

NCC RADIO TEST REPORT

Product name Compact Full HD Wi-Fi Camera

Applicant 友訊科技股份有限公司

Manufacture Shenzhen Aoni Electronic Co.,Ltd

Rating(s) 100-240V 50/60Hz

Trademark D-Link

Model and/or type reference DCS-6100LH

Standard LP0002:2020

Test Result PASS

Date of receipt: 2019-12-17

Date of Issue: 2021-01-18

signature :



NCC RADIO TEST REPORT**Report Reference No.**: M210126N03-1

Compiled by (+ signature)..... Kevin Bothmann



Approved by (+ signature)..... Jay Gandhi



Date of issue: 2021-01-18

Applicant's name.....: 友訊科技股份有限公司

Address.....: (114)台北市內湖區新湖三路 289 號

Manufacture's Name.....: Shenzhen Aoni Electronic Co.,Ltd

Address.....: Building 5, Honghui Industrial Park, 2nd Road Liuxian, Baoan District, Shenzhen, P.R. China, 518101

Test specification:

Standard.....: LP0002: 2020

Test procedure.....: EIA 603、ANSI、FCC/47 CFR/2.1046、2.1047、2.1049、2.1051、2.1053 and 2.1055

Non-standard test method.....: N/A

Test item description

Product name: Compact Full HD Wi-Fi Camera

Trademark : D-Link

Model and/or type reference: DCS-6100LH

Rating(s): 100-240V 50/60Hz

Testing Laboratory information:

Testing Laboratory Name: Electro Magnetic Test, Inc.

Address: 1547 Plymouth Street, Mountain View, CA 94043

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Testing.....:

Date of receipt of test item.....: Dec. 17, 2019

Date (s) of performance of tests.....: Dec. 17, 2019 ~ Jan. 18, 2021

Date of Issue: Jan. 18, 2021

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

GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Electro Magnetic Test, Inc., which is an independent testing and consulting firm. The test report is based on testing performed Electro Magnetic Test, Inc. personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

COUNTRY	AGENCY	IDENTIFYING #
USA	Federal Communications Commission (FCC) (EMT's test site is recognized by the FCC)	Registration Number: 90576
USA, Canada, Taiwan, Australia/New Zealand, European Community	National Voluntary Lab Accreditation Program (NVLAP) (EMT is accredited by NVLAP. A copy of the NVLAP Scope Of Accreditation is available upon request.)	Lab Code: 200147-0
Canada	Industry Canada	File No.: IC 2804
Japan	Voluntary Control Council For Interference (VCCI)	See Below
	Open Field Test Site "A"	R-589
	Mains Conducted Emissions Test Site "A"	C-604
	Telecom Conducted Emissions Test Site "A"	T-1655
	3 Meter Semi-Anechoic Chamber Site "E"	R-3227
	3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)	G-219
	Mains Conducted Emissions Test Site "E"	C-35793
	Telecom Conducted Emissions Test Site "E"	T-1715
Korea	Ministry of Information and Communication's Radio Research Laboratory (RRL) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (A copy of the Scope Of Accreditation is available upon request)	US0036
Taiwan	Bureau Of Standards, Metrology and Inspection (BSMI)	Reference Number: SL2-IN-E-1024
Australia / New Zealand	Australian Communications Authority (AUSTEL)	*

***THESE AGENCIES DO NOT ISSUE AN IDENTIFYING NUMBER TO TEST LABS.**

Table of Contents	Page
1 . SUMMARY OF TEST RESULTS	6
1.1 MEASUREMENT UNCERTAINTY	6
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	9
2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	9
2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	10
2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	11
3 . EMC EMISSION TEST	14
3.1 CONDUCTED EMISSION MEASUREMENT	14
POWER LINE CONDUCTED EMISSION LIMITS	14
3.1.1 TEST PROCEDURE	15
3.1.2 DEVIATION FROM TEST STANDARD	15
3.1.3 TEST SETUP	15
3.1.4 TEST RESULTS	16
3.2 RADIATED EMISSION MEASUREMENT	18
3.1.5 RADIATED EMISSION LIMITS	18
3.1.6 TEST PROCEDURE	19
3.1.7 TEST SETUP	20
3.1.8 EUT OPERATING CONDITIONS	20
3.1.9 TEST RESULTS (BELOW30 MHZ)	21
3.1.10 TEST RESULTS (BETWEEN30 – 1000 MHZ)	21
3.1.11 TEST RESULTS (ABOVE 1000 MHZ)	27
3.1.12 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)	55
4 . OCCUPIED BANDWIDTH TEST	63
4.1 APPLIED PROCEDURES / LIMIT	63
4.1.1 TEST PROCEDURE	63
4.1.2 TEST SETUP	63
4.1.3 EUT OPERATION CONDITIONS	63
4.1.4 TEST RESULTS	64
5 . POWER DENSITY	72
5.1 APPLIED PROCEDURES / LIMIT	72
5.1.1 TEST PROCEDURE	72
5.1.2 TEST SETUP	72
5.1.3 EUT OPERATION CONDITIONS	72
5.1.4 TEST RESULTS	73
6 . PEAK OUTPUT POWER TEST	80
6.1 APPLIED PROCEDURES / LIMIT	80
6.1.1 TEST PROCEDURE	80
6.1.2 DEVIATION FROM STANDARD	80
6.1.3 TEST SETUP	80

Table of Contents	Page
6.1.4 EUT OPERATION CONDITIONS	80
6.1.5 TEST RESULTS	81
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	82
7.1 APPLIED PROCEDURES / LIMIT	82
7.1.1 TEST PROCEDURE	82
7.1.2 TEST SETUP	82
7.1.3 EUT OPERATION CONDITIONS	82
7.1.4 TEST RESULTS	83
8. ANTENNA REQUIREMENT	91
8.1 STANDARD REQUIREMENT	91
8.2 EUT ANTENNA	91
9. EUT TEST PHOTO	92

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

LP0002 : 2020			
Standard Section	Test Item	Judgment	Remark
3.3	Conducted Emission	PASS	None
4.10.1.5/3.6	Radiated Spurious Emission	PASS	None
4.10.1.2	Peak Output Power	PASS	None
4.10.1.6(2)	6dB Occupied Bandwidth	PASS	None
4.10.1.6(2)	Power Density	PASS	None
4.10.1.5/3.5	Restricted Bands	PASS	None
4.10.1.5	Antenna Conducted Spurious Emission	PASS	None
4.10.1.4	Antenna Requirement	PASS	None
4.10.1.5/3.6	Receiver Emissions	PASS	None

NOTE:

(1) "N/A" denotes test is not applicable in this test report.

1.1 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	Conducted Emission Test	1.38dB
2	Radiated Emission Test	3.17dB
3	RF power,conducted	0.16dB
4	Spurious emissions,conducted	0.21dB
5	All emissions,radiated(<1G)	4.68dB
6	All emissions,radiated(>1G)	4.89dB

2. GENERAL INFORMATION

2.1GENERAL DESCRIPTION OF EUT

Equipment	Compact Full HD Wi-Fi Camera	
Trade Name	D-Link	
Model Name	DCS-6100LH	
OEM Brand/Model Name	N/A	
Product Description	Operation Frequency:	802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz): 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
	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
	Number Of Channel	Please see Note 2.
	Antenna Designation:	Please see Note 3.
	Antenna Gain(Peak)	Please see Note 3.
	Output Power:	802.11b: 17.68dBm 802.11g: 23.27dBm 802.11n HT20: 21.35dBm 802.11n HT40: 20.52dBm
Channel List	Please refer to the Note 2.	
Adapter	Input: 100-240V 50/60Hz Output: 5.0V 1.0A 5.0W	
Connecting I/O Port(s)	Please refer to the User's Manual	
Products Covered	N/A	
EUT Modification(s)	N/A	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Operation Frequency of channel			
802.11b/g/n(20MHz)		Channel List for 802.11n(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		

3. Table for Filed Antenna

No.	Manufacturer	Model Name	Antenna Type	Connect or	Gain (dBi)	NOTE
1	UANT	DCS-6100LH	Ceramic patch antenna	N/A	2 dBi	2.4G

2.2 DESCRIPTION OF TEST MODES

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 above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11b: All Rate
Mode 2	802.11g: All Rate
Mode 3	802.11n(20M): All Rate
Mode 4	802.11n(40M): All Rate
Mode 5	WIFI Link Mode
Mode 6	RX

For Conducted Emission	
Final Test Mode	Description
Mode 5	WIFI Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b
Mode 2	802.11g
Mode 3	802.11n(20M)
Mode 4	802.11n(40M)
Mode 5	WIFI Link Mode
Mode 6	RX(worst case)

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

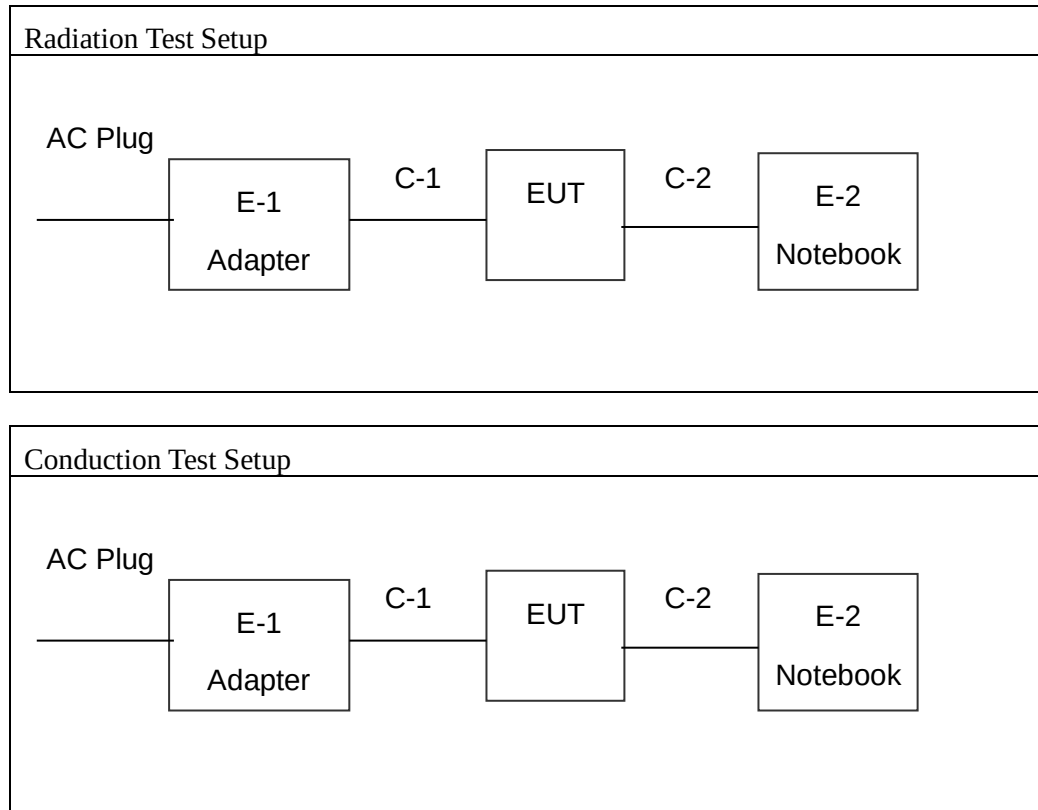
2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

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.

RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	ANT_A Power Class	Software For Testing
WIFI(2.4G)	2.4G WIFI	802.11b	2	35	SecureCRT Ver.1.0
		802.11g		45	
		802.11n(HT20)		40	
		802.11n(HT40)		40	

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Block diagram of EUT configuration



2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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.	Series No.	Note
E-1	Adapter	深圳市科宇電 源科技有限公 司	KA15040-0501000T W	N/A	EUT
E-2	Notebook	DELL	500-320cx	N/A	Laboratory accessories
C-1	USB Cable	D-Link	DCS-6500LH	N/A	EUT
C-2	USB Cable	TEJIATE	MicroUSB	N/A	Laboratory accessories
/	USB TO TTL	MH	CP2102	N/A	Laboratory accessories

Item	Shielded Type	Ferrite Core	Length	Note
1#	NO	N/A	1m	USB Cable
2#	NO	N/A	1m	USB Cable

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” or “with ferrite core”; “NO” means “unshielded” or “without ferrite core”
- (4) These accessories are only provided by the laboratory or customer for testing purpose and are not sold with the product together.

2.5.1 EQUIPMENTS LIST FOR ALL TEST ITEMS

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
Spectrum Analyzer	Hewlett Packard	8566B	3013A07296	April 27, 2020	1 Year
RF Preselector	Hewlett Packard	85685A	3010A01157	April 27, 2020	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650	2521A00584	April 27, 2020	1 Year
Preamplifier	Com Power	PA-102	1482	April 27, 2020	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 5, 2020	1 Year
LISN	Com Power	LI-200	12012	September 07, 2020	1 Year
LISN	Com Power	LI-200	12214	September 07, 2020	1 Year
LISN	Com Power	LI-200	1767	September 07, 2020	1 Year
LISN	Com Power	LI-200	1768	September 07, 2020	1 Year
Biconical Antenna	Com Power	AB-100	01557	September 07, 2020	1 Year
Log Periodic Antenna	Com Power	AL-100	16037	September 07, 2020	1 Year
Horn Antenna	Com Power	AHA-118	711054	September 07, 2020	1 Year
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Dell, Inc.	DHS	DNSV641	N/A	N/A
Printer	Hewlett Packard	C8124A	CN39B2234T	N/A	N/A
Plotter	Hewlett Packard	7470A	2308A96499	N/A	N/A

EMI Test Equipment (Continued)

EQUIPMENT TYPE	MANU-FACT URER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100127	June 10, 2020	1 Year
BiConiLog Antenna	ETS-Lindgren	3142D	00102183	August 12, 2020	1 Year
Horn Antenna	ETS-Lindgren	3117	00109294	May 4, 2020	1 Year
Preamplifier	Rohde & Schwarz	TS-PR18	100056	June 10, 2020	1 Year
Antenna Mast	ETS-Lindgren	2175	00095727	N/A	N/A
Turntable	ETS-Lindgren	2187-3.0	00118231	N/A	N/A
Computer	Acer	Aspire 8930	85100050123	N/A	N/A
Multi-Function Controller	ETS-Lindgren	2090	00102270	N/A	N/A
Loop Antenna	ARA	PLA-1030/B	1029	May 17, 2020	1 Year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

POWER LINE CONDUCTED EMISSION Limits

(Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5			66 - 56 *	56 - 46 *	CISPR
0.50 -5.0			56.00	46.00	CISPR
5.0 -30.0			60.00	50.00	CISPR

0.15 -0.5			66 - 56 *	56 - 46 *	LP0002
0.50 -5.0			56.00	46.00	LP0002
5.0 -30.0			60.00	50.00	LP0002

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

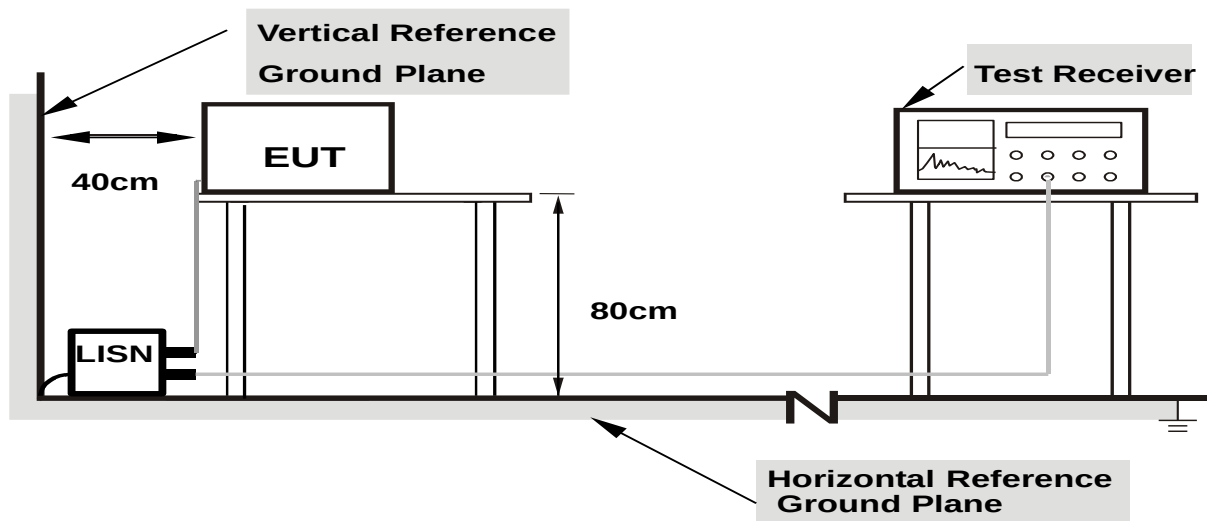
3.1.1 TEST PROCEDURE

- a. The EUT was placed 0.4 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.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.2 DEVIATION FROM TEST STANDARD

No deviation

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 from other units and other metal planes

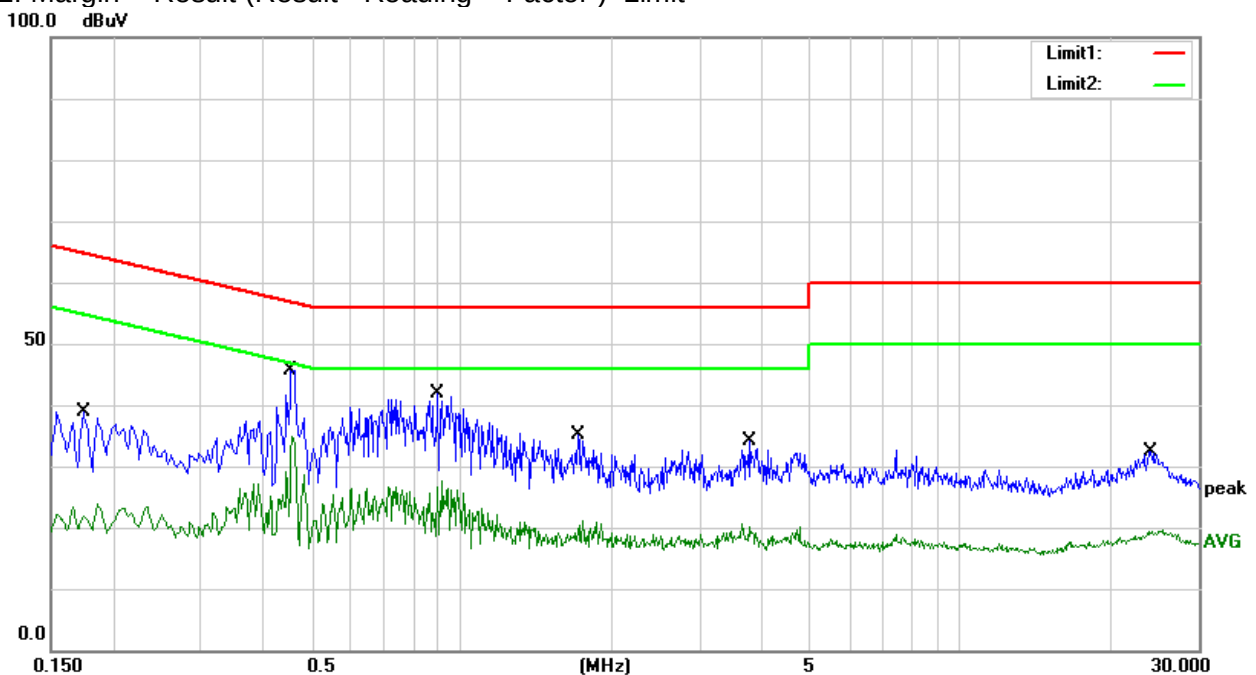
3.1.4 TEST RESULTS

Temperature:	27.2 °C	Relative Humidity:	69%
Test Voltage:	AC 110V/60Hz	Phase:	L
Test Mode:	Mode 5	Test Date:	2021-01-04

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1740	18.65	20.26	38.91	64.77	-25.86	QP
0.1740	1.68	20.26	21.94	54.77	-32.83	AVG
0.4540	25.26	20.48	45.74	56.80	-11.06	QP
0.4540	14.42	20.48	34.90	46.80	-11.90	AVG
0.8980	21.68	20.20	41.88	56.00	-14.12	QP
0.8980	7.34	20.20	27.54	46.00	-18.46	AVG
1.7140	15.10	20.15	35.25	56.00	-20.75	QP
1.7140	1.09	20.15	21.24	46.00	-24.76	AVG
3.7740	14.11	20.06	34.17	56.00	-21.83	QP
3.7740	-0.68	20.06	19.38	46.00	-26.62	AVG
24.0820	11.79	20.68	32.47	60.00	-27.53	QP
24.0820	-1.39	20.68	19.29	50.00	-30.71	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit

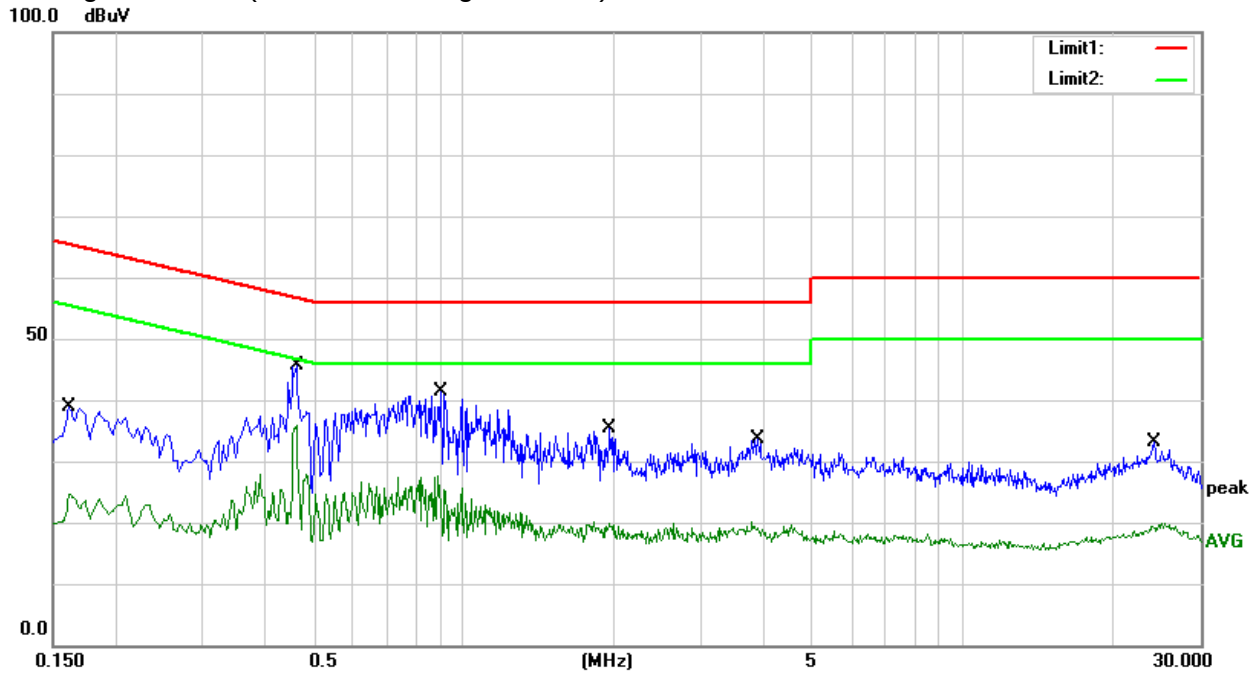


Temperature:	27.2 °C	Relative Humidity:	69%
Test Voltage:	AC 110V/60Hz	Phase:	N
Test Mode:	Mode 5	Test Date:	2021-01-04

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1620	18.71	20.22	38.93	65.36	-26.43	QP
0.1620	4.36	20.22	24.58	55.36	-30.78	AVG
0.4620	25.16	20.46	45.62	56.66	-11.04	QP
0.4620	15.42	20.46	35.88	46.66	-10.78	AVG
0.9020	21.11	20.20	41.31	56.00	-14.69	QP
0.9020	7.37	20.20	27.57	46.00	-18.43	AVG
1.9620	15.21	20.15	35.36	56.00	-20.64	QP
1.9620	-0.21	20.15	19.94	46.00	-26.06	AVG
3.8980	13.63	20.07	33.70	56.00	-22.30	QP
3.8980	-0.84	20.07	19.23	46.00	-26.77	AVG
24.2100	12.47	20.68	33.15	60.00	-26.85	QP
24.2100	-0.69	20.68	19.99	50.00	-30.01	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



3.2 RADIATED EMISSION MEASUREMENT

3.1.5 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 3.5, then the 3.6 limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micровolts/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 (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed according to LP0002.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

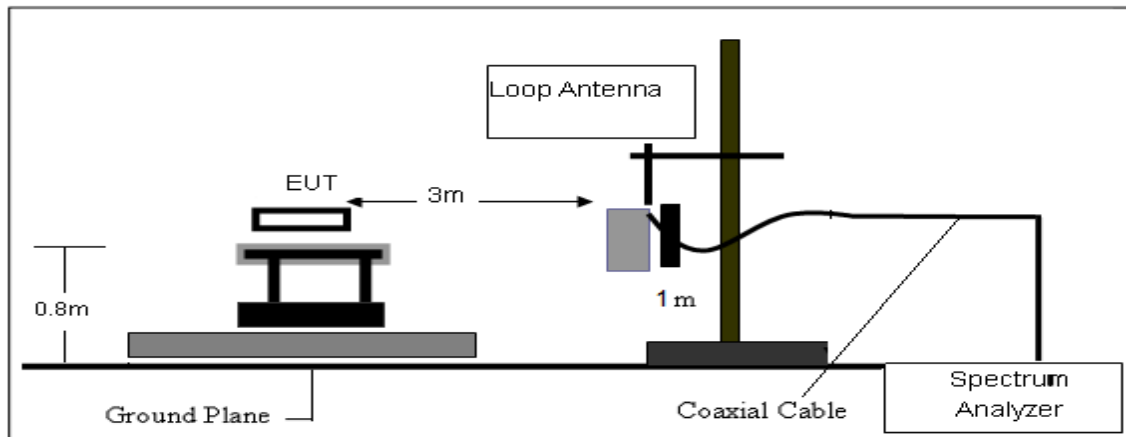
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.1.6 TEST PROCEDURE

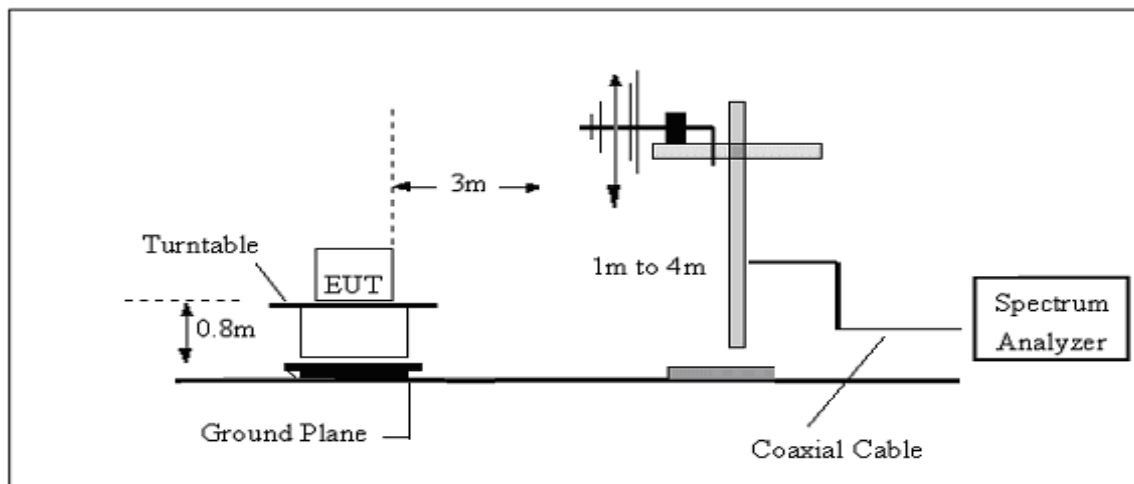
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations 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 then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.7 TEST SETUP

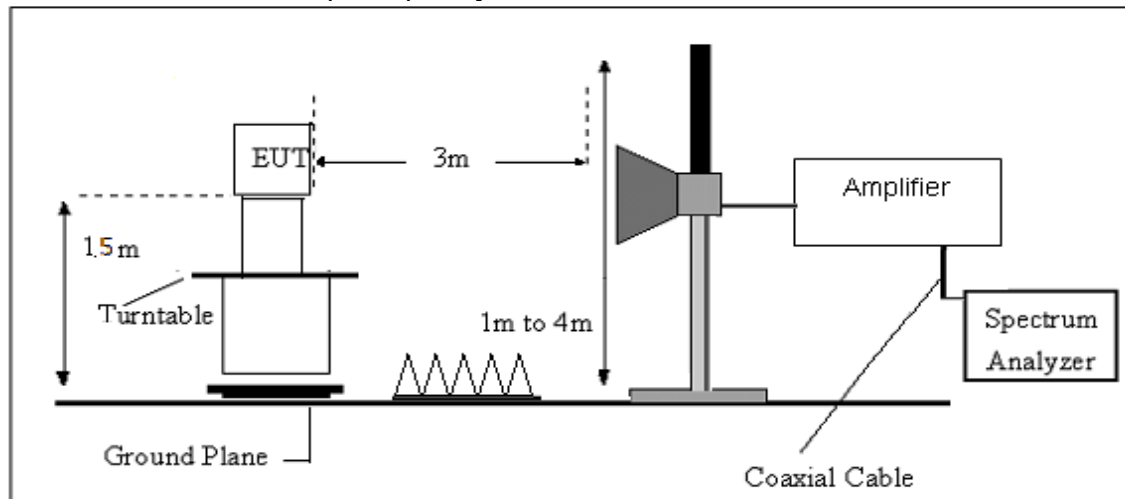
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.1.8 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.1.9 TEST RESULTS (BELOW 30 MHz)

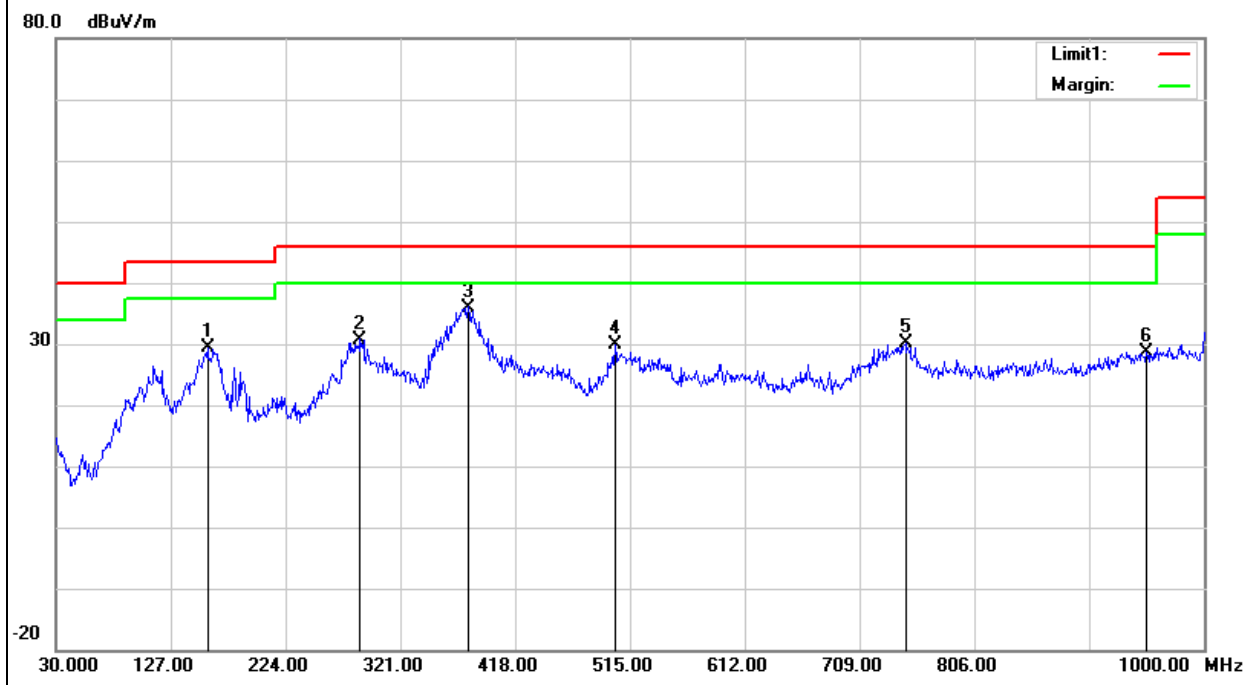
There is no detected below 30MHz.

