

# FCC Radio Test Report

## FCC ID: O57TB3710I

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

**Project No.** : 1512C068  
**Equipment** : Portable Tablet Computer  
**Model Name** : Lenovo TB3-710I  
**Applicant** : LENOVO (SHANGHAI) ELECTRONICS  
TECHNOLOGY CO LTD  
**Address** : NO 68 BUILDING 199 FENJU RD, CHINA  
(SHANGHAI) PILOT FREE TRADE ZONE,  
SHANGHAI, 200131 CHINA

**Date of Receipt** : Dec. 08, 2015  
**Date of Test** : Dec. 08, 2015~Dec. 24, 2015  
**Issued Date** : Dec. 25, 2015  
**Tested by** : BTL Inc.

**Technical Engineer** :

*Shawn Xiao*

(Shawn Xiao)

**Authorized Signatory** :

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# **B T L I N C .**

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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
BTL-FCCP-2-1512C068	Original Issue.	Dec. 25, 2015

## 1. CERTIFICATION

Equipment : Portable Tablet Computer  
Brand Name : Lenovo  
Model Name : Lenovo TB3-710I  
Applicant : LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO LTD  
Manufacturer : Lenovo PC HK Limited  
Address : 23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong  
Date of Test : Dec. 08, 2015~Dec. 24, 2015  
Test Sample : Engineering Sample  
Standard(s) : FCC Part15, Subpart C :2014 (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-2-1512C068) 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).

**Test results included in this report is only for the Bluetooth LE part.**

## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

<b>Applied Standard(s): FCC Part15 (15.247) , Subpart C: 2014</b>				
Standard(s)	Section	Test Item	Judgment	Tested By
	15.207	Conducted Emission	PASS	Robert Luo
	15.247(d)	Antenna conducted Spurious Emission	PASS	Allen Li
	15.247(a)(2)	6dB Bandwidth	PASS	Allen Li
	15.247(b)(3)	Peak Output Power	PASS	Allen Li
	15.247(e)	Power Spectral Density	PASS	Allen Li
	15.203	Antenna Requirement	PASS	-
	15.209/15.205	Transmitter Radiated Emissions	PASS	Robert Luo

**NOTE:**

(1) "N/A" denotes test is not applicable to this device.

## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.  
BTL's test firm number for FCC: 319330

## 2.2 MEASUREMENT UNCERTAINTY

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

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

### A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-C02	CISPR	150 kHz ~ 30MHz	2.32

### B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	9KHz~30MHz	V	3.79
		9KHz~30MHz	H	3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	H	3.78
		200MHz ~ 1,000MHz	V	4.10
		200MHz ~ 1,000MHz	H	4.06
		1GHz~18GHz	V	3.12
		1GHz~18GHz	H	3.68
		18GHz~40GHz	V	4.15
18GHz~40GHz	H	4.14		

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	Portable Tablet Computer	
Brand Name	Lenovo	
Model Name	Lenovo TB3-710I	
Model Difference	This model has two configurations: main supply, secondary supply. Please refer to note 3.	
Product Description	Operation Frequency	2402~2480 MHz
	Modulation Technology	GFSK(1Mbps)
	Bit Rate of Transmitter	
	Output Power (Max.)	-2.32dBm (1Mbps)
Power Source	#1 DC voltage supplied from AC/DC adapter. #2 Supplied from USB port. #3 Supplied from rechargeable Li-Polymer battery.	
Power Rating	Please refer to note 2	

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT contains following accessory devices

Product	Brand	Model	Description
Adapter	Huntkey	C-P56	I/P: 100-240V~ 50/60Hz, 0.15A O/P: 5.0V, 1.0A
	Acbel	C-P56	I/P: 100-240V~ 50/60Hz, 0.13A O/P: 5.0V, 1.0A
Battery	lenovo (SUNWODA)	L13D1P31	3.8VDC, 3450mAh
	lenovo (SCUD)	L13D1P31	3.8VDC, 3450mAh
USB Cable	LIQI	L16B-05100070L	70cm shielded cable w/o core

3.

Main Supply			
Part Name	Model Name	Description	Supplier
PCB--MB	A1901_MB_PCB_V4.0_HF	A1901_PCB_V4.0	HUASHEN
Baseband chip	MT8321A/B	WCDMA	MTK
PMIC	MT6350V/A	-	MTK
PA	AP7169-R95MOG	RFPA_3G_two in one PA_BANDS I, II, III, IV, V, VIII	Airoha
	AP6690-R95MOG	RFPA_850/900/1800/1900/TD1900/TD2010	Airoha
Duplexer	RFDIP1608060TM7T62	Electromagnetic interference two-way stopband filters_ 1.575 GHz/2.4 GHz/5GHz	Walsin
	SAYFH897MHA0F00	Electromagnetic interference two-way stopband filters_ W900	MURATA
	SAYFH836MCC0F0A	Electromagnetic interference two-way stopband filters_ band5_ W850	MURATA
	SAYRF1G88CA0B0A	Electromagnetic interference two-way stopband filters_ band2_ W1900	MURATA
	SAYRF1G95HQ0F0A	Electromagnetic interference two-way stopband filters_ band1_ W2100	MURATA
	MDBF21L914H1897M-DB02H	Electromagnetic interference difference converter_ GSM850/GSM900/DCS1800/PCS1900	MICROGATE
G-sensor	KXTJ2-1009		Kionix
EMMC+DDR3	KMF820012M-B305	MCP_16GB-eMMC_8Gb-LPDDR3	Samsung
Crystal	7L26002009	26M_0.5ppm_2.8V_2520	TXC
audio frequency amplifier	AW8155AFCR	AB type/Dype_sigle-way	Awinic
RF Switch	SKY13489-001	RF Switch_SPDT	Skyworks
LNA	WS7916	GPS_LNA	Will
SAW FILTER	SAFFB1G56KB0F0A	GPS BEIDOU_RX1109	MURATA
TP	TTCT070121	A1900A	Top-Touch
LCD	TXDT700EPLA-68	7Inch_1024*600	TXD
Camera_Front	BLX0A20H-A1900-F	Camera_5x5x2.95mm_30w	BRODSANDS
Camera_Back	BLX2508H-A1900-B	Camera_6.5x6.5x4.2mm_200w	BRODSANDS
5M AF(3G)	O9B5-AW1507BHQ	Camera_8.5*8.5*4.66mm_500W	HUAQUAN
MIC	OB-F15LX42-1592-C10C33EP	-	HUAFENG
Motor(3G)	HZF-Z04B-RL126B20-90	-	HONGZHIFA
SPK	XHS151118SW43P38-02	-	HAOSHENG
Battery	L13D1P31	3450mAh	SUNWODA
Adapter(US)	C-P56	5V/1A	Huntkey
USB Cable	L16B-05100070L	70cm	LIQI

Secondary Supply			
Part Name	Model Name	Description	Supplier
PCB--MB	A1901_MB_PCB_V4.0_HF	A1901_PCB_V4.0	HUASHEN
G-sensor	BMA253		Bosch
EMMC+DDR3	H9TQ17A8GTMCUR-KUM	MCP_16GB-eMMC_8Gb-LPDDR3	Hynix
Crystal	X1E000021043400	26M_10ppm_7.4pF_3225	Epson Toyocom
TP	YCB0880700801A	A1900A	YEJI
LCD	KD070D54-39NH-B2	7Inch_1024*600	GUOXIAN
Camera_Front	GI5953A1D-1P0J0	Camera_5x5x2.95mm_30w	QUNHUI
Camera_Back	GV5954B1S-1P0J0	Camera_6.5x6.5x4.25_200w	QUNHUI
5M AF(3G)	HNW5889B1S-0P0J0	Camera_8.5*8.5*4.66mm_500W	QUNHUI
MIC	CM4015BC-423-WR138	-	JINZUN
Motor(3G)	CY0408L-021HB-047	-	KUNWANG
SPK	KFSC1115G3.5-08-0.7W-D	-	XICHUN
Battery	L13D1P31	3450mAh	SCUD
Adapter(US)	C-P56	5V/1A	Acbel
USB Cable	R16B-05100070	70cm	RIDONGSHENG

#### 4. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
03	2408	23	2448
04	2410	24	2450
05	2412	25	2452
06	2414	26	2454
07	2416	27	2456
08	2418	28	2458
09	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

#### 5. Table for Filed Antenna:

Ant.	Mfr/Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	0.48

### 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 Mode <b>NOTE (1)</b>
Mode 2	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 2	TX Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	TX Mode <b>NOTE (1)</b>

Note:

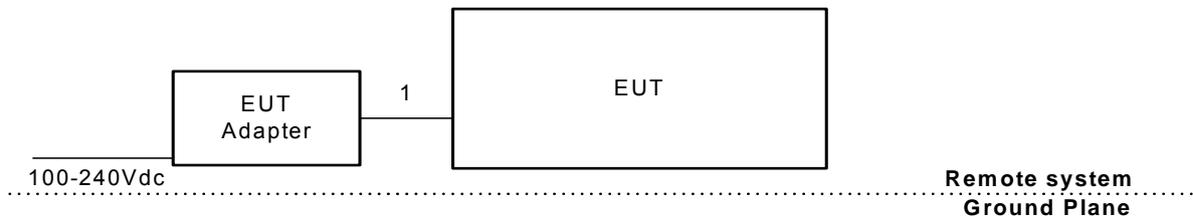
- (1) The measurements are performed at the high, middle, low available channels.
- (2) Both adapter and battery are evaluated, operated the adapter is the worst and recorded as below test data
- (3) The EUT is considered a portable unit, it was pre-tested on the positioned of each 3 axis. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test

### 3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

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

Test Software Version	N/A		
Frequency (MHz)	2402	2440	2480
BT LE	N/A	N/A	N/A

### 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



### 3.5 DESCRIPTION OF SUPPORT UNITS

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

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

Item	Shielded Type	Ferrite Core	Length	Note
1	YES	NO	0.7m	USB Cable

Note:

- (1) For detachable type I/O cable should be specified the length in m in 『Length』 column.

## 4. EMC EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

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

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 -0.5	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

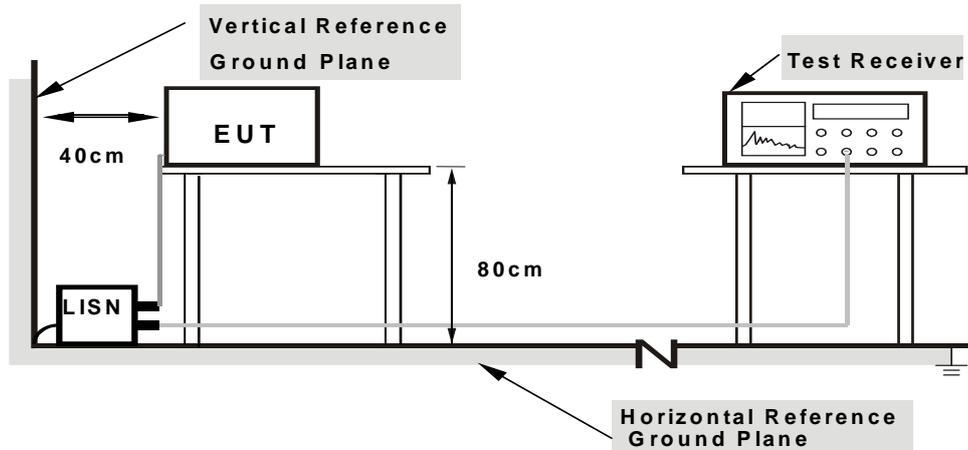
#### 4.1.2 TEST PROCEDURE

- 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 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.

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 150KHz to 30MHz.
- (3) " N/A" denotes test is not applicable to this device.

## 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 (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).
- (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)	RBW 1MHz VBW 3MHz peak detector for Pk value RMS detector for AV value

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

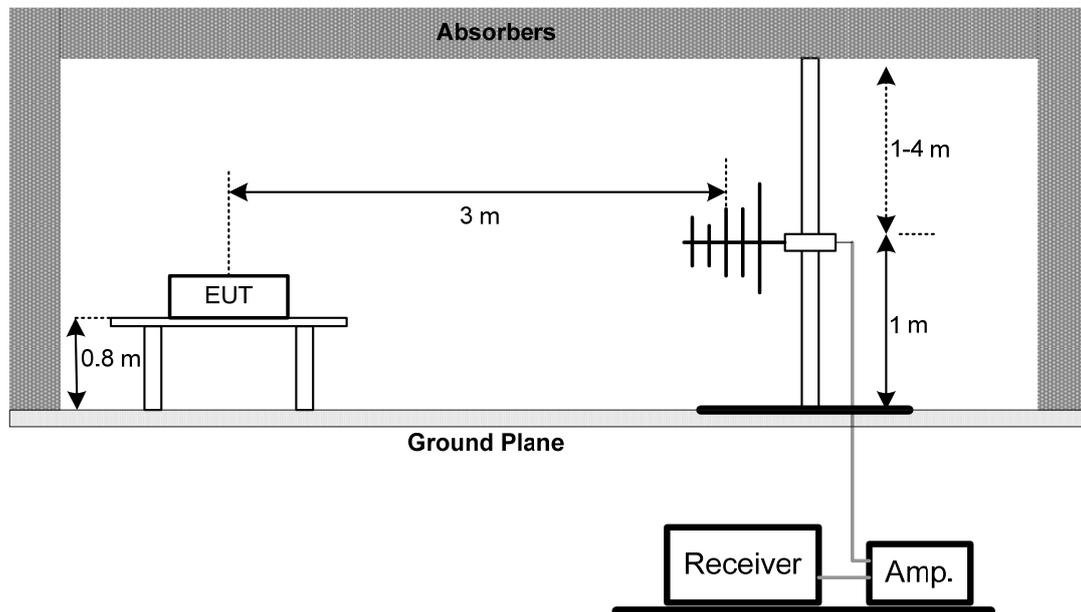
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance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

