

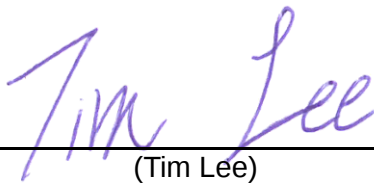
FCC Radio Test Report

FCC ID: T58N2R

Project No. : 1907T039
Equipment : AC1200 Wireless Dual Band Gigabit Router
Test Model : N2
Series Model : N2U
Applicant : NETIS SYSTEMS CO., LTD
Address : Floor 8, Building B, TongFang Information Harbor,
No.11 Langshan Road, Nanshan District, Shenzhen,
China.

Date of Receipt : 2019/7/4
Date of Test : 2019/7/4 ~ 2019/9/4
Issued Date : 2019/11/13
Tested by : BTL Inc.

Testing Engineer :


(Tim Lee)

Technical Manager :


(Pike Lee)

Authorized Signatory :


(Andy Chiu)

B T L I N C .

No.18, Ln. 171, Sec. 2, Jiuzong Rd.,
Neihu Dist., Taipei City 114, Taiwan
TEL: +886-2-2657-3299 FAX: +886-2-2657-3331



Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

CONTENTS

REPORT ISSUED HISTORY	5
1 CERTIFICATION	6
2 SUMMARY OF TEST RESULTS	7
2.1 TEST FACILITY	8
2.2 MEASUREMENT UNCERTAINTY	8
3 GENERAL INFORMATION	10
3.1 DESCRIPTION OF EUT	10
3.2 TEST MODES	12
3.3 PARAMETERS OF TEST SOFTWARE	13
3.4 DUTY CYCLE	14
3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	15
3.6 SUPPORT UNITS	16
4 AC POWER LINE CONDUCTED EMISSIONS TEST	17
4.1 LIMIT	17
4.2 TEST PROCEDURE	17
4.3 DEVIATION FROM TEST STANDARD	17
4.4 TEST SETUP	18
4.5 EUT OPERATING CONDITIONS	18
4.6 TEST RESULT	18
5 RADIATED EMISSIONS TEST	19
5.1 LIMIT	19
5.2 TEST PROCEDURE	20
5.3 DEVIATION FROM TEST STANDARD	20
5.4 TEST SETUP	21
5.5 EUT OPERATING CONDITIONS	22
5.6 TEST RESULT – 9 KHZ TO 30 MHZ	22
5.7 TEST RESULT – 30MHZ TO 1000 MHZ	22
5.8 TEST RESULT – ABOVE 1000 MHZ	23
6 BANDWIDTH TEST	24
6.1 LIMIT	24
6.2 TEST PROCEDURE	24
6.3 DEVIATION FROM TEST STANDARD	24
6.4 TEST SETUP	24
6.5 EUT OPERATING CONDITIONS	24
6.6 TEST RESULT	24
7 PEAK OUTPUT POWER TEST	25
7.1 LIMIT	25
7.2 TEST PROCEDURE	25
7.3 DEVIATION FROM TEST STANDARD	25
7.4 TEST SETUP	25
7.5 EUT OPERATING CONDITIONS	25

7.6	TEST RESULT	25
8	ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST	26
8.1	LIMIT	26
8.2	TEST PROCEDURE	26
8.3	DEVIATION FROM TEST STANDARD	26
8.4	TEST SETUP	26
8.5	EUT OPERATING CONDITIONS	26
8.6	TEST RESULT	26
9	POWER SPECTRAL DENSITY	27
9.1	LIMIT	27
9.2	TEST PROCEDURE	27
9.3	DEVIATION FROM TEST STANDARD	27
9.4	TEST SETUP	27
9.5	EUT OPERATING CONDITIONS	27
9.6	TEST RESULT	27
10	LIST OF MEASURING EQUIPMENTS	28
11	EUT TEST PHOTO	29
APPENDIX A	AC POWER LINE CONDUCTED EMISSIONS	33
APPENDIX B	RADIATED EMISSIONS - 9 KHZ TO 30 MHZ	38
APPENDIX C	RADIATED EMISSIONS - 30 MHZ TO 1000 MHZ	43
APPENDIX D	RADIATED EMISSIONS - ABOVE 1000 MHZ	46
APPENDIX E	BANDWIDTH	79
APPENDIX F	PEAK OUTPUT POWER	84
APPENDIX G	ANTENNA CONDUCTED SPURIOUS EMISSIONS	89
APPENDIX H	POWER SPECTRAL DENSITY	96

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	2019/9/20
R01	Revised Typo.	2019/9/20
R02	Added model name.	2019/10/15
R03	Change address.	2019/11/13

1 CERTIFICATION

Equipment : AC1200 Wireless Dual Band Gigabit Router
Brand Name : 
Test Model : N2
Series Model : N2U
Applicant : NETIS SYSTEMS CO., LTD
Manufacturer : NETIS SYSTEMS CO., LTD
Address : Floor 8, Building B, TongFang Information Harbor, No.11 Langshan Road,
Nanshan District, Shenzhen, China.
Date of Test : 2019/7/4 ~ 2019/9/4
Test Sample : Engineering Sample
Standard(s) : FCC Part15, Subpart C (15.247)
ANSI C63.10-2013

The above equipment has been tested and found in compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1907T039) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

Test results included in this report is only for the WLAN 2.4 GHz part.

2 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

FCC Part15, Subpart C (15.247)				
FCC Clause No	Description	Test Result	Judgement	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	Pass	-----
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	Pass	-----
15.247(a)	Bandwidth	APPENDIX E	Pass	-----
15.247(b)	Peak Output Power	APPENDIX F	Pass	-----
15.247(d)	Antenna Conducted Spurious Emissions	APPENDIX G	Pass	-----
15.247(e)	Power Spectral Density	APPENDIX H	Pass	-----
15.203	Antenna Requirement	-----	Pass	-----

NOTE:

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

2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

- C05:** (FCC RN:674415; FCC DN:TW0659)
No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
- CB15:** (FCC RN:674415; FCC DN:TW0659)
No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
- SR06** (FCC RN:674415; FCC DN:TW0659)
No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

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

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C05	CISPR	150 kHz ~ 30MHz	3.44

B. Radiated emissions below 1 GHz test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U (dB)
CB15 (3m)	CISPR	30 MHz ~ 200 MHz	V	4.20
		30 MHz ~ 200 MHz	H	3.64
		200 MHz ~ 1,000 MHz	V	4.56
		200 MHz ~ 1,000 MHz	H	3.90

C. Radiated emissions above 1 GHz test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U (dB)
CB15 (3m)	CISPR	1 GHz ~ 6 GHz	V	4.46
		1 GHz ~ 6 GHz	H	4.40
		6 GHz ~18 GHz	V	3.88
		6 GHz ~18 GHz	H	4.00

Test Site	Method	Measurement Frequency Range	U (dB)
CB15 (1m)	CISPR	18 GHz ~ 26.5 GHz	4.62
		26.5 GHz ~ 40 GHz	5.12

D. Conducted tests:

Item	Method	U
Bandwidth	ANSI	3.8 %
Output Power	ANSI	0.95 dB
Power Spectral Density	ANSI	0.86 dB
Conducted Spurious Emissions	ANSI	2.71 dB

NOTE:

Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR} , as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz : 5.2 dB

3 GENERAL INFORMATION

3.1 DESCRIPTION OF EUT

Equipment	AC1200 Wireless Dual Band Gigabit Router
Brand Name	
Test Model	N2
Series Model	N2U
Model Difference	Different model distribute to different area.
Power Source	DC Voltage supplied from AC/DC adapter.
Power Rating	I/P: 100-240V~50/60Hz, 0.5A O/P: 12V---1.0A
Operation Frequency	2412 MHz to 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM
Bit Rate of Transmitter	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 300 Mbps
Maximum Output Power	IEEE 802.11b: 17.60 dBm (0.0575 W) IEEE 802.11g: 27.27 dBm (0.5333 W) IEEE 802.11n (HT20): 29.33 dBm (0.8569 W) IEEE 802.11n (HT40): 29.16 dBm (0.8237 W)
Products Covered	3 * Adapter: (1) AMIGO / AMS195-1201000FB (2) AMIGO / AMS195-1201000FU (3) AMIGO / AMS195-1201000FV

NOTE:

(1) For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

(2) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		

(3) Table for Filed Antenna:

Ant.	Brand	Model	Type	Connector	Gain (dBi)
1	RF link	RF21C04434A	Dipole	IPEX	5.01
2	RF link	RF21C04435A	Dipole	IPEX	5.32

NOTE:

(a) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R). 2.4 GHz and 5GHz can't transmit simultaneously.

(b) For Power Spectral Density (CDD mode)

$$\text{Directional Gain} = 10\log [(10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20})^2 / N_{\text{ANT}}] = 8.18 \text{ dBi} > 6\text{dBi}.$$

The reduced power spectral density limits (dBm/MHz) = 8 - (8.18-6) = 5.82

(c) For Conducted Output Power (CDD mode)

For $N_{\text{ANT}} = 2 < 5$,

$$\text{Direction gain} = G_{\text{ANT}} + 0 = 5.32 + 0 = 5.32 \text{ dBi}.$$

The Direction gain is less than 6 dBi, so conducted power limits will not be reduced.

(4) Operating Mode and Antenna Configuration

Operating Mode	1 TX	2 TX
IEEE 802.11b	Ant. 1	-
IEEE 802.11g	Ant. 1	-
IEEE 802.11n (HT20)	-	Ant. 1 + Ant. 2
IEEE 802.11n (HT40)	-	Ant. 1 + Ant. 2

3.2 TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
1	TX B MODE CHANNEL 01/06/11
2	TX G MODE CHANNEL 01/06/11
3	TX N (HT20) MODE CHANNEL 01/06/11
4	TX N (HT40) MODE CHANNEL 03/06/09

Following mode(s) as (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Test Mode	Description
4	TX N (HT40) MODE

Radiated emissions test for Bandedge	
Test Mode	Description
1	TX B MODE CHANNEL 01/11
2	TX G MODE CHANNEL 01/11
3	TX N (HT20) MODE CHANNEL 01/11
4	TX N (HT40) MODE CHANNEL 03/09

Radiated emissions test for Harmonic	
Test Mode	Description
1	TX B MODE CHANNEL 01/06/11
2	TX G MODE CHANNEL 01/06/11
3	TX N (HT20) MODE CHANNEL 01/06/11
4	TX N (HT40) MODE CHANNEL 03/06/09

Conducted test	
Test Mode	Description
1	TX B MODE CHANNEL 01/06/11
2	TX G MODE CHANNEL 01/06/11
3	TX N (HT20) MODE CHANNEL 01/06/11
4	TX N (HT40) MODE CHANNEL 03/06/09

NOTE:

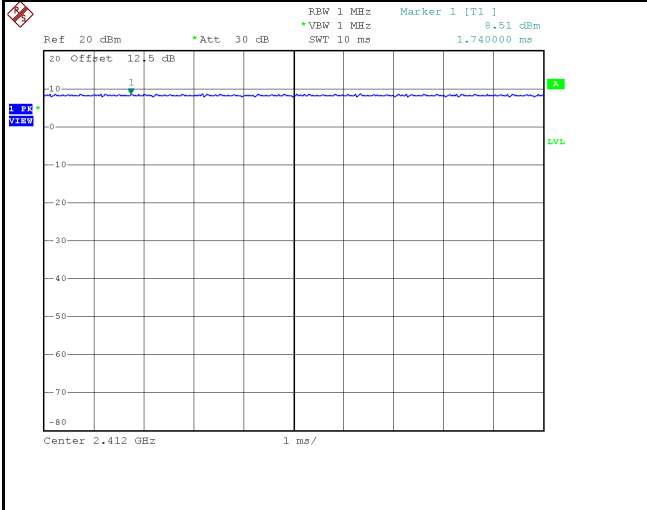
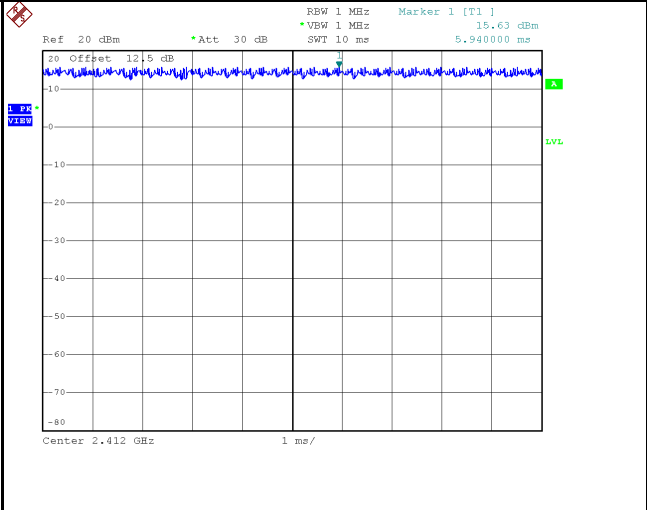
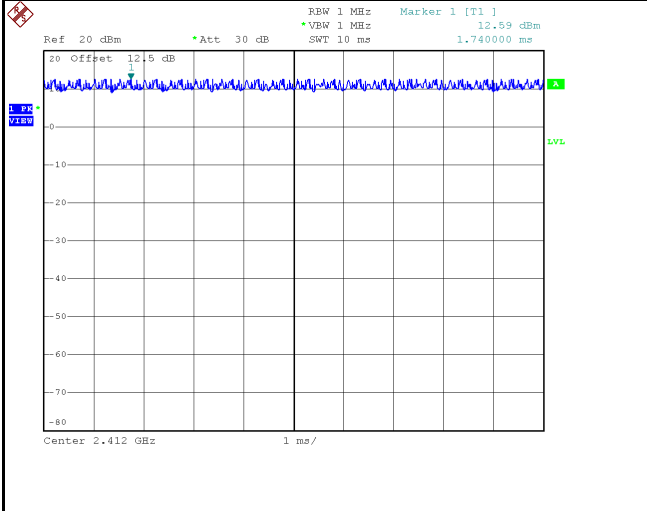
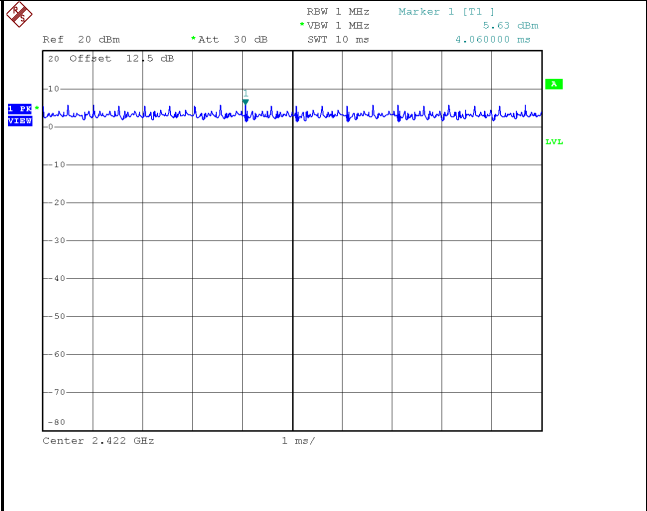
- (1) The measurements are performed at the low, middle and high available channels.
- (2) For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated emission below 1 GHz test, the IEEE 802.11n (HT40) was found to be the worst case and recorded.

3.3 PARAMETERS OF TEST SOFTWARE

Test Software	MP_TEST(v1.3.8.0)			
Mode	2412 MHz	2437 MHz	2462 MHz	Data Rate
IEEE 802.11b	75	73	72	1 Mbps
IEEE 802.11g	108	108	83	6 Mbps
IEEE 802.11n (HT20)	91/104	114/114	83/83	MCS 0
Mode	2422 MHz	2437 MHz	2452 MHz	Data Rate
IEEE 802.11n (HT40)	88/102	109/114	88/88	MCS 0

3.4 DUTY CYCLE

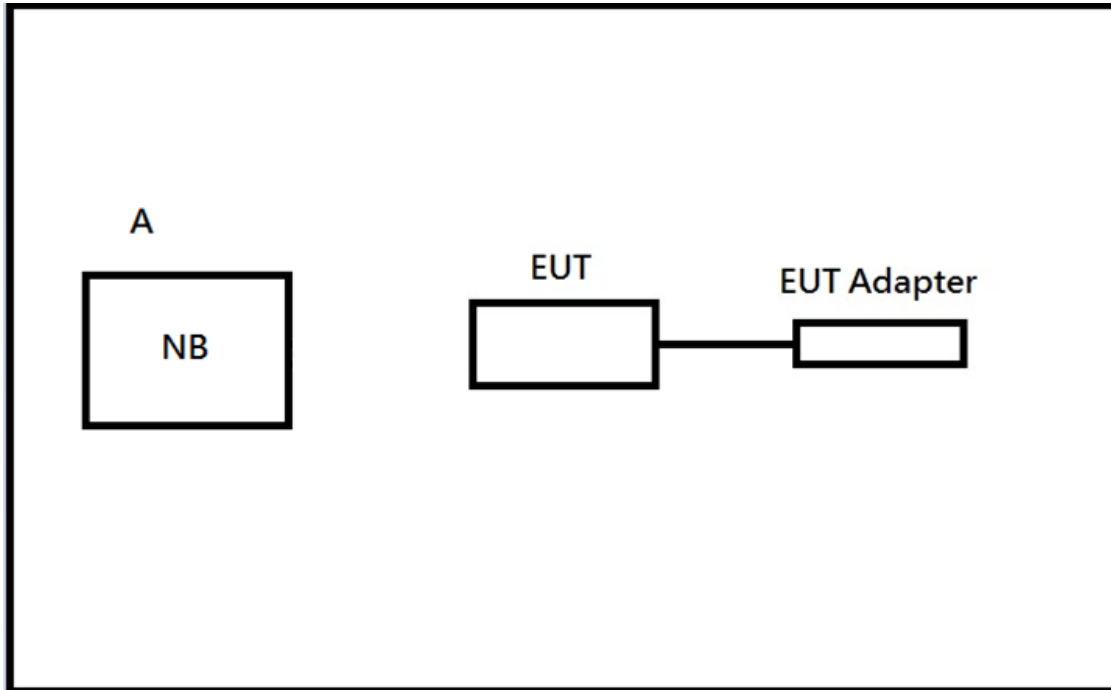
If duty cycle is $\geq 98\%$, duty factor is not required.
If duty cycle is $< 98\%$, duty factor shall be considered.

IEEE 802.11b  Date: 5.AUG.2019 14:51:06	IEEE 802.11g  Date: 5.AUG.2019 14:53:24
Duty cycle = 100 % Duty Factor = $10 * \log(1 / 1) = 0$	Duty cycle = 100 % Duty Factor = $10 * \log(1 / 1) = 0$
IEEE 802.11n (HT20)  Date: 5.AUG.2019 14:54:34	IEEE 802.11n (HT40)  Date: 5.AUG.2019 14:55:36
Duty cycle = 100 % Duty Factor = $10 * \log(1 / 1) = 0$	Duty cycle = 100 % Duty Factor = $10 * \log(1 / 1) = 0$

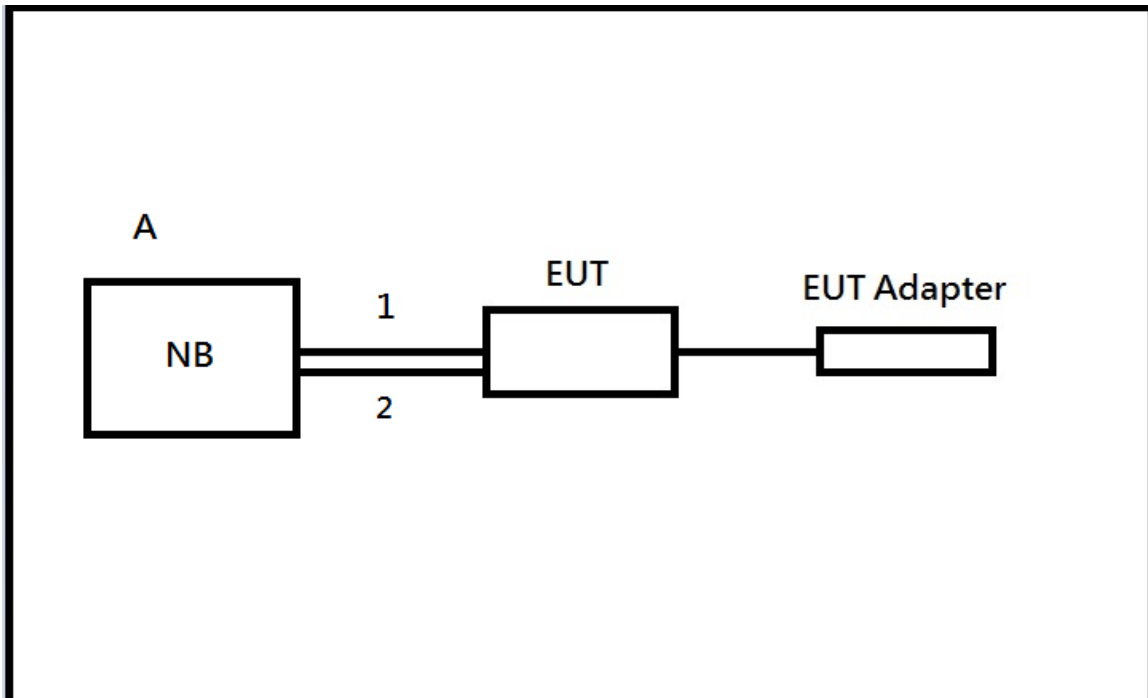
3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 3.6.

For conduction test



For other test



3.6 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	NB	HP	TPN-I119	NA	NA

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	NO	NO	0.2m	USB fixture	Furnished at test lab
2	NO	NO	1.5m	LAN	Furnished at test lab

4 AC POWER LINE CONDUCTED EMISSIONS TEST

4.1 LIMIT

Frequency (MHz)	Class A (dBμV)		Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56 *	56 - 46 *
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

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.
- (3) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)
 Margin Level = Measurement Value – Limit Value

The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

4.2 TEST PROCEDURE

- a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
 All other support equipment were powered from an additional LISN(s).
 The LISN provides 50 Ohm/50uH of 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 to keep the cable above 40 cm.
- c. Excess I/O cables that are not connected to a peripheral shall be bundled in the center.
 The end of the cable will be terminated, using the correct terminating impedance.
 The overall length shall not exceed 1 m.
- d. The LISN is spaced at least 80 cm from the nearest part of the EUT chassis.
- e. For the actual test configuration, please refer to the related Item - EUT Test Photos.

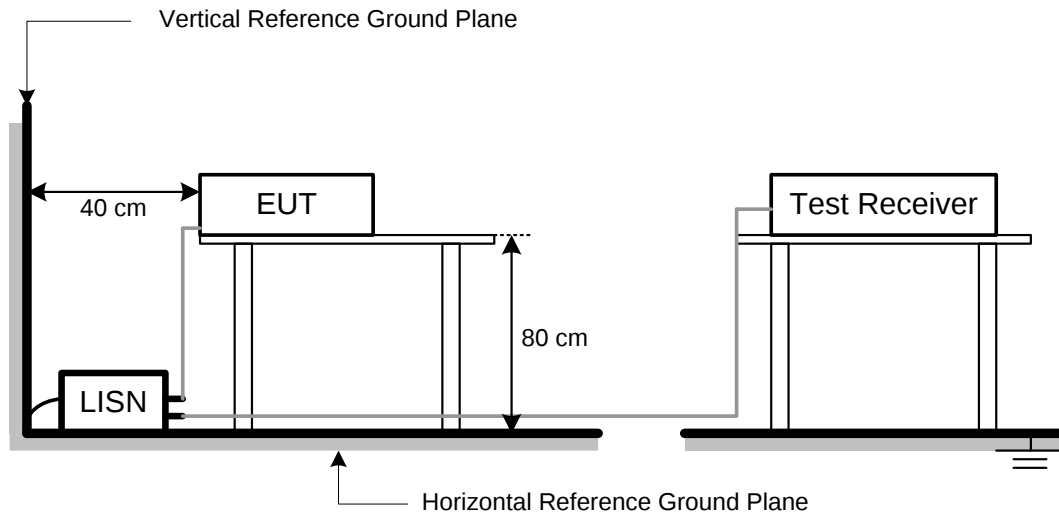
NOTE:

- (1) In the results, each reading is marked as Peak, QP or AVG per the detector used.
 BW=9 kHz (6 dB Bandwidth)
- (2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in normal link mode.

