



**Neutron Engineering Inc.**

# FCC&IC Radio Test Report

**FCC ID: QISAP505130DN**

**IC: 6369A-AP505130DN**

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

**Project No.** : 1403C080B  
**Equipment** : Wireless LAN Access Point  
**Model Name** : AP5130DN  
**Applicant** : Huawei Technologies Co.,Ltd.  
**Address for FCC** : Administration Building, Headquarters of  
Huawei Technologies Co., Ltd., Bantian,  
Longgang District Shenzhen China  
**Address for IC** : Administration Building, Headquarters of  
Huawei Technologies Co., Ltd., Bantian,  
Longgang District, Shenzhen 518129  
China

**Tested by:** Neutron Engineering Inc. EMC Laboratory  
**Date of Receipt:** May. 28, 2014  
**Date of Test:** May. 28, 2014 ~ Jun. 04, 2014  
**Issued Date:** Jun. 05, 2014

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### **Declaration**

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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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**

Issued No.	Description	Issued Date
NEI-FICP-1-1403C080B	Original Issue.	Jun. 05, 2014



## **1. CERTIFICATION**

Equipment : Wireless LAN Access Point  
Brand Name : HUAWEI  
Model Name : AP5130DN  
Applicant : HUAWEI Communications Corporation  
Manufacturer : Huawei Technologies Co.,Ltd.  
Address : Administration Building, Huawei Base, Bantian, Longgang District ,Shenzhen 518129, P.R.China  
Factory : Huawei Technologies Co.,Ltd.  
Address : Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R.China  
Date of Test : May. 28, 2014 ~ Jun. 04, 2014  
Test Item : ENGINEERING SAMPLE  
Standard(s) : FCC Part15, Subpart C(15.247) / ANSI C63.4-2009  
Canada RSS-210:2010  
RSS-GEN Issue 3, Dec 2010

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FICP-1-1403C080B) 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):

<b>Applied Standard(s): FCC Part15 (15.247) , Subpart C Canada RSS-210:2010; RSS-GEN Issue 3, Dec 2010</b>				
Standard(s) Section		Test Item	Judgment	Remark
<b>FCC</b>	<b>IC</b>			
15.207	RSS-GEN 7.2.2	Conducted Emission	PASS	
15.247(d)	RSS-210 Annex 8 (A8.5)	Antenna conducted Spurious Emission	PASS	
15.247(a)(2)	RSS-210 Annex 8 (A8.2(a))	6dB Bandwidth	PASS	
15.247(b)(3)	RSS-210 Annex 8 (A8.4(4))	Peak Output Power	PASS	
15.247(e)	RSS-210 Annex 8 (A8.2(b))	Power Spectral Density	PASS	
15.203	-	Antenna Requirement	PASS	
15.209/15.205	RSS-210 Annex 8 (A8.5)	Transmitter Radiated Emissions	PASS	

**NOTE:**

- (1) "N/A" denotes test is not applicable in this test report.
- (2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r01 (Measurement Guidelines of DTS)



## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792

Neutron's test firm number for FCC: 319330

Neutron's test firm number for IC: 4428B-1

## 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 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 Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

### B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	





### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless LAN Access Point	
Brand Name	HUAWEI	
Model Name	AP5130DN	
Model Difference	N/A	
Product Description	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 450 Mbps
	Output Power (Max.) for 1TX	802.11b: 22.82dBm 802.11g: 21.81dBm 802.11n(20MHz): 21.03dBm 802.11n(40MHz): 20.11dBm
	Output Power (Max.) for 2TX	802.11b: 23.02dBm 802.11g: 22.26dBm 802.11n(20MHz):21.51dBm 802.11n(40MHz): 20.83dBm
	Output Power (Max.) for 3TX	802.11b: 23.78dBm 802.11g: 22.92dBm 802.11n(20MHz): 22.10dBm 802.11n(40MHz): 21.38dBm
Power Source	Dc voltage supplied from adapter or PoE. #1 Brand/ Model: HUAWEI / HW-120200U1W	
Power Rating	I/P:AC 100-240V 50/60Hz 0.8A DC 12.0V 2.0A	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

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

**2. Channel List:**

CH 01 – CH 11 for 802.11b, 802.11g, 802.11n(20MHz) CH 03 – CH 09 for 802.11n(40MHz)							
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**
**Group 1**

Ant.	Manufacture	Model Name	Antenna Type	Connector	Gain (dBi)	Note
A	TONGYU COMMUNICATION	TT-245804-6W1	External Antenna	R-SMA	3.87	TX/RX
B	TONGYU COMMUNICATION	TT-245804-6W1	External Antenna	R-SMA	3.87	TX/RX
C	TONGYU COMMUNICATION	TT-245804-6W1	External Antenna	R-SMA	3.87	TX/RX

**Group 2**

Ant.	Manufacture	Model Name	Antenna Type	Connector	Gain (dBi)	Note
A	Shenglu	SL10301A	External Antenna	R-SMA	3.1	TX/RX
B	Shenglu	SL10301A	External Antenna	R-SMA	3.1	TX/RX
C	Shenglu	SL10301A	External Antenna	R-SMA	3.1	TX/RX

**Note:**

1. The EUT incorporates a MIMO function. Physically, the EUT provides three completed three transmitters and three receivers (3T3R), all transmit signals are completely uncorrelated, then, **Direction gain =  $G_{ANT}$** , that is Directional gain=3.87.
2. ANT B for 1TX was found to be the worst case and recorded.
3. Two groups of antenna used with the same type, only differ in manufacturer and model name and antenna gain, group 1 is tested and recorded as the worst case in this report.

**4.**

Operating Mode / TX Mode	1TX	2TX	3TX
802.11b	V (ANT B)	V (ANT A + ANT B))	V (ANT A + ANT B + ANT C)
802.11g	V (ANT B)	V (ANT A + ANT B)	V (ANT A + ANT B + ANT C)
802.11n(20MHz)	V (ANT B)	V (ANT A + ANT B)	V (ANT A + ANT B + ANT C)
802.11n(40MHz)	V (ANT B)	V (ANT A + ANT B)	V (ANT A + ANT B + ANT C)



### 3.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ 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-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

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 (19.5Mbps)  
802.11n HT40 mode : BPSK (40.5Mbps)  
For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated, the 3TX (ANT A+ANT B+ANT C) is found to be the worst case and recorded.
- (4) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.



### 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

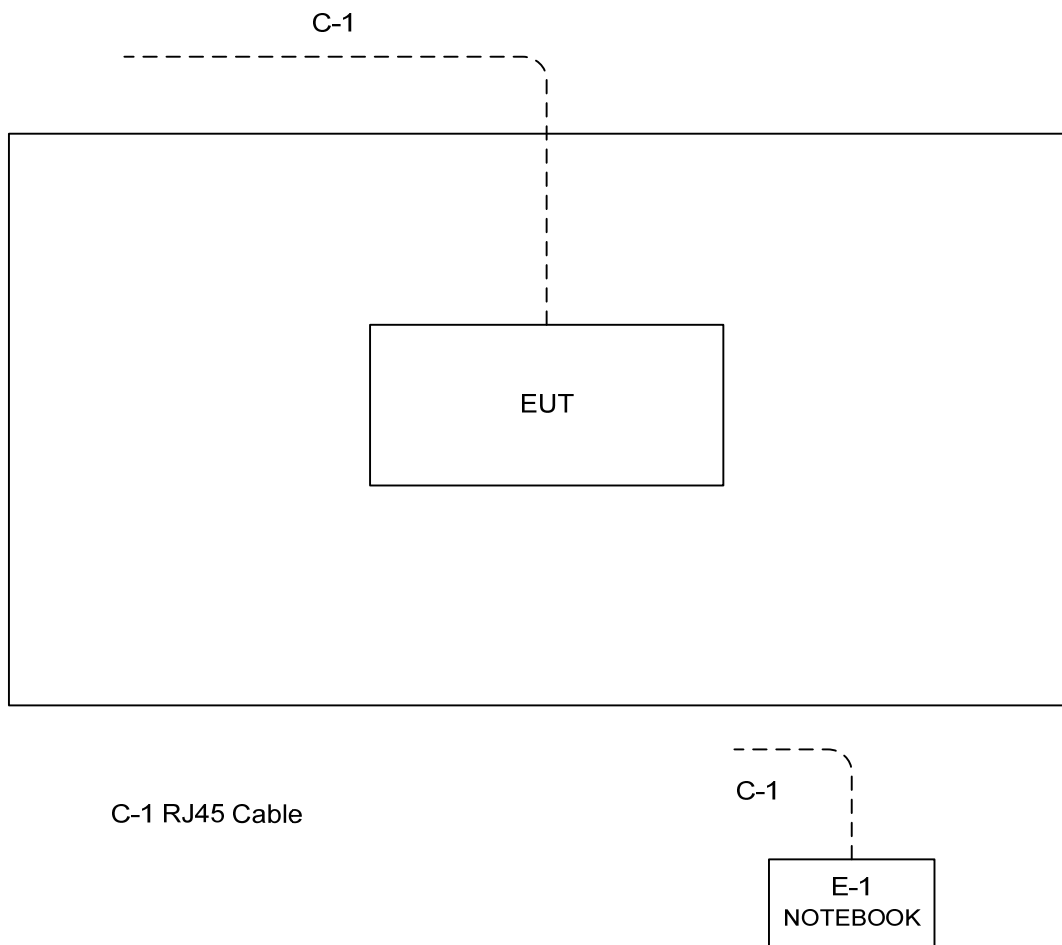
1TX			
Test software version	CART		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b DSSS	20	20	20
IEEE 802.11g OFDM	12	17	12
IEEE 802.11n (20MHz)	12	15	12
Frequency	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n (40MHz)	10	14	10

2TX			
Test software version	CART		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b DSSS	17	17	17
IEEE 802.11g OFDM	9	14	9
IEEE 802.11n (20MHz)	9	12	9
Frequency	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n (40MHz)	7	11	7

3TX			
Test software version	CART		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b DSSS	15	15	15
IEEE 802.11g OFDM	7	12	7
IEEE 802.11n (20MHz)	7	10	7
Frequency	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n (40MHz)	5	9	5



### 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/IC	Series No.	Note
E-1	NOTEBOOK	HP	HP NB 331	DOC	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	10m	



## 4. EMC EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

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

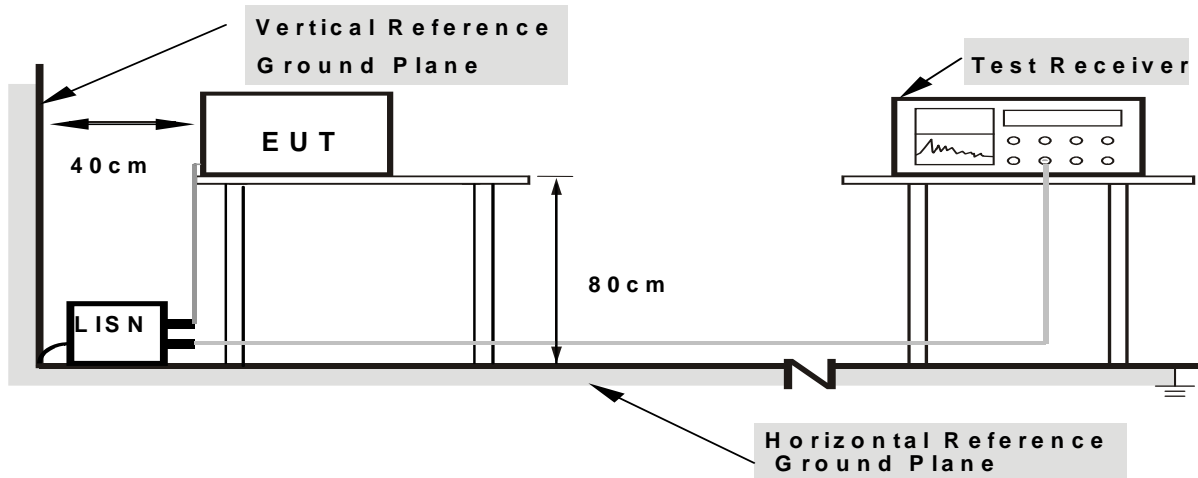
#### 4.1.2 TEST PROCEDURE

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

#### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.4 TEST SETUP



**Note:** 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

#### 4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

#### 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 Attachment A.





## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 RADIATED EMISSION LIMITS

20dB in any 100 KHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) & RSS-210 section 2.2& Annex 8 (A8.5), 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.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

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

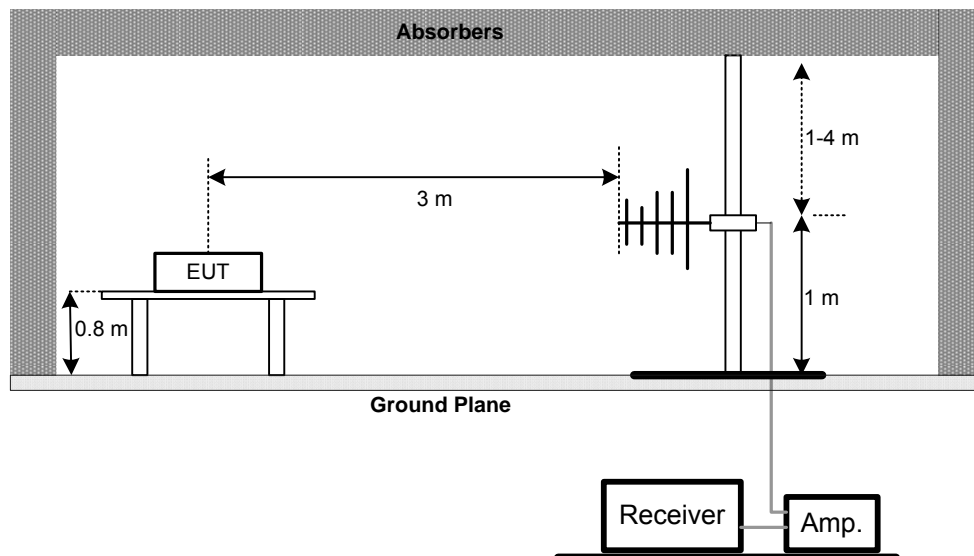
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-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 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.2.3 DEVIATION FROM TEST STANDARD

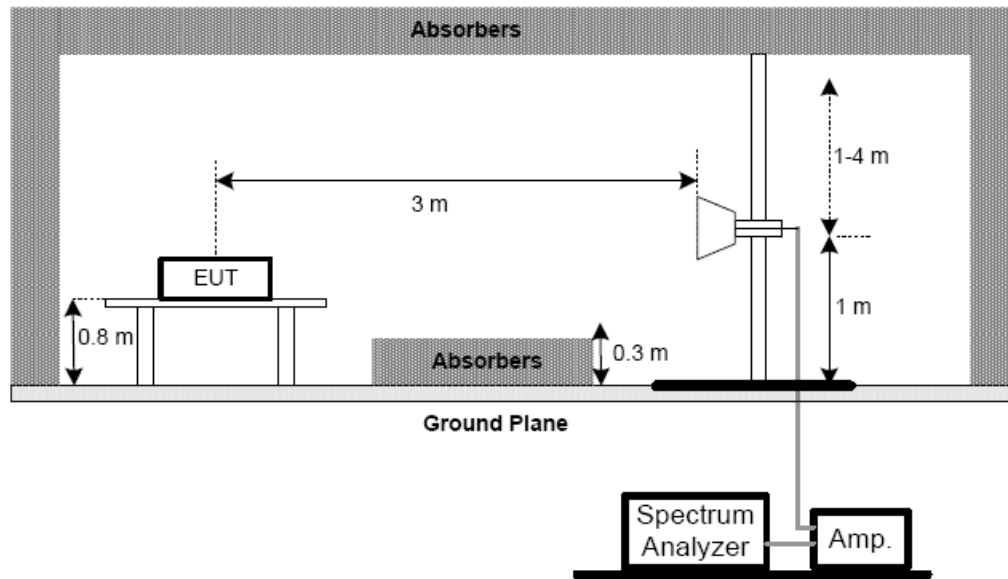
No deviation

#### 4.2.4 TEST SETUP

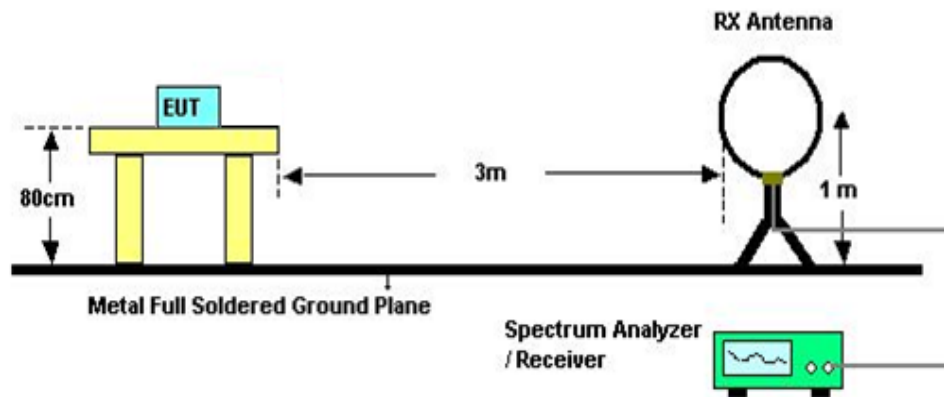
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



**4.2.5 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

**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 Attachment 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 (BETWEEN 30MHZ TO 1000 MHZ)**

Please refer to the Attachment C.

#### **4.2.9 TEST RESULTS (ABOVE 1000 MHZ)**

Please refer to the Attachment D.



## 5. BANDWIDTH TEST

### 5.1 Applied procedures

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-210			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2) RSS-GEN section 4.6.1 RSS-210 Annex 8 (A8.2(a))	Bandwidth	2400-2483.5	PASS

#### 5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 100KHz, VBW=300KHz, 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 tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 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 Attachment E.



## 6. MAXIMUM OUTPUT POWER TEST

### 6.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C/ RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3) RSS-210 Annex 8.4(4)	Maximum Output Power	1 Watt or 30dBm	2400-2483.5	PASS

#### 6.1.1 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 9.1.3 of FCC KDB 558074 D01 DTS Meas Guidance v03r01.

#### 6.1.2 DEVIATION FROM STANDARD

No deviation.

#### 6.1.3 TEST SETUP



#### 6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing. Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.

#### 6.1.5 EUT TEST CONDITIONS

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

#### 6.1.6 TEST RESULTS

Please refer to the Attachment 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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

#### **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= 100KHz, VBW=300KHz, Sweep time = Auto.

#### **7.1.2 DEVIATION FROM STANDARD**

No deviation.

#### **7.1.3 TEST SETUP**



#### **7.1.4 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### **7.1.5 EUT TEST CONDITIONS**

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

#### **7.1.6 TEST RESULTS**

Please refer to the Attachment G.



## 8. POWER SPECTRAL DENSITY TEST

### 8.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C / RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e) RSS-210 Annex 8( A8.2(b))	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

#### 8.1.1 TEST PROCEDURE

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

#### 8.1.2 DEVIATION FROM STANDARD

No deviation.

#### 8.1.3 TEST SETUP



#### 8.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 8.1.5 EUT TEST CONDITIONS

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

#### 8.1.6 TEST RESULTS

Please refer to the Attachment H.