#### 4.2.3 DEVIATION FROM TEST STANDARD

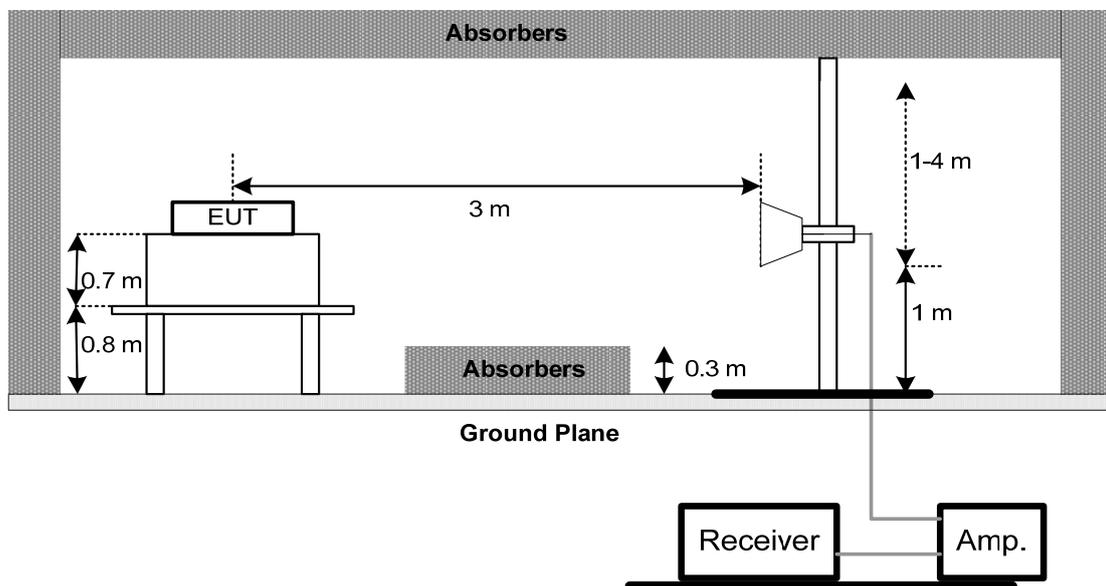
No deviation

#### 4.2.4 TEST SETUP

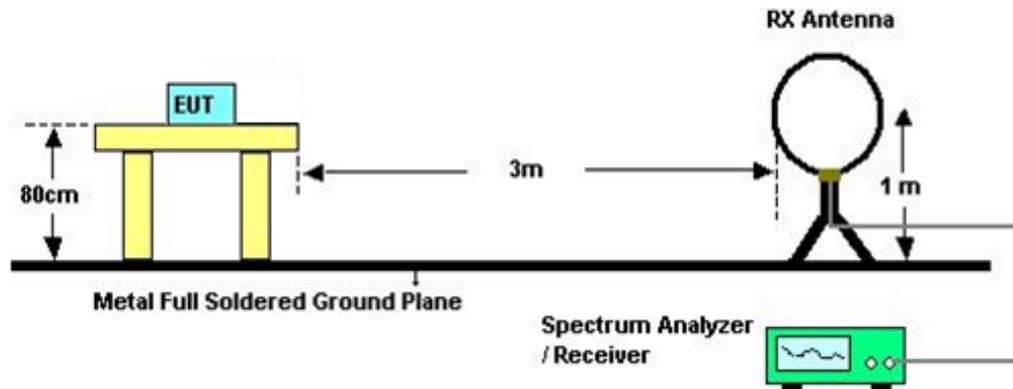
##### (A) Radiated Emission Test Set-Up Frequency Below 1 GHz



##### (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 4.1.5 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 (30MHZ TO 1000 MHZ)**

Please refer to the Attachment C.

Remark:

- (1) 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.
- (2) Measuring frequency range from 30MHz to 1000MHz.
- (3) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

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

Please refer to the Attachment D.

Remark:

- (1) 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.
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission
- (3) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (4) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (5) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (6) 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 / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB 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 4.1.5 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				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 watt or 30dBm	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 peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance v03r03.

#### 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 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

#### 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 device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

#### 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 = 10 ms.
- c. Offset=antanna gain + cable loss

#### 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 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

#### 7.1.5 EUT OPERATION 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				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	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=10 KHz, 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 4.1.5 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. 28, 2016
2	LISN	R&S	ENV216	101447	Mar. 28, 2016
3	Test Cable	emci	RG223(9KHz-30 MHz)	C_17	Mar. 13, 2016
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 28, 2016
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 28, 2016
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 28, 2016
2	Amplifier	HP	8447D	2944A09673	Nov. 16, 2016
3	Receiver	AGILENT	N9038A	MY52130039	Oct. 11, 2016
4	Test Cable	emci	LMR-400(30MHz-1GHz)	C-01	Jun. 28, 2016
5	Controller	CT	SC100	N/A	N/A
6	Antenna	ETS	3115	00075789	Mar. 28, 2016
7	Amplifier	Agilent	8449B	3008A02274	Nov. 01, 2016
8	Test Cable	emci	EMC104-SM-S M-10000(1GHz-26.5GHz)	C-68	Jun. 28, 2016
9	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Mar. 28, 2016
10	Microwave Pre-amplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 28, 2016
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Sep. 07, 2016
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Oct. 11, 2016

<b>Peak Output Power Measurement</b>					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	ANRITSU	ML2495A	1128009	Mar. 28, 2016
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Mar. 28, 2016

<b>Antenna Conducted Spurious Emission Measurement</b>					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Oct. 11, 2016

<b>Power Spectral Density Measurement</b>					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Oct. 11, 2016

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



## ATTACHMENT A - CONDUCTED EMISSION

Test Mode: TX Mode(Adapter\_ Huntkey)

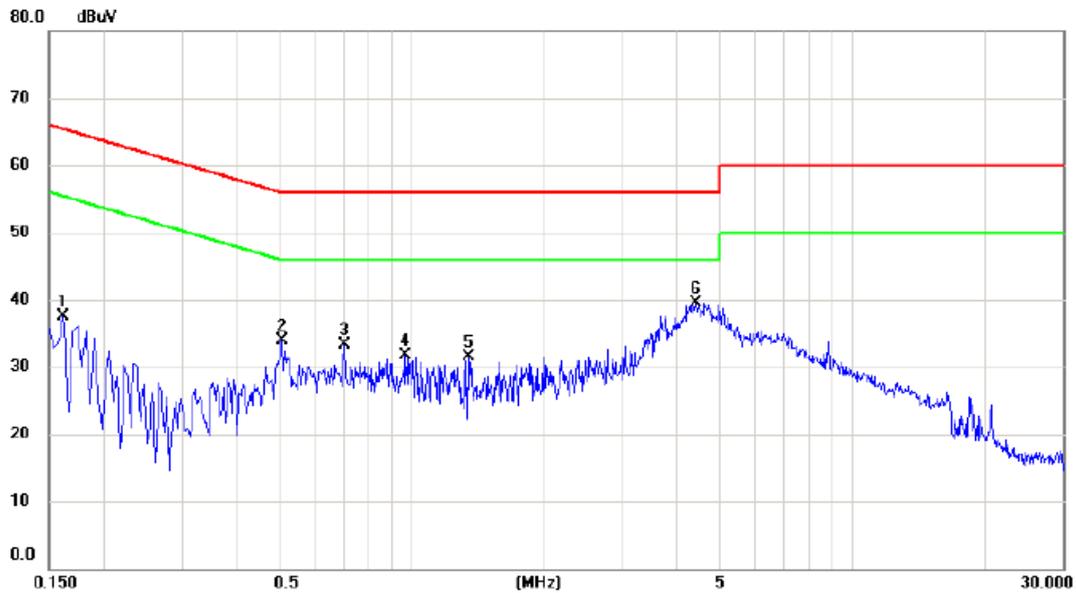
### Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1700	29.01	9.56	38.57	64.96	-26.39	peak	
2		0.5140	33.17	9.69	42.86	56.00	-13.14	peak	
3		1.7620	29.19	9.89	39.08	56.00	-16.92	peak	
4		2.7380	31.42	10.01	41.43	56.00	-14.57	peak	
5		3.8420	32.99	9.97	42.96	56.00	-13.04	peak	
6	*	4.4020	34.19	9.97	44.16	56.00	-11.84	peak	
7		4.4020	12.16	9.97	22.13	46.00	-23.87	AVG	

Test Mode: TX Mode(Adapter\_ Huntkey)

### Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1620	27.97	9.48	37.45	65.36	-27.91	peak	
2		0.5060	24.35	9.56	33.91	56.00	-22.09	peak	
3		0.7020	23.79	9.53	33.32	56.00	-22.68	peak	
4		0.9660	22.10	9.58	31.68	56.00	-24.32	peak	
5		1.3420	21.81	9.64	31.45	56.00	-24.55	peak	
6	*	4.4100	29.61	9.91	39.52	56.00	-16.48	peak	

Test Mode: TX Mode(Adapter\_ Acbel)

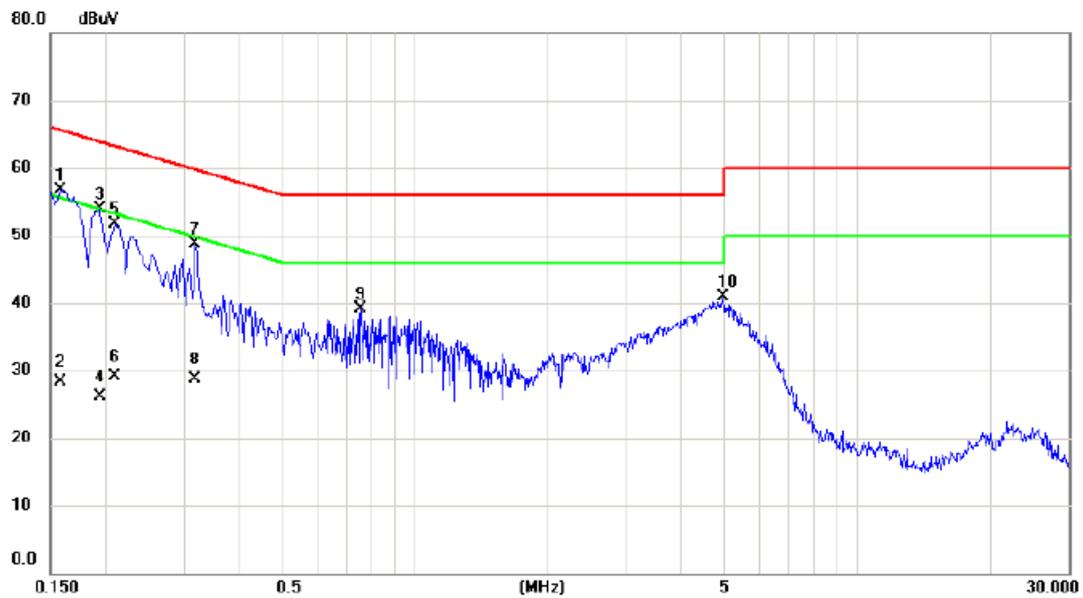
### Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1620	44.18	9.55	53.73	65.36	-11.63	peak	
2		0.1620	23.35	9.55	32.90	55.36	-22.46	AVG	
3		0.1780	43.28	9.56	52.84	64.58	-11.74	peak	
4		0.1780	24.72	9.56	34.28	54.58	-20.30	AVG	
5		0.3260	36.78	9.64	46.42	59.55	-13.13	peak	
6		0.7700	26.74	9.75	36.49	56.00	-19.51	peak	
7		1.0780	25.32	9.80	35.12	56.00	-20.88	peak	
8		4.6980	31.45	9.99	41.44	56.00	-14.56	peak	

Test Mode: TX Mode(Adapter\_ Acbel)

### Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1580	47.22	9.49	56.71	65.57	-8.86	peak	
2		0.1580	18.72	9.49	28.21	55.57	-27.36	AVG	
3		0.1940	44.31	9.50	53.81	63.86	-10.05	peak	
4		0.1940	16.51	9.50	26.01	53.86	-27.85	AVG	
5		0.2100	42.16	9.50	51.66	63.21	-11.55	peak	
6		0.2100	19.69	9.50	29.19	53.21	-24.02	AVG	
7		0.3180	39.22	9.52	48.74	59.76	-11.02	peak	
8		0.3180	19.21	9.52	28.73	49.76	-21.03	AVG	
9		0.7540	29.56	9.55	39.11	56.00	-16.89	peak	
10		4.9580	30.94	9.91	40.85	56.00	-15.15	peak	

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

Test Mode:	TX Mode(Adapter_ Huntkey)
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Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0093	0°	13.27	24.98	38.25	128.23	(89.99)	AVG
0.0093	0°	14.15	24.98	39.13	148.23	(109.11)	PEAK
0.0274	0°	6.60	23.83	30.43	118.85	(88.42)	AVG
0.0274	0°	8.40	23.83	32.23	138.85	(106.62)	PEAK
0.0353	0°	3.53	23.33	26.86	116.65	(89.79)	AVG
0.0353	0°	5.56	23.33	28.89	136.65	(107.76)	PEAK
0.0575	0°	1.20	22.25	23.45	112.41	(88.96)	AVG
0.0575	0°	2.40	22.25	24.65	132.41	(107.76)	PEAK
0.5088	0°	19.23	19.83	39.06	73.47	(34.42)	QP
1.9636	0°	23.62	19.50	43.12	69.54	(26.42)	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0123	90°	13.20	24.30	37.50	125.81	-88.31	AVG
0.0123	90°	14.60	24.30	38.90	145.81	-106.91	PEAK
0.0239	90°	7.74	24.05	31.79	120.04	-88.24	AVG
0.0239	90°	8.85	24.05	32.90	140.04	-107.13	PEAK
0.0450	90°	5.37	22.72	28.09	114.54	-86.45	AVG
0.0450	90°	6.29	22.72	29.01	134.54	-105.53	PEAK
0.0575	90°	1.63	22.25	23.88	112.41	-88.53	AVG
0.0575	90°	2.65	22.25	24.90	132.41	-107.51	PEAK
0.6235	90°	22.10	20.20	42.30	71.71	-29.41	QP
2.0576	90°	24.95	19.47	44.42	69.54	-25.12	QP

