

**CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 Issue 3**

TEST REPORT

For

Milo

MODEL NUMBER: M01

FCC ID: 2A6M9-MV01

IC: 28476-MV01

REPORT NUMBER: 4790849656-2

ISSUE DATE: January 12, 2024

Prepared for

**Loose Cannon Systems, Inc.
PO Box 1447, Ross, CA. 94957 USA**

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	1/12/2024	Initial Issue	

Note: This report is based on 4790371944-9 which is issued by UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch on July 18, 2022. The EUT had already applied for the FCC ID & IC ID, the customer added the new Bit Rates and updated the channel list. The RF technical construction including circuit diagram, PCB Layout, components, component layout and performance does not change. All the Bit Rates have been tested in this report.

Summary of Test Results

Test Item	Clause	Limit/Requirement	Result
Antenna Requirement	N/A	FCC Part 15.203/15.247 (c) RSS-GEN Clause 6.8	Pass
AC Power Line Conducted Emission	ANSI C63.10-2013, Clause 6.2	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
Conducted Output Power	ANSI C63.10-2013, Clause 11.9.1.3	FCC Part 15.247 (b)(3) RSS-247 Clause 5.4 (d)	Pass
6dB Bandwidth and 99% Occupied Bandwidth	ANSI C63.10-2013, Clause 11.8.1	FCC Part 15.247 (a)(2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
Power Spectral Density	ANSI C63.10-2013, Clause 11.10.2	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
Conducted Band edge and spurious emission	ANSI C63.10-2013, Clause 11.11	FCC Part 15.247(d) RSS-247 Clause 5.5	Pass
Radiated Band edge and Spurious Emission	ANSI C63.10-2013, Clause 11.12 & Clause 11.13	FCC Part 15.247 (d) FCC Part 15.205/15.209 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
Duty Cycle	ANSI C63.10-2013, Clause 11.6	None; for reporting purposes only.	Pass

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C><ISED RSS-247 Issue 3> when <Simple Acceptance> decision rule is applied.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Loose Cannon Systems, Inc.
Address: PO Box 1447, Ross, CA. 94957 USA

Manufacturer Information

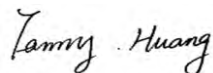
Company Name: Loose Cannon Systems, Inc.
Address: PO Box 1447, Ross, CA. 94957 USA

EUT Information

EUT Name: Milo
Model: M01
Brand: 
Sample Received Date: May 6, 2023
Sample Status: Normal
Sample ID: 6728894
Date of Tested: May 6, 2023~ January 12, 2024

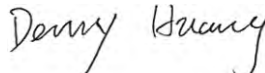
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 FCC PART 15 SUBPART C ISED RSS-247 Issue 3	Pass

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2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C ISED RSS-247 Issue 3, KDB 558074 D01 15.247 Meas Guidance v05r02, 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, ANSI C63.10-2013 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p>A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p>ISED (Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046.</p> <p>VCCI (Registration No.: G-20192, C-20153, T-20155 and R-20202) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20192 and R-20202 Shielding Room B, the VCCI registration No. is C-20153 and T-20155</p>
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Note 1:

All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China.

Note 2:

The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3:

For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 26 GHz)	5.78 dB (1 GHz ~ 18 GHz)
	5.23 dB (18 GHz ~ 26 GHz)
Duty Cycle	±0.028%
DTS and 99% Occupied Bandwidth	±0.0196%
Maximum Conducted Output Power	±0.686 dB
Maximum Power Spectral Density Level	±0.743 dB
Conducted Band-edge Compliance	±1.328 dB
Conducted Unwanted Emissions In Non-restricted Frequency Bands	±0.746 dB (9 kHz ~ 1 GHz)
	±1.328dB (1 GHz ~ 26 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Milo
Model	M01
Power Supply	DC 5 V

Note: The product has 3 power supply modes: battery (DC 3.7 V), USB (DC 5 V), AC adapter, we had pre-scan for all the 3 modes, and only the worst data for DC 5 V supply are recorded in the report.

Test Mode	Modulation	Bit Rate	Operation Frequency	Number of Channels
FCC.2400M.2GFSK.400kbps.LP	2GFSK	400 kbps	2402.035 MHz- 2475.355 MHz	75
FCC.2400M.2GFSK.640kbps		640 kbps	2400.95 MHz- 2476.77 MHz	66
FCC.2400M.2GFSK.1000kbps		1000 kbps	2401.305 MHz- 2475.305 MHz	41
FCC.2400M.2GFSK.1600kbps		1600 kbps	2401.91 MHz- 2469.71 MHz	27
FCC.2400M.2GFSK.2000kbps		2000 kbps	2402.31 MHz- 2469 MHz	21

5.2. CHANNEL LIST

Channel List for FCC.2400M.2GFSK.400kbps.LP									
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2402.035	30	2416.855	48	2430.895	67	2445.715	87	2461.315
12	2402.815	32	2418.415	49	2431.675	68	2446.495	88	2462.095
13	2403.595	33	2419.195	51	2433.235	70	2448.055	90	2463.655
14	2404.375	34	2419.975	52	2434.015	71	2448.835	91	2464.435
15	2405.155	35	2420.755	53	2434.795	72	2449.615	92	2465.215
17	2406.715	36	2421.535	55	2436.355	75	2451.955	93	2465.995
18	2407.495	37	2422.315	56	2437.135	76	2452.735	95	2467.555
19	2408.275	39	2423.875	58	2438.695	77	2453.515	96	2468.335
20	2409.055	40	2424.655	59	2439.475	78	2454.295	97	2469.115
21	2409.835	41	2425.435	60	2440.255	79	2455.075	98	2469.895
23	2411.395	42	2426.215	61	2441.035	80	2455.855	100	2471.455
24	2412.175	43	2426.995	62	2441.815	81	2456.635	101	2472.235
25	2412.955	44	2427.775	63	2442.595	82	2457.415	102	2473.015
27	2414.515	45	2428.555	64	2443.375	84	2458.975	103	2473.795
28	2415.295	46	2429.335	65	2444.155	85	2459.755	105	2475.355

Channel List for FCC.2400M.2GFSK.640kbps									
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2400.95	25	2416.56	39	2432.17	55	2450.01	69	2465.62
12	2402.065	26	2417.675	41	2434.4	56	2451.125	70	2466.735
13	2403.18	27	2418.79	42	2435.515	57	2452.24	72	2468.965
14	2404.295	28	2419.905	43	2436.63	58	2453.355	73	2470.08
15	2405.41	29	2421.02	44	2437.745	59	2454.47	74	2471.195
16	2406.525	30	2422.135	45	2438.86	60	2455.585	75	2472.31
17	2407.64	31	2423.25	46	2439.975	61	2456.7	76	2473.425
18	2408.755	32	2424.365	47	2441.09	62	2457.815	77	2474.54
19	2409.87	33	2425.48	49	2443.32	63	2458.93	78	2475.655
20	2410.985	34	2426.595	50	2444.435	64	2460.045	79	2476.77
21	2412.1	35	2427.71	51	2445.55	65	2461.16	/	/
22	2413.215	36	2428.825	52	2446.665	66	2462.275	/	/
23	2414.33	37	2429.94	53	2447.78	67	2463.39	/	/
24	2415.445	38	2431.055	54	2448.895	68	2464.505	/	/

Channel List for FCC.2400M.2GFSK.1000kbps									
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2401.305	20	2417.955	29	2434.605	38	2451.255	47	2467.905
12	2403.155	21	2419.805	30	2436.455	39	2453.105	48	2469.755
13	2405.005	22	2421.655	31	2438.305	40	2454.955	49	2471.605
14	2406.855	23	2423.505	32	2440.155	41	2456.805	50	2473.455
15	2408.705	24	2425.355	33	2442.005	42	2458.655	51	2475.305
16	2410.555	25	2427.205	34	2443.855	43	2460.505	/	/
17	2412.405	26	2429.055	35	2445.705	44	2462.355	/	/
18	2414.255	27	2430.905	36	2447.555	45	2464.205	/	/
19	2416.105	28	2432.755	37	2449.405	46	2466.055	/	/

Channel List for FCC.2400M.2GFSK.1600kbps									
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2401.91	17	2418.86	23	2435.81	29	2452.76	35	2469.71
12	2404.735	18	2421.685	24	2438.635	30	2455.585	/	/
13	2407.56	19	2424.51	25	2441.46	31	2458.41	/	/
14	2410.385	20	2427.335	26	2444.285	32	2461.235	/	/
15	2413.21	21	2430.16	27	2447.11	33	2464.06	/	/
16	2416.035	22	2432.985	28	2449.935	34	2466.885	/	/

Channel List for FCC.2400M.2GFSK.2000kbps									
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2402.31	16	2419.86	21	2437.41	26	2454.96	/	/
12	2405.82	17	2423.37	22	2440.92	27	2458.47	/	/
13	2409.33	18	2426.88	23	2444.43	28	2461.98	/	/
14	2412.84	19	2430.39	24	2447.94	29	2465.49	/	/
15	2416.35	20	2433.9	25	2451.45	30	2469	/	/

5.3. MAXIMUM POWER

Test Mode	Modulation	Bit Rate	Operation Frequency	Maximum Conducted AVG Output Power (dBm)
FCC.2400M.2GFSK.400kbps.LP	2GFSK	25 kbps	2402.035 MHz- 2475.355 MHz	11.72
FCC.2400M.2GFSK.640kbps		40 kbps	2400.95 MHz- 2476.77 MHz	24.21
FCC.2400M.2GFSK.1000kbps		60 kbps	2401.305 MHz- 2475.305 MHz	24.22
FCC.2400M.2GFSK.1600kbps		96 kbps	2401.91 MHz- 2469.71 MHz	24.15
FCC.2400M.2GFSK.2000kbps		150 kbps	2402.31 MHz- 2469 MHz	24.03

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
FCC.2400M.2GFSK.400kbps.LP	CH 11(Low Channel), CH 58(MID Channel), CH 105(High Channel)	2402.035 MHz, 2438.695 MHz, 2475.355 MHz
FCC.2400M.2GFSK.640kbps	CH 11(Low Channel), CH 45(MID Channel), CH 79(High Channel)	2400.95 MHz, 2438.86 MHz, 2476.77 MHz
FCC.2400M.2GFSK.1000kbps	CH 11(Low Channel), CH 31(MID Channel), CH 51(High Channel)	2401.305 MHz, 2438.305 MHz, 2475.305 MHz
FCC.2400M.2GFSK.1600kbps	CH 11(Low Channel), CH 23(MID Channel), CH 35(High Channel)	2401.91 MHz, 2435.81 MHz, 2469.71 MHz
FCC.2400M.2GFSK.2000kbps	CH 11(Low Channel), CH 21(MID Channel), CH 30(High Channel)	2402.31 MHz, 2437.41 MHz, 2469 MHz

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worst Case Power Setting Parameter				
Test Software		Yukon		
Test Mode	Transmit Antenna Number	Test Software Setting Value		
		Low	Middle	High
FCC.2400M.2GFSK.400kbps.LP	1	Default	Default	Default
FCC.2400M.2GFSK.640kbps	1	Default	Default	Default
FCC.2400M.2GFSK.1000kbps	1	Default	Default	Default
FCC.2400M.2GFSK.1600kbps	1	Default	Default	Default
FCC.2400M.2GFSK.2000kbps	1	Default	Default	Default

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2400-2483.5	Inverted F	2.65

Test Mode	Transmit and Receive Mode	Description
FCC.2400M.2GFSK.400kbps.LP	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
FCC.2400M.2GFSK.640kbps	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
FCC.2400M.2GFSK.1000kbps	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
FCC.2400M.2GFSK.1600kbps	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
FCC.2400M.2GFSK.2000kbps	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.

5.7. SUPPORT UNITS FOR SYSTEM TEST

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N	Remarks
1	PC	Dell	Vostro 3902	8KNDDDB2	/
2	USB TO UART	/	/	/	/
3	AC Adapter	/	HW-100225C00	/	Input: AC 100-240V, 50/60Hz, 0.75A Output: DC 5 V, 2A

I/O PORT

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0	/

ACCESSORY

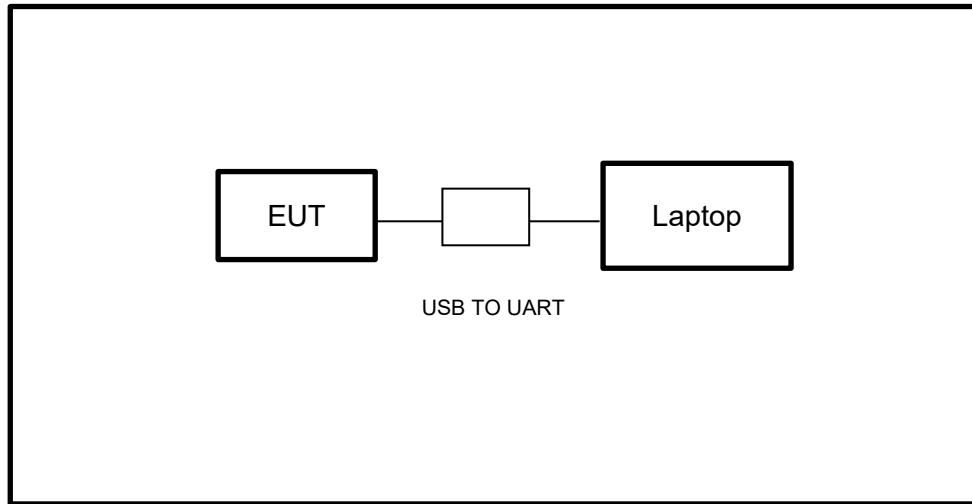
Item	Accessory	Brand Name	Model Name	Description
/	/	/	/	/

TEST SETUP

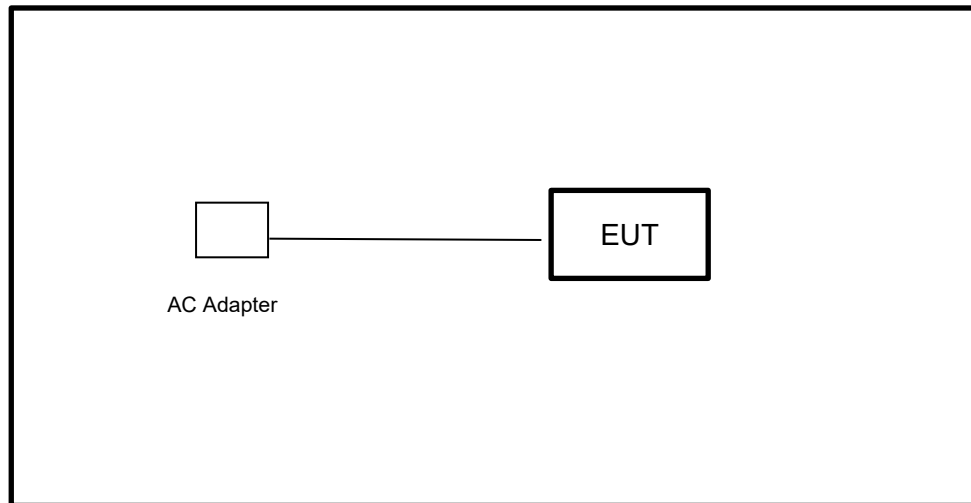
The EUT can work in engineering mode with a software through a Laptop.

SETUP DIAGRAM FOR TESTS

For others:



For AC POWER LINE CONDUCTED EMISSIONS only:



6. MEASURING EQUIPMENT AND SOFTWARE USED

R&S TS 8997 Test System						
Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Due. Date
Power sensor, Power Meter	R&S	OSP120	100921	/	Mar.31, 2023	Mar.30, 2024
Vector Signal Generator	R&S	SMBV100A	261637	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Signal Generator	R&S	SMB100A	178553	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Signal Analyzer	R&S	FSV40	101118	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Software						
Description	Manufacturer	Name	Version			
For R&S TS 8997 Test System	Rohde & Schwarz	EMC 32	10.60.10			
Tonsend RF Test System						
Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Due. Date
Wideband Radio Communication Tester	R&S	CMW500	155523	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Wireless Connectivity Tester	R&S	CMW270	1201.0002N75-102	Sep.28, 2022	Sep.27, 2023	Sep.26, 2024
PXA Signal Analyzer	Keysight	N9030A	MY55410512	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
DC power supply	Keysight	E3642A	MY55159130	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Attenuator	Aglient	8495B	2814a12853	Oct.18, 2022	Oct.12, 2023	Oct.11, 2024
RF Control Unit	Tonscend	JS0806-2	23B80620666	/	April 18,2023	April 17,2024
Software						
Description	Manufacturer	Name	Version			
Tonsend SRD Test System	Tonsend	JS1120-3 RF Test System	V3.2.22			

Conducted Emissions						
Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Due. Date
EMI Test Receiver	R&S	ESR3	101961	Oct.17, 2022	Oct.13, 2023	Oct.12, 2024
Two-Line V-Network	R&S	ENV216	101983	Oct.17, 2022	Oct.13, 2023	Oct.12, 2024
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Oct.17, 2022	Oct.13, 2023	Oct.12, 2024
Software						
Description			Manufacturer	Name	Version	
Test Software for Conducted Emissions			Farad	EZ-EMC	Ver. UL-3A1	

Radiated Emissions						
Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Due. Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	/	Aug.02, 2021	Aug.01, 2024
Preamplifier	HP	8447D	2944A09099	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
EMI Measurement Receiver	R&S	ESR26	101377	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Horn Antenna	TDK	HRN-0118	130940	/	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Horn Antenna	Schwarzbeck	BBHA9170	697	/	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307-00003	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Preamplifier	TDK	PA-02-3	TRS-308-00002	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Loop antenna	Schwarzbeck	1519B	00008	/	Dec.14, 2021	Dec.13, 2024
Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
Preamplifier	Mini-Circuits	ZX60-83LN-S+	SUP01202035	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024
High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Dec.01,2022	Oct.12, 2023	Oct.11, 2024
Highpass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Dec.01,2022	Oct.12, 2023	Oct.11, 2024

Band Reject Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	4	Dec.01,2022	Oct.12, 2023	Oct.11, 2024
Band Reject Filter	Wainwright	WRCJV20-5120-5150-5350-5380-60SS	2	Dec.01,2022	Oct.12, 2023	Oct.11, 2024
Band Reject Filter	Wainwright	WRCJV20-5440-5470-5725-5755-60SS	1	Dec.01,2022	Oct.12, 2023	Oct.11, 2024
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Dec.01,2022	Oct.12, 2023	Oct.11, 2024
Band Reject Filter	Wainwright	WRCD5-1879-1879.85-1880.15-1881-40SS	1	Dec.01,2022	Oct.12, 2023	Oct.11, 2024
Notch Filter	Wainwright	WHJ10-882-980-7000-40SS	1	Dec.01,2022	Oct.12, 2023	Oct.11, 2024
Software						
Description			Manufacturer	Name	Version	
Test Software for Radiated Emissions			Farad	EZ-EMC	Ver. UL-3A1	

Other Instrument						
Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Due. Date
Temperature humidity probe	OMEGA	ITHX-SD-5	18470007	Oct.22, 2022	Oct.19, 2023	Oct.18, 2024
Barometer	Yiyi	Baro	N/A	Oct.24, 2022	Oct.19, 2023	Oct.18, 2024
Attenuator	Agilent	8495B	2814a12853	Oct.18, 2022	Oct.12, 2023	Oct.11, 2024
Power Sensor	Keysight	USB Wideband Power Sensor	MY5100022	Oct.17, 2022	Oct.12, 2023	Oct.11, 2024

Other Instruments					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Dual Channel Power Meter	Keysight	N1912A	MY55416024	Oct.30, 2021	Oct.29, 2022
Power Sensor	Keysight	USB Wideband Power Sensor	MY5100022	Oct.30, 2021	Oct.29, 2022
Signal Analyzer	R&S	FSV40	101118	Oct.30, 2021	Oct.29, 2022

7. ANTENNA PORT TEST RESULTS

7.1. CONDUCTED OUTPUT POWER

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	AVG Conduct Output Power	1 watt or 30 dBm	2400-2483.5

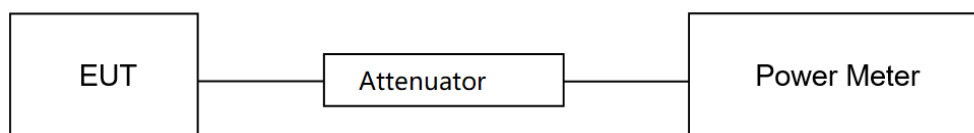
TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).

Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

The test result in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.8 °C	Relative Humidity	52 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

TEST RESULTS

Please refer to section "Test Data" - Appendix C1-C5.

7.2. 6DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

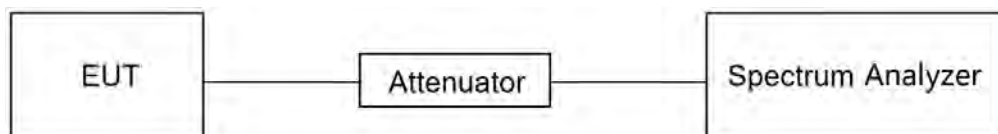
Connect the EUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Frequency Span	For 6 dB Bandwidth: Enough to capture all products of the modulation carrier emission For 99 % Occupied Bandwidth: Between 1.5 times and 5.0 times the OBW
Detector	Peak
RBW	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
VBW	For 6 dB Bandwidth: $\geq 3 \times \text{RBW}$ For 99 % Occupied Bandwidth: $\geq 3 \times \text{RBW}$
Trace	Max hold
Sweep	Auto couple

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) Allow the trace to stabilize and 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.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.8 °C	Relative Humidity	52 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

TEST RESULTS

Please refer to section "Test Data" - Appendix A1-A5&B1-B5.

7.3. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.10.5.

Connect the EUT to the spectrum analyzer and use the following settings:

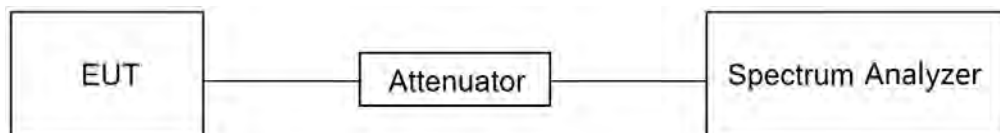
Center Frequency	The center frequency of the channel under test
Detector	power averaging (rms)
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x OBW bandwidth
Trace	Employ trace averaging(rms)mode over a minimum of 100 traces
Sweep time	Auto couple

Allow trace to fully stabilize and 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.

The test result in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.8 °C	Relative Humidity	52 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

TEST RESULTS

Please refer to section "Test Data" - Appendix D1-D5.

7.4. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyzer and use the following settings for reference level measurement:

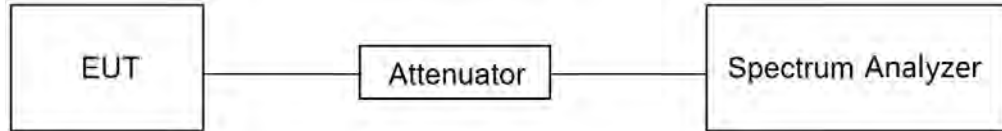
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.

Change the settings for emission level measurement:

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	$\geq 3 \times \text{RBW}$
measurement points	$\geq \text{span}/\text{RBW}$
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

TEST SETUP**TEST ENVIRONMENT**

Temperature	23.8 °C	Relative Humidity	52 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

TEST RESULTS

Please refer to section "Test Data" - Appendix E1-E5&F1-F5.

7.5. DUTY CYCLE

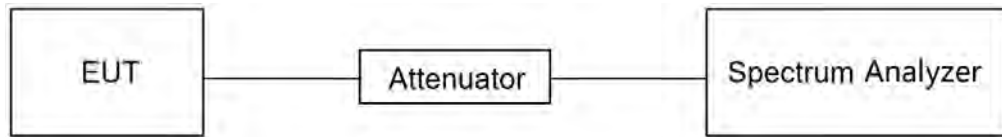
LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.8 °C	Relative Humidity	52 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

TEST RESULTS

Please refer to section "Test Data" - Appendix G1-G5.

8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz		
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz		
Frequency	Magnetic field strength (H-Field) (uA/m)	Measurement distance (m)
9 - 490 kHz ^{Note 1}	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands ^{Note 1}		
MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

Note: ¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

²Above 38.6c

TEST PROCEDURE

Below 30 MHz

The setting of the spectrum analyzer

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80 cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. 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 and average detector and reported.
7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.
8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to $Y-51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyzer

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80 cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. 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.

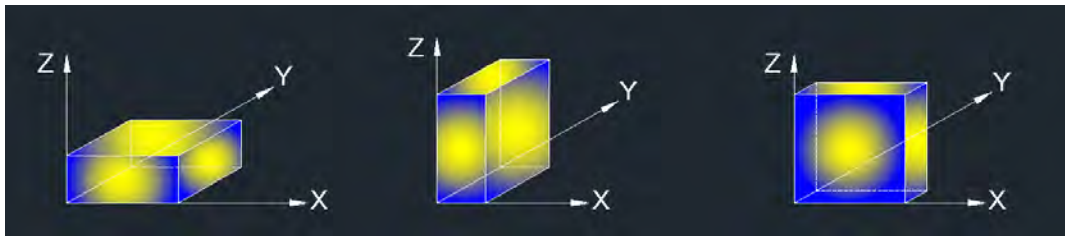
Above 1 GHz

The setting of the spectrum analyzer

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5 m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.5. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

For Restricted Bandedge:

Note:

1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. PK=Peak: Peak detector.
4. AV=Average: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.5.
6. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
7. Both horizontal and vertical have been tested, only the worst data was recorded in the report.
8. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious emission (9 kHz ~ 30 MHz):

Note:

1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.
4. All modes have been tested, but only the worst data was recorded in the report.
5. $\text{dBuA/m} = \text{dBuV/m} - 20\text{Log}_{10}[120\pi] = \text{dBuV/m} - 51.5$

For Radiate Spurious Emission (30 MHz ~ 1 GHz):

Note:

1. Result Level = Read Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
3. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious Emission (1 GHz ~ 3 GHz):

Note:

1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.5.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes have been tested, but only the worst data was recorded in the report.

For Radiate Spurious Emission (3 GHz ~ 18 GHz):

Note:

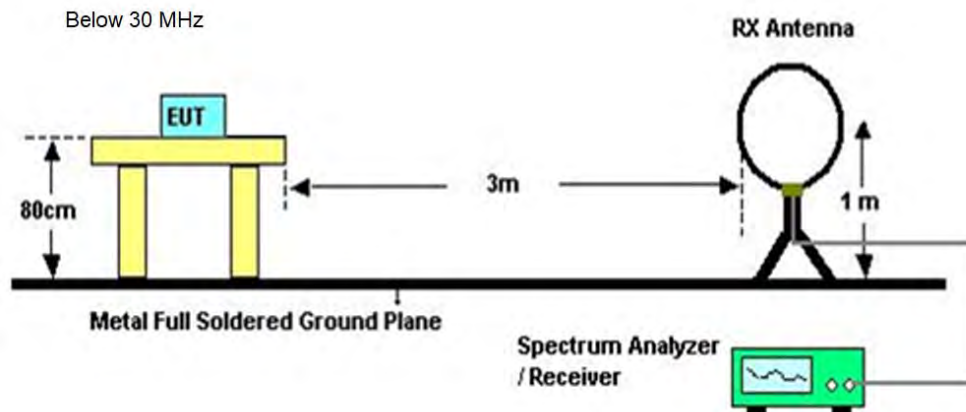
1. Peak Result = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG: $VBW=1/Ton$, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.5.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes have been tested, but only the worst data was recorded in the report.
- 9.*-indicates frequency is out of the restricted bands and the limit is referring to 15.247 (d) and RSS-247 clause 5.5. We had already performed the conducted non-restricted bands test, please refer to clause 7.7.

For Radiate Spurious emission (18 GHz ~ 26 GHz):

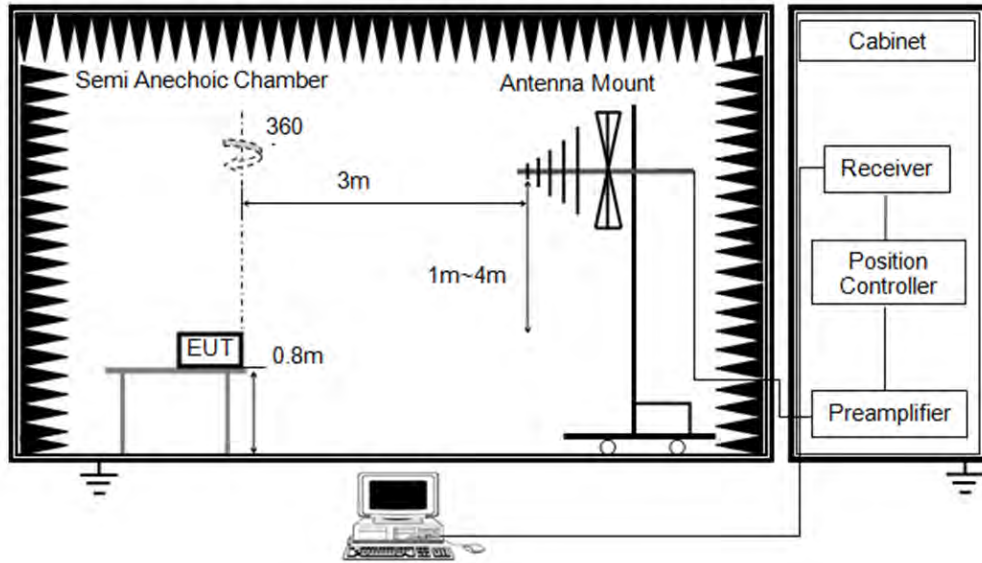
Note:

1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. All modes have been tested, but only the worst data was recorded in the report.

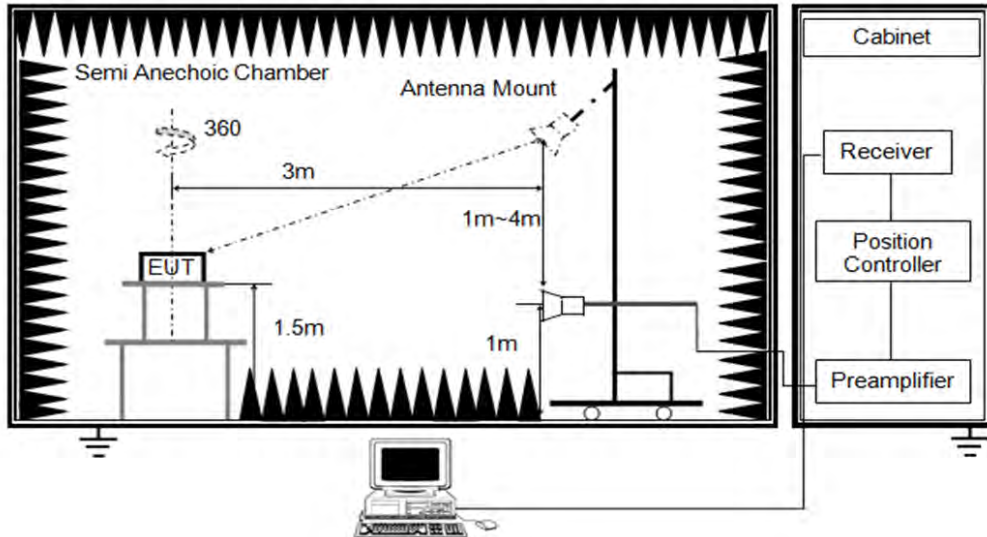
TEST SETUP



Below 1 GHz and above 30 MHz



Above 1 GHz



TEST ENVIRONMENT

Temperature	25.3°C	Relative Humidity	62%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

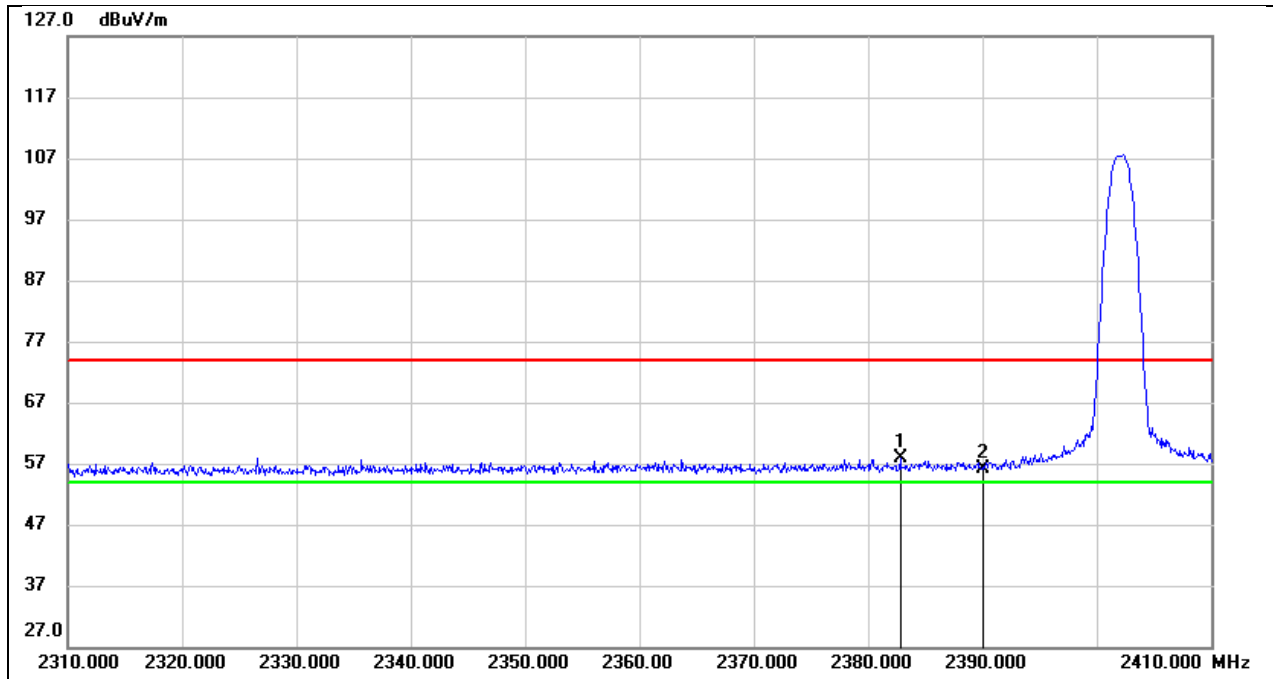
TEST DATE / ENGINEER

Test Date	December 19, 2023	Test By	Rex Huang
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TEST RESULTS

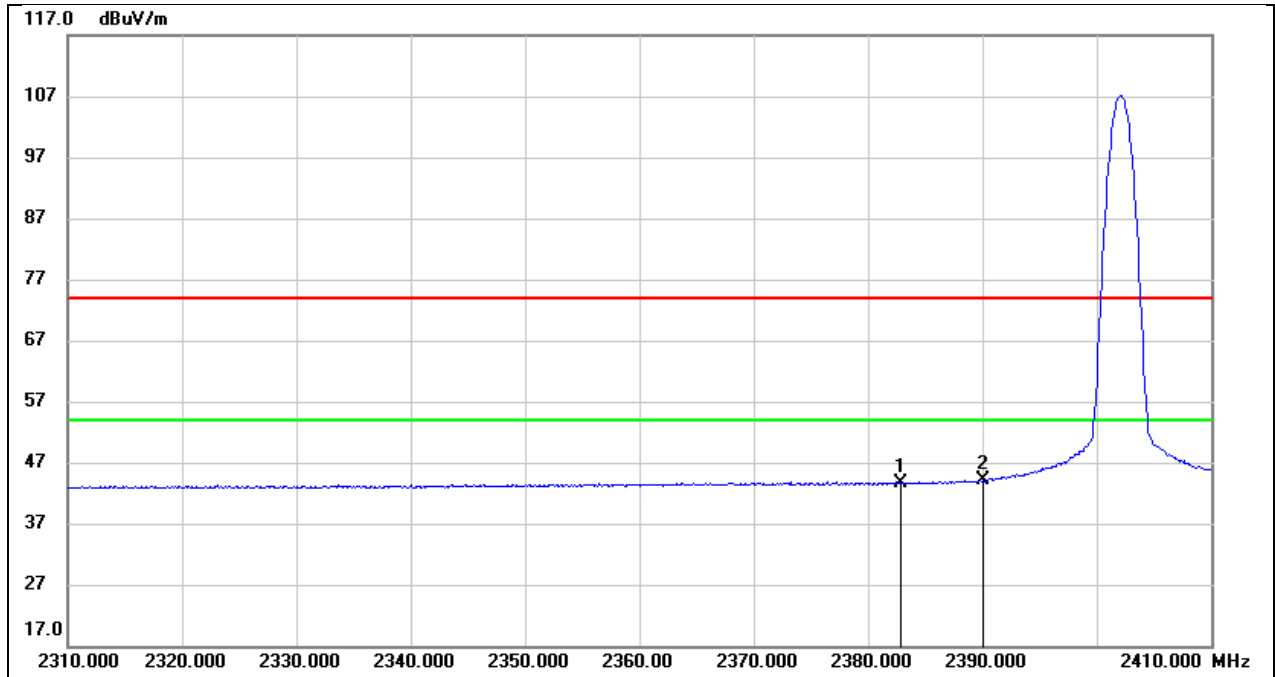
8.1. RESTRICTED BANDEDGE

Test Mode:	2400M.2GFSK.400kbps.LP PK	Frequency(MHz):	2402.035
Polarity:	Horizontal	Test Voltage:	DC 5 V



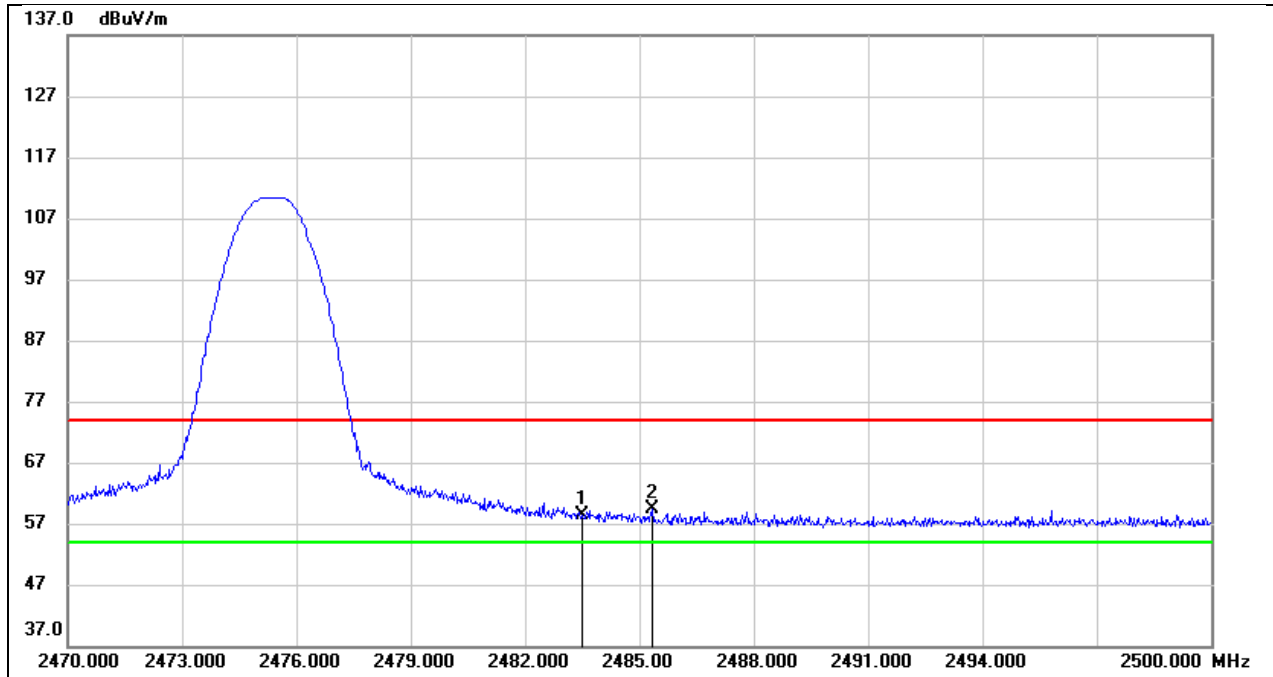
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2382.800	25.69	32.14	57.83	74.00	-16.17	peak
2	2390.000	23.91	32.16	56.07	74.00	-17.93	peak

Test Mode:	2400M.2GFSK.400kbps.LP AV	Frequency(MHz):	2402.035
Polarity:	Horizontal	Test Voltage:	DC 5 V



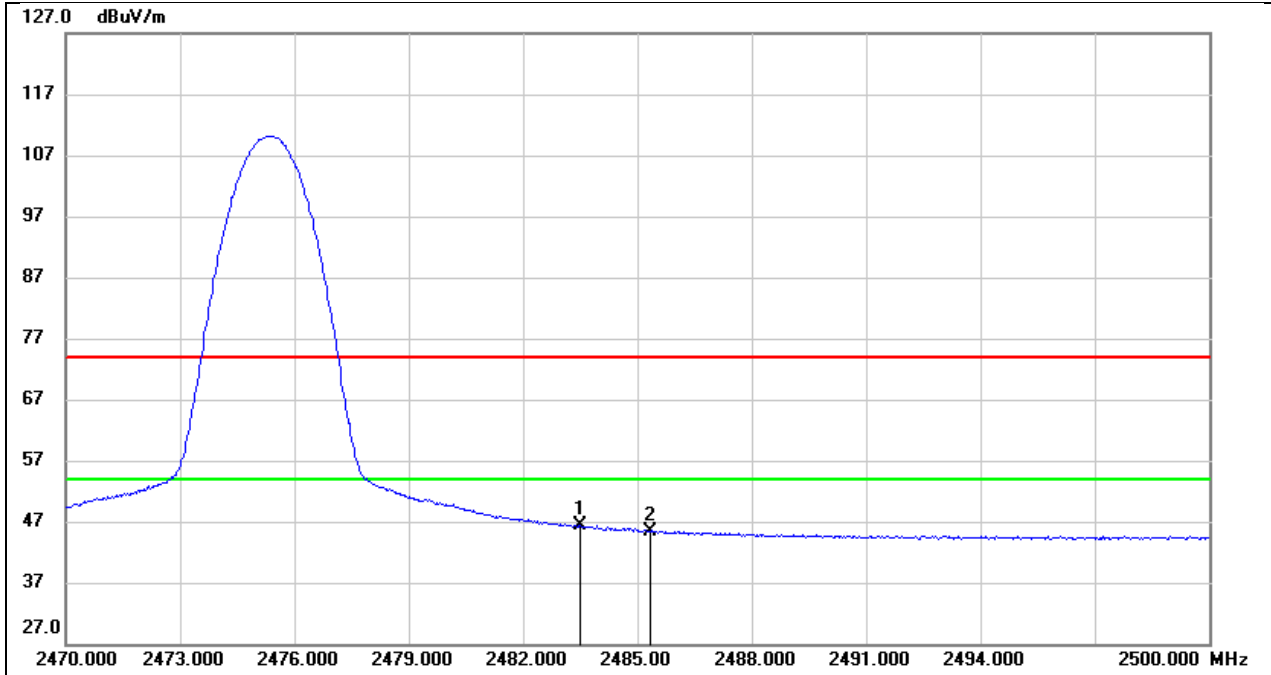
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2382.800	11.45	32.14	43.59	54.00	-10.41	AVG
2	2390.000	11.92	32.16	44.08	54.00	-9.92	AVG

Test Mode:	2400M.2GFSK.400kbps.LP PK	Frequency(MHz):	2475.355
Polarity:	Horizontal	Test Voltage:	DC 5 V



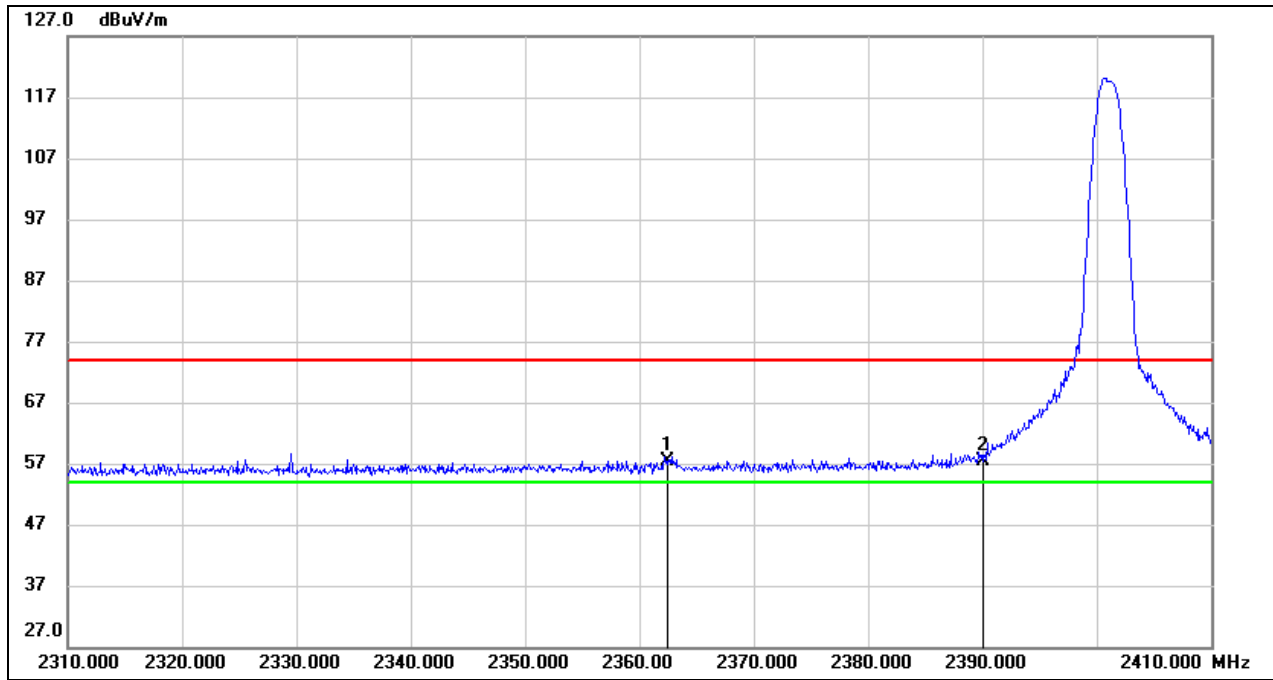
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	25.97	32.44	58.41	74.00	-15.59	peak
2	2485.330	26.85	32.44	59.29	74.00	-14.71	peak

Test Mode:	2400M.2GFSK.400kbps.LP AV	Frequency(MHz):	2475.355
Polarity:	Horizontal	Test Voltage:	DC 5 V



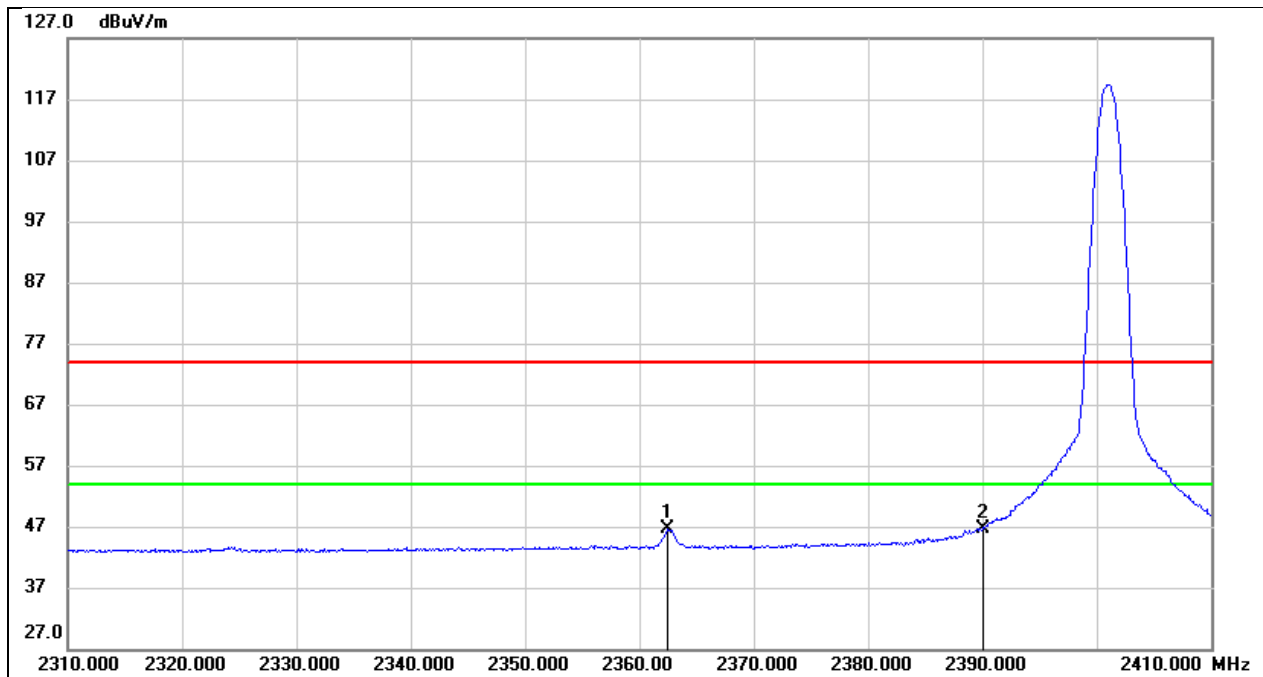
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	13.99	32.44	46.43	54.00	-7.57	AVG
2	2485.330	12.99	32.44	45.43	54.00	-8.57	AVG

Test Mode:	2400M.2GFSK.640kbps. PK	Frequency(MHz):	2400.95
Polarity:	Horizontal	Test Voltage:	DC 5 V



