FCC&IC Radio Test Report

FCC ID: O57TB3710F

IC: 10407A-TB3710F

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

Project No.	:	1509C320
Equipment	:	Portable Tablet Computer
Model Name	:	Lenovo TB3-710F
Applicant	:	LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO LTD
Address	:	NO 68 BUILDING 199 FENJU RD, CHINA (SHANGHAI) PILOT FREE TRADE ZONE, SHANGHAI, 200131 CHINA

Date of Receipt	:	Sep. 29, 2015
Date of Test	:	Sep. 29, 2015 ~ Oct. 09, 2015
Issued Date	:	Oct. 12, 2015
Tested by	:	BTL Inc.

Testing Engineer : Shawn Xiao
(Shawn Xiao)

Technical Manager : David Mao
(David Mao)

Authorized Signatory : Steven Lu
(Steven Lu)

BTL INC.

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 the standards traceable to National Measurement Laboratory (**NML**) of **CHINA**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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 7

2 . SUMMARY OF TEST RESULTS 8

2.1 TEST FACILITY 9

2.2 MEASUREMENT UNCERTAINTY 9

3 . GENERAL INFORMATION 10

3.1 GENERAL DESCRIPTION OF EUT 10

3.2 DESCRIPTION OF TEST MODES 14

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING 14

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 15

3.5 DESCRIPTION OF SUPPORT UNITS 15

4 . EMC EMISSION TEST 16

4.1 CONDUCTED EMISSION MEASUREMENT 16

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS 16

4.1.2 TEST PROCEDURE 16

4.1.3 DEVIATION FROM TEST STANDARD 16

4.1.4 TEST SETUP 17

4.1.5 EUT OPERATING CONDITIONS 17

4.1.6 EUT TEST CONDITIONS 17

4.1.7 TEST RESULTS 17

4.2 RADIATED EMISSION MEASUREMENT 18

4.2.1 RADIATED EMISSION LIMITS 18

4.2.2 TEST PROCEDURE 19

4.2.3 DEVIATION FROM TEST STANDARD 19

4.2.4 TEST SETUP 20

4.2.5 EUT OPERATING CONDITIONS 21

4.2.6 EUT TEST CONDITIONS 21

4.2.7 TEST RESULTS (9KHZ TO 30MHZ) 21

4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ) 22

4.2.9 TEST RESULTS (ABOVE 1000 MHZ) 22

5 . NUMBER OF HOPPING CHANNEL 23

5.1 APPLIED PROCEDURES 23

5.1.1 TEST PROCEDURE 23

5.1.2 DEVIATION FROM STANDARD 23

5.1.3 TEST SETUP 23

5.1.4 EUT OPERATION CONDITIONS 23

5.1.5 EUT TEST CONDITIONS 23

5.1.6 TEST RESULTS 23

Table of Contents Page

6 . AVERAGE TIME OF OCCUPANCY 24

6.1 APPLIED PROCEDURES / LIMIT 24
6.1.1 TEST PROCEDURE 24
6.1.2 DEVIATION FROM STANDARD 24
6.1.3 TEST SETUP 24
6.1.4 EUT OPERATION CONDITIONS 25
6.1.5 EUT TEST CONDITIONS 25
6.1.6 TEST RESULTS 25

7 . HOPPING CHANNEL SEPARATION MEASUREMENT 26

7.1 APPLIED PROCEDURES / LIMIT 26
7.1.1 TEST PROCEDURE 26
7.1.2 DEVIATION FROM STANDARD 26
7.1.3 TEST SETUP 26
7.1.4 EUT TEST CONDITIONS 26
7.1.5 TEST RESULTS 26

8 . BANDWIDTH TEST 27

8.1 APPLIED PROCEDURES 27
8.1.1 TEST PROCEDURE 27
8.1.2 DEVIATION FROM STANDARD 27
8.1.3 TEST SETUP 27
8.1.4 EUT OPERATION CONDITIONS 27
8.1.5 EUT TEST CONDITIONS 27
8.1.6 TEST RESULTS 27

9 . PEAK OUTPUT POWER TEST 28

9.1 APPLIED PROCEDURES / LIMIT 28
9.1.1 TEST PROCEDURE 28
9.1.2 DEVIATION FROM STANDARD 28
9.1.3 TEST SETUP 28
9.1.4 EUT OPERATION CONDITIONS 28
9.1.5 EUT TEST CONDITIONS 28
9.1.6 TEST RESULTS 28

10 . ANTENNA CONDUCTED SPURIOUS EMISSION 29

10.1 APPLIED PROCEDURES / LIMIT 29
10.1.1 TEST PROCEDURE 29
10.1.2 DEVIATION FROM STANDARD 29
10.1.3 TEST SETUP 29
10.1.4 EUT OPERATION CONDITIONS 29
10.1.5 EUT TEST CONDITIONS 29
10.1.6 TEST RESULTS 29

11 . MEASUREMENT INSTRUMENTS LIST 30

Table of Contents Page

12 . EUT TEST PHOTO	32
ATTACHMENT A - CONDUCTED EMISSION	36
ATTACHMENT B - RADIATED EMISSION (9KHZ-30MHZ)	45
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	48
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	73
ATTACHMENT E - NUMBER OF HOPPING CHANNEL	98
ATTACHMENT F - AVERAGE TIME OF OCCUPANCY	100
ATTACHMENT G - HOPPING CHANNEL SEPARATION MEASUREMENT	113
ATTACHMENT H - BANDWIDTH	118
ATTACHMENT I - PEAK OUTPUT POWER	123
ATTACHMENT J - ANTENNA CONDUCTED SPURIOUS EMISSION	128

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FICP-1-1509C320	Original Issue.	Oct. 12, 2015

1. CERTIFICATION

Equipment	:	Portable Tablet Computer
Brand Name	:	Lenovo
Model Name	:	Lenovo TB3-710F
Applicant	:	LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO LTD
Manufacturer	:	Lenovo PC HK Limited
Address	:	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Factory	:	1) DONGGUAN HUABEL ELECTRONIC TECHNOLOGY CO LTD 2) HUIZHOU BYD ELECTRONIC CO LTD
Address	:	1) 9 INDUSTRIAL NORTHERN RD NATIONAL HIGH TECH INDUSTRIAL DEVELOPMNET ZONE SONGSHAN LAKE DONGGUAN GUANGDONG CHINA 2) XIANGSHUI RIVER ECONOMIC DEVELOPMENT ZONE DAYA BAY HUIZHOU GUANGDONG CHINA
Date of Test	:	Sep. 29, 2015 ~ Oct. 09, 2015
Test Sample	:	Engineering Sample
Standard(s)	:	FCC Part15, Subpart C : 2014 (15.247)/ ANSI C63.10-2013 RSS-247 Issue 1, May 2015 RSS-GEN Issue 4, Nov 2014

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-FICP-1-1509C320) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

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

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): 47 CFR Part 15, Subpart C: 2014; RSS-247 Issue 1, May 2015; RSS-GEN Issue 4, Nov 2014				
Standard(s) Section		Test Item	Judgment	Remark
FCC	**IC**			
15.207	RSS-GEN 8.8	Conducted Emission	PASS	
15.247(d)	RSS-247 5.5	Antenna conducted Spurious Emission	PASS	
15.247 (a)(1)	RSS-247 5.1 (2)	Hopping Channel Separation	PASS	
15.247(a)(1)	RSS-247 5.1 (1)	Bandwidth	PASS	
15.247 (b)(1)	RSS-247 5.4 (2)	Peak Output Power	PASS	
15.247(d) 15.209	RSS-247 5.5	Radiated Spurious Emission	PASS	
15.247 (a)(1)(iii)	RSS-247 5.1 (4)	Number of Hopping Frequency	PASS	
15.247 (a)(1)(iii)	RSS-247 5.1 (4)	Dwell Time	PASS	
15.205	RSS-GEN 8.10	Restricted Bands	PASS	
15.203	-	Antenna Requirement	PASS	

Note:

(1)" N/A" denotes test is not applicable in this test report

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
BTL's test firm number for FCC: 319330
BTL's test firm number for IC: 4428B-1

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

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

A. Conducted Measurement :

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

B. Radiated Measurement :

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

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	1GHz ~ 18GHz	V	3.12
		1GHz ~ 18GHz	H	3.68
		18GHz ~ 40GHz	V	4.15
		18GHz ~ 40GHz	H	4.14

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Portable Tablet Computer	
Brand Name	Lenovo	
Model Name	Lenovo TB3-710F	
Model Difference	This model has three configurations: main supply, secondary supply and third supply. Please refer to note 3.	
Output Power (Max.)	Operation Frequency	2402~2480 MHz
	Modulation Technology	GFSK(1Mbps) π/4-DQPSK(2Mbps) 8-DPSK(3Mbps)
	Bit Rate of Transmitter	
	Output Power Max.	5.89 dBm(1Mbps) 5.16 dBm(3Mbps)
Power Source	#1 DC voltage supplied from AC/DC adapter. #2 Supplied from USB port. #3 Supplied from rechargeable Li-Polymer battery."	
Power Rating	Please refer to note 2	

Note:

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

Product	Brand	Model or S/N	Description
Adapter(US)	Huntkey	C-P56/ HQ60310548000	I/P: 100-240V~ 50/60Hz, 0.15A O/P: 5.0V, 1.0A
	Acbel	C-P56/ HQ60311132000	I/P: 100-240V~ 50/60Hz, 0.13A O/P: 5.0V, 1.0A
Battery	lenovo	L13D1P31	3.8VDC, 3550mAh
	lenovo	CA3087A0HV	3.8VDC, 3450mAh
USB Cable	LIQI	L16B-05100070L/ HQ60320546000	70cm shielded cable w/o core

3.

Main Supply				
Part Name	S/N	Mode Name	Description	Supplier
Baseband chip	HQ11100368000	MT8127A/D	WIFI	MediaTek
PMIC	HQ11100356000	MT6323LGA	-	MediaTek
WIFI chip	HQ11110038000	MT6627N	WIFI-BT-FM-GPS four-in-one chip	MediaTek
Memory-EMMC	HQ11120292000	KLMAG2WEPD-B031	EMMC(TLC)_16GB	Samsung
Memory-EMMC	HQ11120291000	KLM8G1WEPD-B031	EMMC(MLC)_8GB	Samsung
Memory-DDR3	HQ11120264000	H9CKNNN8GTMPLR-NUH	LPDDR3_8Gb	Hynix
PCB	HQ12101701000	A1900_MB_PCB_V1.0	-	HUASHEN
LCD	HQ20100818000	TXDT700EPLA-68	7Inch_1024*600	TXD
TP	HQ21711193000	TTCT070121	A1900A	Top-Touch
Camera_Front	HQ20201113000	BLX0A20H-A1900-F	-	BRODSANDS
Camera_Back	HQ20201108000	BLX2508H-A1900-B	-	BRODSANDS
Speaker	HQ20310105000	XHS151118SW43P38-02	-	Haosheng
Shell	HQ20701027000	HQZA1900AJA_01	-	JANUS劲胜
Shell	HQ20741605000	HQZA1900AJA_02	-	JANUS劲胜
Shell	HQ21400541000	HQZA1900AJA_03	-	JANUS劲胜
MIC_Weld	HQ20500069000	OB-F15LX42-1592-C10C33EP	-	HUAFENG
Adapter(US)	HQ60310548000	C-P56	I/P: 100-240V~ 50/60Hz, 0.15A O/P: 5.0V, 1.0A	Huntkey
USB Cable	HQ60320546000	L16B-05100070L	70cm	LIQI
Battery	HQ60331045000	S5000(ATL)	3450mAh	SUNWODA

Secondary Supply				
Part Name	S/N	Mode Name	Description	Supplier
Memory-EMMC	HQ11120418000	THGBMFG7C2LBAIL	EMMC(MLC)_16GB	Toshiba
Memory-EMMC	HQ11120419000	THGBMFG6C1LBAIL	EMMC(MLC)_8GB	Toshiba
Memory-EMMC	-	THGBMAG6A2JBAIR	EMMC(MLC)_8GB	Toshiba **(Remark 1)**
Memory-DDR3	HQ11120371000	K4E8E324EB-AGCF	LPDDR3_8Gb	Samsung
Memory-DDR3	HQ11120262000	K4E8E304EE-AGCE	LPDDR3_8Gb	Samsung
PCB	HQ12101702000	A1900_MB_PCB_V1.0	-	Elec & Elteck
LCD	HQ20100822000	KD070D54-39NH-B2	7Inch_1024*600	K&D
TP	HQ21711200000	YCB0880700801A	A1900A	Each
Camera_Front	HQ20201114000	GI5953A1D-1P0J0	-	Qunhui
Camera_Back	HQ20201117000	GV5954B1S-1P0J0	-	Qunhui
Speaker	HQ2031012500	KFSC1115G3.5-08-0.7W-D	-	Xichun
MIC_Weld	HQ20500068000	CM4015BC-423-WR138	-	Jinzun
Adapter(US)	HQ60311132000	C-P56	I/P: 100-240V~ 50/60Hz, 0.13A O/P: 5.0V, 1.0A	Acbel
Battery	HQ60331361000	S5000(COSLIGHT)	3450mAh	SCUD

Remark: This component is third supply, the only difference between third supply and second supply is the model of 8G Memory-EMMC, the rest is same.

4. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

5 Table for Filed Antenna:
.

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	A1900	Internal	N/A	0.35

3.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	TX Mode **Note (1)**

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

For Conducted Emission	
Final Test Mode	Description
Mode 1	TX Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	TX Mode **Note (1)**

Note:

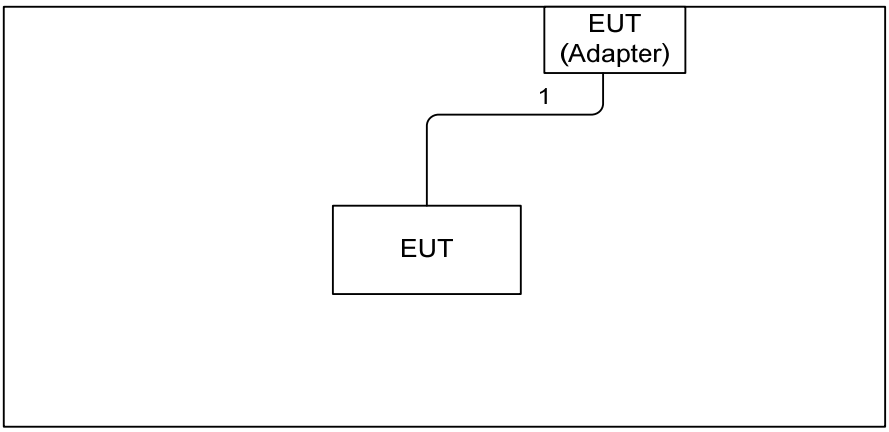
(1) The measurements are performed at the high, middle, low available channels.
(2) The measurements for Hopping Channel Separation, Bandwidth and Peak Output Power were tested during 1Mbps, 2Mbps and 3Mbps, the worst case are 1Mbps and 3Mbps, only worst case was documented.
(3) Both adapter and battery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

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

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

Test Software Version	N/A		
Frequency (MHz)	2402	2441	2480
Parameters(1Mbps)	7.00	7.00	7.00
Parameters(3Mbps)	7.00	7.00	7.00

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

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

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

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

Note:

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

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

Frequency of Emission (MHz)	Conducted Limit (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.

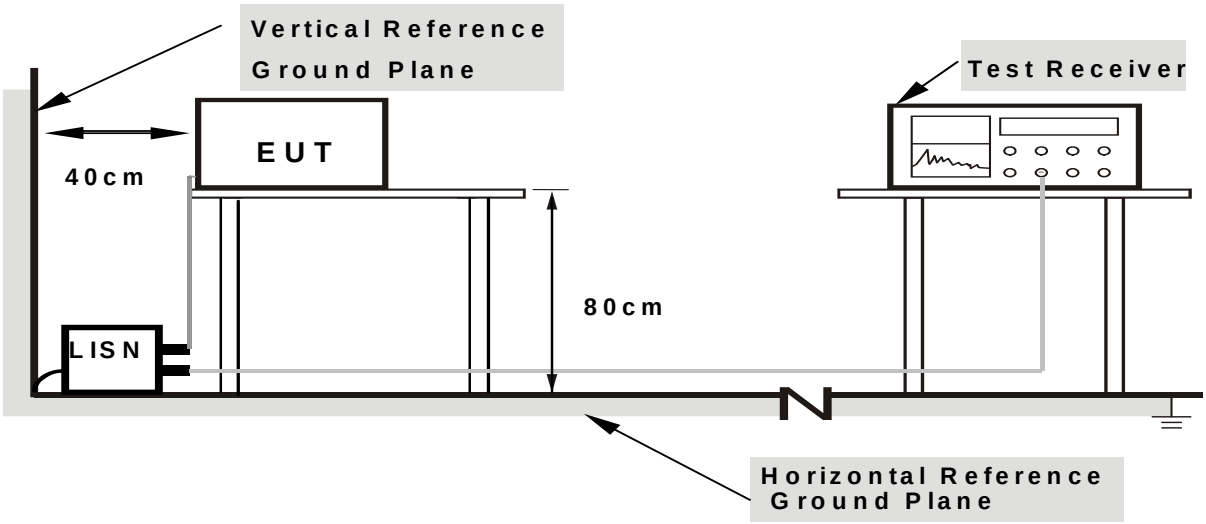
d. LISN at least 80 cm from nearest part of EUT chassis.

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 function (as a customer would normally use it), EUT was programmed to be in continuously transmitting/receiving data or hopping on mode.

4.1.6 EUT TEST CONDITIONS

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

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn‘t perform in this case, a “*” marked in AVG Mode column of Interference Voltage Measured.

(2) Measuring frequency range from 150KHz to 30MHz.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz -1000MHz)

In case the emission fall within the restricted band specified on 15.205(a) & RSS-247 5.5, then the 15.209(a) & RSS-Gen limit in the table below has to be followed.

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)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m) =20log Emission level (uV/m).

(4) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

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

Spectrum 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 at 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 at 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)

c. The height of the equipment or of the substitution antenna shall be 0.8m 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. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

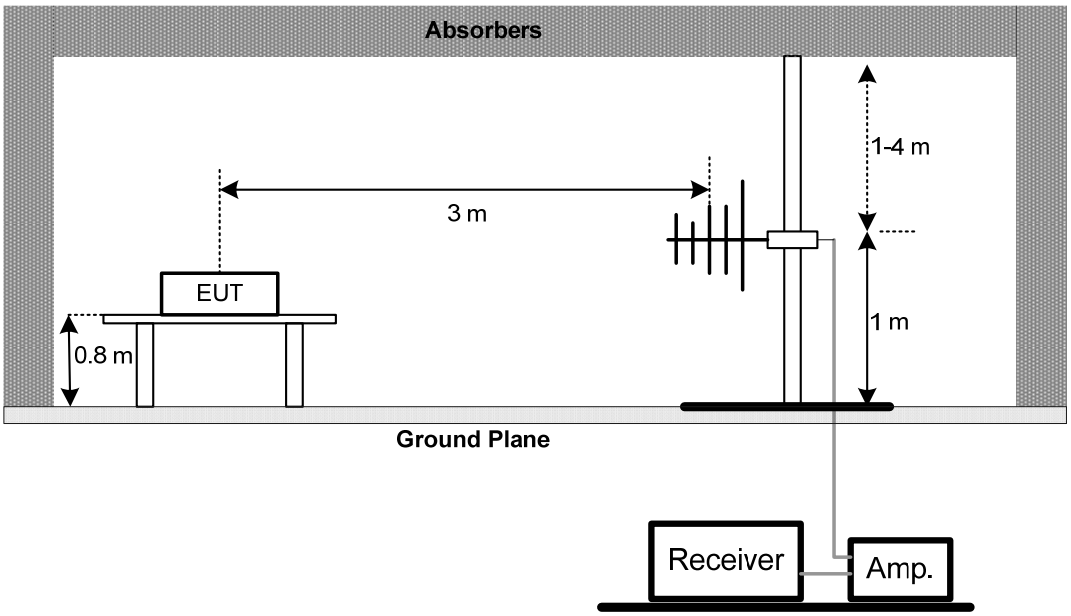
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

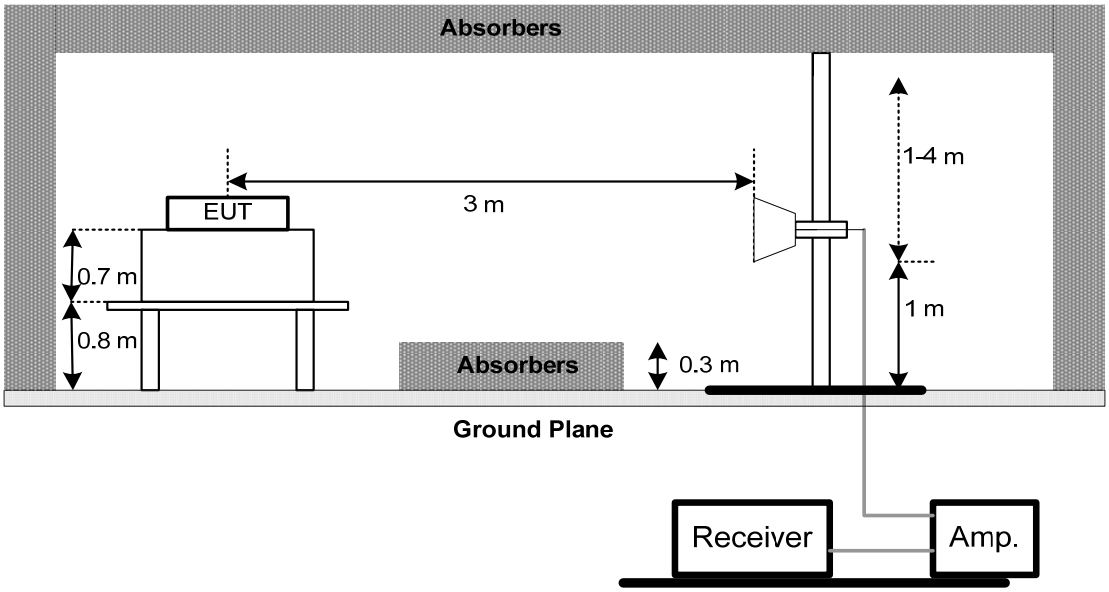
No deviation

4.2.4 TEST SETUP

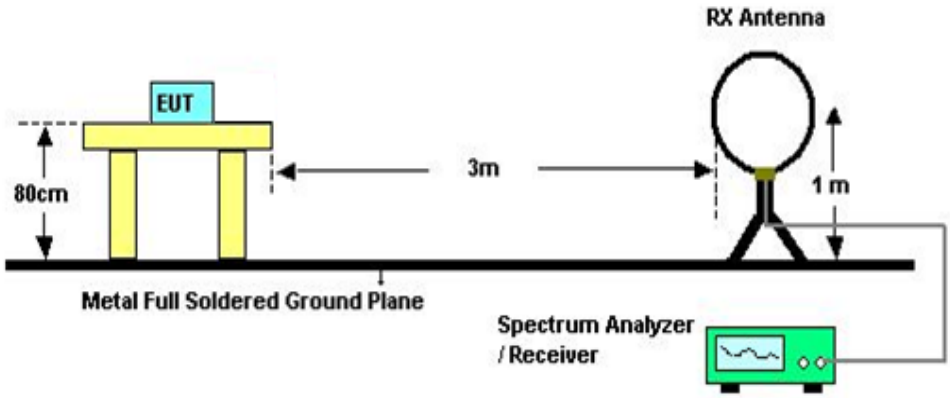
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For Radiated Emissions Below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing

4.2.6 EUT TEST CONDITIONS

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

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Attachment B

Remark:

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

4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

Remark:

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.

(2) 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.

(3) Measuring frequency range from 30MHz to 1000MHz.

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

(1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission

(2) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(3) EUT Orthogonal Axis:
"X" - denotes Laid on Table; "Y" - denotes Vertical Stand; "Z" - denotes Side Stand

(4) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

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

5. NUMBER OF HOPPING CHANNEL

5.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-247			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(1)(iii) RSS-247 5.1 (4)	Number of Hopping Channel	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RBW	100 KHz
VBW	100 KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

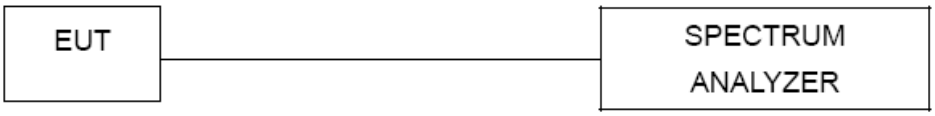
5.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW=100KHz, VBW=100KHz, Sweep time = Auto.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 EUT TEST CONDITIONS

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

5.1.6 TEST RESULTS

Please refer to the Attachment E

6. AVERAGE TIME OF OCCUPANCY

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-247				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(1)(iii) RSS-247 5.1 (4)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

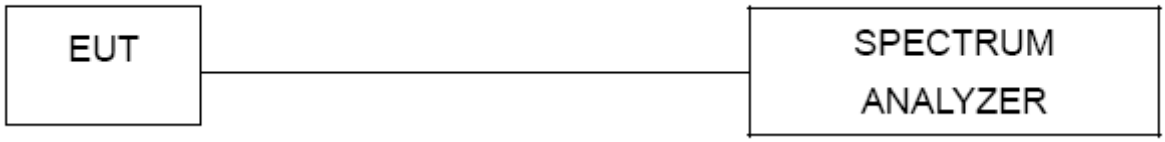
6.1.1 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyzer
b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
d. Sweep Time is more than once pulse time.
e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
f. Measure the maximum time duration of one single pulse.
g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
h. Measure the maximum time duration of one single pulse.
i. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds.
j. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds.
k. DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 EUT TEST CONDITIONS

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

6.1.6 TEST RESULTS

Please refer to the Attachment F

7. HOPPING CHANNEL SEPARATION MEASUREMENT

7.1 APPLIED PROCEDURES / LIMIT

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 KHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RBW	30 KHz
VBW	100 KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

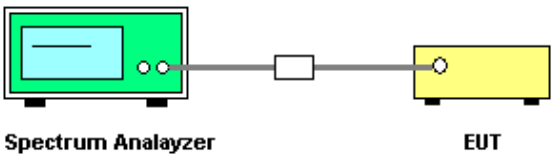
7.1.1 TEST PROCEDURE

a. The EUT must have its hopping function enabled
b. Span = wide enough to capture the peaks of two adjacent channels
Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
Video (or Average) Bandwidth (VBW) ≥ RBW
Sweep = Auto
Detector function = Peak
Trace = Max Hold

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT TEST CONDITIONS

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

7.1.5 TEST RESULTS

Please refer to the Attachment G

8. BANDWIDTH TEST

8.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-247		
Section	Test Item	Frequency Range (MHz)
15.247(a)(2) RSS-GEN 6.6 RSS-247 5.1 (1)	Bandwidth	2400-2483.5

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RBW	30 KHz (20dB Bandwidth) / 30 KHz (Channel Separation)
VBW	100 KHz (20dB Bandwidth) / 100 KHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

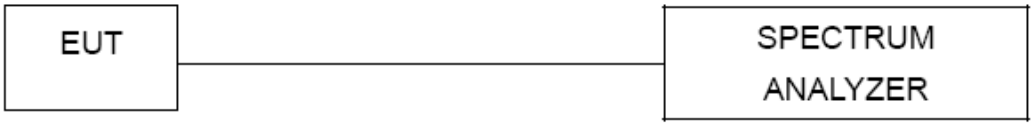
8.1.1 TEST PROCEDURE

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= 30KHz, VBW=100KHz, Sweep Time = Auto.

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

8.1.5 EUT TEST CONDITIONS

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

8.1.6 TEST RESULTS

Please refer to the Attachment H

9. PEAK OUTPUT POWER TEST

9.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C/ RSS-247				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(1) RSS-247 5.4 (2)	Peak Output Power	1 Watt or 30dBm (hopping channel >75) 0.125Watt or 21dBm (hopping channel <75	2400-2483.5	PASS

9.1.1 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= 1MHz/3MHz, VBW= 1MHz/3MHz, Sweep time = Auto.

9.1.2 DEVIATION FROM STANDARD

No deviation.

9.1.3 TEST SETUP

9.1.4 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.

9.1.5 EUT TEST CONDITIONS

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

9.1.6 TEST RESULTS

Please refer to the Attachment I

10. ANTENNA CONDUCTED SPURIOUS EMISSION

10.1 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.

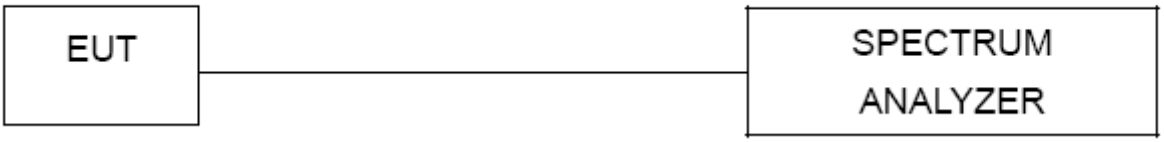
10.1.1 TEST PROCEDURE

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=100KHz, Sweep time = Auto.
c. Offset=antenna gain+cable loss

10.1.2 DEVIATION FROM STANDARD

No deviation.

10.1.3 TEST SETUP



10.1.4 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.

10.1.5 EUT TEST CONDITIONS

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

10.1.6 TEST RESULTS

Please refer to the Attachment J

11. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Mar. 28, 2016
2	LISN	R&S	ENV216	101447	Mar. 28, 2016
3	Test Cable	emci	RG223(9KHz-30 MHz)	C_17	Mar. 13, 2016
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 28, 2016
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 28, 2016
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 28, 2016
2	Amplifier	HP	8447D	2944A09673	Nov. 17, 2015
3	Receiver	AGILENT	N9038A	MY52130039	Sep. 30, 2016
4	Test Cable	emci	LMR-400(30MHz-1GHz)	C-01	Jun. 28, 2016
5	Controller	CT	SC100	N/A	N/A
6	Antenna	ETS	3115	00075789	Mar. 28, 2016
7	Amplifier	Agilent	8449B	3008A02274	Nov. 02, 2015
8	Receiver	AGILENT	N9038A	MY52130039	Sep. 30, 2016
9	Test Cable	emci	EMC104-SM-SM-10000(1GHz－26.5GHz)	C-68	Jun. 28, 2016
10	Controller	CT	SC100	N/A	N/A
11	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Mar. 28, 2016
12	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Aug. 15, 2016
13	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Number of Hopping Channel					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Average Time of Occupancy					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Hopping Channel Separation Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Peak Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Antenna Conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

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

12. EUT TEST PHOTO

Conducted Measurement Photos

Radiated Measurement Photos

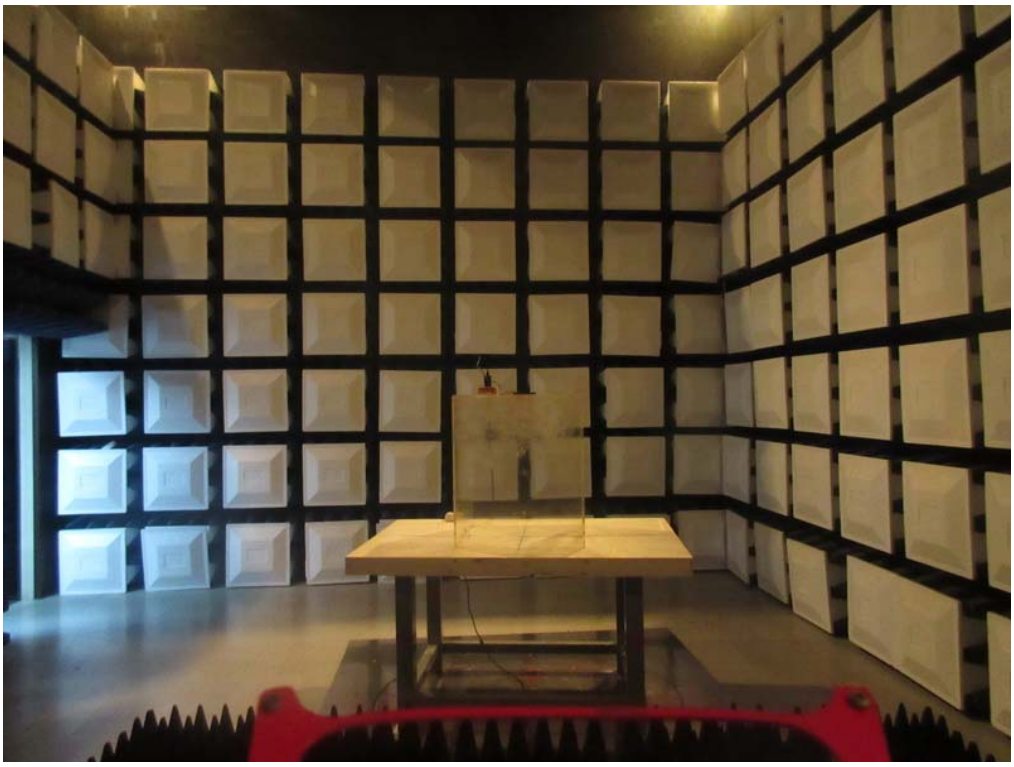
9KHz to 30MHz

Radiated Measurement Photos

30MHz to 1000MHz

Radiated Measurement Photos

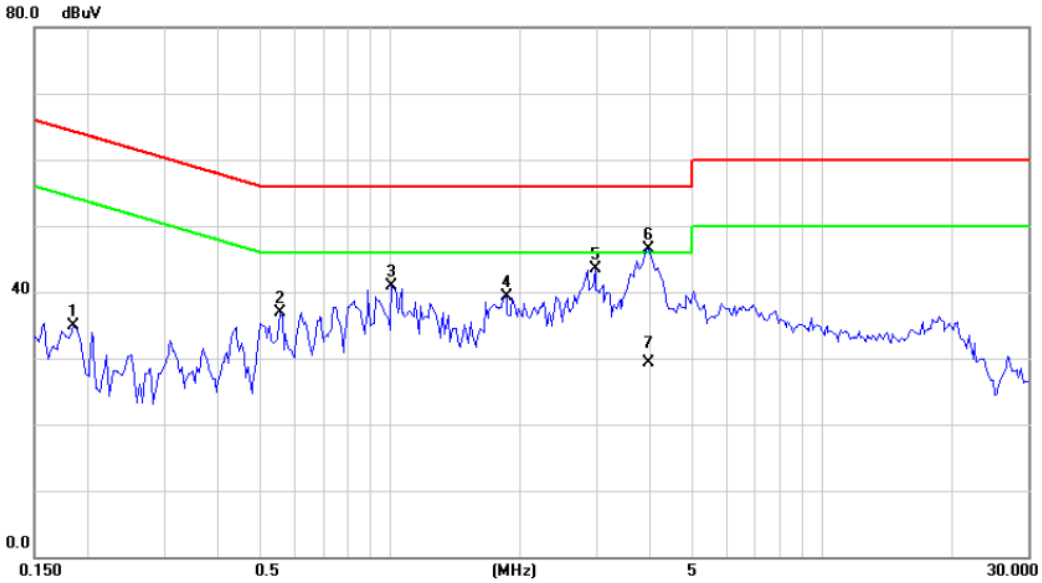
Above 1000MHz



ATTACHMENT A - CONDUCTED EMISSION

Test Mode:	TX Mode_Main Supply_Adapter:Huntkey

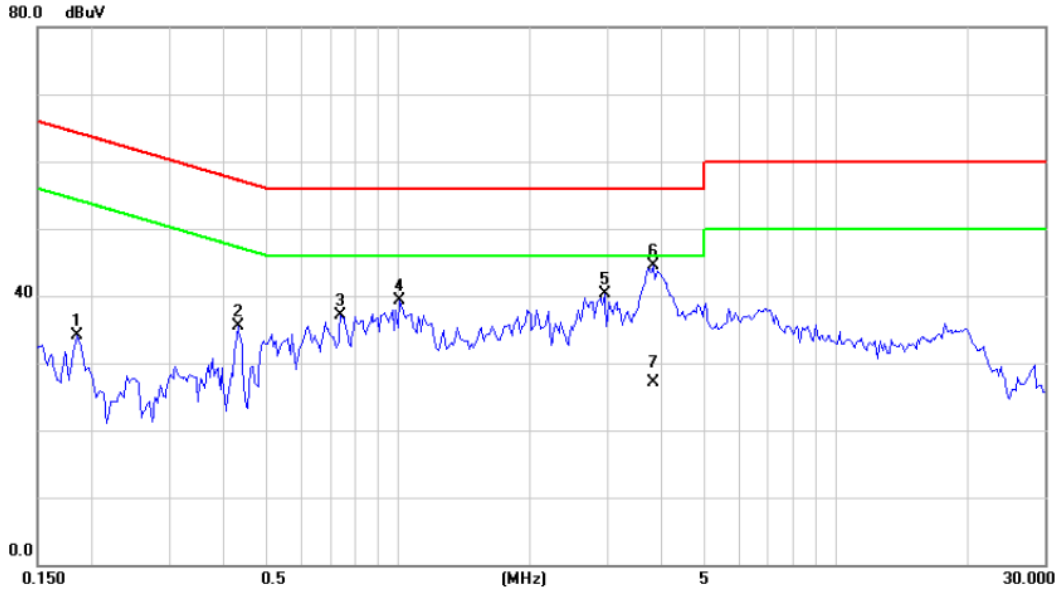
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1852	25.24	9.57	34.81	64.25	-29.44	peak	
2		0.5563	27.25	9.70	36.95	56.00	-19.05	peak	
3		1.0055	31.19	9.80	40.99	56.00	-15.01	peak	
4		1.8570	29.43	9.90	39.33	56.00	-16.67	peak	
5		2.9820	33.52	10.03	43.55	56.00	-12.45	peak	
6	*	3.9648	36.52	9.97	46.49	56.00	-9.51	peak	
7		3.9648	19.40	9.97	29.37	46.00	-16.63	AVG	