Test Mode:	TX Mode(Adapter_ Acbel)
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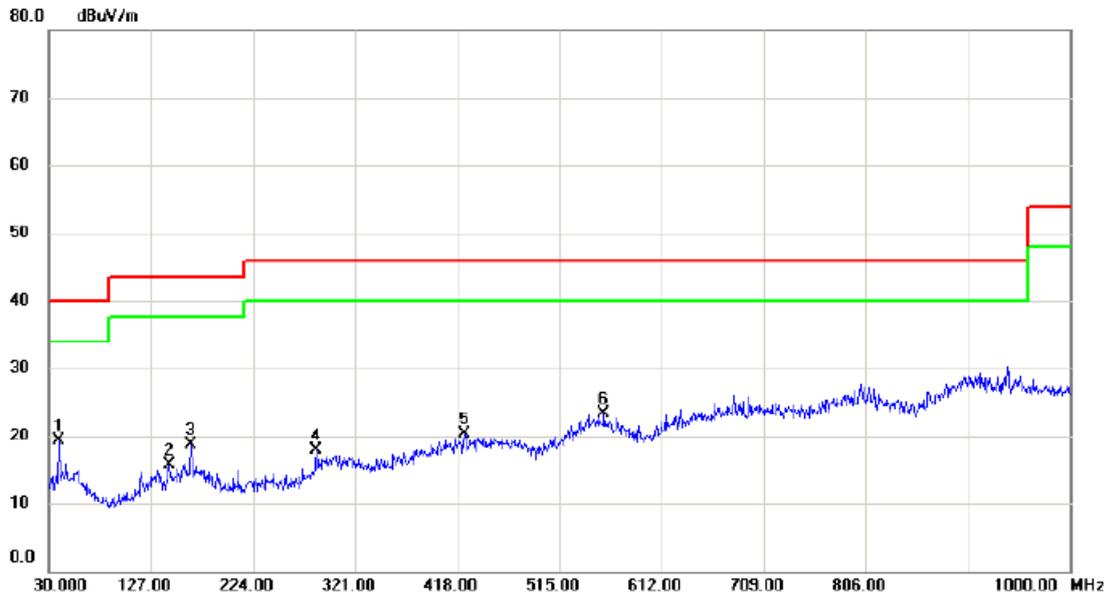
Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0091	0°	13.50	24.99	38.49	128.42	-89.93	AVG
0.0091	0°	14.41	24.99	39.40	148.42	-109.02	PEAK
0.0260	0°	6.80	23.92	30.72	119.30	-88.58	AVG
0.0260	0°	8.51	23.92	32.43	139.30	-106.87	PEAK
0.0347	0°	3.46	23.37	26.83	116.80	-89.97	AVG
0.0347	0°	5.39	23.37	28.76	136.80	-108.04	PEAK
0.0553	0°	1.24	22.29	23.53	112.75	-89.22	AVG
0.0553	0°	2.49	22.29	24.78	132.75	-107.97	PEAK
0.5092	0°	19.48	19.83	39.31	73.47	-34.16	QP
1.9526	0°	23.36	19.50	42.86	69.54	-26.68	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0127	90°	13.51	24.30	37.81	125.53	-87.72	AVG
0.0127	90°	14.78	24.30	39.08	145.53	-106.45	PEAK
0.0284	90°	7.52	23.77	31.29	118.54	-87.25	AVG
0.0284	90°	8.63	23.77	32.40	138.54	-106.14	PEAK
0.0360	90°	5.46	23.29	28.75	116.48	-87.73	AVG
0.0360	90°	6.35	23.29	29.64	136.48	-106.84	PEAK
0.0561	90°	1.87	22.28	24.15	112.62	-88.48	AVG
0.0561	90°	2.64	22.28	24.92	132.62	-107.71	PEAK
0.6249	90°	22.49	20.20	42.69	71.69	-29.00	QP
2.0552	90°	24.50	19.47	43.97	69.54	-25.57	QP

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

Test Mode: TX 2402MHz -CH00(Adapter\_ Huntkey)

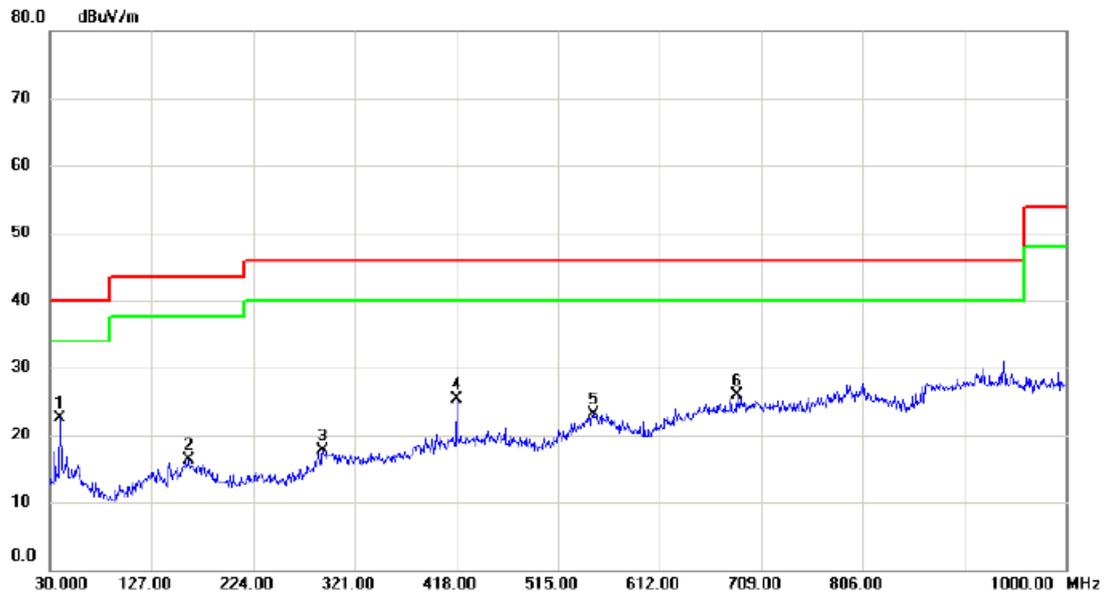
**Vertical**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	39.7000	33.24	-13.98	19.26	40.00	-20.74	peak	
2		144.4600	29.28	-13.60	15.68	43.50	-27.82	peak	
3		164.8300	31.43	-12.65	18.78	43.50	-24.72	peak	
4		284.1400	29.65	-11.72	17.93	46.00	-28.07	peak	
5		424.7900	28.99	-8.70	20.29	46.00	-25.71	peak	
6		557.6800	28.78	-5.56	23.22	46.00	-22.78	peak	

Test Mode: TX 2402MHz -CH00(Adapter\_ Huntkey)

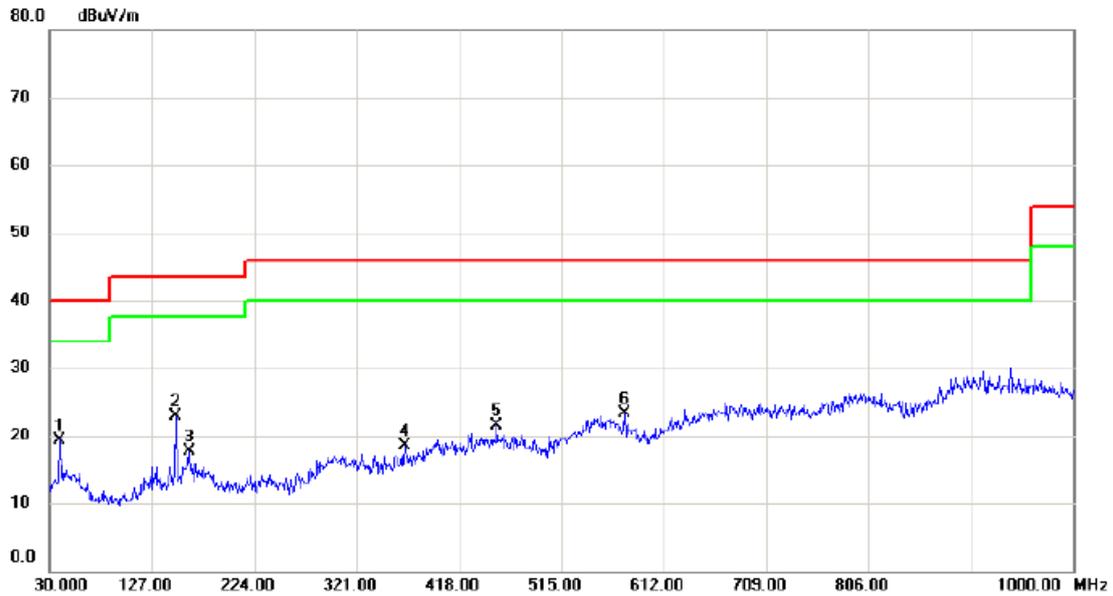
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	39.7000	36.45	-13.98	22.47	40.00	-17.53	peak	
2		161.9200	28.75	-12.52	16.23	43.50	-27.27	peak	
3		290.9300	28.61	-10.95	17.66	46.00	-28.34	peak	
4		418.0000	34.15	-8.87	25.28	46.00	-20.72	peak	
5		548.9500	28.42	-5.24	23.18	46.00	-22.82	peak	
6		685.7200	30.37	-4.45	25.92	46.00	-20.08	peak	

Test Mode: TX 2440MHz -CH19(Adapter\_ Huntkey)

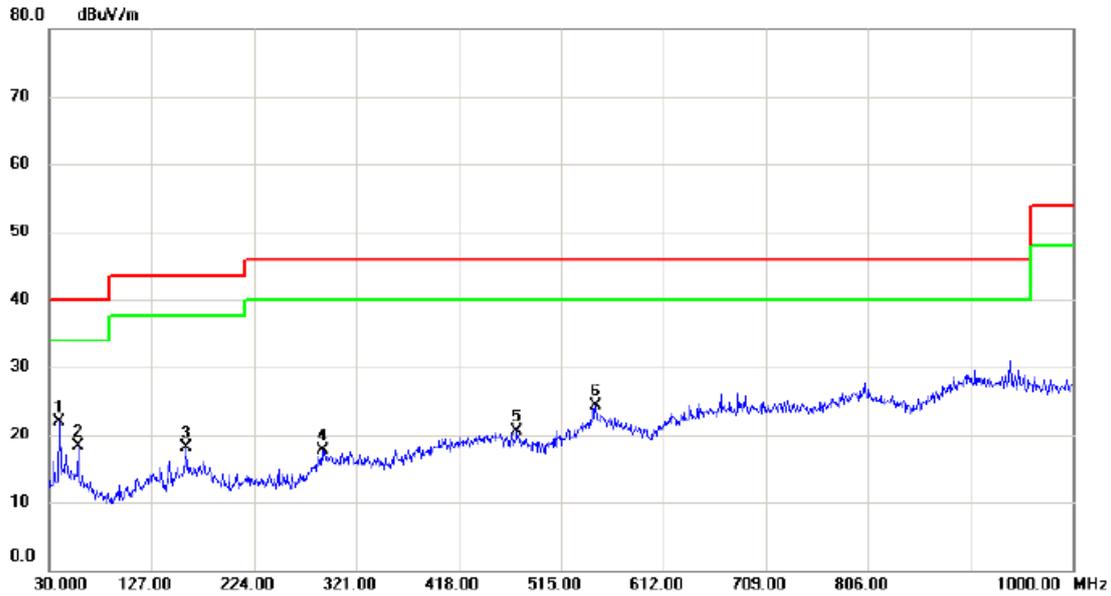
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	39.7000	33.38	-13.98	19.40	40.00	-20.60	peak	
2		149.3100	35.90	-13.08	22.82	43.50	-20.68	peak	
3		161.9200	30.20	-12.52	17.68	43.50	-25.82	peak	
4		366.5900	29.10	-10.67	18.43	46.00	-27.57	peak	
5		453.8900	29.63	-8.20	21.43	46.00	-24.57	peak	
6		575.1400	29.87	-6.51	23.36	46.00	-22.64	peak	

Test Mode: TX 2440MHz -CH19(Adapter\_ Huntkey)

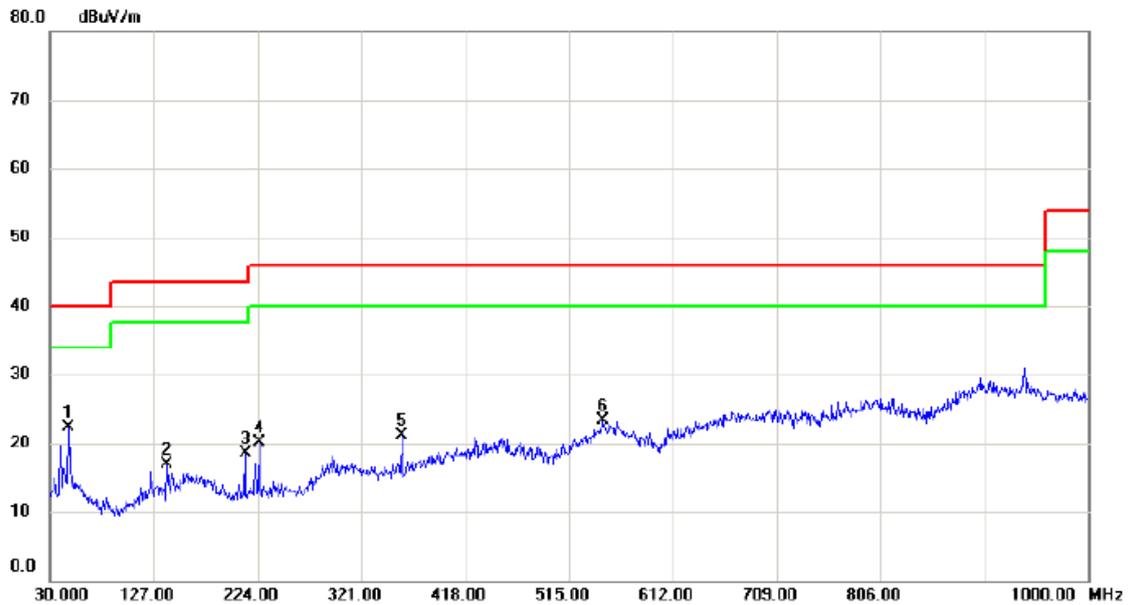
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	39.7000	35.91	-13.98	21.93	40.00	-18.07	peak	
2		57.1600	32.28	-13.92	18.36	40.00	-21.64	peak	
3		159.9800	30.56	-12.42	18.14	43.50	-25.36	peak	
4		288.9900	28.89	-11.13	17.76	46.00	-28.24	peak	
5		473.2900	29.45	-8.95	20.50	46.00	-25.50	peak	
6		547.9800	29.62	-5.33	24.29	46.00	-21.71	peak	

