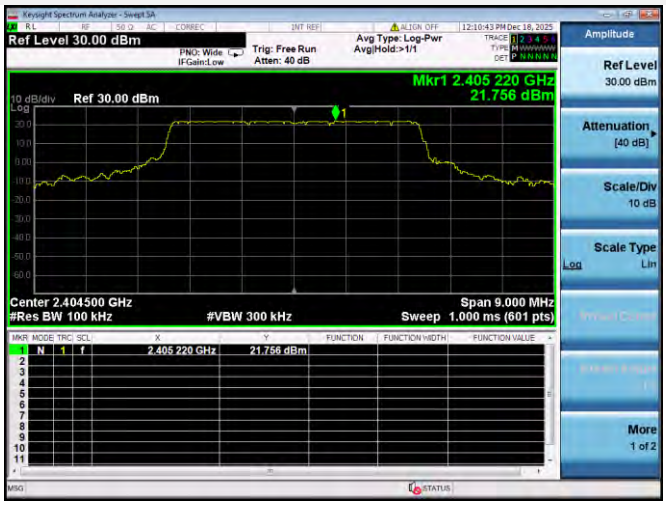


3 MHz HIGH CHANNEL, SPURIOUS

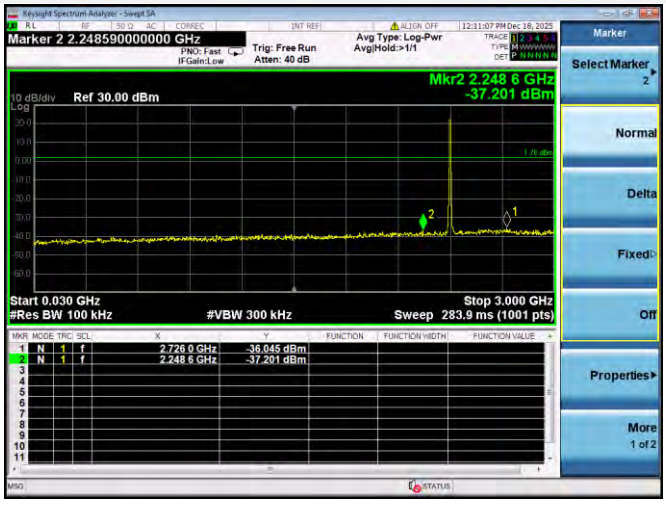
2 GHz ~ 25 GHz



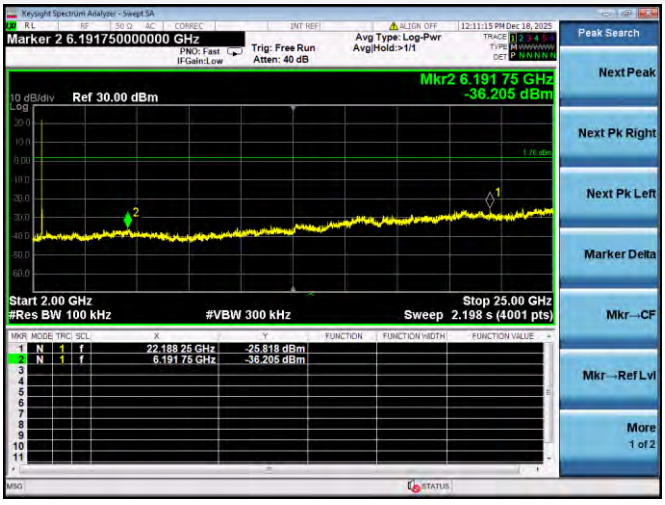
5 MHz LOW CHANNEL CARRIER LEVEL



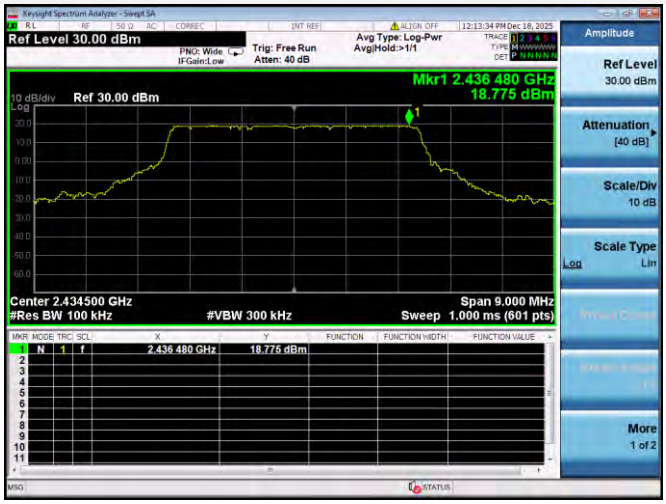
5 MHz LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



5 MHz LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

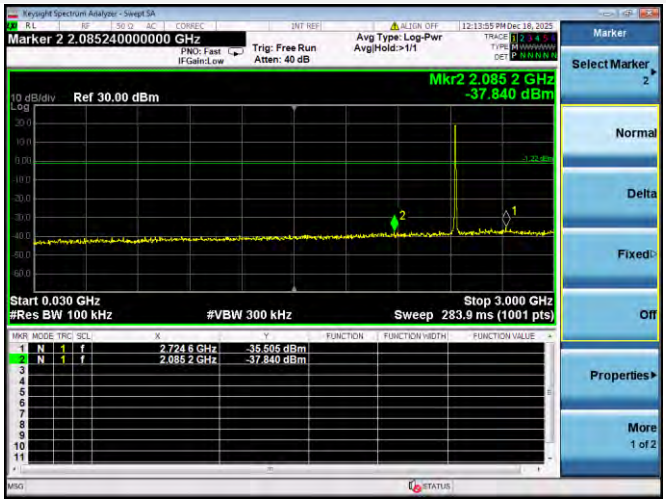


5 MHz MIDDLE CHANNEL CARRIER LEVEL



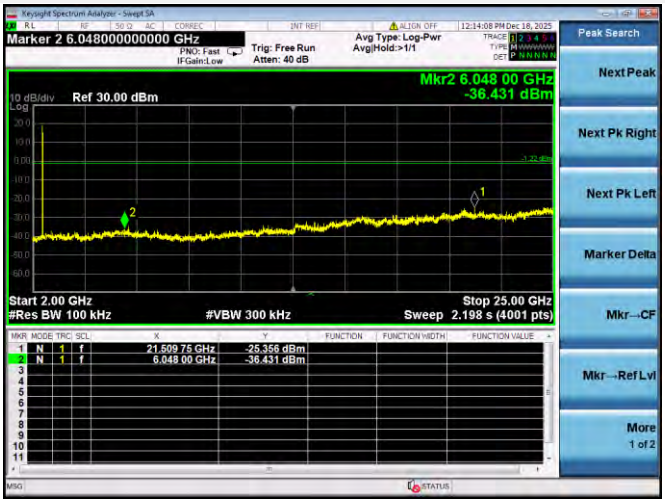
5 MHz MIDDLE CHANNEL, SPURIOUS

30 MHz ~ 3 GHz

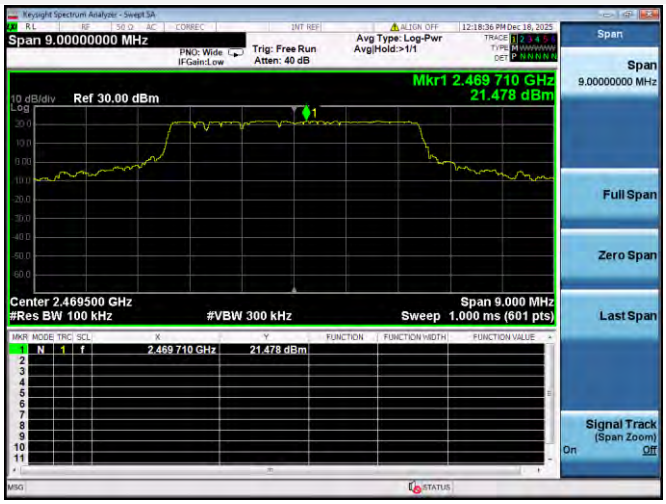


5 MHz MIDDLE CHANNEL, SPURIOUS

2 GHz ~ 25 GHz

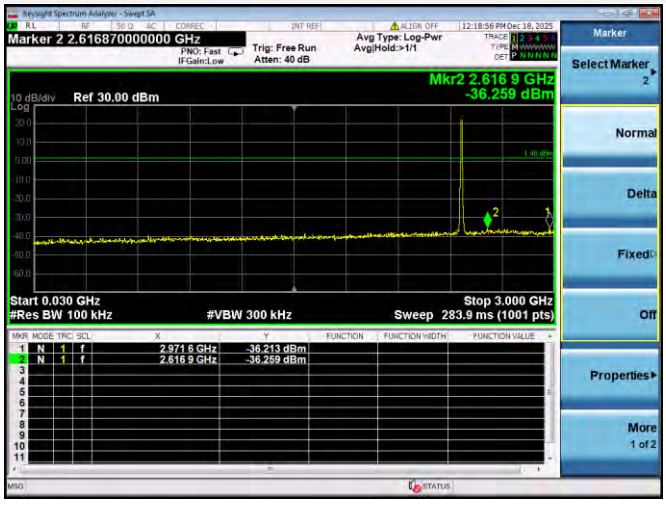


5 MHz HIGH CHANNEL CARRIER LEVEL



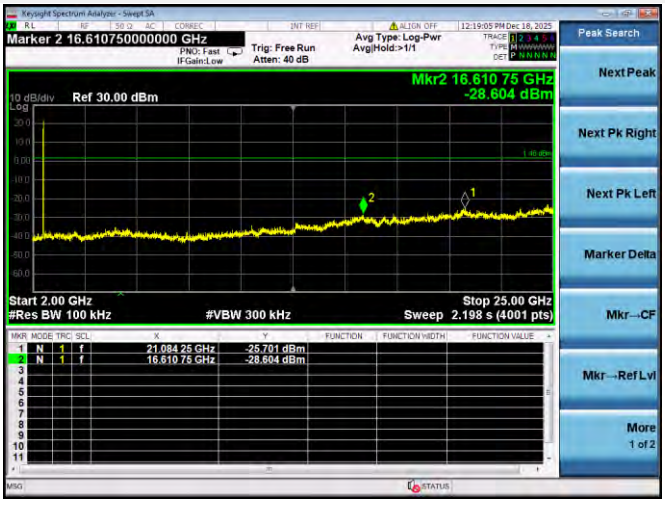
5 MHz HIGH CHANNEL, SPURIOUS

30 MHz ~ 3 GHz

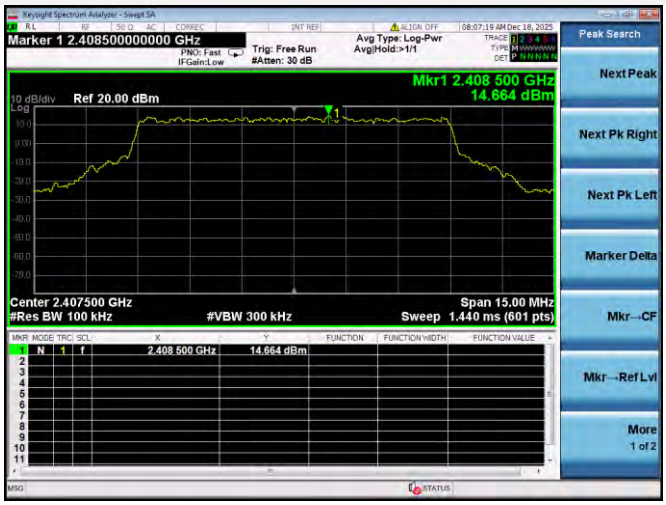


5 MHz HIGH CHANNEL, SPURIOUS

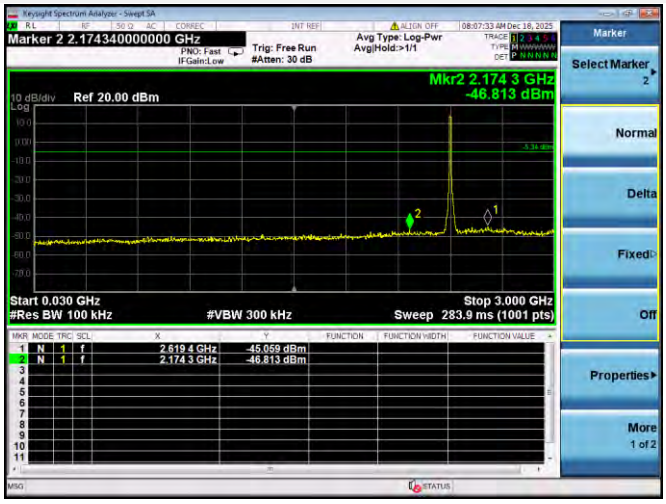
2 GHz ~ 25 GHz



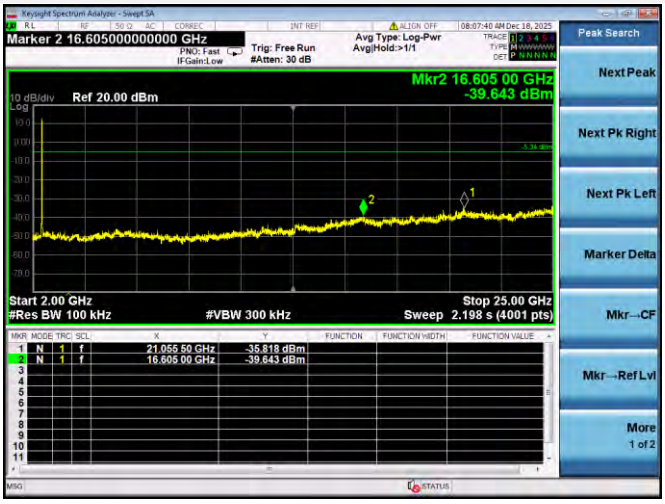
10 MHz LOW CHANNEL CARRIER LEVEL



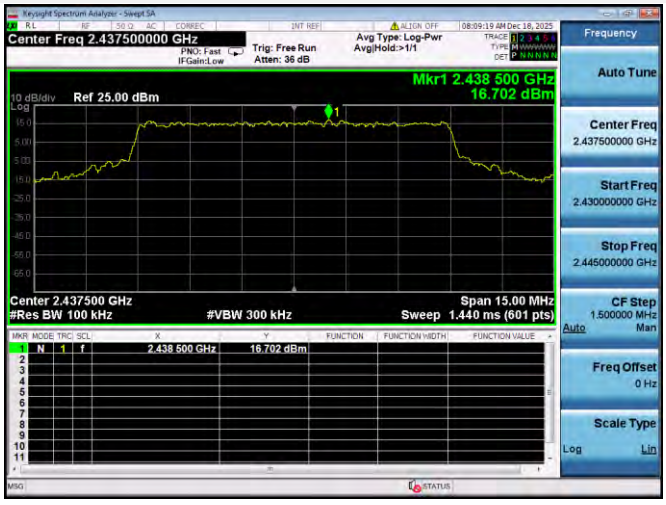
10 MHz LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



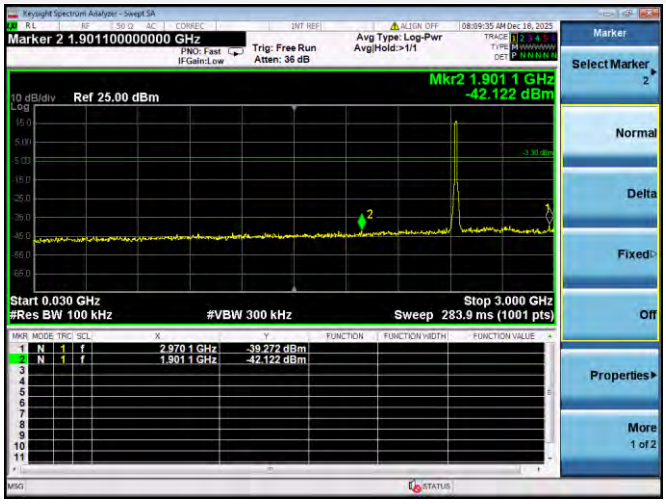
10 MHz LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



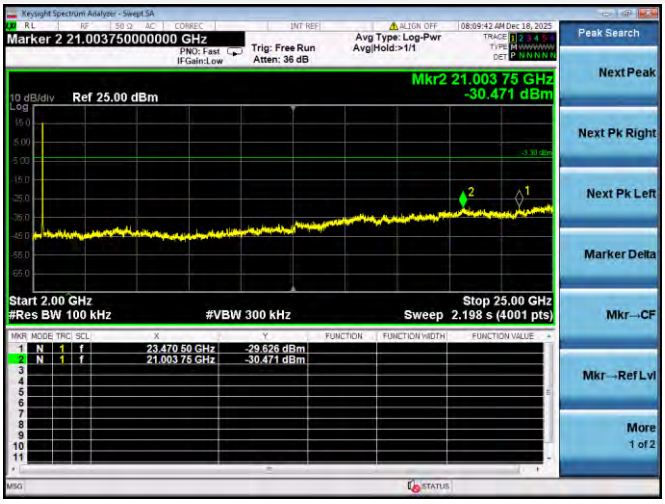
10 MHz MIDDLE CHANNEL CARRIER LEVEL



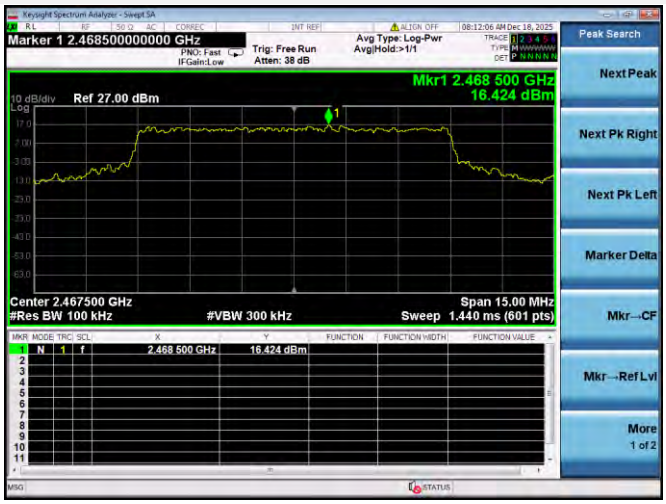
10 MHz MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



