



Radio Test Report

Report No.:STS2601074W13

Issued for

Stanley Black & Decker, Inc.

New Britain Design Center, 600 Myrtle Street, New Britain,
CT 06053 USA

Product Name: ADV2 DIAGNOSTIC SCAN TOOL

Brand Name:



Model Name: ET9150

Series Model(s): N/A

FCC ID: 2ANWFET9150

Test Standards: 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: Stanley Black & Decker, Inc.
Address: New Britain Design Center, 600 Myrtle Street, New Britain, CT 06053 USA
Manufacturer's Name.....: Stanley Black & Decker, Inc.
Address: New Britain Design Center, 600 Myrtle Street, New Britain, CT 06053 USA

Product Description

Product Name.....: ADV2 DIAGNOSTIC SCAN TOOL

Brand Name.....:



Model Name: ET9150

Series Model(s): N/A

Standards: FCC Part 15.247

Test Procedure.....: 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 requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test

Date of receipt of test item.....: 09 Jan. 2026

Date (s) of performance of tests: 09 Jan. 2026 ~ 30 Jan. 2026

Date of Issue: 30 Jan. 2026

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

Testing Engineer :

Aaron Bu

(Aaron Bu)

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Skylar Li

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Authorized Signatory :

Bovey Yang

(Bovey Yang)



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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	30 Jan. 2026	STS2601074W13	ALL	Initial Issue



1. SUMMARY OF TEST RESULTS

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

FCC Part 15.247, Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.247 (a)(2)	6dB Bandwidth	PASS	--
15.247 (b)(3)	Output Power	PASS	--
15.209	Radiated Spurious Emission	PASS	--
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS	--
15.247 (e)	Power Spectral Density	PASS	--
15.205	Restricted Band Edge Emission	PASS	--
Part 15.247(d)/ part 15.209(a)	Band Edge Emission	PASS	--
15.203	Antenna Requirement	PASS	--

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2020.



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

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	ADV2 DIAGNOSTIC SCAN TOOL	
Brand Name		
Model Name	ET9150	
Series Model(s)	N/A	
Model Difference	N/A	
Product Description	The EUT is a ADV2 DIAGNOSTIC SCAN TOOL	
	Operation Frequency:	802.11b/g/n/ax 20: 2412~2462 MHz 802.11n/ax 40:2422~2452MHz
	Modulation Type:	802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11ax(OFDM, OFDMA): BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024QAM 802.11b/g Support SISO 802.11n/ax Support MIMO
	Bit Rate of Transmitter:	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n(20MHz): 65/58.5/52/39/26/19.5/13/6.5Mbps 802.11n(40MHz): 135/121.5/108/81/54/40.5/37/13.5Mbps 802.11ax(HE20): 135/65/58.5/52/39/26/19.5/13/6.5Mbps 802.11ax(HE40): 270/135/121.5/108/81/54/40.5/37/13.5Mbps
	Number of Channel:	802.11b/g/n/ax 20: 11CH 802.11n/ax 40: 7CH
	Antenna Type:	FPC
	Antenna Gain (dBi):	ANT 1:1.98 ANT 2:2.85 MIMO: 5.44
Channel List	Please refer to the Note 3.	
Power Rating	Input: 15VDC, 3A	
Adapter	Model: XDJ481R-PDG Brand: N/A Input: 100-240V~, 50/60Hz, 1.8A Output: 15Vdc, 3A, 45W	
Battery	Model: CLP606070-2S2P Brand: N/A Rated Voltage: 7.6V Charge Limit Voltage: 8.7V Capacity: 7000mAh	
Hardware version number	N/A	
Software version number	N/A	
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 802.11ax mode Only support full RU.

3

Operation Frequency of channel			
802.11b/g/n/ax(20MHz)		Channel List for 802.11n/ax(40MHz)	
Channel	Frequency	Channel	Frequency
01	2412	03	2422
02	2417	04	2427
03	2422	05	2432
04	2427	06	2437
05	2432	07	2442
06	2437	08	2447
07	2442	09	2452
08	2447		
09	2452		
10	2457		
11	2462		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Carrier Frequency Channel

2.4GHz Test Frequency:

For 802.11b/g/n/ax (HT20)		For 802.11n/ax (HT40)	
Channel	Freq.(MHz)	Channel	Freq.(MHz)
01	2412	03	2422
06	2437	06	2437
11	2462	09	2452

3. KDB 662911 D01 Multiple Transmitter Output v02r01

2) Directional Gain Calculations for In-Band Measurements

d) Unequal antenna gains, with equal transmit powers. For antenna gains given by G1, G2, ..., GN dBi

☒ (i) If transmit signals are correlated, then

Directional gain = $10 \log[(10G1/20 + 10G2/20 + \dots + 10GN/20)^2 / NANT]$ dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

☐ (ii) If all transmit signals are completely uncorrelated, then

Directional gain = $10 \log[(10G1/10 + 10G2/10 + \dots + 10GN/10)/NANT]$ dBi



2.2 DESCRIPTION OF THE TEST MODES

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

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11b CH01	1 Mbps
Mode 2	TX IEEE 802.11b CH06	1 Mbps
Mode 3	TX IEEE 802.11 b CH11	1 Mbps
Mode 4	TX IEEE 802.11g CH01	6 Mbps
Mode 5	TX IEEE 802.11g CH06	6 Mbps
Mode 6	TX IEEE 802.11g CH11	6 Mbps
Mode 7	TX IEEE 802.11n HT20 CH01	MCS 0
Mode 8	TX IEEE 802.11n HT20 CH06	MCS 0
Mode 9	TX IEEE 802.11n HT20 CH11	MCS 0
Mode 10	TX IEEE 802.11n HT40 CH03	MCS 0
Mode 11	TX IEEE 802.11n HT40 CH06	MCS 0
Mode 12	TX IEEE 802.11n HT40 CH09	MCS 0
Mode 13	TX IEEE 802.11ax HE20 CH01	NSS1 MCS0
Mode 14	TX IEEE 802.11ax HE20 CH06	NSS1 MCS0
Mode 15	TX IEEE 802.11ax HE20 CH11	NSS1 MCS0
Mode 16	TX IEEE 802.11ax HE40 CH03	NSS1 MCS0
Mode 17	TX IEEE 802.11ax HE40 CH06	NSS1 MCS0
Mode 18	TX IEEE 802.11ax HE40 CH09	NSS1 MCS0

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 U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V /60Hz is shown in the report.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode19: Keeping TX + WLAN Link



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.

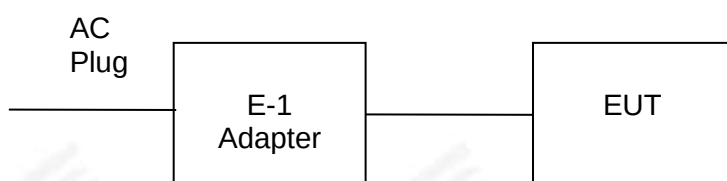
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	ANT_1 Power Class	ANT_2 Power Class	Software For Testing
WIFI(2.4G)	2.4G WIFI	802.11b	ANT 1:1.98 ANT 2:2.85 MIMO:5.44	11	11	CMD
		802.11g		10	10	
		802.11n(HT20)		10	10	
		802.11n(HT40)		8	8	
		802.11ax(HE20)		9	9	
		802.11ax(HE40)		8	8	

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiation Test Set



Conduction Test Set



RF Conduction Test Set



**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	Adapter	N/A	XDJ481R-PDG	N/A

Item	Equipment	Mfr/Brand	Length	Note

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 FOR ALL TEST ITEMS

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
Pre-Amplifier(0.1M-3GHz)	EM	EM330	060665	2025.02.22	2026.02.21
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
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	HONGSHENG FENG	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
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
Switch control box	MW	MW100-RFCB	N/A	N/A	N/A
Pulse Power Sensor	Anritsu	MA2411B	917389	2025.09.23	2026.09.22
Power Meter	Anritsu	ML2480	1005127	2025.09.23	2026.09.22
Temperature& Humidity test chamber	Safety test	AG80L	171200018	2025.02.22	2026.02.21
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
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.

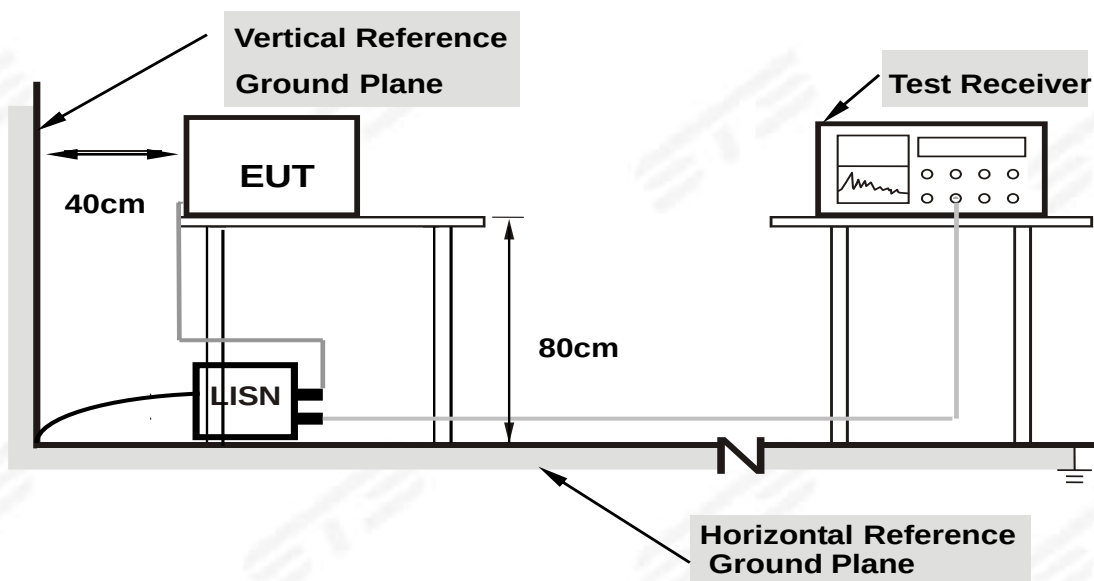
The following table is the setting of the receiver

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

3.1.2 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.

3.1.3 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.

3.1.4 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.



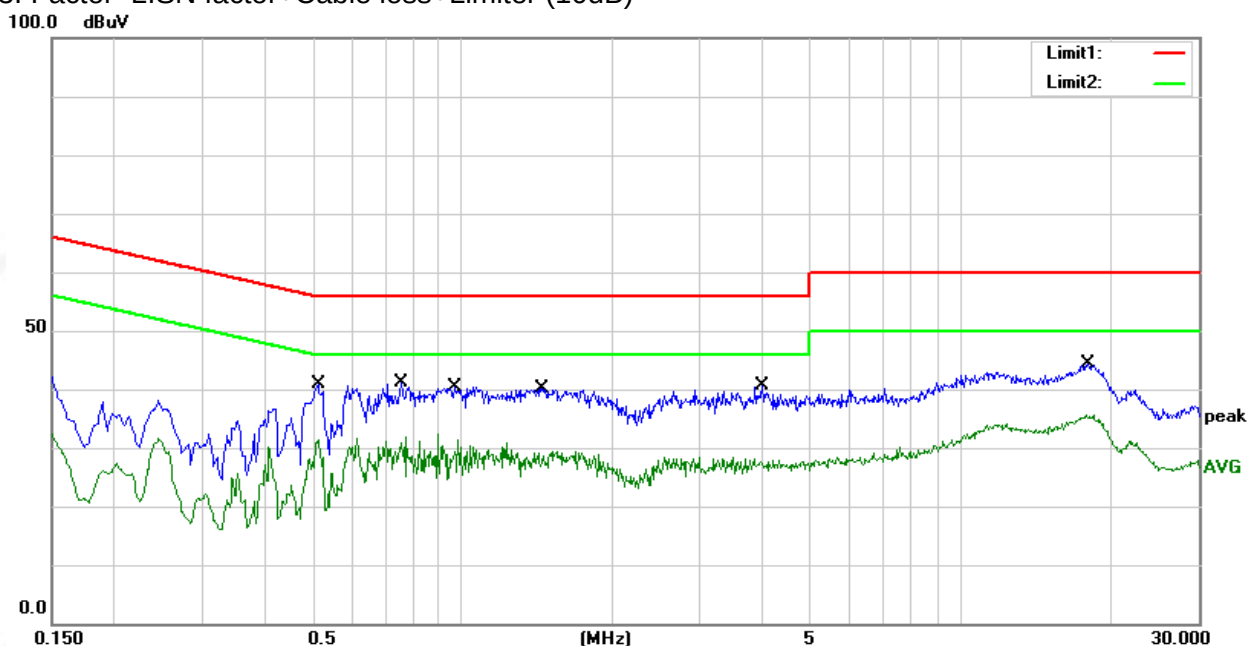
3.1.5 TEST RESULT

Temperature:	25.1°C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 19		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.5140	21.36	19.40	40.76	56.00	-15.24	QP
2	0.5140	11.97	19.40	31.37	46.00	-14.63	AVG
3	0.7580	21.88	19.37	41.25	56.00	-14.75	QP
4	0.7580	12.48	19.37	31.85	46.00	-14.15	AVG
5	0.9660	20.97	19.35	40.32	56.00	-15.68	QP
6	0.9660	13.00	19.35	32.35	46.00	-13.65	AVG
7	1.4420	20.68	19.35	40.03	56.00	-15.97	QP
8	1.4420	11.45	19.35	30.80	46.00	-15.20	AVG
9	3.9900	21.15	19.41	40.56	56.00	-15.44	QP
10	3.9900	8.94	19.41	28.35	46.00	-17.65	AVG
11	18.0100	24.59	19.76	44.35	60.00	-15.65	QP
12	18.0100	15.80	19.76	35.56	50.00	-14.44	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)





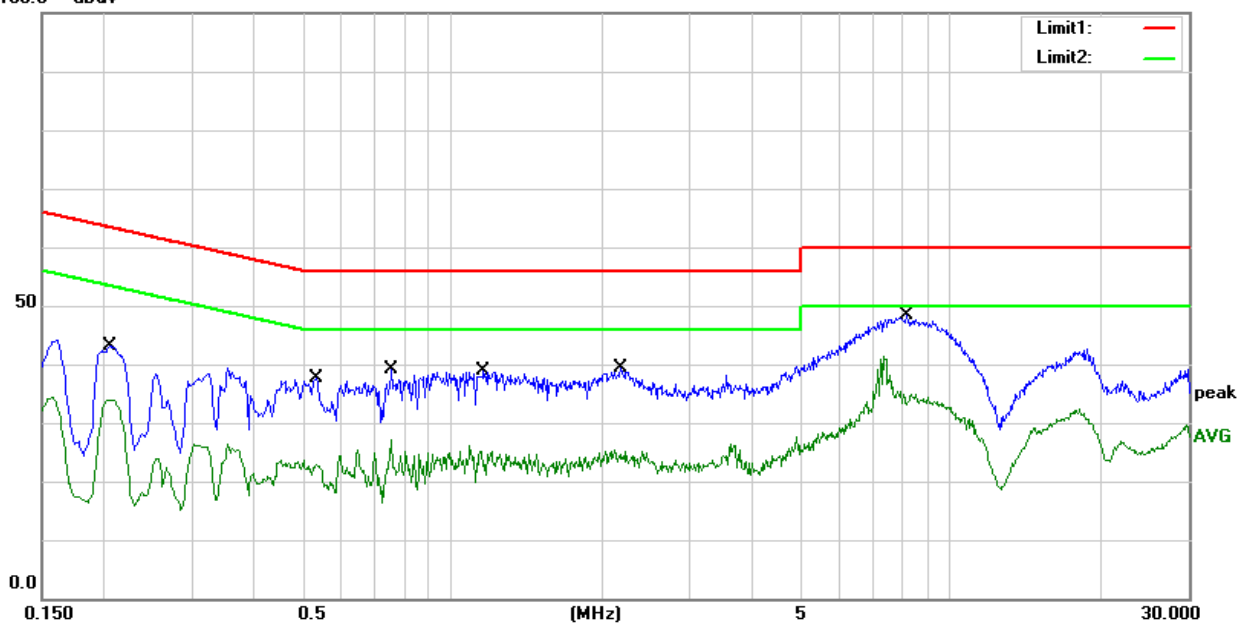
Temperature:	25.1℃	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 19		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2420	21.07	19.38	40.45	62.03	-21.58	QP
2	0.2420	15.69	19.38	35.07	52.03	-16.96	AVG
3	0.4020	22.03	19.35	41.38	57.81	-16.43	QP
4	0.4020	13.16	19.35	32.51	47.81	-15.30	AVG
5	0.6460	16.67	19.38	36.05	56.00	-19.95	QP
6	0.6460	9.57	19.38	28.95	46.00	-17.05	AVG
7	1.0940	16.31	19.39	35.70	56.00	-20.30	QP
8	1.0940	5.66	19.39	25.05	46.00	-20.95	AVG
9	2.0860	17.01	19.39	36.40	56.00	-19.60	QP
10	2.0860	5.41	19.39	24.80	46.00	-21.20	AVG
11	7.5100	24.53	19.50	44.03	60.00	-15.97	QP
12	7.5100	13.62	19.50	33.12	50.00	-16.88	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)

100.0 dBuV





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2020 below has to be followed.

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

Frequencies (MHz)	Field Strength (micorvolts/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

LIMITS OF RADIATED EMISSION MEASUREMENT (1000MHz-25GHz)

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

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (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	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			



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 2430 MHz Upper Band Edge: 2445 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

3.2.2 TEST PROCEDURE

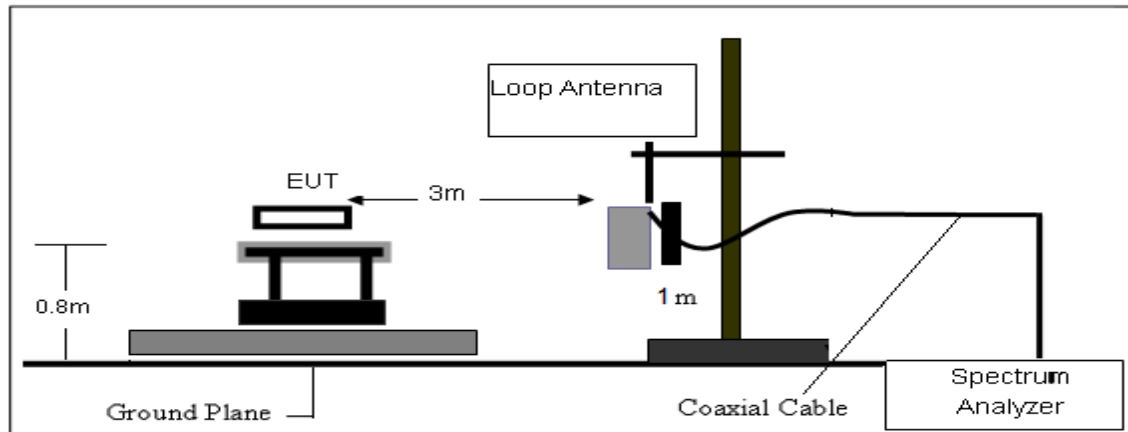
- The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position 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:

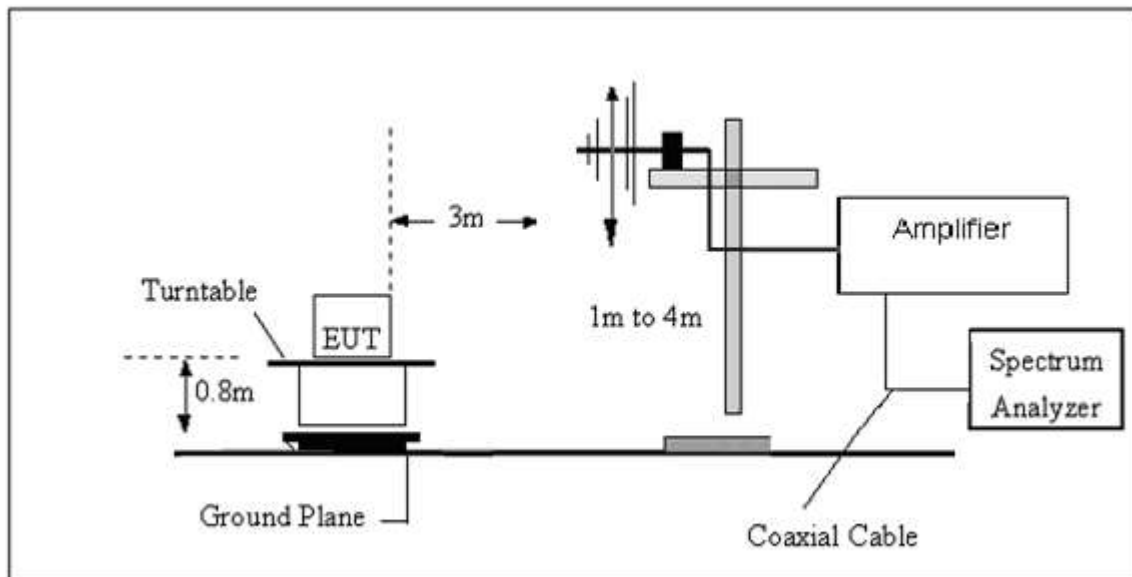
Both horizontal and vertical antenna polarities were tested with a band-stop filter and performed pretest to three orthogonal axis. The worst-case emissions were reported.