Test Mode: TX 2480MHz -CH39(Adapter\_ Huntkey)

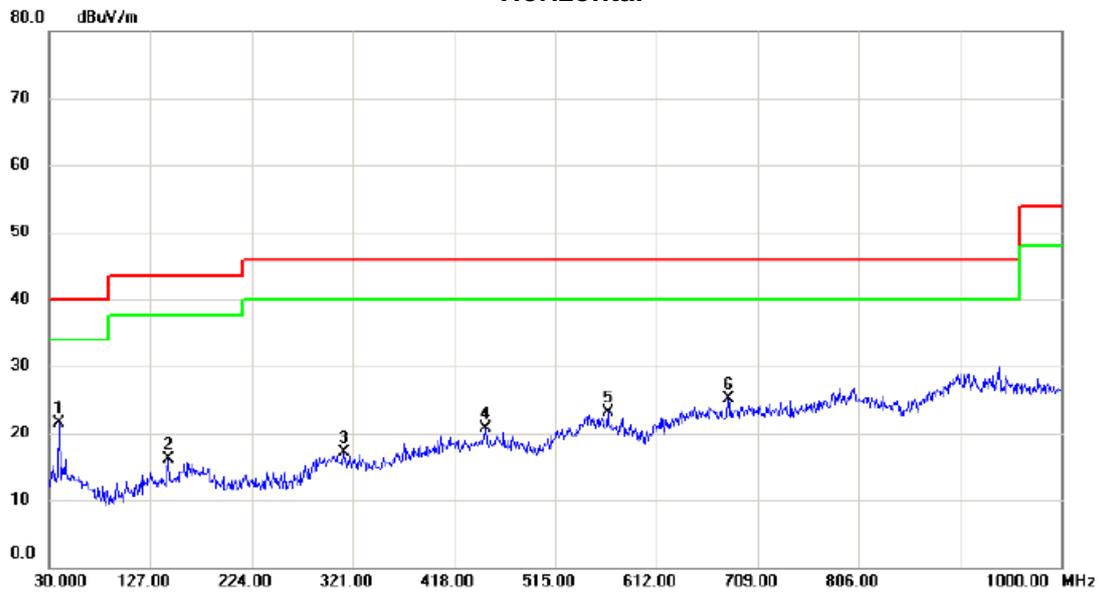
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	47.4600	35.87	-13.62	22.25	40.00	-17.75	peak	
2		139.6100	30.95	-14.03	16.92	43.50	-26.58	peak	
3		212.3600	33.22	-14.72	18.50	43.50	-25.00	peak	
4		225.9400	34.53	-14.33	20.20	46.00	-25.80	peak	
5		358.8300	32.17	-10.98	21.19	46.00	-24.81	peak	
6		547.0100	28.66	-5.44	23.22	46.00	-22.78	peak	

Test Mode: TX 2480MHz -CH39(Adapter\_ Huntkey)

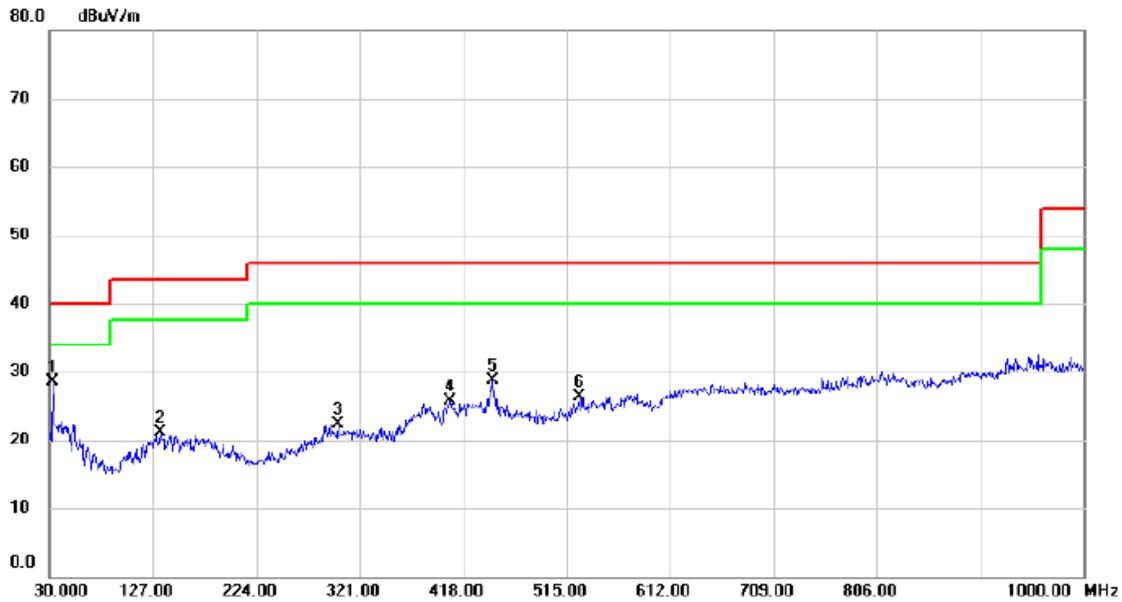
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	39.7000	35.39	-13.98	21.41	40.00	-18.59	peak	
2		144.4600	29.64	-13.60	16.04	43.50	-27.46	peak	
3		312.2700	27.85	-10.71	17.14	46.00	-28.86	peak	
4		448.0700	28.76	-8.10	20.66	46.00	-25.34	peak	
5		565.4400	29.17	-5.97	23.20	46.00	-22.80	peak	
6		680.8700	29.66	-4.55	25.11	46.00	-20.89	peak	

Test Mode: TX 2402MHz -CH00(Adapter\_Acbel)

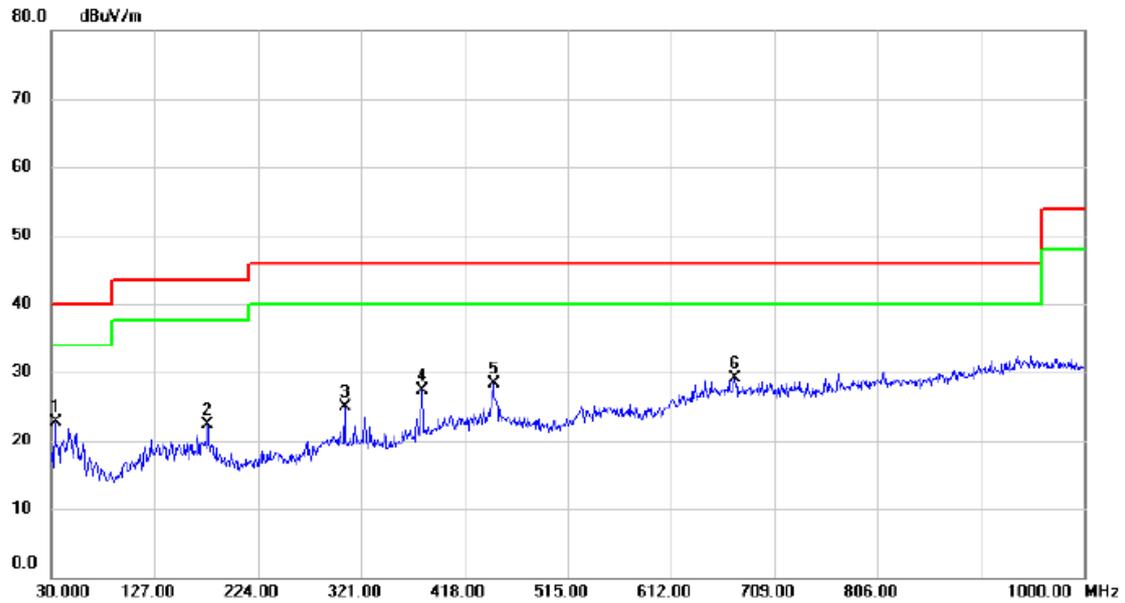
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	32.9100	42.14	-13.62	28.52	40.00	-11.48	peak	
2		133.7900	32.67	-11.53	21.14	43.50	-22.36	peak	
3		300.6300	31.94	-9.59	22.35	46.00	-23.65	peak	
4		405.3900	32.88	-7.12	25.76	46.00	-20.24	peak	
5		445.1600	34.74	-6.03	28.71	46.00	-17.29	peak	
6		527.6100	32.20	-5.86	26.34	46.00	-19.66	peak	

Test Mode: TX 2402MHz -CH00(Adapter\_Acbel)

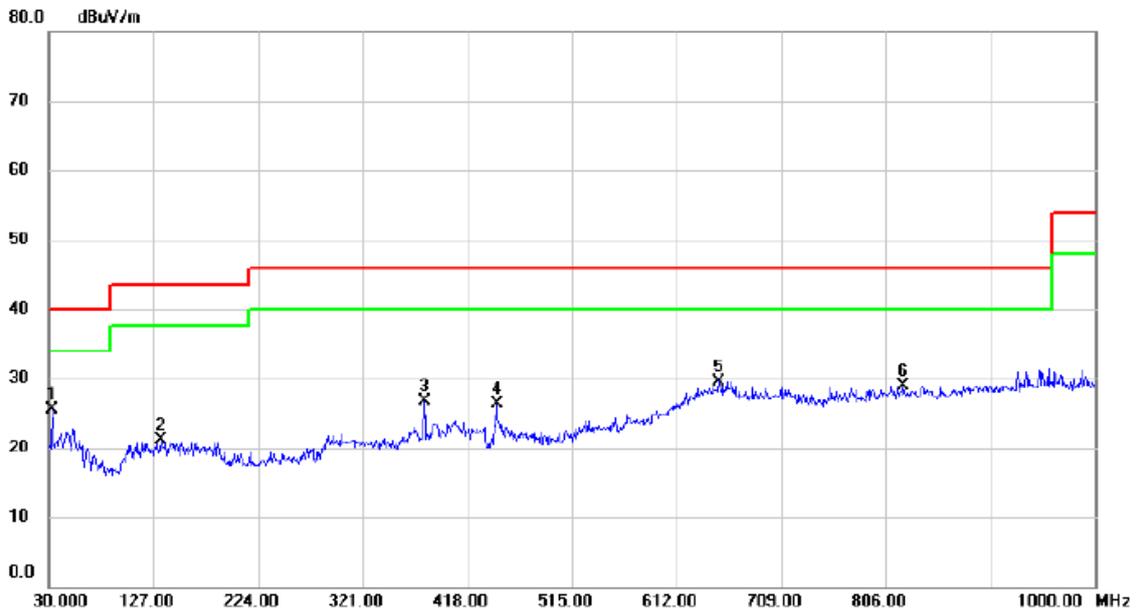
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		33.8800	35.95	-13.32	22.63	40.00	-17.37	peak	
2		176.4700	33.75	-11.35	22.40	43.50	-21.10	peak	
3		305.4800	34.44	-9.63	24.81	46.00	-21.19	peak	
4		378.2300	35.65	-8.42	27.23	46.00	-18.77	peak	
5		445.1600	34.39	-6.03	28.36	46.00	-17.64	peak	
6	*	672.1400	30.71	-1.57	29.14	46.00	-16.86	peak	

Test Mode: TX 2440MHz -CH19(Adapter\_Acbel)

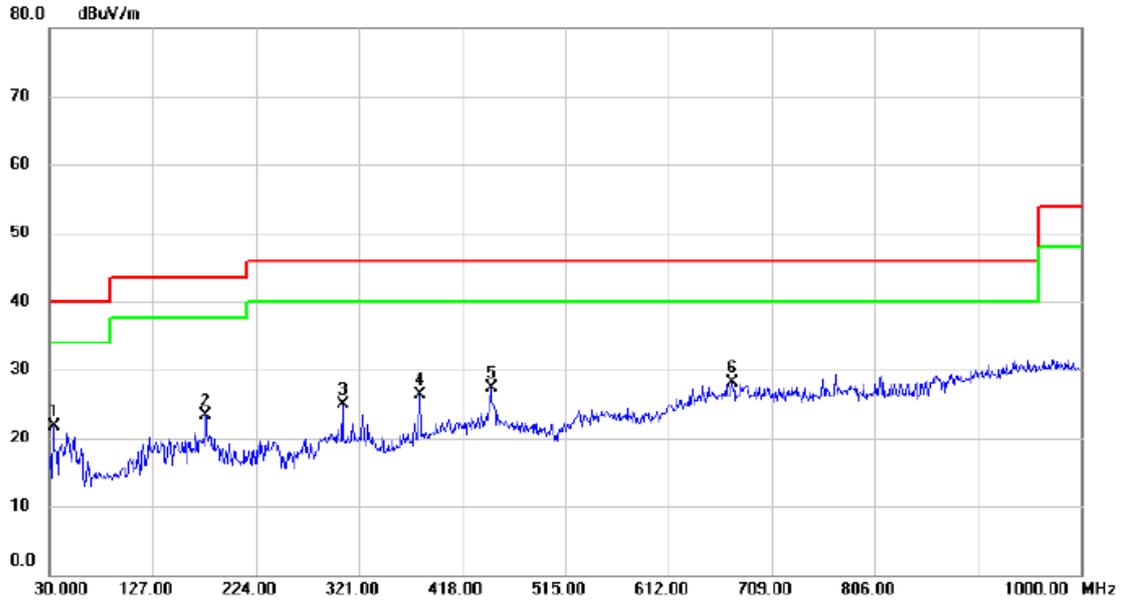
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	32.9100	39.14	-13.62	25.52	40.00	-14.48	peak	
2		133.7900	32.67	-11.53	21.14	43.50	-22.36	peak	
3		378.2300	35.14	-8.42	26.72	46.00	-19.28	peak	
4		445.1600	32.24	-6.03	26.21	46.00	-19.79	peak	
5		651.7700	31.23	-1.63	29.60	46.00	-16.40	peak	
6		821.5200	28.82	0.14	28.96	46.00	-17.04	peak	

Test Mode: TX 2440MHz -CH19(Adapter\_Acbel)

