

Test Report No.: 26030404-RF-US-01

FCC Part 15, Subpart C Test Report

FCC ID: 2BBBFP00018678

Applicant: Minami Acoustics Limited

Address: No.13, Maonan Road, Torch Development District, Zhongshan City,
Guangdong Province, P.R. China

Manufacturer: Minami Acoustics Limited

Address: No.13, Maonan Road, Torch Development District, Zhongshan City,
Guangdong Province, P.R. China

Product(s): StarLink Edge LE Adapter

Brand(s): N/A

Test Model(s): LE01

Series Model(s): N/A

Test Date: Mar. 13, 2026 ~ Mar. 27, 2026

Issued Date: Mar. 27, 2026

Issued By: Hwa-Hsing (Dongguan) Testing Co., Ltd.

Address: No.101, Building N1, Yuyuan 2 Road, Yuyuan Industrial Park, HuangJiang
Town, Dongguan City, People's Republic of China

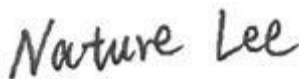
Test Firm Registration No.: 915896

Designation No.: CN1255

Standards: FCC CFR 47 Part 2, Subpart J
FCC CFR 47 Part 15, Subpart C

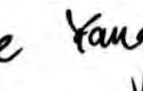
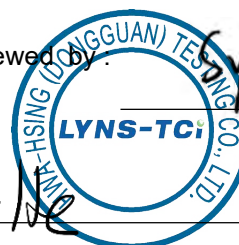
The above equipment has been tested by **Hwa-Hsing (Dongguan) Testing Co., Ltd.**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :



Nature Lee

Reviewed by :



Sye Yang

Approved by :



Scott He

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Table of Contents

Release Control Record	4
1 Summary of Test Results	5
1.1 Measurement Uncertainty	5
1.2 Modification Record	5
2 General Information	6
2.1 General Description of EUT	6
2.2 Description of Test Modes	7
2.3 Test Mode Applicability and Tested Channel Detail	8
2.4 Description of Support Units	10
2.5 Configuration of System under Test	11
2.6 Duty Cycle of Test Signal	12
3 Test Types and Results	16
3.1 Radiated Emission and Band-edge Measurement	16
3.1.1 Limits of Radiated Emission and Band-edge Measurement	16
3.1.2 Test Instruments	17
3.1.3 Test Procedures	18
3.1.4 Deviation from Test Standard	19
3.1.5 Test Setup	20
3.1.6 EUT Operating Conditions	21
3.1.7 Test Results	22
3.2 Conducted Emission Measurement	46
3.2.1 Limits of Conducted Emission Measurement	46
3.2.2 Test Instruments	46
3.2.3 Test Procedures	47
3.2.4 Test Setup	47
3.2.5 EUT Operating Condition	47
3.2.6 Deviation from Test Standard	47
3.2.7 Test Results	48
3.3 Number of Hopping Frequency Used	50
3.3.1 Limits of Hopping Frequency Used Measurement	50
3.3.2 Test Setup	50
3.3.3 Test Instruments	50
3.3.4 Test Procedure	50
3.3.5 Deviation from Test Standard	50
3.3.6 Test Results	51
3.4 Dwell Time on Each Channel	52
3.4.1 Limits of Dwell Time on Each Channel Measurement	52
3.4.2 Test Setup	52
3.4.3 Test Instruments	52
3.4.4 Test Procedures	52
3.4.5 Deviation from Test Standard	52
3.4.6 Test Results	53
3.5 Channel Bandwidth	55
3.5.1 Limits of Channel Bandwidth Measurement	55
3.5.2 Test Setup	55
3.5.3 Test Instruments	55

3.5.4	Test Procedure	55
3.5.5	Deviation from Test Standard	55
3.5.6	EUT Operating Condition	55
3.5.7	Test Results	56
3.6	Occupied Bandwidth Measurement	60
3.6.1	Test Setup	60
3.6.2	Test Instruments	60
3.6.3	Test Procedure	60
3.6.4	Deviation from Test Standard	60
3.6.5	EUT Operating Conditions	60
3.6.6	Test Results	61
3.7	Hopping Channel Separation	65
3.7.1	Limits of Hopping Channel Separation Measurement	65
3.7.2	Test Setup	65
3.7.3	Test Instruments	65
3.7.4	Test Procedure	65
3.7.5	Deviation from Test Standard	65
3.7.6	Test Results	66
3.8	Maximum Output Power	67
3.8.1	Limits of Maximum Output Power Measurement	67
3.8.2	Test Setup	67
3.8.3	Test Instruments	67
3.8.4	Test Procedure	67
3.8.5	Deviation from Test Standard	69
3.8.6	EUT Operating Condition	69
3.8.7	Test Results	70
3.9	Conducted Out of Band Emission Measurement	74
3.9.1	Limits of Conducted Out of Band Emission Measurement	74
3.9.2	Test Setup	74
3.9.3	Test Instruments	74
3.9.4	Test Procedure	75
3.9.5	Deviation from Test Standard	75
3.9.6	EUT Operating Condition	75
3.9.7	Test Results	76
3.10	Antenna Application	89
3.10.1	Antenna Requirement	89
3.10.2	Test Results	89
4	Pictures of Test Arrangements	90
5	Test Instruments	91
	Appendix – Information on the Testing Laboratories	92

Test Report No.: 26030404-RF-US-01

Release Control Record

Issue No.	Description	Date Issued
26030404-RF-US-01	Original Release	Mar. 27, 2026

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1 Summary of Test Results

FCC CFR 47 Part 15, Subpart C			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement
15.247(a)	Number of Hopping Frequency Used	Pass	Meet the requirement of limit.
15.247(a)	Dwell Time on Each Channel	Pass	Meet the requirement of limit.
15.247(a)	1. Hopping Channel Separation 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	Pass	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	Pass	Reference only
15.205 & 209	Radiated Emissions	Pass	Meet the requirement of limit.
15.247(d)	Band Edge Measurement	Pass	Meet the requirement of limit.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

NOTE1: The above test items were tested in accordance with the C63.10 2020 standard for all the requirements.

NOTE2: According to FCC OET KDB 558074, the report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.

1.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUTs specified in CISPR 16-4-2:

The listed uncertainties are the worst-case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.66 dB
Radiated Emissions up to 1 GHz	9KHz ~ 30MHz	2.16 dB
	30MHz ~ 1000MHz	3.56 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	4.71 dB
	6GHz~18GHz	4.84 dB
	18GHz ~ 40GHz	5.73 dB

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

1.2 Modification Record

There were no modifications required for compliance.

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Address: [No.101, Building N1, Yuyuan 2 Road, Yuyuan Industrial Park, HuangJiang Town, Dongguan City, People's Republic of China](#)

Tel: [0769-85598986](tel:0769-85598986)

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2 General Information**2.1 General Description of EUT**

Product(s)	StarLink Edge LE Adapter
Test Model(s)	LE01
Sample No.	HS26030404001
Series Model(s)	N/A
Status of EUT	Engineering Prototype
Power Supply Rating	DC 5V from USB
Modulation Type	GFSK
Modulation Technology	FHSS
Transfer Rate	1Mbps, 2Mbps
Operating Frequency	GFSK 1M: 2402MHz ~ 2480MHz GFSK 2M: 2404MHz ~ 2478MHz
Number of Channel	GFSK 1M: 40 GFSK 2M: 37
Output Power (Peak)	8.99dBm
Antenna Type and Antenna Gain	PIFA Antenna; 1.04dBi Gain
Antenna Connector	N/A
Accessory Device	N/A

Note:

1. Please refer to the EUT photo document (Reference No.: 26030404-01&02) for detailed product photo.
2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.
3. Hwa-Hsing (Dongguan) Testing Co., Ltd. is not responsible for the accuracy of the information provided by the manufacturer.
4. For the test results, the EUT had been tested with all conditions, and only the worst case was shown in the test report.

2.2 Description of Test Modes

These are GFSK 1M 40 channels are provided to this EUT:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

These are GFSK 2M 37 channels are provided to this EUT:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
		10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406			22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460		

2.3 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable test items	X-Axis	Y-Axis	Z-Axis	Voltage Supply
Conducted	AC Power Conducted Emission	N/A	N/A	N/A	DC 5V from USB
Radiated	Radiated Emissions	√	√	√	
Antenna Port Conducted Measurement	Number of Hopping Frequency Used	N/A	N/A	N/A	
	Dwell Time on Each Channel	N/A	N/A	N/A	
	Band Edge Measurement	N/A	N/A	N/A	
	Antenna Port Emission	N/A	N/A	N/A	
	Conducted power	N/A	N/A	N/A	
	Hopping Channel Separation	N/A	N/A	N/A	
	Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	N/A	N/A	N/A	
1. *: The EUT had been pre-tested on the positioned of each 3 Axis. The worst case was found when positioned on X-plane . 2. "N/A" means no effect.					

Evaluation of difference data rate:

Applicable test items	Modulation Type		The Worst-case modes recording in report
	GFSK 1M	GFSK 2M	
Radiated Emissions	√	√	GFSK 1M & GFSK 2M
Antenna Port Conducted Measurement	√	√	GFSK 1M & GFSK 2M

Test Condition:

Applicable test items	Environmental Conditions	Test Date	Tested by
Radiated Emissions	24.0deg. C, 55%RH	Mar. 25, 2026	Hua
Antenna Port Conducted Measurement	25.5deg. C, 58%RH	Mar. 13, 2026	Yonah

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.

Radiated Emission Test (Above 1 GHz):

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
-	0 to 39	0, 19, 39	FHSS	GFSK	GFSK 1M
-	1 to 38	1, 19, 38	FHSS	GFSK	GFSK 2M

Radiated Emission Test (Below 1 GHz):

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
-	0 to 39	0, 19, 39	FHSS	GFSK	GFSK 1M
-	1 to 38	1, 19, 38	FHSS	GFSK	GFSK 2M

Power Line Conducted Emission Test:

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
-	0 to 39	39	FHSS	GFSK	GFSK 1M

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
-	0 to 39	0, 19, 39	FHSS	GFSK	GFSK 1M
-	1 to 38	1, 19, 38	FHSS	GFSK	GFSK 2M

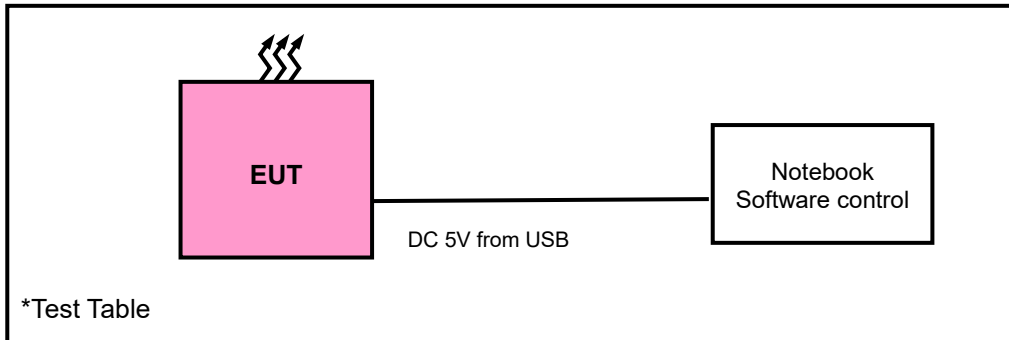
2.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.
1.	Notebook	DELL	Latitude E6420	00426-OEM-8992662-00006
2.	Notebook	HUAWEI	NbD-WFH9	EUEPM21725002655

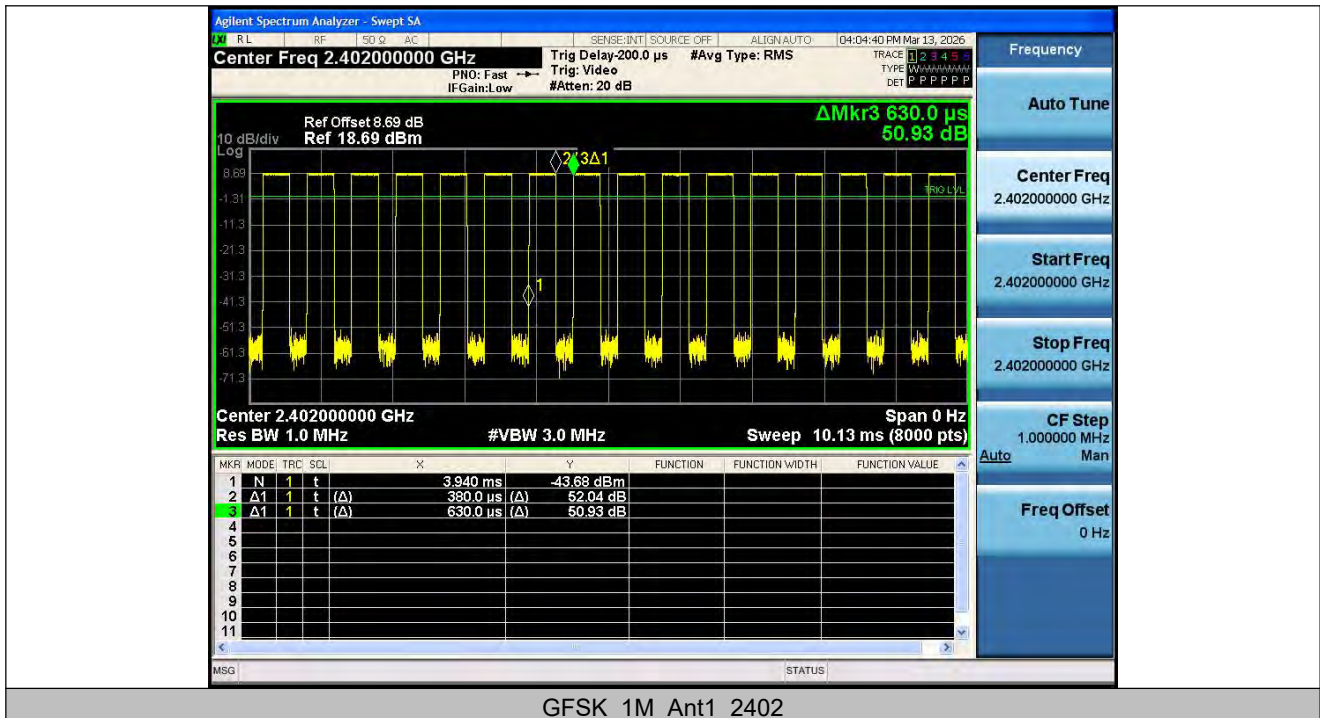
No.	Signal Cable Description of The Above Support Units
1	USB extension cord: Unshielded, Detachable 1.2m;

2.5 Configuration of System under Test

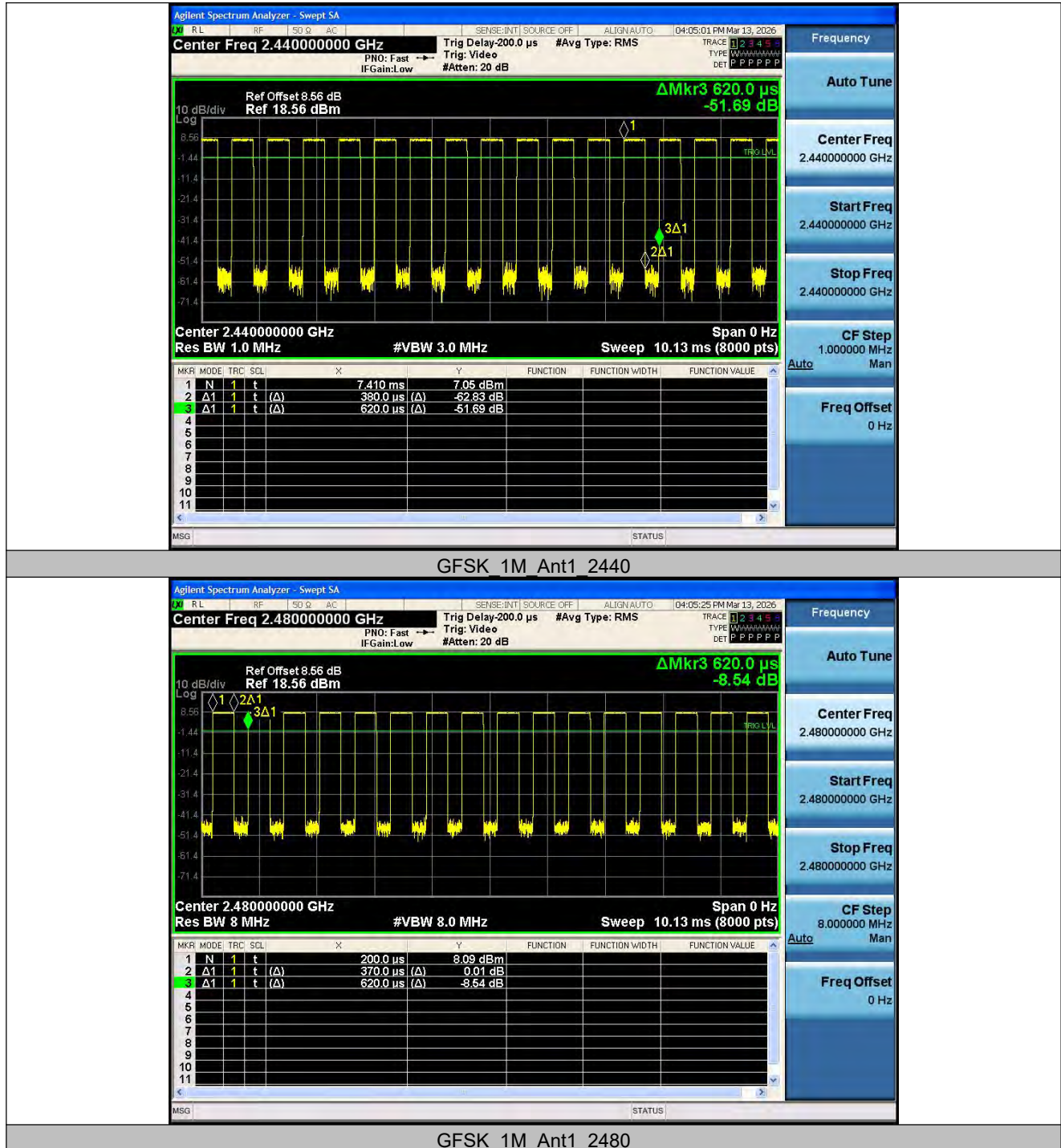


2.6 Duty Cycle of Test Signal

Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
GFSK_1M	Ant1	2402	0.38	0.63	60.32
		2440	0.38	0.62	61.29
		2480	0.37	0.62	59.68
GFSK_2M	Ant1	2404	0.19	0.62	30.65
		2440	0.19	0.62	30.65
		2478	0.19	0.62	30.65



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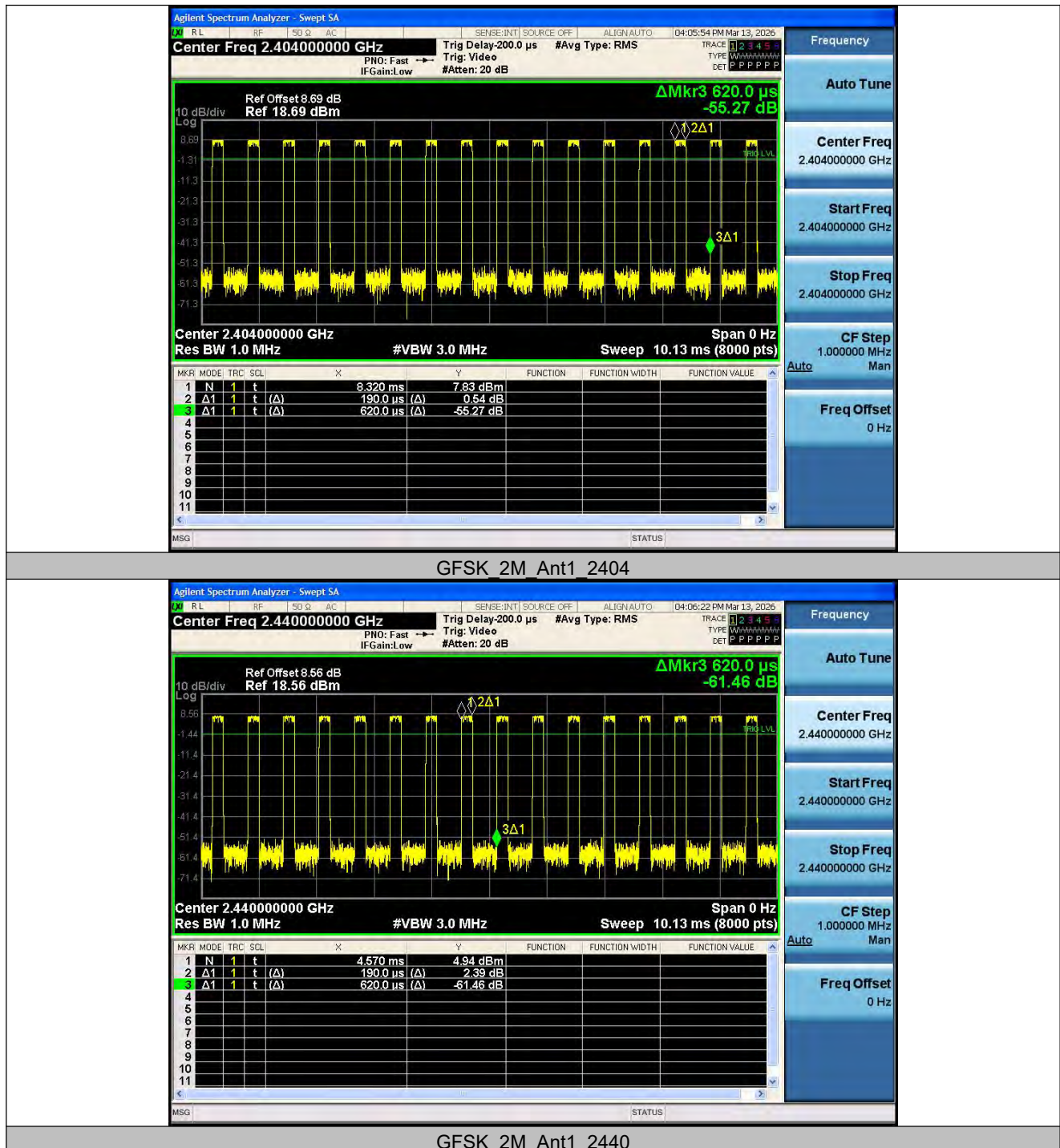
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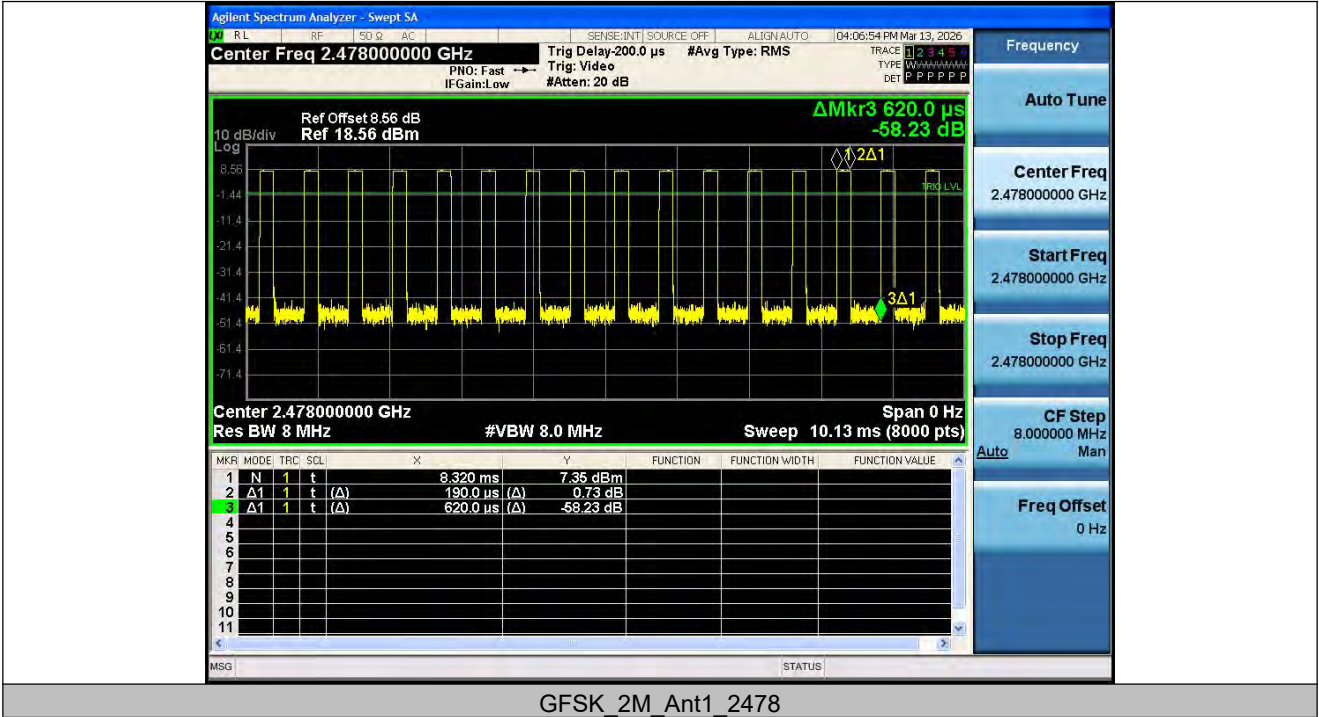
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3 Test Types and Results**3.1 Radiated Emission and Band-edge Measurement****3.1.1 Limits of Radiated Emission and Band-edge Measurement**

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (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
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

* DTS emissions in non-restricted frequency bands Subclause 11.11 of ANSI C63.10 is applicable.

