

# FCC Radio Test Report

## FCC ID: O62-B

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

**Project No.** : 1609029  
**Equipment** : Dongle  
**Model Name** : HSA-D01D  
**Applicant** : Darfon Electronics Corp  
**Address** : 167, Shanying Road, Gueishan Taoyuan Taiwan 333

**Date of Receipt** : Sep. 05, 2016  
**Date of Test** : Sep. 05, 2016 ~ Sep. 21, 2016  
**Issued Date** : Sep. 21, 2016  
**Tested by** : BTL Inc.

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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-1-1609029	Original Issue.	Sep. 21, 2016

## 1. CERTIFICATION

Equipment : Dongle  
Brand Name : HP  
Model Name : HSA-D01D  
Applicant : Darfon Electronics Corp  
Date of Test : Sep. 05, 2016 ~ Sep. 21, 2016  
Test Sample : Engineering Sample  
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-1-1609029) 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):

FCC Part15, Subpart C (15.249)			
StandardSection	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.209 15.249	Radiated Spurious Emission	PASS	
-	Bandwidth	PASS	

**NOTE:**

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

### 2.1 TEST FACILITY

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

**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 1GHz):**

**CB15:** (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 1GHz):**

**CB15:** (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

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

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

### A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)
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)
CB15 (3m)	CISPR	30 MHz ~ 200 MHz	V	3.06
		30 MHz ~ 200 MHz	H	2.58
		200 MHz ~ 1, 000 MHz	V	3.50
		200 MHz ~ 1, 000 MHz	H	3.10

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
CB15 (3m)	CISPR	1GHz ~ 6GHz	V	4.14
		1GHz ~ 6GHz	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	Dongle	
Brand Name	HP	
Model Name	HSA-D01D	
Model Difference	N/A	
Product Description	Operation Frequency	2405-2470 MHz
	Modulation Technology	GFSK
	Data rate	1 Mbps
	Field Strength	91.91 dBuV/m (AVG Max) 95.35 dBuV/m (Peak Max)
PowerSource	Supplied from host.	
Power Rating	DC 5V	

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)
01	2405
02	2413
03	2422
04	2430
05	2440
06	2450
07	2460
08	2470

Table for Filed Antenna:

3.

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	-1.02

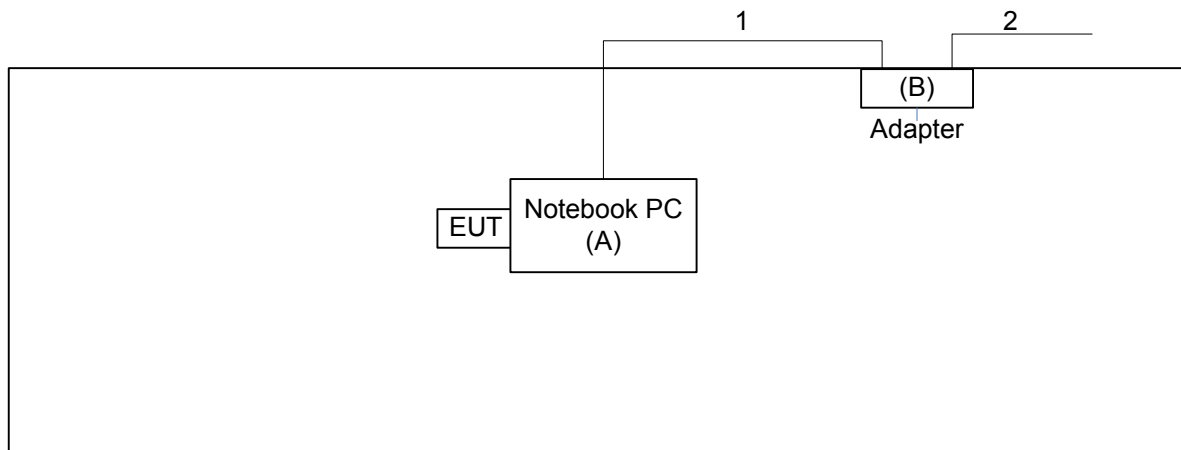
### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which 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

Final Test Mode	Description
Mode 1	TX Mode

### 3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



### 3.4 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	ACER	ACER	N/A	NXMPFTA00143
B	Adapter	acer	PA-1450-26	N/A	ADT

Item	Shielded Type	Ferrite Core	Length	Note
1	No	No	1.0m	Power Cable
2	No	No	1.0m	Power Cable

Note:

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

## 4. EMC EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 POWER LINE CONDUCTED EMISSION (FREQUENCY RANGE 150KHZ-30MHZ)

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	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

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

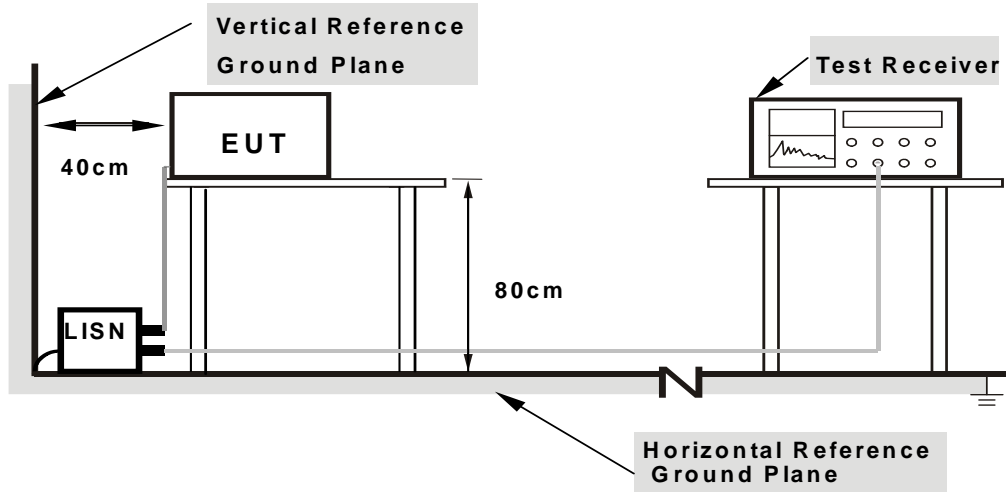
#### 4.1.2 TESTPROCEDURE

- 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 groundplane 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 TESTSETUP



- 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

#### 4.1.5EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it).The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.  
The EUT was programmed to be in continuously transmitting mode.

#### 4.1.6EUT TEST CONDITIONS

Temperature: 24°C  
Relative Humidity: 52%  
Test Voltage: AC 120V 60Hz

#### 4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

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

## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 RADIATED EMISSION LIMITS (FCC 15.209)

Frequencies (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

Harmonic emissions limits comply with below 54dBuV/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 section 15.209(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

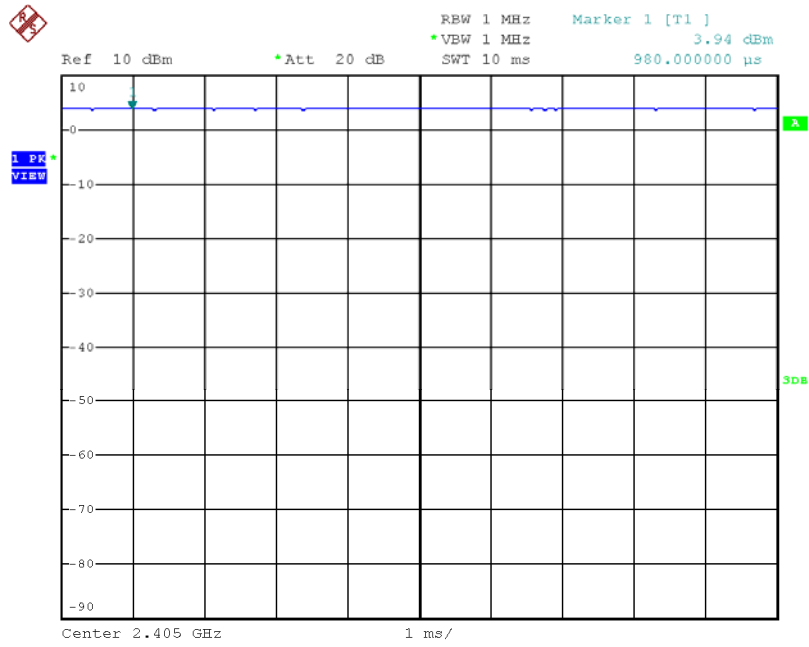
Notes:

- (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).