## 9. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Mar. 29, 2015
2	LISN	R&S	ENV216	101447	Mar. 29, 2015
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 29, 2015
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29, 2015

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	EMCO	3142C	00066462	Mar. 29, 2015
2	Antenna	EMCO	3142C	00066464	Mar. 29, 2015
3	Amplifier	Agilent	8447D	2944A11203	Nov. 11, 2014
4	Amplifier	Agilent	8447D	2944A11204	Nov. 11, 2014
5	Spectrum Analyzer	Agilent	E4443A	MY48250370	Nov. 11, 2014
6	RF Pre-selector	Agilent	N9039A	MY46520201	Nov. 11, 2014
7	Test Cable	N/A	Cable_5m_8m_15m	N/A	Jan. 14, 2015
8	Test Cable	N/A	Cable_5m_11m_15m	N/A	Jan. 14, 2015
9	Spectrum Analyzer	Agilent	E4447A	MY48250208	Nov. 11, 2014
10	RF Pre-selector	Agilent	N9039A	MY46520214	Nov. 11, 2014
11	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
12	Horn Antenna	EMCO	3115	9605-4803	Mar. 29, 2015
13	Amplifier	Agilent	8449B	3008A02584	Nov. 11, 2014
14	Spectrum Analyzer	Agilent	E4447A	MY48250208	Nov. 11, 2014
15	Test Cable	Huber+Suhner	SUCOFLEX_15m_4m	N/A	Jan. 14, 2015



6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Mar. 29, 2015
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Mar. 29, 2015

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

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**

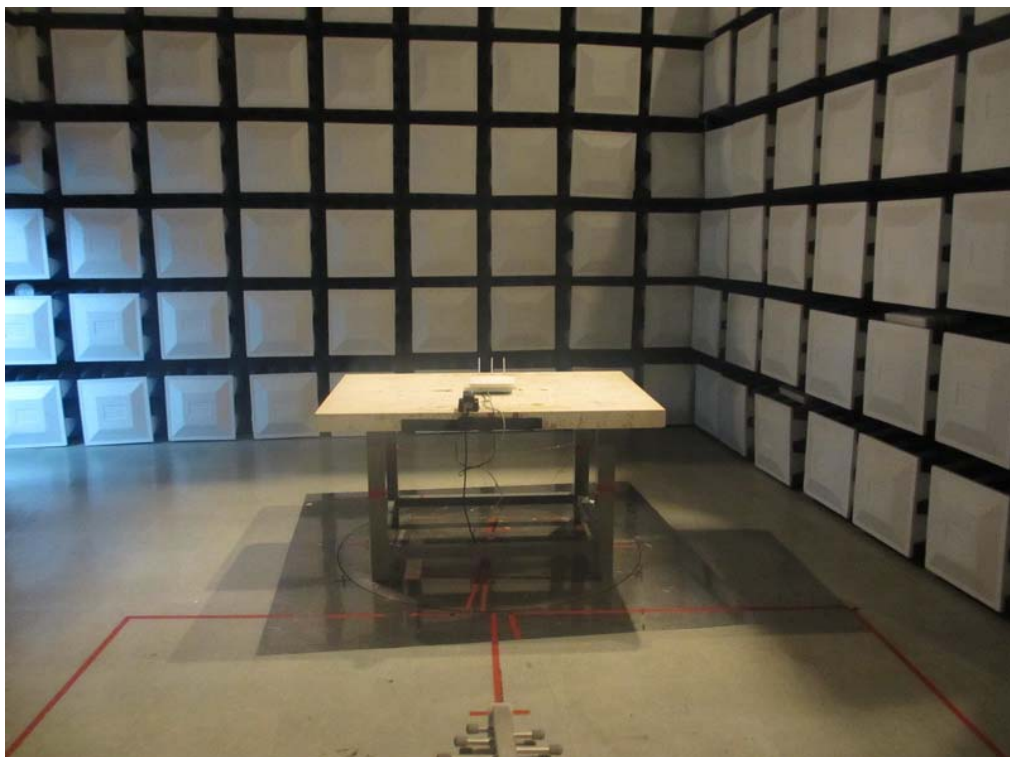
**9KHz to 30MHz**





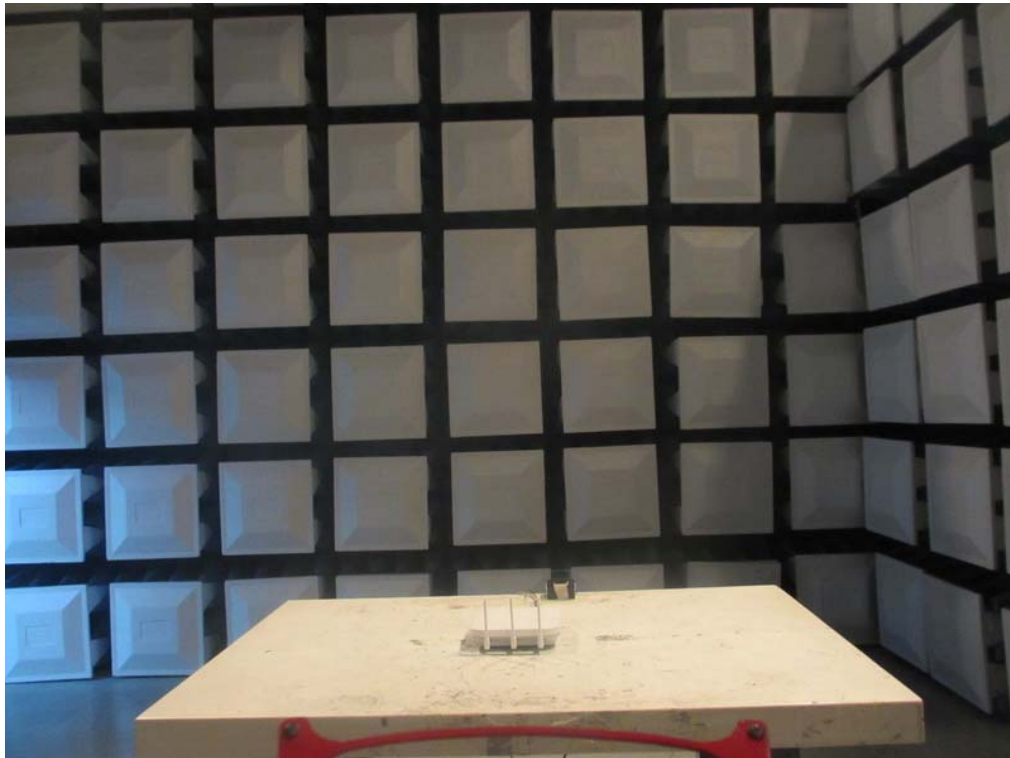
**Radiated Measurement Photos**

**30MHz to 1000MHz**



**Radiated Measurement Photos**

**Above 1000MHz**





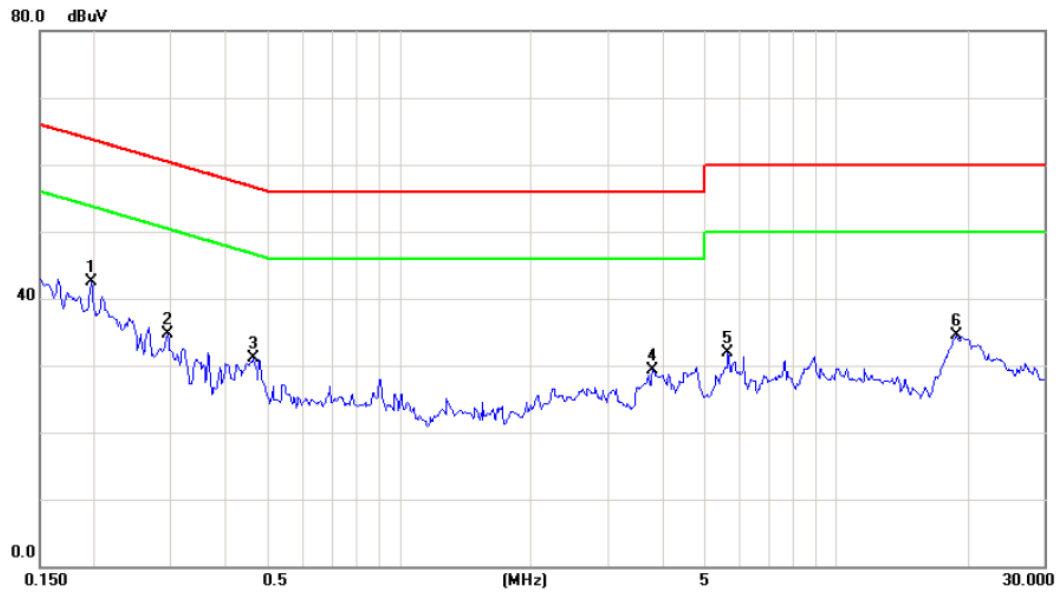
***Neutron Engineering Inc.***

## **ATTACHMENT A - CONDUCTED EMISSION**



Test Mode : TX MODE

**Line**



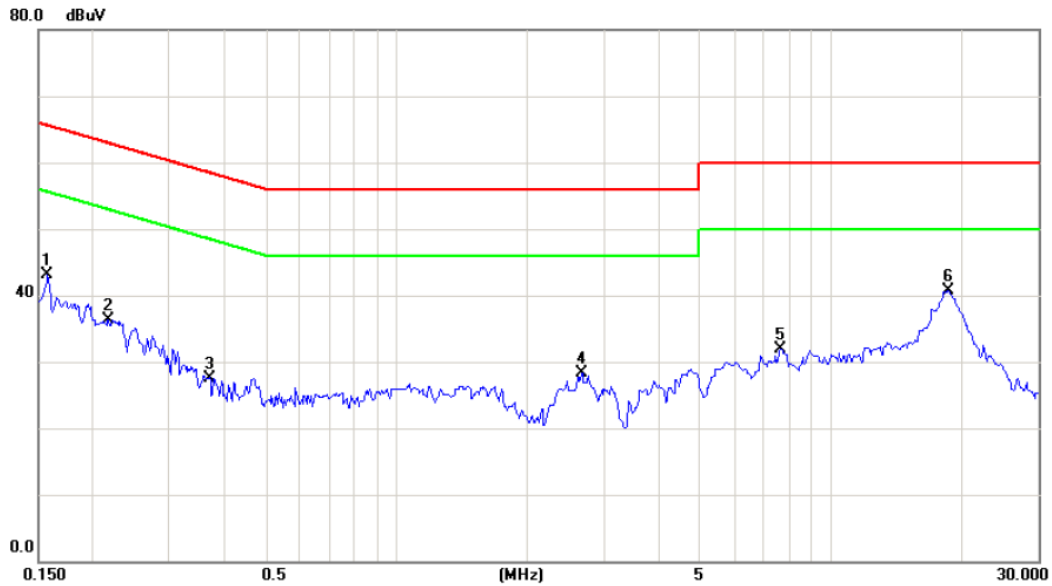
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1968	32.79	9.65	42.44	63.74	-21.30	peak	
2		0.2945	25.04	9.67	34.71	60.40	-25.69	peak	
3		0.4625	21.42	9.70	31.12	56.65	-25.53	peak	
4		3.8007	19.43	9.88	29.31	56.00	-26.69	peak	
5		5.6680	21.90	9.94	31.84	60.00	-28.16	peak	
6		18.8515	24.31	10.26	34.57	60.00	-25.43	peak	





Test Mode : TX MODE

**Neutral**



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1577	33.44	9.70	43.14	65.58	-22.44	peak	
2	0.2172	26.68	9.71	36.39	62.93	-26.54	peak	
3	0.3725	17.87	9.73	27.60	58.44	-30.84	peak	
4	2.6772	18.35	9.88	28.23	56.00	-27.77	peak	
5	7.6680	21.90	10.05	31.95	60.00	-28.05	peak	
6 *	18.6755	30.22	10.43	40.65	60.00	-19.35	peak	



## **ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)**



Test Mode: TX Mode 2412MHz

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0094	0°	68.35	24.30	92.65	128.11	-35.46	AV
0.0094	0°	72.35	24.30	96.65	148.11	-51.46	PK
0.0136	0°	70.35	24.30	94.65	124.93	-30.28	AV
0.0136	0°	79.35	24.30	103.65	144.93	-41.28	PK
0.0243	0°	56.36	24.03	80.39	119.89	-39.50	AV
0.0243	0°	60.12	24.03	84.15	139.89	-55.74	PK
0.0328	0°	61.36	23.49	84.85	117.29	-32.44	AV
0.0328	0°	65.38	23.49	88.87	137.29	-48.42	PK
0.5680	0°	18.72	20.02	38.74	72.52	-33.78	QP
1.7536	0°	18.95	19.52	38.47	69.54	-31.07	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0094	90°	76.35	24.30	100.65	128.18	-27.53	AVG
0.0094	90°	82.36	24.30	106.66	148.18	-41.52	PK
0.0237	90°	56.38	24.07	80.45	120.11	-39.66	AVG
0.0237	90°	59.35	24.07	83.42	140.11	-56.69	PK
0.0318	90°	57.35	23.55	80.90	117.56	-36.65	AVG
0.0318	90°	58.35	23.55	81.90	137.56	-55.65	PK
0.0429	90°	59.35	22.85	82.20	114.96	-32.76	AVG
0.0429	90°	63.35	22.85	86.20	134.96	-48.76	PK
0.4912	90°	17.45	19.82	37.27	73.78	-36.51	QP
1.7156	90°	18.63	19.53	38.16	69.54	-31.38	QP

Remark:

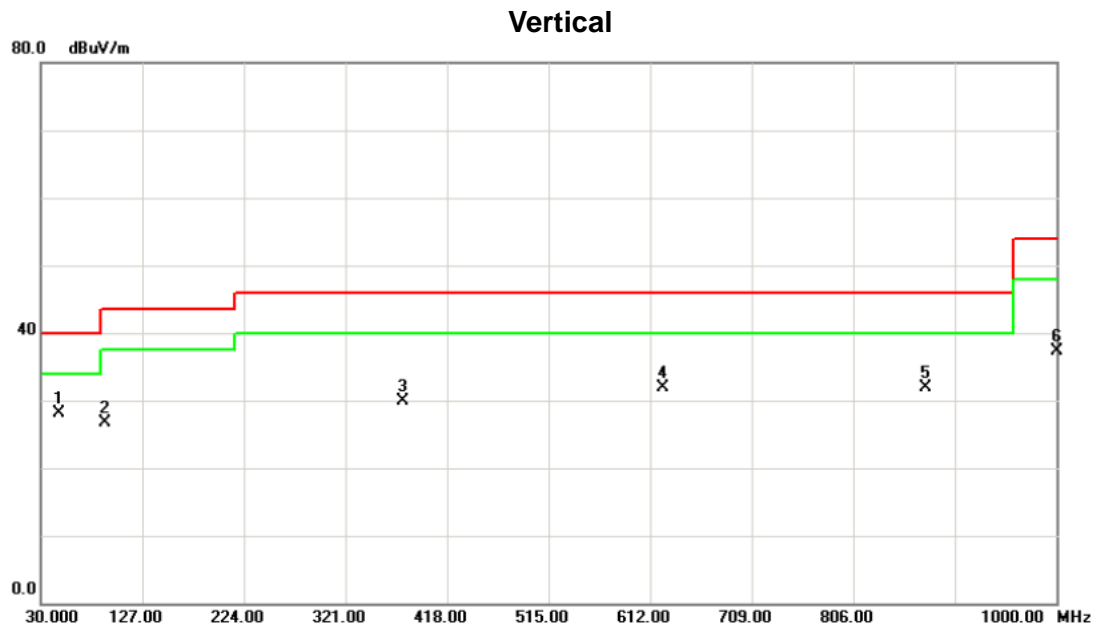
- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB);
- (3) Limit line = specific limits (dBuV) + distance extrapolation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



## **ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)**



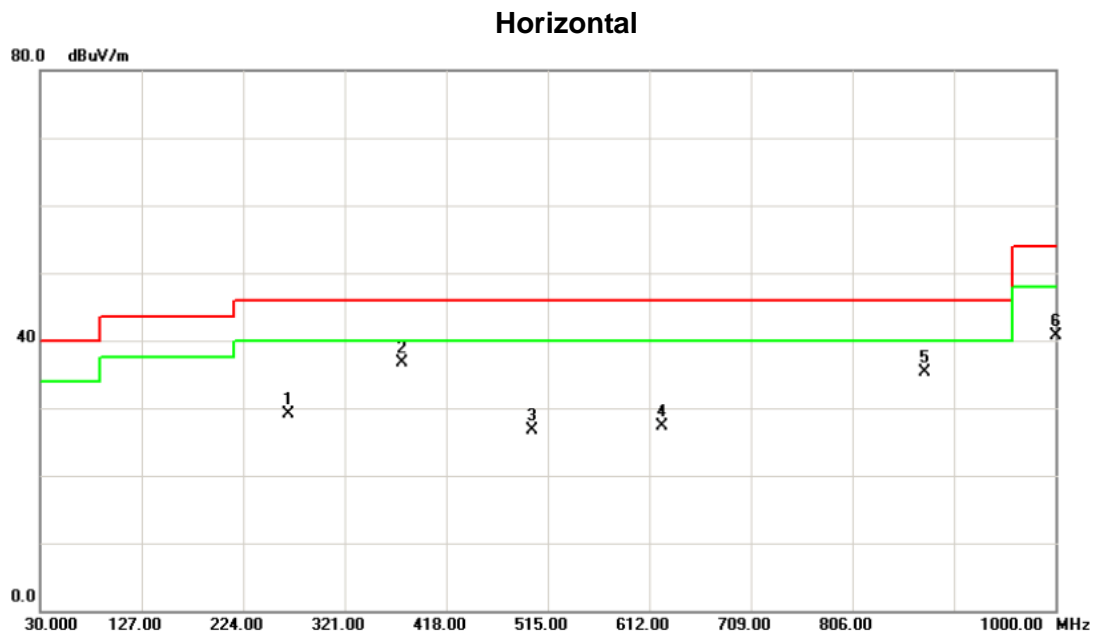
Test Mode:	TX B MODE CHANNEL 01
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	47.4600	42.41	-14.40	28.01	40.00	-11.99	peak	
2		91.1100	44.58	-17.93	26.65	43.50	-16.85	peak	
3		375.3200	40.63	-10.66	29.97	46.00	-16.03	peak	
4		624.6100	38.78	-6.86	31.92	46.00	-14.08	peak	
5		874.8700	34.44	-2.48	31.96	46.00	-14.04	peak	
6		1000.000	36.96	0.26	37.22	54.00	-16.78	peak	



Test Mode: TX B MODE CHANNEL 01

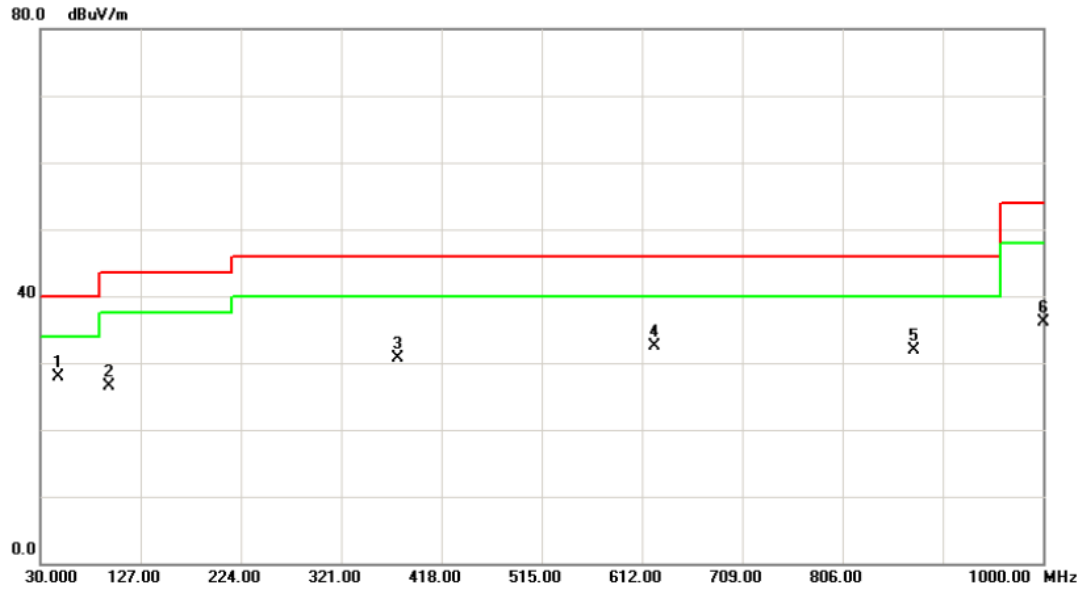


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		266.6800	43.35	-14.18	29.17	46.00	-16.83	peak	
2	*	375.3200	47.44	-10.66	36.78	46.00	-9.22	peak	
3		500.4500	36.93	-10.31	26.62	46.00	-19.38	peak	
4		624.6100	34.11	-6.86	27.25	46.00	-18.75	peak	
5		874.8700	37.83	-2.48	35.35	46.00	-10.65	peak	
6		1000.0000	40.47	0.26	40.73	54.00	-13.27	peak	