* DTS emissions in restricted frequency bands Subclause 11.12 of ANSI C63.10 is applicable

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Test Report No.: 26030404-RF-US-01

3.1.2 Test Instruments

Radiated emission below 30MHz:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	100962	2026-07-23
3m Semi-anechoic Chamber	MAORUI	9m*6m*6m	HS-2018037	2029-03-21*
Test software	FARAD	FARAD	EZ_EMCV1.1.4.2	N/A
Loop Antenna	EMCI	HLA 6121	56735	2026-05-19
Antenna Tower	MF	MFA-440H	NA	NA
Turn Table	MF	MFT-201SS	NA	NA
Antenna Tower&Turn Table Controller	MF	MF-7802	NA	NA

Frequency Range below 1GHz:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver (9kHz~3GHz)	Rohde&Schwarz	ESPI 7	101978	2026-07-23
Broadband antenna (25MHz~2500MHz)	Schwarzbeck	VULB 9168	00937	2026-07-25
3m Semi-anechoic Chamber	MAORUI	9m*6m*6m	HS-2018037	2029-03-21*
Signal Amplifier (30MHz~1000MHz)	Com-power	PAM-103	18020051	2026-07-23
Attenuator	R&S	TS2GA-6dB	18101101	N/A
Test software	FARAD	EZ_EMC V1.1.4.2	N/A	N/A
Broadcast test system	R&S	SFU	100410	2026-07-23
Coaxial cable	N/A	N/A	HS-EMC-100	2026-07-23
Coaxial cable	N/A	N/A	HS-EMC-101/102	2026-07-23

Frequency Range above 1GHz:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESPI 7	101978	2026-07-23
3m Semi-anechoic Chamber	MAORUI	9m*6m*6m	HS-2018037	2029-03-21*
Test software	FARAD	EZ_EMCV1.1.4.2	N/A	N/A
Digital Multimeter	FLUKE	15B+	43512617WS	2026-07-28
Horn Antenna	Schwarzbeck	BBHA 9120 D	1959	2026-08-02
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101783	2026-07-23
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	25	2026-07-23
Pre-Amplifier	EMCI	EMC 184045SE	9870709	2026-07-30
Spectrum	Keysight	N9020A	MY51240612	2026-07-23
Broadcast test system	R&S	SFU	100410	2026-07-23
Antenna Tower	MF	MFA-440H	NA	NA
Turn Table	MF	MFT-201SS	NA	NA
Antenna Tower&Turn Table Controller	MF	MF-7802	NA	NA
Coaxial cable	N/A	N/A	HS-EMC-103	2026-07-23
Coaxial cable	N/A	N/A	HS-EMC-104/105	2026-07-23

Note:

1. The calibration interval of the above test instruments is 12 months or 36 months (*).
2. The test was performed in 966.

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3.1.3 Test Procedures

a. Peak emission levels are measured by setting the instrument as follow:

- 1) RBW&VBW setting as a function of frequency:

Frequency	RBW	VBW
9kHz~150kHz	200Hz	600Hz
0.15MHz~30MHz	9kHz	30kHz
30MHz~1000MHz	120kHz	300kHz
>1000MHz	1MHz	3MHz

- 2) Detector = peak.
- 3) Sweep time = auto.
- 4) Trace mode = max hold.
- 5) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be lengthened for low-duty-cycle applications.)

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

b. Average emission levels are measured by setting the instrument as follow:**● Trace averaging with continuous EUT transmission at full power**

If the EUT can be configured or modified to transmit continuously ($D \geq 98\%$), then the average emission levels shall be measured using the following method (with EUT transmitting continuously):

- 1) RBW=1 MHz (unless otherwise specified).
- 2) $VBW \geq 3 * RBW$.
- 3) Detector =RMS
- 4) Sweep time = auto.
- 5) Perform a trace average of at least 100 traces.

● Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT ($D \geq 98\%$) cannot be achieved and the duty cycle is constant (duty cycle variations are less than $\pm 2\%$), then the following procedure shall be used

- 1) The EUT shall be configured to operate at the maximum achievable duty cycle.
- 2) Measure the duty cycle D of the transmitter output signal as described in 11.6.
- 3) RBW=1 MHz (unless otherwise specified).
- 4) $VBW \geq 3 * RBW$.
- 5) Detector =RMS
- 6) Sweep time = auto.
- 7) Perform a trace average of at least 100 traces.

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

*If power averaging (rms) mode was used in step 5), then the applicable correction factor is $[10 \log (1/D)]$, where D is the duty cycle.

**If linear voltage averaging mode was used in step f), then the applicable correction factor is $[20 \log (1/D)]$, where D is the duty cycle.

***If a specific emission is demonstrated to be continuous ($D > 98\%$) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that.

● Reduced VBW Averaging across ON and OFF times of the EUT transmissions with max hold

If continuous transmission of the EUT ($D > 98\%$) cannot be achieved and the duty cycle is not constant (duty cycle variations exceed $\pm 2\%$), then the following procedure shall be used:

- 1) RBW = 1 MHz.
 - 2) $VBW \geq 1/T$.
 - 3) Detector = peak
 - 4) Sweep time = auto.
 - 5) Trace mode = max hold.
 - 6) Allow max hold to run for at least $[50 \times (1/D)]$ traces
- c. The EUT was placed on the top of a rotating table 0.8 meters (below 1GHz) / 1.5 meters (Above 1GHz) above the reference ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The EUT was set 3 meters away from the interference-receiving antenna (Below 1GHz) & (Above 1GHz), which was mounted on the top of a variable-height antenna tower.
- e. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- f. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- g. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- h. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

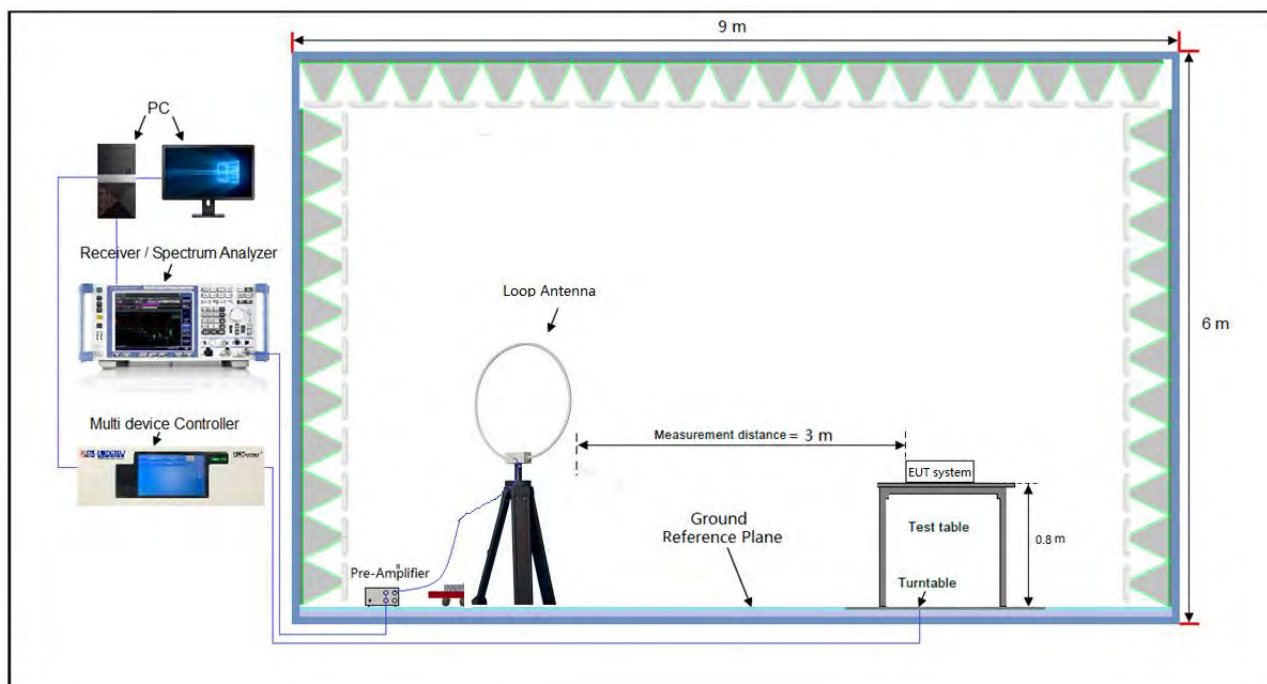
1. Test procedures for measuring FHSS device: The use of a duty cycle correction factor (DCCF) is permitted for calculating average radiated field strength emission levels for an FHSS device in 15.247. This DCCF can be applied when the unwanted emission limit is subject to an average field strength limit (e.g., within a Government Restricted band) and the conditions specified in Section 15.35(c) can be satisfied. The average radiated field strength is calculated by subtracting the DCCF from the maximum radiated field strength level as determined through measurement. The maximum radiated field strength level represents the worst-case (maximum amplitude) RMS measurement of the emission(s) during continuous transmission (i.e., not including any time intervals during which the transmitter is off or is transmitting at a reduced power level). It is also acceptable to apply the DCCF to a measurement performed with a peak detector instead of the specified RMS power averaging detector. Note that Section 15.35(c) specifies that the DCCF shall represent the worst-case (greatest duty cycle) over any 100 msec transmission period. Subclause 7.5 of ANSI C63.10 provides additional measurement guidance applicable to determination of the DCCF.
2. All modes of operation were investigated and the worst-case emissions are reported.

3.1.4 Deviation from Test Standard

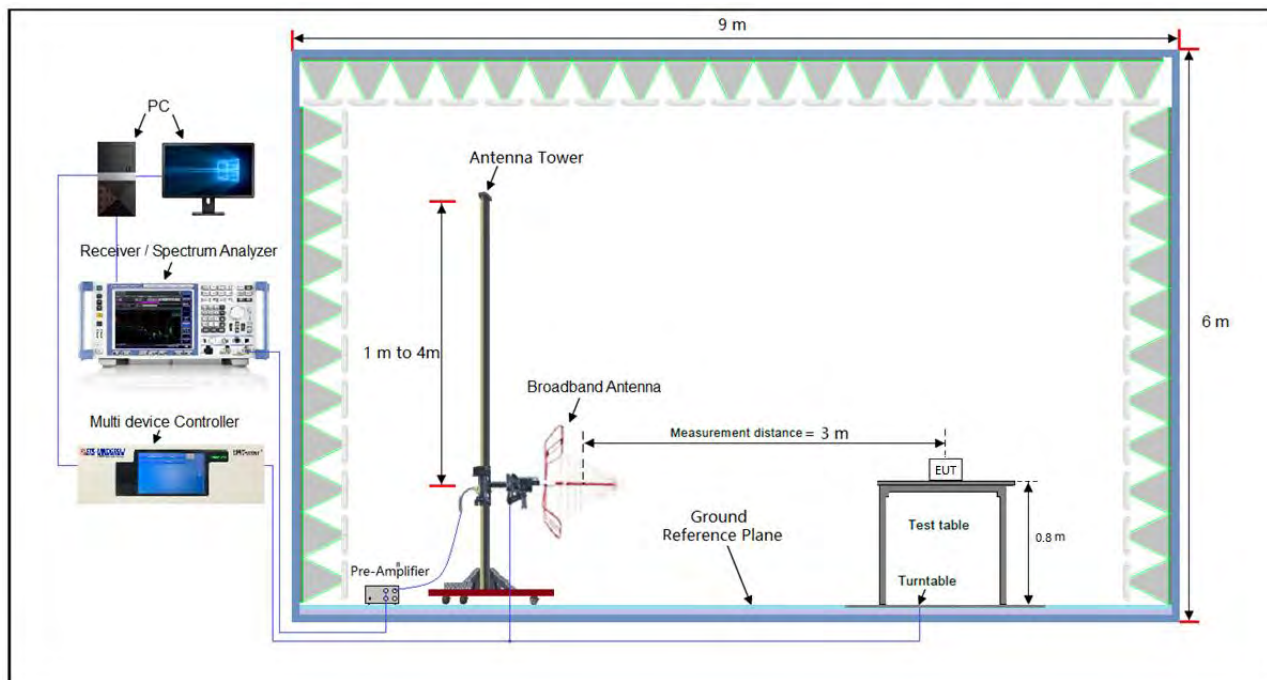
No deviation.

3.1.5 Test Setup

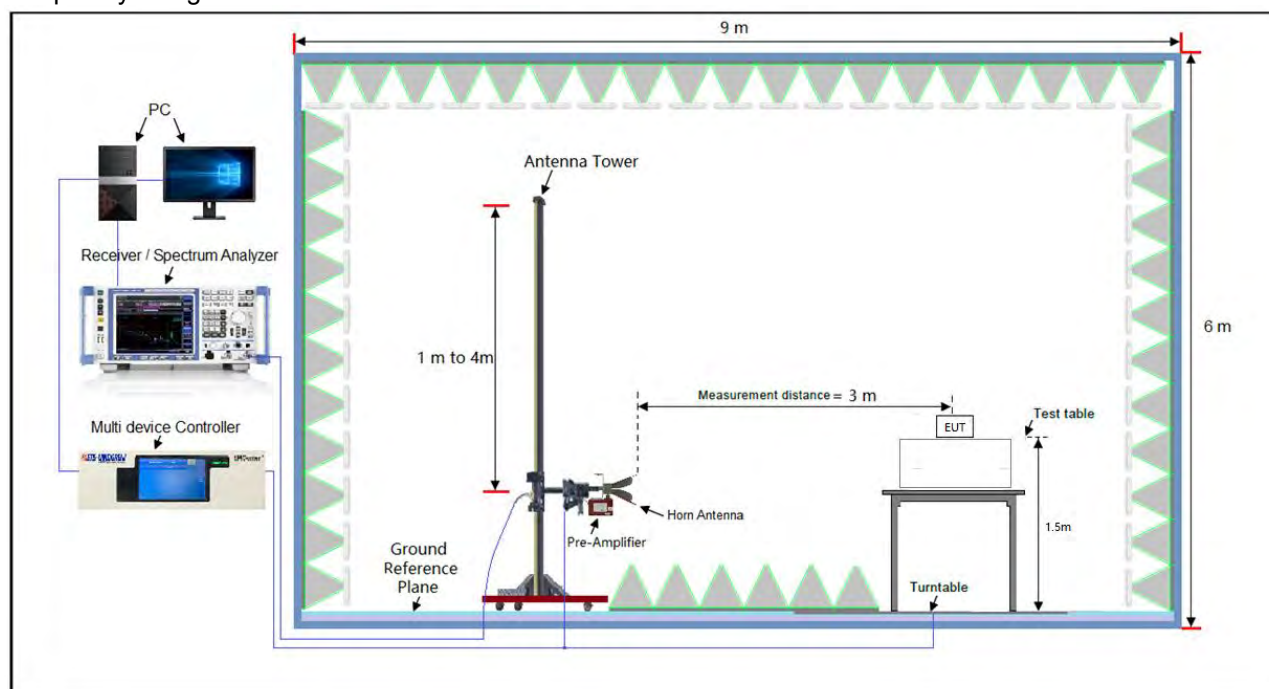
Radiated emission below
30MHz:



Frequency Range below
1GHz:



Frequency Range above 1GHz:



*For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.1.6 EUT Operating Conditions

Set the EUT under transmission condition continuously at specific channel frequency.

Test Report No.: 26030404-RF-US-01

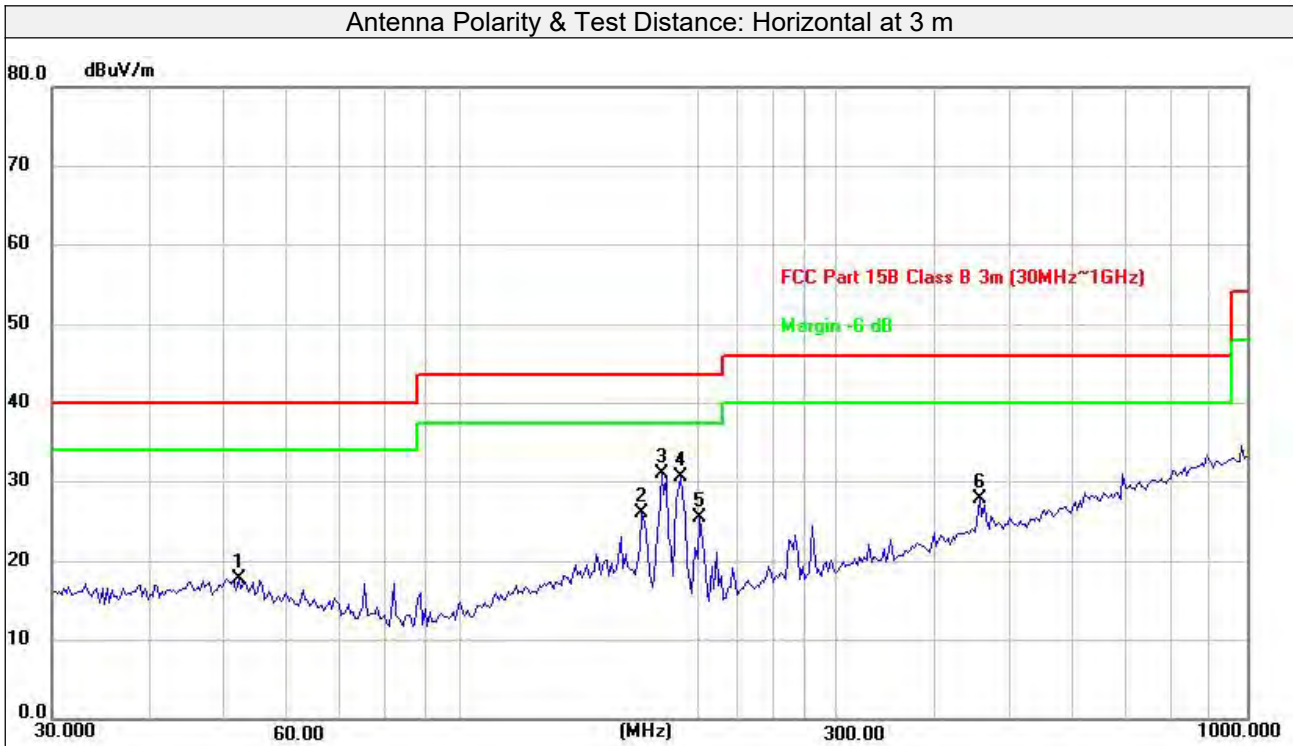
3.1.7 Test Results

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1GHz Worst-Case Data:

Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Mode	GFSK	Test Channel	Channel 0



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	51.8430	32.92	-15.06	17.86	40.00	-22.14	peak	130	224
2	169.5990	40.31	-14.18	26.13	43.50	-17.37	peak	275	267
3	179.3863	46.94	-15.90	31.04	43.50	-12.46	peak	359	17
4	189.7385	47.14	-16.54	30.60	43.50	-12.90	peak	229	31
5	200.6881	42.79	-17.38	25.41	43.50	-18.09	peak	209	338
6	455.9058	35.88	-7.97	27.91	46.00	-18.09	peak	219	82

Remarks:

- 1.Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
- 2.Margin value = Emission level – Limit value

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Test Report No.: 26030404-RF-US-01

Frequency Range	30MHz ~ 1GHz	Detector Function	Peak (PK) Quasi-peak (QP)
Test Mode	GFSK	Test Channel	Channel 0

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	45.6948	33.64	-15.27	18.37	40.00	-21.63	peak	141	173
2	53.3179	33.32	-15.18	18.14	40.00	-21.86	peak	164	149
3	179.3863	40.05	-15.90	24.15	43.50	-19.35	peak	324	275
4	189.7385	41.22	-16.54	24.68	43.50	-18.82	peak	103	227
5	455.9058	36.94	-7.97	28.97	46.00	-17.03	peak	202	210
6	661.1505	34.41	-3.32	31.09	46.00	-14.91	peak	242	246

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value

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Above 1GHz Data:

GFSK 1M

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 0		

Antenna Polarity & Test Distance: Horizontal at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	2358.289	38.63	-1.50	37.13	74.00	-36.87	peak	106	189
2	2358.289	27.08	-1.50	25.58	54.00	-28.42	AVG	106	189
3#	2402.345	101.25	-1.22	100.03			peak	106	189
4#	2402.345	100.49	-1.22	99.27			AVG	106	189

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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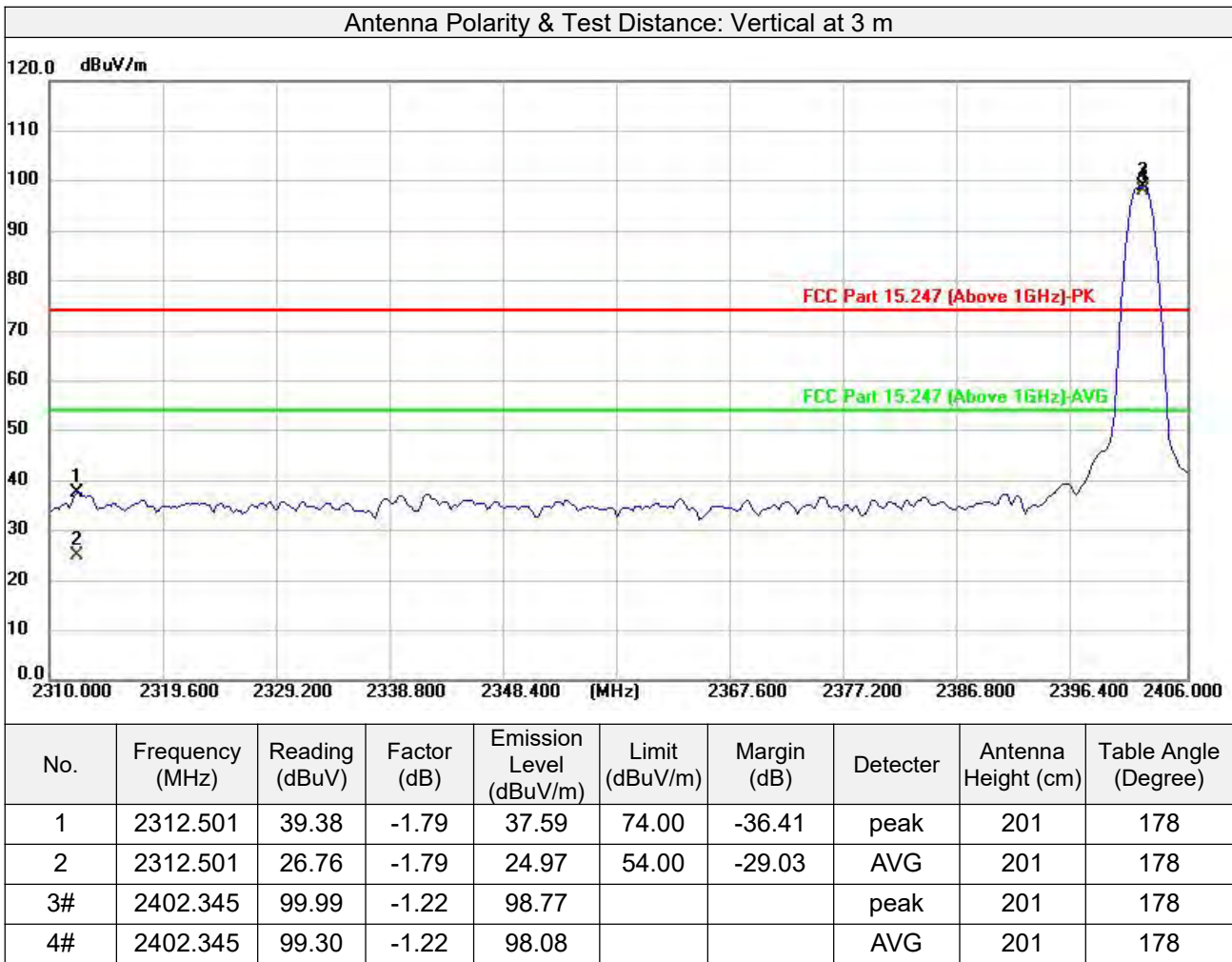
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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 0		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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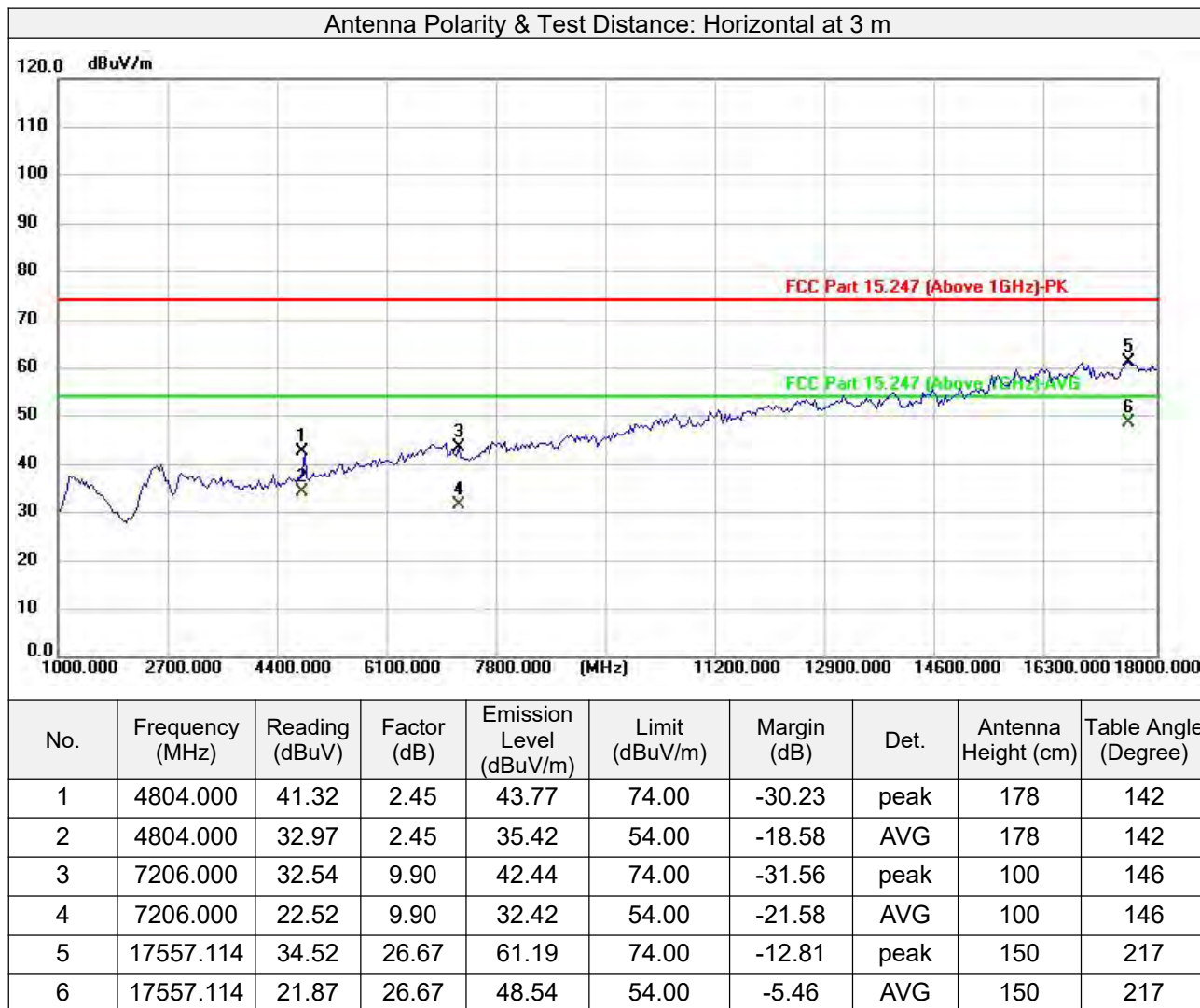
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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 0		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 0		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Antenna Height (cm)	Table Angle (Degree)
1	4804.000	40.69	2.45	43.14	74.00	-30.86	peak	400	152
2	4804.000	29.90	2.45	32.35	54.00	-21.65	AVG	400	152
3	7206.000	33.20	9.90	43.10	74.00	-30.90	peak	100	81
4	7206.000	22.55	9.90	32.45	54.00	-21.55	AVG	100	81
5	17693.387	34.56	27.04	61.60	74.00	-12.40	peak	150	221
6	17693.387	20.09	27.04	47.13	54.00	-6.87	AVG	150	221