4.6 TEST RESULT

Temperature: 25 °C Relative Humidity: 45 % Test Voltage: AC 120V/50Hz

Please refer to the APPENDIX A.

5 RADIATED EMISSIONS TEST

5.1 LIMIT

In case the emission fall within the restricted band specified on 15.205, then the 15.209 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	Radiated Emissions (dBuV/m)		Measurement Distance (meters)
	Peak	Average	
Above 1000	74	54	3

NOTE:

- (1) The limit for radiated test was performed according to FCC Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
 Margin Level = Measurement Value - Limit Value

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

5.2 TEST PROCEDURE

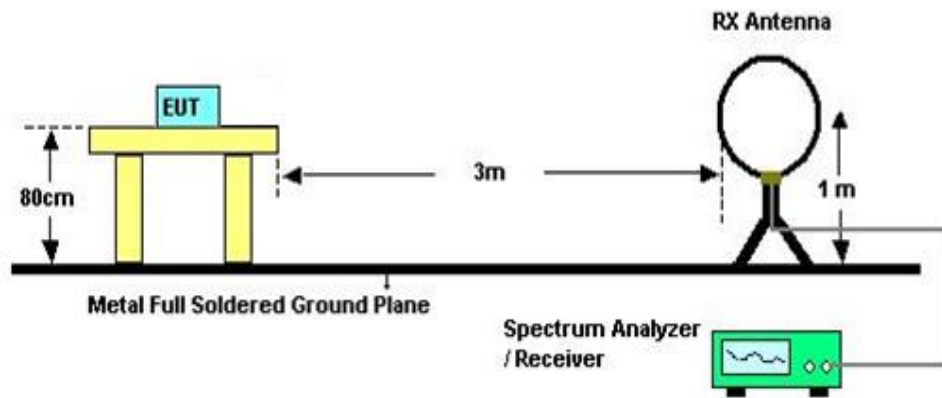
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 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.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.3 DEVIATION FROM TEST STANDARD

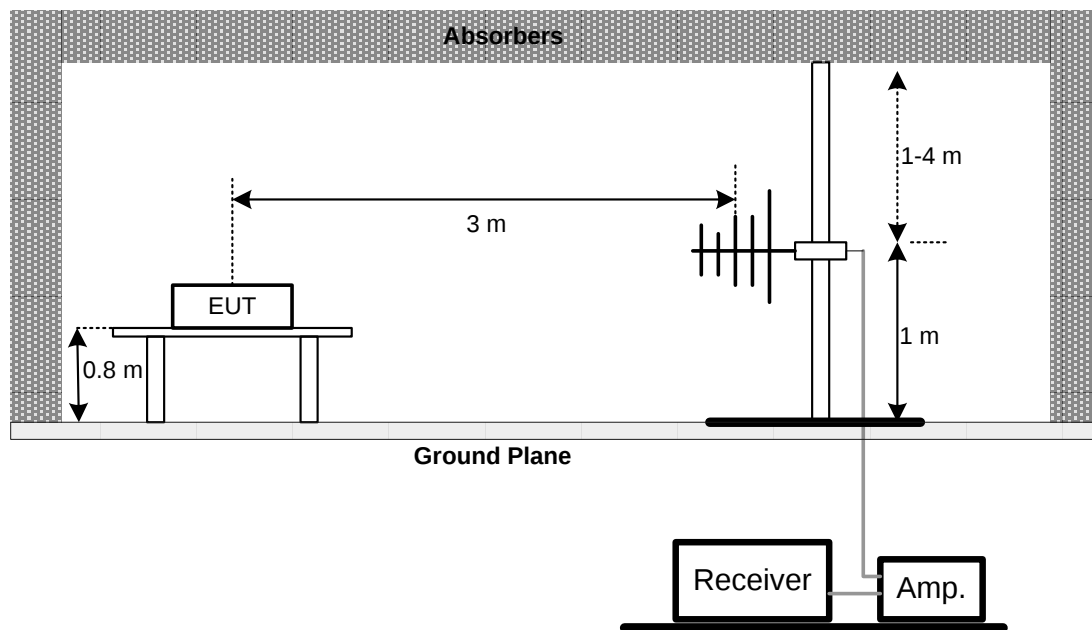
No deviation.

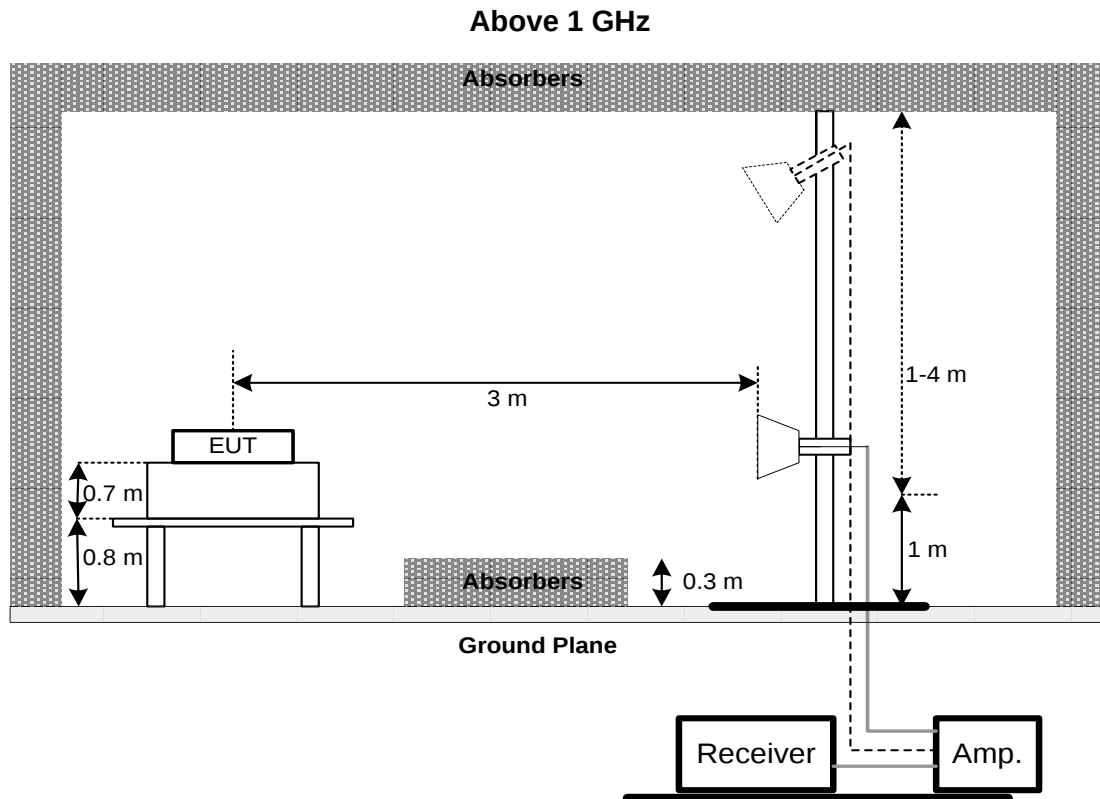
5.4 TEST SETUP

Below 30 MHz



30 MHz to 1 GHz





5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT – 9 KHZ TO 30 MHZ

Temperature: 23 °C Relative Humidity: 62 % Test Voltage: AC 120V/50Hz

Please refer to the APPENDIX B.

NOTE:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

5.7 TEST RESULT – 30MHZ TO 1000 MHZ

Temperature: 23 °C Relative Humidity: 62 % Test Voltage: AC 120V/50Hz

Please refer to the APPENDIX C.

5.8 TEST RESULT – ABOVE 1000 MHZ

Temperature: 23 °C Relative Humidity: 62 % Test Voltage: AC 120V/50Hz

Please refer to the APPENDIX D.

NOTE:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

6 BANDWIDTH TEST

6.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(a)	6 dB Bandwidth	500 kHz

6.2 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 = 2.5 ms.

6.3 DEVIATION FROM TEST STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULT

Please refer to the APPENDIX E.

7 PEAK OUTPUT POWER TEST

7.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(b)	Maximum Output Power	1 Watt or 30dBm

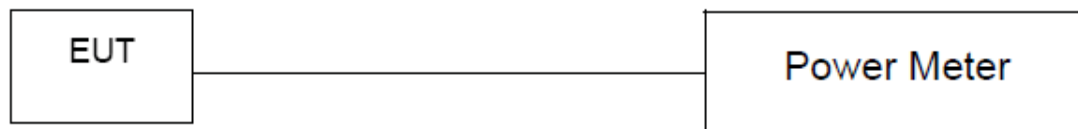
7.2 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance.

7.3 DEVIATION FROM TEST STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULT

Please refer to the APPENDIX F.

8 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST

8.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

8.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW = 100 kHz, VBW=300 kHz, Sweep time = Auto.
- c. Offset = antenna gain + cable loss.

8.3 DEVIATION FROM TEST STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULT

Please refer to the APPENDIX G.

9 POWER SPECTRAL DENSITY

9.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

9.2 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 = 3 kHz, VBW = 10 kHz, Sweep time = Auto.

9.3 DEVIATION FROM TEST STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 TEST RESULT

Please refer to the APPENDIX H.

10 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	2020/3/17
2	Test Cable	EMCI	EMCCFD300-BM-BMR-6000	170715	2020/8/5
3	EMI Test Receiver	R&S	ESR7	101433	2019/12/4
4	Measurement Software	EZ	EZ_EMC (Version NB-03A)	N/A	N/A

Radiated Emissions

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMCI	EMC001340	980555	2020/4/11
2	Preamplifier	EMCI	EMC02325B	980217	2020/4/11
3	Preamplifier	EMCI	EMC012645B	980267	2020/4/11
4	Preamplifier	EMCI	EMC2654045	980030	2020/2/1
5	Test Cable	EMCI	EMC104-SM-SM-800	150207	2020/4/11
6	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2020/4/11
7	Test Cable	EMCI	EMC-SM-SM-7000	180408	2020/4/11
8	MXE EMI Receiver	Agilent	N9038A	MY55420127	2020/3/25
9	Signal Analyzer	Agilent	N9010A	MY56480554	2020/6/5
10	Loop Ant	EMCO	EMCI-LPA600	274	2020/5/30
11	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2020/6/9
12	Horn Ant	Schwarzbeck	BBHA 9170	187	2019/12/21
13	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	000992	2020/5/28
14	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0508	2020/5/28

Bandwidth

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100129	2020/5/22

Peak Output Power

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	2019/12/5
2	Power Sensor	Anritsu	MA2411B	1126001	2019/12/5

Antenna Conducted Spurious Emissions

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100129	2020/5/22

Power Spectral Density

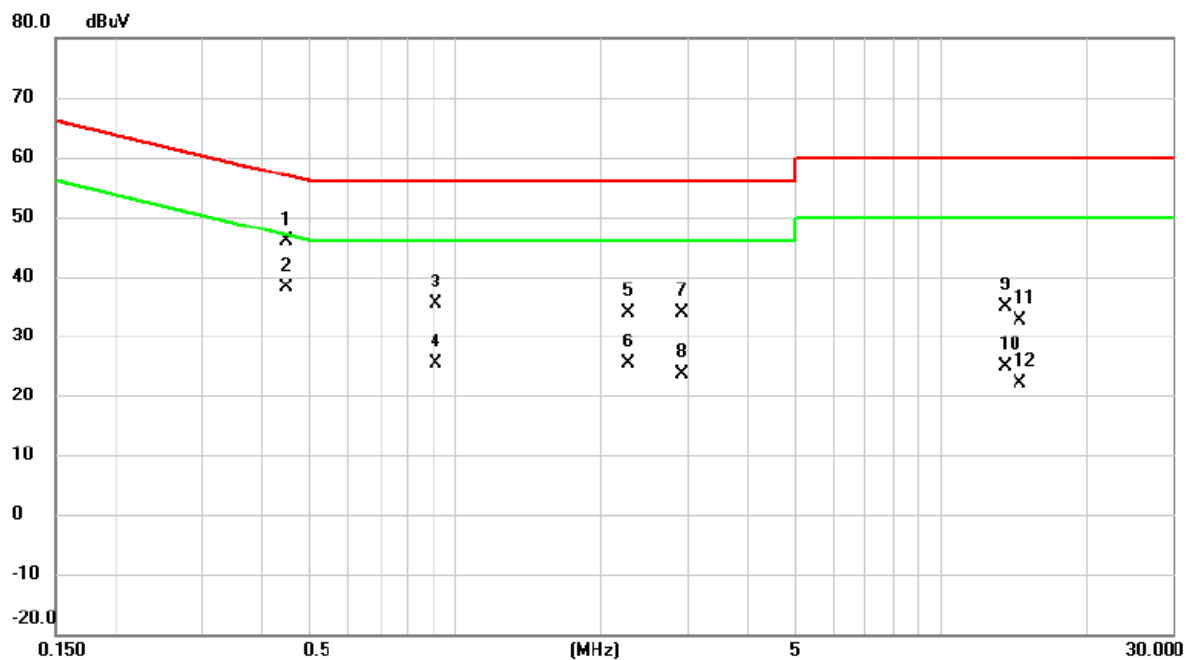
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100129	2020/5/22

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

CONTINUE ON NEXT PAGE

Test Mode	TX N (HT40) MODE	Phase	Line
-----------	------------------	-------	------

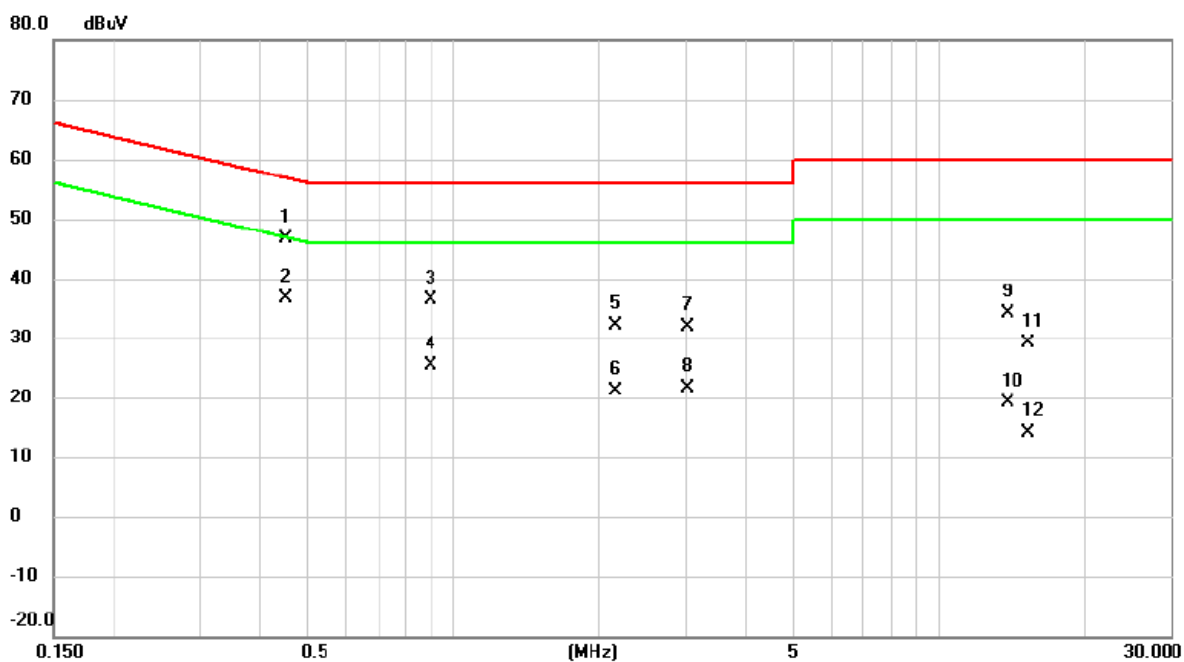


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.4492	36.32	9.58	45.90	56.89	-10.99	QP	
2	*	0.4492	28.67	9.58	38.25	46.89	-8.64	AVG	
3		0.9150	25.75	9.61	35.36	56.00	-20.64	QP	
4		0.9150	15.70	9.61	25.31	46.00	-20.69	AVG	
5		2.2718	24.18	9.68	33.86	56.00	-22.14	QP	
6		2.2718	15.76	9.68	25.44	46.00	-20.56	AVG	
7		2.9153	24.07	9.71	33.78	56.00	-22.22	QP	
8		2.9153	13.82	9.71	23.53	46.00	-22.47	AVG	
9		13.5578	25.11	9.87	34.98	60.00	-25.02	QP	
10		13.5578	14.90	9.87	24.77	50.00	-25.23	AVG	
11		14.5770	22.79	9.89	32.68	60.00	-27.32	QP	
12		14.5770	12.31	9.89	22.20	50.00	-27.80	AVG	

Test Mode TX N (HT40) MODE

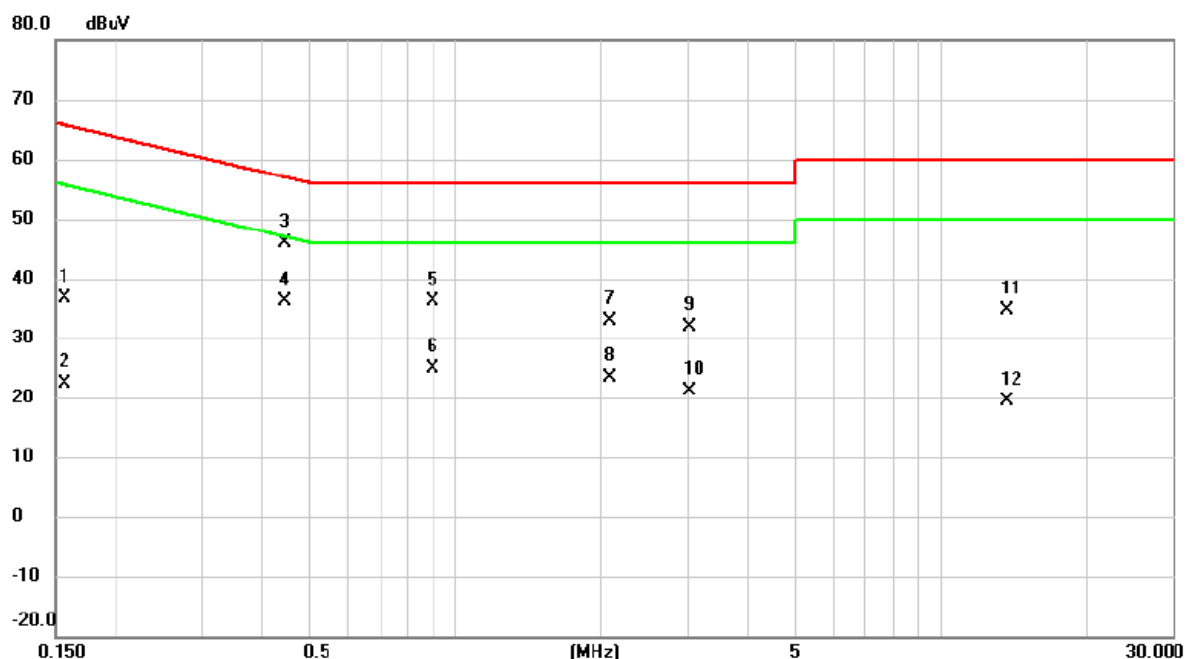
Phase

Neutral



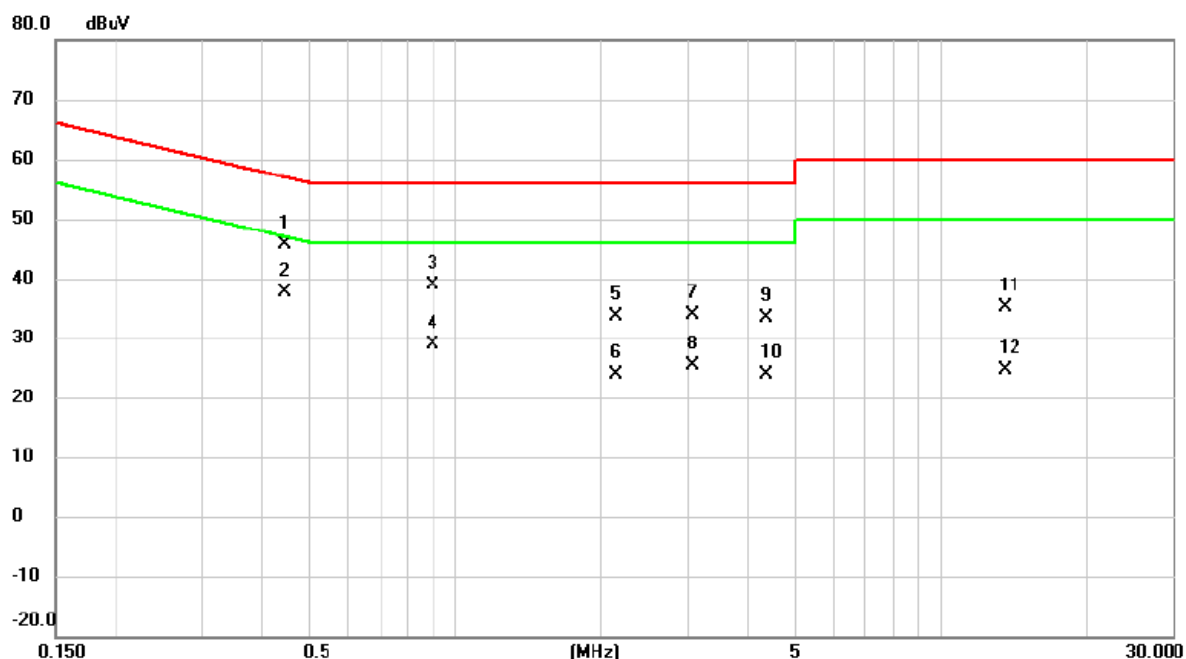
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.4537	36.93	9.58	46.51	56.81	-10.30	QP	
2	*	0.4537	27.17	9.58	36.75	46.81	-10.06	AVG	
3		0.8970	26.77	9.61	36.38	56.00	-19.62	QP	
4		0.8970	15.71	9.61	25.32	46.00	-20.68	AVG	
5		2.1614	22.38	9.68	32.06	56.00	-23.94	QP	
6		2.1614	11.33	9.68	21.01	46.00	-24.99	AVG	
7		3.0368	22.26	9.72	31.98	56.00	-24.02	QP	
8		3.0368	11.91	9.72	21.63	46.00	-24.37	AVG	
9		13.8570	24.12	9.89	34.01	60.00	-25.99	QP	
10		13.8570	9.18	9.89	19.07	50.00	-30.93	AVG	
11		15.2498	19.24	9.89	29.13	60.00	-30.87	QP	
12		15.2498	4.34	9.89	14.23	50.00	-35.77	AVG	

Test Mode RX N (HT40) MODE Phase Line



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1568	26.99	9.59	36.58	65.63	-29.05	QP	
2		0.1568	12.88	9.59	22.47	55.63	-33.16	AVG	
3		0.4470	36.28	9.58	45.86	56.93	-11.07	QP	
4	*	0.4470	26.49	9.58	36.07	46.93	-10.86	AVG	
5		0.9015	26.48	9.61	36.09	56.00	-19.91	QP	
6		0.9015	15.36	9.61	24.97	46.00	-21.03	AVG	
7		2.0827	23.33	9.67	33.00	56.00	-23.00	QP	
8		2.0827	13.63	9.67	23.30	46.00	-22.70	AVG	
9		3.0210	22.16	9.72	31.88	56.00	-24.12	QP	
10		3.0210	11.51	9.72	21.23	46.00	-24.77	AVG	
11		13.6118	24.88	9.87	34.75	60.00	-25.25	QP	
12		13.6118	9.52	9.87	19.39	50.00	-30.61	AVG	

