FCC Radio Test Report

FCC ID: P27SZPIR04N

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

Project No.	:	1610136
Equipment	:	ZigBee Motion Sensor
Test Model	:	SZ-PIR04N
Series Model	:	SZ-PIR04
Applicant	:	Sercomm Corporation
Address	:	8F, No. 3-1, YuanQu St., NanKang, Taipei, Taiwan 115

Date of Receipt	:	Oct. 14, 2016
Date of Test	:	Oct. 14, 2016 ~ Nov. 12, 2016
Issued Date	:	Nov. 14, 2016
Tested by	:	BTL Inc.

Testing Engineer : Rush Kao
(Rush Kao)

Technical Manager : Jeff Yang
(Jeff Yang)

Authorized Signatory :
(Andy Chiu)

BTL INC.

B1, No.37, Lane 365, Yang Guang St.,
Nei-Hu District, Taipei City 114, Taiwan.
TEL:+886-2-2657-3299 FAX: +886-2- 2657-3331

Declaration

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

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

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

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

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

Limitation

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

Table of Contents Page

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1610136	Original Issue.	Nov. 14, 2016

1. CERTIFICATION

Equipment	:	ZigBee Motion Sensor
Brand Name	:	Sercomm
Test Model	:	SZ-PIR04N
Series Model	:	SZ-PIR04
Applicant	:	Sercomm Corporation
Manufacturer	:	SERCOMM CORP
Address	:	3F 81 YUYI RD CHU-NAN MIAO-LI, 350 TAIWAN
Factory	:	SERCOMM CORP
Address	:	3F 81 YUYI RD CHU-NAN MIAO-LI, 350 TAIWAN
Date of Test	:	Oct. 14, 2016 ~ Nov. 12, 2016
Test Sample	:	Engineering Sample
Standard(s)	:	FCC Part15, Subpart C (15.247) / ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1610136) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C			
Standard(s) Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	NOTE (1)
15.247(d)	Antenna conducted Spurious Emission	PASS	
15.247(a)(2)	6dB Bandwidth	PASS	
15.247(b)(3)	Peak Output Power	PASS	
15.247(e)	Power Spectral Density	PASS	
15.203	Antenna Requirement	PASS	
15.209/15.205	Transmitter Radiated Emissions	PASS	

NOTE:

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

2.1 TEST FACILITY

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

Radiated emission Test (Below 1GHz):

CB15: (FCC RN:674415; FCC DN:TW0659)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Above 1GHz):

CB15: (FCC RN:674415; FCC DN:TW0659)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

2.1.1 MEASUREMENT UNCERTAINTY

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

The reported uncertainty of measurement **y** ± **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. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15 (3m)	CISPR	9kHz ~ 150kHz	2.96
		150kHz ~ 30MHz	2.74

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 (3m)	CISPR	30MHz ~ 200MHz	V	4.76
		30MHz ~ 200MHz	H	4.28
		200MHz ~ 1,000MHz	V	5.08
		200MHz ~ 1,000MHz	H	4.50

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 (3m)	CISPR	1GHz ~ 6GHz	V	4.48
		1GHz ~ 6GHz	H	4.50
		6GHz ~ 18GHz	V	4.30
		6GHz ~ 18GHz	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.
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	ZigBee Motion Sensor	
Brand Name	Sercomm	
Test Model	SZ-PIR04N	
Series Model	SZ-PIR04	
Model Difference	Differ in marketing purpose.	
Power Source	DC Voltage supplied from Battery. Model: a. GP / CR123A b. EVE / CR123A	
Power Rating	DC 3V (CR123A*2)	
Product Description	Operation Frequency	2405~2480 MHz
	Modulation Technology	OQPSK
	Bit Rate of Transmitter	250Kbps
	Output Power (Max.)	18.08 dBm

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)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440	26	2480

3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Sercomm	SZ-PIR04N	Printed	N/A	1.40

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

Note:

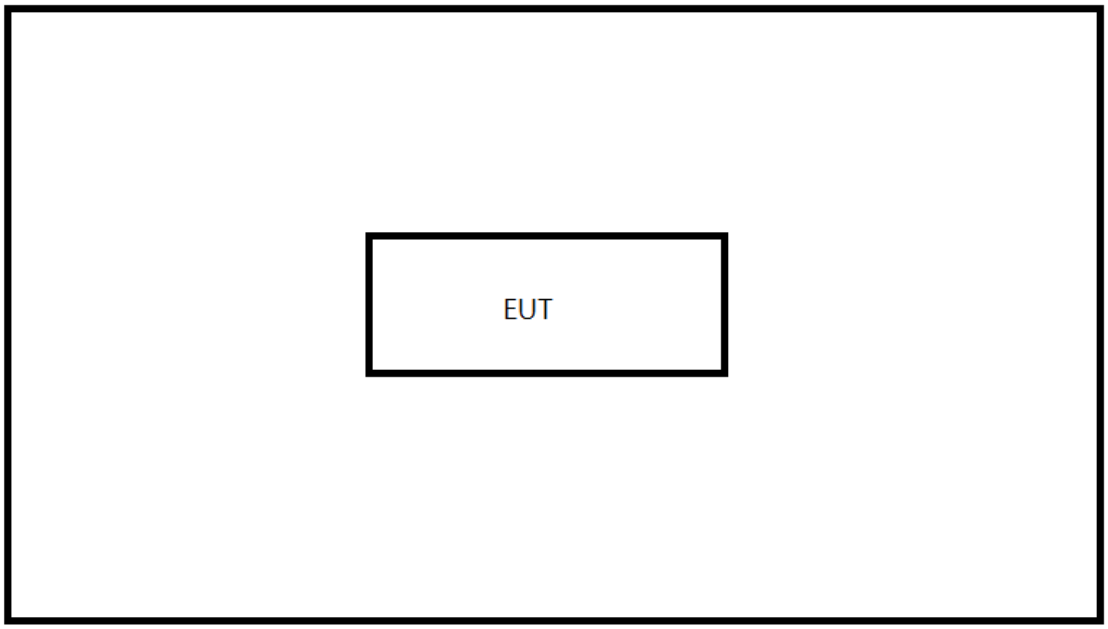
(1) The measurements are performed at the high, middle, low available channels.

3.3 TABLE OF PARAMETERS OF 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 IEEE 802.15.4.

Test Software Version	Ember Desktop		
Frequency (MHz)	2405	2425	2440
IEEE 802.15.4	-8	-8	-8
Frequency (MHz)	2445	2450	2475
IEEE 802.15.4	-8	-8	-C
Frequency (MHz)	2480		
IEEE 802.15.4	-20		

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
-	-	-	-	-

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 = Antenna Factor + 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

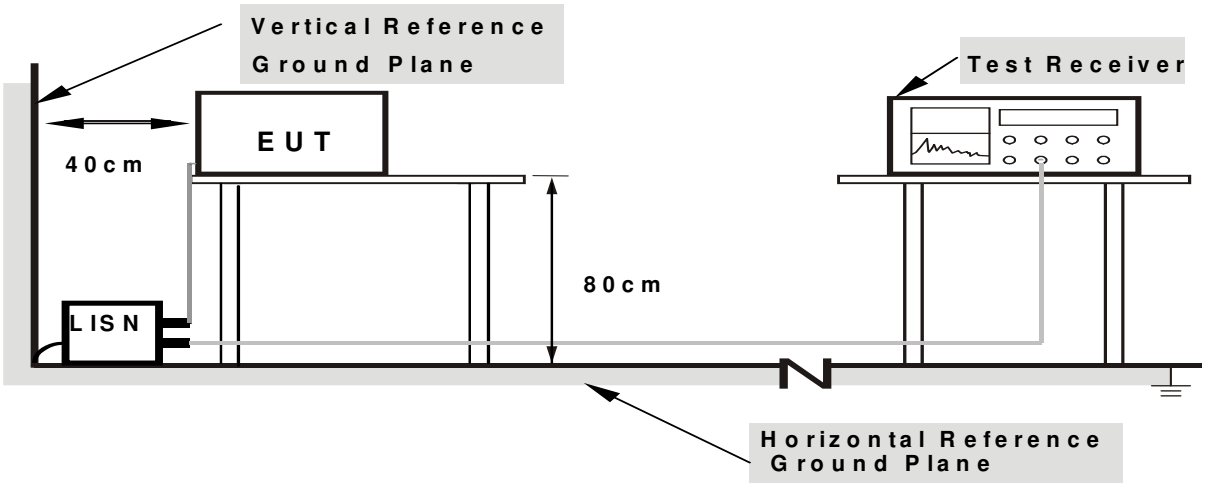
4.1.2 TEST PROCEDURE

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 equipment 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: N/A
Relative Humidity: N/A
Test Voltage: N/A

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

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

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

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

LIMITS OF RADIATED EMISSION MEASUREMENT (9KHz-1000MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

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

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

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

(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	RBW 1MHz VBW 3MHz peak detector for Pk value RMS detector for AV value

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

4.2.2 TEST PROCEDURE

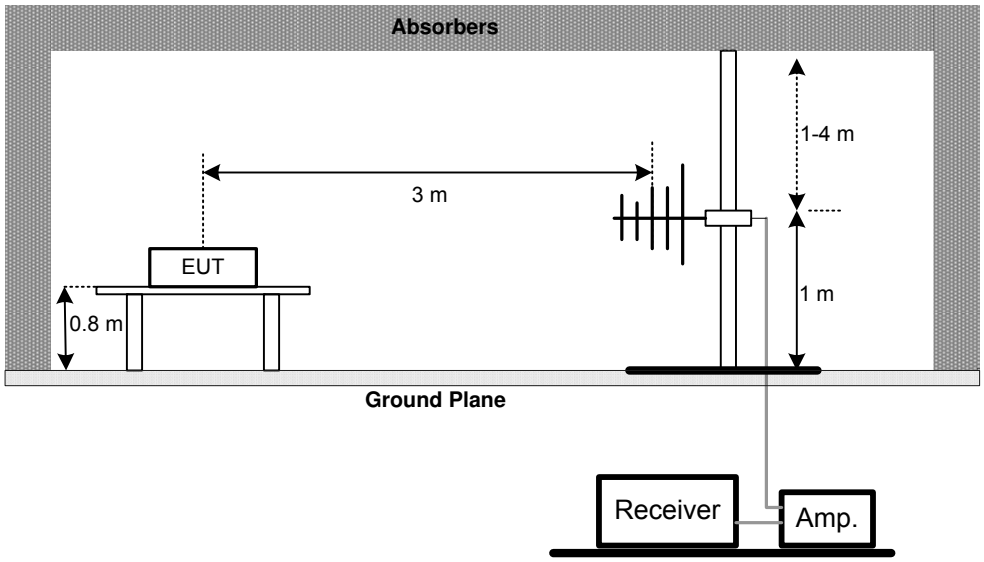
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, 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

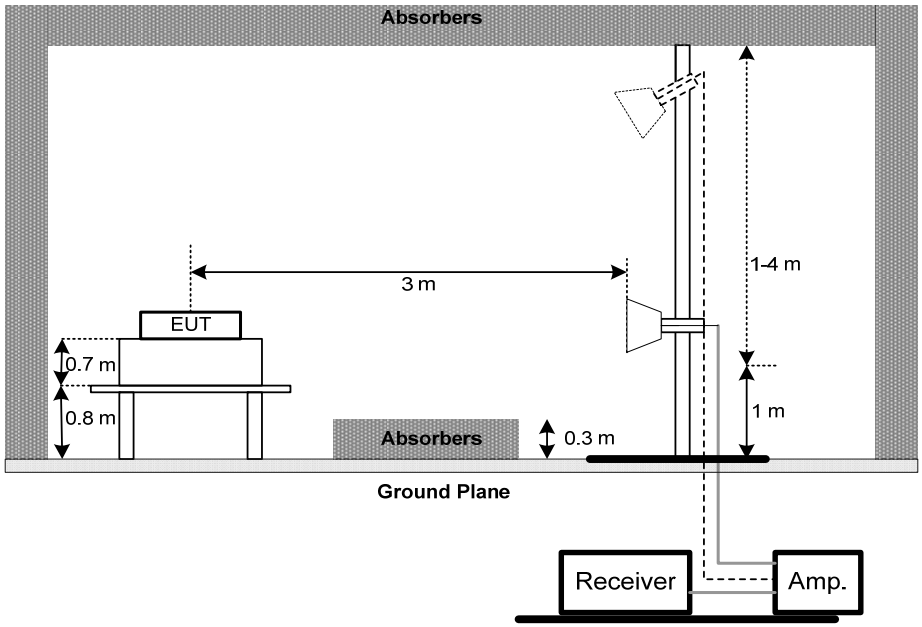
No deviation

4.2.4 TEST SETUP

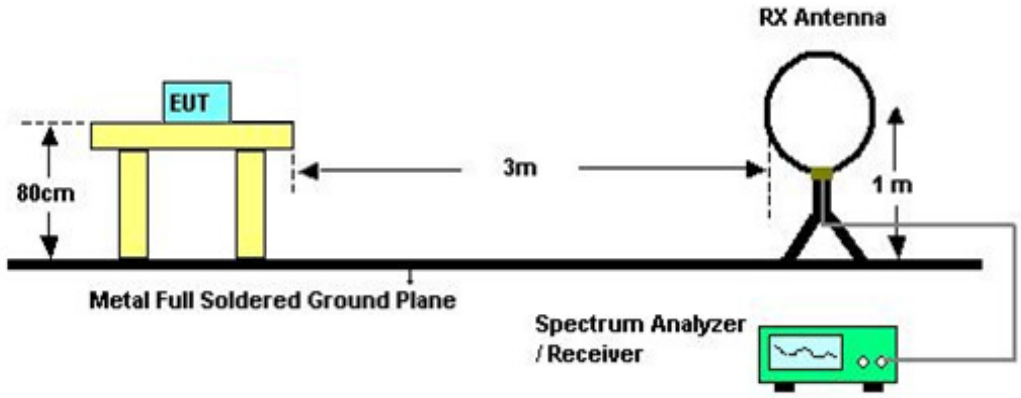
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



4.2.5 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 3V

4.2.6TEST 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.

4.2.7TEST RESULTS (BETWEEN 30MHZ TO 1000 MHZ)

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.

4.2.8TEST 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 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2405~2480 MHz	PASS

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=300KHz, Sweep time = 2.5 ms.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP

5.1.4 EUT OPERATION CONDITIONS

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

5.1.5 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 3V

5.1.6 TEST RESULTS

Please refer to the Attachment E.

6. MAXIMUM OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 watt or 30dBm	2405~2480 MHz	PASS

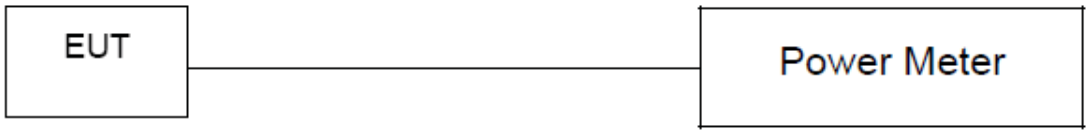
6.1.1 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
b. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance v03r05.

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.
Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.

6.1.5 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 3V

6.1.6 TEST RESULTS

Please refer to the Attachment F.

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

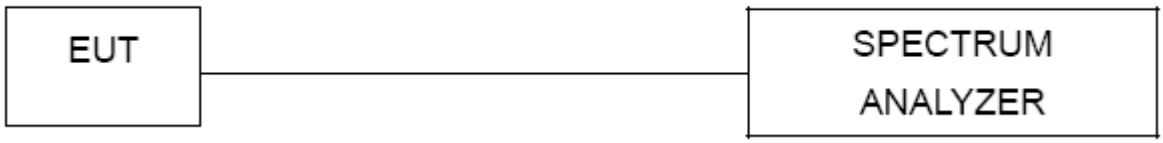
7.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = 10 ms.
c. Offset=antenna gain + cable loss

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

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

7.1.5 EUT OPERATION CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 3V

7.1.6 TEST RESULTS

Please refer to the Attachment G.

8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	2405~2480 MHz	PASS

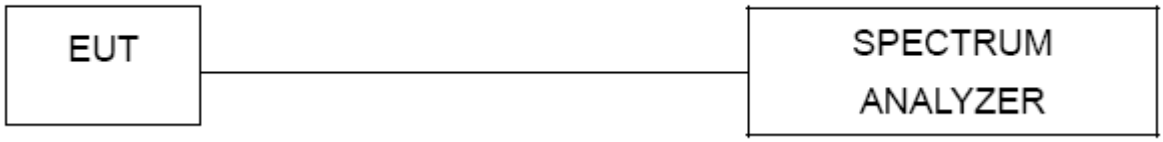
8.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW=3KHz, VBW=10 KHz, Sweep time = auto.

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

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

8.1.5 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 3V

8.1.6 TEST RESULTS

Please refer to the Attachment H.

9. MEASUREMENT INSTRUMENTS LIST

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Receiver	Keysight	N9038A	MY55420127	Jan. 07, 2017
2	EXA Spectrum Analyzer	Keysight	N9010A	MY52220990	Feb. 23, 2017
3	Horn Antenna(1G~18G)	SCHWARZBECK	BBHA 9120 D	9120D-1342	Mar. 01, 2017
4	Trilog-Broadband Antenna(30M~1G)	Schwarzbeck	VULB9168	9168-548	Jan. 17, 2017
5	Pre-Amplifier(30M~1G)	EMCI	EMC02325	980217	Dec. 29, 2016
6	Pre-Amplifier(1G~26G)	承儀	012645B	980267	Mar. 01, 2017
7	Test Cable	EMCI	EMC104-SM-SM-800	150207	Jan. 05, 2017
8	Test Cable	EMCI	EEMC104-SM-SM-3000	151205	Jan. 05, 2017
9	Test Cable	EMCI	S104-SMAP-2	M001220	Jan. 05, 2017
10	EXA Spectrum Analyzer	Agilent	N9010A	MY52220990	Feb. 24, 2017
11	EMI Test Receiver	Agilent	N9038A	MY51210215	Jan. 08, 2017
12	Loop Antenna	EMCO	6502	00042960	Nov. 05, 2017

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY51160196	Jul. 28, 2017

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2495A	1128008	Aug. 17, 2017
2	Power Meter Sensor	Anritsu	MA2491A	034138	Aug. 17, 2017

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY51160196	Jul. 28, 2017

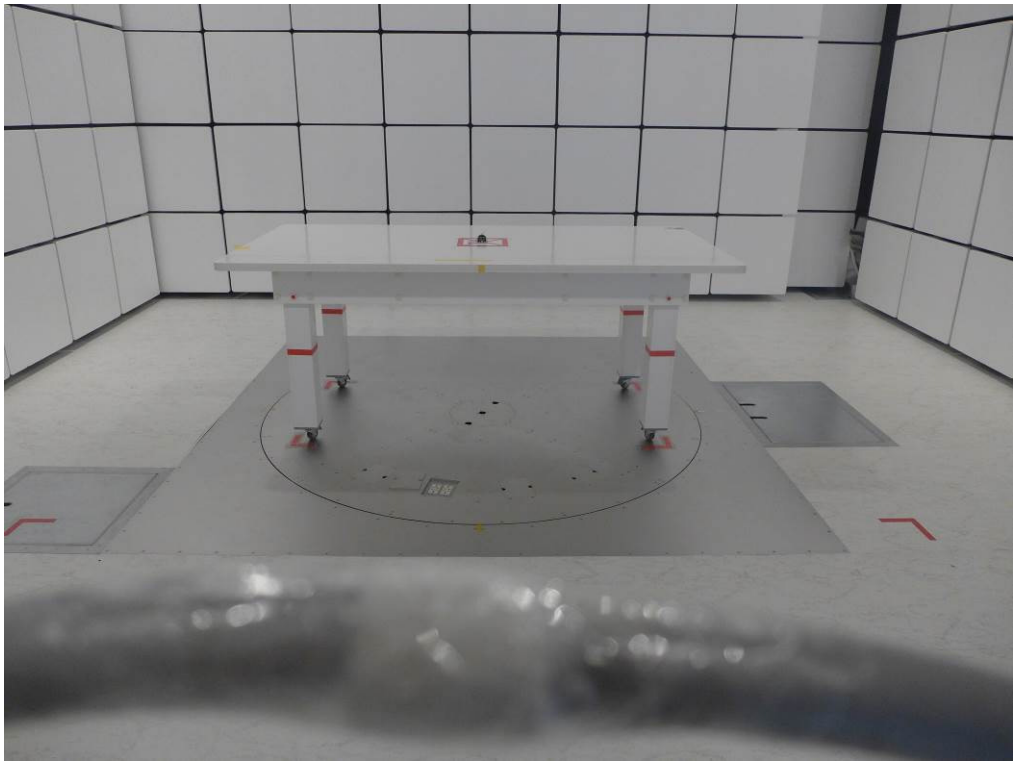
Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY51160196	Jul. 28, 2017

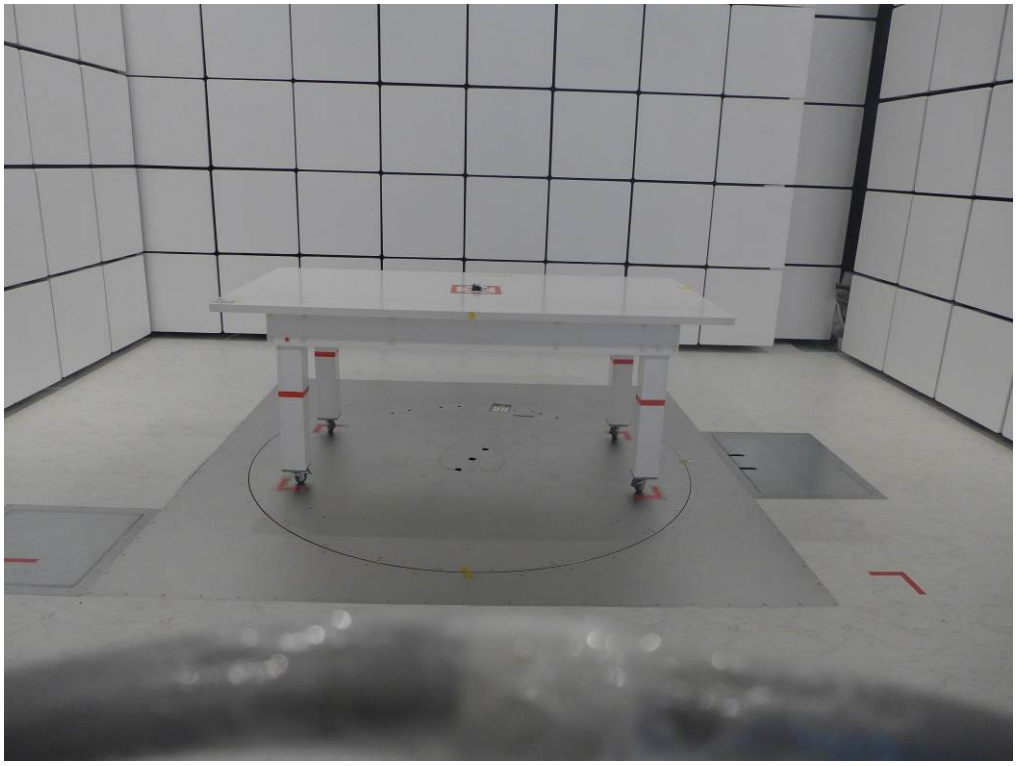
Remark: ”N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