Test Mode:	TX Mode_Main Supply_Adapter:Huntkey

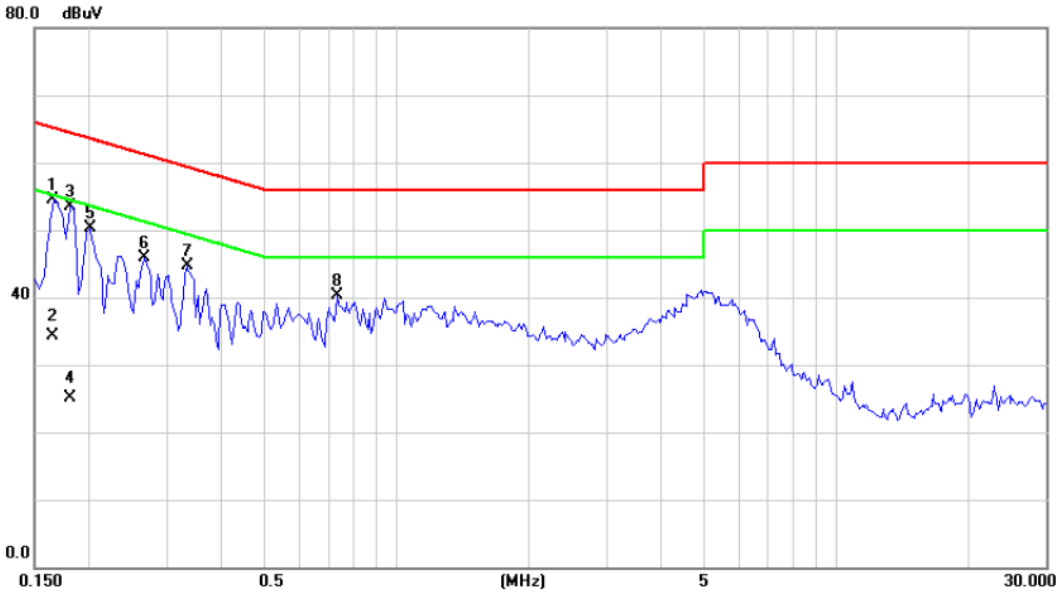
Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1852	24.62	9.49	34.11	64.25	-30.14	peak	
2		0.4313	25.88	9.54	35.42	57.23	-21.81	peak	
3		0.7398	27.52	9.54	37.06	56.00	-18.94	peak	
4		1.0094	29.80	9.58	39.38	56.00	-16.62	peak	
5		2.9703	30.45	9.81	40.26	56.00	-15.74	peak	
6	*	3.8360	34.60	9.90	44.50	56.00	-11.50	peak	
7		3.8360	17.20	9.90	27.10	46.00	-18.90	AVG	

Test Mode:	TX Mode_Main Supply_Adapter:Acbel

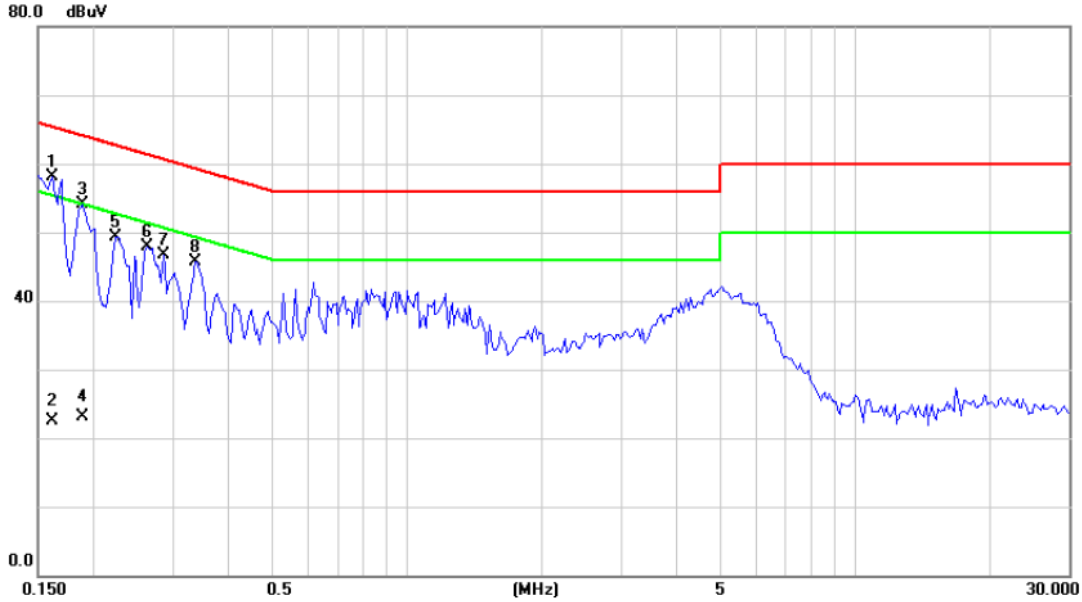
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1655	44.90	9.56	54.46	65.18	-10.72	peak	
2		0.1655	24.70	9.56	34.26	55.18	-20.92	AVG	
3		0.1812	43.94	9.56	53.50	64.43	-10.93	peak	
4		0.1812	15.60	9.56	25.16	54.43	-29.27	AVG	
5		0.2008	40.72	9.57	50.29	63.58	-13.29	peak	
6		0.2672	36.19	9.62	45.81	61.20	-15.39	peak	
7		0.3336	35.06	9.64	44.70	59.36	-14.66	peak	
8		0.7320	30.54	9.74	40.28	56.00	-15.72	peak	

Test Mode:	TX Mode_Main Supply_Adapter: Acbel

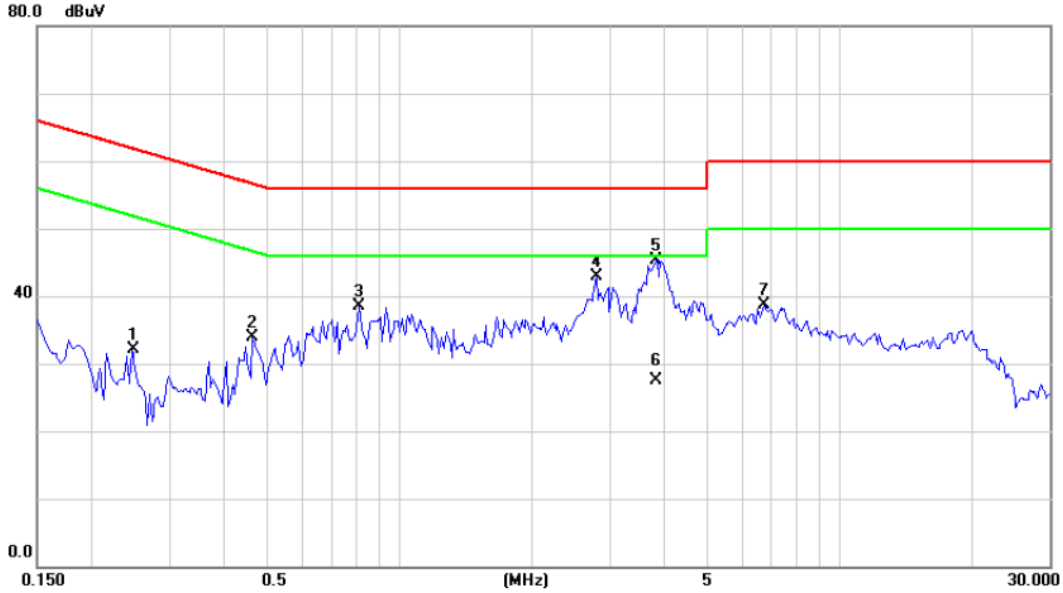
Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1617	48.56	9.48	58.04	65.38	-7.34	peak	
2		0.1617	13.10	9.48	22.58	55.38	-32.80	AVG	
3		0.1891	44.62	9.49	54.11	64.08	-9.97	peak	
4		0.1891	13.60	9.49	23.09	54.08	-30.99	AVG	
5		0.2242	39.88	9.50	49.38	62.66	-13.28	peak	
6		0.2633	38.32	9.51	47.83	61.33	-13.50	peak	
7		0.2867	37.12	9.52	46.64	60.62	-13.98	peak	
8		0.3375	36.22	9.53	45.75	59.26	-13.51	peak	

Test Mode:	TX Mode_ Secondary Supply_Adapter:Huntkey

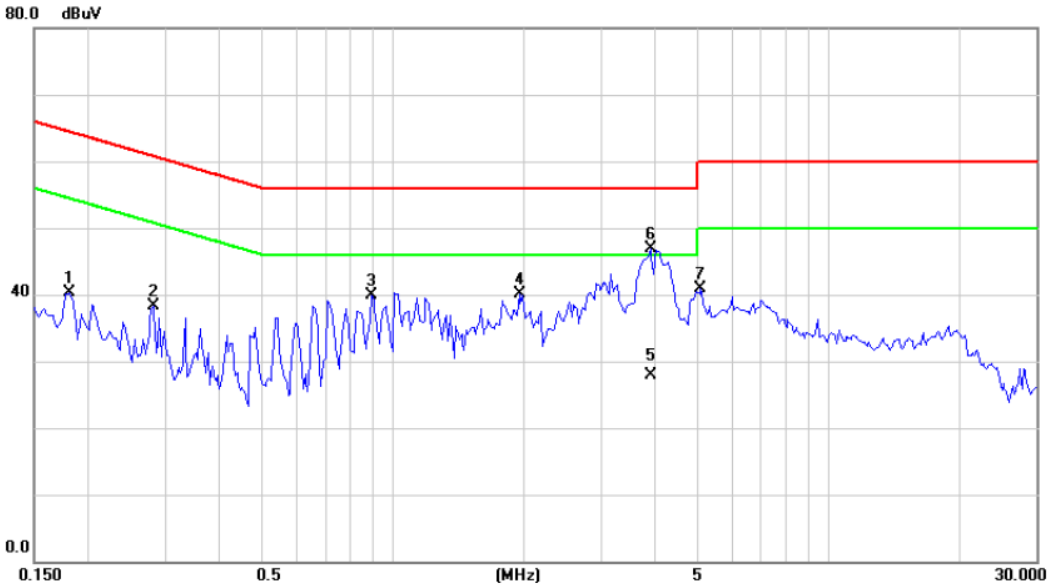
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2477	22.40	9.61	32.01	61.83	-29.82	peak	
2		0.4625	24.21	9.68	33.89	56.65	-22.76	peak	
3		0.8102	28.80	9.75	38.55	56.00	-17.45	peak	
4		2.7945	32.97	10.02	42.99	56.00	-13.01	peak	
5	*	3.8398	35.28	9.97	45.25	56.00	-10.75	peak	
6		3.8398	17.50	9.97	27.47	46.00	-18.53	AVG	
7		6.7422	28.71	9.92	38.63	60.00	-21.37	peak	

Test Mode:	TX Mode_ Secondary Supply_Adapter:Huntkey

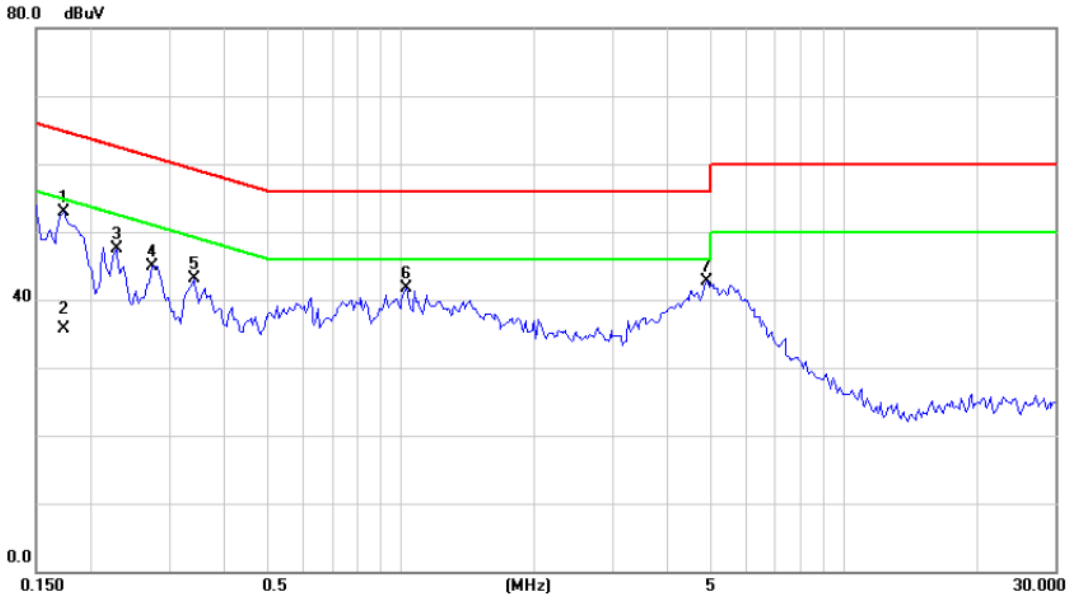
Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1812	30.77	9.49	40.26	64.43	-24.17	peak	
2		0.2828	28.74	9.52	38.26	60.73	-22.47	peak	
3		0.8922	30.35	9.58	39.93	56.00	-16.07	peak	
4		1.9508	30.36	9.72	40.08	56.00	-15.92	peak	
5		3.9063	18.00	9.91	27.91	46.00	-18.09	AVG	
6	*	3.9063	37.00	9.91	46.91	56.00	-9.09	peak	
7		5.0898	30.99	9.91	40.90	60.00	-19.10	peak	

Test Mode:	TX Mode_ Secondary Supply_Adapter:Acbel

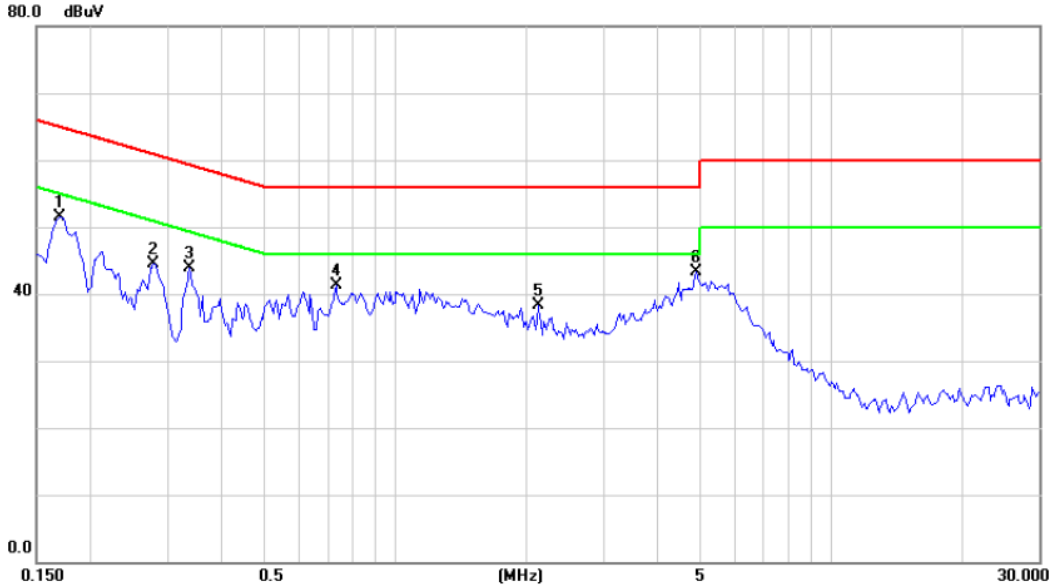
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1734	43.27	9.56	52.83	64.80	-11.97	peak	
2		0.1734	26.20	9.56	35.76	54.80	-19.04	AVG	
3		0.2281	37.97	9.59	47.56	62.52	-14.96	peak	
4		0.2750	35.35	9.63	44.98	60.97	-15.99	peak	
5		0.3414	33.55	9.64	43.19	59.17	-15.98	peak	
6		1.0290	31.85	9.80	41.65	56.00	-14.35	peak	
7		4.9141	32.80	9.99	42.79	56.00	-13.21	peak	

Test Mode:	TX Mode_ Secondary Supply_Adapter: Acbel

Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1695	42.06	9.48	51.54	64.98	-13.44	peak	
2		0.2790	34.96	9.52	44.48	60.85	-16.37	peak	
3		0.3375	34.35	9.53	43.88	59.26	-15.38	peak	
4		0.7320	31.77	9.54	41.31	56.00	-14.69	peak	
5		2.1266	28.55	9.73	38.28	56.00	-17.72	peak	
6	*	4.8983	33.34	9.91	43.25	56.00	-12.75	peak	

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

Test Mode:	TX Mode_Main Supply

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0096	0°	13.47	24.96	38.43	128.00	-89.56	AVG
0.0096	0°	14.49	24.96	39.45	148.00	-108.54	PEAK
0.0262	0°	6.54	23.91	30.45	119.24	-88.79	AVG
0.0262	0°	8.13	23.91	32.04	139.24	-107.20	PEAK
0.0342	0°	3.17	23.40	26.57	116.92	-90.35	AVG
0.0342	0°	5.51	23.40	28.91	136.92	-108.01	PEAK
0.0457	0°	1.32	22.67	23.99	114.41	-90.41	AVG
0.0457	0°	2.62	22.67	25.29	134.41	-109.11	PEAK
0.6437	0°	19.49	20.26	39.75	71.43	-31.68	QP
1.7171	0°	23.67	19.53	43.20	69.54	-26.34	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0095	90°	13.26	24.30	37.56	128.09	-90.53	AVG
0.0095	90°	14.84	24.30	39.14	148.09	-108.95	PEAK
0.0264	90°	7.47	23.89	31.36	119.17	-87.81	AVG
0.0264	90°	8.81	23.89	32.70	139.17	-106.47	PEAK
0.0328	90°	5.43	23.49	28.92	117.29	-88.37	AVG
0.0328	90°	6.37	23.49	29.86	137.29	-107.43	PEAK
0.0434	90°	1.51	22.82	24.33	114.85	-90.53	AVG
0.0434	90°	2.84	22.82	25.66	134.85	-109.20	PEAK
0.5883	90°	22.41	20.08	42.49	72.21	-29.72	QP
1.7147	90°	24.49	19.53	44.02	69.54	-25.52	QP

Test Mode:	TX Mode_ Secondary Supply

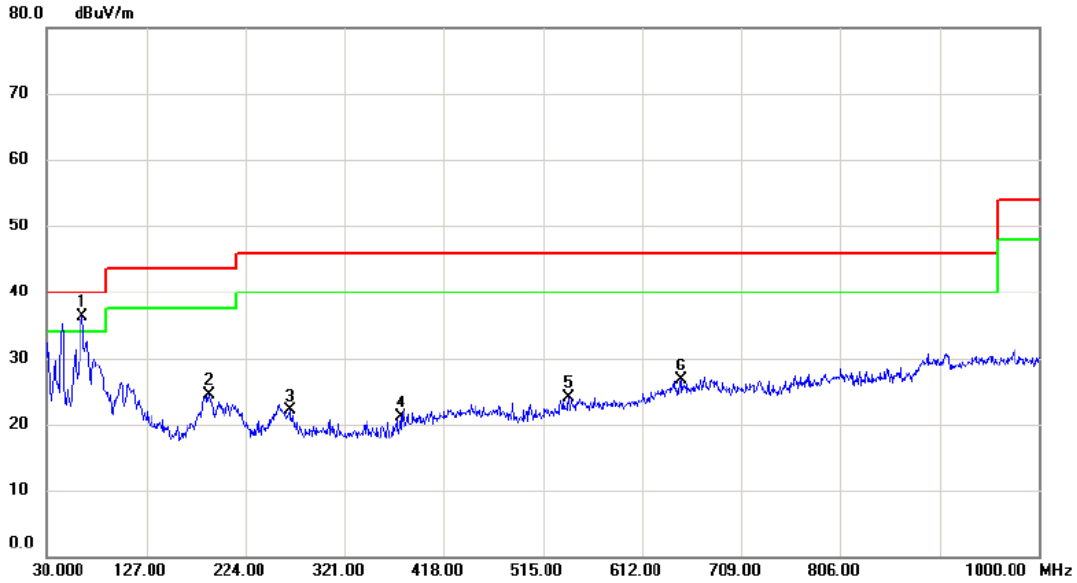
Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0090	0°	13.52	24.99	38.51	128.48	-89.97	AVG
0.0090	0°	14.33	24.99	39.32	148.48	-109.16	PEAK
0.0273	0°	6.08	23.84	29.92	118.88	-88.96	AVG
0.0273	0°	8.27	23.84	32.11	138.88	-106.77	PEAK
0.0358	0°	3.39	23.30	26.69	116.53	-89.84	AVG
0.0358	0°	5.42	23.30	28.72	136.53	-107.81	PEAK
0.0437	0°	1.75	22.80	24.55	114.79	-90.25	AVG
0.0437	0°	2.62	22.80	25.42	134.79	-109.38	PEAK
0.5426	0°	19.17	19.94	39.11	72.91	-33.81	QP
1.7882	0°	23.86	19.52	43.38	69.54	-26.16	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0118	90°	13.14	24.30	37.44	126.17	-88.73	AVG
0.0118	90°	14.27	24.30	38.57	146.17	-107.60	PEAK
0.0205	90°	7.05	24.27	31.32	121.37	-90.05	AVG
0.0205	90°	8.31	24.27	32.58	141.37	-108.79	PEAK
0.0335	90°	5.52	23.45	28.97	117.10	-88.14	AVG
0.0335	90°	6.67	23.45	30.12	137.10	-106.99	PEAK
0.0426	90°	1.85	22.87	24.72	115.02	-90.30	AVG
0.0426	90°	2.43	22.87	25.30	135.02	-109.72	PEAK
0.5934	90°	22.57	20.10	42.67	72.14	-29.47	QP
1.8235	90°	24.43	19.52	43.95	69.54	-25.59	QP

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

Test Mode:	TX 2402MHz _CH00_1Mbps_Main Supply_Adapter:Huntkey

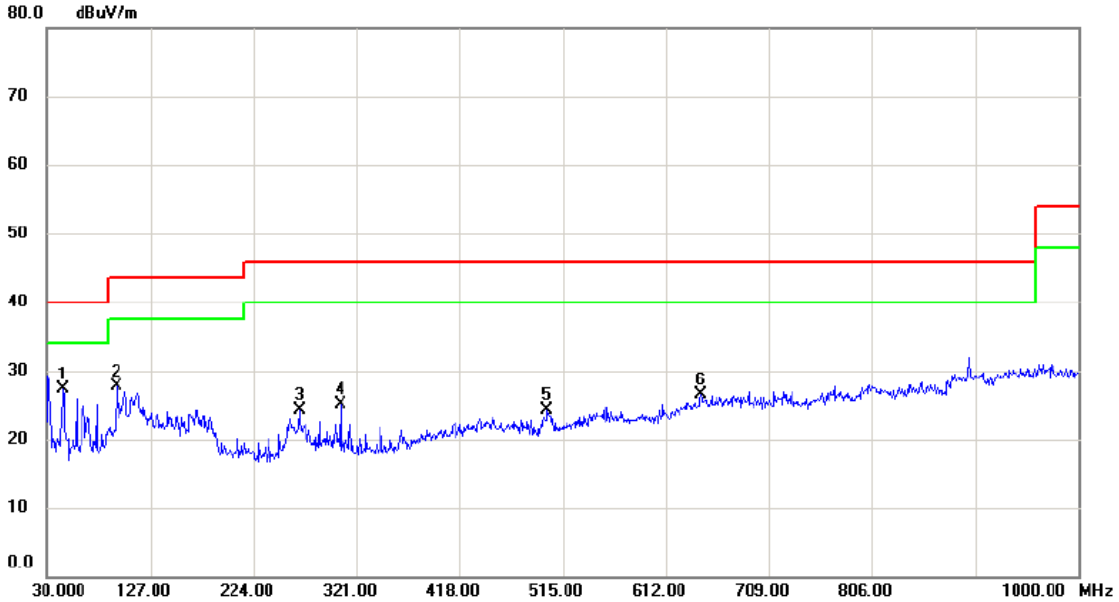
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	50.35	-13.96	36.39	40.00	-3.61	peak	
2		188.1100	37.22	-12.71	24.51	43.50	-18.99	peak	
3		266.6800	34.26	-12.07	22.19	46.00	-23.81	peak	
4		375.3200	29.64	-8.57	21.07	46.00	-24.93	peak	
5		540.2200	29.26	-5.17	24.09	46.00	-21.91	peak	
6		649.8300	28.36	-1.65	26.71	46.00	-19.29	peak	

Test Mode:	TX 2402MHz _CH00_1Mbps_Main Supply_Adapter:Huntkey

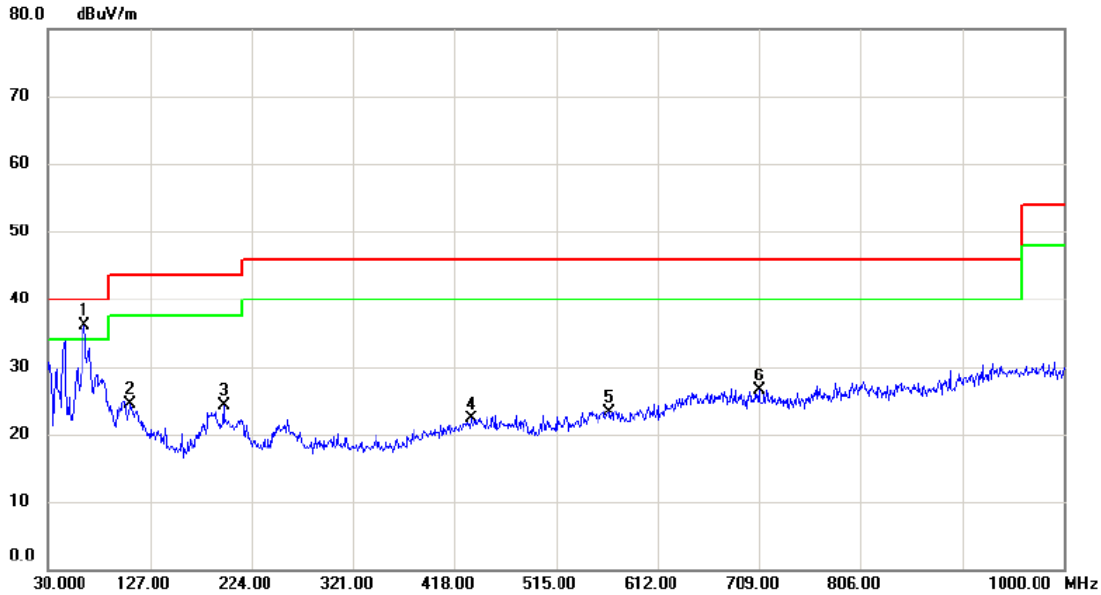
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	44.5500	39.23	-11.94	27.29	40.00	-12.71	peak	
2		94.9900	43.12	-15.51	27.61	43.50	-15.89	peak	
3		266.6800	36.39	-12.07	24.32	46.00	-21.68	peak	
4		305.4800	34.79	-9.63	25.16	46.00	-20.84	peak	
5		500.4500	31.72	-7.37	24.35	46.00	-21.65	peak	
6		644.9800	28.44	-1.94	26.50	46.00	-19.50	peak	

Test Mode:	TX 2441MHz _CH39_1Mbps_Main Supply_Adapter:Huntkey

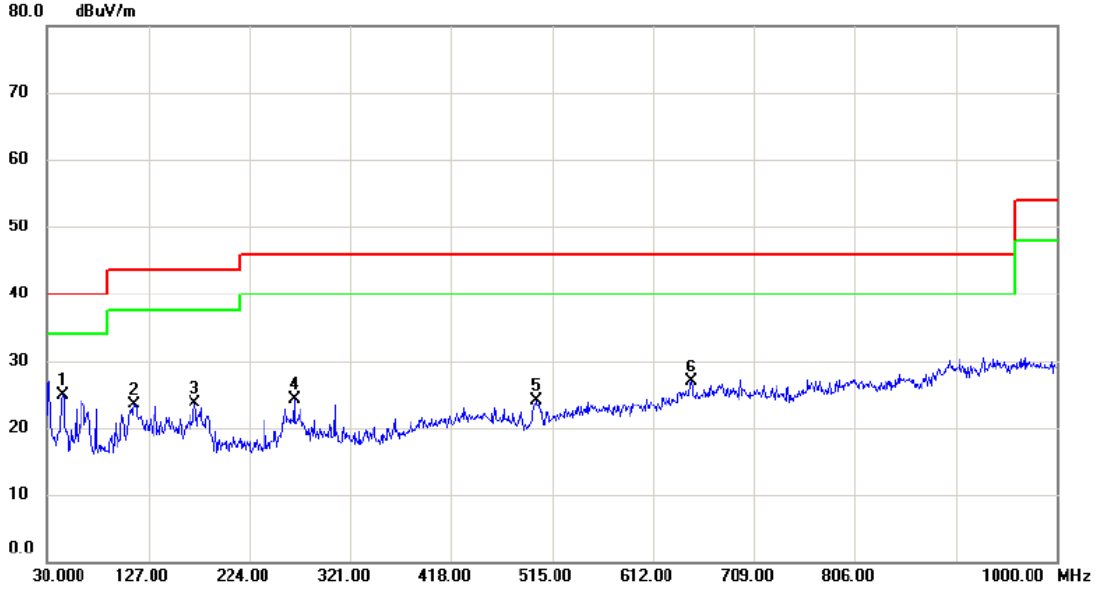
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	50.09	-13.96	36.13	40.00	-3.87	peak	
2		108.5700	38.49	-13.92	24.57	43.50	-18.93	peak	
3		196.8400	37.63	-13.39	24.24	43.50	-19.26	peak	
4		433.5200	28.74	-6.35	22.39	46.00	-23.61	peak	
5		565.4400	28.00	-4.63	23.37	46.00	-22.63	peak	
6		709.0000	28.03	-1.46	26.57	46.00	-19.43	peak	

Test Mode:	TX 2441MHz _CH39_1Mbps_Main Supply_Adapter:Huntkey

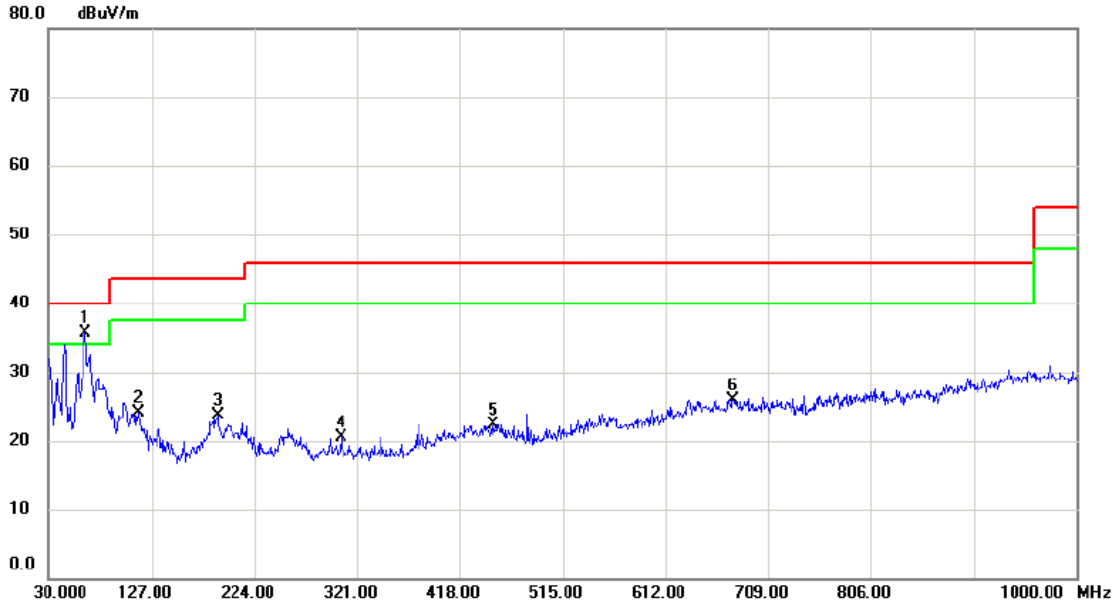
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	44.5500	36.81	-11.94	24.87	40.00	-15.13	peak	
2		113.4200	36.80	-13.38	23.42	43.50	-20.08	peak	
3		171.6200	34.94	-11.17	23.77	43.50	-19.73	peak	
4		266.6800	36.46	-12.07	24.39	46.00	-21.61	peak	
5		500.4500	31.57	-7.37	24.20	46.00	-21.80	peak	
6		648.8600	28.55	-1.72	26.83	46.00	-19.17	peak	

Test Mode:	TX 2480MHz _CH78_1Mbps _Main Supply_Adapter:Huntkey

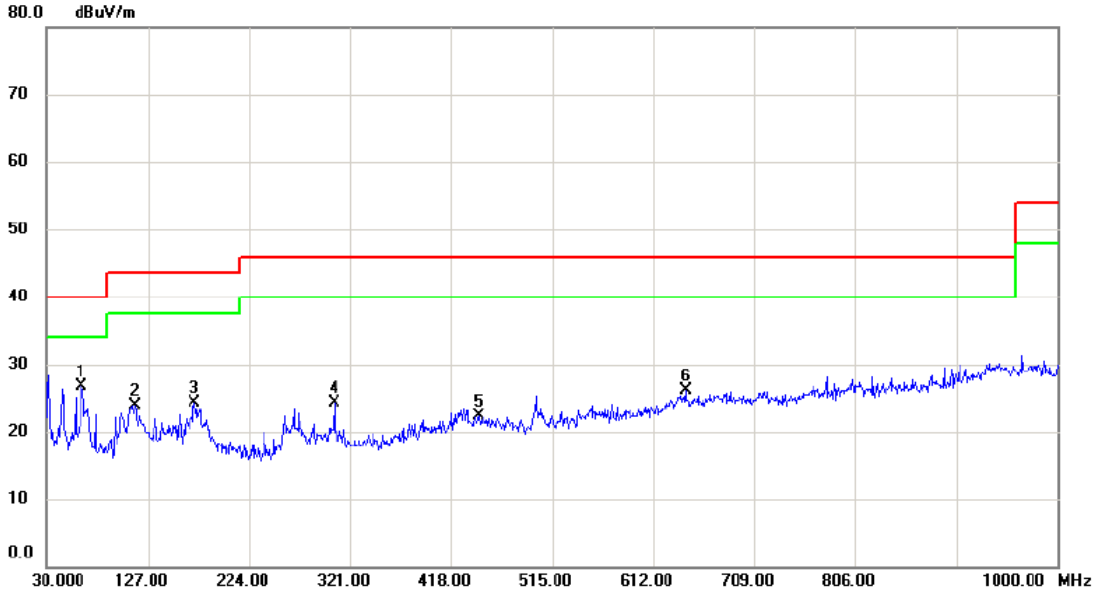
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	49.71	-13.96	35.75	40.00	-4.25	peak	
2		114.3900	37.29	-13.25	24.04	43.50	-19.46	peak	
3		189.0800	36.59	-12.85	23.74	43.50	-19.76	peak	
4		305.4800	30.19	-9.63	20.56	46.00	-25.44	peak	
5		450.0100	28.22	-5.89	22.33	46.00	-23.67	peak	
6		676.0200	27.53	-1.56	25.97	46.00	-20.03	peak	