3.2.3 TEST SETUP

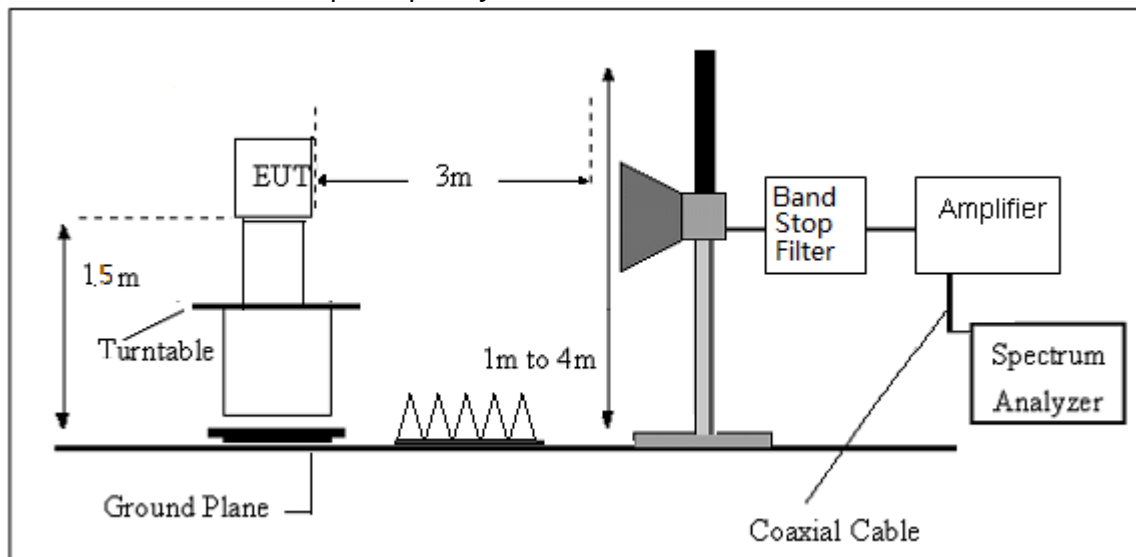
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.4 EUT OPERATING CONDITIONS

Please refer to section 3.1.4 of this report.



3.2.5 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

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



3.2.6 TEST RESULT

9KHz-30MHz

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 7.6V	Polarization:	--
Test Mode:	TX Mode		

Freq.	Reading	Limit	Margin	State	Test Result
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F	
--	--	--	--	--	PASS
--	--	--	--	--	PASS

Note:

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

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.



(30MHz - 1000MHz)

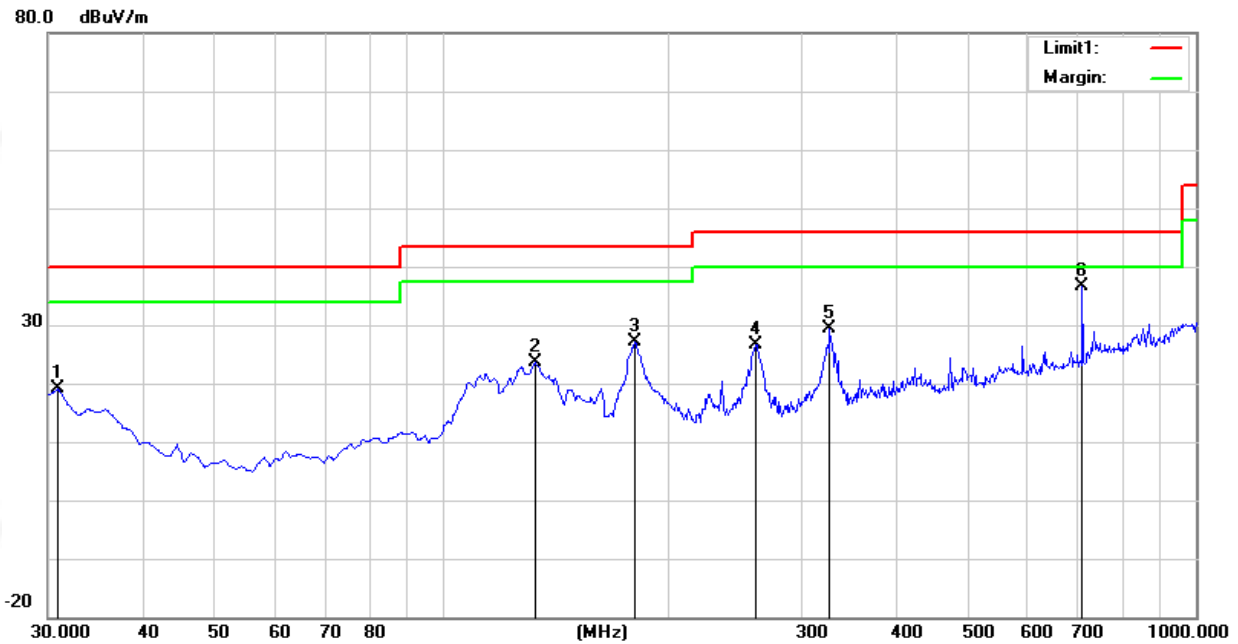
ax20(MIMO)

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 7.6V	Phase:	Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.9700	32.41	-13.35	19.06	40.00	-20.94	peak
2	132.8200	41.73	-18.17	23.56	43.50	-19.94	peak
3	180.3500	47.08	-20.04	27.04	43.50	-16.46	peak
4	260.8600	41.43	-14.78	26.65	46.00	-19.35	peak
5	326.8200	43.16	-13.80	29.36	46.00	-16.64	peak
6	707.0600	40.53	-3.94	36.59	46.00	-9.41	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.



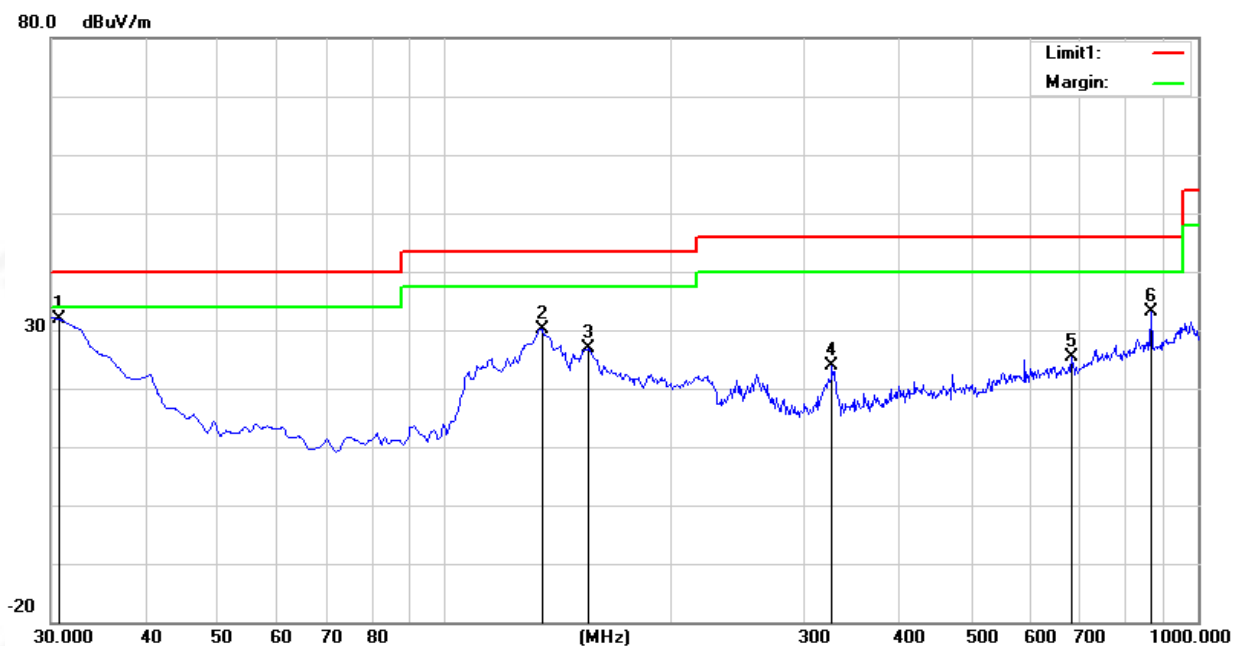


Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 7.6V	Phase:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.7455	45.06	-13.24	31.82	40.00	-8.18	peak
2	134.7600	48.34	-18.11	30.23	43.50	-13.27	peak
3	155.1300	45.40	-18.63	26.77	43.50	-16.73	peak
4	326.8200	37.58	-13.80	23.78	46.00	-22.22	peak
5	681.8400	29.59	-4.29	25.30	46.00	-20.70	peak
6	868.0800	33.52	-0.51	33.01	46.00	-12.99	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.





ax40(MIMO)

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 7.6V	Phase:	Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	127.9700	39.99	-18.25	21.74	43.50	-21.76	peak
2	181.3200	44.25	-20.11	24.14	43.50	-19.36	peak
3	260.8600	41.62	-14.78	26.84	46.00	-19.16	peak
4	328.7600	40.61	-13.74	26.87	46.00	-19.13	peak
5	472.3200	34.34	-8.92	25.42	46.00	-20.58	peak
6	733.2500	31.56	-2.35	29.21	46.00	-16.79	peak

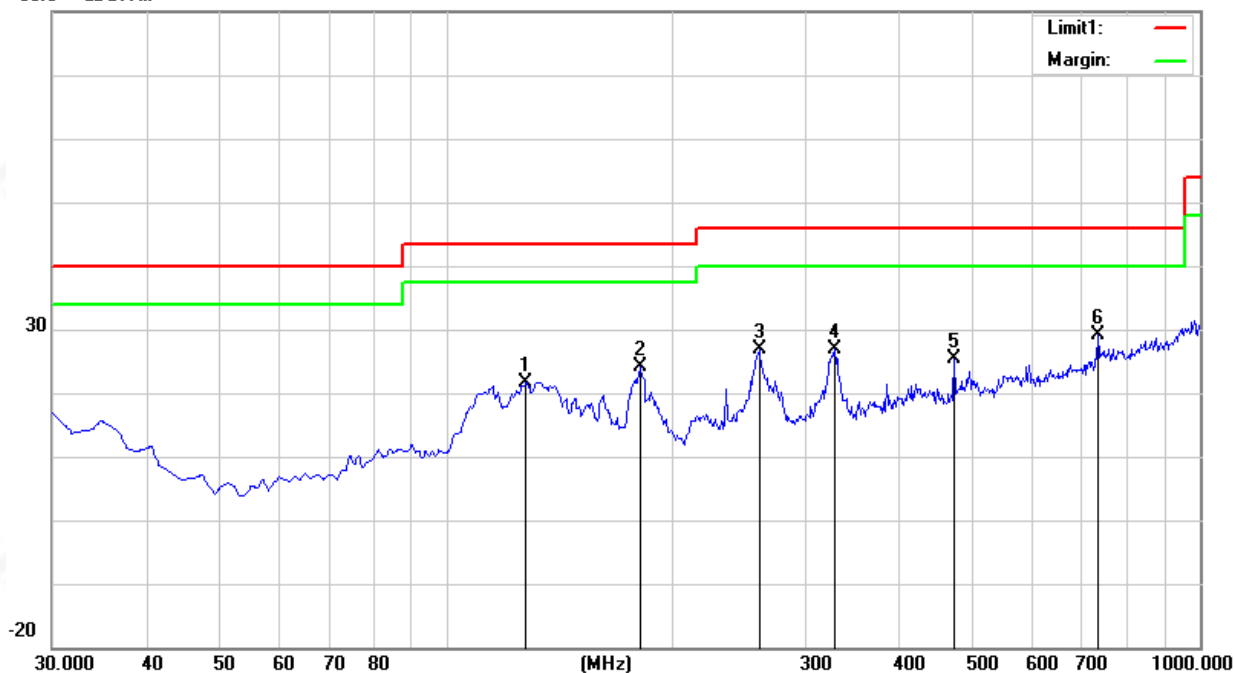
Remark:

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.

80.0 dBuV/m





Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	DC 7.6V	Phase:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.6380	42.23	-13.18	29.05	40.00	-10.95	peak
2	133.7900	47.41	-18.14	29.27	43.50	-14.23	peak
3	154.1600	48.03	-18.60	29.43	43.50	-14.07	peak
4	259.8900	37.98	-14.79	23.19	46.00	-22.81	peak
5	733.2500	30.11	-2.35	27.76	46.00	-18.24	peak
6	900.0900	35.77	-0.45	35.32	46.00	-10.68	peak

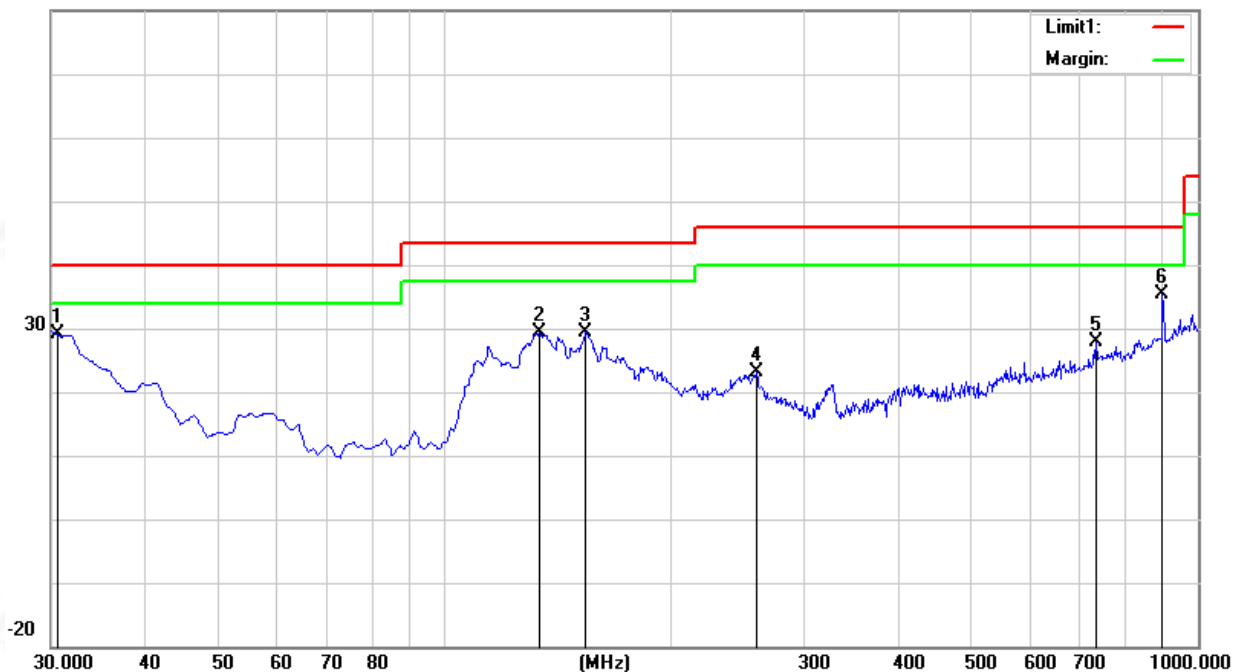
Remark:

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.

80.0 dBuV/m





(1GHz-25GHz) Spurious emission Requirements

Horizontal

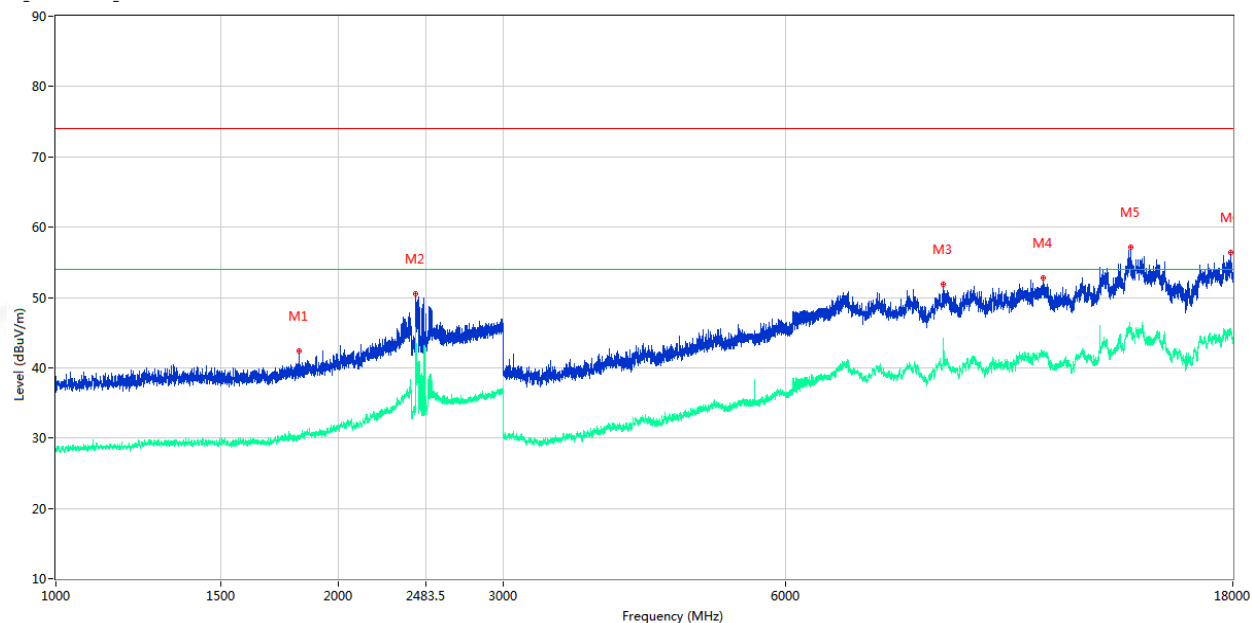
Low Channel (802.11ax20(MIMO)/2412 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1815.50	42.35	-0.55	74	-31.65	Peak	129.0	Horizontal	Pass
1815.50	30.40	-0.55	54	-23.60	AV	129.0	Horizontal	Pass
2421.00	50.51	3.14	74	-23.49	Peak	279.3	Horizontal	Pass
2421.00	45.66	3.14	54	-8.34	AV	279.3	Horizontal	Pass
8848.00	51.90	0.86	74	-22.10	Peak	322.0	Horizontal	Pass
8848.00	44.14	0.86	54	-9.86	AV	322.0	Horizontal	Pass
11306.50	52.78	2.26	74	-21.22	Peak	1.1	Horizontal	Pass
11306.50	42.11	2.26	54	-11.89	AV	1.1	Horizontal	Pass
14009.75	57.09	8.29	74	-16.91	Peak	221.2	Horizontal	Pass
14009.75	45.25	8.29	54	-8.75	AV	221.2	Horizontal	Pass
17901.00	56.38	7.23	74	-17.62	Peak	79.4	Horizontal	Pass
17901.00	45.50	7.23	54	-8.50	AV	79.4	Horizontal	Pass
Middle Channel 802.11ax20(MIMO)/2437 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1815.10	40.43	-0.61	74.00	-33.57	Peak	118.97	Horizontal	Pass
1815.10	29.02	-0.61	54.00	-24.98	AV	118.97	Horizontal	Pass
2420.77	48.57	3.11	74.00	-25.43	Peak	268.48	Horizontal	Pass
2420.77	43.70	3.11	54.00	-10.30	AV	268.48	Horizontal	Pass
8847.54	50.85	0.83	74.00	-23.15	Peak	314.57	Horizontal	Pass
8847.54	42.52	0.83	54.00	-11.48	AV	314.57	Horizontal	Pass
11306.06	50.89	2.22	74.00	-23.11	Peak	8.45	Horizontal	Pass
11306.06	40.67	2.22	54.00	-13.33	AV	8.45	Horizontal	Pass
14009.43	55.77	8.25	74.00	-18.23	Peak	214.05	Horizontal	Pass
14009.43	43.71	8.25	54.00	-10.29	AV	214.05	Horizontal	Pass
17900.73	55.39	7.20	74.00	-18.61	Peak	68.86	Horizontal	Pass
17900.73	44.51	7.20	54.00	-9.49	AV	68.86	Horizontal	Pass