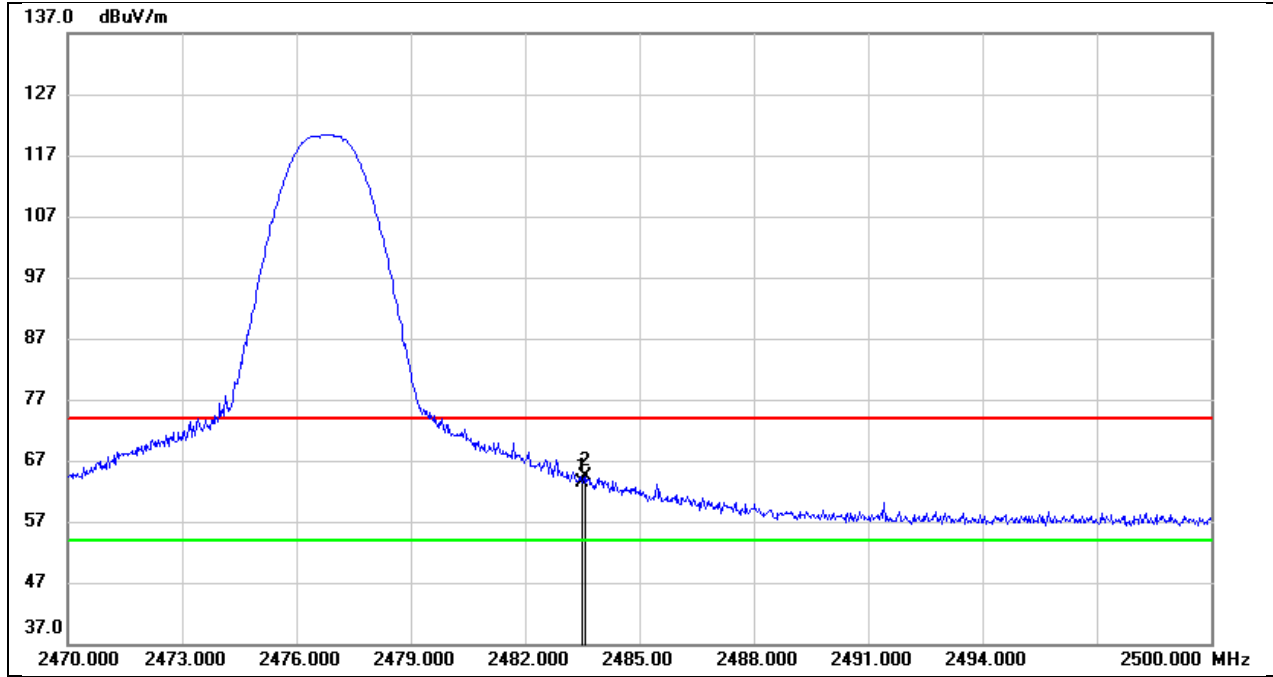
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2362.500	25.30	32.08	57.38	74.00	-16.62	peak
2	2390.000	25.26	32.16	57.42	74.00	-16.58	peak

Test Mode:	2400M.2GFSK.640kbps. AV	Frequency(MHz):	2400.95
Polarity:	Horizontal	Test Voltage:	DC 5 V



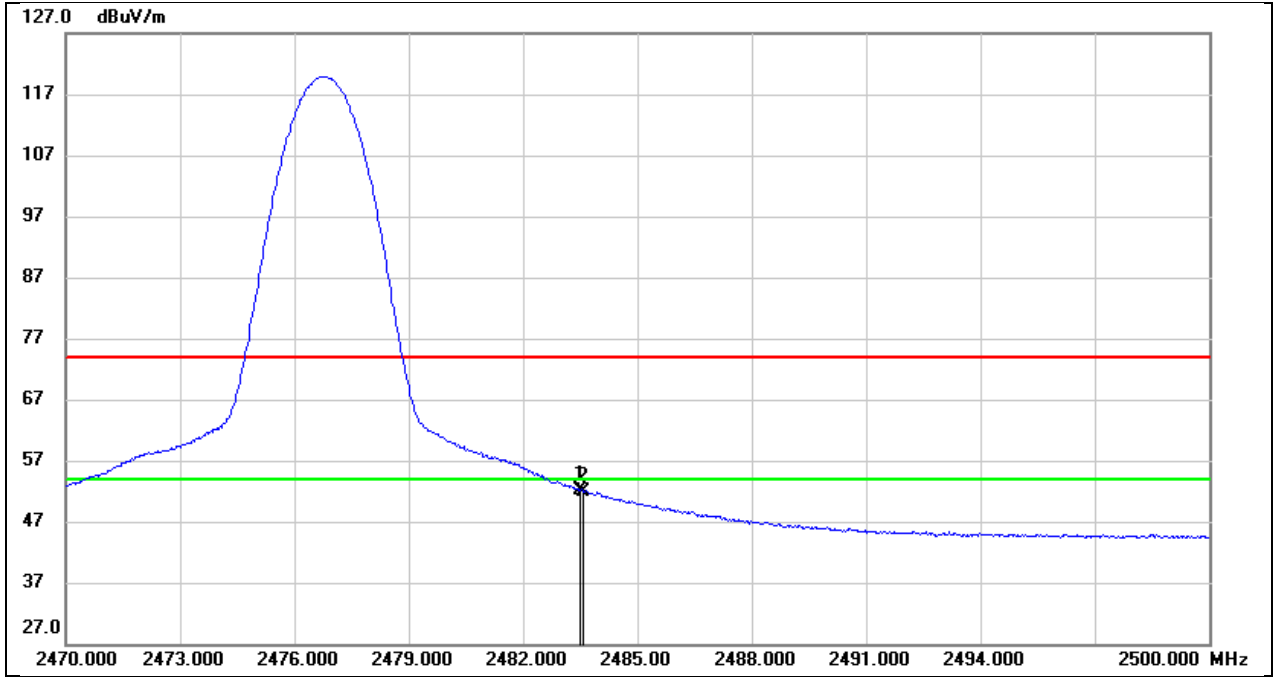
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2362.500	14.56	32.08	46.64	54.00	-7.36	AVG
2	2390.000	14.44	32.16	46.60	54.00	-7.40	AVG

Test Mode:	2400M.2GFSK.640kbps. PK	Frequency(MHz):	2476.77
Polarity:	Horizontal	Test Voltage:	DC 5 V



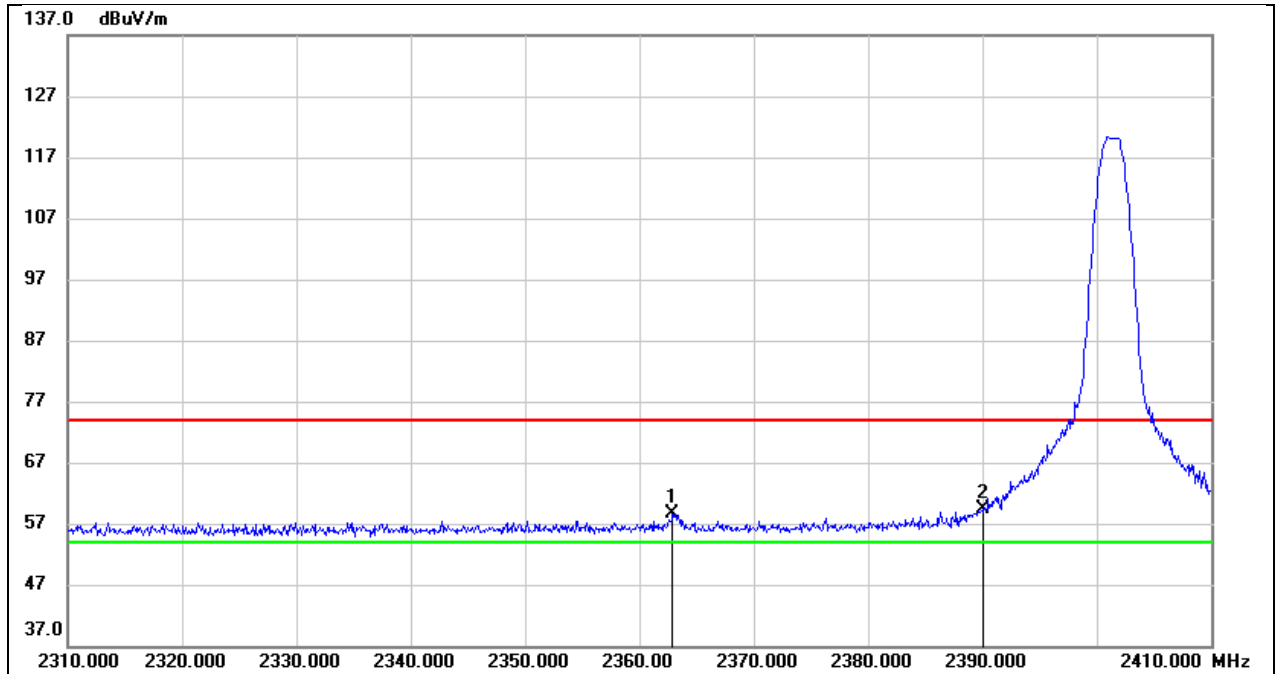
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	30.94	32.44	63.38	74.00	-10.62	peak
2	2483.590	31.89	32.44	64.33	74.00	-9.67	peak

Test Mode:	2400M.2GFSK.640kbps. AV	Frequency(MHz):	2476.77
Polarity:	Horizontal	Test Voltage:	DC 5 V



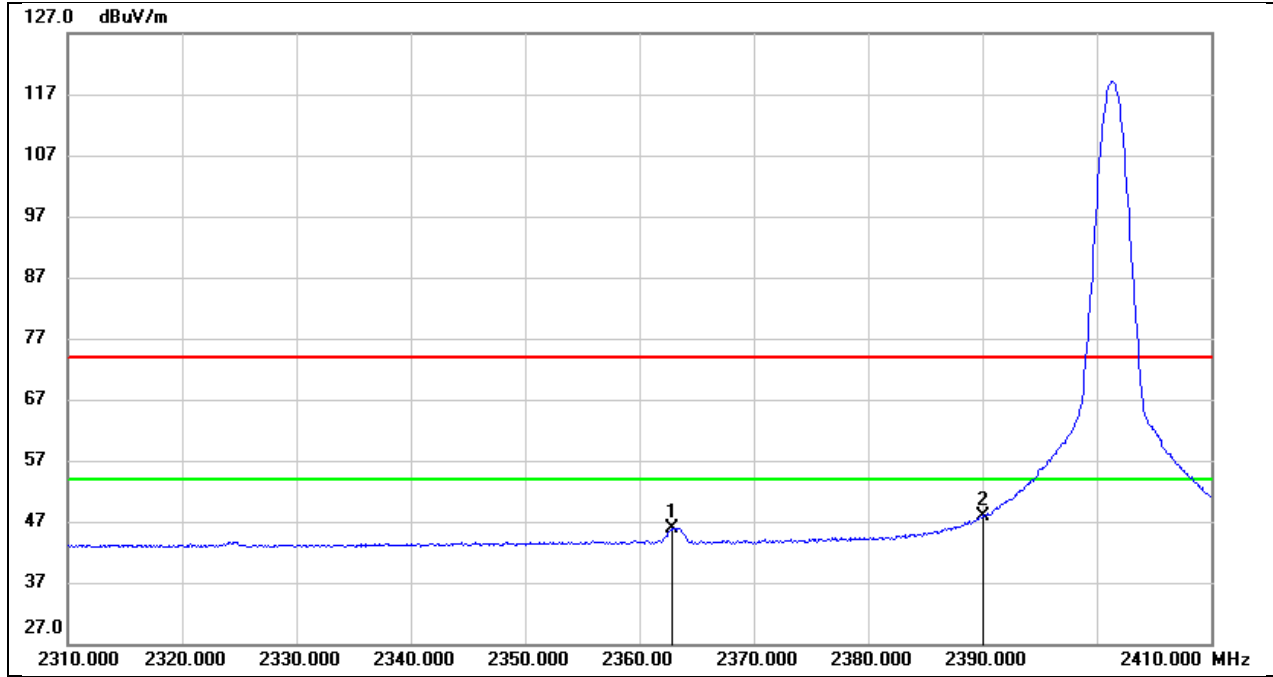
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	19.80	32.44	52.24	54.00	-1.76	AVG
2	2483.590	19.55	32.44	51.99	54.00	-2.01	AVG

Test Mode:	2400M.2GFSK.1000kbps. PK	Frequency(MHz):	2401.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



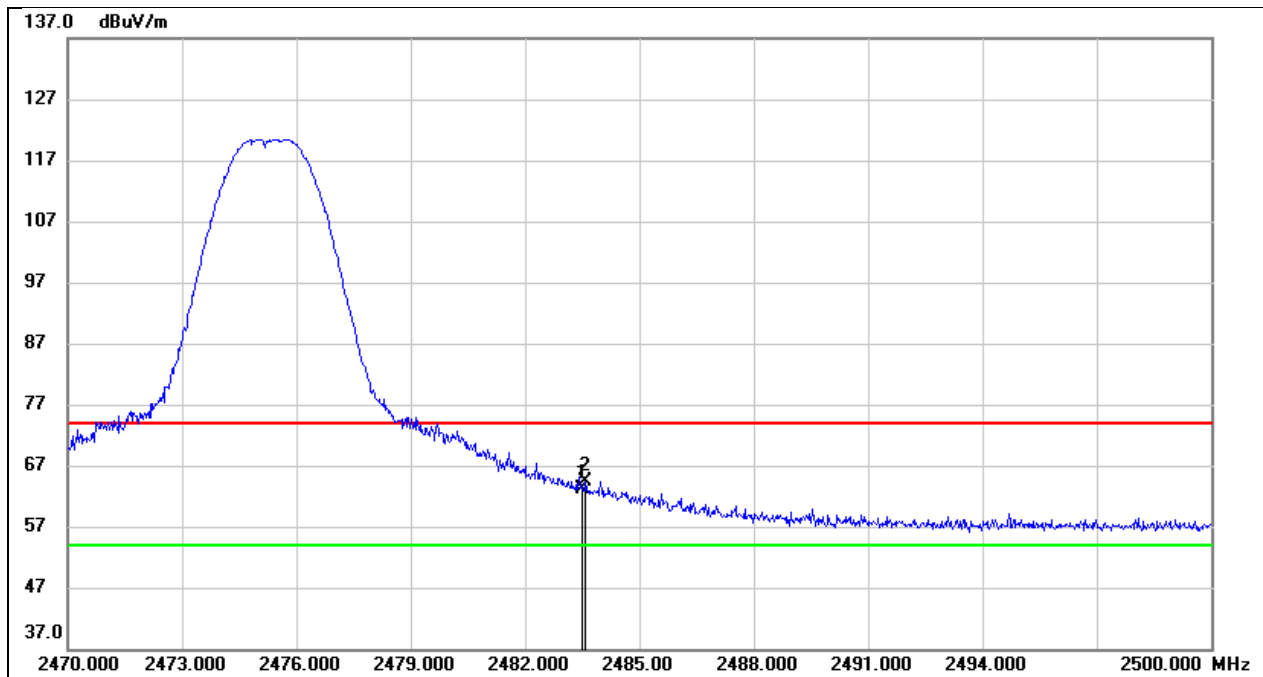
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2362.900	26.52	32.08	58.60	74.00	-15.40	peak
2	2390.000	27.26	32.16	59.42	74.00	-14.58	peak

Test Mode:	2400M.2GFSK.1000kbps. AV	Frequency(MHz):	2401.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



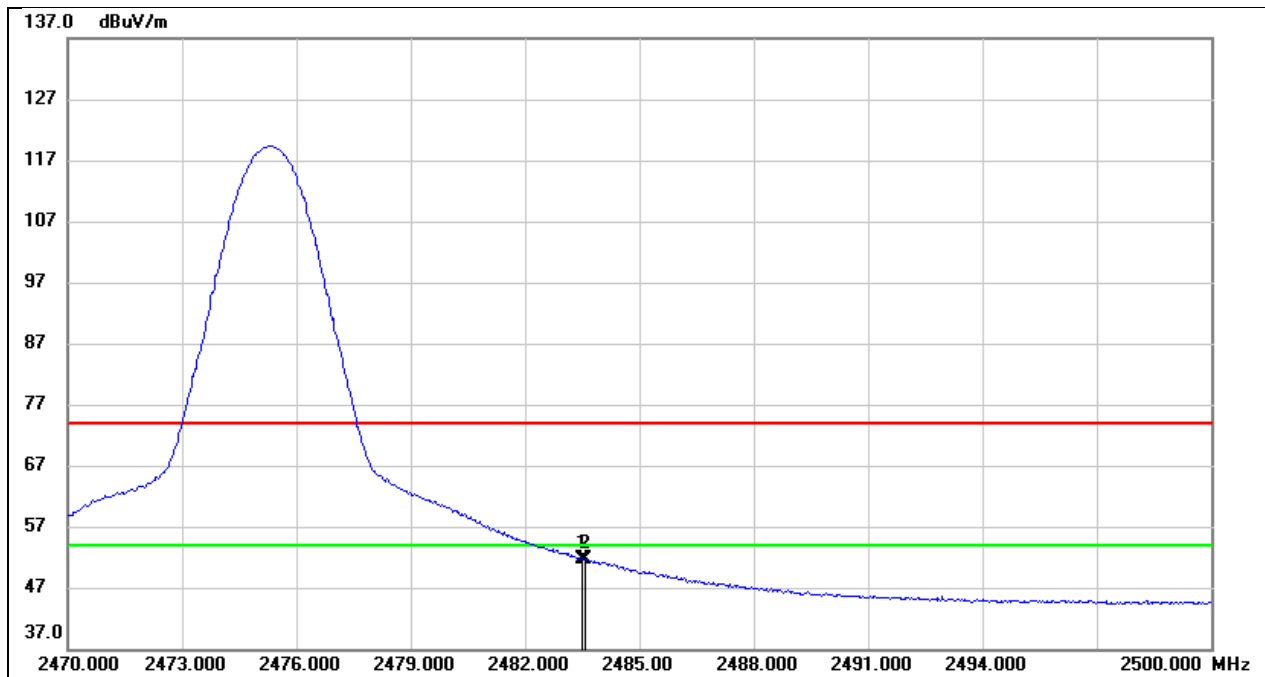
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2362.900	13.89	32.08	45.97	54.00	-8.03	AVG
2	2390.000	15.78	32.16	47.94	54.00	-6.06	AVG

Test Mode:	2400M.2GFSK.1000kbps. PK	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



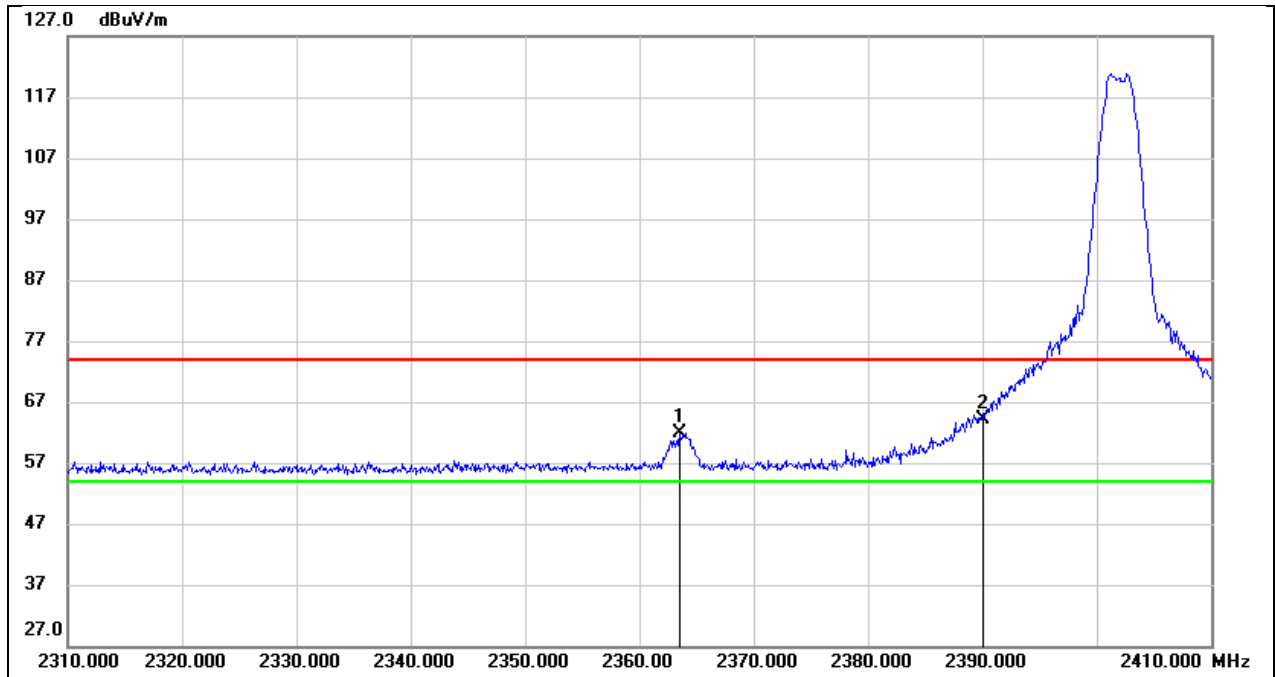
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	30.59	32.44	63.03	74.00	-10.97	peak
2	2483.590	32.03	32.44	64.47	74.00	-9.53	peak

Test Mode:	2400M.2GFSK.1000kbps. AV	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



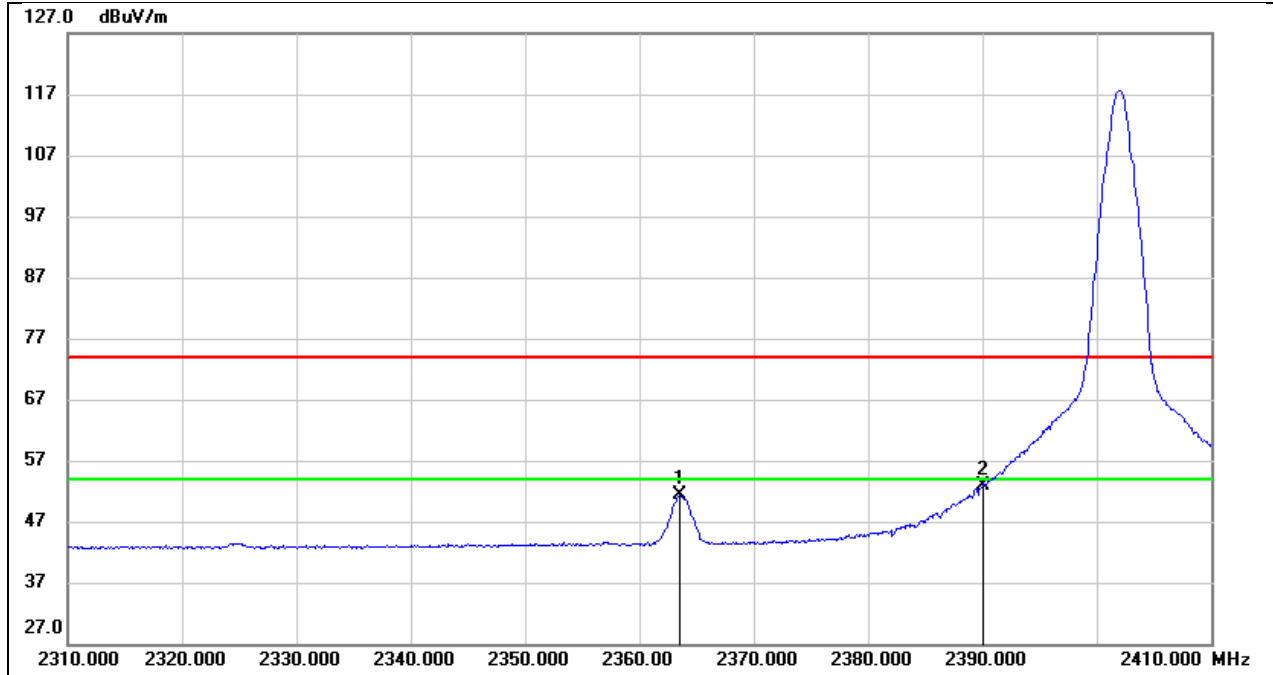
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	19.28	32.44	51.72	54.00	-2.28	AVG
2	2483.590	19.28	32.44	51.72	54.00	-2.28	AVG

Test Mode:	2400M.2GFSK.1600kbps. PK	Frequency(MHz):	2401.91
Polarity:	Horizontal	Test Voltage:	DC 5 V



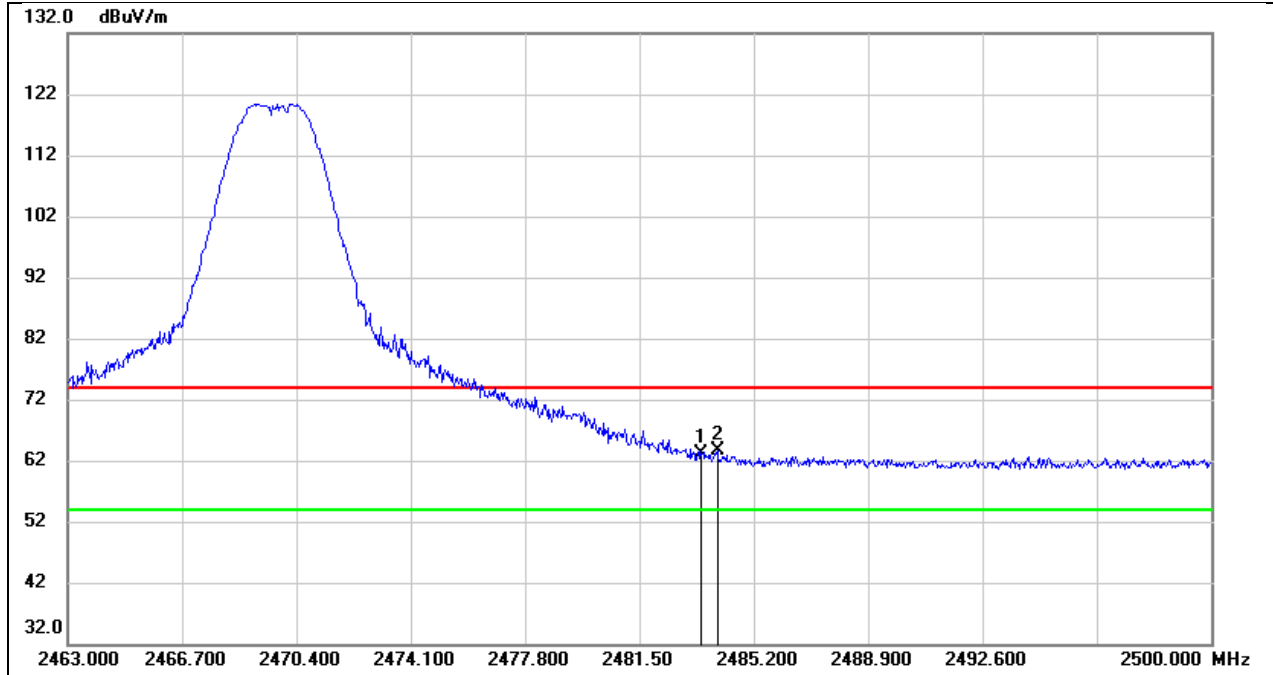
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2363.500	29.84	32.09	61.93	74.00	-12.07	peak
2	2390.000	31.96	32.16	64.12	74.00	-9.88	peak

Test Mode:	2400M.2GFSK.1600kbps. AV	Frequency(MHz):	2401.91
Polarity:	Horizontal	Test Voltage:	DC 5 V



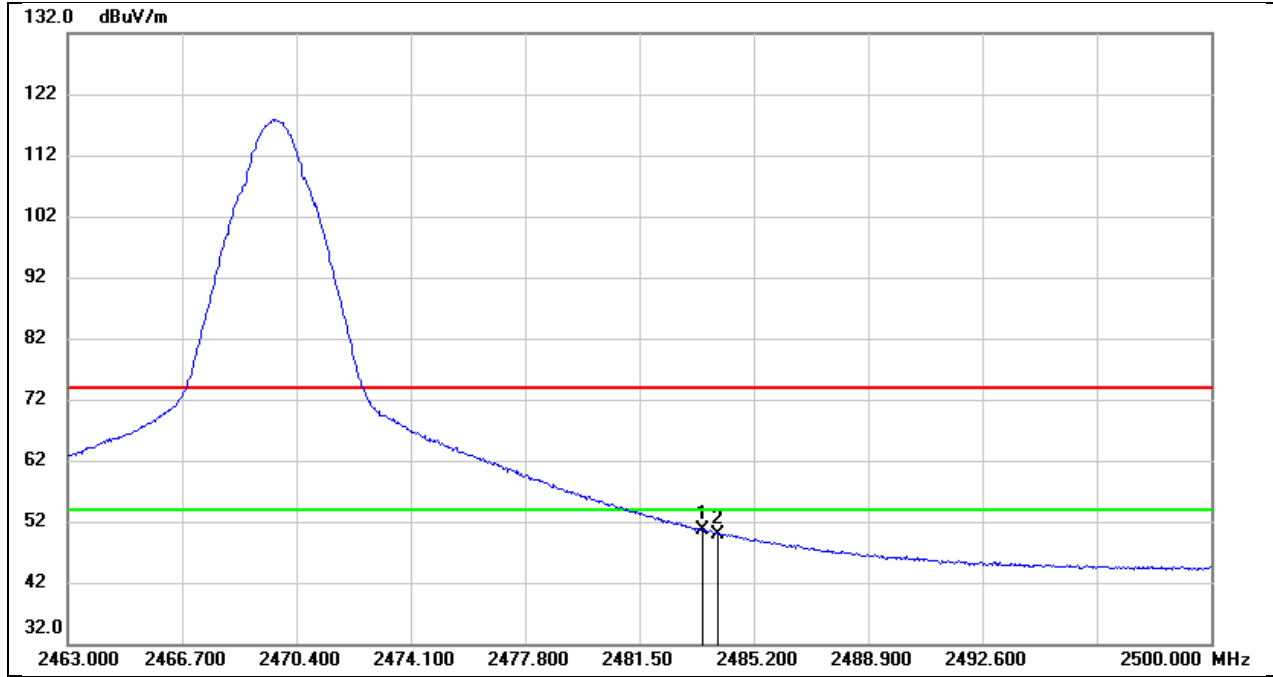
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2363.500	19.37	32.09	51.46	54.00	-2.54	AVG
2	2390.000	20.60	32.16	52.76	54.00	-1.24	AVG

Test Mode:	2400M.2GFSK.1600kbps. PK	Frequency(MHz):	2469.71
Polarity:	Horizontal	Test Voltage:	DC 5 V



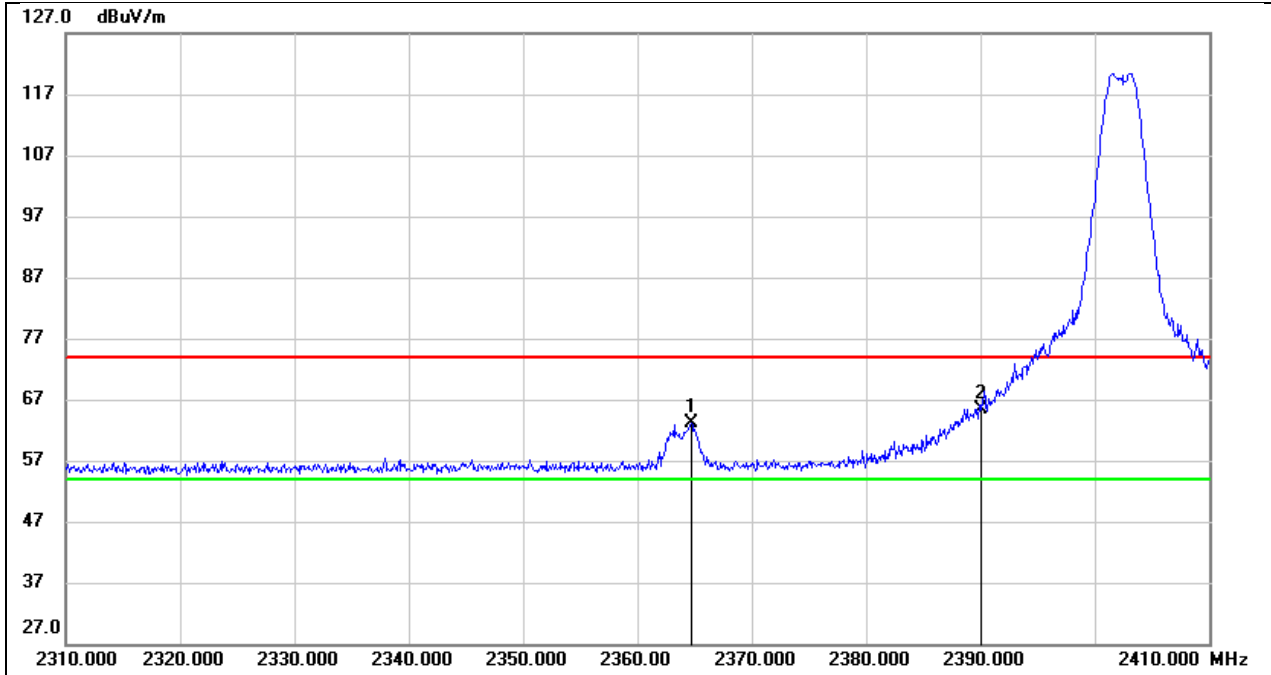
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	30.60	32.44	63.04	74.00	-10.96	peak
2	2484.016	31.23	32.44	63.67	74.00	-10.33	peak

Test Mode:	2400M.2GFSK.1600kbps. AV	Frequency(MHz):	2469.71
Polarity:	Horizontal	Test Voltage:	DC 5 V



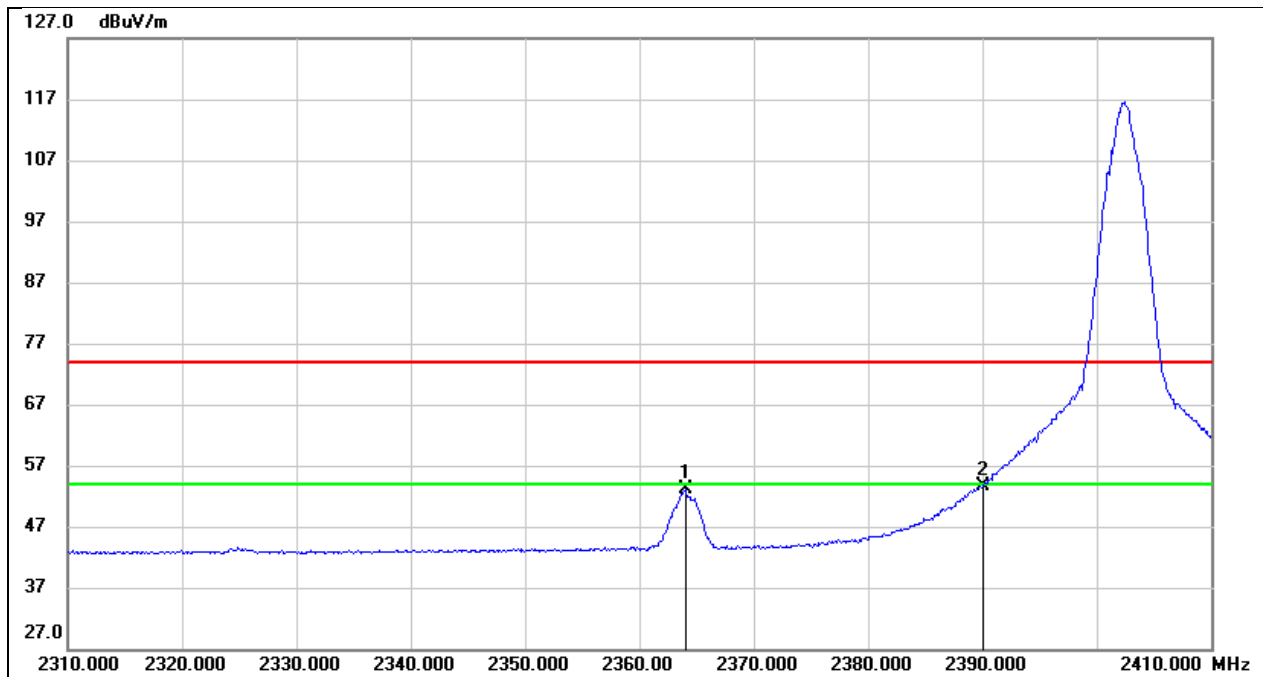
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	18.28	32.44	50.72	54.00	-3.28	AVG
2	2484.016	17.55	32.44	49.99	54.00	-4.01	AVG

Test Mode:	2400M.2GFSK.2000kbps. PK	Frequency(MHz):	2402.31
Polarity:	Horizontal	Test Voltage:	DC 5 V



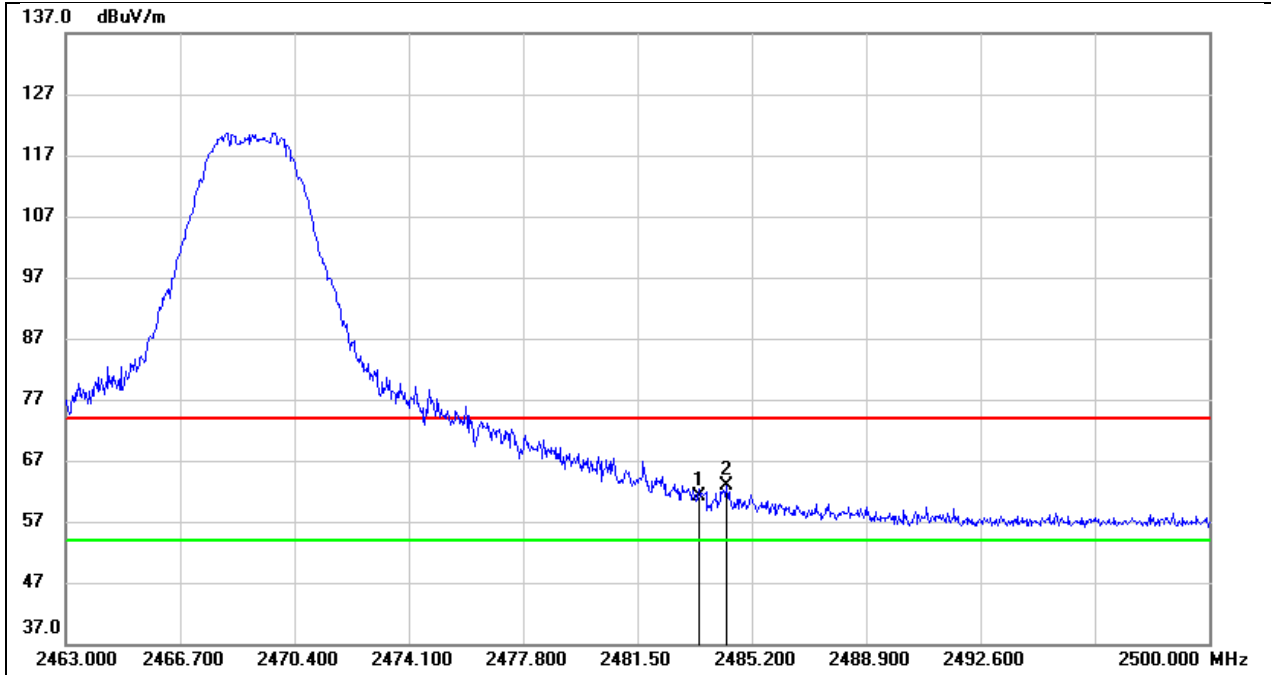
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2364.700	30.95	32.09	63.04	74.00	-10.96	peak
2	2390.000	33.31	32.16	65.47	74.00	-8.53	peak

Test Mode:	2400M.2GFSK.2000kbps. AV	Frequency(MHz):	2402.31
Polarity:	Horizontal	Test Voltage:	DC 5 V



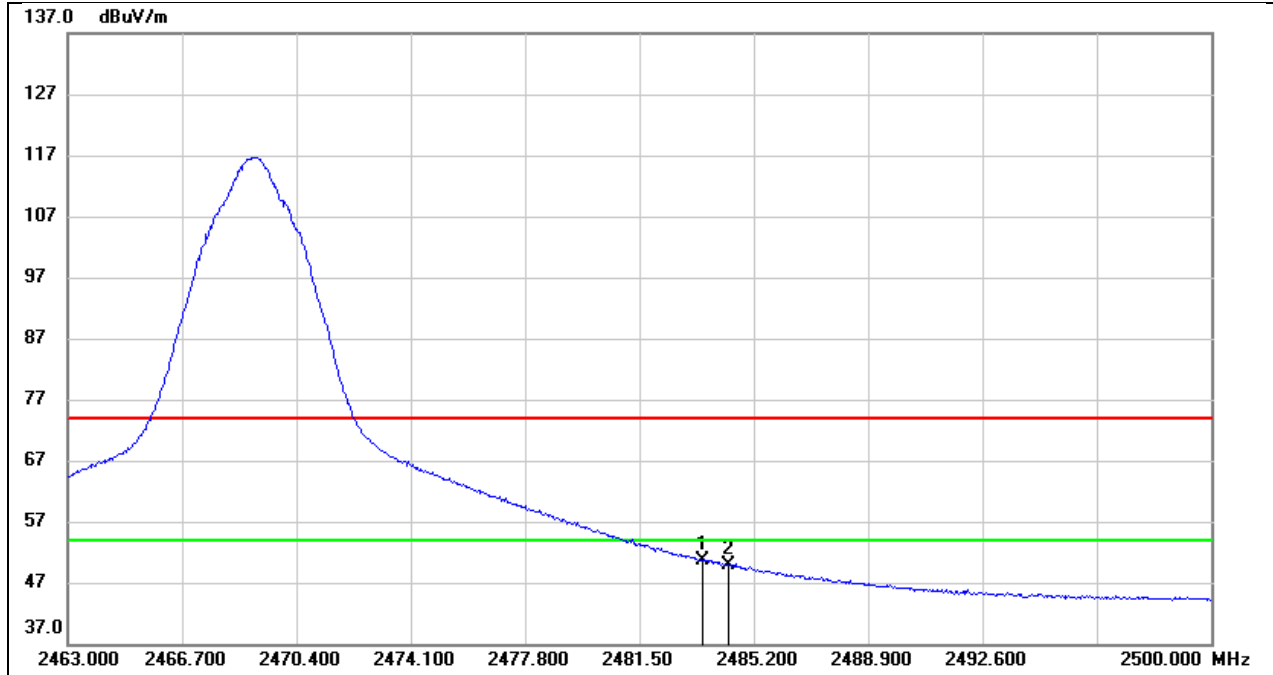
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2364.000	20.98	32.09	53.07	54.00	-0.93	AVG
2	2390.000	21.45	32.16	53.61	54.00	-0.39	AVG

Test Mode:	2400M.2GFSK.2000kbps. PK	Frequency(MHz):	2469
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	28.73	32.44	61.17	74.00	-12.83	peak
2	2484.386	30.33	32.44	62.77	74.00	-11.23	peak

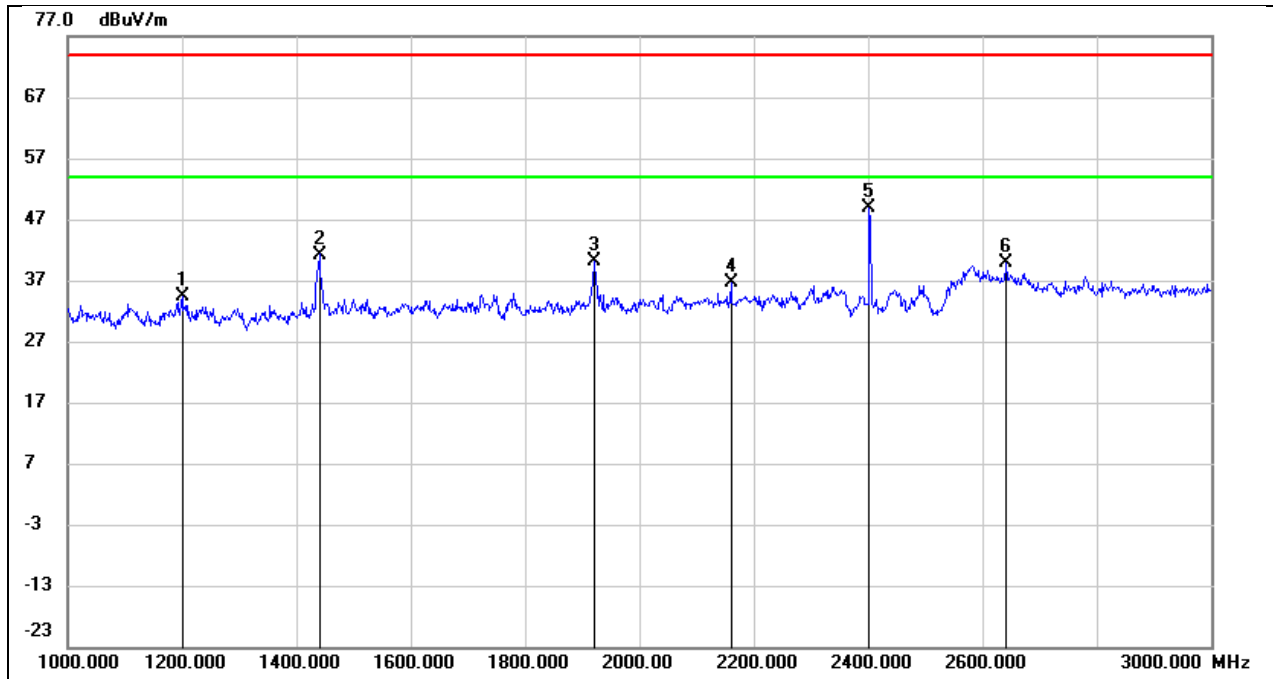
Test Mode:	2400M.2GFSK.2000kbps. AV	Frequency(MHz):	2469
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	18.25	32.44	50.69	54.00	-3.31	AVG
2	2484.386	17.49	32.44	49.93	54.00	-4.07	AVG

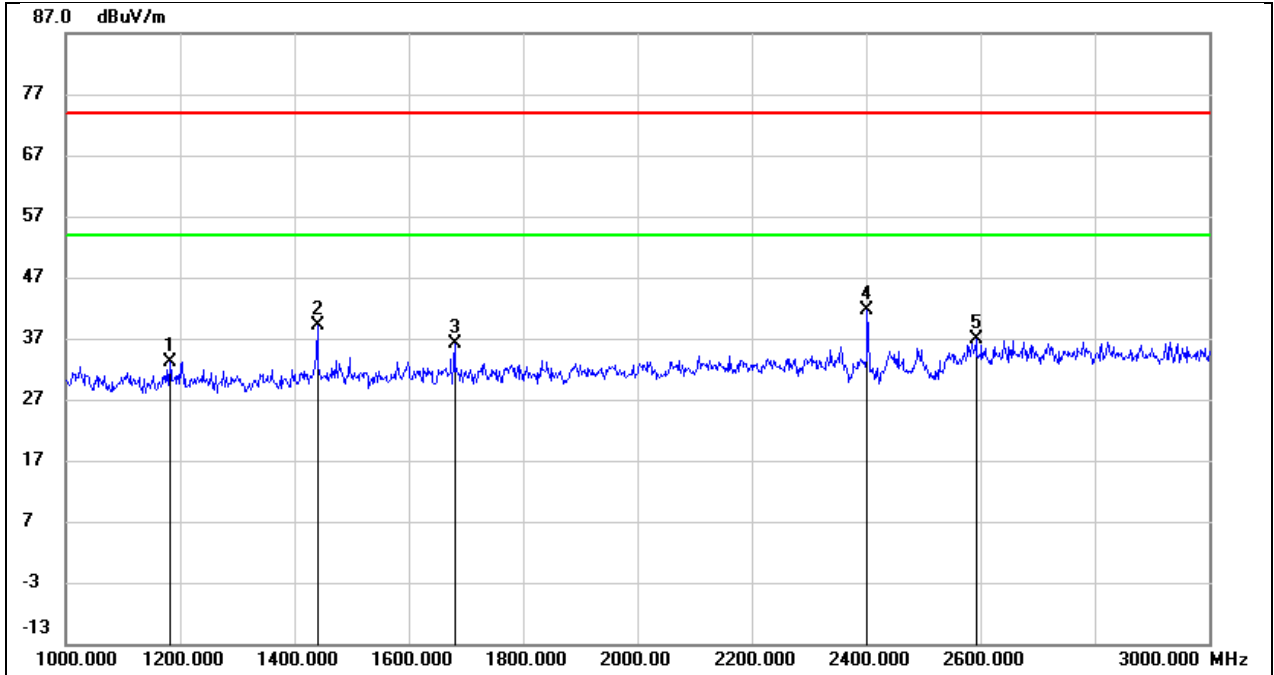
8.2. SPURIOUS EMISSIONS(1 GHZ~3 GHZ)

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2402.035
Polarity:	Horizontal	Test Voltage:	DC 5 V



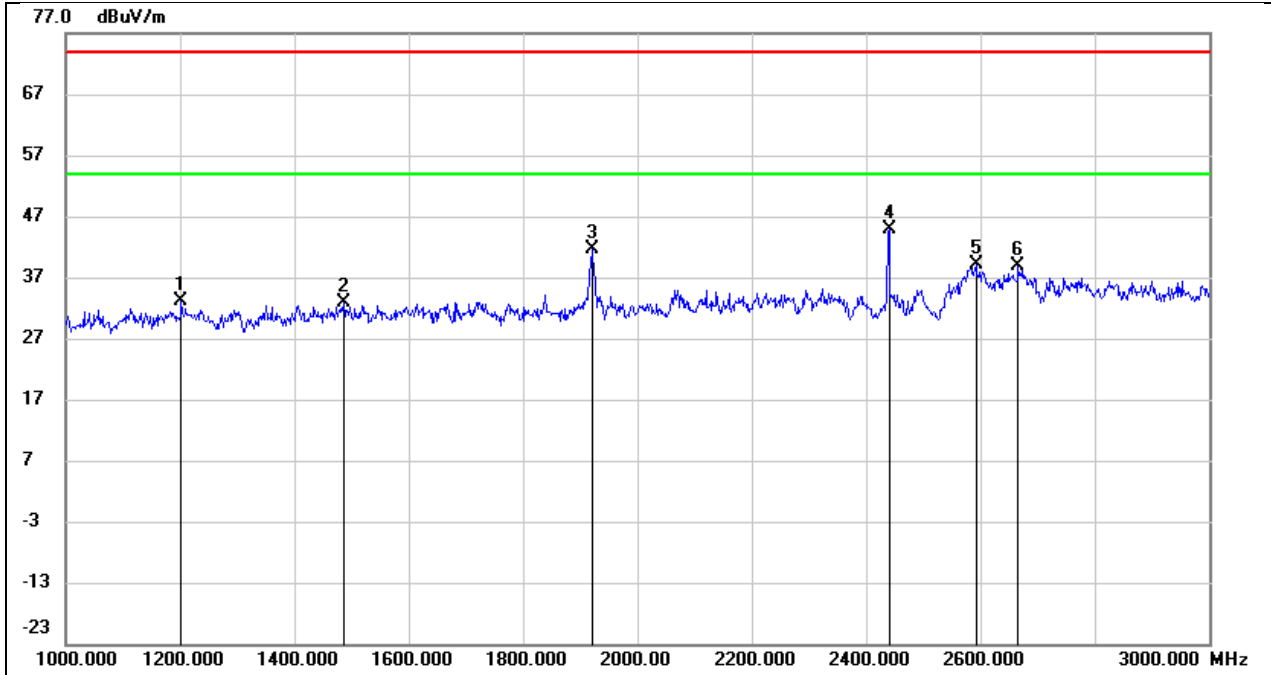
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1200.000	48.43	-14.10	34.33	74.00	-39.67	peak
2	1440.000	54.23	-12.98	41.25	74.00	-32.75	peak
3	1920.000	51.44	-11.32	40.12	74.00	-33.88	peak
4	2160.000	46.89	-10.24	36.65	74.00	-37.35	peak
5	2402.000	57.79	-8.99	48.80	/	/	fundamental
6	2642.000	47.87	-8.06	39.81	74.00	-34.19	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2402.035
Polarity:	Vertical	Test Voltage:	DC 5 V



