

FCC Radio Test Report

FCC ID: KA2AP1820A1

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

Project No. : 1809H005
Equipment : AC2000 Wi-Fi Range Extender,
AC2000 Mesh-Enabled Range Extender
Test Model : DAP-1820
Series Model : DRA-2060
Applicant : D-Link Corporation
Address : 17595 Mt. Herrmann, Fountain Valley, California,
United States 92708

Date of Receipt : Sep. 21, 2018
Date of Test : Sep. 26, 2018 ~ Dec. 09, 2018
Issued Date : Jan. 18, 2019
Tested by : BTL Inc.

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Certificate #5123.03

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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.	Jan. 18, 2019

1. GENERAL SUMMARY

Equipment : AC2000 Wi-Fi Range Extender,
AC2000 Mesh-Enabled Range Extender
Brand Name : D-Link
Test Model : DAP-1820
Series Model : DRA-2060
Applicant : D-Link Corporation
Manufacturer : D-Link Corporation
Address : 17595 Mt. Herrmann, Fountain Valley, California, United States 92708
Date of Test : Sep. 26, 2018 ~ Dec. 09, 2018
Test Sample : Engineering Sample No.:B180900123
Standard(s) : FCC Part15, Subpart C (15.247) / ANSI C63.10-2013

The above equipment has been tested and found 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-1-1809H005) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

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

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C			
Standard(s) Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247(d)	Antenna conducted Spurious Emission	PASS	
15.247(a)(2)	6 dB Bandwidth	PASS	
15.247(b)(3)	Maximum output power	PASS	
15.247(e)	Power Spectral Density	PASS	
15.203	Antenna Requirement	PASS	
15.247(d)/ 15.205/ 15.209	Transmitter Radiated Emissions	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 is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China
 BTL's Test Firm Registration Number for FCC: 476765
 BTL's Designation Number for FCC: CN1241

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) $k=1.96$ or $k=2$ (which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).
 Measurement Uncertainty for a Level of Confidence of 95 %, $U=2xUc(y)$.

The BTL measurement uncertainty as below table:

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
SH-C01	CISPR	150 kHz ~ 30 MHz	2.70

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
SH-CB01	CISPR	9 KHz~30 MHz	V	3.79
		9 KHz~30 MHz	H	3.57
		30 MHz~200 MHz	V	4.04
		30 MH~200 MHz	H	3.76
		200 MHz~1,000 MHz	V	4.24
		200 MHz~1,000 MHz	H	3.84
		1 GHz~18 GHz	V	4.46
		1 GHz~18 GHz	H	4.40
		18 GHz~40 GHz	V	3.95
		18 GHz~40 GHz	H	3.95

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	AC2000 Wi-Fi Range Extender, AC2000 Mesh-Enabled Range Extender	
Brand Name	D-Link	
Test Model	DAP-1820	
Series Model	DRA-2060	
Model Difference(s)	(1) DAP-1820 for AC2000 Wi-Fi Range Extender, DRA-2060 for AC2000 Mesh-Enabled Range Extender. (2) Only differs in the color of the ID.	
Product Description	Operation Frequency	2412MHz ~ 2462MHz
	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 300 Mbps
	Peak Output Power (Max.)	802.11b:25.27 dBm 802.11g: 25.86 dBm 802.11n(20 MHz): 28.45 dBm 802.11n(40 MHz): 27.90 dBm
	AVG Output Power (Max.)	802.11b:16.75 dBm 802.11g: 16.82 dBm 802.11n(20 MHz): 20.28 dBm 802.11n(40 MHz): 19.61 dBm
Power Source	AC Mains.	
Power Rating	I/P: 100-240Vac,5□/60Hz,0.4A	

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(20 MHz) CH03 - CH09 for 802.11n(40 MHz)							
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	P/N	Antenna Type	Connector	Gain (dBi)
1	RF link	RF21C03745A	PCB	N/A	3
2	RF link	RF21C04071A	PCB	N/A	3

Note: This EUT supports CDD, and all antennas have the same gain, Directional gain= $G_{ANT} + \text{Array Gain}$. For power spectral density measurements, Array Gain= $10\log(N_{ANT}/N_{SS})$ dB, that is Directional gain= $3 + 10\log(2/1) = 6.01$. So, the power density limit is $8 - 6.01 + 6 = 7.99$.

4. The worst case for 1TX/2TX as follow:

Operating Mode	TX Mode	1TX	2TX
		802.11b	V (ANT 1)
802.11g		V (ANT 1)	-
802.11n(20MHz)		-	V (ANT 1+ANT 2)
802.11n(40MHz)		-	V (ANT 1+ANT 2)

3.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09
Mode 5	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode:	Description
Mode 5	TX Mode

For Radiated Test	
Final Test Mode:	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

For Band Edge Test	
Final Test Mode:	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

6 dB Spectrum Bandwidth	
Final Test Mode:	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

Maximum Output Power	
Final Test Mode:	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

Power Spectral Density	
Final Test Mode:	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

Note:

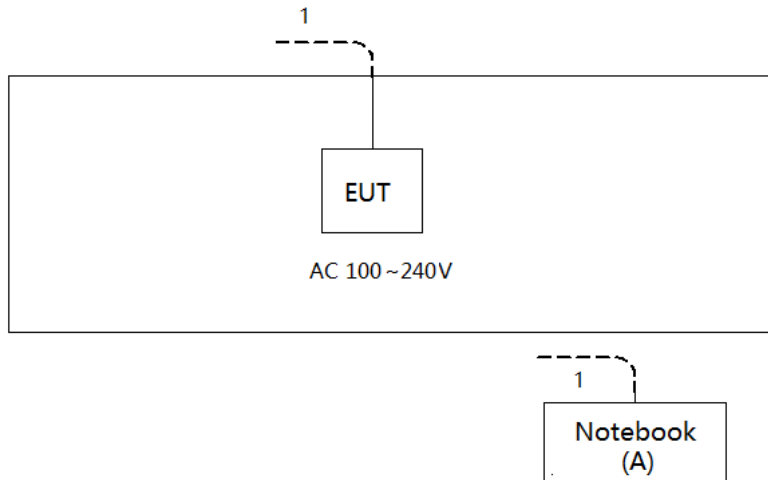
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1 Mbps)
 802.11g mode: OFDM (6 Mbps)
 802.11n HT20 mode : BPSK (13 Mbps)
 802.11n HT40 mode : BPSK (27 Mbps)
 For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated 30 MHz to 1000 MHz test, the 802.11b is found to be the worst case and recorded.

3.3 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

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

Test software version	QA_Tool		
Frequency (MHz)	2412	2437	2462
802.11b	1D	1C	1C
802.11g	1D	1D	1D
802.11n (20 MHz)	1A/1A	1D/1D	1A/1A
Frequency (MHz)	2422	2437	2452
802.11n (40 MHz)	16/16	1C/1C	1C/1C

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.
A	Notebook	ThinkPad	20H3-A00VCD	DOC	PF-0S8287

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	10m	RJ45 Cable

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150 kHz-30 MHz)

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56*	56 to 46*
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note:

- (1) The limit of " * " decreases with the logarithm of the frequency
- (2) 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 Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

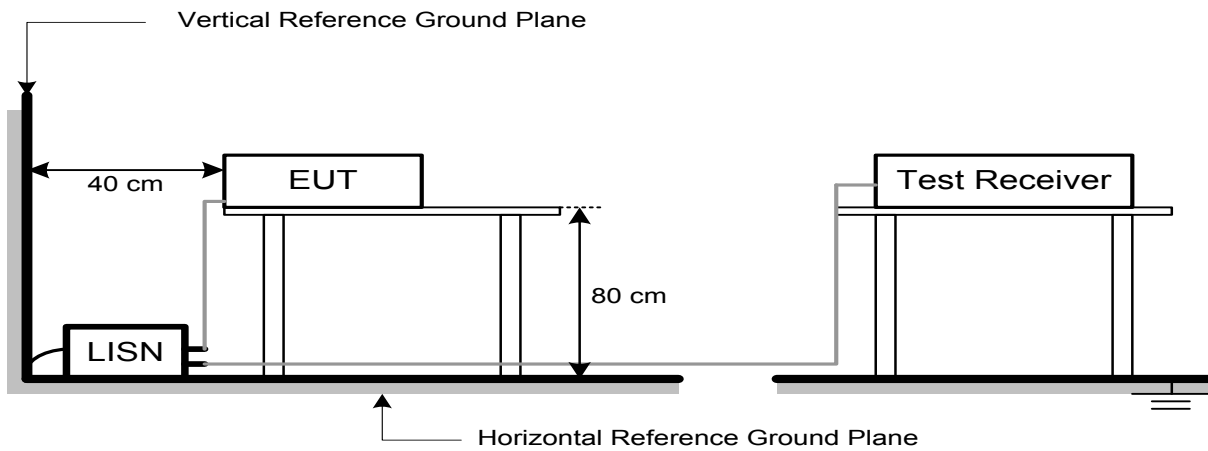
4.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

The EUT was placed on the test table and programmed in normal function.

4.1.6 EUT TEST CONDITIONS

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

4.1.7 TEST RESULTS

Please refer to the Appendix A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』 . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform in this case, a "*" marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150 kHz to 30 MHz.

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), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-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 EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

Note:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (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)	1 MHz / 3 MHz for Peak, 1 MHz / 1/T for Average

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

4.2.2 TEST PROCEDURE

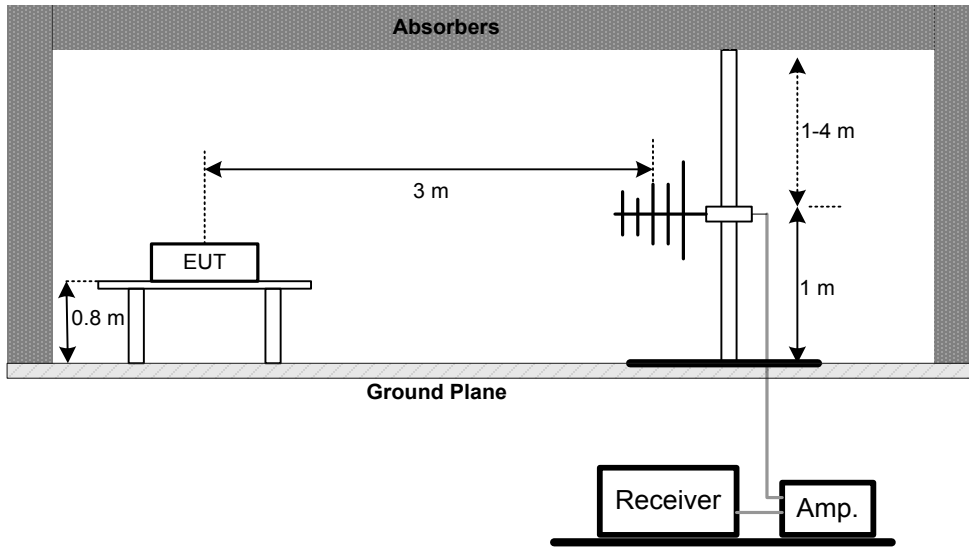
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- b. The measuring distance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

4.2.3 DEVIATION FROM TEST STANDARD

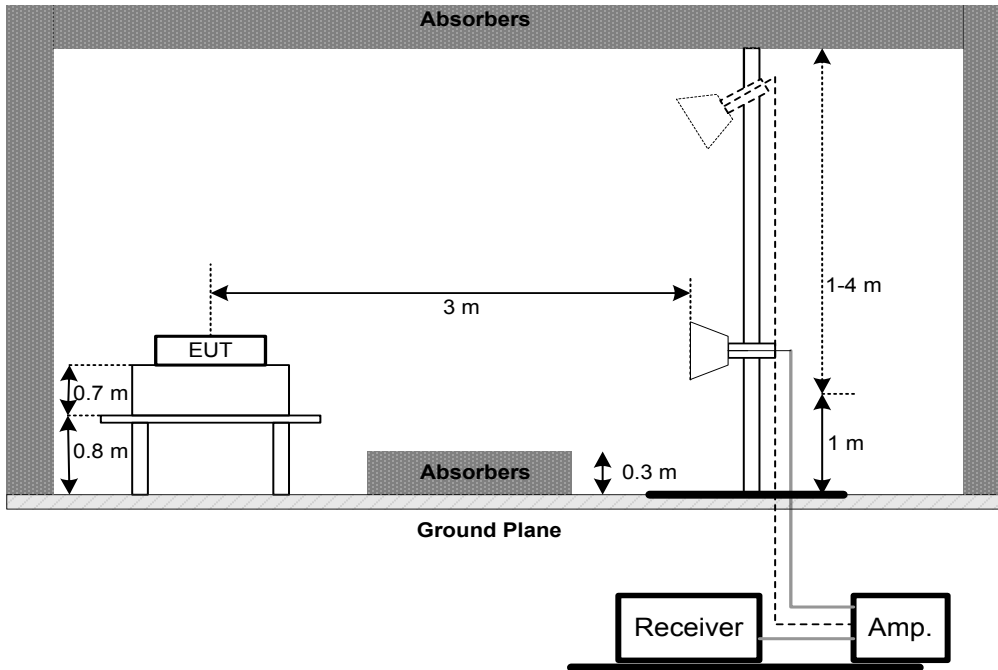
No deviation

4.2.4 TEST SETUP

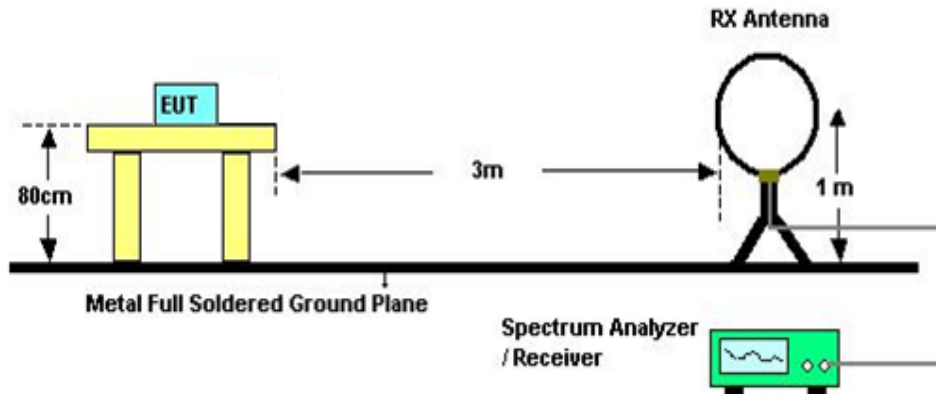
(A) Radiated Emission Test Set-Up Frequency 30 MHz-1000 MHz



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



(C) For Radiated Emissions 9 kHz-30 MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

Temperature: 23°C Relative Humidity: 45% Test Voltage: AC 120V/60Hz

4.2.7 TEST RESULTS (9 kHz TO 30 MHz)

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 (30 MHz 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. BANDWIDTH TEST

5.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	2400-2483.5	PASS

5.1.1 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 = 2.5 ms.

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: 24°C Relative Humidity: 45% Test Voltage: AC 120V/60Hz

5.1.6 TEST RESULTS

Please refer to the Appendix E.

6. MAXIMUM OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

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

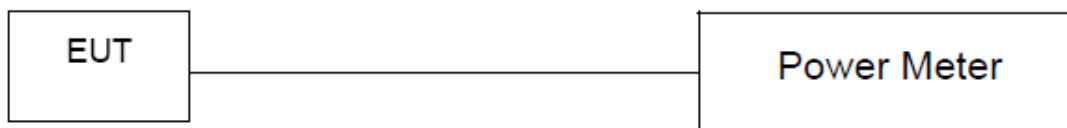
6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- b. The maximum output power was performed in accordance with method 11.9 of ANSI C63.10-2013.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.1.5 EUT TEST CONDITIONS

Temperature: 23°C Relative Humidity: 51% Test Voltage: AC 120V/60Hz

6.1.6 TEST RESULTS

Please refer to the Appendix F.

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 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 the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

7.1.1 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.

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.1.5 EUT TEST CONDITIONS

Temperature: 22°C Relative Humidity: 52% Test Voltage: AC 120V/60Hz

7.1.6 TEST RESULTS

Please refer to the Appendix G.

8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)	2400-2483.5	PASS

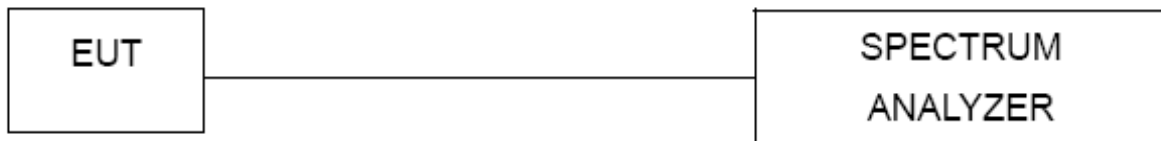
8.1.1 TEST PROCEDURE

- 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=3KHz, VBW=10KHz, Sweep time = Auto.

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.1.5 EUT TEST CONDITIONS

Temperature: 22°C Relative Humidity: 49% Test Voltage: AC 120V/60Hz

8.1.6 TEST RESULTS

Please refer to the Appendix H.

9. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 30, 2019
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Jan. 17, 2019
3	EMI Test Receiver	R&S	ESCI	100082	Mar. 30, 2019
4	50Ω coaxial switch	Anritsu	MP59B	6201750902	Jul. 17, 2019
5	Cable	10m	EMCRG400-BM-N M-10000	170628	Jun. 10, 2019
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement-9 kHz TO 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EMCI	EMCI LPA600	275	Mar. 31, 2019
2	Cable	N/A	EMCRG400-BM-N M-10000	170628	Jun. 10, 2019
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 30, 2019
4	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A

Radiated Emission Measurement-30 MHz TO 1000 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 30, 2019
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 30, 2019
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 30, 2019
4	Attenuator	emci	EMCI-N-6-06	AT-N0644	Mar. 30, 2019
5	Cable	7m	EMC104-SM-SM-7000	170330	Jun. 10, 2019
6	Cable	1m	EMC104-SM-SM-1000	170331	Jun. 10, 2019
7	Cable	3.5m	EMC104-SM-NM-3500	170621	Jun. 10, 2019
8	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A

Radiated Emission Measurement - Above 1GHz

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double-Ridged Waveguide Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1787	Mar. 30, 2019
2	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 30, 2019
3	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 30, 2019
4	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 30, 2019
5	EXA Spectrum Analyzer	Keysight	N9010A	MY56480559	Mar. 30, 2019
6	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 30, 2019
7	Cable	7m	EMC104-SM-SM-7000	170330	Jun. 10, 2019
8	Cable	1m	EMC104-SM-SM-1000	170331	Jun. 10, 2019
9	Cable	3.5m	EMC104-SM-NM-3500	170621	Jun. 10, 2019
10	Cable	0.8m	EMC102-SM-SM-800	170335	Jun. 10, 2019
11	Cable	6m	EMC102-SM-SM-6000	170336	Jun. 10, 2019
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

6 dB Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 31, 2019

Maximum output power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Keysight	8990B	MY51000507	Jul. 27, 2019
2	Pulse Power Sensor	Keysight	N1923A	MY58310003	Aug. 07, 2019

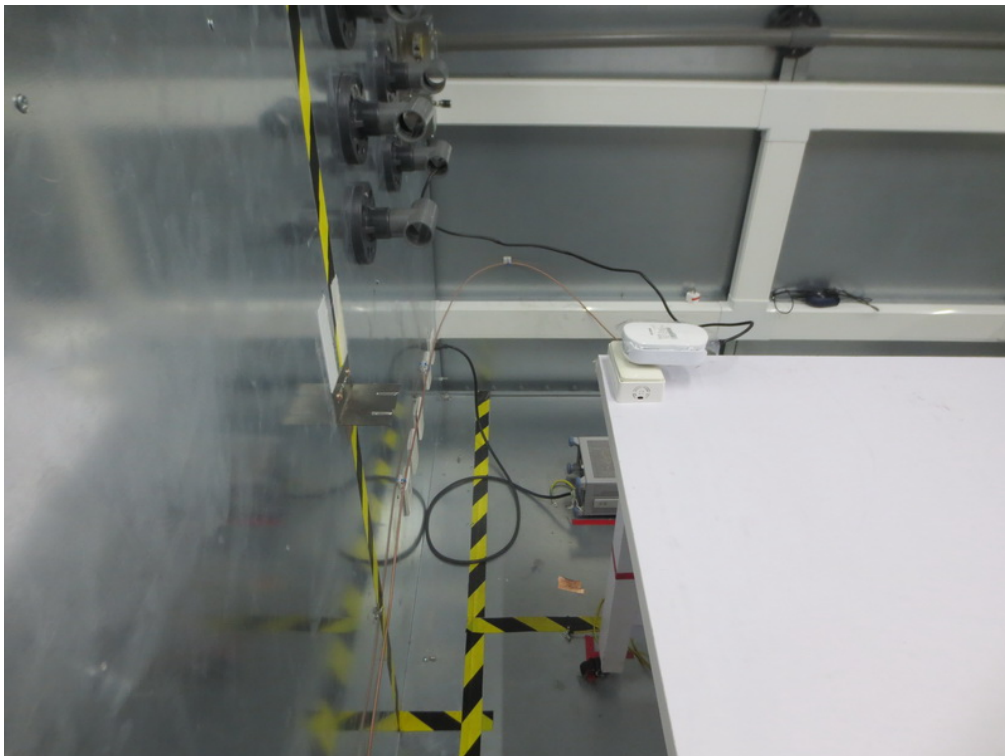
Antenna Conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 31, 2019

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 31, 2019

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

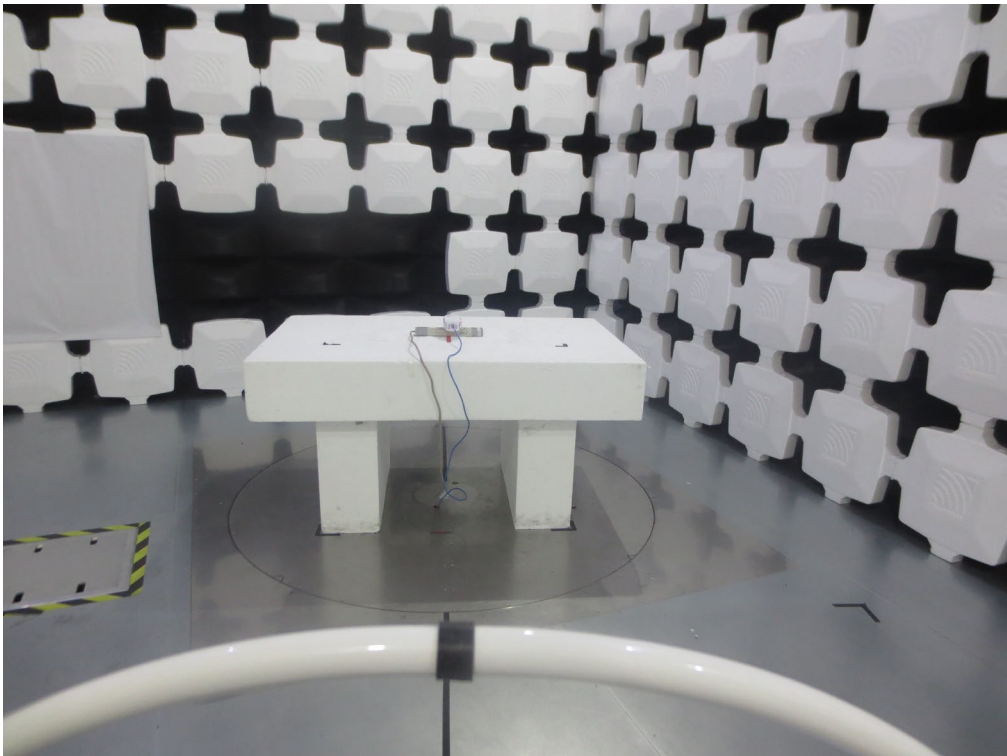
10. EUT TEST PHOTO

Conducted Measurement Photos



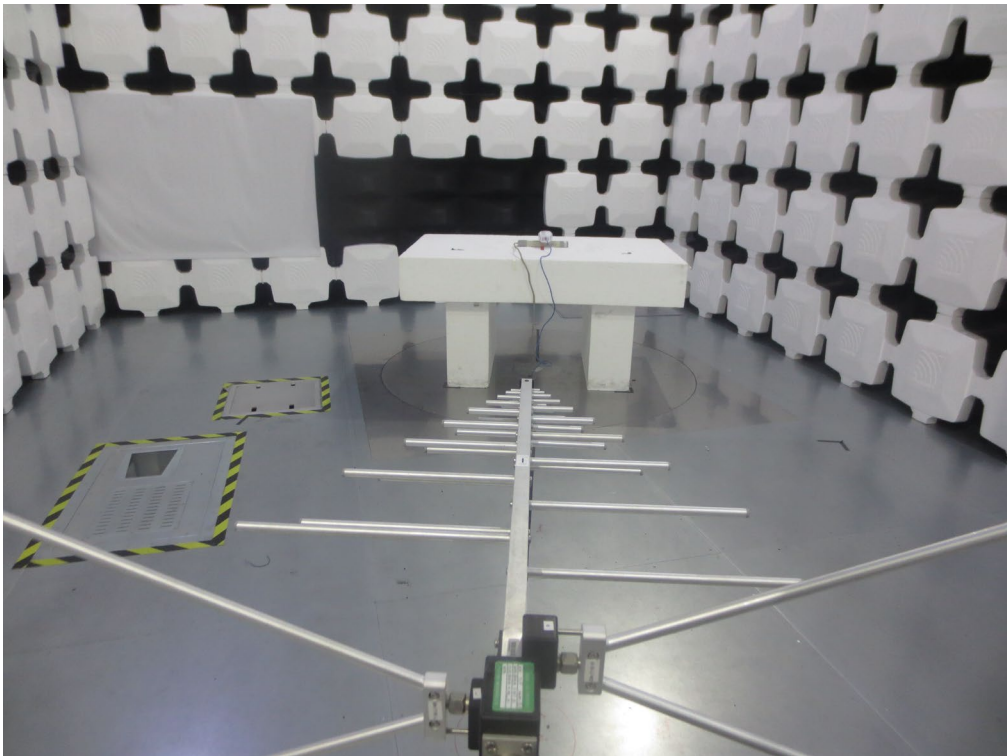
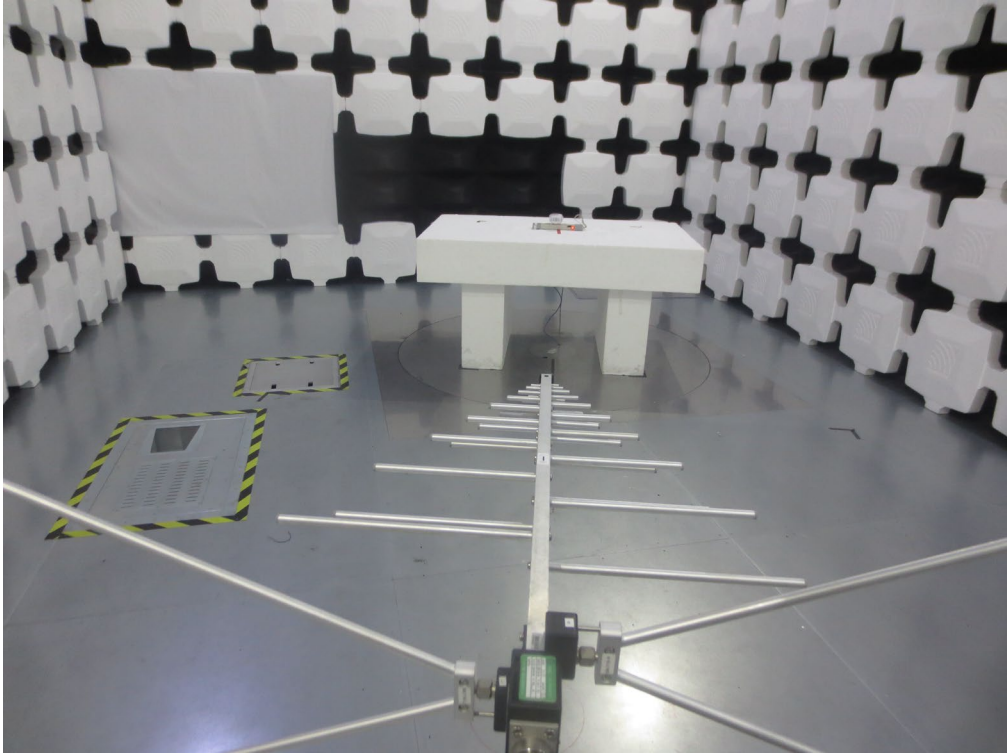
Radiated Measurement Photos

9 kHz to 30 MHz



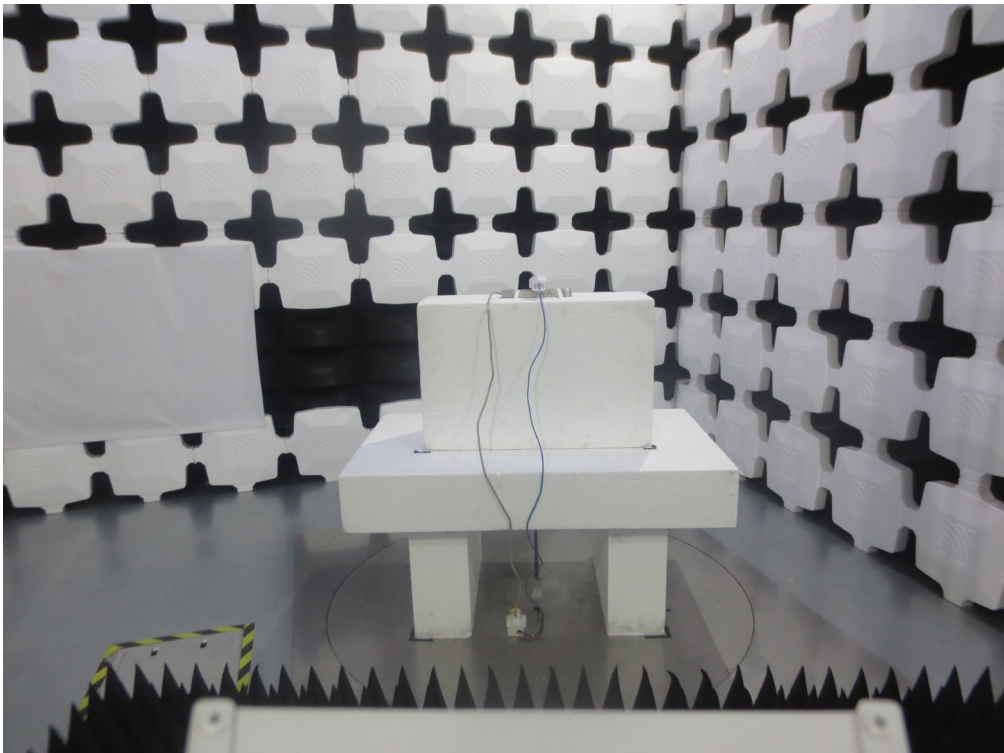
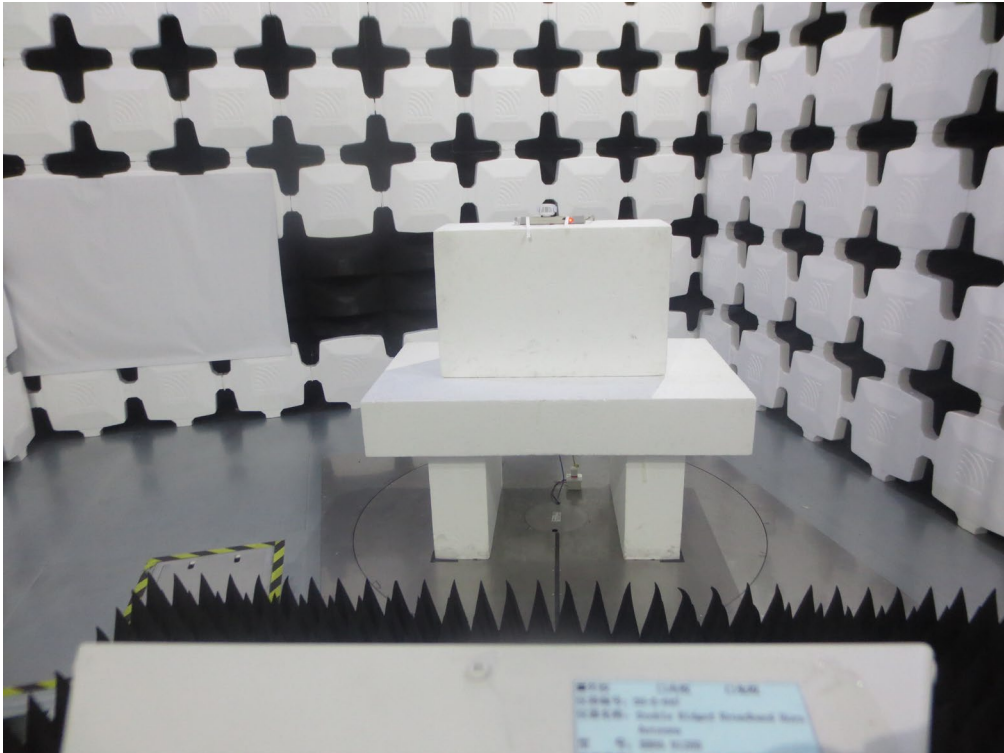
Radiated Measurement Photos

30 MHz to 1000 MHz



Radiated Measurement Photos

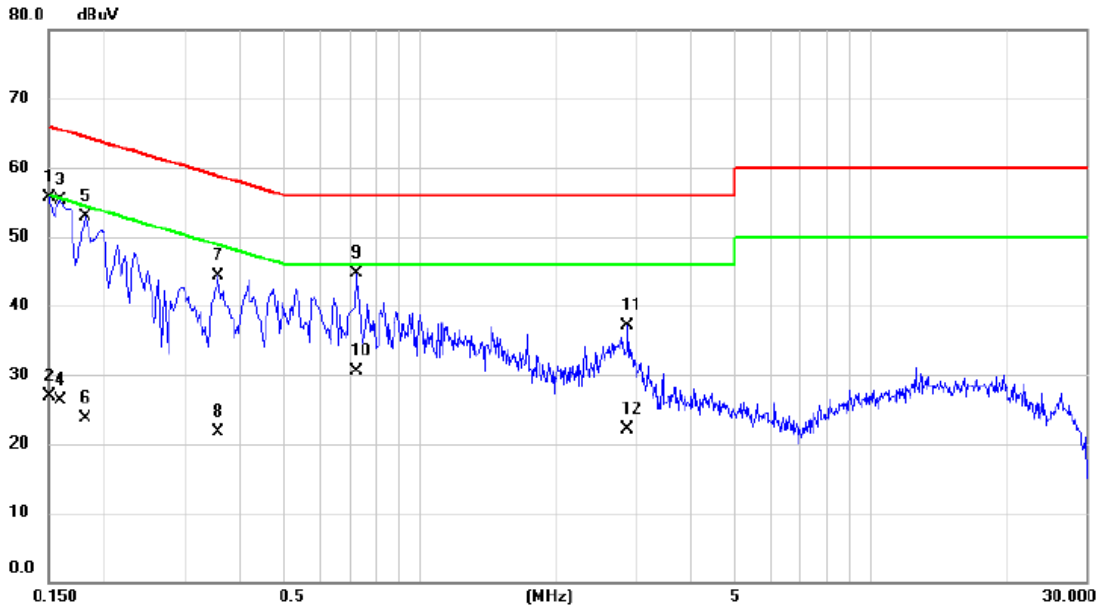
Above 1000 MHz



APPENDIX A - CONDUCTED EMISSION

Test Mode: TX Mode

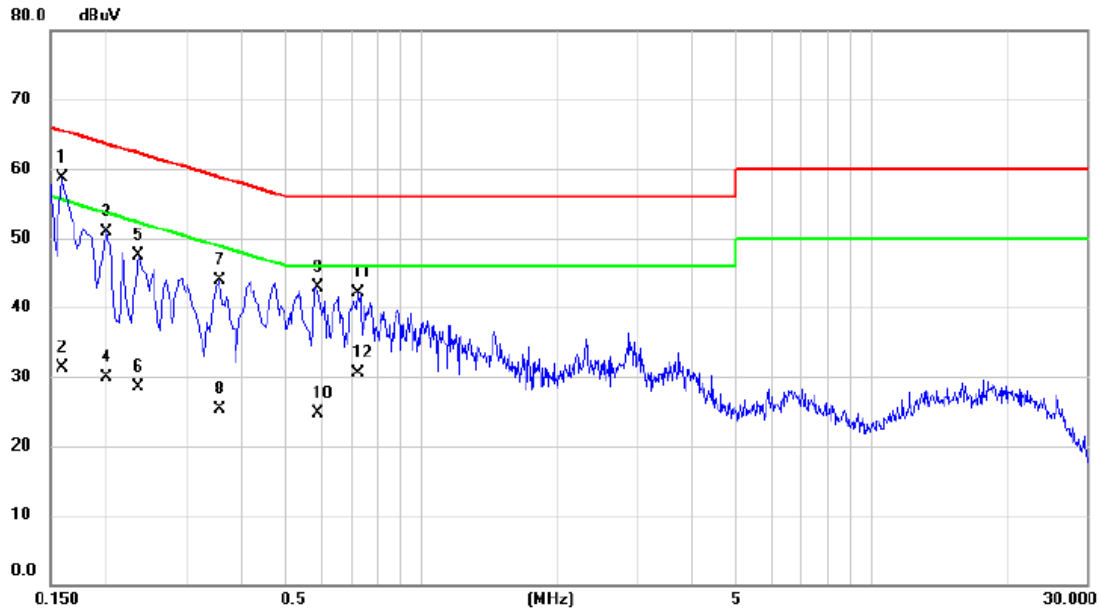
Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	45.85	9.77	55.62	66.00	-10.38	QP	
2		0.1500	17.10	9.77	26.87	56.00	-29.13	AVG	
3	*	0.1590	45.57	9.79	55.36	65.52	-10.16	QP	
4		0.1590	16.50	9.79	26.29	55.52	-29.23	AVG	
5		0.1815	43.10	9.83	52.93	64.42	-11.49	QP	
6		0.1815	13.80	9.83	23.63	54.42	-30.79	AVG	
7		0.3570	34.32	10.00	44.32	58.80	-14.48	QP	
8		0.3570	11.80	10.00	21.80	48.80	-27.00	AVG	
9		0.7215	34.70	9.98	44.68	56.00	-11.32	QP	
10		0.7215	20.60	9.98	30.58	46.00	-15.42	AVG	
11		2.8905	26.98	10.04	37.02	56.00	-18.98	QP	
12		2.8905	12.10	10.04	22.14	46.00	-23.86	AVG	

