

FCC Radio Test Report

FCC ID: QISCRO-LX3

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

Project No. : 1701C155A
Equipment : Smart Phone
Model Name : CRO-L03,CRO-L23
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
Date of Test : Jan. 18, 2017 ~ Feb. 27, 2017
Issued Date : Mar. 23, 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	11
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	11
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	12
3.5 DESCRIPTION OF SUPPORT UNITS	12
4 . EMC EMISSION TEST	13
4.1 CONDUCTED EMISSION MEASUREMENT	13
4.1.1 POWER LINE CONDUCTED EMISSION LIMITS	13
4.1.2 TEST PROCEDURE	13
4.1.3 DEVIATION FROM TEST STANDARD	13
4.1.4 TEST SETUP	14
4.1.5 EUT OPERATING CONDITIONS	14
4.1.6 EUT TEST CONDITIONS	14
4.1.7 TEST RESULTS	14
4.2 RADIATED EMISSION MEASUREMENT	15
4.2.1 RADIATED EMISSION LIMITS	15
4.2.2 TEST PROCEDURE	16
4.2.3 DEVIATION FROM TEST STANDARD	16
4.2.4 TEST SETUP	17
4.2.5 EUT OPERATING CONDITIONS	19
4.2.6 EUT TEST CONDITIONS	19
4.2.7 TEST RESULTS (9KHZ TO 30MHZ)	19
4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)	19
4.2.9 TEST RESULTS (ABOVE 1000 MHZ)	19
5 . BANDWIDTH TEST	20
5.1 APPLIED PROCEDURES / LIMIT	20
5.1.1 TEST PROCEDURE	20
5.1.2 DEVIATION FROM STANDARD	20
5.1.3 TEST SETUP	20
5.1.4 EUT OPERATION CONDITIONS	20
5.1.5 EUT TEST CONDITIONS	20
5.1.6 TEST RESULTS	20
6 . MAXIMUM OUTPUT POWER TEST	21

Table of Contents	Page
6.1 APPLIED PROCEDURES / LIMIT	21
6.1.1 TEST PROCEDURE	21
6.1.2 DEVIATION FROM STANDARD	21
6.1.3 TEST SETUP	21
6.1.4 EUT OPERATION CONDITIONS	21
6.1.5 EUT TEST CONDITIONS	21
6.1.6 TEST RESULTS	21
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	22
7.1 APPLIED PROCEDURES / LIMIT	22
7.1.1 TEST PROCEDURE	22
7.1.2 DEVIATION FROM STANDARD	22
7.1.3 TEST SETUP	22
7.1.4 EUT OPERATION CONDITIONS	22
7.1.5 EUT OPERATION CONDITIONS	22
7.1.6 TEST RESULTS	22
8 . POWER SPECTRAL DENSITY TEST	23
8.1 APPLIED PROCEDURES / LIMIT	23
8.1.1 TEST PROCEDURE	23
8.1.2 DEVIATION FROM STANDARD	23
8.1.3 TEST SETUP	23
8.1.4 EUT OPERATION CONDITIONS	23
8.1.5 EUT TEST CONDITIONS	23
8.1.6 TEST RESULTS	23
9 . MEASUREMENT INSTRUMENTS LIST	24
ATTACHMENT A - CONDUCTED EMISSION	26
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	33
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	46
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	59
ATTACHMENT E - BANDWIDTH	76
ATTACHMENT F - MAXIMUM OUTPUT POWER TEST	79
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	80
ATTACHMENT H - POWER SPECTRAL DENSITY TEST	87

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-2-1701C155	Original Report.	Feb. 28, 2017
BTL-FCCP-2-1701C155A	Compared with the original report (BTL-FCCP-2-1701C155), the model CRO-L23 is added and differences please see the below table. According to the differences description below table, CRO-L23 shares the same test data of CRO-L03 of the same bands which does not affect the test results of the test report.	Mar. 23, 2017

Model	CRO-L03	CRO-L23
Brand	HUAWEI	HUAWEI
2G Frequency	GSM/GPRS/EDEG 850//1900	GSM/GPRS/EDEG 850//1900
3G Frequency	UMTS: B2/B5	UMTS: B2/B5
4G Frequency	FDD-LTE:B2/B4/B5/B7	FDD-LTE:B2/B4/B5/B7
Hardware version	The same	The same
Software version	The difference	The difference
SIM Card	Single (Hardware GPIO level is tested by software to identify odd and even cards.)	Double Hardware GPIO level is tested by software to identify odd and even cards. The dual-slot is added through the hardware, others are the same; The only difference between CRO-L03 and CRO-L23 is: CRO-L03 is single SIM point, and the CRO-L23 is double SIM points.
Dimensions	The same	The same
Appearance	The same	The same
main antenna	The same	The same
BT/Wi-Fi antenna	The same	The same
GPS antenna	The same	The same
PA(GSM)	The same	The same
PA(UMTS/FDD)	The same	The same

1. CERTIFICATION

Equipment : Smart Phone
Brand Name : HUAWEI
Model Name : CRO-L03,CRO-L23
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
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-2-1701C155A) 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-L03,CRO-L23	
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-L03:Cairo-L03C469B015 CRO-L23:Cairo-L23C469B022	

Note:

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

Item	Mfr/Brand	Model.
Battery	SCUD (FUJIAN) Electronics Co., Ltd	HB3742A0EZC+
	Shenzhen Desay Battery Tech 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
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	2.6

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:

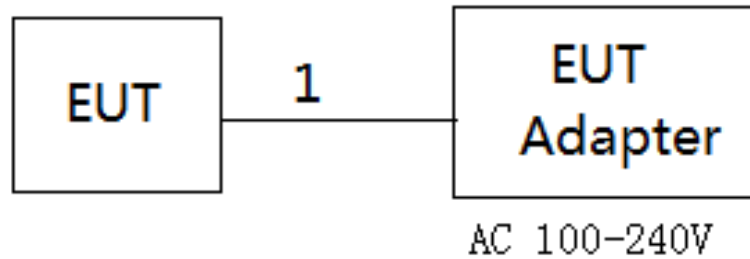
(1) The measurements are performed at the high, middle, low available channels.

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	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

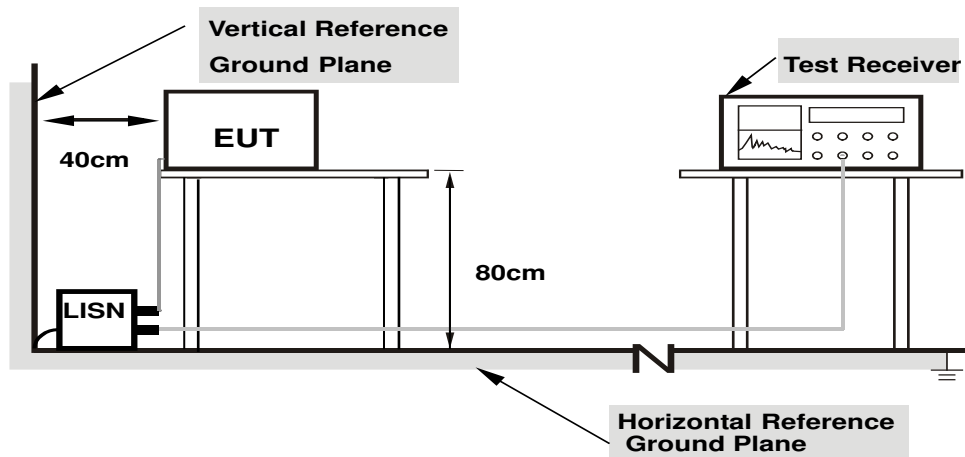
4.1.2 TEST PROCEDURE

- 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: 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 (dBμV/m)		Harmonic at 1.5m (dBμV/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 (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

(5)

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

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

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

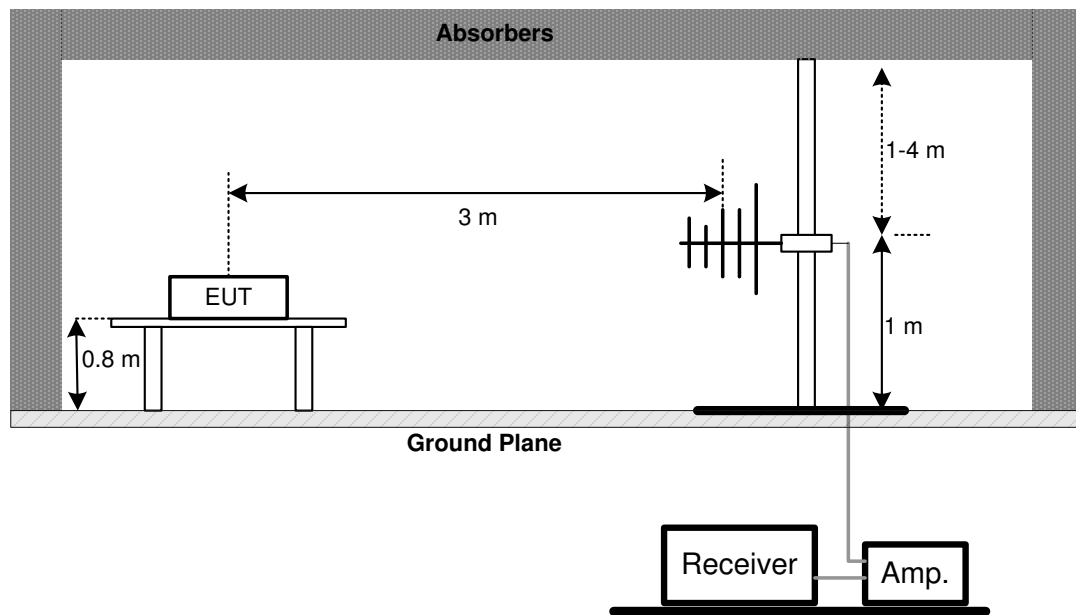
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of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

4.2.3 DEVIATION FROM TEST STANDARD

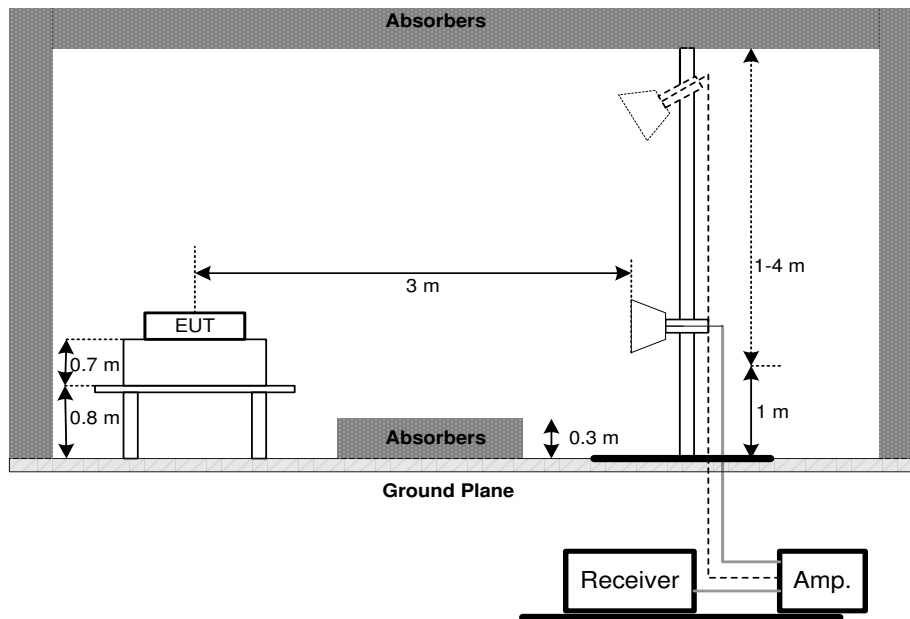
No deviation

4.2.4 TEST SETUP

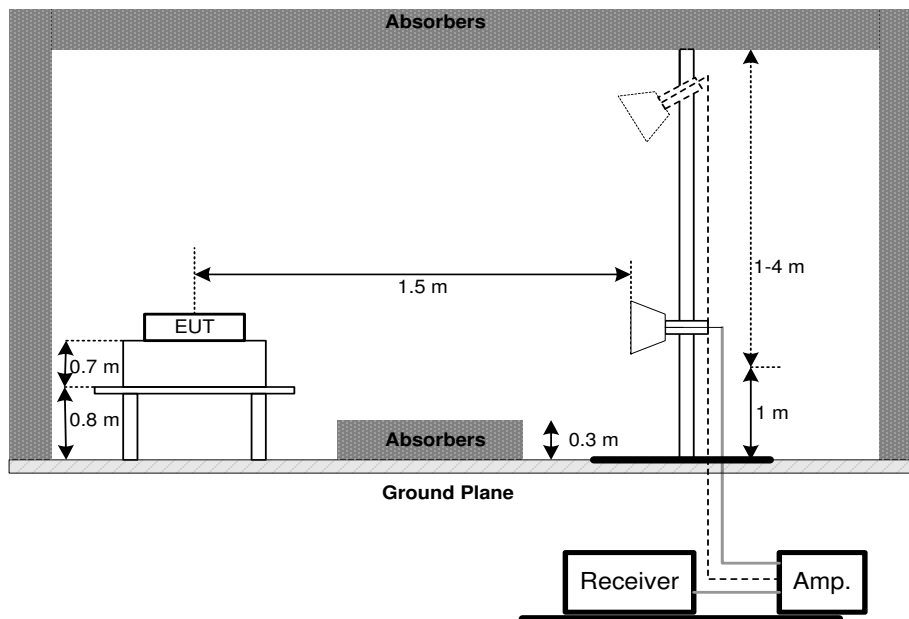
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



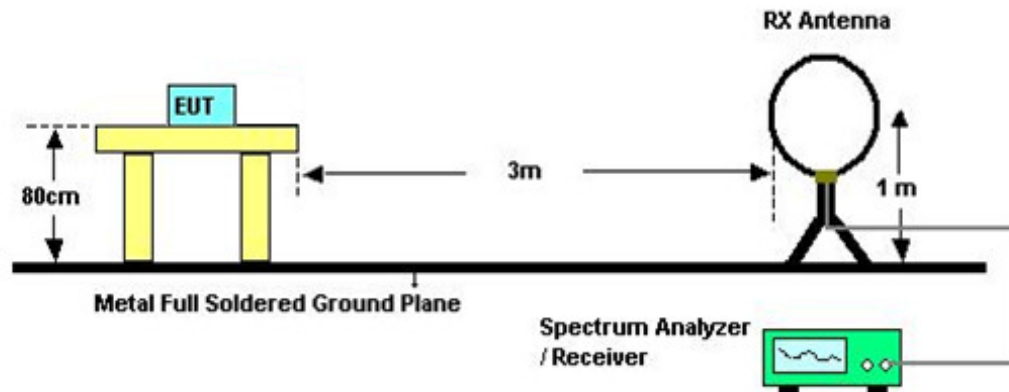
(B) Radiated Emission Test Set-Up Frequency Above 1 GHz
Band edge



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

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance.

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

- 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 = 10 ms.
- 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

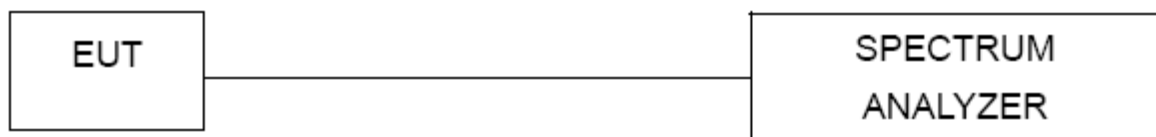
8.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW=3KHz, VBW=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. 27, 2017
2	LISN	EMCO	3816/2	52765	Mar. 27, 2017
3	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 27, 2017
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 27, 2017
5	Cable	emci	RG223(9KHz-30 MHz)(5m)	N/A	Mar. 10, 2017
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. 27, 2017
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	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Apr. 23, 2017
12	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Sep. 16, 2017
13	Controller	MF	MF-7802	MF780208416	N/A
14	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. 26, 2017
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Apr. 26, 2017

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

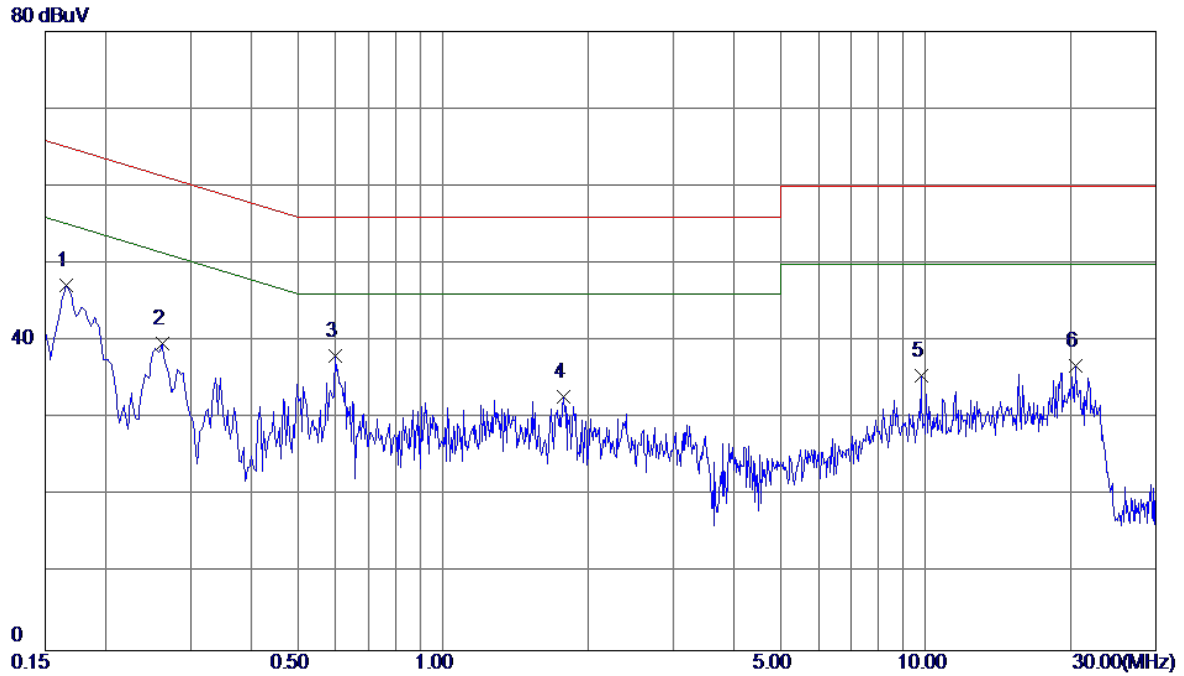
Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017

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

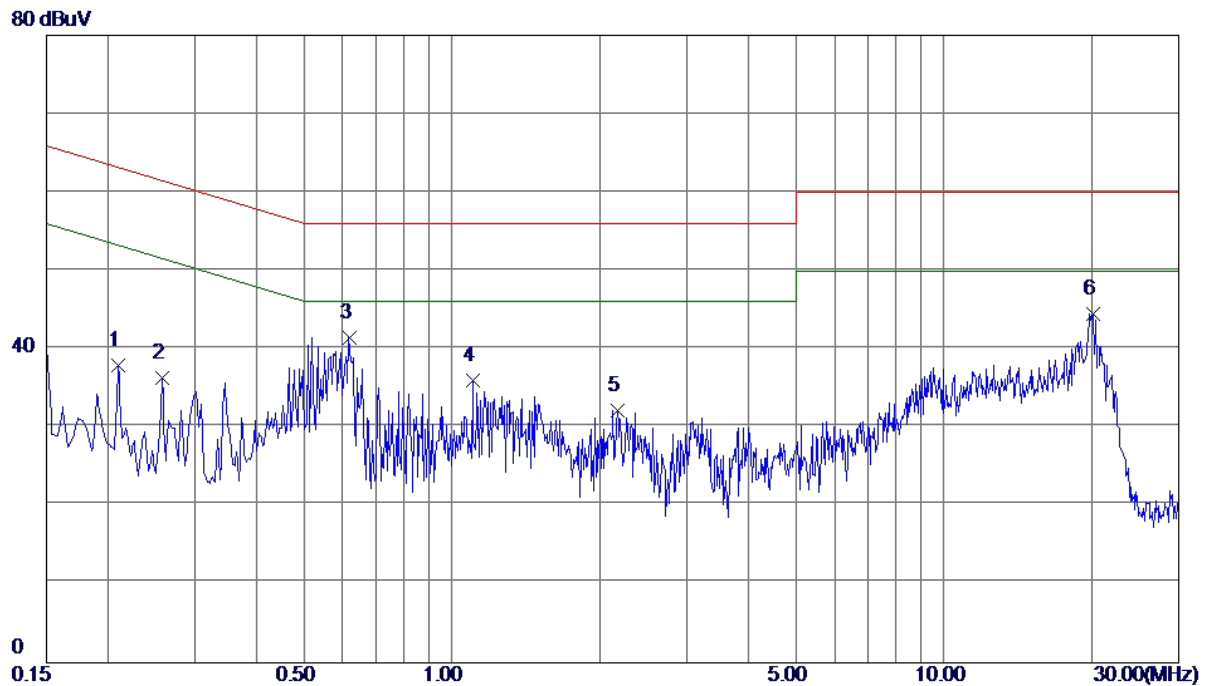
Line



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1660	37.69	9.57	47.26	65.16	-17.90	Peak	
2	0.2620	30.15	9.57	39.72	61.37	-21.65	Peak	
3	0.5980	28.34	9.70	38.04	56.00	-17.96	Peak	
4	1.7780	22.80	9.99	32.79	56.00	-23.21	Peak	
5	9.7860	25.11	10.48	35.59	60.00	-24.41	Peak	
6	20.4260	26.00	10.80	36.80	60.00	-23.20	Peak	