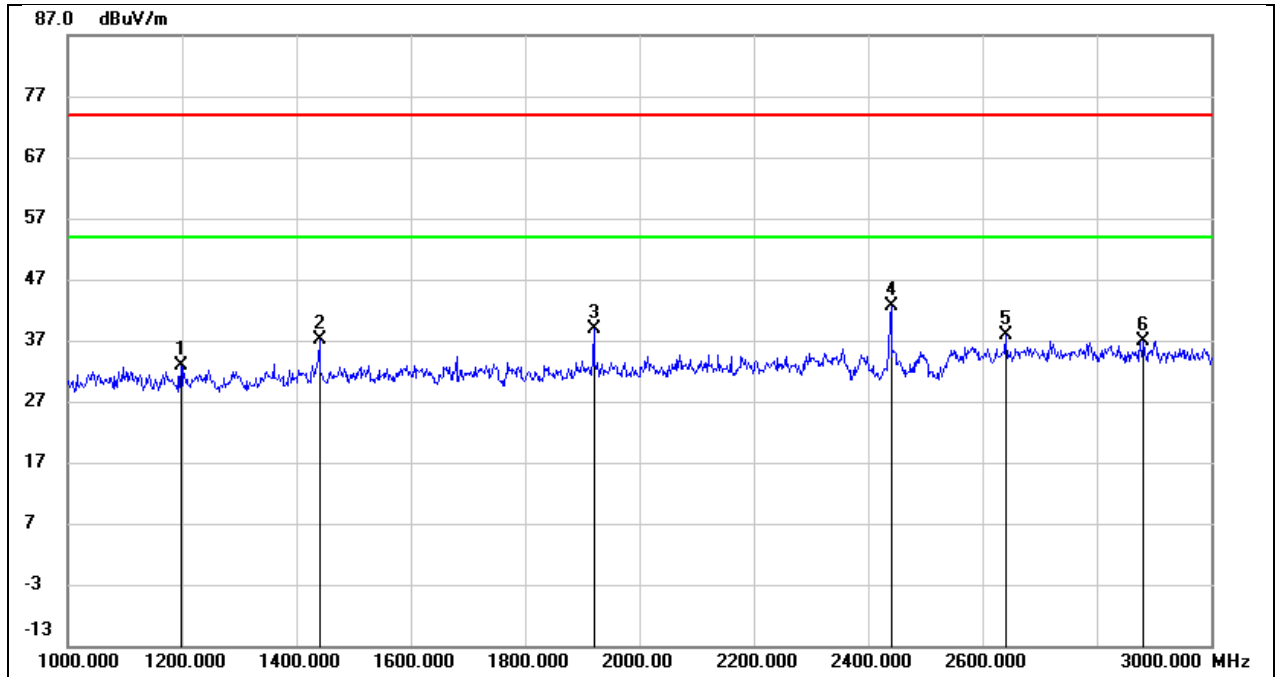
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1182.000	47.33	-14.18	33.15	74.00	-40.85	peak
2	1440.000	52.16	-12.98	39.18	74.00	-34.82	peak
3	1680.000	48.31	-12.12	36.19	74.00	-37.81	peak
4	2402.000	50.62	-8.99	41.63	/	/	fundamental
5	2592.000	45.18	-8.21	36.97	74.00	-37.03	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2438.695
Polarity:	Horizontal	Test Voltage:	DC 5 V



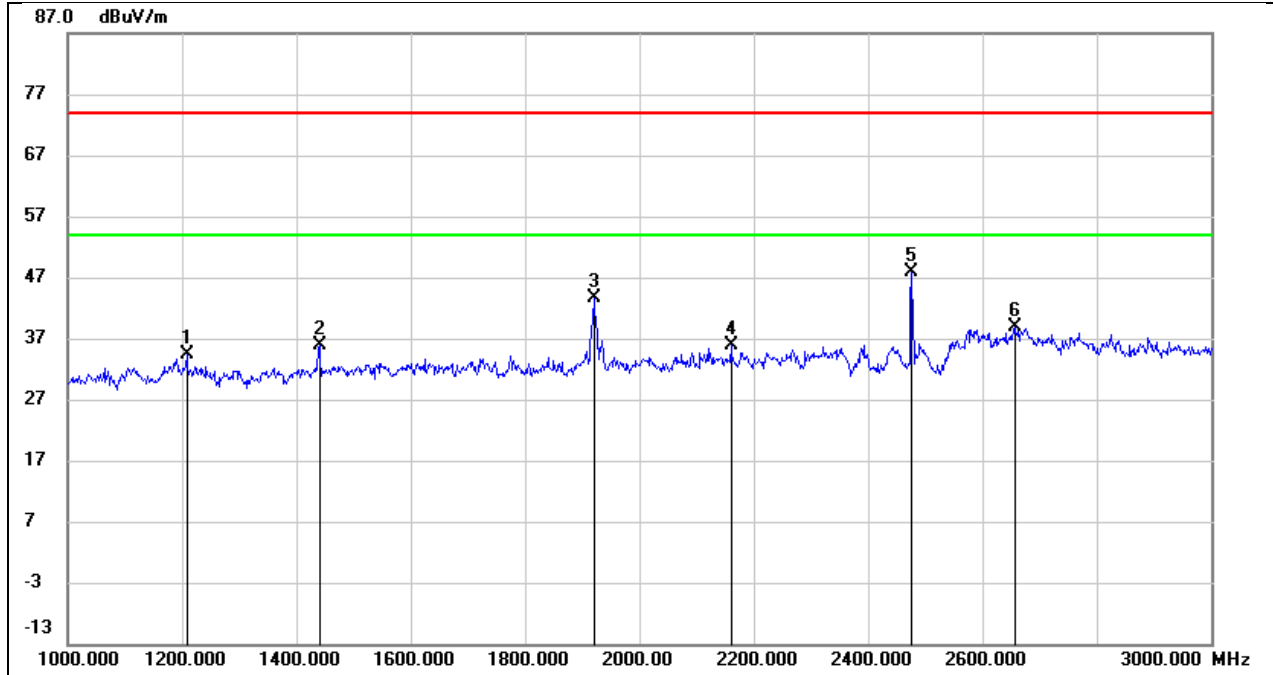
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1202.000	47.12	-14.09	33.03	74.00	-40.97	peak
2	1486.000	45.74	-12.78	32.96	74.00	-41.04	peak
3	1920.000	52.89	-11.32	41.57	74.00	-32.43	peak
4	2440.000	53.76	-8.80	44.96	/	/	fundamental
5	2592.000	47.35	-8.21	39.14	74.00	-34.86	peak
6	2666.000	46.96	-7.98	38.98	74.00	-35.02	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2438.695
Polarity:	Vertical	Test Voltage:	DC 5 V



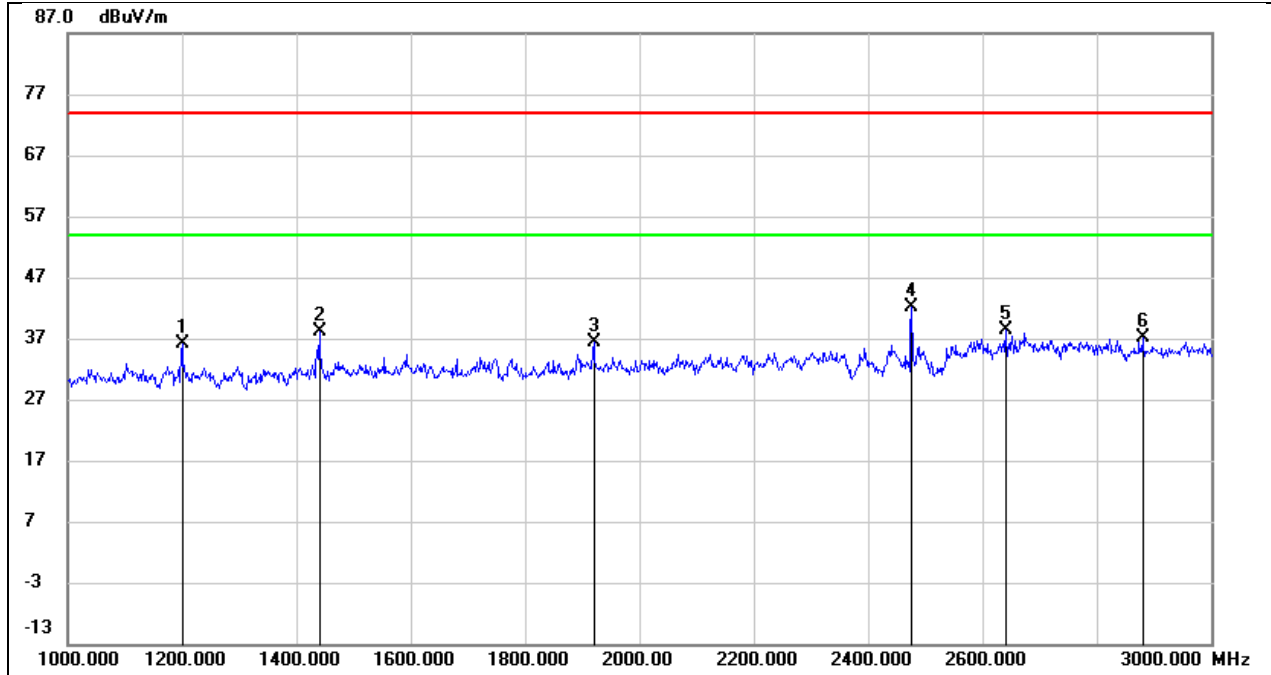
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	47.07	-14.11	32.96	74.00	-41.04	peak
2	1440.000	50.19	-12.98	37.21	74.00	-36.79	peak
3	1920.000	50.27	-11.32	38.95	74.00	-35.05	peak
4	2440.000	51.32	-8.80	42.52	/	/	fundamental
5	2640.000	45.92	-8.07	37.85	74.00	-36.15	peak
6	2882.000	44.21	-7.33	36.88	74.00	-37.12	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2475.355
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1208.000	48.44	-14.06	34.38	74.00	-39.62	peak
2	1440.000	48.83	-12.98	35.85	74.00	-38.15	peak
3	1920.000	54.99	-11.32	43.67	74.00	-30.33	peak
4	2160.000	46.20	-10.24	35.96	74.00	-38.04	peak
5	2476.000	56.55	-8.61	47.94	/	/	fundamental
6	2656.000	46.82	-8.02	38.80	74.00	-35.20	peak

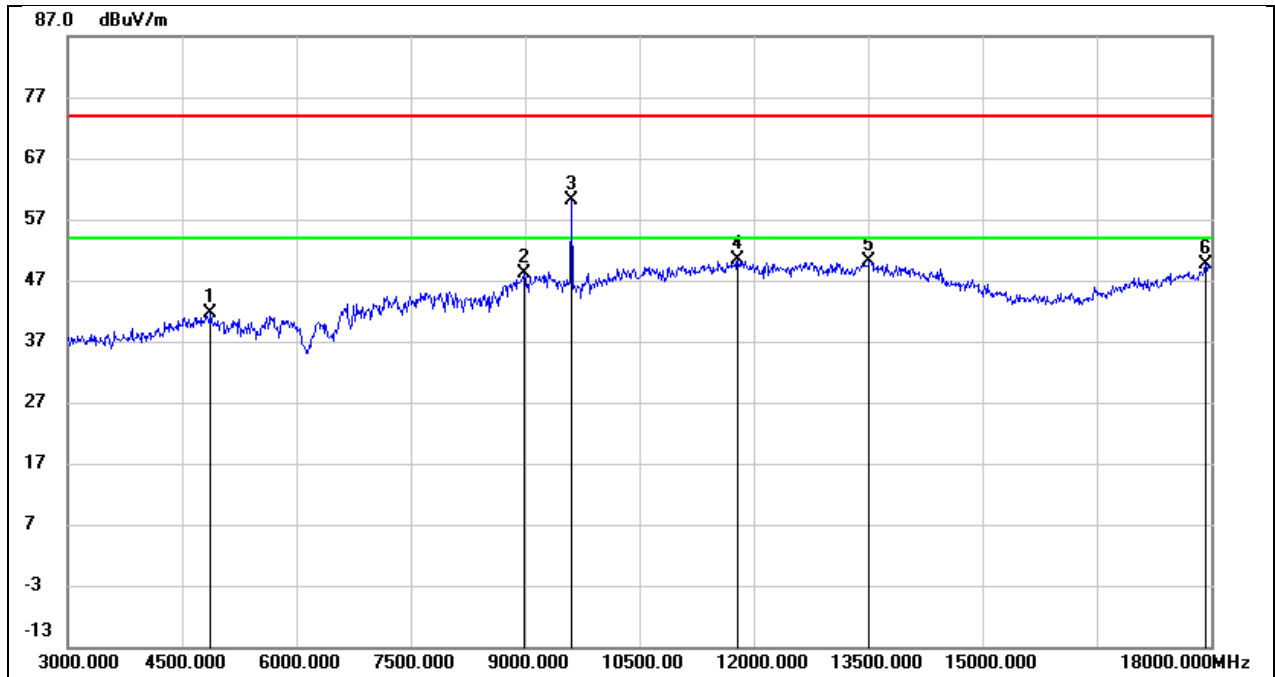
Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2475.355
Polarity:	Vertical	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1200.000	50.17	-14.10	36.07	74.00	-37.93	peak
2	1440.000	51.03	-12.98	38.05	74.00	-35.95	peak
3	1920.000	47.61	-11.32	36.29	74.00	-37.71	peak
4	2476.000	50.82	-8.61	42.21	/	/	fundamental
5	2640.000	46.50	-8.07	38.43	74.00	-35.57	peak
6	2880.000	44.42	-7.34	37.08	74.00	-36.92	peak

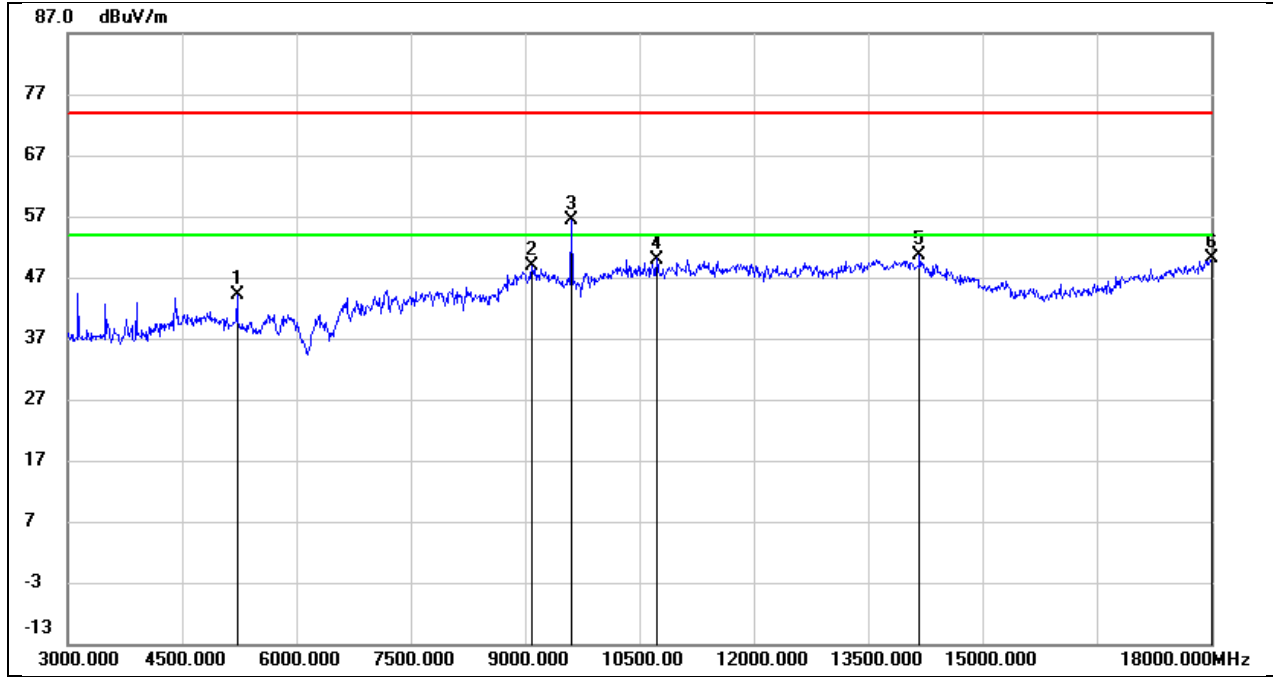
8.3. SPURIOUS EMISSIONS(3 GHZ~18 GHZ)

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2402.035
Polarity:	Horizontal	Test Voltage:	DC 5 V



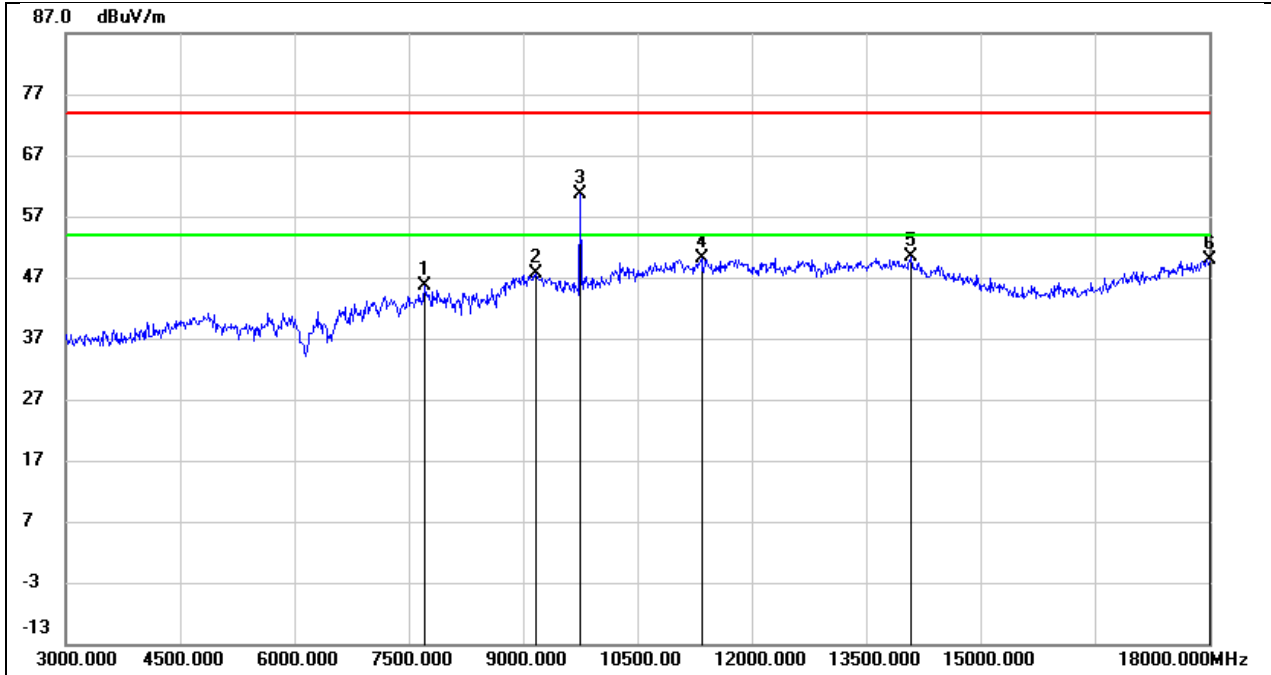
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	41.56	-0.03	41.53	74.00	-32.47	peak
2	8985.000	37.64	10.37	48.01	74.00	-25.99	peak
3*	9600.000	49.15	10.95	60.10	/	/	peak
4	11790.000	33.07	17.38	50.45	74.00	-23.55	peak
5	13515.000	29.12	20.93	50.05	74.00	-23.95	peak
6	17925.000	24.49	25.25	49.74	74.00	-24.26	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2402.035
Polarity:	Vertical	Test Voltage:	DC 5 V



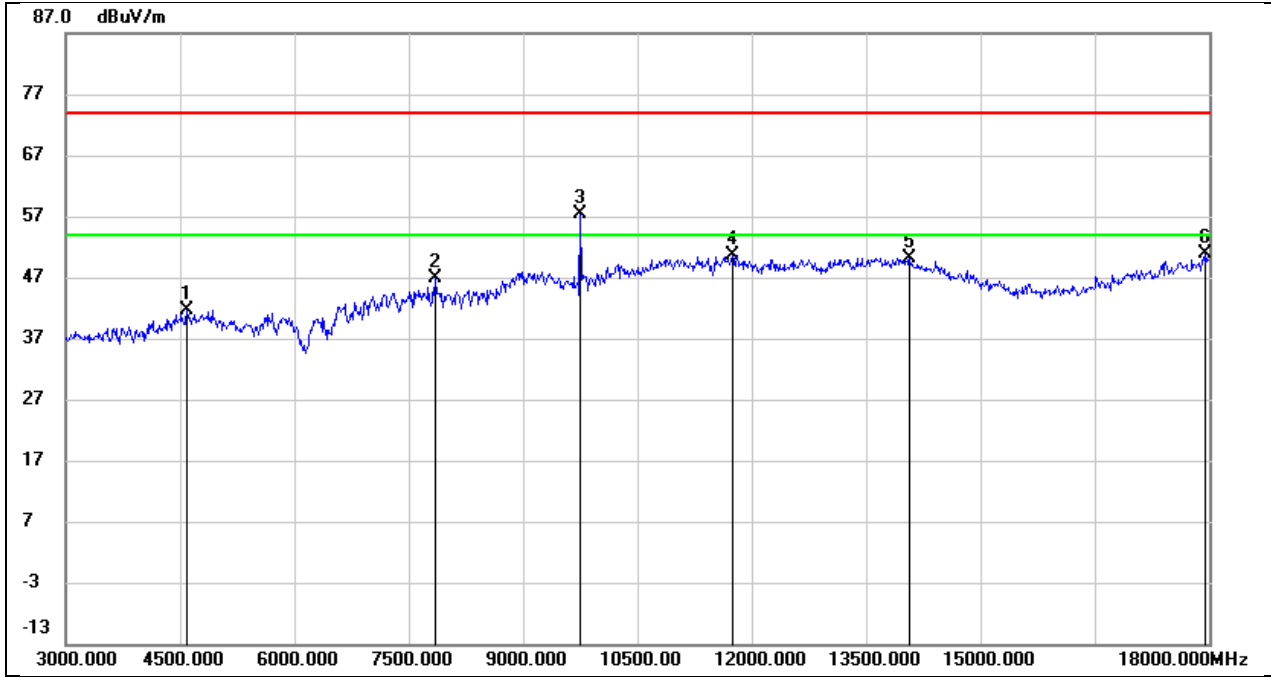
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5220.000	43.50	0.62	44.12	74.00	-29.88	peak
2	9090.000	38.49	10.51	49.00	74.00	-25.00	peak
3*	9600.000	45.43	10.95	56.38	/	/	peak
4	10725.000	36.21	13.79	50.00	74.00	-24.00	peak
5	14175.000	29.39	21.24	50.63	74.00	-23.37	peak
6	18000.000	24.49	25.69	50.18	74.00	-23.82	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2438.695
Polarity:	Horizontal	Test Voltage:	DC 5 V



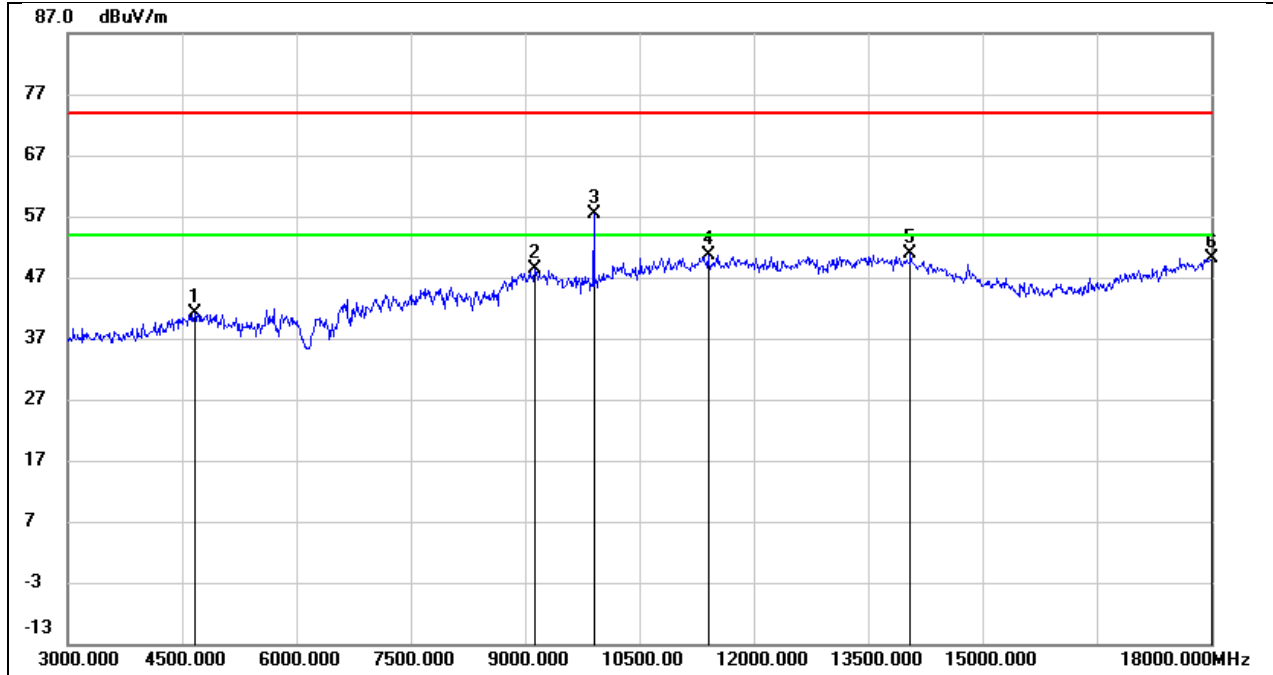
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7710.000	39.38	6.33	45.71	74.00	-28.29	peak
2	9165.000	36.96	10.55	47.51	74.00	-26.49	peak
3*	9750.000	49.37	11.35	60.72	/	/	peak
4	11340.000	34.06	16.01	50.07	74.00	-23.93	peak
5	14085.000	28.75	21.61	50.36	74.00	-23.64	peak
6	18000.000	24.28	25.69	49.97	74.00	-24.03	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2438.695
Polarity:	Vertical	Test Voltage:	DC 5 V



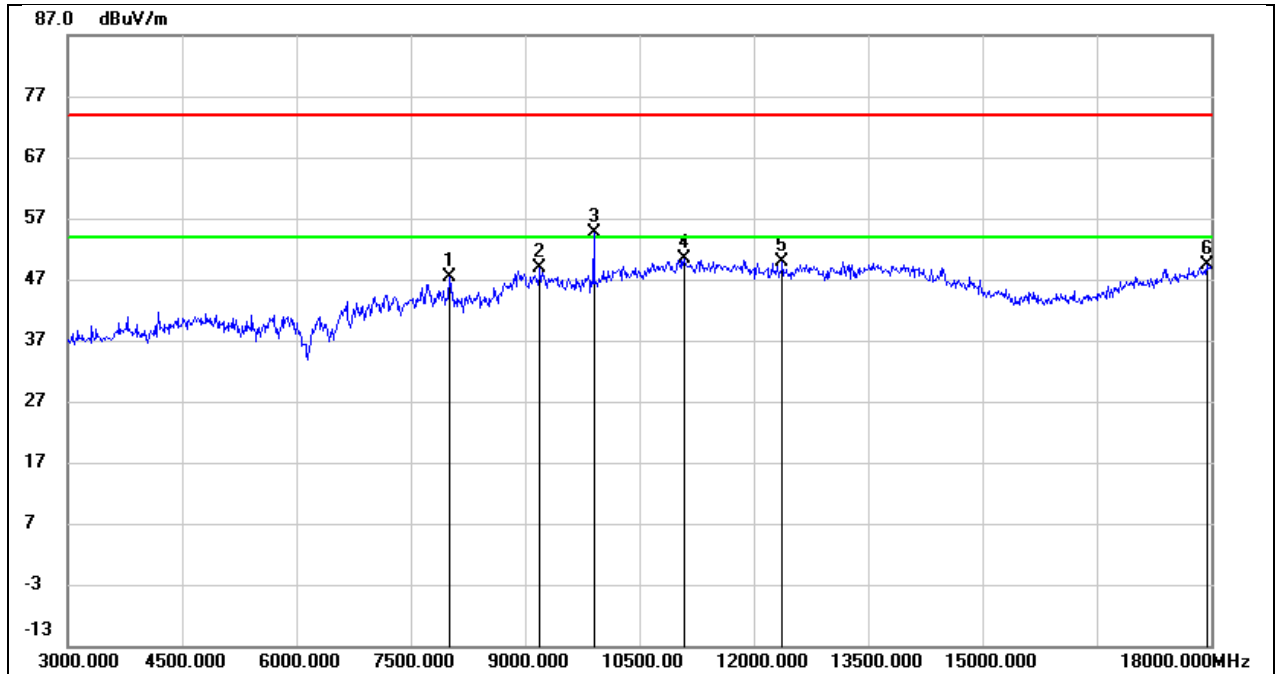
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4590.000	42.76	-1.12	41.64	74.00	-32.36	peak
2	7845.000	40.53	6.32	46.85	74.00	-27.15	peak
3*	9750.000	46.04	11.35	57.39	/	/	peak
4	11745.000	33.47	17.27	50.74	74.00	-23.26	peak
5	14070.000	28.57	21.67	50.24	74.00	-23.76	peak
6	17955.000	25.53	25.42	50.95	74.00	-23.05	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2475.355
Polarity:	Horizontal	Test Voltage:	DC 5 V



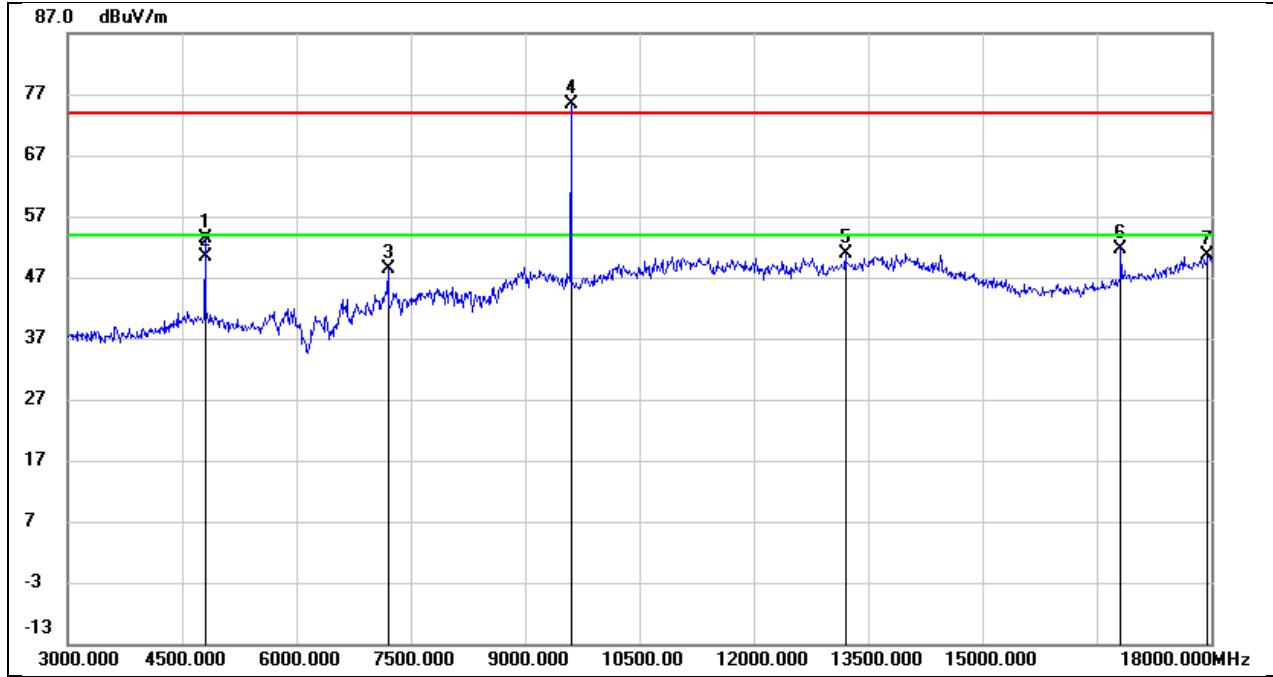
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4665.000	42.02	-0.83	41.19	74.00	-32.81	peak
2	9120.000	37.97	10.53	48.50	74.00	-25.50	peak
3*	9900.000	45.60	11.75	57.35	/	/	peak
4	11400.000	34.36	16.23	50.59	74.00	-23.41	peak
5	14055.000	29.06	21.73	50.79	74.00	-23.21	peak
6	18000.000	24.52	25.69	50.21	74.00	-23.79	peak

Test Mode:	2400M.2GFSK.400kbps.LP	Frequency(MHz):	2475.355
Polarity:	Vertical	Test Voltage:	DC 5 V



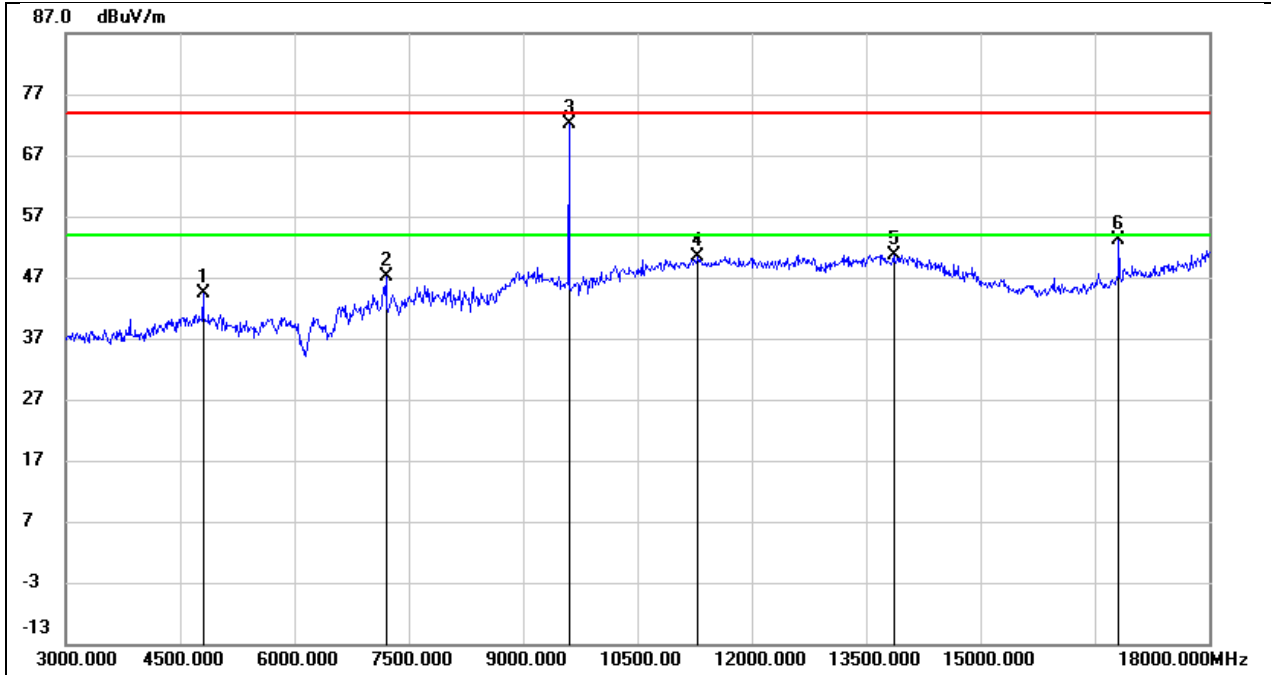
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8010.000	41.13	6.32	47.45	74.00	-26.55	peak
2	9195.000	38.44	10.56	49.00	74.00	-25.00	peak
3*	9900.000	42.84	11.75	54.59	/	/	peak
4	11085.000	35.39	15.08	50.47	74.00	-23.53	peak
5	12375.000	32.22	17.69	49.91	74.00	-24.09	peak
6	17940.000	23.93	25.34	49.27	74.00	-24.73	peak

Test Mode:	2400M.2GFSK.640kbps	Frequency(MHz):	2400.95
Polarity:	Horizontal	Test Voltage:	DC 5 V



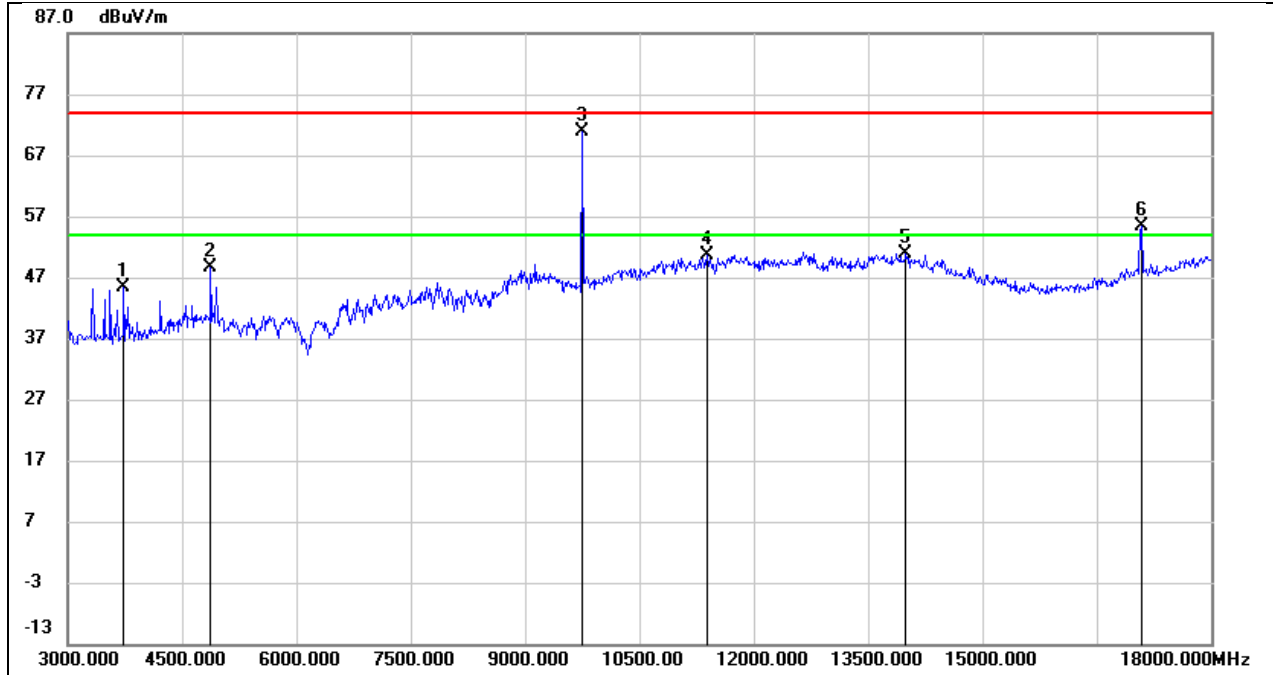
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4800.000	53.71	-0.31	53.40	74.00	-20.60	peak
2	4800.000	50.76	-0.31	50.45	54.00	-3.55	AVG
3	7200.000	41.82	6.55	48.37	74.00	-25.63	peak
4*	9600.000	64.36	10.95	75.31	/	/	peak
5	13200.000	31.31	19.59	50.90	74.00	-23.10	peak
6	16815.000	31.68	20.07	51.75	74.00	-22.25	peak
7	17955.000	25.13	25.42	50.55	74.00	-23.45	peak

Test Mode:	2400M.2GFSK.640kbps	Frequency(MHz):	2400.95
Polarity:	Vertical	Test Voltage:	DC 5 V



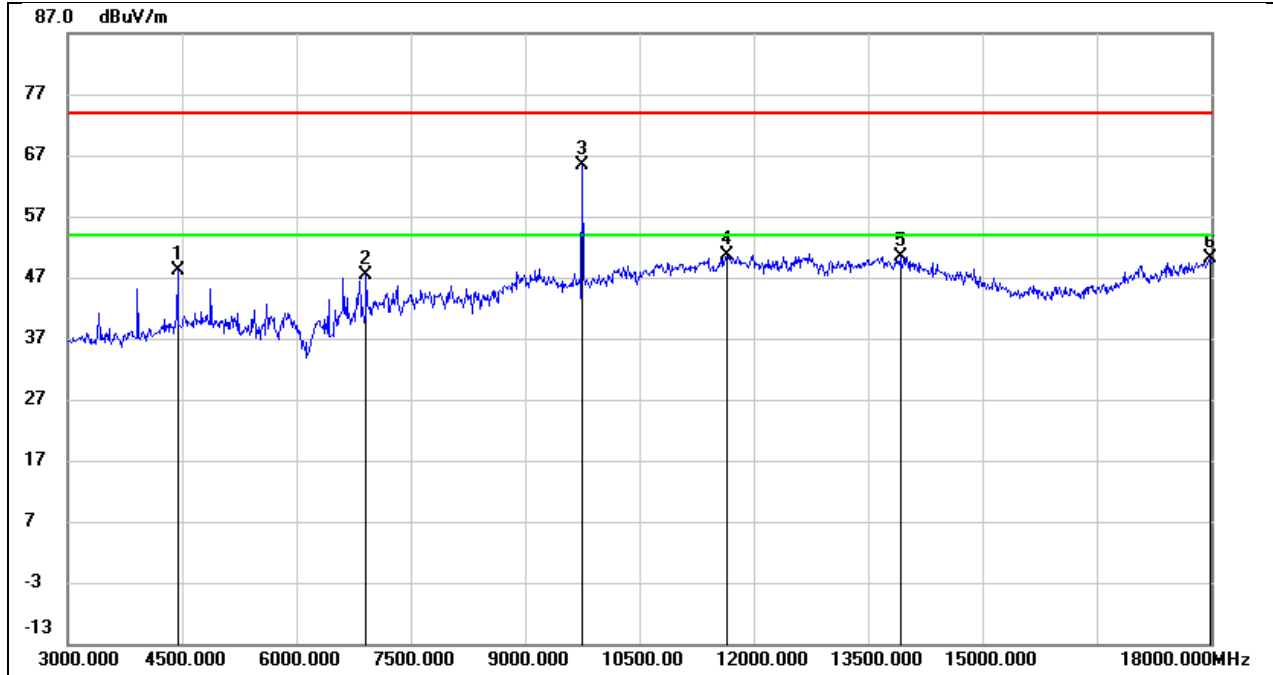
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4800.000	44.75	-0.31	44.44	74.00	-29.56	peak
2	7200.000	40.69	6.55	47.24	74.00	-26.76	peak
3*	9600.000	61.15	10.95	72.10	/	/	peak
4	11295.000	34.45	15.85	50.30	74.00	-23.70	peak
5	13860.000	29.04	21.67	50.71	74.00	-23.29	peak
6	16815.000	33.02	20.07	53.09	74.00	-20.91	peak

Test Mode:	2400M.2GFSK.640kbps	Frequency(MHz):	2438.86
Polarity:	Horizontal	Test Voltage:	DC 5 V



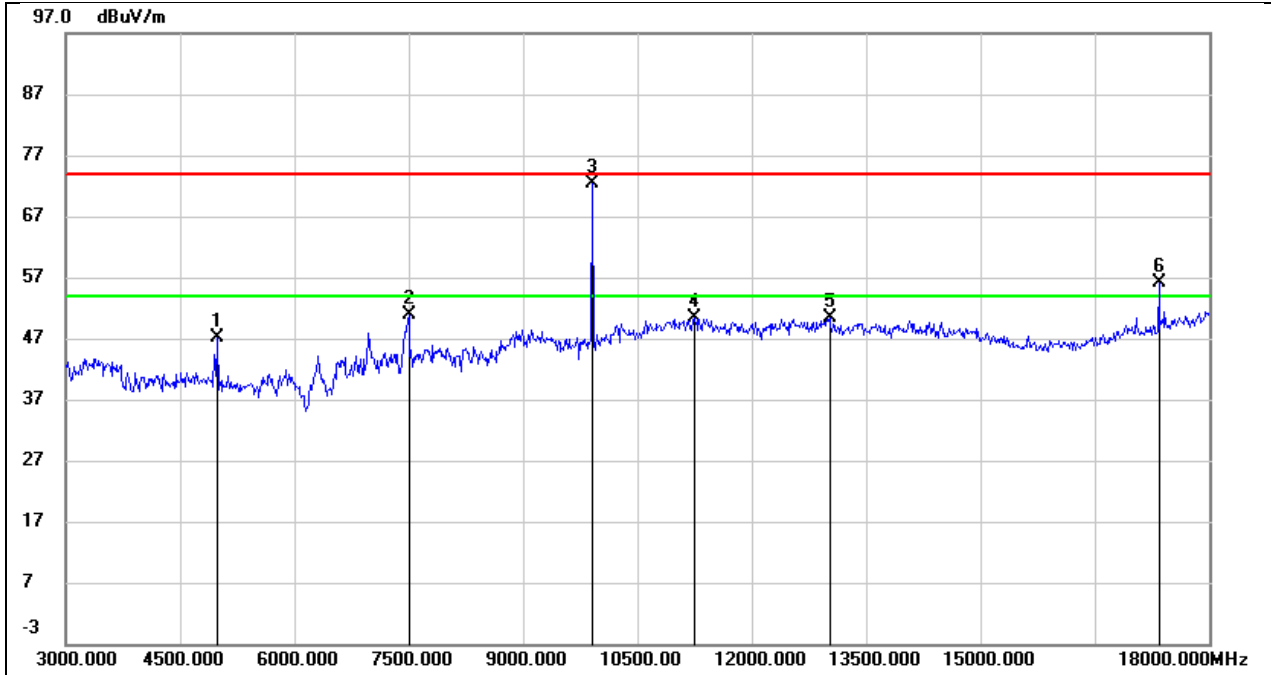
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3735.000	49.67	-4.41	45.26	74.00	-28.74	peak
2	4875.000	48.73	-0.03	48.70	74.00	-25.30	peak
3*	9750.000	59.49	11.35	70.84	/	/	peak
4	11385.000	34.56	16.17	50.73	74.00	-23.27	peak
5	13995.000	28.81	21.95	50.76	74.00	-23.24	peak
6*	17085.000	34.13	21.20	55.33	/	/	peak

Test Mode:	2400M.2GFSK.640kbps	Frequency(MHz):	2438.86
Polarity:	Vertical	Test Voltage:	DC 5 V



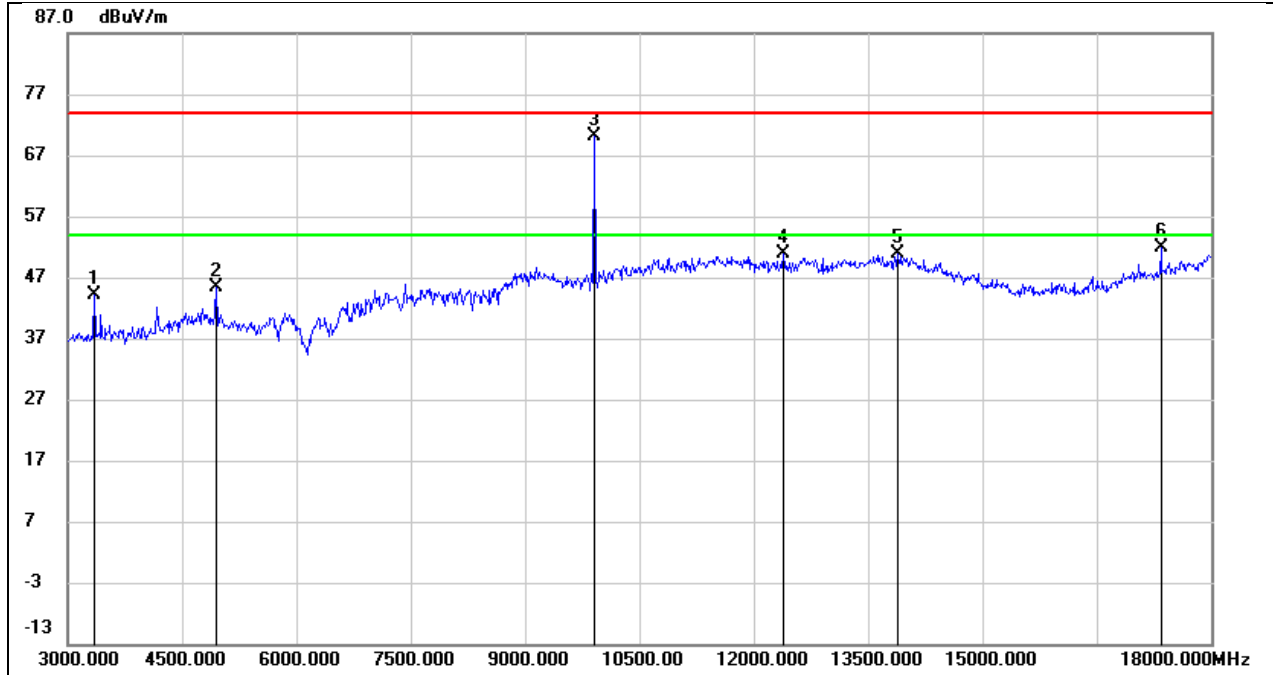
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4440.000	49.76	-1.74	48.02	74.00	-25.98	peak
2	6915.000	41.11	6.27	47.38	74.00	-26.62	peak
3*	9750.000	54.08	11.35	65.43	/	/	peak
4	11655.000	33.51	17.01	50.52	74.00	-23.48	peak
5	13920.000	28.68	21.79	50.47	74.00	-23.53	peak
6	17985.000	24.41	25.60	50.01	74.00	-23.99	peak

Test Mode:	2400M.2GFSK.640kbps	Frequency(MHz):	2476.77
Polarity:	Horizontal	Test Voltage:	DC 5 V