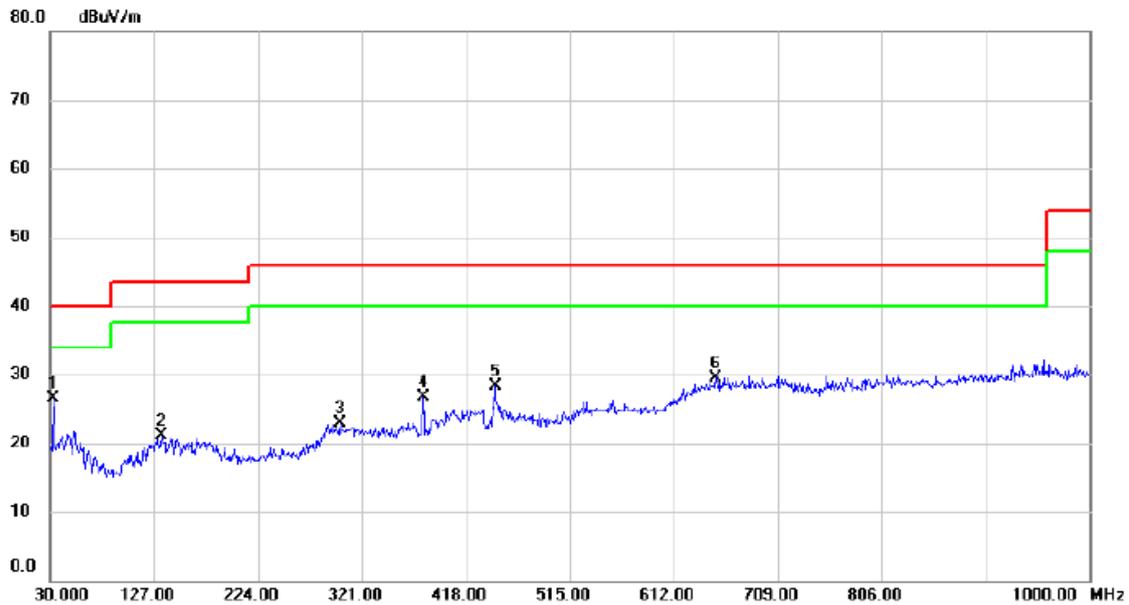
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		33.8800	34.95	-13.32	21.63	40.00	-18.37	peak	
2		176.4700	34.75	-11.35	23.40	43.50	-20.10	peak	
3		305.4800	34.44	-9.63	24.81	46.00	-21.19	peak	
4		378.2300	34.65	-8.42	26.23	46.00	-19.77	peak	
5		445.1600	33.39	-6.03	27.36	46.00	-18.64	peak	
6	*	672.1400	29.71	-1.57	28.14	46.00	-17.86	peak	

Test Mode: TX 2480MHz -CH39(Adapter\_Acbel)

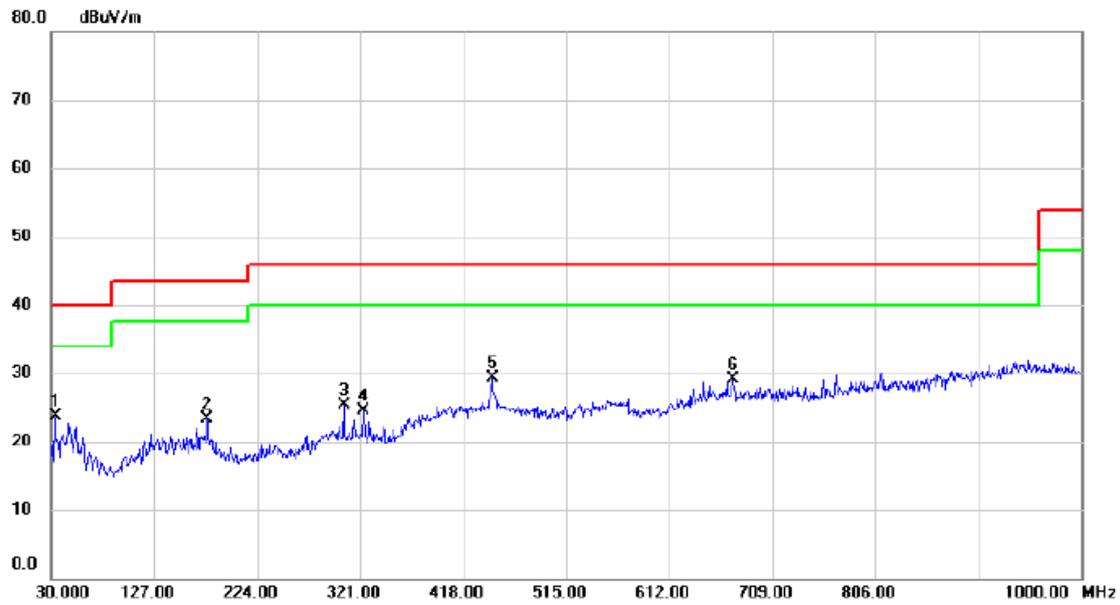
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	32.9100	40.14	-13.62	26.52	40.00	-13.48	peak	
2		133.7900	32.67	-11.53	21.14	43.50	-22.36	peak	
3		300.6300	32.44	-9.59	22.85	46.00	-23.15	peak	
4		378.2300	35.14	-8.42	26.72	46.00	-19.28	peak	
5		445.1600	34.24	-6.03	28.21	46.00	-17.79	peak	
6		651.7700	31.23	-1.63	29.60	46.00	-16.40	peak	

Test Mode: TX 2480MHz -CH39(Adapter\_Acbel)

Horizontal

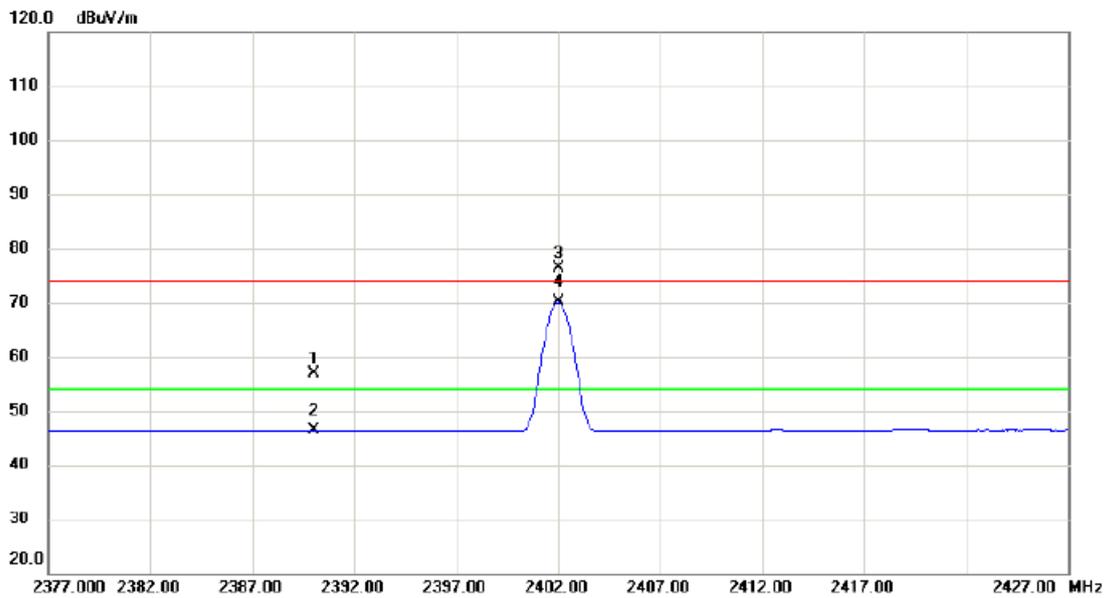


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	33.8800	36.95	-13.32	23.63	40.00	-16.37	peak	
2		176.4700	34.75	-11.35	23.40	43.50	-20.10	peak	
3		305.4800	34.94	-9.63	25.31	46.00	-20.69	peak	
4		323.9100	34.27	-9.74	24.53	46.00	-21.47	peak	
5		445.1600	35.39	-6.03	29.36	46.00	-16.64	peak	
6		672.1400	30.71	-1.57	29.14	46.00	-16.86	peak	

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

Orthogonal Axis :	X
Test Mode :	TX 2402MHz _CH00_1Mbps

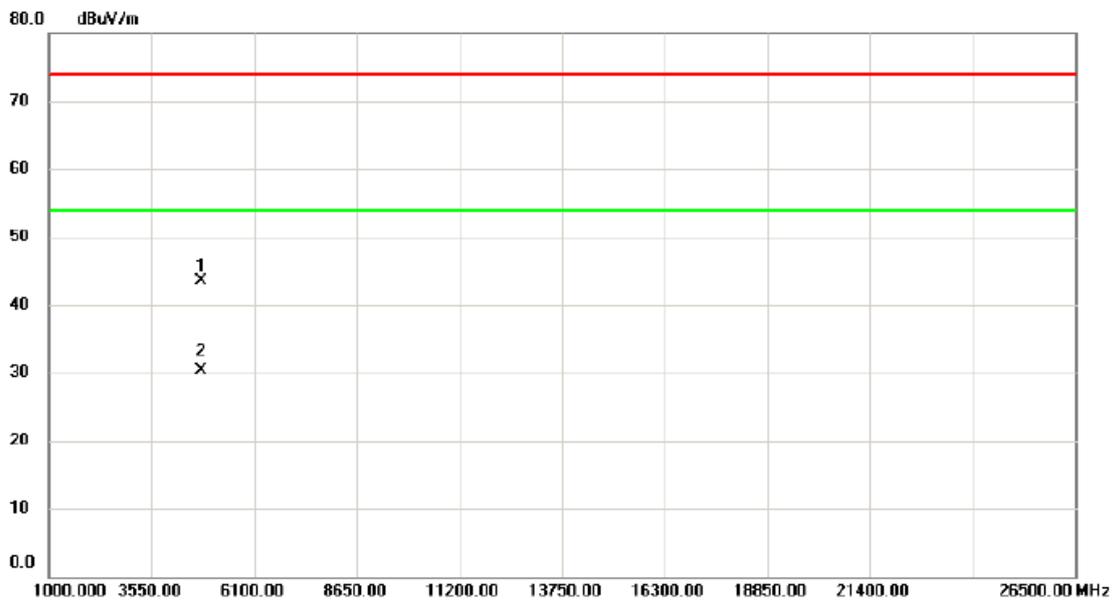
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	22.66	34.23	56.89	74.00	-17.11	peak	
2		2390.000	12.13	34.23	46.36	54.00	-7.64	AVG	
3	X	2402.000	42.15	34.30	76.45	74.00	2.45	peak	No Limit
4	*	2402.000	35.71	34.30	70.01	54.00	16.01	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2402MHz _CH00_1Mbps

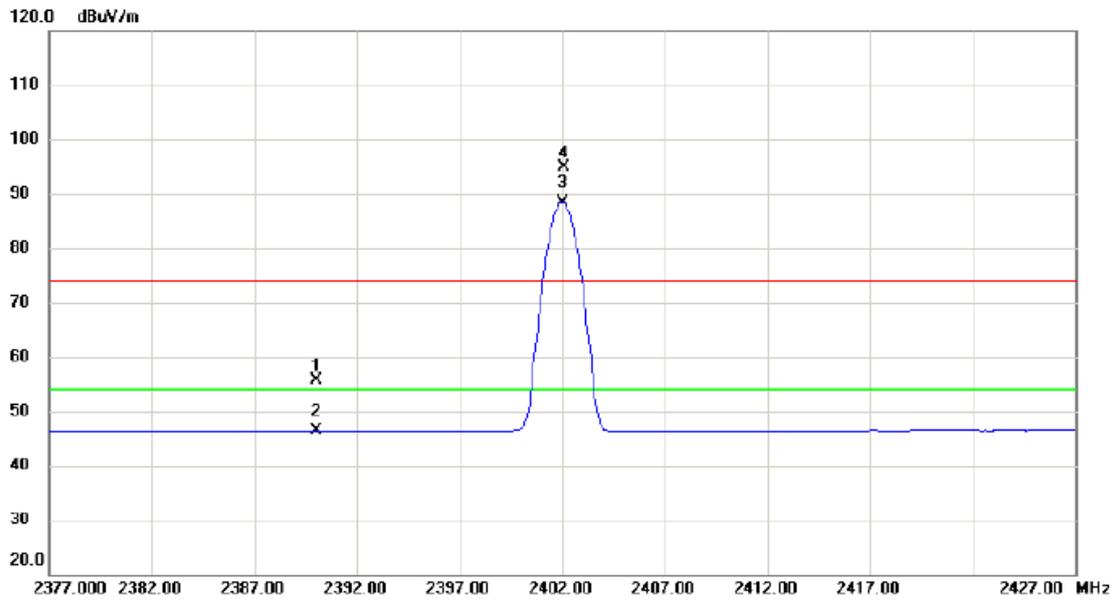
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4805.430	36.74	6.76	43.50	74.00	-30.50	peak	
2	*	4805.700	23.50	6.76	30.26	54.00	-23.74	AVG	