3.1.10 TEST RESULTS (BETWEEN 30 – 1000 MHz)

Temperature :	23.1 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Date :	2021-01-14
Test Mode :	TX CH01 802.11g (worst case)	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
158.0400	48.05	-18.74	29.31	43.50	-14.19	QP
287.0500	46.06	-15.31	30.75	46.00	-15.25	QP
378.2300	48.31	-12.31	36.00	46.00	-10.00	QP
502.3900	37.77	-8.00	29.77	46.00	-16.23	QP
747.8000	32.23	-2.15	30.08	46.00	-15.92	QP
951.5000	26.95	1.62	28.57	46.00	-17.43	QP

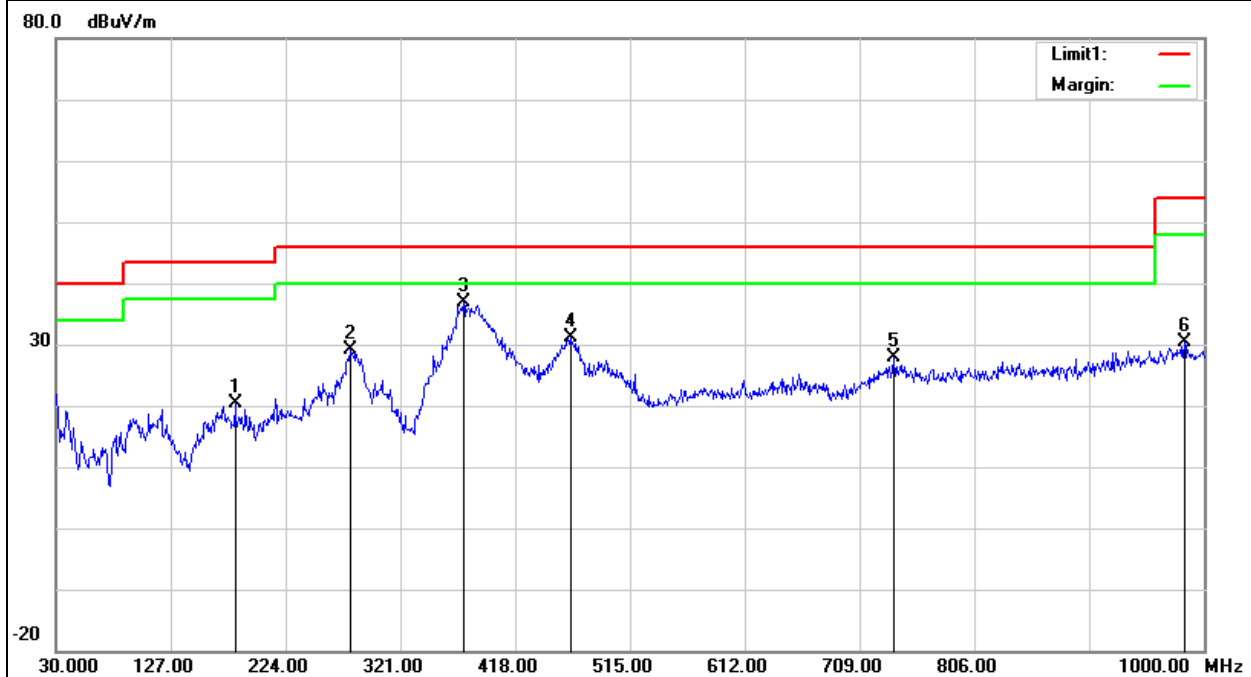
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Temperature :	23.1 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Date :	2021-01-14
Test Mode :	TX CH01 802.11g (worst case)	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
181.3200	40.57	-20.11	20.46	43.50	-23.04	QP
279.2900	44.62	-15.58	29.04	46.00	-16.96	QP
374.3500	49.31	-12.39	36.92	46.00	-9.08	QP
464.5600	40.50	-9.25	31.25	46.00	-14.75	QP
738.1000	30.10	-2.18	27.92	46.00	-18.08	QP
983.5100	27.82	2.46	30.28	54.00	-23.72	QP

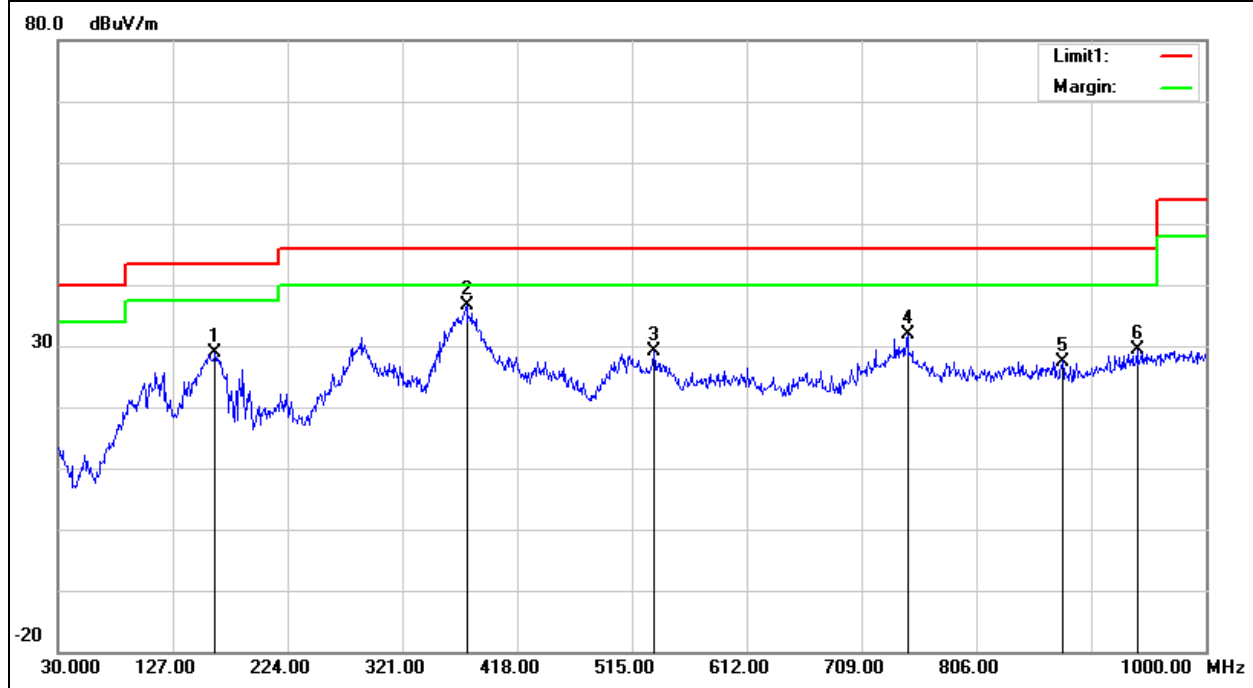
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Temperature :	23.1 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Date :	2021-01-14
Test Mode :	RX CH01 802.11g (worst case)	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
162.8900	47.91	-19.12	28.79	43.50	-14.71	QP
375.3200	48.88	-12.37	36.51	46.00	-9.49	QP
533.4300	36.37	-7.25	29.12	46.00	-16.88	QP
747.8000	33.95	-2.15	31.80	46.00	-14.20	QP
878.7500	28.14	-0.64	27.50	46.00	-18.50	QP
941.8000	27.86	1.42	29.28	46.00	-16.72	QP

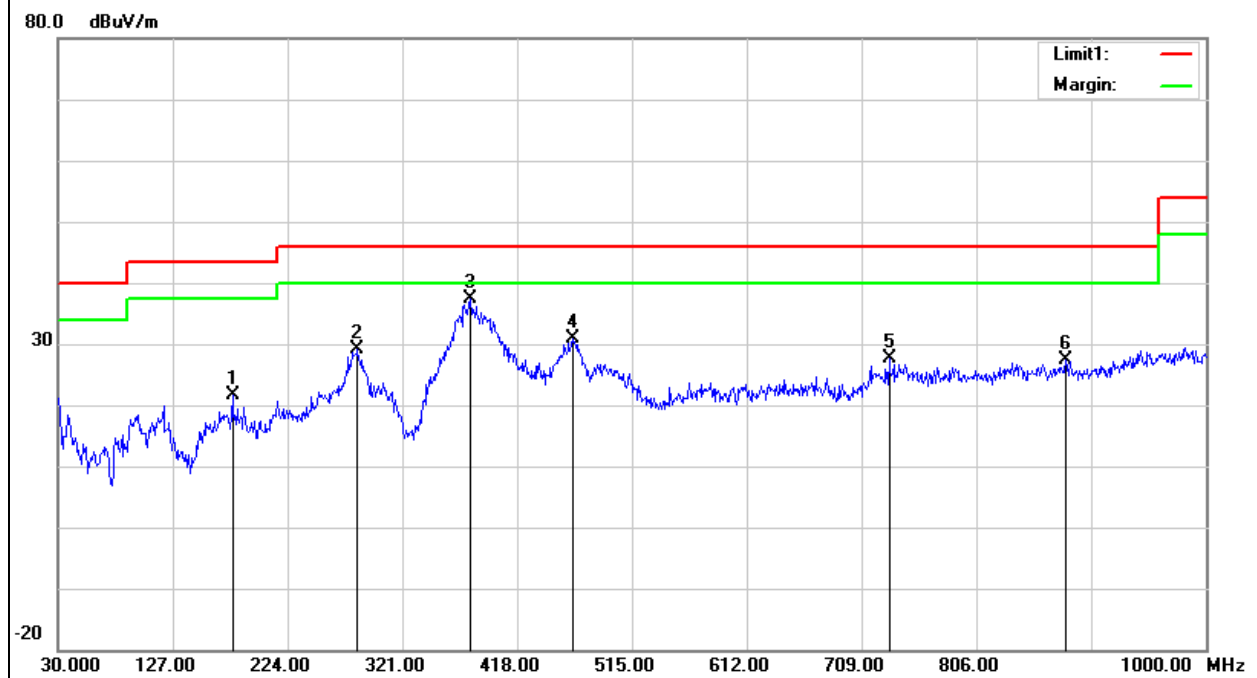
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Temperature :	23.1 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Date :	2021-01-14
Test Mode :	RX CH01 802.11g (worst case)	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
177.4400	41.74	-20.03	21.71	43.50	-21.79	QP
283.1700	44.52	-15.50	29.02	46.00	-16.98	QP
378.2300	49.71	-12.31	37.40	46.00	-8.60	QP
464.5600	40.24	-9.25	30.99	46.00	-15.01	QP
732.2800	30.05	-2.39	27.66	46.00	-18.34	QP
881.6600	28.12	-0.66	27.46	46.00	-18.54	QP

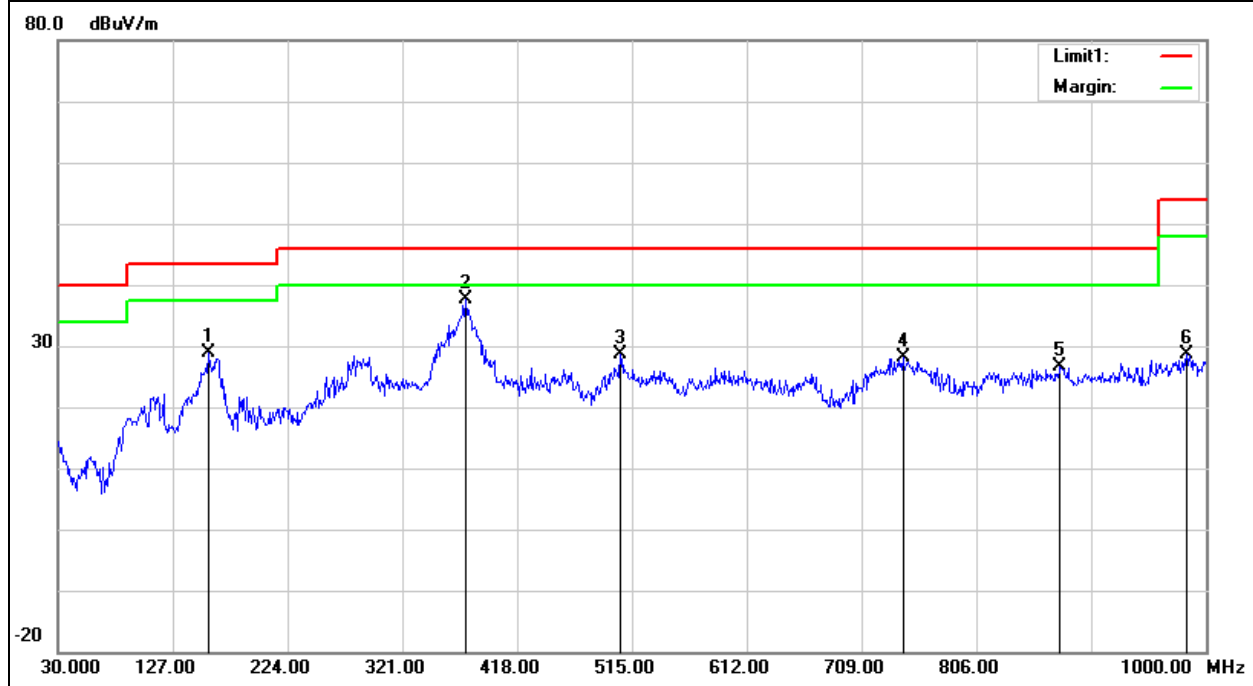
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Temperature :	23.1 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Date :	2021-01-14
Test Mode :	WIFI Link Mode	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
157.0700	47.55	-18.70	28.85	43.50	-14.65	peak
374.3500	49.91	-12.39	37.52	46.00	-8.48	peak
505.3000	36.54	-7.98	28.56	46.00	-17.44	peak
743.9200	30.38	-2.13	28.25	46.00	-17.75	peak
876.8100	27.27	-0.62	26.65	46.00	-19.35	peak
983.5100	26.15	2.46	28.61	54.00	-25.39	peak

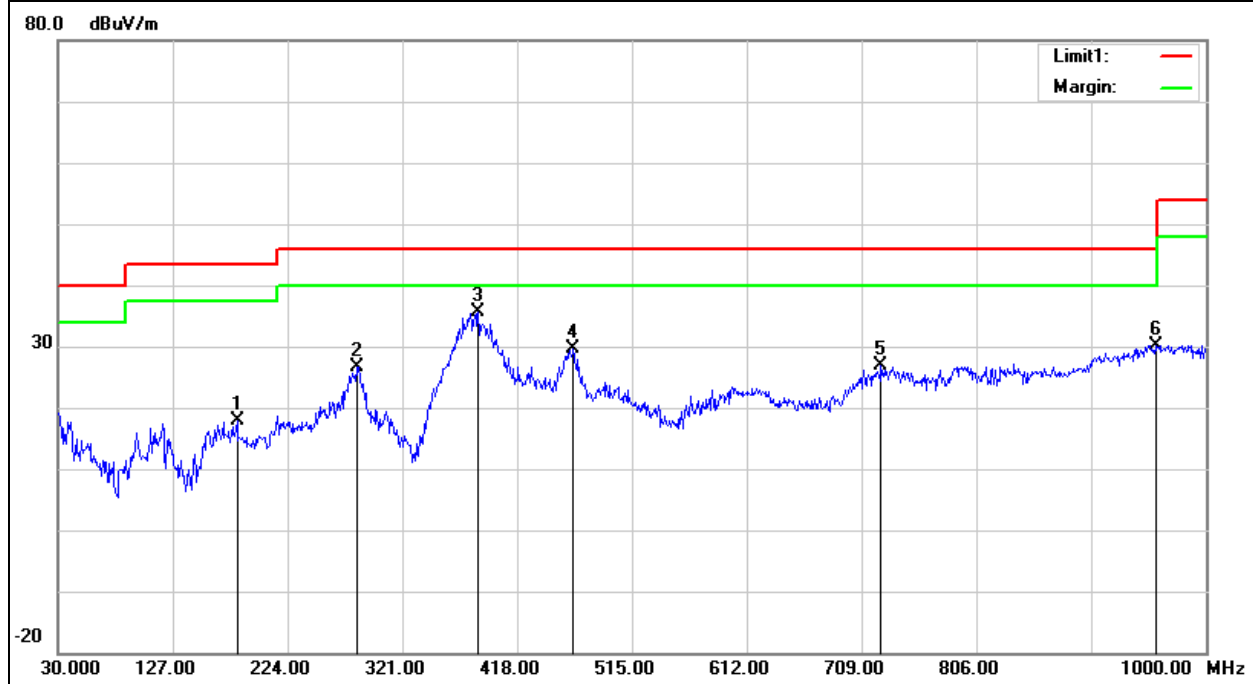
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Temperature :	23.1 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Date :	2021-01-14
Test Mode :	WIFI Link Mode	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
181.3200	37.87	-20.11	17.76	43.50	-25.74	Quasi-Peak
282.2000	42.25	-15.53	26.72	46.00	-19.28	Quasi-Peak
385.0200	47.60	-11.92	35.68	46.00	-10.32	Quasi-Peak
465.5300	38.85	-9.21	29.64	46.00	-16.36	Quasi-Peak
725.4900	29.58	-2.82	26.76	46.00	-19.24	Quasi-Peak
957.3200	28.53	1.72	30.25	46.00	-15.75	Quasi-Peak

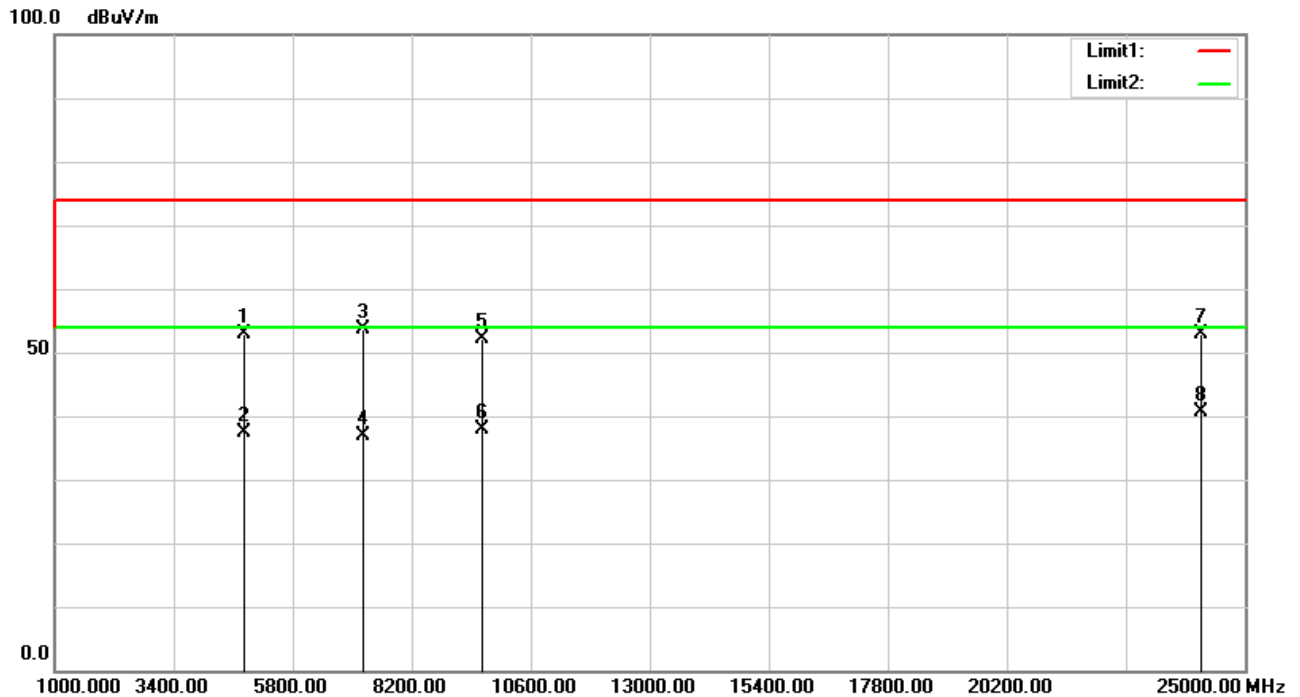
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



3.1.11 TEST RESULTS (ABOVE 1000 MHZ)

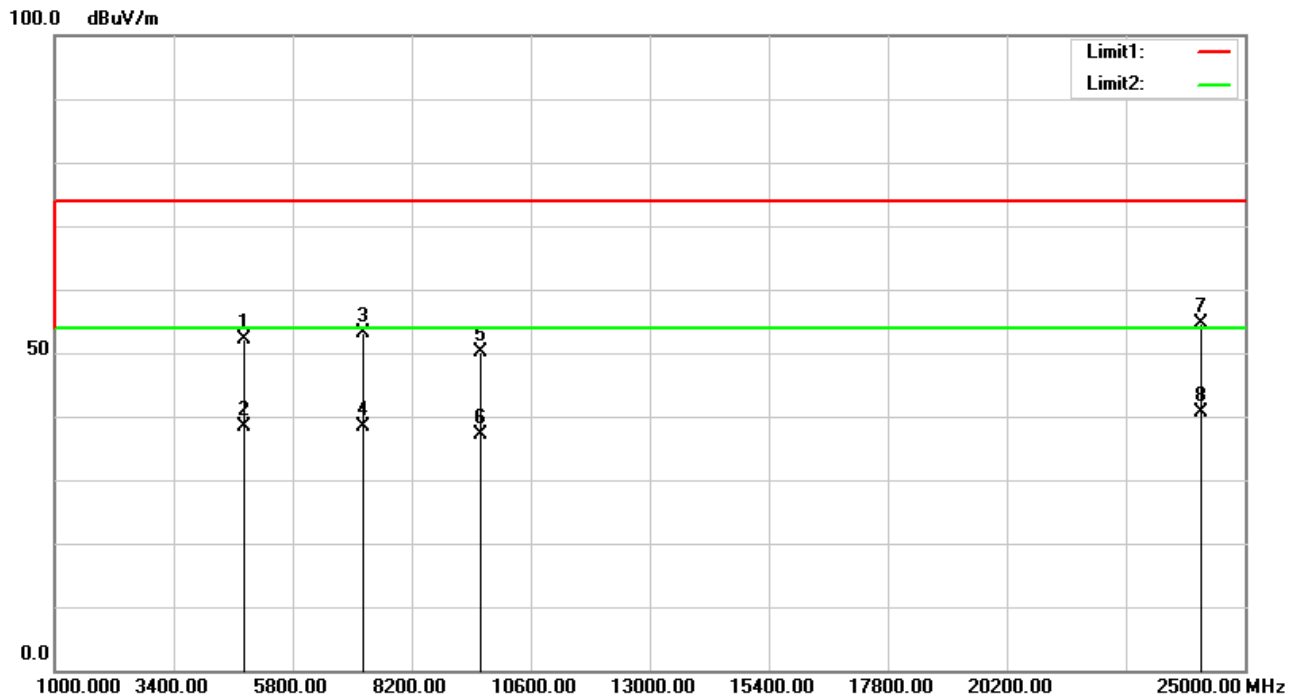
Temperature :	23.1 °C	Relative Humidity :	60%
Test Mode :	TX	Test Date :	2020-01-14

802.11b Low channel Horizontal



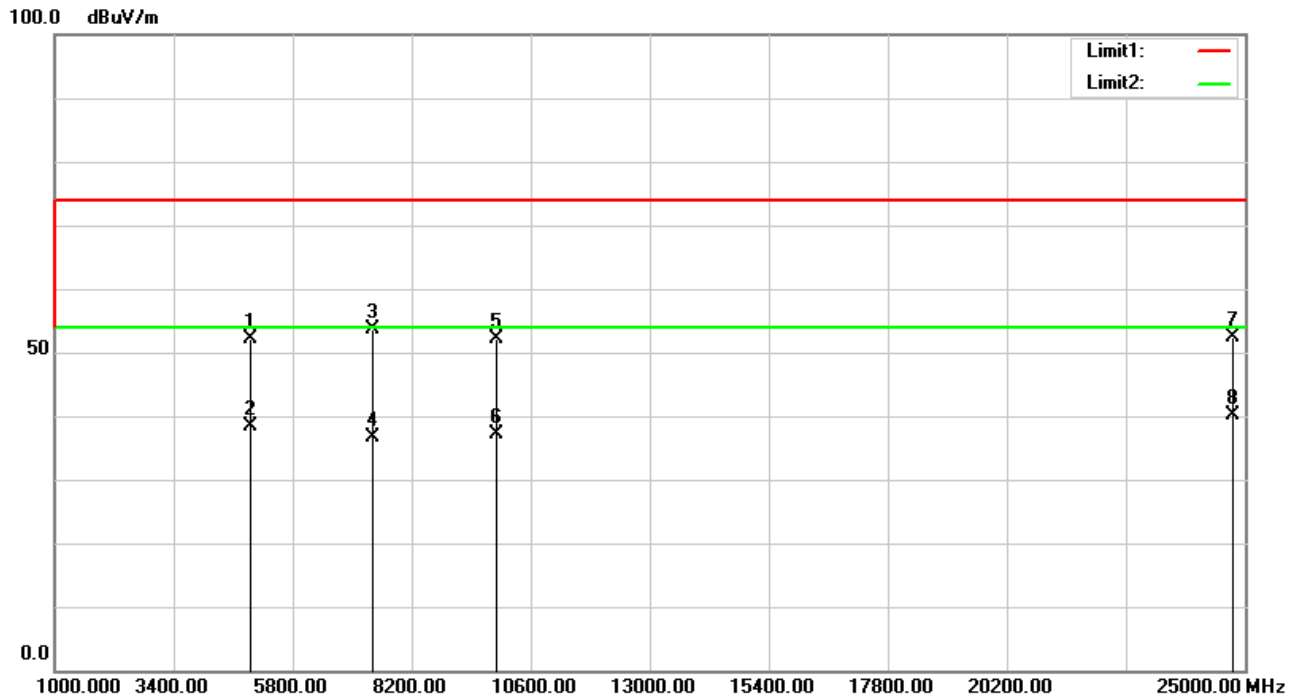
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4822.000	60.08	-7.14	52.94	74.00	-21.06	peak
2	4822.000	44.50	-7.14	37.36	54.00	-16.64	AVG
3	7222.000	53.10	0.61	53.71	74.00	-20.29	peak
4	7222.000	36.16	0.61	36.77	54.00	-17.23	AVG
5	9622.000	48.92	3.20	52.12	74.00	-21.88	peak
6	9622.000	34.80	3.20	38.00	54.00	-16.00	AVG
7	24112.000	36.71	16.22	52.93	74.00	-21.07	peak
8	24112.000	24.42	16.22	40.64	54.00	-13.36	AVG

Vertical



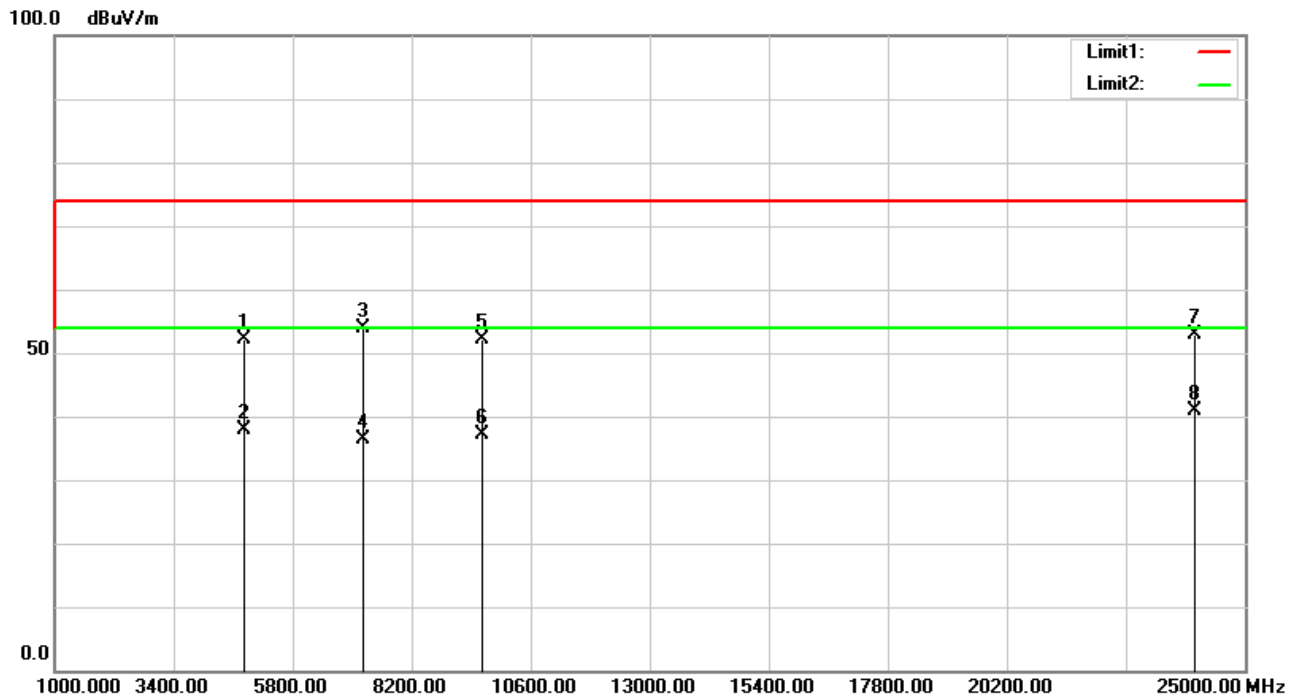
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	59.26	-7.16	52.10	74.00	-21.90	peak
2	4815.000	45.50	-7.16	38.34	54.00	-15.66	AVG
3	7228.000	52.60	0.63	53.23	74.00	-20.77	peak
4	7228.000	37.66	0.63	38.29	54.00	-15.71	AVG
5	9587.000	47.03	3.18	50.21	74.00	-23.79	peak
6	9587.000	33.95	3.18	37.13	54.00	-16.87	AVG
7	24117.000	38.48	16.22	54.70	74.00	-19.30	peak
8	24117.000	24.48	16.22	40.70	54.00	-13.30	AVG

802.11b Mid channel Horizontal



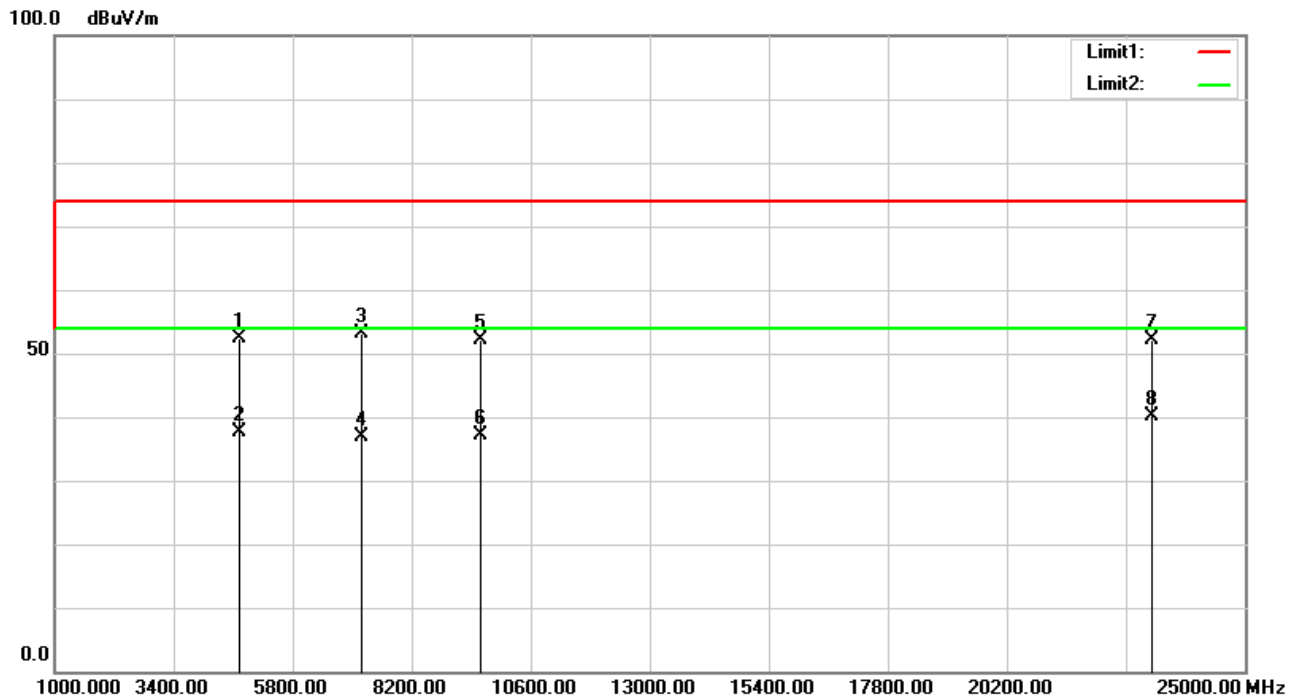
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4954.000	58.62	-6.49	52.13	74.00	-21.87	peak
2	4954.000	44.98	-6.49	38.49	54.00	-15.51	AVG
3	7418.000	52.41	1.33	53.74	74.00	-20.26	peak
4	7418.000	35.37	1.33	36.70	54.00	-17.30	AVG
5	9913.000	48.81	3.32	52.13	74.00	-21.87	peak
6	9913.000	33.76	3.32	37.08	54.00	-16.92	AVG
7	24775.000	35.60	16.79	52.39	74.00	-21.61	peak
8	24775.000	23.37	16.79	40.16	54.00	-13.84	AVG