Test Mode: TX Mode_Adapter: BYD

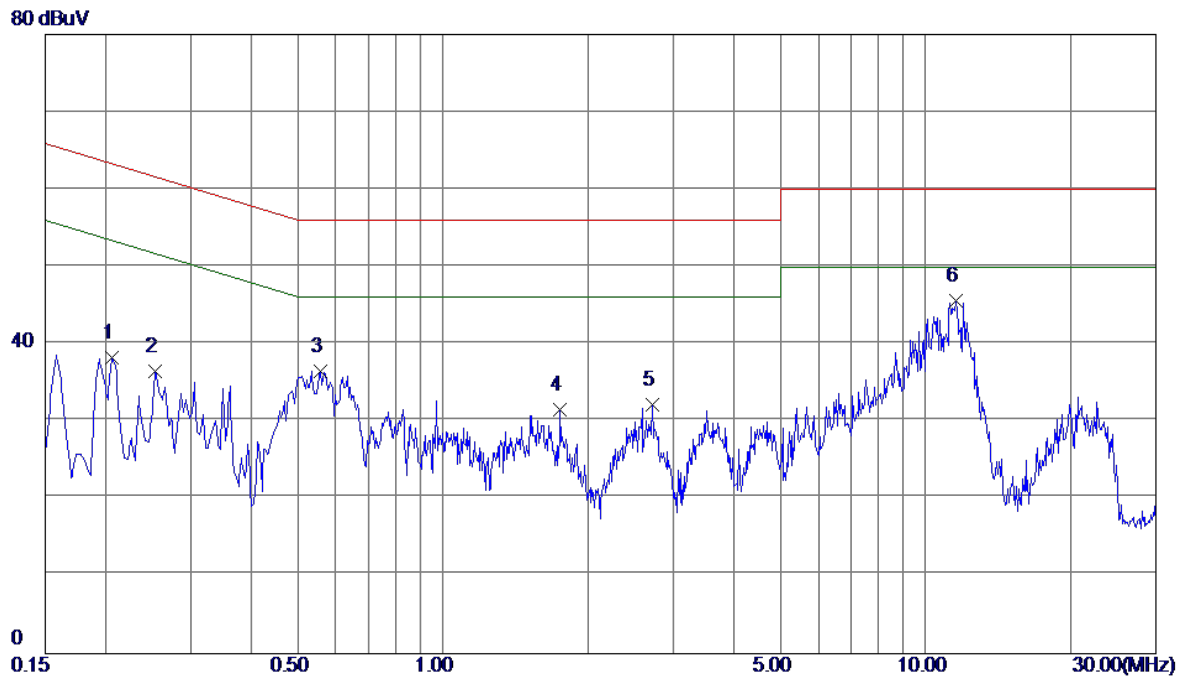
Neutral



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.2100	28.39	9.57	37.96	63.21	-25.25	Peak	
2	0.2580	26.75	9.57	36.32	61.50	-25.18	Peak	
3 *	0.6180	31.92	9.50	41.42	56.00	-14.58	Peak	
4	1.1019	26.26	9.75	36.01	56.00	-19.99	Peak	
5	2.1740	22.37	9.85	32.22	56.00	-23.78	Peak	
6	20.1259	33.62	10.90	44.52	60.00	-15.48	Peak	

Test Mode:	TX Mode_Adapter: PHITEK
------------	-------------------------

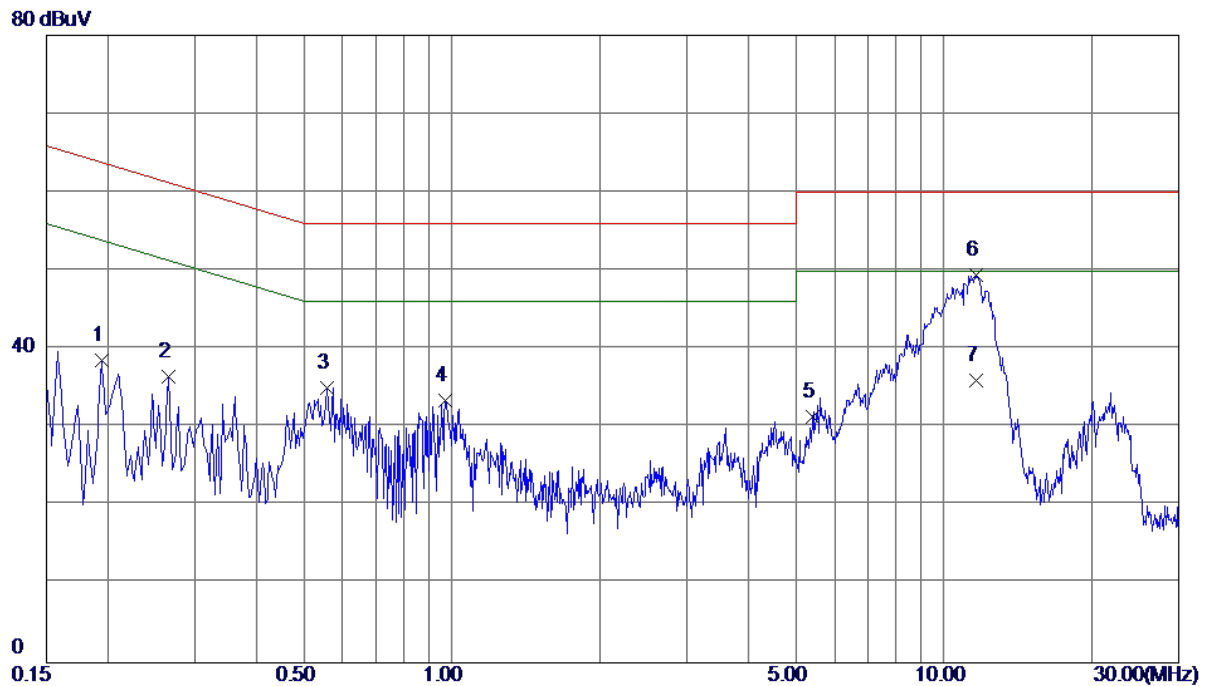
Line



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.2060	28.64	9.57	38.21	63.37	-25.16	Peak	
2	0.2540	26.98	9.57	36.55	61.63	-25.08	Peak	
3	0.5580	26.80	9.70	36.50	56.00	-19.50	Peak	
4	1.7500	21.55	9.99	31.54	56.00	-24.46	Peak	
5	2.7139	21.92	10.25	32.17	56.00	-23.83	Peak	
6 *	11.5860	35.11	10.56	45.67	60.00	-14.33	Peak	

Test Mode:	TX Mode_Adapter: PHITEK
------------	-------------------------

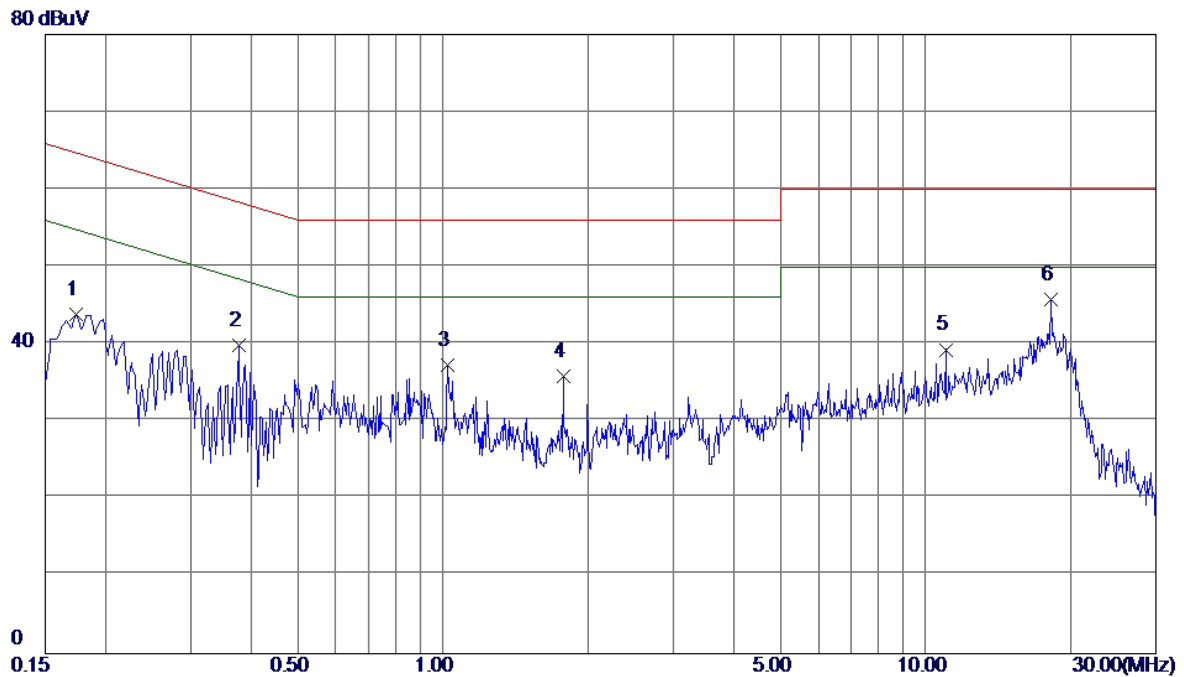
Neutral



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1940	29.06	9.55	38.61	63.86	-25.25	Peak	
2	0.2660	26.95	9.57	36.52	61.24	-24.72	Peak	
3	0.5580	25.61	9.50	35.11	56.00	-20.89	Peak	
4	0.9700	23.66	9.74	33.40	56.00	-22.60	Peak	
5	5.3940	21.07	10.24	31.31	60.00	-28.69	Peak	
6 *	11.5940	38.79	10.62	49.41	60.00	-10.59	Peak	
7	11.5940	25.34	10.62	35.96	50.00	-14.04	AVG	

Test Mode: TX Mode_Adapter: Huntkey

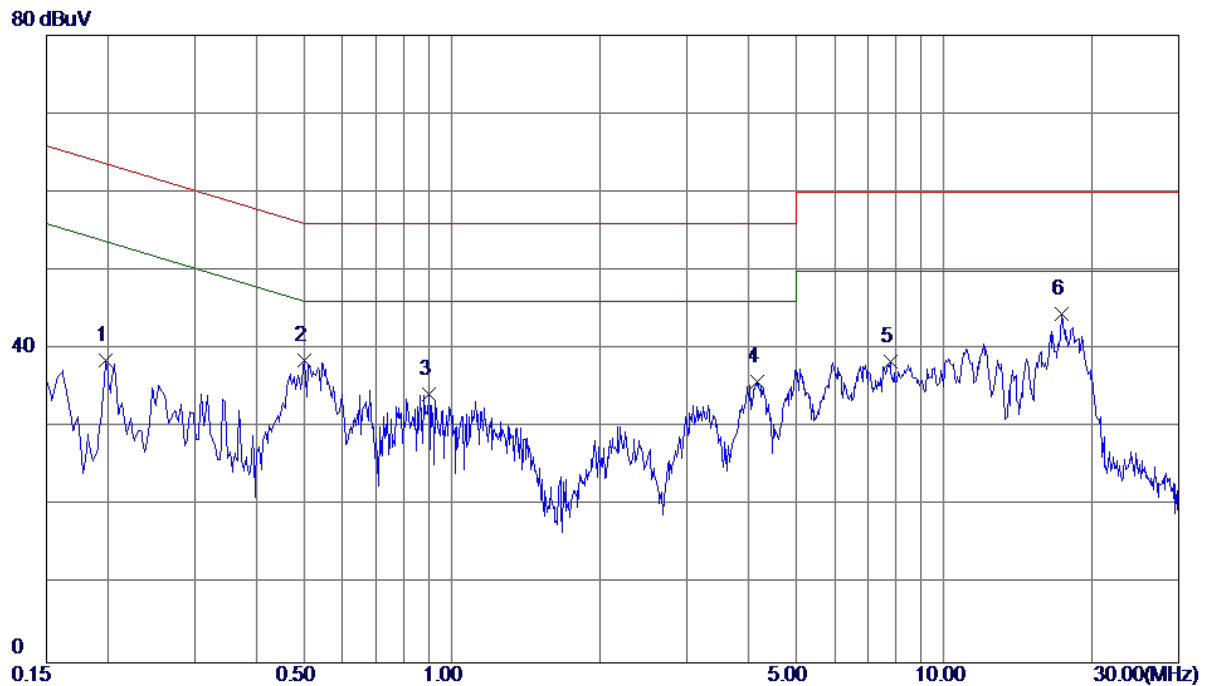
Line



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1740	34.30	9.57	43.87	64.77	-20.90	Peak	
2	0.3780	30.30	9.58	39.88	58.32	-18.44	Peak	
3	1.0220	27.48	9.84	37.32	56.00	-18.68	Peak	
4	1.7740	25.80	9.99	35.79	56.00	-20.21	Peak	
5	11.0180	28.75	10.53	39.28	60.00	-20.72	Peak	
6 *	18.1420	35.01	10.76	45.77	60.00	-14.23	Peak	

Test Mode: TX Mode_Adapter: Huntkey

Neutral

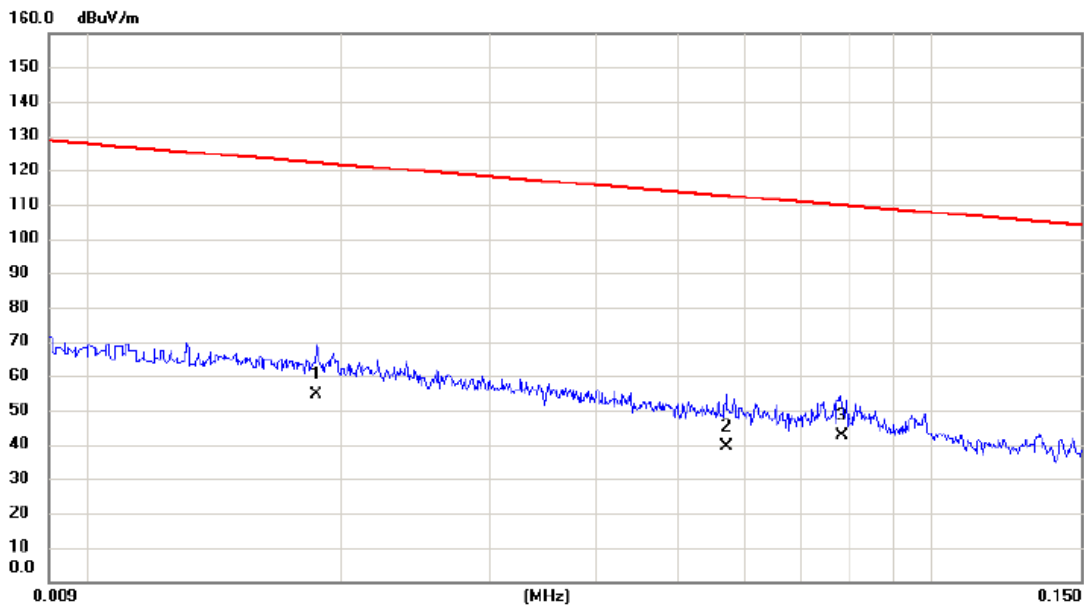


No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1980	28.98	9.56	38.54	63.69	-25.15	Peak	
2	0.5020	29.05	9.49	38.54	56.00	-17.46	Peak	
3	0.8980	24.48	9.73	34.21	56.00	-21.79	Peak	
4	4.1860	25.70	10.12	35.82	56.00	-20.18	Peak	
5	7.7900	28.03	10.30	38.33	60.00	-21.67	Peak	
6 *	17.3779	33.63	10.79	44.42	60.00	-15.58	Peak	

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

Test Mode: TX Mode_Adapter: BYD

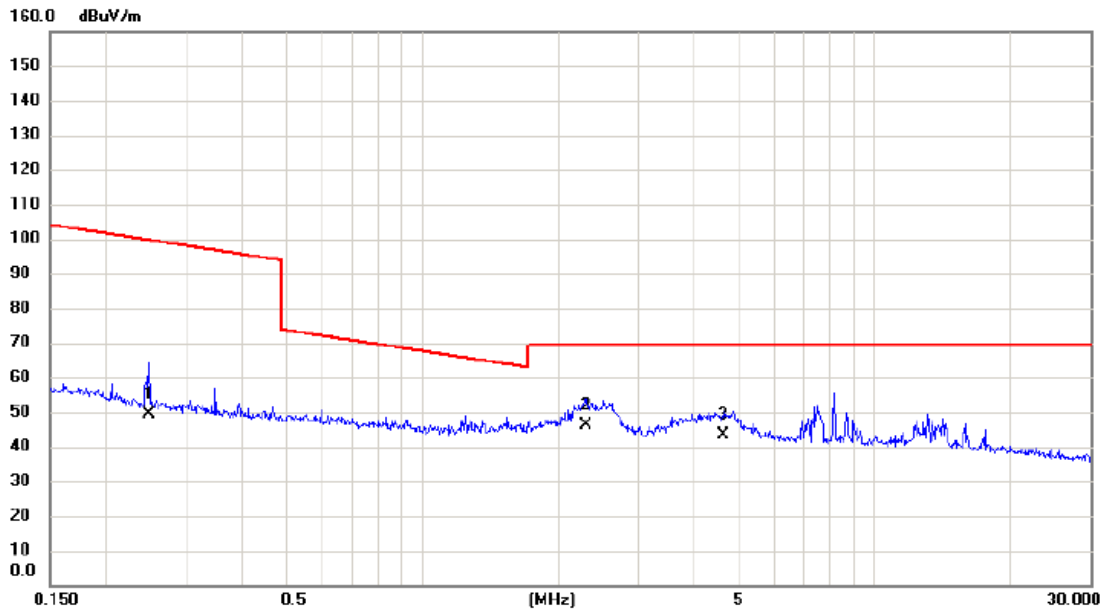
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0187	31.10	23.60	54.70	122.17	-67.47	AVG	
2		0.0570	19.50	19.75	39.25	112.49	-73.24	AVG	
3	*	0.0781	23.20	19.39	42.59	109.75	-67.16	AVG	

Test Mode: TX Mode_Adapter: BYD

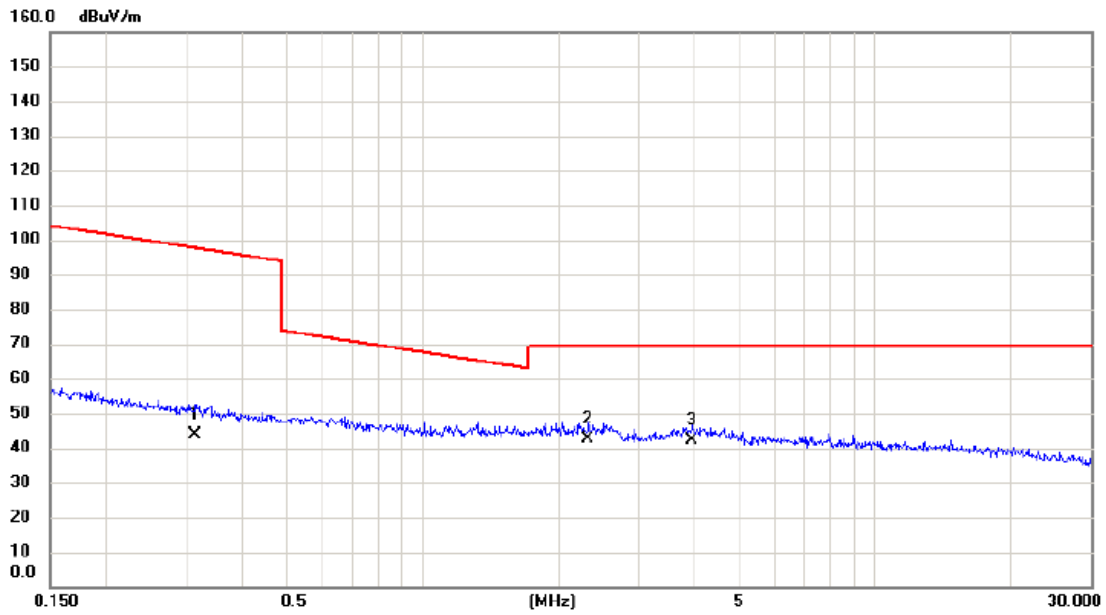
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2481	30.80	18.65	49.45	99.71	-50.26	AVG	
2	*	2.2968	28.70	17.52	46.22	69.54	-23.32	QP	
3		4.6223	25.90	17.46	43.36	69.54	-26.18	QP	

Test Mode: TX Mode_Adapter: BYD

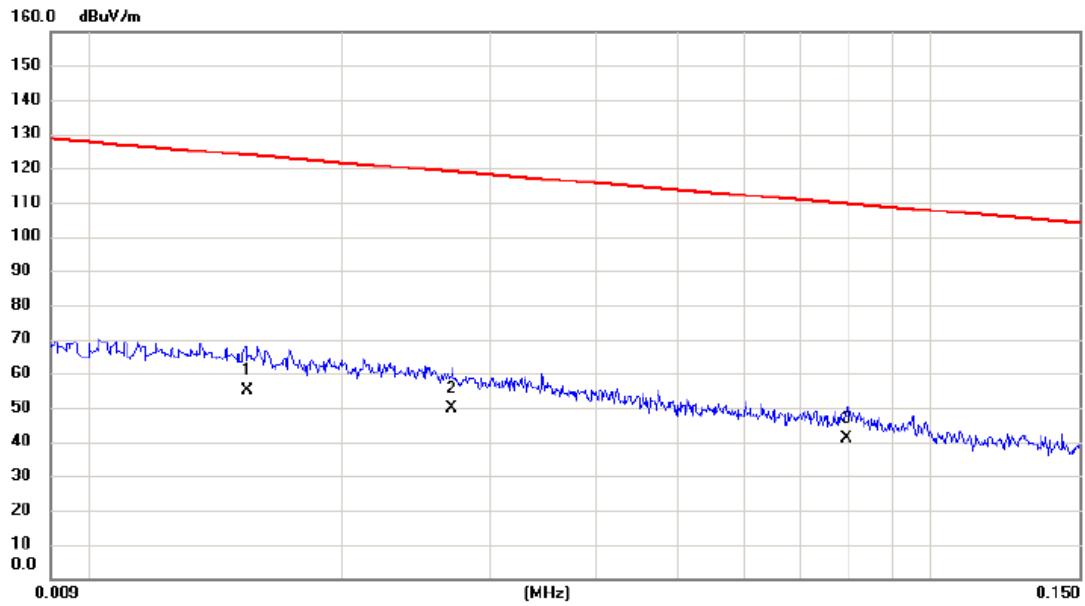
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.3133	25.33	18.57	43.90	97.69	-53.79	AVG	
2	*	2.3213	25.12	17.49	42.61	69.54	-26.93	QP	
3		3.9430	23.45	18.63	42.08	69.54	-27.46	QP	