Test Mode:	TX 2480MHz _CH78_1Mbps _Main Supply_Adapter:Huntkey

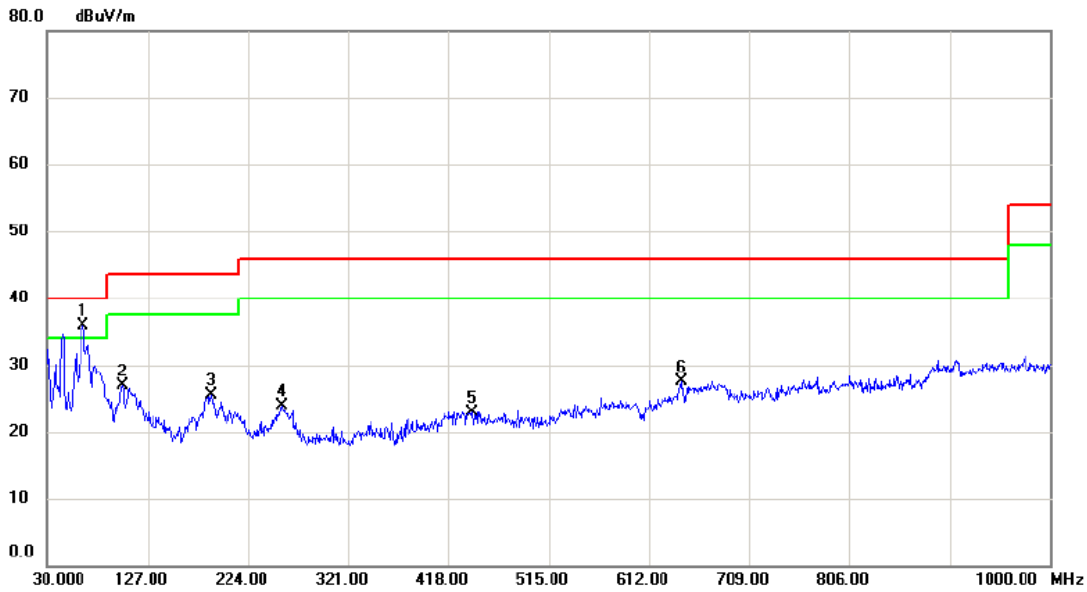
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	62.9800	40.50	-13.89	26.61	40.00	-13.39	peak	
2		114.3900	37.21	-13.25	23.96	43.50	-19.54	peak	
3		171.6200	35.50	-11.17	24.33	43.50	-19.17	peak	
4		305.4800	33.95	-9.63	24.32	46.00	-21.68	peak	
5		444.1900	28.37	-6.06	22.31	46.00	-23.69	peak	
6		643.0400	28.07	-2.05	26.02	46.00	-19.98	peak	

Test Mode:	TX 2402MHz_CH00_1Mbps_Main Supply_Adapter:Acbel

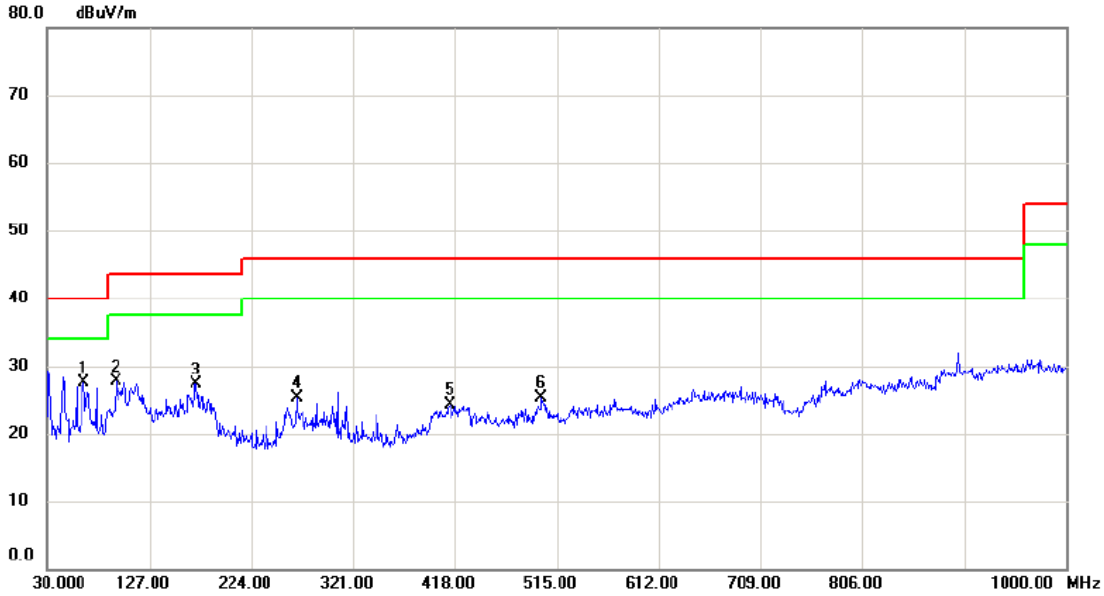
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	49.85	-13.96	35.89	40.00	-4.11	peak	
2		102.7500	41.32	-14.44	26.88	43.50	-16.62	peak	
3		188.1100	38.22	-12.71	25.51	43.50	-17.99	peak	
4		256.9800	36.52	-12.64	23.88	46.00	-22.12	peak	
5		440.3100	29.12	-6.15	22.97	46.00	-23.03	peak	
6		643.0400	29.46	-2.05	27.41	46.00	-18.59	peak	

Test Mode:	TX 2402MHz_CH00_1Mbps_Main Supply_Adapter:Acbel

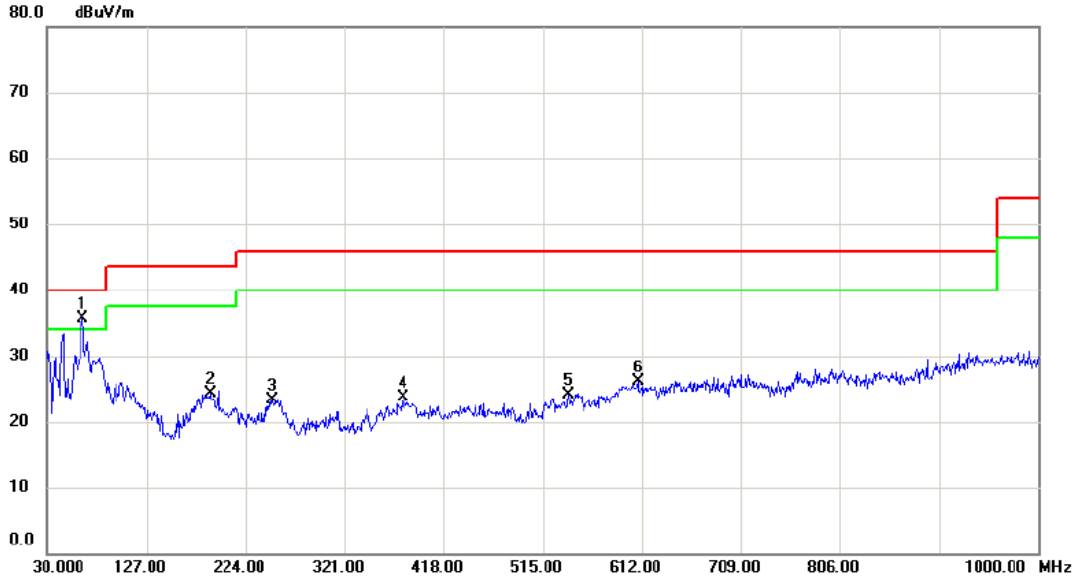
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	41.44	-13.96	27.48	40.00	-12.52	peak	
2		94.9900	43.12	-15.51	27.61	43.50	-15.89	peak	
3		171.6200	38.49	-11.17	27.32	43.50	-16.18	peak	
4		266.6800	37.39	-12.07	25.32	46.00	-20.68	peak	
5		413.1500	31.22	-6.90	24.32	46.00	-21.68	peak	
6		500.4500	32.72	-7.37	25.35	46.00	-20.65	peak	

Test Mode:	TX 2441MHz_CH39_1Mbps_Main Supply_Adapter:Acbel

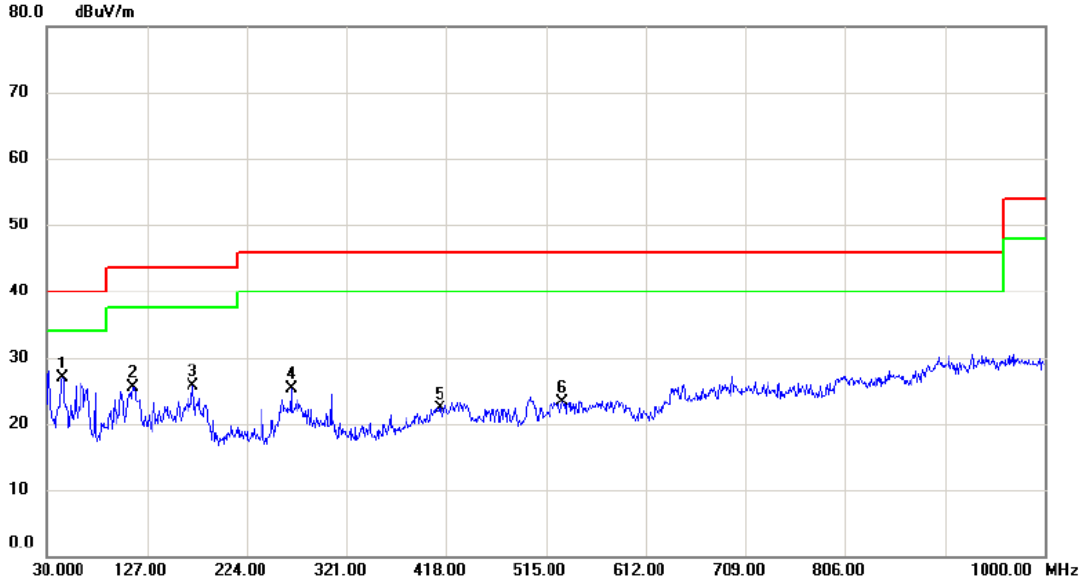
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	49.59	-13.96	35.63	40.00	-4.37	peak	
2		189.0800	37.06	-12.85	24.21	43.50	-19.29	peak	
3		250.1900	36.02	-12.67	23.35	46.00	-22.65	peak	
4		378.2300	32.12	-8.42	23.70	46.00	-22.30	peak	
5		540.2200	29.32	-5.17	24.15	46.00	-21.85	peak	
6		608.1200	30.23	-4.15	26.08	46.00	-19.92	peak	

Test Mode:	TX 2441MHz_CH39_1Mbps_Main Supply_Adapter:Acbel

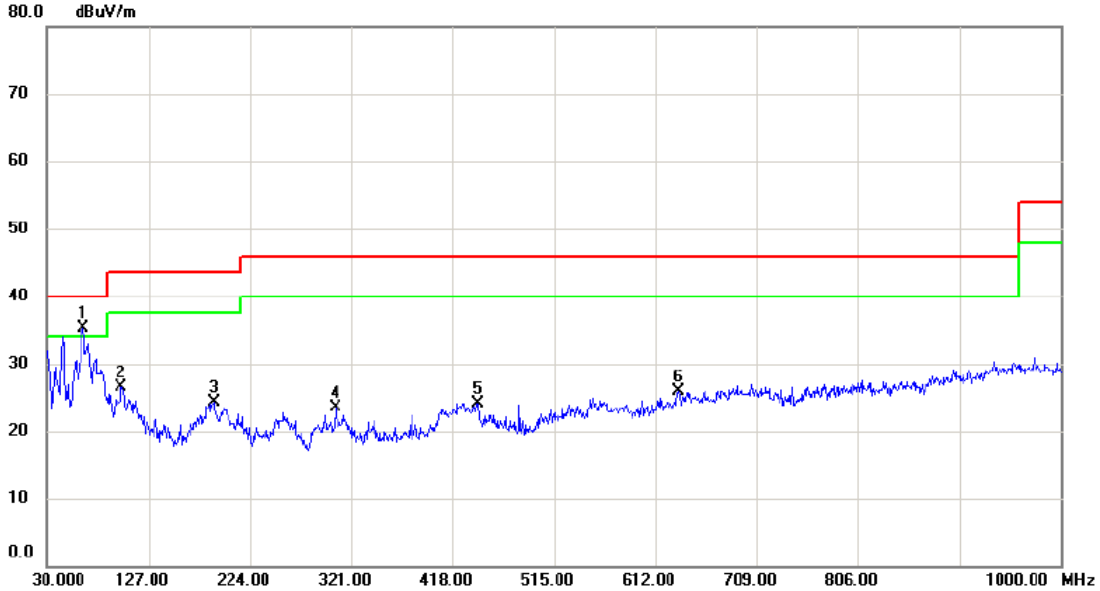
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	44.5500	38.81	-11.94	26.87	40.00	-13.13	peak	
2		113.4200	38.80	-13.38	25.42	43.50	-18.08	peak	
3		171.6200	36.94	-11.17	25.77	43.50	-17.73	peak	
4		266.6800	37.46	-12.07	25.39	46.00	-20.61	peak	
5		412.1800	29.19	-6.92	22.27	46.00	-23.73	peak	
6		530.5200	29.08	-5.69	23.39	46.00	-22.61	peak	

Test Mode:	TX 2480MHz_CH78_1Mbps_Main Supply_Adapter:Acbel

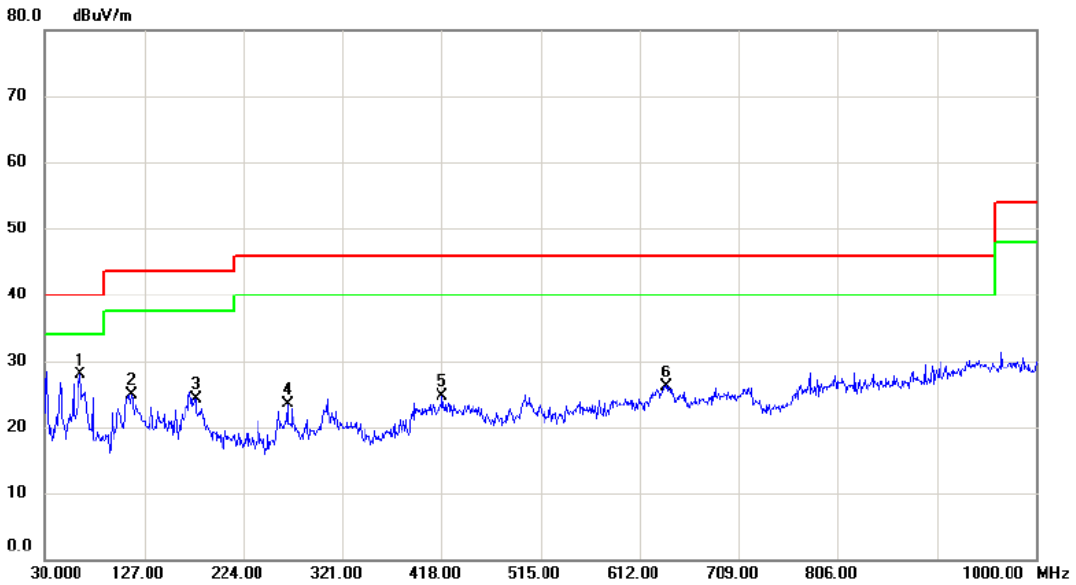
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	49.21	-13.96	35.25	40.00	-4.75	peak	
2		100.8100	41.20	-14.61	26.59	43.50	-16.91	peak	
3		189.0800	37.09	-12.85	24.24	43.50	-19.26	peak	
4		305.4800	33.19	-9.63	23.56	46.00	-22.44	peak	
5		442.2500	30.20	-6.11	24.09	46.00	-21.91	peak	
6		634.3100	28.50	-2.58	25.92	46.00	-20.08	peak	

Test Mode:	TX 2480MHz_CH78_1Mbps_Main Supply_Adapter:Acbel

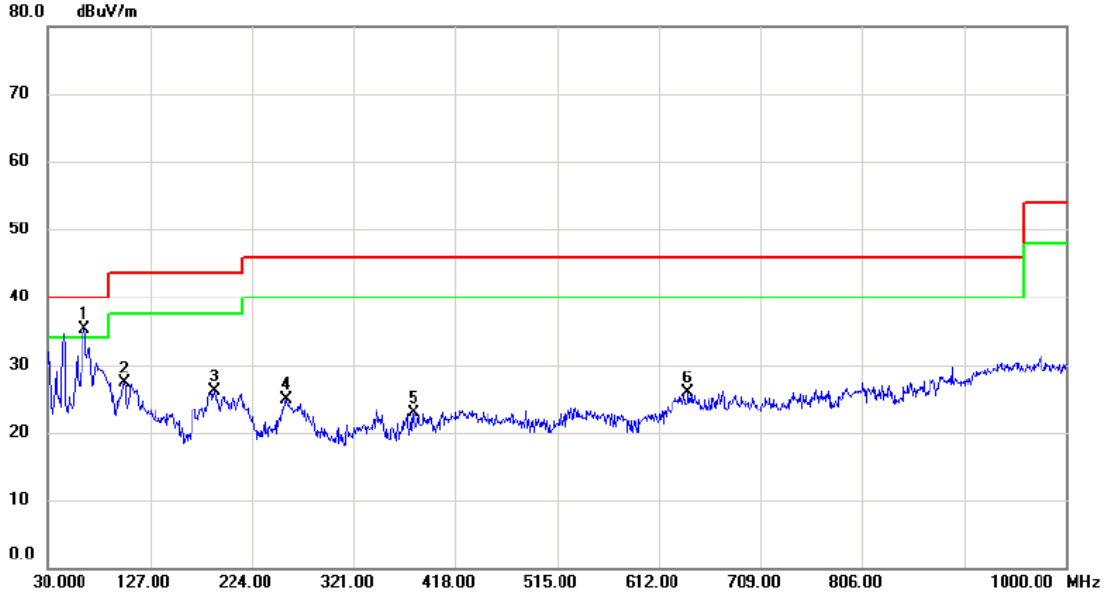
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	41.79	-13.96	27.83	40.00	-12.17	peak	
2		114.3900	38.21	-13.25	24.96	43.50	-18.54	peak	
3		177.4400	35.71	-11.38	24.33	43.50	-19.17	peak	
4		266.6800	35.62	-12.07	23.55	46.00	-22.45	peak	
5		418.9700	31.48	-6.74	24.74	46.00	-21.26	peak	
6		638.1900	28.54	-2.34	26.20	46.00	-19.80	peak	

Test Mode:	TX 2402MHz _CH00_1Mbps_Secondary Supply_Adapter:Huntkey

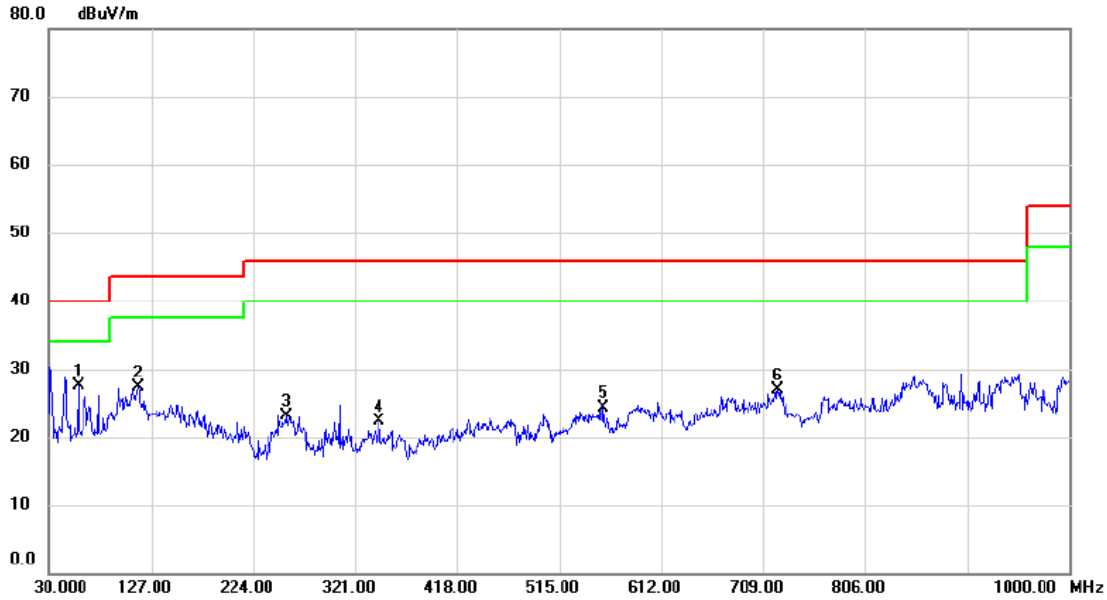
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	49.35	-13.96	35.39	40.00	-4.61	peak	
2		102.7500	41.82	-14.44	27.38	43.50	-16.12	peak	
3		188.1100	38.72	-12.71	26.01	43.50	-17.49	peak	
4		256.9800	37.52	-12.64	24.88	46.00	-21.12	peak	
5		378.2300	31.42	-8.42	23.00	46.00	-23.00	peak	
6		640.1300	28.21	-2.23	25.98	46.00	-20.02	peak	

Test Mode:	TX 2402MHz _CH00_1Mbps_Secondary Supply_Adapter:Huntkey

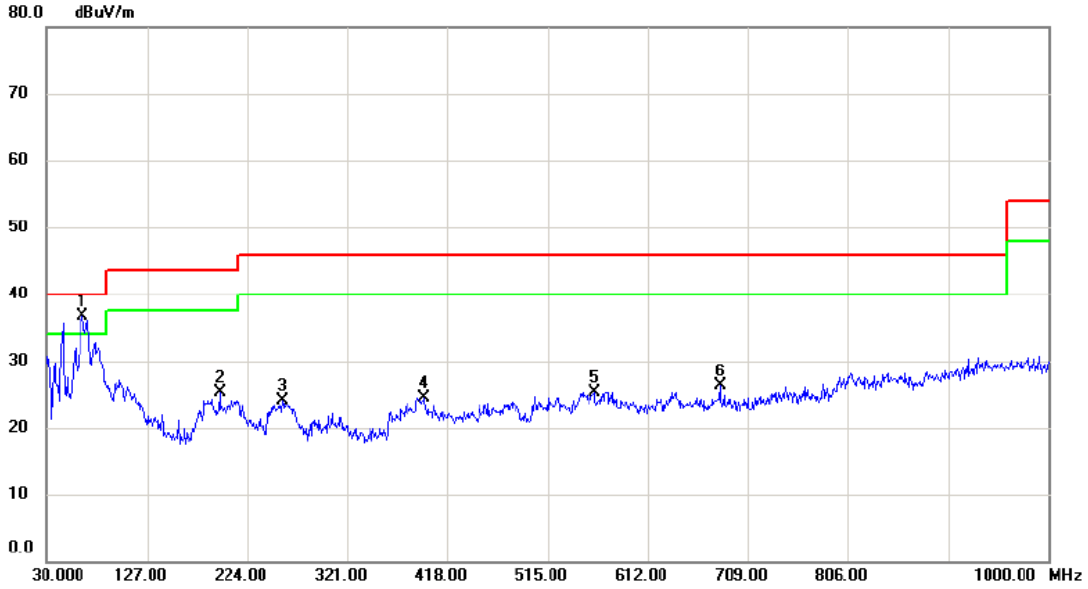
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	57.1600	40.51	-13.03	27.48	40.00	-12.52	peak	
2		114.3900	40.46	-13.25	27.21	43.50	-16.29	peak	
3		255.0400	35.76	-12.65	23.11	46.00	-22.89	peak	
4		343.3100	32.14	-9.88	22.26	46.00	-23.74	peak	
5		557.6800	28.90	-4.62	24.28	46.00	-21.72	peak	
6		722.5800	28.31	-1.44	26.87	46.00	-19.13	peak	

Test Mode:	TX 2441MHz _CH39_1Mbps_Secondary Supply_Adapter:Huntkey

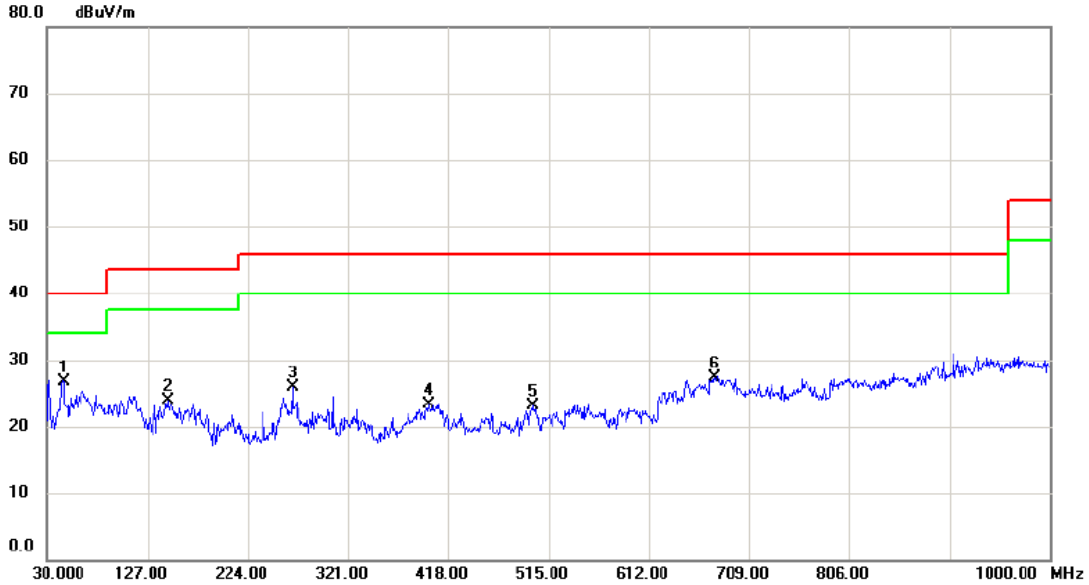
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	50.59	-13.96	36.63	40.00	-3.37	peak	
2		196.8400	38.63	-13.39	25.24	43.50	-18.26	peak	
3		257.9500	36.73	-12.64	24.09	46.00	-21.91	peak	
4		395.6900	31.94	-7.50	24.44	46.00	-21.56	peak	
5		560.5900	29.99	-4.62	25.37	46.00	-20.63	peak	
6		681.8400	27.75	-1.53	26.22	46.00	-19.78	peak	

Test Mode:	TX 2441MHz _CH39_1Mbps_Secondary Supply_Adapter:Huntkey

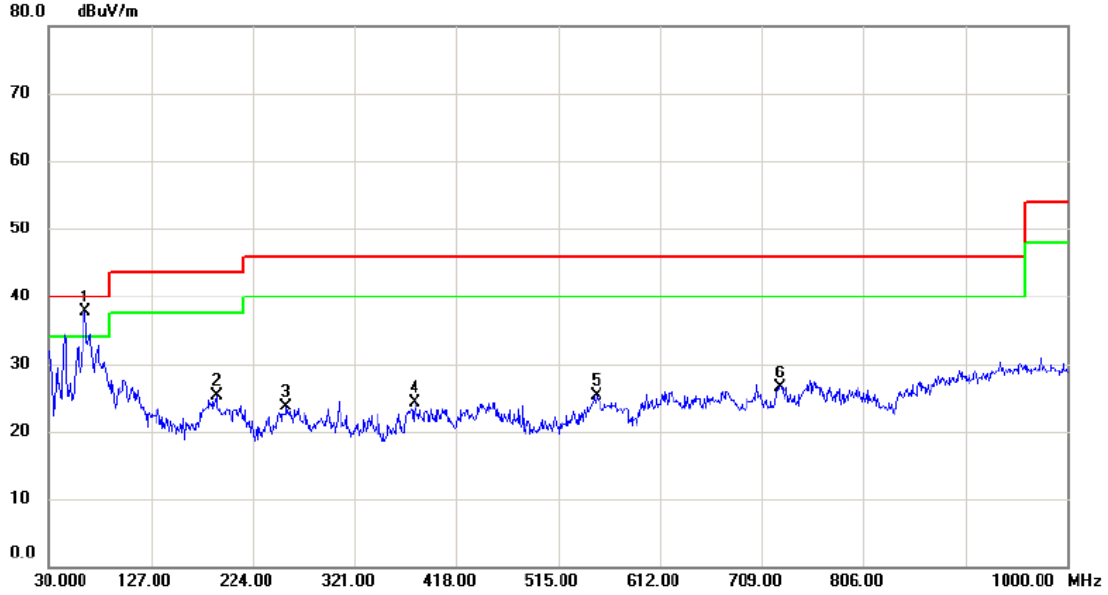
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	45.5200	38.54	-11.84	26.70	40.00	-13.30	peak	
2		146.4000	35.52	-11.58	23.94	43.50	-19.56	peak	
3		266.6800	37.96	-12.07	25.89	46.00	-20.11	peak	
4		398.6000	30.66	-7.34	23.32	46.00	-22.68	peak	
5		500.4500	30.57	-7.37	23.20	46.00	-22.80	peak	
6		676.0200	28.79	-1.56	27.23	46.00	-18.77	peak	

Test Mode:	TX 2480MHz _CH78_1Mbps_Secondary Supply_Adapter:Huntkey

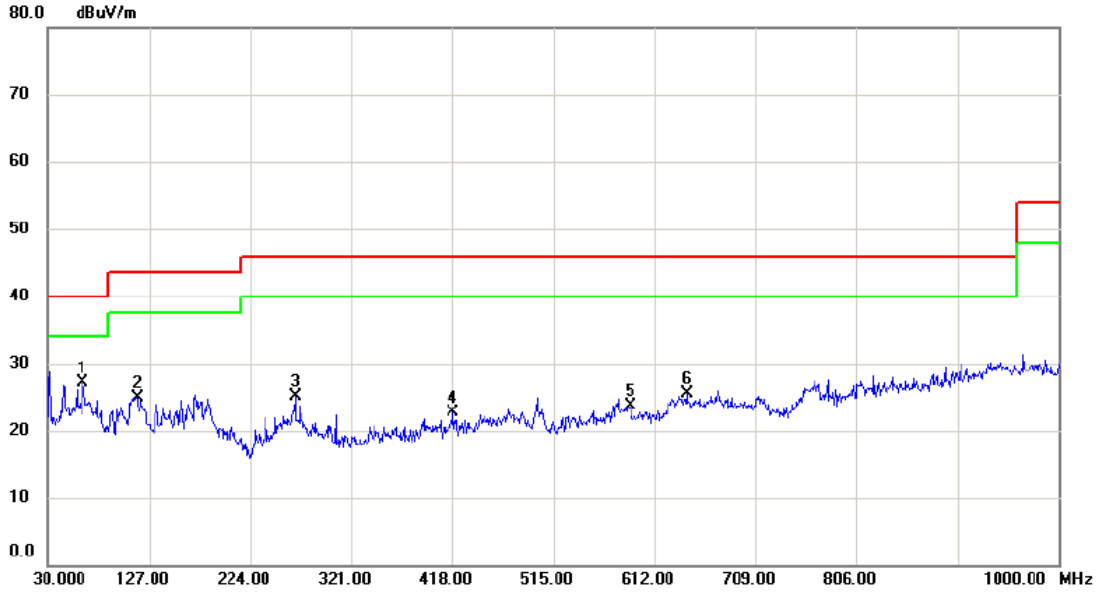
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	51.71	-13.96	37.75	40.00	-2.25	peak	
2		189.0800	38.09	-12.85	25.24	43.50	-18.26	peak	
3		256.0100	36.37	-12.65	23.72	46.00	-22.28	peak	
4		378.2300	32.81	-8.42	24.39	46.00	-21.61	peak	
5		551.8600	29.95	-4.62	25.33	46.00	-20.67	peak	
6		726.4600	28.05	-1.45	26.60	46.00	-19.40	peak	

Test Mode:	TX 2480MHz _CH78_1Mbps_Secondary Supply_Adapter:Huntkey

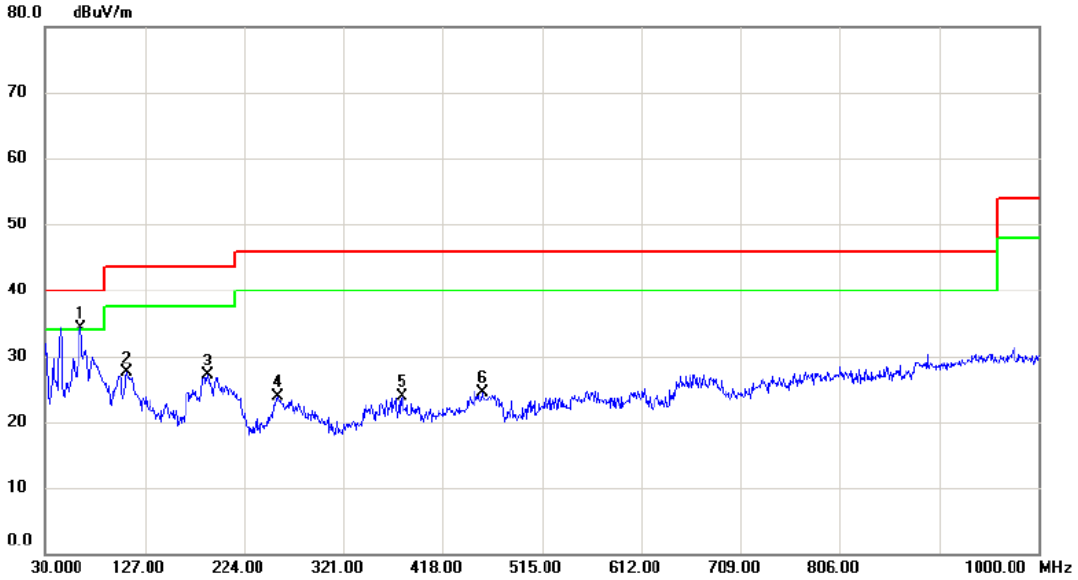
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	62.9800	41.00	-13.89	27.11	40.00	-12.89	peak	
2		115.3600	38.11	-13.14	24.97	43.50	-18.53	peak	
3		266.6800	37.12	-12.07	25.05	46.00	-20.95	peak	
4		418.9700	29.48	-6.74	22.74	46.00	-23.26	peak	
5		588.7200	28.31	-4.63	23.68	46.00	-22.32	peak	
6		643.0400	27.57	-2.05	25.52	46.00	-20.48	peak	

Test Mode:	TX 2402MHz_CH00_1Mbps_Secondary Supply_Adapter: Acbel

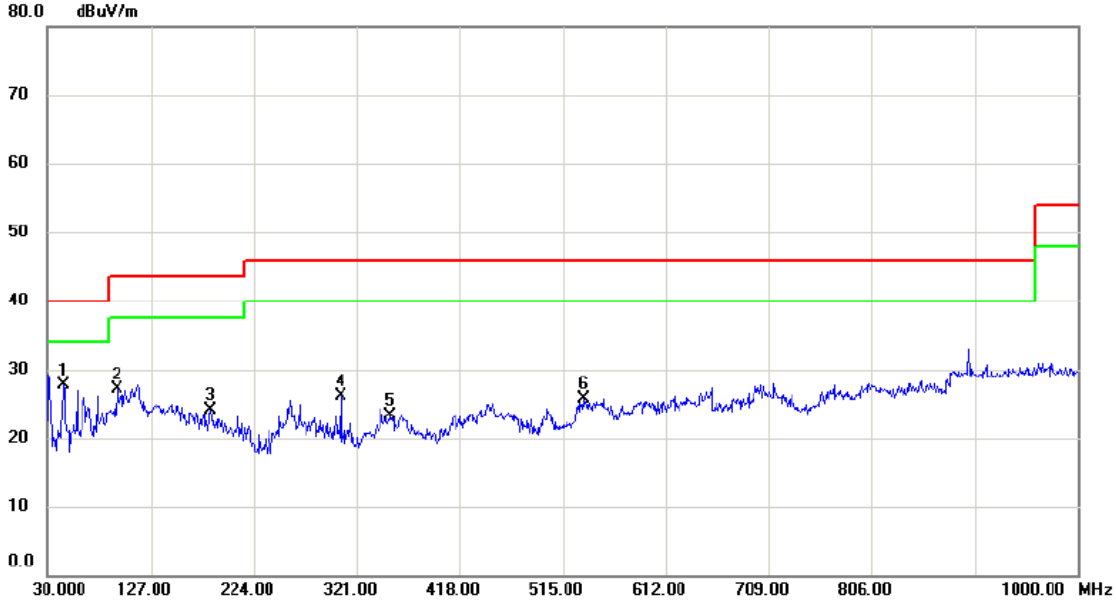
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	48.35	-13.96	34.39	40.00	-5.61	peak	
2		109.5400	41.43	-13.84	27.59	43.50	-15.91	peak	
3		188.1100	39.72	-12.71	27.01	43.50	-16.49	peak	
4		256.9800	36.52	-12.64	23.88	46.00	-22.12	peak	
5		378.2300	32.42	-8.42	24.00	46.00	-22.00	peak	
6		456.8000	30.57	-6.10	24.47	46.00	-21.53	peak	