Test Mode: TX Mode

Neutral

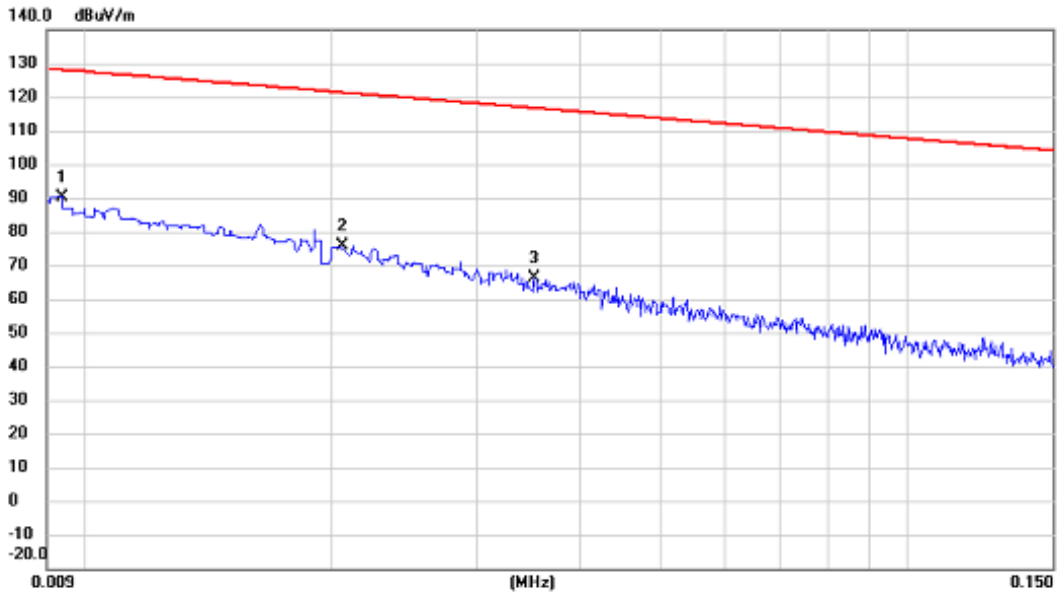


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1590	48.88	9.79	58.67	65.52	-6.85	QP	
2		0.1590	21.50	9.79	31.29	55.52	-24.23	AVG	
3		0.1995	41.15	9.85	51.00	63.63	-12.63	QP	
4		0.1995	20.10	9.85	29.95	53.63	-23.68	AVG	
5		0.2355	37.62	9.90	47.52	62.25	-14.73	QP	
6		0.2355	18.60	9.90	28.50	52.25	-23.75	AVG	
7		0.3570	33.91	10.00	43.91	58.80	-14.89	QP	
8		0.3570	15.40	10.00	25.40	48.80	-23.40	AVG	
9		0.5865	32.86	10.07	42.93	56.00	-13.07	QP	
10		0.5865	14.70	10.07	24.77	46.00	-21.23	AVG	
11		0.7215	32.20	9.98	42.18	56.00	-13.82	QP	
12		0.7215	20.60	9.98	30.58	46.00	-15.42	AVG	

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

Test Mode: TX Mode

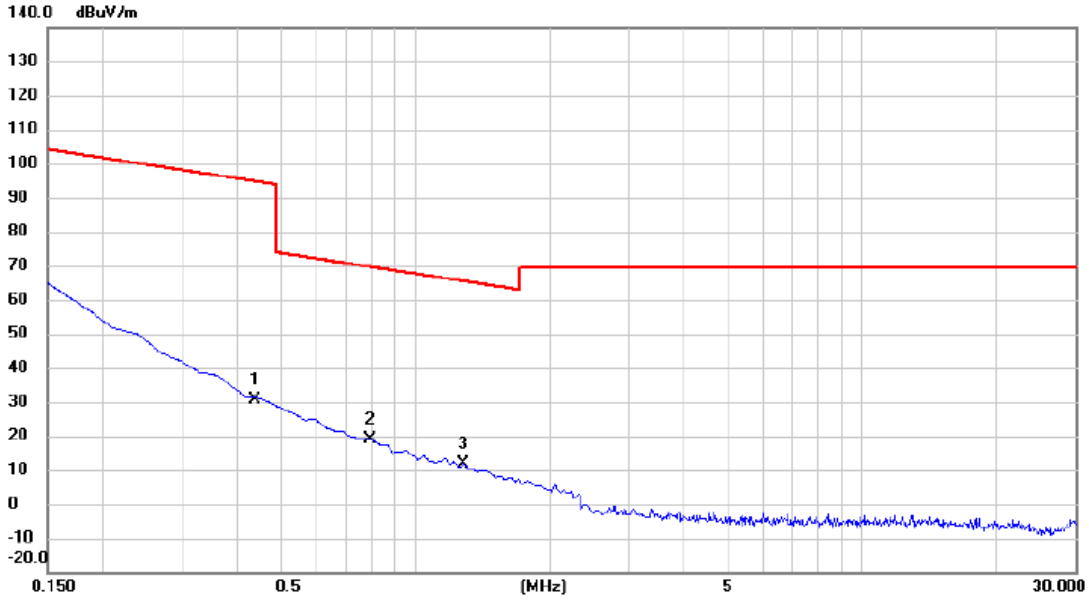
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0094	69.36	21.04	90.40	128.14	-37.74	AVG	
2		0.0206	56.33	19.60	75.93	121.33	-45.40	AVG	
3		0.0352	47.17	19.16	66.33	116.67	-50.34	AVG	

Test Mode: TX Mode

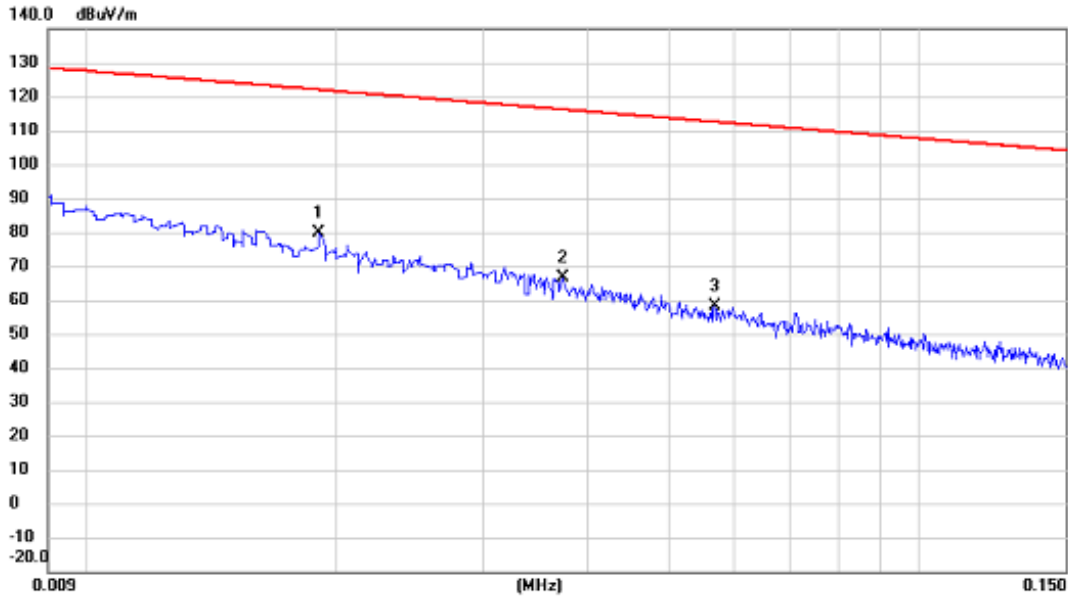
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		0.4374	14.15	16.52	30.67	94.79	-64.12	AVG	
2	*	0.7915	2.75	16.13	18.88	69.64	-50.76	QP	
3		1.2822	-3.91	15.79	11.88	65.45	-53.57	QP	

Test Mode: TX Mode

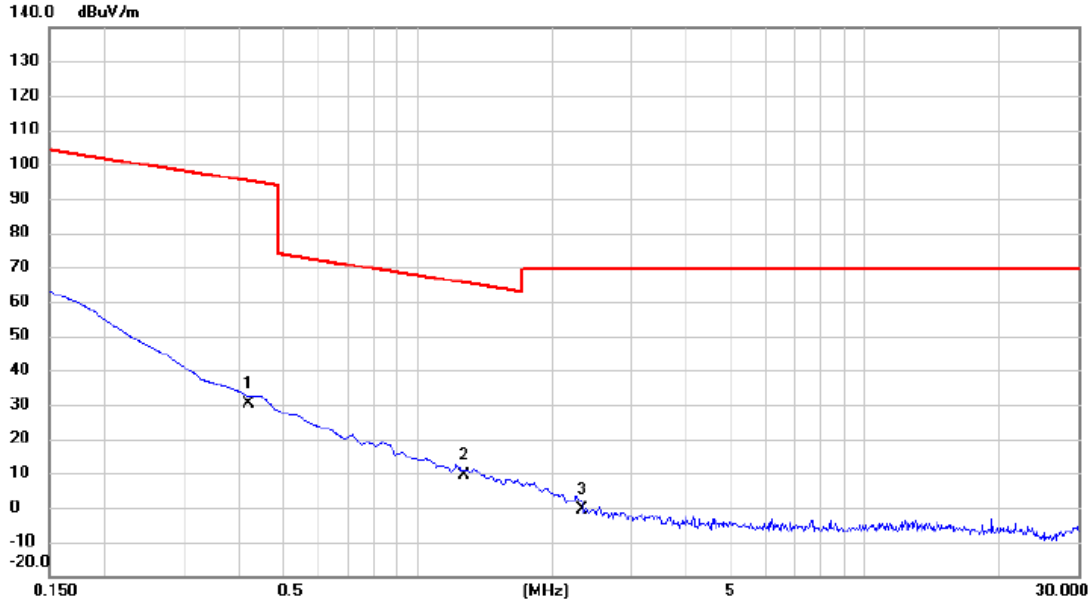
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	0.0190	59.93	19.75	79.68	122.03	-42.35	AVG	
2		0.0374	47.56	19.10	66.66	116.15	-49.49	AVG	
3		0.0568	39.43	18.59	58.02	112.52	-54.50	AVG	

Test Mode: TX Mode

Ant 90°

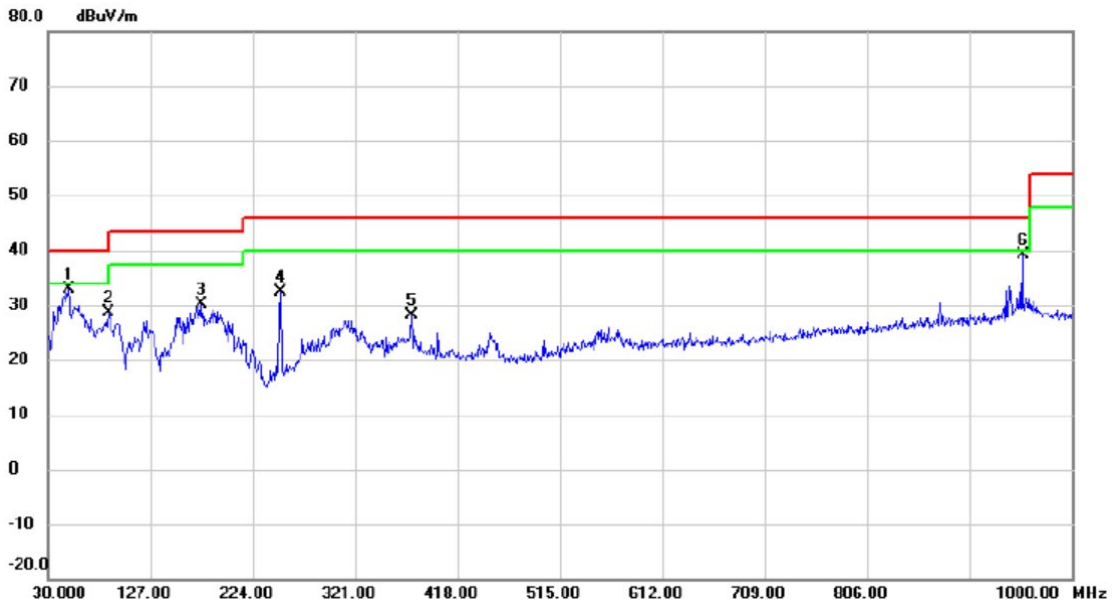


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		0.4187	13.52	16.54	30.06	95.17	-65.11	AVG	
2	*	1.2694	-6.56	15.79	9.23	65.53	-56.30	QP	
3		2.3291	-16.10	15.42	-0.68	69.54	-70.22	QP	

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

Test Mode: TX B Mode Channel 01

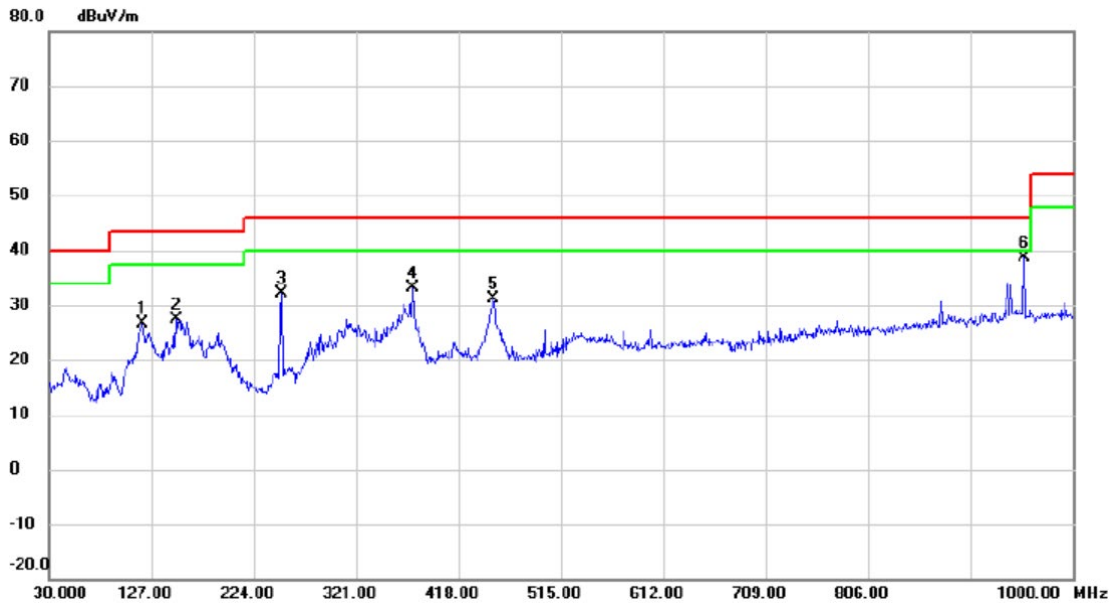
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		49.4000	50.29	-17.42	32.87	40.00	-7.13	peak	
2		87.7150	49.54	-20.79	28.75	40.00	-11.25	peak	
3		175.0150	47.51	-17.42	30.09	43.50	-13.41	peak	
4		250.1900	49.77	-17.47	32.30	46.00	-13.70	peak	
5		374.8350	42.52	-14.46	28.06	46.00	-17.94	peak	
6	*	953.9250	44.38	-5.33	39.05	46.00	-6.95	peak	