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

### DWELL TIME OF PERIODIC OPERATION MEASUREMENT



Date: 9.SEP.2016 17:55:49

#### 4.2.2 TESTPROCEDURE

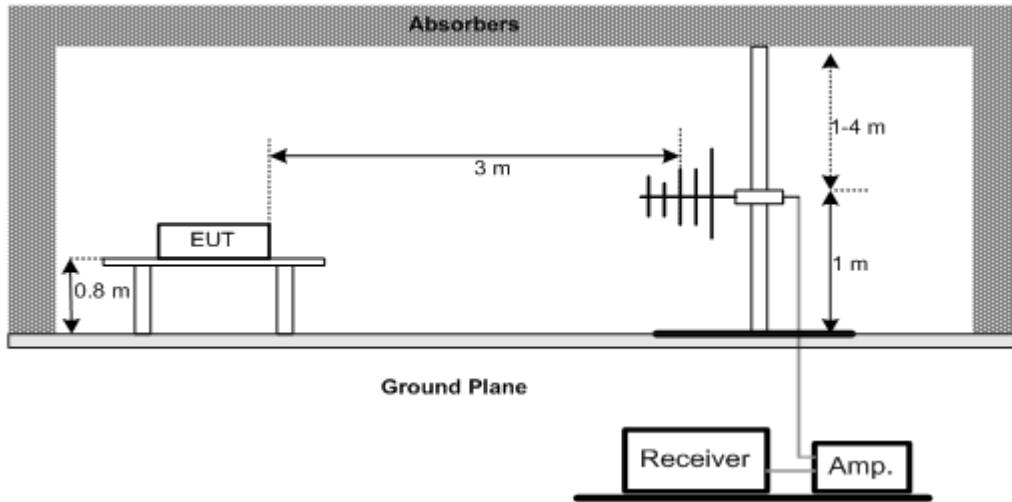
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance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

#### 4.2.3DEVIATIONFROMTESTSTANDARD

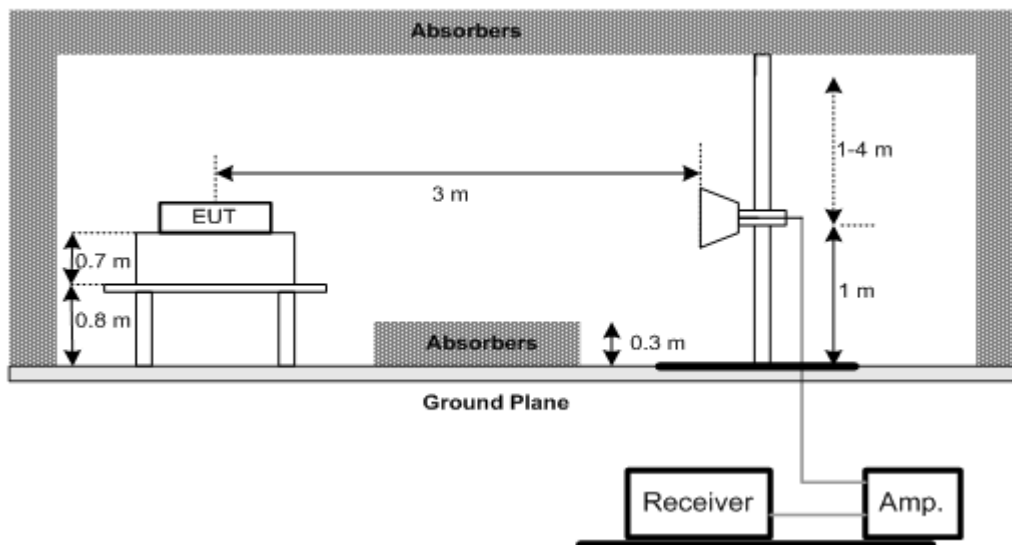
No deviation

**4.2.4 TESTSETUP**

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

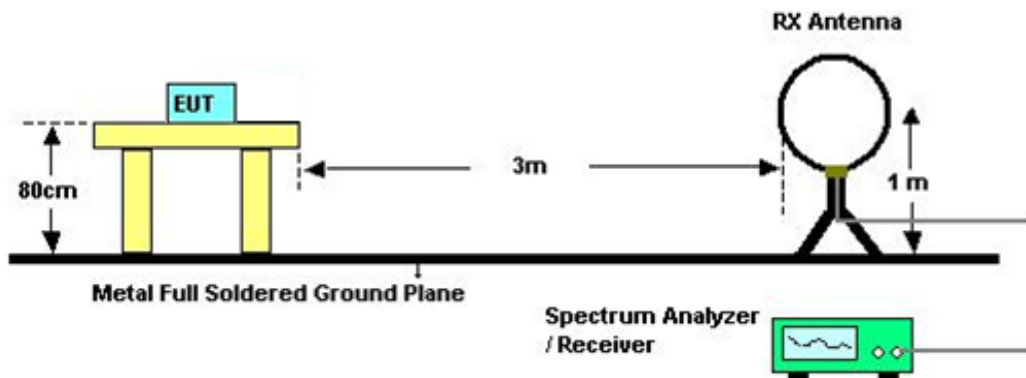


(B) Radiated Emission Test Set-Up Frequency Above 1 GHz





(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: 24°C

Relative Humidity: 52%

Test Voltage: AC 120V 60Hz

#### 4.2.7 TEST RESULTS (BELOW 30MHz)

Please refer to the Attachment B.

Remark:

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

#### 4.2.8 TEST RESULTS (30 TO 1000 MHz)

Please refer to the Attachment C

#### 4.2.9 TEST RESULTS (ABOVE 1000 MHz)

Please refer to the Attachment D

Remark:

- (1) EUT Orthogonal Axis:  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (2) 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. BANDWIDTH TEST

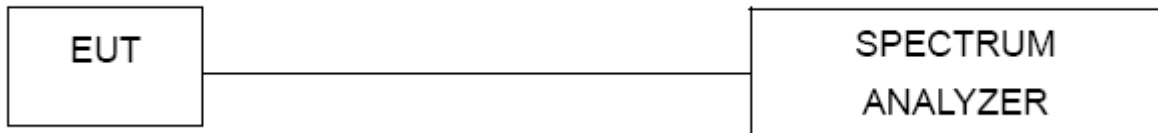
### 5.1 TEST PROCEDURE

- 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= 3kHz, VBW=3kHz, Sweep time = Auto.

### 5.2 DEVIATION FROM STANDARD

No deviation.

### 5.3 TEST SETUP



### 5.4 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.

### 5.5 EUT TEST CONDITIONS

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

### 5.6 TEST RESULTS

Please refer to the Attachment E

## 6.MEASUREMENT INSTRUMENTS LIST AND SETTING

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. 15, 2017
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 10, 2016
4	Measurement Software	EZ	EZ_EMG (Version NB-03A)	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB9168-352	9168-352	Feb. 04, 2017
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-546	Nov. 05, 2017
3	Pre-Amplifier	HP	8447D	2944A08891	Mar. 09 2017
4	Pre-Amplifier	Agilent	8449B	3008A02331	Jan. 24, 2017
5	Test Cable	EMCI	EMC8D-NM-NM-8000	150301	Mar. 09, 2017
6	Test Cable	EMCI	EMC104-SM-SM-2500	150303	Mar. 09, 2017
7	Test Cable	EMCI	EMC104-NM-SM-1000	150304	Mar. 09, 2017
8	Test Cable	EMCI	EMC104-SM-SM-5000	150302	Mar. 29, 2017
9	Test Cable	EMCI	EMC104-SM-SM-800	150305	Mar. 29, 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. 06. 2016

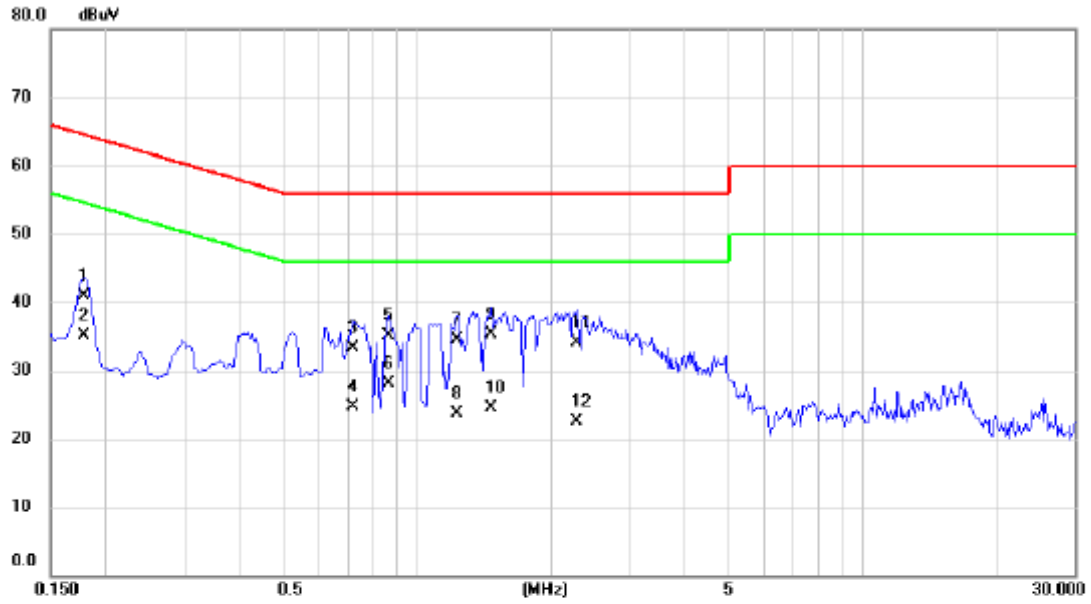
Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

