

FCC Radio Test Report

FCC ID: QISCRO-LX2

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

Project No. : 1701C155G
Equipment : Smart Phone
Model Name : CRO-L22, CRO-L02
Applicant : Huawei Technologies Co.,Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen China

Date of Receipt : Jan. 18, 2017(CRO-L03)
Mar. 28, 2017(CRO-L22, CRO-L02)
May 09, 2017
Date of Test : Jan. 18, 2017 ~ Feb. 27, 2017
May 16, 2017 ~ Jun. 05, 2017
Issued Date : Jun. 06, 2017
Tested by : BTL Inc.

Testing Engineer : Shawn Xiao
(Shawn Xiao)

Technical Manager : David Mao
(David Mao)

Authorized Signatory : Steven Lu
(Steven Lu)

B T L I N C .

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan,
Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000

Declaration

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

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

BTL's report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **BTL-self**, extracts from the test report shall not be reproduced except in full with **BTL's** authorized written approval.

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

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.

Table of Contents	Page
1 . CERTIFICATION	6
2 . SUMMARY OF TEST RESULTS	7
2.1 TEST FACILITY	8
2.2 MEASUREMENT UNCERTAINTY	8
3 . GENERAL INFORMATION	9
3.1 GENERAL DESCRIPTION OF EUT	9
3.2 DESCRIPTION OF TEST MODES	12
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	12
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	13
3.5 DESCRIPTION OF SUPPORT UNITS	13
4 . EMC EMISSION TEST	14
4.1 CONDUCTED EMISSION MEASUREMENT	14
4.1.1 POWER LINE CONDUCTED EMISSION LIMITS	14
4.1.2 TEST PROCEDURE	14
4.1.3 DEVIATION FROM TEST STANDARD	14
4.1.4 TEST SETUP	15
4.1.5 EUT OPERATING CONDITIONS	15
4.1.6 EUT TEST CONDITIONS	15
4.1.7 TEST RESULTS	15
4.2 RADIATED EMISSION MEASUREMENT	16
4.2.1 RADIATED EMISSION LIMITS	16
4.2.2 TEST PROCEDURE	17
4.2.3 DEVIATION FROM TEST STANDARD	17
4.2.4 TEST SETUP	18
4.2.5 EUT OPERATING CONDITIONS	20
4.2.6 EUT TEST CONDITIONS	20
4.2.7 TEST RESULTS (9KHZ TO 30MHZ)	20
4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)	20
4.2.9 TEST RESULTS (ABOVE 1000 MHZ)	20
5 . BANDWIDTH TEST	21
5.1 APPLIED PROCEDURES / LIMIT	21
5.1.1 TEST PROCEDURE	21
5.1.2 DEVIATION FROM STANDARD	21
5.1.3 TEST SETUP	21
5.1.4 EUT OPERATION CONDITIONS	21
5.1.5 EUT TEST CONDITIONS	21
5.1.6 TEST RESULTS	21

Table of Contents	Page
6 . MAXIMUM OUTPUT POWER TEST	22
6.1 APPLIED PROCEDURES / LIMIT	22
6.1.1 TEST PROCEDURE	22
6.1.2 DEVIATION FROM STANDARD	22
6.1.3 TEST SETUP	22
6.1.4 EUT OPERATION CONDITIONS	22
6.1.5 EUT TEST CONDITIONS	22
6.1.6 TEST RESULTS	22
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	23
7.1 APPLIED PROCEDURES / LIMIT	23
7.1.1 TEST PROCEDURE	23
7.1.2 DEVIATION FROM STANDARD	23
7.1.3 TEST SETUP	23
7.1.4 EUT OPERATION CONDITIONS	23
7.1.5 EUT OPERATION CONDITIONS	23
7.1.6 TEST RESULTS	23
8 . POWER SPECTRAL DENSITY TEST	24
8.1 APPLIED PROCEDURES / LIMIT	24
8.1.1 TEST PROCEDURE	24
8.1.2 DEVIATION FROM STANDARD	24
8.1.3 TEST SETUP	24
8.1.4 EUT OPERATION CONDITIONS	24
8.1.5 EUT TEST CONDITIONS	24
8.1.6 TEST RESULTS	24
9 . MEASUREMENT INSTRUMENTS LIST	25
ATTACHMENT A - CONDUCTED EMISSION	27
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	34
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	47
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	60
ATTACHMENT E - BANDWIDTH	77
ATTACHMENT F - MAXIMUM OUTPUT POWER TEST	80
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	81
ATTACHMENT H - POWER SPECTRAL DENSITY TEST	88

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-2-1701C155	Original Report.	Feb. 28, 2017
BTL-FCCP-2-1701C155B	Compared with the original report (BTL-FCCP-2-1701C155), the model name are changed and differences please see the below table. According to the differences description below table, CRO-L22 and CRO-L02 shares the same test data of CRO-L03 of the same bands which does not affect the test results of the test report.	Apr. 13, 2017
BTL-FCCP-2-1701C155G	Compared with the original report (BTL-FCCP-2-1701C155B), the antenna is changed and battery, earphone are added. The Radiated Spurious Emissions had been evaluated and recorded in the test report, the rest are the same.	Jun. 06, 2017

Project ID	1701C155	1701C155B, 1701C155G	
Model	CRO-L03	CRO-L22	CRO-L02
Brand	HUAWEI	HUAWEI	HUAWEI
2G Frequency	850/1900	850/1900	850/1900
3G Frequency	B2/B5	B2/B5	B2/B5
4G Frequency	B2/B4/B5/B7	B5/B7	B5/B7
Hardware version	The same	The same	The same
Software version	The difference	The difference	The difference
SIM Card	Single	Dual	Single
Dimensions	The same	The same	The same
Appearance	The same	The same	The same
main antenna	The same	The same	The same
BT/Wi-Fi antenna	The same	The same	The same
GPS antenna	The same	The same	The same
PA(GSM)	The same	The same	The same
PA(WCDMA/FDD)	The same	The same	The same

1. CERTIFICATION

Equipment : Smart Phone
Brand Name : HUAWEI
Model Name : CRO-L22, CRO-L02
Applicant : Huawei Technologies Co.,Ltd.
Manufacturer : Huawei Technologies Co.,Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District Shenzhen China
Factory : Huawei Technologies Co.,Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District Shenzhen China
Date of Test : Jan. 18, 2017 ~ Feb. 27, 2017
May 16, 2017 ~ Jun. 05, 2017
Test Sample : Engineering Sample
Standard(s) : FCC Part15, Subpart C (15.247)
ANSI C63.10-2013

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-2-1701C155G) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

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

NOTE:

(1) "N/A" denotes test is not applicable 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_{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	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	Smart Phone	
Brand Name	HUAWEI	
Model Name	CRO-L22, CRO-L02	
Model Difference	Please refer to page 5.	
Product Description	Operation Frequency	2402~2480 MHz
	Modulation Technology	GFSK(1Mbps)
	Bit Rate of Transmitter	
	Output Power (Max.)	0.48 dBm (1Mbps)
Power Source	#1 DC Voltage supplied from AC/DC adapter. #2 Battery Supplied.	
Power Rating	#1:AC 100–240V 50/60Hz DC 5V 1A #2:DC 3.82V 2200mAh	
HW Version	HL1CROM	
SW Version	CRO-L22:Cairo-L22C636B015 CRO-L02:Cairo-L02C636B022	

Note:

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

2.

Item	Mfr/Brand	Model.
Battery	SCUD (FUJIAN) Electronics Co., Ltd	HB3742A0EZC+
	Shenzhen Desay Battery Tech Co., Ltd.	
	Sunwoda Electronic Co.,LTD.	
USB Cable	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	CUBB01M-HC208-DH
	HONGLIN TECHNOLOGY CO.,LTD	130-26654
	Luxshare Precision Industry Co., Ltd.	L99U2013-CS-H
Earphone	Jiangxi Lianchuang Hongsheng Electronic Co.,LTD	MEMD1632B580C00
	BOLUO COUNTY QUANCHENG ELECTRONIC CO.,LTD	1311-3291-3.5mm-229
	MERRY ELECTRONICS CO., LTD.	EMC309-001
	Jiangxi Lianchuang Hongsheng Electronic Co.,LTD (Black)	MEMD1532B528000
	BOLUO COUNTY QUANCHENG ELECTRONIC CO.,LTD (Black)	1293#+3283# 3.5MM-150
	GoerTek (Black),	HA1-3
	GoerTek (White)	NA12
Adapter	HUIZHOU BYD ELECTRONIC CO., LTD.	HW-050100U01
	Shenzhen Huntkey Electric Co., Ltd.	
	DONG GUAN PHITEK ELECTRONICS CO., LTD.	

2. 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

3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	2.14

3.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	TX Mode NOTE (1)

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 1	TX Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	TX Mode NOTE (1)

Note:

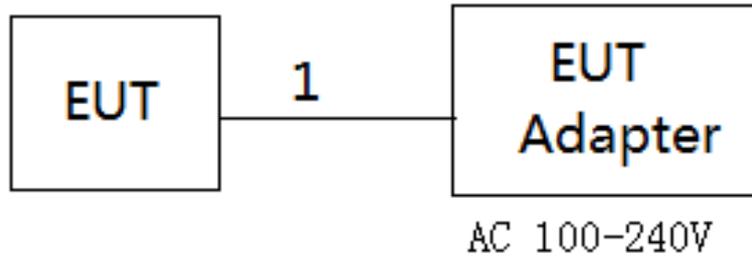
(1) The measurements are performed at the high, middle, low available channels.

3.3 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

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

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	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
1	NO	NO	1.2m	USB Cable	-

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 (dBμV)	
	Quasi-peak	Average
0.15 -0.5	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	0	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

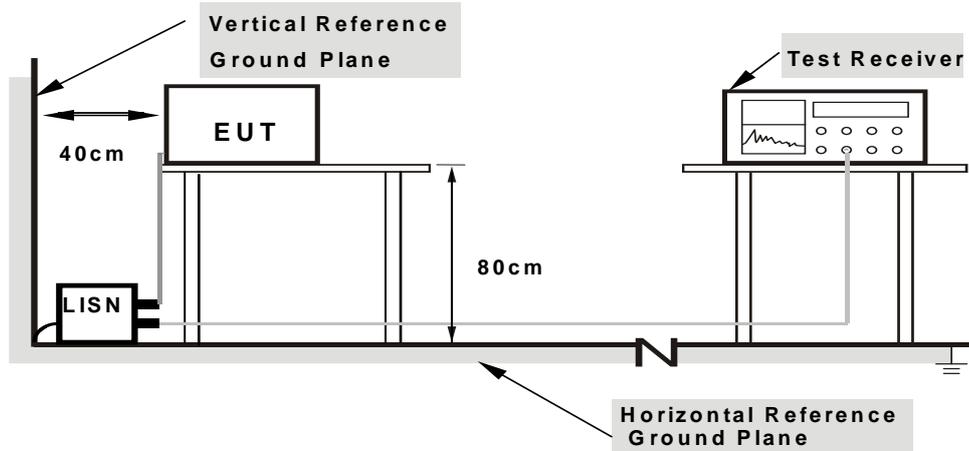
4.1.2 TEST PROCEDURE

- 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: 24°C Relative Humidity: 60% 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)	Band edge at 3m (dB μ V/m)		Harmonic at 1.5m (dB μ V/m)	
	Peak	Average	Peak	Average
Above 1000	74	54	80 (Note 5)	60 (Note 5)

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 (dB μ V/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

$$(5) \quad FS_{\text{limit}} = FS_{\text{max}} - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

$$20 \log d_{\text{limit}}/d_{\text{measure}} = 20 \log 3/1.5 = 6 \text{dB.}$$

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

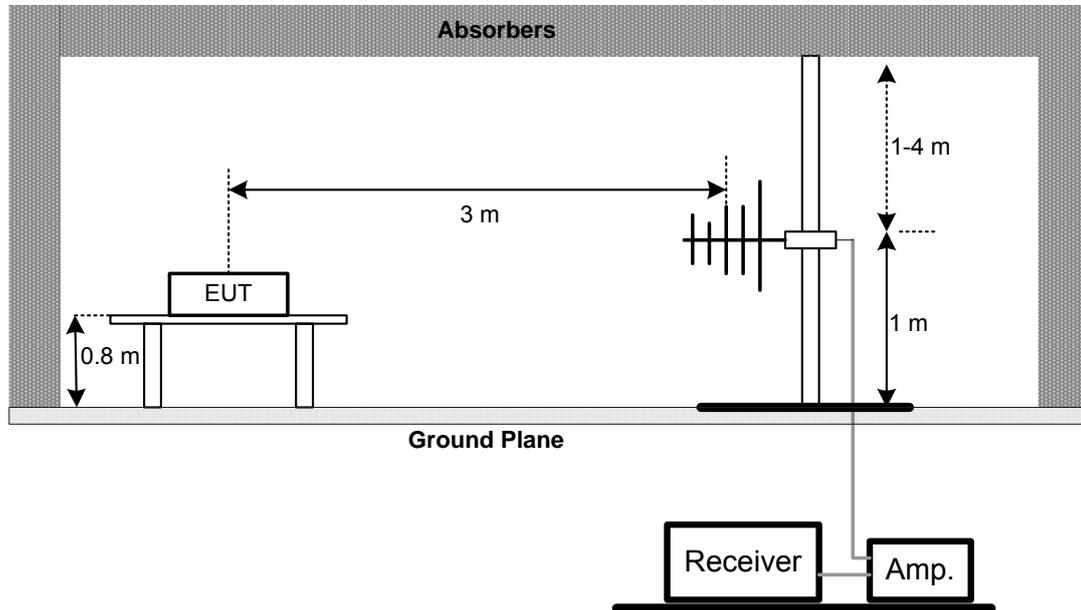
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of 3 m or 1.5m 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 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

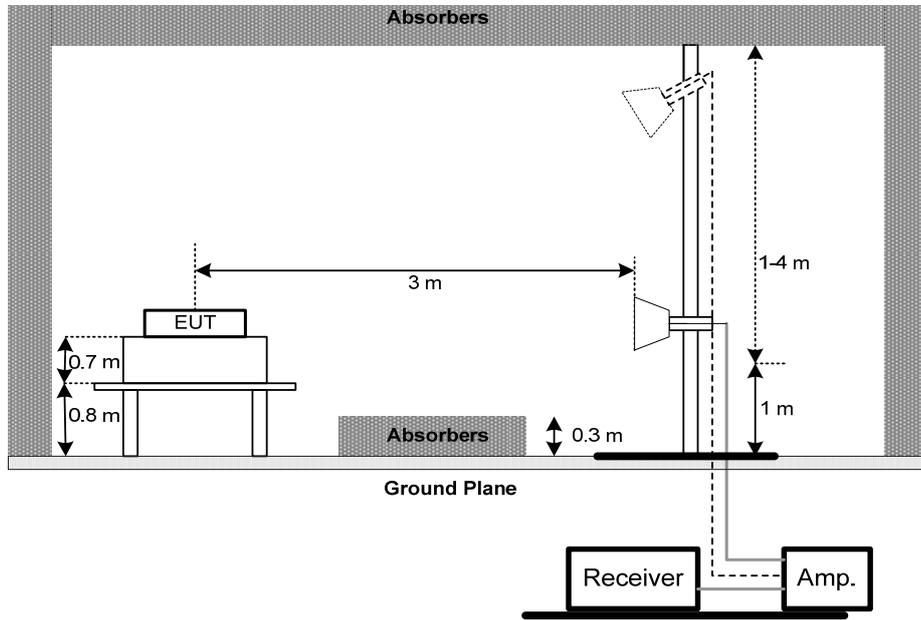
No deviation

4.2.4 TEST SETUP

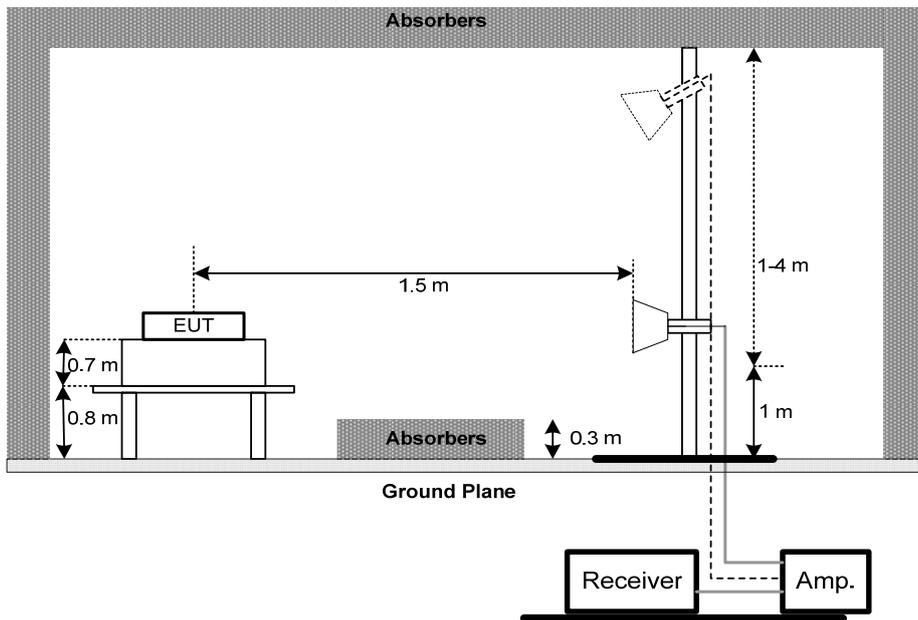
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



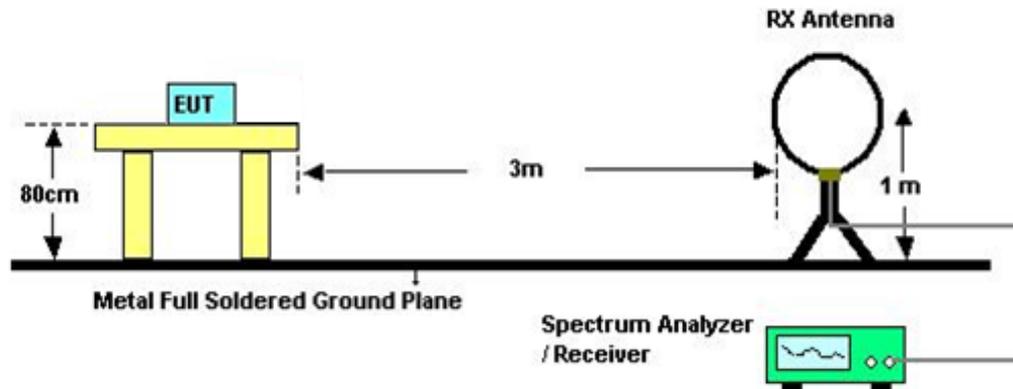
(B) Radiated Emission Test Set-Up Frequency Above 1 GHz
Band edge



Harmonic



(C) For radiated emissions below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

Temperature: 22°C Relative Humidity: 56% 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.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

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

5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / 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: 24°C Relative Humidity: 60% 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.