Test Mode:	TX 2402MHz_CH00_1Mbps_Secondary Supply_Adapter: Acbel

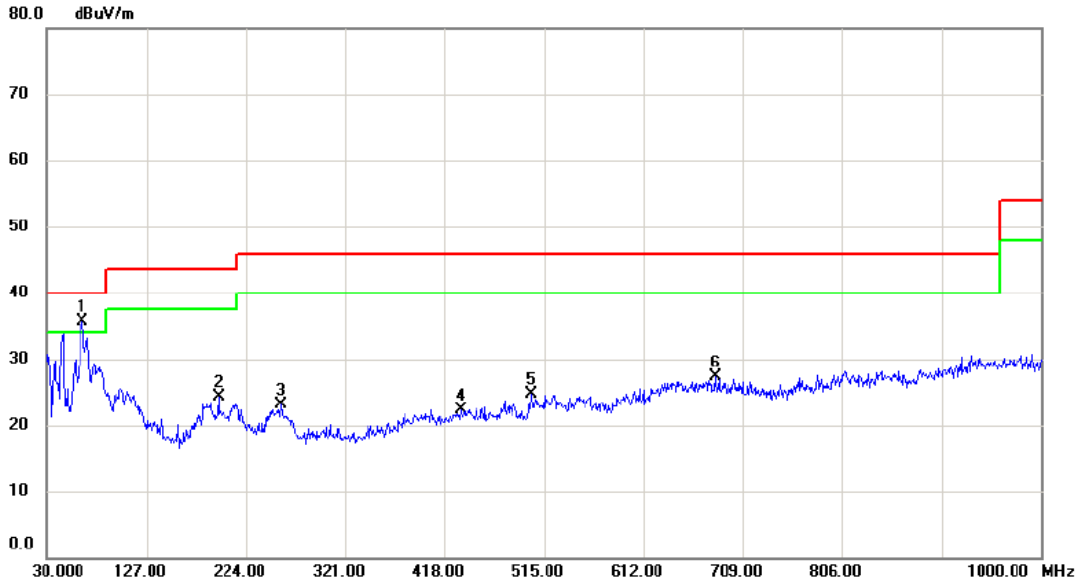
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	44.5500	39.73	-11.94	27.79	40.00	-12.21	peak	
2		94.9900	42.62	-15.51	27.11	43.50	-16.39	peak	
3		183.2600	36.04	-11.96	24.08	43.50	-19.42	peak	
4		305.4800	35.79	-9.63	26.16	46.00	-19.84	peak	
5		353.0100	33.13	-9.77	23.36	46.00	-22.64	peak	
6		534.4000	31.19	-5.48	25.71	46.00	-20.29	peak	

Test Mode:	TX 2441MHz_CH39_1Mbps_Secondary Supply_Adapter: Acbel

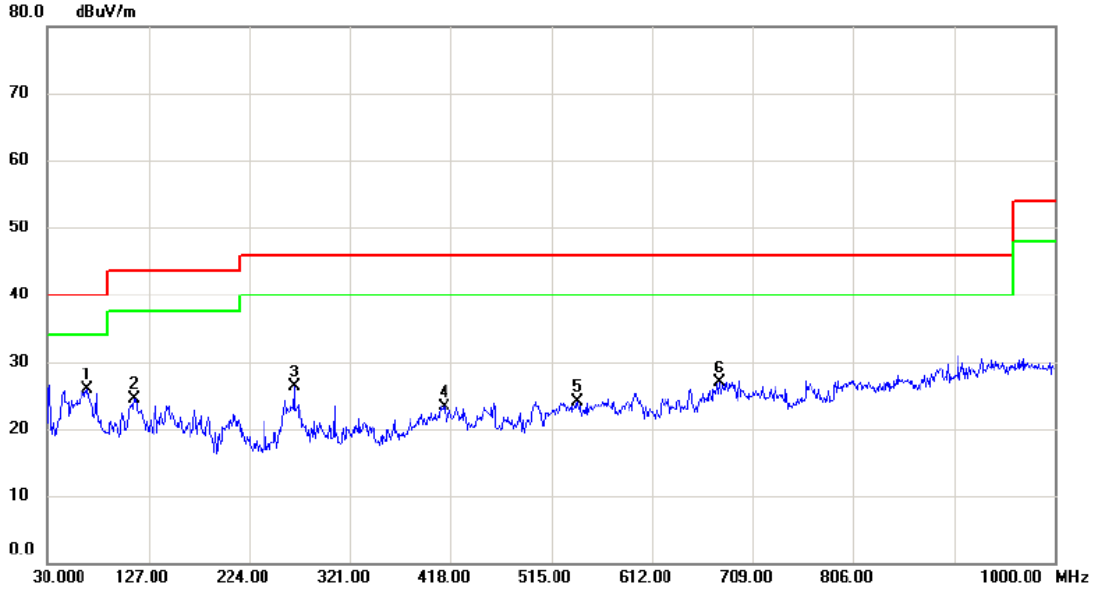
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	49.59	-13.96	35.63	40.00	-4.37	peak	
2		196.8400	37.63	-13.39	24.24	43.50	-19.26	peak	
3		257.9500	35.73	-12.64	23.09	46.00	-22.91	peak	
4		433.5200	28.74	-6.35	22.39	46.00	-23.61	peak	
5		502.3900	31.92	-7.25	24.67	46.00	-21.33	peak	
6		681.8400	28.75	-1.53	27.22	46.00	-18.78	peak	

Test Mode:	TX 2441MHz_CH39_1Mbps_Secondary Supply_Adapter: Acbel

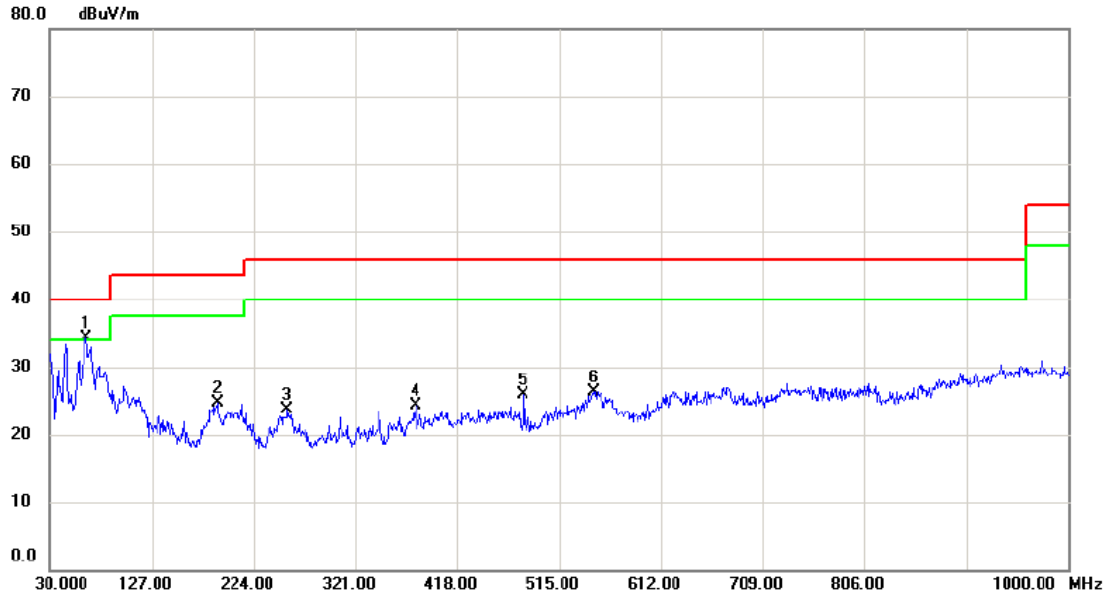
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	67.8300	40.44	-14.46	25.98	40.00	-14.02	peak	
2		113.4200	37.80	-13.38	24.42	43.50	-19.08	peak	
3		266.6800	38.46	-12.07	26.39	46.00	-19.61	peak	
4		412.1800	30.19	-6.92	23.27	46.00	-22.73	peak	
5		540.2200	29.31	-5.17	24.14	46.00	-21.86	peak	
6		676.9900	28.37	-1.55	26.82	46.00	-19.18	peak	

Test Mode:	TX 2480MHz_CH78_1Mbps_Secondary Supply_Adapter: Acbel

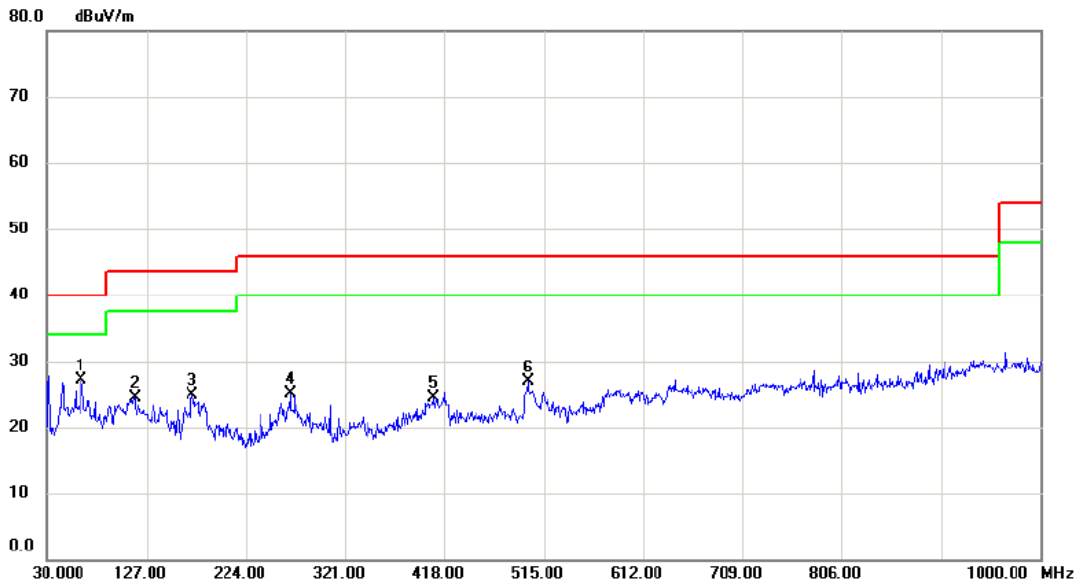
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	63.9500	48.21	-13.96	34.25	40.00	-5.75	peak	
2		189.0800	37.59	-12.85	24.74	43.50	-18.76	peak	
3		256.0100	36.37	-12.65	23.72	46.00	-22.28	peak	
4		378.2300	32.81	-8.42	24.39	46.00	-21.61	peak	
5		481.0500	32.71	-6.82	25.89	46.00	-20.11	peak	
6		547.9800	31.14	-4.74	26.40	46.00	-19.60	peak	

Test Mode:	TX 2480MHz_CH78_1Mbps_Secondary Supply_Adapter: Acbel

Horizontal

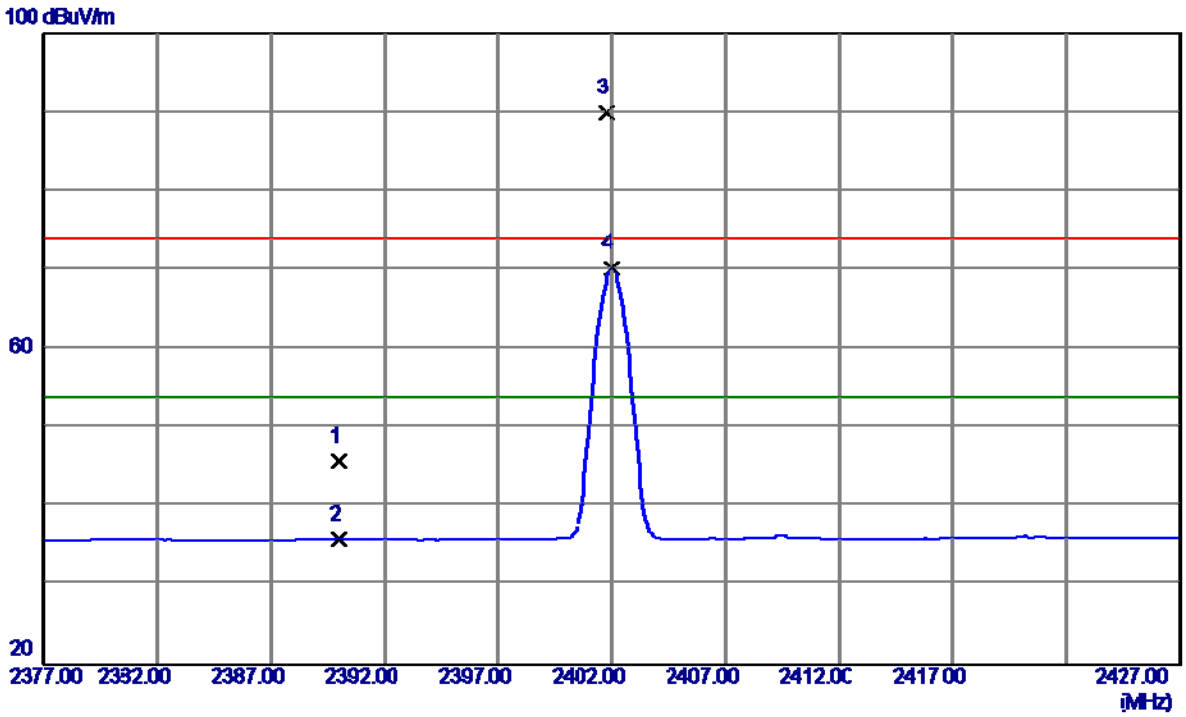


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	62.9800	41.00	-13.89	27.11	40.00	-12.89	peak	
2		115.3600	37.61	-13.14	24.47	43.50	-19.03	peak	
3		171.6200	36.00	-11.17	24.83	43.50	-18.67	peak	
4		266.6800	37.12	-12.07	25.05	46.00	-20.95	peak	
5		406.3600	31.68	-7.09	24.59	46.00	-21.41	peak	
6		499.4800	34.26	-7.37	26.89	46.00	-19.11	peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Test Mode :	TX 2402MHz _CH00_1Mbps

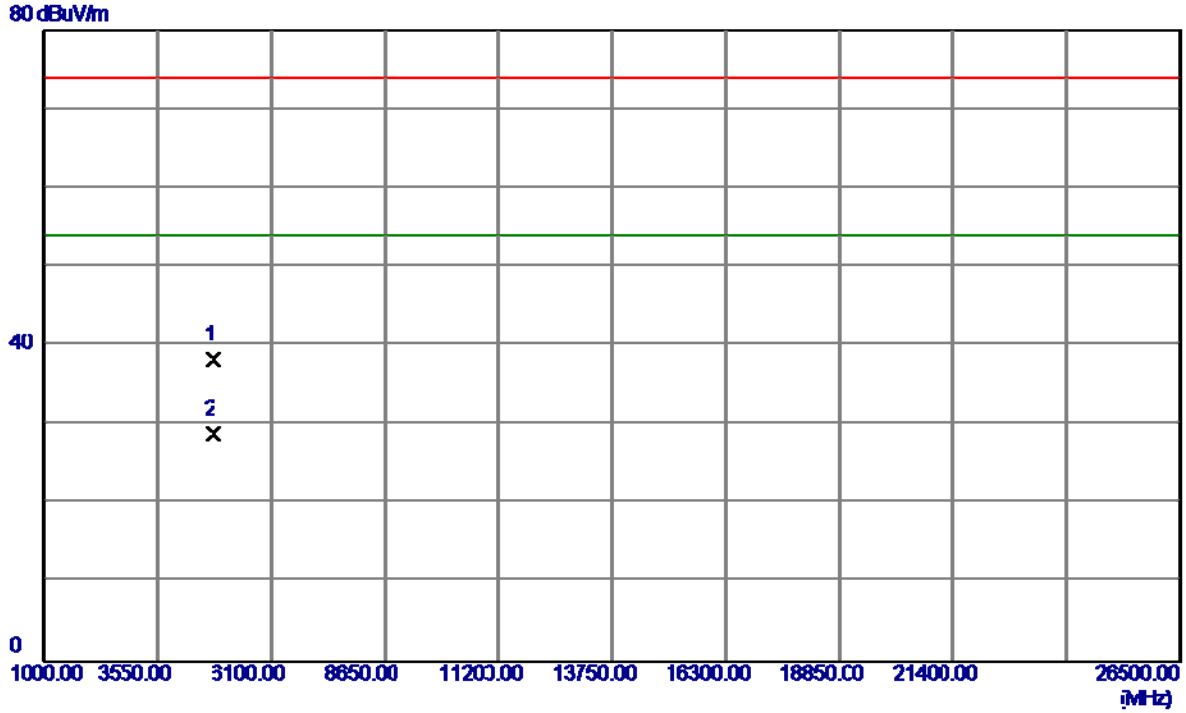
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	16.72	29.02	45.74	74.00	-28.26	Peak	
2	2390.0000	6.82	29.02	35.84	54.00	-18.16	AVG	
3	2401.8000	60.94	29.03	89.97	74.00	15.97	Peak	NO LIMIT
4	2402.0000	41.28	29.03	70.31	54.00	16.31	AVG	NO LIMIT

Test Mode :	TX 2402MHz _CH00_1Mbps

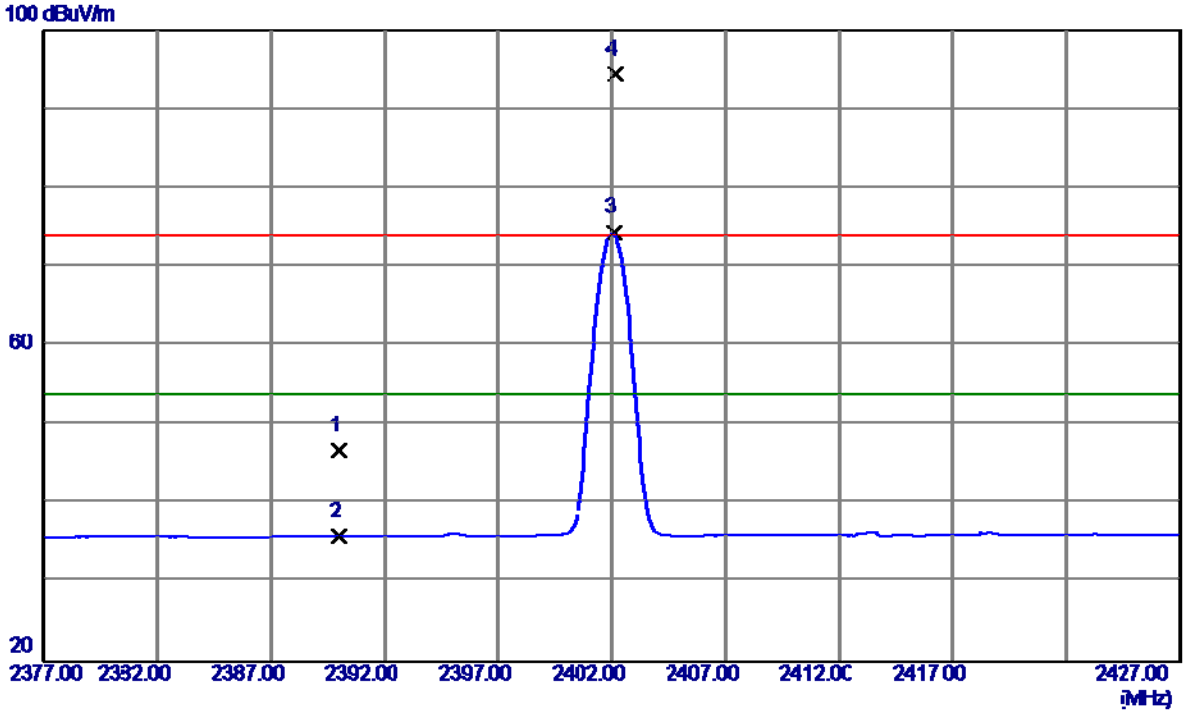
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4803.9000	40.08	-1.81	38.27	74.00	-35.73	Peak	
2	4803.9700	30.67	-1.81	28.86	54.00	-25.14	AVG	

Test Mode :	TX 2402MHz _CH00_1Mbps

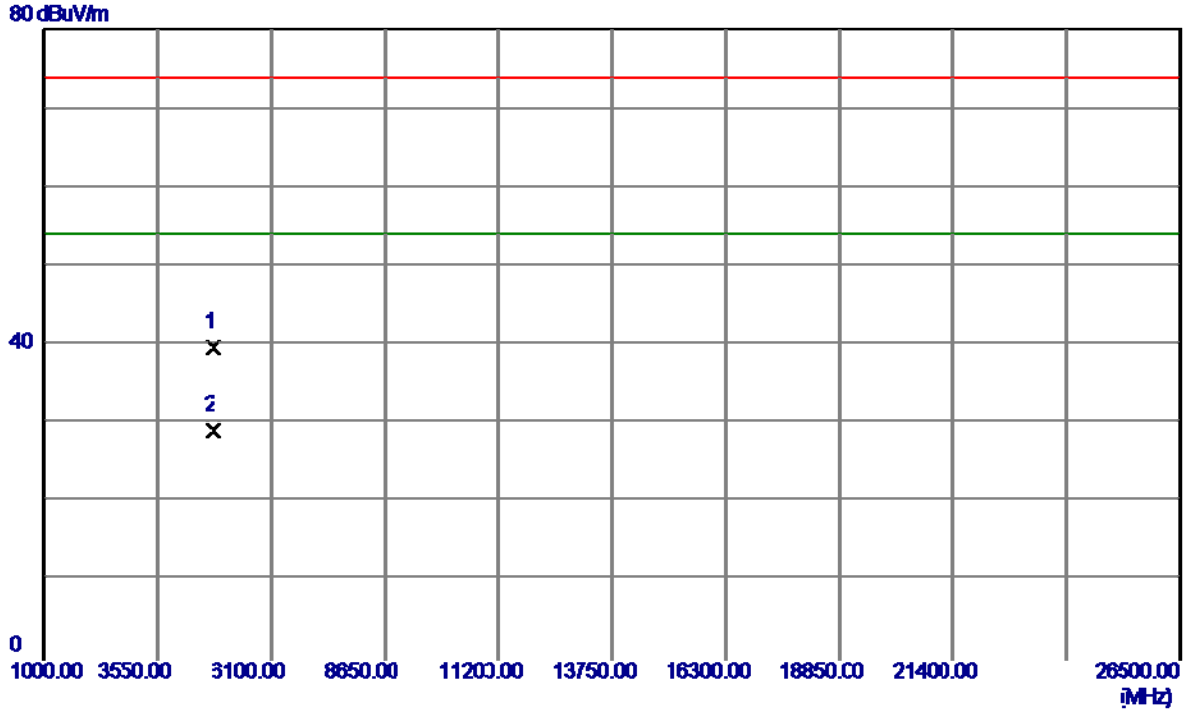
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	17.67	29.02	46.69	74.00	-27.31	Peak	
2	2390.0000	6.81	29.02	35.83	54.00	-18.17	AVG	
3	2402.1000	45.32	29.03	74.35	54.00	20.35	AVG	NO LIMIT
4	2402.1500	65.36	29.03	94.39	74.00	20.39	Peak	NO LIMIT

Test Mode :	TX 2402MHz _CH00_1Mbps

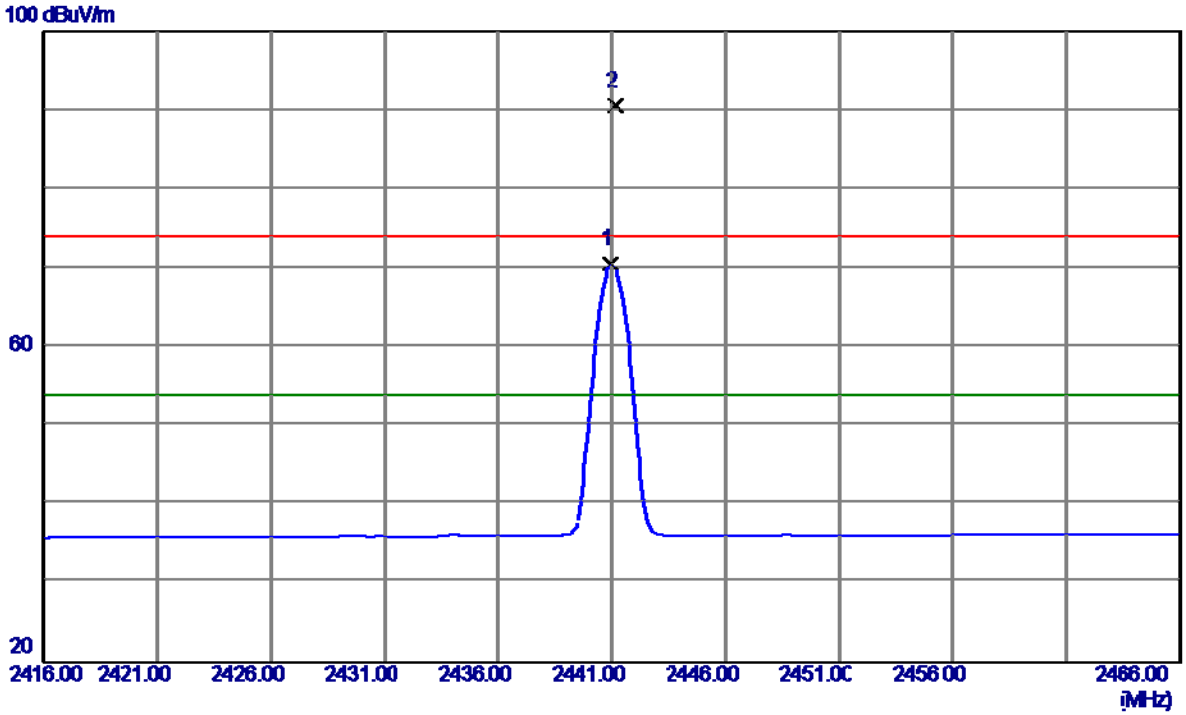
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4803.9000	41.45	-1.81	39.64	74.00	-34.36	Peak	
2	4803.9900	30.88	-1.81	29.07	54.00	-24.93	AVG	

Test Mode :	TX 2441MHz _CH39_1Mbps

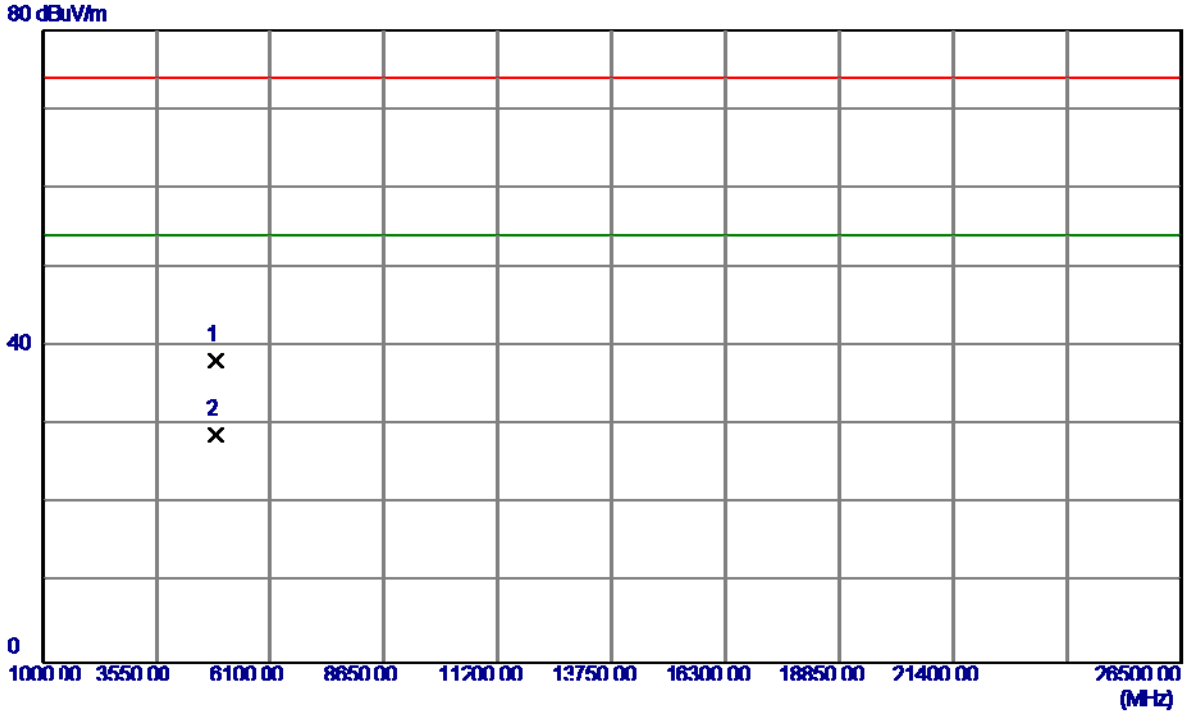
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2440.9500	41.47	29.08	70.55	54.00	16.55	AVG	NO LIMIT
2	2441.1500	61.49	29.08	90.57	74.00	16.57	Peak	NO LIMIT

Test Mode :	TX 2441MHz _CH39_1Mbps

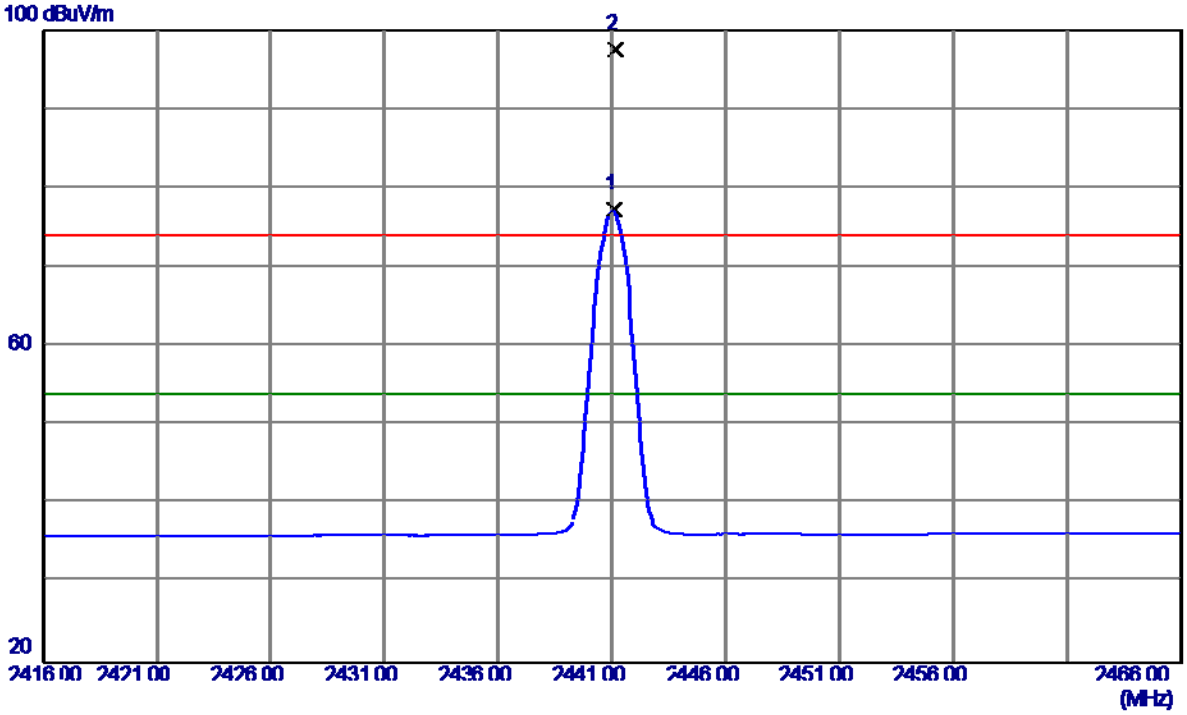
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4882.0600	39.97	-1.70	38.27	74.00	-35.73	Peak	
2	4881.9800	30.56	-1.70	28.86	54.00	-25.14	AVG	

Test Mode :	TX 2441MHz _CH39_1Mbps

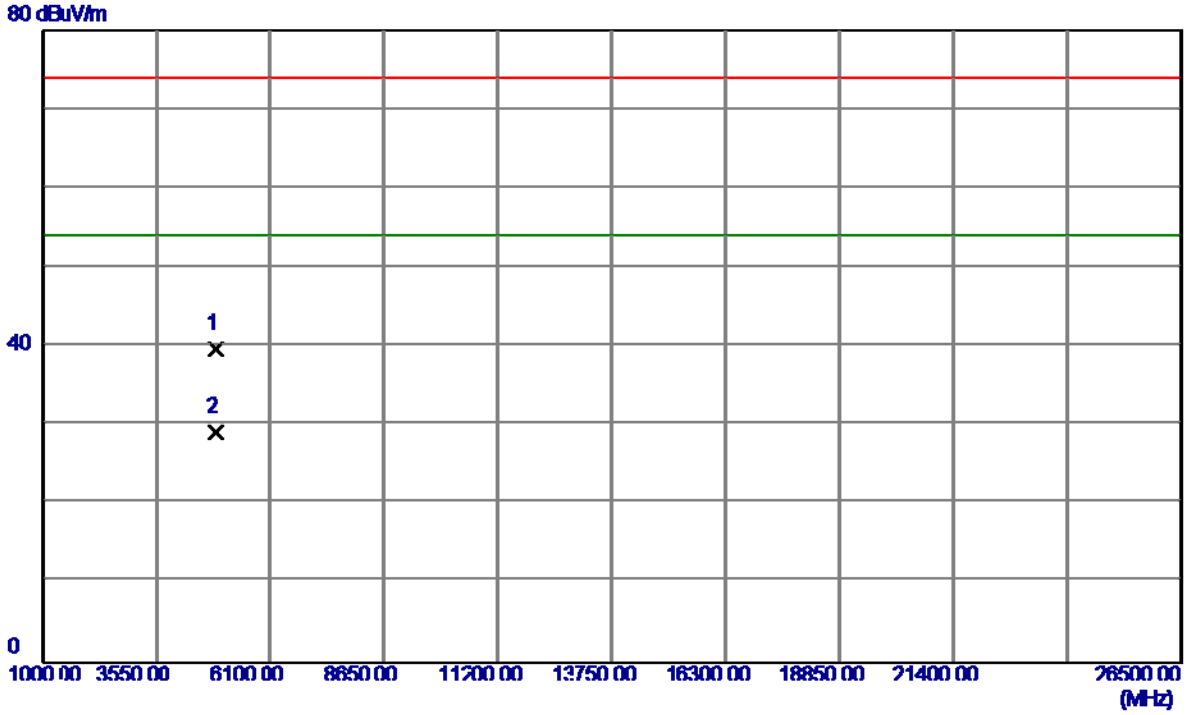
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2441.1000	48.24	29.08	77.32	54.00	23.32	AVG	NO LIMIT
2	2441.1500	68.51	29.08	97.59	74.00	23.59	Peak	NO LIMIT