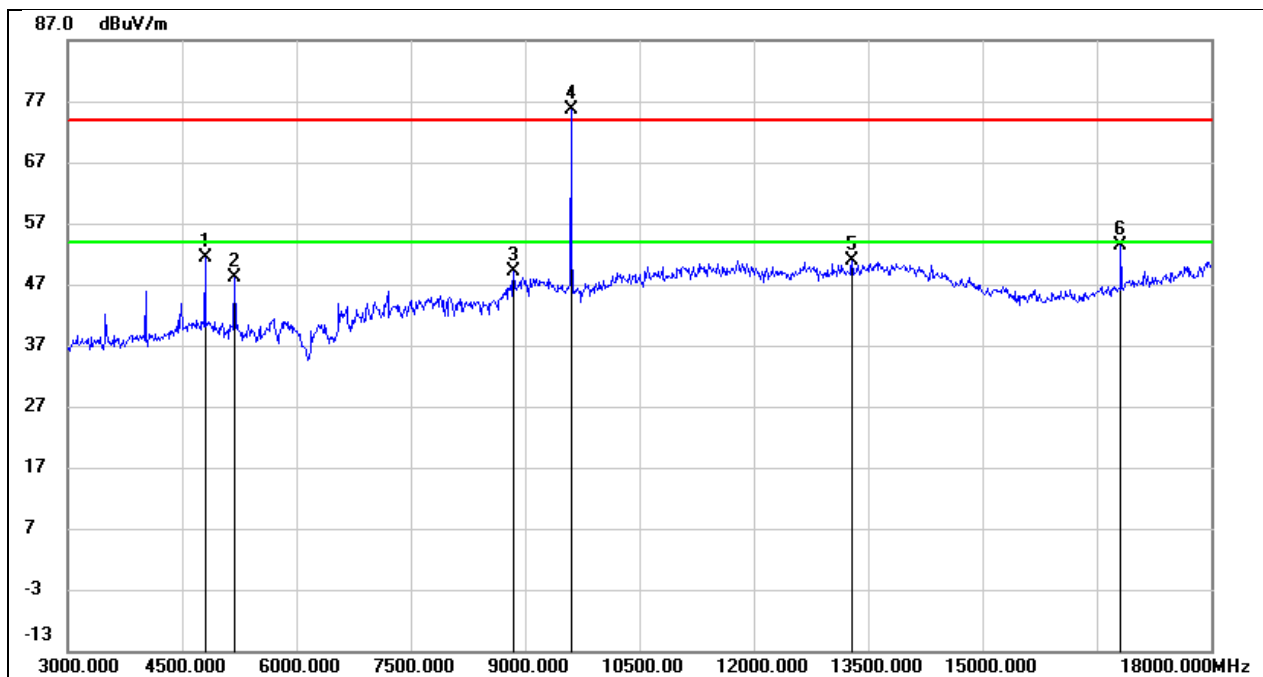
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4995.000	46.66	0.43	47.09	74.00	-26.91	peak
2	7500.000	44.62	6.33	50.95	74.00	-23.05	peak
3*	9900.000	60.74	11.75	72.49	/	/	peak
4	11250.000	34.71	15.69	50.40	74.00	-23.60	peak
5	13020.000	31.58	18.80	50.38	74.00	-23.62	peak
6*	17340.000	33.97	22.14	56.11	/	/	peak

Test Mode:	2400M.2GFSK.640kbps	Frequency(MHz):	2476.77
Polarity:	Vertical	Test Voltage:	DC 5 V



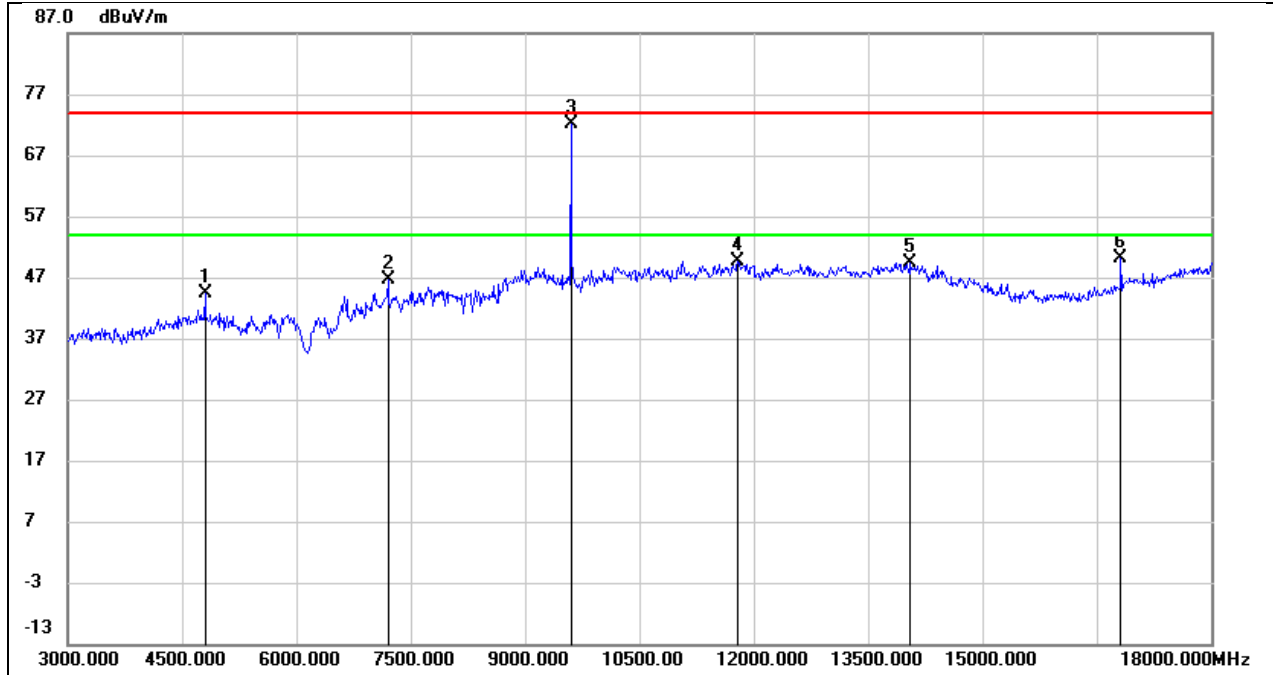
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3345.000	49.17	-5.05	44.12	74.00	-29.88	peak
2	4950.000	45.21	0.26	45.47	74.00	-28.53	peak
3*	9900.000	58.45	11.75	70.20	/	/	peak
4	12390.000	33.18	17.68	50.86	74.00	-23.14	peak
5	13890.000	29.18	21.72	50.90	74.00	-23.10	peak
6	17340.000	29.86	22.14	52.00	74.00	-22.00	peak

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2401.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



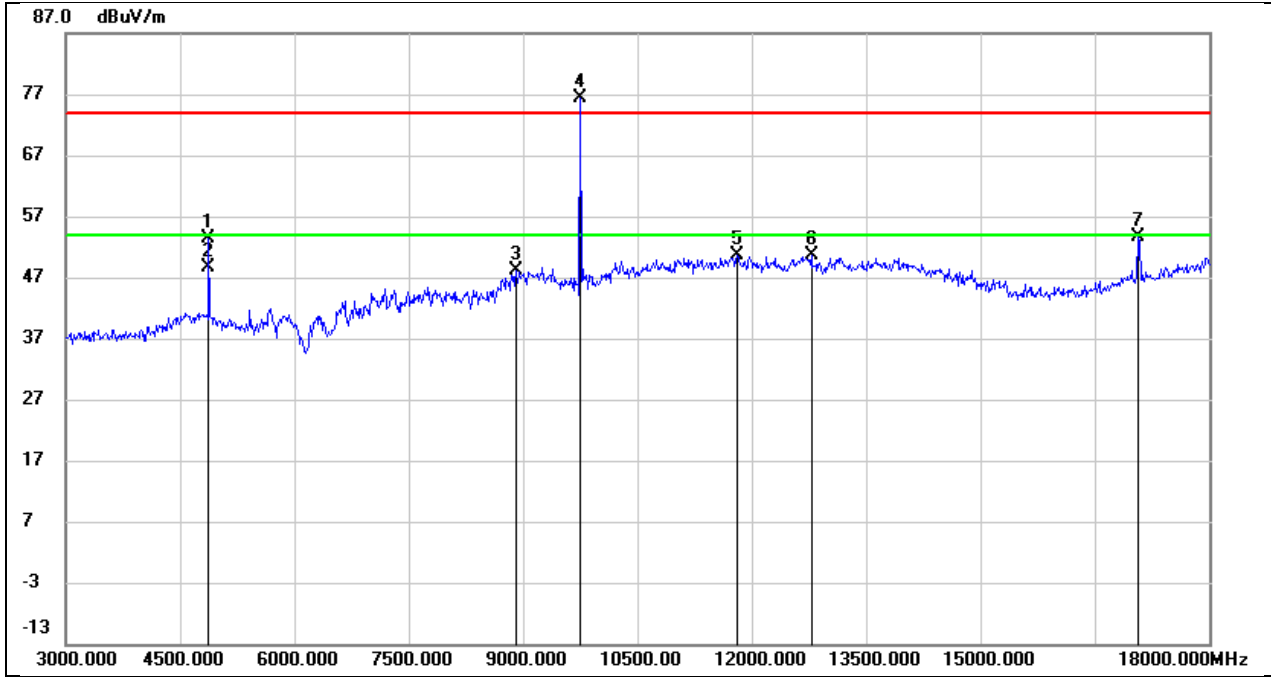
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4800.000	51.66	-0.31	51.35	74.00	-22.65	peak
2	5190.000	47.42	0.60	48.02	74.00	-25.98	peak
3	8850.000	39.67	9.39	49.06	74.00	-24.94	peak
4*	9600.000	64.63	10.95	75.58	/	/	peak
5	13290.000	30.95	19.99	50.94	74.00	-23.06	peak
6	16815.000	33.40	20.07	53.47	74.00	-20.53	peak

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2401.305
Polarity:	Vertical	Test Voltage:	DC 5 V



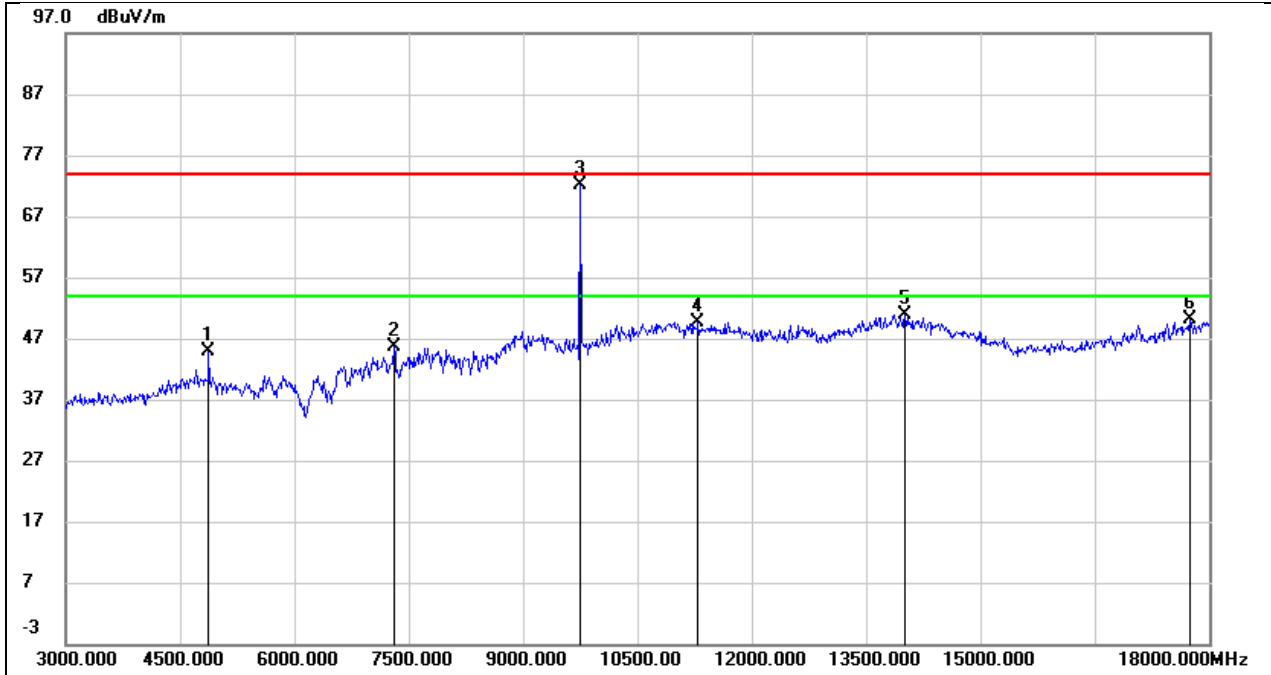
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4800.000	44.78	-0.31	44.47	74.00	-29.53	peak
2	7200.000	40.11	6.55	46.66	74.00	-27.34	peak
3*	9600.000	61.22	10.95	72.17	/	/	peak
4	11790.000	32.26	17.38	49.64	74.00	-24.36	peak
5	14055.000	27.70	21.73	49.43	74.00	-24.57	peak
6	16815.000	30.09	20.07	50.16	74.00	-23.84	peak

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2438.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



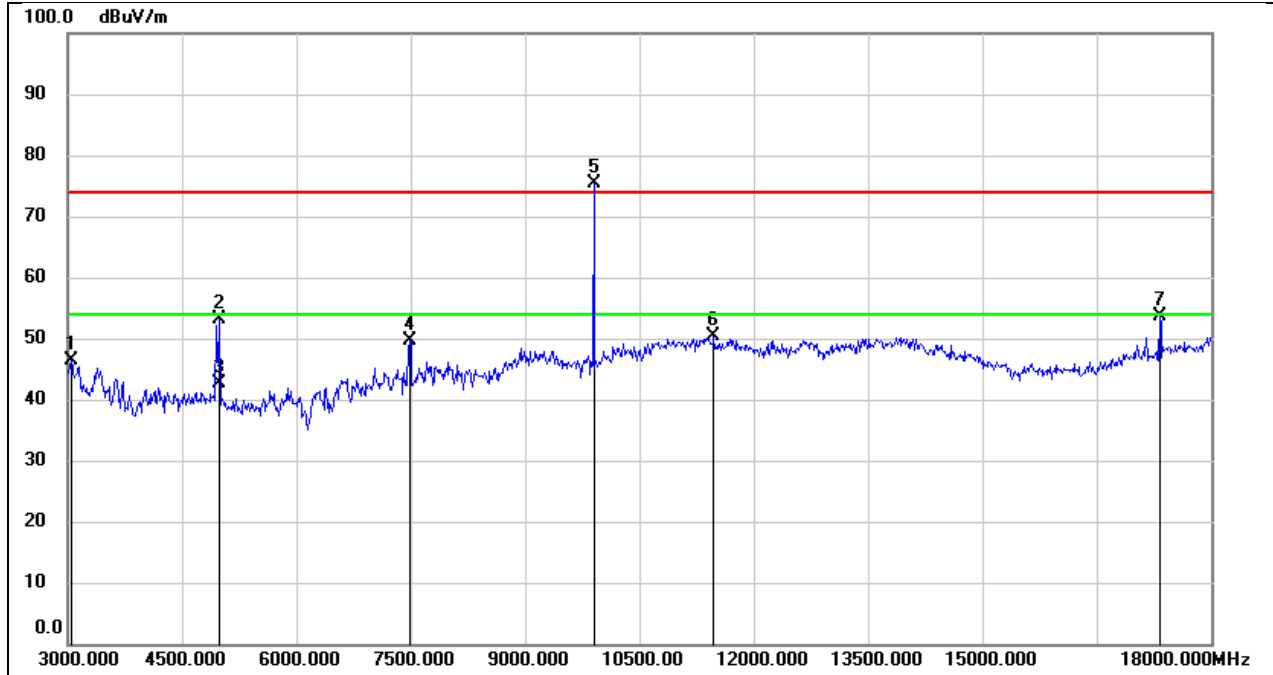
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	53.51	-0.03	53.48	74.00	-20.52	peak
2	4875.000	48.62	-0.03	48.59	54.00	-5.41	AVG
3	8910.000	38.20	9.82	48.02	74.00	-25.98	peak
4*	9750.000	65.02	11.35	76.37	/	/	peak
5	11805.000	33.21	17.43	50.64	74.00	-23.36	peak
6	12780.000	32.44	18.24	50.68	74.00	-23.32	peak
7	17070.000	32.39	21.15	53.54	74.00	-20.46	peak

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2438.305
Polarity:	Vertical	Test Voltage:	DC 5 V



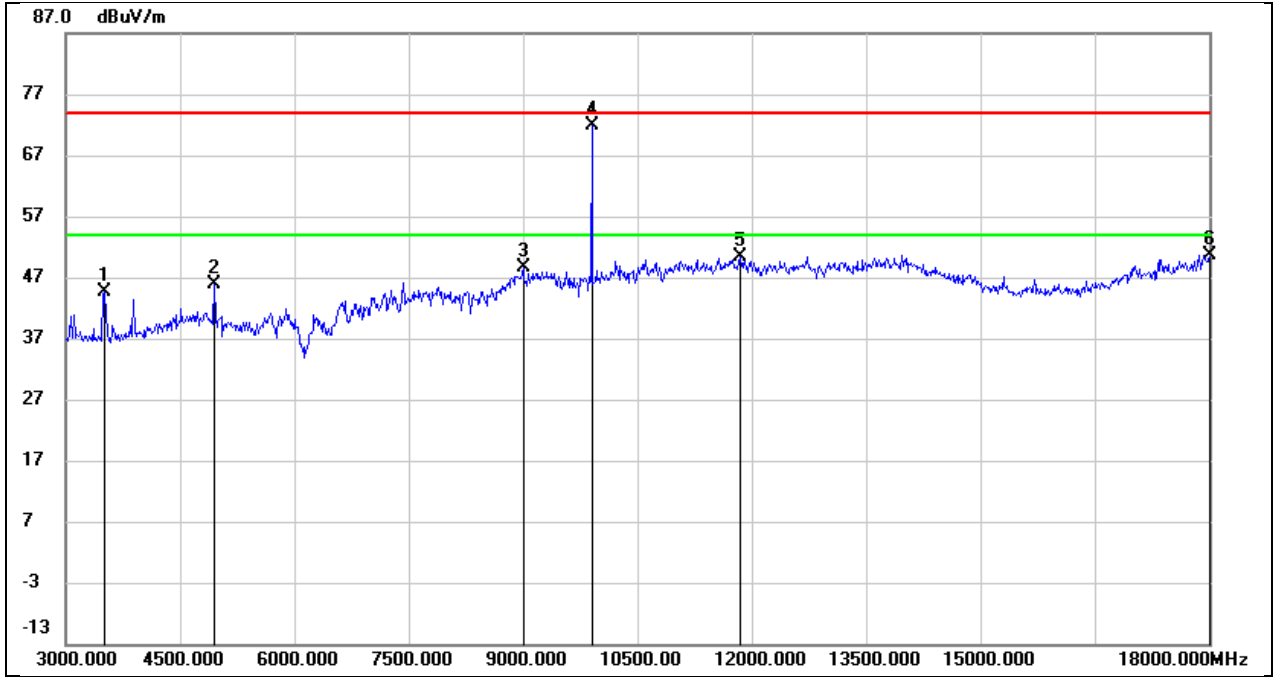
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	45.02	-0.03	44.99	74.00	-29.01	peak
2	7305.000	39.13	6.47	45.60	74.00	-28.40	peak
3*	9750.000	60.77	11.35	72.12	/	/	peak
4	11295.000	33.78	15.85	49.63	74.00	-24.37	peak
5	14010.000	28.94	21.93	50.87	74.00	-23.13	peak
6	17745.000	26.01	24.18	50.19	74.00	-23.81	peak

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



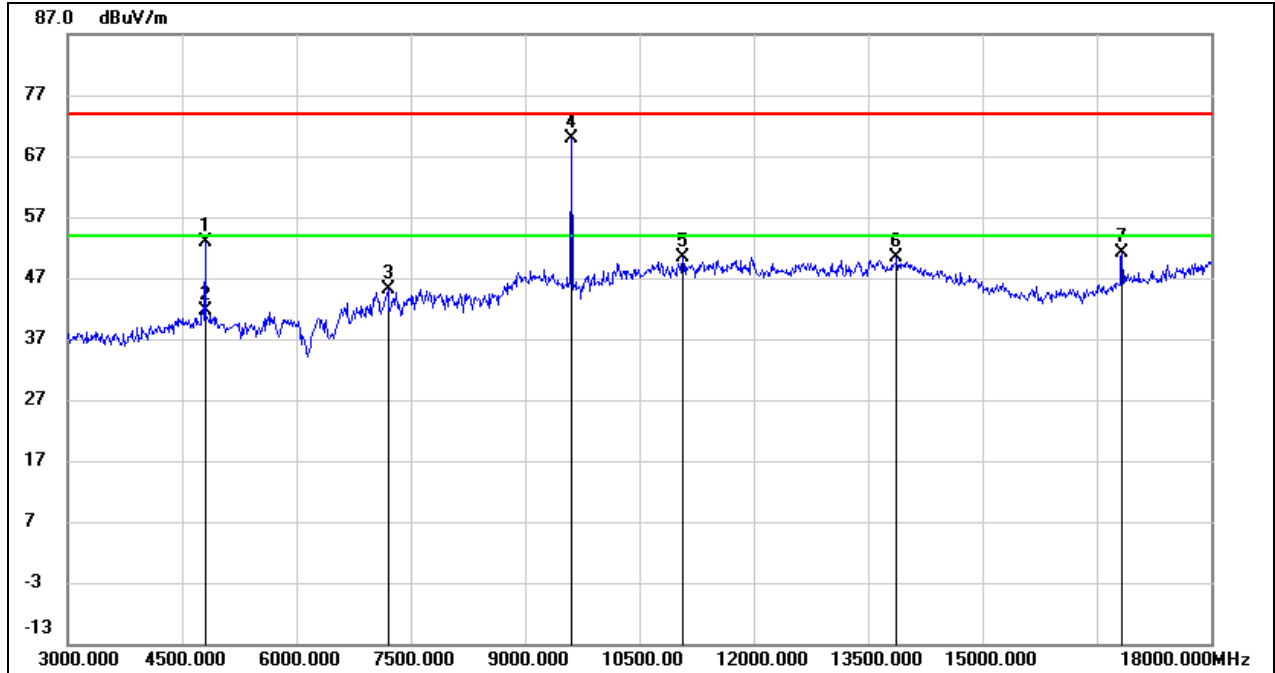
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3045.000	51.71	-5.22	46.49	74.00	-27.51	peak
2	4995.000	52.69	0.43	53.12	74.00	-20.88	peak
3	4995.000	42.28	0.43	42.71	54.00	-11.29	AVG
4	7485.000	43.36	6.34	49.70	74.00	-24.30	peak
5*	9900.000	63.64	11.75	75.39	/	/	peak
6	11475.000	33.79	16.51	50.30	74.00	-23.70	peak
7	17325.000	31.60	22.09	53.69	74.00	-20.31	peak

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Vertical	Test Voltage:	DC 5 V



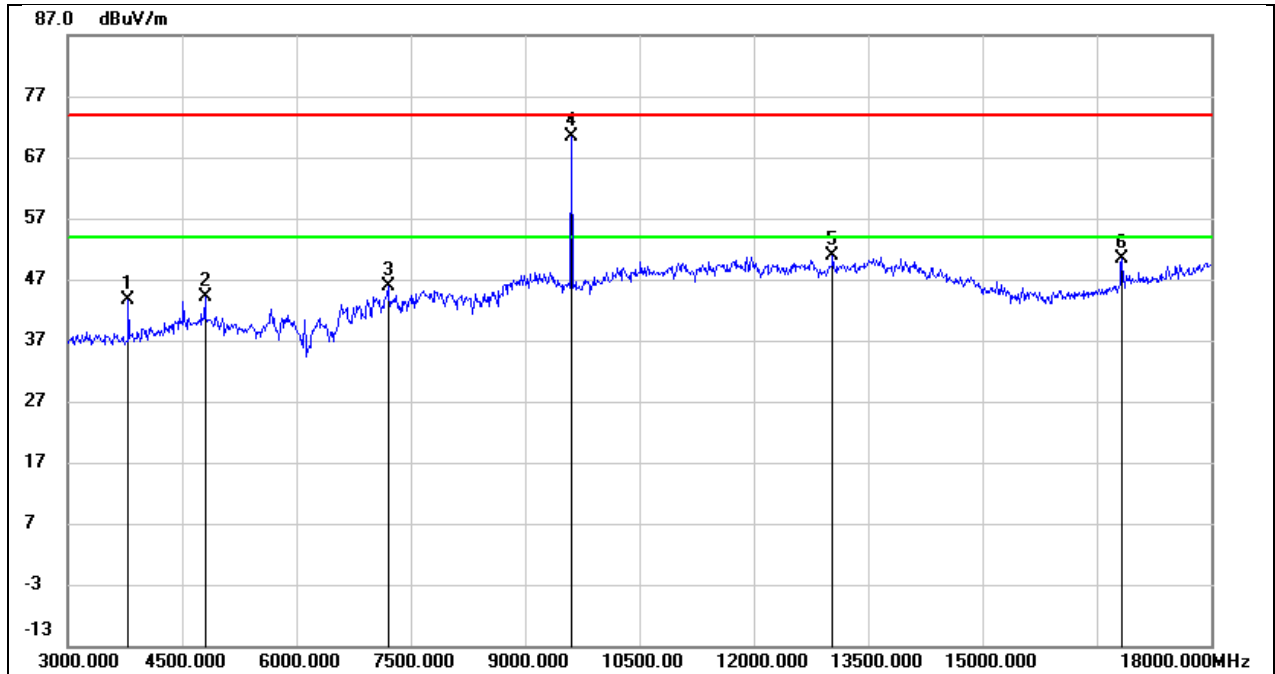
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3510.000	49.49	-4.94	44.55	74.00	-29.45	peak
2	4950.000	45.50	0.26	45.76	74.00	-28.24	peak
3	9000.000	38.08	10.48	48.56	74.00	-25.44	peak
4*	9900.000	60.06	11.75	71.81	/	/	peak
5	11850.000	32.92	17.56	50.48	74.00	-23.52	peak
6	18000.000	24.99	25.69	50.68	74.00	-23.32	peak

Test Mode:	2400M.2GFSK.1600kbps	Frequency(MHz):	2401.91
Polarity:	Horizontal	Test Voltage:	DC 5 V



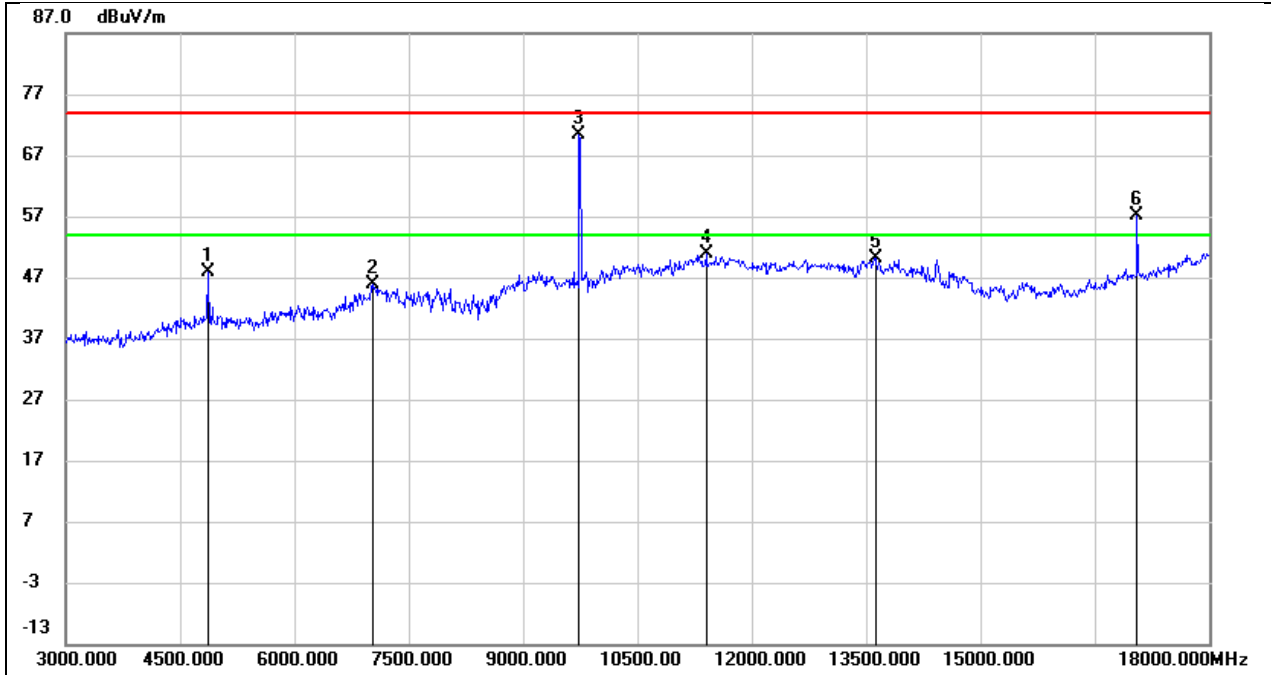
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4800.000	53.28	-0.31	52.97	74.00	-21.03	peak
2	4800.000	41.88	-0.31	41.57	54.00	-12.43	AVG
3	7200.000	38.69	6.55	45.24	74.00	-28.76	peak
4*	9615.000	58.86	11.00	69.86	/	/	peak
5	11070.000	35.35	15.03	50.38	74.00	-23.62	peak
6	13875.000	28.64	21.70	50.34	74.00	-23.66	peak
7	16830.000	30.92	20.14	51.06	74.00	-22.94	peak

Test Mode:	2400M.2GFSK.1600kbps	Frequency(MHz):	2401.91
Polarity:	Vertical	Test Voltage:	DC 5 V



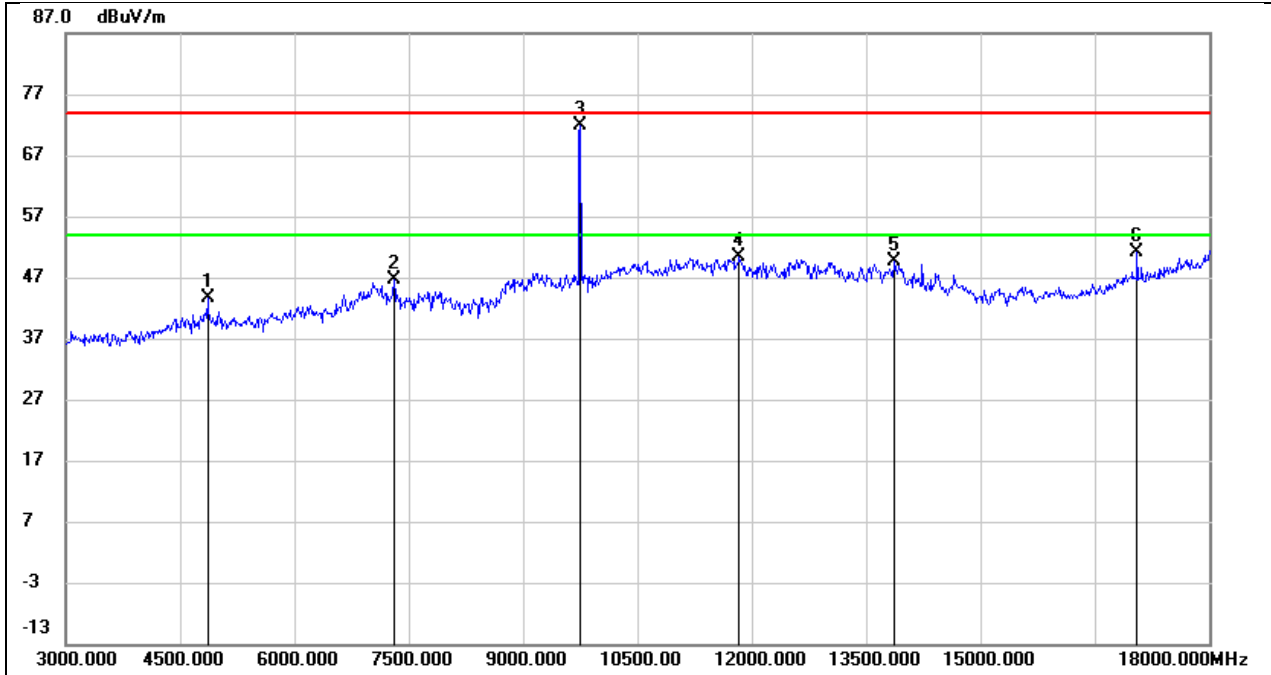
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3795.000	47.87	-4.28	43.59	74.00	-30.41	peak
2	4800.000	44.42	-0.31	44.11	74.00	-29.89	peak
3	7200.000	39.44	6.55	45.99	74.00	-28.01	peak
4*	9600.000	59.33	10.95	70.28	/	/	peak
5	13035.000	32.05	18.87	50.92	74.00	-23.08	peak
6	16830.000	30.18	20.14	50.32	74.00	-23.68	peak

Test Mode:	2400M.2GFSK.1600kbps	Frequency(MHz):	2435.81
Polarity:	Horizontal	Test Voltage:	DC 5 V



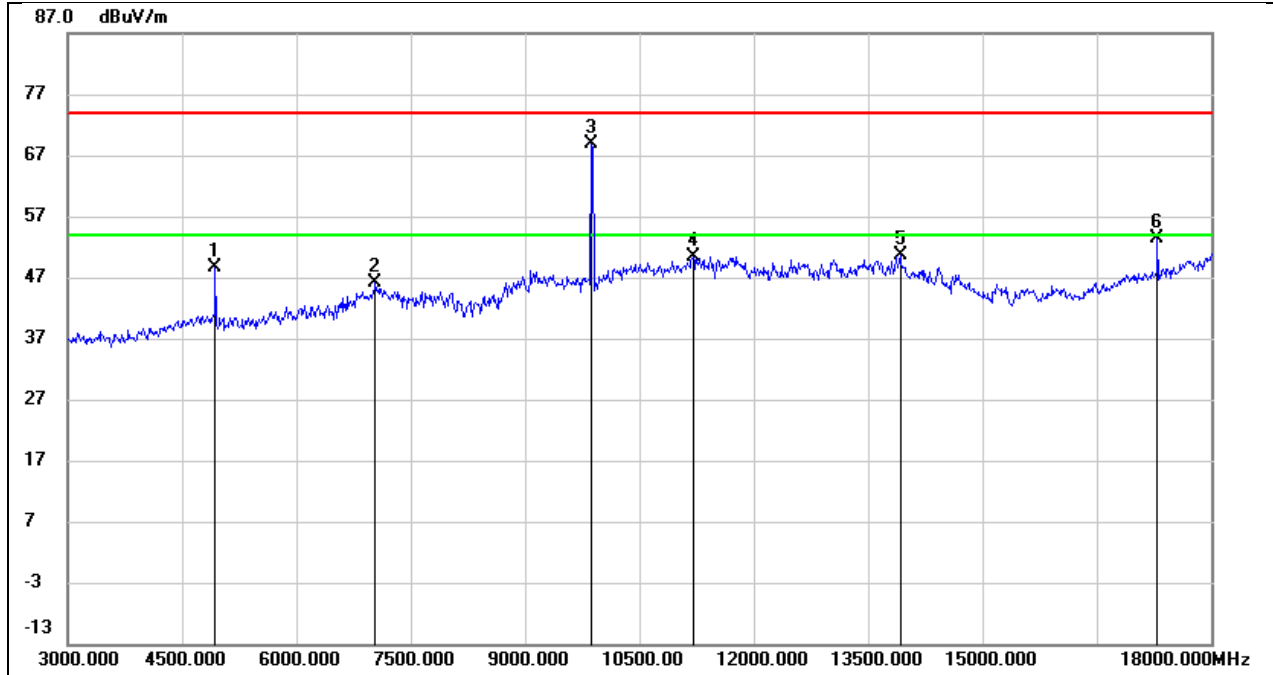
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	47.99	-0.09	47.90	74.00	-26.10	peak
2	7035.000	39.17	6.67	45.84	74.00	-28.16	peak
3*	9735.000	58.96	11.32	70.28	/	/	peak
4	11400.000	34.63	16.23	50.86	74.00	-23.14	peak
5	13620.000	29.08	21.15	50.23	74.00	-23.77	peak
6*	17055.000	36.15	21.08	57.23	/	/	peak

Test Mode:	2400M.2GFSK.1600kbps	Frequency(MHz):	2435.81
Polarity:	Vertical	Test Voltage:	DC 5 V



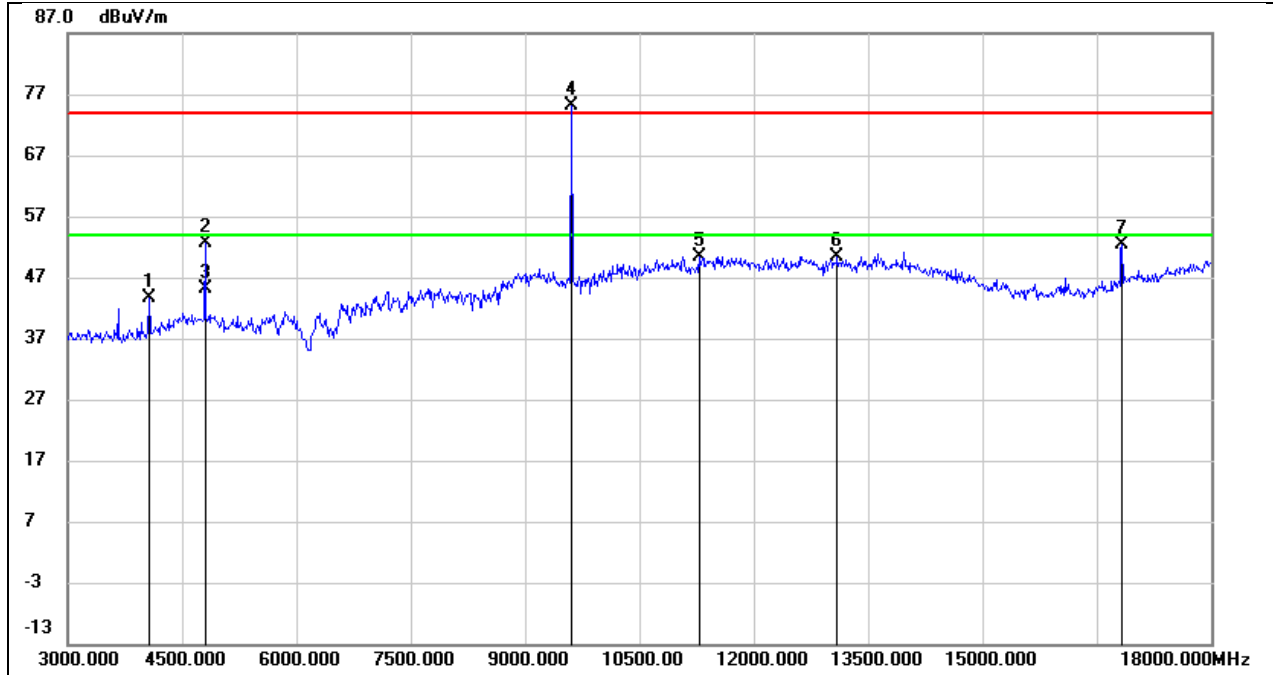
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	43.64	-0.09	43.55	74.00	-30.45	peak
2	7305.000	40.23	6.47	46.70	74.00	-27.30	peak
3*	9750.000	60.50	11.35	71.85	/	/	peak
4	11835.000	32.80	17.51	50.31	74.00	-23.69	peak
5	13875.000	27.89	21.70	49.59	74.00	-24.41	peak
6	17055.000	30.16	21.08	51.24	74.00	-22.76	peak

Test Mode:	2400M.2GFSK.1600kbps	Frequency(MHz):	2469.71
Polarity:	Horizontal	Test Voltage:	DC 5 V



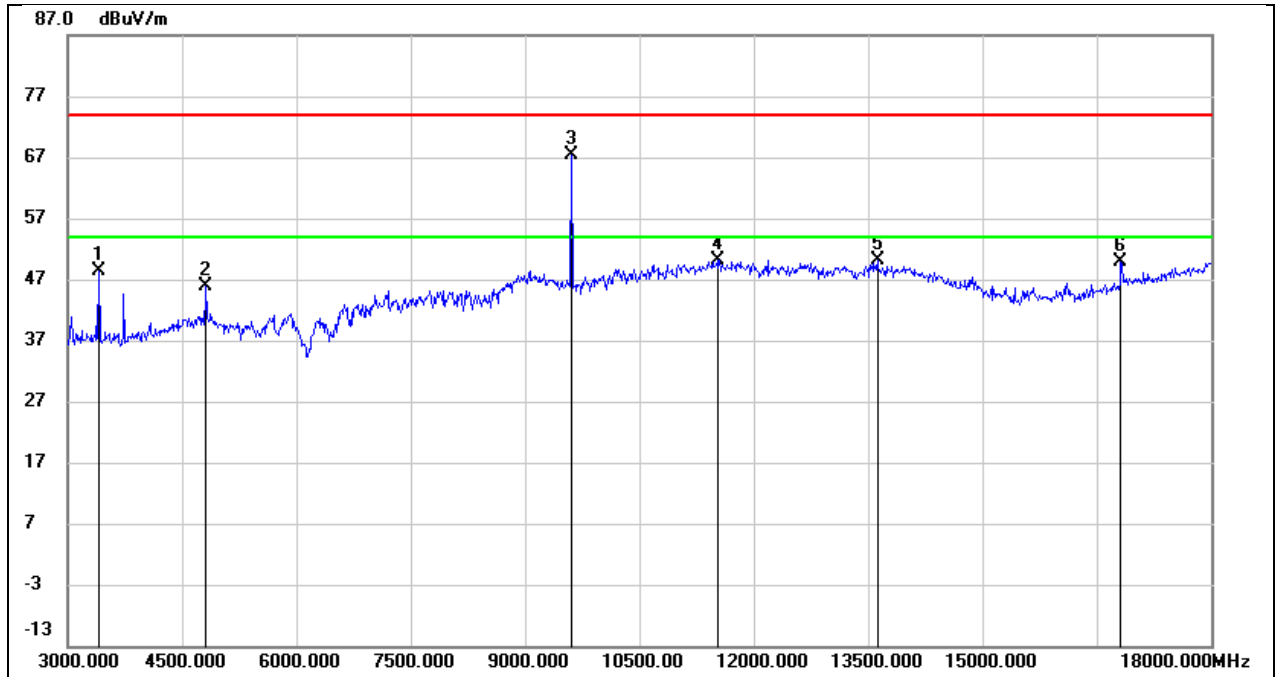
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4935.000	48.33	0.20	48.53	74.00	-25.47	peak
2	7035.000	39.43	6.67	46.10	74.00	-27.90	peak
3*	9870.000	57.11	11.67	68.78	/	/	peak
4	11205.000	34.80	15.52	50.32	74.00	-23.68	peak
5	13920.000	28.73	21.79	50.52	74.00	-23.48	peak
6	17295.000	31.43	21.98	53.41	74.00	-20.59	peak

Test Mode:	2400M.2GFSK.2000kbps	Frequency(MHz):	2402.31
Polarity:	Horizontal	Test Voltage:	DC 5 V



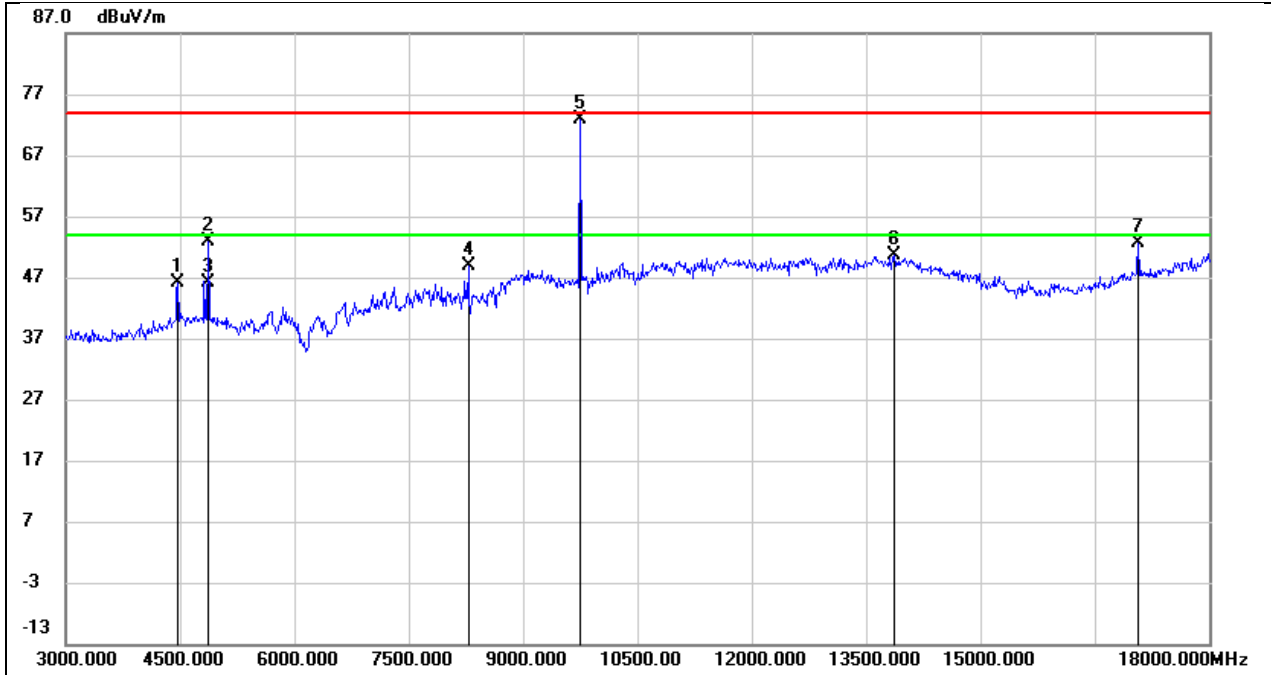
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4065.000	47.10	-3.49	43.61	74.00	-30.39	peak
2	4800.000	52.92	-0.31	52.61	74.00	-21.39	peak
3	4800.000	45.53	-0.31	45.22	54.00	-8.78	AVG
4*	9615.000	64.03	11.00	75.03	/	/	peak
5	11280.000	34.56	15.80	50.36	74.00	-23.64	peak
6	13095.000	31.17	19.14	50.31	74.00	-23.69	peak
7	16830.000	32.21	20.14	52.35	74.00	-21.65	peak

Test Mode:	2400M.2GFSK.2000kbps	Frequency(MHz):	2402.31
Polarity:	Vertical	Test Voltage:	DC 5 V



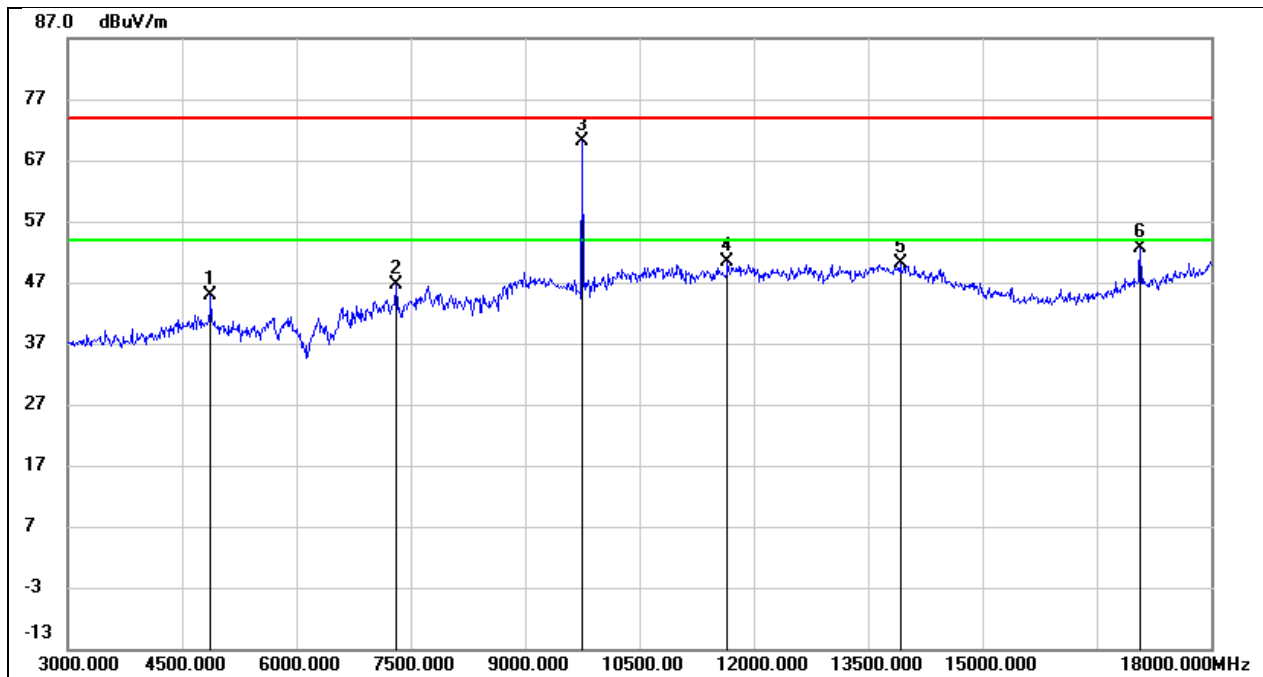
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3405.000	53.36	-5.01	48.35	74.00	-25.65	peak
2	4815.000	46.12	-0.26	45.86	74.00	-28.14	peak
3*	9600.000	56.31	10.95	67.26	/	/	peak
4	11520.000	33.56	16.65	50.21	74.00	-23.79	peak
5	13620.000	28.95	21.15	50.10	74.00	-23.90	peak
6	16815.000	29.83	20.07	49.90	74.00	-24.10	peak

Test Mode:	2400M.2GFSK.2000kbps	Frequency(MHz):	2437.41
Polarity:	Horizontal	Test Voltage:	DC 5 V



