



Radio Test Report

Report No.: STS2601134W01

Issued for

Gree Electric Appliances, Inc. of Zhuhai

Jinji West Rd, Qianshan, Zhuhai, Guangdong 519070, P.R.
China

Product Name: WiFi Module

Brand Name: N/A

Model Name: GRJWB05-J12

Series Model(s): N/A

IC: 12478-GRJWB05J12

FCC ID 2ADAP-GRJWB05J12

Test Standards: RSS-247 Issue 4 July 24, 2025
RSS-Gen Issue 5, Amendment 2, February 2021
FCC Part15.247

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name..... : Gree Electric Appliances, Inc. of Zhuhai
Address : Jinji West Rd, Qianshan, Zhuhai, Guangdong 519070, P.R. China
Manufacturer's Name : Gree Electric Appliances, Inc. of Zhuhai
Address : Jinji West Rd, Qianshan, Zhuhai, Guangdong 519070, P.R. China

Product Description

Product Name : WiFi Module
Brand Name : N/A
Model Name..... : GRJWB05-J12
:
Series Model(s) : N/A

RSS-247 Issue 4 July 24, 2025

Standards..... : RSS-Gen Issue 5, Amendment 2, February 2021
FCC Part 15.247

Test Procedure : IC: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024 FCC: ANSI C63.10-2020

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC&IC requirements. And it is applicable only to the tested sample identified in the report.

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

Date of Test..... :

Date of receipt of test item : 12 Jan. 2026

Date (s) of performance of tests..... : 12 Jan. 2026 ~ 18 Mar. 2026

Date of Issue..... : 18 Mar. 2026

Test Result..... : **Pass**

Testing Engineer :

(Aaron Bu)

Technical Manager :

(Skylar Li)

Authorized Signatory :

(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	18 Mar. 2026	STS2601134W01	ALL	Initial Issue



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
KDB 558074 D01 15.247 Meas Guidance v05r02.

RSS-247 Issue 4 FCC Part 15.247, Subpart C			
Standard Section	Test Item	Judgment	Remark
RSS-Gen 8.8 15.207	Conducted Emission	PASS	--
RSS-Gen 6.7 RSS-247 6.3.1 15.247 (a)(2)	6dB Bandwidth&Occupied bandwidth	PASS	--
RSS-247 6.3.2 15.247 (b)(3)	Output Power	PASS	--
RSS-Gen 8.9/8.10 15.209	Radiated Spurious Emission	PASS	--
RSS-247 6.6 RSS-Gen 8.9/8.10 15.247 (d)	Conducted Spurious & Band Edge Emission	PASS	--
RSS-247 6.3.1 15.247 (e)	Power Spectral Density	PASS	--
RSS-Gen 8.9/8.10 15.205	Restricted bands of operation	PASS	--
RSS-247 6.6 RSS-Gen 8.9/8.10 Part 15.247(d)/ part 15.209(a)	Band Edge Emission	PASS	--
RSS-Gen 6.8 15.203	Antenna Requirement	PASS	--
RSS-Gen 6.11/8.11	Frequency Stability	PASS	--

Note:

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024 for IC.
- (3) All tests are according to ANSI C63.10-2020 for FCC.



1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

IC CAB ID: CN0086

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.751\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.888\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 2.48\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 2.52\text{dB}$
5	All emissions, radiated 1G-18GHz	$\pm 3.48\text{dB}$
6	All emissions, radiated >18GHz	$\pm 4.18\text{dB}$
7	Conducted Emission (9KHz-150KHz)	$\pm 2.48\text{dB}$
8	Conducted Emission (150KHz-30MHz)	$\pm 2.52\text{dB}$
9	Occupied Channel Bandwidth	$\pm 3.6\%$
10	Power Spectral Density, conducted	$\pm 1.214\text{dB}$
11	Duty Cycle	$\pm 3.2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	WiFi Module	
Brand Name	N/A	
Model Name	GRJWB05-J12	
PMN	WiFi Module	
HVIN	GRJWB05-J12	
Series Model(s)	N/A	
Model Difference	N/A	
Product Description	The EUT is a WiFi Module	
	Operation Frequency:	2402~2480 MHz
	Modulation Type:	GFSK
	Radio Technology:	BLE
	Bluetooth Configuration:	LE(Support 1M PHY, 2M PHY)
	Number Of Channel:	40
	Antenna Type:	PCB
	Antenna Gain (dBi)	1.85dBi
Channel List	Please refer to the Note 3.	
Power Rating	Input: 3.3V	
Adapter	N/A	
Battery	N/A	
Hardware version number	GRJWB05-J12	
Software version/FVIN	V1.02	
Sample Number	260109005-1	
Connecting I/O Port(s)	Please refer to the Note 1.	

Note

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
2. The antenna details in this report are based on the manufacturer provided antenna specification documents and apply only to the tested sample identified herein. Any discrepancies in the antenna information may affect the accuracy of the test results, and the customer assumes responsibility for any related issues.
3. The offset setting information for all conduction test items is as follows:
Offset Calculated: The offset is derived from the system self-calibrated path attenuation + cable loss and is calculated as follows: $\text{Offset} = \text{PA} + \text{CL}$



Where

PA=Path Attenuation

CL=Cable Attenuation Factor (Cable Loss),

Cable and Cable Loss are provided by the applicant.

4.

Channel List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	10	2422	20	2442	30	2462
01	2404	11	2424	21	2444	31	2464
02	2406	12	2426	22	2446	32	2466
03	2408	13	2428	23	2448	33	2468
04	2410	14	2430	24	2450	34	2470
05	2412	15	2432	25	2452	35	2472
06	2414	16	2434	26	2454	36	2474
07	2416	17	2436	27	2456	37	2476
08	2418	18	2438	28	2458	38	2478
09	2420	19	2440	29	2460	39	2480

2.2 DESCRIPTION OF THE TEST MODES

For conducted test items and radiated spurious emissions

Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively.

Worst Mode	Description	Data/Modulation
Mode 1	TX CH00(2402MHz)	1M PHY /GFSK
Mode 2	TX CH19(2440MHz)	1M PHY /GFSK
Mode 3	TX CH39(2480MHz)	1M PHY /GFSK

Worst Mode	Description	Data/Modulation
Mode 4	TX CH01(2402MHz)	2M PHY /GFSK
Mode 5	TX CH19(2440MHz)	2M PHY /GFSK
Mode 6	TX CH38(2480MHz)	2M PHY /GFSK

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

(2) We have be tested for all avaiable Canada voltage and frequencies(For 120V,50/60Hz) for which the device is capable of operation, and the worst case of 120V/60Hz is shown in the report.

For AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 7 : Keeping BT TX



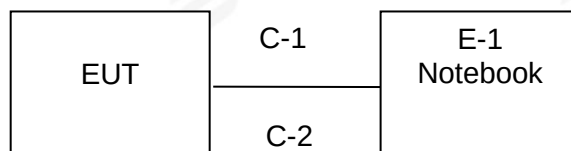
2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

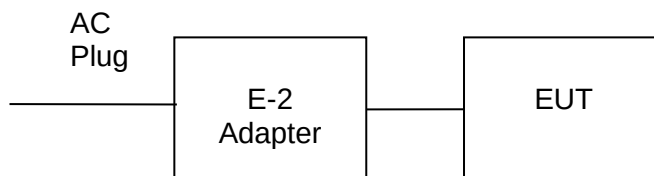
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
BLE(With 2M PHY)	BLE_1M PHY	GFSK	1.85	0X36	RTLBTAPP
	BLE_2M PHY	GFSK	1.85	0X37	

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

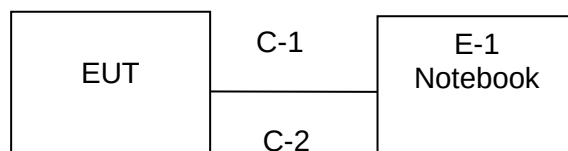
Radiated Spurious Emission Test



Conducted Emission Test



RF Conducted Test





2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND 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.

Item	Equipment	Mfr/Brand	Model/Type No.	Note
E-1	Notebook	DELL	Inspiron 3501	N/A
E-2	Adapter	ZTC	NB-A515A	N/A
C-1	Serial port board	XES	WTYZK	N/A
C-2	USB Cable	MI	RYEW3A	N/A

Item	Equipment	Mfr/Brand	Length	Note
C-2	Shielded	NO	150cm	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (2) “YES” is means “with core”; “NO” is means “without core”.



2.6 EQUIPMENTS LIST

RF Radiation Test Equipment					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
				2026.02.04	2027.02.03
Pre-Amplifier(0.1M-3GHz)	EM	EM330	060665	2025.02.22	2026.02.21
				2026.02.04	2027.02.03
Pre-Amplifier(1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2025.09.25	2026.09.24
Pre-Amplifier(18G-40GHz)	SKET	LNPA_1840-50	SK2018101801	2025.02.22	2026.02.21
				2026.02.04	2027.02.03
Active loop Antenna	ZHINAN	ZN30900C	16035	2025.02.25	2027.02.24
Bilog Antenna	TESEQ	CBL6111D	34678	2025.09.27	2027.09.26
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2025.09.27	2027.09.26
Horn Antenna	A-INFOMW	LB-180400-KF	J211020657	2025.09.27	2027.09.26
Positioning Controller	MF	MF-7802	MF-780208587	N/A	N/A
Signal Analyzer	R&S	FSV 40-N	101823	2025.09.26	2026.09.25
Switch Control Box	N/A	N/A	N/A	N/A	N/A
Band 2.4G-2.5G Filter	HX MICROWAVE	HXLBQ-DZA61	N/A	2025.09.23	2026.09.22
Antenna Mast	MF	MFA-440H	N/A	N/A	N/A
Turn Table	MF	SC100_1	60531	N/A	N/A
AC Power Source	APC	KDF-11010G	F214050035	N/A	N/A
DC power supply	HONGSHENGFE NG	DPS-305AF	17064939	2025.09.22	2026.09.21
Test SW	EZ-EMC	Ver.STSLAB-03A1 RE			
Conduction Test Equipment					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2025.09.25	2026.09.24
Limiter	CYBERTEK	EM5010	N/A	2025.09.25	2026.09.24
LISN	R&S	ENV216	101242	2025.09.25	2026.09.24
LISN	EMCO	3810/2NM	23625	2025.09.25	2026.09.24
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
				2026.02.04	2027.02.03
Test SW	EZ-EMC	Ver.STSLAB-03A1 CE			
RF Connected Test					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Analyzer	Agilent	N9020A	MY51510623	2025.02.22	2026.02.21
				2026.02.04	2027.02.03
Switch control box	MW	MW100-RFCB	N/A	N/A	N/A
Temperature& Humidity test chamber	Safety test	AG80L	171200018	2025.02.22	2026.02.21
				2026.02.04	2027.02.03
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
				2026.02.04	2027.02.03
Test SW	MW	MTS 8310 2.0.0.0			



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

FREQUENCY (MHz)	Conducted Emission limit (dBuV)	
	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

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of “*” marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

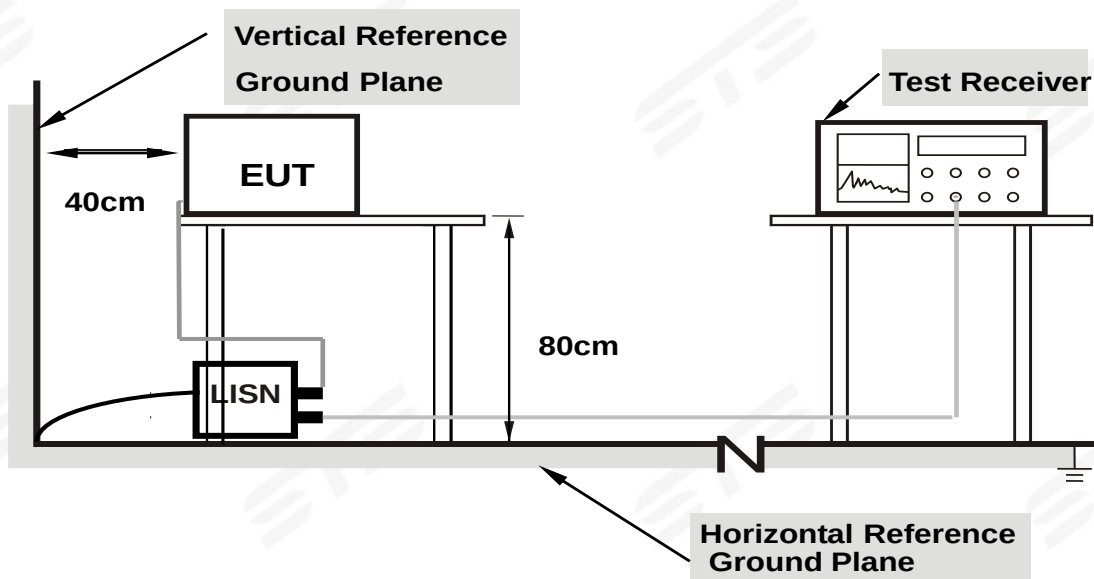
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.2 TEST PROCEDURE

- The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN is at least 80 cm from the nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

3.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



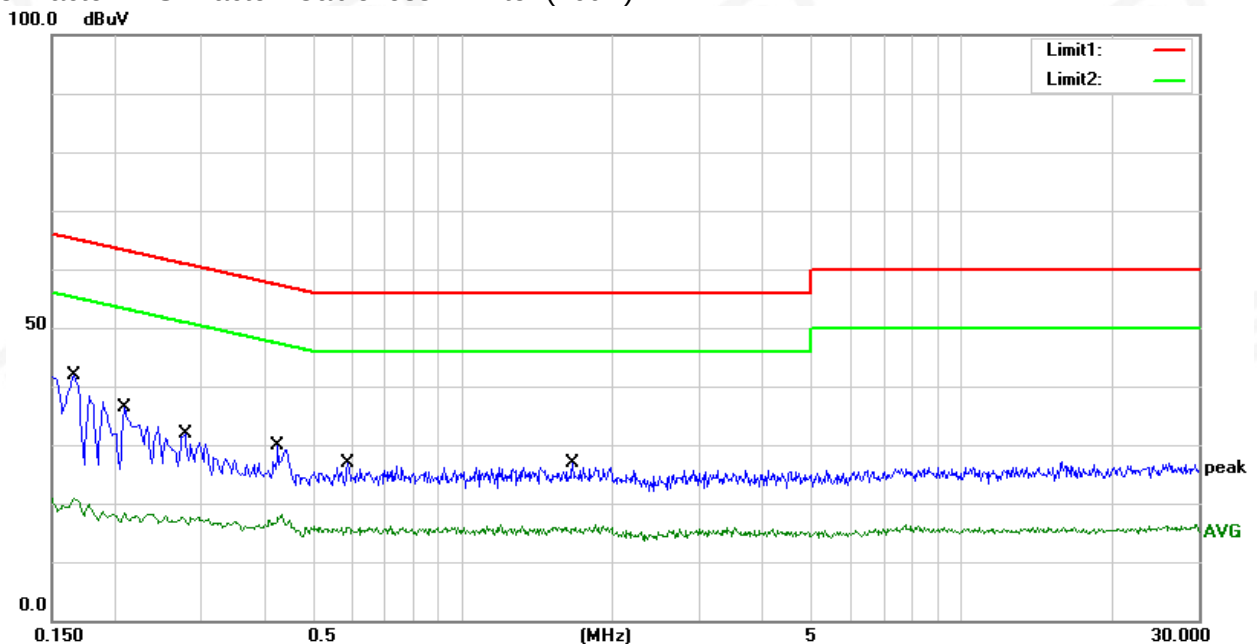
3.5 TEST RESULTS

Temperature:	25.1°C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 7		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	22.52	19.38	41.90	65.16	-23.26	QP
2	0.1660	1.41	19.38	20.79	55.16	-34.37	AVG
3	0.2100	17.01	19.39	36.40	63.21	-26.81	QP
4	0.2100	-1.07	19.39	18.32	53.21	-34.89	AVG
5	0.2780	12.39	19.37	31.76	60.88	-29.12	QP
6	0.2780	-1.62	19.37	17.75	50.88	-33.13	AVG
7	0.4260	10.45	19.39	29.84	57.33	-27.49	QP
8	0.4260	-1.37	19.39	18.02	47.33	-29.31	AVG
9	0.5900	7.56	19.38	26.94	56.00	-29.06	QP
10	0.5900	-3.45	19.38	15.93	46.00	-30.07	AVG
11	1.6660	7.54	19.35	26.89	56.00	-29.11	QP
12	1.6660	-2.91	19.35	16.44	46.00	-29.56	AVG

Remark:

1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result = Reading + Factor) – Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)



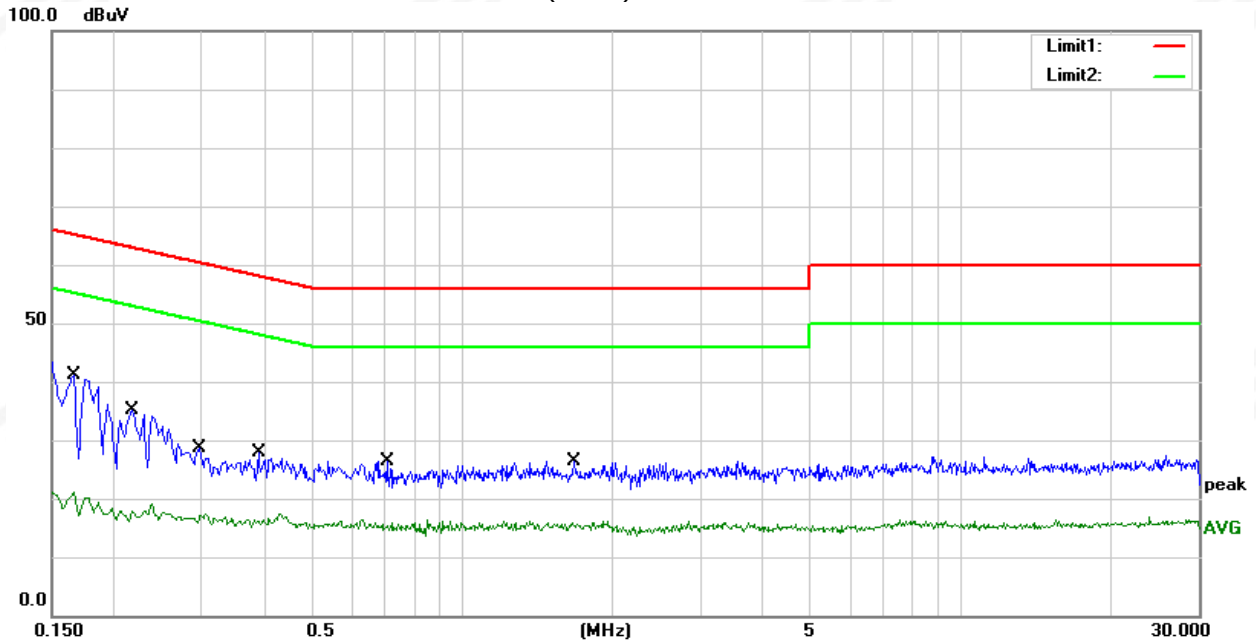


Temperature:	25.1℃	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 7		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	21.83	19.40	41.23	65.16	-23.93	QP
2	0.1660	1.62	19.40	21.02	55.16	-34.14	AVG
3	0.2185	14.97	19.37	34.34	62.88	-28.54	QP
4	0.2185	-0.23	19.37	19.14	52.88	-33.74	AVG
5	0.2980	9.18	19.38	28.56	60.30	-31.74	QP
6	0.2980	-2.05	19.38	17.33	50.30	-32.97	AVG
7	0.3900	8.48	19.36	27.84	58.06	-30.22	QP
8	0.3900	-2.07	19.36	17.29	48.06	-30.77	AVG
9	0.7060	6.89	19.41	26.30	56.00	-29.70	QP
10	0.7060	-2.96	19.41	16.45	46.00	-29.55	AVG
11	1.6780	7.09	19.38	26.47	56.00	-29.53	QP
12	1.6780	-3.21	19.38	16.17	46.00	-29.83	AVG

Remark:

1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result = Reading + Factor) – Limit
3. Factor = LISN factor + Cable loss + Limiter (10dB)





4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on RSS-Gen Issue 5 and RSS-247 Issue 4 (5.5) limit in the table and according to ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

Frequencies (MHz)	Field Strength (uA/m)	Measurement Distance (m)
0.009~0.490	6.37/F(KHz)	300
0.490~1.705	6.37/F(KHz)	30
1.705~30.0	0.08	30

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (1GHz-25 GHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

- Notes (1) The limit for radiated test was performed according to RSS 247.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	12.57675-12.57725	399.9-410	7.25-7.75
0.495-0.505	13.36-13.41	608-614	8.025-8.5
2.1735-2.1905	16.42-16.423	960-1427	9.0-9.2
3.020-3.026	16.69475-16.69525	1435-1626.5	9.3-9.5
4.125-4.128	16.80425-16.80475	1645.5-1646.5	10.6-12.7
4.17725-4.17775	25.5-25.67	1660-1710	13.25-13.4
4.20725-4.20775	37.5-38.25	1718.8-1722.2	14.47-14.5
5.677-5.683	73-74.6	2200-2300	15.35-16.2
6.215-6.218	74.8-75.2	2310-2390	17.7-21.4
6.26775-6.26825	108-38	2483.5-2500	22.01-23.12
6.31175-6.31225	149.9-150.05	2655-2900	23.6-24.0
8.291-8.294	156.52475-156.52525	3260-3267	31.2-31.8
8.362-8.366	156.7-156.9	3332-3339	36.43-36.5
8.37625-8.38675	162.0125-167.17	3345.8-3358	Above 38.6
8.41425-8.41475	167.72-173.2	3500-4400	-
12.29-12.293	240-285	4500-5150	-
12.51975-12.52025	322-335.4	5350-5460	-



For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 KHz/150KHz(Peak/QP/AV)
Stop Frequency	150KHz/30MHz(Peak/QP/AV)
RB / VB (emission in restricted band)	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz); 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted band)	120 KHz / 300 KHz

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)

For Restricted band

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stop Frequency	Lower Band Edge: 2310 to 2410 MHz Upper Band Edge: 2475 to 2500 MHz
RB / VB	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)



Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.2 TEST PROCEDURE

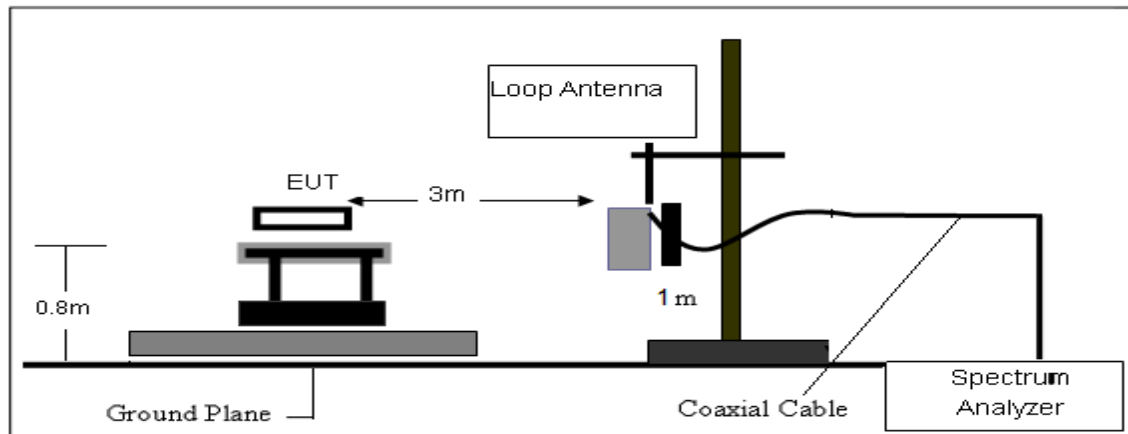
- The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- 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 QuasiPeak detector mode will be re-measured.
- If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

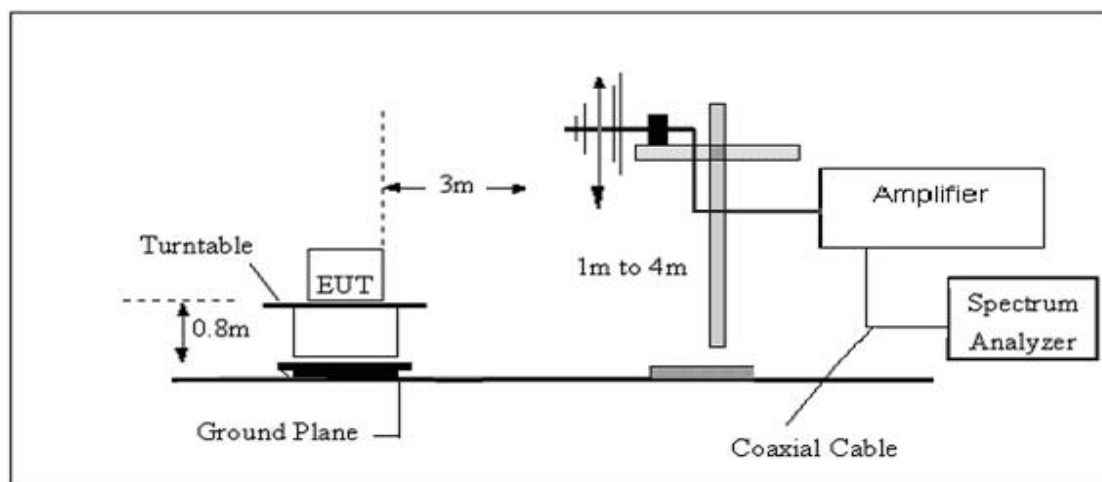
Both horizontal and vertical antenna polarities were tested with a band-stop filter and performed pretest to three orthogonal axis. The worst-case emissions were reported.

4.3 TEST SETUP

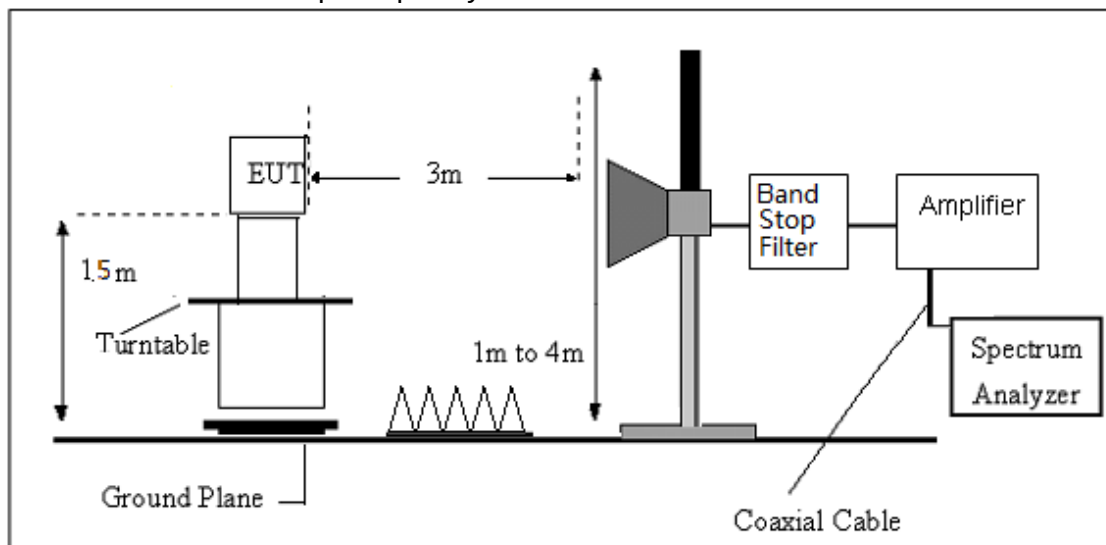
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



4.4 EUT OPERATING CONDITIONS

Please refer to section 3.4 of this report.



4.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$



4.6 TEST RESULTS

(Between 9KHz – 30 MHz)

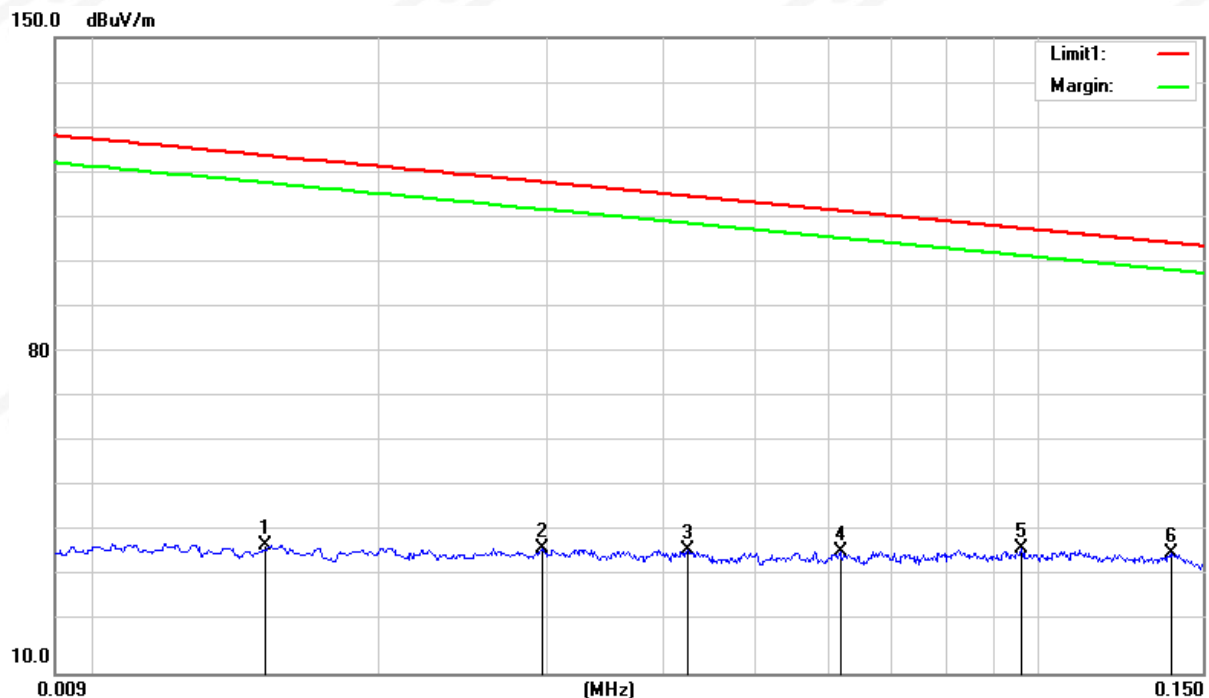
1M PHY

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Horizontal
Test Mode:	Mode 1/2/3 (Mode 2 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0151	18.37	19.74	38.11	124.03	-85.92	peak
2	0.0297	17.64	19.91	37.55	118.15	-80.60	peak
3	0.0424	17.34	19.65	36.99	115.06	-78.07	peak
4	0.0616	17.65	19.18	36.83	111.81	-74.98	peak
5	0.0961	19.53	17.79	37.32	107.95	-70.63	peak
6	0.1386	18.79	17.52	36.31	104.77	-68.46	peak

Remark:

1. Margin = Result (Result = Reading + Factor) – Limit
2. Factor = Antenna factor + Cable attenuation factor (cable loss) - Amplifier gain
3. All modes have been tested, only show the worst case.



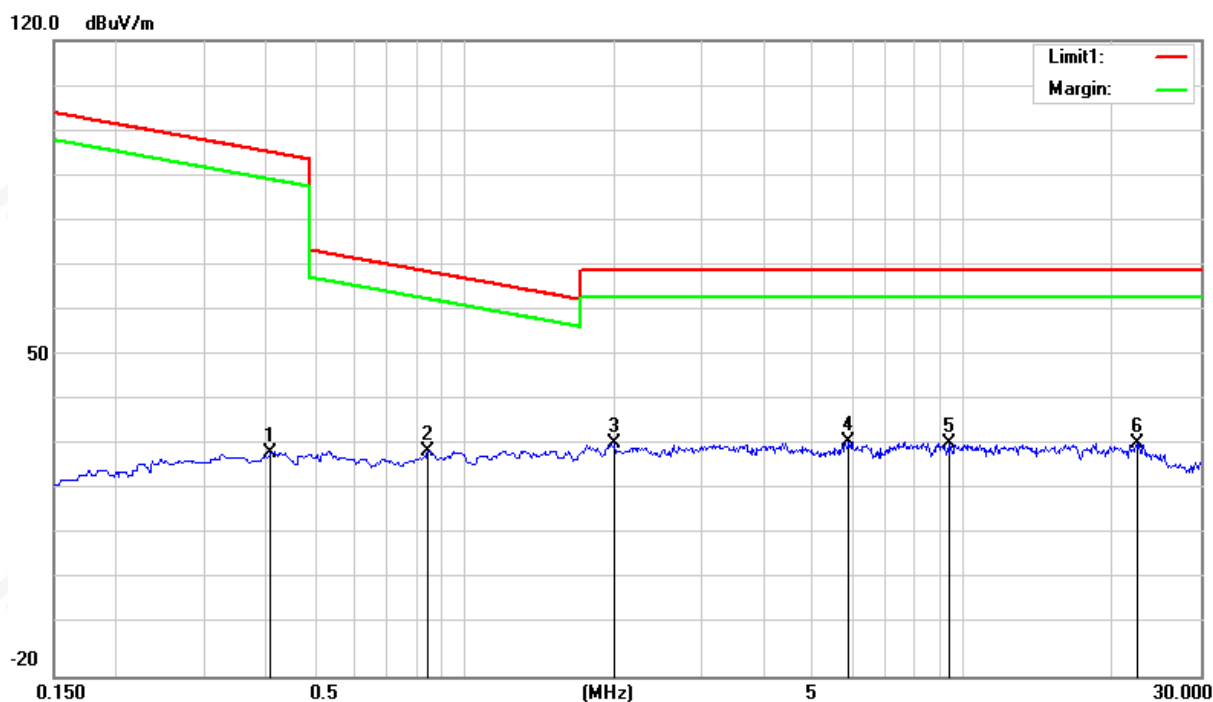


Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Horizontal
Test Mode:	Mode 1/2/3 (Mode 2 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.4082	9.16	20.16	29.32	95.39	-66.07	peak
2	0.8437	9.42	20.26	29.68	69.08	-39.40	peak
3	2.0011	10.81	20.40	31.21	69.50	-38.29	peak
4	5.9111	11.20	20.45	31.65	69.50	-37.85	peak
5	9.4334	10.93	20.23	31.16	69.50	-38.34	peak
6	22.4771	9.77	21.56	31.33	69.50	-38.17	peak

Remark:

1. Margin = Result (Result = Reading + Factor) – Limit
2. Factor = Antenna factor + Cable attenuation factor (cable loss) - Amplifier gain
3. All modes have been tested, only show the worst case.





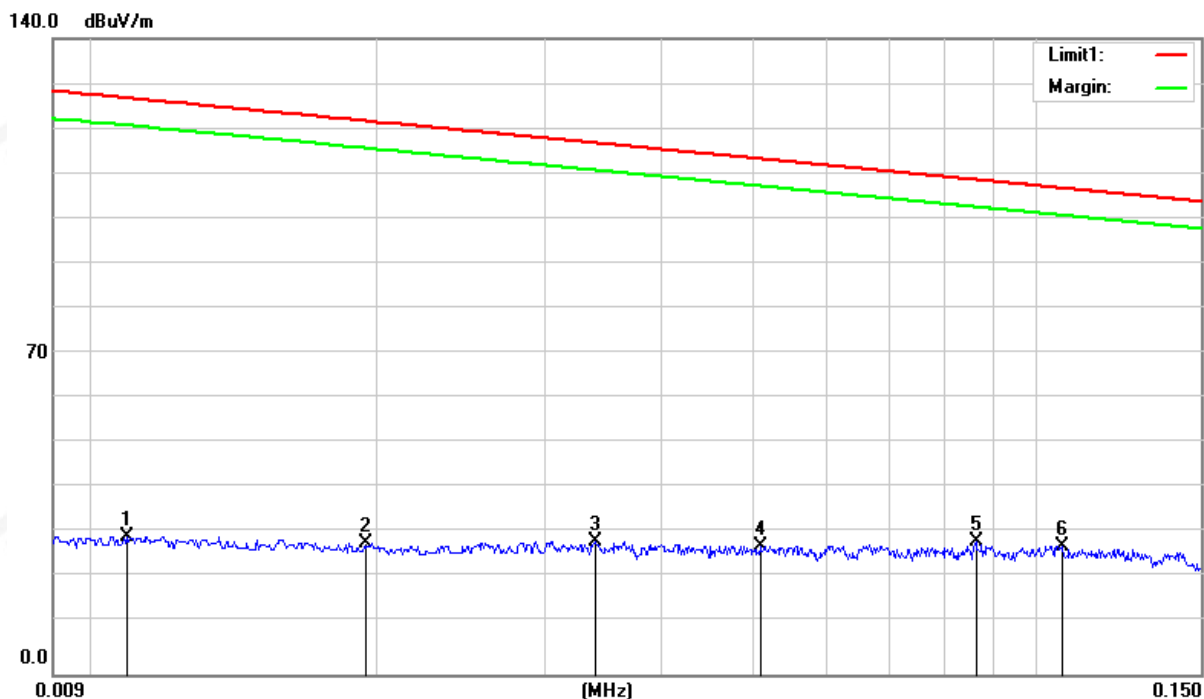
2M PHY

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Horizontal
Test Mode:	Mode 4/5/6 (Mode 5 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0108	10.96	19.43	30.39	126.94	-96.55	peak
2	0.0194	8.86	20.06	28.92	121.85	-92.93	peak
3	0.0340	9.41	19.82	29.23	116.97	-87.74	peak
4	0.0510	8.78	19.47	28.25	113.45	-85.20	peak
5	0.0864	11.05	18.25	29.30	108.87	-79.57	peak
6	0.1068	10.66	17.59	28.25	107.03	-78.78	peak

Remark:

1. Margin = Result (Result = Reading + Factor) – Limit
2. Factor = Antenna factor + Cable attenuation factor (cable loss) - Amplifier gain
3. All modes have been tested, only show the worst case.



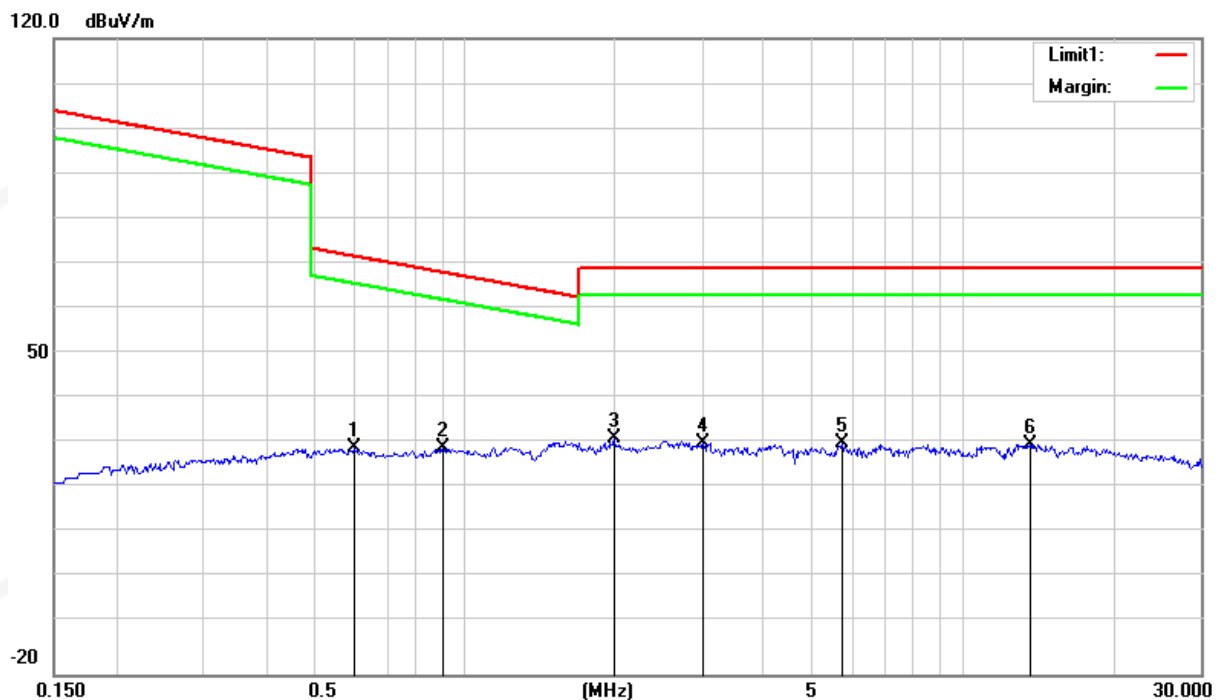


Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Horizontal
Test Mode:	Mode 4/5/6 (Mode 5 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.6010	9.52	20.24	29.76	72.03	-42.27	peak
2	0.9040	9.56	20.24	29.80	68.48	-38.68	peak
3	2.0007	11.42	20.40	31.82	69.50	-37.68	peak
4	3.0156	10.89	20.10	30.99	69.50	-38.51	peak
5	5.7320	10.32	20.46	30.78	69.50	-38.72	peak
6	13.6422	9.64	21.00	30.64	69.50	-38.86	peak

Remark:

1. Margin = Result (Result = Reading + Factor) – Limit
2. Factor = Antenna factor + Cable attenuation factor (cable loss) - Amplifier gain
3. All modes have been tested, only show the worst case.