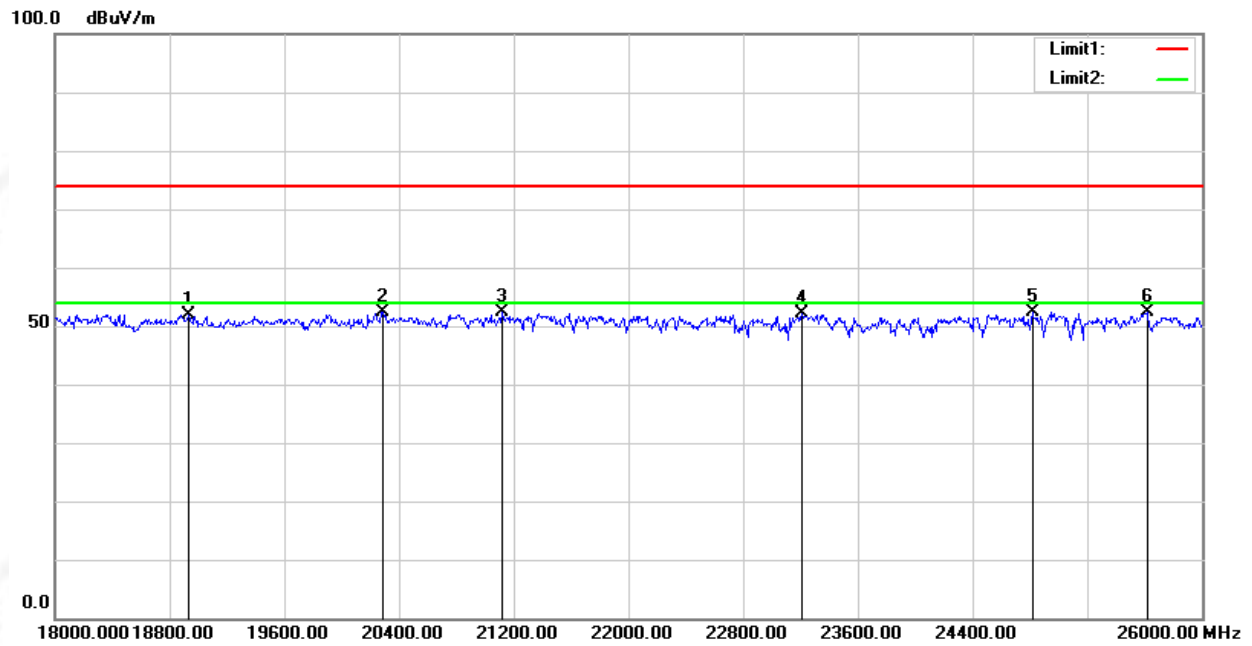


High Channel (802.11ax20(MIMO)2462 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1814.67	39.15	-0.66	74.00	-34.85	Peak	106.04	Horizontal	Pass
1814.67	27.90	-0.66	54.00	-26.10	AV	106.04	Horizontal	Pass
2420.41	46.57	3.07	74.00	-27.43	Peak	261.08	Horizontal	Pass
2420.41	41.95	3.07	54.00	-12.05	AV	261.08	Horizontal	Pass
8847.30	49.01	0.80	74.00	-24.99	Peak	305.68	Horizontal	Pass
8847.30	41.30	0.80	54.00	-12.70	AV	305.68	Horizontal	Pass
11305.60	49.46	2.19	74.00	-24.54	Peak	4.72	Horizontal	Pass
11305.60	39.64	2.19	54.00	-14.36	AV	4.72	Horizontal	Pass
14009.22	54.86	8.22	74.00	-19.14	Peak	210.88	Horizontal	Pass
14009.22	42.53	8.22	54.00	-11.47	AV	210.88	Horizontal	Pass
17900.36	53.72	7.16	74.00	-20.28	Peak	71.43	Horizontal	Pass
17900.36	43.39	7.16	54.00	-10.61	AV	71.43	Horizontal	Pass

RSE-1G-18G-H

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





No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18936.000	50.11	1.81	51.92	54.00	-2.08	peak
2	20288.000	50.35	2.05	52.40	54.00	-1.60	peak
3	21120.000	49.61	2.72	52.33	54.00	-1.67	peak
4	23208.000	48.22	3.85	52.07	54.00	-1.93	peak
5	24816.000	47.27	5.09	52.36	54.00	-1.64	peak
6	25624.000	46.71	5.69	52.40	54.00	-1.60	peak



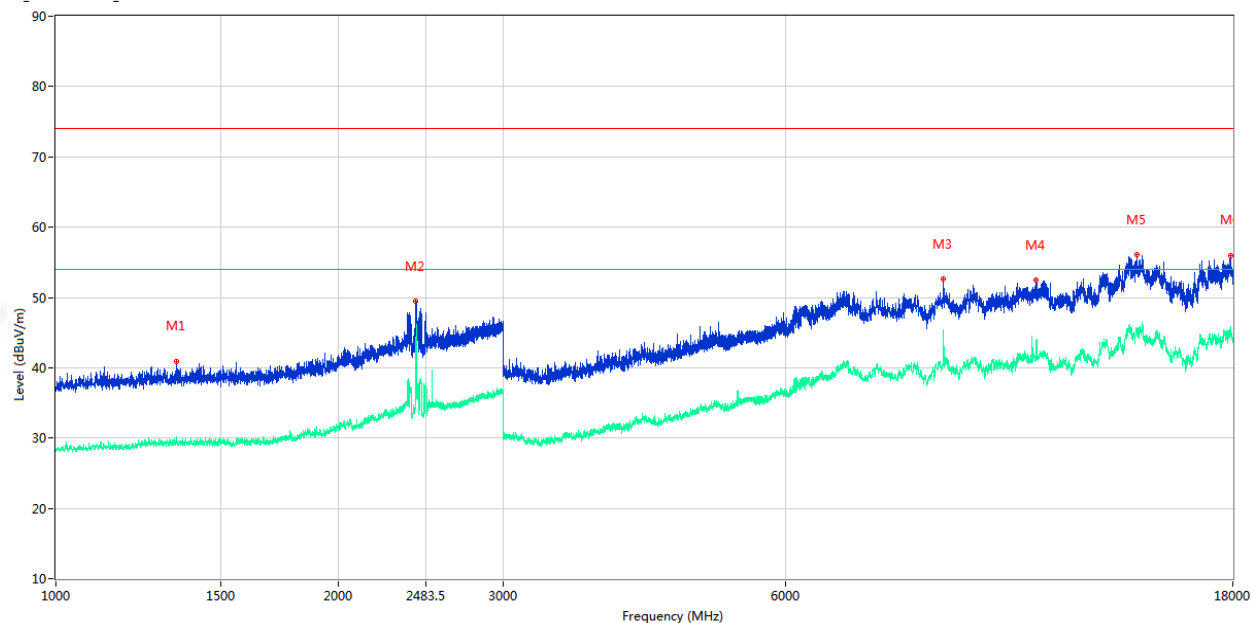
Low Channel (802.11ax20(MIMO)/2412 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1345.50	40.95	-1.26	74	-33.05	Peak	156.1	Vertical	Pass
1345.50	29.29	-1.26	54	-24.71	AV	156.1	Vertical	Pass
2419.00	49.41	3.13	74	-24.59	Peak	218.5	Vertical	Pass
2419.00	43.89	3.13	54	-10.11	AV	218.5	Vertical	Pass
8848.00	52.65	0.86	74	-21.35	Peak	17.1	Vertical	Pass
8848.00	45.37	0.86	54	-8.63	AV	17.1	Vertical	Pass
11114.00	52.45	2.16	74	-21.55	Peak	77.7	Vertical	Pass
11114.00	43.71	2.16	54	-10.29	AV	77.7	Vertical	Pass
14210.50	56.06	6.95	74	-17.94	Peak	359.5	Vertical	Pass
14210.50	44.82	6.95	54	-9.18	AV	359.5	Vertical	Pass
17895.50	56.01	7.20	74	-17.99	Peak	295.9	Vertical	Pass
17895.50	45.41	7.20	54	-8.59	AV	295.9	Vertical	Pass
Middle Channel (802.11ax20(MIMO)/2437 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1345.19	39.49	-1.34	74.00	-34.51	Peak	155.12	Vertical	Pass
1345.19	27.34	-1.34	54.00	-26.66	AV	155.12	Vertical	Pass
2418.56	48.79	3.11	74.00	-25.21	Peak	216.12	Vertical	Pass
2418.56	42.40	3.11	54.00	-11.60	AV	216.12	Vertical	Pass
8847.73	52.12	0.83	74.00	-21.88	Peak	14.75	Vertical	Pass
8847.73	44.54	0.83	54.00	-9.46	AV	14.75	Vertical	Pass
11113.76	50.59	2.13	74.00	-23.41	Peak	64.86	Vertical	Pass
11113.76	42.00	2.13	54.00	-12.00	AV	64.86	Vertical	Pass
14210.04	55.33	6.91	74.00	-18.67	Peak	356.65	Vertical	Pass
14210.04	43.30	6.91	54.00	-10.70	AV	356.65	Vertical	Pass
17895.30	54.50	7.17	74.00	-19.50	Peak	297.31	Vertical	Pass
17895.30	44.00	7.17	54.00	-10.00	AV	297.31	Vertical	Pass

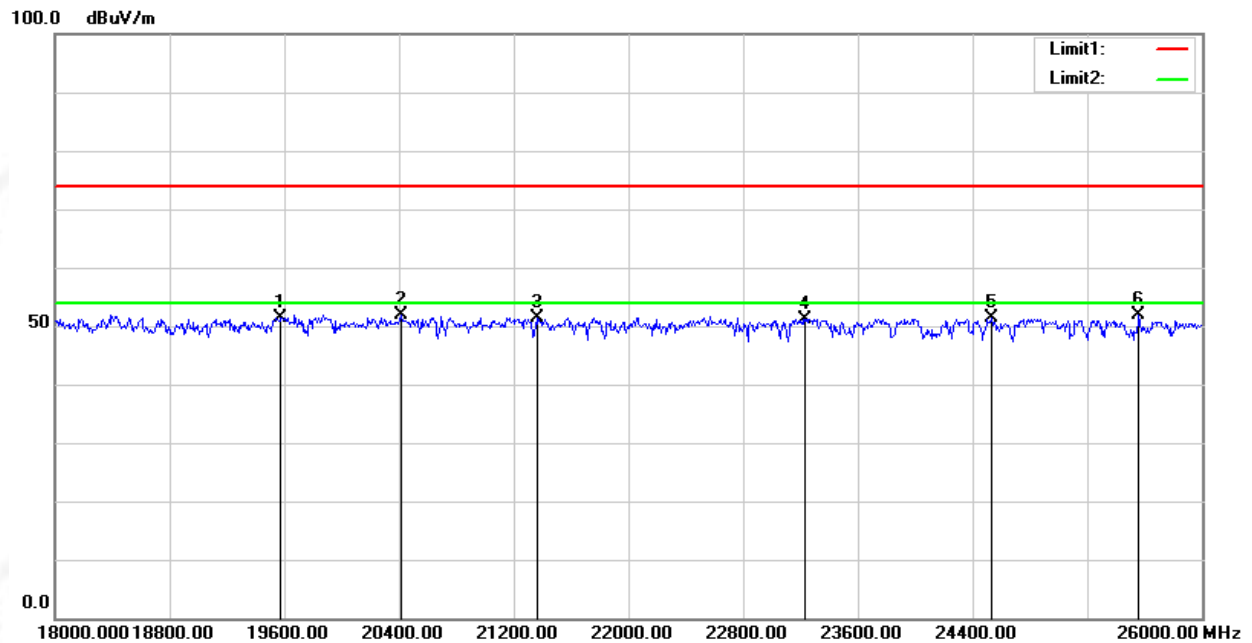


High Channel (802.11ax20(MIMO)/2462 MHz)								
Frequency (MHz)	Results (dBuV/m)	Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Antenna	Verdict
1344.97	38.85	-1.41	74.00	-35.15	Peak	156.00	Vertical	Pass
1344.97	25.44	-1.41	54.00	-28.56	AV	156.00	Vertical	Pass
2418.27	47.89	3.06	74.00	-26.11	Peak	213.06	Vertical	Pass
2418.27	41.48	3.06	54.00	-12.52	AV	213.06	Vertical	Pass
8847.46	51.10	0.78	74.00	-22.90	Peak	8.87	Vertical	Pass
8847.46	43.97	0.78	54.00	-10.03	AV	8.87	Vertical	Pass
11113.38	49.11	2.08	74.00	-24.89	Peak	57.94	Vertical	Pass
11113.38	41.16	2.08	54.00	-12.84	AV	57.94	Vertical	Pass
14209.55	53.67	6.87	74.00	-20.33	Peak	351.60	Vertical	Pass
14209.55	42.03	6.87	54.00	-11.97	AV	351.60	Vertical	Pass
17894.95	53.90	7.12	74.00	-20.10	Peak	300.25	Vertical	Pass
17894.95	43.04	7.12	54.00	-10.96	AV	300.25	Vertical	Pass

RSE-1G-18G-V

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





No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19576.000	49.97	1.52	51.49	54.00	-2.51	peak
2	20416.000	49.64	2.16	51.80	54.00	-2.20	peak
3	21368.000	48.57	2.86	51.43	54.00	-2.57	peak
4	23232.000	47.36	3.87	51.23	54.00	-2.77	peak
5	24528.000	46.67	4.75	51.42	54.00	-2.58	peak
6	25560.000	46.22	5.67	51.89	54.00	-2.11	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.

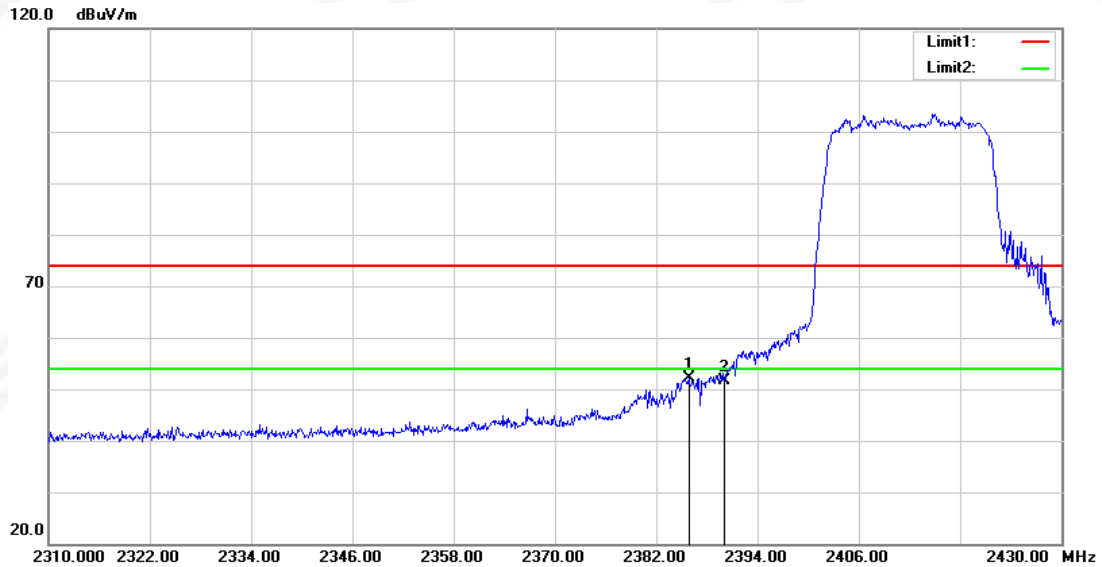


3.2.6 TEST RESULTS(Band edge Requirements)

802.11 ax20 MIMO

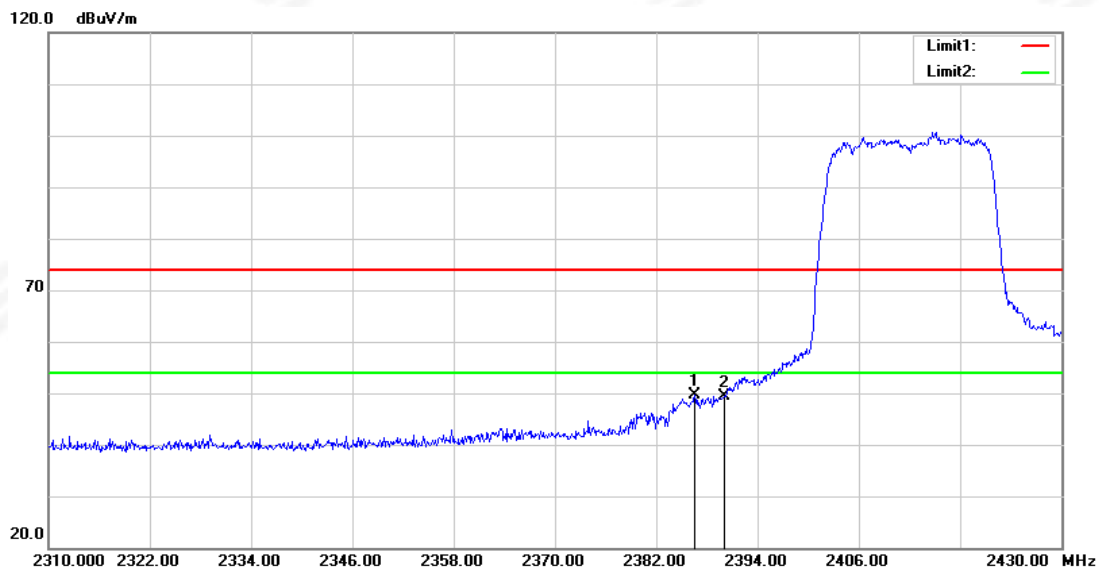
Low Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.840	51.32	0.77	52.09	54.00	-1.91	peak
2	2390.000	50.84	0.81	51.65	54.00	-2.35	peak

Vertical

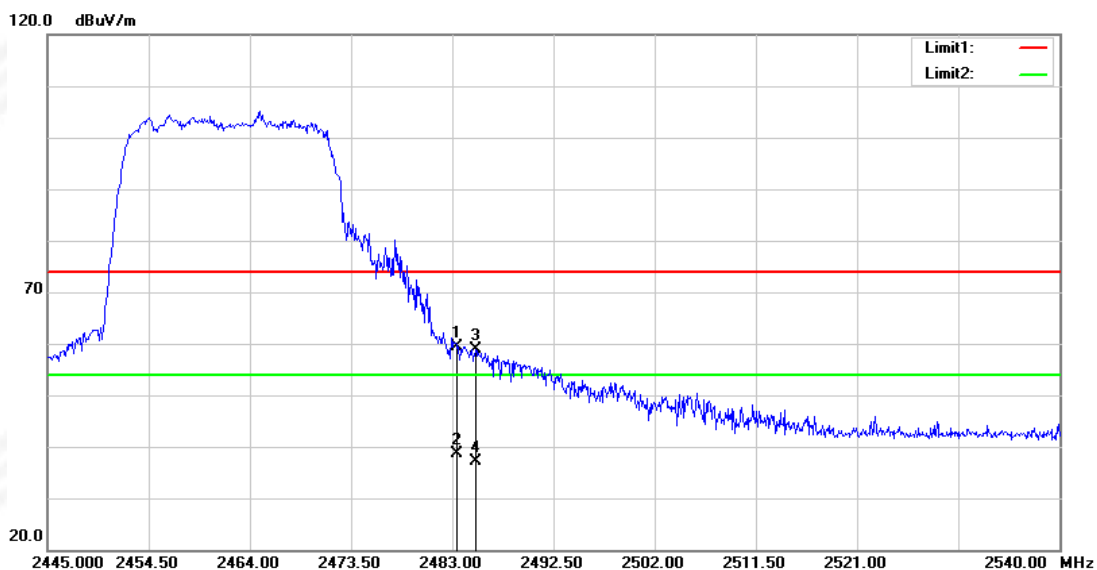


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.560	48.81	0.78	49.59	54.00	-4.41	peak
2	2390.000	48.55	0.81	49.36	54.00	-4.64	peak