Test Mode: TX B Mode Channel 01

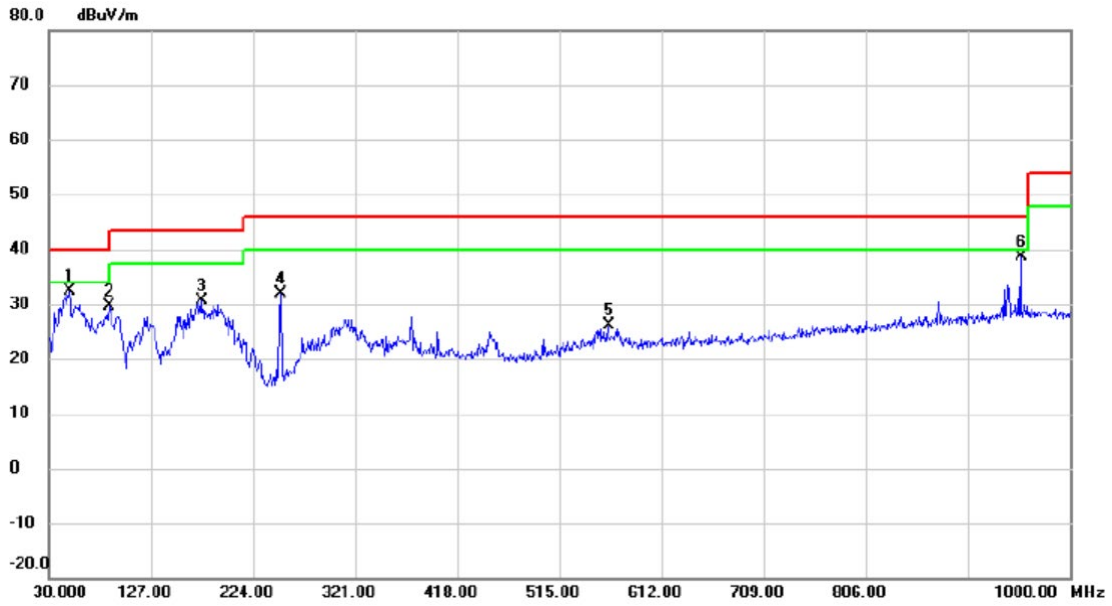
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		118.7550	44.30	-17.78	26.52	43.50	-16.98	peak	
2		150.7650	42.95	-15.56	27.39	43.50	-16.11	peak	
3		250.1900	49.55	-17.47	32.08	46.00	-13.92	peak	
4		374.8350	47.54	-14.46	33.08	46.00	-12.92	peak	
5		450.9800	43.60	-12.39	31.21	46.00	-14.79	peak	
6	*	953.9250	43.94	-5.33	38.61	46.00	-7.39	peak	

Test Mode: TX B Mode Channel 06

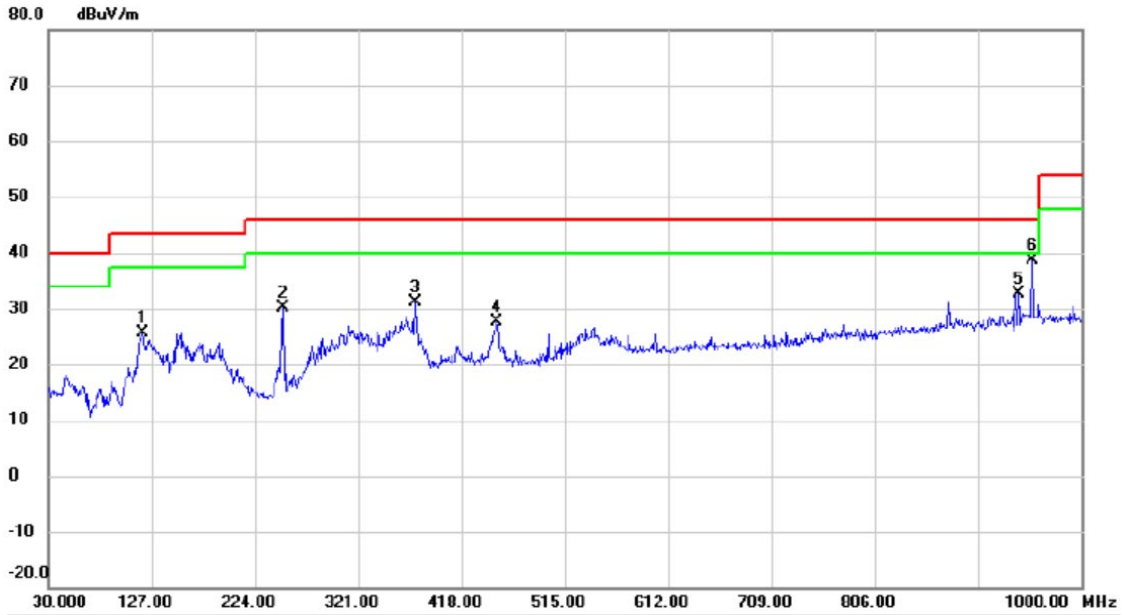
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		49.4000	49.79	-17.42	32.37	40.00	-7.63	peak	
2		87.7150	50.54	-20.79	29.75	40.00	-10.25	peak	
3		175.0150	48.01	-17.42	30.59	43.50	-12.91	peak	
4		250.1900	49.27	-17.47	31.80	46.00	-14.20	peak	
5		562.0450	36.32	-10.29	26.03	46.00	-19.97	peak	
6	*	953.9250	43.88	-5.33	38.55	46.00	-7.45	peak	

Test Mode: TX B Mode Channel 06

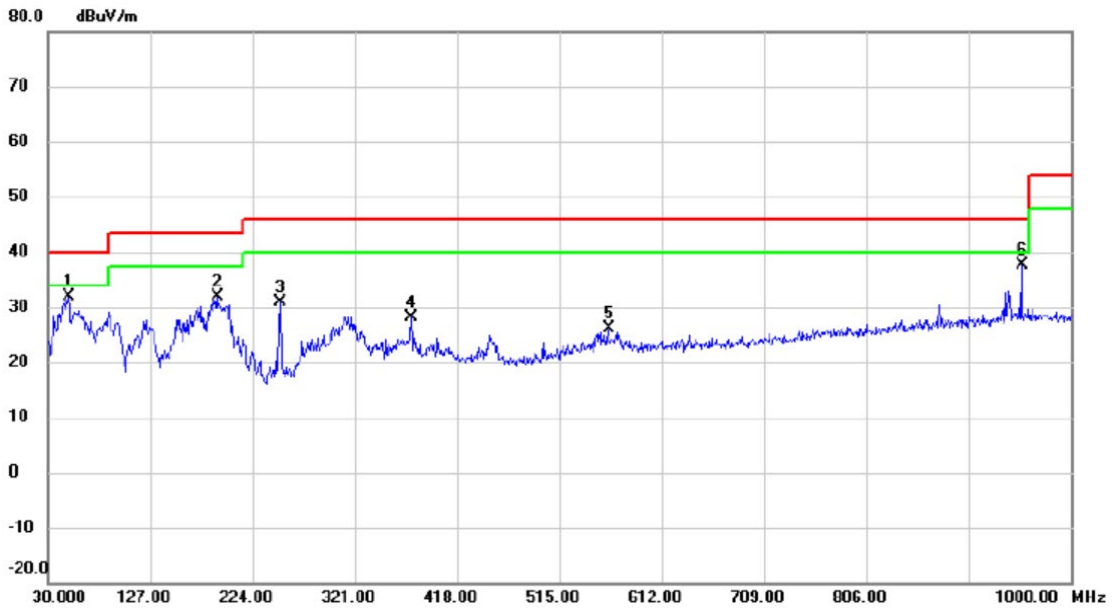
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		118.7550	43.30	-17.78	25.52	43.50	-17.98	peak	
2		250.1900	47.54	-17.47	30.07	46.00	-15.93	peak	
3		374.8350	45.54	-14.46	31.08	46.00	-14.92	peak	
4		450.9800	40.10	-12.39	27.71	46.00	-18.29	peak	
5		941.3150	38.13	-5.48	32.65	46.00	-13.35	peak	
6	*	953.9250	43.94	-5.33	38.61	46.00	-7.39	peak	

Test Mode: TX B Mode Channel 11

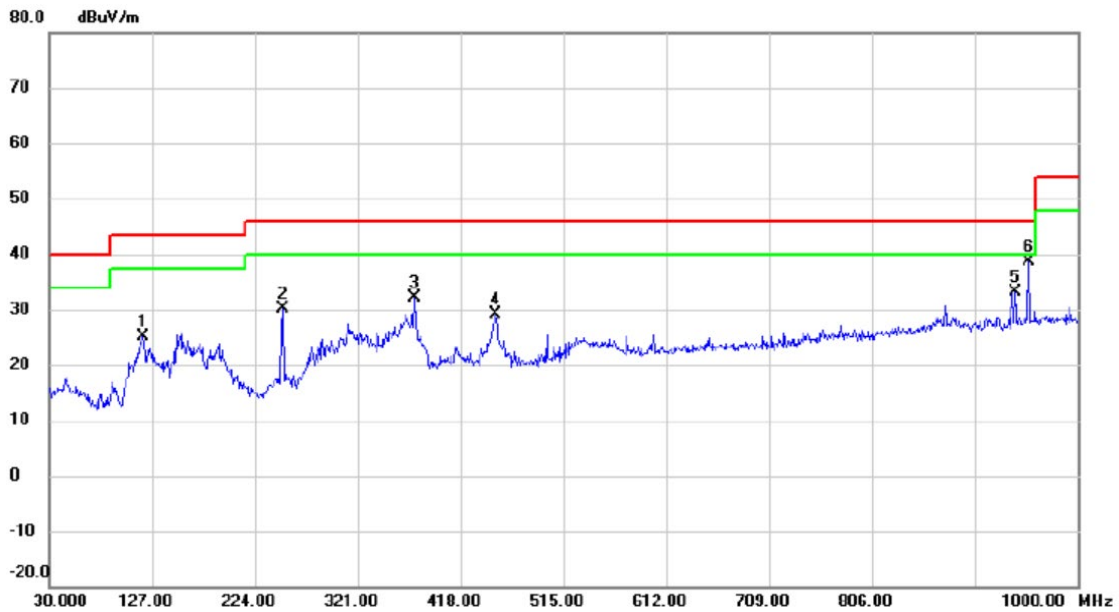
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	49.4000	49.29	-17.42	31.87	40.00	-8.13	peak	
2		190.5350	51.12	-19.33	31.79	43.50	-11.71	peak	
3		250.1900	48.27	-17.47	30.80	46.00	-15.20	peak	
4		374.8350	42.52	-14.46	28.06	46.00	-17.94	peak	
5		562.0450	36.32	-10.29	26.03	46.00	-19.97	peak	
6		953.9250	42.88	-5.33	37.55	46.00	-8.45	peak	

Test Mode: TX B Mode Channel 11

Horizontal

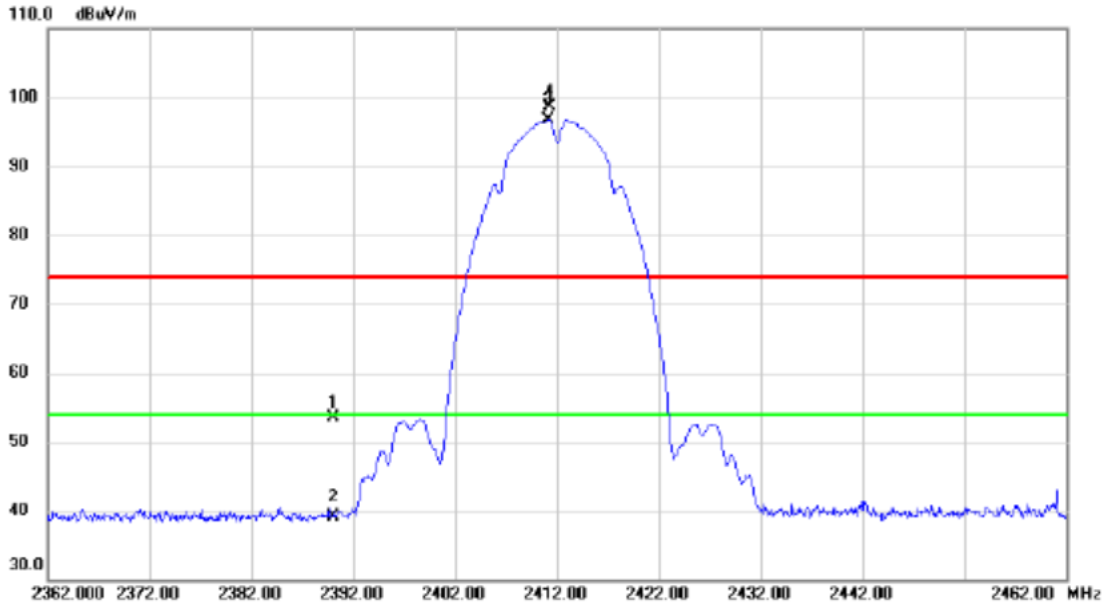


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	118.7550	42.80	-17.78	25.02	43.50	-18.48	peak	
2	250.1900	47.54	-17.47	30.07	46.00	-15.93	peak	
3	374.8350	46.54	-14.46	32.08	46.00	-13.92	peak	
4	450.9800	41.60	-12.39	29.21	46.00	-16.79	peak	
5	941.3150	38.63	-5.48	33.15	46.00	-12.85	peak	
6 *	953.9250	43.94	-5.33	38.61	46.00	-7.39	peak	

APPENDIX D - RADIATED EMISSION (ABOVE 1000 MHZ)

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

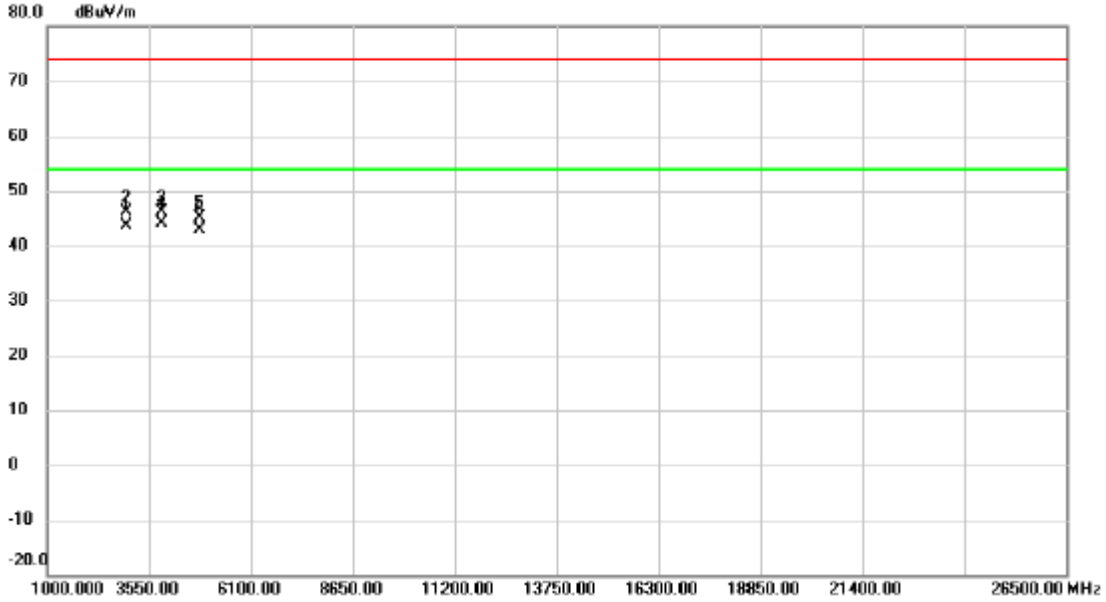
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	21.79	31.79	53.58	74.00	-20.42	peak	
2		2390.000	7.33	31.79	39.12	54.00	-14.88	AVG	
3	*	2411.150	64.93	31.85	96.78	54.00	42.78	AVG	No Limit
4	X	2411.300	66.83	31.85	98.68	74.00	24.68	peak	No Limit

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

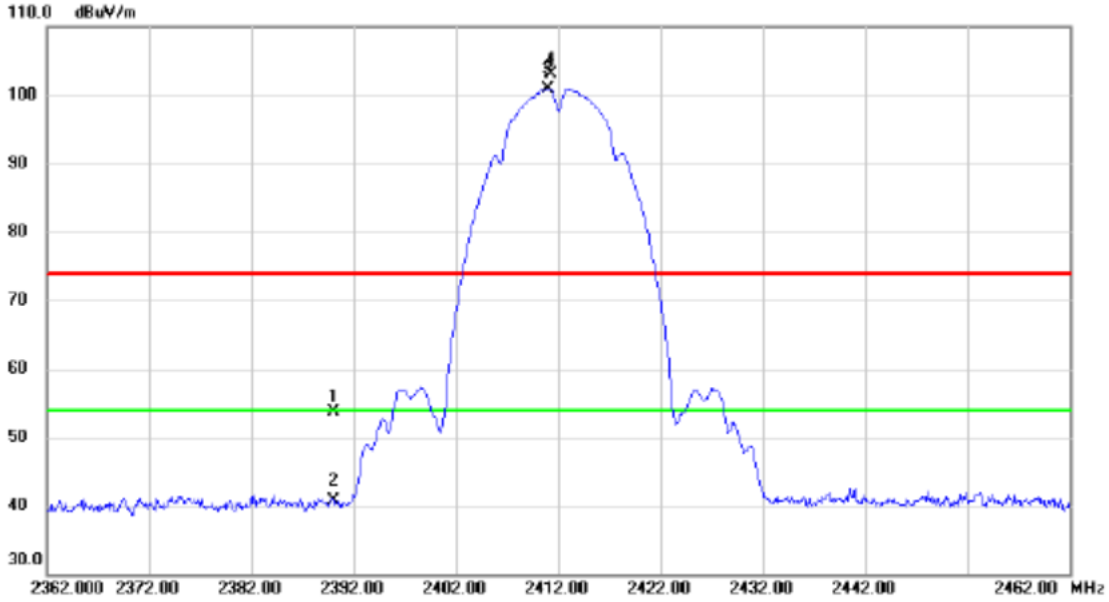
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	59.21	-15.48	43.73	54.00	-10.27	AVG	
2		2999.840	61.64	-15.48	46.16	74.00	-27.84	peak	
3		3859.265	59.76	-13.59	46.17	74.00	-27.83	peak	
4	*	3861.125	57.74	-13.58	44.16	54.00	-9.84	AVG	
5		4823.855	55.88	-10.72	45.16	74.00	-28.84	peak	
6		4824.625	53.51	-10.72	42.79	54.00	-11.21	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	21.97	31.79	53.76	74.00	-20.24	peak	
2		2390.000	9.01	31.79	40.80	54.00	-13.20	AVG	
3	*	2411.000	69.12	31.85	100.97	54.00	46.97	AVG	No Limit
4	X	2411.300	71.26	31.85	103.11	74.00	29.11	peak	No Limit

