FCC Radio Test Report

FCC ID: H4IDG9080

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

Project No.	:	1411196
Equipment	:	USB Transceiver
Model Name	:	SD-9080
Applicant	:	LITE-ON TECHNOLOGY CORP.
Address	:	16F, 392 , Ruey Kuang Road, Neihu, Taipei 11492, Taiwan, R.O.C

Date of Receipt	:	Nov. 26, 2014
Date of Test	:	Nov. 26, 2014 ~ Dec. 09, 2014
Issued Date	:	Dec. 10, 2014
Tested by	:	BTL Inc.

Testing Engineer : Rush Kao
(Rush Kao)

Technical Manager : Jeff Yang
(Jeff Yang)

Authorized Signatory : Andy Chiu
(Andy Chiu)

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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

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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**

Table of Contents **Page**

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
T100514003-RP1	Original Report.	May 25, 2010
BTL-FCCP-1-1411196	Compared with previous report (T100514003-RP1) antenna manufacturer is changed, and the antenna gain is higher than before, all test items are re-tested and recorded in the test report.	Dec. 10, 2014

1. CERTIFICATION

Equipment	:	USB Transceiver
Brand Name	:	Liteon
Model Name	:	SD-9080
Applicant	:	LITE-ON TECHNOLOGY CORP.
Date of Test	:	Nov. 26, 2014 ~ Dec. 09, 2014
Test Sample	:	Engineering Sample
Standard(s)	:	FCC Part15, Subpart C(15.249)/ ANSI C63.4-2009

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-1-1411196) 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 FCC	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.209 15.249	Radiated Spurious Emission	PASS	

NOTE:

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

2.1 TEST FACILITY

Conducted emission Test:

C02: (VCCI RN: C-3477; FCC RN: 614388; FCC DN: TW1054)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Radiated emission Test (Below 1 GHz):

CB08: (FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

CB08: (VCCI RN: G-91; FCC RN: 614388; FCC DN: TW1054; IC Assigned Cc 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

BTL's test firm number for FCC: 319330

2.2 MEASUREMENT UNCERTAINTY

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

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

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

A. Conducted emission test:

Test Site	Measurement Frequency Range	U，(dB)	NOTE
C02	150 kHz ~ 30 MHz	1.94	

B. Radiated emission test:

Test Site	Item	Measurement Frequency Range		Uncertainty	NOTE
CB08	Radiated emission at 3m	Horizontal Polarization	30 - 200MHz	3.35 dB	
			200 - 1000MHz	3.11 dB	
			1 - 18GHz	3.97 dB	
			18 - 40GHz	4.01 dB	
		Vertical Polarization	30 - 200MHz	3.22 dB	
			200 - 1000MHz	3.24 dB	
			1 - 18GHz	4.05 dB	
			18 - 40GHz	4.04 dB	

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	USB Transceiver	
Brand Name	Liteon	
Model Name	SD-9080	
Model Difference	N/A	
Product Description	Operation Frequency	2403~2480 MHz
	Modulation Technology	MSK(2Mbps)
	Data rate	
	Field Strength	74.12 dBuV/m(AV Max)
Power Source	Supplied from USB Port	
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. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	WISN	RFANT3216120A 5T Series	Chip	N/A	2.12	

3.2 DESCRIPTION OF TEST MODES

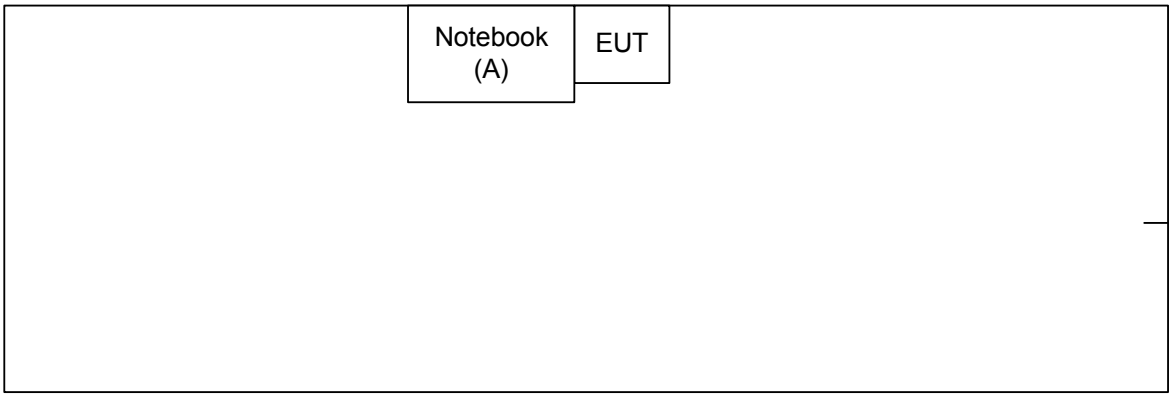
To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration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

Pretest Mode	Description
Mode 1	TX Low Channel
Mode 2	TX Middle Channel
Mode 3	TX High Channel

For Radiated Test	
Final Test Mode	Description
Mode 1	TX Low Channel
Mode 2	TX Middle Channel
Mode 3	TX High Channel

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

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.	Note
A	Notebook PC	DELL	PP18L	DOC	PF329 A01	

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	

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 (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

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

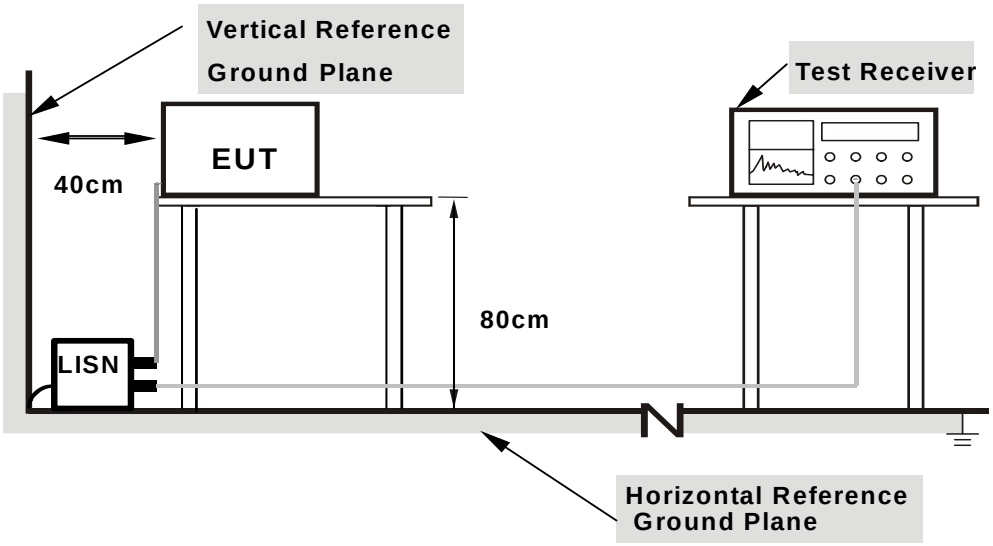
d. LISN at least 80 cm from nearest part of EUT chassis.

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

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

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

4.1.6 EUT TEST CONDITIONS

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

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

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

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (FCC 15.209)

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

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

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC Part 15.249)

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

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

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

4.2.2 TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8 meters 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 EUT was placed on the top of a rotating table 0.8 meters 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; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then AV detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

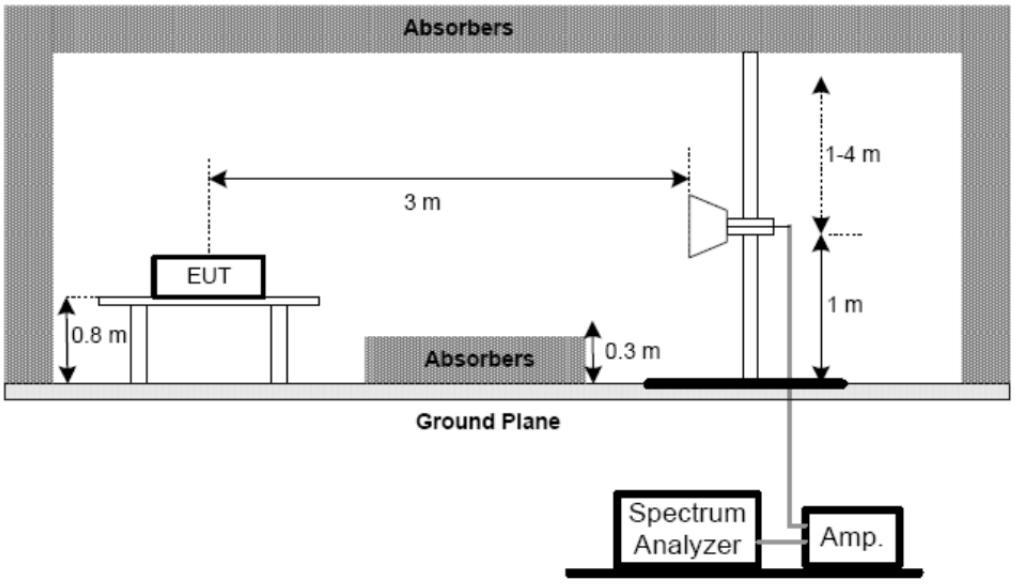
4.2.3 DEVIATION FROM TEST STANDARD

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



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 EUT TEST CONDITIONS

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

4.2.7 TEST RESULTS (BETWEEN 30 – 1000 MHz)

Please refer to the Attachment B

Remark：

(1) 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.
(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
(3) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission .