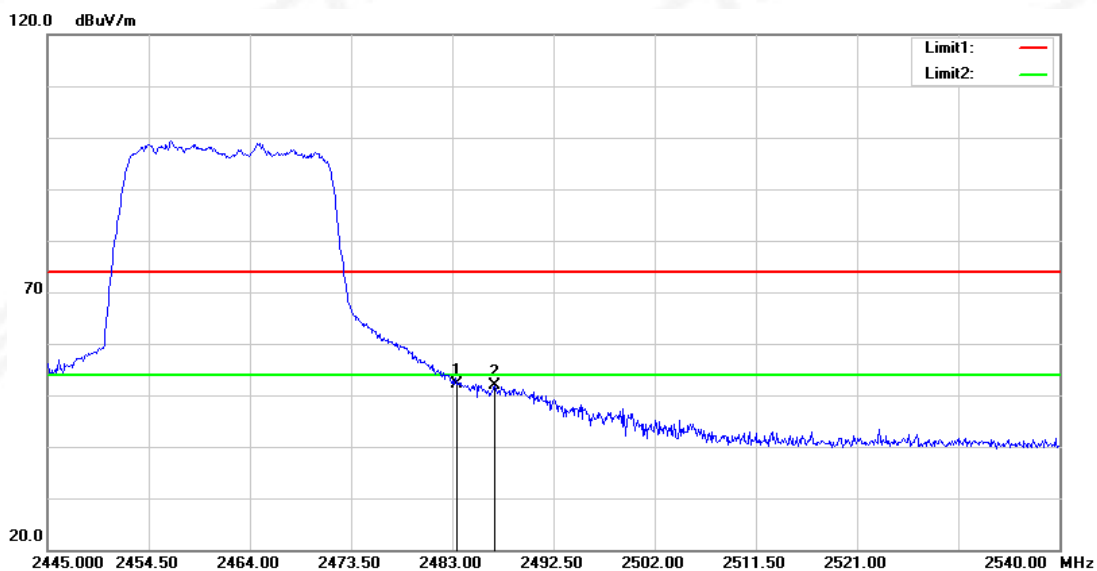
High Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	58.27	1.02	59.29	74.00	-14.71	peak
2	2483.500	37.66	1.02	38.68	54.00	-15.32	AVG
3	2485.185	57.77	1.03	58.80	74.00	-15.20	peak
4	2485.185	36.14	1.03	37.17	54.00	-16.83	AVG

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	51.11	1.02	52.13	54.00	-1.87	peak
2	2486.990	50.85	1.03	51.88	54.00	-2.12	peak

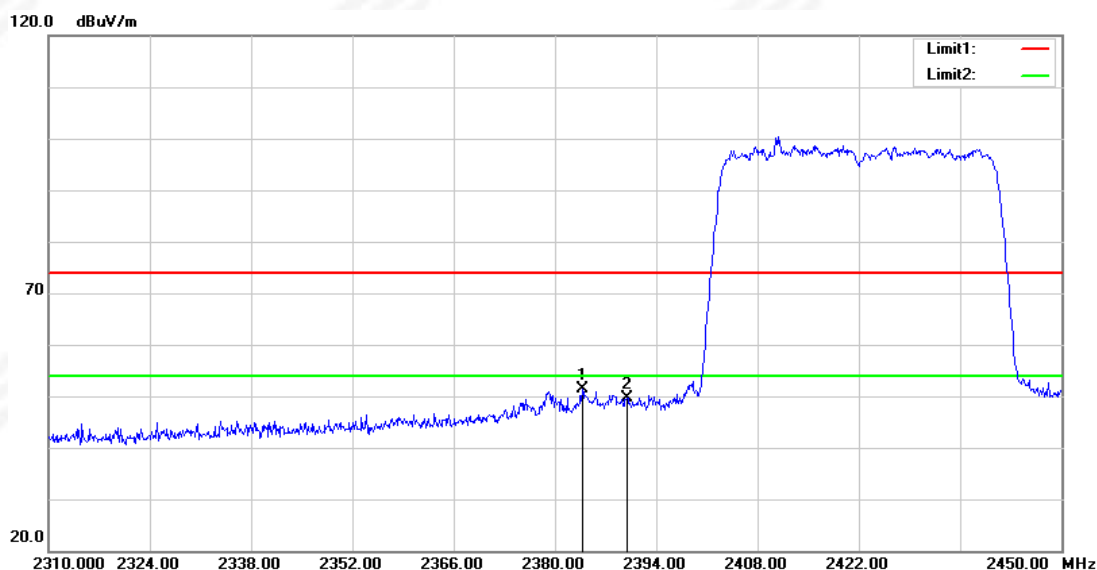
Note: All modes have been measurement, only worst mode was reported.



802.11 ax40 MIMO

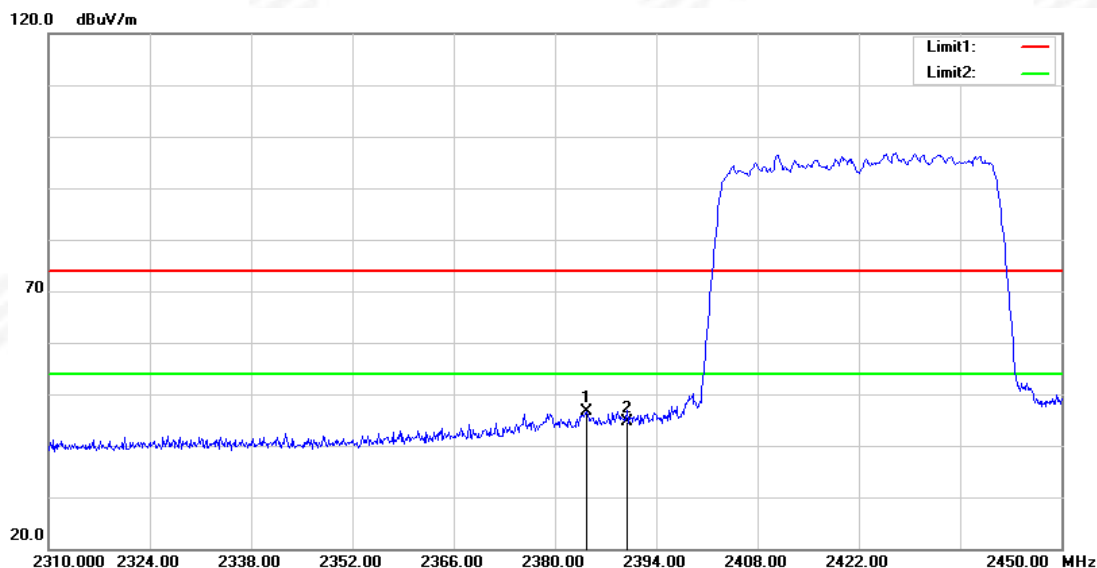
Low Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.780	50.69	0.76	51.45	54.00	-2.55	peak
2	2390.000	48.70	0.81	49.51	54.00	-4.49	peak

Vertical

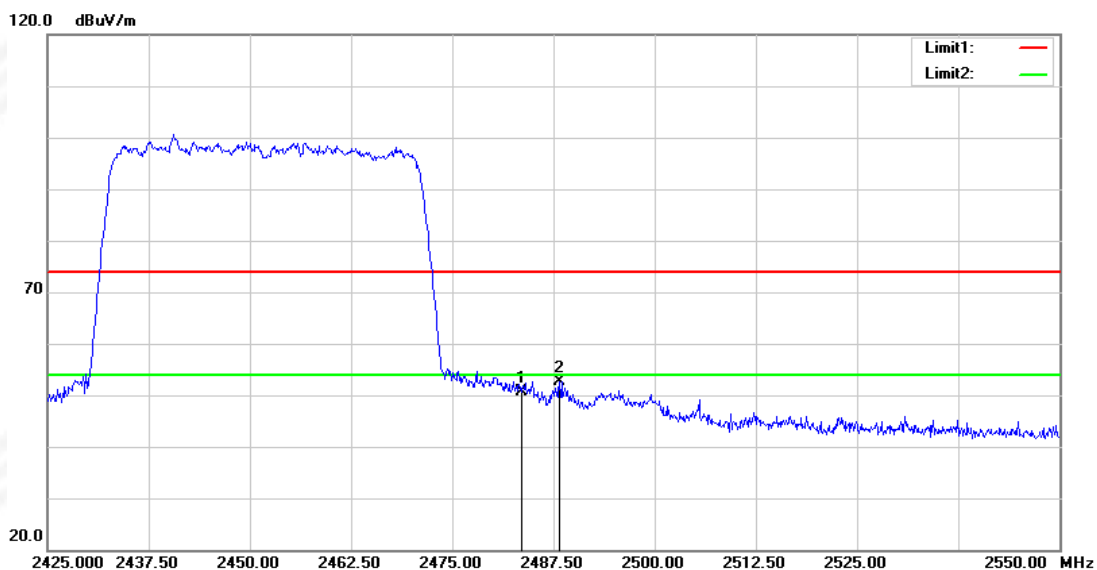


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.340	45.80	0.77	46.57	54.00	-7.43	peak
2	2390.000	43.77	0.81	44.58	54.00	-9.42	peak



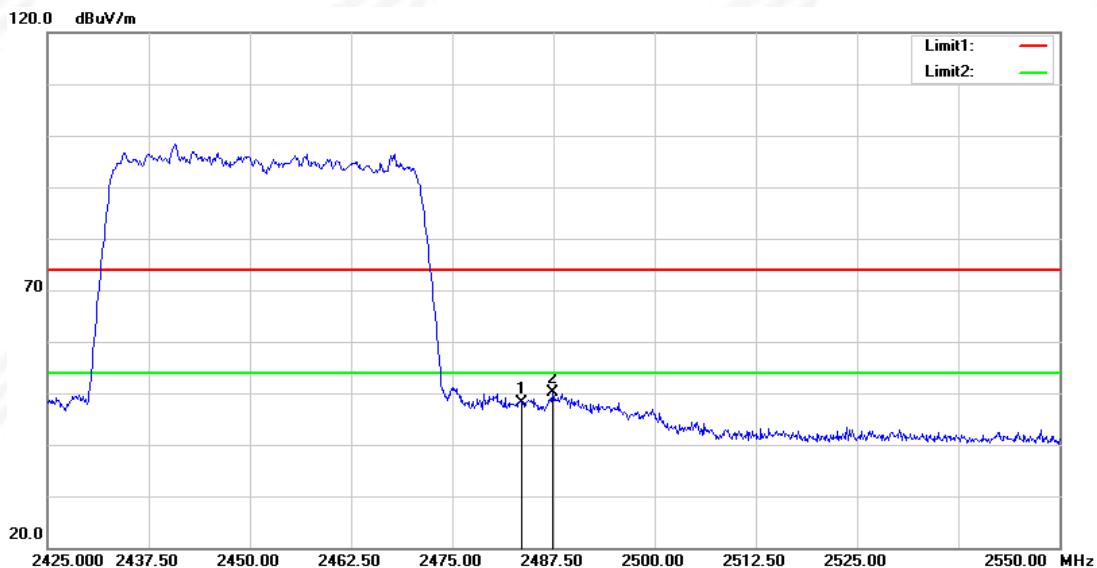
High Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	49.58	1.02	50.60	54.00	-3.40	peak
2	2488.250	51.59	1.03	52.62	54.00	-1.38	AVG

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	47.12	1.02	48.14	54.00	-5.86	peak
2	2487.375	49.06	1.03	50.09	54.00	-3.91	peak

Note: All modes have been measurement, only worst mode was reported.



4. DUTY CYCLE

4.1 TEST STANDARD

Please refer to ANSI C63.10-2020 Section 11.6

4.2 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

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



4.5 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.

4.6 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



5. CONDUCTED SPURIOUS & BAND EDGE EMISSION

5.1 LIMIT

According to 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.

5.2 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

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; 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.

5.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

5.6 TEST RESULTS

Note:

1. The test data please refer to APPENDIX 1.
2. For unwanted emission strength measurements of 802.11n,,802.11ax MIMO, 3dB is added to SISO measurements, and the results are passed.



6. POWER SPECTRAL DENSITY TEST

6.1 LIMIT

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

6.2 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 $100 \text{ kHz} \geq \text{RBW} \geq 3 \text{ kHz}$.
4. Set the $\text{VBW} \geq 3 \times \text{RBW}$.
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.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

6.6 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



7. BANDWIDTH TEST

7.1 LIMIT

FCC Part15.247,Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

7.2 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 = 1% to 5% of the OBW but not less than 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.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

7.6 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



8. PEAK OUTPUT POWER TEST

7.1 LIMIT

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

8.2 TEST PROCEDURE

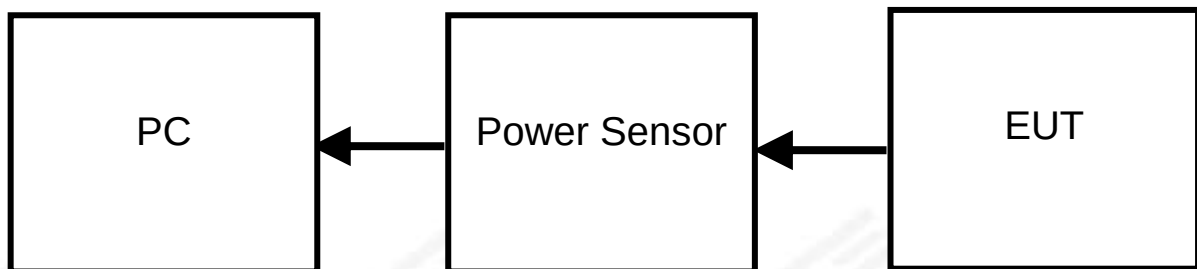
PKPM1 Peak power meter method:

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

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

8.6 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

9.2 EUT ANTENNA

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



APPENDIX 1-TEST DATA

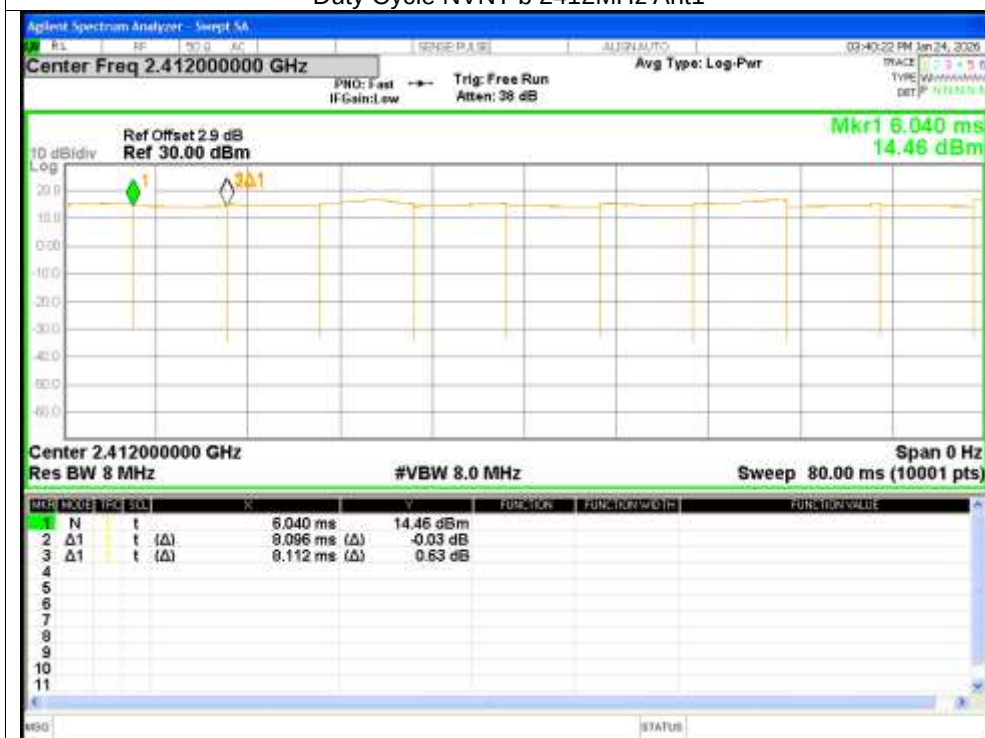
Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	8.096	8.112	99.8	0.01	0.12
NVNT	b	2437	Ant1	8.096	8.112	99.8	0.01	0.12
NVNT	b	2462	Ant1	8.096	8.112	99.8	0.01	0.12
NVNT	b	2412	Ant2	8.096	8.112	99.8	0.01	0.12
NVNT	b	2437	Ant2	8.096	8.112	99.8	0.01	0.12
NVNT	b	2462	Ant2	8.096	8.112	99.8	0.01	0.12
NVNT	g	2412	Ant1	1.36	1.372	99.13	0.04	0.74
NVNT	g	2437	Ant1	1.36	1.372	99.13	0.04	0.74
NVNT	g	2462	Ant1	1.36	1.372	99.13	0.04	0.74
NVNT	g	2412	Ant2	1.36	1.372	99.13	0.04	0.74
NVNT	g	2437	Ant2	1.36	1.372	99.13	0.04	0.74
NVNT	g	2462	Ant2	1.36	1.372	99.13	0.04	0.74
NVNT	n20	2412	MIMO	1.15	1.255	91.63	0.38	0.87
NVNT	n20	2437	MIMO	1.15	1.255	91.63	0.38	0.87
NVNT	n20	2462	MIMO	1.15	1.25	92	0.36	0.87
NVNT	n40	2422	MIMO	0.573	0.603	95.02	0.22	1.75
NVNT	n40	2437	MIMO	0.573	0.678	84.51	0.73	1.75
NVNT	n40	2452	MIMO	0.573	0.678	84.51	0.73	1.75
NVNT	ax20	2412	MIMO	0.987	1.089	90.63	0.43	1.01
NVNT	ax20	2437	MIMO	0.987	1.092	90.38	0.44	1.01
NVNT	ax20	2462	MIMO	0.987	1.089	90.63	0.43	1.01
NVNT	ax40	2422	MIMO	0.52	0.624	83.33	0.79	1.92
NVNT	ax40	2437	MIMO	0.522	0.558	93.55	0.29	1.92
NVNT	ax40	2452	MIMO	0.52	0.626	83.07	0.81	1.92

