

FCC Radio Test Report

FCC ID: 2AX6X-M1

Original Grant

Report No. : TB-FCC177434
Applicant : Simpnic co., Ltd.
Equipment Under Test (EUT)
EUT Name : Miu Keeper
Model No. : M1
Series Model No. : N/A
Sample ID : 20200928-20-1_02
Brand Name : SIMPNIc
Receipt Date : 2020-11-24
Test Date : 2020-11-25 to 2020-12-25
Issue Date : 2020-12-26
Standards : FCC Part 15, Subpart C 15.247
Test Method : ANSI C63.10: 2013
Conclusions : **PASS**

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC requirements

Test/Witness Engineer : Rebecca Rebecca

Engineer Supervisor : Ivan Su Ivan Su

Engineer Manager : Ray Lai Ray Lai



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

Contents

CONTENTS.....	2
1. GENERAL INFORMATION ABOUT EUT	5
1.1 Client Information.....	5
1.2 General Description of EUT (Equipment Under Test)	5
1.3 Block Diagram Showing the Configuration of System Tested.....	7
1.4 Description of Support Units	7
1.5 Description of Test Mode.....	8
1.6 Description of Test Software Setting	9
1.7 Measurement Uncertainty	10
1.8 Test Facility.....	10
2. TEST SUMMARY.....	11
3. TEST SOFTWARE.....	11
4. TEST EQUIPMENT.....	12
5. CONDUCTED EMISSION TEST	13
5.1 Test Standard and Limit.....	13
5.2 Test Setup.....	13
5.3 Test Procedure.....	14
5.4 Deviation From Test Standard.....	14
5.5 EUT Operating Mode	14
5.6 Test Data.....	14
6. RADIATED EMISSION TEST	15
6.1 Test Standard and Limit.....	15
6.2 Test Setup.....	16
6.3 Test Procedure.....	17
6.4 Deviation From Test Standard.....	18
6.5 EUT Operating Condition	18
6.6 Test Data.....	18
7. RESTRICTED BANDS REQUIREMENT	19
7.1 Test Standard and Limit.....	19
7.2 Test Setup.....	19
7.3 Test Procedure.....	20
7.4 Deviation From Test Standard.....	20
7.5 EUT Operating Condition	20
7.6 Test Data.....	20
8. BANDWIDTH TEST.....	21
8.1 Test Standard and Limit.....	21
8.2 Test Setup.....	21
8.3 Test Procedure.....	21
8.4 Deviation From Test Standard.....	21

8.5 EUT Operating Condition	21
8.6 Test Data.....	21
9. PEAK OUTPUT POWER TEST.....	22
9.1 Test Standard and Limit.....	22
9.2 Test Setup.....	22
9.3 Test Procedure.....	22
9.4 Deviation From Test Standard.....	22
9.5 EUT Operating Condition	22
9.6 Test Data.....	22
10. POWER SPECTRAL DENSITY TEST	23
10.1 Test Standard and Limit	23
10.2 Test Setup.....	23
10.3 Test Procedure.....	23
10.4 Deviation From Test Standard.....	23
10.5 EUT Operating Condition	23
10.6 Test Data.....	23
11. ANTENNA REQUIREMENT.....	24
11.1 Standard Requirement.....	24
11.2 Deviation From Test Standard.....	24
11.3 Antenna Connected Construction	24
ATTACHMENT A-- CONDUCTED EMISSION TEST DATA	25
ATTACHMENT B-- RADIATED EMISSION TEST DATA	27
ATTACHMENT C-- RESTRICTED BANDS REQUIREMENT AND BAND-EDGE TEST DATA	53
ATTACHMENT D-- BANDWIDTH TEST DATA.....	77
ATTACHMENT E-- PEAK OUTPUT POWER TEST DATA.....	93
ATTACHMENT F-- POWER SPECTRAL DENSITY TEST DATA.....	97

Revision History

Report No.	Version	Description	Issued Date
TB-FCC177434	Rev.01	Initial issue of report	2020-12-26

1. General Information about EUT

1.1 Client Information

Applicant	:	Simpnic co., Ltd.
Address	:	16F-6, No. 79, Sec 1, Xintai 5th Rd, Xizhi Dist.,New Taipei City, Taiwan
Manufacturer	:	Suzhou WINTECH Electronics Technology Co., Ltd
Address	:	Building 1, No. 2639, tianedang Road, Wuzhong District, Suzhou City, Jiangsu Province, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Miu Keeper
Models No.	:	M1
Model Different	:	N/A
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels see note(3) 802.11n(HT40): 7 channels see note(3)
	RF Output Power:	802.11b:13.57dBm 802.11g: 23.43dBm 802.11n (HT20): 24.00dBm 802.11n (HT40): 23.27dBm
	Antenna Gain:	Please see Note(4)
	Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n:OFDM(BPSK,QPSK,16QAM,64QAM)
	Bit Rate of Transmitter:	802.11b:11/5.5/2/1Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps
Power Rating	:	AC/DC Adapter(Model: A18A-050100U-US2): Input: AC 100-240V, 50/60Hz 0.2A Max Output: DC 5V, 1A
Software Version	:	B04
Hardware Version	:	M1-B04

Note:

- (1) This Test Report is FCC Part 15.247 for 802.11b/g/n, the test procedure follows the FCC KDB 558074 D01 v05r02 and KDB 662911 D01 Multiple Transmitter Output v02r01.
- (2) For a more detailed features description, please refer to the User's Manual.

(3) Channel List:

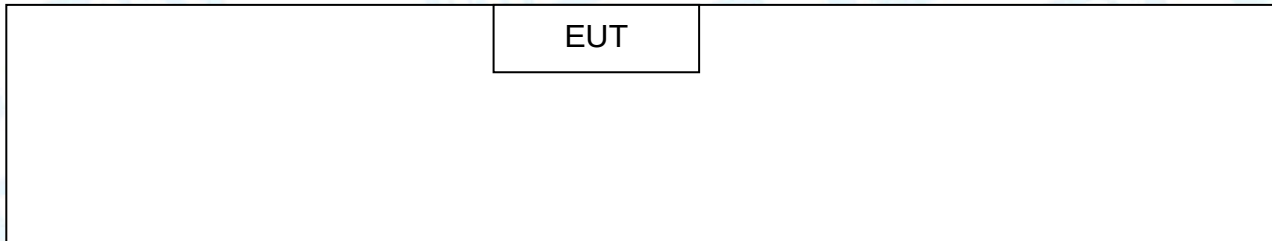
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		
Note: CH 01~CH 11 for 802.11b/g/n(HT20) CH 03~CH 09 for 802.11n(HT40)					

(4) Antenna information

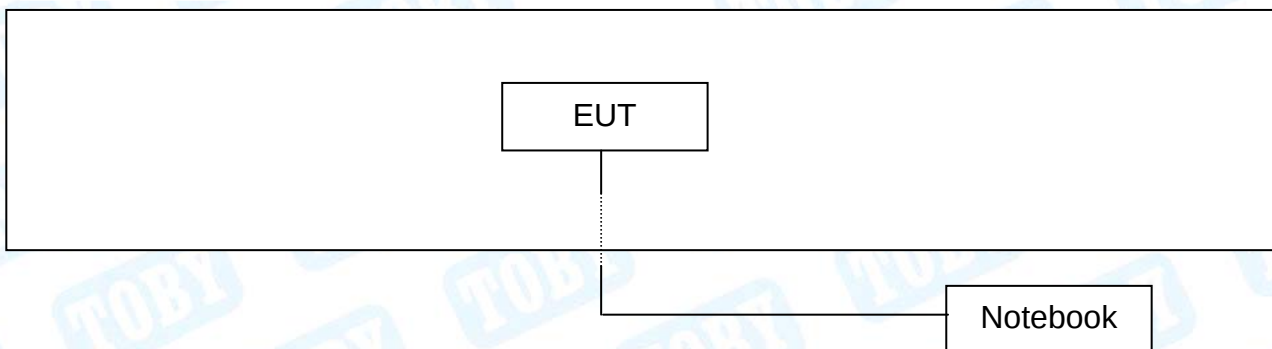
Mode		TX Antenna (s)	Remark	
802.11b		1	The worst case is ANT. A	
802.11g		2	ANT. A+ ANT. B	
802.11n(HT20)		2	ANT. A+ ANT. B	
802.11n(HT40)		2	ANT. A+ ANT. B	
Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
ANT. A	N/A	N/A	FPC	3.68
ANT. B	N/A	N/A	FPC	3.68
Note:				
For MIMO mode: Directional Gain=ANT. Gain+10*LOG(NANT) =6.69dBi				
2.4G working with 802.11g/n(HT20)/n(HT40) has MIMO mode.				

1.3 Block Diagram Showing the Configuration of System Tested

Conducted Test



Radiated Test



1.4 Description of Support Units

Name	Model	S/N	Manufacturer	Used “√”
Notebook	Inspiron 5493	----	Dell	√

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Test	
Final Test Mode	Description
Mode 1	Charging with TX B Mode
For Radiated and RF Conducted Test	
Final Test Mode	Description
Mode 2	TX Mode B Mode Channel 01/06/11
Mode 3	TX Mode G Mode Channel 01/06/11
Mode 4	TX Mode N(HT20) Mode Channel 01/06/11
Mode 5	TX Mode N(HT40) Mode Channel 03/06/09
Note : The antenna gain and Adapter provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

Note:

- (1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.
According to ANSI C63.10 standards, the measurements are performed at the highest, Middle, lowest available channels, and the worst case data rate as follows:
 802.11b Mode: CCK (1 Mbps)
 802.11g Mode: OFDM (6 Mbps)
 802.11n (HT20) Mode: MCS 0 (54 Mbps)
 802.11n (HT40) Mode: MCS 0 (54 Mbps)
- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a Mobile device; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel & Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN.

Test Software: MP_Tool				
Test Mode: Continuously transmitting				
Mode	Data Rate	Channel	Parameters	
			ANT. A	ANT. B
802.11b	CCK/ 1Mbps	01	0	0
	CCK/ 1Mbps	06	0	0
	CCK/ 1Mbps	11	0	0
			Parameters	
			ANT. A	ANT. B
802.11g	OFDM/ 6Mbps	01	24	25
	OFDM/ 6Mbps	06	25	27
	OFDM/ 6Mbps	11	28	28
802.11n(HT20)	MCS 0	01	24	25
	MCS 0	06	25	27
	MCS 0	11	28	28
802.11n(HT40)	MCS 0	03	24	25
	MCS 0	06	25	27
	MCS 0	09	28	28
Note: The report only showed the worst case.				

1.7 Measurement Uncertainty

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

Test Item	Parameters	Expanded Uncertainty (U_{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	± 3.50 dB ± 3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	± 4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	± 4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	± 4.20 dB

1.8 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at: 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.

At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A.

2. Test Summary

FCC Part 15 Subpart C(15.247)				
Standard Section FCC	Test Item	Test Sample(s)	Judgment	Remark
15.203	Antenna Requirement	20200928-20-1_02	PASS	N/A
15.207(a)	Conducted Emission	20200928-20-1_02	PASS	N/A
15.205&15.247(d)	Band-Edge & Unwanted Emissions into Restricted Frequency	20200928-20-1_02	PASS	N/A
15.247(a)(2)	6dB Bandwidth	20200928-20-1_02	PASS	N/A
15.247(b)(3)	Conducted Max Output Power	20200928-20-1_02	PASS	N/A
15.247(e)	Power Spectral Density	20200928-20-1_02	PASS	N/A
15.205, 15.209&15.247(d)	Transmitter Radiated Spurious & Unwanted Emissions into Restricted Frequency	20200928-20-1_02	PASS	N/A
Note: N/A is an abbreviation for Not Applicable.				

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
RF Conducted Measurement	MTS-8310	MWRFTtest	V2.0.0.0

4. Test Equipment

Conducted Emission Test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 06, 2020	Jul. 05, 2021
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 06, 2020	Jul. 05, 2021
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 06, 2020	Jul. 05, 2021
LISN	Rohde & Schwarz	ENV216	101131	Jul. 06, 2020	Jul. 05, 2021
Radiation Emission Test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jul. 06, 2020	Jul. 05, 2021
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	BBHA 9170	BBHA9170582	Mar.01, 2020	Feb. 28, 2021
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 07, 2020	Jul. 06, 2021
Pre-amplifier	Sonoma	310N	185903	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	HP	8449B	3008A00849	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	SKET	LNPA_1840G-50	SK201904032	Jul. 06, 2020	Jul. 05, 2021
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.07, 2020	Mar. 06, 2021
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 06, 2020	Jul. 05, 2021
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 11, 2020	Sep. 10, 2021
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 11, 2020	Sep. 10, 2021
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 11, 2020	Sep. 10, 2021
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep. 11, 2020	Sep. 10, 2021

5.3 Test Procedure

- (1) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- (2) 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.
- (3) 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.
- (4) LISN at least 80 cm from nearest part of EUT chassis.
- (5) The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

5.4 Deviation From Test Standard

No deviation

5.5 EUT Operating Mode

Please refer to the description of test mode.

5.6 Test Data

Please refer to the Attachment A.

6. Radiated Emission Test

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC Part 15.209

6.1.2 Test Limit

Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz)	Field Strength (microvolt/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

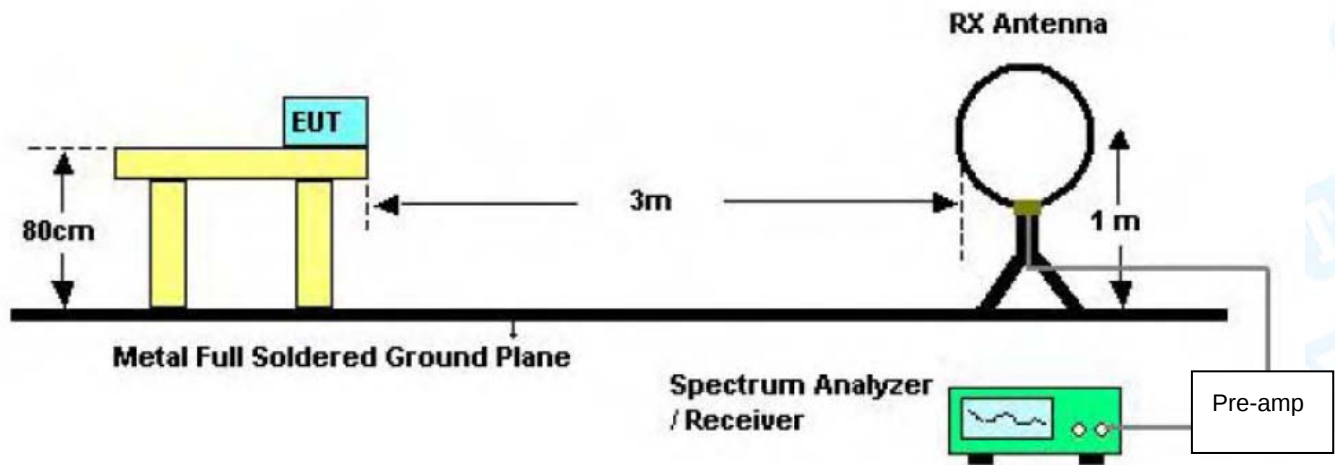
Radiated Emission Limit (Above 1000MHz)

Frequency (MHz)	Distance of 3m (dBuV/m)	
	Peak	Average
Above 1000	74	54

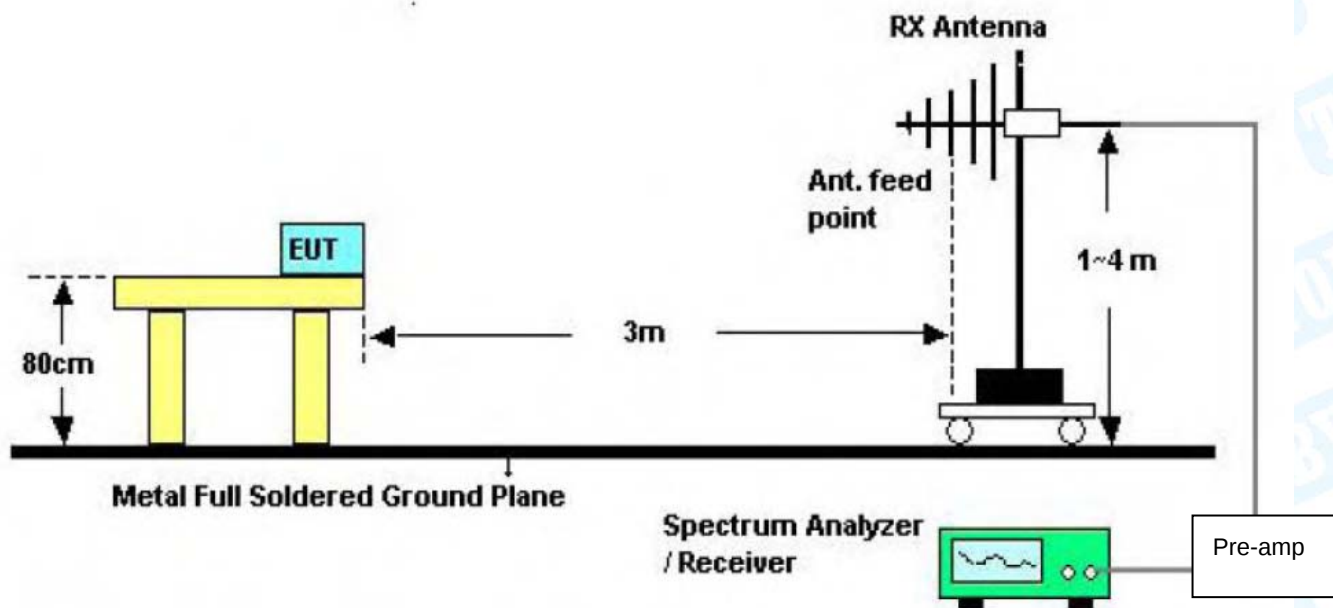
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

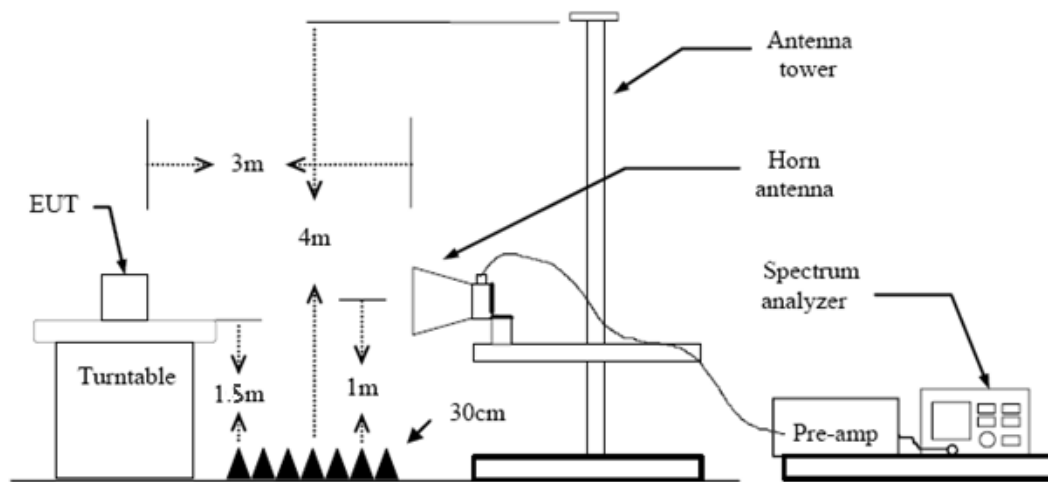
6.2 Test Setup



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

6.3 Test Procedure

- (1) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency Below 1GHz. The EUT was placed on a rotating 0.8m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.6 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

Please refer to the Attachment B.

7. Restricted Bands Requirement

7.1 Test Standard and Limit

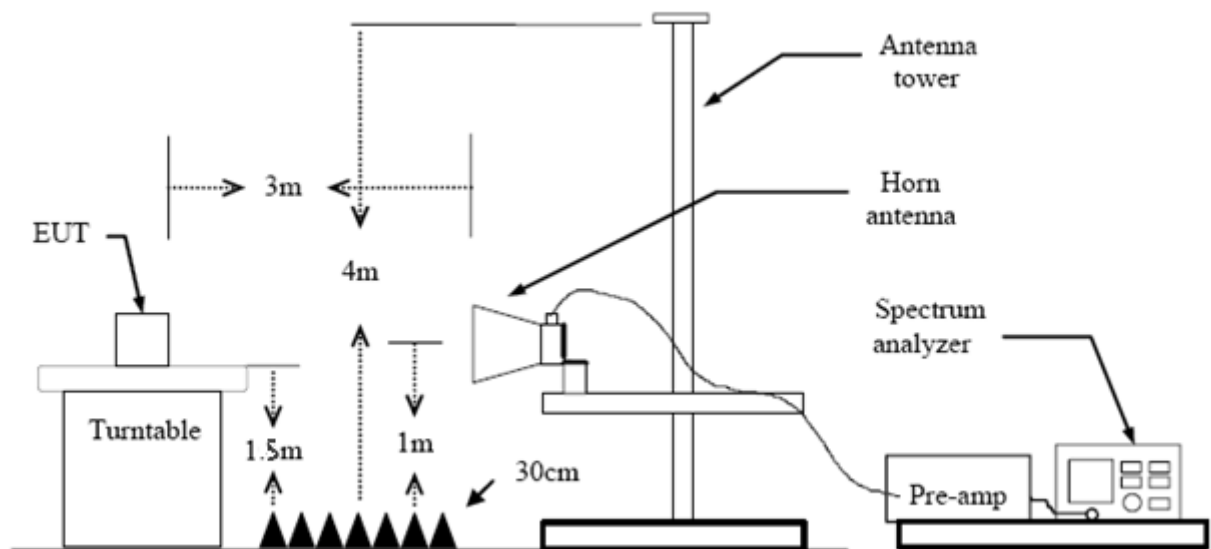
7.1.1 Test Standard

FCC Part 15.247(d)
FCC Part 15.209
FCC Part 15.205

7.1.2 Test Limit

Restricted Frequency Band (MHz)	Distance of 3m (dBuV/m)	
	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

7.2 Test Setup



7.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency Below 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

7.4 Deviation From Test Standard

No deviation

7.5 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

7.6 Test Data

Please refer to the Attachment C.

8. Bandwidth Test

8.1 Test Standard and Limit

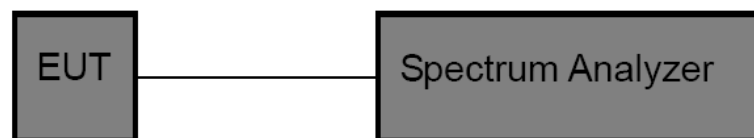
8.1.1 Test Standard

FCC Part 15.247 (a)(2)

8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)		
Test Item	Limit	Frequency Range(MHz)
Bandwidth	≥ 500 KHz (6dB bandwidth)	2400~2483.5

8.2 Test Setup



8.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
- (3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

8.4 Deviation From Test Standard

No deviation

8.5 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

8.6 Test Data

Please refer to the Attachment D.

9. Peak Output Power Test

9.1 Test Standard and Limit

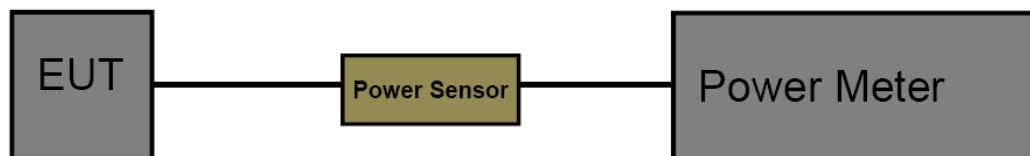
9.1.1 Test Standard

FCC Part 15.247 (b)

9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)		
Test Item	Limit	Frequency Range(MHz)
Peak Output Power	1 Watt or 30 dBm	2400~2483.5

9.2 Test Setup



9.3 Test Procedure

The measurement is according to section 9.1.2 of KDB 558074 D01 v05r02.

The EUT was connected to RF power meter via a broadband power sensor as show the block above. The power sensor video bandwidth is greater than or equal to the DTS bandwidth of the equipment.

9.4 Deviation From Test Standard

No deviation

9.5 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

9.6 Test Data

Please refer to the Attachment E.

10. Power Spectral Density Test

10.1 Test Standard and Limit

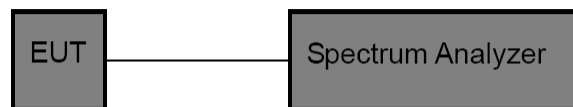
10.1.1 Test Standard

FCC Part 15.247 (e)

10.1.2 Test Limit

FCC Part 15 Subpart C(15.247)		
Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

10.2 Test Setup



10.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 D01 v05r02.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser centre frequency to DTS channel centre frequency.
- (3) Set the span to 1.5 times the DTS bandwidth.
- (4) Set the RBW to: 3 kHz
- (5) Set the VBW to: 10 kHz
- (6) Detector: peak
- (7) Sweep time: auto
- (8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

10.4 Deviation From Test Standard

No deviation

10.5 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

10.6 Test Data

Please refer to the Attachment F.

11. Antenna Requirement

11.1 Standard Requirement

11.1.1 Standard

FCC Part 15.203

11.1.2 Requirement

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.

11.2 Deviation From Test Standard

No deviation

11.3 Antenna Connected Construction

The gains of the antenna used for transmitting is 3.68dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

Result

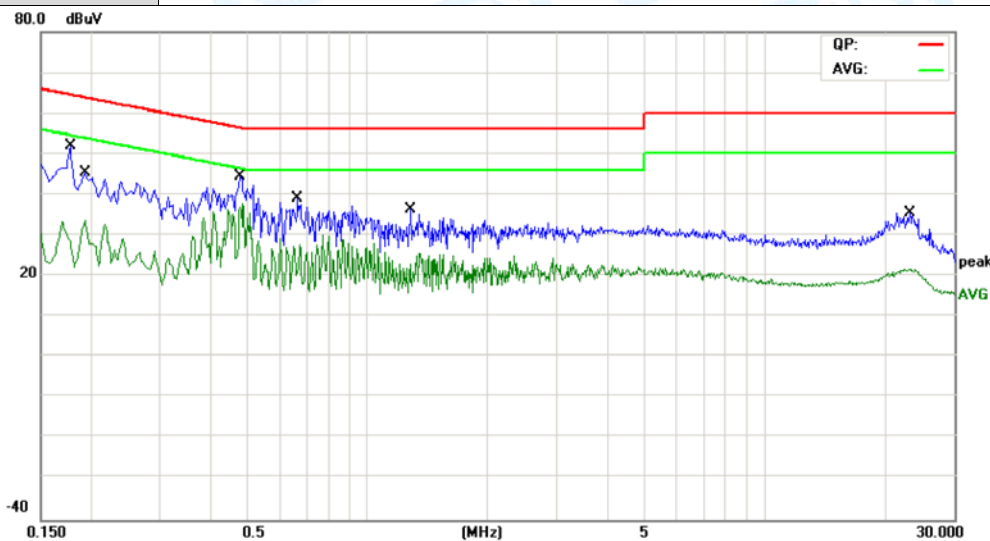
The EUT antenna is a FPC Antenna. It complies with the standard requirement.

Antenna Type
☐ Permanent attached antenna
☒ Unique connector antenna
☐ Professional installation antenna

Attachment A-- Conducted Emission Test Data

Remark: All channels have been tested and Shows only the worst channels.

Temperature:	24.0°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Terminal:	Line		
Test Mode:	Mode 1		
Remark:	Only worst case is reported		



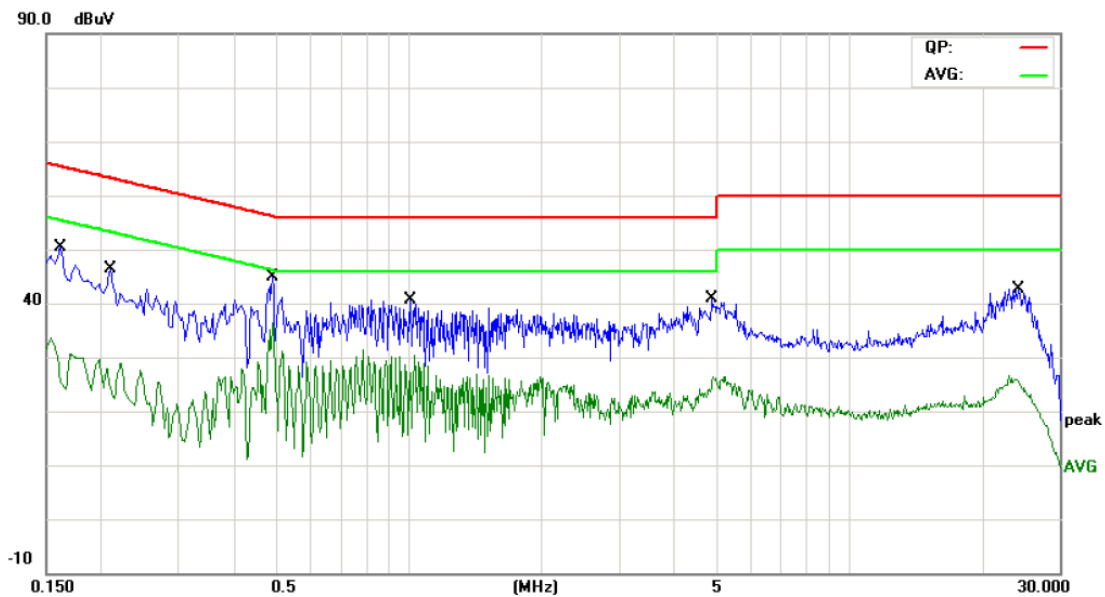
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1780	32.41	9.80	42.21	64.57	-22.36	QP
2		0.1780	16.81	9.80	26.61	54.57	-27.96	AVG
3		0.1945	31.90	9.80	41.70	63.84	-22.14	QP
4		0.1945	20.24	9.80	30.04	53.84	-23.80	AVG
5		0.4780	31.22	9.80	41.02	56.37	-15.35	QP
6	*	0.4780	27.36	9.80	37.16	46.37	-9.21	AVG
7		0.6660	20.33	9.80	30.13	56.00	-25.87	QP
8		0.6660	9.62	9.80	19.42	46.00	-26.58	AVG
9		1.2860	17.17	9.80	26.97	56.00	-29.03	QP
10		1.2860	9.00	9.80	18.80	46.00	-27.20	AVG
11		23.2060	15.56	10.08	25.64	60.00	-34.36	QP
12		23.2060	10.36	10.08	20.44	50.00	-29.56	AVG

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)

2. Margin (dB) = QuasiPeak/Average (dBuV) - Limit (dBuV)

Temperature:	24.0°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Terminal:	Neutral		
Test Mode:	Mode 1		
Remark:	Only worst case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1620	32.37	9.80	42.17	65.36	-23.19	QP
2		0.1620	11.63	9.80	21.43	55.36	-33.93	AVG
3		0.2100	28.64	9.80	38.44	63.20	-24.76	QP
4		0.2100	12.03	9.80	21.83	53.20	-31.37	AVG
5		0.4900	33.35	9.80	43.15	56.17	-13.02	QP
6	*	0.4900	24.08	9.80	33.88	46.17	-12.29	AVG
7		1.0100	23.51	9.80	33.31	56.00	-22.69	QP
8		1.0100	16.33	9.80	26.13	46.00	-19.87	AVG
9		4.8820	24.65	9.80	34.45	56.00	-21.55	QP
10		4.8820	13.05	9.80	22.85	46.00	-23.15	AVG
11		24.2020	22.08	10.10	32.18	60.00	-27.82	QP
12		24.2020	13.93	10.10	24.03	50.00	-25.97	AVG

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)

2. Margin (dB) = QuasiPeak/Average (dBuV) - Limit (dBuV)

Attachment B-- Radiated Emission Test Data

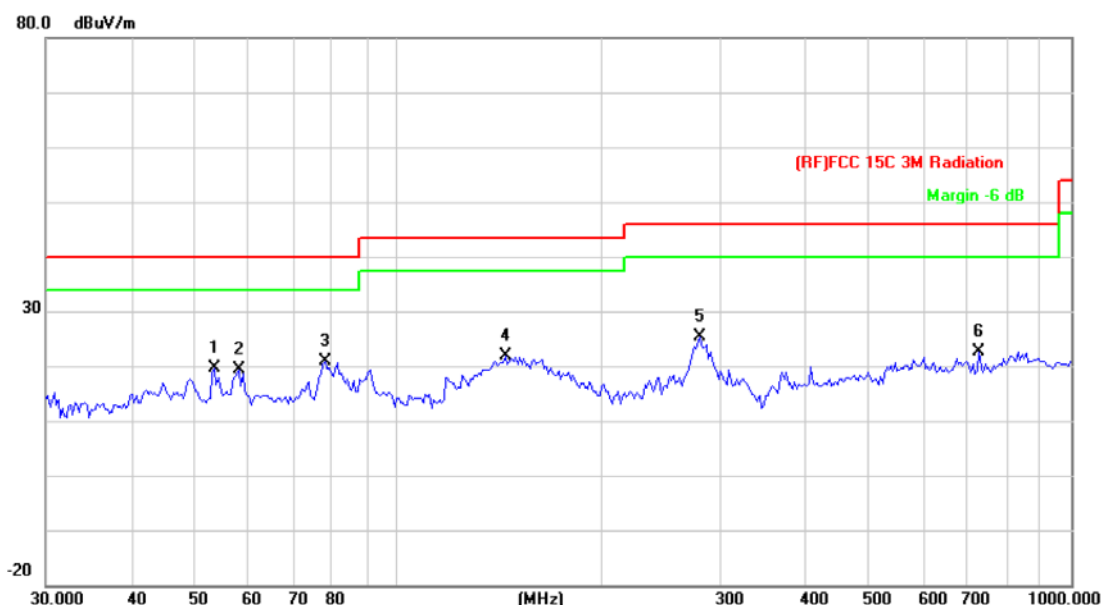
9KHz~150KHz

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

30MHz~1GHz

Temperature:	23.6℃	Relative Humidity:	45%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2412MHz		
Remark:	Only worst case is reported.		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		53.3179	43.10	-23.44	19.66	40.00	-20.34	peak
2		57.9992	43.41	-23.98	19.43	40.00	-20.57	peak
3	*	77.8653	43.59	-22.66	20.93	40.00	-19.07	peak
4		144.3348	43.91	-21.93	21.98	43.50	-21.52	peak
5		281.0074	42.02	-16.64	25.38	46.00	-20.62	peak
6		729.3582	29.40	-6.67	22.73	46.00	-23.27	peak

*:Maximum data x:Over limit !:over margin

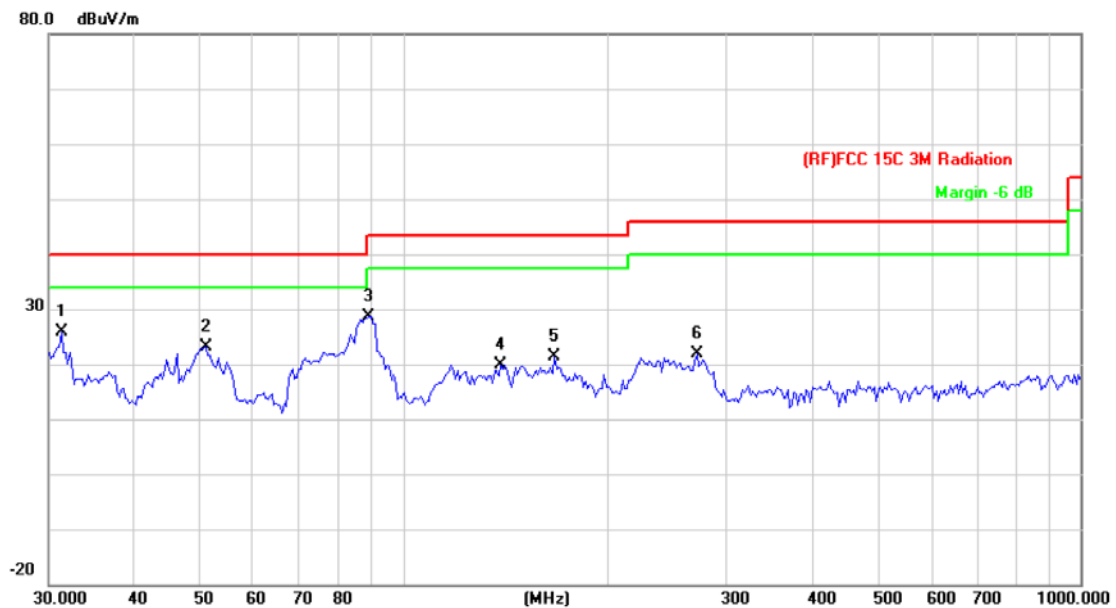
Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

Temperature:	23.6°C	Relative Humidity:	45%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHZ		
Remark:	Only worst case is reported.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	31.2893	39.88	-13.91	25.97	40.00	-14.03	peak
2		51.1208	46.28	-23.17	23.11	40.00	-16.89	peak
3		88.9637	50.57	-21.92	28.65	43.50	-14.85	peak
4		139.3610	42.23	-22.38	19.85	43.50	-23.65	peak
5		167.2366	41.98	-20.56	21.42	43.50	-22.08	peak
6		271.3245	38.64	-16.82	21.82	46.00	-24.18	peak

*:Maximum data x:Over limit !:over margin

Remark:

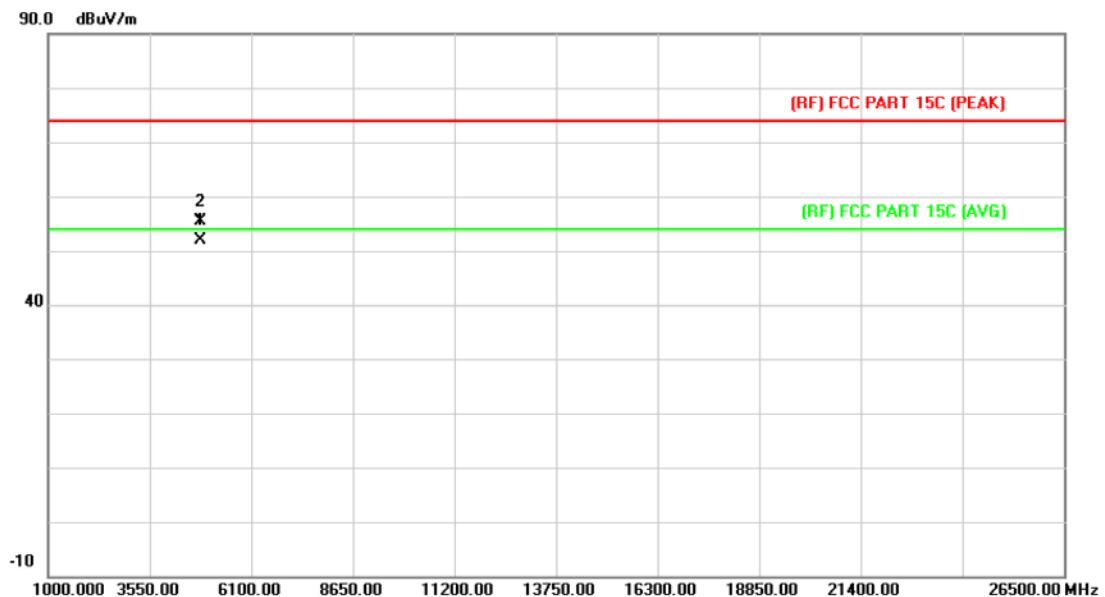
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

Above 1GHz

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2412MHz ANT. A		
Remark:	No report for the emission which more than 15dB below the prescribed limit. Only show the worst case ANT. A.		