Test Mode:	TX B MODE CHANNEL 06
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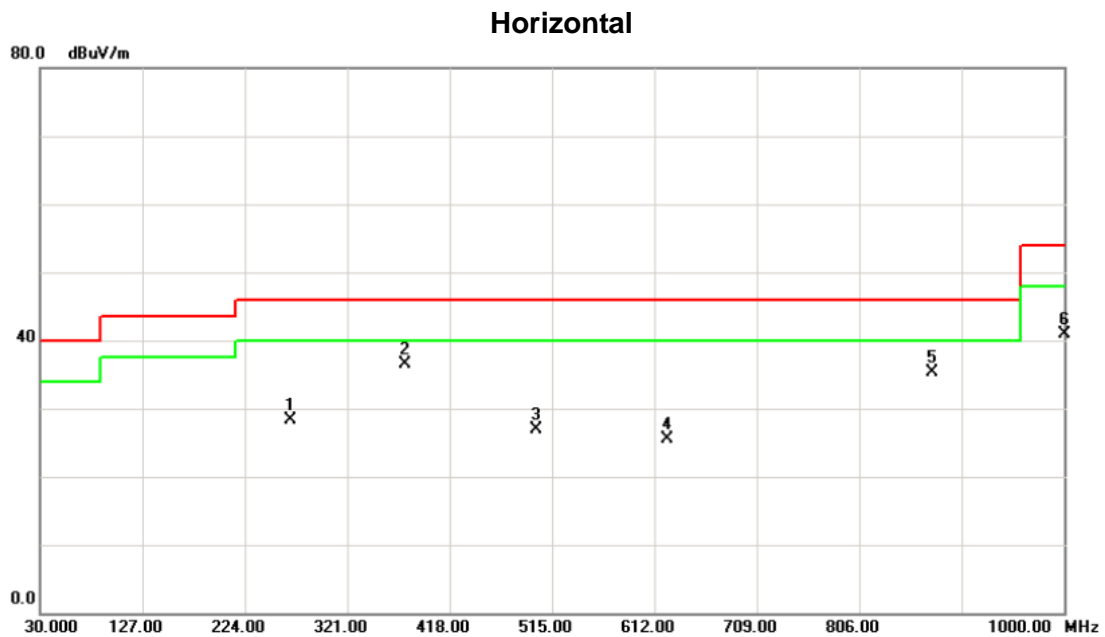
**Vertical**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	47.4600	42.33	-14.40	27.93	40.00	-12.07	peak	
2		95.9600	43.65	-17.07	26.58	43.50	-16.92	peak	
3		375.3200	41.37	-10.66	30.71	46.00	-15.29	peak	
4		624.6100	39.44	-6.86	32.58	46.00	-13.42	peak	
5		874.8700	34.45	-2.48	31.97	46.00	-14.03	peak	
6		1000.000	35.88	0.26	36.14	54.00	-17.86	peak	



Test Mode:	TX B MODE CHANNEL 06
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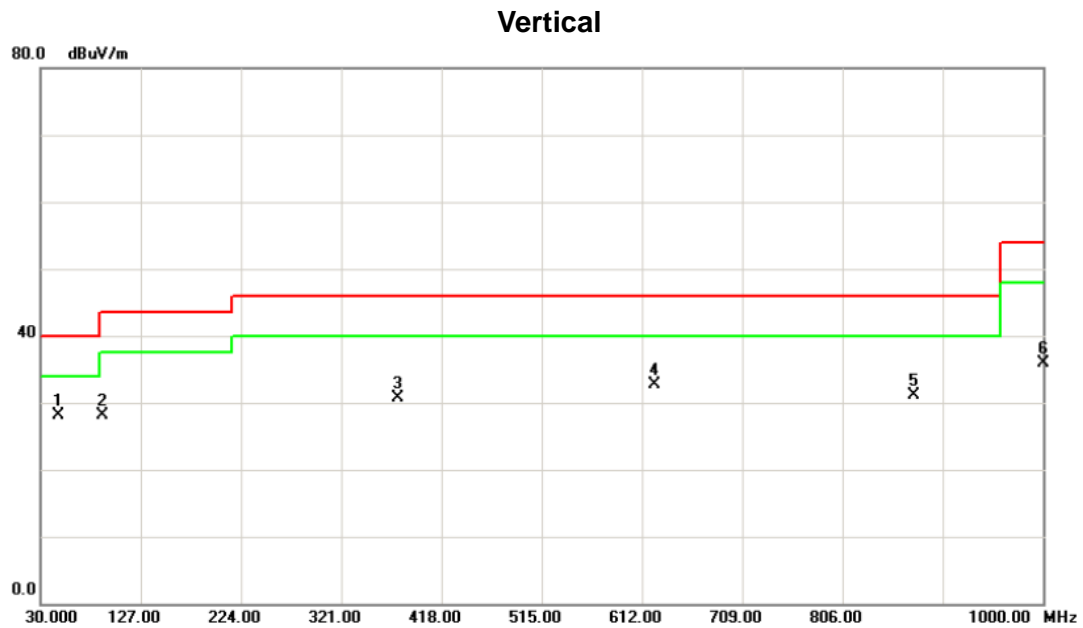


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		266.6800	42.44	-14.18	28.26	46.00	-17.74	peak	
2	*	375.3200	47.17	-10.66	36.51	46.00	-9.49	peak	
3		500.4500	37.28	-10.31	26.97	46.00	-19.03	peak	
4		624.6100	32.45	-6.86	25.59	46.00	-20.41	peak	
5		874.8700	37.80	-2.48	35.32	46.00	-10.68	peak	
6		1000.000	40.68	0.26	40.94	54.00	-13.06	peak	





Test Mode:	TX B MODE CHANNEL 11
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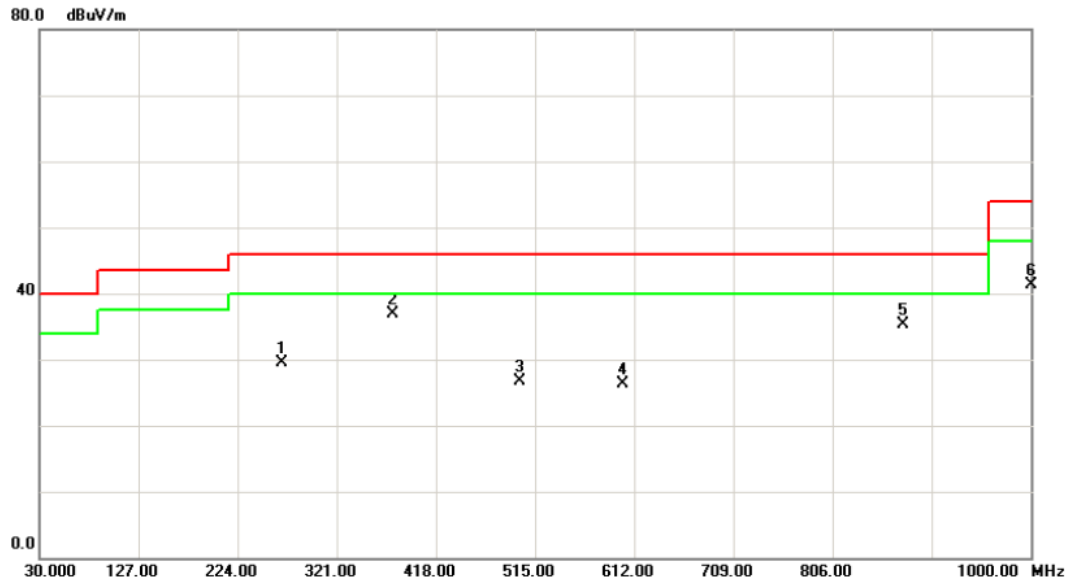


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	47.4600	42.49	-14.40	28.09	40.00	-11.91	peak	
2		90.1400	46.14	-18.09	28.05	43.50	-15.45	peak	
3		375.3200	41.38	-10.66	30.72	46.00	-15.28	peak	
4		624.6100	39.60	-6.86	32.74	46.00	-13.26	peak	
5		874.8700	33.55	-2.48	31.07	46.00	-14.93	peak	
6		1000.000	35.66	0.26	35.92	54.00	-18.08	peak	



Test Mode:	TX B MODE CHANNEL 11
------------	----------------------

**Horizontal**



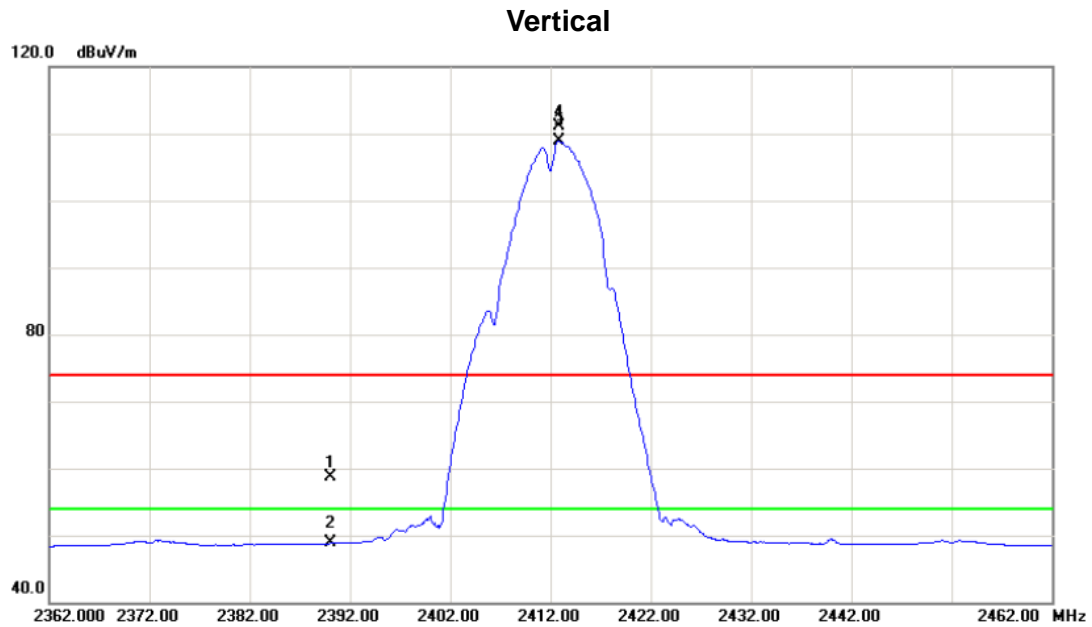
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		266.6800	43.76	-14.18	29.58	46.00	-16.42	peak	
2	*	375.3200	47.65	-10.66	36.99	46.00	-9.01	peak	
3		500.4500	37.05	-10.31	26.74	46.00	-19.26	peak	
4		600.3600	34.35	-8.08	26.27	46.00	-19.73	peak	
5		874.8700	37.79	-2.48	35.31	46.00	-10.69	peak	
6		1000.000	40.97	0.26	41.23	54.00	-12.77	peak	



## **ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)**



Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

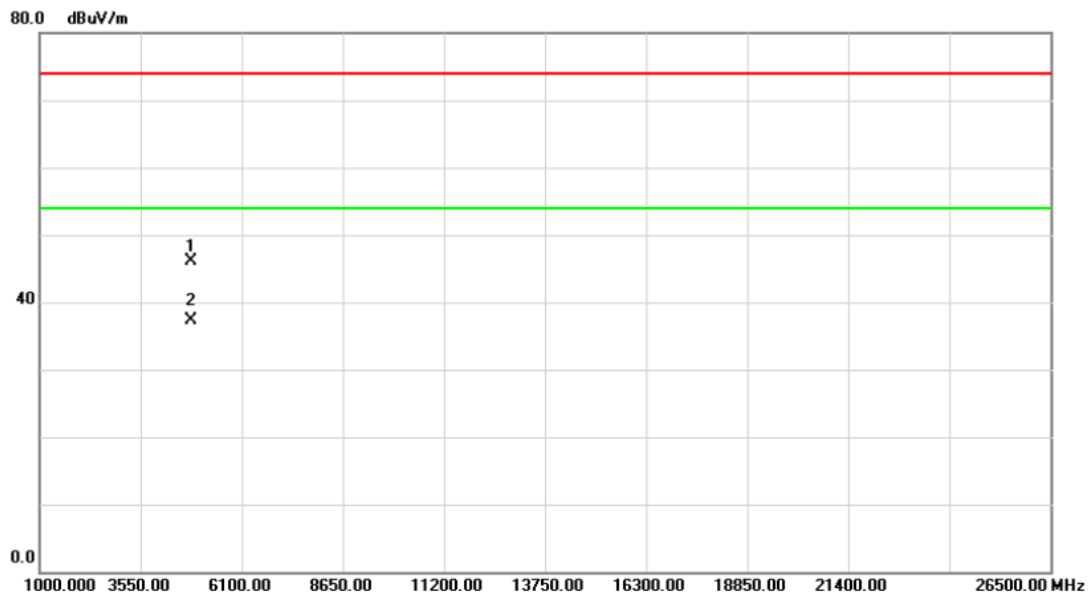


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	24.69	34.09	58.78	74.00	-15.22	peak	
2		2390.000	14.74	34.09	48.83	54.00	-5.17	AVG	
3	*	2412.800	74.69	34.16	108.85	54.00	54.85	AVG	Fundamental frequency, no limit
4	X	2412.900	76.87	34.16	111.03	74.00	37.03	peak	Fundamental frequency, no limit



Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

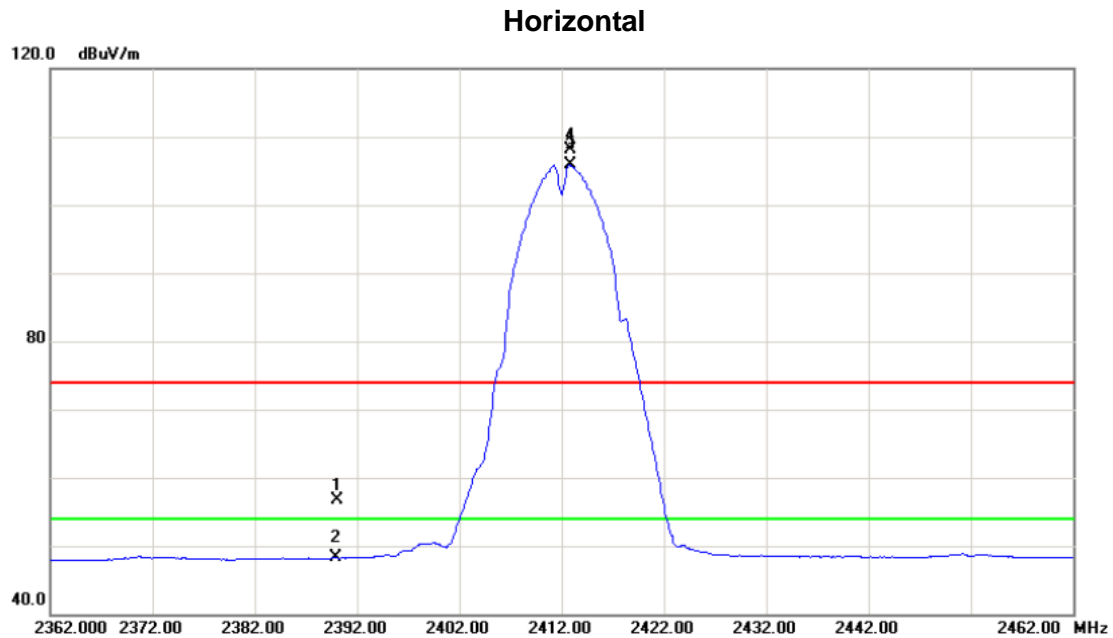
**Vertical**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4823.775	39.60	6.43	46.03	74.00	-27.97	peak	
2	*	4823.905	30.80	6.43	37.23	54.00	-16.77	AVG	



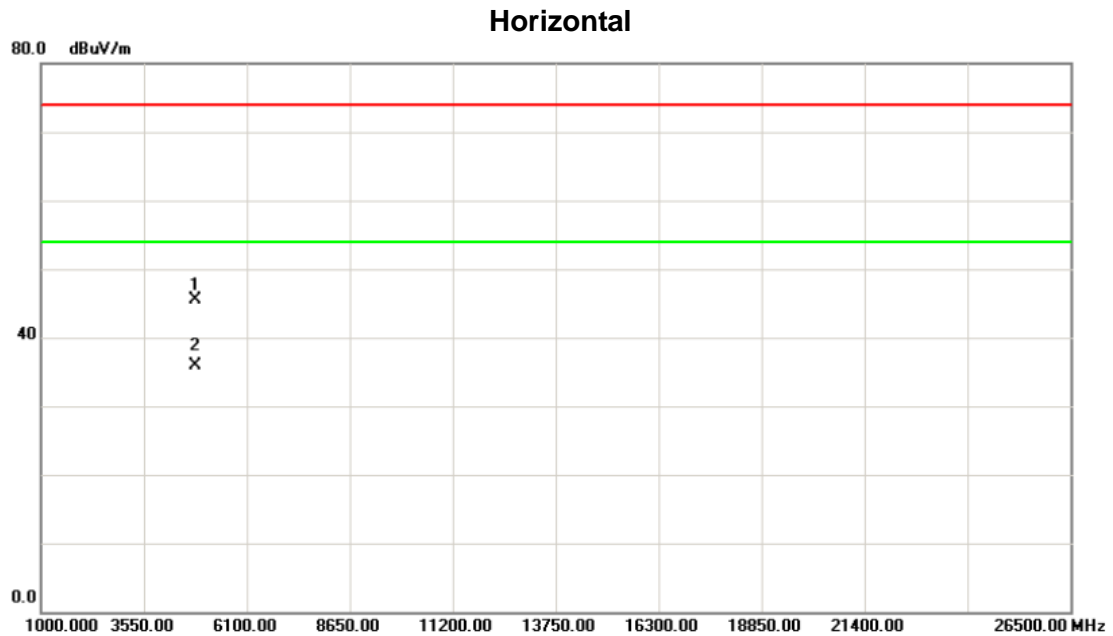
Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	22.65	34.09	56.74	74.00	-17.26	peak	
2		2390.000	14.13	34.09	48.22	54.00	-5.78	AVG	
3	*	2412.800	71.69	34.16	105.85	54.00	51.85	AVG	Fundamental frequency, no limit
4	X	2412.900	73.98	34.16	108.14	74.00	34.14	peak	Fundamental frequency, no limit



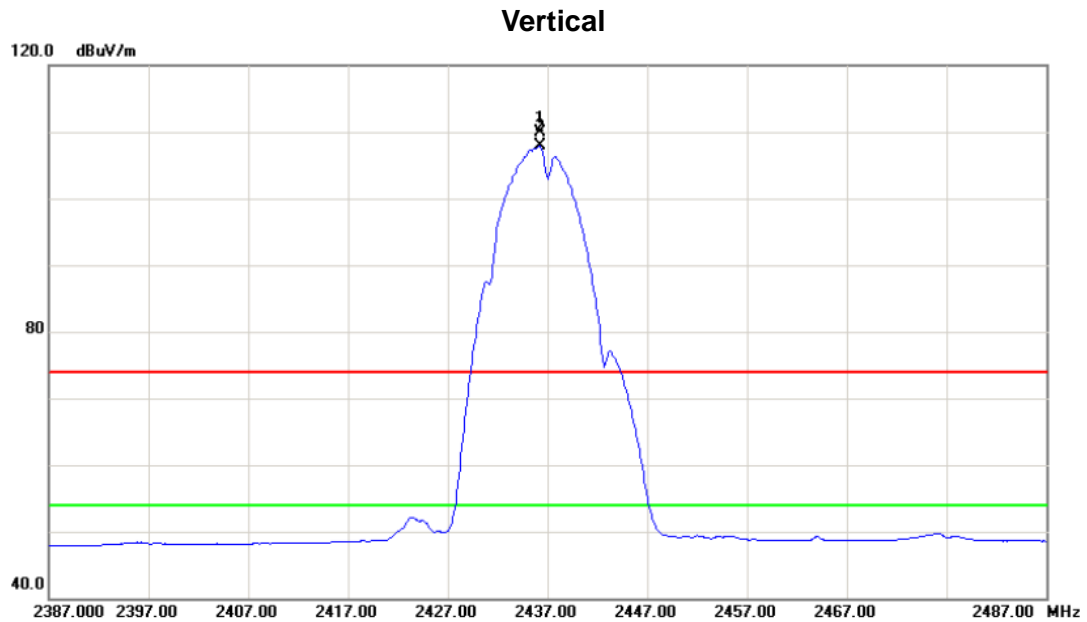
Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.270	39.16	6.43	45.59	74.00	-28.41	peak	
2	*	4824.270	29.48	6.43	35.91	54.00	-18.09	AVG	



Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz



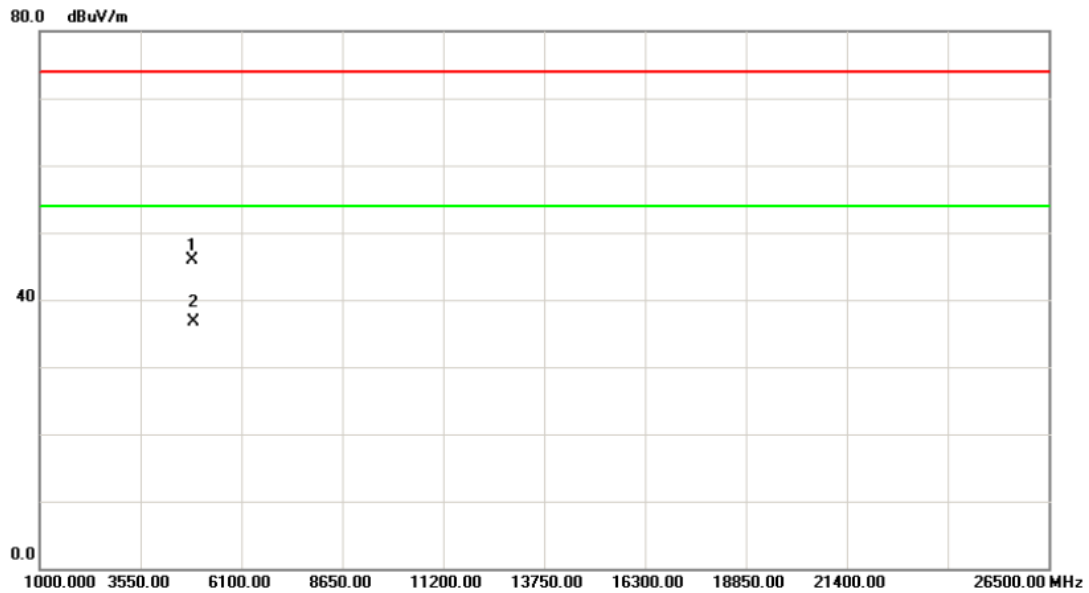
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2436.200	75.60	34.23	109.83	74.00	35.83	peak	Fundamental frequency, no limit
2	*	2436.200	73.64	34.23	107.87	54.00	53.87	AVG	Fundamental frequency, no limit





Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

**Vertical**

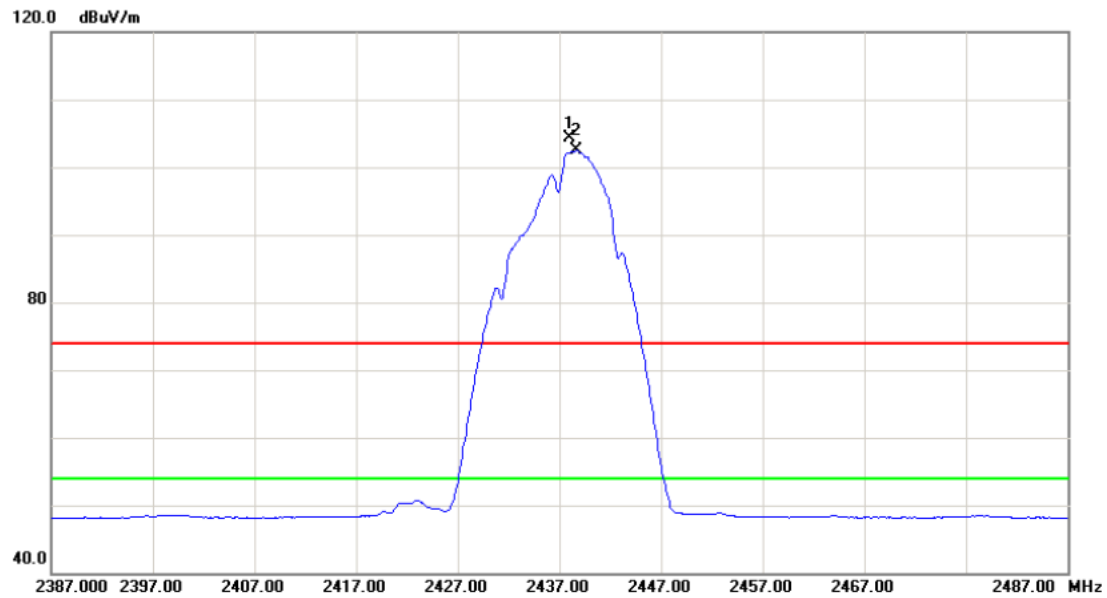


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	4874.000	39.40	6.58	45.98	74.00	-28.02	peak	
2 *	4874.000	30.17	6.58	36.75	54.00	-17.25	AVG	



Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

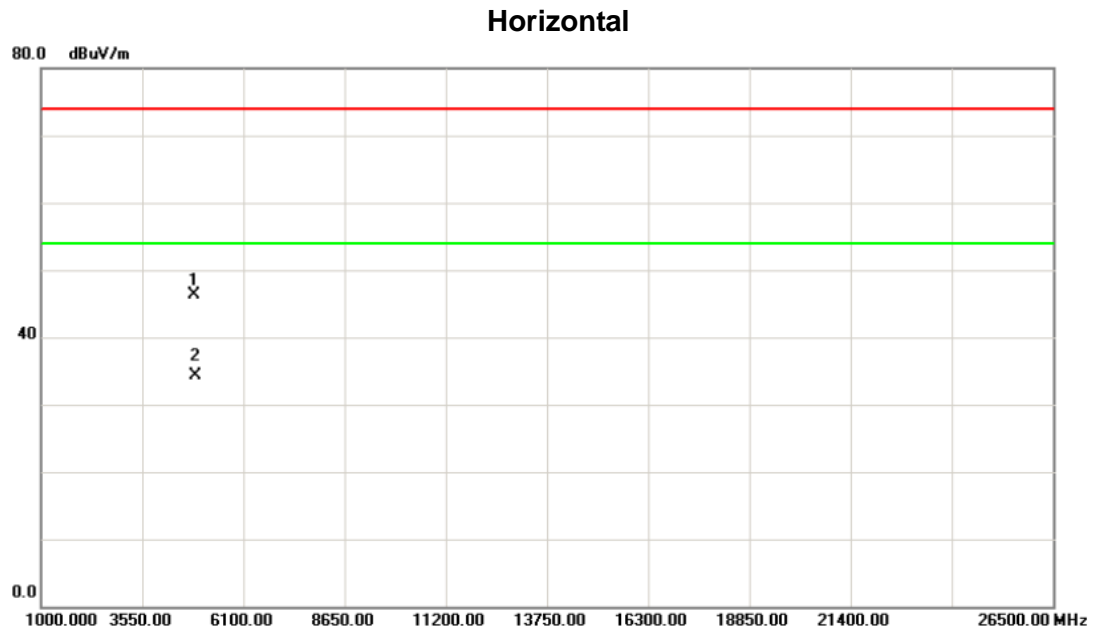
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2438.000	70.01	34.23	104.24	74.00	30.24	peak	Fundamental frequency, no limit
2	*	2438.700	68.25	34.23	102.48	54.00	48.48	AVG	Fundamental frequency, no limit



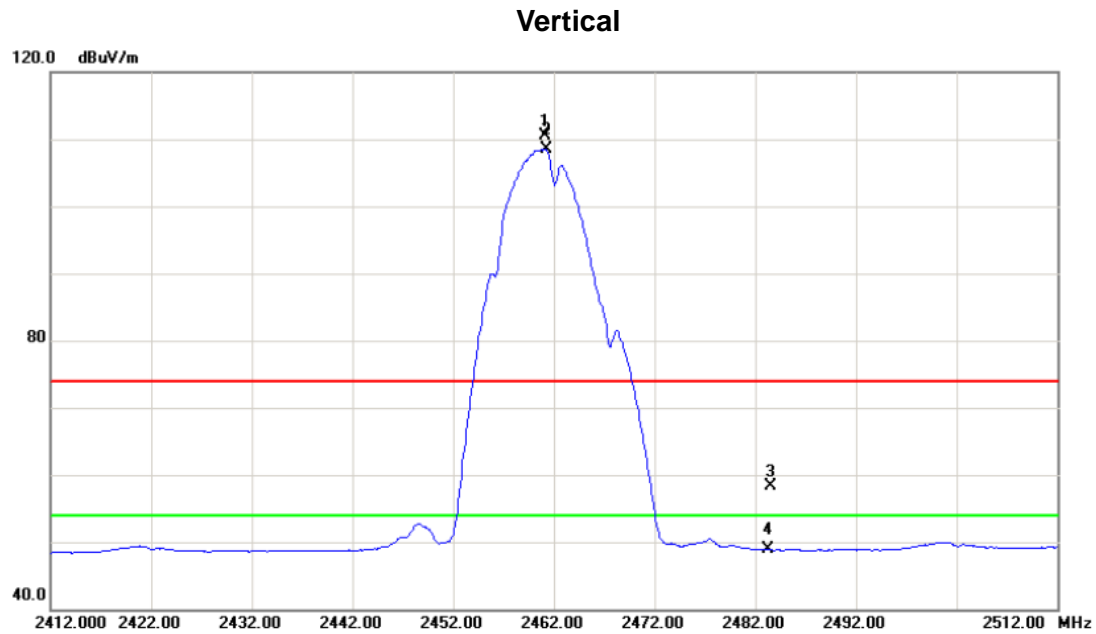
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	39.65	6.58	46.23	74.00	-27.77	peak	
2	*	4874.000	27.67	6.58	34.25	54.00	-19.75	AVG	



Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

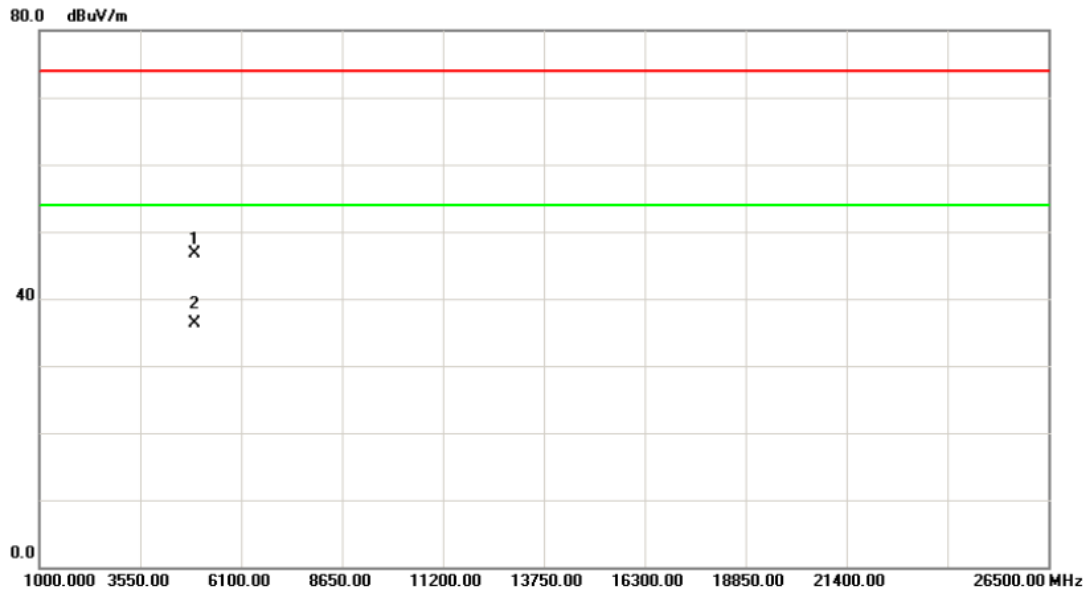


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2461.100	76.21	34.31	110.52	74.00	36.52	peak	Fundamental frequency, no limit
2	*	2461.200	74.21	34.31	108.52	54.00	54.52	AVG	Fundamental frequency, no limit
3		2483.500	23.92	34.37	58.29	74.00	-15.71	peak	
4		2483.500	14.46	34.37	48.83	54.00	-5.17	AVG	



Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

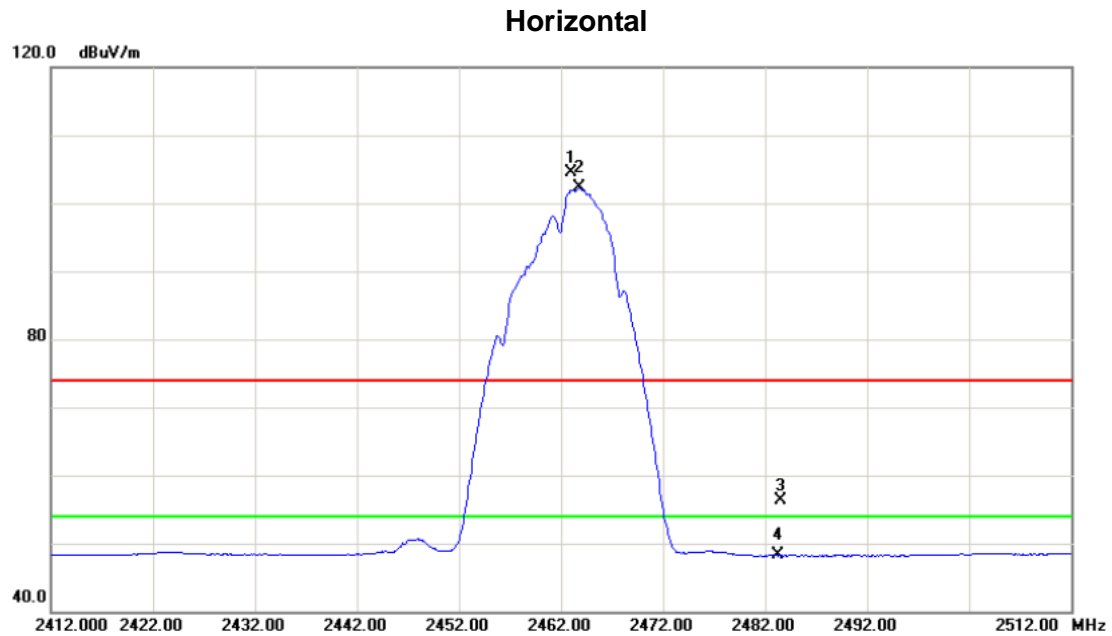
**Vertical**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	40.06	6.72	46.78	74.00	-27.22	peak	
2	*	4924.000	29.50	6.72	36.22	54.00	-17.78	AVG	



Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

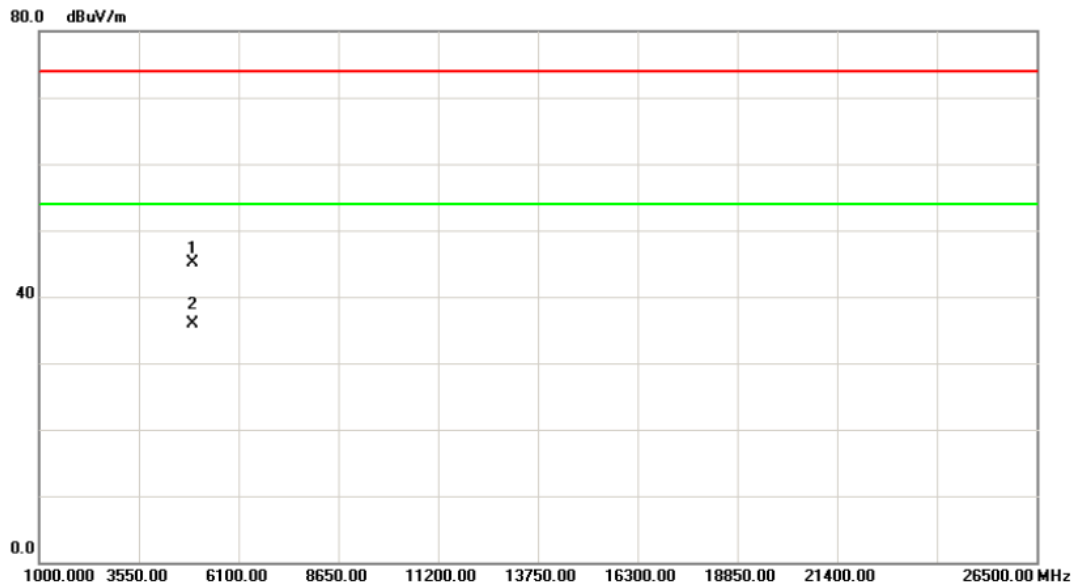


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2463.000	70.12	34.31	104.43	74.00	30.43	peak	Fundamental frequency, no limit
2	*	2463.800	67.99	34.31	102.30	54.00	48.30	AVG	Fundamental frequency, no limit
3		2483.500	22.03	34.37	56.40	74.00	-17.60	peak	
4		2483.500	13.84	34.37	48.21	54.00	-5.79	AVG	



Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

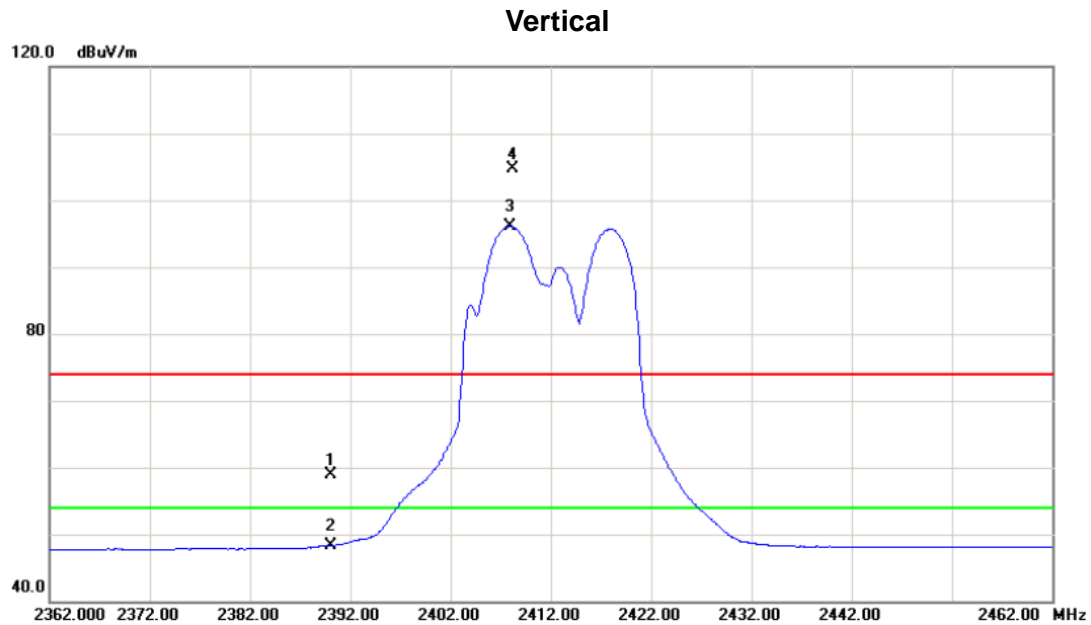
**Horizontal**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	38.39	6.72	45.11	74.00	-28.89	peak	
2	*	4924.000	29.24	6.72	35.96	54.00	-18.04	AVG	



Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

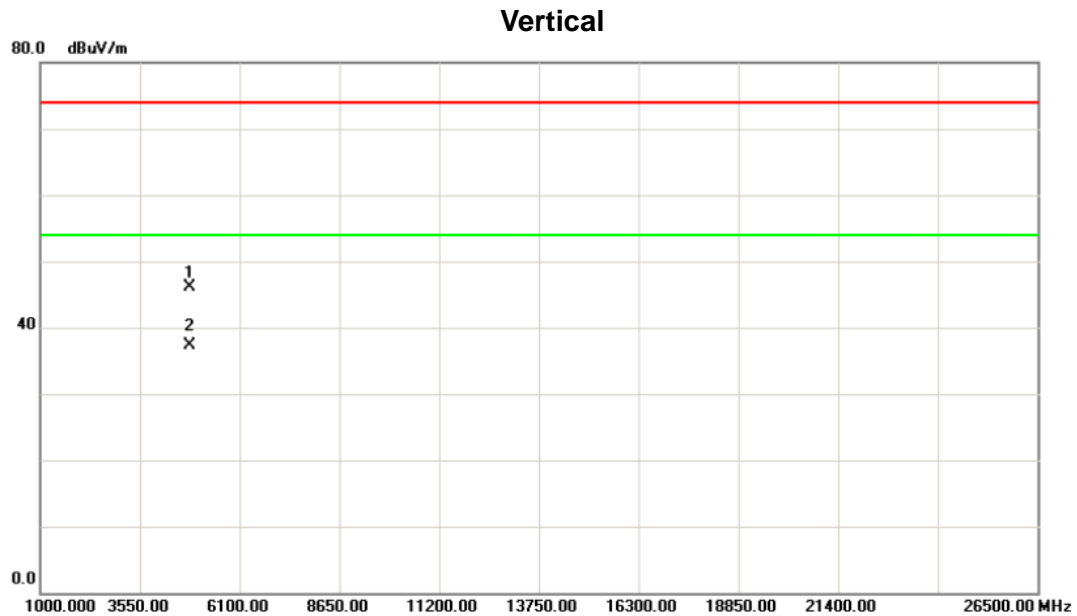


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	24.82	34.09	58.91	74.00	-15.09	peak	
2		2390.000	14.24	34.09	48.33	54.00	-5.67	AVG	
3	*	2407.900	61.97	34.14	96.11	54.00	42.11	AVG	Fundamental frequency, no limit
4	X	2408.200	70.55	34.14	104.69	74.00	30.69	peak	Fundamental frequency, no limit