Test Mode: TX Mode_Adapter: BYD

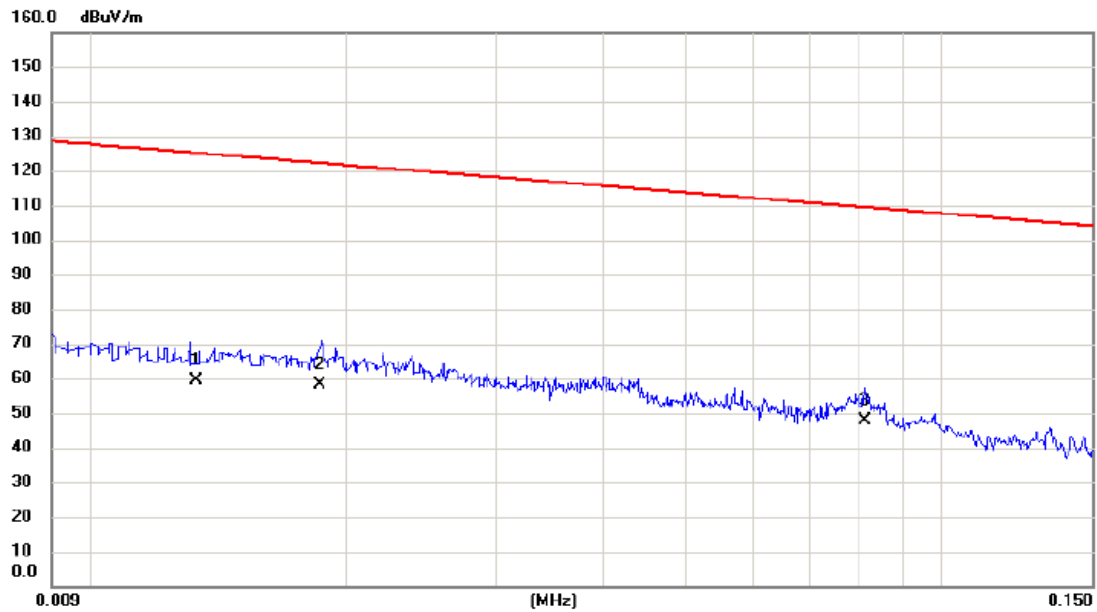
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0154	31.05	23.80	54.85	123.85	-69.00	AVG	
2		0.0270	27.14	22.66	49.80	118.98	-69.18	AVG	
3	*	0.0793	21.75	19.34	41.09	109.62	-68.53	AVG	

Test Mode: TX Mode_Adapter: PHITEK

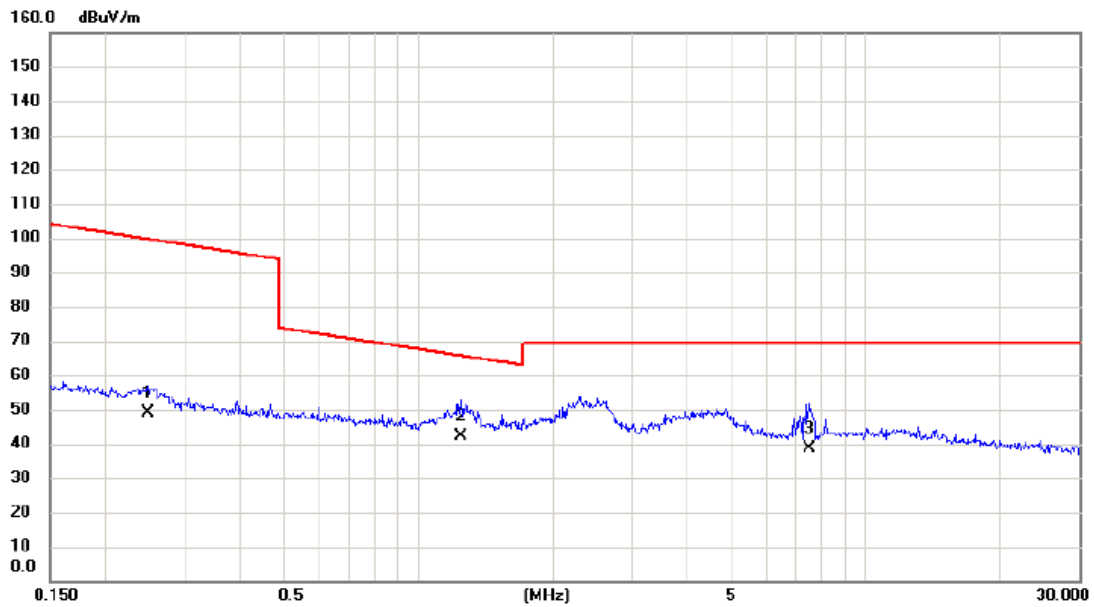
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0133	35.49	23.92	59.41	125.13	-65.72	AVG	
2		0.0186	34.66	23.60	58.26	122.21	-63.95	AVG	
3	*	0.0812	28.36	19.26	47.62	109.41	-61.79	AVG	

Test Mode: TX Mode_Adapter: PHITEK

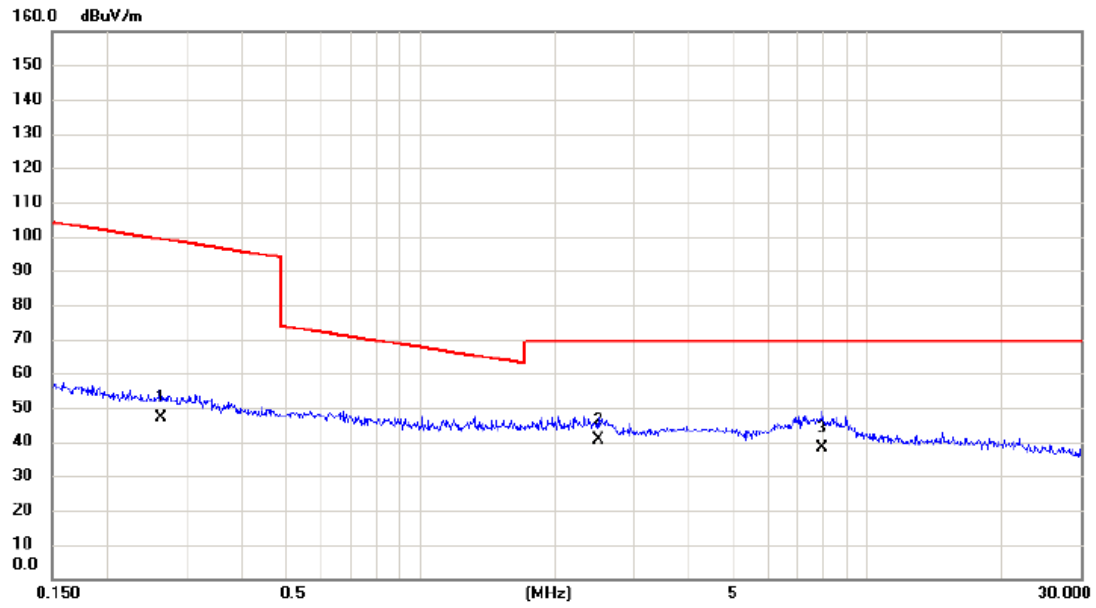
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2482	30.31	18.65	48.96	99.71	-50.75	AVG	
2	*	1.2465	24.63	17.74	42.37	65.69	-23.32	QP	
3		7.4853	22.49	16.26	38.75	69.54	-30.79	QP	

Test Mode: TX Mode_Adapter: PHITEK

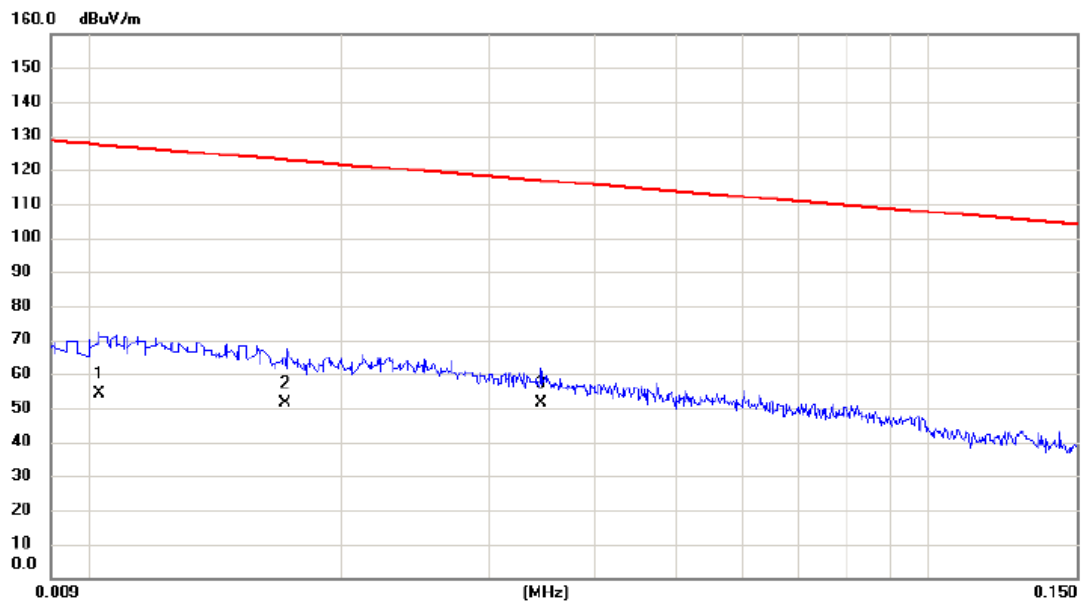
Ant 90°



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			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

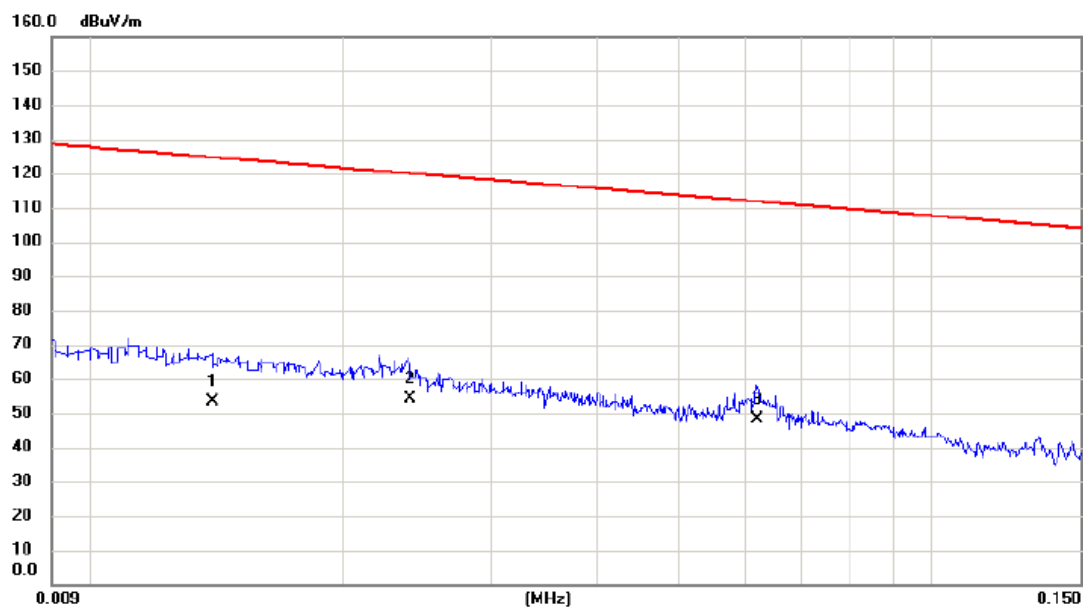
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0103	30.28	24.10	54.38	127.35	-72.97	AVG	
2		0.0171	27.56	23.69	51.25	122.94	-71.69	AVG	
3	*	0.0346	29.71	21.72	51.43	116.82	-65.39	AVG	

Test Mode: TX Mode_Adapter: Huntkey

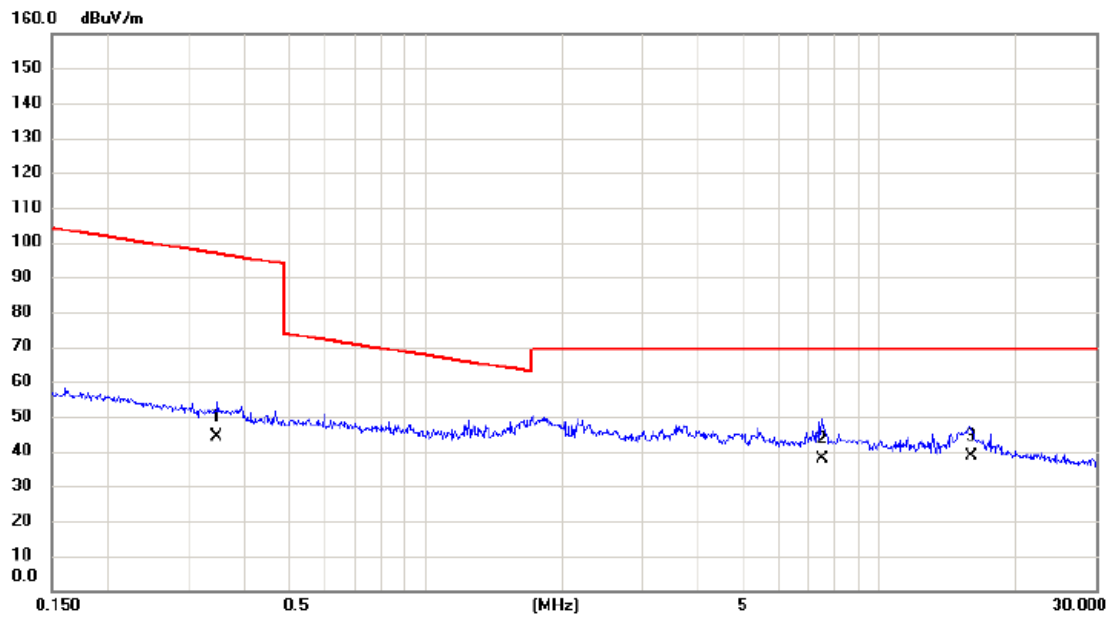
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0140	29.34	23.88	53.22	124.68	-71.46	AVG	
2		0.0240	31.28	23.03	54.31	120.00	-65.69	AVG	
3	*	0.0620	28.66	19.69	48.35	111.76	-63.41	AVG	

Test Mode: TX Mode_Adapter: Huntkey

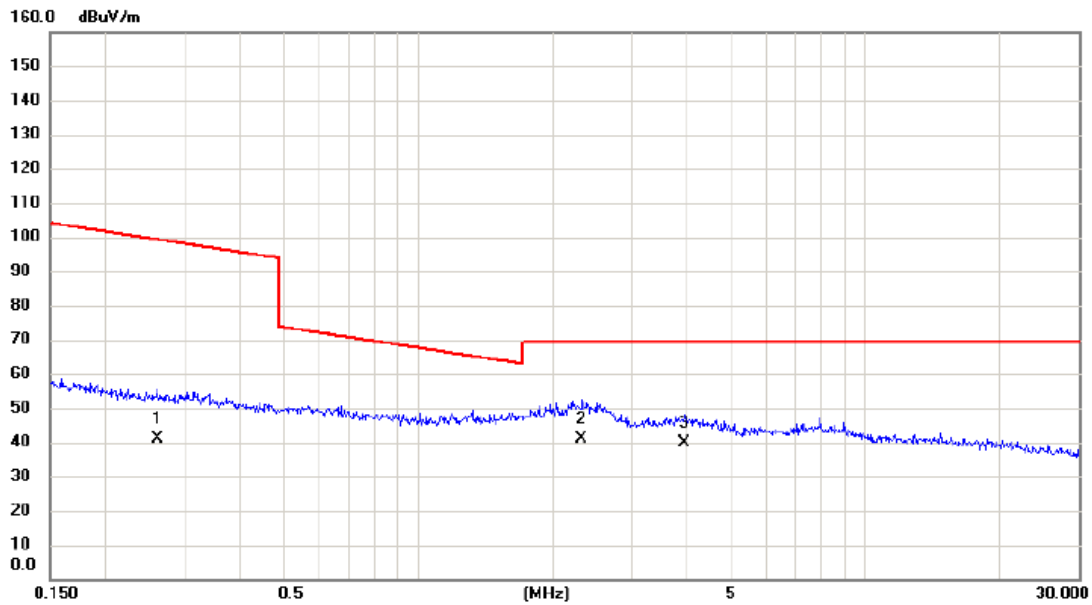
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.3461	25.66	18.54	44.20	96.82	-52.62	AVG	
2		7.4860	21.38	16.26	37.64	69.54	-31.90	QP	
3	*	15.8868	23.17	15.54	38.71	69.54	-30.83	QP	

Test Mode: TX Mode_Adapter: Huntkey

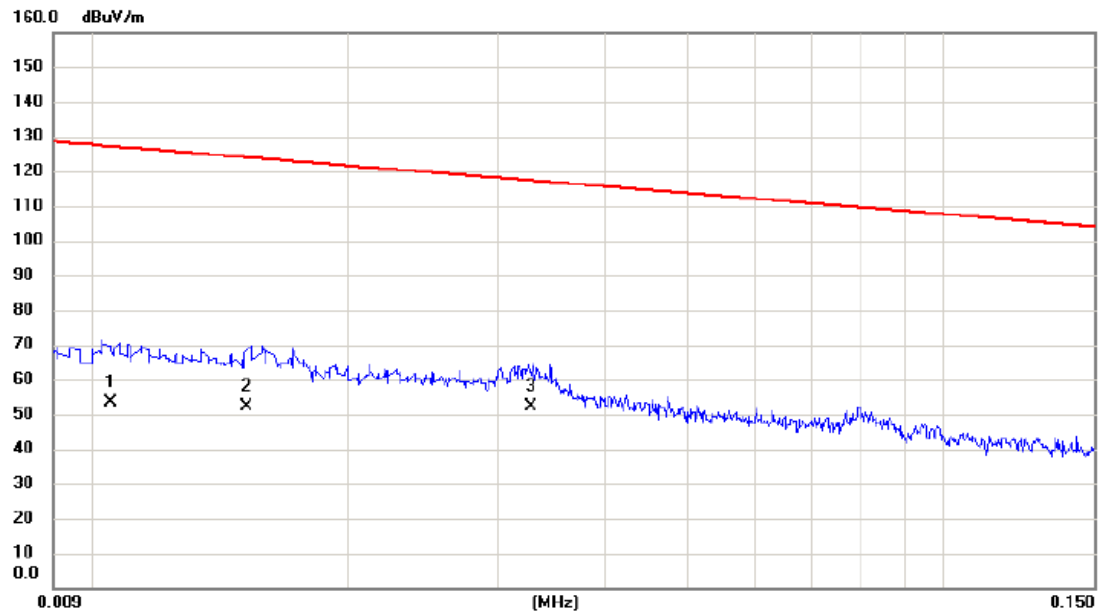
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2611	22.47	18.64	41.11	99.27	-58.16	AVG	
2	*	2.3226	23.64	17.49	41.13	69.54	-28.41	QP	
3		3.9427	21.13	18.63	39.76	69.54	-29.78	QP	

Test Mode: TX Mode_Adapter: Huntkey

Ant 90°

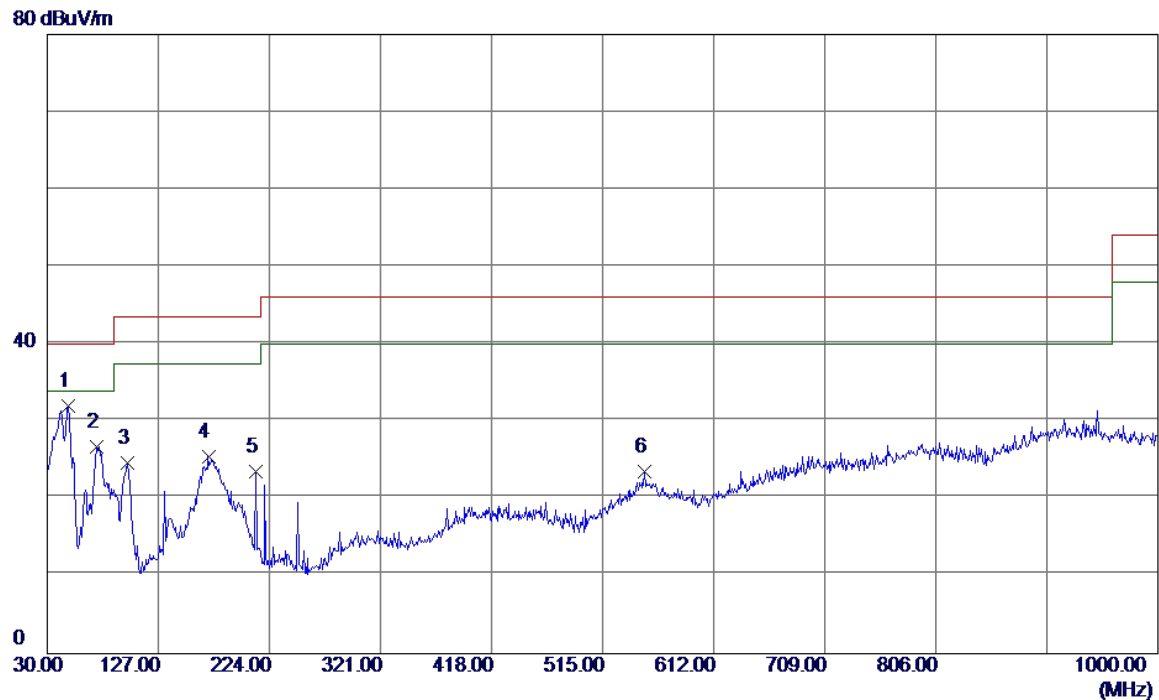


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0105	29.25	24.09	53.34	127.18	-73.84	AVG	
2		0.0152	28.36	23.81	52.17	123.97	-71.80	AVG	
3	*	0.0328	30.26	21.94	52.20	117.29	-65.09	AVG	