10. EUT TEST PHOTO

Radiated Measurement Photos

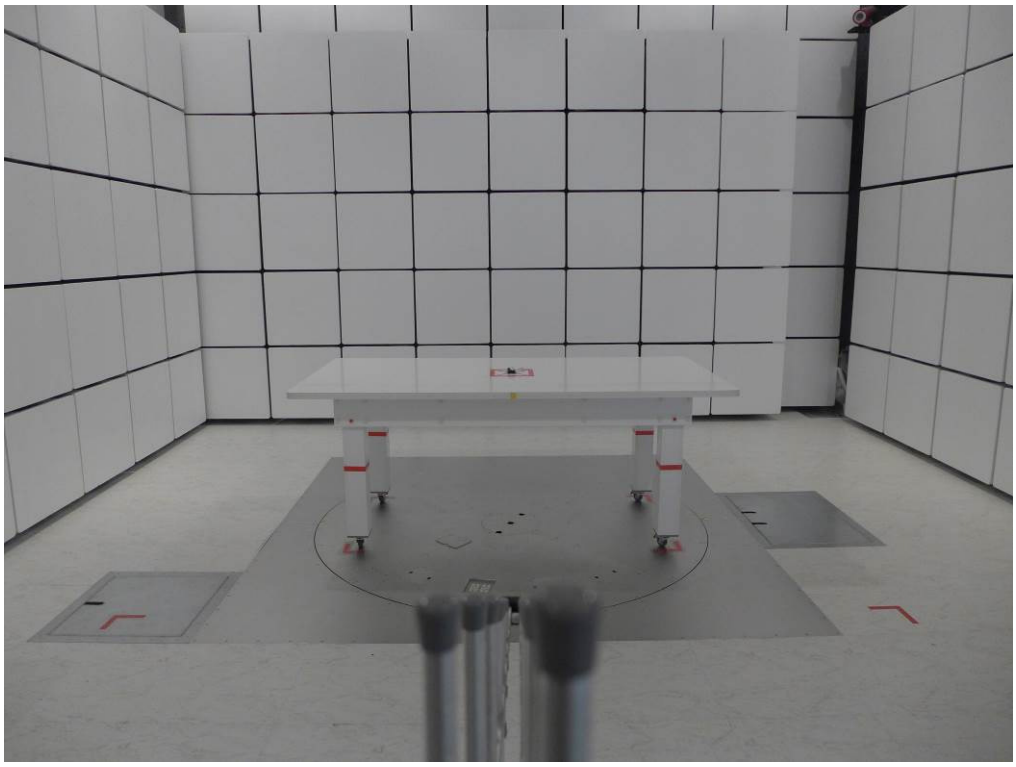
9KHz to 30MHz

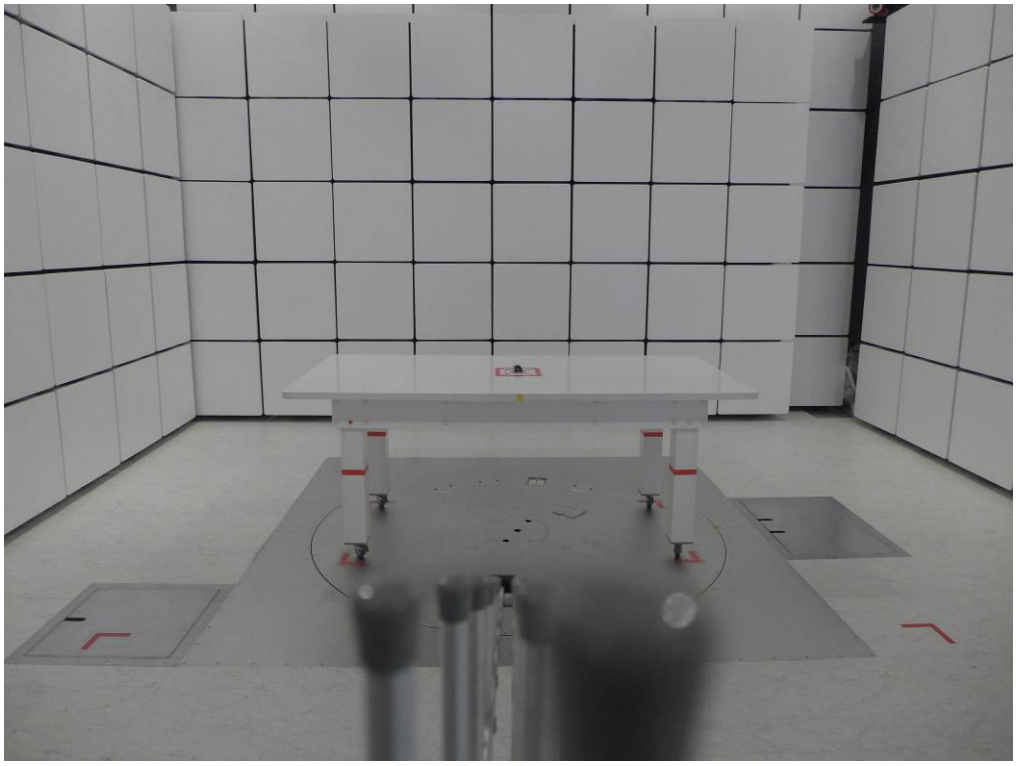




Radiated Measurement Photos

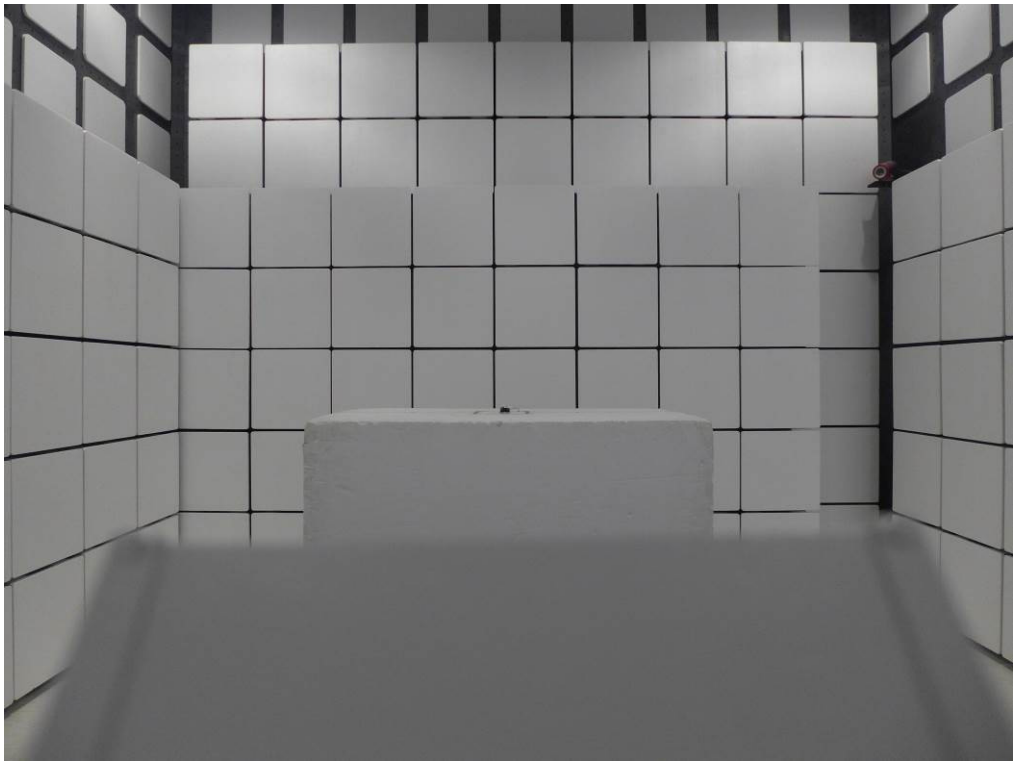
30M to 1000MHz



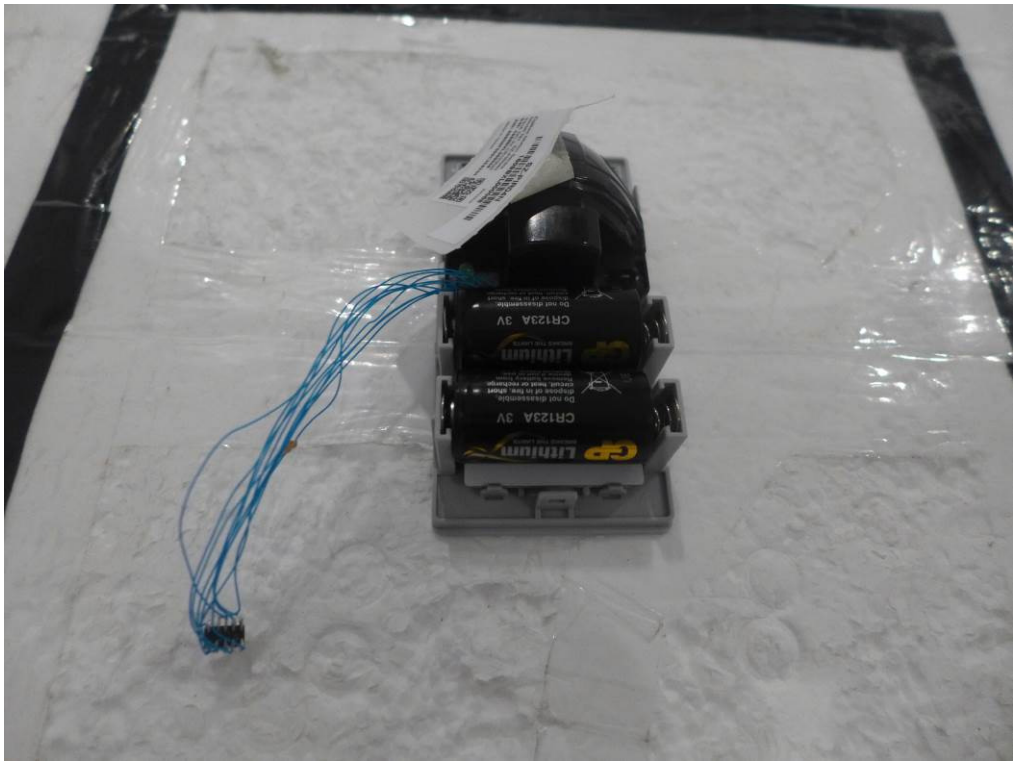


Radiated Measurement Photos

Above 1000MHz



Radiated Measurement Photos



ATTACHMENT A - CONDUCTED EMISSION

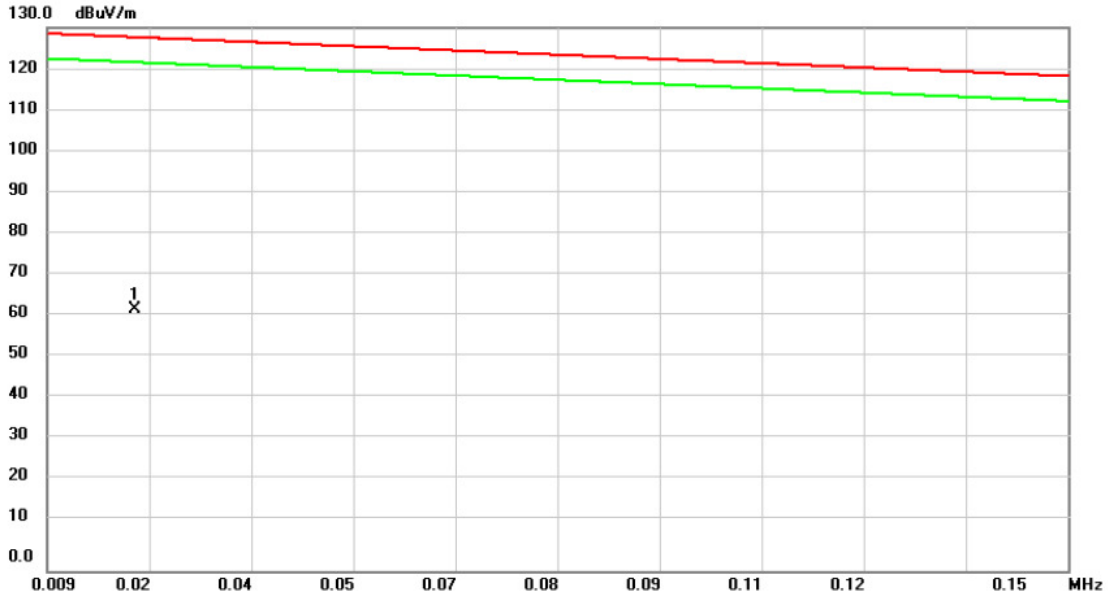
Test Mode: N/A

Note: “N/A” denotes test is not applicable to this device.

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

Test Mode:	TX Mode

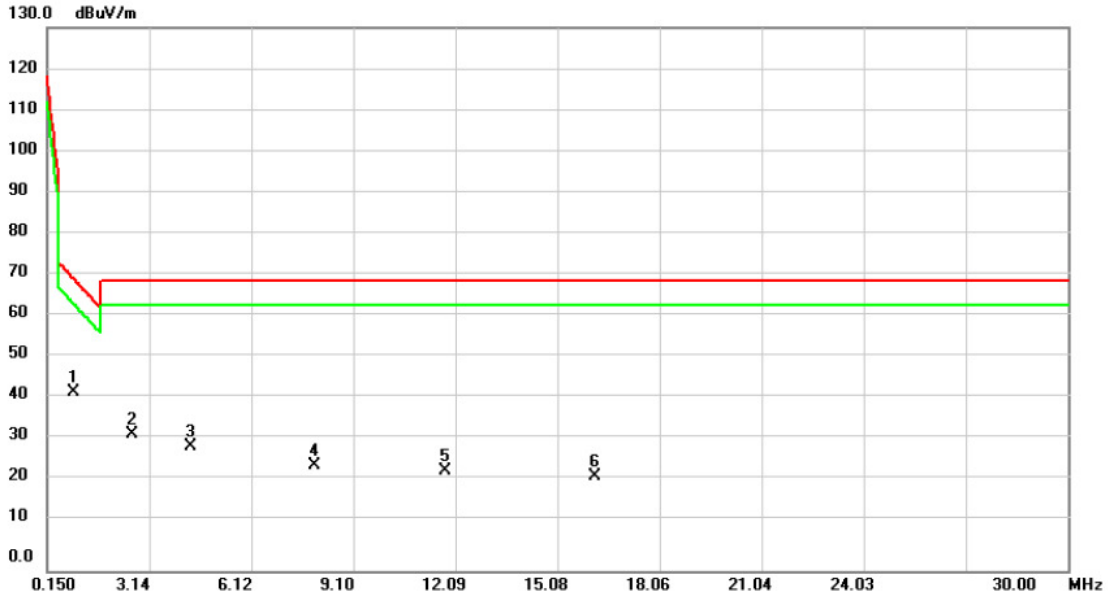
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	0.0212	45.16	17.42	62.58	127.64	-65.06	peak	100	13	

Test Mode:	TX Mode

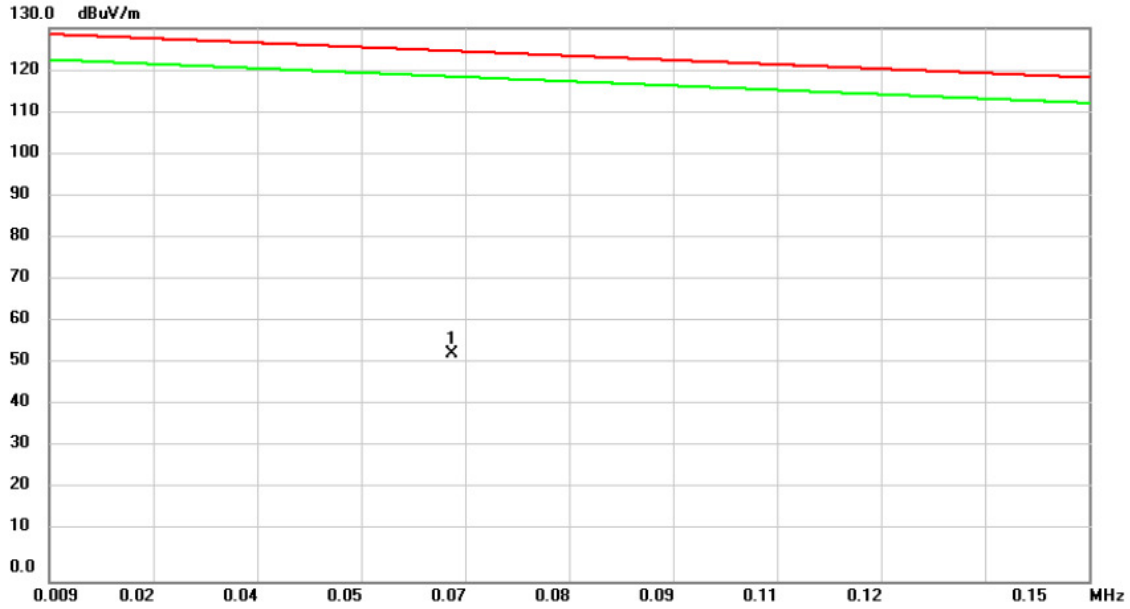
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	0.9261	30.79	11.97	42.76	69.91	-27.15	peak	100	12	
2		2.6274	21.29	11.27	32.56	69.54	-36.98	peak	100	171	
3		4.3290	18.38	11.30	29.68	69.54	-39.86	peak	100	293	
4		7.9706	13.82	11.34	25.16	69.54	-44.38	peak	100	66	
5		11.7911	12.65	11.25	23.90	69.54	-45.64	peak	100	65	
6		16.1794	11.63	11.11	22.74	69.54	-46.80	peak	100	105	

Test Mode:	TX Mode

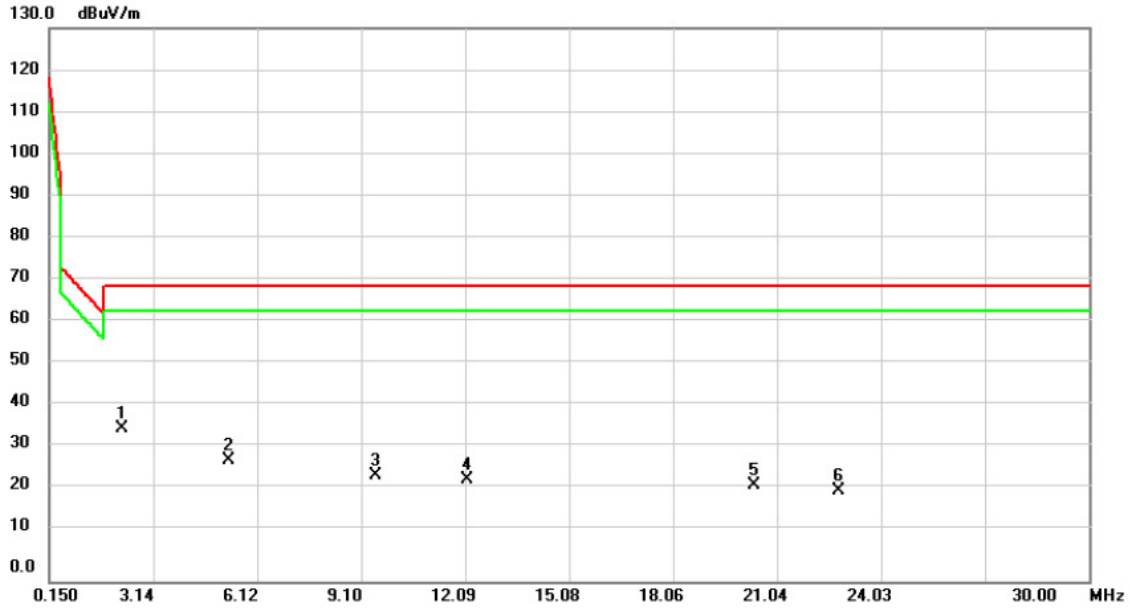
CLOSE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	0.0637	40.61	12.75	53.36	124.57	-71.21	peak	100	47	

Test Mode:	TX Mode

CLOSE

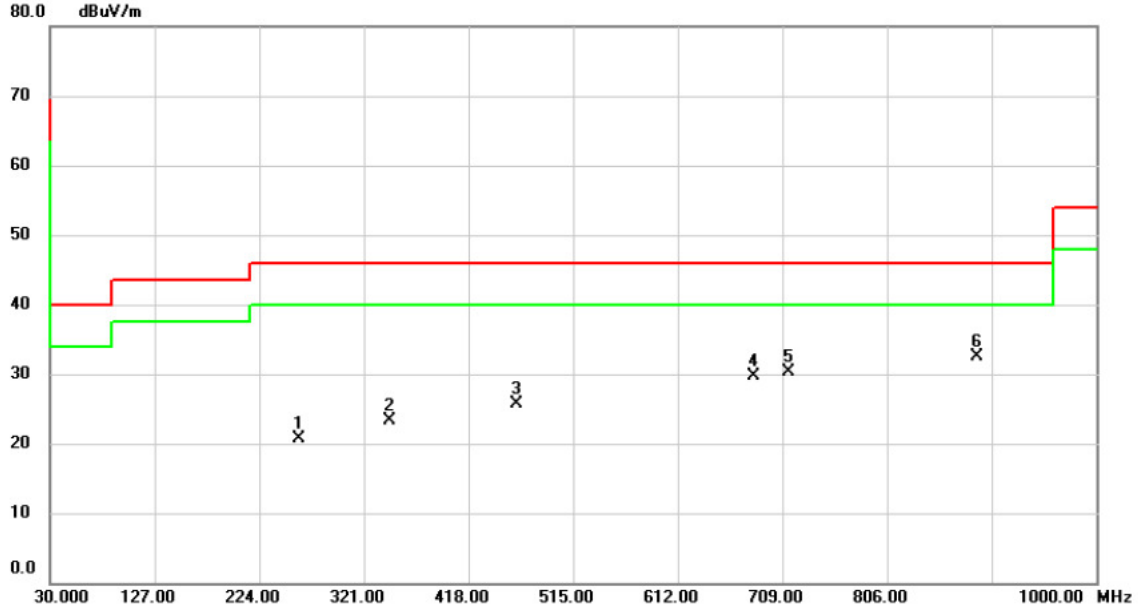


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2.2395	24.62	11.44	36.06	69.54	-33.48	peak	100	290	
2		5.2842	16.97	11.39	28.36	69.54	-41.18	peak	100	173	
3		9.5228	13.44	11.31	24.75	69.54	-44.79	peak	100	122	
4		12.1493	12.61	11.24	23.85	69.54	-45.69	peak	100	106	
5		20.3883	11.79	10.93	22.72	69.54	-46.82	peak	100	98	
6		22.8061	10.72	10.49	21.21	69.54	-48.33	peak	100	240	

