FCC Radio Test Report

FCC ID: H8GRT62

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

Project No.	:	1601186
Equipment	:	2.4G RF Gaming Mouse
Model Name	:	RT62, RT62-1, RT62a, RT62ma
Applicant	:	A-FOUR TECH CO., LTD.
Address	:	6F., No.108, Min-Chuan Rd., Xindian Dist., New Taipei City, Taiwan R.O.C.

Date of Receipt	:	Jan. 28, 2016
Date of Test	:	Jan. 28, 2016 ~ Mar. 17, 2016
Issued Date	:	Mar. 22, 2016
Tested by	:	BTL Inc.

Testing Engineer : Rush Kao
(Rush Kao)

Technical Manager : Jeff Yang
(Jeff Yang)

Authorized Signatory : Andy Chiu
(Andy Chiu)

BTL INC.

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Declaration

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

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

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1601186	Original Issue.	Mar. 22, 2016

1. CERTIFICATION

Equipment	: 2.4G RF Gaming Mouse
Brand Name	: bloodY,   ,A4Tech
Model Name	: RT62, RT62-1, RT62a, RT62ma
Applicant	: A-FOUR TECH CO., LTD.
Date of Test	: Jan. 28, 2016 ~ Mar. 17, 2016
Standard(s)	: FCC Part15, Subpart C (15.249) / ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1601186) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15, Subpart C (15.249)			
Standard(s) Section	Test Item	Judgment	Remark
15.207(a)	Conducted Emission	PASS	
15.205	Restricted Band of Operation	PASS	
15.209 15.249(a)	Radiated Emissions	PASS	
15.215(c)	20dB Bandwidth Test	PASS	

NOTE:

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

2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C05: (VCCI RN: C-4742; FCC RN:949005; FCC DN:TW1082)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Below 1 GHz):

CB11: (VCCI RN: R-4260; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Above 1 GHz):

CB11: (VCCI RN: G-868; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty is not specified by FCC rules and Canada Industury for reference only.

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**%.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U,(dB)
C05	CISPR	150 kHz ~ 30MHz	2.04

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U,(dB)
CB11 (3m)	CISPR	9kHz ~ 150kHz	4.00
		150kHz ~ 30MHz	4.00

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
CB11 (3m)	CISPR	30MHz ~ 200MHz	V	3.06
		30MHz ~ 200MHz	H	2.58
		200MHz ~ 1,000MHz	V	3.50
		200MHz ~ 1,000MHz	H	3.10

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
CB11 (3m)	CISPR	1GHz ~ 6GHz	V	4.14
		1GHz ~ 6GHz	H	4.14
		6GHz ~ 18GHz	V	5.34
		6GHz ~ 18GHz	H	5.34

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

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR}, as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz : 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR}.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	2.4G RF Gaming Mouse	
Brand Name	bloodY,   ,A4Tech	
Model Name	RT62, RT62-1, RT62a, RT62ma	
Model Difference	Only differ in model name.	
Product Description	Operation Frequency	2404.5~2477.5 MHz
	Modulation Technology	GFSK
	Bit Rate of Transmitter	2 Mbps
	Field Strength	89.02dBuV/m (AVG Max) 102.84dBuV/m (Peak Max)
Power Source	#1 Supplied from battery. #2 Supplied from USB DC Source.	
Power Rating	#1 DC 3.7V/25mA(Capacity:600mAh) #2 DC 5V/330mA	

Note:

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

Channel	Frequency (MHz)		Channel	Frequency (MHz)	
	TX	RX		TX	RX
01	2404.5	2402.5	13	2440	2438
02	2406.5	2404.5	14	2442.5	2440.5
03	2409	2407	15	2444.5	2442.5
04	2411	2409	16	2450.5	2448.5
05	2413	2411	17	2453	2451
06	2419	2417	18	2455	2453
07	2421.5	2419.5	19	2457.5	2455.5
08	2423.5	2421.5	20	2467.5	2465.5
09	2426	2424	21	2472.5	2470.5
10	2428	2426	22	2475.5	2473.5
11	2436	2434	23	2477.5	2475.5
12	2438	2436			

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	1.31

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

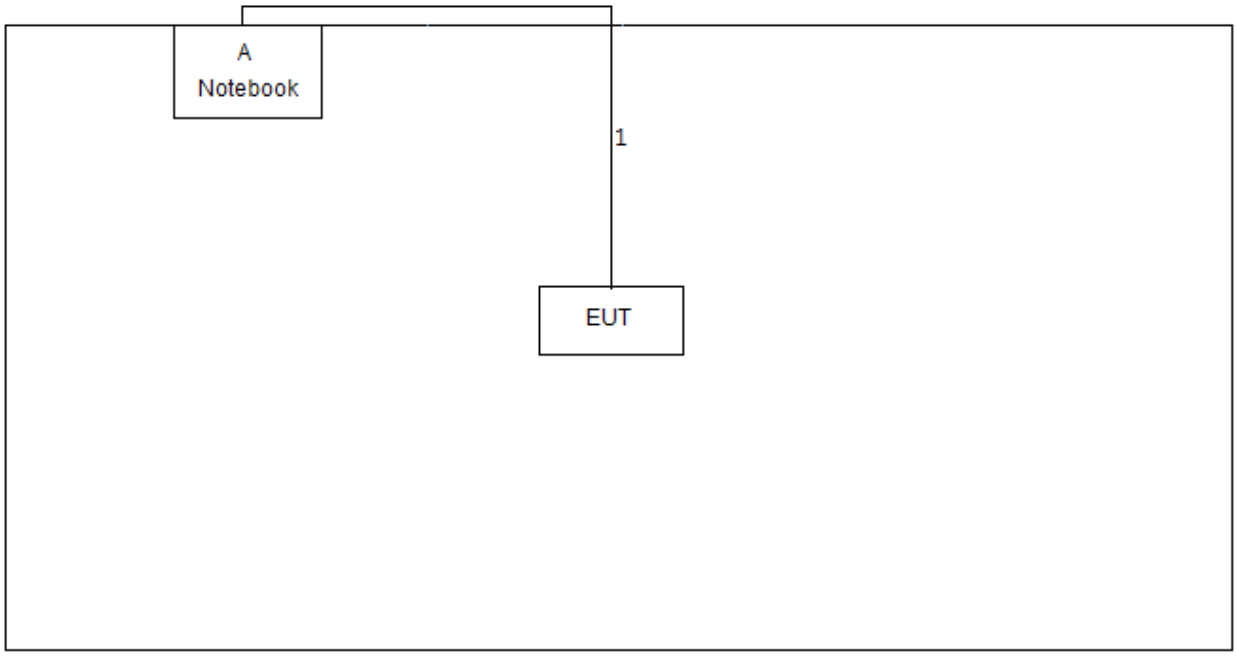
The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode	Description
Mode 1	TX Mode

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

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

3.4 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.
A	Notebook PC	ASUS	X450J	DOC	E8N0WU31377235F

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.82m	USB Cable

Note:
(1) The support equipment was authorized by Declaration of Conformity (DOC).

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 - Amplifier Gain(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

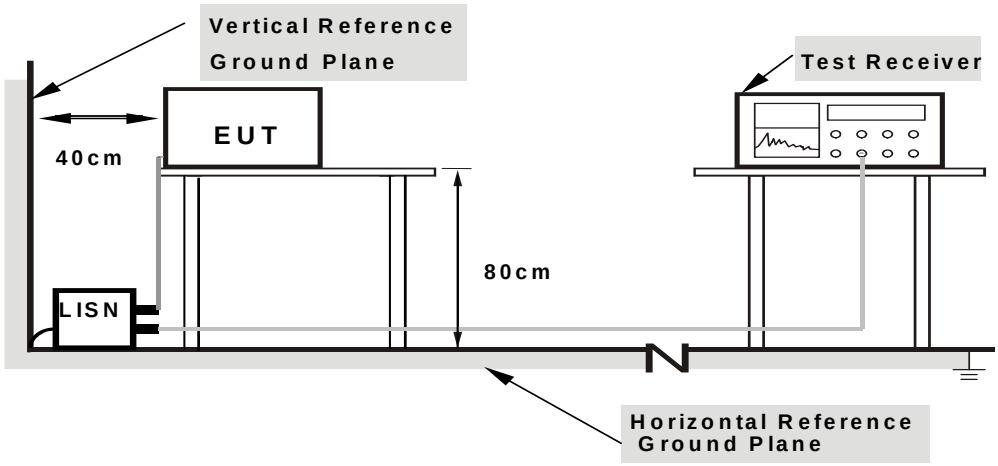
4.1.2 TEST PROCEDURE

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: 54%
Test Voltage: AC 120V/60Hz

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform.In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
(2) Measuring frequency range from 150KHz to 30MHz.
(3) " N/A" denotes test is not applicable to this device.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (FCC 15.209)

Frequencies (MHz)	Field Strength (micorvolts/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

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section15.209(a) limit in the table below has to be followed.

Note:

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

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

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.209)

FREQUENCY (MHz)	(dBuV/m) (at 3m)	
	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).

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC Part 15.249)

FCC Part15 (15.249) , Subpart C	
Limit	Frequency Range(MHz)
Field strength of fundamental 50000 μV/m (94 dBμV/m) @ 3 m	2400-2483.5
Field strength of harmonics 500 μV/m (54 dBμV/m) @ 3 m	Above 2483.5

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2.2 TEST PROCEDURE

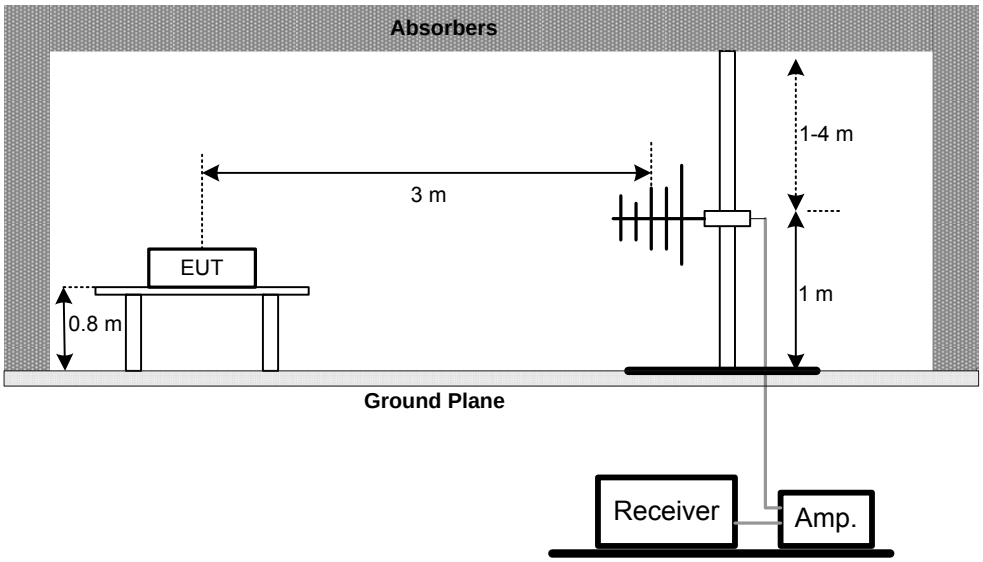
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

