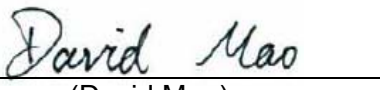
FCC Radio Test Report

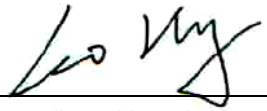
FCC ID: V7TA300

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

Project No.	:	1407C099
Equipment	:	Wireless N300 Universal Range Extender
Model Name	:	A300
Applicant	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address	:	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen,China.518052

Tested by: BTL Inc.
Date of Receipt: Jul. 14, 2014
Date of Test: Jul. 14, 2014 ~ Jul. 25, 2014
Issued Date: Jul. 28, 2014

Testing Engineer : 
(David Mao)

Technical Manager : 
(Leo Hung)

Authorized Signatory : 
(Steven Lu)

BTL INC.

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, China.
TEL: 0769-8318-3000 FAX: 0769-8319-6000

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **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.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
NEI-FCCP-1-1407C099	Original Issue.	Jul. 28, 2014

1. CERTIFICATION

Equipment	:	Wireless N300 Universal Range Extender
Brand Name	:	Tenda
Model Name	:	A300
Applicant	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Manufacturer	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address	:	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen,China.518052
Date of Test	:	Jul. 14, 2014 ~ Jul. 25, 2014
Test Item	:	ENGINEERING SAMPLE
Standard(s)	:	FCC Part15, Subpart C: 2013 (15.247) / 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. NEI-FCCP-1-1407C099) 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: 2013			
Standard(s) Section **FCC**	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
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 in this test report.

(2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r02 (Measurement Guidelines of DTS)

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792
BTL's test firm number for FCC: 319330

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 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 %。

A. Conducted Measurement :

est Site	Method	Measurement Frequency Range	U，(dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless N300 Universal Range Extender	
Brand Name	Tenda	
Model Name	A300	
Model Difference	N/A	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 300 Mbps
	Output Power (Max.)	802.11b: 21.35dBm 802.11g: 23.45dBm 802.11n(20MHz): 25.65dBm 802.11n(40MHz): 25.52dBm
Power Source	AC mains.	
Power Rating	I/P: AC 100~240V, 50/60Hz 0.1A O/P: DC 5V/1A	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2. Channel List:

CH01 – CH11 for 802.11b, 802.11g, 802.11n(20MHz) CH03 – CH09 for 802.11n(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Printed	N/A	2
2	N/A	N/A	Printed	N/A	2

Note:
(1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed two transmitters and two receivers (2T2R).

4.

Operating Mode / TX Mode	1TX	2TX
802.11b	V (ANT 1 or ANT 2)	-
802.11g	V (ANT 1 or ANT 2)	-
802.11n(20MHz)	-	V (ANT 1 + ANT 2)
802.11n(40MHz)	-	V (ANT 1 + ANT 2)

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 B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09
Mode 5	TX MODE

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

For Conducted Test	
Final Test Mode	Description
Mode 5	TX MODE

For Radiated Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

Note:

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

(2) 802.11b mode: DBPSK (1Mbps)
802.11g mode: OFDM (6Mbps)
802.11n HT20 mode : BPSK (13Mbps)
802.11n HT40 mode : BPSK (27Mbps)
For radiated emission tests, the highest output powers were set for final test.

(3) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

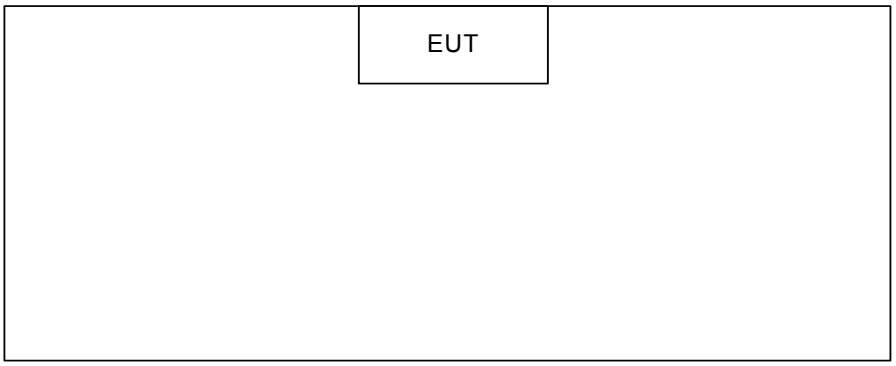
During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software version	MTOOL		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b DSSS	72	75	76
IEEE 802.11g OFDM	60	76	66
IEEE 802.11n (20MHz)	57	77	64
Frequency	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n (40MHz)	50	78	55