(30MHz -1000MHz)

1M PHY

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Horizontal
Test Mode:	Mode 1/2/3 (Mode 2 worst mode)		

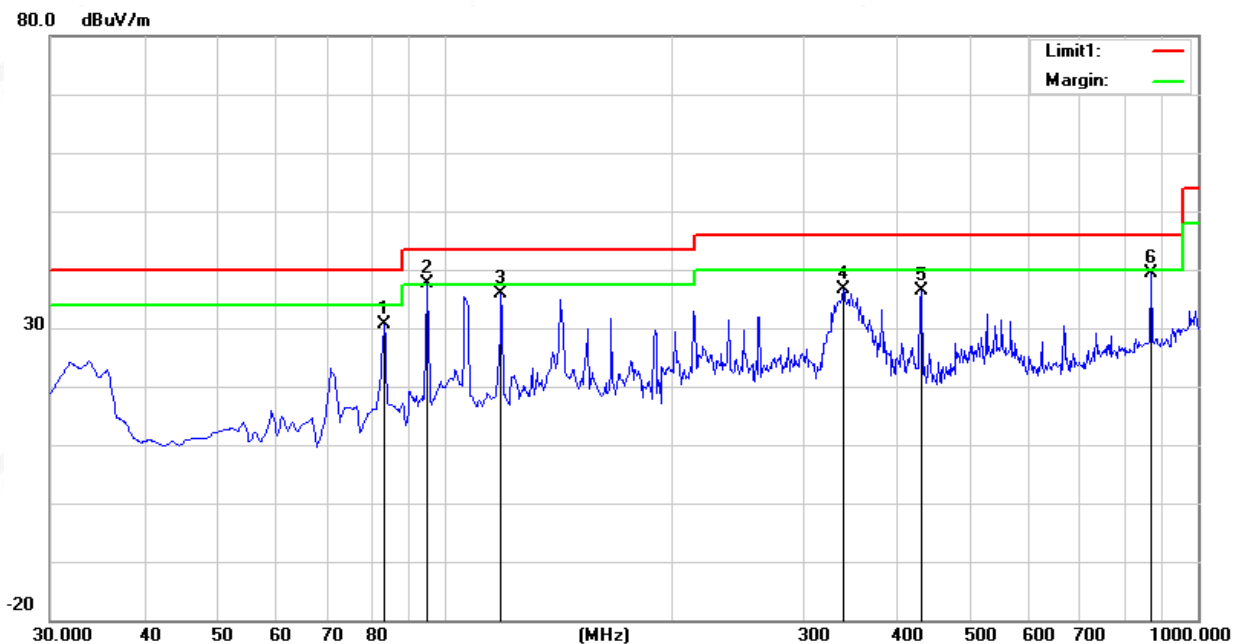
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	83.3500	53.06	-22.52	30.54	40.00	-9.46	peak
2	94.9900	58.42	-20.78	37.64	43.50	-5.86	peak
3	119.2400	54.31	-18.38	35.93	43.50	-7.57	peak
4	339.4300	50.11	-13.43	36.68	46.00	-9.32	peak
5	429.6400	46.45	-10.14	36.31	46.00	-9.69	peak
6	869.0500	39.95	-0.52	39.43	46.00	-6.57	peak

Remark:

4. Margin = Result (Result =Reading + Factor)-Limit

5. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

6. All modes have been tested,only show the worst case.



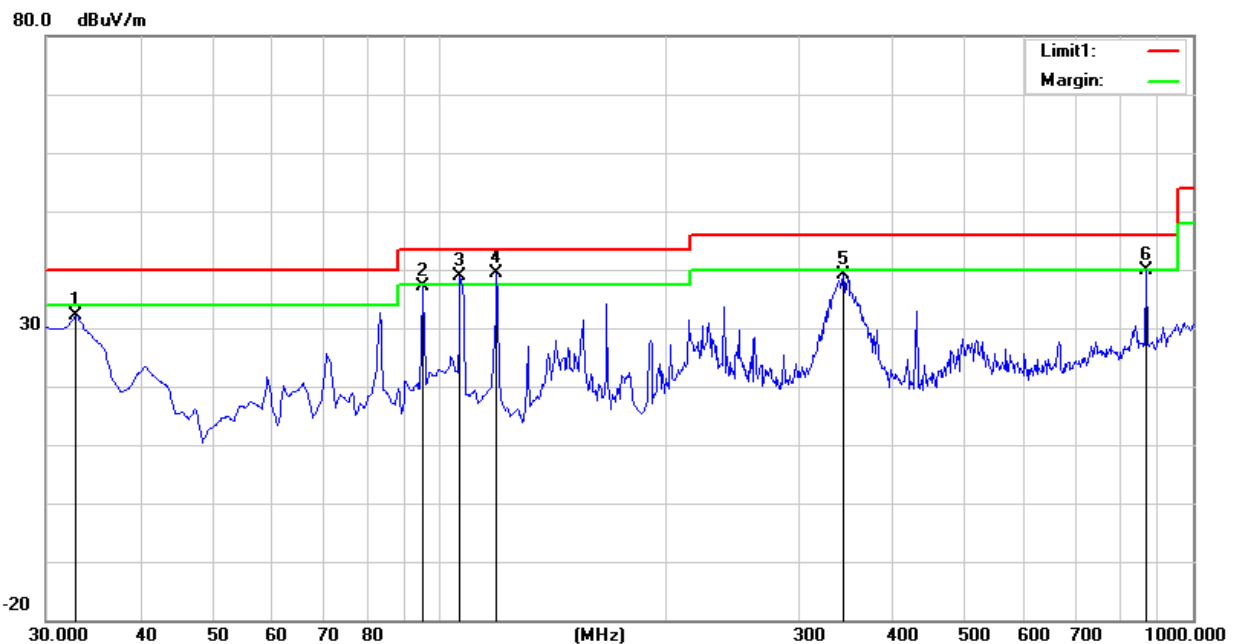


Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Vertical
Test Mode:	Mode 1/2/3 (Mode 2 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.9100	46.57	-14.33	32.24	40.00	-7.76	peak
2	94.9900	57.79	-20.78	37.01	43.50	-6.49	peak
3	106.6300	58.32	-19.42	38.90	43.50	-4.60	peak
4	119.2400	57.82	-18.38	39.44	43.50	-4.06	peak
5	344.2800	52.27	-13.26	39.01	46.00	-6.99	peak
6	869.0500	40.45	-0.52	39.93	46.00	-6.07	peak

Remark:

- Margin = Result (Result = Reading + Factor) - Limit
- Factor = Antenna factor + Cable attenuation factor (cable loss) - Amplifier gain
- All modes have been tested, only show the worst case.





2M PHY

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Horizontal
Test Mode:	Mode 4/5/6 (Mode 5 worst mode)		

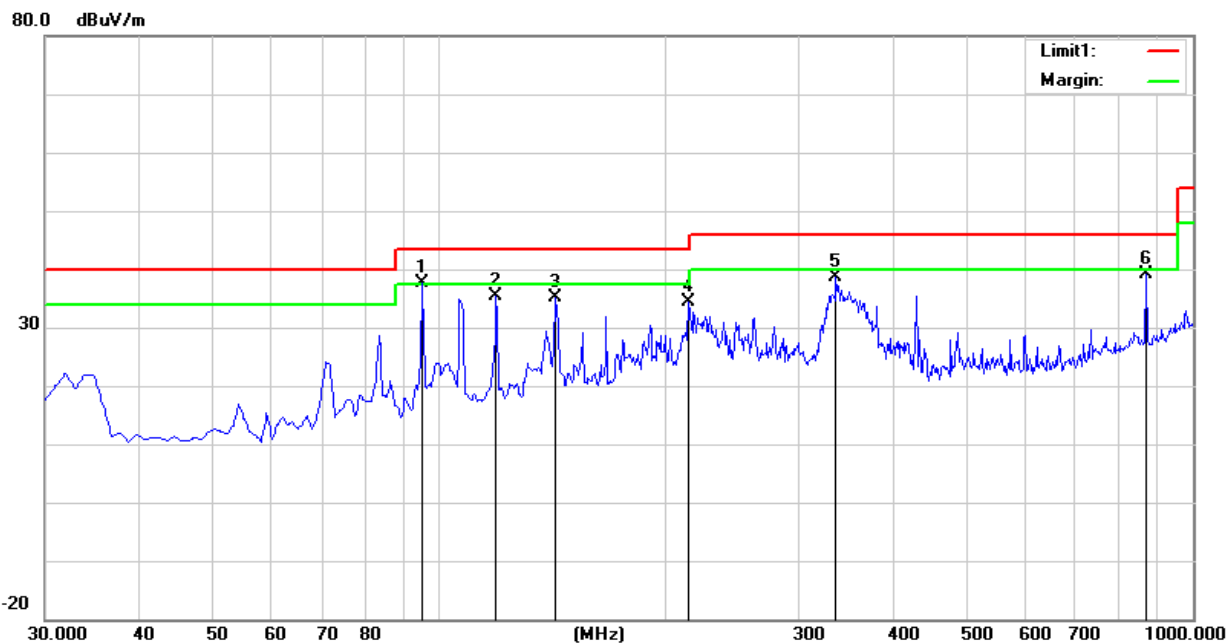
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	94.9900	58.52	-20.78	37.74	43.50	-5.76	peak
2	119.2400	53.78	-18.38	35.40	43.50	-8.10	peak
3	142.5200	53.25	-18.18	35.07	43.50	-8.43	peak
4	214.3000	54.63	-20.21	34.42	43.50	-9.08	peak
5	336.5200	52.07	-13.51	38.56	46.00	-7.44	peak
6	869.0500	39.67	-0.52	39.15	46.00	-6.85	peak

Remark:

4. Margin = Result (Result = Reading + Factor) - Limit

5. Factor = Antenna factor + Cable attenuation factor (cable loss) - Amplifier gain

6. All modes have been tested, only show the worst case.



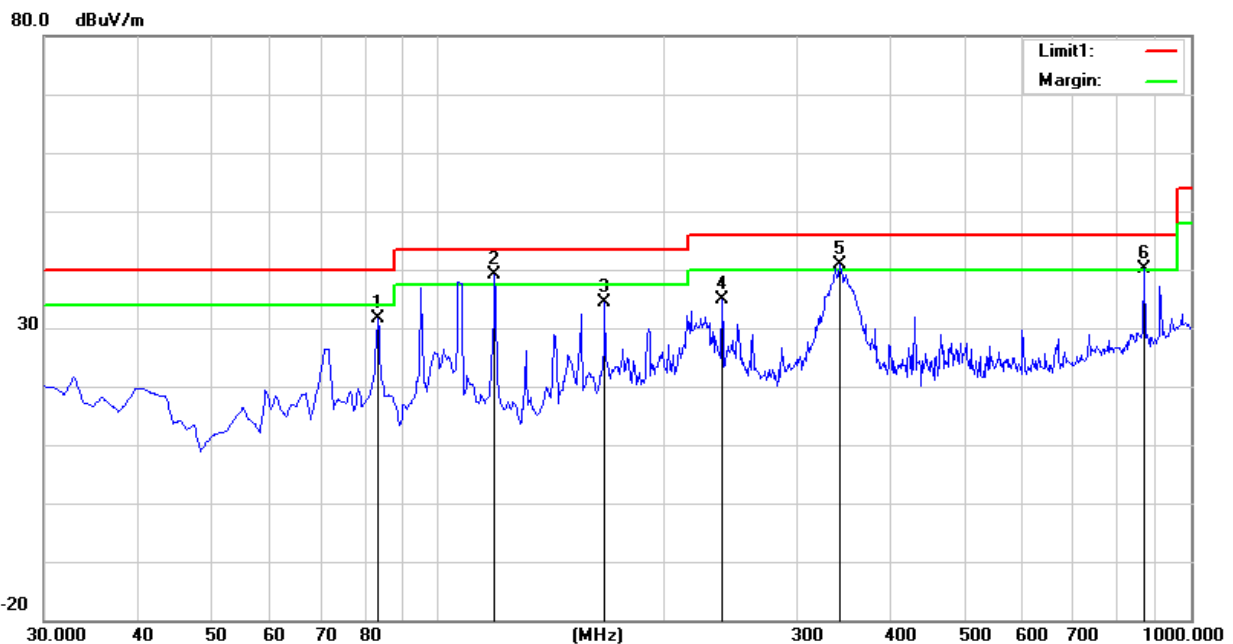


Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 3.3V	Phase:	Vertical
Test Mode:	Mode 4/5/6 (Mode 5 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	83.3500	54.11	-22.52	31.59	40.00	-8.41	peak
2	119.2400	57.52	-18.38	39.14	43.50	-4.36	peak
3	166.7700	53.97	-19.49	34.48	43.50	-9.02	peak
4	238.5500	53.14	-18.23	34.91	46.00	-11.09	peak
5	342.3400	54.10	-13.33	40.77	46.00	-5.23	peak
6	869.0500	40.55	-0.52	40.03	46.00	-5.97	peak

Remark:

4. $\text{Margin} = \text{Result} (\text{Result} = \text{Reading} + \text{Factor}) - \text{Limit}$
5. $\text{Factor} = \text{Antenna factor} + \text{Cable attenuation factor (cable loss)} - \text{Amplifier gain}$
6. All modes have been tested, only show the worst case.





(1GHz-25GHz) Spurious emission Requirements

1M PHY- GFSK

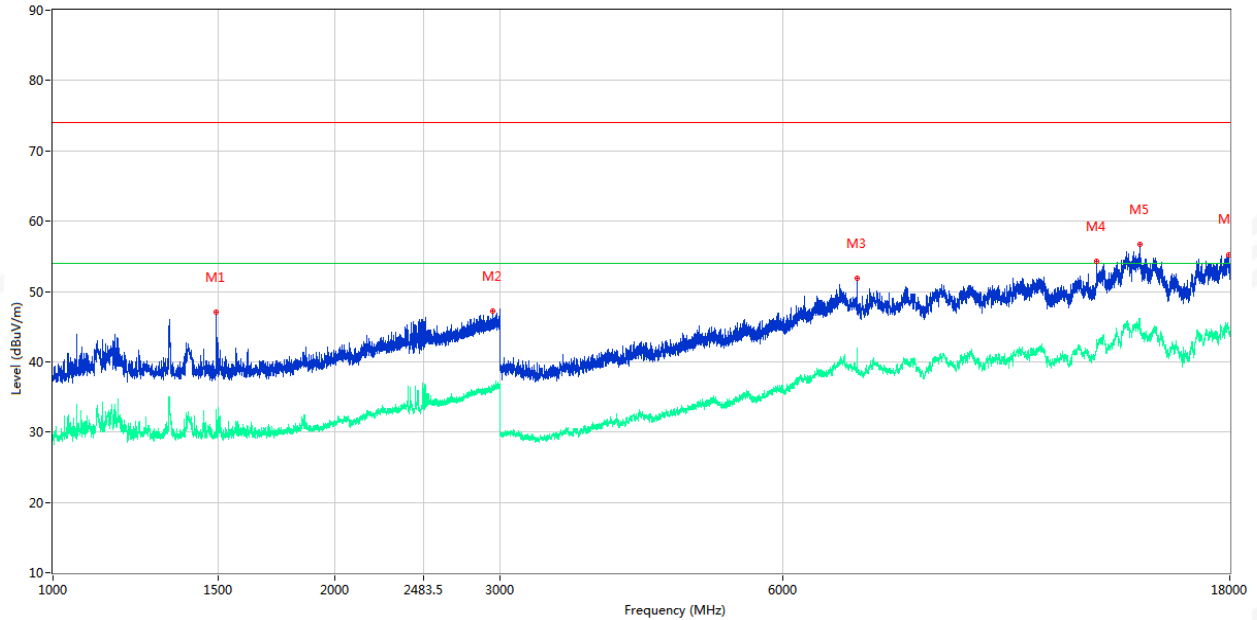
Low Channel (GFSK/2402 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1494.50	47.06	-1.05	74.00	-26.94	Peak	132.20	Horizontal	Pass
1494.50	33.13	-1.05	54.00	-20.87	AV	132.20	Horizontal	Pass
2945.00	47.16	5.18	74.00	-26.84	Peak	360.00	Horizontal	Pass
2945.00	36.15	5.18	54.00	-17.85	AV	360.00	Horizontal	Pass
7203.50	51.87	-1.90	74.00	-22.13	Peak	296.30	Horizontal	Pass
7203.50	41.95	-1.90	54.00	-12.05	AV	296.30	Horizontal	Pass
12981.25	54.32	3.76	74.00	-19.68	Peak	242.40	Horizontal	Pass
12981.25	42.39	3.76	54.00	-11.61	AV	242.40	Horizontal	Pass
14419.50	56.72	6.85	74.00	-17.28	Peak	268.00	Horizontal	Pass
14419.50	45.99	6.85	54.00	-8.01	AV	268.00	Horizontal	Pass
17936.75	55.27	6.96	74.00	-18.73	Peak	193.70	Horizontal	Pass
17936.75	44.74	6.96	54.00	-9.26	AV	193.70	Horizontal	Pass
Middle Channel (GFSK/2440 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1330.000	44.99	-1.29	74.0	-29.01	Peak	178.10	Horizontal	Pass
1330.000	34.18	-1.29	54.0	-19.82	AV	178.10	Horizontal	Pass
2816.000	47.28	4.83	74.0	-26.72	Peak	41.20	Horizontal	Pass
2816.000	35.85	4.83	54.0	-18.15	AV	41.20	Horizontal	Pass
7319.000	52.40	-2.07	74.0	-21.60	Peak	29.00	Horizontal	Pass
7319.000	45.72	-2.07	54.0	-8.28	AV	29.00	Horizontal	Pass
11182.750	52.87	2.53	74.0	-21.13	Peak	141.70	Horizontal	Pass
11182.750	42.32	2.53	54.0	-11.68	AV	141.70	Horizontal	Pass
14433.250	56.02	6.75	74.0	-17.98	Peak	282.90	Horizontal	Pass
14433.250	45.28	6.75	54.0	-8.72	AV	282.90	Horizontal	Pass
17914.751	55.95	7.13	74.0	-18.05	Peak	137.60	Horizontal	Pass
17914.751	45.69	7.13	54.0	-8.31	AV	137.60	Horizontal	Pass



High Channel (GFSK/2480 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1329.500	44.44	-1.29	74.0	-29.56	Peak	187.70	Horizontal	Pass
1329.500	33.97	-1.29	54.0	-20.03	AV	187.70	Horizontal	Pass
2634.000	54.55	3.80	74.0	-19.45	Peak	142.30	Horizontal	Pass
2634.000	50.18	3.80	54.0	-3.82	AV	142.30	Horizontal	Pass
7440.000	53.02	-1.51	74.0	-20.98	Peak	6.10	Horizontal	Pass
7440.000	43.75	-1.51	54.0	-10.25	AV	6.10	Horizontal	Pass
10797.750	53.27	2.02	74.0	-20.73	Peak	9.90	Horizontal	Pass
10797.750	42.75	2.02	54.0	-11.25	AV	9.90	Horizontal	Pass
14191.250	57.15	6.95	74.0	-16.85	Peak	345.80	Horizontal	Pass
14191.250	45.88	6.95	54.0	-8.12	AV	345.80	Horizontal	Pass
17601.249	56.04	6.60	74.0	-17.96	Peak	159.80	Horizontal	Pass
17601.249	45.91	6.60	54.0	-8.09	AV	159.80	Horizontal	Pass

RSE-1G-18G-H-Low Channel

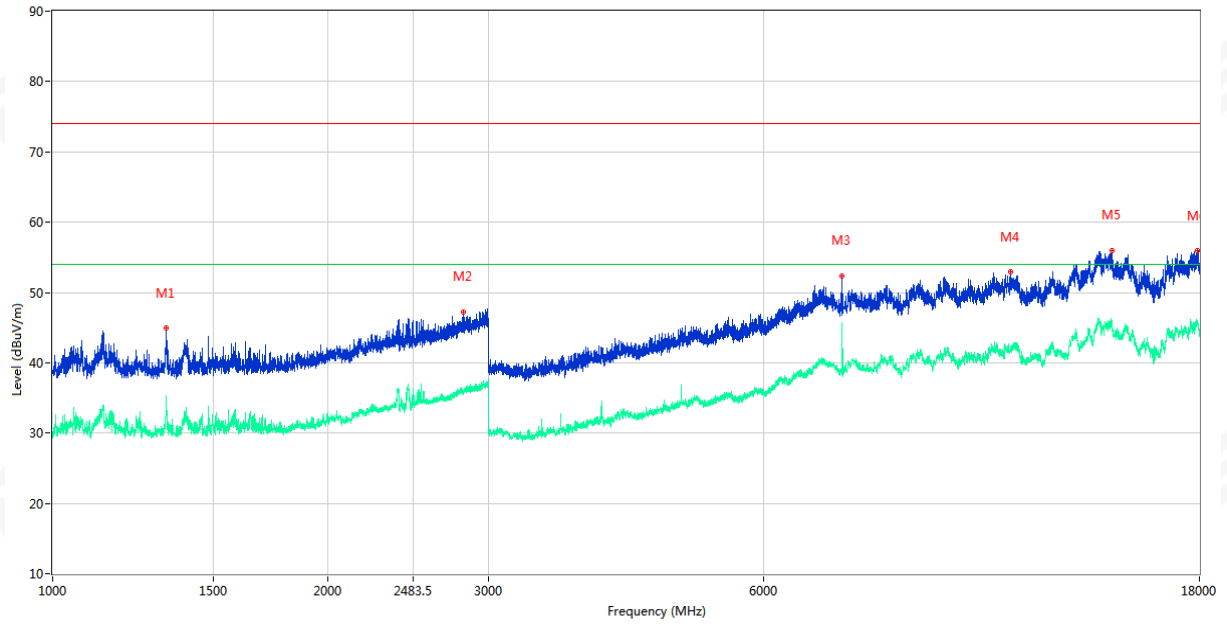
RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G





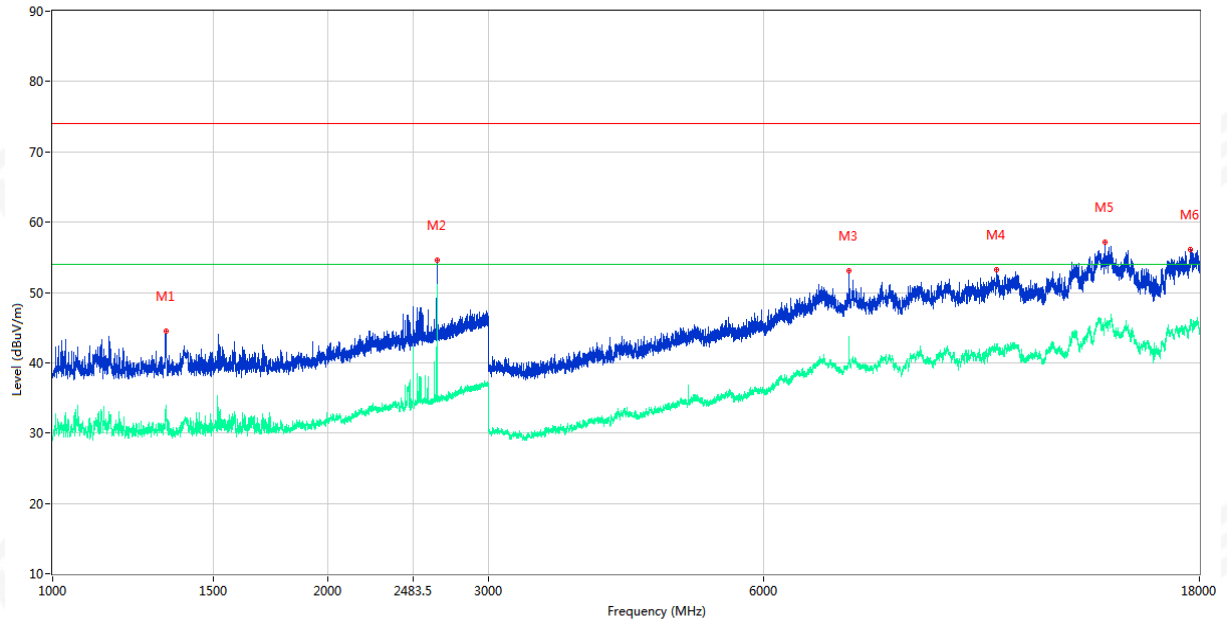
RSE-1G-18G-H-Middle Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



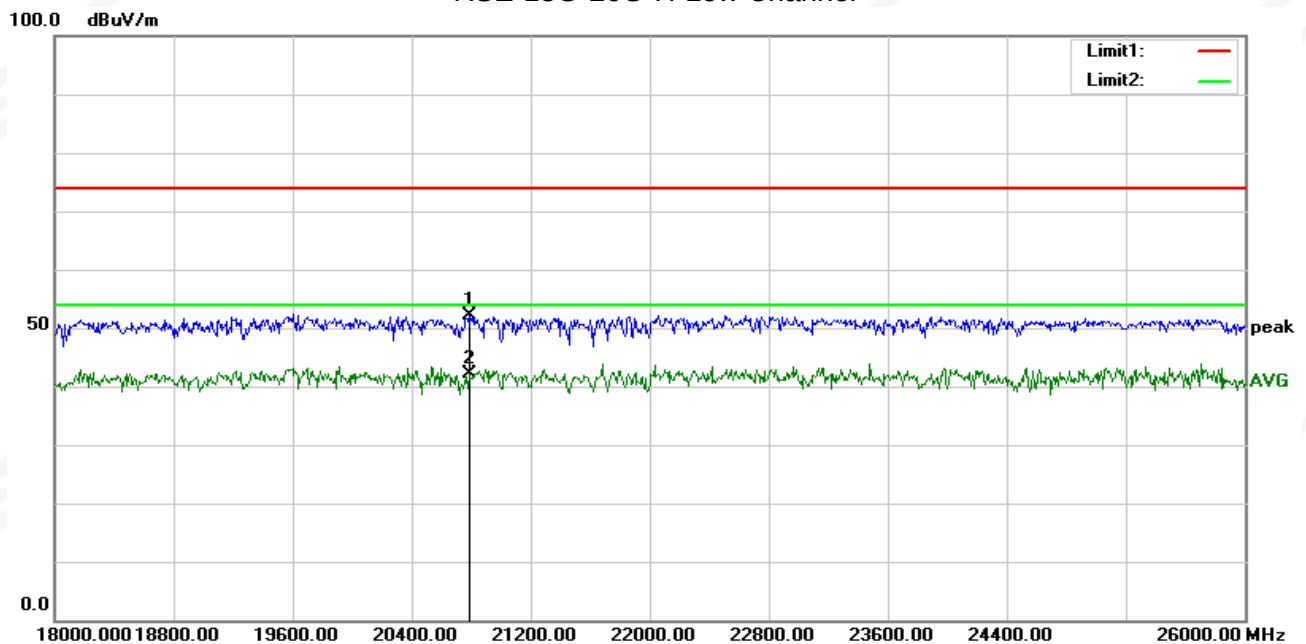
RSE-1G-18G-H-High Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G





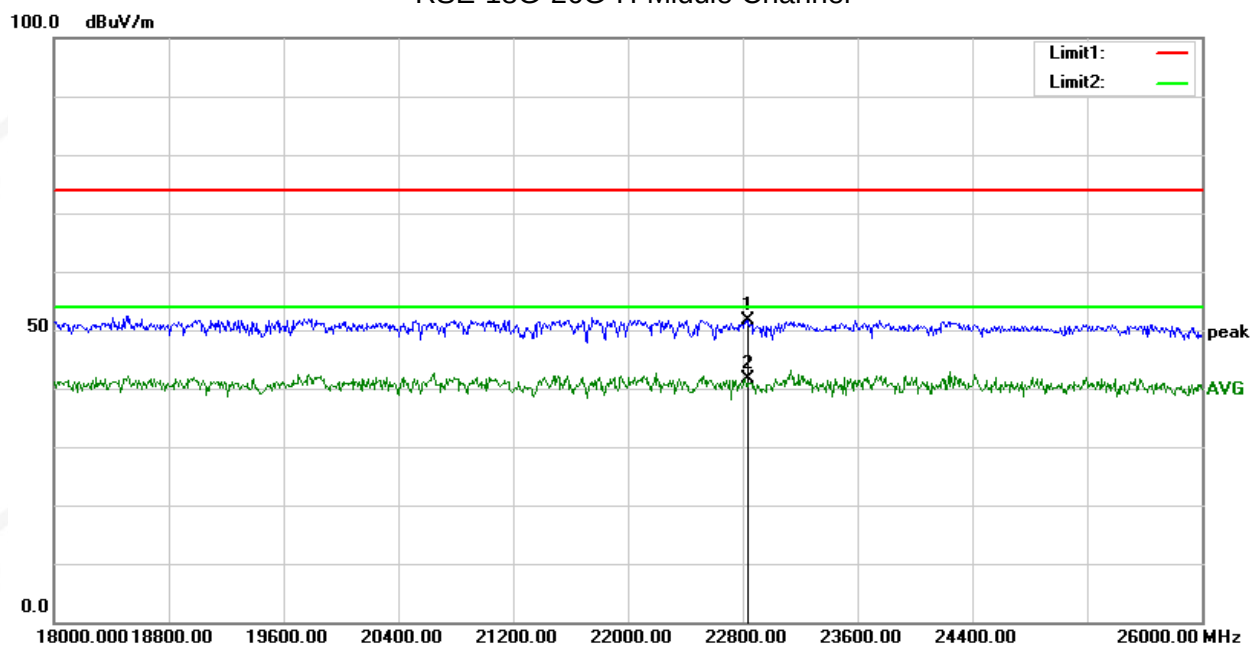
RSE-18G-26G-H-Low Channel



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	20792.000	49.72	2.48	52.20	74.00	-21.80	peak
2	20792.000	39.73	2.48	42.21	54.00	-11.79	AVG



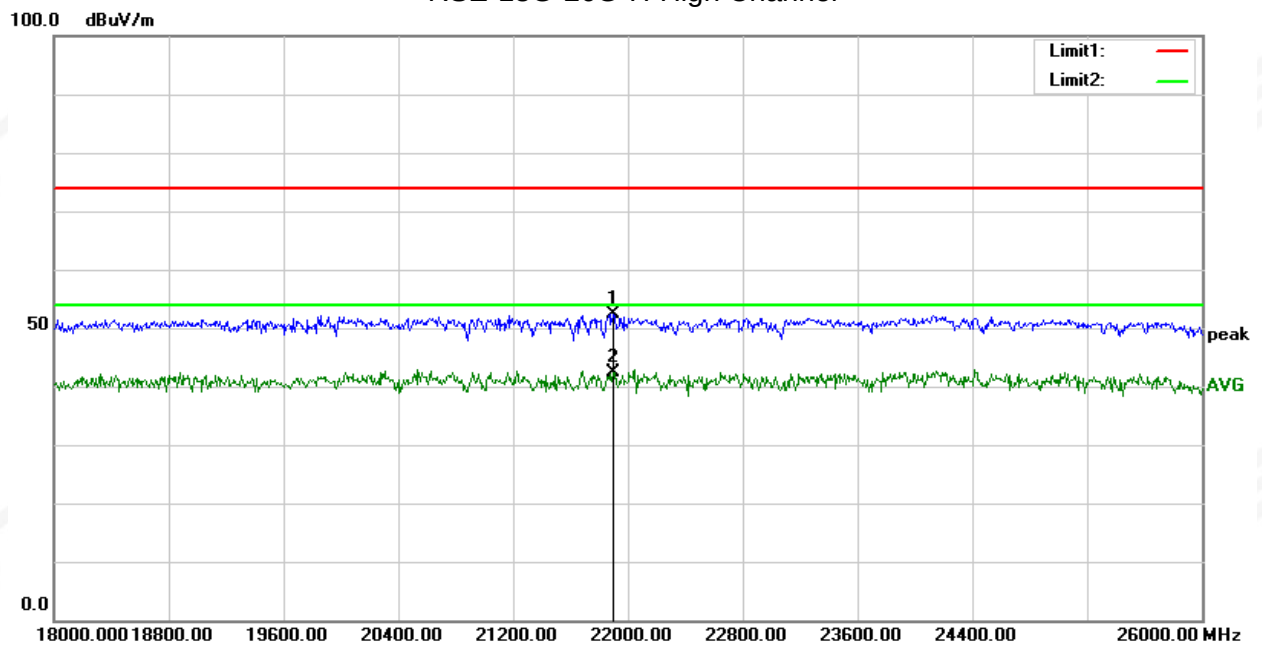
RSE-18G-26G-H-Middle Channel



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	22840.000	47.95	3.72	51.67	74.00	-22.33	peak
2	22840.000	37.98	3.72	41.70	54.00	-12.30	AVG



RSE-18G-26G-H-High Channel



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	21896.000	49.15	3.32	52.47	74.00	-21.53	peak
2	21896.000	39.09	3.32	42.41	54.00	-11.59	AVG



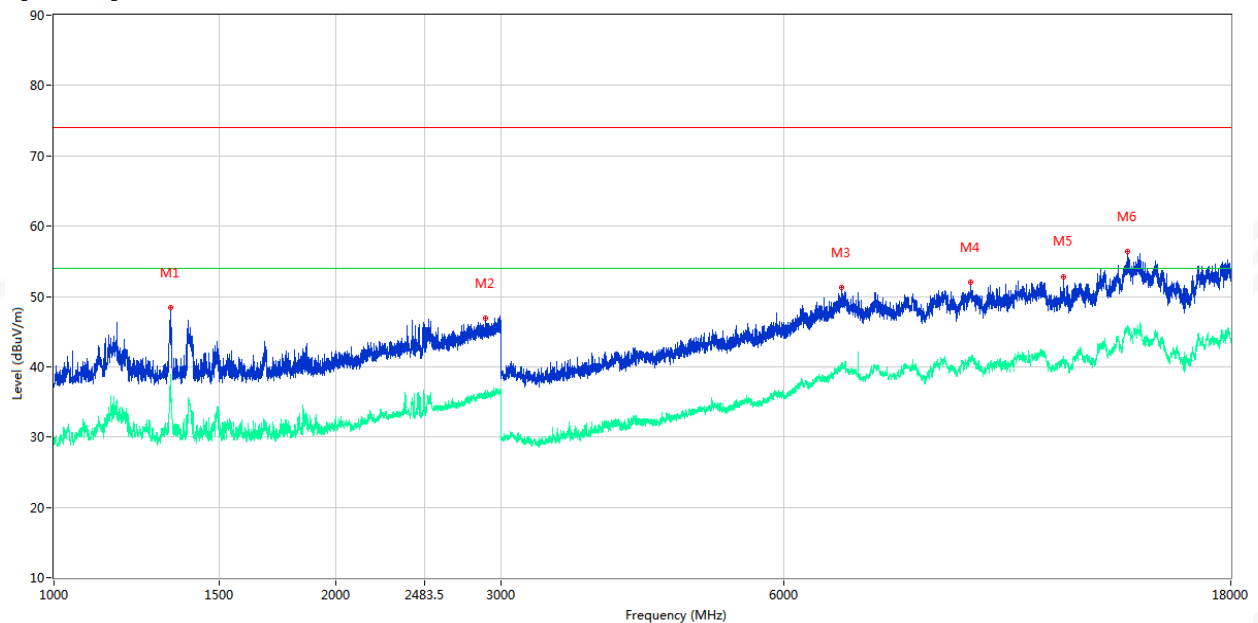
Low Channel (GFSK/2402 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1331.00	48.35	-1.29	74.00	-25.65	Peak	141.20	Vertical	Pass
1331.00	38.89	-1.29	54.00	-15.11	AV	141.20	Vertical	Pass
2886.00	46.89	4.93	74.00	-27.11	Peak	282.20	Vertical	Pass
2886.00	35.77	4.93	54.00	-18.23	AV	282.20	Vertical	Pass
6914.00	51.23	0.62	74.00	-22.77	Peak	151.30	Vertical	Pass
6914.00	39.79	0.62	54.00	-14.21	AV	151.30	Vertical	Pass
9513.50	51.97	1.42	74.00	-22.03	Peak	310.50	Vertical	Pass
9513.50	41.28	1.42	54.00	-12.72	AV	310.50	Vertical	Pass
11950.00	52.85	2.01	74.00	-21.15	Peak	288.90	Vertical	Pass
11950.00	40.84	2.01	54.00	-13.16	AV	288.90	Vertical	Pass
13954.75	56.38	7.88	74.00	-17.62	Peak	4.00	Vertical	Pass
13954.75	45.76	7.88	54.00	-8.24	AV	4.00	Vertical	Pass
Middle Channel (GFSK/2440 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1105.500	45.03	-1.75	74.0	-28.97	Peak	186.60	Vertical	Pass
1105.500	32.12	-1.75	54.0	-21.88	AV	186.60	Vertical	Pass
2633.500	48.75	3.80	74.0	-25.25	Peak	315.30	Vertical	Pass
2633.500	42.93	3.80	54.0	-11.07	AV	315.30	Vertical	Pass
7319.000	51.79	-2.07	74.0	-22.21	Peak	48.20	Vertical	Pass
7319.000	44.02	-2.07	54.0	-9.98	AV	48.20	Vertical	Pass
11254.250	53.16	2.44	74.0	-20.84	Peak	256.90	Vertical	Pass
11254.250	42.65	2.44	54.0	-11.35	AV	256.90	Vertical	Pass
14180.250	56.82	6.94	74.0	-17.18	Peak	89.50	Vertical	Pass
14180.250	45.42	6.94	54.0	-8.58	AV	89.50	Vertical	Pass
17846.000	56.52	6.78	74.0	-17.48	Peak	354.80	Vertical	Pass
17846.000	45.48	6.78	54.0	-8.52	AV	354.80	Vertical	Pass



High Channel (GFSK/2480 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1394.500	45.23	-1.20	74.0	-28.77	Peak	251.60	Vertical	Pass
1394.500	34.27	-1.20	54.0	-19.73	AV	251.60	Vertical	Pass
2633.500	49.50	3.80	74.0	-24.50	Peak	159.70	Vertical	Pass
2633.500	44.97	3.80	54.0	-9.03	AV	159.70	Vertical	Pass
7437.250	51.91	-1.53	74.0	-22.09	Peak	60.60	Vertical	Pass
7437.250	42.60	-1.53	54.0	-11.40	AV	60.60	Vertical	Pass
11059.000	53.38	1.95	74.0	-20.62	Peak	254.30	Vertical	Pass
11059.000	42.48	1.95	54.0	-11.52	AV	254.30	Vertical	Pass
14422.250	56.56	6.83	74.0	-17.44	Peak	52.00	Vertical	Pass
14422.250	46.17	6.83	54.0	-7.83	AV	52.00	Vertical	Pass
17796.499	56.55	6.36	74.0	-17.45	Peak	331.30	Vertical	Pass
17796.499	45.64	6.36	54.0	-8.36	AV	331.30	Vertical	Pass

RSE-1G-18G-V-Low Channel

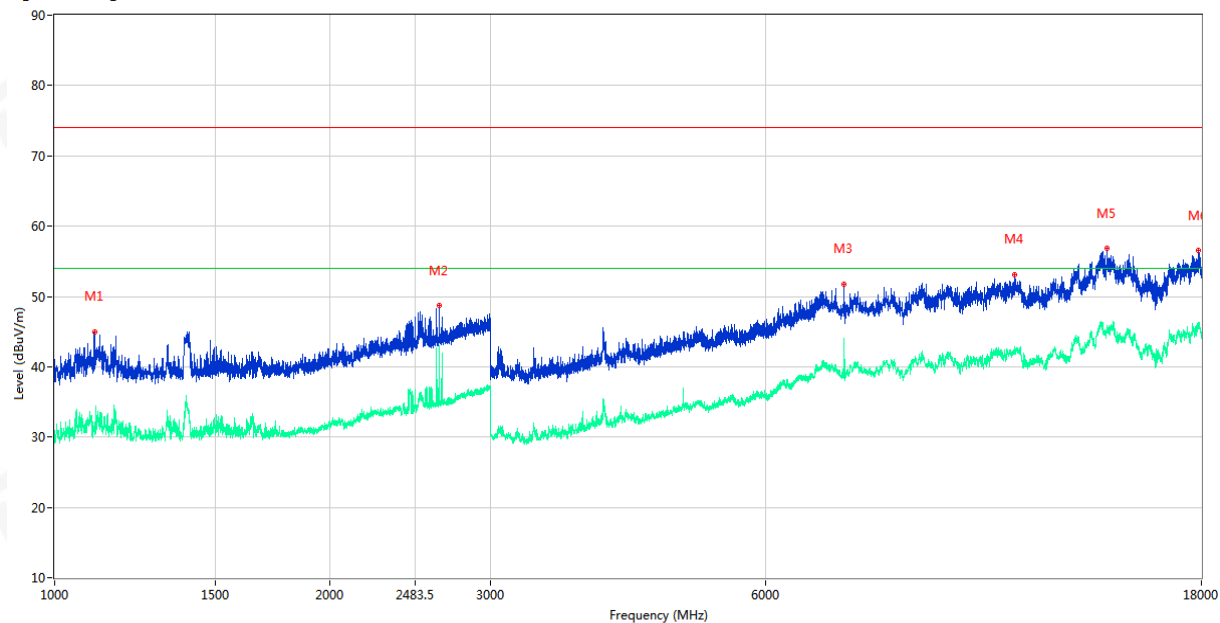
RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G





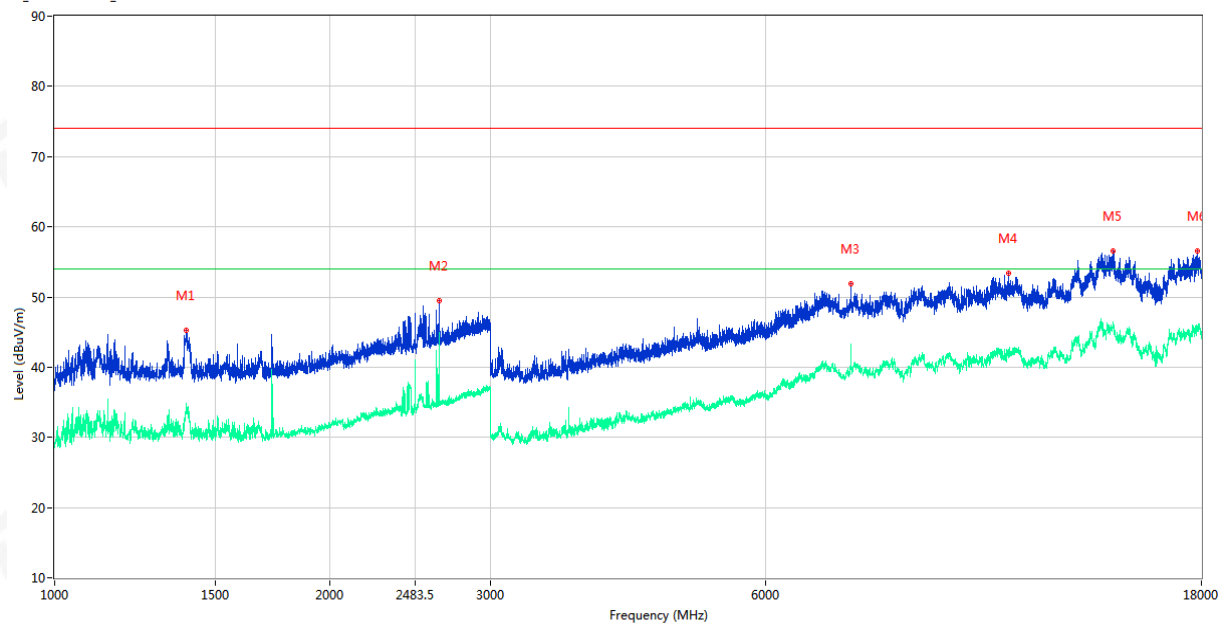
RSE-1G-18G-V-Middle Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



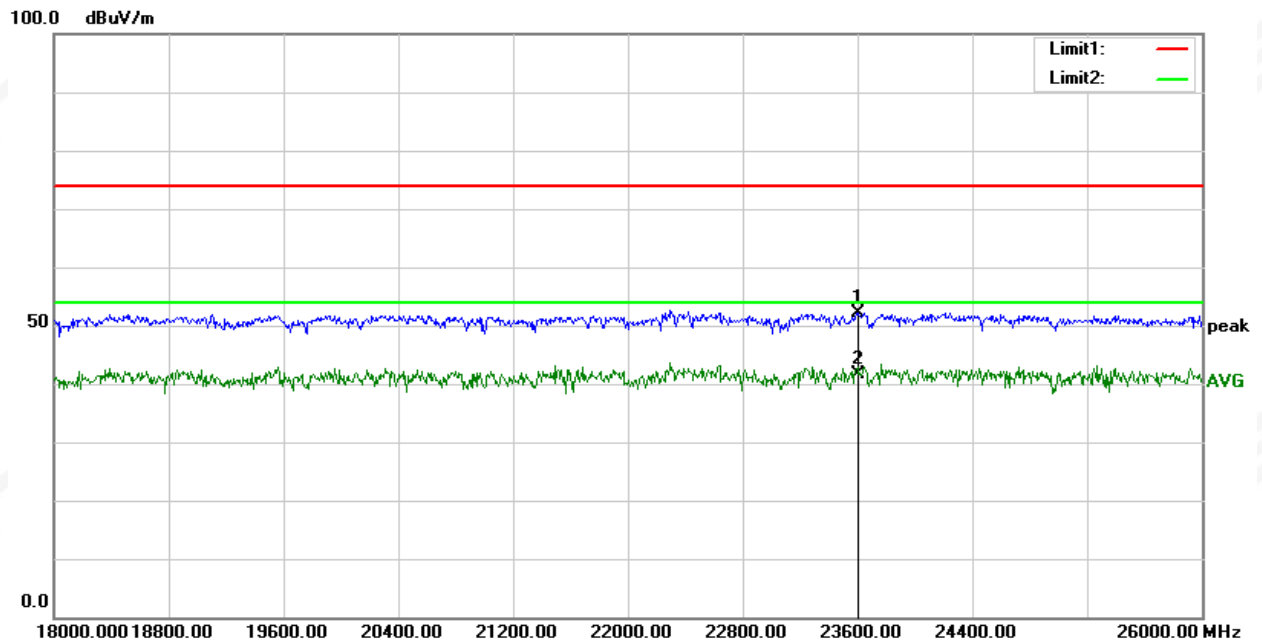
RSE-1G-18G-V-High Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G