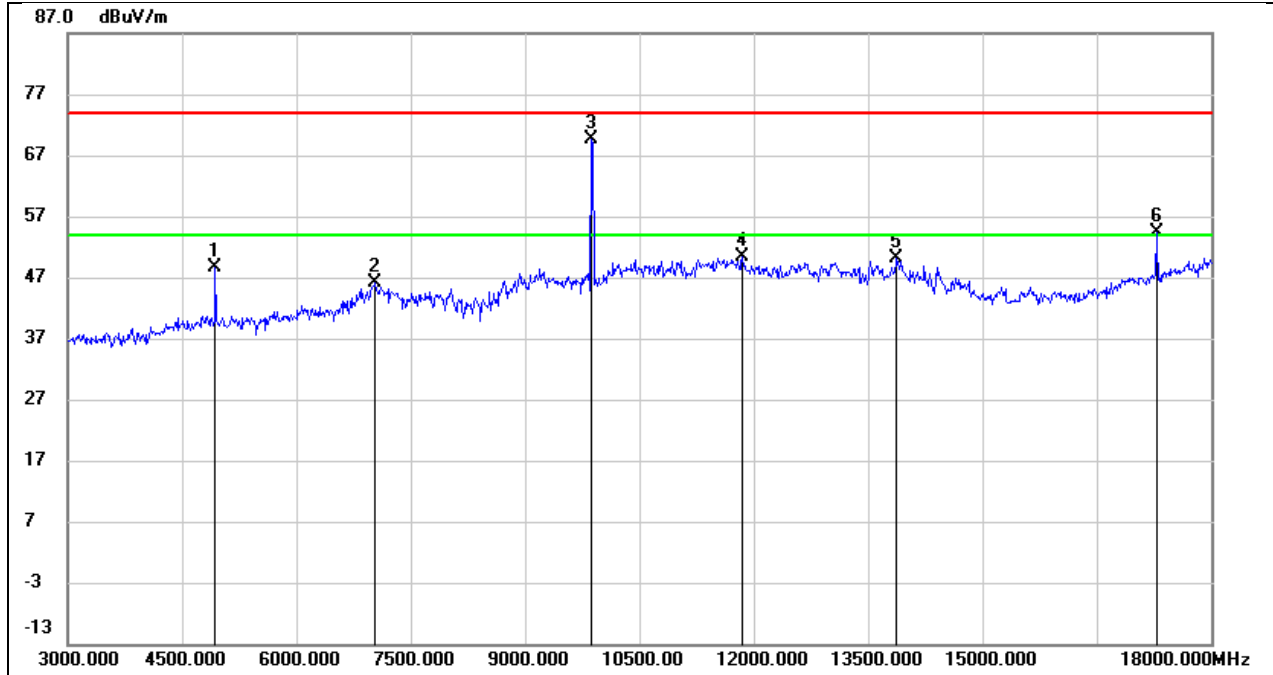
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4470.000	47.70	-1.60	46.10	74.00	-27.90	peak
2	4875.000	52.91	-0.03	52.88	74.00	-21.12	peak
3	4875.000	46.08	-0.03	46.05	54.00	-7.95	AVG
4	8280.000	42.38	6.61	48.99	74.00	-25.01	peak
5*	9750.000	61.45	11.35	72.80	/	/	peak
6	13875.000	28.91	21.70	50.61	74.00	-23.39	peak
7	17070.000	31.56	21.15	52.71	74.00	-21.29	peak

Test Mode:	2400M.2GFSK.2000kbps	Frequency(MHz):	2437.41
Polarity:	Vertical	Test Voltage:	DC 5 V



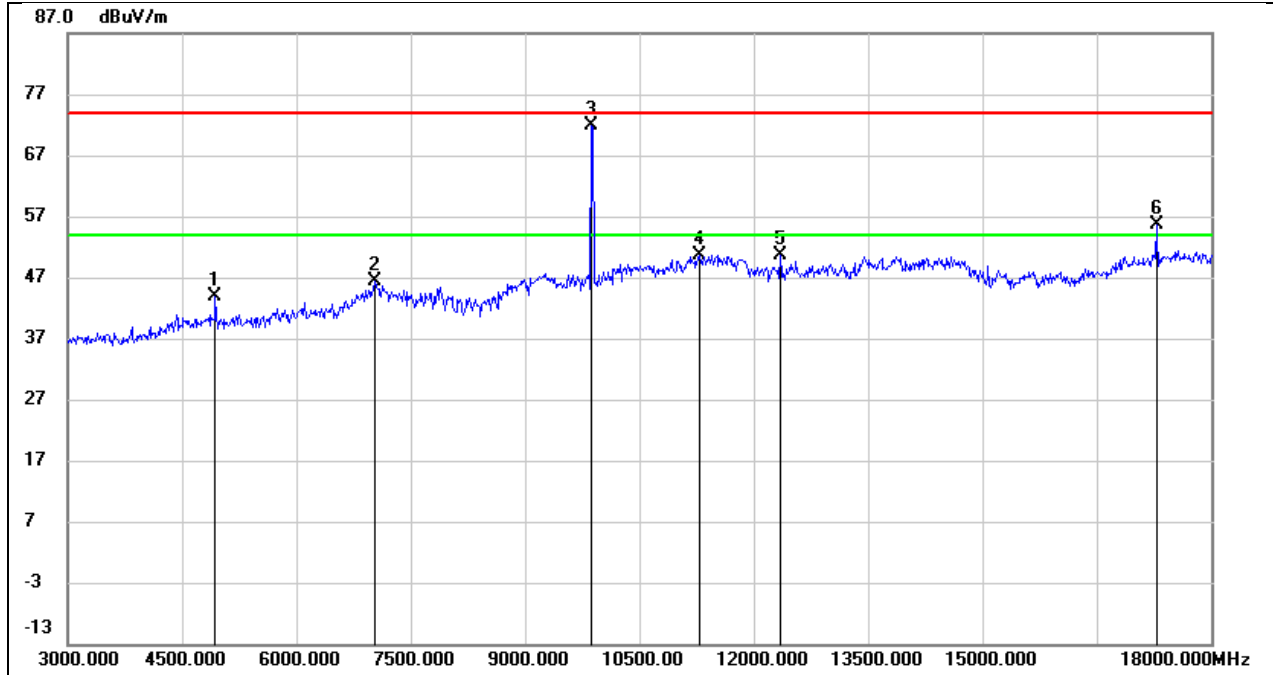
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	44.94	-0.03	44.91	74.00	-29.09	peak
2	7305.000	40.25	6.47	46.72	74.00	-27.28	peak
3*	9750.000	58.89	11.35	70.24	/	/	peak
4	11655.000	33.31	17.01	50.32	74.00	-23.68	peak
5	13920.000	28.22	21.79	50.01	74.00	-23.99	peak
6	17070.000	31.55	21.15	52.70	74.00	-21.30	peak

Test Mode:	2400M.2GFSK.2000kbps	Frequency(MHz):	2469
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4935.000	48.53	0.20	48.73	74.00	-25.27	peak
2	7035.000	39.39	6.67	46.06	74.00	-27.94	peak
3*	9870.000	58.05	11.67	69.72	/	/	peak
4	11850.000	32.78	17.56	50.34	74.00	-23.66	peak
5	13875.000	28.34	21.70	50.04	74.00	-23.96	peak
6*	17280.000	32.38	21.91	54.29	/	/	peak

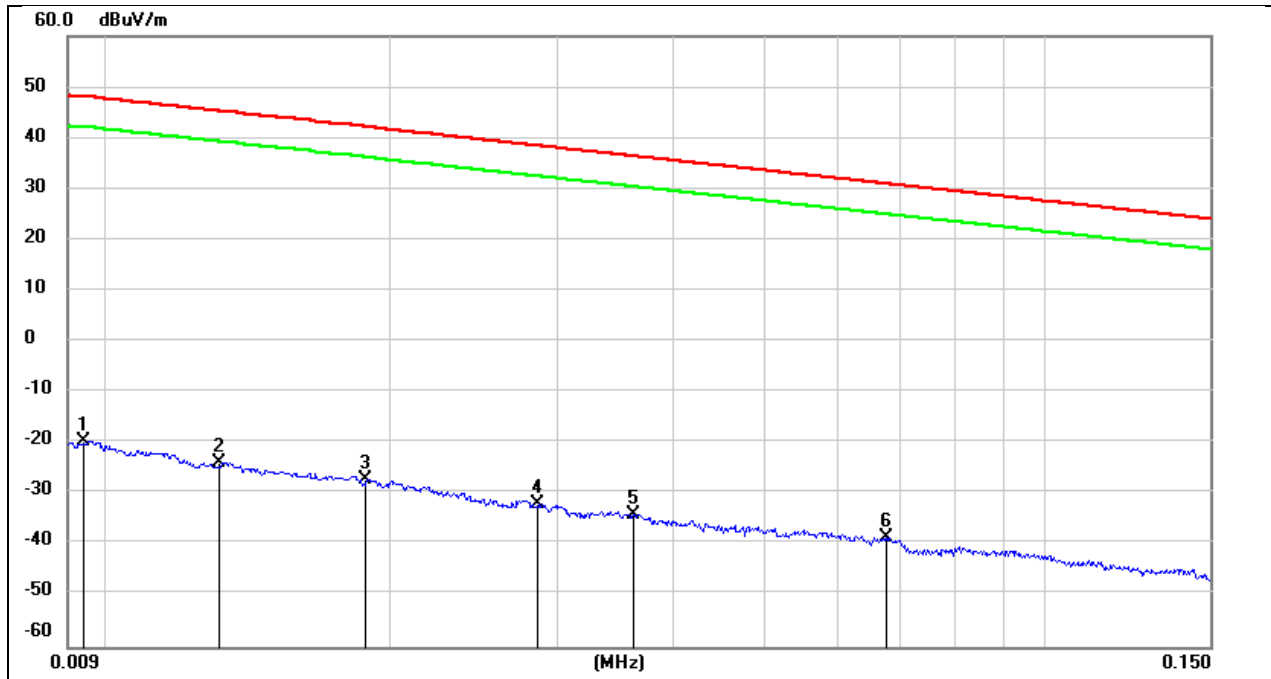
Test Mode:	2400M.2GFSK.2000kbps	Frequency(MHz):	2469
Polarity:	Vertical	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4935.000	43.66	0.20	43.86	74.00	-30.14	peak
2	7035.000	39.66	6.67	46.33	74.00	-27.67	peak
3*	9870.000	60.22	11.67	71.89	/	/	peak
4	11280.000	34.80	15.80	50.60	74.00	-23.40	peak
5	12345.000	32.99	17.71	50.70	74.00	-23.30	peak
6*	17280.000	33.60	21.91	55.51	/	/	peak

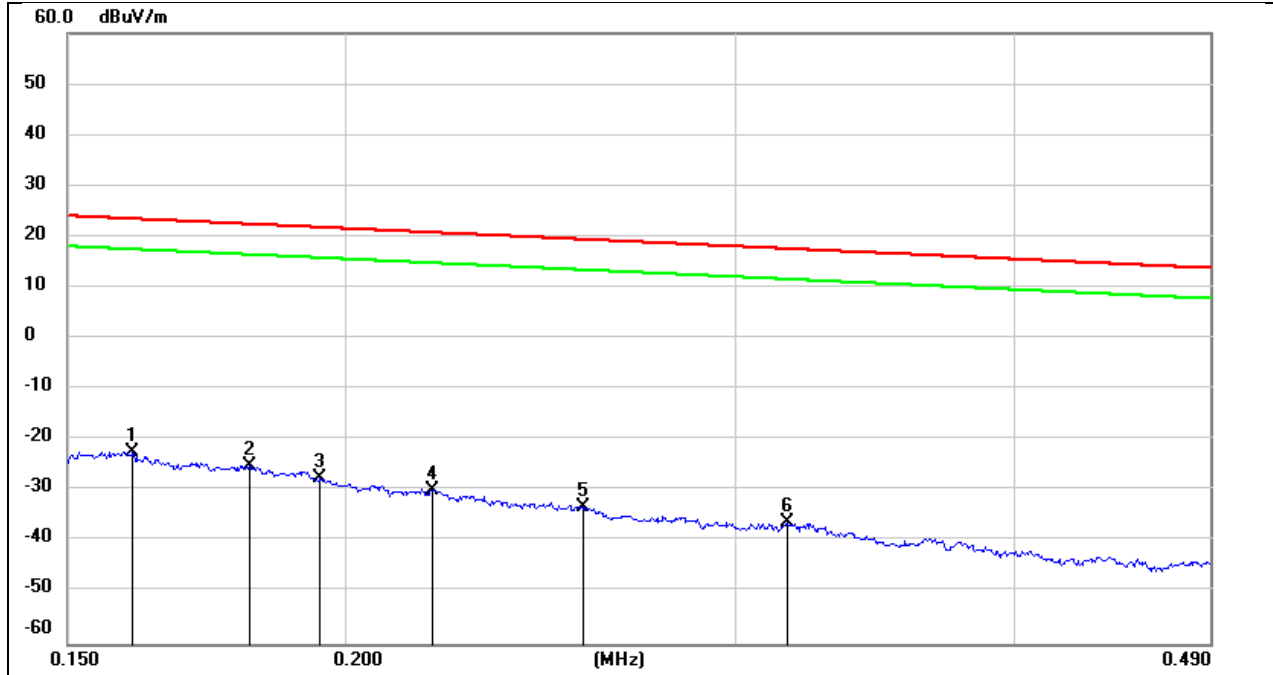
8.4. SPURIOUS EMISSIONS(9 KHZ~30 MHZ)

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



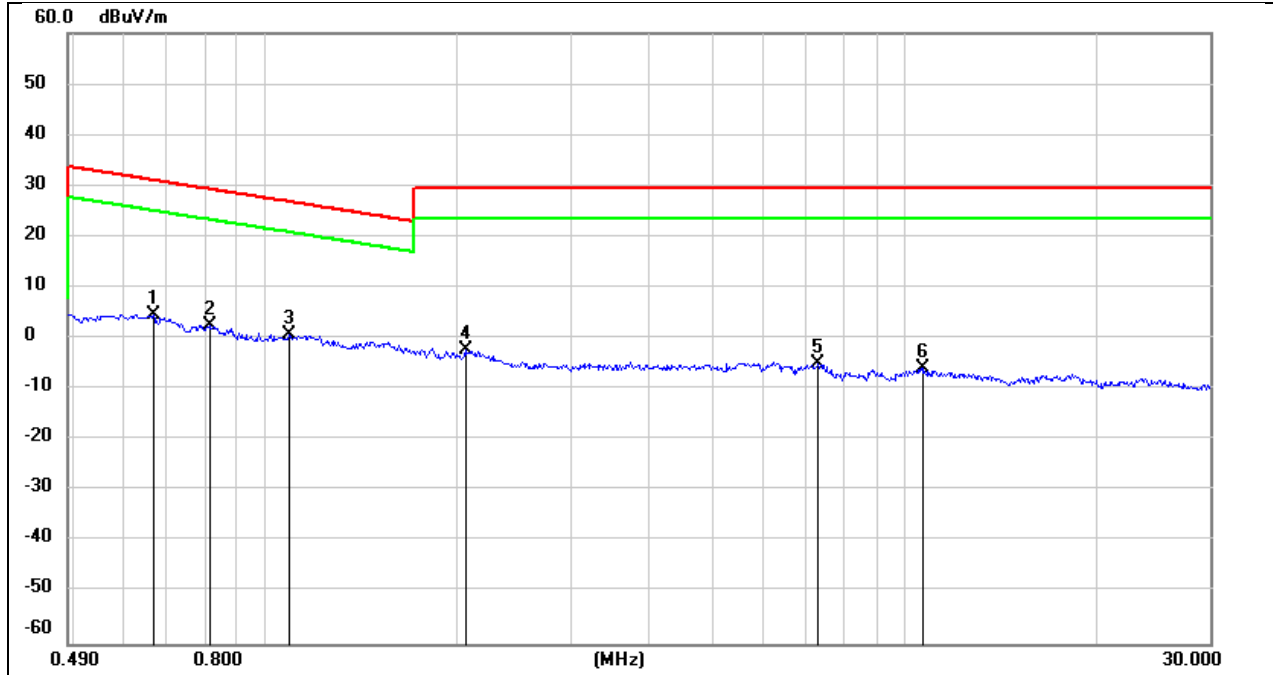
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	ISED Result (dBuA/m)	ISED Limit (dBuA/m)	Margin (dB)	Remark
1	0.0094	81.66	-101.35	-19.69	48.05	-71.19	-3.45	-67.74	peak
2	0.0131	77.45	-101.38	-23.93	45.25	-75.43	-6.25	-69.18	peak
3	0.0188	74.14	-101.35	-27.21	42.12	-78.71	-9.38	-69.33	peak
4	0.0286	69.46	-101.38	-31.92	38.47	-83.42	-13.03	-70.39	peak
5	0.0362	67.51	-101.42	-33.91	36.43	-85.41	-15.07	-70.34	peak
6	0.0675	63.14	-101.56	-38.42	31.02	-89.92	-20.48	-69.44	peak

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	ISED Result (dBuA/m)	ISED Limit (dBuA/m)	Margin (dB)	Remark
1	0.1604	79.18	-101.65	-22.47	23.50	-73.97	-28.00	-45.97	peak
2	0.1811	76.55	-101.68	-25.13	22.45	-76.63	-29.05	-47.58	peak
3	0.1948	74.25	-101.71	-27.46	21.81	-78.96	-29.69	-49.27	peak
4	0.2190	71.77	-101.75	-29.98	20.79	-81.48	-30.71	-50.77	peak
5	0.2558	68.70	-101.80	-33.10	19.44	-84.60	-32.06	-52.54	peak
6	0.3163	65.70	-101.87	-36.17	17.60	-87.67	-33.90	-53.77	peak

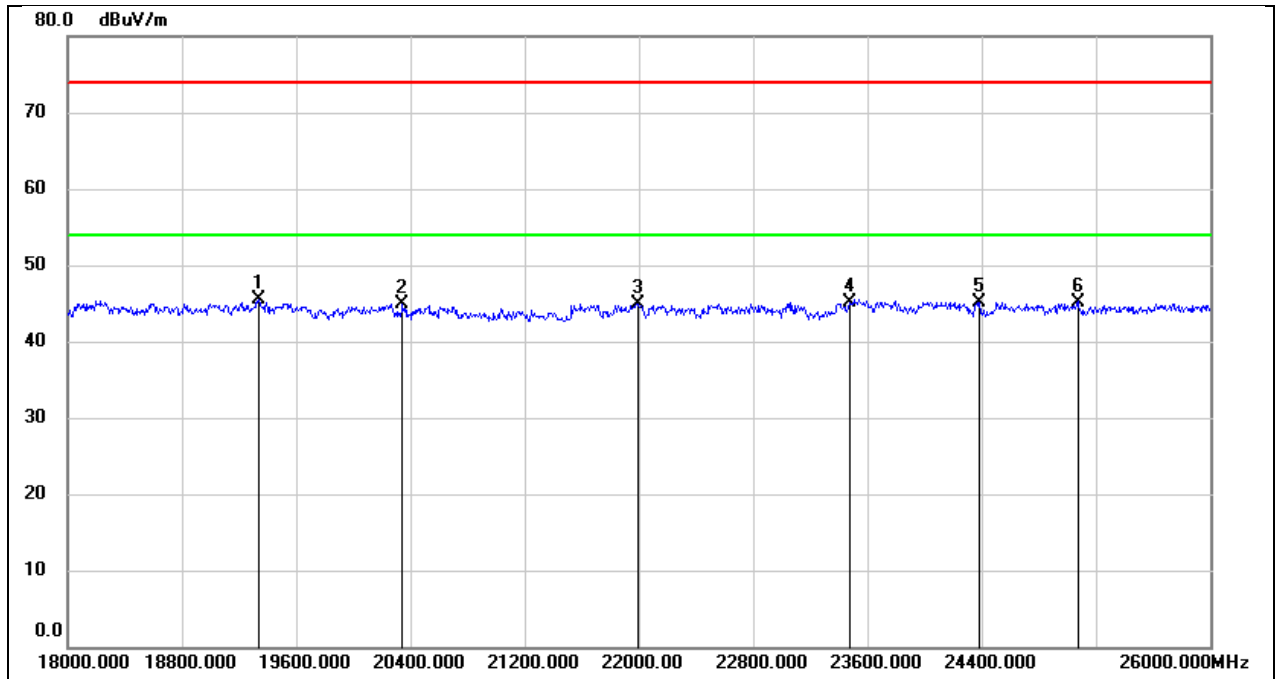
Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	ISED Result (dBuA/m)	ISED Limit (dBuA/m)	Margin (dB)	Remark
1	0.6671	66.75	-62.10	4.65	31.12	-46.85	-20.38	-26.47	peak
2	0.8162	64.57	-62.16	2.41	29.37	-49.09	-22.13	-26.96	peak
3	1.0886	62.91	-62.22	0.69	26.87	-50.81	-24.63	-26.18	peak
4	2.0539	59.70	-61.81	-2.11	29.54	-53.61	-21.96	-31.65	peak
5	7.3361	56.08	-61.17	-5.09	29.54	-56.59	-21.96	-34.63	peak
6	10.7004	54.86	-60.83	-5.97	29.54	-57.47	-21.96	-35.51	peak

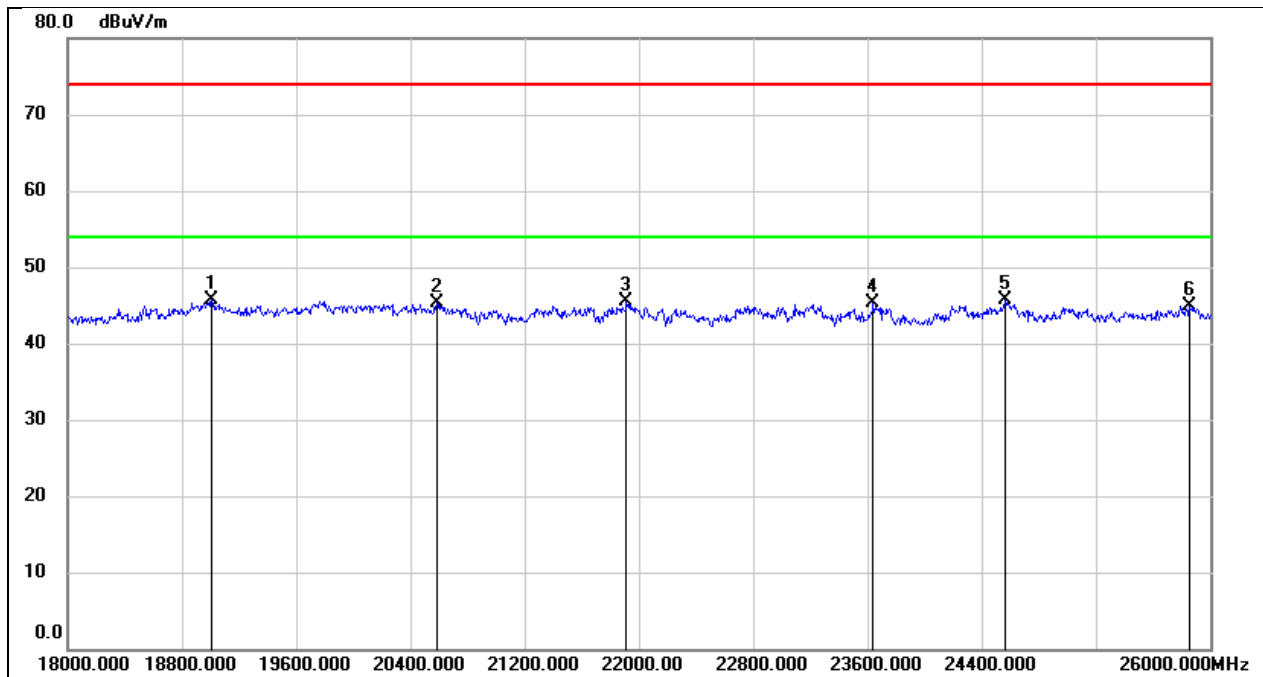
8.5. SPURIOUS EMISSIONS(18 GHZ~26 GHZ)

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19336.000	51.04	-5.58	45.46	74.00	-28.54	peak
2	20344.000	50.41	-5.52	44.89	74.00	-29.11	peak
3	21992.000	49.37	-4.47	44.90	74.00	-29.10	peak
4	23472.000	48.27	-3.17	45.10	74.00	-28.90	peak
5	24384.000	47.68	-2.55	45.13	74.00	-28.87	peak
6	25072.000	47.17	-1.97	45.20	74.00	-28.80	peak

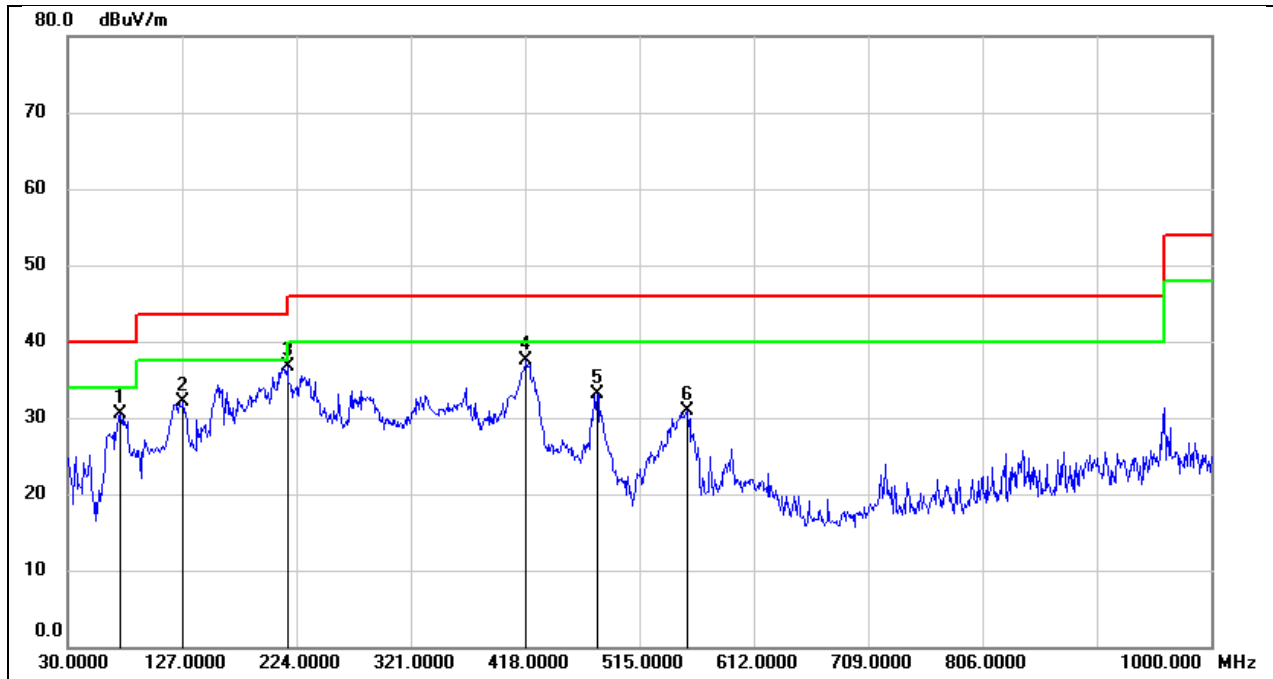
Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Vertical	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19008.000	51.01	-5.23	45.78	74.00	-28.22	peak
2	20584.000	50.50	-5.27	45.23	74.00	-28.77	peak
3	21912.000	49.89	-4.43	45.46	74.00	-28.54	peak
4	23640.000	48.47	-3.17	45.30	74.00	-28.70	peak
5	24568.000	48.10	-2.33	45.77	74.00	-28.23	peak
6	25856.000	45.79	-0.80	44.99	74.00	-29.01	peak

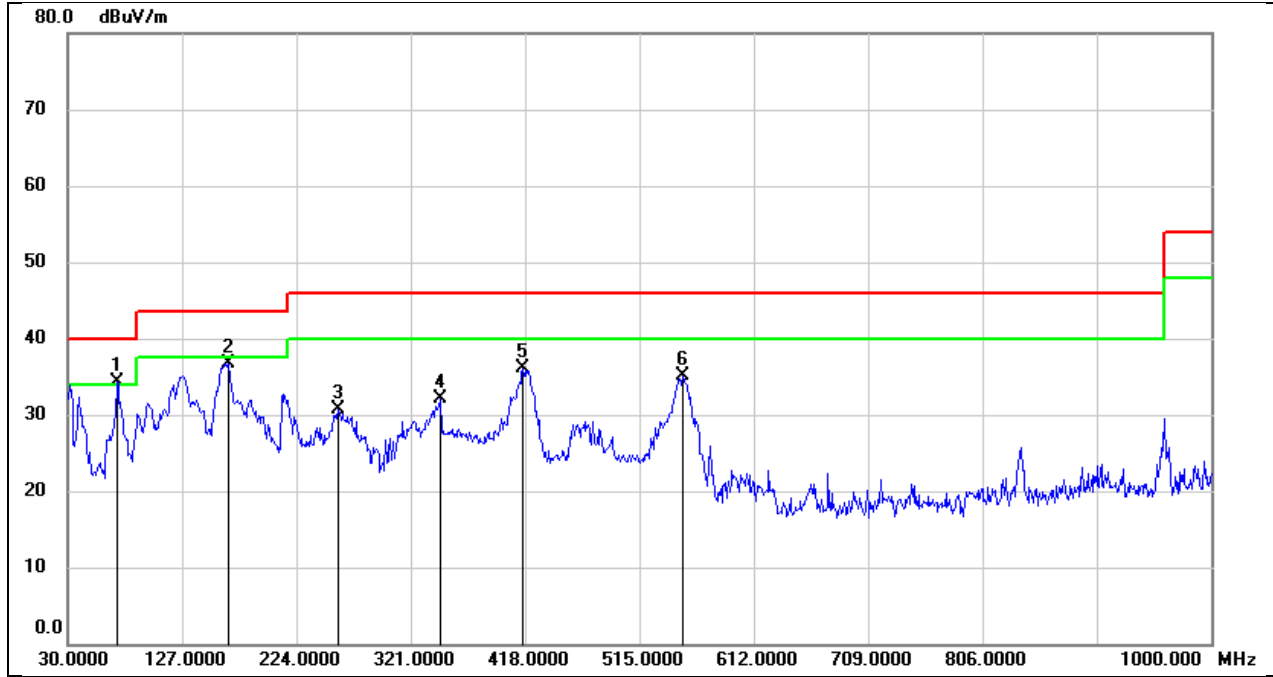
8.6. SPURIOUS EMISSIONS(30 MHZ~1 GHZ)

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Horizontal	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	74.6200	51.05	-20.61	30.44	40.00	-9.56	QP
2	127.9700	51.00	-18.98	32.02	43.50	-11.48	QP
3	216.2400	53.42	-16.64	36.78	46.00	-9.22	QP
4	418.9700	49.53	-12.10	37.43	46.00	-8.57	QP
5	479.1100	44.00	-10.80	33.20	46.00	-12.80	QP
6	555.7400	41.04	-10.12	30.92	46.00	-15.08	QP

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Polarity:	Vertical	Test Voltage:	DC 5 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	71.7100	54.69	-20.41	34.28	40.00	-5.72	QP
2	165.8000	53.35	-16.61	36.74	43.50	-6.76	QP
3	258.9200	48.44	-17.75	30.69	46.00	-15.31	QP
4	346.2200	44.81	-12.68	32.13	46.00	-13.87	QP
5	416.0600	48.18	-12.13	36.05	46.00	-9.95	QP
6	551.8600	45.29	-10.23	35.06	46.00	-10.94	QP

9. ANTENNA REQUIREMENT

REQUIREMENT

Please refer to FCC part 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.

Please refer to FCC part 15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DESCRIPTION

Pass

10. AC POWER LINE CONDUCTED EMISSION

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

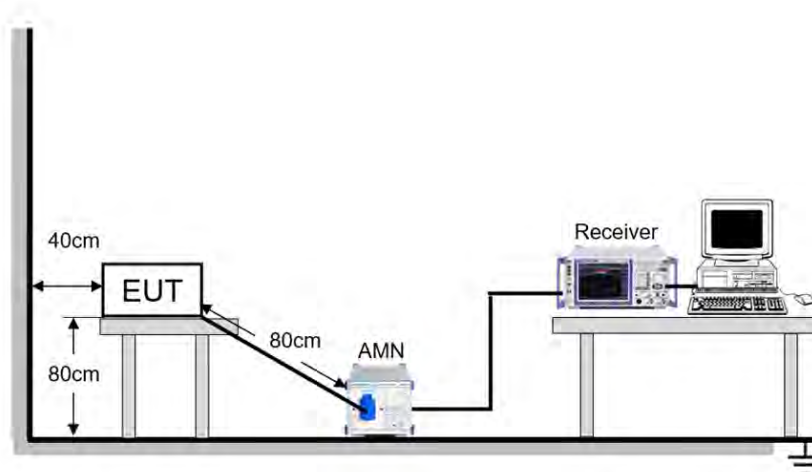
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

TEST PROCEDURE

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST SETUP



TEST ENVIRONMENT

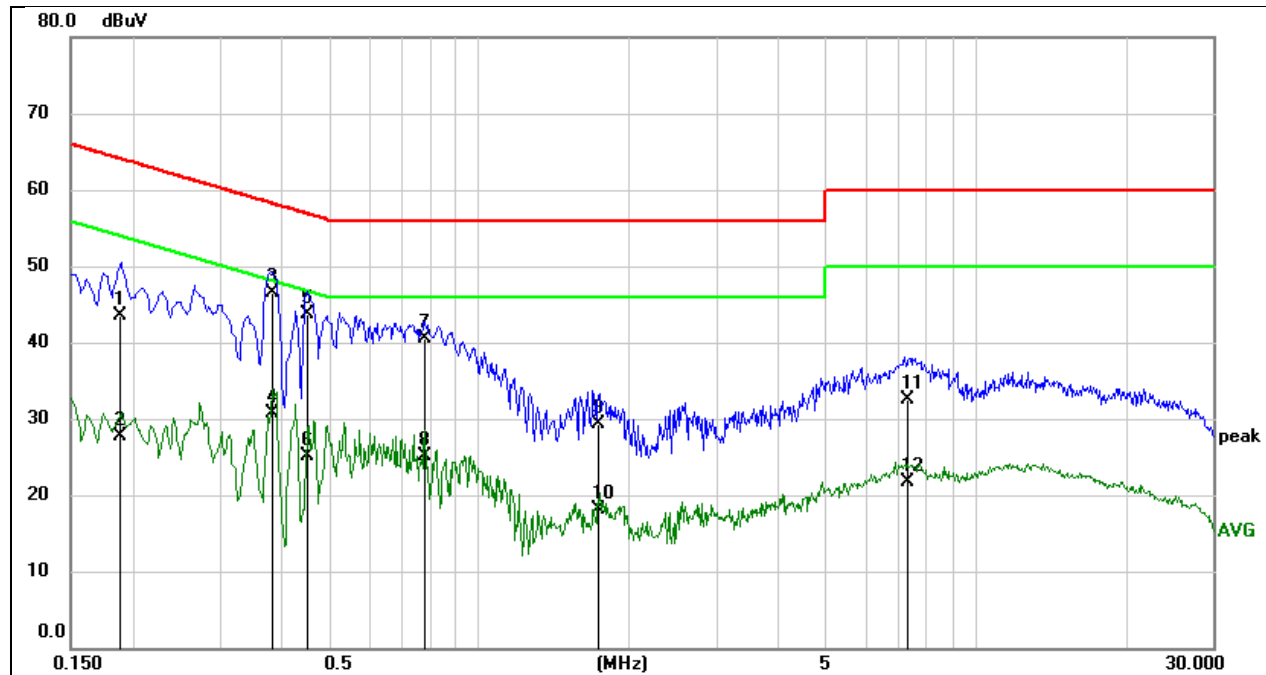
Temperature	22.9°C	Relative Humidity	47.1%
Atmosphere Pressure	101kPa	Test Voltage	AC 120 V, 60 Hz

TEST DATE / ENGINEER

Test Date	December 22, 2023	Test By	Fanny Huang
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TEST RESULTS

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Line:	Line		



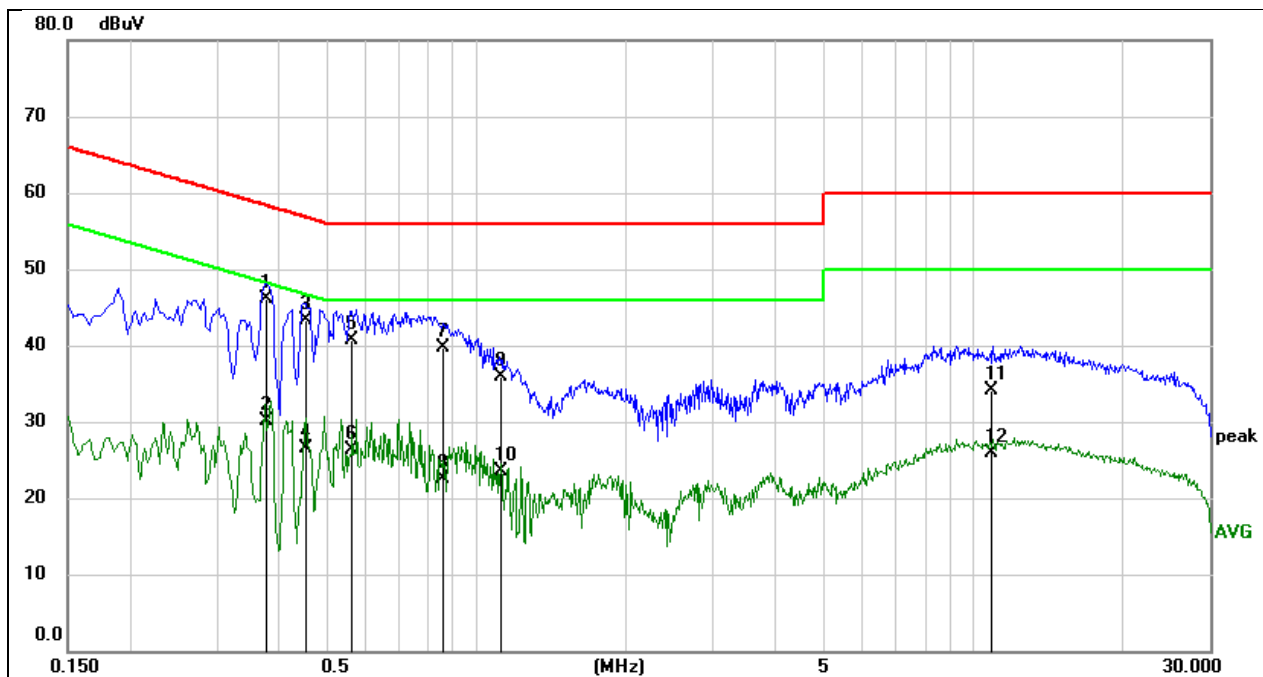
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1876	33.94	9.59	43.53	64.14	-20.61	QP
2	0.1876	18.16	9.59	27.75	54.14	-26.39	AVG
3	0.3818	36.91	9.59	46.50	58.24	-11.74	QP
4	0.3818	21.20	9.59	30.79	48.24	-17.45	AVG
5	0.4499	34.08	9.60	43.68	56.88	-13.20	QP
6	0.4499	15.58	9.60	25.18	46.88	-21.70	AVG
7	0.7766	30.98	9.60	40.58	56.00	-15.42	QP
8	0.7766	15.41	9.60	25.01	46.00	-20.99	AVG
9	1.7402	19.59	9.62	29.21	56.00	-26.79	QP
10	1.7402	8.43	9.62	18.05	46.00	-27.95	AVG
11	7.2901	22.74	9.72	32.46	60.00	-27.54	QP
12	7.2901	11.96	9.72	21.68	50.00	-28.32	AVG

Note:

1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

Test Mode:	2400M.2GFSK.1000kbps	Frequency(MHz):	2475.305
Line:	Neutral		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.3779	36.50	9.59	46.09	58.33	-12.24	QP
2	0.3779	20.49	9.59	30.08	48.33	-18.25	AVG
3	0.4520	33.71	9.60	43.31	56.84	-13.53	QP
4	0.4520	16.93	9.60	26.53	46.84	-20.31	AVG
5	0.5612	31.03	9.60	40.63	56.00	-15.37	QP
6	0.5612	16.65	9.60	26.25	46.00	-19.75	AVG
7	0.8648	30.17	9.60	39.77	56.00	-16.23	QP
8	0.8648	12.88	9.60	22.48	46.00	-23.52	AVG
9	1.1231	26.26	9.61	35.87	56.00	-20.13	QP
10	1.1231	13.96	9.61	23.57	46.00	-22.43	AVG
11	10.9036	24.45	9.74	34.19	60.00	-25.81	QP
12	10.9036	16.21	9.74	25.95	50.00	-24.05	AVG

Note:

1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

TEST DATA

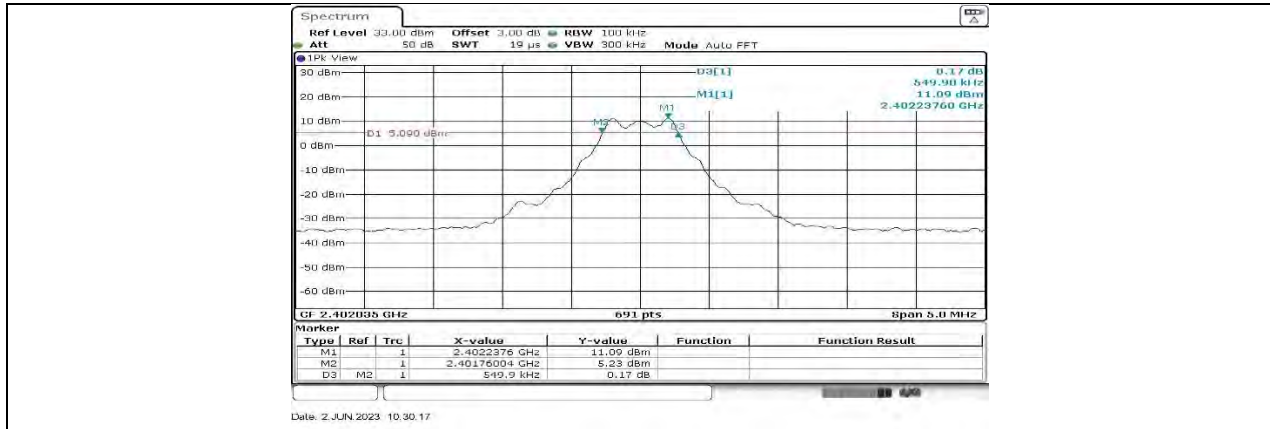
11. FCC.2400M.2GFSK.400kbps.LP

11.1. APPENDIX A1: DTS BANDWIDTH

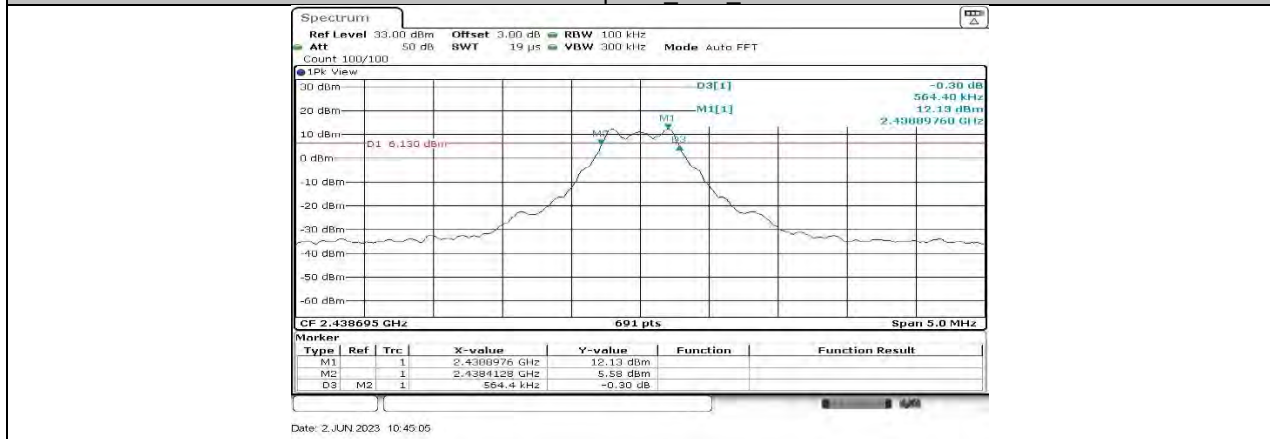
11.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2GFSK-400 kbps.LP	Ant1	LCH	0.550	2401.76	LCH.30	0.5	PASS
		MCH	0.564	2438.41	2438.98	0.5	PASS
		HCH	0.564	2475.07	2475.64	0.5	PASS

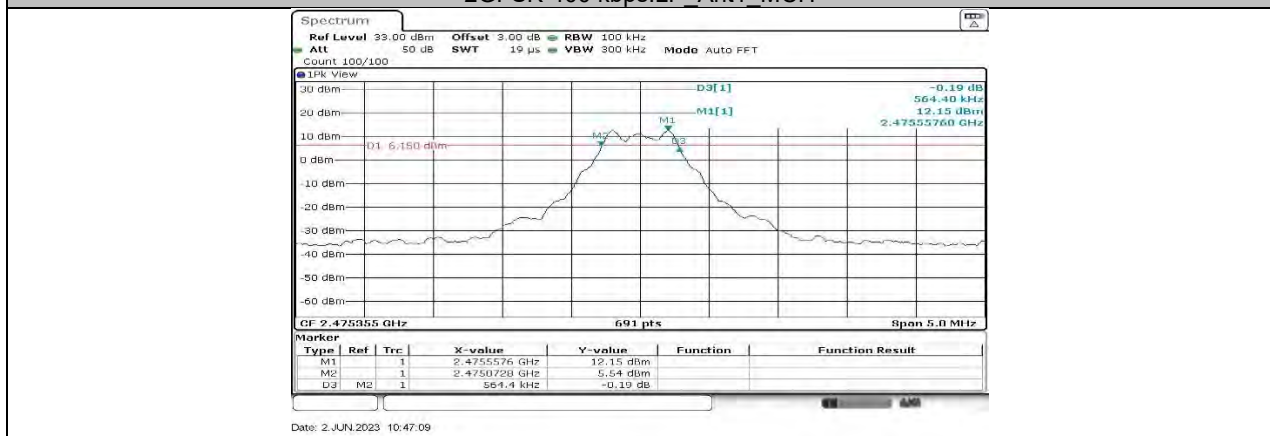
11.1.2. Test Graphs



2GFSK-400 kbps.LP_Ant1_LCH.035



2GFSK-400 kbps.LP_Ant1_MCH



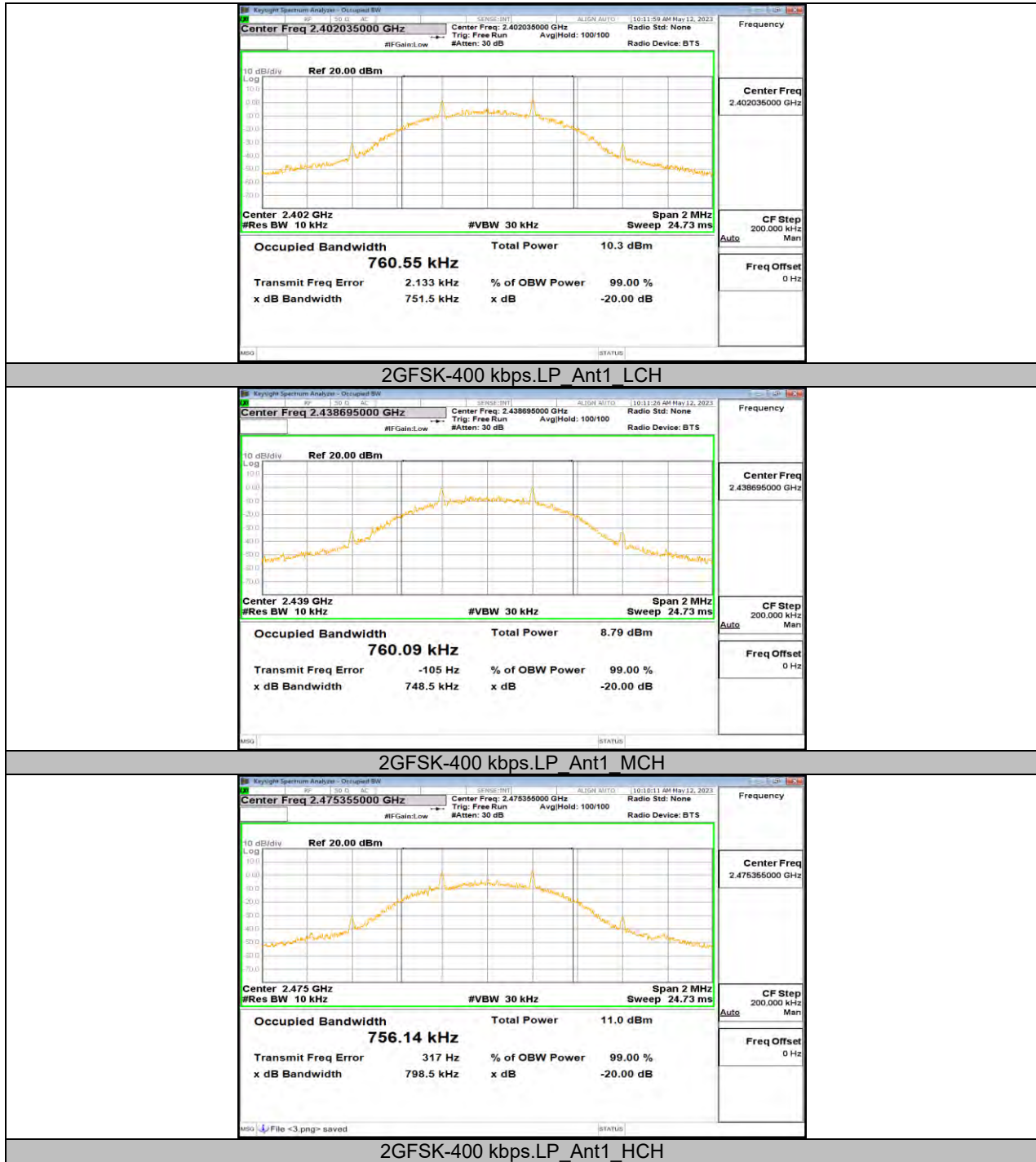
2GFSK-400 kbps.LP_Ant1_HCH

11.2. APPENDIX B1: OCCUPIED CHANNEL BANDWIDTH

11.2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	Verdict
2GFSK-400 kbps.LP	Ant1	LCH	0.761	PASS
		MCH	0.760	PASS
		HCH	0.756	PASS

11.2.1. Test Graphs



11.3. APPENDIX C1: MAXIMUM CONDUCTED OUTPUT POWER

11.3.1. Test Result

Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK-400 kbps.LP	Ant1	LCH	10.97	≤30	PASS
		MCH	11.46	≤30	PASS
		HCH	11.52	≤30	PASS

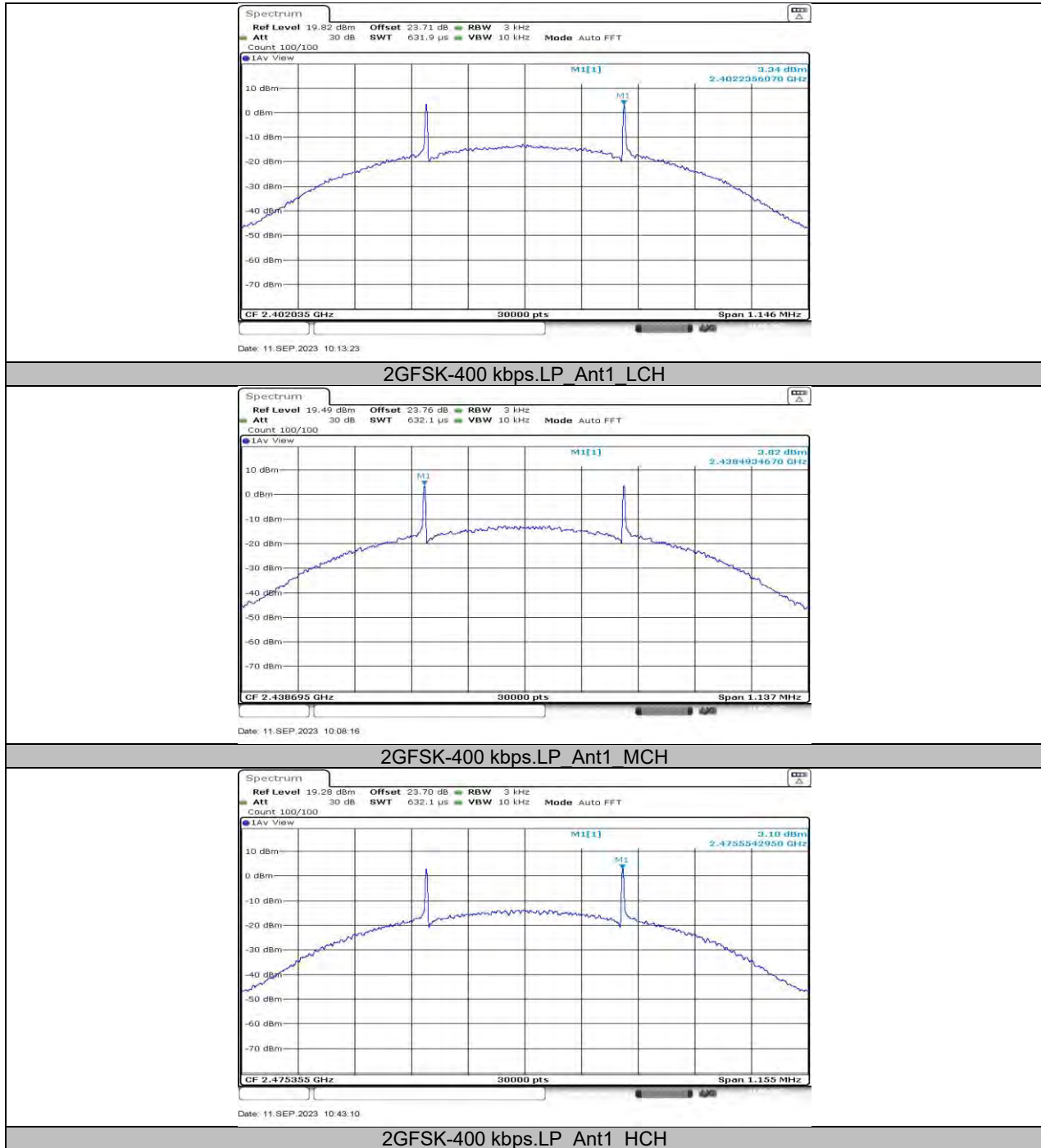
Note: Note: 1. Conducted Power=Meas. Level+ Correction Factor
2. The Duty Cycle Factor had already compensated to the test data.