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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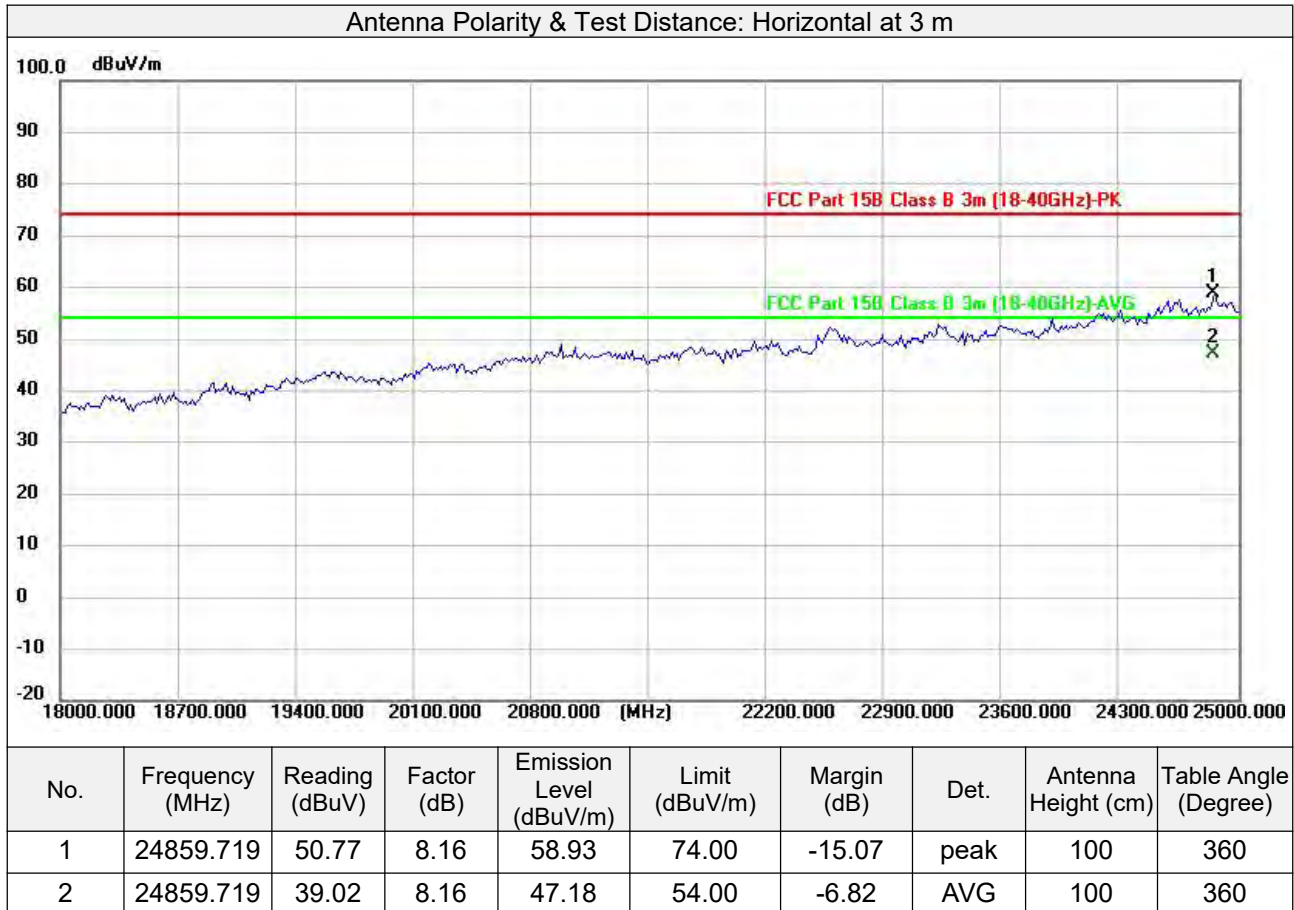
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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 0		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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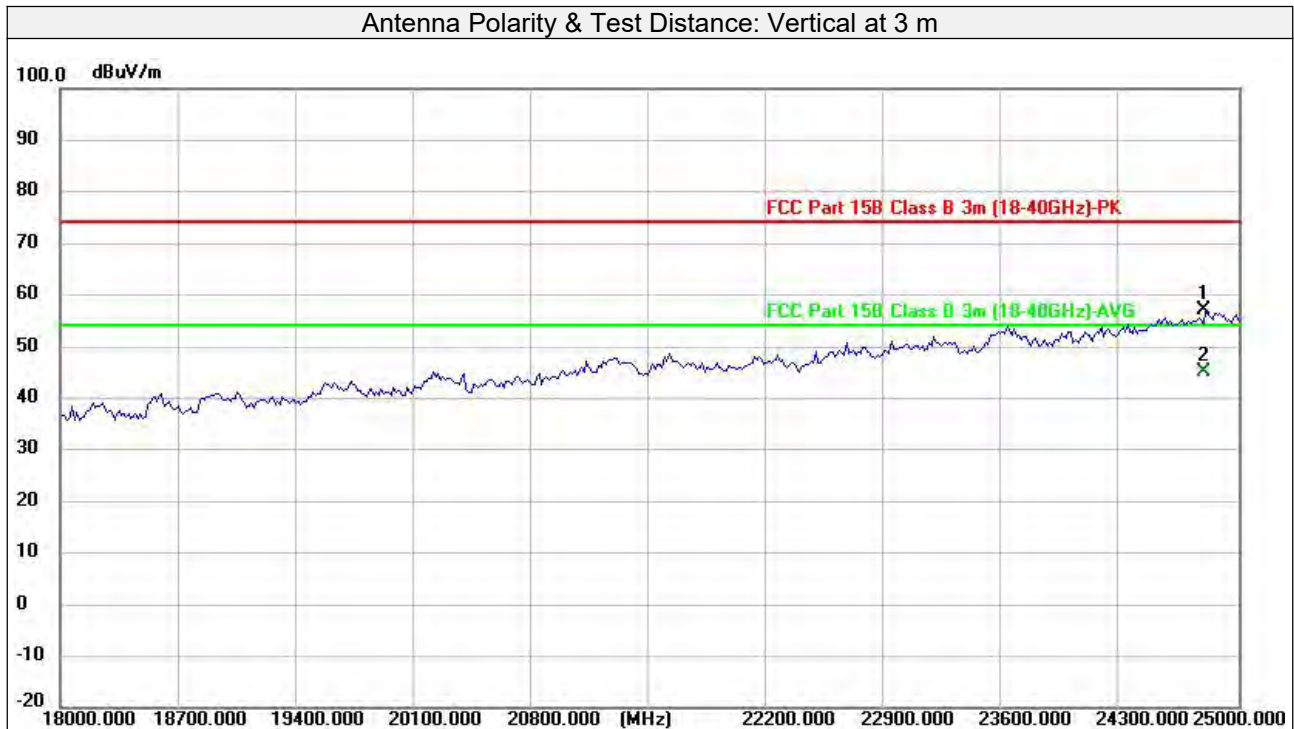
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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 0		

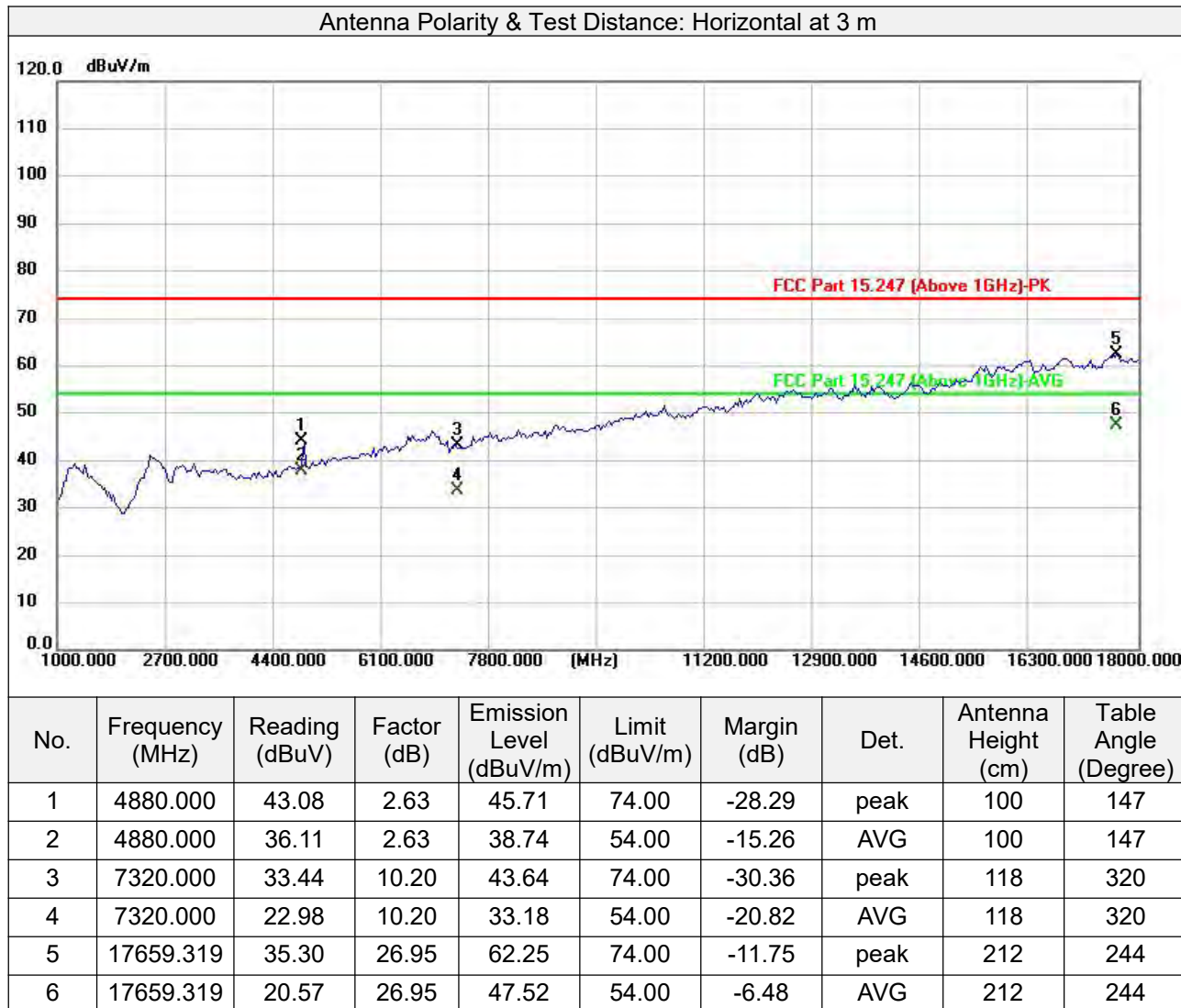


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Antenna Height (cm)	Table Angle (Degree)
1	24803.607	49.06	7.99	57.05	74.00	-16.95	peak	100	55
2	24803.607	37.23	7.99	45.22	54.00	-8.78	AVG	100	55

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 19		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 19		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Antenna Height (cm)	Table Angle (Degree)
1	4880.000	41.58	2.63	44.21	74.00	-29.79	peak	100	57
2	4880.000	32.50	2.63	35.13	54.00	-18.87	AVG	100	57
3	7320.000	33.33	10.20	43.53	74.00	-30.47	peak	217	188
4	7320.000	22.95	10.20	33.15	54.00	-20.85	AVG	217	188
5	16194.389	36.37	24.89	61.26	74.00	-12.74	peak	100	140
6	16194.389	21.56	24.89	46.45	54.00	-7.55	AVG	100	140

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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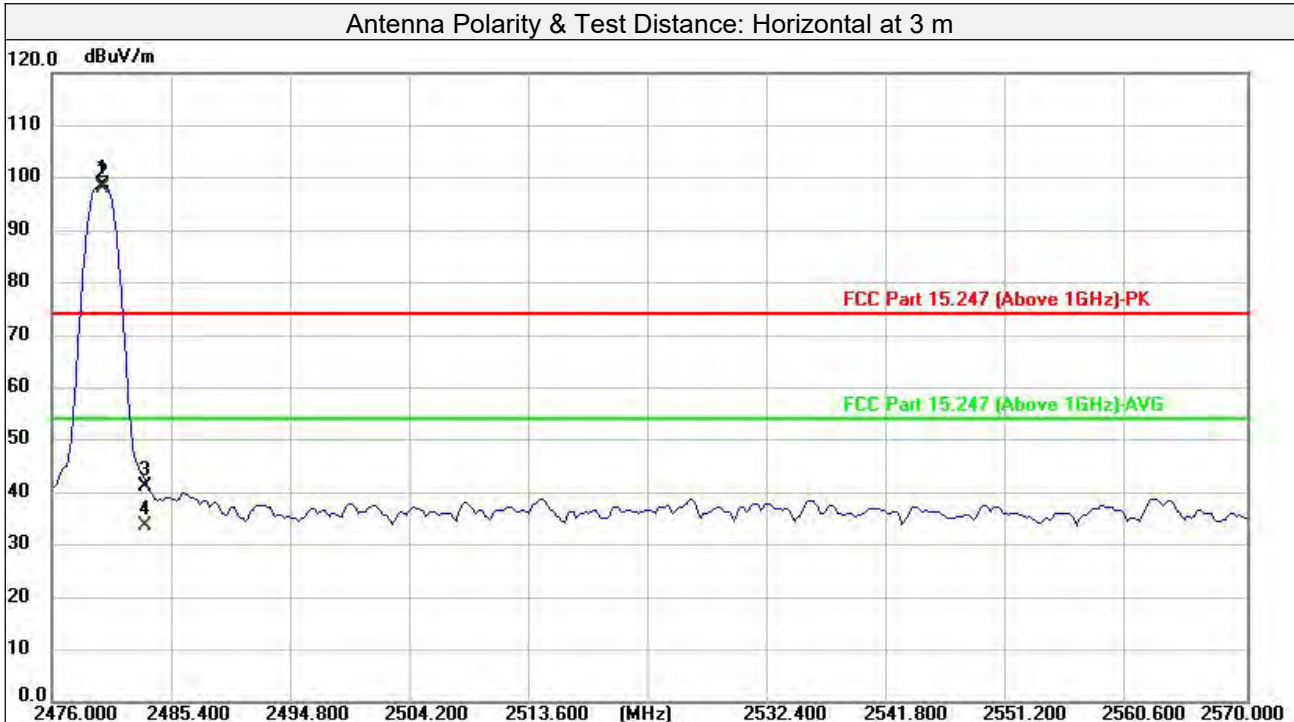
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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 39		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1#	2480.144	99.40	-0.72	98.68			peak	100	215
2#	2480.144	98.87	-0.72	98.15			AVG	100	215
3	2483.500	41.89	-0.69	41.20	74.00	-32.80	peak	100	215
4	2483.500	34.21	-0.69	33.52	54.00	-20.48	AVG	100	215

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 39		

Antenna Polarity & Test Distance: Vertical at 3 m

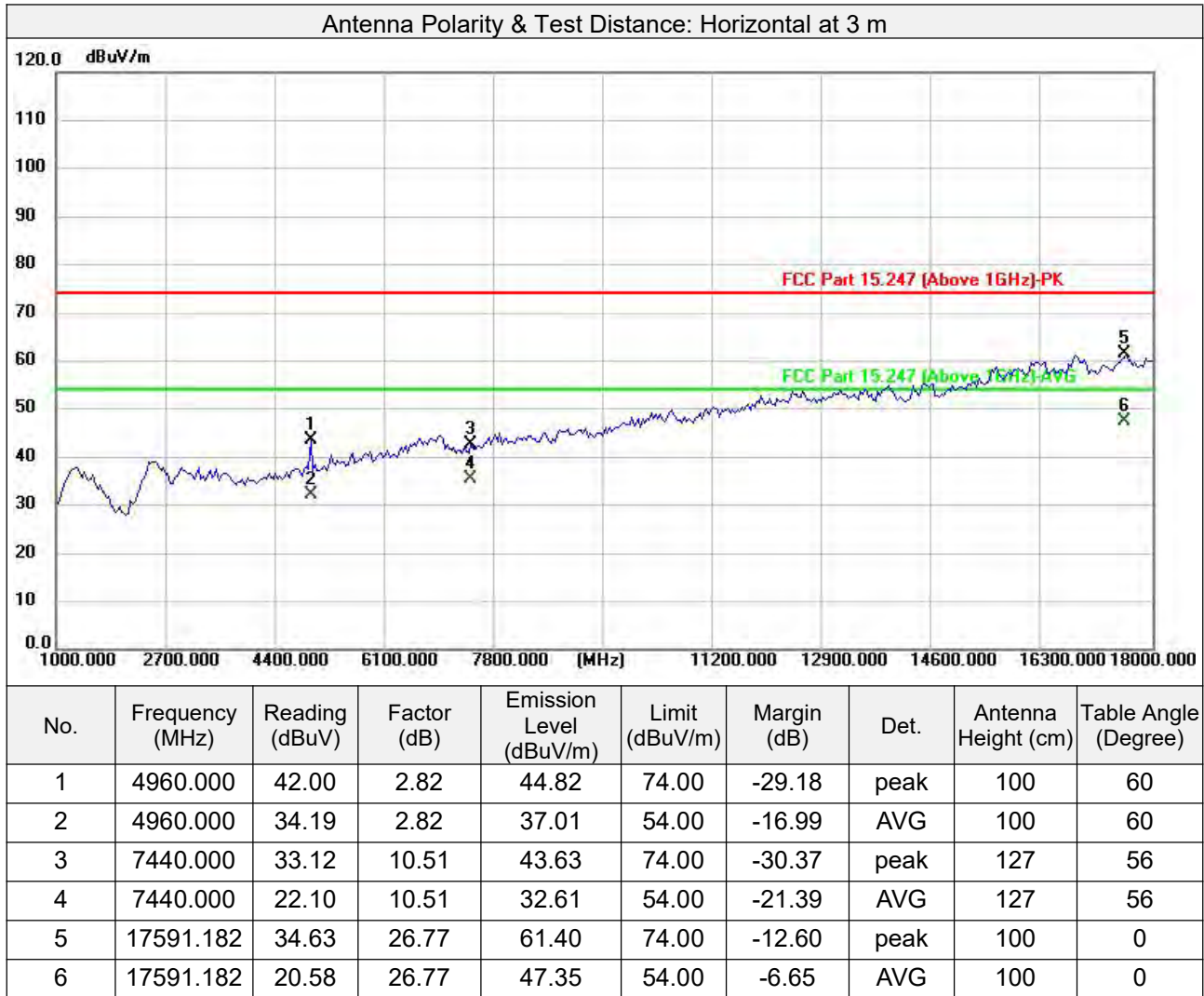


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1#	2480.144	99.13	-0.72	98.41			peak	100	123
2#	2480.144	98.52	-0.72	97.80			AVG	100	123
3	2483.347	40.61	-0.70	39.91	74.00	-34.09	peak	100	123
4	2483.347	33.04	-0.70	32.34	54.00	-21.66	AVG	100	123

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 39		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 39		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Antenna Height (cm)	Table Angle (Degree)
1	4960.000	40.70	2.82	43.52	74.00	-30.48	peak	100	41
2	4960.000	32.88	2.82	35.70	54.00	-18.30	AVG	100	41
3	7440.000	32.62	10.51	43.13	74.00	-30.87	peak	224	107
4	7440.000	22.10	10.51	32.61	54.00	-21.39	AVG	224	107
5	17591.182	34.65	26.77	61.42	74.00	-12.58	peak	146	15
6	17591.182	19.93	26.77	46.70	54.00	-7.30	AVG	146	15

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

GFSK 2M

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 1		

Antenna Polarity & Test Distance: Horizontal at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	2389.559	38.09	-1.30	36.79	74.00	-37.21	peak	385	74
2	2389.559	26.58	-1.30	25.28	54.00	-28.72	AVG	385	74
3#	2404.589	99.32	-1.19	98.13			peak	385	74
4#	2404.589	70.50	-1.19	69.31			AVG	385	74

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 1		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	2340.461	39.41	-1.62	37.79	74.00	-36.21	peak	107	132
2	2340.461	29.65	-1.62	28.03	54.00	-25.97	AVG	107	132
3#	2404.589	101.95	-1.19	100.76			peak	107	132
4#	2404.589	72.44	-1.19	71.25			AVG	107	132

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 1		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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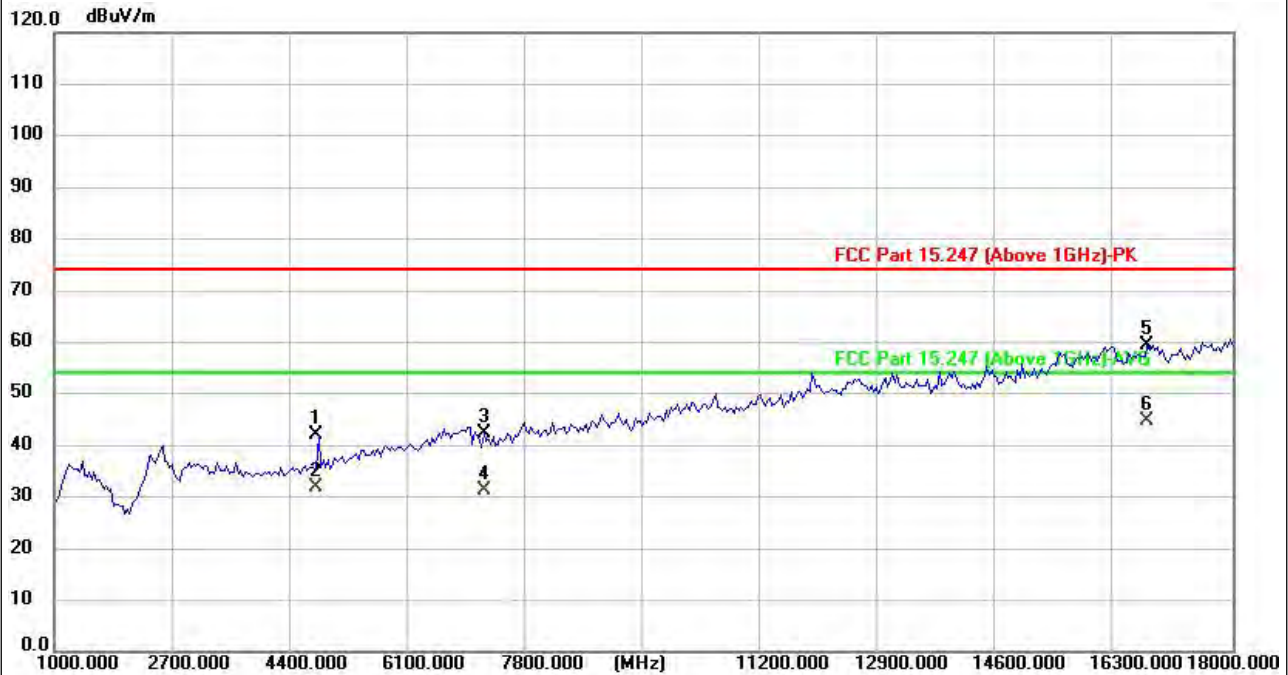
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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 1		

Antenna Polarity & Test Distance: Vertical at 3 m

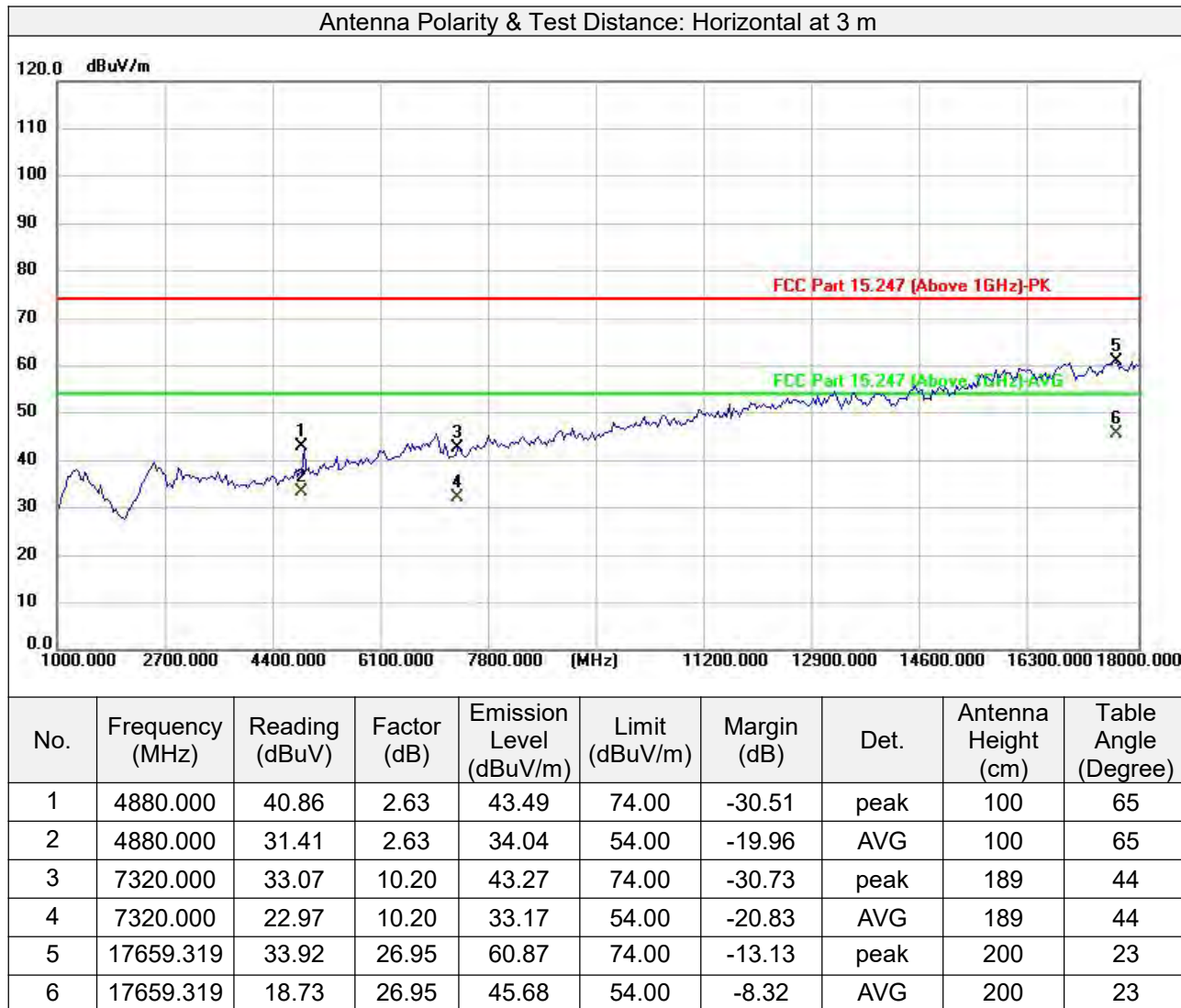


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Antenna Height (cm)	Table Angle (Degree)
1	4808.000	39.61	2.47	42.08	74.00	-31.92	peak	124	247
2	4808.000	29.11	2.47	31.58	54.00	-22.42	AVG	124	247
3	7212.000	32.87	9.92	42.79	74.00	-31.21	peak	221	18
4	7212.000	22.77	9.92	32.69	54.00	-21.31	AVG	221	18
5	16773.547	34.44	25.08	59.52	74.00	-14.48	peak	150	221
6	16773.547	19.53	25.08	44.61	54.00	-9.39	AVG	150	221