Test Mode :	TX 2441MHz _CH39_1Mbps

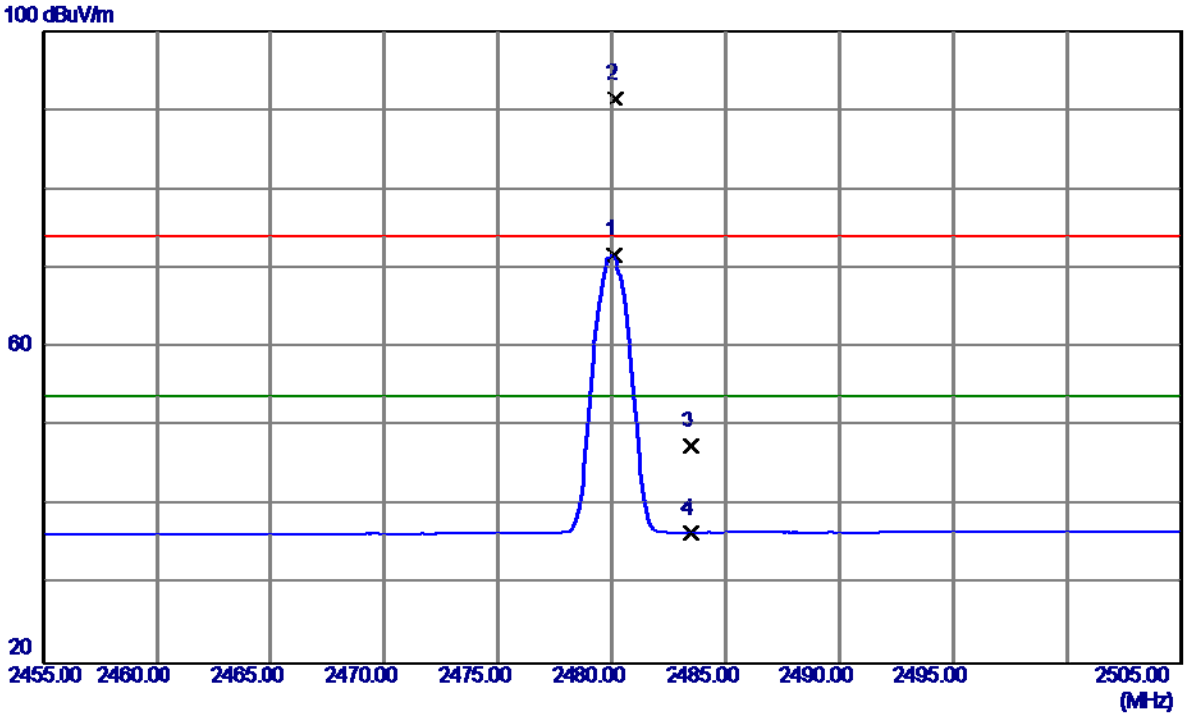
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4882.1080	41.34	-1.70	39.64	74.00	-34.36	Peak	
2	4882.0810	30.77	-1.70	29.07	54.00	-24.93	AVG	

Test Mode :	TX 2480MHz _CH78_1Mbps

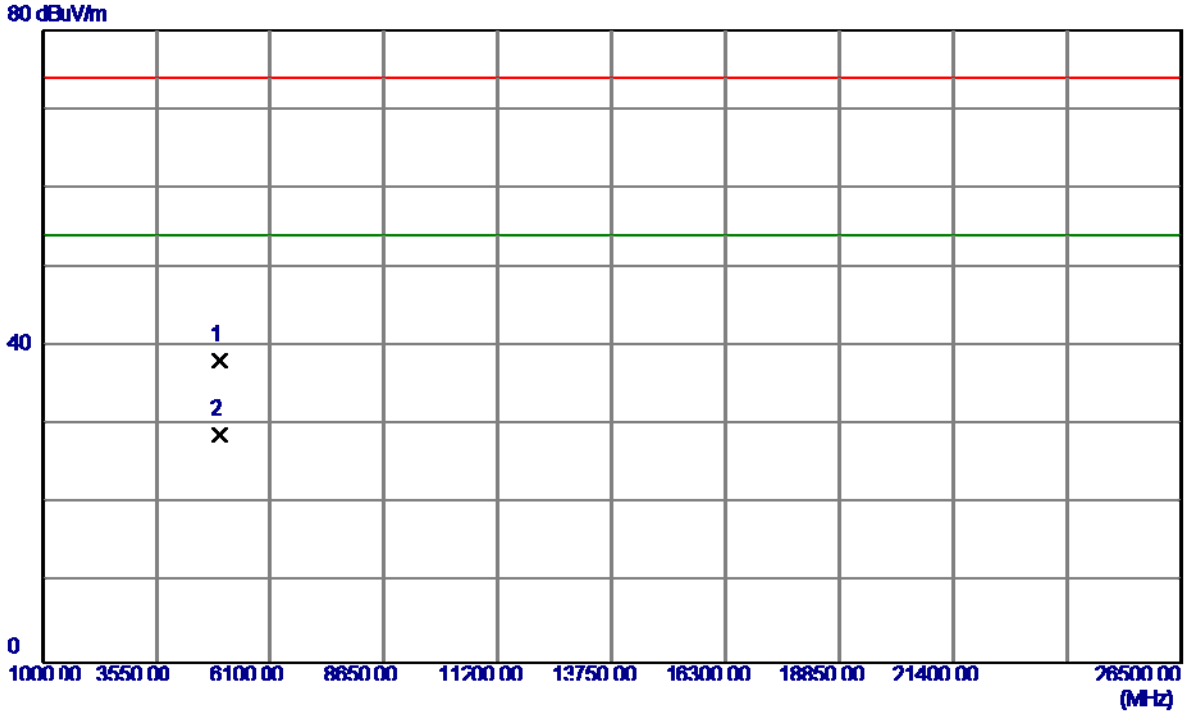
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2480.1000	42.50	29.13	71.63	54.00	17.63	AVG	NO LIMIT
2	2480.1500	62.39	29.13	91.52	74.00	17.52	Peak	NO LIMIT
3	2483.5000	18.45	29.14	47.59	74.00	-26.41	Peak	
4	2483.5000	7.41	29.14	36.55	54.00	-17.45	AVG	

Test Mode :	TX 2480MHz _CH78_1Mbps

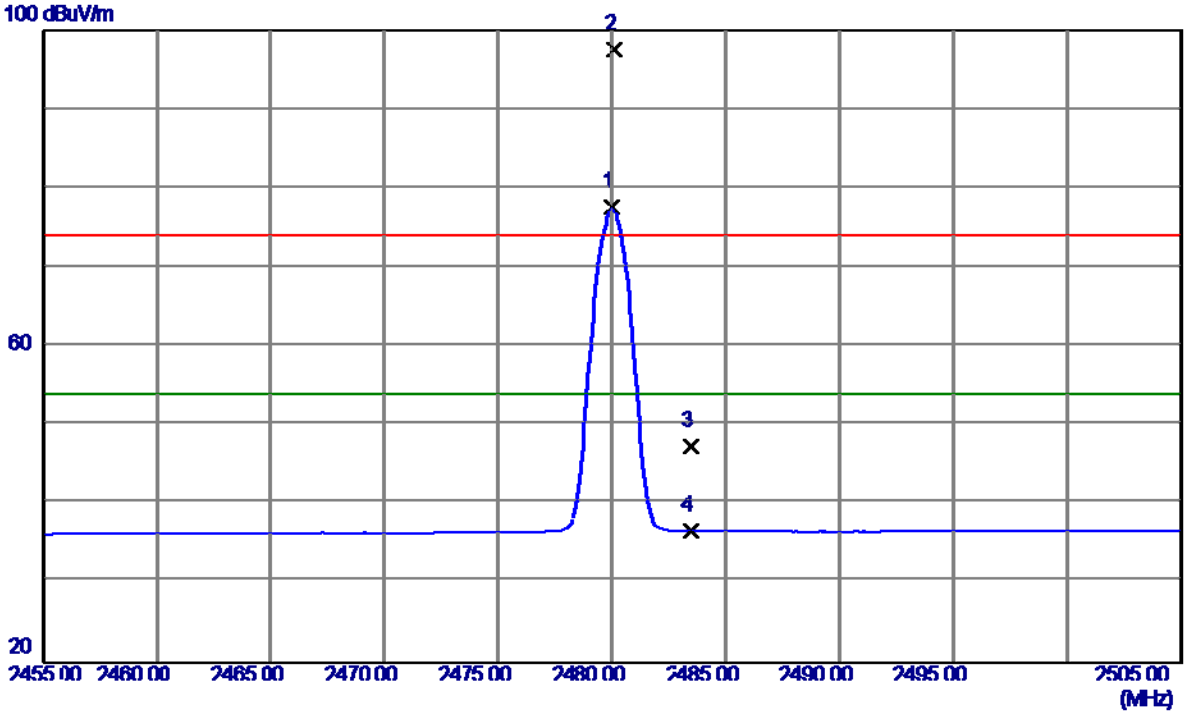
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4960.0000	39.87	-1.60	38.27	74.00	-35.73	Peak	
2	4960.0800	30.46	-1.60	28.86	54.00	-25.14	AVG	

Test Mode :	TX 2480MHz _CH78_1Mbps

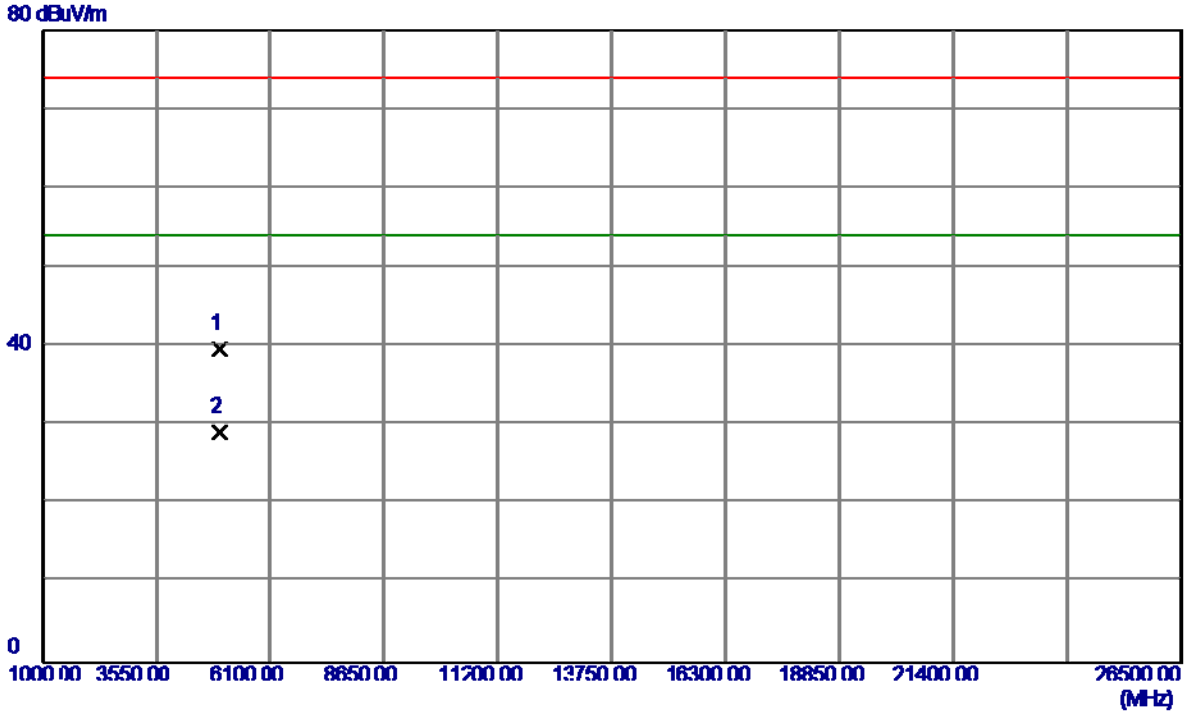
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2480.0000	48.41	29.13	77.54	54.00	23.54	AVG	NO LIMIT
2	2480.1200	68.49	29.13	97.62	74.00	23.62	Peak	NO LIMIT
3	2483.5000	18.15	29.14	47.29	74.00	-26.71	Peak	
4	2483.5000	7.43	29.14	36.57	54.00	-17.43	AVG	

Test Mode :	TX 2480MHz _CH78_1Mbps

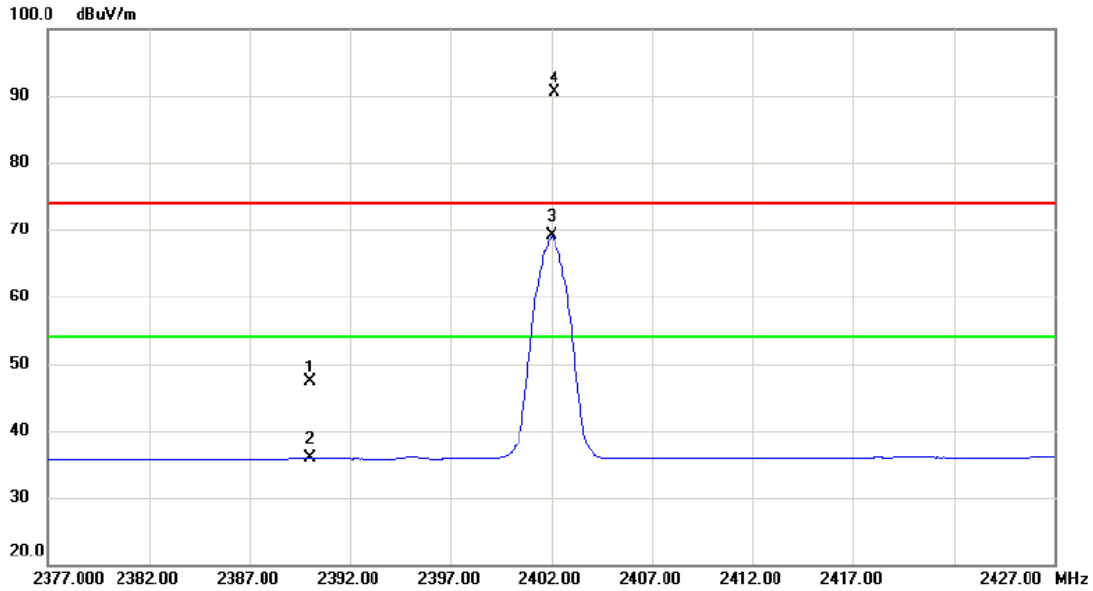
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4959.8100	41.24	-1.60	39.64	74.00	-34.36	Peak	
2	4960.0430	30.67	-1.60	29.07	54.00	-24.93	AVG	

Test Mode :	TX 2402MHz _CH00_3Mbps

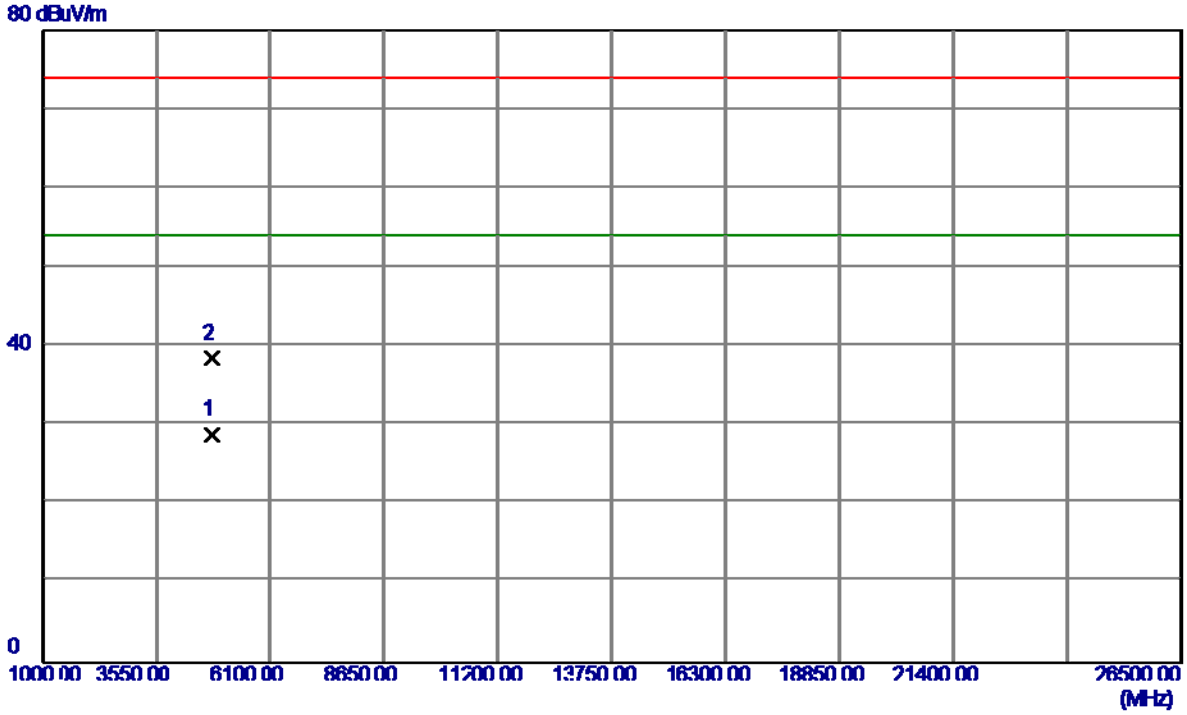
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	13.08	34.23	47.31	74.00	-26.69	peak	
2		2390.000	1.61	34.23	35.84	54.00	-18.16	AVG	
3	X	2402.000	34.87	34.30	69.17	54.00	15.17	AVG	NO LIMIT
4	*	2402.150	56.26	34.30	90.56	74.00	16.56	peak	NO LIMIT

Test Mode :	TX 2402MHz _CH00_3Mbps

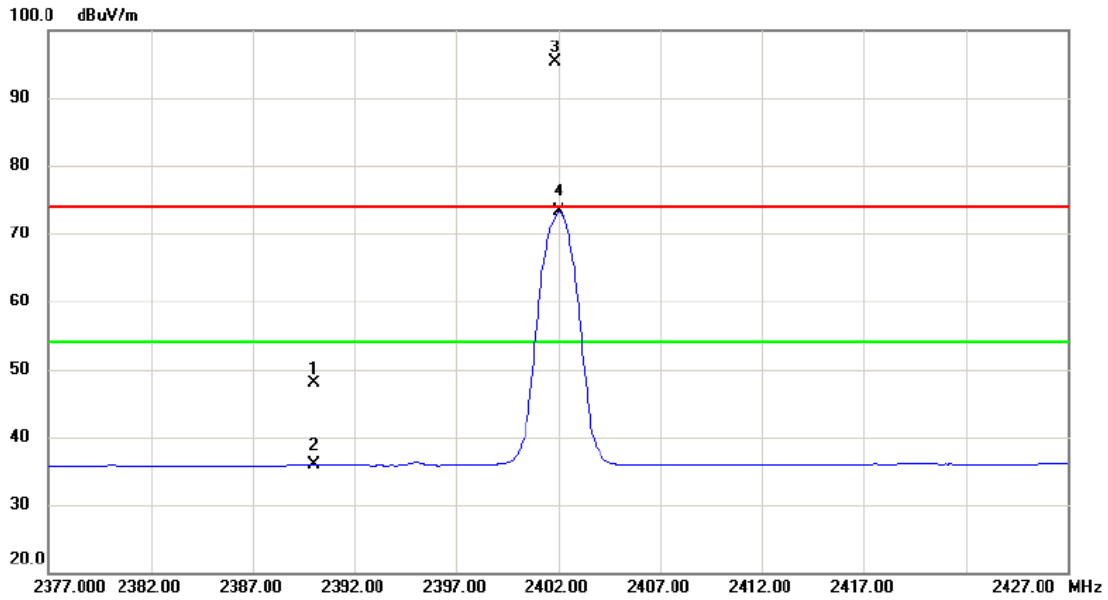
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4803.9200	30.66	-1.81	28.85	54.00	-25.15	AVG	
2	4804.1400	40.29	-1.81	38.48	74.00	-35.52	Peak	

Test Mode :	TX 2402MHz _CH00_3Mbps

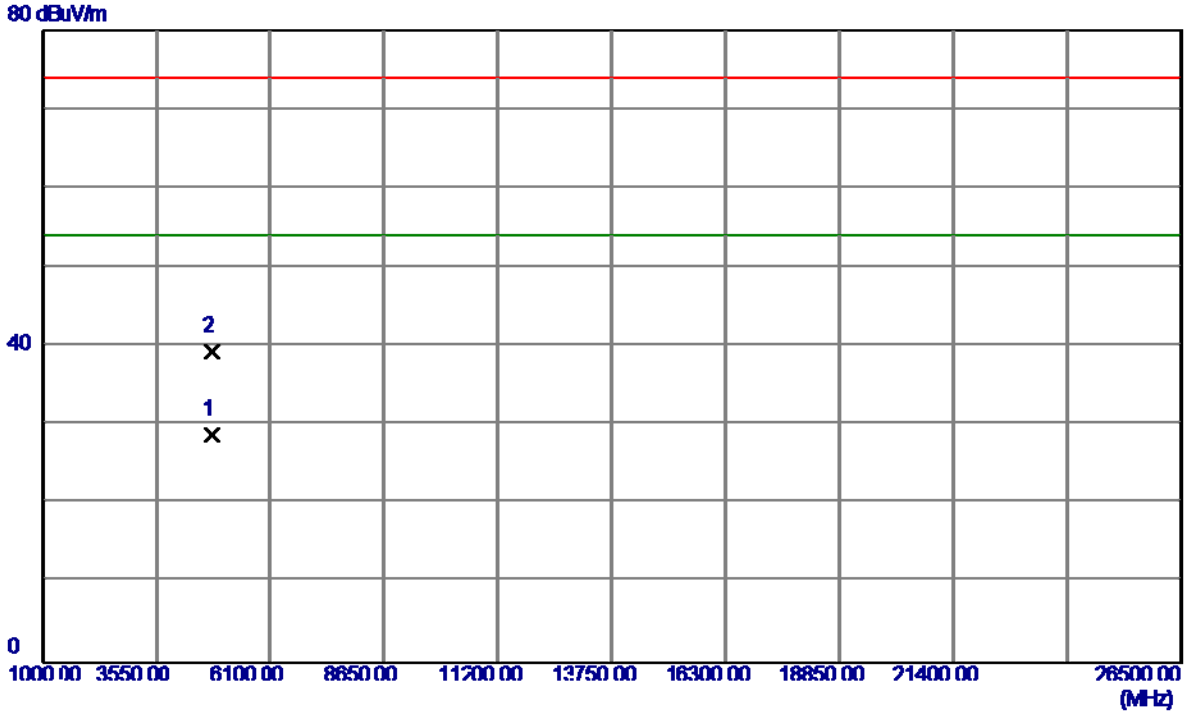
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	13.72	34.23	47.95	74.00	-26.05	peak	
2		2390.000	1.61	34.23	35.84	54.00	-18.16	AVG	
3	*	2401.800	61.01	34.30	95.31	74.00	21.31	peak	NO LIMIT
4	X	2402.000	38.95	34.30	73.25	54.00	19.25	AVG	NO LIMIT

Test Mode :	TX 2402MHz _CH00_3Mbps

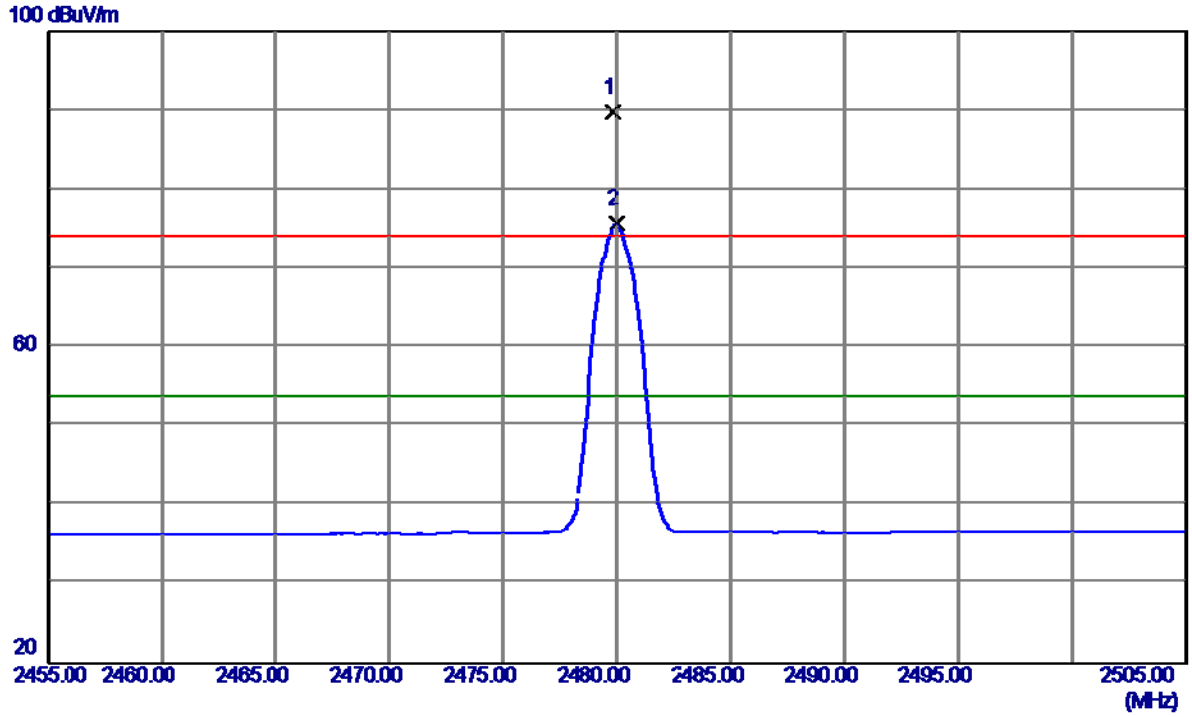
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4803.9000	30.56	-1.81	28.75	54.00	-25.25	AVG	
2	4804.0000	41.15	-1.81	39.34	74.00	-34.66	Peak	

Test Mode :	TX 2441MHz _CH39_3Mbps

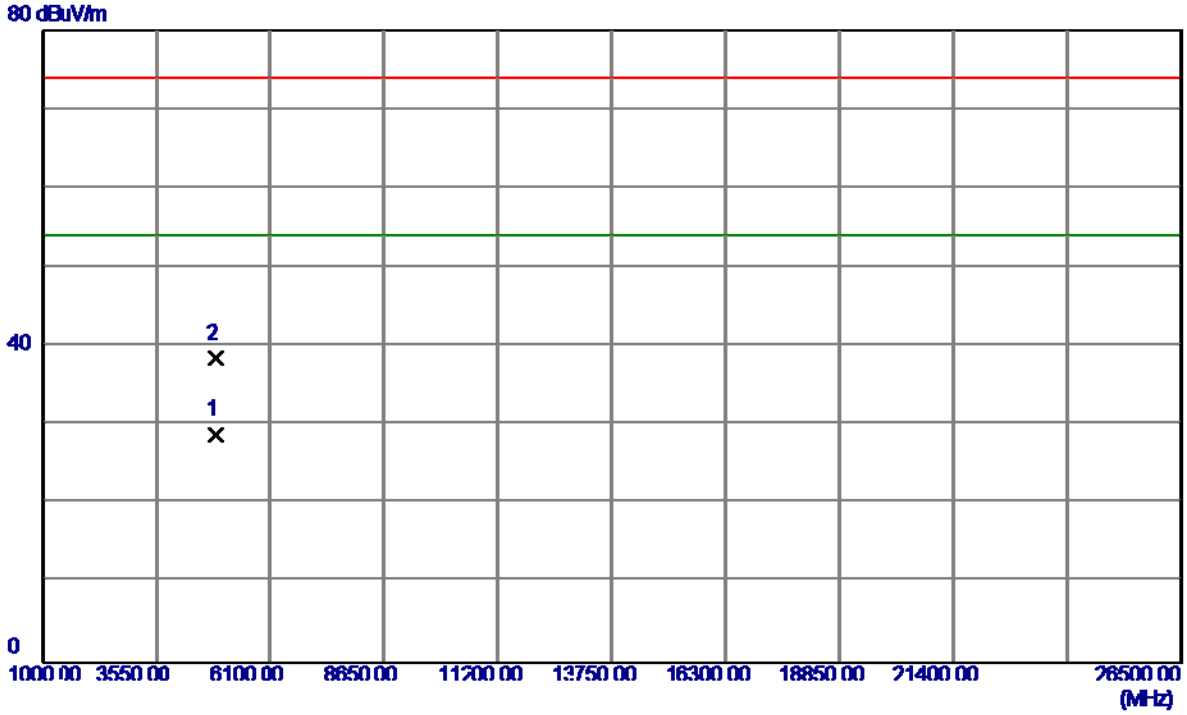
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2479.8500	60.69	29.13	89.82	74.00	15.82	Peak	NO LIMIT
2	2480.0000	46.62	29.13	75.75	54.00	21.75	AVG	NO LIMIT

Test Mode :	TX 2441MHz _CH39_3Mbps

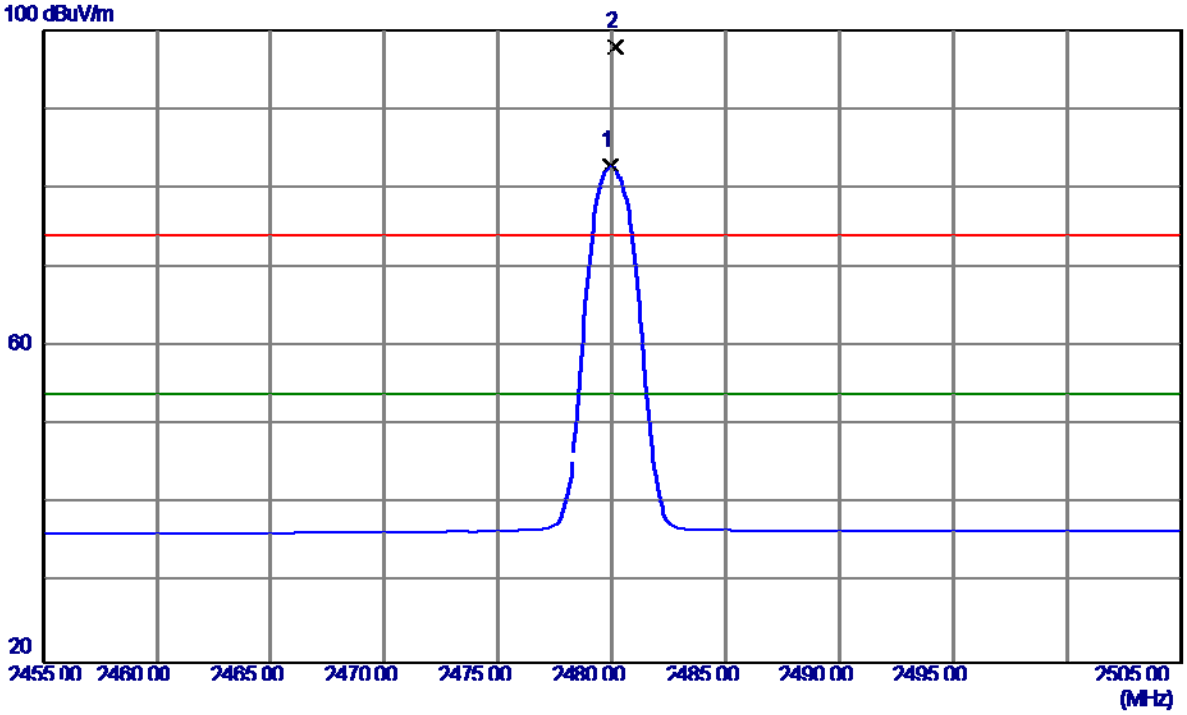
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4882.0099	30.55	-1.70	28.85	54.00	-25.15	AVG	
2	4882.1080	40.18	-1.70	38.48	74.00	-35.52	Peak	

Test Mode :	TX 2441MHz _CH39_3Mbps

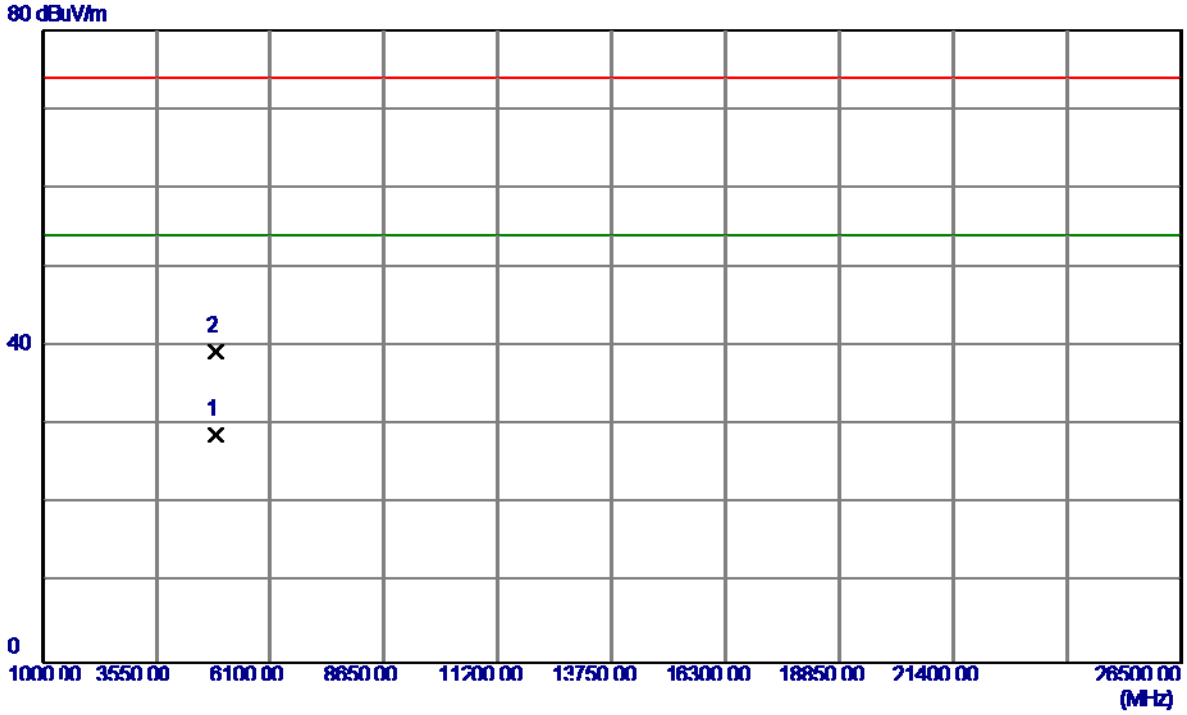
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2479.9500	53.73	29.13	82.86	54.00	28.86	AVG	NO LIMIT
2	2480.1500	68.78	29.13	97.91	74.00	23.91	Peak	NO LIMIT

Test Mode :	TX 2441MHz _CH39_3Mbps

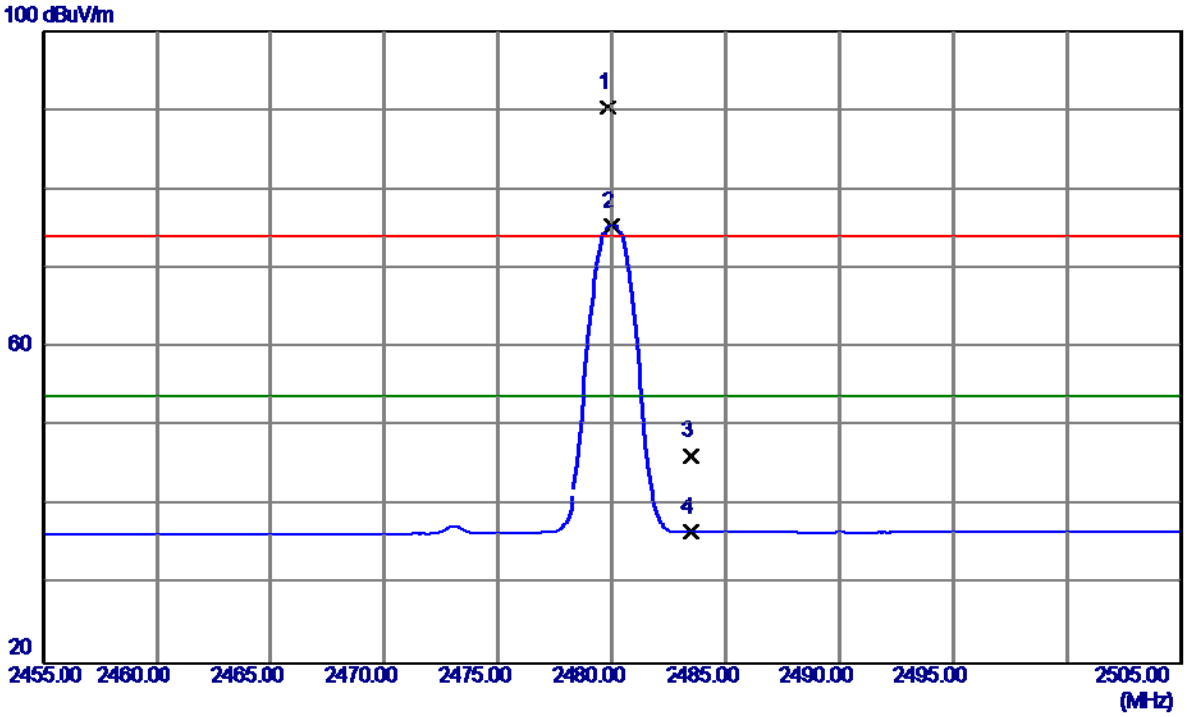
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4882.0299	30.45	-1.70	28.75	54.00	-25.25	AVG	
2	4882.0900	41.04	-1.70	39.34	74.00	-34.66	Peak	