Test Mode	RX N (HT40) MODE	Phase	Neutral
-----------	------------------	-------	---------

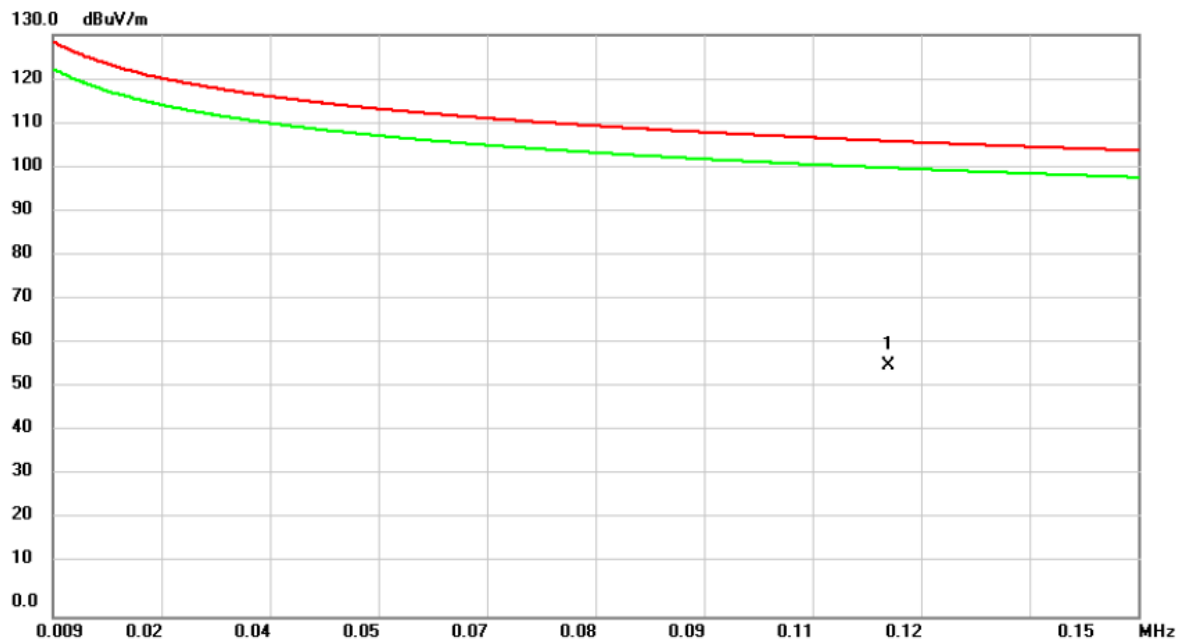


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.4470	36.07	9.63	45.70	56.93	-11.23	QP	
2	*	0.4470	27.98	9.63	37.61	46.93	-9.32	AVG	
3		0.8970	29.22	9.65	38.87	56.00	-17.13	QP	
4		0.8970	19.34	9.65	28.99	46.00	-17.01	AVG	
5		2.1480	23.83	9.72	33.55	56.00	-22.45	QP	
6		2.1480	14.28	9.72	24.00	46.00	-22.00	AVG	
7		3.0750	24.06	9.76	33.82	56.00	-22.18	QP	
8		3.0750	15.74	9.76	25.50	46.00	-20.50	AVG	
9		4.3845	23.56	9.78	33.34	56.00	-22.66	QP	
10		4.3845	14.01	9.78	23.79	46.00	-22.21	AVG	
11		13.5263	25.17	9.94	35.11	60.00	-24.89	QP	
12		13.5263	14.66	9.94	24.60	50.00	-25.40	AVG	

APPENDIX B RADIATED EMISSIONS - 9 KHZ TO 30 MHZ

CONTINUE ON NEXT PAGE

Test Mode	TX N (HT40) MODE 2437MHz	Azimuth Angle	90°
-----------	--------------------------	---------------	-----



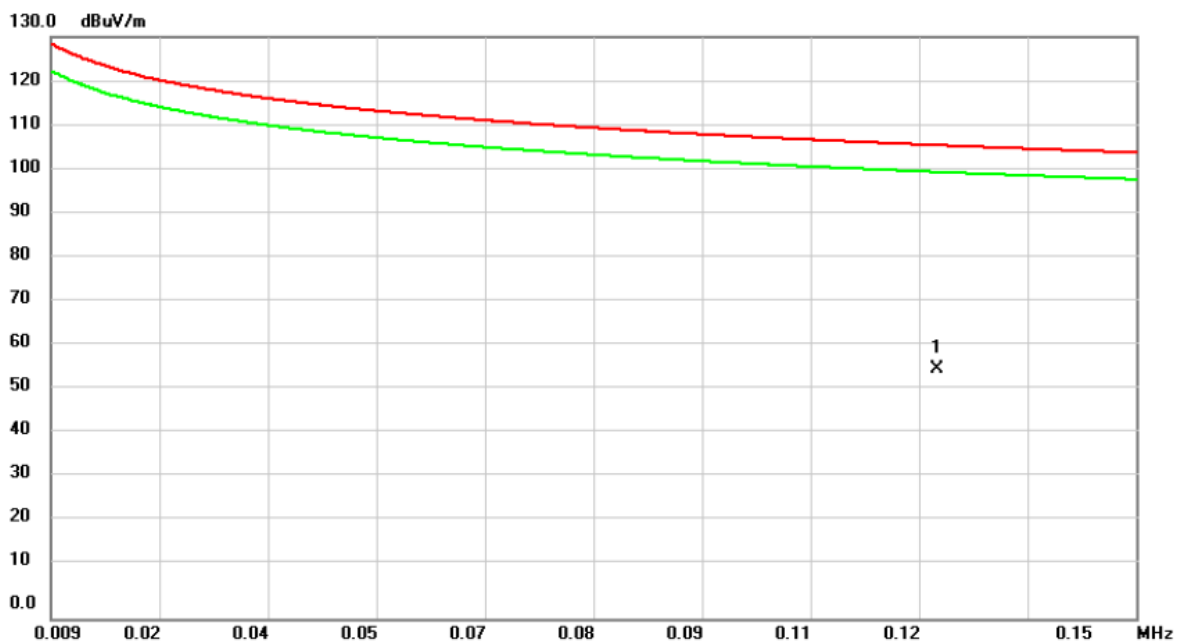
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.1176	40.99	15.03	56.02	106.20	-50.18	AVG	

Test Mode	TX N (HT40) MODE 2437MHz	Azimuth Angle	90°
-----------	--------------------------	---------------	-----



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		3.5826	45.84	-3.57	42.27	69.54	-27.27	QP	
2	*	6.1797	46.54	-3.85	42.69	69.54	-26.85	QP	
3		10.0304	42.38	-4.50	37.88	69.54	-31.66	QP	
4		13.5525	37.53	-4.59	32.94	69.54	-36.60	QP	
5		17.7913	35.32	-5.90	29.42	69.54	-40.12	QP	
6		20.6570	35.72	-6.27	29.45	69.54	-40.09	QP	

Test Mode	TX N (HT40) MODE 2437MHz	Azimuth Angle	0°
-----------	--------------------------	---------------	----



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.1242	41.02	14.66	55.68	105.72	-50.04	AVG	

Test Mode	TX N (HT40) MODE 2437MHz	Azimuth Angle	0°
-----------	--------------------------	---------------	----

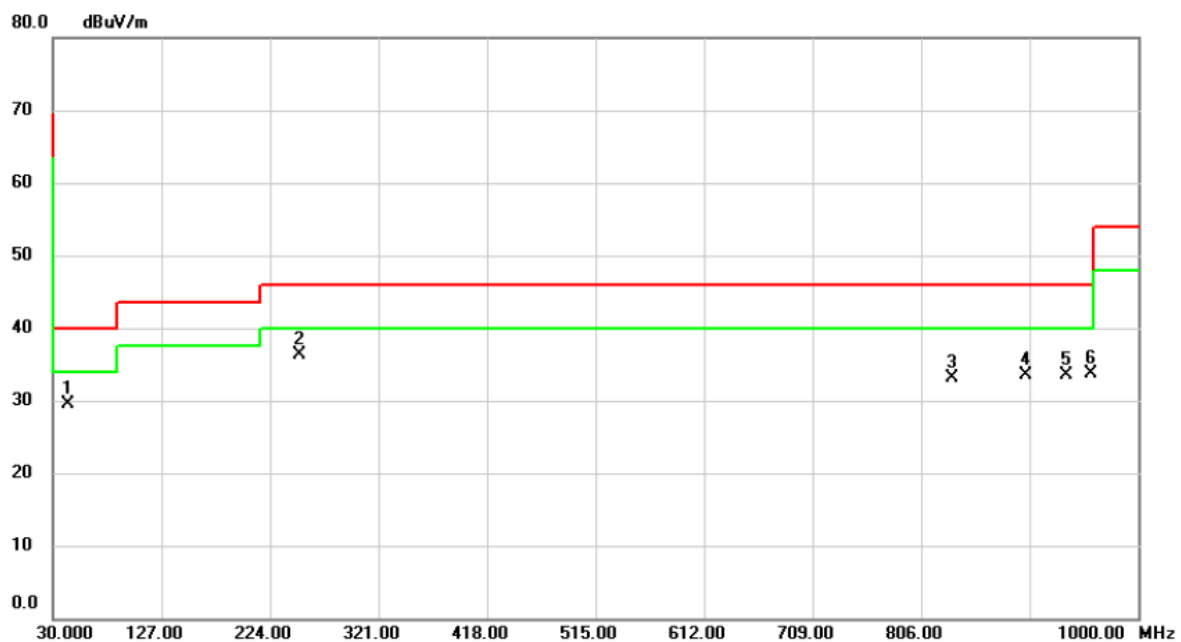


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3.5825	52.40	-3.57	48.83	69.54	-20.71	QP	
2		6.1797	50.83	-3.85	46.98	69.54	-22.56	QP	
3		10.0900	52.61	-4.51	48.10	69.54	-21.44	QP	
4		12.9557	45.39	-4.59	40.80	69.54	-28.74	QP	
5		14.5676	44.45	-4.69	39.76	69.54	-29.78	QP	
6		18.1794	49.70	-6.01	43.69	69.54	-25.85	QP	

APPENDIX C RADIATED EMISSIONS - 30 MHZ TO 1000 MHZ

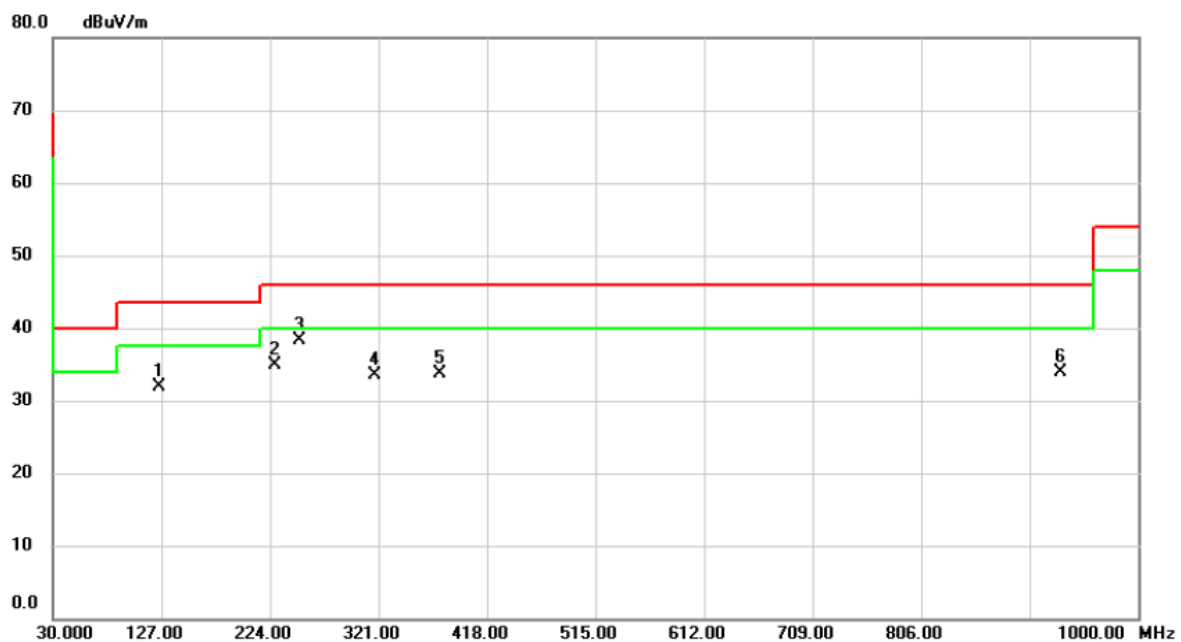
CONTINUE ON NEXT PAGE

Test Mode	TX N (HT40) MODE 2437MHz	Polarization	Vertical
-----------	--------------------------	--------------	----------



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		43.5800	37.80	-8.37	29.43	40.00	-10.57	peak	
2	*	250.1900	45.12	-8.80	36.32	46.00	-9.68	peak	
3		834.1300	29.61	3.46	33.07	46.00	-12.93	peak	
4		900.0900	28.96	4.45	33.41	46.00	-12.59	peak	
5		935.9800	28.60	4.93	33.53	46.00	-12.47	peak	
6		957.3200	28.51	5.25	33.76	46.00	-12.24	peak	

Test Mode	TX N (HT40) MODE 2437MHz	Polarization	Horizontal
-----------	--------------------------	--------------	------------



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		125.0600	42.55	-10.72	31.83	43.50	-11.67	peak	
2		227.8800	44.75	-9.78	34.97	46.00	-11.03	peak	
3	*	250.1900	47.01	-8.80	38.21	46.00	-7.79	peak	
4		317.1200	40.43	-6.83	33.60	46.00	-12.40	peak	
5		375.3200	39.09	-5.31	33.78	46.00	-12.22	peak	
6		931.1300	28.98	4.87	33.85	46.00	-12.15	peak	

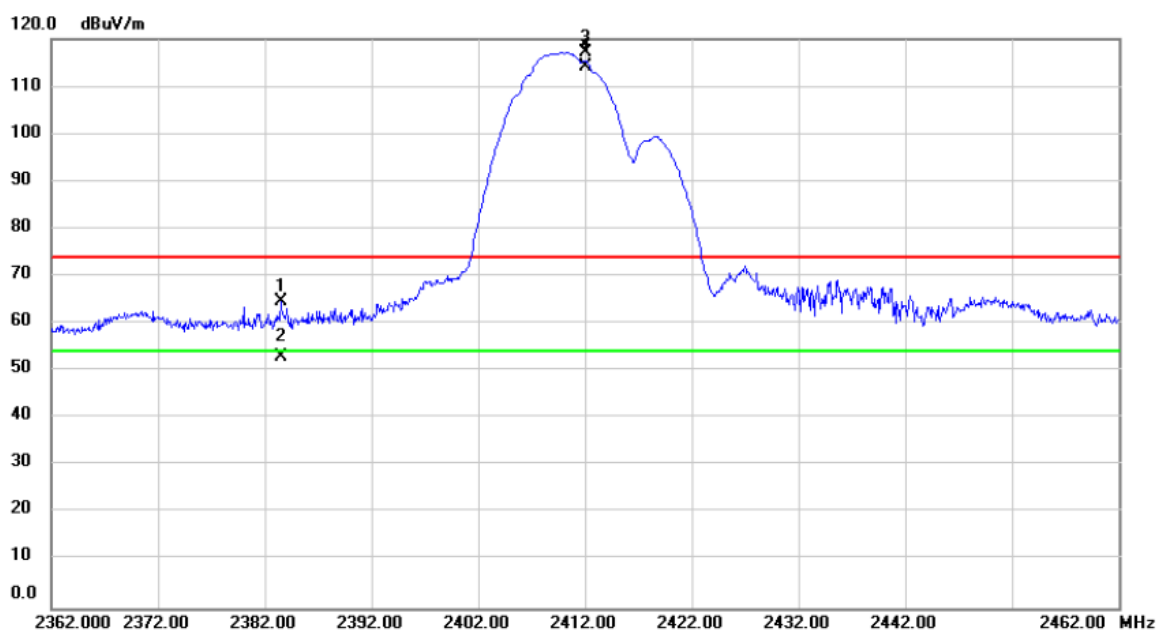
APPENDIX D RADIATED EMISSIONS - ABOVE 1000 MHZ

CONTINUE ON NEXT PAGE

Test Mode TX B MODE _2412 MHz

Polarization

Vertical

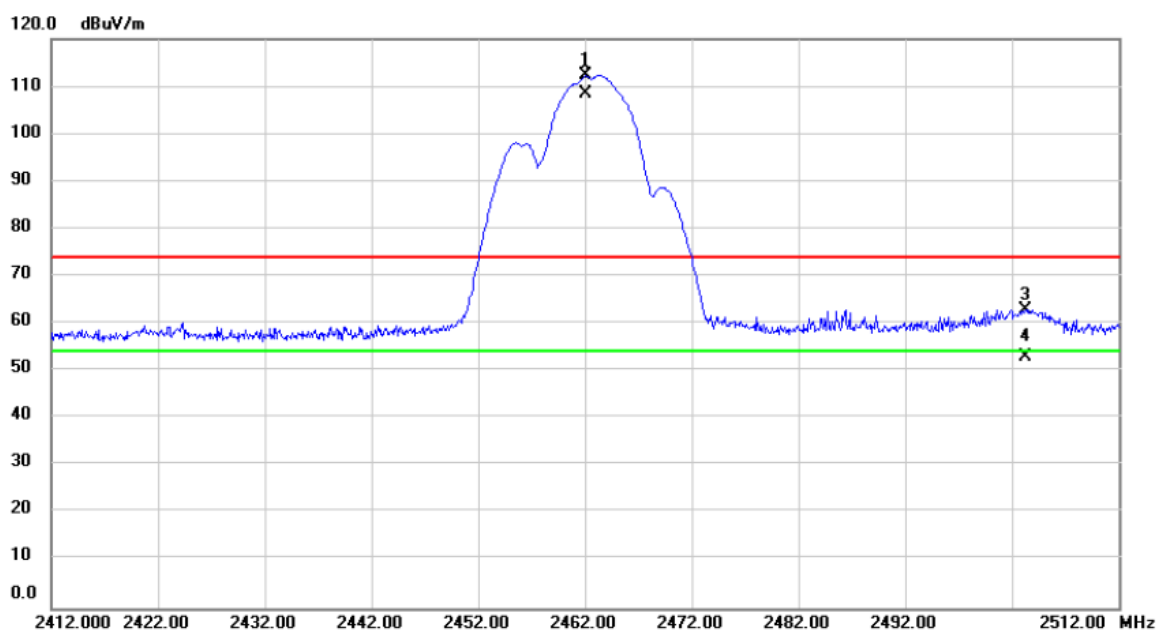


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2383.500	33.34	31.35	64.69	74.00	-9.31	peak	
2		2383.500	21.51	31.35	52.86	54.00	-1.14	AVG	
3	X	2412.000	85.59	31.47	117.06	74.00	43.06	peak	No Limit
4	*	2412.000	82.56	31.47	114.03	54.00	60.03	AVG	No Limit

Test Mode TX B MODE _2462 MHz

Polarization

Vertical

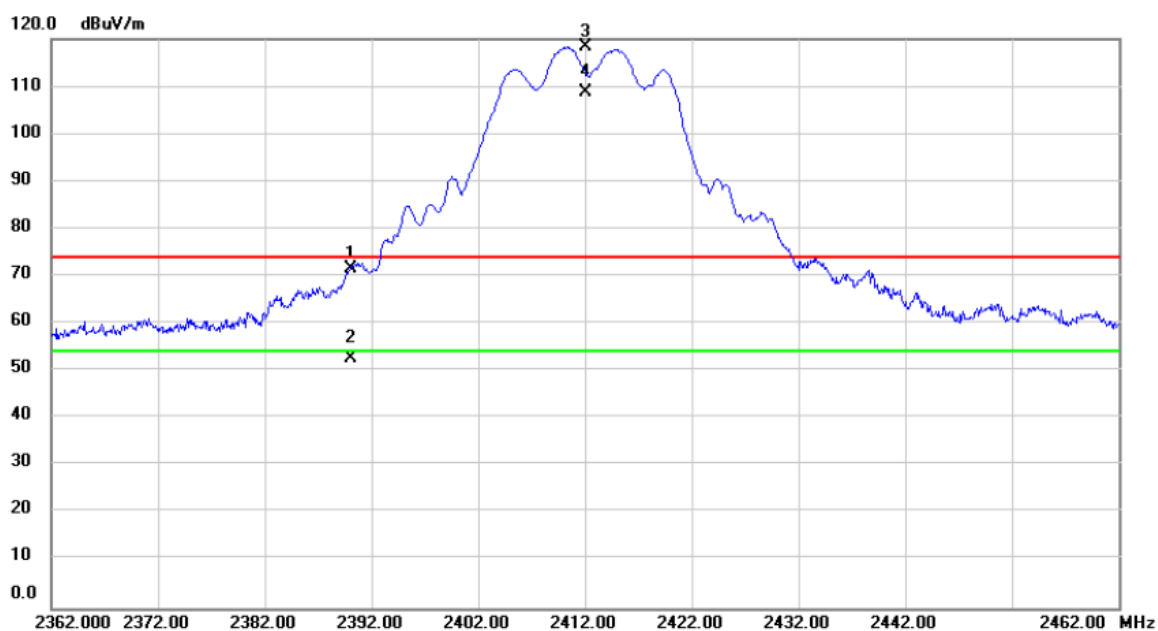


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2462.000	80.66	31.67	112.33	74.00	38.33	peak	No Limit
2	*	2462.000	76.93	31.67	108.60	54.00	54.60	AVG	No Limit
3		2503.300	31.10	31.83	62.93	74.00	-11.07	peak	
4		2503.300	21.01	31.83	52.84	54.00	-1.16	AVG	

Test Mode TX G MODE _2412 MHz

Polarization

Vertical

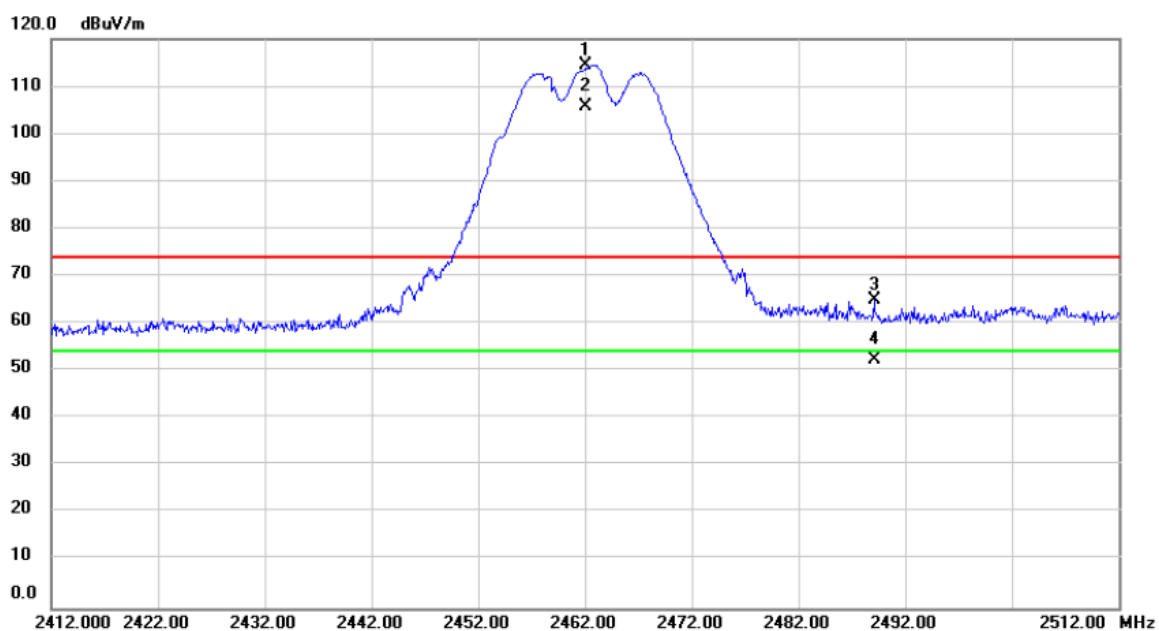


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	40.17	31.38	71.55	74.00	-2.45	peak	
2		2390.000	21.28	31.38	52.66	54.00	-1.34	AVG	
3	X	2412.000	86.83	31.47	118.30	74.00	44.30	peak	No Limit
4	*	2412.000	77.34	31.47	108.81	54.00	54.81	AVG	No Limit