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

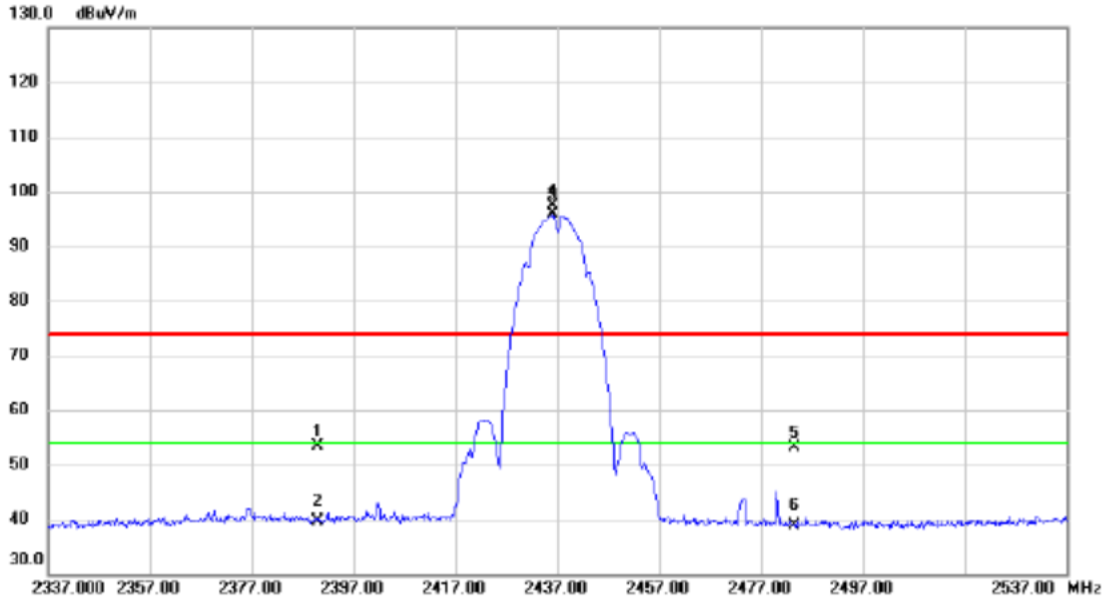
Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2997.500	56.85	-15.48	41.37	54.00	-12.63	AVG	
2	2999.950	60.01	-15.48	44.53	74.00	-29.47	peak	
3	3859.235	57.79	-13.59	44.20	74.00	-29.80	peak	
4	3861.125	54.86	-13.58	41.28	54.00	-12.72	AVG	
5	4823.985	56.10	-10.72	45.38	74.00	-28.62	peak	
6 *	4824.625	53.73	-10.72	43.01	54.00	-10.99	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

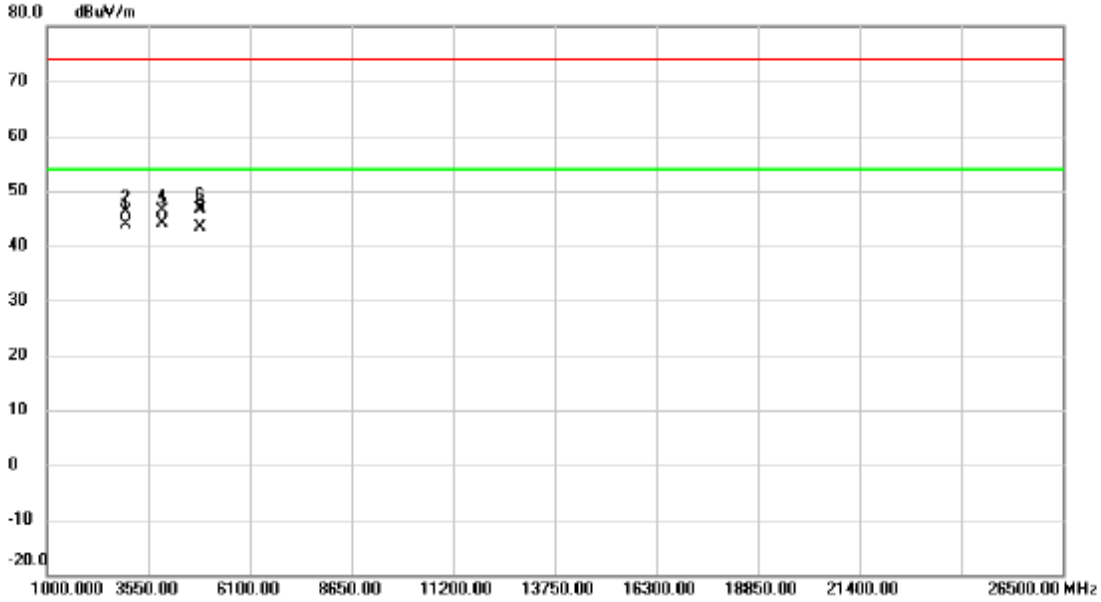
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	21.52	31.79	53.31	74.00	-20.69	peak	
2		2390.000	7.84	31.79	39.63	54.00	-14.37	AVG	
3	*	2436.000	63.85	31.91	95.76	54.00	41.76	AVG	No Limit
4	X	2436.100	65.45	31.91	97.36	74.00	23.36	peak	No Limit
5		2483.500	21.17	32.05	53.22	74.00	-20.78	peak	
6		2483.500	6.93	32.05	38.98	54.00	-15.02	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

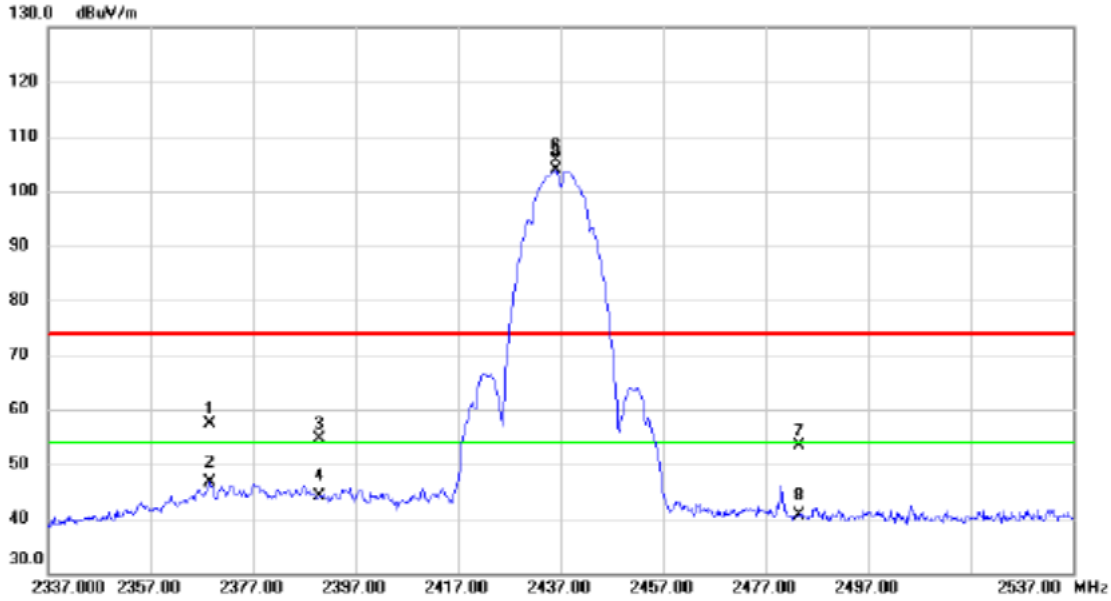
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	59.25	-15.48	43.77	54.00	-10.23	AVG	
2		2999.940	61.51	-15.48	46.03	74.00	-27.97	peak	
3	*	3896.375	57.72	-13.48	44.24	54.00	-9.76	AVG	
4		3899.185	59.97	-13.47	46.50	74.00	-27.50	peak	
5		4871.625	53.97	-10.52	43.45	54.00	-10.55	AVG	
6		4873.865	57.04	-10.51	46.53	74.00	-27.47	peak	

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

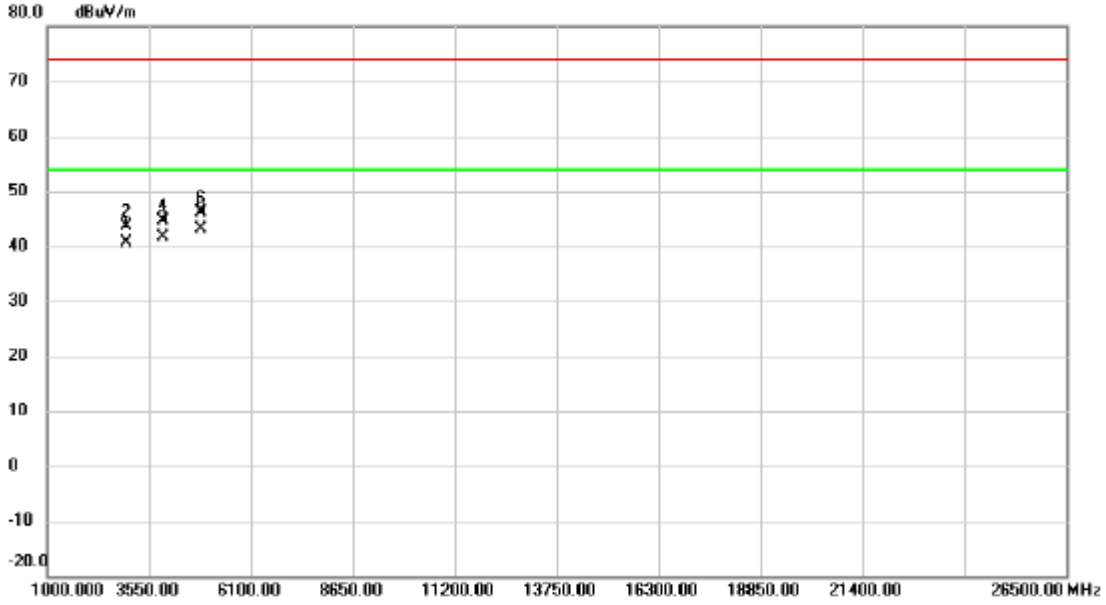
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2368.600	25.61	31.72	57.33	74.00	-16.67	peak	
2	X	2368.600	14.86	31.72	46.58	54.00	-7.42	AVG	
3		2390.000	22.85	31.79	54.64	74.00	-19.36	peak	
4	X	2390.000	12.42	31.79	44.21	54.00	-9.79	AVG	
5	*	2436.000	71.85	31.91	103.76	54.00	49.76	AVG	No Limit
6	X	2436.100	73.62	31.91	105.53	74.00	31.53	peak	No Limit
7		2483.500	21.27	32.05	53.32	74.00	-20.68	peak	
8	X	2483.500	8.54	32.05	40.59	54.00	-13.41	AVG	

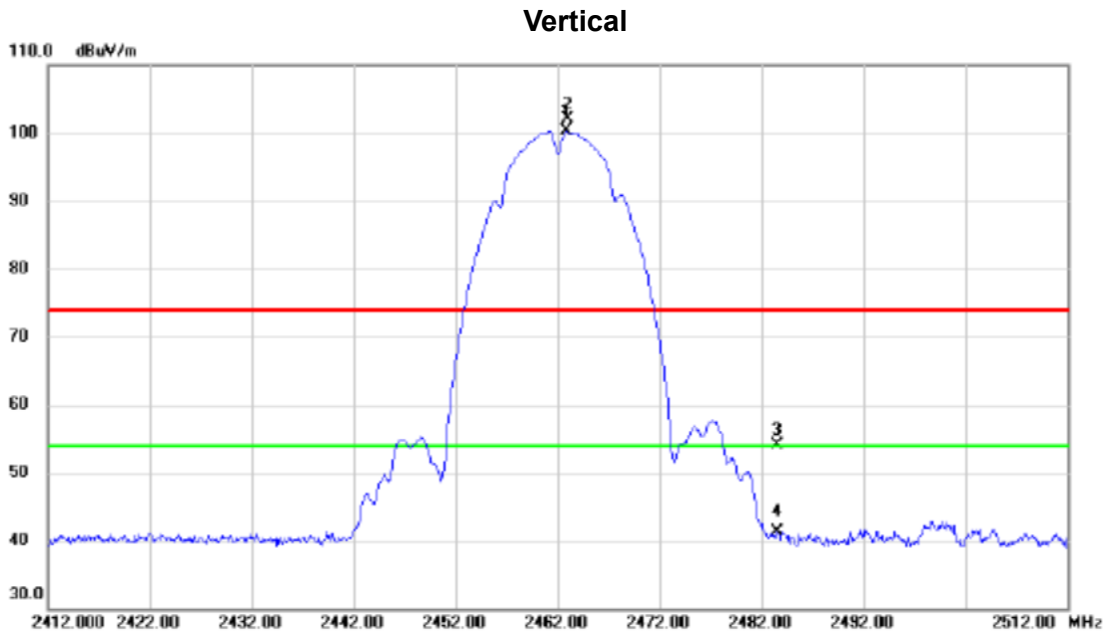
Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	56.06	-15.48	40.58	54.00	-13.42	AVG	
2		3000.110	59.14	-15.48	43.66	74.00	-30.34	peak	
3		3896.375	55.19	-13.48	41.71	54.00	-12.29	AVG	
4		3899.075	58.14	-13.47	44.67	74.00	-29.33	peak	
5	*	4871.625	53.65	-10.52	43.13	54.00	-10.87	AVG	
6		4874.095	56.70	-10.51	46.19	74.00	-27.81	peak	

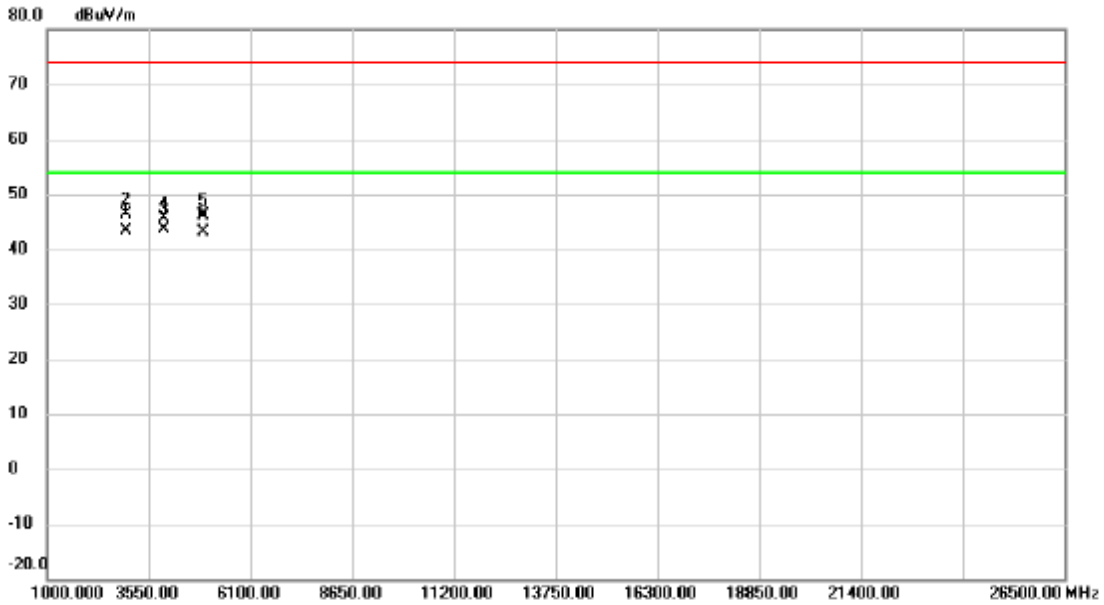
Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2462.900	68.33	31.99	100.32	54.00	46.32	AVG	No Limit
2	X	2463.000	70.10	31.99	102.09	74.00	28.09	peak	No Limit
3		2483.500	22.02	32.05	54.07	74.00	-19.93	peak	
4		2483.500	9.29	32.05	41.34	54.00	-12.66	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

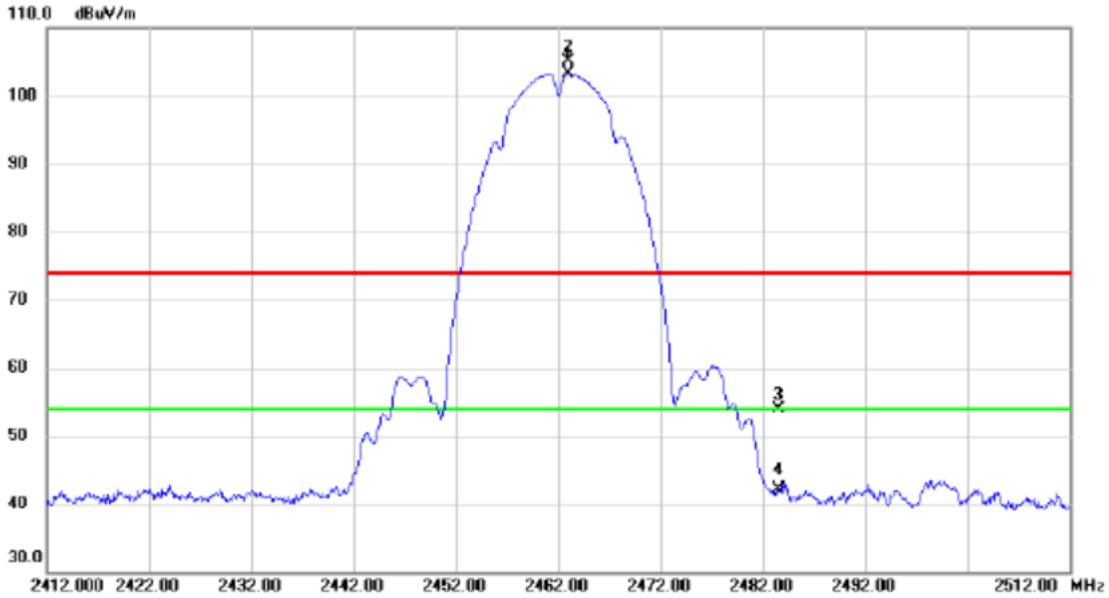
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	58.82	-15.48	43.34	54.00	-10.66	AVG	
2		2999.970	61.74	-15.48	46.26	74.00	-27.74	peak	
3	*	3937.500	56.95	-13.34	43.61	54.00	-10.39	AVG	
4		3939.130	58.90	-13.34	45.56	74.00	-28.44	peak	
5		4923.880	56.32	-10.30	46.02	74.00	-27.98	peak	
6		4924.500	53.32	-10.30	43.02	54.00	-10.98	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