Vertical



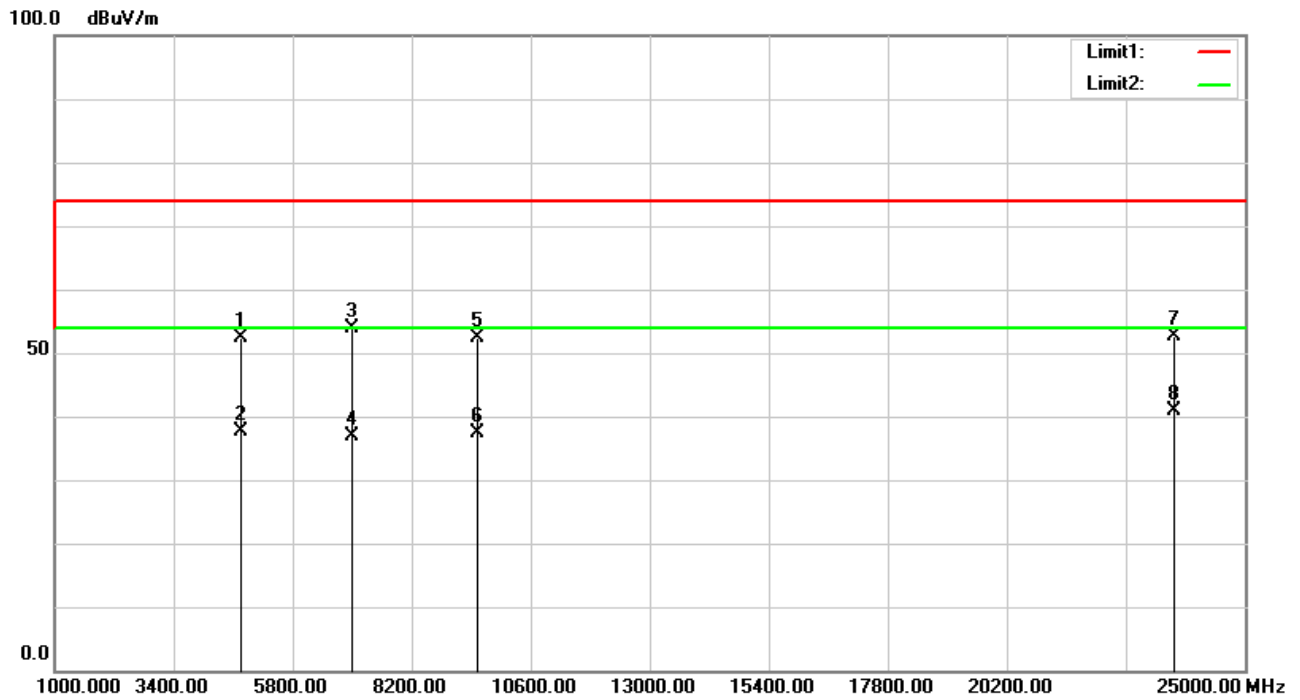
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4813.000	59.31	-7.17	52.14	74.00	-21.86	peak
2	4813.000	45.03	-7.17	37.86	54.00	-16.14	AVG
3	7216.000	53.35	0.59	53.94	74.00	-20.06	peak
4	7216.000	35.82	0.59	36.41	54.00	-17.59	AVG
5	9633.000	49.04	3.20	52.24	74.00	-21.76	peak
6	9633.000	33.86	3.20	37.06	54.00	-16.94	AVG
7	23997.000	36.69	16.12	52.81	74.00	-21.19	peak
8	23997.000	24.85	16.12	40.97	54.00	-13.03	AVG

802.11b High channel Horizontal



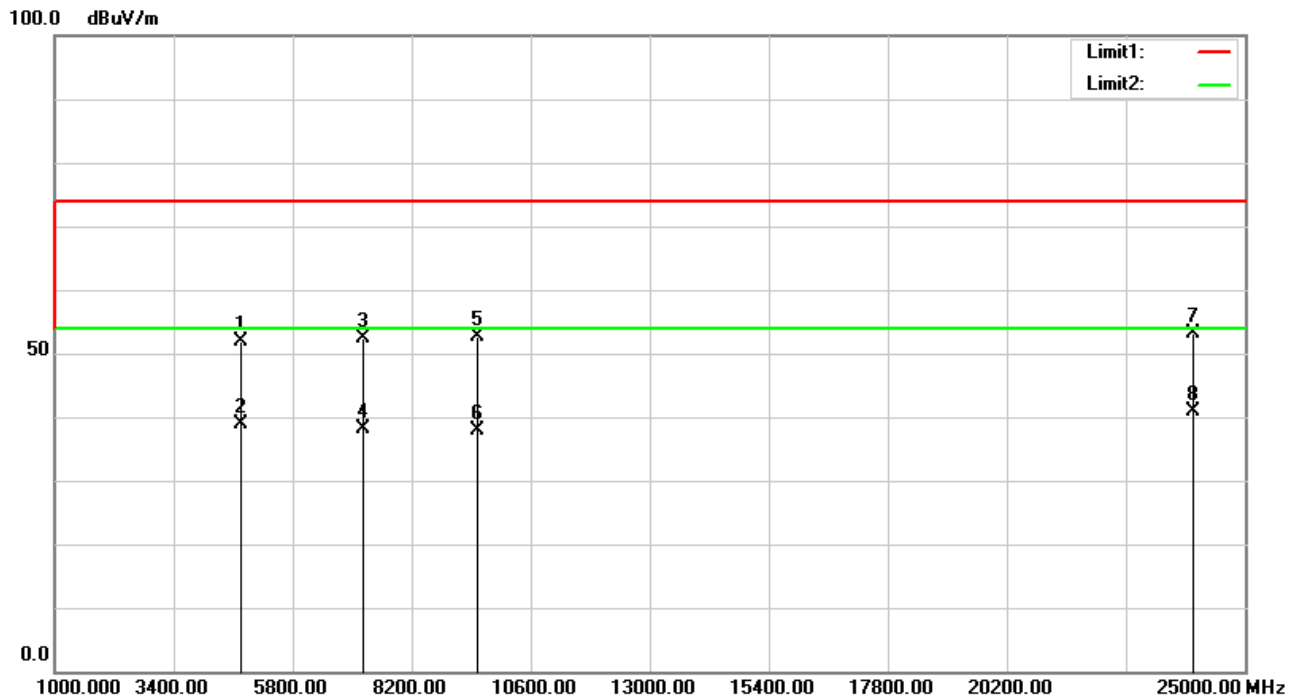
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4731.000	59.81	-7.32	52.49	74.00	-21.51	peak
2	4731.000	44.87	-7.32	37.55	54.00	-16.45	AVG
3	7198.000	52.64	0.53	53.17	74.00	-20.83	peak
4	7198.000	36.41	0.53	36.94	54.00	-17.06	AVG
5	9596.000	48.94	3.19	52.13	74.00	-21.87	peak
6	9596.000	33.86	3.19	37.05	54.00	-16.95	AVG
7	23133.000	37.07	15.07	52.14	74.00	-21.86	peak
8	23133.000	25.11	15.07	40.18	54.00	-13.82	AVG

Vertical



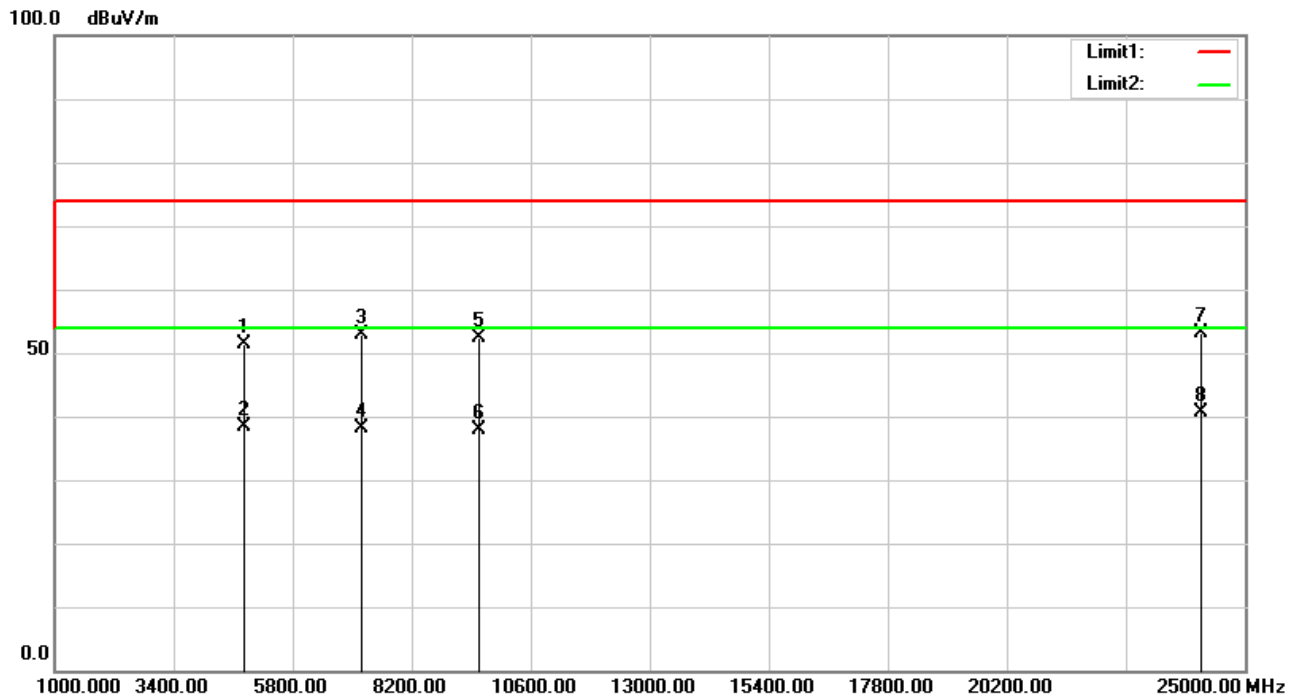
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4759.000	59.74	-7.28	52.46	74.00	-21.54	peak
2	4759.000	44.87	-7.28	37.59	54.00	-16.41	AVG
3	6997.000	53.97	-0.20	53.77	74.00	-20.23	peak
4	6997.000	37.14	-0.20	36.94	54.00	-17.06	AVG
5	9533.000	49.16	3.15	52.31	74.00	-21.69	peak
6	9533.000	34.34	3.15	37.49	54.00	-16.51	AVG
7	23590.000	25.02	27.62	52.64	74.00	-21.36	peak
8	23590.000	13.19	27.62	40.81	54.00	-13.19	AVG

802.11g Low channel Horizontal



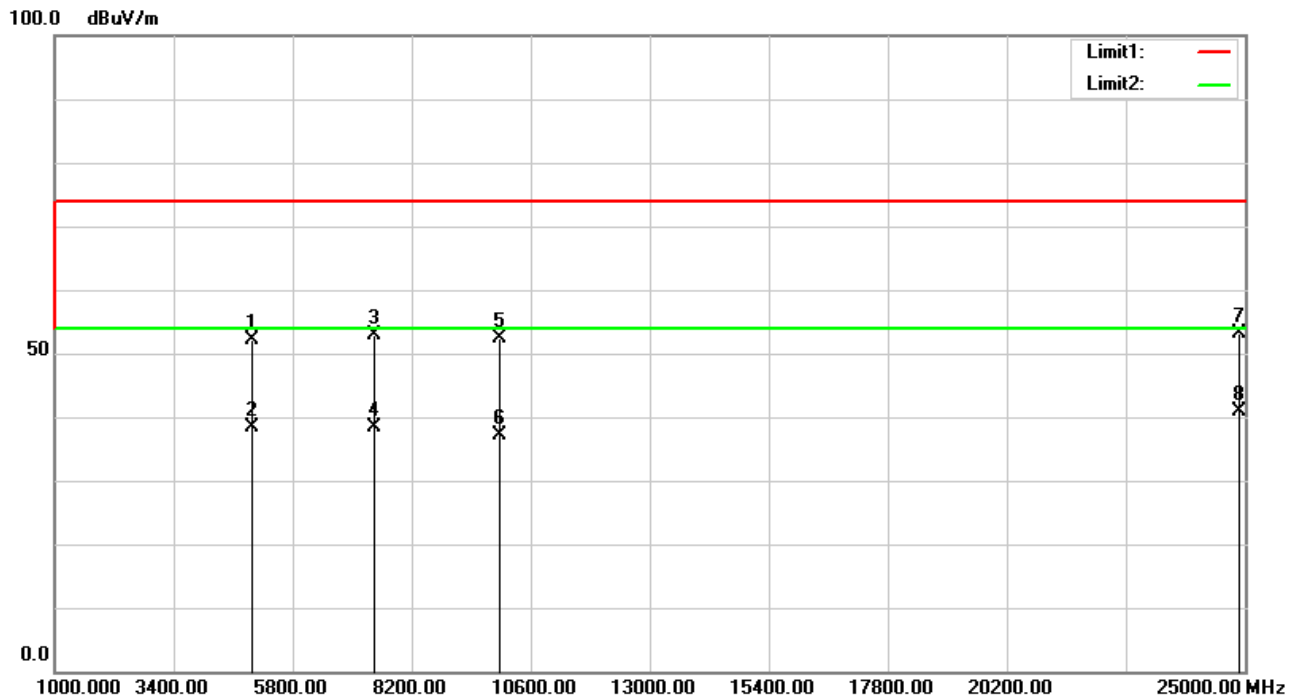
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4775.000	59.22	-7.26	51.96	74.00	-22.04	peak
2	4775.000	46.03	-7.26	38.77	54.00	-15.23	AVG
3	7233.000	51.74	0.65	52.39	74.00	-21.61	peak
4	7233.000	37.58	0.65	38.23	54.00	-15.77	AVG
5	9513.000	49.46	3.15	52.61	74.00	-21.39	peak
6	9513.000	34.66	3.15	37.81	54.00	-16.19	AVG
7	23957.000	37.09	16.07	53.16	74.00	-20.84	peak
8	23957.000	24.78	16.07	40.85	54.00	-13.15	AVG

Vertical



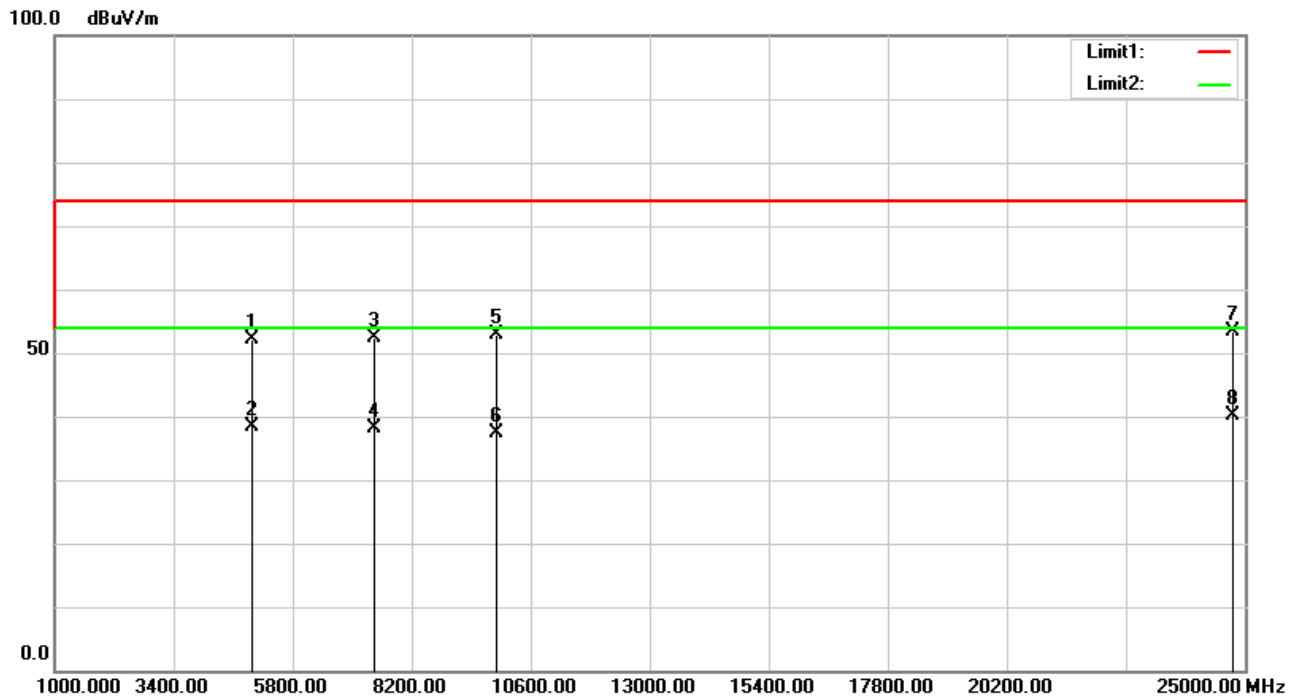
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4812.000	58.54	-7.18	51.36	74.00	-22.64	peak
2	4812.000	45.65	-7.18	38.47	54.00	-15.53	AVG
3	7198.000	52.43	0.53	52.96	74.00	-21.04	peak
4	7198.000	37.72	0.53	38.25	54.00	-15.75	AVG
5	9548.000	49.31	3.16	52.47	74.00	-21.53	peak
6	9548.000	34.78	3.16	37.94	54.00	-16.06	AVG
7	24117.000	36.92	16.22	53.14	74.00	-20.86	peak
8	24117.000	24.37	16.22	40.59	54.00	-13.41	AVG

802.11g Mid channel Horizontal



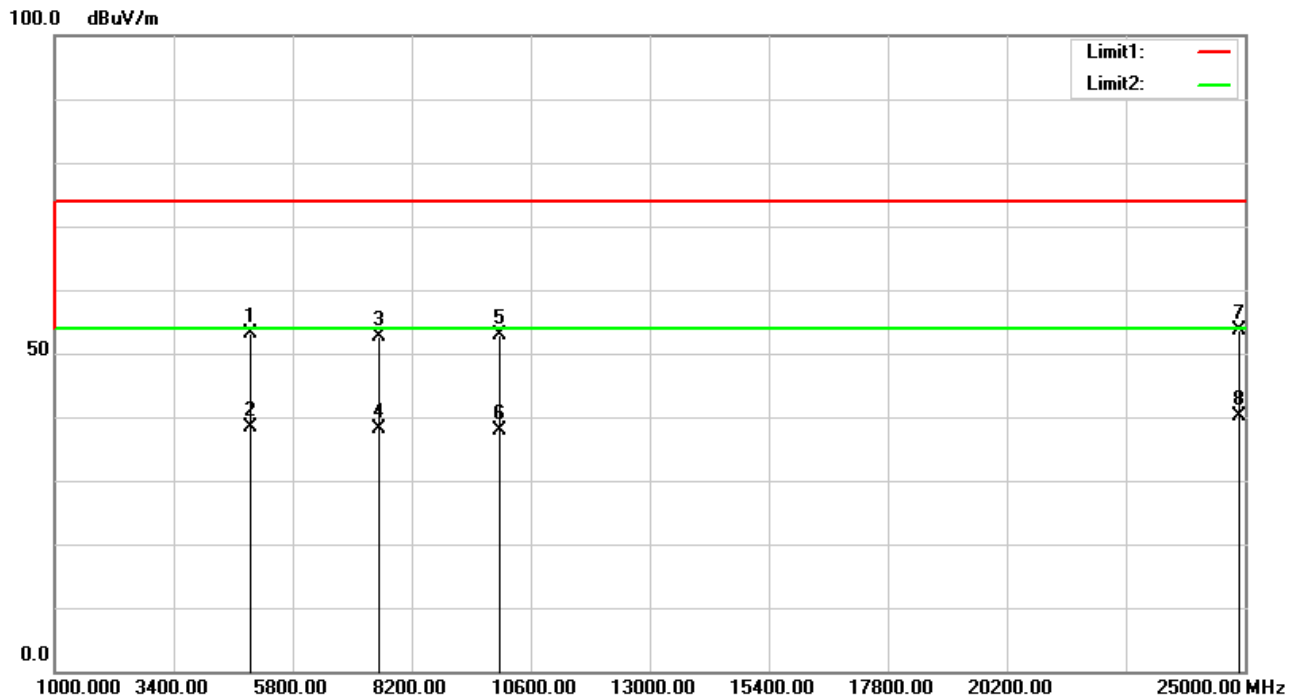
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4997.000	58.35	-6.21	52.14	74.00	-21.86	peak
2	4997.000	44.68	-6.21	38.47	54.00	-15.53	AVG
3	7459.000	51.49	1.48	52.97	74.00	-21.03	peak
4	7459.000	37.01	1.48	38.49	54.00	-15.51	AVG
5	9976.000	49.11	3.35	52.46	74.00	-21.54	peak
6	9976.000	33.80	3.35	37.15	54.00	-16.85	AVG
7	24887.000	36.28	16.88	53.16	74.00	-20.84	peak
8	24887.000	24.01	16.88	40.89	54.00	-13.11	AVG

Vertical



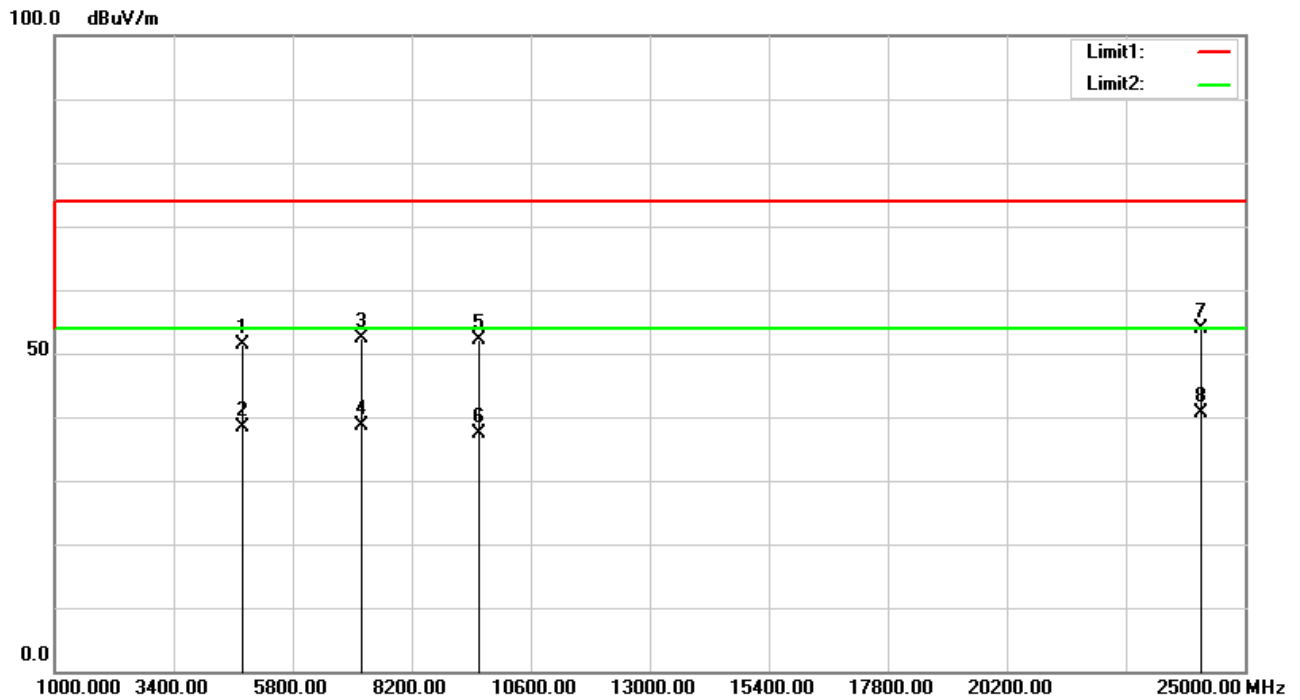
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4993.000	58.24	-6.23	52.01	74.00	-21.99	peak
2	4993.000	44.68	-6.23	38.45	54.00	-15.55	AVG
3	7456.000	50.90	1.46	52.36	74.00	-21.64	peak
4	7456.000	36.75	1.46	38.21	54.00	-15.79	AVG
5	9917.000	49.57	3.32	52.89	74.00	-21.11	peak
6	9917.000	34.14	3.32	37.46	54.00	-16.54	AVG
7	24773.000	36.69	16.78	53.47	74.00	-20.53	peak
8	24773.000	23.35	16.78	40.13	54.00	-13.87	AVG

802.11g High channel Horizontal



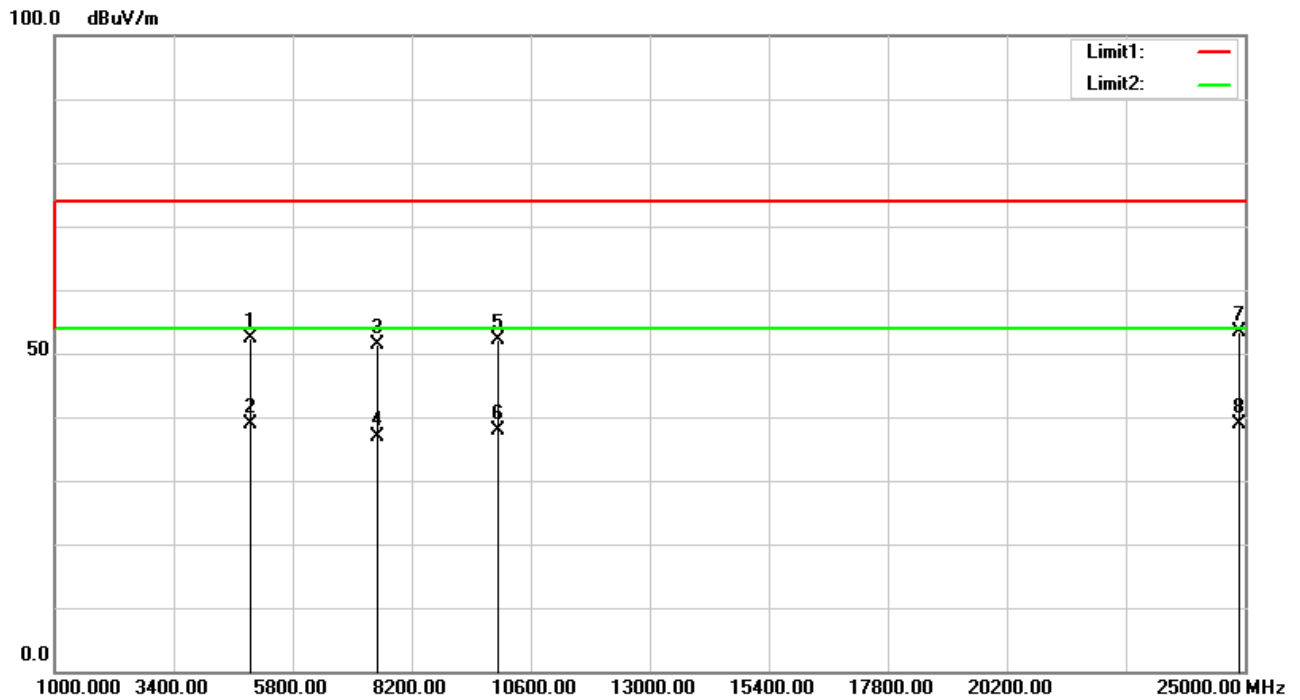
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4965.000	59.56	-6.42	53.14	74.00	-20.86	peak
2	4965.000	44.83	-6.42	38.41	54.00	-15.59	AVG
3	7531.000	50.96	1.67	52.63	74.00	-21.37	peak
4	7531.000	36.47	1.67	38.14	54.00	-15.86	AVG
5	9961.000	49.64	3.34	52.98	74.00	-21.02	peak
6	9961.000	34.50	3.34	37.84	54.00	-16.16	AVG
7	24884.000	36.81	16.88	53.69	74.00	-20.31	peak
8	24884.000	23.27	16.88	40.15	54.00	-13.85	AVG

Vertical



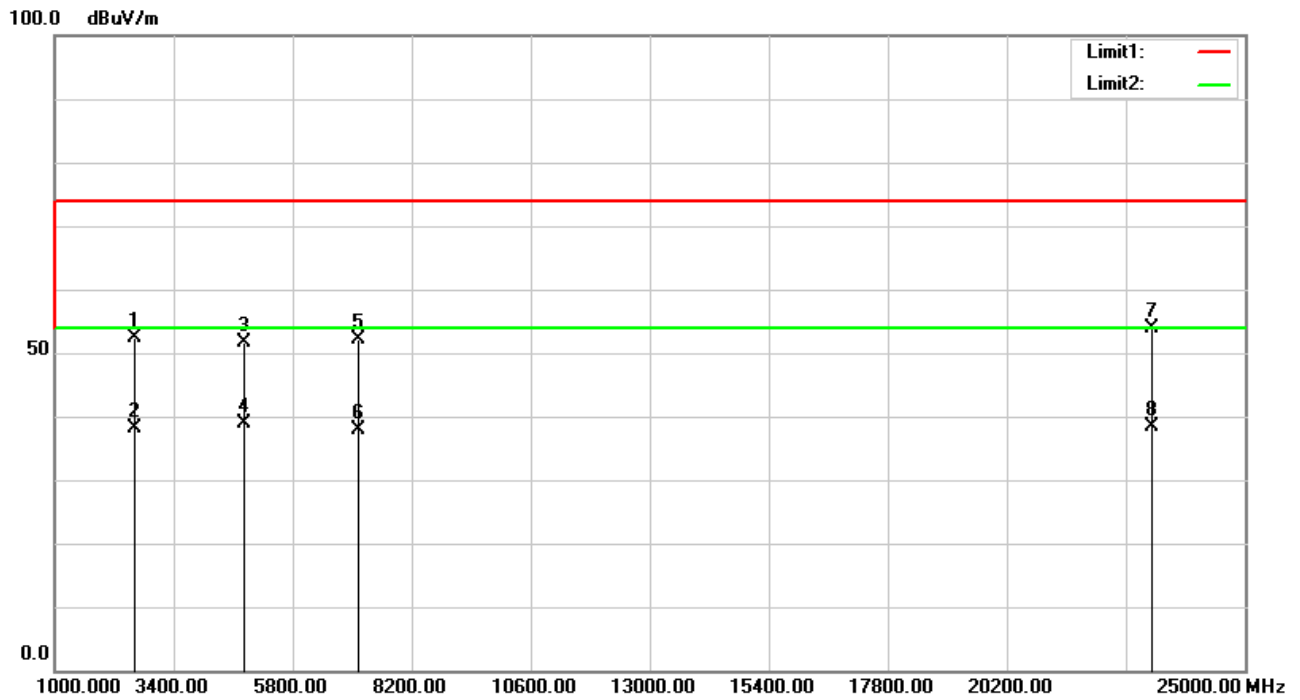
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4799.000	58.72	-7.22	51.50	74.00	-22.50	peak
2	4799.000	45.69	-7.22	38.47	54.00	-15.53	AVG
3	7179.000	52.00	0.46	52.46	74.00	-21.54	peak
4	7179.000	38.29	0.46	38.75	54.00	-15.25	AVG
5	9548.000	48.98	3.16	52.14	74.00	-21.86	peak
6	9548.000	34.26	3.16	37.42	54.00	-16.58	AVG
7	24111.000	37.72	16.22	53.94	74.00	-20.06	peak
8	24111.000	24.49	16.22	40.71	54.00	-13.29	AVG