4.2.8 TEST RESULTS (ABOVE 1000 MHz)

Please refer to the Attachment C

Remark：

(1) 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.

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

(3) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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

(5) EUT Orthogonal Axis：

"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(6) 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

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

5. BANDWIDTH TEST

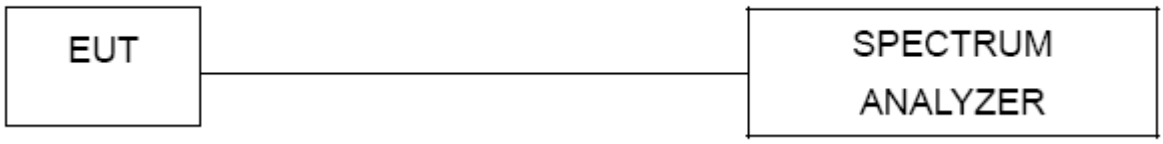
5.1 TEST PROCEDURE

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

5.2 DEVIATION FROM STANDARD

No deviation.

5.3 TEST SETUP



5.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 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 D

6. ANTENNA CONDUCTED SPURIOUS EMISSION

6.1 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.

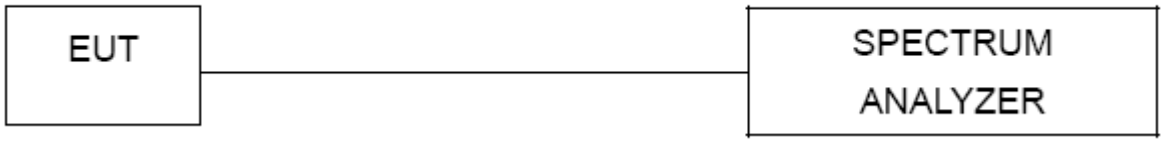
6.2 TEST PROCEDURE

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

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 EUT TEST CONDITIONS

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

6.7 TEST RESULTS

Please refer to the Attachment E

7. MEASUREMENT INSTRUMENTS LIST AND SETTING

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101050	Jan. 15, 2015
2	Test Cable	TIMES	CFD300-NL	C01	Jun. 15, 2015
3	EMI Test Receiver	R&S	ESCI	100082	Apr. 13, 2015
4	Measurement Software	EZ	EZ_EMC (Version NB-02A)	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 26, 2015
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Jun. 14, 2015
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 15, 2015
4	Microflex Cable	Harbour industries	27478LL142	1m	May. 12, 2015
5	Microflex Cable	EMC	S104-SMA	8m	May. 14, 2015
6	Microflex Cable	Harbour industries	27478LL142	3m	May. 12, 2015
7	Test Cable	LMR	LMR-400	12m	May. 13, 2015
8	Test Cable	LMR	LMR-400	3m	May. 13, 2015
9	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 17, 2015
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	July. 10, 2015

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 26, 2015

Antenna Conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 26, 2015

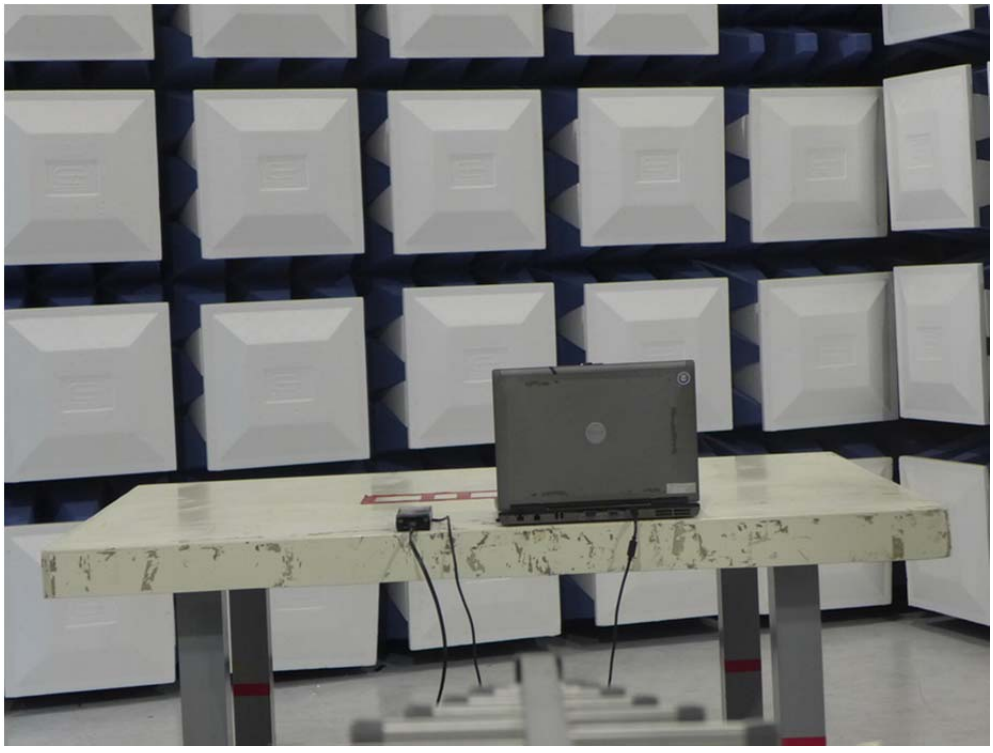
Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

