

FCC&ISED Radio Test Report


FCC ID: 2AEUPBHACM001

IC: 20271-BHACM001

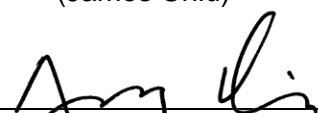
This report concerns (check one): ☐ Original Grant ☐ Class I Change ☒ Class II Change

Project No. : 1804T043C
Equipment : Chime
Test Model : Chime
Series Model : N/A
Applicant : Ring, Inc.
Address : 1523 26th St, Santa Monica, CA 90404, USA

Date of Receipt : Oct. 23, 2018
Date of Test : Oct. 23, 2018 ~ Dec. 07, 2018
Issued Date : Dec. 17, 2018
Tested by : BTL Inc.

Testing Engineer : 
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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, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements 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.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Dec. 17, 2018

1. CERTIFICATION

Equipment : Chime
Brand Name : ring
Test Model : Chime
Series Model : N/A
Applicant : Ring, Inc.
Manufacturer : Goldtek Technology CO.,LTD.
Address : 16F., No166, Jian 1st Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)
Factory : Goldtek Technology CO.,LTD.
Address : 16F., No166, Jian 1st Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)
Date of Test : Oct. 23, 2018 ~ Dec. 07, 2018
Test Sample : Engineering Sample
Standard(s) : FCC Part15, Subpart C:(15.247) / ANSI C63.10-2013
RSS-247 Issue 2, Feb. 2017
RSS-GEN Issue 5, Apr. 2018

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-FICP-1-1804T043C) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C Canada RSS-247 Issue 2, Feb. 2017, RSS-GEN Issue 5, Apr. 2018				
Standard(s) Section		Test Item	Judgment	Remark
FCC	IC			
15.247(b)(3)	RSS-247 5.4 (d)	Peak Output Power	PASS	-----
15.247(d)/ 15.205/ 15.209	RSS-247 5.5	Transmitter Radiated Emissions	PASS	-----

NOTE:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) Input power is supplied by battery.
- (3) Compared with the previous report (EMC_BOTH0-003-15001_15.247_DTS_WLAN).
The difference compared with original report is change bandpass filter and change antenna which type is same and antenna gain is lower than the original antenna.
Only Conducted, Radiated Emissions and Peak Output Power (TX G MODE) test need to be verified and which are recorded in this report.

2.1 TEST FACILITY

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

Conducted emission Test:

C05: (VCCI RN: C-4742; FCC RN:674415; FCC DN:TW0659)

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

Radiated emission Test (Below 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659; ISSED Assigned Code:20088-5)

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659; ISSED Assigned Code:20088-5)

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

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. Conducted emission test:

Test Site	Method	Measurement Frequency Range	U,(dB)
C05	CISPR	150 kHz ~ 30MHz	2.68

B. Radiated emission test:

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15 (3m)	CISPR	9kHz ~ 150kHz	2.82
		150kHz ~ 30MHz	2.58

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

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

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

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

It can be seen that our U_{lab} values are smaller than U_{CISPR} .

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Chime
Brand Name	ring
Test Model	Chime
Series Model	N/A
Model Difference	N/A
Power Source	AC Mains.
Power Rating	I/P:110-240V~50-60Hz 2.0-1.0A
Products Covered	N/A
Operation Frequency	2412~2462 MHz
Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 72.2 Mbps
Output Power (Max.)	802.11b: 16.84dBm 802.11g: 18.74dBm 802.11n(20MHz): 18.15dBm

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Channel List:

CH01 – CH11 for 802.11b, 802.11g, 802.11n(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	INPAQ	WA-P-LA-02-187	PCB Antenna	I-PEX	1.83

3.2 DESCRIPTION OF TEST MODES

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

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

Test Items	Test mode	Channel	Note
AC Power Line Conducted Emissions	TX G MODE	11	-
Transmitter Radiated Emissions (BELOW 1GHz)	TX G MODE	11	-
Transmitter Radiated Emissions (ABOVE 1GHz)	TX G MODE	01/06/11	-
Peak Output Power	TX B MODE	01/06/11	-
	TX G MODE	01/06/11	-
	TX N-20M MODE	01/06/11	-

Note:

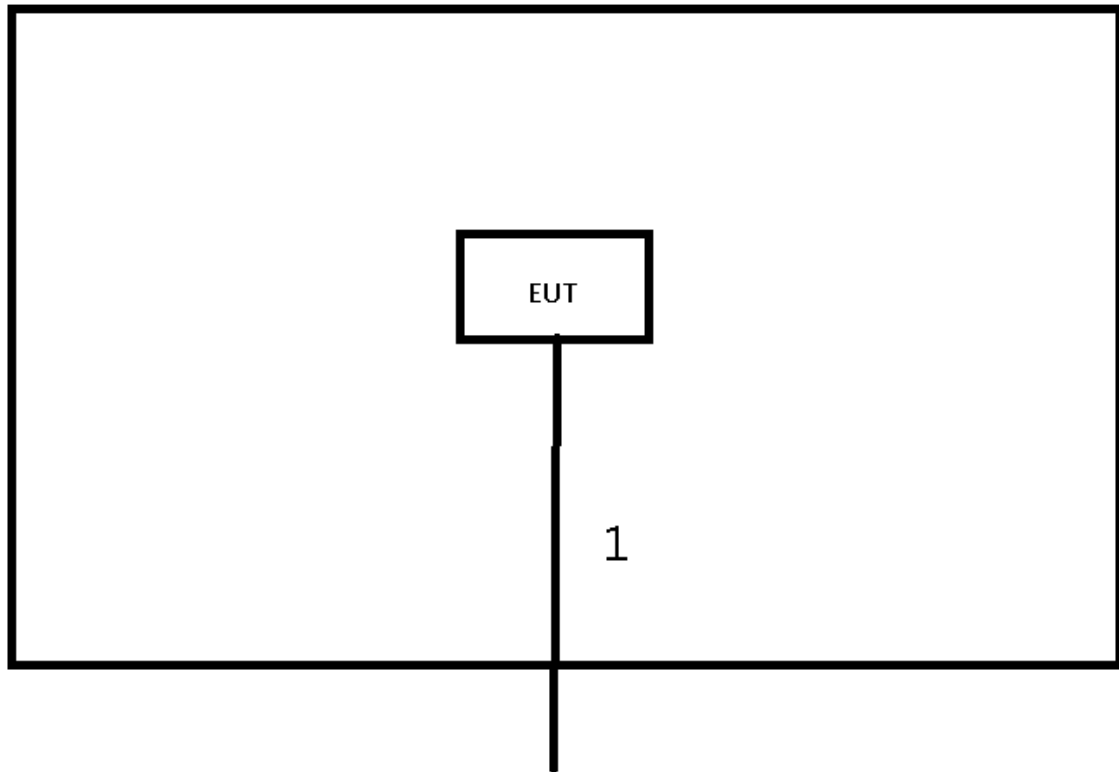
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
 802.11g mode: OFDM (6Mbps)
 802.11n HT20 mode : BPSK (MCS 0)
 For radiated emission tests, the highest output powers were set for final test.

3.3 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 of WLAN

Test software version	v1.2.5942.19689		
Frequency (MHz)	2412	2437	2462
802.11b	0	0	0
802.11g	0	0	0
802.11n (20MHz)	0	0	0

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	2m	Power cable-

4. EMC EMISSION TEST

4.1 AC POWER LINE CONDUCTED EMISSIONS TEST

4.1.1 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

4.1.2 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.

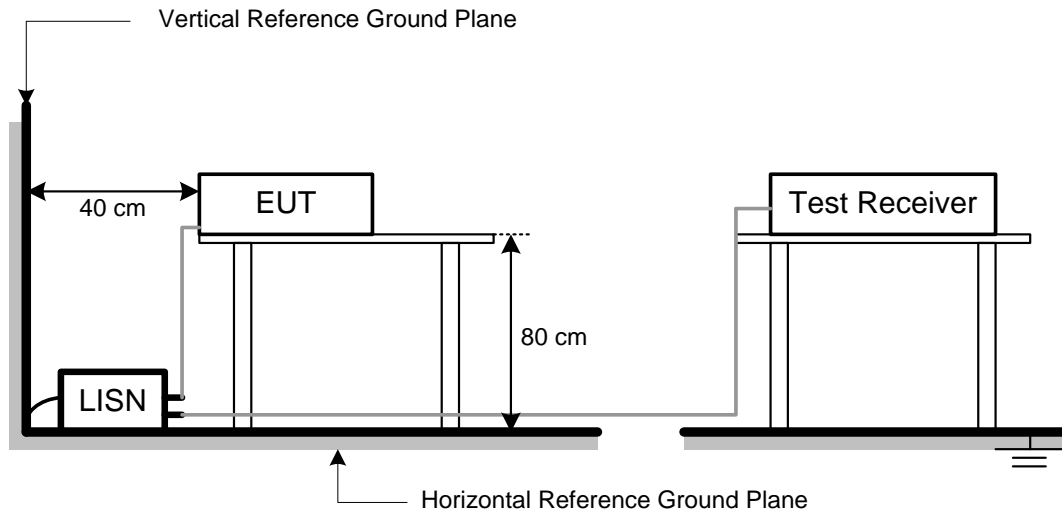
Notes:

- (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.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in normal link mode.