802.11n 20 Low channel Horizontal



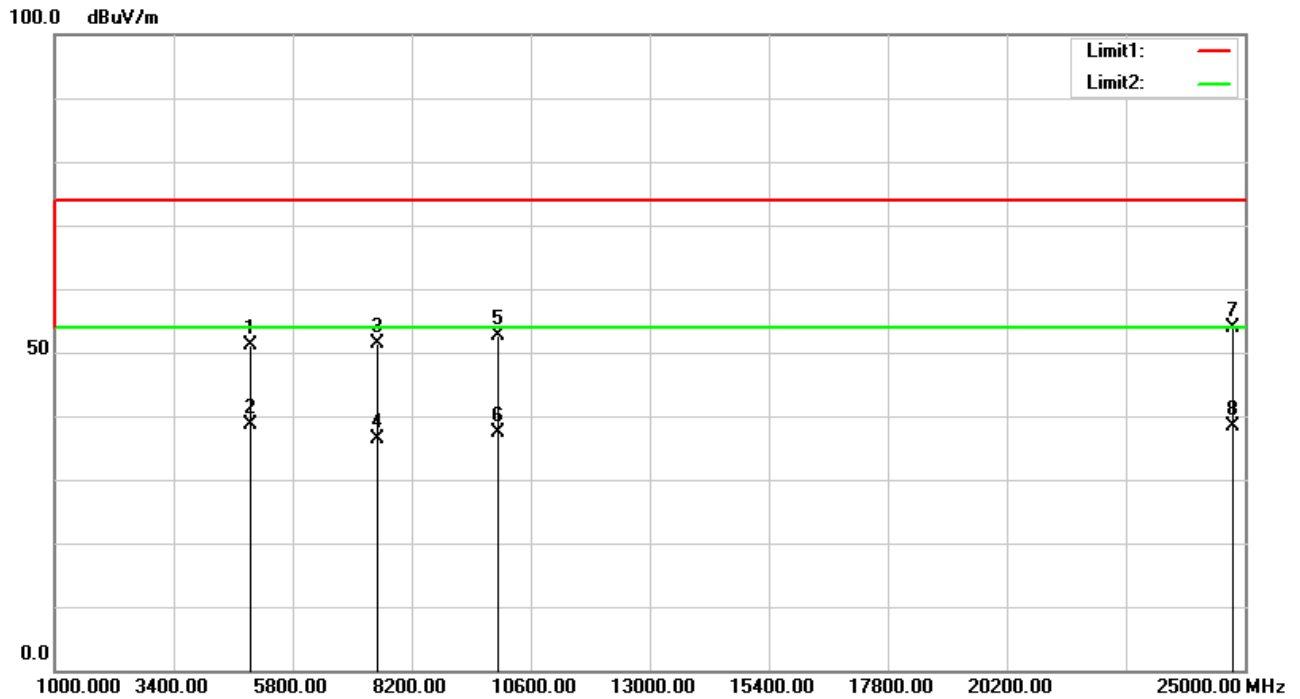
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4951.000	58.87	-6.51	52.36	74.00	-21.64	peak
2	4951.000	45.30	-6.51	38.79	54.00	-15.21	AVG
3	7513.000	49.85	1.64	51.49	74.00	-22.51	peak
4	7513.000	35.21	1.64	36.85	54.00	-17.15	AVG
5	9946.000	48.80	3.33	52.13	74.00	-21.87	peak
6	9946.000	34.50	3.33	37.83	54.00	-16.17	AVG
7	24887.000	36.53	16.88	53.41	74.00	-20.59	peak
8	24887.000	21.89	16.88	38.77	54.00	-15.23	AVG

Vertical



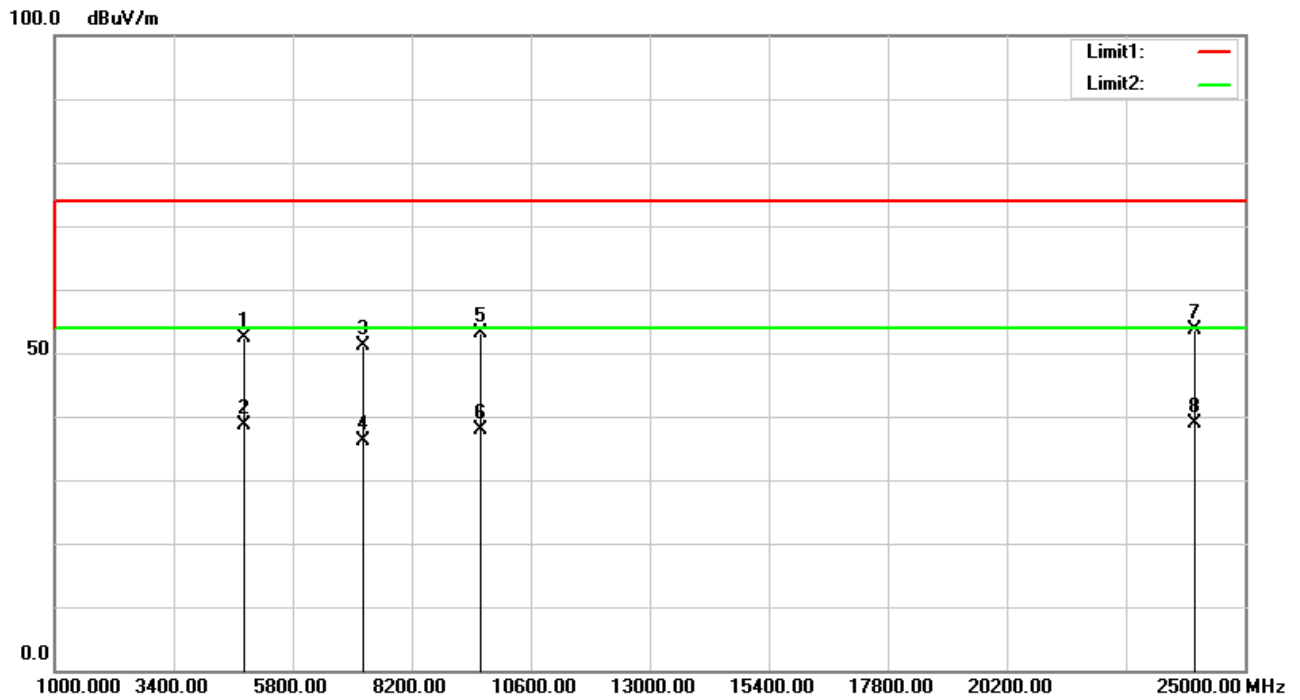
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2614.000	65.85	-13.49	52.36	74.00	-21.64	peak
2	2614.000	51.53	-13.49	38.04	54.00	-15.96	AVG
3	4811.000	58.87	-7.18	51.69	74.00	-22.31	peak
4	4811.000	46.11	-7.18	38.93	54.00	-15.07	AVG
5	7118.000	51.93	0.23	52.16	74.00	-21.84	peak
6	7118.000	37.58	0.23	37.81	54.00	-16.19	AVG
7	23118.000	38.90	15.05	53.95	74.00	-20.05	peak
8	23118.000	23.42	15.05	38.47	54.00	-15.53	AVG

802.11n 20 Mid channel Horizontal



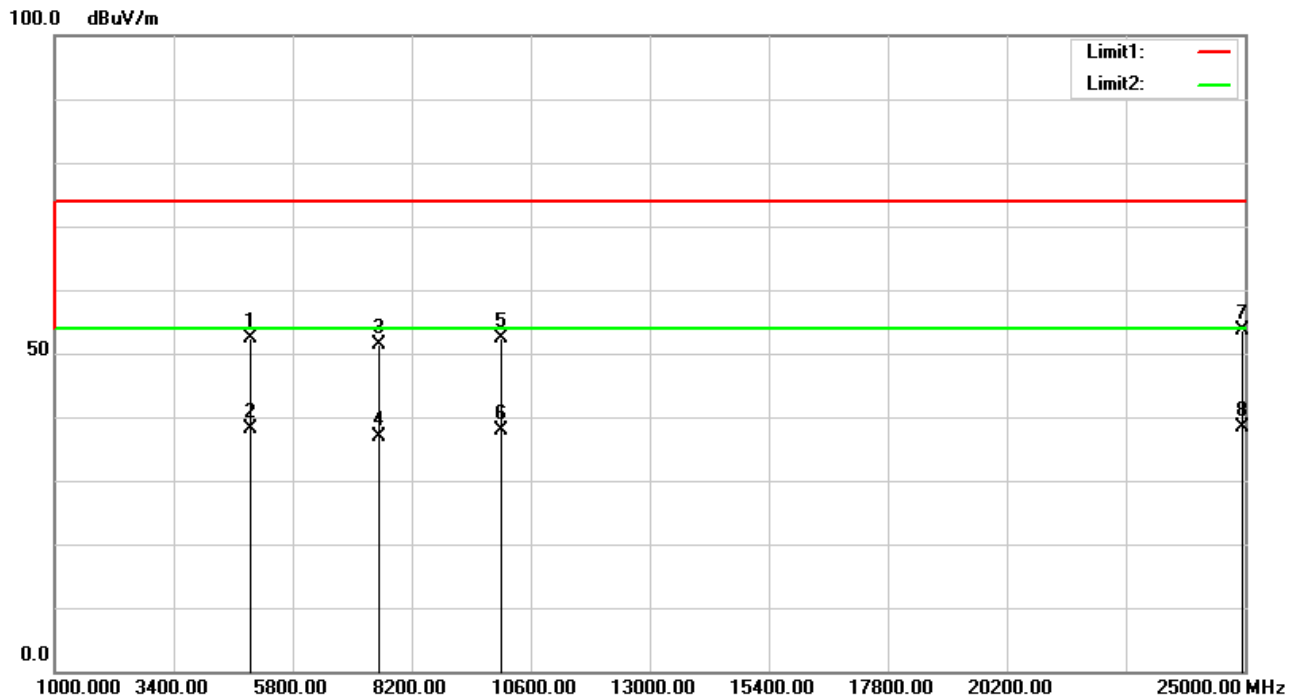
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4964.000	57.66	-6.42	51.24	74.00	-22.76	peak
2	4964.000	45.16	-6.42	38.74	54.00	-15.26	AVG
3	7518.000	49.77	1.65	51.42	74.00	-22.58	peak
4	7518.000	34.80	1.65	36.45	54.00	-17.55	AVG
5	9935.000	49.26	3.33	52.59	74.00	-21.41	peak
6	9935.000	34.15	3.33	37.48	54.00	-16.52	AVG
7	24766.000	37.11	16.78	53.89	74.00	-20.11	peak
8	24766.000	21.61	16.78	38.39	54.00	-15.61	AVG

Vertical



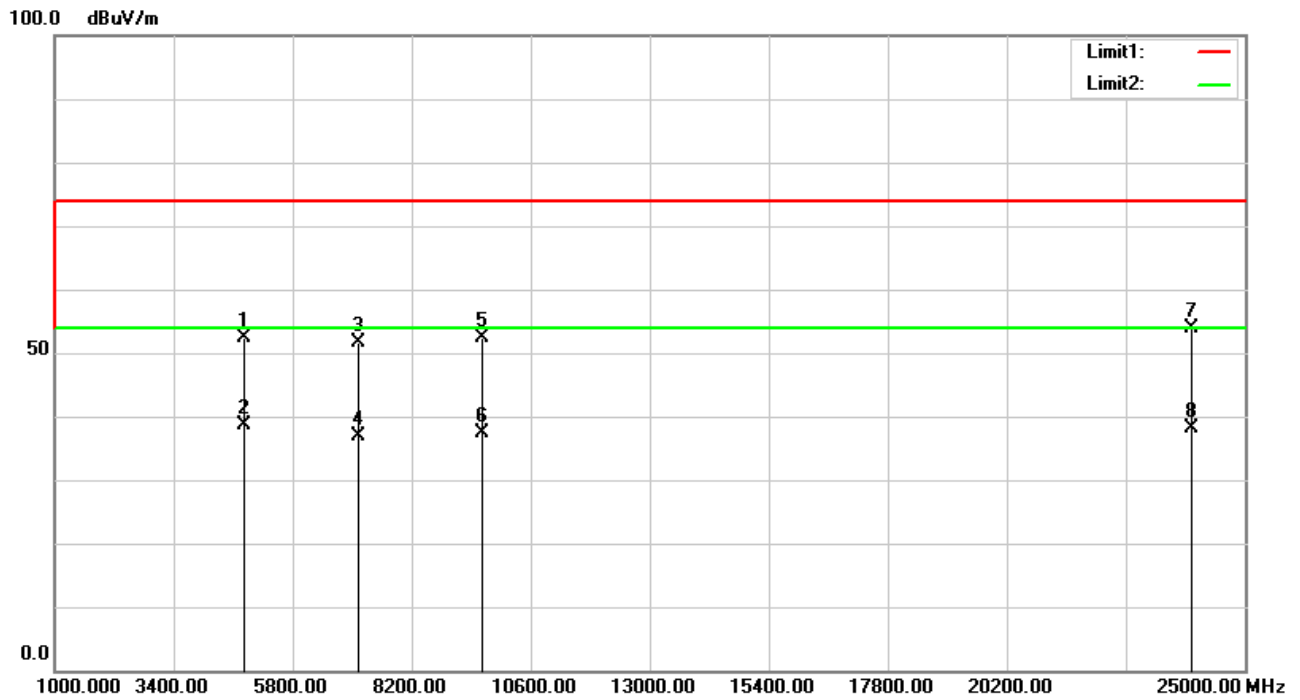
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4811.000	59.55	-7.18	52.37	74.00	-21.63	peak
2	4811.000	45.72	-7.18	38.54	54.00	-15.46	AVG
3	7225.000	50.62	0.63	51.25	74.00	-22.75	peak
4	7225.000	35.56	0.63	36.19	54.00	-17.81	AVG
5	9593.000	49.85	3.19	53.04	74.00	-20.96	peak
6	9593.000	34.75	3.19	37.94	54.00	-16.06	AVG
7	24007.000	37.49	16.13	53.62	74.00	-20.38	peak
8	24007.000	22.63	16.13	38.76	54.00	-15.24	AVG

802.11n 20 High channel Horizontal



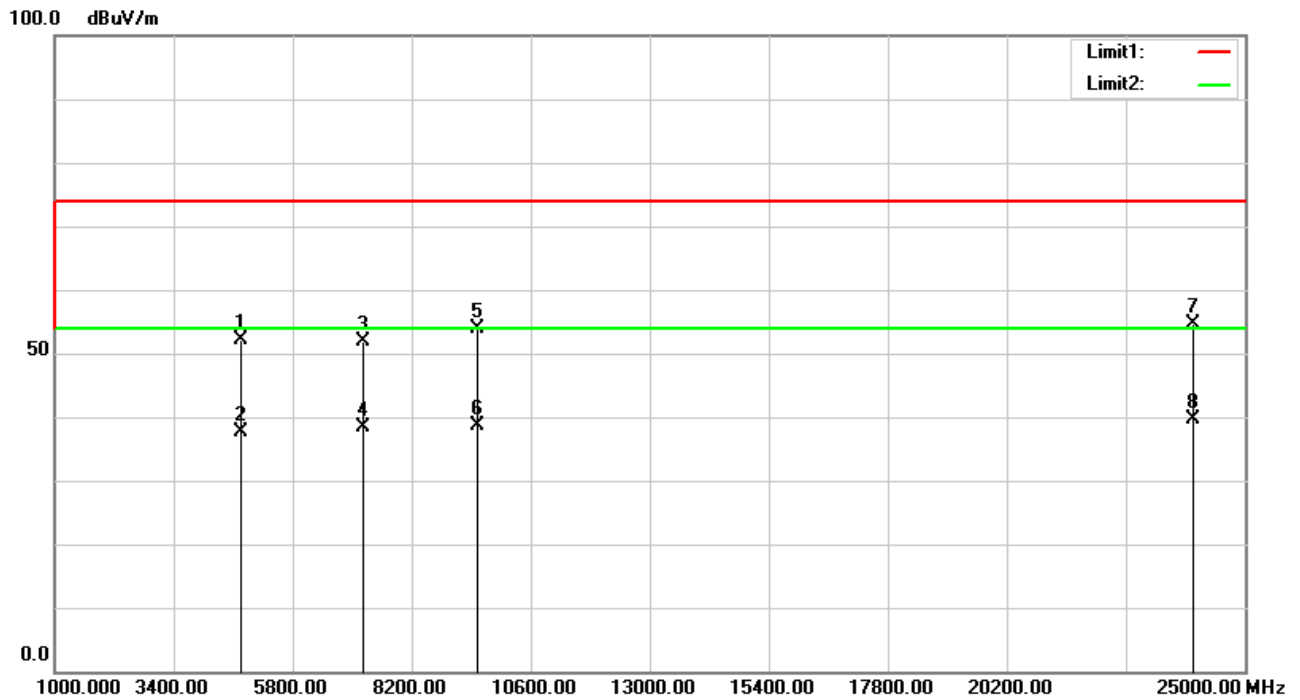
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4957.000	58.83	-6.47	52.36	74.00	-21.64	peak
2	4957.000	44.52	-6.47	38.05	54.00	-15.95	AVG
3	7554.000	49.78	1.69	51.47	74.00	-22.53	peak
4	7554.000	35.26	1.69	36.95	54.00	-17.05	AVG
5	9994.000	48.98	3.36	52.34	74.00	-21.66	peak
6	9994.000	34.62	3.36	37.98	54.00	-16.02	AVG
7	24967.000	36.68	16.95	53.63	74.00	-20.37	peak
8	24967.000	21.47	16.95	38.42	54.00	-15.58	AVG

Vertical



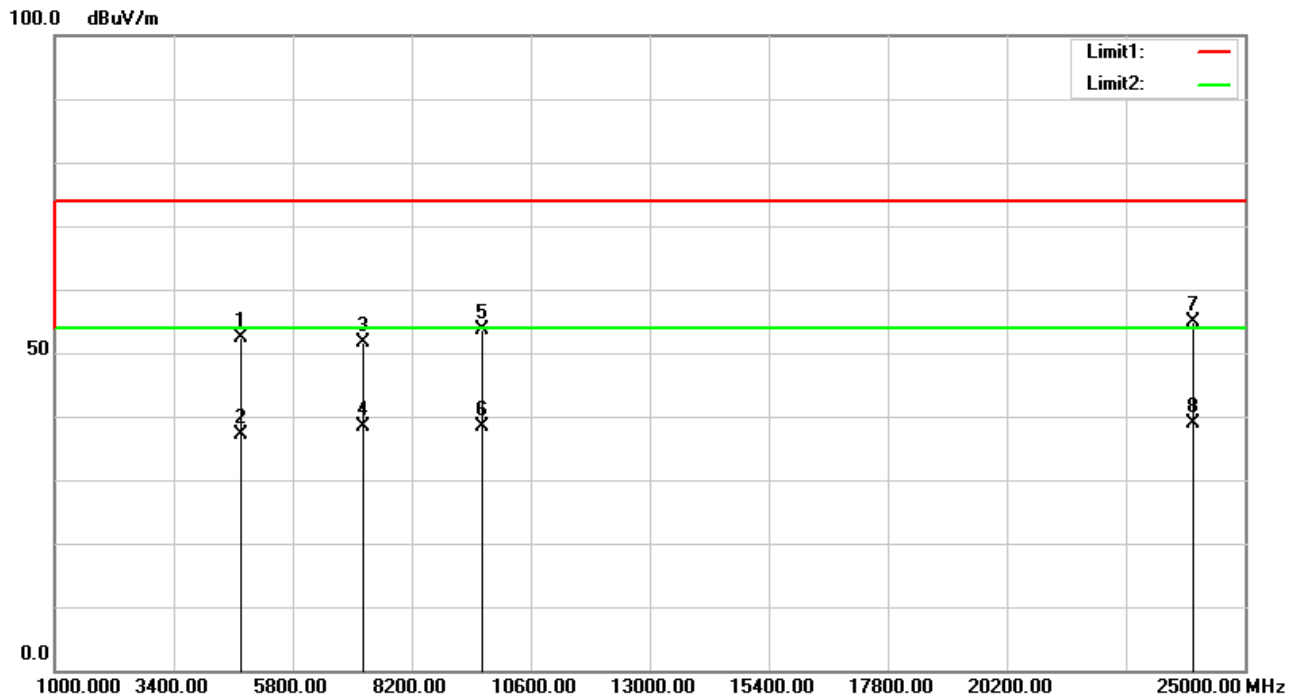
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4813.000	59.54	-7.17	52.37	74.00	-21.63	peak
2	4813.000	45.69	-7.17	38.52	54.00	-15.48	AVG
3	7116.000	51.42	0.22	51.64	74.00	-22.36	peak
4	7116.000	36.71	0.22	36.93	54.00	-17.07	AVG
5	9633.000	49.26	3.20	52.46	74.00	-21.54	peak
6	9633.000	34.21	3.20	37.41	54.00	-16.59	AVG
7	23916.000	37.95	16.02	53.97	74.00	-20.03	peak
8	23916.000	22.17	16.02	38.19	54.00	-15.81	AVG

802.11n 40 Low channel Horizontal



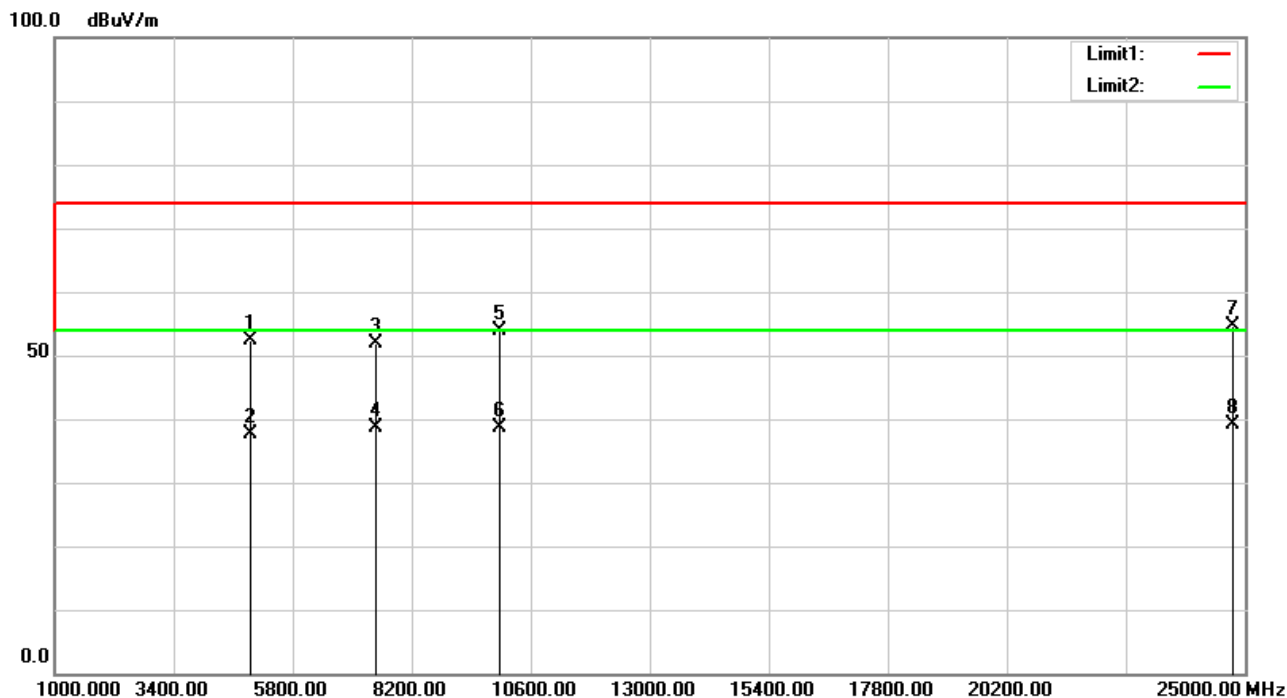
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4766.000	59.40	-7.27	52.13	74.00	-21.87	peak
2	4766.000	44.86	-7.27	37.59	54.00	-16.41	AVG
3	7224.000	51.27	0.62	51.89	74.00	-22.11	peak
4	7224.000	37.79	0.62	38.41	54.00	-15.59	AVG
5	9537.000	50.76	3.16	53.92	74.00	-20.08	peak
6	9537.000	35.41	3.16	38.57	54.00	-15.43	AVG
7	23968.000	38.55	16.08	54.63	74.00	-19.37	peak
8	23968.000	23.43	16.08	39.51	54.00	-14.49	AVG

Vertical



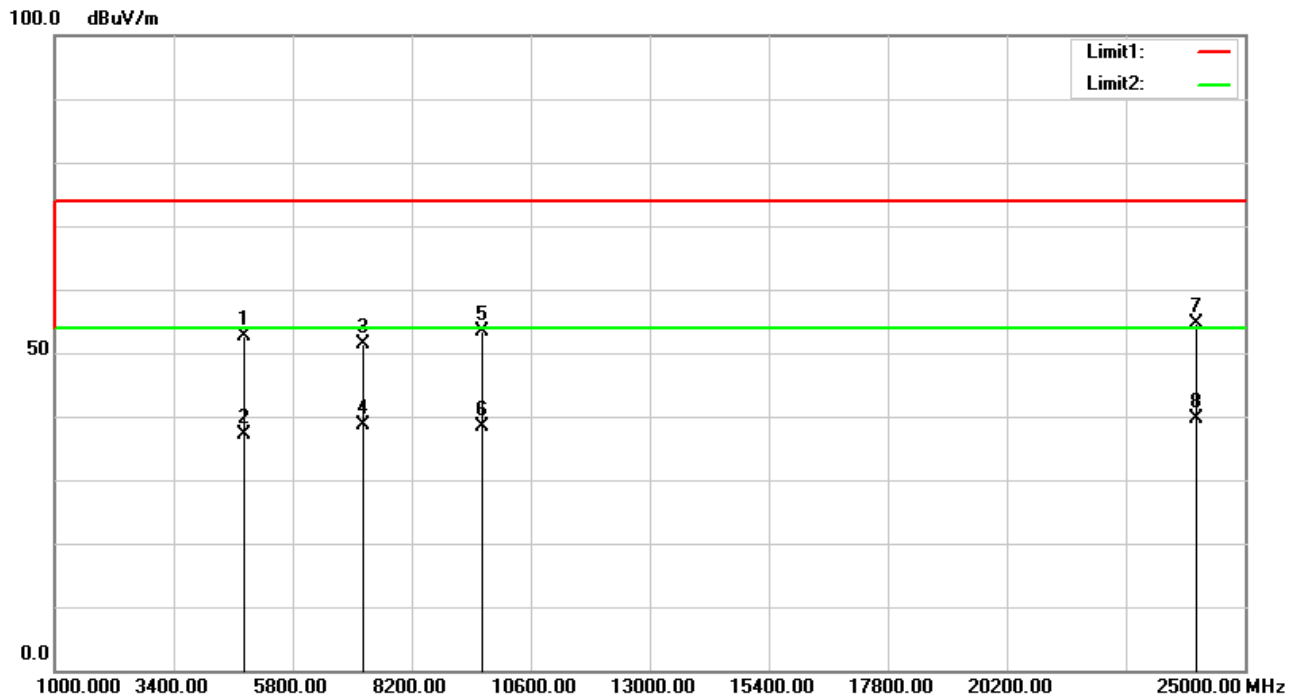
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4769.000	59.63	-7.26	52.37	74.00	-21.63	peak
2	4769.000	44.50	-7.26	37.24	54.00	-16.76	AVG
3	7213.000	51.11	0.58	51.69	74.00	-22.31	peak
4	7213.000	37.79	0.58	38.37	54.00	-15.63	AVG
5	9625.000	50.45	3.20	53.65	74.00	-20.35	peak
6	9625.000	35.28	3.20	38.48	54.00	-15.52	AVG
7	23967.000	38.84	16.08	54.92	74.00	-19.08	peak
8	23967.000	22.89	16.08	38.97	54.00	-15.03	AVG

802.11n 40 Mid channel Horizontal



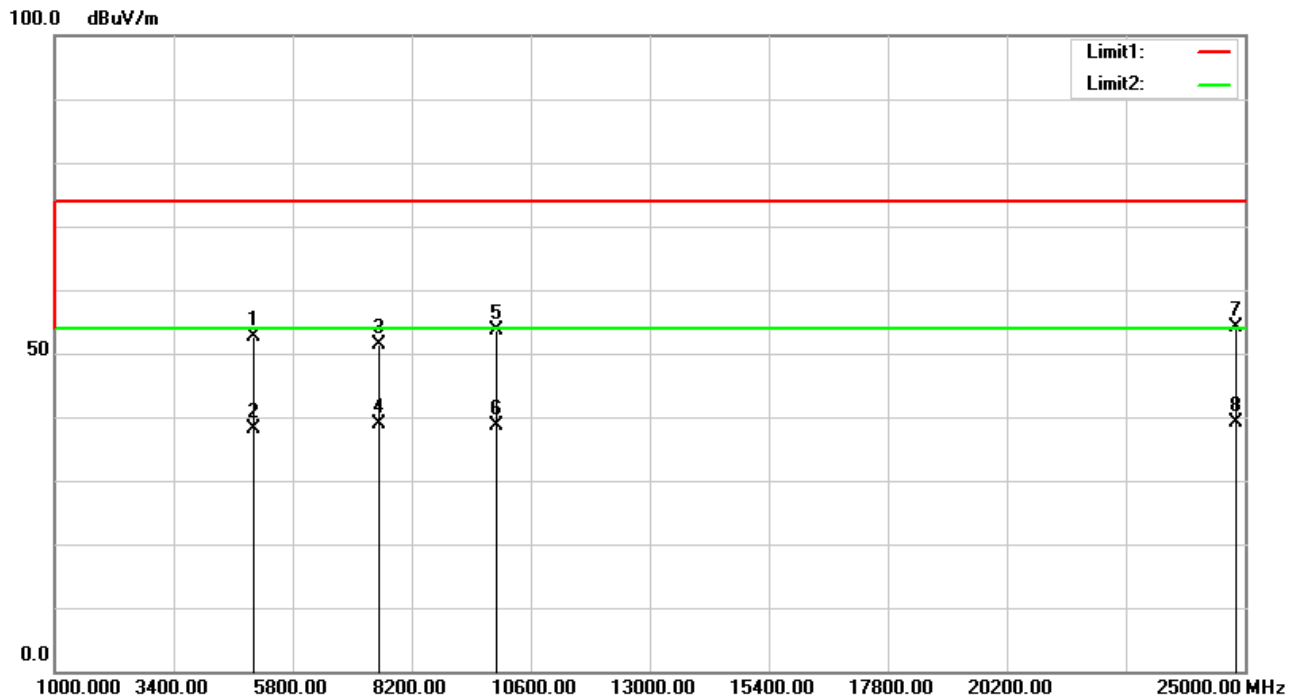
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4966.000	58.72	-6.41	52.31	74.00	-21.69	peak
2	4966.000	43.93	-6.41	37.52	54.00	-16.48	AVG
3	7466.000	50.46	1.51	51.97	74.00	-22.03	peak
4	7466.000	37.03	1.51	38.54	54.00	-15.46	AVG
5	9963.000	50.60	3.34	53.94	74.00	-20.06	peak
6	9963.000	35.20	3.34	38.54	54.00	-15.46	AVG
7	24766.000	37.94	16.78	54.72	74.00	-19.28	peak
8	24766.000	22.27	16.78	39.05	54.00	-14.95	AVG

Vertical



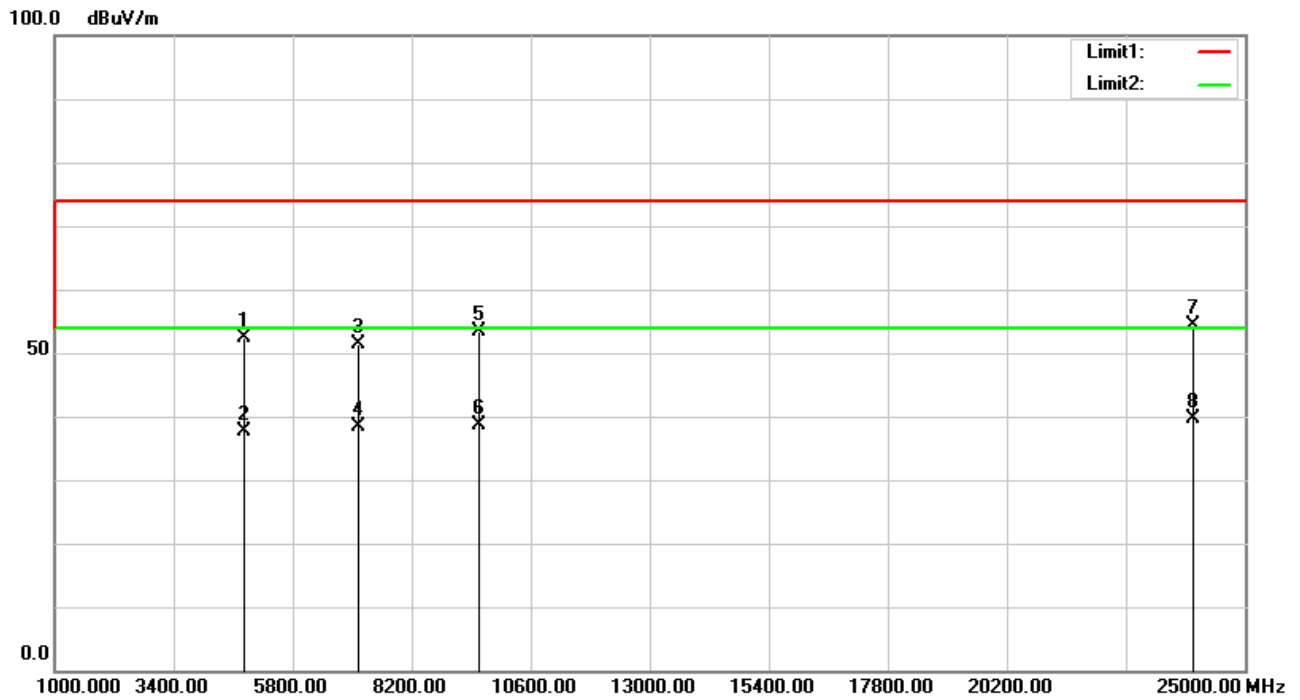
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4816.000	59.88	-7.16	52.72	74.00	-21.28	peak
2	4816.000	44.41	-7.16	37.25	54.00	-16.75	AVG
3	7233.000	50.68	0.65	51.33	74.00	-22.67	peak
4	7233.000	37.99	0.65	38.64	54.00	-15.36	AVG
5	9637.000	50.27	3.20	53.47	74.00	-20.53	peak
6	9637.000	35.21	3.20	38.41	54.00	-15.59	AVG
7	24008.000	38.49	16.13	54.62	74.00	-19.38	peak
8	24008.000	23.44	16.13	39.57	54.00	-14.43	AVG