Orthogonal Axis :	X
Test Mode :	TX 2402MHz _CH00_1Mbps

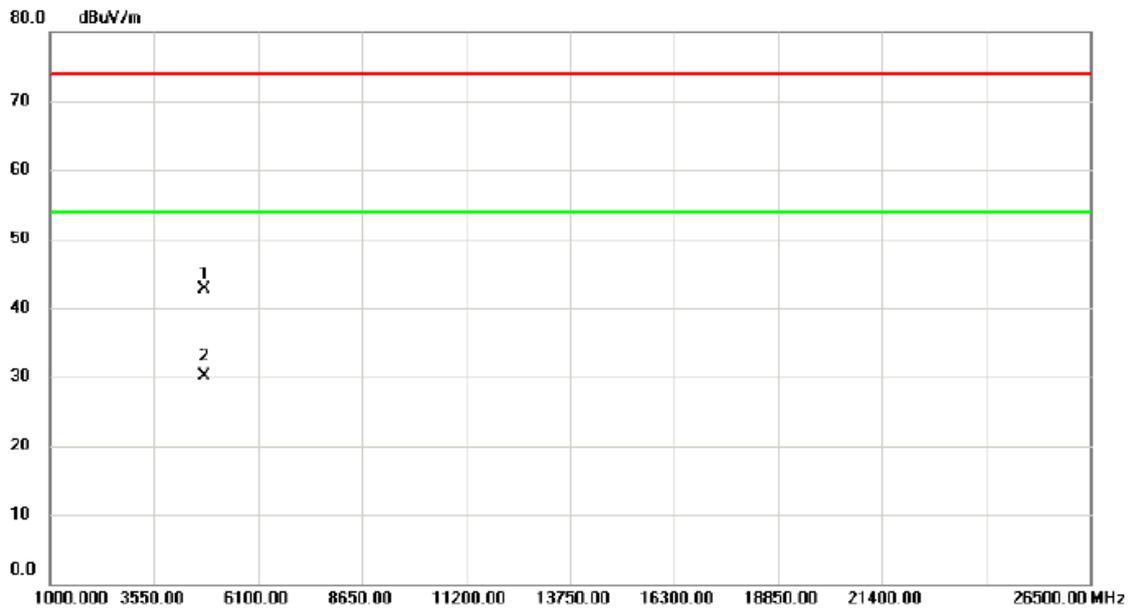
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	21.45	34.23	55.68	74.00	-18.32	peak	
2		2390.000	12.11	34.23	46.34	54.00	-7.66	AVG	
3	*	2402.000	54.13	34.30	88.43	54.00	34.43	AVG	No Limit
4	X	2402.100	60.69	34.30	94.99	74.00	20.99	peak	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2402MHz _CH00_1Mbps

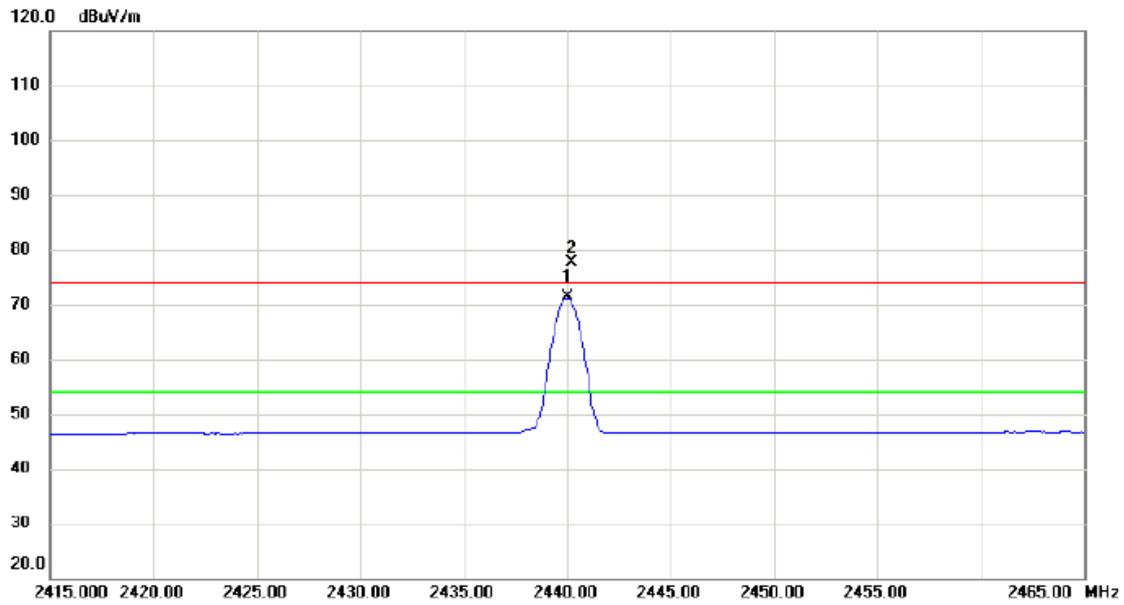
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4804.300	35.89	6.76	42.65	74.00	-31.35	peak	
2 *	4804.600	23.38	6.76	30.14	54.00	-23.86	AVG	

Orthogonal Axis :	X
Test Mode :	TX 2440MHz_CH19_1Mbps

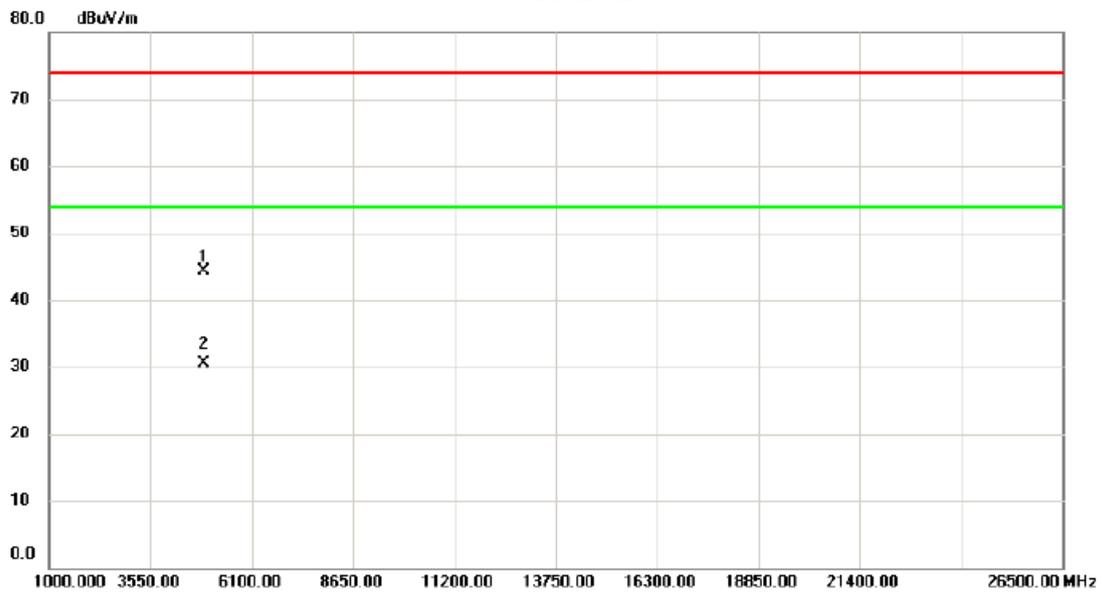
### Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2440.000	36.74	34.52	71.26	54.00	17.26	AVG	No Limit
2	X	2440.250	43.07	34.52	77.59	74.00	3.59	peak	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2440MHz _CH19_1Mbps

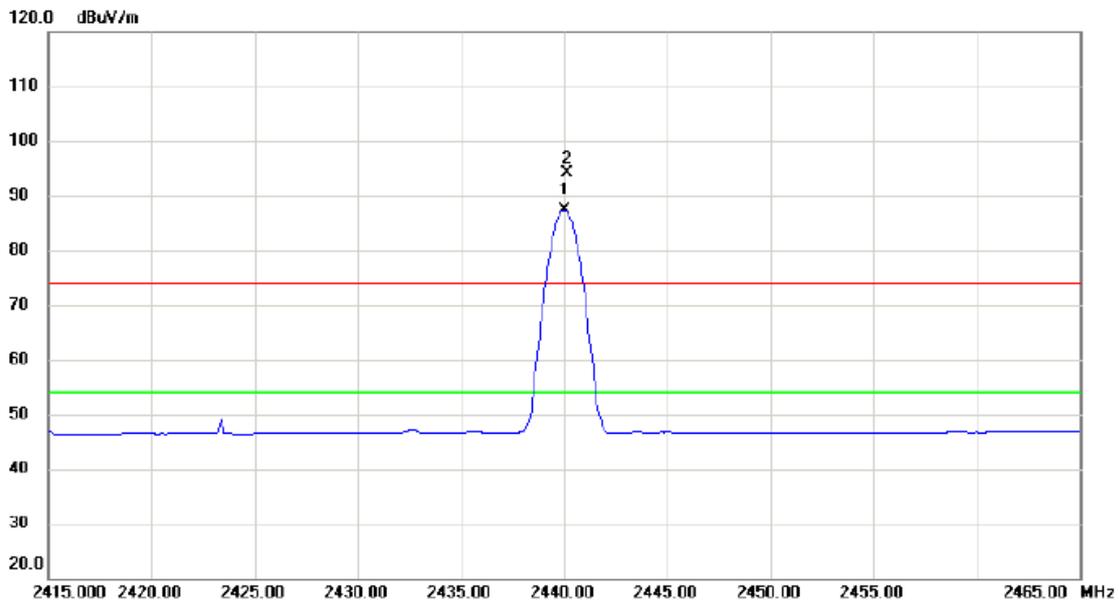
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4879.250	37.33	6.99	44.32	74.00	-29.68	peak	
2	*	4880.360	23.53	6.99	30.52	54.00	-23.48	AVG	

Orthogonal Axis :	X
Test Mode :	TX 2440MHz _CH19_1Mbps

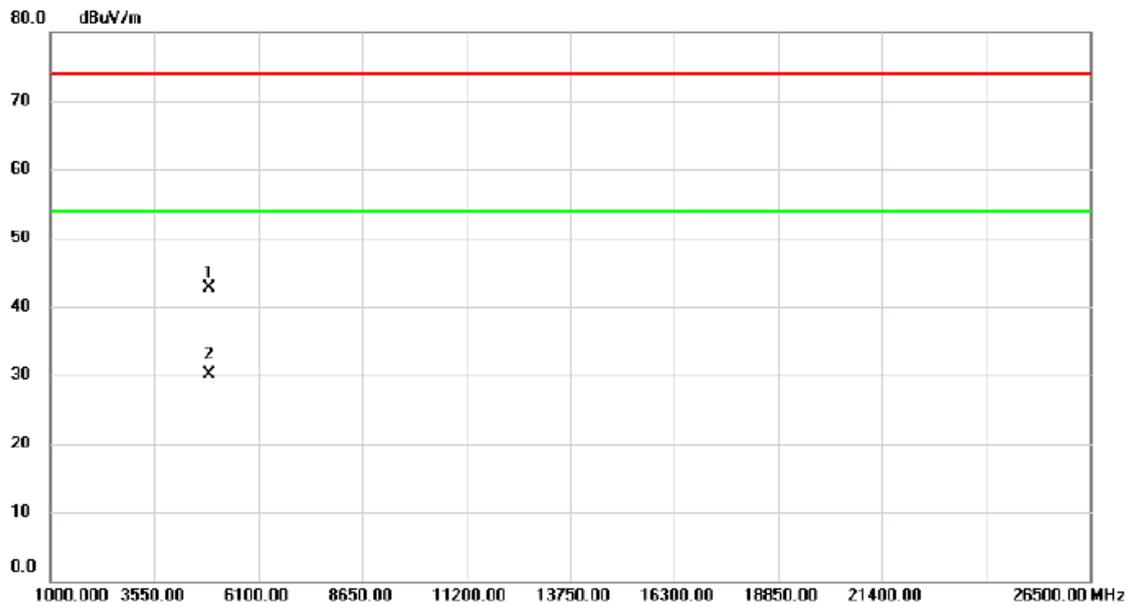
### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2440.000	52.98	34.52	87.50	54.00	33.50	AVG	No Limit
2	X	2440.150	59.49	34.52	94.01	74.00	20.01	peak	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2440MHz _CH19_1Mbps

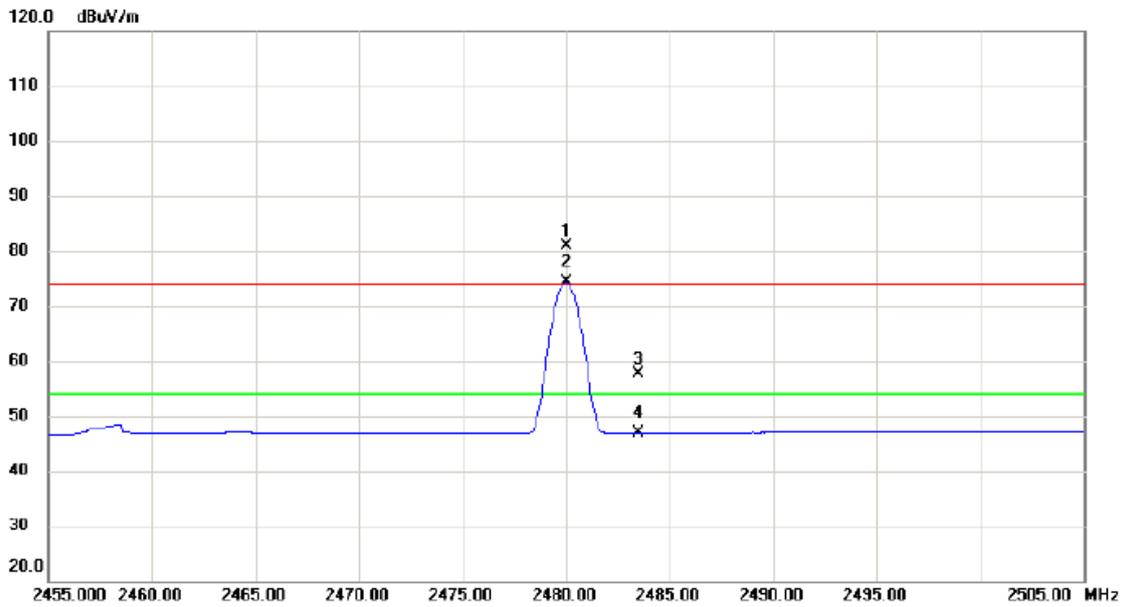
### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4879.300	35.66	6.99	42.65	74.00	-31.35	peak	
2	*	4880.600	23.15	6.99	30.14	54.00	-23.86	AVG	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz_CH39_1Mbps