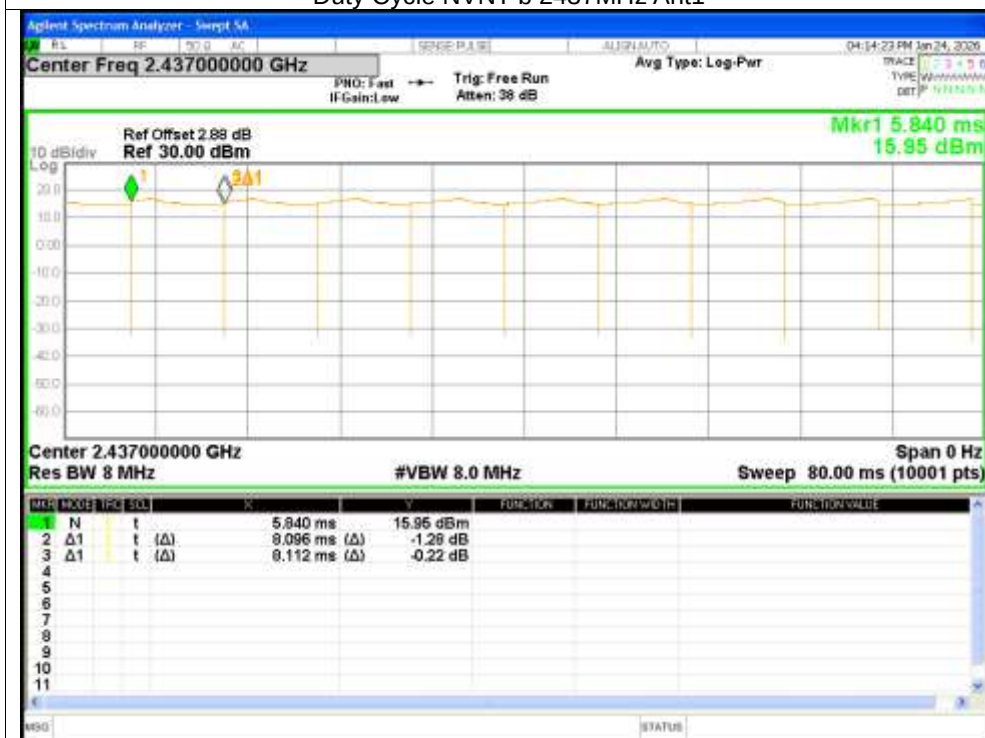


Test Graphs

Duty Cycle NVNT b 2412MHz Ant1

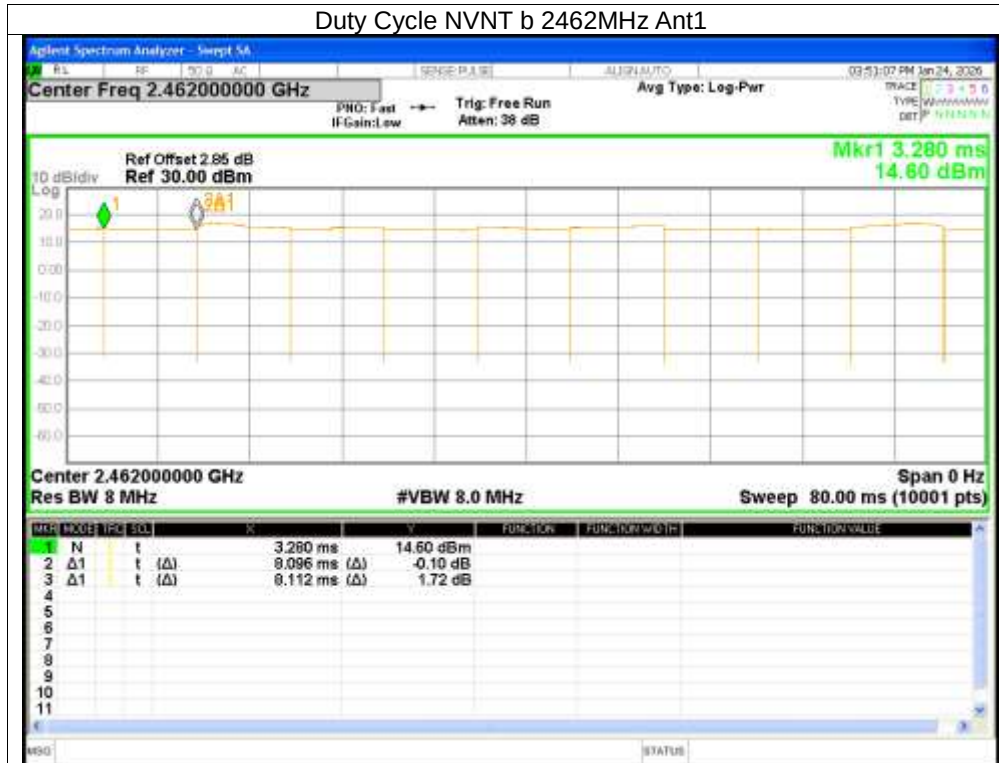


Duty Cycle NVNT b 2437MHz Ant1

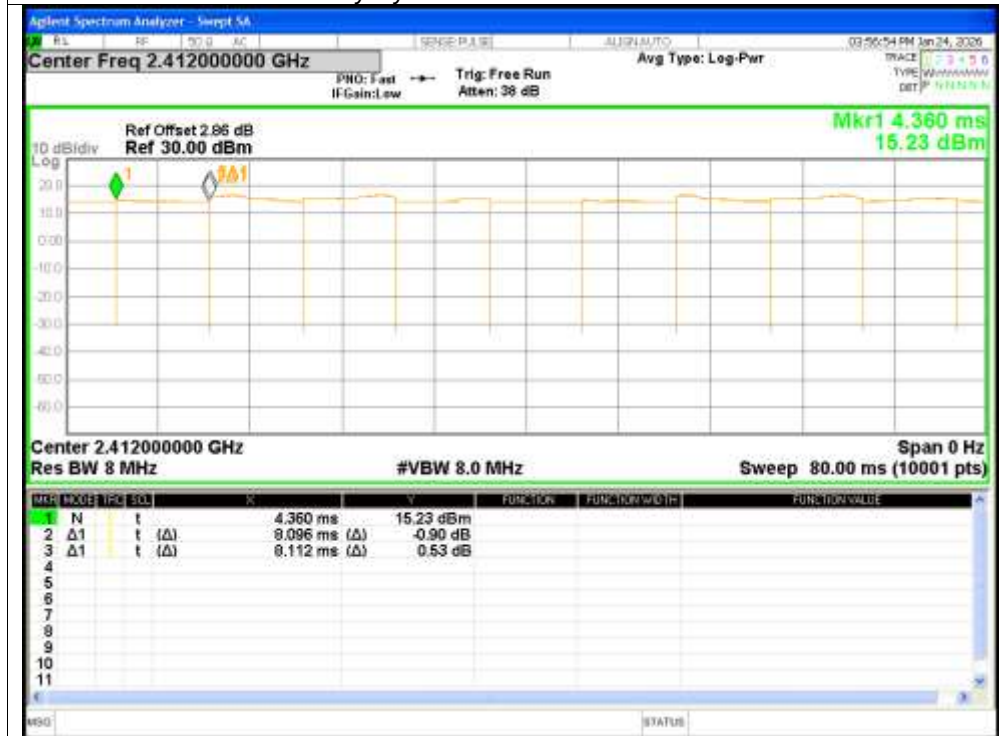




Duty Cycle NVNT b 2462MHz Ant1

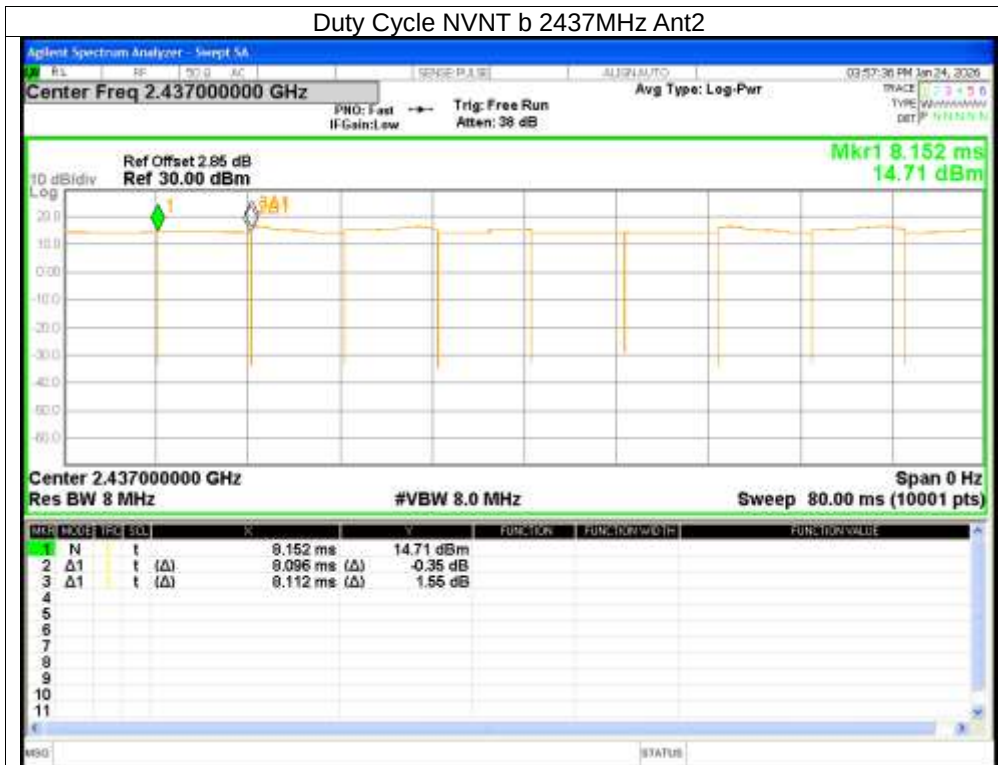


Duty Cycle NVNT b 2412MHz Ant2





Duty Cycle NVNT b 2437MHz Ant2

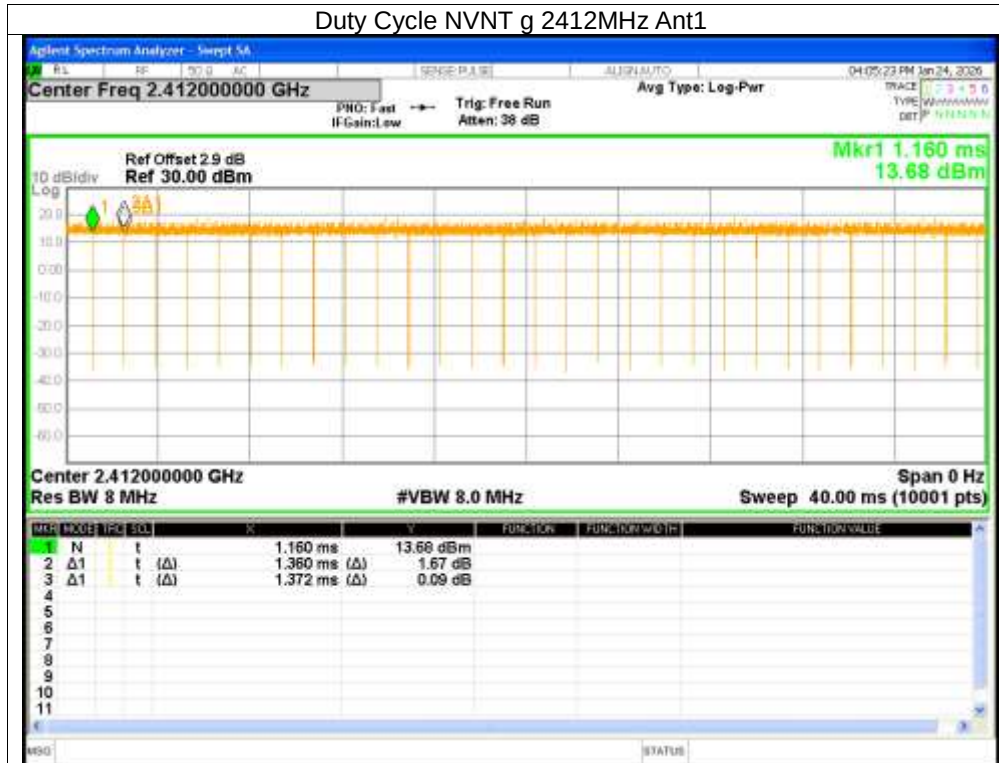


Duty Cycle NVNT b 2462MHz Ant2

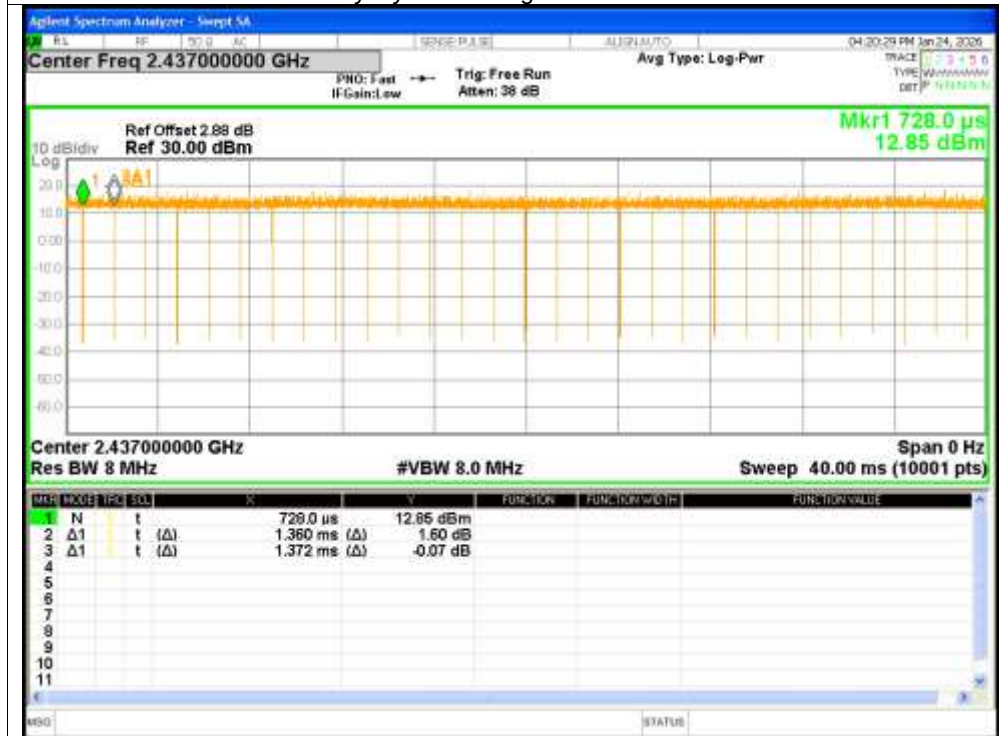




Duty Cycle NVNT g 2412MHz Ant1

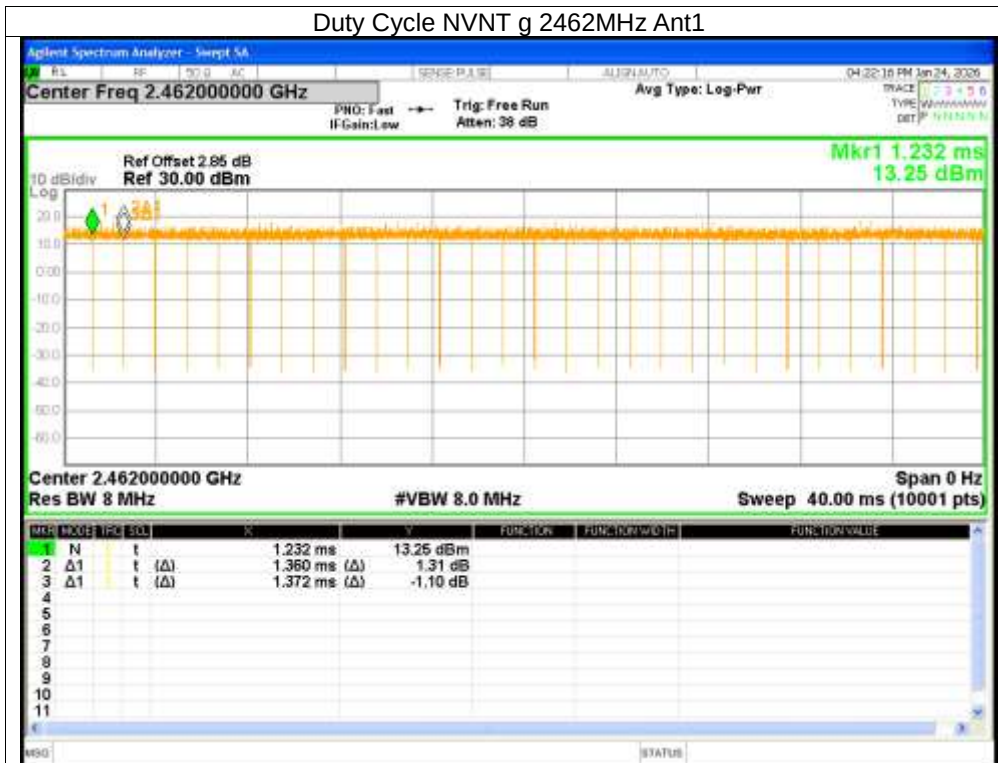


Duty Cycle NVNT g 2437MHz Ant1





Duty Cycle NVNT g 2462MHz Ant1

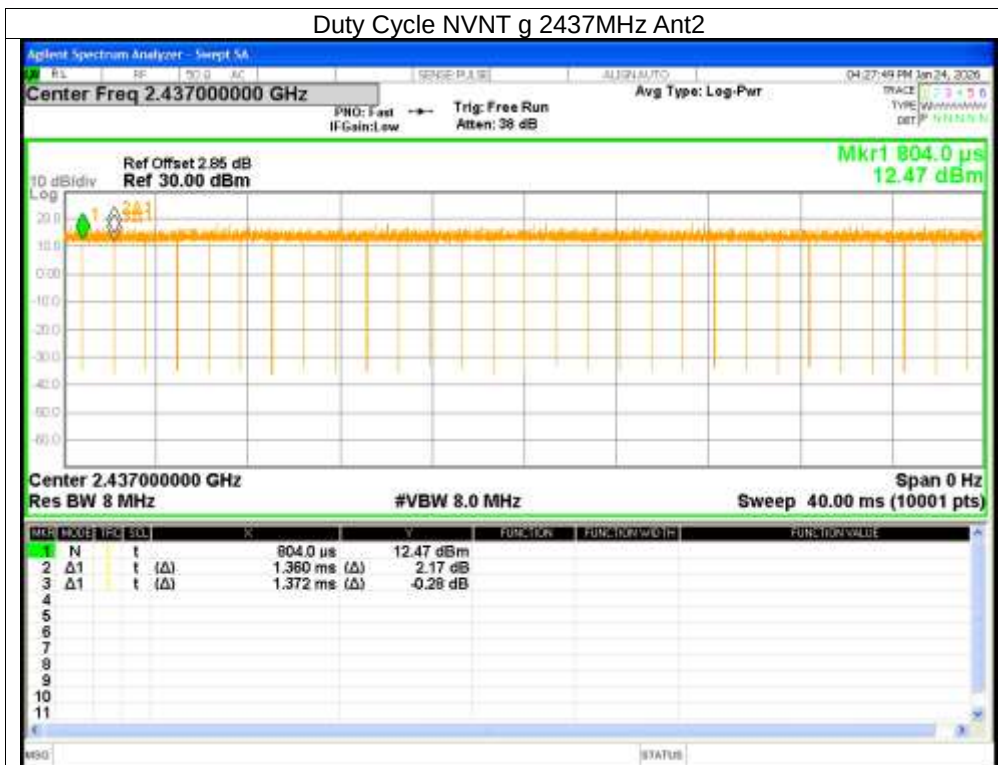


Duty Cycle NVNT g 2412MHz Ant2

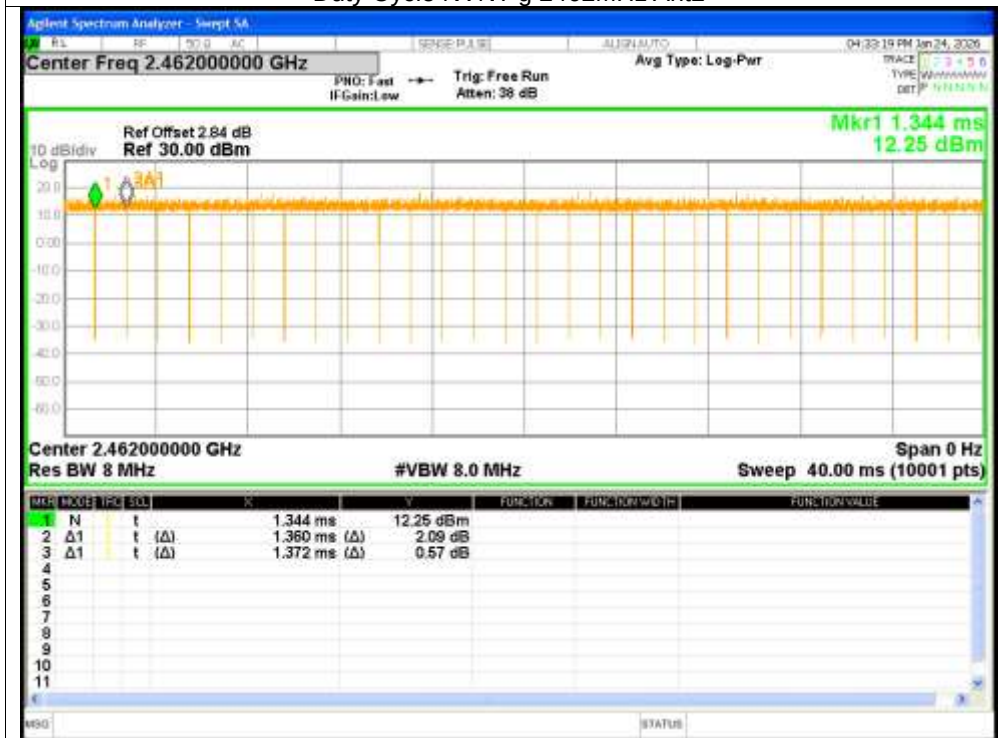




Duty Cycle NVNT g 2437MHz Ant2

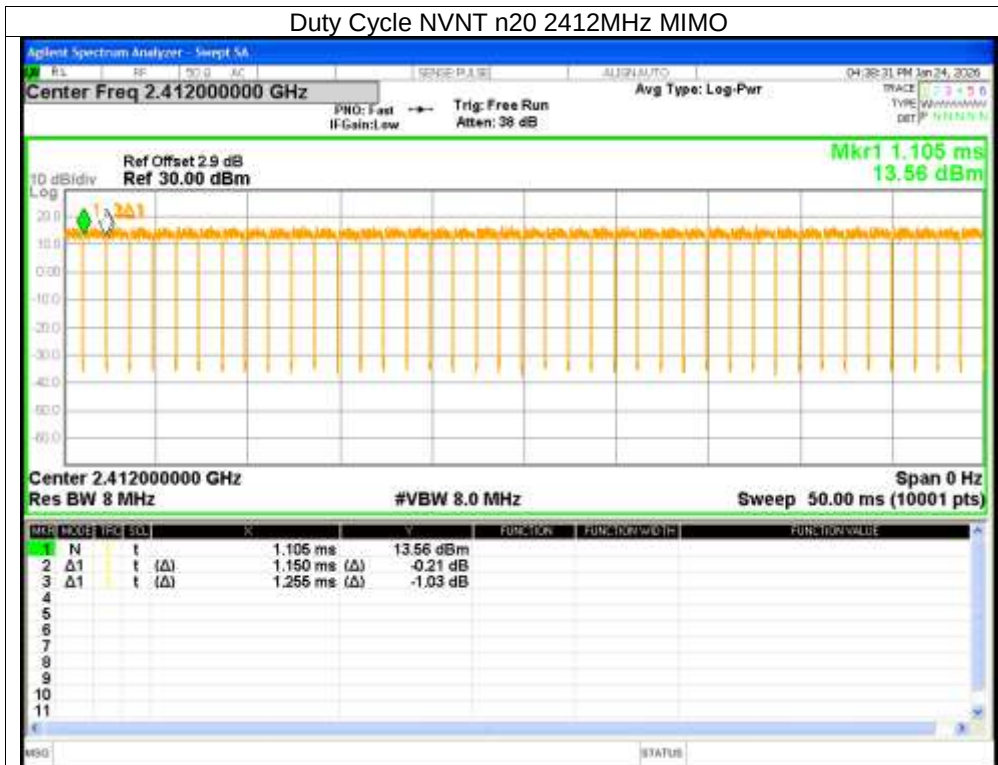


Duty Cycle NVNT g 2462MHz Ant2

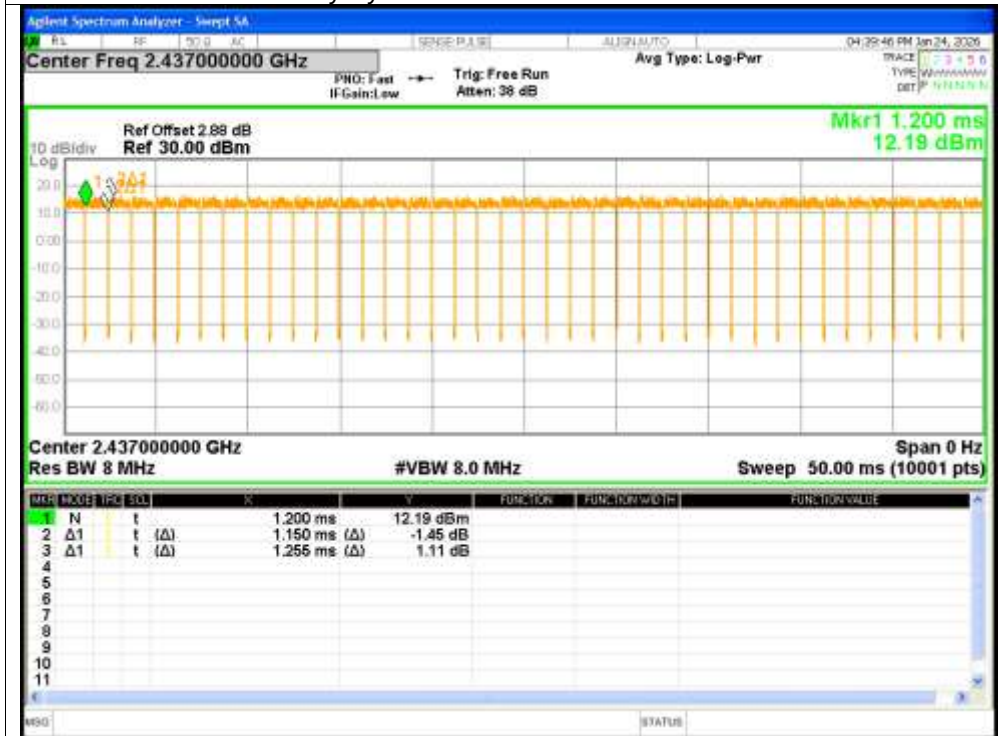




Duty Cycle NVNT n20 2412MHz MIMO

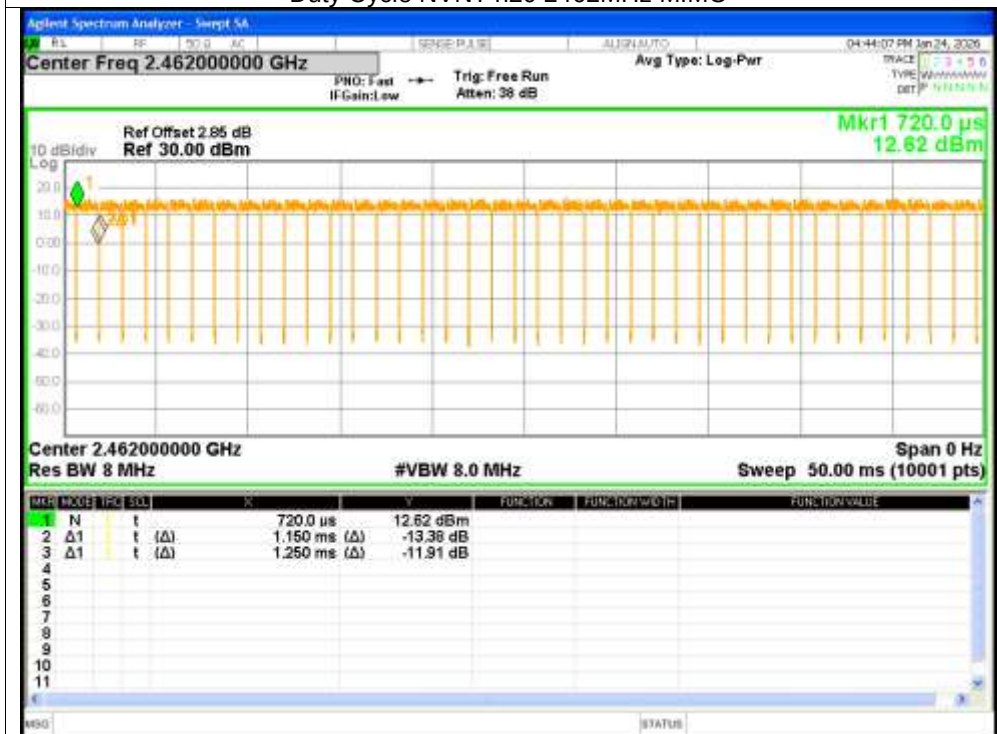


Duty Cycle NVNT n20 2437MHz MIMO

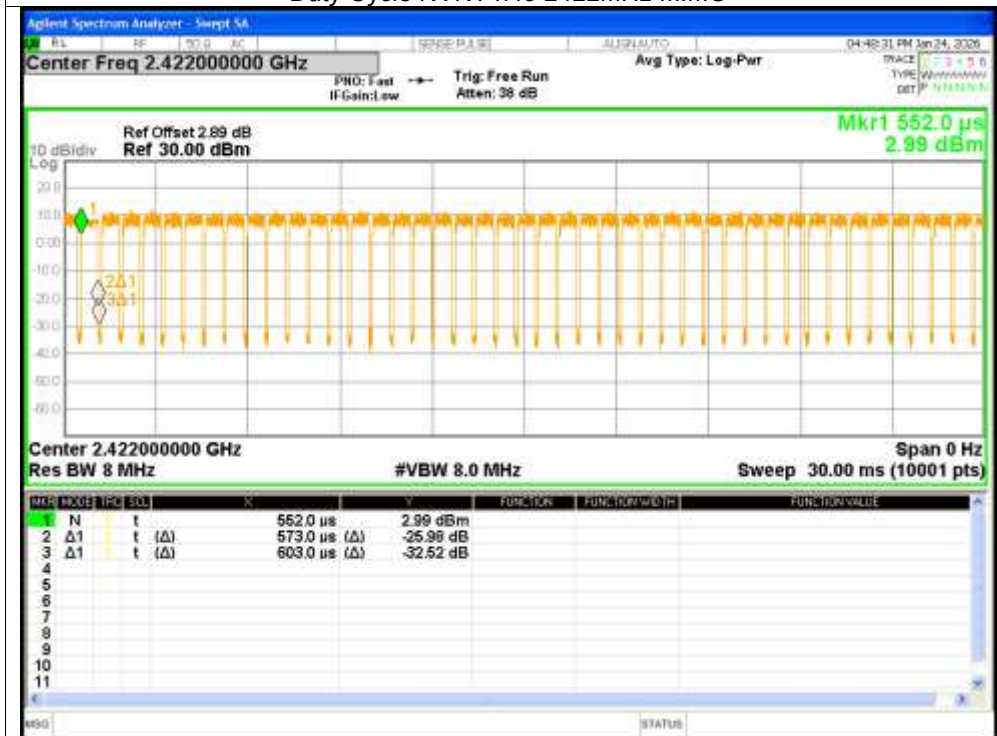




Duty Cycle NVNT n20 2462MHz MIMO

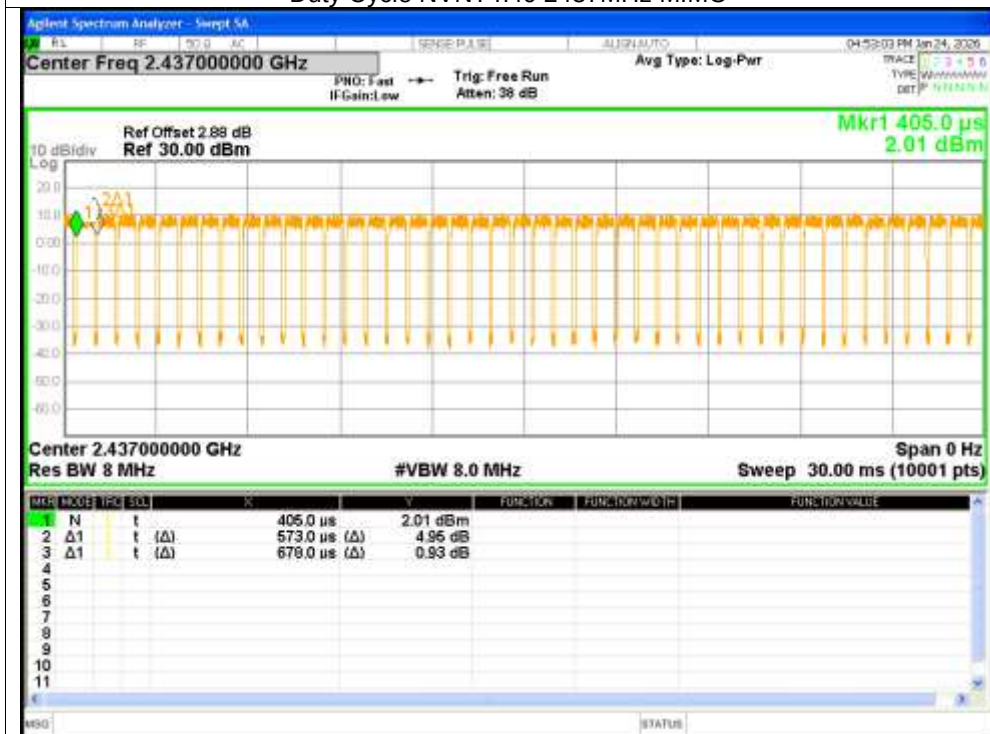


Duty Cycle NVNT n40 2422MHz MIMO

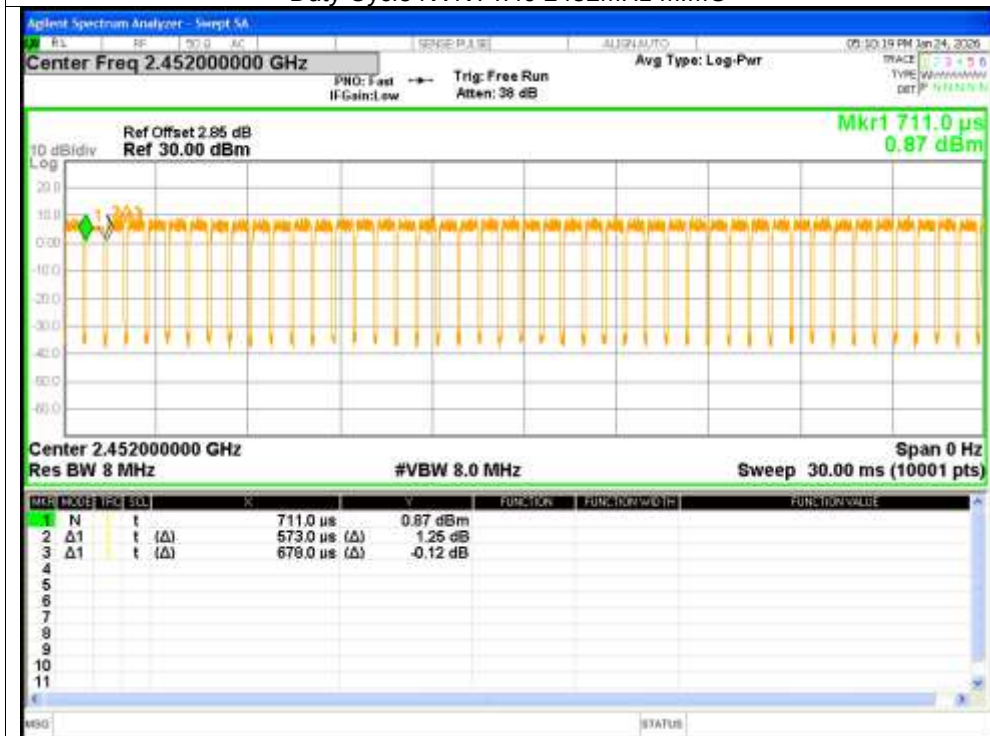




Duty Cycle NVNT n40 2437MHz MIMO

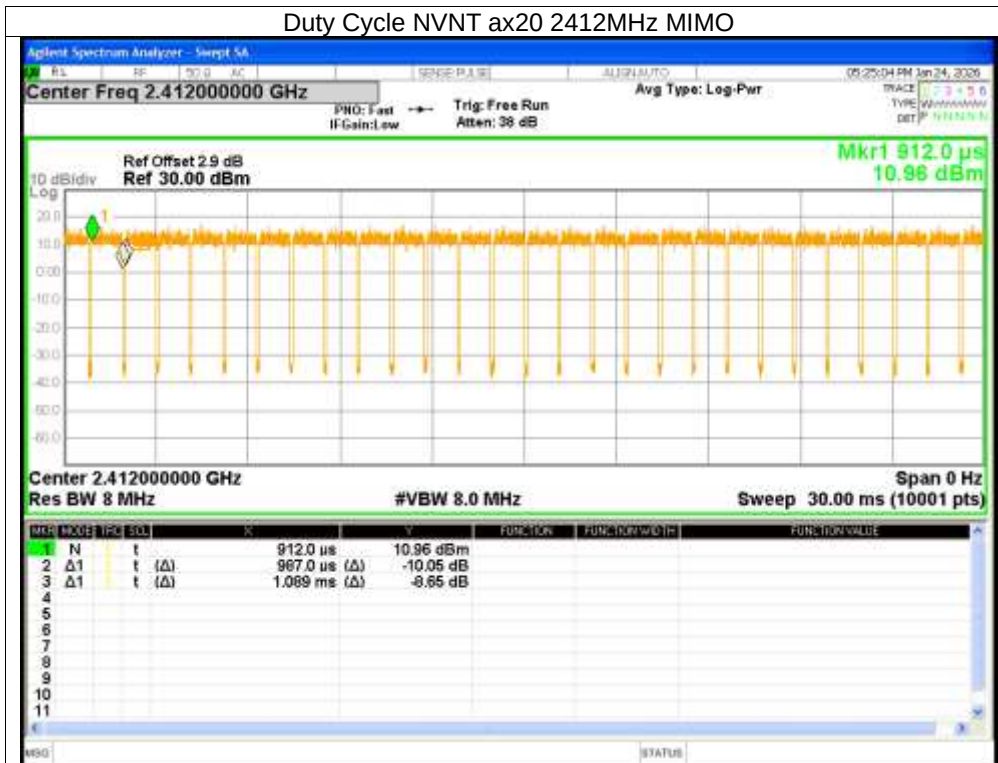


Duty Cycle NVNT n40 2452MHz MIMO

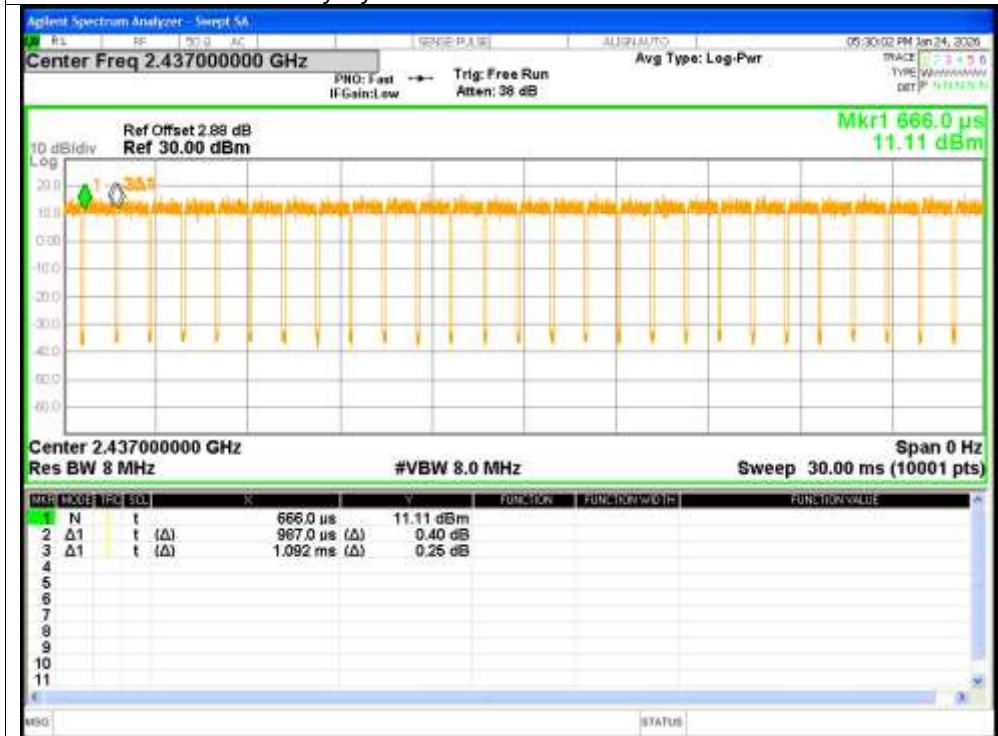




Duty Cycle NVNT ax20 2412MHz MIMO

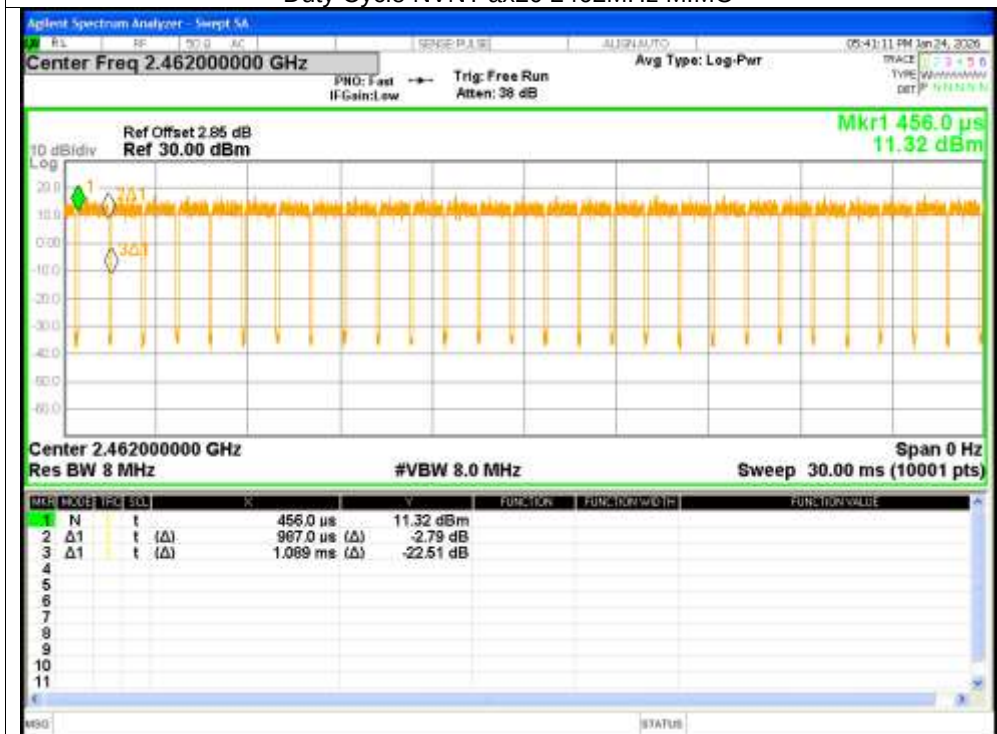


Duty Cycle NVNT ax20 2437MHz MIMO

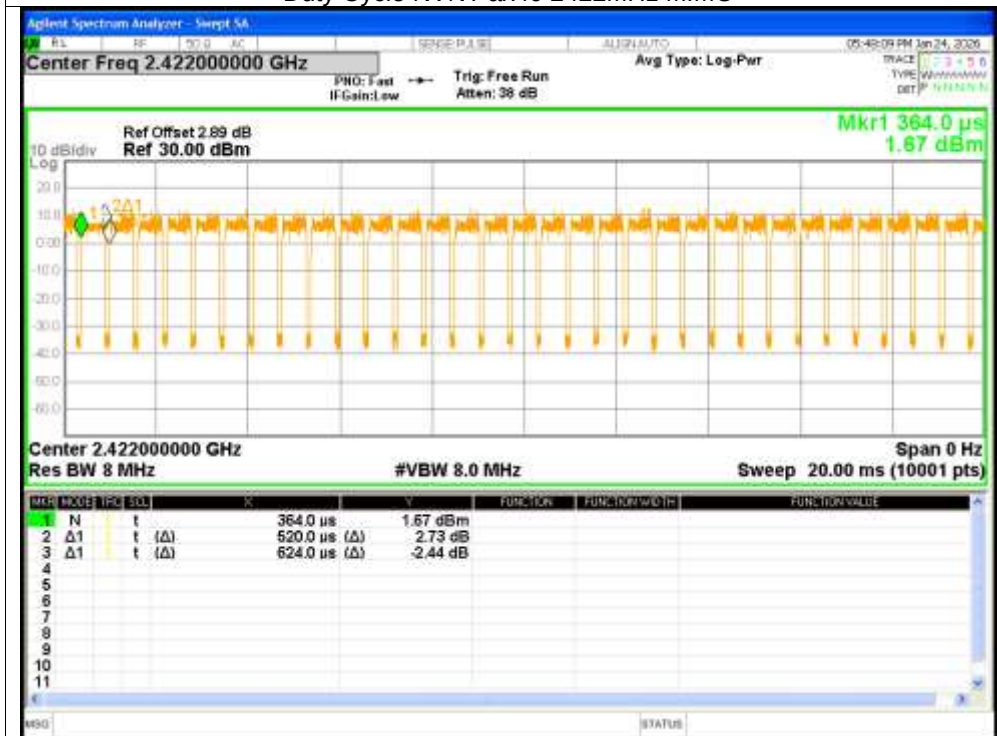




Duty Cycle NVNT ax20 2462MHz MIMO

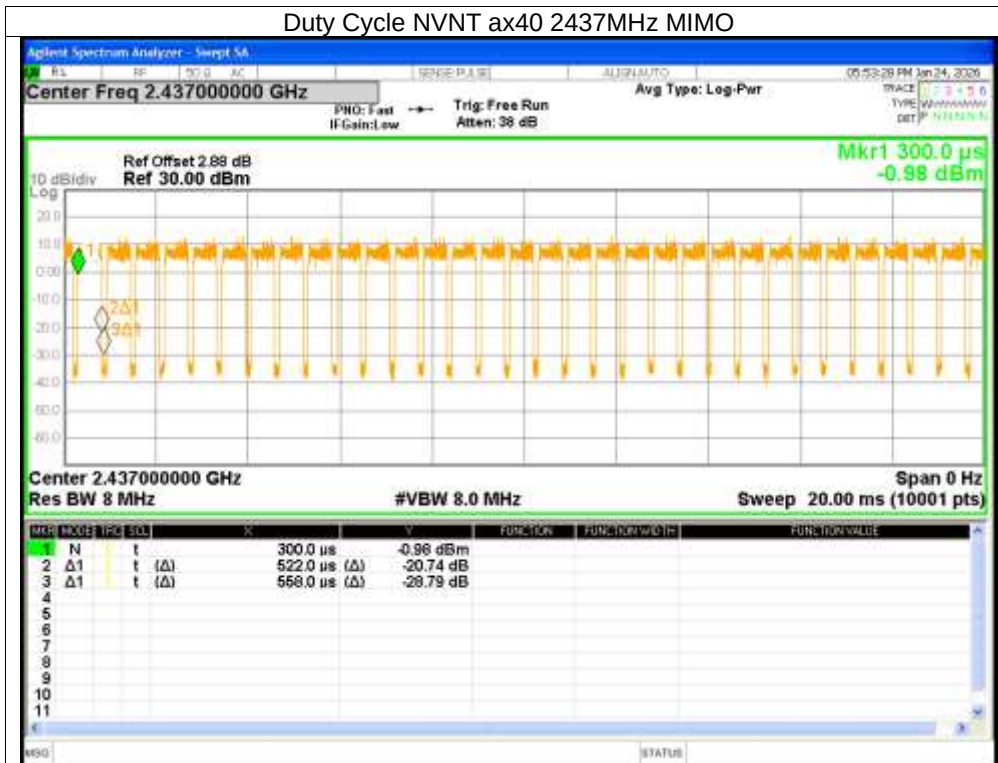


Duty Cycle NVNT ax40 2422MHz MIMO

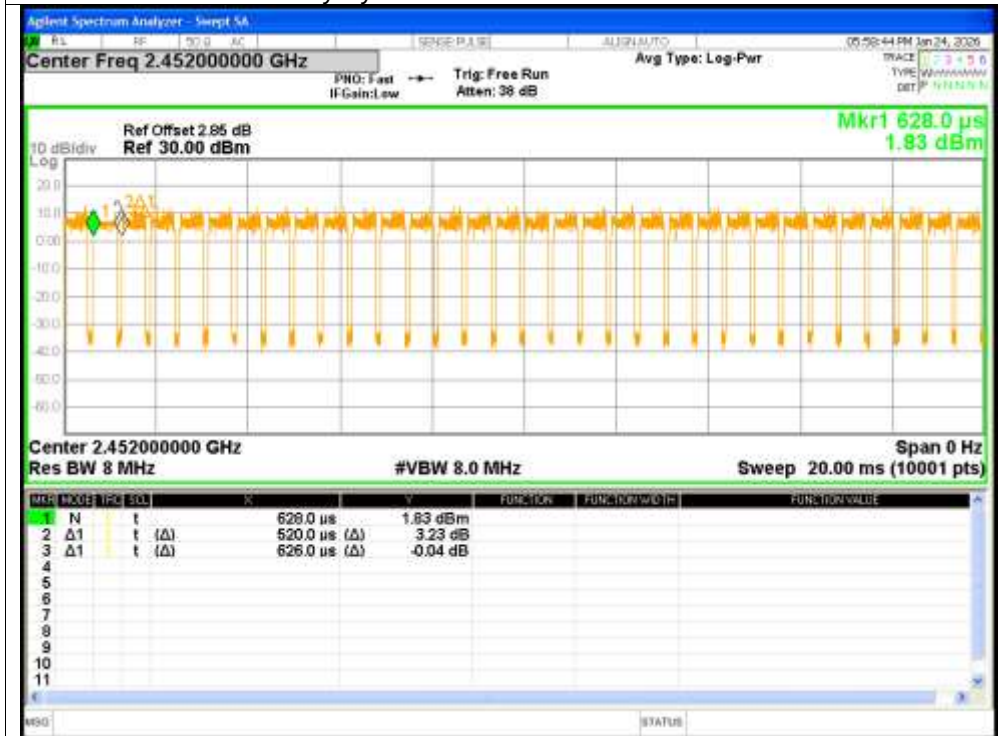




Duty Cycle NVNT ax40 2437MHz MIMO



Duty Cycle NVNT ax40 2452MHz MIMO





Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	16.83	<=30	Pass
NVNT	b	2437	Ant1	17.03	<=30	Pass
NVNT	b	2462	Ant1	16.9	<=30	Pass
NVNT	b	2412	Ant2	16.82	<=30	Pass
NVNT	b	2437	Ant2	16.83	<=30	Pass
NVNT	b	2462	Ant2	16.75	<=30	Pass