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

## ATTACHMENT A - CONDUCTED EMISSION

Test Mode: TX Mode\_2405MHz

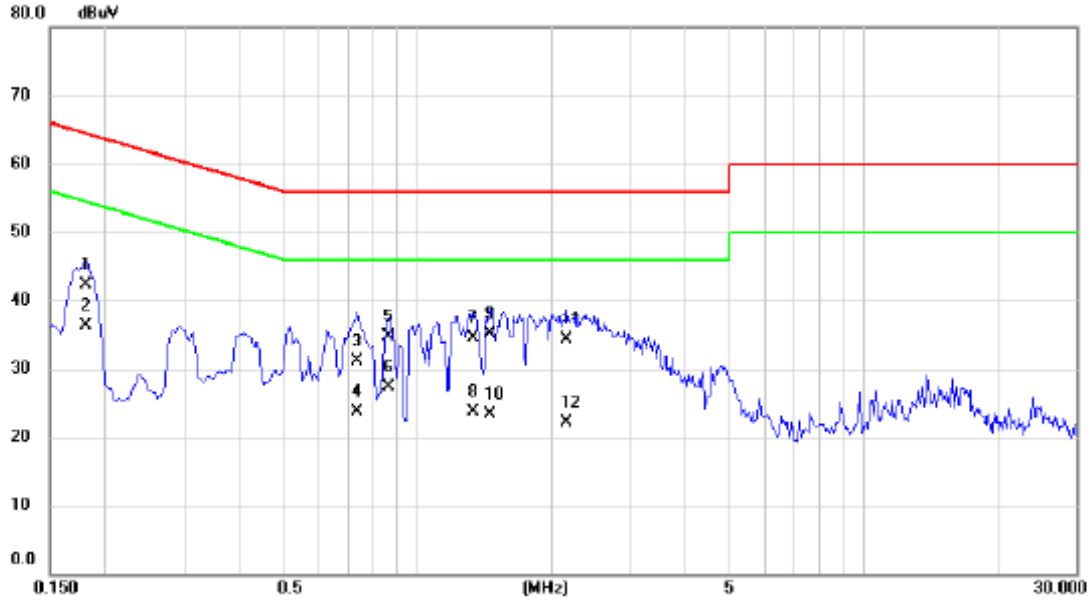
### Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1787	31.30	9.66	40.96	64.55	-23.59	QP	
2		0.1787	25.40	9.66	35.06	54.55	-19.49	AVG	
3		0.7160	23.60	9.67	33.27	56.00	-22.73	QP	
4		0.7160	15.10	9.67	24.77	46.00	-21.23	AVG	
5		0.8600	25.40	9.67	35.07	56.00	-20.93	QP	
6	*	0.8600	18.40	9.67	28.07	46.00	-17.93	AVG	
7		1.2290	24.90	9.68	34.58	56.00	-21.42	QP	
8		1.2290	14.10	9.68	23.78	46.00	-22.22	AVG	
9		1.4630	25.60	9.69	35.29	56.00	-20.71	QP	
10		1.4630	14.80	9.69	24.49	46.00	-21.51	AVG	
11		2.2820	24.40	9.74	34.14	56.00	-21.86	QP	
12		2.2820	12.80	9.74	22.54	46.00	-23.46	AVG	

Test Mode: TX Mode\_2405MHz

### Neutral

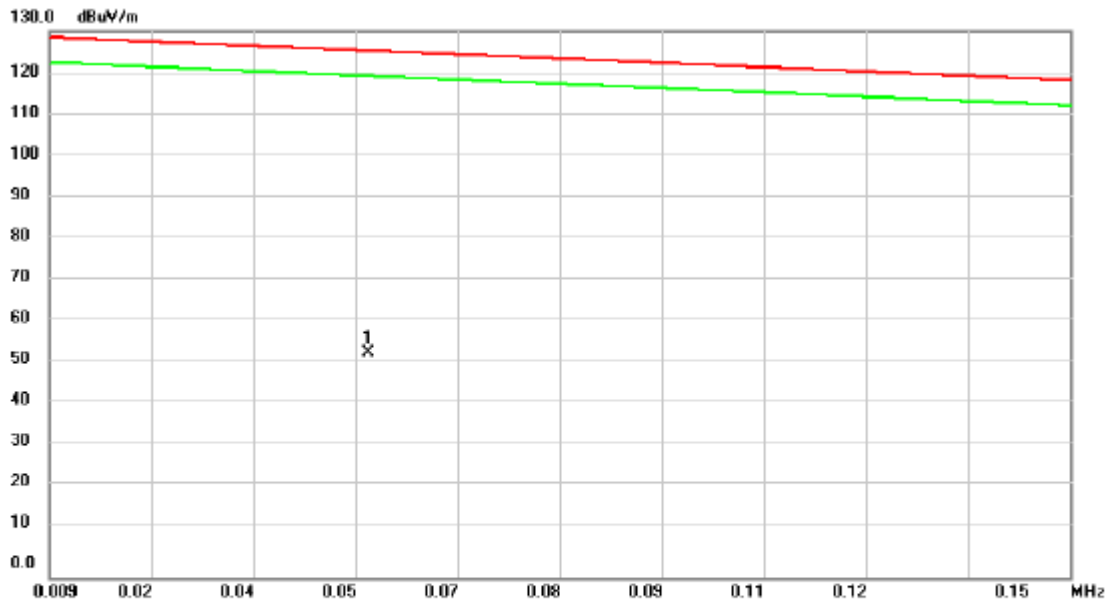


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1808	32.70	9.66	42.36	64.45	-22.09	QP	
2	*	0.1808	26.70	9.66	36.36	54.45	-18.09	AVG	
3		0.7340	21.50	9.68	31.18	56.00	-24.82	QP	
4		0.7340	14.00	9.68	23.68	46.00	-22.32	AVG	
5		0.8600	25.00	9.68	34.68	56.00	-21.32	QP	
6		0.8600	17.70	9.68	27.38	46.00	-18.62	AVG	
7		1.3370	24.90	9.70	34.60	56.00	-21.40	QP	
8		1.3370	14.00	9.70	23.70	46.00	-22.30	AVG	
9		1.4540	25.40	9.70	35.10	56.00	-20.90	QP	
10		1.4540	13.60	9.70	23.30	46.00	-22.70	AVG	
11		2.1650	24.60	9.74	34.34	56.00	-21.66	QP	
12		2.1650	12.30	9.74	22.04	46.00	-23.96	AVG	

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

Test Mode: TX Mode\_2405MHz

**OPEN**

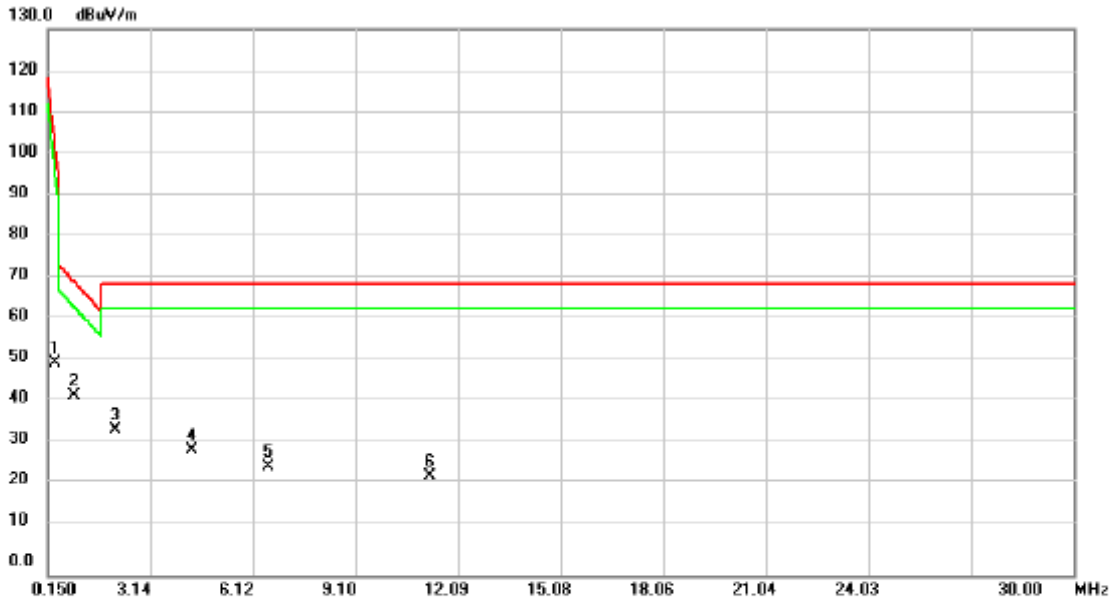


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.0530	40.57	12.95	53.52	125.34	-71.82	peak	