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

Test Mode:	TX 2402MHz _CH00_1Mbps_Adapter: BYD
------------	-------------------------------------

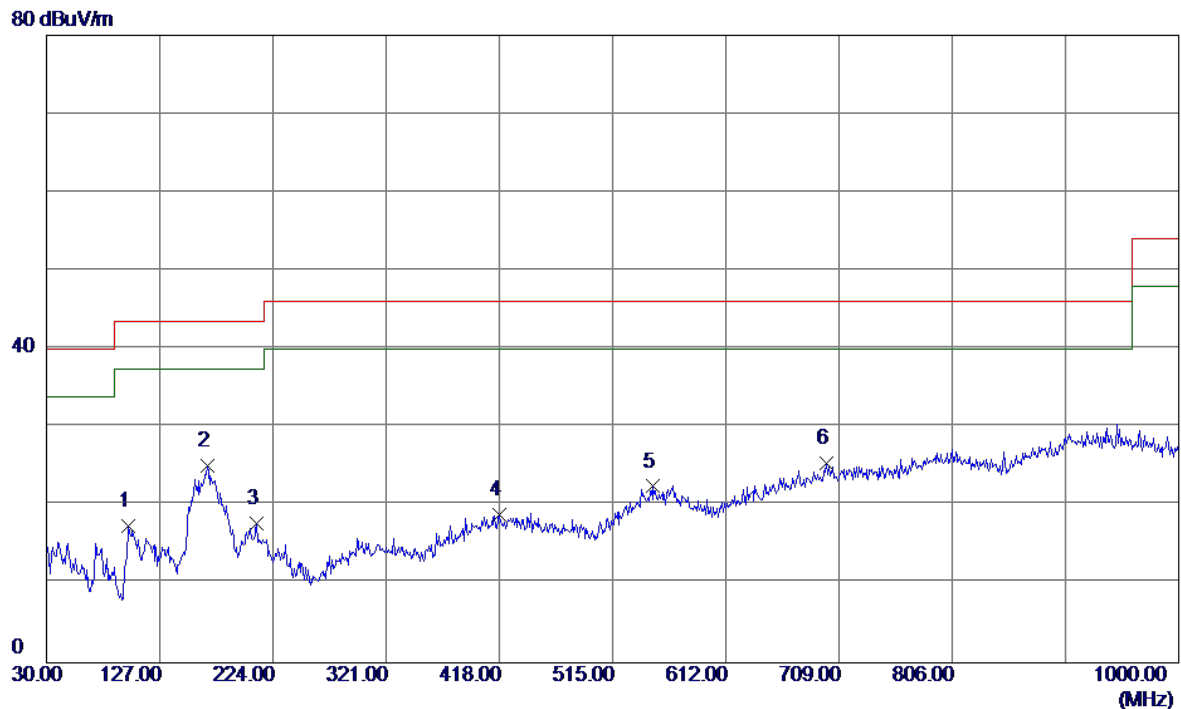
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	48.4300	45.11	-13.11	32.00	40.00	-8.00	Peak	
2	72.6800	43.32	-16.56	26.76	40.00	-13.24	Peak	
3	99.8399	40.19	-15.52	24.67	43.50	-18.83	Peak	
4	170.6500	37.70	-12.28	25.42	43.50	-18.08	Peak	
5	212.3600	38.06	-14.55	23.51	43.50	-19.99	Peak	
6	551.8600	28.09	-4.63	23.46	46.00	-22.54	Peak	

Test Mode:	TX 2402MHz _CH00_1Mbps_Adapter: BYD
------------	-------------------------------------

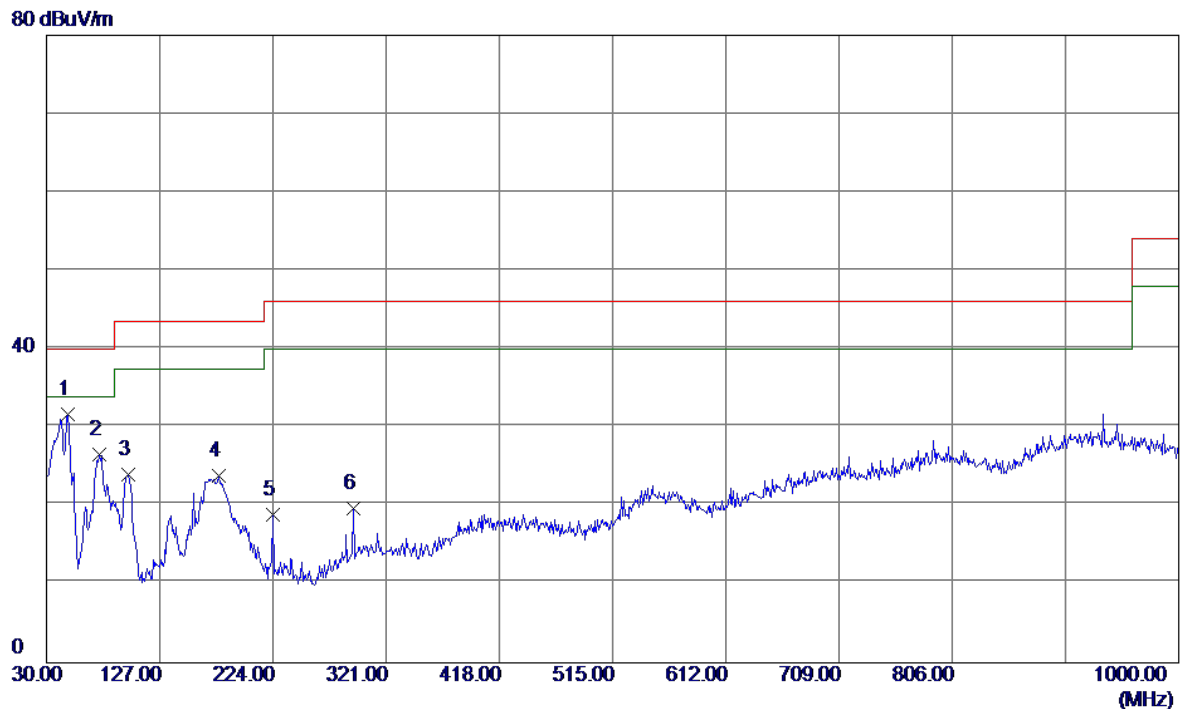
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	99.8399	33.00	-15.52	17.48	43.50	-26.02	Peak	
2 *	167.7400	37.39	-12.22	25.17	43.50	-18.33	Peak	
3	210.4200	32.34	-14.63	17.71	43.50	-25.79	Peak	
4	418.0000	26.76	-7.86	18.90	46.00	-27.10	Peak	
5	549.9200	27.03	-4.55	22.48	46.00	-23.52	Peak	
6	698.3300	27.62	-2.17	25.45	46.00	-20.55	Peak	

Test Mode:	TX 2480MHz _CH39_1Mbps_Adapter: BYD
------------	-------------------------------------

Vertical

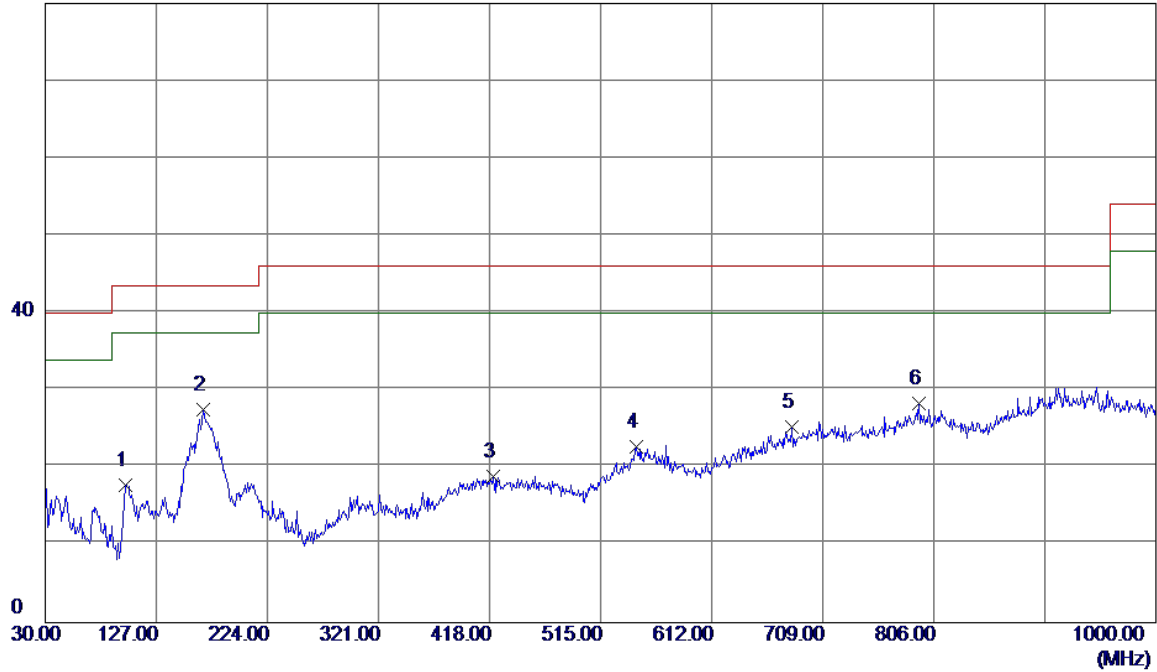


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	48.4300	44.73	-13.11	31.62	40.00	-8.38	Peak	
2	75.5899	43.13	-16.52	26.61	40.00	-13.39	Peak	
3	99.8399	39.49	-15.52	23.97	43.50	-19.53	Peak	
4	177.4400	36.46	-12.69	23.77	43.50	-19.73	Peak	
5	224.0000	32.74	-13.90	18.84	46.00	-27.16	Peak	
6	292.8700	30.65	-10.94	19.71	46.00	-26.29	Peak	

Test Mode: TX 2480MHz _CH39_1Mbps_Adapter: BYD

Horizontal

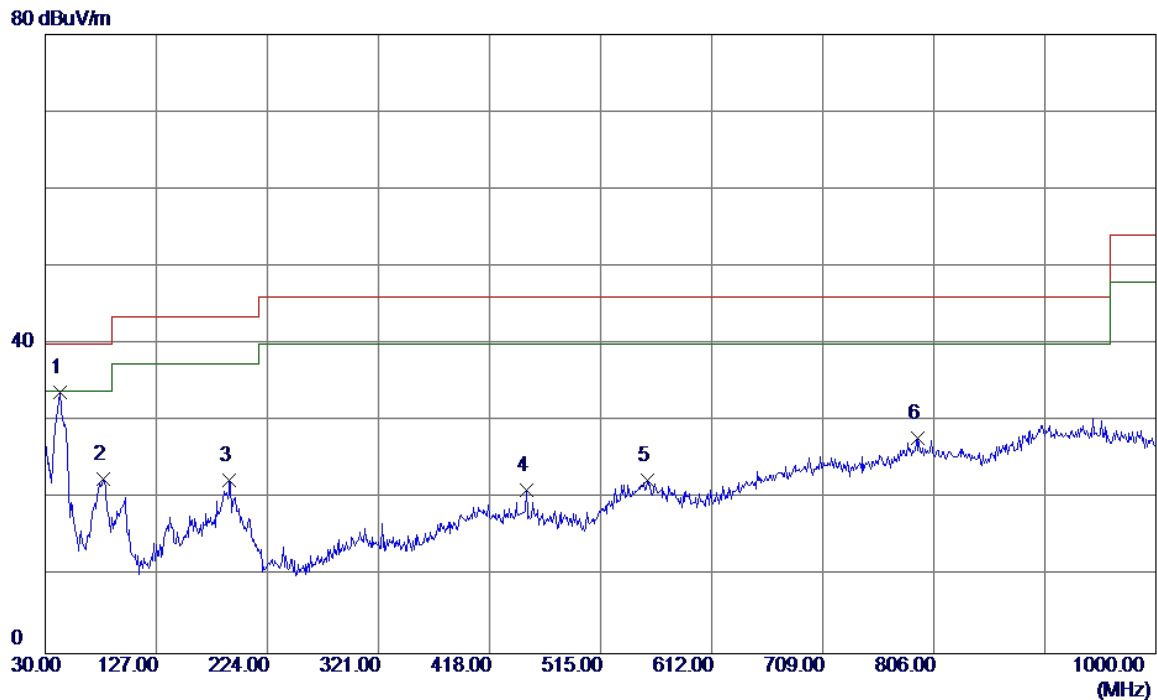
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	99.8399	33.25	-15.52	17.73	43.50	-25.77	Peak	
2 *	167.7400	39.67	-12.22	27.45	43.50	-16.05	Peak	
3	420.9100	26.79	-7.87	18.92	46.00	-27.08	Peak	
4	546.0400	27.70	-4.95	22.75	46.00	-23.25	Peak	
5	681.8400	28.09	-2.86	25.23	46.00	-20.77	Peak	
6	793.3900	28.34	-0.03	28.31	46.00	-17.69	Peak	

Test Mode: TX 2402MHz_CH00_1Mbps_Adapter: PHITEK

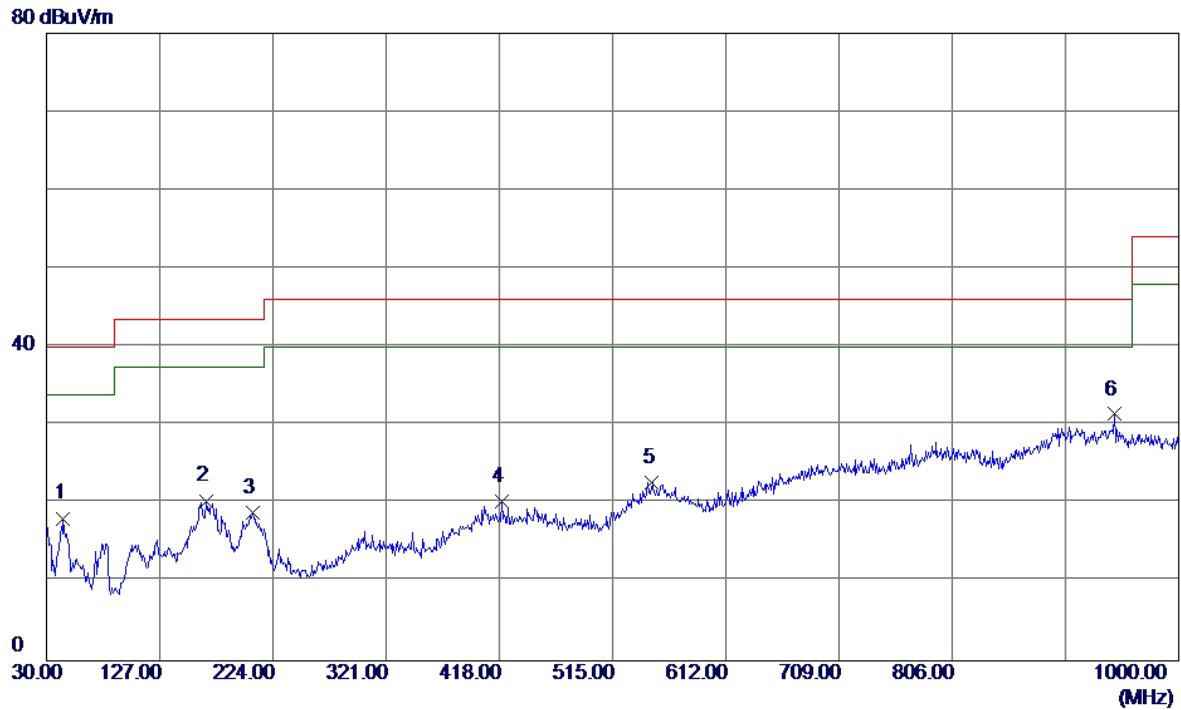
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	42.6100	47.09	-13.36	33.73	40.00	-6.27	Peak	
2	80.4400	38.77	-16.16	22.61	40.00	-17.39	Peak	
3	191.0200	36.43	-13.98	22.45	43.50	-21.05	Peak	
4	450.0100	29.07	-8.00	21.07	46.00	-24.93	Peak	
5	555.7400	27.22	-4.83	22.39	46.00	-23.61	Peak	
6	792.4200	27.98	-0.08	27.90	46.00	-18.10	Peak	

Test Mode:	TX 2402MHz_CH00_1Mbps_Adapter: PHITEK
------------	---------------------------------------

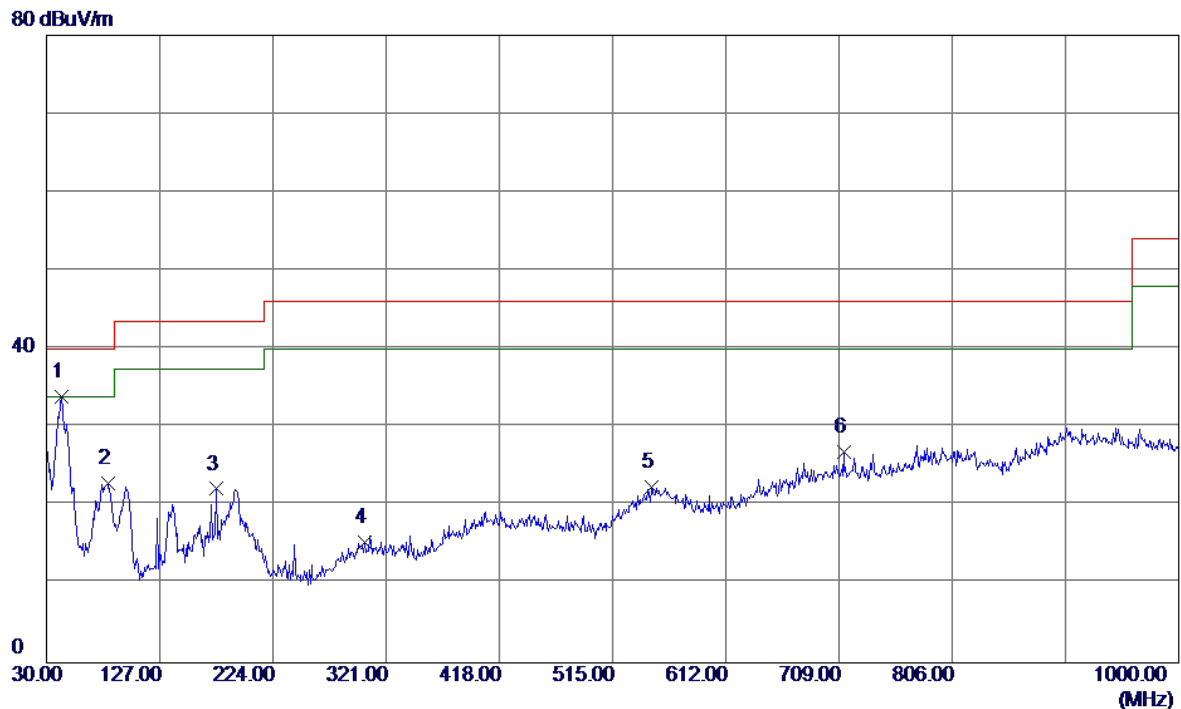
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	44.5500	31.06	-12.90	18.16	40.00	-21.84	Peak	
2	166.7700	32.61	-12.21	20.40	43.50	-23.10	Peak	
3	206.5399	33.48	-14.57	18.91	43.50	-24.59	Peak	
4	419.9400	28.15	-7.87	20.28	46.00	-25.72	Peak	
5	548.9500	27.41	-4.65	22.76	46.00	-23.24	Peak	
6 *	944.7100	28.98	2.46	31.44	46.00	-14.56	Peak	

Test Mode:	TX 2480MHz_CH39_1Mbps_Adapter: PHITEK
------------	---------------------------------------

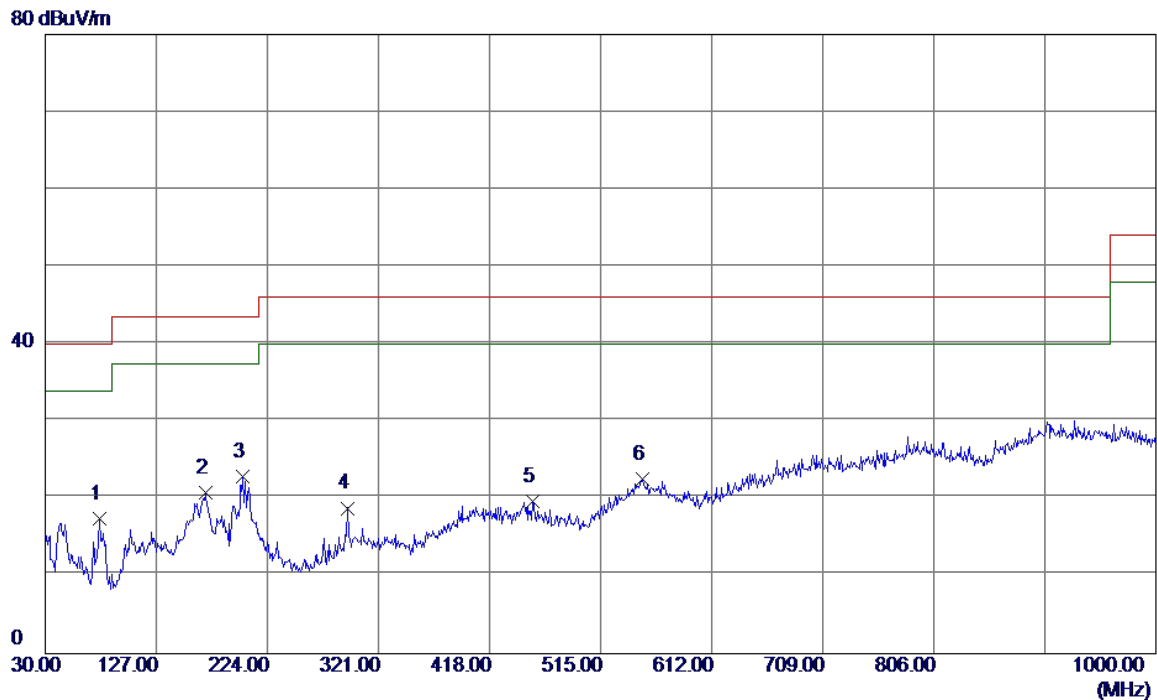
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	42.6100	47.23	-13.36	33.87	40.00	-6.13	Peak	
2	82.3800	39.58	-16.69	22.89	40.00	-17.11	Peak	
3	175.5000	34.73	-12.57	22.16	43.50	-21.34	Peak	
4	302.5700	25.52	-10.21	15.31	46.00	-30.69	Peak	
5	547.9800	27.21	-4.75	22.46	46.00	-23.54	Peak	
6	712.8800	29.01	-2.07	26.94	46.00	-19.06	Peak	