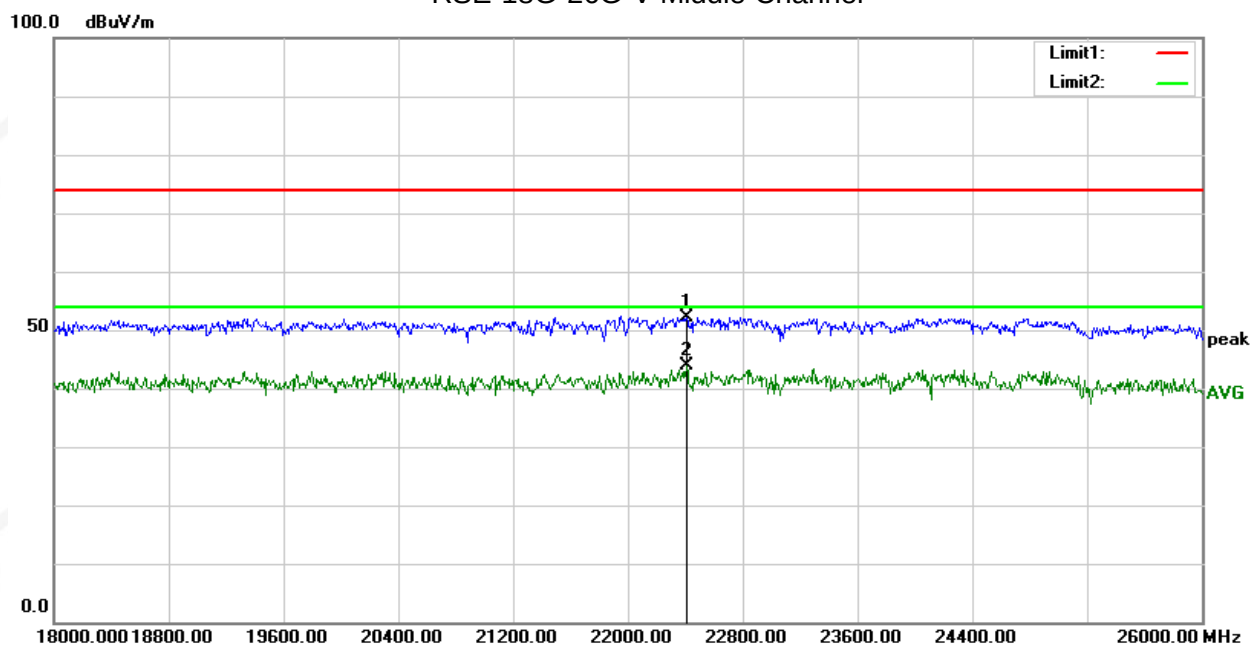
RSE-18G-26G-V-Low Channel



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	23600.000	48.02	4.23	52.25	74.00	-21.75	peak
2	23600.000	37.34	4.23	41.57	54.00	-12.43	AVG



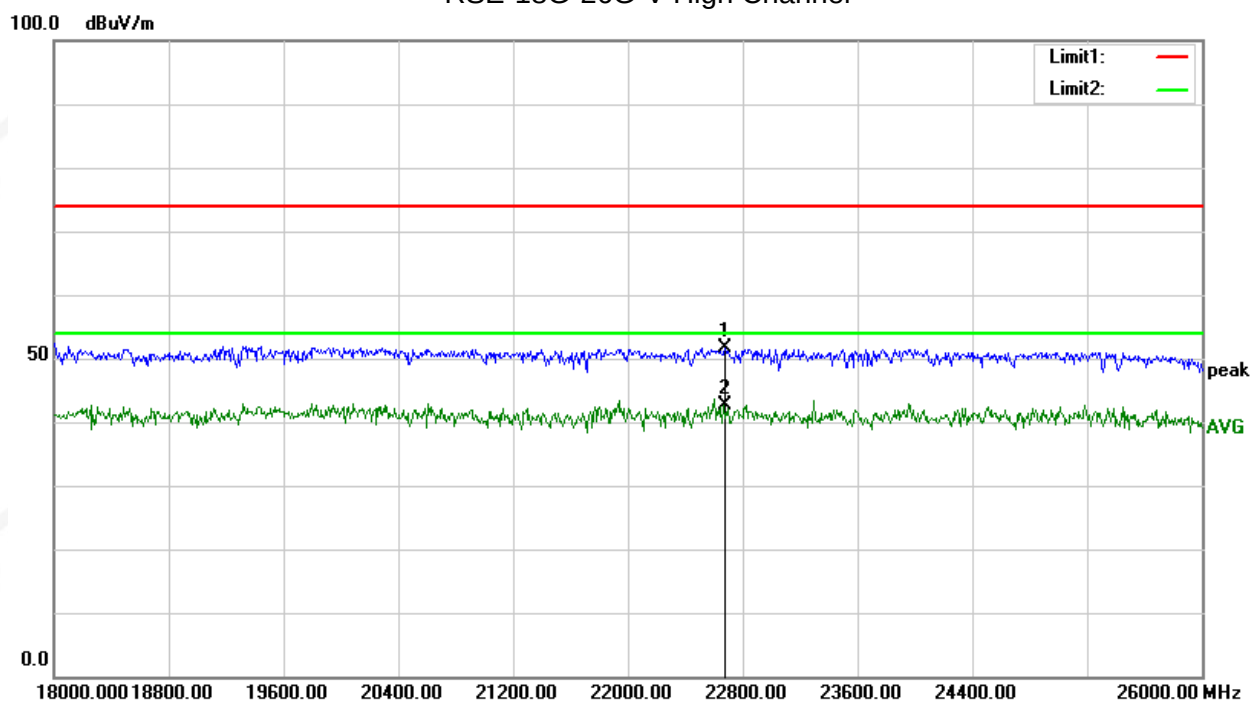
RSE-18G-26G-V-Middle Channel



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	22408.000	48.38	3.83	52.21	74.00	-21.79	peak
2	22408.000	40.02	3.83	43.85	54.00	-10.15	AVG



RSE-18G-26G-V-High Channel



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	22680.000	47.84	3.82	51.66	74.00	-22.34	peak
2	22680.000	38.77	3.82	42.59	54.00	-11.41	AVG

Note:

- 1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor.
- 2) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.



2M PHY

Low Channel (GFSK/2402 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1147.00	44.92	-1.68	74.00	-29.08	Peak	282.90	Horizontal	Pass
1147.00	35.10	-1.68	54.00	-18.90	AV	282.90	Horizontal	Pass
2939.00	46.58	5.15	74.00	-27.42	Peak	325.60	Horizontal	Pass
2939.00	36.11	5.15	54.00	-17.89	AV	325.60	Horizontal	Pass
7539.00	50.84	-1.13	74.00	-23.16	Peak	187.00	Horizontal	Pass
7539.00	39.42	-1.13	54.00	-14.58	AV	187.00	Horizontal	Pass
9491.50	52.32	1.50	74.00	-21.68	Peak	338.30	Horizontal	Pass
9491.50	41.30	1.50	54.00	-12.70	AV	338.30	Horizontal	Pass
13974.00	56.71	8.12	74.00	-17.29	Peak	259.10	Horizontal	Pass
13974.00	46.04	8.12	54.00	-7.96	AV	259.10	Horizontal	Pass
17895.50	55.93	7.20	74.00	-18.07	Peak	59.10	Horizontal	Pass
17895.50	45.89	7.20	54.00	-8.11	AV	59.10	Horizontal	Pass
Middle Channel (GFSK/2440 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1337.500	43.43	-1.28	74.0	-30.57	Peak	191.50	Horizontal	Pass
1337.500	32.07	-1.28	54.0	-21.93	AV	191.50	Horizontal	Pass
2977.000	47.48	5.35	74.0	-26.52	Peak	304.10	Horizontal	Pass
2977.000	36.73	5.35	54.0	-17.27	AV	304.10	Horizontal	Pass
7319.000	51.49	-2.07	74.0	-22.51	Peak	43.50	Horizontal	Pass
7319.000	44.63	-2.07	54.0	-9.37	AV	43.50	Horizontal	Pass
11037.000	52.76	1.88	74.0	-21.24	Peak	360.00	Horizontal	Pass
11037.000	42.42	1.88	54.0	-11.58	AV	360.00	Horizontal	Pass
13943.750	56.25	7.75	74.0	-17.75	Peak	312.00	Horizontal	Pass
13943.750	46.10	7.75	54.0	-7.90	AV	312.00	Horizontal	Pass
17856.999	55.93	6.87	74.0	-18.07	Peak	256.60	Horizontal	Pass
17856.999	45.43	6.87	54.0	-8.57	AV	256.60	Horizontal	Pass

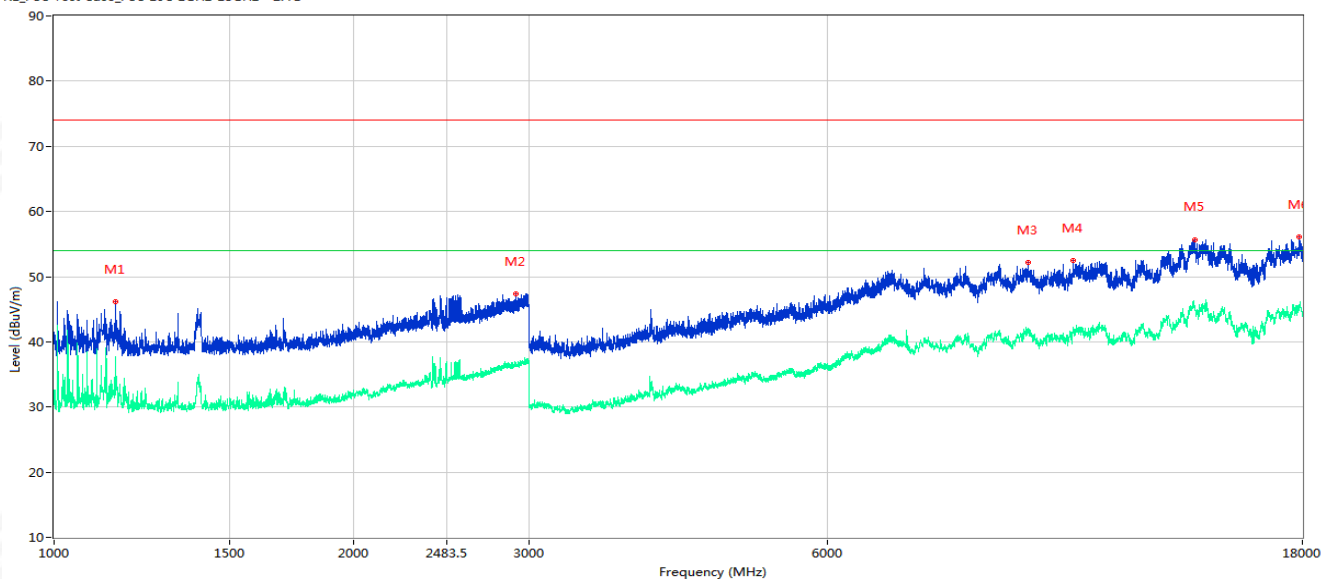


High Channel (GFSK/2480 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1327.000	46.49	-1.29	74.0	-27.51	Peak	183.30	Horizontal	Pass
1327.000	34.90	-1.29	54.0	-19.10	AV	183.30	Horizontal	Pass
2827.000	47.47	4.88	74.0	-26.53	Peak	270.30	Horizontal	Pass
2827.000	36.26	4.88	54.0	-17.74	AV	270.30	Horizontal	Pass
7473.000	50.71	-1.23	74.0	-23.29	Peak	3.60	Horizontal	Pass
7473.000	40.07	-1.23	54.0	-13.93	AV	3.60	Horizontal	Pass
10828.000	52.93	1.96	74.0	-21.07	Peak	76.10	Horizontal	Pass
10828.000	41.95	1.96	54.0	-12.05	AV	76.10	Horizontal	Pass
14381.000	57.16	6.97	74.0	-16.84	Peak	61.20	Horizontal	Pass
14381.000	45.69	6.97	54.0	-8.31	AV	61.20	Horizontal	Pass
17598.501	56.16	6.59	74.0	-17.84	Peak	353.50	Horizontal	Pass
17598.501	45.82	6.59	54.0	-8.18	AV	353.50	Horizontal	Pass



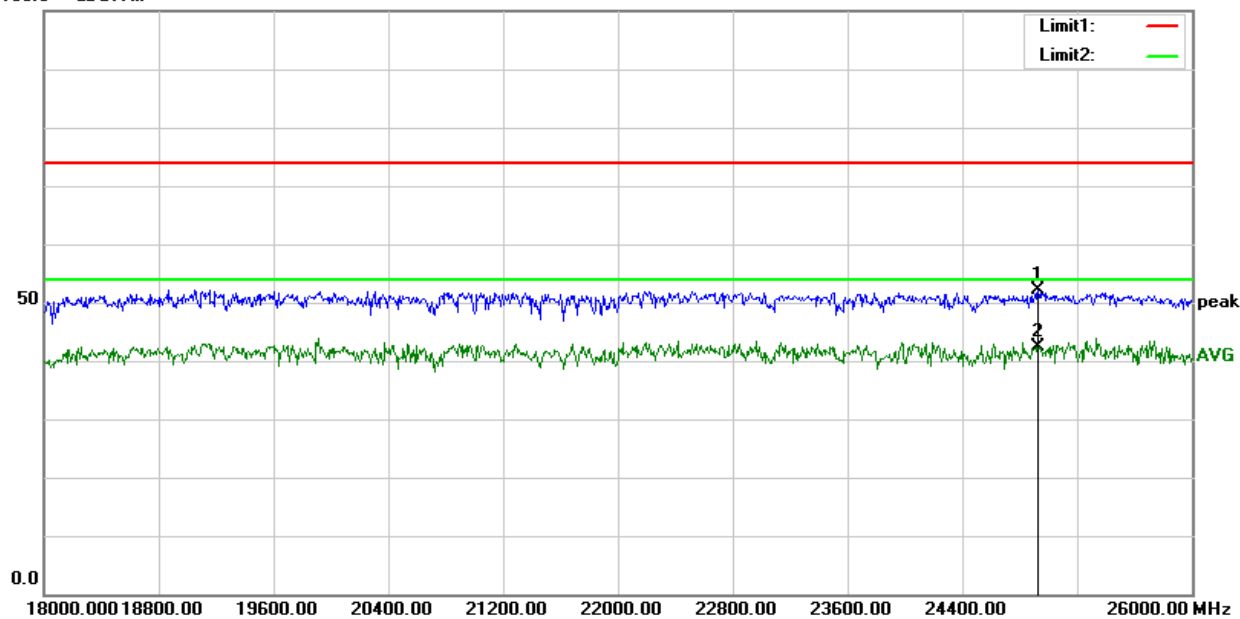
RSE-1G-18G-H-Low Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



RSE-18G-26G-H-Low Channel

100.0 dBuV/m

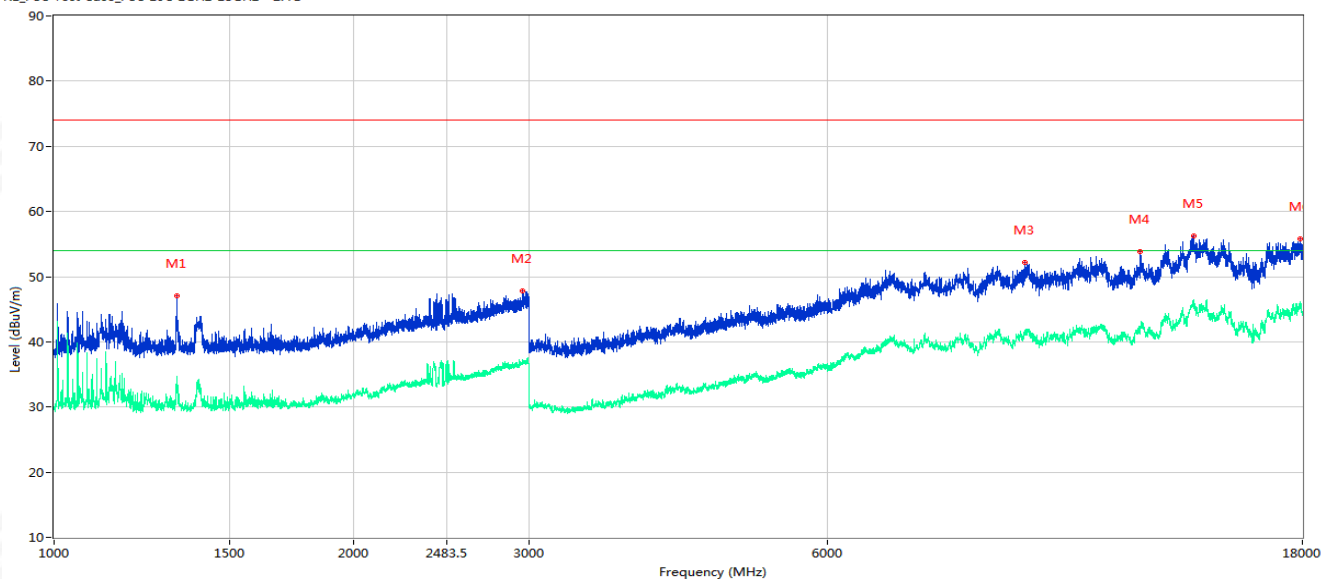


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	24928.000	46.90	5.22	52.12	74.00	-21.88	peak
2	24928.000	37.14	5.22	42.36	54.00	-11.64	AVG



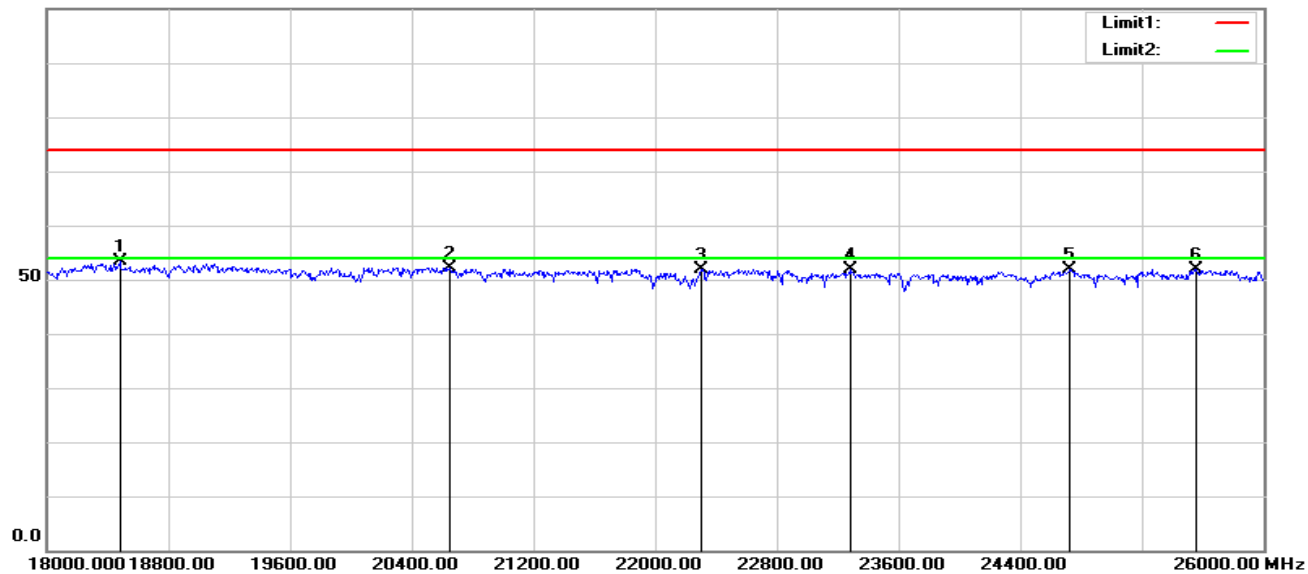
RSE-1G-18G-H-Middle Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



RSE-18G-26G-H-Middle Channel

100.0 dBuV/m

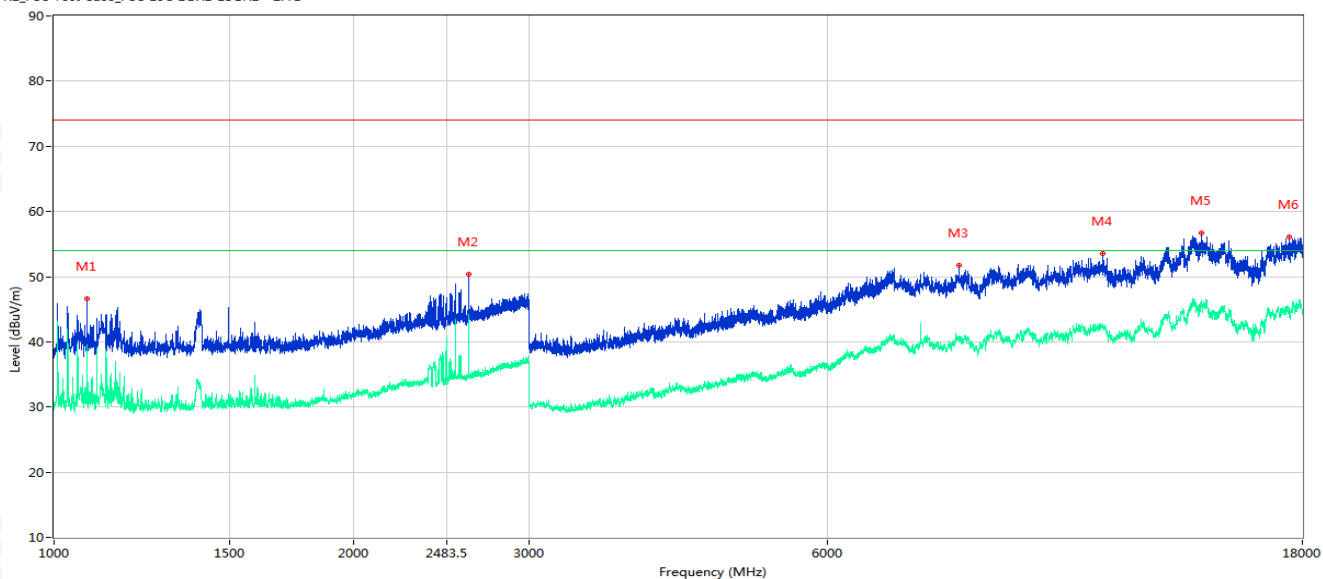


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18480.000	51.09	2.28	53.37	54.00	-0.63	peak
2	20648.000	49.88	2.36	52.24	54.00	-1.76	peak
3	22304.000	48.20	3.72	51.92	54.00	-2.08	peak
4	23280.000	48.01	3.92	51.93	54.00	-2.07	peak
5	24728.000	46.87	4.98	51.85	54.00	-2.15	peak
6	25560.000	46.32	5.67	51.99	54.00	-2.01	peak



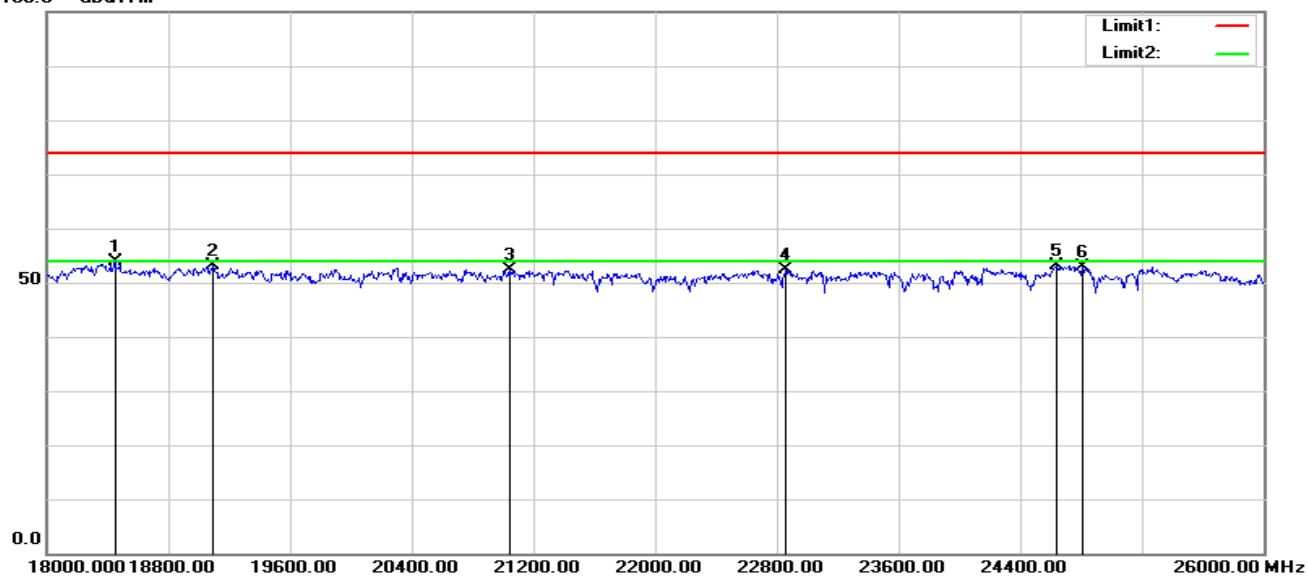
RSE-1G-18G-H-High Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



RSE-18G-26G-H-High Channel

100.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18448.000	51.57	2.29	53.86	54.00	-0.14	peak
2	19096.000	51.43	1.70	53.13	54.00	-0.87	peak
3	21040.000	49.64	2.69	52.33	54.00	-1.67	peak
4	22856.000	48.67	3.72	52.39	54.00	-1.61	peak
5	24640.000	48.28	4.88	53.16	54.00	-0.84	peak
6	24808.000	47.73	5.08	52.81	54.00	-1.19	peak



Low Channel (GFSK/2402 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1333.50	47.59	-1.28	74.00	-26.41	Peak	145.30	Vertical	Pass
1333.50	34.75	-1.28	54.00	-19.25	AV	145.30	Vertical	Pass
2525.00	46.54	3.35	74.00	-27.46	Peak	143.00	Vertical	Pass
2525.00	35.21	3.35	54.00	-18.79	AV	143.00	Vertical	Pass
6946.00	50.97	0.88	74.00	-23.03	Peak	94.30	Vertical	Pass
6946.00	40.05	0.88	54.00	-13.95	AV	94.30	Vertical	Pass
10795.00	52.34	2.00	74.00	-21.66	Peak	89.10	Vertical	Pass
10795.00	41.93	2.00	54.00	-12.07	AV	89.10	Vertical	Pass
14012.50	56.50	8.25	74.00	-17.50	Peak	162.80	Vertical	Pass
14012.50	45.09	8.25	54.00	-8.91	AV	162.80	Vertical	Pass
17876.25	55.61	7.04	74.00	-18.39	Peak	324.20	Vertical	Pass
17876.25	45.21	7.04	54.00	-8.79	AV	324.20	Vertical	Pass
Middle Channel (GFSK/2440 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1327.500	46.76	-1.29	74.0	-27.24	Peak	270.70	Vertical	Pass
1327.500	36.07	-1.29	54.0	-17.93	AV	270.70	Vertical	Pass
2522.000	56.41	3.32	74.0	-17.59	Peak	300.10	Vertical	Pass
2522.000	47.60	3.32	54.0	-6.40	AV	300.10	Vertical	Pass
7319.000	53.06	-2.07	74.0	-20.94	Peak	69.80	Vertical	Pass
7319.000	43.40	-2.07	54.0	-10.60	AV	69.80	Vertical	Pass
11147.000	52.59	2.33	74.0	-21.41	Peak	47.10	Vertical	Pass
11147.000	42.03	2.33	54.0	-11.97	AV	47.10	Vertical	Pass
14408.500	56.82	6.93	74.0	-17.18	Peak	0.30	Vertical	Pass
14408.500	46.64	6.93	54.0	-7.36	AV	0.30	Vertical	Pass
17898.250	56.67	7.22	74.0	-17.33	Peak	157.20	Vertical	Pass
17898.250	46.09	7.22	54.0	-7.91	AV	157.20	Vertical	Pass

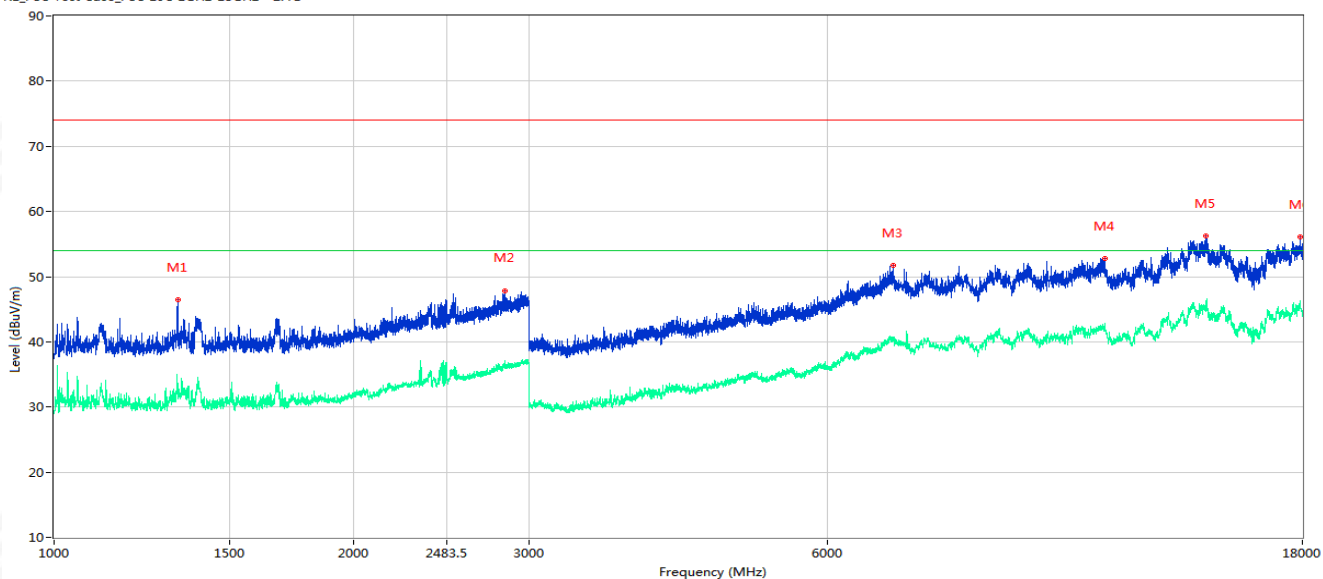


High Channel (GFSK/2480 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1329.000	46.34	-1.29	74.0	-27.66	Peak	283.70	Vertical	Pass
1329.000	36.65	-1.29	54.0	-17.35	AV	283.70	Vertical	Pass
2521.500	47.19	3.32	74.0	-26.81	Peak	204.90	Vertical	Pass
2521.500	35.80	3.32	54.0	-18.20	AV	204.90	Vertical	Pass
7431.750	51.49	-1.58	74.0	-22.51	Peak	93.70	Vertical	Pass
7431.750	44.43	-1.58	54.0	-9.57	AV	93.70	Vertical	Pass
11248.750	53.22	2.45	74.0	-20.78	Peak	95.50	Vertical	Pass
11248.750	42.61	2.45	54.0	-11.39	AV	95.50	Vertical	Pass
13974.000	57.30	8.12	74.0	-16.70	Peak	78.80	Vertical	Pass
13974.000	46.16	8.12	54.0	-7.84	AV	78.80	Vertical	Pass
17595.750	57.29	6.55	74.0	-16.71	Peak	309.30	Vertical	Pass
17595.750	45.99	6.55	54.0	-8.01	AV	309.30	Vertical	Pass

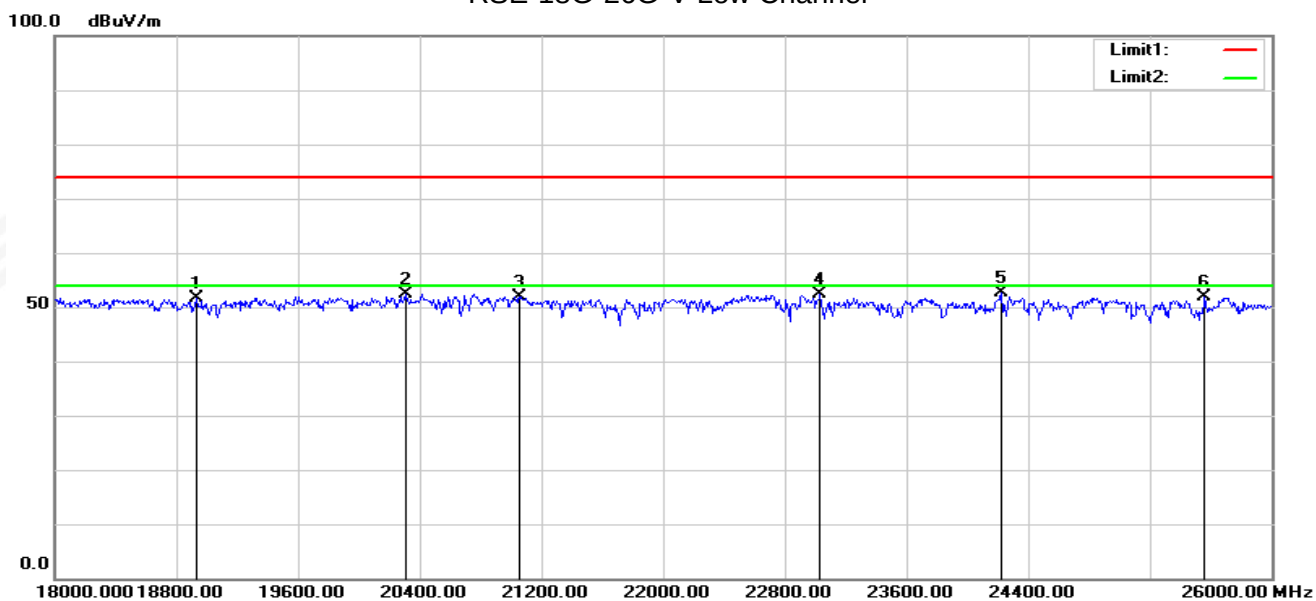


RSE-1G-18G-V-Low Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



RSE-18G-26G-V-Low Channel

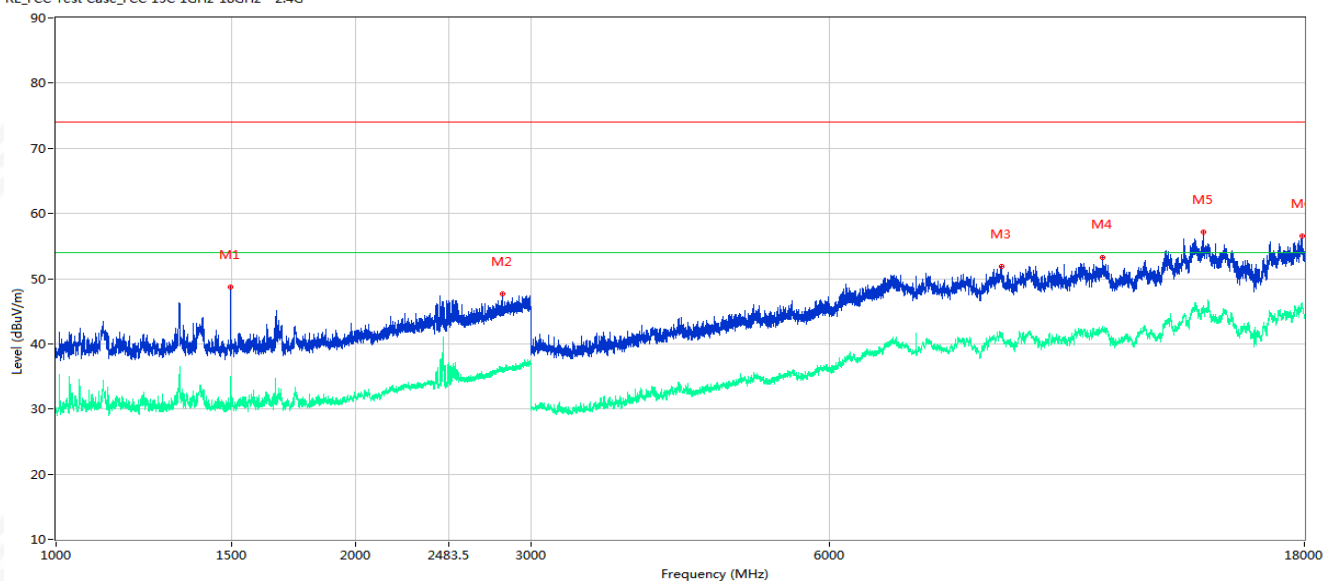


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18936.000	49.78	1.81	51.59	54.00	-2.41	peak
2	20304.000	50.24	2.06	52.30	54.00	-1.70	peak
3	21056.000	49.30	2.69	51.99	54.00	-2.01	peak
4	23032.000	48.83	3.67	52.50	54.00	-1.50	peak
5	24224.000	47.94	4.66	52.60	54.00	-1.40	peak
6	25560.000	46.22	5.67	51.89	54.00	-2.11	peak

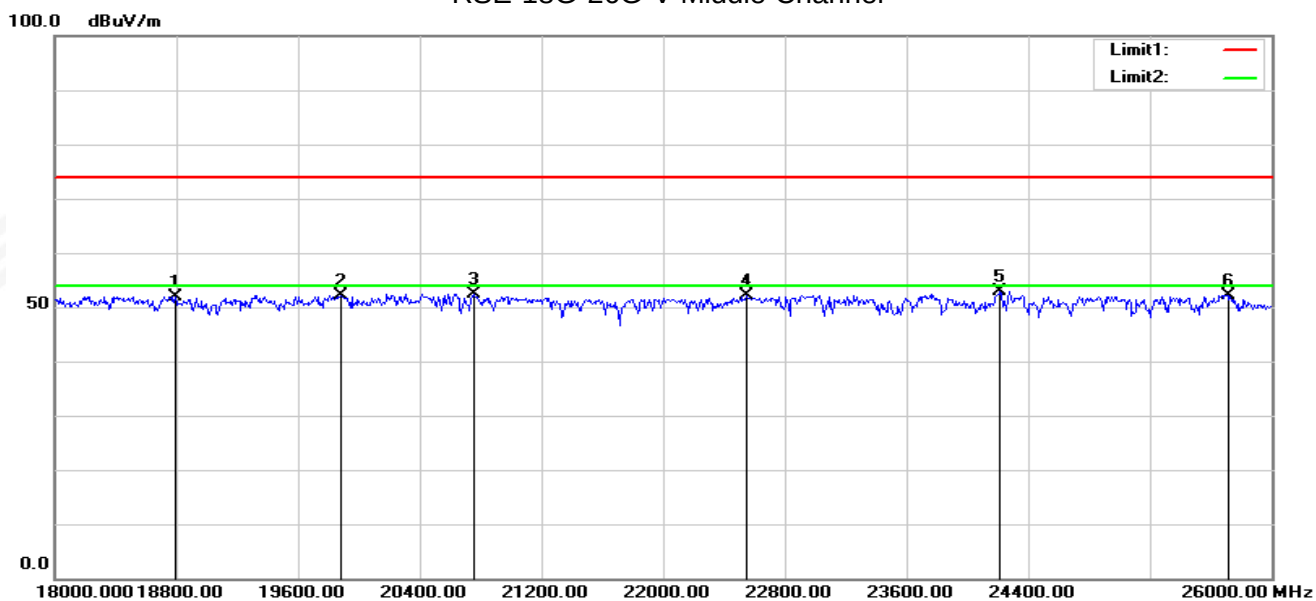


RSE-1G-18G-V-Middle Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



RSE-18G-26G-V-Middle Channel

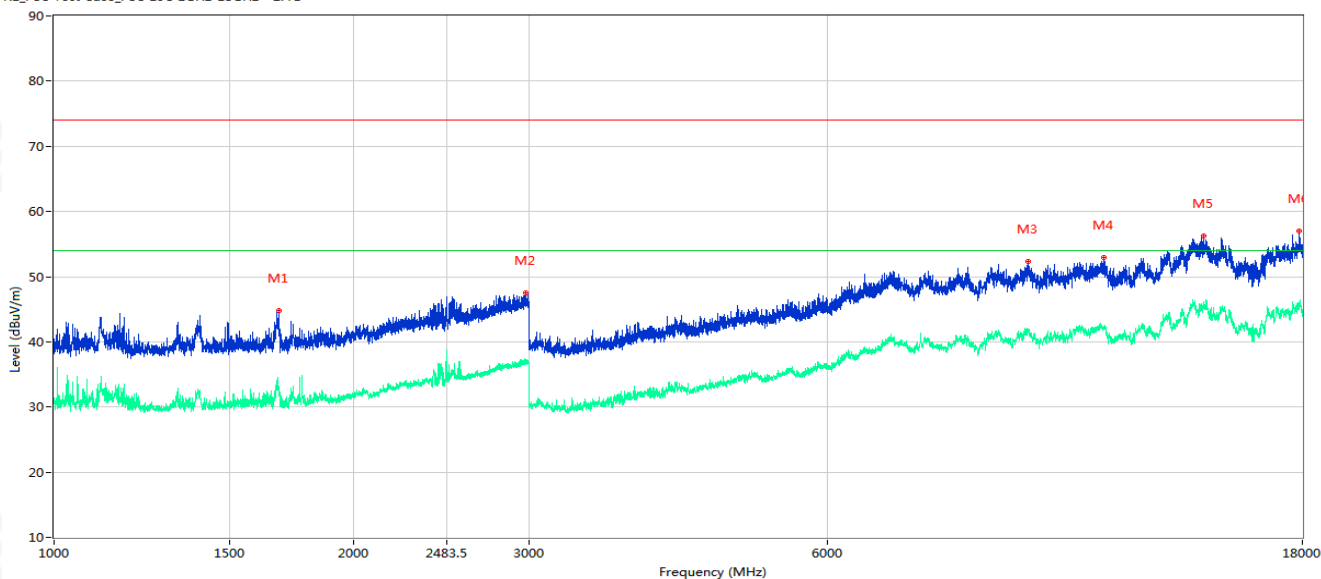


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18792.000	50.02	1.97	51.99	54.00	-2.01	peak
2	19880.000	50.39	1.72	52.11	54.00	-1.89	peak
3	20752.000	50.05	2.44	52.49	54.00	-1.51	peak
4	22552.000	48.30	3.90	52.20	54.00	-1.80	peak
5	24216.000	48.33	4.67	53.00	54.00	-1.00	peak
6	25712.000	46.52	5.72	52.24	54.00	-1.76	peak



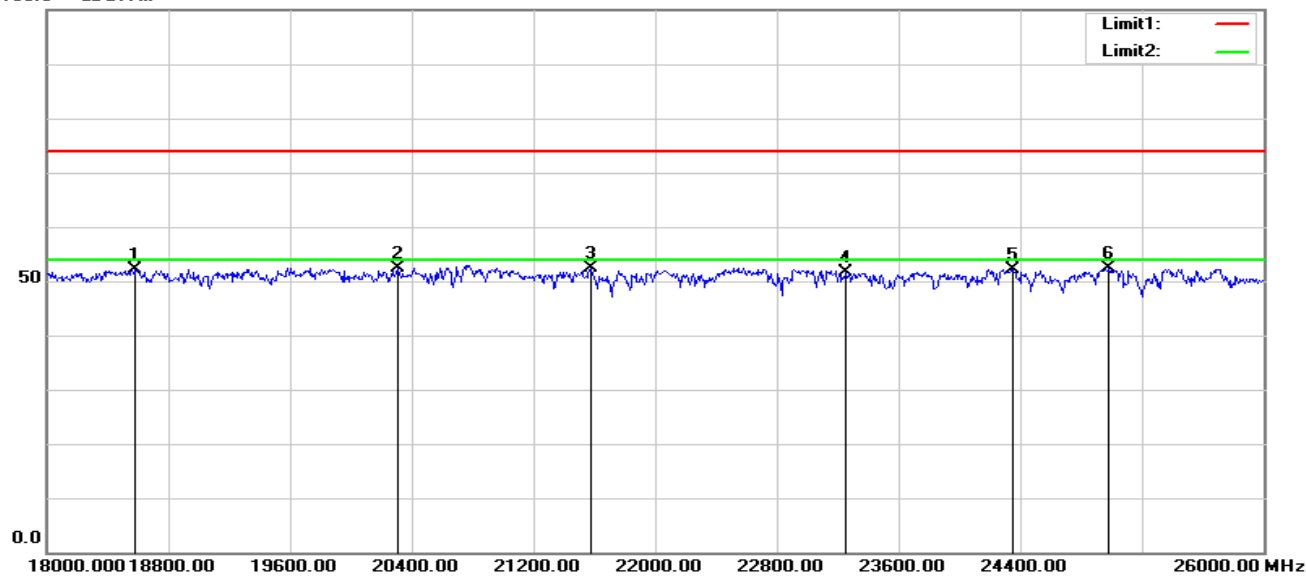
RSE-1G-18G-V-High Channel

RE_FCC Test Case_FCC 15C 1GHz-18GHz - 2.4G



RSE-18G-26G-V-High Channel

100.0 dBuV/m



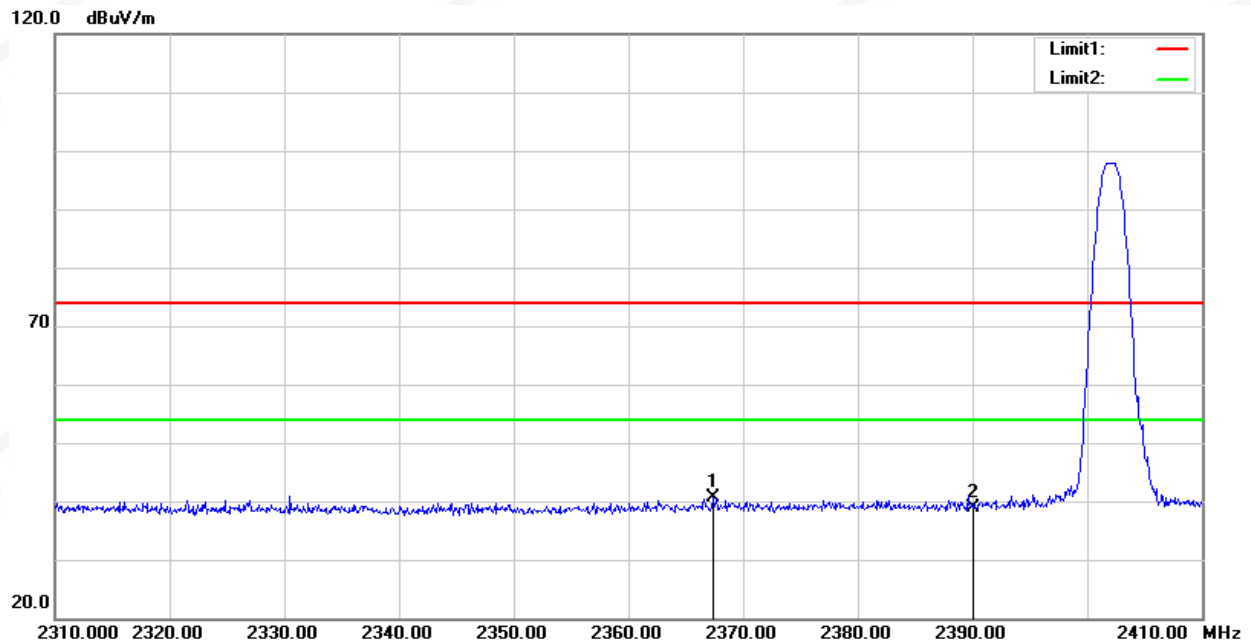
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18584.000	50.08	2.17	52.25	54.00	-1.75	peak
2	20304.000	50.24	2.06	52.30	54.00	-1.70	peak
3	21576.000	49.29	3.01	52.30	54.00	-1.70	peak
4	23256.000	47.76	3.89	51.65	54.00	-2.35	peak
5	24352.000	47.47	4.69	52.16	54.00	-1.84	peak
6	24984.000	47.19	5.28	52.47	54.00	-1.53	peak

Note:

- 1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor.
- 2) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.