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 19		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 19		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Antenna Height (cm)	Table Angle (Degree)
1	4880.000	39.85	2.63	42.48	74.00	-31.52	peak	115	218
2	4880.000	29.64	2.63	32.27	54.00	-21.73	AVG	115	218
3	7320.000	33.89	10.20	44.09	74.00	-29.91	peak	155	91
4	7320.000	23.12	10.20	33.32	54.00	-20.68	AVG	155	91
5	16739.479	35.30	25.06	60.36	74.00	-13.64	peak	100	140
6	16739.479	20.30	25.06	45.36	54.00	-8.64	AVG	100	140

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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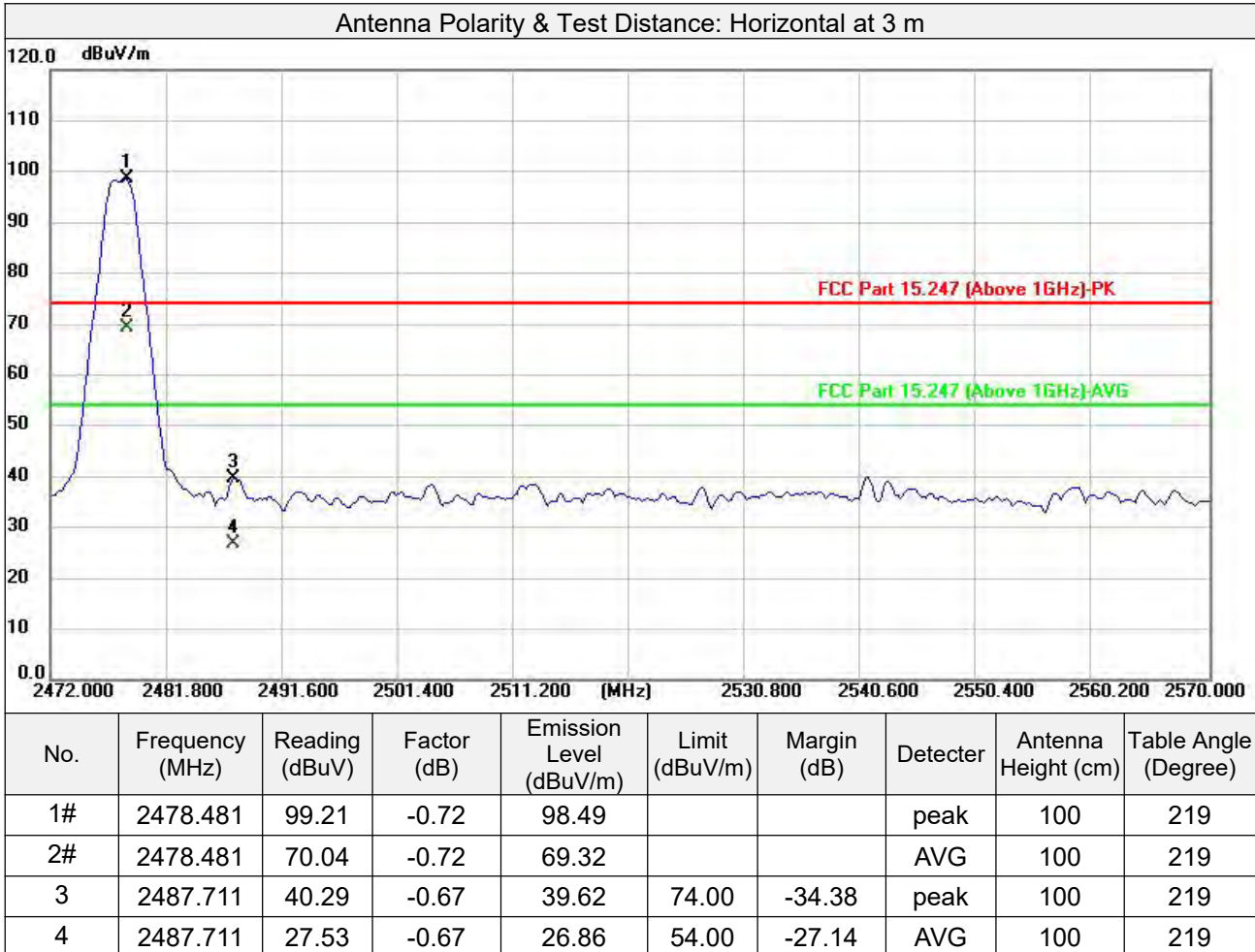
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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 38		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 38		

Antenna Polarity & Test Distance: Vertical at 3 m

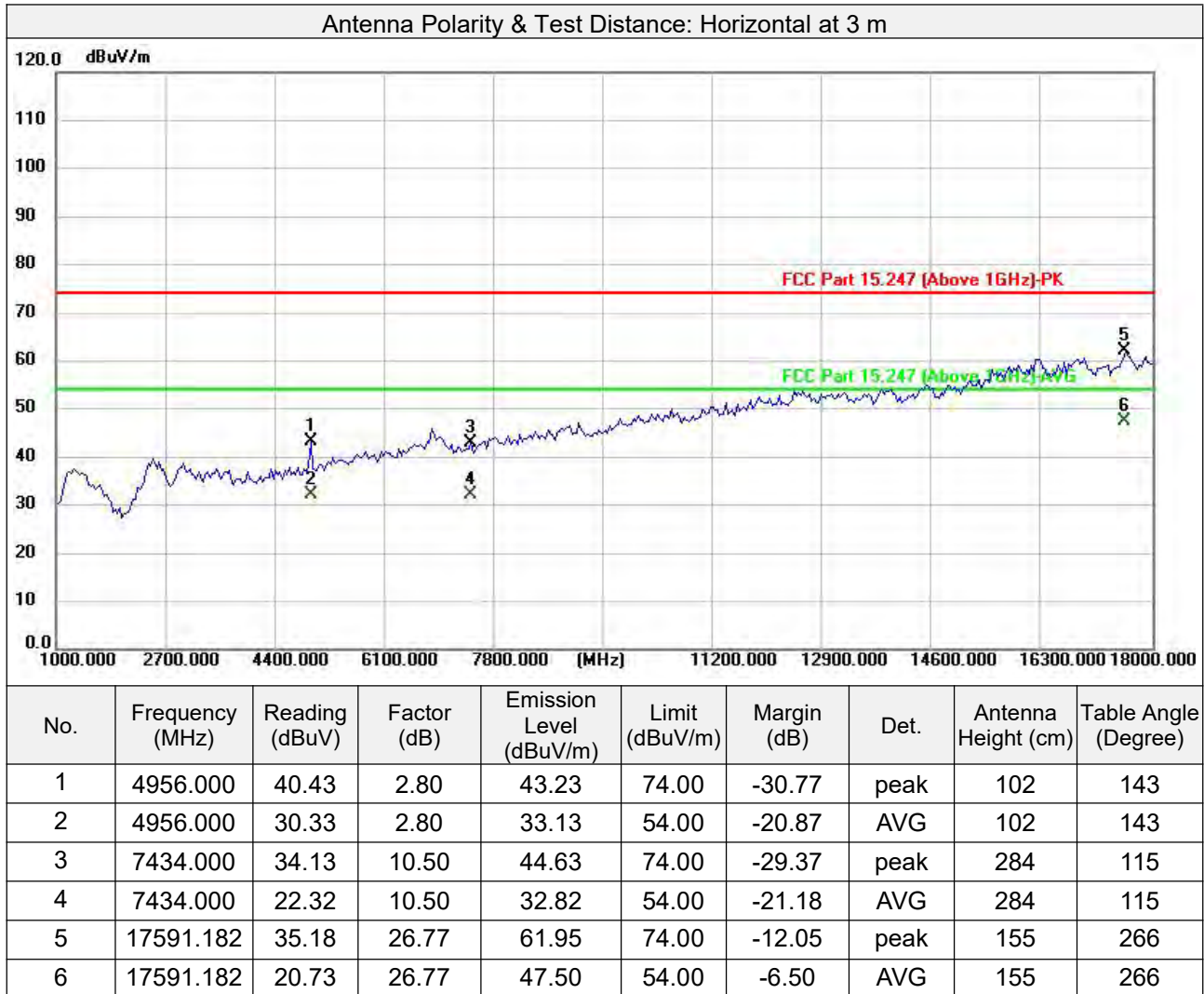


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1#	2477.499	100.17	-0.73	99.44			peak	100	129
2#	2477.499	70.51	-0.73	69.78			AVG	100	129
3	2483.500	41.44	-0.69	40.75	74.00	-33.25	peak	100	129
4	2483.500	29.21	-0.69	28.52	54.00	-25.48	AVG	100	129

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 38		



Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

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Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AVG)
Test Channel	Channel 38		

Antenna Polarity & Test Distance: Vertical at 3 m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Antenna Height (cm)	Table Angle (Degree)
1	4956.000	39.61	2.80	42.41	74.00	-31.59	peak	100	100
2	4956.000	29.64	2.80	32.44	54.00	-21.56	AVG	100	100
3	7434.000	33.45	10.50	43.95	74.00	-30.05	peak	173	295
4	7434.000	22.25	10.50	32.75	54.00	-21.25	AVG	173	295
5	17625.251	34.01	26.85	60.86	74.00	-13.14	peak	133	152
6	17625.251	19.12	26.85	45.97	54.00	-8.03	AVG	133	152

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamplifier Factor)
2. Margin value = Emission level – Limit value
3. #: Fundamental frequency.
4. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.
5. The harmonic values recorded in the table are from the test results of the low SPAN spectrum.

3.2 Conducted Emission Measurement**3.2.1 Limits of Conducted Emission Measurement**

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

- Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3.2.2 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Next Cal. Date
EMI Test Receiver (10kHz~7GHz)	Rohde&Schwarz	ESR7	101961	2026-07-23
2 Line V-Network LISN	Rohde&Schwarz	ENV216	3560.6550.15	2026-07-23
Test software	FARAD	EZ_EMV V1.1.4.2	N/A	N/A
Broadcast test system	R&S	SFU	100410	2026-07-23

Note:

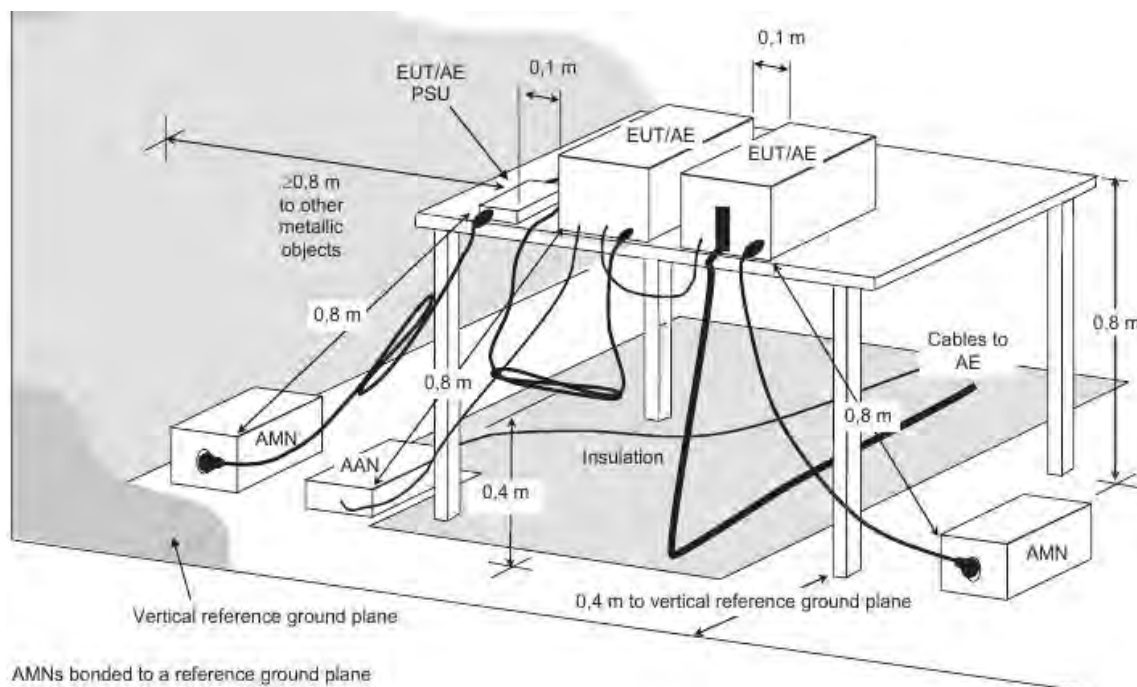
1. The calibration interval of the above test instruments is 12 months and calibrated by LISAI/CHINA.
2. The test was performed in Shielded Room 743.

3.2.3 Test Procedures

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit – 20dB) was not recorded.

Note: All modes of operation were investigated and the worst-case emissions are reported.

3.2.4 Test Setup



For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.2.5 EUT Operating Condition

Set the EUT under transmission condition continuously at specific channel frequency.

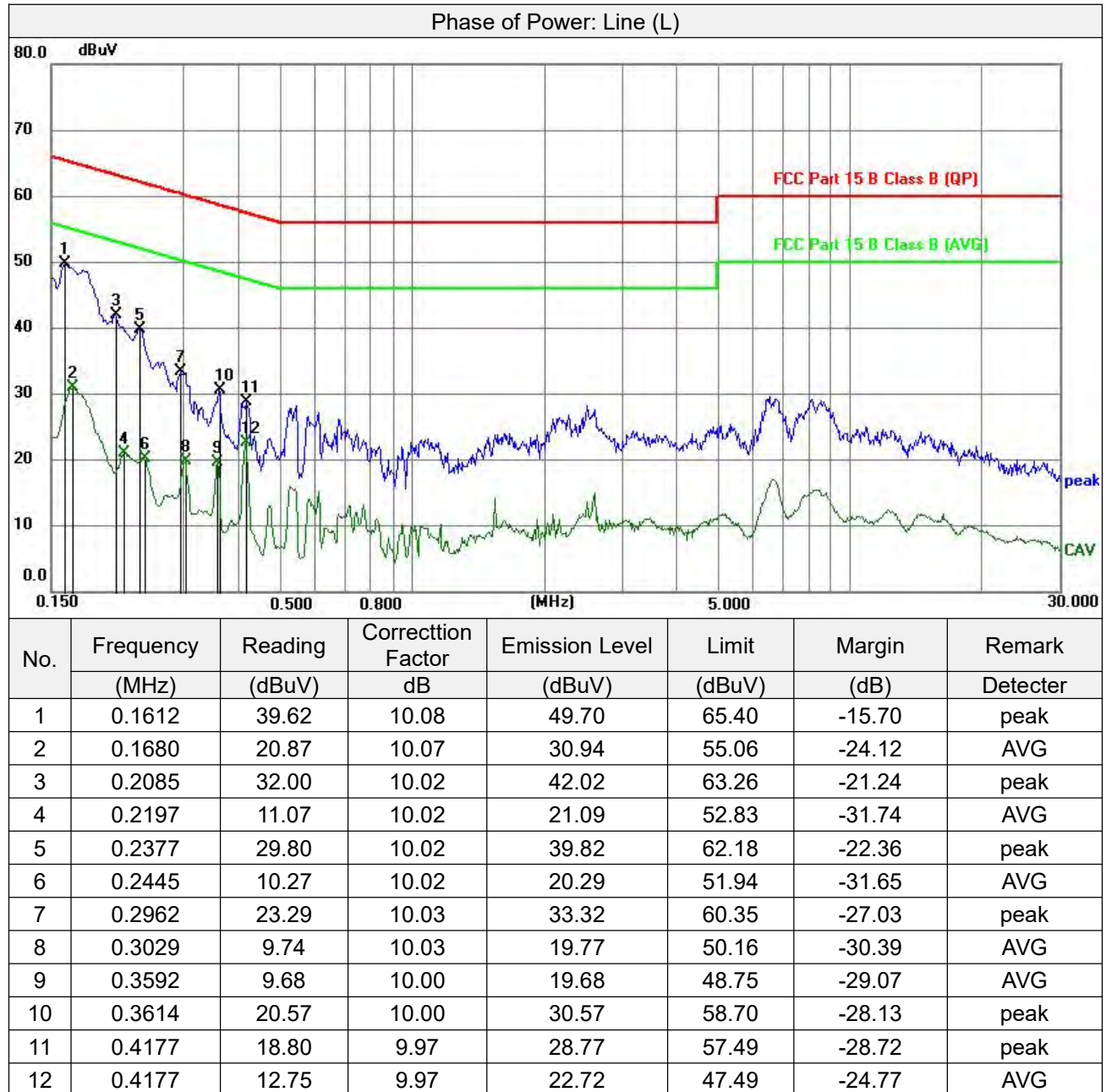
3.2.6 Deviation from Test Standard

No deviation.

Test Report No.: 26030404-RF-US-01

3.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution andwidth	Quasi-Peak (QP) / Average (AV), 9kHz
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Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

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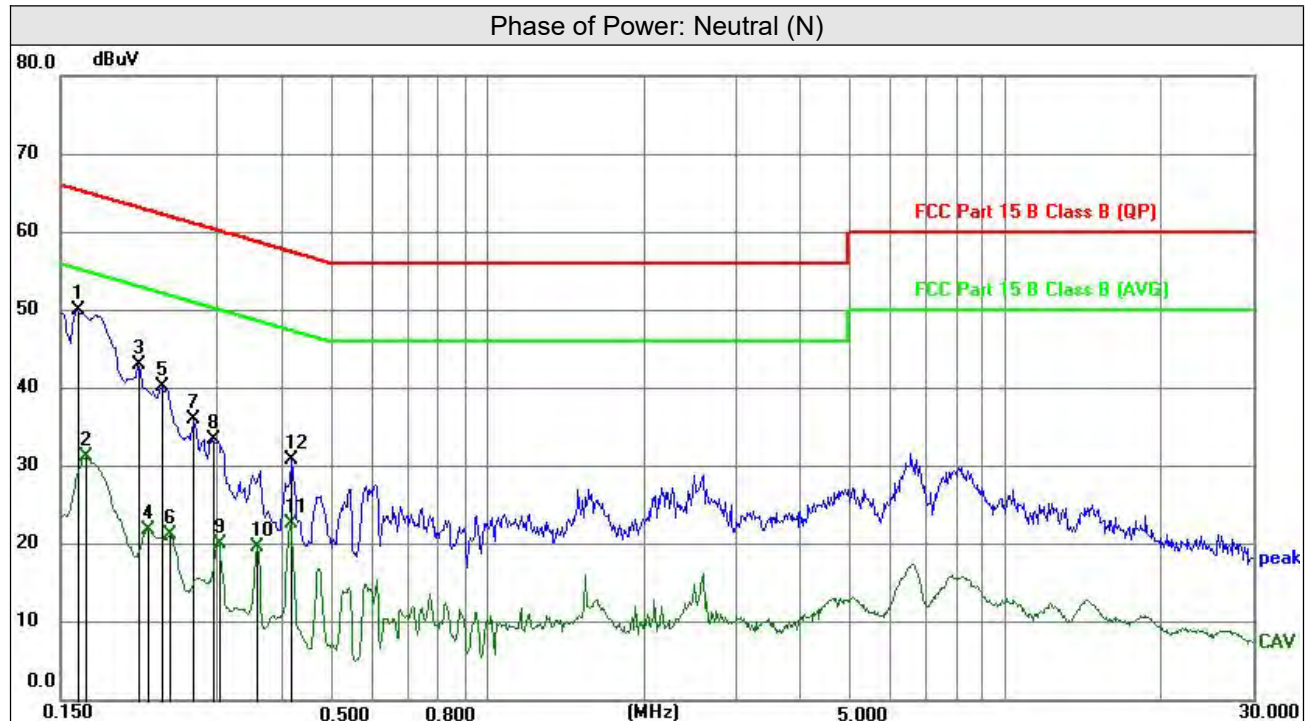
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Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution andwidth	Quasi-Peak (QP) / Average (AV), 9kHz
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No.	Frequency (MHz)	Reading (dBuV)	Correct Factor dB	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Remark Detector
1	0.1613	39.82	10.08	49.90	65.40	-15.50	peak
2	0.1680	21.07	10.07	31.14	55.06	-23.92	AVG
3	0.2108	33.06	10.03	43.09	63.17	-20.08	peak
4	0.2220	11.87	10.03	21.90	52.74	-30.84	AVG
5	0.2355	30.14	10.03	40.17	62.25	-22.08	peak
6	0.2445	11.17	10.03	21.20	51.94	-30.74	AVG
7	0.2714	25.90	10.03	35.93	61.07	-25.14	peak
8	0.2940	23.39	10.03	33.42	60.41	-26.99	peak
9	0.3030	10.05	10.03	20.08	50.16	-30.08	AVG
10	0.3592	9.57	9.99	19.56	48.75	-29.19	AVG
11	0.4177	12.74	9.96	22.70	47.49	-24.79	AVG
12	0.4200	20.78	9.96	30.74	57.45	-26.71	peak

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

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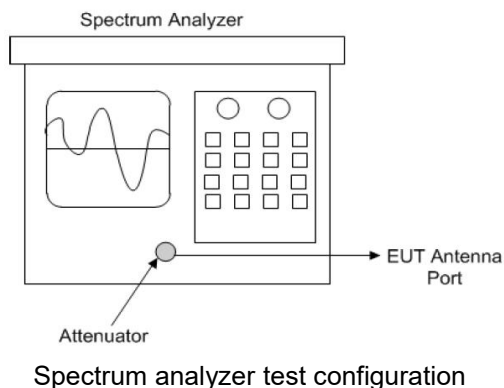
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3.3 Number of Hopping Frequency Used

3.3.1 Limits of Hopping Frequency Used Measurement

At least 15 channels frequencies, and should be equally spaced.

3.3.2 Test Setup



3.3.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.3.4 Test Procedure

- Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
- Set the SA on View mode and then plot the result on SA screen.
- Repeat above procedures until all frequencies measured were complete.

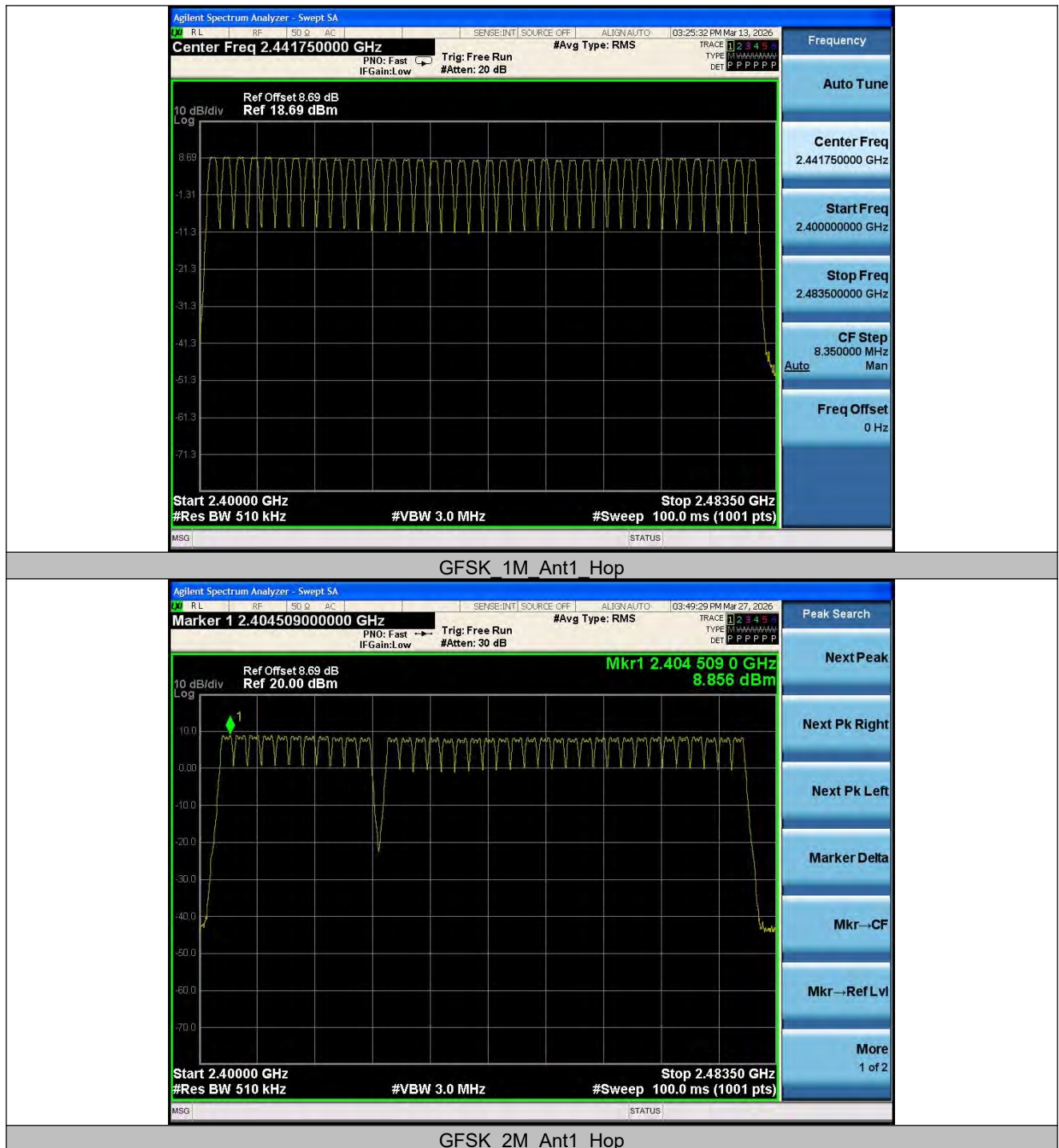
3.3.5 Deviation from Test Standard

No deviation.