4.1.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 45% Test Voltage: AC 120V/60Hz

4.1.7 TEST RESULTS

Please refer to the Appendix A.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

In case the emission fall within the restricted band specified on 15.205(a) & RSS-247 5.5, then the 15.209(a) & RSS-Gen limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9KHz-1000MHz)

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 EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C/RSS-247.
- (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

Receiver 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

4.2.2 TEST PROCEDURE

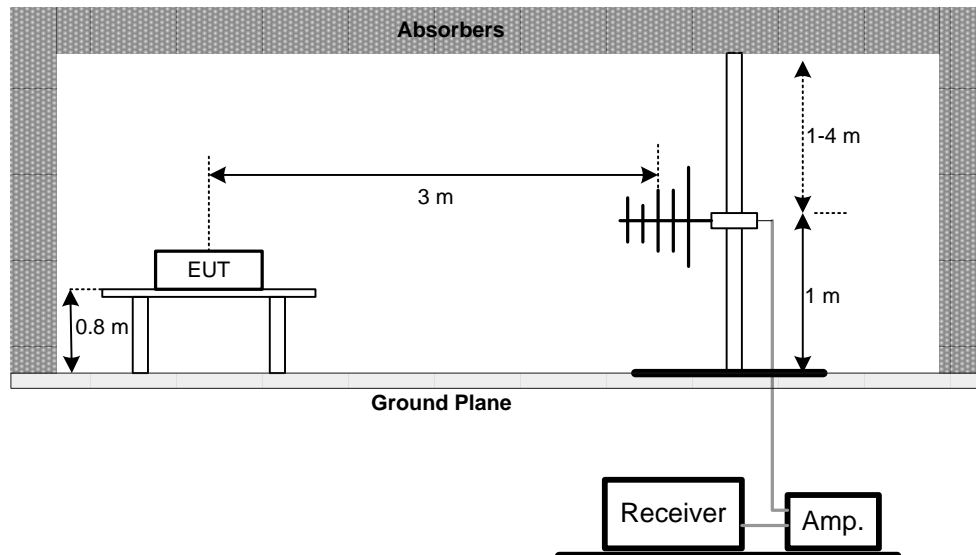
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 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)
- The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; 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.
- 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).
- 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.
- 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.
- 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)
- 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)
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

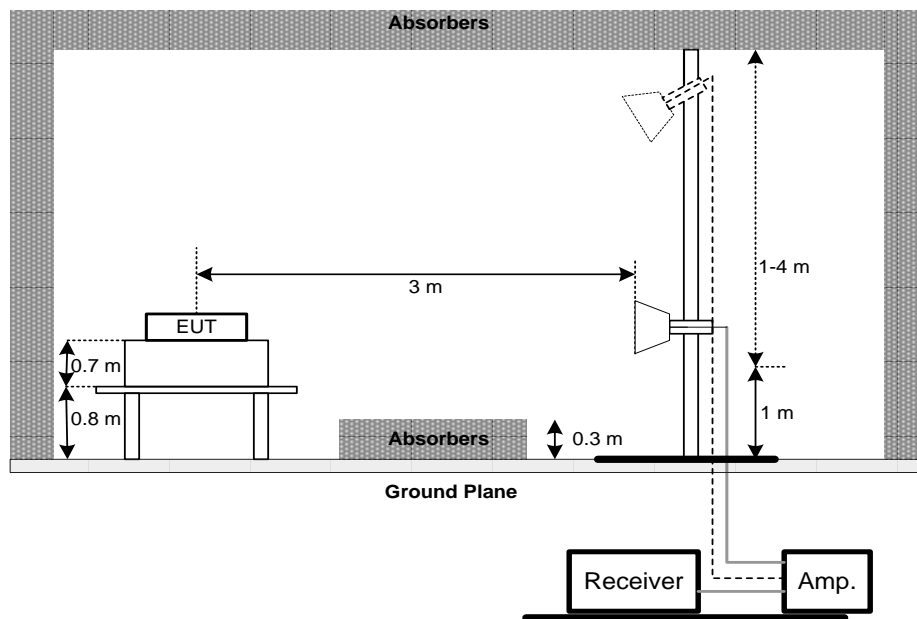
No deviation

4.2.4 TEST SETUP

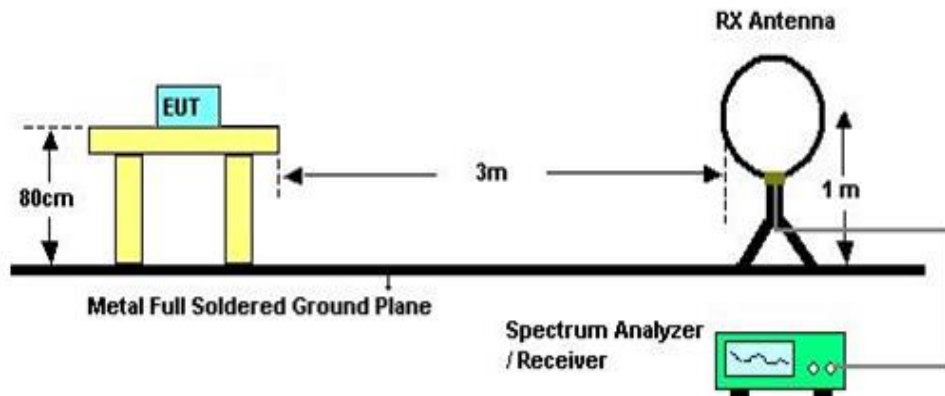
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz Band edge



(C) For Radiated Emissions Below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix B.

Remark:

- (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.

4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)

Please refer to the Appendix C.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Appendix D.

Remark:

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

5. MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C/ RSS-247				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3) RSS-247 5.4 (d)	Maximum Output Power	1 Watt or 30dBm	2400-2483.5	PASS

5.1.1 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.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

5.1.6 TEST RESULTS

Please refer to the Appendix E.

6. MEASUREMENT INSTRUMENTS LIST

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	Mar. 08, 2019
2	Test Cable	EMCI	EMCCFD300-B M-BMR-6000	170715	Aug. 07, 2019
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 10, 2018
4	Measurement Software	EZ	EZ EMC (Version NB-03A)	N/A	N/A