802.11n 40 High channel Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5013.000	58.84	-6.13	52.71	74.00	-21.29	peak
2	5013.000	44.14	-6.13	38.01	54.00	-15.99	AVG
3	7538.000	49.81	1.67	51.48	74.00	-22.52	peak
4	7538.000	37.27	1.67	38.94	54.00	-15.06	AVG
5	9917.000	50.37	3.32	53.69	74.00	-20.31	peak
6	9917.000	35.30	3.32	38.62	54.00	-15.38	AVG
7	24837.000	37.41	16.84	54.25	74.00	-19.75	peak
8	24837.000	22.31	16.84	39.15	54.00	-14.85	AVG

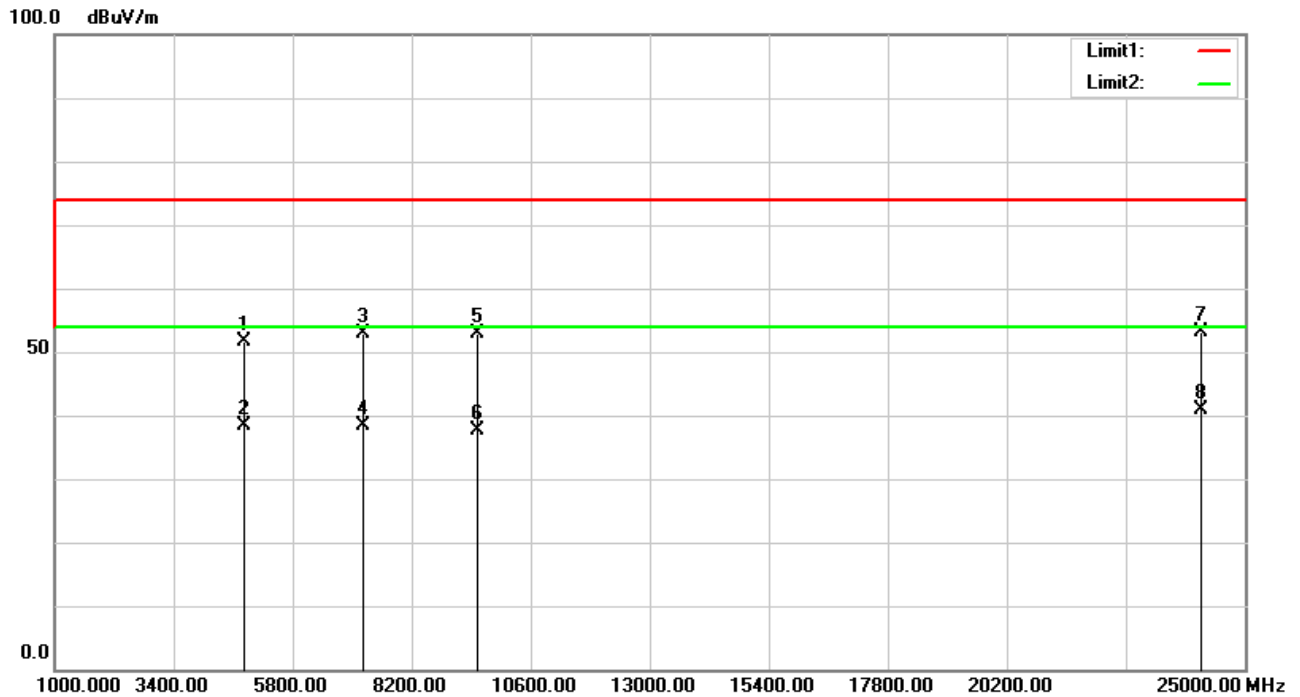
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4813.000	59.54	-7.17	52.37	74.00	-21.63	peak
2	4813.000	44.75	-7.17	37.58	54.00	-16.42	AVG
3	7118.000	51.26	0.23	51.49	74.00	-22.51	peak
4	7118.000	38.19	0.23	38.42	54.00	-15.58	AVG
5	9573.000	50.11	3.17	53.28	74.00	-20.72	peak
6	9573.000	35.36	3.17	38.53	54.00	-15.47	AVG
7	23947.000	38.20	16.06	54.26	74.00	-19.74	peak
8	23947.000	23.55	16.06	39.61	54.00	-14.39	AVG

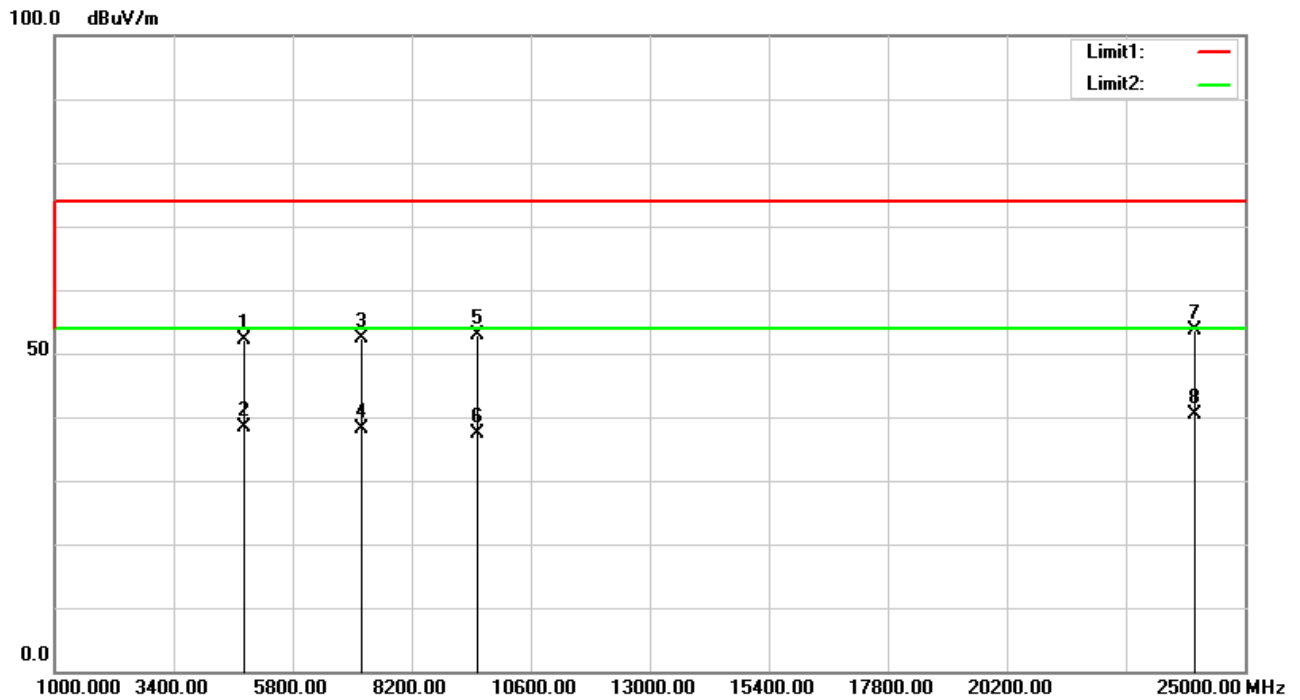
Temperature :	23.1 °C	Relative Humidity :	60%
Test Mode :	RX	Test Date :	2021-01-14

802.11g Low channel(Worst case) Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4813.000	58.76	-7.17	51.59	74.00	-22.41	peak
2	4813.000	45.58	-7.17	38.41	54.00	-15.59	AVG
3	7214.000	52.39	0.58	52.97	74.00	-21.03	peak
4	7214.000	37.71	0.58	38.29	54.00	-15.71	AVG
5	9537.000	49.71	3.16	52.87	74.00	-21.13	peak
6	9537.000	34.48	3.16	37.64	54.00	-16.36	AVG
7	24115.000	36.92	16.22	53.14	74.00	-20.86	peak
8	24115.000	24.73	16.22	40.95	54.00	-13.05	AVG

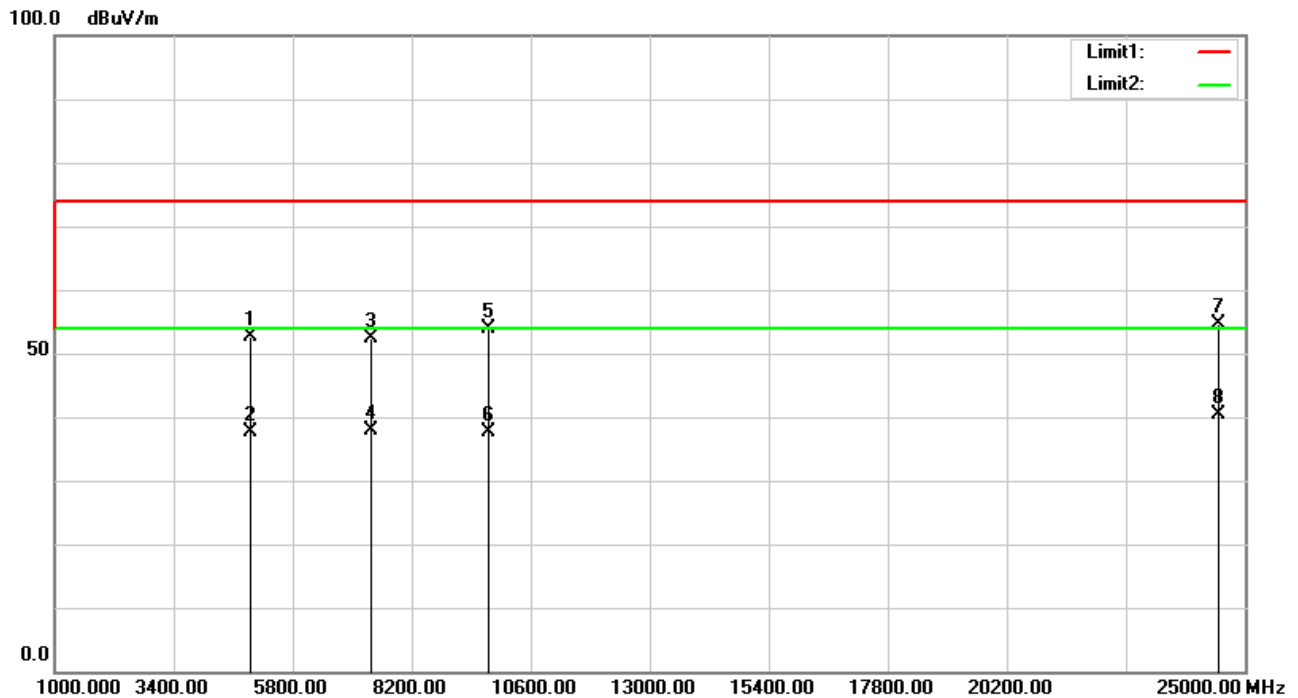
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4811.000	59.19	-7.18	52.01	74.00	-21.99	peak
2	4811.000	45.67	-7.18	38.49	54.00	-15.51	AVG
3	7199.000	51.83	0.53	52.36	74.00	-21.64	peak
4	7199.000	37.61	0.53	38.14	54.00	-15.86	AVG
5	9543.000	49.78	3.16	52.94	74.00	-21.06	peak
6	9543.000	34.32	3.16	37.48	54.00	-16.52	AVG
7	23986.000	37.59	16.10	53.69	74.00	-20.31	peak
8	23986.000	24.17	16.10	40.27	54.00	-13.73	AVG

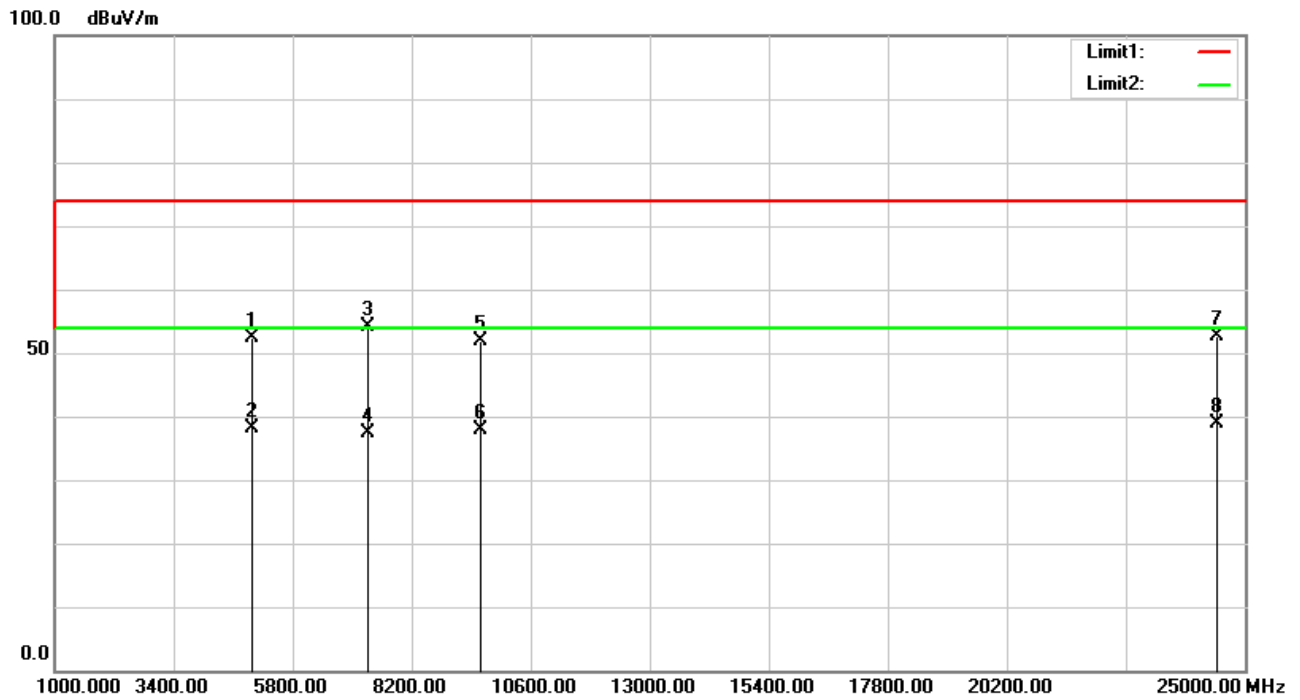
Temperature :	23.1 °C	Relative Humidity :	60%
Test Mode :	WIFI Link Mode	Test Date :	2021-01-14

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4953.000	59.17	-6.49	52.68	74.00	-21.32	peak
2	4953.000	44.15	-6.49	37.66	54.00	-16.34	AVG
3	7381.000	51.10	1.19	52.29	74.00	-21.71	peak
4	7381.000	36.81	1.19	38.00	54.00	-16.00	AVG
5	9755.000	50.68	3.25	53.93	74.00	-20.07	peak
6	9755.000	34.44	3.25	37.69	54.00	-16.31	AVG
7	24477.000	38.03	16.53	54.56	74.00	-19.44	peak
8	24477.000	23.78	16.53	40.31	54.00	-13.69	AVG

Vertical

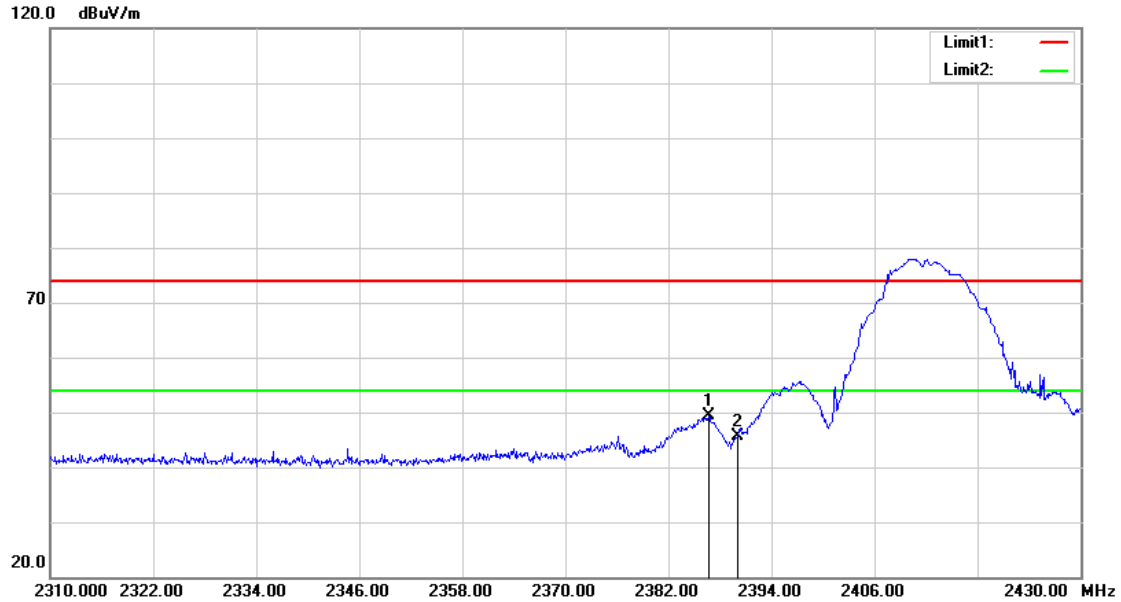


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4981.000	58.66	-6.32	52.34	74.00	-21.66	peak
2	4981.000	44.42	-6.32	38.10	54.00	-15.90	AVG
3	7328.000	53.05	1.00	54.05	74.00	-19.95	peak
4	7328.000	36.41	1.00	37.41	54.00	-16.59	AVG
5	9576.000	48.66	3.17	51.83	74.00	-22.17	peak
6	9576.000	34.61	3.17	37.78	54.00	-16.22	AVG
7	24437.000	36.09	16.50	52.59	74.00	-21.41	peak
8	24437.000	22.46	16.50	38.96	54.00	-15.04	AVG

3.1.12 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

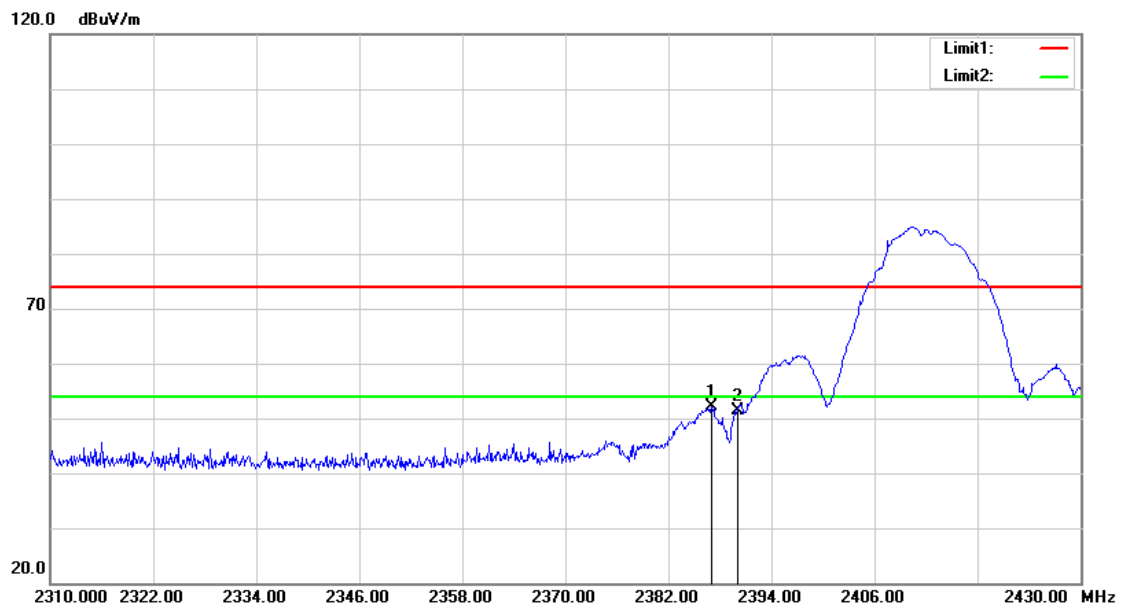
Temperature :	23.1 °C	Relative Humidity :	60%
Test Mode :	TX	Test Date :	2020-01-13

802.11b Low channel Horizontal



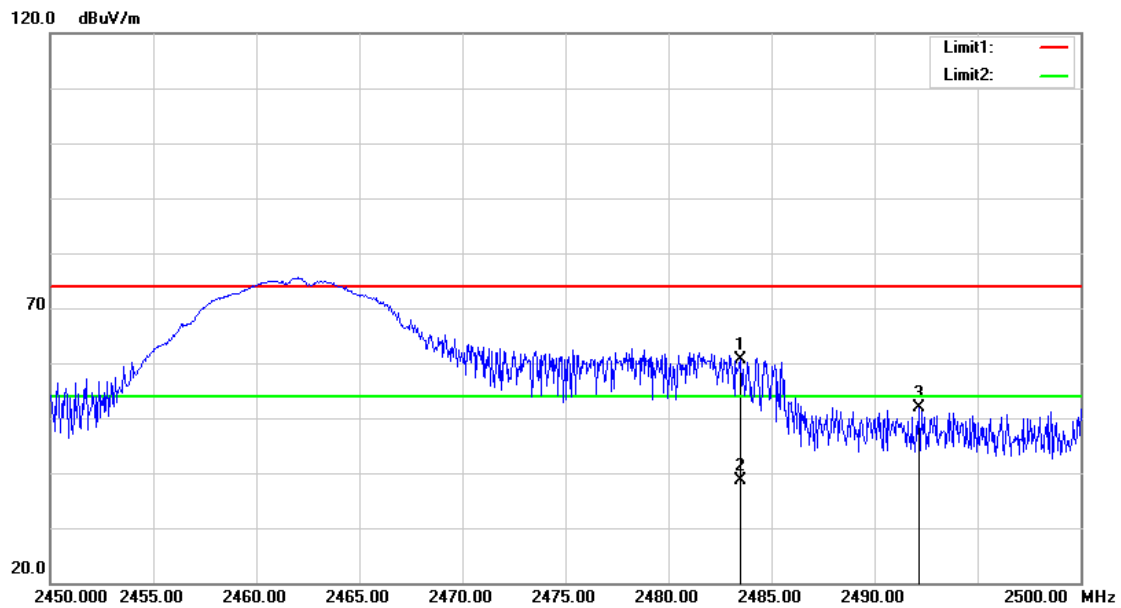
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.680	45.01	4.29	49.30	74.00	-24.70	peak
2	2390.000	41.39	4.34	45.73	74.00	-28.27	peak

Vertical



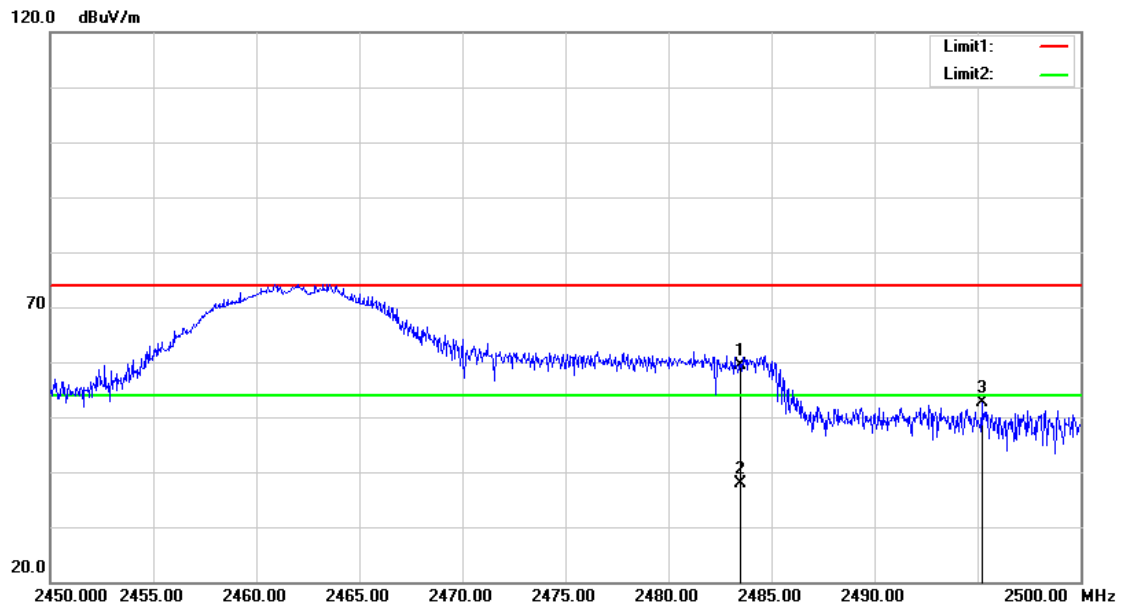
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.040	47.72	4.30	52.02	74.00	-21.98	peak
2	2390.000	46.92	4.34	51.26	74.00	-22.74	peak

802.11b High channel Horizontal



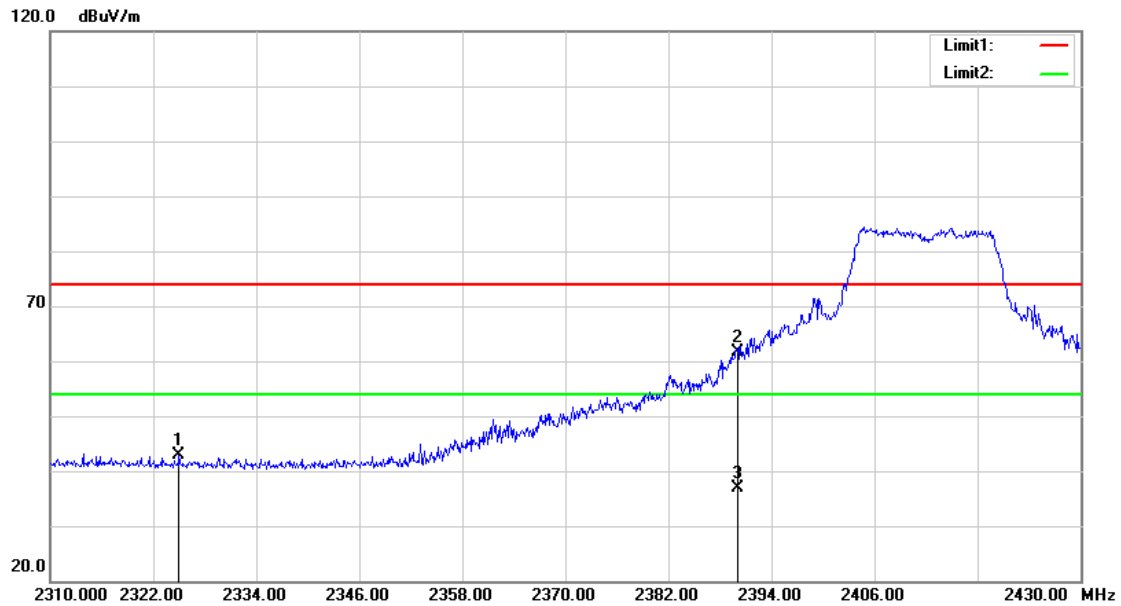
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	55.94	4.60	60.54	74.00	-13.46	peak
2	2483.500	33.96	4.60	38.56	54.00	-15.44	AVG
3	2492.150	47.17	4.63	51.80	74.00	-22.20	peak

Vertical



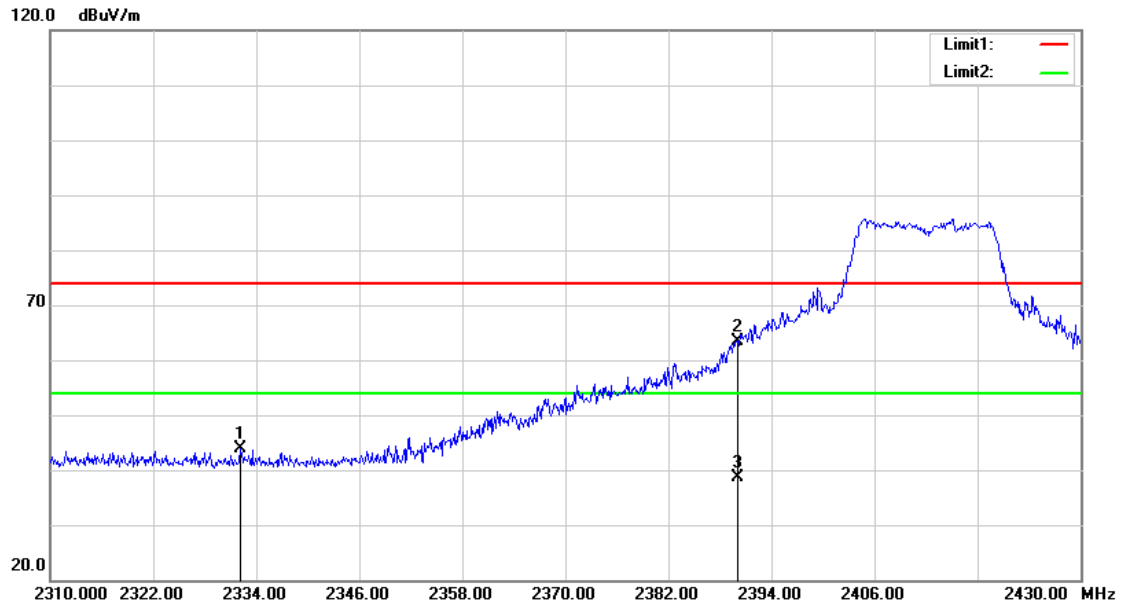
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	54.90	4.60	59.50	74.00	-14.50	peak
2	2483.500	33.25	4.60	37.85	54.00	-16.15	AVG
3	2495.200	47.89	4.63	52.52	74.00	-21.48	peak

802.11g Low channel Horizontal



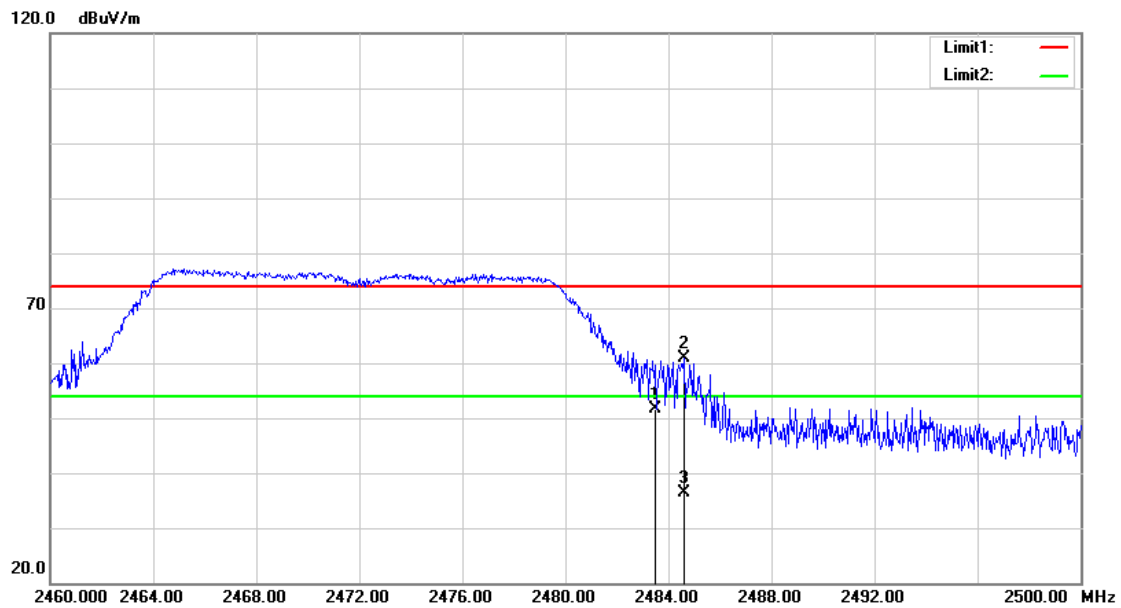
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2325.000	39.22	3.60	42.82	74.00	-31.18	peak
2	2390.000	57.22	4.34	61.56	74.00	-12.44	peak
3	2390.000	32.48	4.34	36.82	54.00	-17.18	AVG