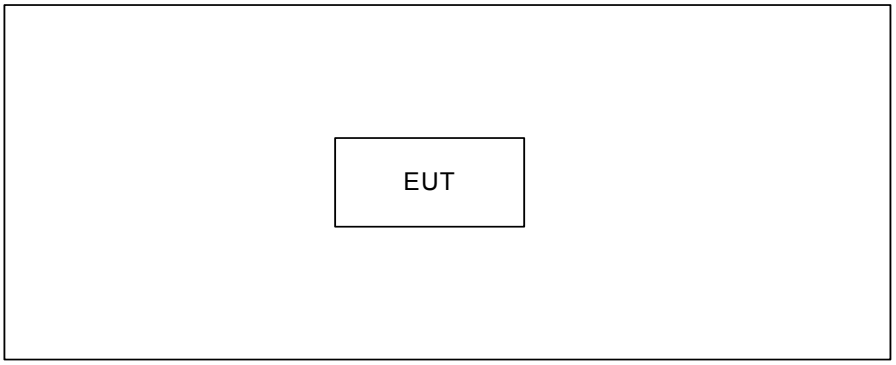
Note: the EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is 100%.

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted TX Mode:



Radiated TX Mode:



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/IC	Series No.	Note
-	-	-	-	-	-	

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	

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

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

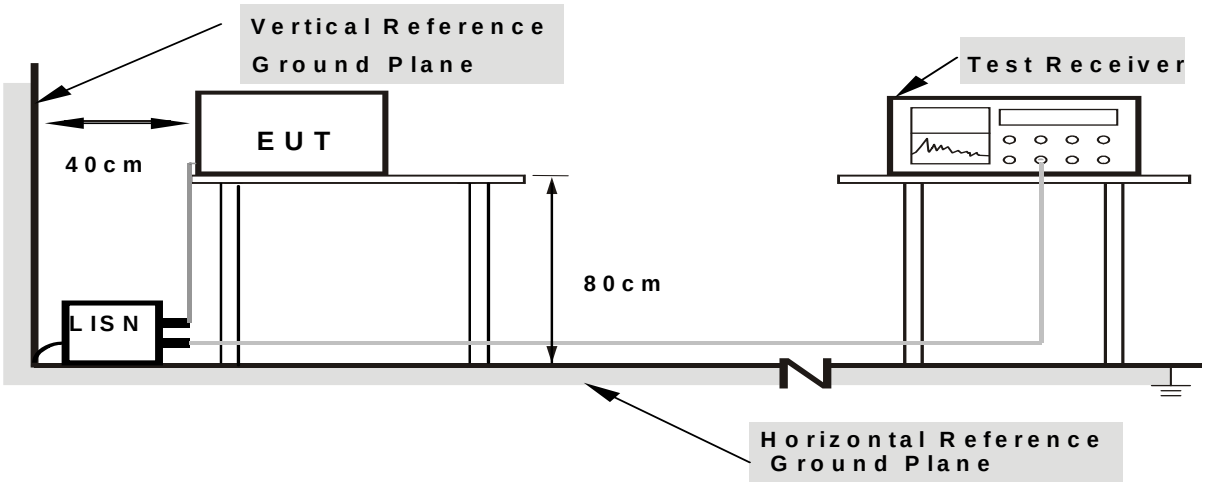
4.1.2 TEST PROCEDURE

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.

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.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

20dB in any 100 KHz bandwidth outside the operating frequency band. 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).

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

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

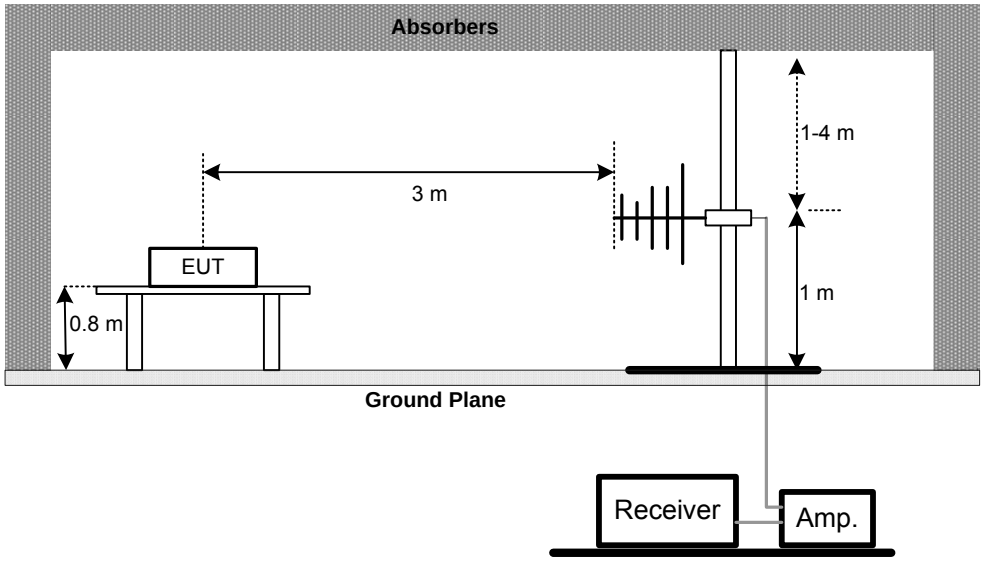
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-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 Quasi Peak 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