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: 24°C Relative Humidity: 60% 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=antenna 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: 24°C Relative Humidity: 60% 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: 24°C Relative Humidity: 60% 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	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018
2	LISN	EMCO	3816/2	52765	Mar. 26, 2018
3	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 26, 2018
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 26, 2018
5	Cable	emci	RG223(9KHz-30 MHz)(5m)	N/A	Mar. 09, 2018
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	Schwarbeck	VULB9160	9160-3232	Mar. 26, 2018
2	Amplifier	HP	8447D	2944A09673	Oct. 20, 2017
3	Receiver	Agilent	N9038A	MY52130039	Sep. 04, 2017
4	Cable	emci	LMR-400(30MHz-1GHz)(8m+5m)	N/A	Jun. 27, 2017
5	Controller	CT	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF780208416	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	Amplifier	Agilent	8449B	3008A02274	Mar. 09, 2018
9	Receiver	Agilent	N9038A	MY52130039	Sep. 04, 2017
10	Antenna	EM	EM-6876-1	230	Jul. 08, 2017
11	Controller	MF	MF-7802	MF780208416	N/A
12	Cable	emci	EMC104-SM-S M-12000(12m)	N/A	Jul. 06, 2017

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	ANRITSU	ML2495A	1128009	Apr. 25, 2018
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Apr. 25, 2018

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017

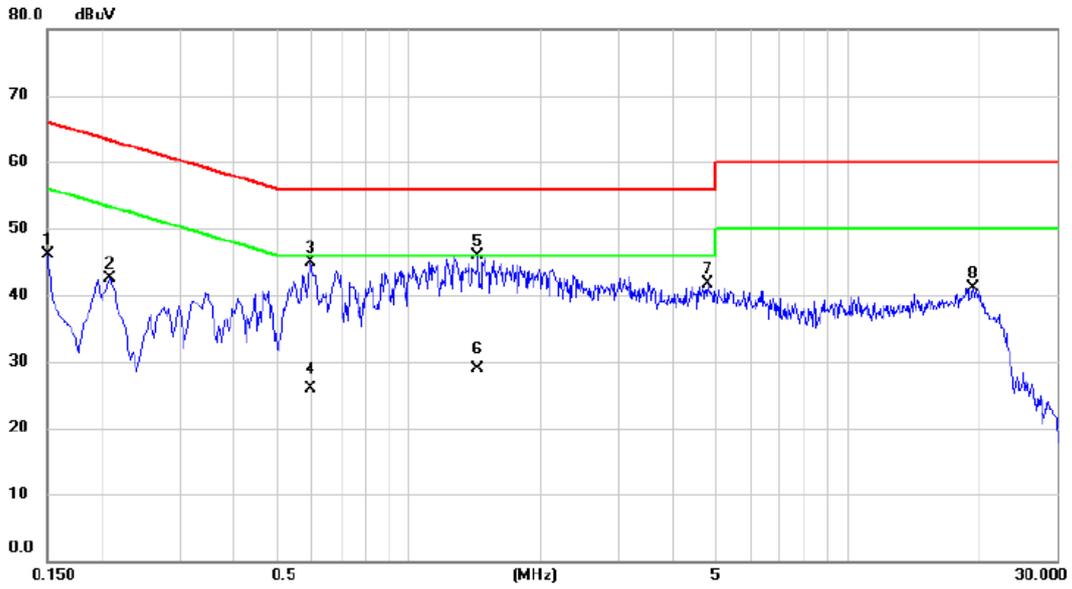
Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017

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

ATTACHMENT A - CONDUCTED EMISSION

Test Mode: TX Mode_Adapter: BYD

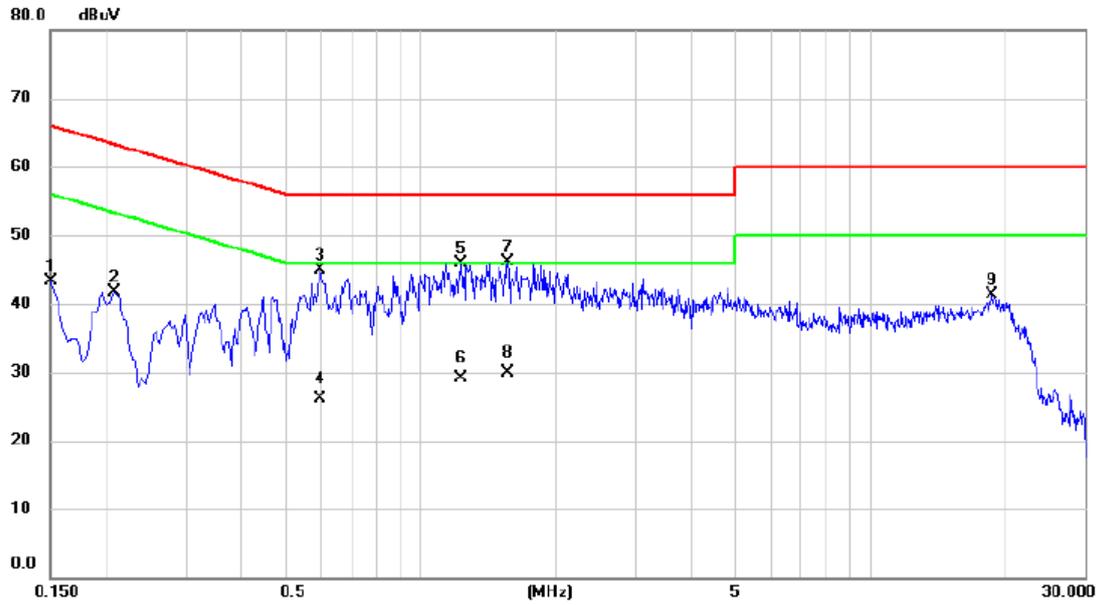
Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.150	36.38	9.68	46.06	66.00	-19.94	peak	
2		0.208	32.87	9.69	42.56	63.26	-20.70	peak	
3		0.596	35.19	9.71	44.90	56.00	-11.10	peak	
4		0.596	16.27	9.71	25.98	46.00	-20.02	AVG	
5	*	1.437	36.19	9.78	45.97	56.00	-10.03	peak	
6		1.437	19.06	9.78	28.84	46.00	-17.16	AVG	
7		4.780	31.64	10.00	41.64	56.00	-14.36	peak	
8		19.235	30.38	10.73	41.11	60.00	-18.89	peak	

Test Mode: TX Mode_ Adapter: BYD

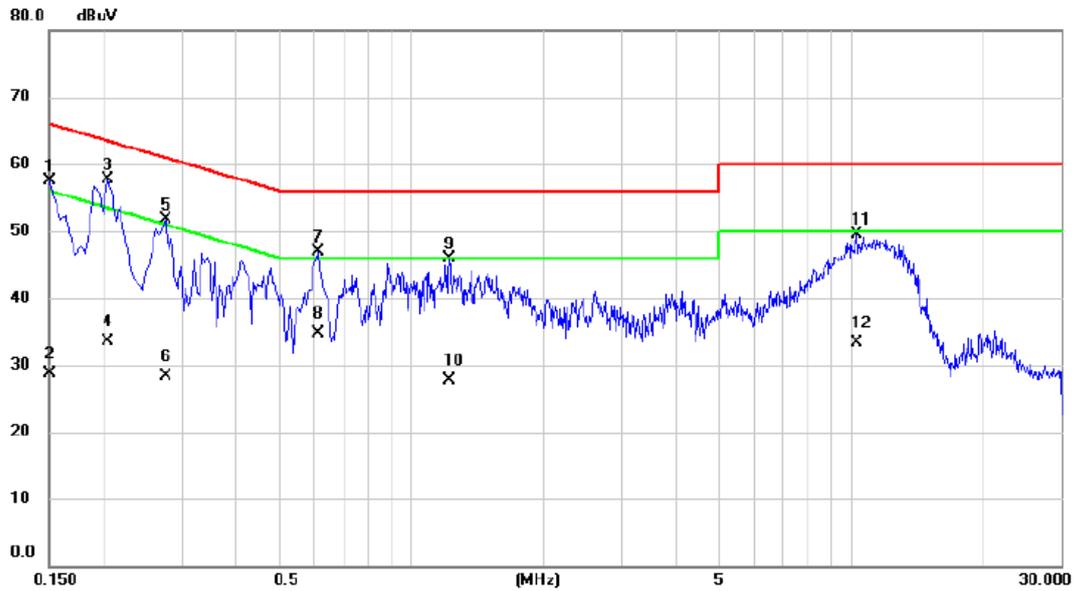
Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.150	33.68	9.68	43.36	66.00	-22.64	peak	
2		0.208	32.01	9.69	41.70	63.26	-21.56	peak	
3		0.596	35.13	9.71	44.84	56.00	-11.16	peak	
4		0.596	16.37	9.71	26.08	46.00	-19.92	AVG	
5		1.230	36.07	9.76	45.83	56.00	-10.17	peak	
6		1.230	19.35	9.76	29.11	46.00	-16.89	AVG	
7	*	1.563	36.26	9.79	46.05	56.00	-9.95	peak	
8		1.563	20.09	9.79	29.88	46.00	-16.12	AVG	
9		18.649	30.61	10.71	41.32	60.00	-18.68	peak	

Test Mode: TX Mode_ Adapter: PHITEK

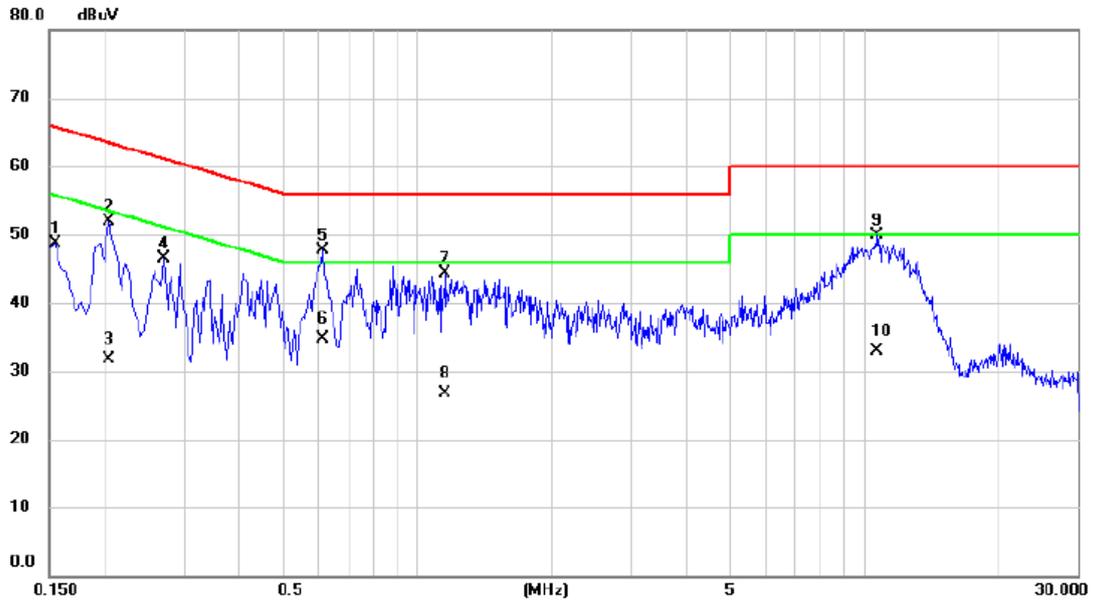
Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.150	47.87	9.68	57.55	66.00	-8.45	peak	
2		0.150	18.97	9.68	28.65	56.00	-27.35	AVG	
3	*	0.204	47.97	9.69	57.66	63.45	-5.79	peak	
4		0.204	23.86	9.69	33.55	53.45	-19.90	AVG	
5		0.276	42.03	9.68	51.71	60.94	-9.23	peak	
6		0.276	18.67	9.68	28.35	50.94	-22.59	AVG	
7		0.613	37.29	9.71	47.00	56.00	-9.00	peak	
8		0.613	25.07	9.71	34.78	46.00	-11.22	AVG	
9		1.221	36.14	9.76	45.90	56.00	-10.10	peak	
10		1.221	18.03	9.76	27.79	46.00	-18.21	AVG	
11		10.289	39.22	10.29	49.51	60.00	-10.49	peak	
12		10.289	23.04	10.29	33.33	50.00	-16.67	AVG	

Test Mode: TX Mode_ Adapter: PHITEK

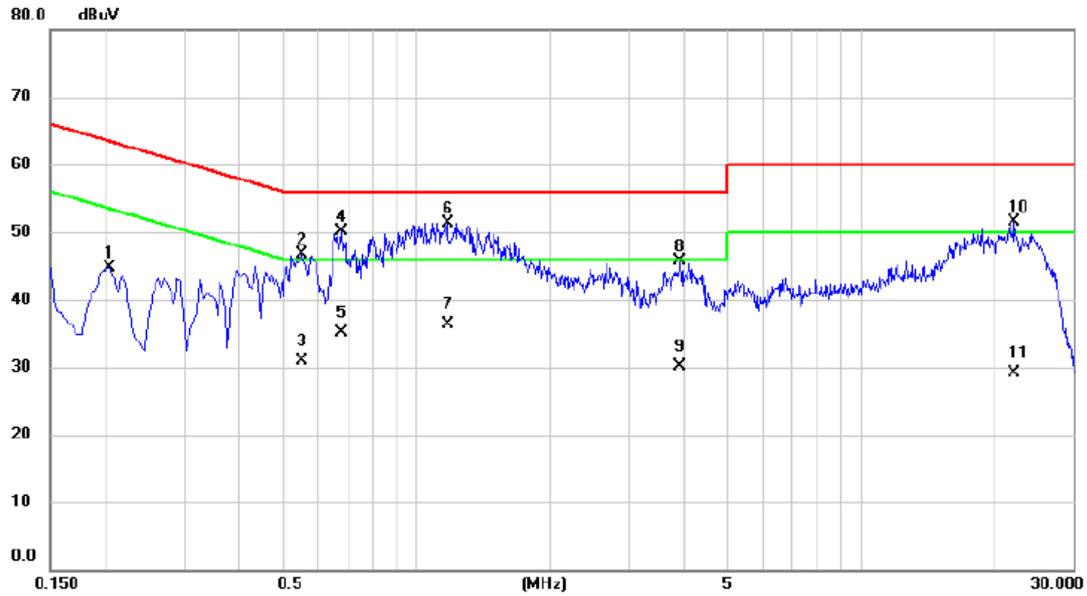
Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.154	39.00	9.68	48.68	65.75	-17.07	peak	
2		0.204	42.26	9.69	51.95	63.45	-11.50	peak	
3		0.204	21.97	9.69	31.66	53.45	-21.79	AVG	
4		0.271	36.87	9.67	46.54	61.07	-14.53	peak	
5	*	0.613	38.03	9.71	47.74	56.00	-8.26	peak	
6		0.613	25.09	9.71	34.80	46.00	-11.20	AVG	
7		1.153	34.61	9.75	44.36	56.00	-11.64	peak	
8		1.153	16.86	9.75	26.61	46.00	-19.39	AVG	
9		10.680	39.53	10.31	49.84	60.00	-10.16	peak	
10		10.680	22.56	10.31	32.87	50.00	-17.13	AVG	

Test Mode: TX Mode_ Adapter: Huntkey

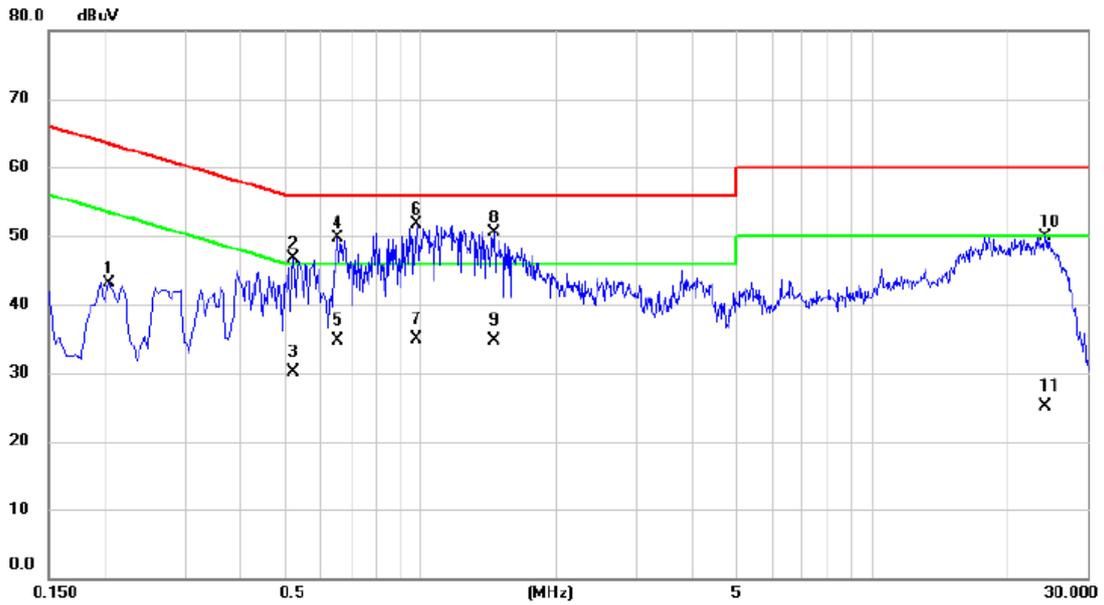
Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.204	35.06	9.69	44.75	63.45	-18.70	peak	
2		0.550	36.96	9.71	46.67	56.00	-9.33	peak	
3		0.550	21.10	9.71	30.81	46.00	-15.19	AVG	
4		0.676	40.33	9.72	50.05	56.00	-5.95	peak	
5		0.676	25.34	9.72	35.06	46.00	-10.94	AVG	
6	*	1.176	41.63	9.75	51.38	56.00	-4.62	peak	
7		1.176	26.65	9.75	36.40	46.00	-9.60	AVG	
8		3.917	35.77	9.95	45.72	56.00	-10.28	peak	
9		3.917	20.15	9.95	30.10	46.00	-15.90	AVG	
10		22.069	40.61	10.84	51.45	60.00	-8.55	peak	
11		22.069	18.26	10.84	29.10	50.00	-20.90	AVG	

Test Mode: TX Mode _ Adapter: Huntkey

Neutral

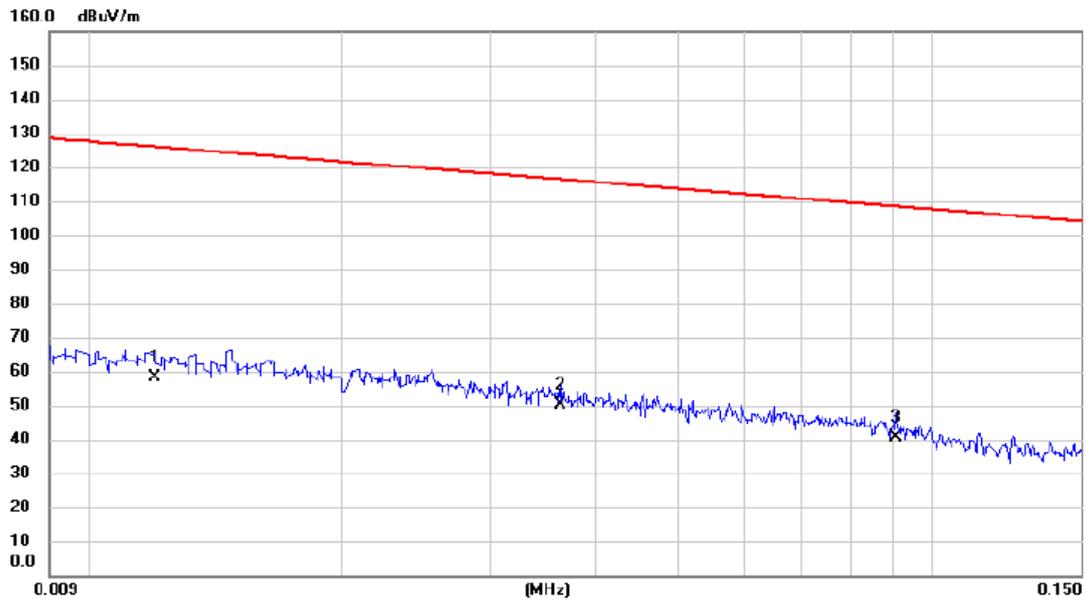


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.204	33.39	9.69	43.08	63.45	-20.37	peak	
2		0.523	37.09	9.70	46.79	56.00	-9.21	peak	
3		0.523	20.36	9.70	30.06	46.00	-15.94	AVG	
4		0.654	40.02	9.72	49.74	56.00	-6.26	peak	
5		0.654	25.02	9.72	34.74	46.00	-11.26	AVG	
6	*	0.978	41.89	9.75	51.64	56.00	-4.36	peak	
7		0.978	25.13	9.75	34.88	46.00	-11.12	AVG	
8		1.450	40.70	9.78	50.48	56.00	-5.52	peak	
9		1.450	24.91	9.78	34.69	46.00	-11.31	AVG	
10		24.247	38.93	10.92	49.85	60.00	-10.15	peak	
11		24.247	14.21	10.92	25.13	50.00	-24.87	AVG	