Test Mode TX G MODE _2462 MHz

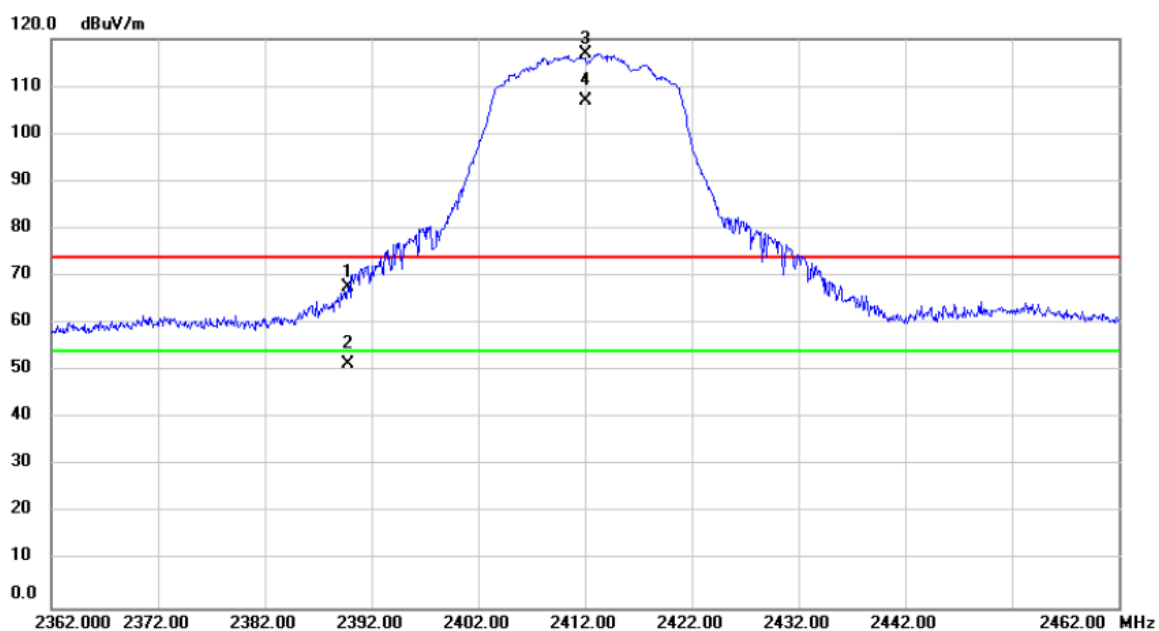
Polarization

Vertical



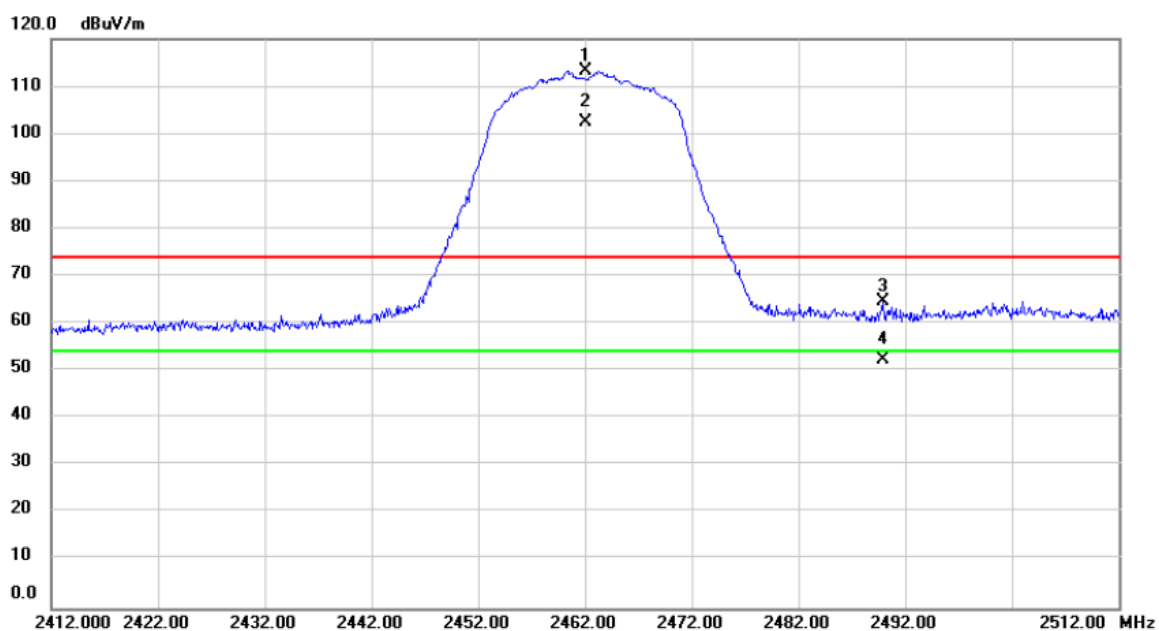
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2462.000	82.83	31.67	114.50	74.00	40.50	peak	No Limit
2	*	2462.000	74.01	31.67	105.68	54.00	51.68	AVG	No Limit
3		2489.100	33.03	31.78	64.81	74.00	-9.19	peak	
4		2489.100	20.67	31.78	52.45	54.00	-1.55	AVG	

Test Mode	TX N (HT20) MODE _2412 MHz	Polarization	Vertical
-----------	----------------------------	--------------	----------



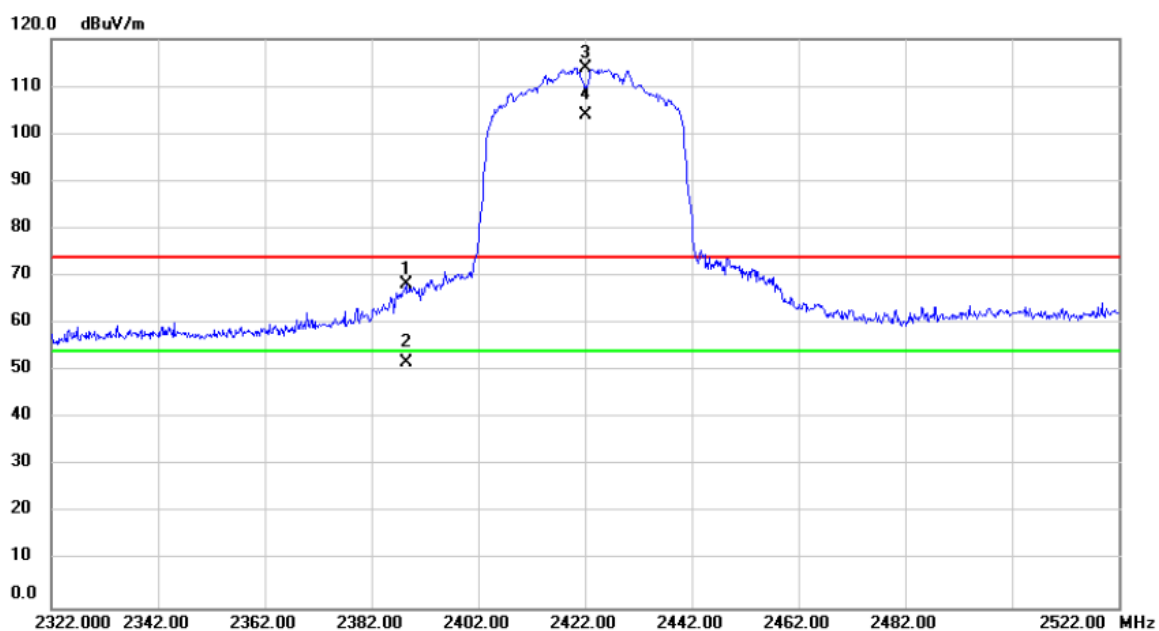
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2389.800	36.33	31.38	67.71	74.00	-6.29	peak	
2		2389.800	20.09	31.38	51.47	54.00	-2.53	AVG	
3	X	2412.000	85.47	31.47	116.94	74.00	42.94	peak	No Limit
4	*	2412.000	75.35	31.47	106.82	54.00	52.82	AVG	No Limit

Test Mode	TX N (HT20) MODE _2462 MHz	Polarization	Vertical
-----------	----------------------------	--------------	----------



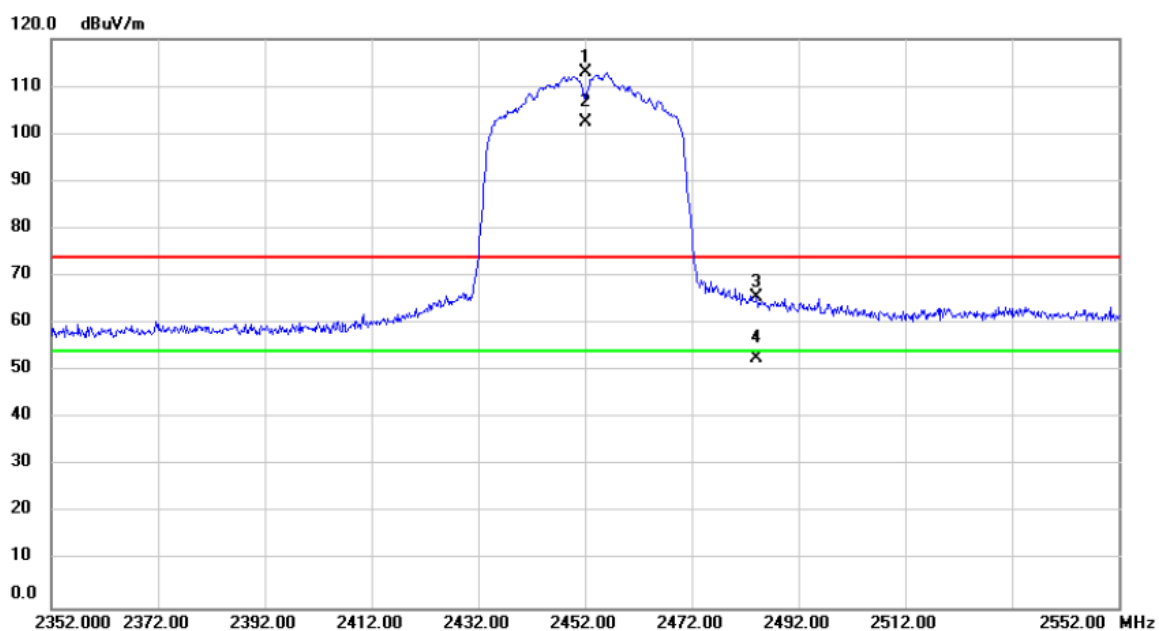
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2462.000	81.52	31.67	113.19	74.00	39.19	peak	No Limit
2	*	2462.000	70.87	31.67	102.54	54.00	48.54	AVG	No Limit
3		2489.900	32.84	31.78	64.62	74.00	-9.38	peak	
4		2489.900	20.58	31.78	52.36	54.00	-1.64	AVG	

Test Mode	TX N (HT40) MODE _2422 MHz	Polarization	Vertical
-----------	----------------------------	--------------	----------



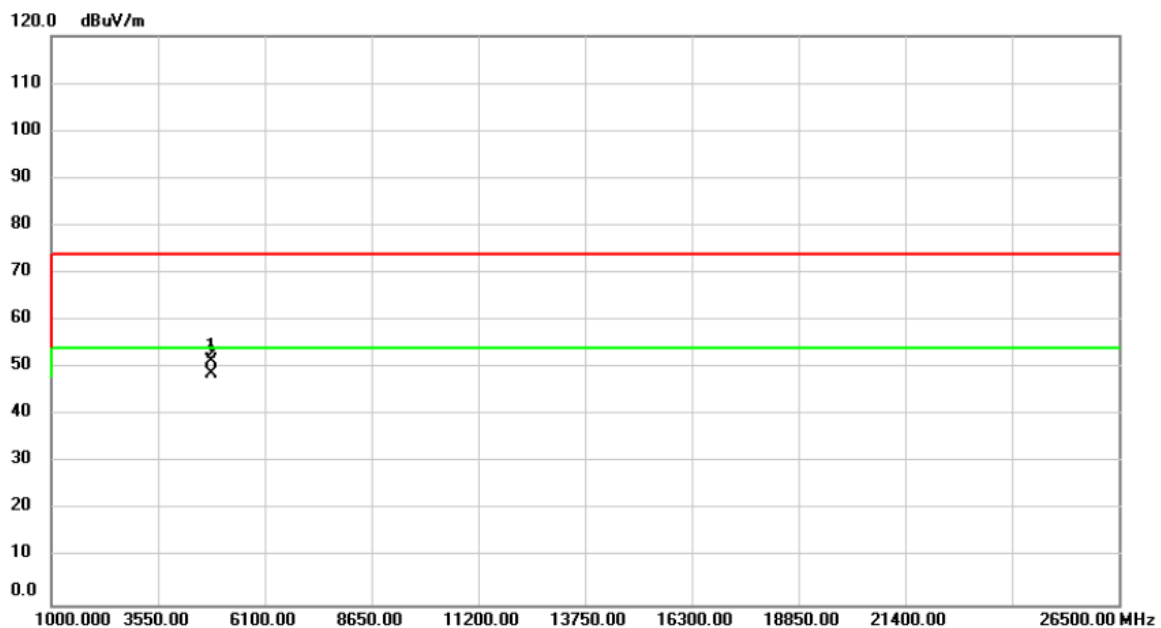
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2388.400	36.74	31.37	68.11	74.00	-5.89	peak	
2		2388.400	20.39	31.37	51.76	54.00	-2.24	AVG	
3	X	2422.000	82.40	31.51	113.91	74.00	39.91	peak	No Limit
4	*	2422.000	72.33	31.51	103.84	54.00	49.84	AVG	No Limit

Test Mode	TX N (HT40) MODE _2452 MHz	Polarization	Vertical
-----------	----------------------------	--------------	----------



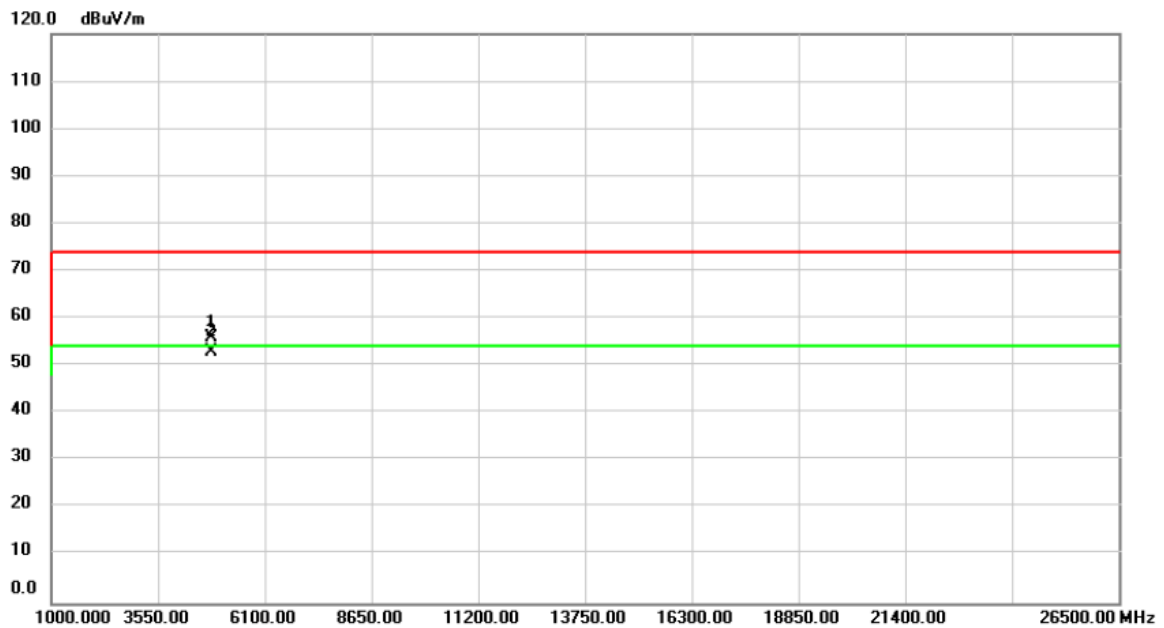
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2452.000	81.40	31.63	113.03	74.00	39.03	peak	No Limit
2	*	2452.000	70.71	31.63	102.34	54.00	48.34	AVG	No Limit
3		2484.200	33.77	31.76	65.53	74.00	-8.47	peak	
4		2484.200	20.85	31.76	52.61	54.00	-1.39	AVG	

Test Mode	TX B MODE _2412 MHz	Polarization	Vertical
-----------	---------------------	--------------	----------



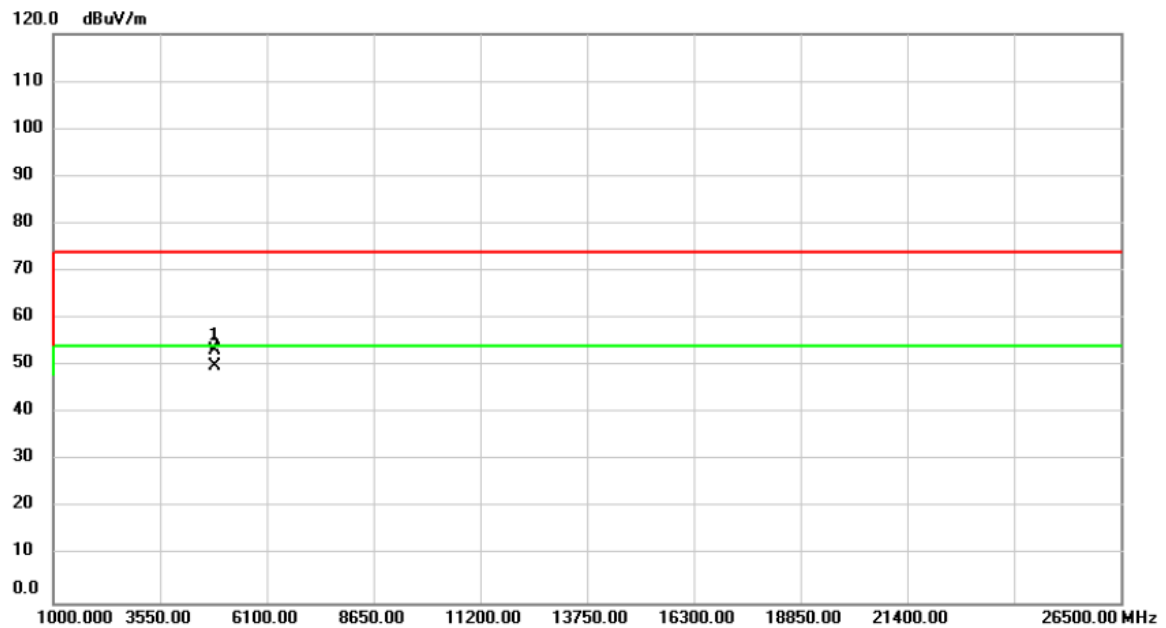
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	61.39	-9.79	51.60	74.00	-22.40	peak	
2	*	4824.000	58.67	-9.79	48.88	54.00	-5.12	AVG	

Test Mode	TX B MODE _2412 MHz	Polarization	Horizontal
-----------	---------------------	--------------	------------



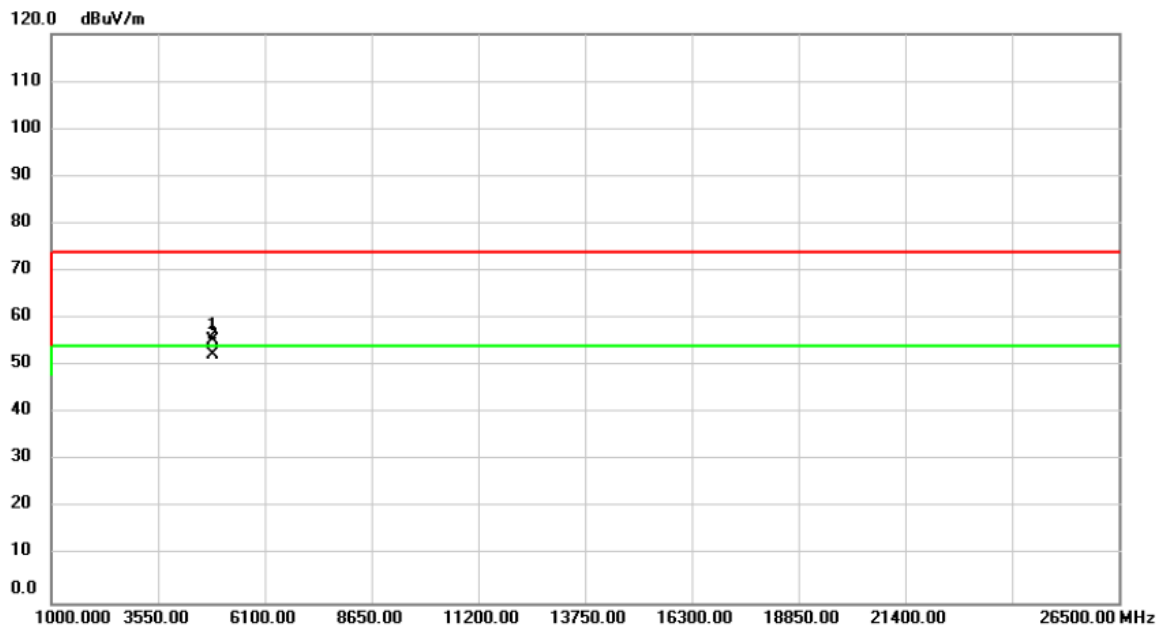
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	65.86	-9.79	56.07	74.00	-17.93	peak	
2	*	4824.000	62.74	-9.79	52.95	54.00	-1.05	AVG	

Test Mode	TX B MODE _2437 MHz	Polarization	Vertical
-----------	---------------------	--------------	----------



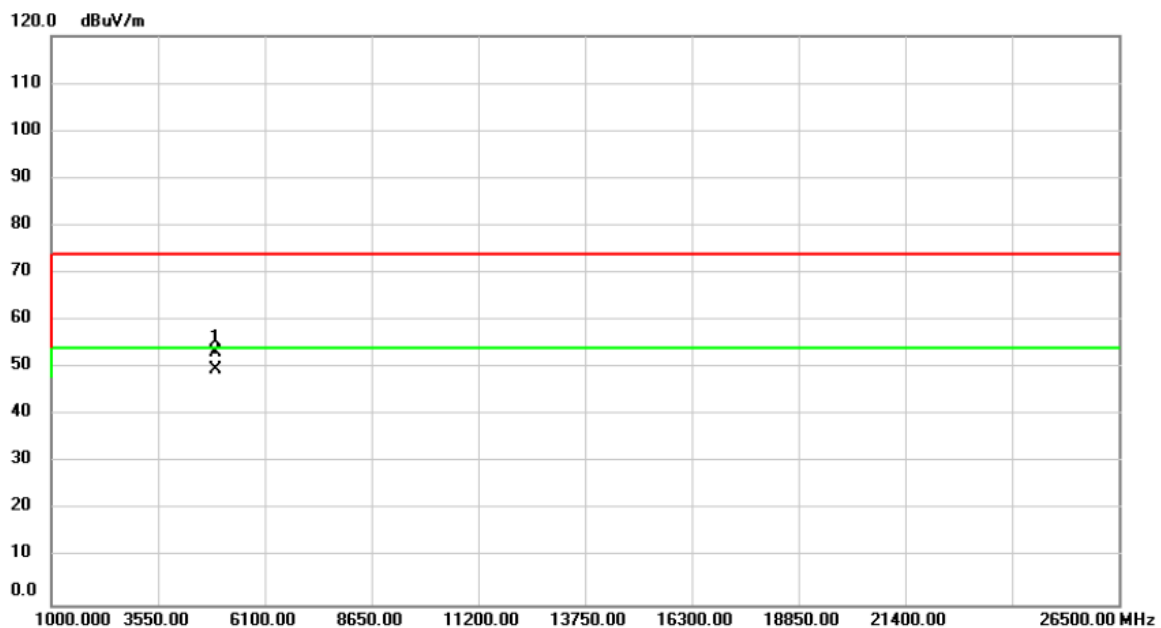
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	62.90	-9.67	53.23	74.00	-20.77	peak	
2	*	4874.000	59.61	-9.67	49.94	54.00	-4.06	AVG	