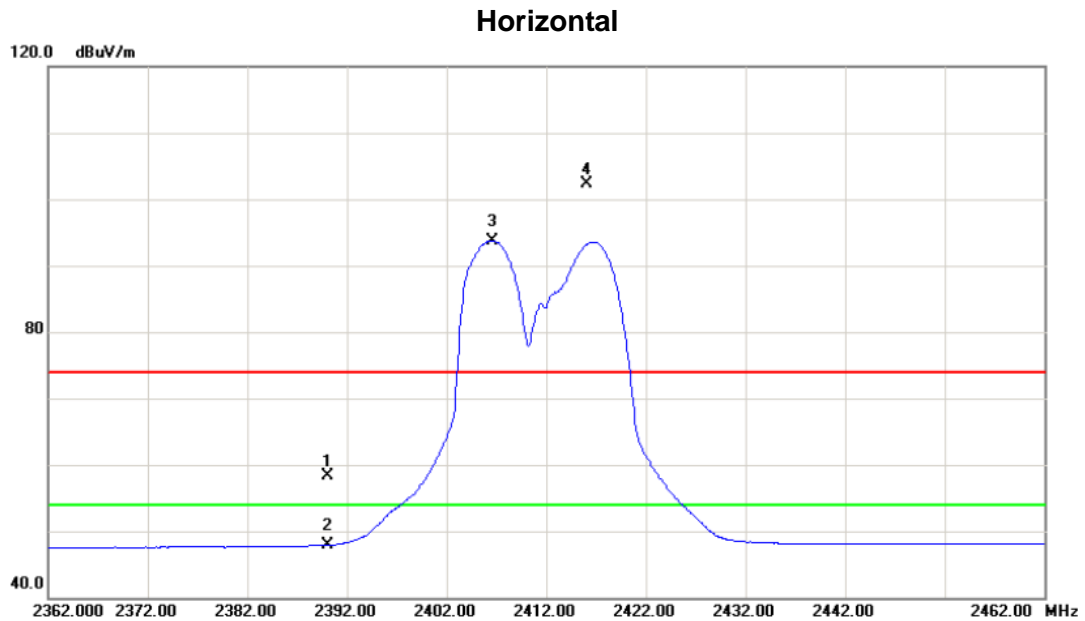
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	39.69	6.43	46.12	74.00	-27.88	peak	
2	*	4824.000	30.78	6.43	37.21	54.00	-16.79	AVG	



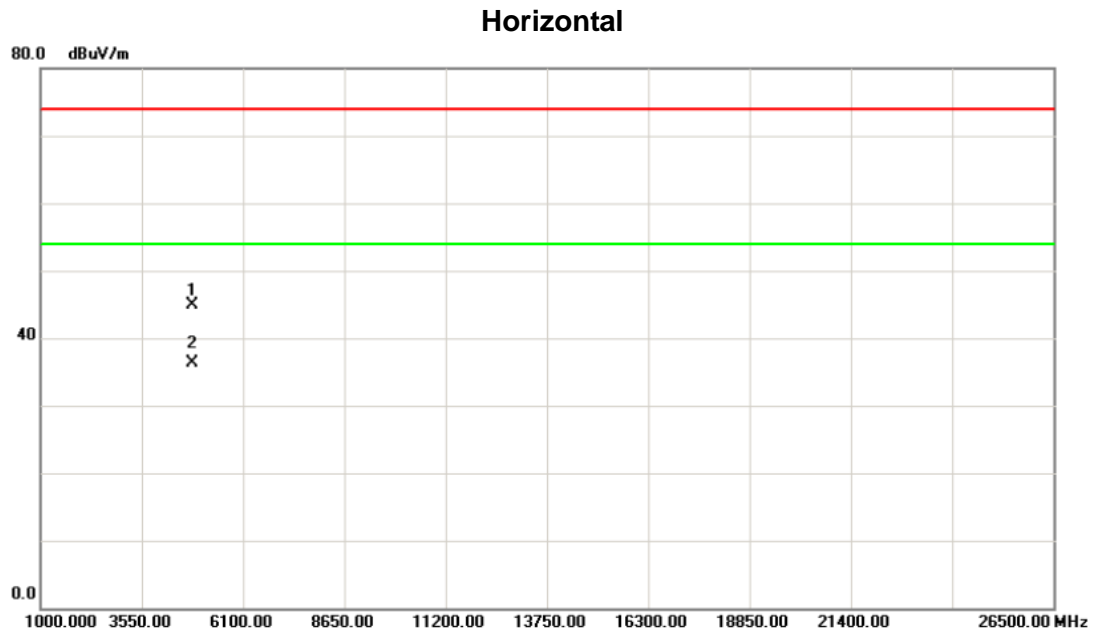
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	24.16	34.09	58.25	74.00	-15.75	peak	
2		2390.000	13.84	34.09	47.93	54.00	-6.07	AVG	
3	*	2406.600	59.59	34.14	93.73	54.00	39.73	AVG	Fundamental frequency, no limit
4	X	2416.000	68.21	34.17	102.38	74.00	28.38	peak	Fundamental frequency, no limit



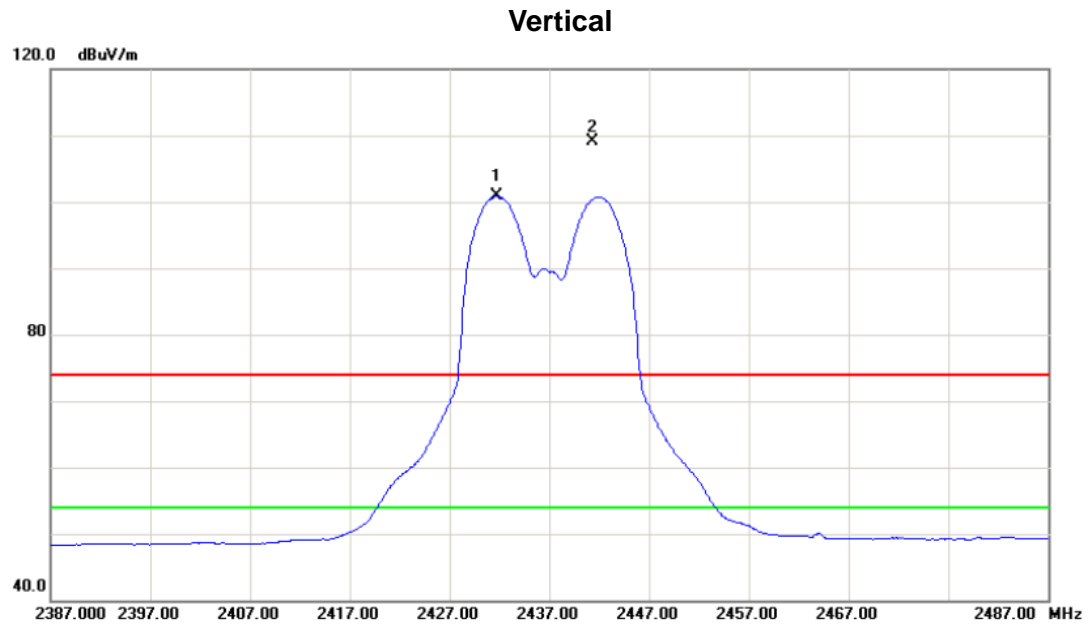
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.270	38.46	6.43	44.89	74.00	-29.11	peak	
2	*	4824.270	29.89	6.43	36.32	54.00	-17.68	AVG	



Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

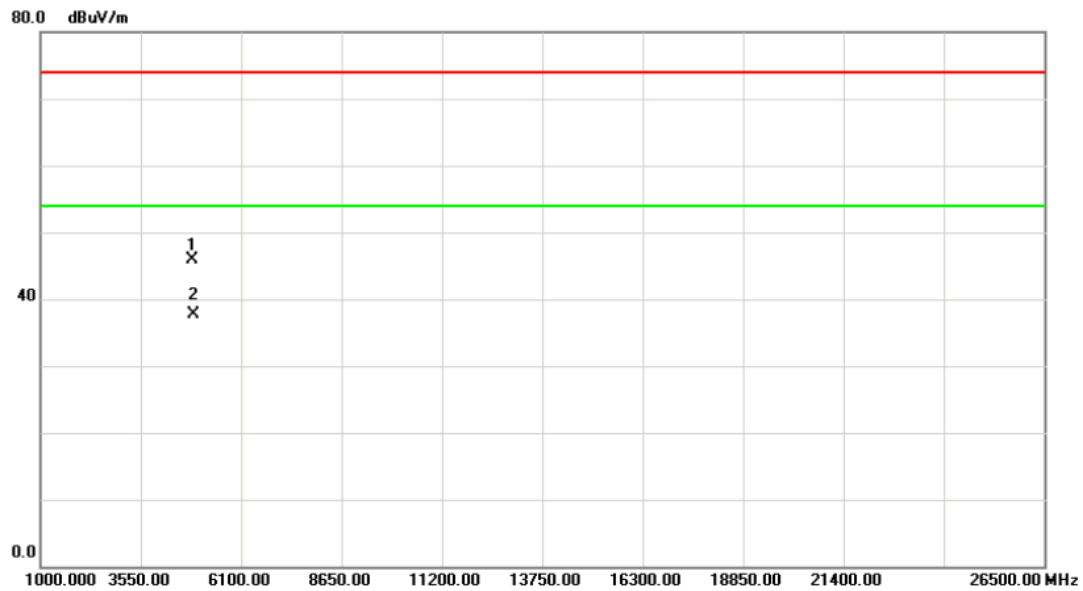


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2431.700	66.65	34.21	100.86	54.00	46.86	AVG	Fundamental frequency, no limit
2	X	2441.300	74.79	34.25	109.04	74.00	35.04	peak	Fundamental frequency, no limit



Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

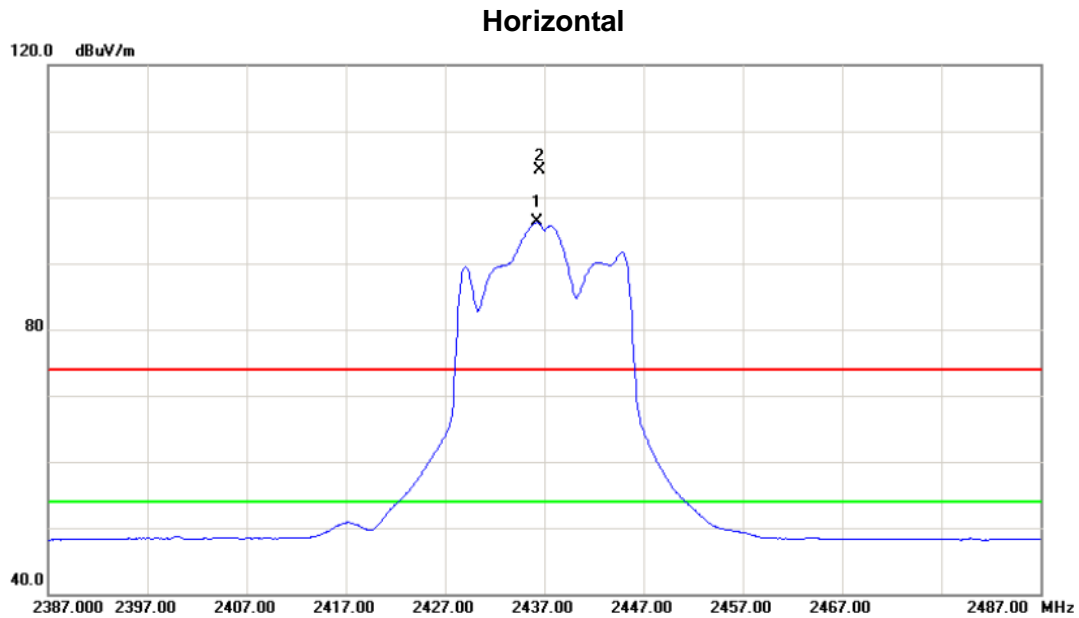
**Vertical**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	39.38	6.58	45.96	74.00	-28.04	peak	
2	*	4874.000	31.08	6.58	37.66	54.00	-16.34	AVG	



Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

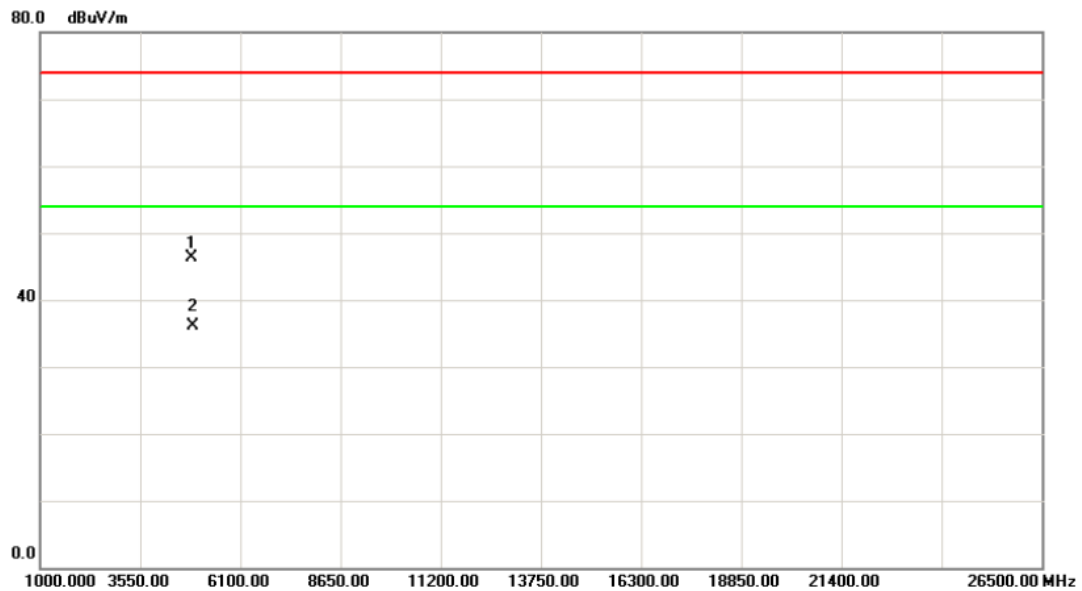


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2436.300	62.00	34.23	96.23	54.00	42.23	AVG	Fundamental frequency, no limit
2	X	2436.500	69.79	34.23	104.02	74.00	30.02	peak	Fundamental frequency, no limit



Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

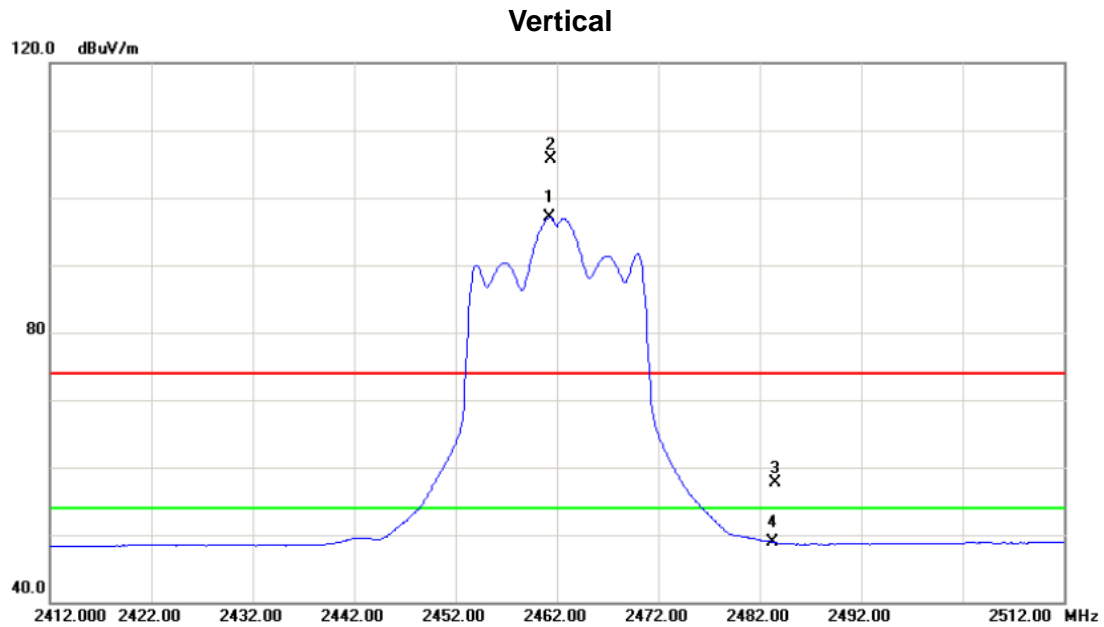
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	39.67	6.58	46.25	74.00	-27.75	peak	
2	*	4874.000	29.44	6.58	36.02	54.00	-17.98	AVG	



Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz



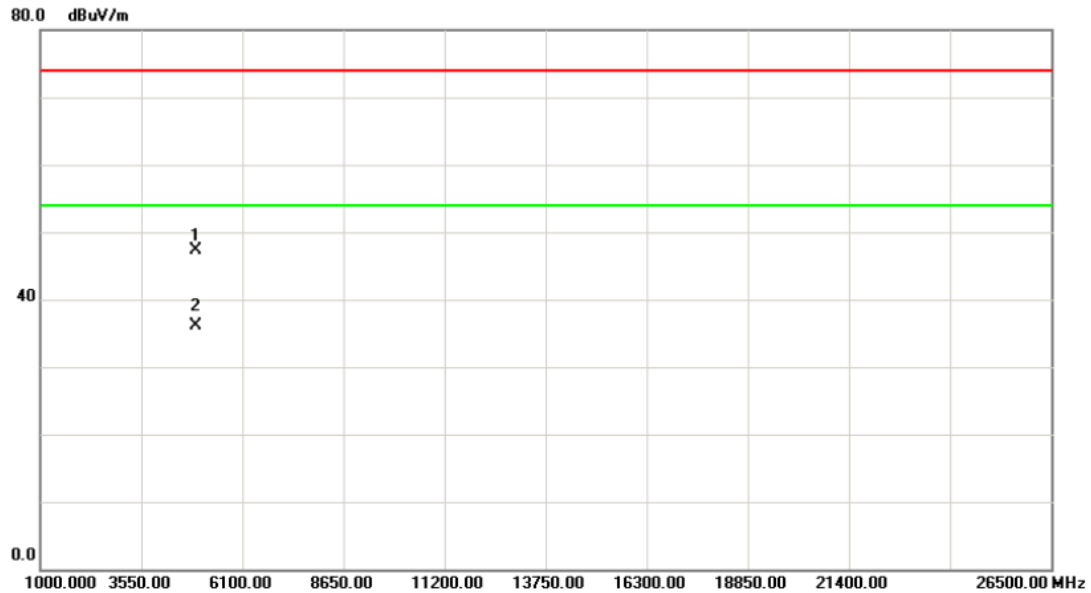
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2461.300	62.77	34.31	97.08	54.00	43.08	AVG	Fundamental frequency, no limit
2	X	2461.400	71.35	34.31	105.66	74.00	31.66	peak	Fundamental frequency, no limit
3		2483.500	23.31	34.37	57.68	74.00	-16.32	peak	
4		2483.500	14.48	34.37	48.85	54.00	-5.15	AVG	





Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

**Vertical**

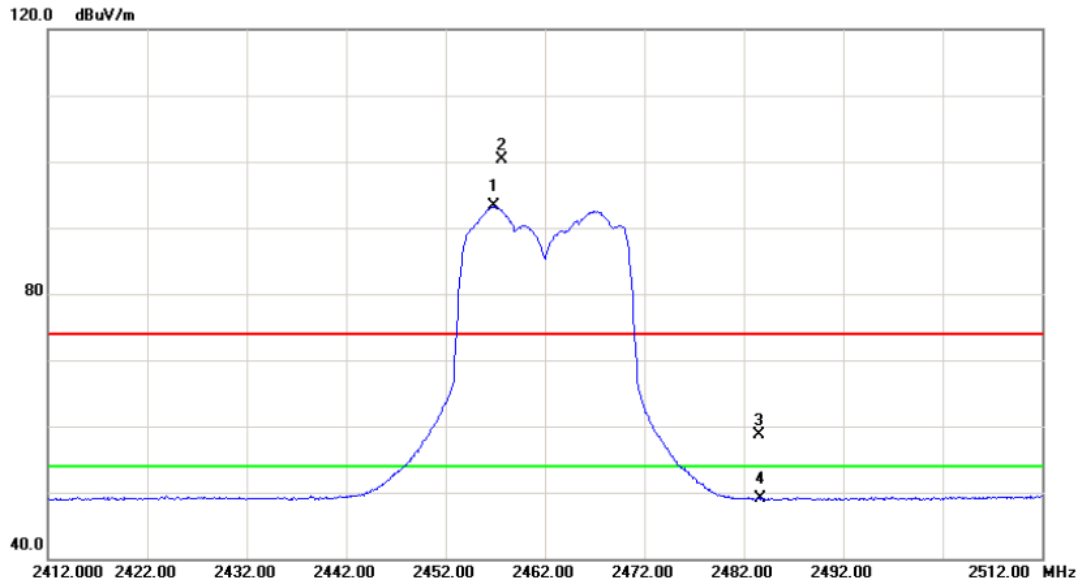


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	40.52	6.72	47.24	74.00	-26.76	peak	
2	*	4924.000	29.40	6.72	36.12	54.00	-17.88	AVG	



Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

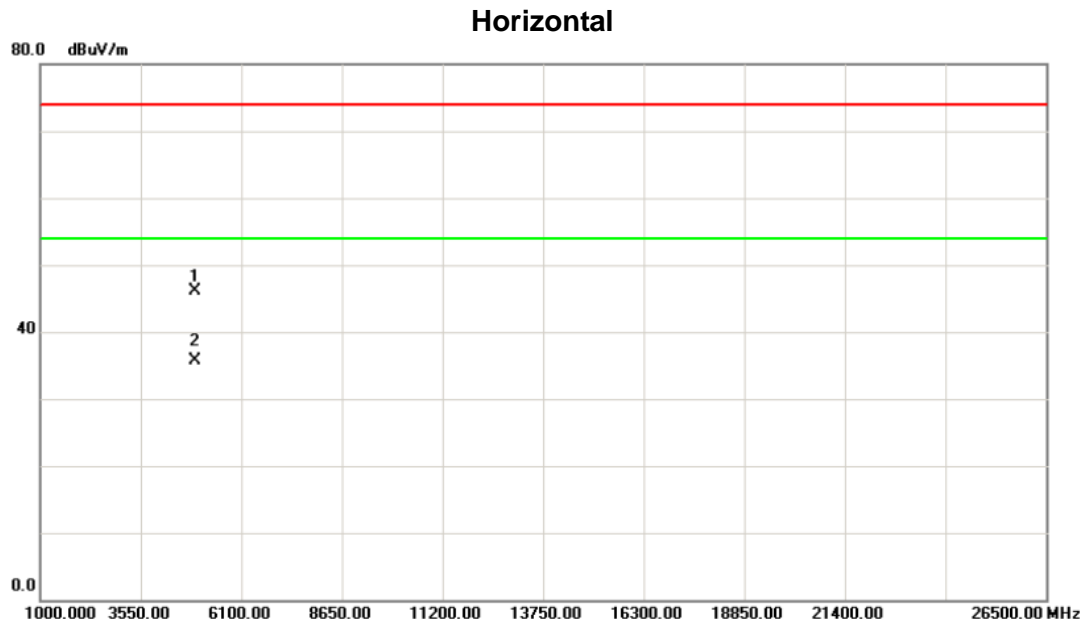
### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2456.800	58.94	34.29	93.23	54.00	39.23	AVG	Fundamental frequency, no limit
2	X	2457.700	66.00	34.29	100.29	74.00	26.29	peak	Fundamental frequency, no limit
3		2483.500	24.34	34.37	58.71	74.00	-15.29	peak	
4		2483.500	14.74	34.37	49.11	54.00	-4.89	AVG	



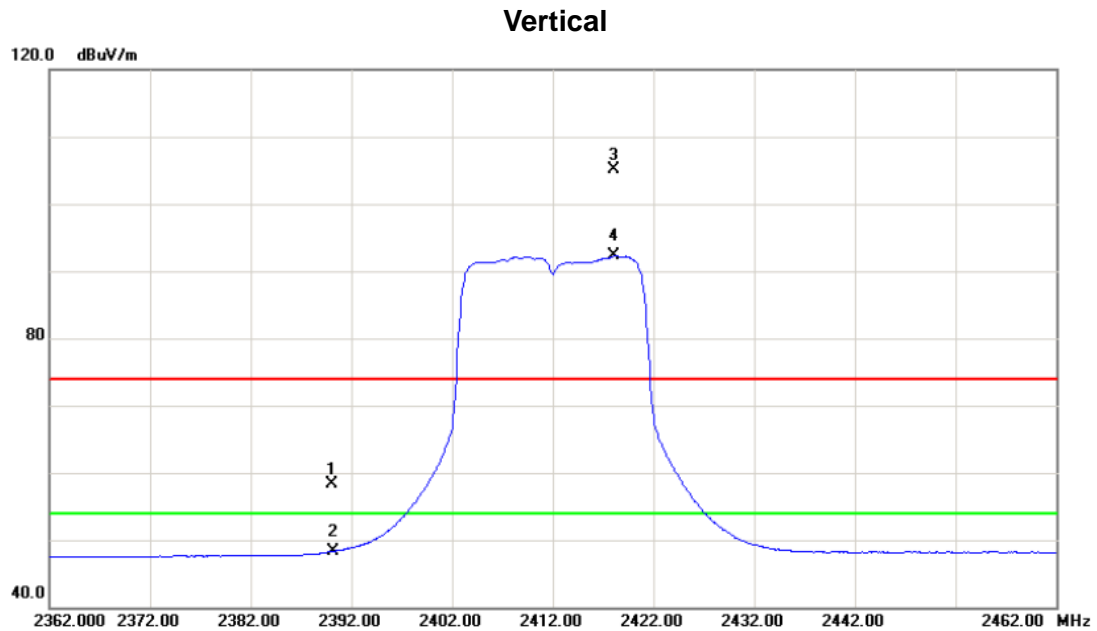
Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	39.39	6.72	46.11	74.00	-27.89	peak	
2	*	4924.000	29.05	6.72	35.77	54.00	-18.23	AVG	



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

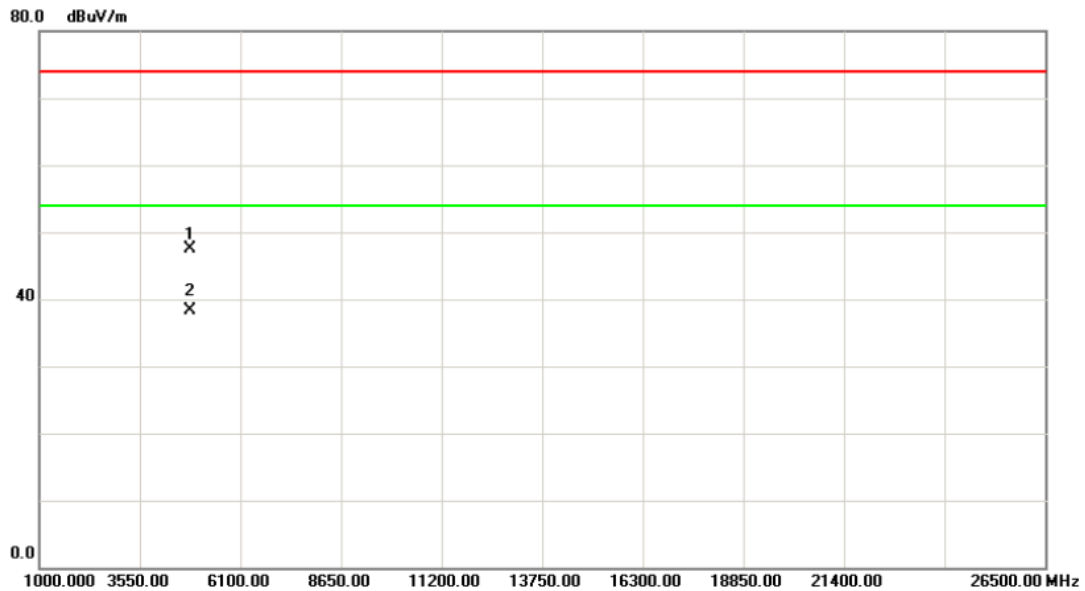


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	24.22	34.09	58.31	74.00	-15.69	peak	
2		2390.000	14.22	34.09	48.31	54.00	-5.69	AVG	
3	X	2418.000	70.91	34.18	105.09	74.00	31.09	peak	Fundamental frequency, no limit
4	*	2418.100	58.07	34.18	92.25	54.00	38.25	AVG	Fundamental frequency, no limit



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

**Vertical**

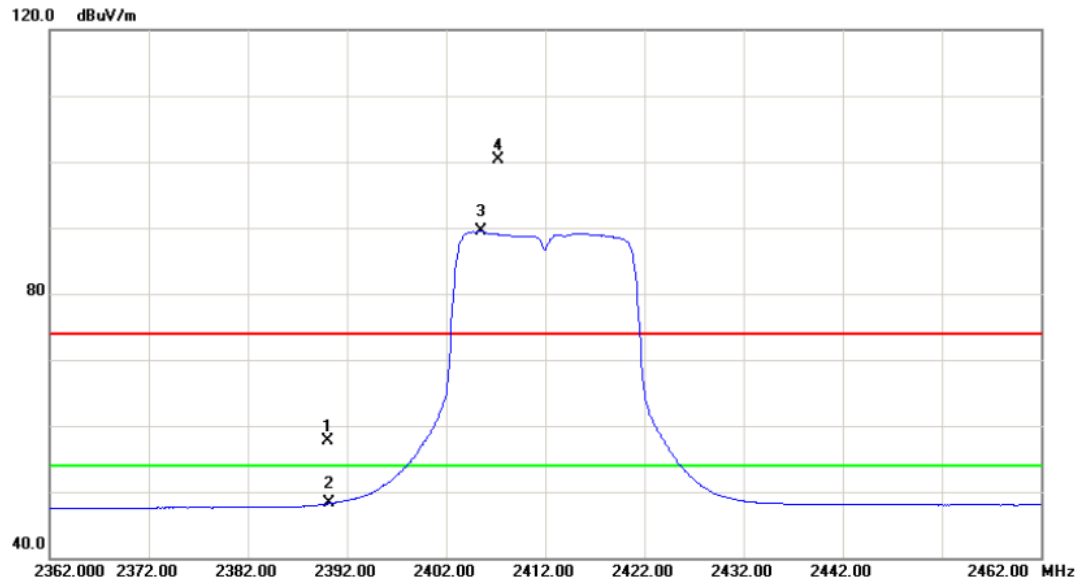


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	41.09	6.43	47.52	74.00	-26.48	peak	
2	*	4824.000	31.78	6.43	38.21	54.00	-15.79	AVG	



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

### Horizontal

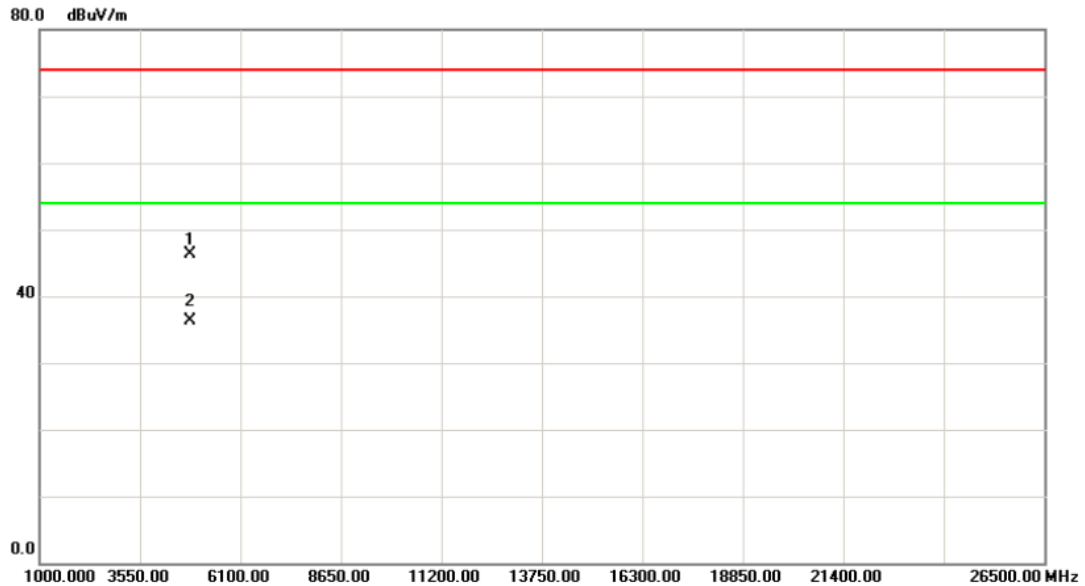


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	23.69	34.09	57.78	74.00	-16.22	peak	
2		2390.000	14.12	34.09	48.21	54.00	-5.79	AVG	
3	*	2405.500	55.42	34.14	89.56	54.00	35.56	AVG	Fundamental frequency, no limit
4	X	2407.300	66.26	34.14	100.40	74.00	26.40	peak	Fundamental frequency, no limit



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

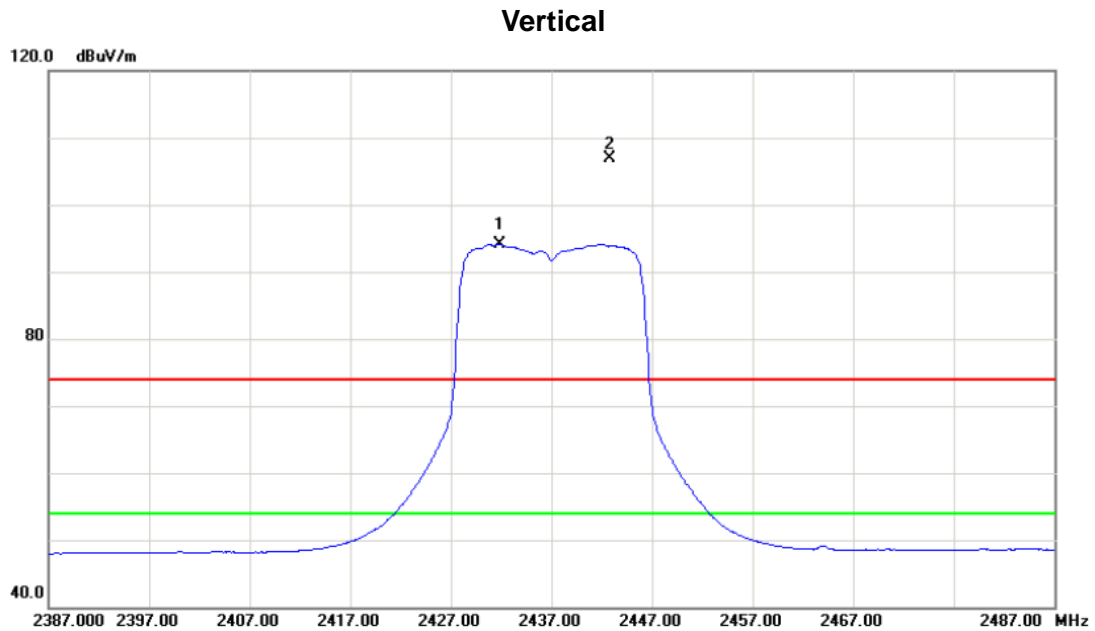
**Horizontal**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.270	39.81	6.43	46.24	74.00	-27.76	peak	
2	*	4824.270	29.80	6.43	36.23	54.00	-17.77	AVG	



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



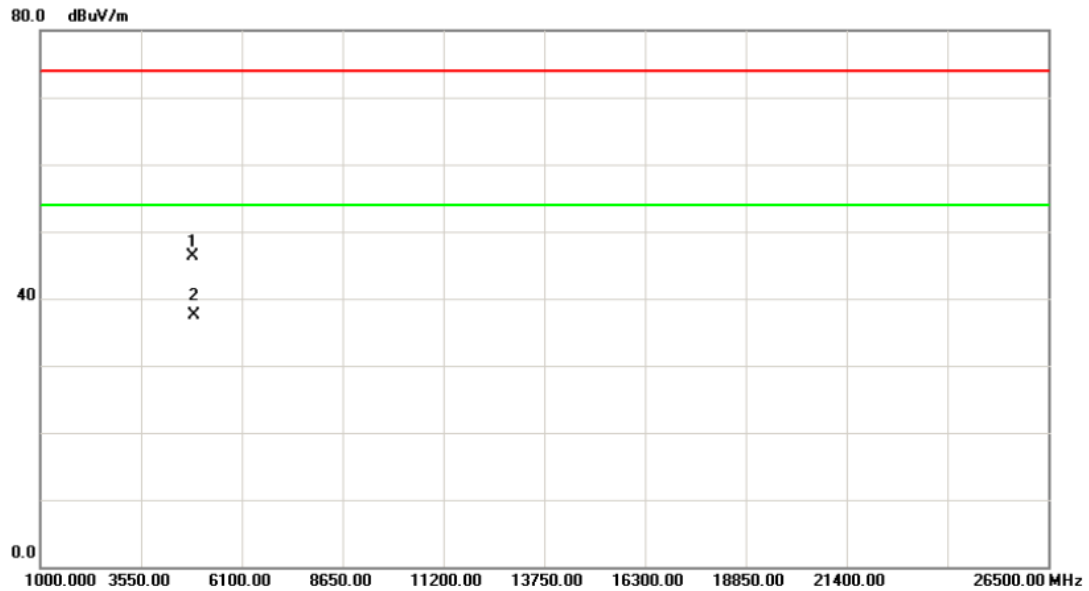
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2431.900	59.91	34.21	94.12	54.00	40.12	AVG	Fundamental frequency, no limit
2	X	2442.800	72.67	34.25	106.92	74.00	32.92	peak	Fundamental frequency, no limit





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

**Vertical**

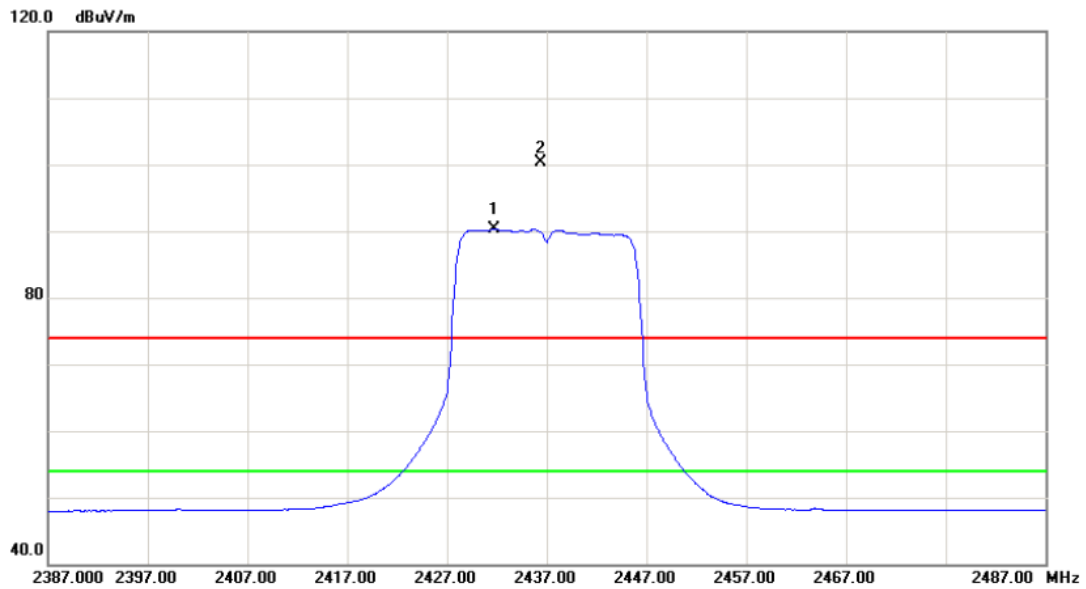


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	39.67	6.58	46.25	74.00	-27.75	peak	
2	*	4874.000	30.83	6.58	37.41	54.00	-16.59	AVG	