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

Test Mode:	TX Mode

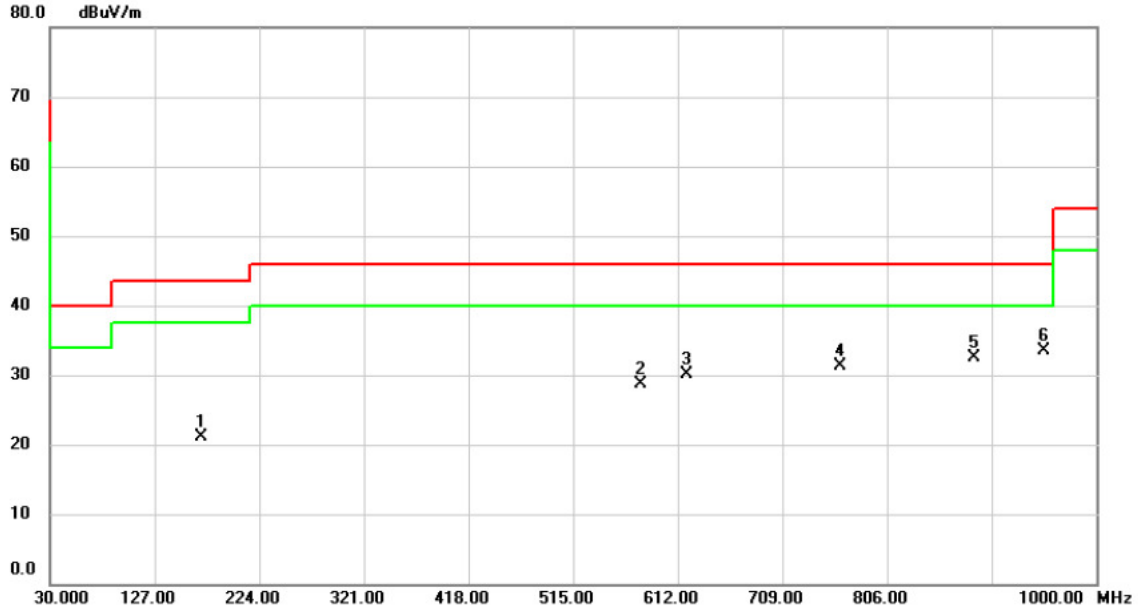
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		260.8600	29.83	-9.03	20.80	46.00	-25.20	peak	302	360	
2		345.2500	29.85	-6.48	23.37	46.00	-22.63	peak	200	359	
3		462.6200	29.41	-3.65	25.76	46.00	-20.24	peak	200	19	
4		681.8400	29.20	0.46	29.66	46.00	-16.34	peak	300	132	
5		714.8200	29.11	1.17	30.28	46.00	-15.72	peak	100	227	
6	*	889.4200	28.59	3.91	32.50	46.00	-13.50	peak	100	248	

Test Mode:	TX Mode

Horizontal

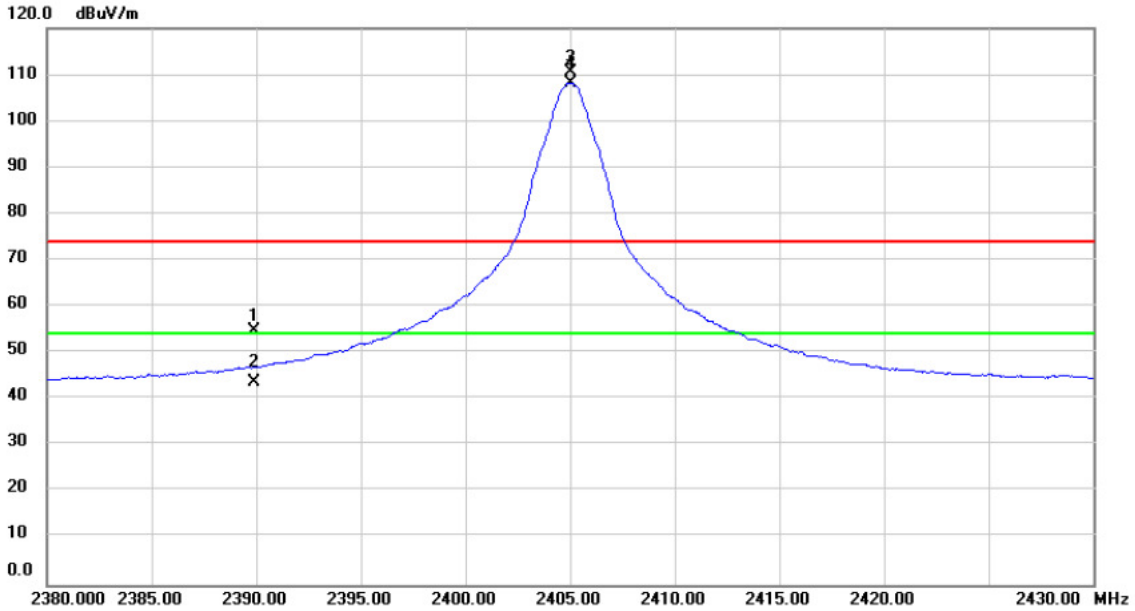


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		170.6500	30.22	-9.16	21.06	43.50	-22.44	peak	100	280	
2		577.0800	30.02	-1.22	28.80	46.00	-17.20	peak	200	360	
3		620.7300	30.52	-0.46	30.06	46.00	-15.94	peak	300	266	
4		762.3500	29.35	2.02	31.37	46.00	-14.63	peak	200	16	
5		886.5100	28.70	3.84	32.54	46.00	-13.46	peak	200	72	
6	*	951.5000	28.42	5.01	33.43	46.00	-12.57	peak	200	231	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Orthogonal Axis :	X
Test Mode :	TX 2405MHz

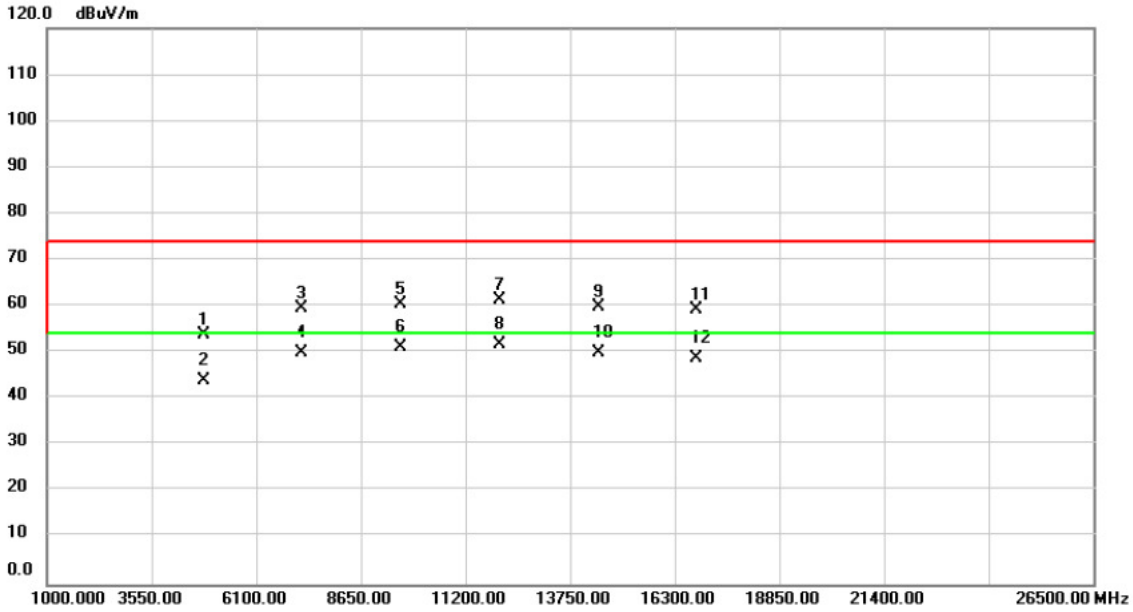
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2389.910	23.76	30.96	54.72	74.00	-19.28	peak	103	294	
2		2389.910	12.78	30.96	43.74	54.00	-10.26	AVG	103	294	
3	X	2405.000	79.46	31.02	110.48	74.00	36.48	peak	103	294	No Limit
4	*	2405.000	77.26	31.02	108.28	54.00	54.28	AVG	103	294	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2405MHz

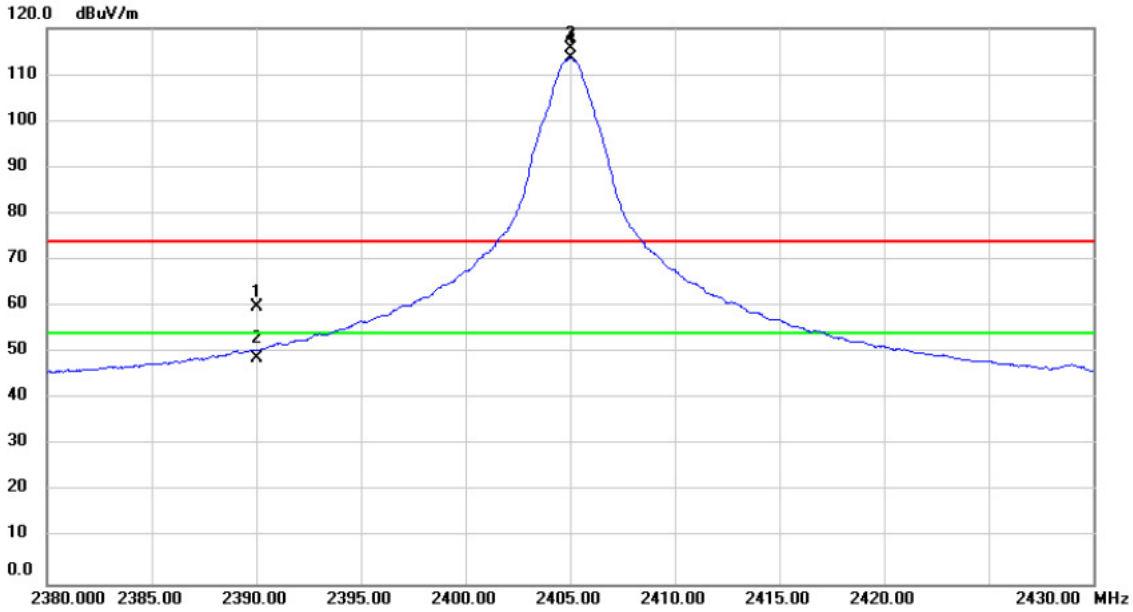
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4810.000	65.23	-11.49	53.74	74.00	-20.26	peak	100	50	
2		4810.000	55.55	-11.49	44.06	54.00	-9.94	AVG	100	50	
3		7215.000	65.08	-5.44	59.64	74.00	-14.36	peak	100	300	
4		7215.000	55.33	-5.44	49.89	54.00	-4.11	AVG	100	300	
5		9620.000	59.78	0.73	60.51	74.00	-13.49	peak	370	75	
6		9620.000	50.54	0.73	51.27	54.00	-2.73	AVG	370	75	
7		12025.00	58.78	2.60	61.38	74.00	-12.62	peak	100	203	
8	*	12025.00	49.09	2.60	51.69	54.00	-2.31	AVG	100	203	
9		14430.00	52.55	7.41	59.96	74.00	-14.04	peak	100	104	
10		14430.00	42.41	7.41	49.82	54.00	-4.18	AVG	100	104	
11		16835.00	52.67	6.55	59.22	74.00	-14.78	peak	100	237	
12		16835.00	42.18	6.55	48.73	54.00	-5.27	AVG	100	237	

Orthogonal Axis :	X
Test Mode :	TX 2405MHz

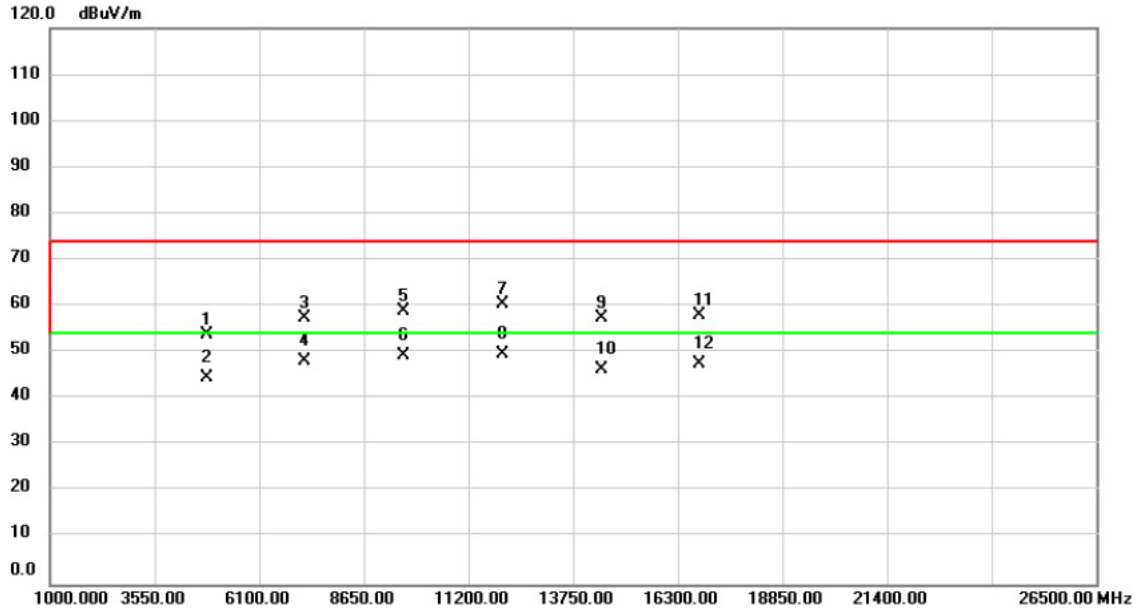
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2390.000	28.98	30.96	59.94	74.00	-14.06	peak	113	343	
2		2390.000	17.94	30.96	48.90	54.00	-5.10	AVG	113	343	
3	X	2405.000	84.64	31.02	115.66	74.00	41.66	peak	113	343	No Limit
4	*	2405.000	82.48	31.02	113.50	54.00	59.50	AVG	113	343	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2405MHz

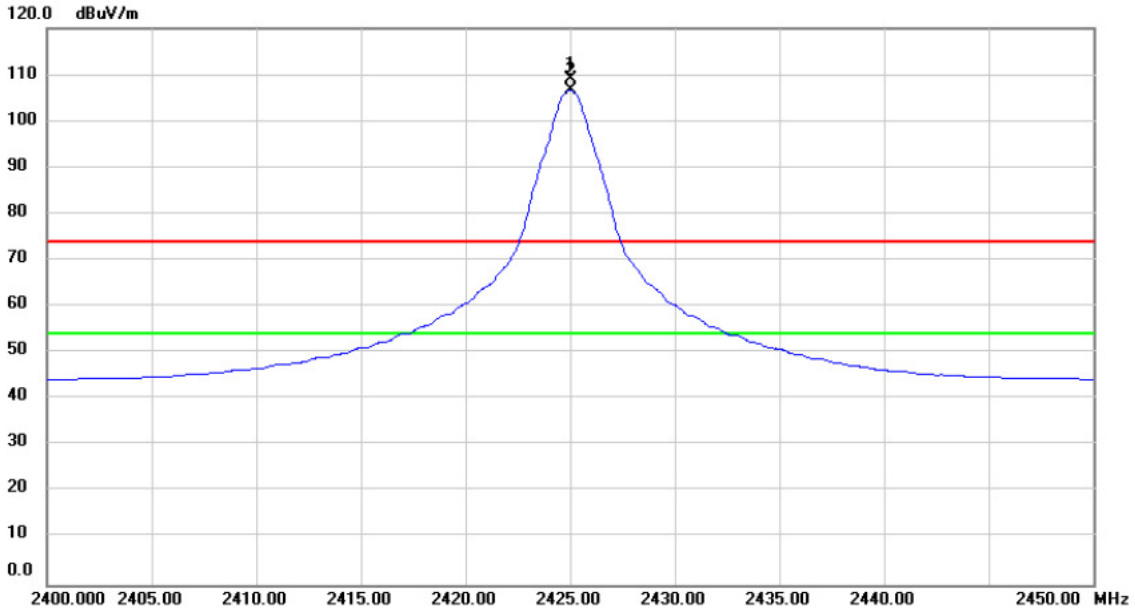
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4810.000	65.36	-11.49	53.87	74.00	-20.13	peak	100	20	
2		4810.000	55.96	-11.49	44.47	54.00	-9.53	AVG	100	20	
3		7215.000	62.94	-5.44	57.50	74.00	-16.50	peak	100	235	
4		7215.000	53.55	-5.44	48.11	54.00	-5.89	AVG	100	235	
5		9620.000	58.24	0.73	58.97	74.00	-15.03	peak	397	145	
6		9620.000	48.72	0.73	49.45	54.00	-4.55	AVG	397	145	
7		12025.00	57.97	2.60	60.57	74.00	-13.43	peak	100	69	
8	*	12025.00	47.09	2.60	49.69	54.00	-4.31	AVG	100	69	
9		14430.00	50.13	7.41	57.54	74.00	-16.46	peak	100	38	
10		14430.00	39.07	7.41	46.48	54.00	-7.52	AVG	100	38	
11		16835.00	51.52	6.55	58.07	74.00	-15.93	peak	103	44	
12		16835.00	41.00	6.55	47.55	54.00	-6.45	AVG	103	44	

Orthogonal Axis :	X
Test Mode :	TX 2425MHz

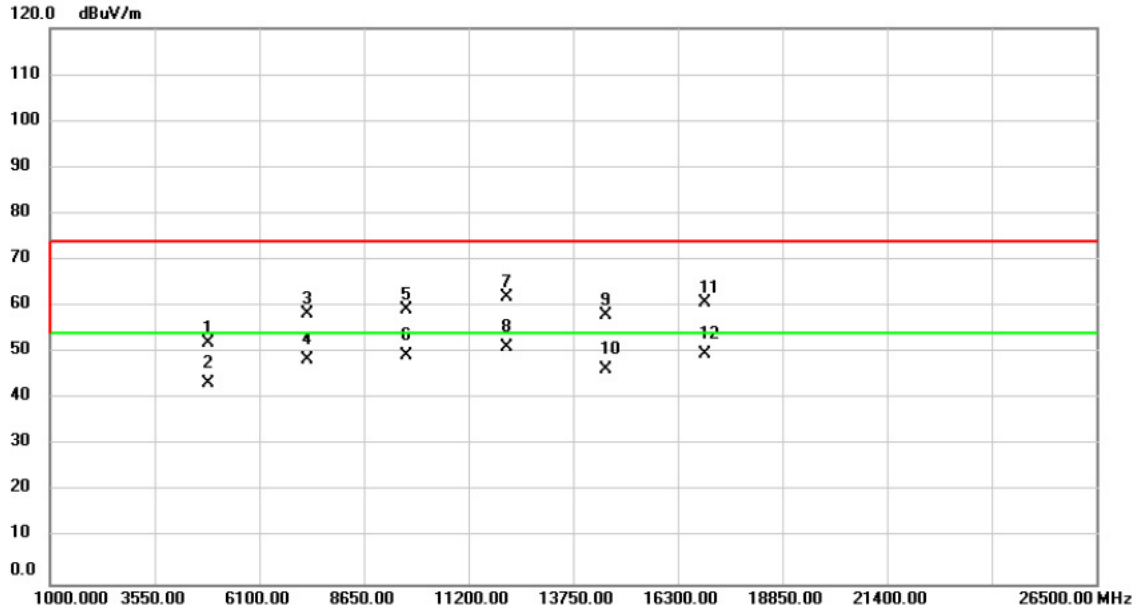
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2425.000	77.90	31.09	108.99	74.00	34.99	peak	100	67	No Limit
2	*	2425.000	75.59	31.09	106.68	54.00	52.68	AVG	100	67	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2425MHz