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

Test Mode: TX Mode_Adapter: BYD

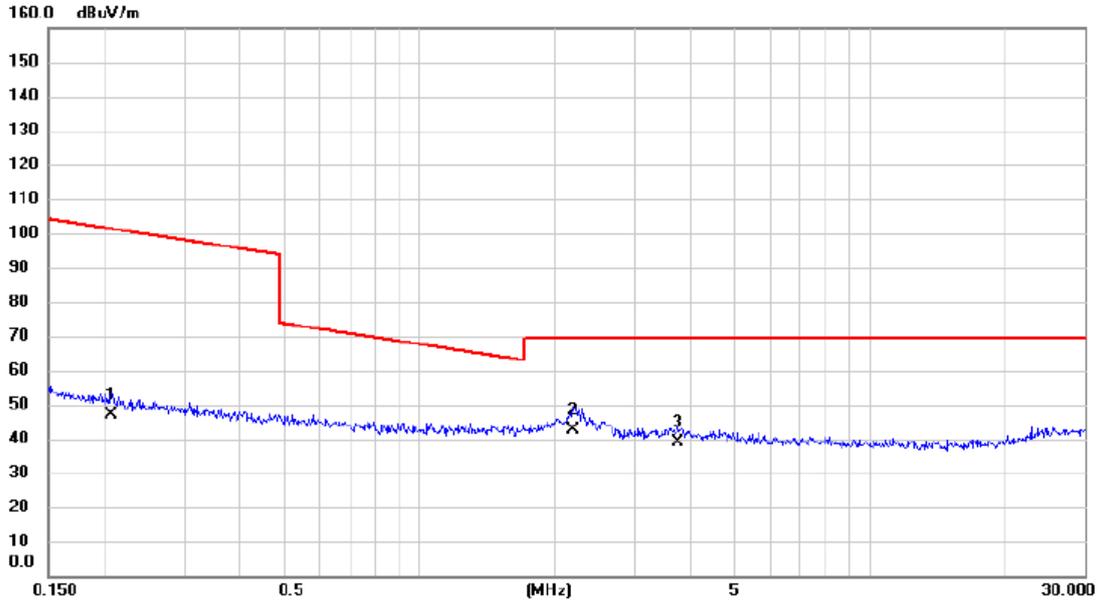
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.012	37.62	20.66	58.28	126.02	-67.74	AVG	
2	*	0.036	30.88	19.13	50.01	116.43	-66.42	AVG	
3		0.091	22.83	17.85	40.68	108.45	-67.77	AVG	

Test Mode: TX Mode_Adapter: BYD

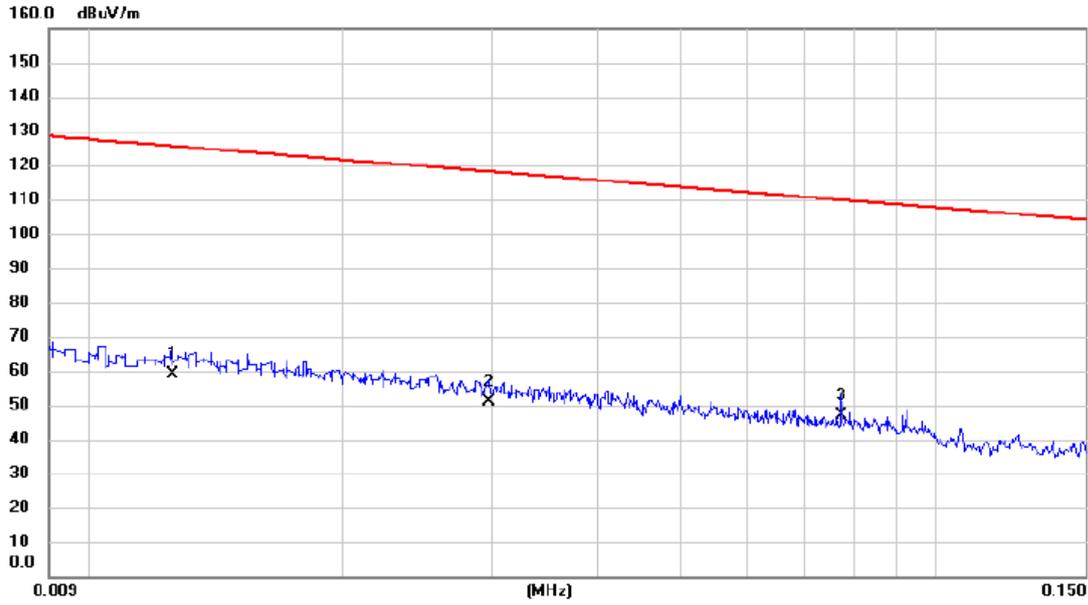
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.207	30.18	16.77	46.95	101.28	-54.33	AVG	
2	*	2.190	27.02	15.45	42.47	69.54	-27.07	QP	
3		3.740	23.89	15.03	38.92	69.54	-30.62	QP	

Test Mode: TX Mode_ Adapter: BYD

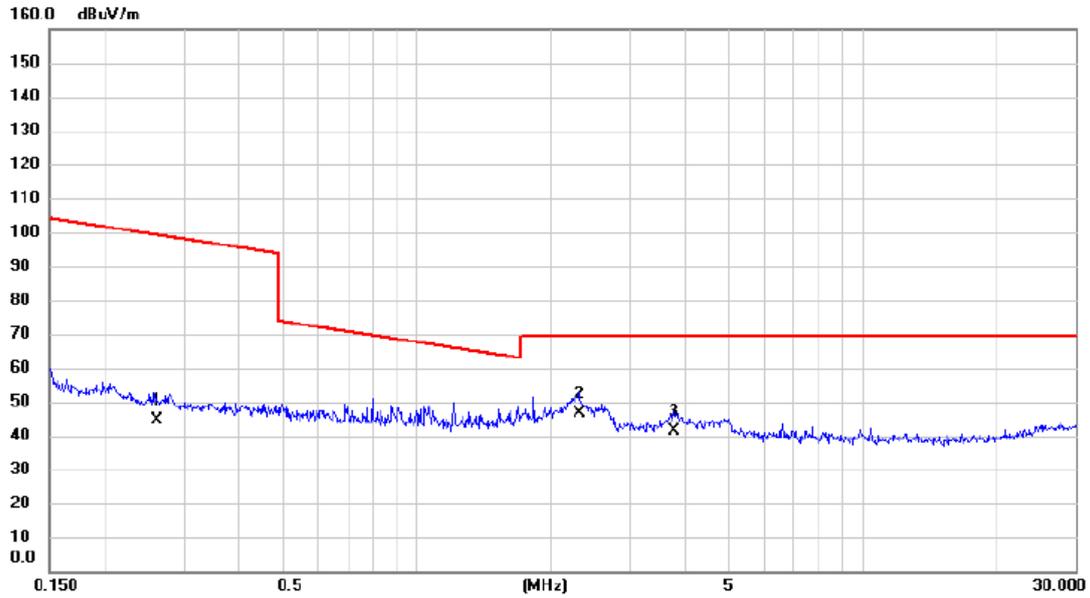
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.013	38.39	20.58	58.97	125.60	-66.63	AVG	
2		0.030	31.68	19.33	51.01	118.15	-67.14	AVG	
3	*	0.077	28.73	18.17	46.90	109.84	-62.94	AVG	

Test Mode: TX Mode_Adapter: BYD

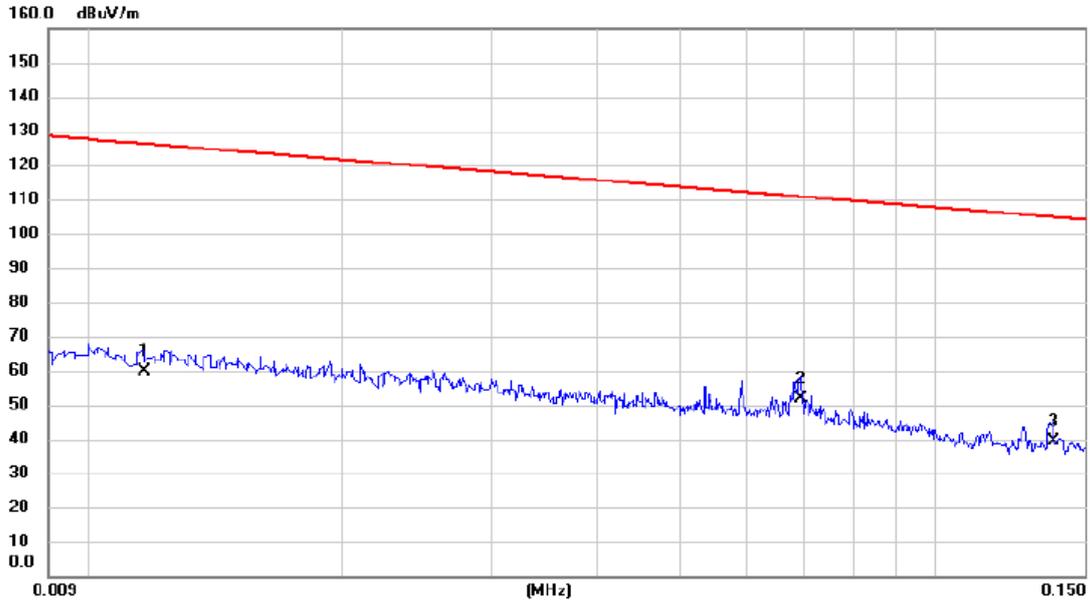
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.260	27.92	16.64	44.56	99.30	-54.74	AVG	
2	*	2.309	31.16	15.42	46.58	69.54	-22.96	QP	
3		3.779	26.45	15.02	41.47	69.54	-28.07	QP	

Test Mode: TX Mode_Adapter: PHITEK

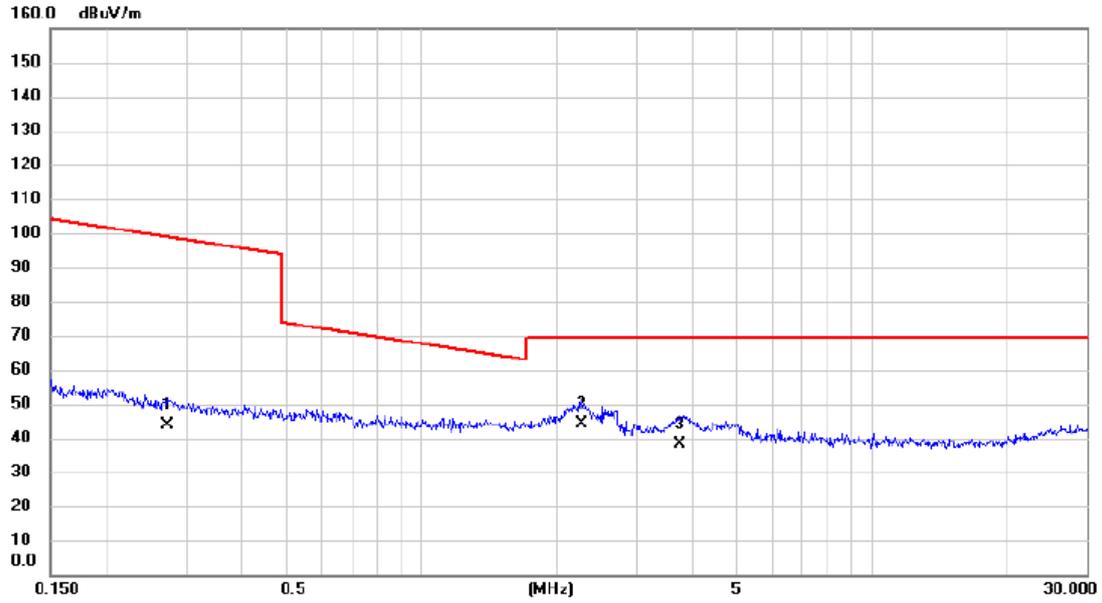
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.012	38.93	20.70	59.63	126.24	-66.61	AVG	
2	*	0.069	33.45	18.34	51.79	110.79	-59.00	AVG	
3		0.138	22.36	17.11	39.47	104.82	-65.35	AVG	

Test Mode: TX Mode_Adapter: PHITEK

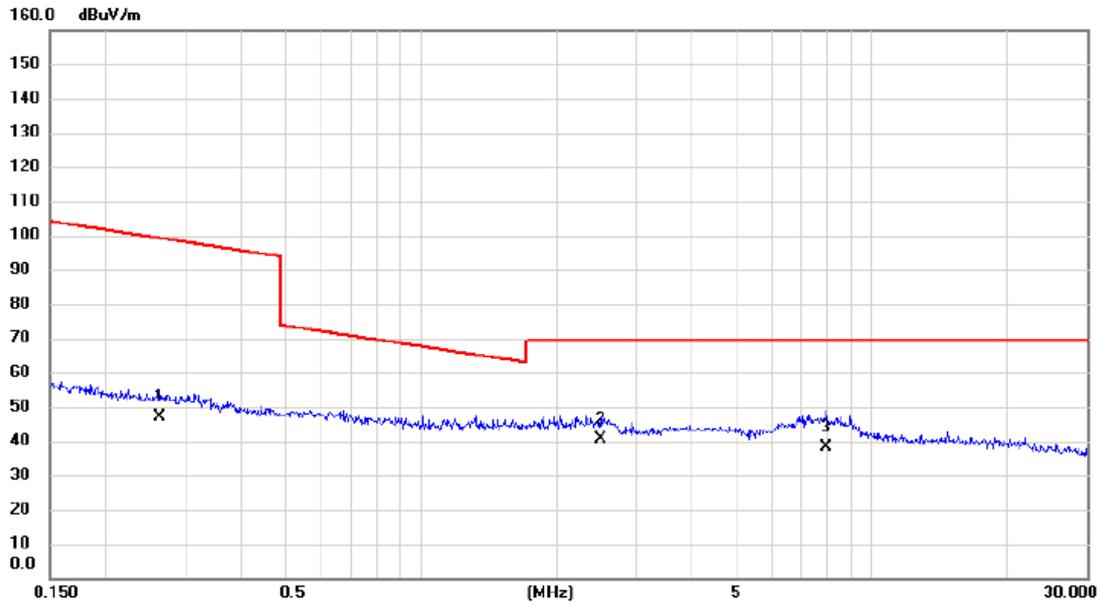
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.273	27.14	16.63	43.77	98.88	-55.11	AVG	
2	*	2.272	28.90	15.43	44.33	69.54	-25.21	QP	
3		3.740	23.24	15.03	38.27	69.54	-31.27	QP	

Test Mode: TX Mode_Adapter: PHITEK

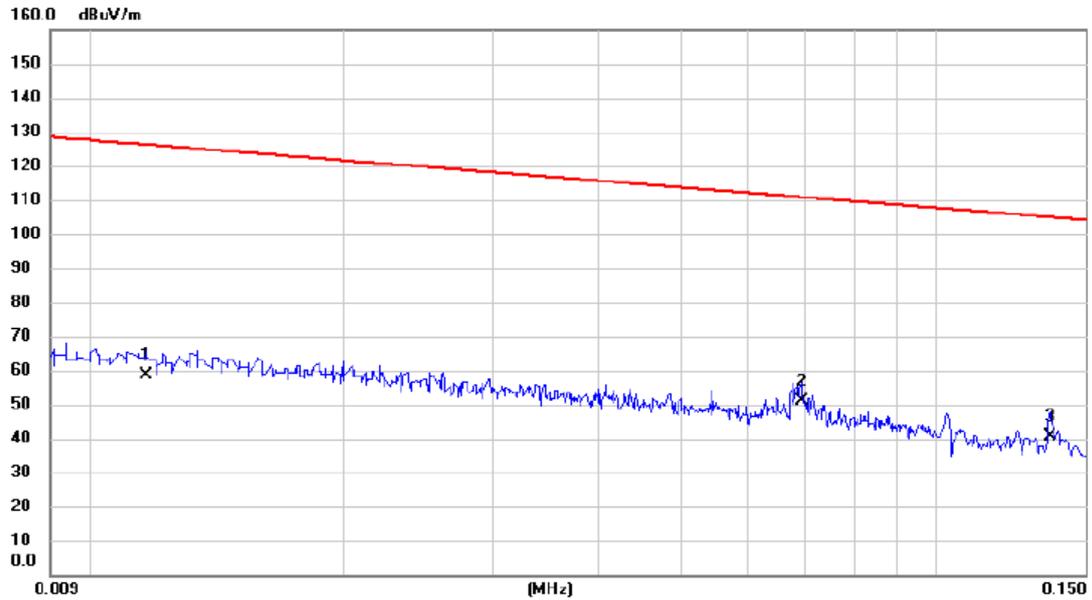
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.2635	28.32	18.63	46.95	99.19	-52.24	AVG	
2	*	2.5128	23.44	17.25	40.69	69.54	-28.85	QP	
3		7.9372	22.16	16.19	38.35	69.54	-31.19	QP	

Test Mode: TX Mode_Adapter: PHITEK

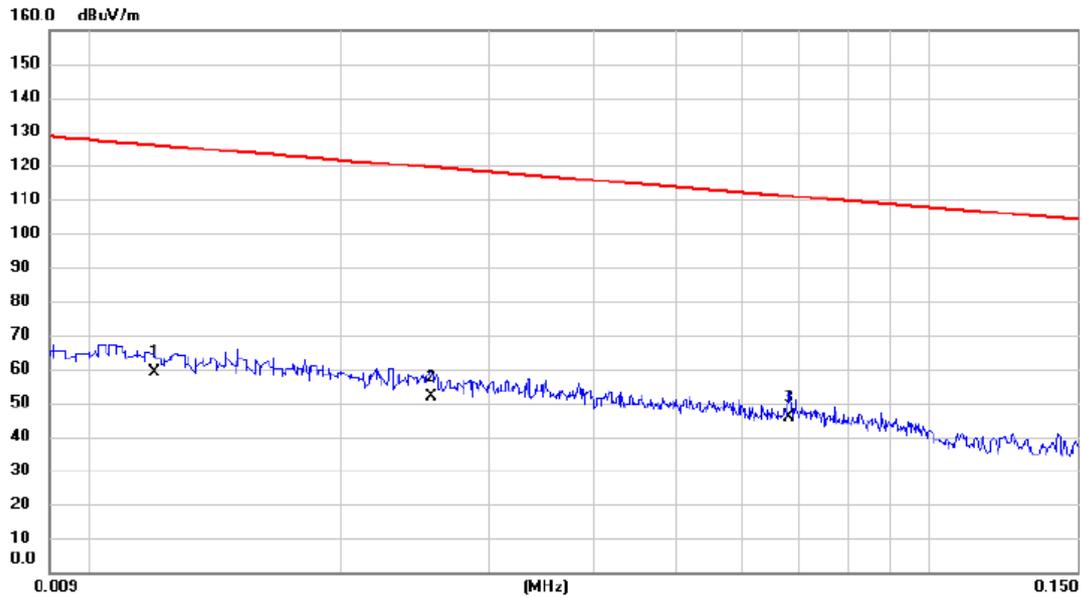
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.012	38.04	20.70	58.74	126.24	-67.50	AVG	
2	*	0.069	32.58	18.34	50.92	110.79	-59.87	AVG	
3		0.136	23.59	17.13	40.72	104.92	-64.20	AVG	