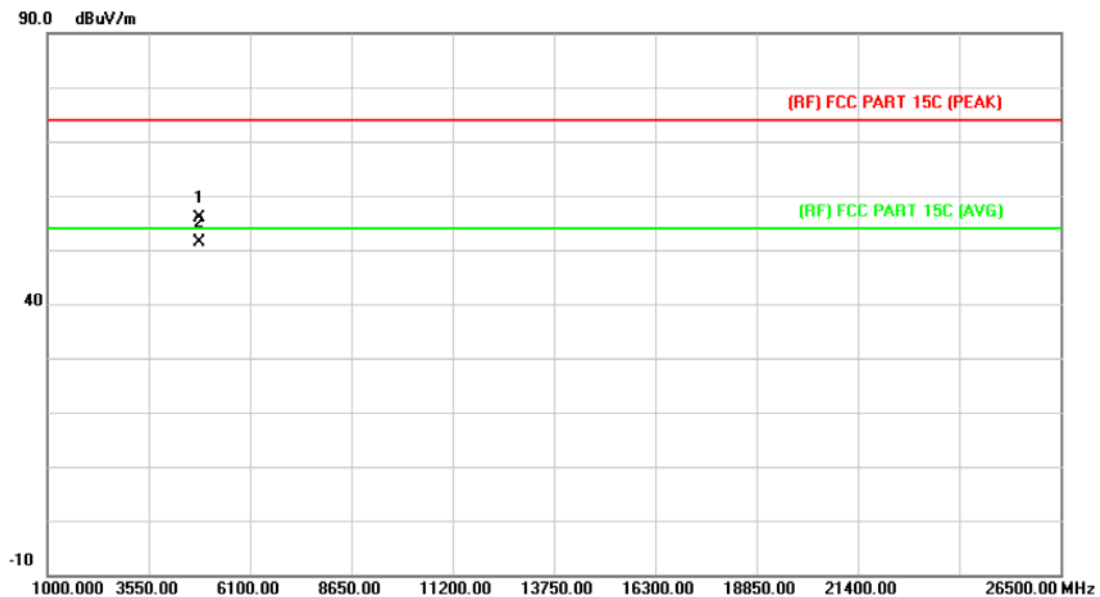


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4823.568	38.84	13.16	52.00	54.00	-2.00	AVG
2		4823.618	42.14	13.16	55.30	74.00	-18.70	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHz ANT. A		
Remark:	No report for the emission which more than 15dB below the prescribed limit. Only show the worst case ANT. A.		

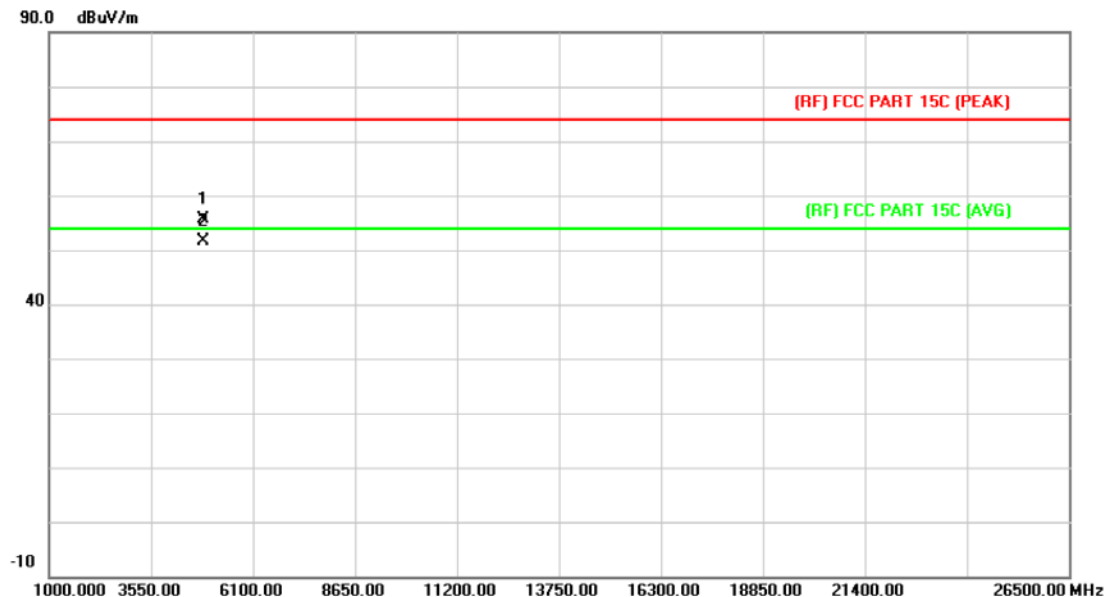


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4823.680	42.68	13.16	55.84	74.00	-18.16	peak
2	*	4823.984	38.16	13.16	51.32	54.00	-2.68	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2437MHz ANT. A		
Remark:	No report for the emission which more than 15dB below the prescribed limit. Only show the worst case ANT. A.		

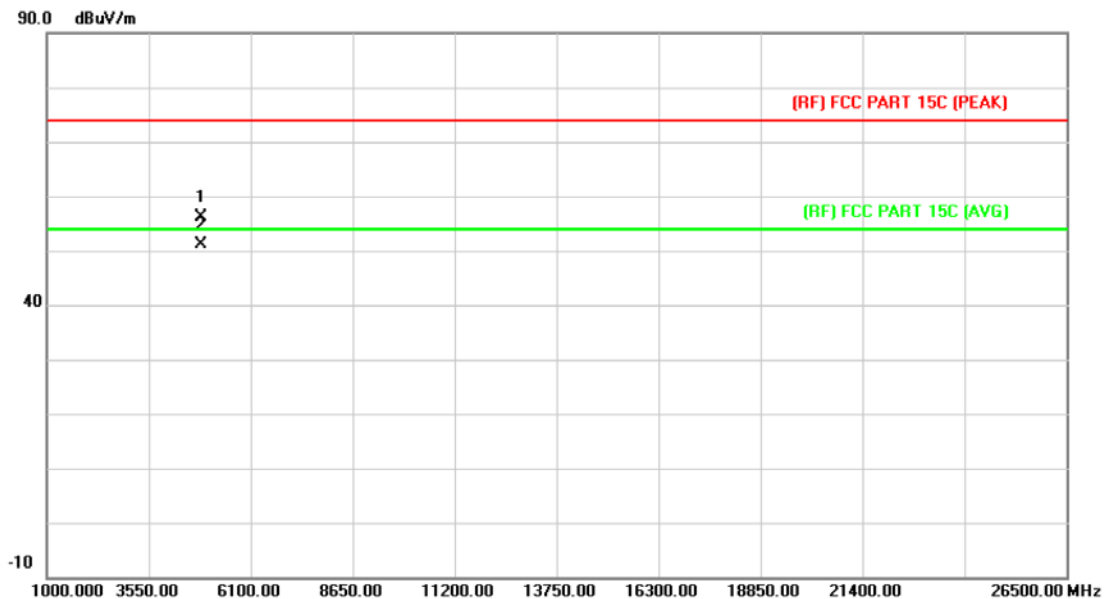


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4873.676	42.21	13.53	55.74	74.00	-18.26	peak
2	*	4874.438	38.03	13.53	51.56	54.00	-2.44	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2437MHz ANT. A		
Remark:	No report for the emission which more than 15dB below the prescribed limit. Only show the worst case ANT. A.		

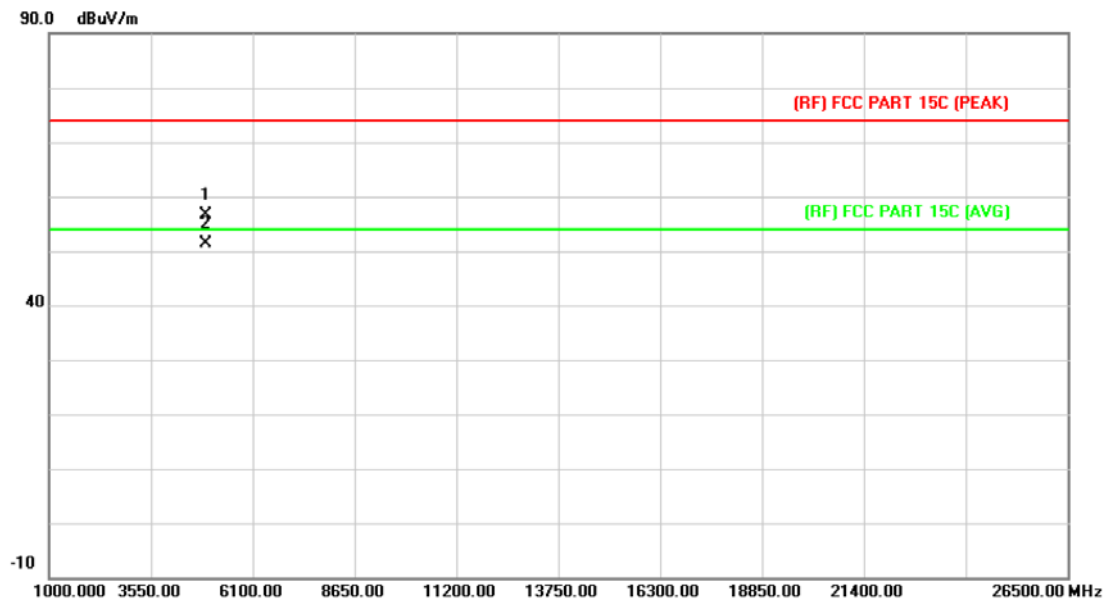


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.668	42.48	13.53	56.01	74.00	-17.99	peak
2	*	4873.892	37.68	13.53	51.21	54.00	-2.79	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2462MHz ANT. A		
Remark:	No report for the emission which more than 15dB below the prescribed limit. Only show the worst case ANT. A.		

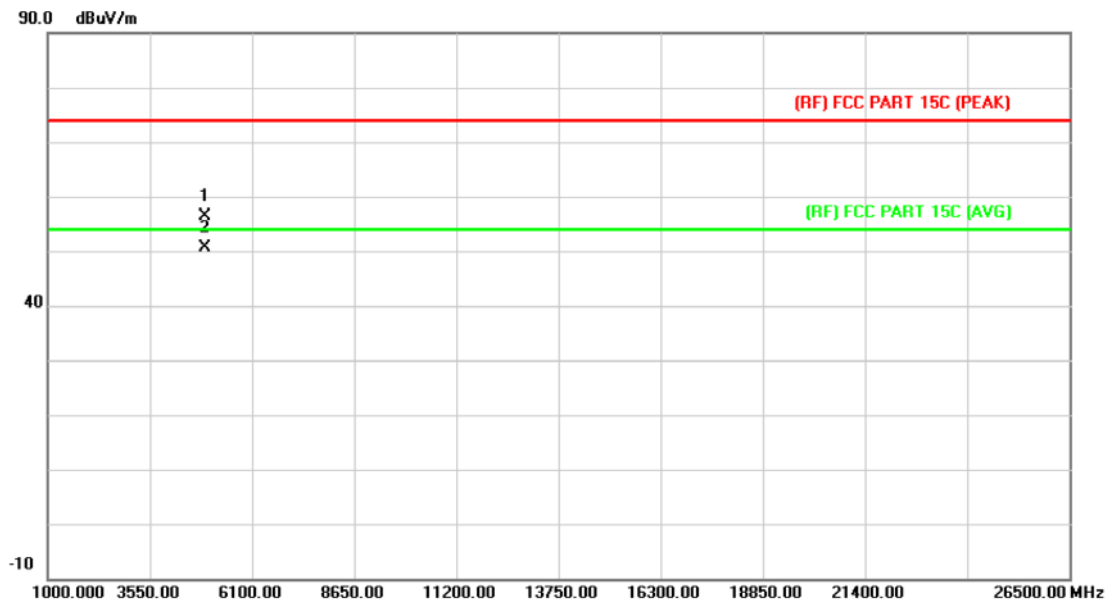


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4923.988	42.78	13.89	56.67	74.00	-17.33	peak
2	*	4924.212	37.43	13.89	51.32	54.00	-2.68	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2462MHz ANT. A		
Remark:	No report for the emission which more than 15dB below the prescribed limit. Only show the worst case ANT. A.		

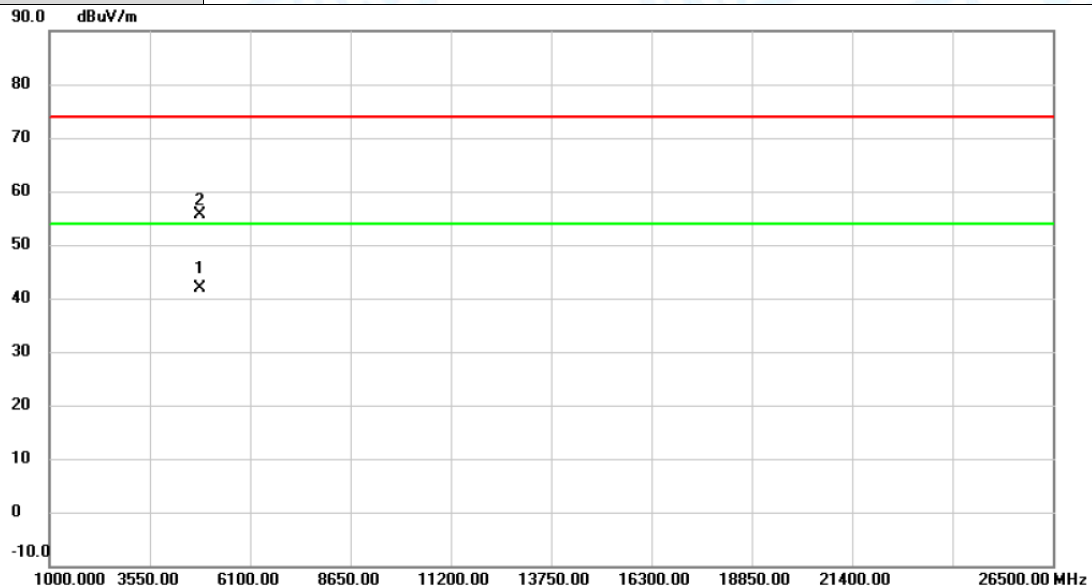


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.882	42.60	13.89	56.49	74.00	-17.51	peak
2	*	4924.102	36.78	13.89	50.67	54.00	-3.33	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2412MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

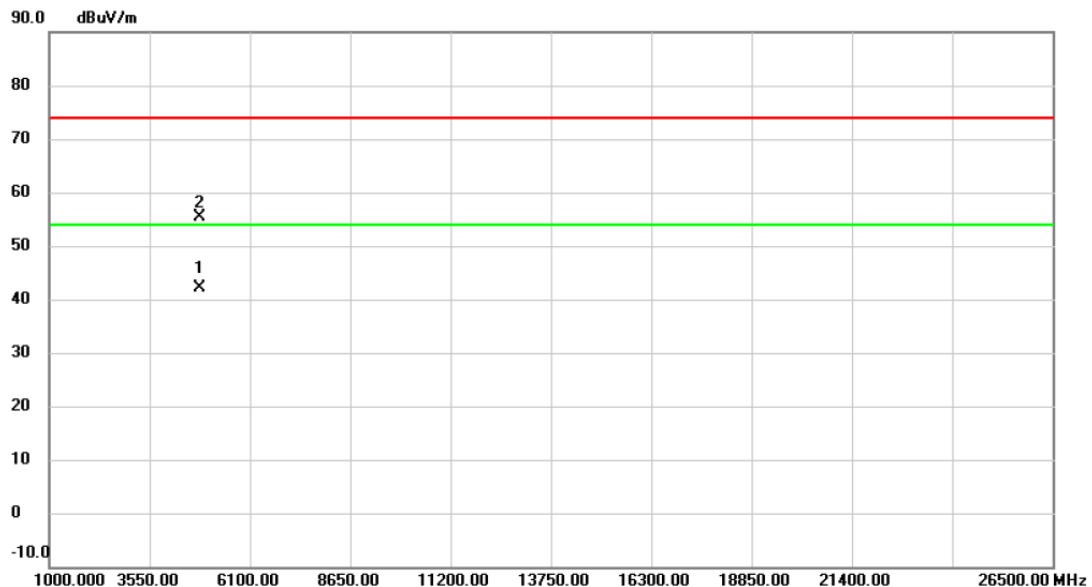


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	4824.102	28.76	13.16	41.92	54.00	-12.08	AVG
2		4824.134	42.35	13.16	55.51	74.00	-18.49	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2412MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

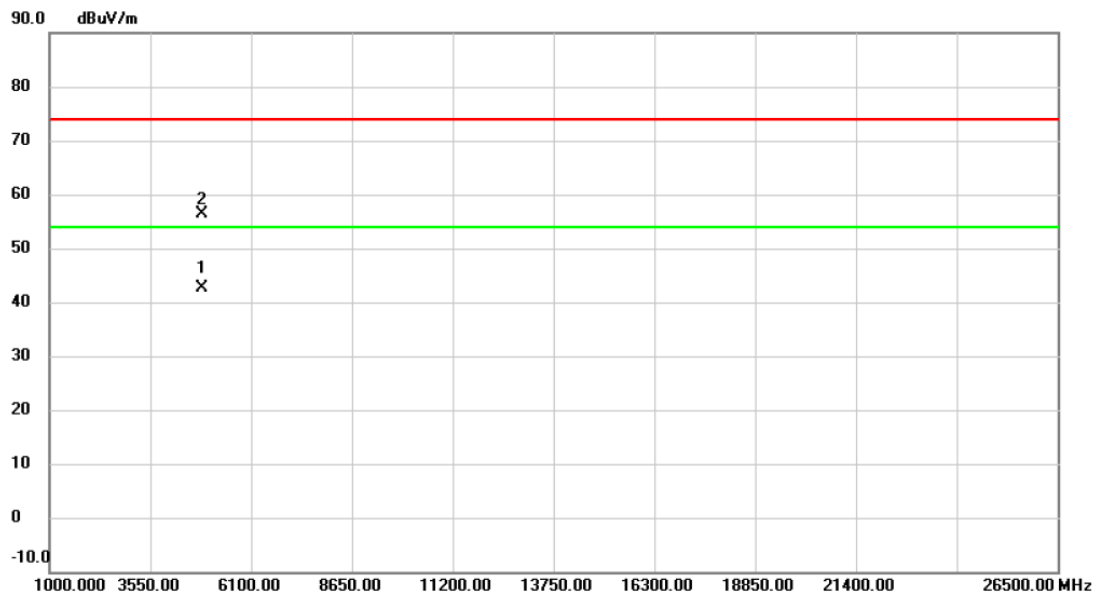


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	4823.584	28.88	13.16	42.04	54.00	-11.96	AVG
2		4823.752	42.25	13.16	55.41	74.00	-18.59	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2437MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

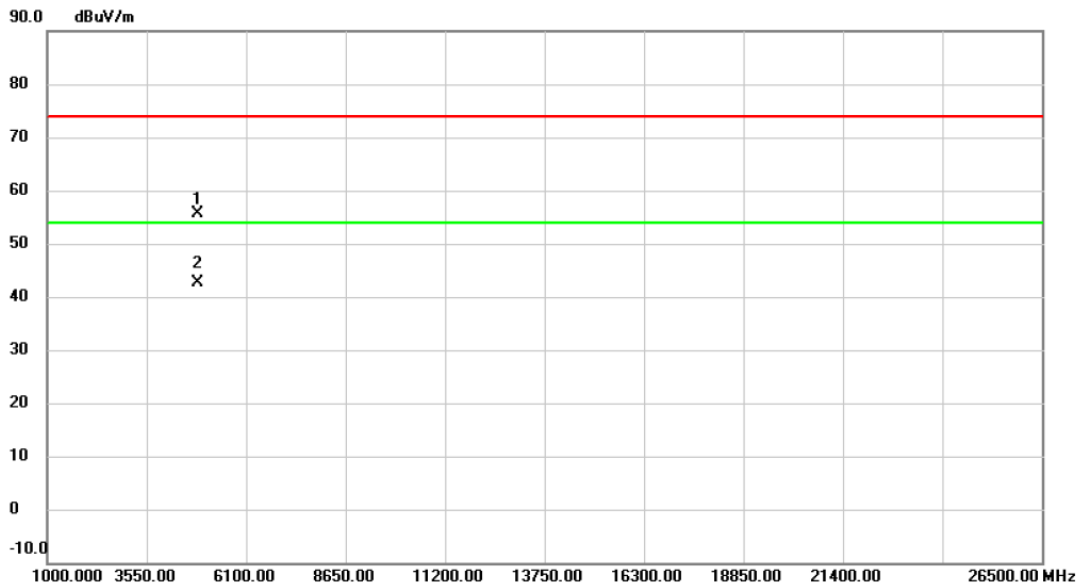


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	4873.702	29.00	13.53	42.53	54.00	-11.47	AVG
2		4874.042	42.97	13.53	56.50	74.00	-17.50	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2437MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit. Only show the worst case ANT. A.		

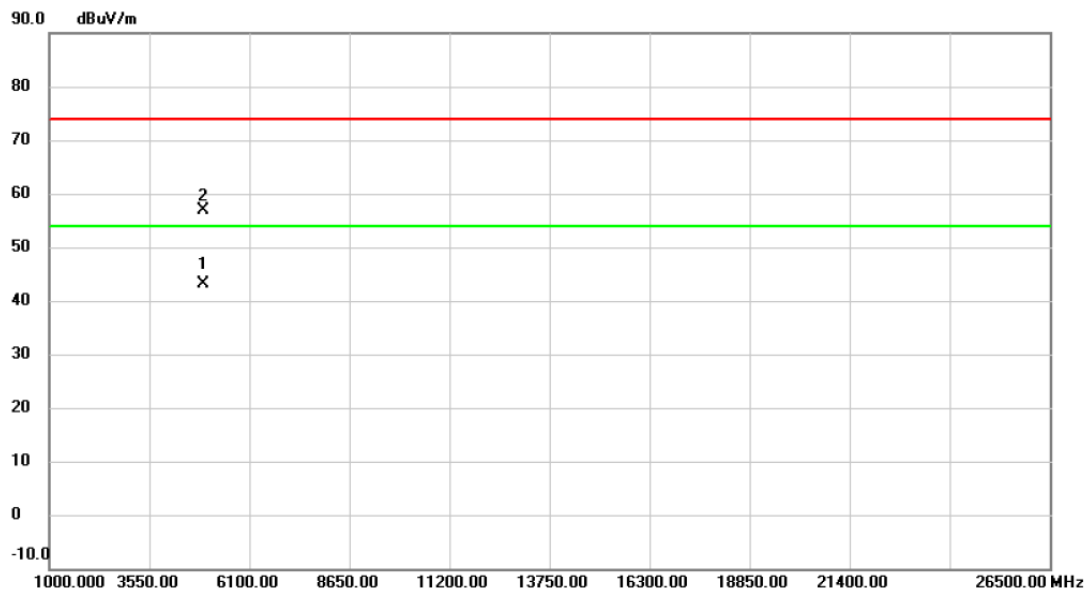


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4874.316	42.14	13.53	55.67	74.00	-18.33	peak
2	*	4874.462	29.02	13.53	42.55	54.00	-11.45	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2462MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

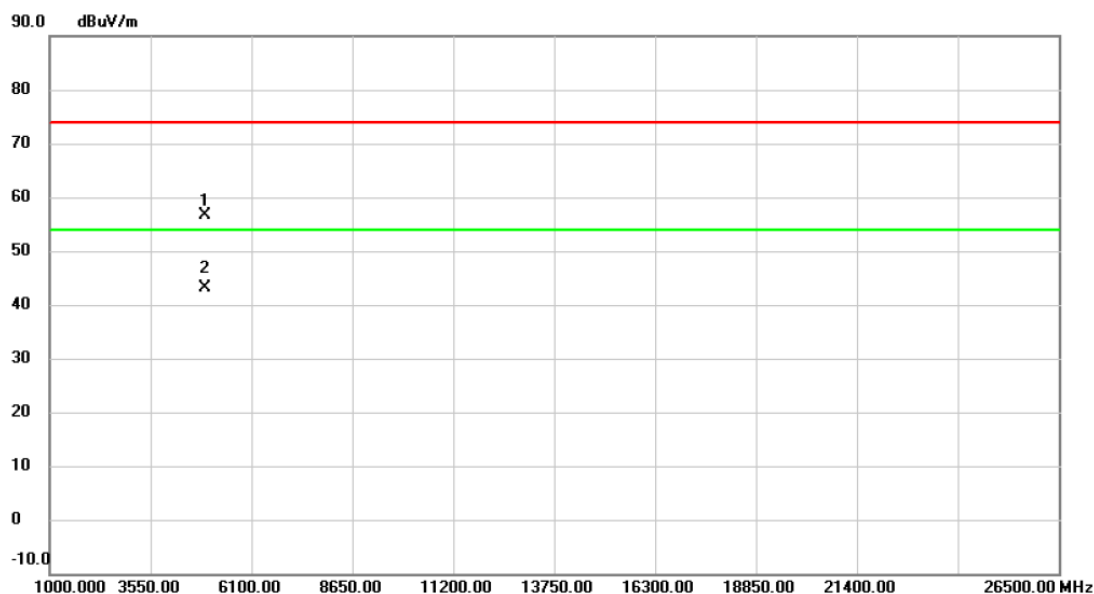


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	4923.804	29.15	13.89	43.04	54.00	-10.96	AVG
2		4924.460	43.10	13.89	56.99	74.00	-17.01	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2462MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4924.016	42.67	13.89	56.56	74.00	-17.44	peak
2	*	4924.202	29.29	13.89	43.18	54.00	-10.82	AVG

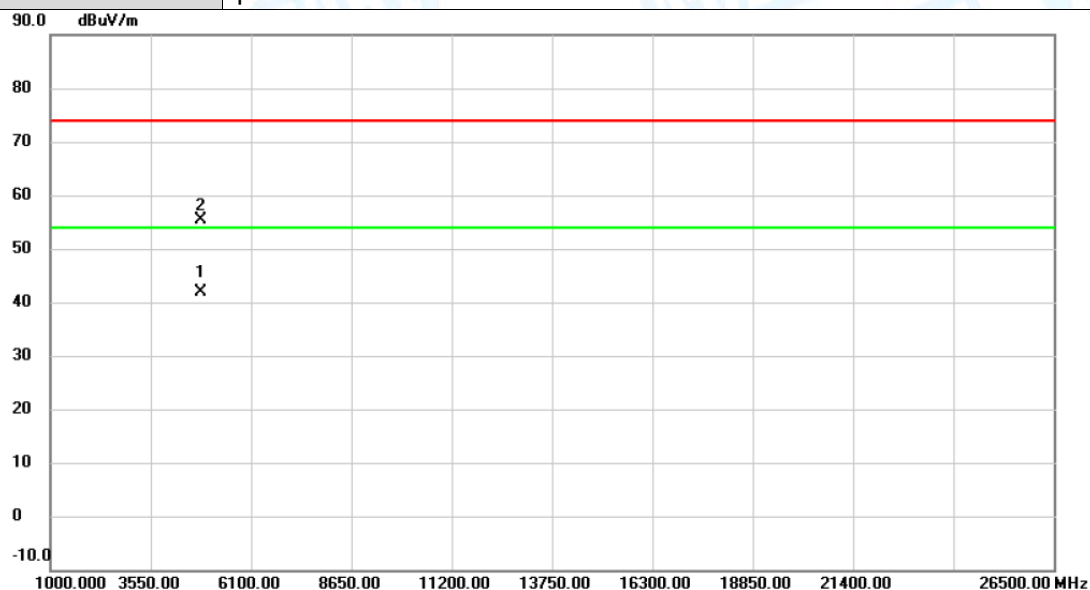
Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)

3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX n(HT20) Mode 2412MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

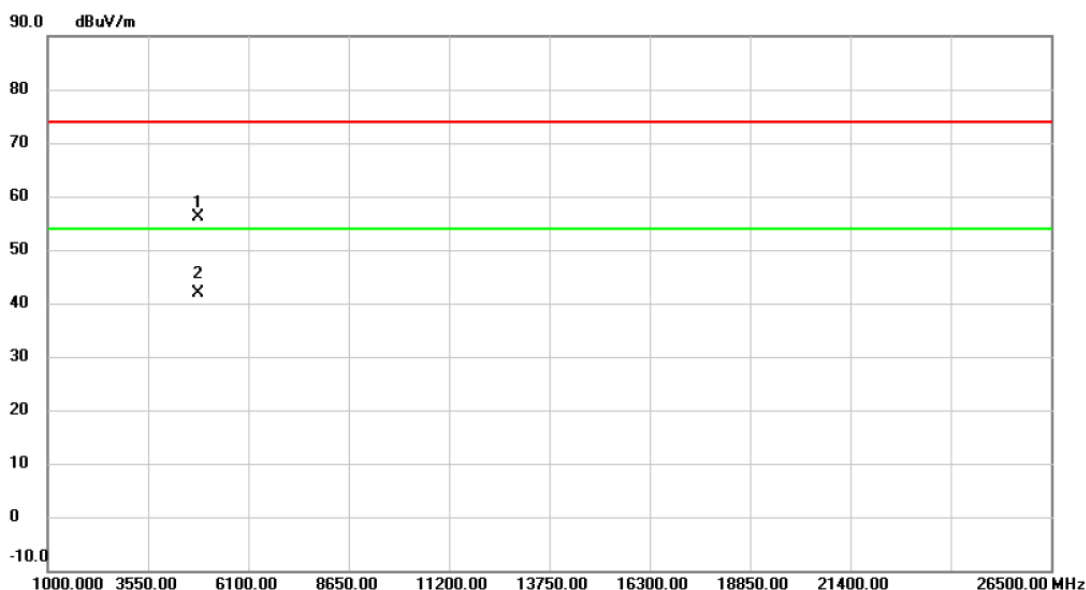


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	4824.158	28.84	13.16	42.00	54.00	-12.00	AVG
2		4824.224	42.10	13.16	55.26	74.00	-18.74	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX n(HT20) Mode 2412MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

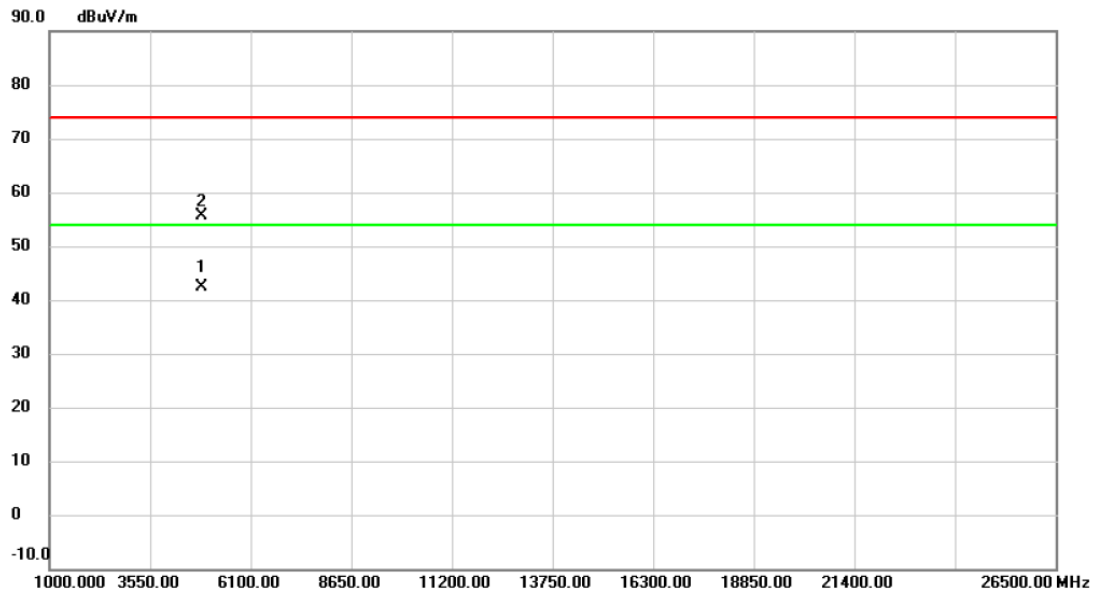


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4824.012	43.02	13.16	56.18	74.00	-17.82	peak
2	*	4824.056	28.76	13.16	41.92	54.00	-12.08	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX n(HT20) Mode 2437MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

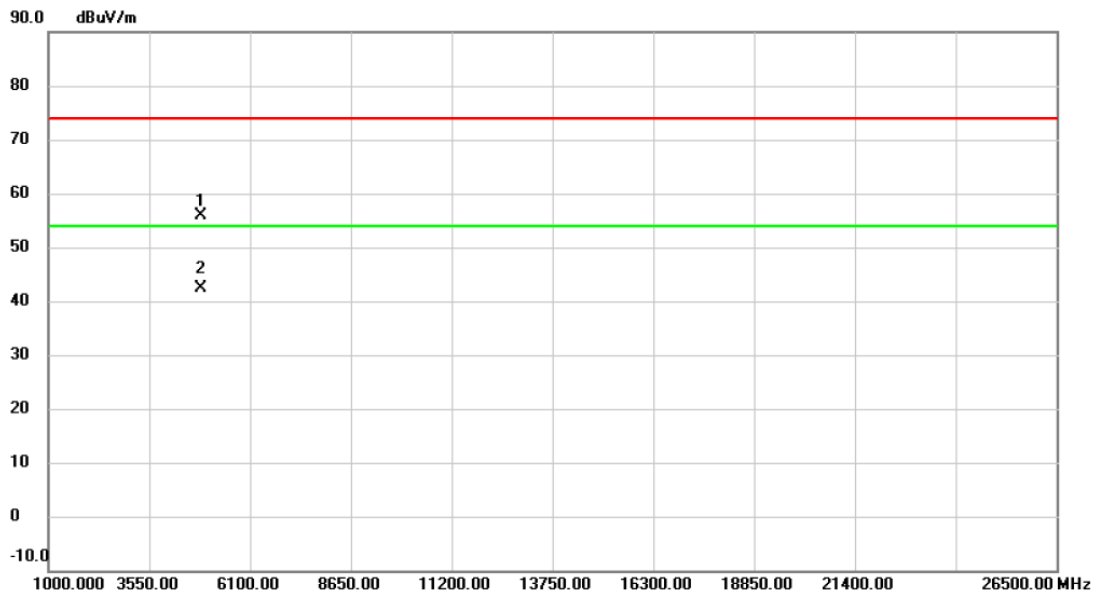


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	4873.670	28.86	13.53	42.39	54.00	-11.61	AVG
2		4874.416	42.16	13.53	55.69	74.00	-18.31	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX n(HT20) Mode 2437MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

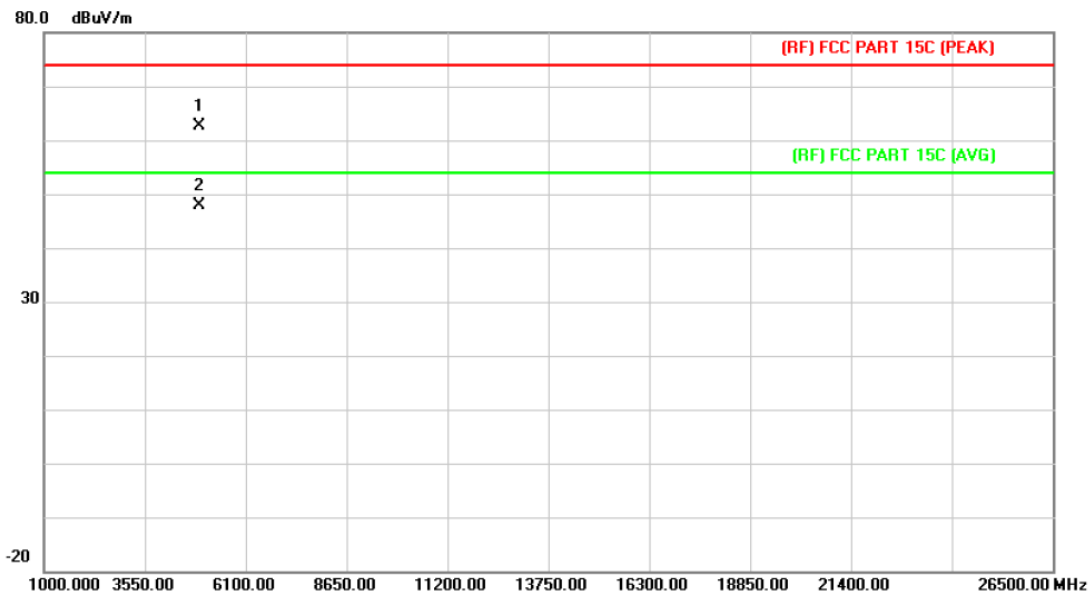


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4874.198	42.36	13.53	55.89	74.00	-18.11	peak
2	*	4874.262	28.83	13.53	42.36	54.00	-11.64	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX n(HT20) Mode 2462MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