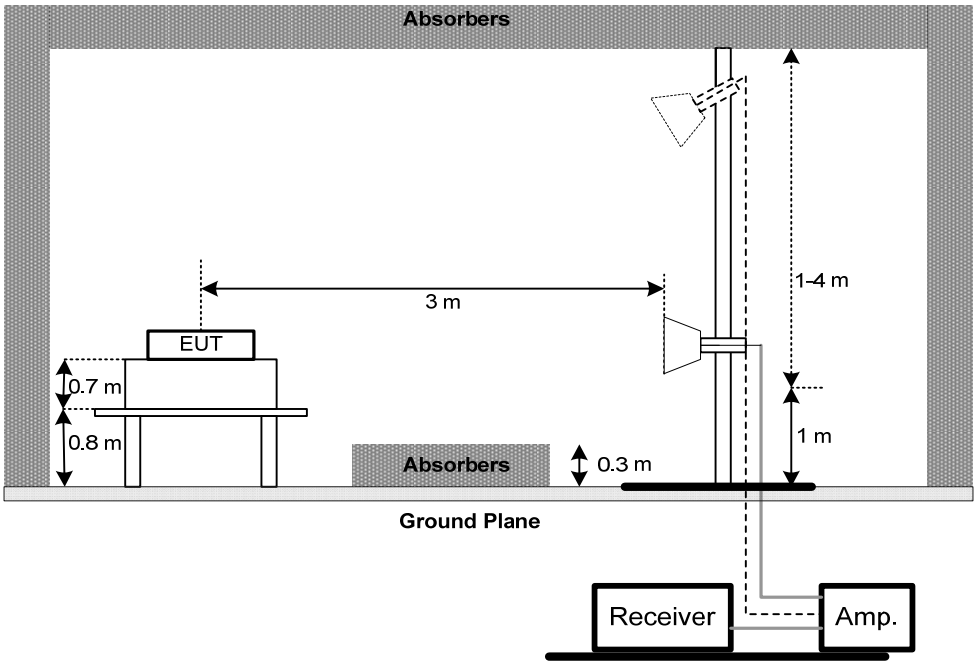
No deviation

4.2.4 TEST SETUP

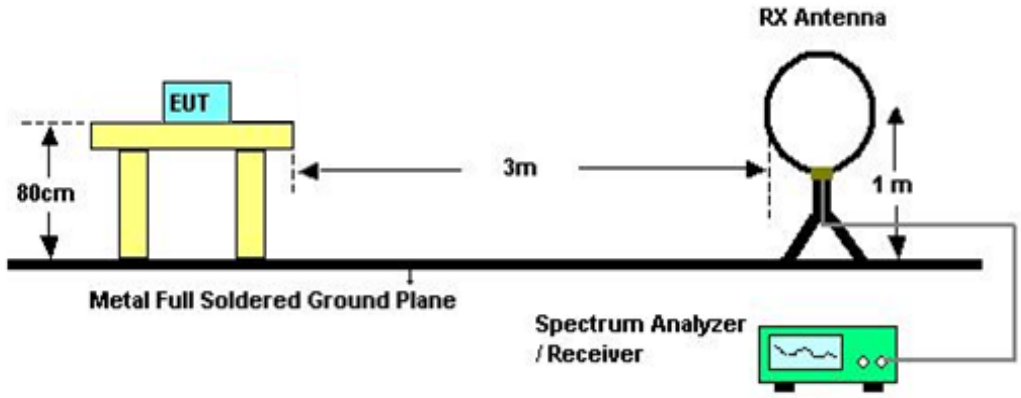
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(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: 45%
Test Voltage: DC 3.7V

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 1000MHZ)

Please refer to the Attachment C.

Remark:

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

4.2.9TEST 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. BANDWIDTH TEST

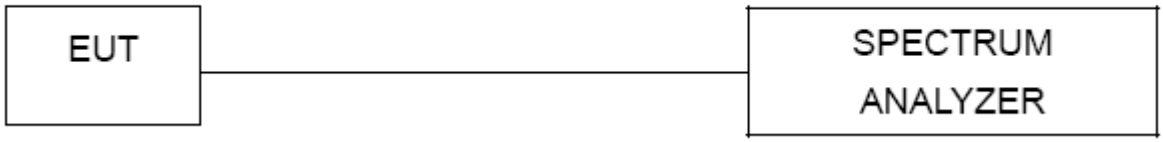
5.1 TEST PROCEDURE

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.

5.2 DEVIATION FROM STANDARD

No deviation.

5.3 TEST SETUP



5.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.5 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 3.7V

5.6 TEST RESULTS

Please refer to the Attachment E.

6. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Jan. 26, 2017
2	Test Cable	TIMES	CFD300-NL	C02	Jun. 14, 2016
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 09, 2016
4	Power Dividers	HP	11636A	8103	May 04, 2016
5	Measurement Software	EZ	EZ_EMC (Version NB-03A)	N/A	N/A

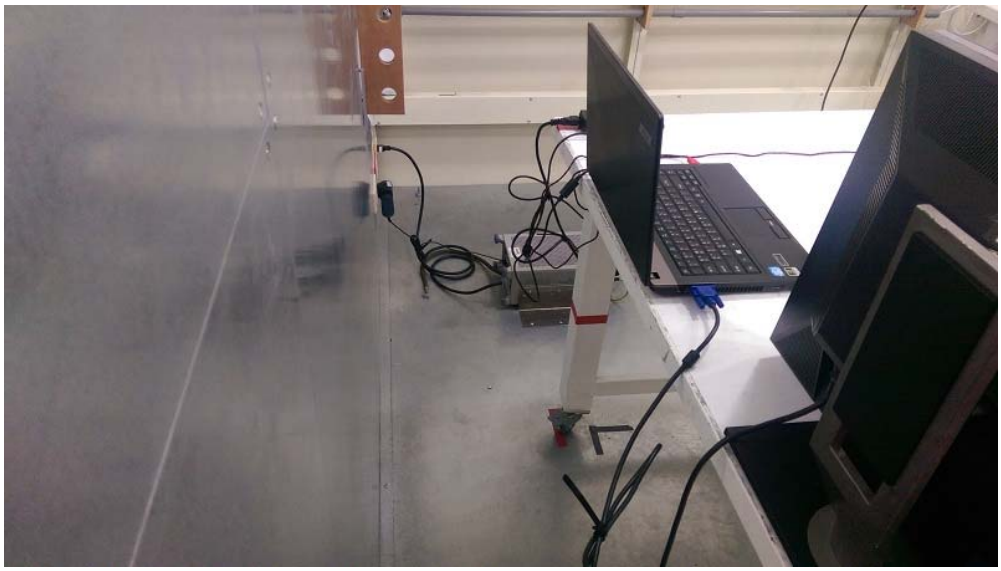
Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jul. 30, 2016
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 20, 2016
3	Horn Antenna	Schwarzbeck	BBHA 9120	9120D-1333	May 20, 2016
4	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 16, 2016
5	Pre-Amplifier	Agilent	8449B	3008A01714	Apr. 14, 2016
6	Test Cable	LMR	LMR-400	01(10M)	May 12, 2016
7	Test Cable	LMR	LMR-400	01(3M)	May 12, 2016
8	Test Cable	Harbour industries	27478LL142	1M	May 13, 2016
9	Test Cable	Harbour industries	27478LL142	3M	May 13, 2016
10	Test Cable	AISI	S104-SMAP-1	8M	May 13, 2016
11	Spectrum Analyzer	Agilent	N9020A	MY51160196	Aug. 02, 2016
12	EMI Test Receiver	R&S	ESCI	100080	May 13, 2016
13	Measurement Software	Farad	EZ_EMC (Version NB-03A)	N/A	N/A
14	Loop Ant	EMCO	6502	42960	Nov.15.2016

Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 17, 2017

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

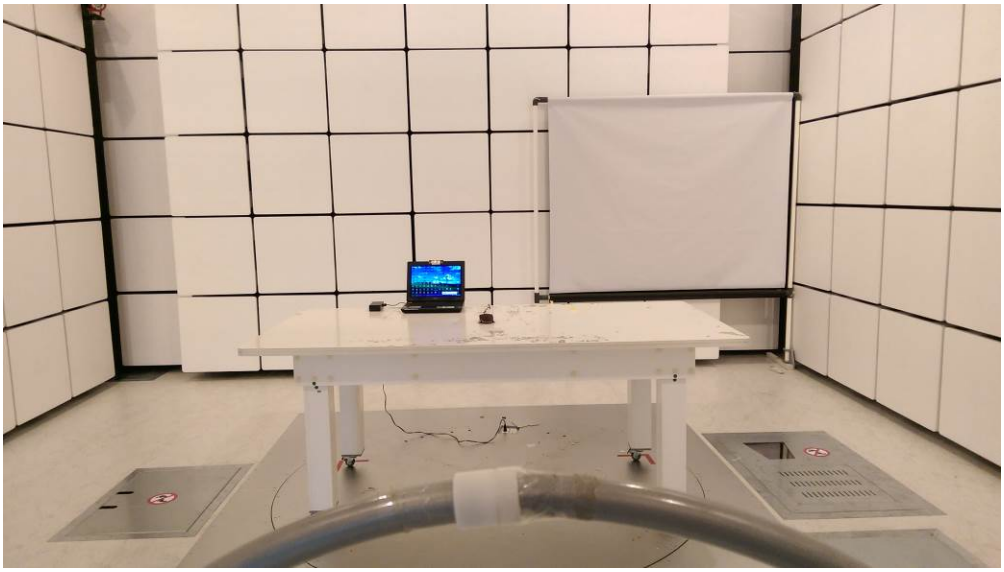
7. EUT TEST PHOTO

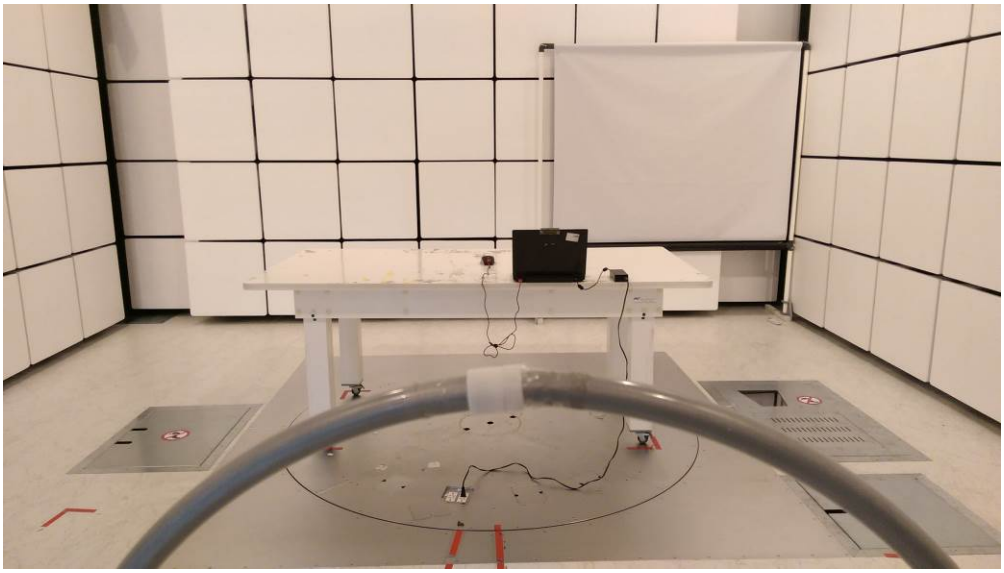
Conducted Measurement Photos



Radiated Measurement Photos

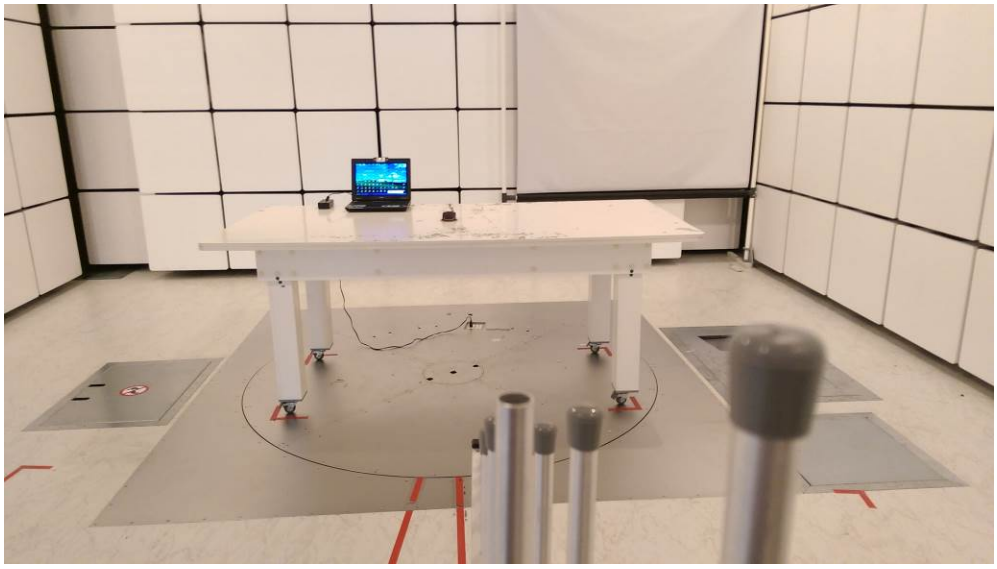
9K-30MHz

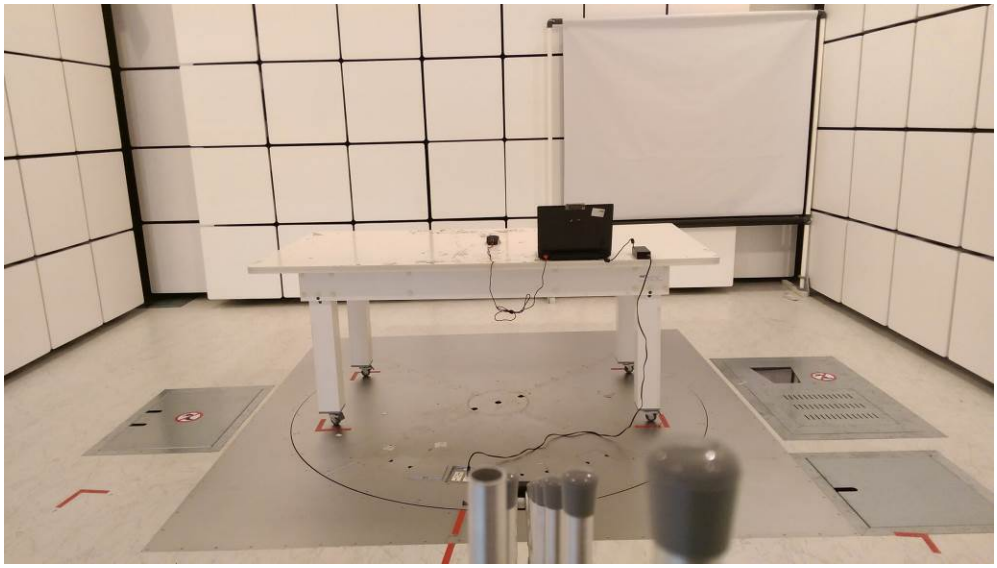




Radiated Measurement Photos

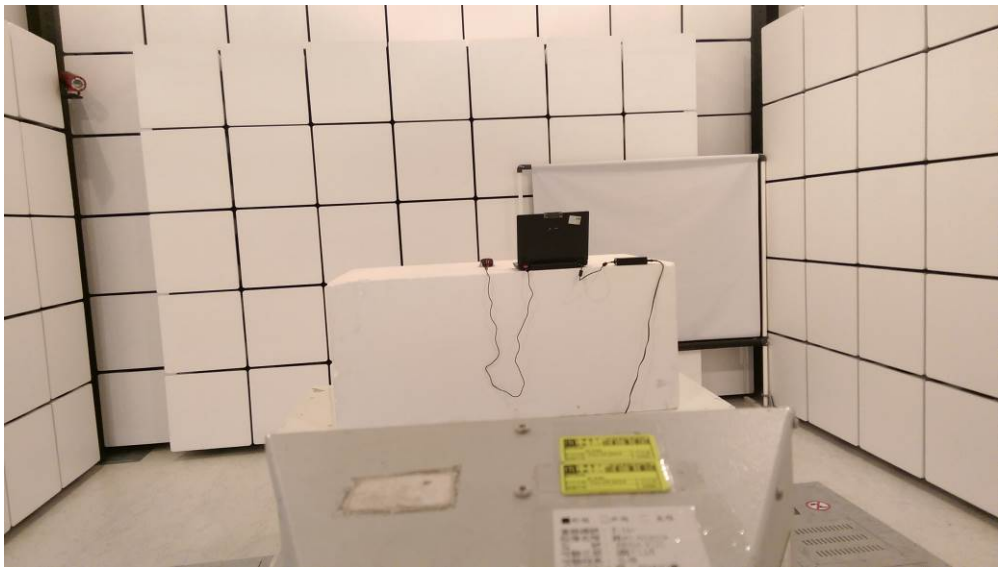
30MHz-1G





Radiated Measurement Photos

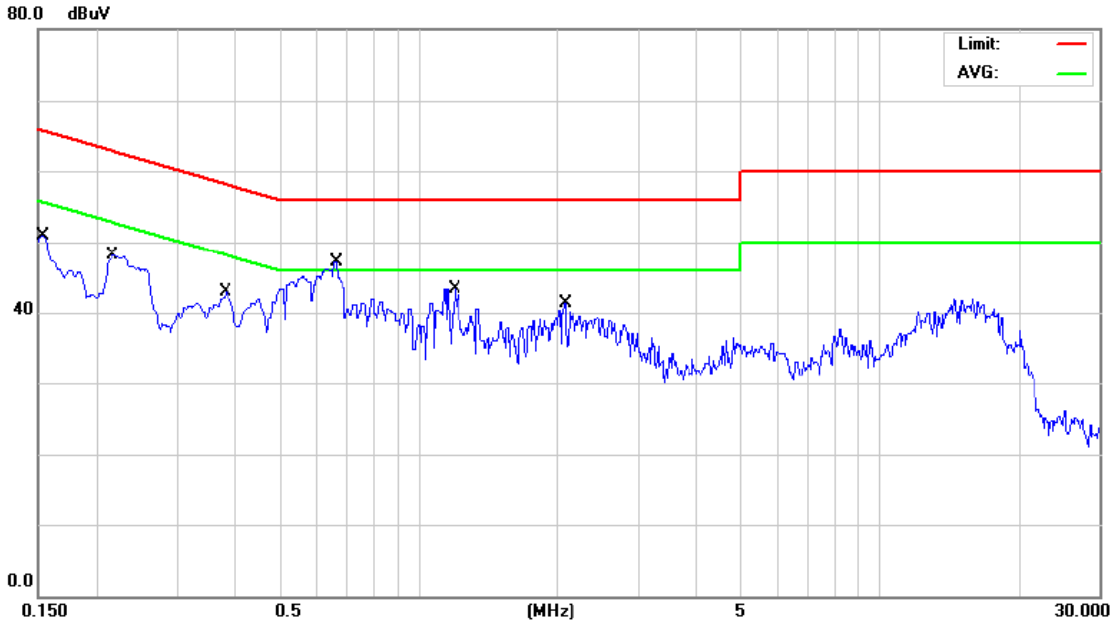
Above 1G



ATTACHMENT A - CONDUCTED EMISSION

Test Mode	TX Mode

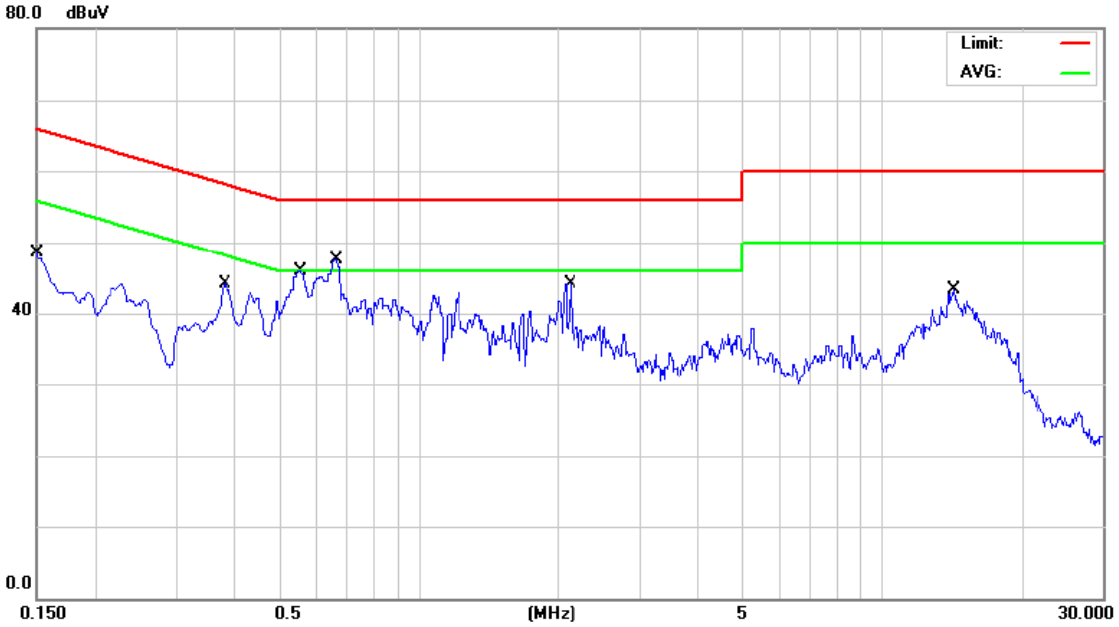
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1528	33.90	9.67	43.57	65.84	-22.27	QP	
2		0.1528	23.90	9.67	33.57	55.84	-22.27	AVG	
3		0.2172	33.50	9.66	43.16	62.92	-19.76	QP	
4		0.2172	22.90	9.66	32.56	52.92	-20.36	AVG	
5		0.3831	26.10	9.66	35.76	58.21	-22.45	QP	
6		0.3831	16.80	9.66	26.46	48.21	-21.75	AVG	
7	*	0.6620	33.80	9.68	43.48	56.00	-12.52	QP	
8		0.6620	19.00	9.68	28.68	46.00	-17.32	AVG	
9		1.2020	27.00	9.71	36.71	56.00	-19.29	QP	
10		1.2020	16.70	9.71	26.41	46.00	-19.59	AVG	
11		2.0660	26.20	9.76	35.96	56.00	-20.04	QP	
12		2.0660	21.40	9.76	31.16	46.00	-14.84	AVG	