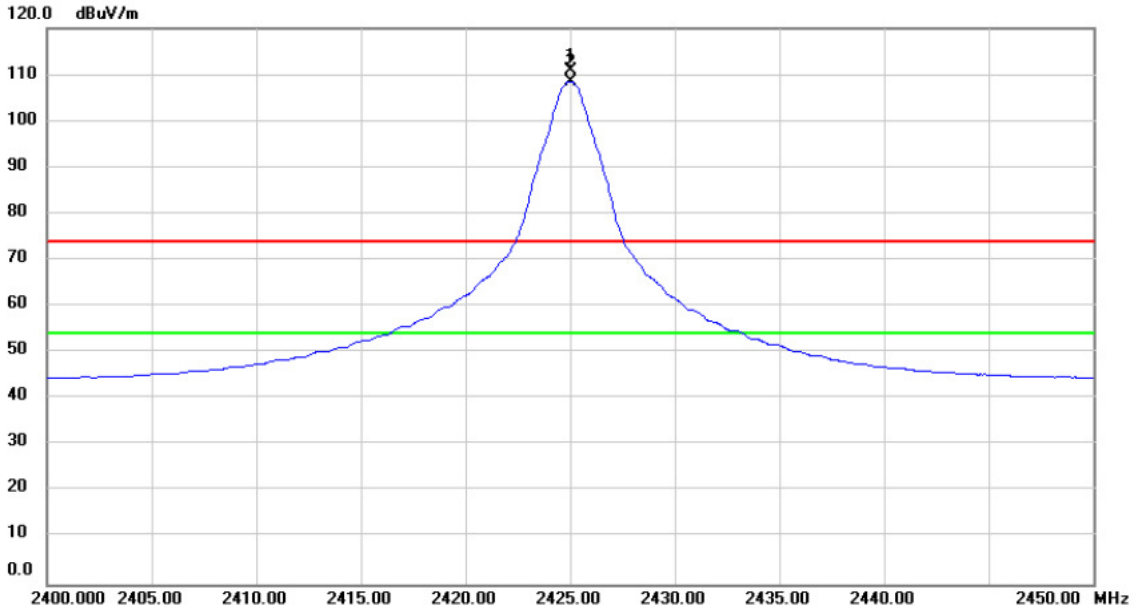
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4850.000	63.40	-11.43	51.97	74.00	-22.03	peak	104	25	
2		4850.000	54.71	-11.43	43.28	54.00	-10.72	AVG	104	25	
3		7275.000	63.60	-5.22	58.38	74.00	-15.62	peak	100	324	
4		7275.000	53.59	-5.22	48.37	54.00	-5.63	AVG	100	324	
5		9700.000	58.31	0.96	59.27	74.00	-14.73	peak	250	73	
6		9700.000	48.24	0.96	49.20	54.00	-4.80	AVG	250	73	
7		12125.00	59.54	2.48	62.02	74.00	-11.98	peak	100	288	
8	*	12125.00	48.71	2.48	51.19	54.00	-2.81	AVG	100	288	
9		14550.00	50.47	7.45	57.92	74.00	-16.08	peak	100	128	
10		14550.00	39.00	7.45	46.45	54.00	-7.55	AVG	100	128	
11		16975.00	53.50	7.16	60.66	74.00	-13.34	peak	100	360	
12		16975.00	42.61	7.16	49.77	54.00	-4.23	AVG	100	360	

Orthogonal Axis :	X
Test Mode :	TX 2425MHz

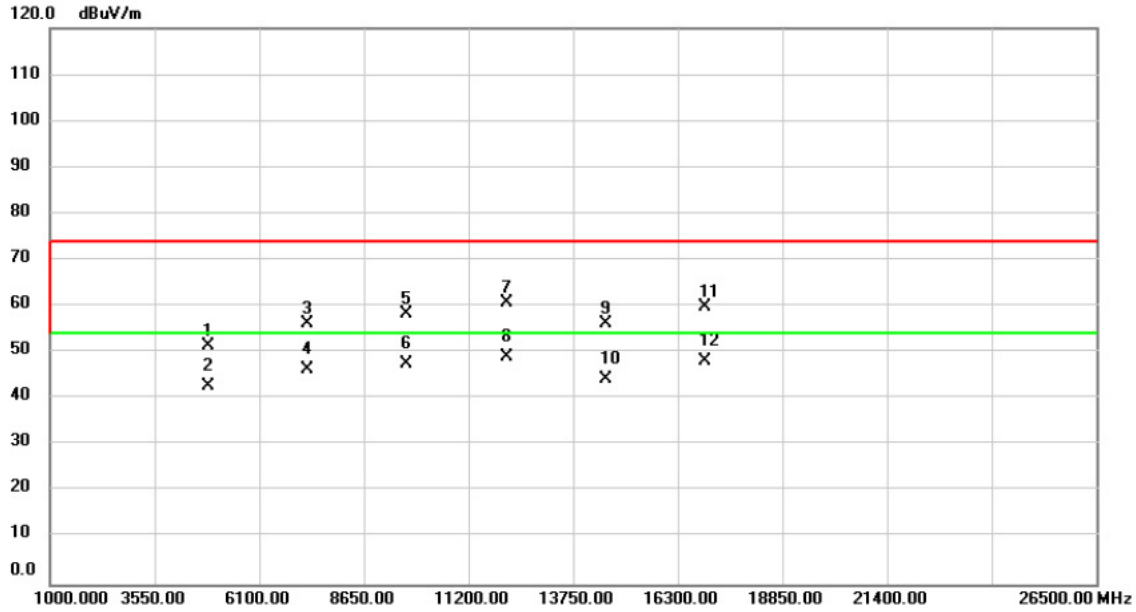
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2425.000	79.74	31.09	110.83	74.00	36.83	peak	129	133	No Limit
2	*	2425.000	77.46	31.09	108.55	54.00	54.55	AVG	129	133	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2425MHz

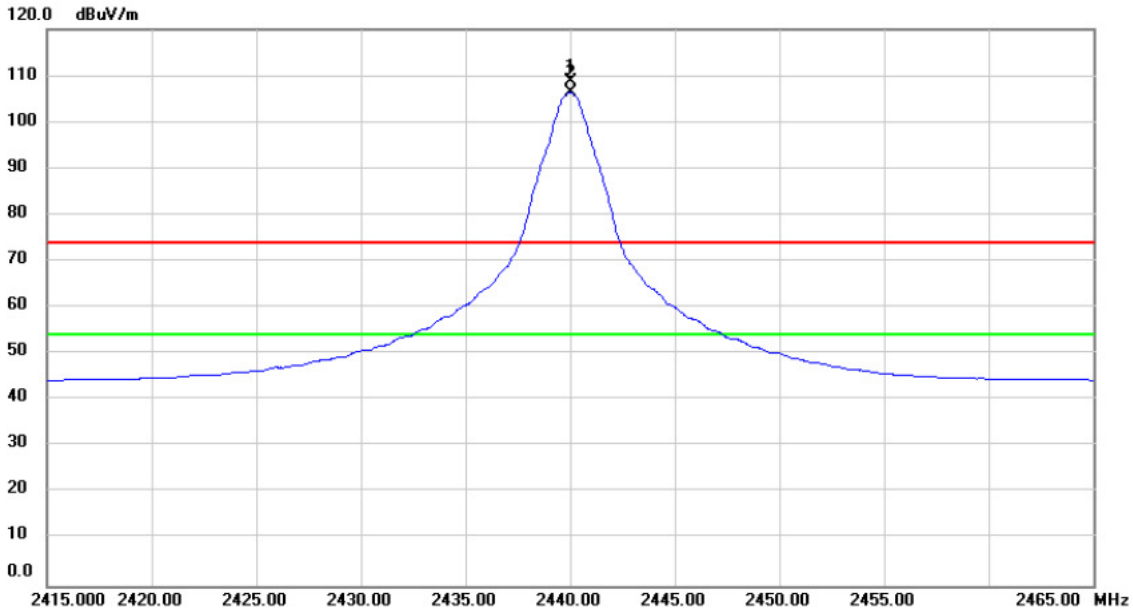
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4850.000	62.87	-11.43	51.44	74.00	-22.56	peak	122	19	
2		4850.000	54.20	-11.43	42.77	54.00	-11.23	AVG	122	19	
3		7275.000	61.54	-5.22	56.32	74.00	-17.68	peak	100	220	
4		7275.000	51.47	-5.22	46.25	54.00	-7.75	AVG	100	220	
5		9700.000	57.41	0.96	58.37	74.00	-15.63	peak	400	162	
6		9700.000	46.62	0.96	47.58	54.00	-6.42	AVG	400	162	
7		12125.00	58.29	2.48	60.77	74.00	-13.23	peak	112	105	
8	*	12125.00	46.70	2.48	49.18	54.00	-4.82	AVG	112	105	
9		14550.00	48.88	7.45	56.33	74.00	-17.67	peak	100	39	
10		14550.00	36.77	7.45	44.22	54.00	-9.78	AVG	100	39	
11		16975.00	52.60	7.16	59.76	74.00	-14.24	peak	107	311	
12		16975.00	40.90	7.16	48.06	54.00	-5.94	AVG	107	311	

Orthogonal Axis :	X
Test Mode :	TX 2440MHz

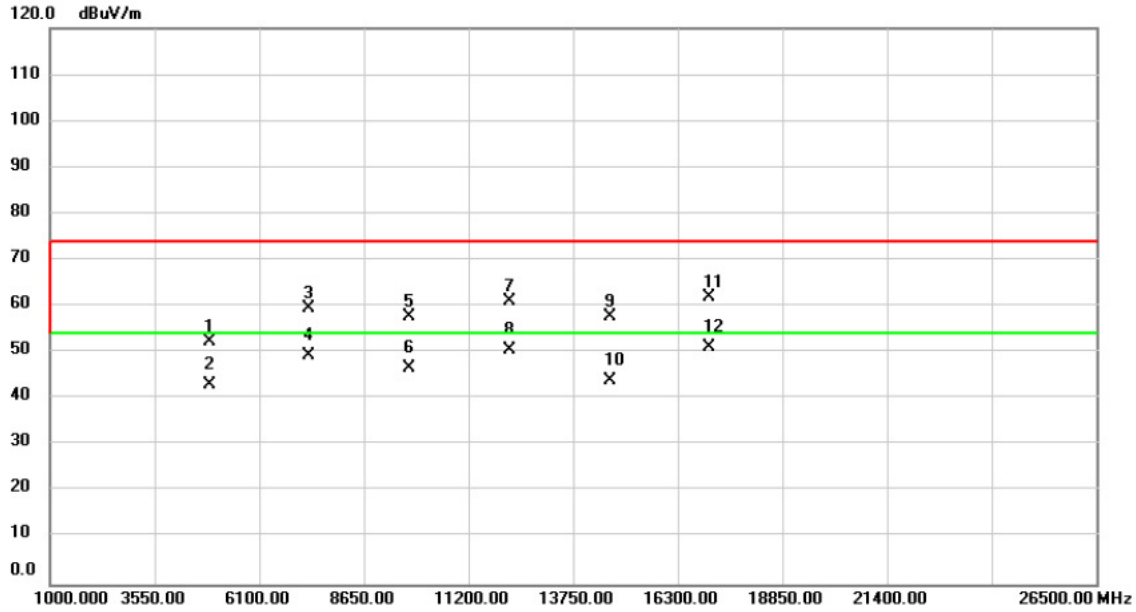
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2440.000	77.46	31.15	108.61	74.00	34.61	peak	100	68	No Limit
2	*	2440.000	75.16	31.15	106.31	54.00	52.31	AVG	100	68	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2440MHz

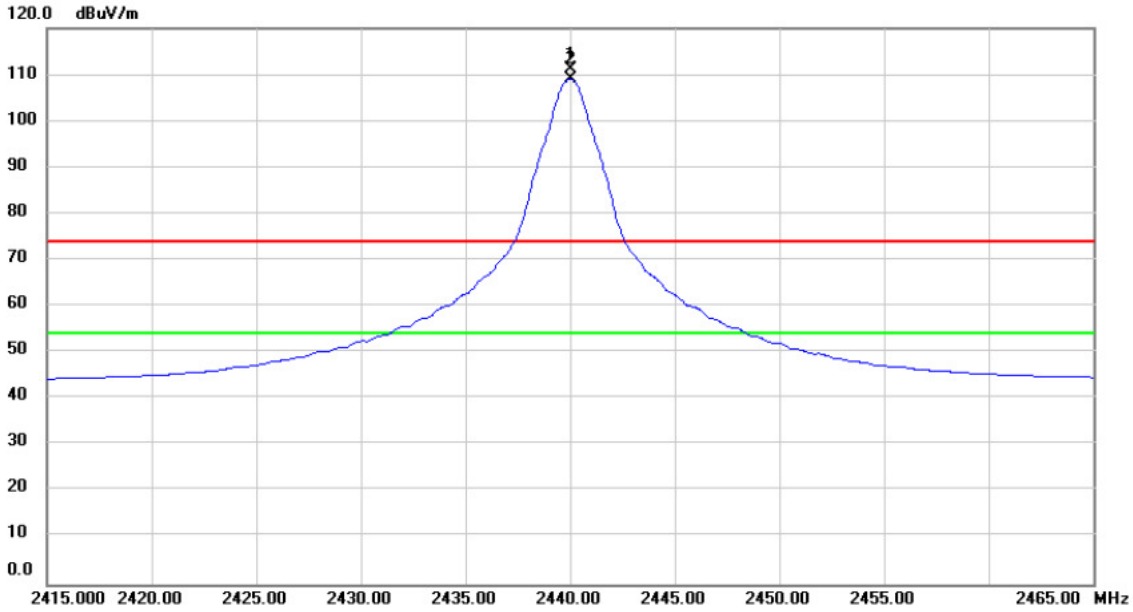
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4880.000	63.70	-11.38	52.32	74.00	-21.68	peak	123	70	
2		4880.000	54.56	-11.38	43.18	54.00	-10.82	AVG	123	70	
3		7320.000	64.56	-5.04	59.52	74.00	-14.48	peak	123	305	
4		7320.000	54.27	-5.04	49.23	54.00	-4.77	AVG	123	305	
5		9760.000	56.66	1.14	57.80	74.00	-16.20	peak	100	163	
6		9760.000	45.65	1.14	46.79	54.00	-7.21	AVG	100	163	
7		12200.00	58.78	2.37	61.15	74.00	-12.85	peak	100	117	
8		12200.00	48.07	2.37	50.44	54.00	-3.56	AVG	100	117	
9		14640.00	50.43	7.26	57.69	74.00	-16.31	peak	100	360	
10		14640.00	36.82	7.26	44.08	54.00	-9.92	AVG	100	360	
11		17080.00	54.40	7.56	61.96	74.00	-12.04	peak	100	358	
12	*	17080.00	43.50	7.56	51.06	54.00	-2.94	AVG	100	358	

Orthogonal Axis :	X
Test Mode :	TX 2440MHz

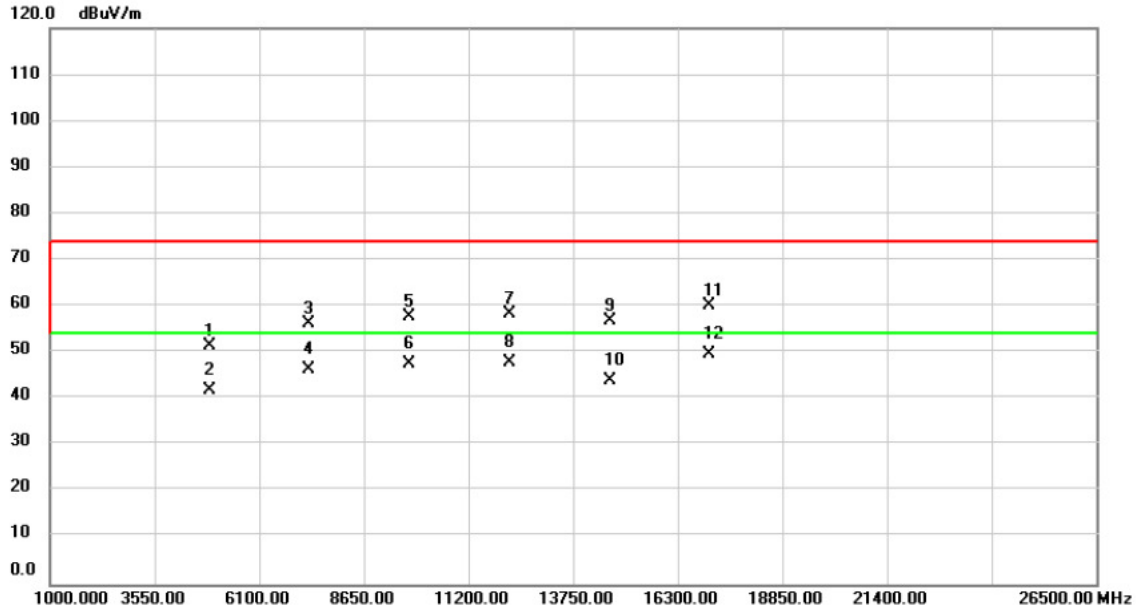
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2440.000	80.11	31.15	111.26	74.00	37.26	peak	214	233	No Limit
2	*	2440.000	77.84	31.15	108.99	54.00	54.99	AVG	214	233	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2440MHz

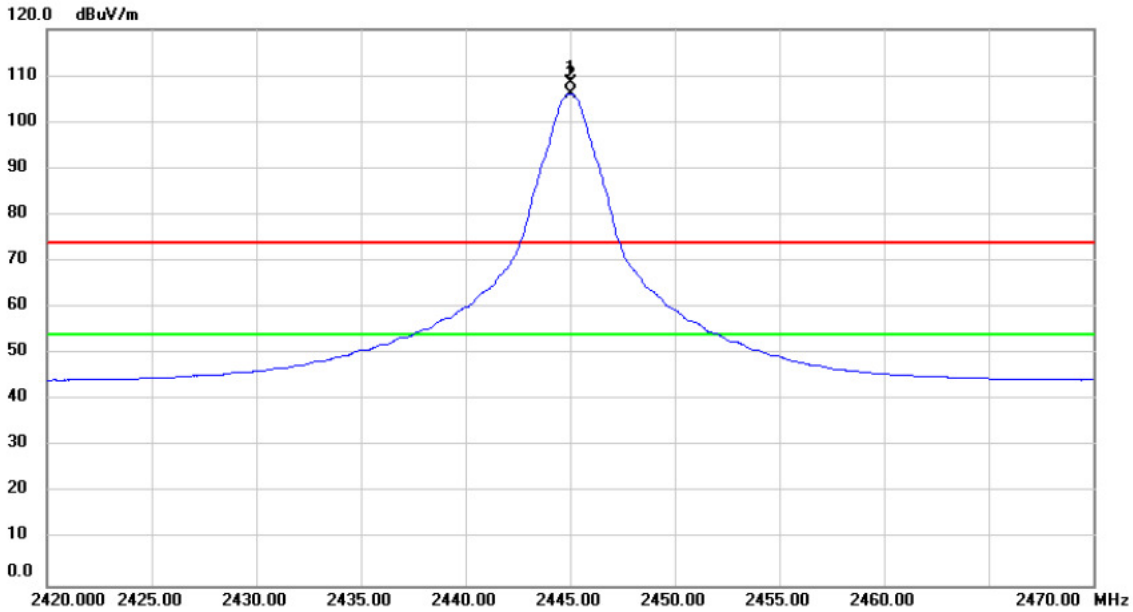
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4880.000	62.79	-11.38	51.41	74.00	-22.59	peak	100	47	
2		4880.000	53.31	-11.38	41.93	54.00	-12.07	AVG	100	47	
3		7320.000	61.33	-5.04	56.29	74.00	-17.71	peak	100	244	
4		7320.000	51.47	-5.04	46.43	54.00	-7.57	AVG	100	244	
5		9760.000	56.62	1.14	57.76	74.00	-16.24	peak	397	140	
6		9760.000	46.43	1.14	47.57	54.00	-6.43	AVG	397	140	
7		12200.00	55.86	2.37	58.23	74.00	-15.77	peak	100	108	
8		12200.00	45.53	2.37	47.90	54.00	-6.10	AVG	100	108	
9		14640.00	49.74	7.26	57.00	74.00	-17.00	peak	100	0	
10		14640.00	36.67	7.26	43.93	54.00	-10.07	AVG	100	0	
11		17080.00	52.57	7.56	60.13	74.00	-13.87	peak	117	312	
12	*	17080.00	42.14	7.56	49.70	54.00	-4.30	AVG	117	312	

Orthogonal Axis :	X
Test Mode :	TX 2445MHz

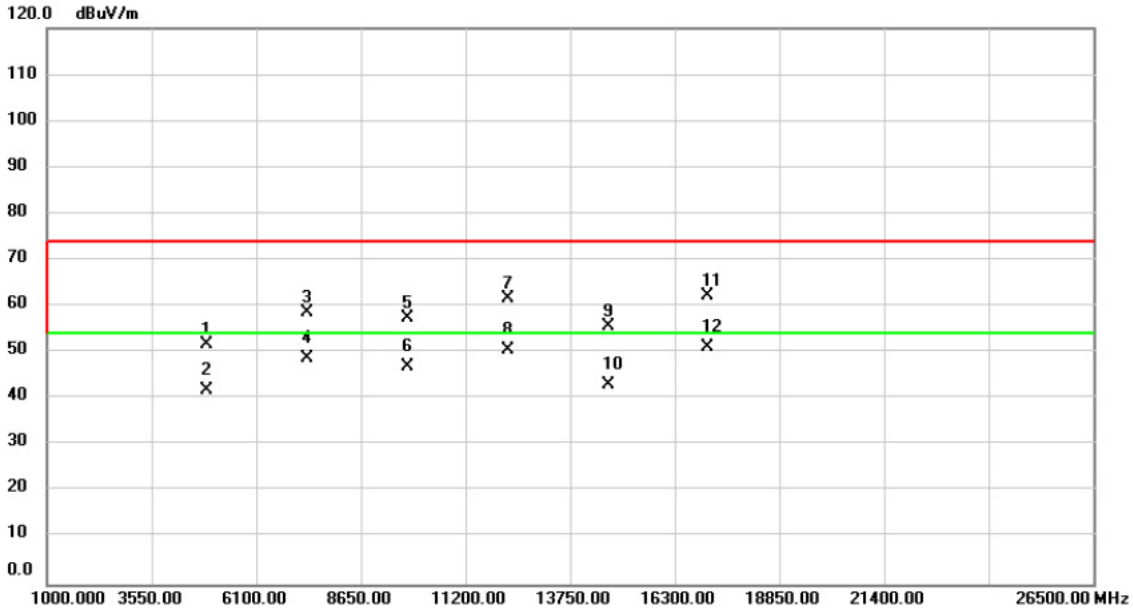
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2445.000	77.18	31.17	108.35	74.00	34.35	peak	100	66	No Limit
2	*	2445.000	75.01	31.17	106.18	54.00	52.18	AVG	100	66	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2445MHz