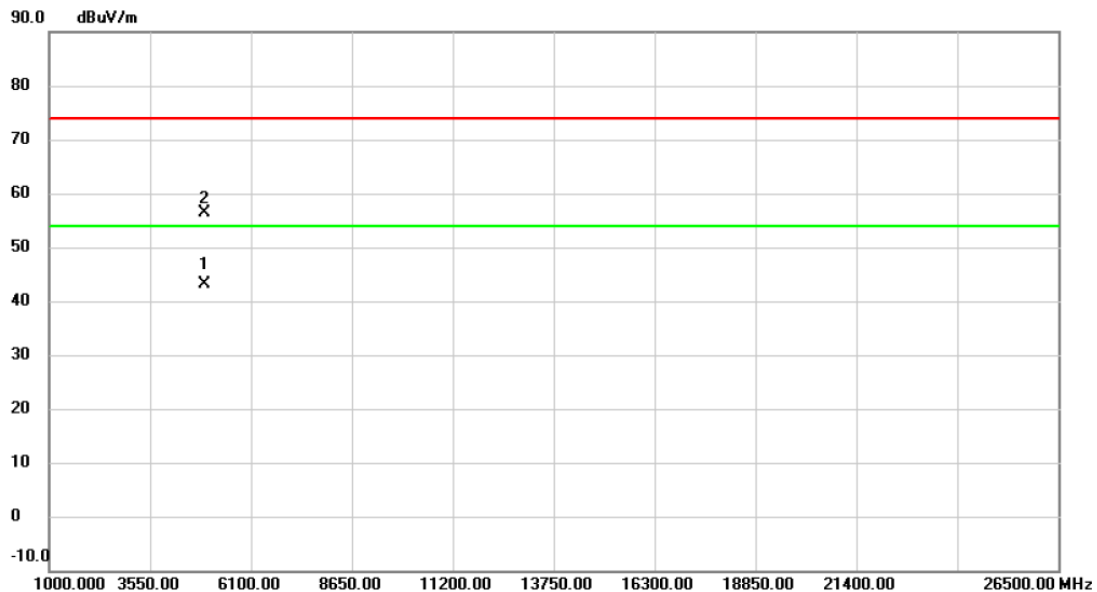


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4924.546	48.68	13.89	62.57	74.00	-11.43	peak
2	*	4924.864	33.92	13.90	47.82	54.00	-6.18	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX n(HT20) Mode 2462MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

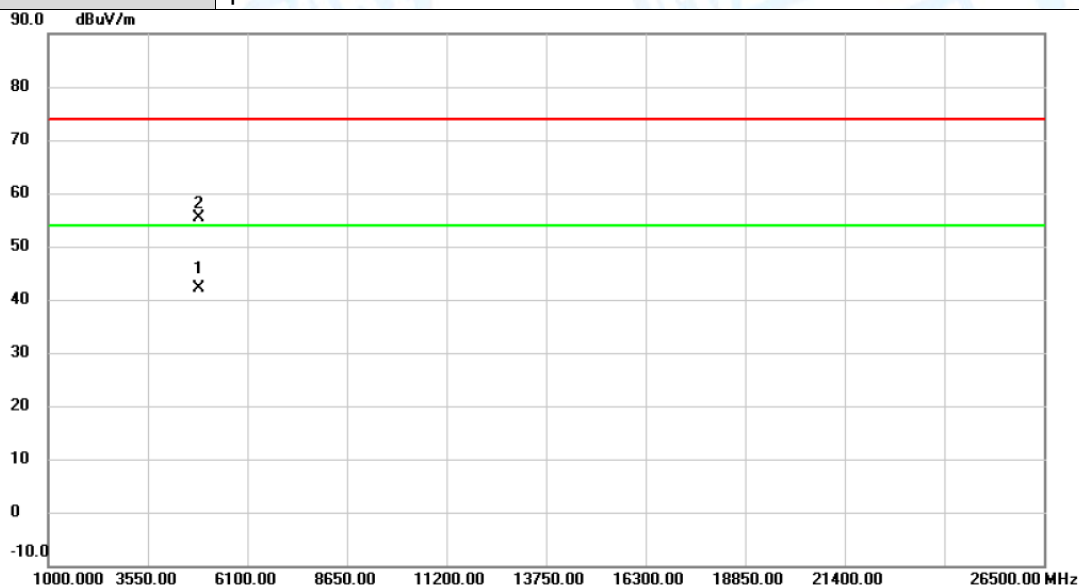


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	4923.708	29.17	13.89	43.06	54.00	-10.94	AVG
2		4923.940	42.52	13.89	56.41	74.00	-17.59	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX n(HT40) Mode 2422MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

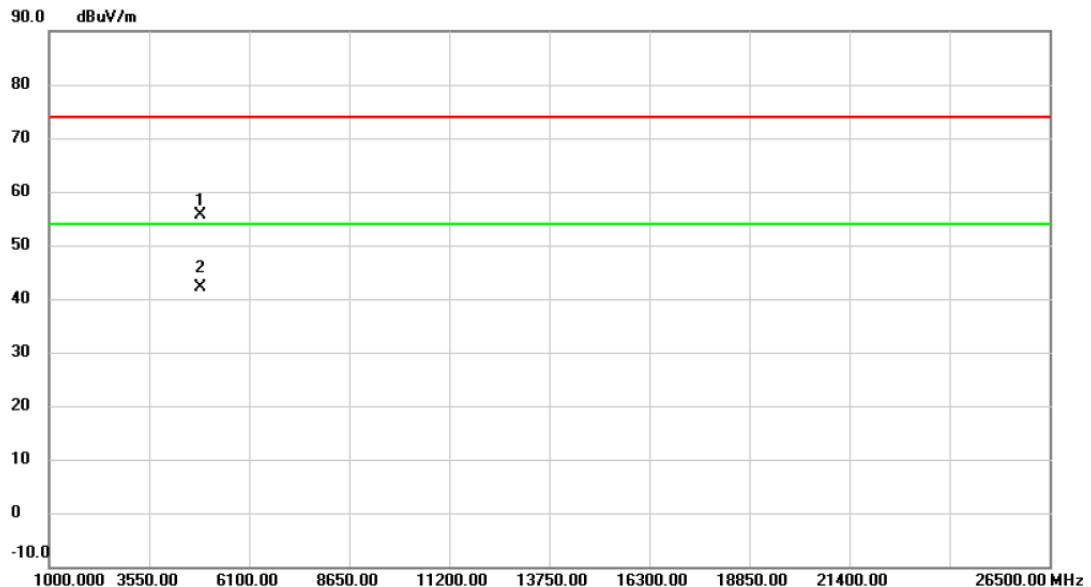


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	4844.004	28.89	13.31	42.20	54.00	-11.80	AVG
2		4844.424	42.06	13.31	55.37	74.00	-18.63	peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX n(HT40) Mode 2422MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

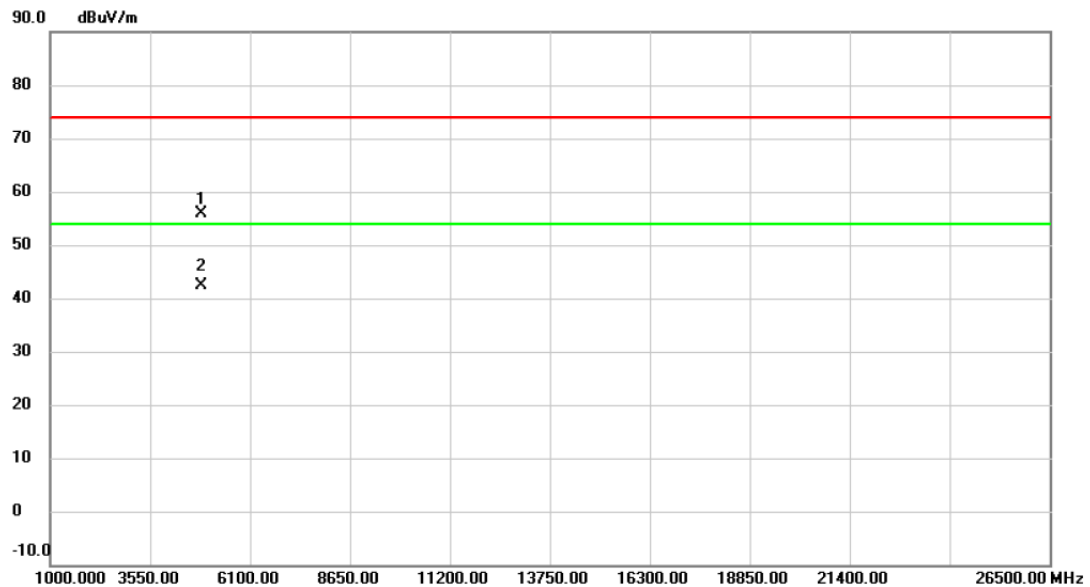


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4843.602	42.22	13.30	55.52	74.00	-18.48	peak
2	*	4843.810	28.94	13.31	42.25	54.00	-11.75	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX n(HT40) Mode 2437MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

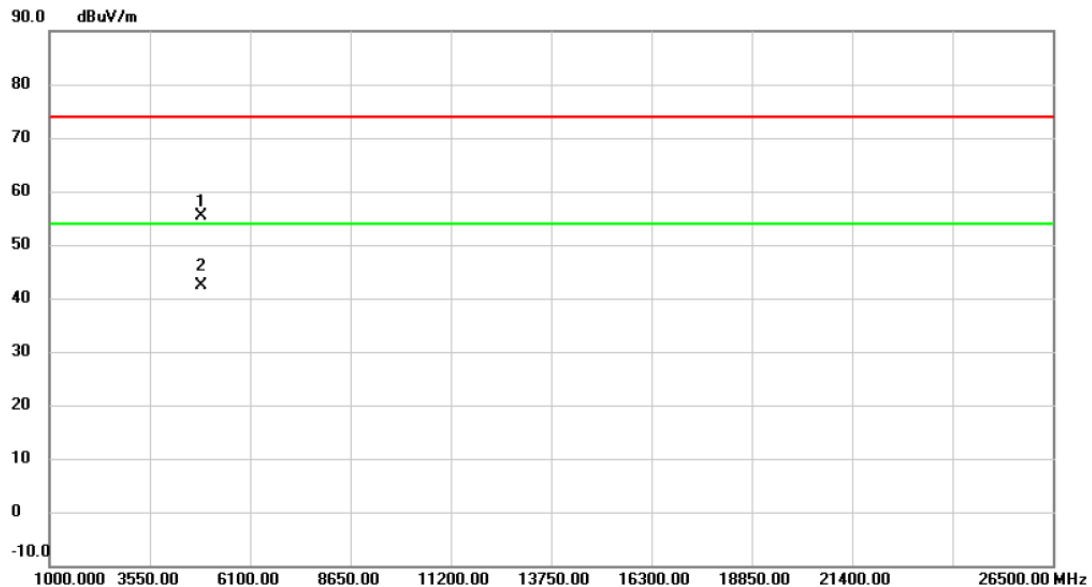


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4874.102	42.27	13.53	55.80	74.00	-18.20	peak
2	*	4874.430	28.90	13.53	42.43	54.00	-11.57	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX n(HT40) Mode 2437MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

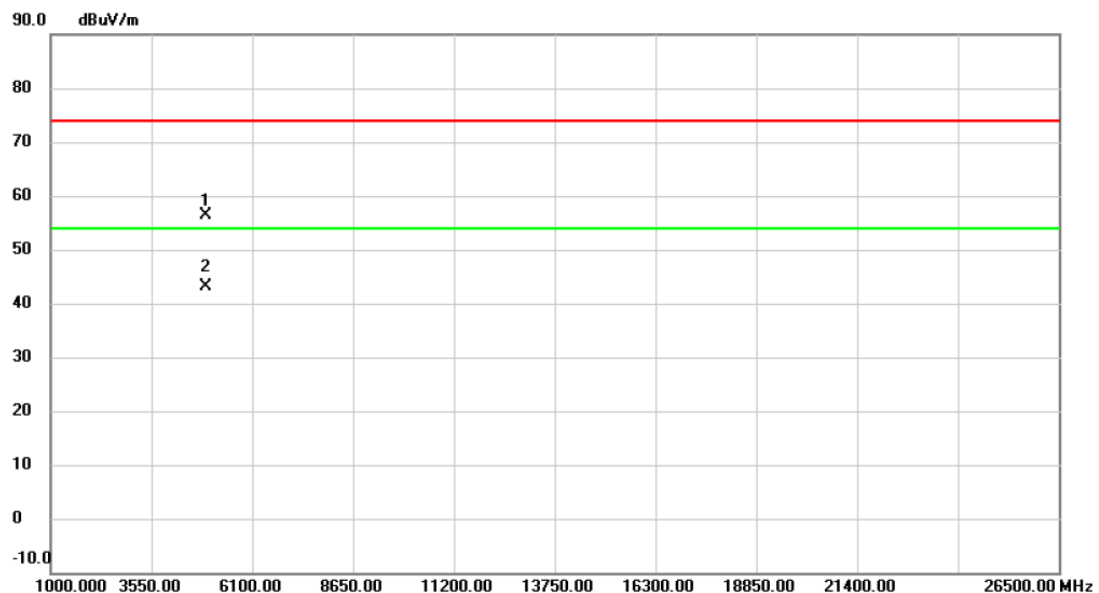


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4874.174	41.73	13.53	55.26	74.00	-18.74	peak
2	*	4874.342	28.82	13.53	42.35	54.00	-11.65	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX n(HT40) Mode 2452MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		

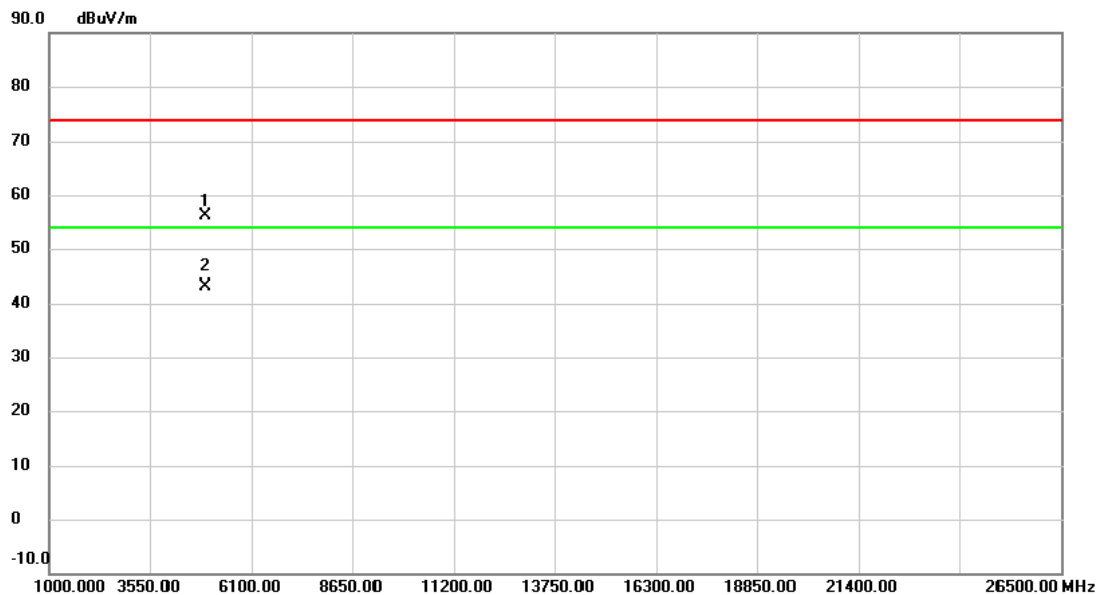


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4903.716	42.39	13.89	56.28	74.00	-17.72	peak
2	*	4904.162	29.25	13.89	43.14	54.00	-10.86	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX n(HT40) Mode 2452MHz ANT. A+ANT. B		
Remark:	No report for the emission which more than 15dB below the prescribed limit.		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4903.700	42.31	13.89	56.20	74.00	-17.80	peak
2	*	4903.928	29.15	13.89	43.04	54.00	-10.96	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Attachment C-- Restricted Bands Requirement and Band-edge Test Data

(1) Radiation Test

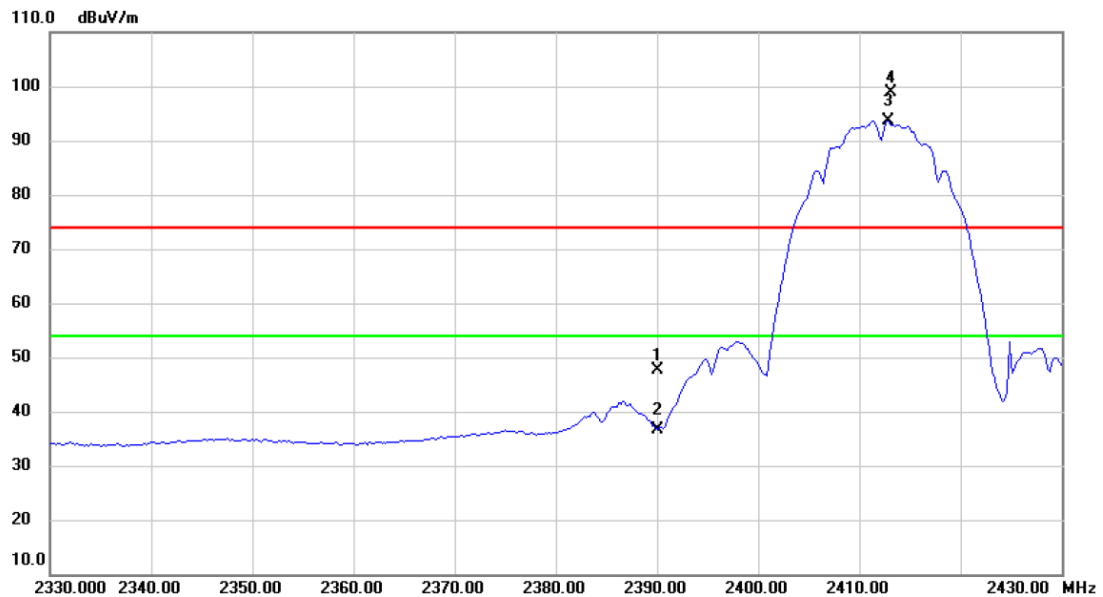
Temperature:	24.2°C	Relative Humidity:	40%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2412MHz ANT. A.		
Remark:	Only show the worst case ANT. A.		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2390.000	54.33	1.28	55.61	74.00	-18.39	peak
2		2390.000	42.84	1.28	44.12	54.00	-9.88	AVG
3	*	2411.400	98.63	1.39	100.02	Fundamental Frequency		AVG
4	X	2413.200	103.6	1.41	105.06	Fundamental Frequency		peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHz ANT. A.		
Remark:	Only show the worst case ANT. A.		

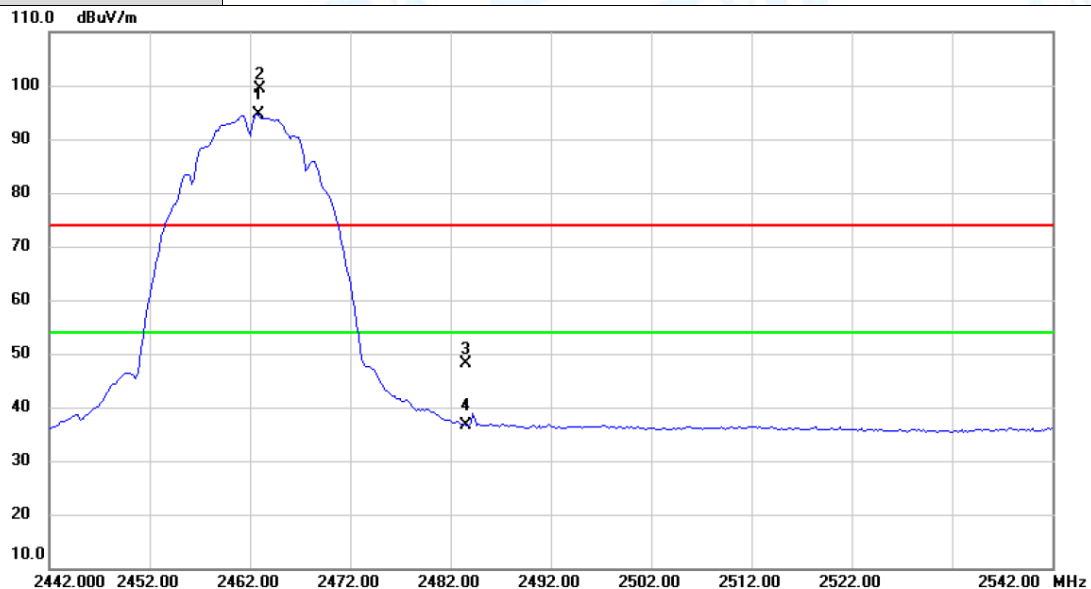


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2390.000	46.45	1.28	47.73	74.00	-26.27	peak
2		2390.000	35.42	1.28	36.70	54.00	-17.30	AVG
3	*	2412.800	92.16	1.40	93.56	Fundamental Frequency		AVG
4	X	2413.200	97.35	1.41	98.76	Fundamental Frequency		peak

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2462MHz ANT. A.		
Remark:	Only show the worst case ANT. A.		

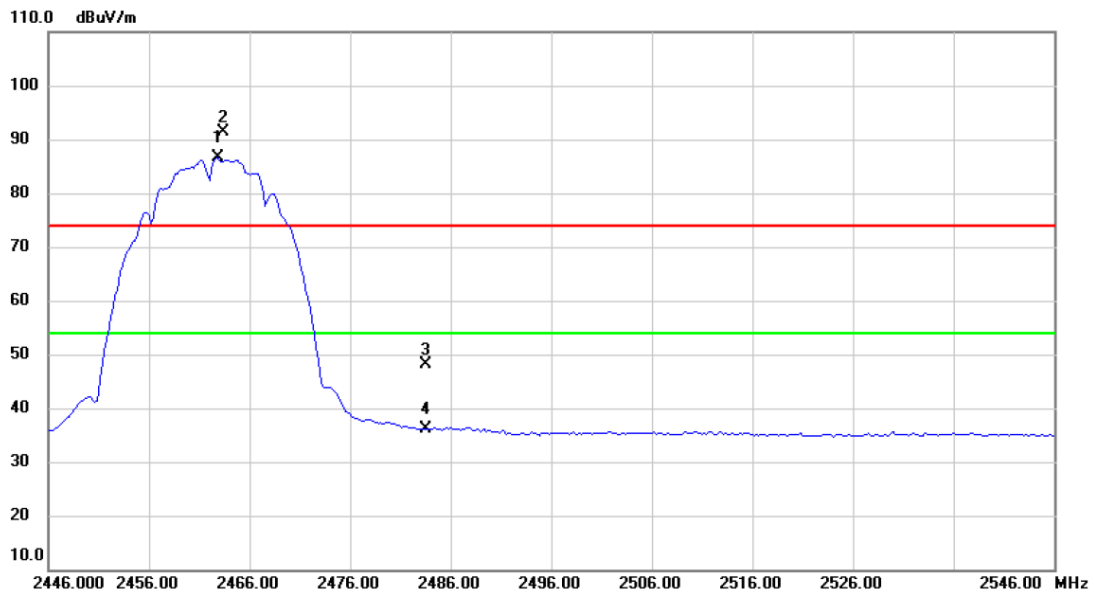


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	2462.800	92.85	1.74	94.59	Fundamental Frequency		AVG
2	X	2463.000	97.61	1.74	99.35	Fundamental Frequency		peak
3		2483.500	46.36	1.88	48.24	74.00	-25.76	peak
4		2483.500	34.83	1.88	36.71	54.00	-17.29	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2462MHz ANT. A.		
Remark:	Only show the worst case ANT. A.		

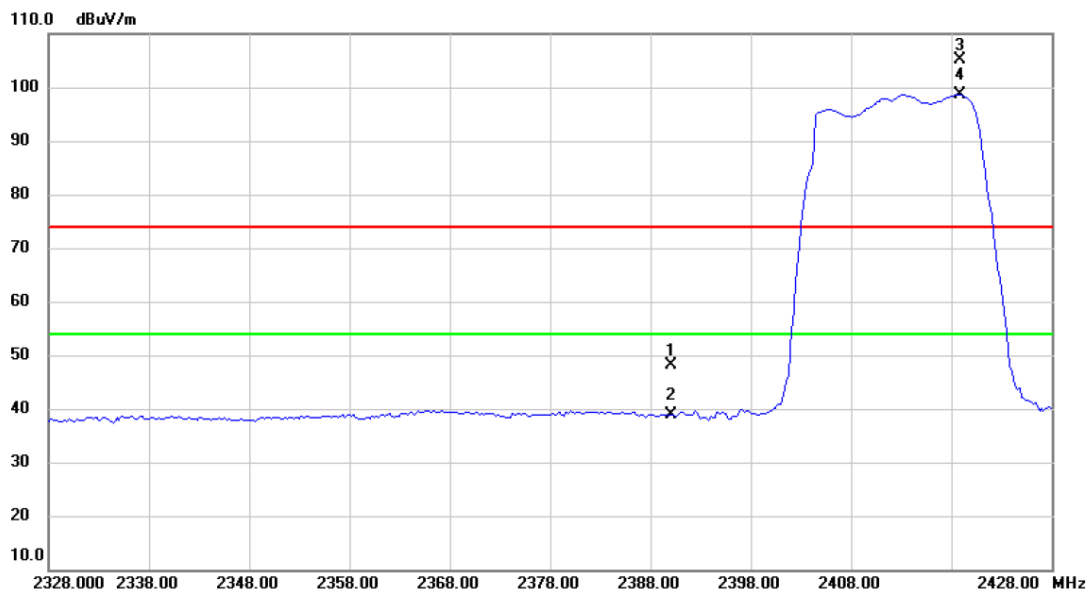


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	2462.800	84.77	1.74	86.51	Fundamental Frequency		AVG
2	X	2463.400	89.66	1.75	91.41	Fundamental Frequency		peak
3		2483.500	46.17	1.88	48.05	74.00	-25.95	peak
4		2483.500	34.26	1.88	36.14	54.00	-17.86	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2412MHz ANT. A+ANT. B		
Remark:	Only show the worst case.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2390.000	46.95	1.28	48.23	74.00	-25.77	peak
2		2390.000	37.50	1.28	38.78	54.00	-15.22	AVG
3	X	2418.800	103.8	1.44	105.24	Fundamental Frequency		peak
4	*	2418.800	97.24	1.44	98.68	Fundamental Frequency		AVG

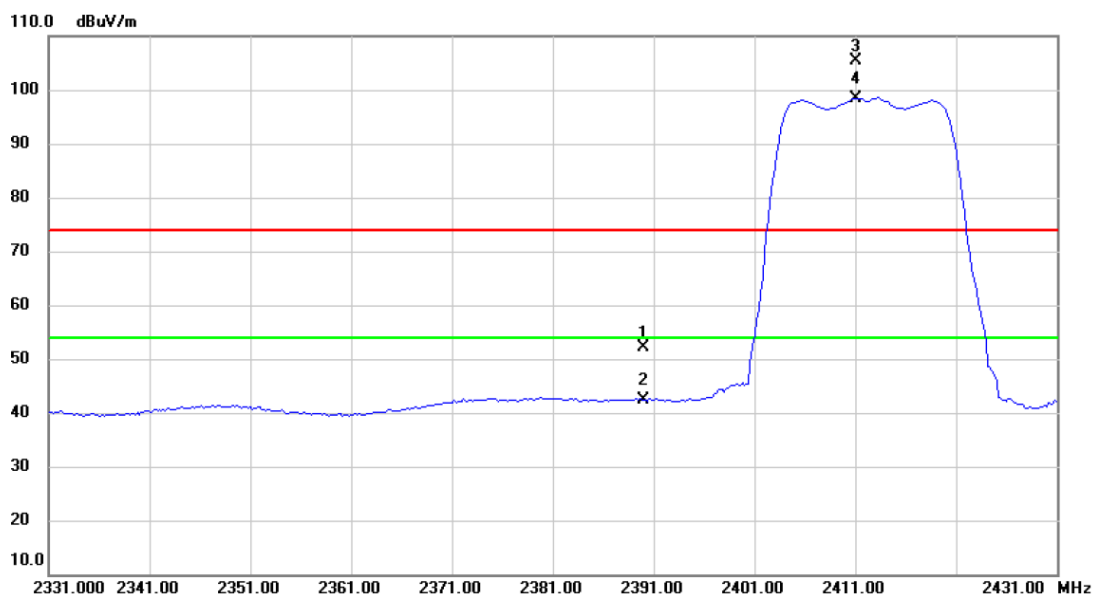
Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)

3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2412MHz ANT. A+ANT. B		
Remark:	Only show the worst case.		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2390.000	50.96	1.28	52.24	74.00	-21.76	peak
2		2390.000	41.14	1.28	42.42	54.00	-11.58	AVG
3	X	2411.000	103.9	1.38	105.32	Fundamental Frequency		peak
4	*	2411.000	97.12	1.38	98.50	Fundamental Frequency		AVG

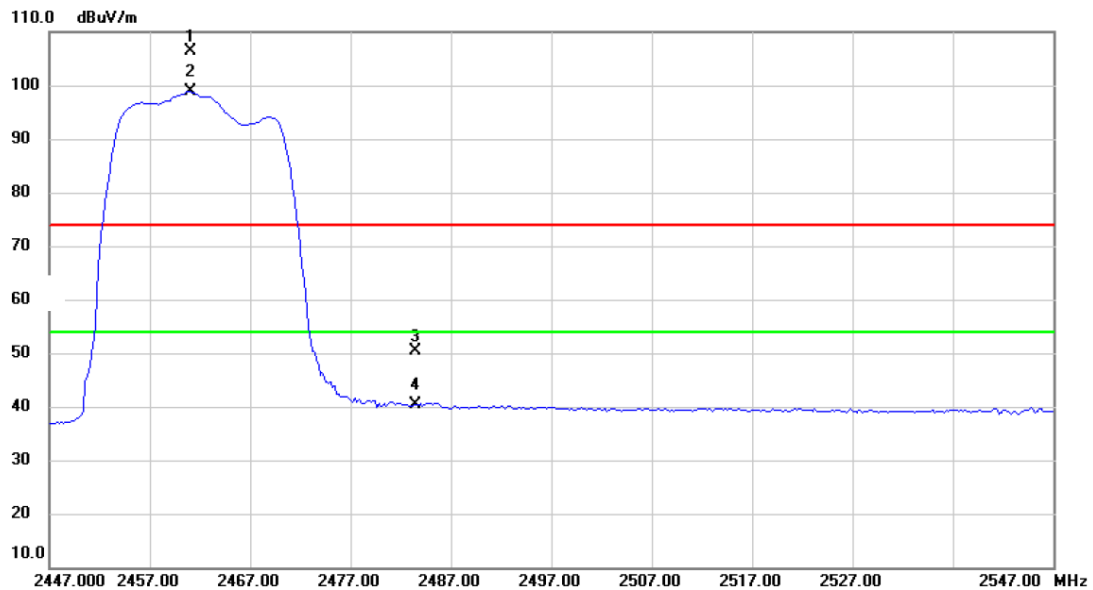
Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)

3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2462MHz ANT. A+ANT. B		
Remark:	Only show the worst case.		

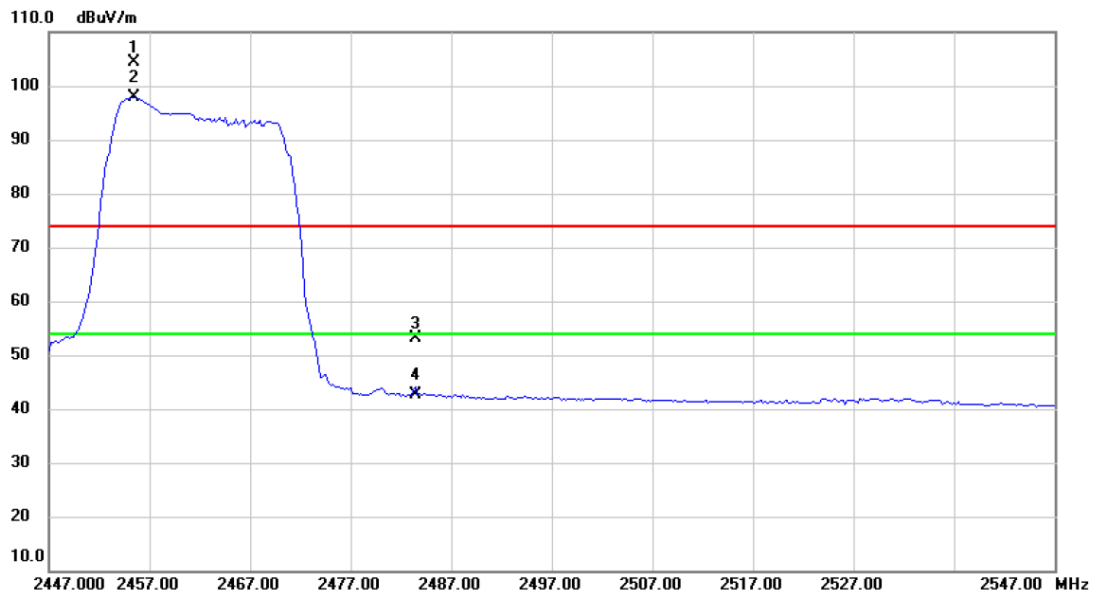


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	2461.000	104.6	1.72	106.32	Fundamental Frequency		peak
2	*	2461.000	97.20	1.72	98.92	Fundamental Frequency		AVG
3		2483.500	48.44	1.88	50.32	74.00	-23.68	peak
4		2483.500	38.54	1.88	40.42	54.00	-13.58	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2462MHz ANT. A+ANT. B		
Remark:	Only show the worst case.		