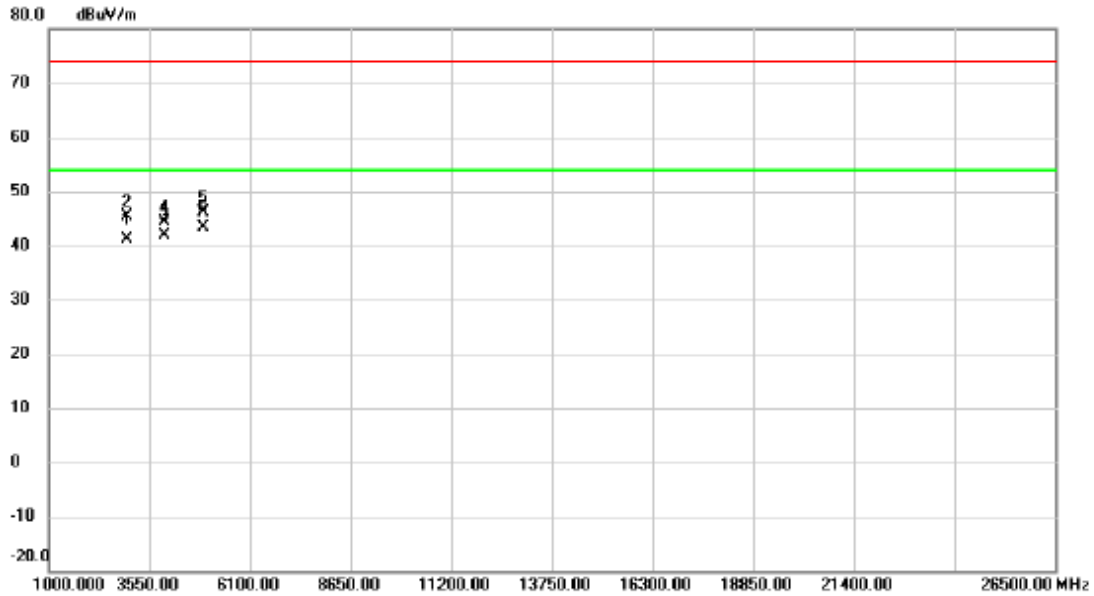
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2462.950	71.41	31.99	103.40	54.00	49.40	AVG	No Limit
2	X	2463.000	73.03	31.99	105.02	74.00	31.02	peak	No Limit
3		2483.500	21.86	32.05	53.91	74.00	-20.09	peak	
4		2483.500	10.06	32.05	42.11	54.00	-11.89	AVG	

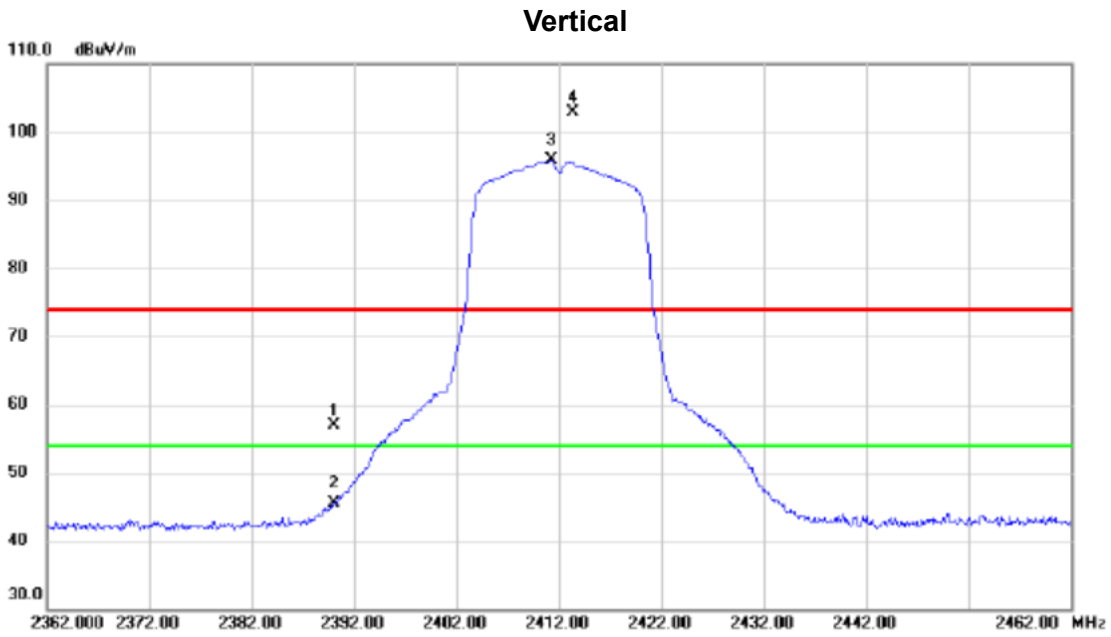
Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	56.54	-15.48	41.06	54.00	-12.94	AVG	
2		2999.630	60.90	-15.48	45.42	74.00	-28.58	peak	
3		3937.500	55.26	-13.34	41.92	54.00	-12.08	AVG	
4		3939.080	57.71	-13.34	44.37	74.00	-29.63	peak	
5		4923.840	56.32	-10.30	46.02	74.00	-27.98	peak	
6	*	4924.500	53.74	-10.30	43.44	54.00	-10.56	AVG	

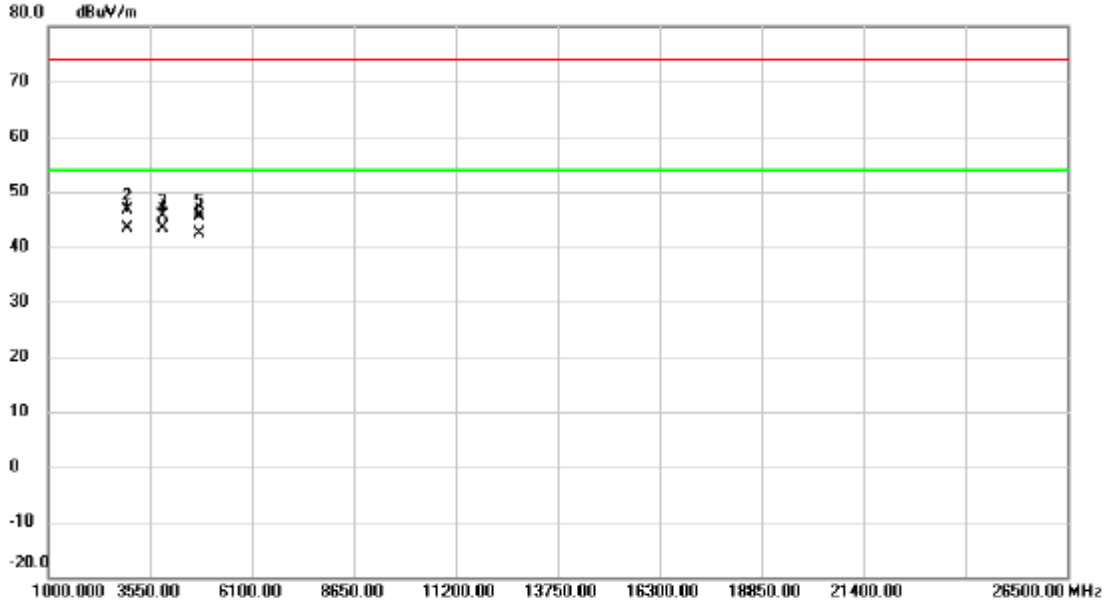
Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	25.04	31.79	56.83	74.00	-17.17	peak	
2		2390.000	13.80	31.79	45.59	54.00	-8.41	AVG	
3	*	2411.250	64.03	31.85	95.88	54.00	41.88	AVG	No Limit
4	X	2413.450	70.99	31.85	102.84	74.00	28.84	peak	No Limit

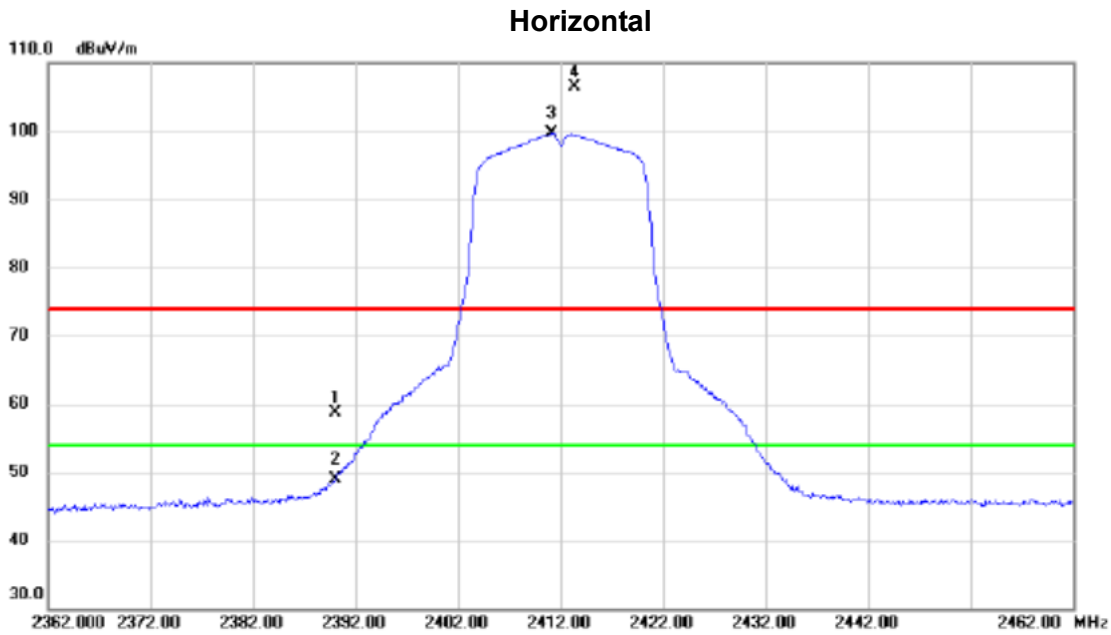
Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	58.94	-15.48	43.46	54.00	-10.54	AVG	
2		2999.480	62.18	-15.48	46.70	74.00	-27.30	peak	
3		3859.185	59.34	-13.59	45.75	74.00	-28.25	peak	
4	*	3861.125	57.07	-13.58	43.49	54.00	-10.51	AVG	
5		4799.745	56.55	-10.82	45.73	74.00	-28.27	peak	
6		4801.125	53.09	-10.82	42.27	54.00	-11.73	AVG	

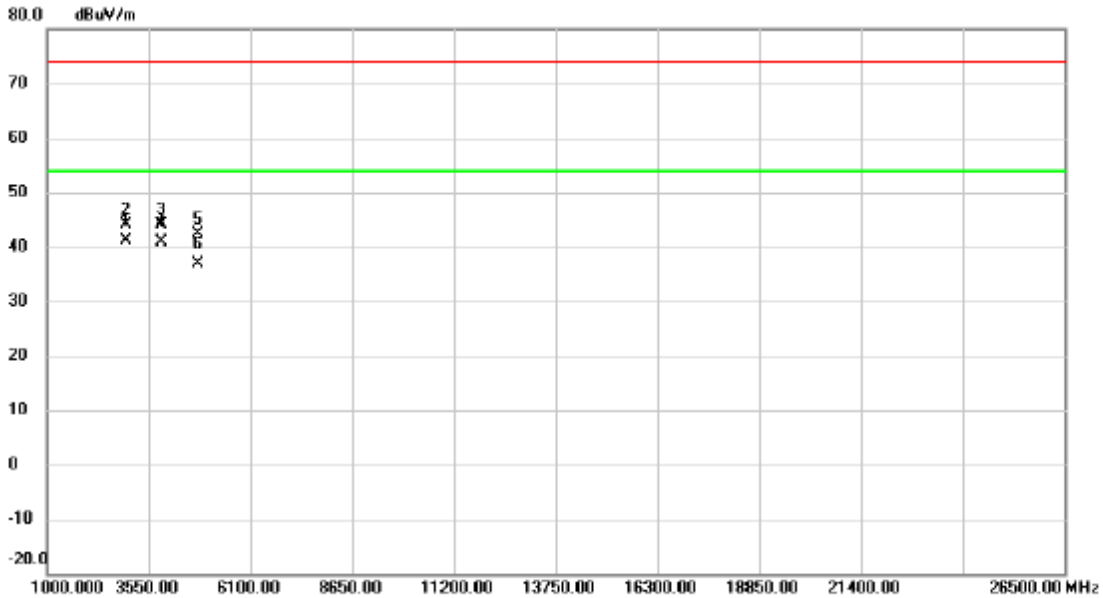
Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	26.92	31.79	58.71	74.00	-15.29	peak	
2		2390.000	17.10	31.79	48.89	54.00	-5.11	AVG	
3	*	2411.200	67.85	31.85	99.70	54.00	45.70	AVG	No Limit
4	X	2413.400	74.73	31.85	106.58	74.00	32.58	peak	No Limit

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

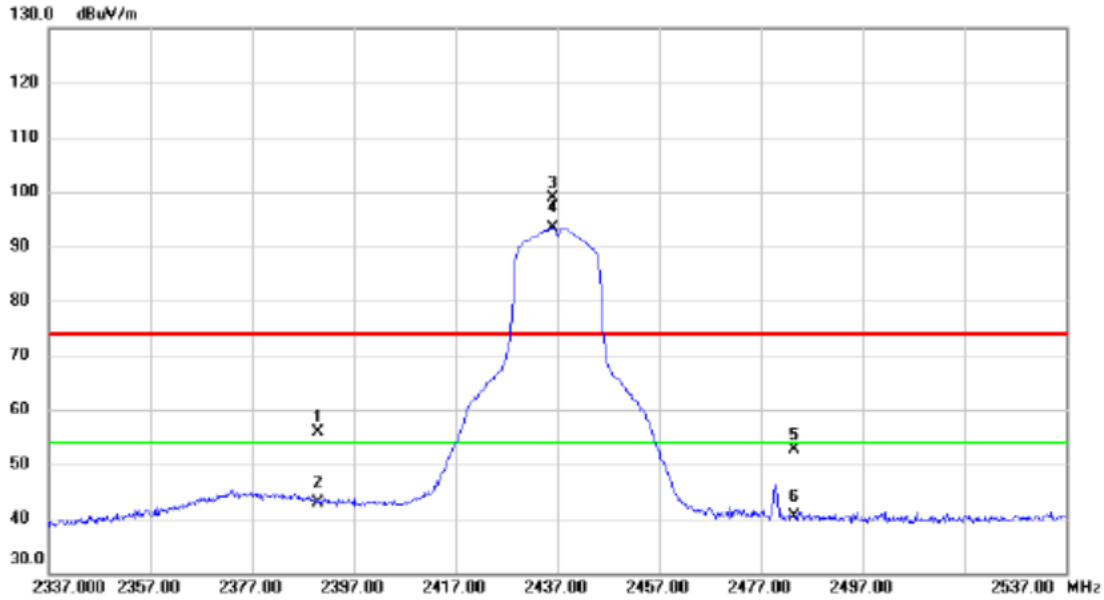
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2997.500	56.51	-15.48	41.03	54.00	-12.97	AVG	
2		2999.840	59.65	-15.48	44.17	74.00	-29.83	peak	
3		3859.185	57.68	-13.59	44.09	74.00	-29.91	peak	
4		3861.125	54.52	-13.58	40.94	54.00	-13.06	AVG	
5		4799.985	53.16	-10.82	42.34	74.00	-31.66	peak	
6		4801.125	47.81	-10.82	36.99	54.00	-17.01	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

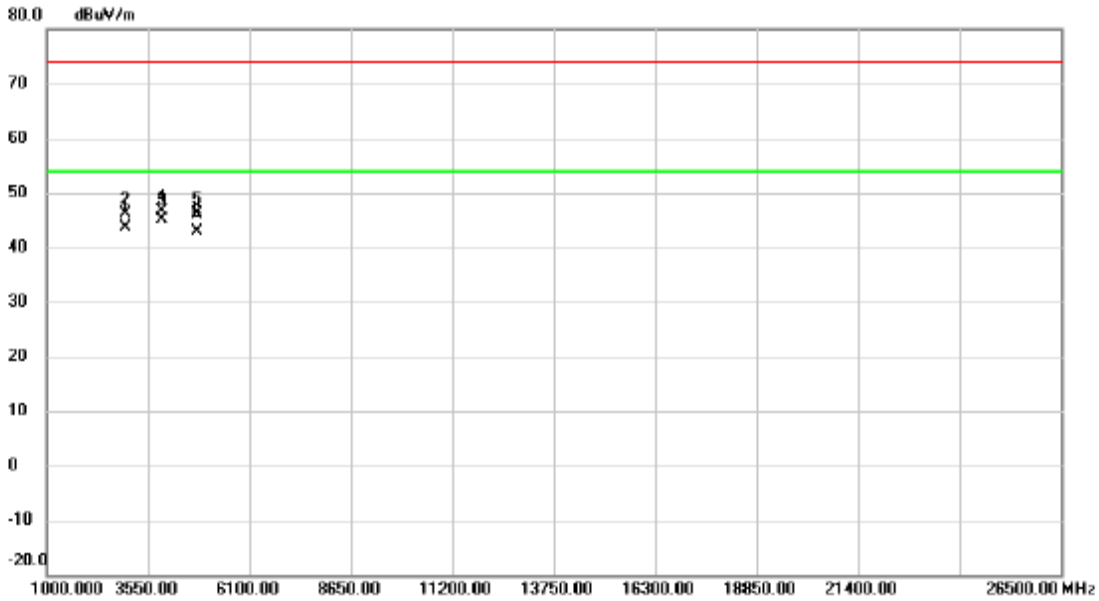
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	24.18	31.79	55.97	74.00	-18.03	peak	
2		2390.000	10.98	31.79	42.77	54.00	-11.23	AVG	
3	X	2436.100	66.92	31.91	98.83	74.00	24.83	peak	No Limit
4	*	2436.200	61.58	31.92	93.50	54.00	39.50	AVG	No Limit
5		2483.500	20.66	32.05	52.71	74.00	-21.29	peak	
6		2483.500	8.42	32.05	40.47	54.00	-13.53	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