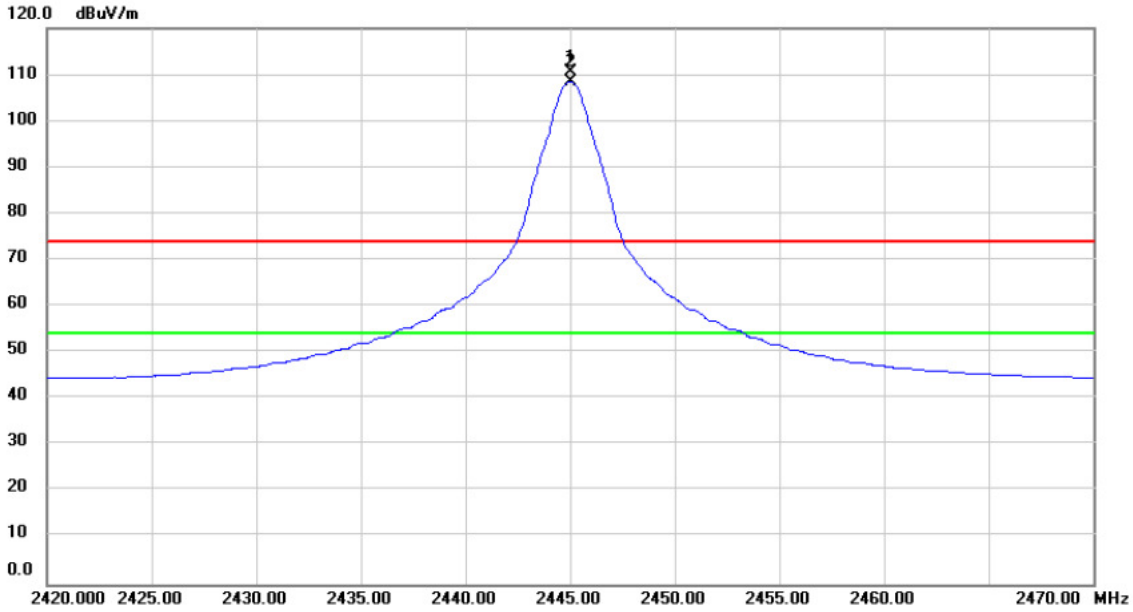
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4890.000	63.10	-11.37	51.73	74.00	-22.27	peak	100	70	
2		4890.000	53.16	-11.37	41.79	54.00	-12.21	AVG	100	70	
3		7335.000	63.76	-4.99	58.77	74.00	-15.23	peak	128	303	
4		7335.000	53.81	-4.99	48.82	54.00	-5.18	AVG	128	303	
5		9780.000	56.20	1.19	57.39	74.00	-16.61	peak	108	163	
6		9780.000	45.79	1.19	46.98	54.00	-7.02	AVG	108	163	
7		12225.00	59.18	2.34	61.52	74.00	-12.48	peak	100	115	
8		12225.00	48.25	2.34	50.59	54.00	-3.41	AVG	100	115	
9		14670.00	48.51	7.21	55.72	74.00	-18.28	peak	100	0	
10		14670.00	35.87	7.21	43.08	54.00	-10.92	AVG	100	0	
11		17115.00	54.51	7.68	62.19	74.00	-11.81	peak	100	4	
12	*	17115.00	43.36	7.68	51.04	54.00	-2.96	AVG	100	4	

Orthogonal Axis :	X
Test Mode :	TX 2445MHz

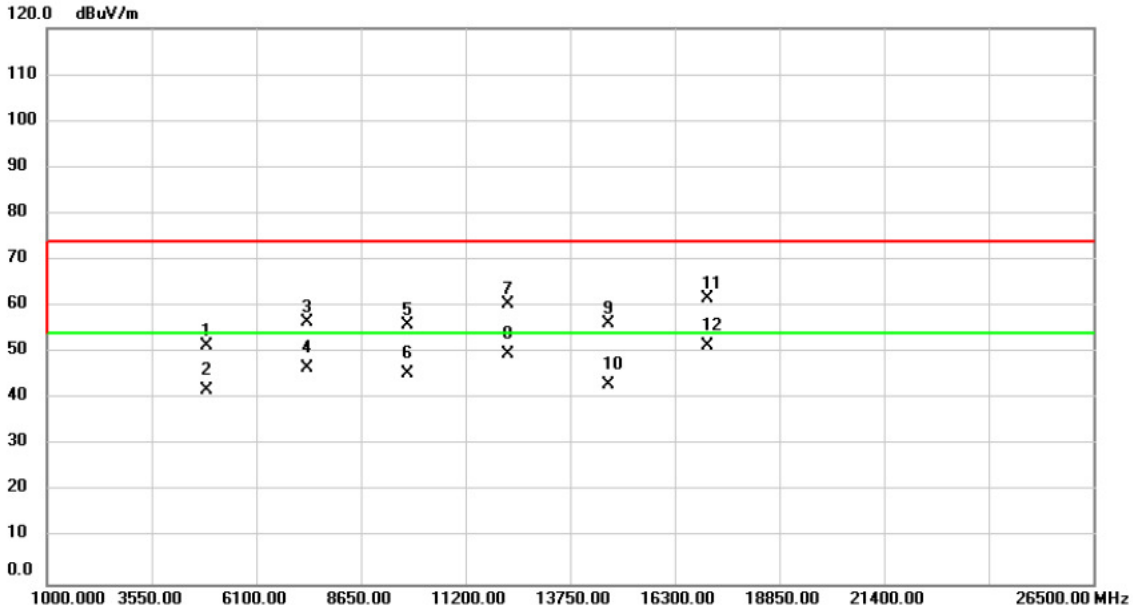
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2445.000	79.42	31.17	110.59	74.00	36.59	peak	209	254	No Limit
2	*	2445.000	77.24	31.17	108.41	54.00	54.41	AVG	209	254	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2445MHz

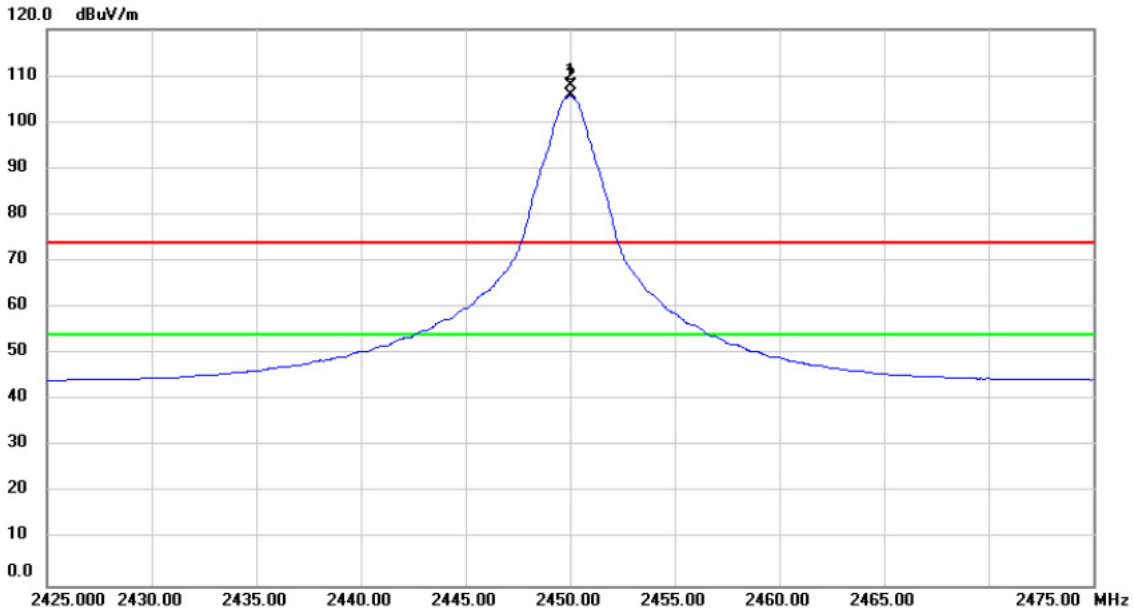
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4890.000	62.75	-11.37	51.38	74.00	-22.62	peak	100	27	
2		4890.000	53.14	-11.37	41.77	54.00	-12.23	AVG	100	27	
3		7335.000	61.67	-4.99	56.68	74.00	-17.32	peak	101	236	
4		7335.000	51.54	-4.99	46.55	54.00	-7.45	AVG	101	236	
5		9780.000	54.77	1.19	55.96	74.00	-18.04	peak	100	157	
6		9780.000	44.13	1.19	45.32	54.00	-8.68	AVG	100	157	
7		12225.00	57.98	2.34	60.32	74.00	-13.68	peak	100	108	
8		12225.00	47.41	2.34	49.75	54.00	-4.25	AVG	100	108	
9		14670.00	49.19	7.21	56.40	74.00	-17.60	peak	100	0	
10		14670.00	35.96	7.21	43.17	54.00	-10.83	AVG	100	0	
11		17115.00	54.09	7.68	61.77	74.00	-12.23	peak	101	359	
12	*	17115.00	43.77	7.68	51.45	54.00	-2.55	AVG	101	359	

Orthogonal Axis :	X
Test Mode :	TX 2450MHz

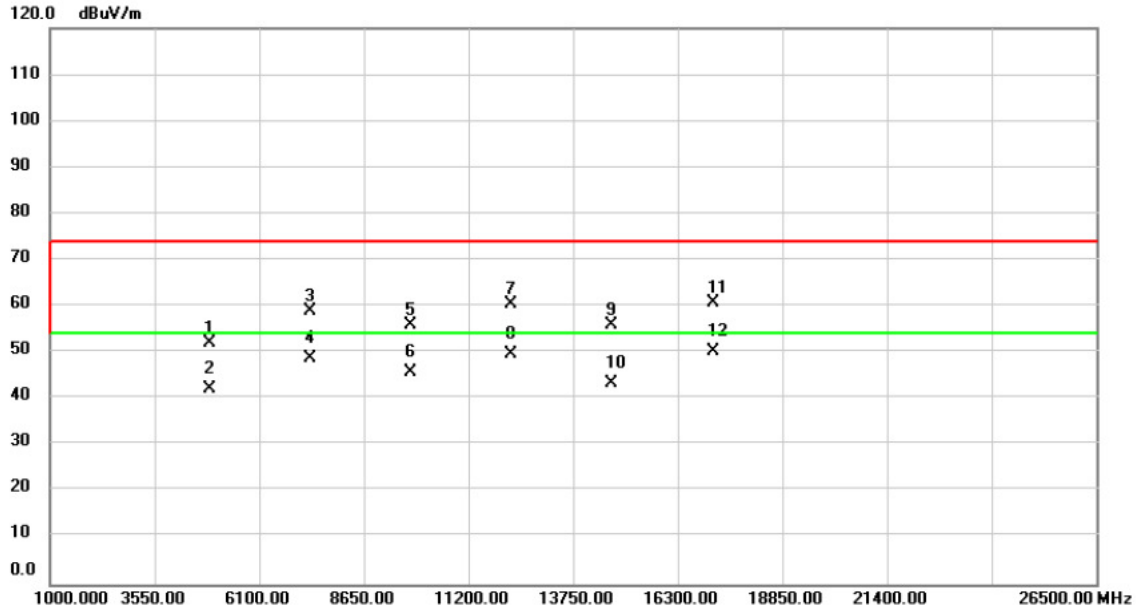
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2450.000	76.66	31.19	107.85	74.00	33.85	peak	100	66	No Limit
2	*	2450.000	74.45	31.19	105.64	54.00	51.64	AVG	100	66	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2450MHz

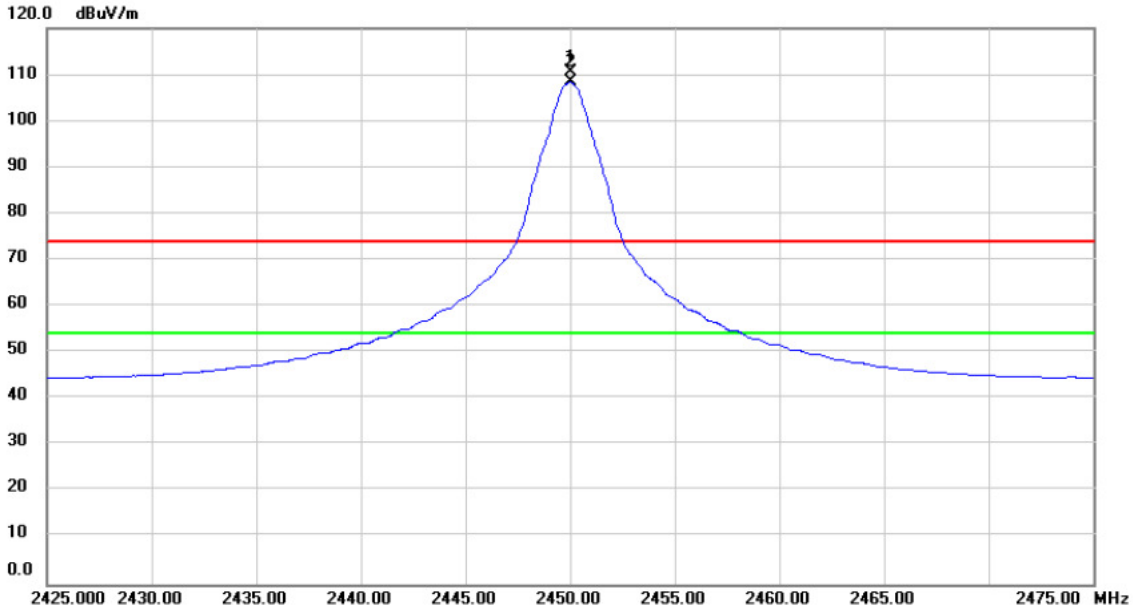
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4900.000	63.43	-11.36	52.07	74.00	-21.93	peak	387	34	
2		4900.000	53.59	-11.36	42.23	54.00	-11.77	AVG	387	34	
3		7350.000	63.82	-4.93	58.89	74.00	-15.11	peak	106	290	
4		7350.000	53.69	-4.93	48.76	54.00	-5.24	AVG	106	290	
5		9800.000	54.68	1.25	55.93	74.00	-18.07	peak	100	162	
6		9800.000	44.49	1.25	45.74	54.00	-8.26	AVG	100	162	
7		12250.00	58.03	2.30	60.33	74.00	-13.67	peak	105	114	
8		12250.00	47.31	2.30	49.61	54.00	-4.39	AVG	105	114	
9		14700.00	48.89	7.15	56.04	74.00	-17.96	peak	150	360	
10		14700.00	36.16	7.15	43.31	54.00	-10.69	AVG	150	360	
11		17150.00	52.99	7.81	60.80	74.00	-13.20	peak	101	360	
12	*	17150.00	42.55	7.81	50.36	54.00	-3.64	AVG	101	360	

Orthogonal Axis :	X
Test Mode :	TX 2450MHz

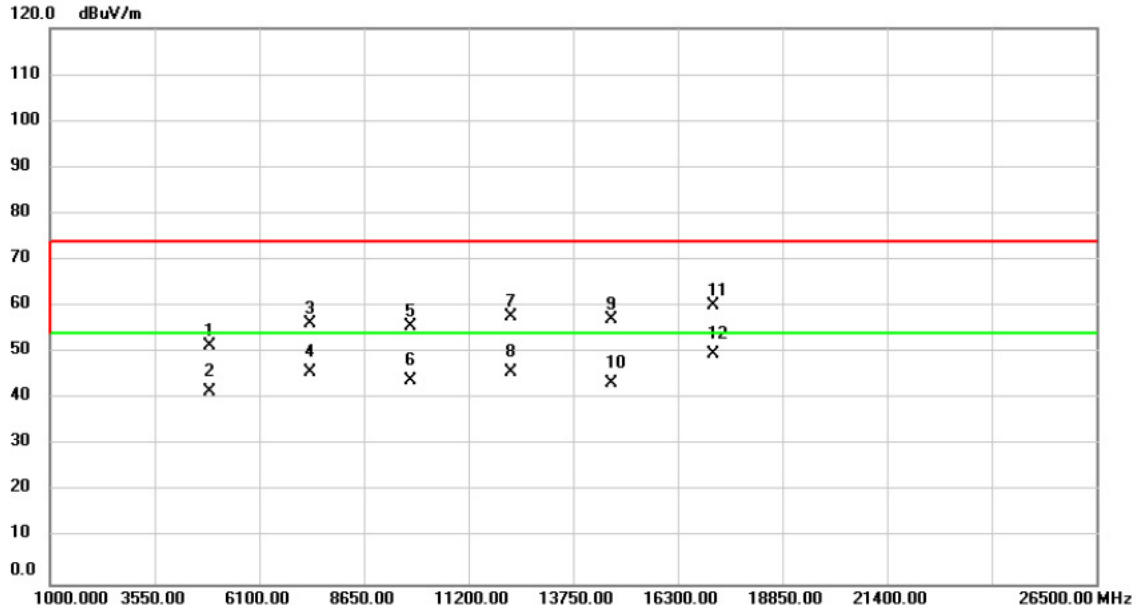
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2450.000	79.31	31.19	110.50	74.00	36.50	peak	211	254	No Limit
2	*	2450.000	77.15	31.19	108.34	54.00	54.34	AVG	211	254	No Limit

Orthogonal Axis :	X
Test Mode :	TX 2450MHz

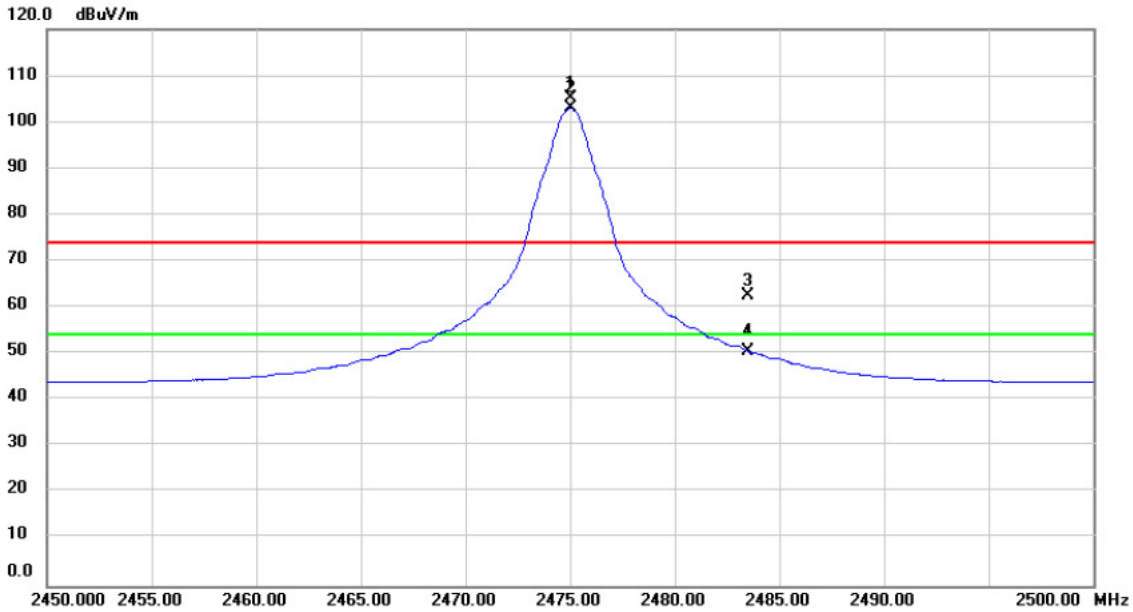
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4900.000	62.93	-11.36	51.57	74.00	-22.43	peak	100	28	
2		4900.000	52.91	-11.36	41.55	54.00	-12.45	AVG	100	28	
3		7350.000	61.11	-4.93	56.18	74.00	-17.82	peak	101	30	
4		7350.000	50.77	-4.93	45.84	54.00	-8.16	AVG	101	30	
5		9800.000	54.30	1.25	55.55	74.00	-18.45	peak	100	155	
6		9800.000	42.82	1.25	44.07	54.00	-9.93	AVG	100	155	
7		12250.00	55.56	2.30	57.86	74.00	-16.14	peak	100	281	
8		12250.00	43.48	2.30	45.78	54.00	-8.22	AVG	100	281	
9		14700.00	49.96	7.15	57.11	74.00	-16.89	peak	100	0	
10		14700.00	36.13	7.15	43.28	54.00	-10.72	AVG	100	0	
11		17150.00	52.22	7.81	60.03	74.00	-13.97	peak	110	301	
12	*	17150.00	41.73	7.81	49.54	54.00	-4.46	AVG	110	301	

Orthogonal Axis :	X
Test Mode :	TX 2475MHz

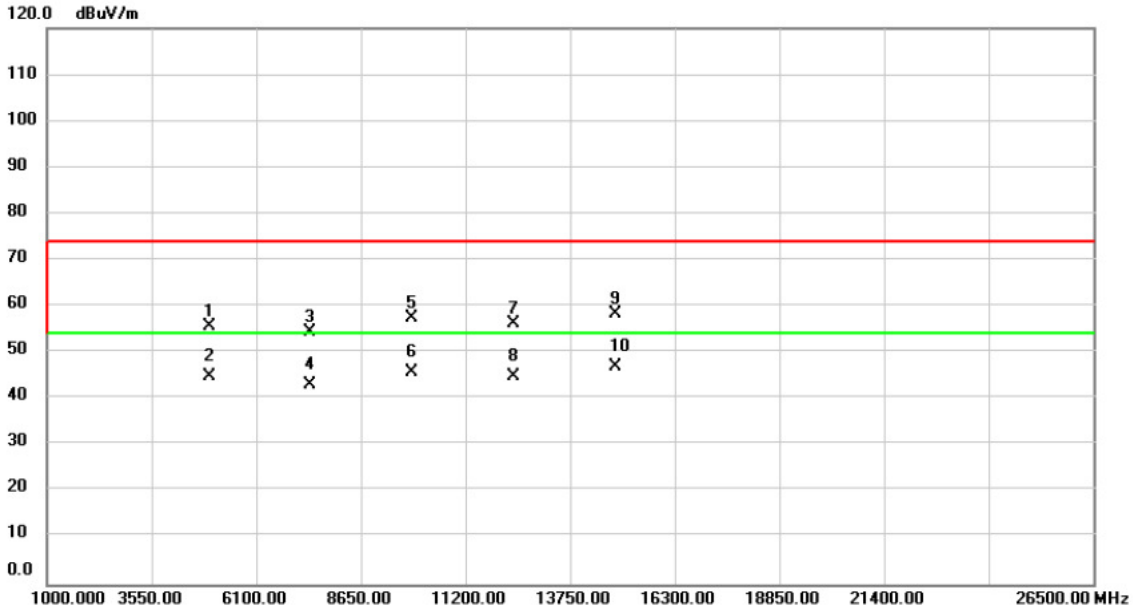
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2475.000	73.80	31.28	105.08	74.00	31.08	peak	100	296	No Limit
2	*	2475.000	71.69	31.28	102.97	54.00	48.97	AVG	100	296	No Limit
3		2483.500	31.24	31.31	62.55	74.00	-11.45	peak	100	296	
4		2483.500	19.27	31.31	50.58	54.00	-3.42	AVG	100	296	