8. EUT TEST PHOTO

Conducted Measurement Photos

Radiated Measurement Photos

30MHz to 1000MHz



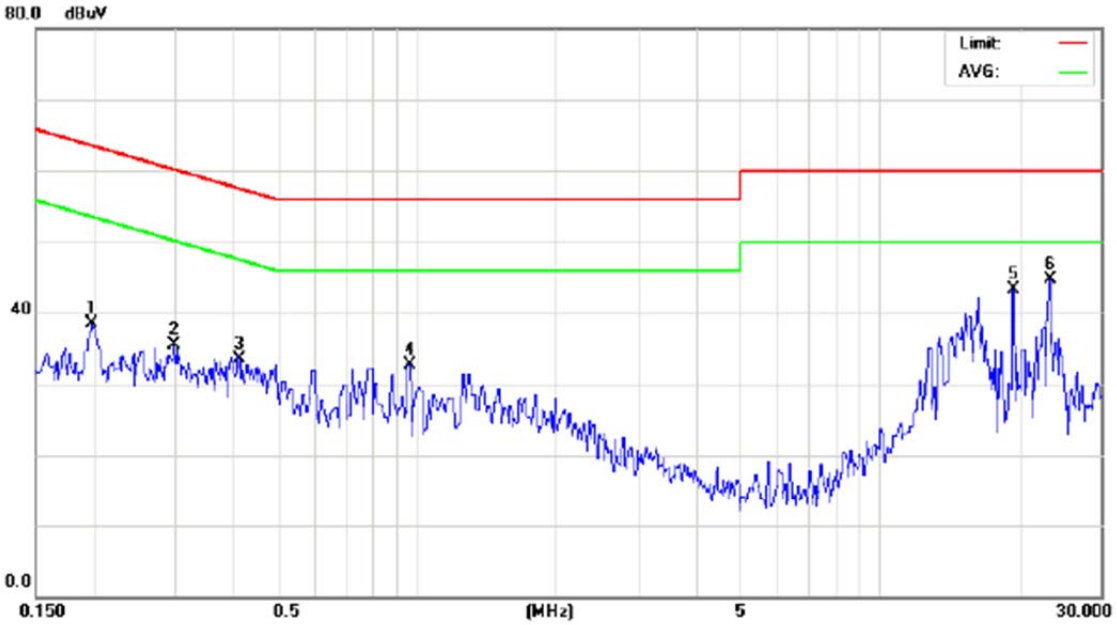
Radiated Measurement Photos

Above 1000MHz

ATTACHMENT A - CONDUCTED EMISSION

Test Mode:	TX Mode

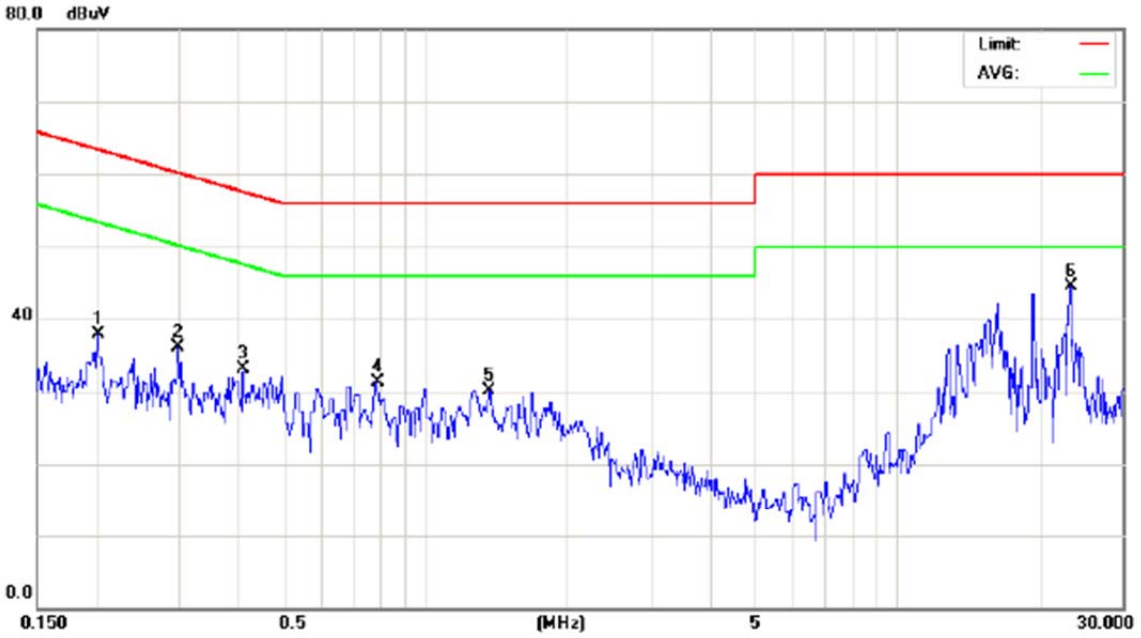
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1983	28.91	9.65	38.56	63.68	-25.12	peak	
2		0.2976	25.72	9.76	35.48	60.31	-24.83	peak	
3		0.4117	23.61	9.89	33.50	57.61	-24.11	peak	
4		0.9590	22.93	9.70	32.63	56.00	-23.37	peak	
5		19.3500	32.82	10.50	43.32	60.00	-16.68	peak	
6	*	23.1500	34.17	10.46	44.63	60.00	-15.37	peak	

Test Mode:	TX Mode

Neutral

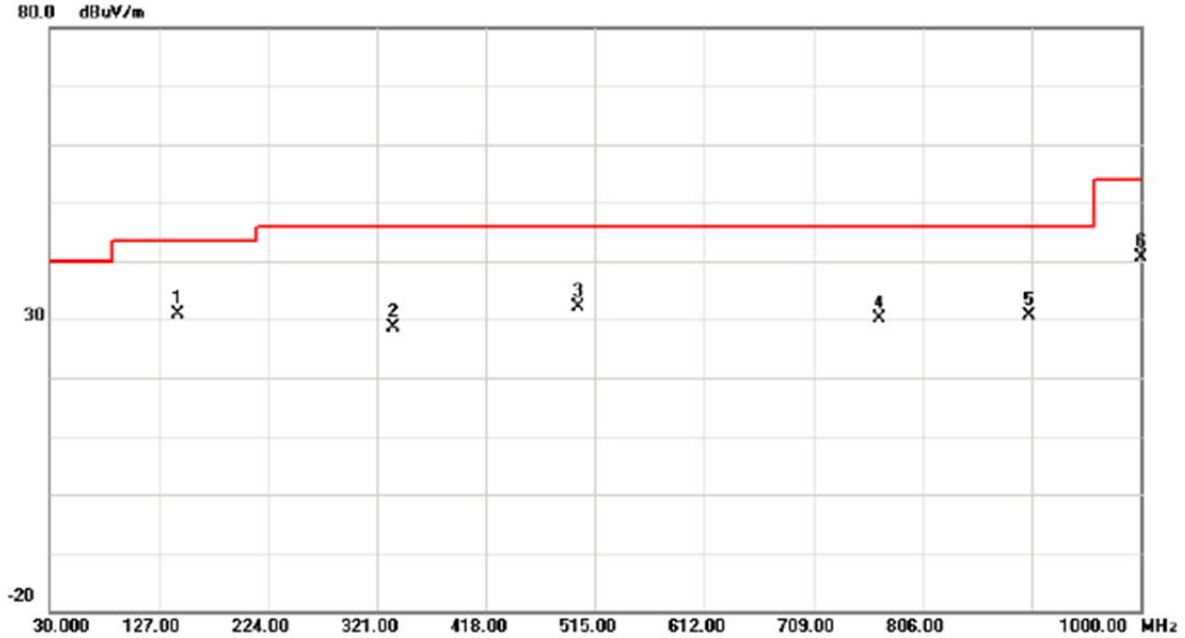


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2011	28.21	9.64	37.85	63.56	-25.71	peak	
2		0.2976	26.39	9.65	36.04	60.31	-24.27	peak	
3		0.4103	23.52	9.66	33.18	57.64	-24.46	peak	
4		0.7880	21.54	9.68	31.22	56.00	-24.78	peak	
5		1.3639	20.43	9.72	30.15	56.00	-25.85	peak	
6	*	23.1500	34.09	10.49	44.58	60.00	-15.42	peak	

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

Test Mode:	TX Middle Channel

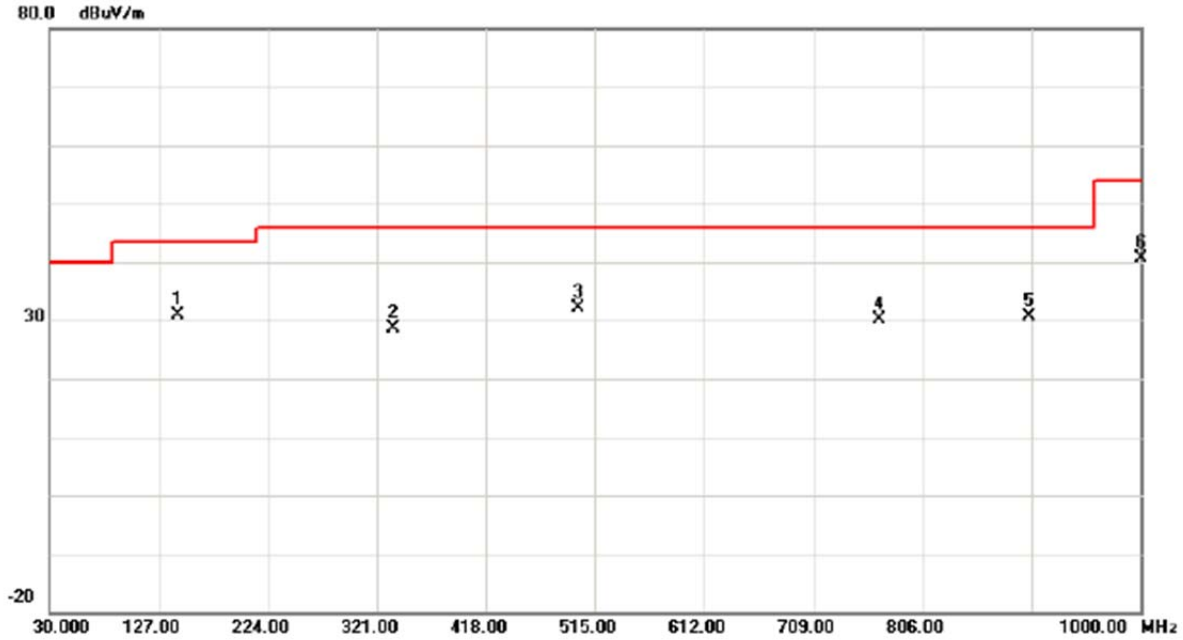
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	143.9750	45.27	-14.29	30.98	43.50	-12.52	peak	
2		335.5500	41.09	-12.57	28.52	46.00	-17.48	peak	
3		500.4500	41.32	-9.30	32.02	46.00	-13.98	peak	
4		767.2000	35.09	-4.91	30.18	46.00	-15.82	peak	
5		900.5750	33.37	-2.82	30.55	46.00	-15.45	peak	
6		1000.000	41.82	-1.28	40.54	54.00	-13.46	peak	

Test Mode:	TX Middle Channel

Horizontal

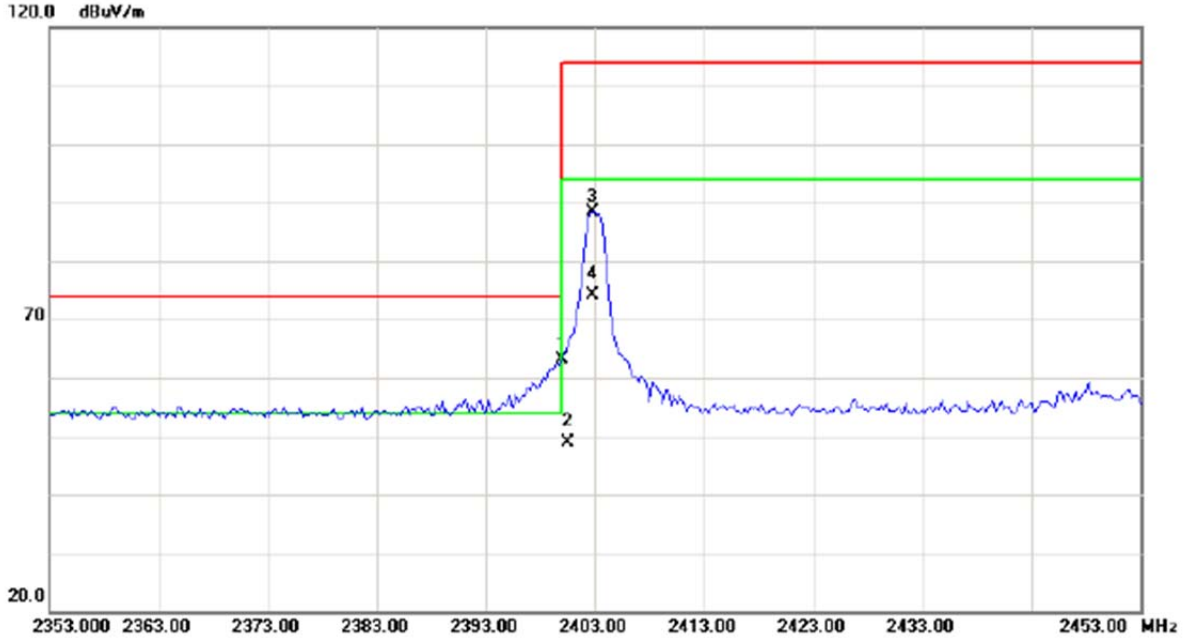


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	143.9750	45.27	-14.29	30.98	43.50	-12.52	peak	
2		335.5500	41.09	-12.57	28.52	46.00	-17.48	peak	
3		500.4500	41.32	-9.30	32.02	46.00	-13.98	peak	
4		767.2000	35.09	-4.91	30.18	46.00	-15.82	peak	
5		900.5750	33.37	-2.82	30.55	46.00	-15.45	peak	
6		1000.000	41.82	-1.28	40.54	54.00	-13.46	peak	