NVNT	g	2412	Ant1	16.64	<=30	Pass
NVNT	g	2437	Ant1	16.71	<=30	Pass
NVNT	g	2462	Ant1	16.36	<=30	Pass
NVNT	g	2412	Ant2	16.34	<=30	Pass
NVNT	g	2437	Ant2	16.75	<=30	Pass
NVNT	g	2462	Ant2	16.37	<=30	Pass
NVNT	n20	2412	Ant1	16.64	<=30	Pass
NVNT	n20	2412	Ant2	16.44	<=30	Pass
NVNT	n20	2412	MIMO	19.55	<=30	Pass
NVNT	n20	2437	Ant1	16.56	<=30	Pass
NVNT	n20	2437	Ant2	16.5	<=30	Pass
NVNT	n20	2437	MIMO	19.54	<=30	Pass
NVNT	n20	2462	Ant1	16.31	<=30	Pass
NVNT	n20	2462	Ant2	16.45	<=30	Pass
NVNT	n20	2462	MIMO	19.39	<=30	Pass
NVNT	n40	2422	Ant1	15.72	<=30	Pass
NVNT	n40	2422	Ant2	15.69	<=30	Pass
NVNT	n40	2422	MIMO	18.72	<=30	Pass
NVNT	n40	2437	Ant1	14.6	<=30	Pass
NVNT	n40	2437	Ant2	14.76	<=30	Pass
NVNT	n40	2437	MIMO	17.69	<=30	Pass
NVNT	n40	2452	Ant1	14.55	<=30	Pass
NVNT	n40	2452	Ant2	14.76	<=30	Pass
NVNT	n40	2452	MIMO	17.67	<=30	Pass
NVNT	ax20	2412	Ant1	16.41	<=30	Pass
NVNT	ax20	2412	Ant2	16.25	<=30	Pass
NVNT	ax20	2412	MIMO	19.34	<=30	Pass
NVNT	ax20	2437	Ant1	16.61	<=30	Pass
NVNT	ax20	2437	Ant2	16.65	<=30	Pass
NVNT	ax20	2437	MIMO	19.64	<=30	Pass
NVNT	ax20	2462	Ant1	16.54	<=30	Pass
NVNT	ax20	2462	Ant2	16.44	<=30	Pass
NVNT	ax20	2462	MIMO	19.5	<=30	Pass
NVNT	ax40	2422	Ant1	15.6	<=30	Pass
NVNT	ax40	2422	Ant2	15.74	<=30	Pass
NVNT	ax40	2422	MIMO	18.68	<=30	Pass
NVNT	ax40	2437	Ant1	15.69	<=30	Pass
NVNT	ax40	2437	Ant2	15.79	<=30	Pass
NVNT	ax40	2437	MIMO	18.75	<=30	Pass
NVNT	ax40	2452	Ant1	15.65	<=30	Pass
NVNT	ax40	2452	Ant2	15.66	<=30	Pass
NVNT	ax40	2452	MIMO	18.67	<=30	Pass

**-6dB Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	10.2	≥ 0.5	Pass
NVNT	b	2437	Ant1	11.13	≥ 0.5	Pass
NVNT	b	2462	Ant1	12.02	≥ 0.5	Pass
NVNT	b	2412	Ant2	11.1	≥ 0.5	Pass
NVNT	b	2437	Ant2	11.09	≥ 0.5	Pass
NVNT	b	2462	Ant2	12.04	≥ 0.5	Pass
NVNT	g	2412	Ant1	16.27	≥ 0.5	Pass
NVNT	g	2437	Ant1	16.3	≥ 0.5	Pass
NVNT	g	2462	Ant1	16.33	≥ 0.5	Pass
NVNT	g	2412	Ant2	16.39	≥ 0.5	Pass
NVNT	g	2437	Ant2	16.33	≥ 0.5	Pass
NVNT	g	2462	Ant2	16.33	≥ 0.5	Pass
NVNT	n20	2412	Ant1	16.74	≥ 0.5	Pass