Test Mode :	TX 2480MHz _CH78_3Mbps

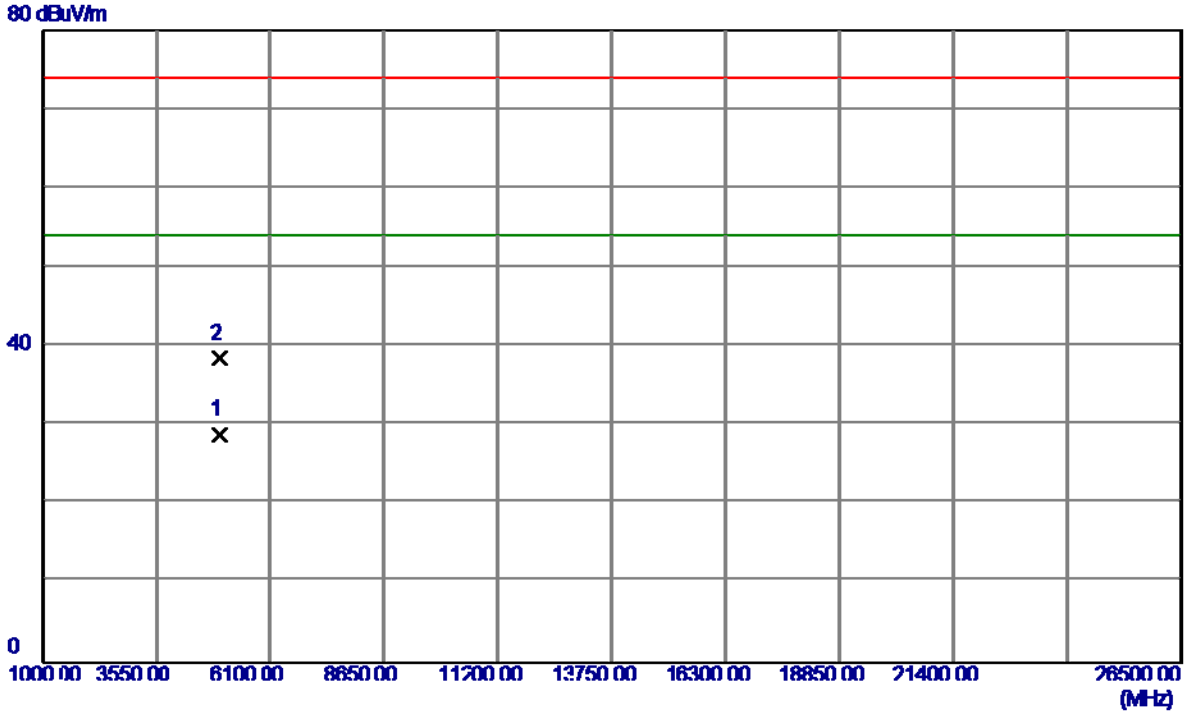
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2479.8500	61.34	29.13	90.47	74.00	16.47	Peak	NO LIMIT
2	2480.0000	46.30	29.13	75.43	54.00	21.43	AVG	NO LIMIT
3	2483.5000	17.17	29.14	46.31	74.00	-27.69	Peak	
4	2483.5000	7.44	29.14	36.58	54.00	-17.42	AVG	

Test Mode :	TX 2480MHz _CH78_3Mbps

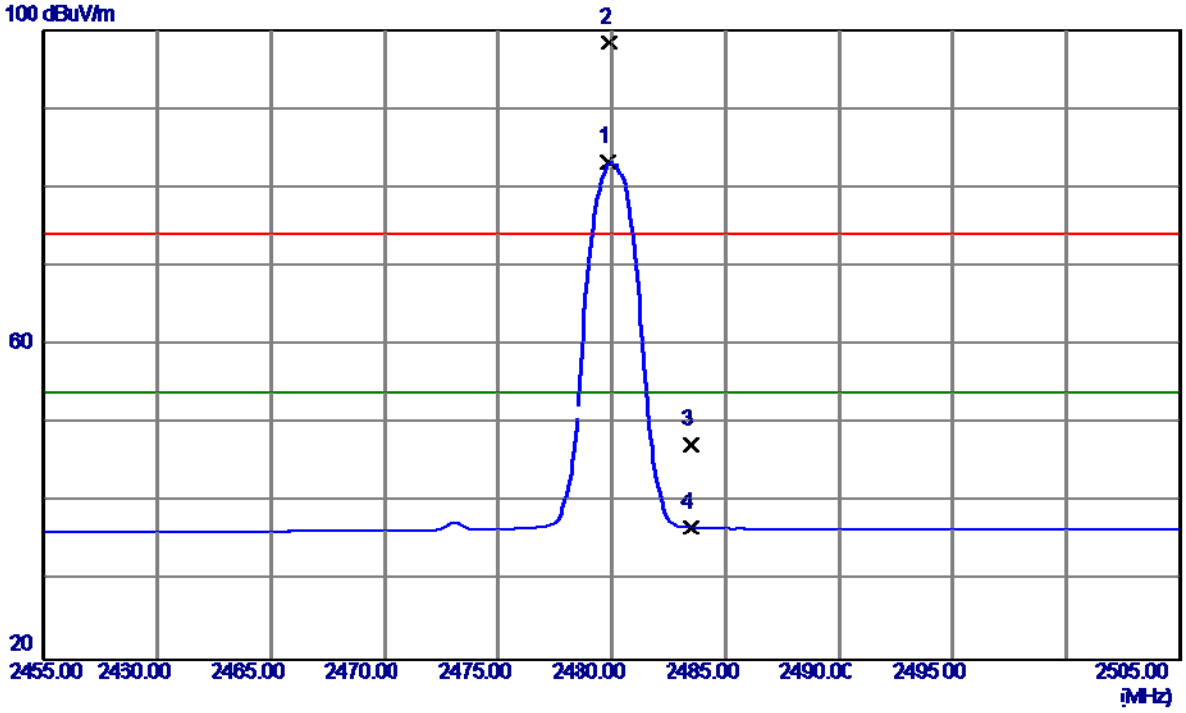
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4960.0500	30.45	-1.60	28.85	54.00	-25.15	AVG	
2	4960.0000	40.08	-1.60	38.48	74.00	-35.52	Peak	

Test Mode :	TX 2480MHz _CH78_3Mbps

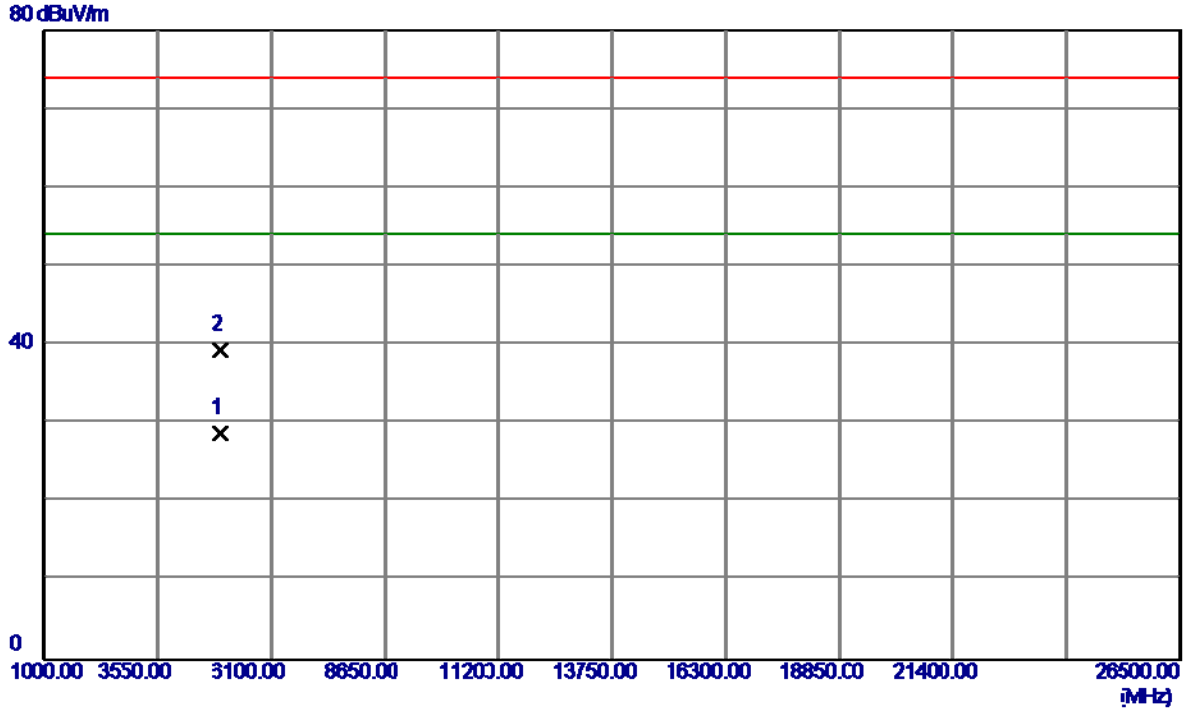
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2479.8500	54.10	29.13	83.23	54.00	29.23	AVG	NO LIMIT
2	2479.9000	69.29	29.13	98.42	74.00	24.42	Peak	NO LIMIT
3	2483.5000	18.17	29.14	47.31	74.00	-26.69	Peak	
4	2483.5000	7.71	29.14	36.85	54.00	-17.15	AVG	

Test Mode :	TX 2480MHz _CH78_3Mbps

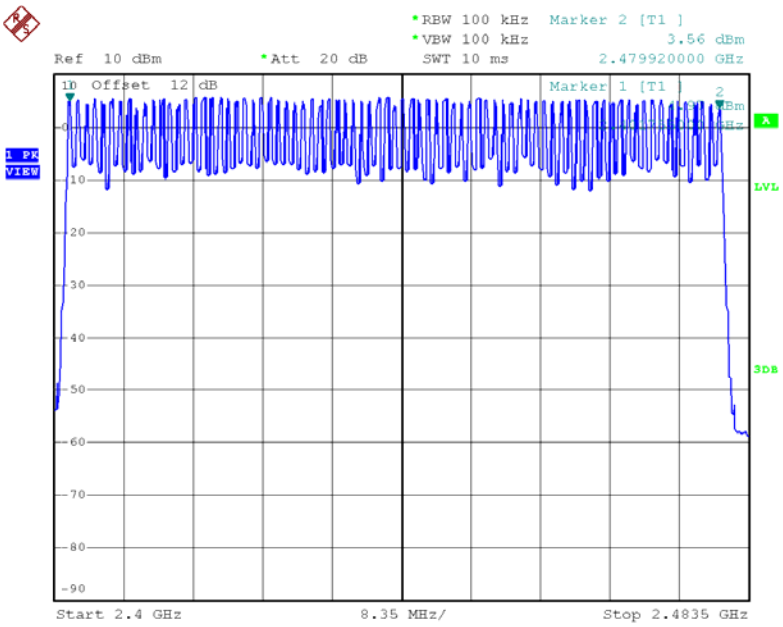
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Over		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4960.1300	30.35	-1.60	28.75	54.00	-25.25	AVG	
2	4960.1080	40.94	-1.60	39.34	74.00	-34.66	Peak	

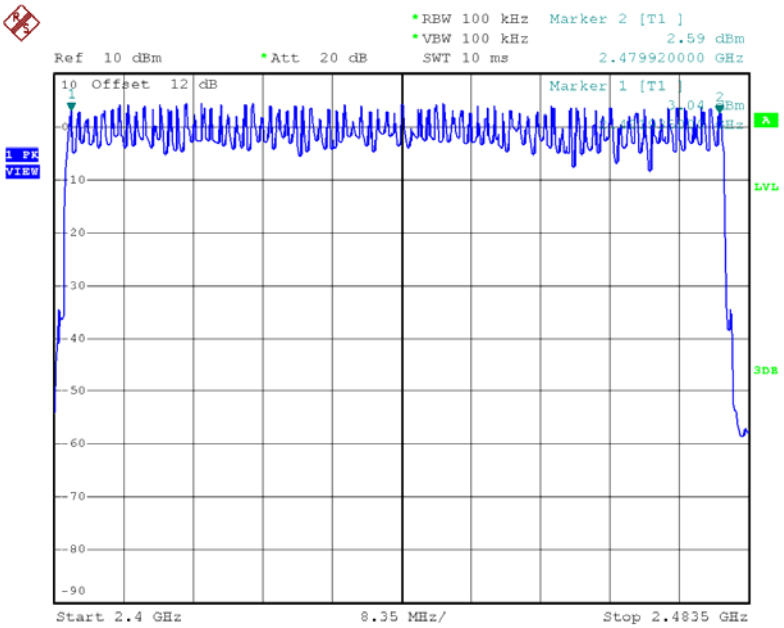
ATTACHMENT E - NUMBER OF HOPPING CHANNEL

Test Mode	Hopping Mode_1Mbps
Number of Hopping Channel	79



Date: 11.OCT.2015 08:57:03

Test Mode	Hopping Mode_3Mbps
Number of Hopping Channel	79



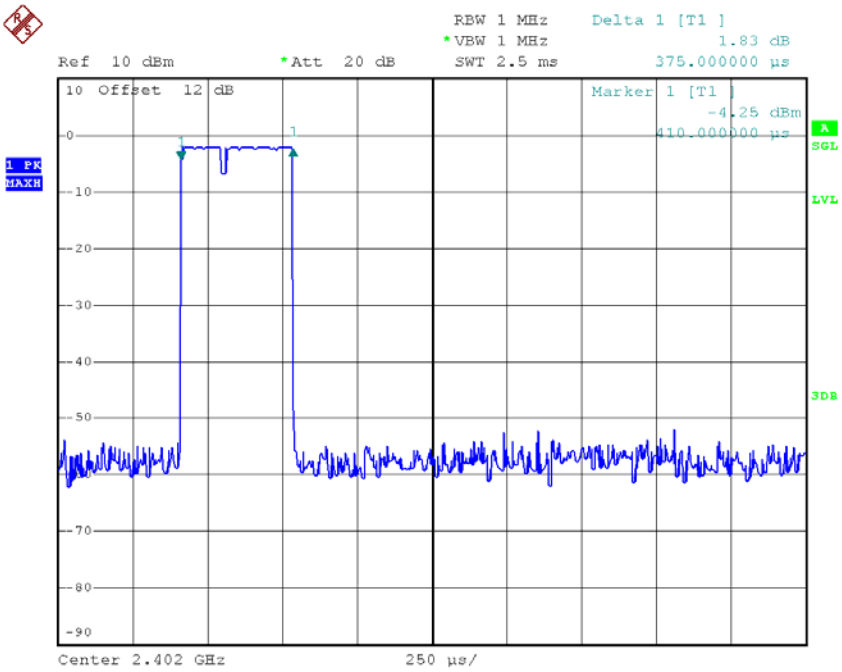
Date: 8.OCT.2015 10:40:38

ATTACHMENT F - AVERAGE TIME OF OCCUPANCY

Test Mode :	TX Mode_1Mbps

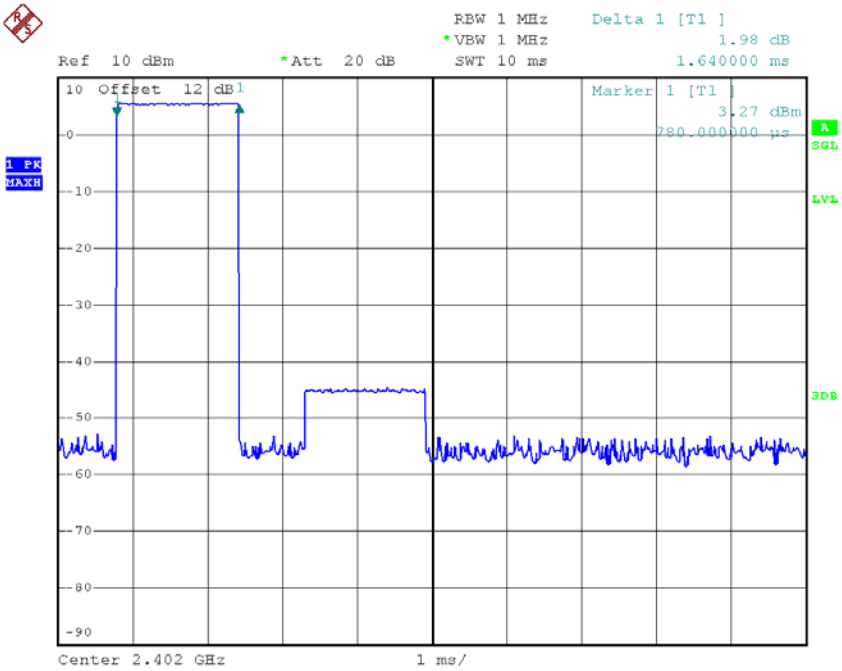
Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Result
DH5	2402	2.8800	0.3072	0.4000	Pass
DH3	2402	1.6400	0.1749	0.4000	Pass
DH1	2402	0.3750	0.0400	0.4000	Pass
DH5	2441	2.8800	0.3072	0.4000	Pass
DH3	2441	1.6200	0.1728	0.4000	Pass
DH1	2441	0.3750	0.0400	0.4000	Pass
DH5	2480	2.8800	0.3072	0.4000	Pass
DH3	2480	1.6200	0.1728	0.4000	Pass
DH1	2480	0.3700	0.0395	0.4000	Pass

CH00-DH1



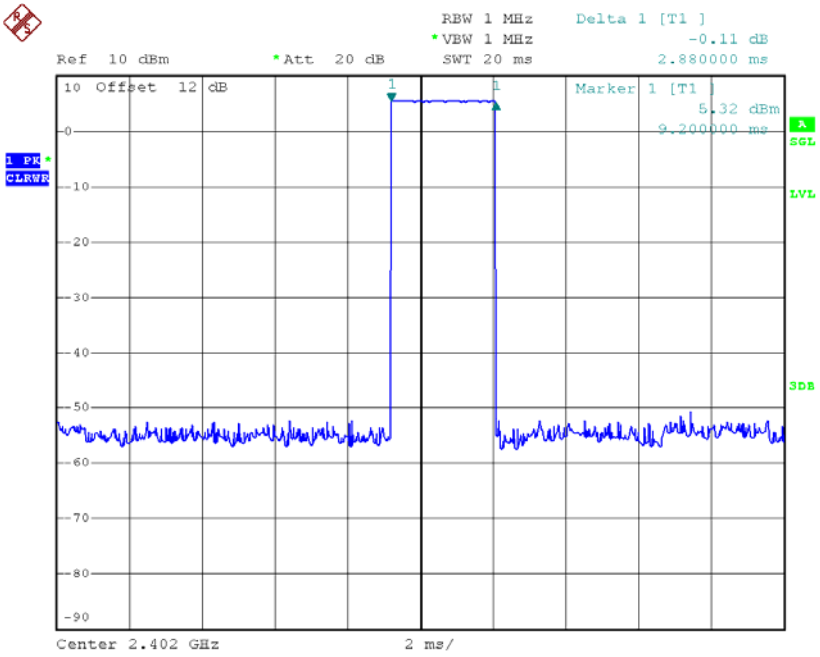
Date: 11.OCT.2015 08:51:47

CH00-DH3



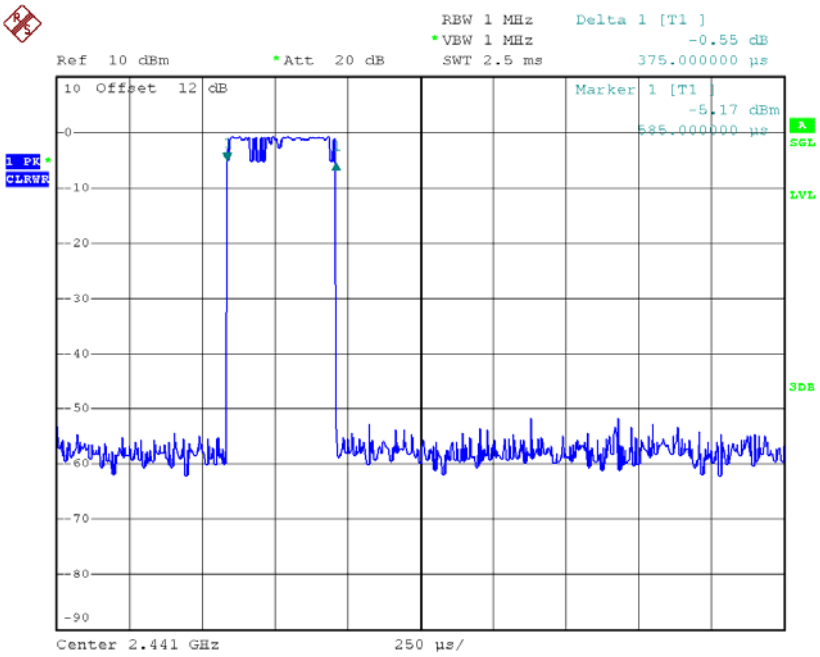
Date: 11.OCT.2015 08:58:33

CH00-DH5



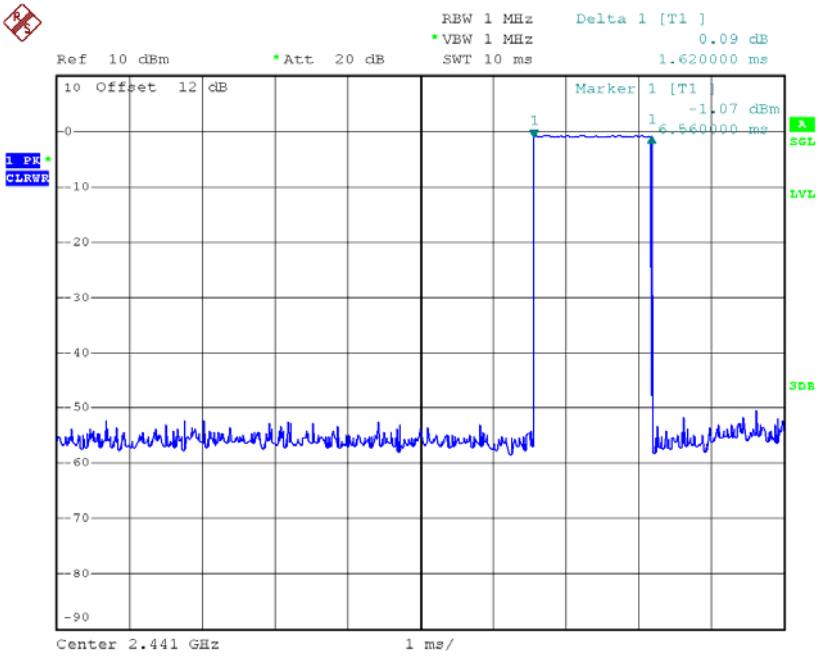
Date: 11.OCT.2015 08:59:11

CH39-DH1



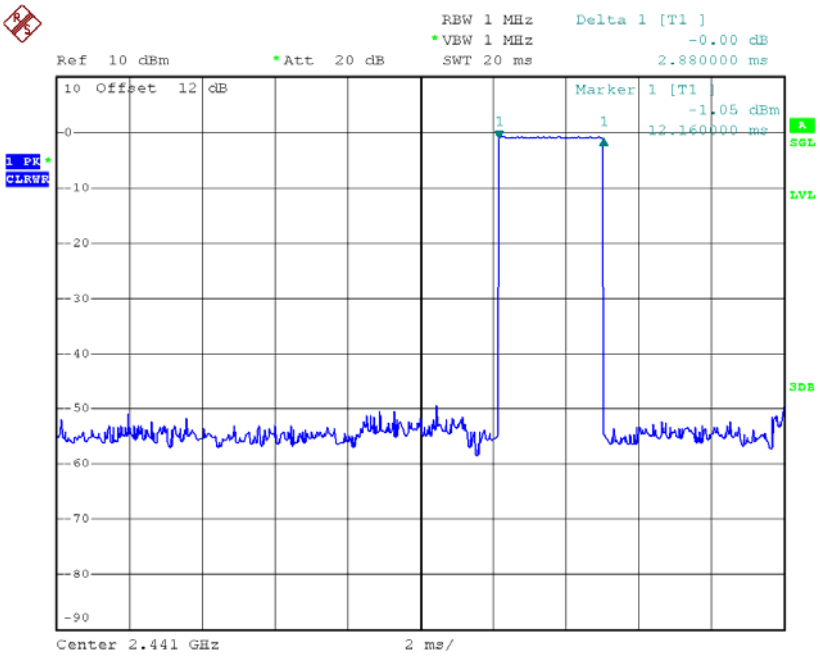
Date: 11.OCT.2015 08:51:52

CH39-DH3



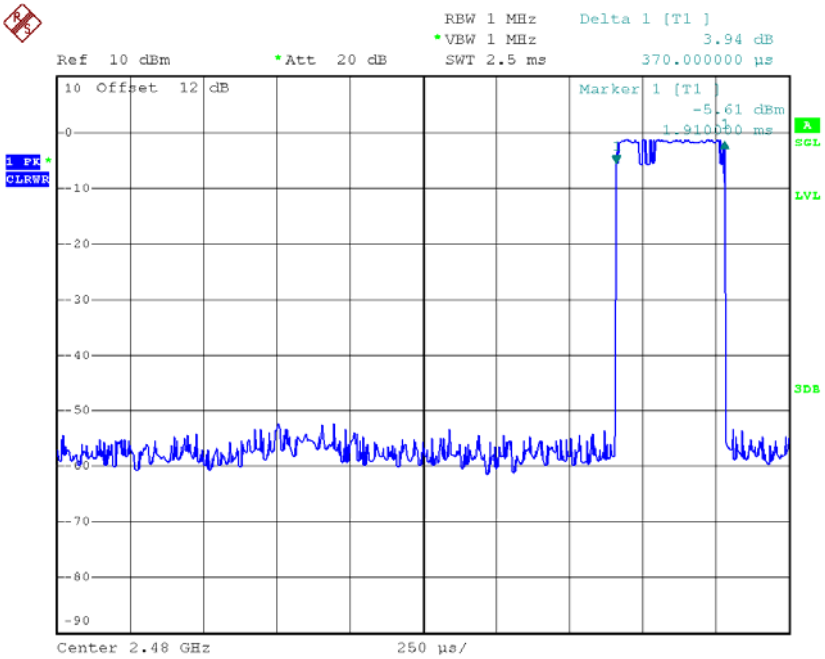
Date: 11.OCT.2015 08:58:39

CH39-DH5



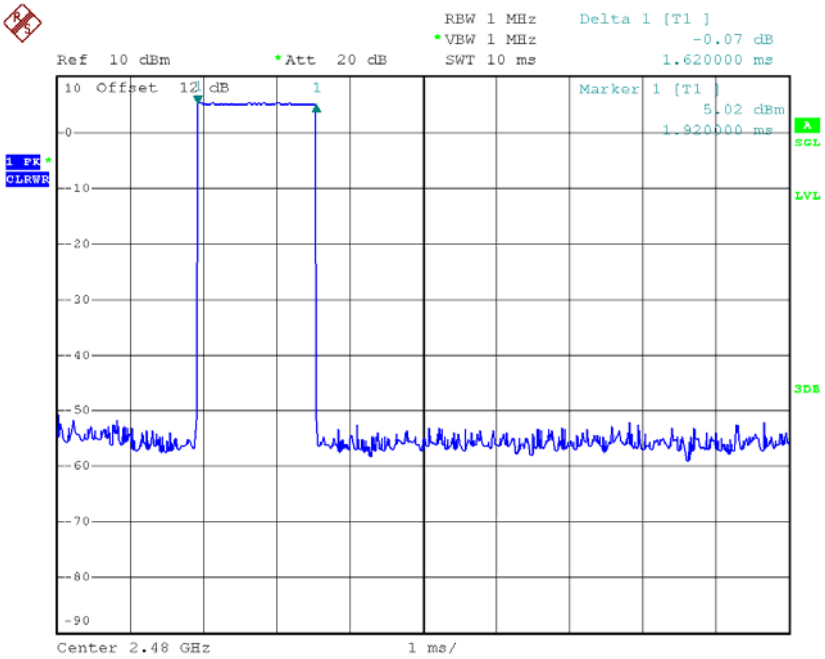
Date: 11.OCT.2015 08:59:16

CH78-DH1



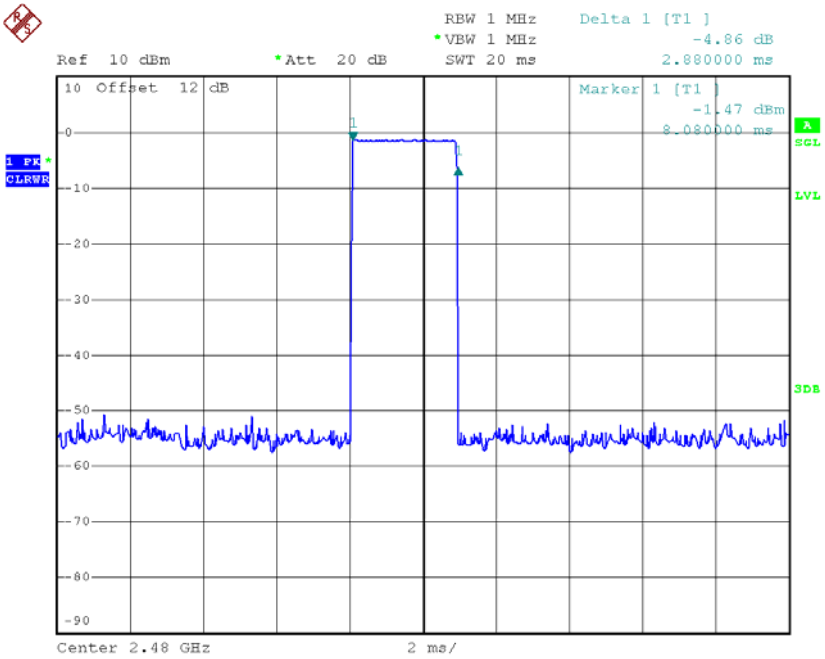
Date: 11.OCT.2015 08:51:56

CH78-DH3



Date: 11.OCT.2015 08:58:50

CH78-DH5

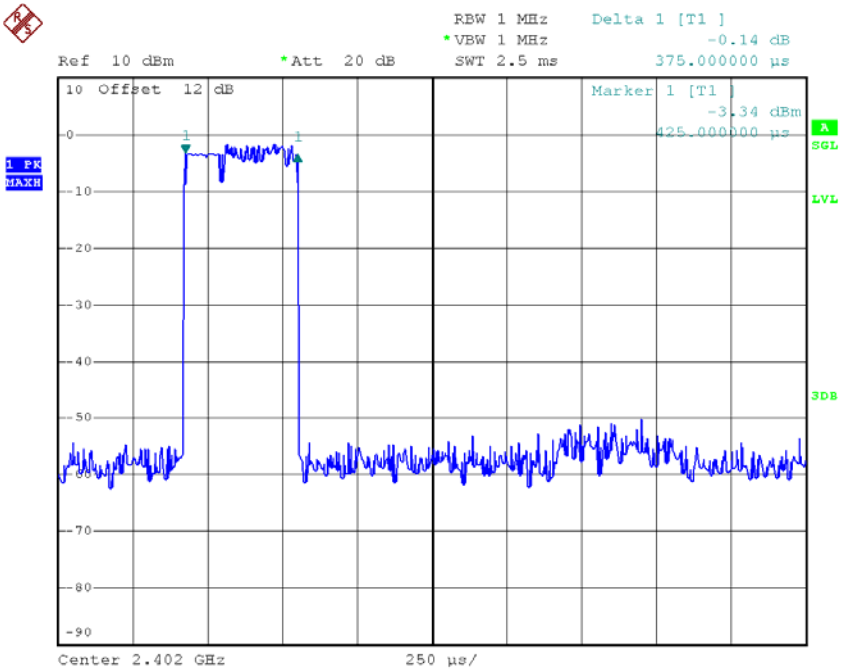


Date: 11.OCT.2015 08:59:22

Test Mode :	TX Mode_3Mbps

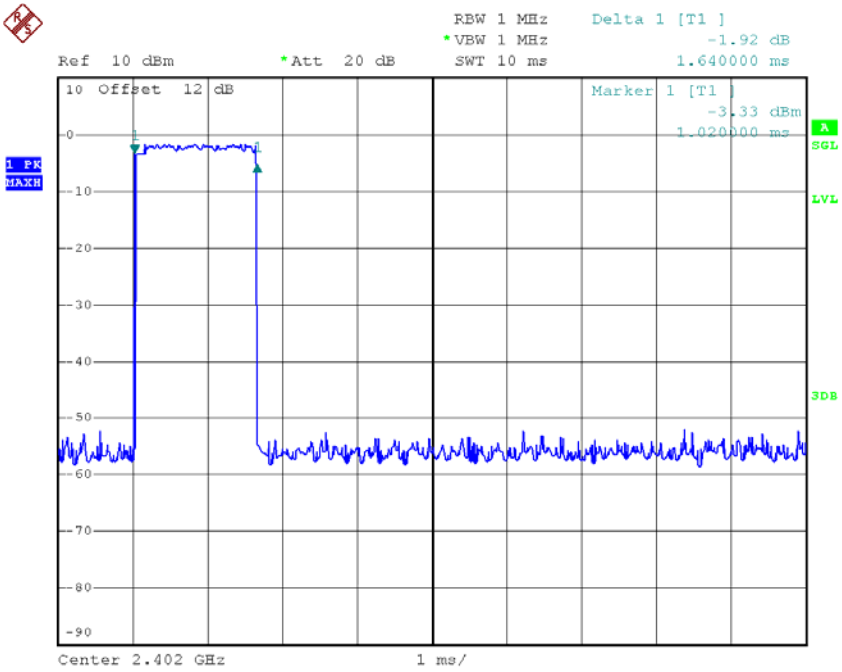
Data Packet	Frequency	Pulse Duration(ms)	Dwell Time(s)	Limits(s)	Test Result
DH5	2402	2.9200	0.3115	0.4000	Pass
DH3	2402	1.6400	0.1749	0.4000	Pass
DH1	2402	0.3750	0.0400	0.4000	Pass
DH5	2441	2.9200	0.3115	0.4000	Pass
DH3	2441	1.6400	0.1749	0.4000	Pass
DH1	2441	0.3750	0.0400	0.4000	Pass
DH5	2480	2.8800	0.3072	0.4000	Pass
DH3	2480	1.6400	0.1749	0.4000	Pass
DH1	2480	0.3800	0.0405	0.4000	Pass