Test Mode: TX Mode\_2405MHz

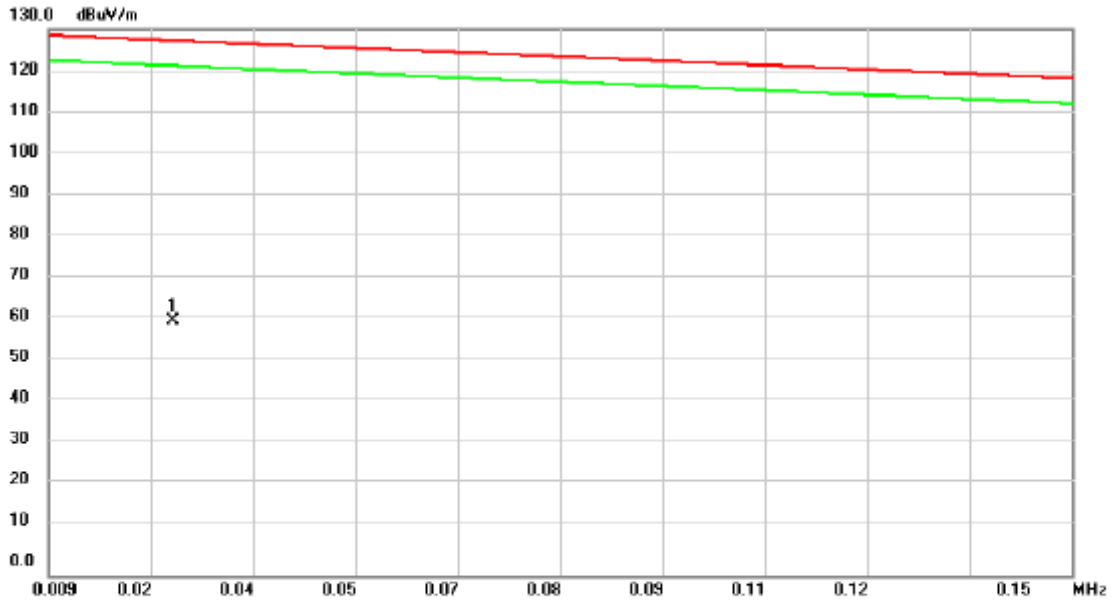
**OPEN**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.3886	38.80	11.80	50.60	101.12	-50.52	peak	
2	*	0.9261	30.79	11.97	42.76	69.91	-27.15	peak	
3		2.1200	23.06	11.50	34.56	69.54	-34.98	peak	
4		4.3290	18.38	11.30	29.68	69.54	-39.86	peak	
5		6.5678	14.33	11.37	25.70	69.54	-43.84	peak	
6		11.2542	12.39	11.26	23.65	69.54	-45.89	peak	

Test Mode: TX Mode\_2405MHz

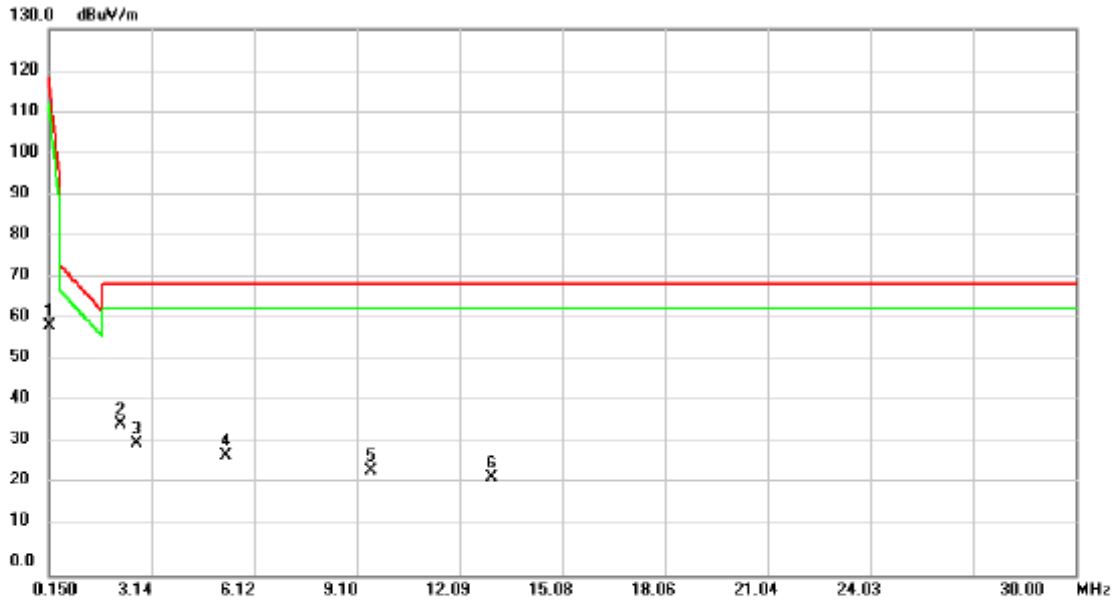
**CLOSE**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0262	44.44	16.04	60.48	127.28	-66.80	peak	

Test Mode: TX Mode\_2405MHz

CLOSE

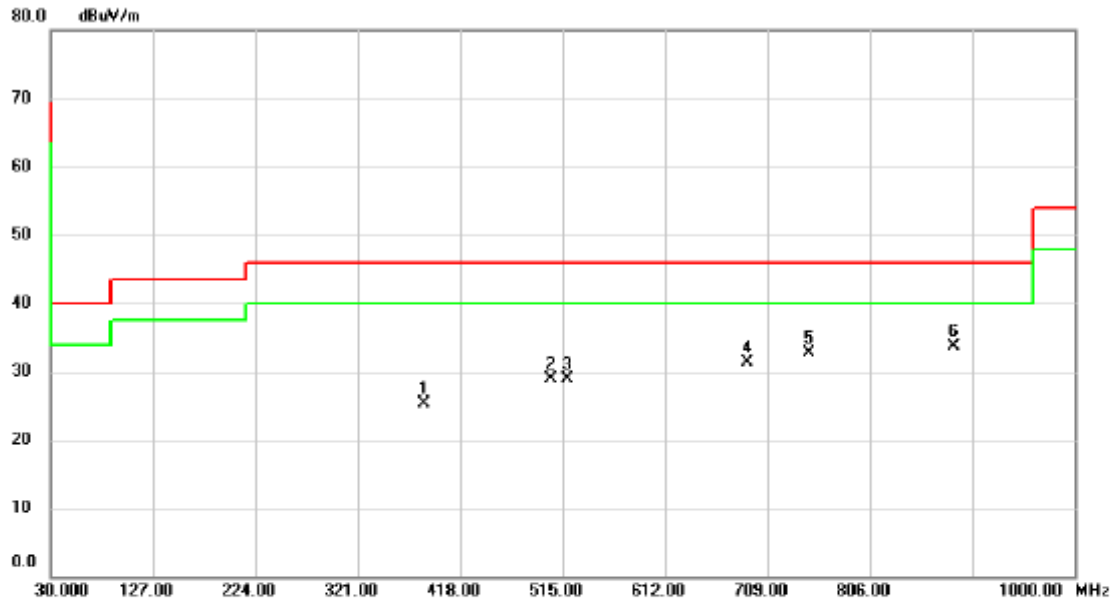


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.1500	47.16	12.03	59.19	118.34	-59.15	peak	
2	*	2.2395	24.62	11.44	36.06	69.54	-33.48	peak	
3		2.7170	20.26	11.23	31.49	69.54	-38.05	peak	
4		5.2842	16.97	11.39	28.36	69.54	-41.18	peak	
5		9.5228	13.44	11.31	24.75	69.54	-44.79	peak	
6		13.0152	12.08	11.21	23.29	69.54	-46.25	peak	

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

Test Mode: TX Mode\_2405MHz

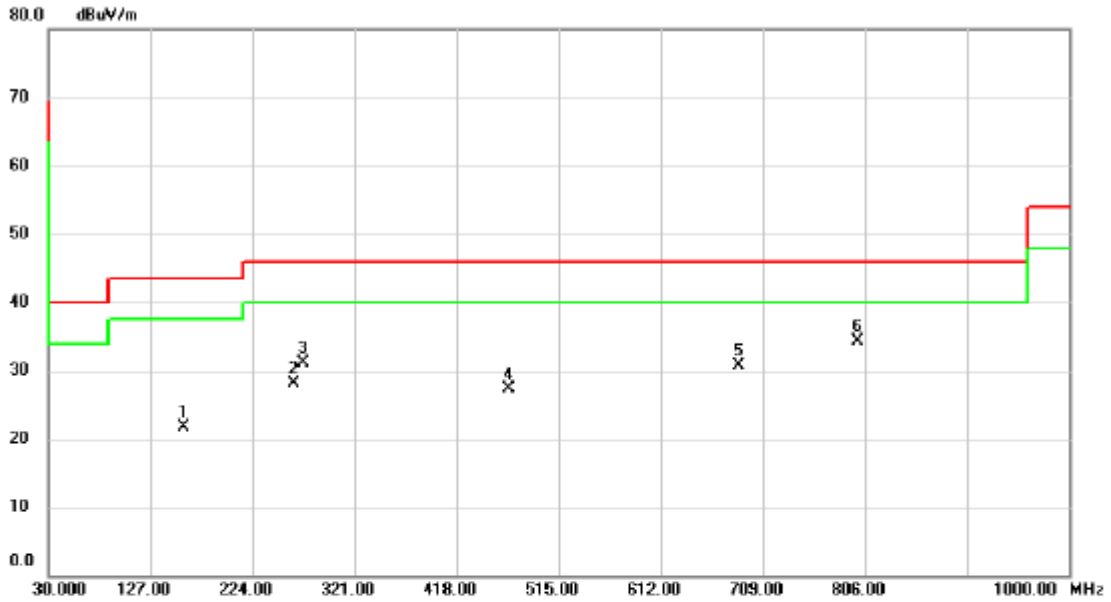
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		383.0800	30.48	-5.27	25.21	46.00	-20.79	peak	
2		503.3600	31.39	-2.57	28.82	46.00	-17.18	peak	
3		519.8500	31.05	-2.21	28.84	46.00	-17.16	peak	
4		690.5700	30.32	1.08	31.40	46.00	-14.60	peak	
5		747.8000	30.34	2.29	32.63	46.00	-13.37	peak	
6	*	885.5400	29.46	4.32	33.78	46.00	-12.22	peak	