Test Mode	TX Mode

Neutral

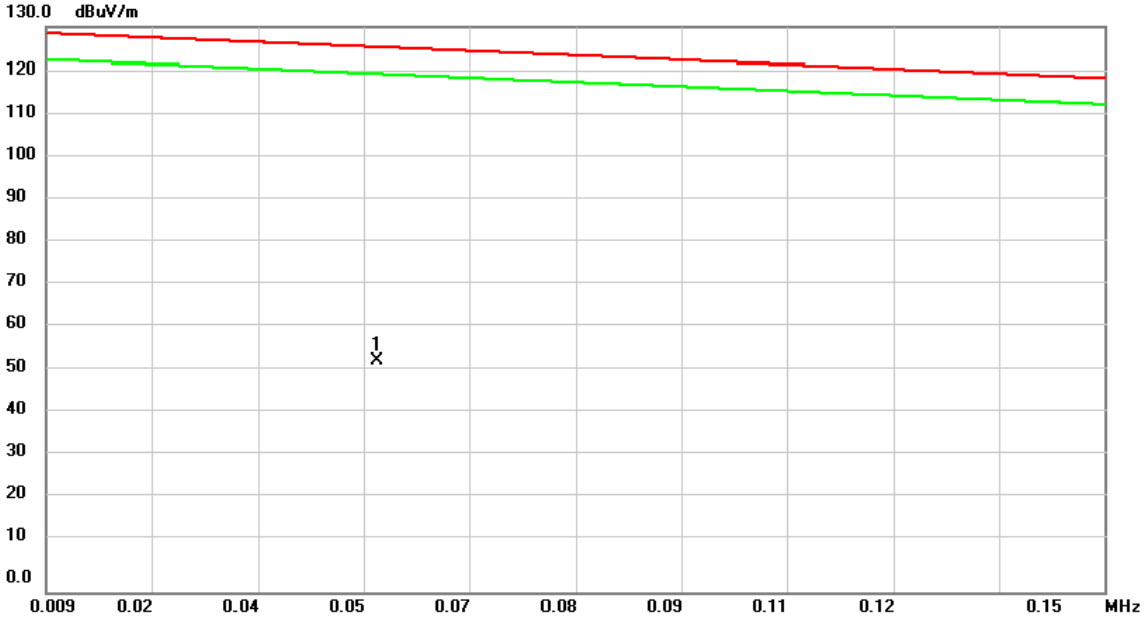


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	32.40	9.66	42.06	65.99	-23.93	QP	
2		0.1500	23.20	9.66	32.86	55.99	-23.13	AVG	
3		0.3810	26.10	9.67	35.77	58.26	-22.49	QP	
4		0.3810	16.50	9.67	26.17	48.26	-22.09	AVG	
5		0.5540	32.70	9.68	42.38	56.00	-13.62	QP	
6		0.5540	19.00	9.68	28.68	46.00	-17.32	AVG	
7	*	0.6620	34.00	9.69	43.69	56.00	-12.31	QP	
8		0.6620	19.30	9.69	28.99	46.00	-17.01	AVG	
9		2.1199	26.20	9.75	35.95	56.00	-20.05	QP	
10		2.1199	20.20	9.75	29.95	46.00	-16.05	AVG	
11		14.3500	26.20	9.87	36.07	60.00	-23.93	QP	
12		14.3500	20.50	9.87	30.37	50.00	-19.63	AVG	

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

Test Mode	TX Mode

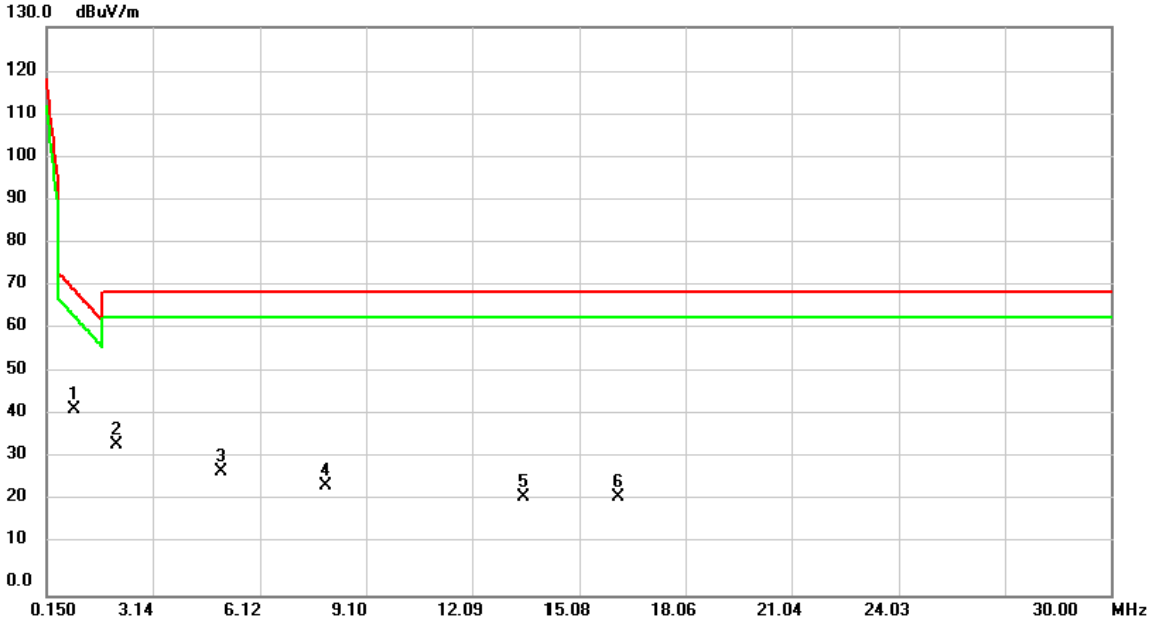
Open



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0530	40.57	12.95	53.52	125.34	-71.82	peak	

Test Mode	TX Mode

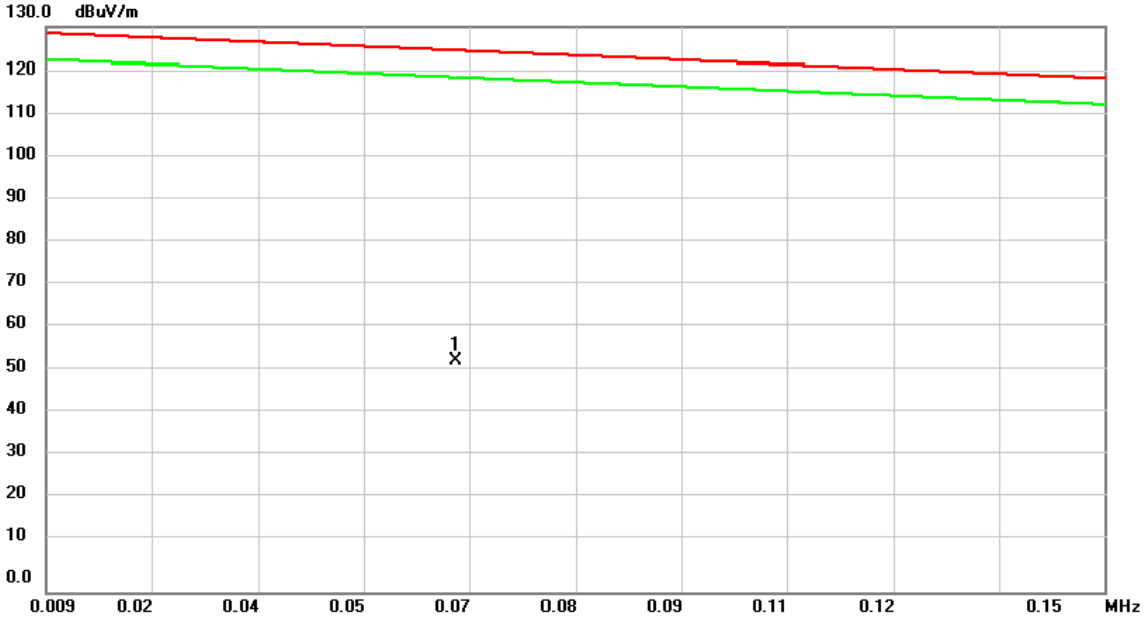
Open



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.9261	30.79	11.97	42.76	69.91	-27.15	peak	
2		2.1200	23.06	11.50	34.56	69.54	-34.98	peak	
3		5.0750	16.98	11.40	28.38	69.54	-41.16	peak	
4		7.9706	13.82	11.34	25.16	69.54	-44.38	peak	
5		13.5228	11.24	11.19	22.43	69.54	-47.11	peak	
6		16.1794	11.63	11.11	22.74	69.54	-46.80	peak	

Test Mode	TX Mode

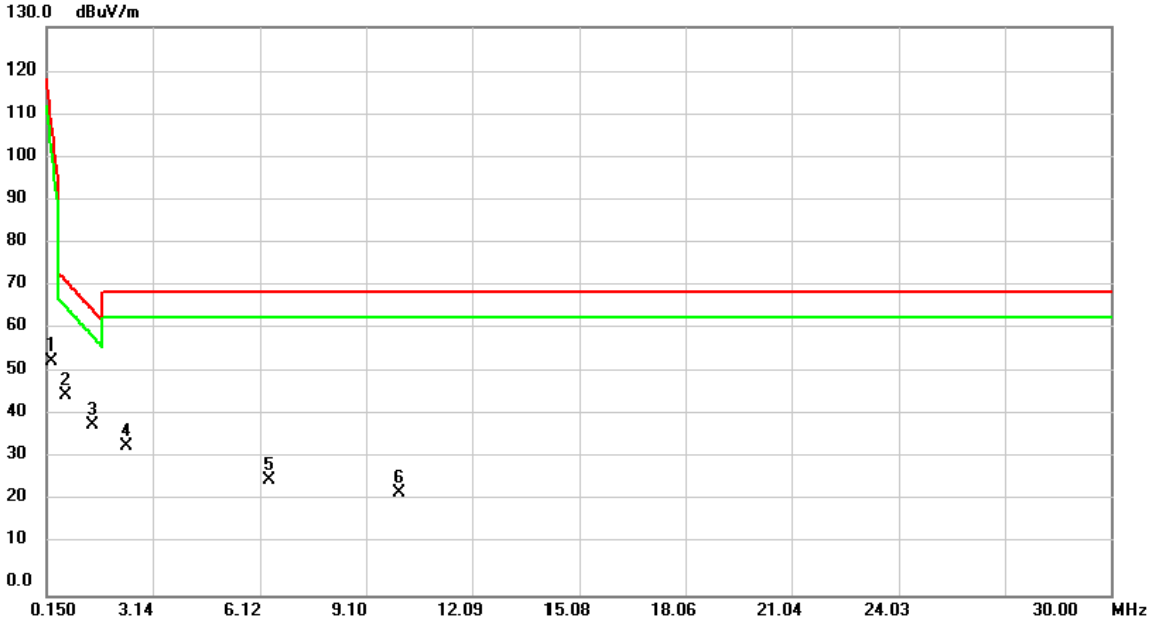
Close



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0637	40.61	12.75	53.36	124.57	-71.21	peak	