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3.3.6 Test Results

Test Mode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
GFSK_1M	Ant1	Hop	40	≥15	PASS
GFSK_2M	Ant1	Hop	37	≥15	PASS



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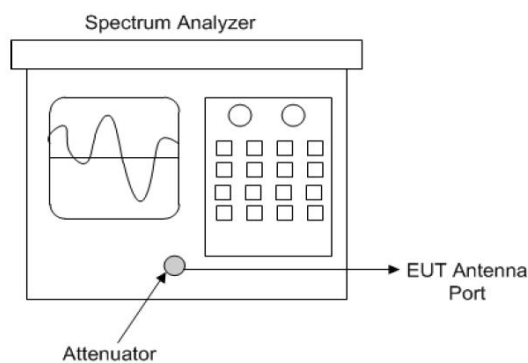
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3.4 Dwell Time on Each Channel

3.4.1 Limits of Dwell Time on Each Channel Measurement

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

3.4.2 Test Setup



Spectrum analyzer test configuration

3.4.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.4.4 Test Procedures

- Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
- Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
- Repeat above procedures until all different time-slot modes have been completed.

3.4.5 Deviation from Test Standard

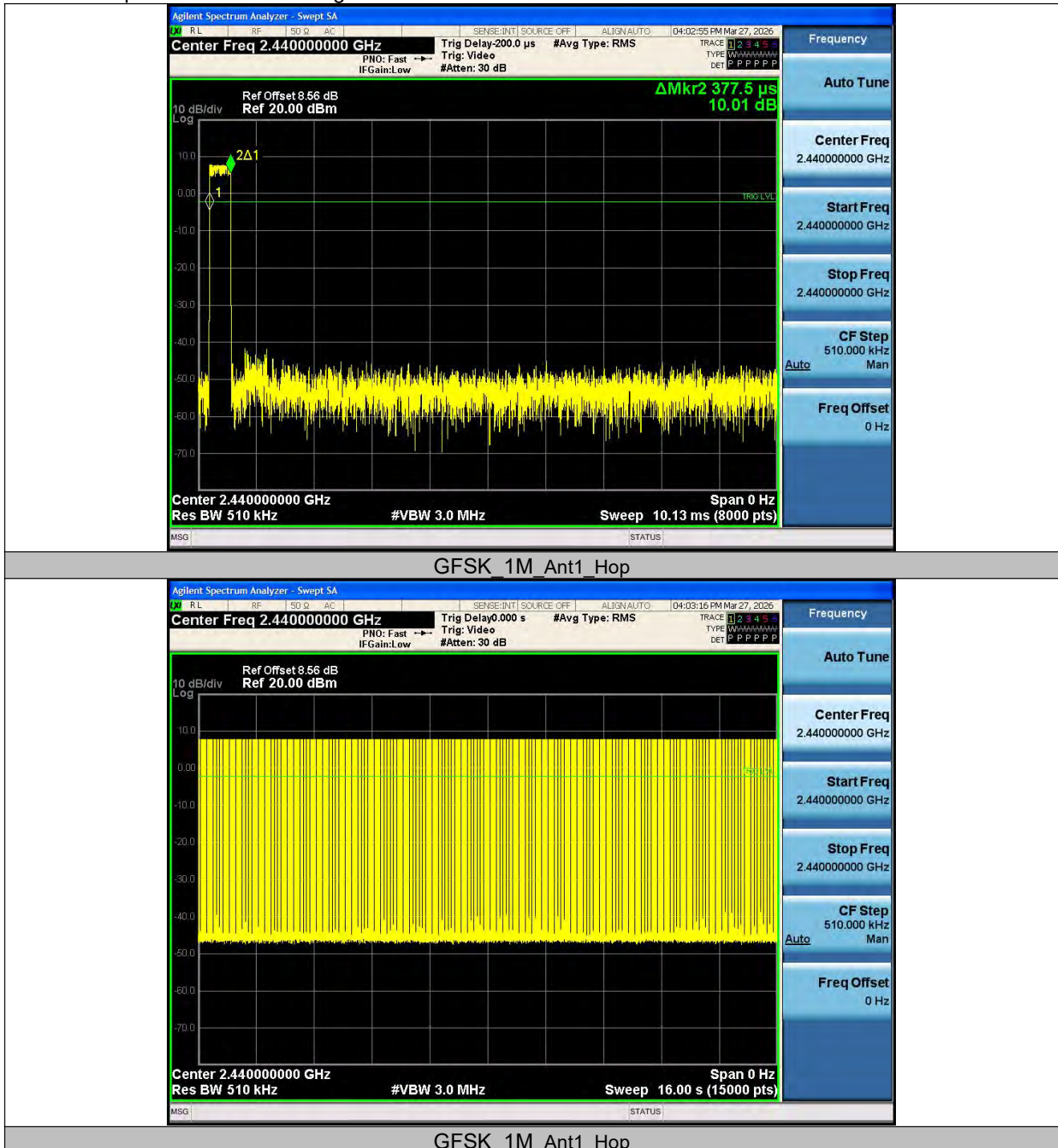
No deviation.

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3.4.6 Test Results

Test Mode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
GFSK 1M	Ant1	Hop	0.38	639	0.241	≤0.4	PASS
GFSK 2M	Ant1	Hop	0.19	607	0.118	≤0.4	PASS

Note: Test plots of the transmitting time slot are shown as below.



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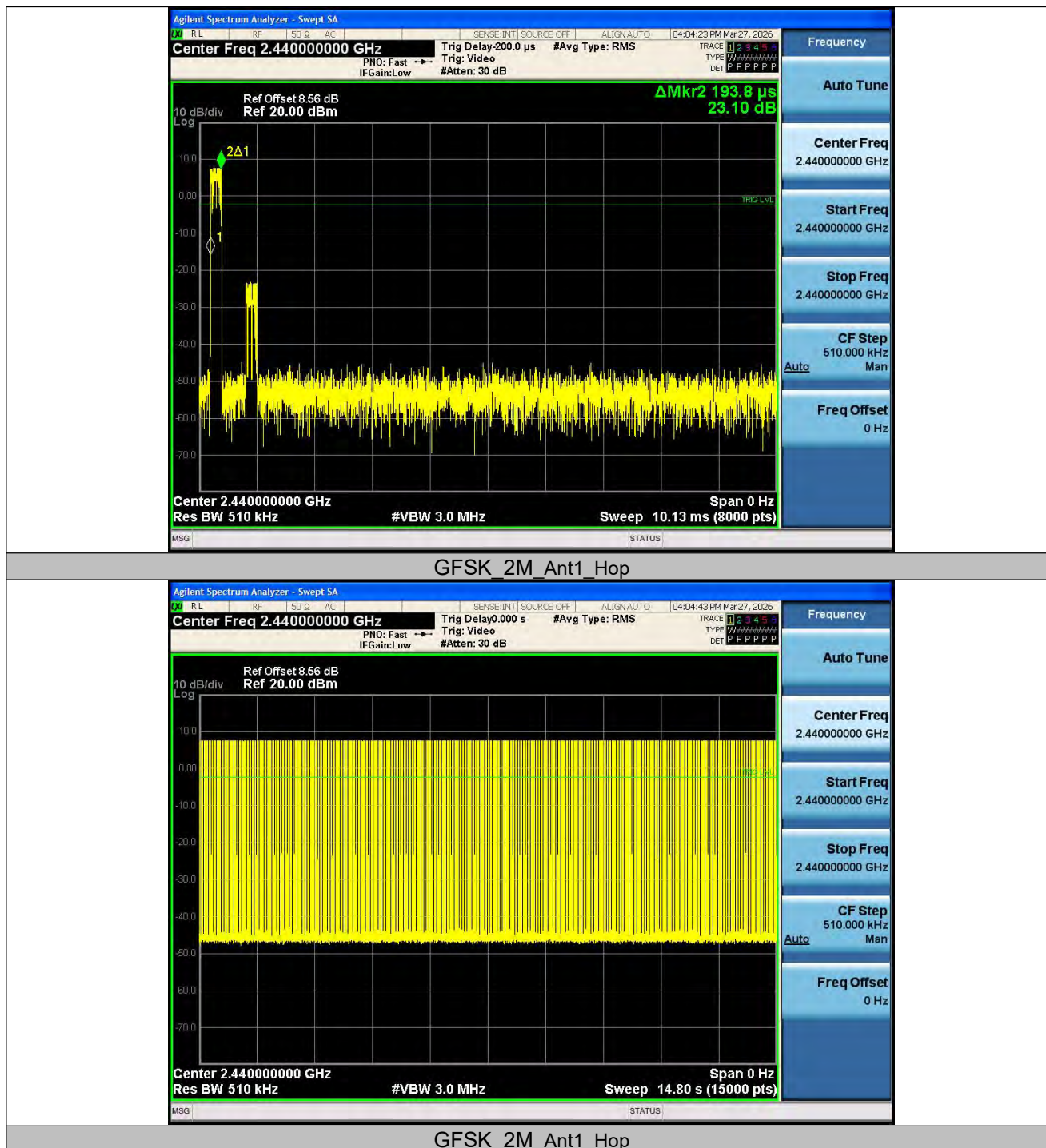
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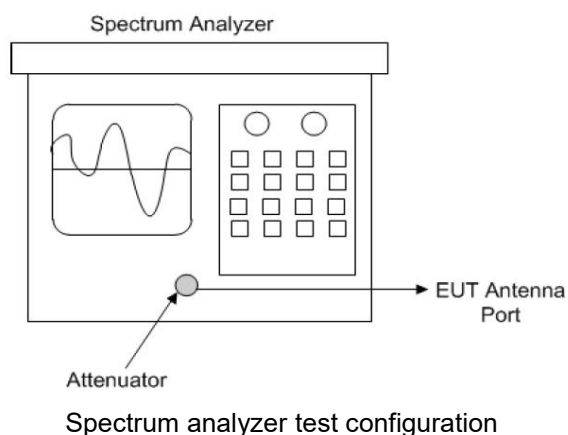
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3.5 Channel Bandwidth

3.5.1 Limits of Channel Bandwidth Measurement

For frequency hopping system operating in the 2400-2483.5 MHz, if the 20 dB bandwidth of hopping channel is greater than 25 kHz, two-thirds 20 dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

3.5.2 Test Setup



3.5.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.5.4 Test Procedure

- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the instrument equal to the highest peak value.
- Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
- Repeat above procedures until all frequencies measured were complete.

3.5.5 Deviation from Test Standard

No deviation.

3.5.6 EUT Operating Condition

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

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3.5.7 Test Results

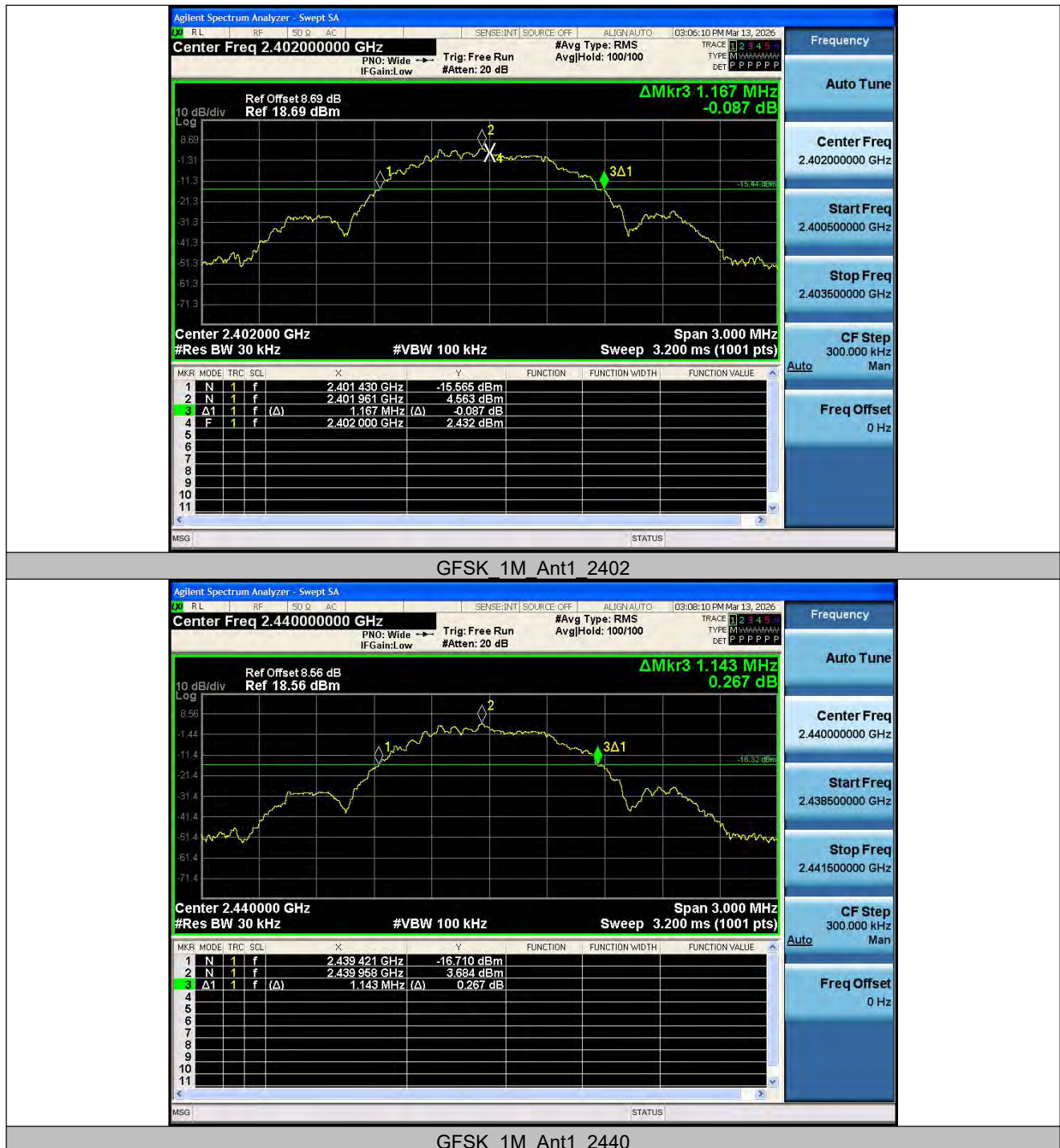
Test Mode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]
GFSK_1M	Ant1	2402	1.167	2401.430	2402.597
		2440	1.143	2439.421	2440.564
		2480	1.167	2479.412	2480.579
GFSK_2M	Ant1	2404	2.346	2402.863	2405.209
		2440	2.346	2438.857	2441.203
		2478	2.238	2476.884	2479.122

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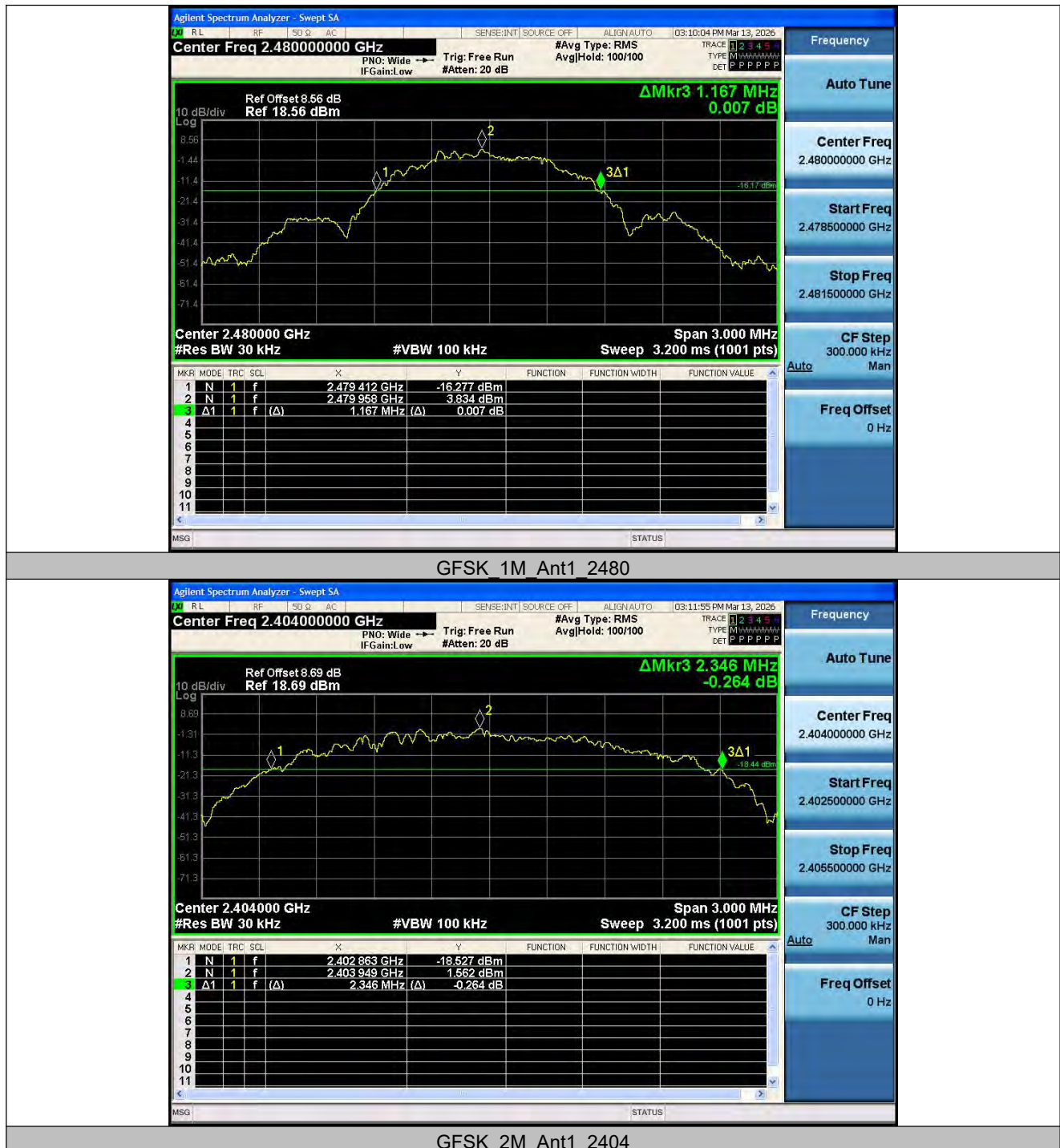
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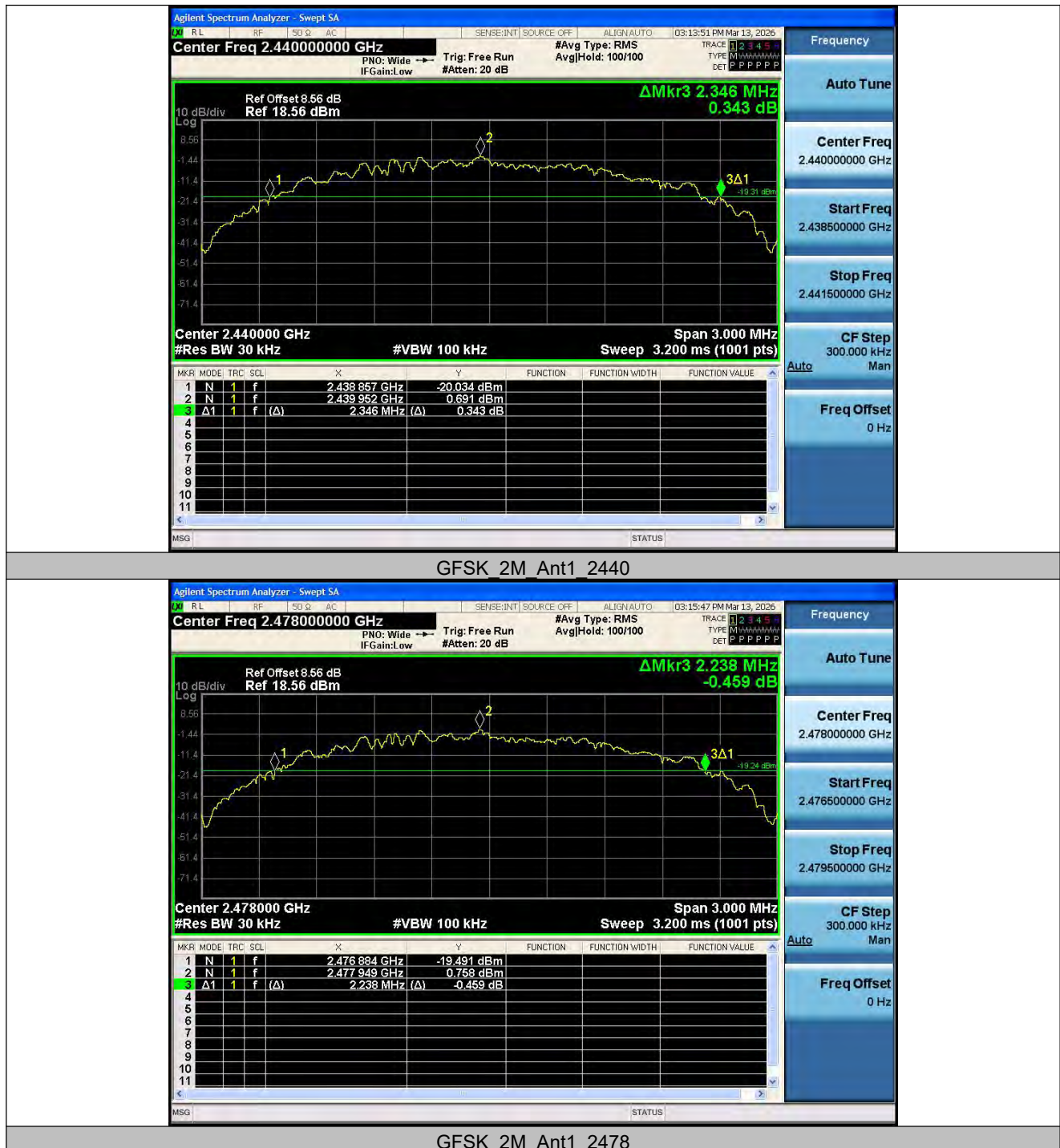
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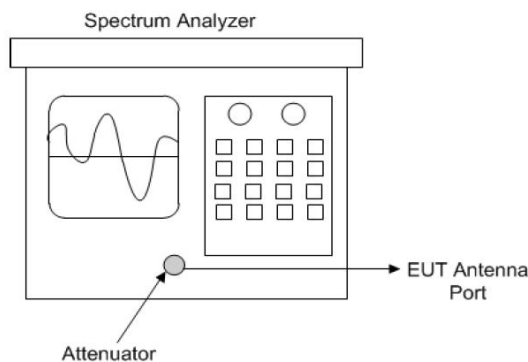
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3.6 Occupied Bandwidth Measurement

3.6.1 Test Setup



Spectrum analyzer test configuration

3.6.2 Test Instruments

Refer to section 5 to get information of above instrument

3.6.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to PEAK. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

3.6.4 Deviation from Test Standard

No deviation.

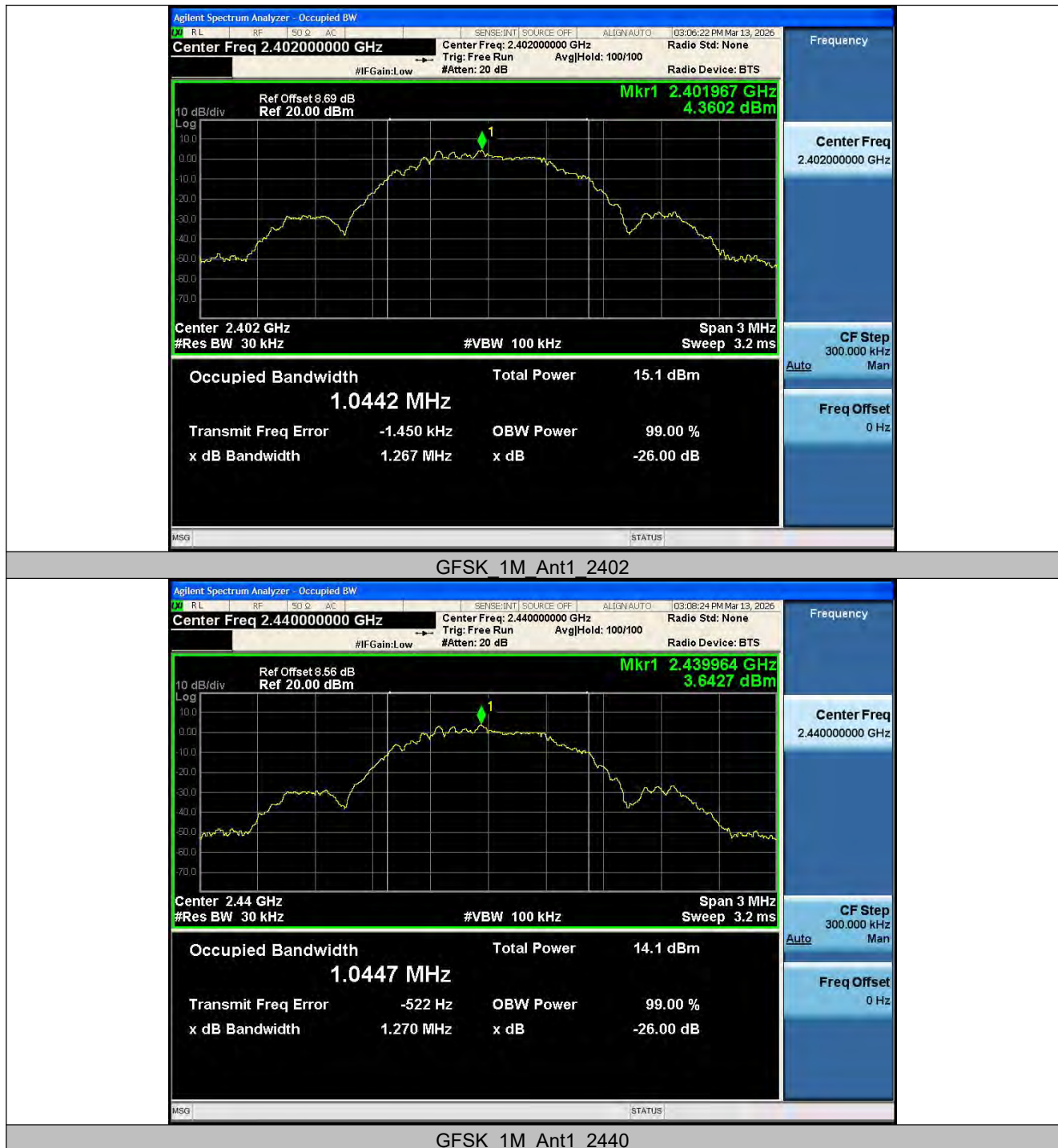
3.6.5 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.6.6 Test Results

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]
GFSK_1M	Ant1	2402	1.0442	2401.476	2402.521
		2440	1.0447	2439.477	2440.522
		2480	1.0432	2479.478	2480.522
GFSK_2M	Ant1	2404	2.0564	2402.990	2405.046
		2440	2.0477	2438.994	2441.042
		2478	2.0607	2476.989	2479.049