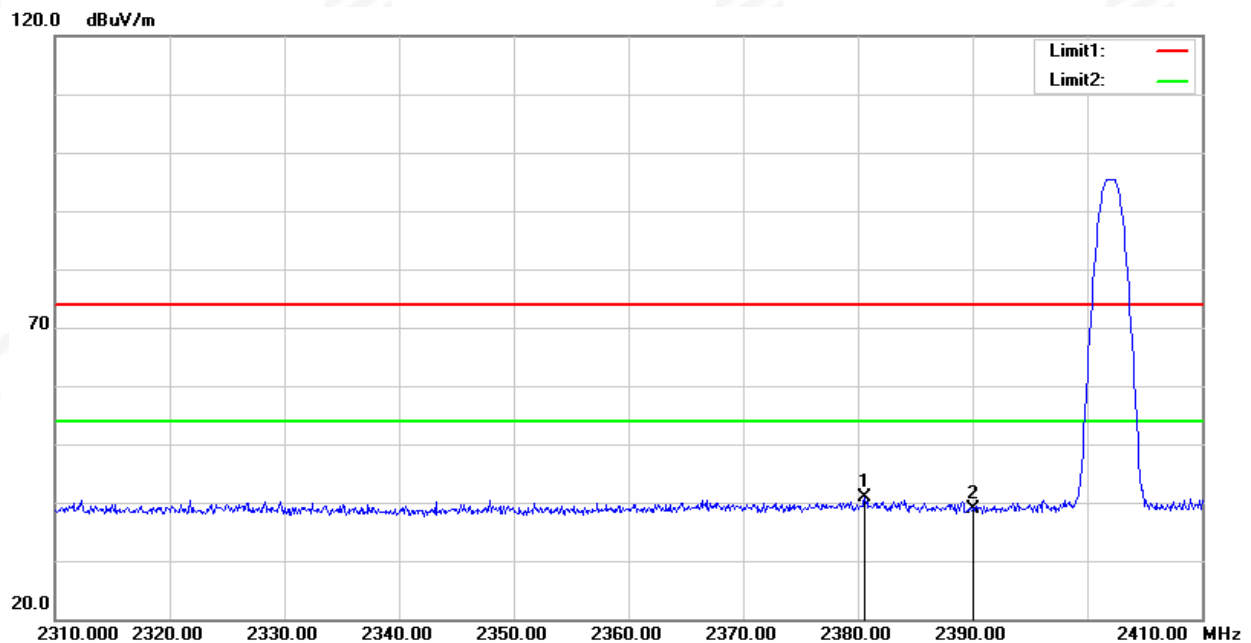


4.6 TEST RESULTS (Restricted Bands Requirements)

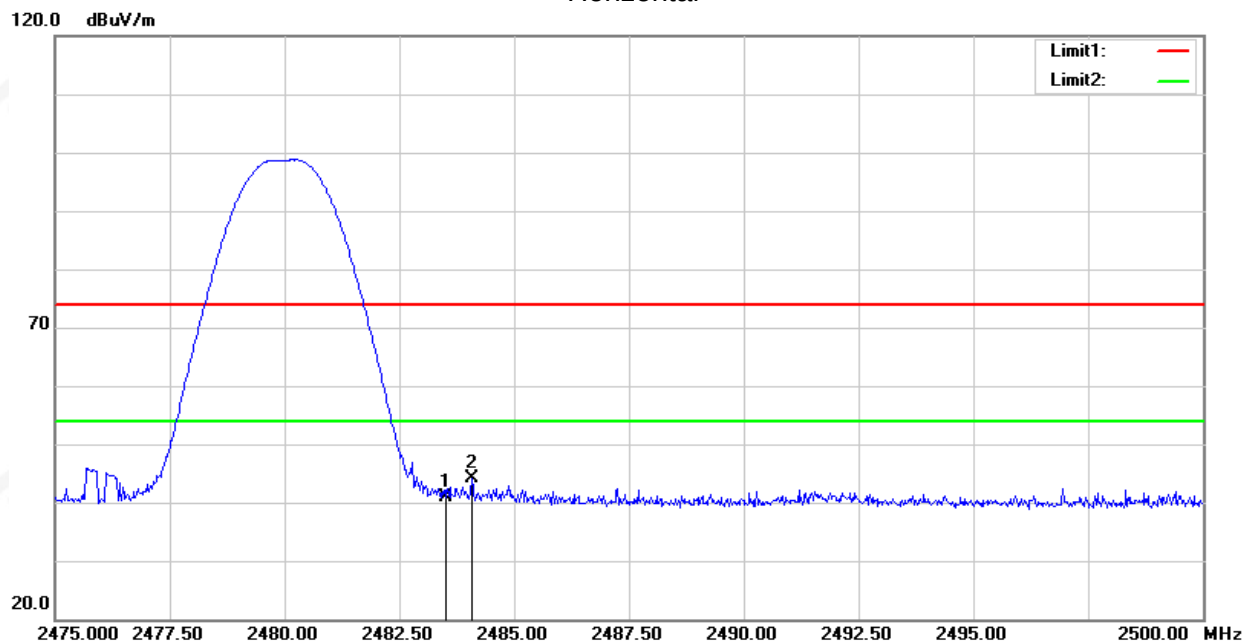
1M PHY-LOW
Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2367.400	39.91	0.64	40.55	54.00	-13.45	peak
2	2390.000	38.17	0.81	38.98	54.00	-15.02	peak

Vertical

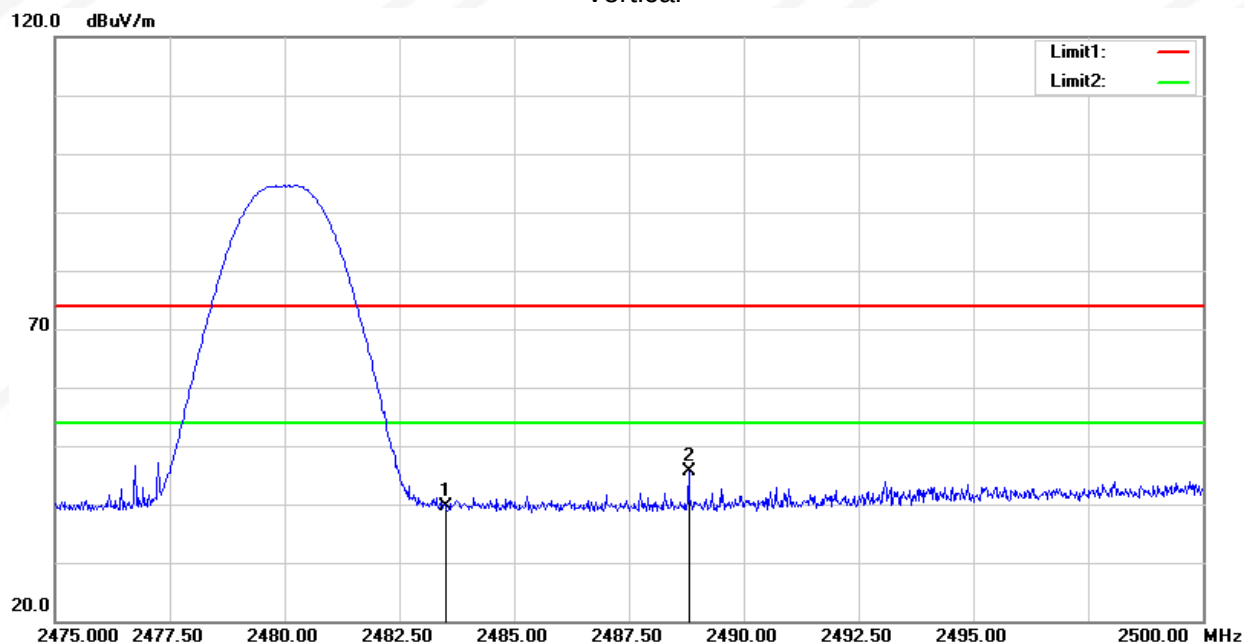


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2380.600	40.23	0.73	40.96	54.00	-13.04	peak
2	2390.000	37.95	0.81	38.76	54.00	-15.24	peak

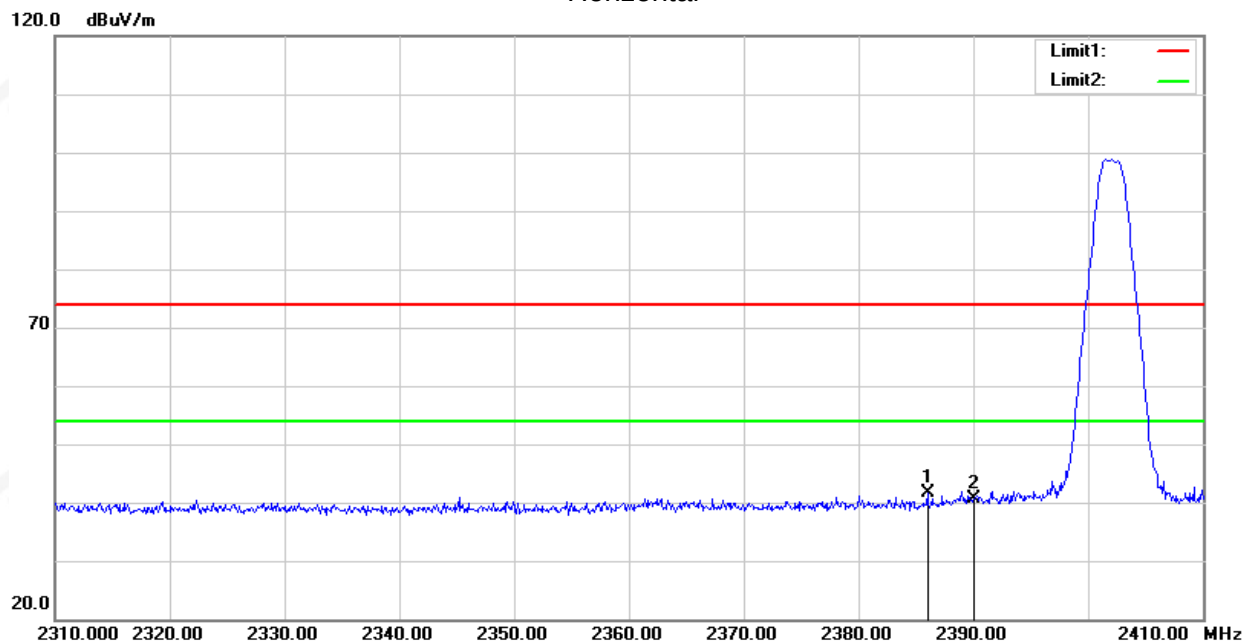
1M PHY-HIGH
Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	39.90	1.02	40.92	54.00	-13.08	peak
2	2484.075	43.03	1.03	44.06	54.00	-9.94	peak

Vertical

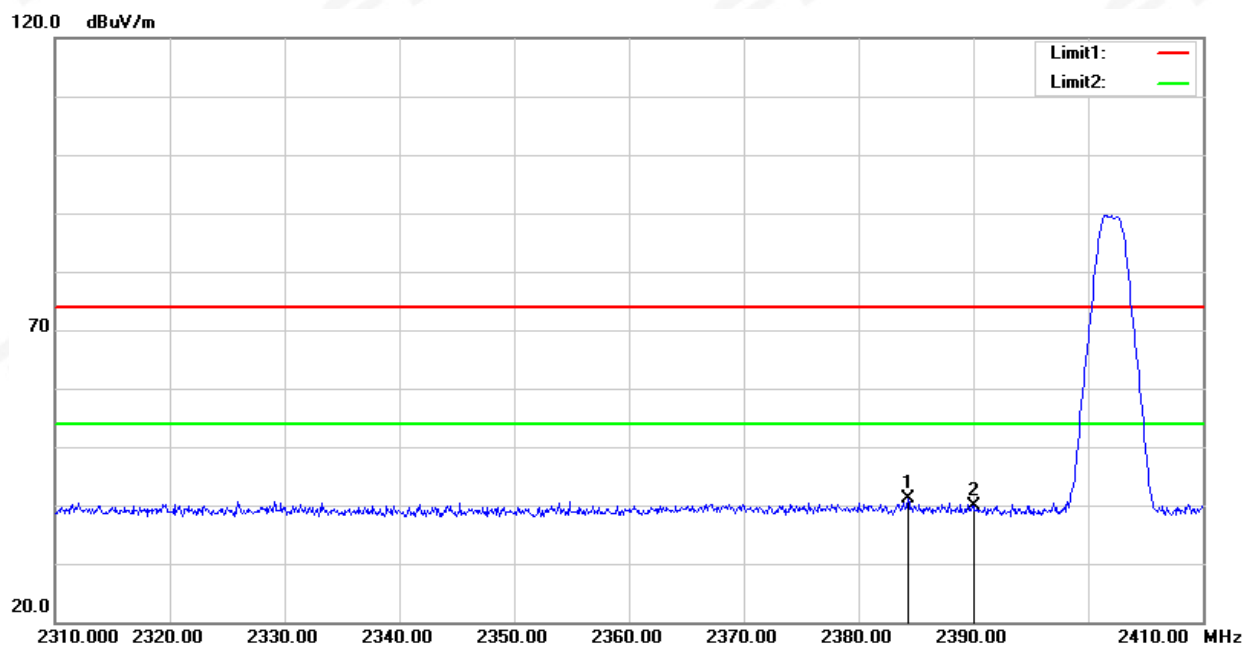


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	38.59	1.02	39.61	54.00	-14.39	peak
2	2488.800	44.67	1.03	45.70	54.00	-8.30	peak

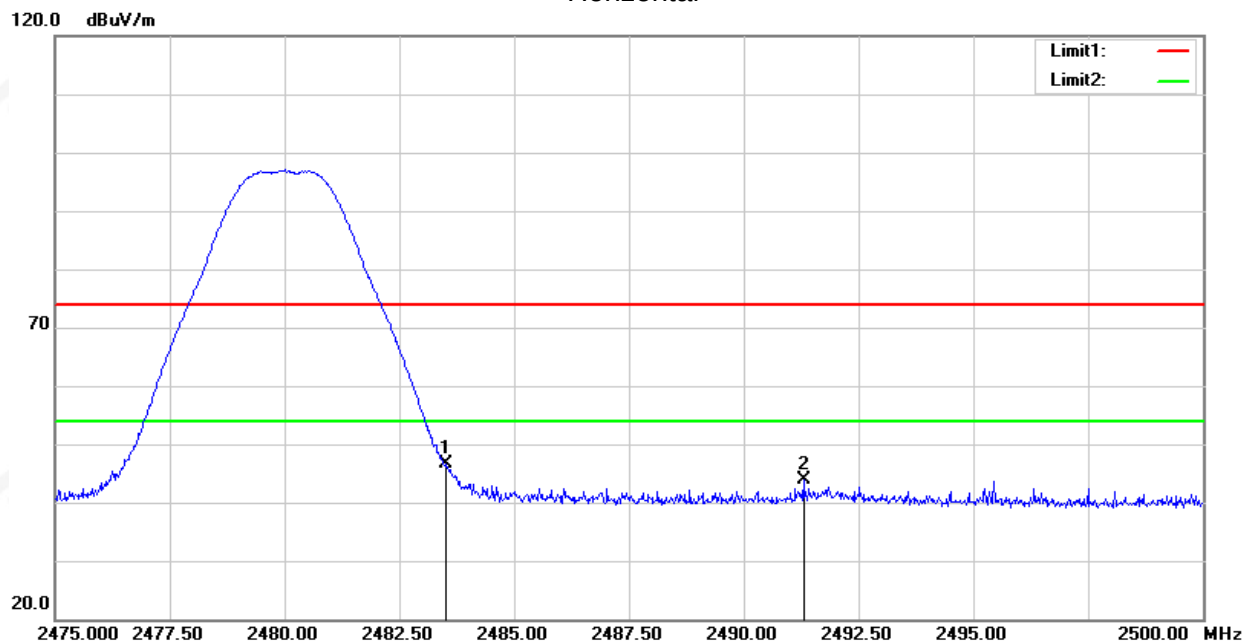
2M PHY-LOW
Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.000	40.92	0.78	41.70	54.00	-12.30	peak
2	2390.000	39.75	0.81	40.56	54.00	-13.44	peak

Vertical

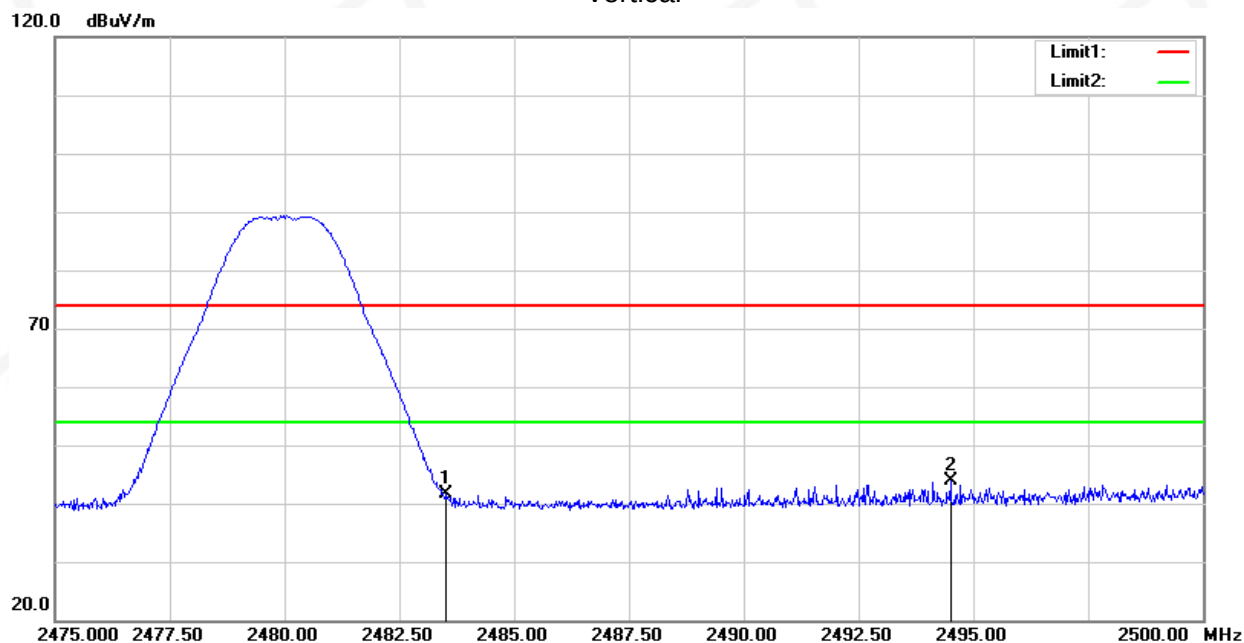


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.300	40.29	0.77	41.06	54.00	-12.94	peak
2	2390.000	39.02	0.81	39.83	54.00	-14.17	peak

2M PHY-HIGH
Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	45.58	1.02	46.60	54.00	-7.40	peak
2	2491.300	42.79	1.03	43.82	54.00	-10.18	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	40.62	1.02	41.64	54.00	-12.36	peak
2	2494.500	42.75	1.04	43.79	54.00	-10.21	peak



5. DUTY CYCLE

5.1 TEST STANDARD

Please refer to ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+Errata to C63.10a-2024 / ANSI C63.10-2020 Section 11.6

5.2 TEST PROCEDURE

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Zero
RB	set RBW to the largest available value
VB	$VBW \geq RBW$.
Detector	Peak
Trace	Clear Write
Sweep Time	Auto

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 5 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



6. CONDUCTED SPURIOUS & BAND EDGE EMISSION

6.1 LIMIT

According to RSS-247 Issue 4 / FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

6.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

6.3 TEST SETUP



The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth(RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

6.4 EUT OPERATION CONDITIONS

Please refer to section 3.4 of this report.

6.5 TEST RESULTS

Note:

1. The test data please refer to APPENDIX 1.
2. Input compensation coefficient (dB) = Cable Loss (dB)



7. POWER SPECTRAL DENSITY TEST

7.1 LIMIT

RSS-247 Issue 4 FCC Part15.247 , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e) RSS-247 Issue 4	Power Spectral Density	≤ 8 dBm (RBW ≥ 3 KHz)	2400-2483.5	PASS

7.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW to: $100 \text{ kHz} \geq \text{RBW} \geq 3 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS

Please refer to section 3.4 of this report.

7.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



8. BANDWIDTH TEST

8.1 LIMIT

RSS-Gen Clause 6.7 FCC Part15.247,Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
RSS-247 6.3.1(a) 15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS
RSS-Gen Clause 6.7	99% Bandwidth	For reporting purposes only.	2400-2483.5	PASS

8.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW $\geq$ 3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be $\geq$ 6 dB.

8.3 TEST SETUP



8.4 EUT OPERATION CONDITIONS

Please refer to section 3.4 of this report.

8.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



9. PEAK OUTPUT POWER TEST

9.1 LIMIT

RSS-247 Issue 4 FCC Part15.247,Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
RSS 247 Issue 4 15.247(b)(3)	Output Power	1 watt or 30dBm	2400-2483.5	PASS
RSS-247	EIRP	4W	2400-2483.5	PASS

8.2 TEST PROCEDURE

One of the following procedures may be used to determine the maximum peak conducted output power of a DTS EUT.

RBW $\geq$ DTS bandwidth

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:

- Set the RBW $\geq$ DTS bandwidth.
- Set VBW $\geq$ [3 $\times$ RBW].
- Set span $\geq$ [3 $\times$ RBW].
- Sweep time = auto couple.
- Detector = peak.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use peak marker function to determine the peak amplitude level.

EIRP calculation formula:

EIRP= PK power(dBm)+Antenna Gain(dBi)

9.3 TEST SETUP



9.4 EUT OPERATION CONDITIONS

Please refer to section 3.4 of this report.

9.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

RSS Gen / 15.203 requirement: According to RSS GEN / 15.203 section 6.8, The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

10.2 ANTENNA ANTI-REPLACEMENT CONSTRUCTION THE ANTENNA

Anti-Replacement As Following Method:

Protected Method	Description
The PCB antenna is on the board	PCB antenna design is used, please refer to clause 2.1 Technical Information of E.U.T.

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

The EUT antenna is PCB Antenna. It comply with the standard requirement.



11. FREQUENCY STABILITY

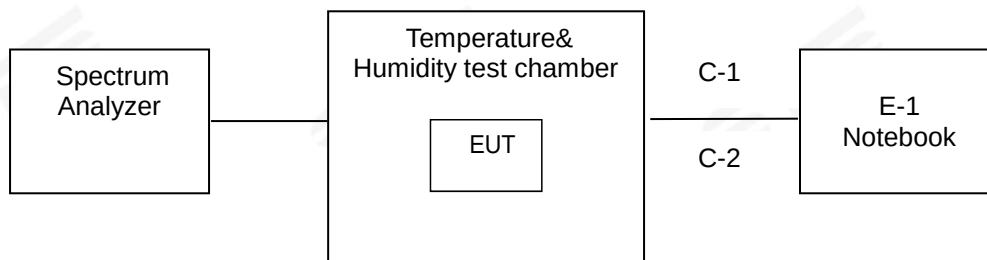
11.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.02\%$ of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees.

11.2 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at $+20$ degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

11.3 TEST SETUP





11.4 TEST RESULT

1M PHY:

Channel 0 (2402MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.795	2402.0025
3.3	2402.0020
2.805	2402.0015
Max.Deviation(MHz)	0.0025
Max.Deviation(ppm)	1.04

Rated working voltage: DC 3.3V

Temperature vs. Frequency Stability

Temperature(°C)	Measurement Frequency(MHz)
-30	2402.0027
-20	2402.0022
-10	2402.0021
0	2402.0025
10	2402.0025
20	2402.0022
30	2402.0020
40	2402.0020
50	2402.0018
Max.Deviation(MHz)	0.0027
Max.Deviation(ppm)	1.12



Channel 19 (2440MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.795	2440.0026
3.3	2440.0026
2.805	2440.0023
Max.Deviation(MHz)	0.0026
Max.Deviation(ppm)	1.07

Rated working voltage: DC 3.3V

Temperature vs. Frequency Stability

Temperature(°C)	Measurement Frequency(MHz)
-30	2440.0029
-20	2440.0020
-10	2440.0021
0	2440.0024
10	2440.0020
20	2440.0021
30	2440.0027
40	2440.0021
50	2440.0026
Max.Deviation(MHz)	0.0029
Max.Deviation(ppm)	1.19



Channel 39 (2480MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.795	2480.0028
3.3	2480.0022
2.805	2480.0025
Max.Deviation(MHz)	0.0028
Max.Deviation(ppm)	1.13

Rated working voltage: DC 3.3V

Temperature vs. Frequency Stability

Temperature(°C)	Measurement Frequency(MHz)
-30	2480.0029
-20	2480.0023
-10	2480.0023
0	2480.0022
10	2480.0024
20	2480.0025
30	2480.0024
40	2480.0026
50	2480.0020
Max.Deviation(MHz)	0.0029
Max.Deviation(ppm)	1.17



2M PHY:

Channel 1 (2402MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.795	2404.0027
3.3	2404.0025
2.805	2404.0023
Max.Deviation(MHz)	0.0027
Max.Deviation(ppm)	1.12

Rated working voltage: DC 3.3V

Temperature vs. Frequency Stability

Temperature(°C)	Measurement Frequency(MHz)
-30	2404.0030
-20	2404.0027
-10	2404.0024
0	2404.0027
10	2404.0027
20	2404.0021
30	2404.0023
40	2404.0029
50	2404.0024
Max.Deviation(MHz)	0.0030
Max.Deviation(ppm)	1.25



Channel 19 (2440MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.795	2440.0028
3.3	2440.0016
2.805	2440.0016
Max.Deviation(MHz)	0.0028
Max.Deviation(ppm)	1.15

Rated working voltage: DC 3.3V

Temperature vs. Frequency Stability

Temperature(°C)	Measurement Frequency(MHz)
-30	2440.0032
-20	2440.0030
-10	2440.0032
0	2440.0022
10	2440.0027
20	2440.0025
30	2440.0031
40	2440.0025
50	2440.0031
Max.Deviation(MHz)	0.0032
Max.Deviation(ppm)	1.31



Channel 38 (2480MHz)

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency(MHz)
3.795	2478.0030
3.3	2478.0025
2.805	2478.0027
Max.Deviation(MHz)	0.0030
Max.Deviation(ppm)	1.21

Rated working voltage: DC 3.3V

Temperature vs. Frequency Stability

Temperature(°C)	Measurement Frequency(MHz)
-30	2478.0033
-20	2478.0024
-10	2478.0024
0	2478.0025
10	2478.0031
20	2478.0030
30	2478.0024
40	2478.0030
50	2478.0031
Max.Deviation(MHz)	0.0033
Max.Deviation(ppm)	1.33

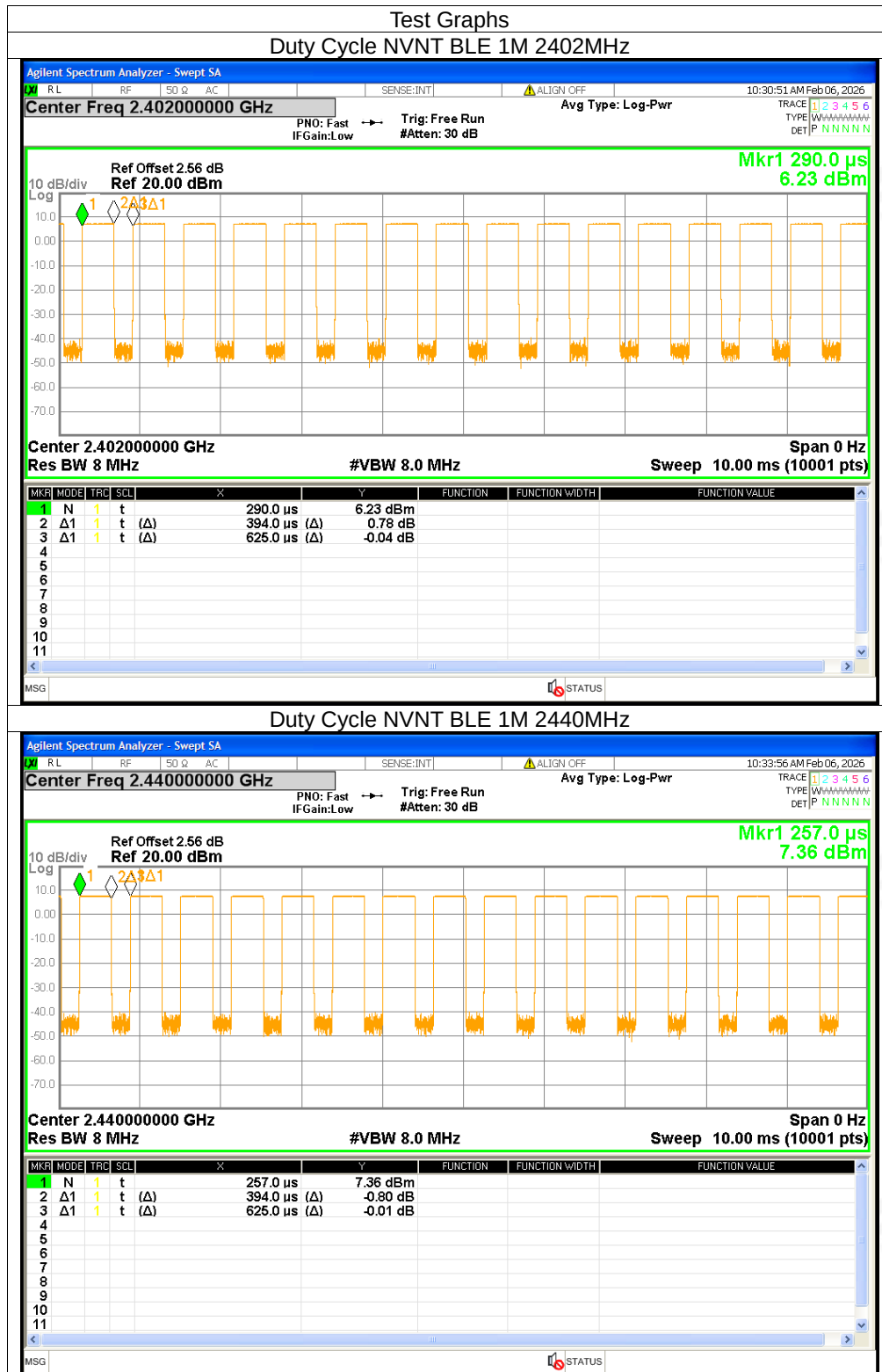


APPENDIX 1-TEST DATA

FCC

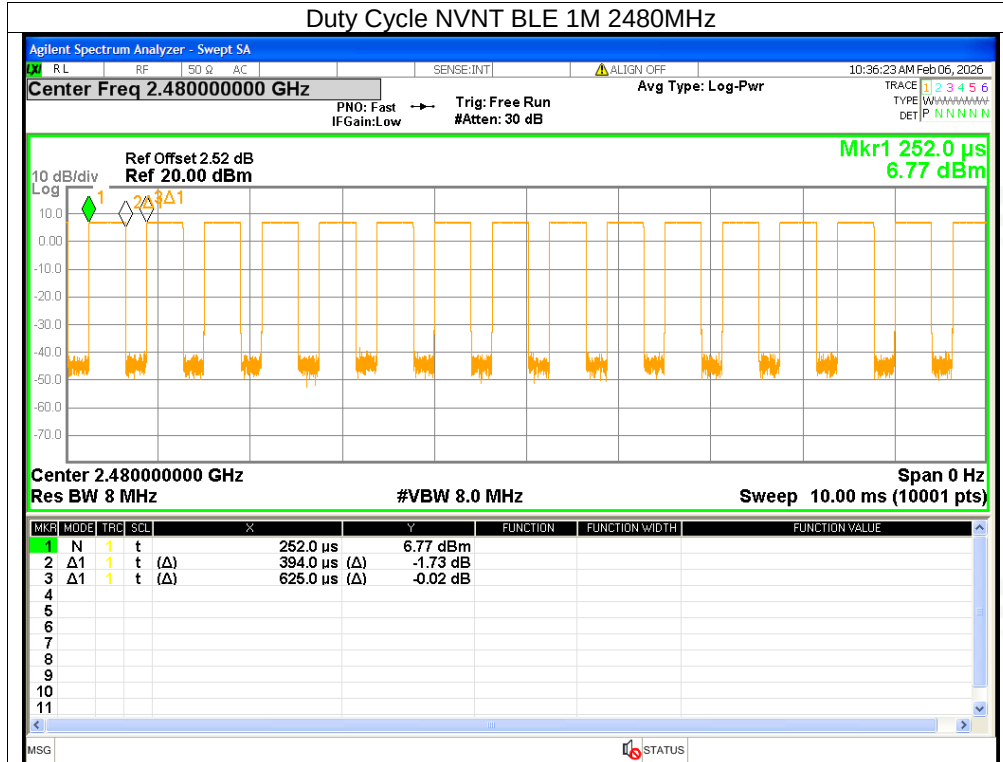
Duty Cycle

Condition	Mode	Frequency (MHz)	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	0.394	0.625	63.04	2	2.54
NVNT	BLE 1M	2440	0.394	0.625	63.04	2	2.54
NVNT	BLE 1M	2480	0.394	0.625	63.04	2	2.54
NVNT	BLE 2M	2402	0.209	0.625	33.44	4.76	4.78
NVNT	BLE 2M	2440	0.209	0.625	33.44	4.76	4.78
NVNT	BLE 2M	2480	0.209	0.625	33.44	4.76	4.78