Orthogonal Axis :	X
Test Mode :	TX 2475MHz

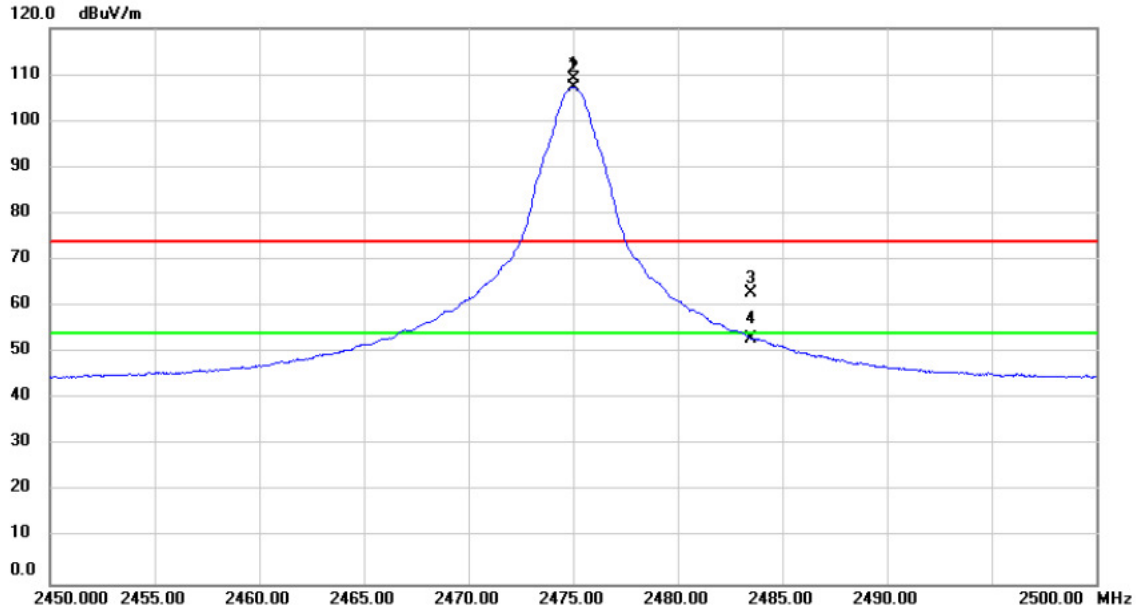
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4950.000	66.89	-11.27	55.62	74.00	-18.38	peak	269	301	
2		4950.000	56.10	-11.27	44.83	54.00	-9.17	AVG	269	301	
3		7425.000	59.22	-4.66	54.56	74.00	-19.44	peak	100	305	
4		7425.000	47.72	-4.66	43.06	54.00	-10.94	AVG	100	305	
5		9900.000	55.90	1.54	57.44	74.00	-16.56	peak	100	6	
6		9900.000	44.09	1.54	45.63	54.00	-8.37	AVG	100	6	
7		12375.00	54.18	2.14	56.32	74.00	-17.68	peak	100	58	
8		12375.00	42.64	2.14	44.78	54.00	-9.22	AVG	100	58	
9		14850.00	51.48	6.84	58.32	74.00	-15.68	peak	100	313	
10	*	14850.00	40.22	6.84	47.06	54.00	-6.94	AVG	100	313	

Orthogonal Axis :	X
Test Mode :	TX 2475MHz

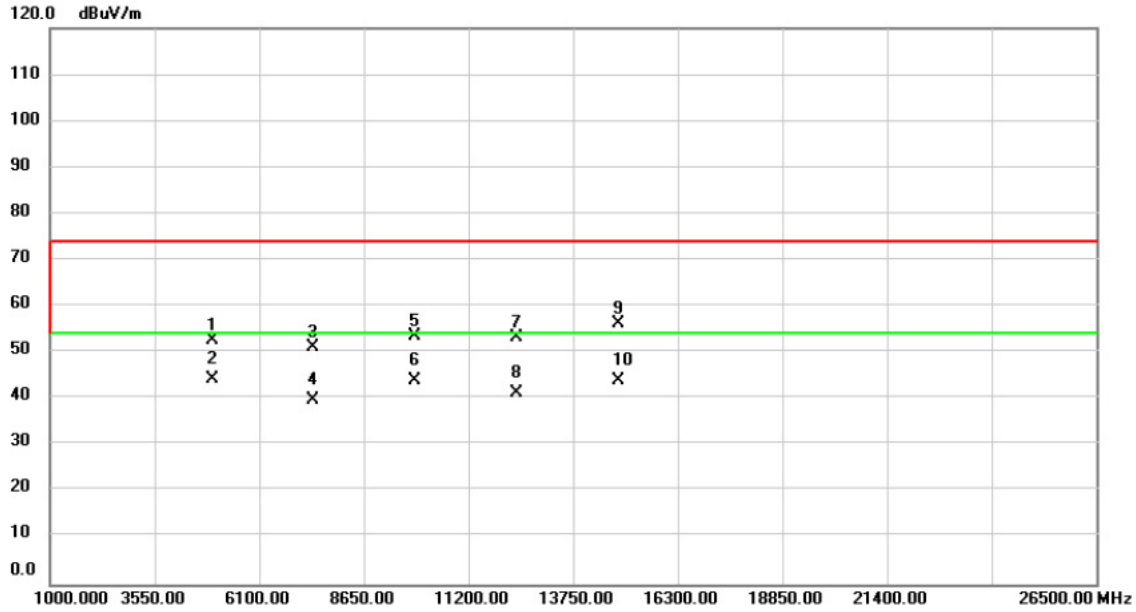
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	X	2475.000	77.91	31.28	109.19	74.00	35.19	peak	110	339	No Limit
2	*	2475.000	75.95	31.28	107.23	54.00	53.23	AVG	110	339	No Limit
3		2483.500	31.40	31.31	62.71	74.00	-11.29	peak	110	339	
4		2483.500	21.55	31.31	52.86	54.00	-1.14	AVG	110	339	

Orthogonal Axis :	X
Test Mode :	TX 2475MHz

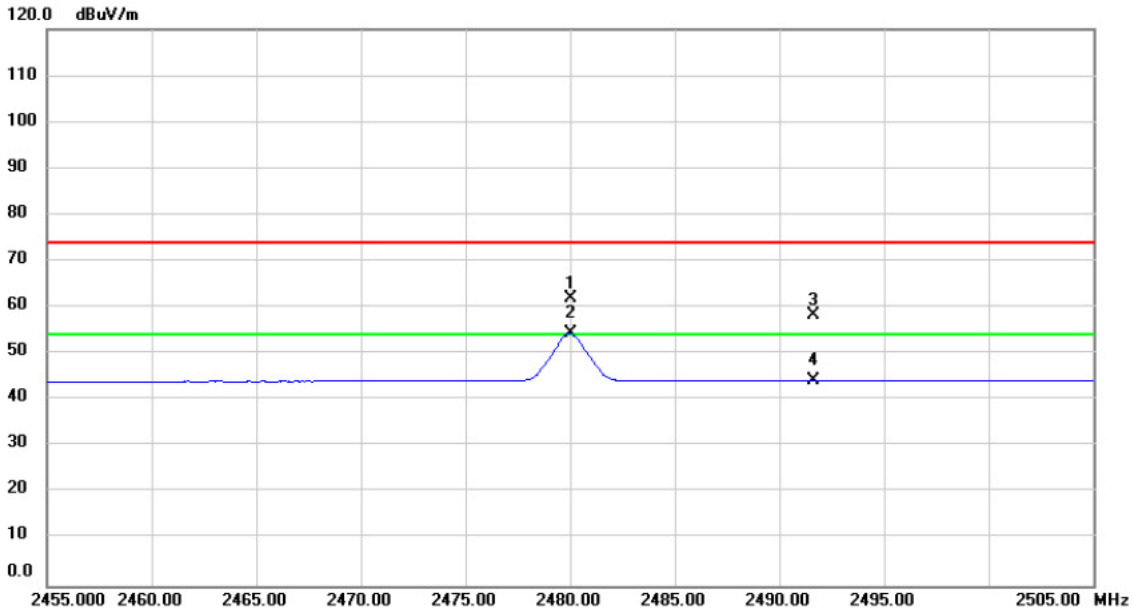
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4950.000	63.86	-11.27	52.59	74.00	-21.41	peak	100	235	
2	*	4950.000	55.51	-11.27	44.24	54.00	-9.76	AVG	100	235	
3		7425.000	55.85	-4.66	51.19	74.00	-22.81	peak	100	268	
4		7425.000	44.49	-4.66	39.83	54.00	-14.17	AVG	100	268	
5		9900.000	52.02	1.54	53.56	74.00	-20.44	peak	100	174	
6		9900.000	42.29	1.54	43.83	54.00	-10.17	AVG	100	174	
7		12375.00	51.19	2.14	53.33	74.00	-20.67	peak	100	76	
8		12375.00	39.04	2.14	41.18	54.00	-12.82	AVG	100	76	
9		14850.00	49.49	6.84	56.33	74.00	-17.67	peak	100	360	
10		14850.00	37.18	6.84	44.02	54.00	-9.98	AVG	100	360	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz

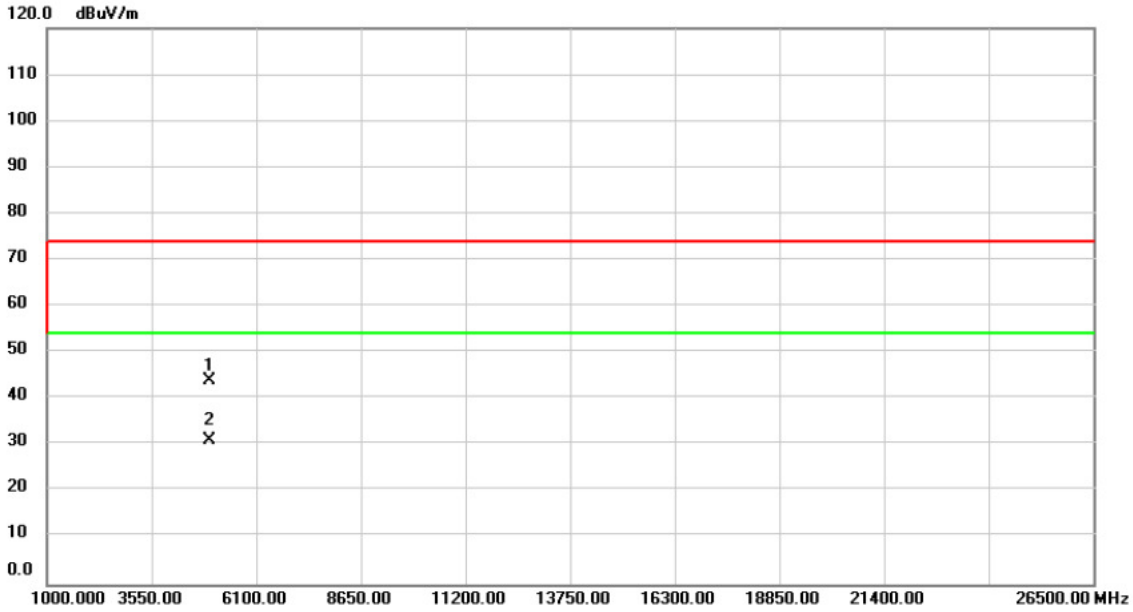
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2480.000	30.72	31.29	62.01	74.00	-11.99	peak	100	201	No Limit
2	*	2480.000	23.21	31.29	54.50	54.00	0.50	AVG	100	201	No Limit
3		2491.651	26.86	31.34	58.20	74.00	-15.80	peak	100	201	
4		2491.651	13.04	31.34	44.38	54.00	-9.62	AVG	100	201	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz

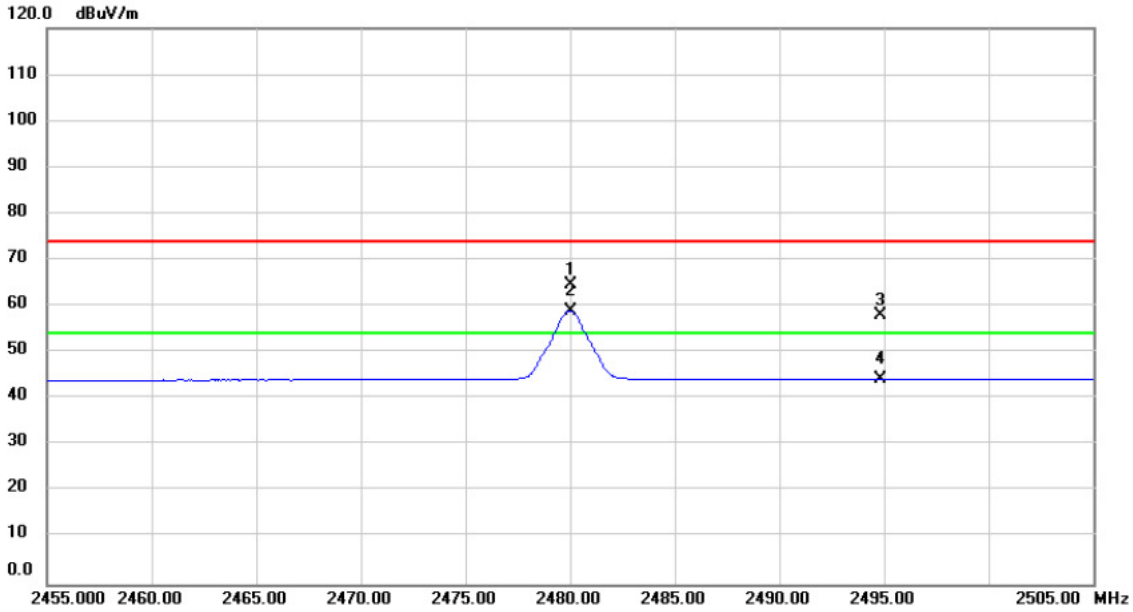
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4960.000	55.06	-11.25	43.81	74.00	-30.19	peak	116	21	
2	*	4960.000	42.45	-11.25	31.20	54.00	-22.80	AVG	116	21	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz

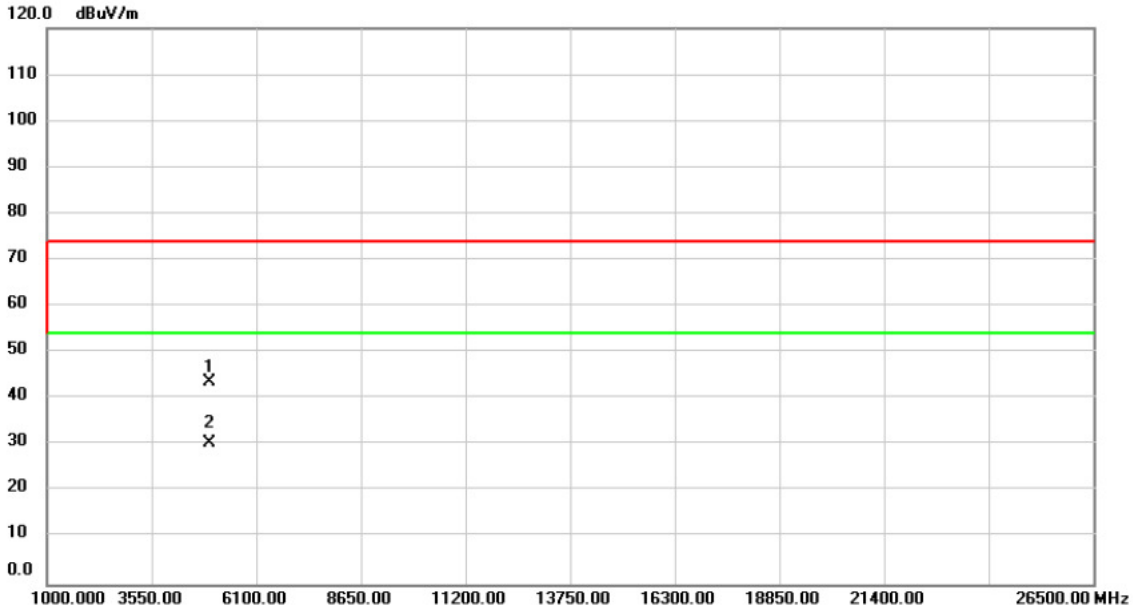
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2480.000	33.39	31.29	64.68	74.00	-9.32	peak	135	243	No Limit
2	*	2480.000	27.68	31.29	58.97	54.00	4.97	AVG	135	243	No Limit
3		2494.802	26.55	31.36	57.91	74.00	-16.09	peak	135	243	
4		2494.802	13.01	31.36	44.37	54.00	-9.63	AVG	135	243	

Orthogonal Axis :	X
Test Mode :	TX 2480MHz

Horizontal



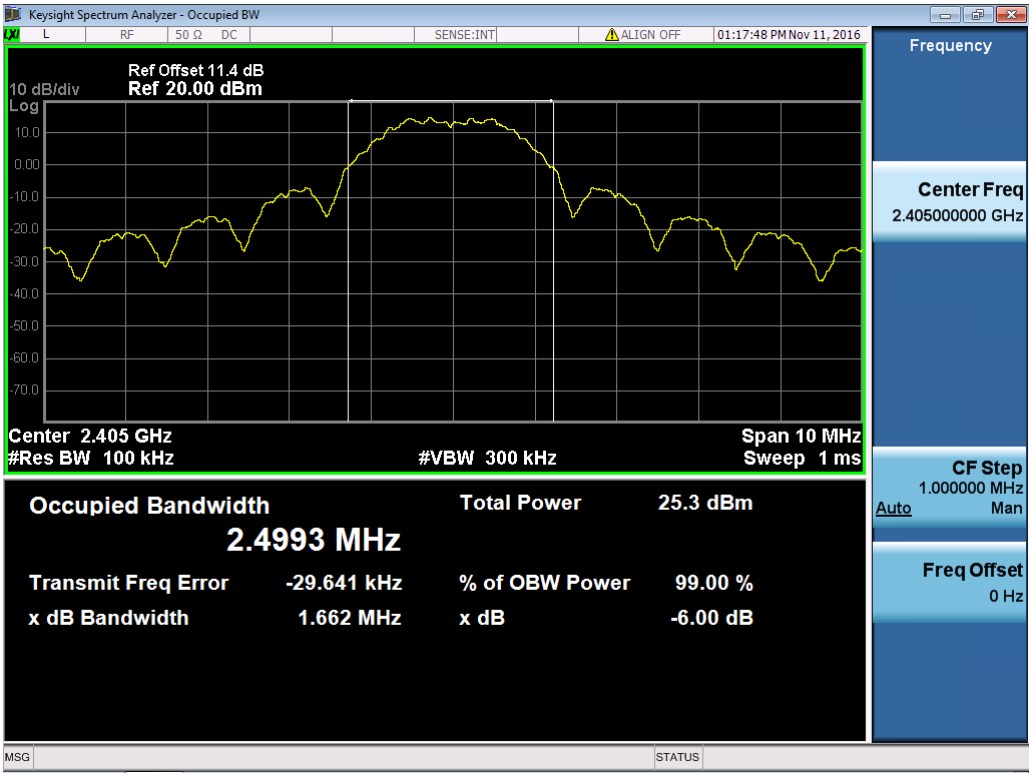
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4960.000	55.03	-11.25	43.78	74.00	-30.22	peak	100	26	
2	*	4960.000	41.59	-11.25	30.34	54.00	-23.66	AVG	100	26	

ATTACHMENT E - BANDWIDTH

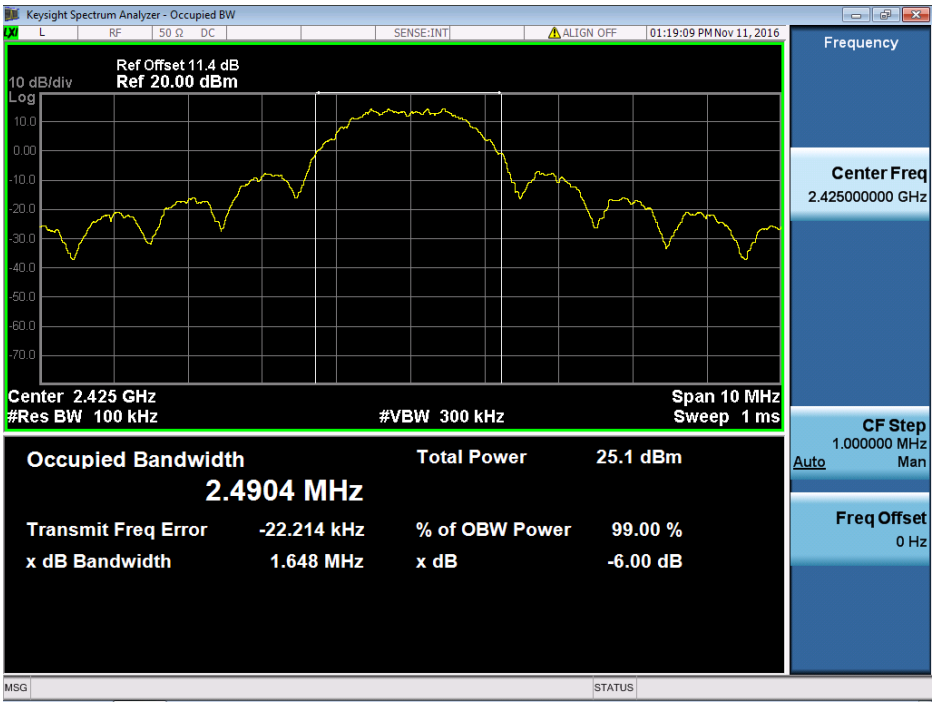
Test Mode :	TX Mode

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)
2405	1.662	2.4993	500
2425	1.648	2.4904	500
2440	1.638	2.4760	500
2445	1.622	2.4521	500
2450	1.600	2.4339	500
2475	1.631	2.4670	500
2480	1.613	2.6632	500