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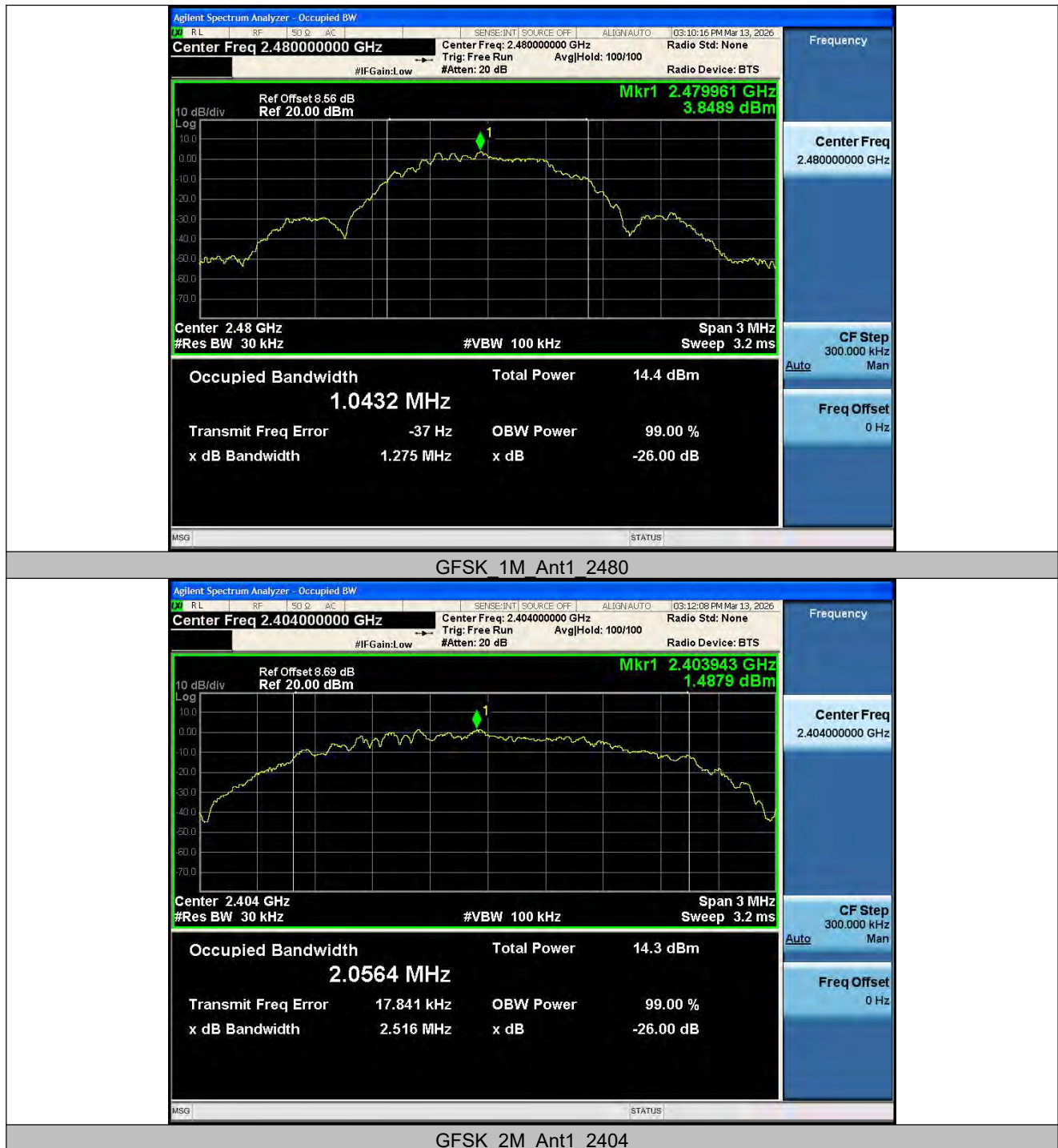
Web.: www.lyns-tci.com

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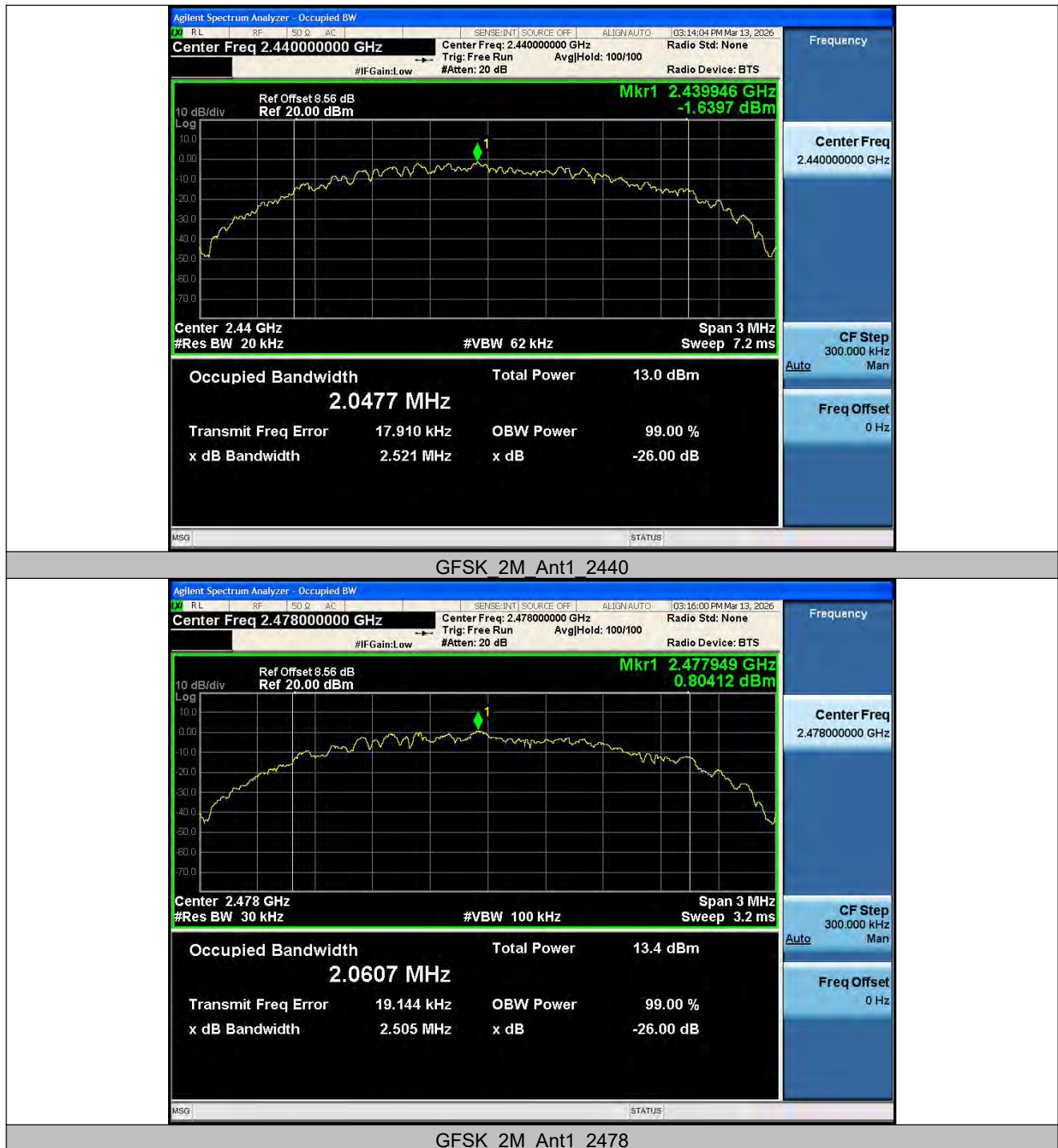
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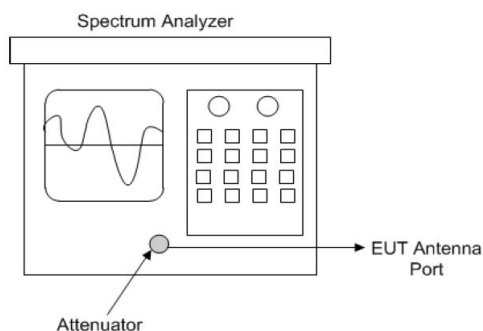
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3.7 Hopping Channel Separation

3.7.1 Limits of Hopping Channel Separation Measurement

At least 25 kHz or two-third of 20 dB hopping channel bandwidth (whichever is greater).

3.7.2 Test Setup



3.7.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.7.4 Test Procedure

- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
- By using the MaxHold function record the separation of two adjacent channels.
- Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
- Repeat above procedures until all frequencies measured were complete.

3.7.5 Deviation from Test Standard

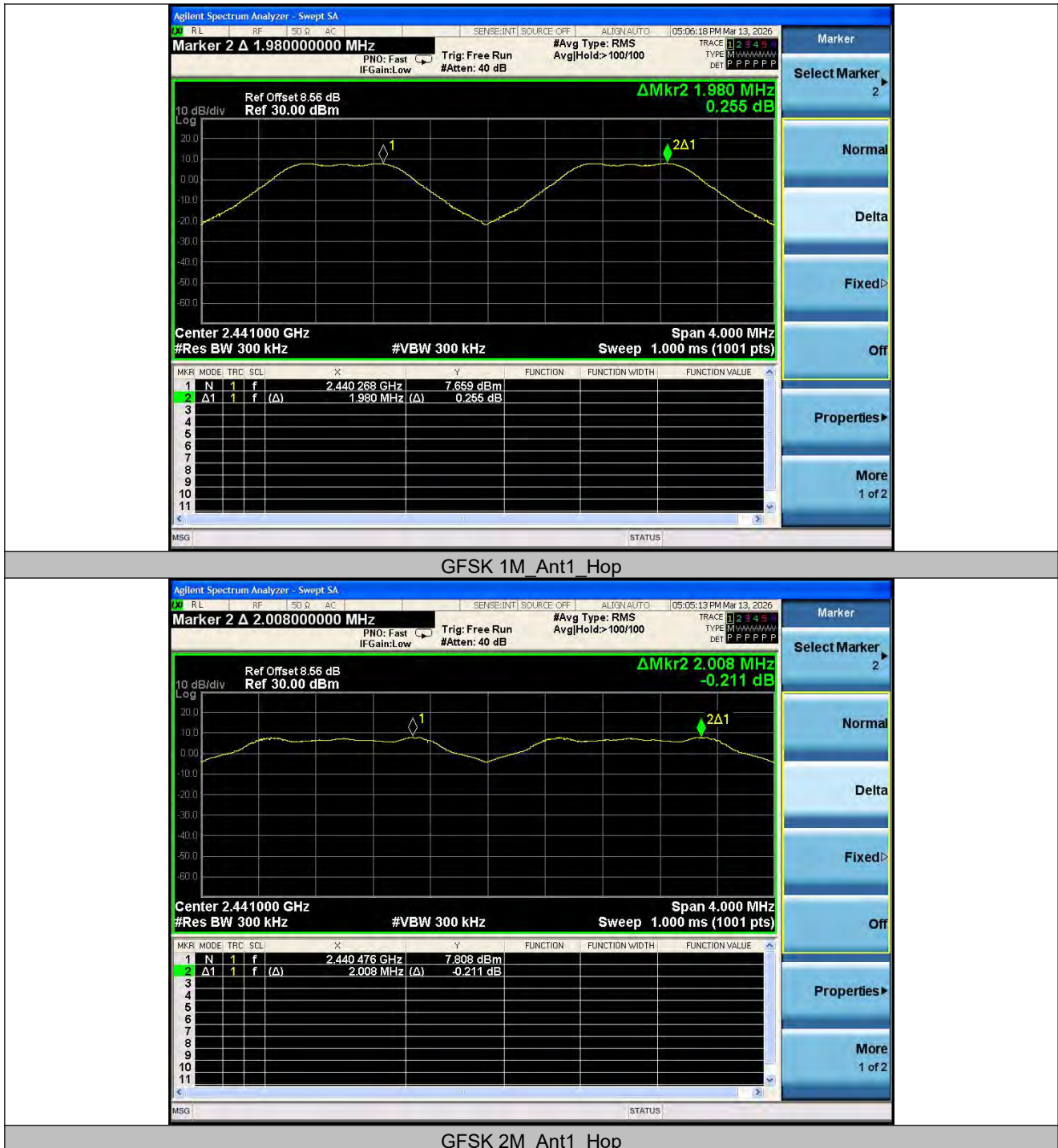
No deviation.

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3.7.6 Test Results

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
GFSK 1M	Ant1	Hop	1.980	≥ 0.778	PASS
GFSK 2M	Ant1	Hop	2.008	≥ 1.564	PASS

Note: The minimum limit is two-third 20 dB bandwidth.



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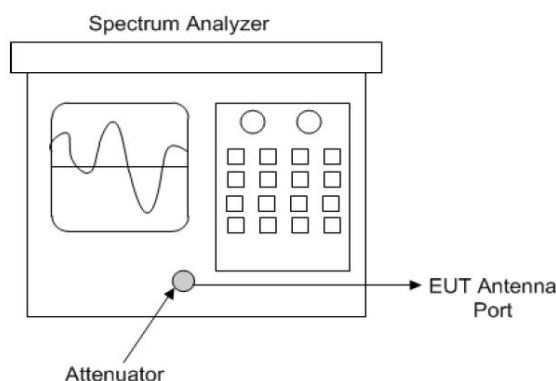
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3.8 Maximum Output Power

3.8.1 Limits of Maximum Output Power Measurement

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30dBm).

3.8.2 Test Setup



Spectrum analyzer test configuration

3.8.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.8.4 Test Procedure

Measurement using a spectrum analyzer (SA), Selection of test method:

The proper test method is selected based on the following criteria:

- a) **Method AVGSA-1 or method AVGSA-1A (alternative)** shall be applied if either of the following conditions can be satisfied:
 - 1) The EUT transmits continuously (or with a $D > 98\%$).
 - 2) Sweep triggering can be implemented in such a way that the device transmits at the maximum power control level throughout the duration of each of the instrument sweeps to be averaged. This condition can generally be achieved by triggering the instrument's sweep if the duration of the sweep (with the instrument configured as in method AVGSA-1) is equal to or shorter than the duration T of each transmission from the EUT, and if those transmissions exhibit full power throughout their durations.
- b) **Method AVGSA-2 or method AVGSA-2A (alternative)** shall be applied if the conditions of the preceding item a) cannot be achieved and the transmissions exhibit a constant duty cycle during the measurement duration. Duty cycle will be considered to be constant if variations are less than $+2\%$.
- c) **Method AVGSA-3 or method AVGSA-3A (alternative)** shall be applied if the conditions of the preceding item a) and item b) cannot be achieved.

☒ Measurement using a spectrum analyzer (SA), Selection of test method:

☒ Maximum peak conducted output power

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

- a) Set the RBW > DTS bandwidth.
- b) Set VBW > [3 x RBW]
- c) Set span > [3 x RBW]
- d) Sweep time = auto couple.
- e) Detector = peak
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

Test Report No.: 26030404-RF-US-01

☒ Maximum conducted (average) output power(Method AVGSA-2):

- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c) SA Setting:
 - 1)* Set span to at least 1.5 times the OBW
 - 2)* Set sweep trigger to "free run."
 - 3)* Set RBW= 1% to 5% of the OBW. not to exceed 1MHz.
 - 4)* Set VBW $\geq 3 \times$ RBW
 - 5)* Number of points in sweep $\geq 2 \times$ span /RBW. (This gives bin-to-bin spacing $\leq$ RBW / 2. so that narrowband signals are not lost between frequency bins).
 - 6)* Sweep time $\leq$ (number of points in sweep) $\times$ T. where T is defined in 11.6. If this gives a sweep time less than the auto sweep time of the instrument. then method AVGSA-3 shall not be used (use AVGSA-3A). The purpose of this step is so that the averaging time in each bin is less than or equal to the minimum time of a transmission.
 - 7)* Detector =RMS (power averaging).
 - 8)* Trace mode =Max hold.
 - 9)* Allow max hold to run for at least 60 s or longer as needed to allow the trace to stabilize.
 - 10)* Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function. then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW.
- d. Measure the captured power within the band and recording the plot.
- e. Repeat above procedures until all frequencies required were complete.

3.8.5 Deviation from Test Standard

No deviation.

3.8.6 EUT Operating Condition

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

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3.8.7 Test Results

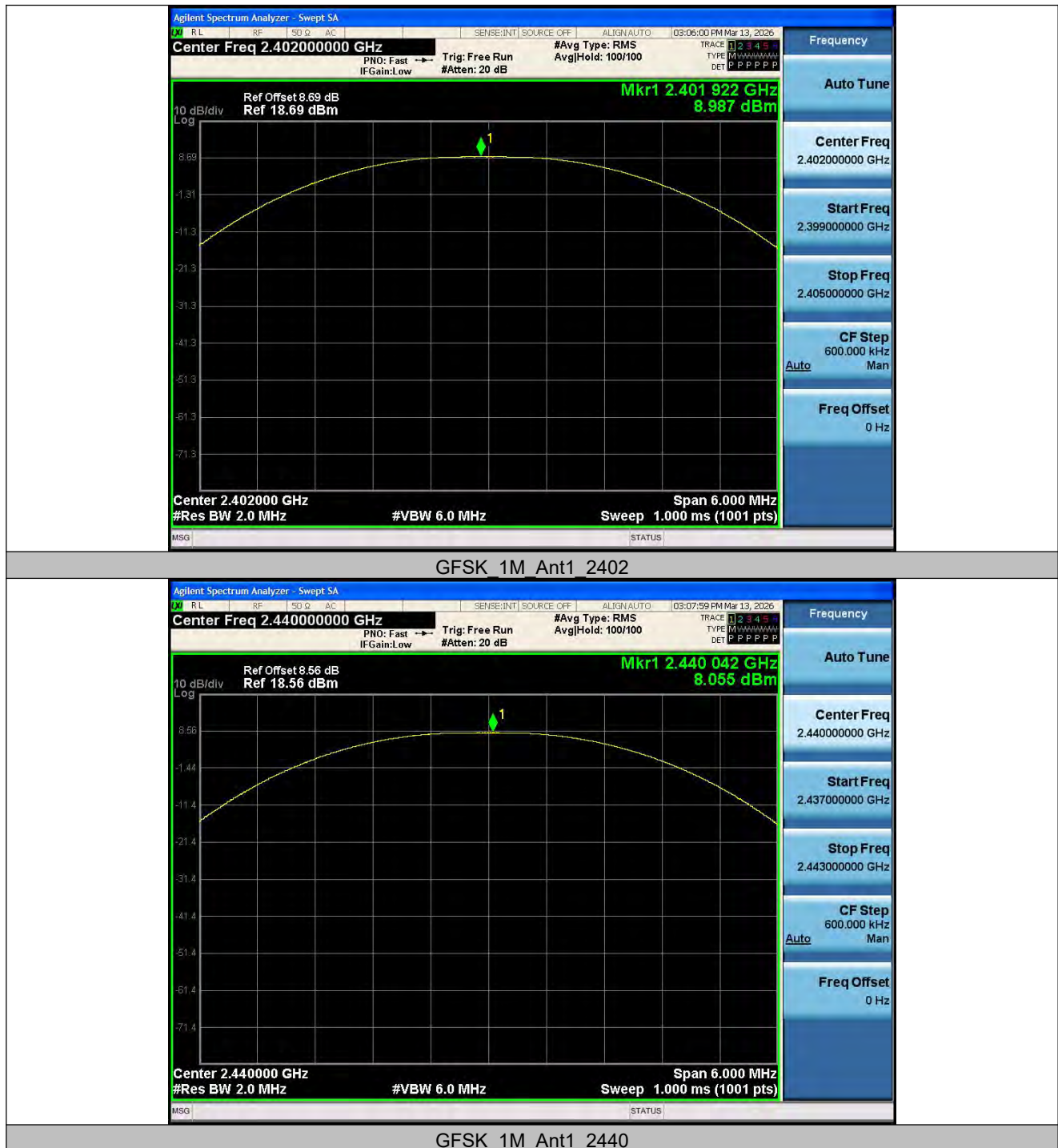
Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
GFSK_1M	Ant1	2402	8.99	≤30	PASS
		2440	8.06	≤30	PASS
		2480	8.2	≤30	PASS
GFSK_2M	Ant1	2404	8.85	≤30	PASS
		2440	7.91	≤30	PASS
		2478	8.04	≤30	PASS

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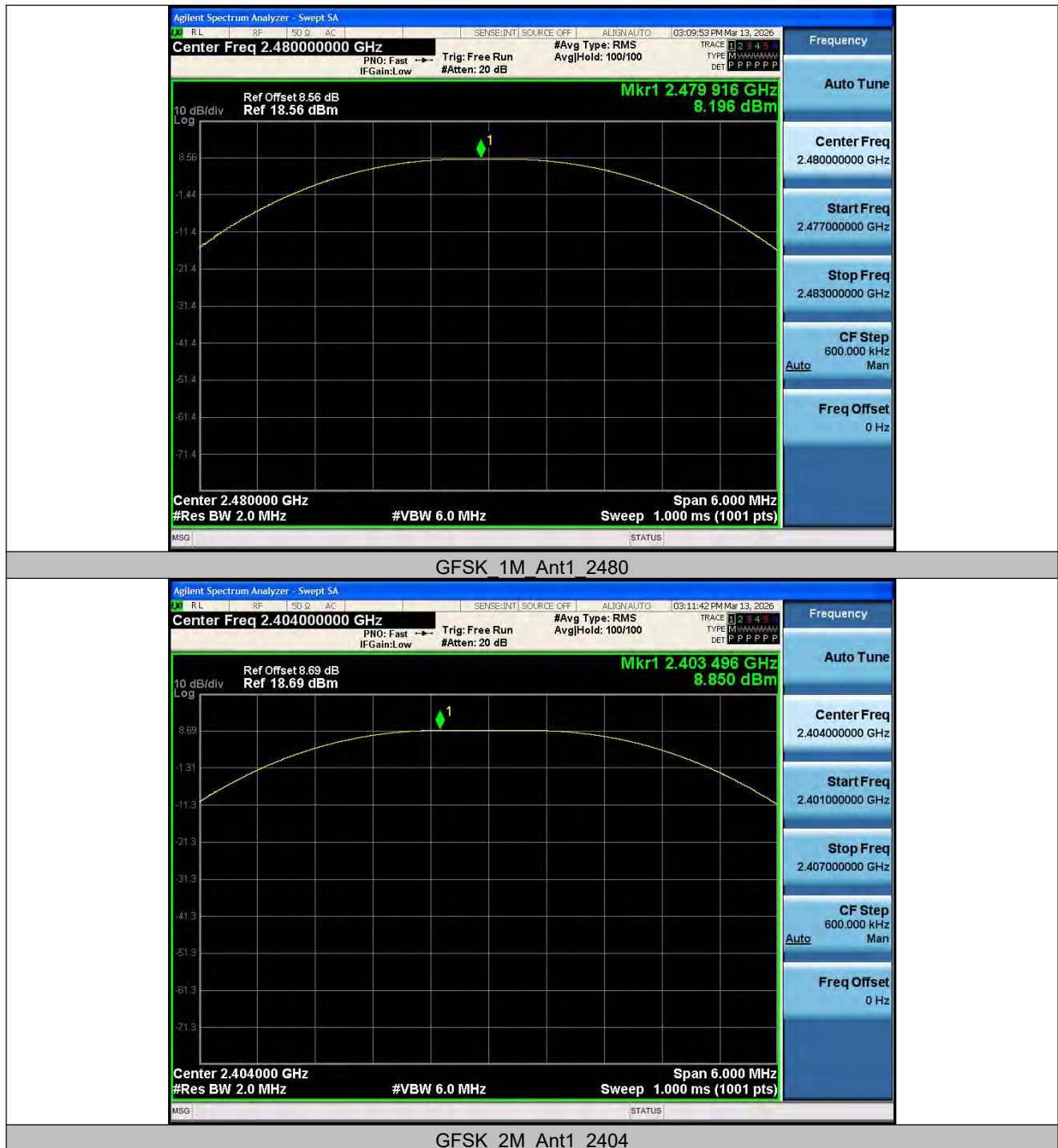
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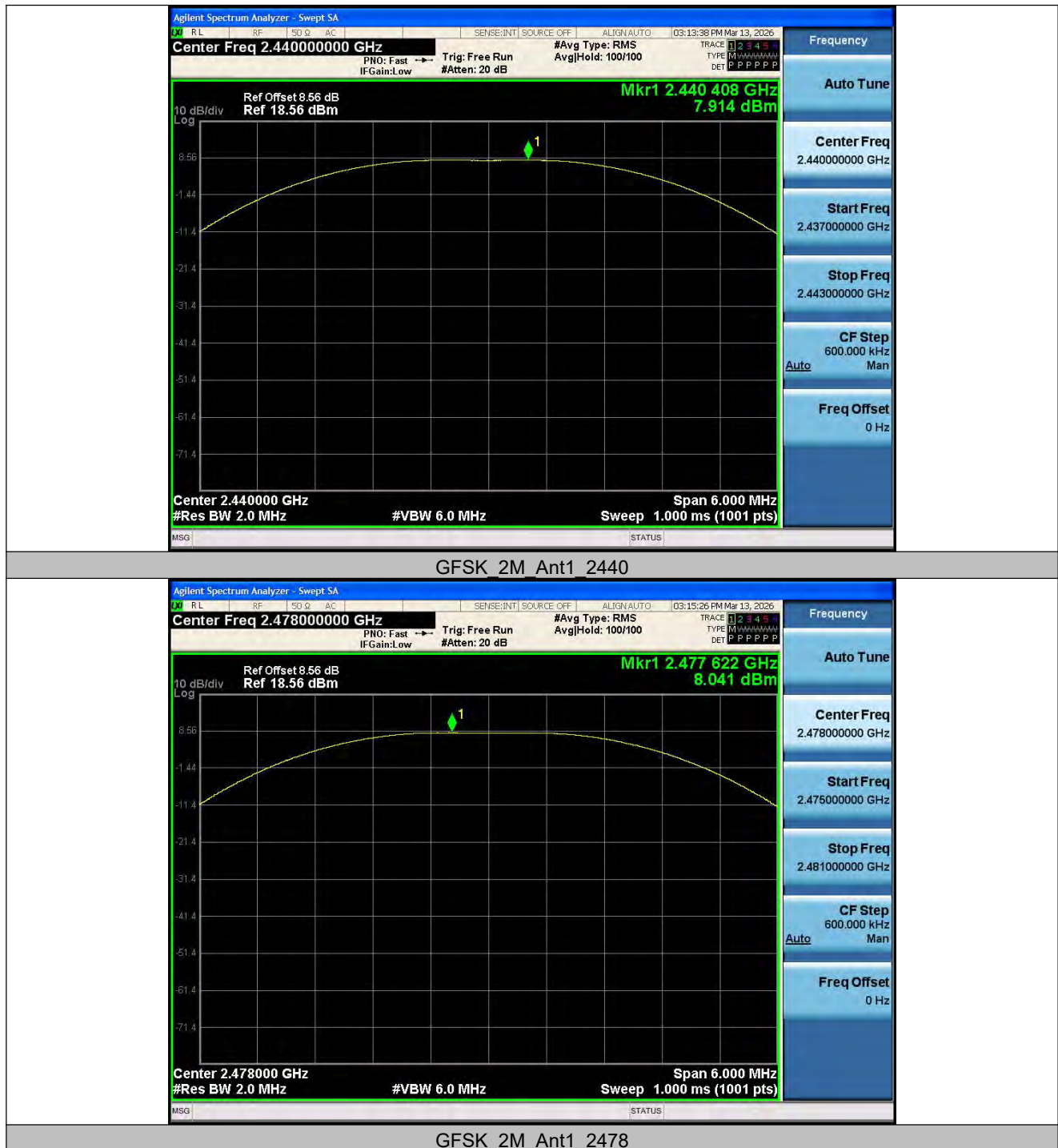
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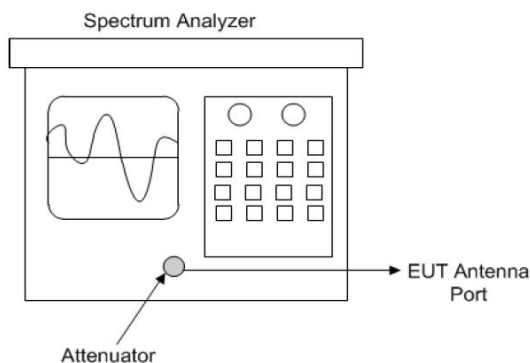
3.9 Conducted Out of Band Emission Measurement

3.9.1 Limits of Conducted Out of Band Emission Measurement

- a. **If the maximum peak conducted output power procedure was used to determine compliance as described in 11.9.1**, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).
- b. **If maximum conducted (average) output power was used to determine compliance as described in 11.9.2**, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc)

3.9.2 Test Setup

- DTS emissions in non-restricted frequency bands Subclause 11.11 of ANSI C63.10 is applicable.
- DTS emissions in restricted frequency bands Subclause 11.12 of ANSI C63.10 is applicable.