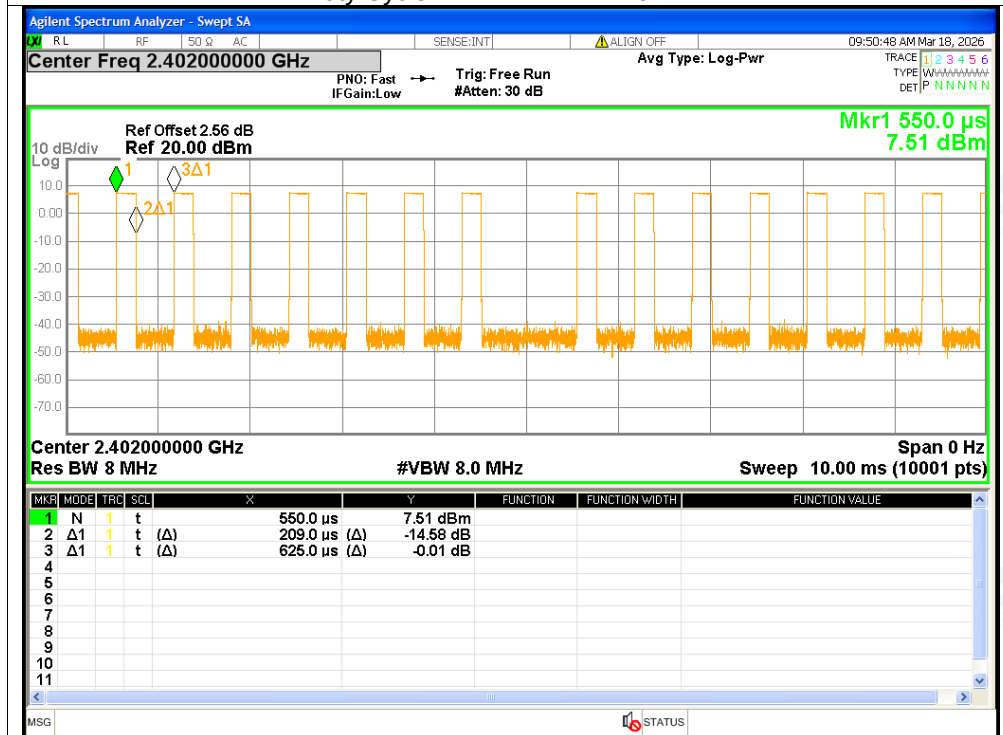




Duty Cycle NVNT BLE 1M 2480MHz

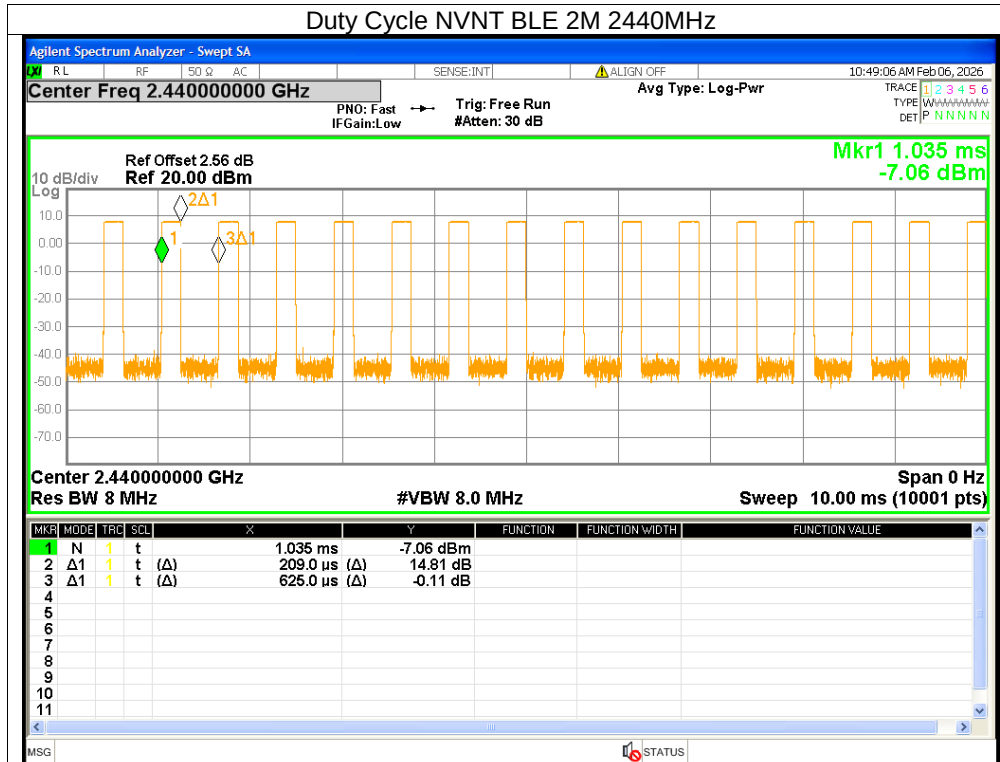


Duty Cycle NVNT BLE 2M 2402MHz

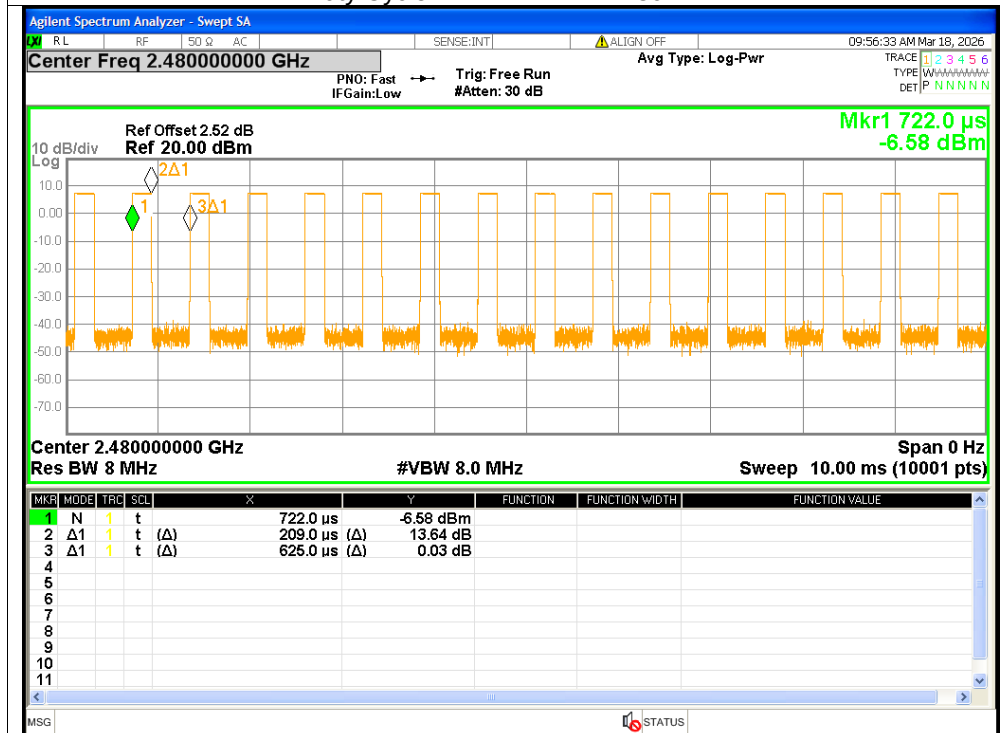




Duty Cycle NVNT BLE 2M 2440MHz



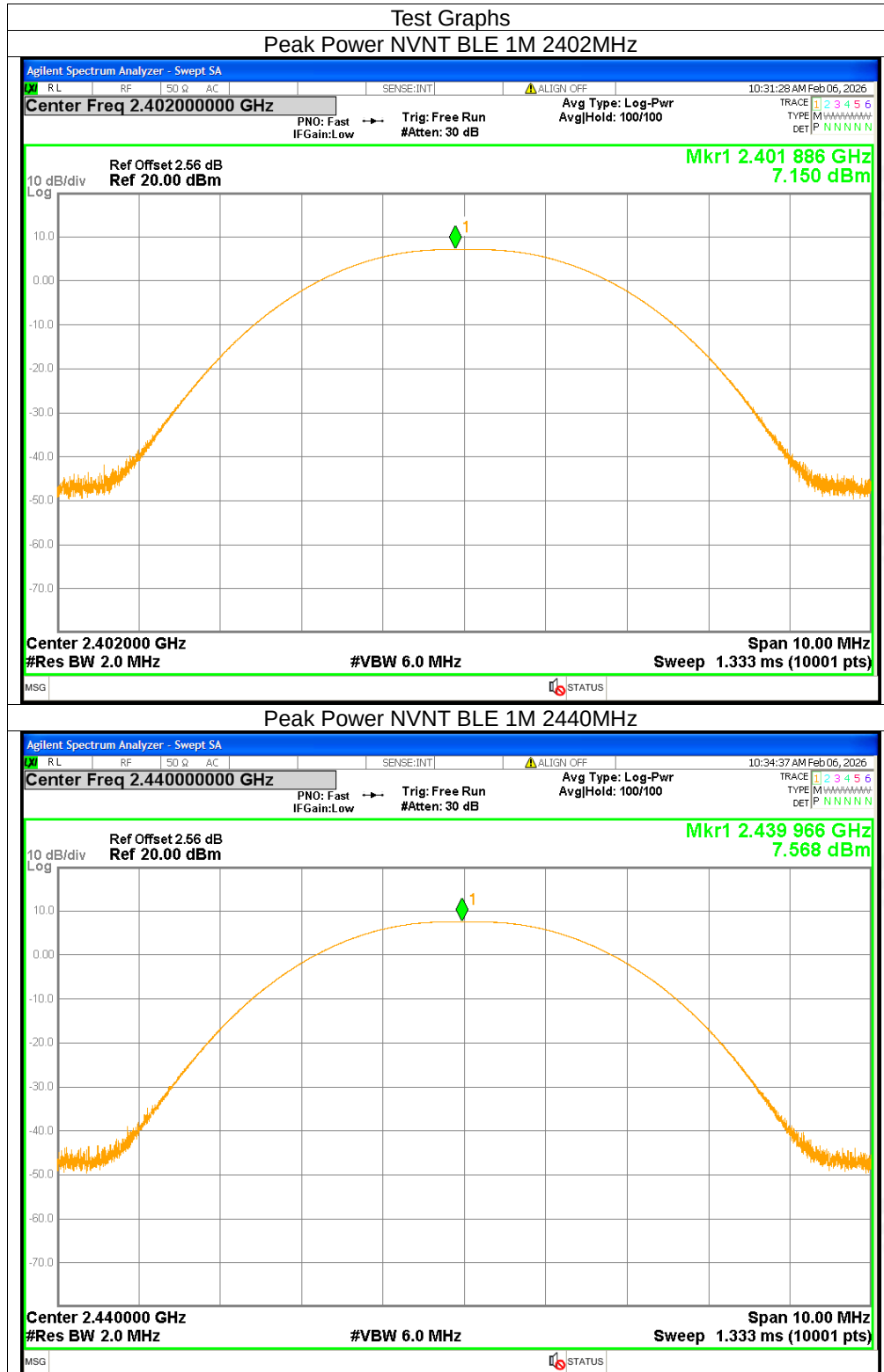
Duty Cycle NVNT BLE 2M 2480MHz

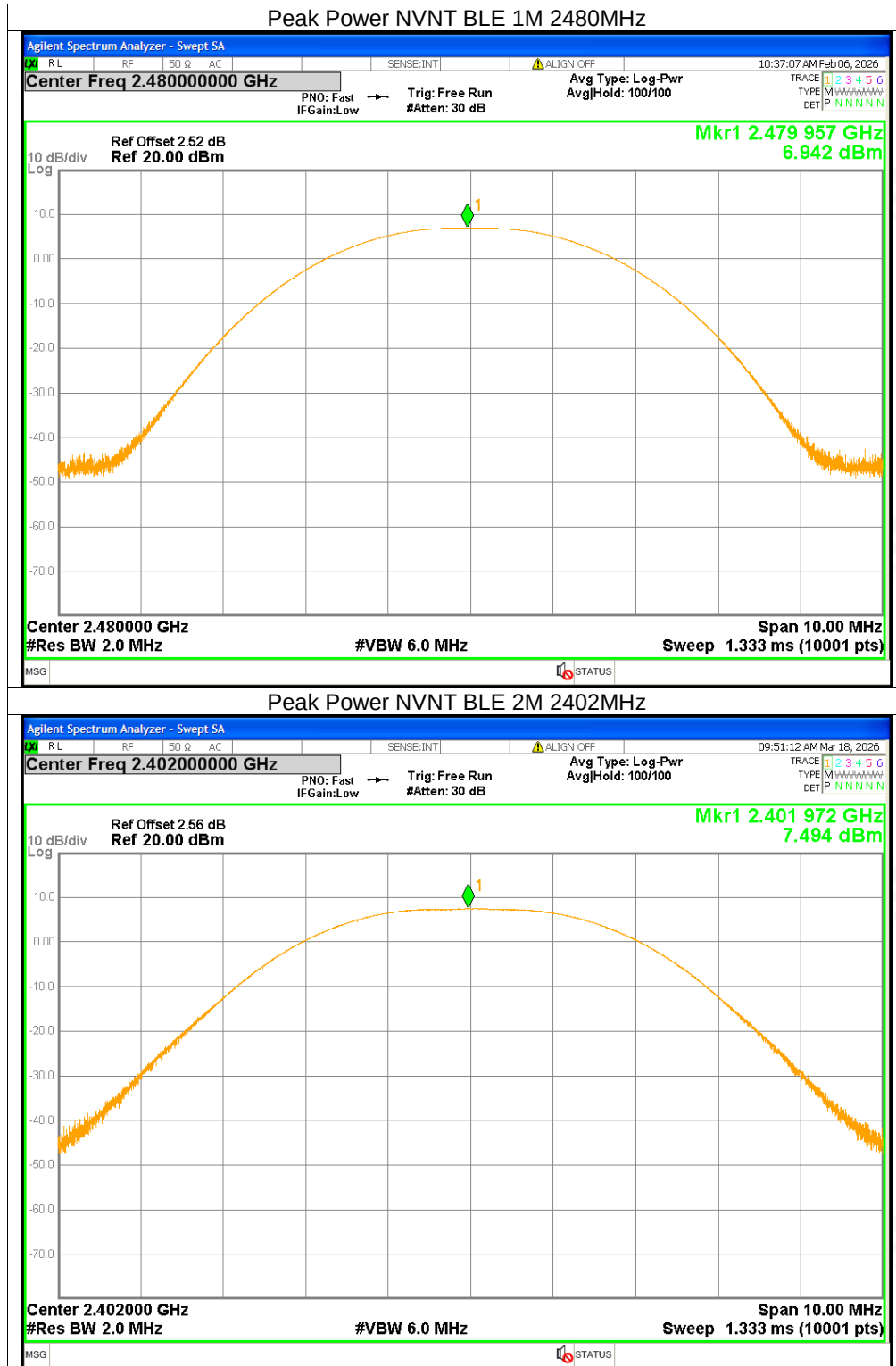


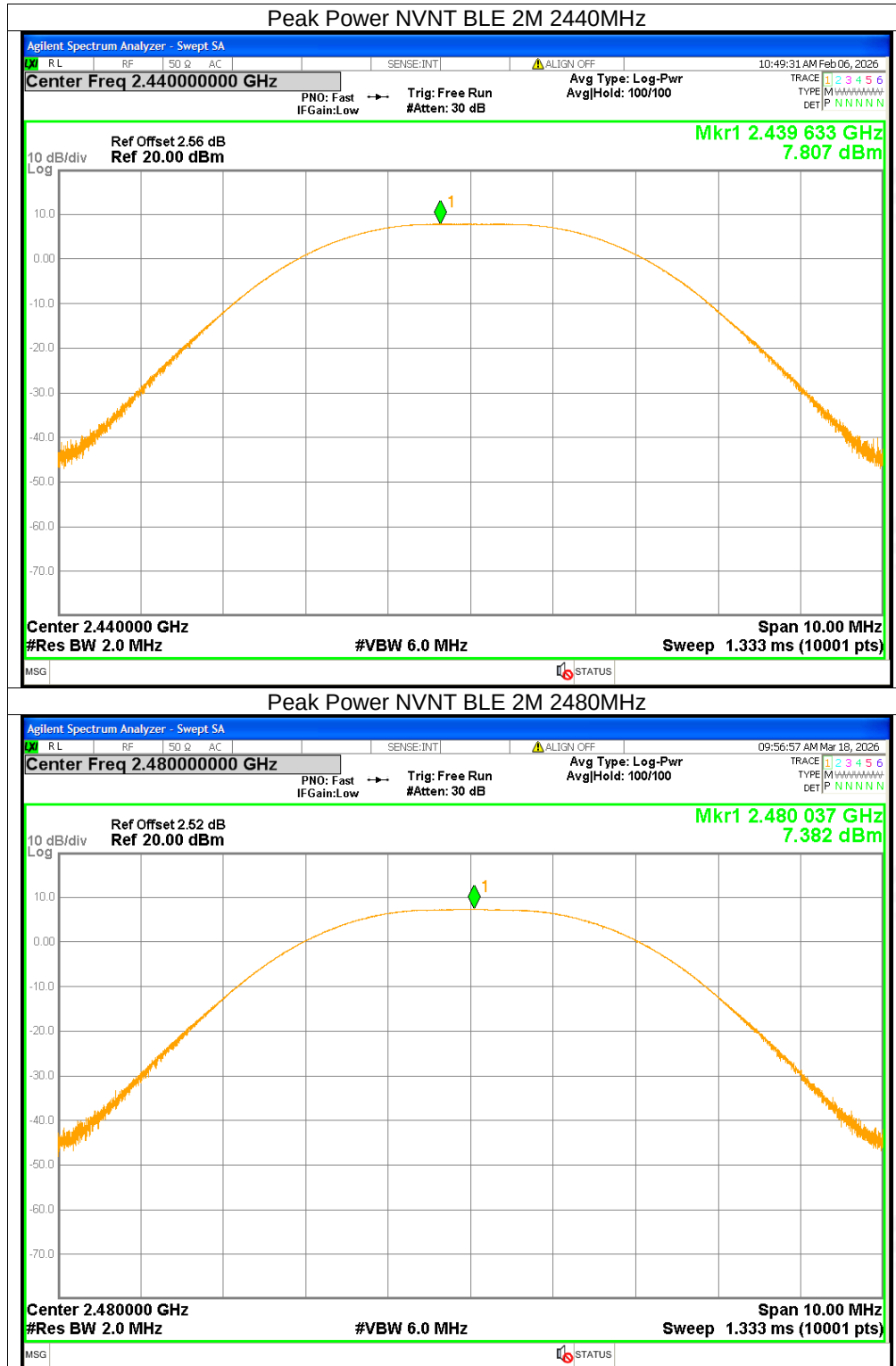


Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	7.15	<=30	Pass
NVNT	BLE 1M	2440	7.57	<=30	Pass
NVNT	BLE 1M	2480	6.94	<=30	Pass
NVNT	BLE 2M	2402	7.49	<=30	Pass
NVNT	BLE 2M	2440	7.81	<=30	Pass
NVNT	BLE 2M	2480	7.38	<=30	Pass



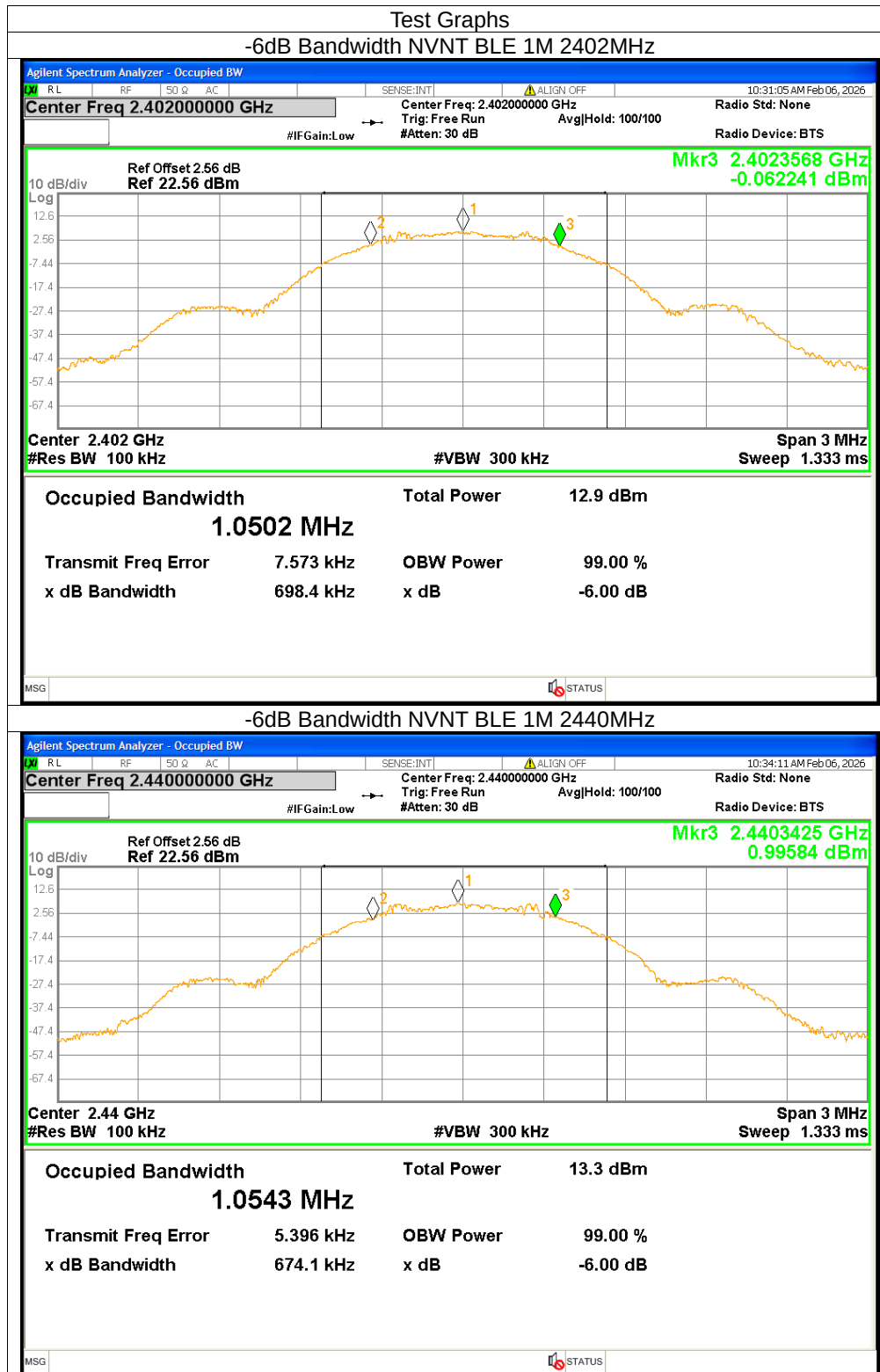


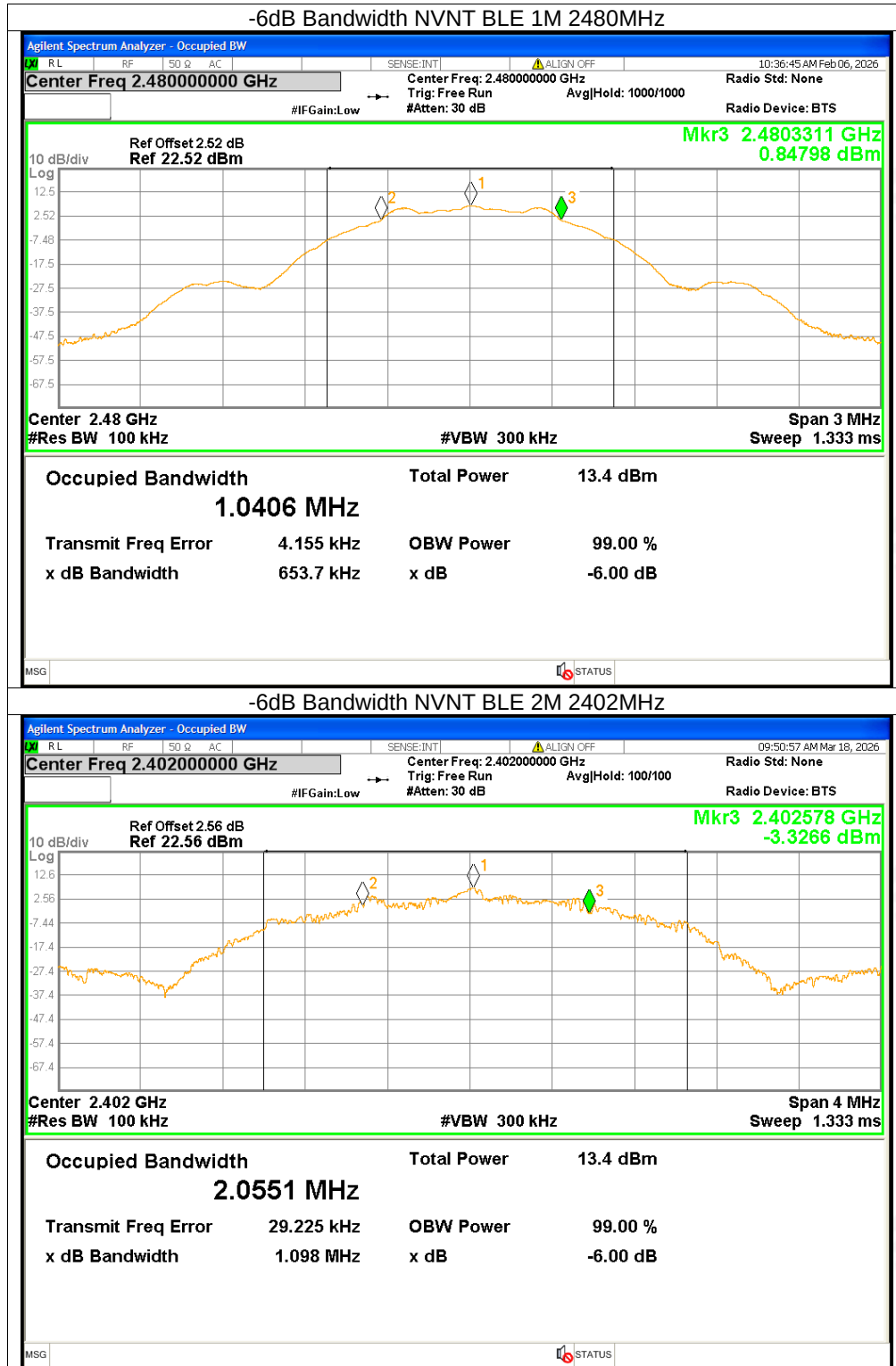


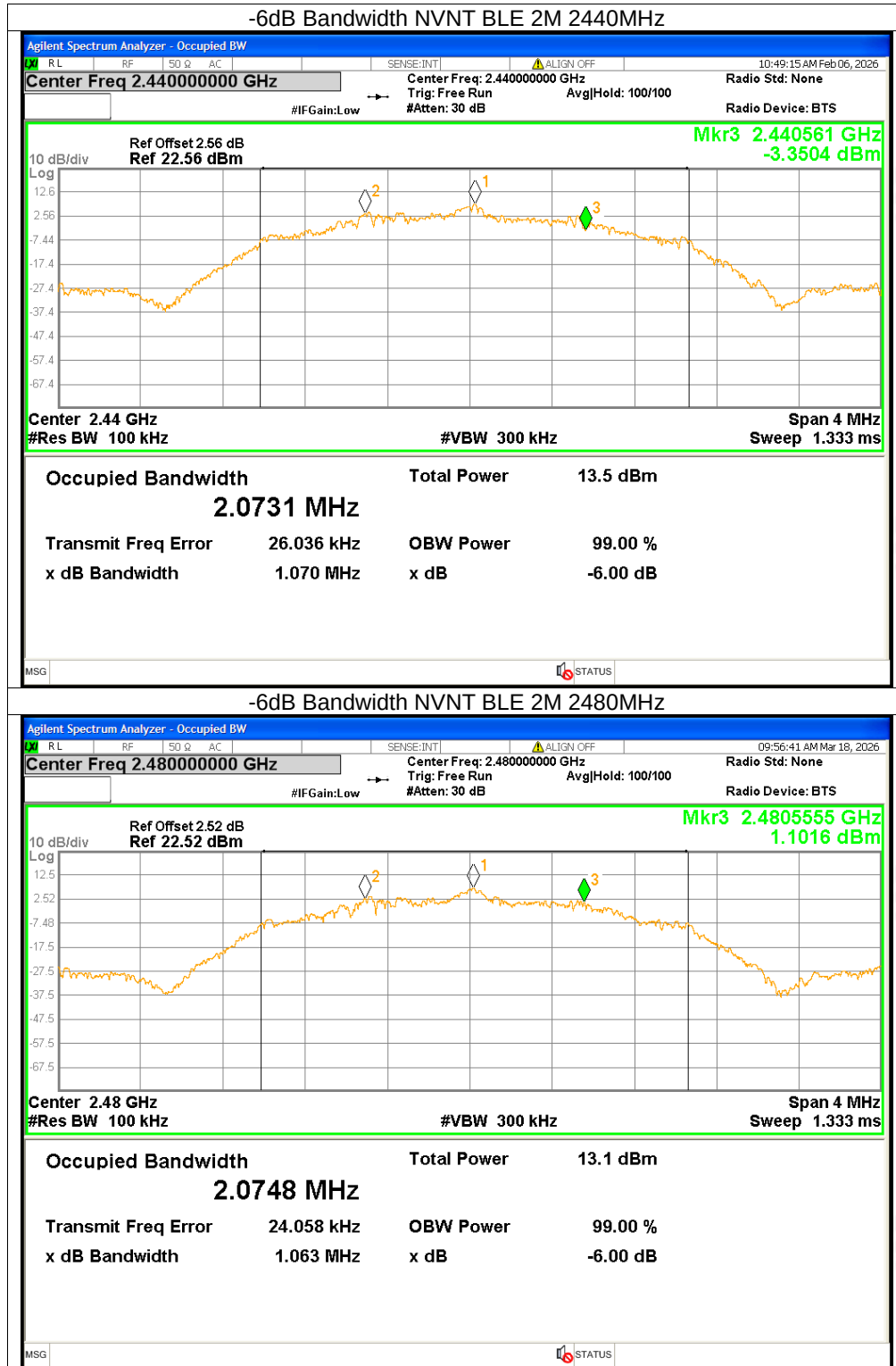


-6dB Bandwidth

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	0.6984	≥ 0.5	Pass
NVNT	BLE 1M	2440	0.6741	≥ 0.5	Pass
NVNT	BLE 1M	2480	0.6537	≥ 0.5	Pass
NVNT	BLE 2M	2402	1.098	≥ 0.5	Pass
NVNT	BLE 2M	2440	1.07	≥ 0.5	Pass
NVNT	BLE 2M	2480	1.063	≥ 0.5	Pass



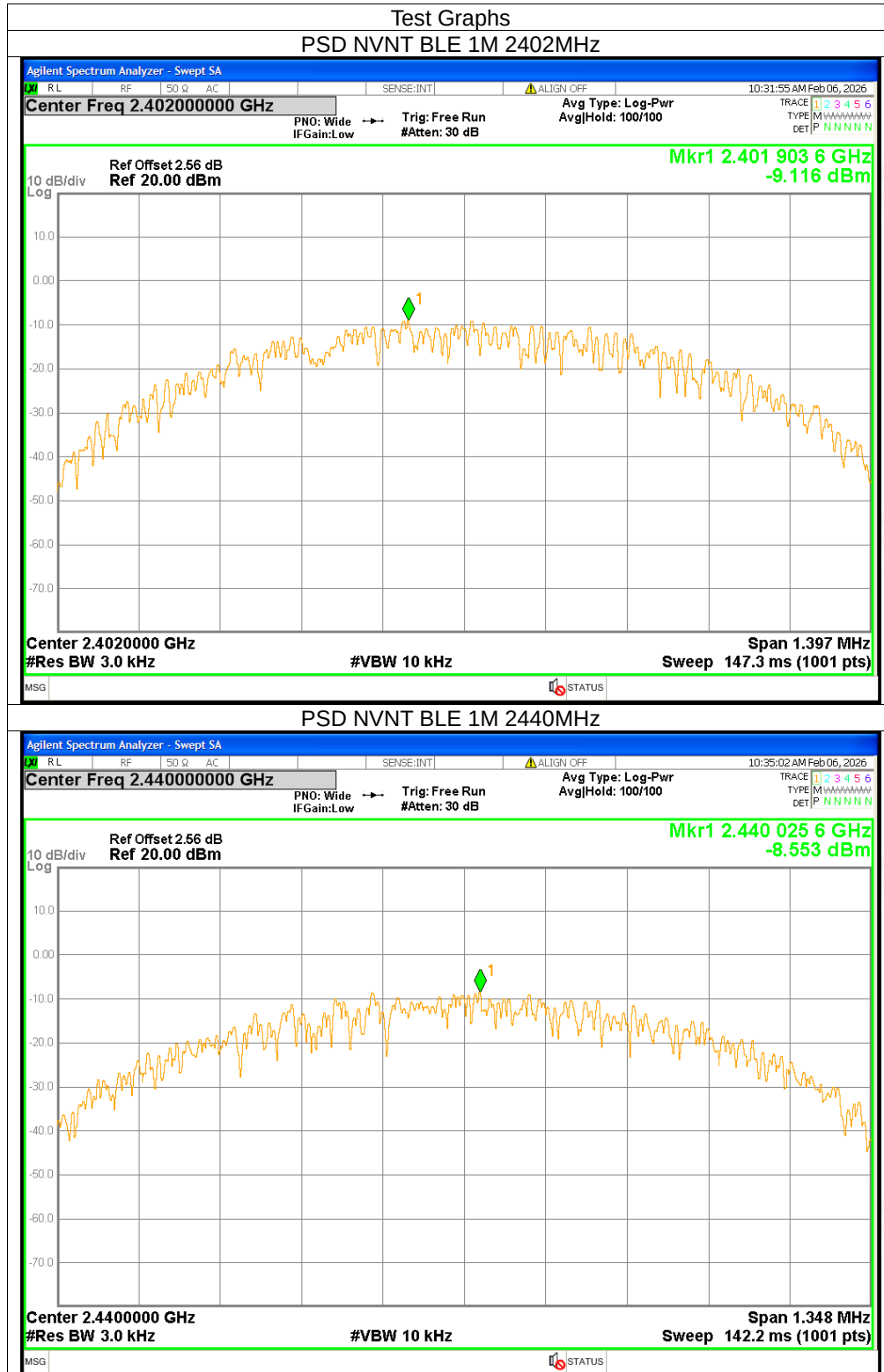


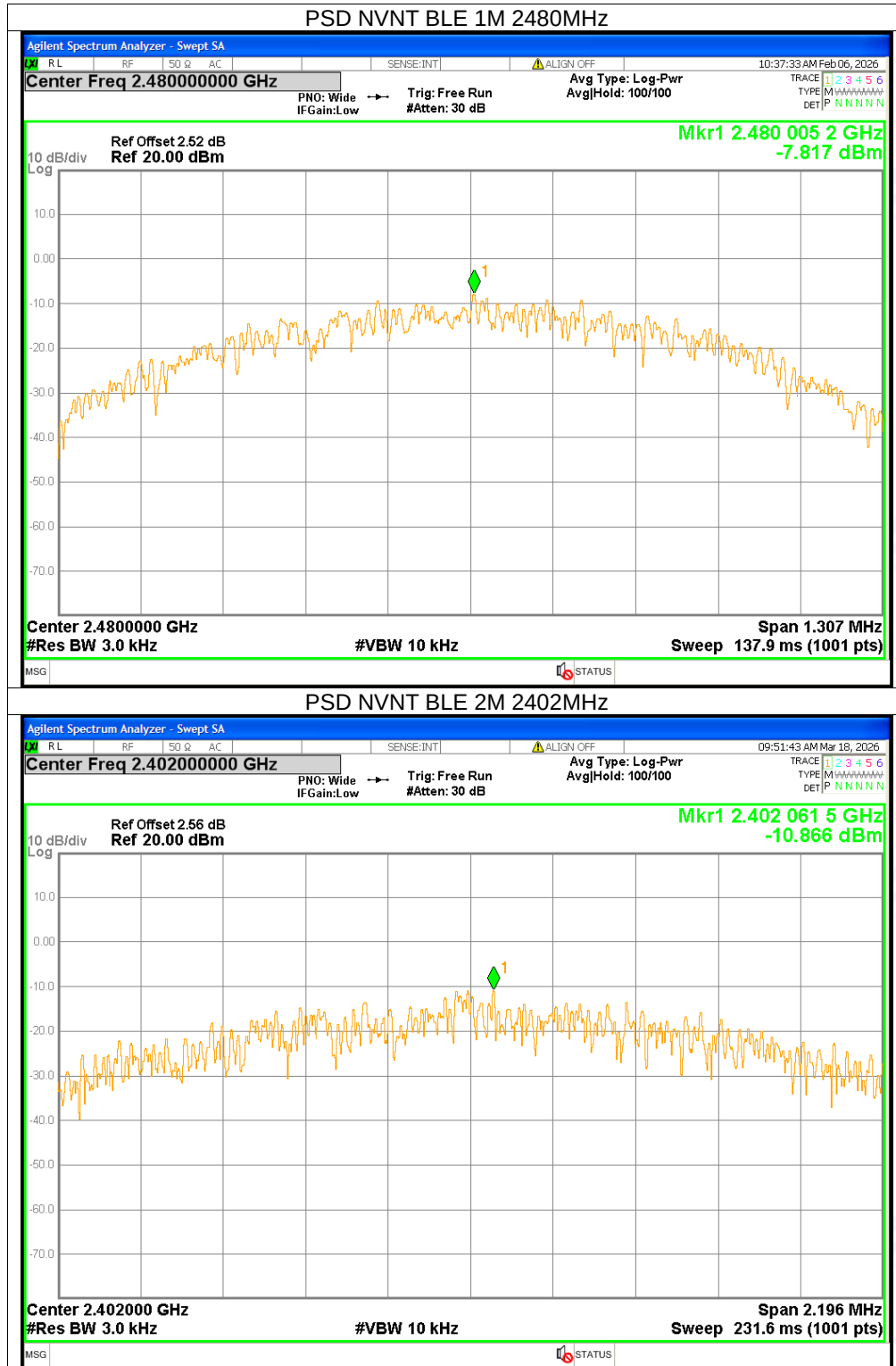




Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	-9.12	≤ -8	Pass
NVNT	BLE 1M	2440	-8.55	≤ -8	Pass
NVNT	BLE 1M	2480	-7.82	≤ -8	Pass
NVNT	BLE 2M	2402	-10.87	≤ -8	Pass
NVNT	BLE 2M	2440	-8.84	≤ -8	Pass
NVNT	BLE 2M	2480	-9.68	≤ -8	Pass



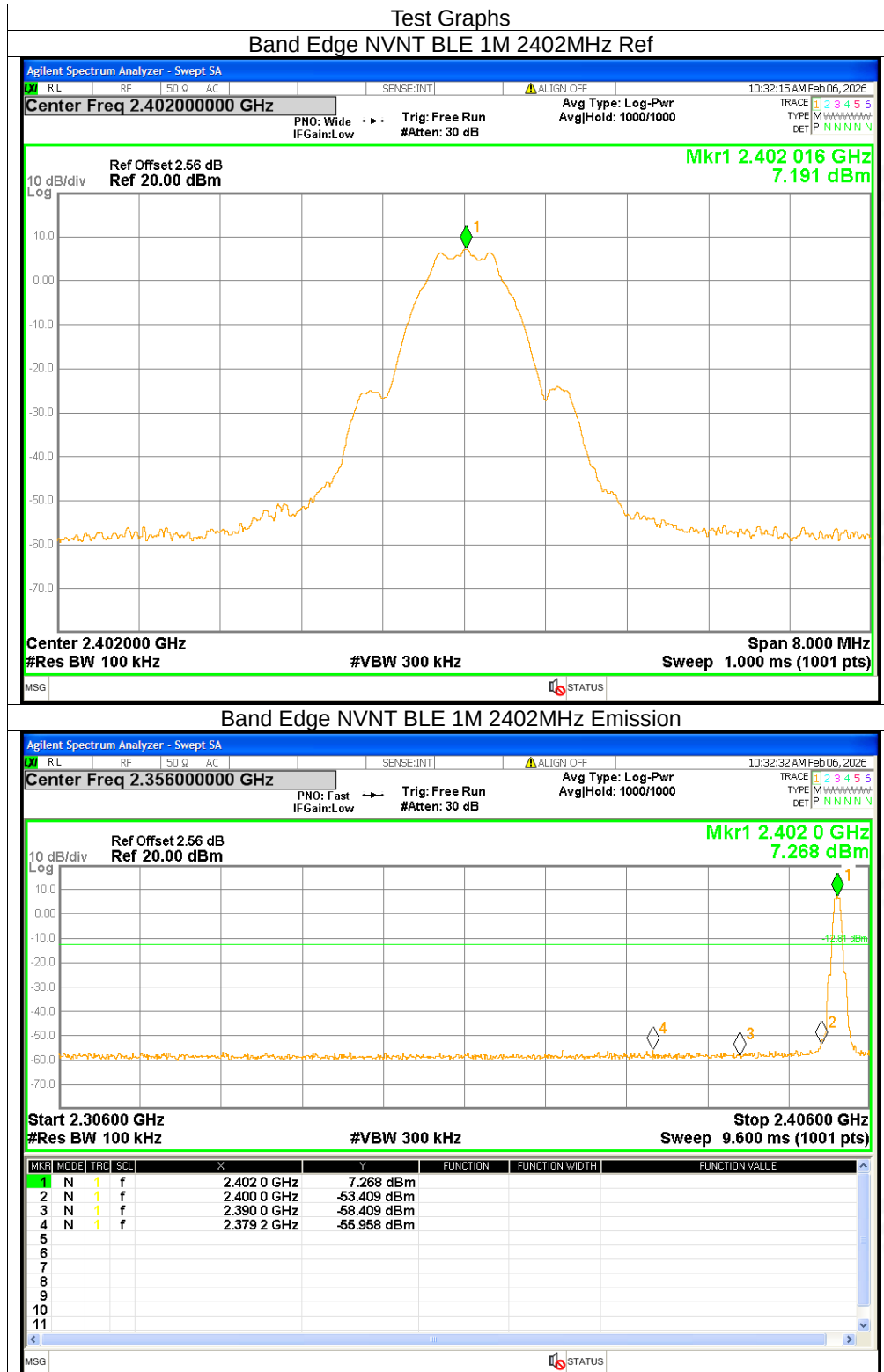


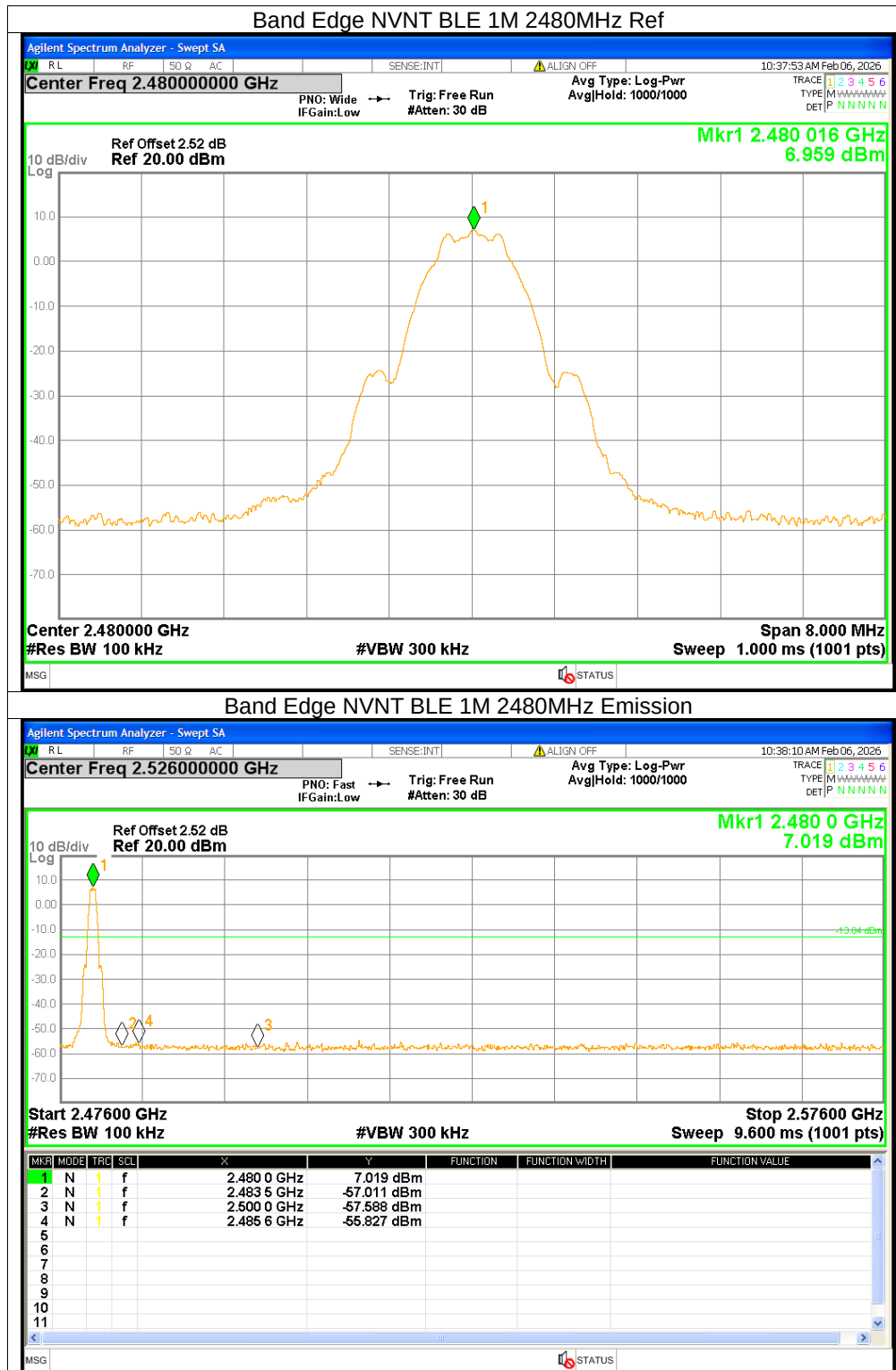


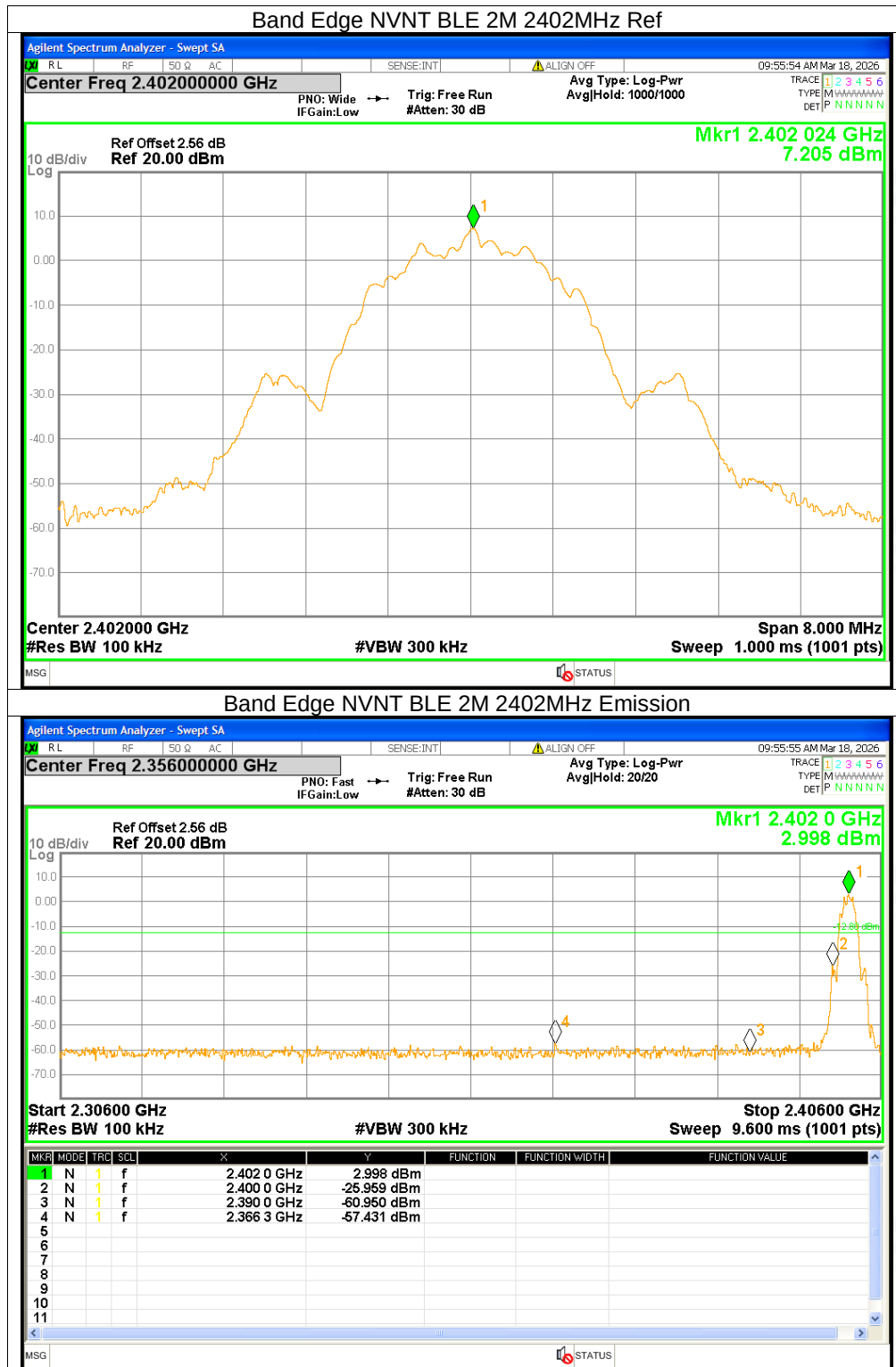


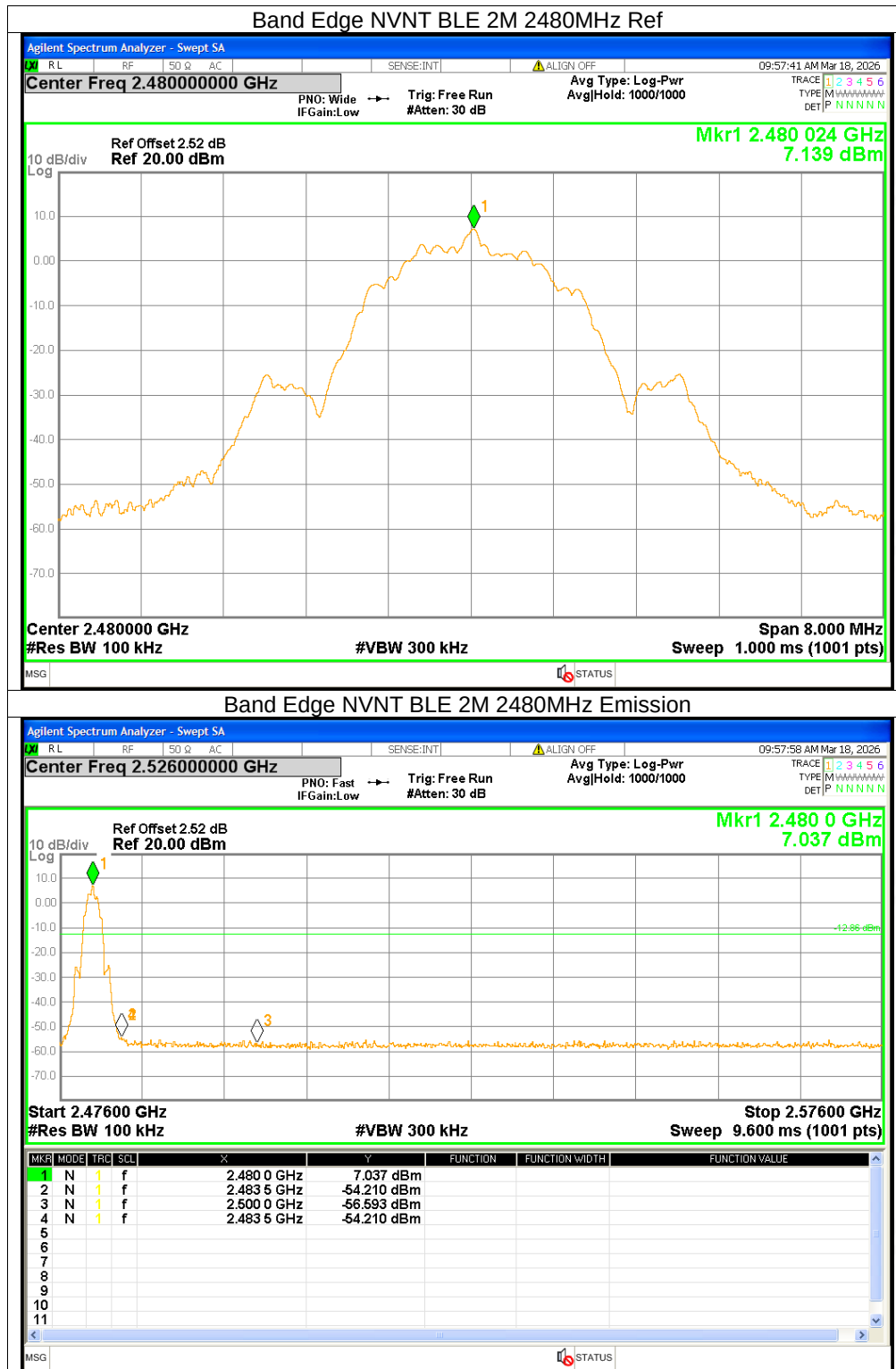
Band Edge

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-63.14	≤ -20	Pass
NVNT	BLE 1M	2480	-62.78	≤ -20	Pass
NVNT	BLE 2M	2402	-64.64	≤ -20	Pass
NVNT	BLE 2M	2480	-61.35	≤ -20	Pass