Test Mode:	TX 2480MHz_CH39_1Mbps_Adapter: PHITEK
------------	---------------------------------------

Horizontal

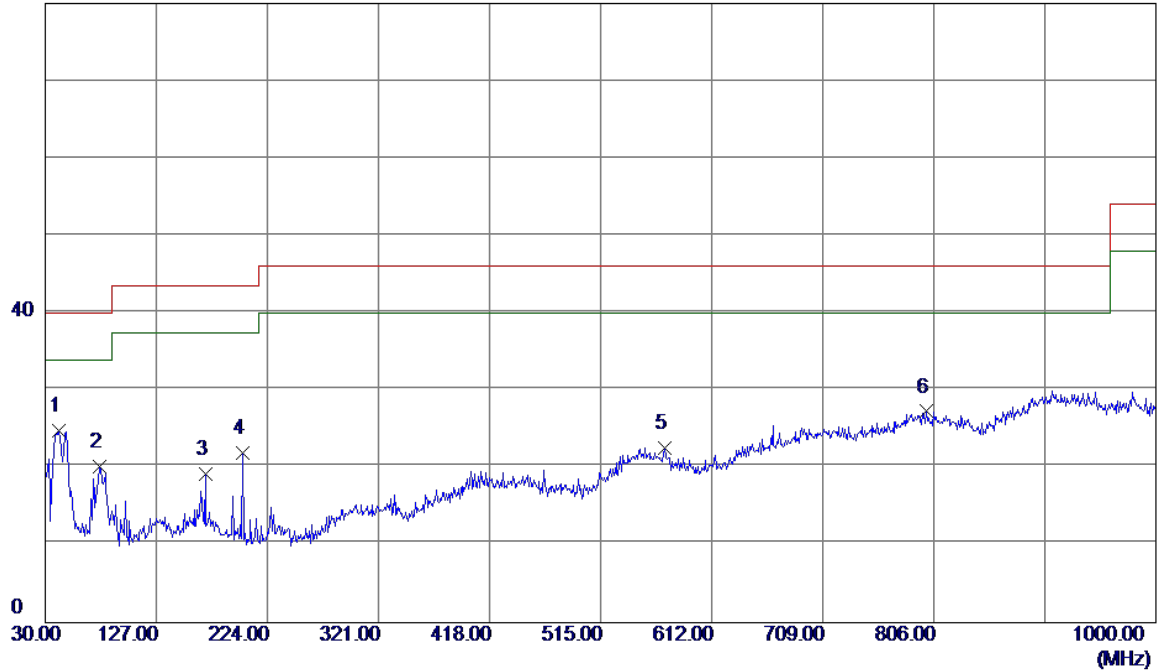


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	77.5300	33.68	-16.31	17.37	40.00	-22.63	Peak	
2	169.6799	32.98	-12.24	20.74	43.50	-22.76	Peak	
3 *	202.6600	37.40	-14.49	22.91	43.50	-20.59	Peak	
4	293.8400	29.63	-10.83	18.80	46.00	-27.20	Peak	
5	455.8300	27.92	-8.20	19.72	46.00	-26.28	Peak	
6	551.8600	27.13	-4.63	22.50	46.00	-23.50	Peak	

Test Mode: TX 2402MHz_CH00_1Mbps_Adapter: Huntkey

Vertical

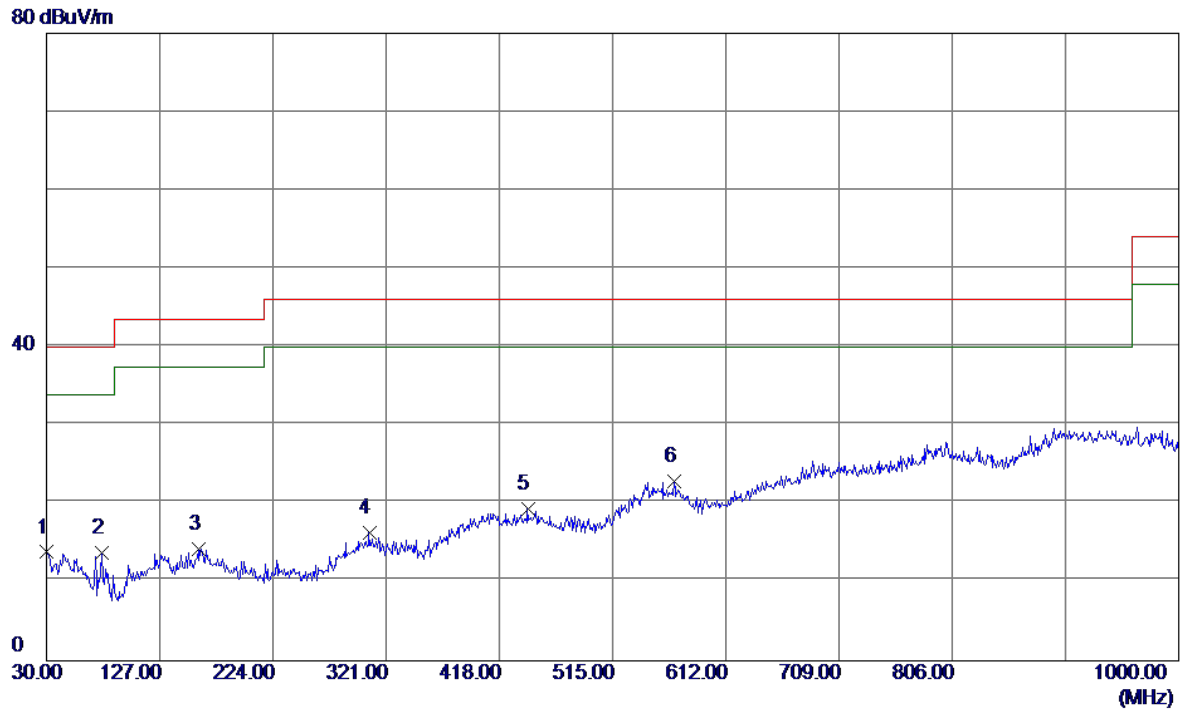
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	41.6400	38.43	-13.57	24.86	40.00	-15.14	Peak	
2	77.5300	36.44	-16.31	20.13	40.00	-19.87	Peak	
3	169.6799	31.45	-12.24	19.21	43.50	-24.29	Peak	
4	202.6600	36.42	-14.49	21.93	43.50	-21.57	Peak	
5	571.2600	28.23	-5.61	22.62	46.00	-23.38	Peak	
6	799.2100	27.06	0.22	27.28	46.00	-18.72	Peak	

Test Mode:	TX 2402MHz_CH00_1Mbps_Adapter: Huntkey
------------	--

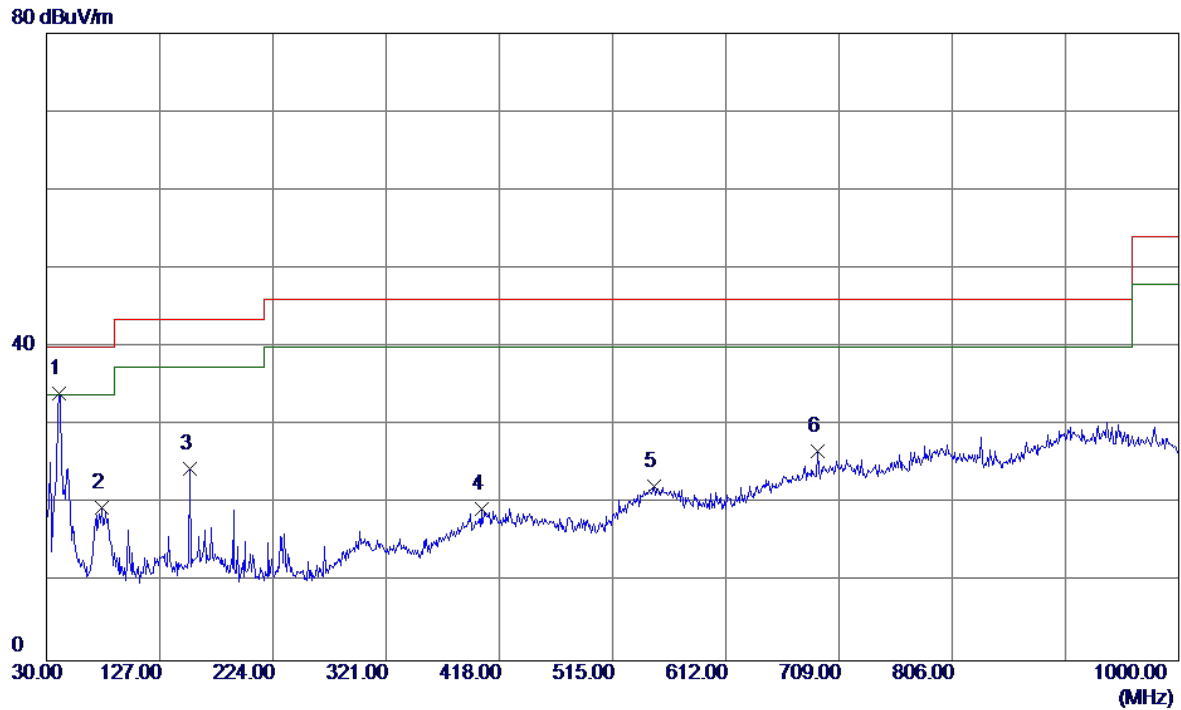
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	30.0000	27.87	-14.03	13.84	40.00	-26.16	Peak	
2	77.5300	30.06	-16.31	13.75	40.00	-26.25	Peak	
3	159.9800	26.42	-12.15	14.27	43.50	-29.23	Peak	
4	306.4500	26.59	-10.30	16.29	46.00	-29.71	Peak	
5	442.2500	27.32	-7.97	19.35	46.00	-26.65	Peak	
6 *	567.3800	28.28	-5.42	22.86	46.00	-23.14	Peak	

Test Mode: TX 2480MHz_CH39_1Mbps_Adapter: Huntkey

Vertical

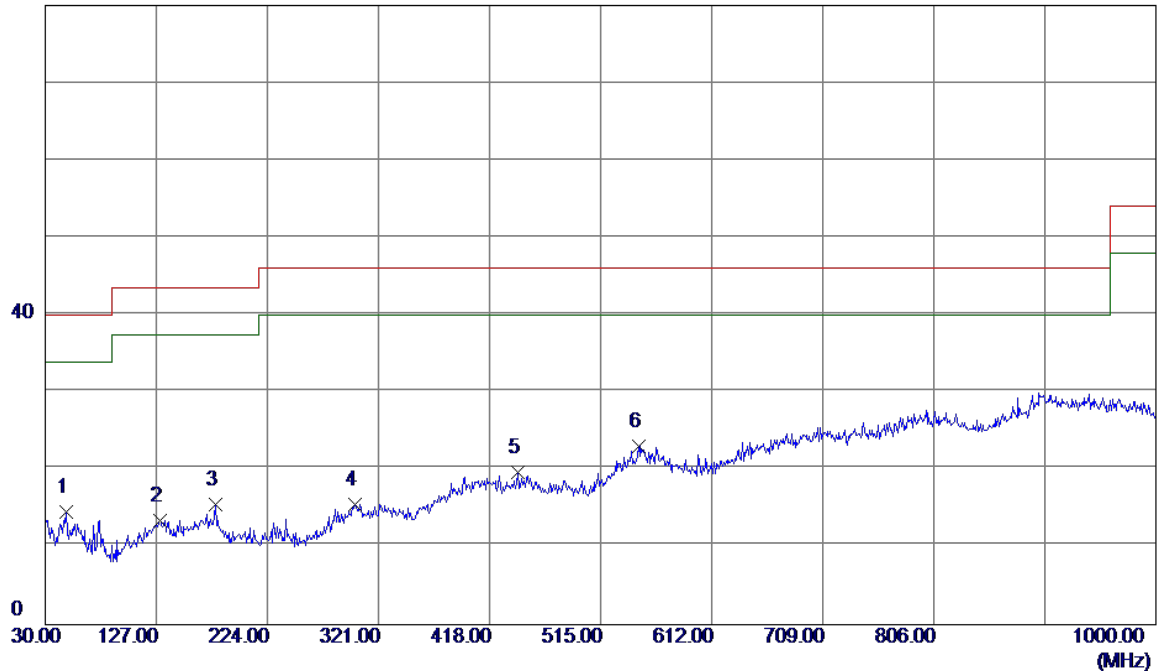


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	40.6699	47.87	-13.77	34.10	40.00	-5.90	Peak	
2	77.5300	35.77	-16.31	19.46	40.00	-20.54	Peak	
3	153.1900	37.11	-12.69	24.42	43.50	-19.08	Peak	
4	402.4800	27.12	-7.79	19.33	46.00	-26.67	Peak	
5	550.8900	26.86	-4.58	22.28	46.00	-23.72	Peak	
6	690.5700	29.23	-2.49	26.74	46.00	-19.26	Peak	

Test Mode: TX 2480MHz_CH39_1Mbps_Adapter: Huntkey

Horizontal

80 dBuV/m



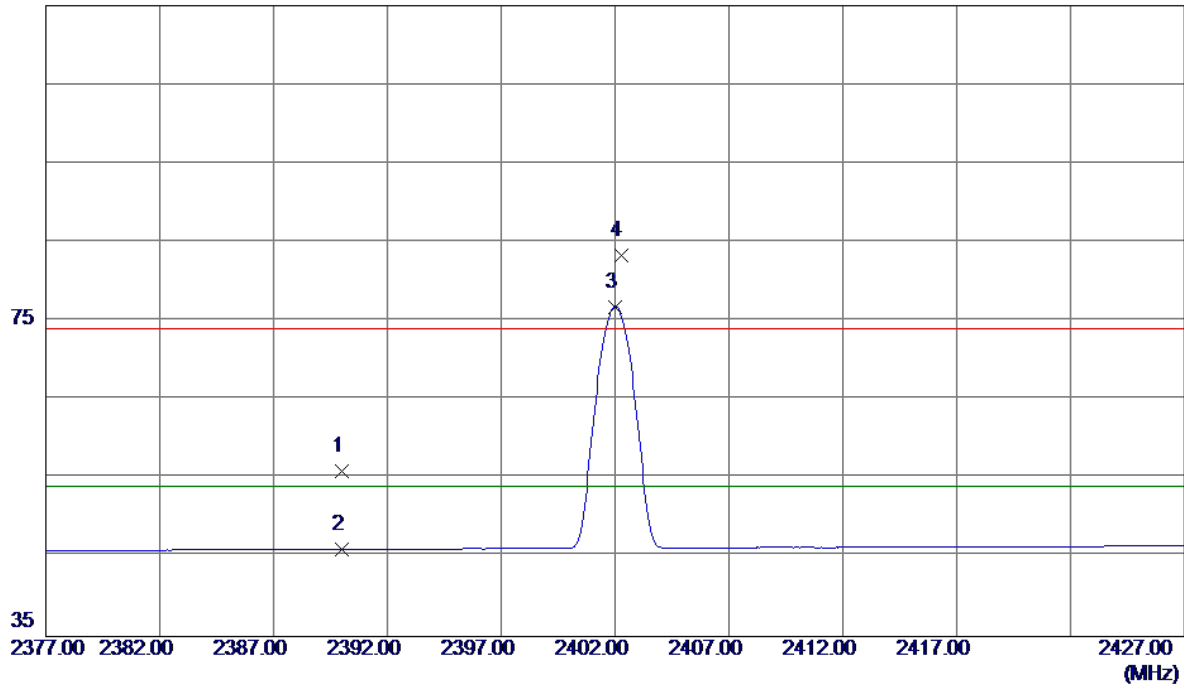
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	48.4300	27.65	-13.11	14.54	40.00	-25.46	Peak	
2	129.9100	25.81	-12.36	13.45	43.50	-30.05	Peak	
3	178.4100	28.32	-12.74	15.58	43.50	-27.92	Peak	
4	300.6300	25.74	-10.17	15.57	46.00	-30.43	Peak	
5	443.2200	27.62	-7.97	19.65	46.00	-26.35	Peak	
6 *	547.9800	27.86	-4.75	23.11	46.00	-22.89	Peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Vertical

115 dBuV/m

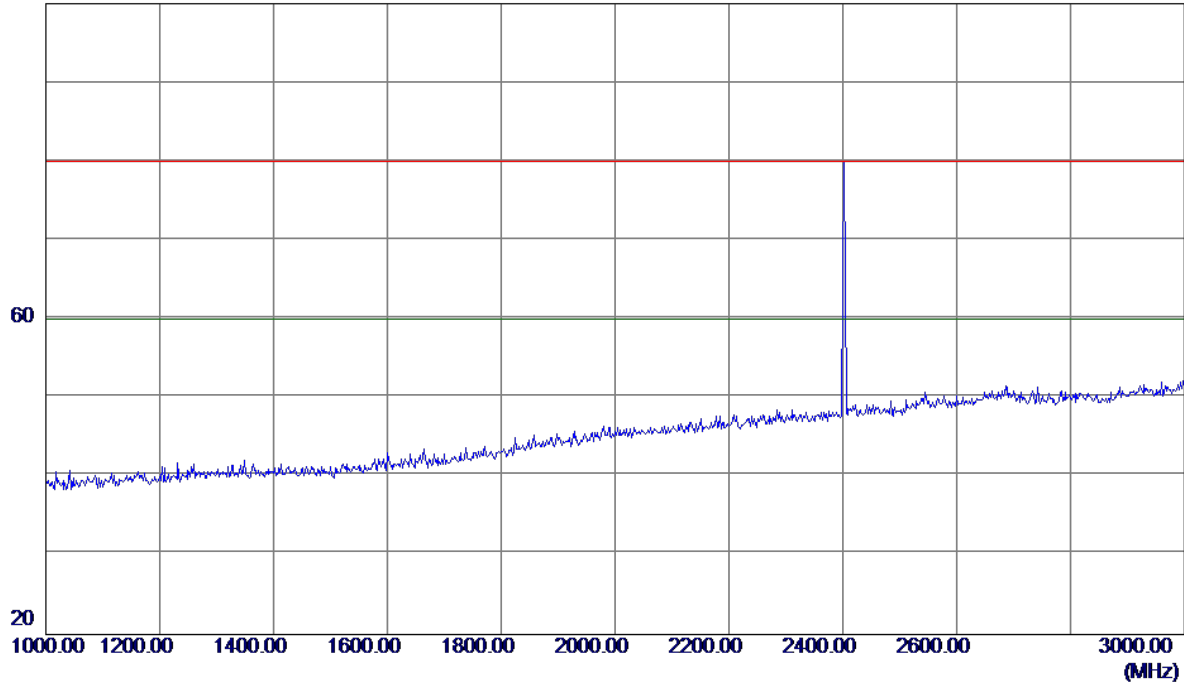


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	22.90	33.01	55.91	74.00	-18.09	Peak	
2	2390.0000	13.03	33.01	46.04	54.00	-7.96	AVG	
3 *	2402.0000	43.78	33.06	76.84	54.00	22.84	AVG	No Limit
4	2402.2500	50.25	33.06	83.31	74.00	9.31	Peak	No Limit