Test Mode: TX Mode_ Adapter: Huntkey

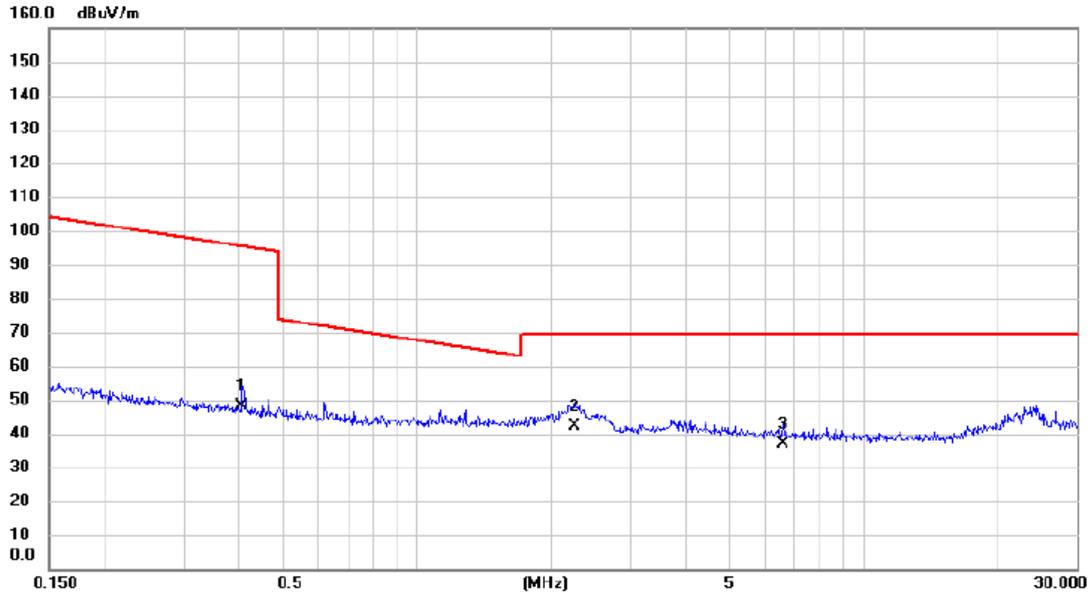
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.012	38.21	20.66	58.87	126.02	-67.15	AVG	
2		0.026	32.35	19.45	51.80	119.44	-67.64	AVG	
3	*	0.068	27.43	18.37	45.80	110.93	-65.13	AVG	

Test Mode: TX Mode_Adapter: Huntkey

Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.406	31.76	16.54	48.30	95.43	-47.13	AVG	
2	*	2.249	26.95	15.44	42.39	69.54	-27.15	QP	
3		6.592	22.67	14.18	36.85	69.54	-32.69	QP	

Test Mode: TX Mode_ Adapter: Huntkey

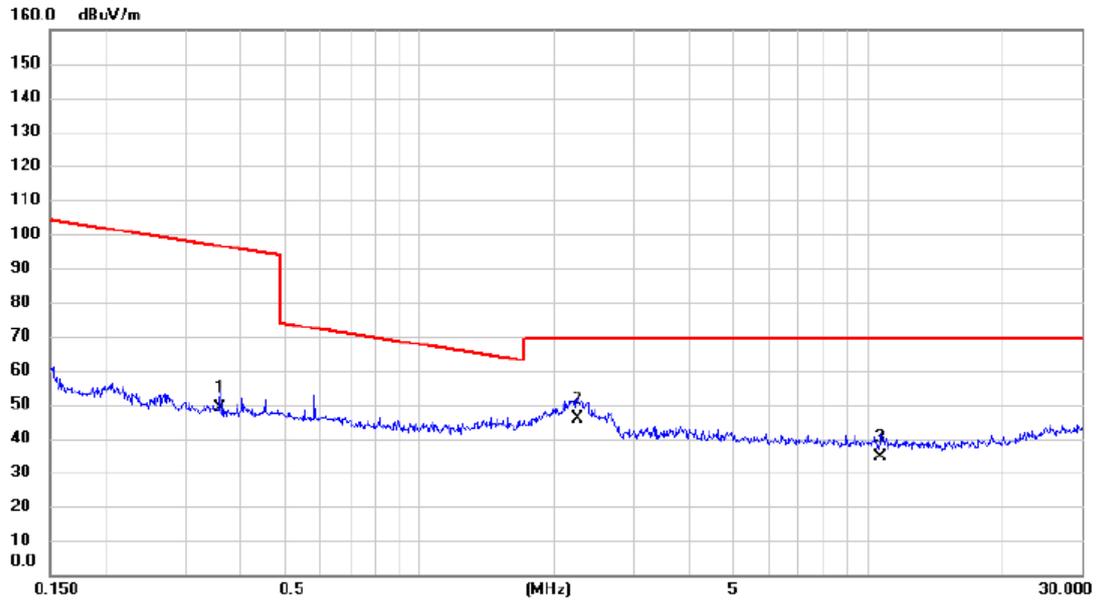
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.012	40.19	20.66	60.85	126.02	-65.17	AVG	
2		0.028	31.28	19.38	50.66	118.63	-67.97	AVG	
3	*	0.069	29.27	18.36	47.63	110.87	-63.24	AVG	

Test Mode: TX Mode_ Adapter: Huntkey

Ant 90°

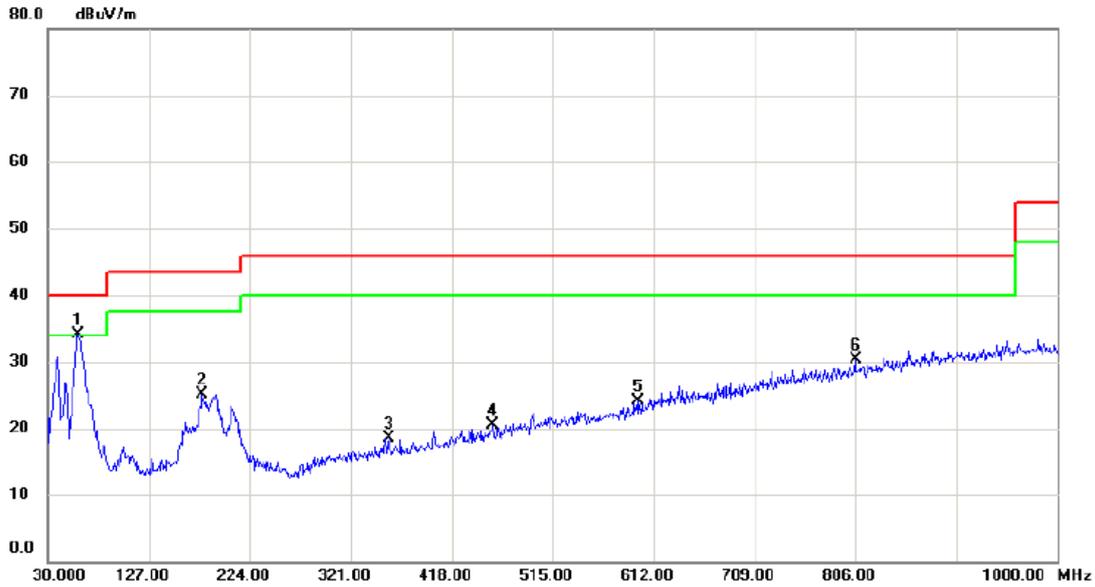


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.359	32.24	16.57	48.81	96.49	-47.68	AVG	
2	*	2.249	30.42	15.44	45.86	69.54	-23.68	QP	
3		10.676	20.65	13.80	34.45	69.54	-35.09	QP	

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

Test Mode: TX 2402MHz_CH00_1Mbps_Adapter: BYD

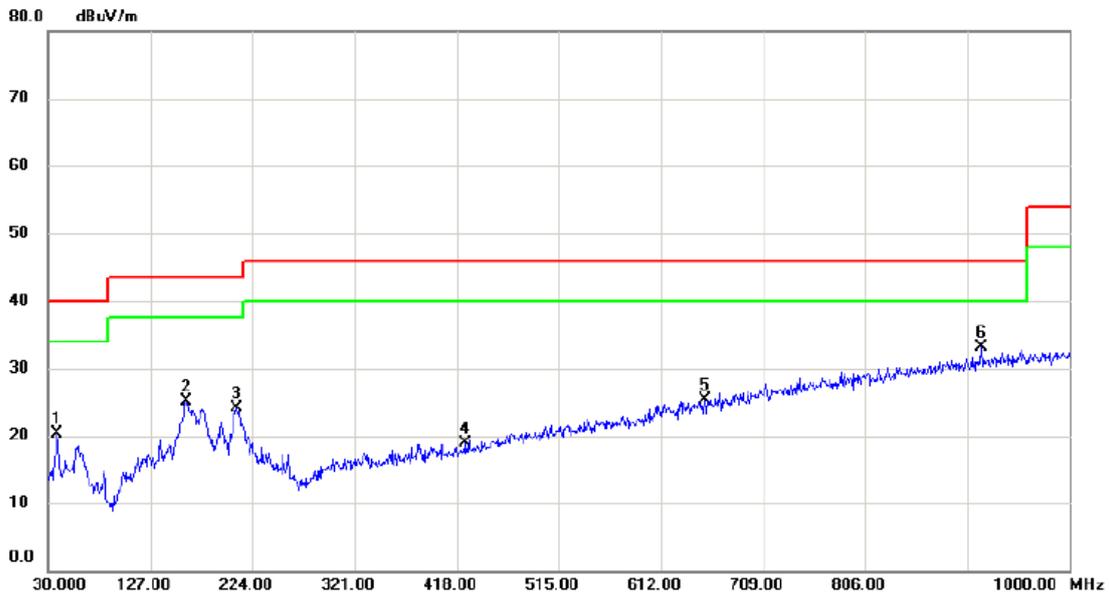
Vertical



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	59.100	48.00	-13.95	34.05	40.00	-5.95	peak	
2	178.410	36.81	-11.69	25.12	43.50	-18.38	peak	
3	357.860	29.79	-11.24	18.55	46.00	-27.45	peak	
4	457.770	29.59	-9.02	20.57	46.00	-25.43	peak	
5	597.450	29.57	-5.55	24.02	46.00	-21.98	peak	
6	806.000	30.33	-0.11	30.22	46.00	-15.78	peak	

Test Mode: TX 2402MHz _CH00_ 1Mbps_Adapter: BYD

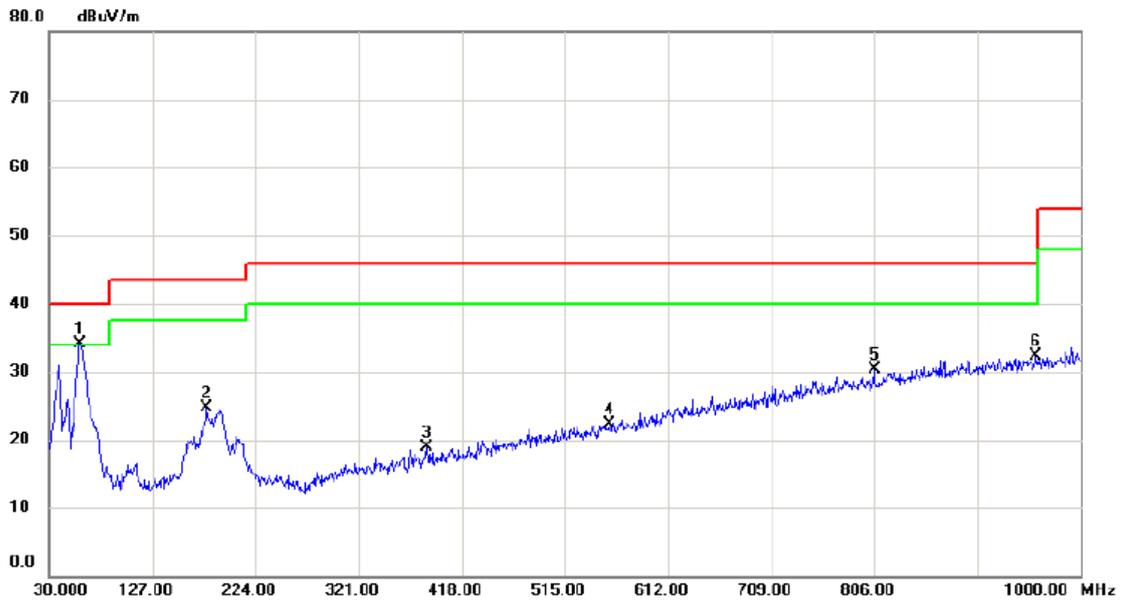
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		38.730	34.25	-13.93	20.32	40.00	-19.68	peak	
2		160.950	37.69	-12.49	25.20	43.50	-18.30	peak	
3		208.480	37.66	-13.51	24.15	43.50	-19.35	peak	
4		426.730	28.84	-9.91	18.93	46.00	-27.07	peak	
5		653.710	29.77	-4.38	25.39	46.00	-20.61	peak	
6	*	916.580	30.51	2.54	33.05	46.00	-12.95	peak	

Test Mode: TX 2480MHz _CH39_ 1Mbps_Adapter: BYD

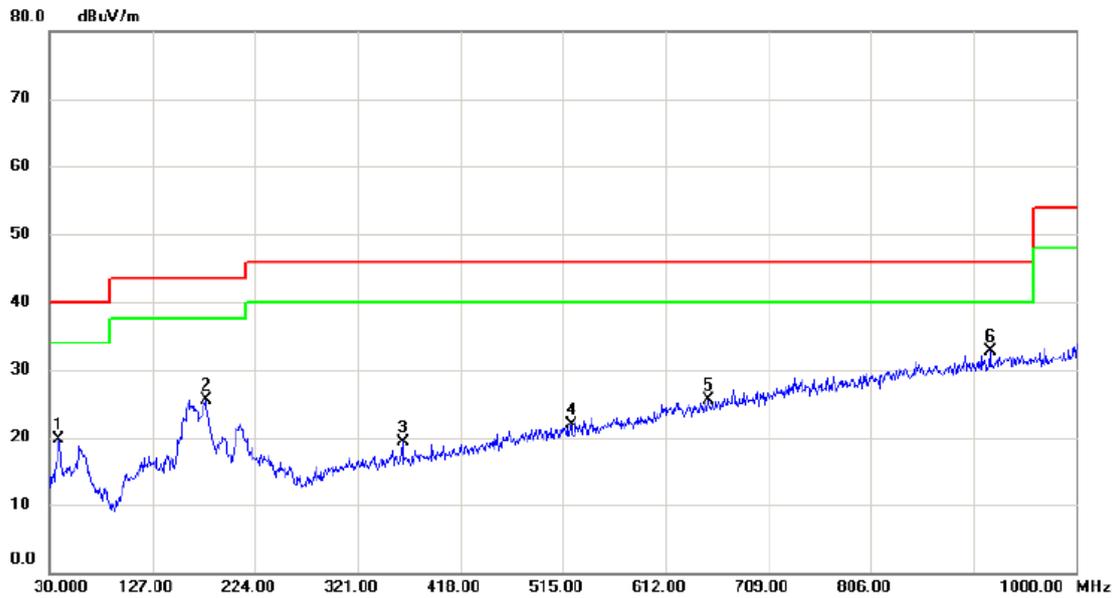
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	59.100	48.14	-13.95	34.19	40.00	-5.81	peak	
2		178.410	36.34	-11.69	24.65	43.50	-18.85	peak	
3		385.020	29.83	-10.89	18.94	46.00	-27.06	peak	
4		557.680	28.87	-6.65	22.22	46.00	-23.78	peak	
5		806.000	30.36	-0.11	30.25	46.00	-15.75	peak	
6		958.290	28.99	3.38	32.37	46.00	-13.63	peak	

Test Mode: TX 2480MHz_CH39_1Mbps_Adapter: BYD

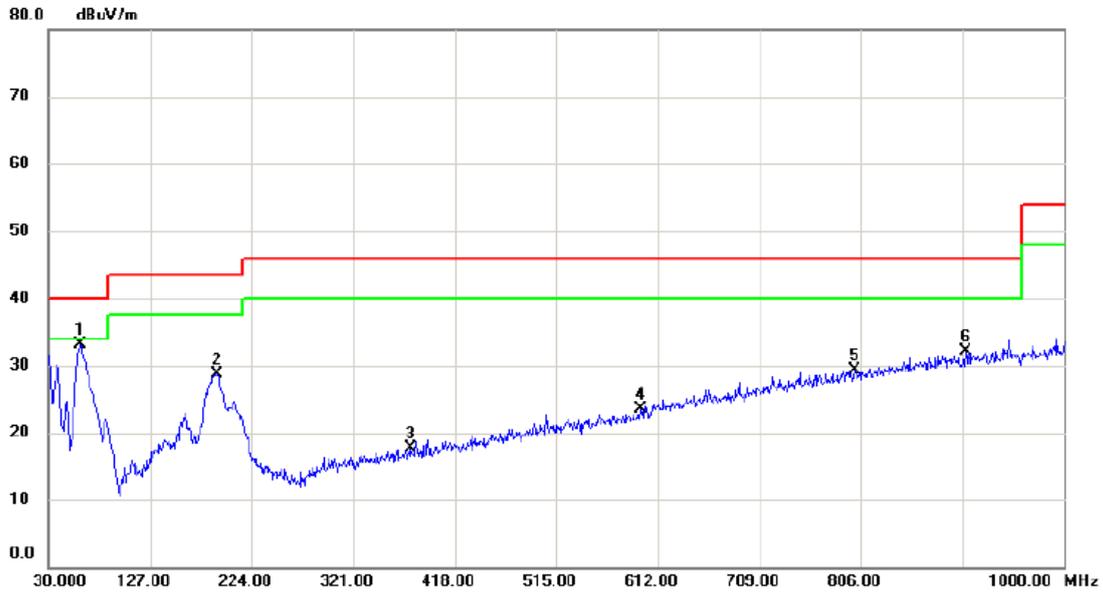
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		38.730	33.70	-13.93	19.77	40.00	-20.23	peak	
2		177.440	37.20	-11.72	25.48	43.50	-18.02	peak	
3		363.680	30.41	-11.17	19.24	46.00	-26.76	peak	
4		522.760	29.29	-7.44	21.85	46.00	-24.15	peak	
5		652.740	30.02	-4.42	25.60	46.00	-20.40	peak	
6	*	918.520	30.05	2.57	32.62	46.00	-13.38	peak	

Test Mode: TX 2402MHz_CH00_1Mbps_Adapter: PHITEK

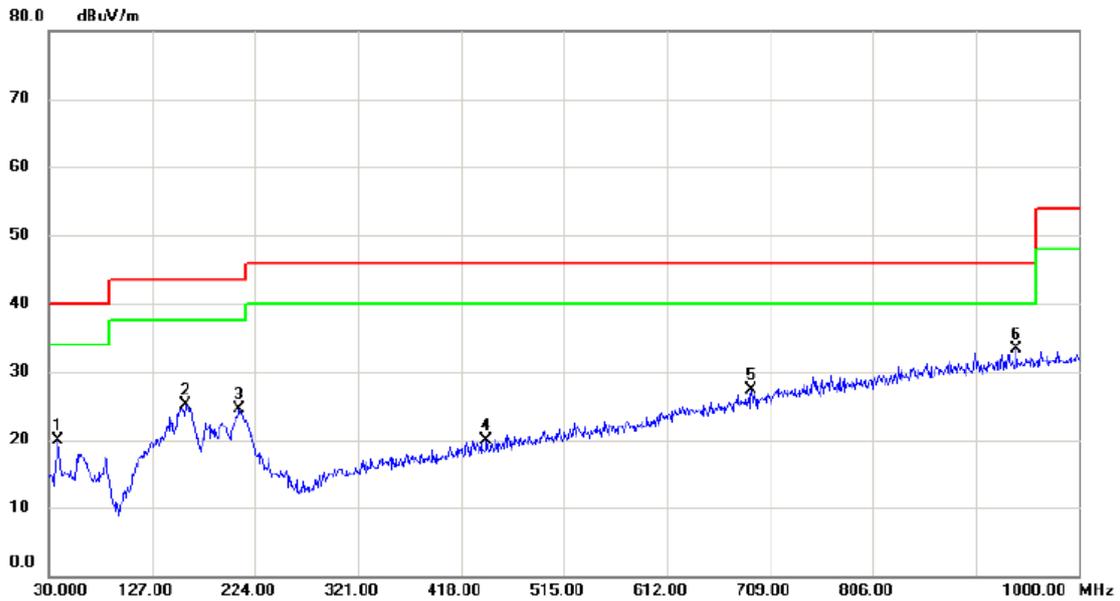
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	60.070	47.11	-14.04	33.07	40.00	-6.93	peak	
2		191.020	41.26	-12.54	28.72	43.50	-14.78	peak	
3		376.290	28.63	-11.00	17.63	46.00	-28.37	peak	
4		595.510	29.11	-5.62	23.49	46.00	-22.51	peak	
5		800.180	29.59	-0.27	29.32	46.00	-16.68	peak	
6		905.910	29.84	2.33	32.17	46.00	-13.83	peak	