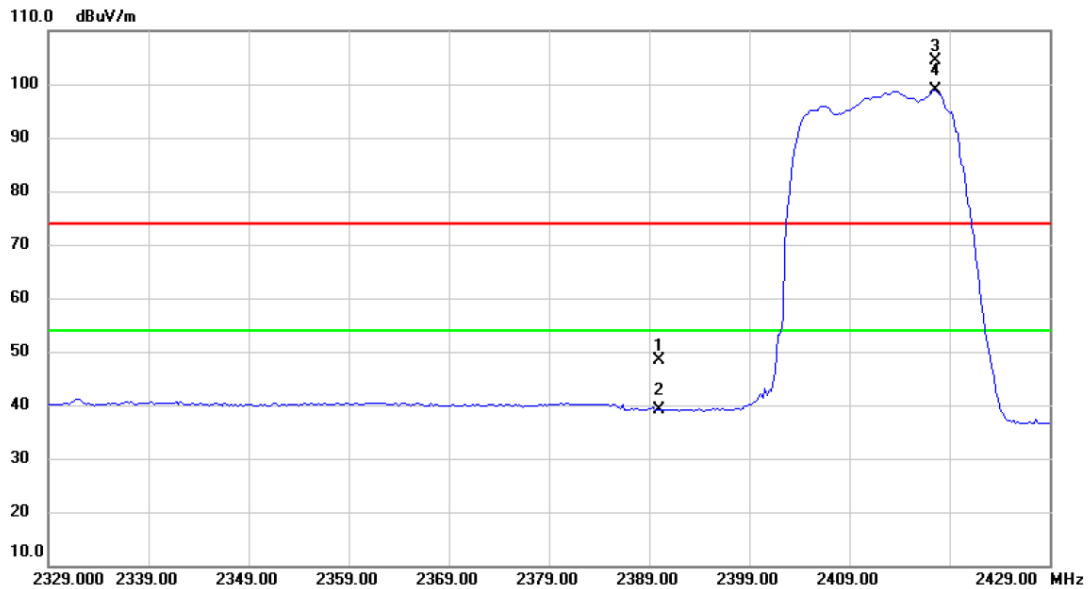


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	2455.400	102.6	1.69	104.36	Fundamental Frequency		peak
2	*	2455.400	96.12	1.69	97.81	Fundamental Frequency		AVG
3		2483.500	51.33	1.88	53.21	74.00	-20.79	peak
4		2483.500	40.77	1.88	42.65	54.00	-11.35	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2412MHz ANT. A+ANT. A		
Remark:	N/A		

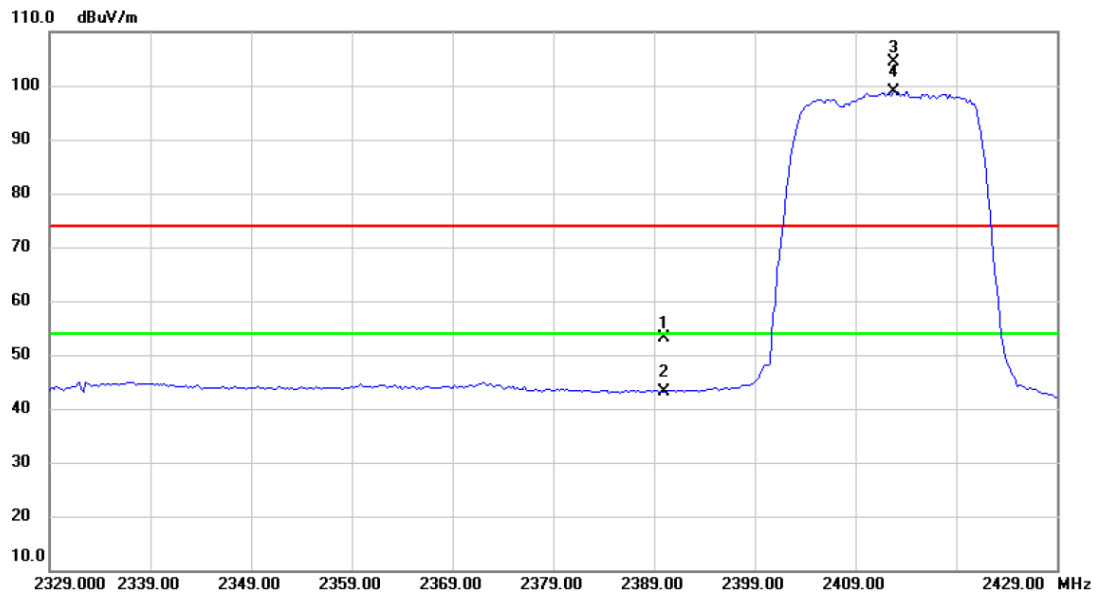


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2390.000	47.09	1.28	48.37	74.00	-25.63	peak
2		2390.000	37.95	1.28	39.23	54.00	-14.77	AVG
3	X	2417.600	102.9	1.44	104.36	Fundamental Frequency		peak
4	*	2417.600	97.46	1.44	98.90	Fundamental Frequency		AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2412MHz ANT. A+ANT. B		
Remark:	N/A		

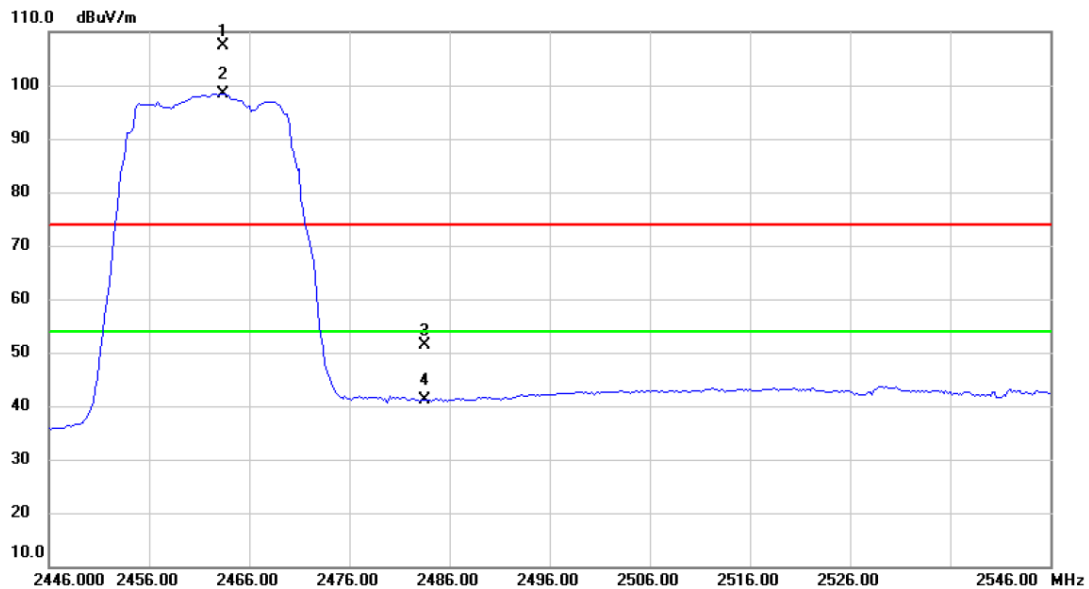


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2390.000	51.95	1.28	53.23	74.00	-20.77	peak
2		2390.000	41.91	1.28	43.19	54.00	-10.81	AVG
3	X	2412.800	102.9	1.40	104.36	Fundamental Frequency		peak
4	*	2412.800	97.47	1.40	98.87	Fundamental Frequency		AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

Temperature:	23.4℃	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2462MHz ANT. A+ANT. B		
Remark:	N/A		

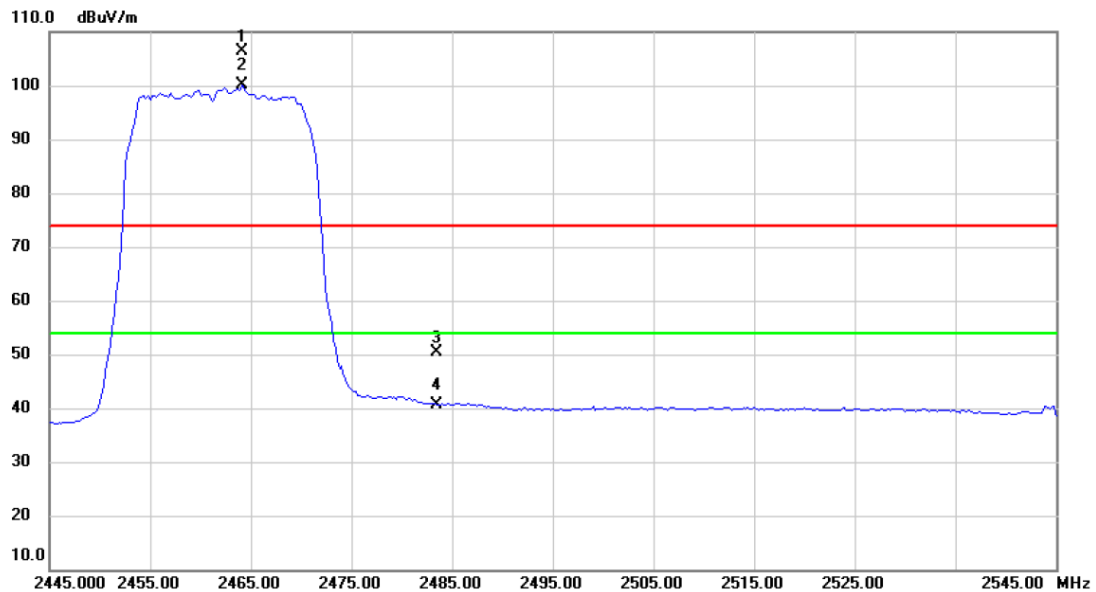


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	2463.400	105.5	1.75	107.31	Fundamental Frequency		peak
2	*	2463.400	96.65	1.75	98.40	Fundamental Frequency		AVG
3		2483.500	49.44	1.88	51.32	74.00	-22.68	peak
4		2483.500	39.25	1.88	41.13	54.00	-12.87	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

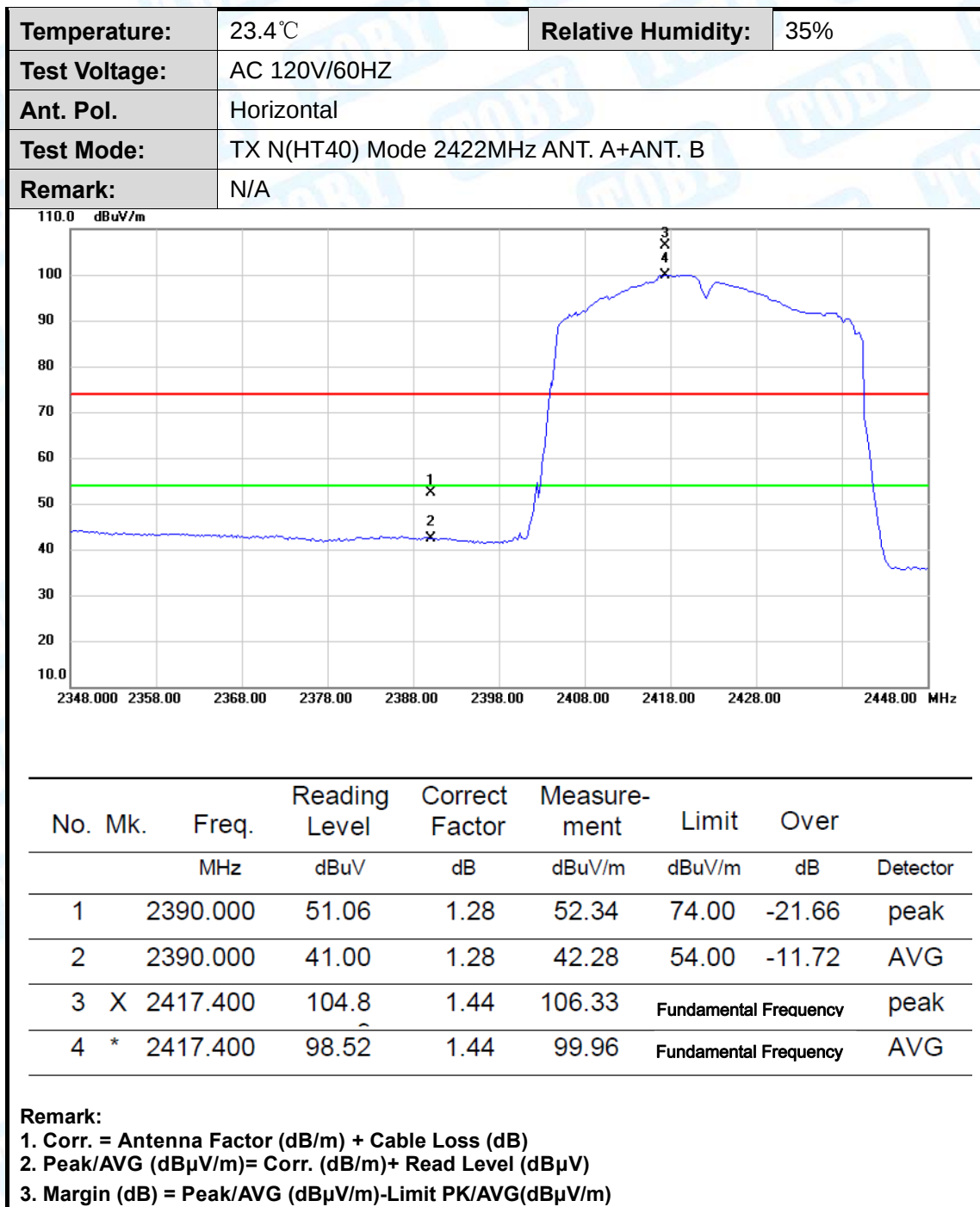
Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2462MHz ANT. A+ANT. B		
Remark:	N/A		



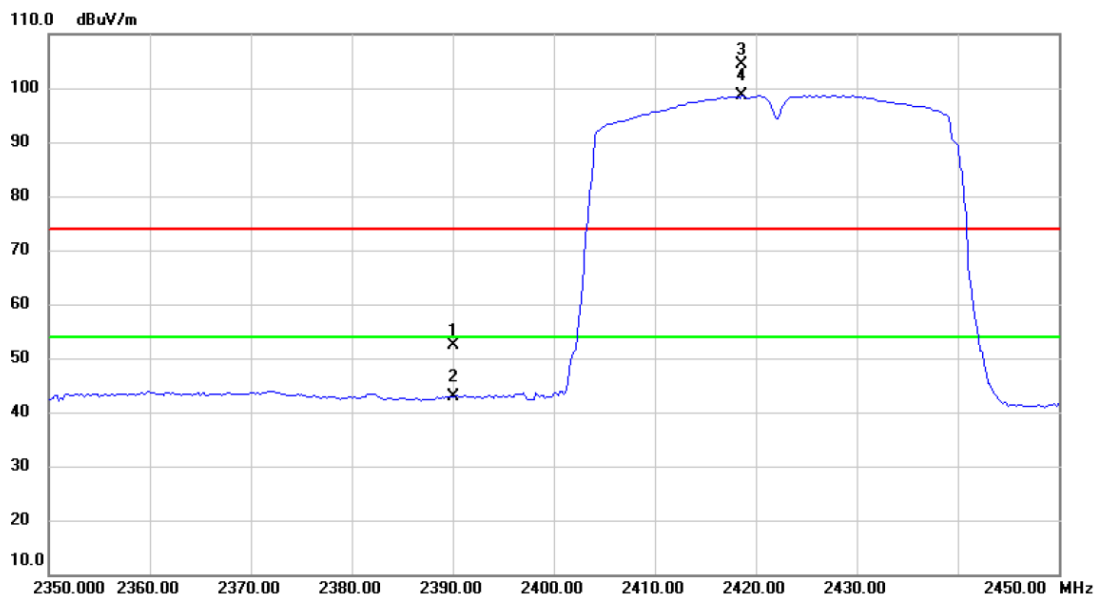
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	2464.200	104.6	1.75	106.35	Fundamental Frequency		peak
2	*	2464.200	98.39	1.75	100.14	Fundamental Frequency		AVG
3		2483.500	48.43	1.88	50.31	74.00	-23.69	peak
4		2483.500	38.80	1.88	40.68	54.00	-13.32	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)



Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2422MHz ANT. A+ANT. B		
Remark:	N/A		

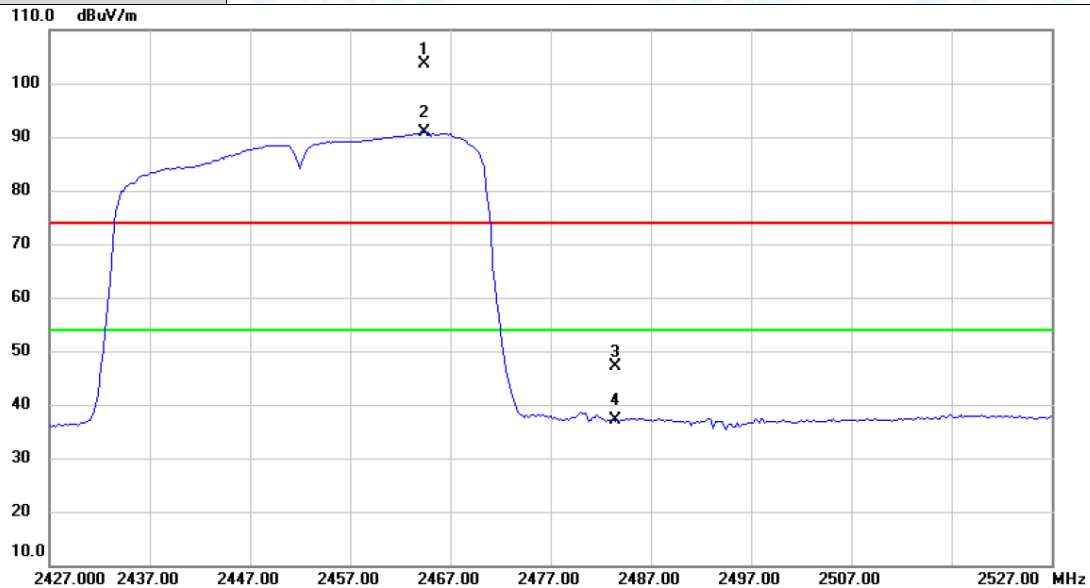


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2390.000	51.03	1.28	52.31	74.00	-21.69	peak
2		2390.000	41.56	1.28	42.84	54.00	-11.16	AVG
3	X	2418.600	102.8	1.44	104.32	Fundamental Frequency		peak
4	*	2418.600	97.19	1.44	98.63	Fundamental Frequency		AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2452MHz ANT. A+ANT. B		
Remark:	N/A		

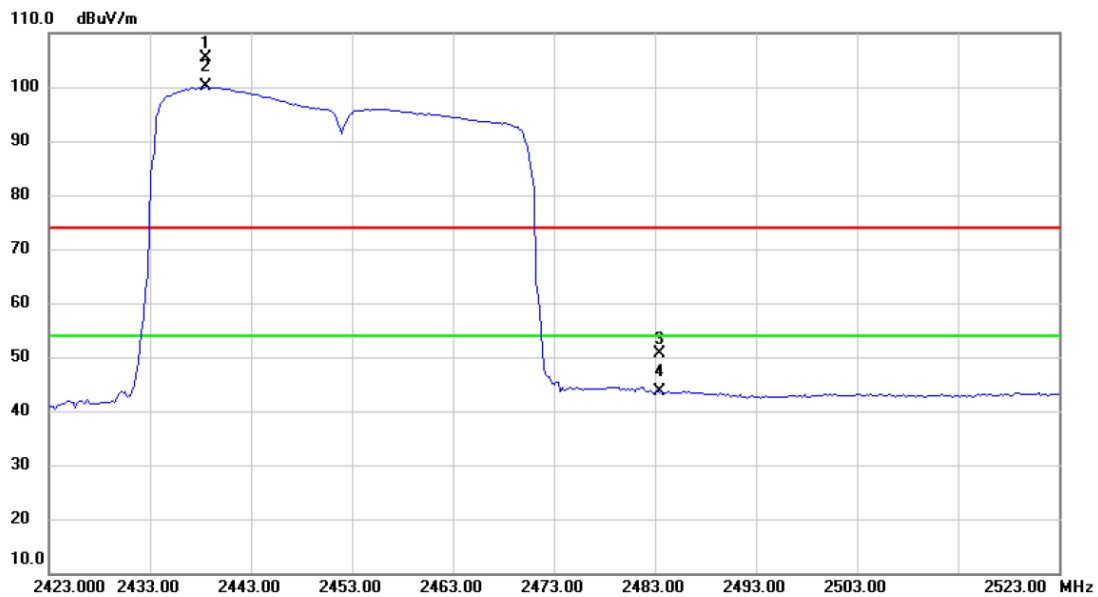


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	2464.400	101.9	1.75	103.69	Fundamental Frequency		peak
2	*	2464.400	89.13	1.75	90.88	Fundamental Frequency		AVG
3		2483.500	45.35	1.88	47.23	74.00	-26.77	peak
4		2483.500	35.37	1.88	37.25	54.00	-16.75	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m)= Corr. (dB/m)+ Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m)-Limit PK/AVG(dBuV/m)

Temperature:	23.4°C	Relative Humidity:	35%
Test Voltage:	AC 120V/60HZ		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2452MHz ANT. A+ANT. B		
Remark:	N/A		



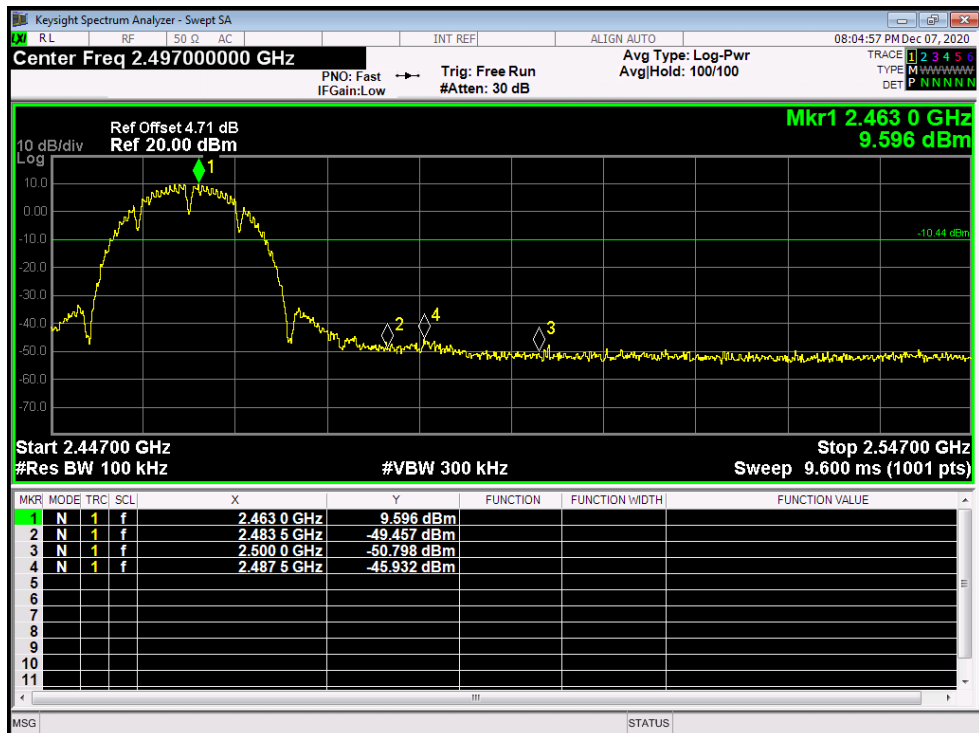
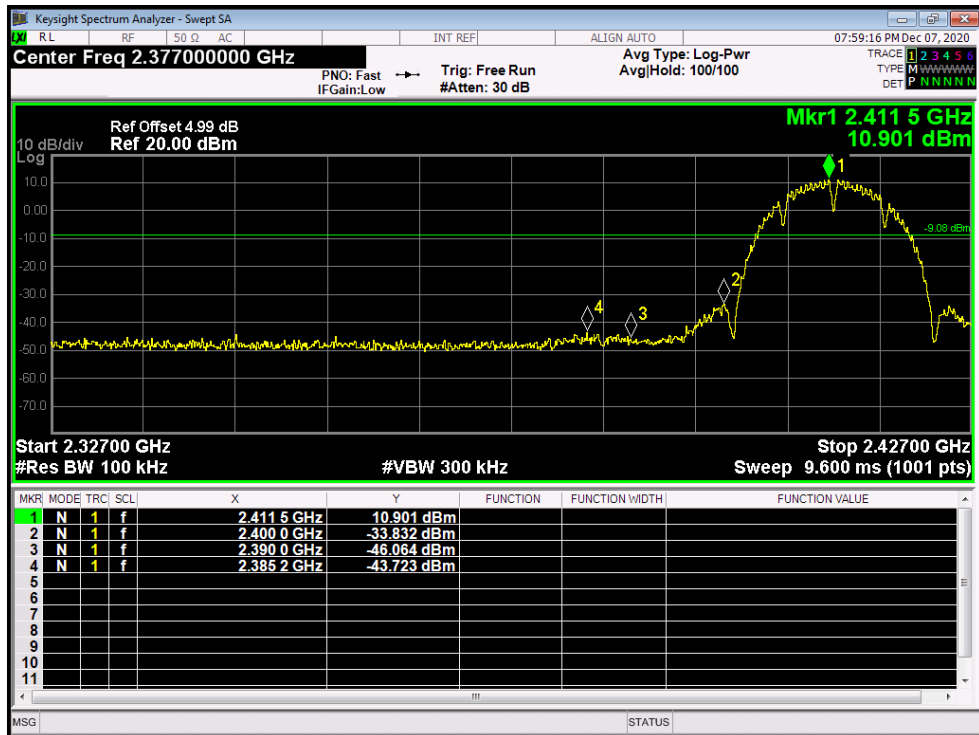
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	2438.600	103.7	1.58	105.32	Fundamental Frequency		peak
2	*	2438.600	98.43	1.58	100.01	Fundamental Frequency		AVG
3		2483.500	48.80	1.88	50.68	74.00	-23.32	peak
4		2483.500	41.63	1.88	43.51	54.00	-10.49	AVG

Remark:

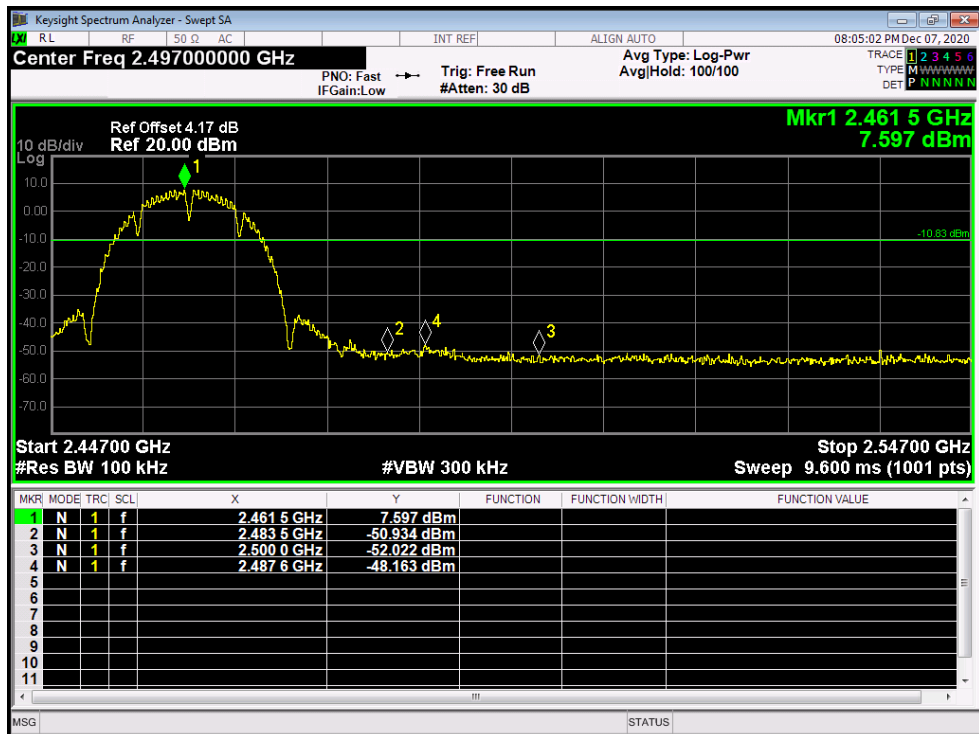
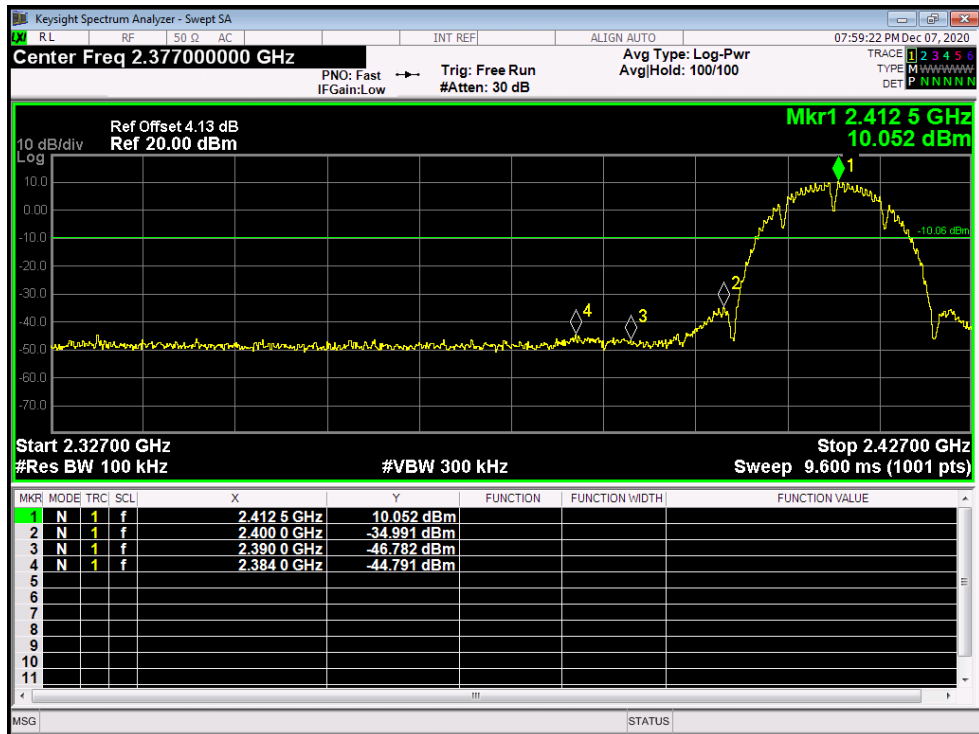
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Peak/AVG (dBuV/m) - Limit PK/AVG (dBuV/m)

(2) Conducted Test

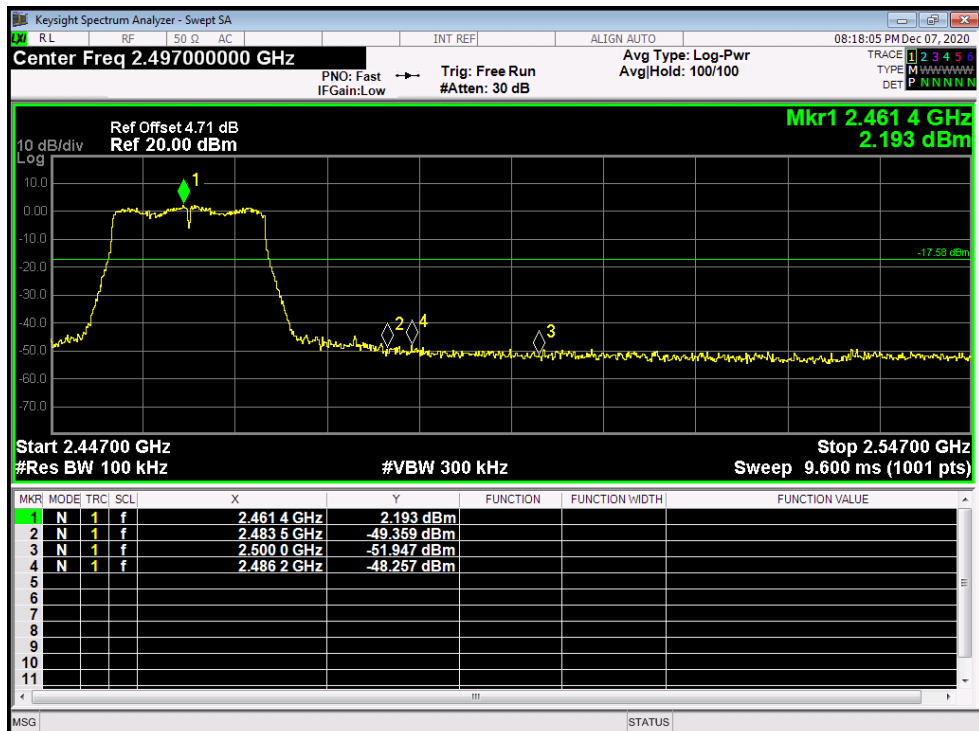
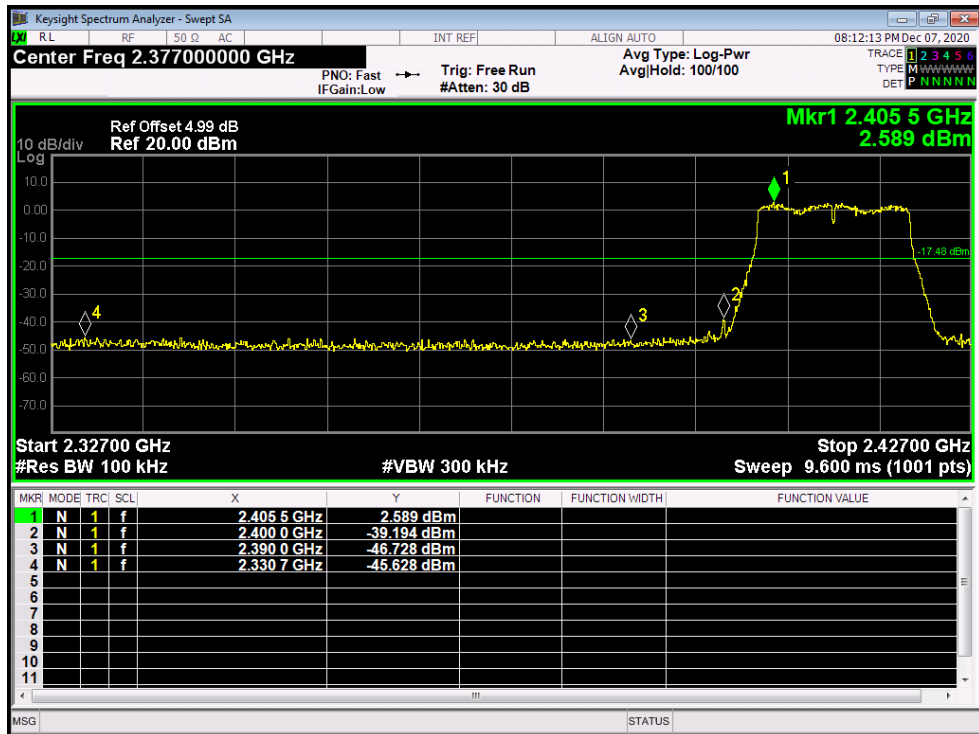
Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX B Mode 2412MHz / TX B Mode 2462MHz ANT. A		
Remark:	The EUT is programmed in continuously transmitting mode		



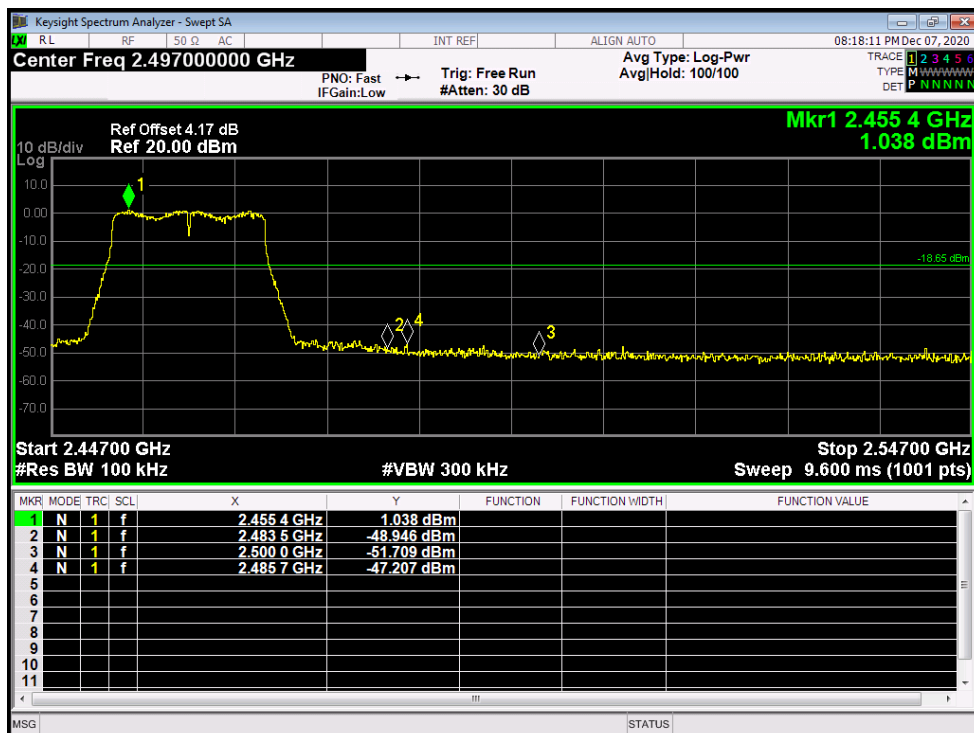
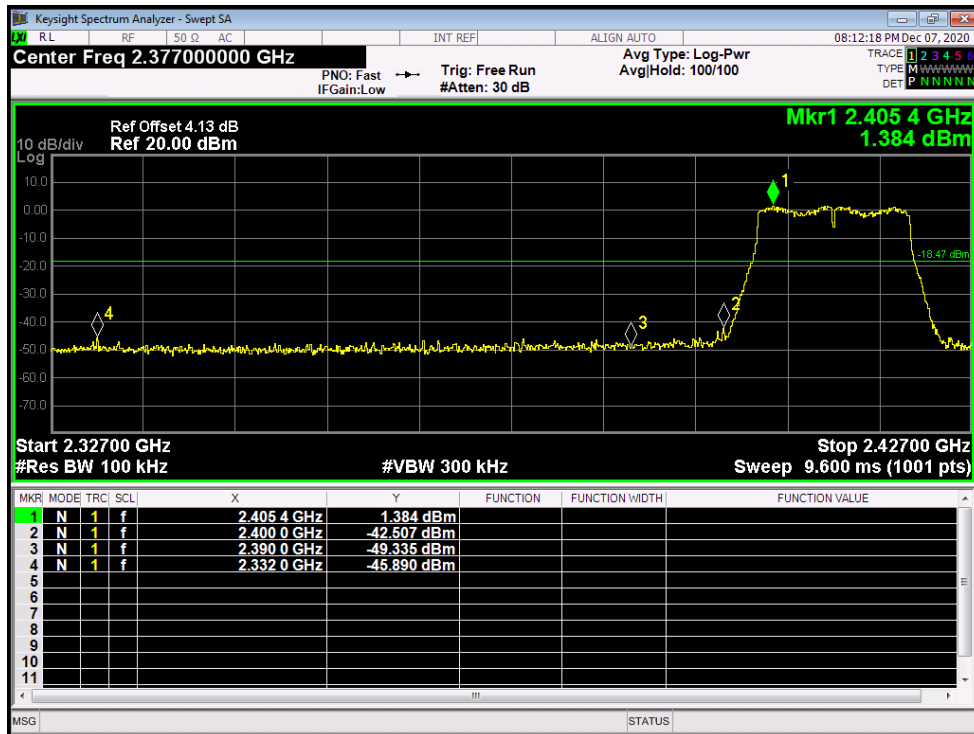
Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX B Mode 2412MHz / TX B Mode 2462MHz ANT. A		
Remark:	The EUT is programmed in continuously transmitting mode		