ATTACHMENT C - RADIATED EMISSION (ABOVE 1000MHZ)

Orthogonal Axis :	X
Test Mode :	TX Low Channel

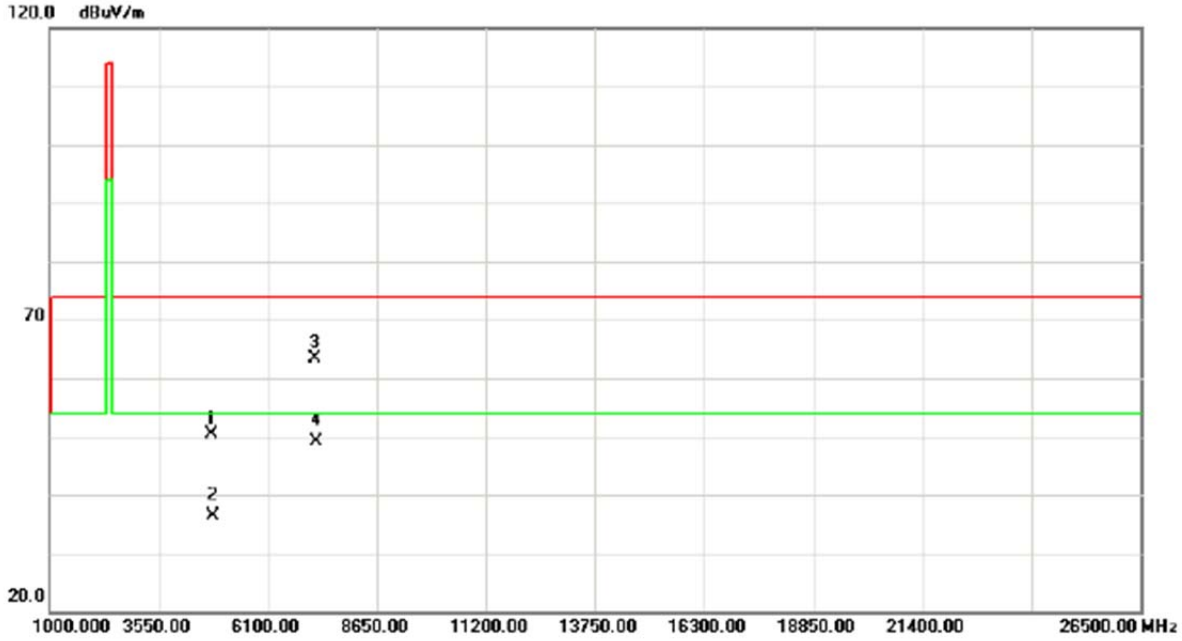
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2400.000	32.04	31.07	63.11	74.00	-10.89	peak	
2	*	2400.000	17.86	31.07	48.93	54.00	-5.07	AVG	
3		2402.750	57.22	31.08	88.30	114.00	-25.70	peak	
4		2402.750	43.04	31.08	74.12	94.00	-19.88	AVG	

Orthogonal Axis :	X
Test Mode :	TX Low Channel

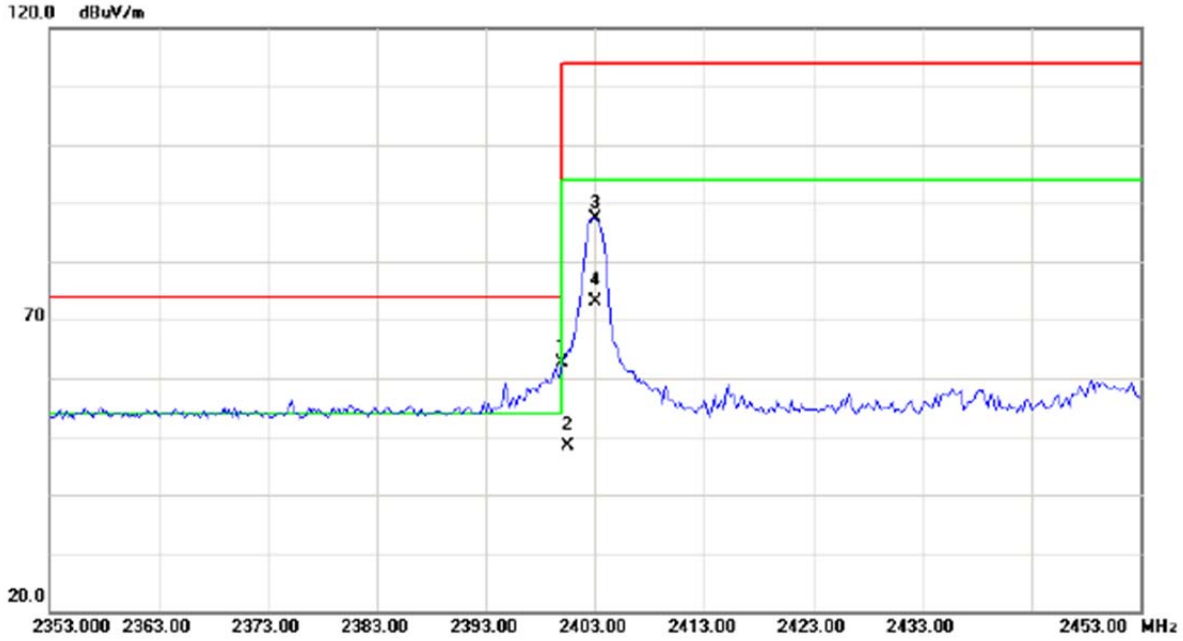
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4806.130	43.72	6.78	50.50	74.00	-23.50	peak	
2		4806.130	29.54	6.78	36.32	54.00	-17.68	AVG	
3		7208.887	48.27	15.03	63.30	74.00	-10.70	peak	
4	*	7208.887	34.09	15.03	49.12	54.00	-4.88	AVG	

Orthogonal Axis :	X
Test Mode :	TX Low Channel

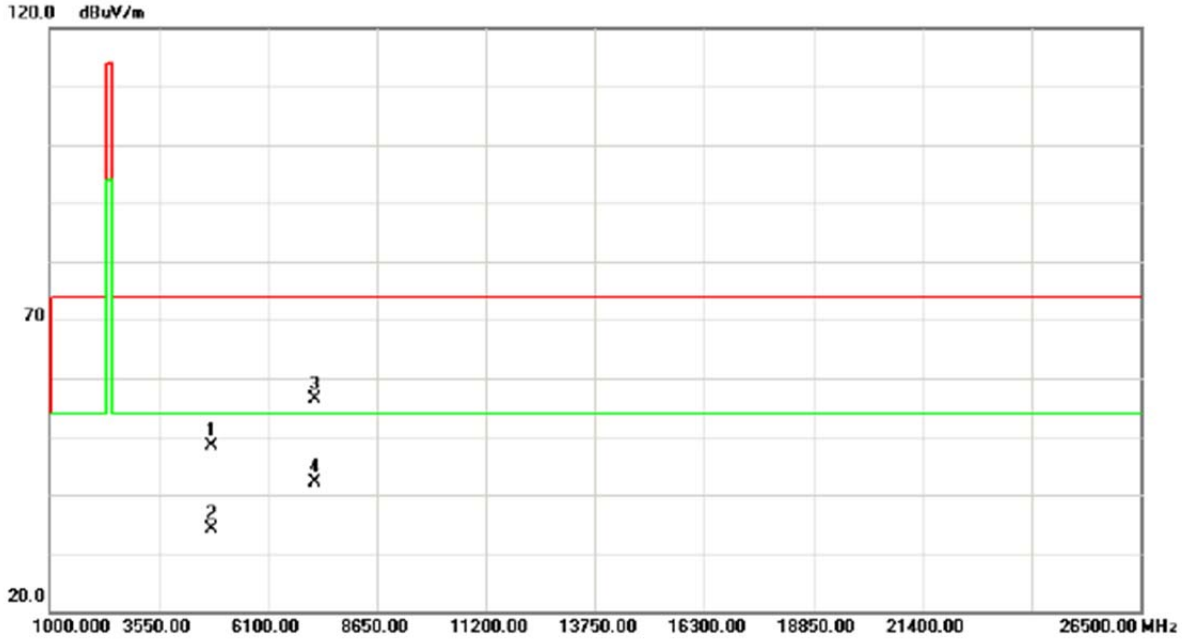
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2400.000	31.49	31.07	62.56	74.00	-11.44	peak	
2	*	2400.000	17.31	31.07	48.38	54.00	-5.62	AVG	
3		2403.000	56.19	31.08	87.27	114.00	-26.73	peak	
4		2403.000	42.01	31.08	73.09	94.00	-20.91	AVG	