Test Mode	TX B MODE _2437 MHz	Polarization	Horizontal
-----------	---------------------	--------------	------------



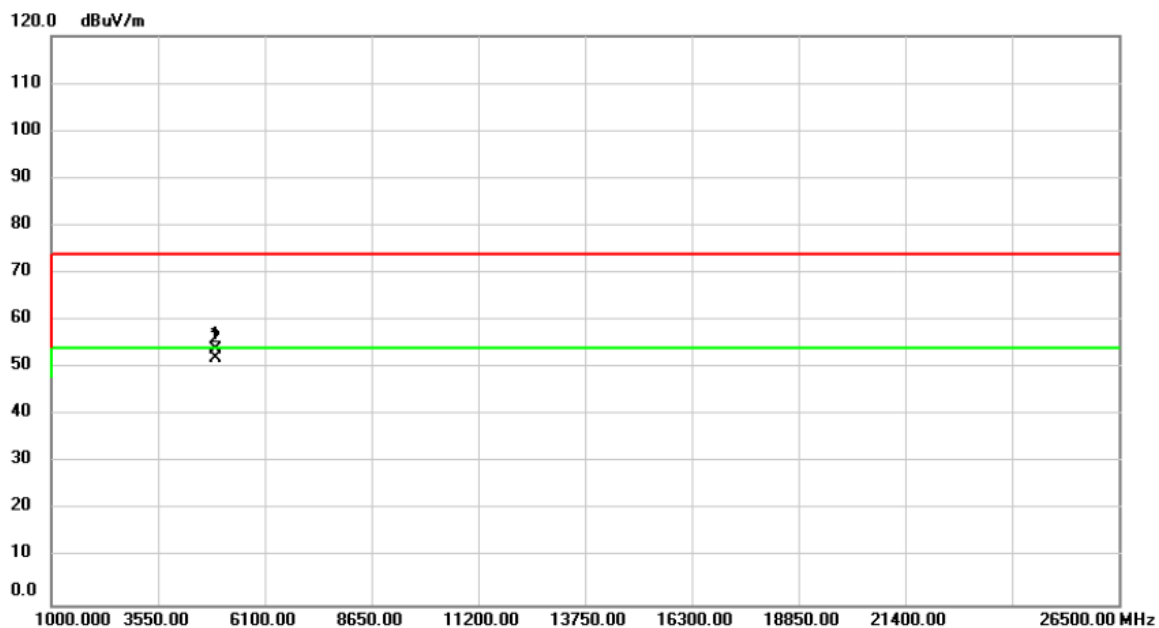
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	65.06	-9.67	55.39	74.00	-18.61	peak	
2	*	4874.000	61.98	-9.67	52.31	54.00	-1.69	AVG	

Test Mode	TX B MODE _2462 MHz	Polarization	Vertical
-----------	---------------------	--------------	----------



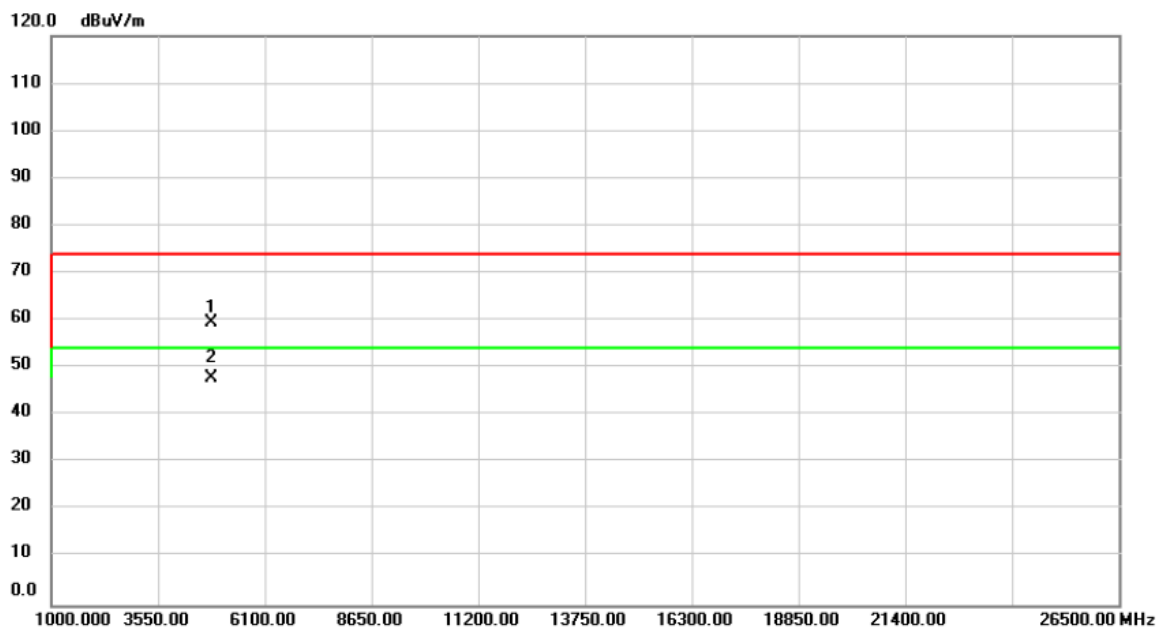
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	62.71	-9.56	53.15	74.00	-20.85	peak	
2	*	4924.000	59.26	-9.56	49.70	54.00	-4.30	AVG	

Test Mode	TX B MODE _2462 MHz	Polarization	Horizontal
-----------	---------------------	--------------	------------



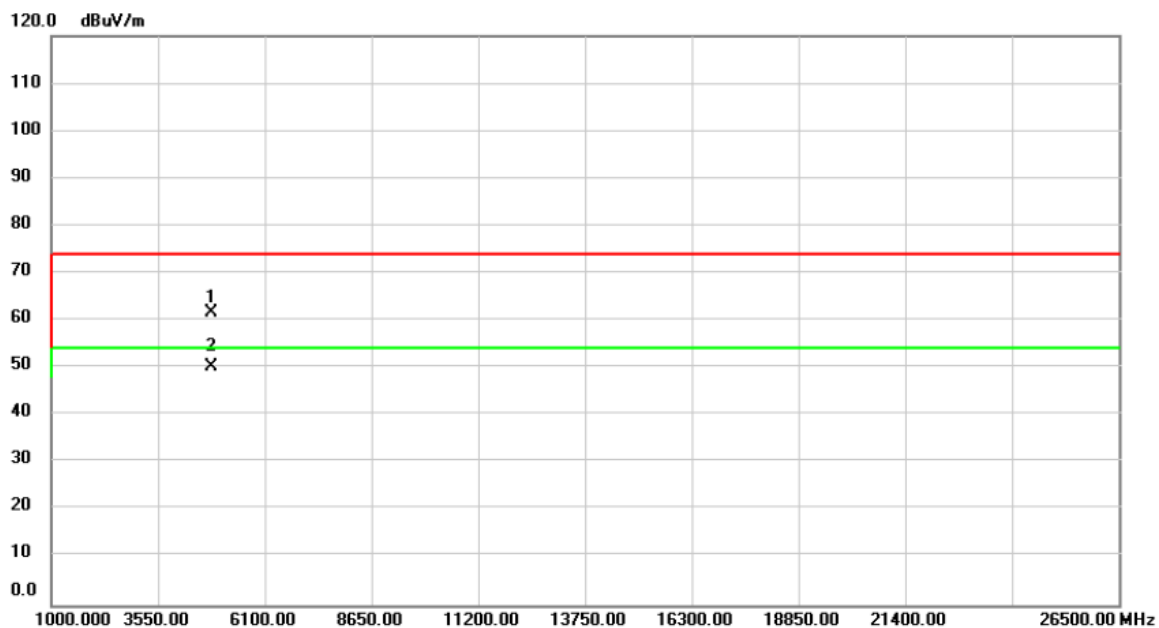
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	63.53	-9.56	53.97	74.00	-20.03	peak	
2	*	4924.000	61.60	-9.56	52.04	54.00	-1.96	AVG	

Test Mode	TX G MODE _2412 MHz	Polarization	Vertical
-----------	---------------------	--------------	----------



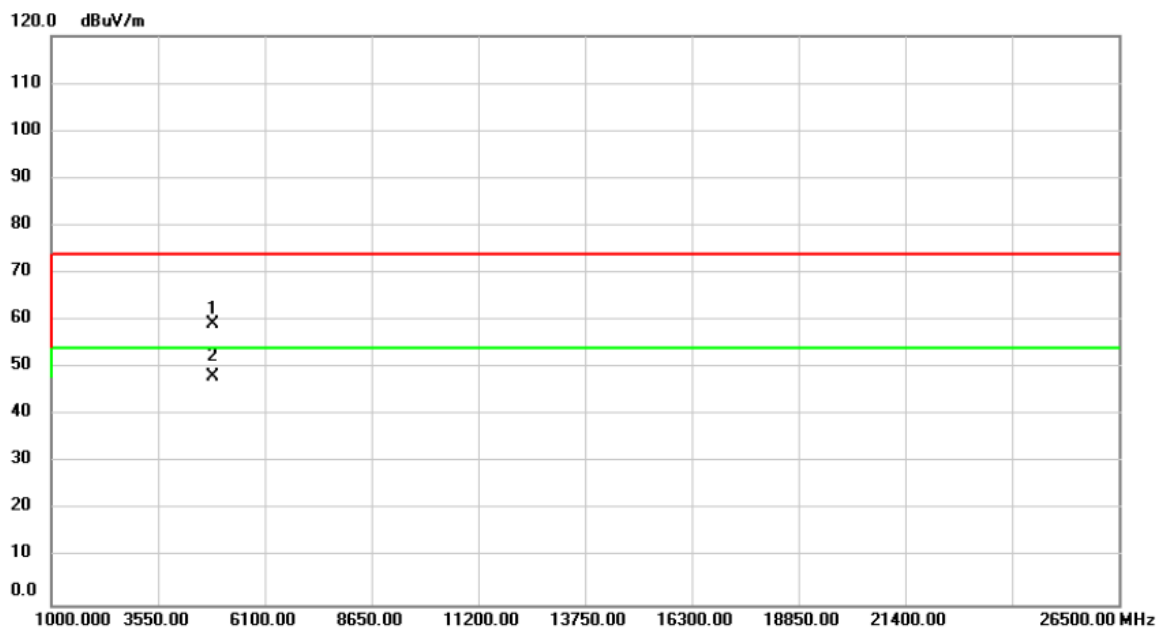
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	69.46	-9.79	59.67	74.00	-14.33	peak	
2	*	4824.000	57.76	-9.79	47.97	54.00	-6.03	AVG	

Test Mode	TX G MODE _2412 MHz	Polarization	Horizontal
-----------	---------------------	--------------	------------



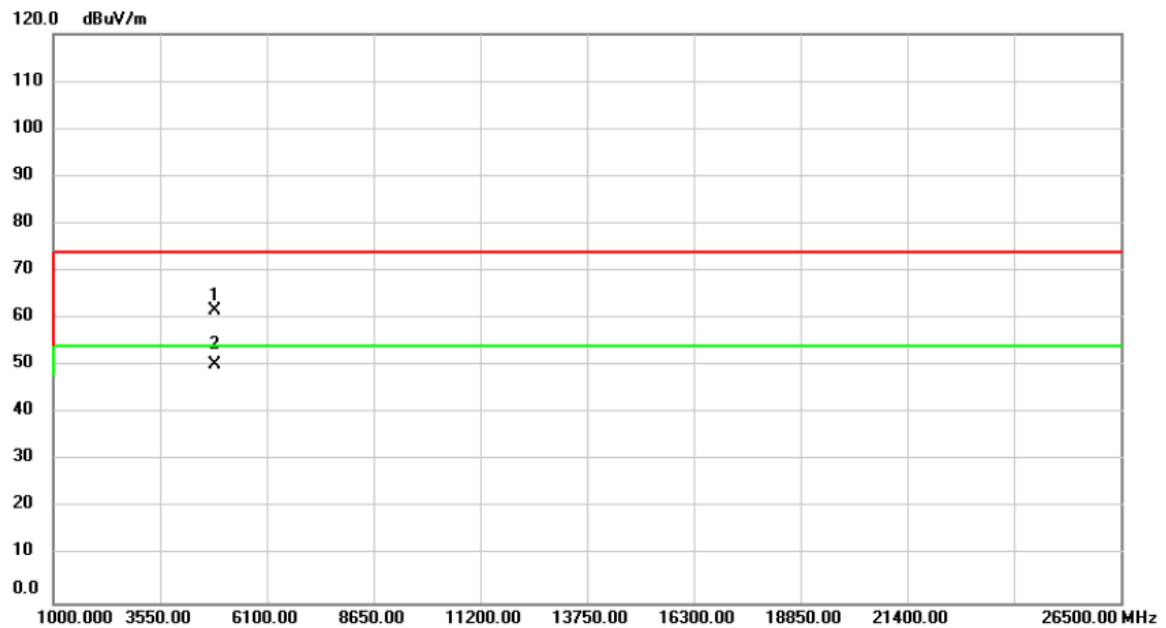
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	71.37	-9.79	61.58	74.00	-12.42	peak	
2	*	4824.000	60.17	-9.79	50.38	54.00	-3.62	AVG	

Test Mode	TX G MODE _2437 MHz	Polarization	Vertical
-----------	---------------------	--------------	----------



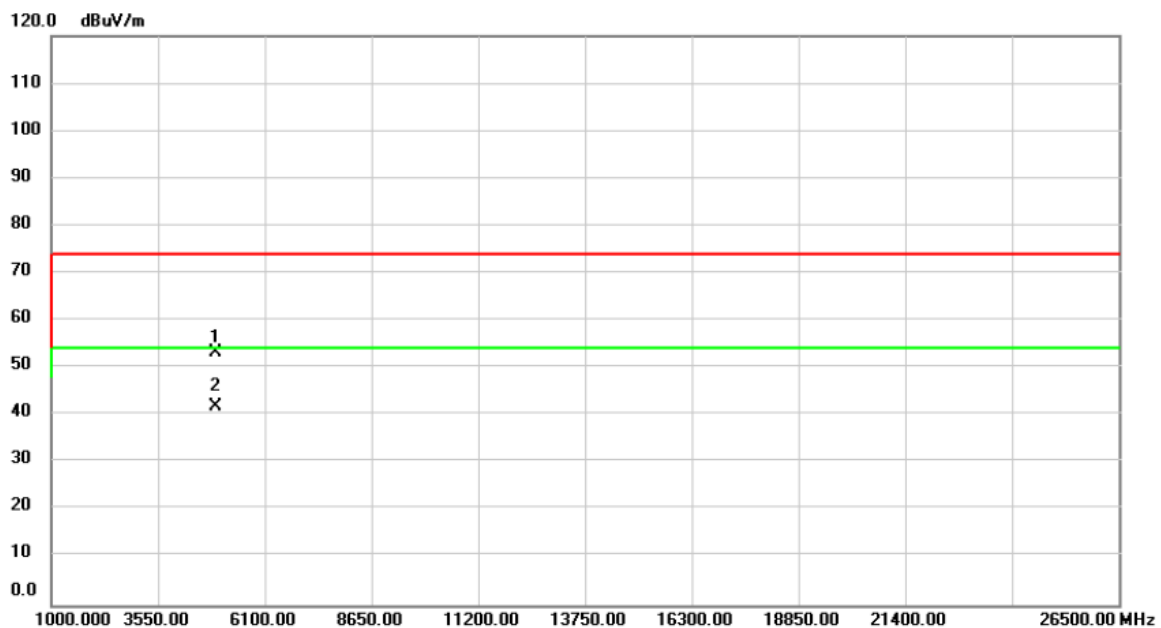
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	68.87	-9.67	59.20	74.00	-14.80	peak	
2	*	4874.000	57.74	-9.67	48.07	54.00	-5.93	AVG	

Test Mode	TX G MODE _2437 MHz	Polarization	Horizontal
-----------	---------------------	--------------	------------



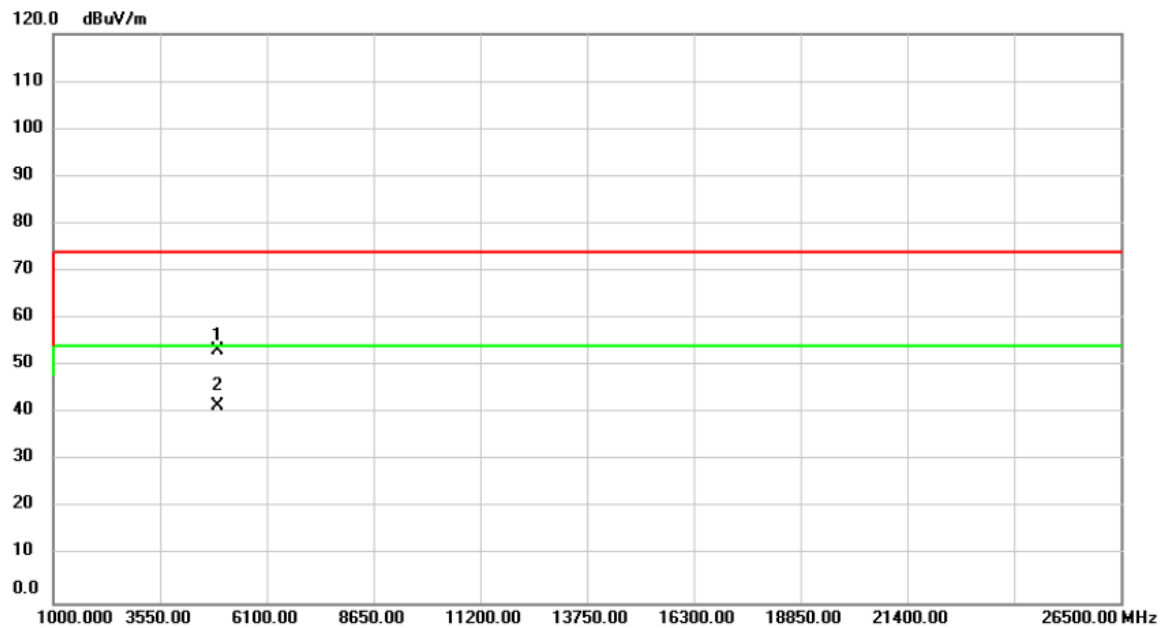
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	71.29	-9.67	61.62	74.00	-12.38	peak	
2	*	4874.000	60.02	-9.67	50.35	54.00	-3.65	AVG	

Test Mode	TX G MODE _2462 MHz	Polarization	Vertical
-----------	---------------------	--------------	----------



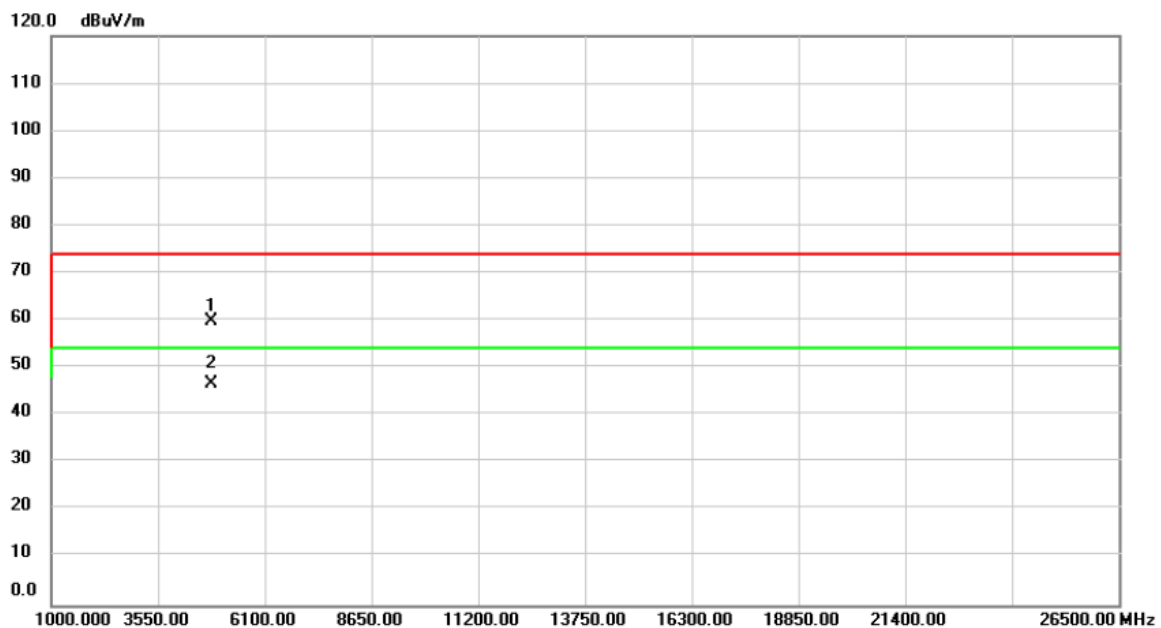
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	62.78	-9.56	53.22	74.00	-20.78	peak	
2	*	4924.000	51.56	-9.56	42.00	54.00	-12.00	AVG	

Test Mode	TX G MODE _2462 MHz	Polarization	Horizontal
-----------	---------------------	--------------	------------



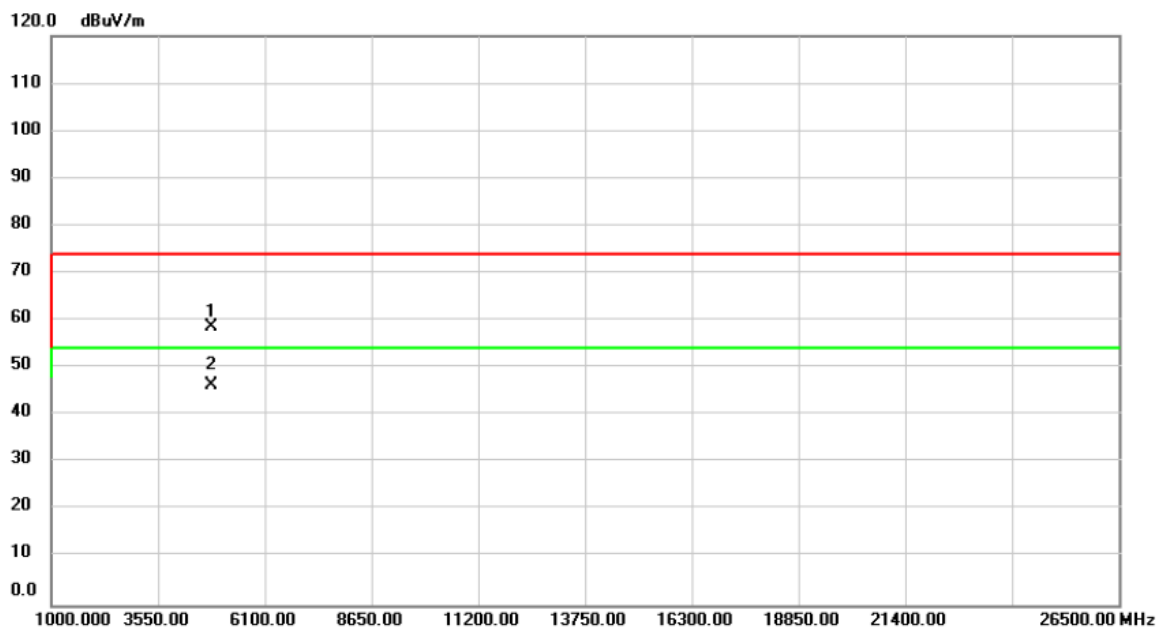
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	62.82	-9.56	53.26	74.00	-20.74	peak	
2	*	4924.000	51.14	-9.56	41.58	54.00	-12.42	AVG	