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Vertical

100 dBuV/m

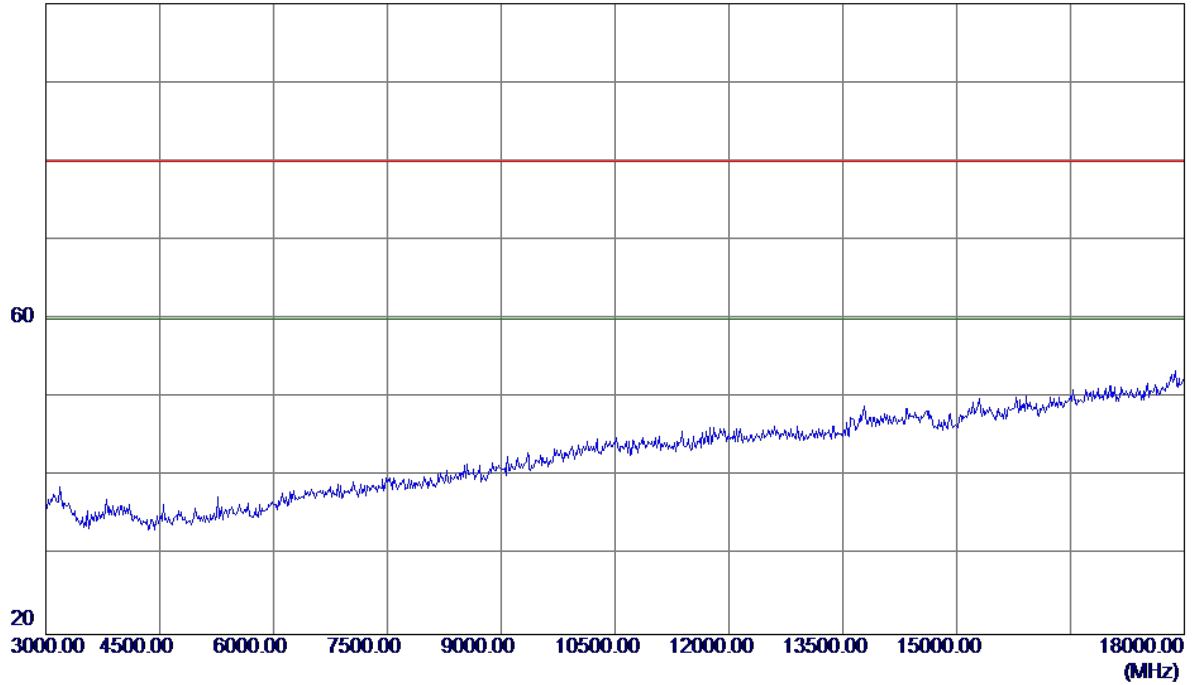


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Vertical

100 dBuV/m

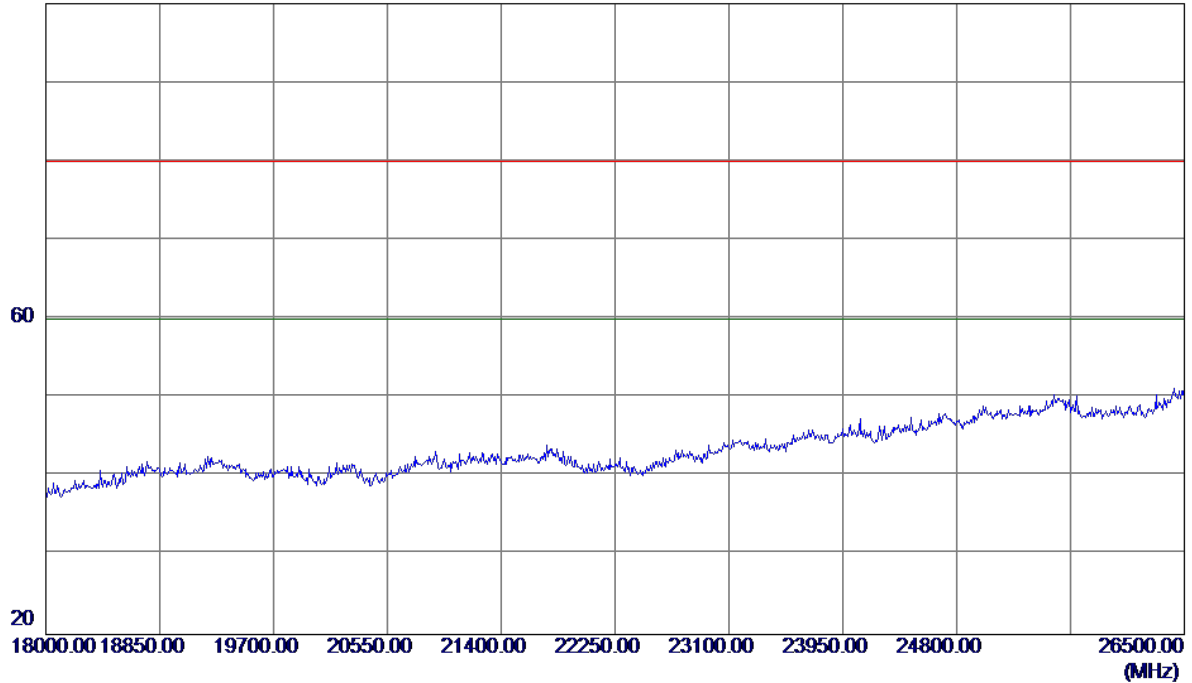


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Vertical

100 dBuV/m

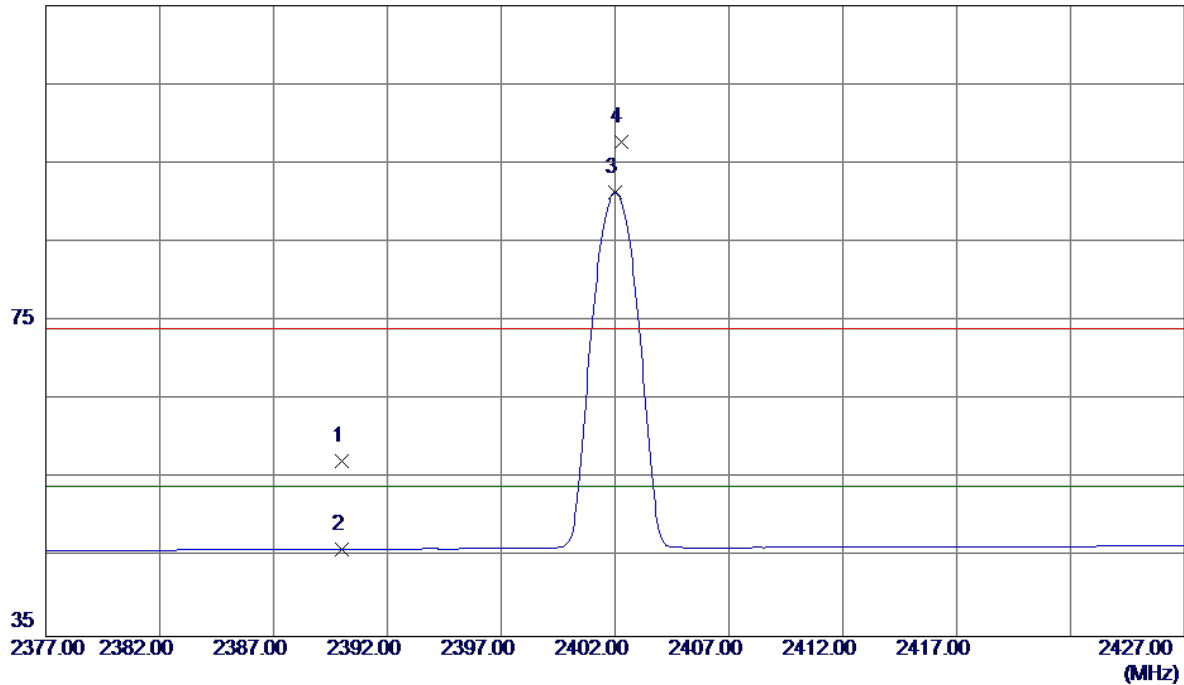


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Horizontal

115 dBuV/m

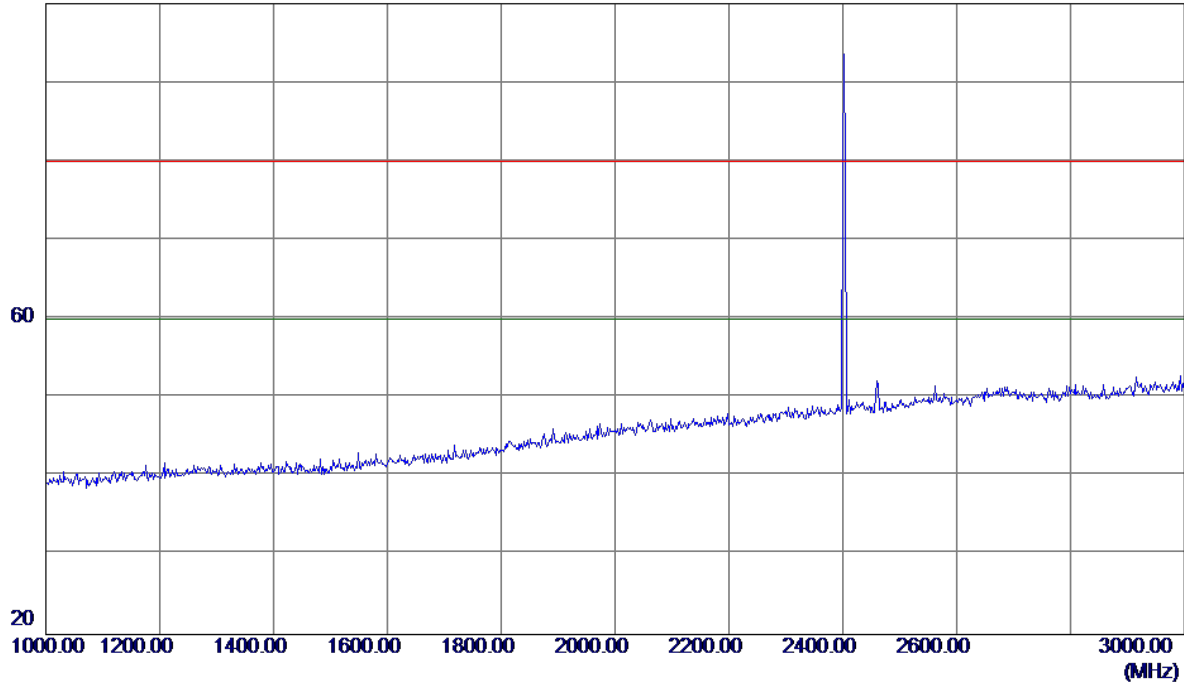


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	24.19	33.01	57.20	74.00	-16.80	Peak	
2	2390.0000	13.04	33.01	46.05	54.00	-7.95	AVG	
3 *	2402.0000	58.26	33.06	91.32	54.00	37.32	AVG	No Limit
4	2402.2500	64.63	33.06	97.69	74.00	23.69	Peak	No Limit

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Horizontal

100 dBuV/m

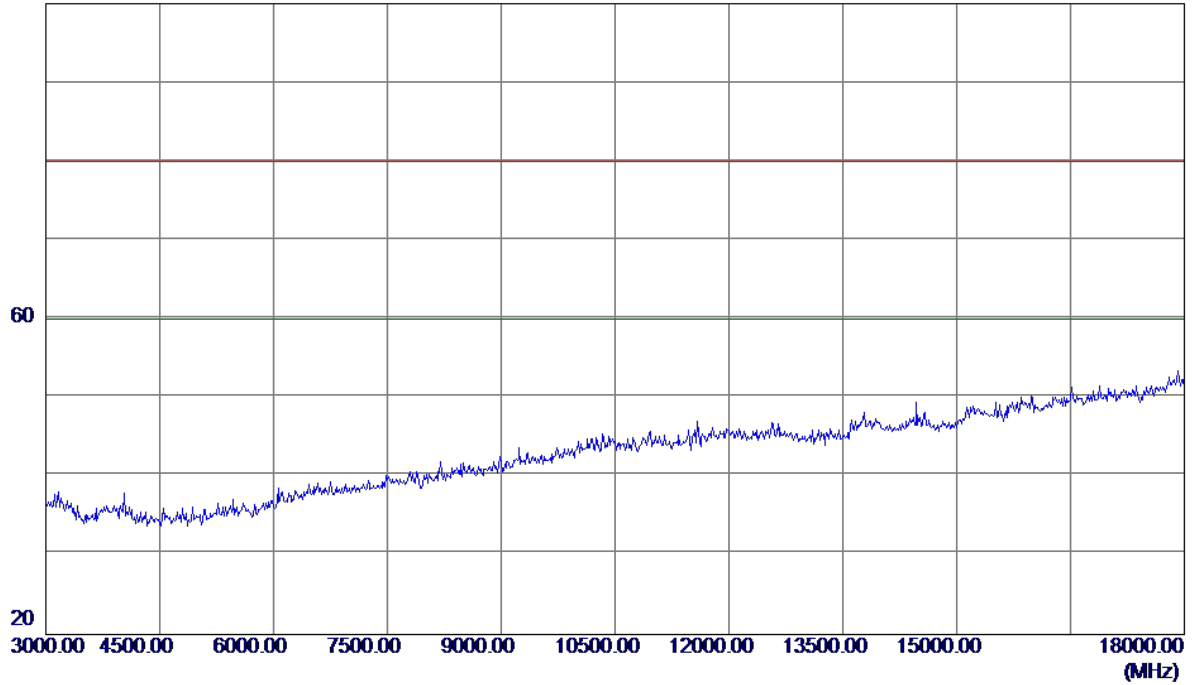


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Horizontal

100 dBuV/m

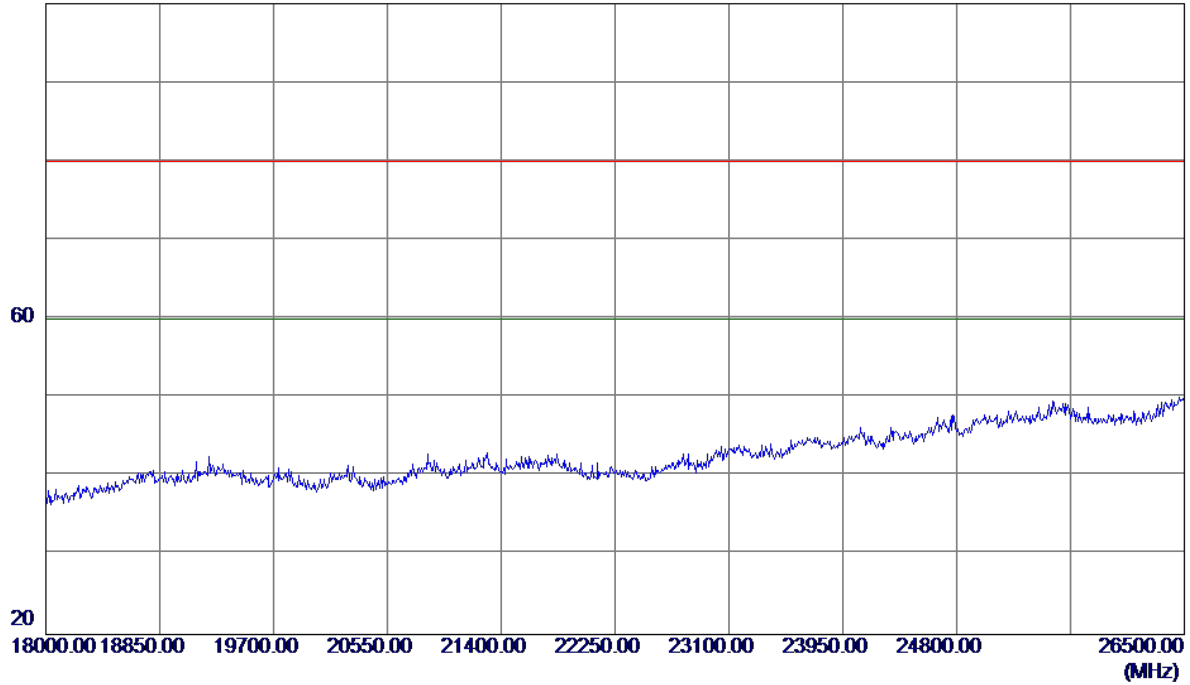


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode :	TX 2402MHz _CH00_1Mbps
-------------	------------------------

Horizontal

100 dBuV/m

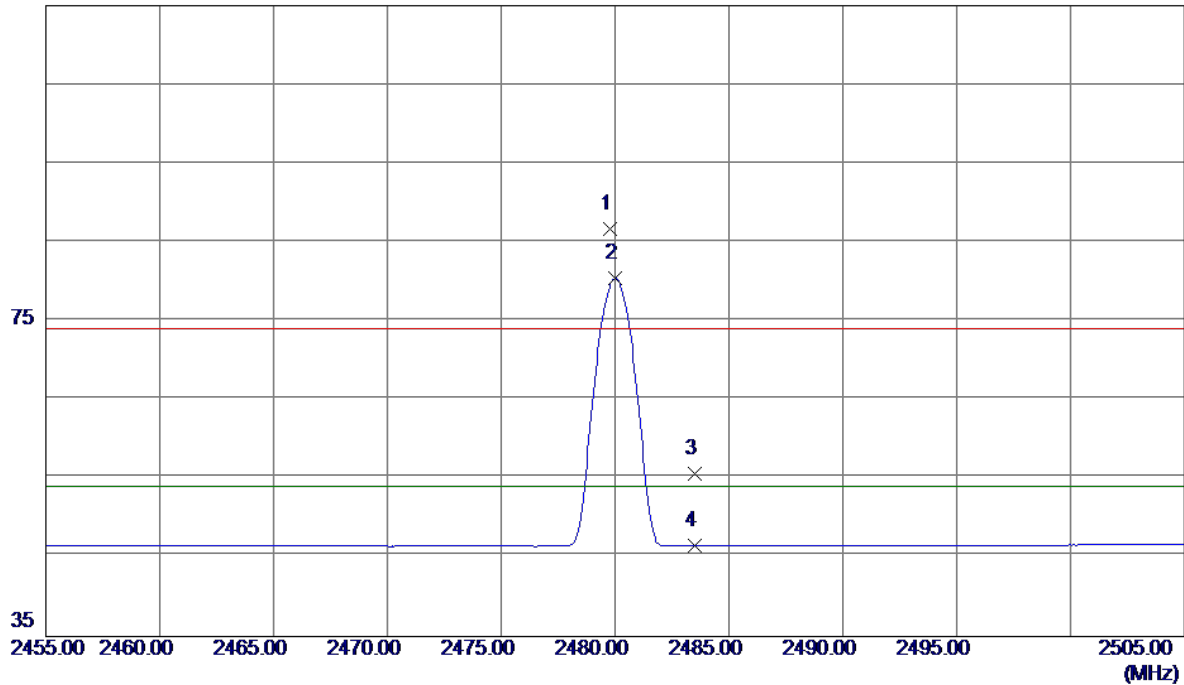


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode : TX 2480MHz _CH39_1Mbps

Vertical

115 dBuV/m

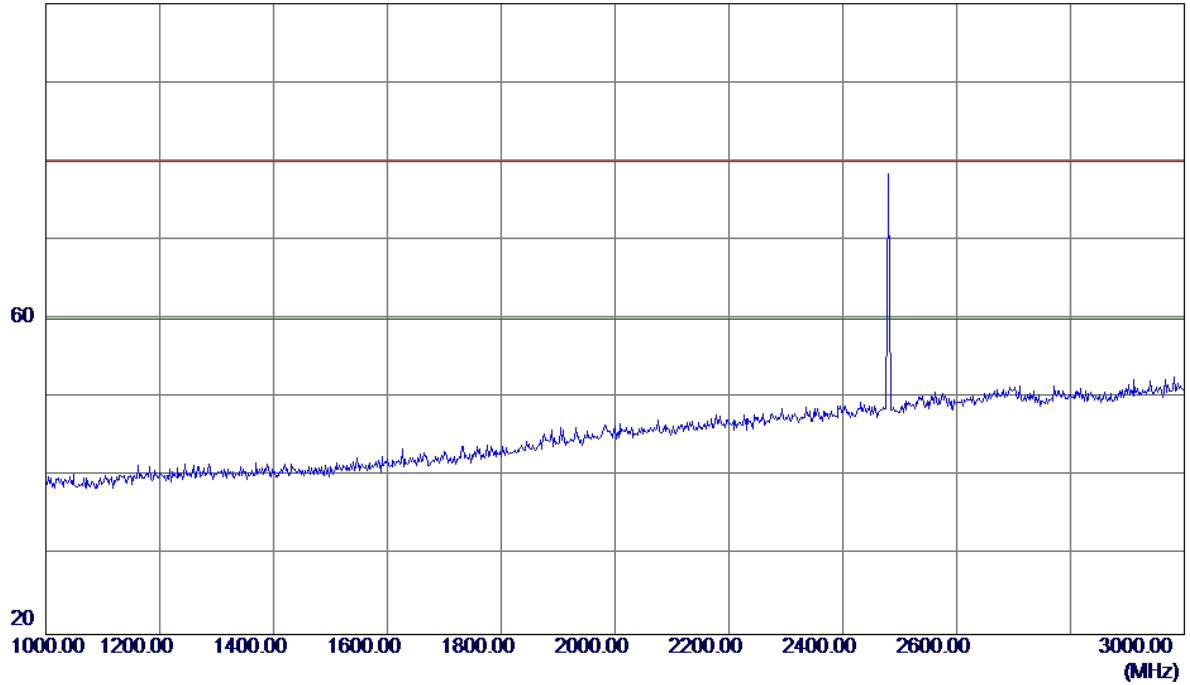


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2479.8000	53.31	33.39	86.70	74.00	12.70	Peak	No Limit
2 *	2480.0000	46.99	33.39	80.38	54.00	26.38	AVG	No Limit
3	2483.5000	22.18	33.40	55.58	74.00	-18.42	Peak	
4	2483.5000	13.07	33.40	46.47	54.00	-7.53	AVG	