Spectrum analyzer test configuration

3.9.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.9.4 Test Procedure

a. Establish a reference level by using the following procedure:

- 1) Set instrument center frequency to DTS channel center frequency.
- 2) Set the span to 21.5 times the DTS bandwidth)
- 3) Set the RBW= 100 kHz)
- 4) Set the VBW $\geq 3 \times$ RBW
- 5) Detector = peak
- 6) Sweep time = auto coupling
- 7) Trace mode =max hold
- 8) Allow trace to fully stabilize
- 9) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

b. Establish an emission level by using the following procedure:

- 1) Set the center frequency and span to encompass frequency range to be measured.
- 2) Set the RBW = 100 kHz
- 3) Set the VBW ≥ 300 kHz.
- 4) Detector = peak.
- 5) Sweep time = auto couple.
- 6) Trace mode = max hold.
- 7) Allow trace to fully stabilize.
- 8) Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

3.9.5 Deviation from Test Standard

No deviation.

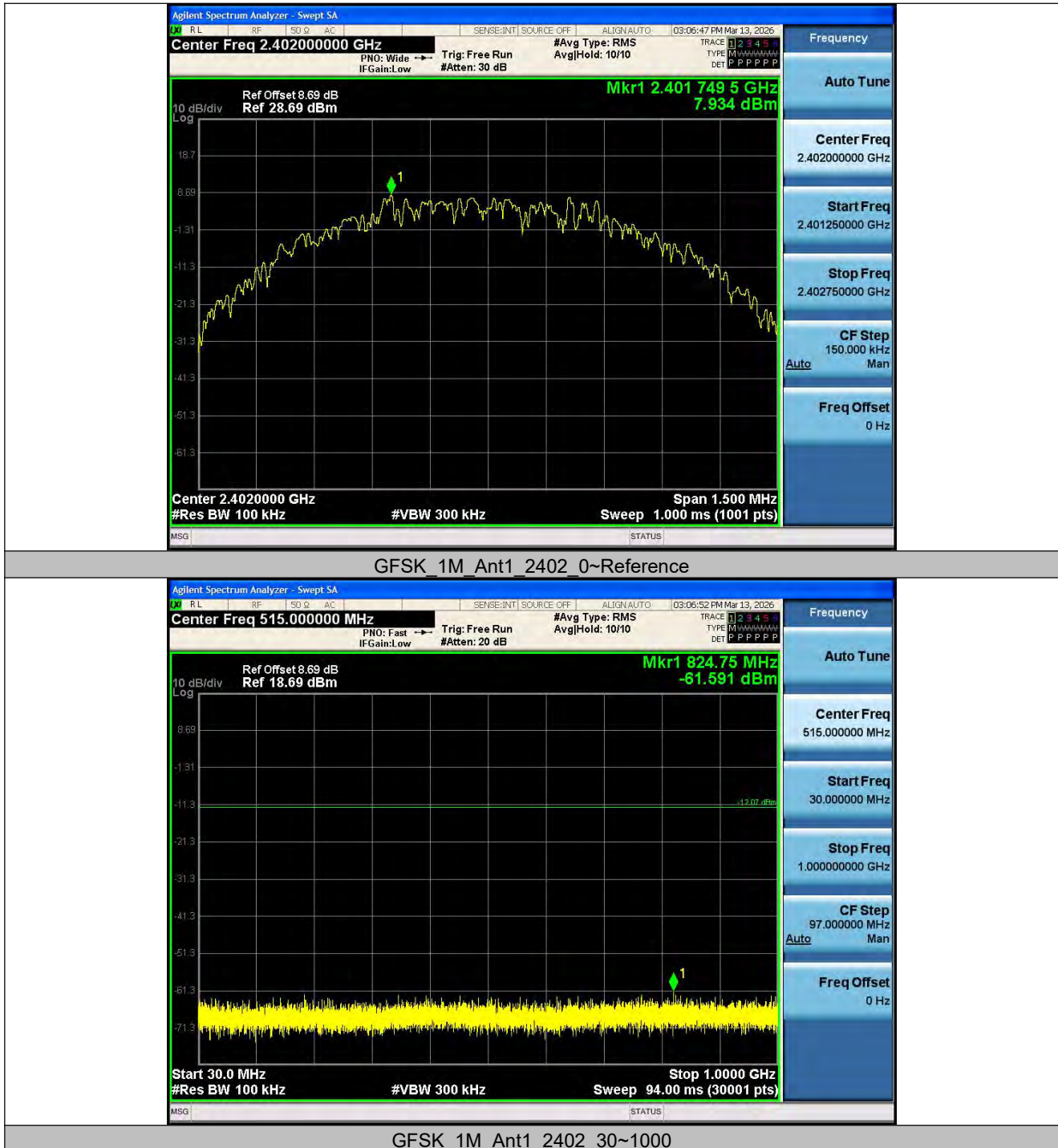
3.9.6 EUT Operating Condition

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

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3.9.7 Test Results

The spectrum plots are attached on the following images. Mkr1 of 0~Reference indicates the highest level, Mkr1 of 30~1000 and 1000~26500 indicates the 20dB offset below highest level. It shows compliance with the requirement.

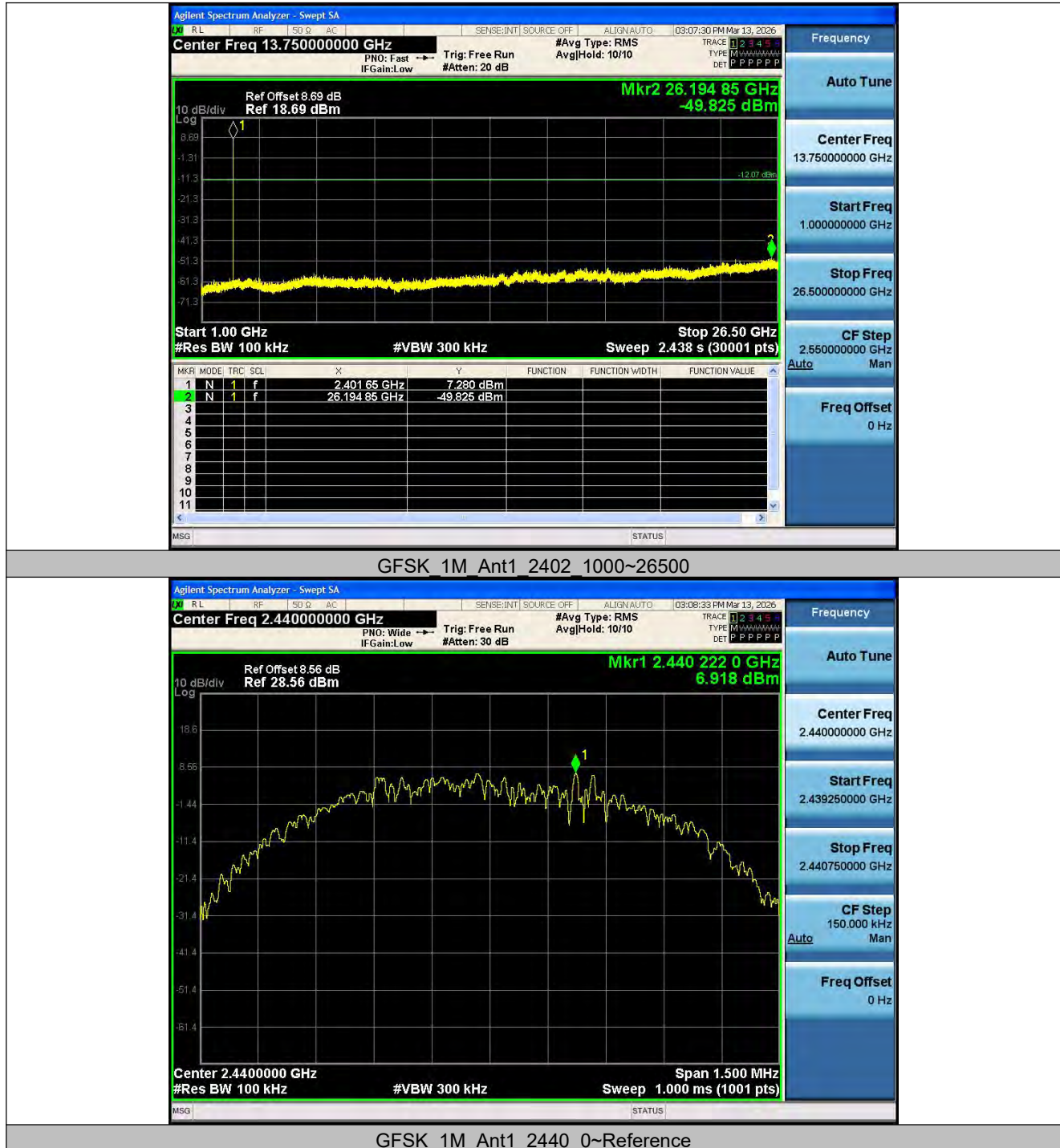


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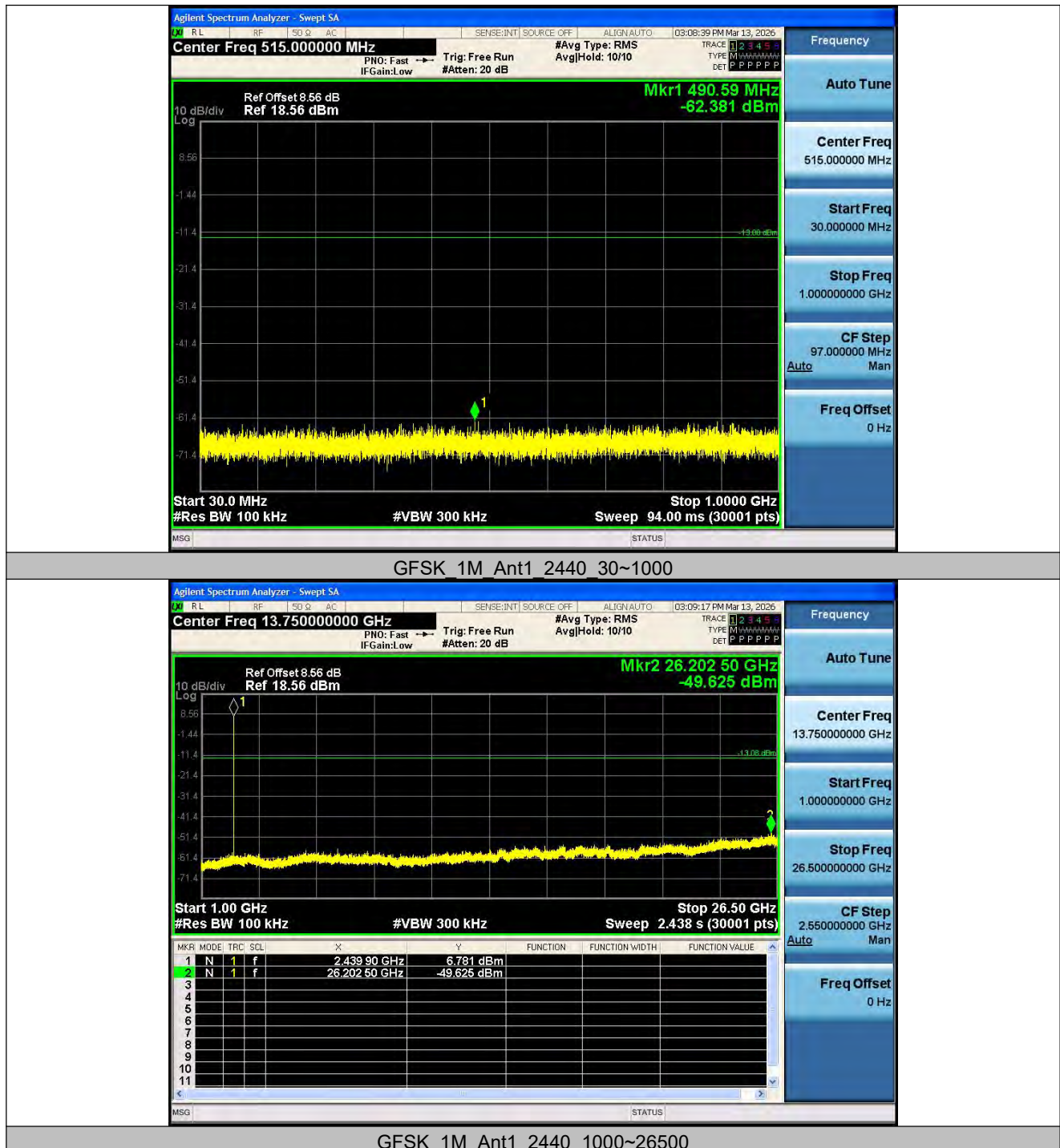
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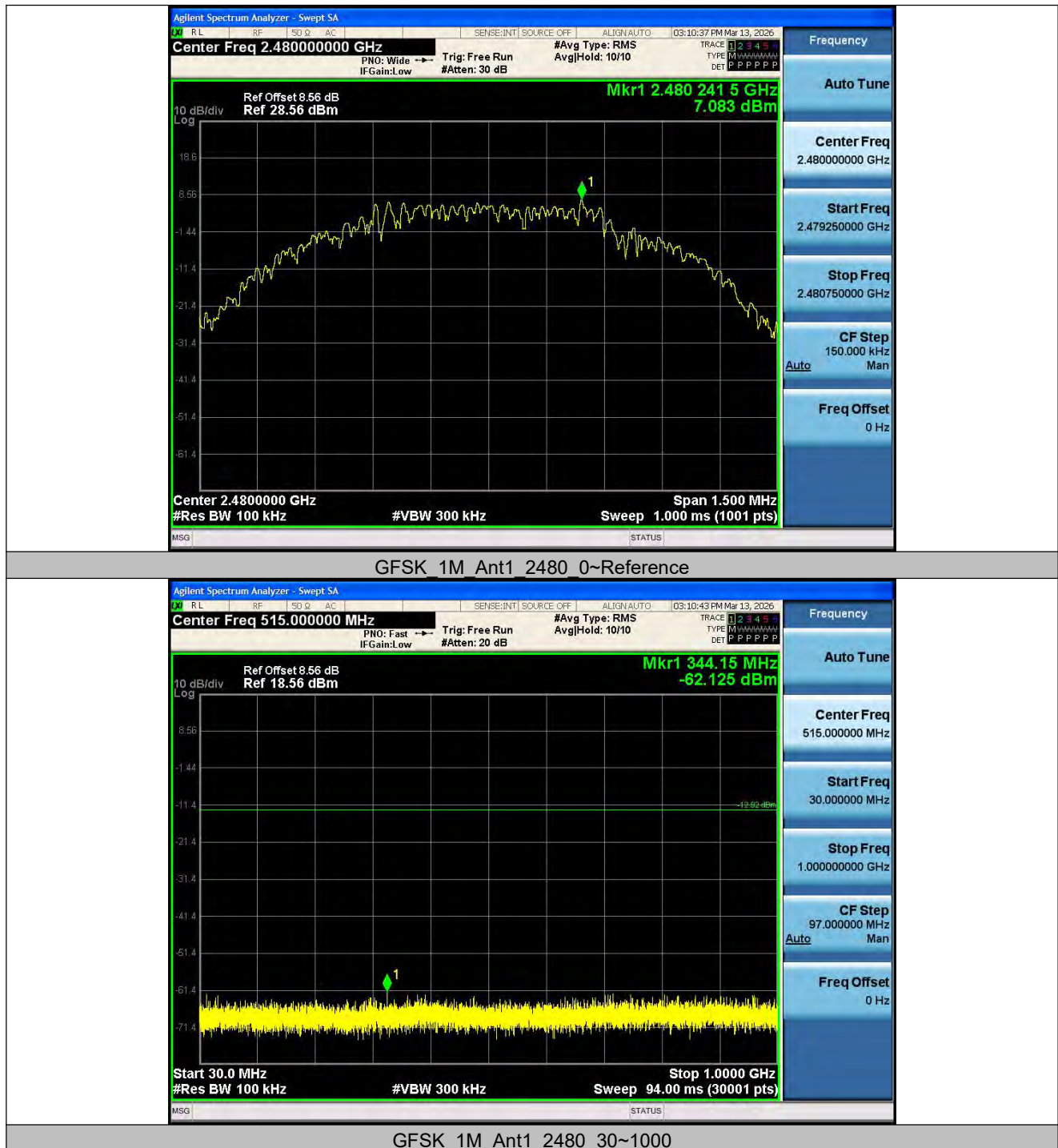
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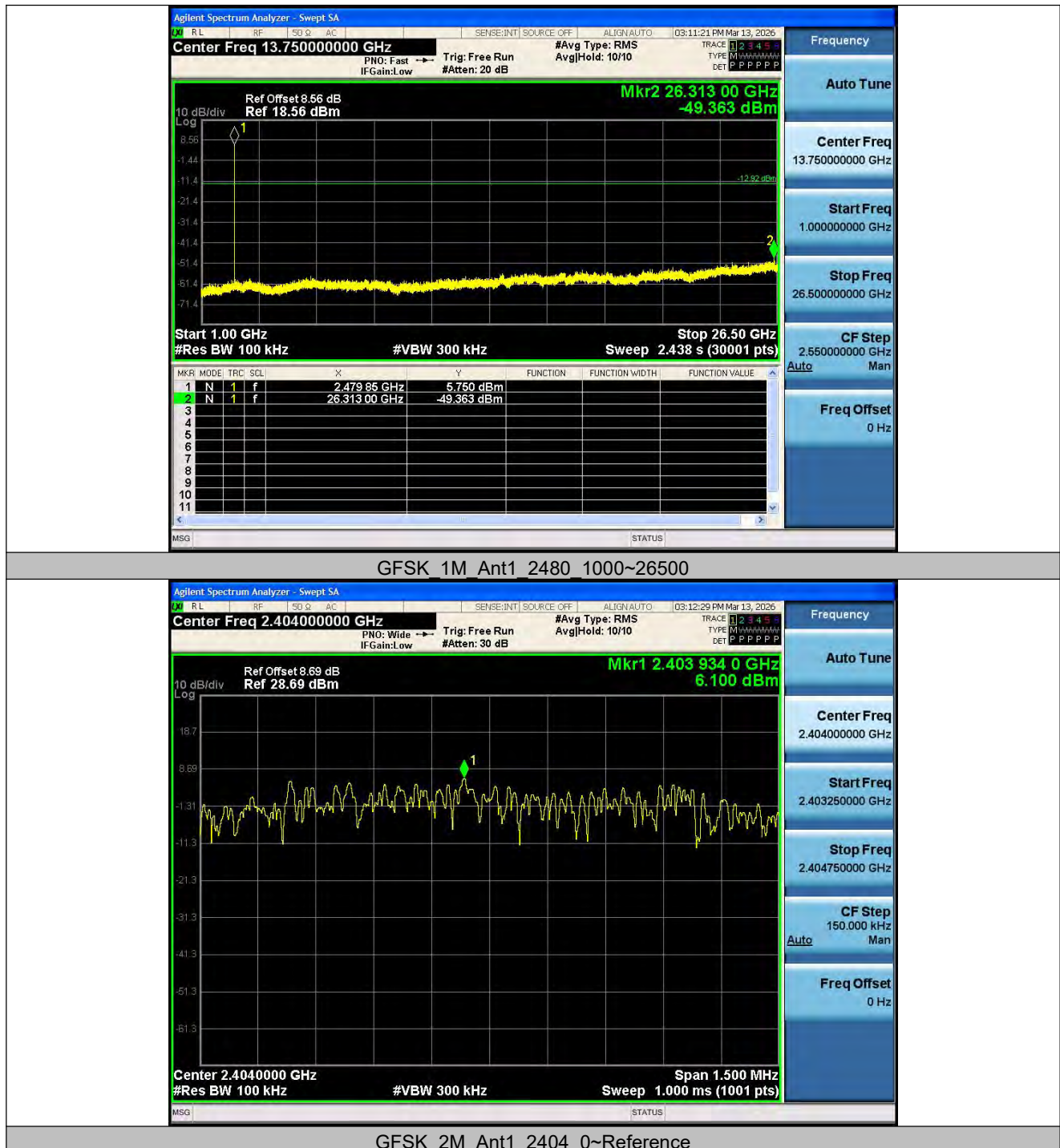
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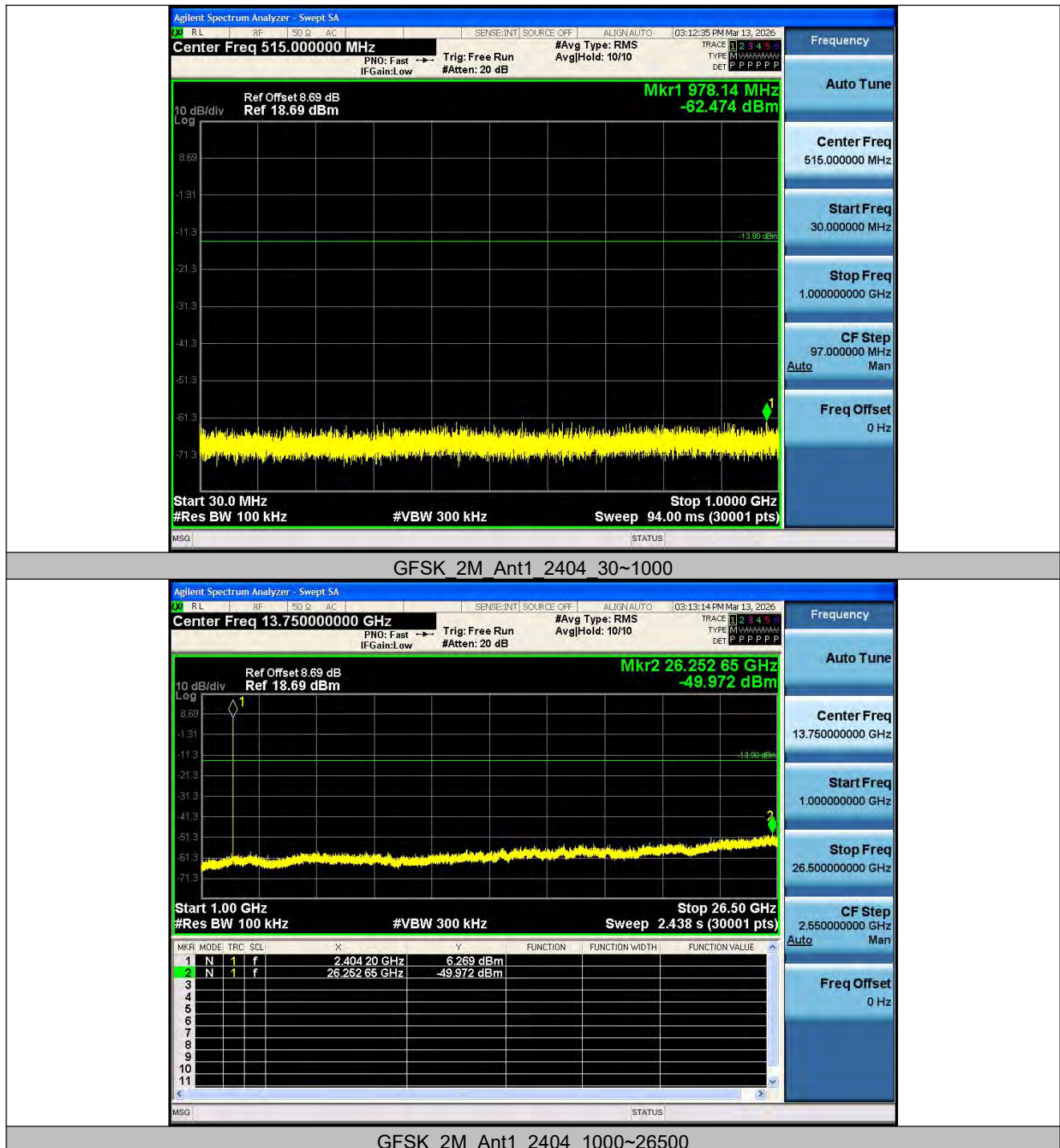
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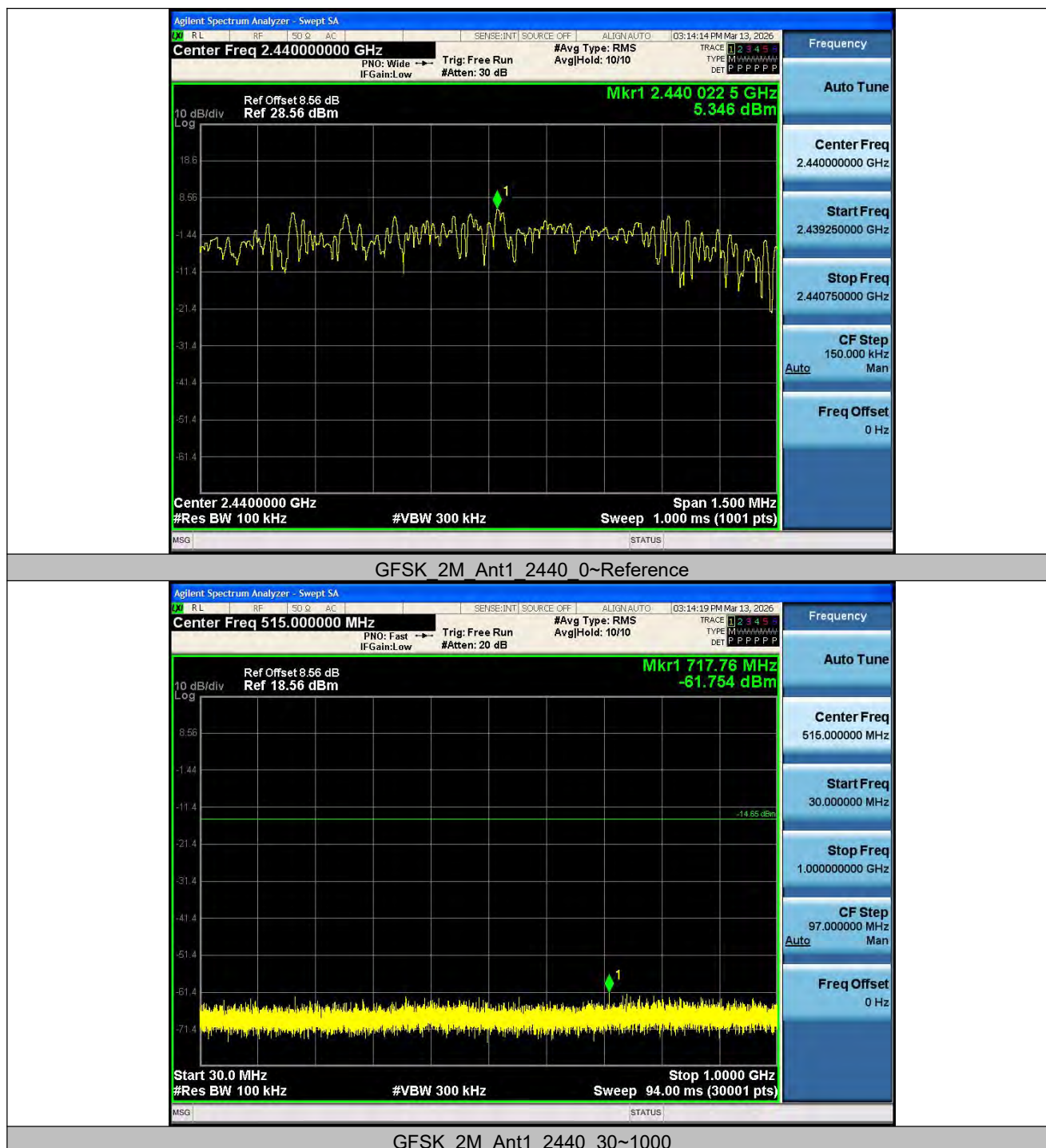
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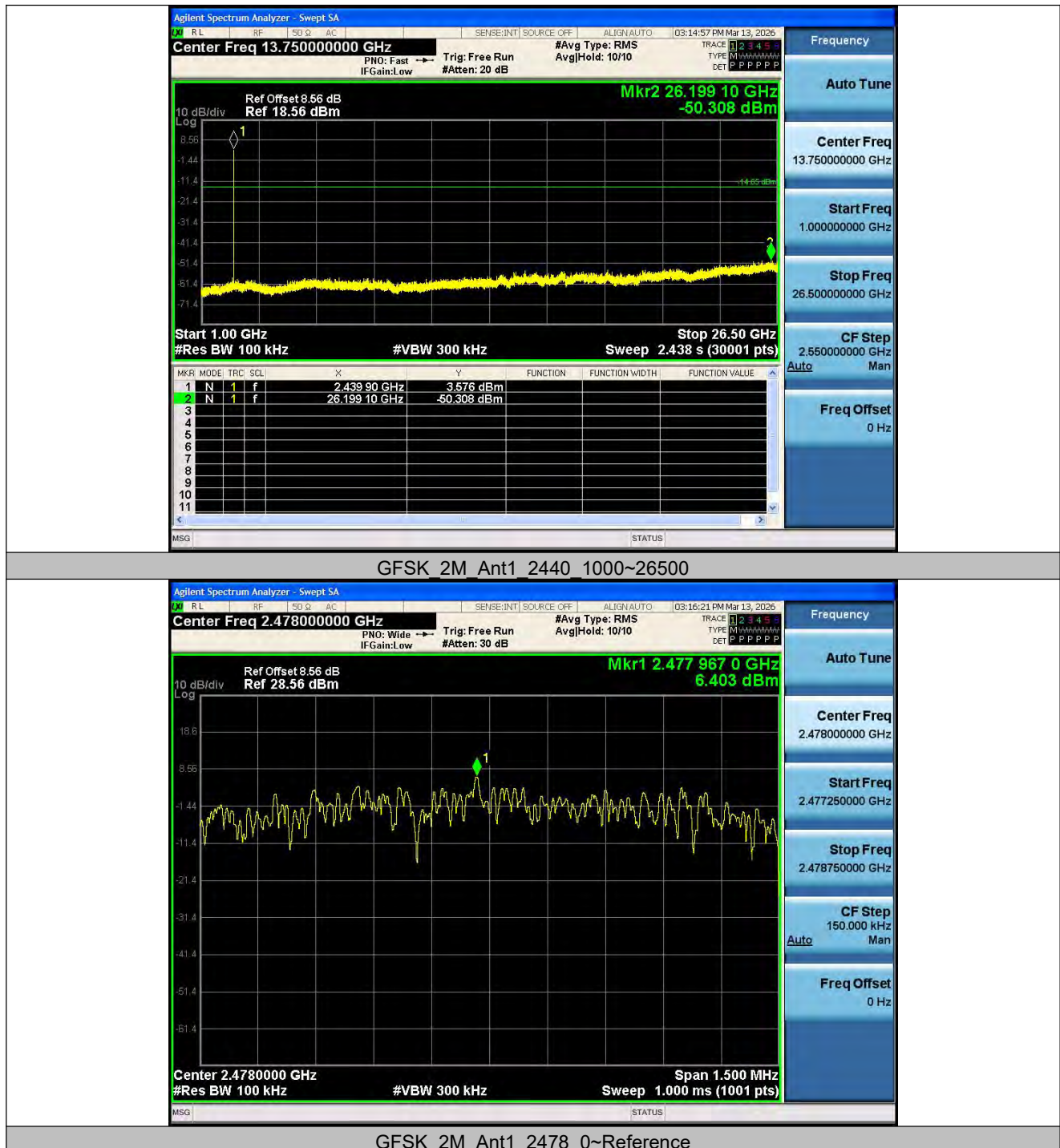
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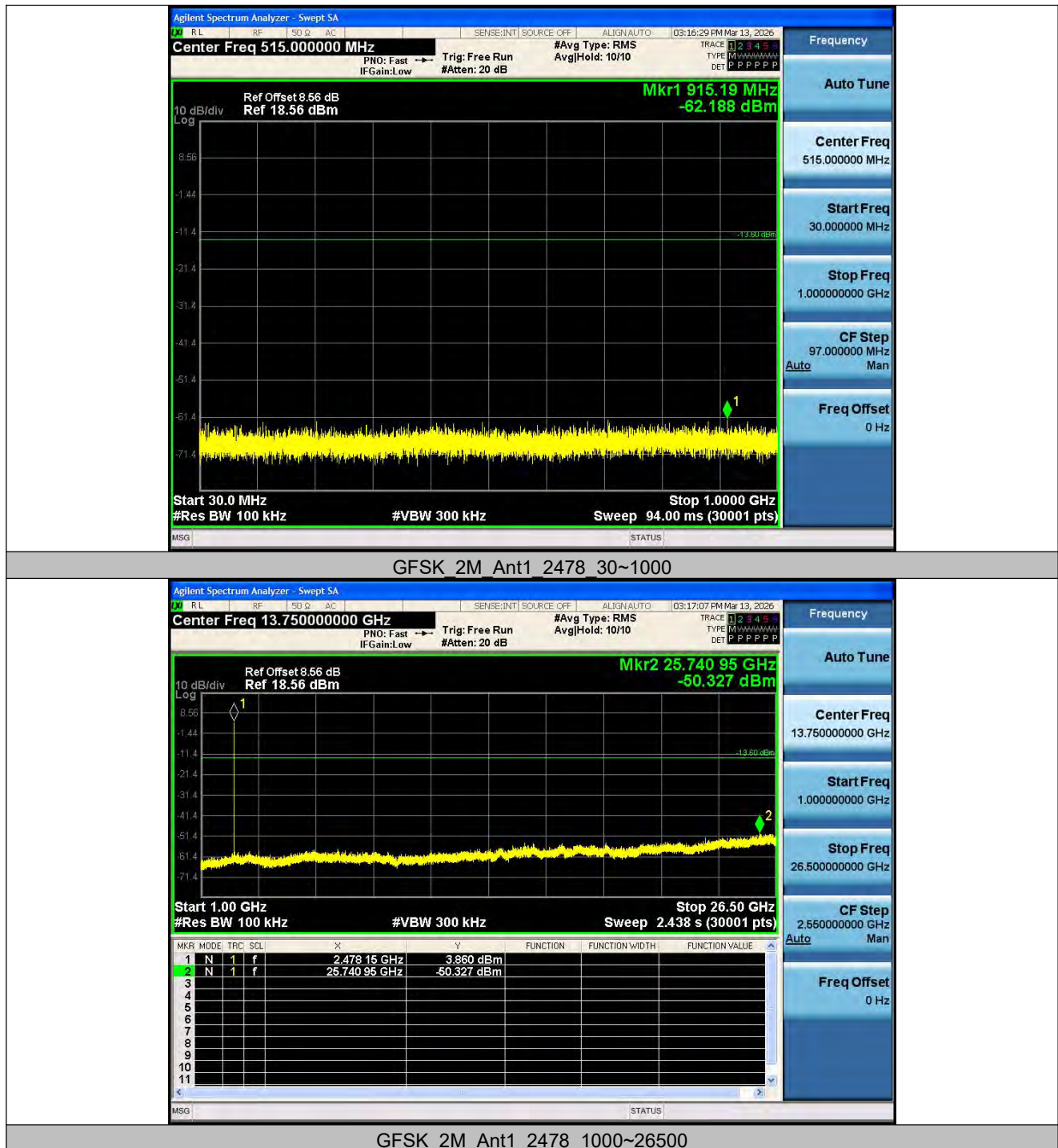
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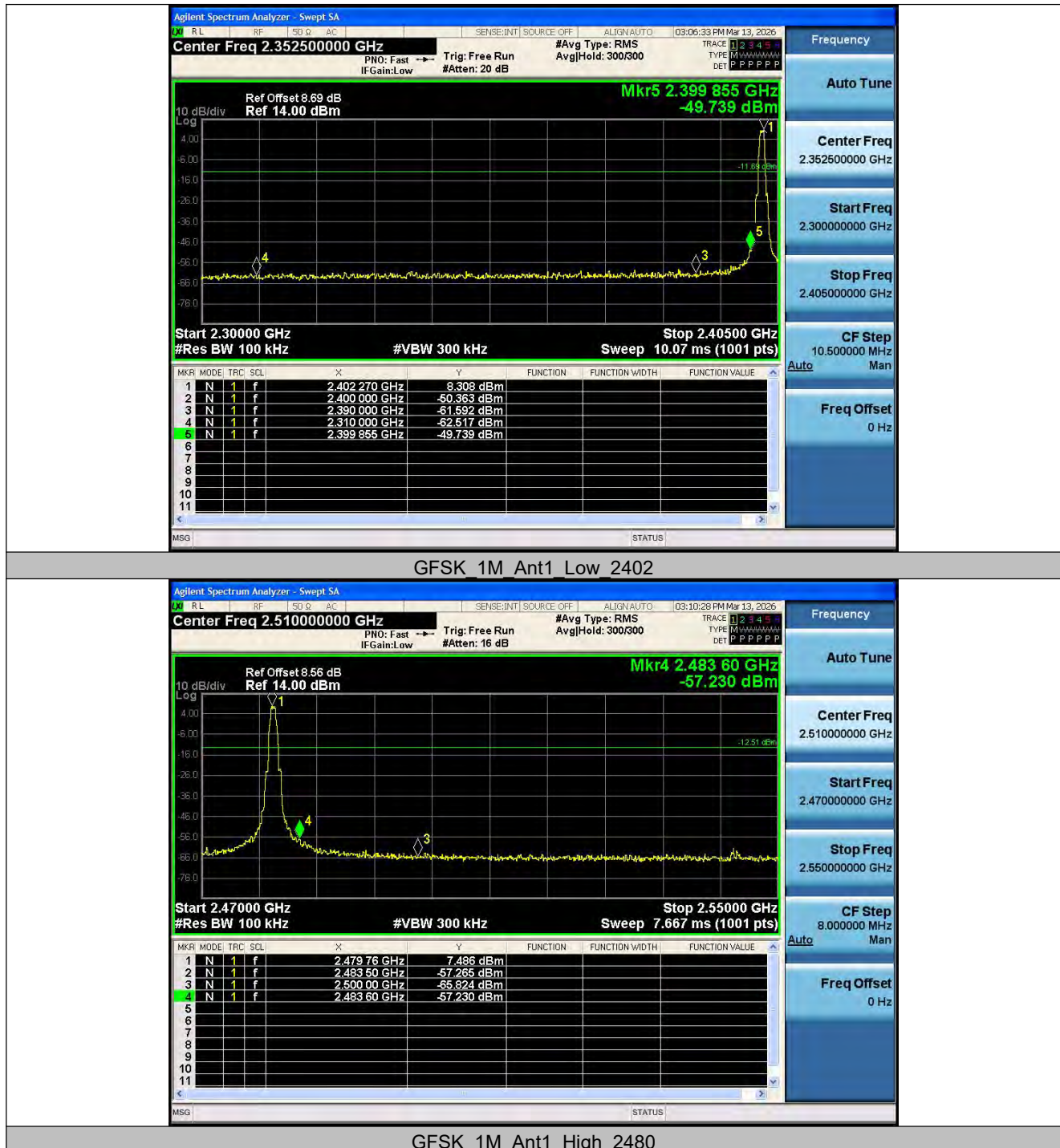
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Mkr1 indicates the highest level, other indicates the 20dB offset below highest level. It shows compliance with the requirement.