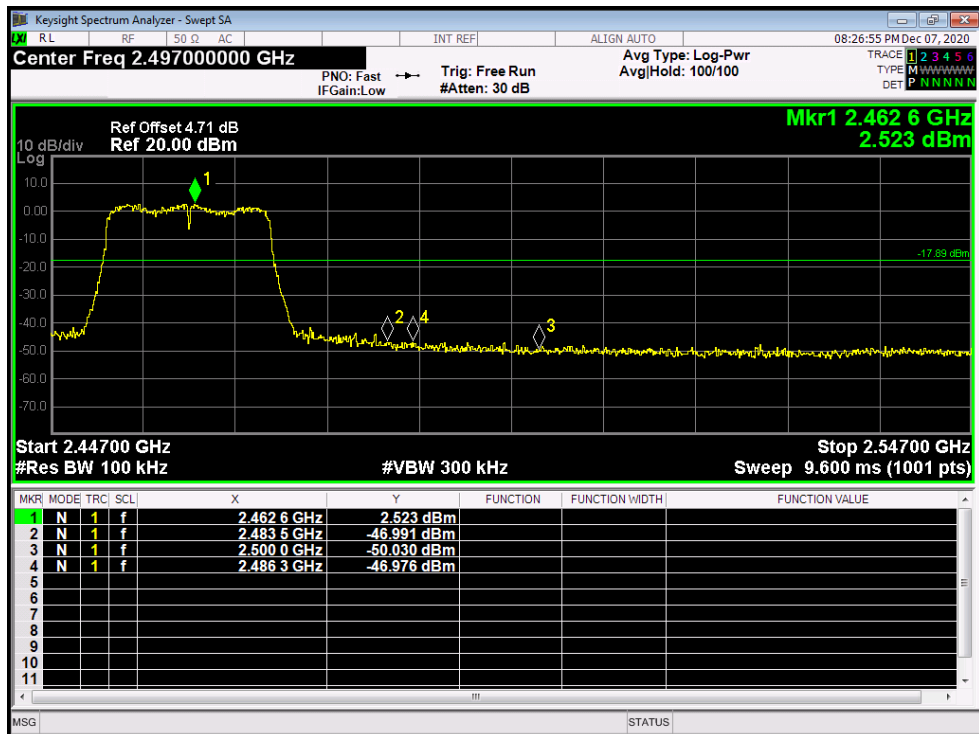
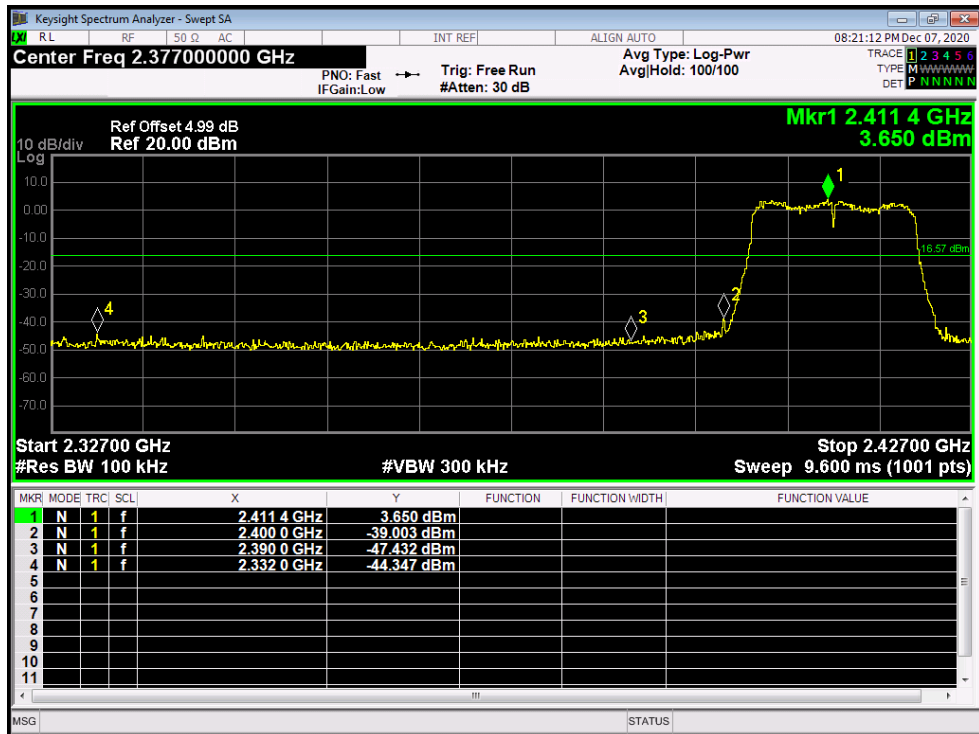
Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX G Mode 2412MHz / TX G Mode 2462MHz ANT. A		
Remark:	The EUT is programmed in continuously transmitting mode		



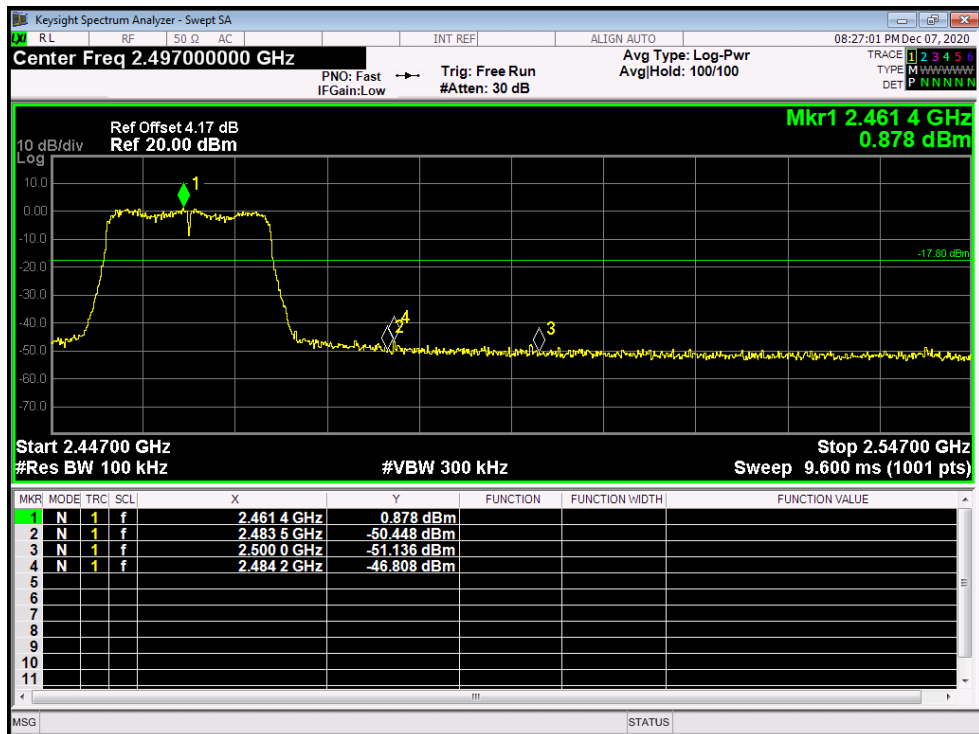
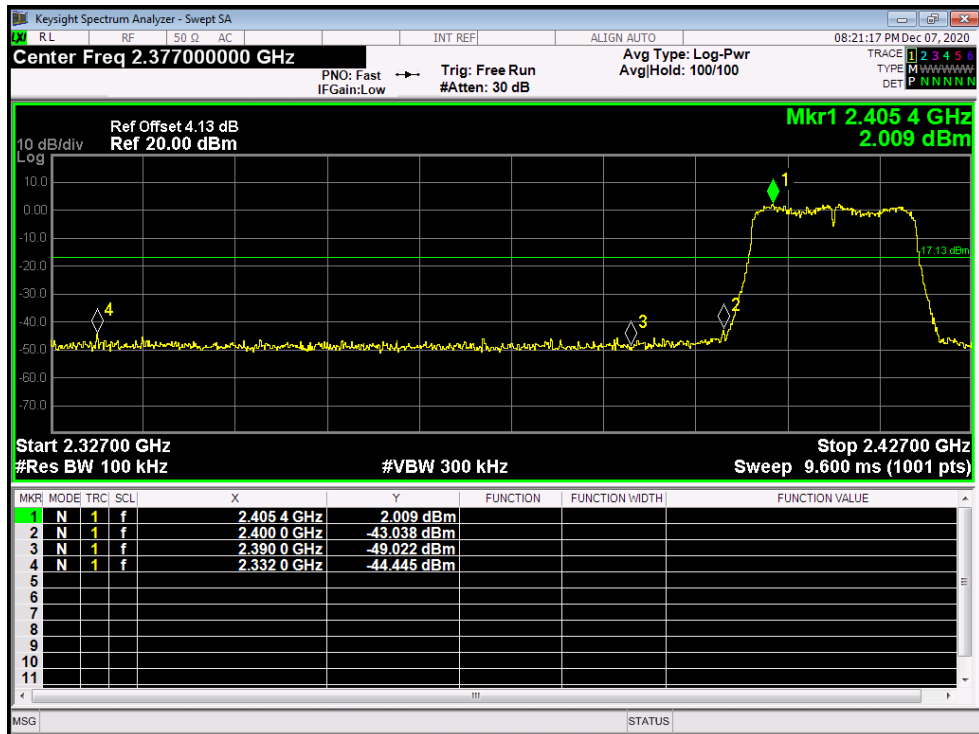
Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX G Mode 2412MHz / TX G Mode 2462MHz ANT. B		
Remark:	The EUT is programmed in continuously transmitting mode		



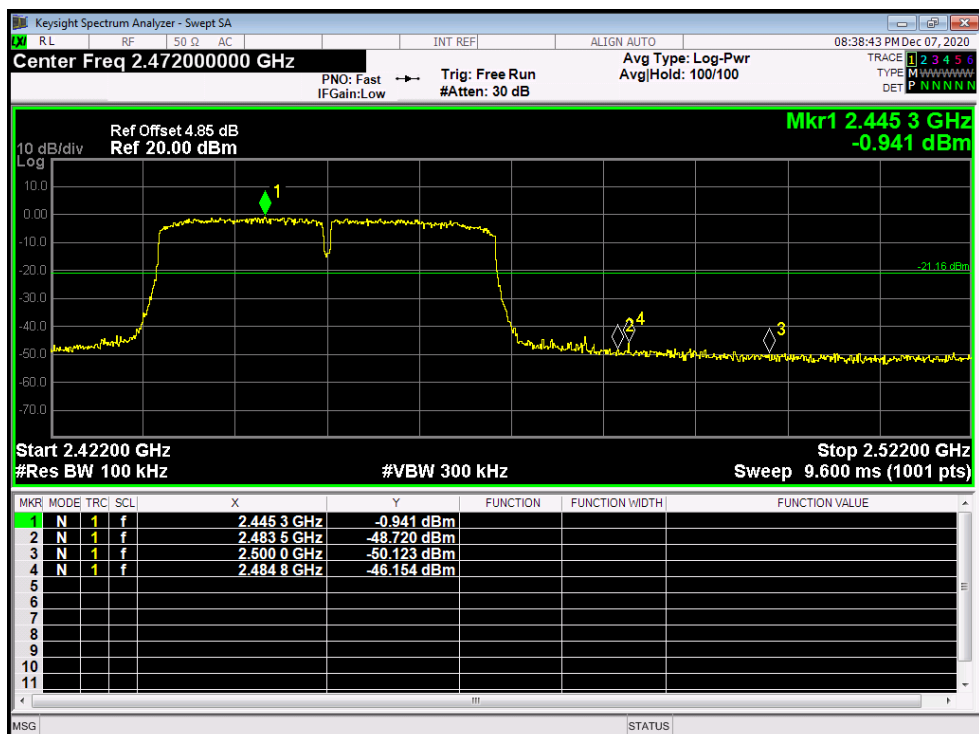
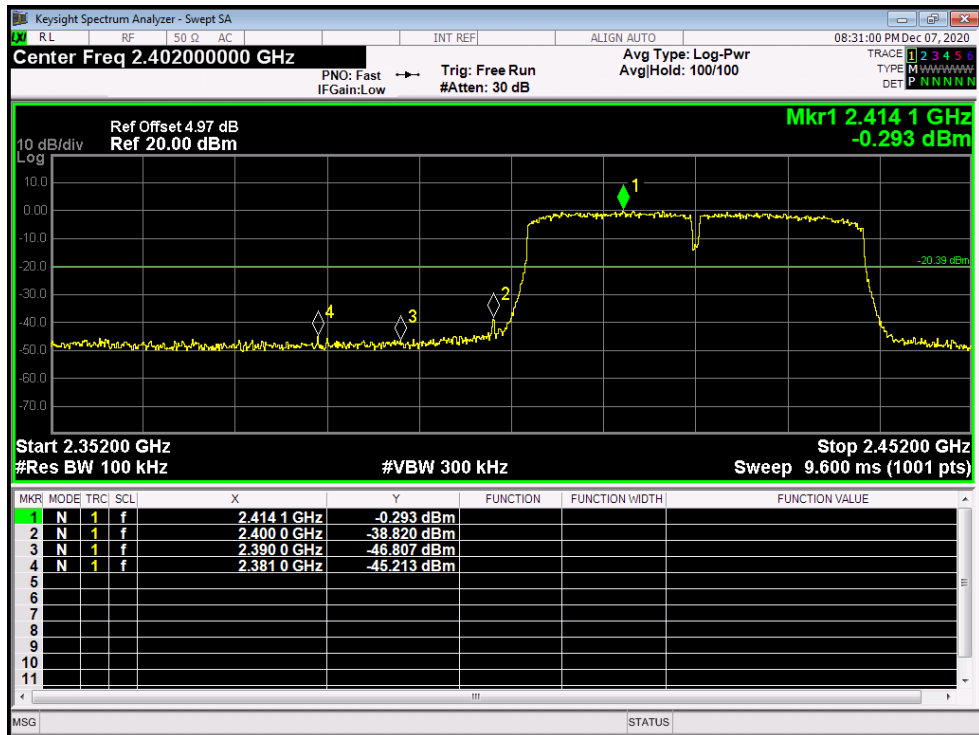
Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX N(HT20) Mode 2412MHz / TX N(HT20) Mode 2462MHz ANT. A		
Remark:	The EUT is programmed in continuously transmitting mode		



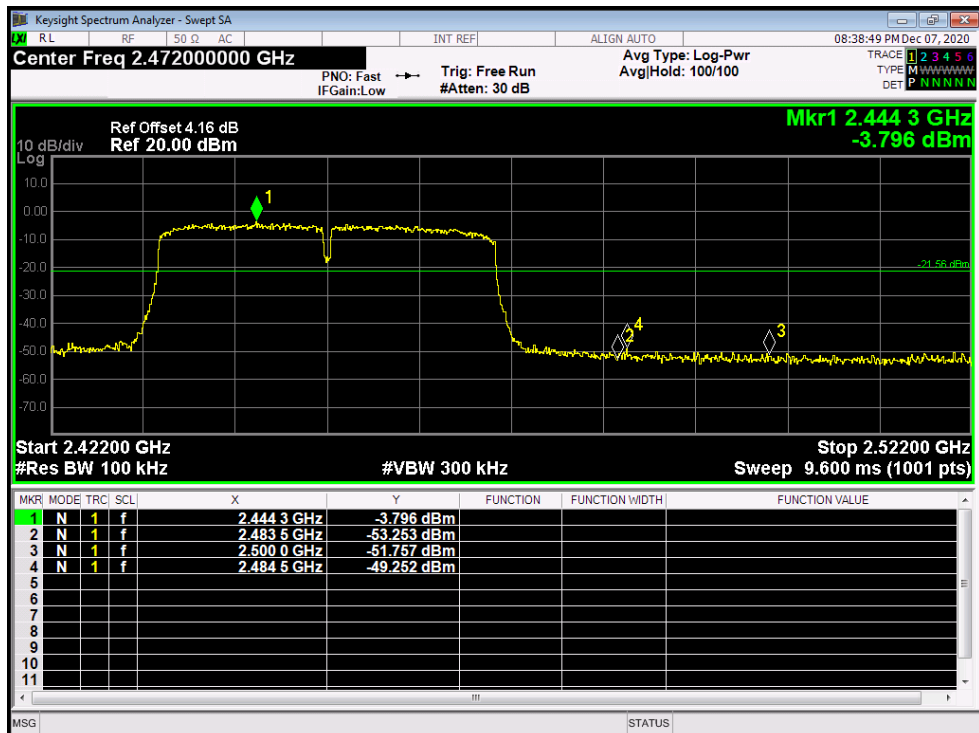
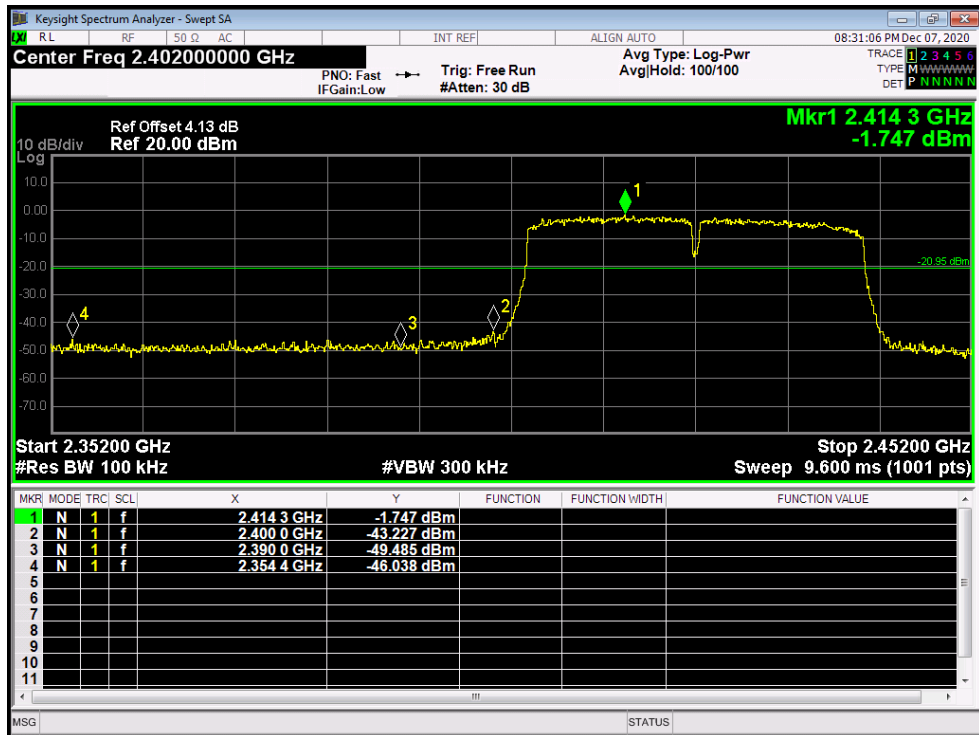
Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX N(HT20) Mode 2412MHz / TX N(HT20) Mode 2462MHz ANT. B		
Remark:	The EUT is programmed in continuously transmitting mode		



Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX N(HT40) Mode 2422MHz / TX N(HT40) Mode 2452MHz ANT. A		
Remark:	The EUT is programmed in continuously transmitting mode		



Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX N(HT40) Mode 2422MHz / TX N(HT40) Mode 2452MHz ANT. B		
Remark:	The EUT is programmed in continuously transmitting mode		



Attachment D-- Bandwidth Test Data

Temperature:	25℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX 802.11B Mode ANT. A		
Channel frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
2412	10.02	/	>=0.5
2437	10.01	/	
2462	10.07	/	
802.11B Mode			
2412 MHz			