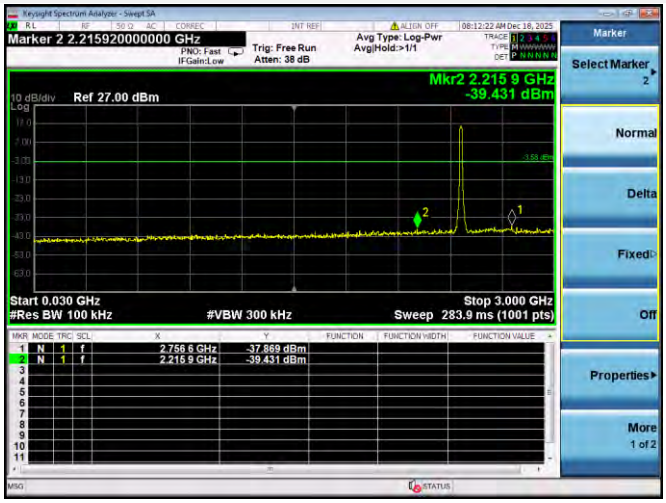
10 MHz MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



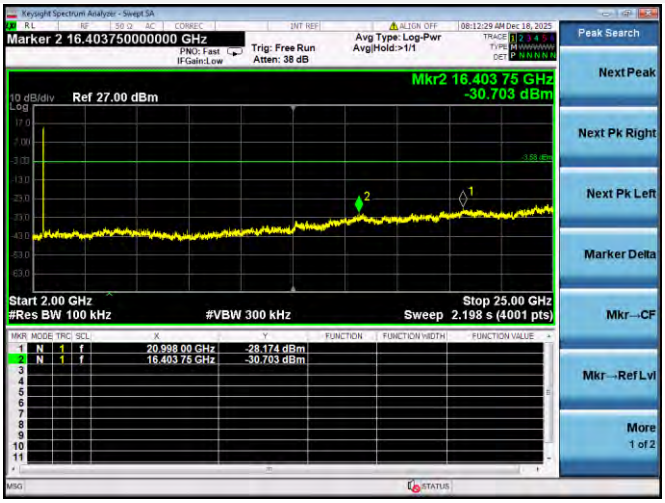
10 MHz HIGH CHANNEL CARRIER LEVEL



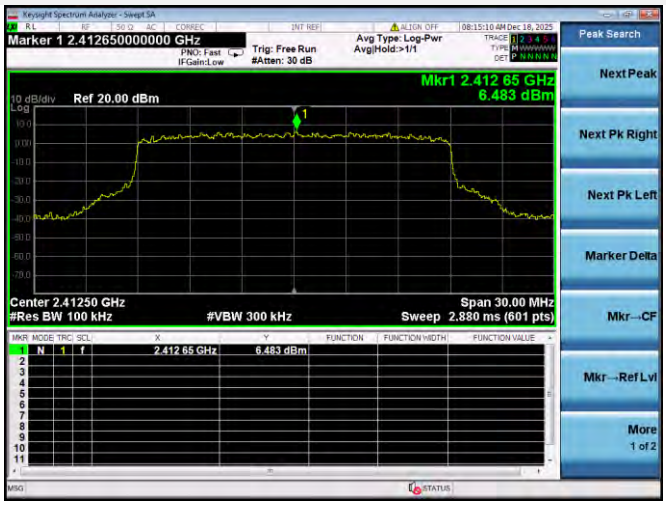
10 MHz HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



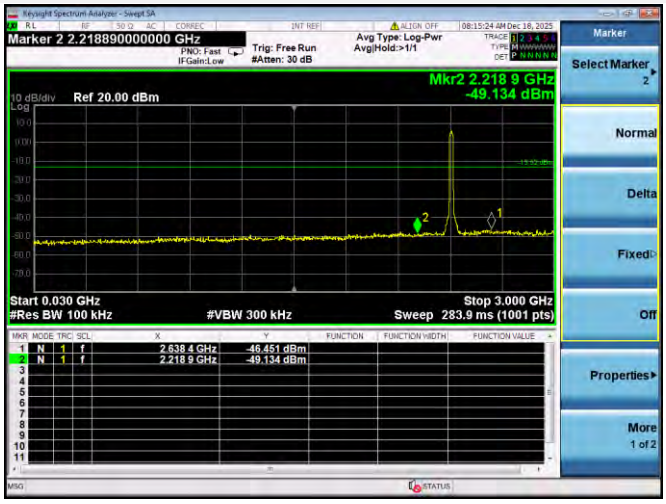
10 MHz HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



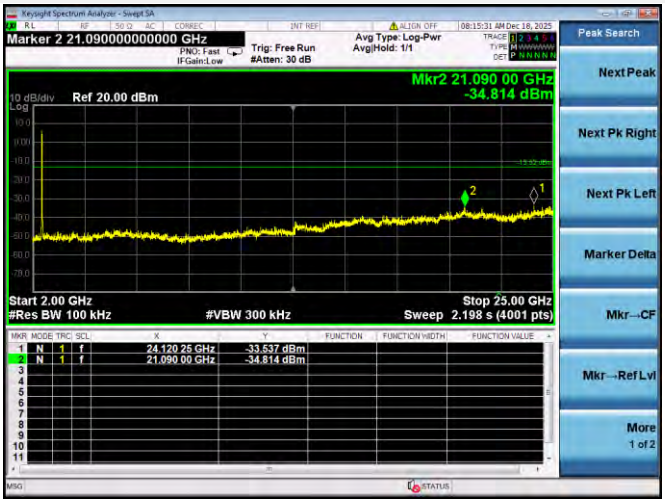
20 MHz LOW CHANNEL CARRIER LEVEL



20 MHz LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

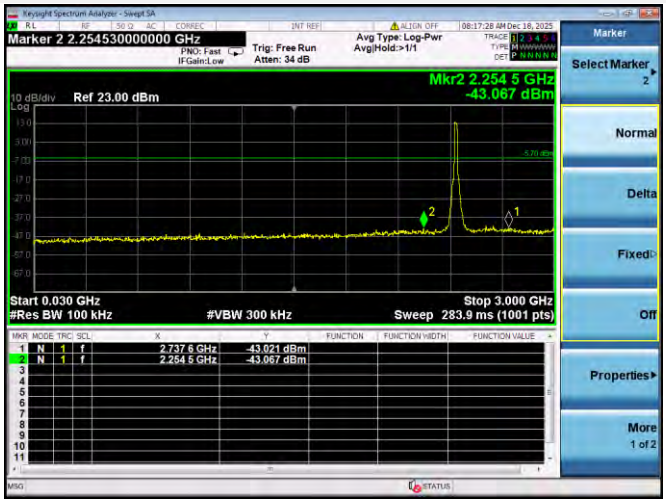


20 MHz LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

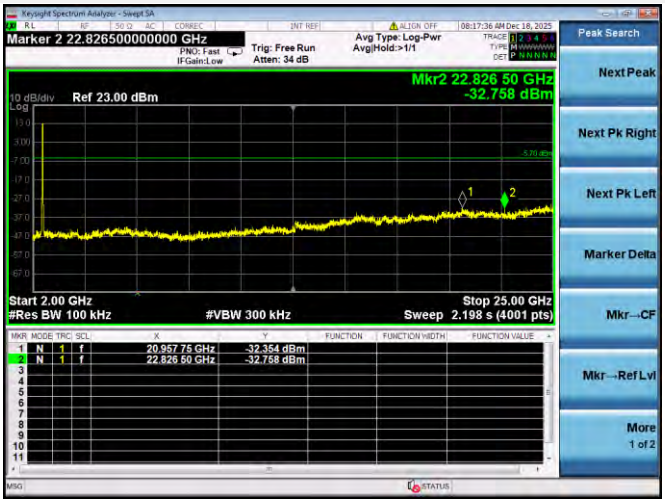


20 MHz MIDDLE CHANNEL CARRIER LEVEL

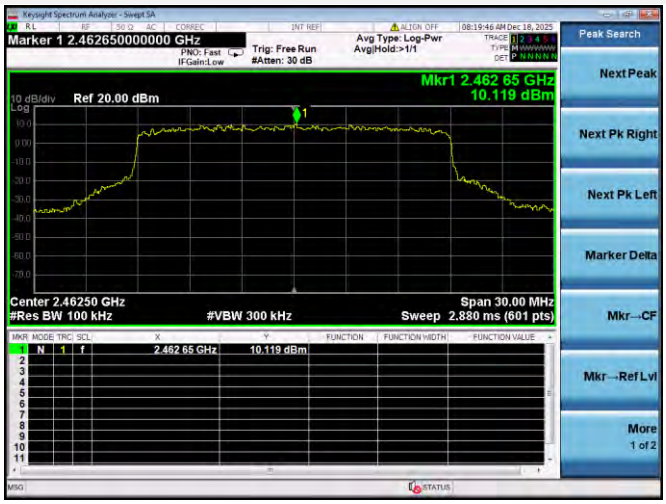
20 MHz MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



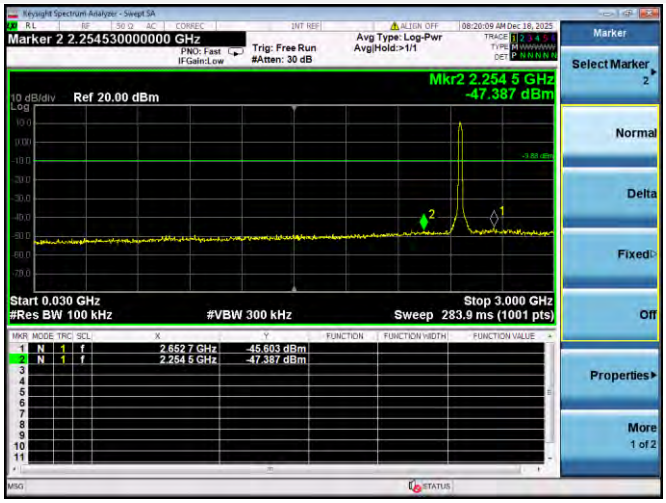
20 MHz MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



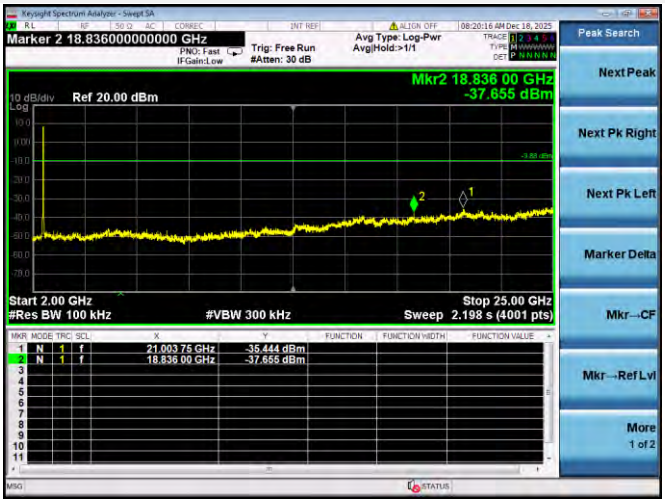
20 MHz HIGH CHANNEL CARRIER LEVEL



20 MHz HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

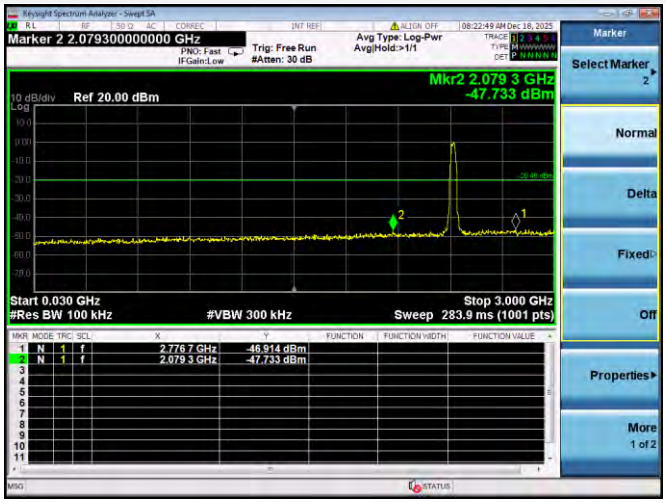


20 MHz HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

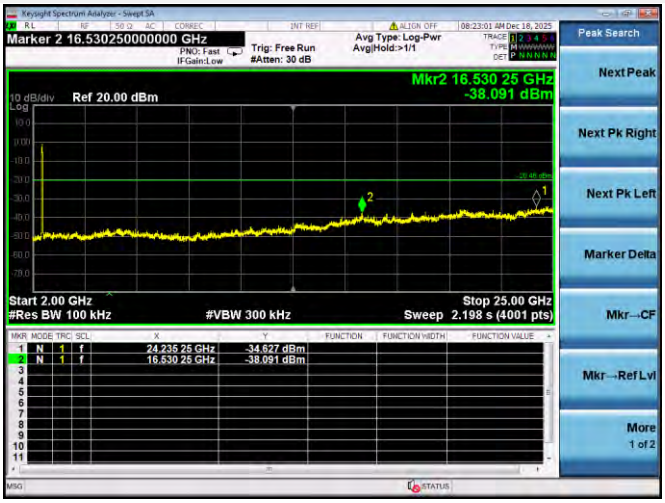


40 MHz LOW CHANNEL CARRIER LEVEL

40 MHz LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

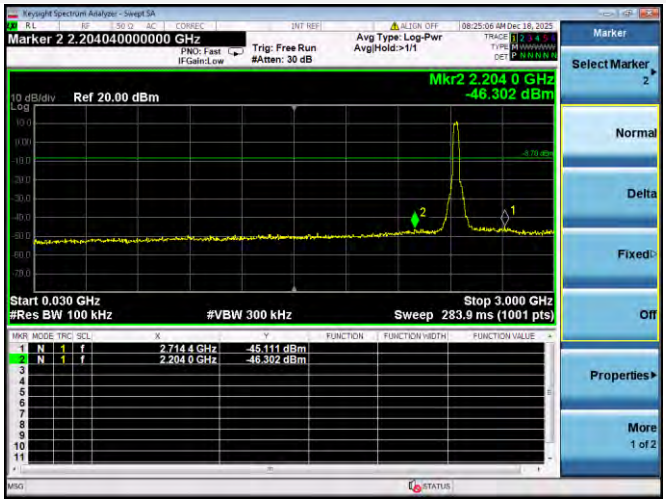


40 MHz LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

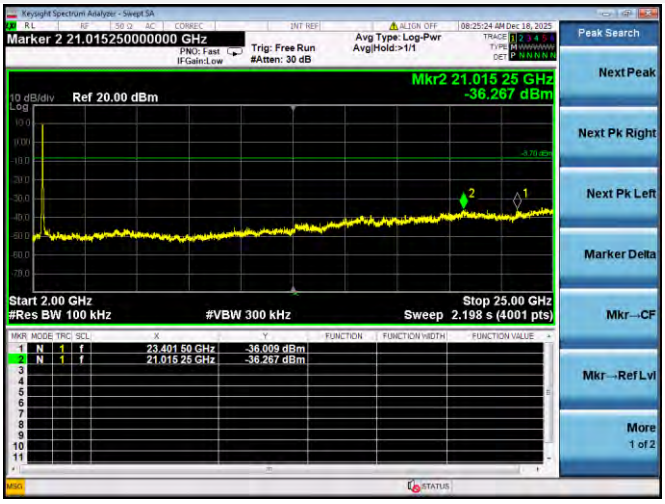


40 MHz MIDDLE CHANNEL CARRIER LEVEL

40 MHz MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

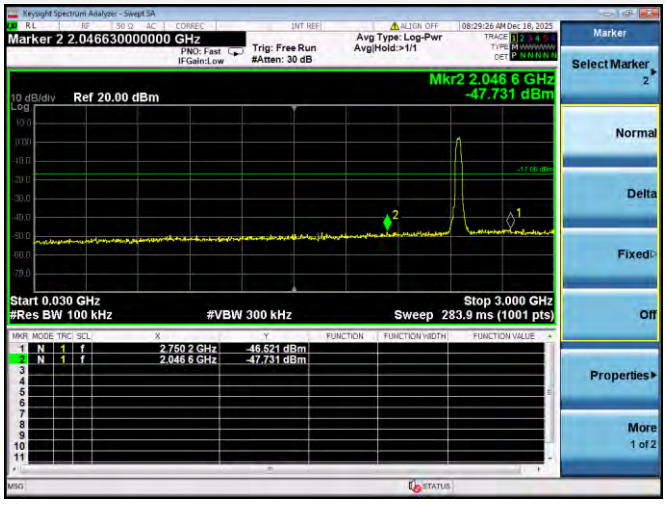


40 MHz MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz

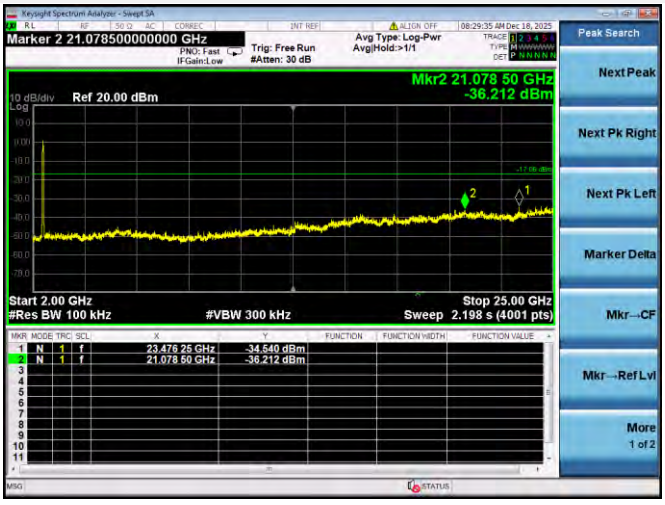


40 MHz HIGH CHANNEL CARRIER LEVEL

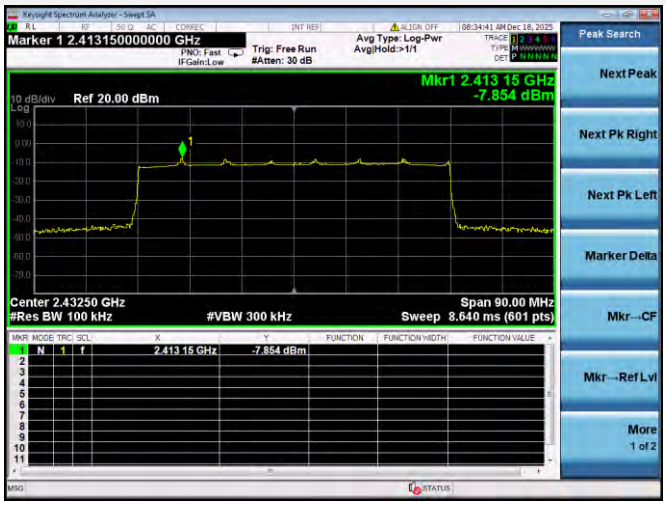
40 MHz HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