Test Mode: TX Mode\_2405MHz

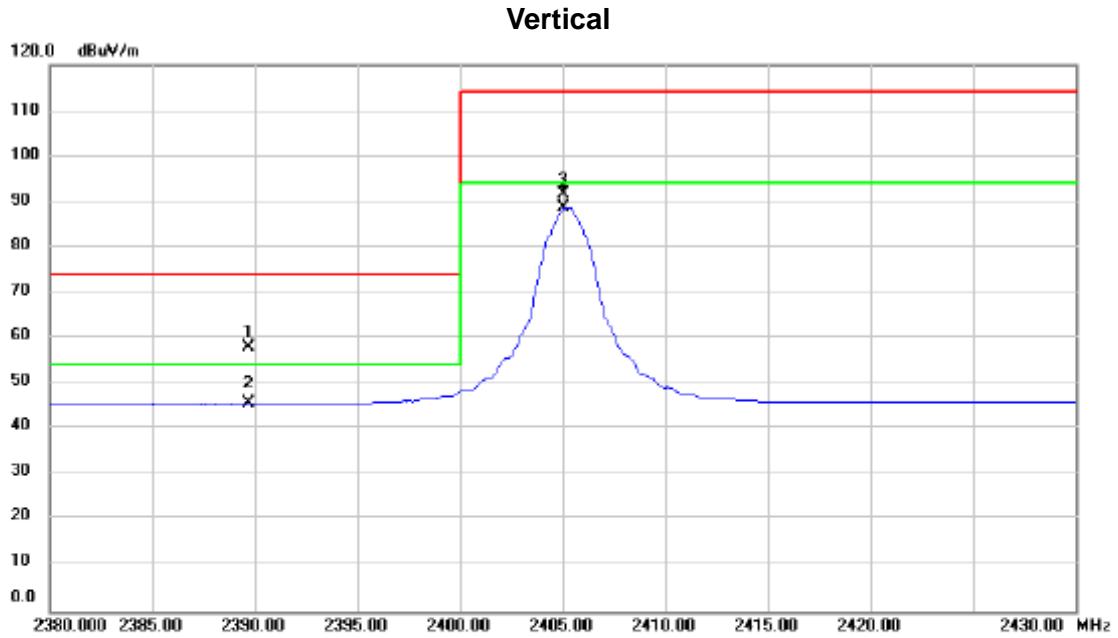
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		159.0100	30.36	-8.58	21.78	43.50	-21.72	peak	
2		263.7700	36.76	-8.63	28.13	46.00	-17.87	peak	
3		272.5000	39.43	-8.26	31.17	46.00	-14.83	peak	
4		467.4700	30.53	-3.20	27.33	46.00	-18.67	peak	
5		686.6900	29.70	0.99	30.69	46.00	-15.31	peak	
6	*	798.2400	31.37	2.86	34.23	46.00	-11.77	peak	

**ATTACHMENT D -RADIATED EMISSION (ABOVE 1000MHZ)**

Orthogonal Axis :	X
Test Mode :	TX Mode_2405MHz

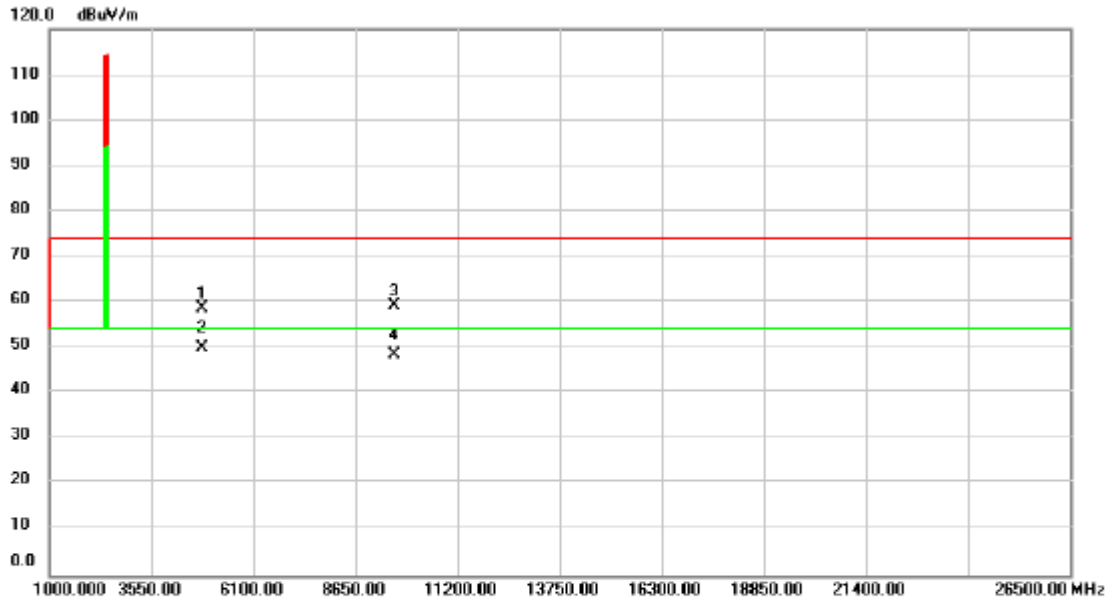


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2389.700	27.22	30.96	58.18	74.00	-15.82	peak	
2		2389.700	14.72	30.96	45.68	54.00	-8.32	AVG	
3		2405.000	60.63	31.02	91.65	114.00	-22.35	peak	
4	*	2405.000	57.77	31.02	88.79	94.00	-5.21	AVG	



Orthogonal Axis :	X
Test Mode :	TX Mode_2405MHz

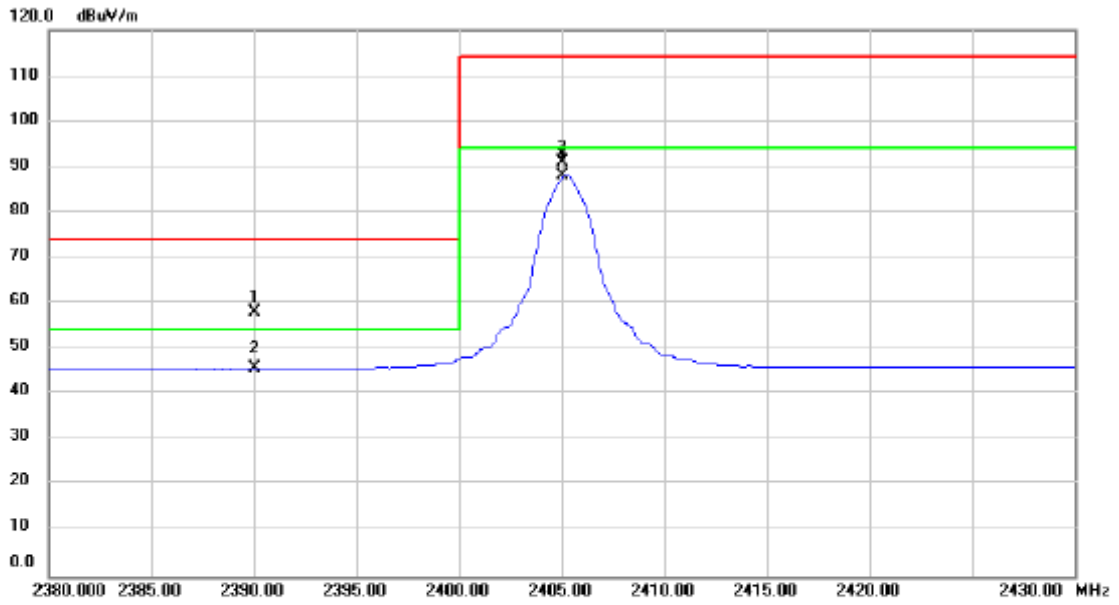
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4810.000	70.01	-11.49	58.52	74.00	-15.48	peak	
2	*	4810.000	61.32	-11.49	49.83	54.00	-4.17	AVG	
3		9620.000	58.66	0.73	59.39	71.65	-12.26	peak	
4		9620.000	47.84	0.73	48.57	68.79	-20.22	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2405MHz