NVNT	n20	2412	Ant2	17.61	≥ 0.5	Pass
NVNT	n20	2437	Ant1	17.3	≥ 0.5	Pass
NVNT	n20	2437	Ant2	15.4	≥ 0.5	Pass
NVNT	n20	2462	Ant1	17.5	≥ 0.5	Pass
NVNT	n20	2462	Ant2	17.4	≥ 0.5	Pass
NVNT	n40	2422	Ant1	28.99	≥ 0.5	Pass
NVNT	n40	2422	Ant2	36.4	≥ 0.5	Pass
NVNT	n40	2437	Ant1	36.03	≥ 0.5	Pass
NVNT	n40	2437	Ant2	20.35	≥ 0.5	Pass
NVNT	n40	2452	Ant1	36.13	≥ 0.5	Pass
NVNT	n40	2452	Ant2	36.32	≥ 0.5	Pass
NVNT	ax20	2412	Ant1	18.96	≥ 0.5	Pass
NVNT	ax20	2412	Ant2	18.83	≥ 0.5	Pass
NVNT	ax20	2437	Ant1	18.97	≥ 0.5	Pass
NVNT	ax20	2437	Ant2	17.42	≥ 0.5	Pass
NVNT	ax20	2462	Ant1	18.93	≥ 0.5	Pass
NVNT	ax20	2462	Ant2	18.93	≥ 0.5	Pass
NVNT	ax40	2422	Ant1	37.87	≥ 0.5	Pass
NVNT	ax40	2422	Ant2	26.71	≥ 0.5	Pass
NVNT	ax40	2437	Ant1	37.77	≥ 0.5	Pass
NVNT	ax40	2437	Ant2	17.85	≥ 0.5	Pass
NVNT	ax40	2452	Ant1	37.83	≥ 0.5	Pass
NVNT	ax40	2452	Ant2	36.54	≥ 0.5	Pass



Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1



-6dB Bandwidth NVNT b 2437MHz Ant1





-6dB Bandwidth NVNT b 2462MHz Ant1



-6dB Bandwidth NVNT b 2412MHz Ant2





-6dB Bandwidth NVNT b 2437MHz Ant2



-6dB Bandwidth NVNT b 2462MHz Ant2





-6dB Bandwidth NVNT g 2412MHz Ant1

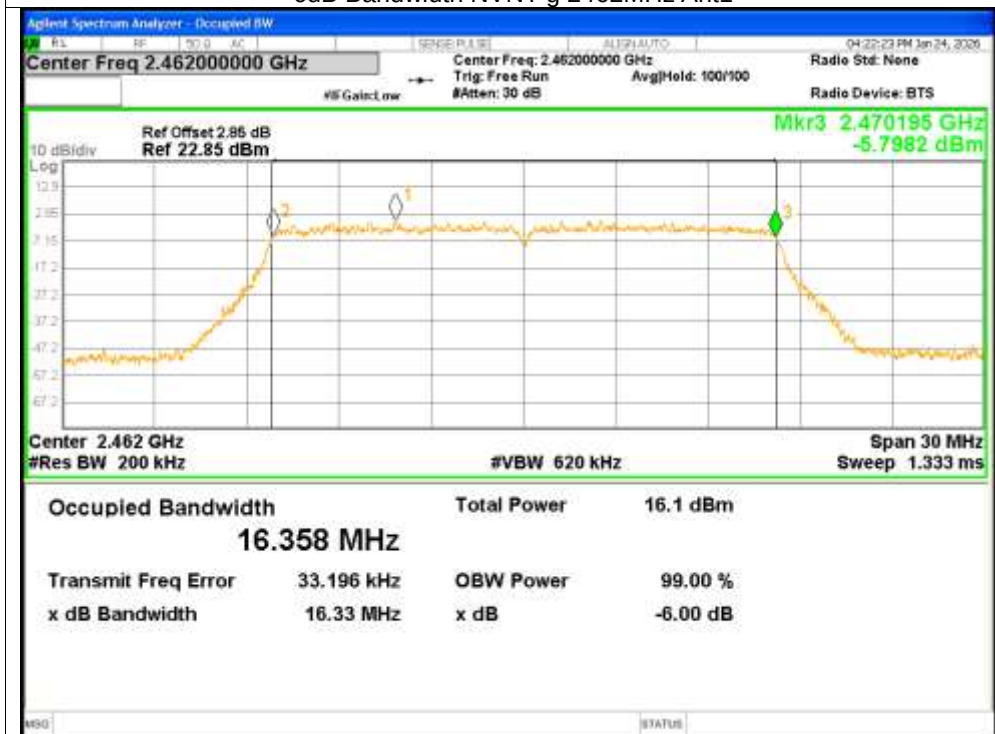


-6dB Bandwidth NVNT g 2437MHz Ant1





-6dB Bandwidth NVNT g 2462MHz Ant1



-6dB Bandwidth NVNT g 2412MHz Ant2





-6dB Bandwidth NVNT g 2437MHz Ant2



-6dB Bandwidth NVNT g 2462MHz Ant2

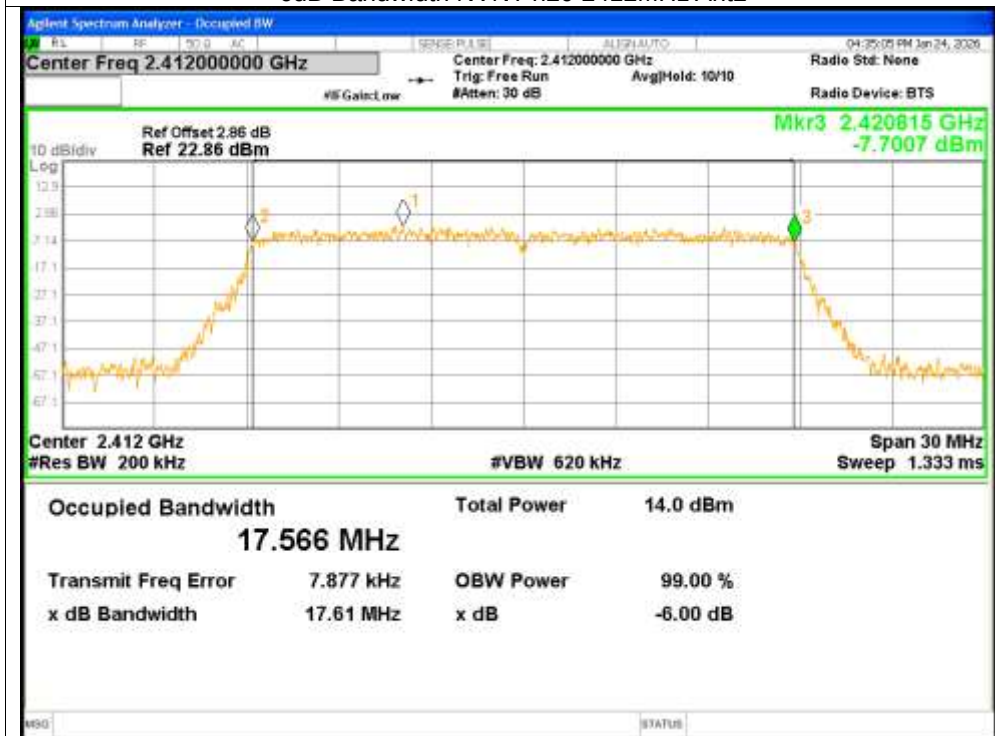




-6dB Bandwidth NVNT n20 2412MHz Ant1



-6dB Bandwidth NVNT n20 2412MHz Ant2





-6dB Bandwidth NVNT n20 2437MHz Ant1



-6dB Bandwidth NVNT n20 2437MHz Ant2





-6dB Bandwidth NVNT n20 2462MHz Ant1



-6dB Bandwidth NVNT n20 2462MHz Ant2

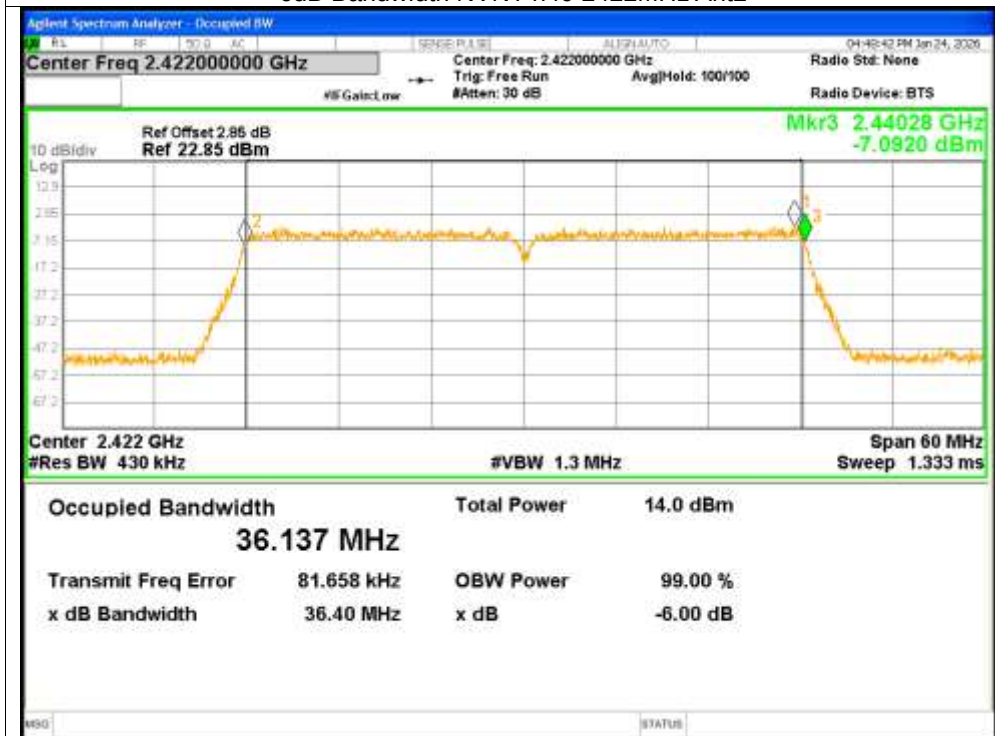




-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2422MHz Ant2





-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant2

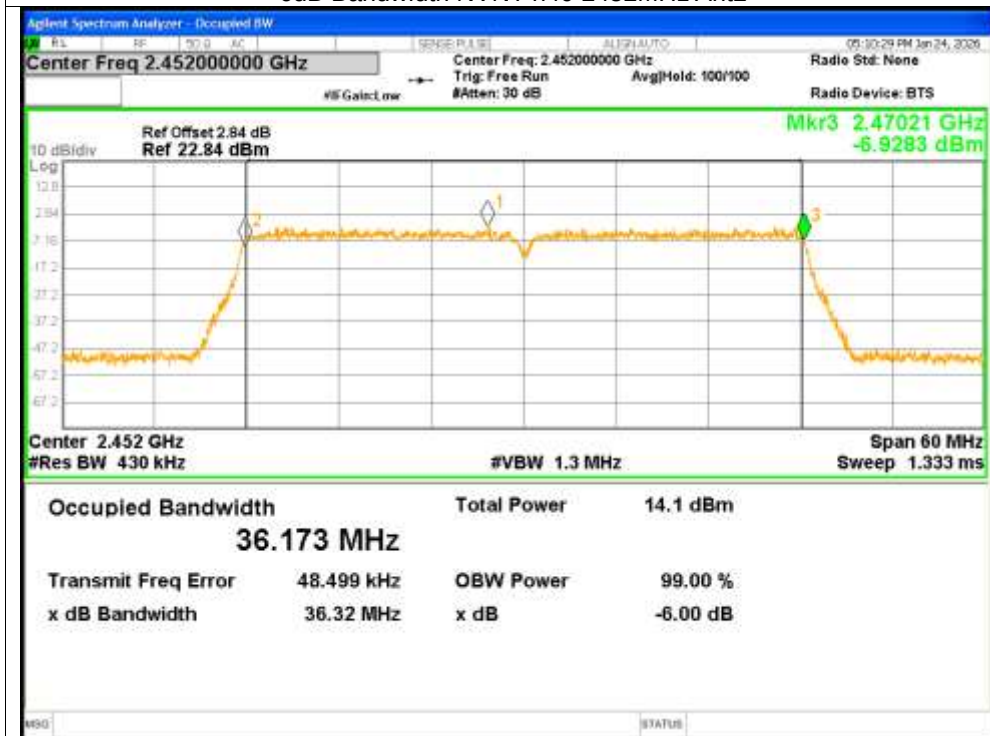




-6dB Bandwidth NVNT n40 2452MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant2