Keysight Spectrum Analyzer - Occupied BW

RL

RF

50 Q

AC

INT REF

ALIGN AUTO

07:57:26 PM Dec 07, 2020

Center Freq 2.412000000 GHz

Center Freq: 2.412000000 GHz

Trig: Free Run

Avg|Hold: 100/100

Radio Std: None

#IFGain:Low

#Atten: 30 dB

Radio Device: BTS

Ref Offset 4.99 dB

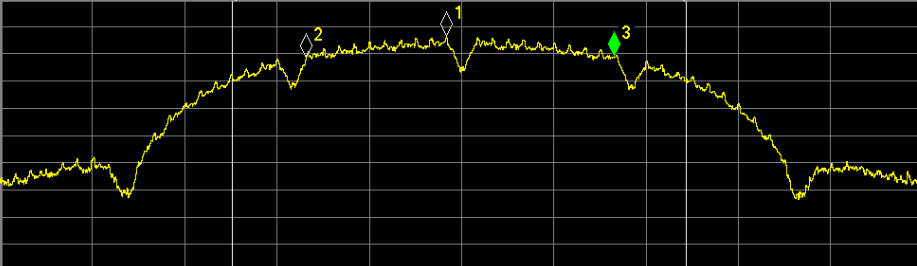
Ref 24.99 dBm

Mkr3 2.416963 GHz

3.4874 dBm

10 dB/div

Log



Center 2.412 GHz

#Res BW 100 kHz

#VBW 300 kHz

Span 30 MHz

Sweep 3.333 ms

Occupied Bandwidth

14.673 MHz

Total Power

27.2 dBm

Transmit Freq Error

-46.557 kHz

% of OBW Power

99.00 %

x dB Bandwidth

10.02 MHz

x dB

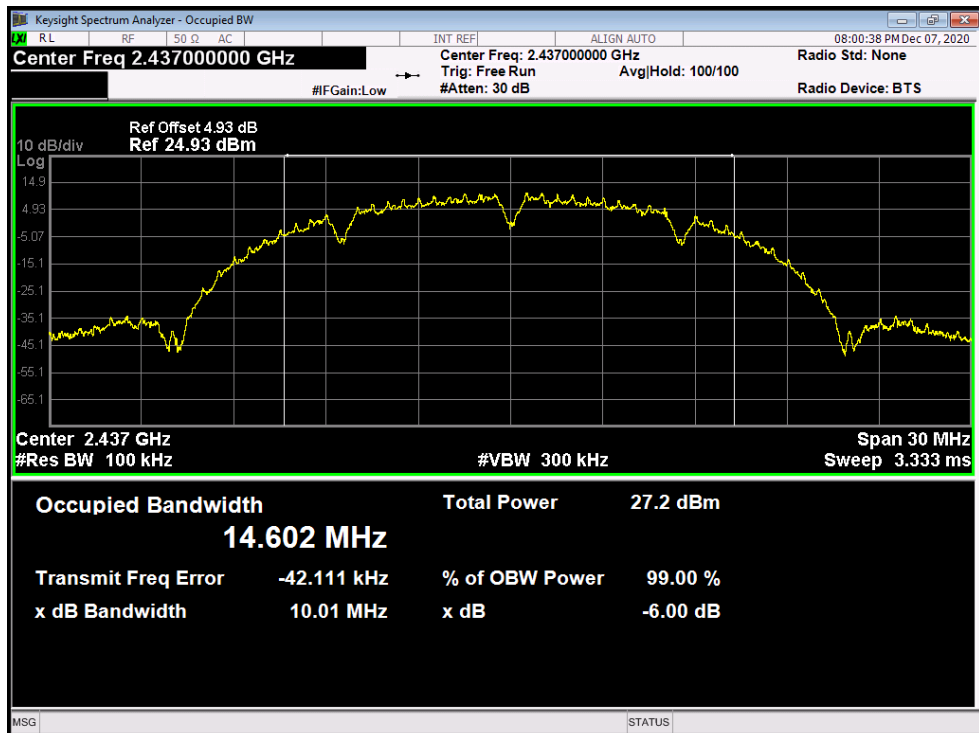
-6.00 dB

MSG

STATUS

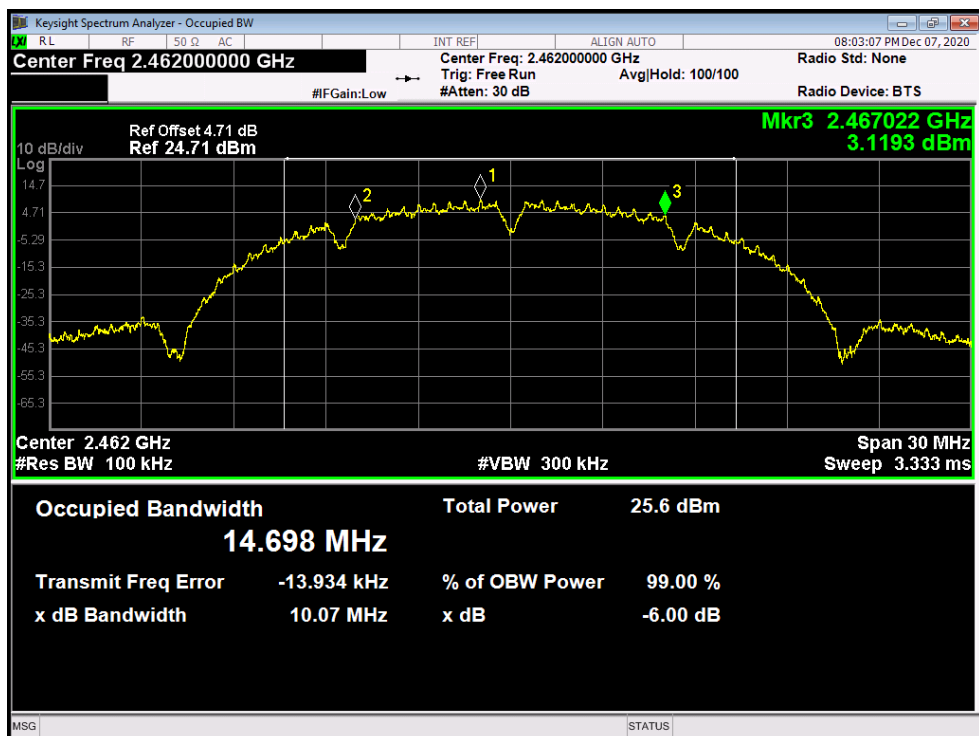
802.11B Mode

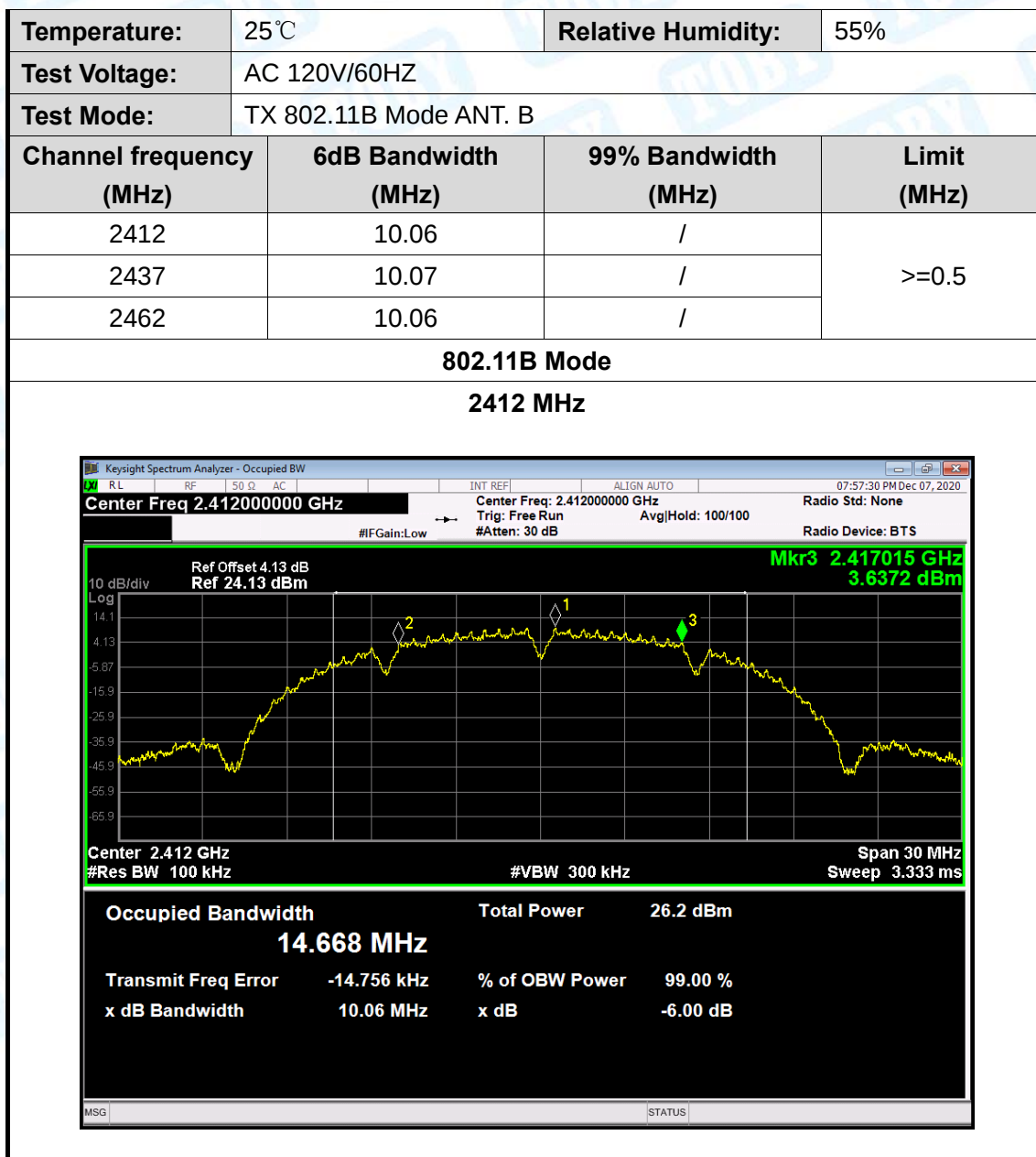
2437 MHz



802.11B Mode

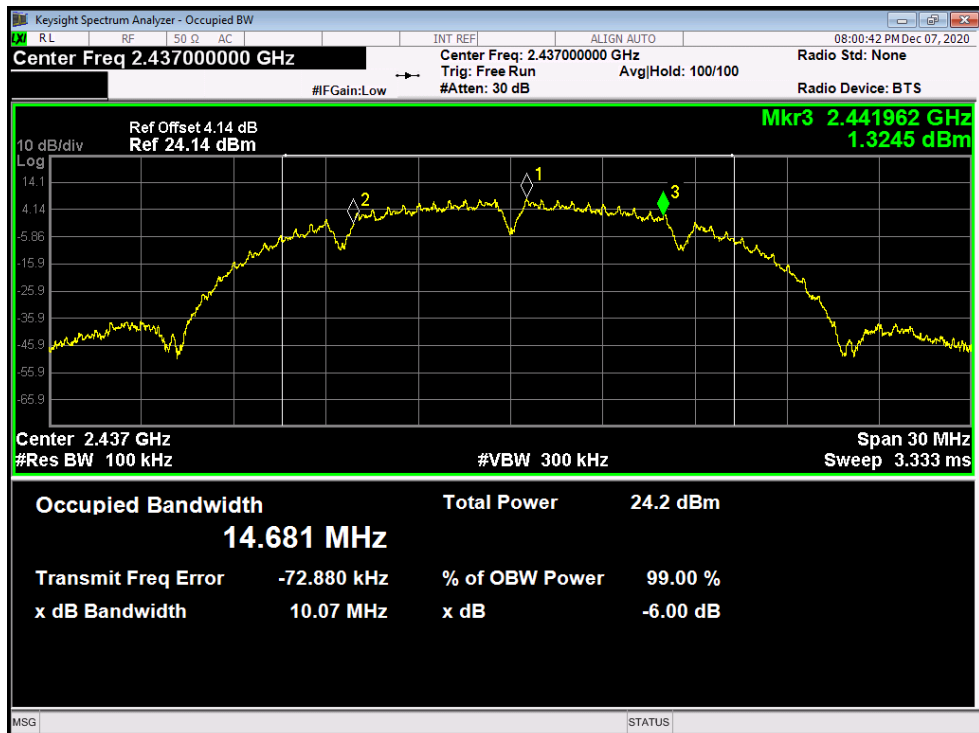
2462 MHz





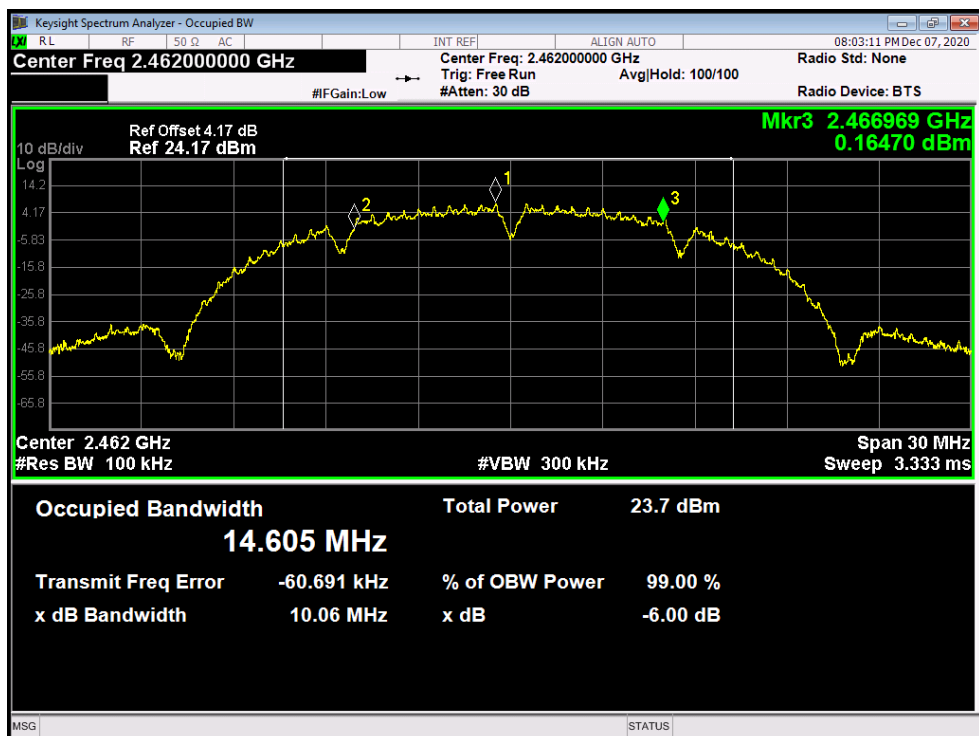
802.11B Mode

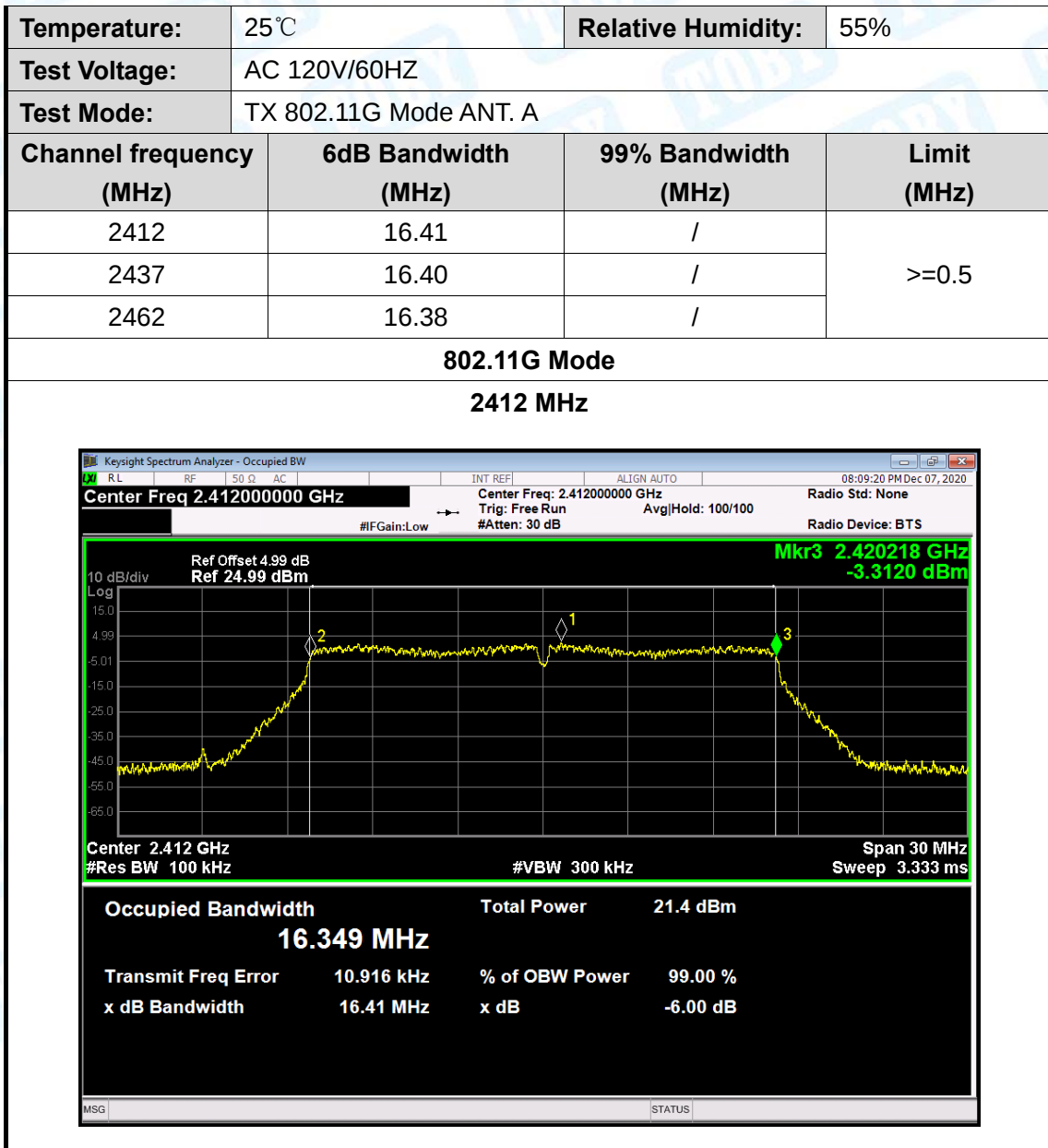
2437 MHz



802.11B Mode

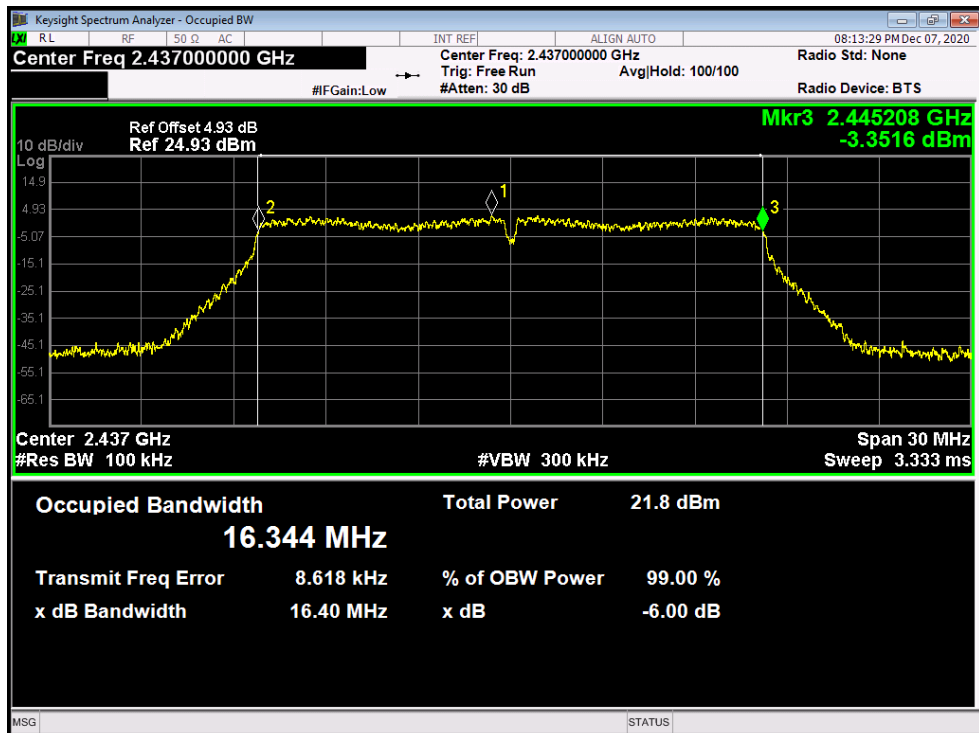
2462 MHz





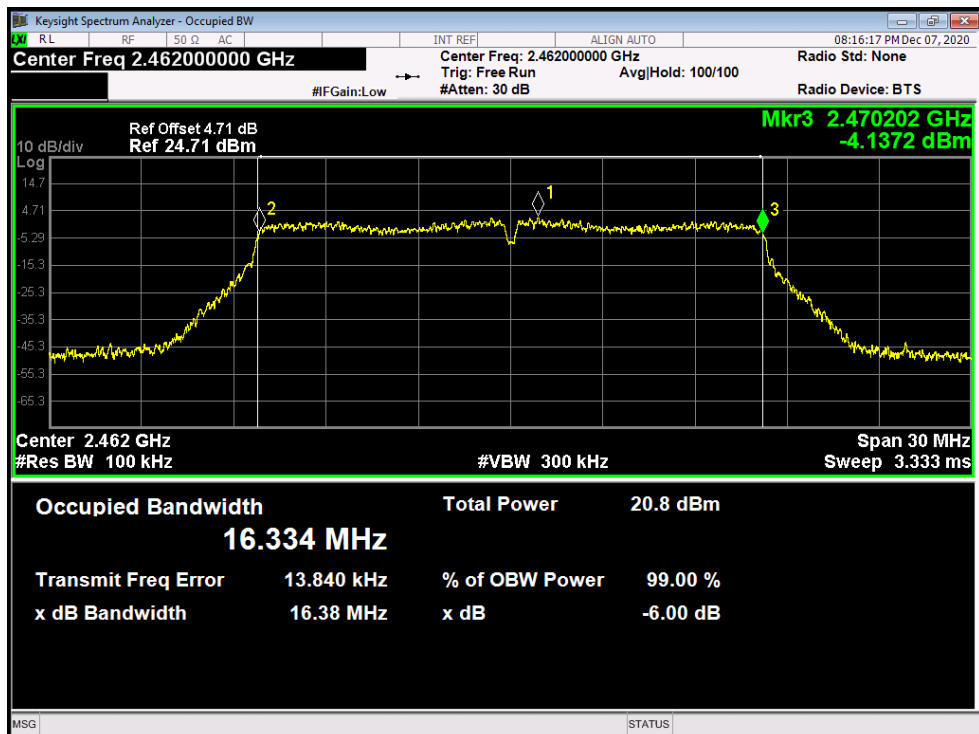
802.11G Mode

2437 MHz



802.11G Mode

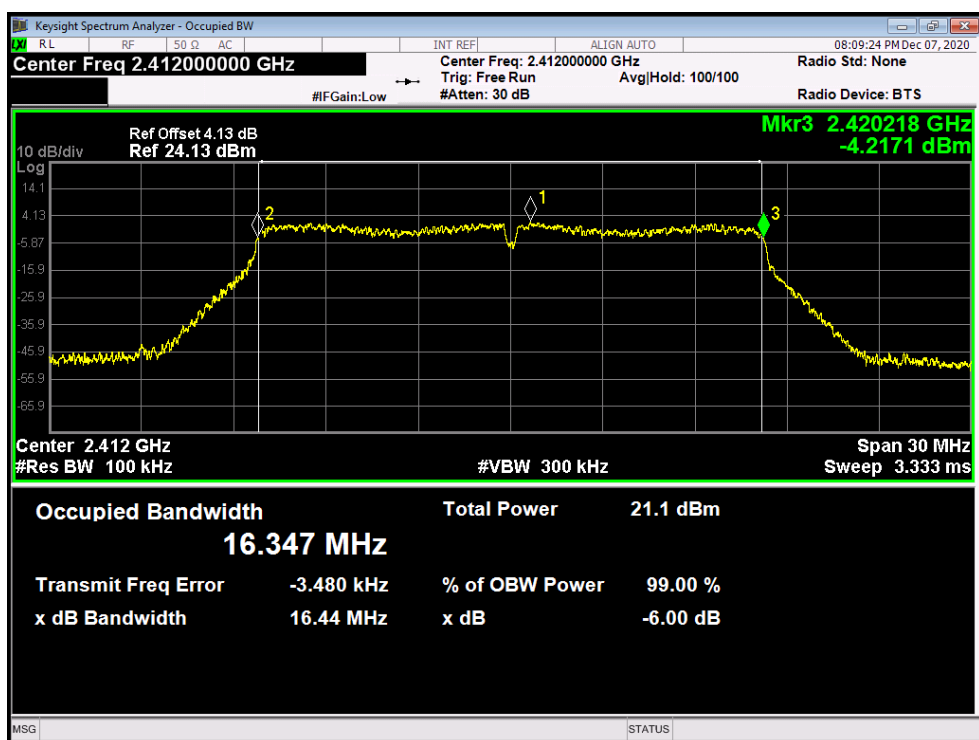
2462 MHz



Temperature:	25°C	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ		
Test Mode:	TX 802.11G Mode ANT. B		
Channel frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
2412	16.44	/	>=0.5
2437	16.47	/	
2462	16.44	/	