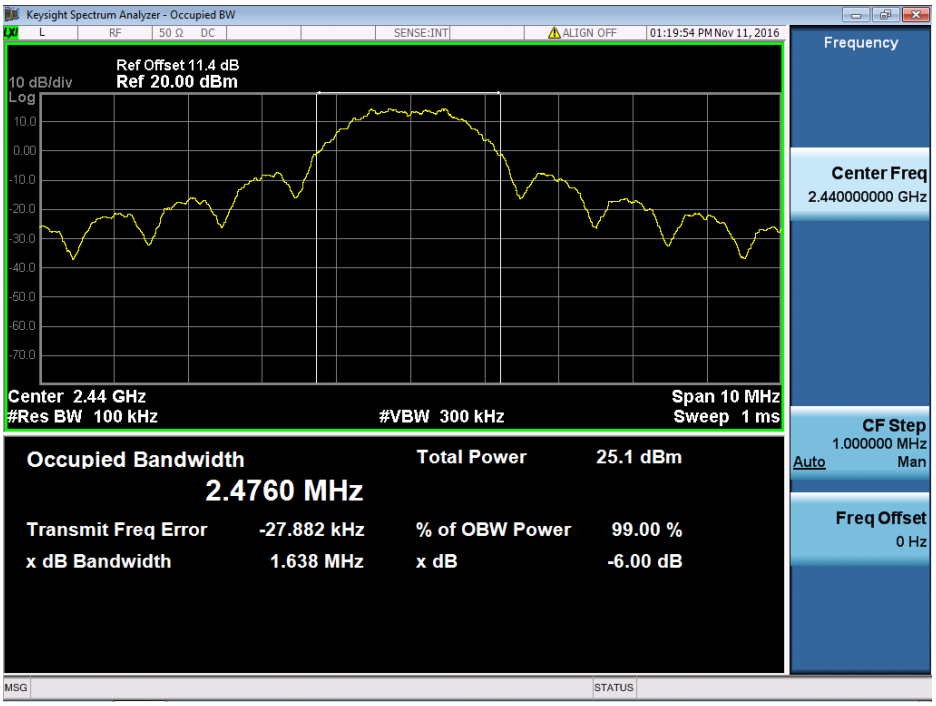
2405MHz



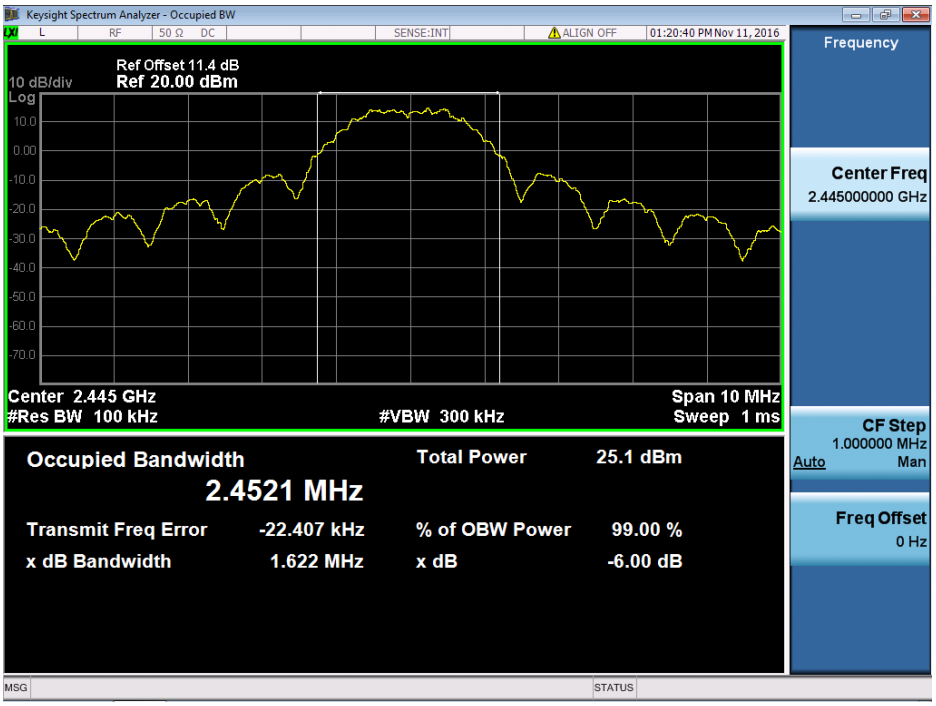
2425MHz



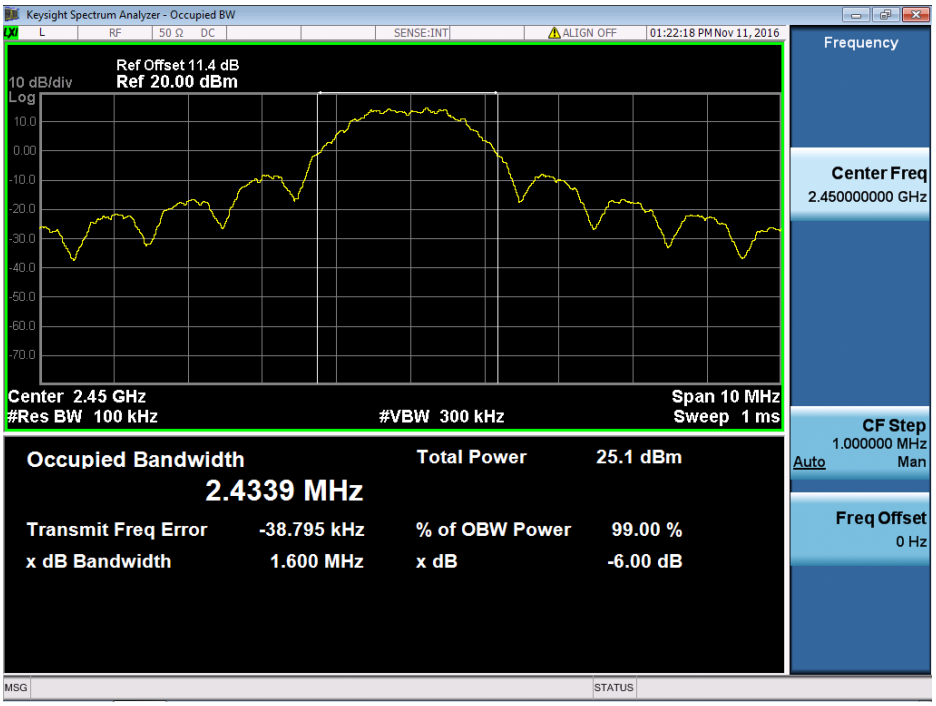
2440MHz



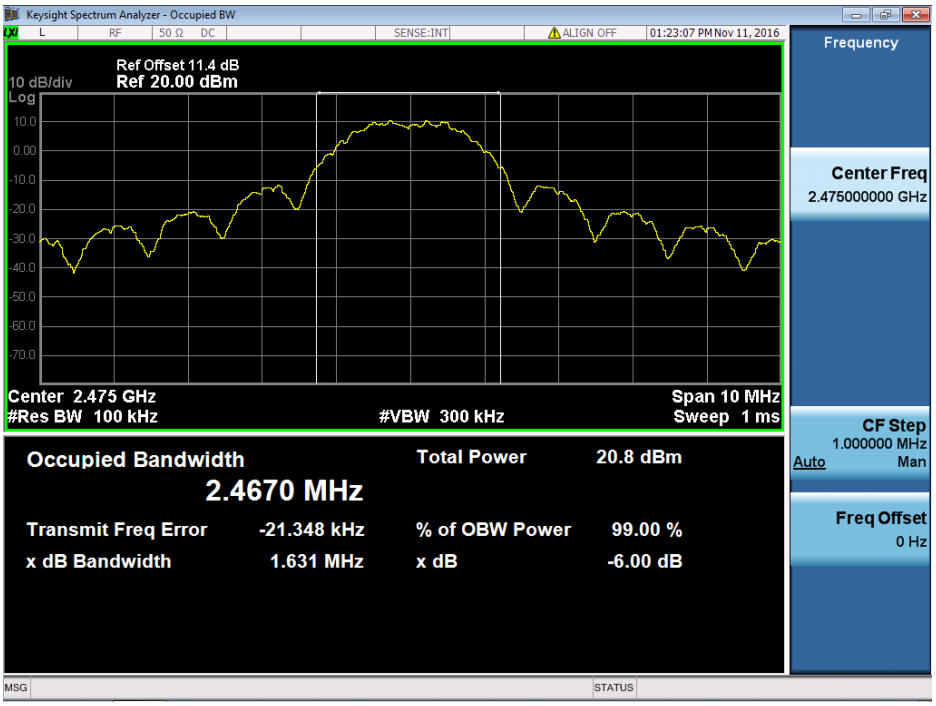
2445MHz



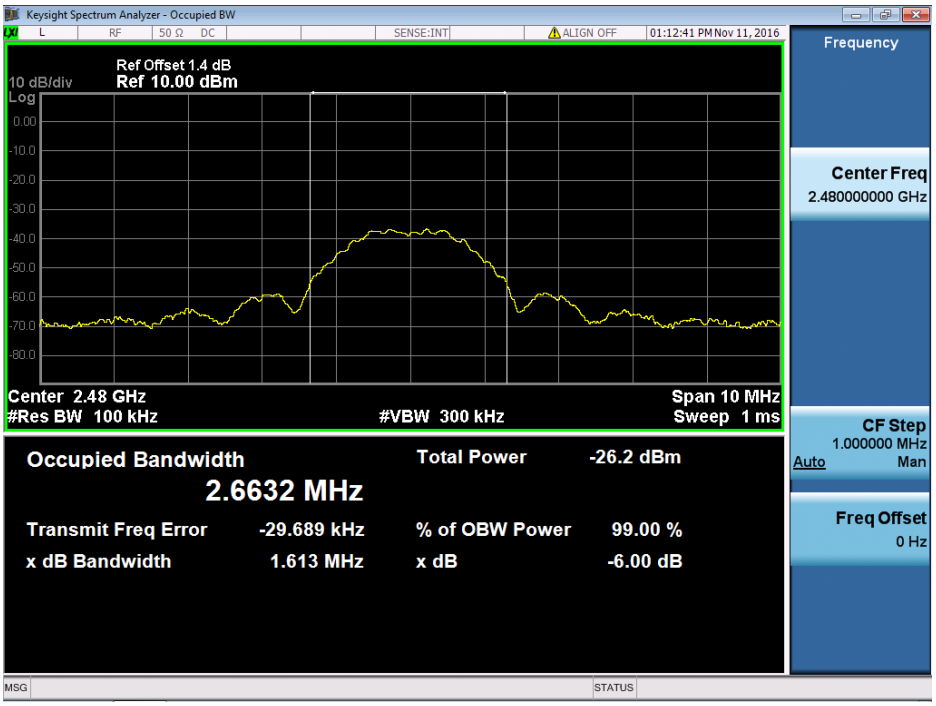
2450MHz



2475MHz



2480MHz



ATTACHMENT F - MAXIMUM OUTPUT POWER TEST

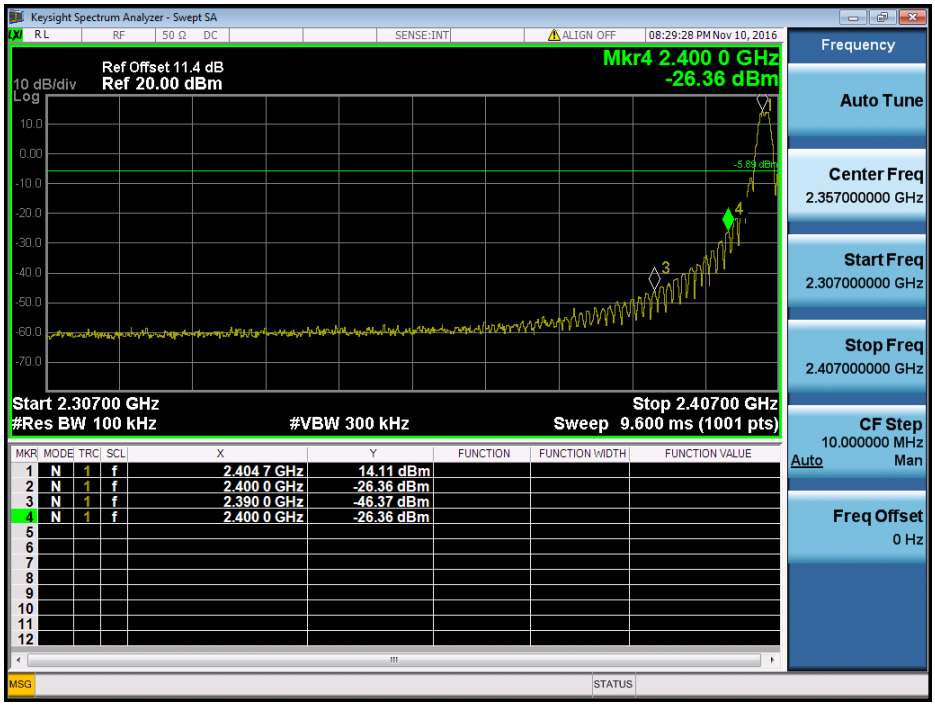
Test Mode :	TX Mode

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watt)	Max. Limit (dBm)	Max. Limit (Watt)
2405	17.93	0.0621	30.00	1.00
2425	18.08	0.0643	30.00	1.00
2440	18.05	0.0638	30.00	1.00
2445	17.96	0.0625	30.00	1.00
2450	17.94	0.0622	30.00	1.00
2475	13.33	0.0215	30.00	1.00
2480	-38.43	0.0000	30.00	1.00

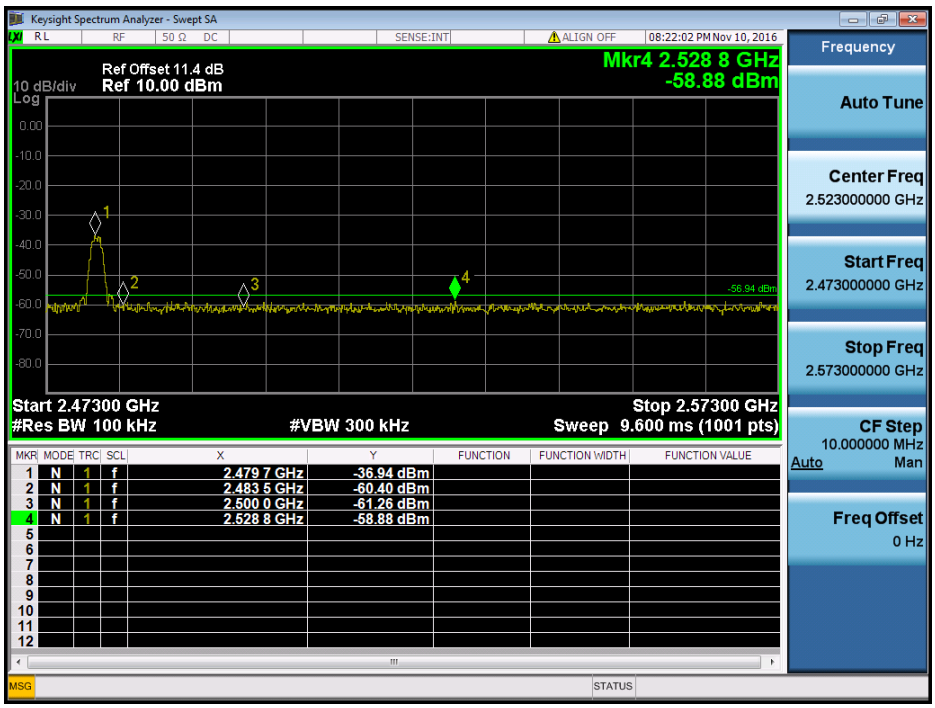
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

Test Mode :	TX Mode

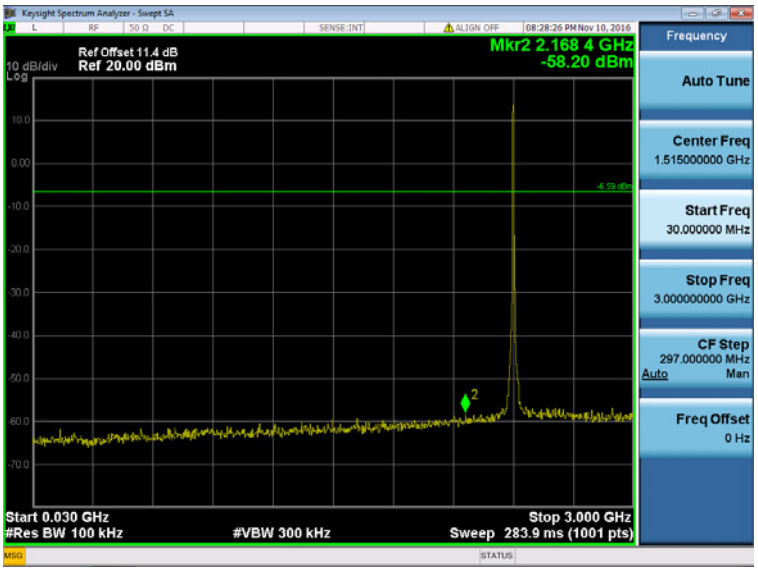
2405MHz (Lower)

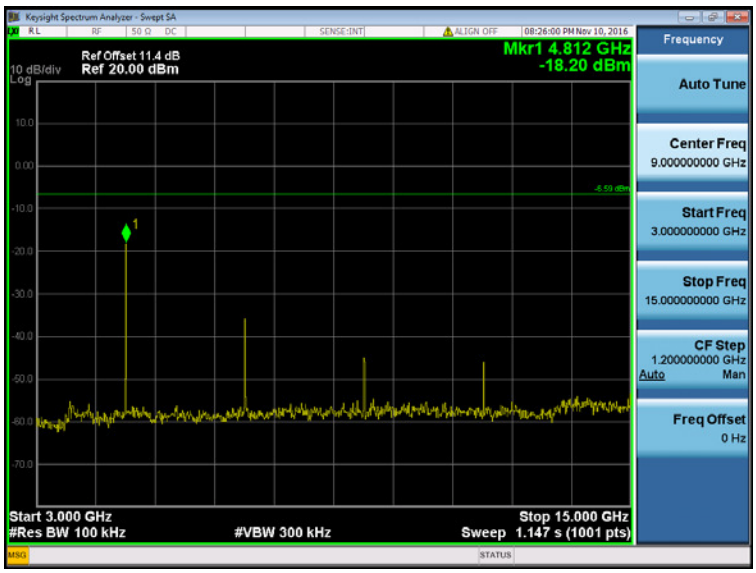


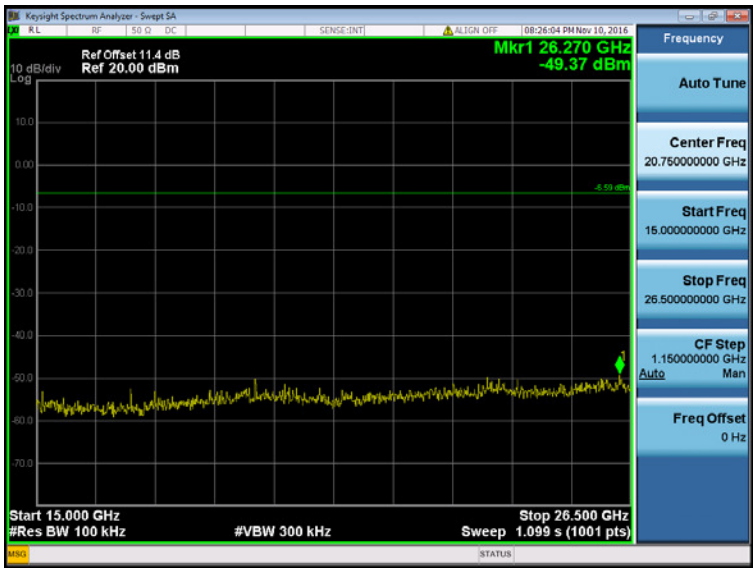
2480MHz (upper)



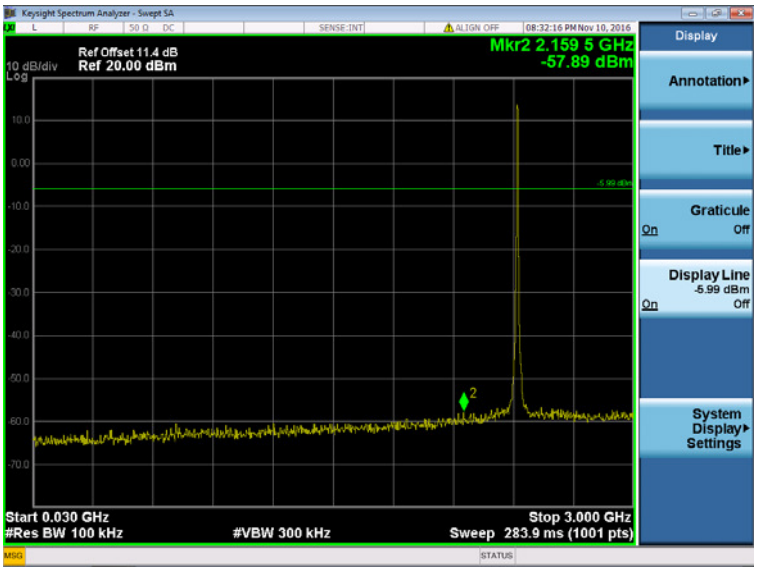
2405MHz (10th Harmonic of the frequency)