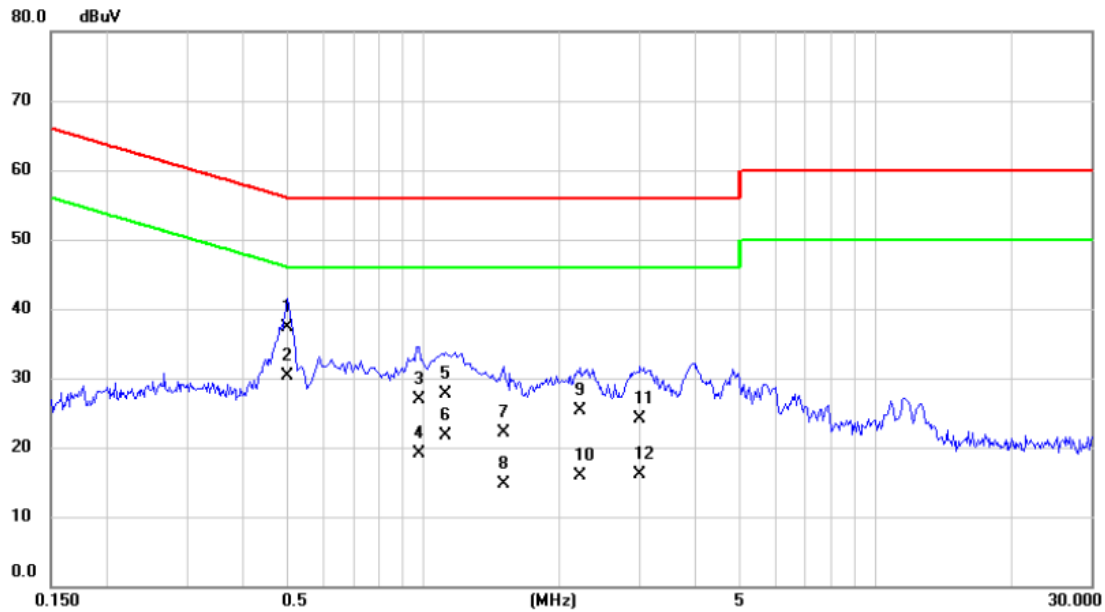
Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMCI	012645B	980267	Apr. 14, 2019
2	Preamplifier	EMCI	EMC02325	980217	Apr. 14, 2019
3	Preamplifier	EMCI	EMC2654045	980030	Apr. 14, 2019
4	Test Cable	EMCI	EMC104-SM-S M-8000	8m	Apr. 14, 2019
5	Test Cable	EMCI	EMC104-SM-S M-800	150207	Apr. 14, 2019
6	Test Cable	EMCI	EEMC104-SM-S M-3000	151205	Apr. 14, 2019
7	MXE EMI Receiver	Agilent	N9038A	MY55420127	Jan. 27, 2019
8	Signal Analyzer	Agilent	N9010A	MY52220990	May 22, 2019
9	Loop Ant	EMCI	LPA600	274	May 03, 2019
10	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	May 02, 2019
11	Horn Ant	Schwarzbeck	BBHA 9170	187	Aug. 16, 2019
12	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-548	Mar. 22, 2019
13	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0623	Mar. 22, 2019

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	Aug. 15, 2019
2	Power Sensor	Anritsu	MA2411B	1126001	Aug. 15, 2019

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

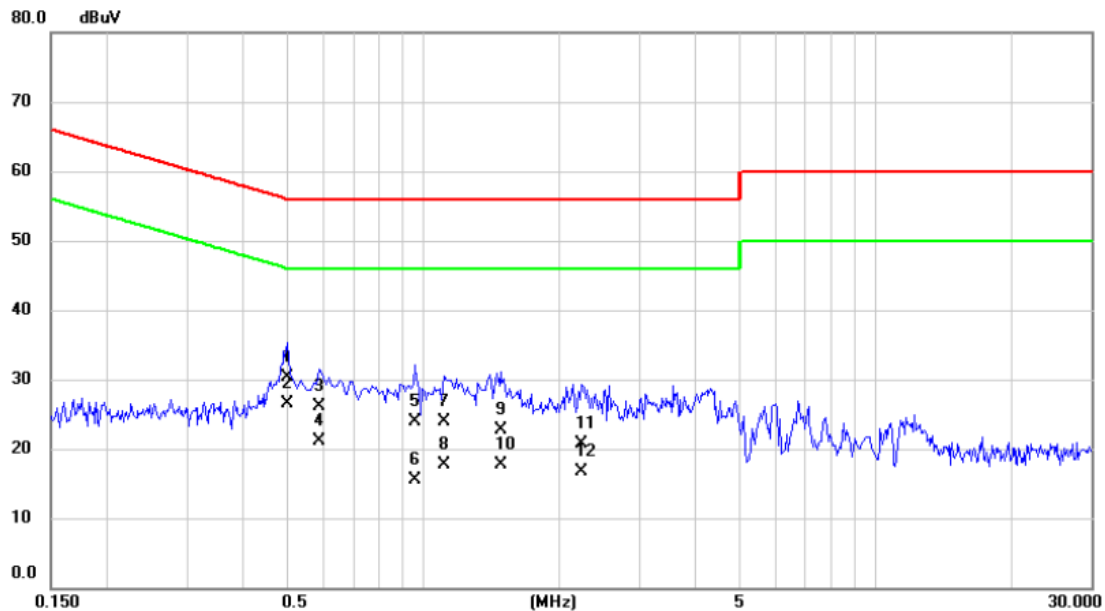
APPENDIX A - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode	TX G MODE 2462MHz	Phase	Line
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.5000	27.60	9.65	37.25	56.00	-18.75	QP	
2	*	0.5000	20.70	9.65	30.35	46.00	-15.65	AVG	
3		0.9770	17.30	9.69	26.99	56.00	-29.01	QP	
4		0.9770	9.40	9.69	19.09	46.00	-26.91	AVG	
5		1.1210	18.00	9.69	27.69	56.00	-28.31	QP	
6		1.1210	12.10	9.69	21.79	46.00	-24.21	AVG	
7		1.5080	12.40	9.72	22.12	56.00	-33.88	QP	
8		1.5080	5.00	9.72	14.72	46.00	-31.28	AVG	
9		2.2280	15.50	9.75	25.25	56.00	-30.75	QP	
10		2.2280	6.20	9.75	15.95	46.00	-30.05	AVG	
11		3.0110	14.40	9.79	24.19	56.00	-31.81	QP	
12		3.0110	6.30	9.79	16.09	46.00	-29.91	AVG	

Test Mode	TX G MODE 2462MHz	Phase	Neutral
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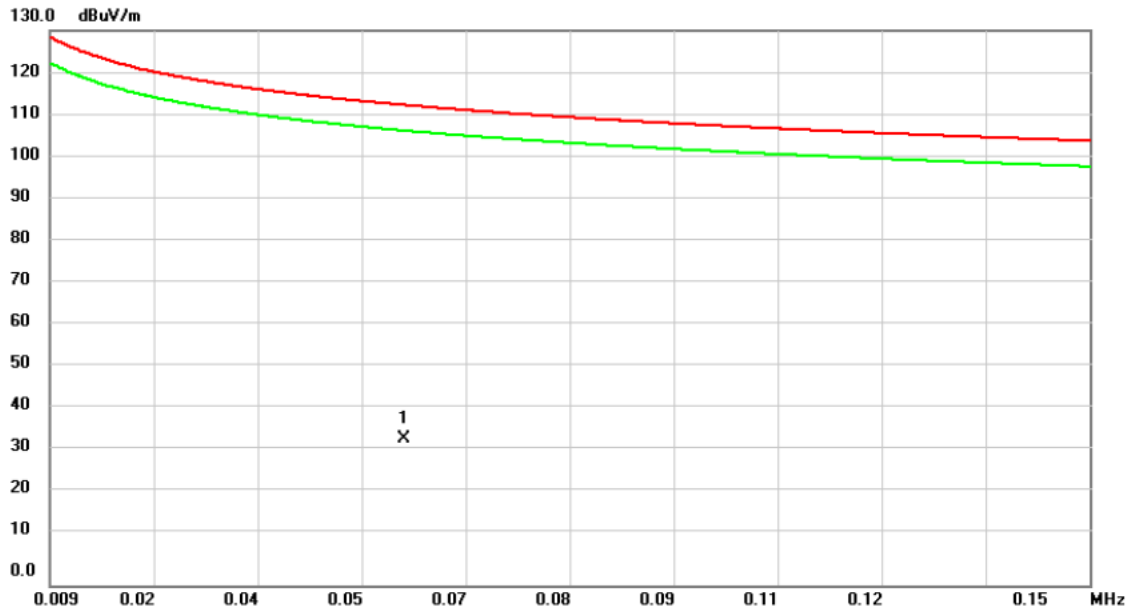


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.5000	20.60	9.64	30.24	56.00	-25.76	QP	
2	*	0.5000	16.90	9.64	26.54	46.00	-19.46	AVG	
3		0.5900	16.50	9.65	26.15	56.00	-29.85	QP	
4		0.5900	11.40	9.65	21.05	46.00	-24.95	AVG	
5		0.9590	14.30	9.68	23.98	56.00	-32.02	QP	
6		0.9590	5.90	9.68	15.58	46.00	-30.42	AVG	
7		1.1120	14.20	9.68	23.88	56.00	-32.12	QP	
8		1.1120	8.00	9.68	17.68	46.00	-28.32	AVG	
9		1.4810	13.00	9.70	22.70	56.00	-33.30	QP	
10		1.4810	8.00	9.70	17.70	46.00	-28.30	AVG	
11		2.2370	11.00	9.73	20.73	56.00	-35.27	QP	
12		2.2370	6.90	9.73	16.63	46.00	-29.37	AVG	

APPENDIX B - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode: TX G MODE 2462MHz

Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	0.0570	12.87	21.30	34.17	112.49	-78.32	AVG	