Test Mode: TX 2402MHz_CH00_1Mbps_Adapter: PHITEK

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		38.730	33.81	-13.93	19.88	40.00	-20.12	peak	
2		159.010	37.73	-12.61	25.12	43.50	-18.38	peak	
3		209.450	38.04	-13.54	24.50	43.50	-19.00	peak	
4		442.250	29.42	-9.44	19.98	46.00	-26.02	peak	
5		691.540	30.46	-3.19	27.27	46.00	-18.73	peak	
6	*	940.830	30.34	3.03	33.37	46.00	-12.63	peak	

Test Mode: TX 2480MHz_CH39_1Mbps_Adapter: PHITEK

Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	61.040	47.57	-14.20	33.37	40.00	-6.63	peak	
2		189.080	41.34	-12.37	28.97	43.50	-14.53	peak	
3		415.090	29.17	-10.25	18.92	46.00	-27.08	peak	
4		629.460	30.08	-4.91	25.17	46.00	-20.83	peak	
5		756.530	31.00	-1.26	29.74	46.00	-16.26	peak	
6		927.250	29.83	2.76	32.59	46.00	-13.41	peak	

Test Mode: TX 2480MHz_CH39_1Mbps_Adapter: PHITEK

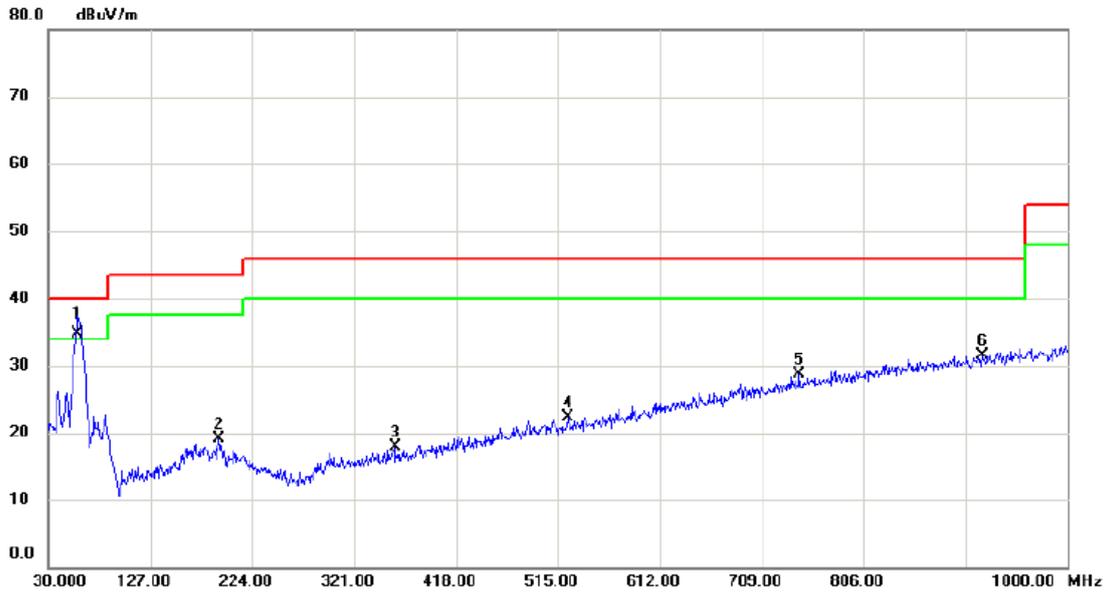
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		37.760	33.68	-14.07	19.61	40.00	-20.39	peak	
2		159.980	38.58	-12.56	26.02	43.50	-17.48	peak	
3		210.420	38.16	-13.55	24.61	43.50	-18.89	peak	
4		375.320	29.94	-11.02	18.92	46.00	-27.08	peak	
5		556.710	29.59	-6.68	22.91	46.00	-23.09	peak	
6	*	749.740	30.09	-1.41	28.68	46.00	-17.32	peak	

Test Mode: TX 2402MHz_CH00_1Mbps_Adapter: Huntkey

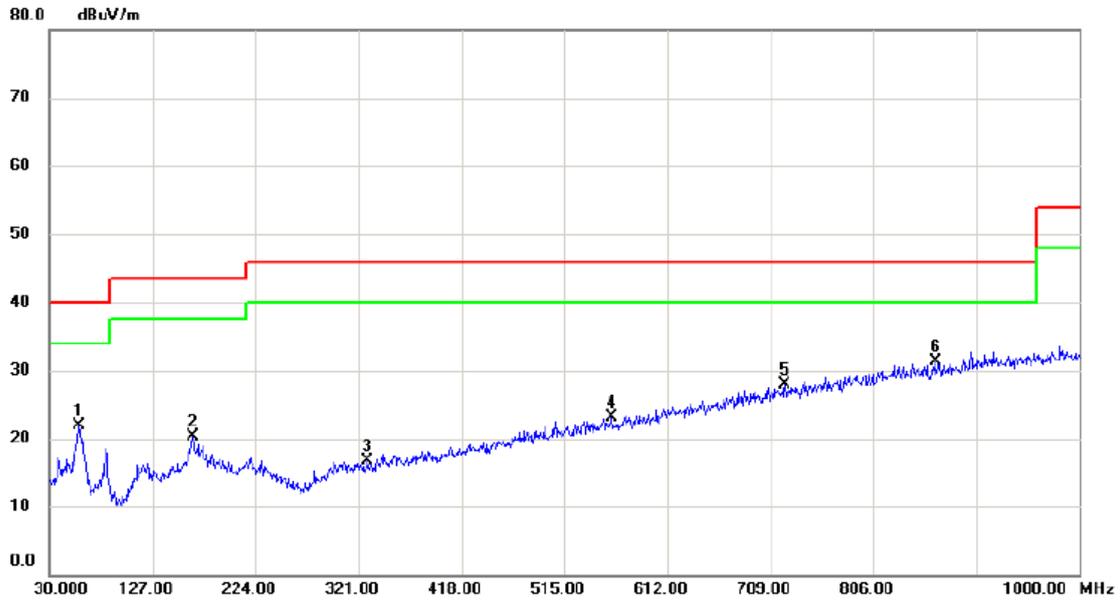
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	58.130	48.65	-13.85	34.80	40.00	-5.20	QP	
2		191.990	31.73	-12.62	19.11	43.50	-24.39	peak	
3		359.800	29.12	-11.21	17.91	46.00	-28.09	peak	
4		524.700	29.77	-7.41	22.36	46.00	-23.64	peak	
5		744.890	30.19	-1.55	28.64	46.00	-17.36	peak	
6		918.520	28.85	2.57	31.42	46.00	-14.58	peak	

Test Mode: TX 2402MHz_CH00_1Mbps_Adapter: Huntkey

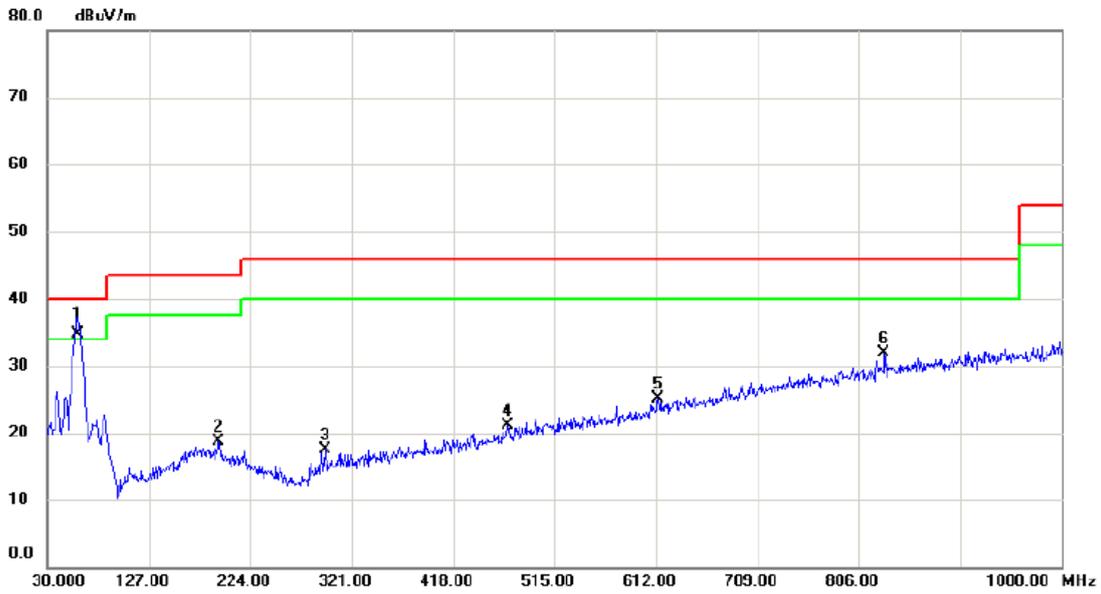
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		57.160	35.76	-13.77	21.99	40.00	-18.01	peak	
2		164.830	32.60	-12.27	20.33	43.50	-23.17	peak	
3		329.730	28.41	-11.72	16.69	46.00	-29.31	peak	
4		559.620	29.71	-6.60	23.11	46.00	-22.89	peak	
5		722.580	30.06	-2.23	27.83	46.00	-18.17	peak	
6	*	864.200	29.83	1.43	31.26	46.00	-14.74	peak	

Test Mode: TX 2480MHz_CH39_1Mbps_Adapter: Huntkey

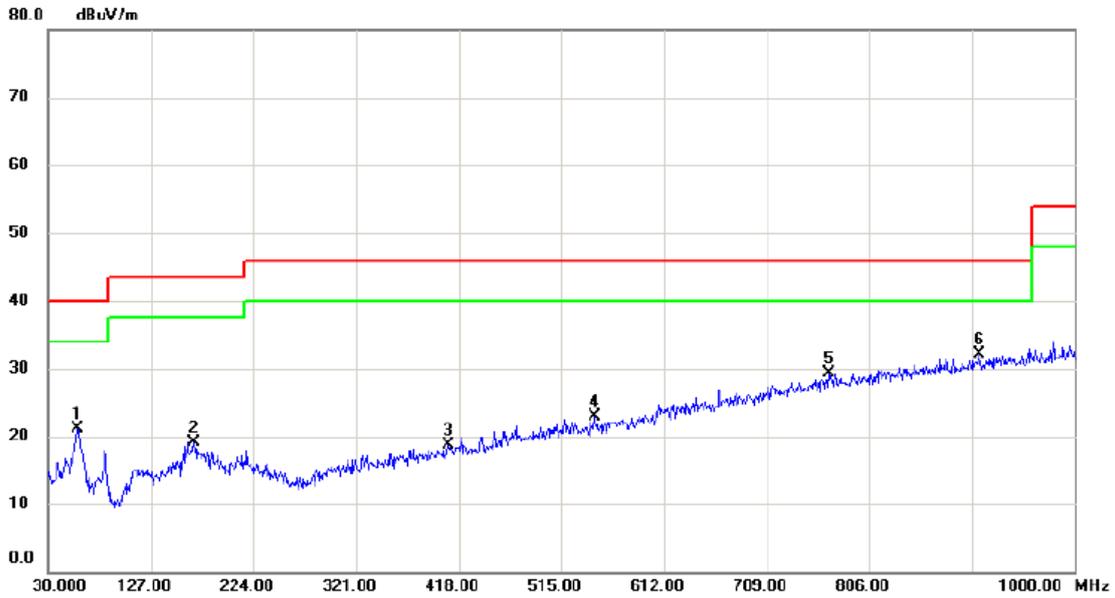
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	59.100	48.64	-13.95	34.69	40.00	-5.31	QP	
2		193.930	31.58	-12.79	18.79	43.50	-24.71	peak	
3		295.780	30.47	-12.87	17.60	46.00	-28.40	peak	
4		470.380	29.86	-8.69	21.17	46.00	-24.83	peak	
5		613.940	30.31	-5.21	25.10	46.00	-20.90	peak	
6		830.250	31.29	0.56	31.85	46.00	-14.15	peak	

Test Mode: TX 2480MHz_CH39_1Mbps_Adapter: Huntkey

Horizontal

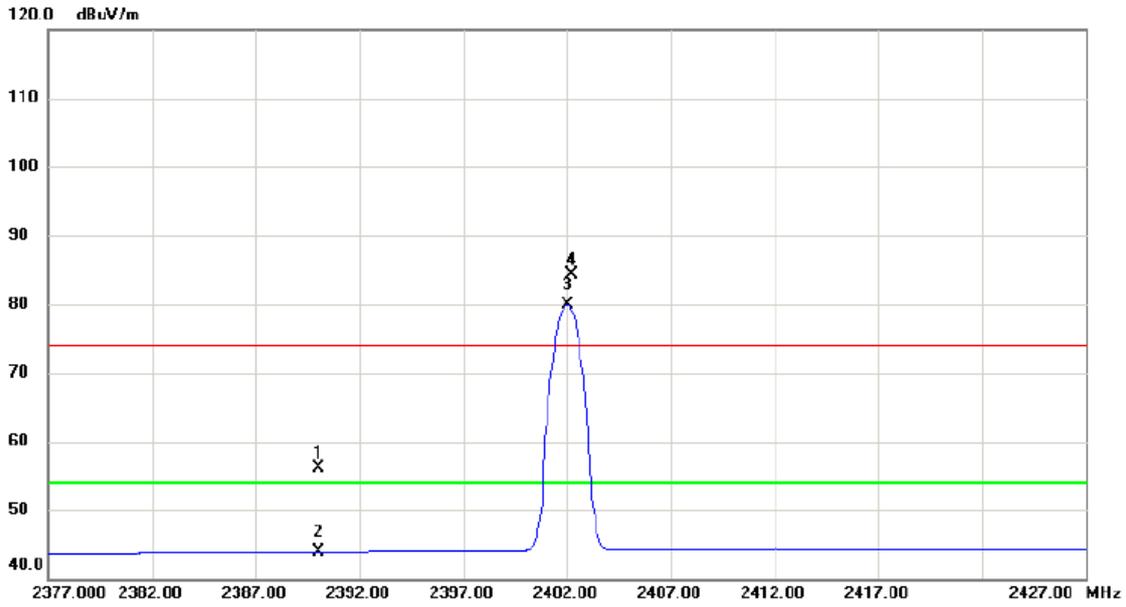


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		57.160	34.87	-13.77	21.10	40.00	-18.90	peak	
2		167.740	31.11	-12.09	19.02	43.50	-24.48	peak	
3		408.300	29.14	-10.45	18.69	46.00	-27.31	peak	
4		546.040	29.79	-6.95	22.84	46.00	-23.16	peak	
5		767.200	30.38	-1.00	29.38	46.00	-16.62	peak	
6	*	909.790	29.74	2.41	32.15	46.00	-13.85	peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Test Mode : TX 2402MHz _CH00_1Mbps

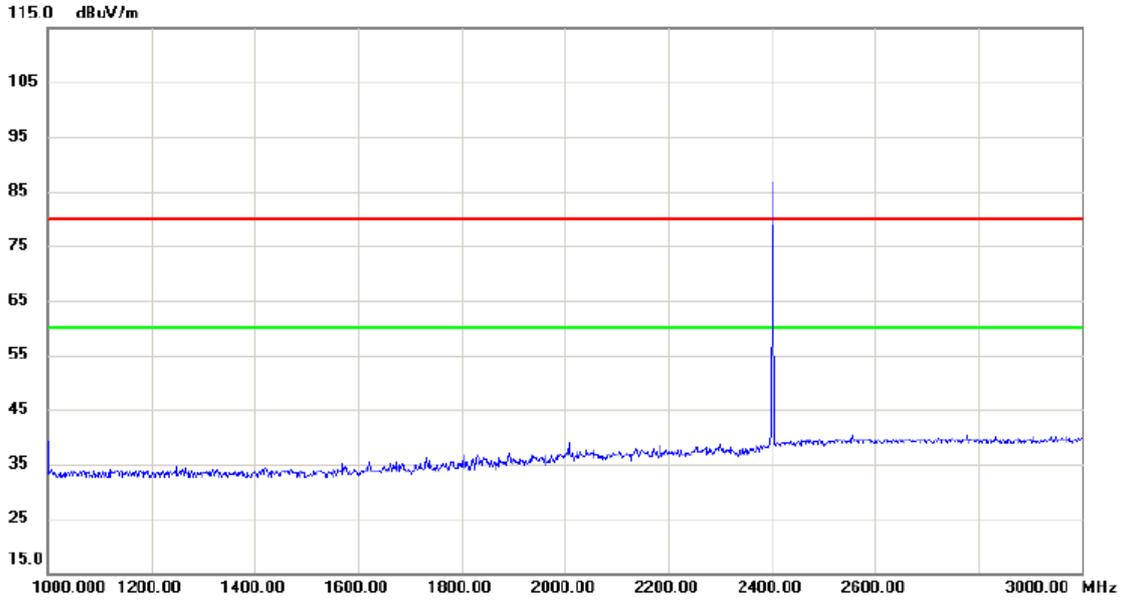
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	23.74	32.37	56.11	74.00	-17.89	peak	
2		2390.000	11.57	32.37	43.94	54.00	-10.06	AVG	
3	*	2402.000	47.49	32.42	79.91	54.00	25.91	AVG	No Limit
4	X	2402.250	51.95	32.42	84.37	74.00	10.37	peak	No Limit

Test Mode : TX 2402MHz _CH00_1Mbps

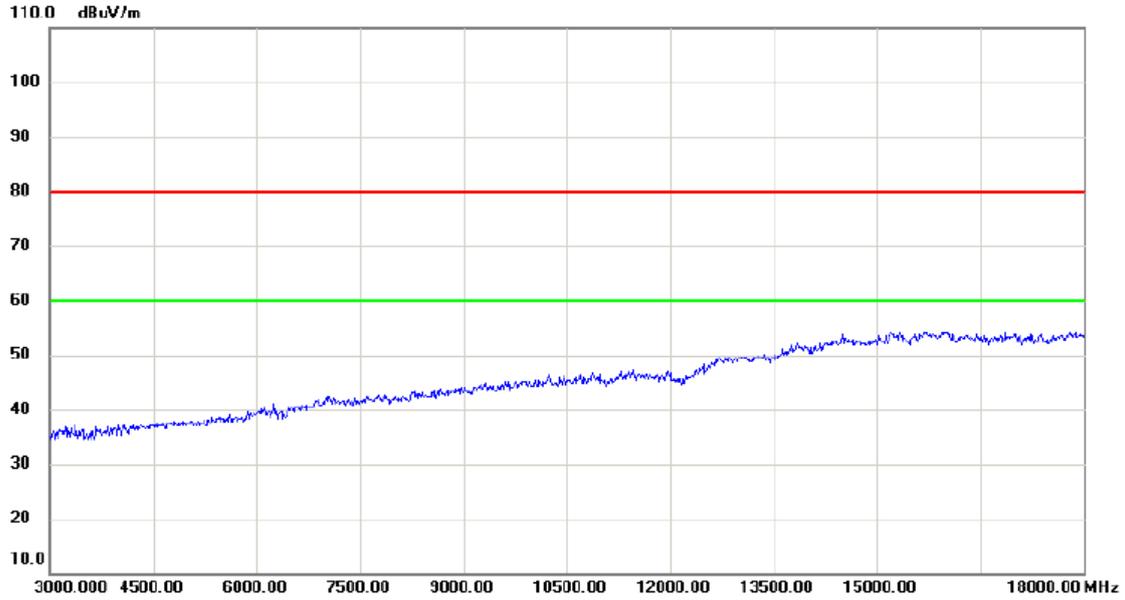
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
		2402.000	85.0	0.0	85.0	80.0	5.0		