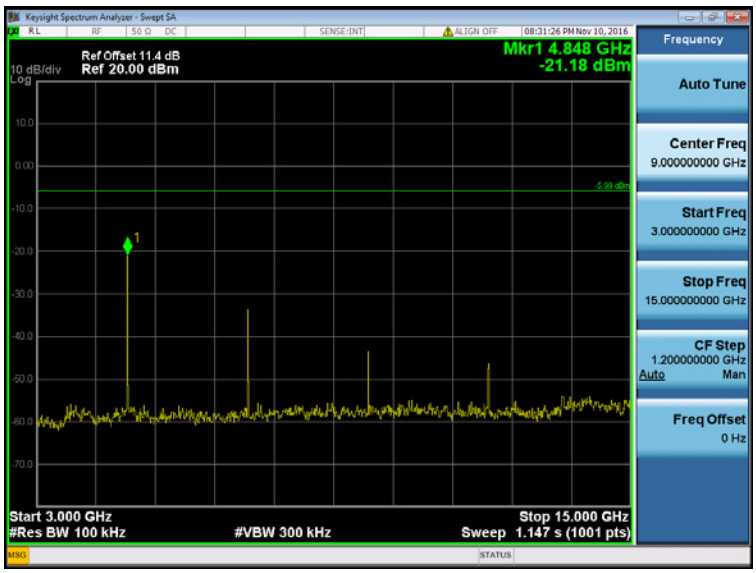


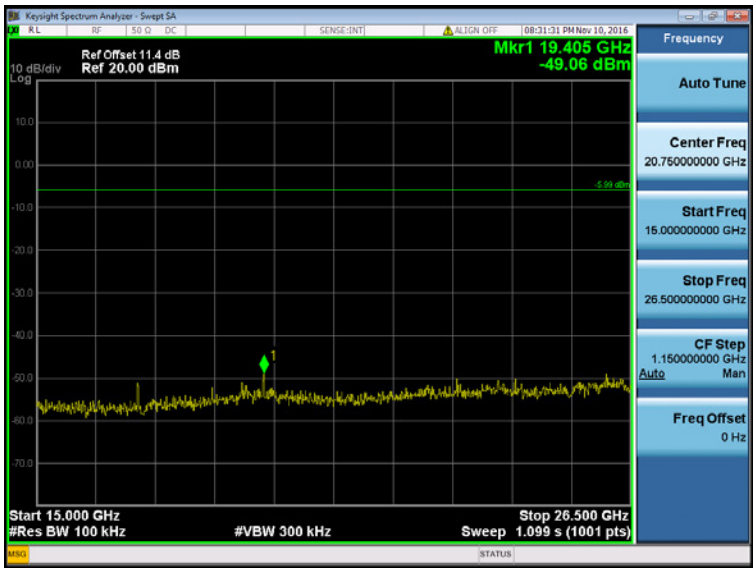




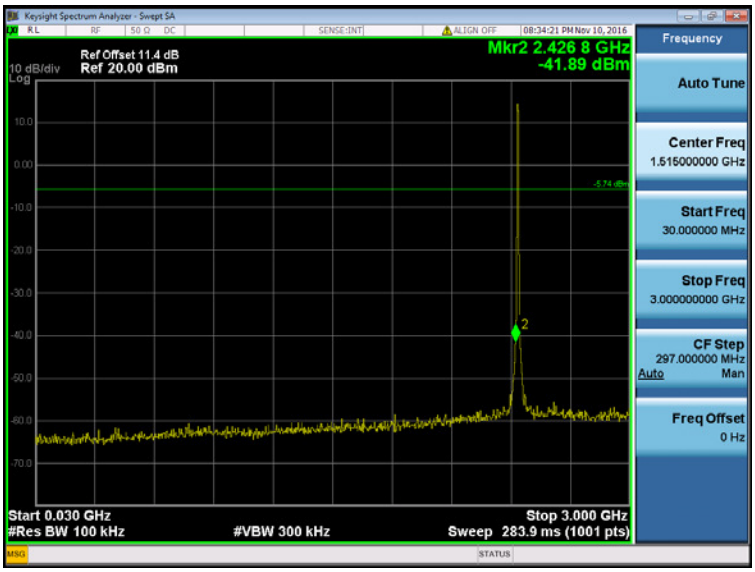
2425MHz (10th Harmonic of the frequency)

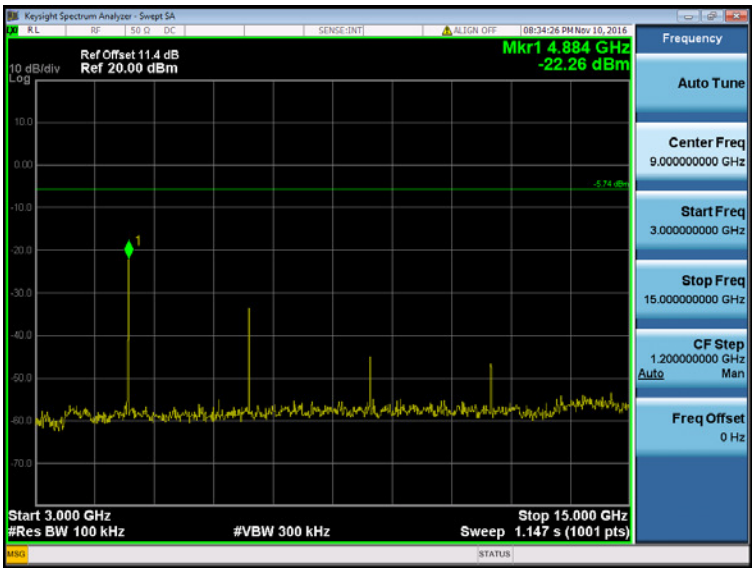


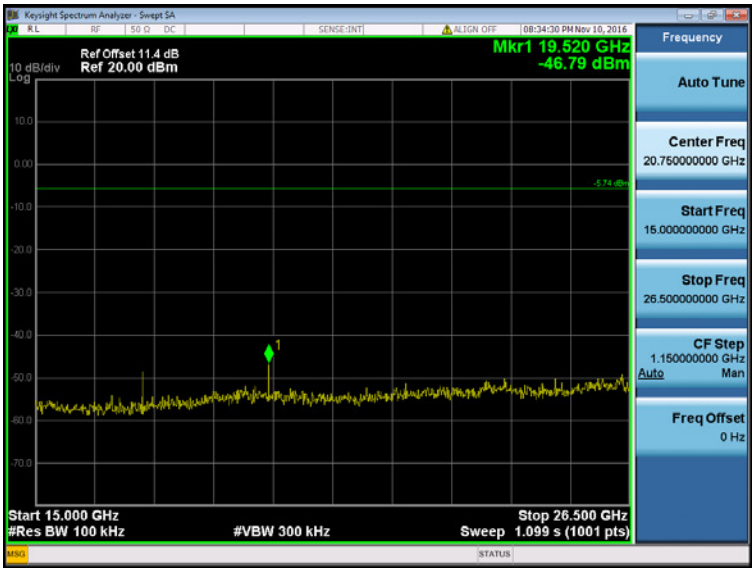




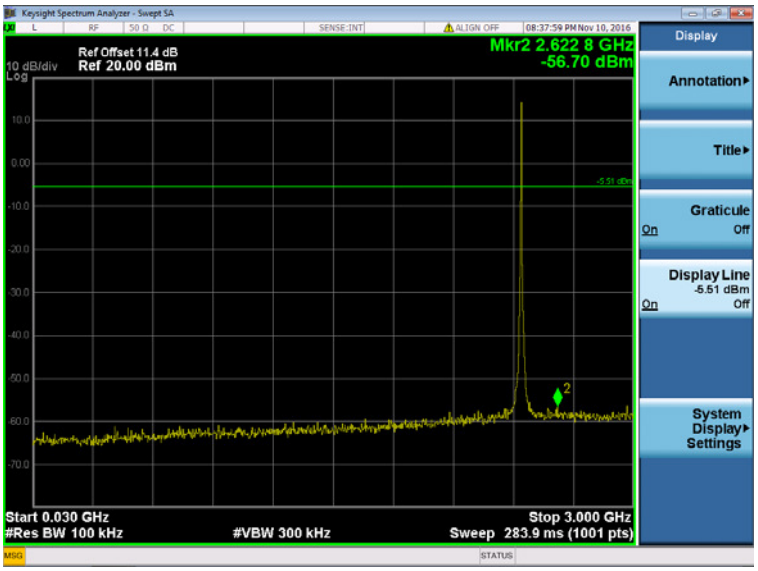
2440MHz (10th Harmonic of the frequency)

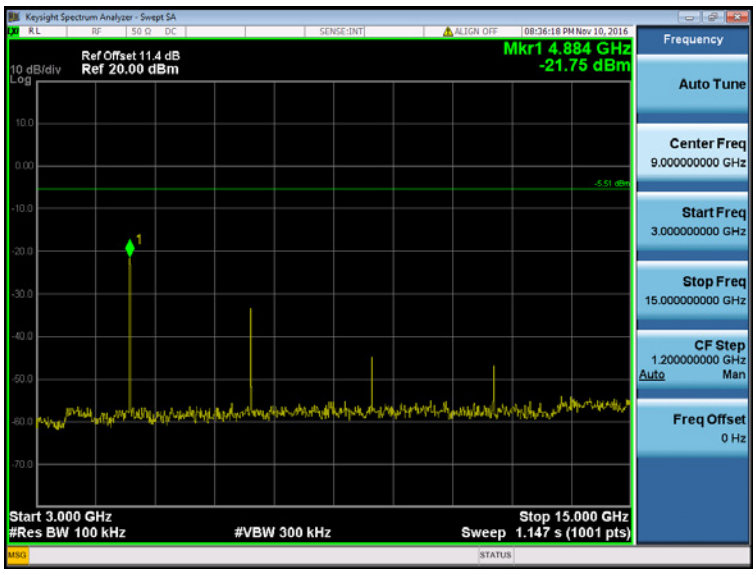


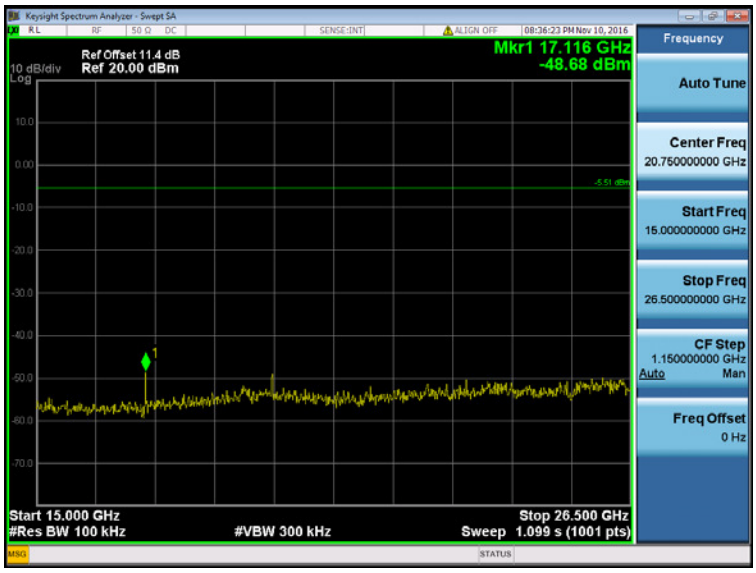




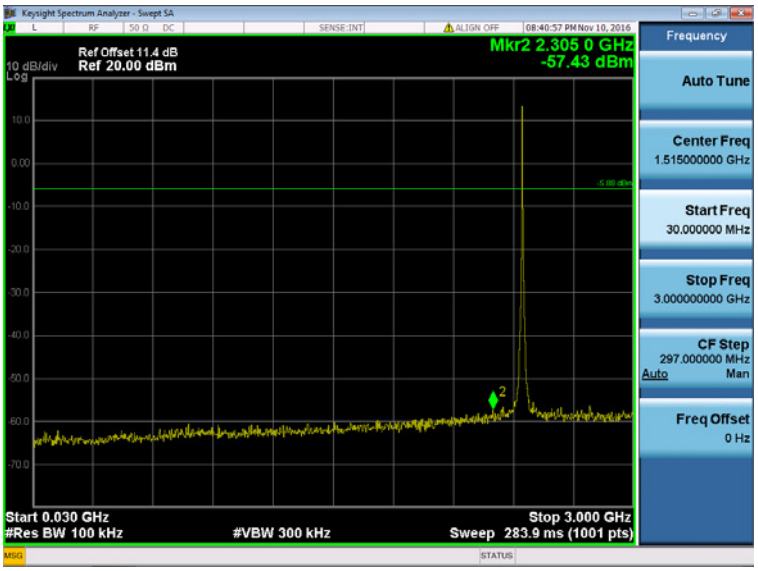
2445MHz (10th Harmonic of the frequency)

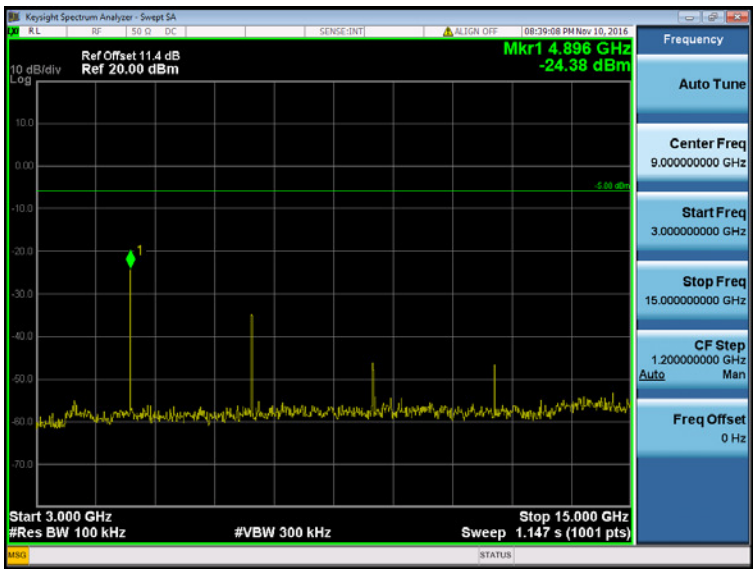


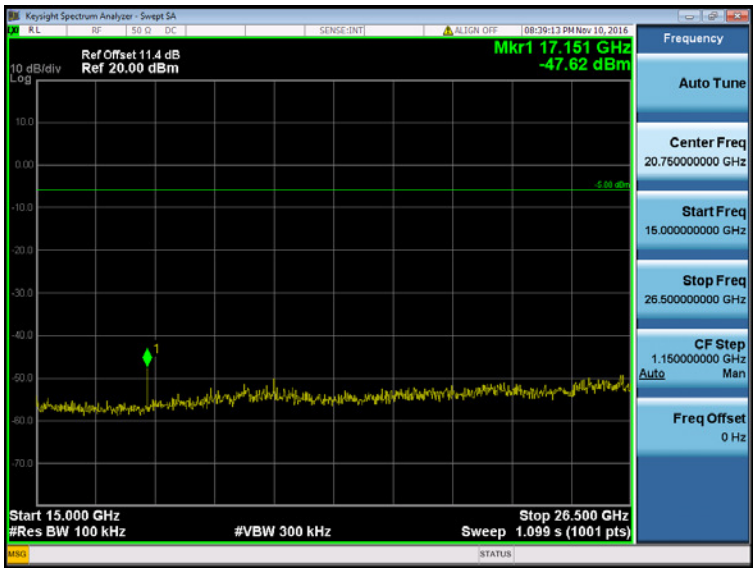




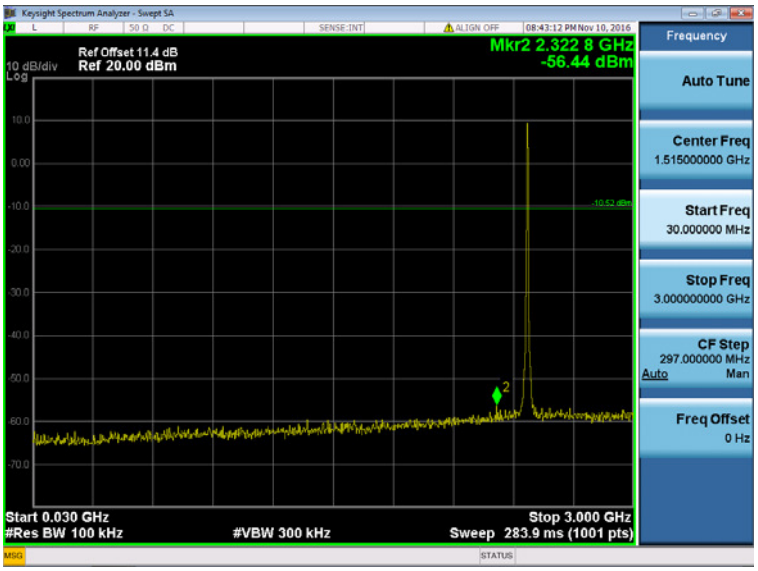
2450MHz (10th Harmonic of the frequency)

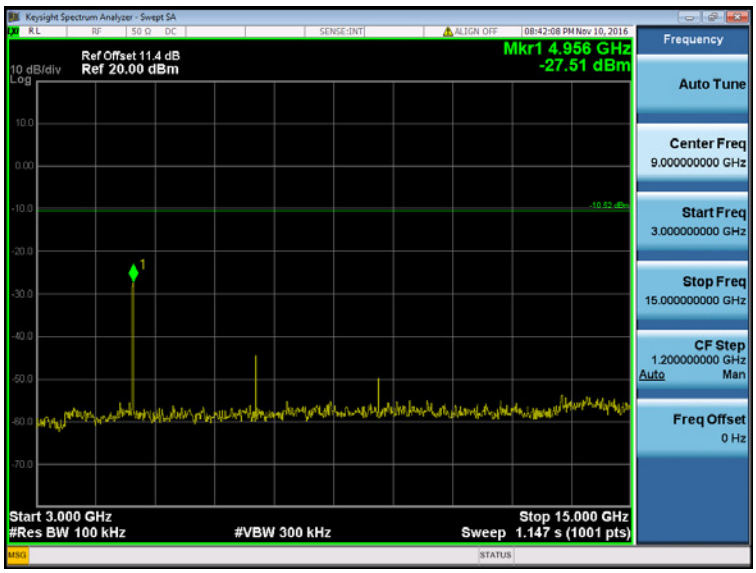


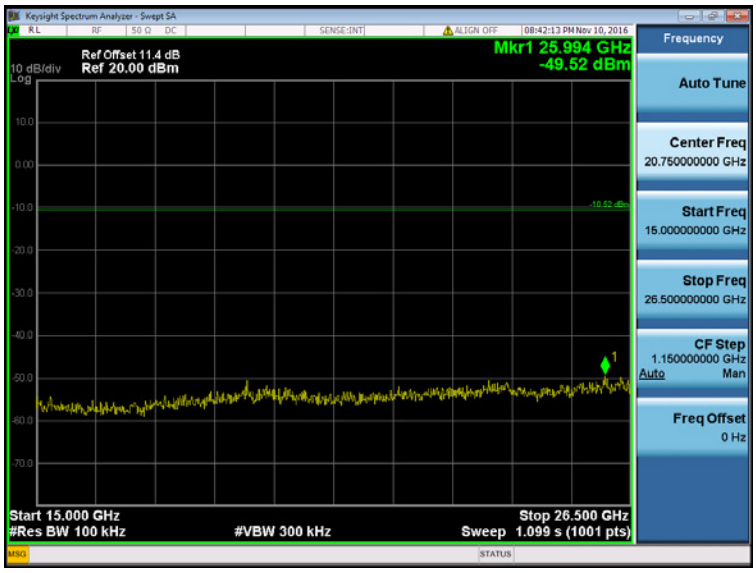




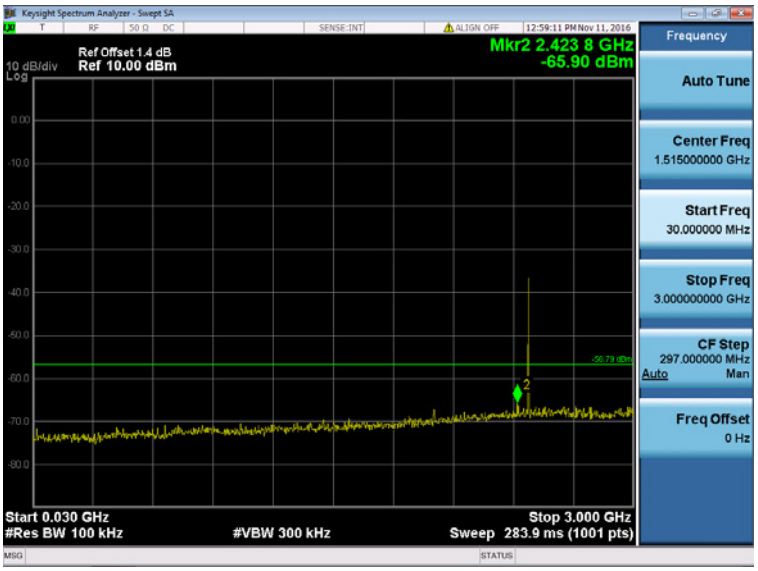
2475MHz (10th Harmonic of the frequency)

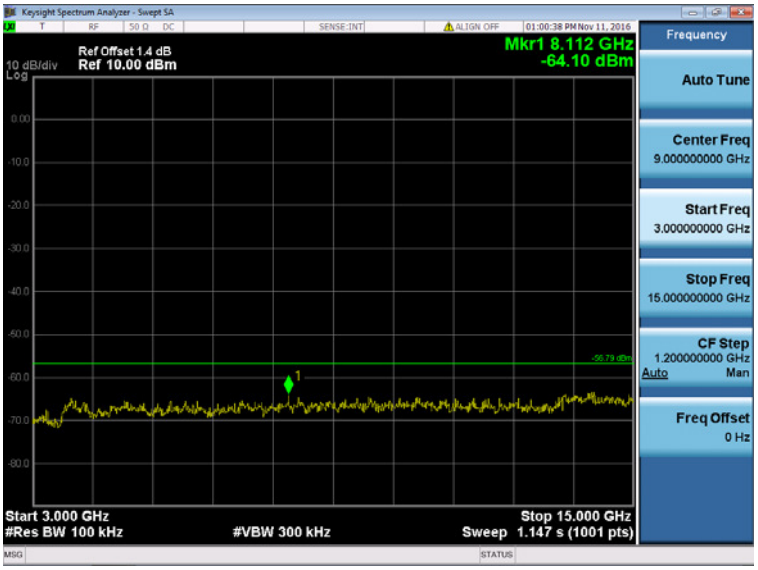


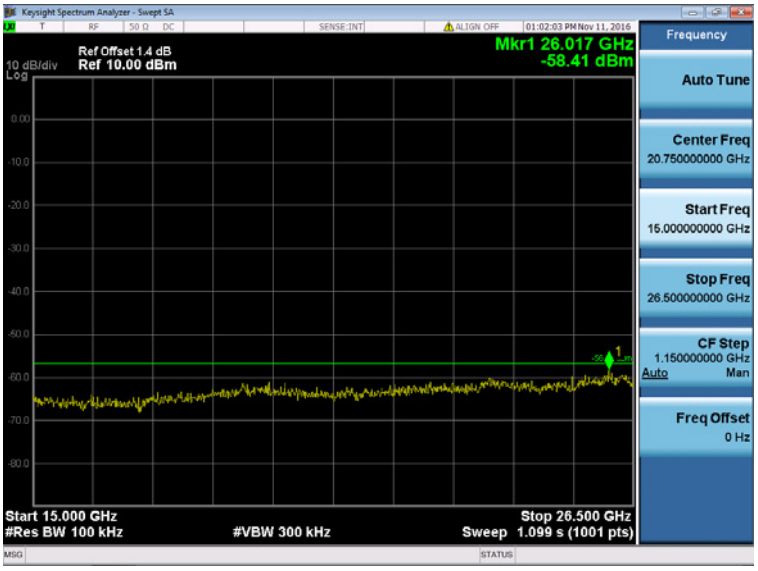




2480MHz (10th Harmonic of the frequency)







ATTACHMENT H - POWER SPECTRAL DENSITY TEST

Test Mode :	TX Mode

Frequency (MHz)	Power Density (dBm)	Max. Limit (dBm)
2405	0.48	8
2425	0.41	8
2440	0.16	8
2445	0.95	8
2450	0.91	8
2475	-2.37	8
2480	-49.97	8

2405MHz

2425MHz

2440MHz

2445MHz

2450MHz

2475MHz

2480MHz