Test Mode	TX Mode

Close

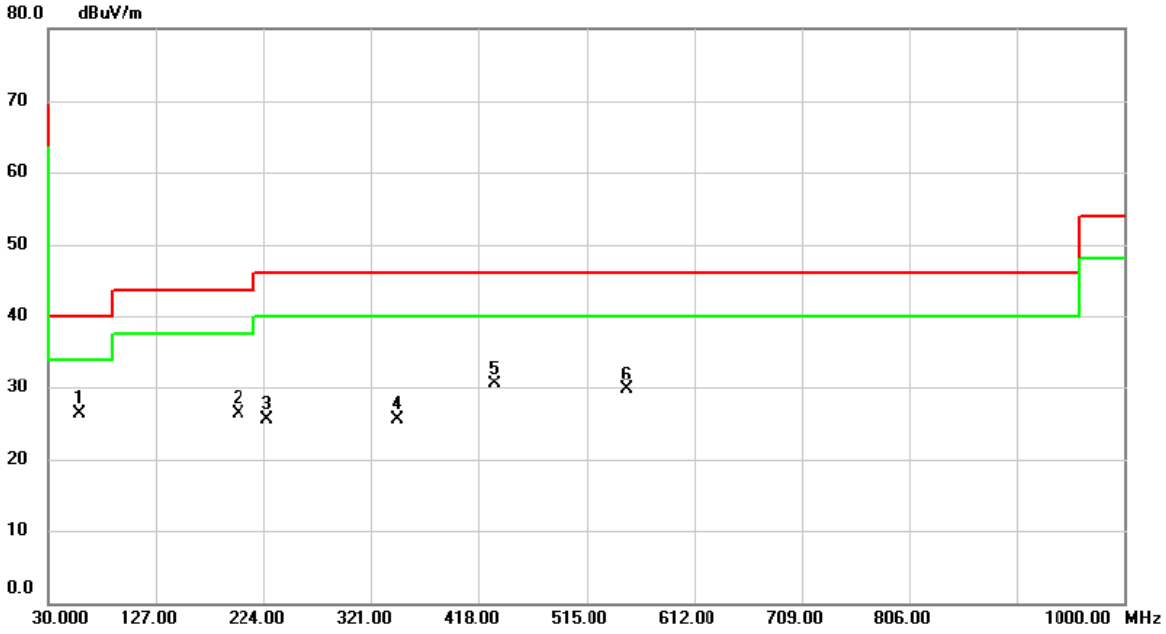


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2993	41.85	11.80	53.65	107.57	-53.92	peak	
2	*	0.6873	34.17	11.87	46.04	72.04	-26.00	peak	
3		1.4334	27.49	11.80	39.29	65.39	-26.10	peak	
4		2.3887	22.98	11.38	34.36	69.54	-35.18	peak	
5		6.3887	15.28	11.37	26.65	69.54	-42.89	peak	
6		10.0304	12.42	11.30	23.72	69.54	-45.82	peak	

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

Test Mode	TX Mode

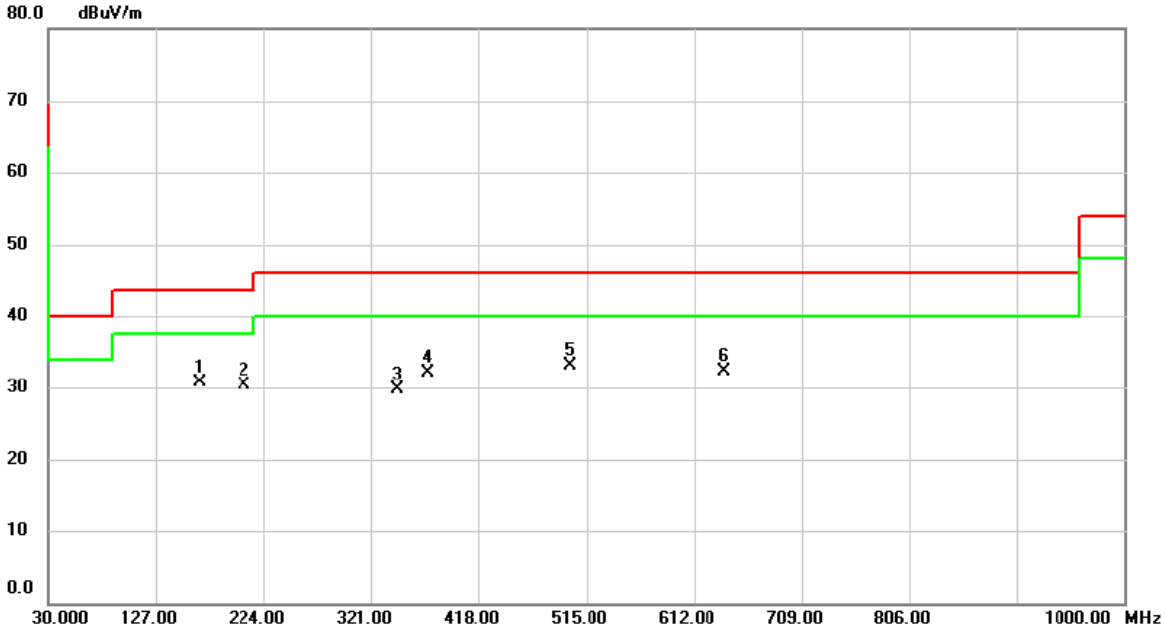
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	57.1600	34.92	-8.67	26.25	40.00	-13.75	peak	
2		200.7200	37.06	-10.82	26.24	43.50	-17.26	peak	
3		226.9100	35.82	-10.37	25.45	46.00	-20.55	peak	
4		345.2500	31.55	-6.13	25.42	46.00	-20.58	peak	
5		432.5500	34.48	-4.00	30.48	46.00	-15.52	peak	
6		551.8600	31.12	-1.49	29.63	46.00	-16.37	peak	

Test Mode	TX Mode

Horizontal

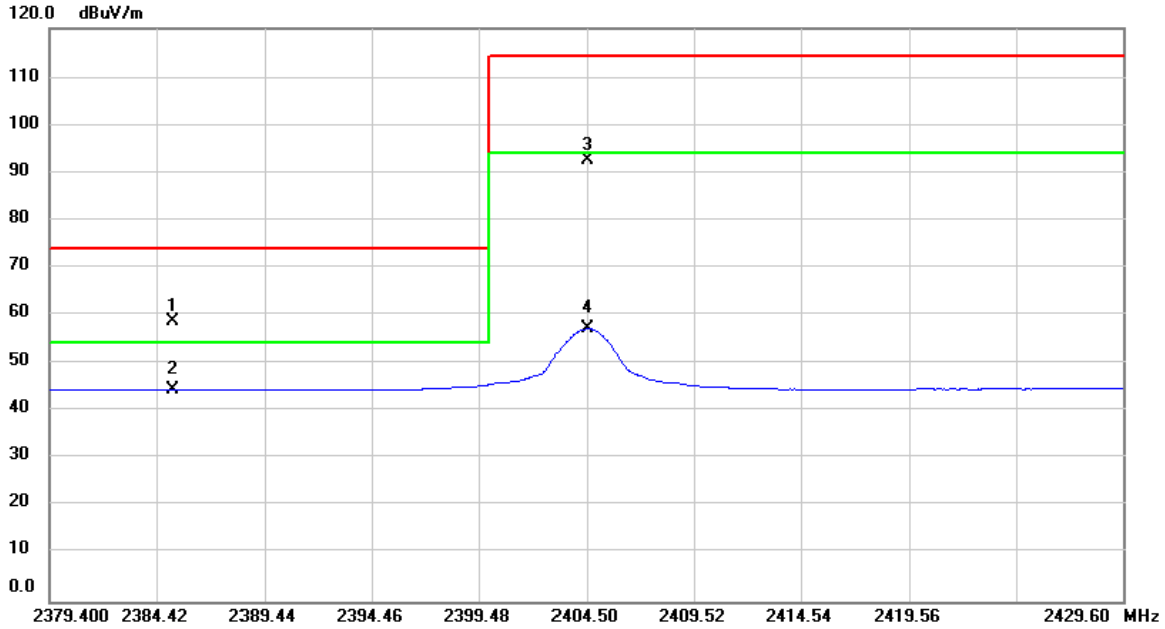


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	166.7700	39.49	-8.77	30.72	43.50	-12.78	peak	
2		206.5400	41.16	-10.87	30.29	43.50	-13.21	peak	
3		345.2500	35.90	-6.13	29.77	46.00	-16.23	peak	
4		371.4400	37.60	-5.52	32.08	46.00	-13.92	peak	
5		499.4800	35.69	-2.66	33.03	46.00	-12.97	peak	
6		640.1300	32.12	0.10	32.22	46.00	-13.78	peak	

ATTACHMENT D -RADIATED EMISSION (ABOVE 1000MHZ)

Test Mode	TX Low Channel

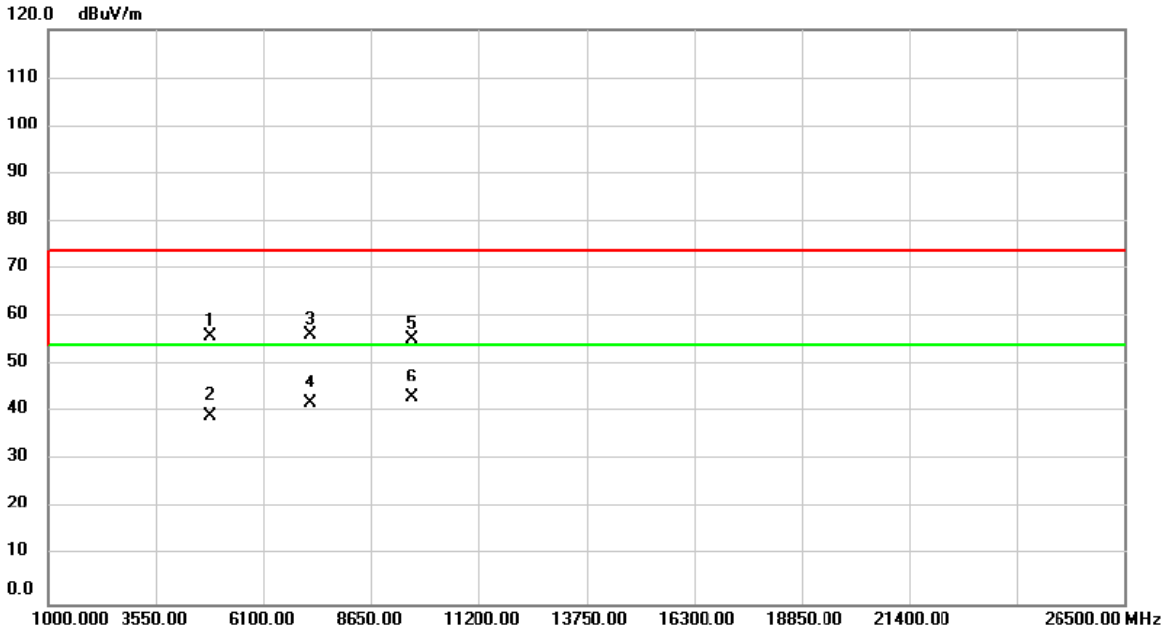
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2385.223	26.56	32.12	58.68	74.00	-15.32	peak	
2	*	2385.223	12.39	32.12	44.51	54.00	-9.49	AVG	
3		2404.500	60.26	32.21	92.47	114.00	-21.53	peak	
4		2404.500	24.87	32.21	57.08	94.00	-36.92	AVG	