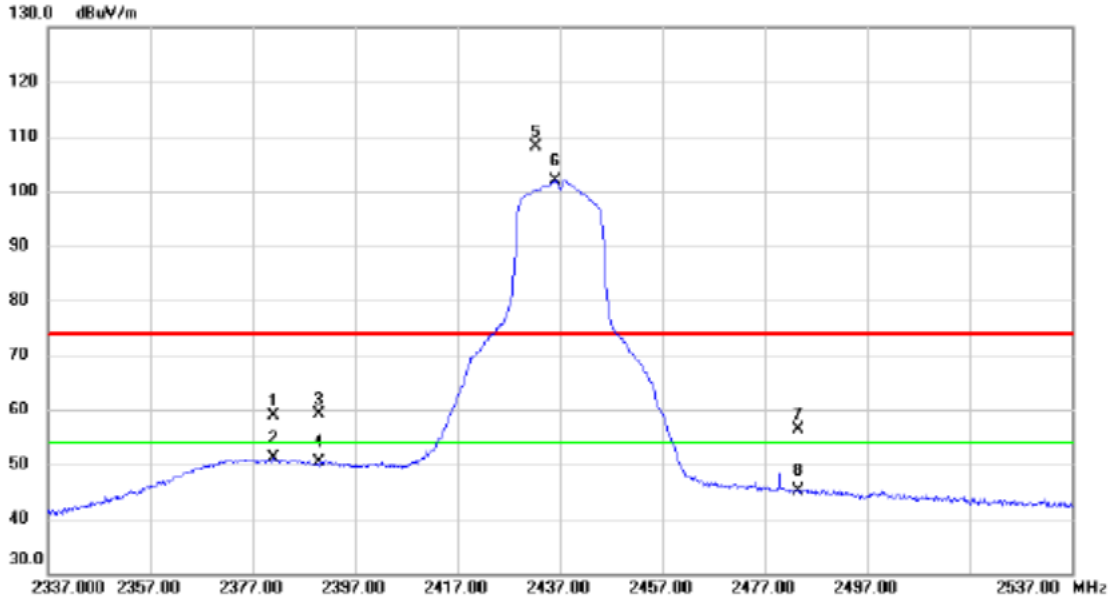
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	59.18	-15.48	43.70	54.00	-10.30	AVG	
2		2999.960	61.71	-15.48	46.23	74.00	-27.77	peak	
3	*	3896.375	58.73	-13.48	45.25	54.00	-8.75	AVG	
4		3899.275	60.03	-13.47	46.56	74.00	-27.44	peak	
5		4800.095	56.83	-10.82	46.01	74.00	-27.99	peak	
6		4801.125	53.66	-10.82	42.84	54.00	-11.16	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

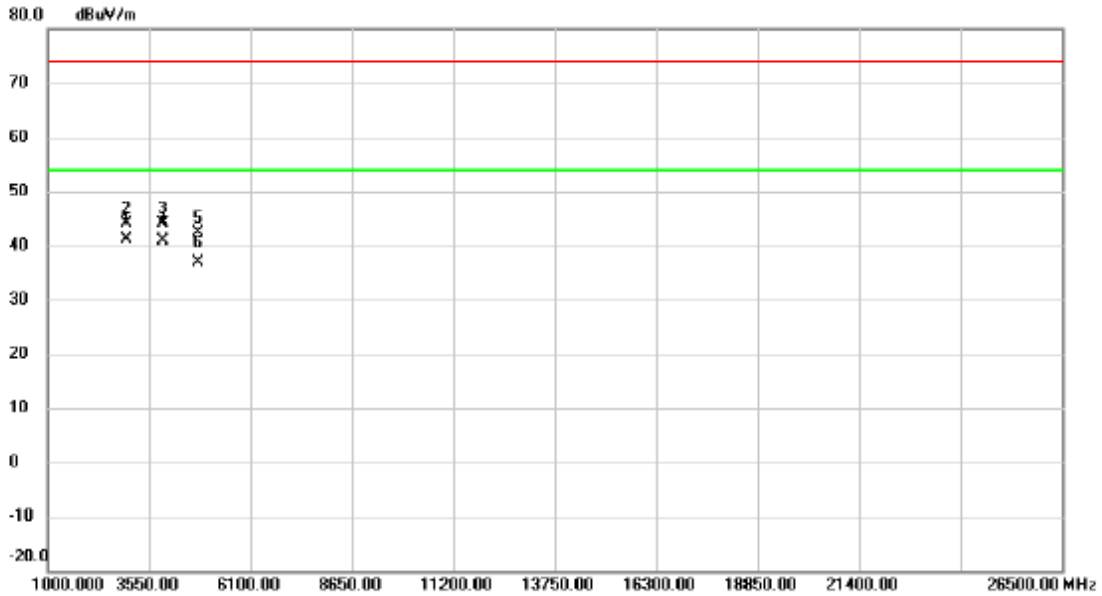
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2381.200	27.08	31.77	58.85	74.00	-15.15	peak	
2		2381.200	19.40	31.77	51.17	54.00	-2.83	AVG	
3		2390.000	27.25	31.79	59.04	74.00	-14.96	peak	
4		2390.000	18.60	31.79	50.39	54.00	-3.61	AVG	
5	X	2432.300	76.14	31.91	108.05	74.00	34.05	peak	No Limit
6	*	2436.100	70.06	31.91	101.97	54.00	47.97	AVG	No Limit
7		2483.500	24.35	32.05	56.40	74.00	-17.60	peak	
8		2483.500	13.20	32.05	45.25	54.00	-8.75	AVG	

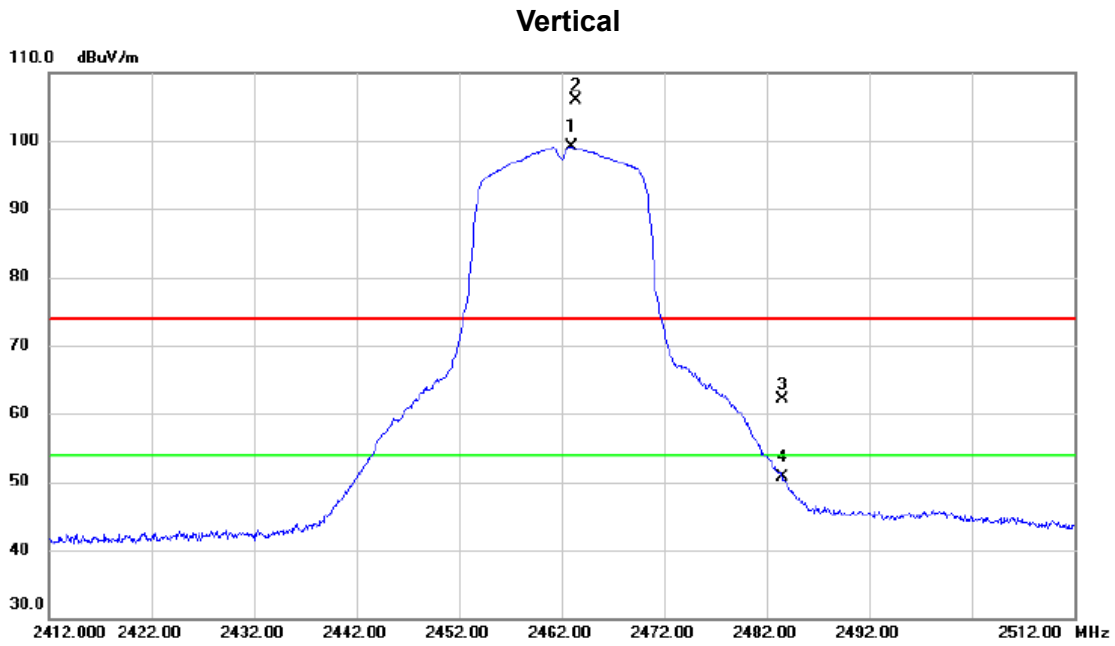
Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2997.500	56.51	-15.48	41.03	54.00	-12.97	AVG	
2		3000.570	59.65	-15.48	44.17	74.00	-29.83	peak	
3		3896.375	57.57	-13.48	44.09	74.00	-29.91	peak	
4		3899.265	54.41	-13.47	40.94	54.00	-13.06	AVG	
5		4799.935	53.16	-10.82	42.34	74.00	-31.66	peak	
6		4801.125	47.81	-10.82	36.99	54.00	-17.01	AVG	

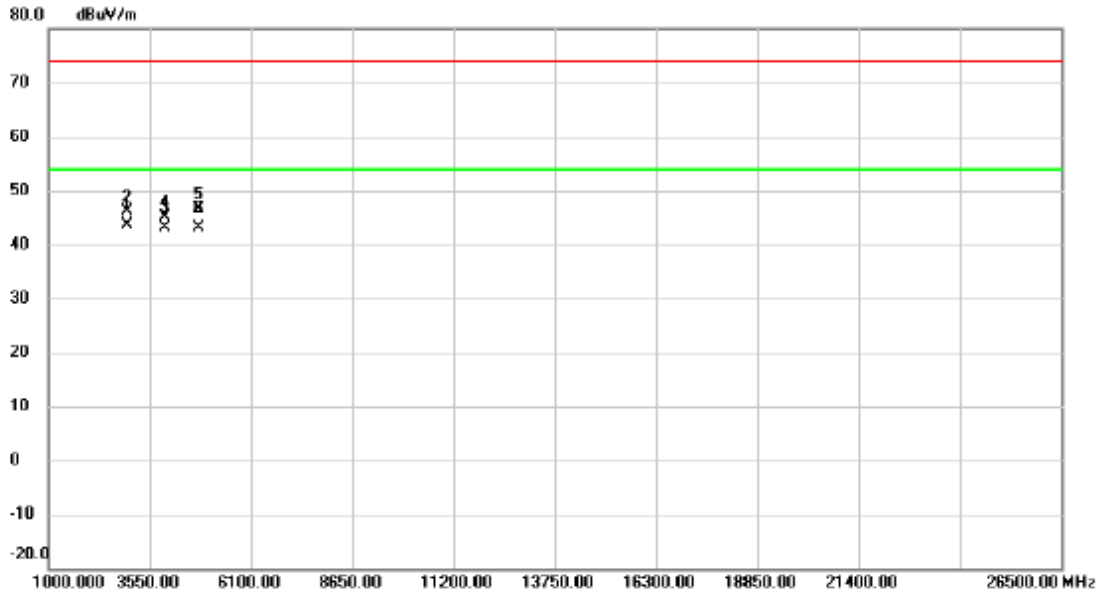
Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2463.000	67.11	31.99	99.10	54.00	45.10	AVG	No Limit
2	X	2463.400	73.97	31.99	105.96	74.00	31.96	peak	No Limit
3		2483.500	30.06	32.05	62.11	74.00	-11.89	peak	
4		2483.500	18.59	32.05	50.64	54.00	-3.36	AVG	

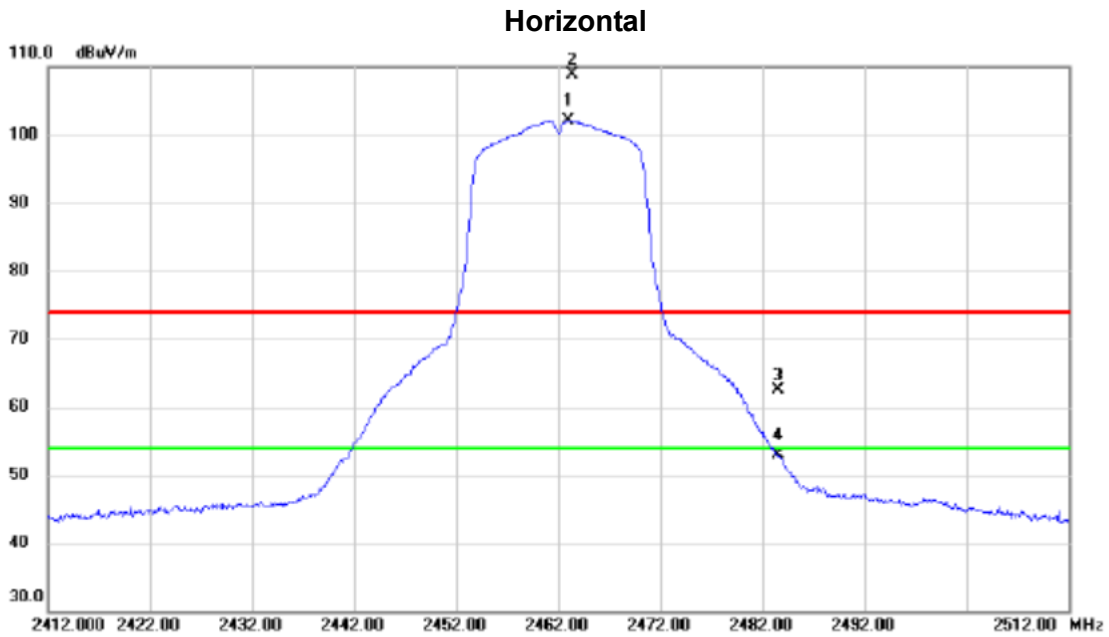
Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2997.500	59.03	-15.48	43.55	54.00	-10.45	AVG	
2		3000.050	61.50	-15.48	46.02	74.00	-27.98	peak	
3		3937.500	56.36	-13.34	43.02	54.00	-10.98	AVG	
4		3939.460	58.45	-13.34	45.11	74.00	-28.89	peak	
5		4799.955	57.35	-10.82	46.53	74.00	-27.47	peak	
6		4801.125	54.07	-10.82	43.25	54.00	-10.75	AVG	

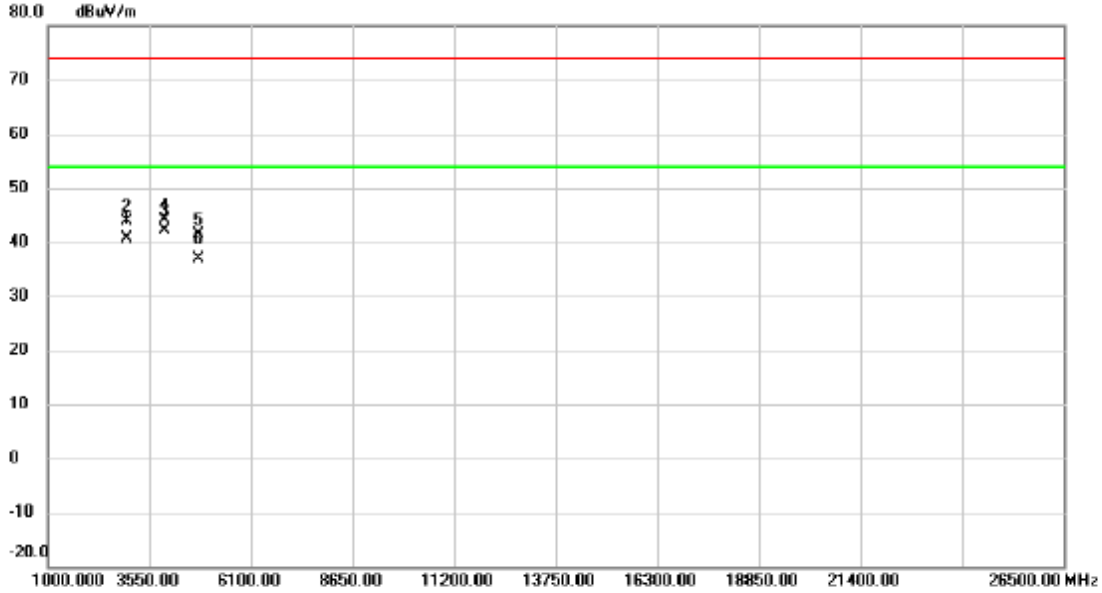
Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2463.050	70.16	31.99	102.15	54.00	48.15	AVG	No Limit
2	X	2463.350	76.86	31.99	108.85	74.00	34.85	peak	No Limit
3		2483.500	30.49	32.05	62.54	74.00	-11.46	peak	
4		2483.500	20.79	32.05	52.84	54.00	-1.16	AVG	

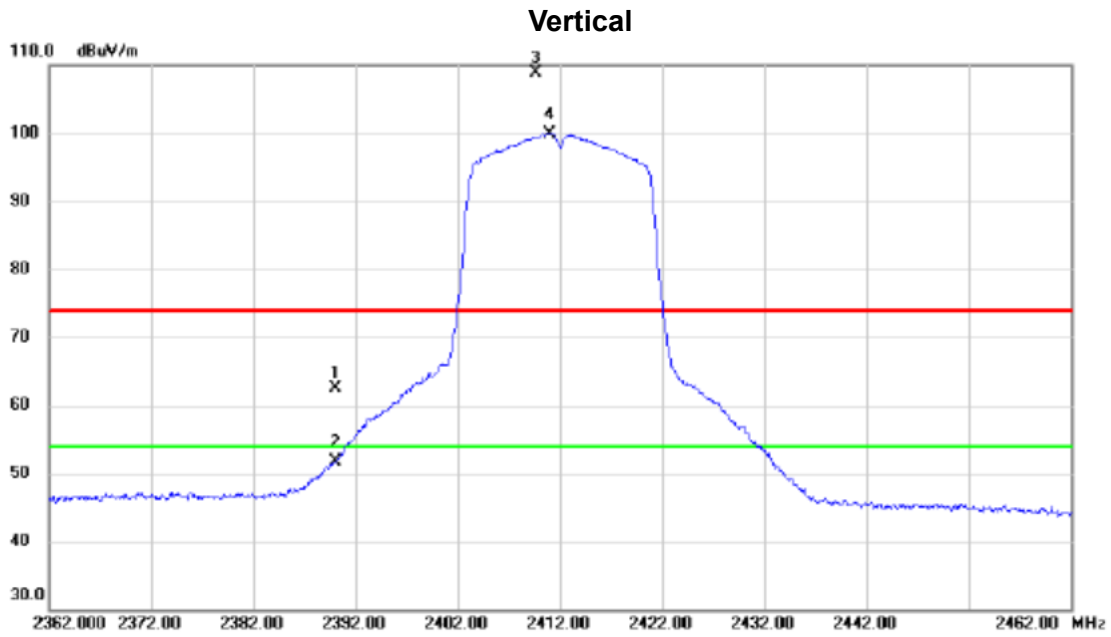
Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	56.20	-15.48	40.72	54.00	-13.28	AVG	
2		3000.140	59.32	-15.48	43.84	74.00	-30.16	peak	
3	*	3937.500	55.35	-13.34	42.01	54.00	-11.99	AVG	
4		3939.180	57.56	-13.34	44.22	74.00	-29.78	peak	
5		4800.150	52.08	-10.82	41.26	74.00	-32.74	peak	
6		4801.125	47.62	-10.82	36.80	54.00	-17.20	AVG	