Vertical



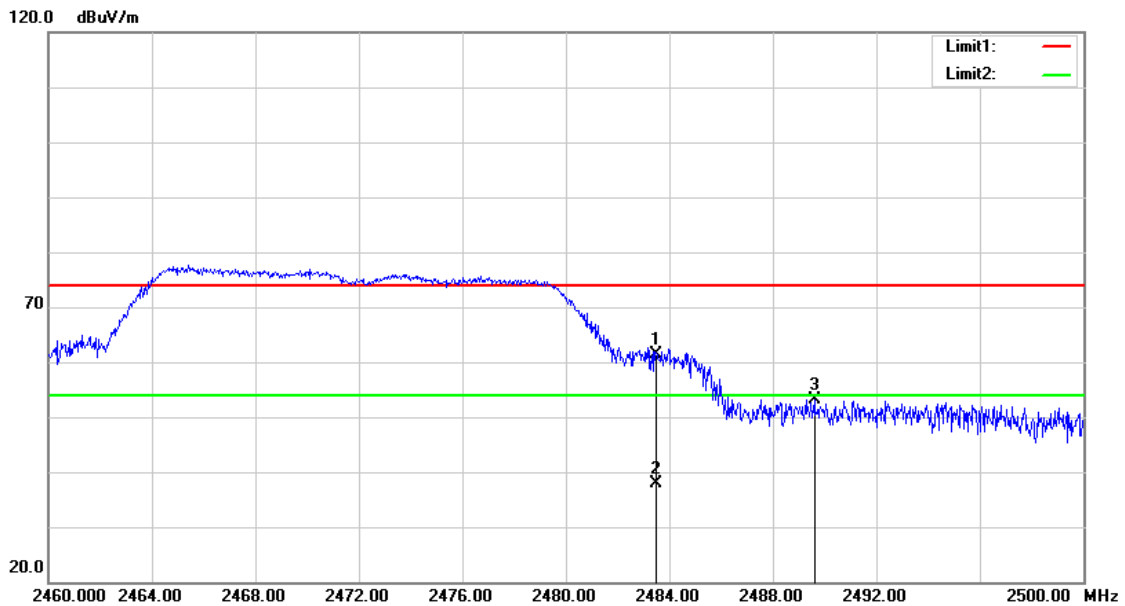
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2332.080	40.33	3.64	43.97	74.00	-30.03	peak
2	2390.000	59.08	4.34	63.42	74.00	-10.58	peak
3	2390.000	34.17	4.34	38.51	54.00	-15.49	AVG

802.11g High channel Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	46.94	4.60	51.54	74.00	-22.46	peak
2	2484.600	56.33	4.61	60.94	74.00	-13.06	peak
3	2484.600	31.88	4.61	36.49	54.00	-17.51	AVG

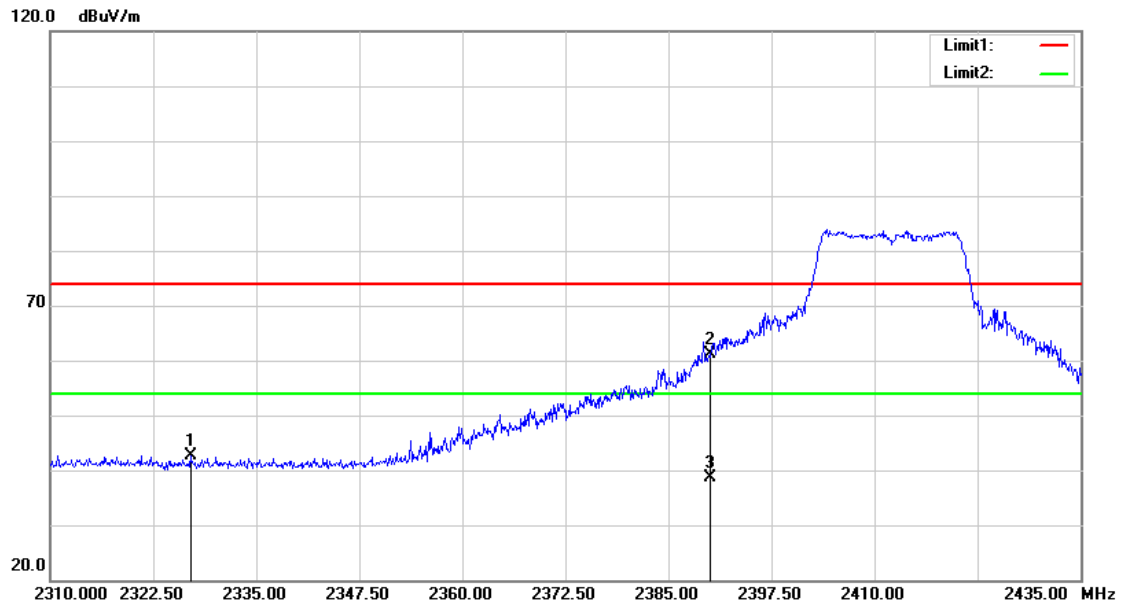
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	56.89	4.60	61.49	74.00	-12.51	peak
2	2483.500	33.23	4.60	37.83	54.00	-16.17	AVG
3	2489.600	48.53	4.62	53.15	74.00	-20.85	peak

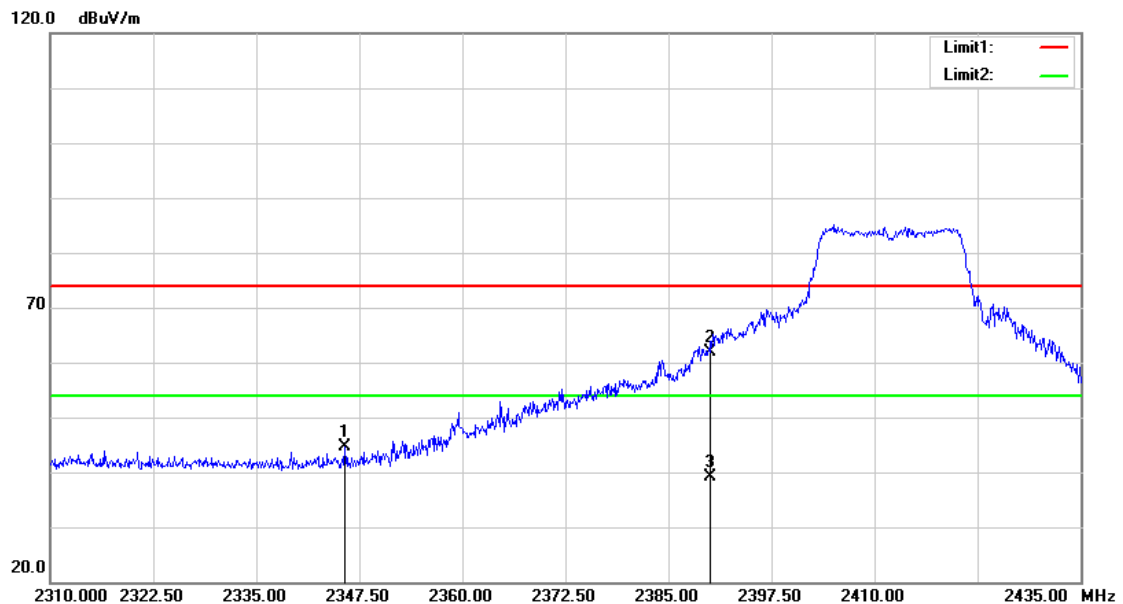
802.11n 20 Low channel

Horizontal



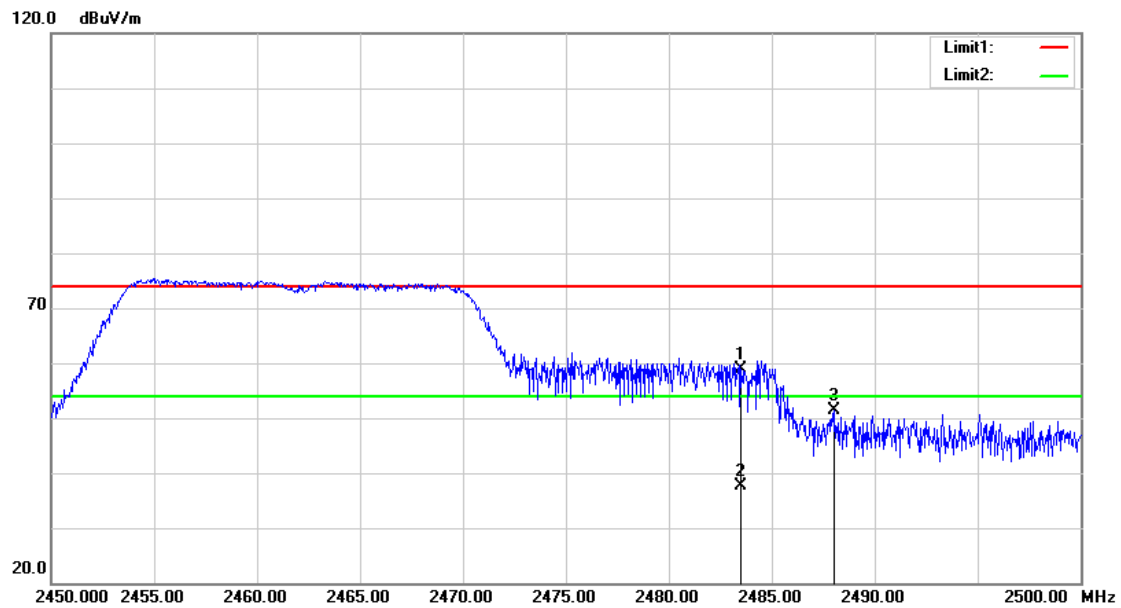
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2327.000	39.11	3.61	42.72	74.00	-31.28	peak
2	2390.000	56.69	4.34	61.03	74.00	-12.97	peak
3	2390.000	34.23	4.34	38.57	54.00	-15.43	AVG

Vertical



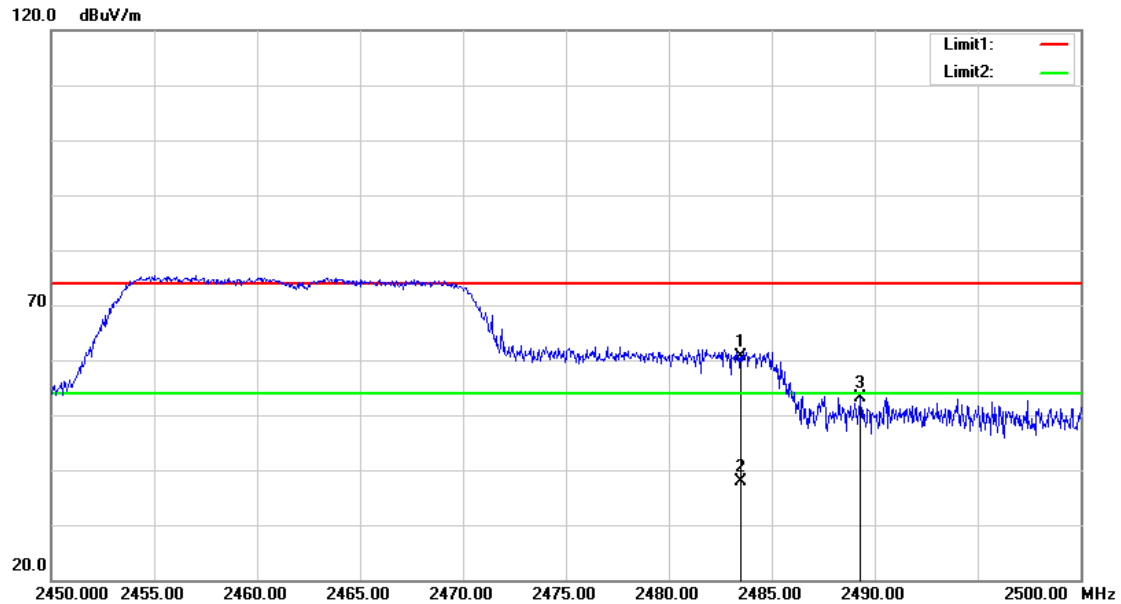
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2345.750	41.01	3.72	44.73	74.00	-29.27	peak
2	2390.000	57.43	4.34	61.77	74.00	-12.23	peak
3	2390.000	34.80	4.34	39.14	54.00	-14.86	AVG

802.11n 20 High channel Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	54.19	4.60	58.79	74.00	-15.21	peak
2	2483.500	33.01	4.60	37.61	54.00	-16.39	AVG
3	2488.050	46.79	4.62	51.41	74.00	-22.59	peak

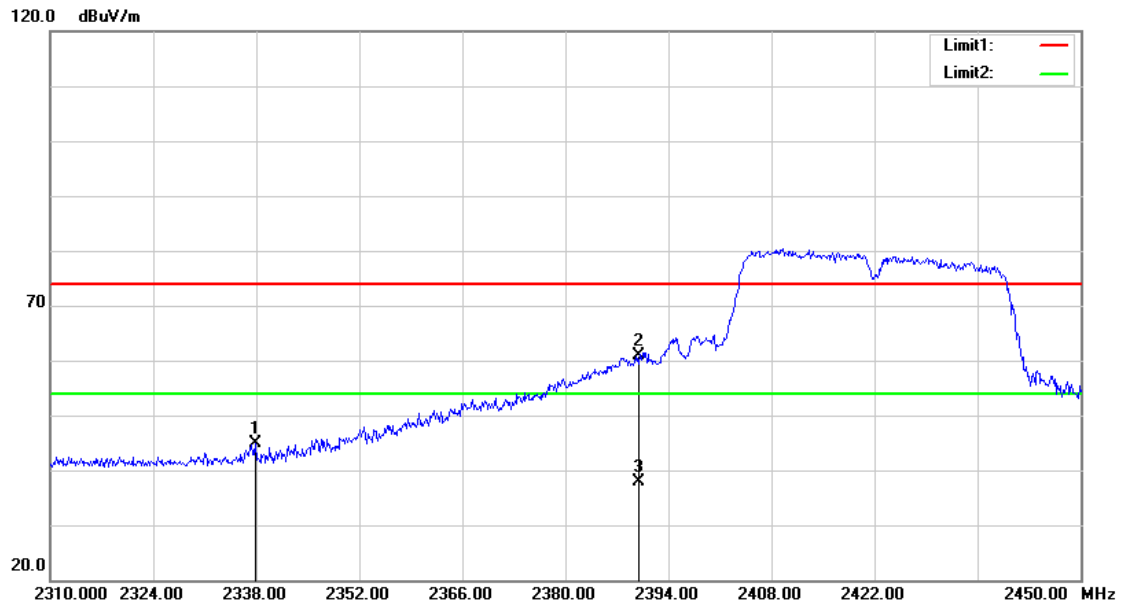
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	56.12	4.60	60.72	74.00	-13.28	peak
2	2483.500	33.32	4.60	37.92	54.00	-16.08	AVG
3	2489.300	48.46	4.62	53.08	74.00	-20.92	peak

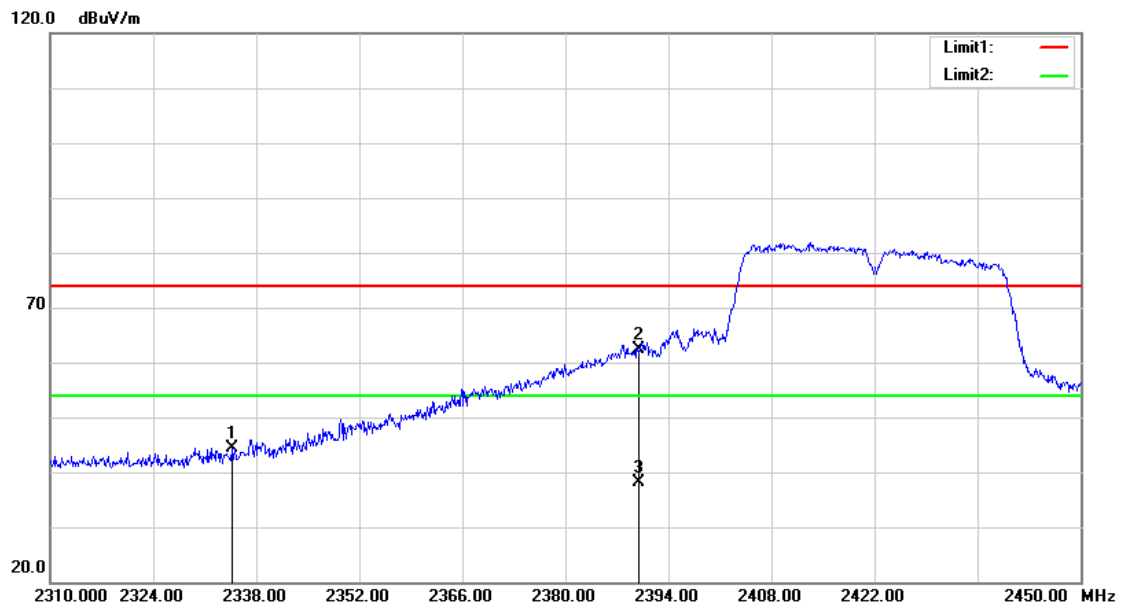
802.11n 40 Low channel

Horizontal



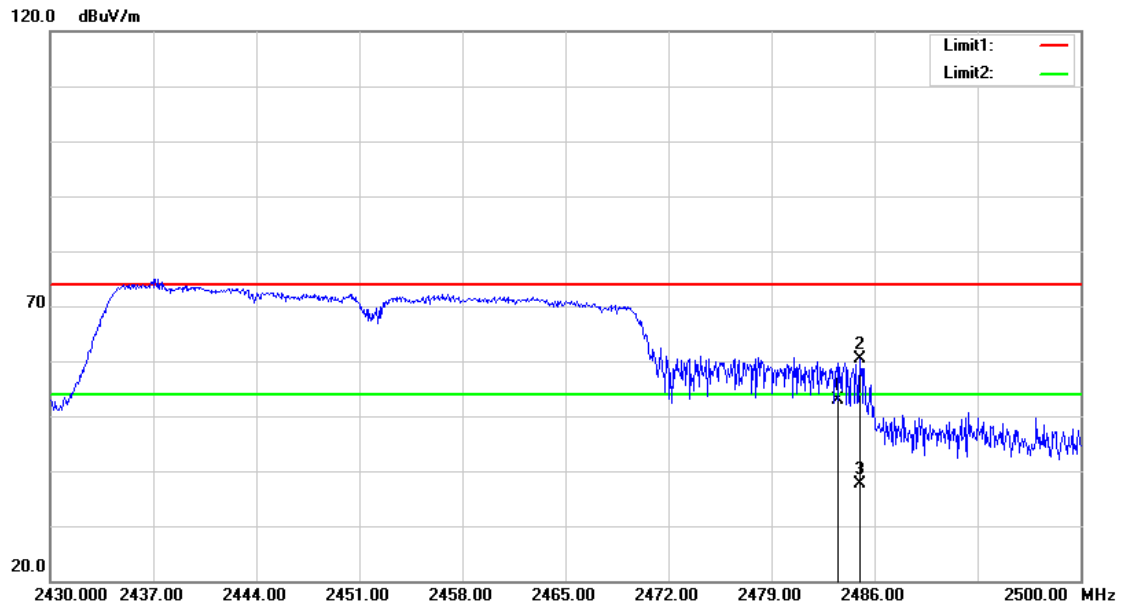
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2337.860	41.12	3.68	44.80	74.00	-29.20	peak
2	2390.000	56.49	4.34	60.83	74.00	-13.17	peak
3	2390.000	33.49	4.34	37.83	54.00	-16.17	AVG

Vertical



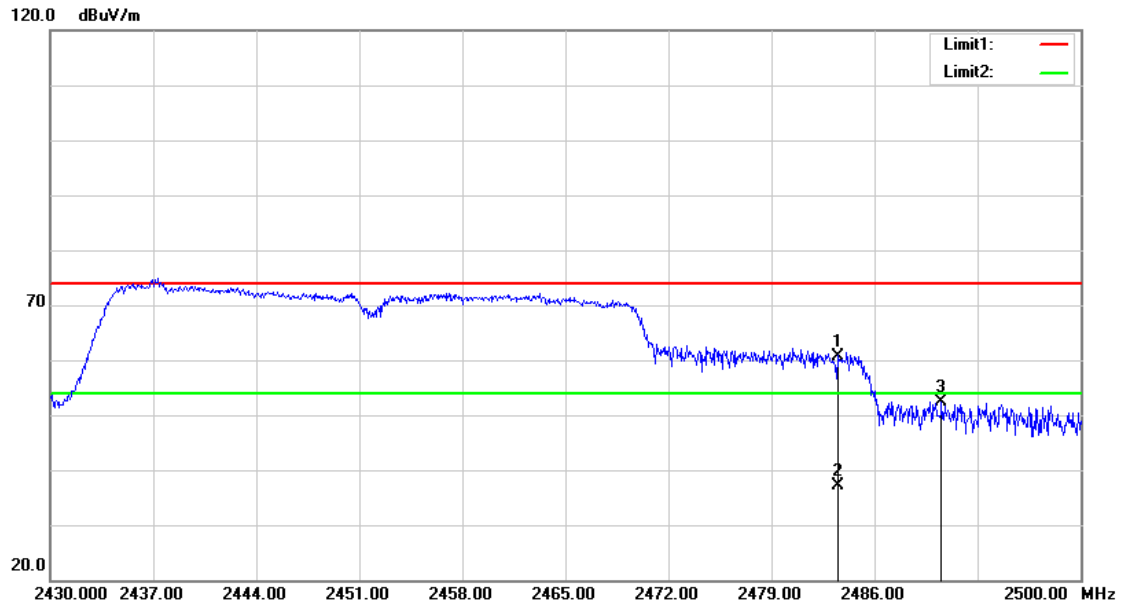
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2334.640	40.75	3.66	44.41	74.00	-29.59	peak
2	2390.000	58.01	4.34	62.35	74.00	-11.65	peak
3	2390.000	33.80	4.34	38.14	54.00	-15.86	AVG

802.11n 40 High channel Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	48.21	4.60	52.81	74.00	-21.19	peak
2	2485.020	55.66	4.61	60.27	74.00	-13.73	peak
3	2485.020	33.03	4.61	37.64	54.00	-16.36	AVG

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	55.94	4.60	60.54	74.00	-13.46	peak
2	2483.500	32.57	4.60	37.17	54.00	-16.83	AVG
3	2490.550	47.75	4.63	52.38	74.00	-21.62	peak

4. OCCUPIED BANDWIDTH TEST

4.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
4.10.1.6(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	$>$ Measurement Bandwidth or Channel Separation
RB	100 kHz (6dB Bandwidth) / 100 kHz (Channel Separation)
VB	300 kHz (6dB Bandwidth) / 300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

4.1.2 TEST SETUP



4.1.3 EUT OPERATION CONDITIONS

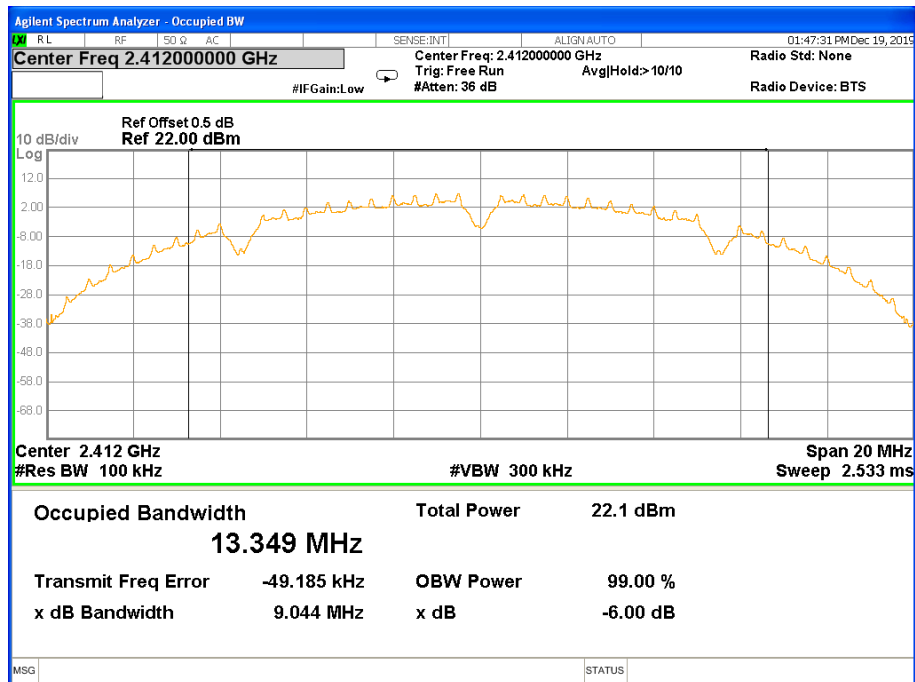
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.4 TEST RESULTS

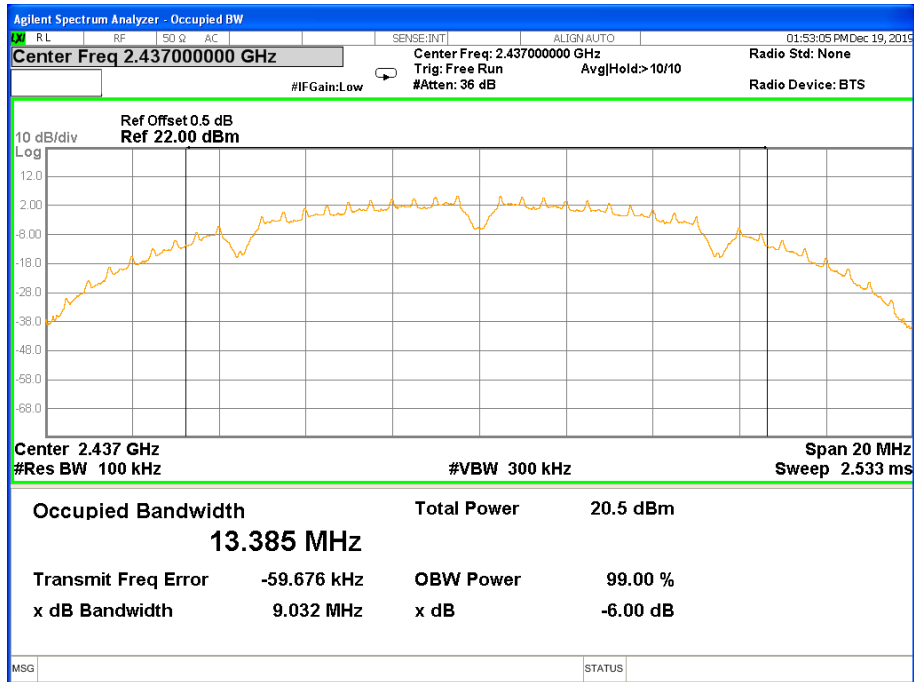
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Voltage :	AC 110V/60Hz
Test Date :	2019-12-19		

Frequency	6dB Bandwidth	Limit	Result
	(MHz)	(KHz)	
2412 MHz	9.044	≥500KHz	PASS
2437 MHz	9.032	≥500KHz	PASS
2462 MHz	9.044	≥500KHz	PASS

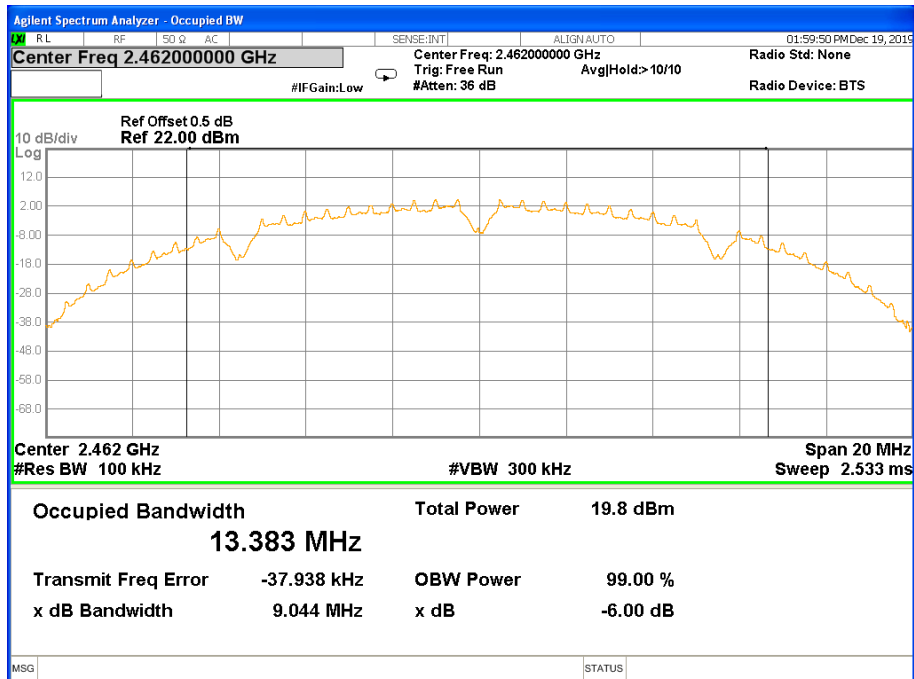
b Low channel



b Mid channel

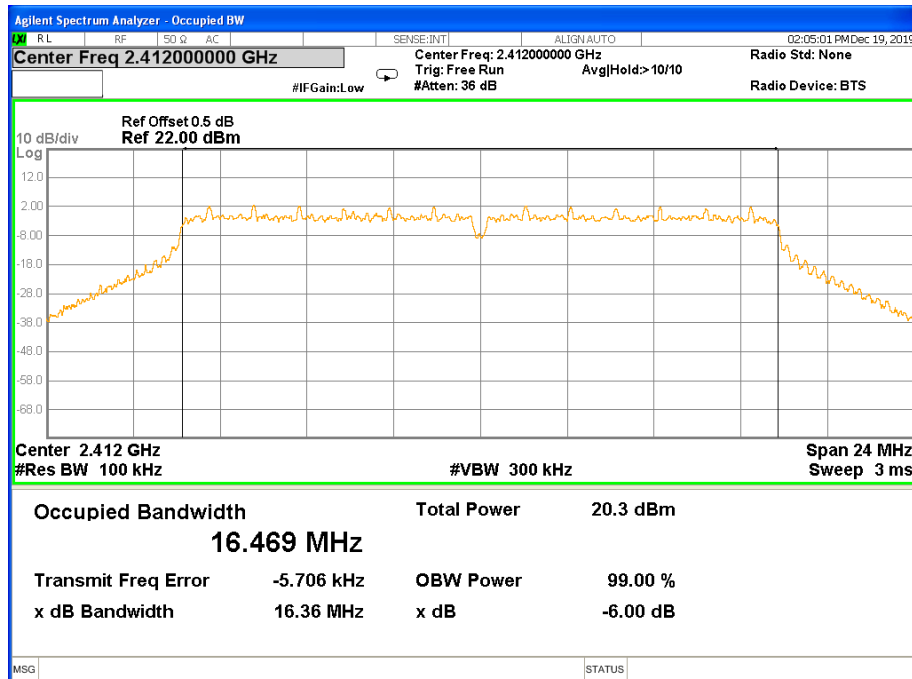


b High channel

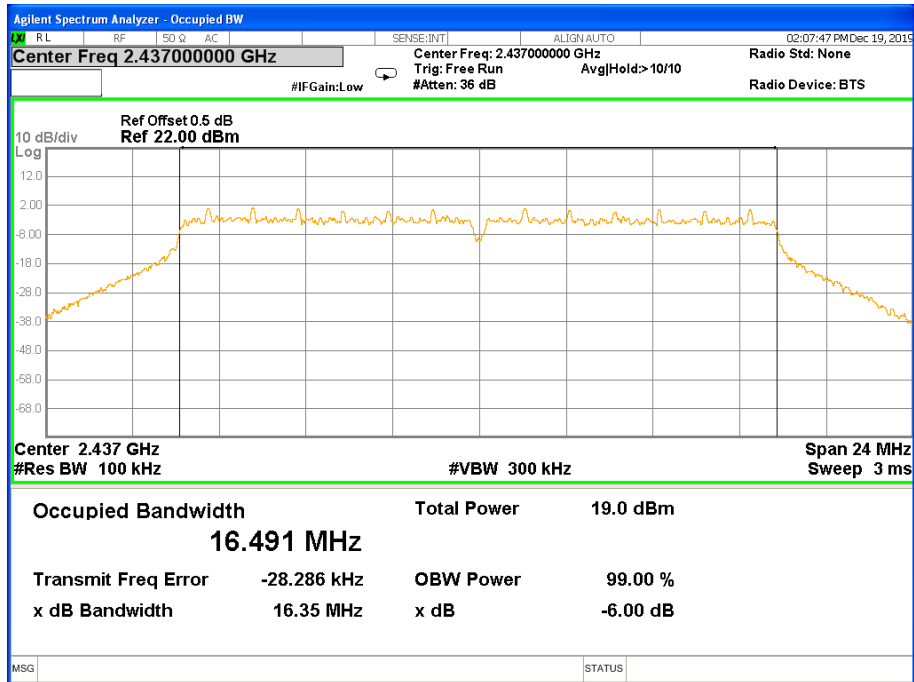


Frequency	6dB Bandwidth	Limit	Result
	(MHz)	(KHz)	
2412 MHz	16.36	≥500KHz	PASS
2437 MHz	16.35	≥500KHz	PASS
2462 MHz	16.36	≥500KHz	PASS