11.4. APPENDIX D1: MAXIMUM POWER SPECTRAL DENSITY

11.4.1. Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Duty Cycle Correction Factor (dB)	Final Result [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2GFSK-400 kbps.LP	Ant1	LCH	3.34	2.38	5.72	≤8.00	PASS
		MCH	3.82	2.38	6.20	≤8.00	PASS
		HCH	3.10	2.38	5.48	≤8.00	PASS

11.4.2. Test Graphs

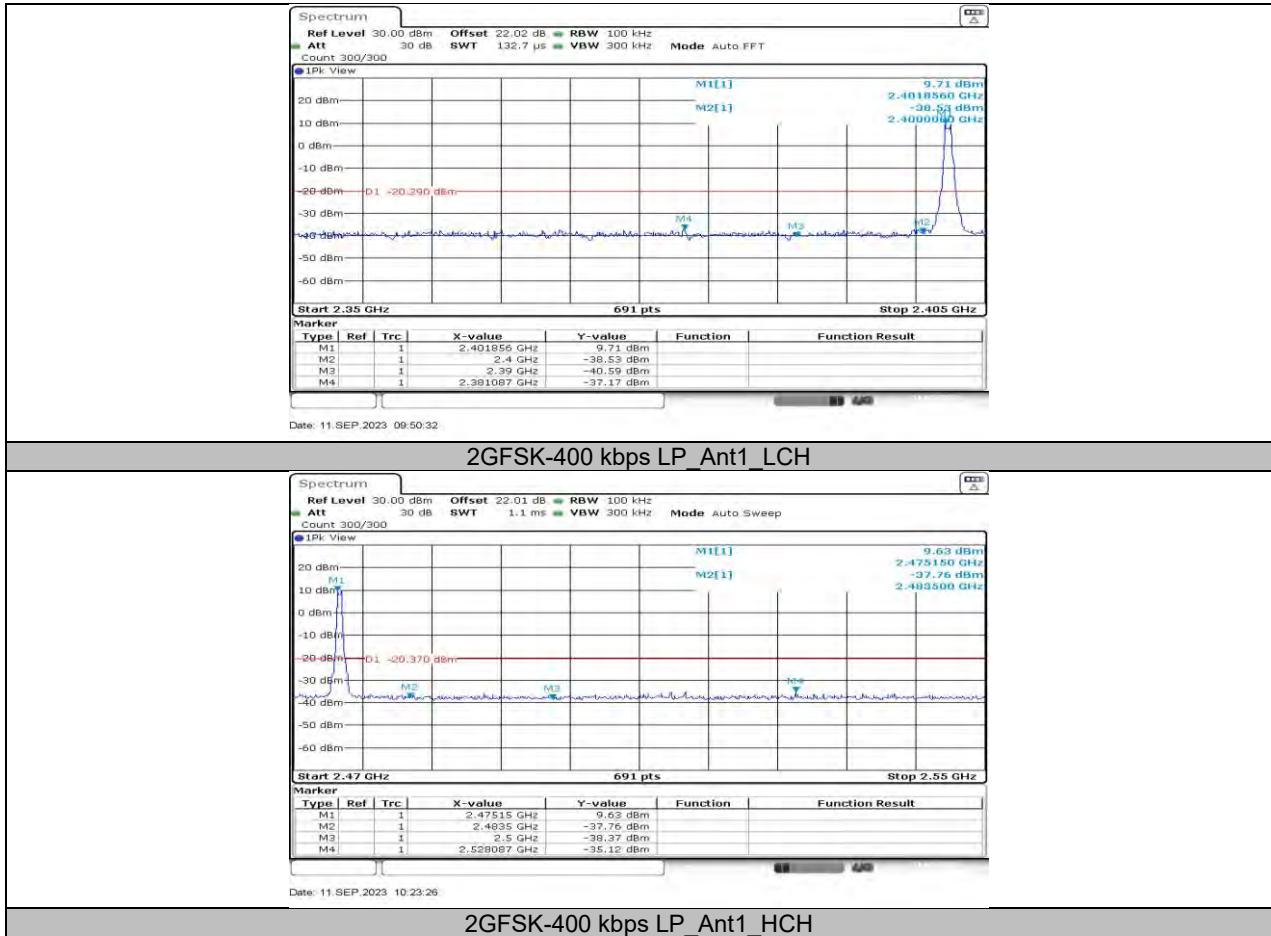


11.5. APPENDIX E1: BAND EDGE MEASUREMENTS

11.5.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-400 kbps LP	Ant1	LCH	See the below graphs	PASS
		HCH		PASS

11.5.2. Test Graphs

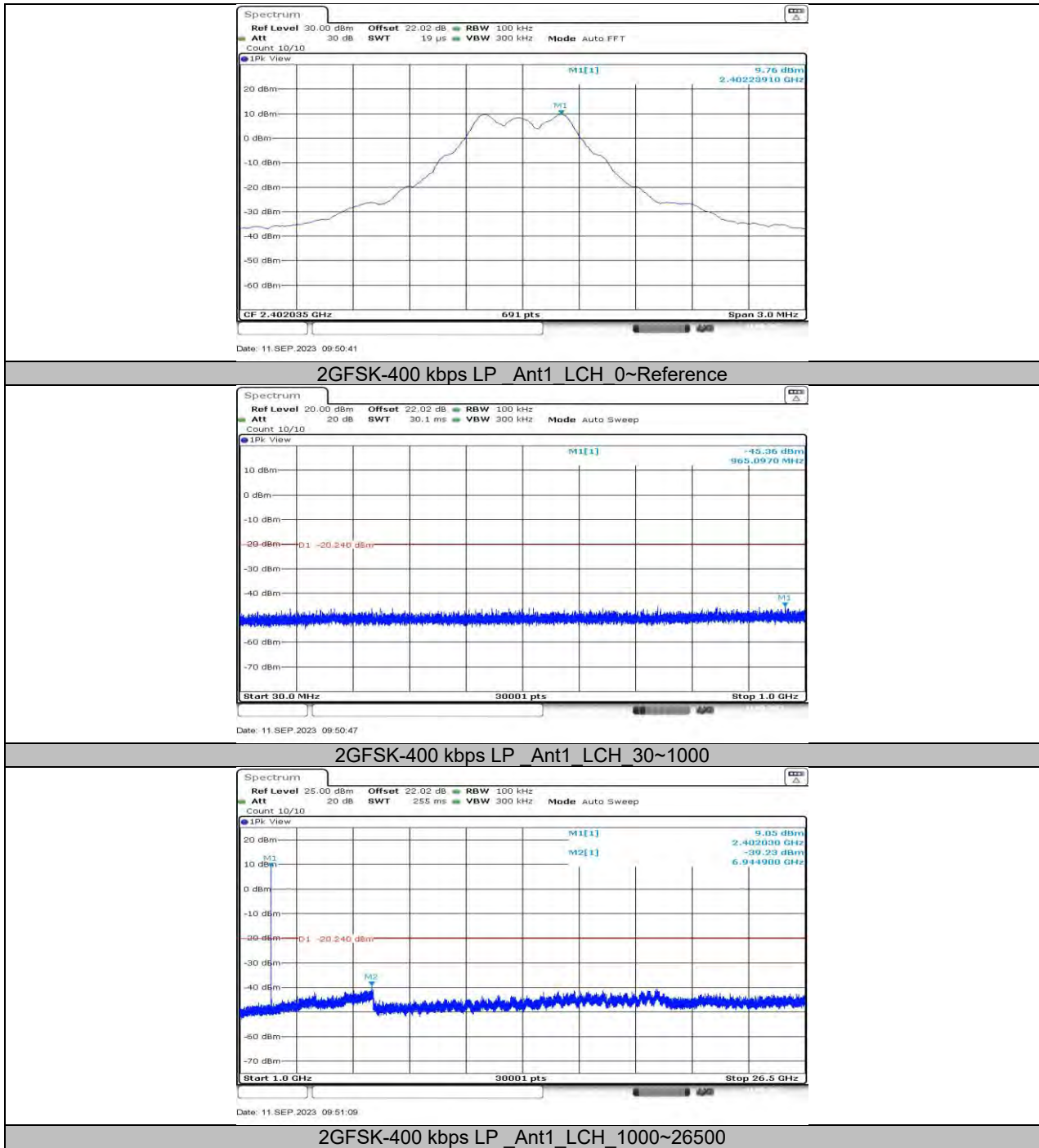


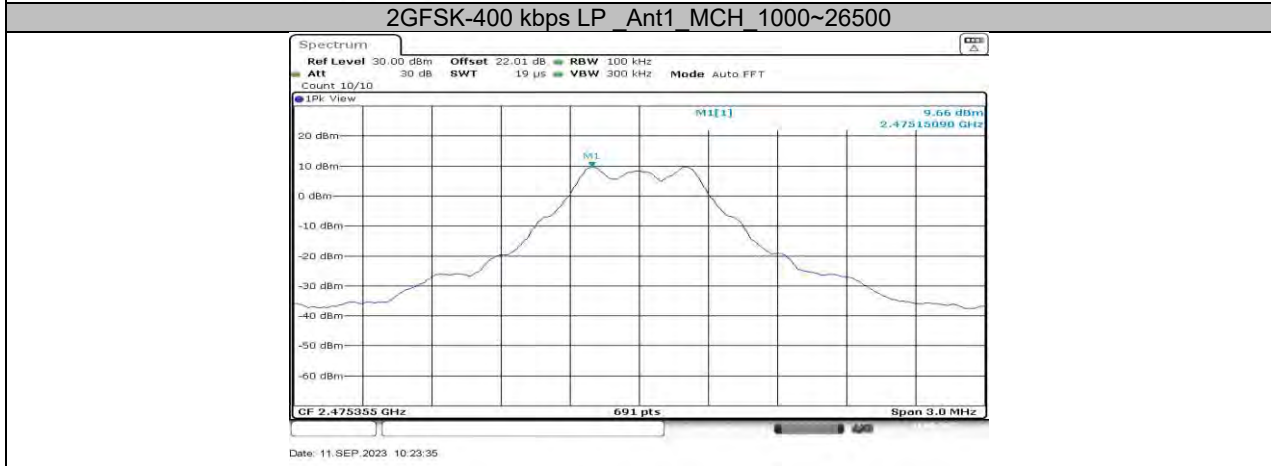
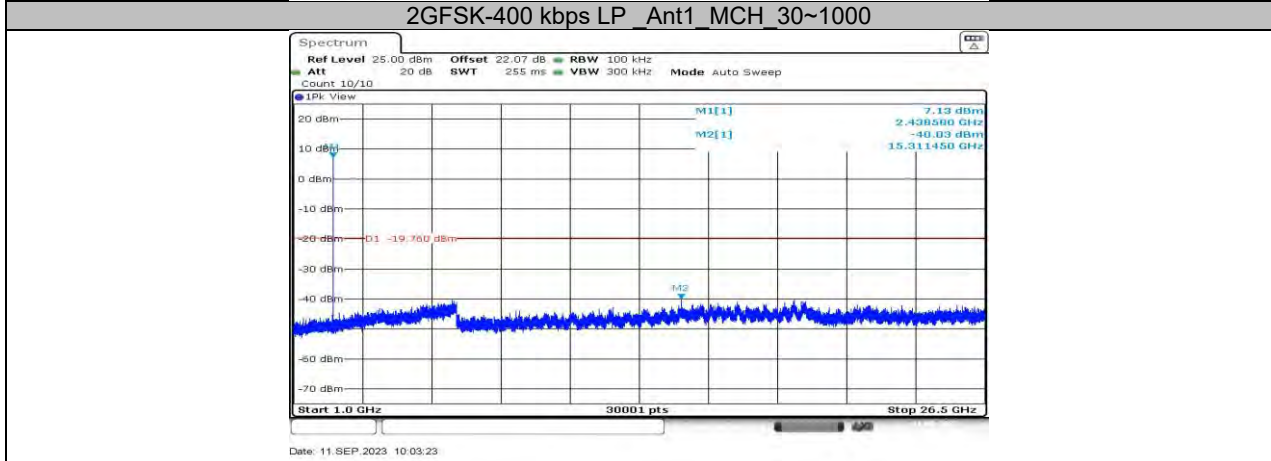
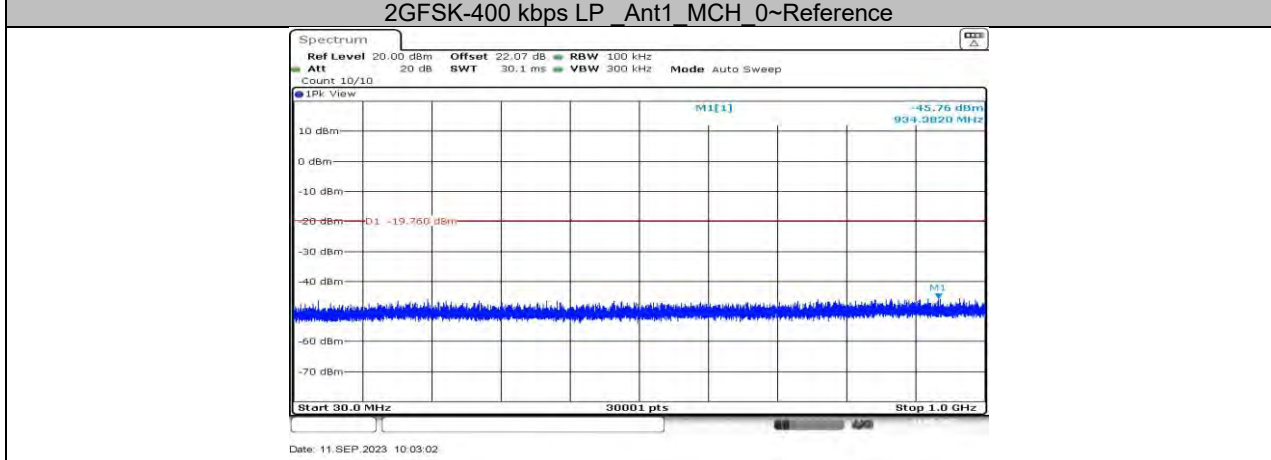
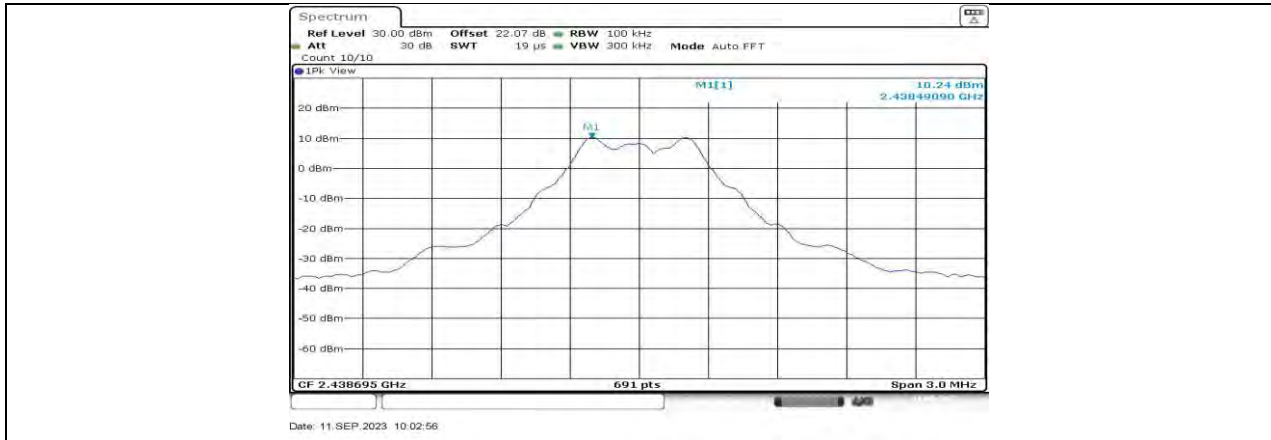
11.6. APPENDIX F1: CONDUCTED SPURIOUS EMISSION

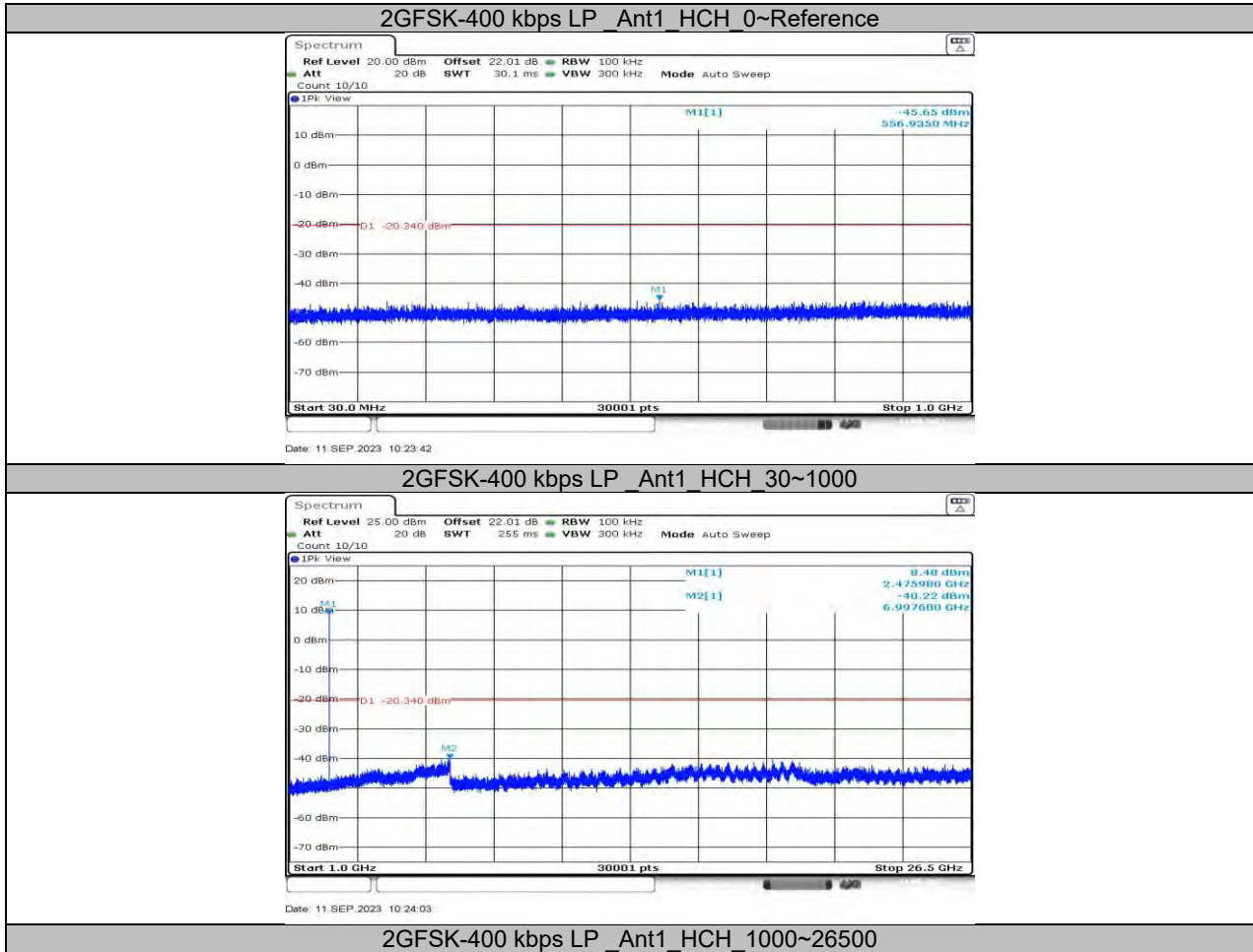
11.6.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-400 kbps LP	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS

11.6.2. Test Graphs







11.7. APPENDIX G1: DUTY CYCLE

11.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-400 kbps LP	9.681	16.752	0.5779	57.79	2.38	0.10	1

Note:

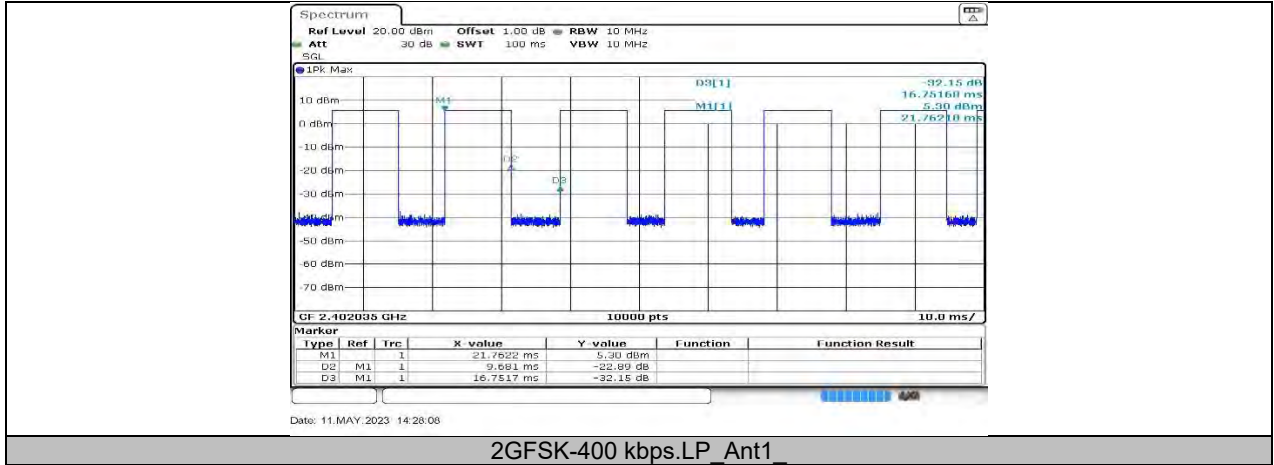
Duty Cycle Correction Factor=10log (1/x).

Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer then the next HCHer value should be used.

11.7.2. Test Graphs



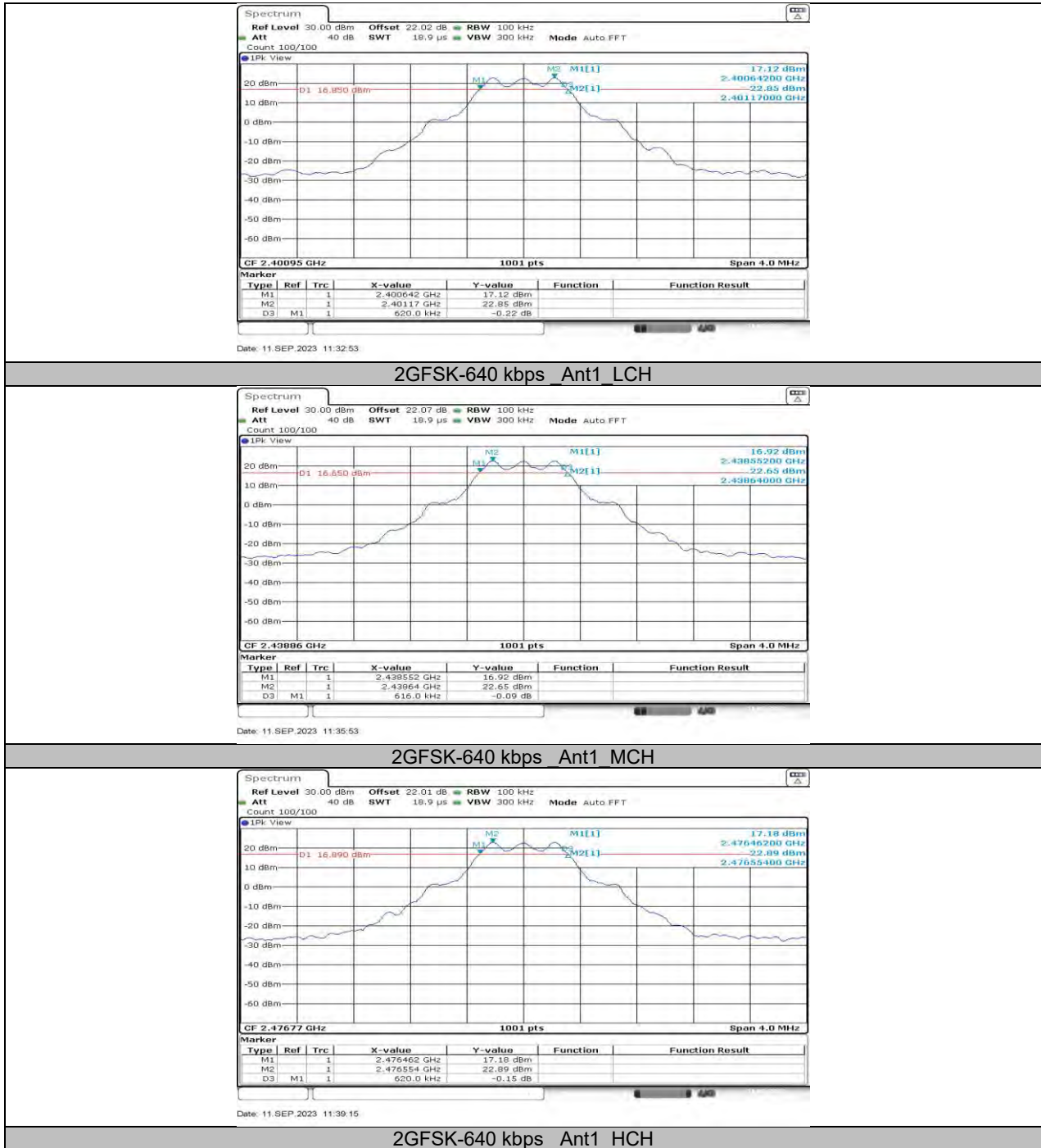
12. FCC.2400M.2GFSK.640kbps

12.1. APPENDIX A2: DTS BANDWIDTH

12.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2GFSK-640 kbps	Ant1	LCH	0.62	2400.64	2401.26	≥0.5	PASS
		MCH	0.62	2438.55	2439.17	≥0.5	PASS
		HCH	0.62	2476.46	2477.08	≥0.5	PASS

12.1.2. Test Graphs

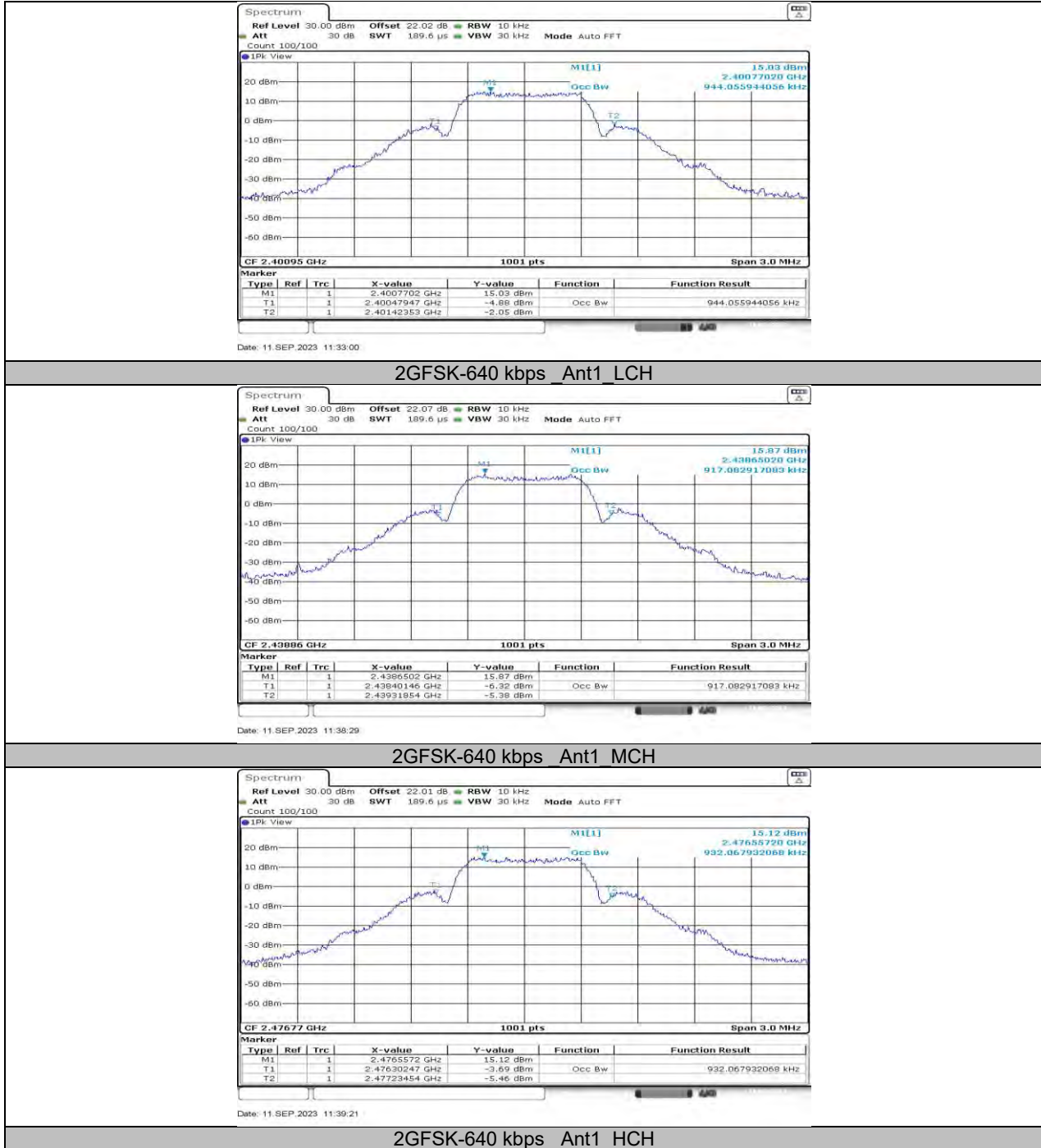


12.2. APPENDIX B2: OCCUPIED CHANNEL BANDWIDTH

12.2.1. Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
2GFSK-640 kbps	Ant1	LCH	0.944	2400.4795	2401.4235	PASS
		MCH	0.917	2438.4015	2439.3185	PASS
		HCH	0.932	2476.3025	2477.2345	PASS

12.2.2. Test Graphs



12.3. APPENDIX C2: MAXIMUM CONDUCTED OUTPUT POWER

12.3.1. Test Result

Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK-640kbps	Ant1	LCH	23.41	≤30	PASS
		MCH	23.79	≤30	PASS
		HCH	24.05	≤30	PASS

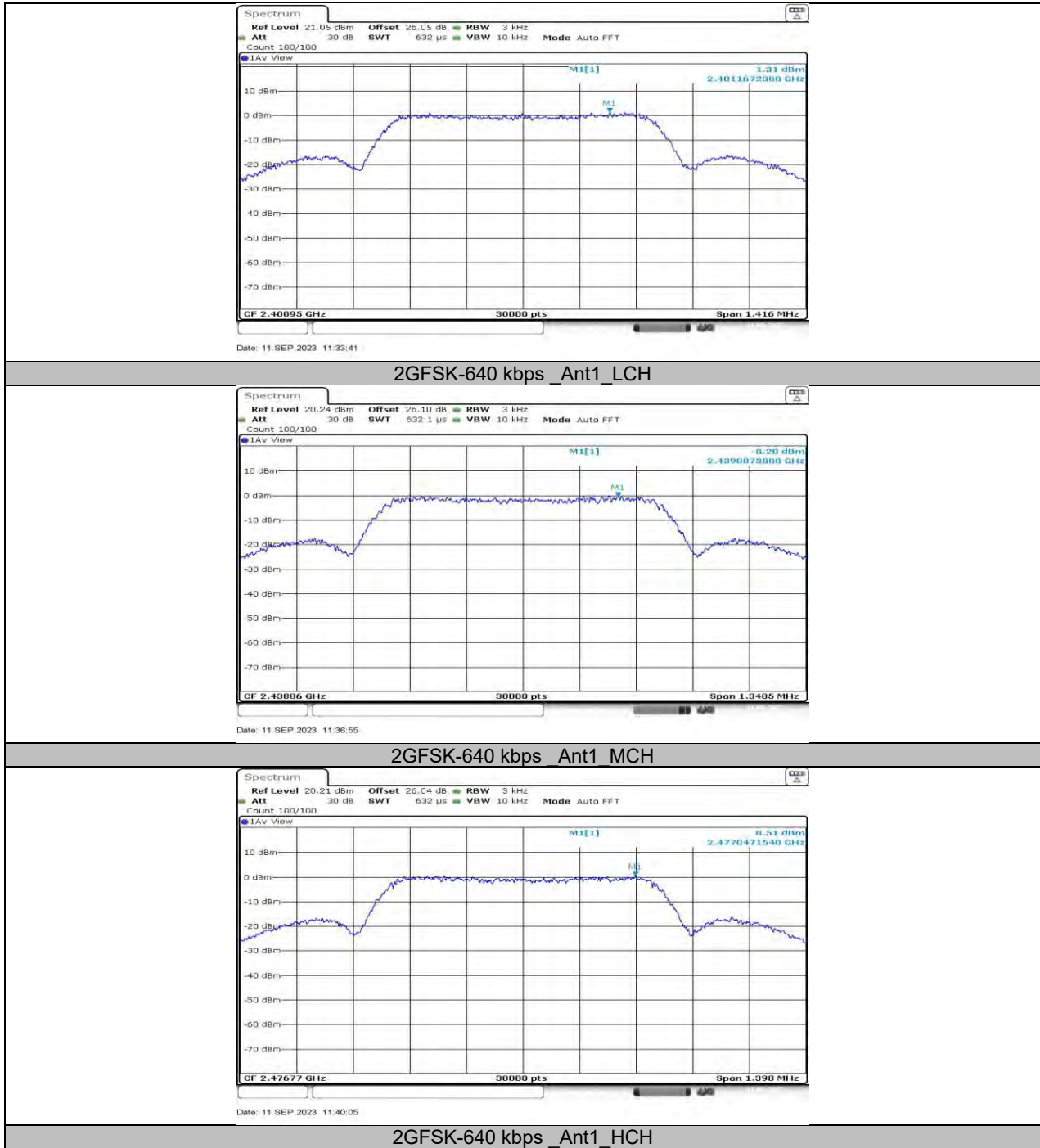
Note: Note: 1. Conducted Power=Meas. Level+ Correction Factor
2. The Duty Cycle Factor had already compensated to the test data.

12.4. APPENDIX D2: MAXIMUM POWER SPECTRAL DENSITY

12.4.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Duty Cycle Correction Factor (dB)	Final Result [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2GFSK-640 kbps	Ant1	LCH	1.31	4.39	5.70	≤8.00	PASS
		MCH	-0.2	4.39	4.19	≤8.00	PASS
		HCH	0.51	4.39	4.90	≤8.00	PASS

12.4.2. Test Graphs

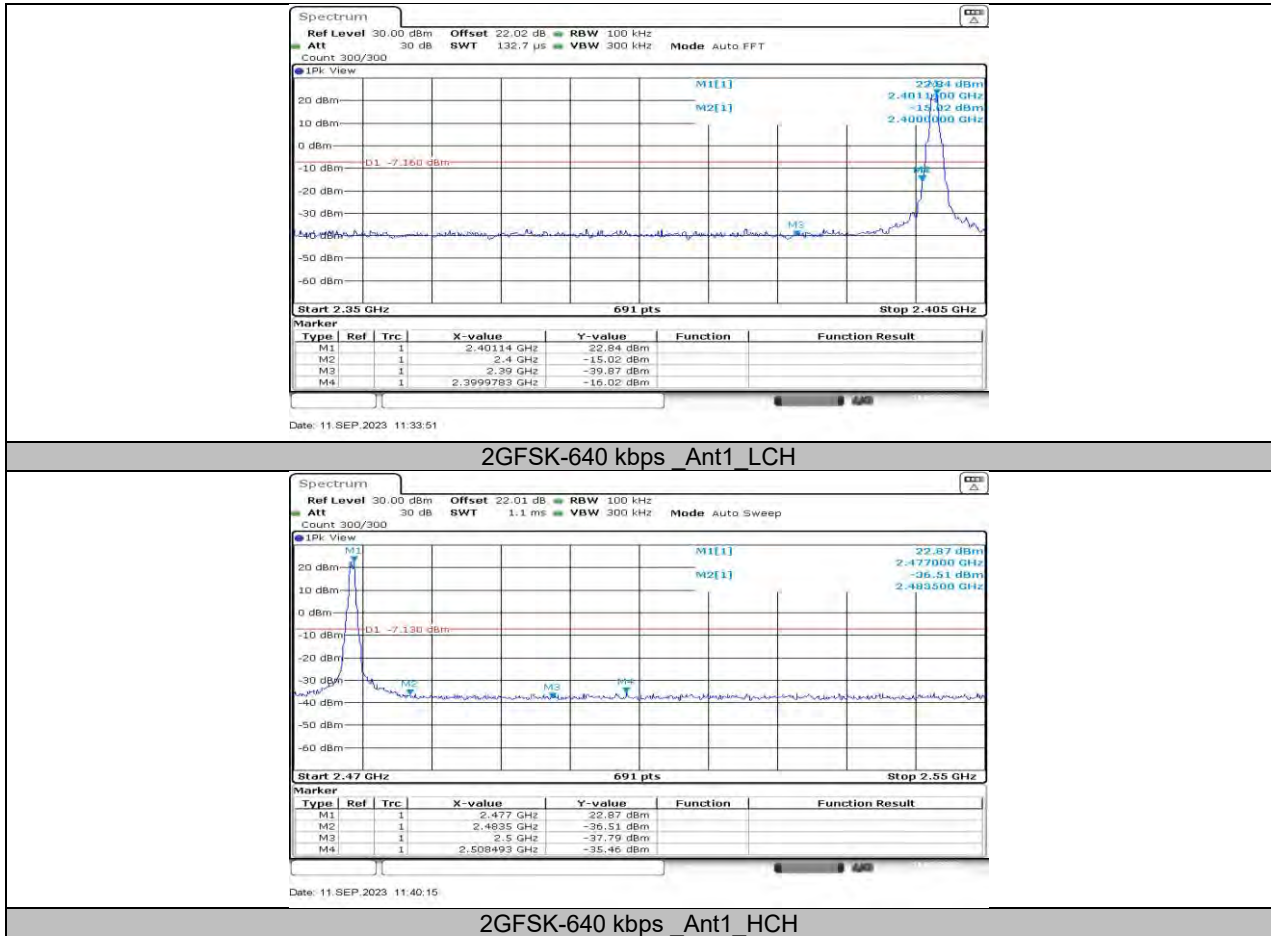


12.5. APPENDIX E2: BAND EDGE MEASUREMENTS

12.5.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-640 kbps	Ant1	LCH	See the below graphs	PASS
		HCH		PASS

12.5.2. Test Graphs

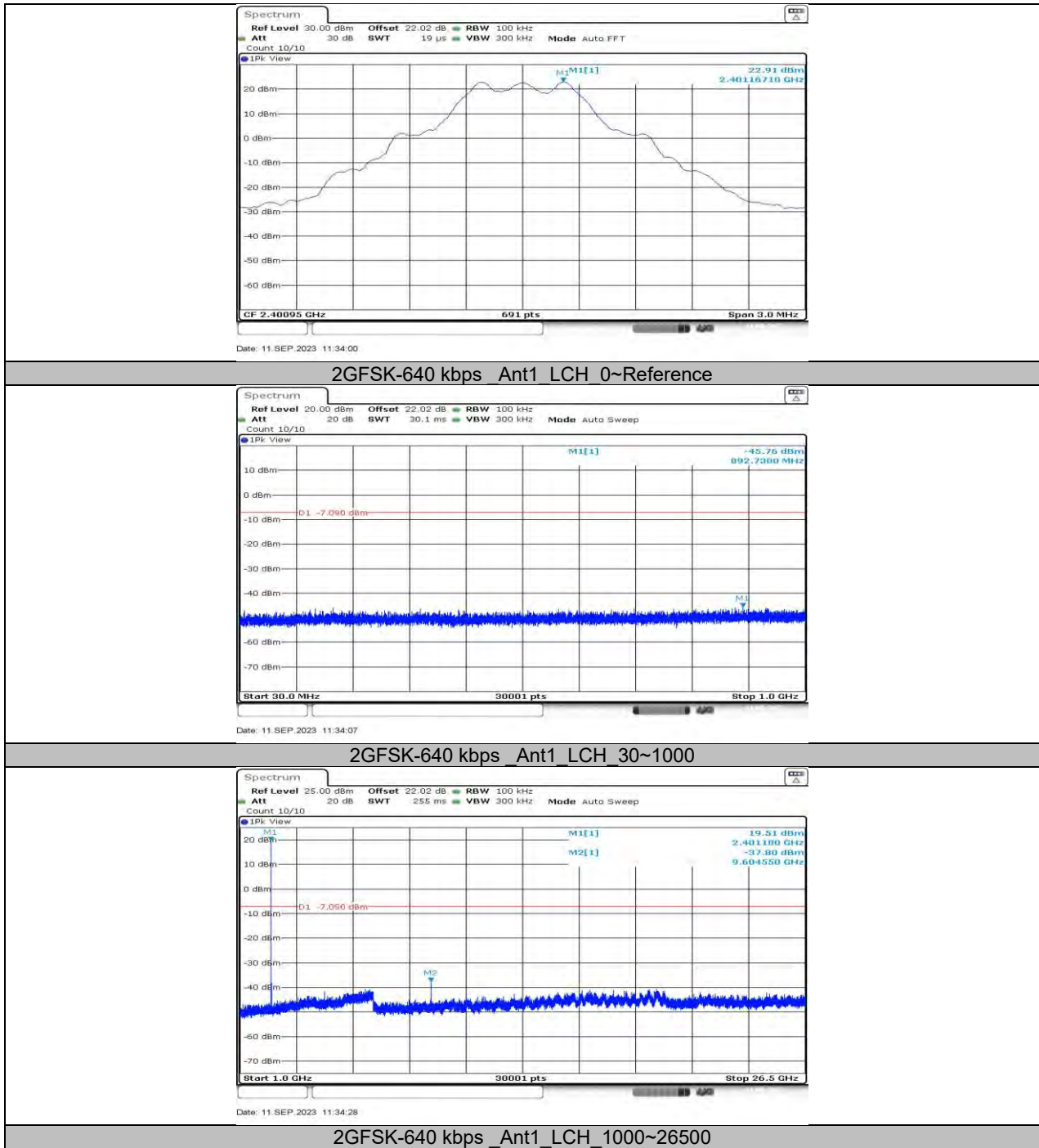


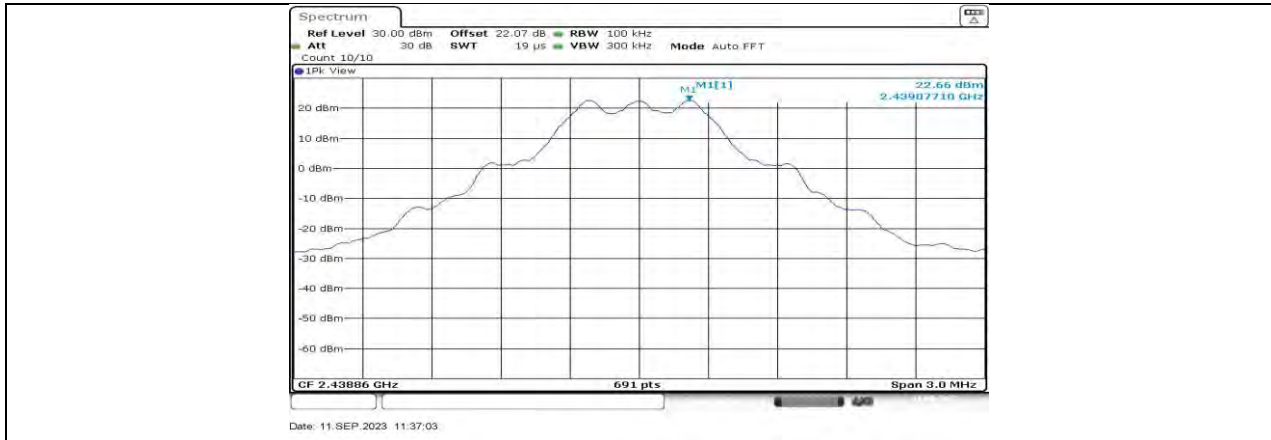
12.6. APPENDIX F2: CONDUCTED SPURIOUS EMISSION

12.6.1. Test Result

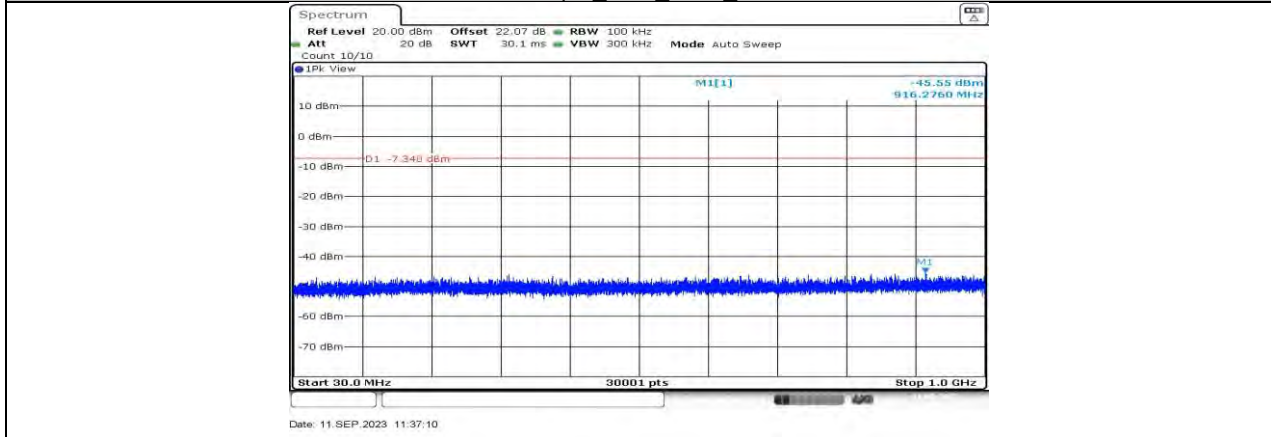
Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-640 kbps	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS

12.6.2. Test Graphs

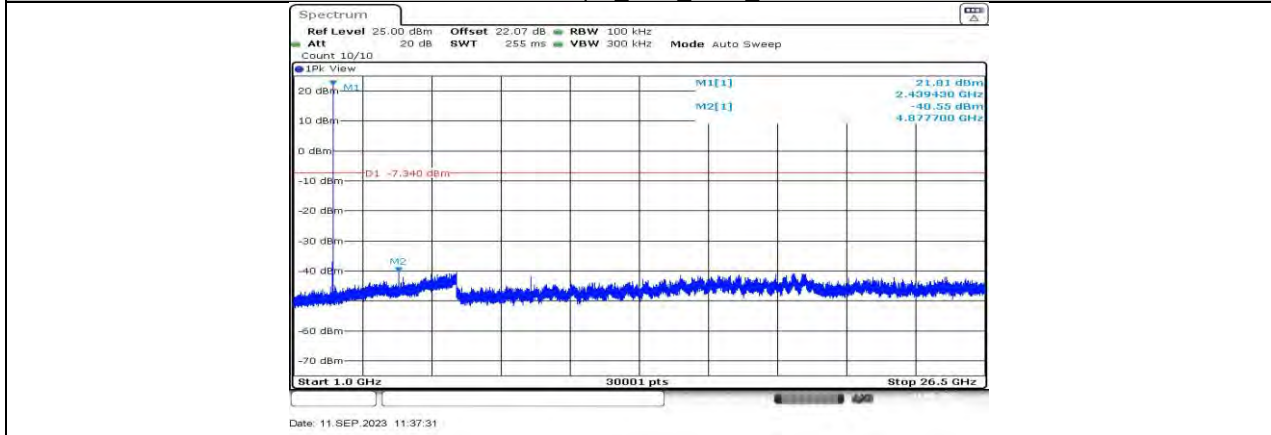




2GFSK-640 kbps Ant1 MCH 0~Reference

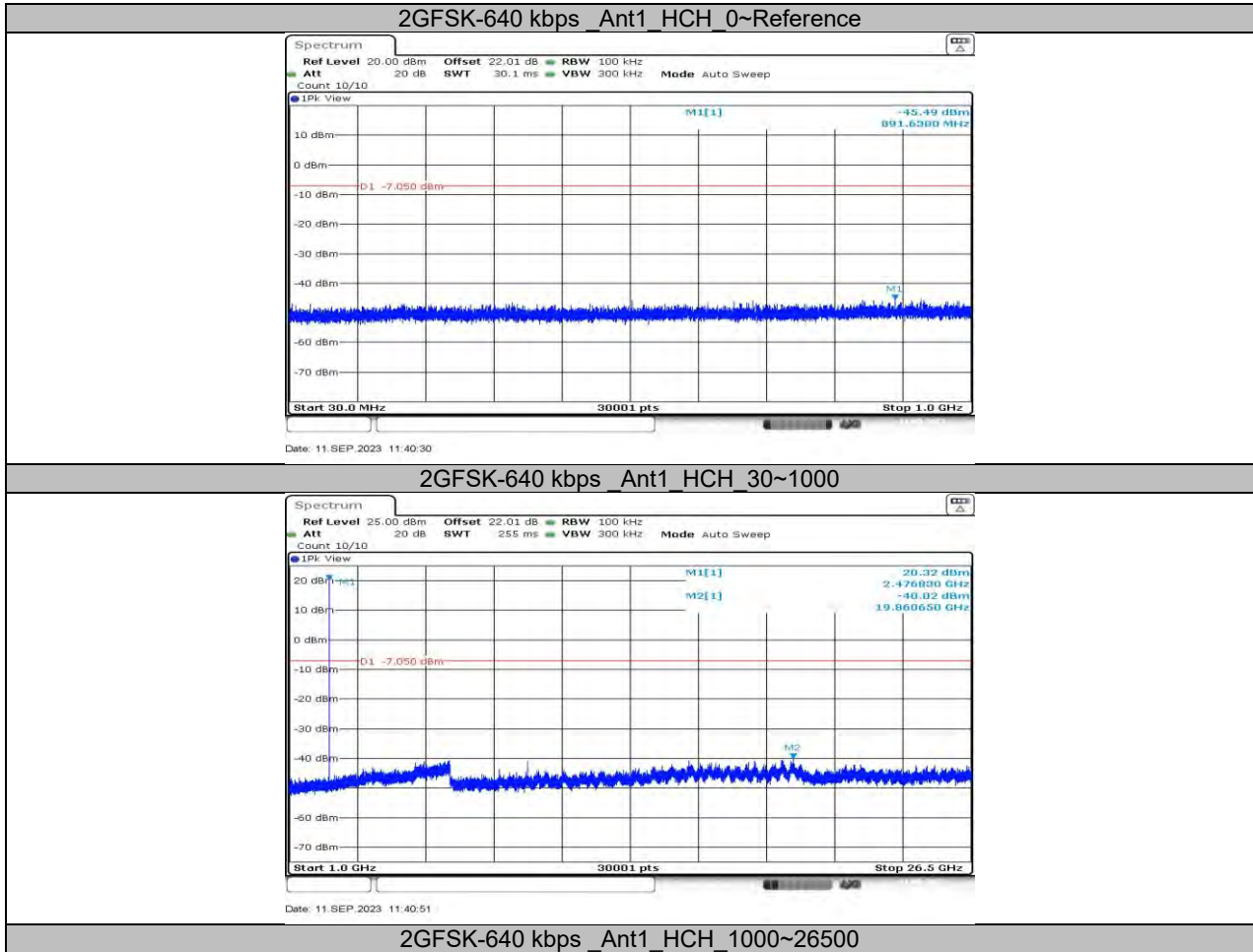


2GFSK-640 kbps Ant1 MCH 30~1000



2GFSK-640 kbps Ant1 MCH 1000~26500





12.7. APPENDIX G2: DUTY CYCLE

12.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-640 kbps	36.3636	100	0.3636	36.36	4.39	0.03	1

Note:

Duty Cycle Correction Factor=10log (1/x).