Test Mode: TX G MODE 2462MHz

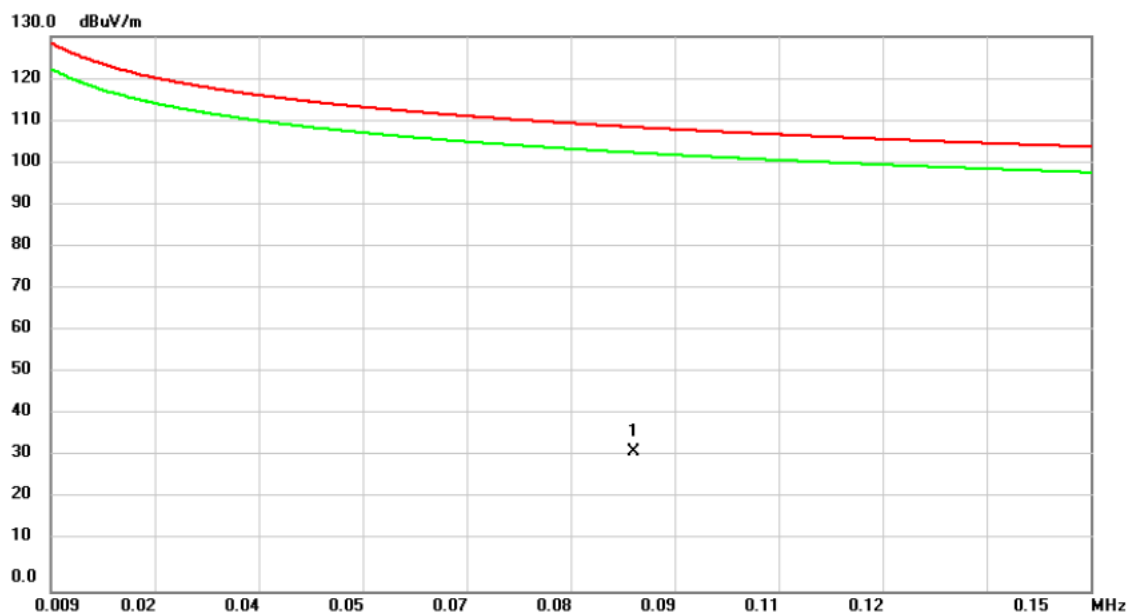
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	1.2644	28.62	-1.03	27.59	65.57	-37.98	QP	
2		3.3340	28.73	-3.70	25.03	69.54	-44.51	QP	
3		6.2394	30.54	-4.05	26.49	69.54	-43.05	QP	
4		10.9358	29.33	-4.80	24.53	69.54	-45.01	QP	
5		12.6870	30.13	-4.82	25.31	69.54	-44.23	QP	
6		17.0650	29.23	-5.86	23.37	69.54	-46.17	QP	

Test Mode:	TX G MODE 2462MHz
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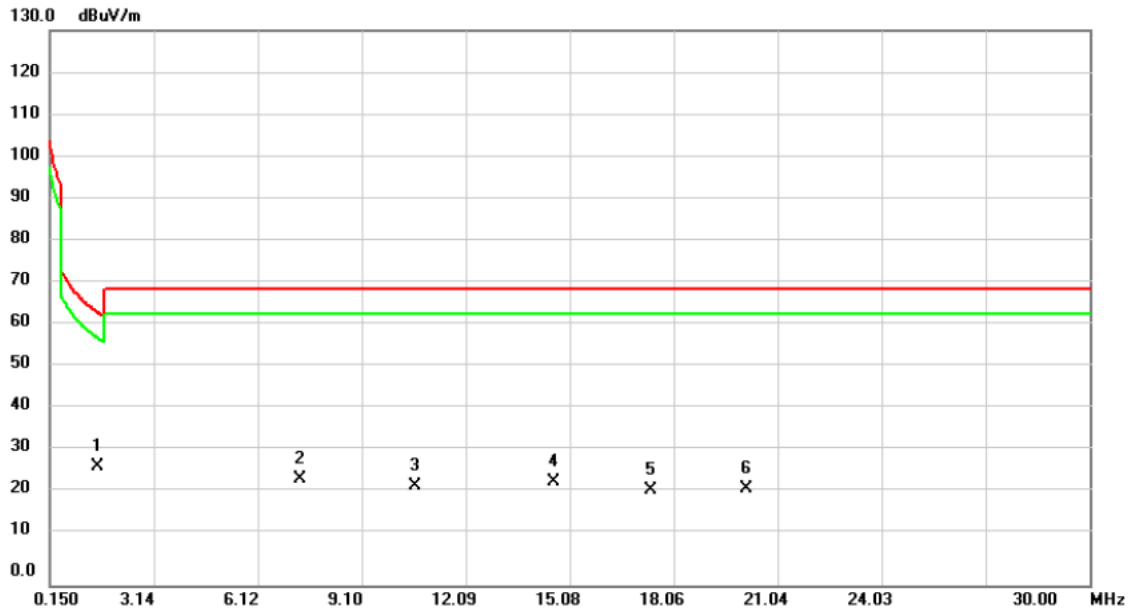
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0881	15.07	17.49	32.56	108.70	-76.14	AVG	

Test Mode: TX G MODE 2462MHz

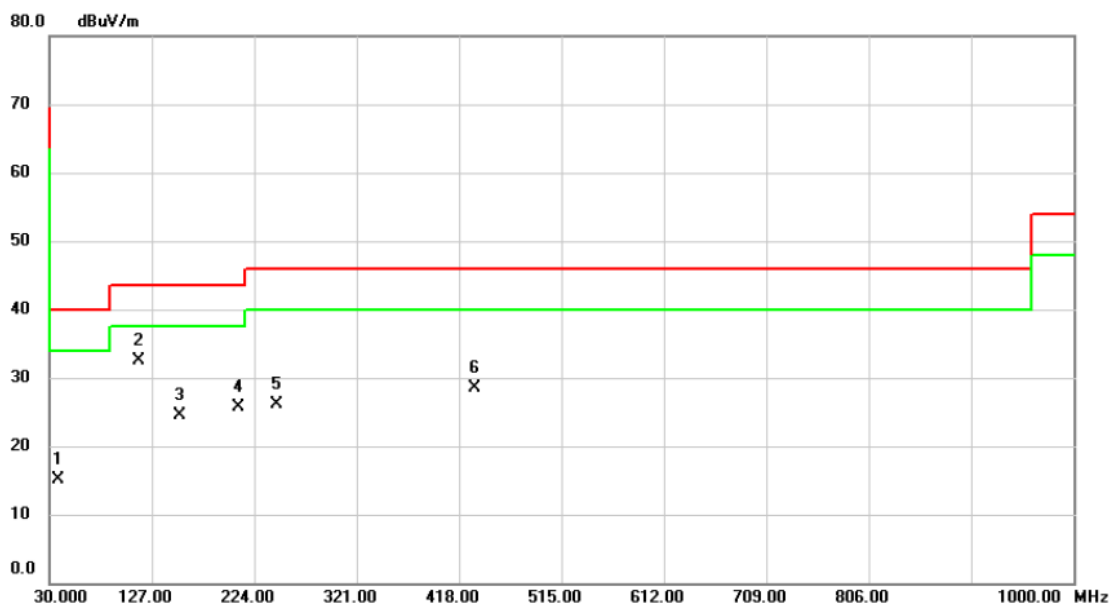
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	1.5032	29.40	-1.66	27.74	64.06	-36.32	QP	
2		7.3140	29.03	-4.18	24.85	69.54	-44.69	QP	
3		10.6174	28.01	-4.77	23.24	69.54	-46.30	QP	
4		14.5974	29.24	-4.94	24.30	69.54	-45.24	QP	
5		17.3834	28.31	-5.98	22.33	69.54	-47.21	QP	
6		20.1296	29.19	-6.54	22.65	69.54	-46.89	QP	