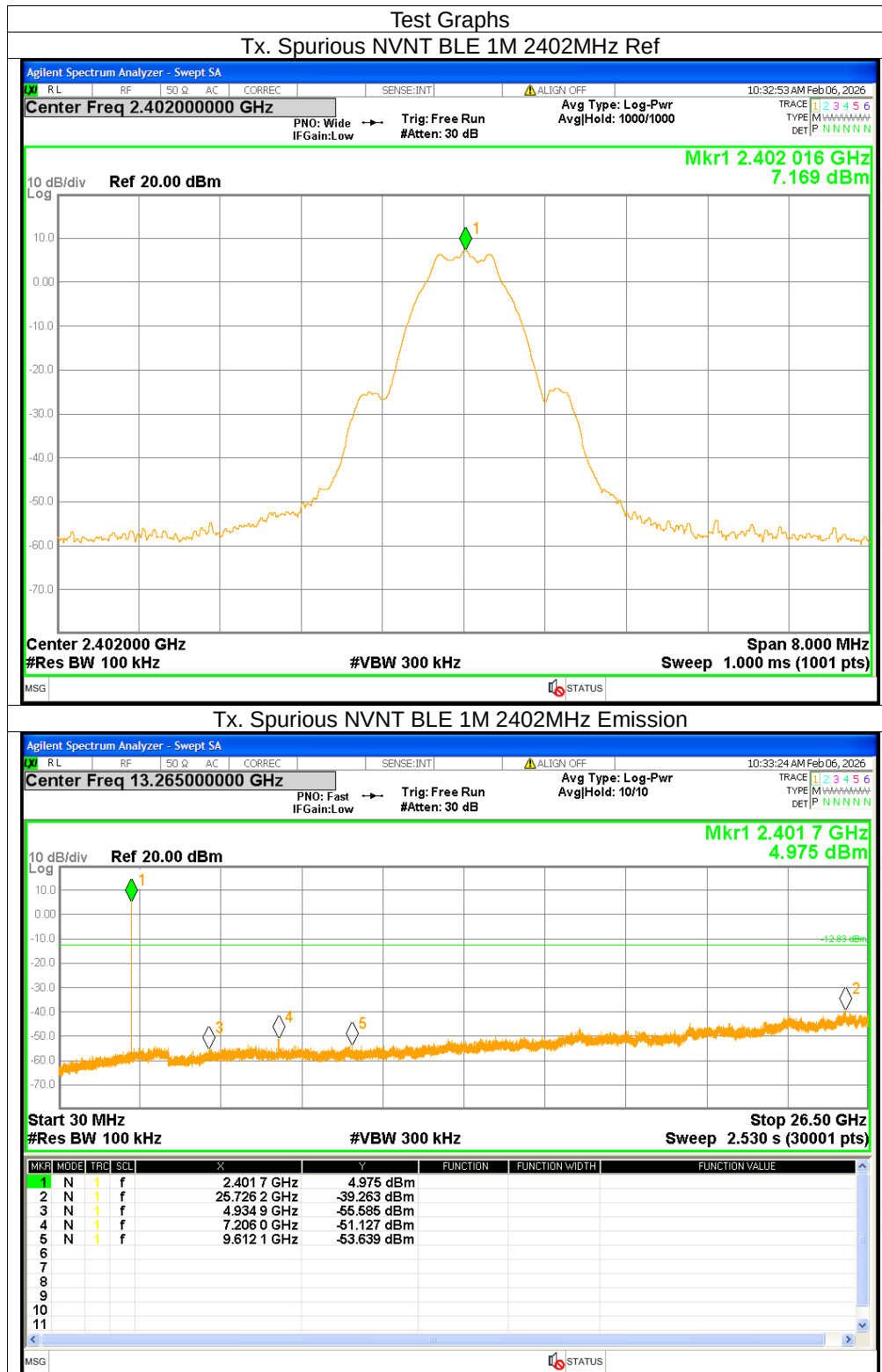


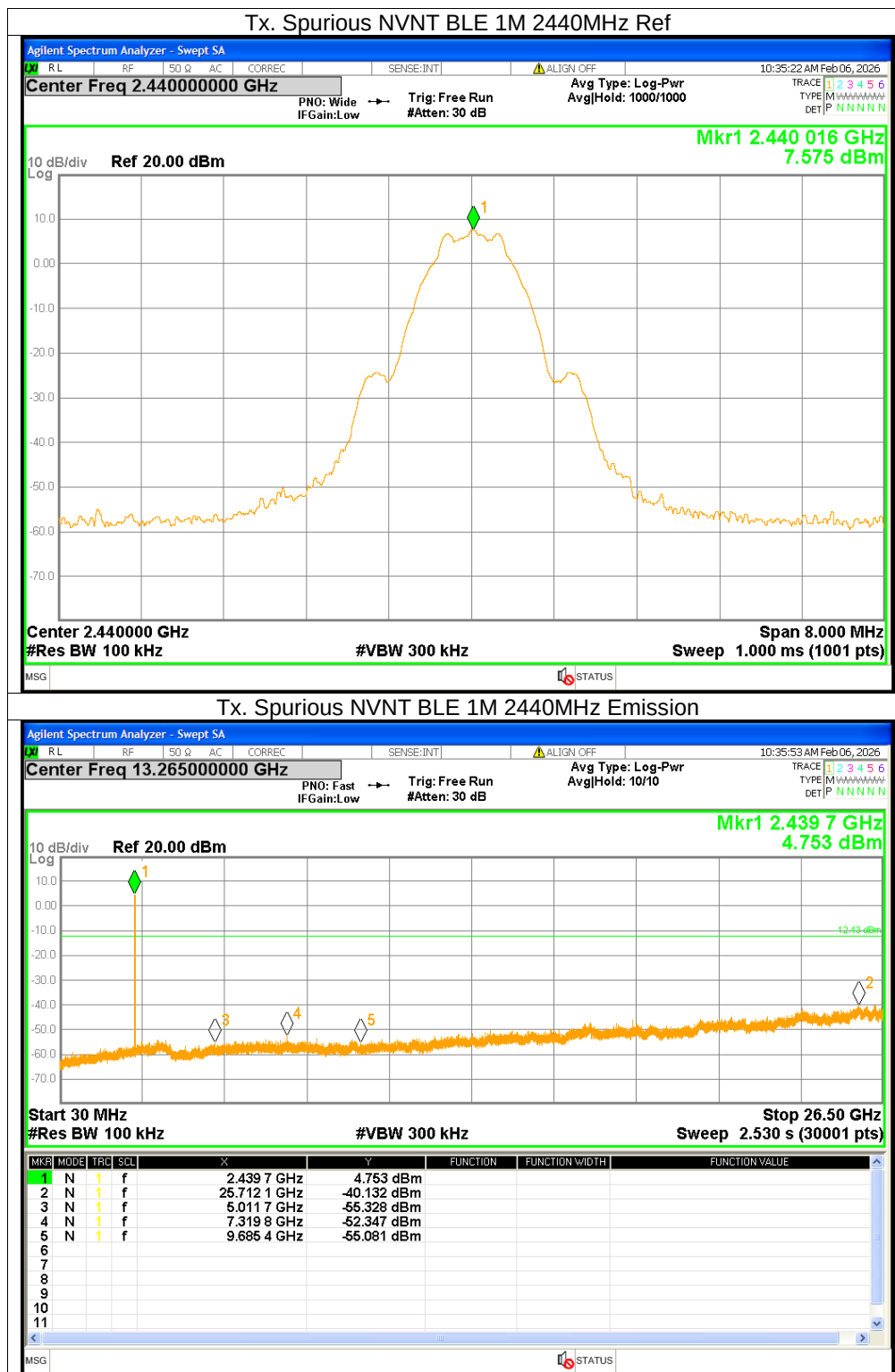


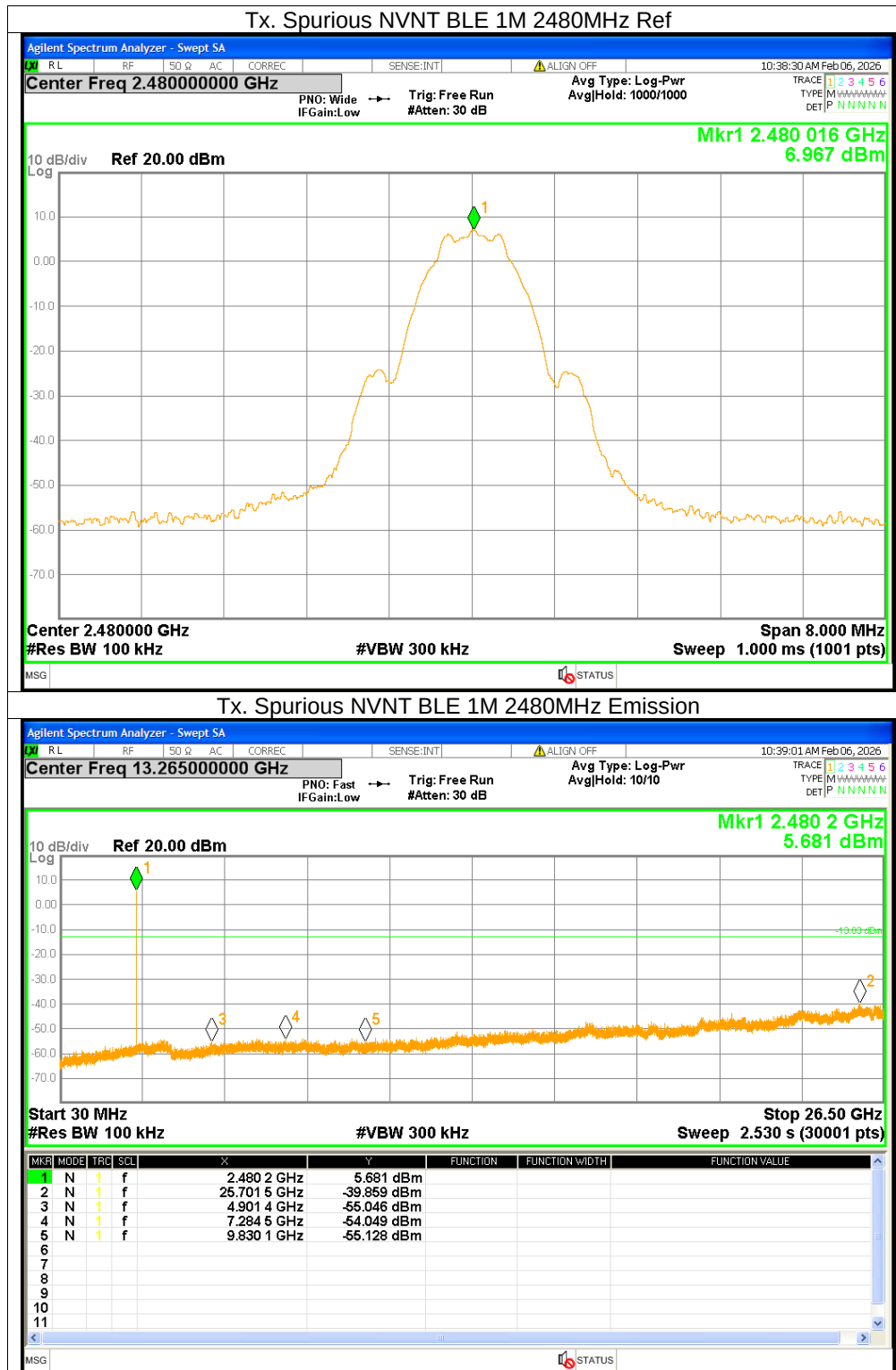


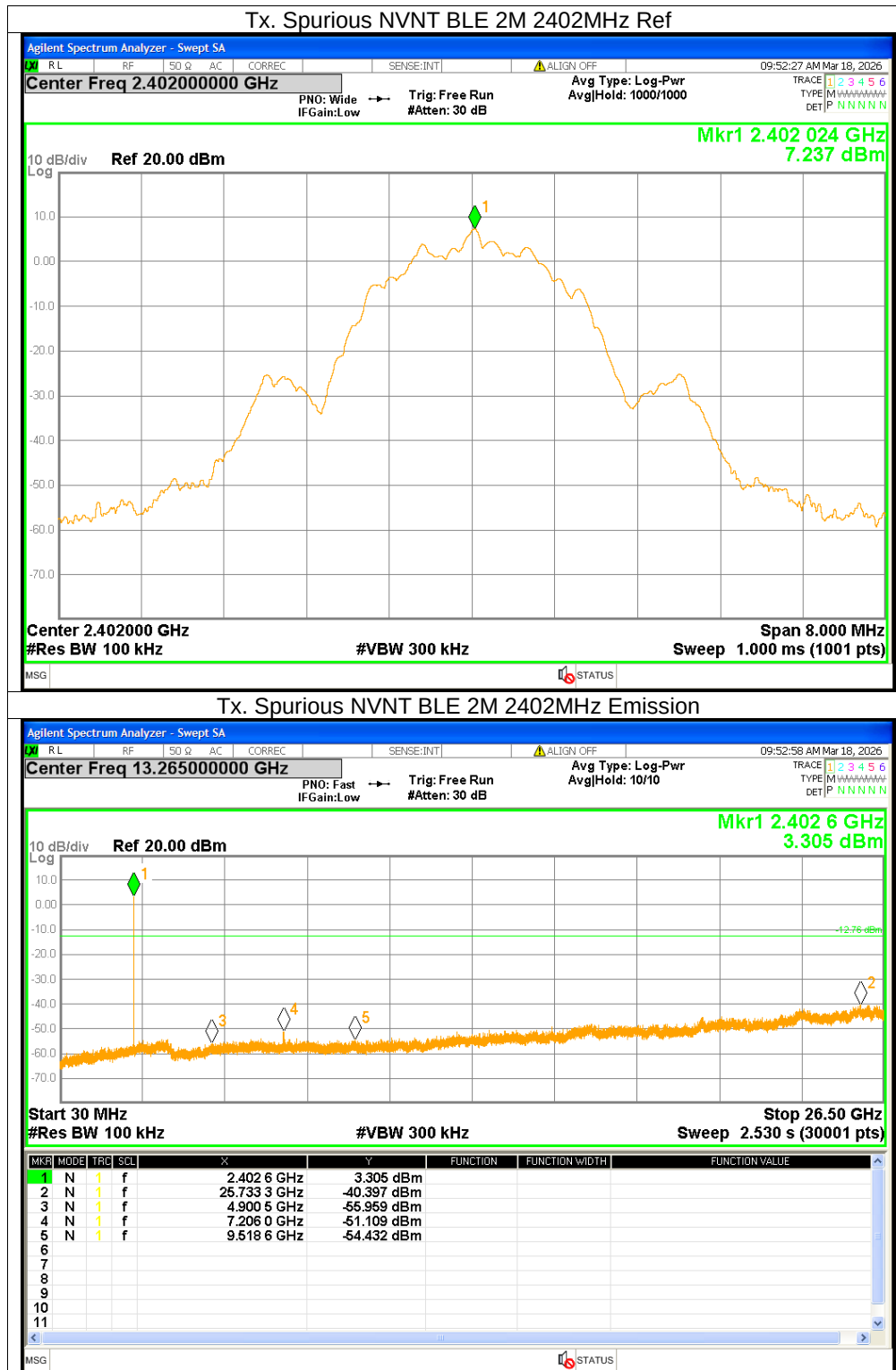
Conducted RF Spurious Emission

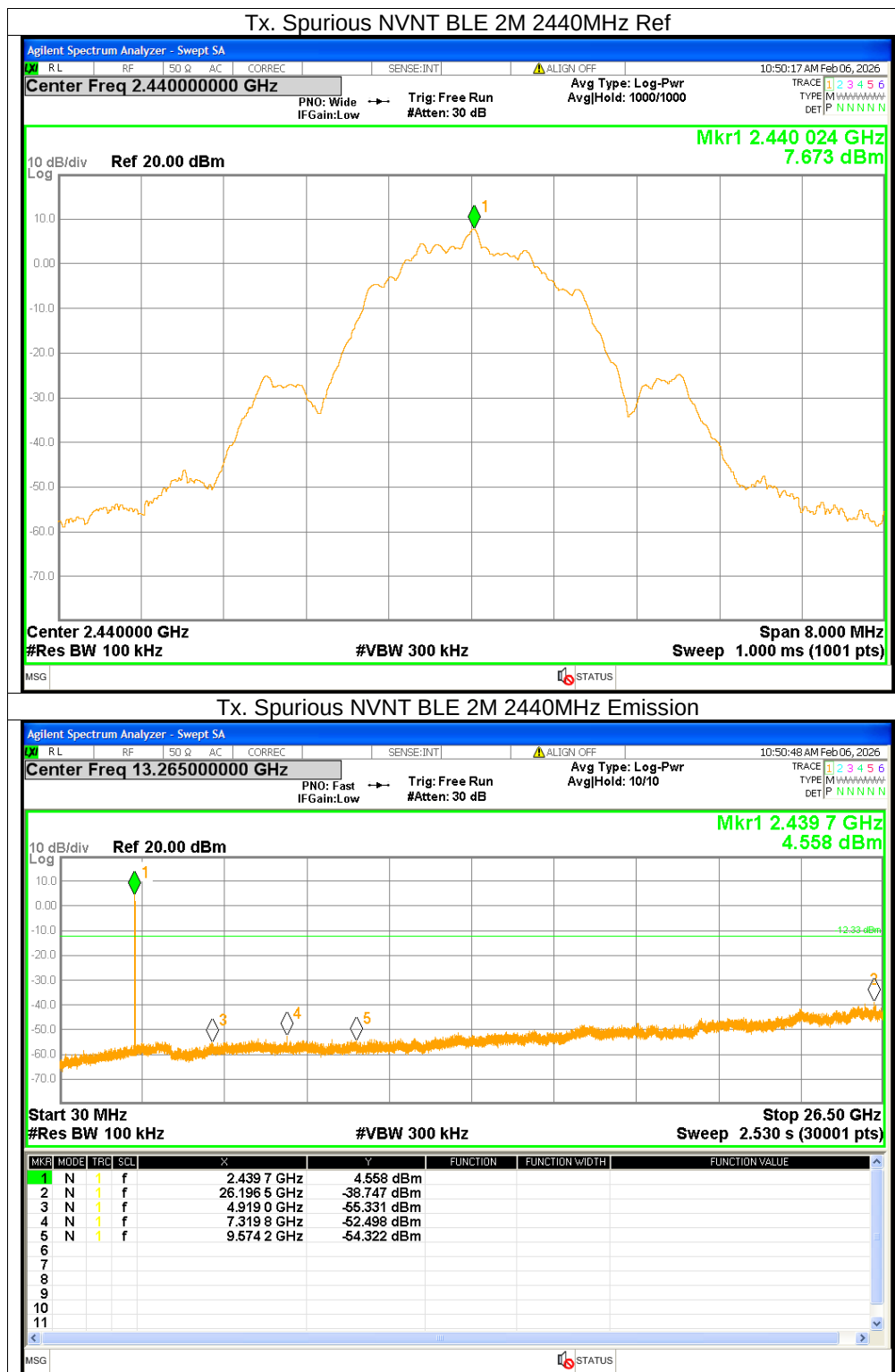
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-46.43	<=-20	Pass
NVNT	BLE 1M	2440	-47.71	<=-20	Pass
NVNT	BLE 1M	2480	-46.82	<=-20	Pass
NVNT	BLE 2M	2402	-47.63	<=-20	Pass
NVNT	BLE 2M	2440	-46.41	<=-20	Pass
NVNT	BLE 2M	2480	-47.69	<=-20	Pass

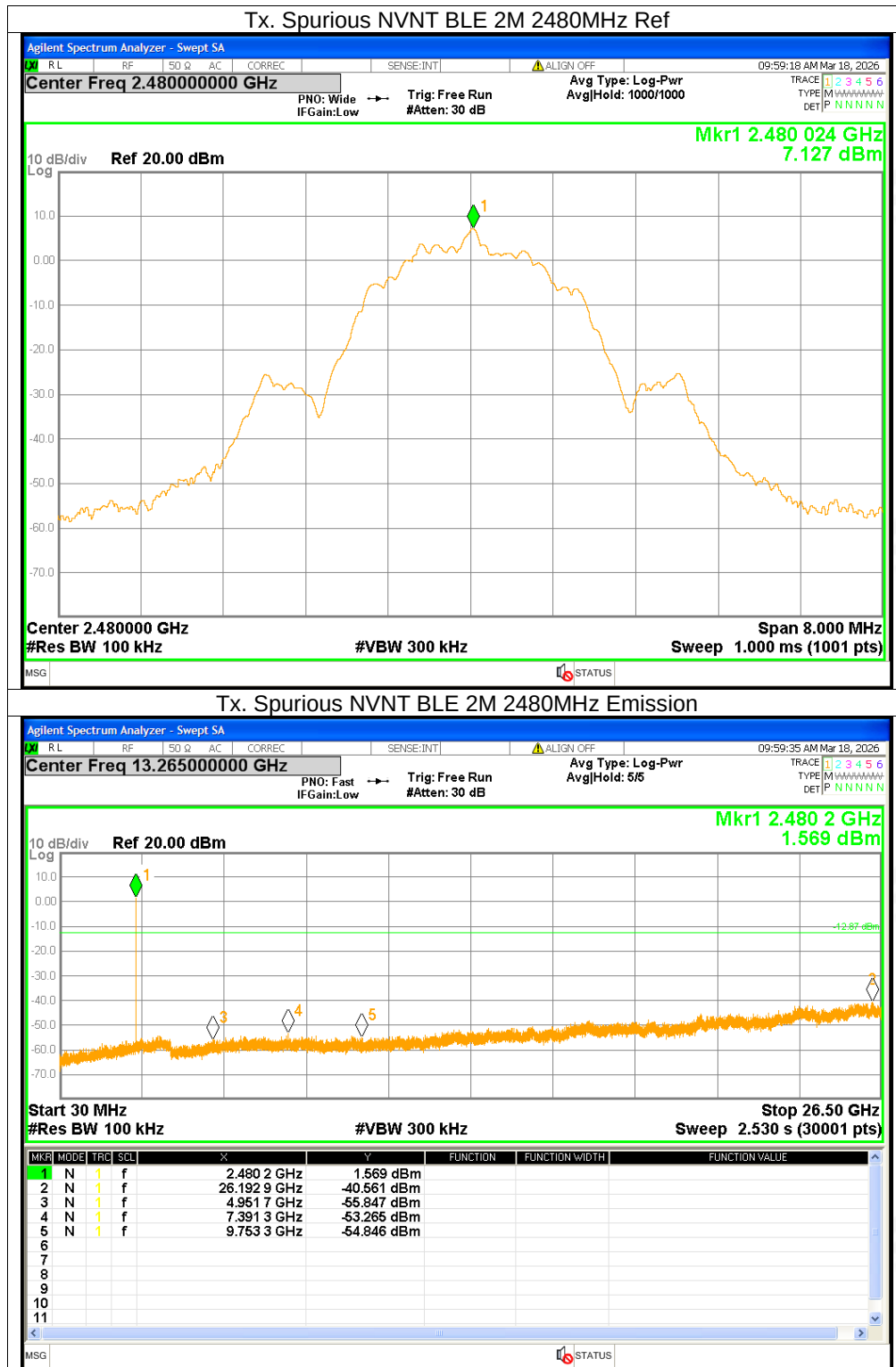










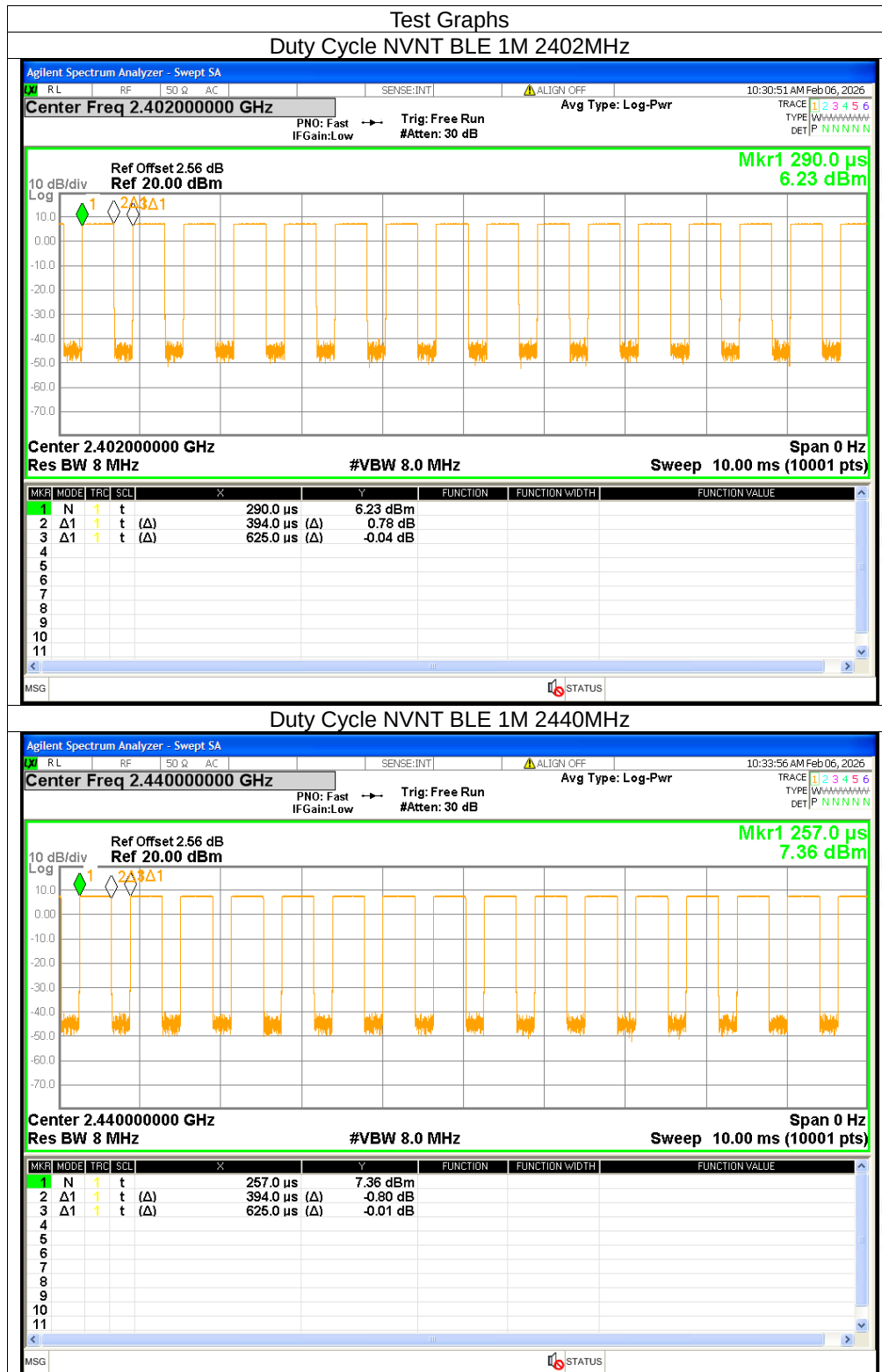




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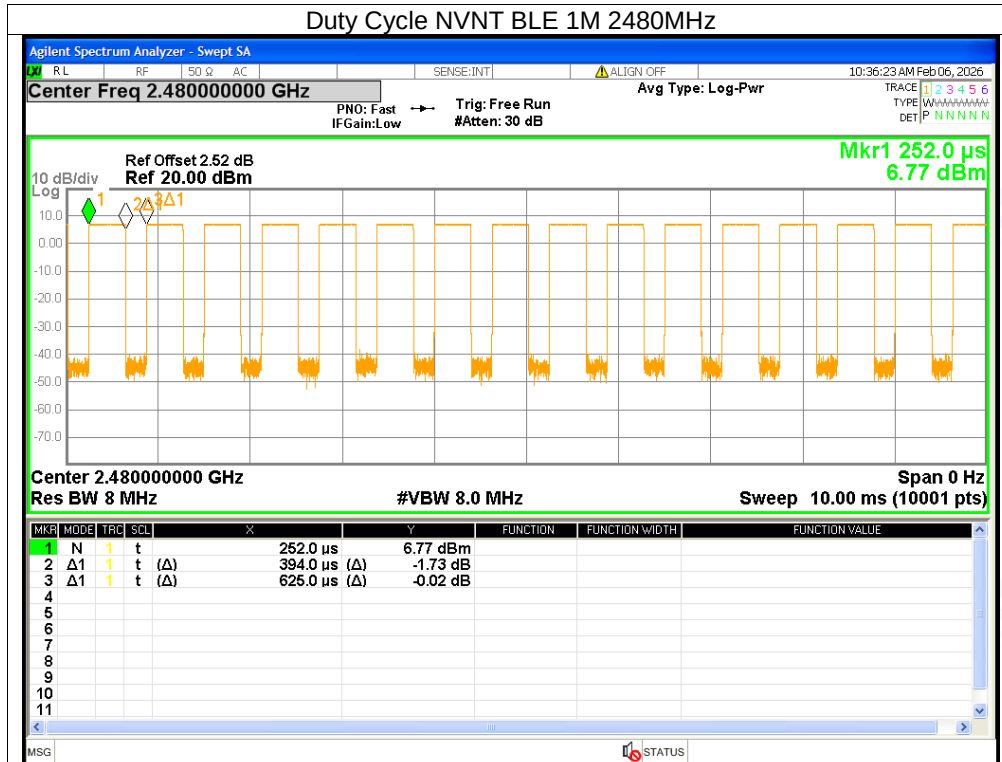
Duty Cycle

Condition	Mode	Frequency (MHz)	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	0.394	0.625	63.04	2	2.54
NVNT	BLE 1M	2440	0.394	0.625	63.04	2	2.54
NVNT	BLE 1M	2480	0.394	0.625	63.04	2	2.54
NVNT	BLE 2M	2402	0.209	0.625	33.44	4.76	4.78
NVNT	BLE 2M	2440	0.209	0.625	33.44	4.76	4.78
NVNT	BLE 2M	2480	0.209	0.625	33.44	4.76	4.78

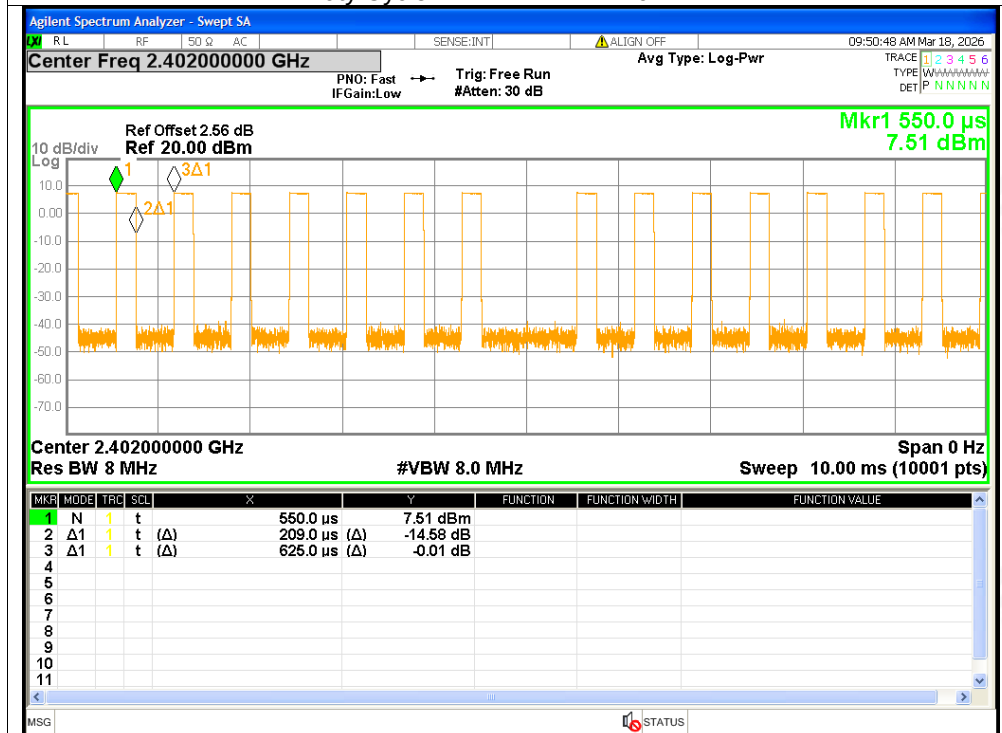




Duty Cycle NVNT BLE 1M 2480MHz

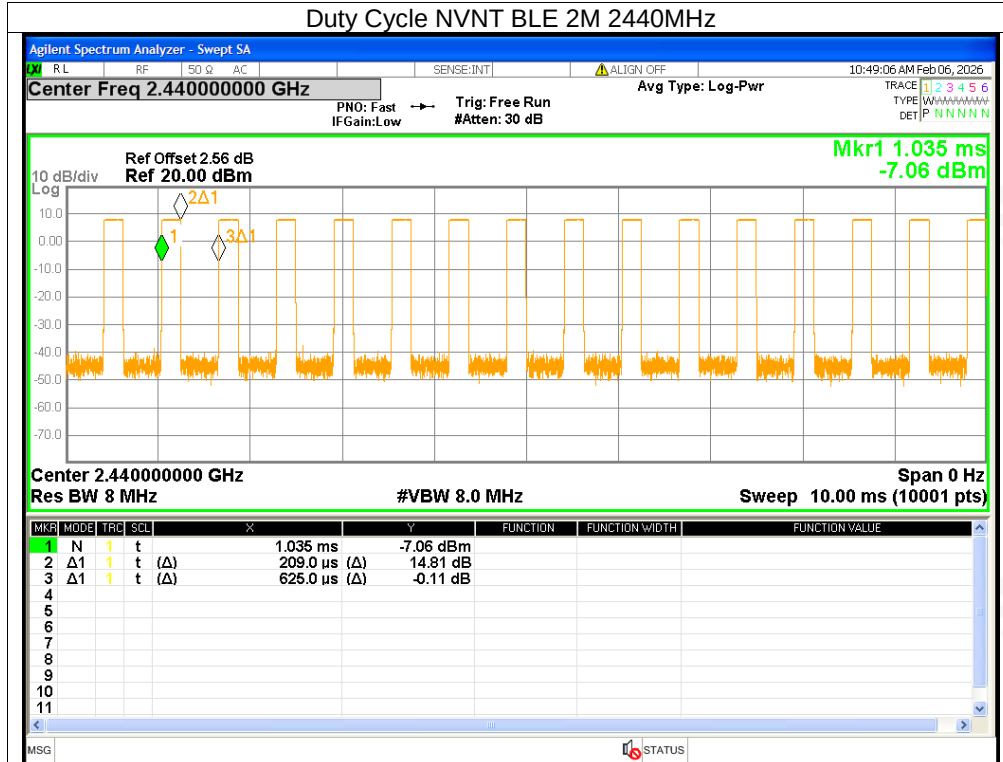


Duty Cycle NVNT BLE 2M 2402MHz

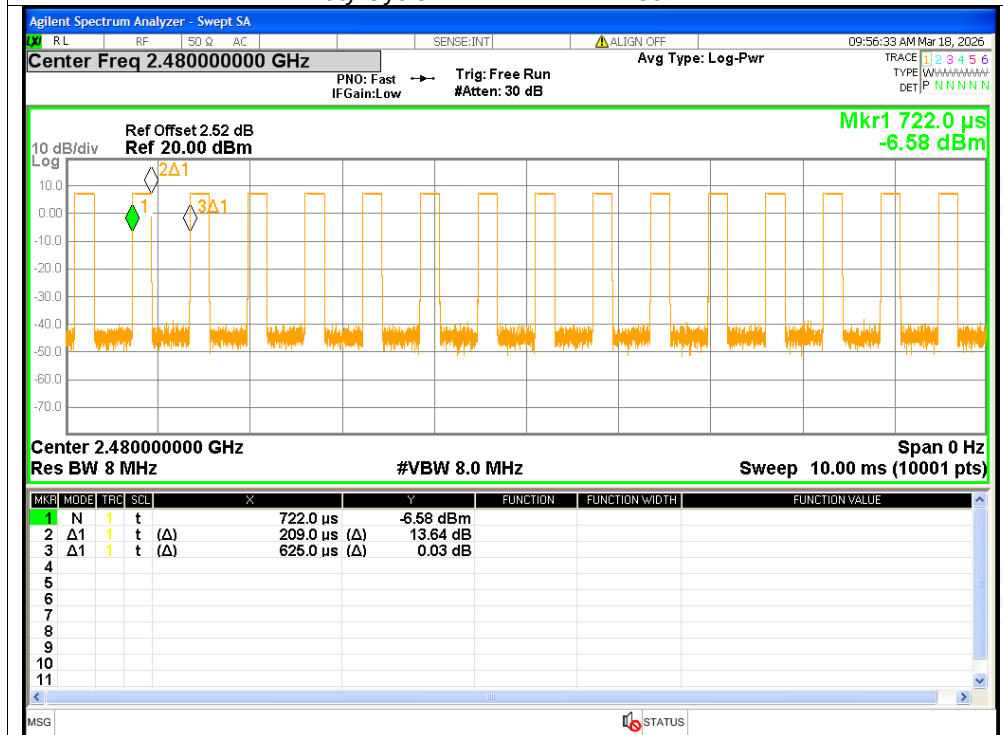




Duty Cycle NVNT BLE 2M 2440MHz



Duty Cycle NVNT BLE 2M 2480MHz





Maximum Peak Conducted Output Power

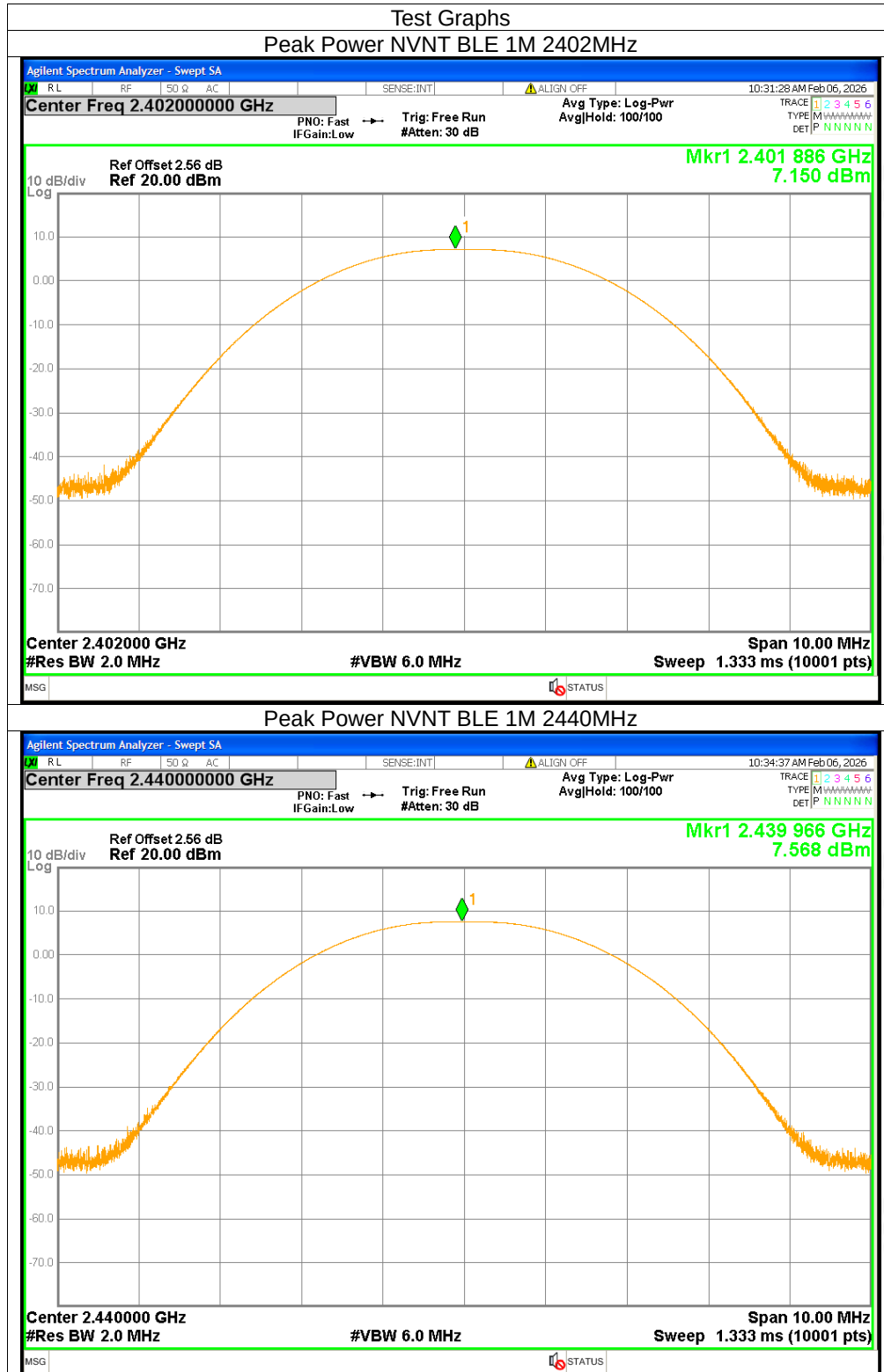
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	7.15	<=30	Pass
NVNT	BLE 1M	2440	7.57	<=30	Pass
NVNT	BLE 1M	2480	6.94	<=30	Pass
NVNT	BLE 2M	2402	7.49	<=30	Pass
NVNT	BLE 2M	2440	7.81	<=30	Pass
NVNT	BLE 2M	2480	7.38	<=30	Pass