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

### Horizontal

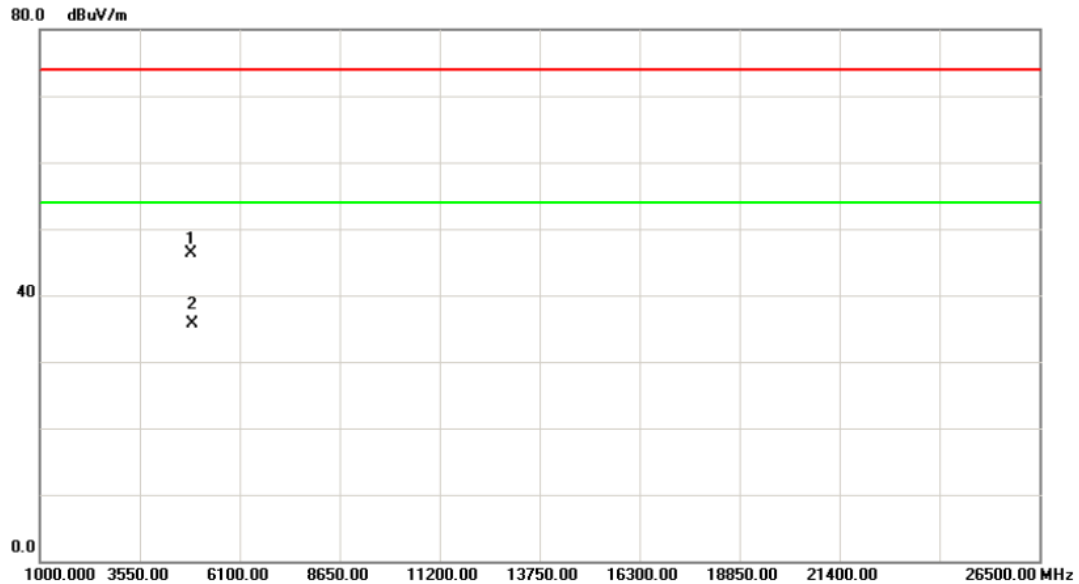


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2431.700	56.10	34.21	90.31	54.00	36.31	AVG	Fundamental frequency, no limit
2	X	2436.400	66.05	34.23	100.28	74.00	26.28	peak	Fundamental frequency, no limit



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

**Horizontal**

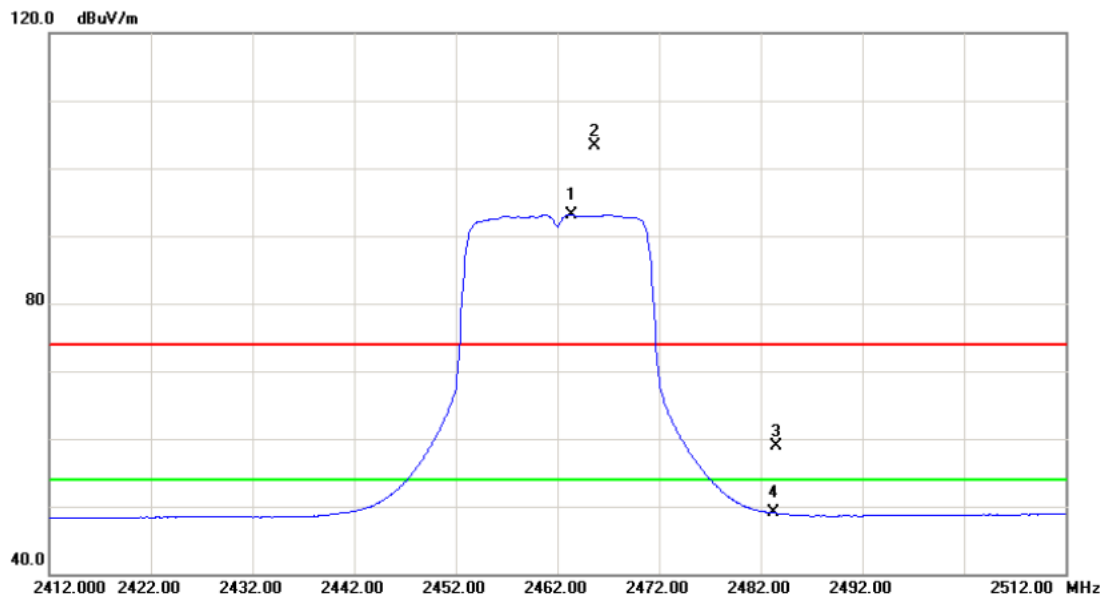


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	39.65	6.58	46.23	74.00	-27.77	peak	
2	*	4874.000	29.07	6.58	35.65	54.00	-18.35	AVG	



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

**Vertical**

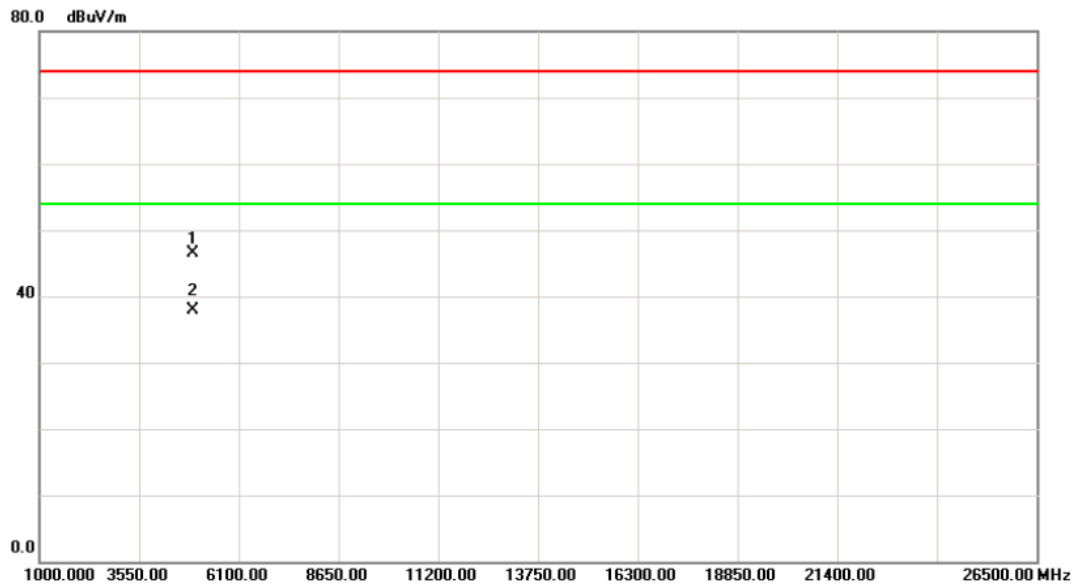


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2463.400	58.87	34.31	93.18	54.00	39.18	AVG	Fundamental frequency, no limit
2	X	2465.600	69.02	34.31	103.33	74.00	29.33	peak	Fundamental frequency, no limit
3		2483.500	24.49	34.37	58.86	74.00	-15.14	peak	
4		2483.500	14.66	34.37	49.03	54.00	-4.97	AVG	



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

**Vertical**

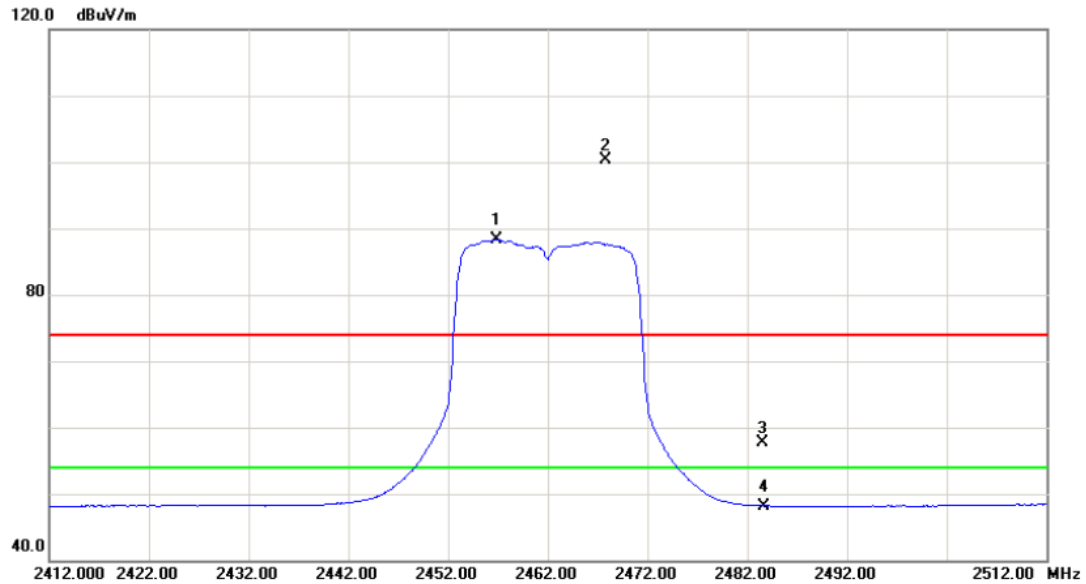


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	39.82	6.72	46.54	74.00	-27.46	peak	
2	*	4924.000	31.13	6.72	37.85	54.00	-16.15	AVG	



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

**Horizontal**

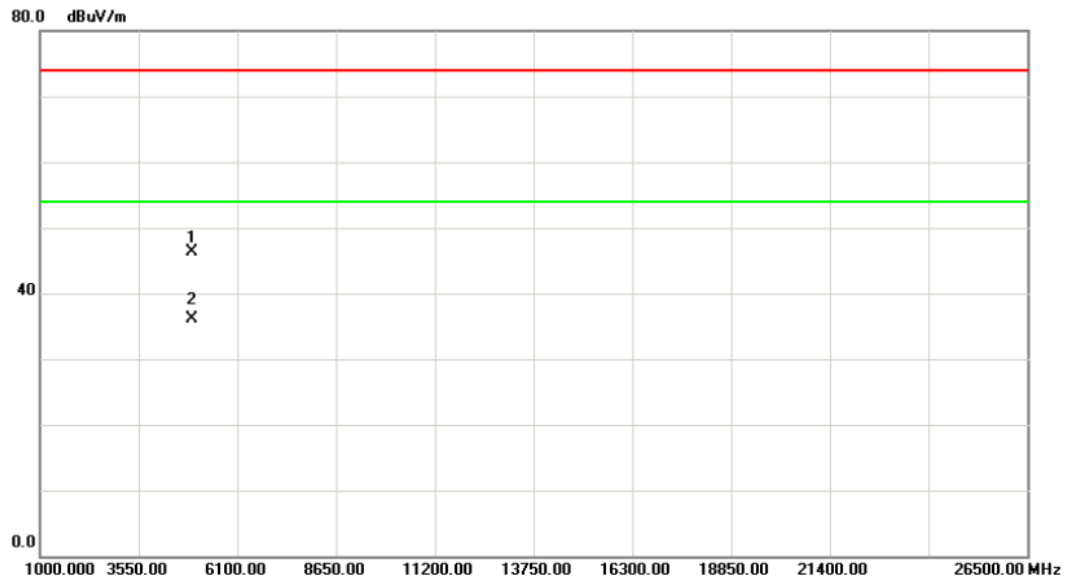


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2456.800	54.05	34.29	88.34	54.00	34.34	AVG	Fundamental frequency, no limit
2	X	2467.800	65.98	34.32	100.30	74.00	26.30	peak	Fundamental frequency, no limit
3		2483.500	23.25	34.37	57.62	74.00	-16.38	peak	
4		2483.500	13.83	34.37	48.20	54.00	-5.80	AVG	



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

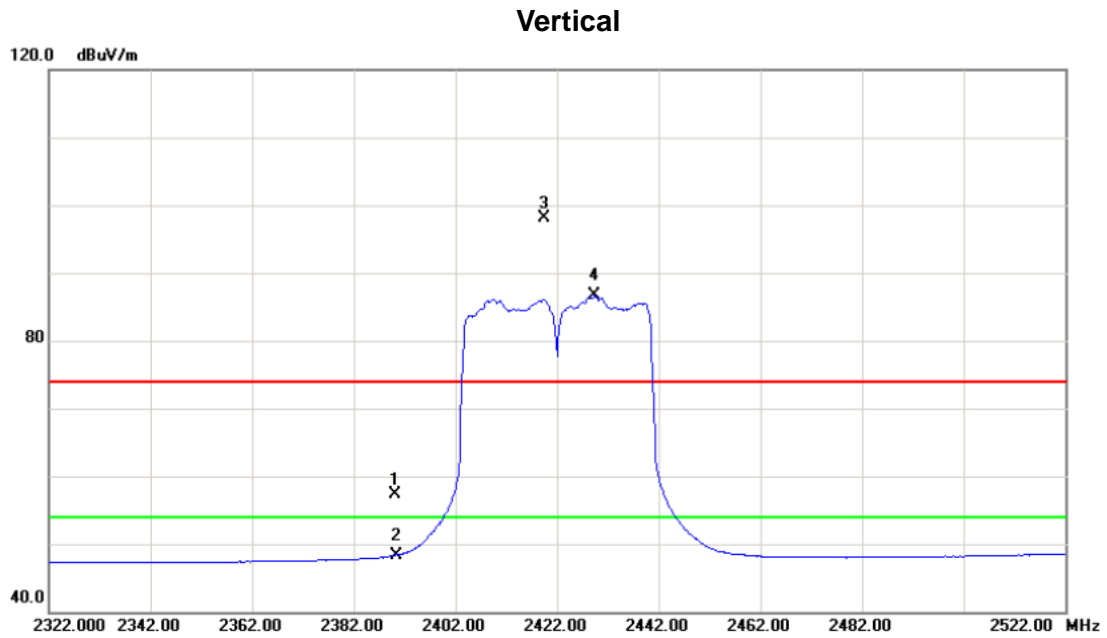
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	39.61	6.72	46.33	74.00	-27.67	peak	
2	*	4924.000	29.38	6.72	36.10	54.00	-17.90	AVG	



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

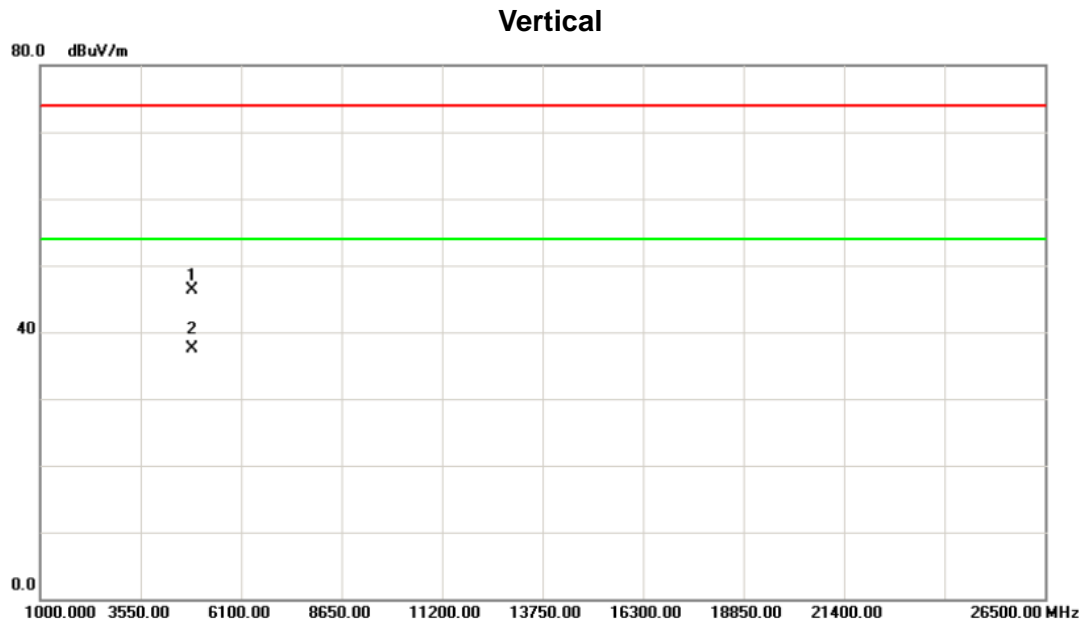


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2390.000	23.29	34.09	57.38	74.00	-16.62	peak	
2		2390.000	14.29	34.09	48.38	54.00	-5.62	AVG	
3	X	2419.400	63.83	34.18	98.01	74.00	24.01	peak	Fundamental frequency, no limit
4	*	2429.400	52.41	34.21	86.62	54.00	32.62	AVG	Fundamental frequency, no limit





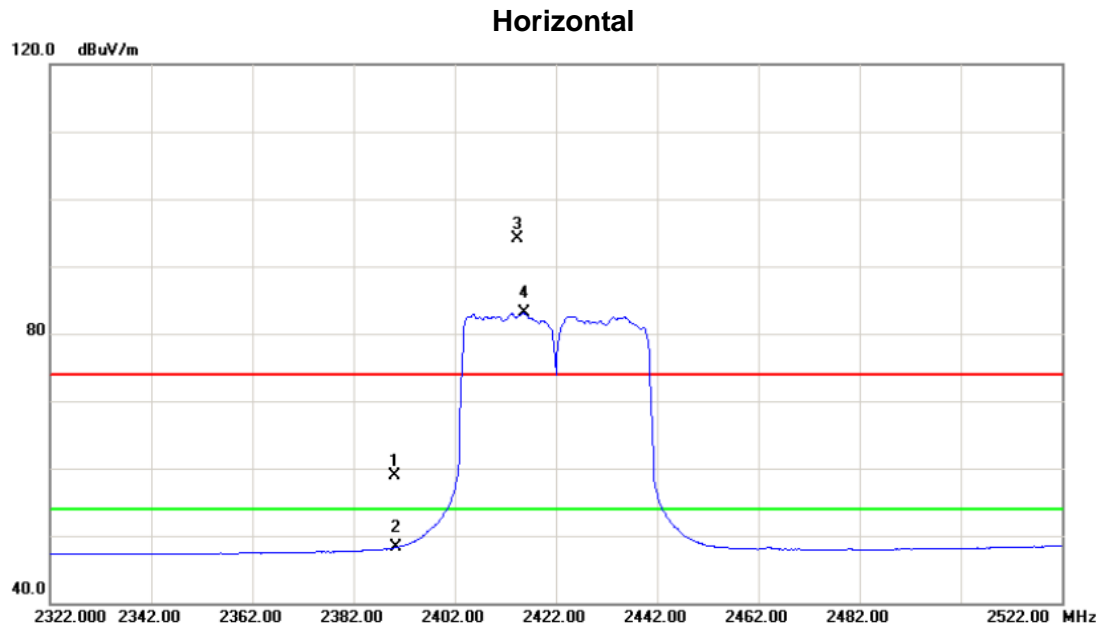
Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4844.000	39.71	6.50	46.21	74.00	-27.79	peak	
2	*	4844.000	30.91	6.50	37.41	54.00	-16.59	AVG	