Test Mode	TX Low Channel

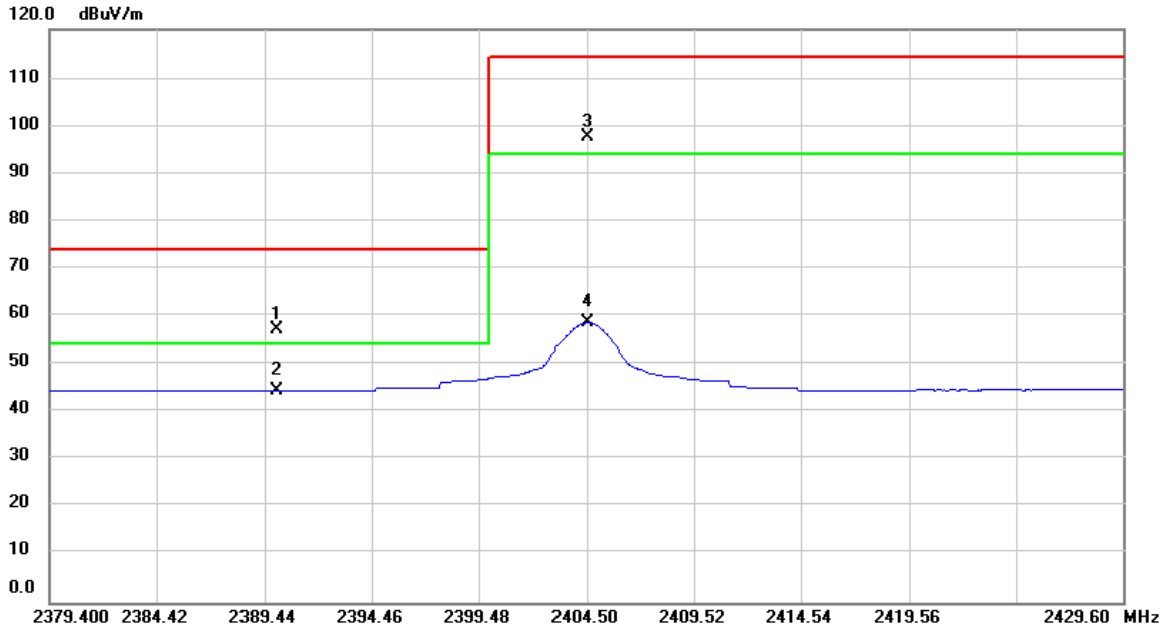
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4809.000	65.79	-9.69	56.10	74.00	-17.90	peak	
2		4809.000	48.83	-9.69	39.14	54.00	-14.86	AVG	
3		7213.500	59.94	-3.72	56.22	74.00	-17.78	peak	
4		7213.500	45.68	-3.72	41.96	54.00	-12.04	AVG	
5		9618.000	56.41	-1.06	55.35	74.00	-18.65	peak	
6	*	9618.000	44.02	-1.06	42.96	54.00	-11.04	AVG	

Test Mode	TX Low Channel

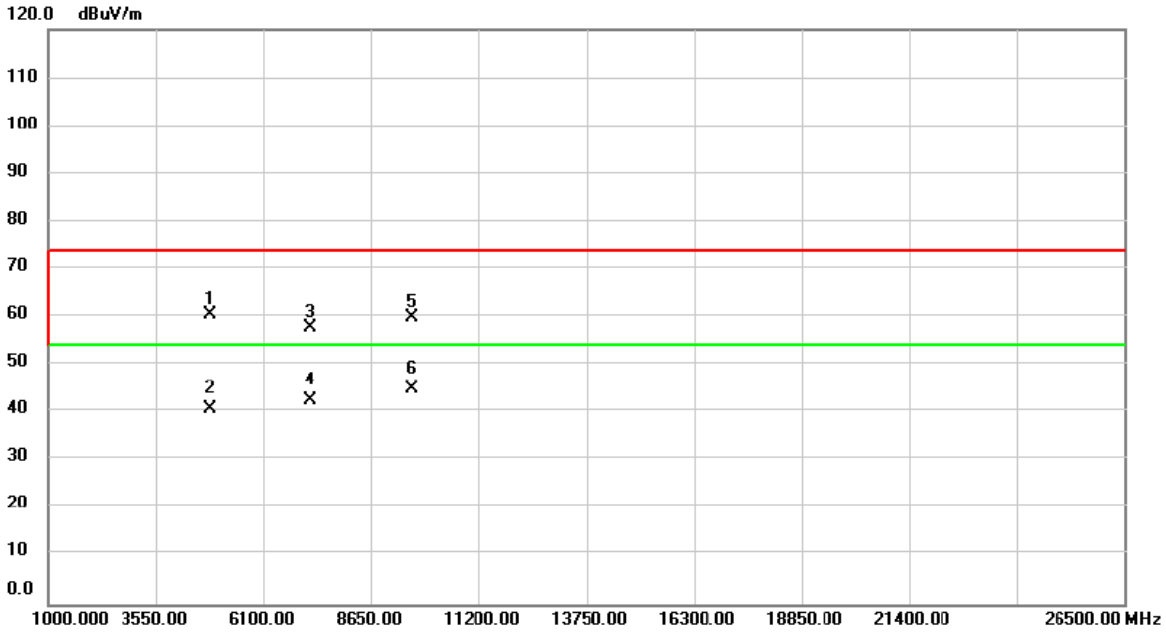
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	25.14	32.14	57.28	74.00	-16.72	peak	
2	*	2390.000	12.33	32.14	44.47	54.00	-9.53	AVG	
3		2404.500	65.43	32.21	97.64	114.00	-16.36	peak	
4		2404.500	26.37	32.21	58.58	94.00	-35.42	AVG	

Test Mode	TX Low Channel

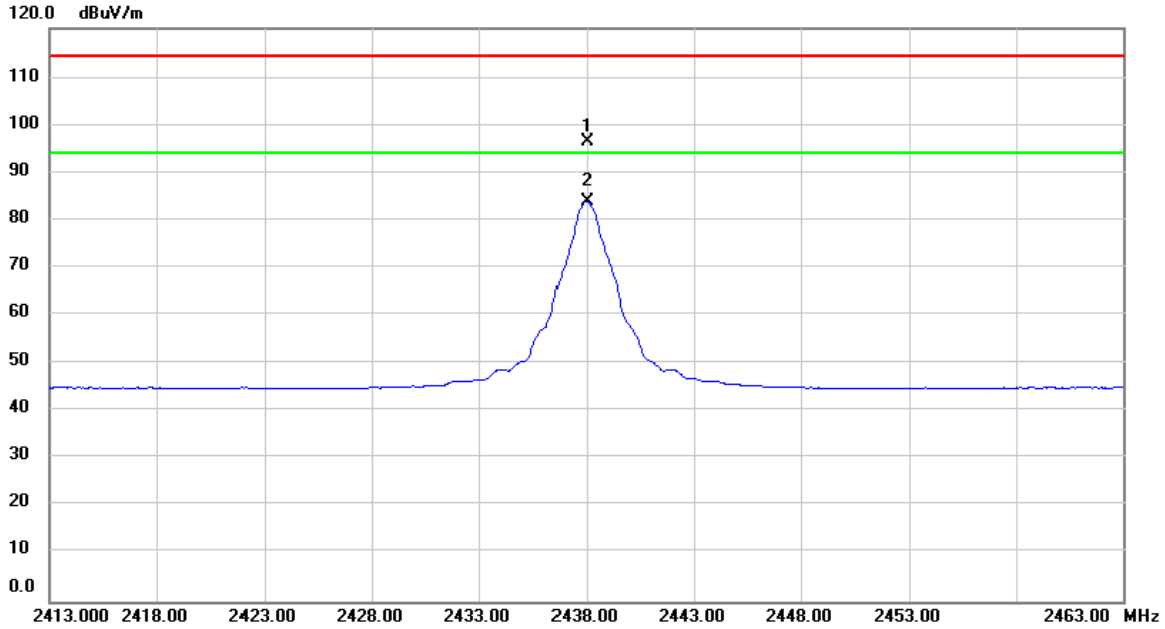
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4809.000	70.14	-9.69	60.45	74.00	-13.55	peak	
2		4809.000	50.35	-9.69	40.66	54.00	-13.34	AVG	
3		7213.500	61.42	-3.72	57.70	74.00	-16.30	peak	
4		7213.500	46.26	-3.72	42.54	54.00	-11.46	AVG	
5		9618.000	61.04	-1.06	59.98	74.00	-14.02	peak	
6	*	9618.000	45.85	-1.06	44.79	54.00	-9.21	AVG	

Test Mode	TX Middle Channel

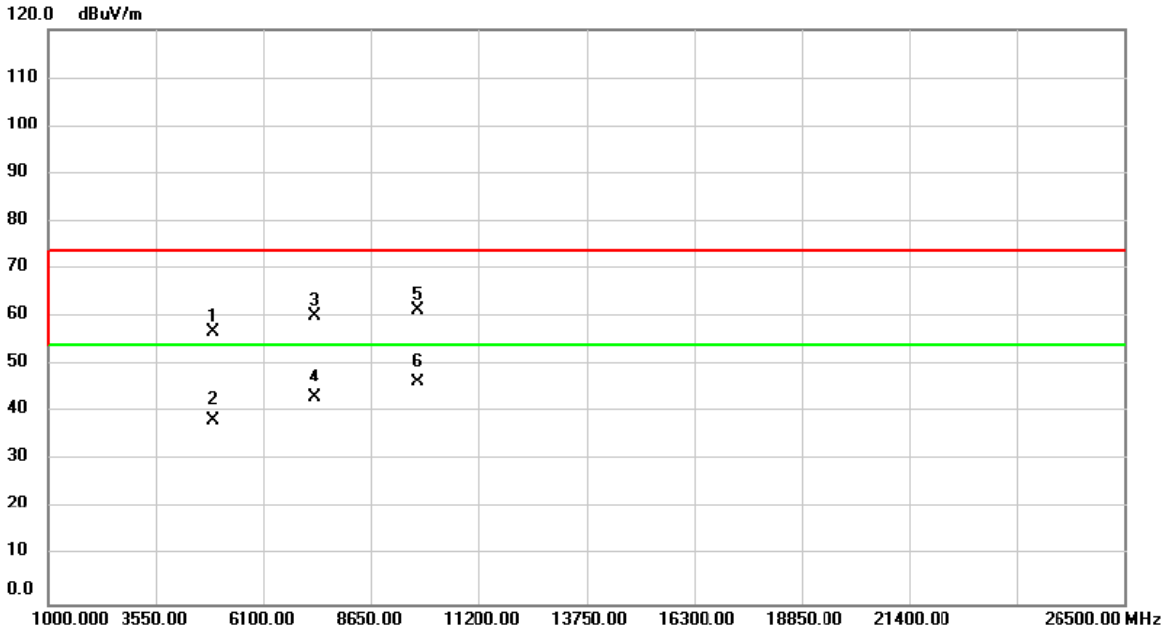
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2438.000	64.17	32.35	96.52	114.00	-17.48	peak	
2	*	2438.000	51.47	32.35	83.82	94.00	-10.18	AVG	