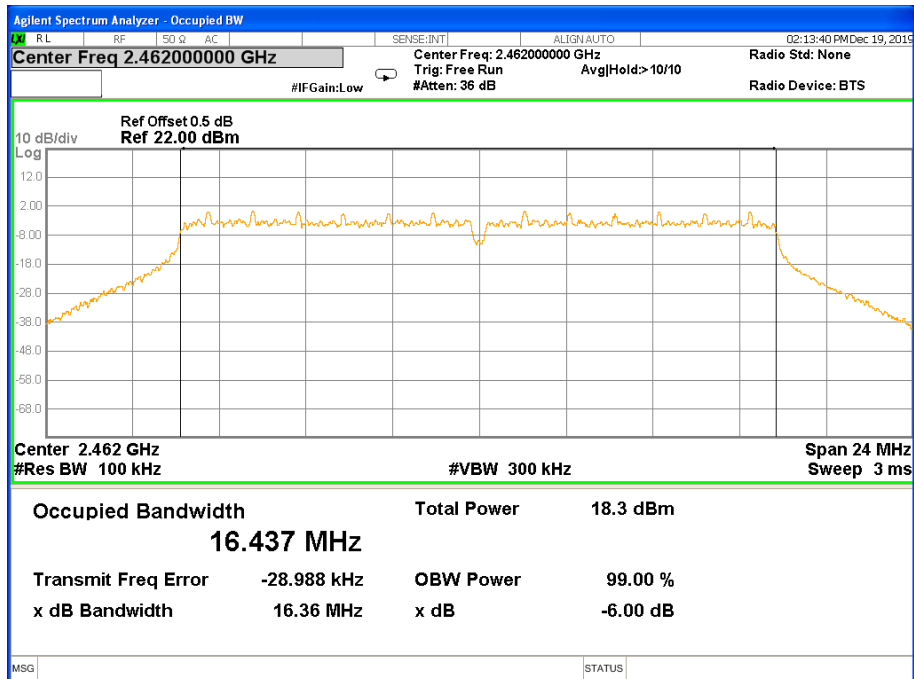
g Low channel



g Mid channel

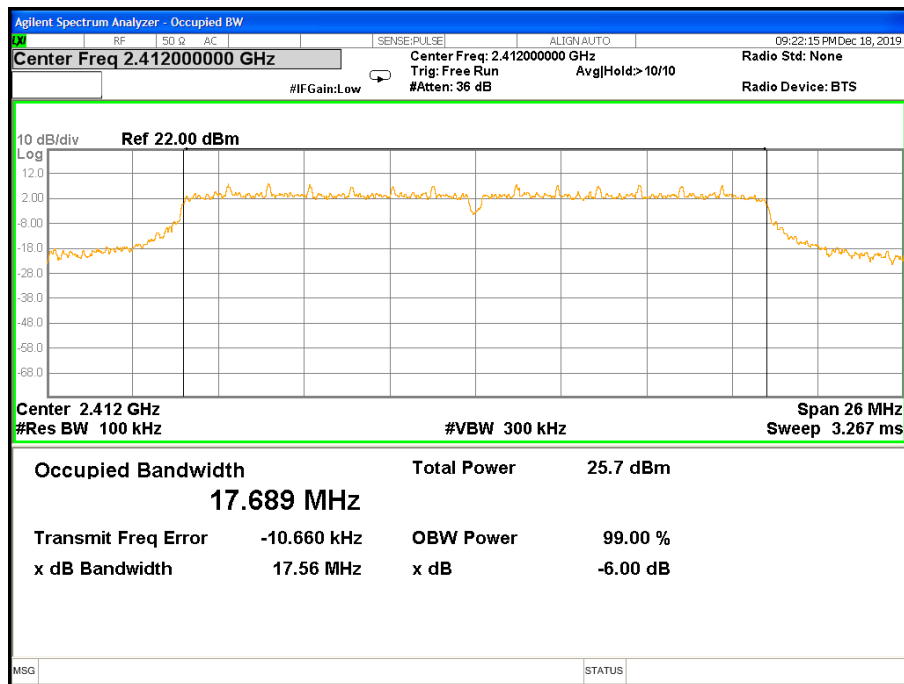


g High channel

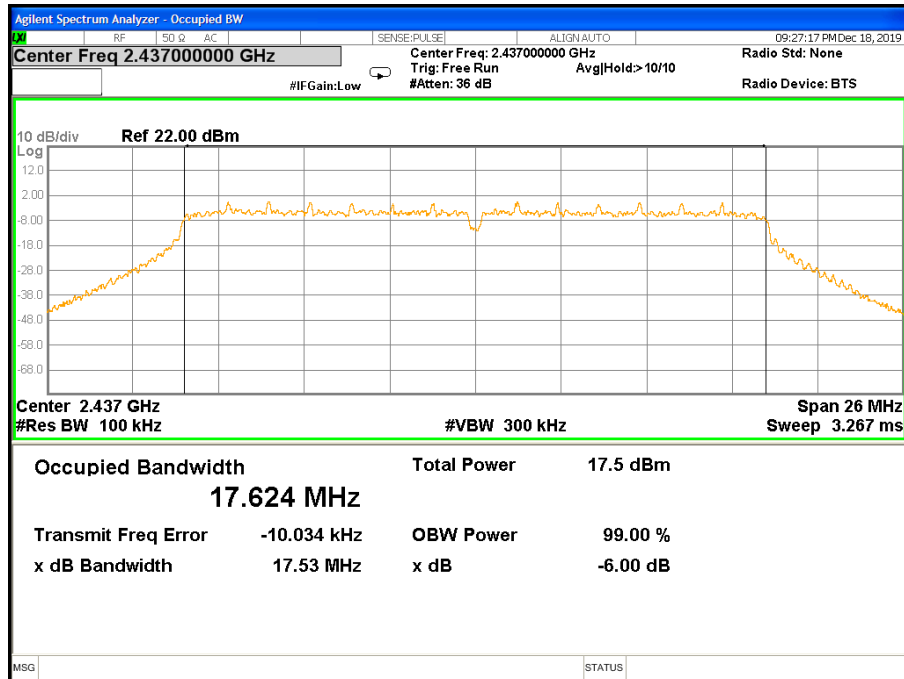


Frequency	6dB Bandwidth	Limit	Result
	(MHz)	(KHz)	
2412 MHz	17.56	≥500KHz	PASS
2437 MHz	17.53	≥500KHz	PASS
2462 MHz	17.32	≥500KHz	PASS

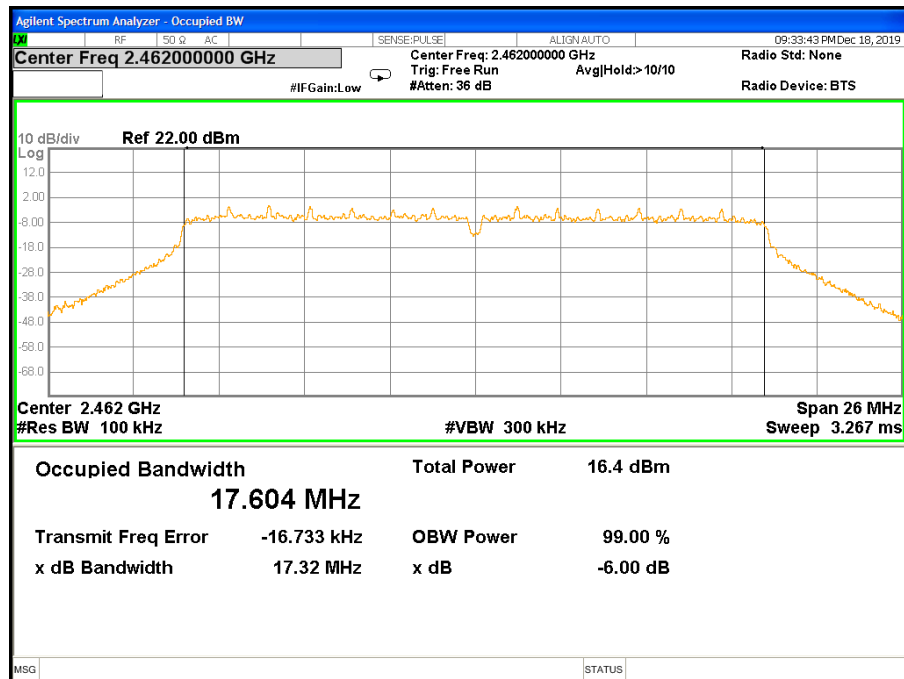
N20 Low channel



N20 Mid channel

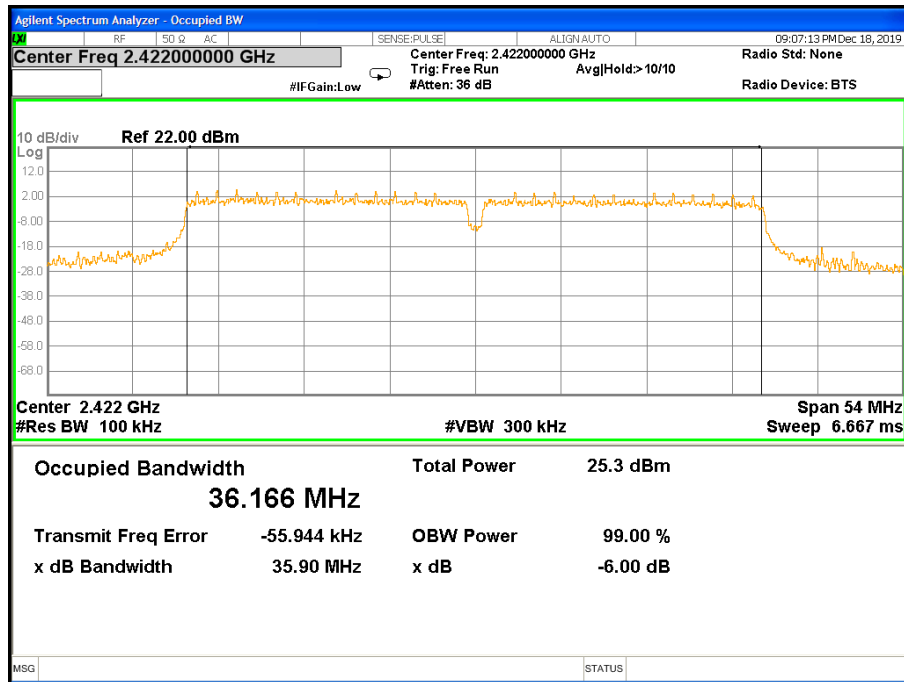


N20 High channel

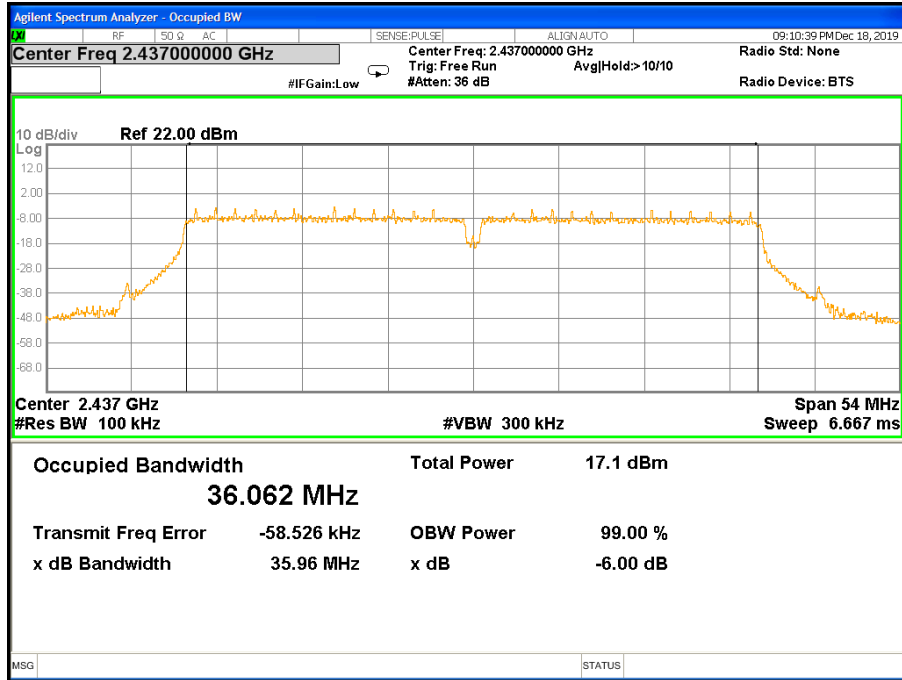


Frequency	6dB Bandwidth	Limit	Result
	(MHz)	(KHz)	
2422 MHz	35.90	≥500KHz	PASS
2437 MHz	35.96	≥500KHz	PASS
2452 MHz	35.77	≥500KHz	PASS

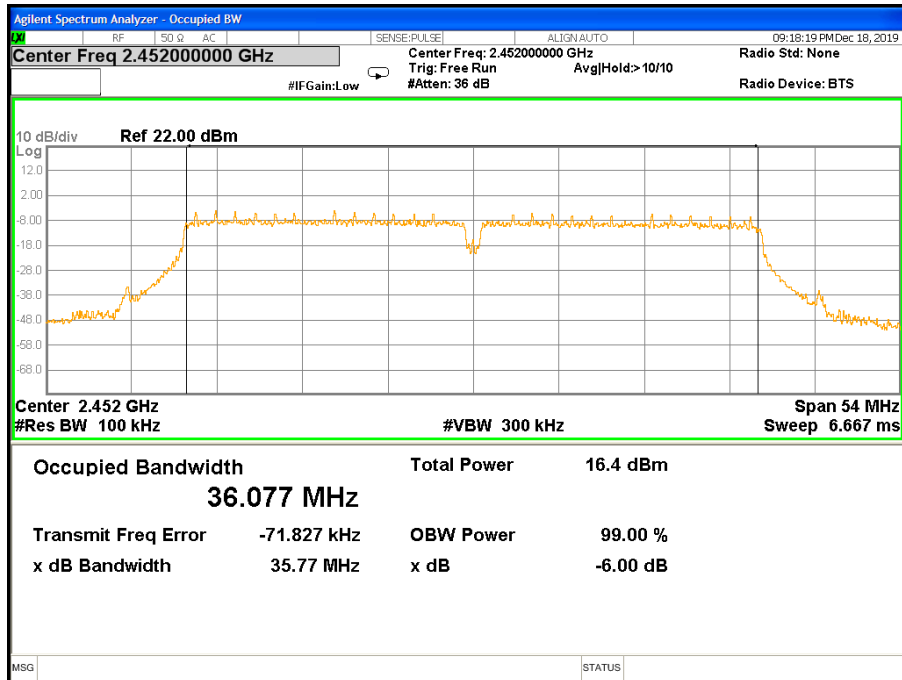
N40 Low channel



N40 Mid channel



N40 High channel



5. POWER DENSITY

5.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
4.10.1.6(2)	Power density	8dBm	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	3 kHz
VB	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 3KHz, VBW=10KHz, Sweep time = 100S, Span=300KHz.

5.1.2 TEST SETUP



5.1.3 EUT OPERATION CONDITIONS

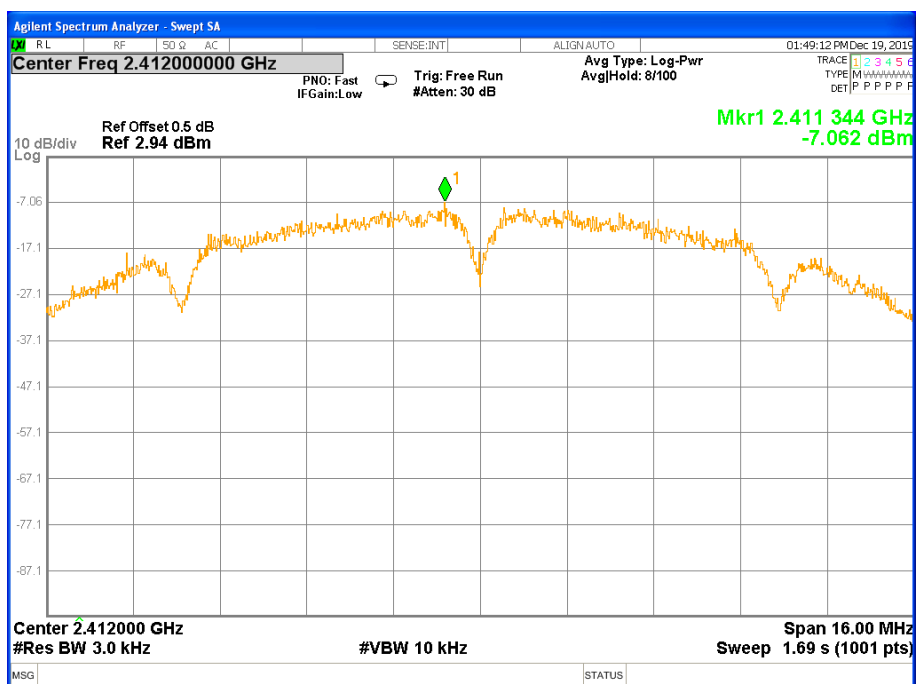
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.4 TEST RESULTS

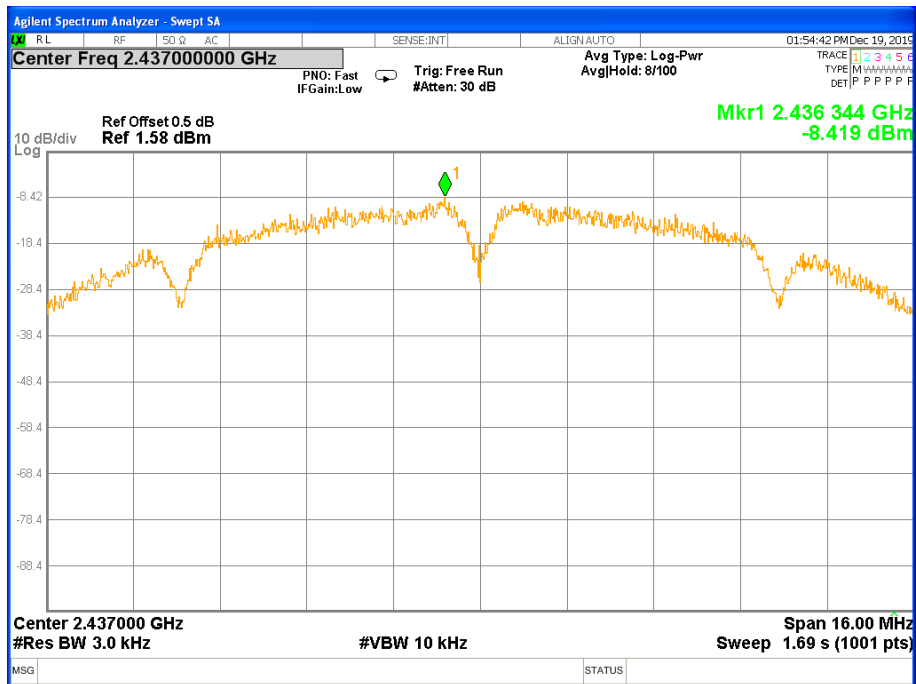
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Voltage :	AC 110V/60Hz
Test Date :	2019-12-19		

Mod.	Frequency	Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
b	2412 MHz	-7.062	≤8	PASS
b	2437 MHz	-8.419	≤8	PASS
b	2462 MHz	-9.43	≤8	PASS
g	2412 MHz	-11.165	≤8	PASS
g	2437 MHz	-12.741	≤8	PASS
g	2462 MHz	-12.411	≤8	PASS
N20	2412 MHz	-5.502	≤8	PASS
N20	2437 MHz	-13.355	≤8	PASS
N20	2462 MHz	-14.713	≤8	PASS
N40	2422 MHz	-9.279	≤8	PASS
N40	2437 MHz	-16.6	≤8	PASS
N40	2452 MHz	-16.701	≤8	PASS