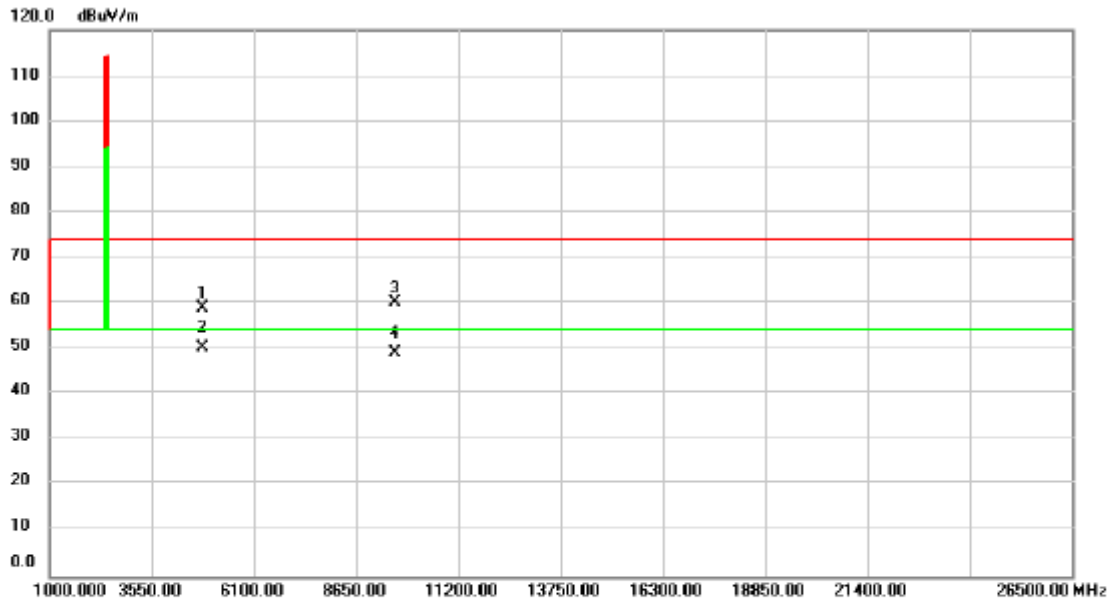
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	27.15	30.96	58.11	74.00	-15.89	peak	
2		2390.000	14.70	30.96	45.66	54.00	-8.34	AVG	
3		2405.000	59.99	31.02	91.01	114.00	-22.99	peak	
4	*	2405.000	57.08	31.02	88.10	94.00	-5.90	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2405MHz

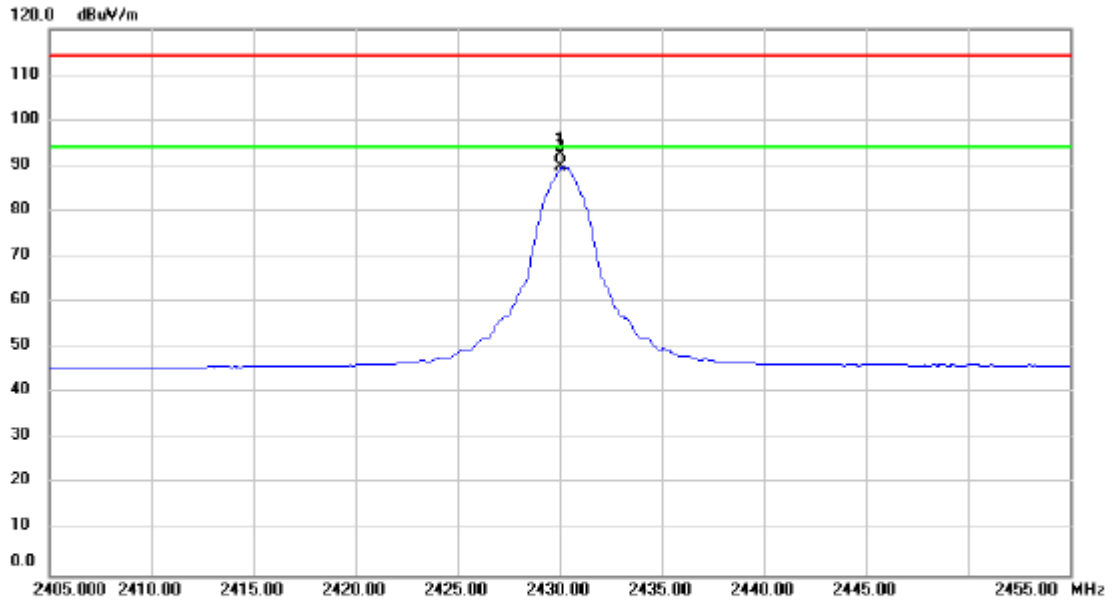
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4810.000	70.54	-11.49	59.05	74.00	-14.95	peak	
2	*	4810.000	61.69	-11.49	50.20	54.00	-3.80	AVG	
3		9620.000	59.34	0.73	60.07	71.01	-10.94	peak	
4		9620.000	48.21	0.73	48.94	68.10	-19.16	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2430MHz

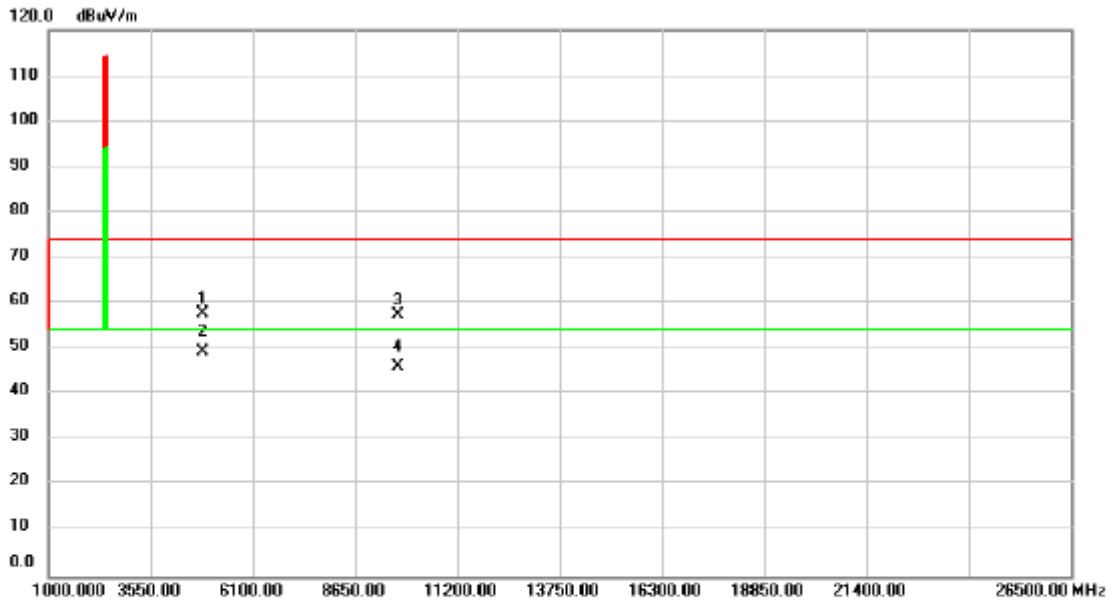
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2430.000	61.49	31.11	92.60	114.00	-21.40	peak	
2	*	2430.000	58.60	31.11	89.71	94.00	-4.29	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2430MHz

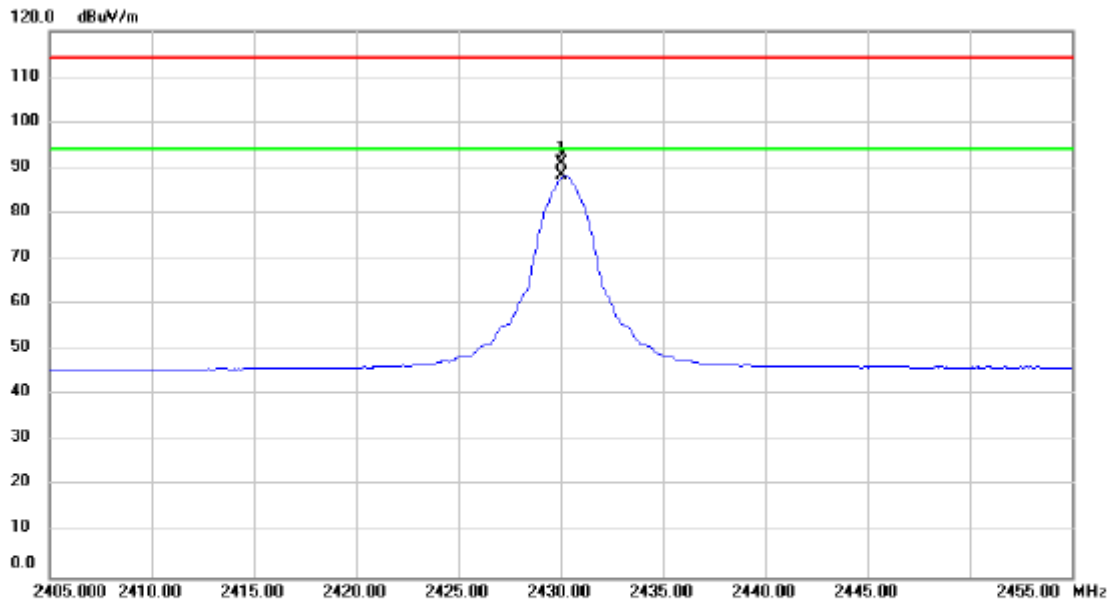
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4860.000	69.30	-11.41	57.89	74.00	-16.11	peak	
2	*	4860.000	60.85	-11.41	49.44	54.00	-4.56	AVG	
3		9720.000	56.30	1.02	57.32	72.60	-15.28	peak	
4		9720.000	44.95	1.02	45.97	69.71	-23.74	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2430MHz