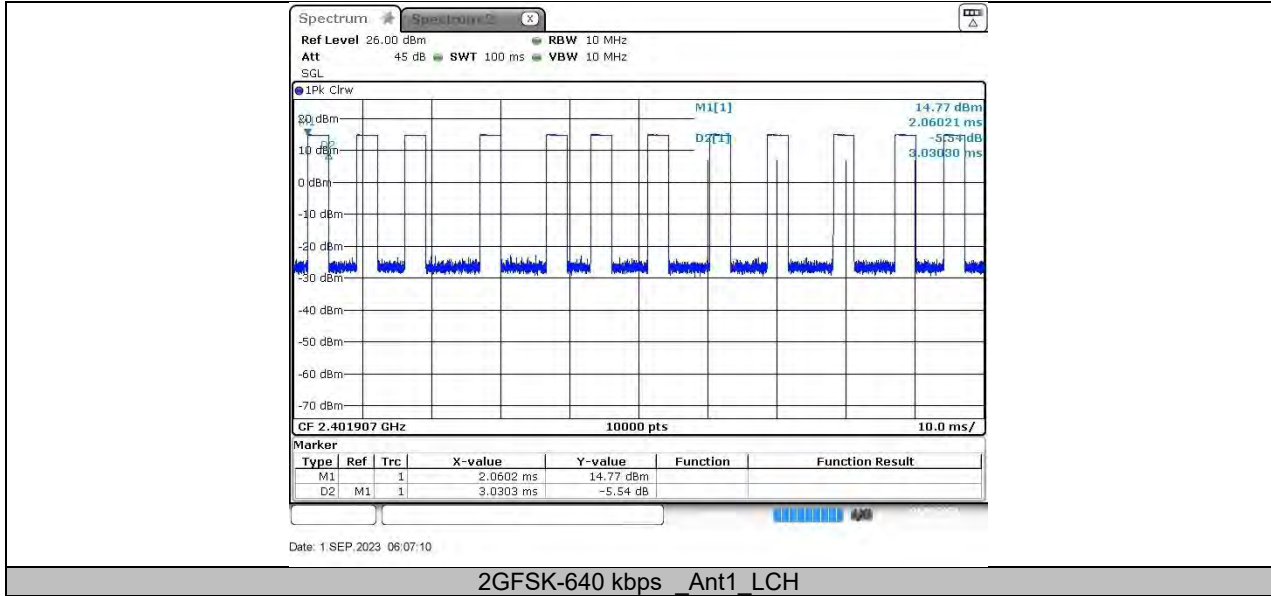
Where: x is Duty Cycle (Linear)

Where: T is On Time

On Time=3.0303*12=36.3636ms

If that calculated VBW is not available on the analyzer then the next higher value should be used.

12.7.2. Test Graphs



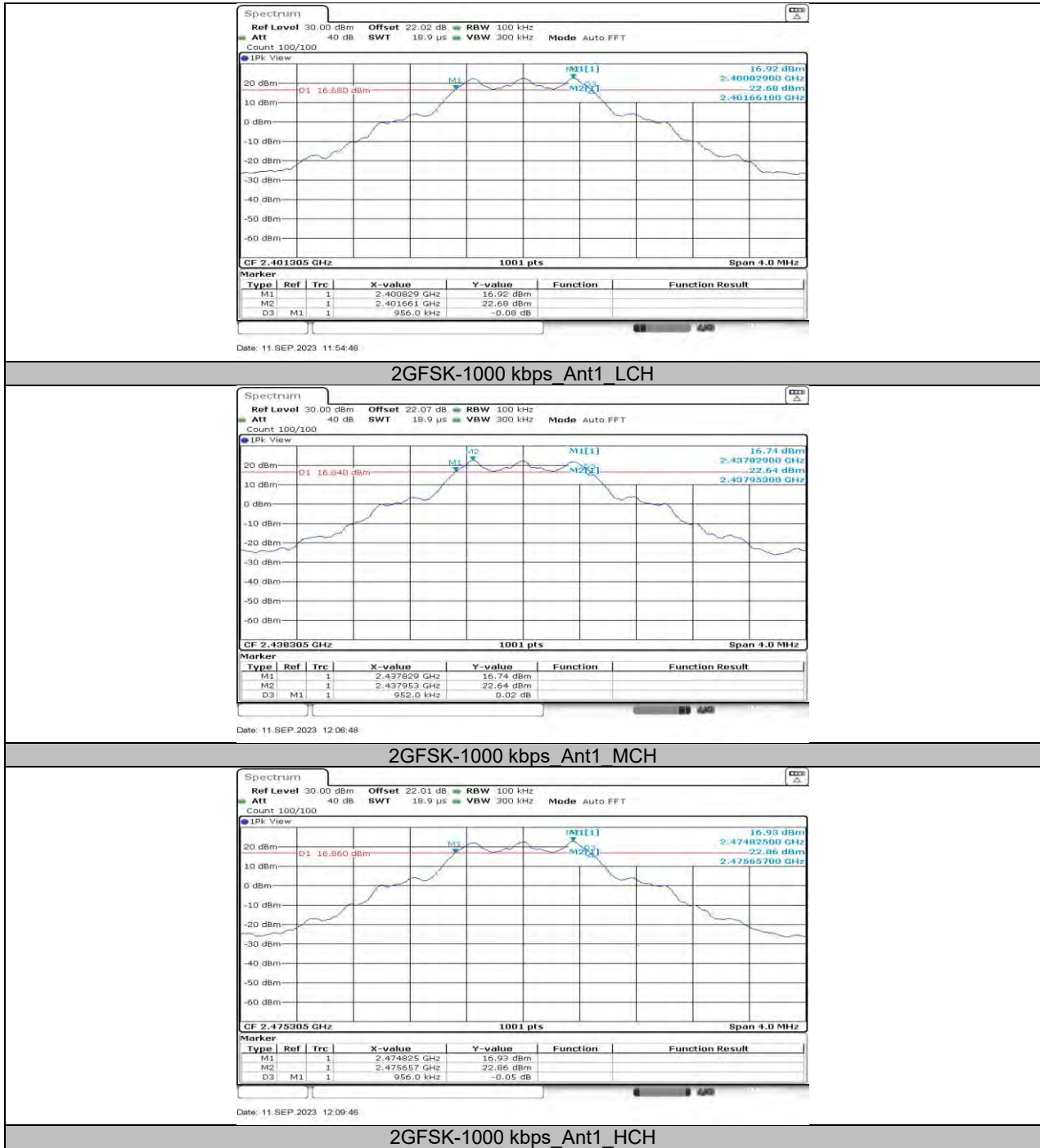
13. FCC.2400M.2GFSK.1000kbps

13.1. APPENDIX A3: DTS BANDWIDTH

13.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2GFSK-1000 kbps	Ant1	LCH	0.96	2400.83	2401.79	≥0.5	PASS
		MCH	0.95	2437.83	2438.78	≥0.5	PASS
		HCH	0.96	2474.83	2475.78	≥0.5	PASS

13.1.2. Test Graphs

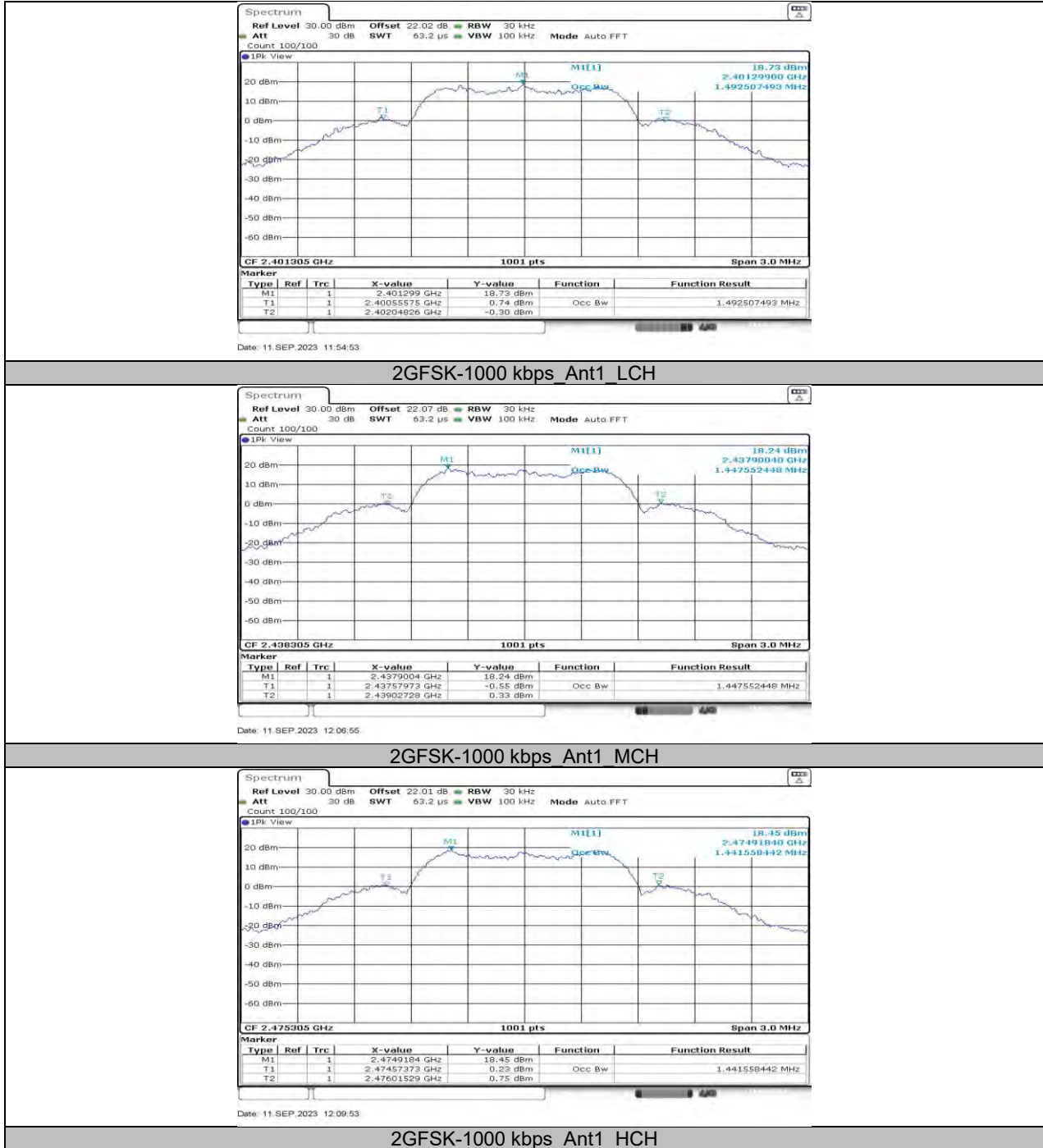


13.2. APPENDIX B3: OCCUPIED CHANNEL BANDWIDTH

13.2.1. Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
2GFSK-1000 kbps	Ant1	LCH	1.493	2400.5557	2402.0483	PASS
		MCH	1.448	2437.5797	2439.0273	PASS
		HCH	1.442	2474.5737	2476.0153	PASS

13.2.2. Test Graphs



13.3. APPENDIX C3: MAXIMUM CONDUCTED OUTPUT POWER

13.3.1. Test Result

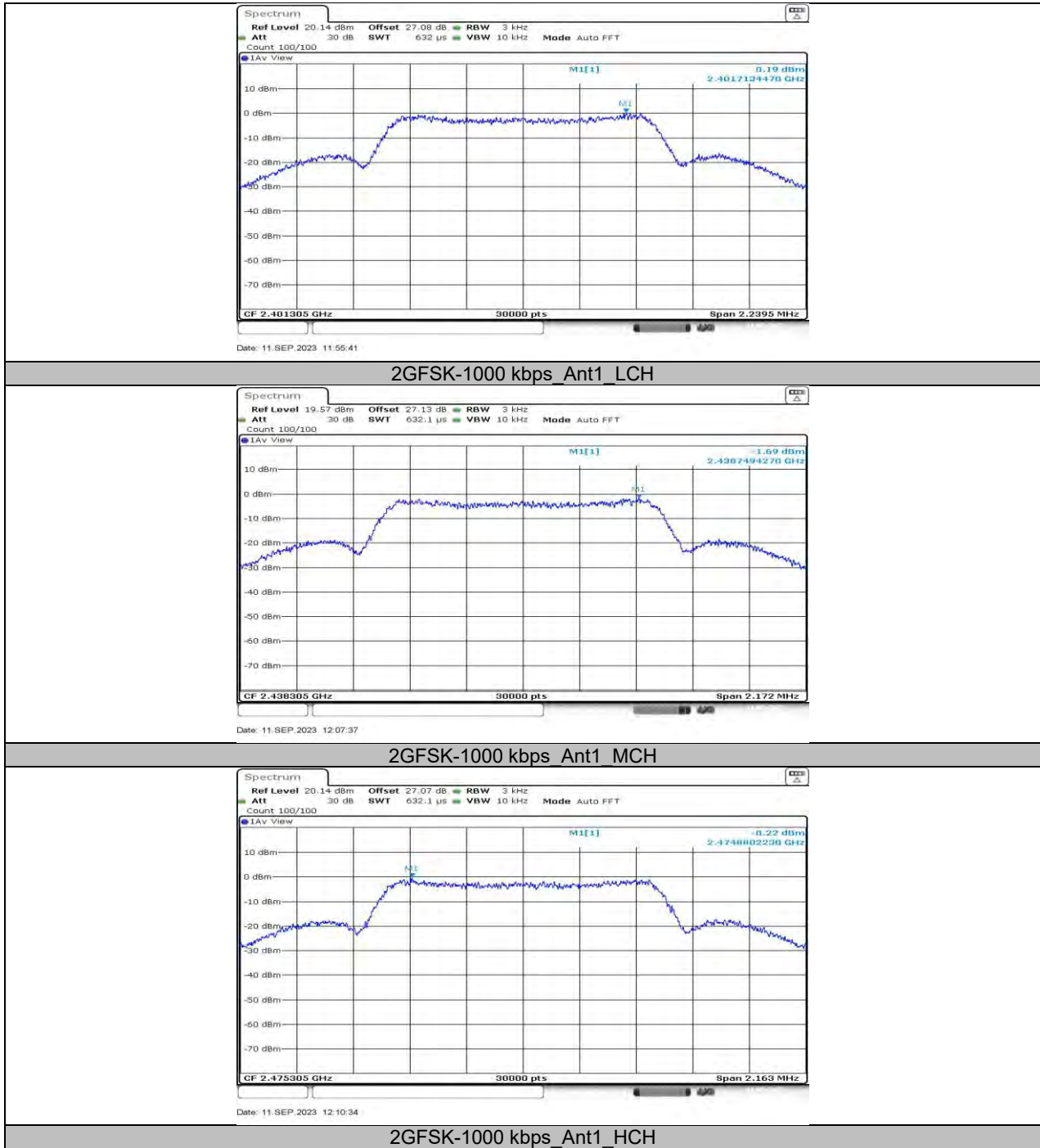
Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK 1000kbps	Ant1	LCH	23.37	≤30	PASS
		MCH	23.77	≤30	PASS
		HCH	24.08	≤30	PASS

13.4. APPENDIX D3: MAXIMUM POWER SPECTRAL DENSITY

13.4.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm/3kHz]	Duty Cycle Correction Factor (dB)	Final Result [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2GFSK-1000 kbps	Ant1	LCH	0.19	5.34	5.53	≤8.00	PASS
		MCH	-1.69	5.34	3.65	≤8.00	PASS
		HCH	-0.22	5.34	5.12	≤8.00	PASS

13.4.2. Test Graphs

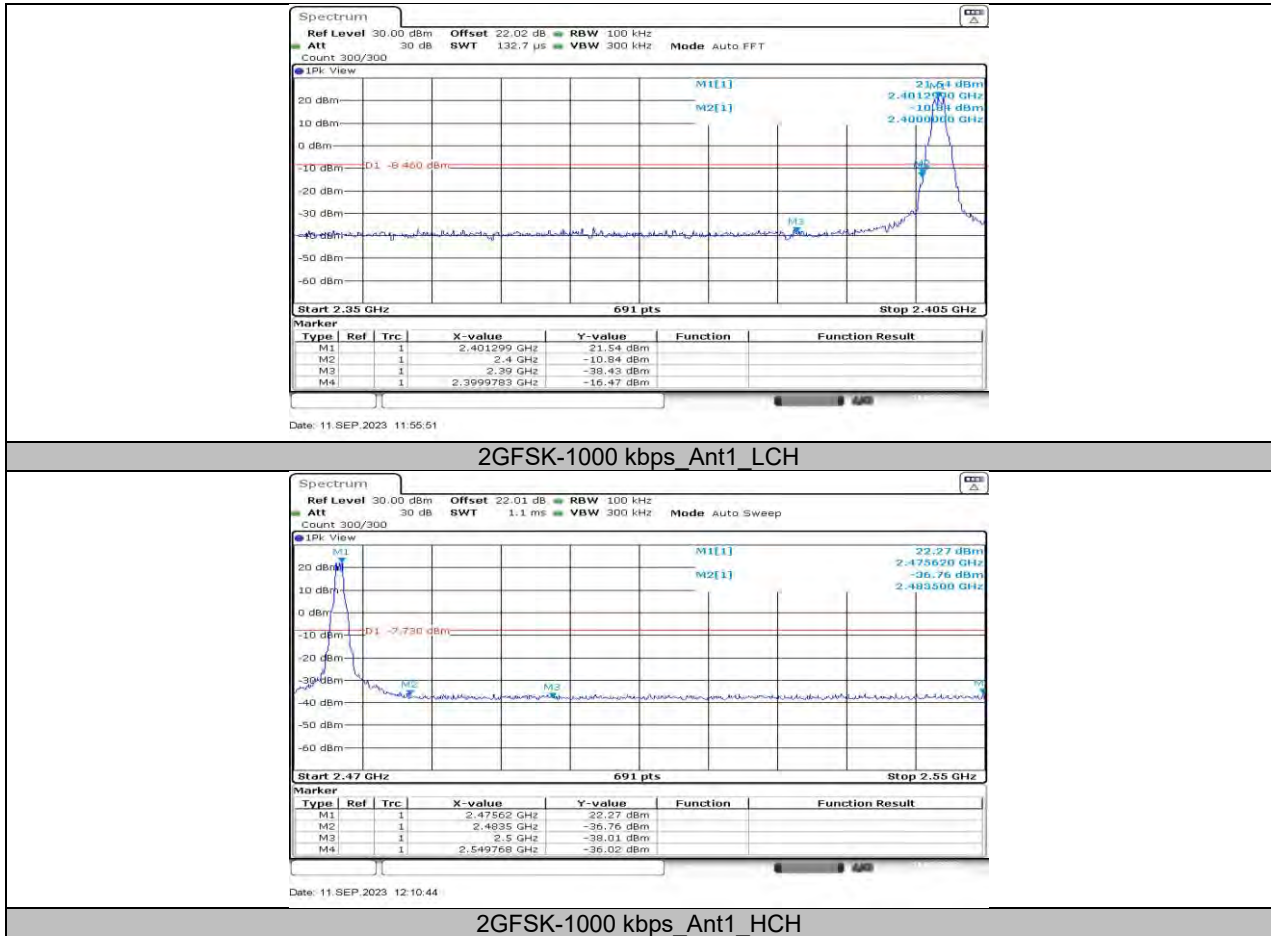


13.5. APPENDIX E3: BAND EDGE MEASUREMENTS

13.5.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-1000 kbps	Ant1	LCH	See the below graphs	PASS
		HCH		PASS

13.5.2. Test Graphs

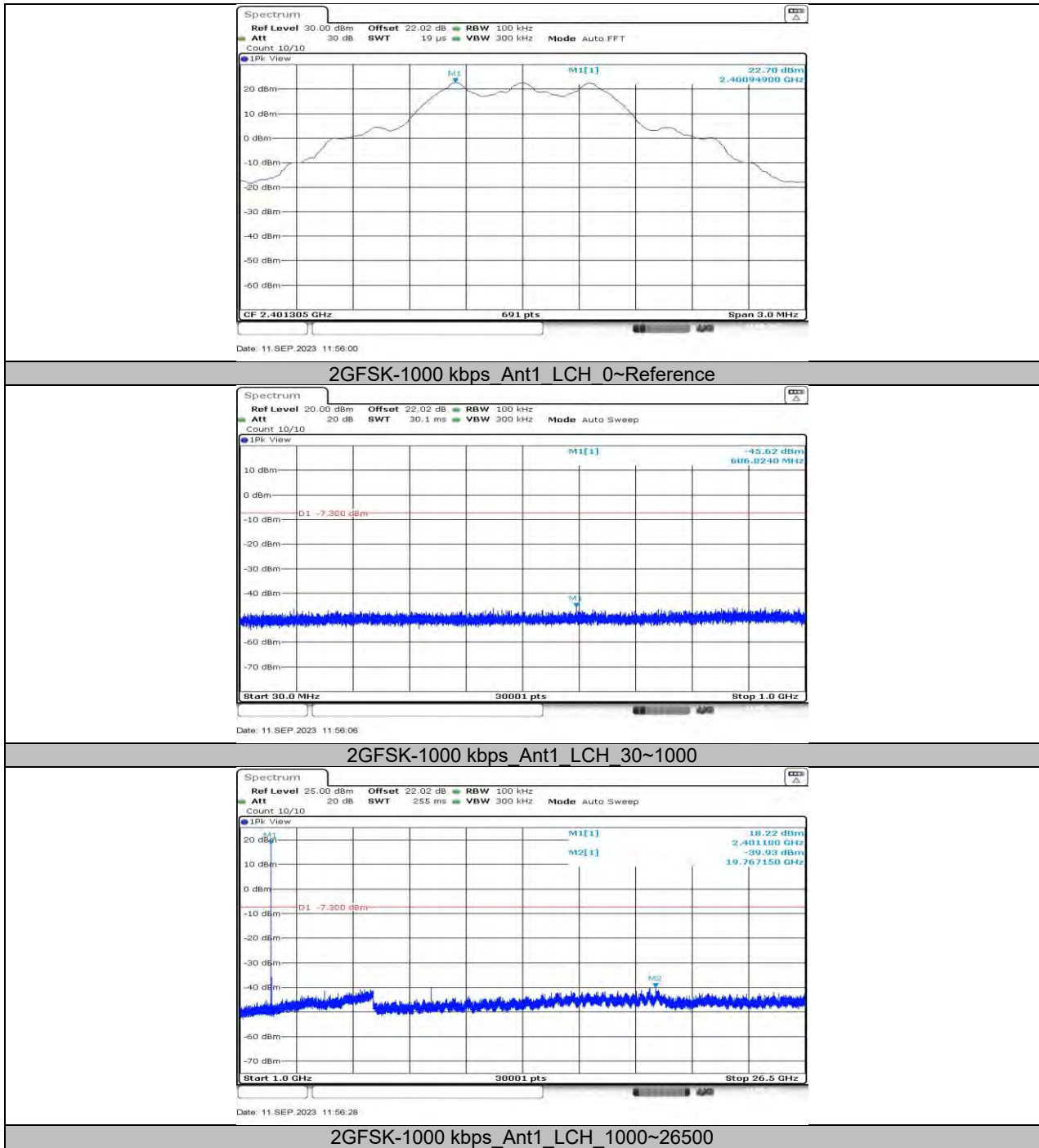


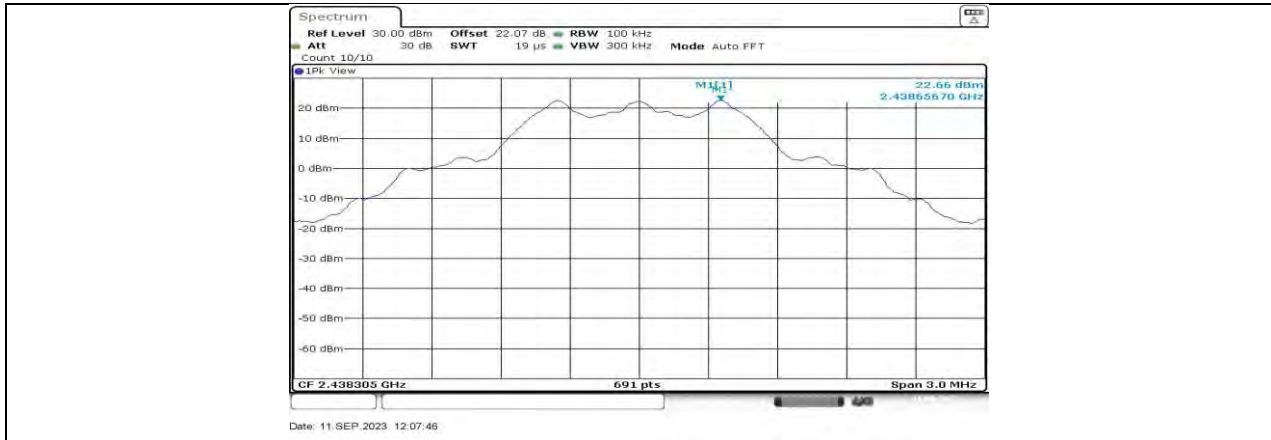
13.6. APPENDIX F3: CONDUCTED SPURIOUS EMISSION

13.6.1. Test Result

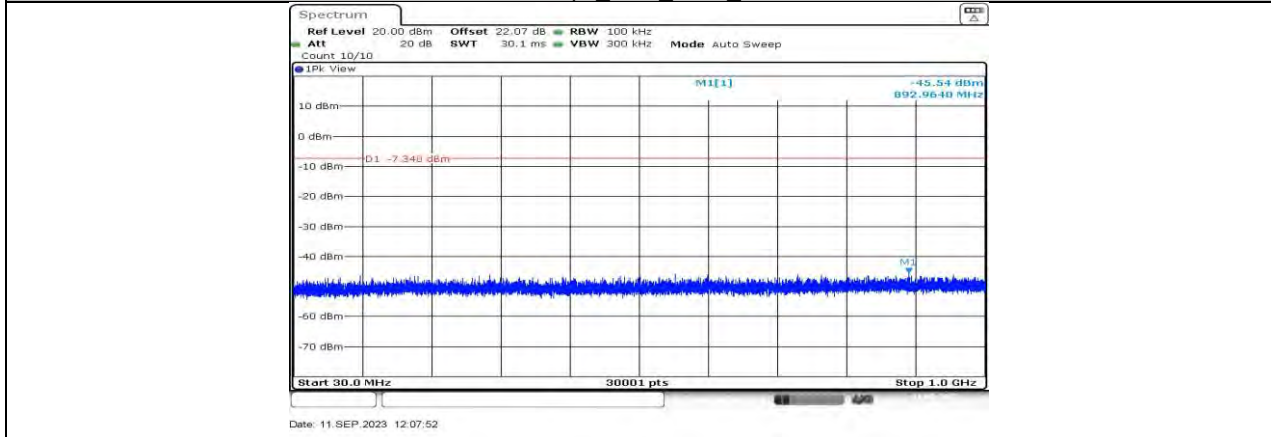
Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-1000 kbps	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS

13.6.2. Test Graphs

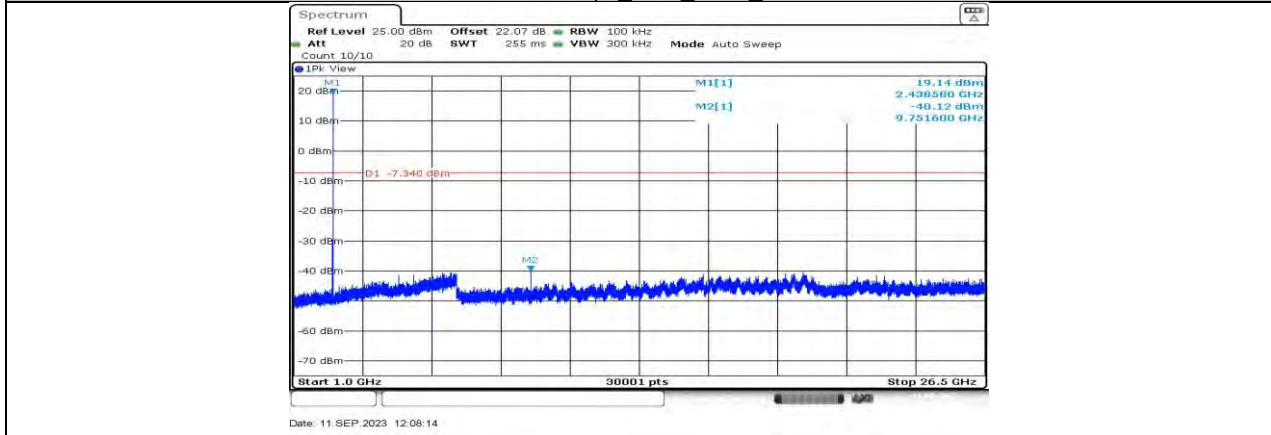




2GFSK-1000 kbps Ant1 MCH 0~Reference

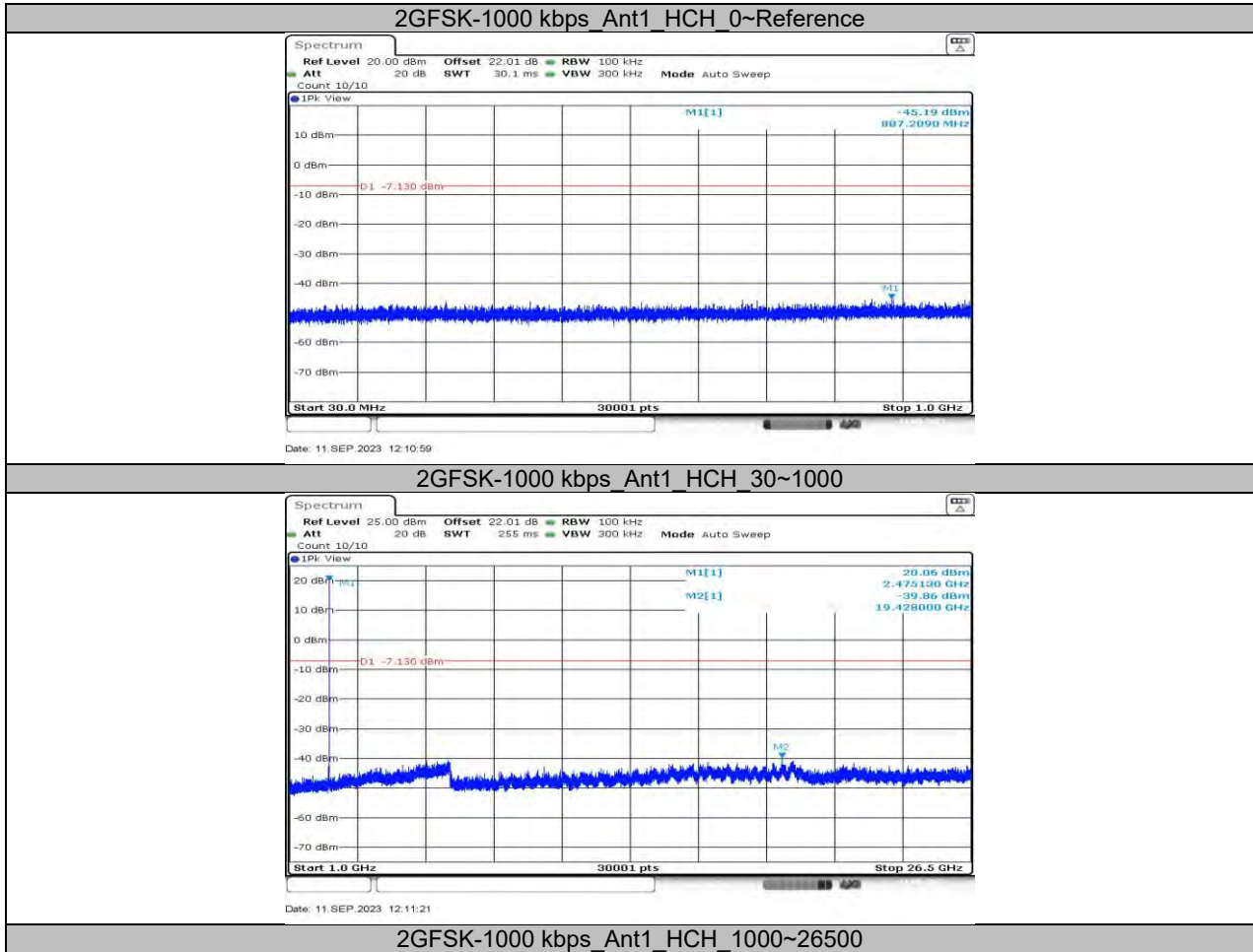


2GFSK-1000 kbps Ant1 MCH 30~1000



2GFSK-1000 kbps Ant1 MCH 1000~26500





13.7. APPENDIX G3: DUTY CYCLE

13.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-1000 kbps	29.253	100	0.2925	29.25	5.34	0.03	1

Note:

Duty Cycle Correction Factor=10log (1/x).

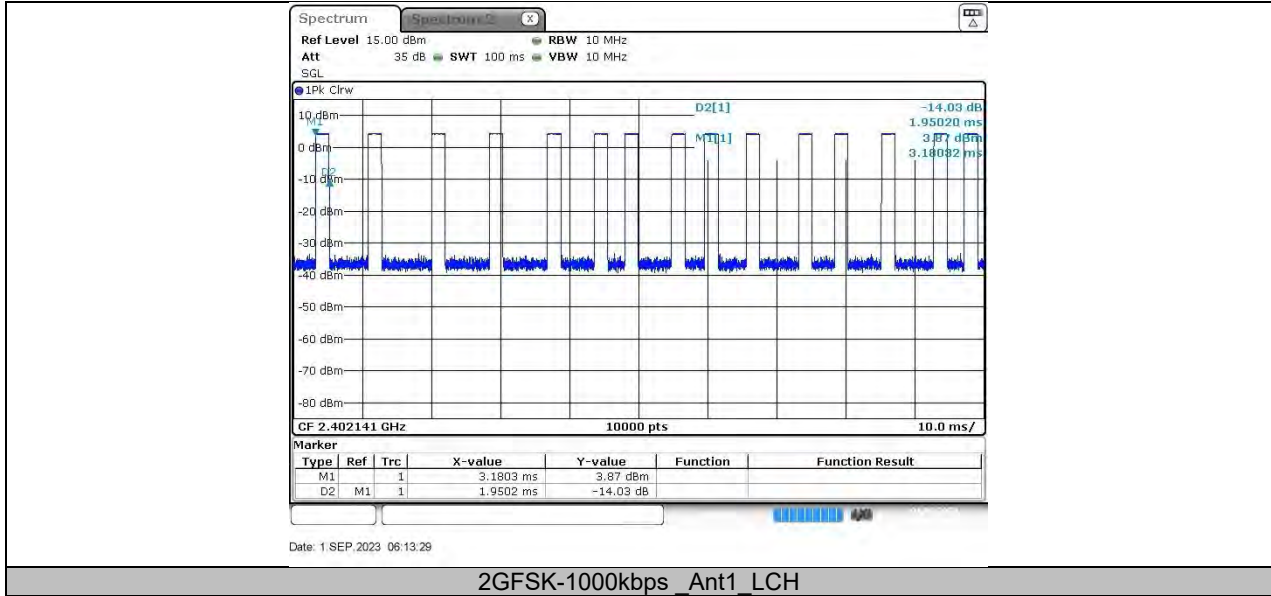
Where: x is Duty Cycle (Linear)

Where: T is On Time

On Time=1.9502*15=29.253ms

If that calculated VBW is not available on the analyzer then the next higher value should be used.

13.7.2. Test Graphs



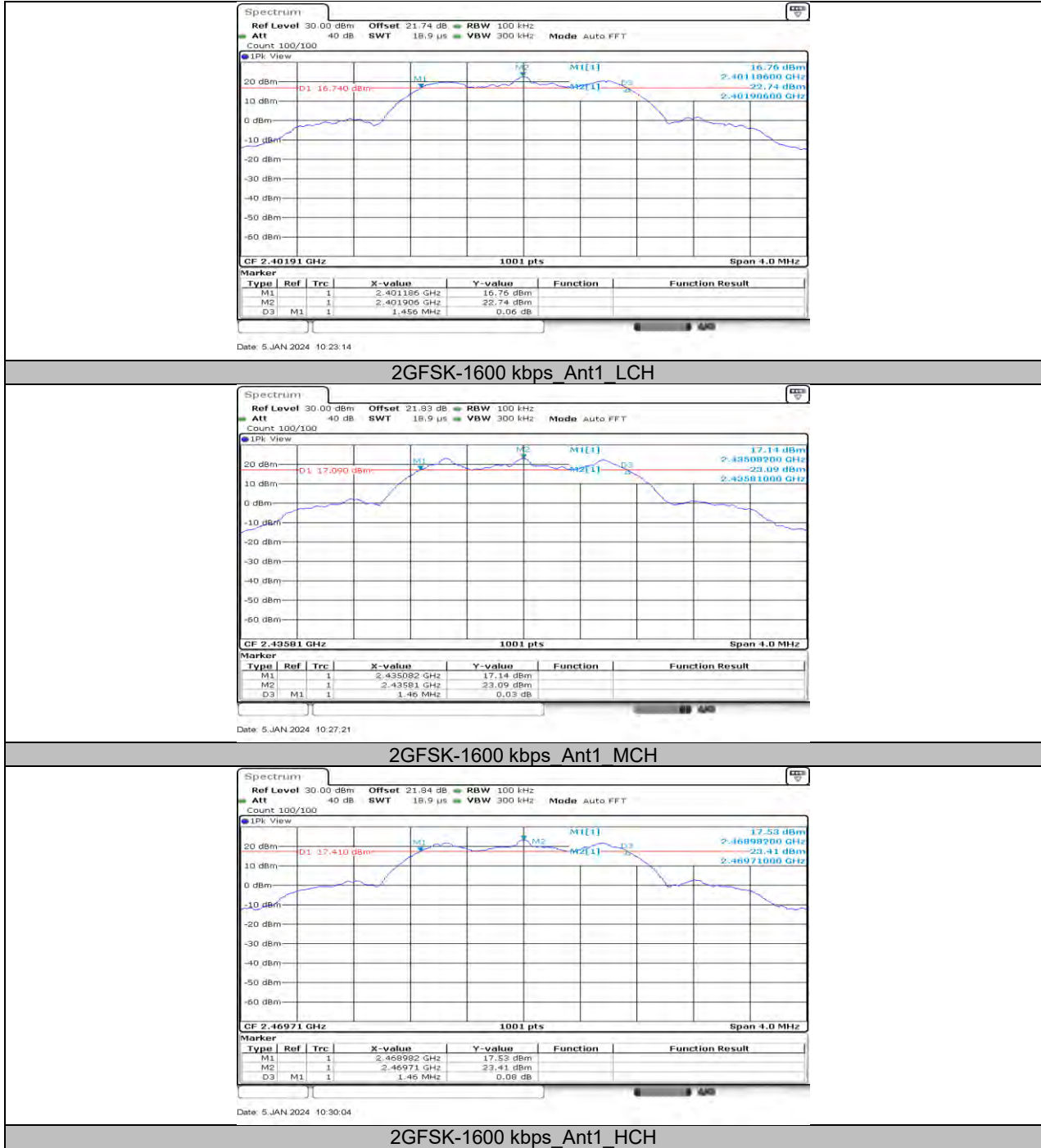
14. FCC.2400M.2GFSK.1600kbps

14.1. APPENDIX A4: DTS BANDWIDTH

14.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2GFSK-1600 kbps	Ant1	LCH	1.46	2401.19	2402.64	≥0.5	PASS
		MCH	1.46	2435.08	2436.54	≥0.5	PASS
		HCH	1.46	2468.98	2470.44	≥0.5	PASS

14.1.2. Test Graphs

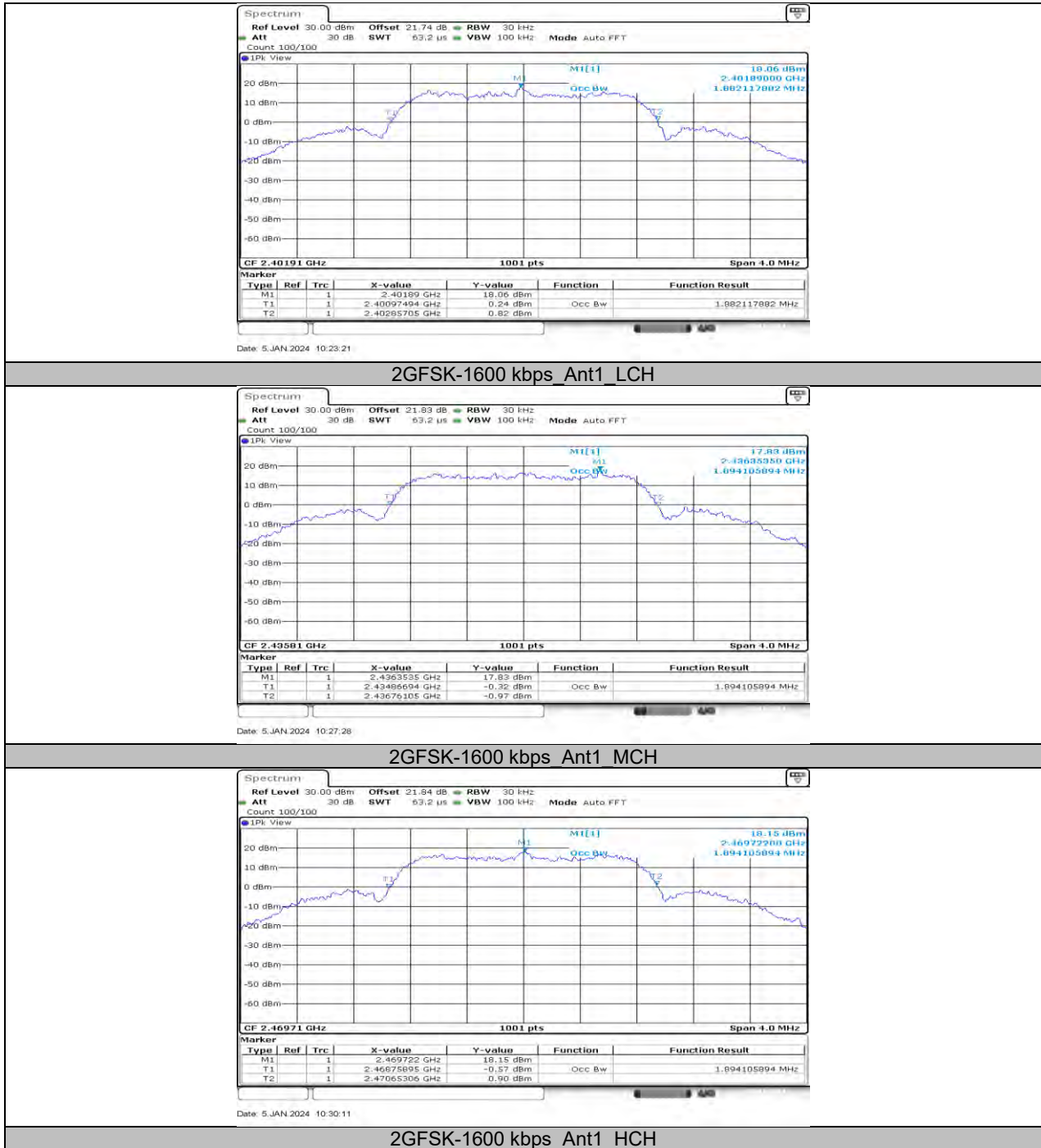


14.2. APPENDIX B4: OCCUPIED CHANNEL BANDWIDTH

14.2.1. Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
2GFSK-1600 kbps	Ant1	LCH	1.882	2400.9749	2402.8571	PASS
		MCH	1.894	2434.8669	2436.7610	PASS
		HCH	1.894	2468.7590	2470.6531	PASS

14.2.2. Test Graphs



14.3. APPENDIX C4: MAXIMUM CONDUCTED OUTPUT POWER

14.3.1. Test Result

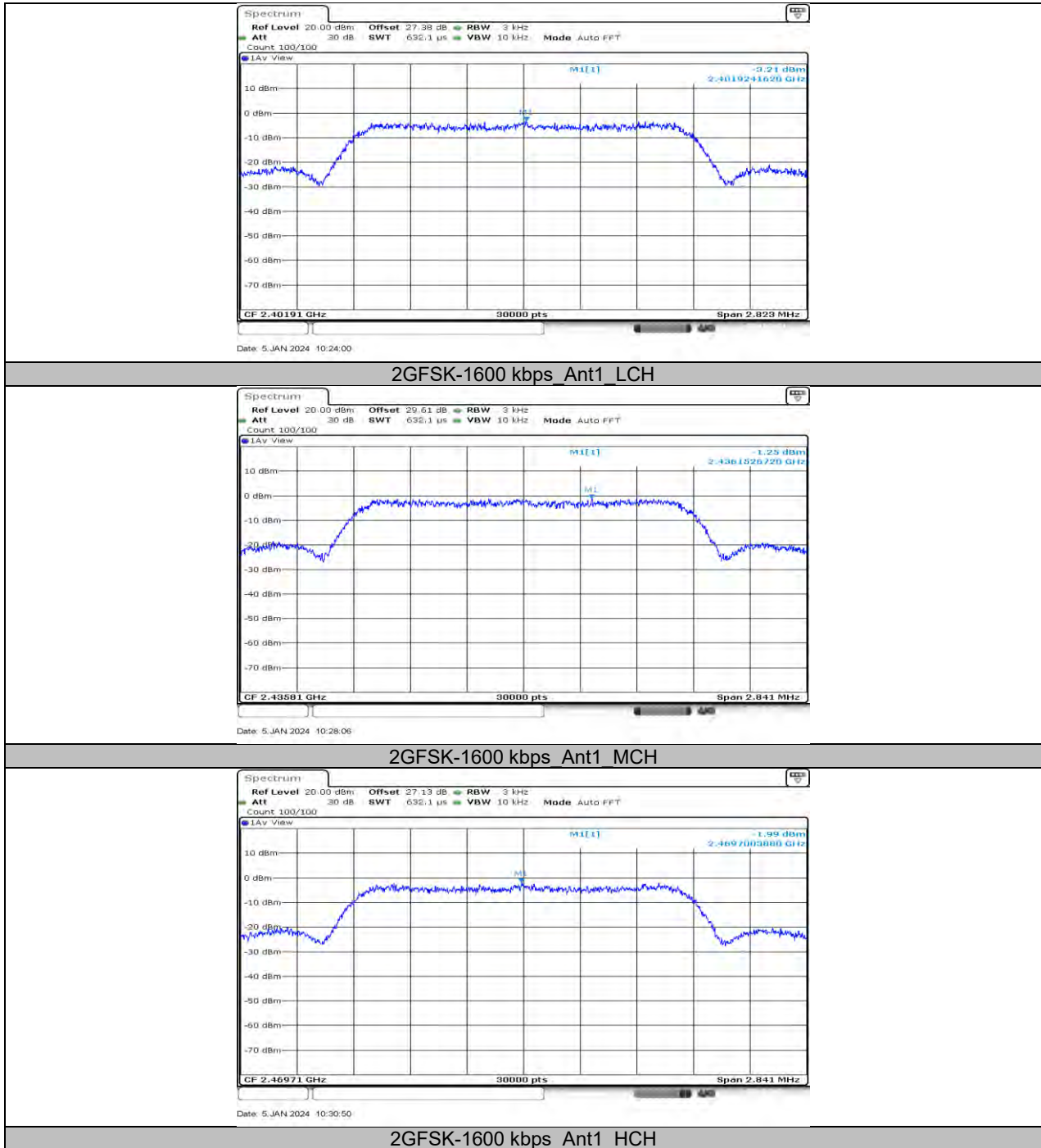
Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK- 1600kbps	Ant1	LCH	23.62	≤30	PASS
		MCH	24.07	≤30	PASS
		HCH	23.92	≤30	PASS