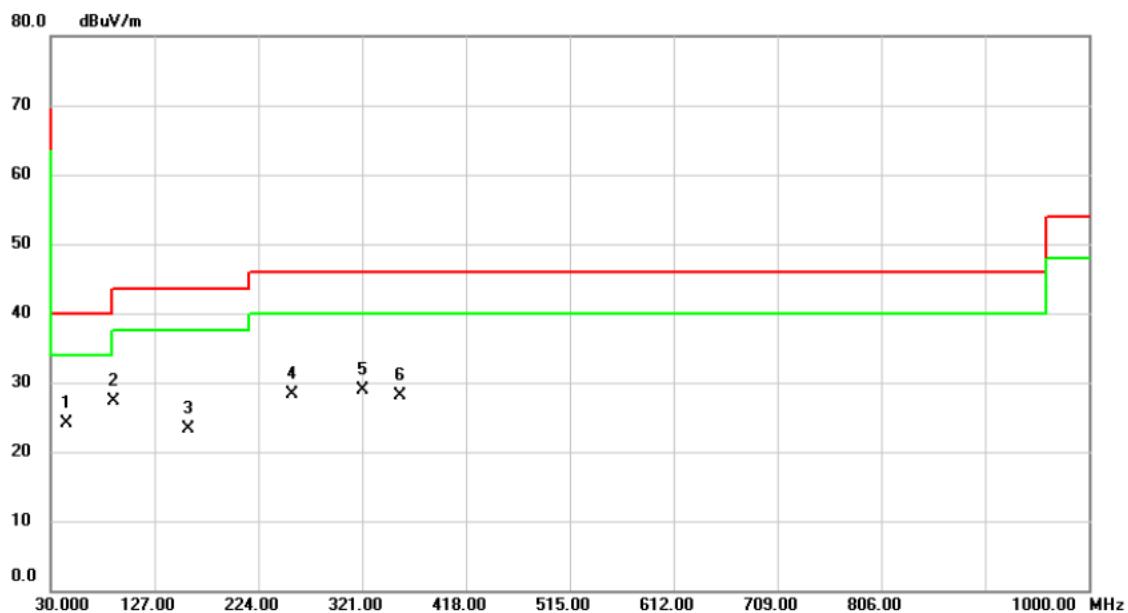
APPENDIX C - RADIATED EMISSION (30MHZ TO 1000MHZ)

Test Mode	TX G MODE 2462MHz	Polarization	Vertical
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		37.7600	23.92	-8.79	15.13	40.00	-24.87	QP	
2	*	114.3900	43.49	-11.00	32.49	43.50	-11.01	QP	
3		153.1900	33.17	-8.59	24.58	43.50	-18.92	QP	
4		209.4500	36.47	-10.71	25.76	43.50	-17.74	QP	
5		245.3400	35.21	-9.12	26.09	46.00	-19.91	QP	
6		432.5500	32.68	-4.25	28.43	46.00	-17.57	QP	

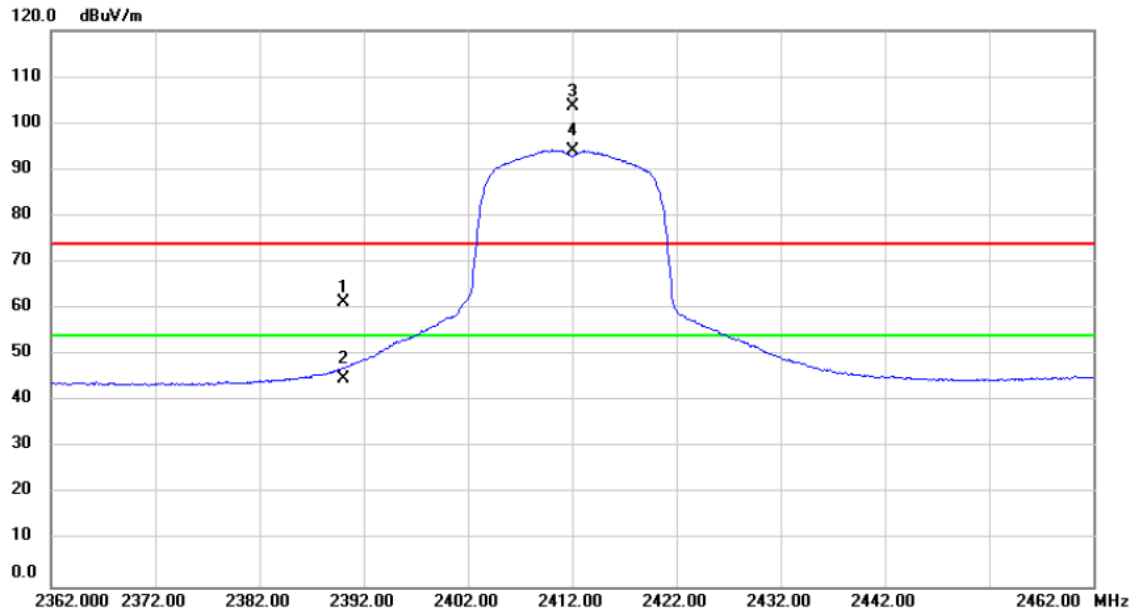
Test Mode	TX G MODE 2462MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	44.5500	32.42	-8.25	24.17	40.00	-15.83	QP	
2		88.2000	40.88	-13.56	27.32	43.50	-16.18	QP	
3		158.0400	31.80	-8.55	23.25	43.50	-20.25	QP	
4		255.0400	37.24	-8.91	28.33	46.00	-17.67	QP	
5		321.9700	35.78	-6.93	28.85	46.00	-17.15	QP	
6		356.8900	34.06	-6.05	28.01	46.00	-17.99	QP	

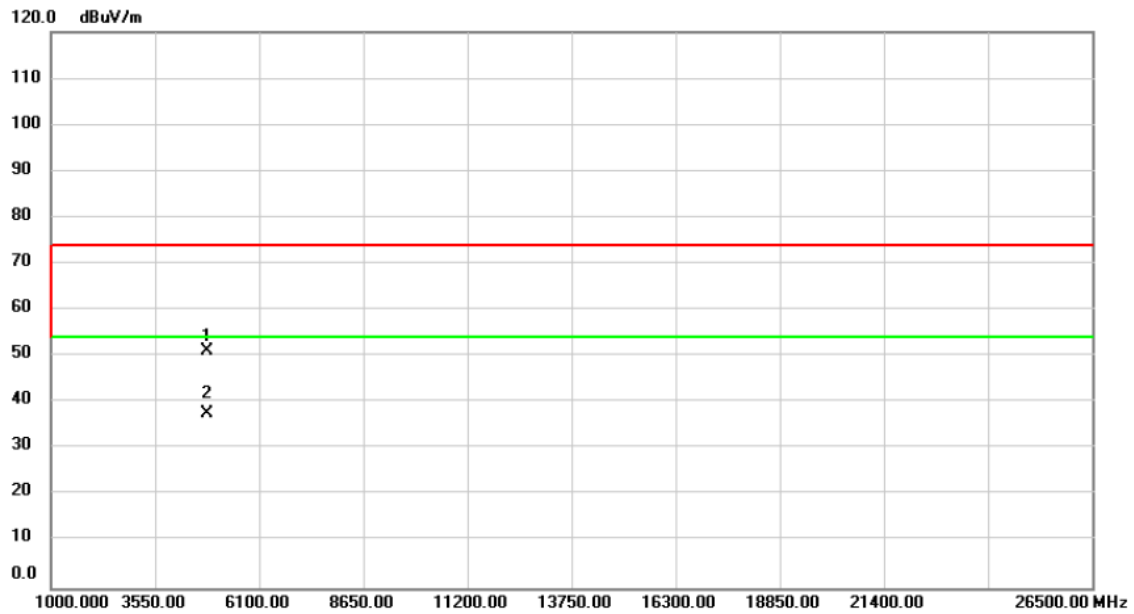
APPENDIX D - RADIATED EMISSION (ABOVE 1000MHZ)