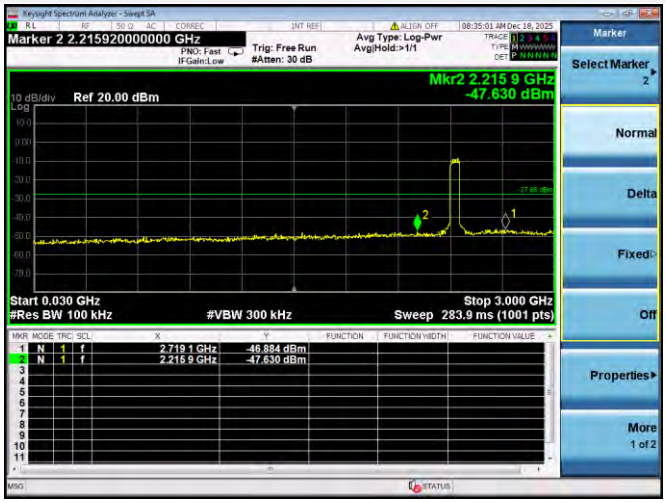
40 MHz HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



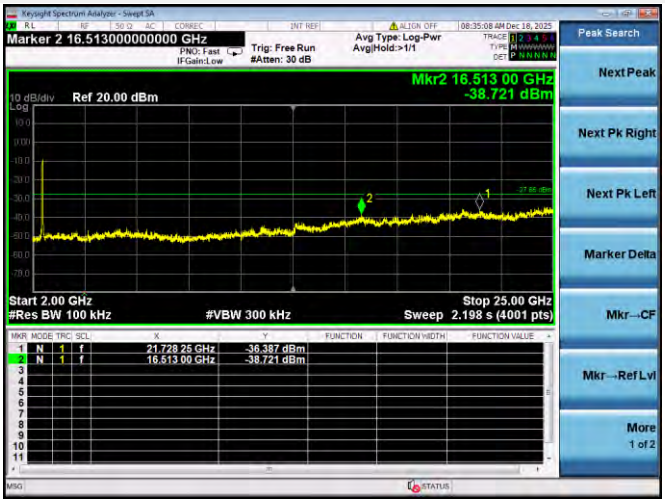
60 MHz LOW CHANNEL CARRIER LEVEL



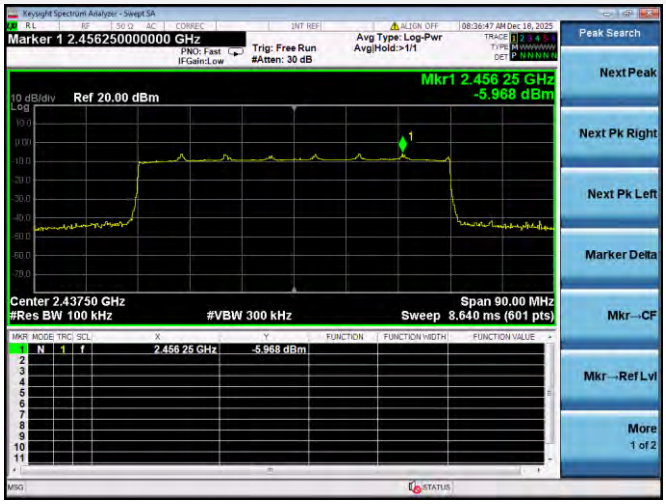
60 MHz LOW CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



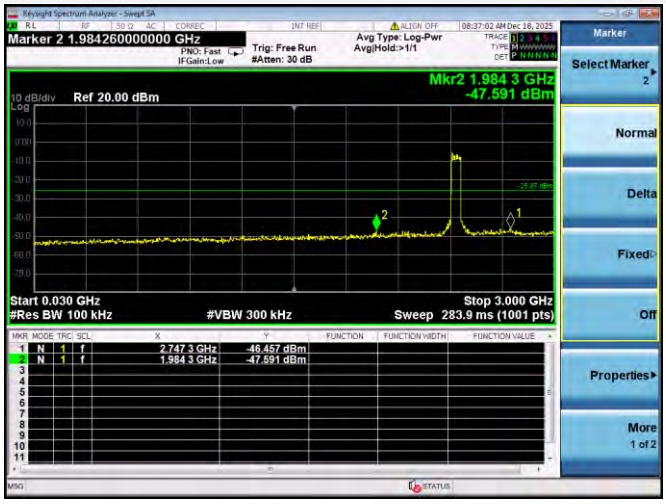
60 MHz LOW CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



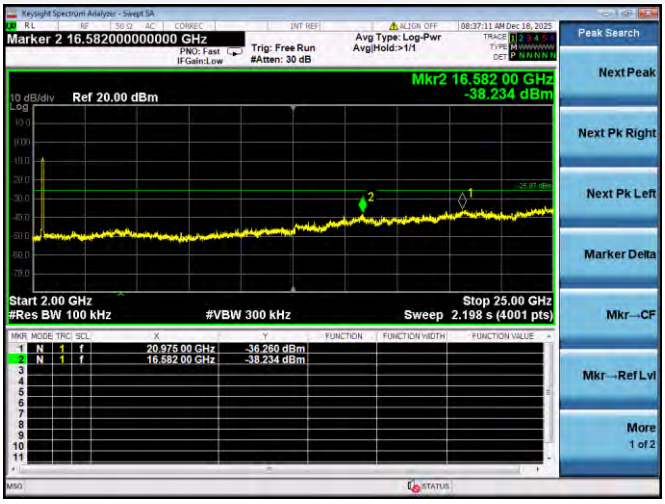
60 MHz MIDDLE CHANNEL CARRIER LEVEL



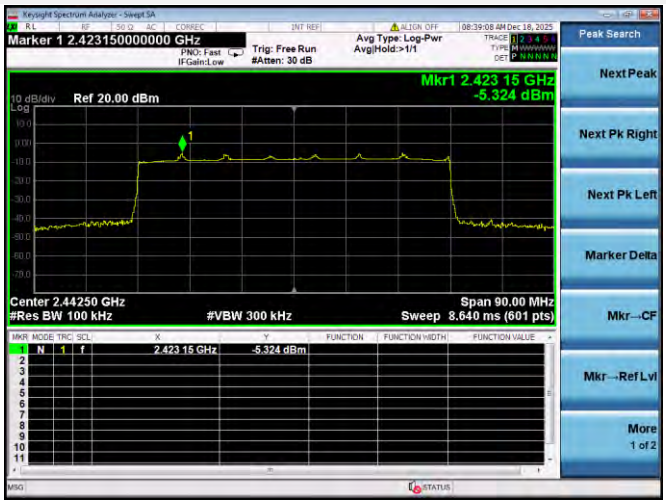
60 MHz MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



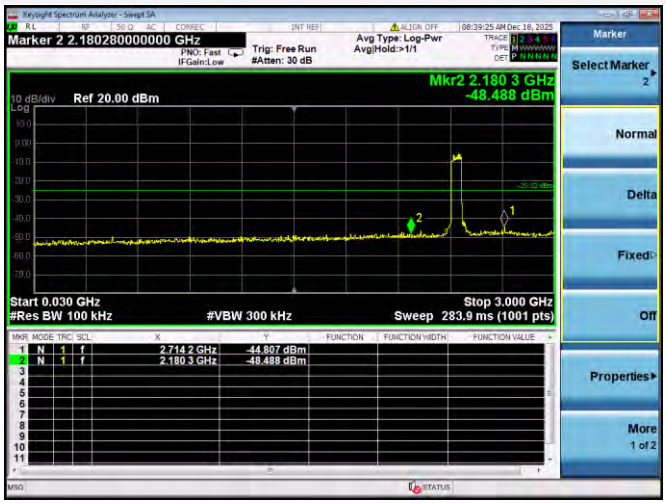
60 MHz MIDDLE CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



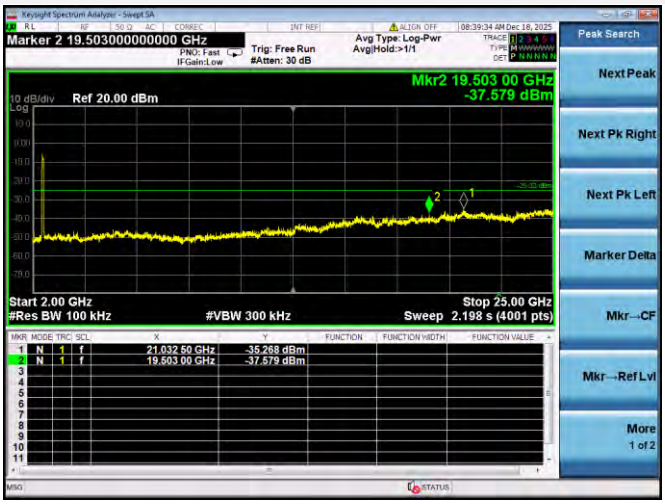
60 MHz HIGH CHANNEL CARRIER LEVEL



60 MHz HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz



60 MHz HIGH CHANNEL, SPURIOUS
2 GHz ~ 25 GHz



A.4 Band Edge (Authorized-band band-edge)

Note [1]: The 99% OBW of the fundamental emission is without 2 MHz of the authorized band.
Note [2]: All antenna were pre tested, but only the worst case has been reported in this report.
ANT0
Test Data
1.4 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-34.22	18.10	-1.90	Pass
High Channel	-42.99	20.78	0.78	Pass

3 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-33.65	20.60	0.60	Pass
High Channel	-43.71	20.38	0.38	Pass

5 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-9.94	21.76	1.76	Pass
High Channel	-36.87	21.48	1.48	Pass

10 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-22.96	14.66	-5.34	Pass
High Channel	-28.57	16.42	-3.58	Pass

20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-37.45	6.48	-13.52	Pass
High Channel	-36.61	10.12	-9.88	Pass

40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-35.99	-0.46	-20.46	Pass
High Channel	-38.64	2.95	-17.06	Pass

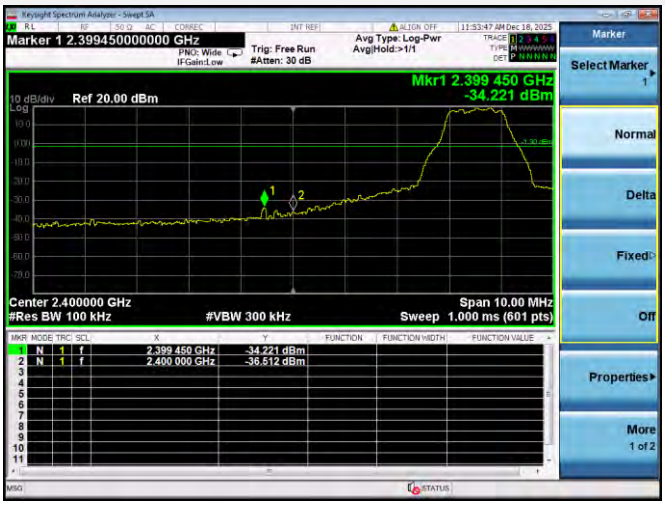
60 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-43.38	-7.85	-27.85	Pass
High Channel	-42.50	-5.32	-25.32	Pass