Orthogonal Axis :	X
Test Mode :	TX Low Channel

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4805.962	41.58	6.78	48.36	74.00	-25.64	peak	
2		4805.962	27.40	6.78	34.18	74.00	-39.82	peak	
3	*	7207.925	41.23	15.03	56.26	74.00	-17.74	peak	
4		7207.925	27.05	15.03	42.08	74.00	-31.92	peak	

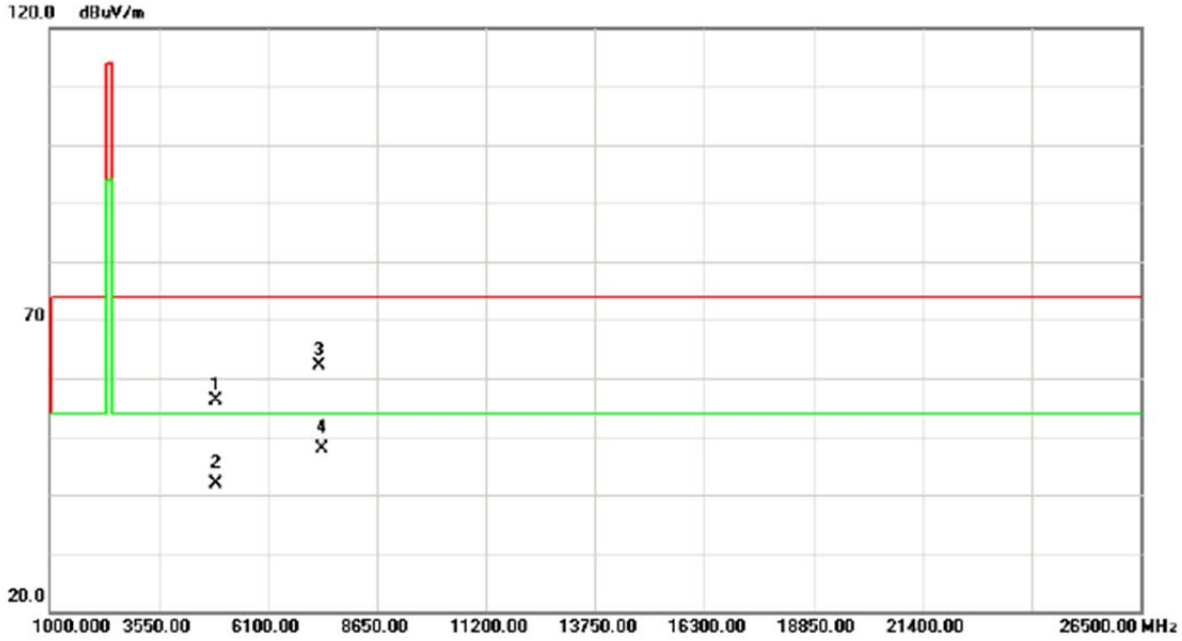
Orthogonal Axis :	X
Test Mode :	TX Middle Channel

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2441.000	56.30	31.26	87.56	114.00	-26.44	peak	
2	*	2441.000	42.12	31.26	73.38	94.00	-20.62	AVG	

Orthogonal Axis :	X
Test Mode :	TX Middle Channel

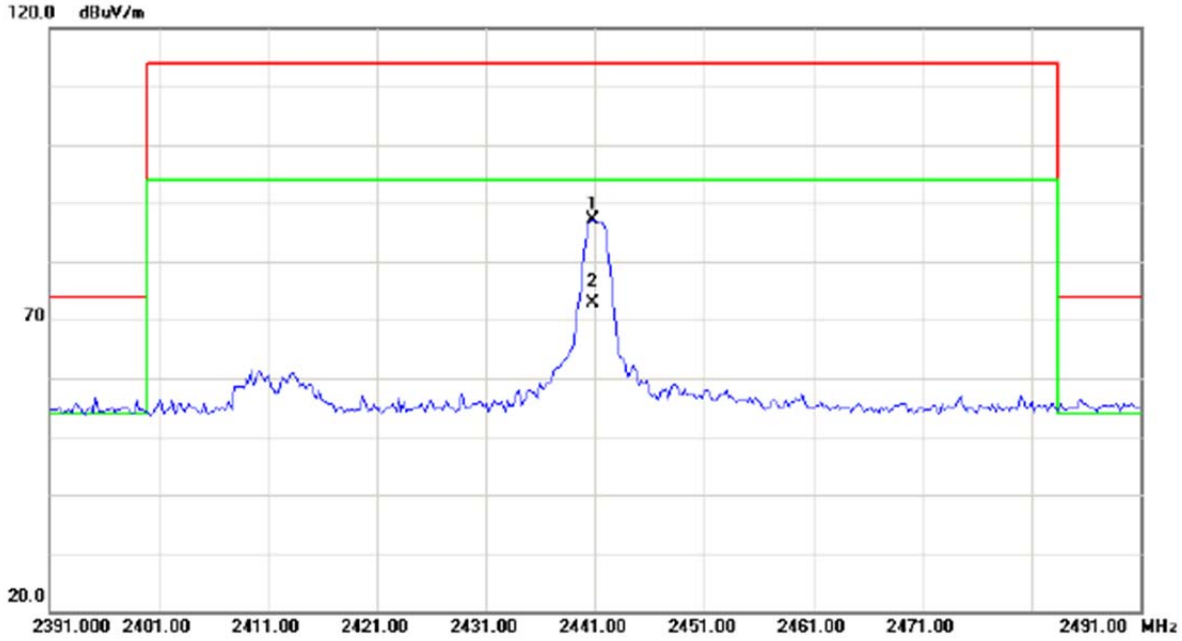
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4881.770	49.24	6.77	56.01	74.00	-17.99	peak	
2		4881.770	35.06	6.77	41.83	54.00	-12.17	AVG	
3		7322.935	46.48	15.65	62.13	74.00	-11.87	peak	
4	*	7322.935	32.30	15.65	47.95	54.00	-6.05	AVG	

Orthogonal Axis :	X
Test Mode :	TX Middle Channel

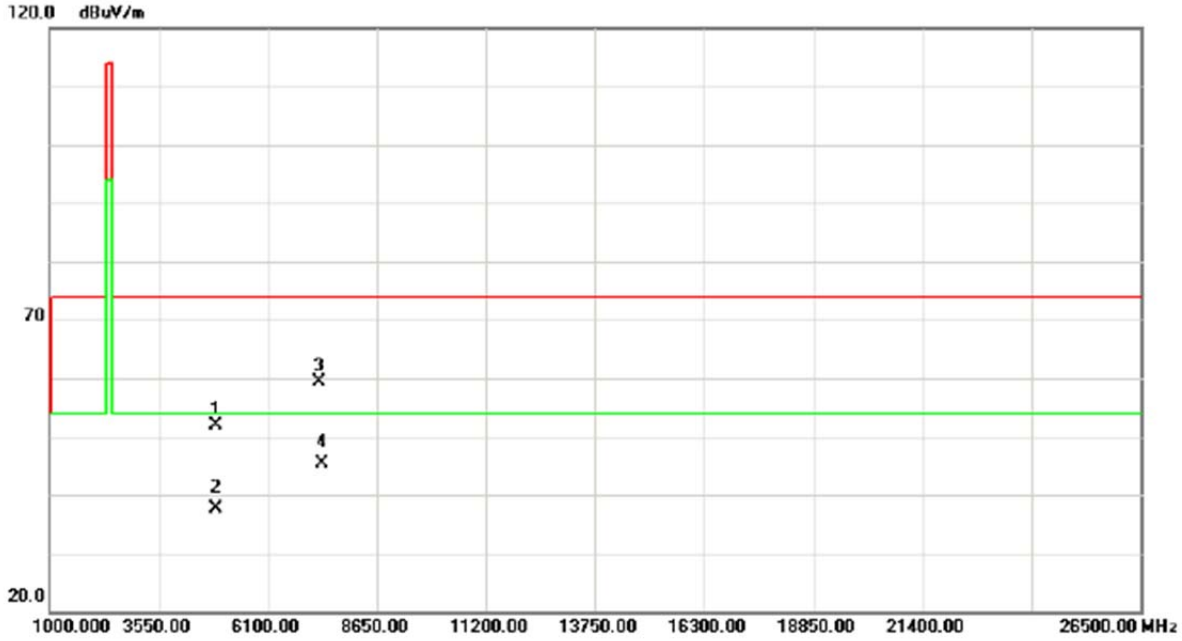
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2440.750	55.91	31.26	87.17	114.00	-26.83	peak	
2	*	2440.750	41.73	31.26	72.99	94.00	-21.01	AVG	