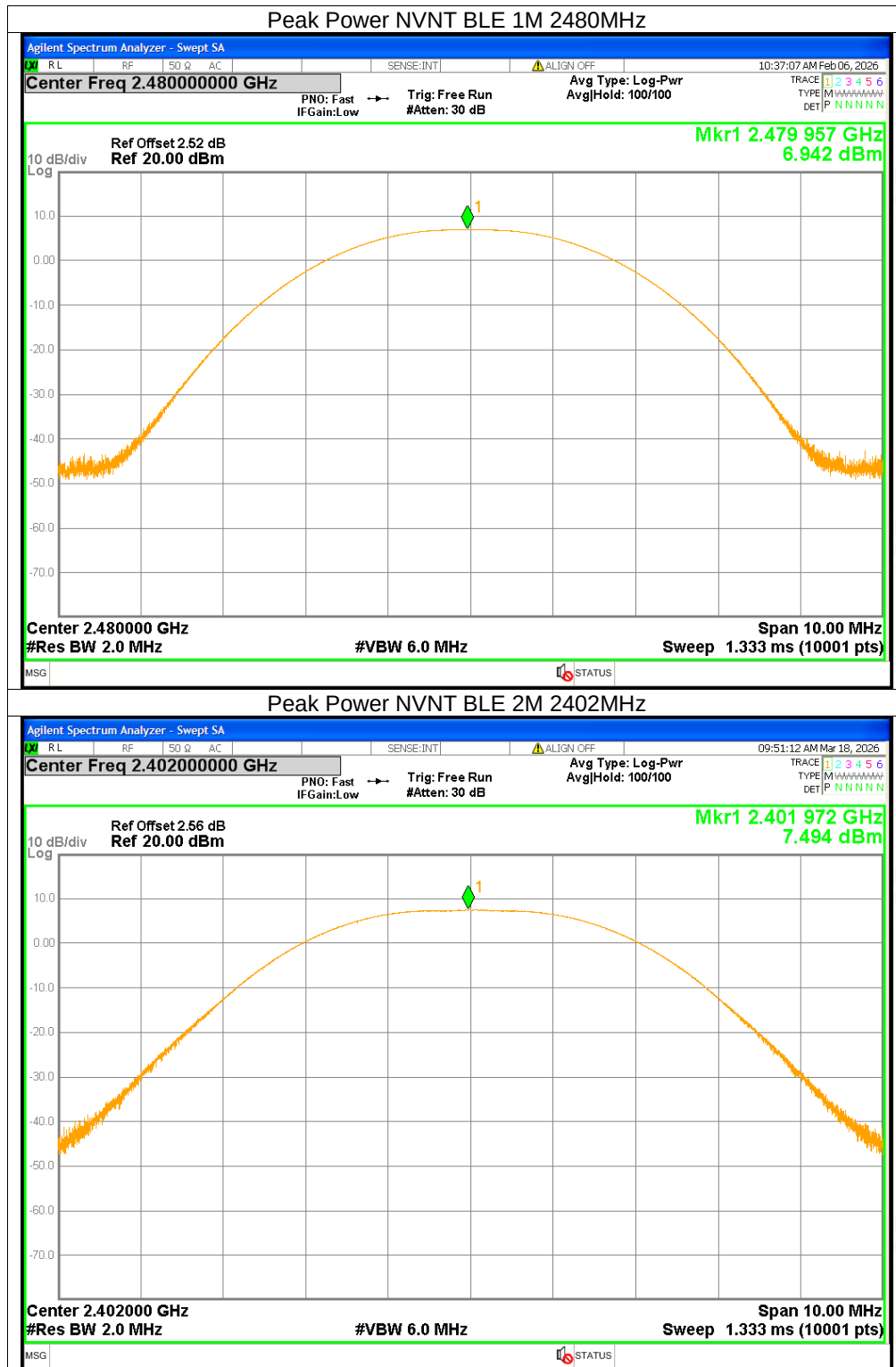
1M

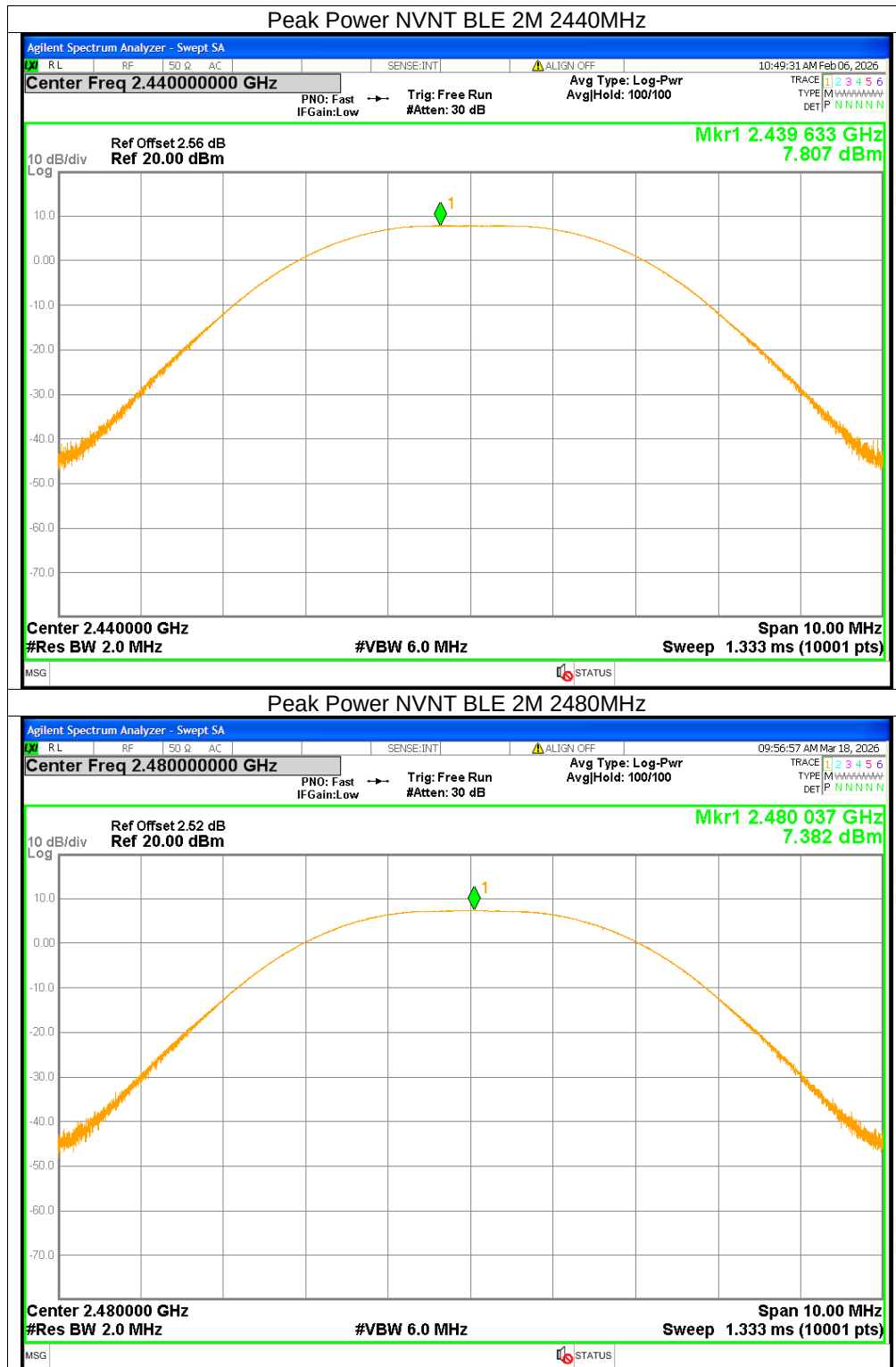
Test Channel	Frequency	Peak Conducted Output Power	Antenna Gain	EIRP Power	LIMIT
	(MHz)	(dBm)	(dBi)	(dBm)	dBm
CH0	2402	7.15	1.85	9.00	36.02
CH19	2440	7.57	1.85	9.42	36.02
CH39	2480	6.94	1.85	8.79	36.02

2M

Test Channel	Frequency	Peak Conducted Output Power	Antenna Gain	EIRP Power	LIMIT
	(MHz)	(dBm)	(dBi)	(dBm)	dBm
CH0	2402	7.46	1.85	9.31	36.02
CH19	2440	7.81	1.85	9.66	36.02
CH39	2480	7.12	1.85	8.97	36.02



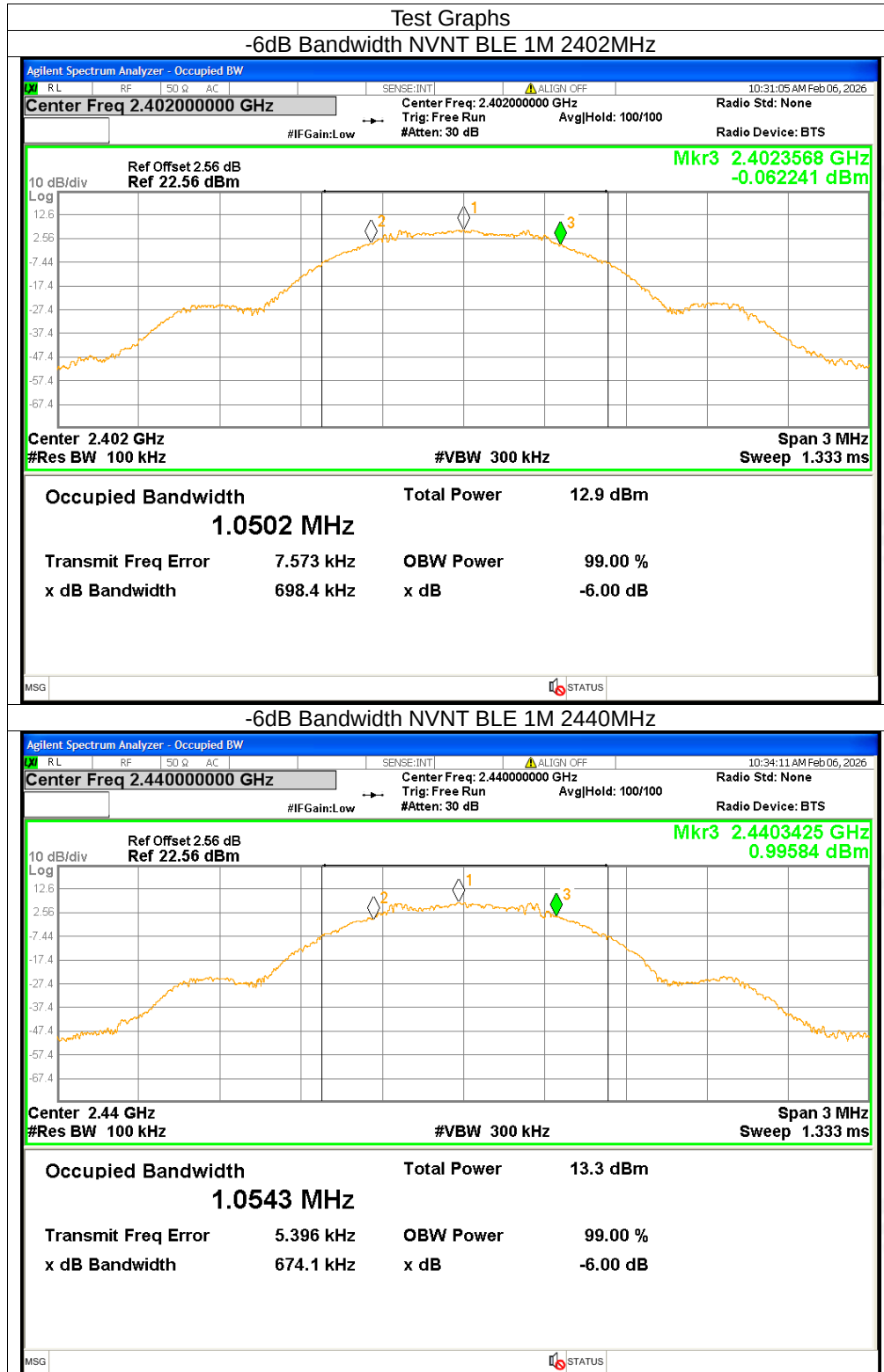


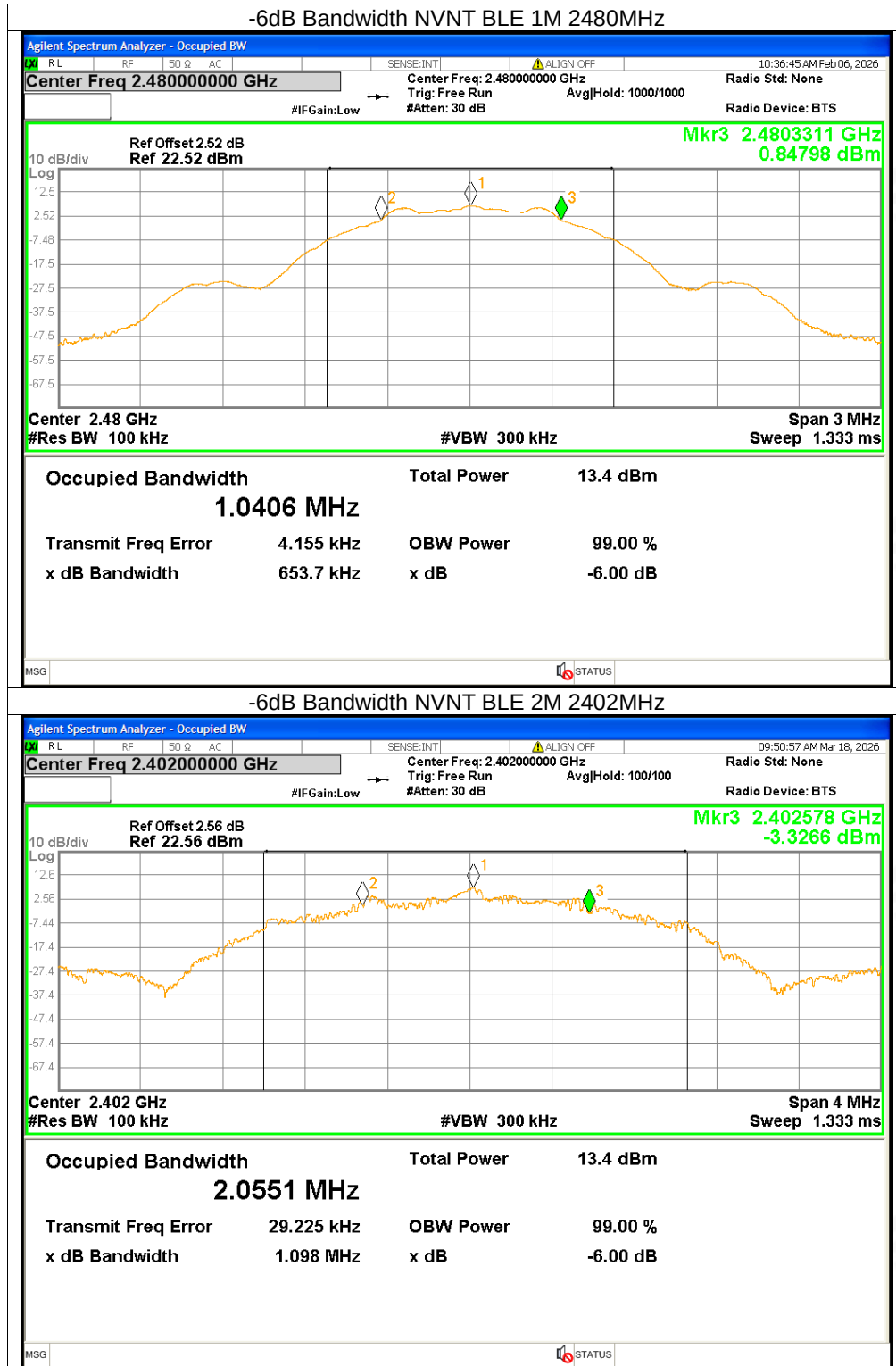


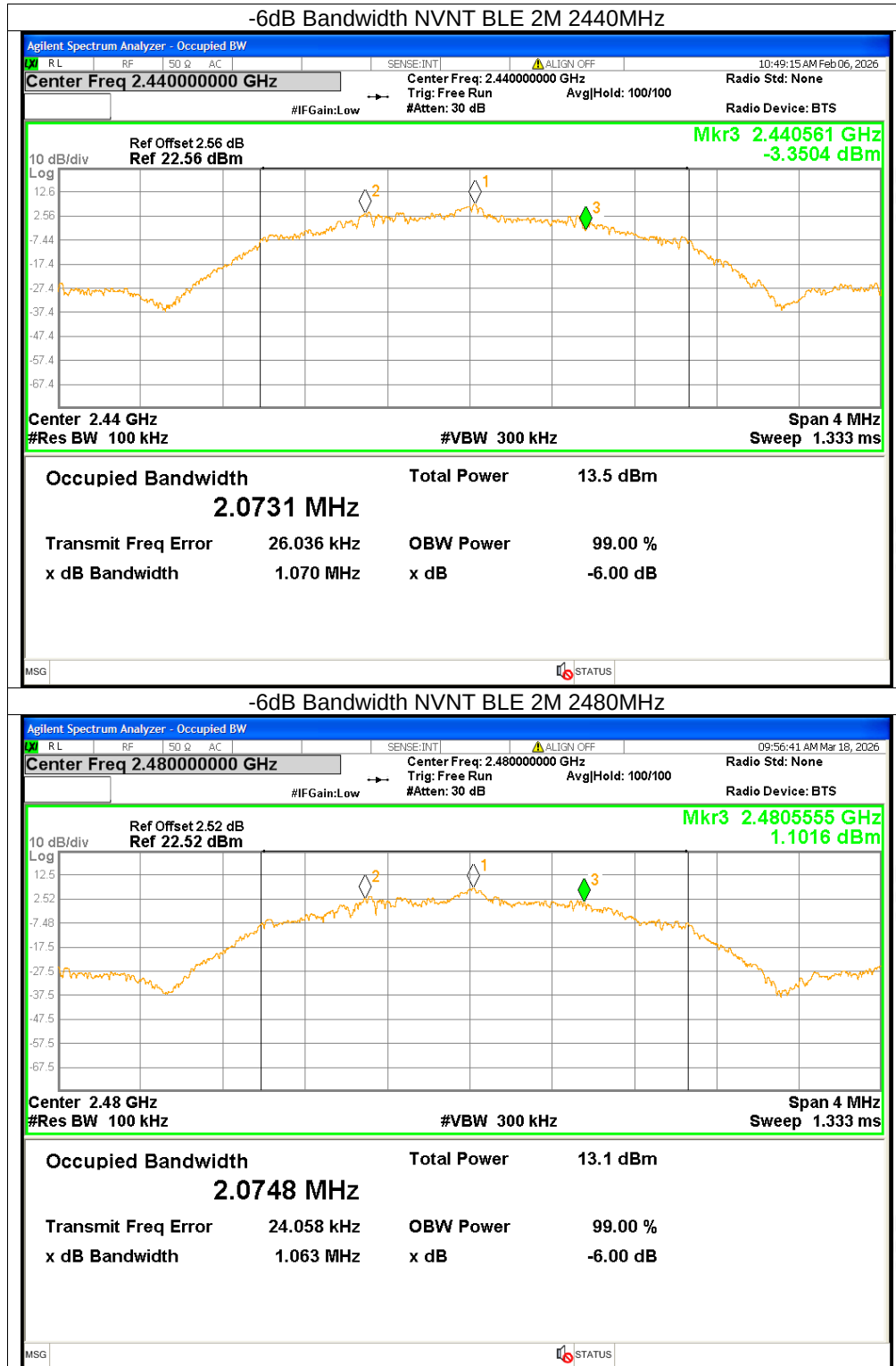


-6dB Bandwidth

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	0.6984	≥ 0.5	Pass
NVNT	BLE 1M	2440	0.6741	≥ 0.5	Pass
NVNT	BLE 1M	2480	0.6537	≥ 0.5	Pass
NVNT	BLE 2M	2402	1.098	≥ 0.5	Pass
NVNT	BLE 2M	2440	1.07	≥ 0.5	Pass
NVNT	BLE 2M	2480	1.063	≥ 0.5	Pass



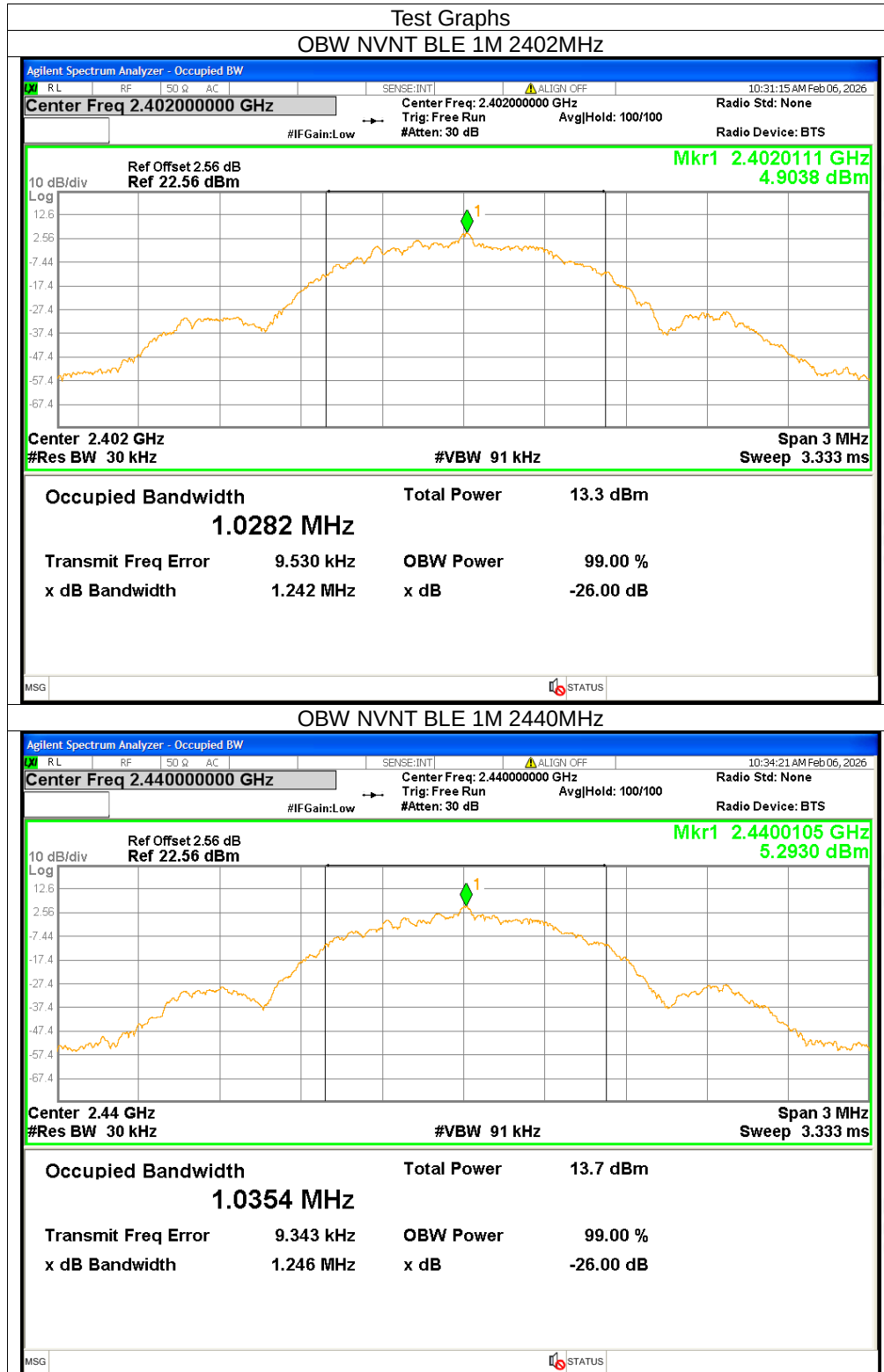


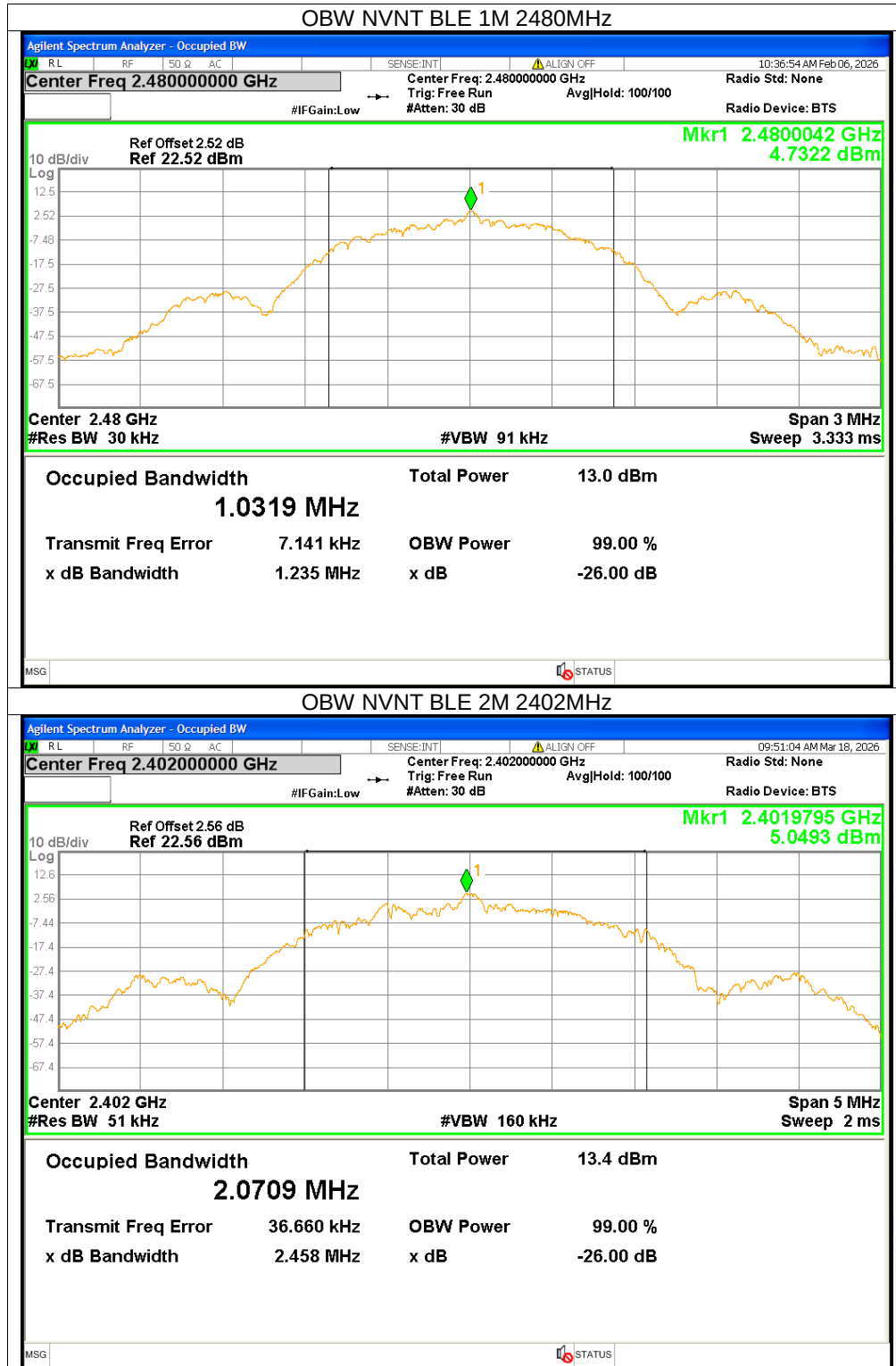


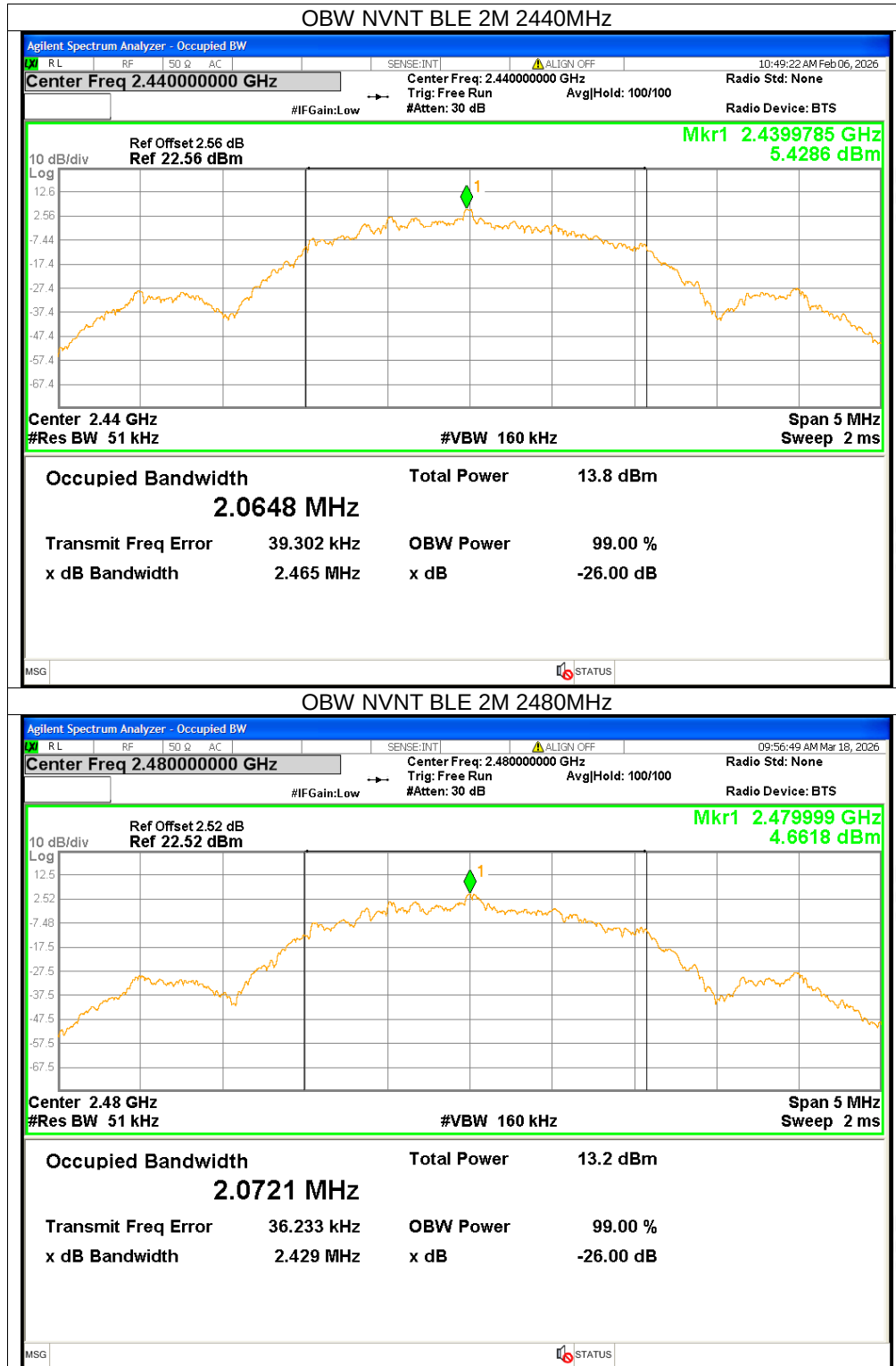


Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	BLE 1M	2402	1.0282
NVNT	BLE 1M	2440	1.0354
NVNT	BLE 1M	2480	1.0319
NVNT	BLE 2M	2402	2.0709
NVNT	BLE 2M	2440	2.0648
NVNT	BLE 2M	2480	2.0721



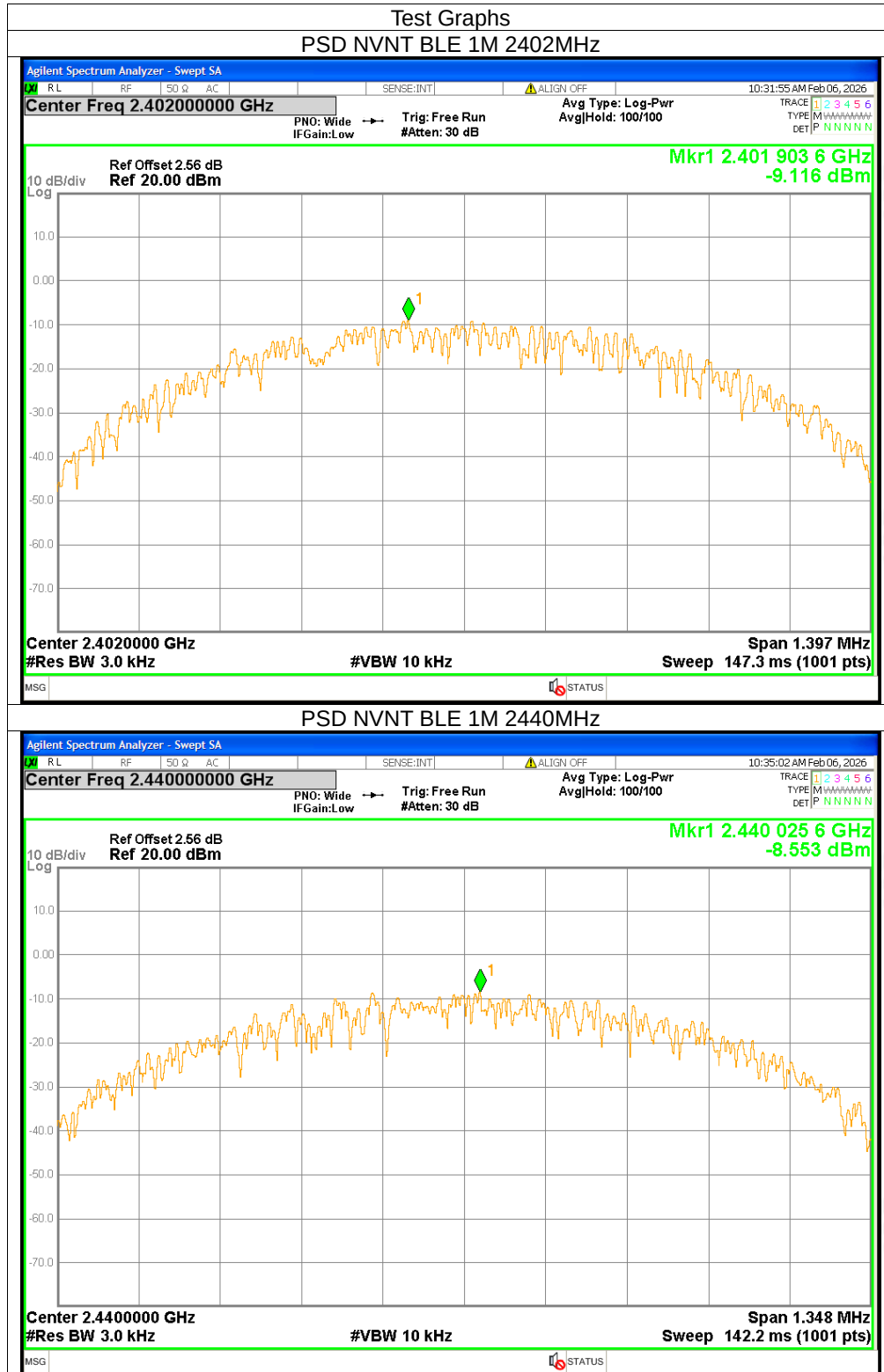


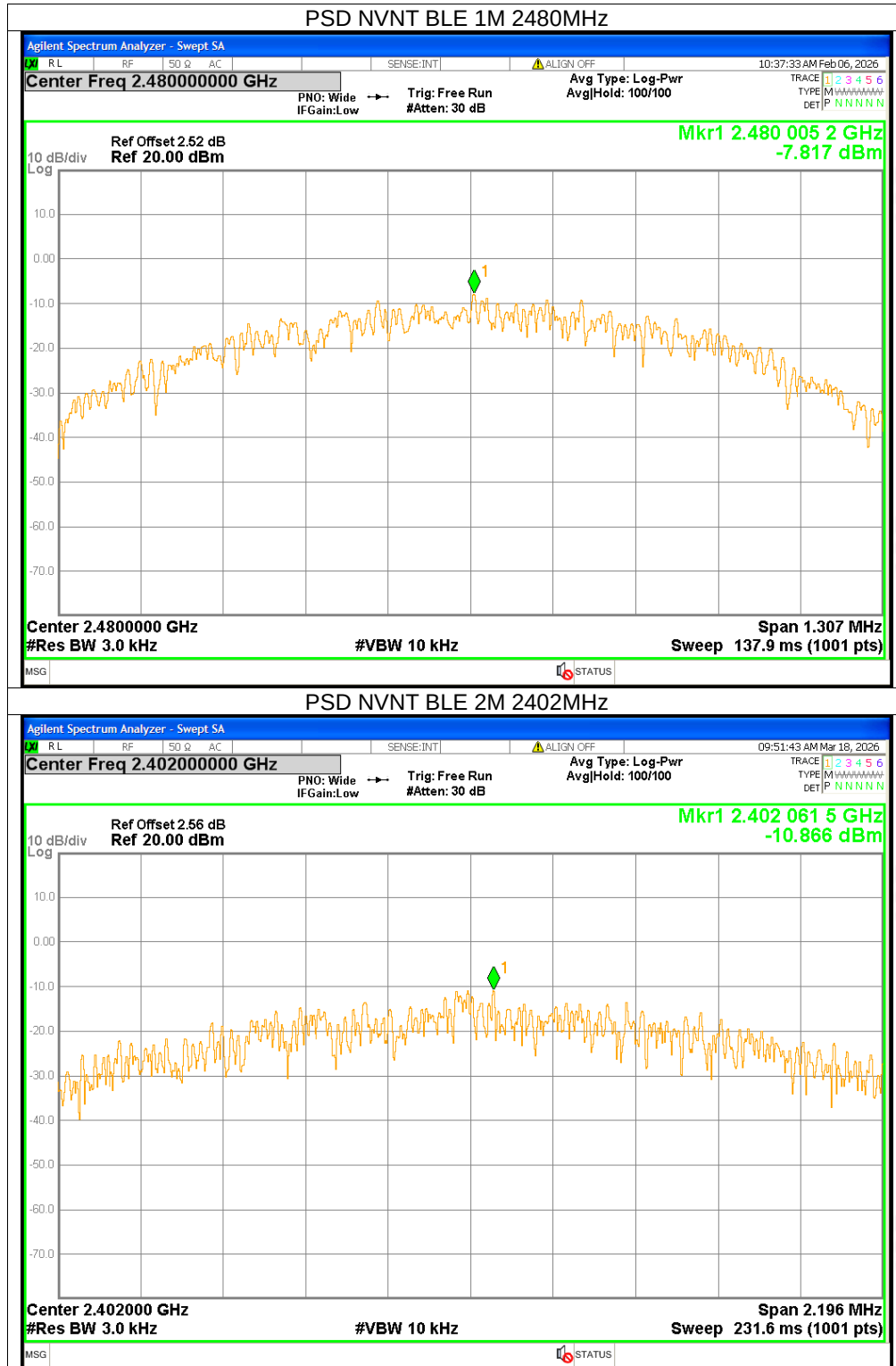


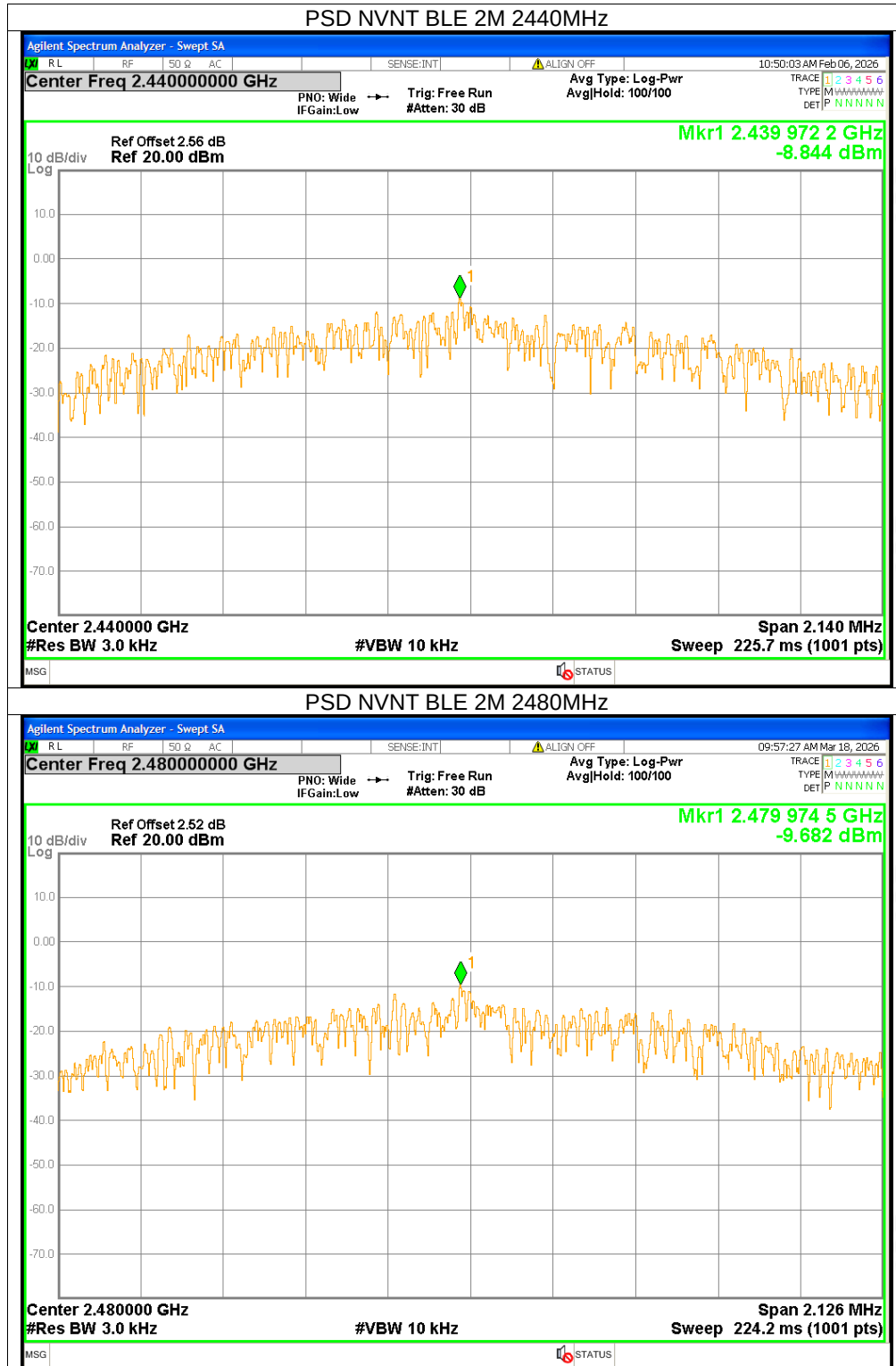


Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	-9.12	≤ -8	Pass
NVNT	BLE 1M	2440	-8.55	≤ -8	Pass
NVNT	BLE 1M	2480	-7.82	≤ -8	Pass
NVNT	BLE 2M	2402	-10.87	≤ -8	Pass
NVNT	BLE 2M	2440	-8.84	≤ -8	Pass
NVNT	BLE 2M	2480	-9.68	≤ -8	Pass