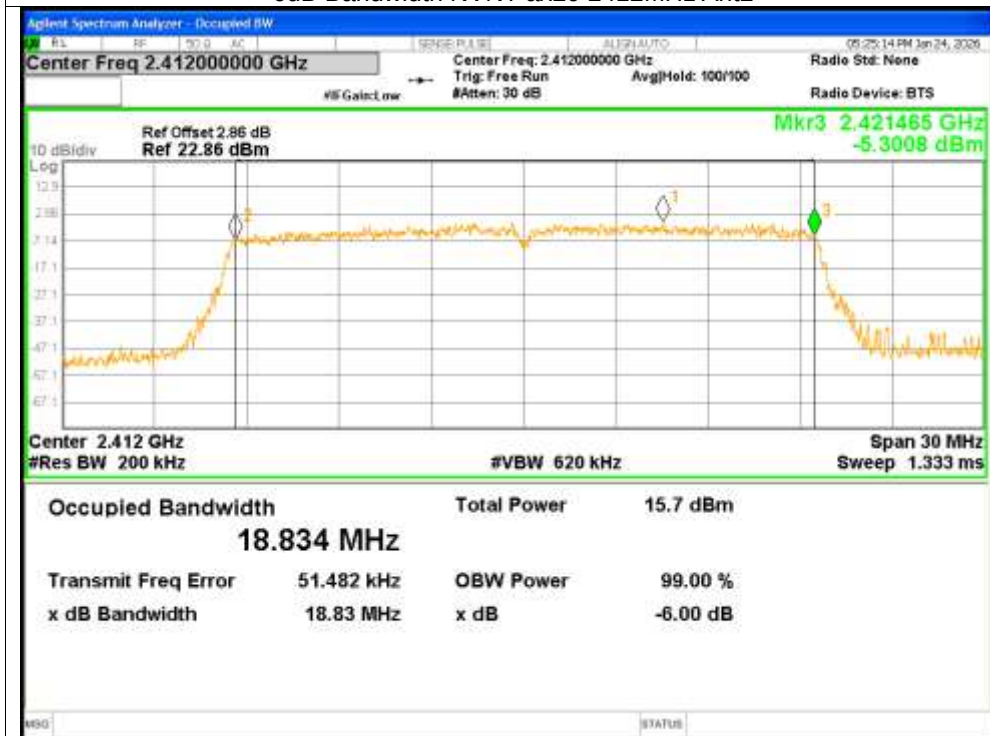




-6dB Bandwidth NVNT ax20 2412MHz Ant1



-6dB Bandwidth NVNT ax20 2412MHz Ant2





-6dB Bandwidth NVNT ax20 2437MHz Ant1



-6dB Bandwidth NVNT ax20 2437MHz Ant2

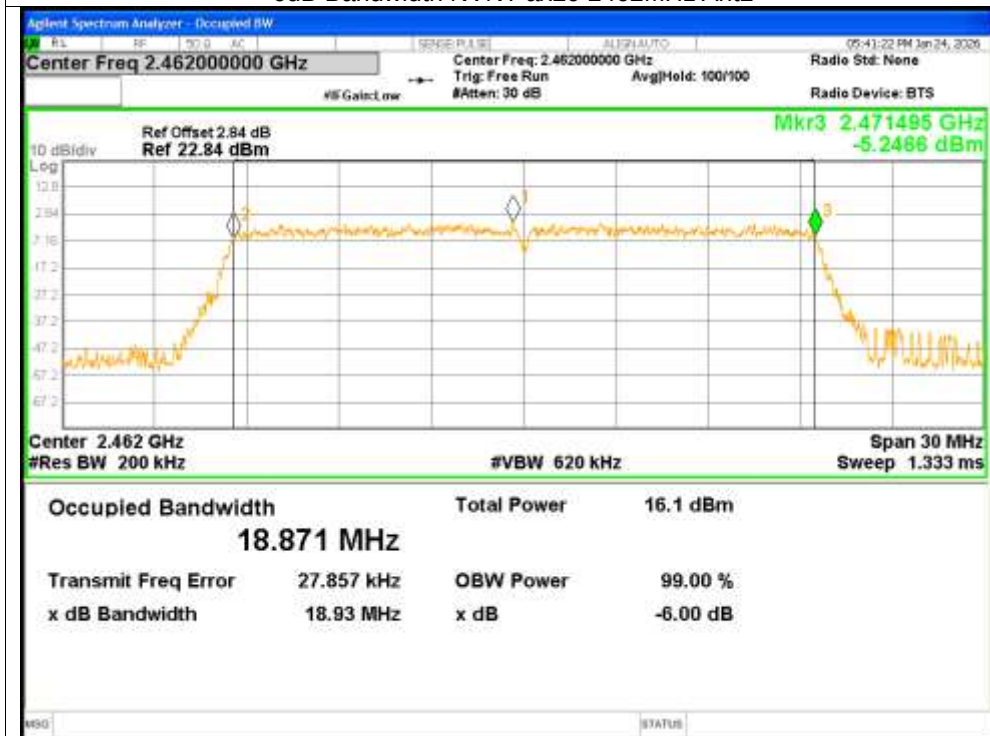




-6dB Bandwidth NVNT ax20 2462MHz Ant1



-6dB Bandwidth NVNT ax20 2462MHz Ant2





-6dB Bandwidth NVNT ax40 2422MHz Ant1



-6dB Bandwidth NVNT ax40 2422MHz Ant2





-6dB Bandwidth NVNT ax40 2437MHz Ant1



-6dB Bandwidth NVNT ax40 2437MHz Ant2

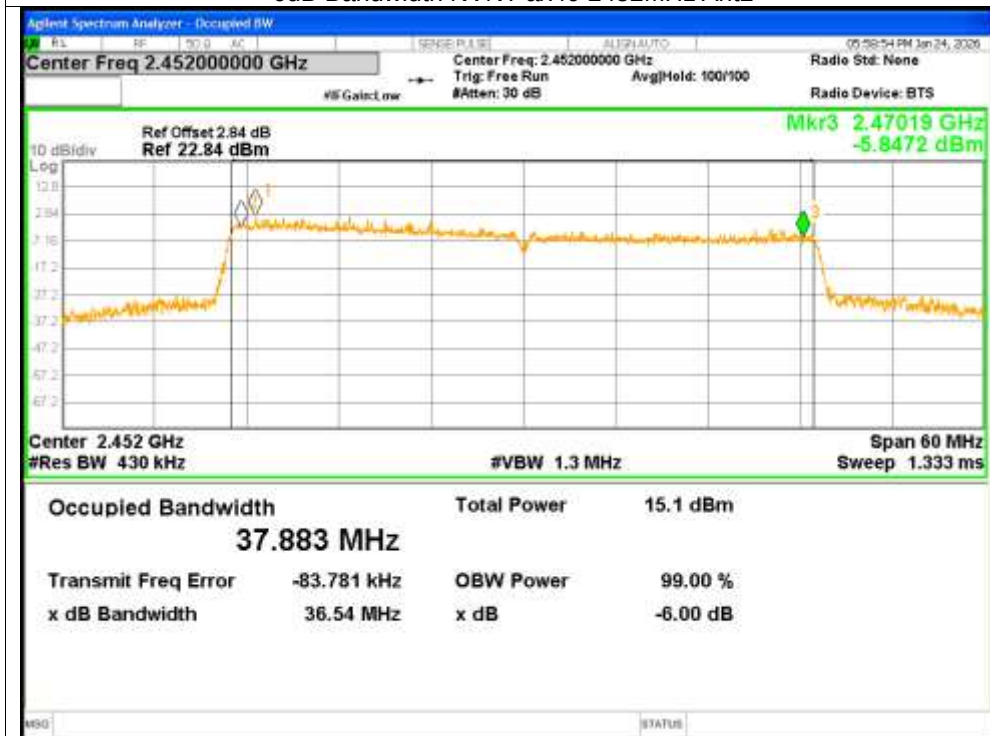




-6dB Bandwidth NVNT ax40 2452MHz Ant1



-6dB Bandwidth NVNT ax40 2452MHz Ant2





Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	14.837
NVNT	b	2437	Ant1	14.841
NVNT	b	2462	Ant1	14.908
NVNT	b	2412	Ant2	14.88
NVNT	b	2437	Ant2	14.914
NVNT	b	2462	Ant2	14.931
NVNT	g	2412	Ant1	16.33
NVNT	g	2437	Ant1	16.349
NVNT	g	2462	Ant1	16.349
NVNT	g	2412	Ant2	16.321
NVNT	g	2437	Ant2	16.329
NVNT	g	2462	Ant2	16.353
NVNT	n20	2412	Ant1	17.455
NVNT	n20	2412	Ant2	17.525
NVNT	n20	2437	Ant1	17.513
NVNT	n20	2437	Ant2	17.388
NVNT	n20	2462	Ant1	17.537
NVNT	n20	2462	Ant2	17.537
NVNT	n40	2422	Ant1	35
NVNT	n40	2422	Ant2	36.112
NVNT	n40	2437	Ant1	36.031
NVNT	n40	2437	Ant2	35.675
NVNT	n40	2452	Ant1	36.363
NVNT	n40	2452	Ant2	36.158
NVNT	ax20	2412	Ant1	18.887
NVNT	ax20	2412	Ant2	18.845
NVNT	ax20	2437	Ant1	18.885
NVNT	ax20	2437	Ant2	18.753
NVNT	ax20	2462	Ant1	18.9
NVNT	ax20	2462	Ant2	18.9
NVNT	ax40	2422	Ant1	37.794
NVNT	ax40	2422	Ant2	36.629
NVNT	ax40	2437	Ant1	37.668
NVNT	ax40	2437	Ant2	36.978
NVNT	ax40	2452	Ant1	37.813
NVNT	ax40	2452	Ant2	37.904

Test Graphs
OBW NVNT b 2412MHz Ant1

OBW NVNT b 2437MHz Ant1

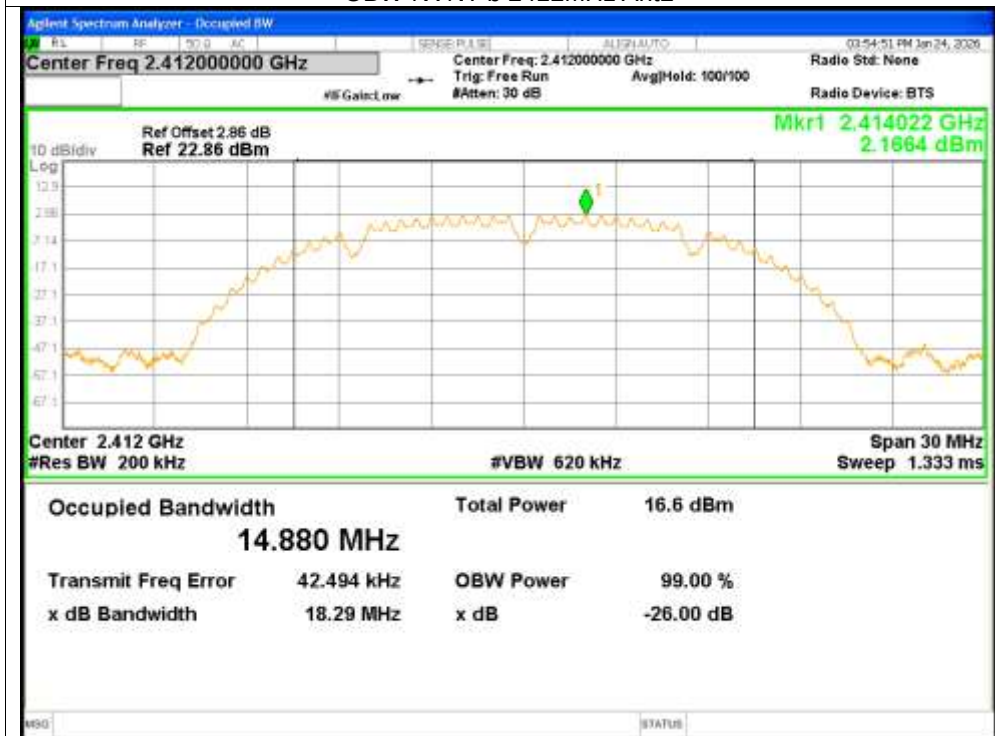




OBW NVNT b 2462MHz Ant1



OBW NVNT b 2412MHz Ant2





OBW NVNT b 2437MHz Ant2



OBW NVNT b 2462MHz Ant2





OBW NVNT g 2412MHz Ant1

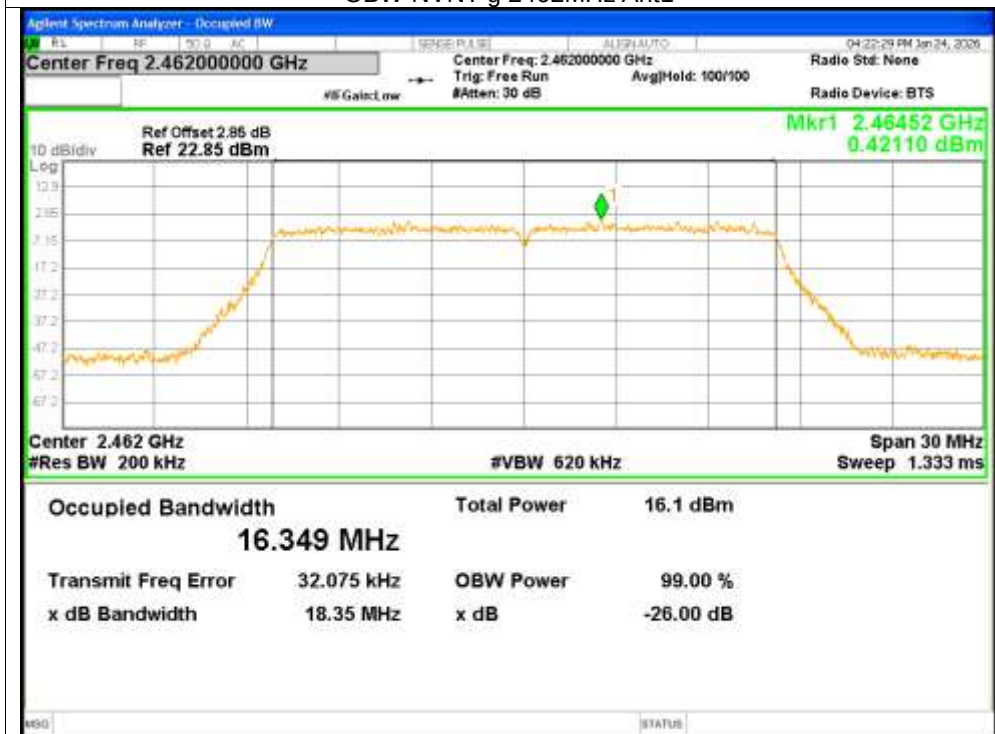


OBW NVNT g 2437MHz Ant1





OBW NVNT g 2462MHz Ant1



OBW NVNT g 2412MHz Ant2





OBW NVNT g 2437MHz Ant2



OBW NVNT g 2462MHz Ant2





OBW NVNT n20 2412MHz Ant1



OBW NVNT n20 2412MHz Ant2





OBW NVNT n20 2437MHz Ant1



OBW NVNT n20 2437MHz Ant2





OBW NVNT n20 2462MHz Ant1



OBW NVNT n20 2462MHz Ant2

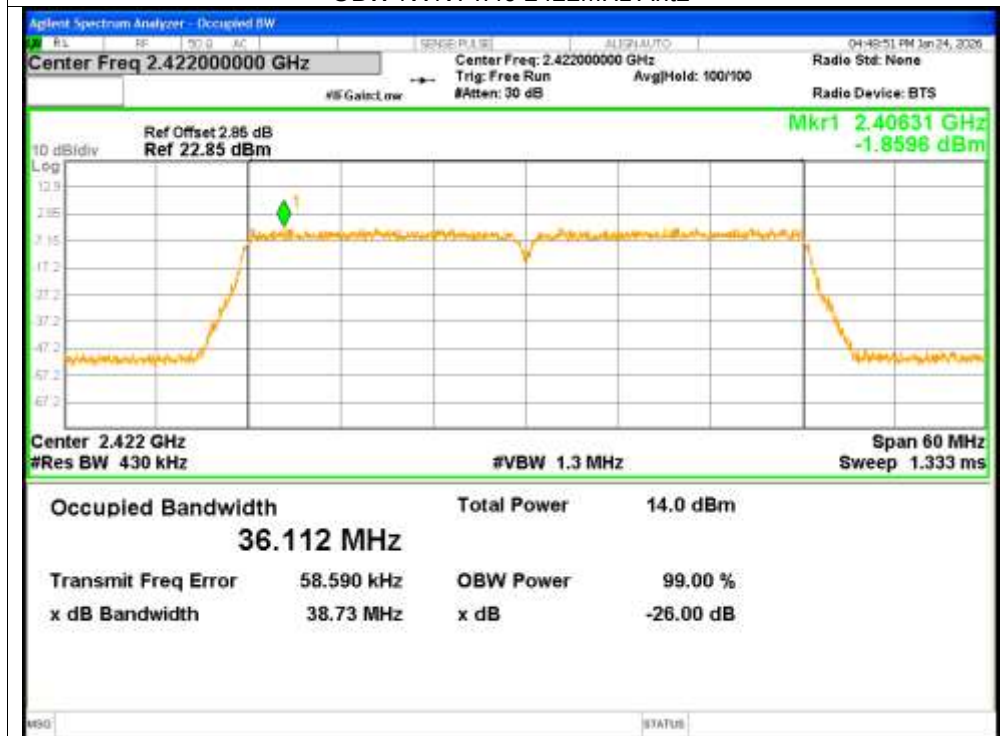




OBW NVNT n40 2422MHz Ant1



OBW NVNT n40 2422MHz Ant2





OBW NVNT n40 2437MHz Ant1



OBW NVNT n40 2437MHz Ant2