Orthogonal Axis :	X
Test Mode :	TX Middle Channel

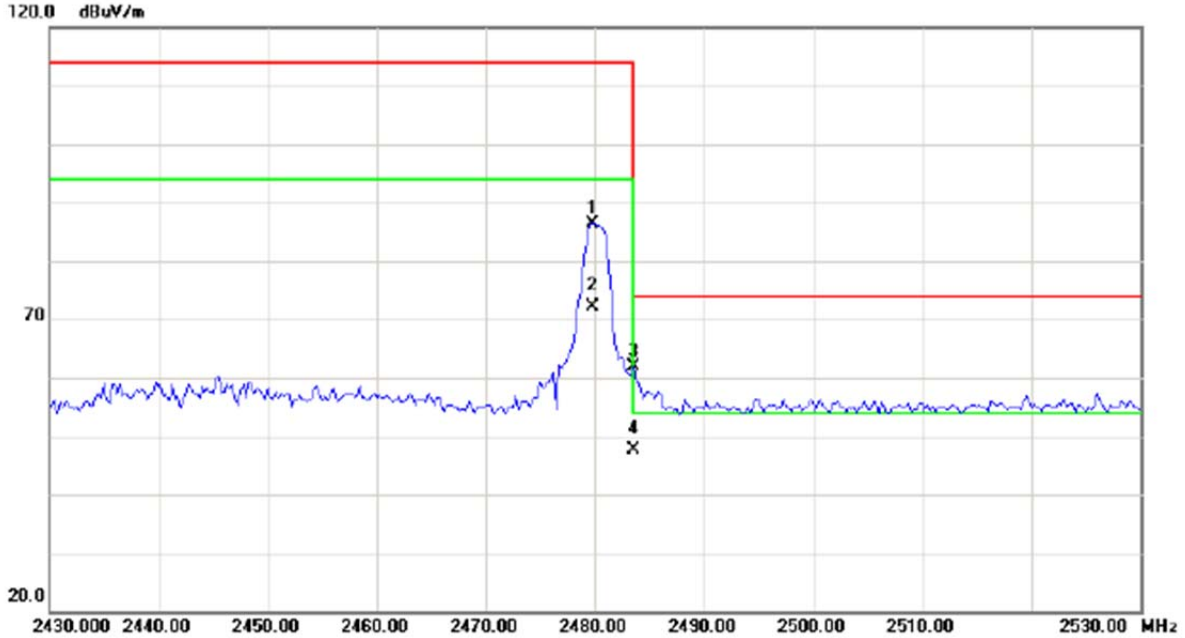
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4881.345	45.04	6.77	51.81	74.00	-22.19	peak	
2		4881.345	30.86	6.77	37.63	54.00	-16.37	AVG	
3		7322.990	43.83	15.65	59.48	74.00	-14.52	peak	
4	*	7322.990	29.65	15.65	45.30	54.00	-8.70	AVG	

Orthogonal Axis :	X
Test Mode :	TX High Channel

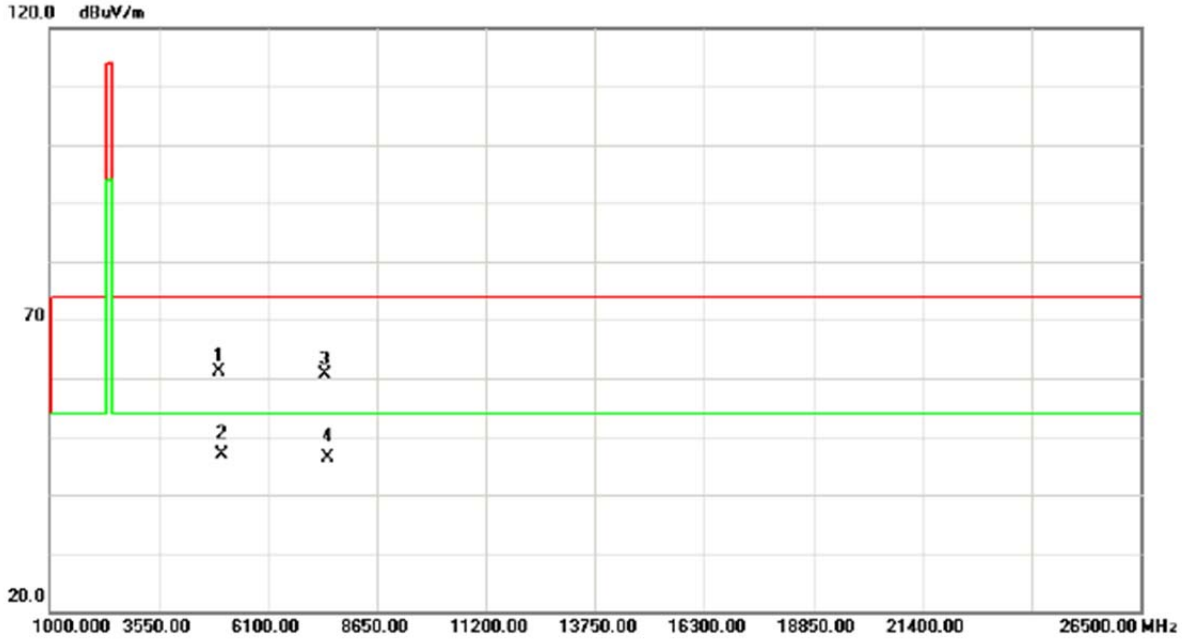
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2479.750	54.94	31.44	86.38	114.00	-27.62	peak	
2		2479.750	40.73	31.44	72.17	94.00	-21.83	AVG	
3		2483.500	30.37	31.46	61.83	74.00	-12.17	peak	
4	*	2483.500	16.19	31.46	47.65	54.00	-6.35	AVG	

Orthogonal Axis :	X
Test Mode :	TX High Channel

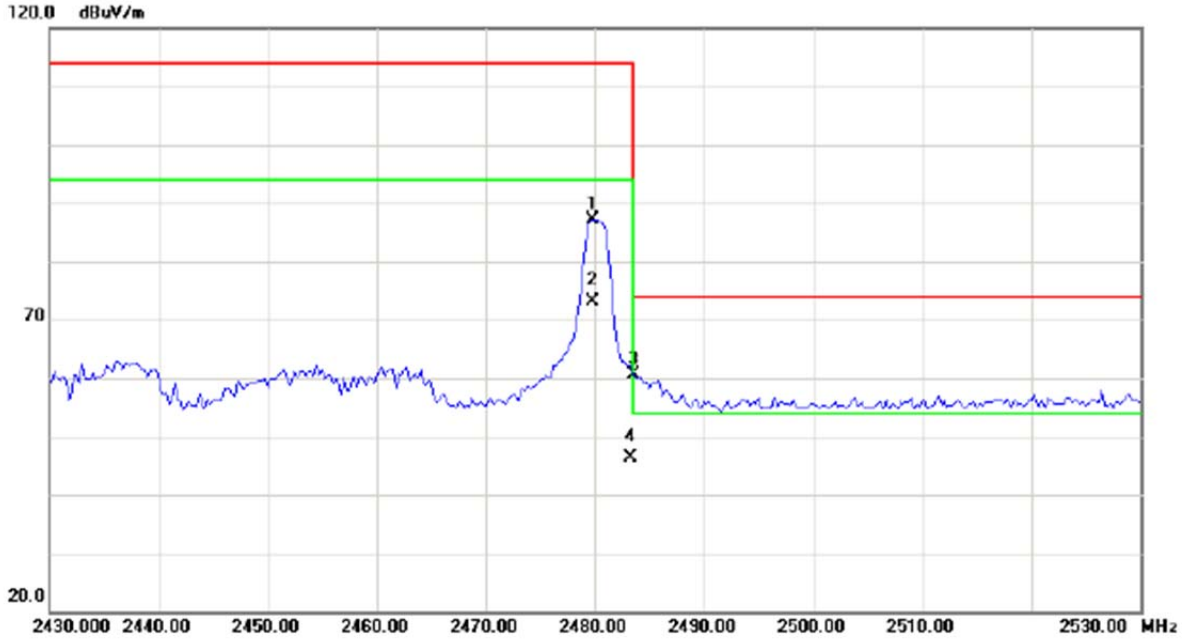
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4959.840	54.30	6.76	61.06	74.00	-12.94	peak	
2	*	4959.840	40.12	6.76	46.88	54.00	-7.12	AVG	
3		7439.950	44.23	16.28	60.51	74.00	-13.49	peak	
4		7439.950	30.05	16.28	46.33	54.00	-7.67	AVG	