Test Plots

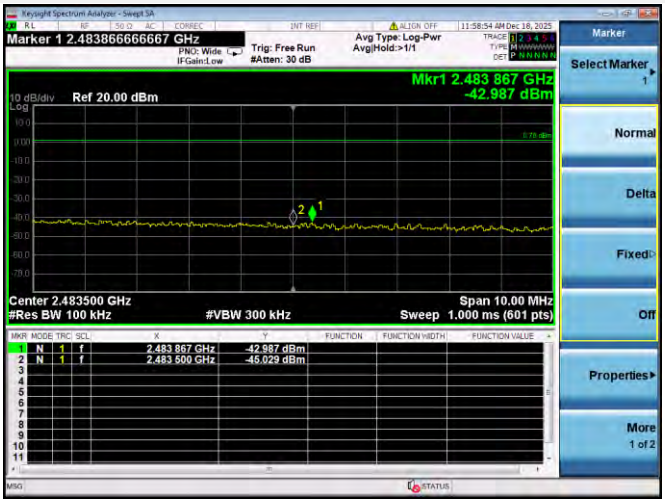
1.4 MHz LOW CHANNEL, CARRIER LEVEL

1.4 MHz LOW CHANNEL, BAND EDGE



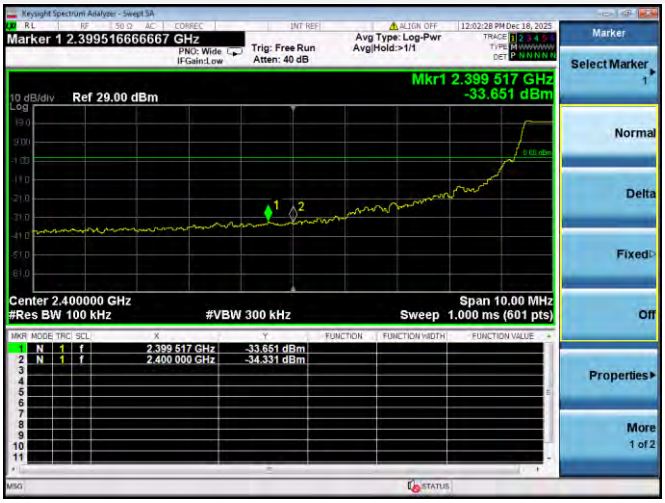
1.4 MHz HIGH CHANNEL, CARRIER LEVEL

1.4 MHz HIGH CHANNEL, BAND EDGE

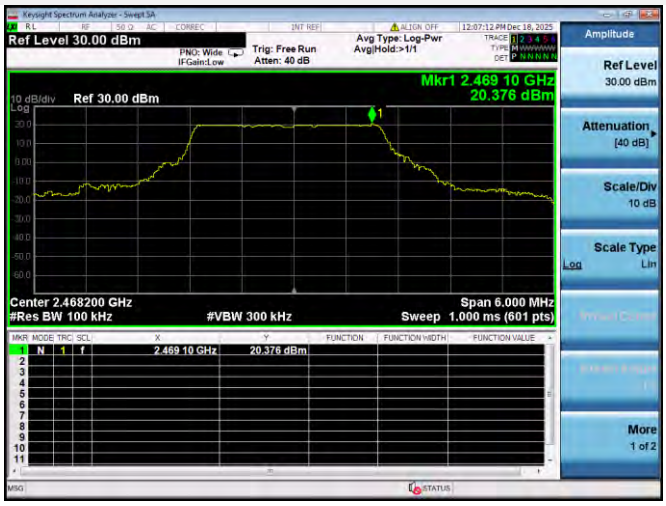


3 MHz LOW CHANNEL, CARRIER LEVEL

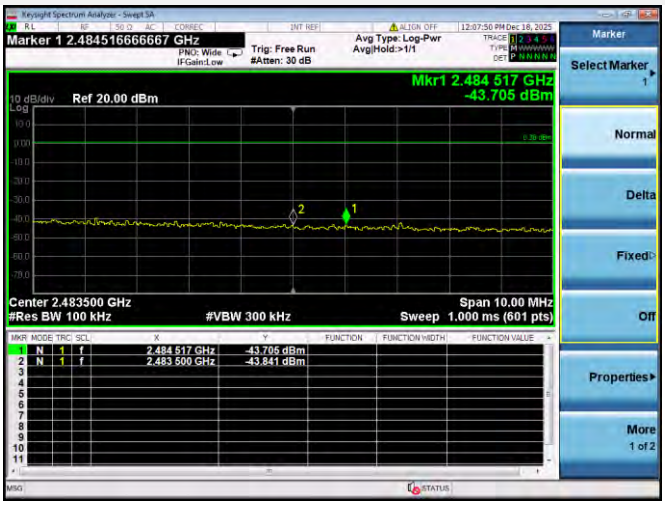
3 MHz LOW CHANNEL, BAND EDGE



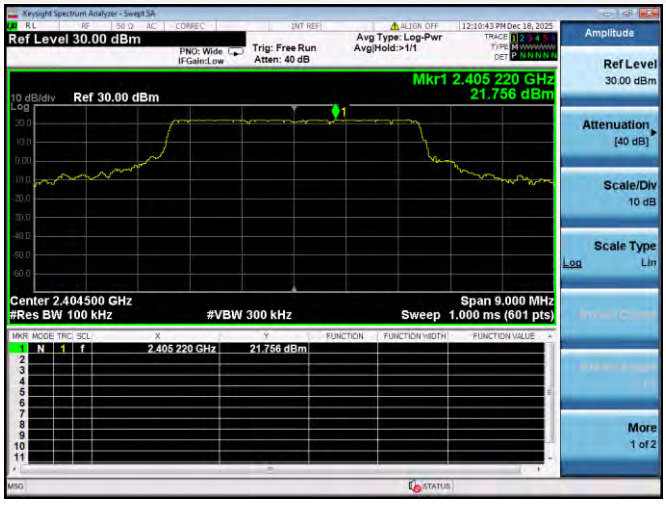
3 MHz HIGH CHANNEL, CARRIER LEVEL



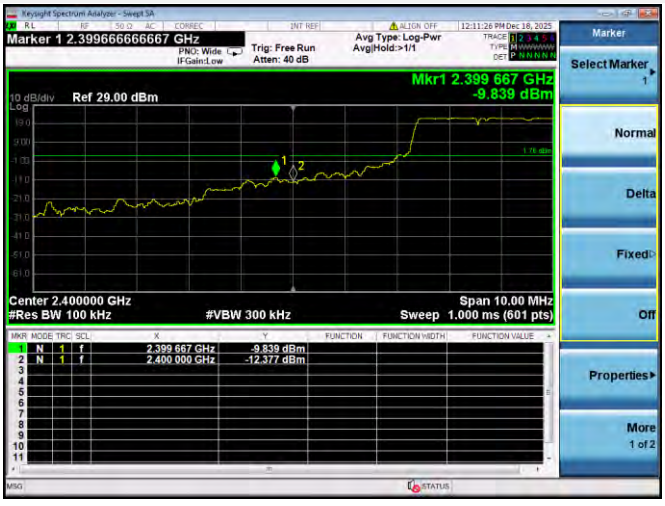
3 MHz HIGH CHANNEL, BAND EDGE



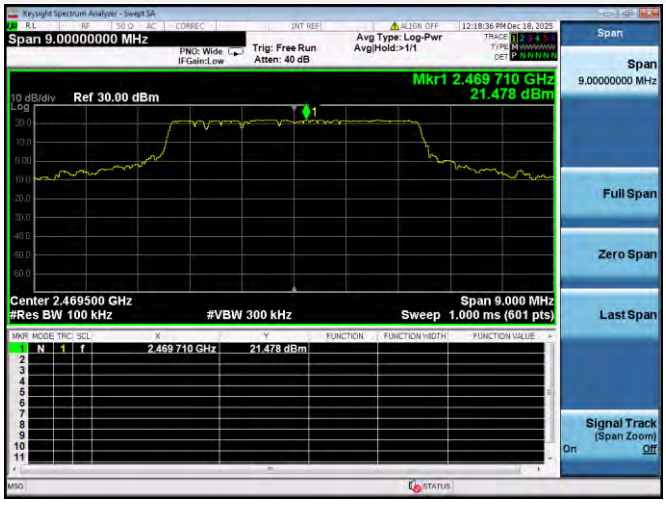
5 MHz LOW CHANNEL, CARRIER LEVEL



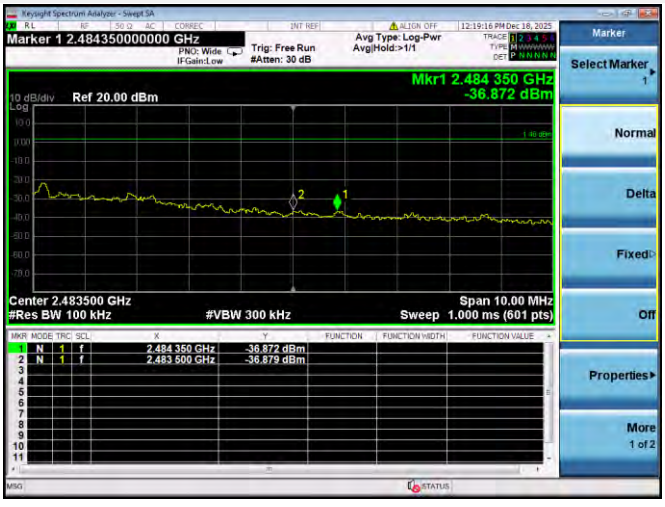
5 MHz LOW CHANNEL, BAND EDGE



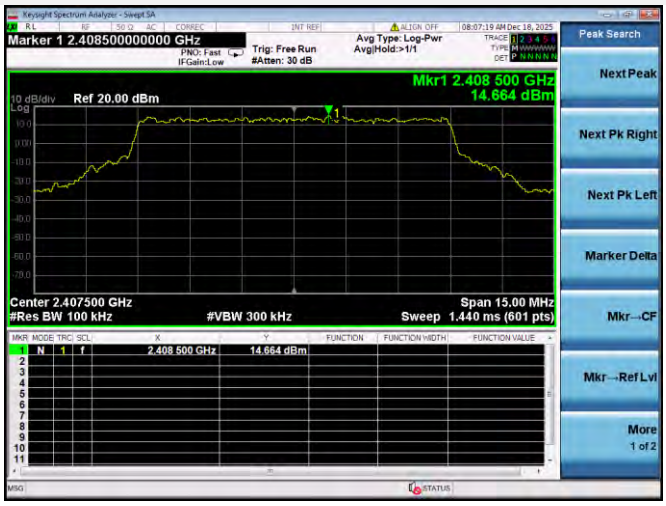
5 MHz HIGH CHANNEL, CARRIER LEVEL



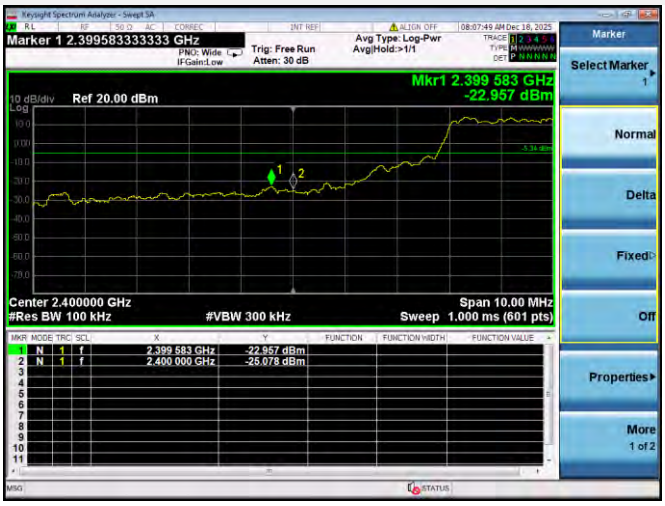
5 MHz HIGH CHANNEL, BAND EDGE



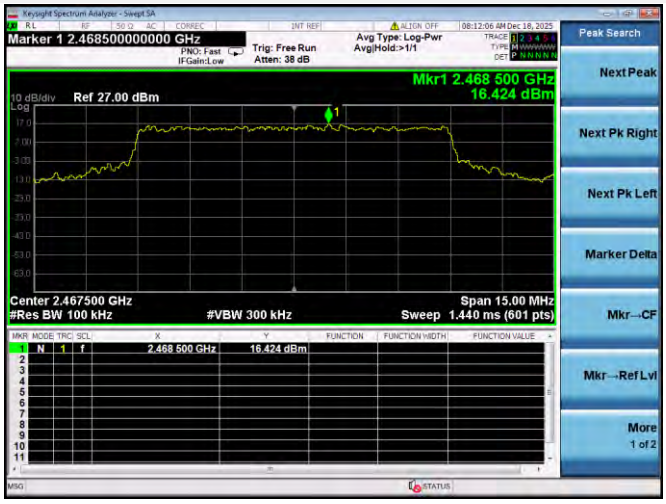
10 MHz LOW CHANNEL, CARRIER LEVEL



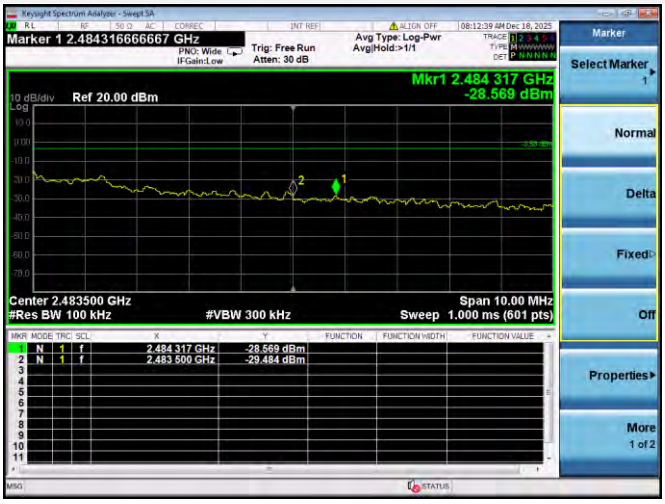
10 MHz LOW CHANNEL, BAND EDGE



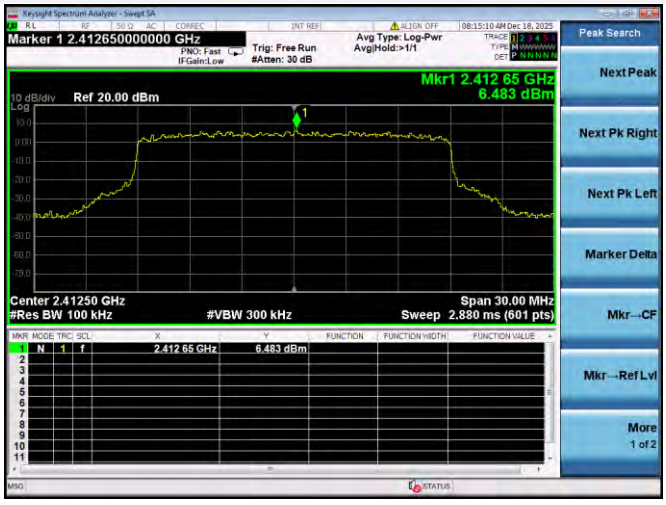
10 MHz HIGH CHANNEL, CARRIER LEVEL



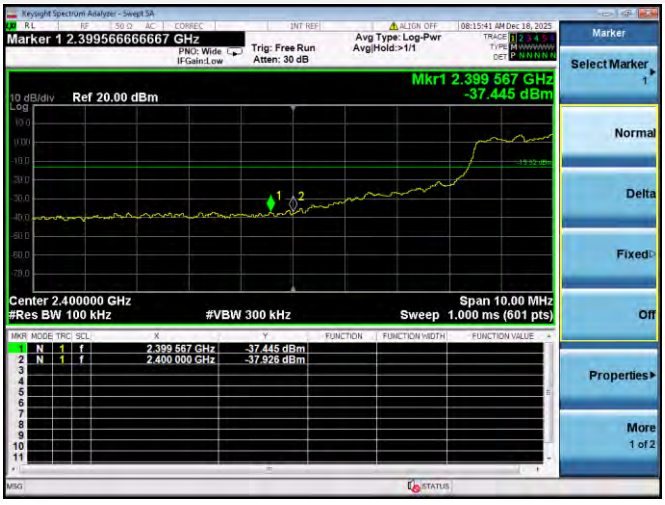
10 MHz HIGH CHANNEL, BAND EDGE



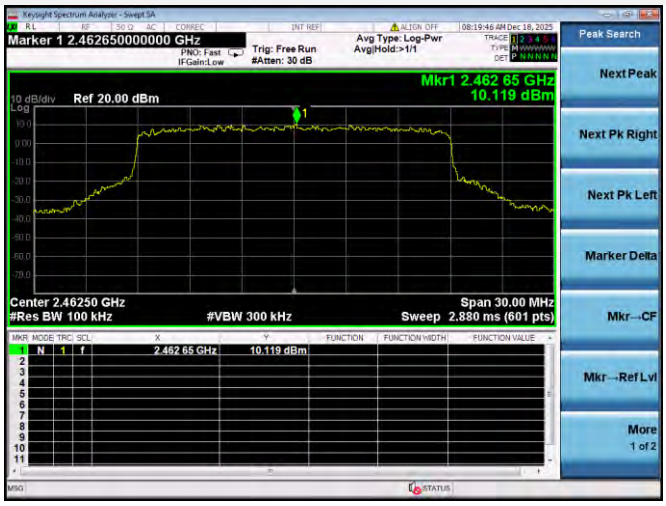
20 MHz LOW CHANNEL, CARRIER LEVEL



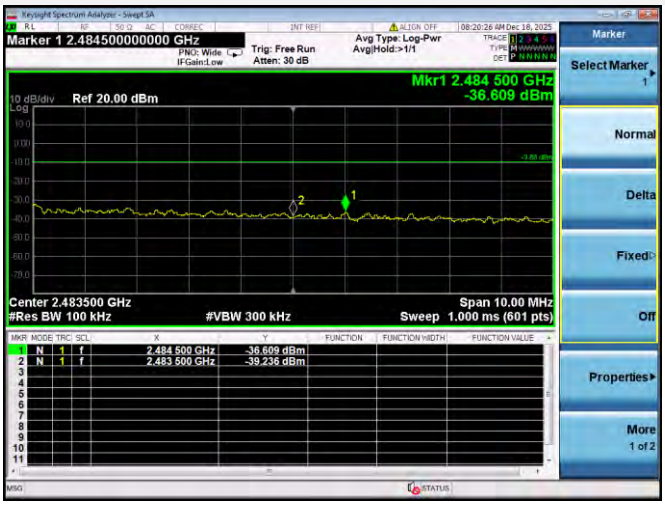
20 MHz LOW CHANNEL, BAND EDGE



20 MHz HIGH CHANNEL, CARRIER LEVEL

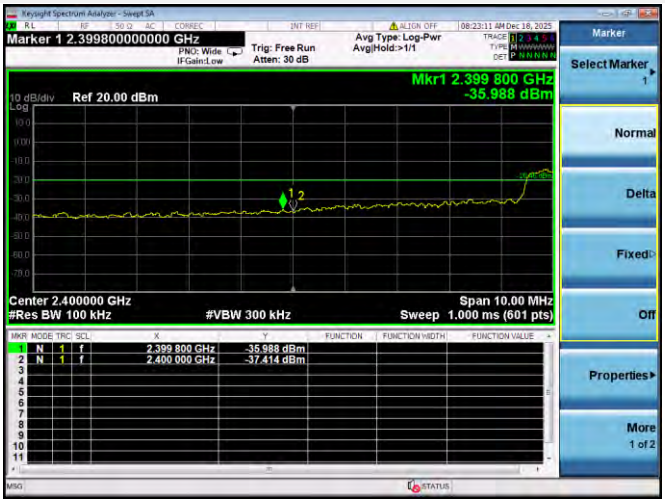


20 MHz HIGH CHANNEL, BAND EDGE



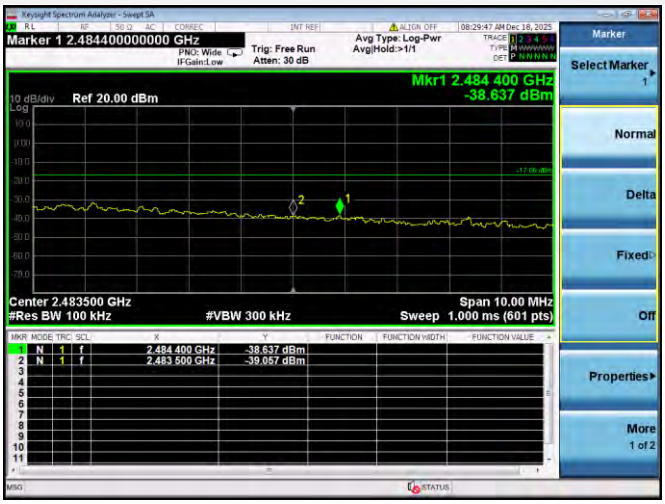
40 MHz LOW CHANNEL, CARRIER LEVEL

40 MHz LOW CHANNEL, BAND EDGE

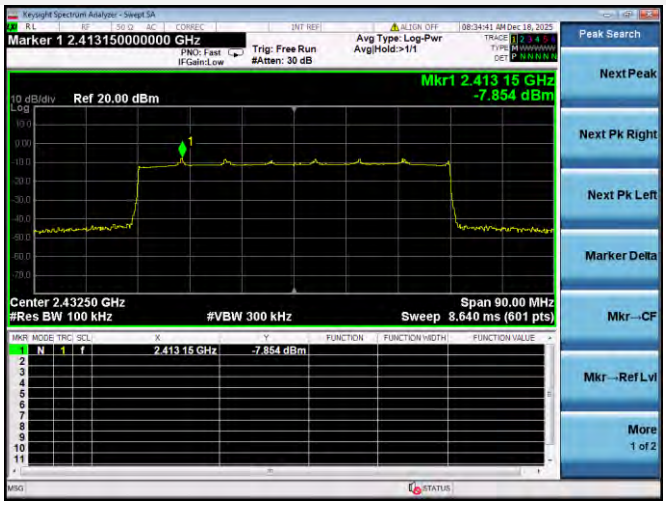


40 MHz HIGH CHANNEL, CARRIER LEVEL

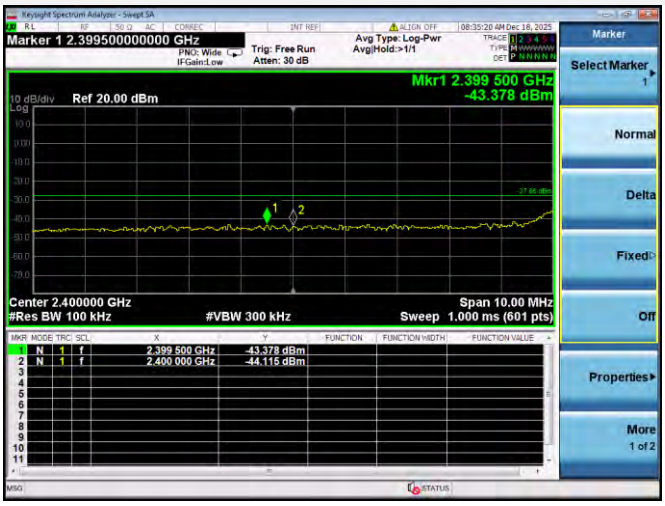
40 MHz HIGH CHANNEL, BAND EDGE



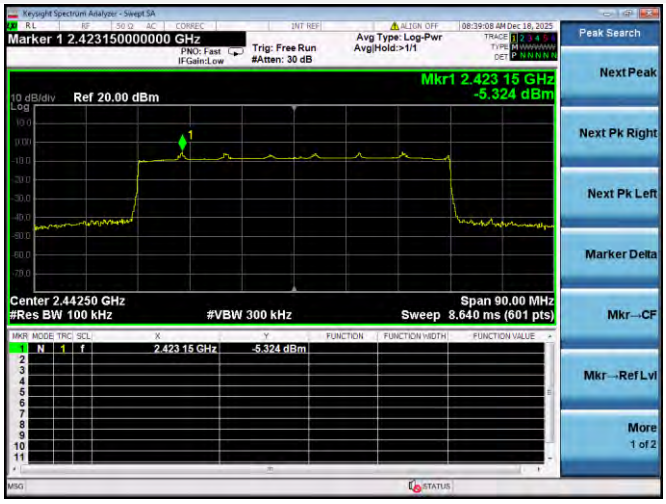
60 MHz LOW CHANNEL, CARRIER LEVEL



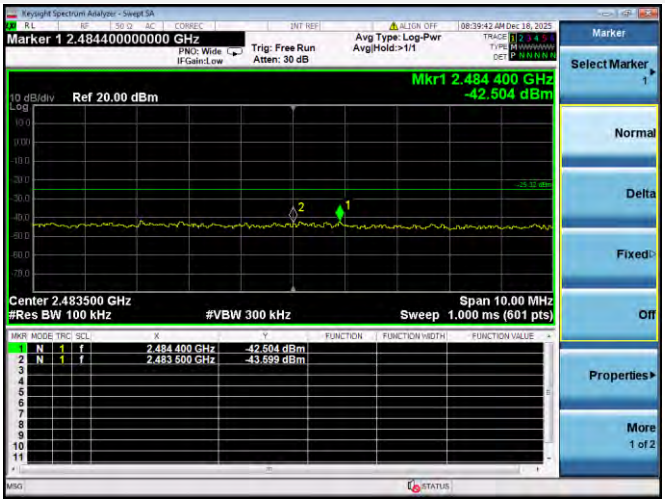
60 MHz LOW CHANNEL, BAND EDGE



60 MHz HIGH CHANNEL, CARRIER LEVEL



60 MHz HIGH CHANNEL, BAND EDGE



A.5 Conducted Emissions

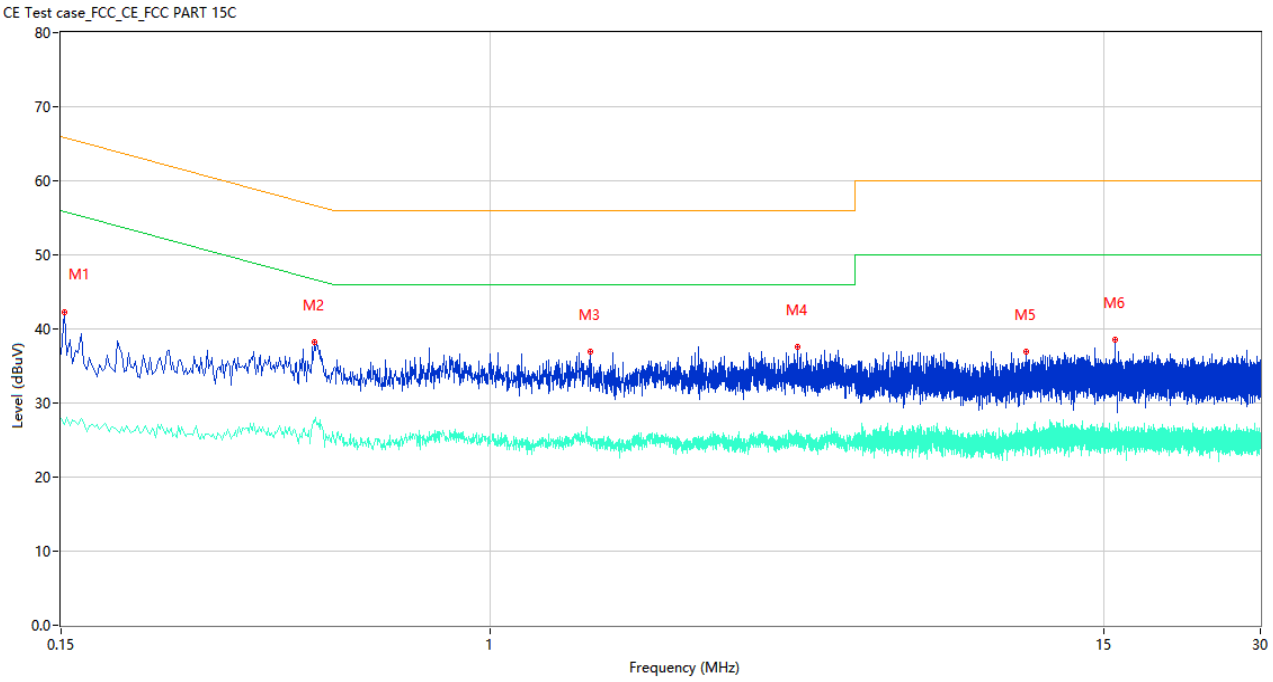
Note [1]: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

Note [2]: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

Note [3]: Results (dBuV) = Original reading level of Spectrum Analyzer (dBuV) + Factor (dB)

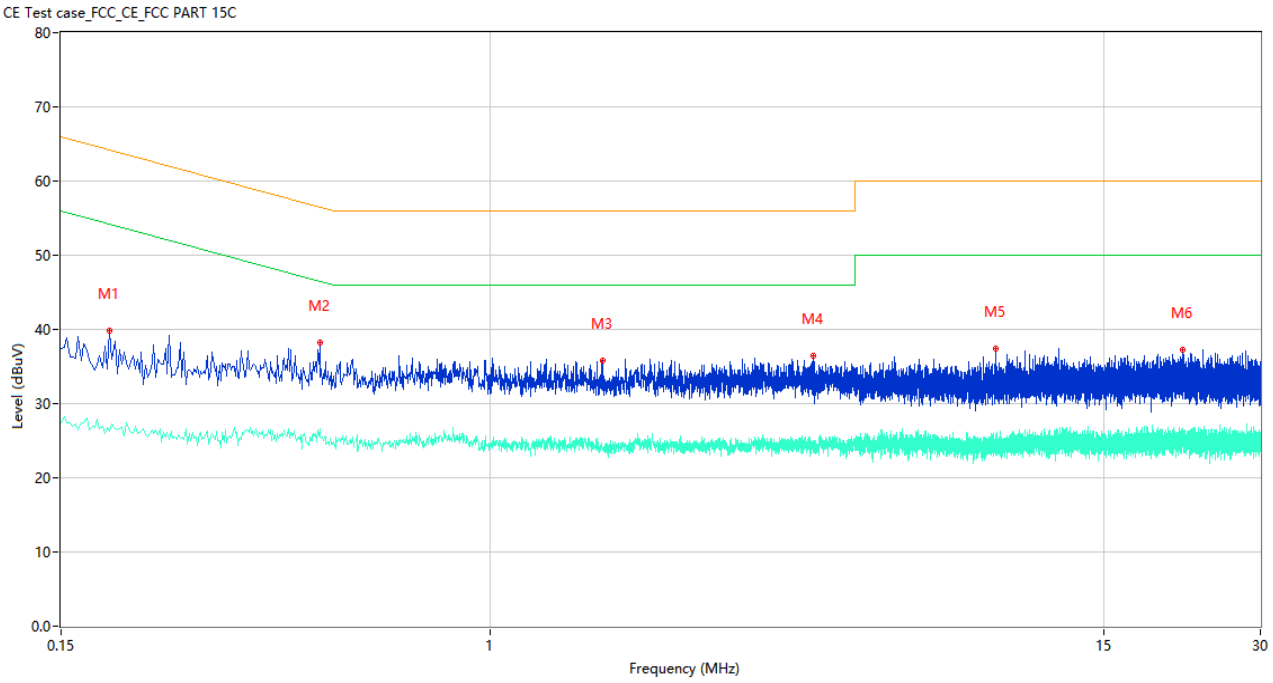
Test Data and Plots

PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	42.22	9.86	65.89	23.67	Peak	L	Pass
1**	0.152	27.08	9.86	55.89	28.81	AV	L	Pass
2	0.460	38.27	10.08	56.69	18.42	Peak	L	Pass
2**	0.460	27.44	10.08	46.69	19.25	AV	L	Pass