CH00-DH1



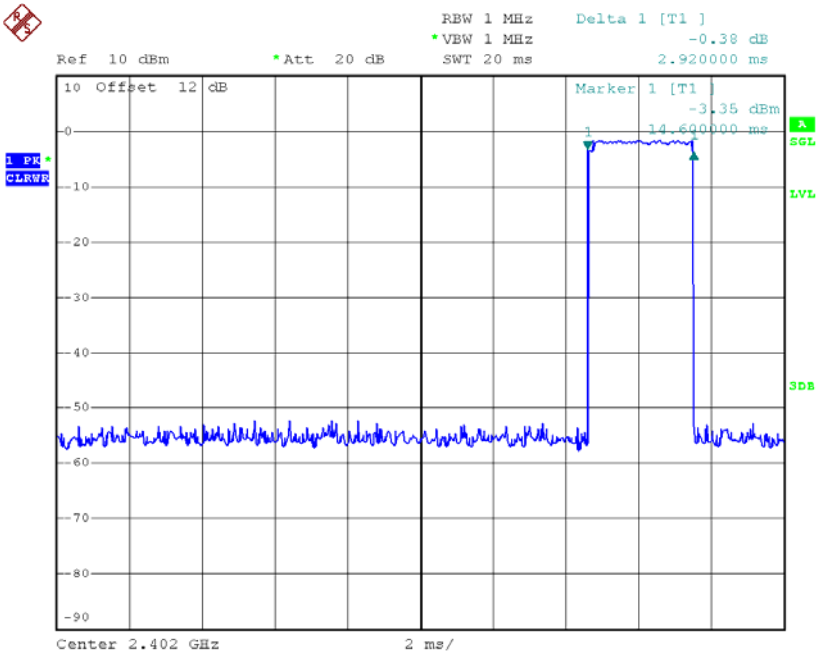
Date: 8.OCT.2015 10:35:21

CH00-DH3



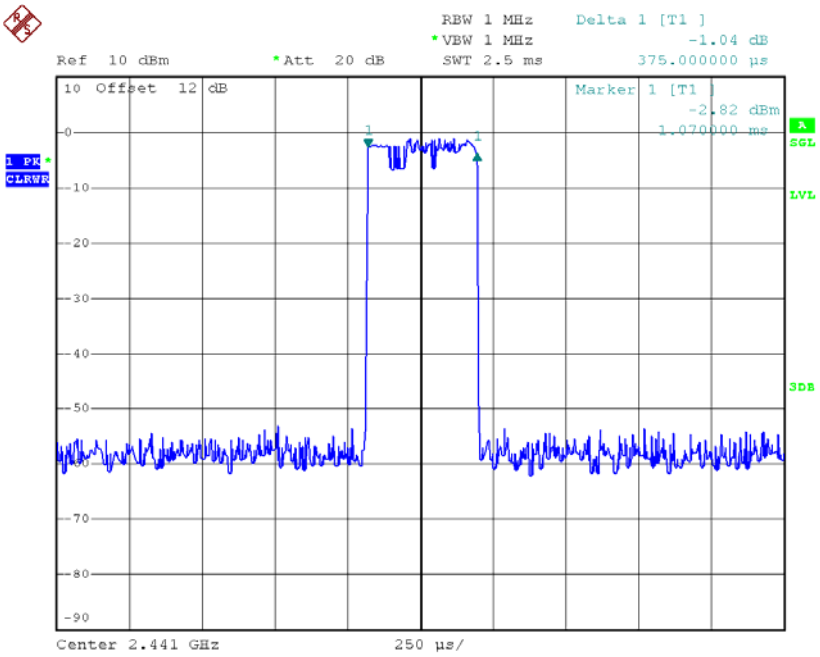
Date: 8.OCT.2015 10:42:21

CH00-DH5



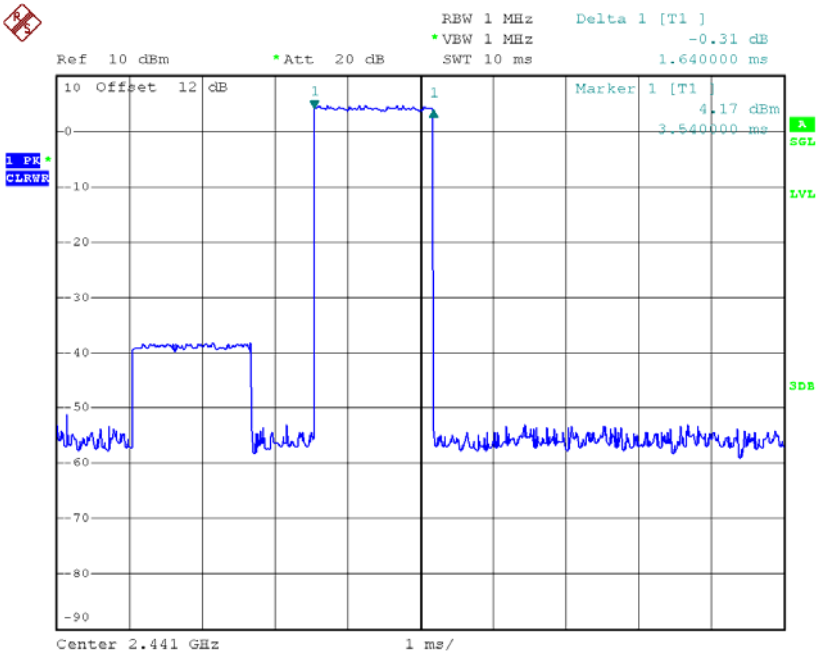
Date: 8.OCT.2015 10:42:54

CH39-DH1



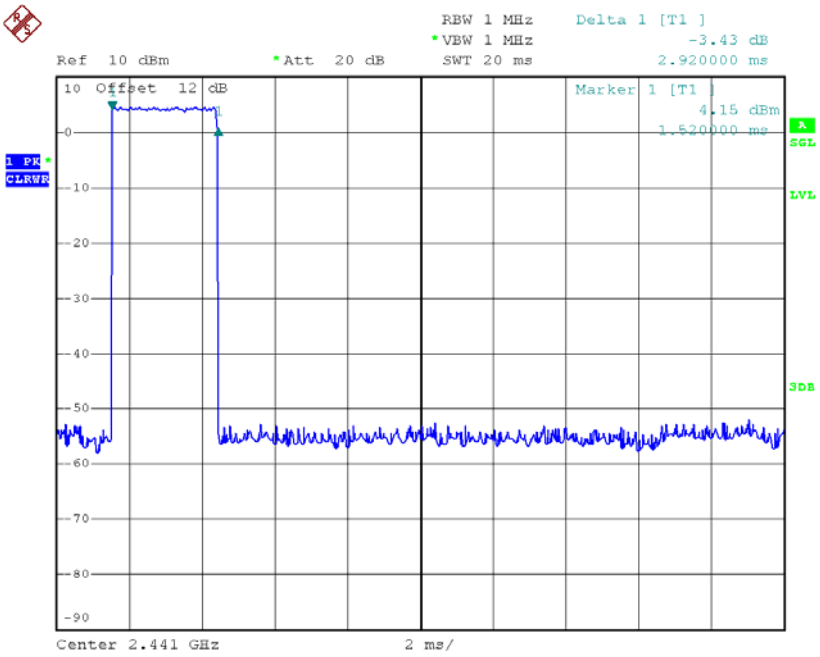
Date: 8.OCT.2015 10:35:26

CH39-DH3



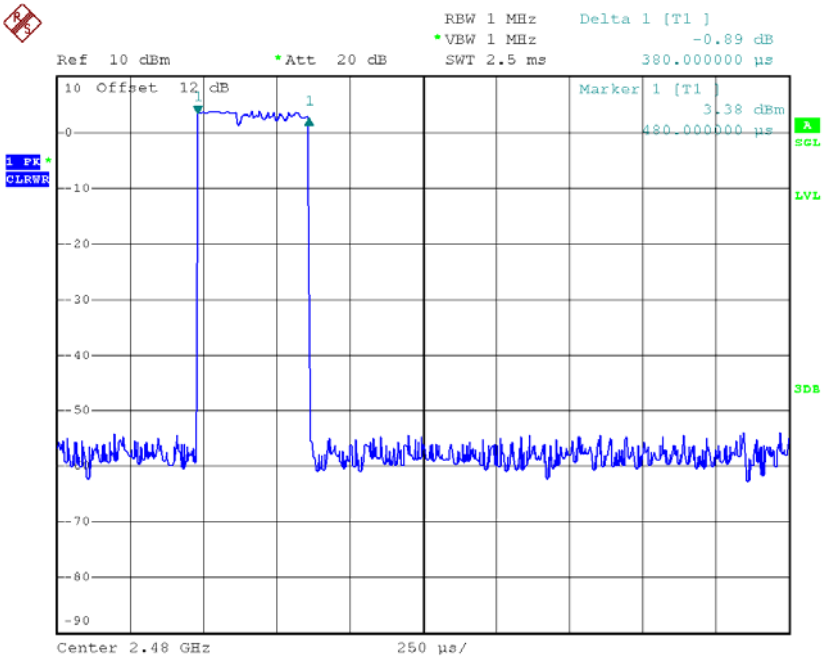
Date: 8.OCT.2015 10:42:26

CH39-DH5



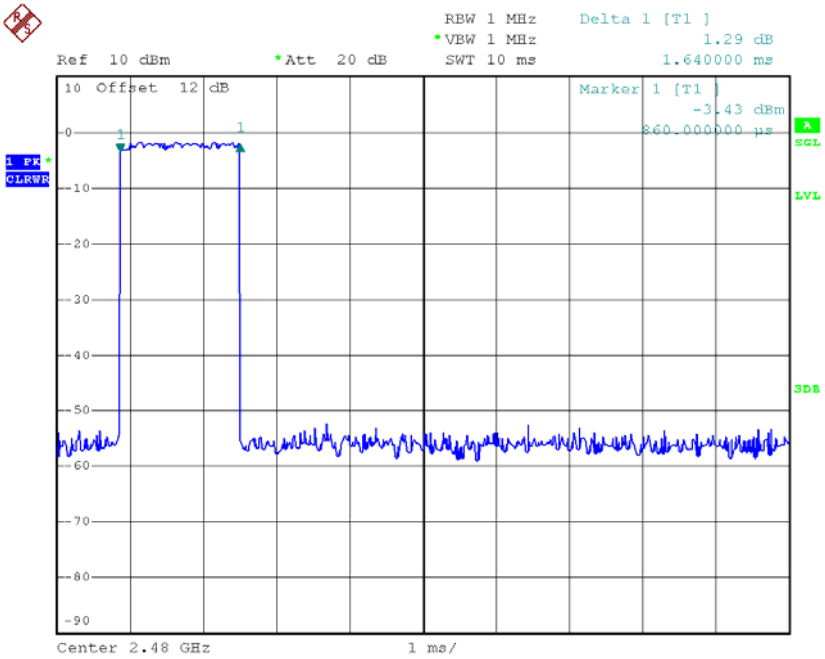
Date: 8.OCT.2015 10:43:00

CH78-DH1



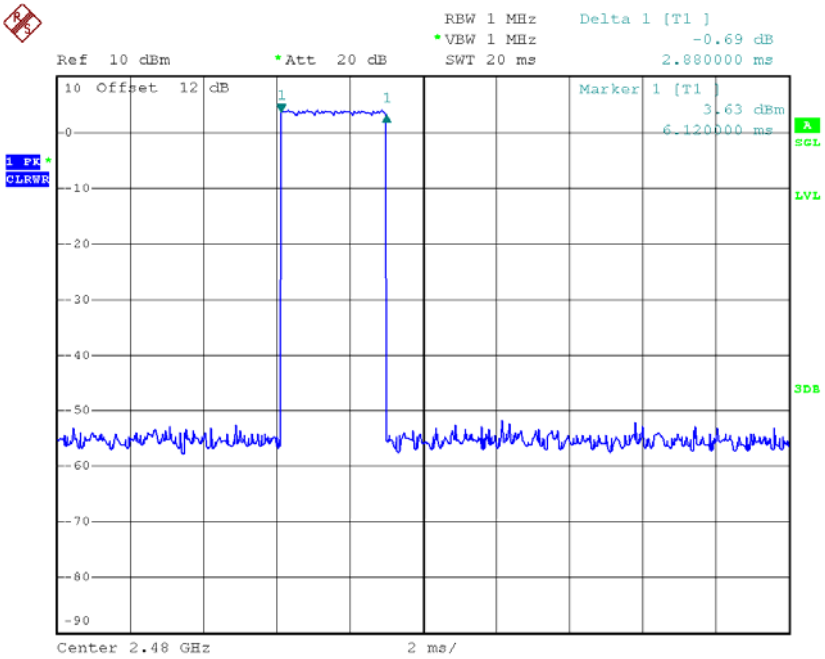
Date: 8.OCT.2015 10:35:33

CH78-DH3



Date: 8.OCT.2015 10:42:31

CH78-DH5



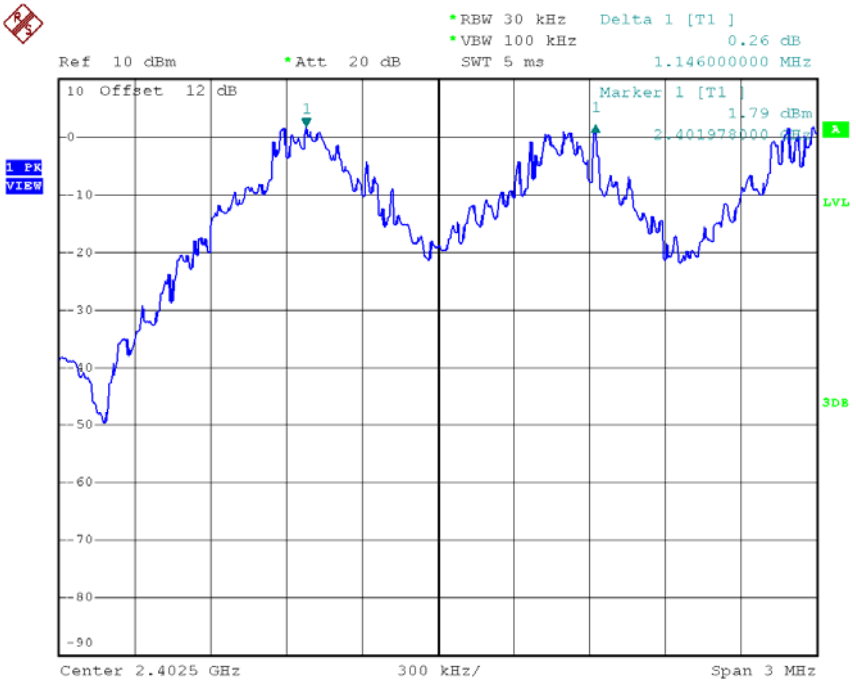
Date: 8.OCT.2015 10:43:04

ATTACHMENT G - HOPPING CHANNEL SEPARATION MEASUREMENT

Test Mode :	Hopping on _1Mbps

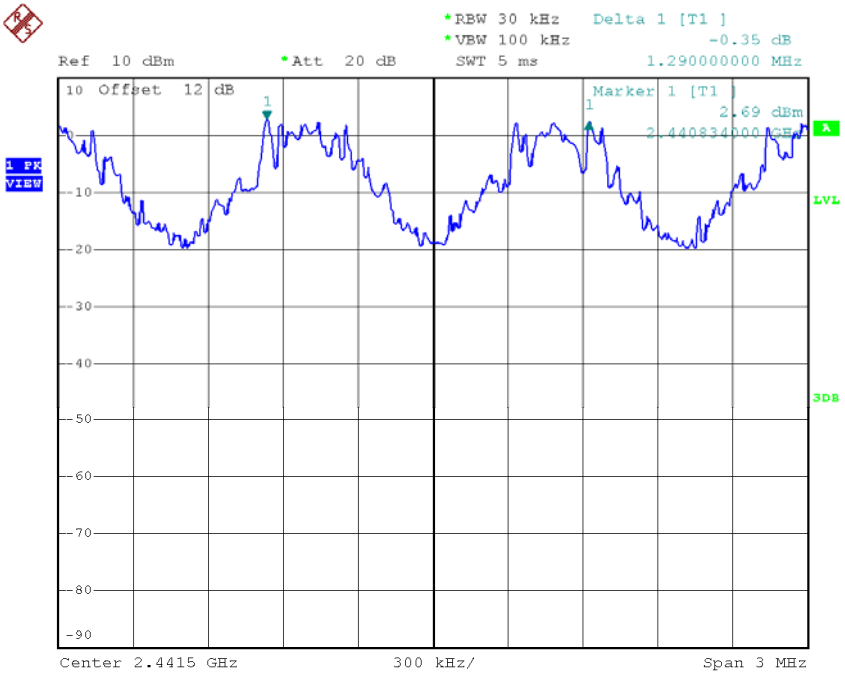
Frequency (MHz)	Channel Separation (MHz)	2/3 of 20dB Bandwidth (MHz)	Test Result
2402	1.146	0.623	Pass
2441	1.290	0.619	Pass
2480	1.002	0.625	Pass

CH00



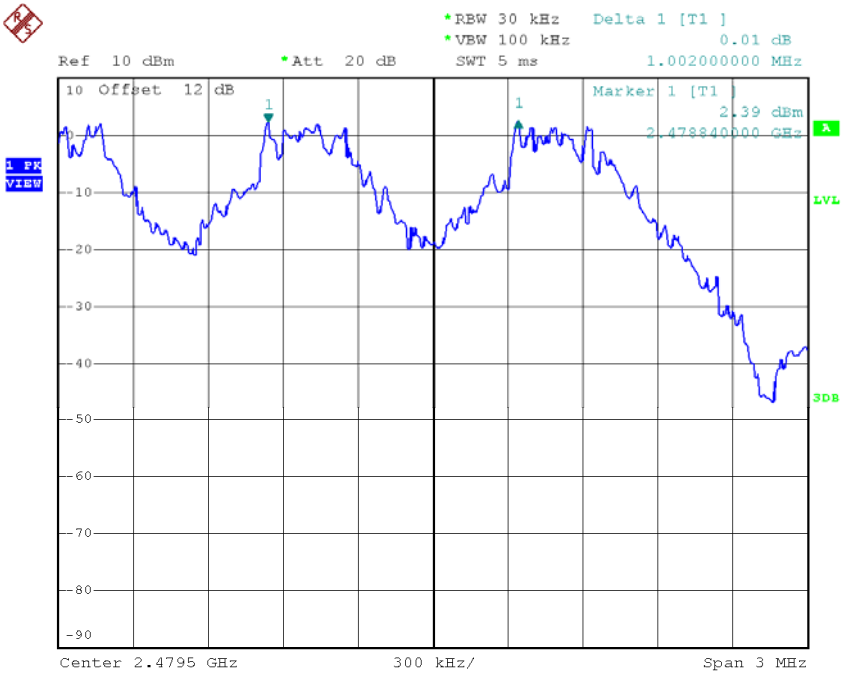
Date: 11.OCT.2015 08:53:01

CH39



Date: 11.OCT.2015 09:03:44

CH78

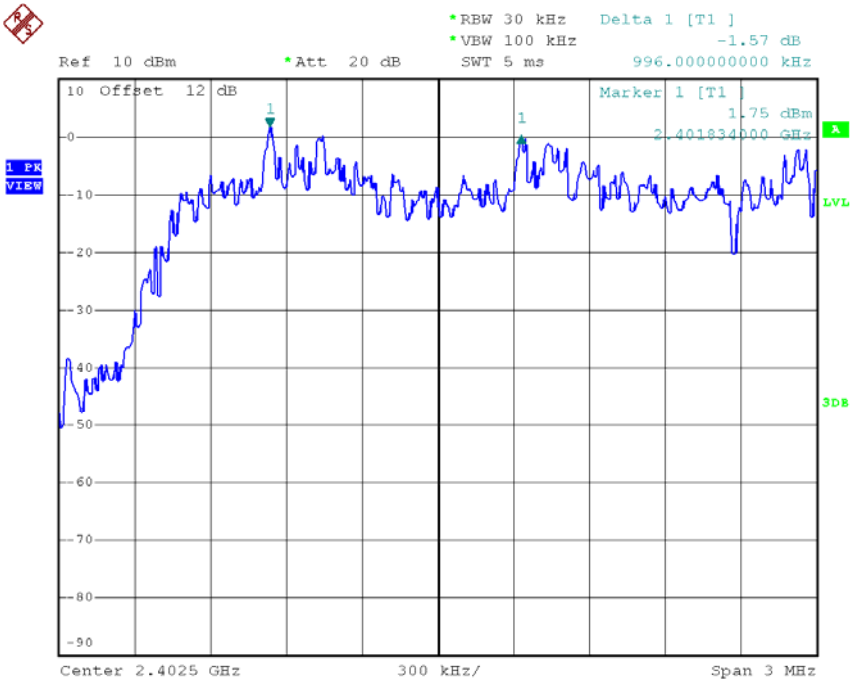


Date: 11.OCT.2015 09:05:18

Test Mode :	Hopping on _3Mbps

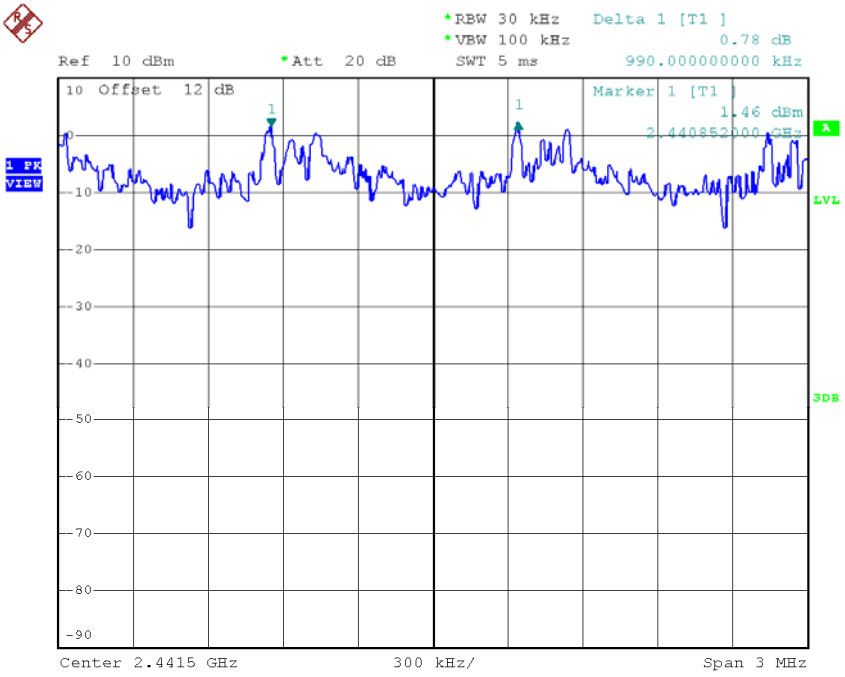
Frequency (MHz)	Channel Separation (MHz)	2/3 of 20dB Bandwidth (MHz)	Test Result
2402	0.996	0.817	Pass
2441	0.990	0.811	Pass
2480	1.004	0.815	Pass

CH00



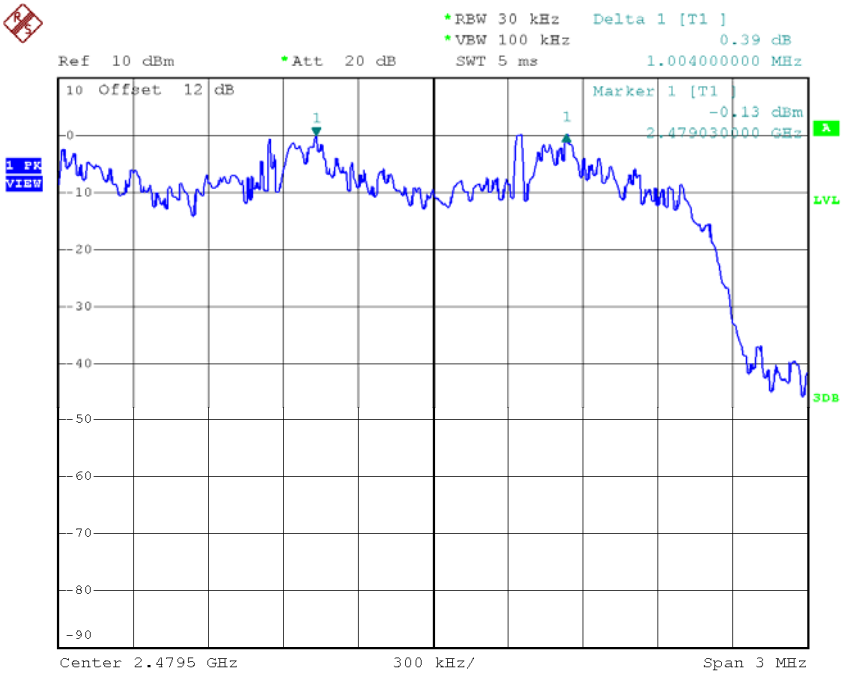
Date: 8.OCT.2015 10:36:39

CH39



Date: 8.OCT.2015 10:37:43

CH78



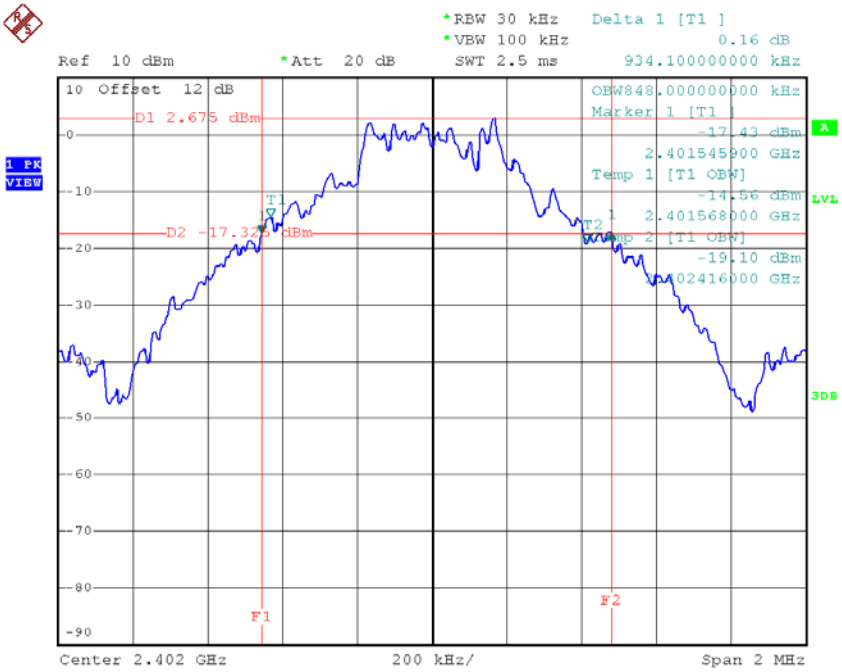
Date: 8.OCT.2015 10:38:50

ATTACHMENT H - BANDWIDTH

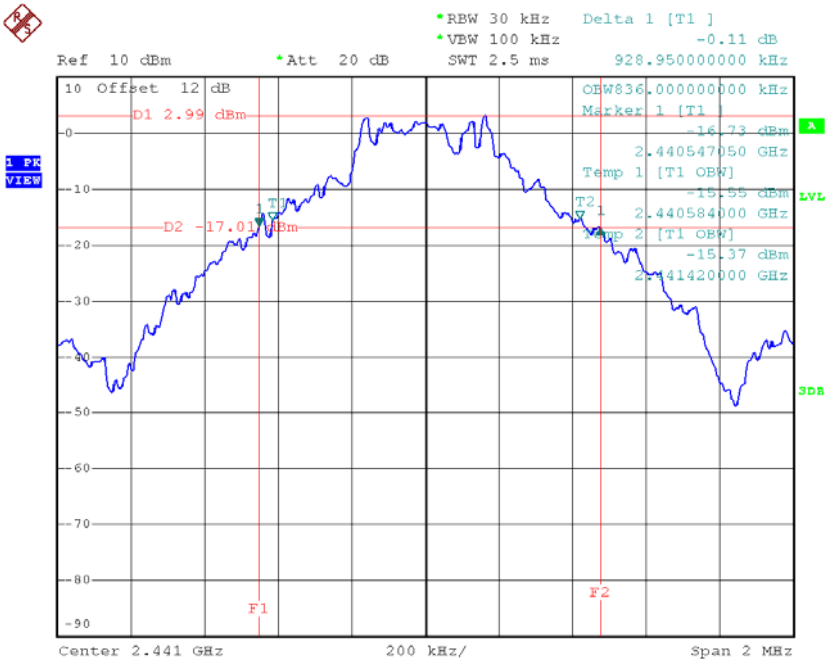
Test Mode :	TX Mode _1Mbps

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)	Test Result
2402	0.934	0.848	Pass
2441	0.929	0.836	Pass
2480	0.937	0.848	Pass

CH00

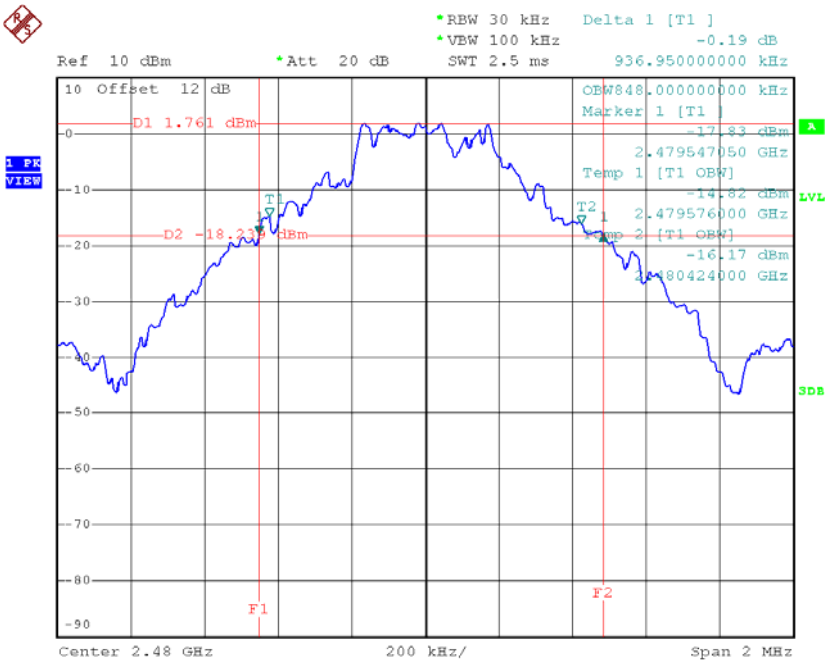


CH39



Date: 11.OCT.2015 08:49:39

CH78

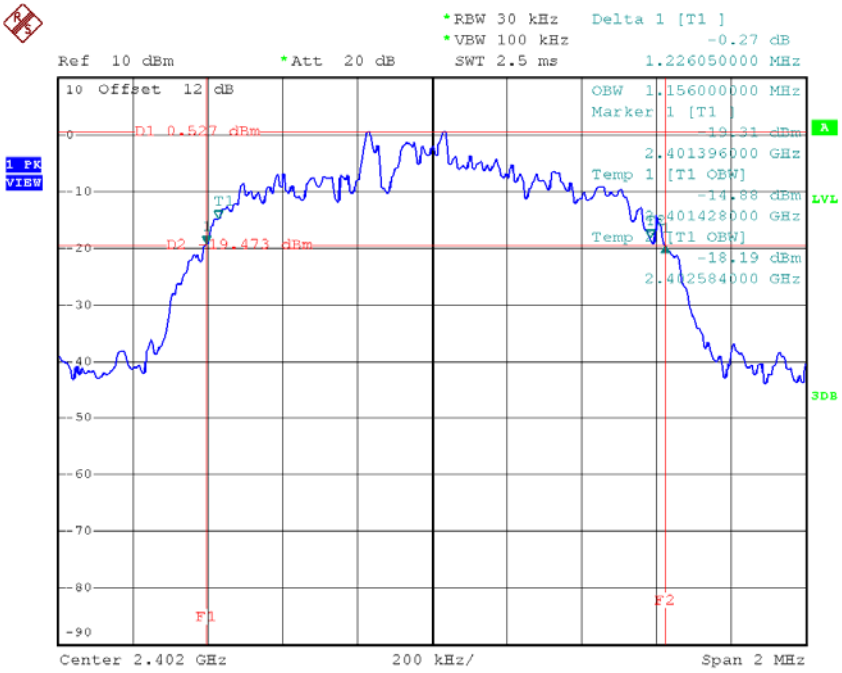


Date: 11.OCT.2015 08:50:23

Test Mode :	TX Mode _3Mbps

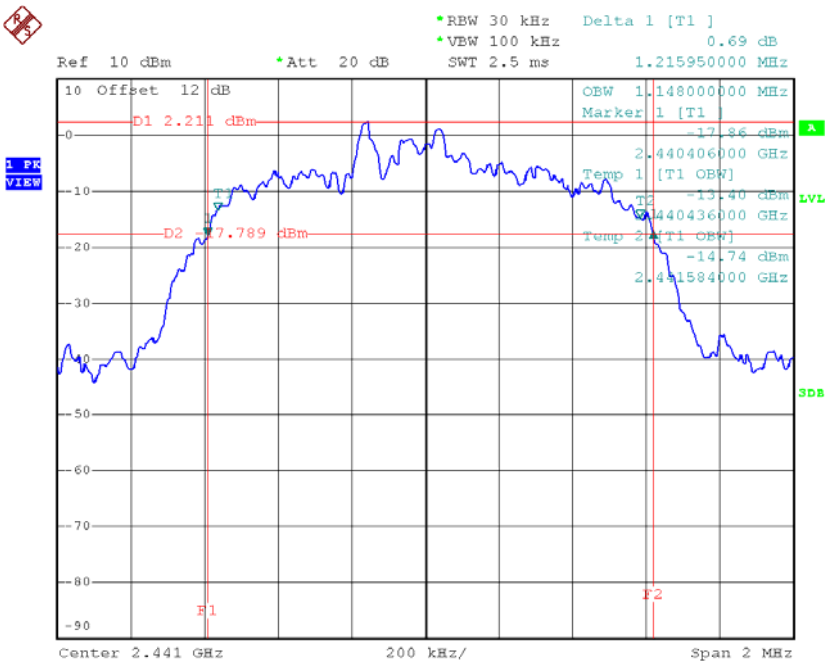
Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)	Test Result
2402	1.226	1.156	Pass
2441	1.216	1.148	Pass
2480	1.222	1.148	Pass

CH00



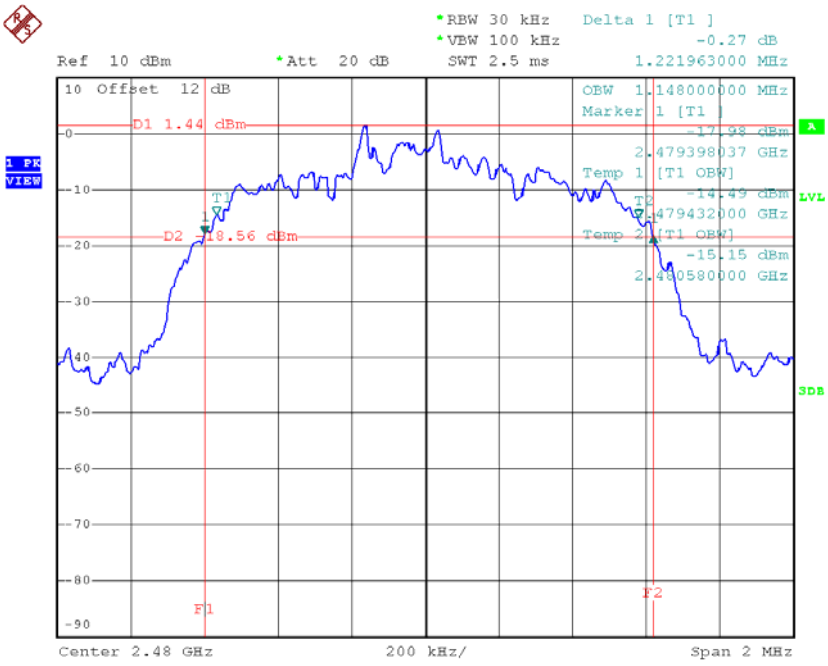
Date: 8.OCT.2015 10:31:08

CH39



Date: 8.OCT.2015 10:33:08

CH78



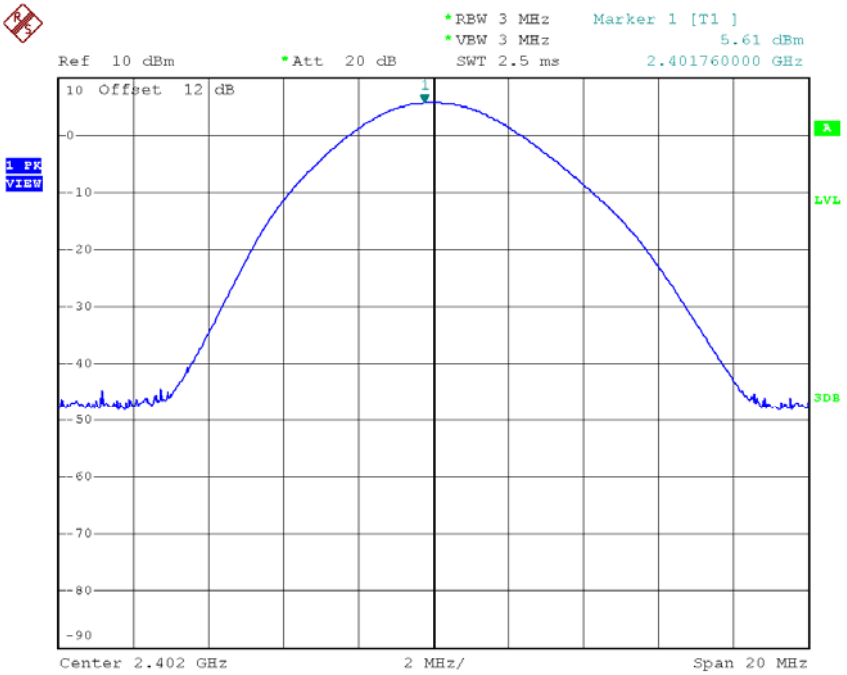
Date: 8.OCT.2015 10:34:02

ATTACHMENT I - PEAK OUTPUT POWER

Test Mode :	TX Mode _1Mbps

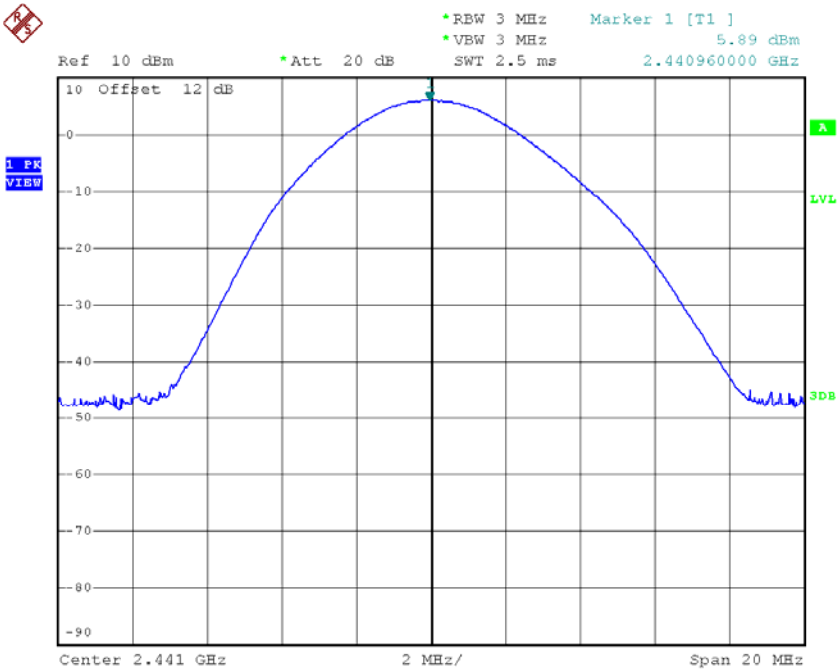
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	5.61	0.0036	30.00	1.00	Pass
2441	5.89	0.0039	30.00	1.00	Pass
2480	5.36	0.0034	30.00	1.00	Pass