Test Mode : TX 2402MHz _CH00_1Mbps

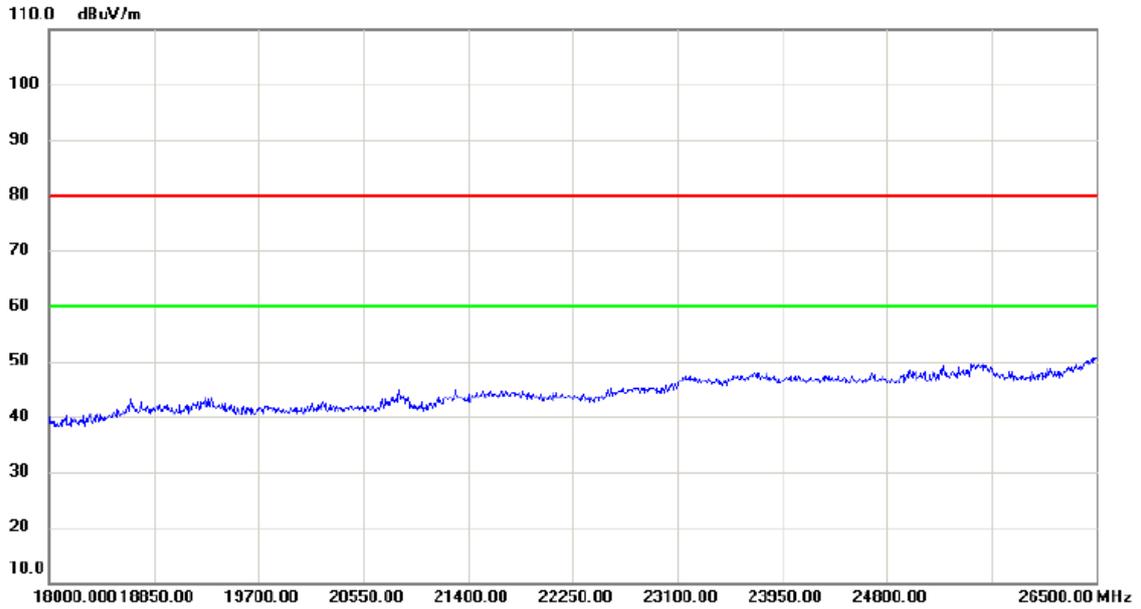
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
		3000.000	35		35	60	25		
		4500.00	36		36	60	24		
		6000.00	38		38	60	22		
		7500.00	40		40	60	20		
		9000.00	42		42	60	18		
		10500.00	44		44	60	16		
		12000.00	46		46	60	14		
		13500.00	48		48	60	12		
		15000.00	50		50	60	10		
		18000.00	55		55	60	5		

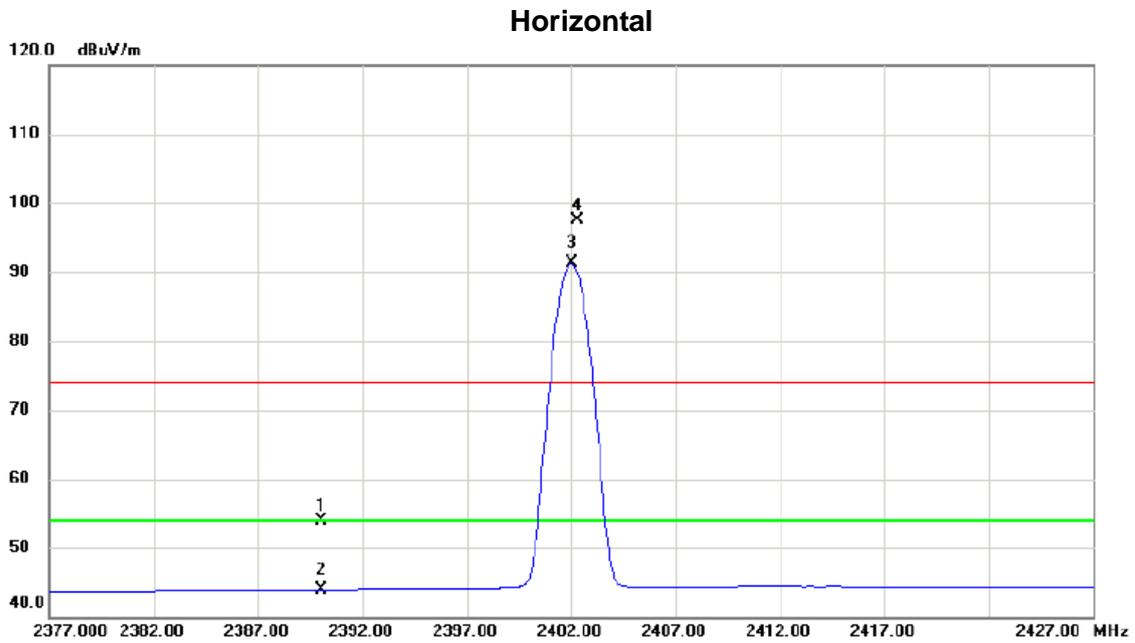
Test Mode : TX 2402MHz _CH00_1Mbps

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		

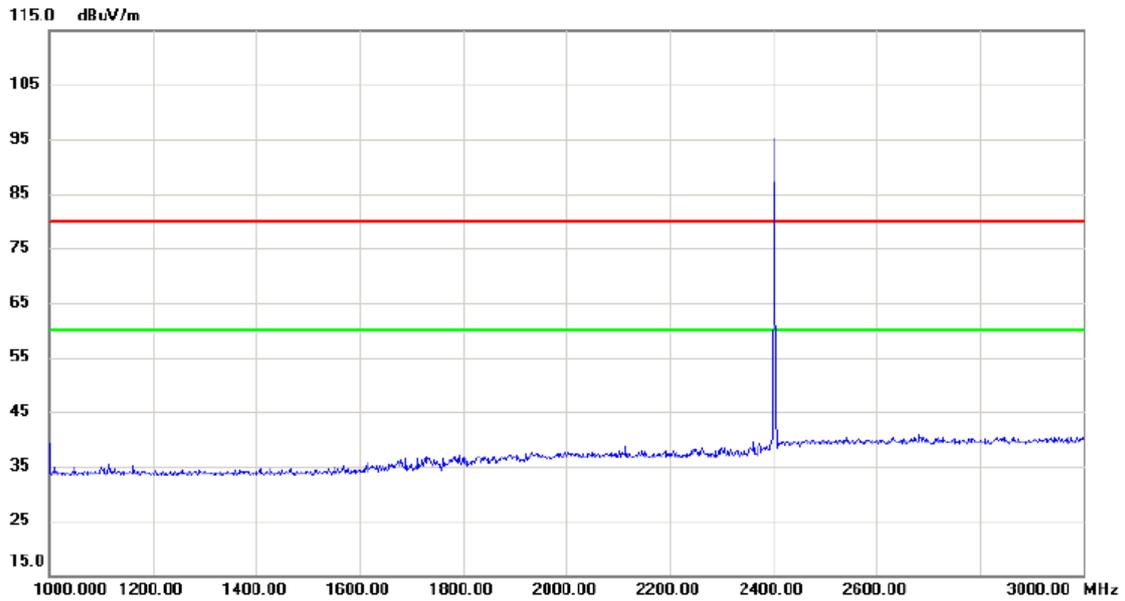
Test Mode : TX 2402MHz _CH00_1Mbps



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	21.46	32.37	53.83	74.00	-20.17	peak	
2		2390.000	11.60	32.37	43.97	54.00	-10.03	AVG	
3	*	2402.000	58.85	32.42	91.27	54.00	37.27	AVG	No Limit
4	X	2402.300	65.14	32.42	97.56	74.00	23.56	peak	No Limit

Test Mode : TX 2402MHz _CH00_1Mbps

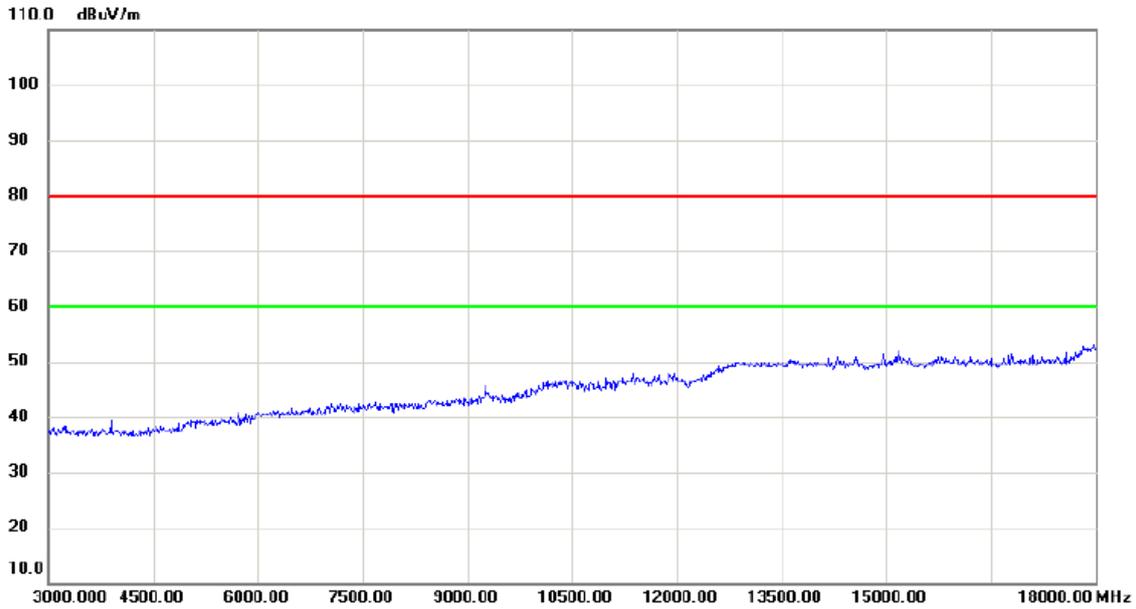
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
		2400.00	~35		~35	~80	~45		

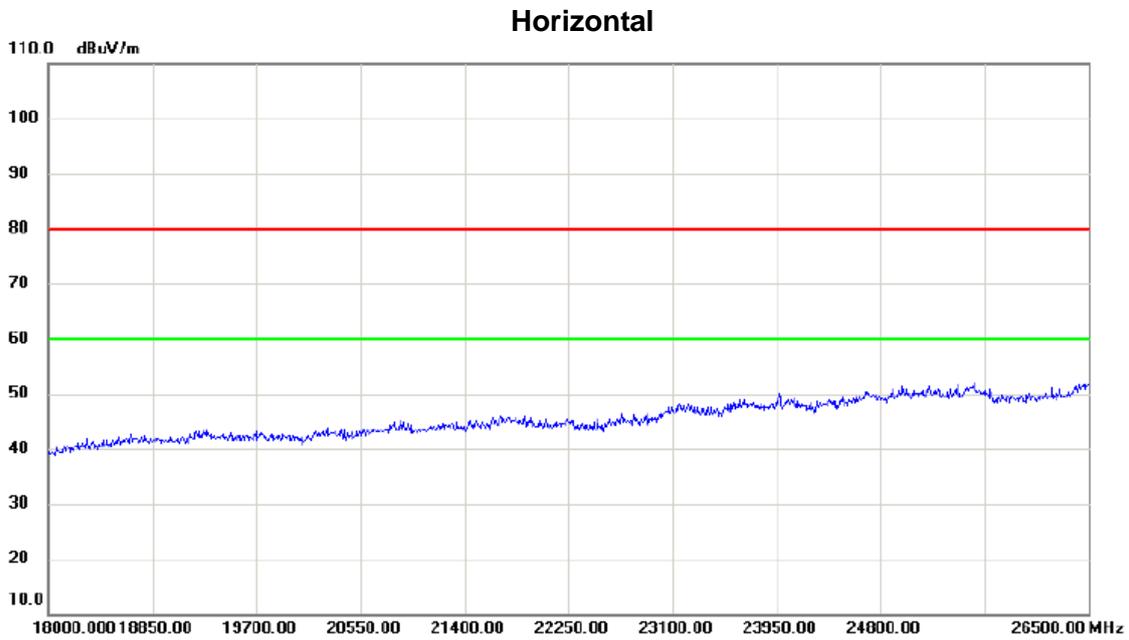
Test Mode : TX 2402MHz _CH00_1Mbps

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		

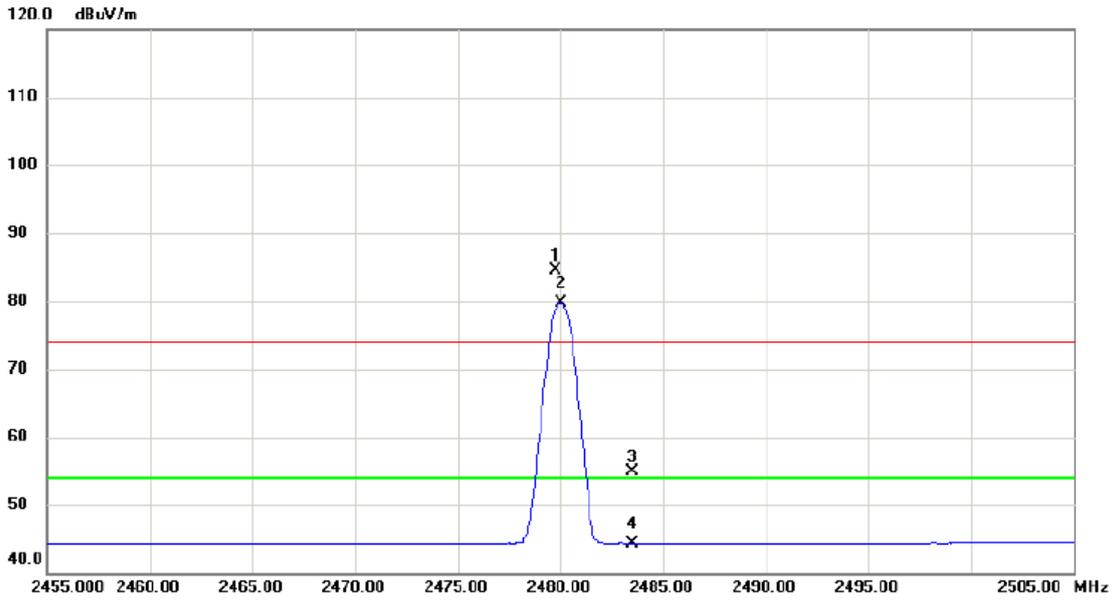
Test Mode : TX 2402MHz _CH00_1Mbps



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		

Test Mode : TX 2480MHz _CH39_ 1Mbps

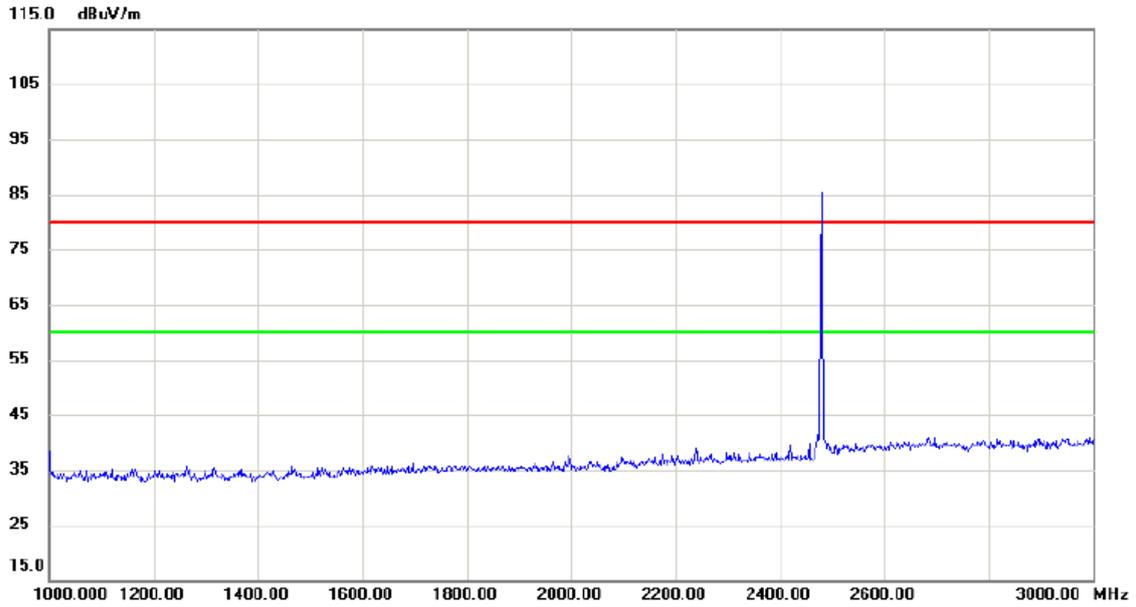
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2479.750	51.73	32.70	84.43	74.00	10.43	peak	No Limit
2	*	2480.000	47.04	32.70	79.74	54.00	25.74	AVG	No Limit
3		2483.500	22.23	32.71	54.94	74.00	-19.06	peak	
4		2483.500	11.67	32.71	44.38	54.00	-9.62	AVG	

Test Mode : TX 2480MHz _CH39_1Mbps

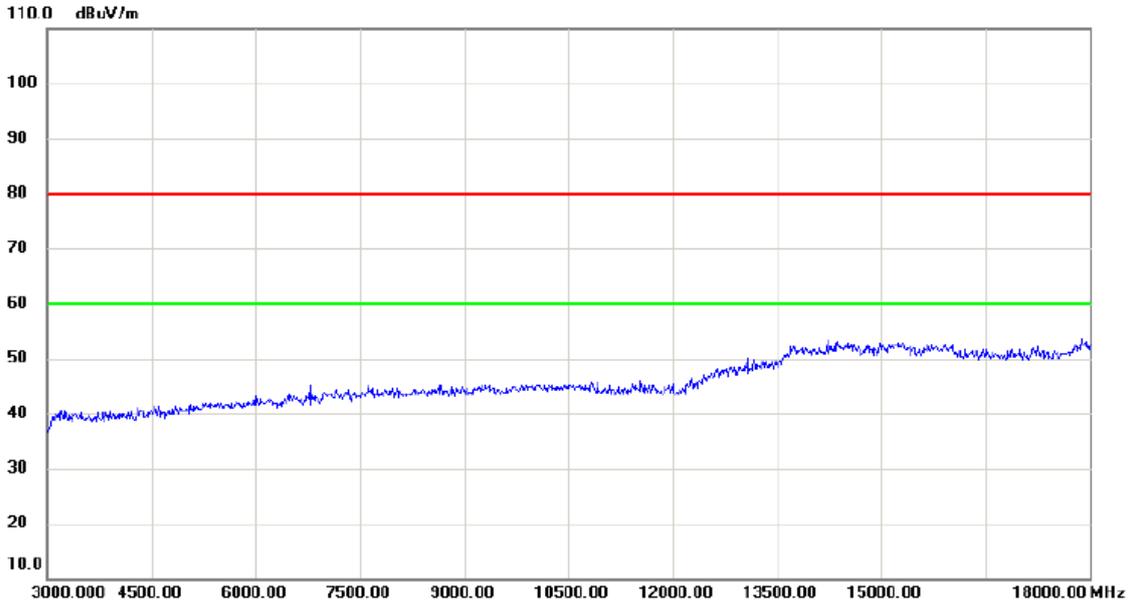
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
		2480.00	85.0	0.0	85.0	80.0	5.0		