Orthogonal Axis :	X
Test Mode :	TX High Channel

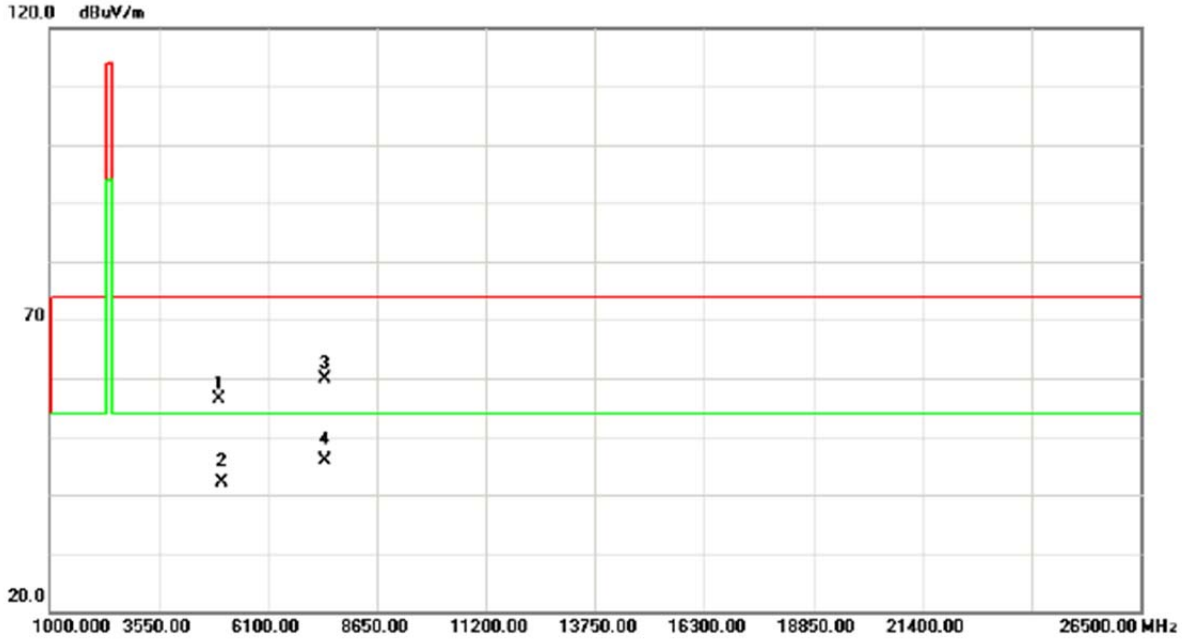
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2479.750	55.76	31.44	87.20	114.00	-26.80	peak	
2		2479.750	41.76	31.44	73.20	94.00	-20.80	AVG	
3		2483.500	29.14	31.46	60.60	74.00	-13.40	peak	
4	*	2483.500	14.96	31.46	46.42	54.00	-7.58	AVG	

Orthogonal Axis :	X
Test Mode :	TX High Channel

Horizontal

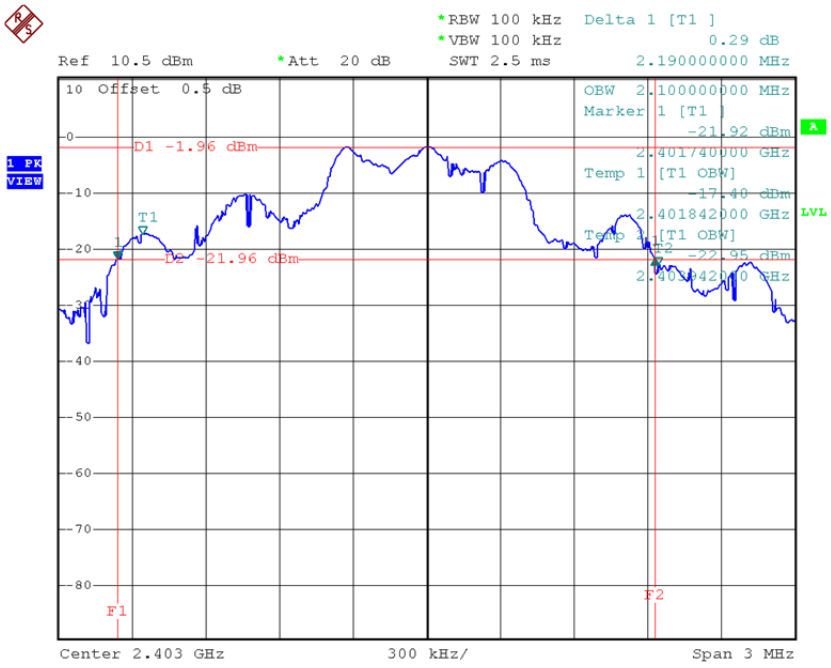


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4959.413	49.64	6.76	56.40	74.00	-17.60	peak	
2		4959.413	35.46	6.76	42.22	54.00	-11.78	AVG	
3		7438.688	43.72	16.27	59.99	74.00	-14.01	peak	
4	*	7438.688	29.54	16.27	45.81	54.00	-8.19	AVG	

ATTACHMENT D - BANDWIDTH

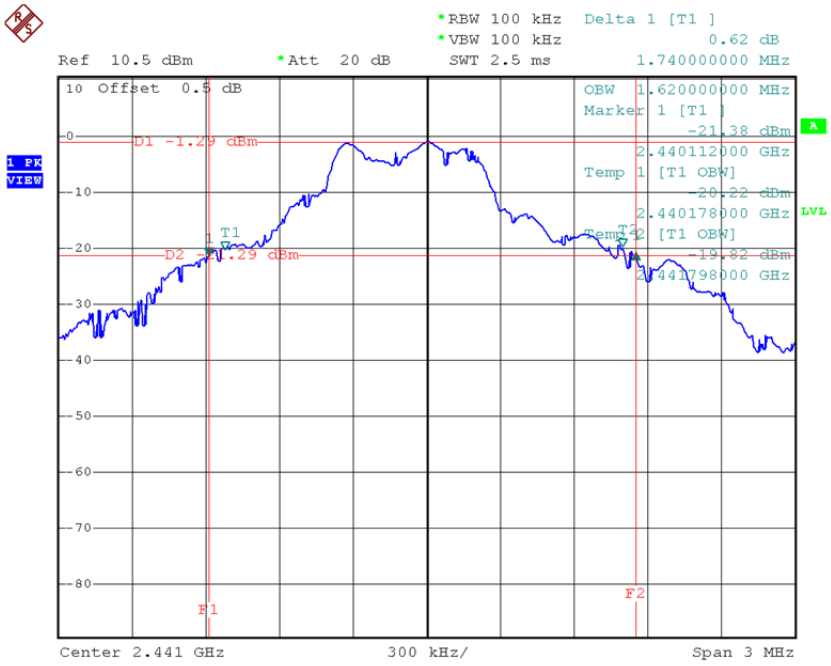
Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)
2403.0	2.19	2.10
2441.0	1.74	1.62
2480.0	1.63	1.60