Test Mode	TX Middle Channel

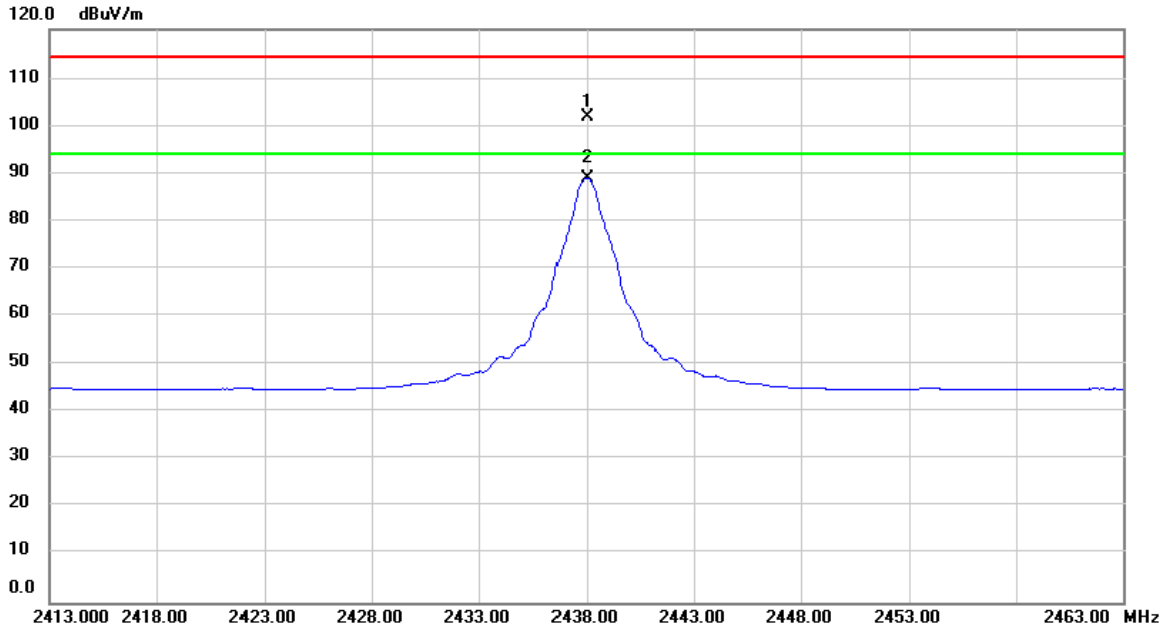
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4876.000	66.39	-9.43	56.96	74.00	-17.04	peak	
2		4876.000	47.79	-9.43	38.36	54.00	-15.64	AVG	
3		7314.000	63.70	-3.49	60.21	74.00	-13.79	peak	
4		7314.000	46.40	-3.49	42.91	54.00	-11.09	AVG	
5		9752.000	61.74	-0.41	61.33	74.00	-12.67	peak	
6	*	9752.000	46.65	-0.41	46.24	54.00	-7.76	AVG	

Test Mode	TX Middle Channel

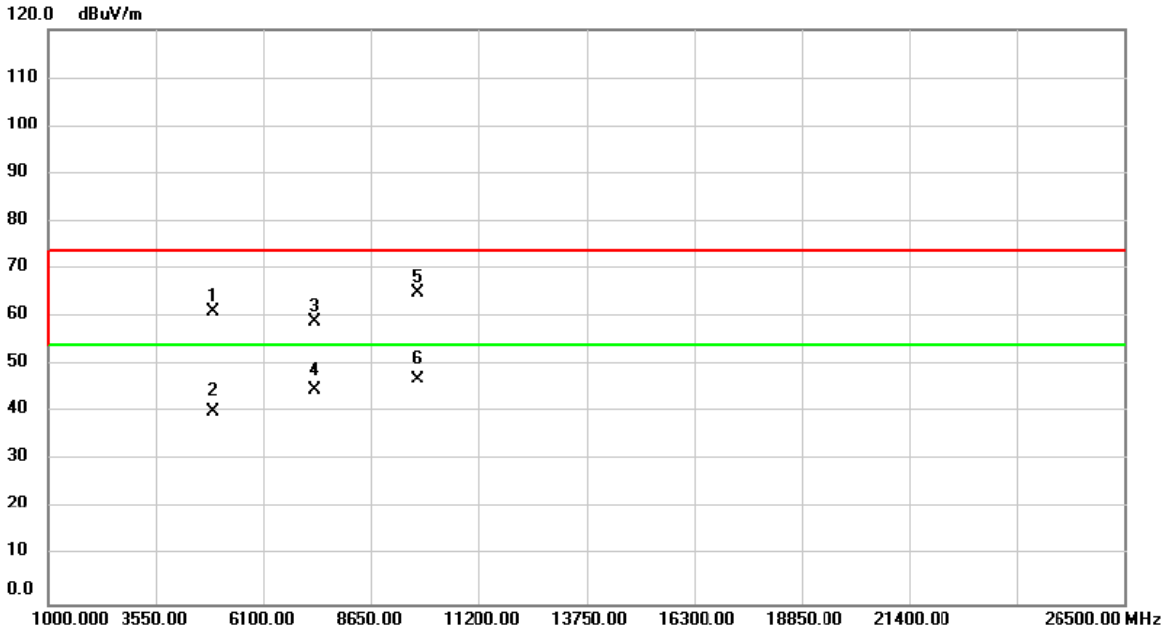
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2438.000	69.38	32.35	101.73	114.00	-12.27	peak	
2	*	2438.000	56.67	32.35	89.02	94.00	-4.98	AVG	

Test Mode	TX Middle Channel

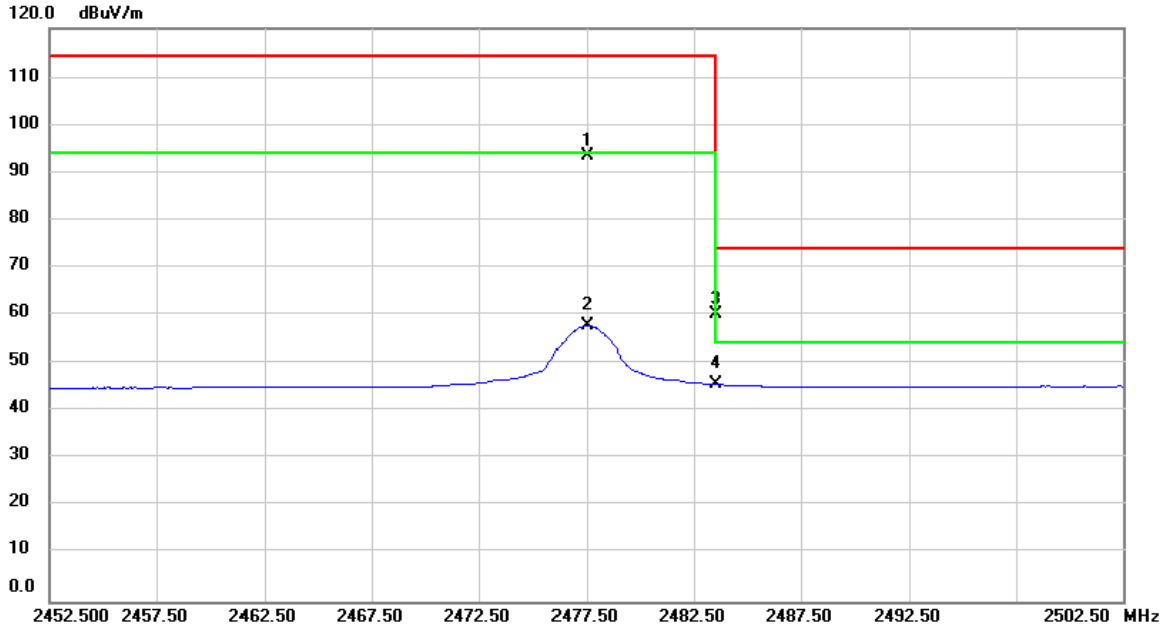
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4876.000	70.48	-9.43	61.05	74.00	-12.95	peak	
2		4876.000	49.41	-9.43	39.98	54.00	-14.02	AVG	
3		7314.000	62.58	-3.49	59.09	74.00	-14.91	peak	
4		7314.000	48.04	-3.49	44.55	54.00	-9.45	AVG	
5		9752.000	65.48	-0.41	65.07	74.00	-8.93	peak	
6	*	9752.000	47.30	-0.41	46.89	54.00	-7.11	AVG	

Test Mode	TX High Channel

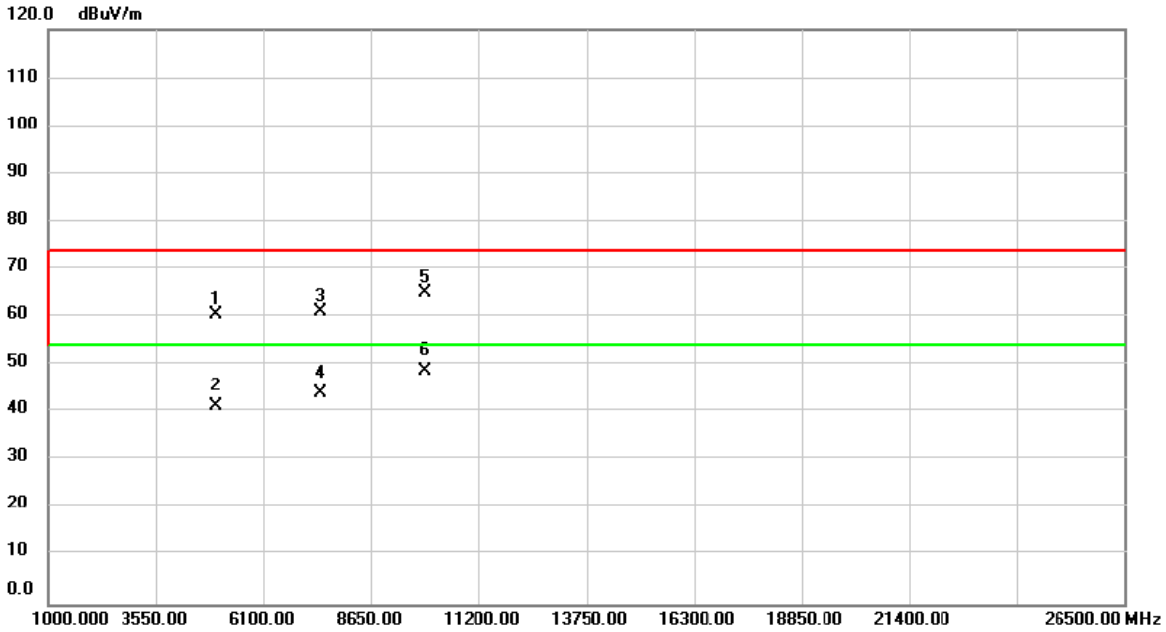
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2477.500	61.03	32.53	93.56	114.00	-20.44	peak	
2		2477.500	25.28	32.53	57.81	94.00	-36.19	AVG	
3		2483.500	27.58	32.55	60.13	74.00	-13.87	peak	
4	*	2483.500	13.20	32.55	45.75	54.00	-8.25	AVG	