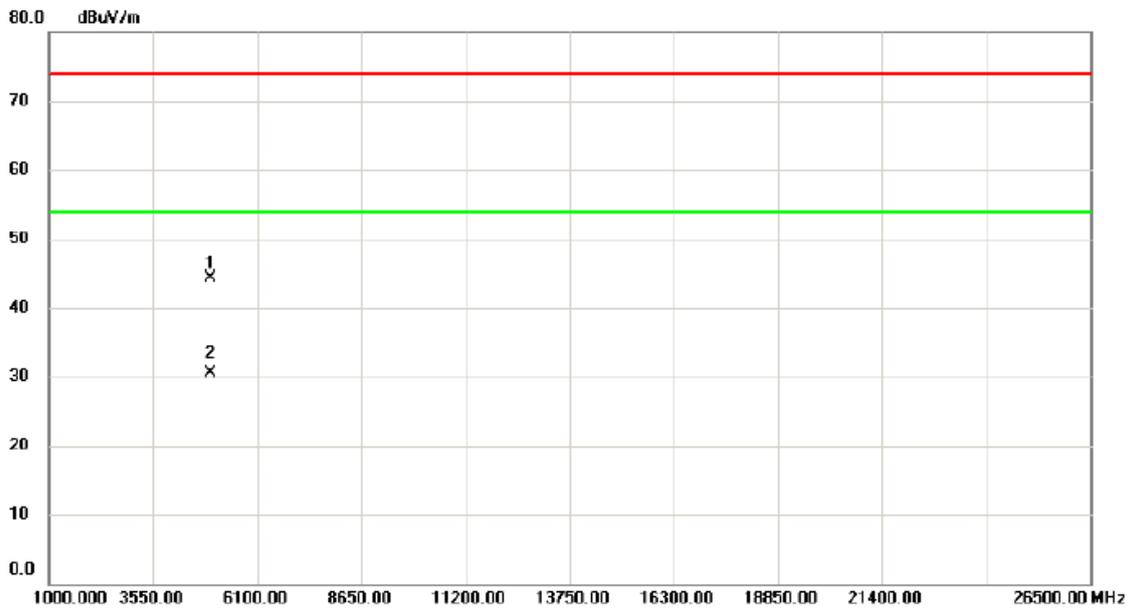
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2480.000	46.16	34.75	80.91	74.00	6.91	peak	No Limit
2	*	2480.000	39.55	34.75	74.30	54.00	20.30	AVG	No Limit
3		2483.500	22.89	34.78	57.67	74.00	-16.33	peak	
4		2483.500	12.15	34.78	46.93	54.00	-7.07	AVG	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz _CH39_1Mbps

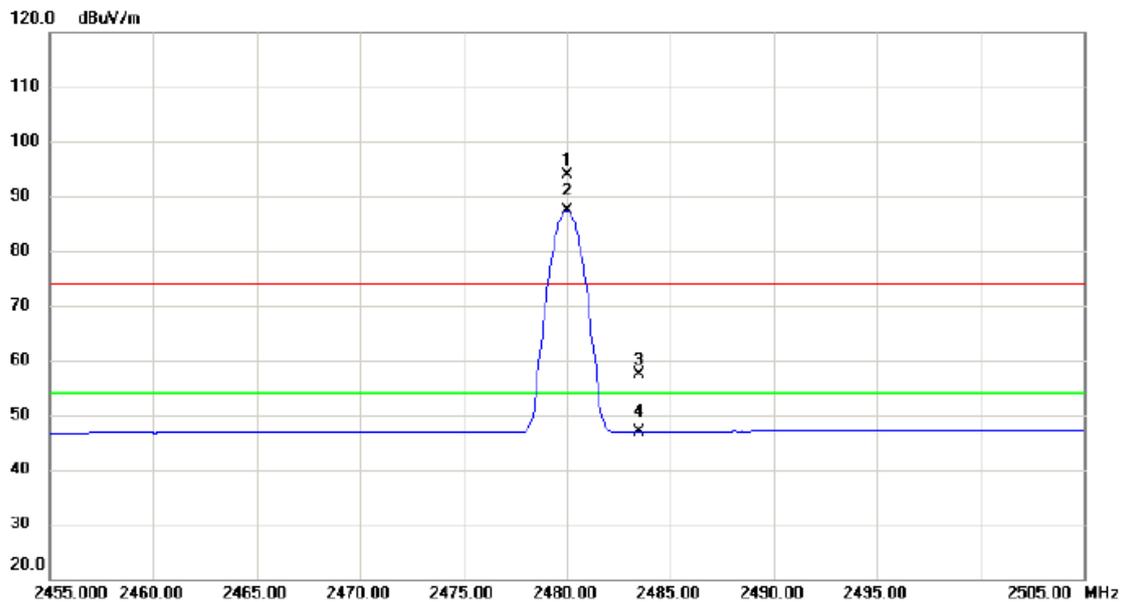
### Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4960.250	37.10	7.22	44.32	74.00	-29.68	peak	
2	*	4960.360	23.30	7.22	30.52	54.00	-23.48	AVG	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz _CH39_1Mbps

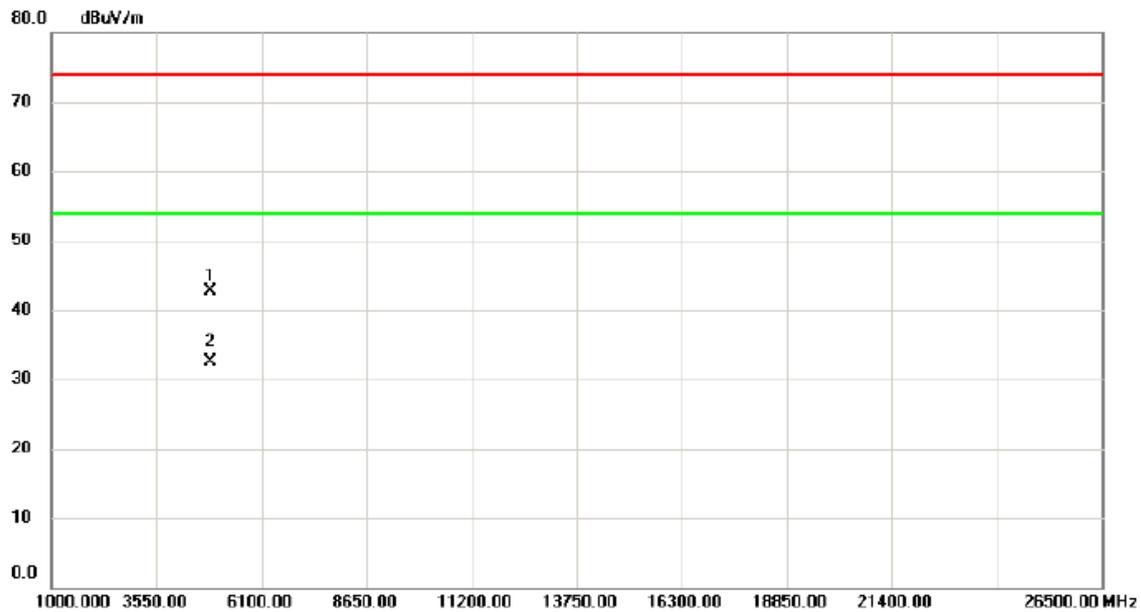
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2480.000	59.25	34.75	94.00	74.00	20.00	peak	No Limit
2	*	2480.000	52.68	34.75	87.43	54.00	33.43	AVG	No Limit
3		2483.500	22.63	34.78	57.41	74.00	-16.59	peak	
4		2483.500	12.16	34.78	46.94	54.00	-7.06	AVG	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz _CH39_1Mbps

### Horizontal



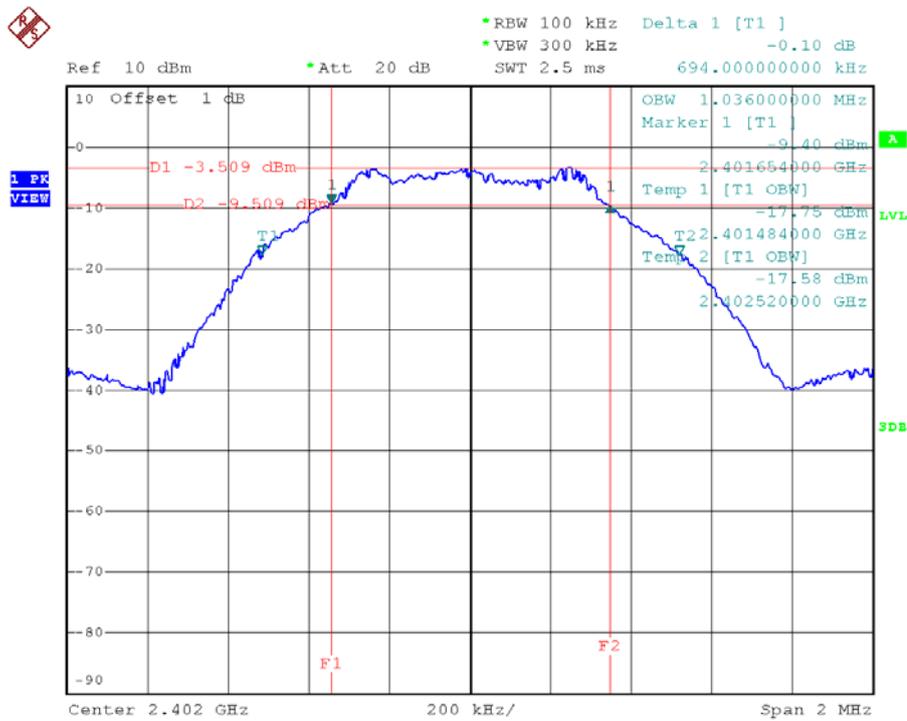
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4860.500	35.71	6.94	42.65	74.00	-31.35	peak	
2	*	4860.720	25.64	6.94	32.58	54.00	-21.42	AVG	

## ATTACHMENT E - BANDWIDTH

Test Mode : CH00, CH19 , CH39 - 1Mbps

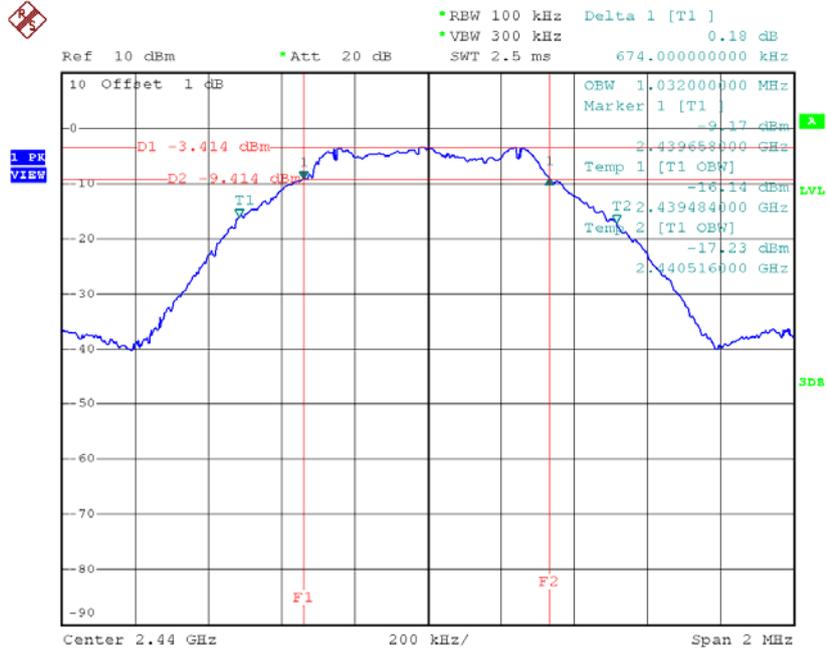
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	0.694	1.036	500	Complies
2440	0.674	1.032	500	Complies
2480	0.688	1.036	500	Complies

### TX CH00



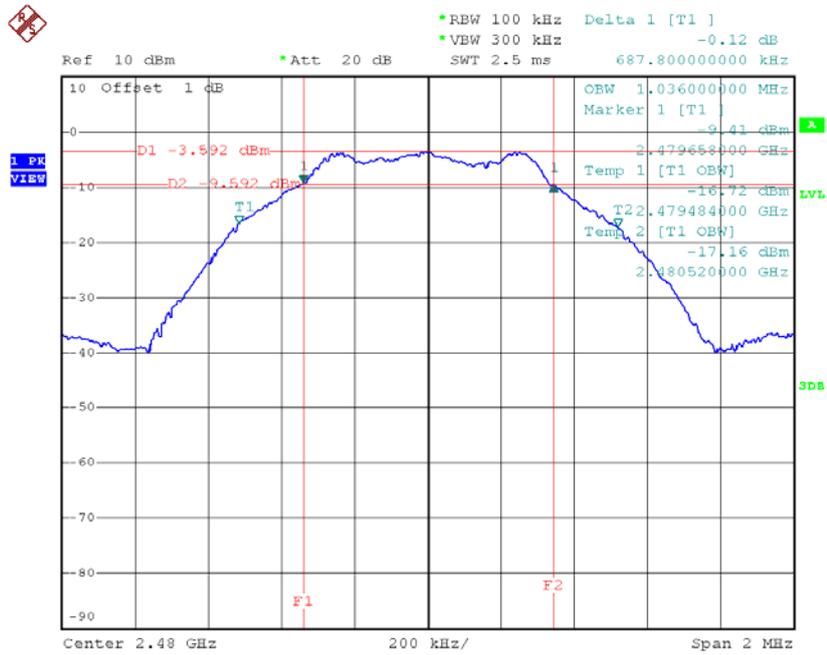
Date: 14.DEC.2015 14:23:07

### TX CH19



Date: 14.DEC.2015 14:24:47

### TX CH39



Date: 14.DEC.2015 14:26:00

## ATTACHMENT F - MAXIMUM OUTPUT POWER TEST

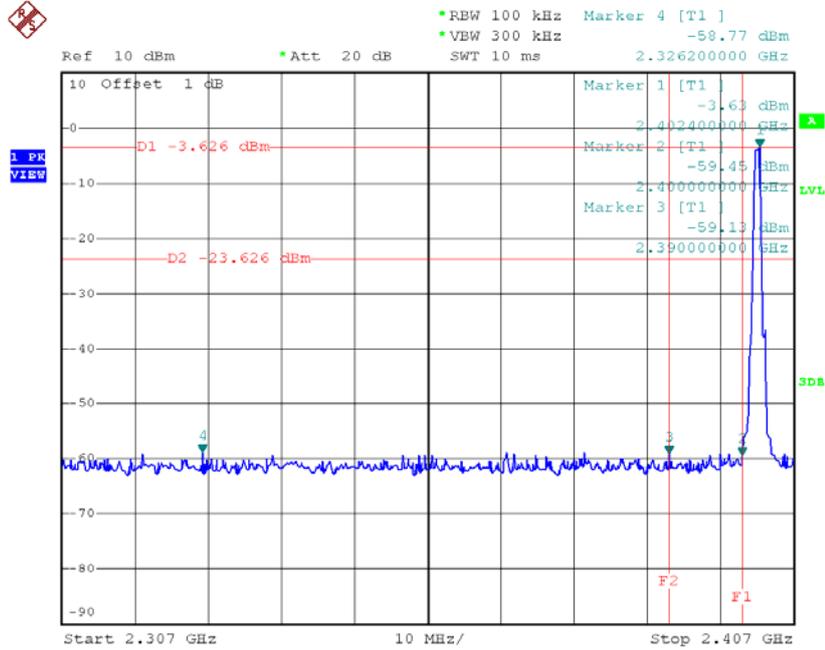
Test Mode : CH00, CH19 , CH39 - 1Mbps

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watt)	Max. Limit (dBm)	Max. Limit (Watt)	Test Result
2402	-2.75	0.0005	30.00	1.00	Complies
2440	-2.58	0.0006	30.00	1.00	Complies
2480	-2.32	0.0006	30.00	1.00	Complies