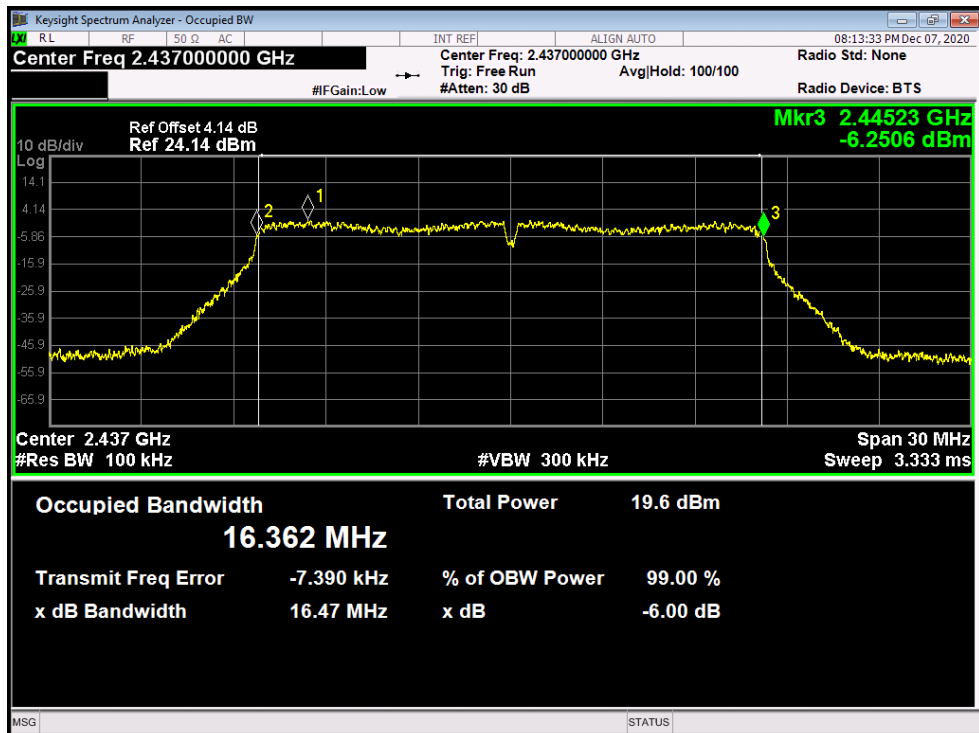
802.11G Mode

2412 MHz



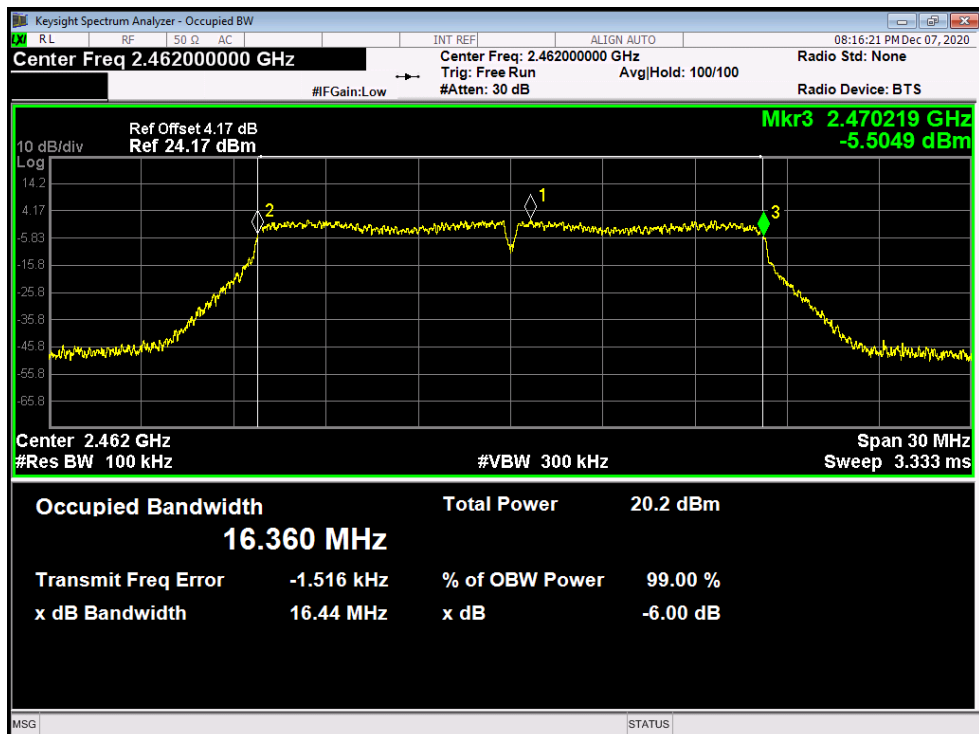
802.11G Mode

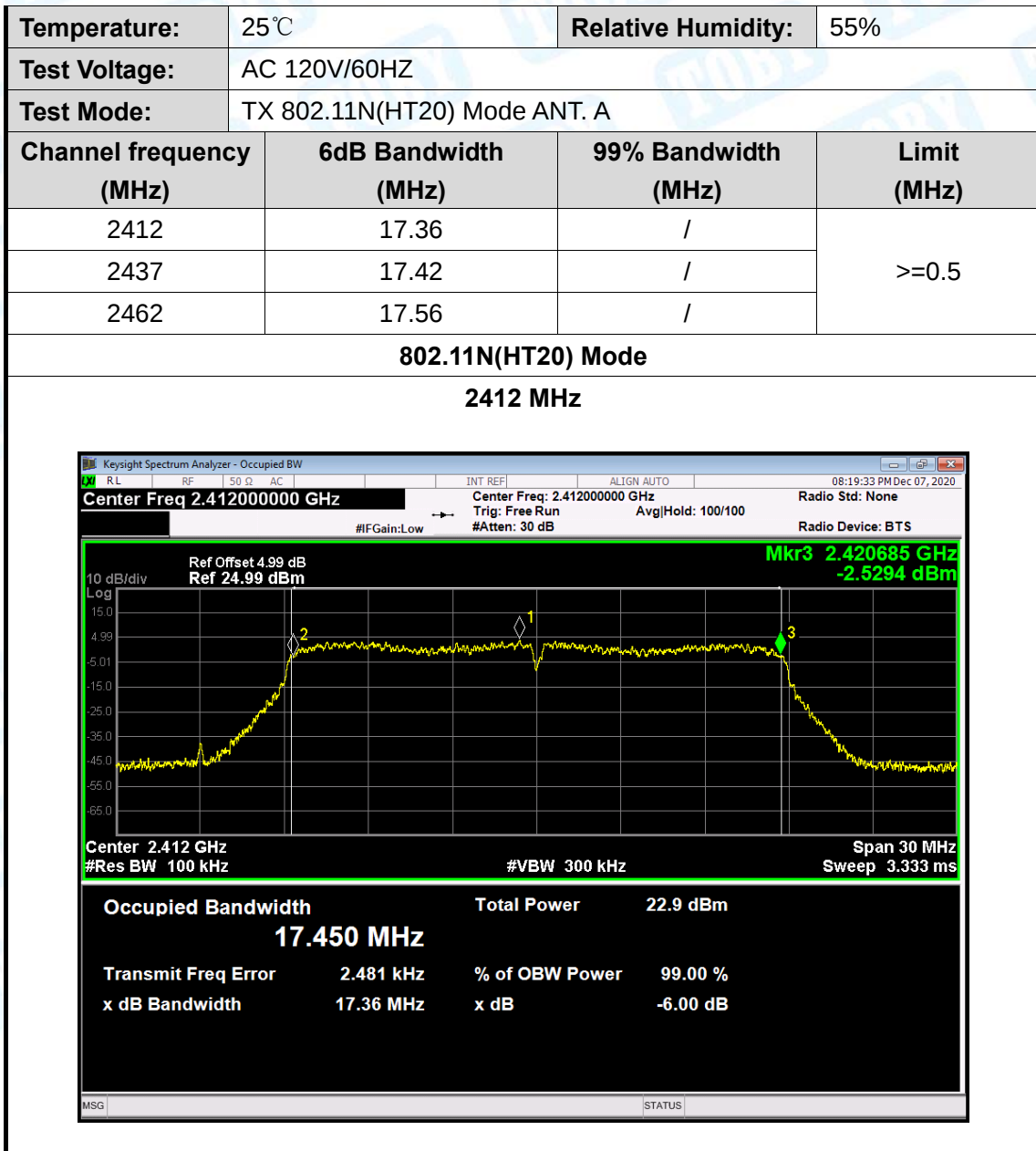
2437 MHz



802.11G Mode

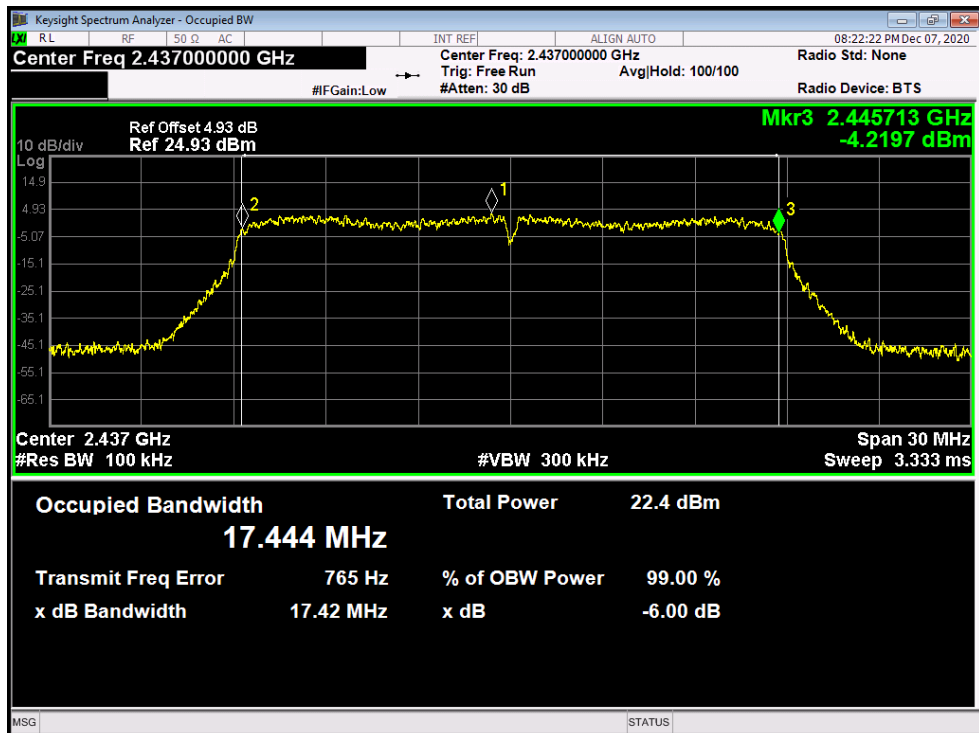
2462 MHz





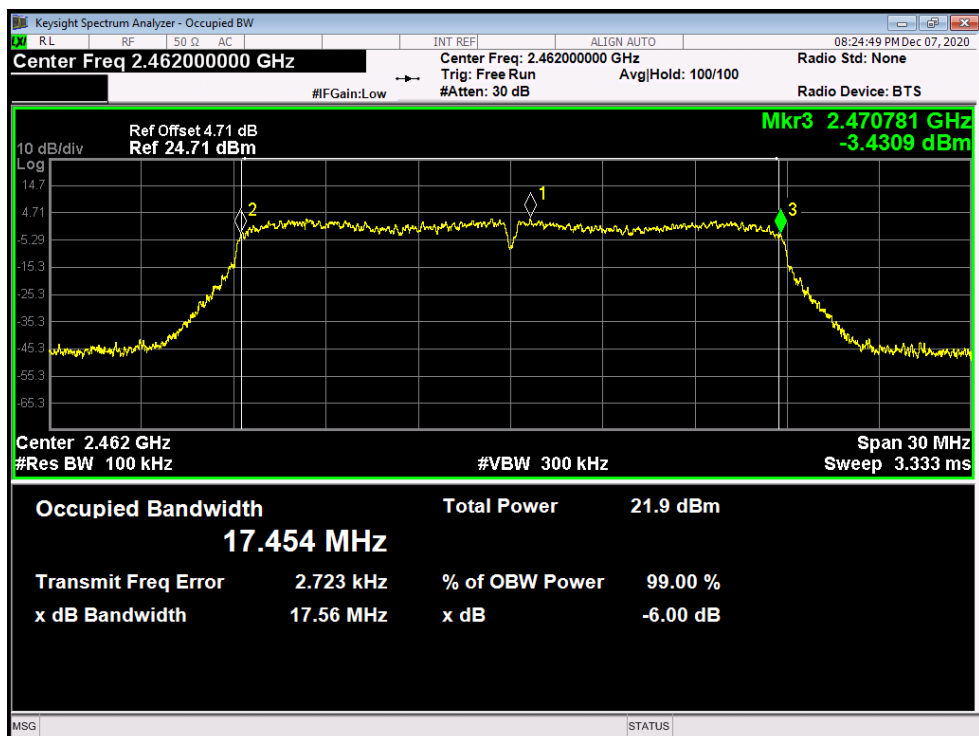
802.11N(HT20) Mode

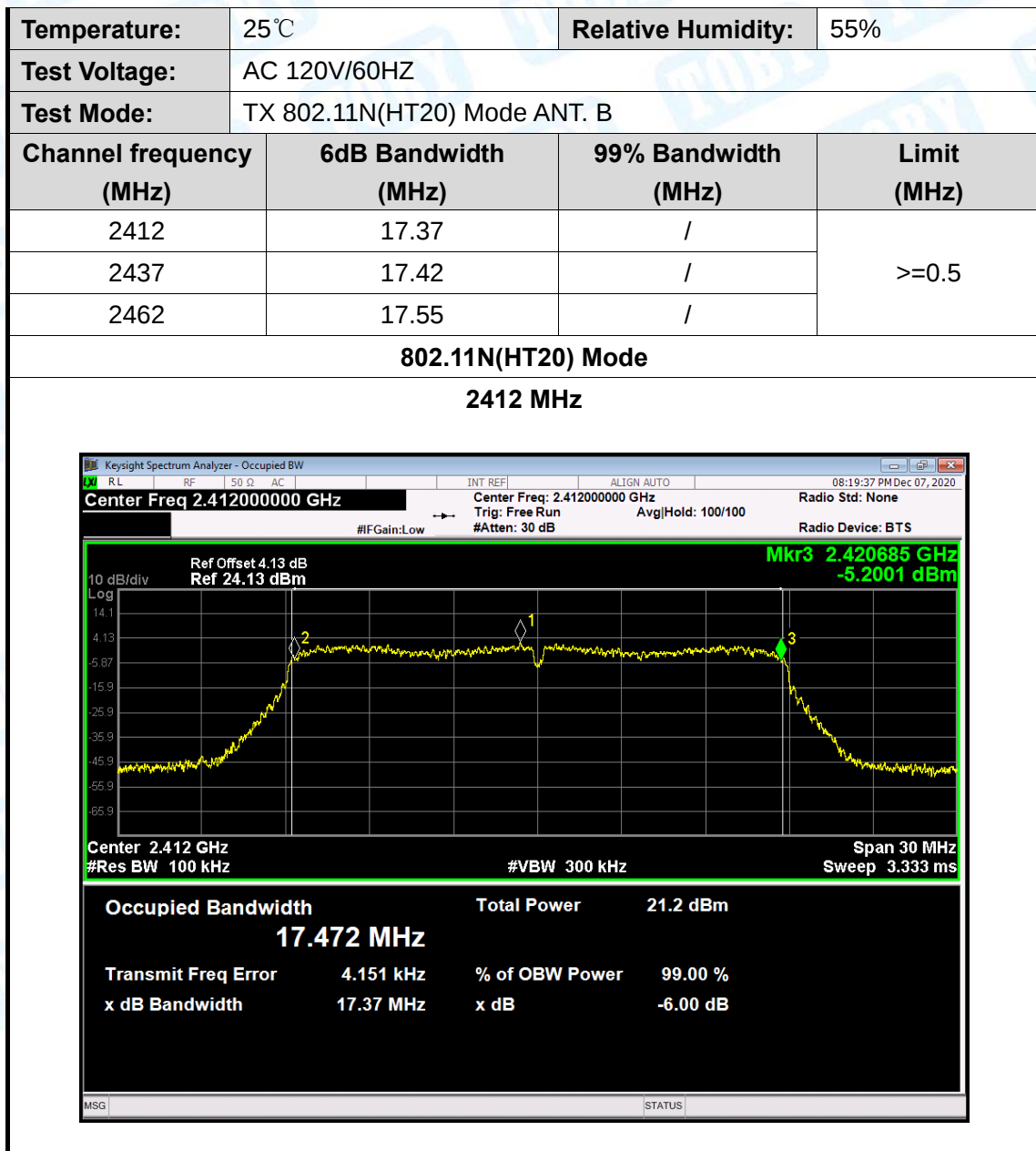
2437 MHz



802.11N(HT20) Mode

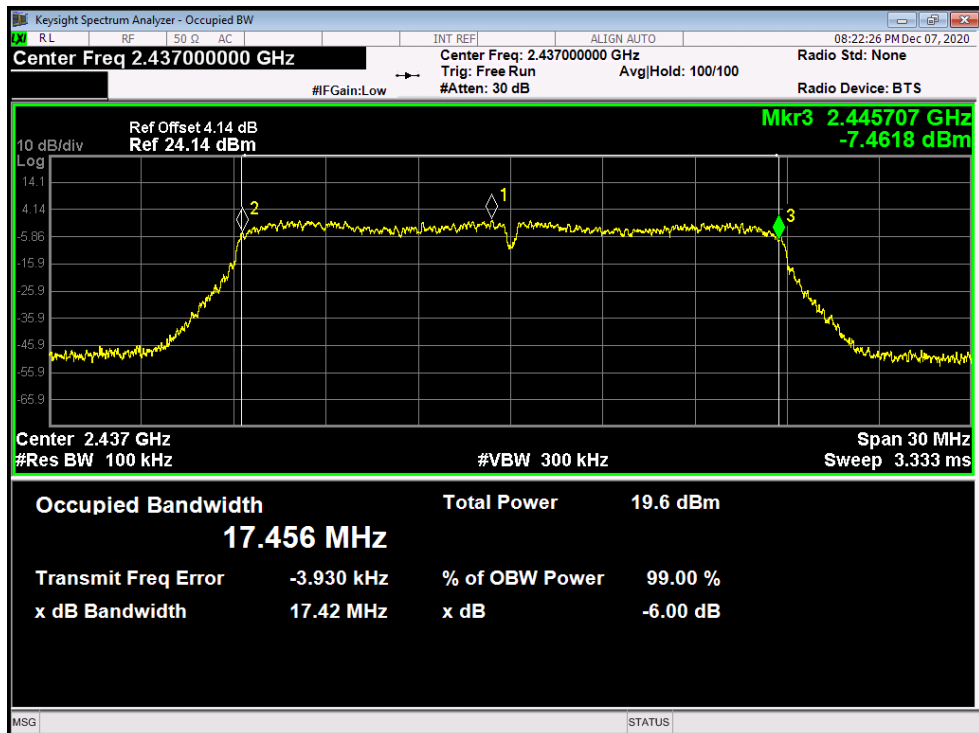
2462 MHz





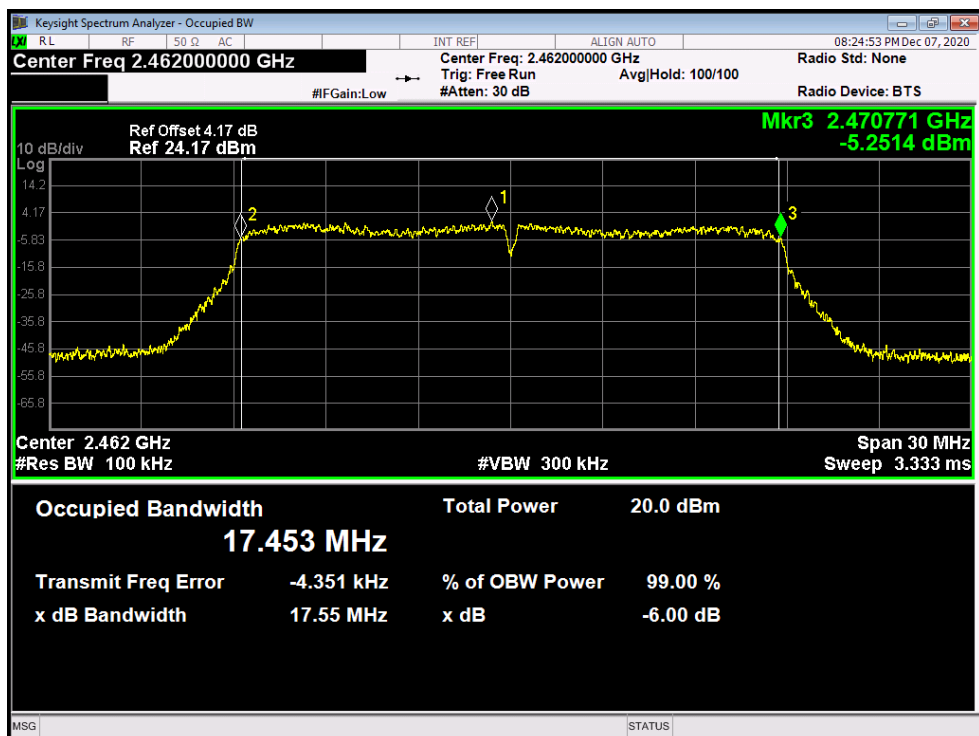
802.11N(HT20) Mode

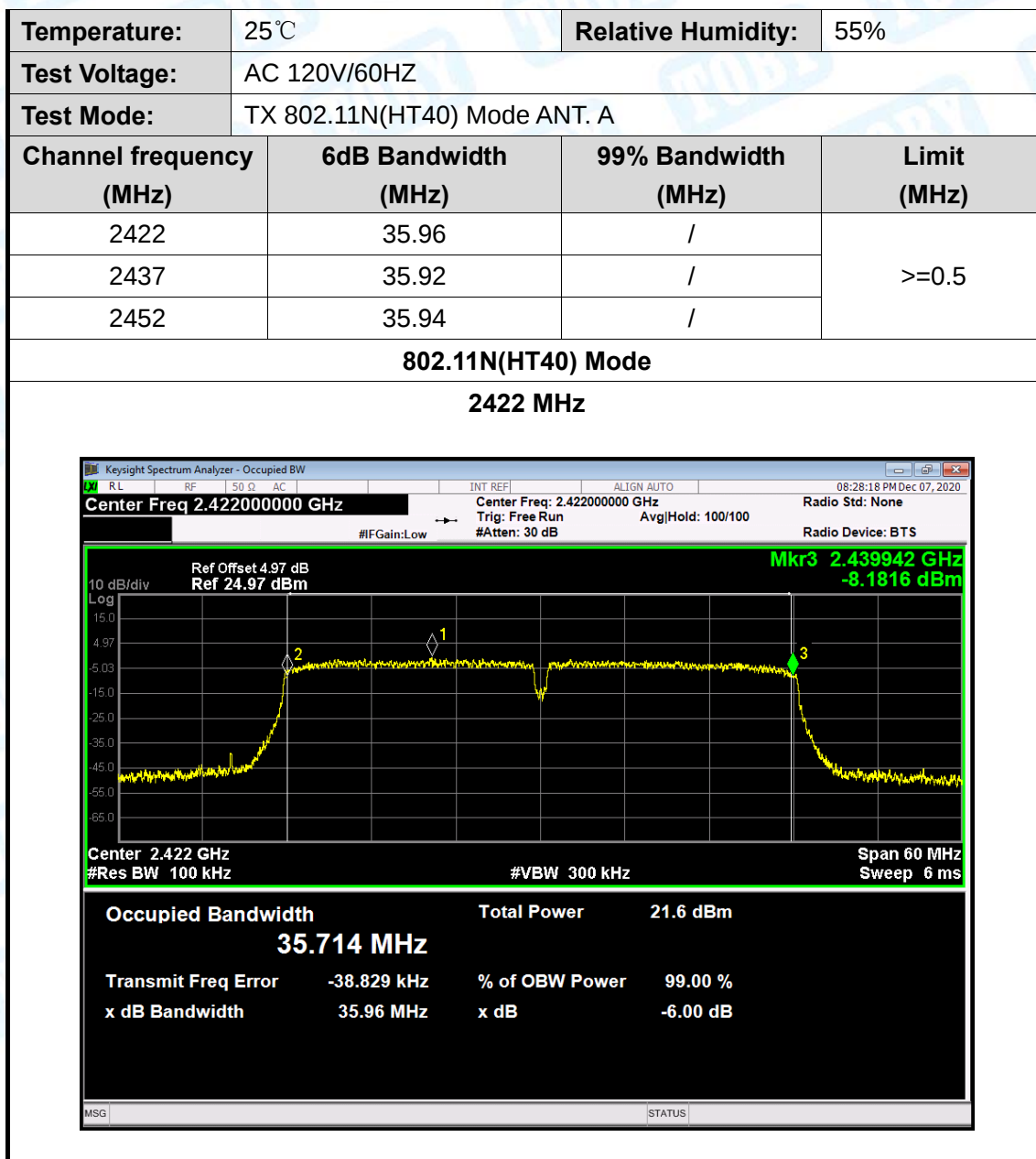
2437 MHz



802.11N(HT20) Mode

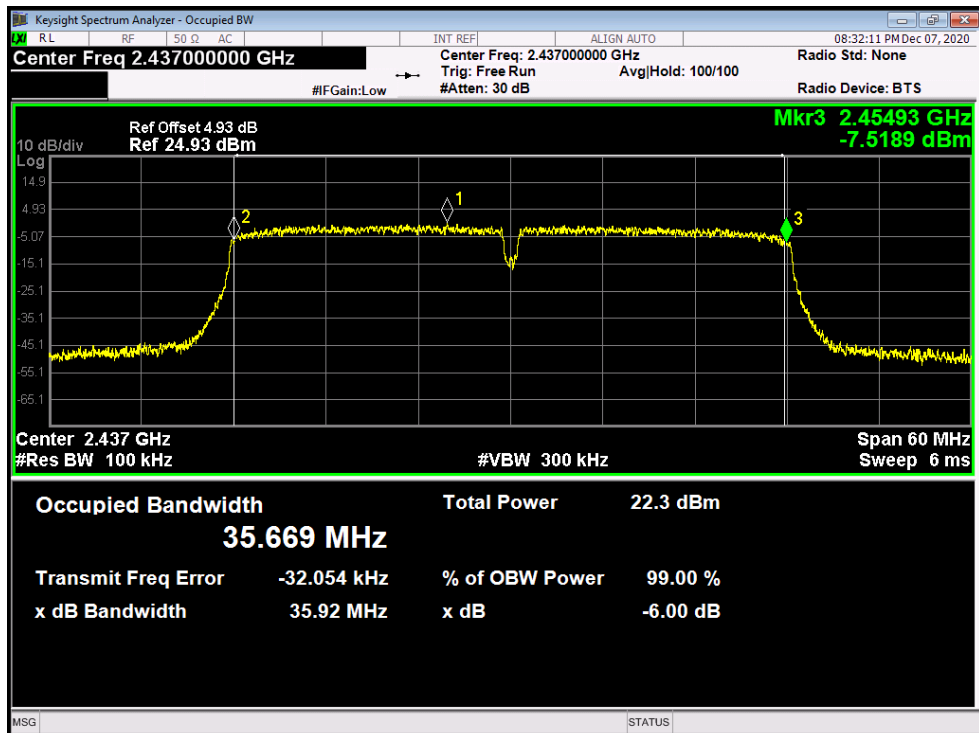
2462 MHz





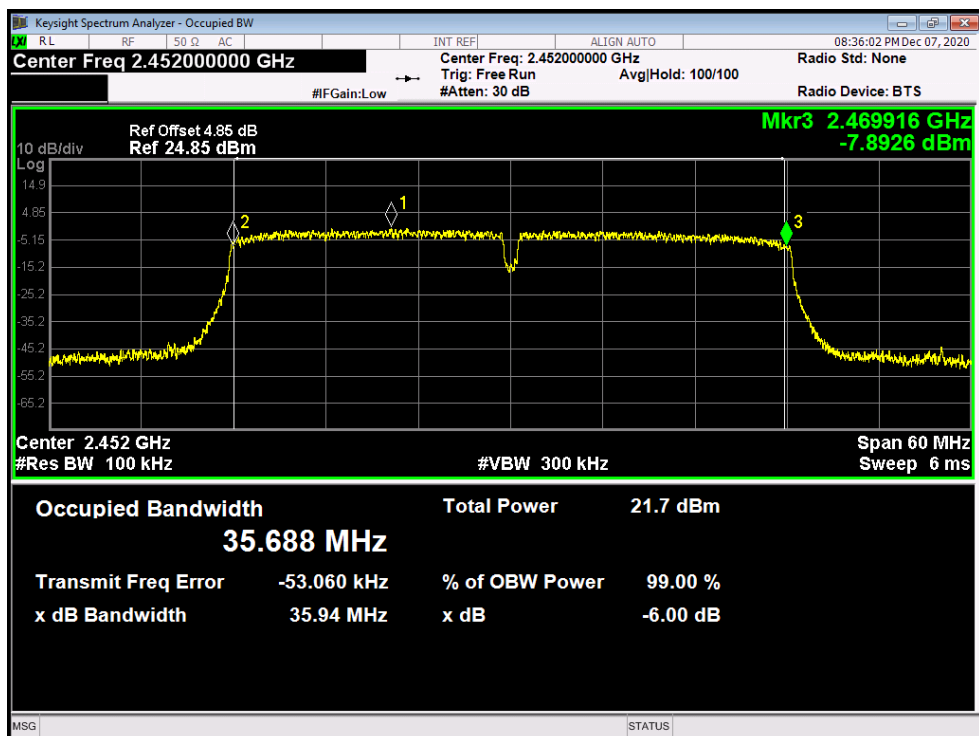
802.11N(HT40) Mode

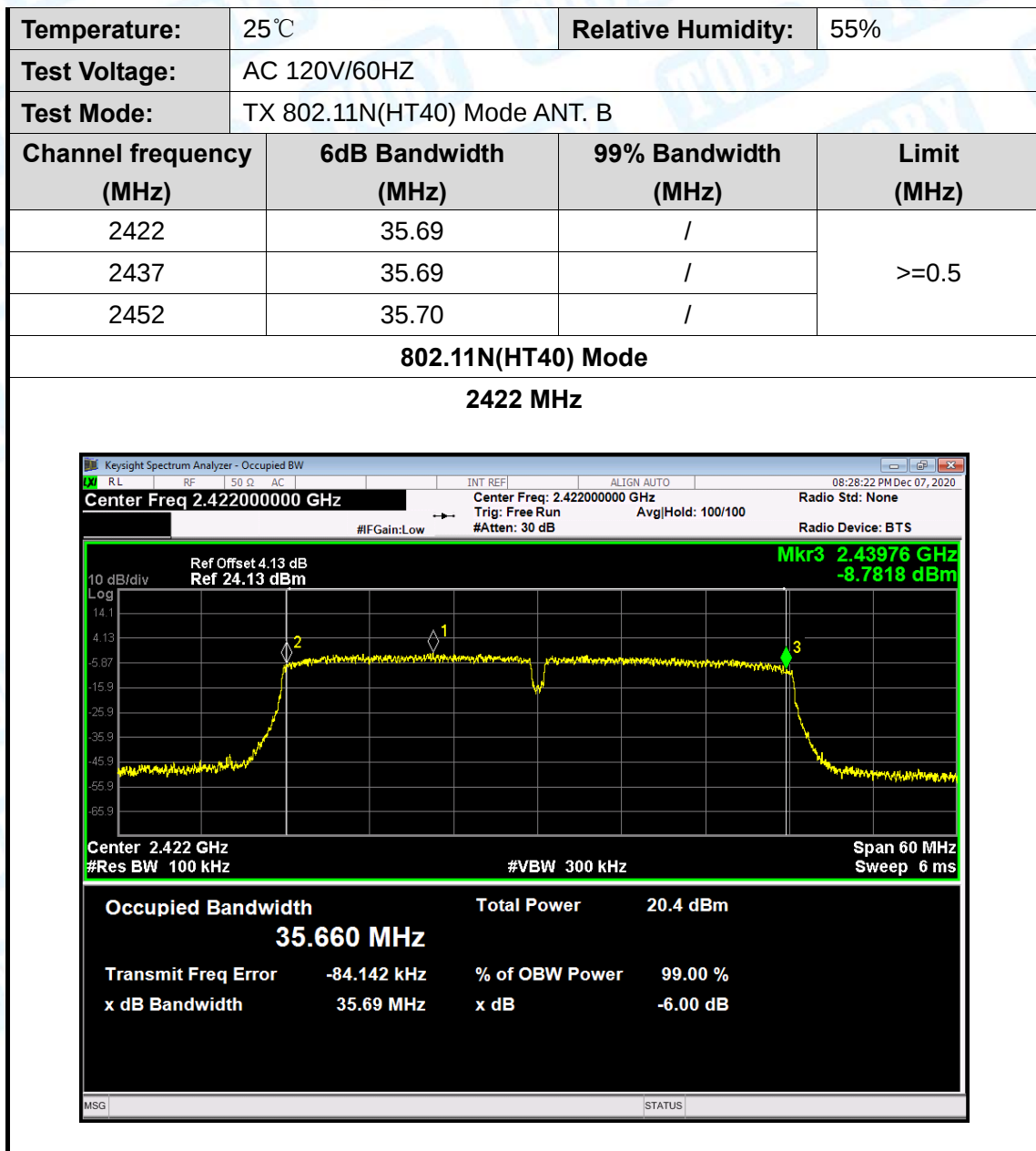
2437 MHz



802.11N(HT40) Mode

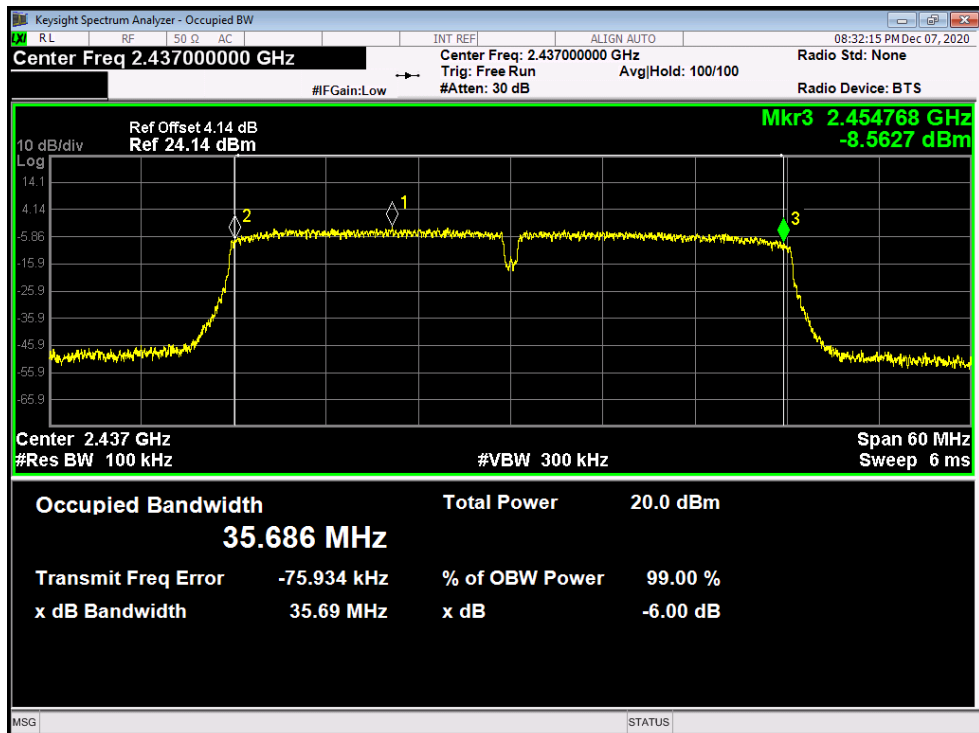
2452 MHz





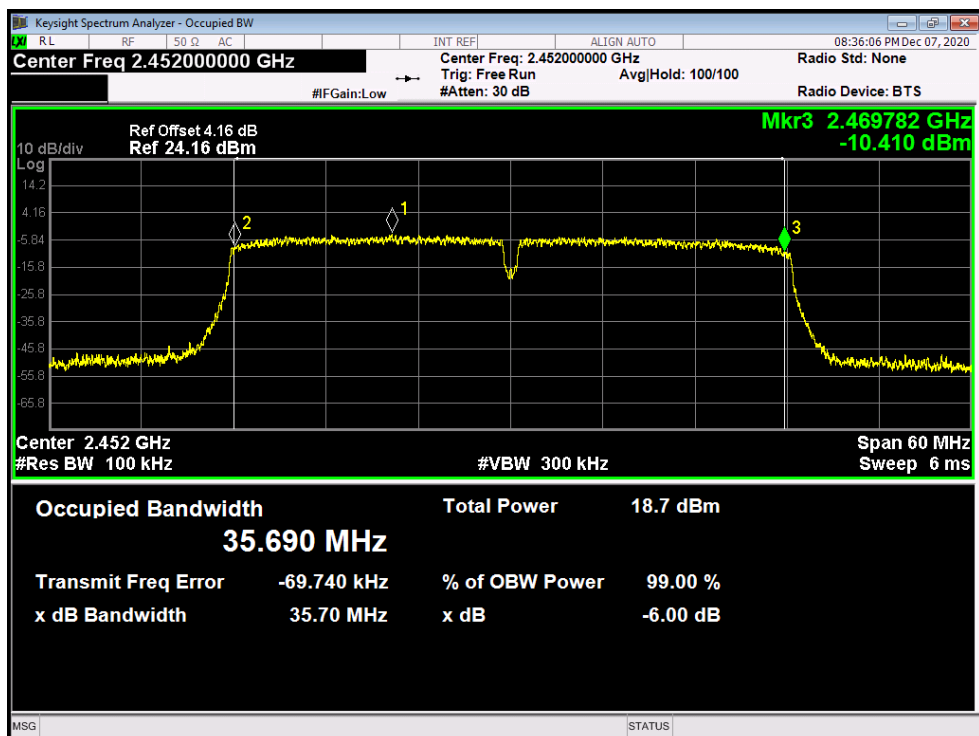
802.11N(HT40) Mode

2437 MHz



802.11N(HT40) Mode

2452 MHz

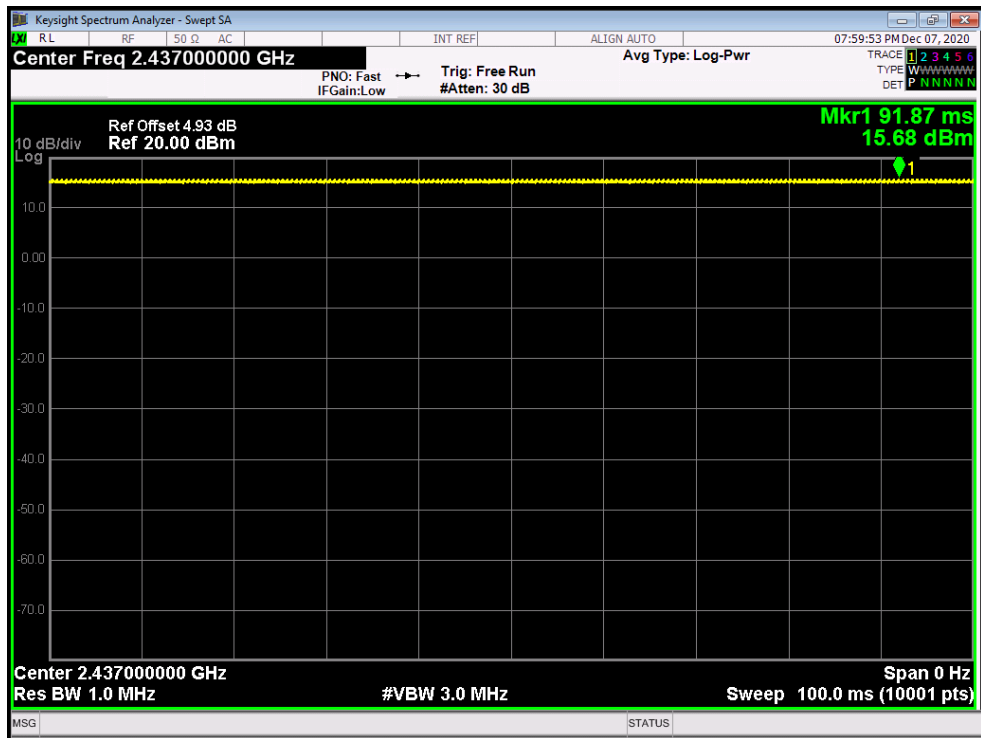


Attachment E-- Peak Output Power Test Data

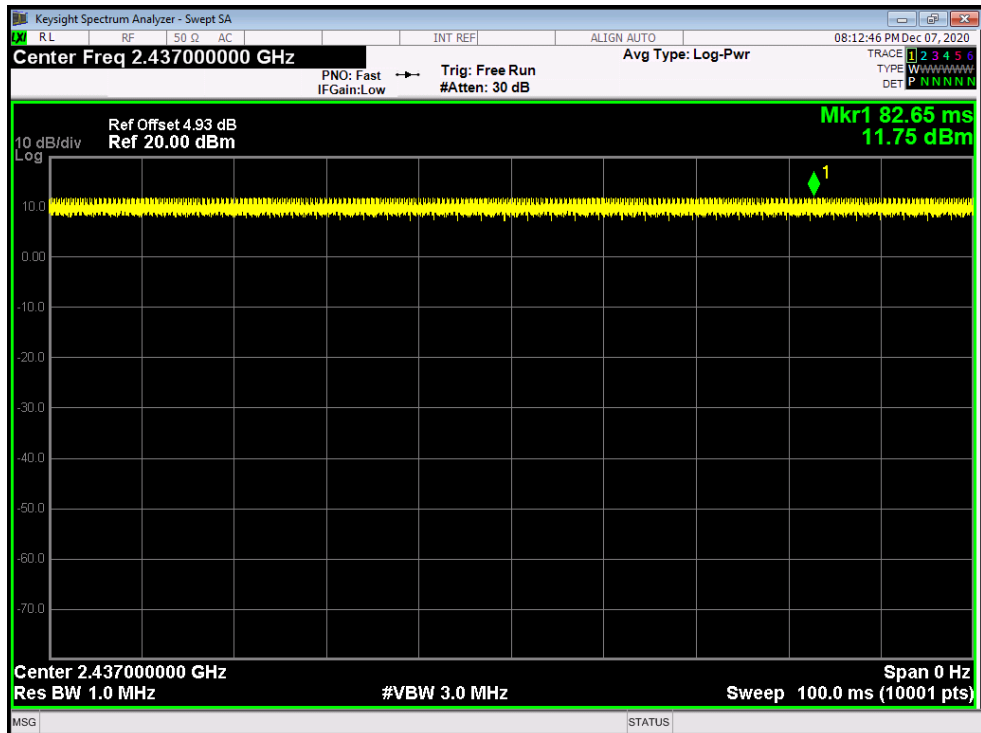
Conducted Power					
802.11b					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		ANT. A	ANT. B	Total	
1	2412 MHz	13.57	13.17	----	30
6	2437 MHz	12.04	11.71	----	
11	2462 MHz	10.91	10.83	----	
802.11g					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		ANT. A	ANT. B	Total	
1	2412 MHz	21.02	19.73	23.43	29.31
6	2437 MHz	20.78	17.93	22.59	
11	2462 MHz	19.74	19.05	22.42	
802.11n(HT20)					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		ANT. A	ANT. B	Total	
1	2412 MHz	21.80	20.00	24.00	29.31
6	2437 MHz	21.55	18.59	23.33	
11	2462 MHz	21.22	19.26	23.36	
802.11n(HT40)					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		ANT. A	ANT. B	Total	
3	2422 MHz	21.08	19.23	23.27	29.31
6	2437 MHz	21.55	18.40	23.26	
9	2452 MHz	20.59	17.52	22.33	
Note: The ANT. A. and ANT. B will transmitting simultaneously for the 802.11g/n(HT20)/n(HT40) Mode, the Directional Gain =Ant. Gain + 10*LOG(N _{ANT}) =6.69dBi> 6 dBi. So P _{out} = P _{limit} -(G _{TX} -6)=30-0.69=29.31dBm					

Duty Cycle		
Mode	Channel frequency (MHz)	Test Result
802.11b	2412	>98%
	2437	
	2462	
802.11g	2412	
	2437	
	2462	
802.11n (HT20)	2412	
	2437	
	2462	
802.11n (HT40)	2422	
	2437	
	2452	
Please see below plots		

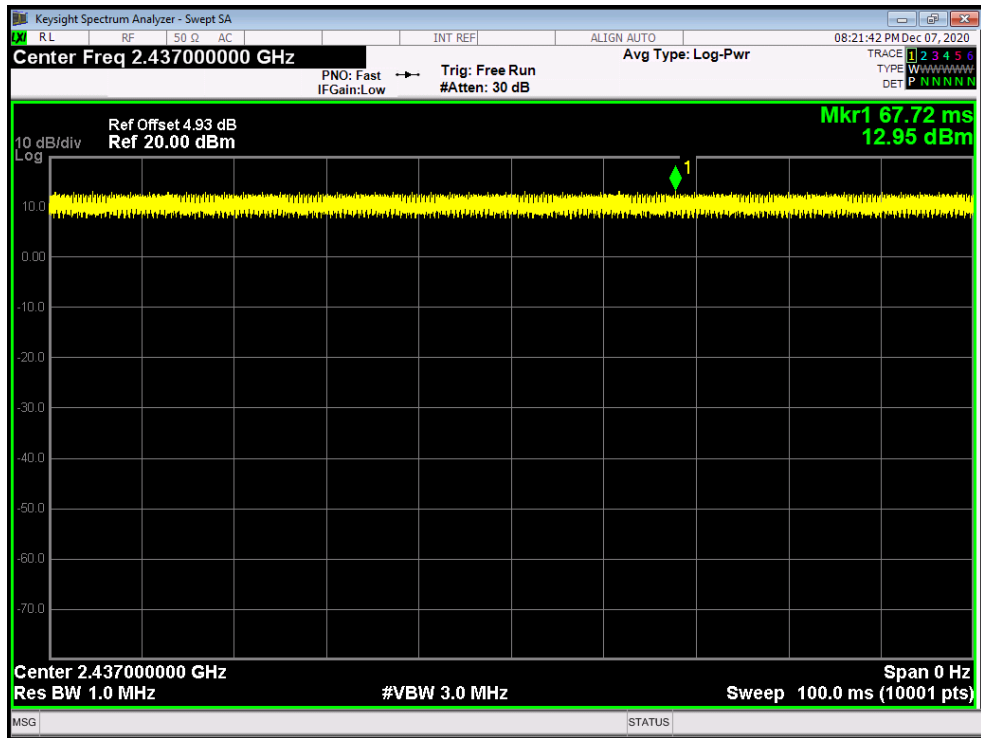
802.11 B Mode 2437 MHz



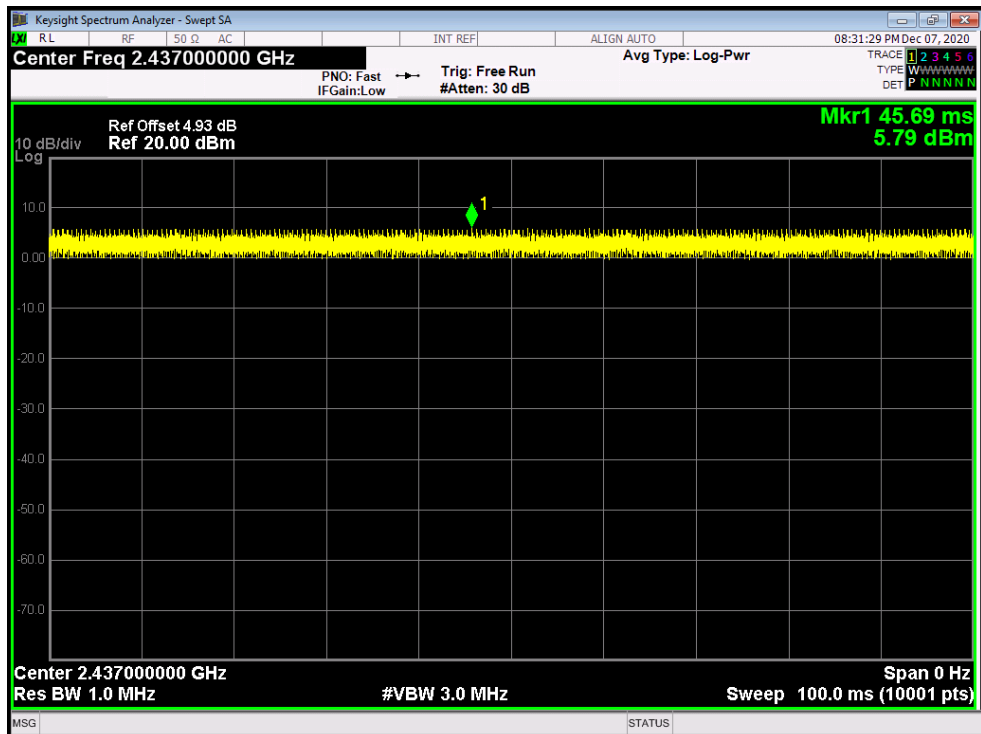
802.11 G Mode 2437 MHz



802.11 N(HT20) Mode 2437 MHz



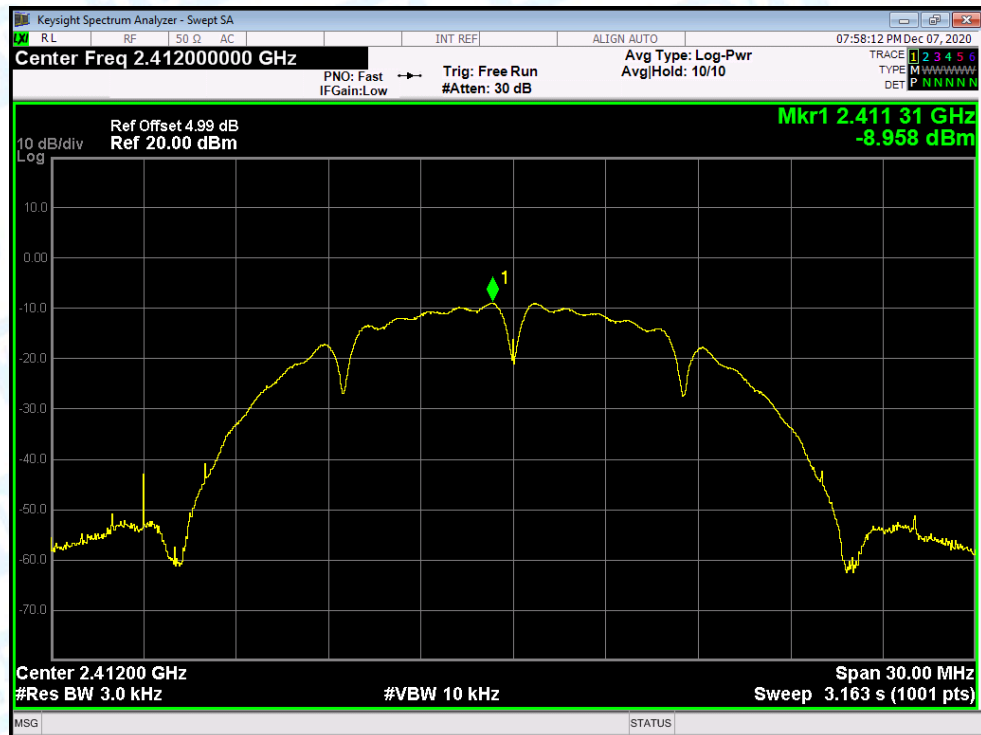
802.11 N(HT40) Mode 2437 MHz



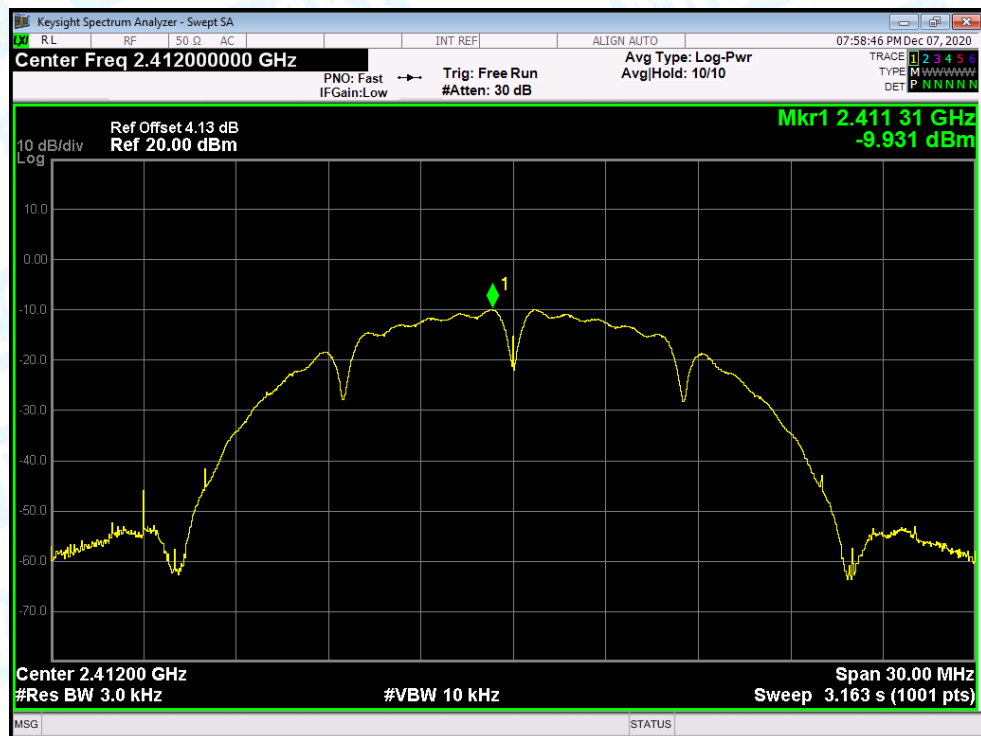
Attachment F-- Power Spectral Density Test Data

802.11b Mode					
Channel	Frequency	Conducted PSD (dBm/3KHz)			Max. Limit (dBm/3KHz)
		ANT. A	ANT. B	Total	
1	2412 MHz	-8.958	-9.931	----	8
6	2437 MHz	-9.155	-12.278	----	
11	2462 MHz	-9.987	-12.024	----	
802.11g Mode					
Channel	Frequency	Conducted PSD (dBm/3KHz)			Max. Limit (dBm/3KHz)
		ANT. A	ANT. B	Total	
1	2412 MHz	-11.554	-12.364	-8.930	7.31
6	2437 MHz	-11.546	-13.716	-9.487	
11	2462 MHz	-12.319	-13.046	-9.657	
802.11n(HT20) Mode					
Channel	Frequency	Conducted PSD (dBm/3KHz)			Max. Limit (dBm/3KHz)
		ANT. A	ANT. B	Total	
1	2412 MHz	-9.203	-11.131	-7.051	7.31
6	2437 MHz	-9.826	-12.551	-7.902	
11	2462 MHz	-10.505	-12.180	-8.252	
802.11n(HT40) Mode					
Channel	Frequency	Conducted PSD (dBm/3KHz)			Max. Limit (dBm/3KHz)
		ANT. A	ANT. B	Total	
3	2422 MHz	-10.844	-14.397	-9.257	7.31
6	2437 MHz	-12.709	-14.938	-10.672	
9	2452 MHz	-11.477	-15.869	-10.130	
Note: The ANT. A. and ANT. B will transmitting simultaneously for the 802.11g/n(HT20)/n(HT40) Mode, the T Directional Gain =Ant. Gain + 10*LOG(N _{ANT}) =6.69dBi>6 dBi. So P _{out} = P _{limit} -(G _{TX} -6)]=8-0.69=7.31dBm					
Test plots please refer to below pages:					