3	1.556	37.00	10.17	56.00	19.00	Peak	L	Pass
3**	1.556	25.32	10.17	46.00	20.68	AV	L	Pass
4	3.874	37.55	10.36	56.00	18.45	Peak	L	Pass
4**	3.874	25.99	10.36	46.00	20.01	AV	L	Pass
5	10.680	36.94	10.52	60.00	23.06	Peak	L	Pass
5**	10.680	25.22	10.52	50.00	24.78	AV	L	Pass
6	15.792	38.53	10.86	60.00	21.47	Peak	L	Pass
6**	15.792	25.69	10.86	50.00	24.31	AV	L	Pass

PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.186	39.92	9.84	64.21	24.29	Peak	N	Pass
1**	0.186	26.27	9.84	54.21	27.94	AV	N	Pass
2	0.470	38.20	10.07	56.51	18.31	Peak	N	Pass
2**	0.470	26.68	10.07	46.51	19.83	AV	N	Pass
3	1.644	35.81	9.97	56.00	20.19	Peak	N	Pass
3**	1.644	23.91	9.97	46.00	22.09	AV	N	Pass
4	4.160	36.42	10.00	56.00	19.58	Peak	N	Pass
4**	4.160	24.74	10.00	46.00	21.26	AV	N	Pass
5	9.342	37.37	10.41	60.00	22.63	Peak	N	Pass
5**	9.342	25.04	10.41	50.00	24.96	AV	N	Pass
6	21.330	37.29	11.32	60.00	22.71	Peak	N	Pass
6**	21.330	25.35	11.32	50.00	24.65	AV	N	Pass

A.6 Radiated Emission

Note [1]: The symbol of "--" in the table which means not application.

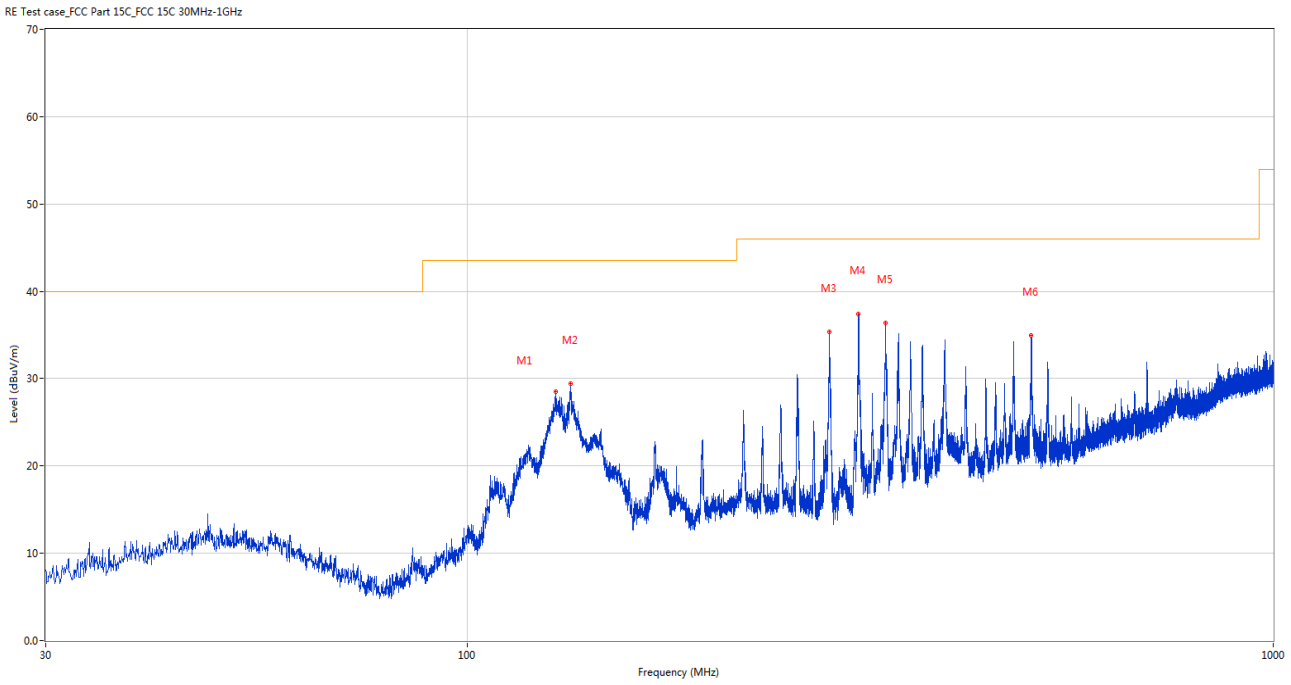
Note [2]: For the test data above 1 GHz, According the ANSI C63.10-2020, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note [3]: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note [4]: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

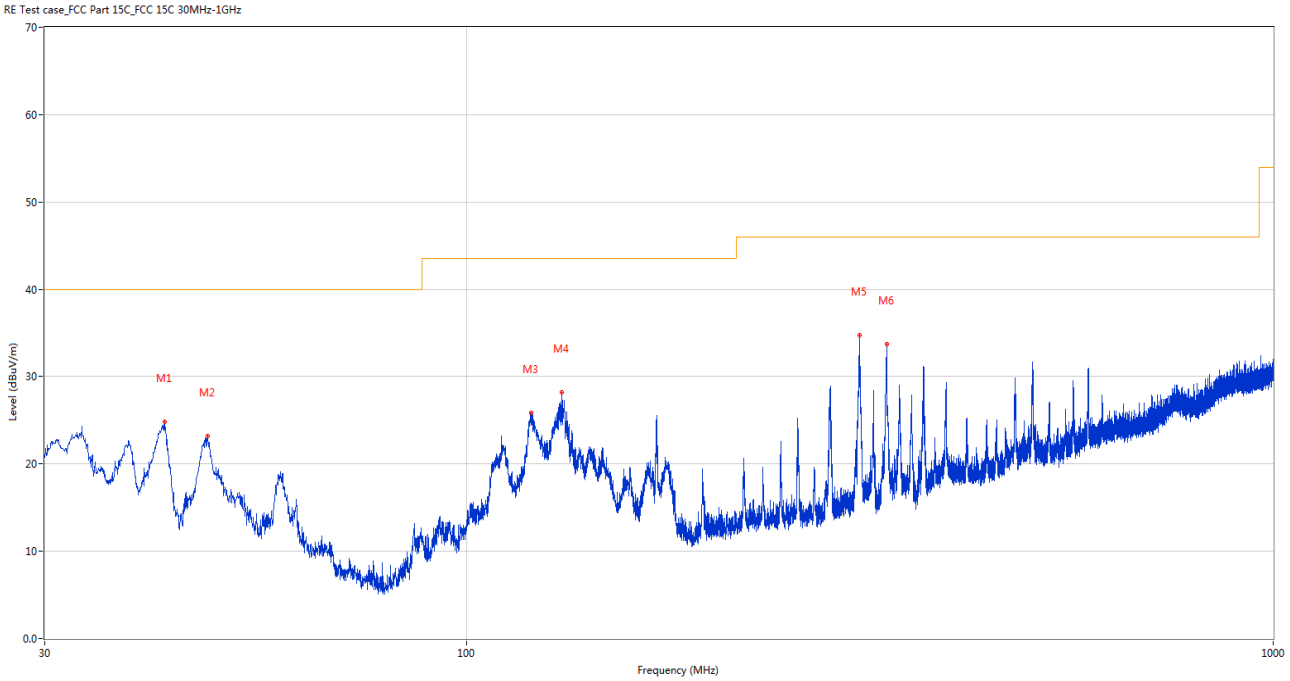
Test Data and Plots

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	128.746	28.55	-28.56	43.5	14.95	Peak	190.80	200	Horizontal	Pass
2	134.226	29.44	-28.71	43.5	14.06	Peak	7.40	200	Horizontal	Pass
3	281.666	35.34	-22.75	46.0	10.66	Peak	75.20	100	Horizontal	Pass
4	305.965	37.38	-22.17	46.0	8.62	Peak	92.50	100	Horizontal	Pass
5	330.554	36.40	-21.13	46.0	9.60	Peak	108.00	100	Horizontal	Pass
6	501.226	34.98	-16.84	46.0	11.02	Peak	129.00	200	Horizontal	Pass

30 MHz to 1 GHz, ANT V



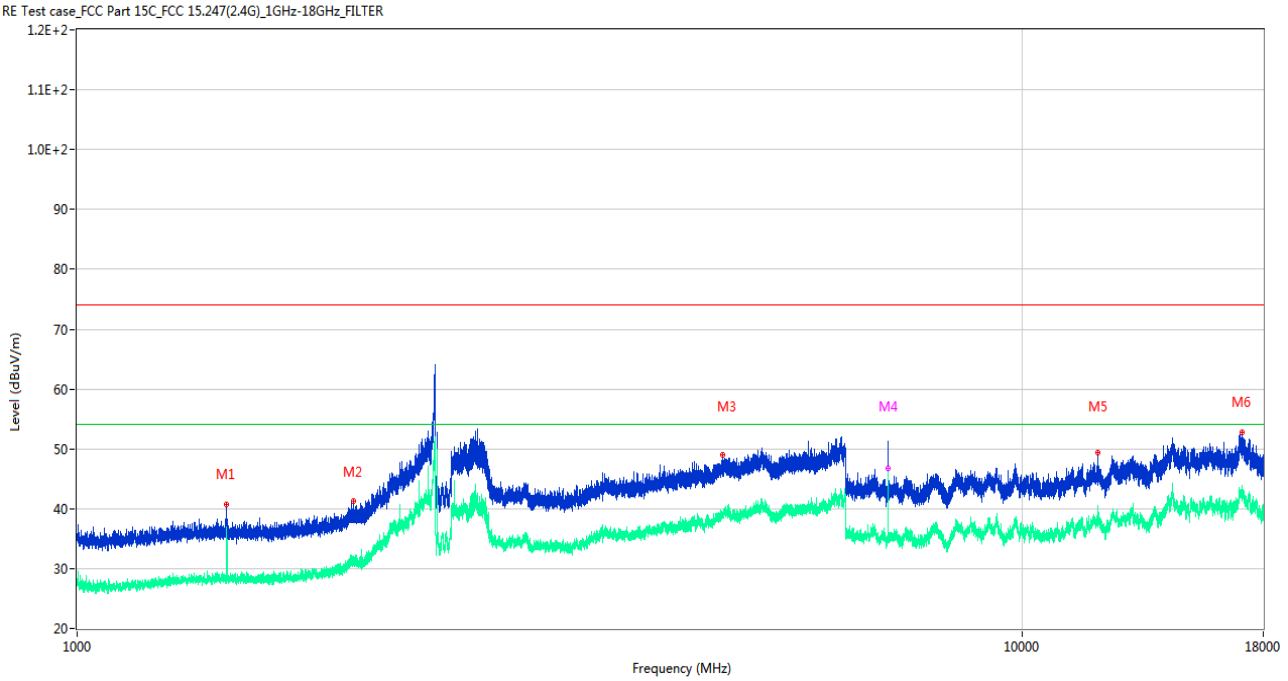
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	42.270	24.82	-25.25	40.0	15.18	Peak	360.00	100	Vertical	Pass
2	47.751	23.18	-24.36	40.0	16.82	Peak	38.50	100	Vertical	Pass
3	120.161	25.88	-27.33	43.5	17.62	Peak	253.40	100	Vertical	Pass
4	131.316	28.19	-28.80	43.5	15.31	Peak	110.50	100	Vertical	Pass
5	307.226	34.73	-22.15	46.0	11.27	Peak	167.20	100	Vertical	Pass
6	331.864	33.75	-21.08	46.0	12.25	Peak	151.10	100	Vertical	Pass

Note [1]: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note [2]: The spurious above 18G is noise only, do not show on the report.