Test Mode	TX G MODE 2412MHz	Polarization	Vertical
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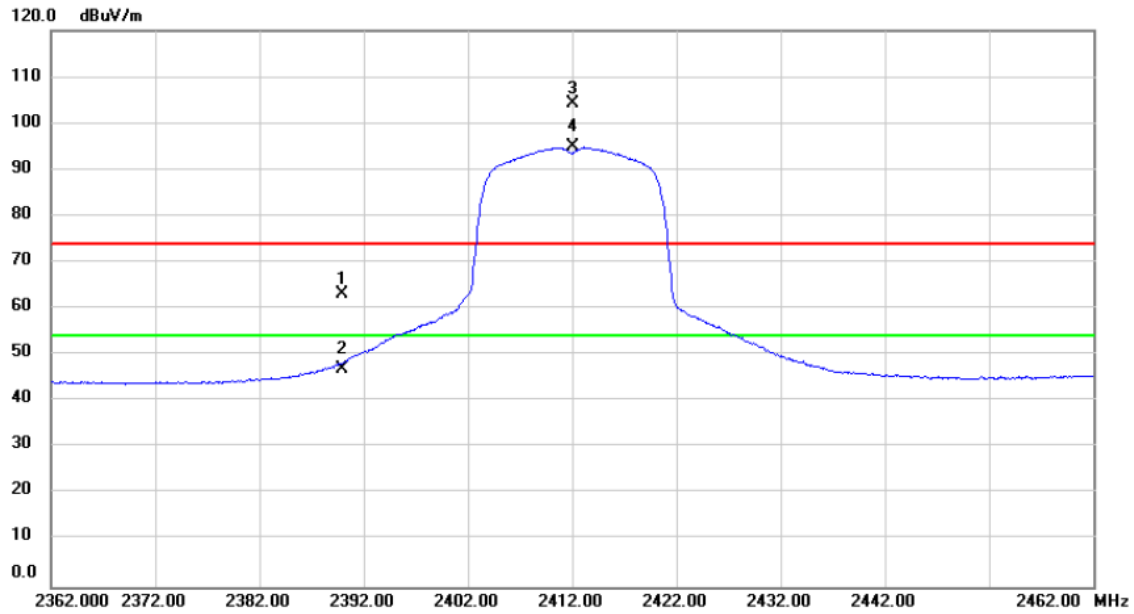
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	30.64	30.84	61.48	74.00	-12.52	peak	
2		2390.000	14.13	30.84	44.97	54.00	-9.03	AVG	
3	X	2412.000	72.74	30.92	103.66	74.00	29.66	peak	No Limit
4	*	2412.000	63.26	30.92	94.18	54.00	40.18	AVG	No Limit

Test Mode	TX G MODE 2412MHz	Polarization	Vertical
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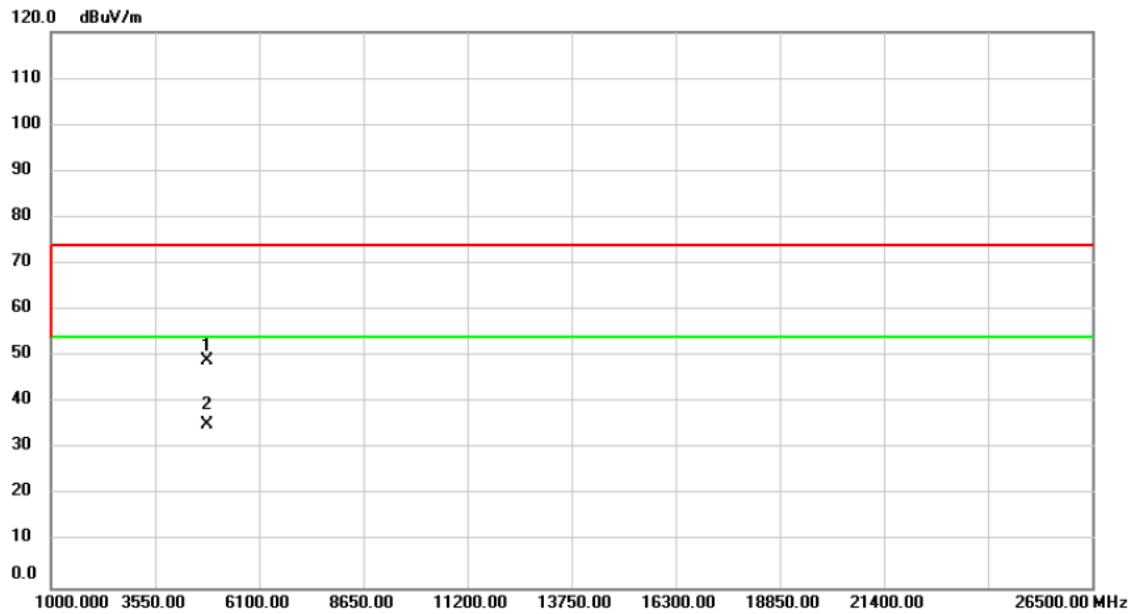
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	62.70	-11.48	51.22	74.00	-22.78	peak	
2	*	4824.000	49.11	-11.48	37.63	54.00	-16.37	AVG	

Test Mode	TX G MODE 2412MHz	Polarization	Horizontal
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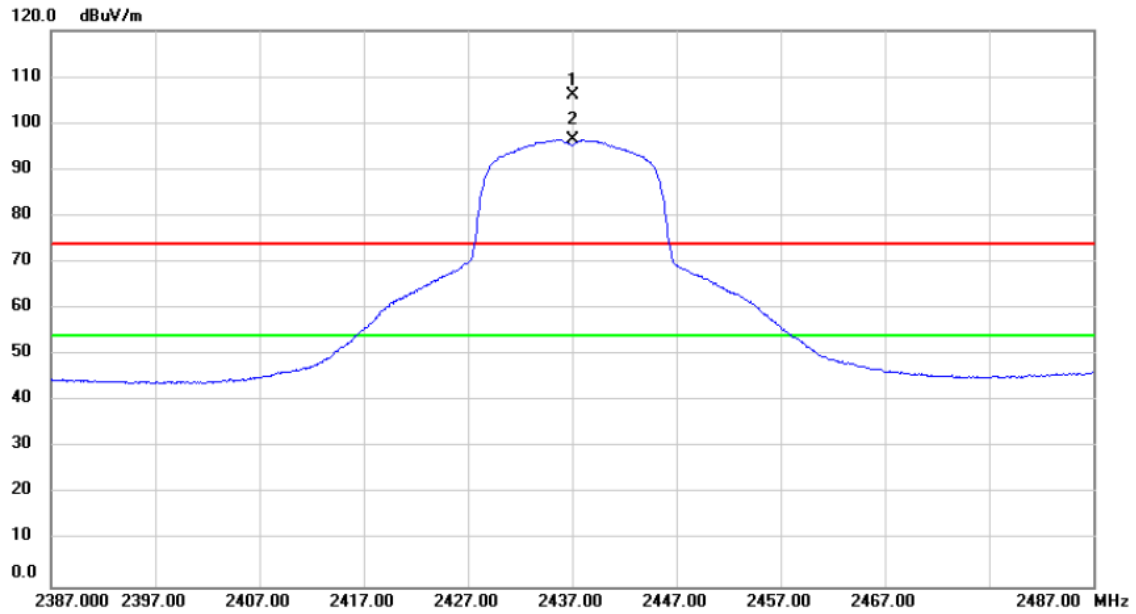
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2389.944	32.31	30.84	63.15	74.00	-10.85	peak	
2		2389.944	16.18	30.84	47.02	54.00	-6.98	AVG	
3	X	2412.000	73.39	30.92	104.31	74.00	30.31	peak	No Limit
4	*	2412.000	63.93	30.92	94.85	54.00	40.85	AVG	No Limit

Test Mode	TX G MODE 2412MHz	Polarization	Horizontal
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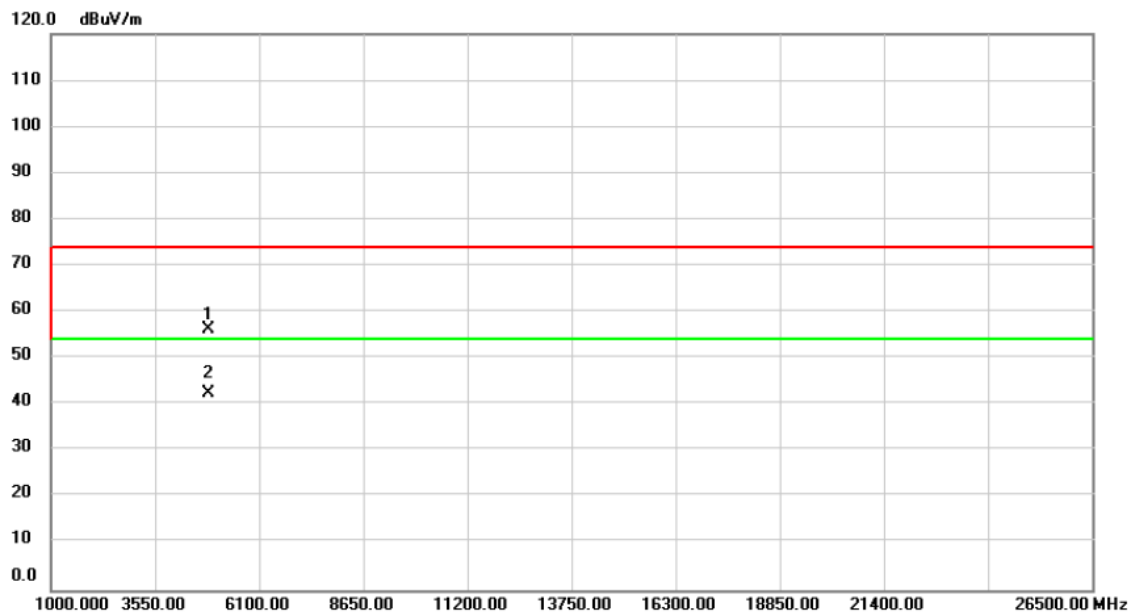
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	60.43	-11.48	48.95	74.00	-25.05	peak	
2	*	4824.000	46.76	-11.48	35.28	54.00	-18.72	AVG	