Test Mode :	TX 2480MHz _CH39_1Mbps
-------------	------------------------

Vertical

100 dBuV/m

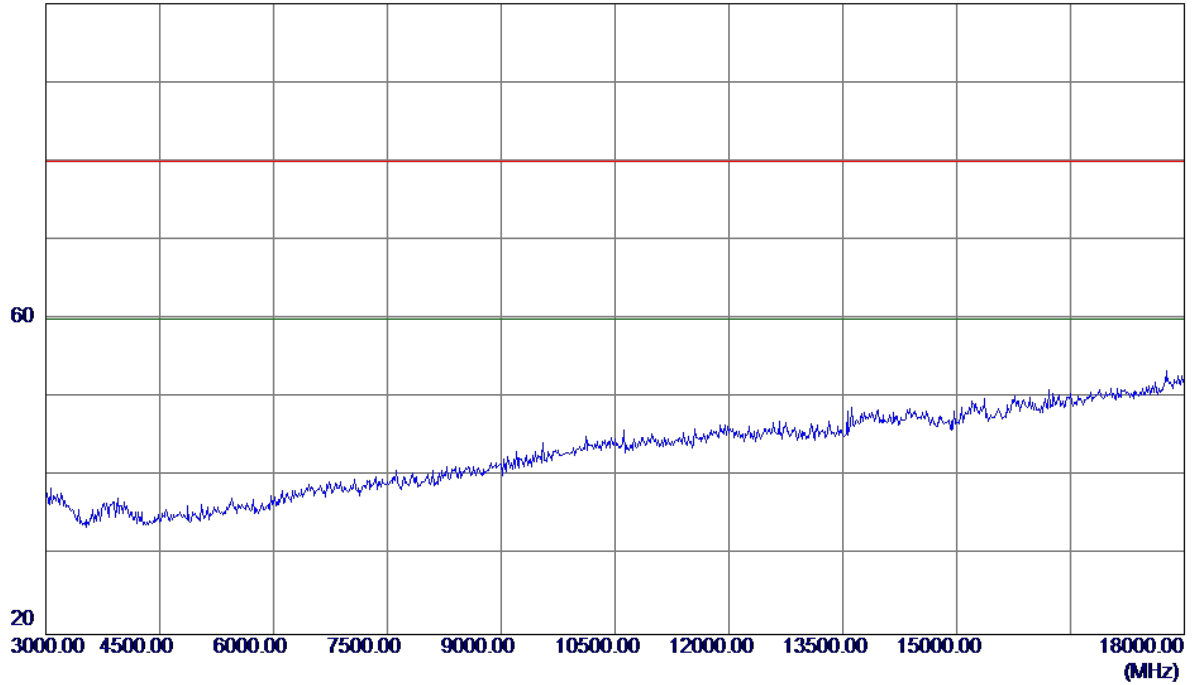


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		

Test Mode :	TX 2480MHz _CH39_1Mbps
-------------	------------------------

Vertical

100 dBuV/m

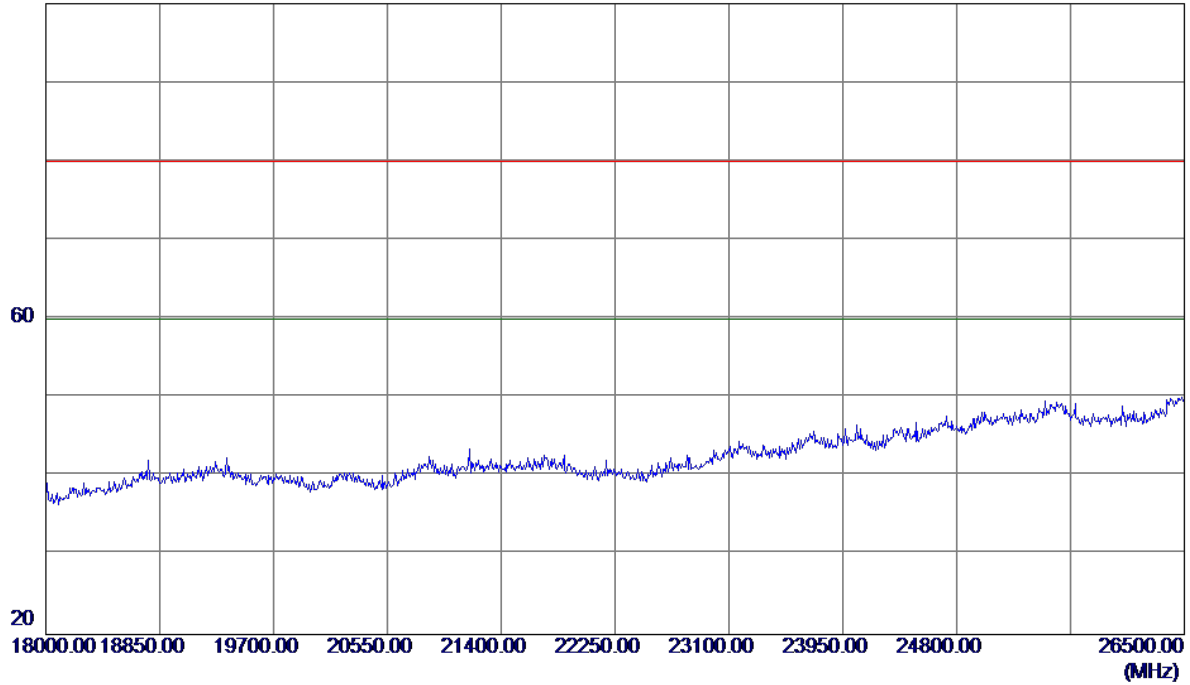


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode :	TX 2480MHz _CH39_1Mbps
-------------	------------------------

Vertical

100 dBuV/m

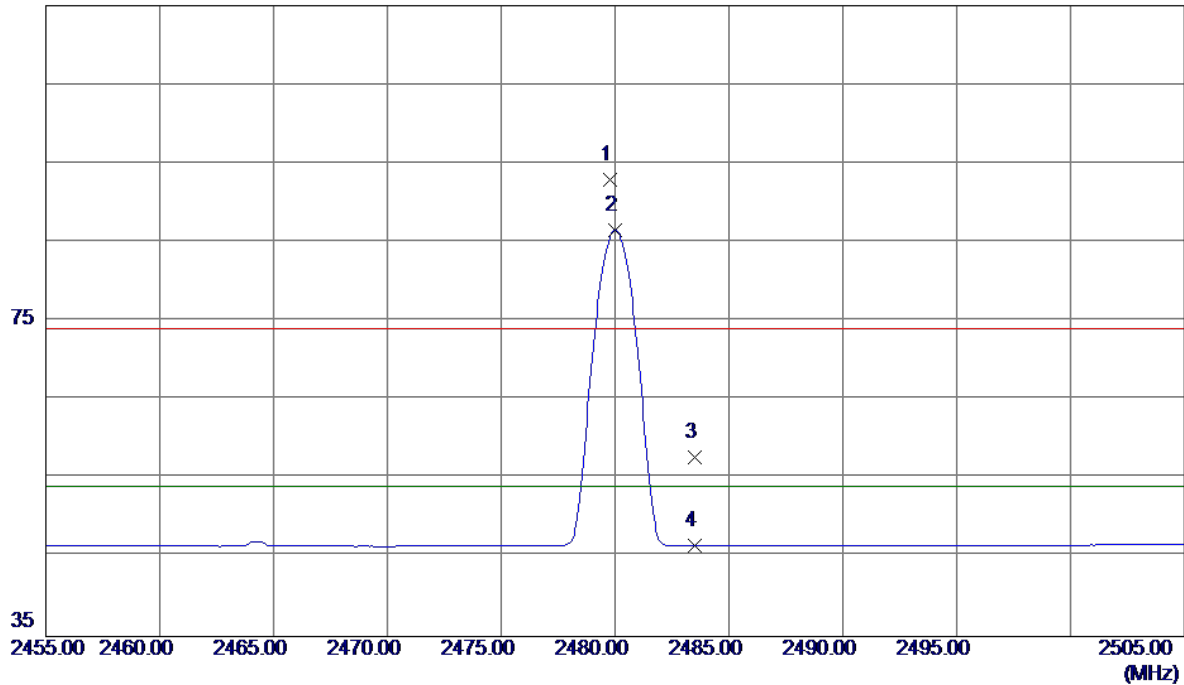


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		

Test Mode : TX 2480MHz _CH39_1Mbps

Horizontal

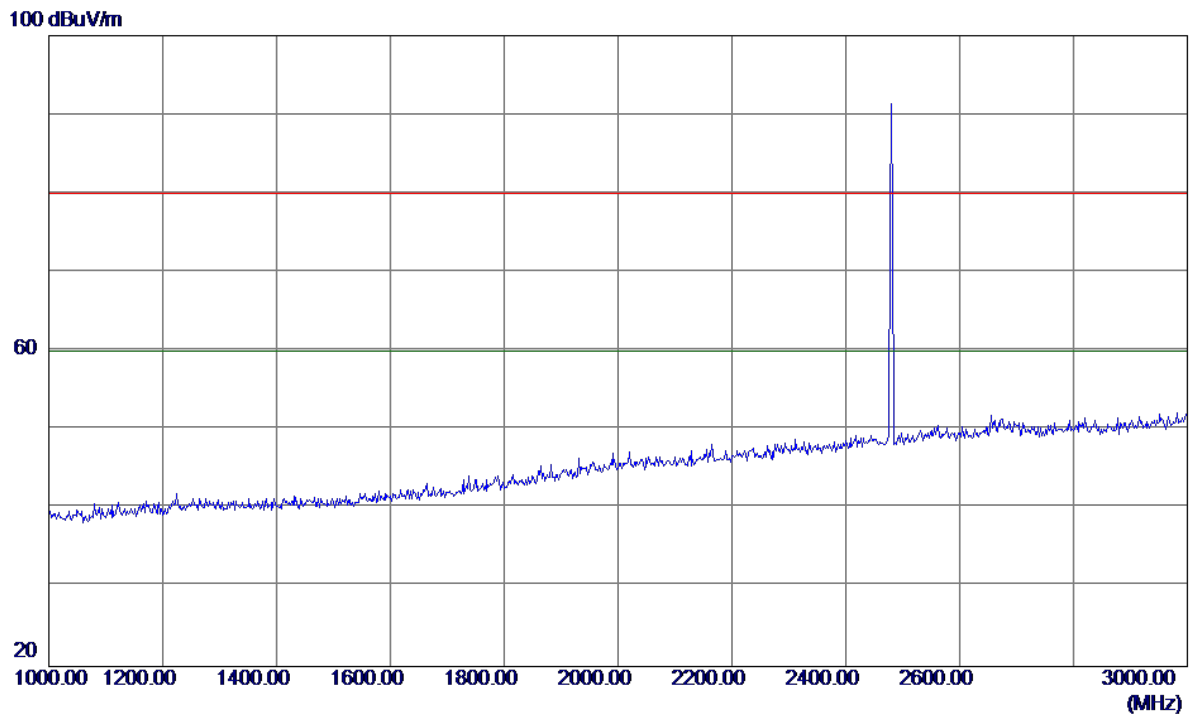
115 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2479.8000	59.59	33.39	92.98	74.00	18.98	Peak	No Limit
2 *	2480.0000	53.15	33.39	86.54	54.00	32.54	AVG	No Limit
3	2483.5000	24.32	33.40	57.72	74.00	-16.28	Peak	
4	2483.5000	13.07	33.40	46.47	54.00	-7.53	AVG	

Test Mode :	TX 2480MHz _CH39_1Mbps
-------------	------------------------

Horizontal

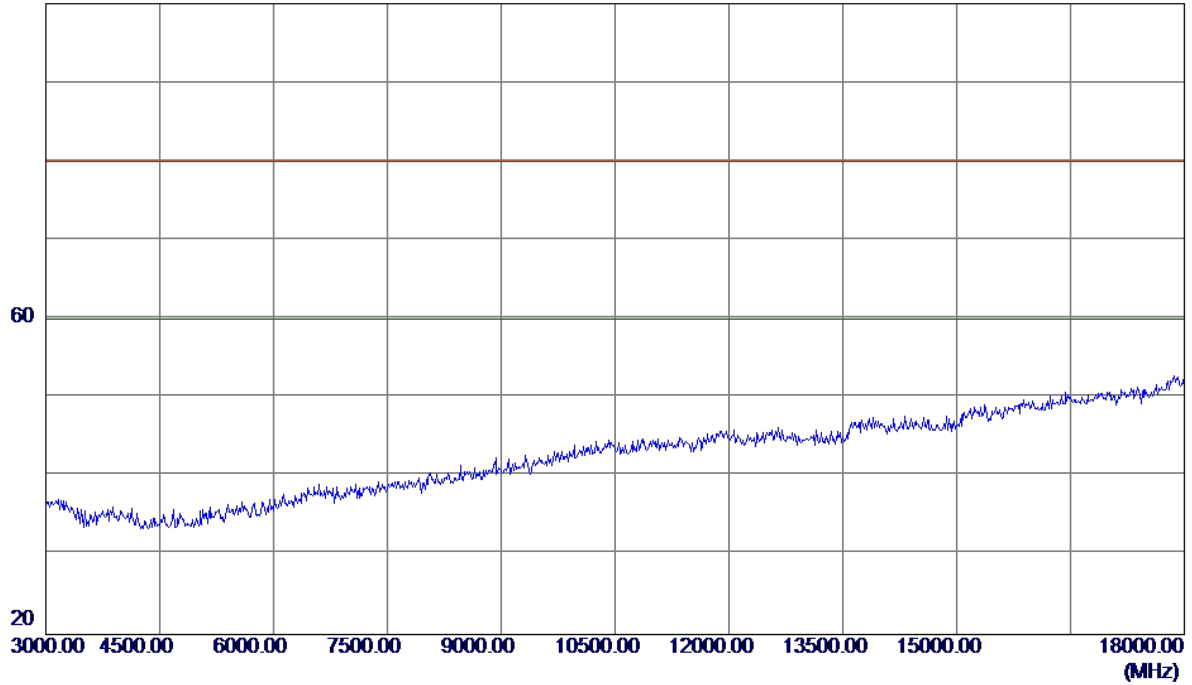


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode :	TX 2480MHz _CH39_1Mbps
-------------	------------------------

Horizontal

100 dBuV/m

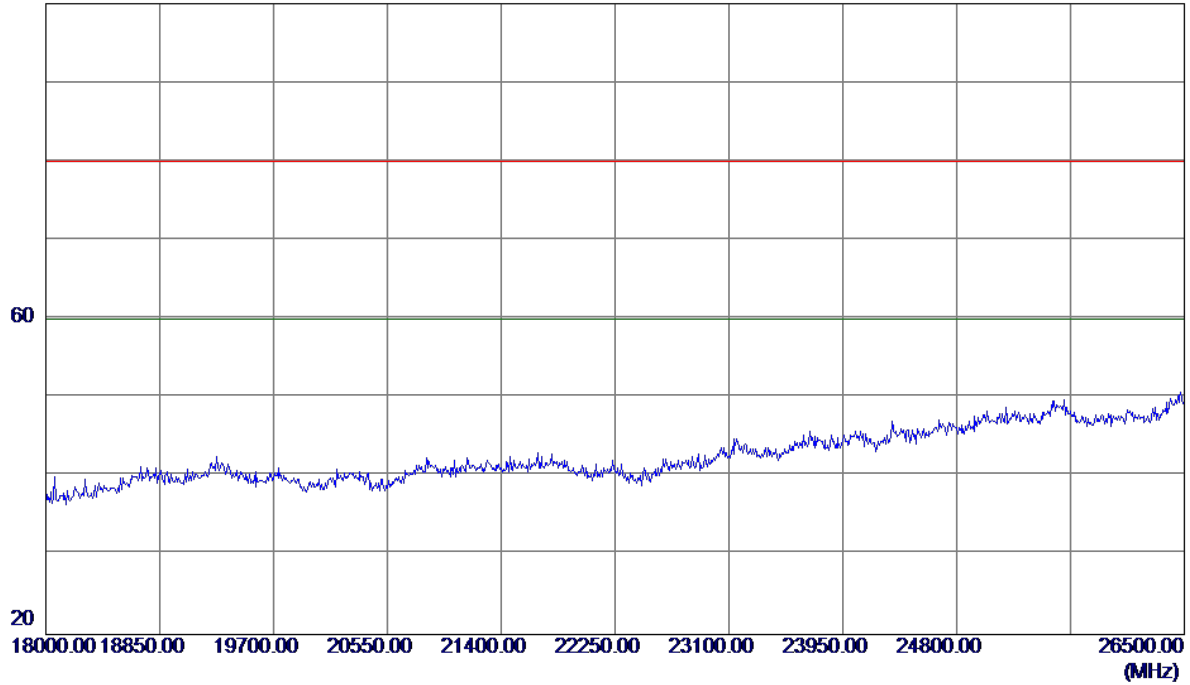


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment

Test Mode :	TX 2480MHz _CH39_1Mbps
-------------	------------------------

Horizontal

100 dBuV/m



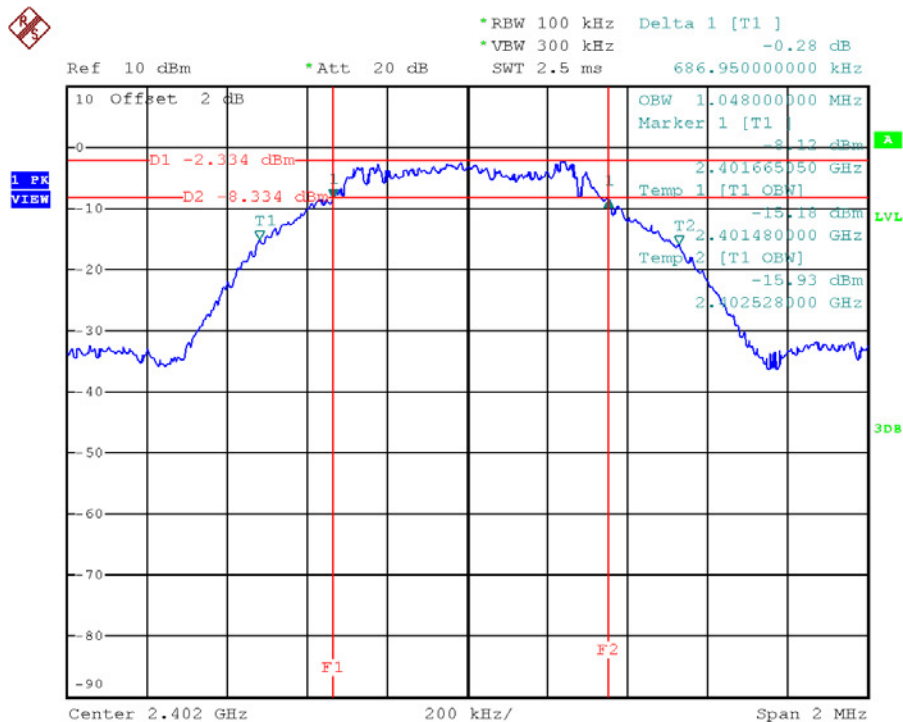
No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		

ATTACHMENT E - BANDWIDTH

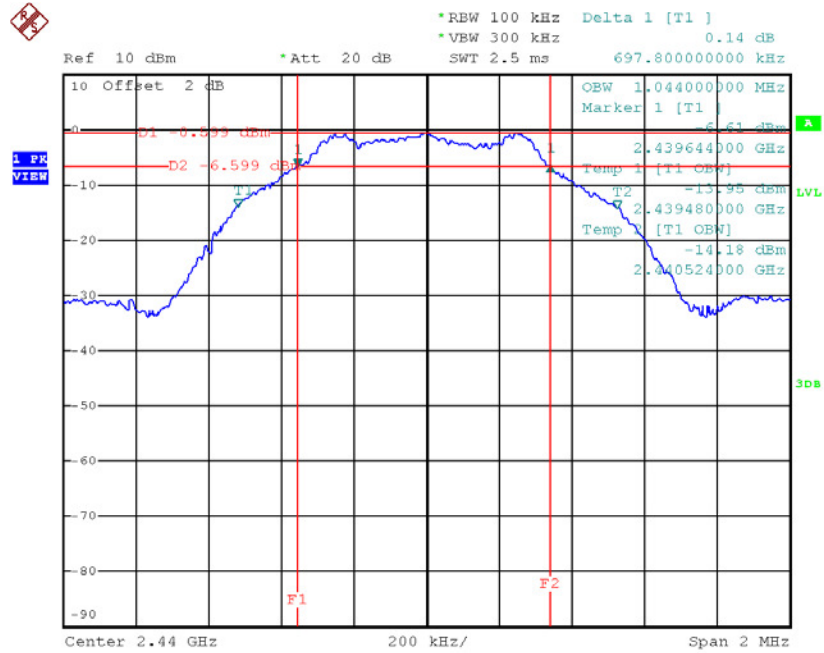
Test Mode:	TX Mode
------------	---------

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

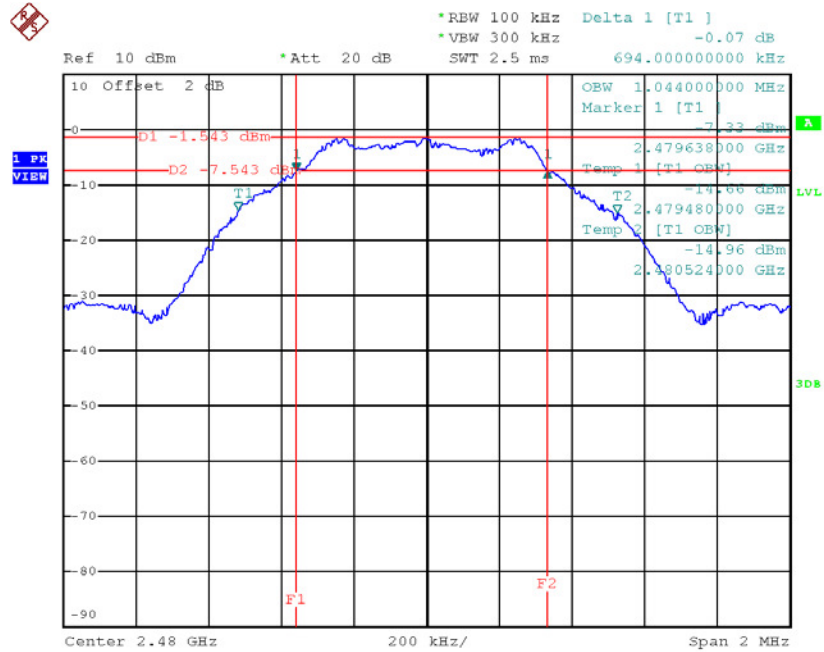
TX CH00



TX CH19



TX CH39



ATTACHMENT F - MAXIMUM OUTPUT POWER TEST

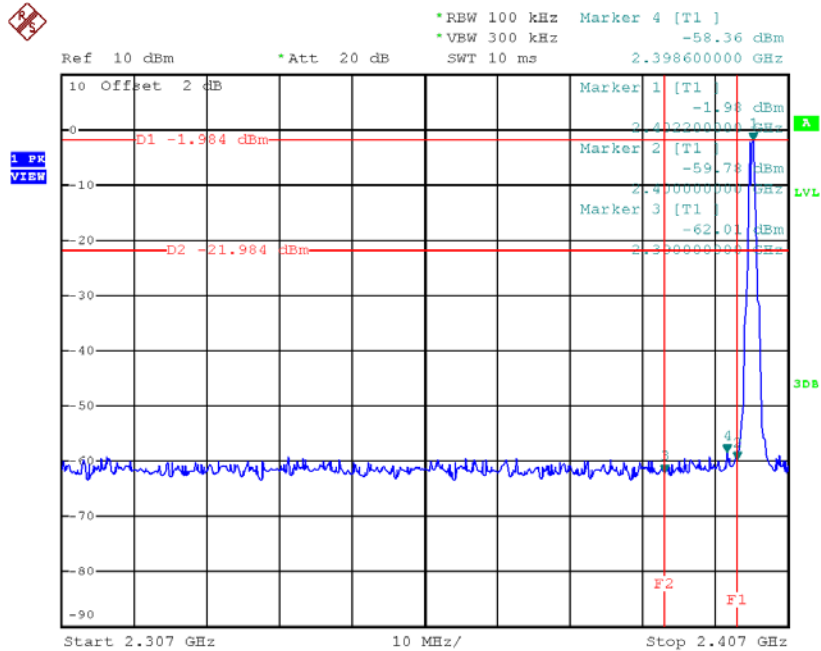
Test Mode :	CH00, CH19 , CH39 - 1Mbps
-------------	---------------------------