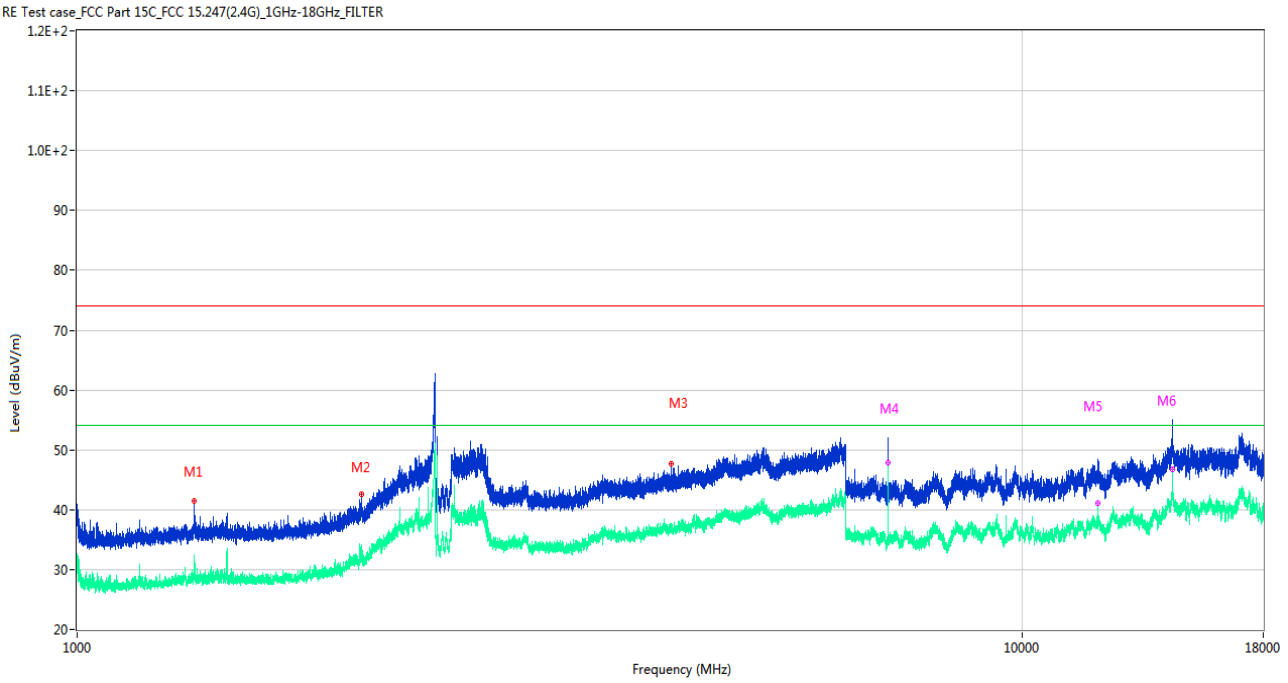
ANT0

1 GHz to 18 GHz, ANT H 1.4 MHz Low Channel



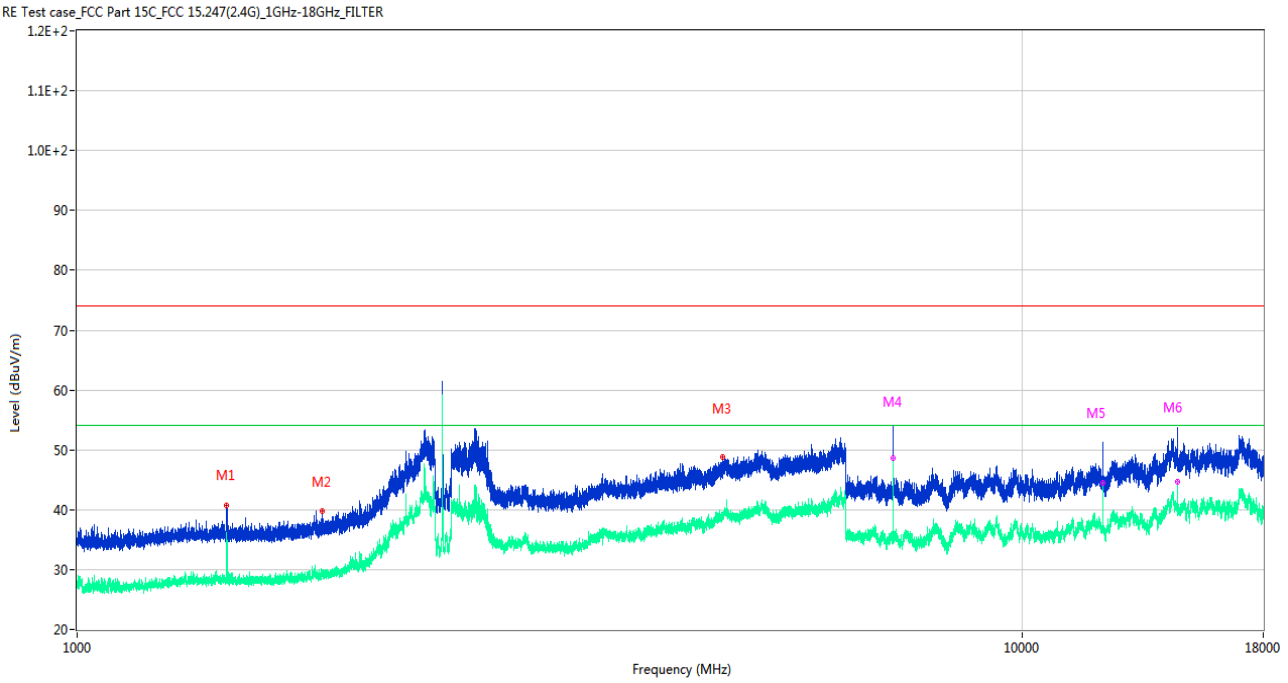
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.160	40.72	74.0	33.28	Peak	32.00	100	Horizontal	Pass
1**	1440.160	34.96	54.0	19.04	AV	32.00	100	Horizontal	Pass
2	1962.880	41.21	74.0	32.79	Peak	138.00	150	Horizontal	Pass
2**	1962.880	31.18	54.0	22.82	AV	138.00	150	Horizontal	Pass
3	4821.120	48.97	74.0	25.03	Peak	62.00	100	Horizontal	Pass
3**	4821.120	38.82	54.0	15.18	AV	62.00	100	Horizontal	Pass
4	7211.000	50.47	74.0	23.53	Peak	108.00	150	Horizontal	Pass
4**	7211.000	46.76	54.0	7.24	AV	108.00	150	Horizontal	Pass
5	12018.000	49.36	74.0	24.64	Peak	233.00	300	Horizontal	Pass
5**	12018.000	39.95	54.0	14.05	AV	233.00	300	Horizontal	Pass
6	17110.363	52.86	74.0	21.14	Peak	244.00	100	Horizontal	Pass
6**	17110.363	43.11	54.0	10.89	AV	244.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 1.4 MHz Low Channel



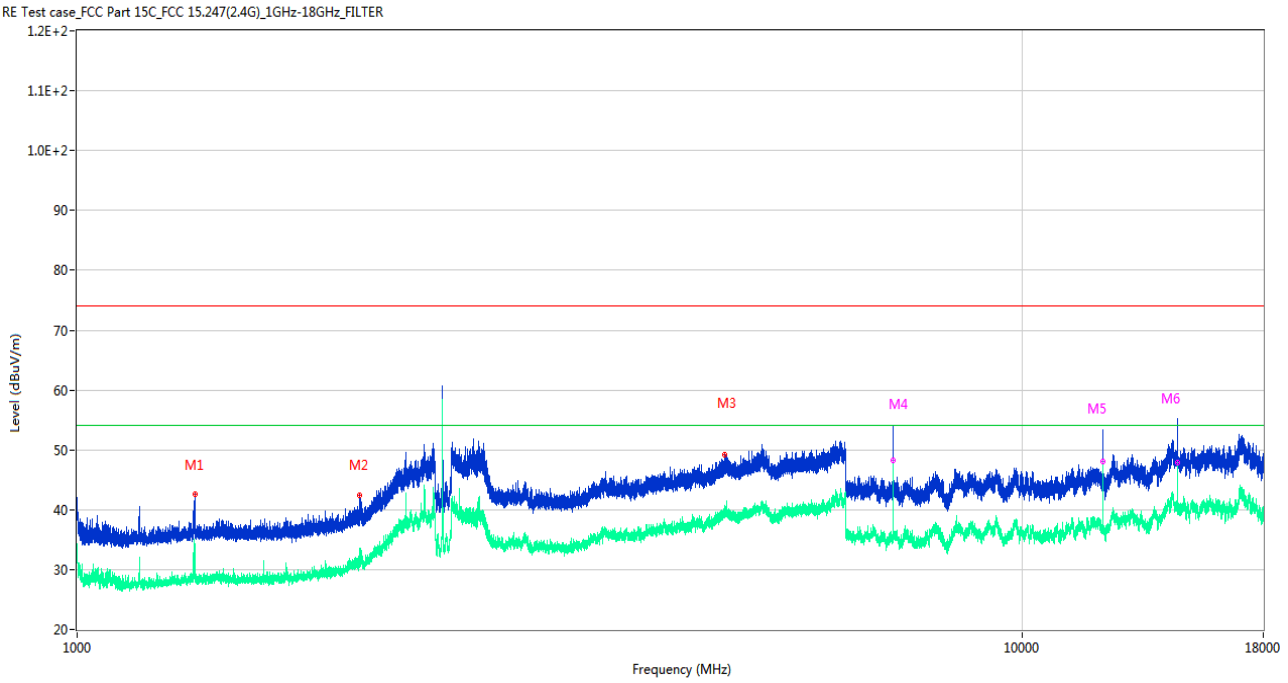
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1330.080	41.46	74.0	32.54	Peak	118.00	400	Vertical	Pass
1**	1330.080	31.57	54.0	22.43	AV	118.00	400	Vertical	Pass
2	1998.720	42.66	74.0	31.34	Peak	288.00	150	Vertical	Pass
2**	1998.720	31.81	54.0	22.19	AV	288.00	150	Vertical	Pass
3	4249.920	47.71	74.0	26.29	Peak	93.00	150	Vertical	Pass
3**	4249.920	36.87	54.0	17.13	AV	93.00	150	Vertical	Pass
4	7211.000	51.59	74.0	22.41	Peak	125.00	150	Vertical	Pass
4**	7211.000	47.95	54.0	6.05	AV	125.00	150	Vertical	Pass
5	12018.000	47.67	74.0	26.33	Peak	78.00	150	Vertical	Pass
5**	12018.000	41.02	54.0	12.98	AV	78.00	150	Vertical	Pass
6	14421.887	53.20	74.0	20.80	Peak	251.00	150	Vertical	Pass
6**	14421.887	46.65	54.0	7.35	AV	251.00	150	Vertical	Pass

1 GHz to 18 GHz, ANT H 1.4 MHz Middle Channel



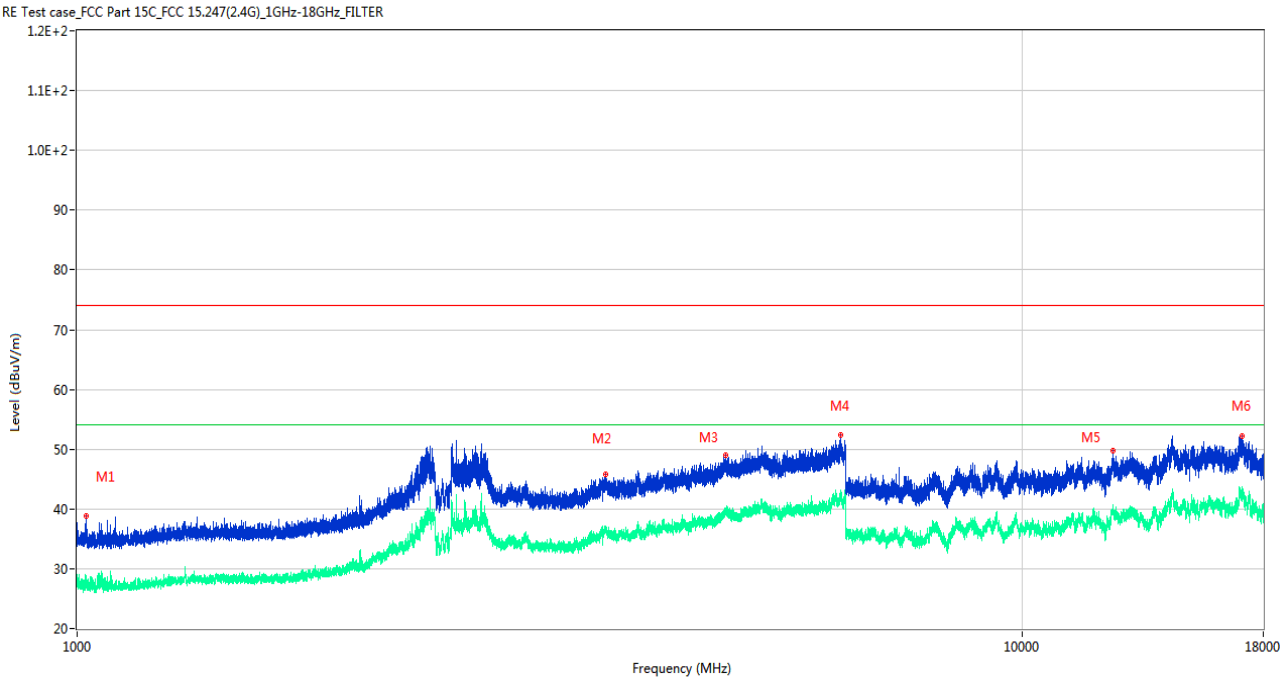
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.000	40.77	74.0	33.23	Peak	35.00	400	Horizontal	Pass
1**	1440.000	34.86	54.0	19.14	AV	35.00	400	Horizontal	Pass
2	1816.160	39.75	74.0	34.25	Peak	19.00	150	Horizontal	Pass
2**	1816.160	28.95	54.0	25.05	AV	19.00	150	Horizontal	Pass
3	4818.600	48.85	74.0	25.15	Peak	350.00	200	Horizontal	Pass
3**	4818.600	39.22	54.0	14.78	AV	350.00	200	Horizontal	Pass
4	7307.000	53.94	74.0	20.06	Peak	111.00	150	Horizontal	Pass
4**	7307.000	48.71	54.0	5.29	AV	111.00	150	Horizontal	Pass
5	12178.500	49.98	74.0	24.02	Peak	95.00	150	Horizontal	Pass
5**	12178.500	44.44	54.0	9.56	AV	95.00	150	Horizontal	Pass
6	14612.795	50.51	74.0	23.49	Peak	53.00	150	Horizontal	Pass
6**	14612.795	44.67	54.0	9.33	AV	53.00	150	Horizontal	Pass