TX Low Channel



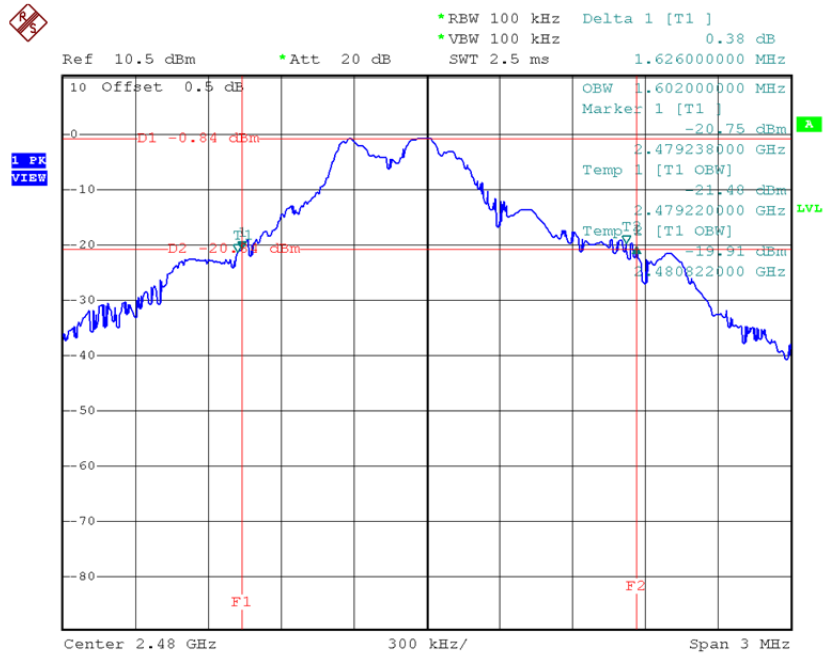
Date: 10.DEC.2014 15:14:55

TX Middle Channel



Date: 10.DEC.2014 15:16:28

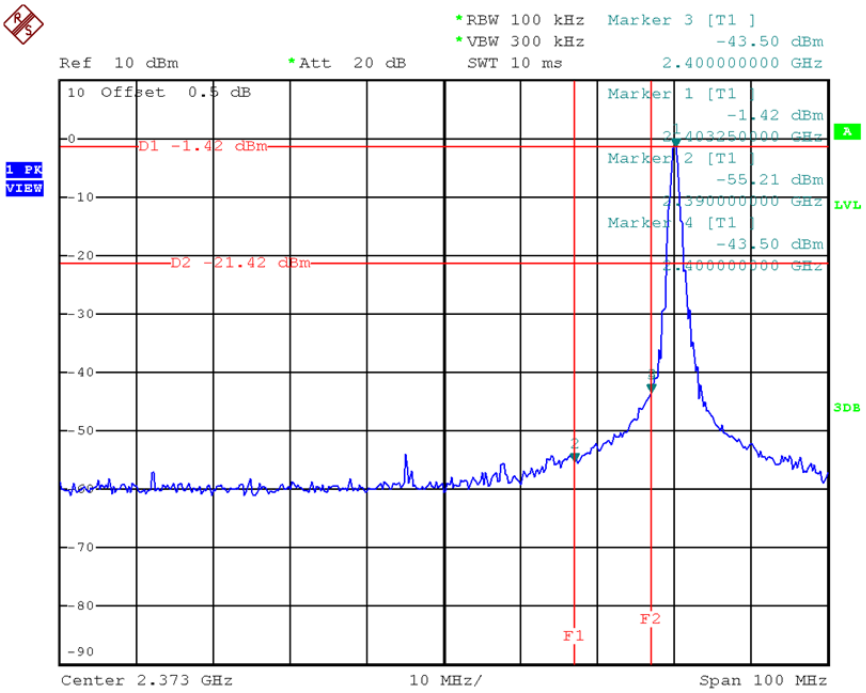
TX High Channel



Date: 10.DEC.2014 15:17:40

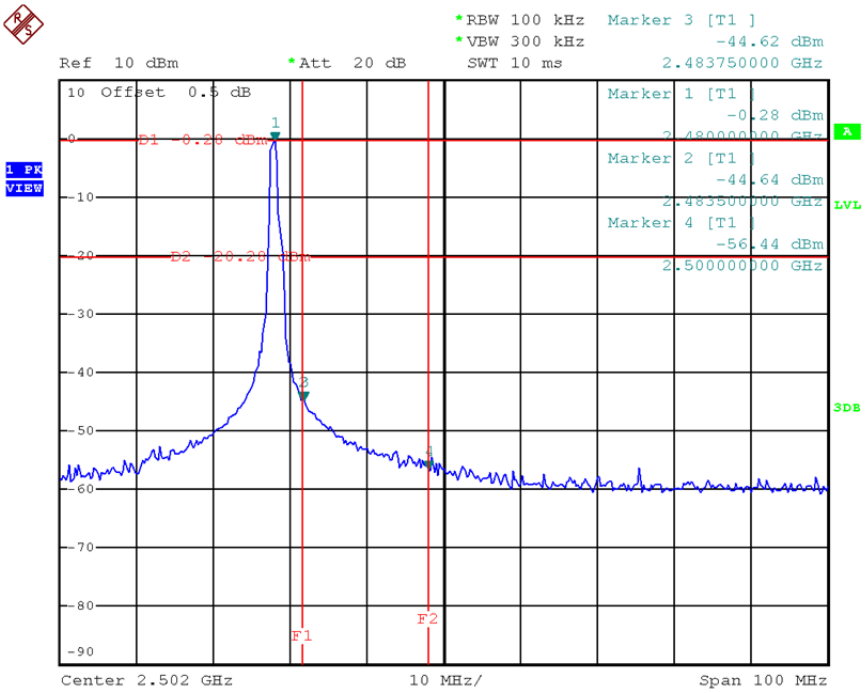
ATTACHMENT E - ANTENNA CONDUCTED SPURIOUS EMISSION

TX Low Channel (Lower)



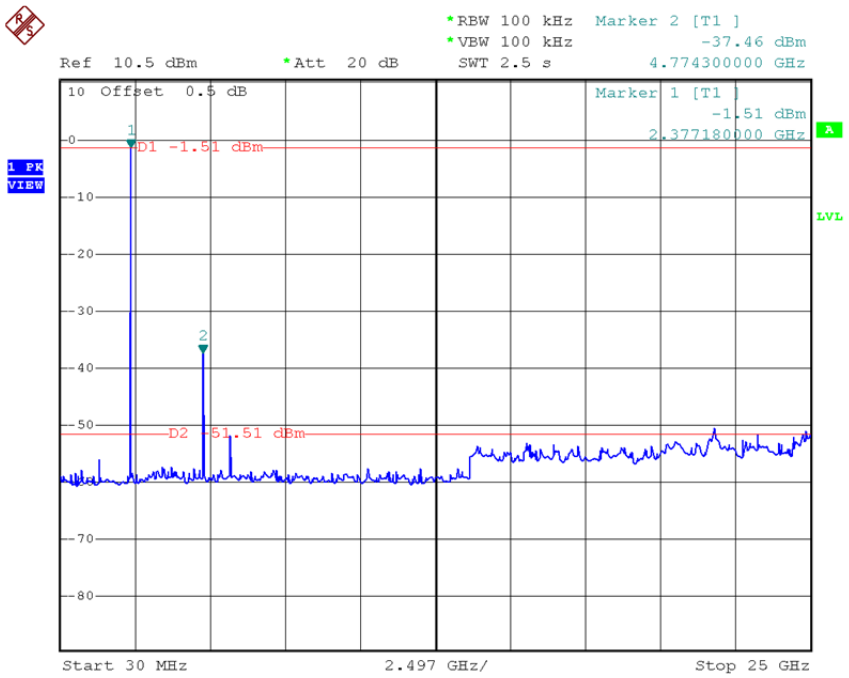
Date: 3.DEC.2014 14:36:11

TX High Channel (Upper)



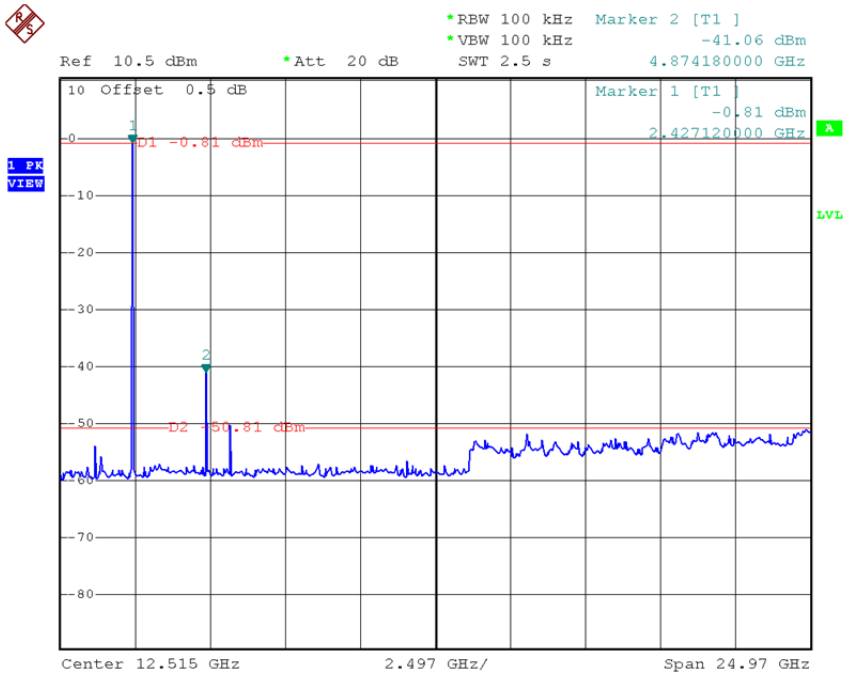
Date: 3.DEC.2014 14:54:22

TX Low Channel (10 Harmonic of the frequency)



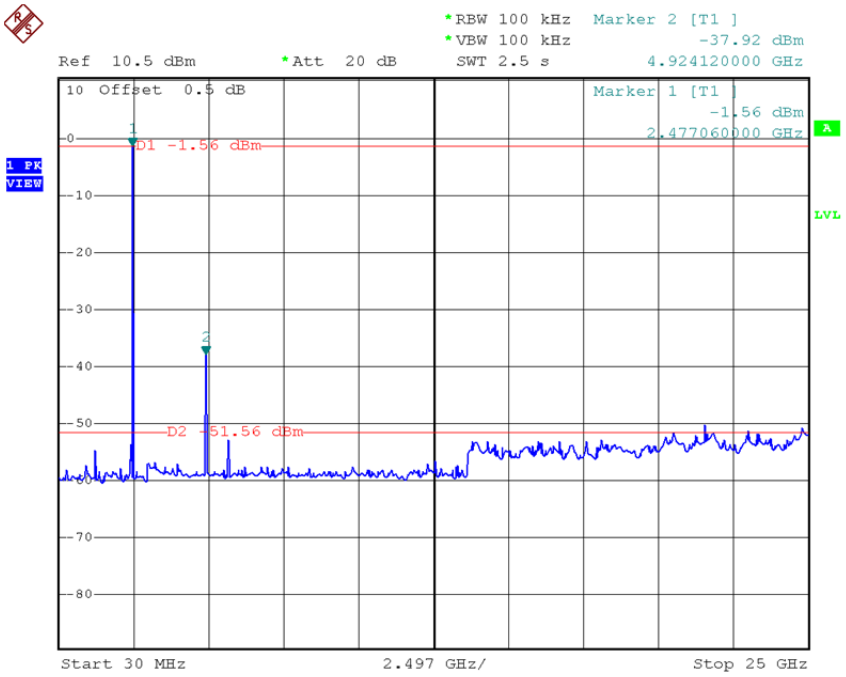
Date: 10.DEC.2014 15:30:58

TX Middle Channel (10 Harmonic of the frequency)



Date: 10.DEC.2014 15:28:46

TX High Channel (10 Harmonic of the frequency)



Date: 10.DEC.2014 15:26:24