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

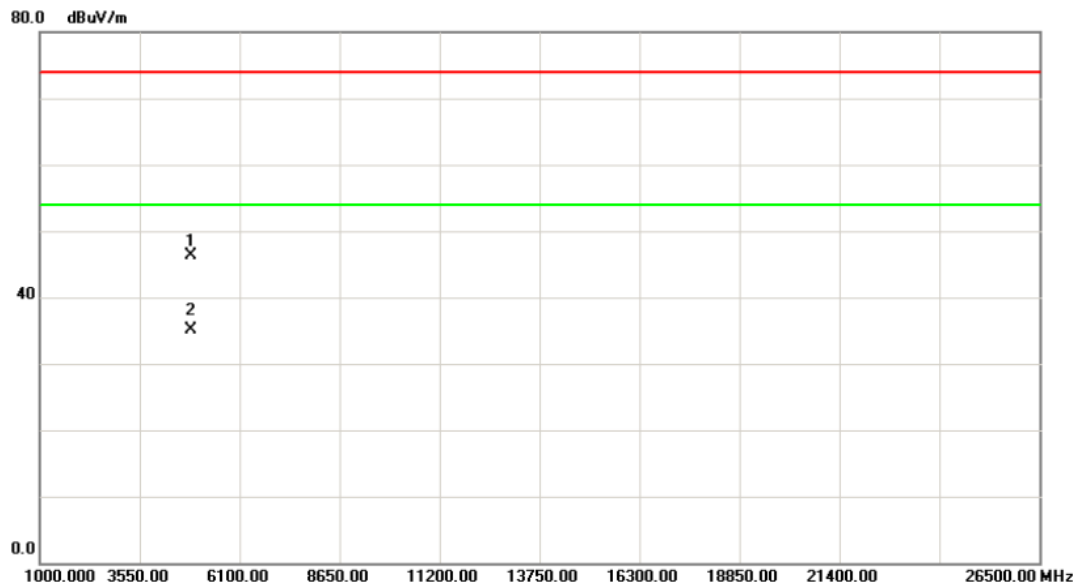


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2390.000	24.87	34.09	58.96	74.00	-15.04	peak	
2		2390.000	14.14	34.09	48.23	54.00	-5.77	AVG	
3	X	2414.400	59.89	34.16	94.05	74.00	20.05	peak	Fundamental frequency, no limit
4	*	2415.600	48.88	34.16	83.04	54.00	29.04	AVG	Fundamental frequency, no limit



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

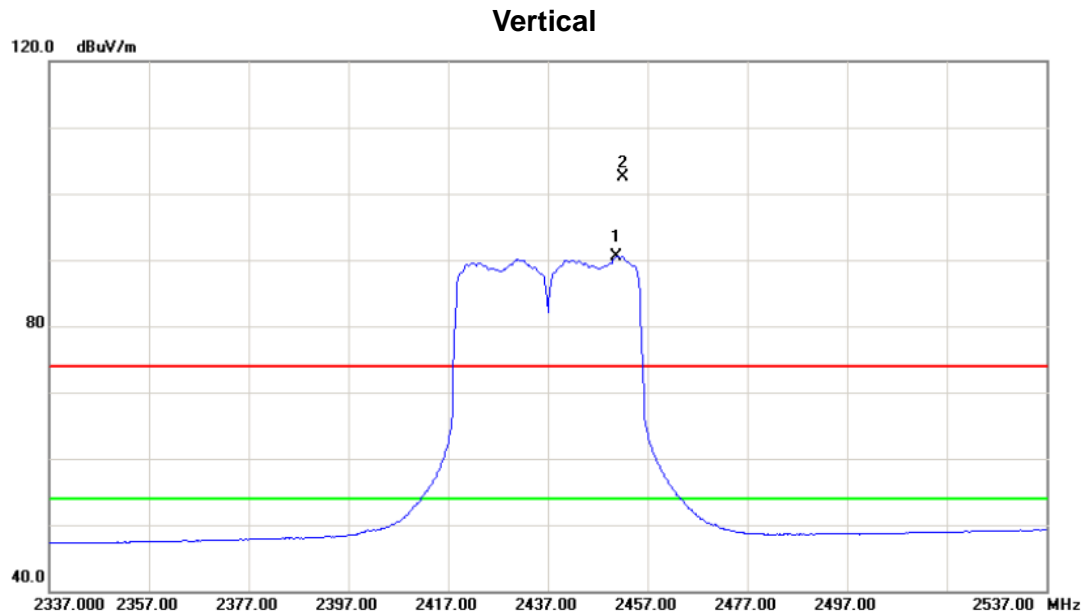
**Horizontal**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4844.000	39.82	6.50	46.32	74.00	-27.68	peak	
2	*	4844.000	28.62	6.50	35.12	54.00	-18.88	AVG	



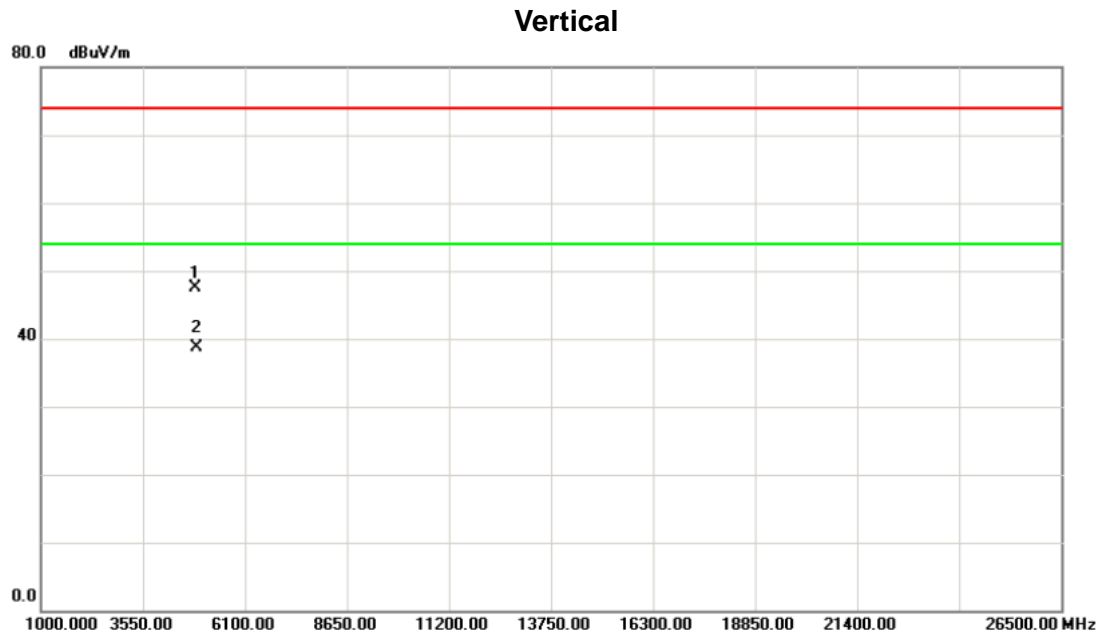
Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2450.800	56.23	34.27	90.50	54.00	36.50	AVG	Fundamental frequency, no limit
2	X	2452.000	68.18	34.27	102.45	74.00	28.45	peak	Fundamental frequency, no limit



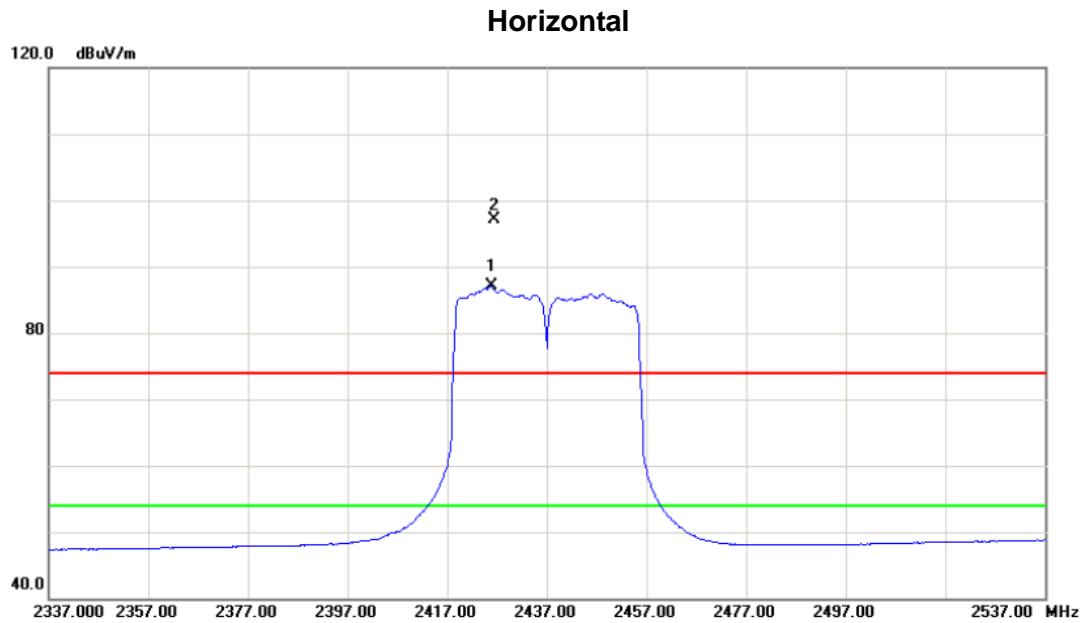
Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	40.97	6.58	47.55	74.00	-26.45	peak	
2	*	4874.000	32.05	6.58	38.63	54.00	-15.37	AVG	



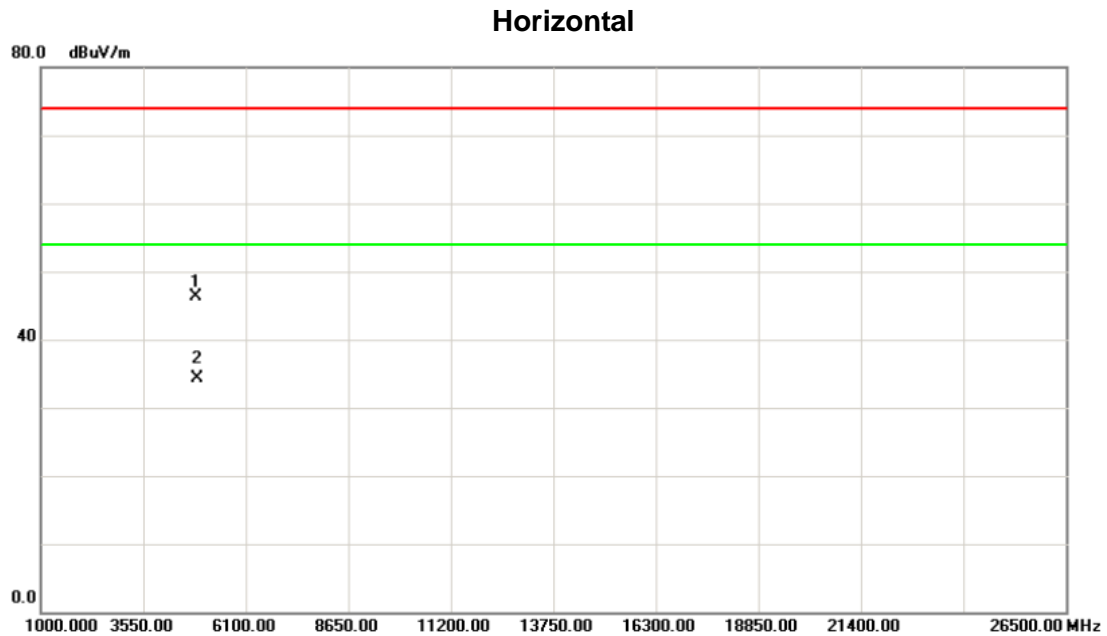
Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2425.800	52.94	34.20	87.14	54.00	33.14	AVG	Fundamental frequency, no limit
2	X	2426.400	62.90	34.20	97.10	74.00	23.10	peak	Fundamental frequency, no limit



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

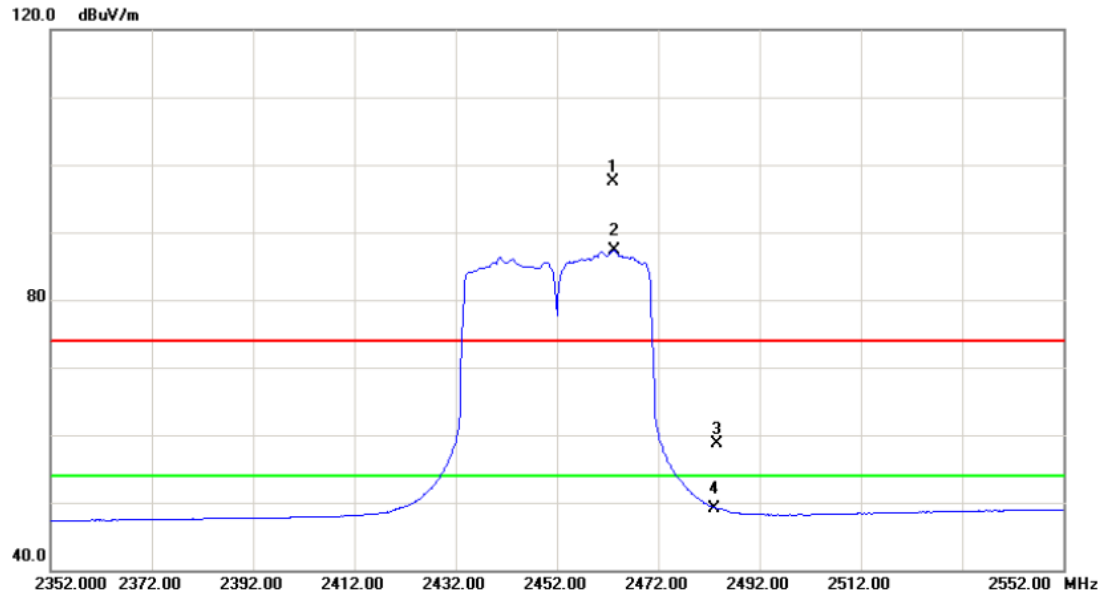


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	39.64	6.58	46.22	74.00	-27.78	peak	
2	*	4874.000	27.63	6.58	34.21	54.00	-19.79	AVG	



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

**Vertical**



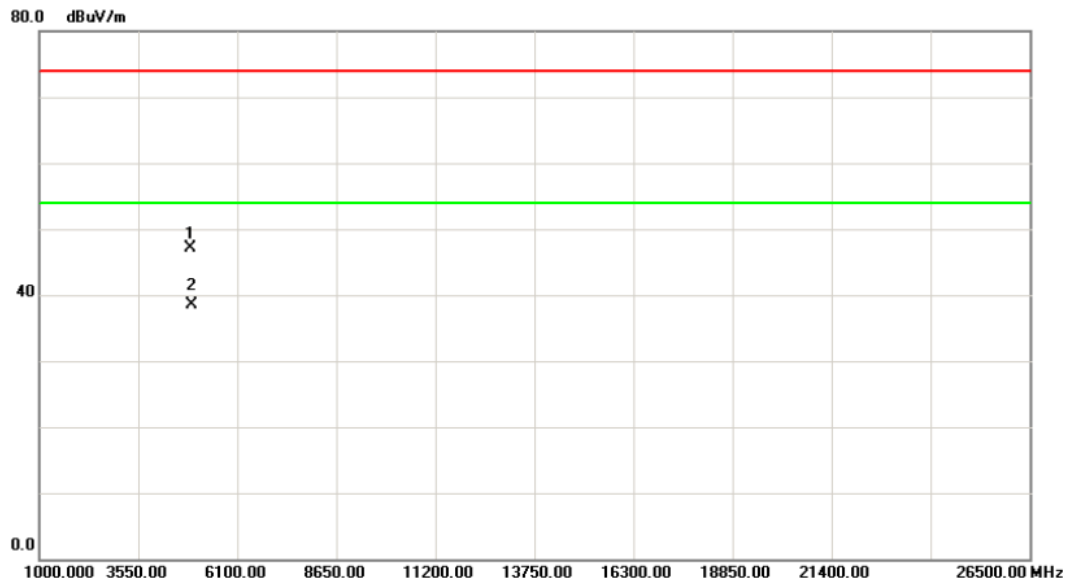
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2463.000	63.23	34.31	97.54	74.00	23.54	peak	Fundamental frequency, no limit
2	*	2463.200	53.04	34.31	87.35	54.00	33.35	AVG	Fundamental frequency, no limit
3		2483.500	24.30	34.37	58.67	74.00	-15.33	peak	
4		2483.500	14.82	34.37	49.19	54.00	-4.81	AVG	





Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

**Vertical**

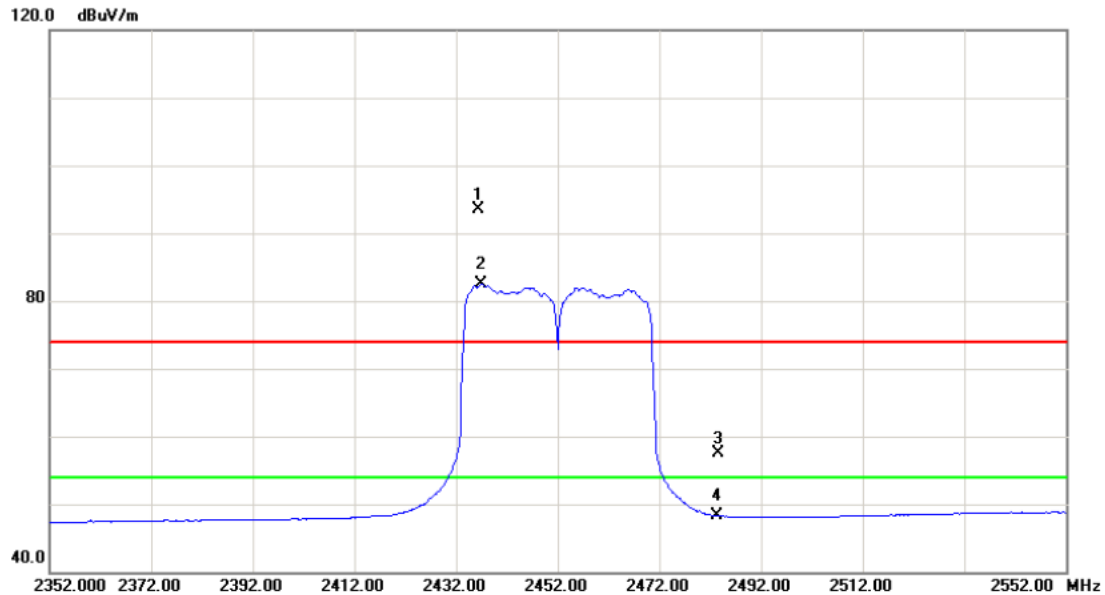


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4904.000	40.53	6.67	47.20	74.00	-26.80	peak	
2	*	4904.000	31.74	6.67	38.41	54.00	-15.59	AVG	



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

### Horizontal

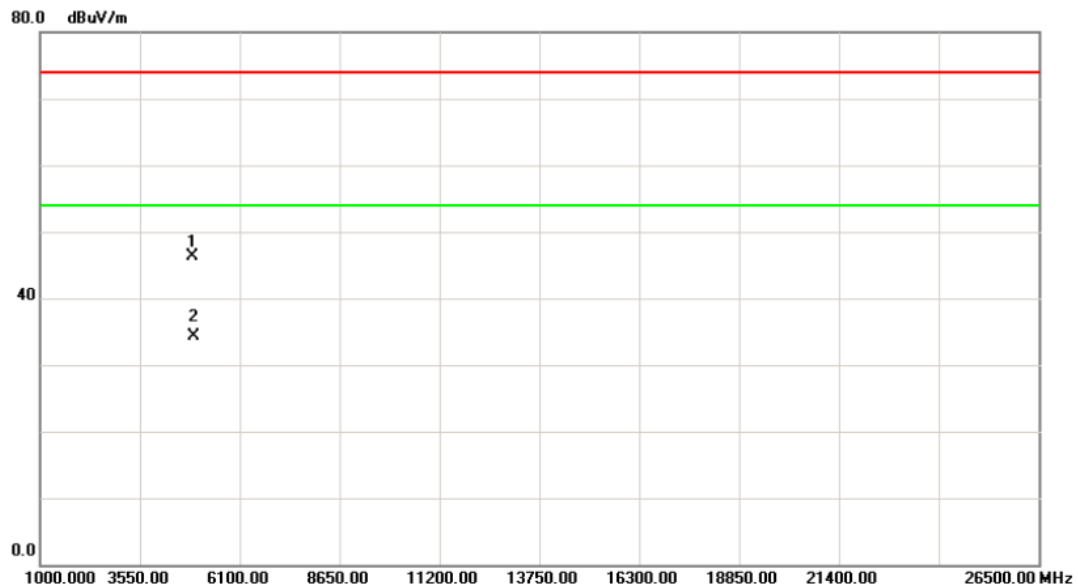


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	2436.400	59.21	34.23	93.44	74.00	19.44	peak	Fundamental frequency, no limit
2	*	2437.000	48.26	34.23	82.49	54.00	28.49	AVG	Fundamental frequency, no limit
3		2483.500	23.11	34.37	57.48	74.00	-16.52	peak	
4		2483.500	13.92	34.37	48.29	54.00	-5.71	AVG	



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

**Horizontal**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4904.000	39.66	6.67	46.33	74.00	-27.67	peak	
2	*	4904.000	27.55	6.67	34.22	54.00	-19.78	AVG	