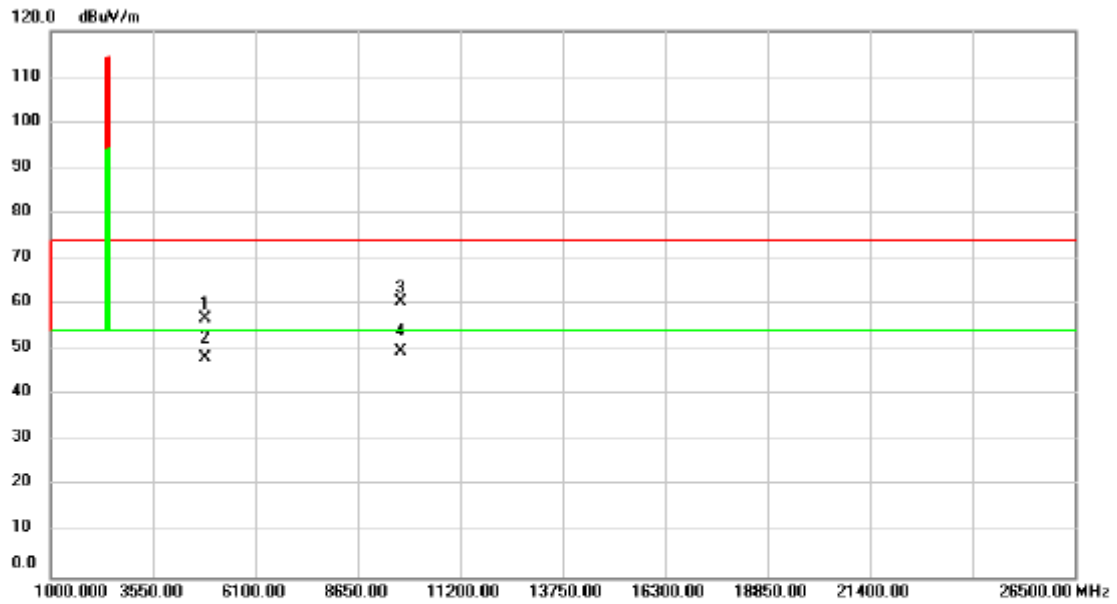
### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2430.000	59.91	31.11	91.02	114.00	-22.98	peak	
2	*	2430.000	57.11	31.11	88.22	94.00	-5.78	AVG	

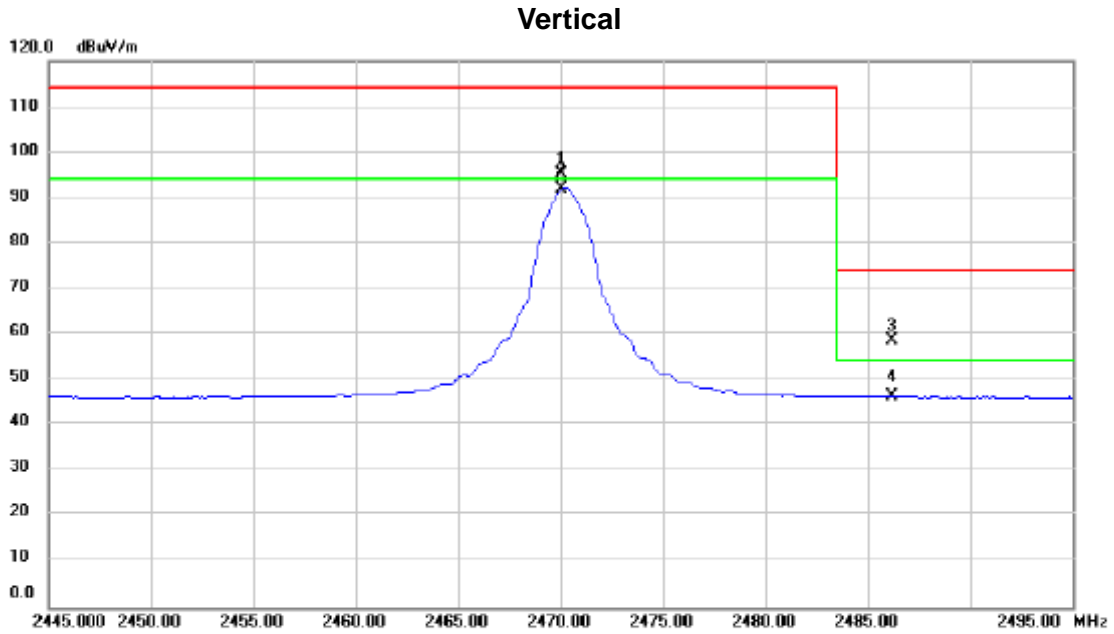
Orthogonal Axis :	X
Test Mode :	TX Mode_2430MHz

### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4860.000	68.19	-11.41	56.78	74.00	-17.22	peak	
2	4860.000	59.62	-11.41	48.21	54.00	-5.79	AVG	
3	9720.000	59.45	1.02	60.47	71.02	-10.55	peak	
4 *	9720.000	48.49	1.02	49.51	68.22	-18.71	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2470MHz

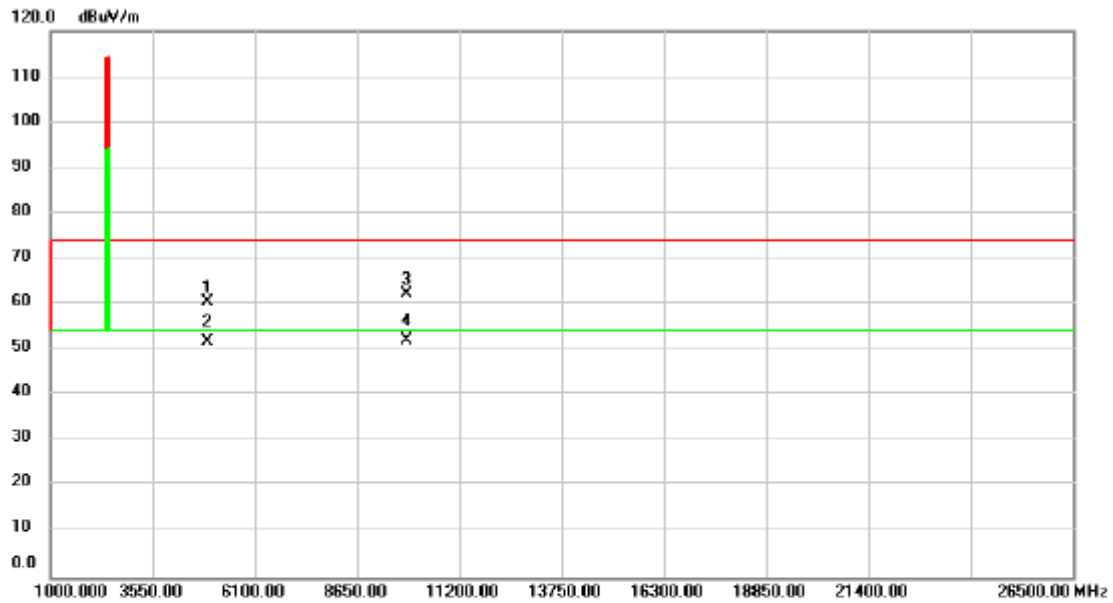


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2470.000	64.09	31.26	95.35	114.00	-18.65	peak	
2	*	2470.000	60.65	31.26	91.91	94.00	-2.09	AVG	
3		2486.150	27.41	31.32	58.73	74.00	-15.27	peak	
4		2486.150	15.16	31.32	46.48	54.00	-7.52	AVG	