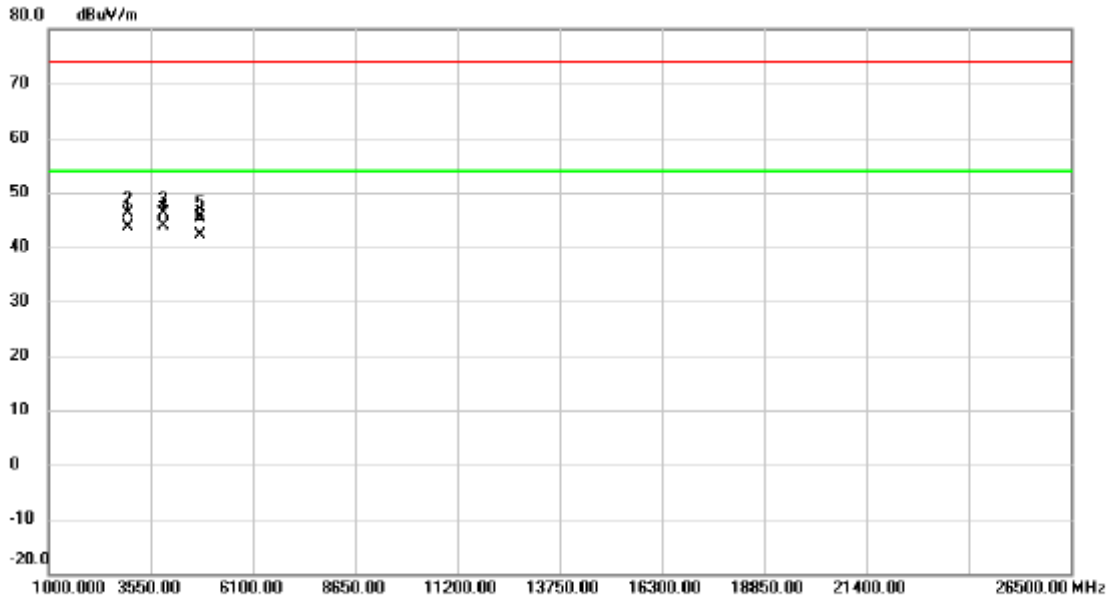
Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	30.66	31.79	62.45	74.00	-11.55	peak	
2		2390.000	19.93	31.79	51.72	54.00	-2.28	AVG	
3	X	2409.700	77.04	31.85	108.89	74.00	34.89	peak	No Limit
4	*	2411.000	68.08	31.85	99.93	54.00	45.93	AVG	No Limit

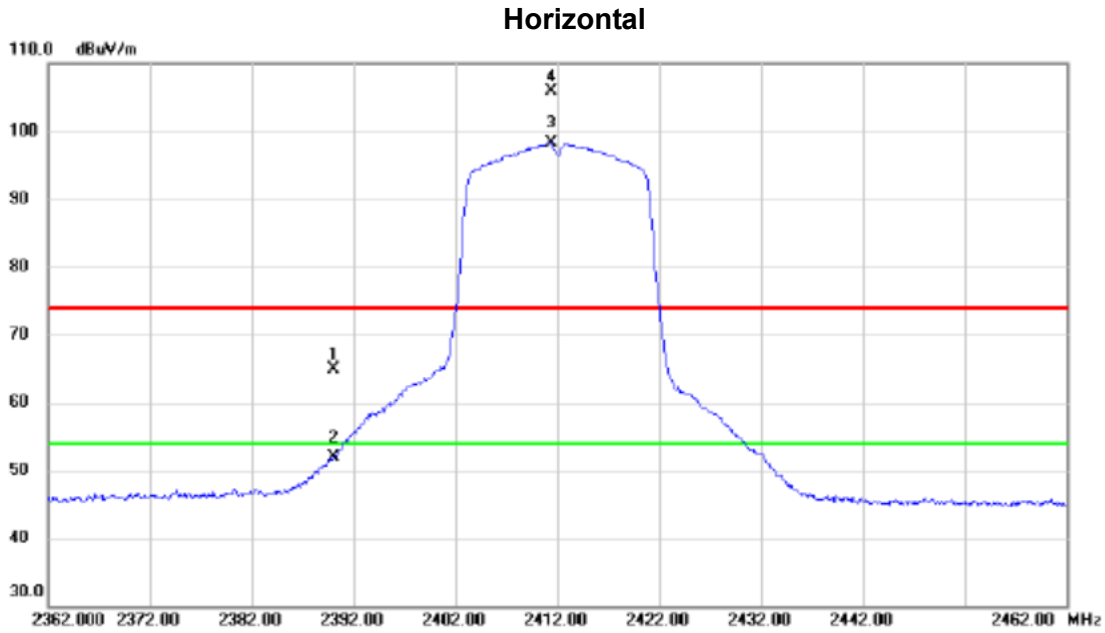
Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz

Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	59.15	-15.48	43.67	54.00	-10.33	AVG	
2		3000.020	61.63	-15.48	46.15	74.00	-27.85	peak	
3		3859.315	59.71	-13.59	46.12	74.00	-27.88	peak	
4	*	3861.125	57.47	-13.58	43.89	54.00	-10.11	AVG	
5		4799.935	56.27	-10.82	45.45	74.00	-28.55	peak	
6		4801.125	53.04	-10.82	42.22	54.00	-11.78	AVG	

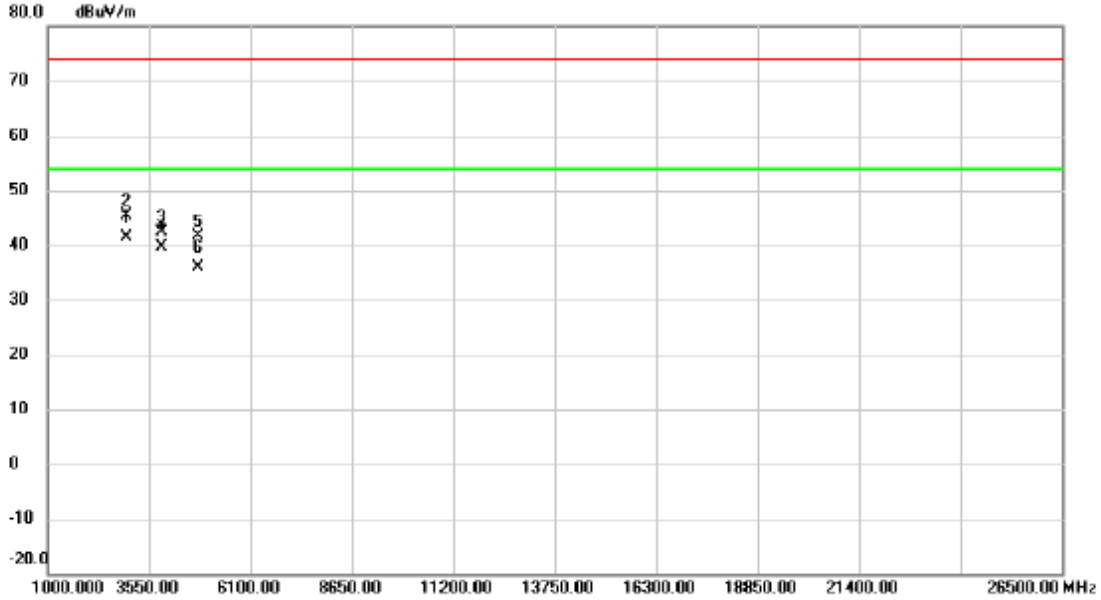
Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	33.09	31.79	64.88	74.00	-9.12	peak	
2		2390.000	20.14	31.79	51.93	54.00	-2.07	AVG	
3	*	2411.350	66.55	31.85	98.40	54.00	44.40	AVG	No Limit
4	X	2411.450	74.12	31.85	105.97	74.00	31.97	peak	No Limit

Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz

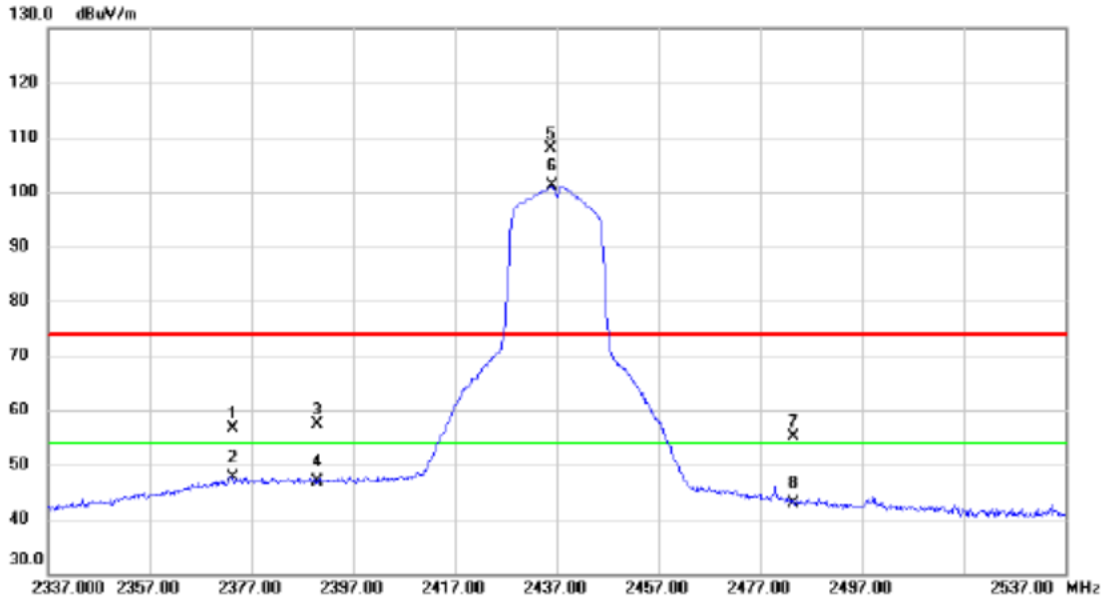
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2997.500	56.98	-15.48	41.50	54.00	-12.50	AVG	
2		2999.970	60.91	-15.48	45.43	74.00	-28.57	peak	
3		3859.135	56.07	-13.59	42.48	74.00	-31.52	peak	
4		3861.125	53.31	-13.58	39.73	54.00	-14.27	AVG	
5		4799.805	52.43	-10.82	41.61	74.00	-32.39	peak	
6		4801.125	46.73	-10.82	35.91	54.00	-18.09	AVG	

Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz

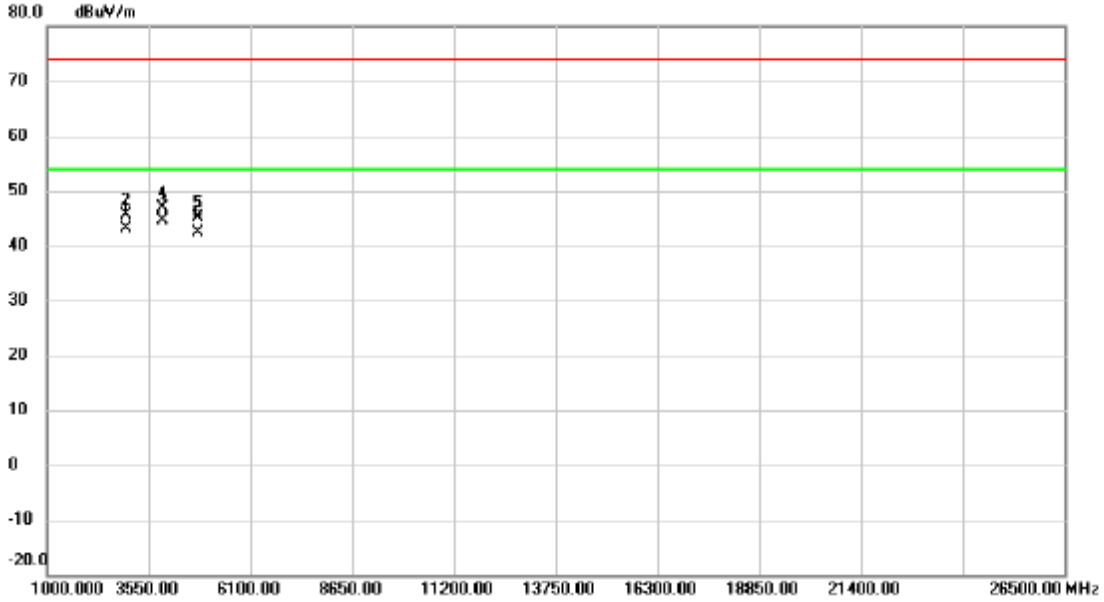
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2373.400	24.90	31.74	56.64	74.00	-17.36	peak	
2		2373.400	15.98	31.74	47.72	54.00	-6.28	AVG	
3		2390.000	25.58	31.79	57.37	74.00	-16.63	peak	
4		2390.000	15.21	31.79	47.00	54.00	-7.00	AVG	
5	X	2435.800	76.06	31.91	107.97	74.00	33.97	peak	No Limit
6	*	2436.100	69.14	31.91	101.05	54.00	47.05	AVG	No Limit
7		2483.500	22.96	32.05	55.01	74.00	-18.99	peak	
8		2483.500	10.92	32.05	42.97	54.00	-11.03	AVG	

Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz

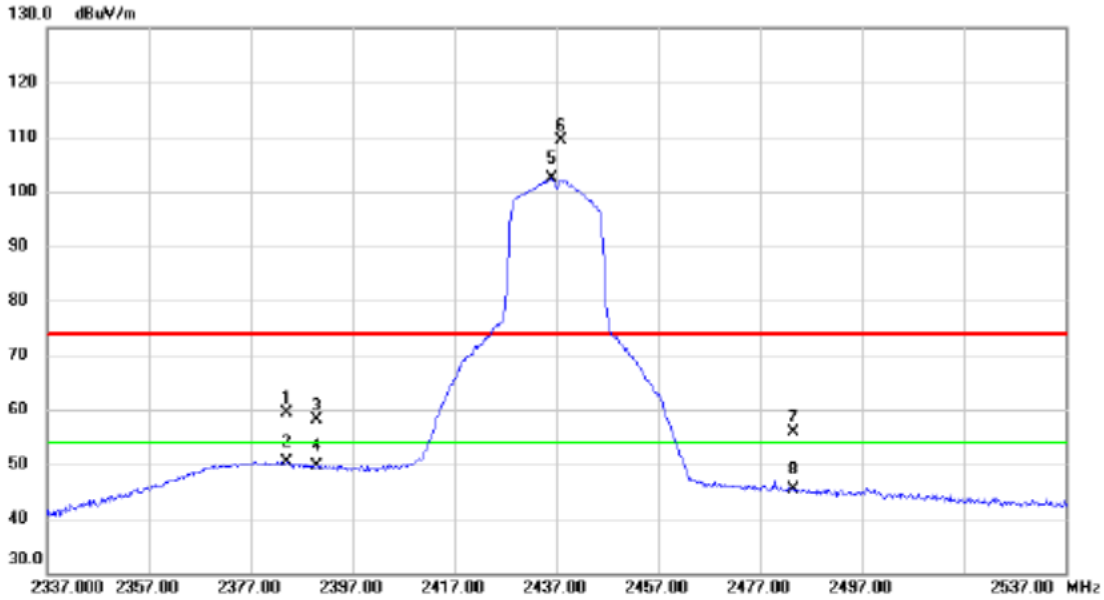
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	58.57	-15.48	43.09	54.00	-10.91	AVG	
2		3000.090	61.23	-15.48	45.75	74.00	-28.25	peak	
3	*	3896.375	58.05	-13.48	44.57	54.00	-9.43	AVG	
4		3899.065	60.38	-13.47	46.91	74.00	-27.09	peak	
5		4799.815	55.89	-10.82	45.07	74.00	-28.93	peak	
6		4801.125	53.08	-10.82	42.26	54.00	-11.74	AVG	

Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2384.200	27.72	31.77	59.49	74.00	-14.51	peak	
2		2384.200	18.62	31.77	50.39	54.00	-3.61	AVG	
3		2390.000	26.45	31.79	58.24	74.00	-15.76	peak	
4		2390.000	17.76	31.79	49.55	54.00	-4.45	AVG	
5	*	2436.000	70.46	31.91	102.37	54.00	48.37	AVG	No Limit
6	X	2437.800	77.43	31.93	109.36	74.00	35.36	peak	No Limit
7		2483.500	23.84	32.05	55.89	74.00	-18.11	peak	
8		2483.500	13.44	32.05	45.49	54.00	-8.51	AVG	

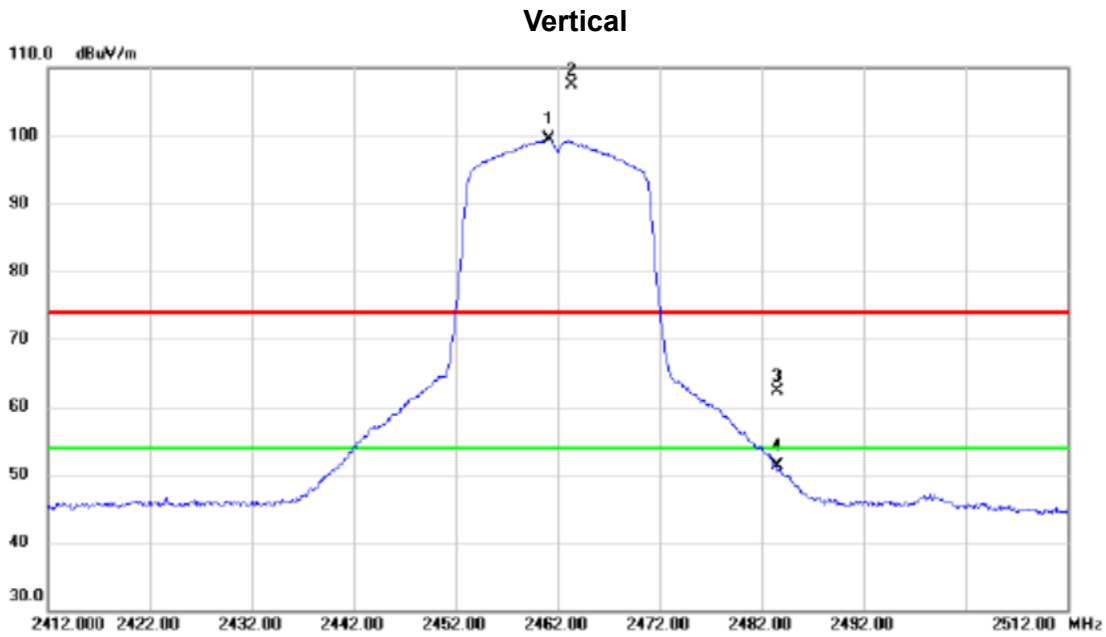
Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2997.500	56.40	-15.48	40.92	54.00	-13.08	AVG	
2		2999.920	58.71	-15.48	43.23	74.00	-30.77	peak	
3	*	3896.375	56.43	-13.48	42.95	54.00	-11.05	AVG	
4		3899.455	58.48	-13.47	45.01	74.00	-28.99	peak	
5		4995.000	47.84	-10.01	37.83	54.00	-16.17	AVG	
6		4995.700	56.40	-10.00	46.40	74.00	-27.60	peak	

Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2462 MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2461.200	67.56	31.99	99.55	54.00	45.55	AVG	No Limit
2	X	2463.400	75.57	31.99	107.56	74.00	33.56	peak	No Limit
3		2483.500	30.29	32.05	62.34	74.00	-11.66	peak	
4		2483.500	19.25	32.05	51.30	54.00	-2.70	AVG	