## **ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION**

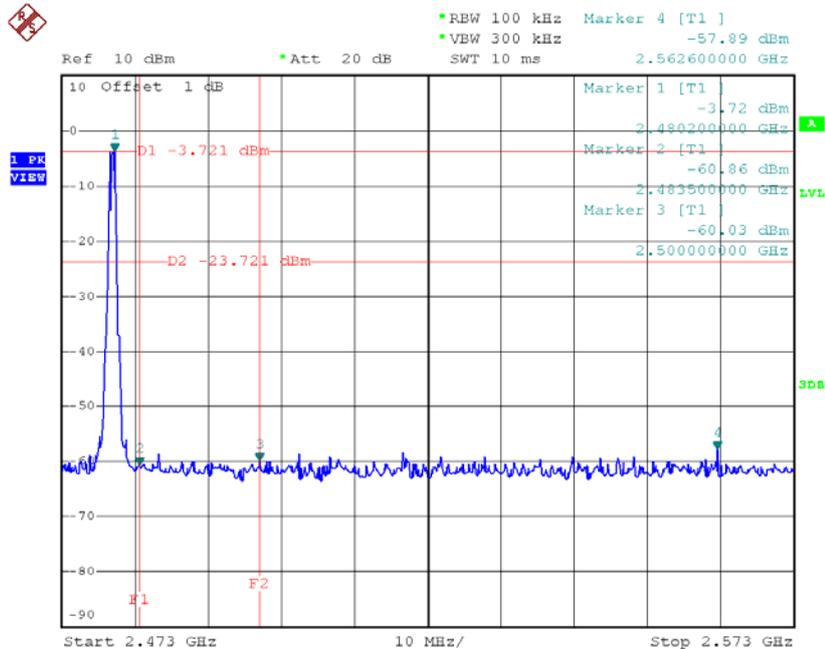
Test Mode : CH00, CH19 , CH39 - 1Mbps

### CH00 (Lower) - 1Mbps



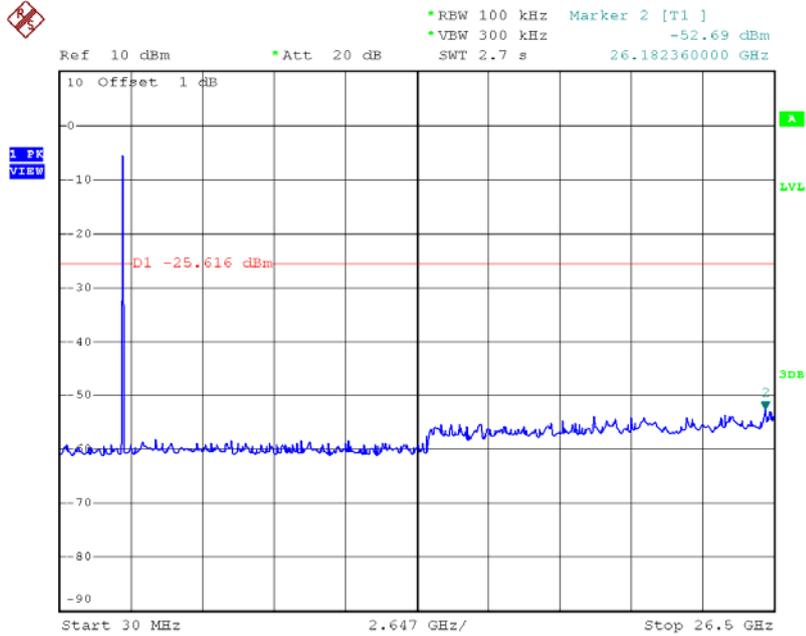
Date: 14.DEC.2015 14:23:15

### CH39 (upper) - 1Mbps



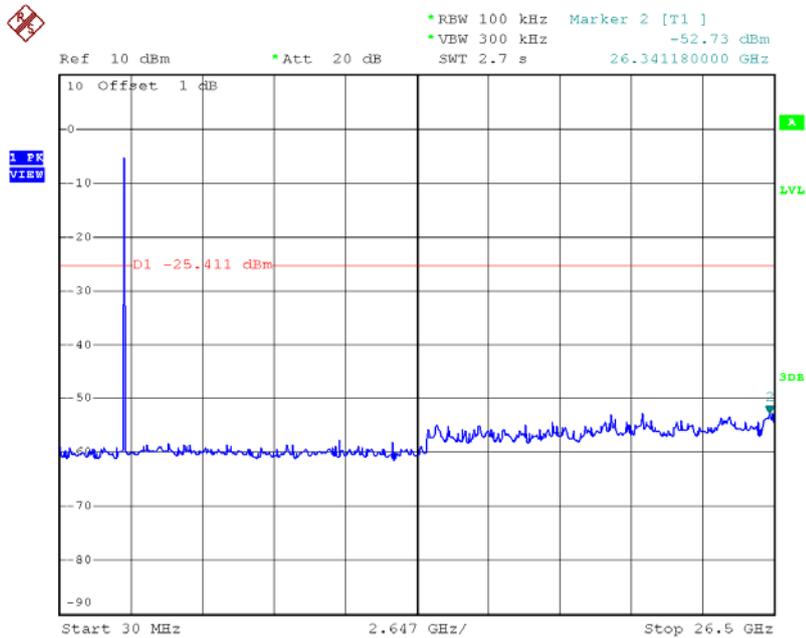
Date: 14.DEC.2015 14:26:09

### CH00 (10 Harmonic of the frequency)



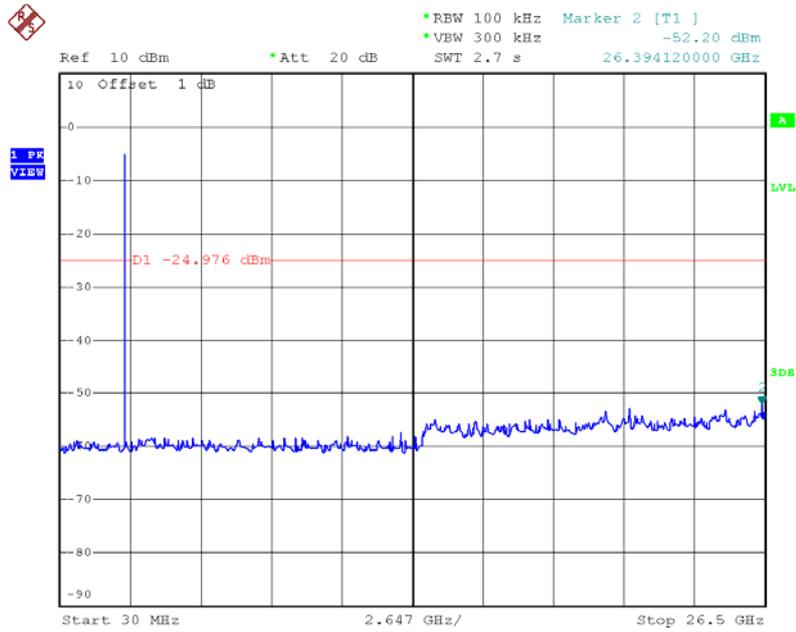
Date: 14.DEC.2015 14:23:29

### CH19 (10 Harmonic of the frequency)



Date: 14.DEC.2015 14:25:01

### CH39 (10 Harmonic of the frequency)



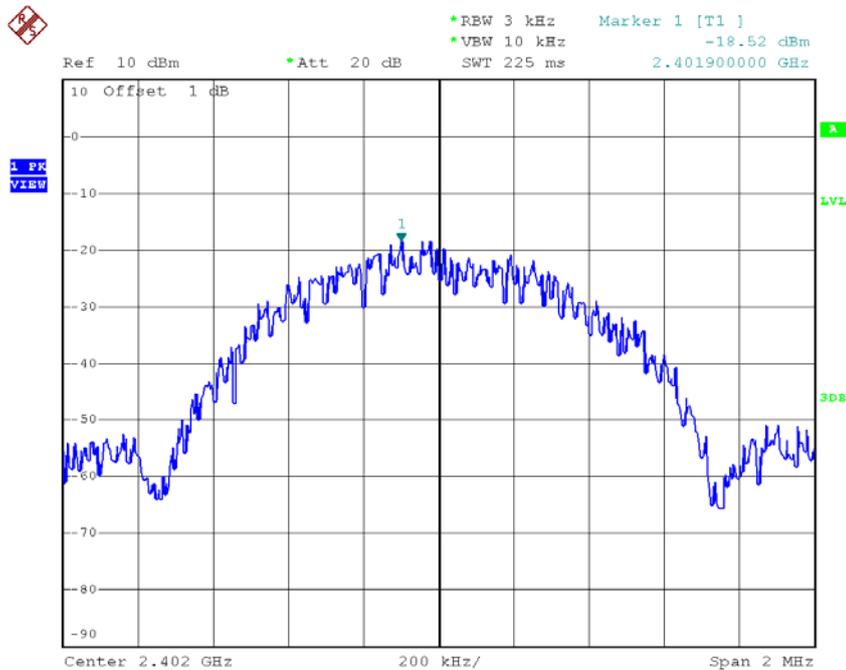
Date: 14.DEC.2015 14:26:23

## ATTACHMENT H - POWER SPECTRAL DENSITY TEST

Test Mode : CH00, CH19 , CH39 - 1Mbps

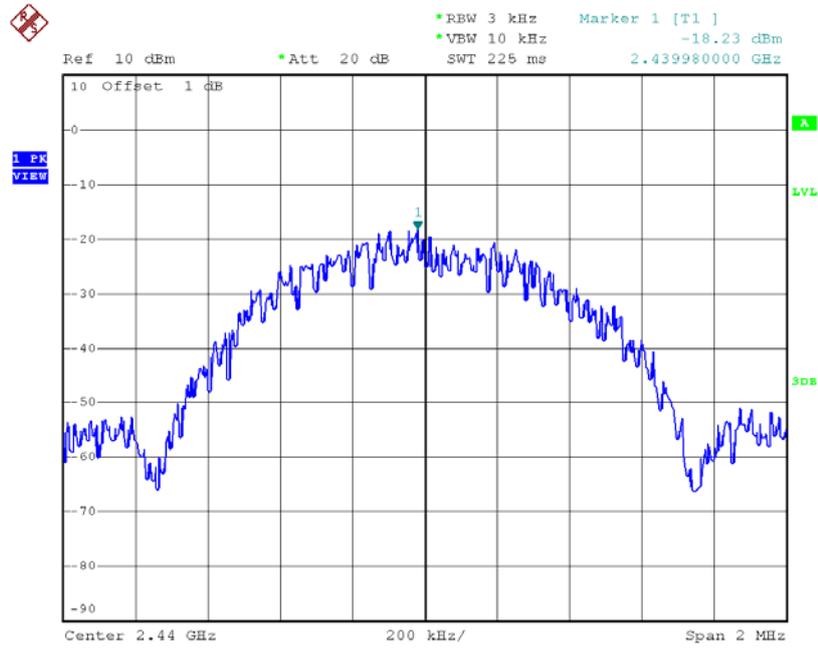
Frequency (MHz)	Power Density (dBm)	Max. Limit (dBm)	Result
2402	-18.52	8	Complies
2440	-18.23	8	Complies
2480	-18.39	8	Complies

### TX CH00



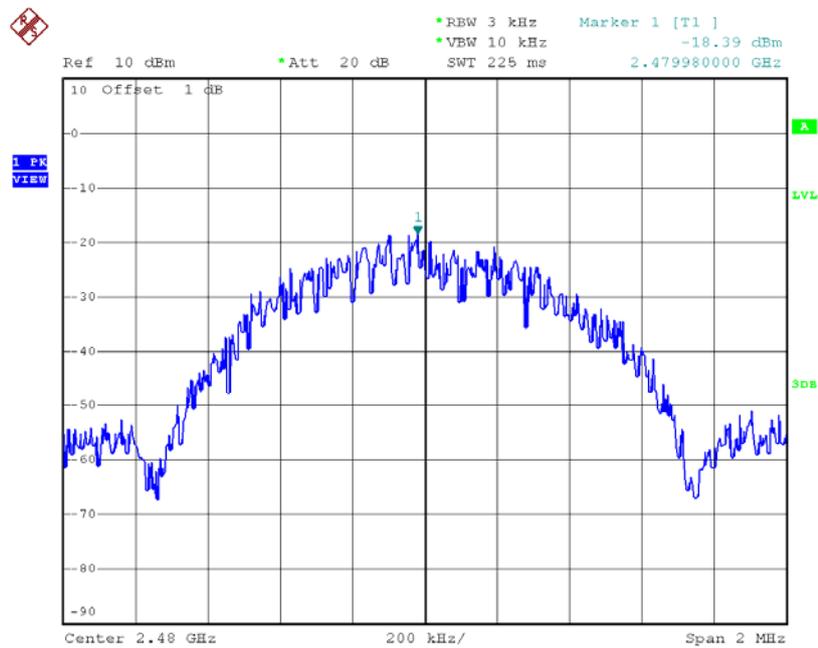
Date: 14.DEC.2015 14:23:35

### TX CH19



Date: 14.DEC.2015 14:25:07

### TX CH39



Date: 14.DEC.2015 14:26:29