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

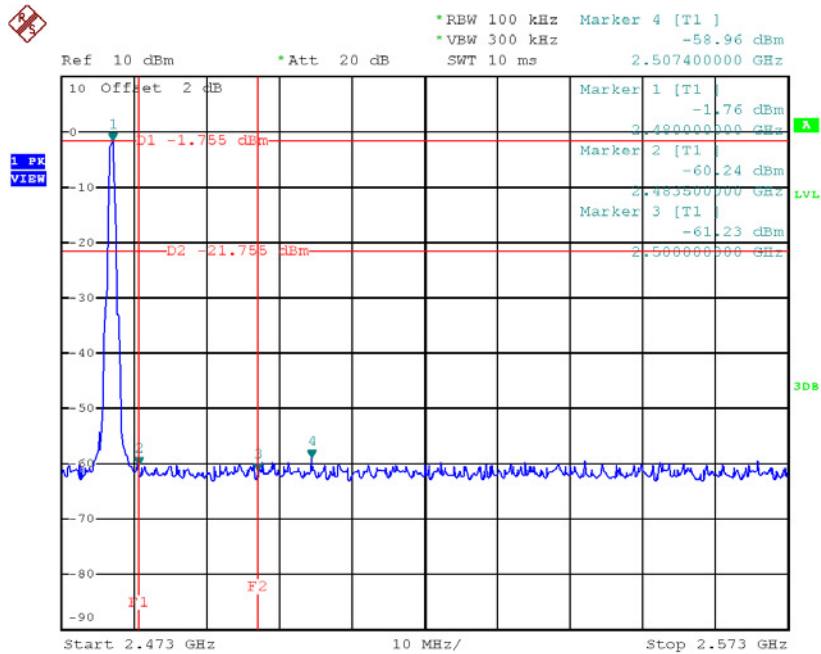
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

Test Mode : CH00, CH19 , CH39 - 1Mbps

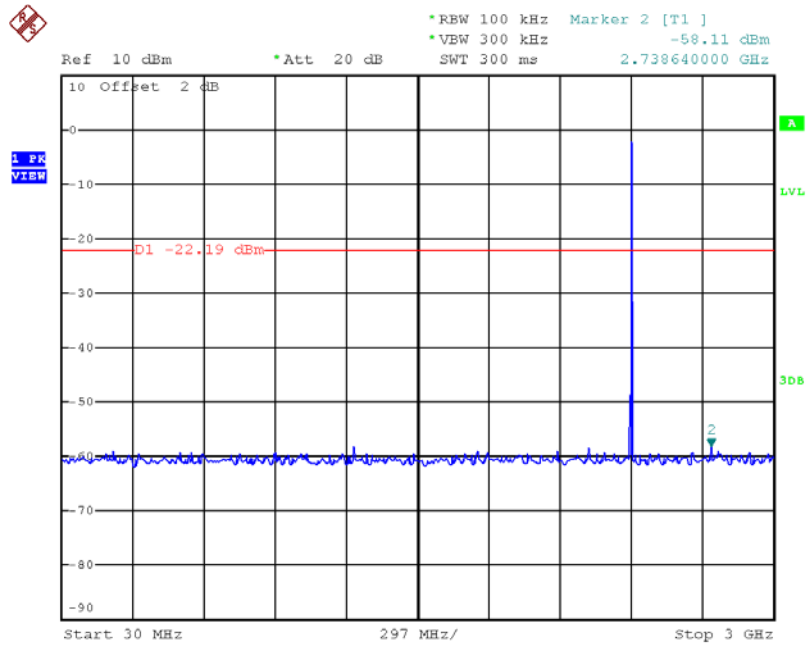
CH00 (Lower) - 1Mbps



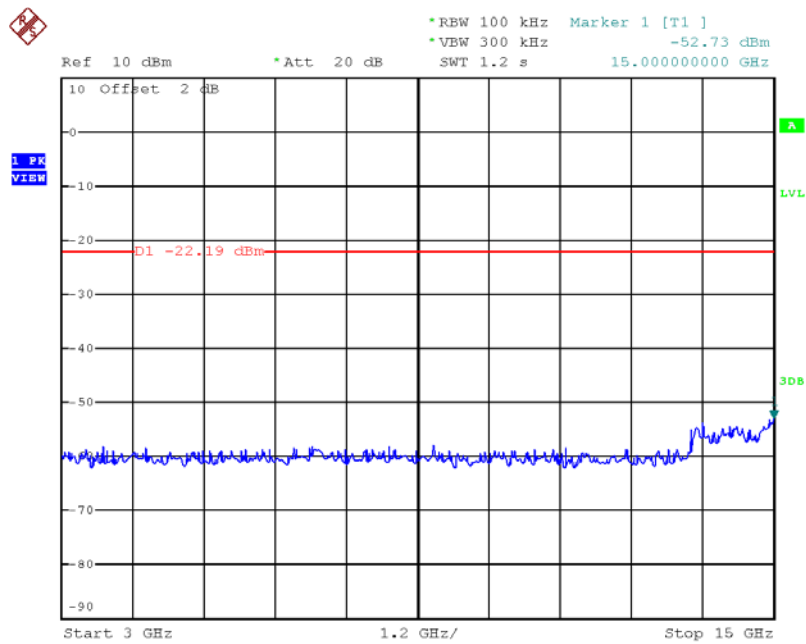
CH39 (upper) - 1Mbps



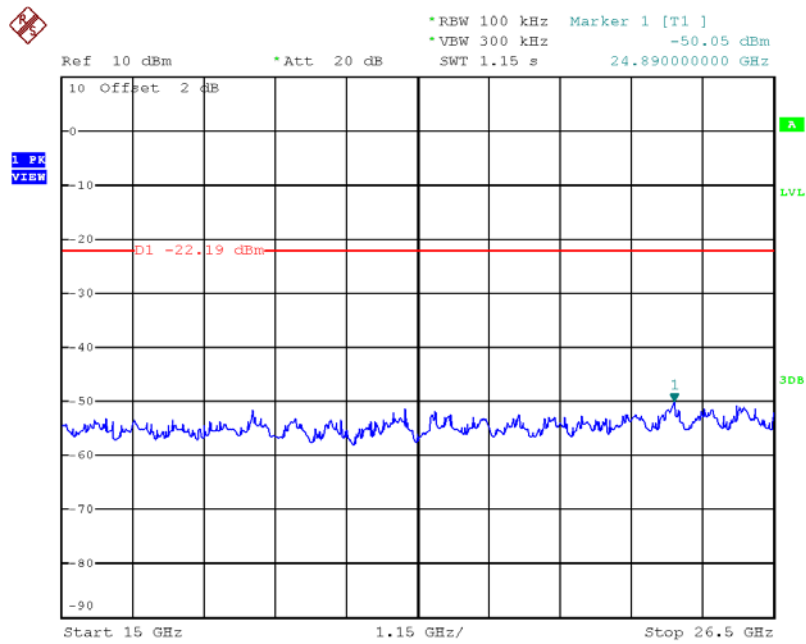
CH00 (10 Harmonic of the frequency) 1



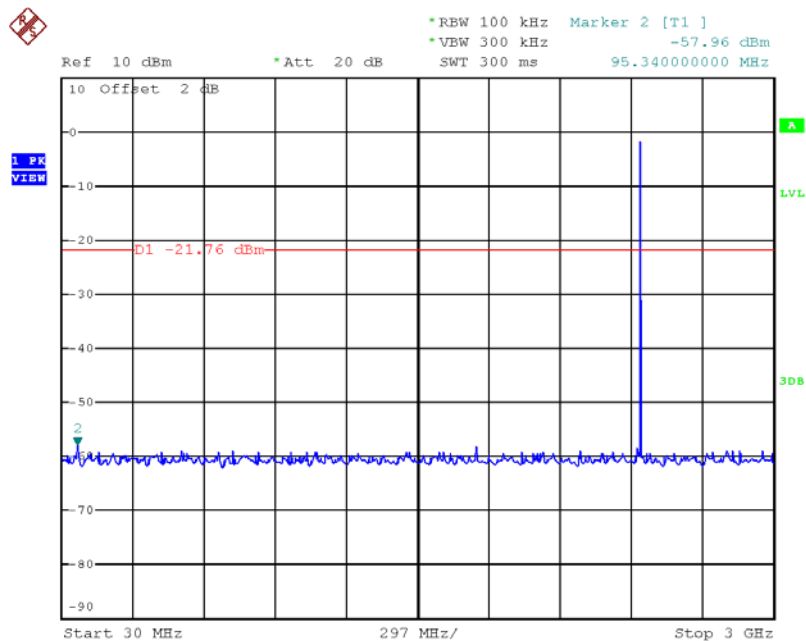
CH00 (10 Harmonic of the frequency) 2



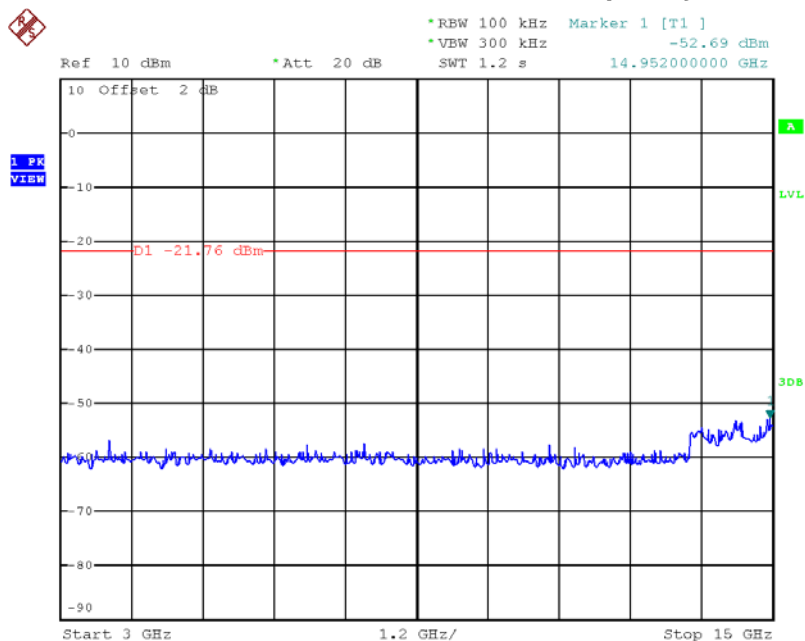
CH00 (10 Harmonic of the frequency) 3



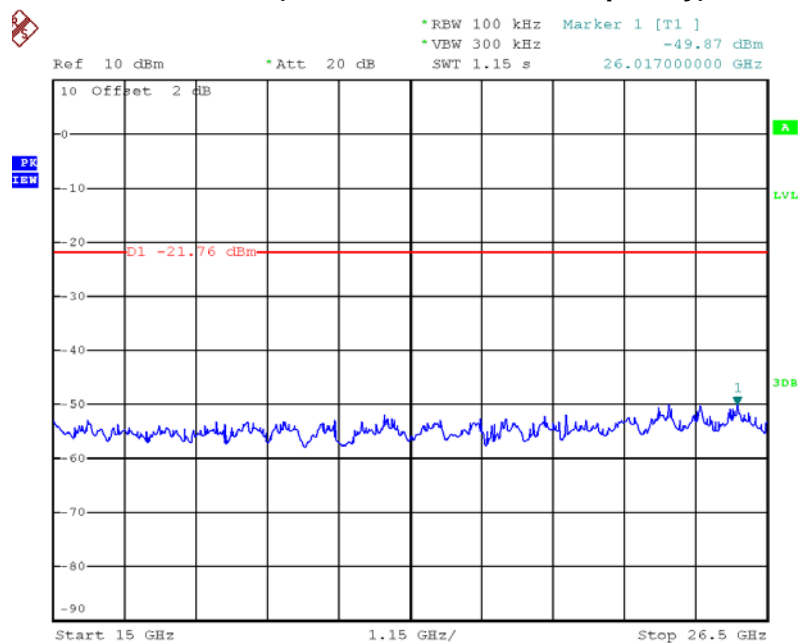
CH19 (10 Harmonic of the frequency) 1



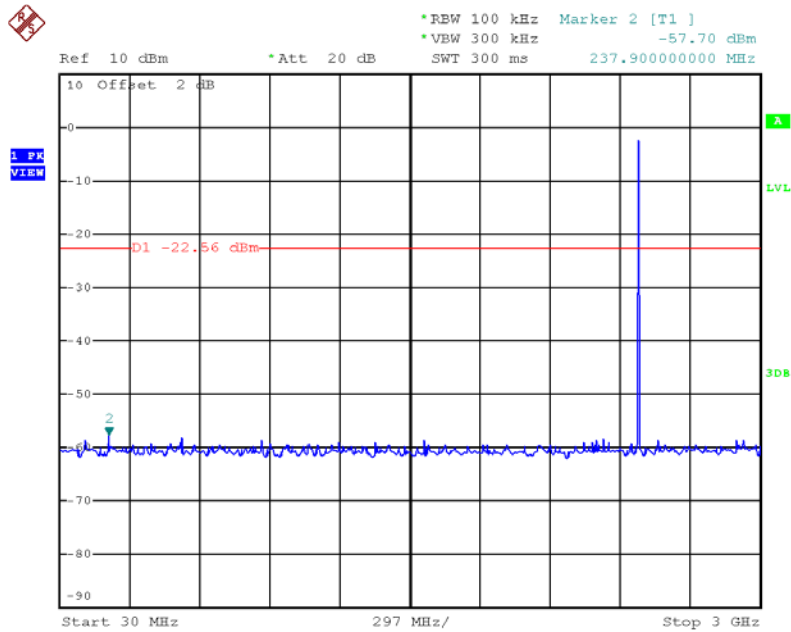
CH19 (10 Harmonic of the frequency) 2



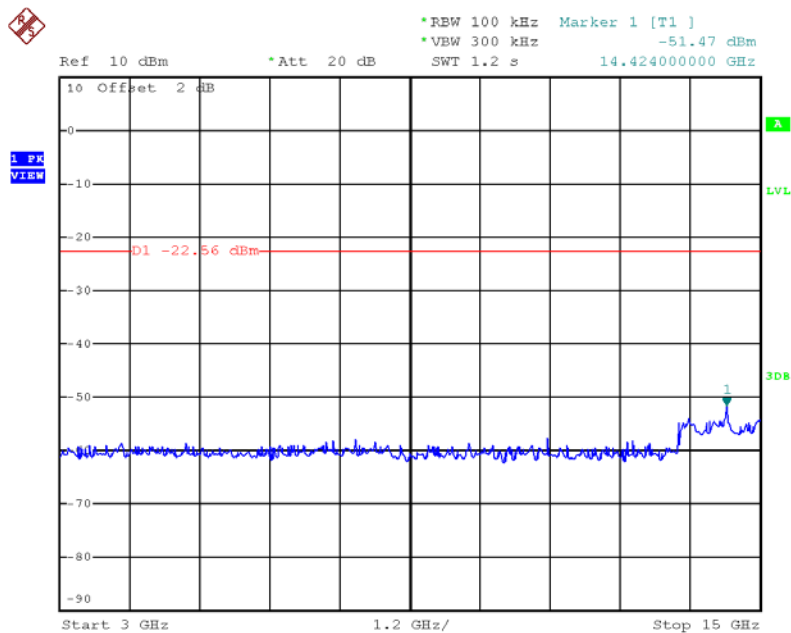
CH19 (10 Harmonic of the frequency) 3



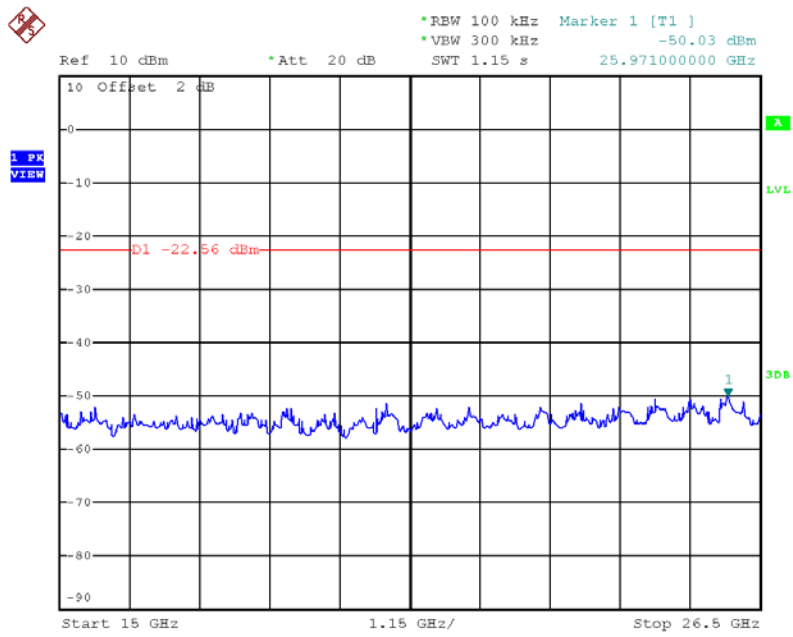
CH39 (10 Harmonic of the frequency) 1



CH39 (10 Harmonic of the frequency) 2



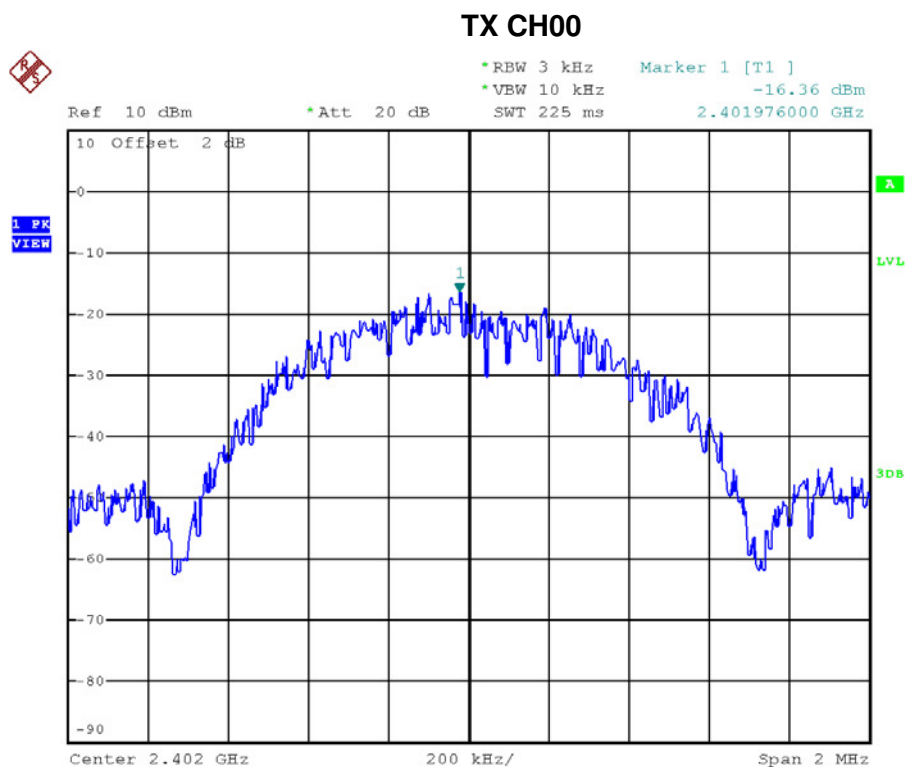
CH39 (10 Harmonic of the frequency) 3



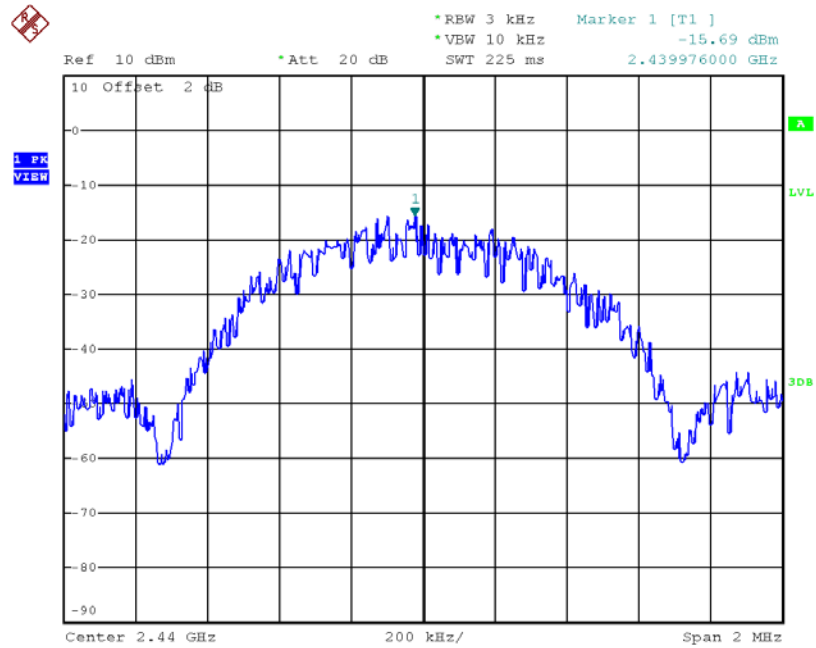
ATTACHMENT H - POWER SPECTRAL DENSITY TEST

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 CH19



TX CH39