Test Mode	TX N (HT20) MODE 2412MHz	Polarization	Vertical
-----------	--------------------------	--------------	----------



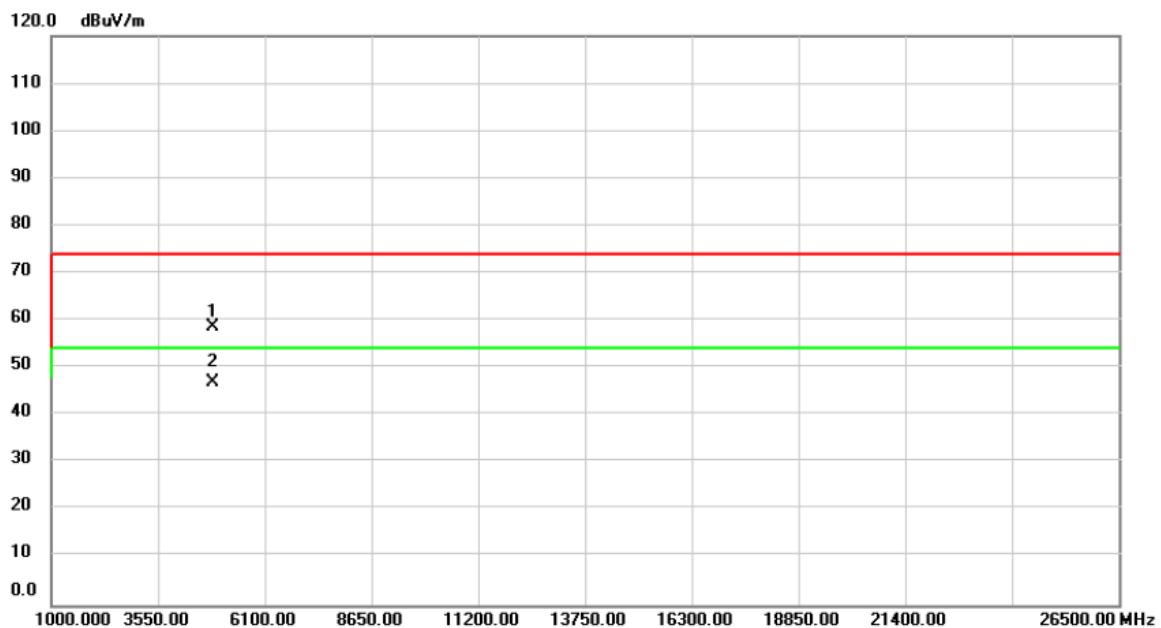
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	69.68	-9.79	59.89	74.00	-14.11	peak	
2	*	4824.000	56.47	-9.79	46.68	54.00	-7.32	AVG	

Test Mode	TX N (HT20) MODE 2412MHz	Polarization	Horizontal
-----------	--------------------------	--------------	------------



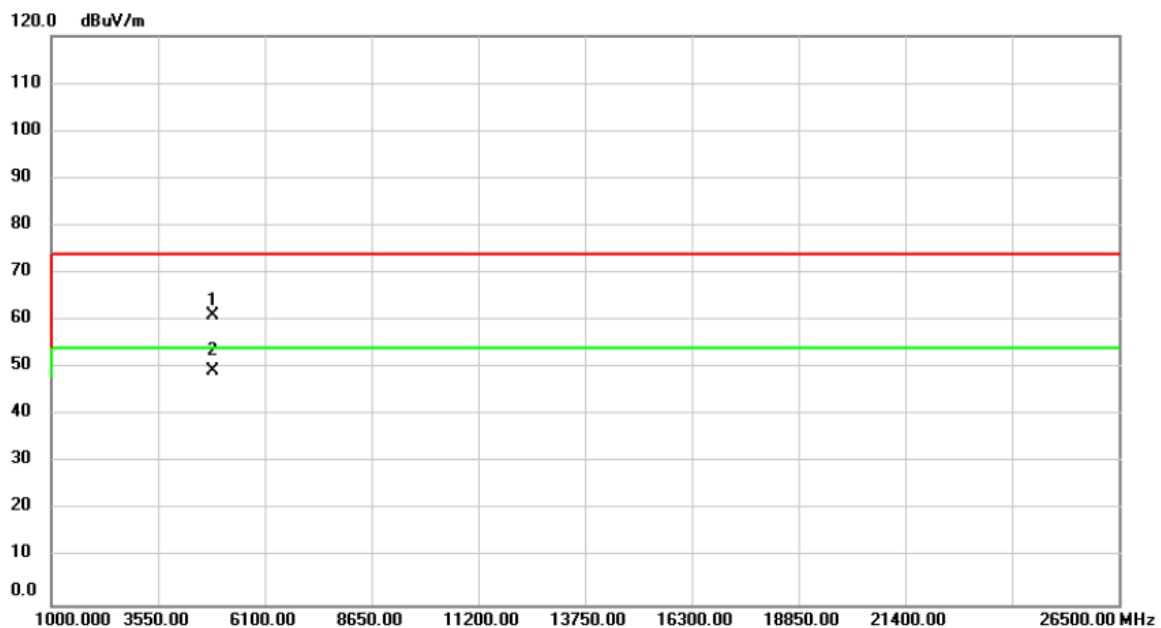
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	68.42	-9.79	58.63	74.00	-15.37	peak	
2	*	4824.000	56.20	-9.79	46.41	54.00	-7.59	AVG	

Test Mode	TX N (HT20) MODE 2437MHz	Polarization	Vertical
-----------	--------------------------	--------------	----------



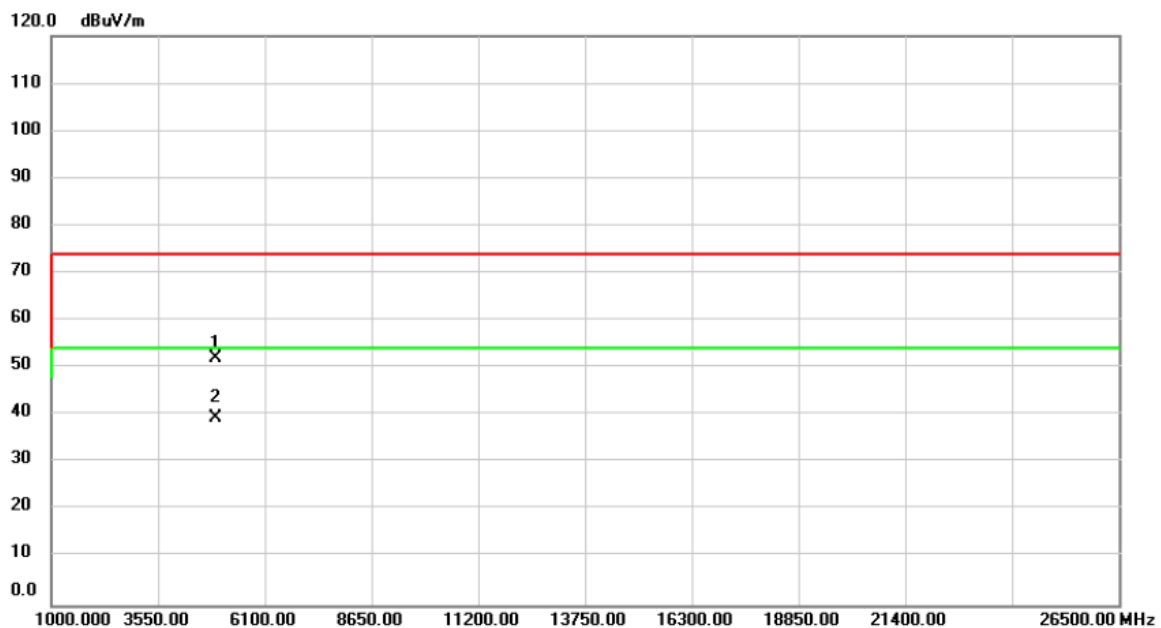
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	68.38	-9.67	58.71	74.00	-15.29	peak	
2	*	4874.000	56.70	-9.67	47.03	54.00	-6.97	AVG	

Test Mode	TX N (HT20) MODE 2437MHz	Polarization	Horizontal
-----------	--------------------------	--------------	------------



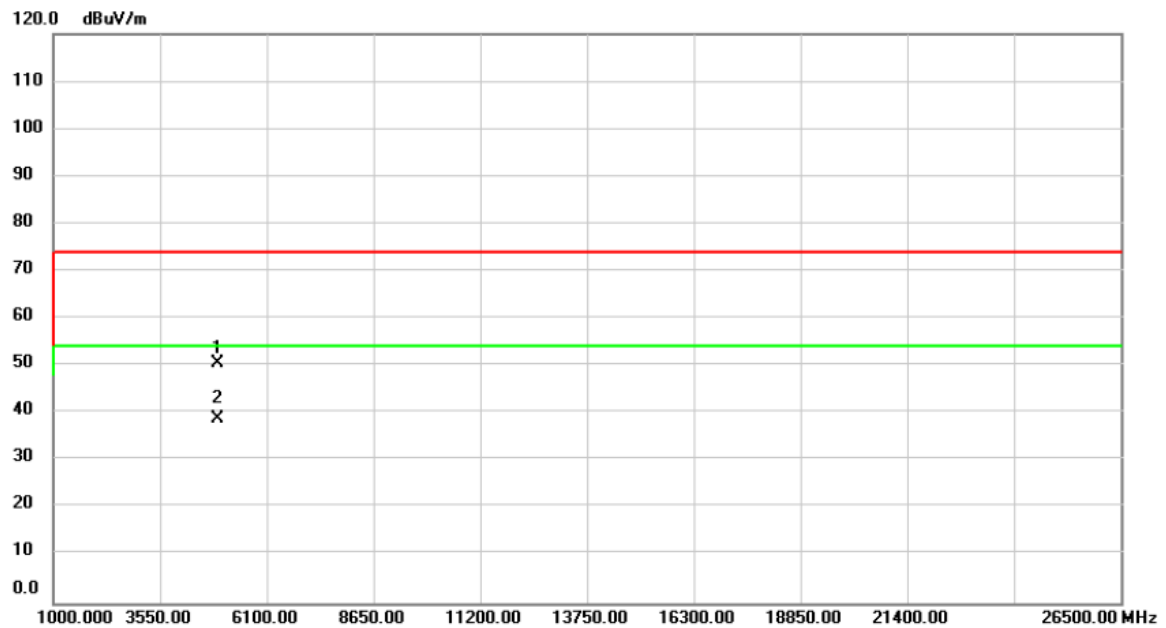
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	70.78	-9.67	61.11	74.00	-12.89	peak	
2	*	4874.000	58.90	-9.67	49.23	54.00	-4.77	AVG	

Test Mode	TX N (HT20) MODE 2462MHz	Polarization	Vertical
-----------	--------------------------	--------------	----------



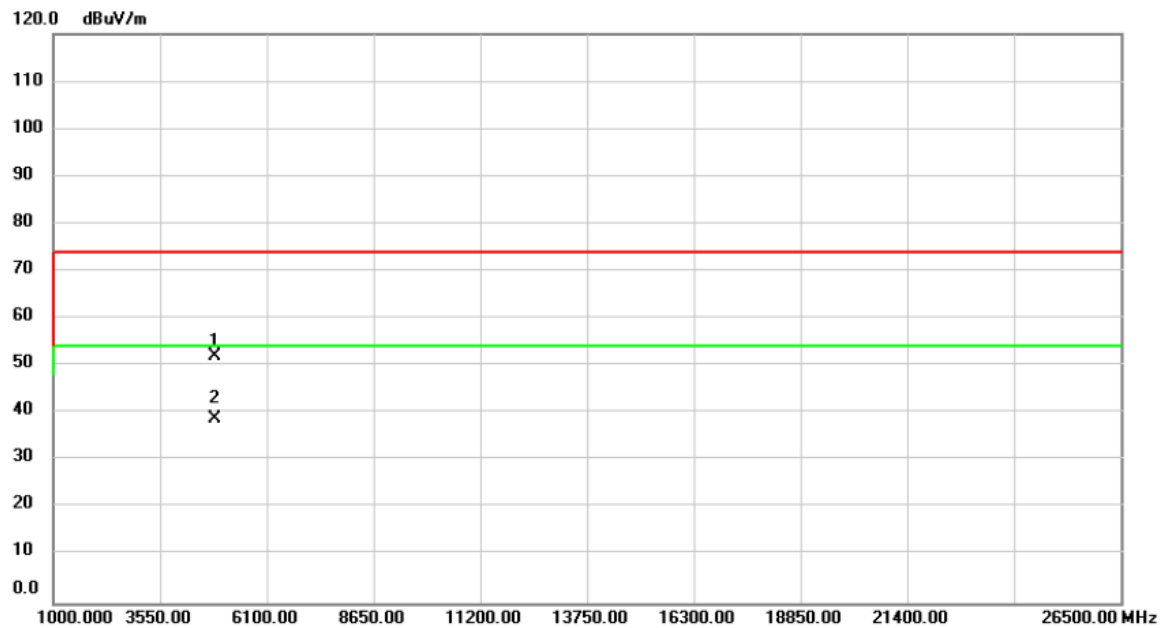
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	61.66	-9.56	52.10	74.00	-21.90	peak	
2	*	4924.000	48.90	-9.56	39.34	54.00	-14.66	AVG	

Test Mode	TX N (HT20) MODE 2462MHz	Polarization	Horizontal
-----------	--------------------------	--------------	------------



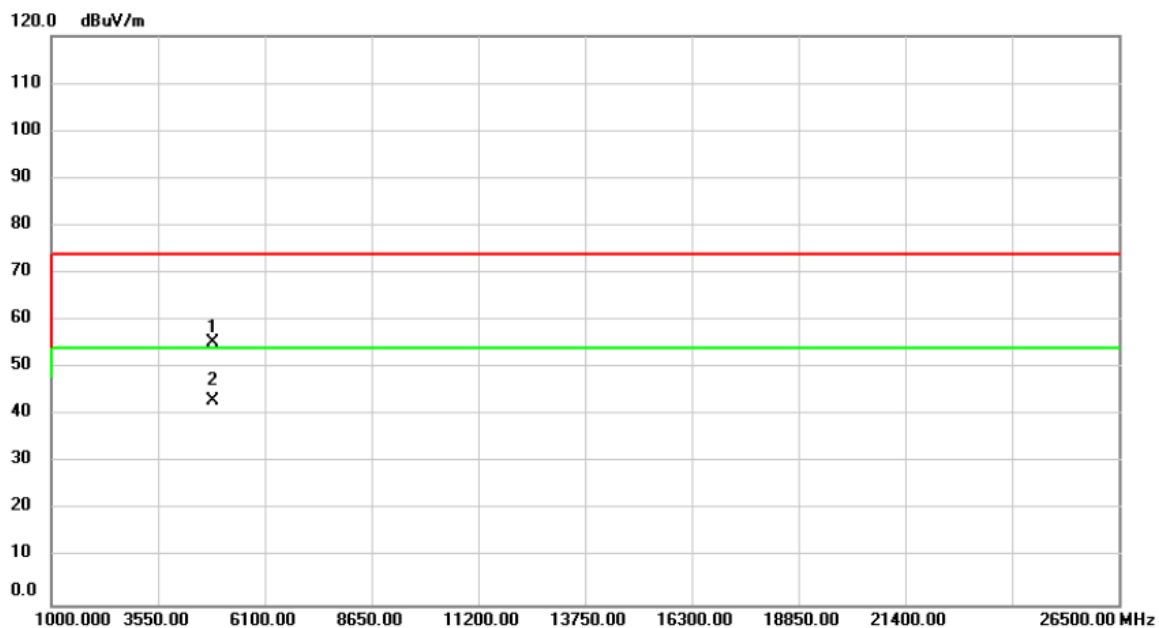
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	60.10	-9.56	50.54	74.00	-23.46	peak	
2	*	4924.000	48.55	-9.56	38.99	54.00	-15.01	AVG	

Test Mode	TX N (HT40) MODE 2422MHz	Polarization	Vertical
-----------	--------------------------	--------------	----------



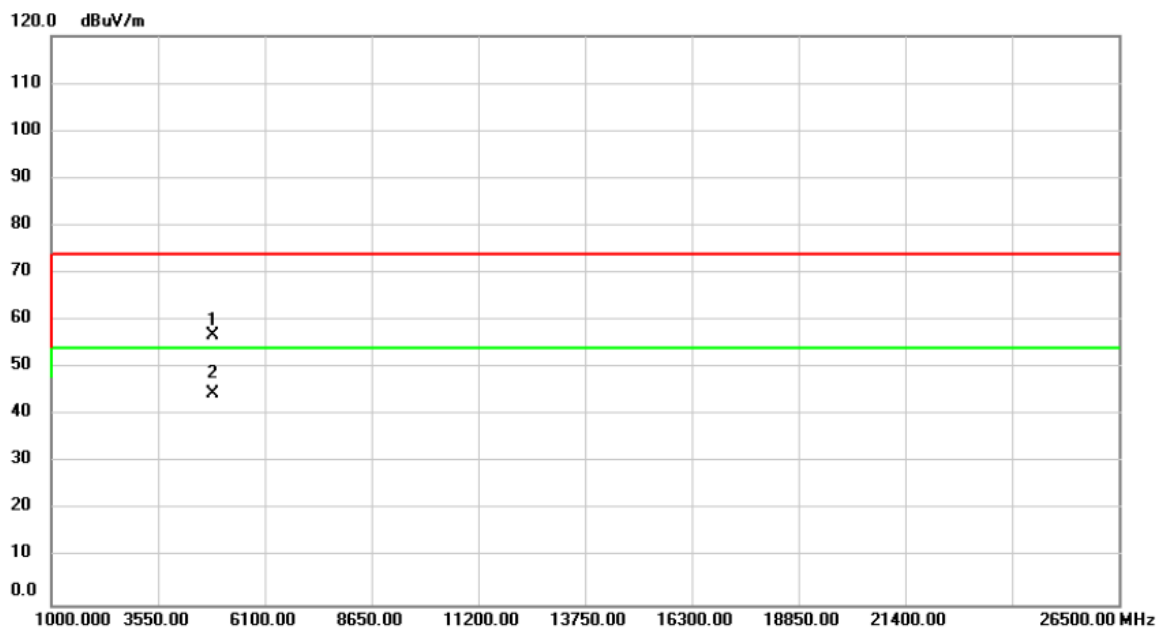
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4844.000	61.88	-9.74	52.14	74.00	-21.86	peak	
2	*	4844.000	48.69	-9.74	38.95	54.00	-15.05	AVG	

Test Mode	TX N (HT40) MODE 2422MHz	Polarization	Horizontal
-----------	--------------------------	--------------	------------



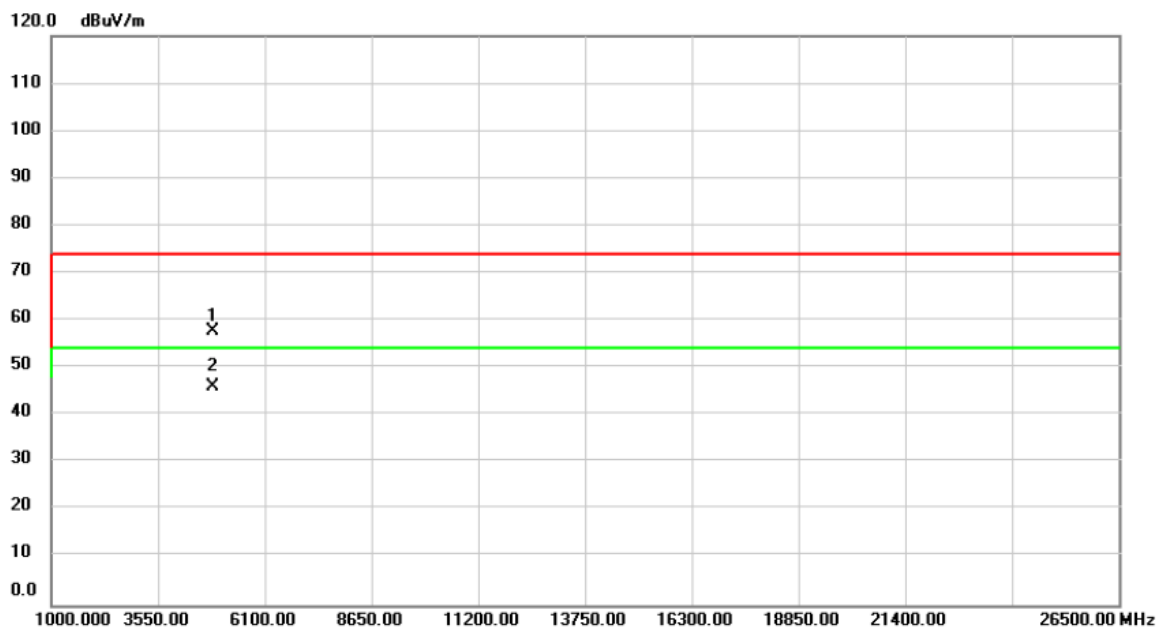
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4844.000	65.22	-9.74	55.48	74.00	-18.52	peak	
2	*	4844.000	52.80	-9.74	43.06	54.00	-10.94	AVG	

Test Mode	TX N (HT40) MODE 2437MHz	Polarization	Vertical
-----------	--------------------------	--------------	----------



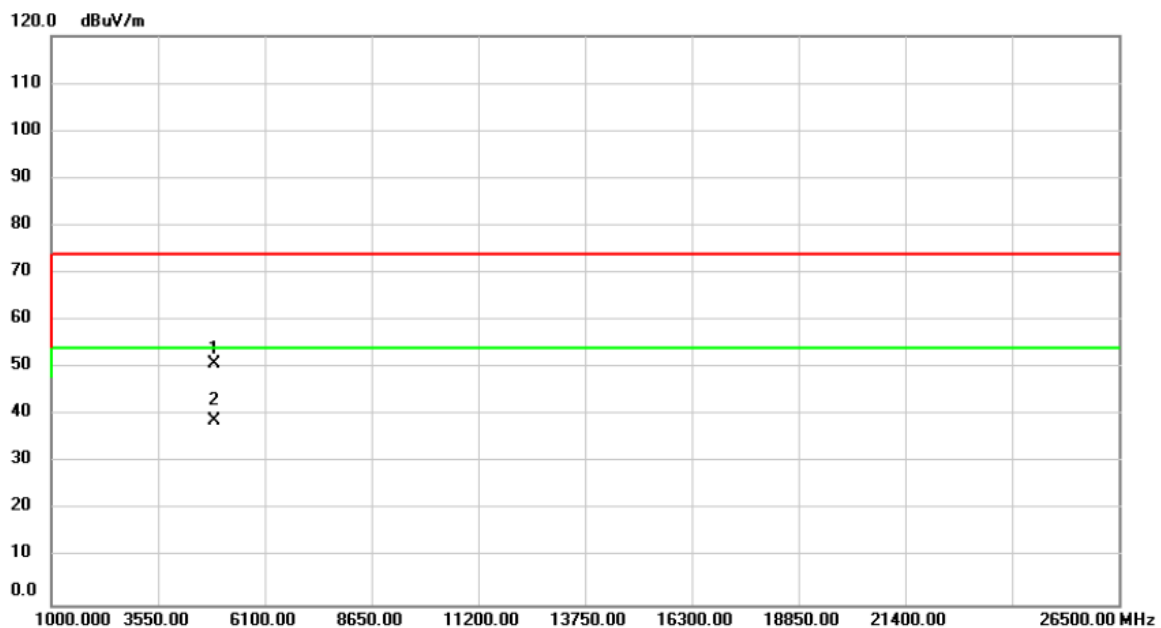
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	66.38	-9.67	56.71	74.00	-17.29	peak	
2	*	4874.000	54.30	-9.67	44.63	54.00	-9.37	AVG	