Test Mode	TX High Channel

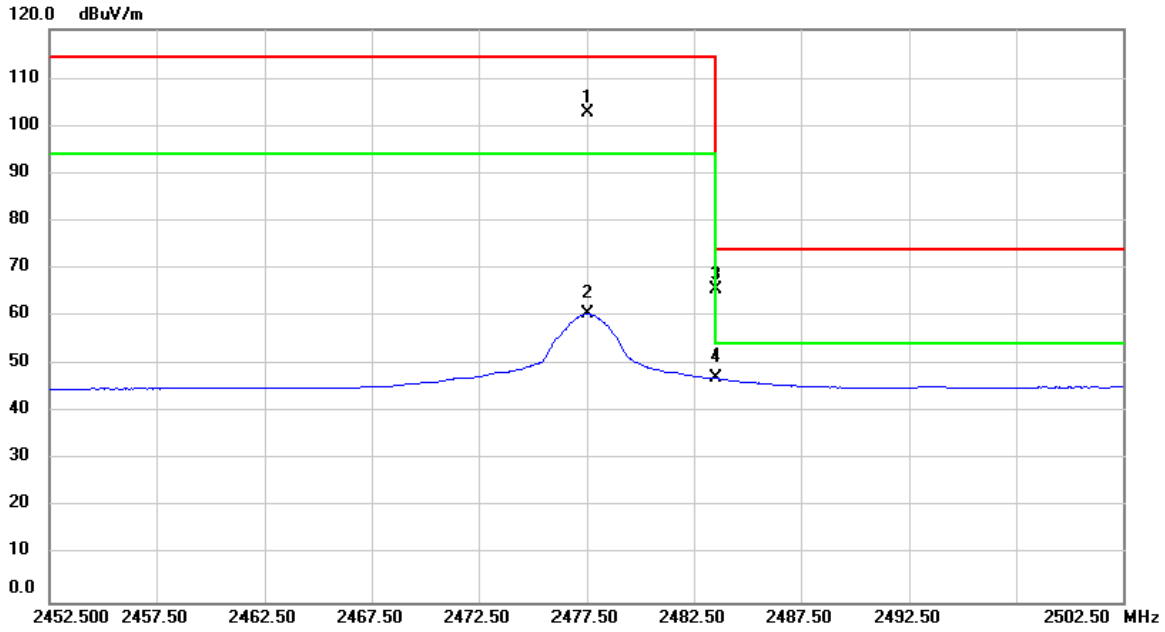
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4955.000	69.54	-9.13	60.41	74.00	-13.59	peak	
2		4955.000	50.41	-9.13	41.28	54.00	-12.72	AVG	
3		7432.500	64.37	-3.21	61.16	74.00	-12.84	peak	
4		7432.500	47.24	-3.21	44.03	54.00	-9.97	AVG	
5		9910.000	64.61	0.36	64.97	74.00	-9.03	peak	
6	*	9910.000	48.40	0.36	48.76	54.00	-5.24	AVG	

Test Mode	TX High Channel

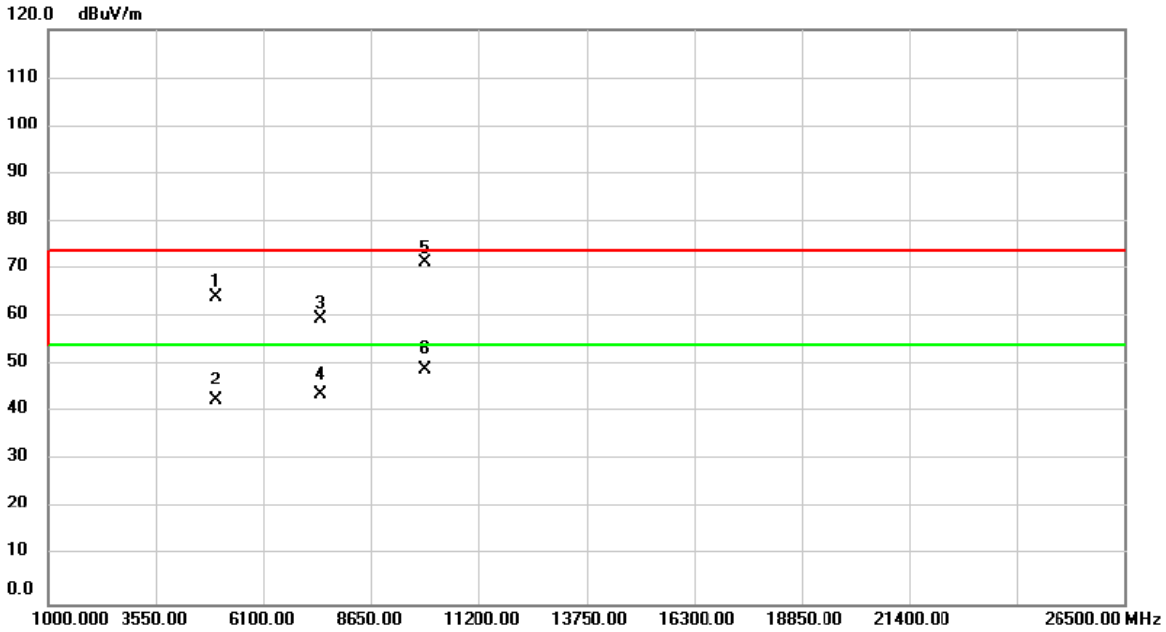
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2477.500	70.31	32.53	102.84	114.00	-11.16	peak	
2		2477.500	27.83	32.53	60.36	94.00	-33.64	AVG	
3		2483.500	33.05	32.55	65.60	74.00	-8.40	peak	
4	*	2483.500	14.66	32.55	47.21	54.00	-6.79	AVG	

Test Mode	TX High Channel

Horizontal



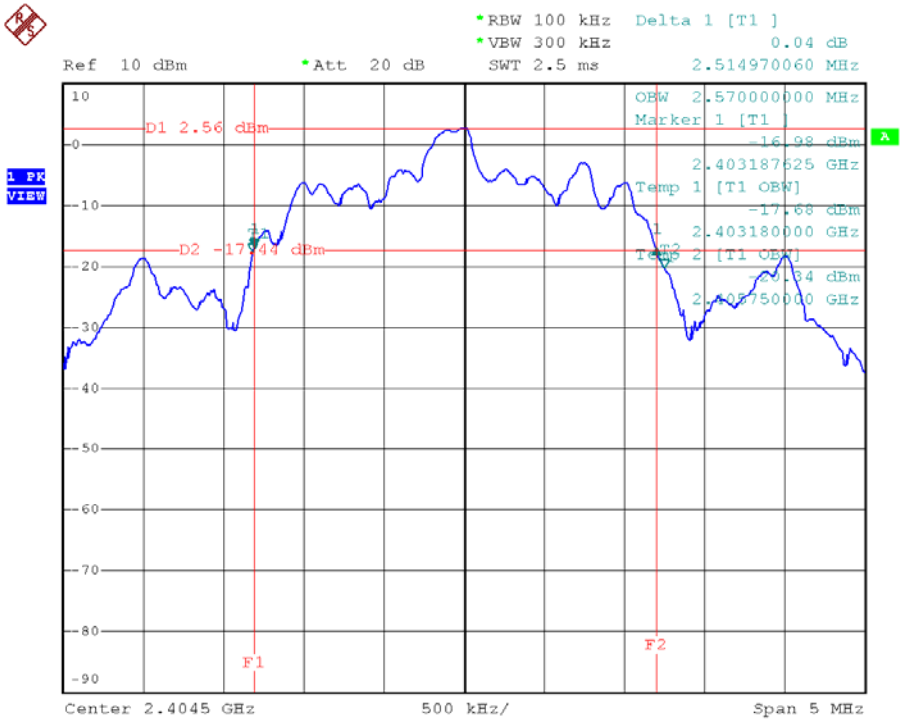
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4955.000	73.30	-9.13	64.17	74.00	-9.83	peak	
2		4955.000	51.46	-9.13	42.33	54.00	-11.67	AVG	
3		7432.500	62.71	-3.21	59.50	74.00	-14.50	peak	
4		7432.500	46.84	-3.21	43.63	54.00	-10.37	AVG	
5	*	9910.000	71.03	0.36	71.39	74.00	-2.61	peak	
6		9910.000	48.57	0.36	48.93	54.00	-5.07	AVG	

ATTACHMENT E - BANDWIDTH

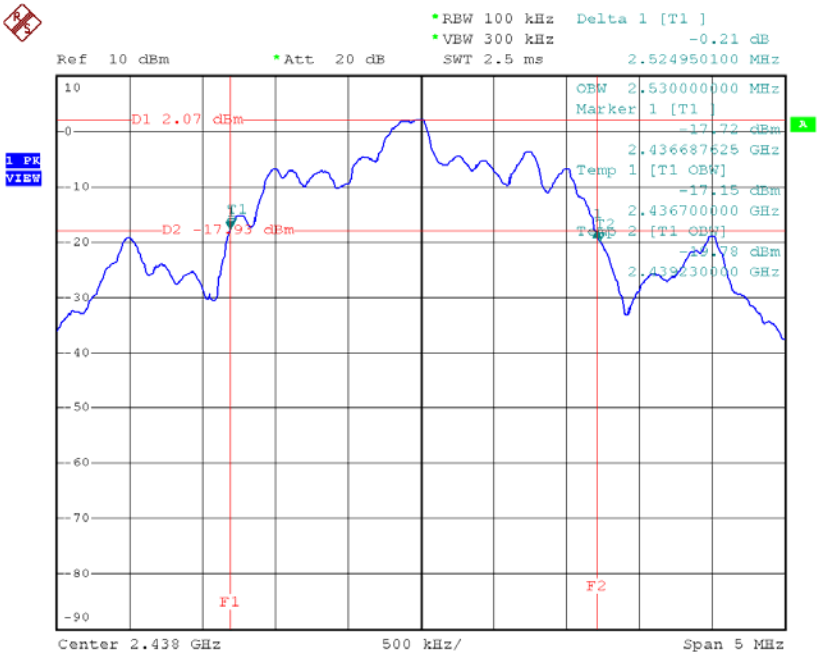
Test Mode:	TX Mode

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)
Low Channel	2.57	2.51
Middle Channel	2.52	2.53
High Channel	2.51	2.48

TX Low Channel

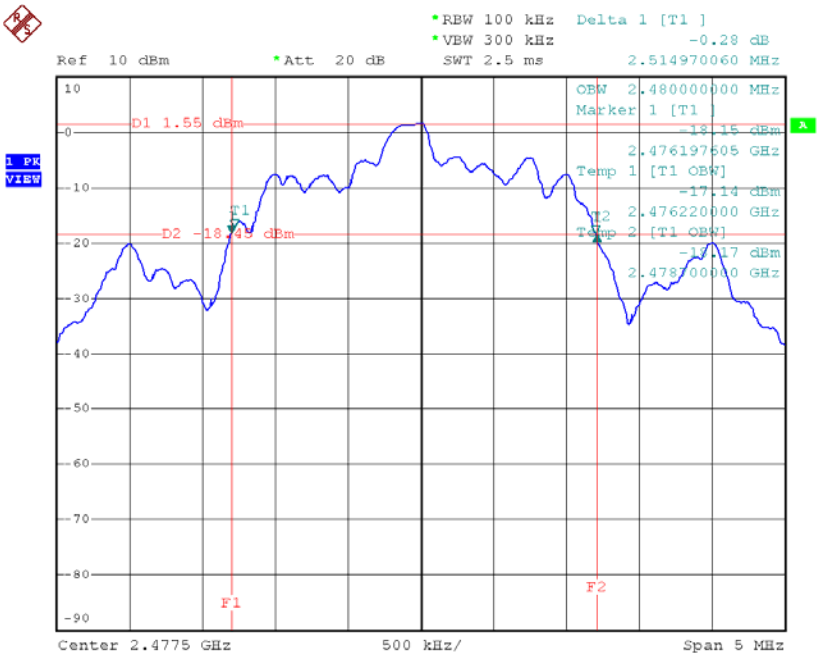


TX Middle Channel



Date: 14.MAR.2016 22:35:38

TX High Channel



Date: 14.MAR.2016 22:40:15