14.4. APPENDIX D4: MAXIMUM POWER SPECTRAL DENSITY

14.4.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Duty Cycle Correction Factor (dB)	Final Result [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2GFSK-1600 kbps	Ant1	LCH	-3.21	6.54	3.33	≤8.00	PASS
		MCH	-1.25	6.54	5.29	≤8.00	PASS
		HCH	-1.99	6.54	4.55	≤8.00	PASS

14.4.2. Test Graphs

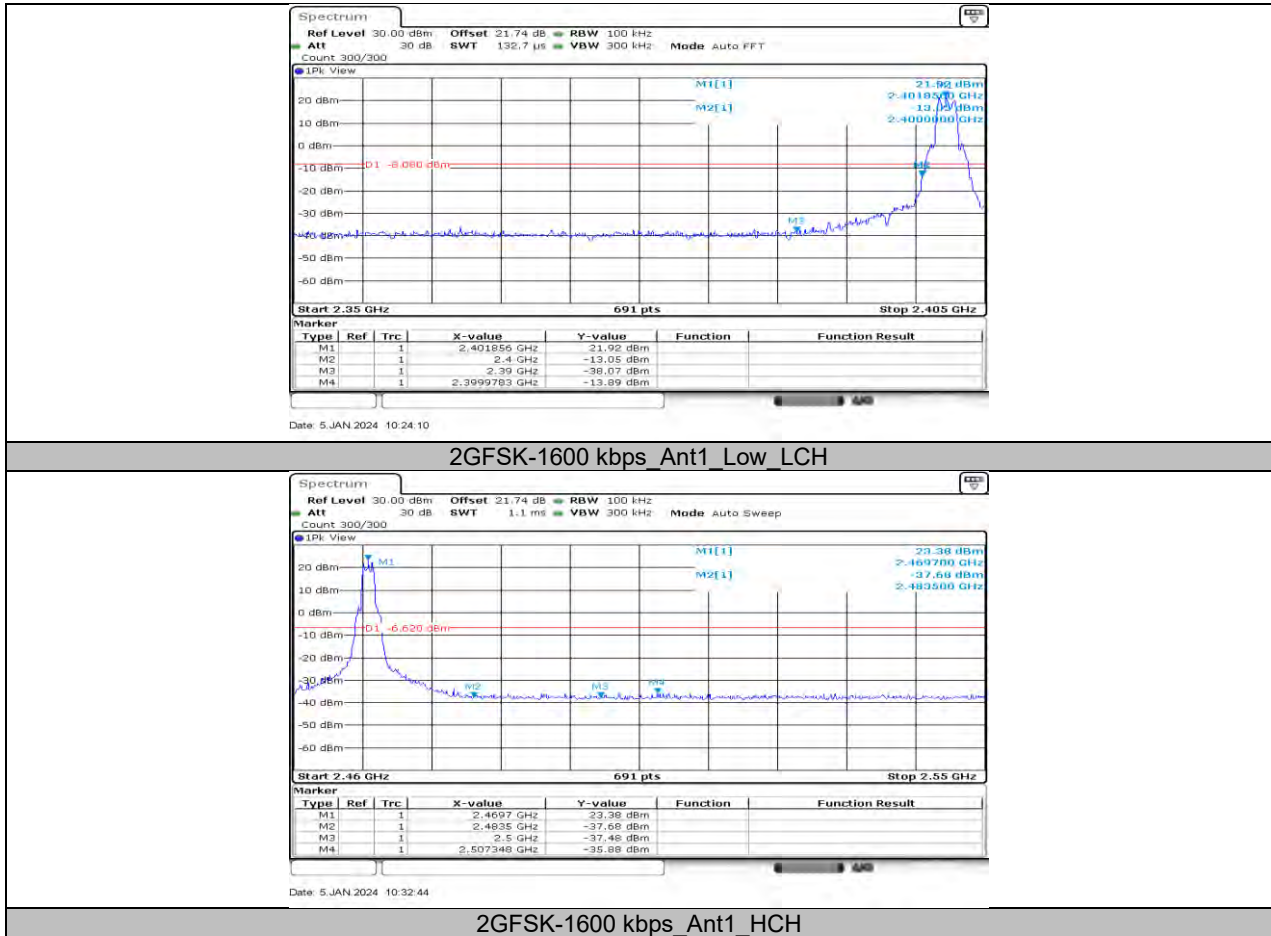


14.5. APPENDIX E4: BAND EDGE MEASUREMENTS

14.5.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-1600 kbps	Ant1	LCH	See the below graphs	PASS
		HCH		PASS

14.5.2. Test Graphs

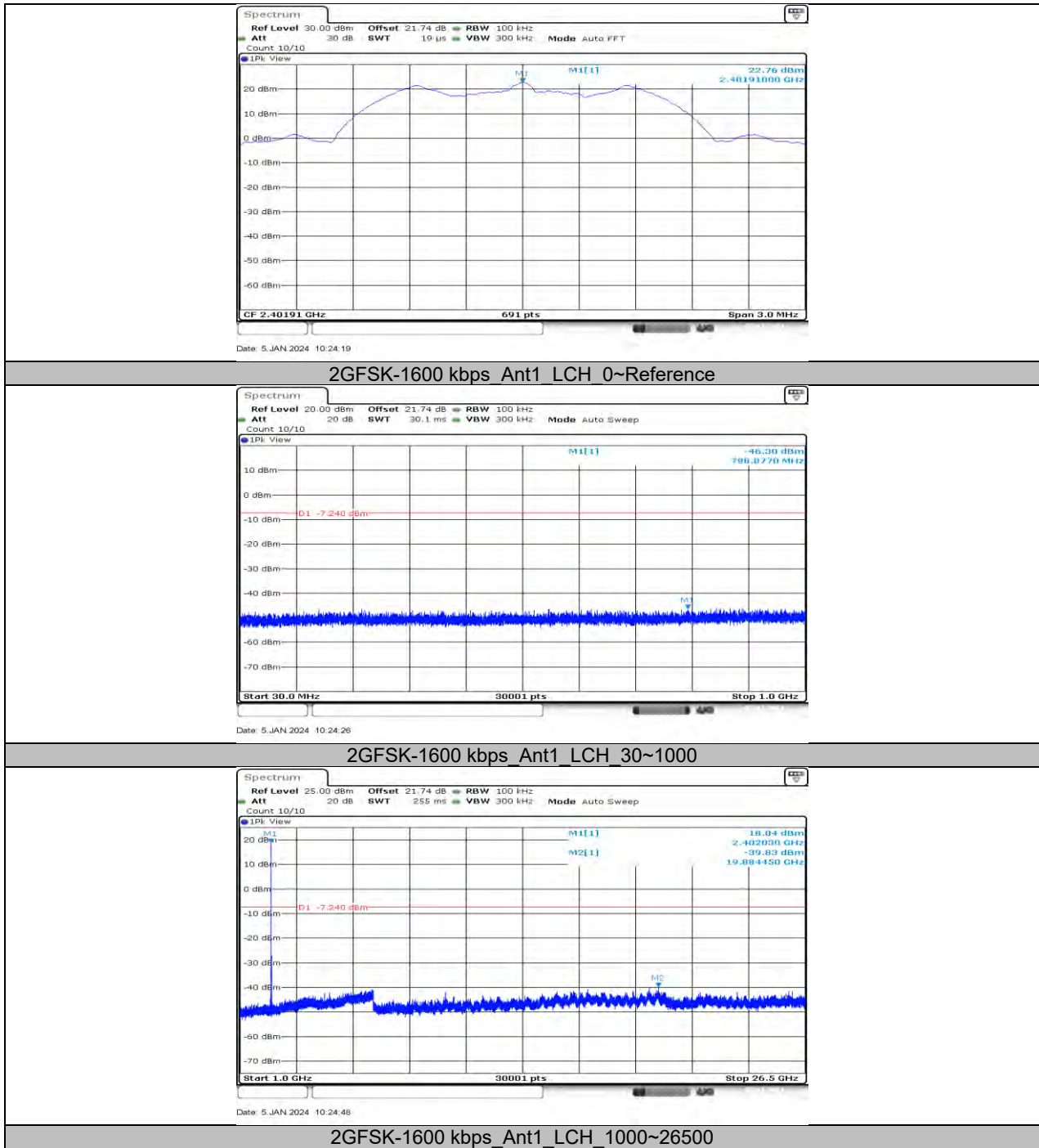


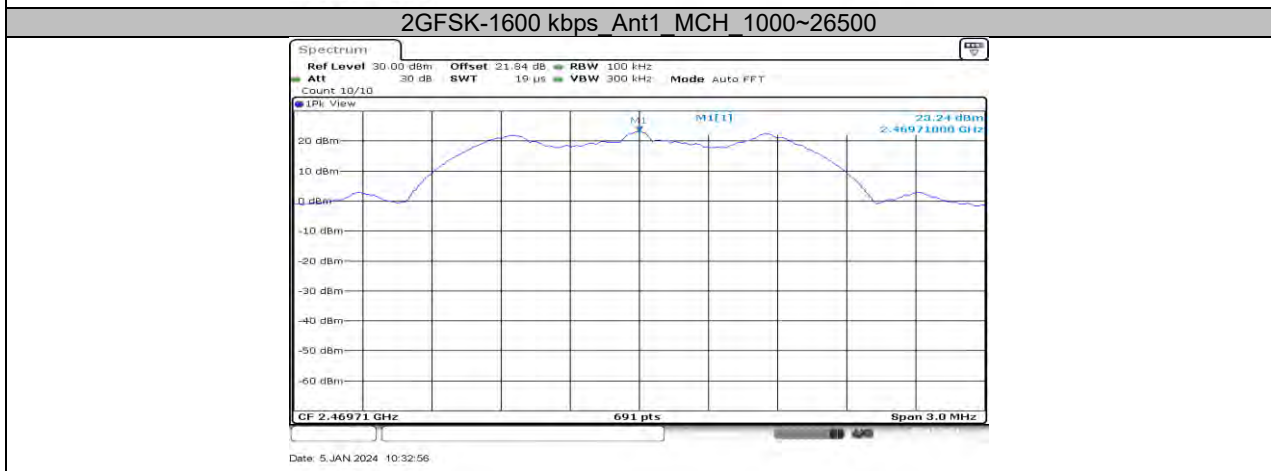
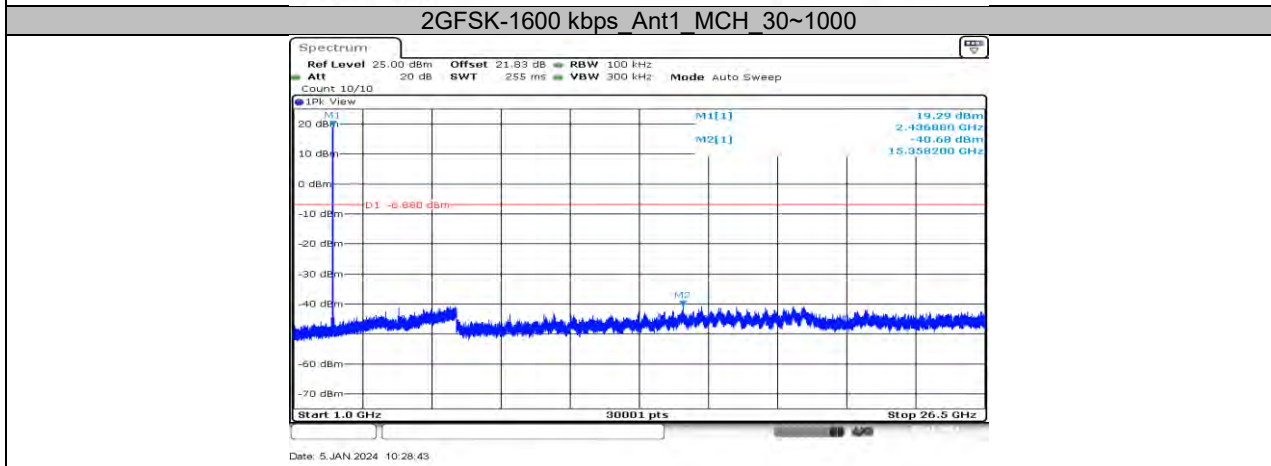
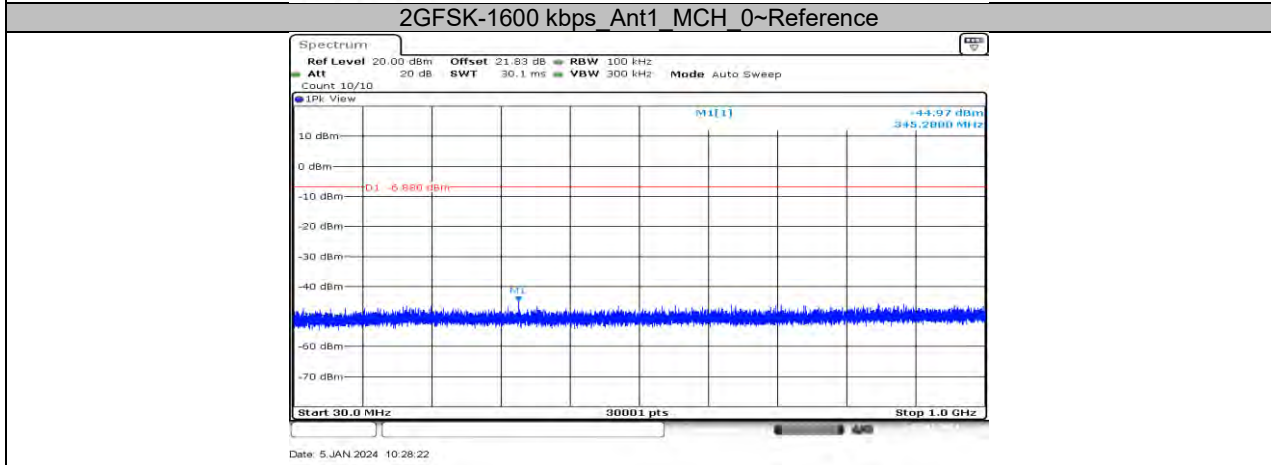
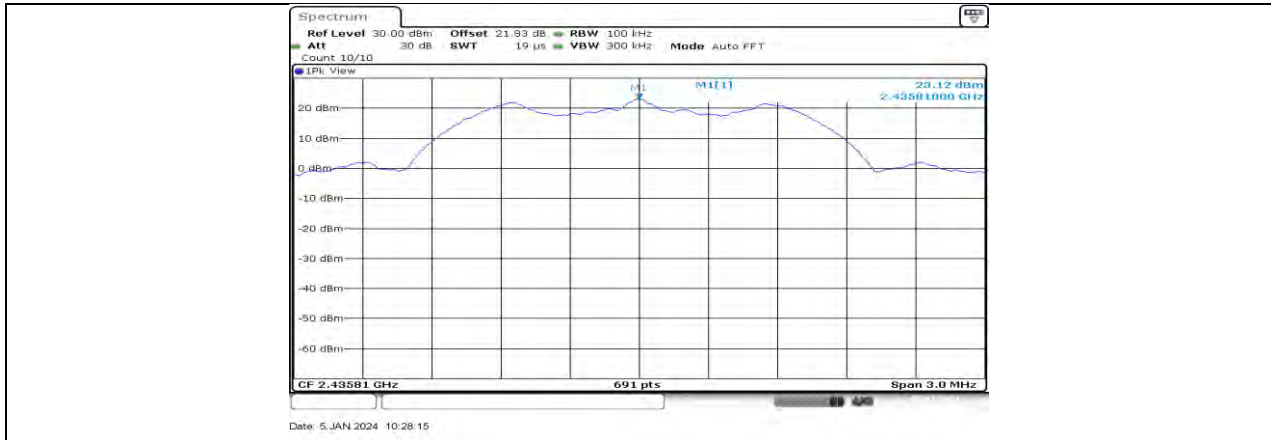
14.6. APPENDIX F4: CONDUCTED SPURIOUS EMISSION

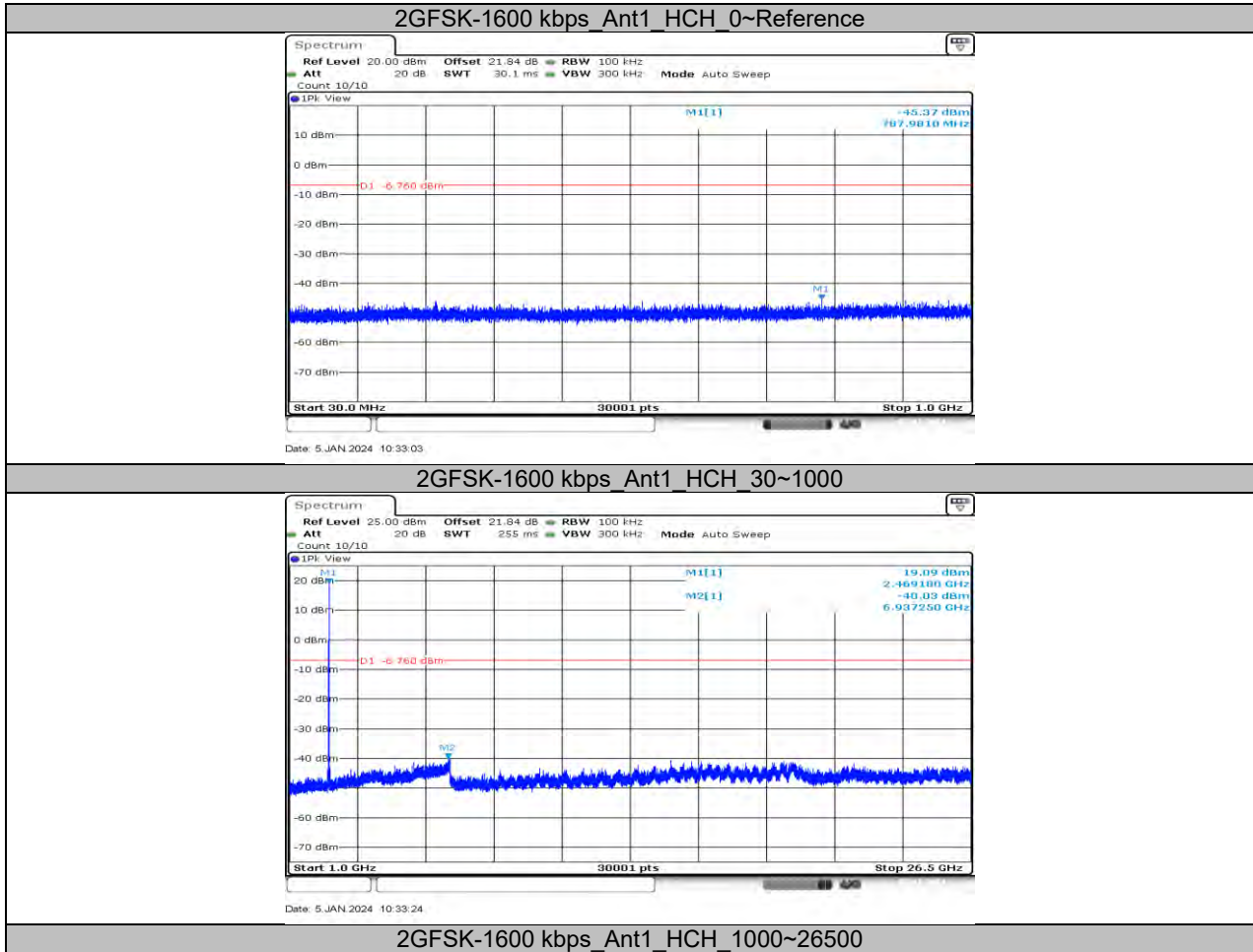
14.6.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-1600 kbps	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS

14.6.2. Test Graphs







14.7. APPENDIX G4: DUTY CYCLE

14.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-1600 kbps	22.16016	100	0.2216	22.16	6.54	0.05	1

Note:

Duty Cycle Correction Factor=10log (1/x).

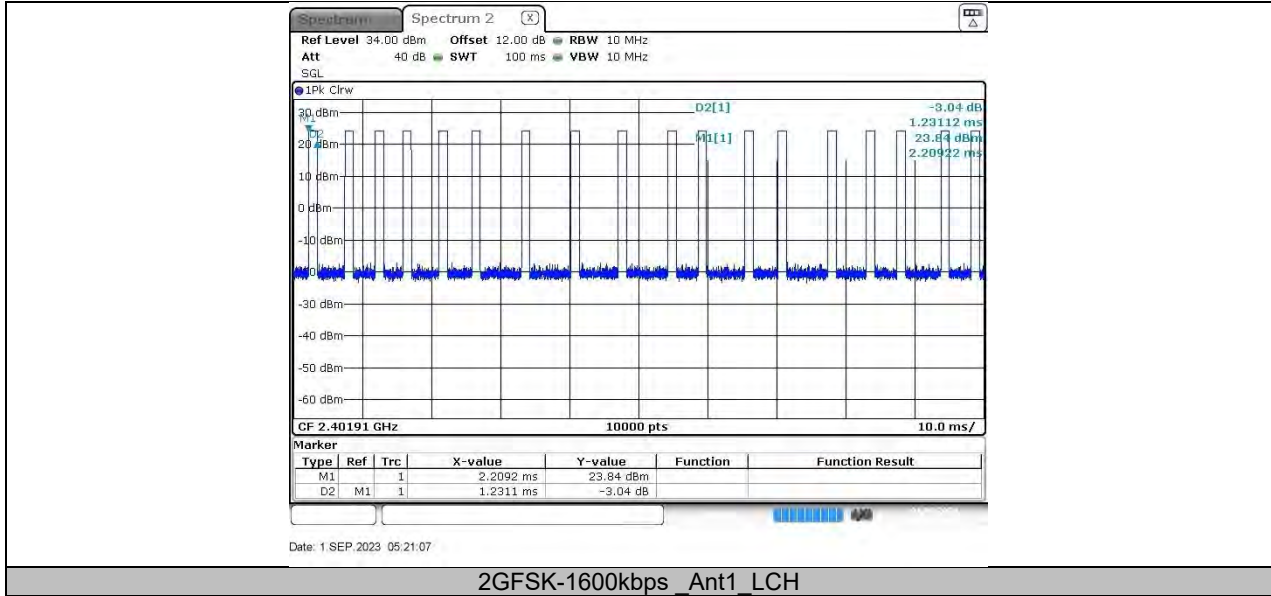
Where: x is Duty Cycle (Linear)

Where: T is On Time

On Time=1.23112*18=22.16016ms

If that calculated VBW is not available on the analyzer then the next higher value should be used.

14.7.2. Test Graphs



15. FCC.2400M.2GFSK.2000kbps

15.1. APPENDIX A5: DTS BANDWIDTH

15.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
2GFSK-2000 kbps	Ant1	LCH	1.82	2401.40	2403.22	≥0.5	PASS
		MCH	1.82	2436.51	2438.33	≥0.5	PASS
		HCH	1.83	2468.09	2469.92	≥0.5	PASS

15.1.2. Test Graphs



15.2. APPENDIX B5: OCCUPIED CHANNEL BANDWIDTH

15.2.1. Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
2GFSK-2000 kbps	Ant1	LCH	2.498	2401.0393	2403.5368	PASS
		MCH	2.517	2436.1632	2438.6807	PASS
		HCH	2.541	2467.7093	2470.2507	PASS

15.2.2. Test Graphs



15.3. APPENDIX C5: MAXIMUM CONDUCTED OUTPUT POWER

15.3.1. Test Result

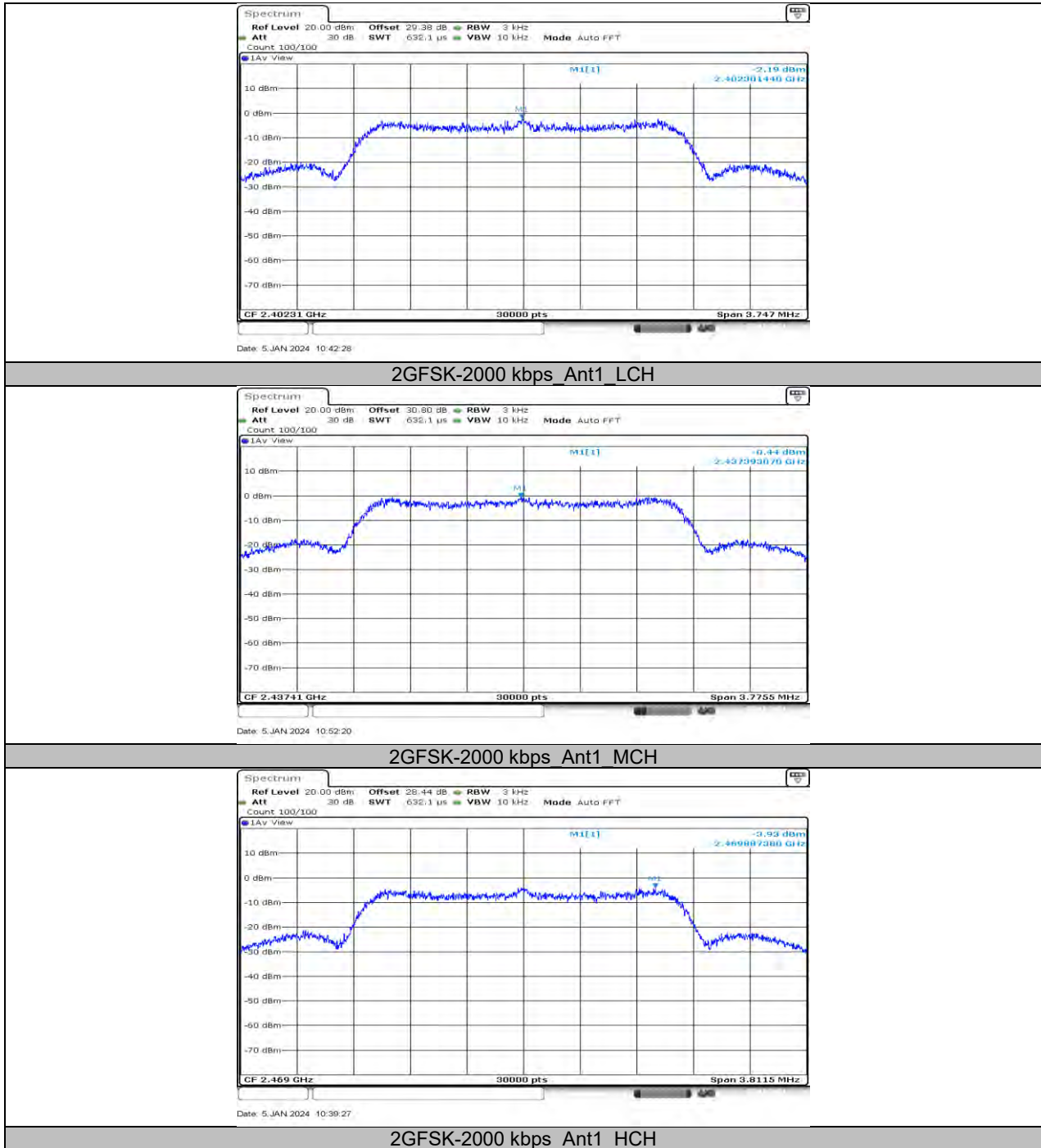
Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK- 2000kbps	Ant1	LCH	23.65	≤30	PASS
		MCH	23.86	≤30	PASS
		HCH	23.96	≤30	PASS

15.4. APPENDIX D5: MAXIMUM POWER SPECTRAL DENSITY

15.4.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Duty Cycle Correction Factor (dB)	Final Result [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2GFSK-2000 kbps	Ant1	LCH	-2.19	7.30	5.11	≤8.00	PASS
		MCH	-0.44	7.30	6.86	≤8.00	PASS
		HCH	-3.93	7.30	3.37	≤8.00	PASS

15.4.2. Test Graphs

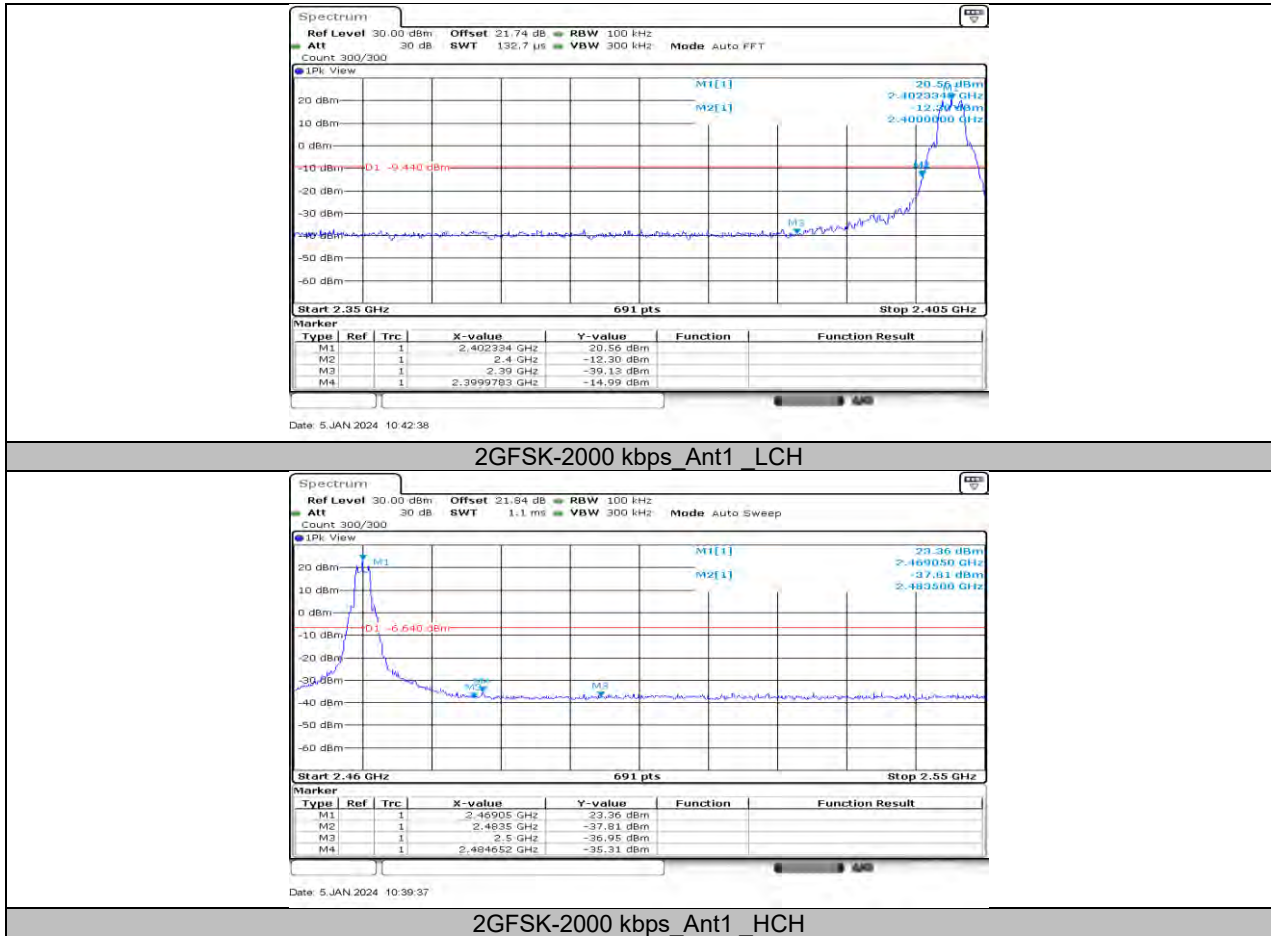


15.5. APPENDIX E5: BAND EDGE MEASUREMENTS

15.5.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-2000 kbps	Ant1	LCH	See the below graphs	PASS
		HCH		PASS

15.5.2. Test Graphs

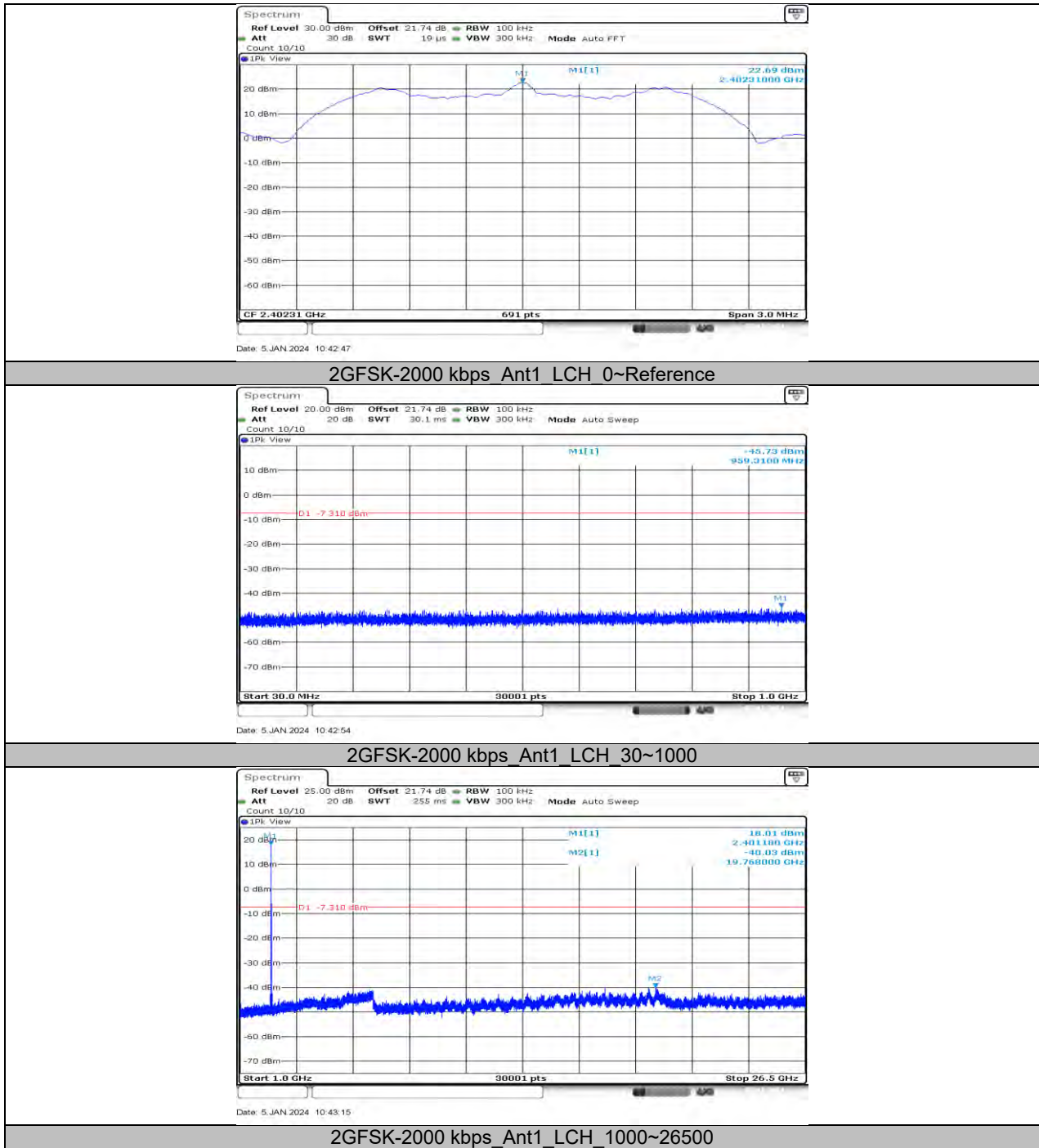


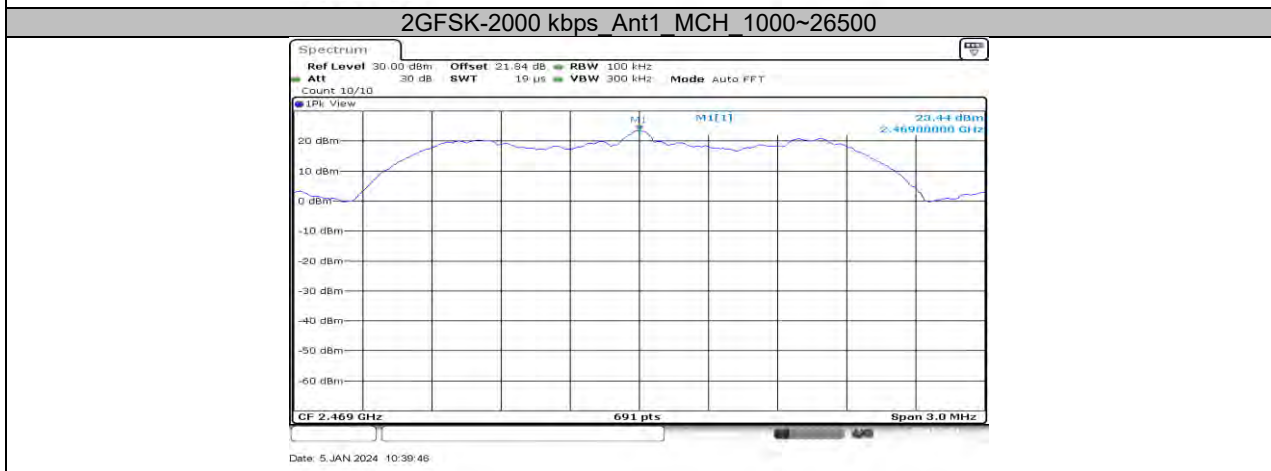
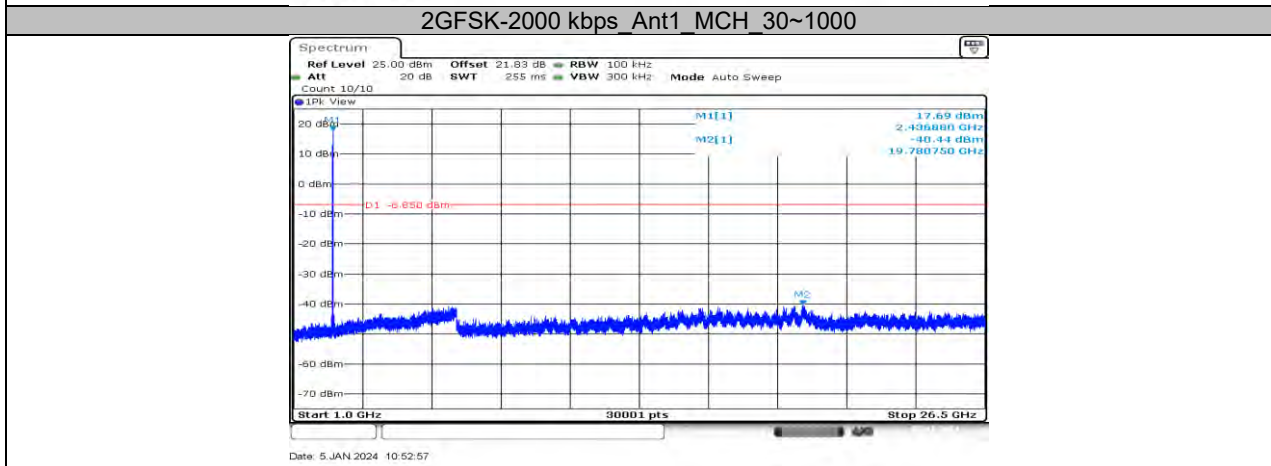
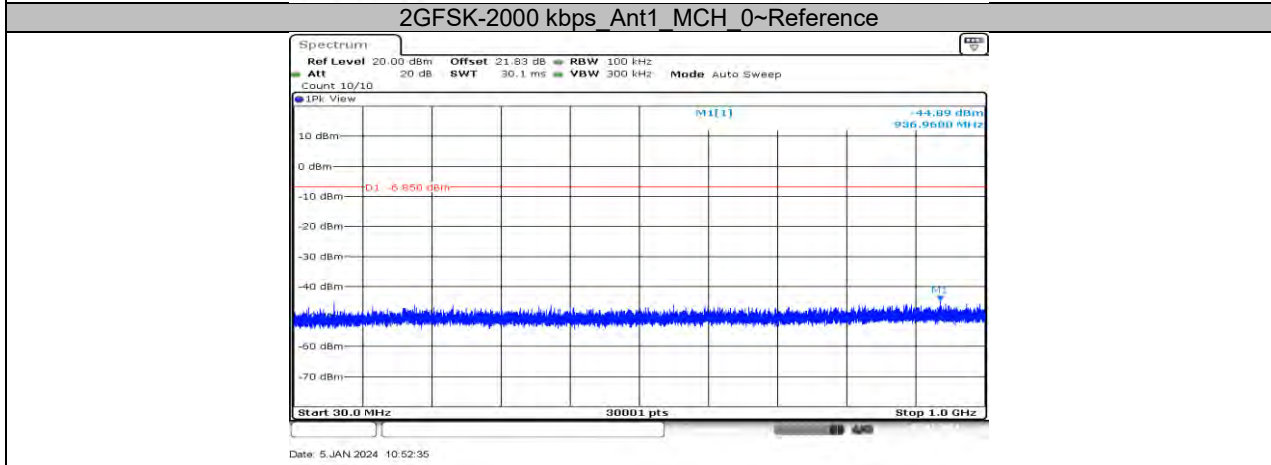
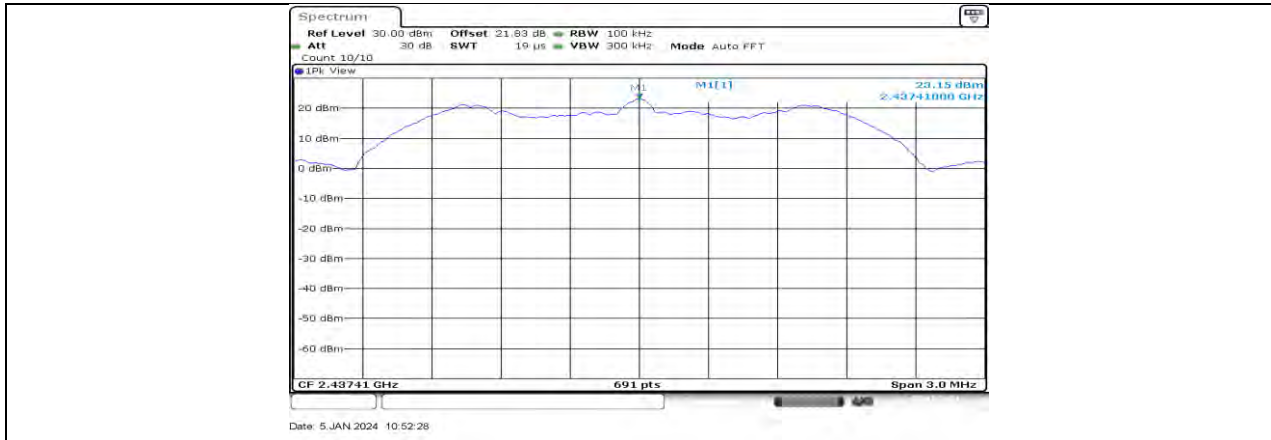
15.6. APPENDIX F5: CONDUCTED SPURIOUS EMISSION

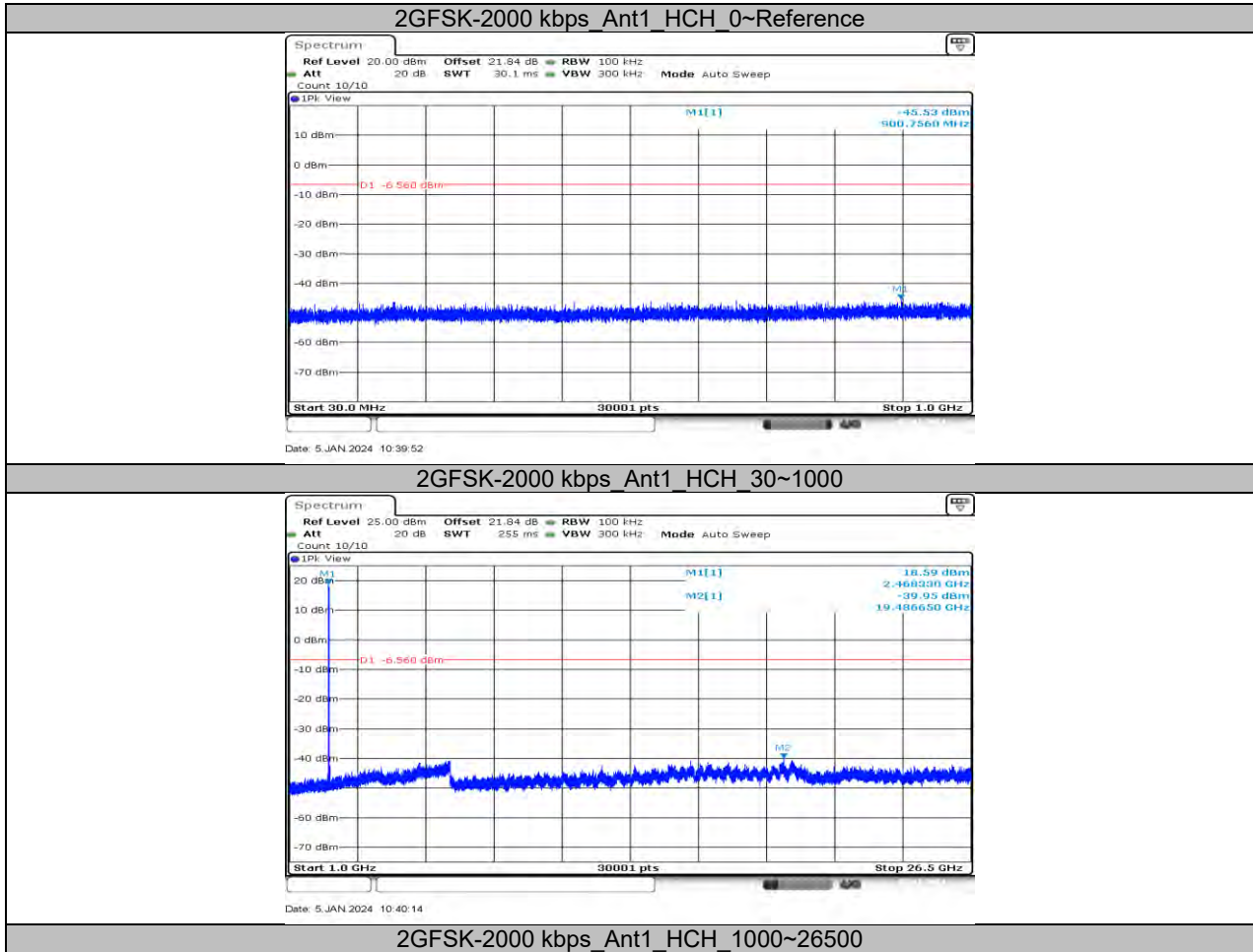
15.6.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-2000 kbps	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS

15.6.2. Test Graphs







15.7. APPENDIX G5: DUTY CYCLE

15.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-1600 kbps	18.6409	100	0.1864	18.64	7.30	0.05	1

Note:

Duty Cycle Correction Factor=10log (1/x).

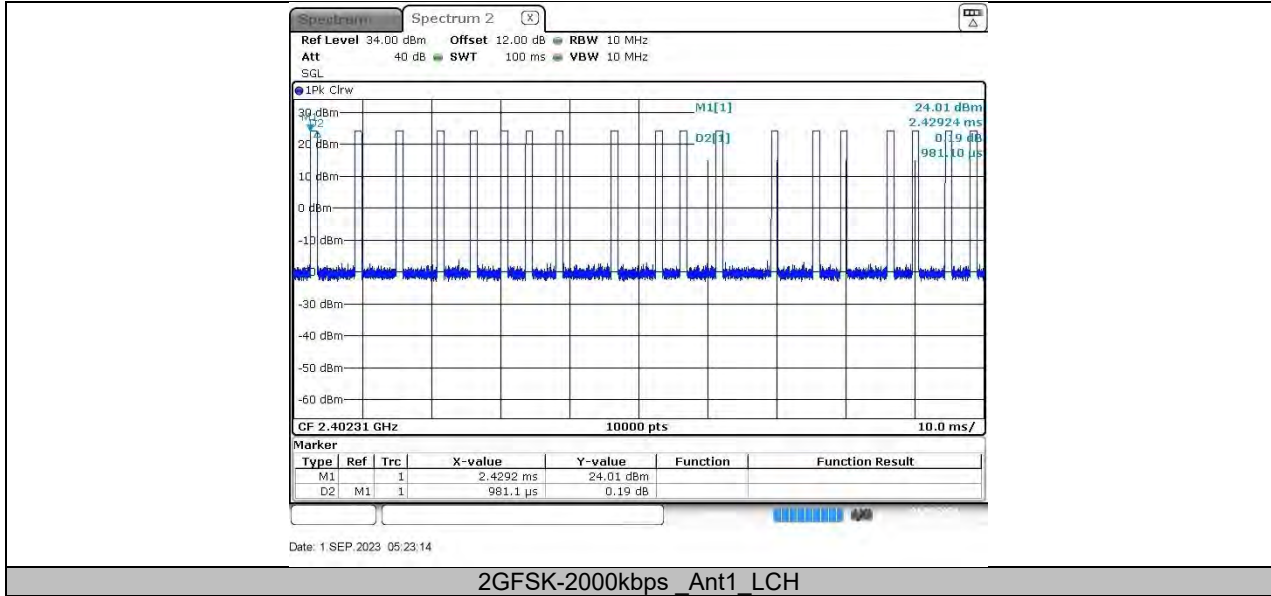
Where: x is Duty Cycle (Linear)

Where: T is On Time

On Time=0.9811*19=18.6409ms

If that calculated VBW is not available on the analyzer then the next higher value should be used.

15.7.2. Test Graphs



END OF REPORT