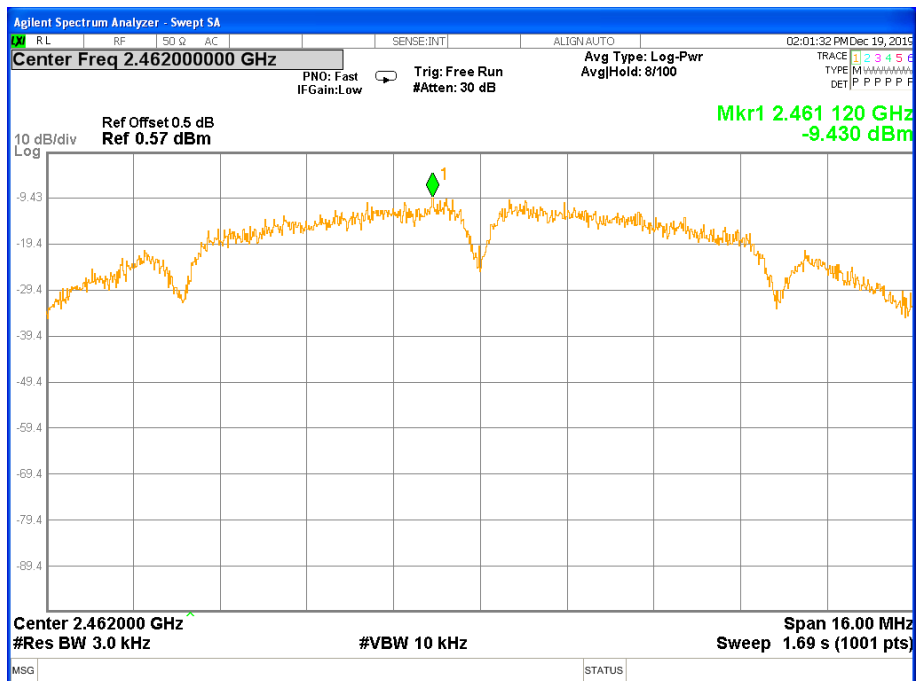
b Low channel



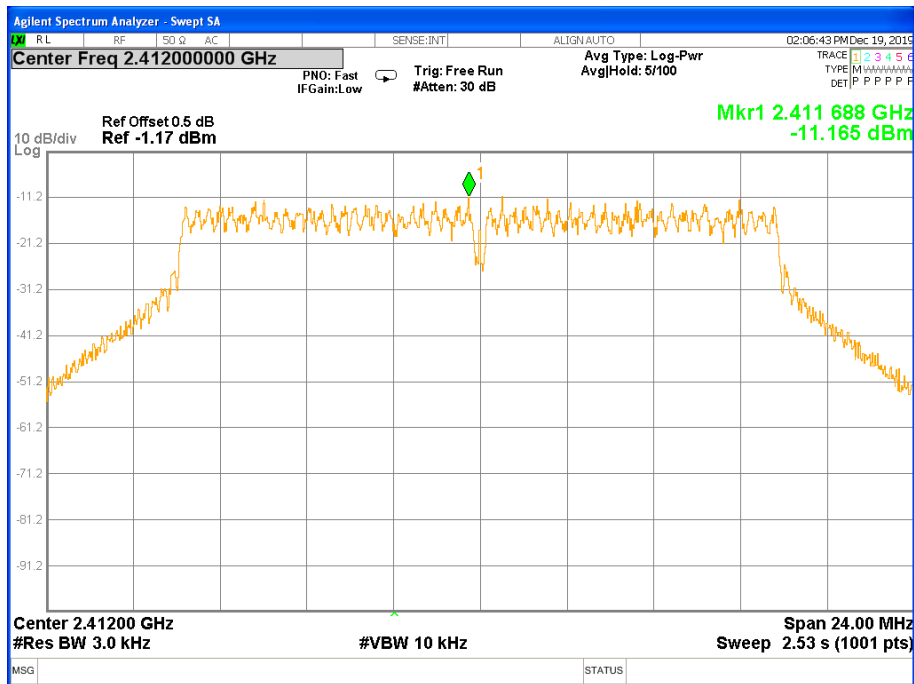
b Mid channel



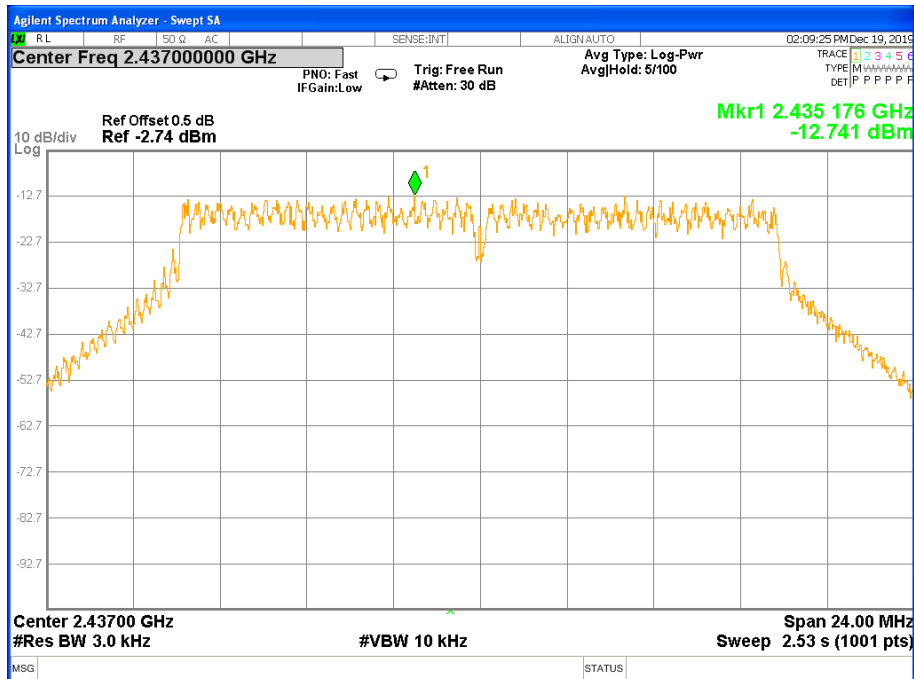
b High channel



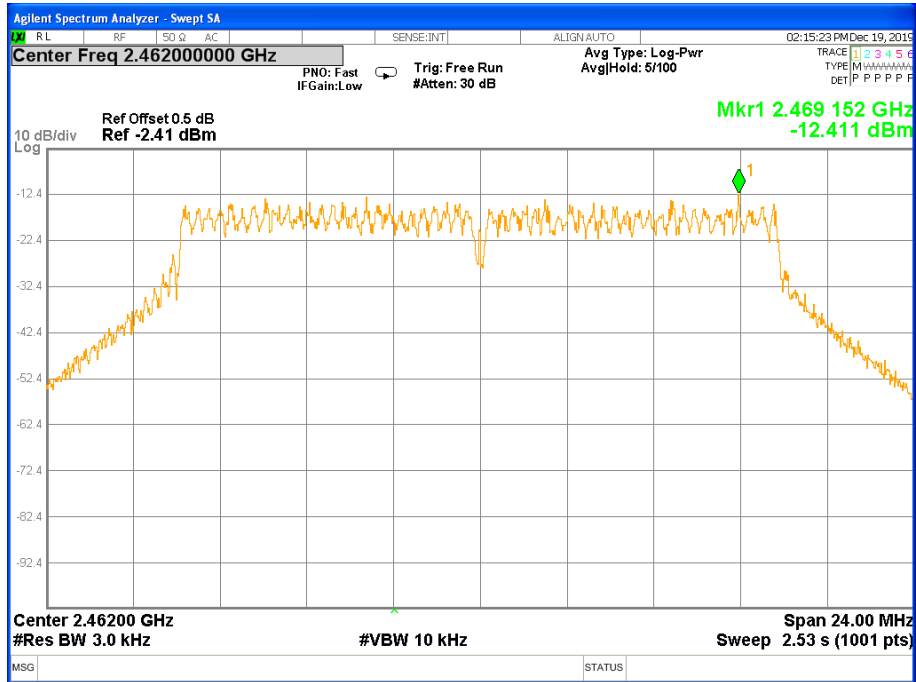
g Low channel



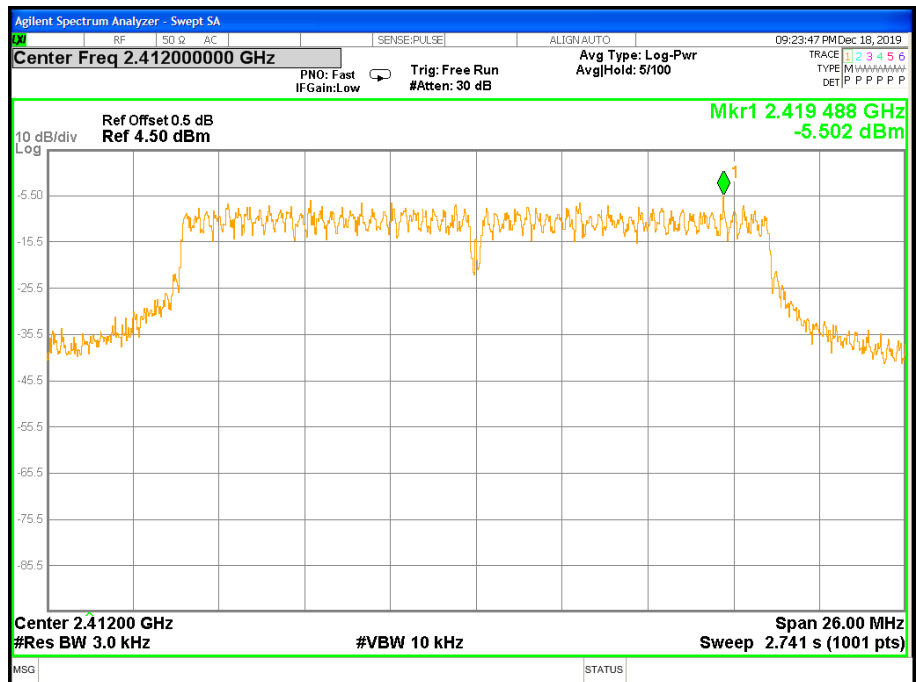
g Mid channel



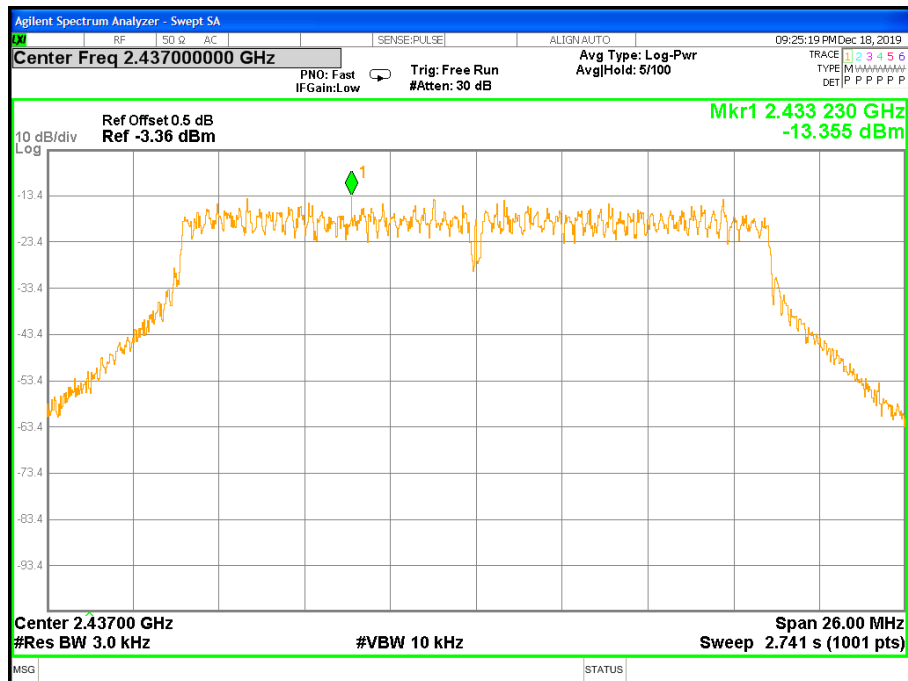
g High channel



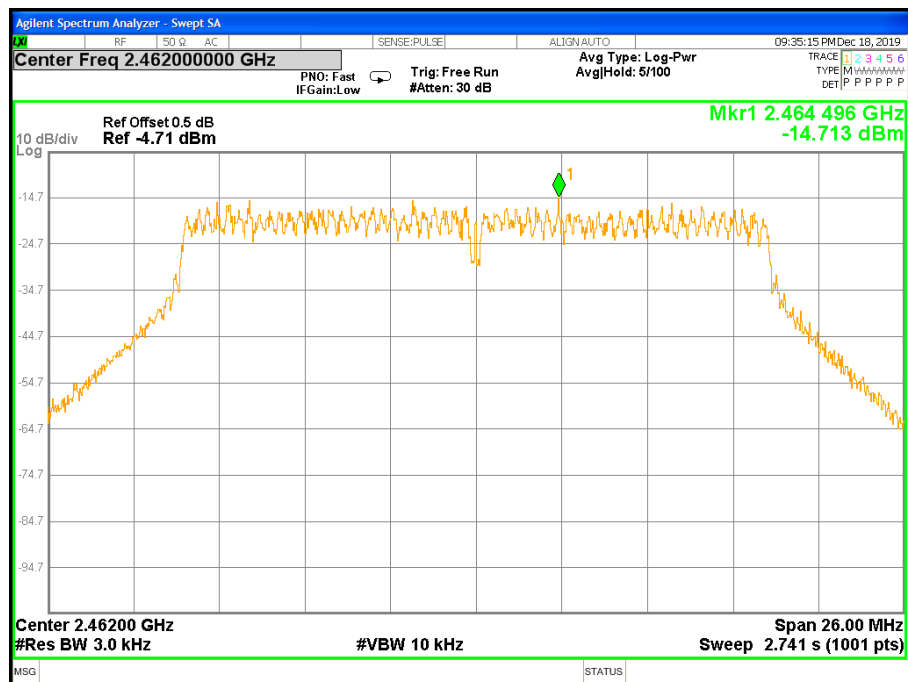
N20 Low channel



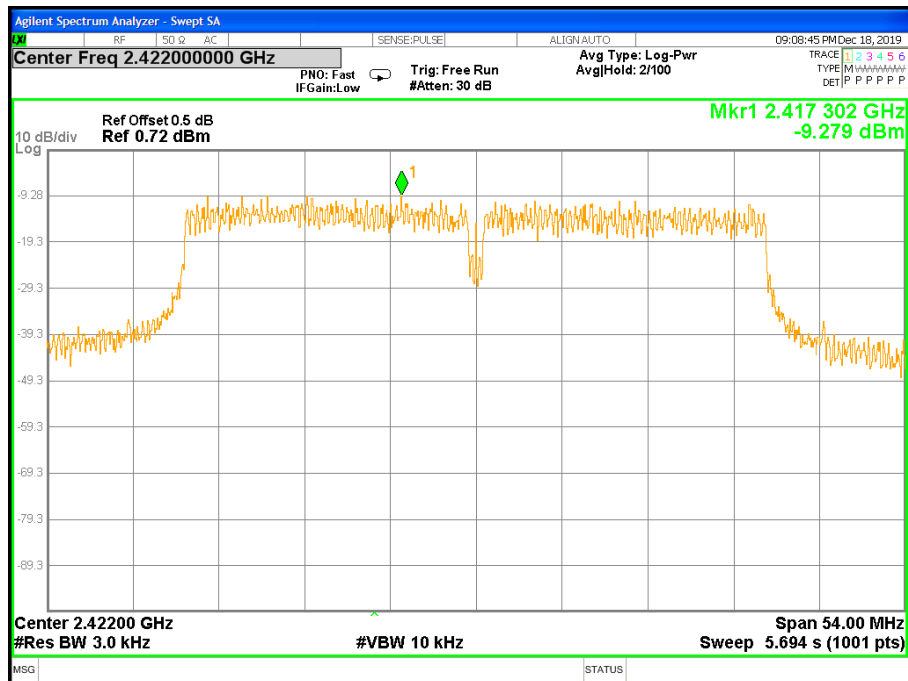
N20 Mid channel



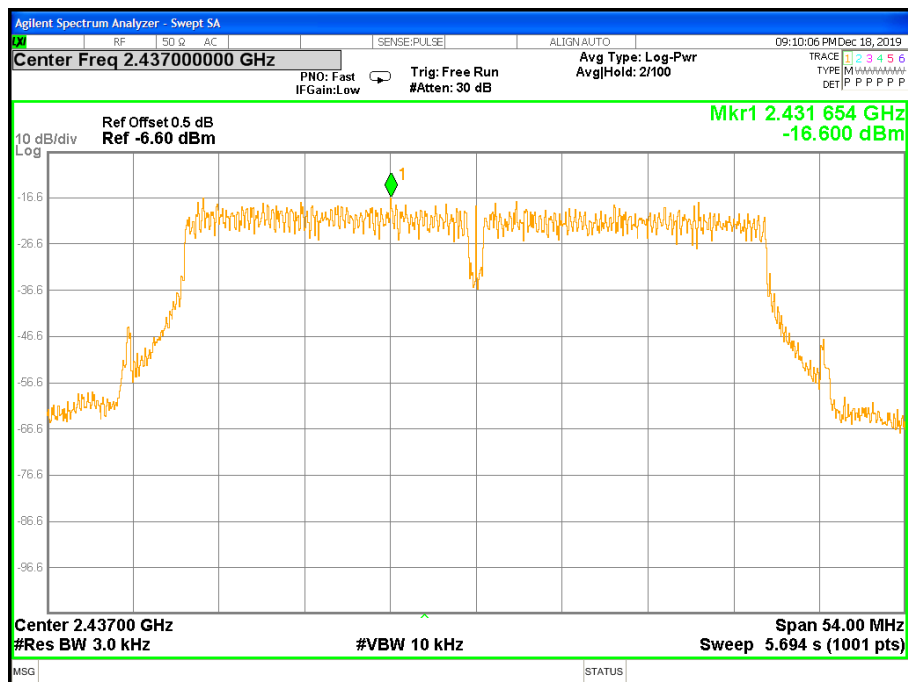
N20 High channel



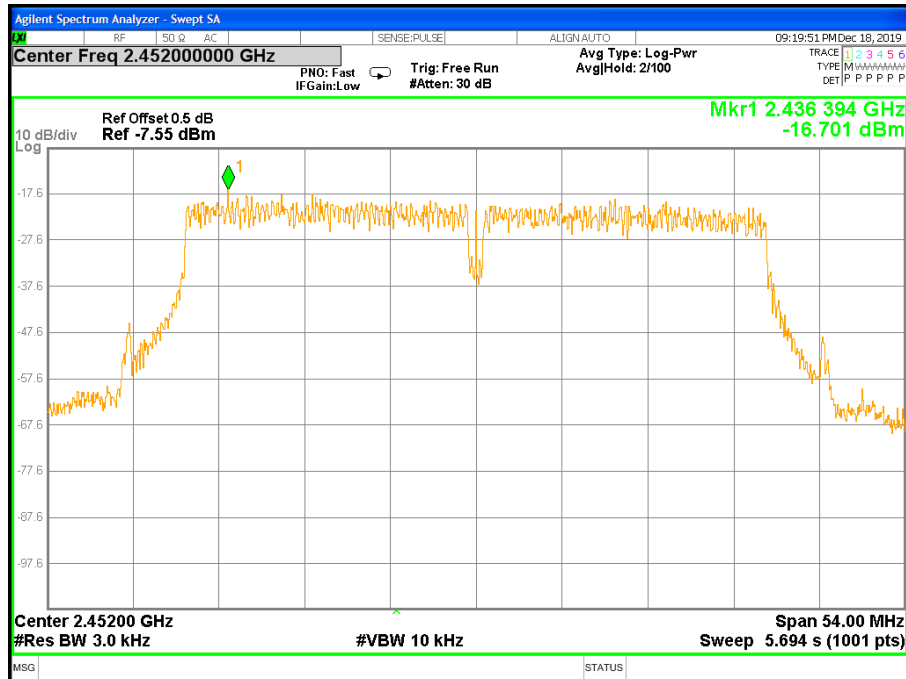
N40 Low channel



N40 Mid channel



N40 High channel



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
4.10.1.2	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

6.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 1MHz, VBW= 3MHz, Sweep time = Auto.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Voltage :	AC 110V/60Hz
Test Mode :	802.11b/g/n20/n40	Test Date :	2019-12-18

Mode	Test Channe	Frequency	Peak Conducted Output Power	LIMIT
		(MHz)	(dBm)	dBm
TX 802.11b	CH01	2412	17.68	30
	CH06	2437	17.18	30
	CH11	2462	16.43	30
TX 802.11g	CH01	2412	23.27	30
	CH06	2437	22.34	30
	CH11	2462	21.60	30
TX 802.11n20	CH01	2412	21.35	30
	CH06	2437	20.57	30
	CH11	2462	20.55	30
TX 802.11n40	CH03	2422	20.52	30
	CH06	2437	20.07	30
	CH09	2452	19.80	30

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in Section 3.6.

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

The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	100 KHz /100 KHz for Peak

7.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

7.1.2 TEST SETUP



7.1.3 EUT OPERATION CONDITIONS

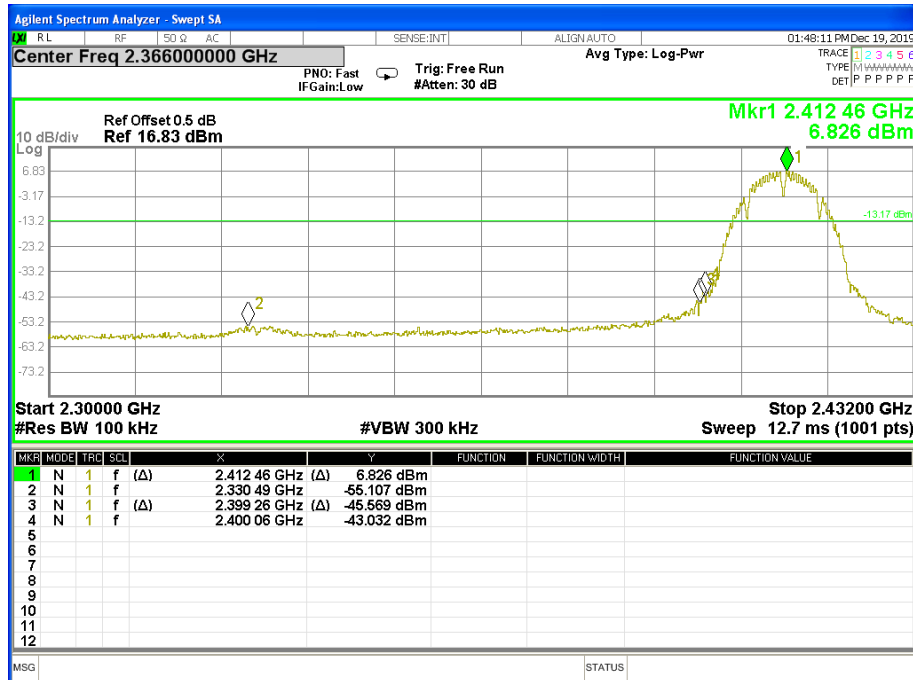
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.4 TEST RESULTS

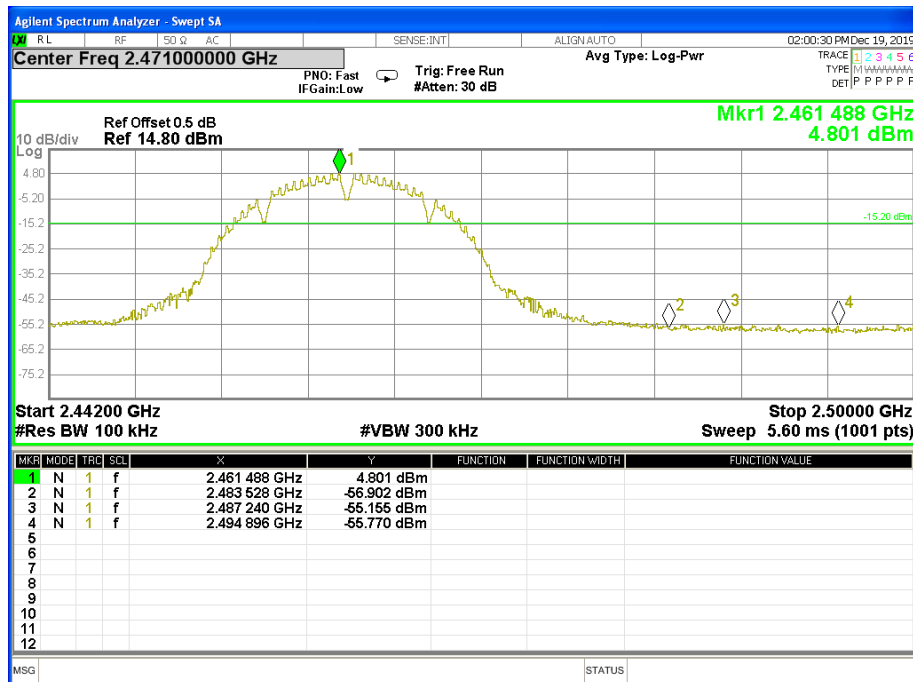
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Voltage :	AC 110V/60Hz
Test Mode :	CH01/ CH11 (802.11b)	Test Date :	2019-12-19

in any 100kHz bandwidth outside the low frequency band	in any 100 kHz bandwidth outside the high frequency band
Pass	Pass
Result	
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.	

CH01 (Lower)



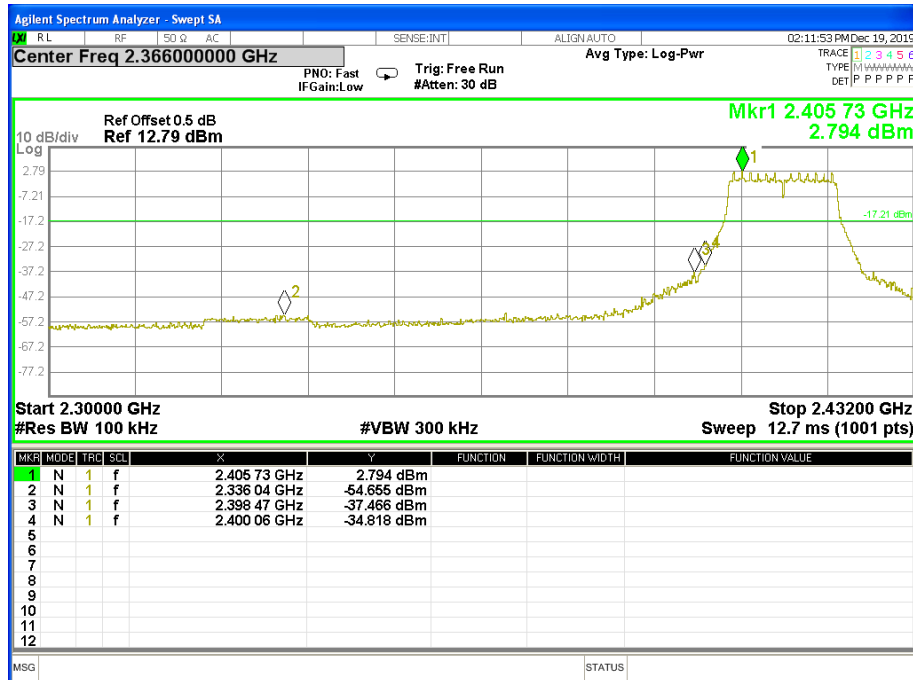
CH 11(Upper)



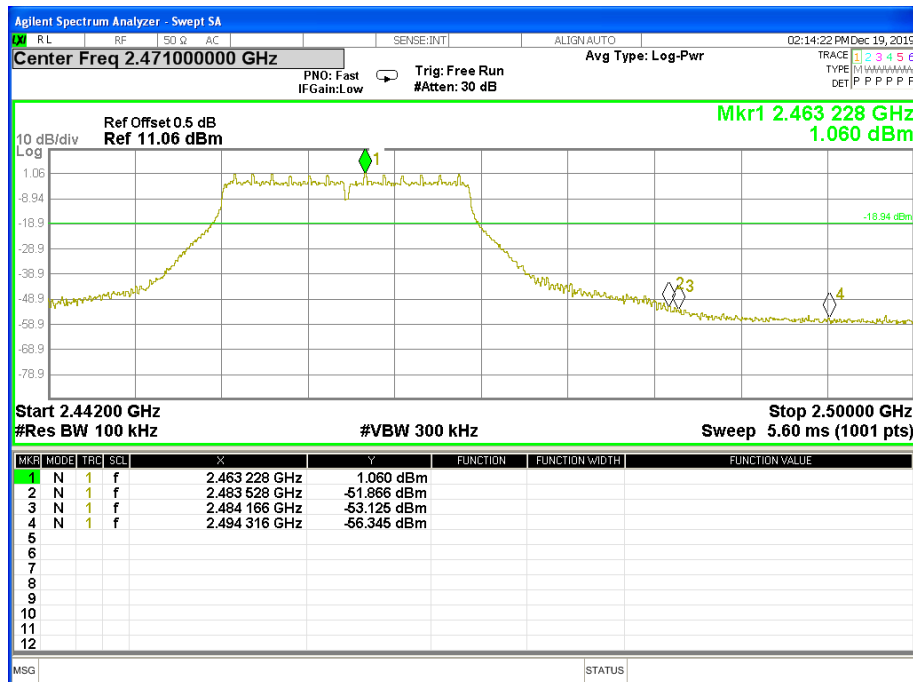
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Voltage :	AC 110V/60Hz
Test Mode :	CH01/ CH11 (802.11g)	Test Date :	2019-12-19

in any 100kHz bandwidth outside the low frequency band	in any 100 kHz bandwidth outside the high frequency band
Pass	Pass
Result	
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.	

CH01 (Lower)



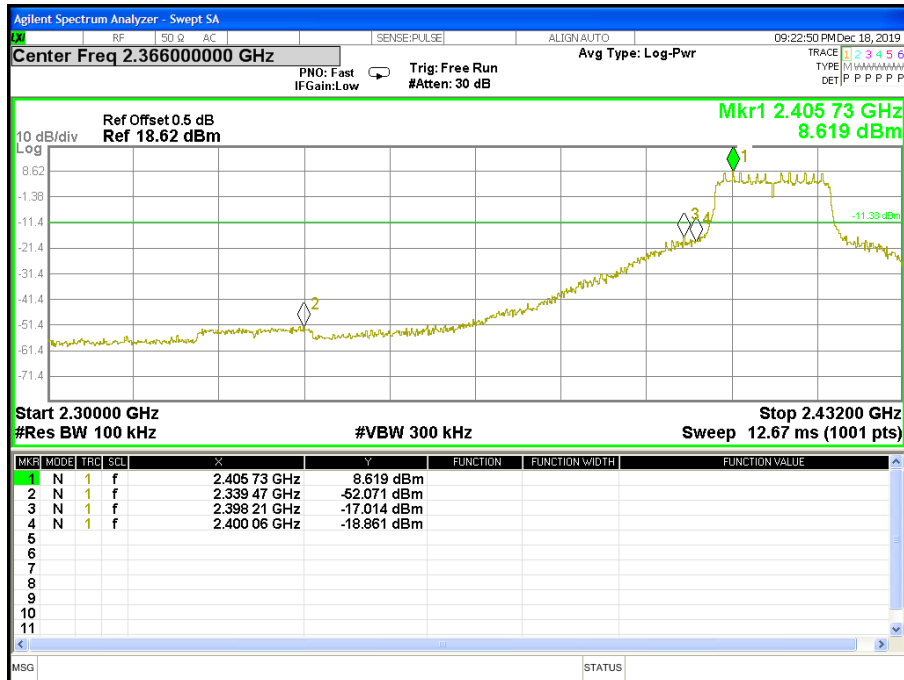
CH 11(Upper)



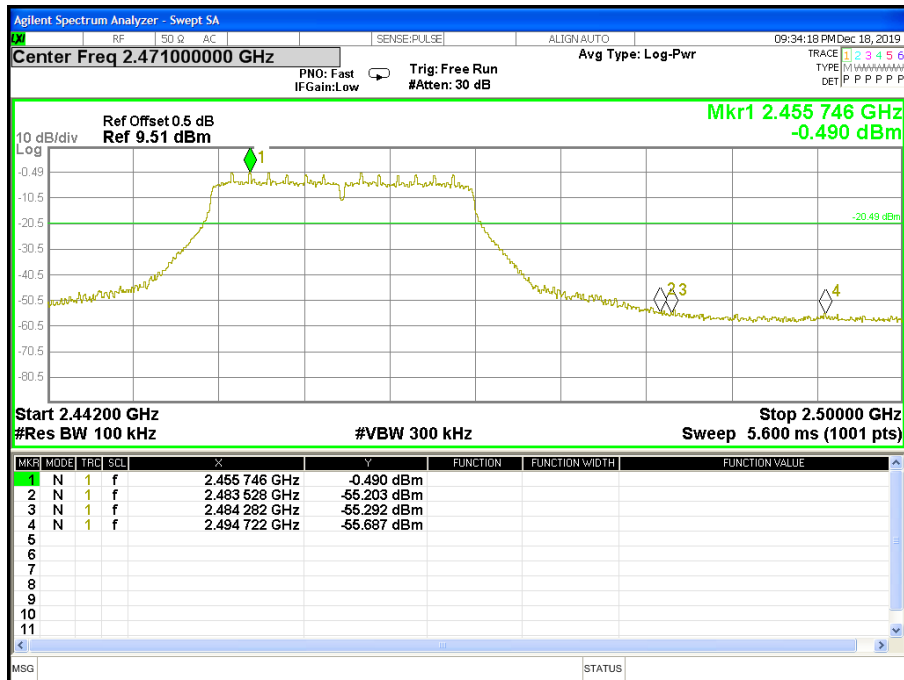
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Voltage :	AC 110V/60Hz
Test Mode :	CH01/ CH11 (802.11n20)	Test Date :	2019-12-18

in any 100kHz bandwidth outside the low frequency band	in any 100 kHz bandwidth outside the high frequency band
Pass	Pass
Result	
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.	

CH01 (Lower)



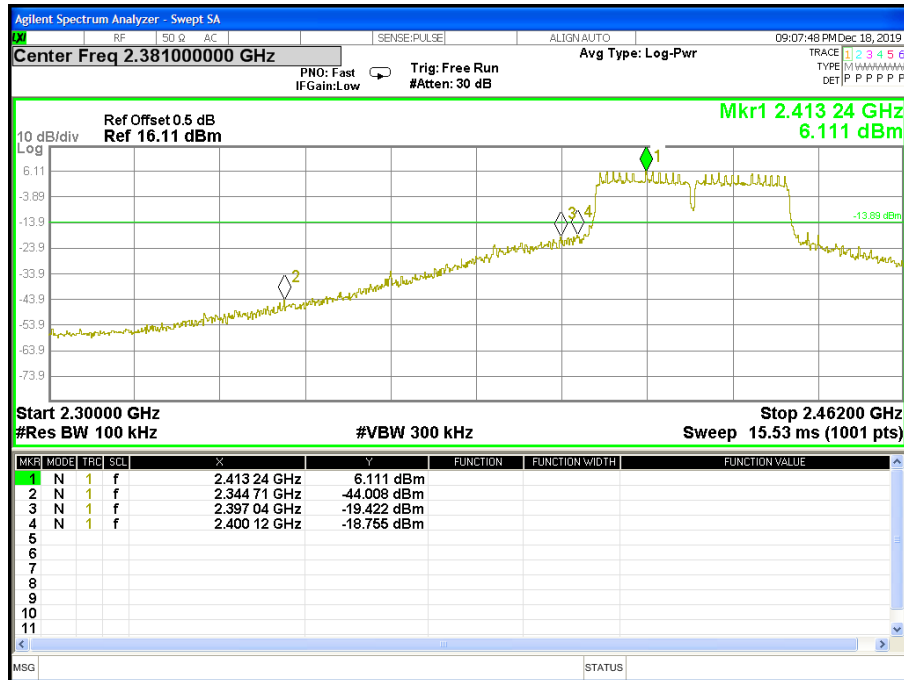
CH 11(Upper)



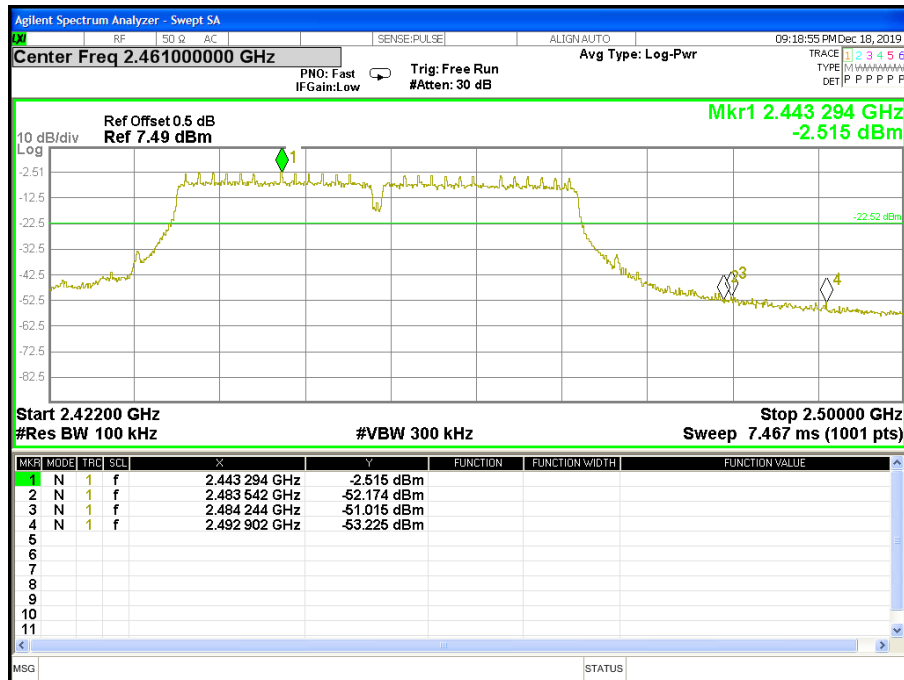
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1010 hPa	Test Voltage :	AC 110V/60Hz
Test Mode :	CH03/ CH09 (802.11n40)	Test Date :	2019-12-18

in any 100kHz bandwidth outside the low frequency band	in any 100 kHz bandwidth outside the high frequency band
Pass	Pass
Result	
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.	

CH03 (Lower)



CH 09(Upper)



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

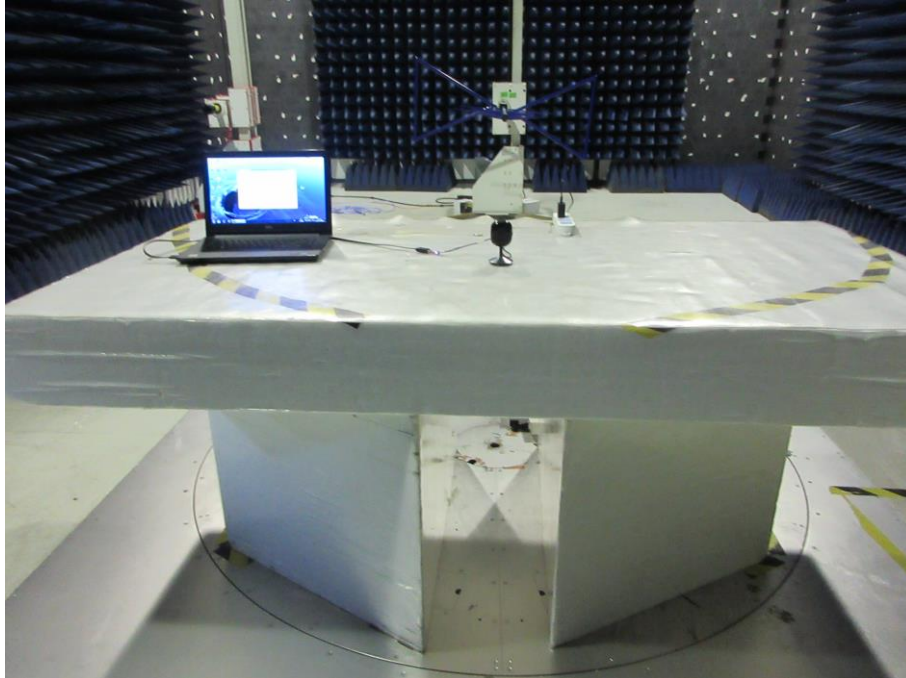
4.10.1.3 requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

8.2 EUT ANTENNA

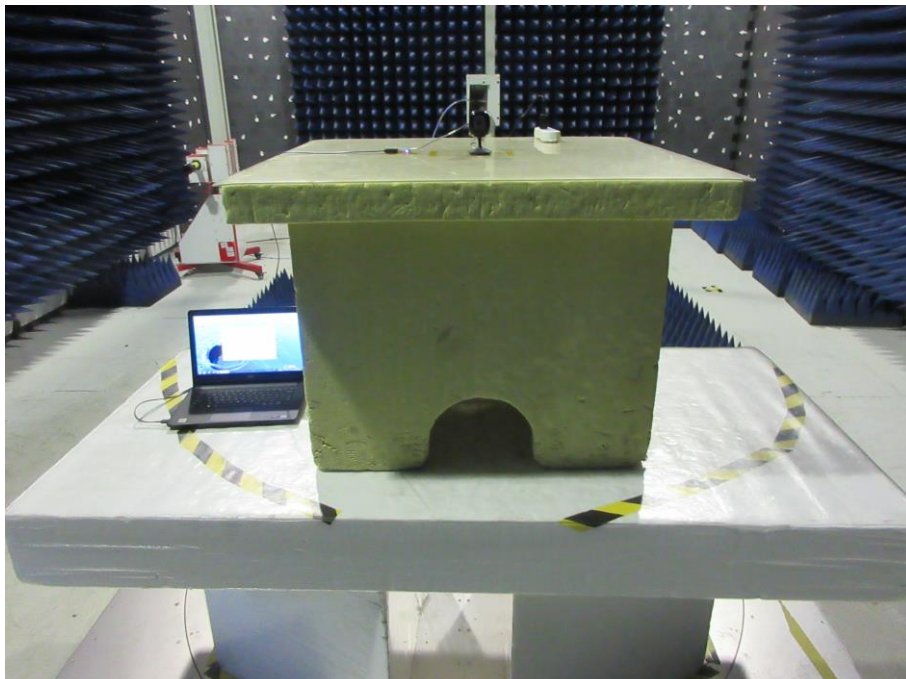
The antenna is Ceramic patch antenna and no consideration of replacement. Antenna max gain is 2dBi from 2.4GHz to 2.5GHz.

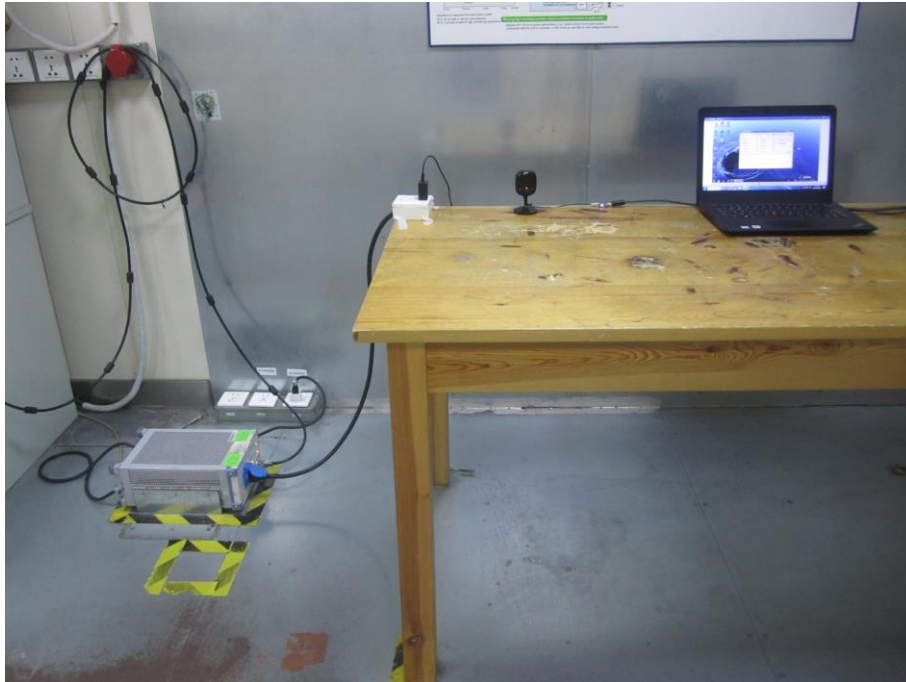
9. EUT TEST PHOTO

**Radiated Measurement Photos
30MHz-1GHz**



**Radiated Measurement Photos
Above 1GHz**



Conducted Measurement Photos

*** *End of Report****