Test Mode : TX 2480MHz _CH39_1Mbps

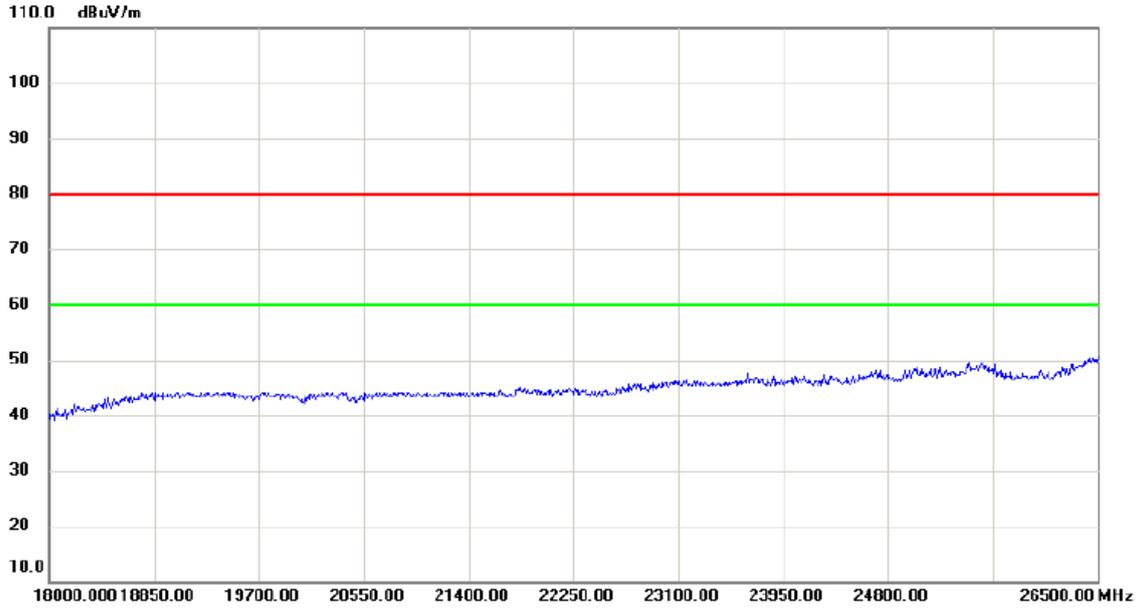
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		

Test Mode : TX 2480MHz _CH39_1Mbps

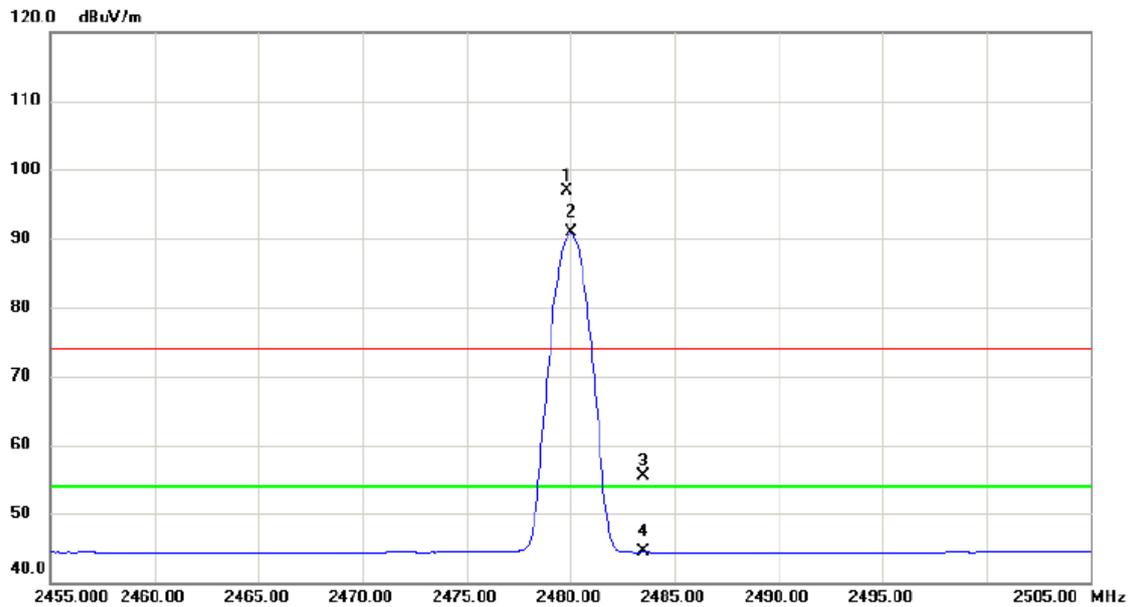
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		

Test Mode : TX 2480MHz _CH39_1Mbps

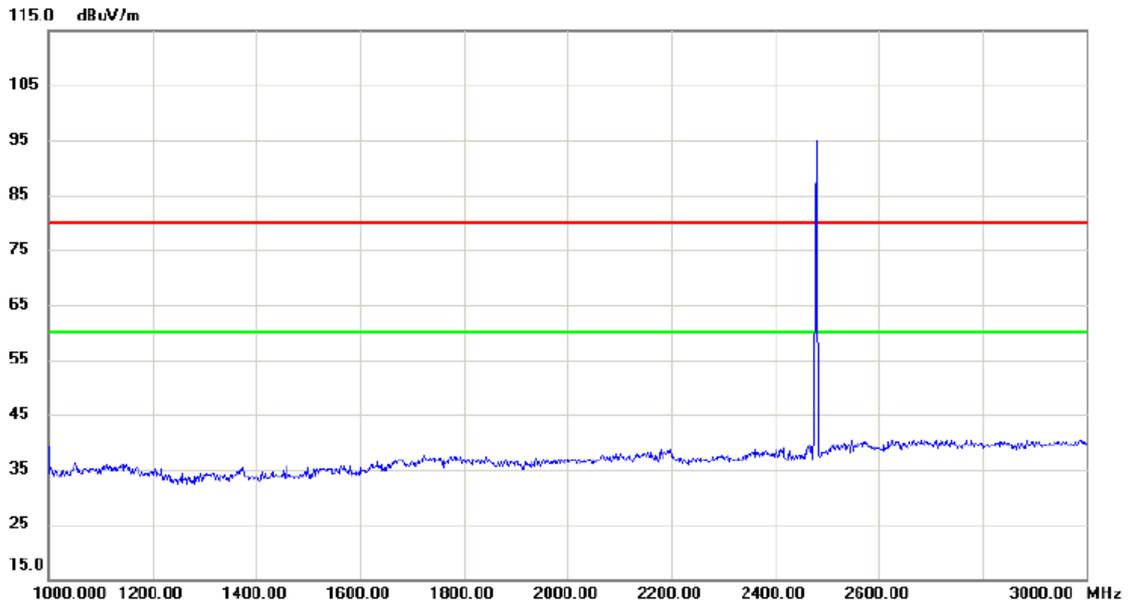
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2479.800	64.17	32.70	96.87	74.00	22.87	peak	No Limit
2	*	2480.000	58.14	32.70	90.84	54.00	36.84	AVG	No Limit
3		2483.500	22.88	32.71	55.59	74.00	-18.41	peak	
4		2483.500	11.70	32.71	44.41	54.00	-9.59	AVG	

Test Mode : TX 2480MHz _CH39_1Mbps

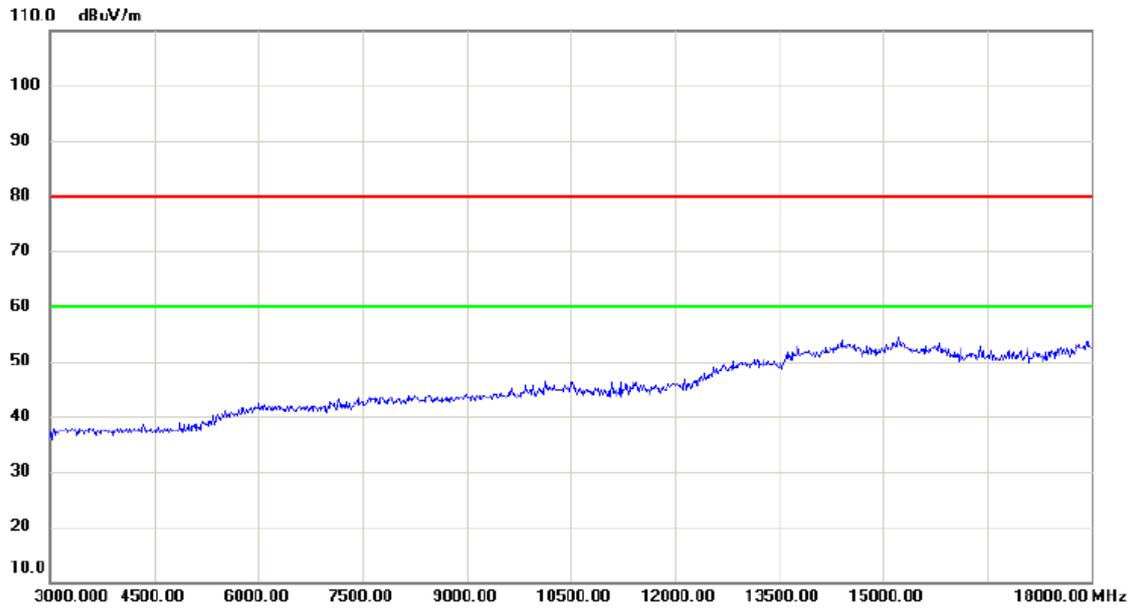
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
		2480.00	95.0	0.0	95.0	80.0	15.0		

Test Mode : TX 2480MHz _CH39_1Mbps

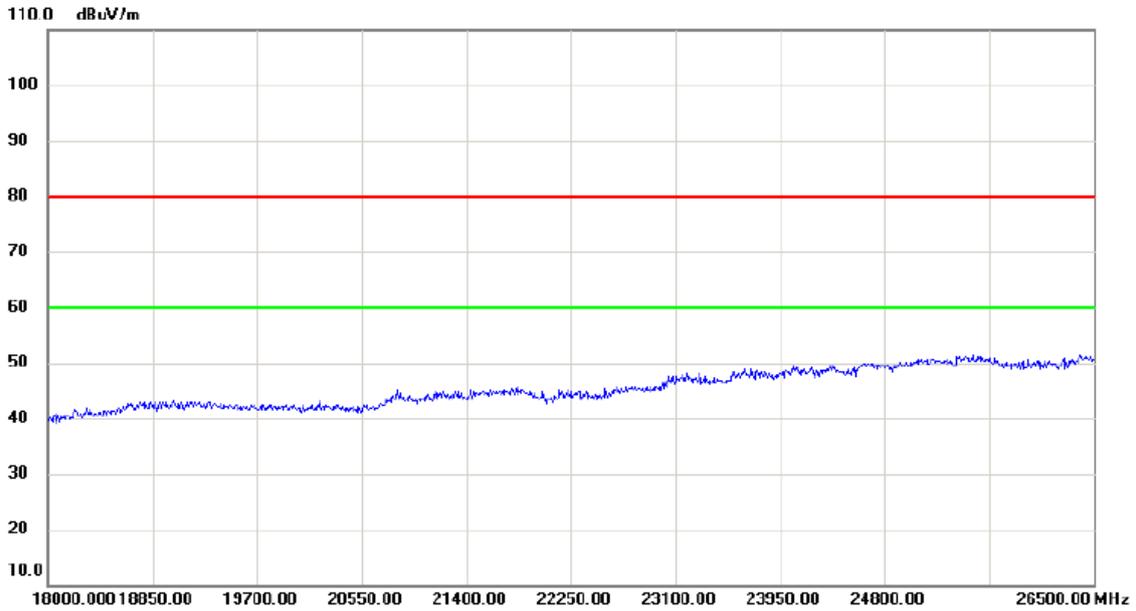
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		

Test Mode : TX 2480MHz _CH39_1Mbps

Horizontal



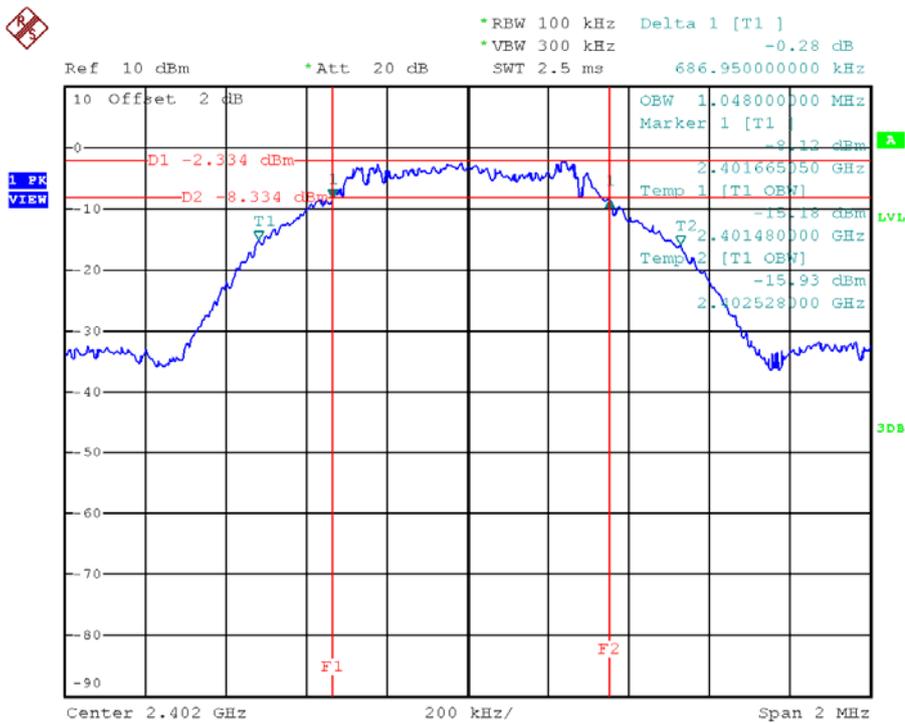
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		

ATTACHMENT E - BANDWIDTH

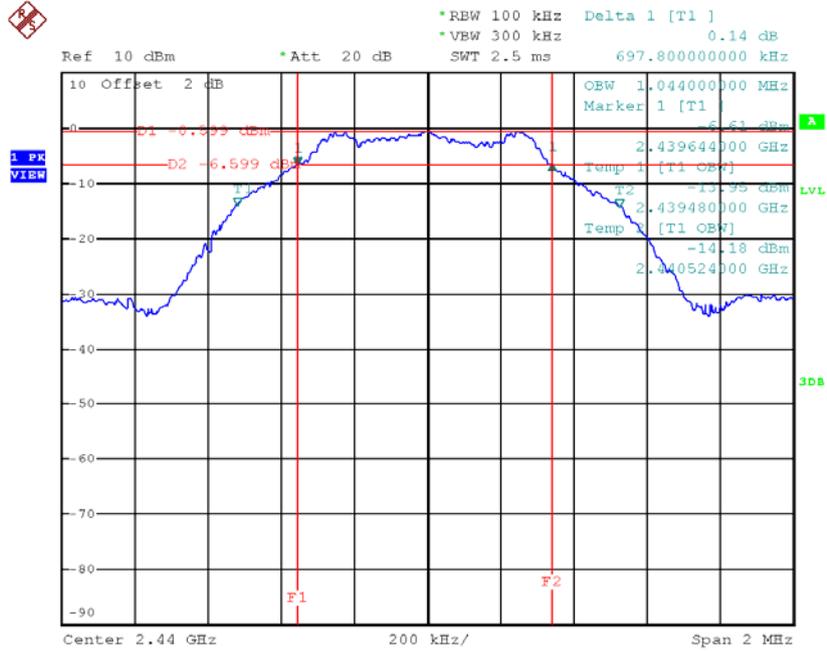
Test Mode:	TX Mode
------------	---------

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2402	0.687	1.048	500	Pass
2440	0.698	1.044	500	Pass
2480	0.694	1.044	500	Pass

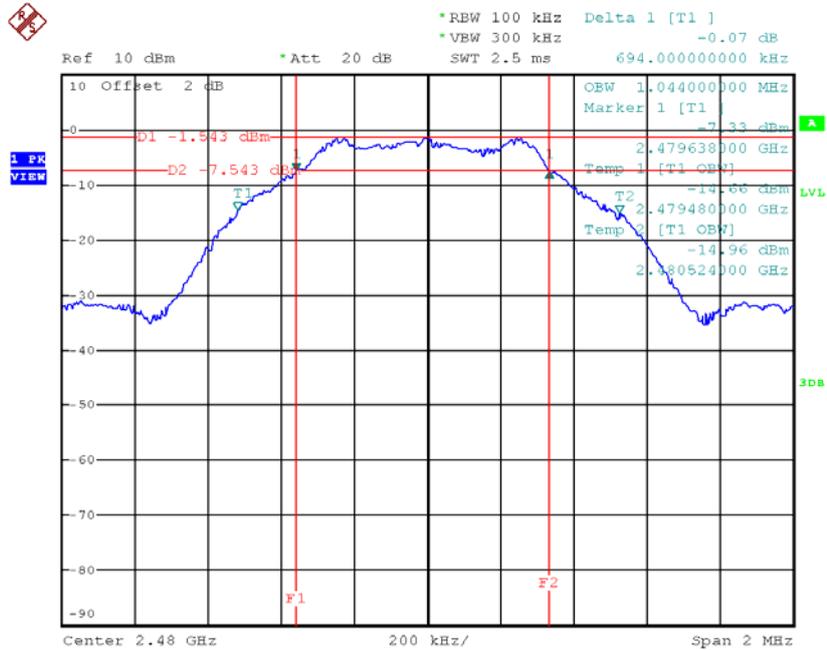
TX CH00



TX CH19



TX CH39



ATTACHMENT F - MAXIMUM OUTPUT POWER TEST

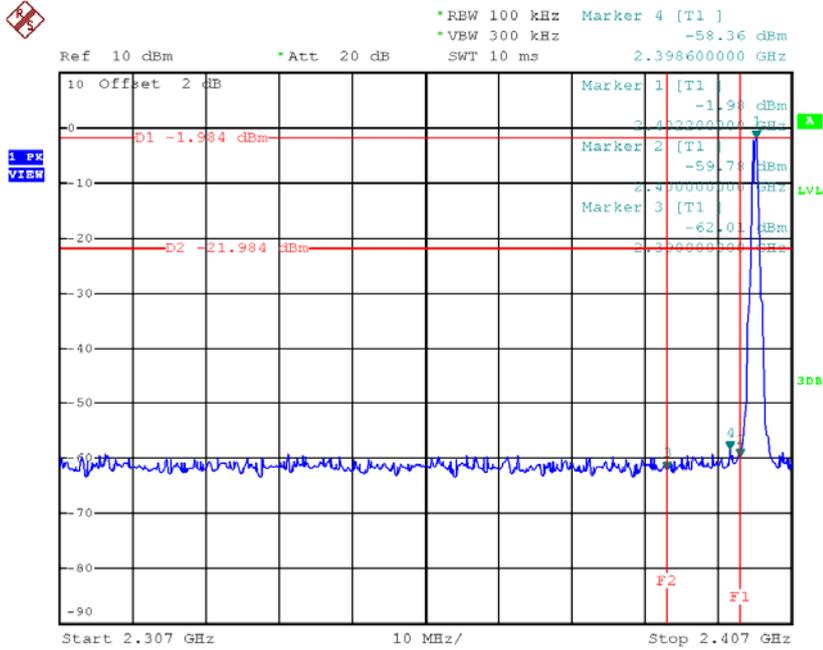
Test Mode : CH00, CH19 , CH39 - 1Mbps

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	-0.96	0.0008	30.00	1.00	Pass
2440	0.48	0.0011	30.00	1.00	Pass
2480	-0.31	0.0009	30.00	1.00	Pass

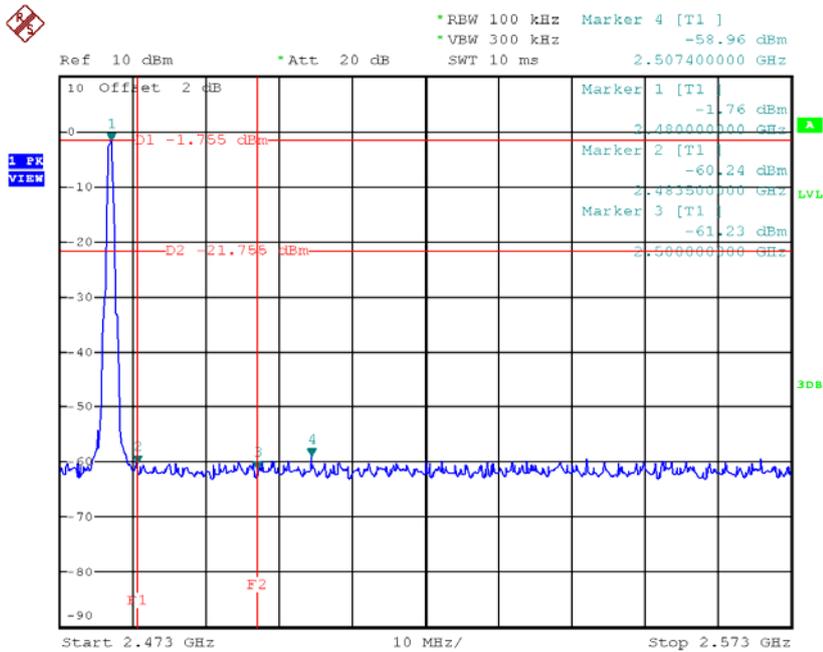
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