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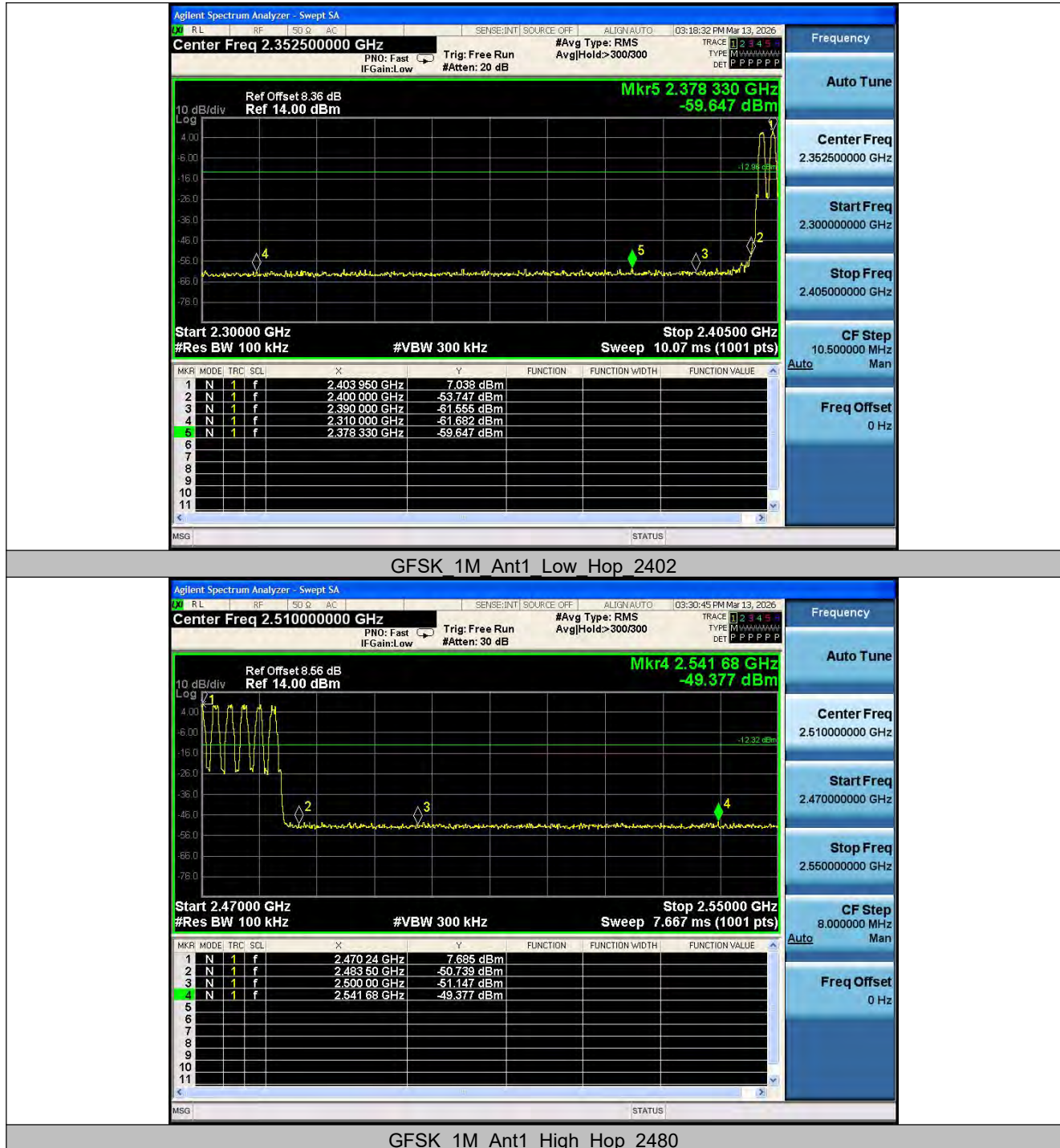
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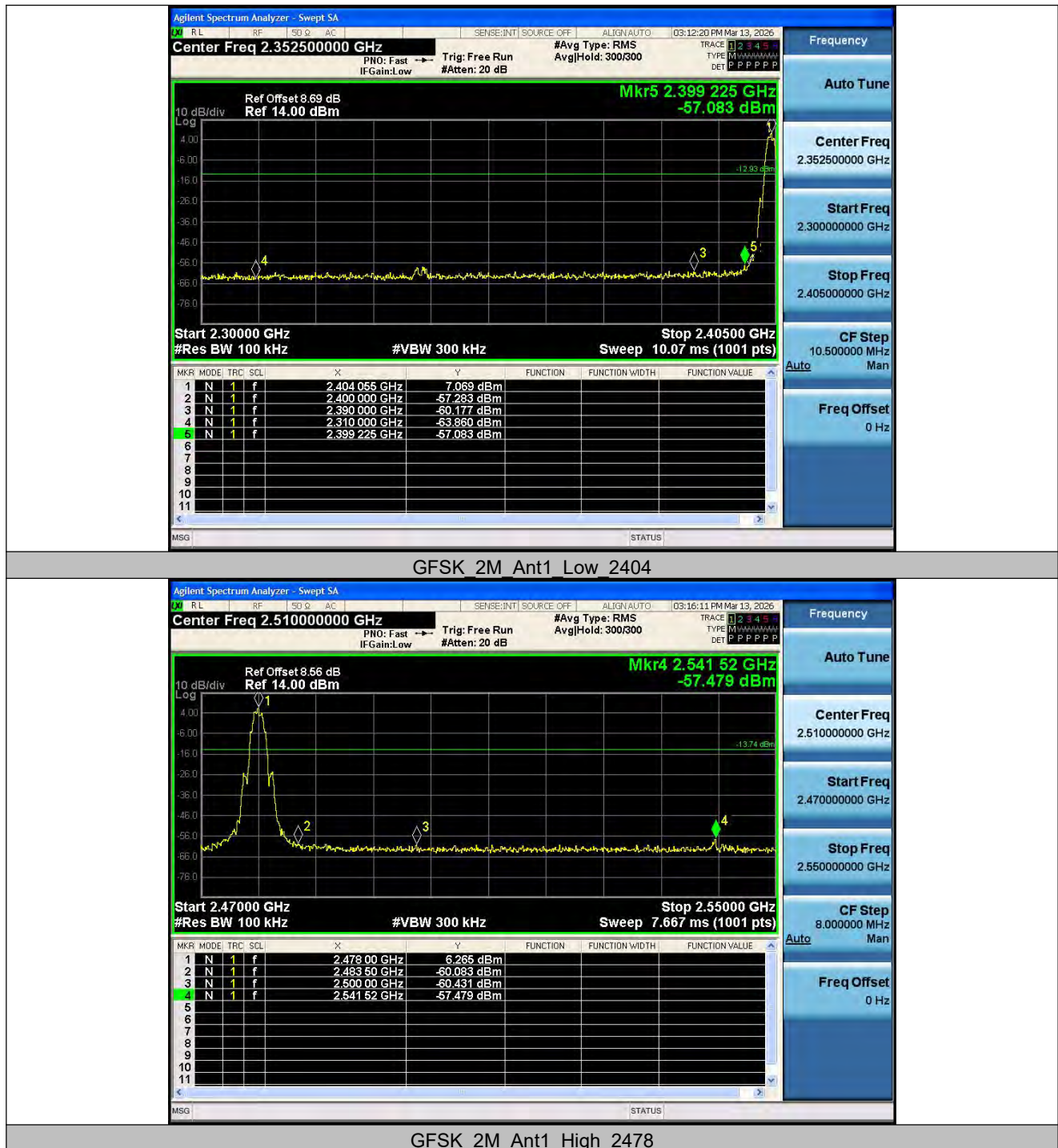
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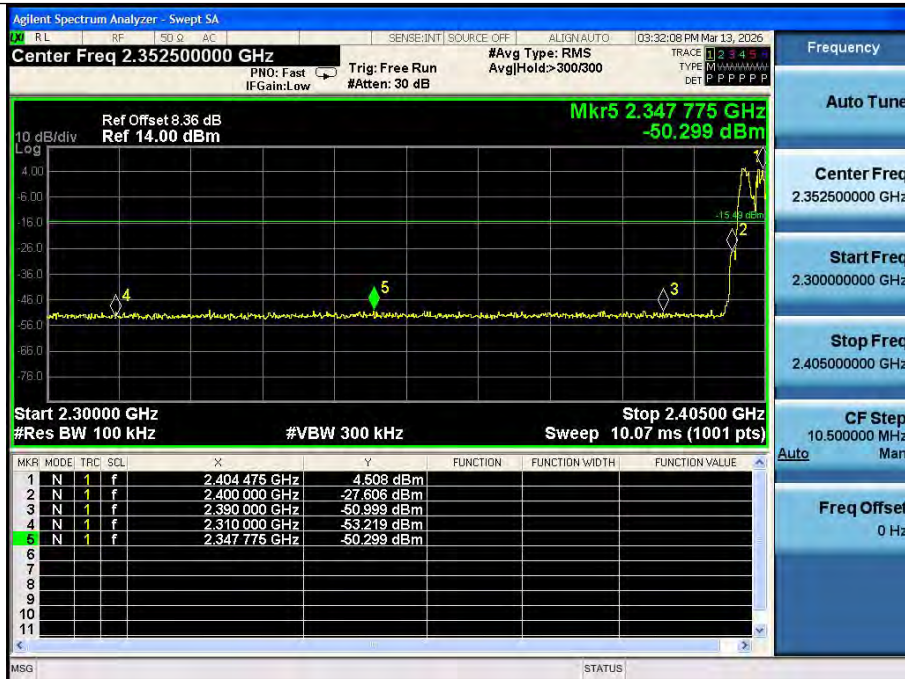
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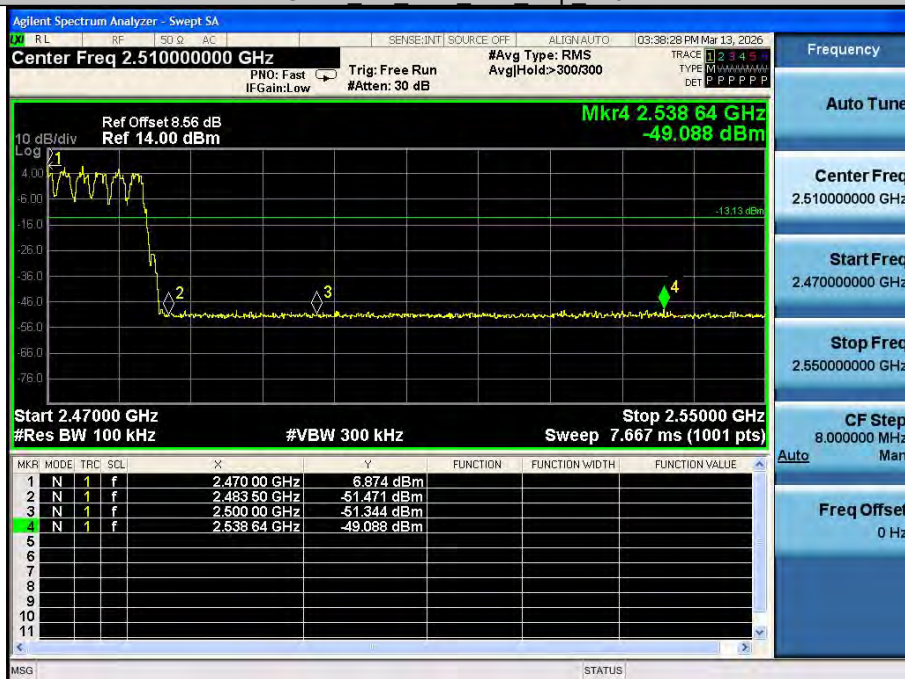
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GFSK 2M Ant1 Low Hop 2402



GFSK 2M Ant1 High Hop 2480

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3.10 Antenna Application**3.10.1 Antenna Requirement**

Standard	Requirement
FCC CFR 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.

3.10.2 Test Results

☒	Antenna use a permanently attached antenna which is not replaceable.
☐	Not using a standard antenna jack or electrical connector for antenna replacement
☐	The antenna has to be professionally installed (please provide method of installation)

Please refer to the attached document Internal Photos to show the antenna.

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4 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

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5 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum	Keysight	N9020A	MY51240612	2026-07-23
Power Meter 10Hz~18GHz	Tonscend	JS0806-2	188060126	2026-07-23
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101783	2026-07-23
Signal generator	Keysight	E4421	GB40051020	2026-05-18
Universal Switch Control Unit	Rohde&Schwarz	CMW500	12010002k50	2026-07-23
Humidity tester	Jingchuang	GSP-8A	CMA22B000592	2026-07-28
Test Software	Tonscend	JS0806-2	188060126	2026-07-23

Note: 1. The calibration interval of the above test instruments is 12 months.
2. The test was performed in RF Chamber.

Appendix – Information on the Testing Laboratories

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If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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