CH00



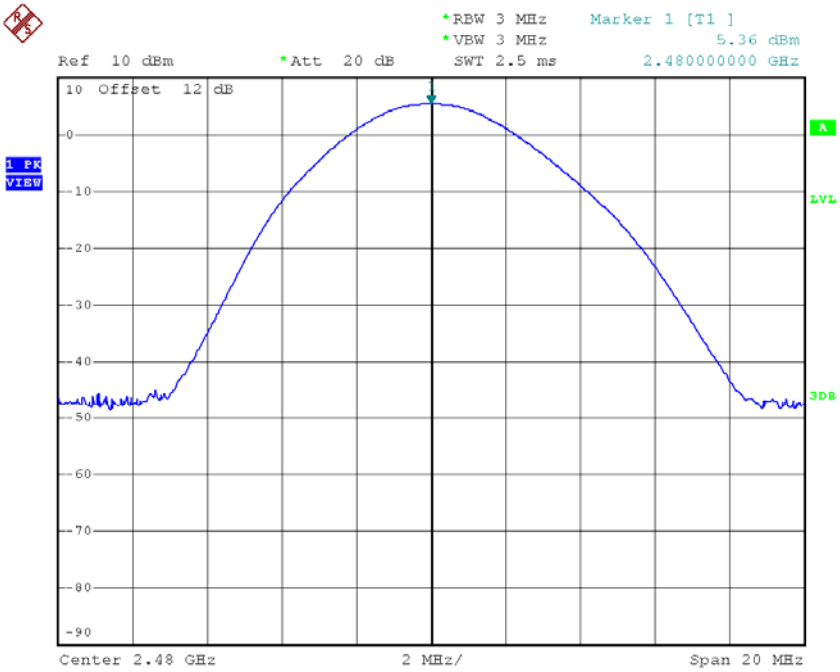
Date: 11.OCT.2015 09:08:20

CH39



Date: 11.OCT.2015 08:46:19

CH78

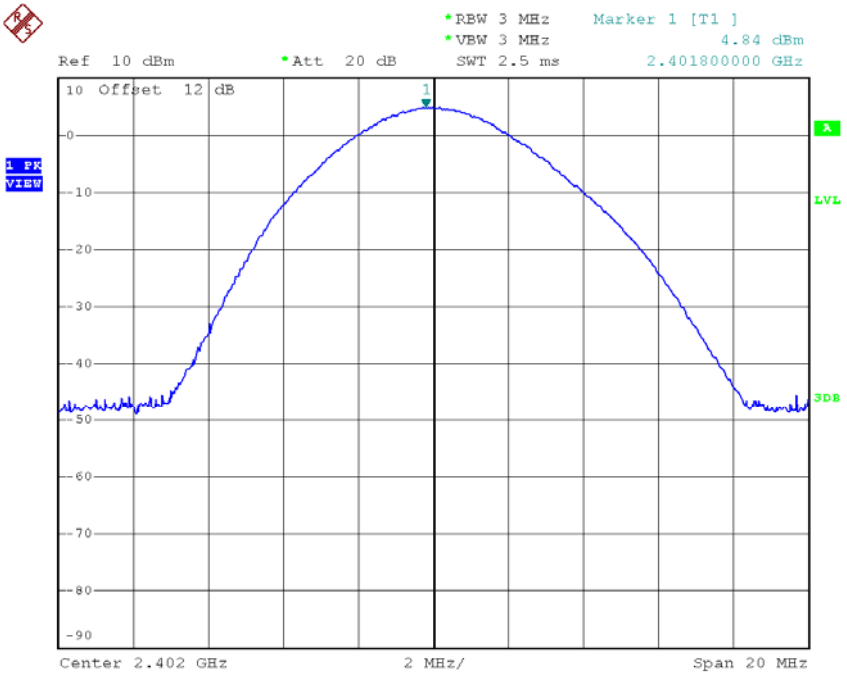


Date: 11.OCT.2015 08:46:46

Test Mode :	TX Mode _3Mbps

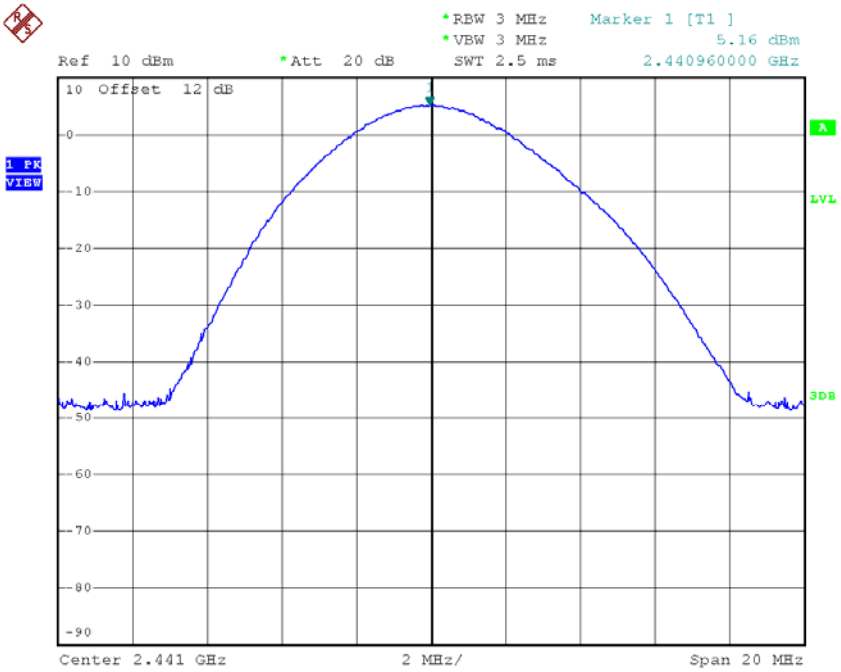
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	4.84	0.0030	30.00	1.00	Pass
2441	5.16	0.0033	30.00	1.00	Pass
2480	4.46	0.0028	30.00	1.00	Pass

CH00



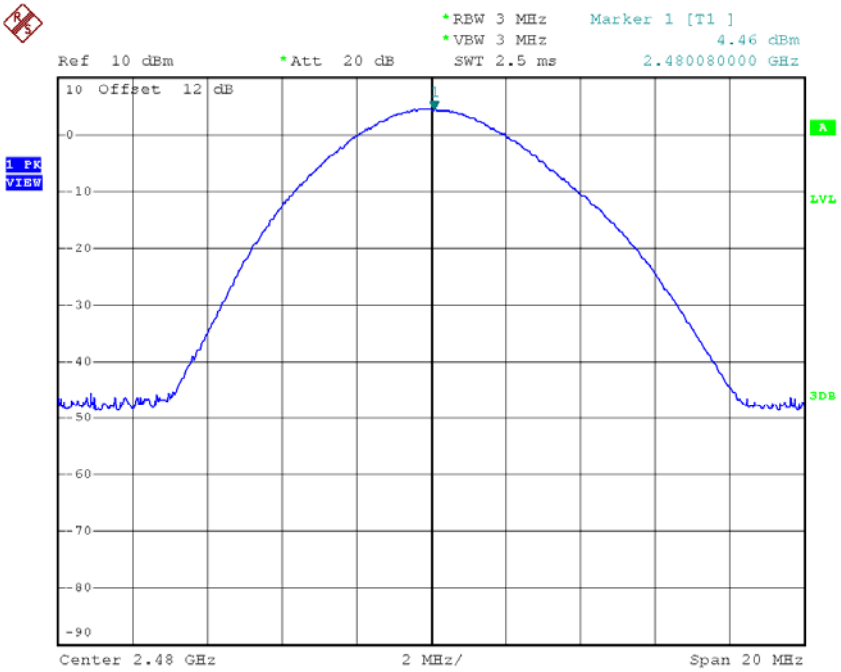
Date: 8.OCT.2015 10:28:39

CH39



Date: 8.OCT.2015 10:29:01

CH78

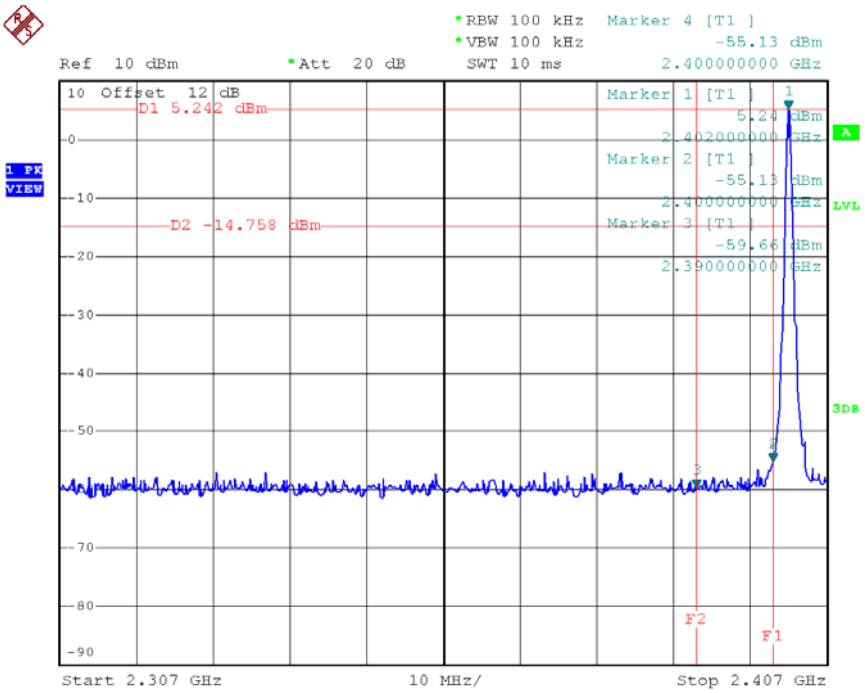


Date: 8.OCT.2015 10:29:22

ATTACHMENT J - ANTENNA CONDUCTED SPURIOUS EMISSION

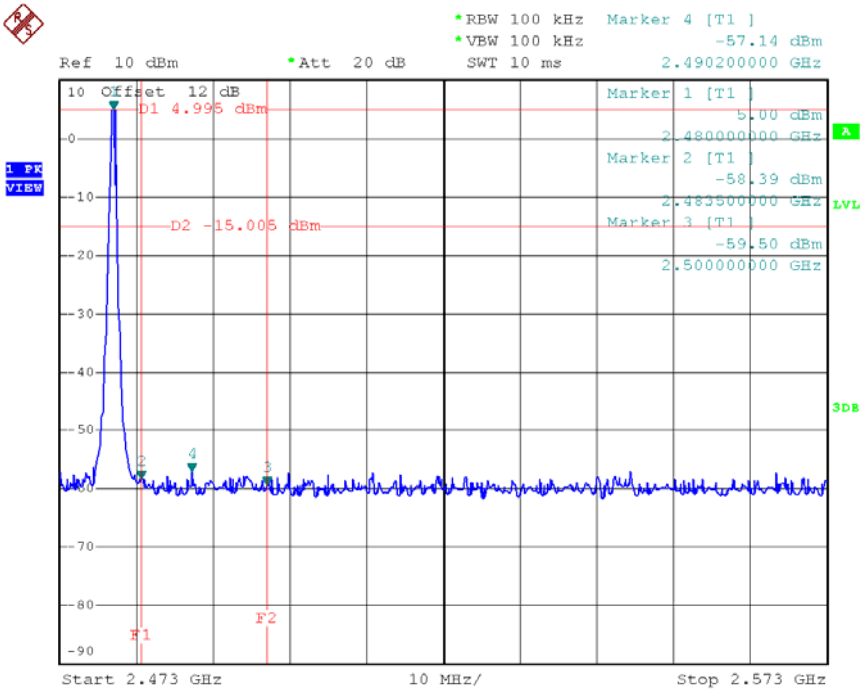
Test Mode :	TX Mode _1Mbps

CH00 (Lower)_1Mbps



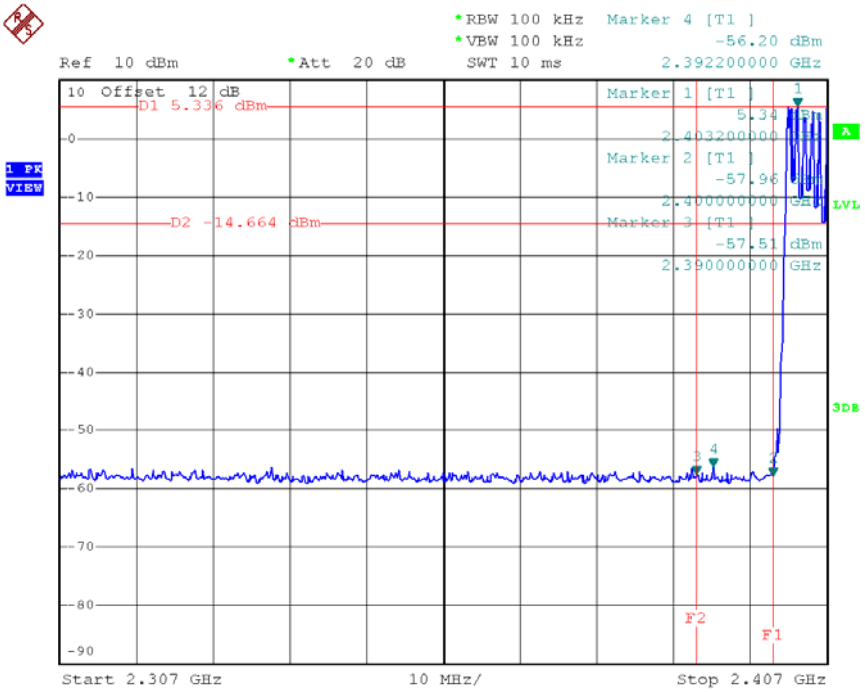
Date: 11.OCT.2015 08:47:46

CH78 (Upper) _1Mbps



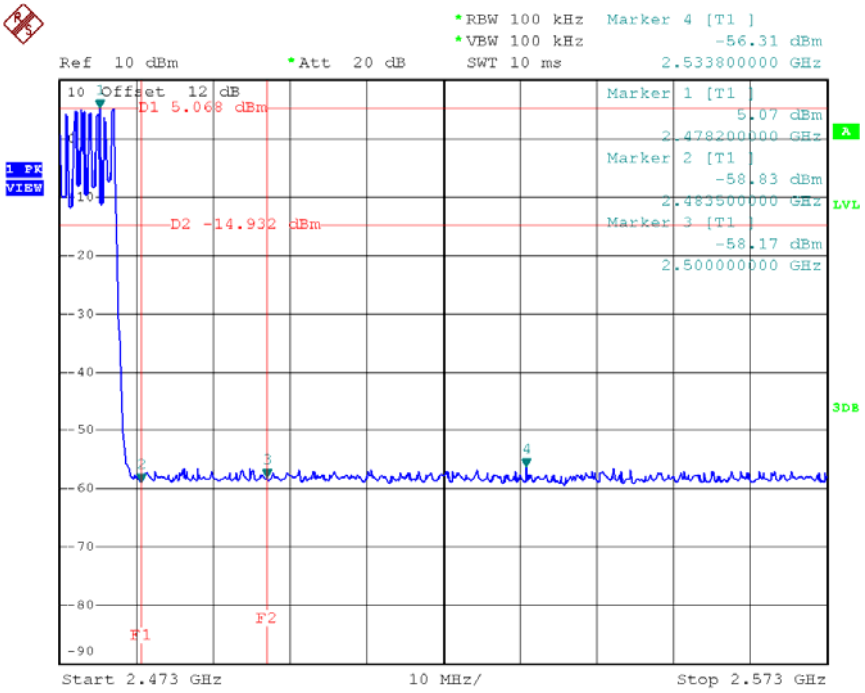
Date: 11.OCT.2015 08:49:57

CH00 Hopping on mode (Lower)_1Mbps



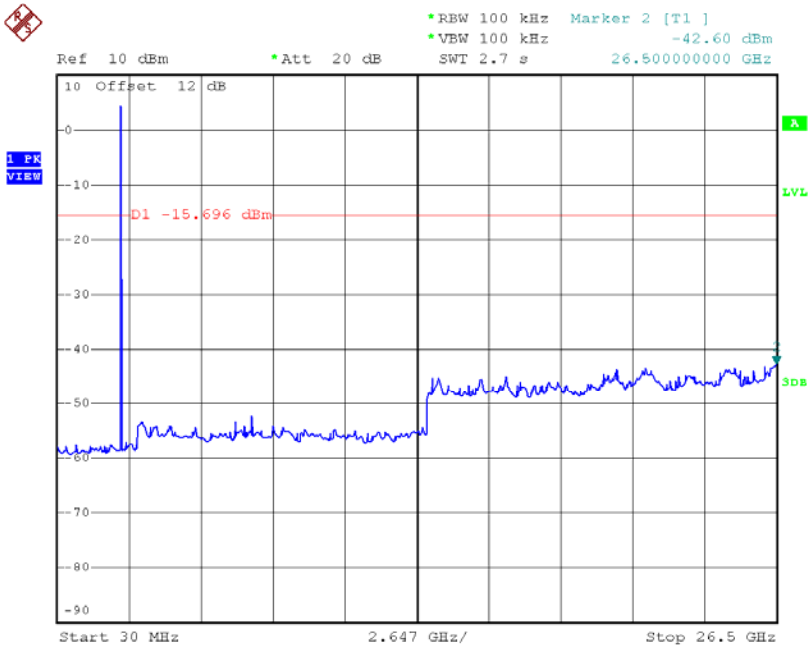
Date: 11.OCT.2015 09:06:24

CH78 Hopping on mode (Upper) _1Mbps



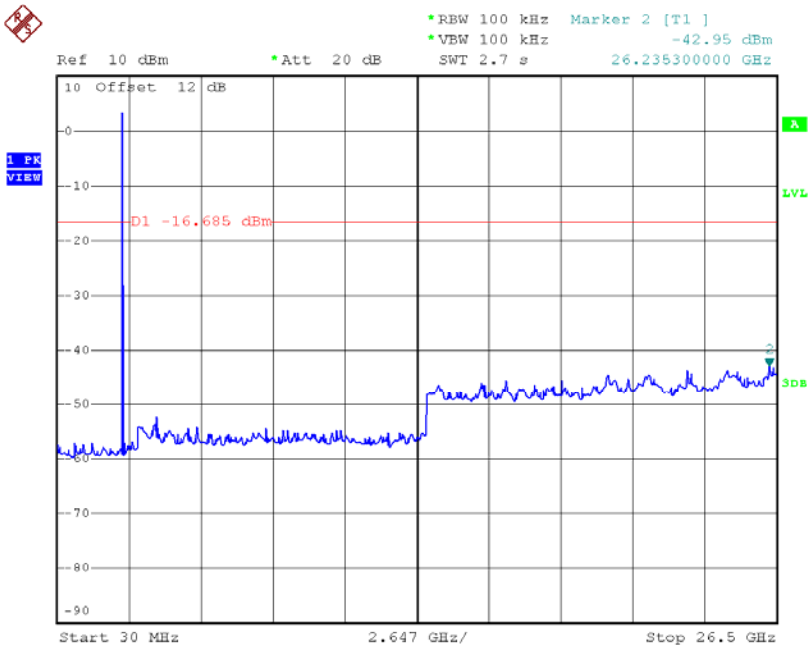
Date: 11.OCT.2015 09:07:28

CH00 (10 Harmonic of the frequency) _1Mbps



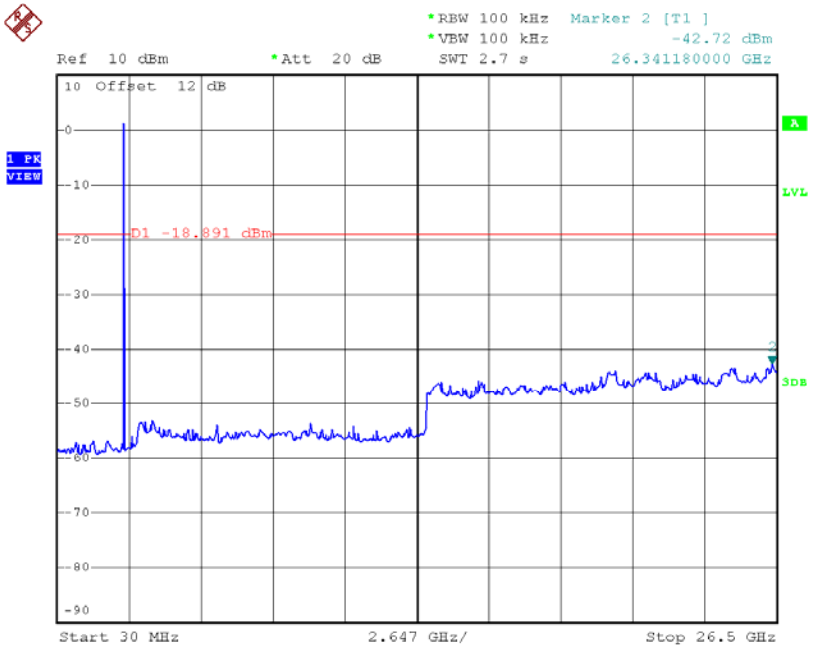
Date: 11.OCT.2015 08:48:43

CH39 (10 Harmonic of the frequency) _1Mbps



Date: 11.OCT.2015 08:49:13

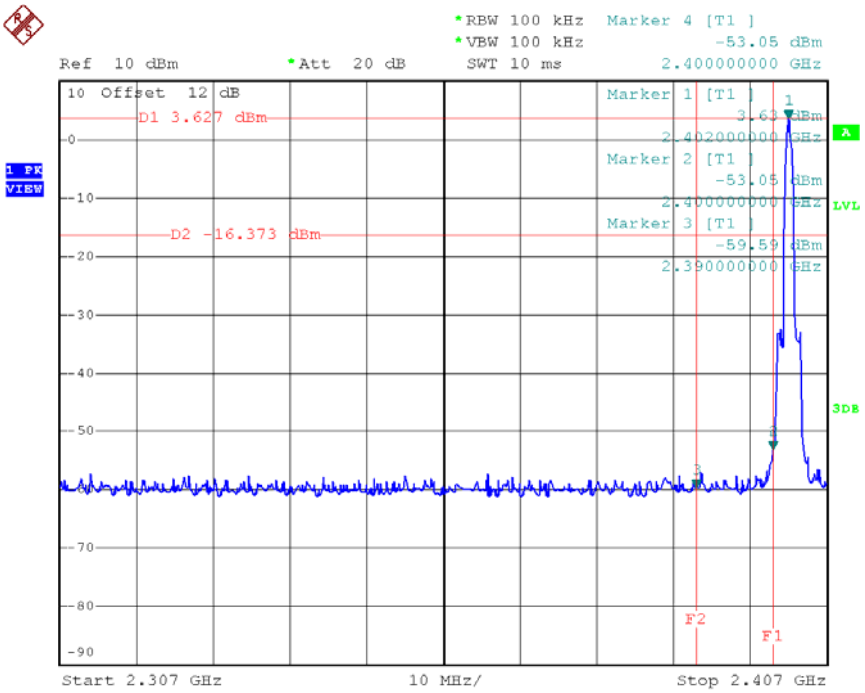
CH78 (10 Harmonic of the frequency) _1Mbps



Date: 11.OCT.2015 08:50:53

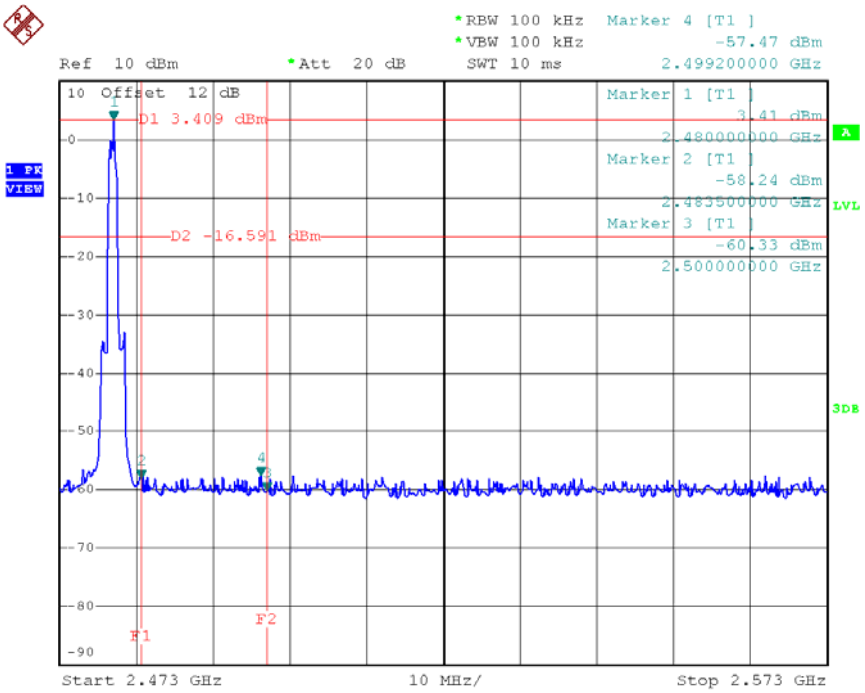
Test Mode :	TX Mode _3Mbps

CH00 (Lower) _3Mbps



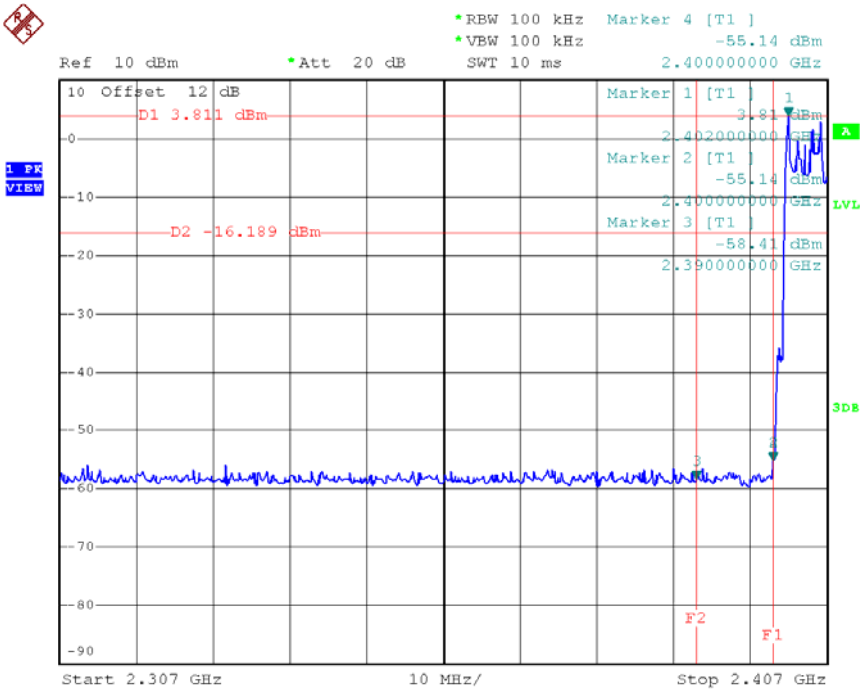
Date: 8.OCT.2015 10:30:47

CH78 (Upper) _3Mbps



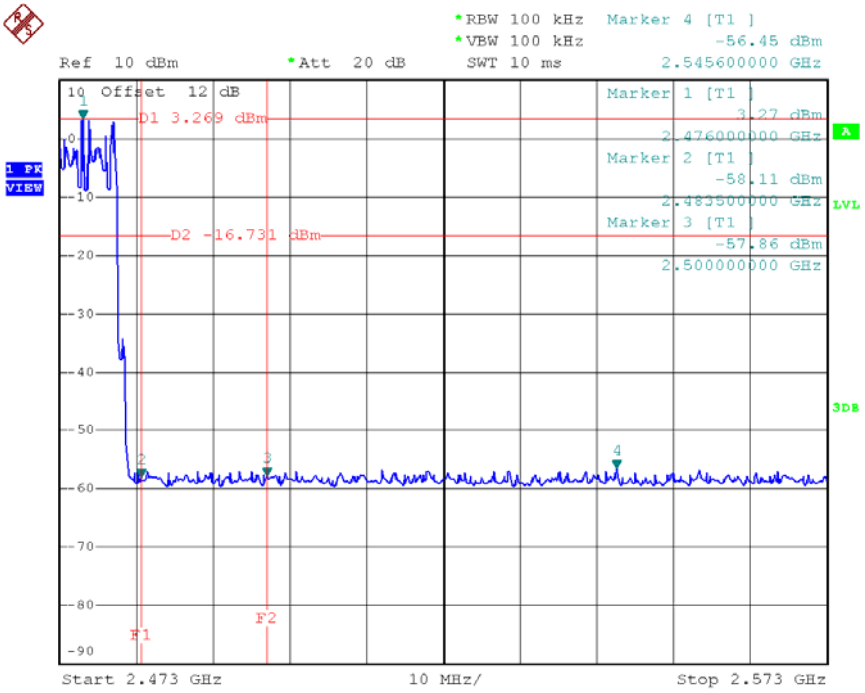
Date: 8.OCT.2015 10:33:41

CH00 Hopping on mode (Lower)_3Mbps



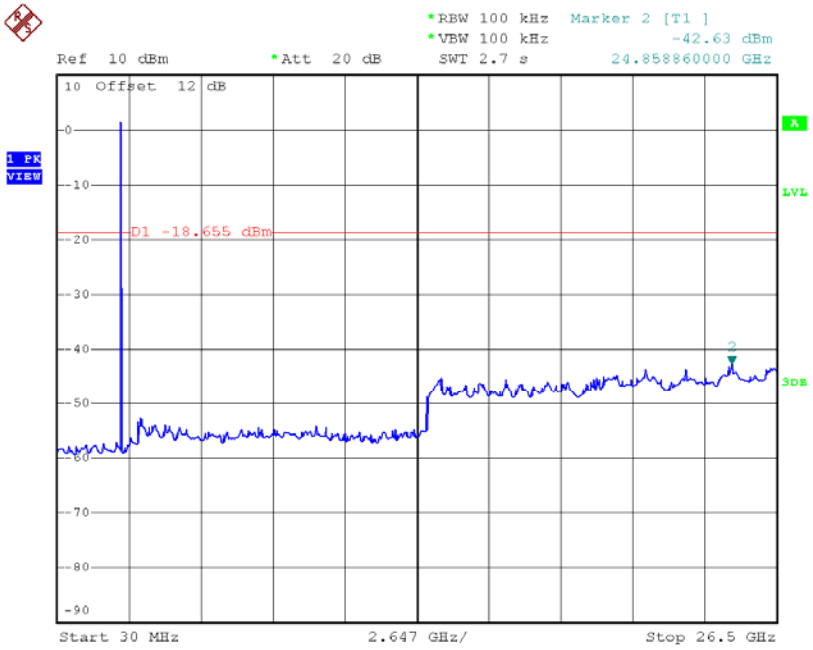
Date: 8.OCT.2015 10:41:13

CH78 Hopping on mode (Upper) _3Mbps



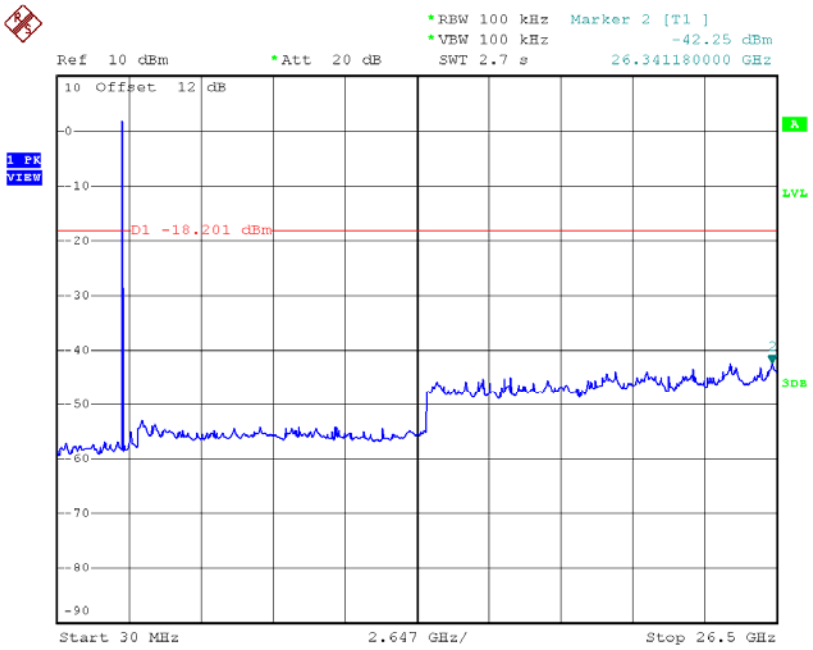
Date: 8.OCT.2015 10:41:48

CH00 (10 Harmonic of the frequency) _3Mbps



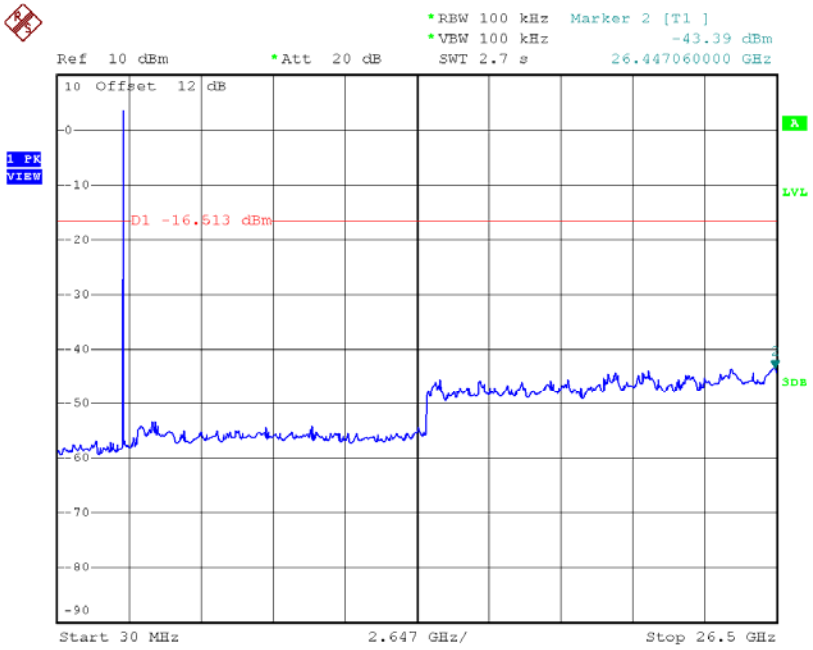
Date: 8.OCT.2015 10:31:42

CH39 (10 Harmonic of the frequency) _3Mbps



Date: 8.OCT.2015 10:32:46

CH78 (10 Harmonic of the frequency) _3Mbps



Date: 8.OCT.2015 10:34:27