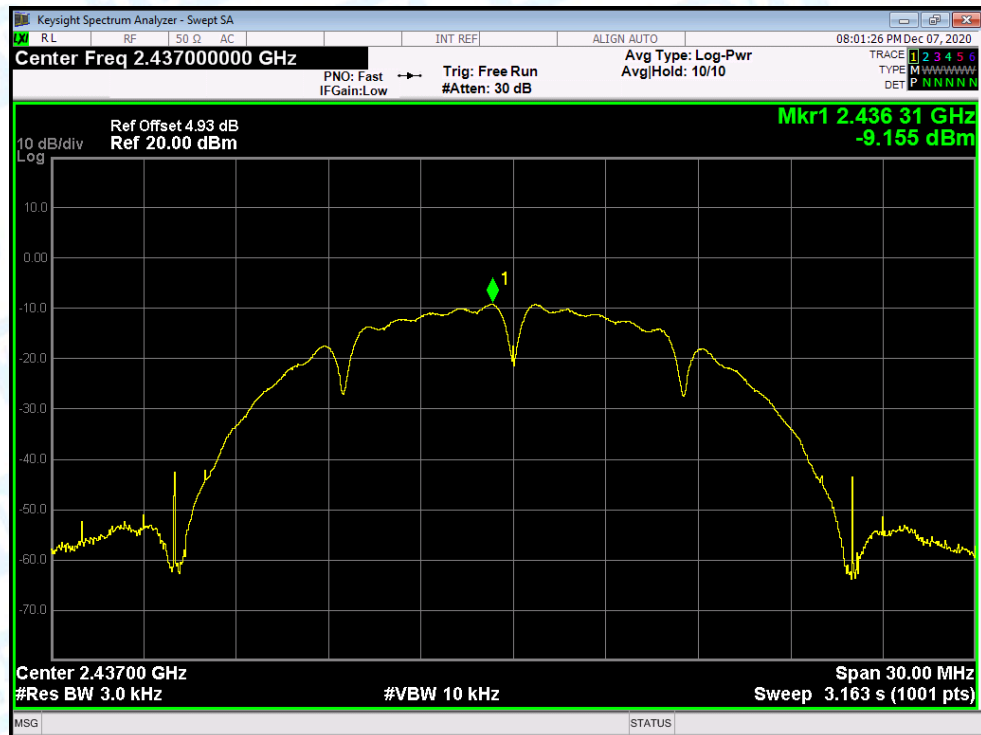
PSD NVNT b 2412MHz Ant. A



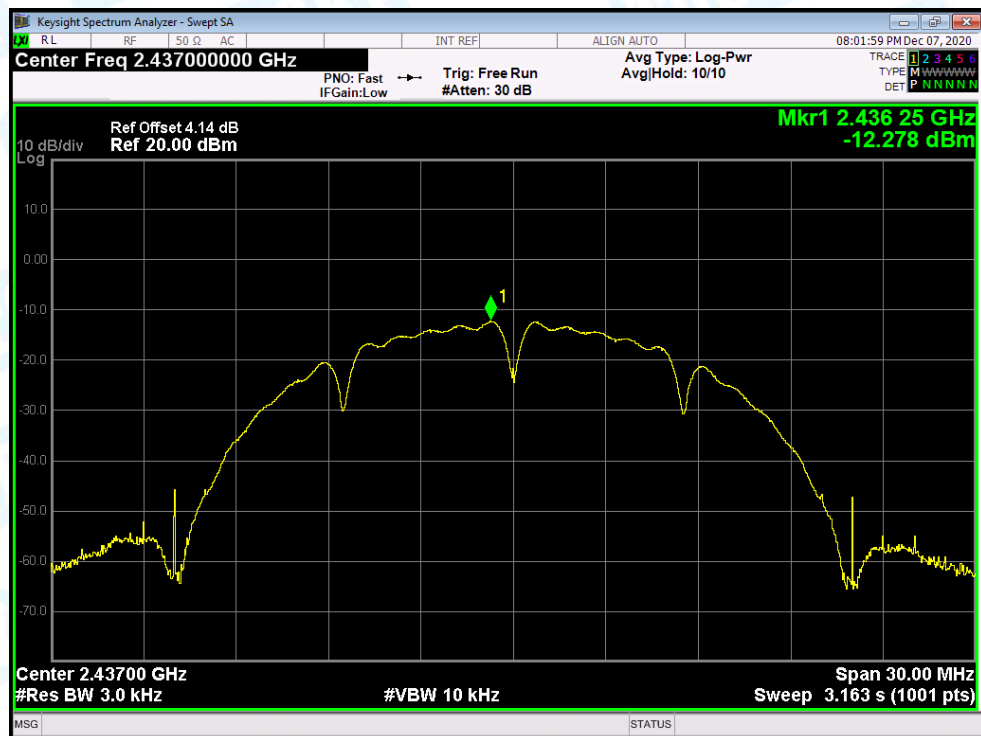
PSD NVNT b 2412MHz Ant. B



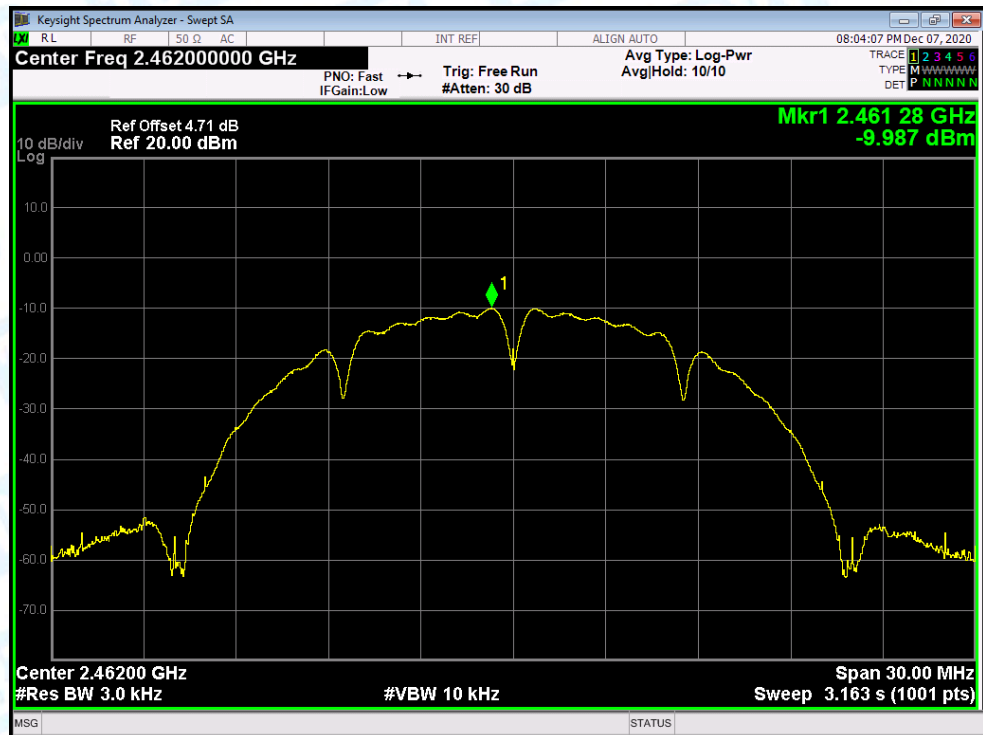
PSD NVNT b 2437MHz Ant. A



PSD NVNT b 2437MHz Ant. B



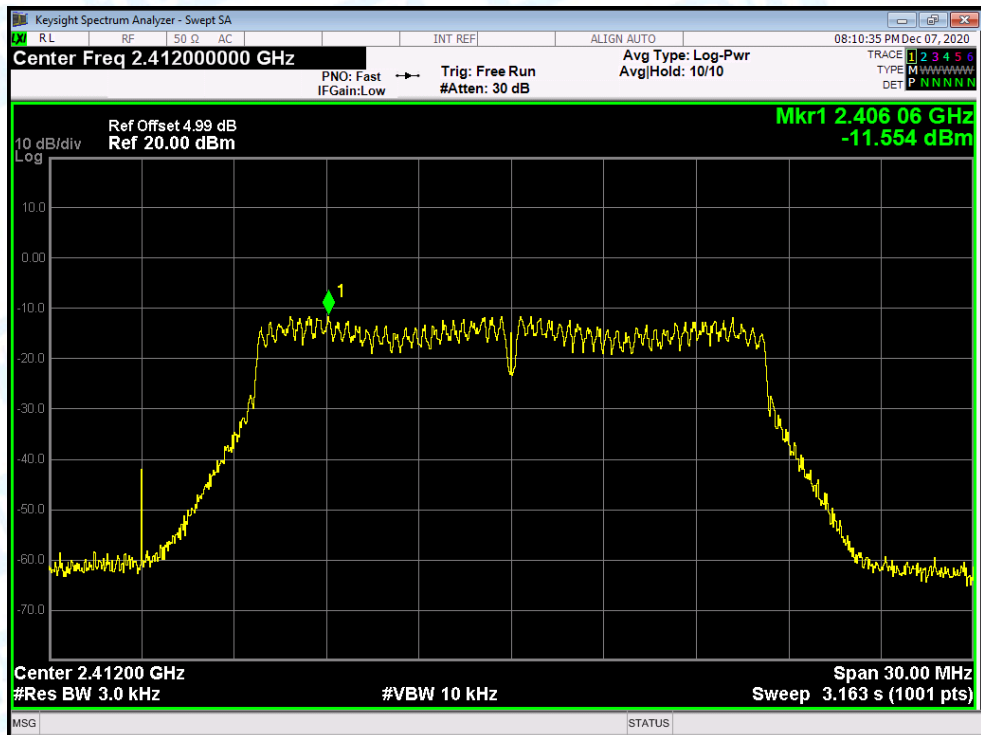
PSD NVNT b 2462MHz Ant. A



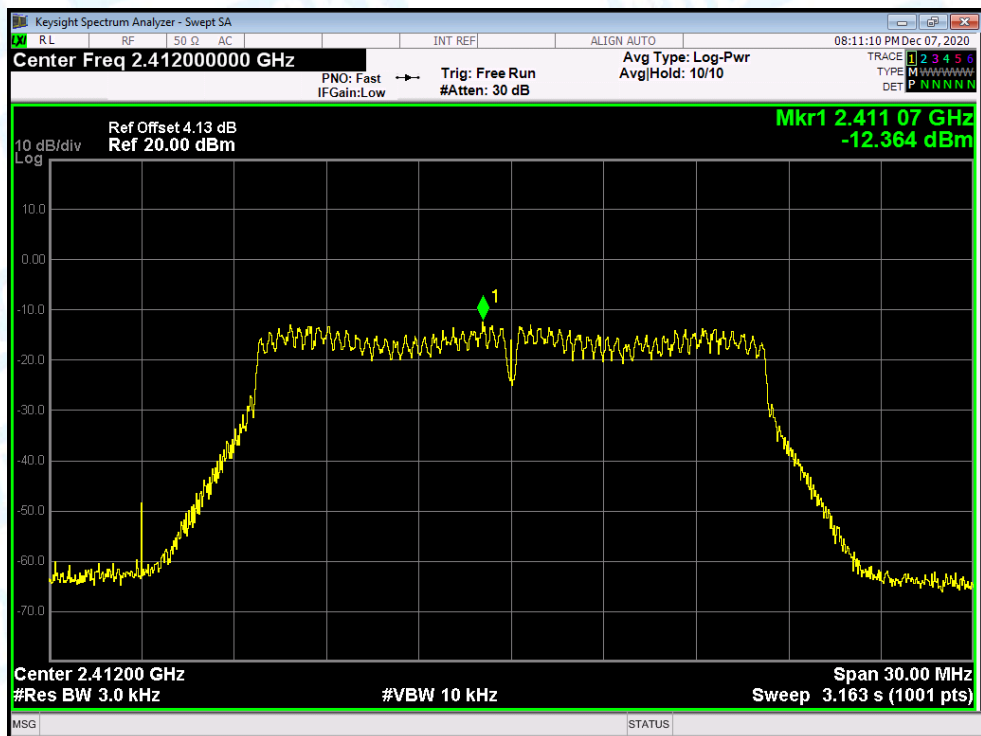
PSD NVNT b 2462MHz Ant. B



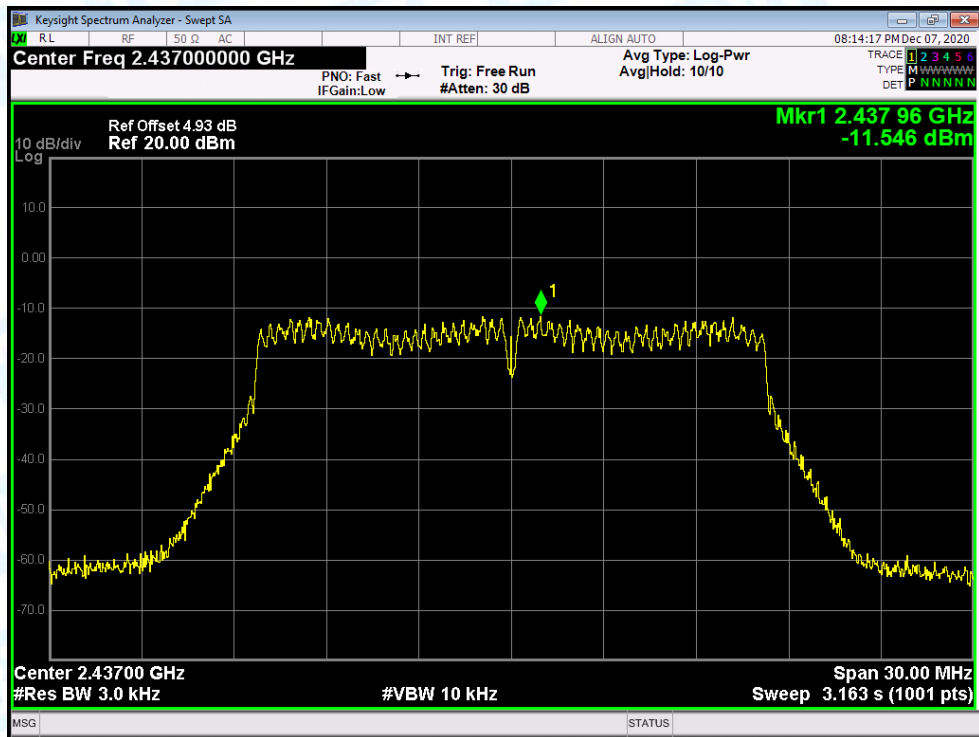
PSD NVNT g 2412MHz Ant. A



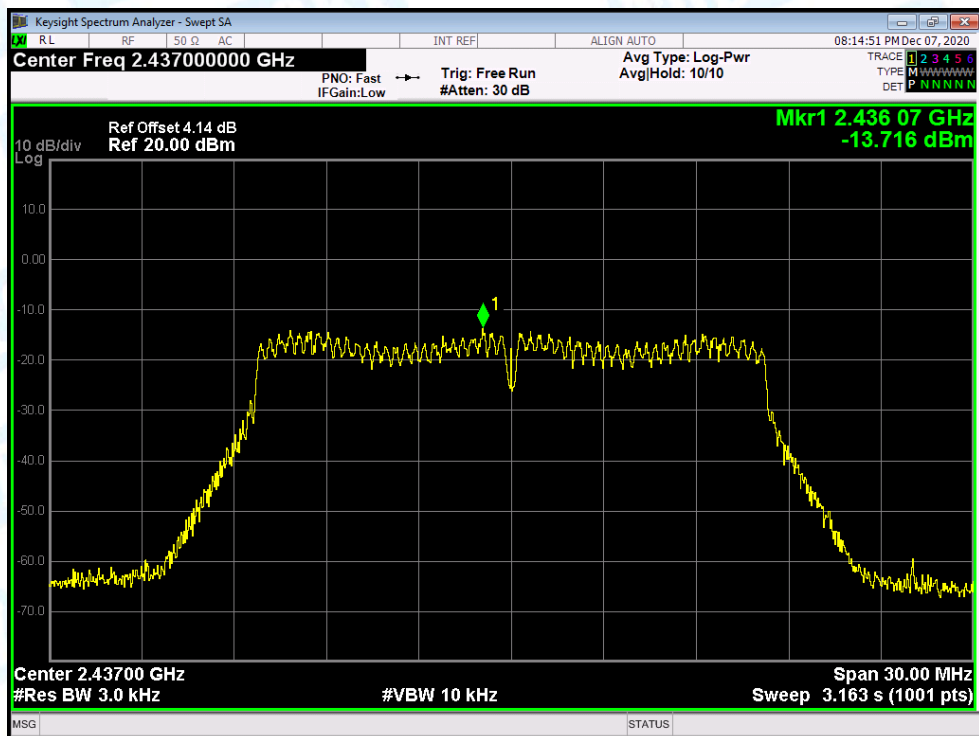
PSD NVNT g 2412MHz Ant. B



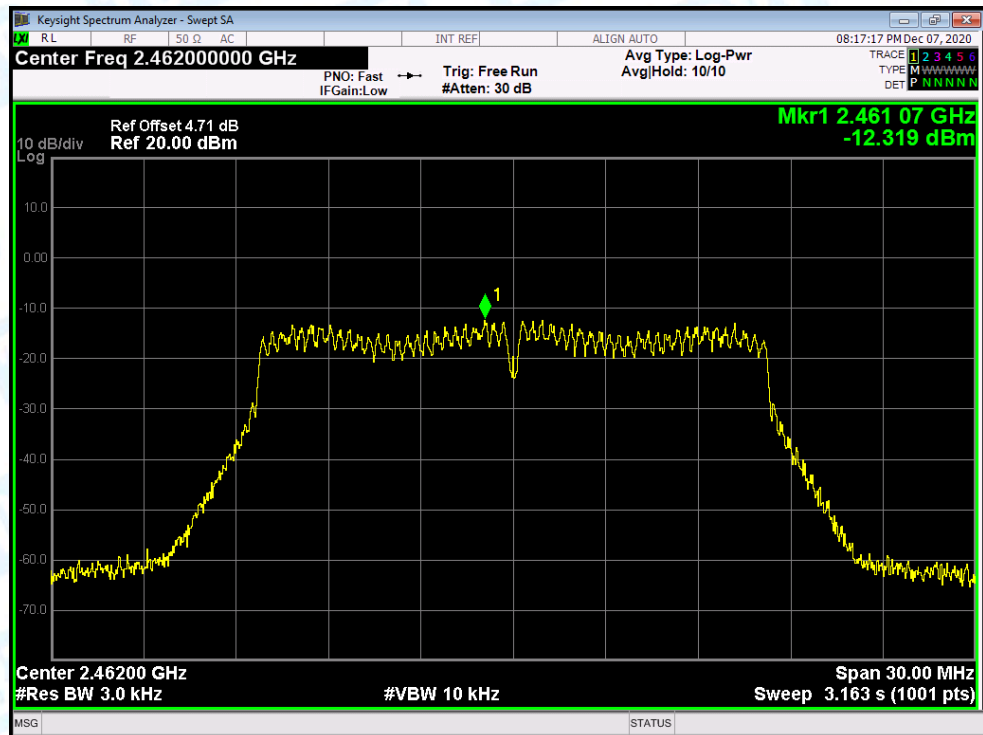
PSD NVNT g 2437MHz Ant. A



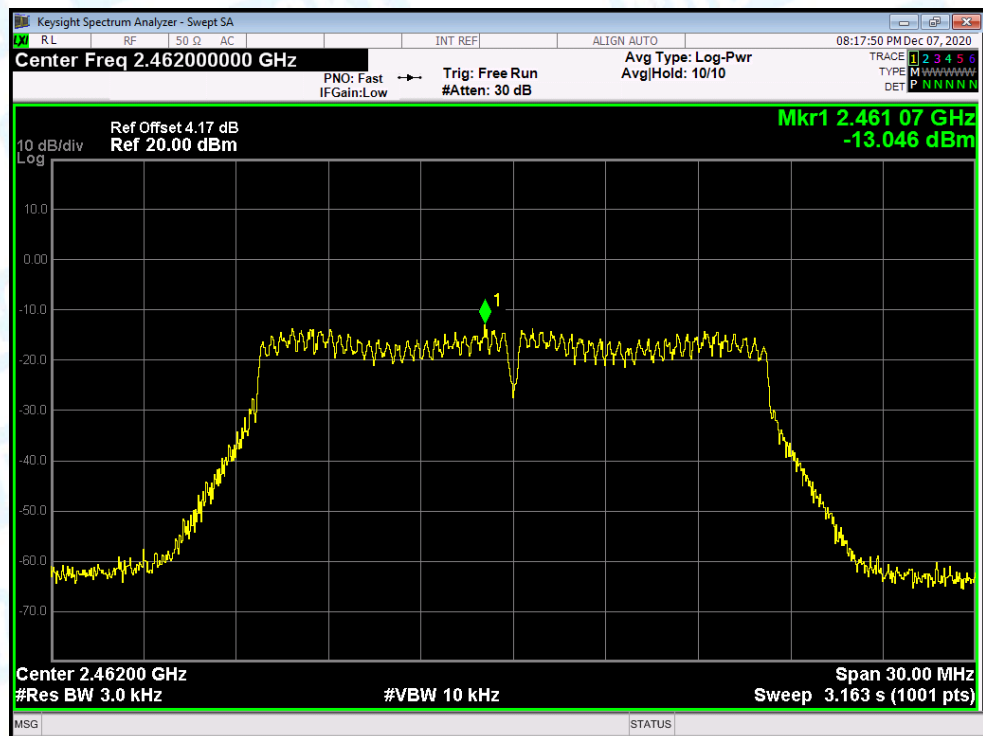
PSD NVNT g 2437MHz Ant. B



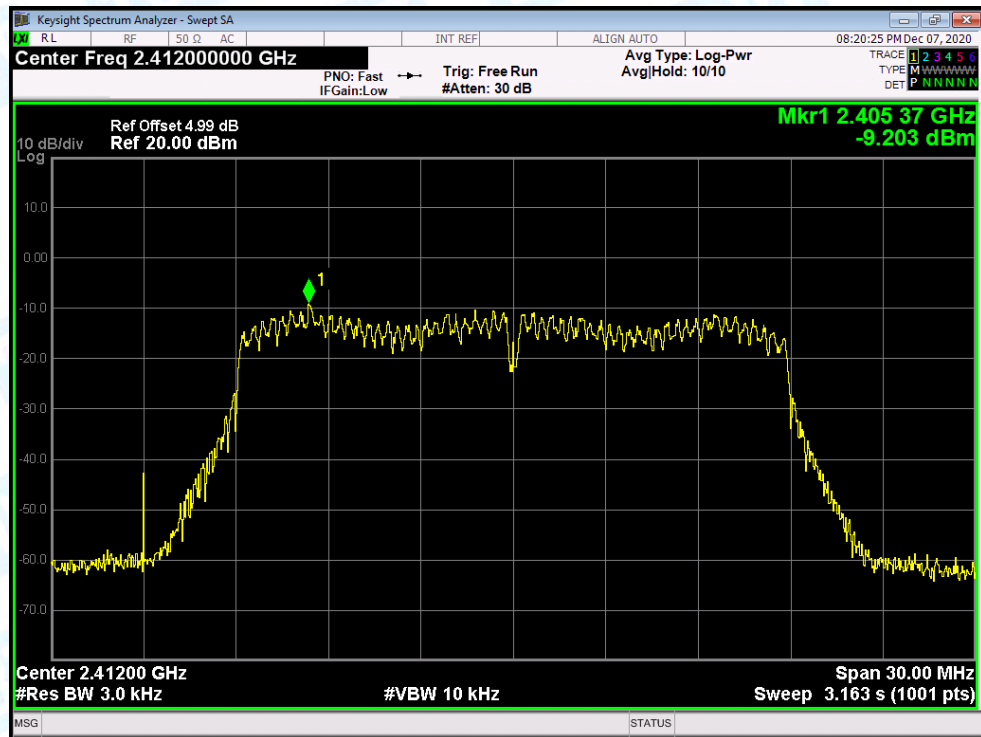
PSD NVNT g 2462MHz Ant. A



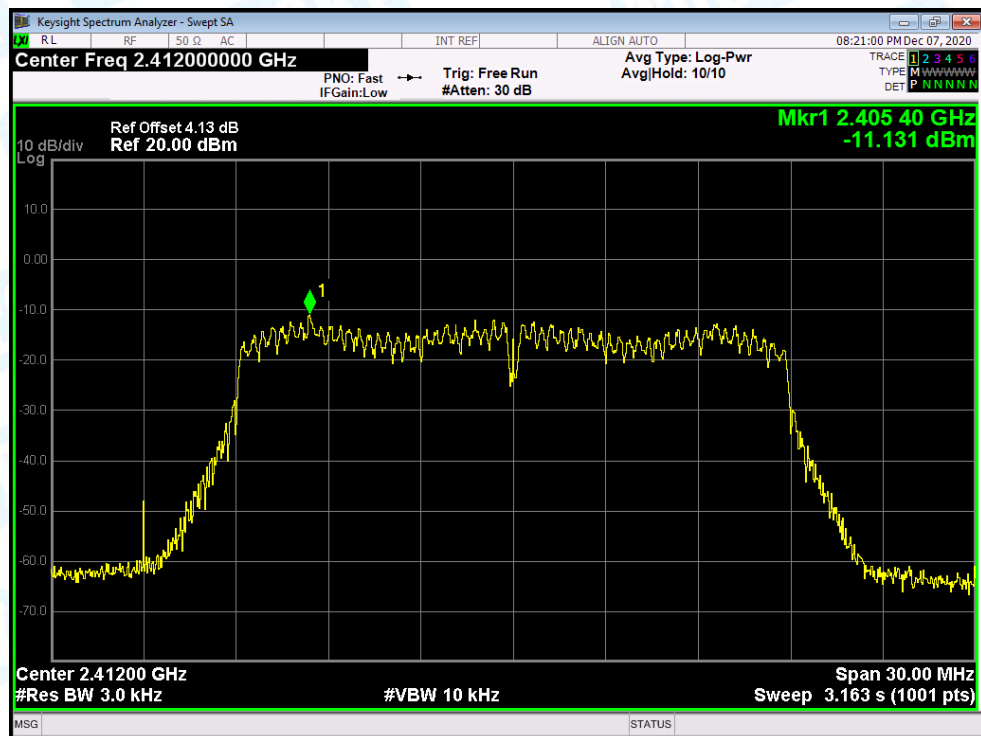
PSD NVNT g 2462MHz Ant. B



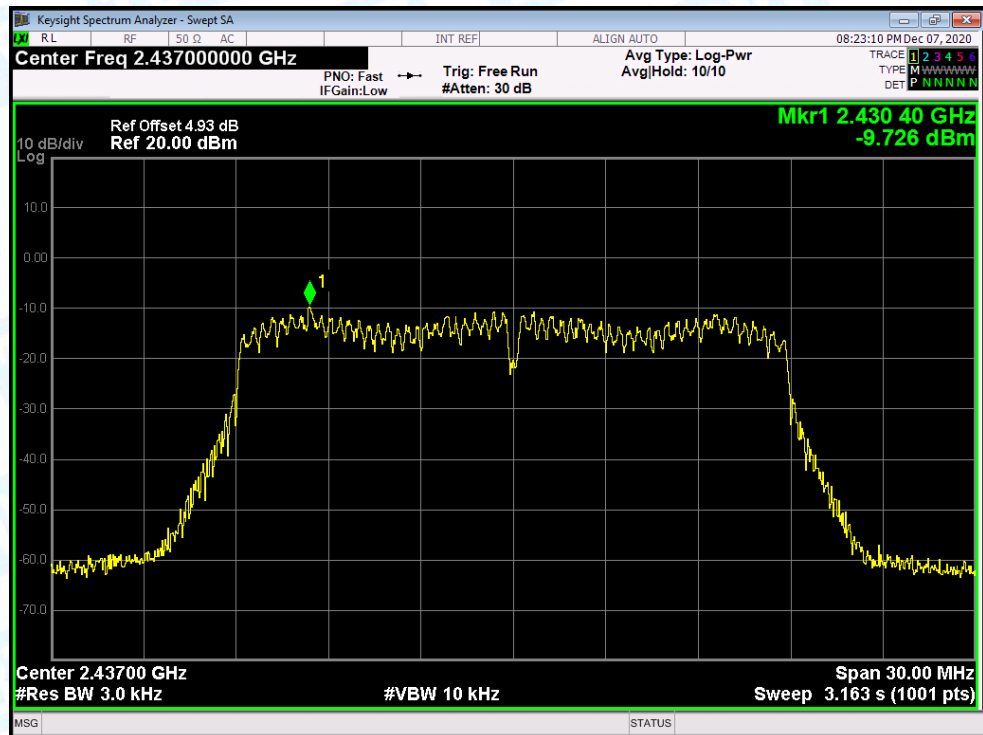
PSD NVNT n20 2412MHz Ant. A



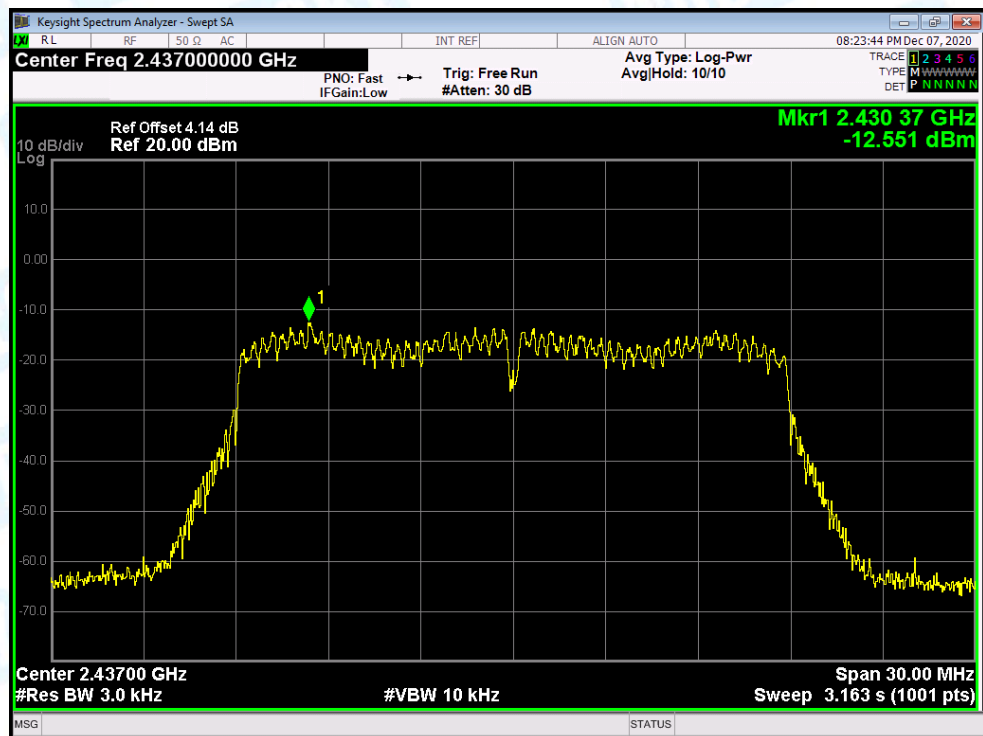
PSD NVNT n20 2412MHz AntB



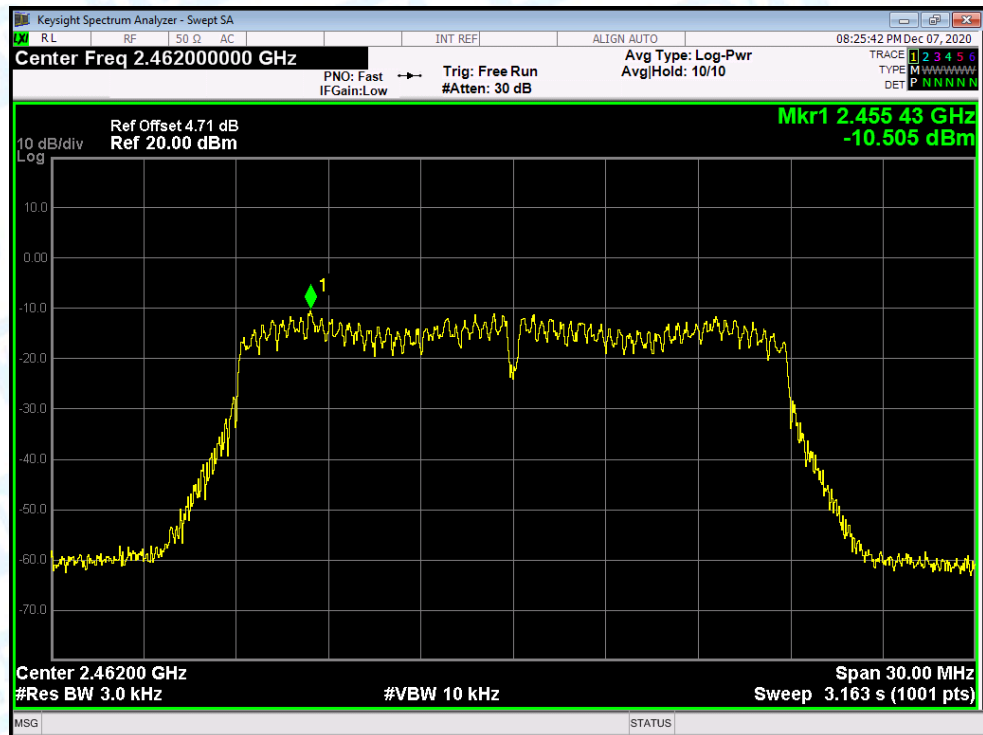
PSD NVNT n20 2437MHz Ant. A



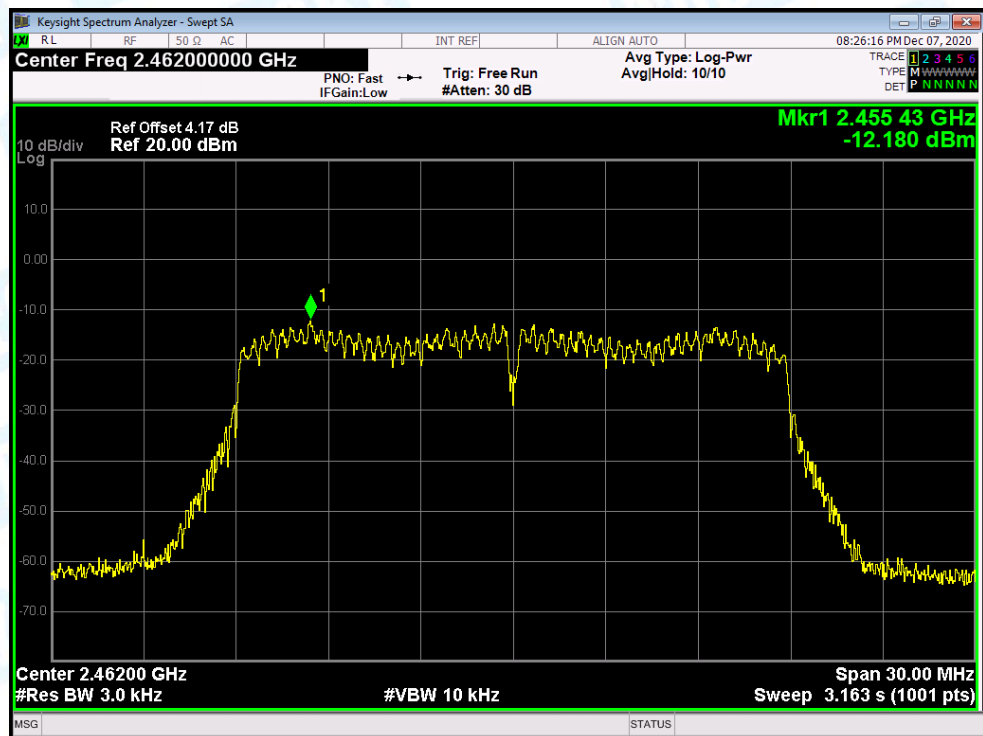
PSD NVNT n20 2437MHz Ant. B



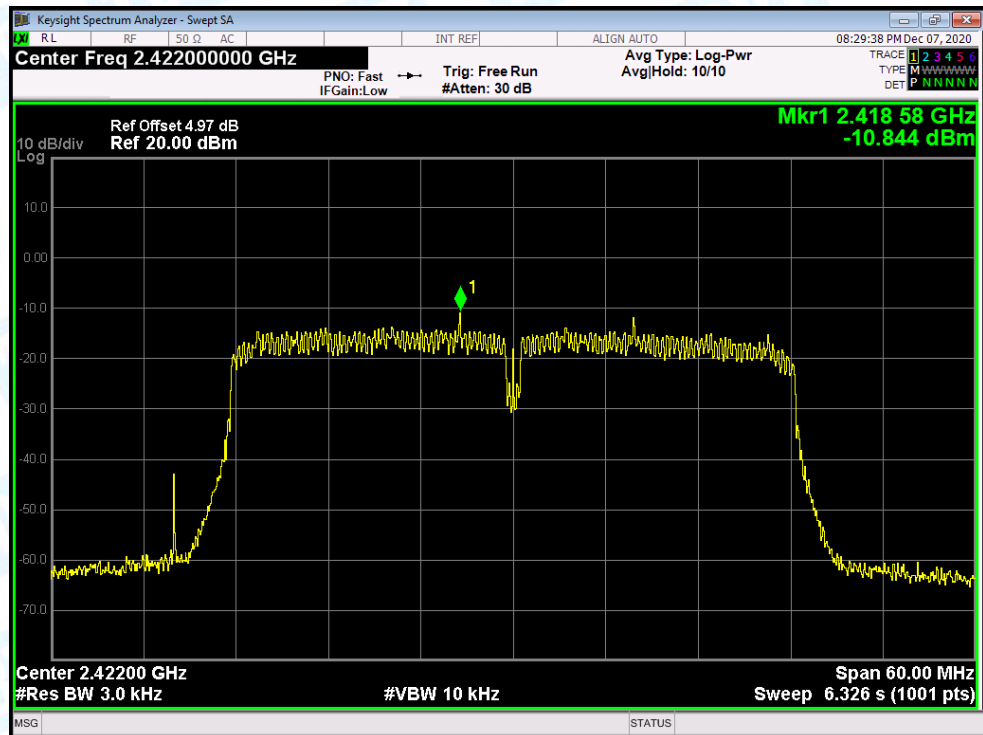
PSD NVNT n20 2462MHz Ant. A



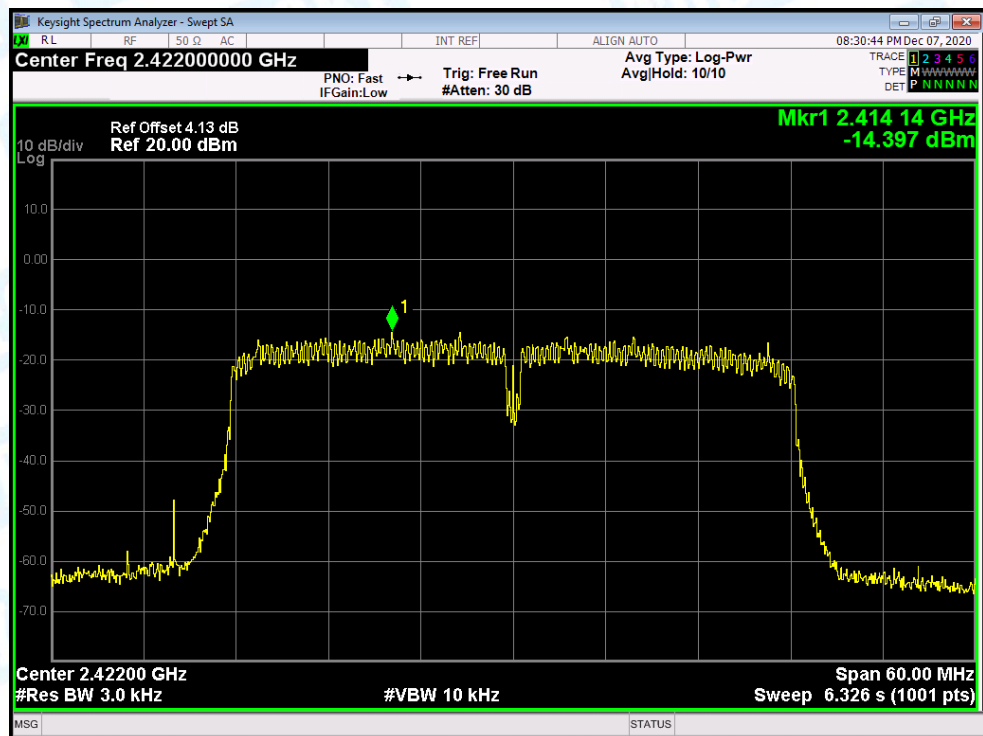
PSD NVNT n20 2462MHz Ant. B



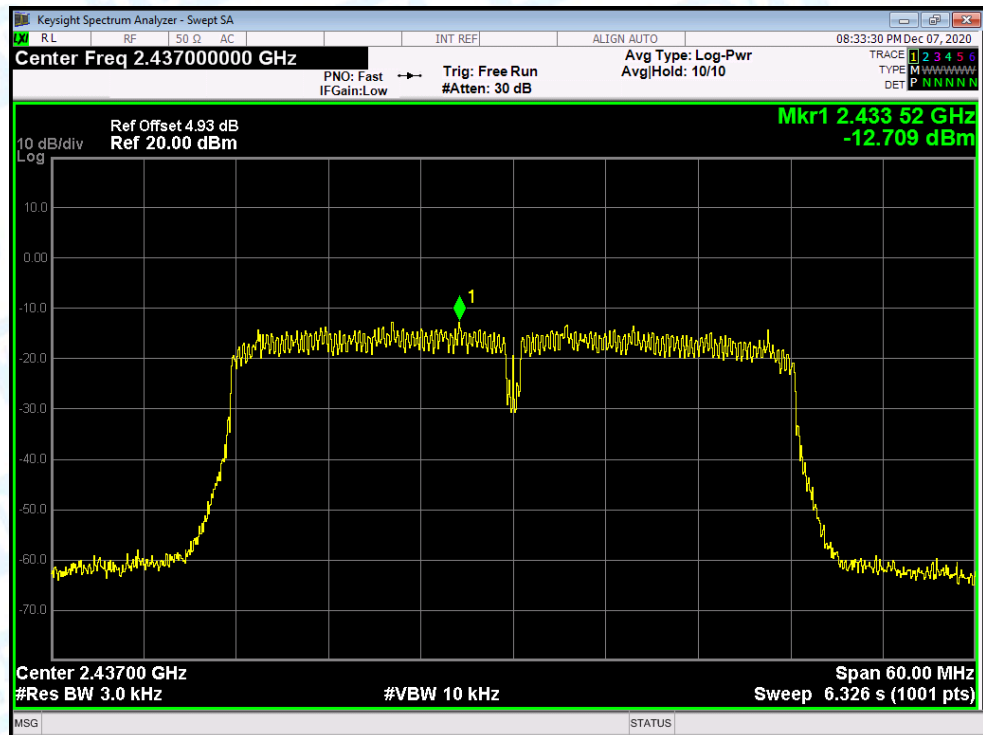
PSD NVNT n40 2422MHz Ant. A



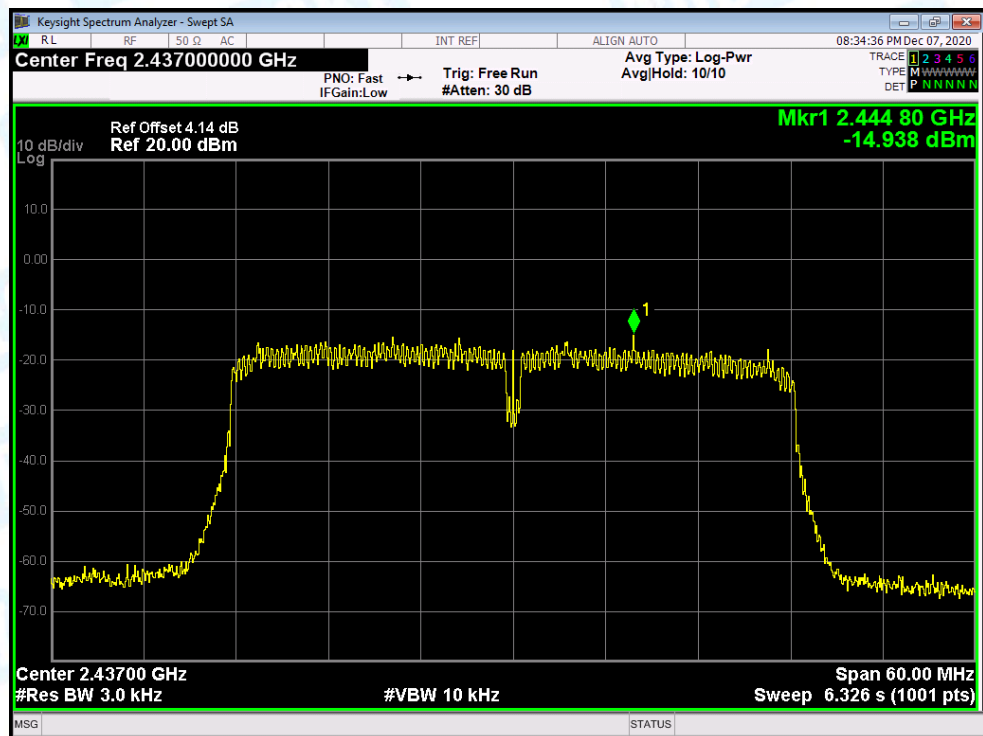
PSD NVNT n40 2422MHz Ant. B



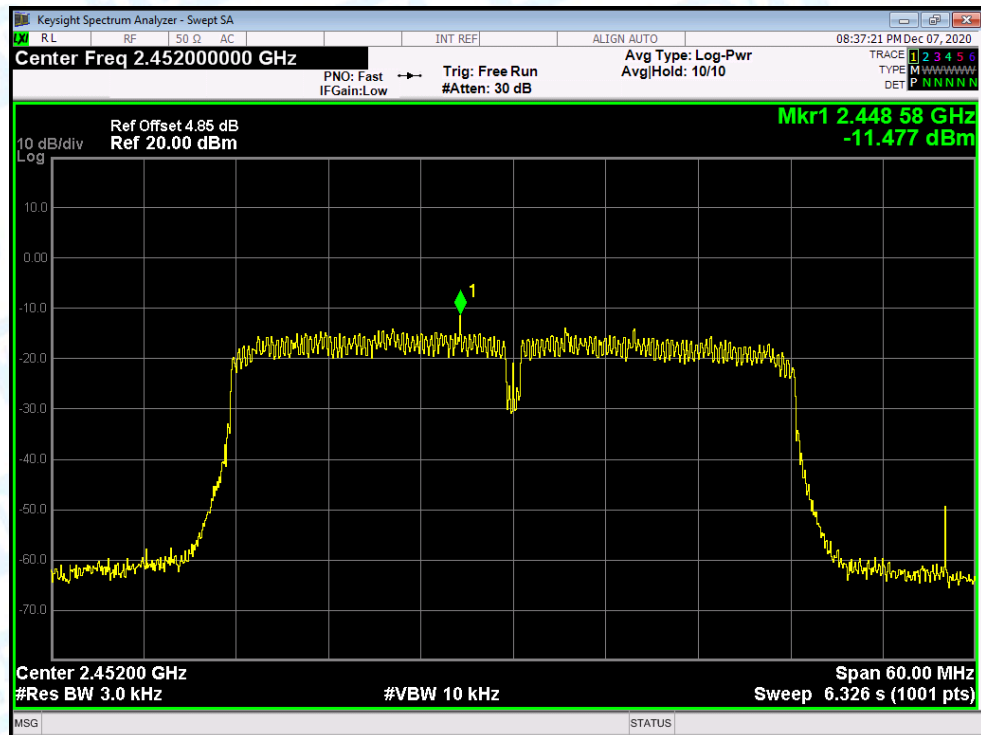
PSD NVNT n40 2437MHz Ant. A



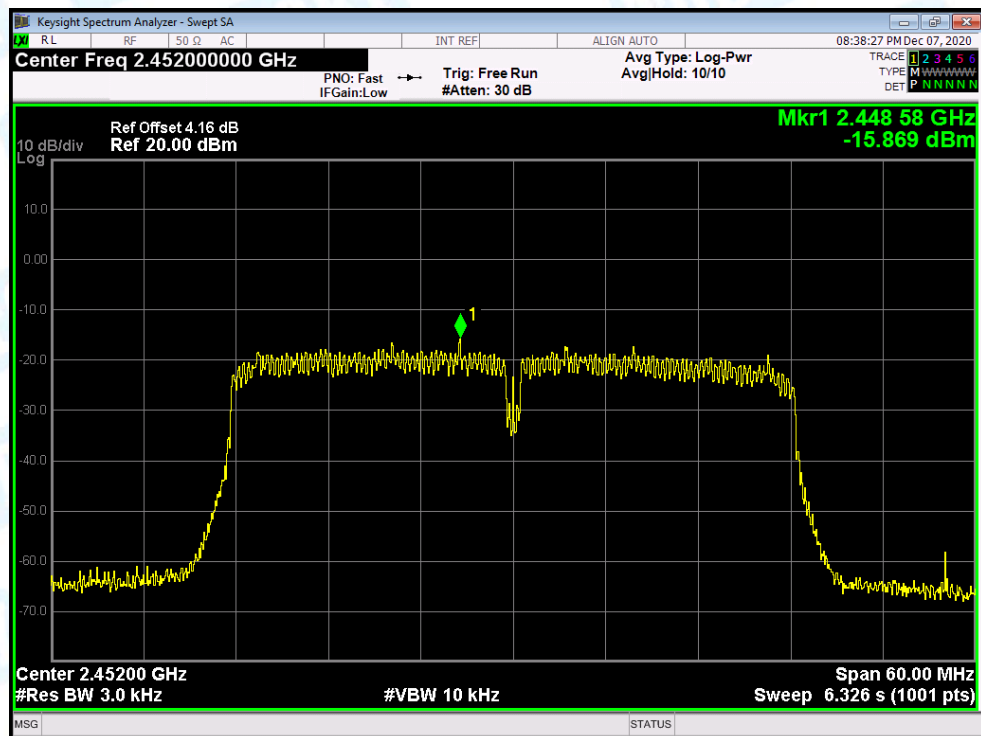
PSD NVNT n40 2437MHz Ant. B



PSD NVNT n40 2452MHz Ant. A



PSD NVNT n40 2452MHz Ant. B



-----END OF REPORT-----