Orthogonal Axis :	X
Test Mode :	TX Mode_2470MHz

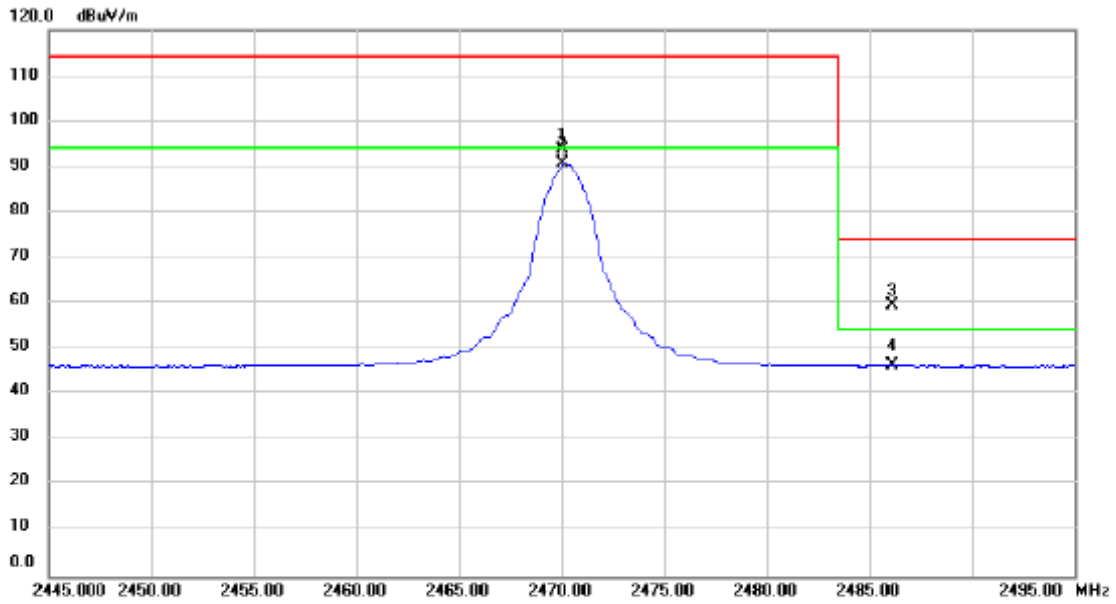
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4940.000	71.75	-11.29	60.46	74.00	-13.54	peak	
2		4940.000	63.08	-11.29	51.79	54.00	-2.21	AVG	
3		9880.000	60.75	1.48	62.23	75.35	-13.12	peak	
4	*	9880.000	50.46	1.48	51.94	71.91	-19.97	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2470MHz

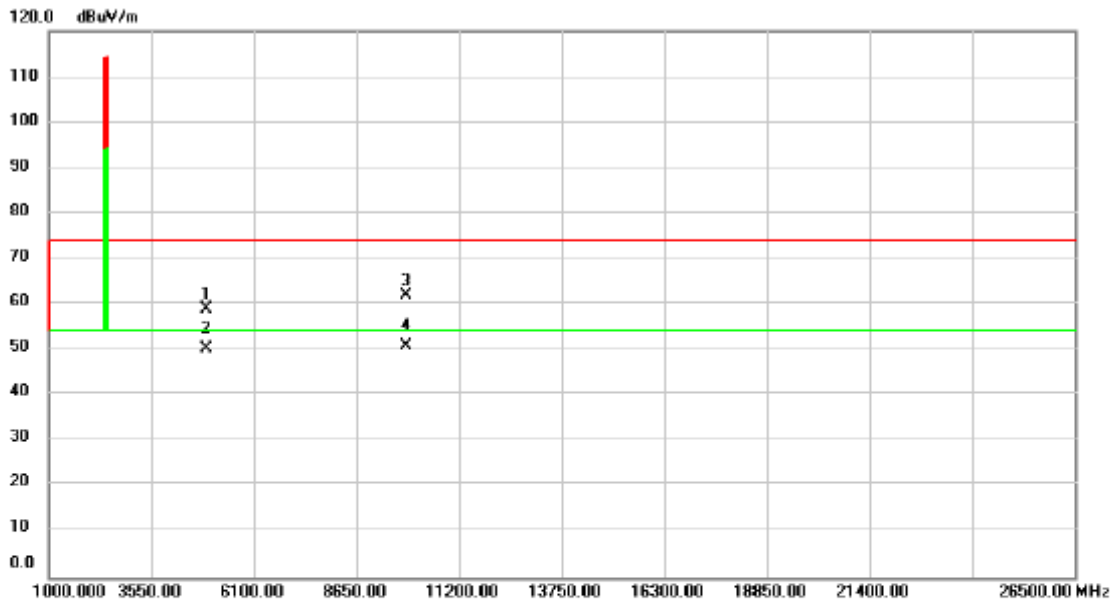
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2470.000	62.48	31.26	93.74	114.00	-20.26	peak	
2	*	2470.000	59.44	31.26	90.70	94.00	-3.30	AVG	
3		2486.100	28.12	31.32	59.44	74.00	-14.56	peak	
4		2486.100	15.05	31.32	46.37	54.00	-7.63	AVG	

Orthogonal Axis :	X
Test Mode :	TX Mode_2470MHz

### Horizontal

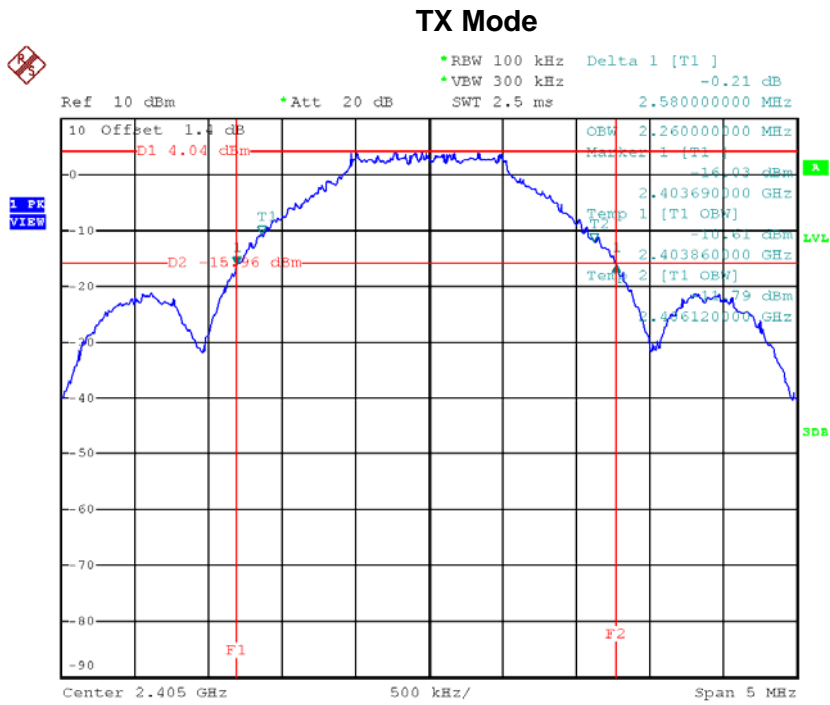


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4940.000	70.26	-11.29	58.97	74.00	-15.03	peak	
2		4940.000	61.51	-11.29	50.22	54.00	-3.78	AVG	
3		9880.000	60.39	1.48	61.87	73.74	-11.87	peak	
4	*	9880.000	49.37	1.48	50.85	70.70	-19.85	AVG	

## ATTACHMENT E - BANDWIDTH

Test Mode : TX Mode\_2405MHz

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)
2405.0	2.58	2.26

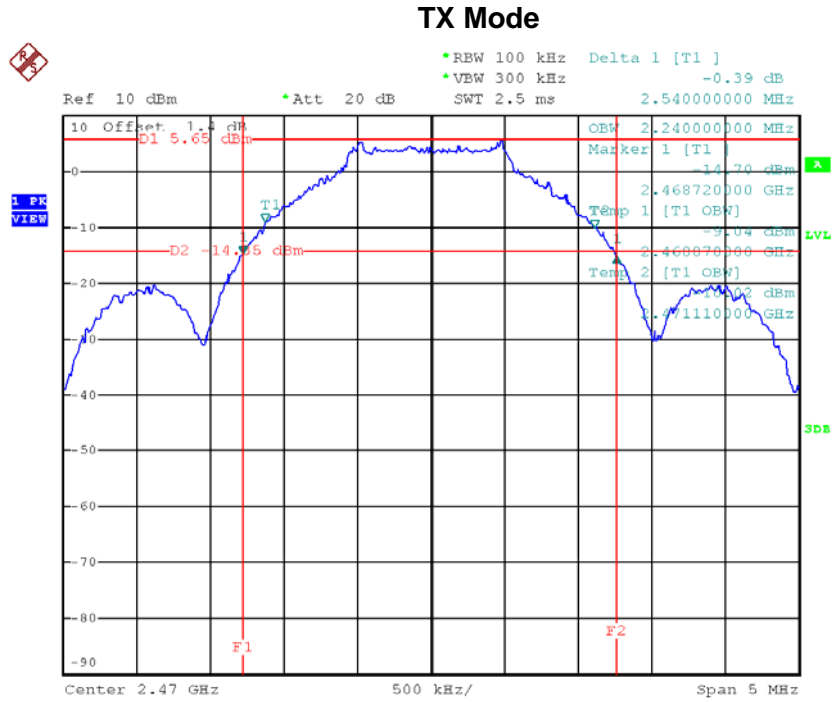


Date: 9.SEP.2016 17:59:00



Test Mode : TX Mode\_270MHz

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)
2470.0	2.54	2.24



Date: 9.SEP.2016 18:03:06