Test Mode	TX N (HT40) MODE 2437MHz	Polarization	Horizontal
-----------	--------------------------	--------------	------------



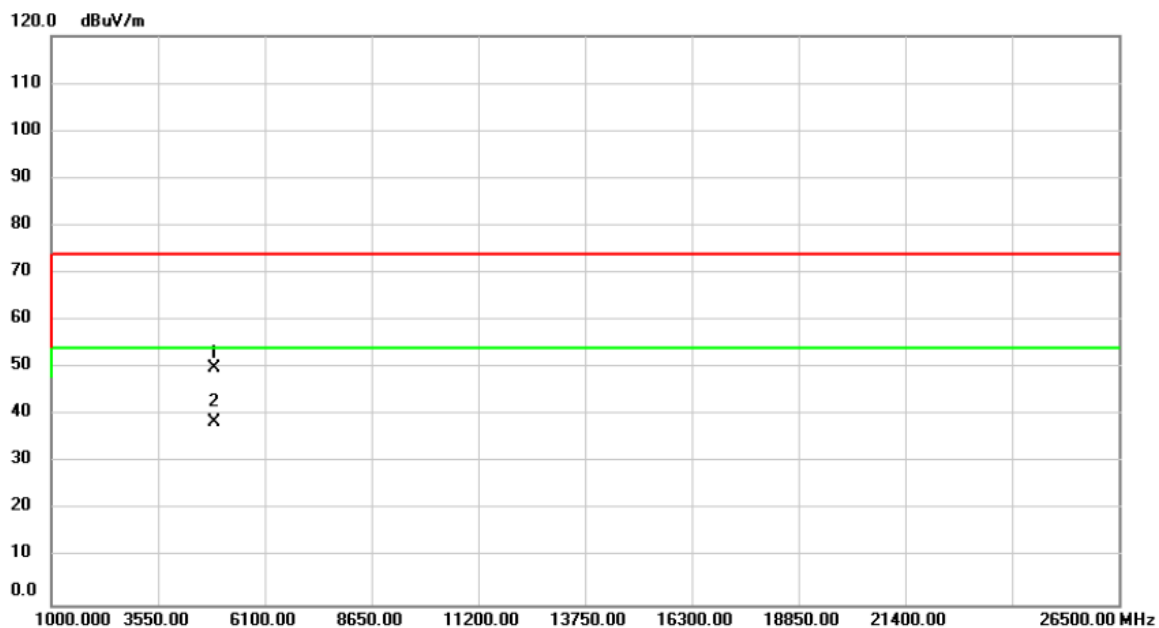
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	67.51	-9.67	57.84	74.00	-16.16	peak	
2	*	4874.000	55.60	-9.67	45.93	54.00	-8.07	AVG	

Test Mode	TX N (HT40) MODE 2452MHz	Polarization	Vertical
-----------	--------------------------	--------------	----------



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4902.000	60.43	-9.61	50.82	74.00	-23.18	peak	
2	*	4902.000	48.39	-9.61	38.78	54.00	-15.22	AVG	

Test Mode	TX N (HT40) MODE 2452MHz	Polarization	Horizontal
-----------	--------------------------	--------------	------------



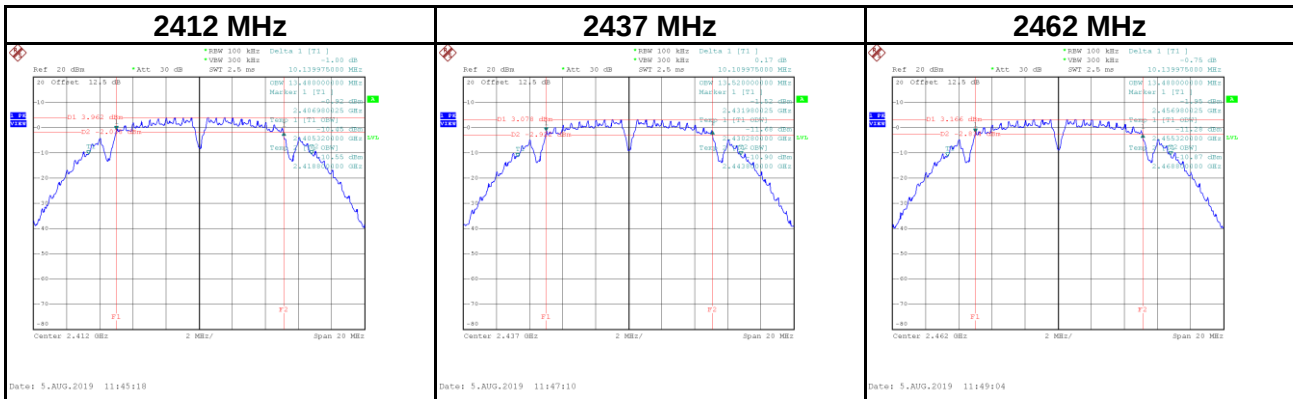
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4902.000	59.70	-9.61	50.09	74.00	-23.91	peak	
2	*	4902.000	48.26	-9.61	38.65	54.00	-15.35	AVG	

APPENDIX E BANDWIDTH

CONTINUE ON NEXT PAGE

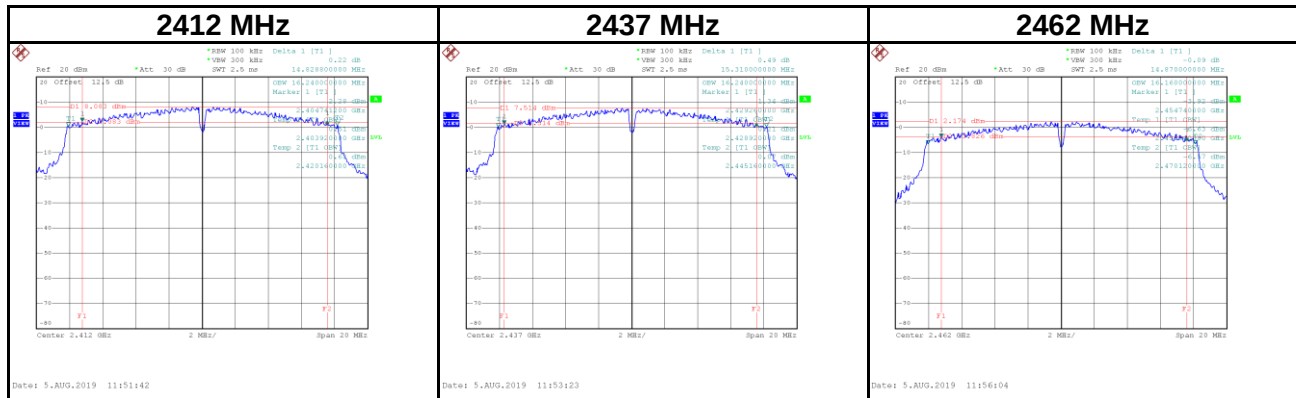
Test Mode IEEE 802.11b_ANT 1

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	10.14	13.48	500	Complies
2437	10.11	13.52	500	Complies
2462	10.14	13.48	500	Complies



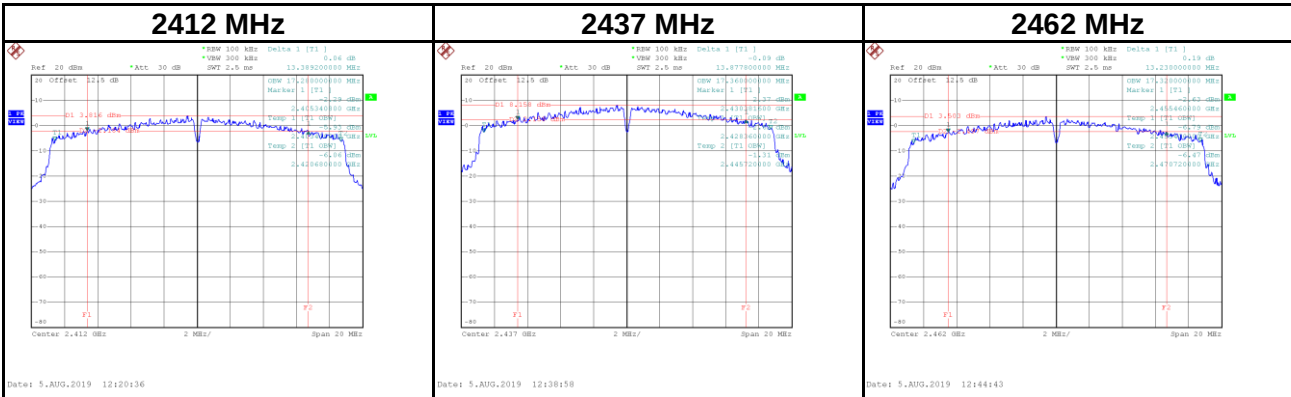
Test Mode IEEE 802.11g_ANT 1

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	14.83	16.24	500	Complies
2437	15.31	16.24	500	Complies
2462	14.87	16.16	500	Complies



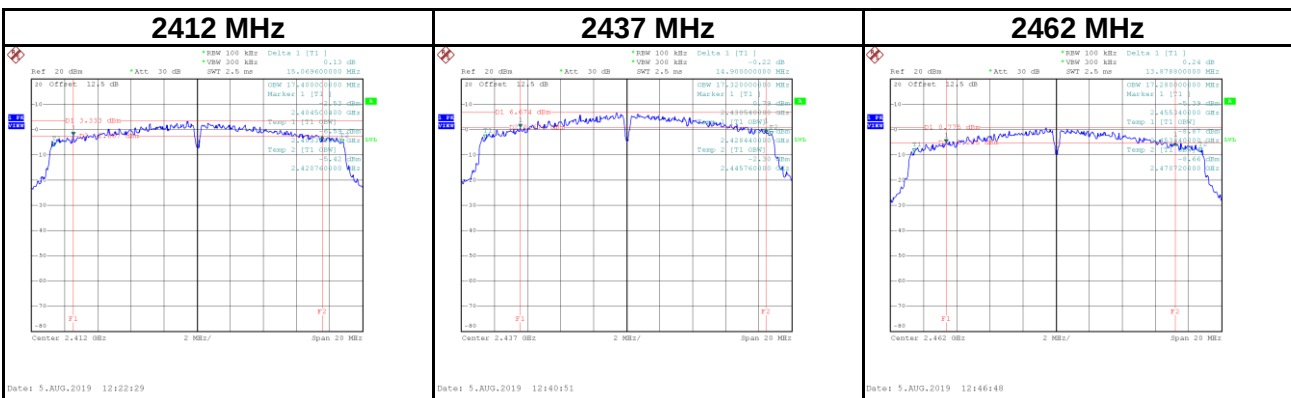
Test Mode IEEE 802.11n (HT20)_ANT 1

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	13.39	17.28	500	Complies
2437	13.88	17.36	500	Complies
2462	13.23	17.32	500	Complies



Test Mode IEEE 802.11n (HT20)_ANT 2

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	15.07	17.40	500	Complies
2437	14.90	17.32	500	Complies
2462	13.88	17.28	500	Complies



APPENDIX F PEAK OUTPUT POWER

CONTINUE ON NEXT PAGE

Test Mode	IEEE 802.11b_ANT 1
-----------	--------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	17.60	0.0575	30.00	1.0000	Complies
2437	16.94	0.0494	30.00	1.0000	Complies
2462	16.91	0.0491	30.00	1.0000	Complies

Test Mode	IEEE 802.11g_ANT 1
-----------	--------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	27.27	0.5333	30.00	1.0000	Complies
2437	26.36	0.4325	30.00	1.0000	Complies
2462	23.36	0.2168	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)_ANT 1
-----------	---------------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	24.41	0.2761	30.00	1.0000	Complies
2437	25.74	0.3750	30.00	1.0000	Complies
2462	22.40	0.1738	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)_ANT 2
-----------	---------------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	24.05	0.2541	30.00	1.0000	Complies
2437	26.83	0.4819	30.00	1.0000	Complies
2462	22.34	0.1714	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)_Total
-----------	---------------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	27.24	0.5302	30.00	1.0000	Complies
2437	29.33	0.8569	30.00	1.0000	Complies
2462	25.38	0.3452	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40)_ANT 1
-----------	---------------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	23.91	0.2460	30.00	1.0000	Complies
2437	25.54	0.3581	30.00	1.0000	Complies
2452	23.11	0.2046	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40)_ANT 2
-----------	---------------------------

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	23.61	0.2296	30.00	1.0000	Complies
2437	26.68	0.4656	30.00	1.0000	Complies
2452	24.30	0.2692	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT40)_Total
-----------	---------------------------

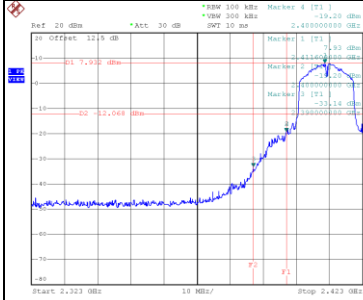
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2422	26.77	0.4757	30.00	1.0000	Complies
2437	29.16	0.8237	30.00	1.0000	Complies
2452	26.76	0.4738	30.00	1.0000	Complies

APPENDIX G ANTENNA CONDUCTED SPURIOUS EMISSIONS

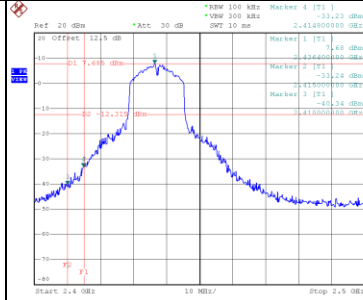
CONTINUE ON NEXT PAGE

Test Mode IEEE 802.11g_ANT 1

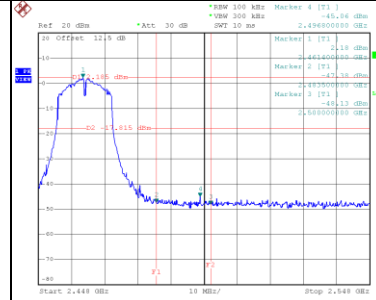
Bandedge-2412 MHz



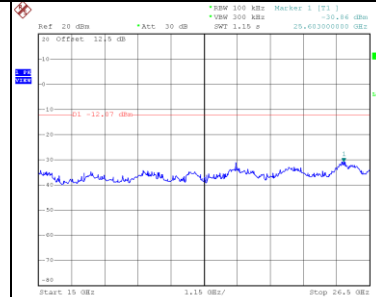
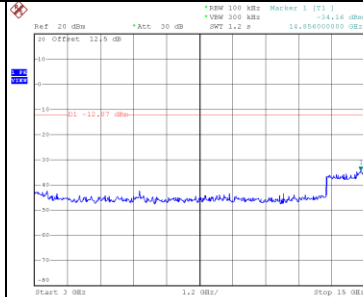
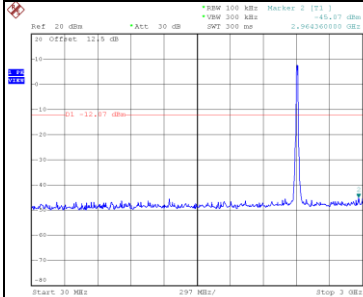
Bandedge-2437 MHz



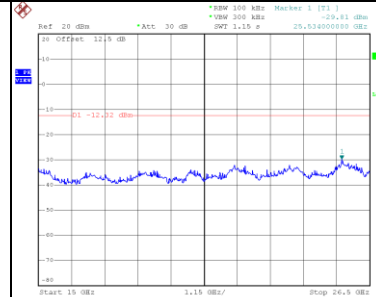
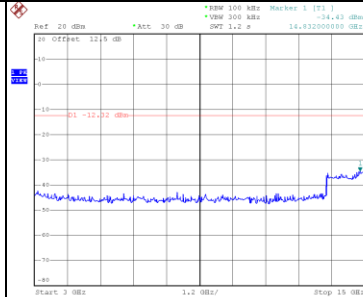
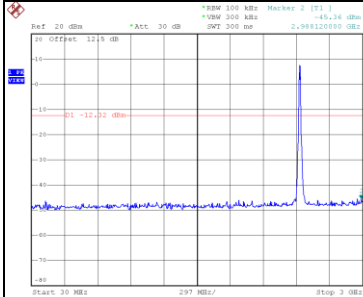
Bandedge-2462 MHz



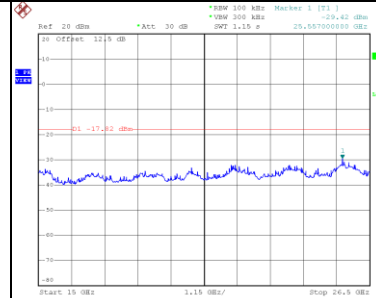
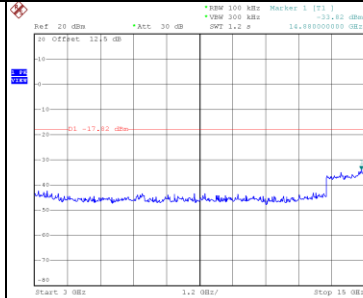
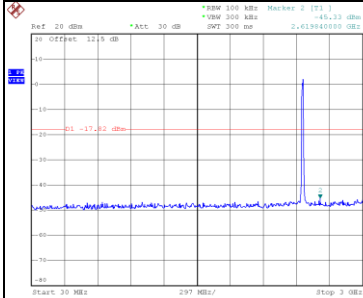
2412 MHz – 10 Harmonics



2437 MHz – 10 Harmonics

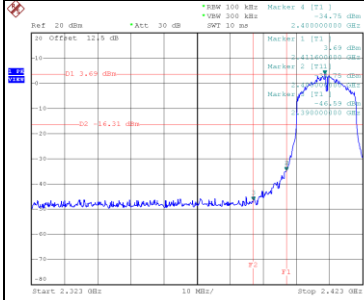


2462 MHz – 10 Harmonics

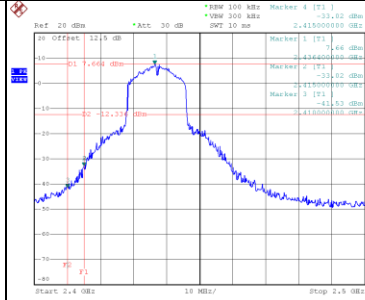


Test Mode IEEE 802.11n (HT20)_ANT 1

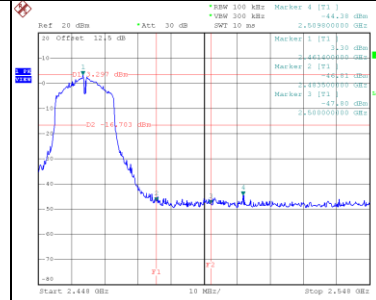
Bandedge-2412 MHz



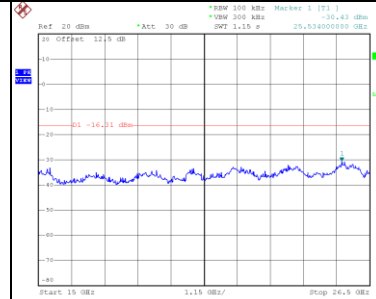
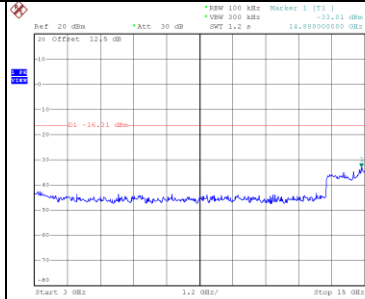
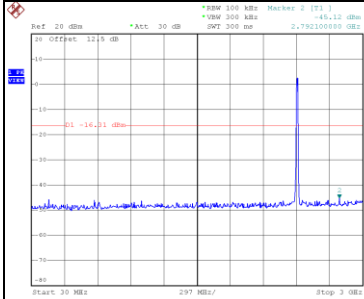
Bandedge-2437 MHz



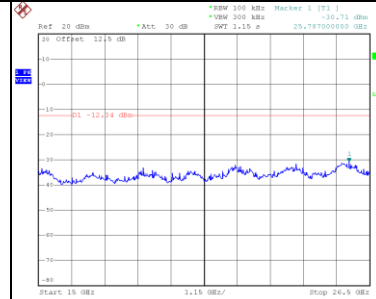
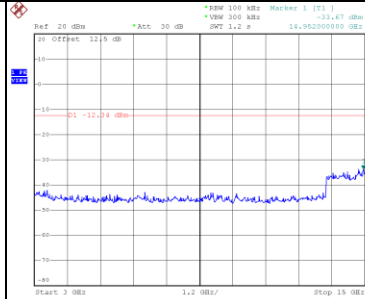
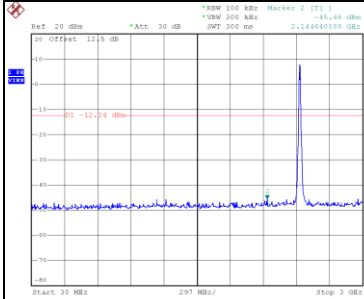
Bandedge-2462 MHz



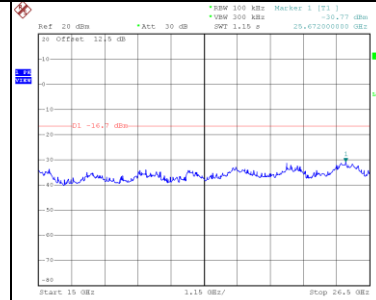
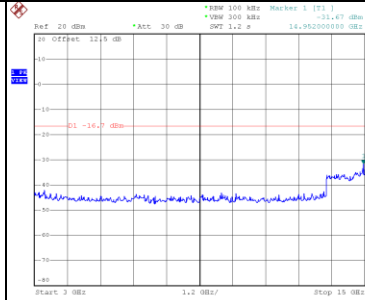
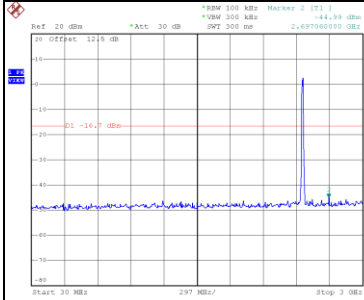
2412 MHz – 10 Harmonics



2437 MHz – 10 Harmonics

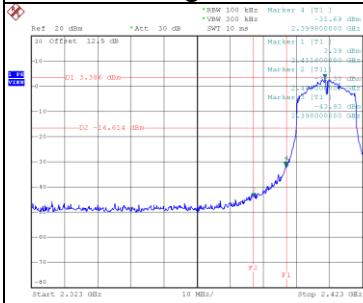


2462 MHz – 10 Harmonics

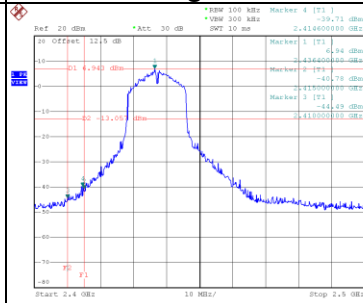


Test Mode IEEE 802.11n (HT20)_ANT 2

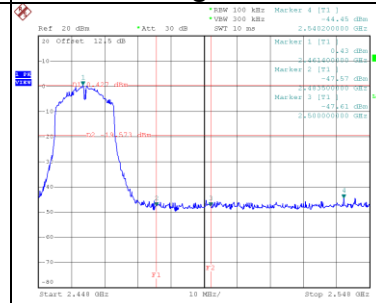
Bandedge-2412 MHz



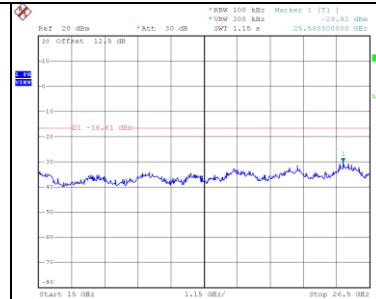
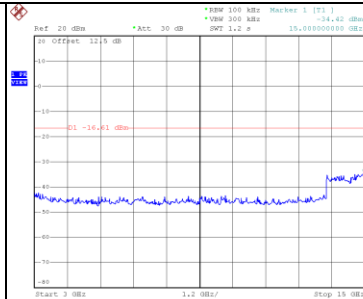
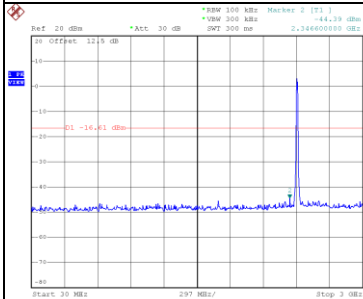
Bandedge-2437 MHz