Test Mode : CH00, CH19 , CH39 - 1Mbps

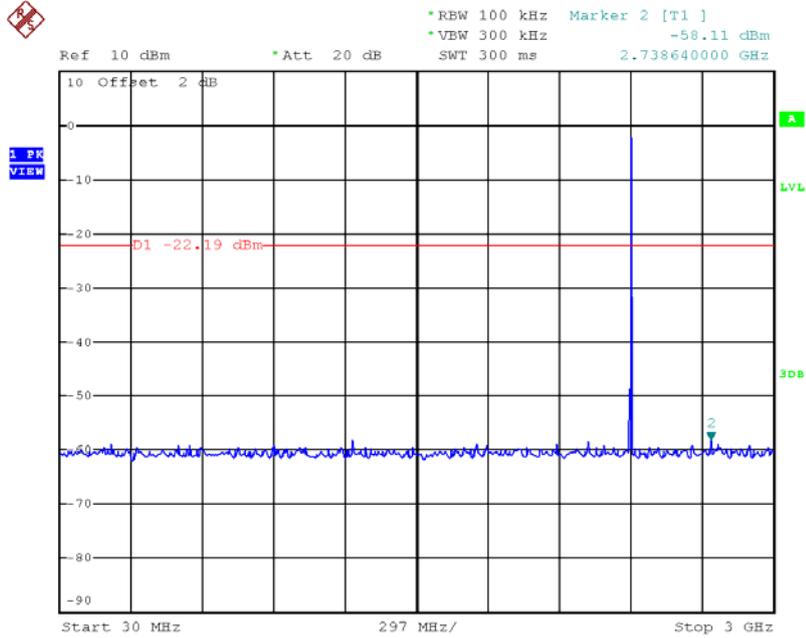
CH00 (Lower) - 1Mbps



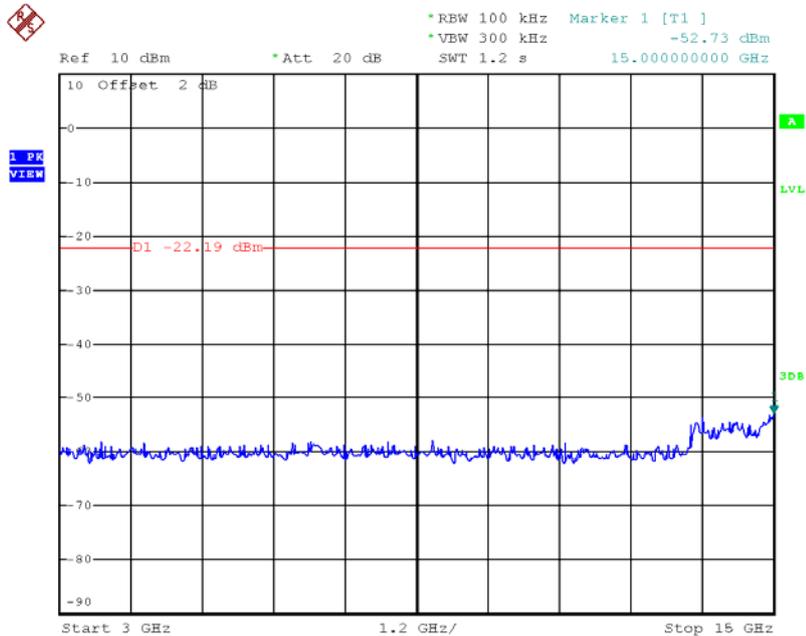
CH39 (upper) - 1Mbps



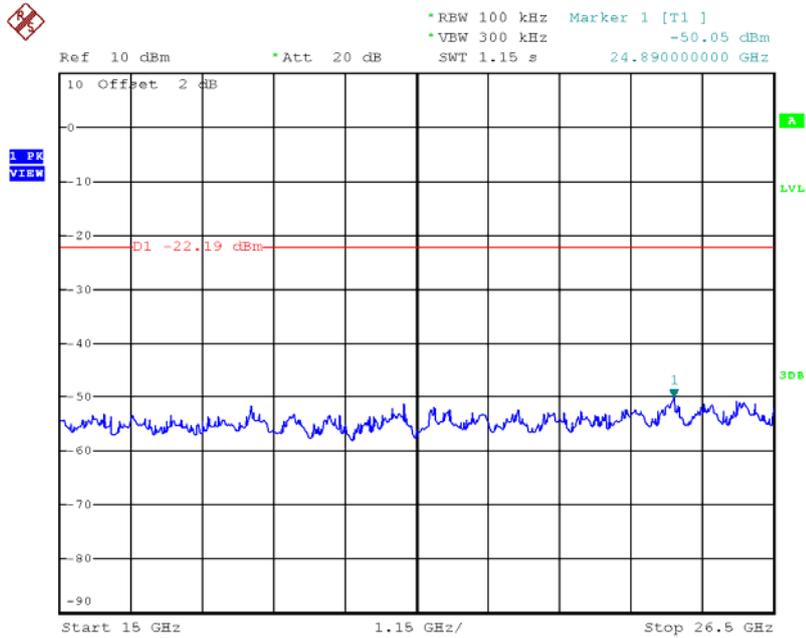
CH00 (10 Harmonic of the frequency) 1



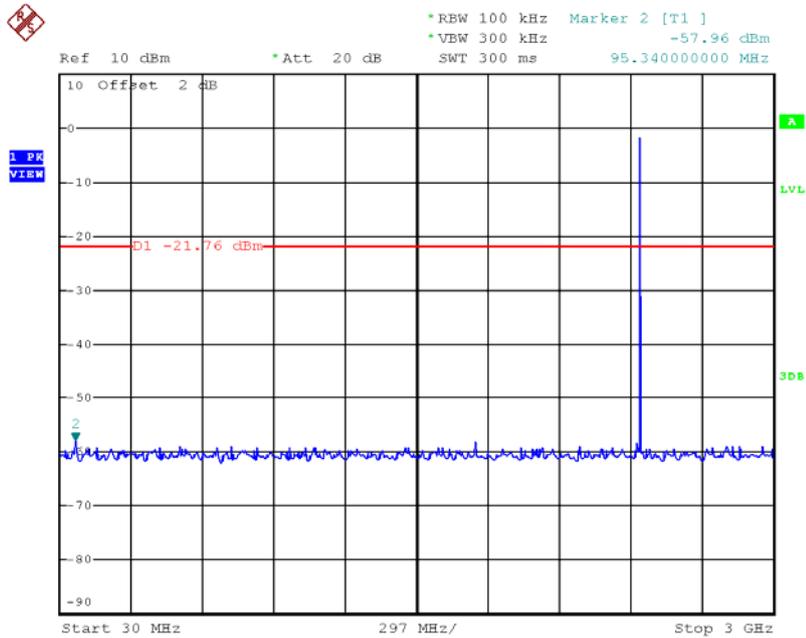
CH00 (10 Harmonic of the frequency) 2



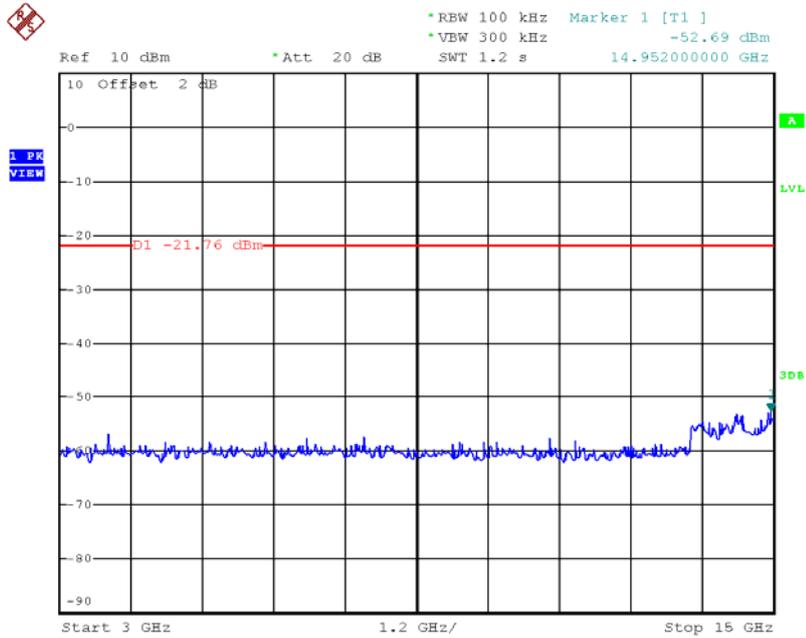
CH00 (10 Harmonic of the frequency) 3



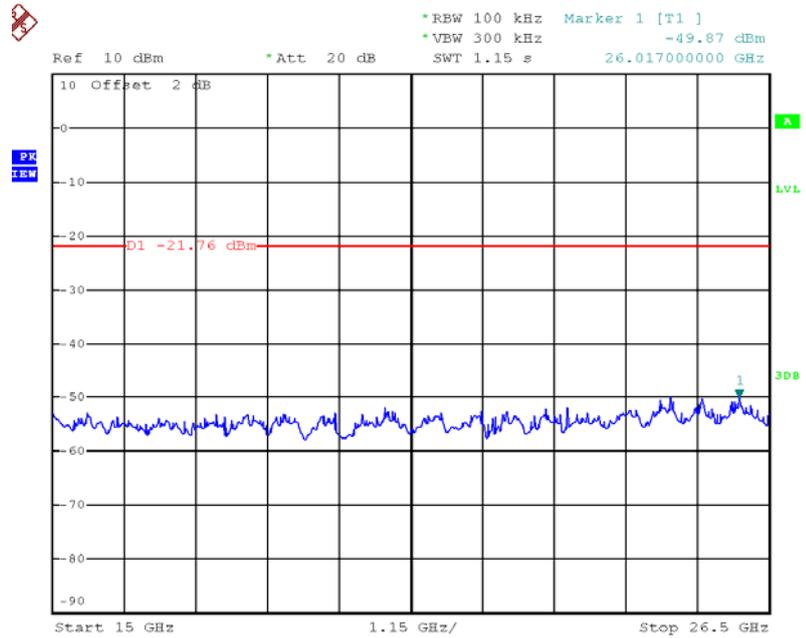
CH19 (10 Harmonic of the frequency) 1



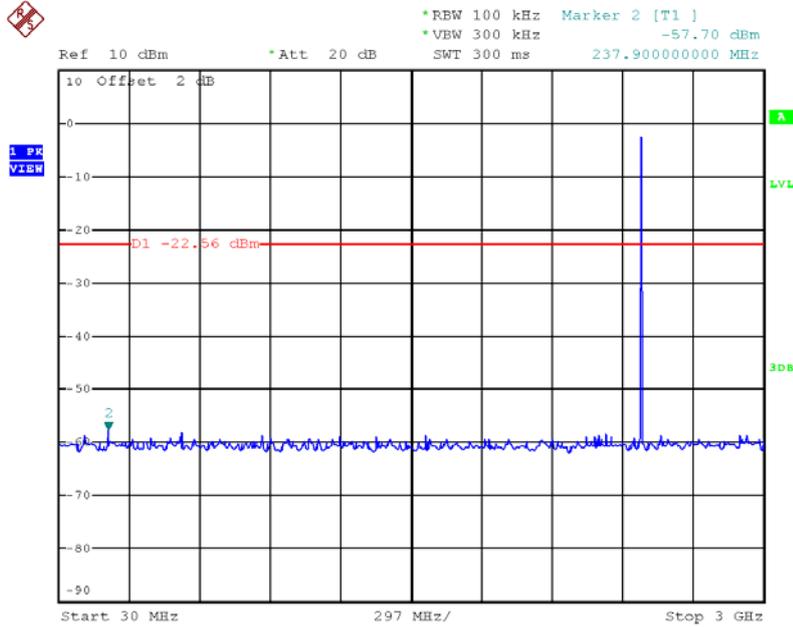
CH19 (10 Harmonic of the frequency) 2



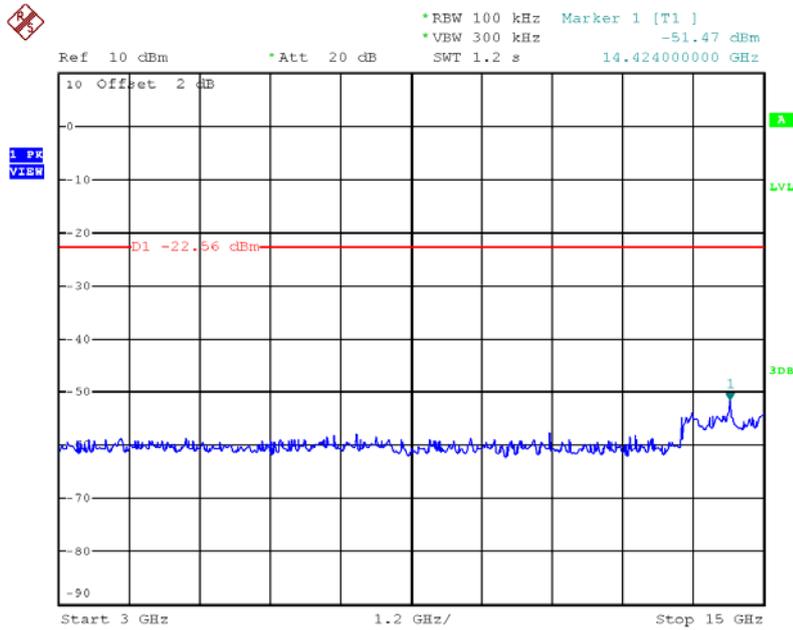
CH19 (10 Harmonic of the frequency) 3



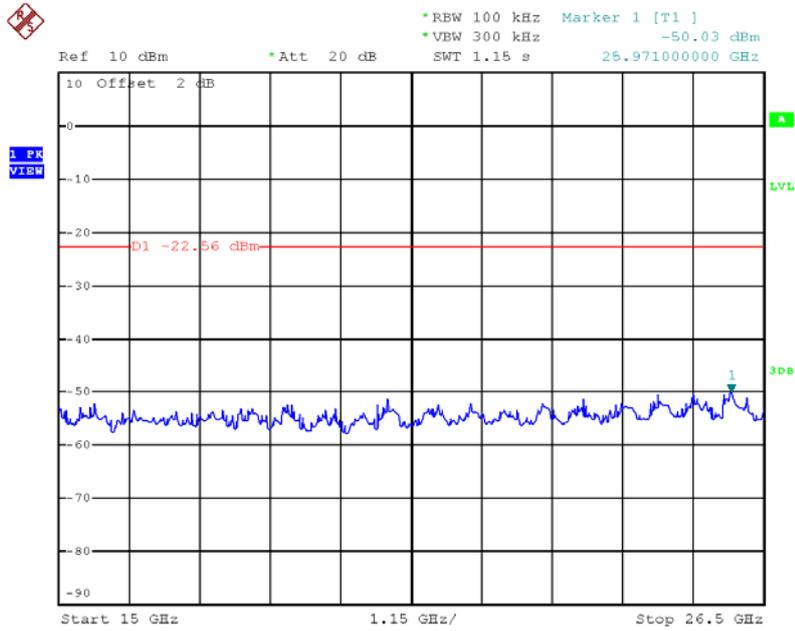
CH39 (10 Harmonic of the frequency) 1



CH39 (10 Harmonic of the frequency) 2



CH39 (10 Harmonic of the frequency) 3

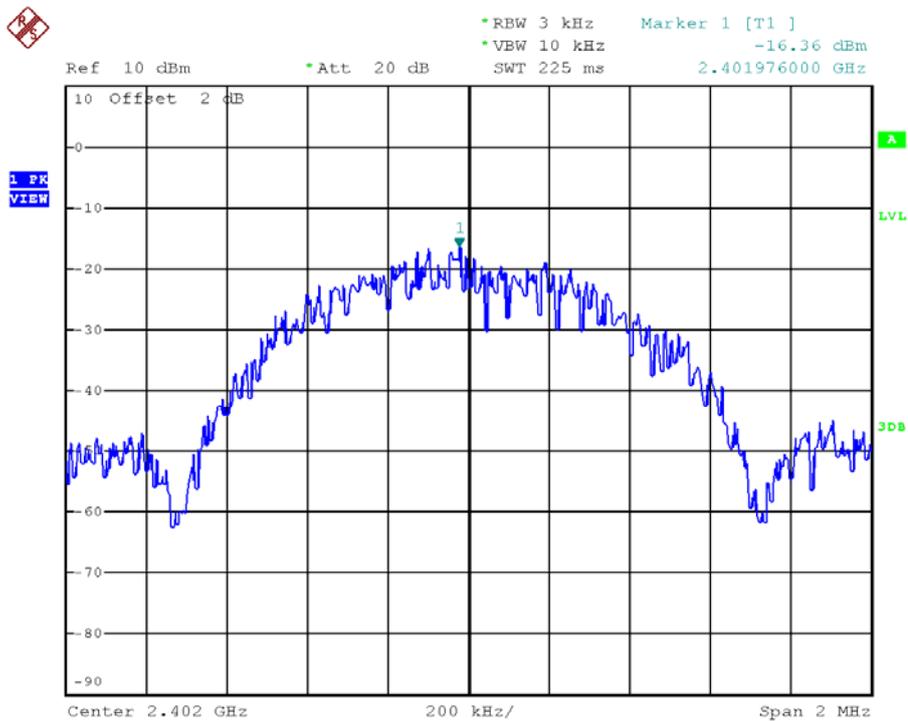


ATTACHMENT H - POWER SPECTRAL DENSITY TEST

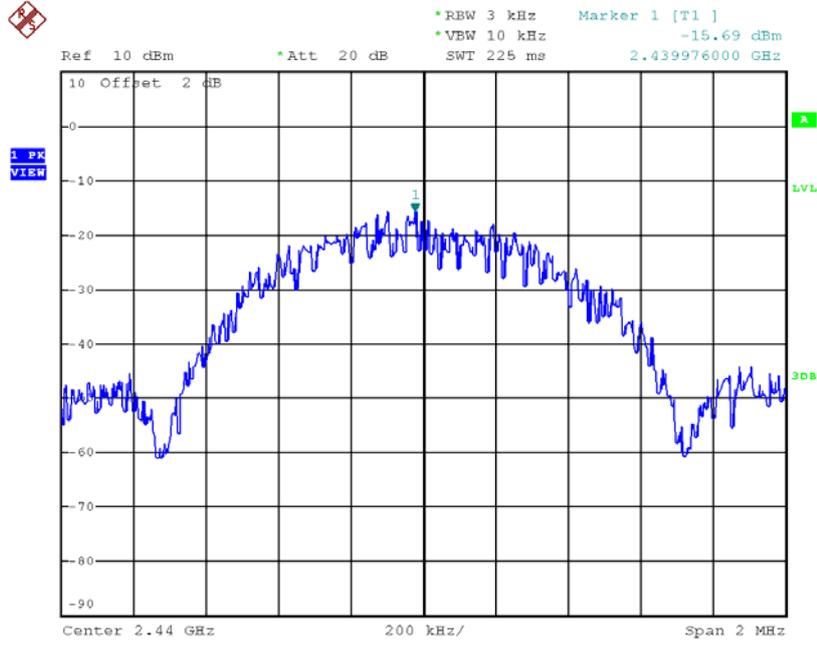
Test Mode: CH00, CH19 , CH39 - 1Mbps

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Test Result
2402	-16.360	0.023	8.00	Pass
2440	-15.690	0.027	8.00	Pass
2480	-16.120	0.024	8.00	Pass

TX CH00



TX CH19



TX CH39