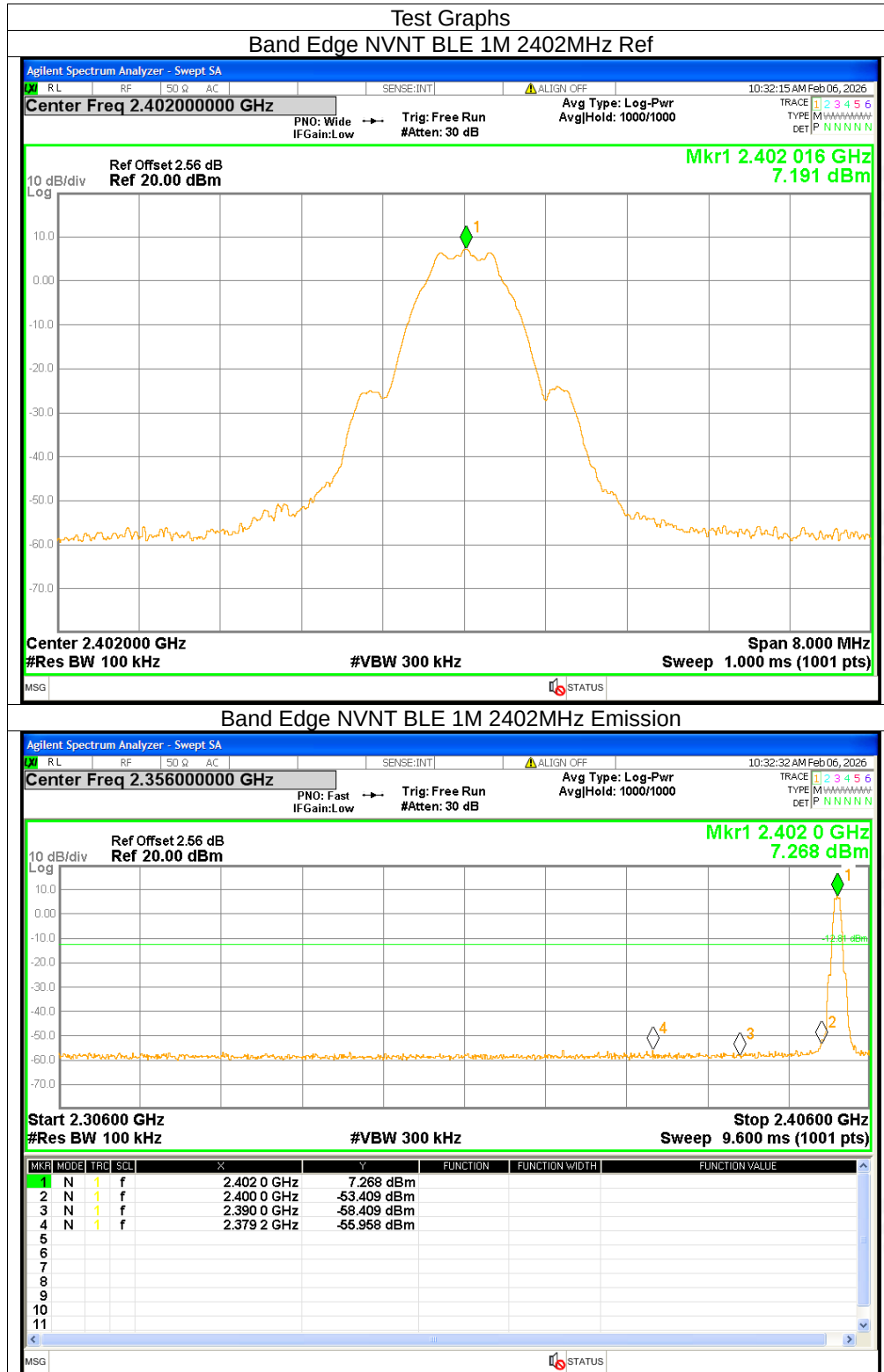


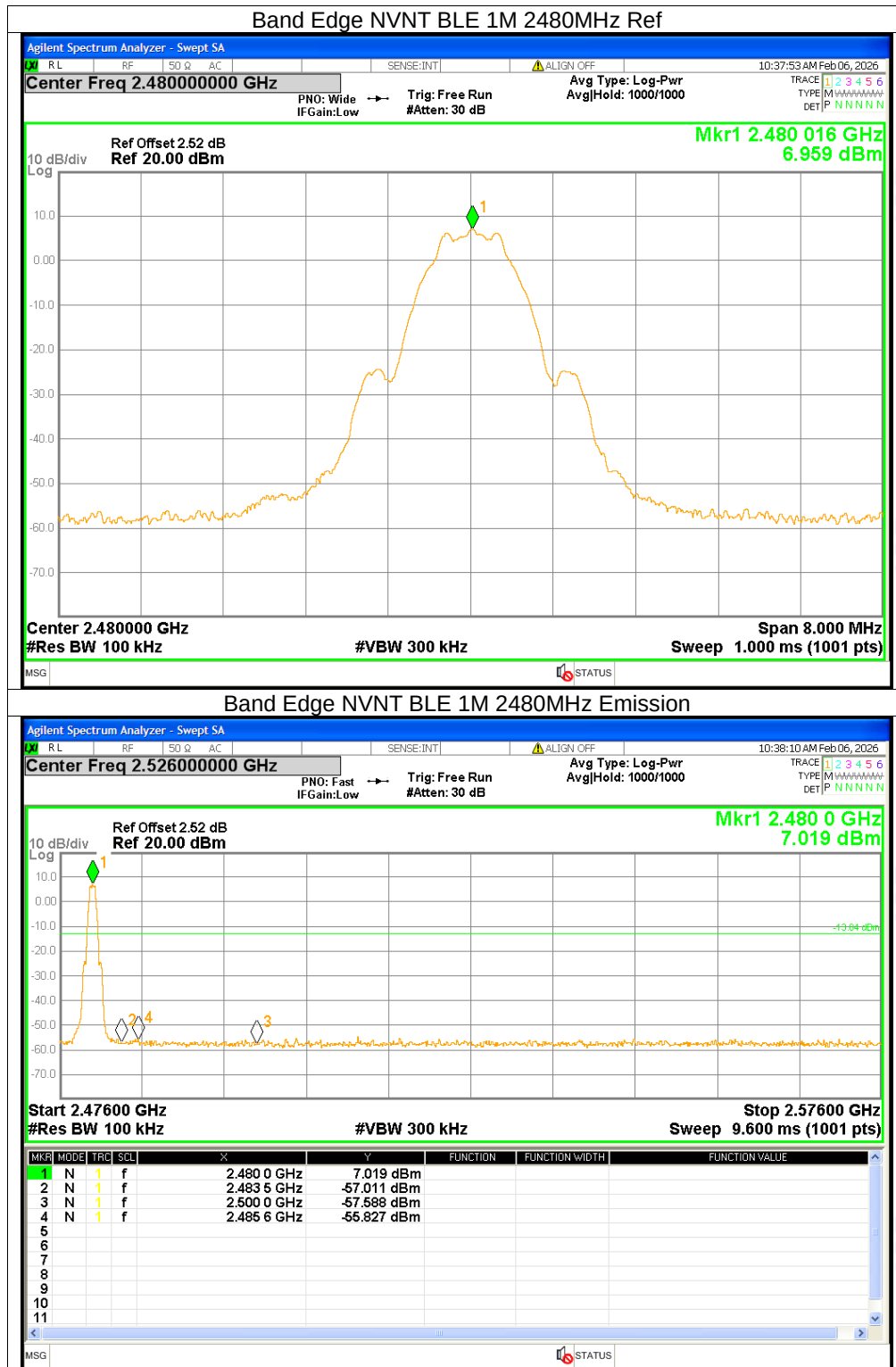


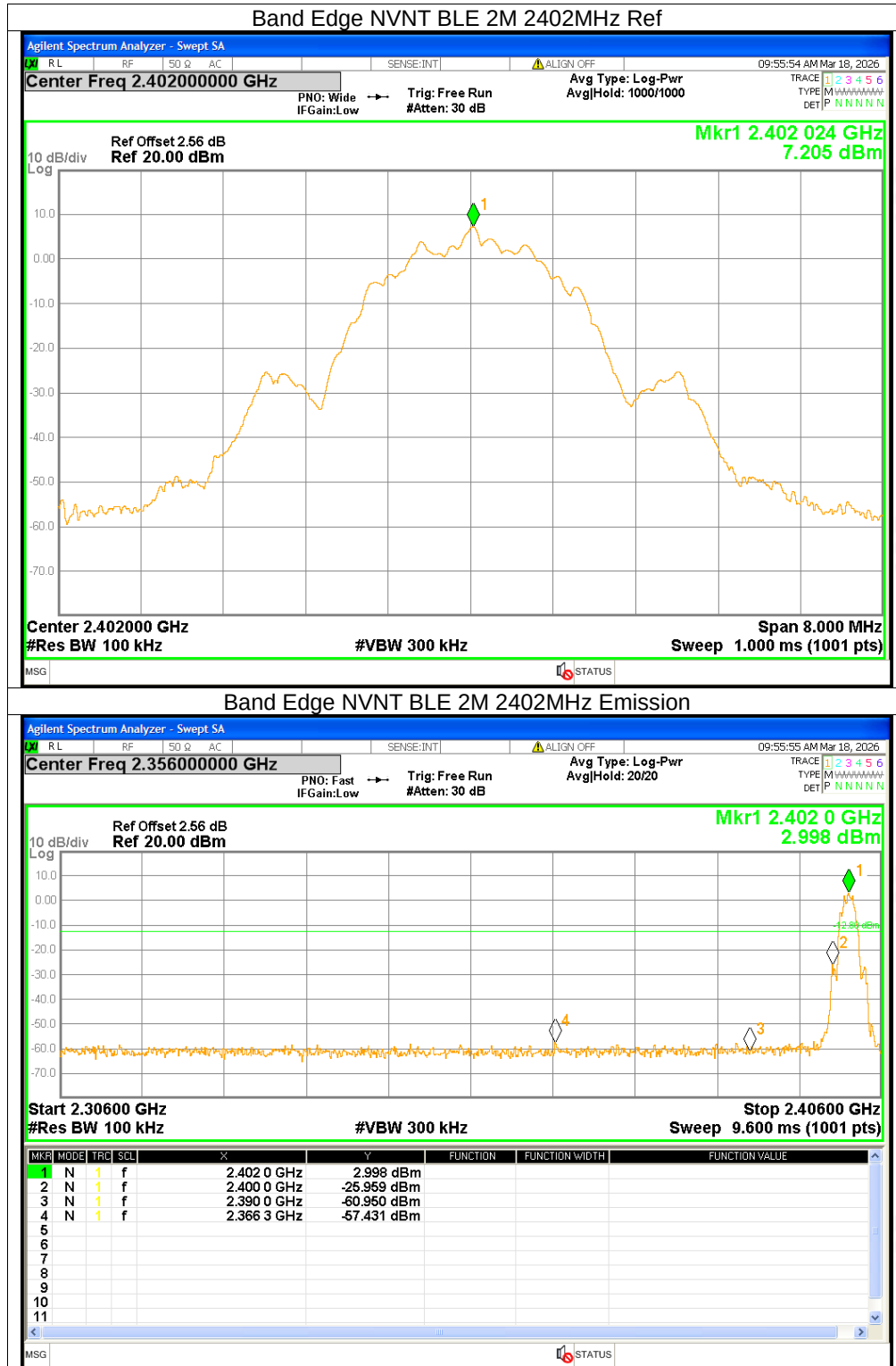


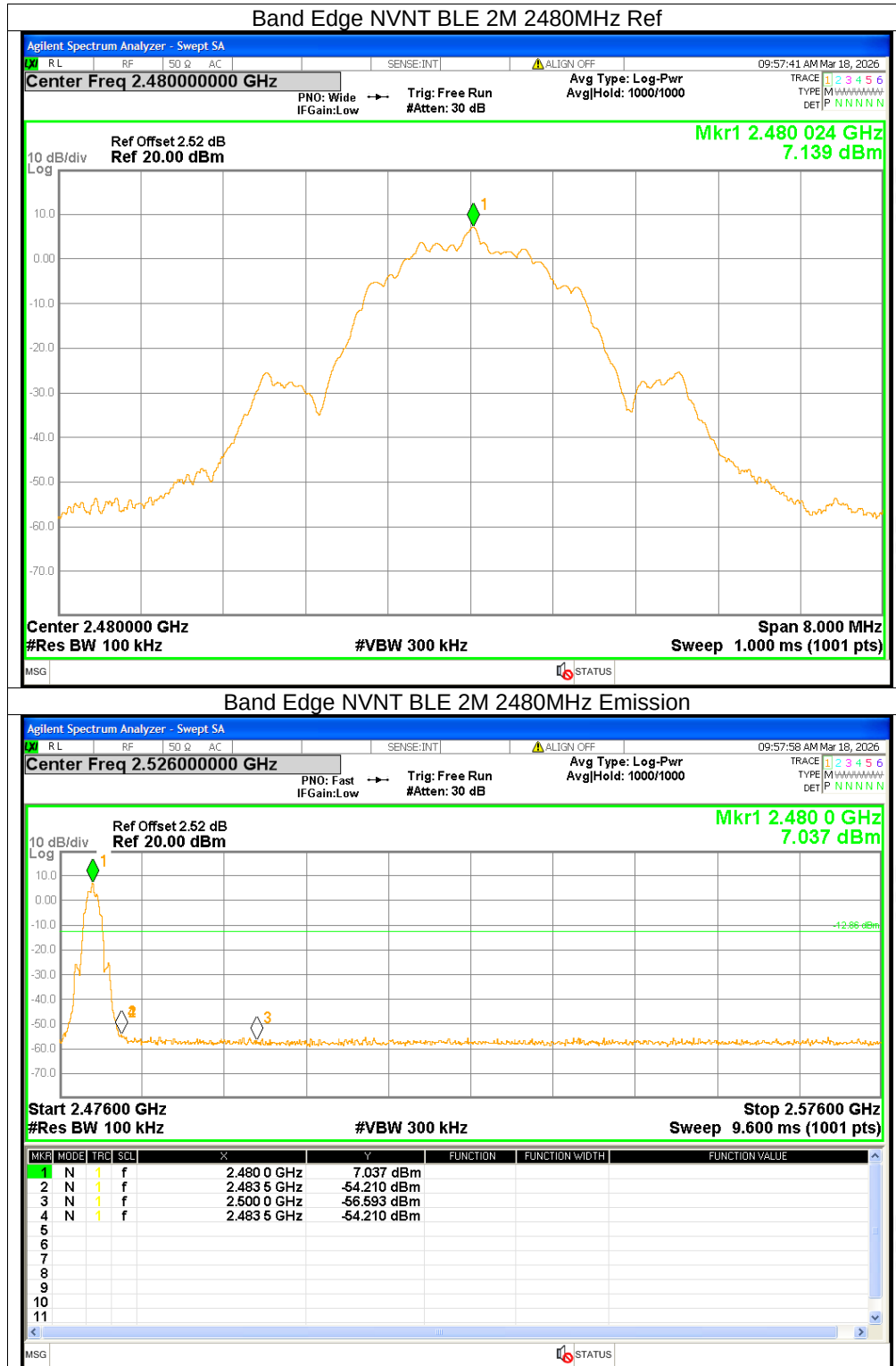
Band Edge

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-63.14	≤ -20	Pass
NVNT	BLE 1M	2480	-62.78	≤ -20	Pass
NVNT	BLE 2M	2402	-64.64	≤ -20	Pass
NVNT	BLE 2M	2480	-61.35	≤ -20	Pass





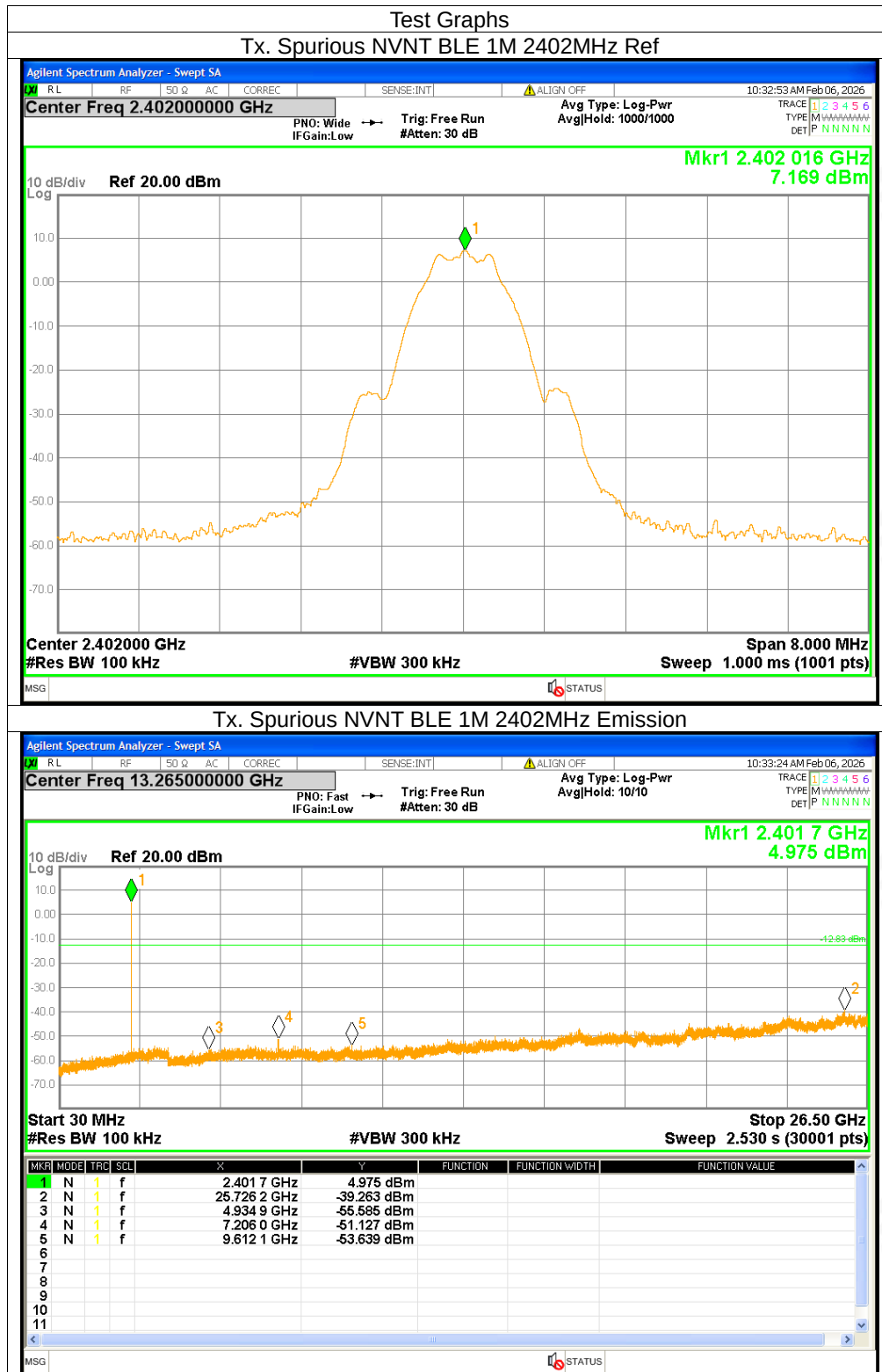


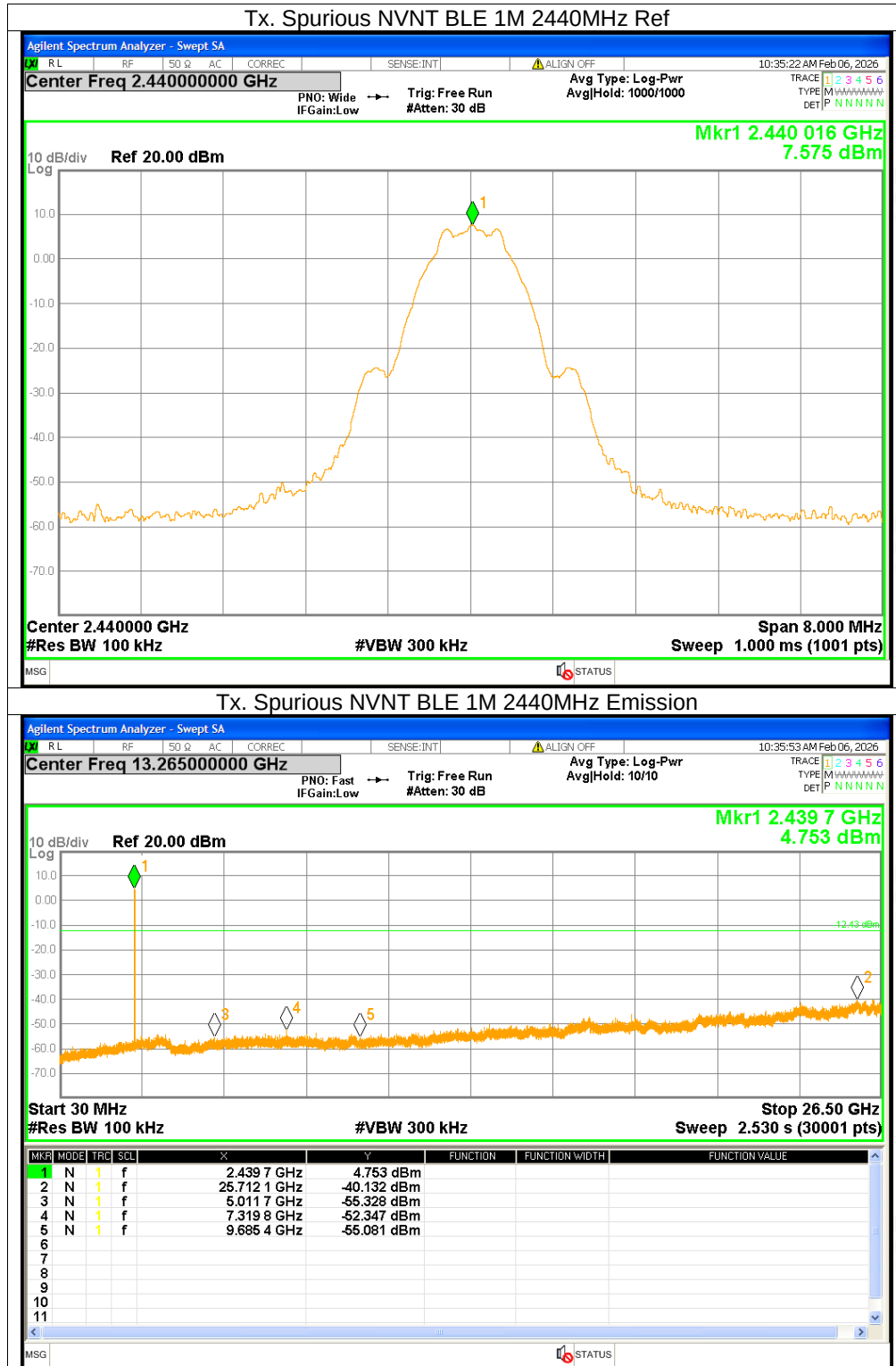


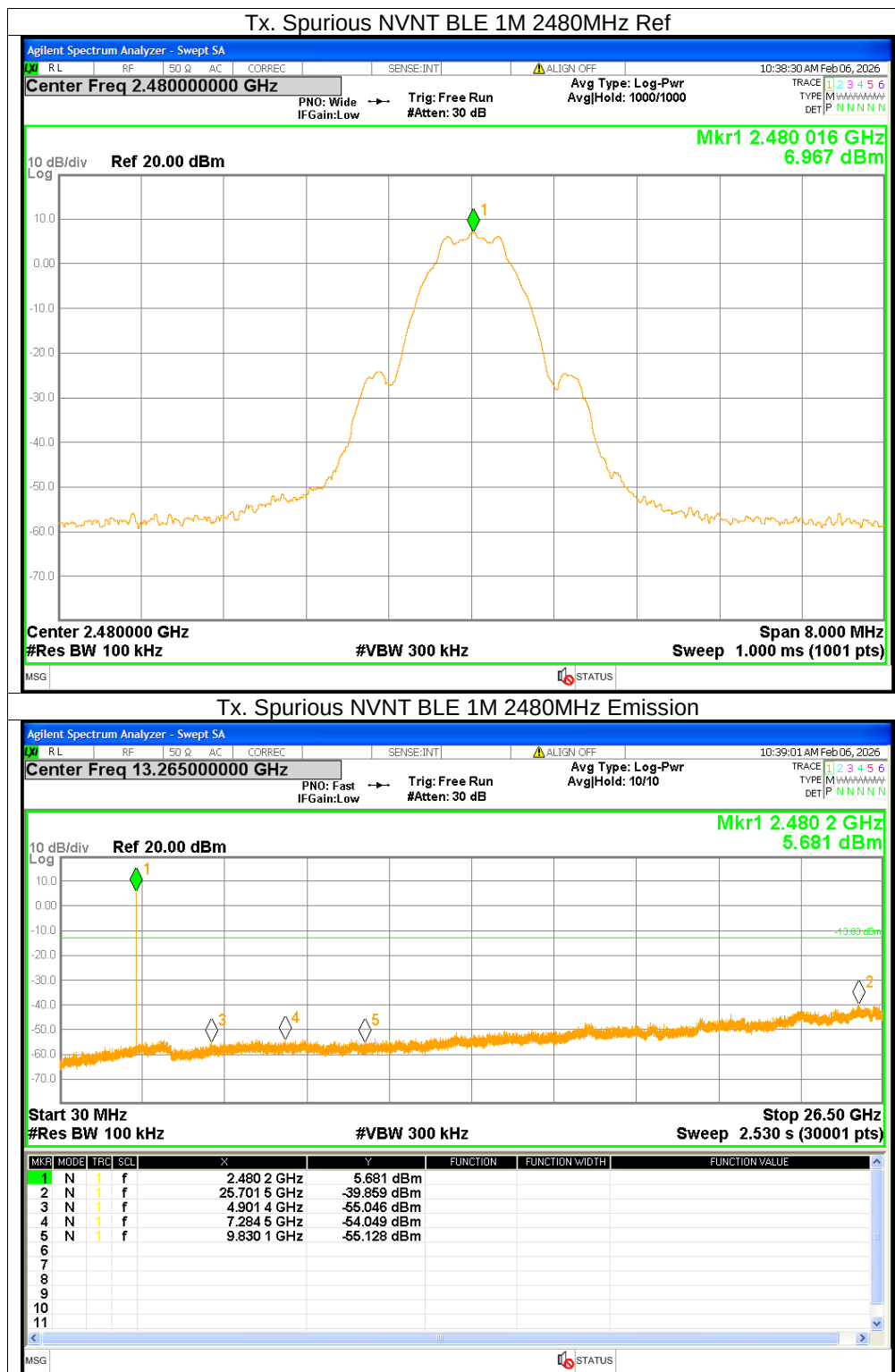


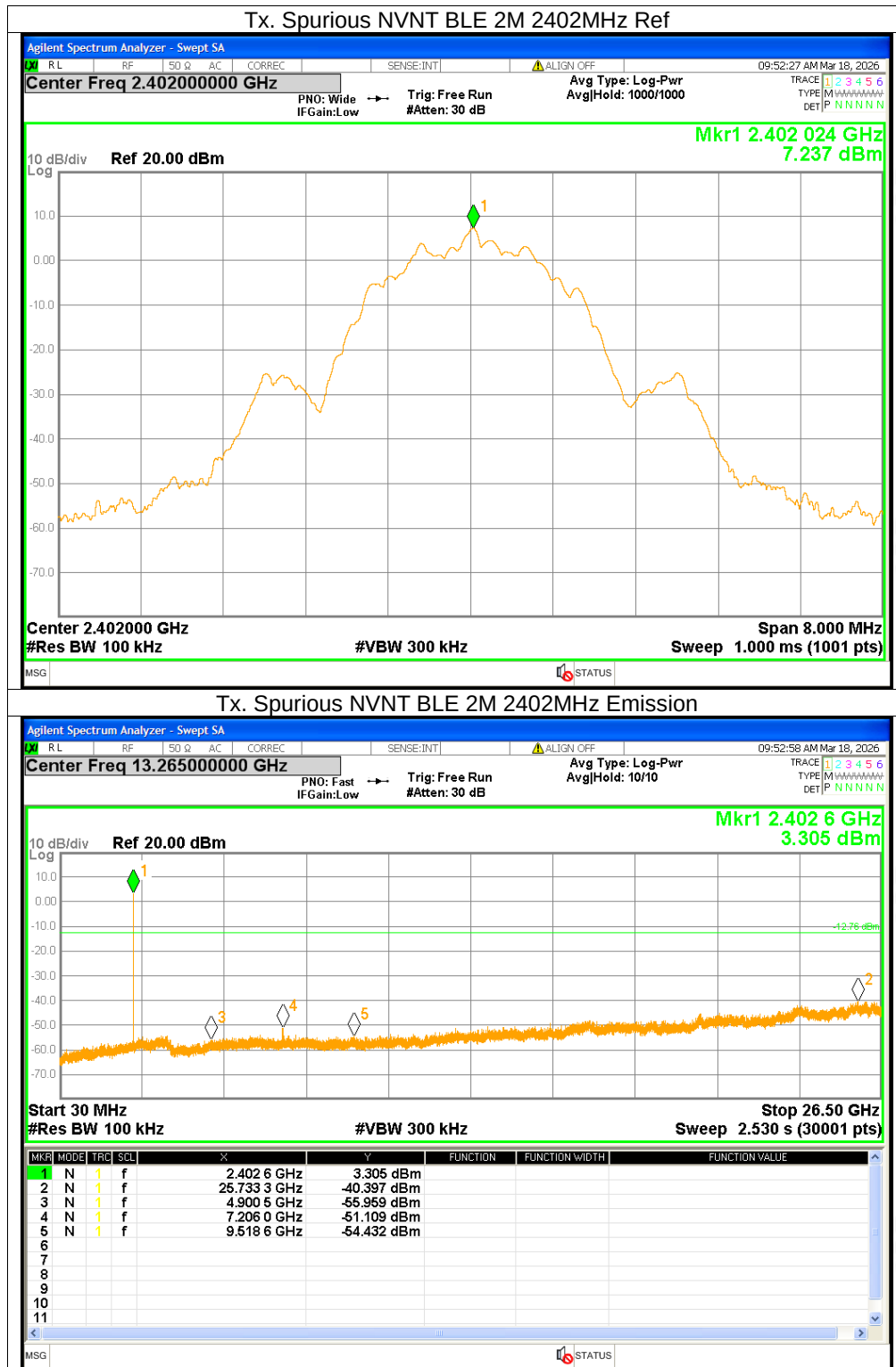
Conducted RF Spurious Emission

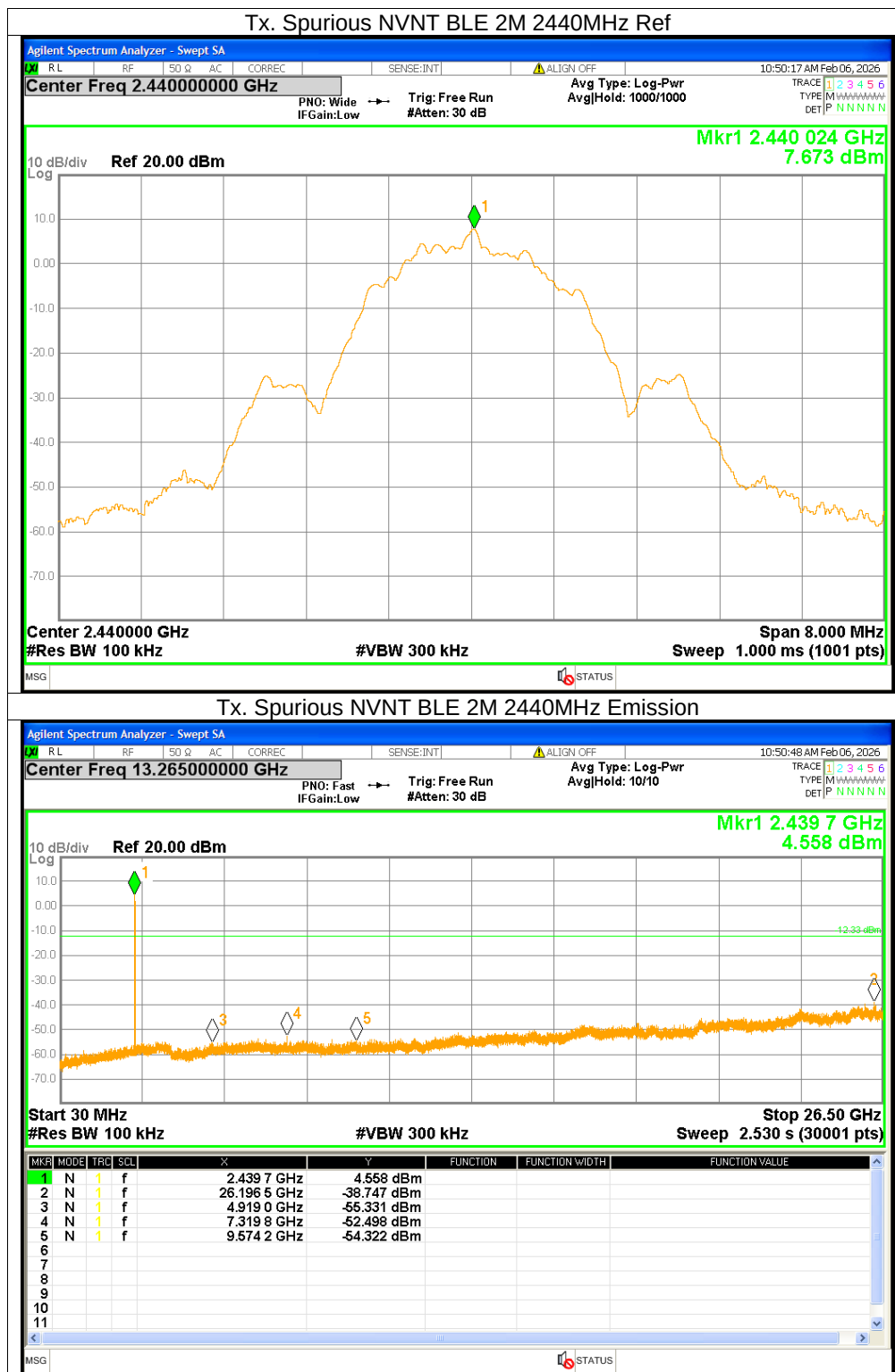
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-46.43	<=-20	Pass
NVNT	BLE 1M	2440	-47.71	<=-20	Pass
NVNT	BLE 1M	2480	-46.82	<=-20	Pass
NVNT	BLE 2M	2402	-47.63	<=-20	Pass
NVNT	BLE 2M	2440	-46.41	<=-20	Pass
NVNT	BLE 2M	2480	-47.69	<=-20	Pass

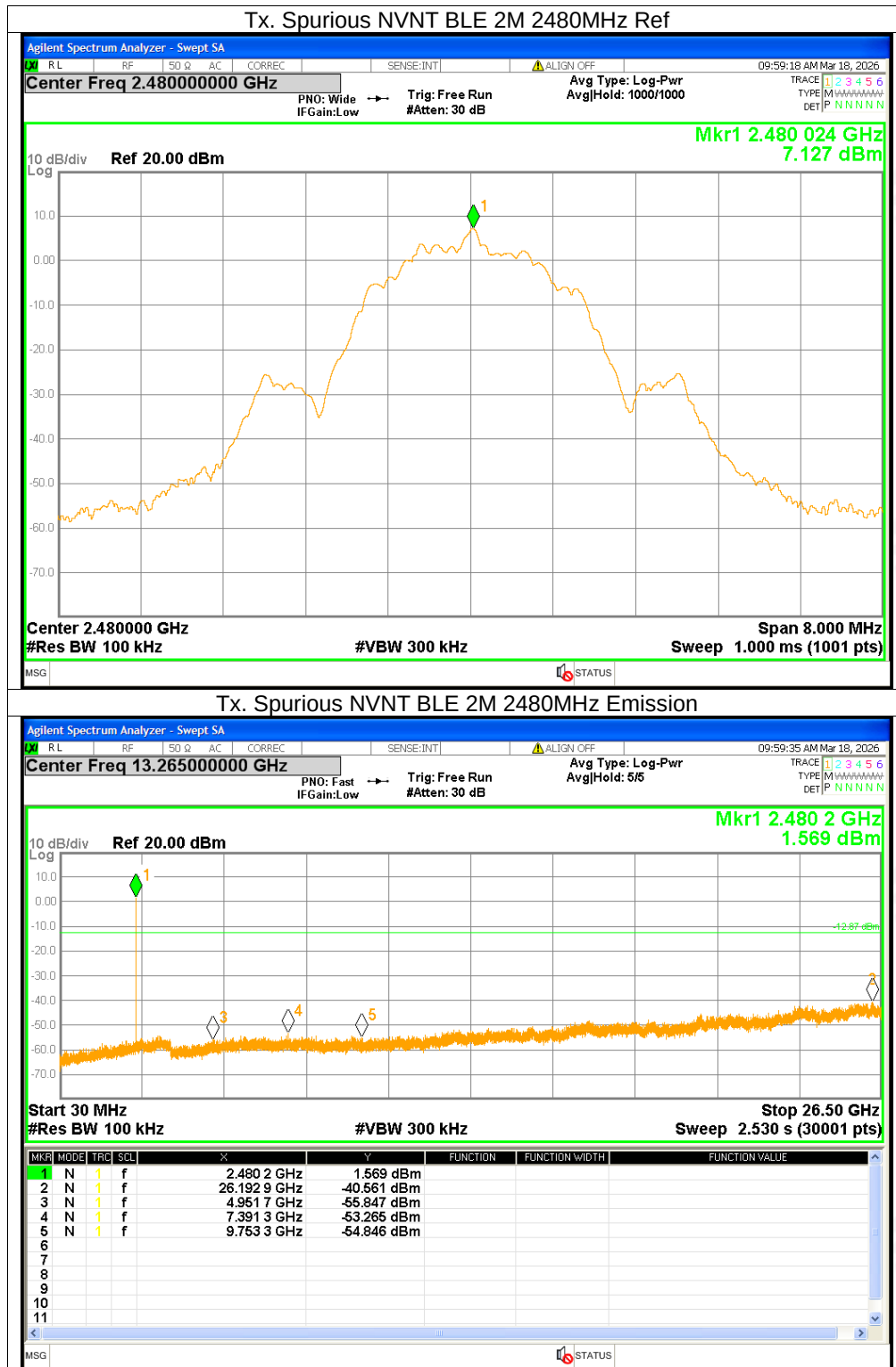














APPENDIX 2- EUT TEST PHOTO

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

*****END OF THE REPORT*****