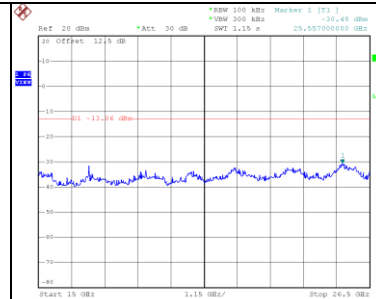
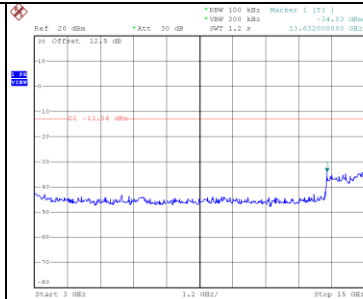
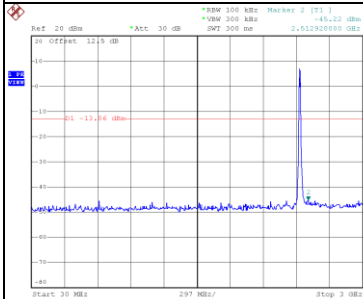
Bandedge-2462 MHz



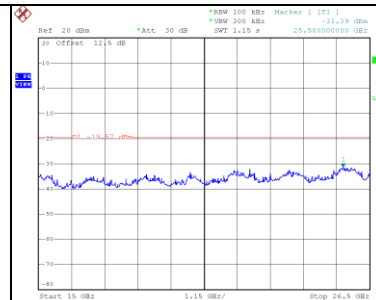
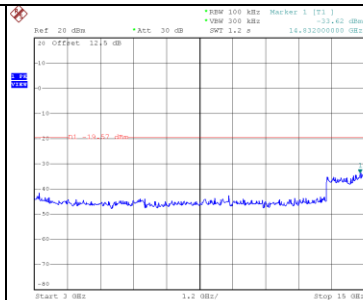
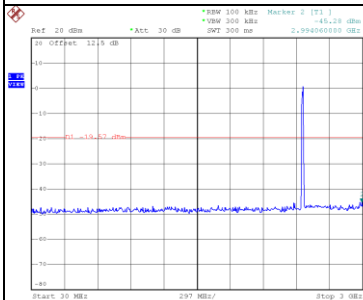
2412 MHz – 10 Harmonics



2437 MHz – 10 Harmonics

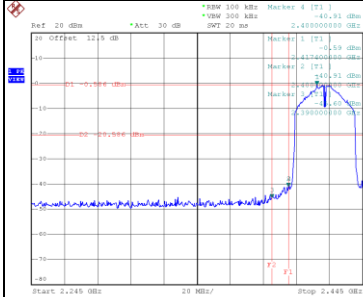


2462 MHz – 10 Harmonics

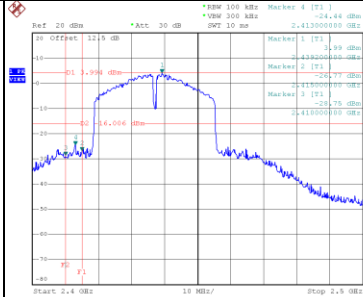


Test Mode IEEE 802.11n (HT40)_ANT 1

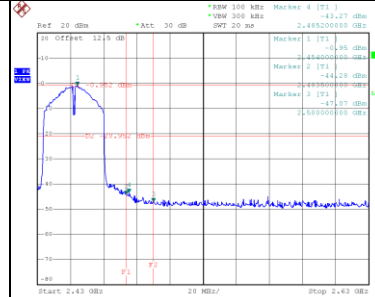
Bandedge-2422 MHz



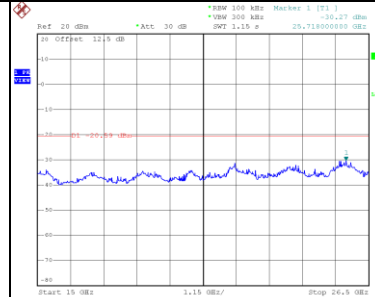
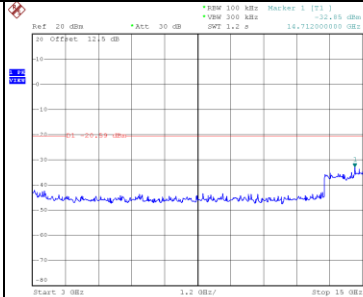
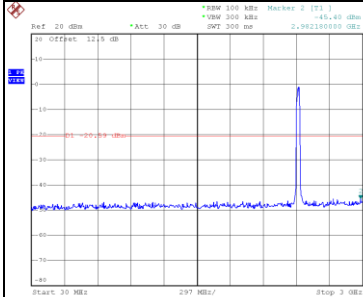
Bandedge-2437 MHz



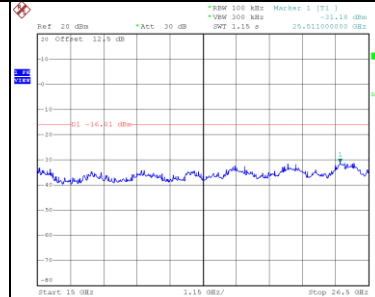
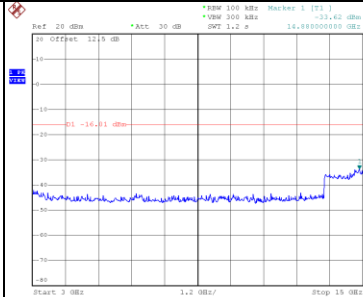
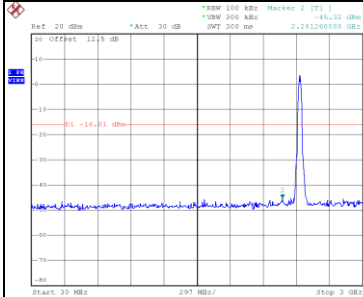
Bandedge-2452 MHz



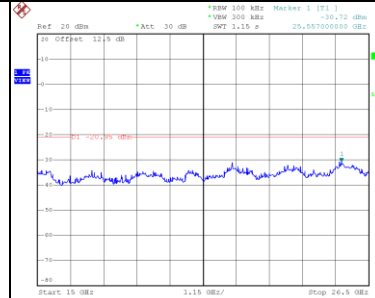
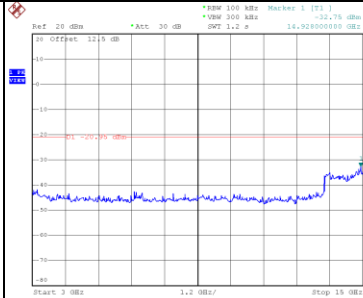
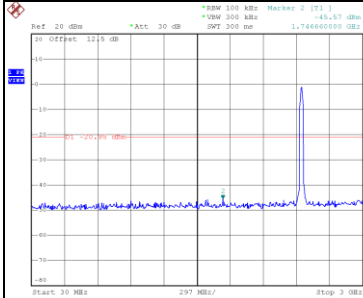
2422 MHz – 10 Harmonics



2437 MHz – 10 Harmonics

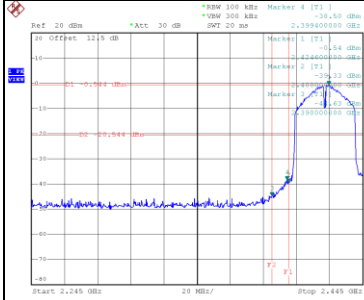


2452 MHz – 10 Harmonics

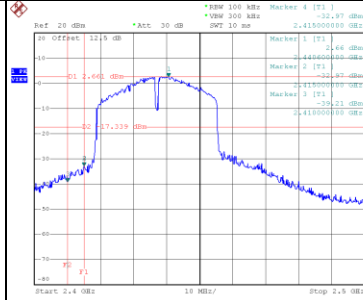


Test Mode IEEE 802.11n (HT40)_ANT 2

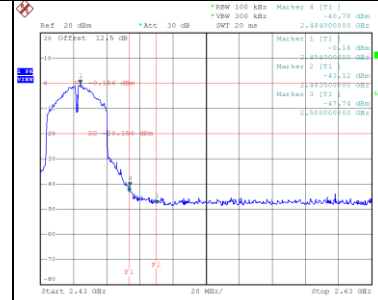
Bandedge-2422 MHz



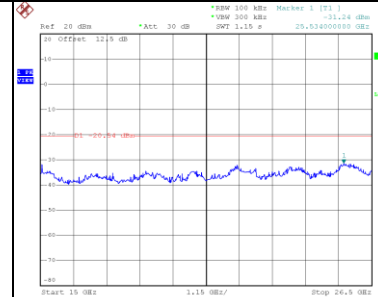
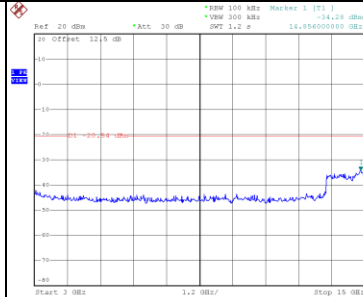
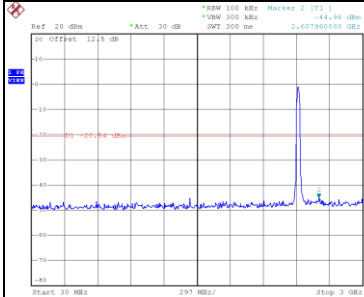
Bandedge-2437 MHz



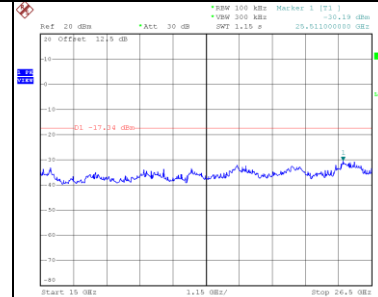
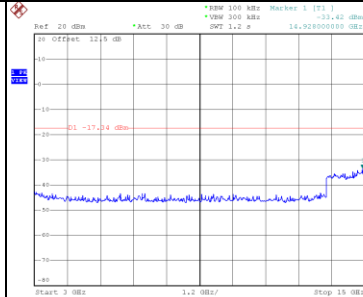
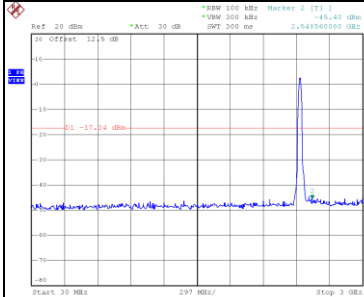
Bandedge-2452 MHz



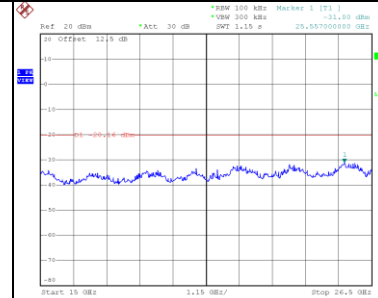
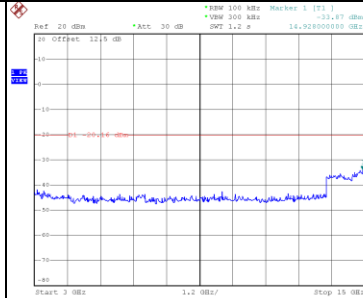
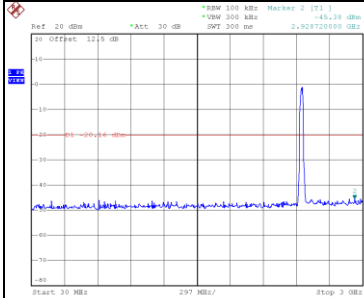
2422 MHz – 10 Harmonics



2437 MHz – 10 Harmonics



2452 MHz – 10 Harmonics

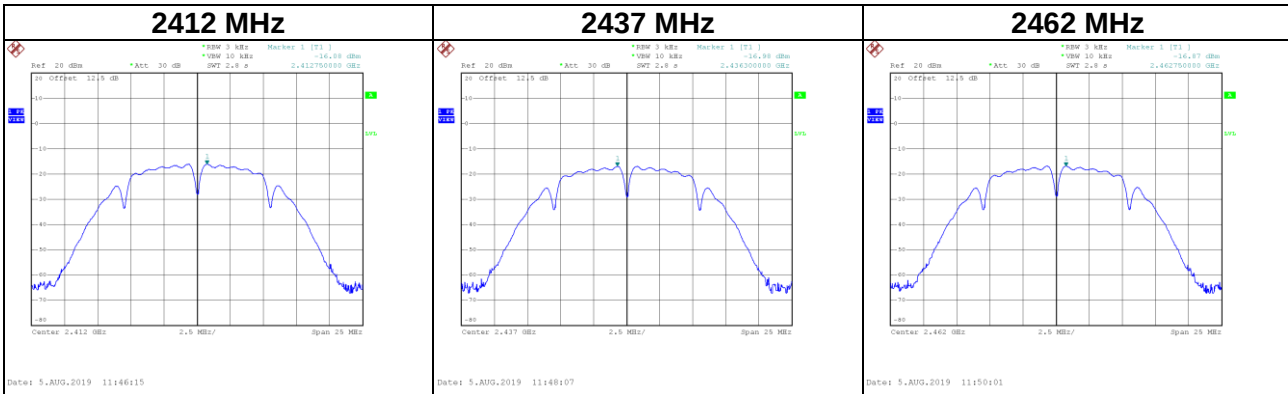


APPENDIX H POWER SPECTRAL DENSITY

CONTINUE ON NEXT PAGE

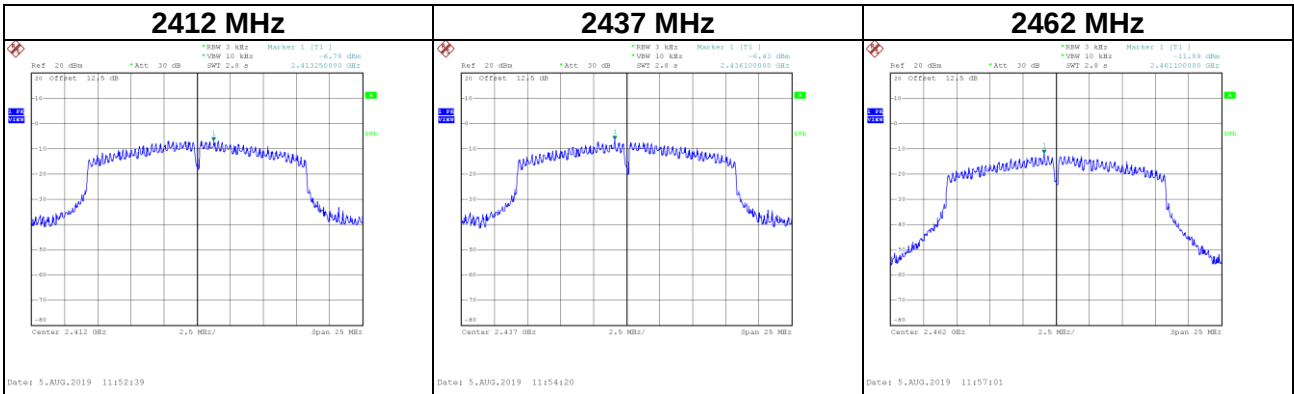
Test Mode	IEEE 802.11b_ANT 1
-----------	--------------------

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-16.08	5.82	Complies
2437	-16.98	5.82	Complies
2462	-16.87	5.82	Complies



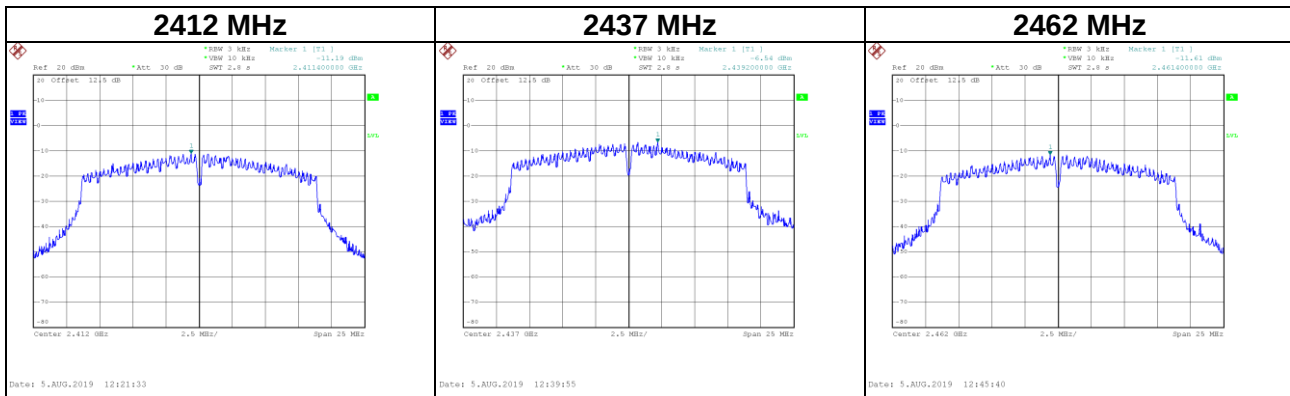
Test Mode	IEEE 802.11g_ANT 1
-----------	--------------------

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-6.78	5.82	Complies
2437	-6.43	5.82	Complies
2462	-11.89	5.82	Complies



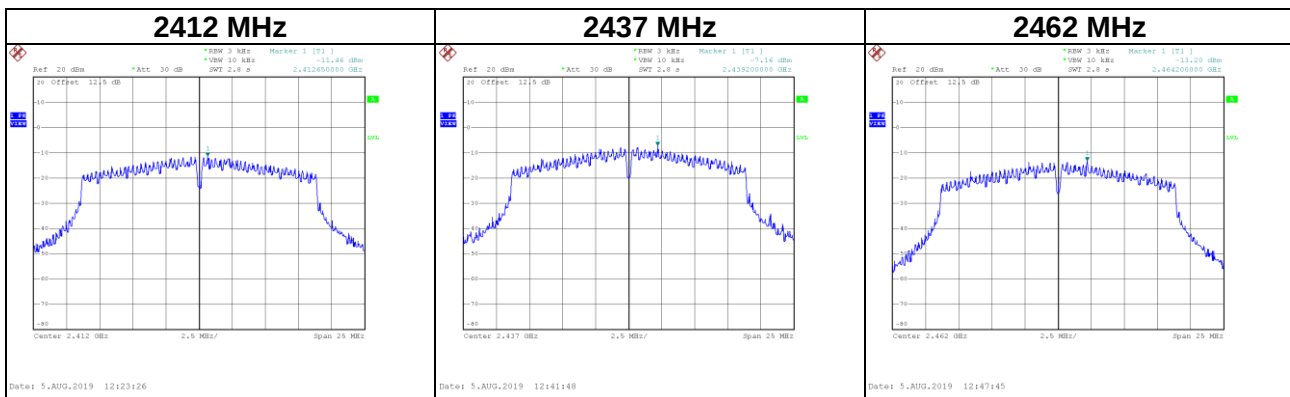
Test Mode IEEE 802.11n (HT20)_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-11.19	5.82	Complies
2437	-6.54	5.82	Complies
2462	-11.61	5.82	Complies



Test Mode IEEE 802.11n (HT20)_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-11.46	5.82	Complies
2437	-7.16	5.82	Complies
2462	-13.20	5.82	Complies

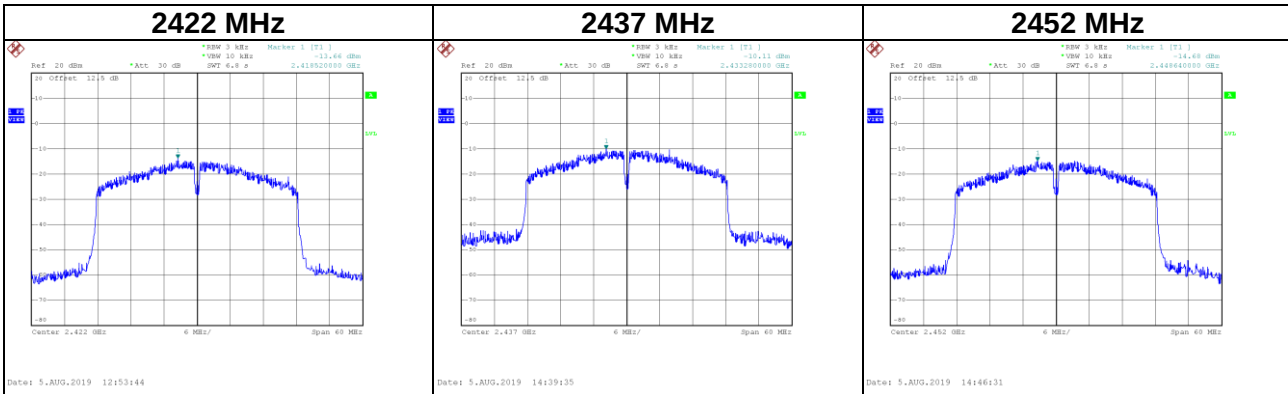


Test Mode	IEEE 802.11n (HT20)_Total
-----------	---------------------------

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-8.31	5.82	Complies
2437	-3.83	5.82	Complies
2462	-9.32	5.82	Complies

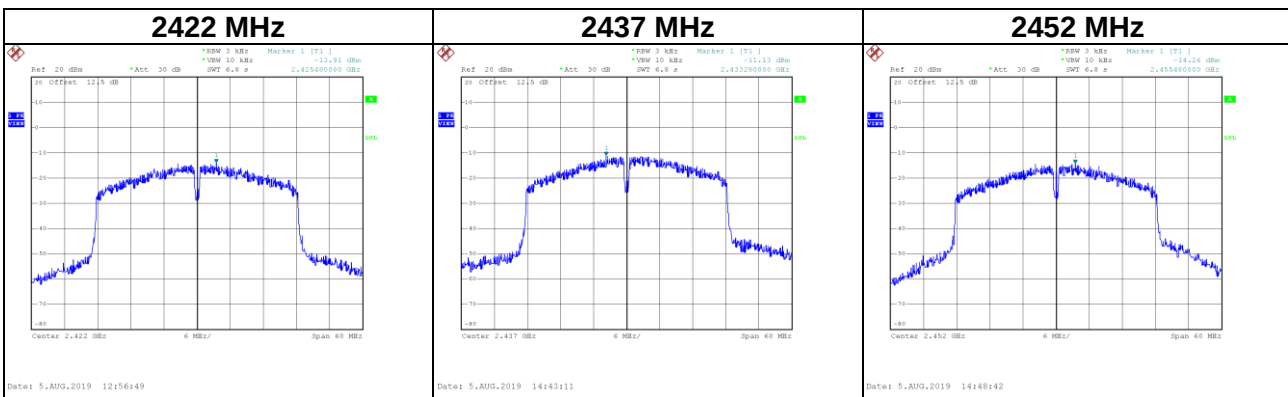
Test Mode IEEE 802.11n (HT40)_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2422	-13.66	5.82	Complies
2437	-10.11	5.82	Complies
2452	-14.68	5.82	Complies



Test Mode IEEE 802.11n (HT40)_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2422	-13.91	5.82	Complies
2437	-11.13	5.82	Complies
2452	-14.26	5.82	Complies



Test Mode	IEEE 802.11n (HT40)_Total
-----------	---------------------------

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2422	-10.77	5.82	Complies
2437	-7.58	5.82	Complies
2452	-11.45	5.82	Complies

End of Test Report