Test Mode	TX G MODE 2437MHz	Polarization	Vertical
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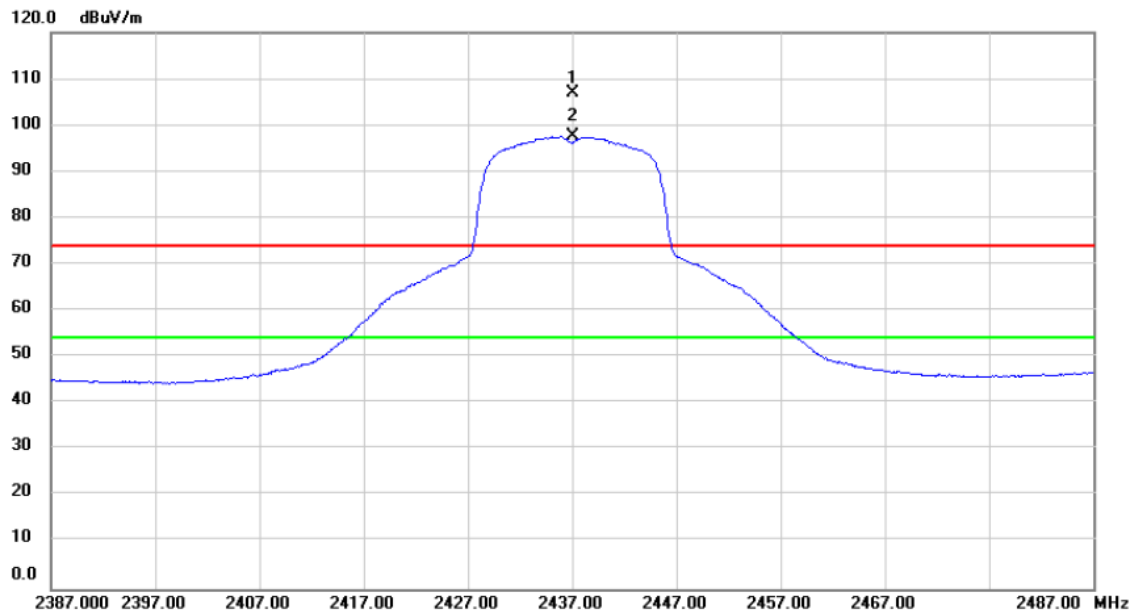
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2437.000	75.04	31.01	106.05	74.00	32.05	peak	No Limit
2	*	2437.000	65.47	31.01	96.48	54.00	42.48	AVG	No Limit

Test Mode	TX G MODE 2437MHz	Polarization	Vertical
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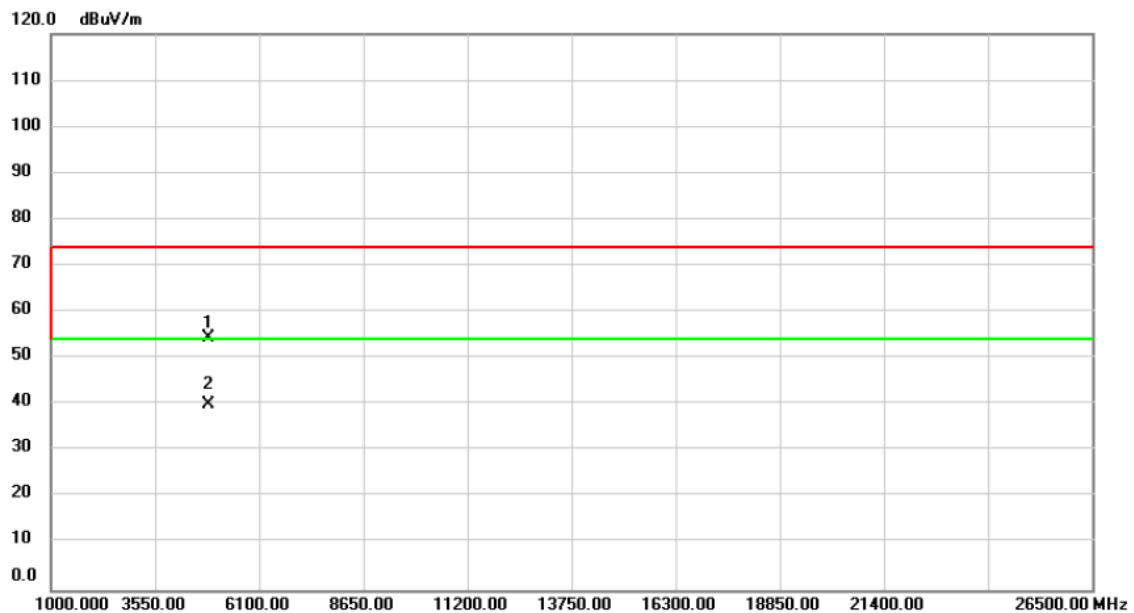
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	67.56	-11.42	56.14	74.00	-17.86	peak	
2	*	4874.000	53.98	-11.42	42.56	54.00	-11.44	AVG	

Test Mode	TX G MODE 2437MHz	Polarization	Horizontal
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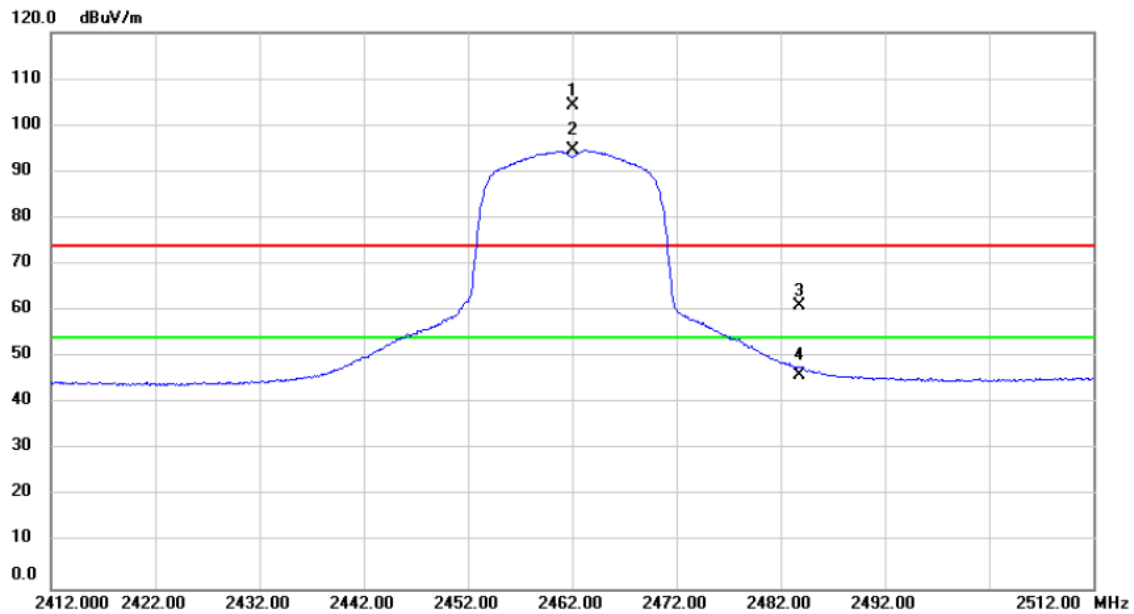
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2437.000	75.99	31.01	107.00	74.00	33.00	peak	No Limit
2	*	2437.000	66.50	31.01	97.51	54.00	43.51	AVG	No Limit