1 GHz to 18 GHz, ANT V 1.4 MHz Middle Channel



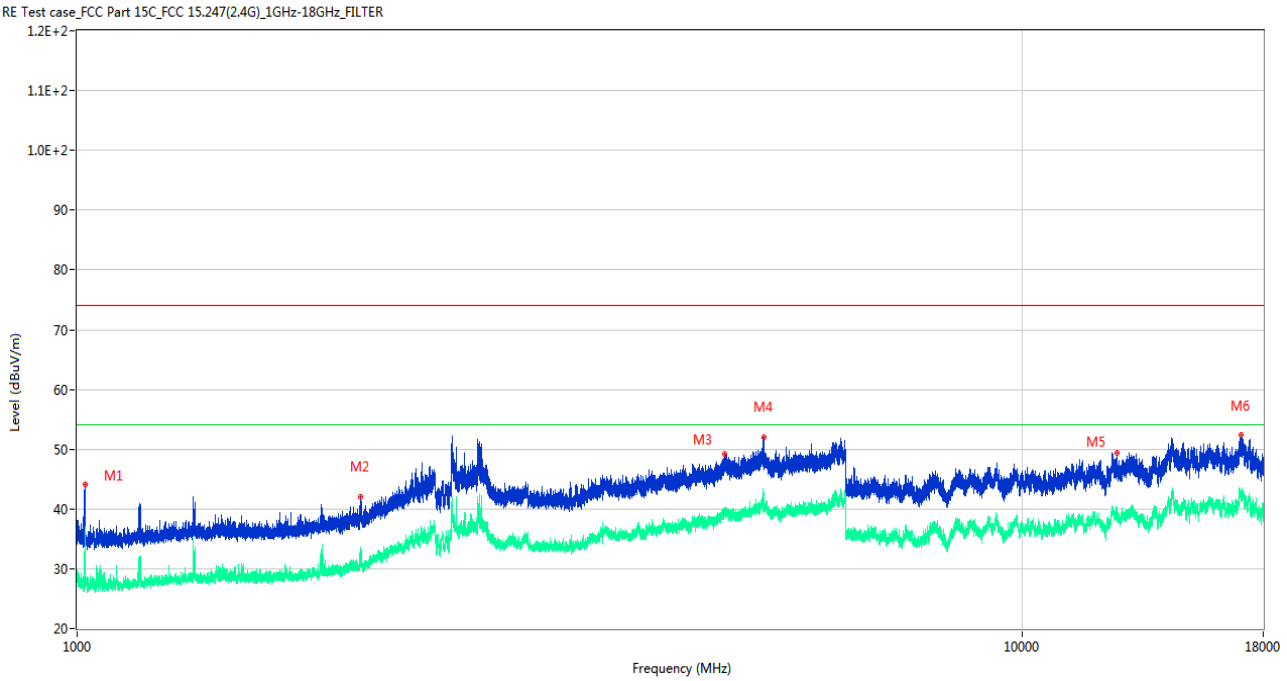
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1333.440	42.57	74.0	31.43	Peak	108.00	100	Vertical	Pass
1**	1333.440	28.79	54.0	25.21	AV	108.00	100	Vertical	Pass
2	1991.840	42.33	74.0	31.67	Peak	283.00	150	Vertical	Pass
2**	1991.840	31.46	54.0	22.54	AV	283.00	150	Vertical	Pass
3	4848.560	49.28	74.0	24.72	Peak	83.00	100	Vertical	Pass
3**	4848.560	40.15	54.0	13.85	AV	83.00	100	Vertical	Pass
4	7307.000	53.00	74.0	21.00	Peak	128.00	150	Vertical	Pass
4**	7307.000	48.27	54.0	5.73	AV	128.00	150	Vertical	Pass
5	12178.500	52.96	74.0	21.04	Peak	334.00	150	Vertical	Pass
5**	12178.500	47.97	54.0	6.03	AV	334.00	150	Vertical	Pass
6	14613.750	55.13	74.0	18.87	Peak	49.00	150	Vertical	Pass
6**	14613.750	47.88	54.0	6.12	AV	49.00	150	Vertical	Pass

1 GHz to 18 GHz, ANT H 1.4 MHz High Channel



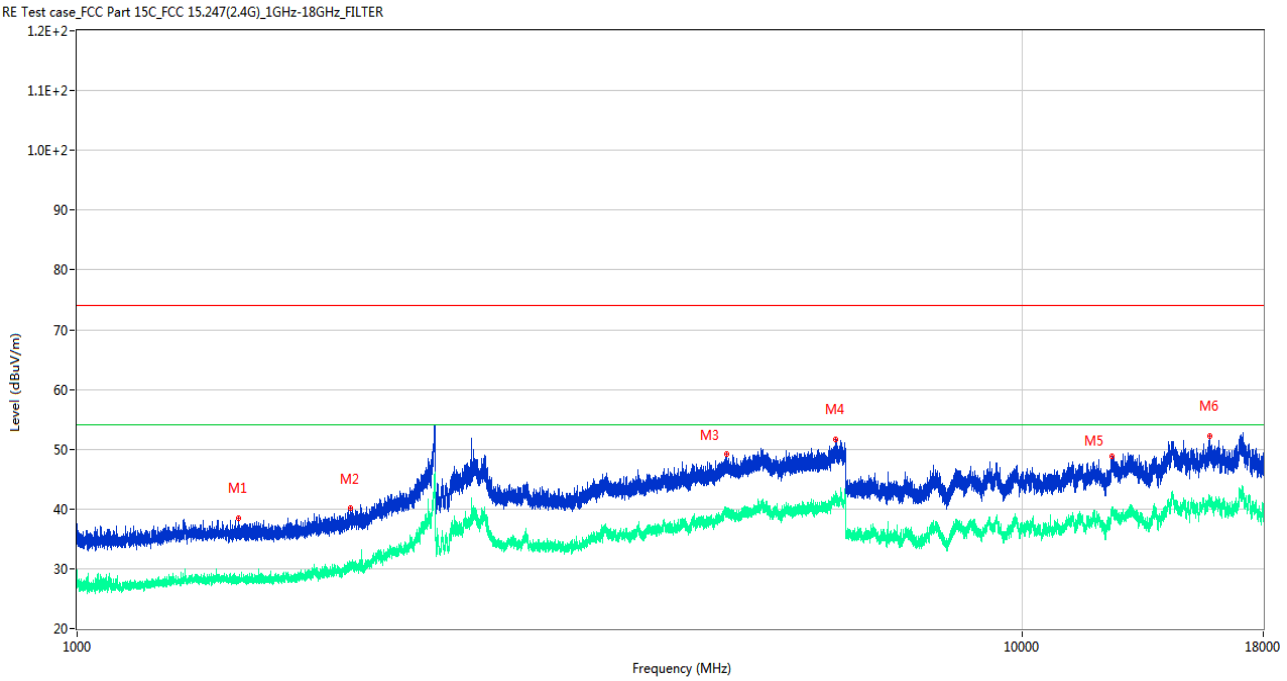
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1021.120	38.75	74.0	35.25	Peak	141.00	200	Horizontal	Pass
1**	1021.120	27.80	54.0	26.20	AV	141.00	200	Horizontal	Pass
2	3621.320	45.74	74.0	28.26	Peak	210.00	150	Horizontal	Pass
2**	3621.320	35.97	54.0	18.03	AV	210.00	150	Horizontal	Pass
3	4854.160	49.09	74.0	24.91	Peak	38.00	150	Horizontal	Pass
3**	4854.160	39.63	54.0	14.37	AV	38.00	150	Horizontal	Pass
4	6426.080	52.37	74.0	21.63	Peak	290.00	300	Horizontal	Pass
4**	6426.080	42.57	54.0	11.43	AV	290.00	300	Horizontal	Pass
5	12483.500	49.73	74.0	24.27	Peak	0.00	300	Horizontal	Pass
5**	12483.500	39.96	54.0	14.04	AV	0.00	300	Horizontal	Pass
6	17099.387	52.27	74.0	21.73	Peak	141.00	400	Horizontal	Pass
6**	17099.387	42.69	54.0	11.31	AV	141.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 1.4 MHz High Channel



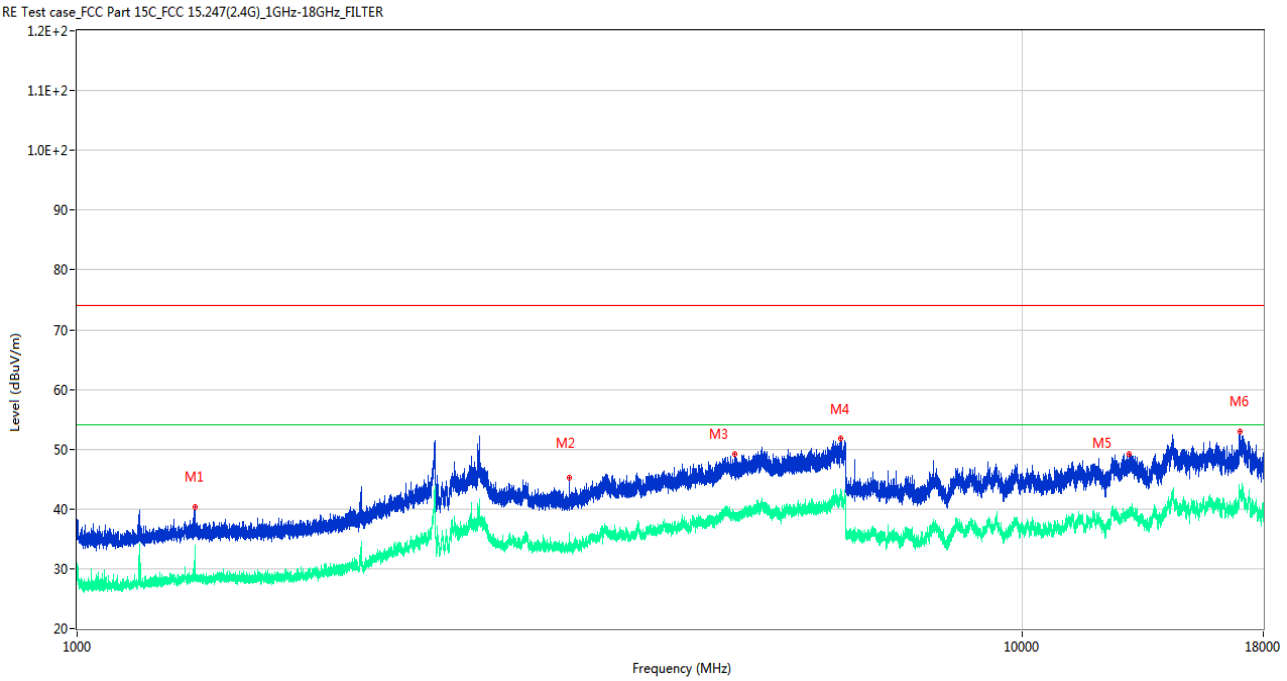
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1018.720	44.17	74.0	29.83	Peak	181.00	200	Vertical	Pass
1**	1018.720	34.55	54.0	19.45	AV	181.00	200	Vertical	Pass
2	1992.800	42.08	74.0	31.92	Peak	80.00	150	Vertical	Pass
2**	1992.800	31.87	54.0	22.13	AV	80.00	150	Vertical	Pass
3	4842.120	49.27	74.0	24.73	Peak	179.00	200	Vertical	Pass
3**	4842.120	39.26	54.0	14.74	AV	179.00	200	Vertical	Pass
4	5327.640	52.07	74.0	21.93	Peak	83.00	400	Vertical	Pass
4**	5327.640	39.91	54.0	14.09	AV	83.00	400	Vertical	Pass
5	12600.001	49.35	74.0	24.65	Peak	44.00	150	Vertical	Pass
5**	12600.001	39.37	54.0	14.63	AV	44.00	150	Vertical	Pass
6	17039.250	52.31	74.0	21.69	Peak	215.00	200	Vertical	Pass
6**	17039.250	41.52	54.0	12.48	AV	215.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 3 MHz Low Channel



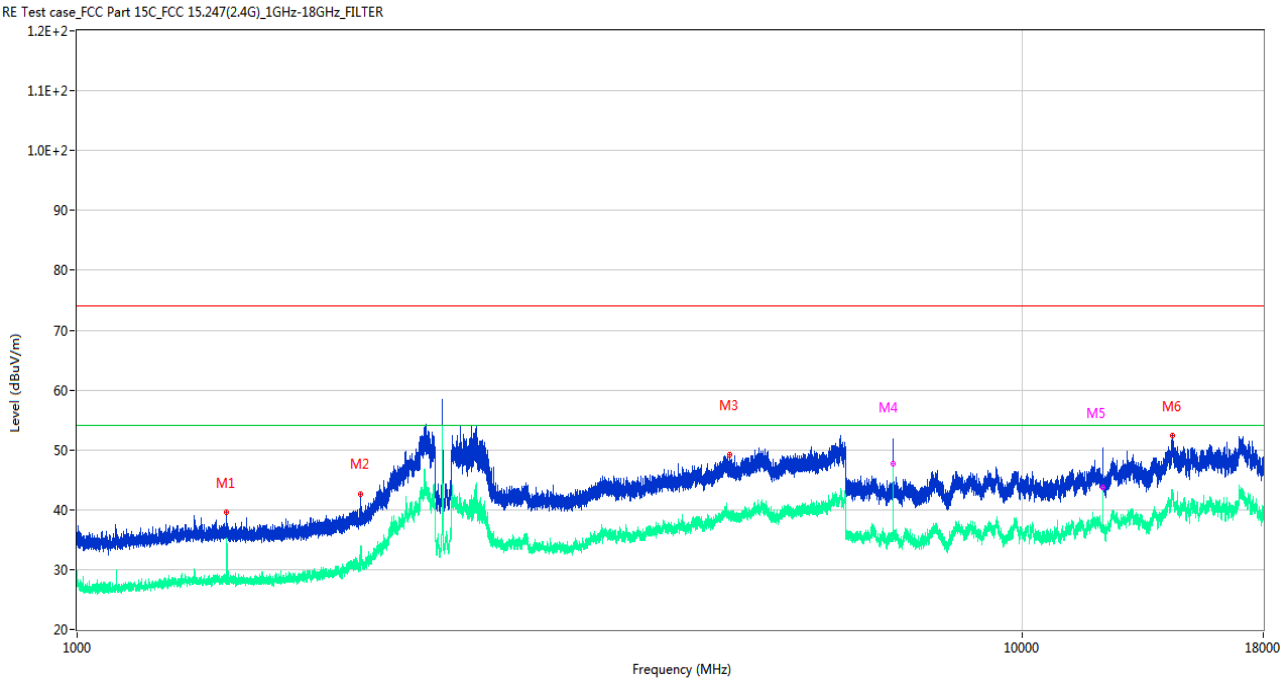
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1480.000	38.48	74.0	35.52	Peak	358.00	400	Horizontal	Pass
1**	1480.000	28.05	54.0	25.95	AV	358.00	400	Horizontal	Pass
2	1944.800	40.14	74.0	33.86	Peak	360.00	150	Horizontal	Pass
2**	1944.800	30.31	54.0	23.69	AV	360.00	150	Horizontal	Pass
3	4865.640	49.22	74.0	24.78	Peak	118.00	150	Horizontal	Pass
3**	4865.640	39.29	54.0	14.71	AV	118.00	150	Horizontal	Pass
4	6355.520	51.73	74.0	22.27	Peak	109.00	100	Horizontal	Pass
4**	6355.520	41.85	54.0	12.15	AV	109.00	100	Horizontal	Pass
5	12450.500	48.83	74.0	25.17	Peak	340.00	150	Horizontal	Pass
5**	12450.500	39.54	54.0	14.46	AV	340.00	150	Horizontal	Pass
6	15816.954	52.17	74.0	21.83	Peak	273.00	150	Horizontal	Pass
6**	15816.954	40.83	54.0	13.17	AV	273.00	150	Horizontal	Pass

1 GHz to 18 GHz, ANT V 3 MHz Low Channel



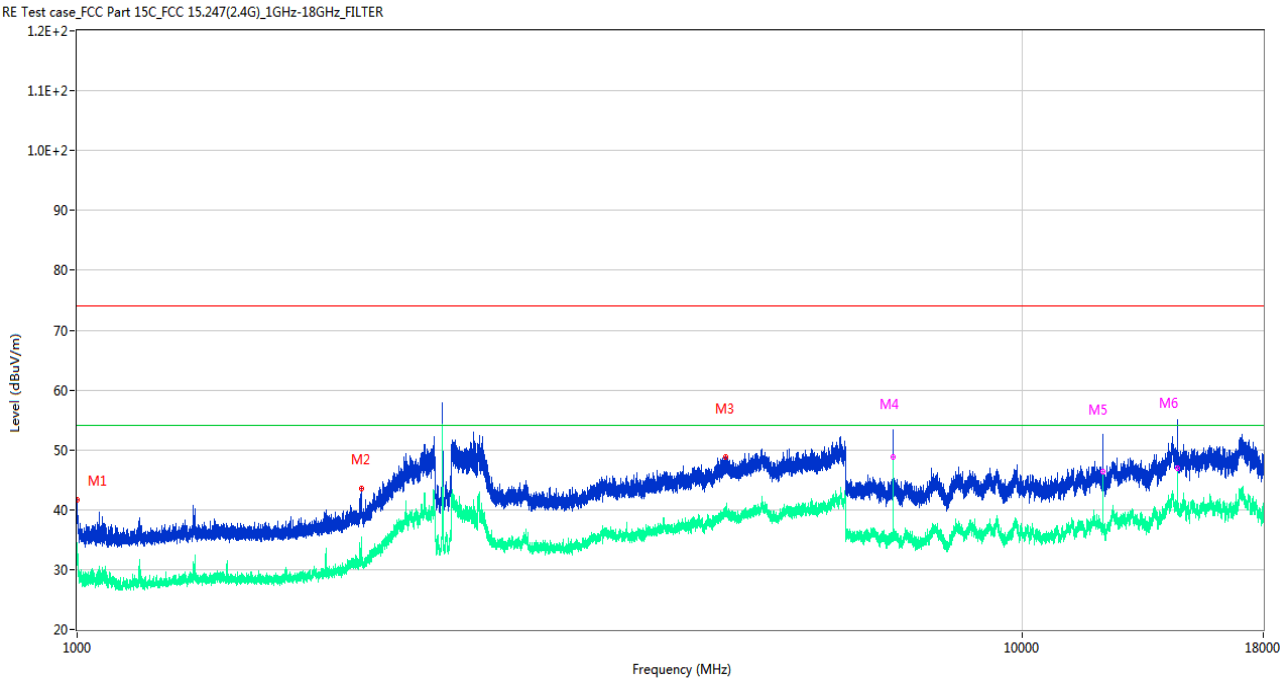
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1333.120	40.35	74.0	33.65	Peak	0.00	100	Vertical	Pass
1**	1333.120	31.18	54.0	22.82	AV	0.00	100	Vertical	Pass
2	3317.800	45.27	74.0	28.73	Peak	85.00	150	Vertical	Pass
2**	3317.800	33.32	54.0	20.68	AV	85.00	150	Vertical	Pass
3	4965.040	49.25	74.0	24.75	Peak	239.00	200	Vertical	Pass
3**	4965.040	39.24	54.0	14.76	AV	239.00	200	Vertical	Pass
4	6432.800	51.75	74.0	22.25	Peak	210.00	100	Vertical	Pass
4**	6432.800	41.99	54.0	12.01	AV	210.00	100	Vertical	Pass
5	12986.250	49.19	74.0	24.81	Peak	143.00	300	Vertical	Pass
5**	12986.250	38.98	54.0	15.02	AV	143.00	300	Vertical	Pass
6	16991.524	52.99	74.0	21.01	Peak	96.00	400	Vertical	Pass
6**	16991.524	42.16	54.0	11.84	AV	96.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 3 MHz Middle Channel