Test Mode	TX G MODE 2437MHz	Polarization	Horizontal
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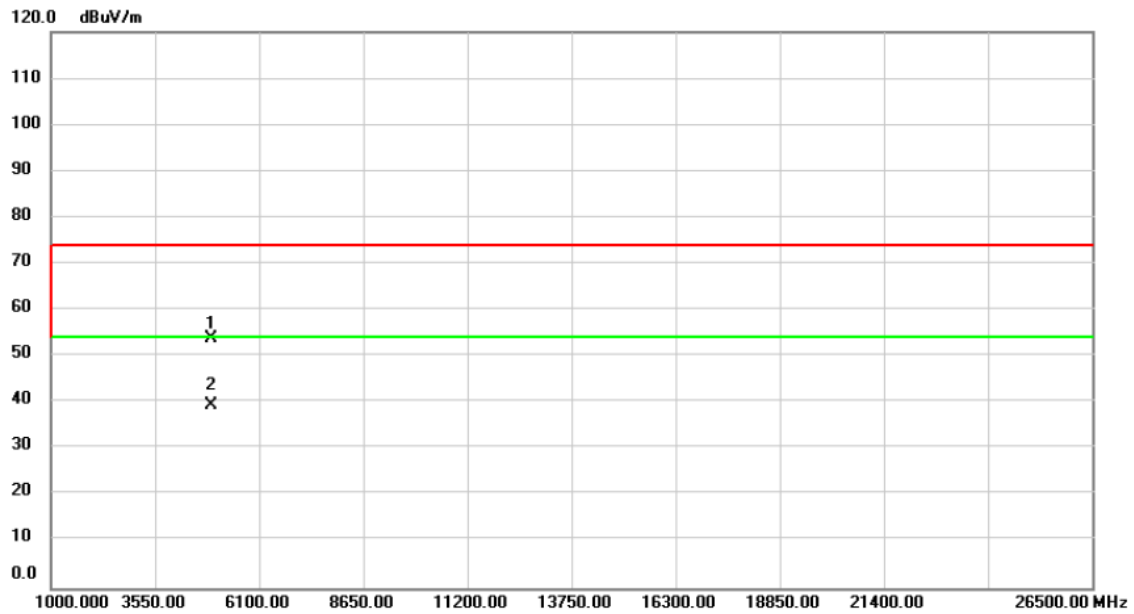
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	65.85	-11.42	54.43	74.00	-19.57	peak	
2	*	4874.000	51.55	-11.42	40.13	54.00	-13.87	AVG	

Test Mode	TX G MODE 2462MHz	Polarization	Vertical
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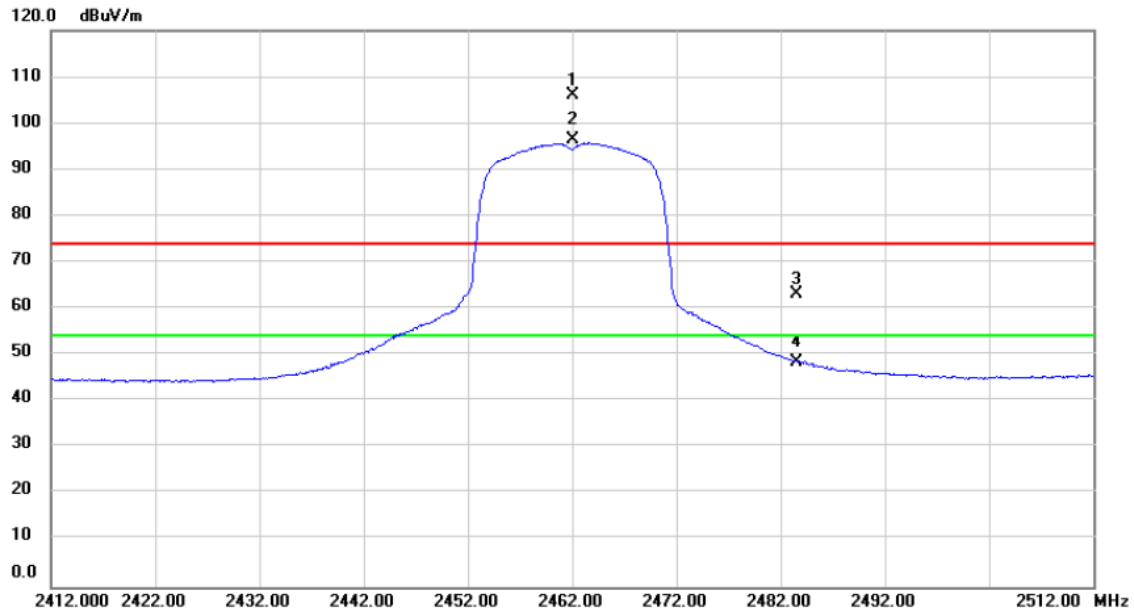
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2462.000	73.03	31.09	104.12	74.00	30.12	peak	No Limit
2	*	2462.000	63.42	31.09	94.51	54.00	40.51	AVG	No Limit
3		2483.747	29.98	31.17	61.15	74.00	-12.85	peak	
4		2483.747	14.88	31.17	46.05	54.00	-7.95	AVG	

Test Mode	TX G MODE 2462MHz	Polarization	Vertical
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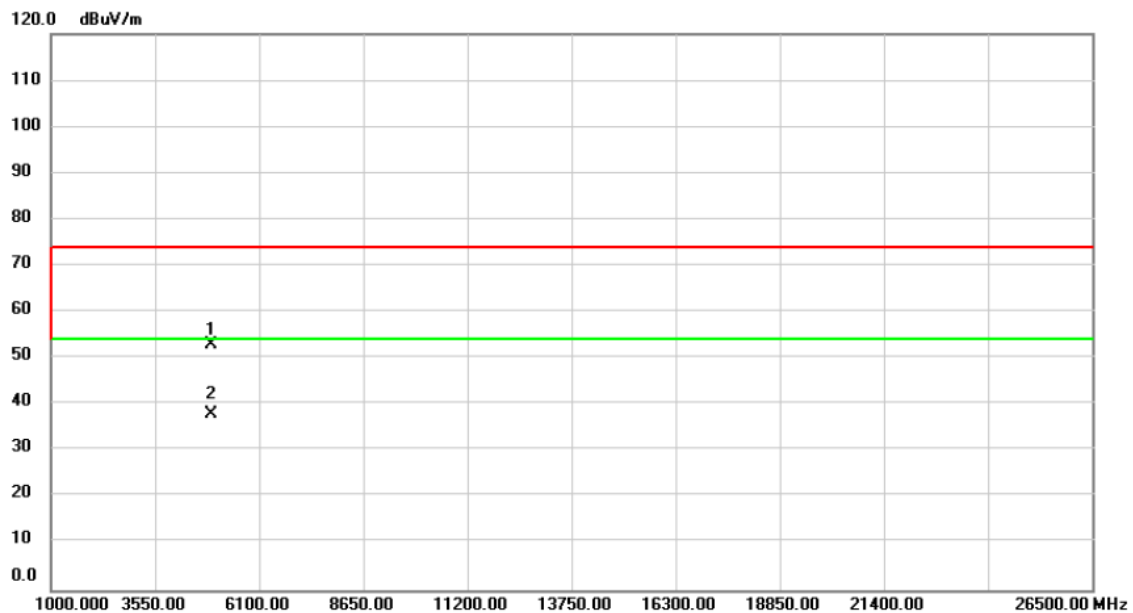
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	65.35	-11.37	53.98	74.00	-20.02	peak	
2	*	4924.000	50.93	-11.37	39.56	54.00	-14.44	AVG	

Test Mode	TX G MODE 2462MHz	Polarization	Horizontal
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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	75.00	31.09	106.09	74.00	32.09	peak	No Limit
2	*	2462.000	65.33	31.09	96.42	54.00	42.42	AVG	No Limit
3		2483.550	31.94	31.17	63.11	74.00	-10.89	peak	
4		2483.550	17.15	31.17	48.32	54.00	-5.68	AVG	

Test Mode	TX G MODE 2462MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	64.41	-11.37	53.04	74.00	-20.96	peak	
2	*	4924.000	49.37	-11.37	38.00	54.00	-16.00	AVG	

APPENDIX E - MAXIMUM PEAK CONDUCTED OUTPUT POWER

Test Mode :TX B Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	15.68	0.0370	30.00	1.00	Complies
2437	16.84	0.0483	30.00	1.00	Complies
2462	16.41	0.0438	30.00	1.00	Complies

Test Mode :TX G Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	17.75	0.0596	30.00	1.00	Complies
2437	18.74	0.0748	30.00	1.00	Complies
2462	18.06	0.0640	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	17.69	0.0587	30.00	1.00	Complies
2437	18.15	0.0653	30.00	1.00	Complies
2462	18.04	0.0637	30.00	1.00	Complies

End of Test Report