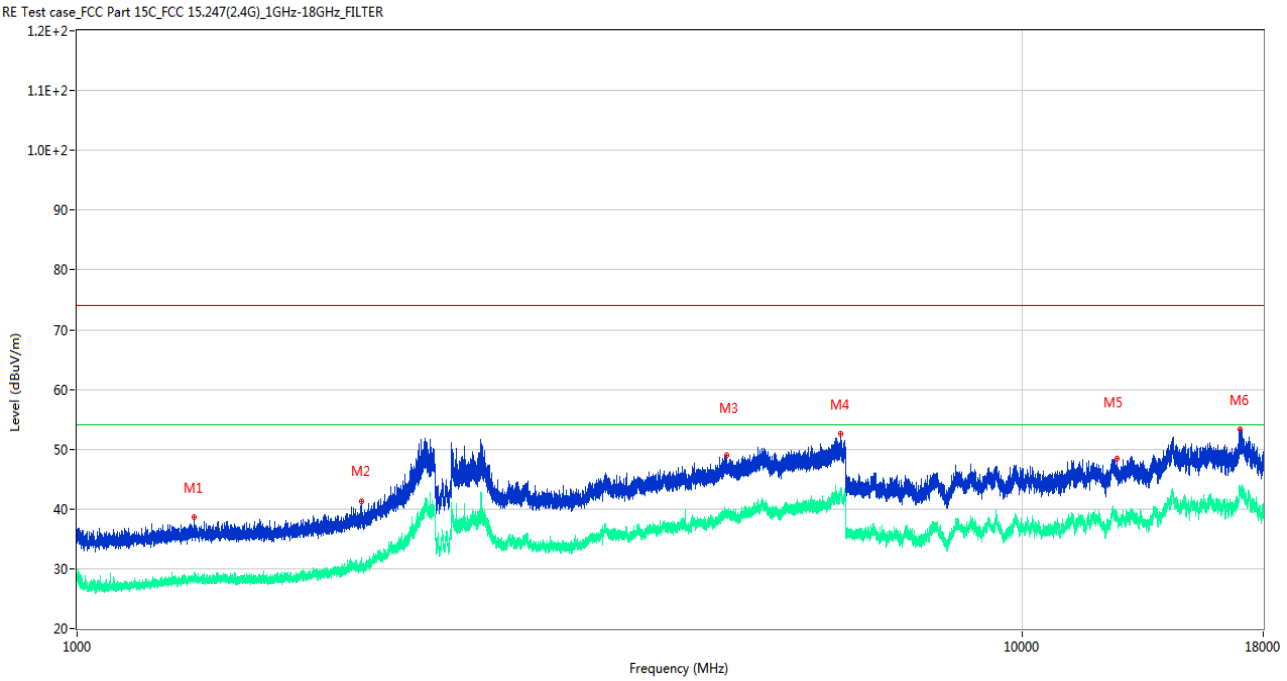
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.160	39.53	74.0	34.47	Peak	357.00	200	Horizontal	Pass
1**	1440.160	35.21	54.0	18.79	AV	357.00	200	Horizontal	Pass
2	1992.960	42.69	74.0	31.31	Peak	106.00	150	Horizontal	Pass
2**	1992.960	30.86	54.0	23.14	AV	106.00	150	Horizontal	Pass
3	4903.160	49.20	74.0	24.80	Peak	124.00	150	Horizontal	Pass
3**	4903.160	39.00	54.0	15.00	AV	124.00	150	Horizontal	Pass
4	7307.000	50.61	74.0	23.39	Peak	111.00	150	Horizontal	Pass
4**	7307.000	47.63	54.0	6.37	AV	111.00	150	Horizontal	Pass
5	12177.000	50.23	74.0	23.77	Peak	95.00	150	Horizontal	Pass
5**	12177.000	43.79	54.0	10.21	AV	95.00	150	Horizontal	Pass
6	14423.796	52.30	74.0	21.70	Peak	100.00	100	Horizontal	Pass
6**	14423.796	41.76	54.0	12.24	AV	100.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 3 MHz Middle Channel



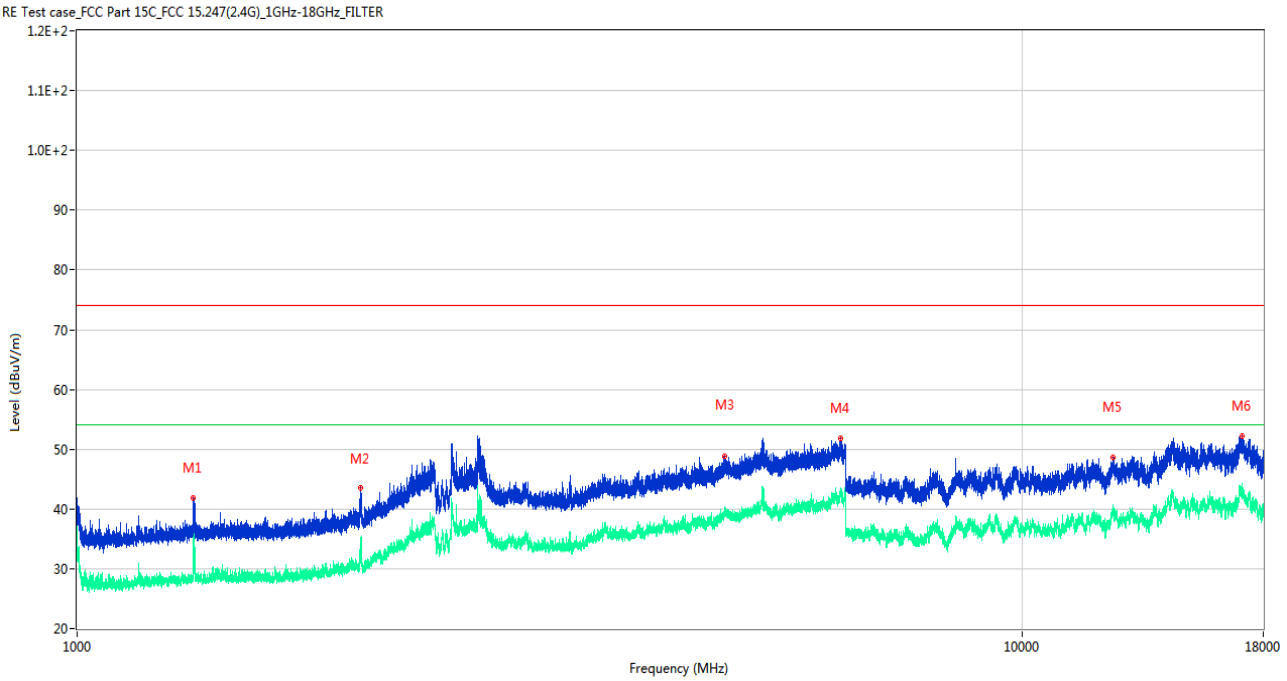
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1000.160	41.64	74.0	32.36	Peak	0.00	300	Vertical	Pass
1**	1000.160	32.61	54.0	21.39	AV	0.00	300	Vertical	Pass
2	1998.400	43.59	74.0	30.41	Peak	22.00	150	Vertical	Pass
2**	1998.400	31.56	54.0	22.44	AV	22.00	150	Vertical	Pass
3	4854.160	48.90	74.0	25.10	Peak	4.00	150	Vertical	Pass
3**	4854.160	39.69	54.0	14.31	AV	4.00	150	Vertical	Pass
4	7306.500	52.17	74.0	21.83	Peak	126.00	150	Vertical	Pass
4**	7306.500	48.77	54.0	5.23	AV	126.00	150	Vertical	Pass
5	12177.500	51.41	74.0	22.59	Peak	0.00	150	Vertical	Pass
5**	12177.500	46.34	54.0	7.66	AV	0.00	150	Vertical	Pass
6	14613.273	53.85	74.0	20.15	Peak	57.00	150	Vertical	Pass
6**	14613.273	47.00	54.0	7.00	AV	57.00	150	Vertical	Pass

1 GHz to 18 GHz, ANT H 3 MHz High Channel



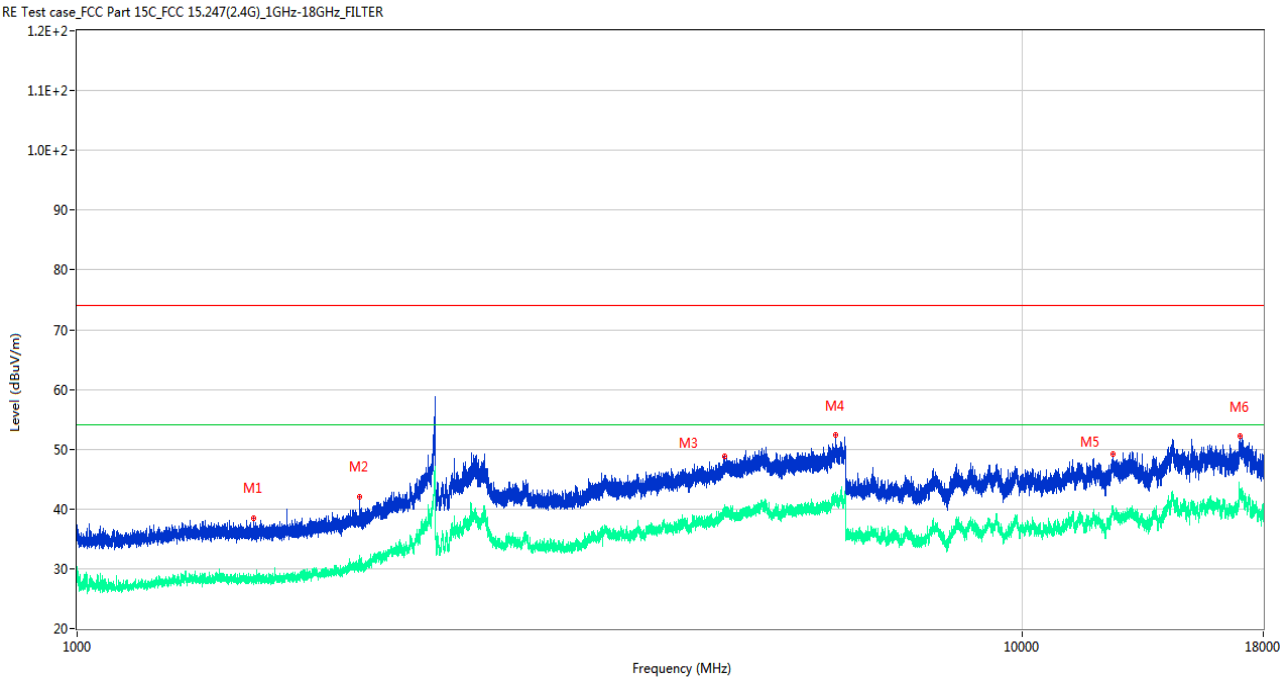
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.200	38.58	74.0	35.42	Peak	73.00	100	Horizontal	Pass
1**	1331.200	29.46	54.0	24.54	AV	73.00	100	Horizontal	Pass
2	1998.560	41.27	74.0	32.73	Peak	29.00	150	Horizontal	Pass
2**	1998.560	30.96	54.0	23.04	AV	29.00	150	Horizontal	Pass
3	4867.600	49.07	74.0	24.93	Peak	93.00	100	Horizontal	Pass
3**	4867.600	38.96	54.0	15.04	AV	93.00	100	Horizontal	Pass
4	6435.040	52.57	74.0	21.43	Peak	63.00	400	Horizontal	Pass
4**	6435.040	43.42	54.0	10.58	AV	63.00	400	Horizontal	Pass
5	12615.000	48.46	74.0	25.54	Peak	109.00	100	Horizontal	Pass
5**	12615.000	38.58	54.0	15.42	AV	109.00	100	Horizontal	Pass
6	17021.113	53.32	74.0	20.68	Peak	0.00	200	Horizontal	Pass
6**	17021.113	42.45	54.0	11.55	AV	0.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 3 MHz High Channel



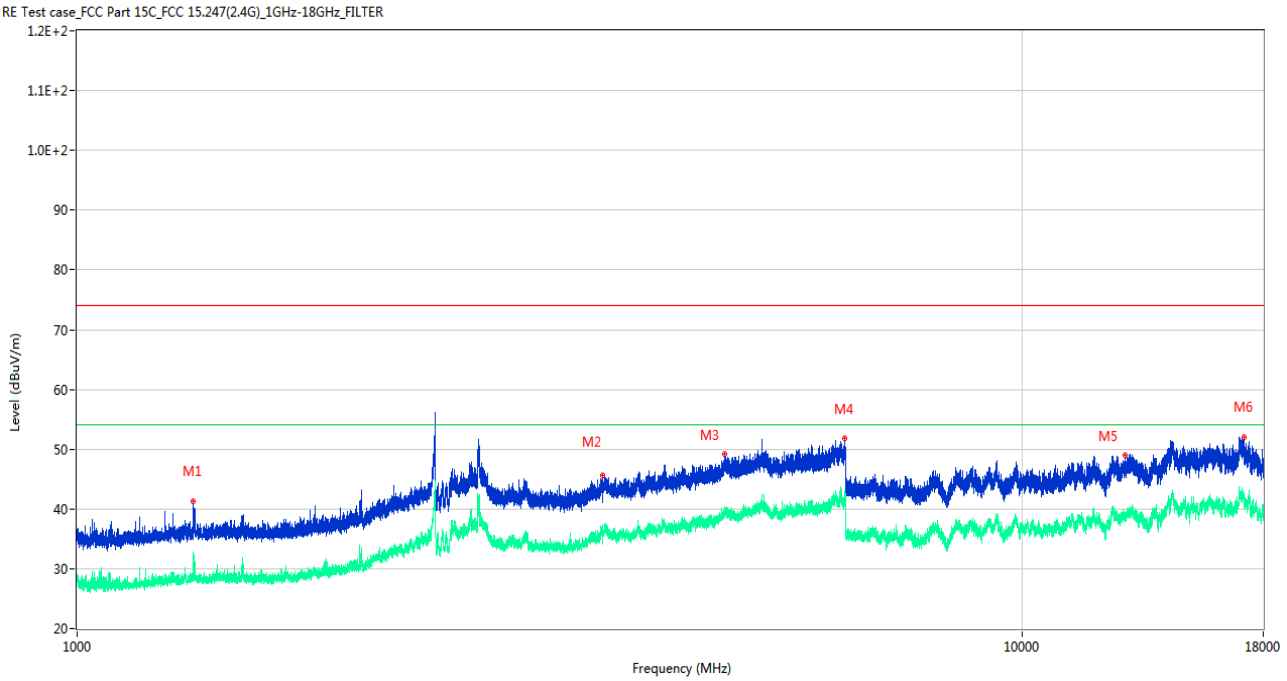
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.520	41.91	74.0	32.09	Peak	111.00	200	Vertical	Pass
1**	1327.520	29.88	54.0	24.12	AV	111.00	200	Vertical	Pass
2	1993.760	43.52	74.0	30.48	Peak	137.00	150	Vertical	Pass
2**	1993.760	34.25	54.0	19.75	AV	137.00	150	Vertical	Pass
3	4844.920	48.87	74.0	25.13	Peak	166.00	200	Vertical	Pass
3**	4844.920	39.54	54.0	14.46	AV	166.00	200	Vertical	Pass
4	6423.280	51.85	74.0	22.15	Peak	333.00	400	Vertical	Pass
4**	6423.280	42.32	54.0	11.68	AV	333.00	400	Vertical	Pass
5	12494.500	48.72	74.0	25.28	Peak	157.00	400	Vertical	Pass
5**	12494.500	40.70	54.0	13.30	AV	157.00	400	Vertical	Pass
6	17089.842	52.28	74.0	21.72	Peak	121.00	200	Vertical	Pass
6**	17089.842	42.01	54.0	11.99	AV	121.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 5 MHz Low Channel



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1537.760	38.49	74.0	35.51	Peak	0.00	400	Horizontal	Pass
1**	1537.760	27.74	54.0	26.26	AV	0.00	400	Horizontal	Pass
2	1991.520	42.07	74.0	31.93	Peak	339.00	150	Horizontal	Pass
2**	1991.520	31.85	54.0	22.15	AV	339.00	150	Horizontal	Pass
3	4849.960	48.88	74.0	25.12	Peak	43.00	150	Horizontal	Pass
3**	4849.960	39.17	54.0	14.83	AV	43.00	150	Horizontal	Pass
4	6350.200	52.34	74.0	21.66	Peak	360.00	100	Horizontal	Pass
4**	6350.200	42.39	54.0	11.61	AV	360.00	100	Horizontal	Pass
5	12476.500	49.15	74.0	24.85	Peak	60.00	200	Horizontal	Pass
5**	12476.500	39.51	54.0	14.49	AV	60.00	200	Horizontal	Pass
6	17025.408	52.12	74.0	21.88	Peak	346.00	100	Horizontal	Pass
6**	17025.408	41.53	54.0	12.47	AV	346.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 5 MHz Low Channel



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.680	41.32	74.0	32.68	Peak	107.00	300	Vertical	Pass
1**	1327.680	28.76	54.0	25.24	AV	107.00	300	Vertical	Pass
2	3600.040	45.65	74.0	28.35	Peak	181.00	150	Vertical	Pass
2**	3600.040	37.35	54.0	16.65	AV	181.00	150	Vertical	Pass
3	4848.000	49.25	74.0	24.75	Peak	28.00	150	Vertical	Pass
3**	4848.000	40.14	54.0	13.86	AV	28.00	150	Vertical	Pass
4	6488.800	51.74	74.0	22.26	Peak	258.00	400	Vertical	Pass
4**	6488.800	41.56	54.0	12.44	AV	258.00	400	Vertical	Pass
5	12848.318	49.06	74.0	24.94	Peak	301.00	400	Vertical	Pass
5**	12848.318	38.37	54.0	15.63	AV	301.00	400	Vertical	Pass
6	17162.864	52.01	74.0	21.99	Peak	96.00	150	Vertical	Pass
6**	17162.864	41.84	54.0	12.16	AV	96.00	150	Vertical	Pass