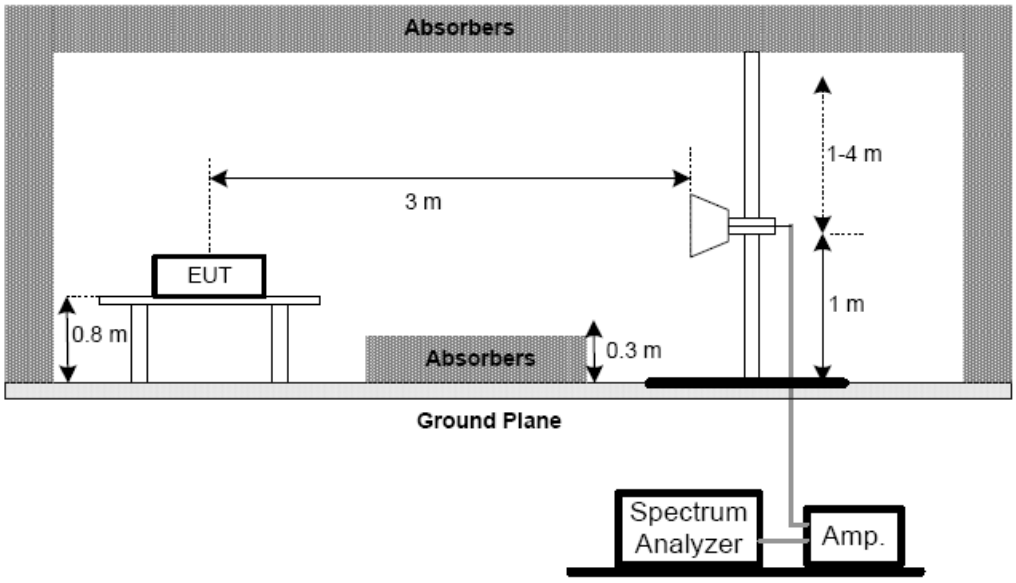
No deviation

4.2.4 TEST SETUP

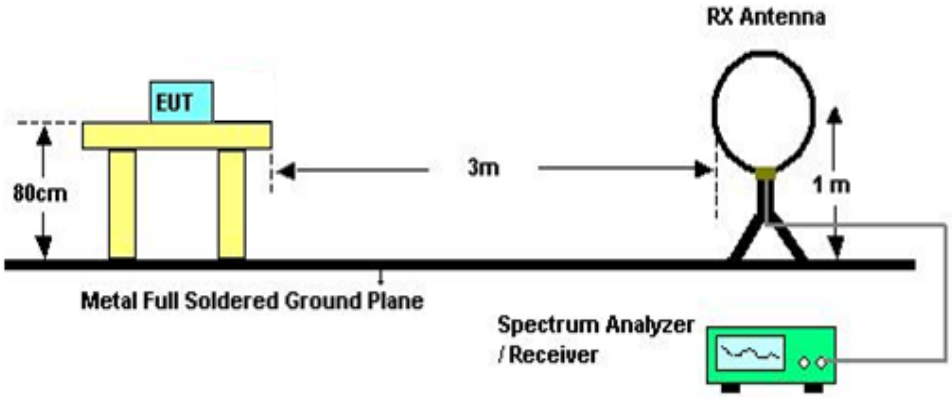
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



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 (9KHZ TO 30MHZ)

Please refer to the Attachment B

Remark:

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

4.2.8 TEST RESULTS (BETWEEN 30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

5. BANDWIDTH TEST

5.1 Applied procedures

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	2400-2483.5	PASS

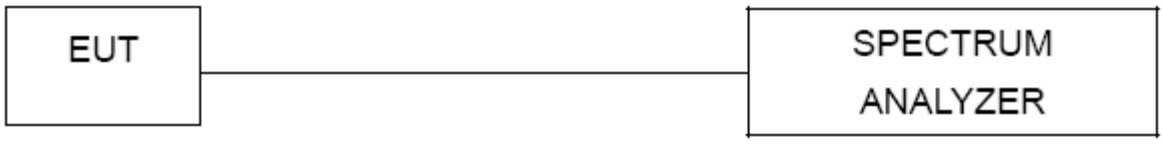
5.1.1 TEST PROCEDURE

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 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 EUT TEST CONDITIONS

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

5.1.6 TEST RESULTS

Please refer to the Attachment E.

6. 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	2400-2483.5	PASS

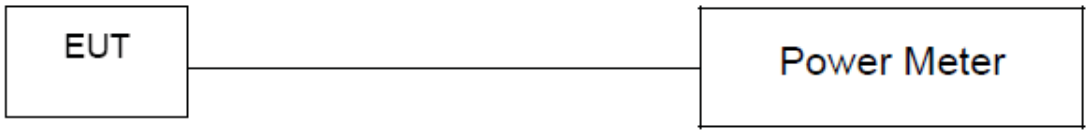
6.1.1 TEST PROCEDURE

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 9.1.3 of FCC KDB 558074 D01 DTS Meas Guidance v03r01.

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 4.1.6 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: AC 120V/60Hz

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.

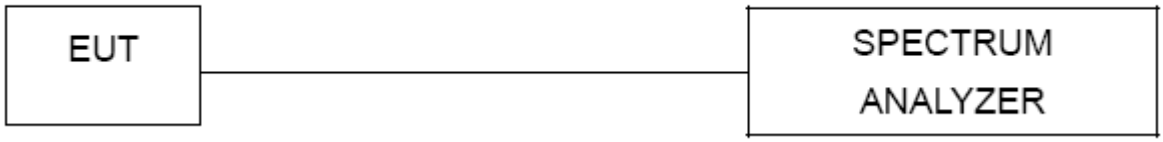
7.1.1 TEST PROCEDURE

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 = Auto.

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 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 EUT TEST CONDITIONS

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

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)	2400-2483.5	PASS

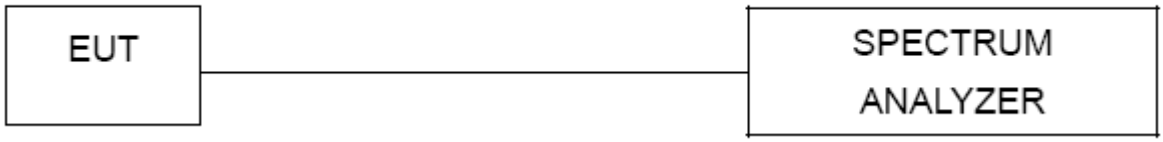
8.1.1 TEST PROCEDURE

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=10KHz, 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 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.5 EUT TEST CONDITIONS

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

8.1.6 TEST RESULTS

Please refer to the Attachment H.

9. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Mar. 29, 2015
2	LISN	R&S	ENV216	101447	Mar. 29, 2015
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 29, 2015
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29, 2015

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	EMCO	3142C	00066462	Mar. 29, 2015
2	Antenna	EMCO	3142C	00066464	Mar. 29, 2015
3	Amplifier	Agilent	8447D	2944A11203	Nov. 11, 2014
4	Amplifier	Agilent	8447D	2944A11204	Nov. 11, 2014
5	Spectrum Analyzer	Agilent	E4443A	MY48250370	Nov. 11, 2014
6	RF Pre-selector	Agilent	N9039A	MY46520201	Nov. 11, 2014
7	Test Cable	N/A	Cable_5m_8m_15m	N/A	Jan. 14, 2015
8	Test Cable	N/A	Cable_5m_11m_15m	N/A	Jan. 14, 2015
9	Spectrum Analyzer	Agilent	E4447A	MY48250208	Nov. 11, 2014
10	RF Pre-selector	Agilent	N9039A	MY46520214	Nov. 11, 2014
11	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Feb. 22, 2015
13	Amplifier	Agilent	8449B	3008A02584	Nov. 11, 2014
14	Spectrum Analyzer	Agilent	E4447A	MY48250208	Nov. 11, 2014
15	Test Cable	Huber+Suhner	SUCOFLEX_15m_4m	N/A	Jan. 14, 2015
16	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Mar. 29, 2015

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Mar. 29, 2015
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Mar. 29, 2015

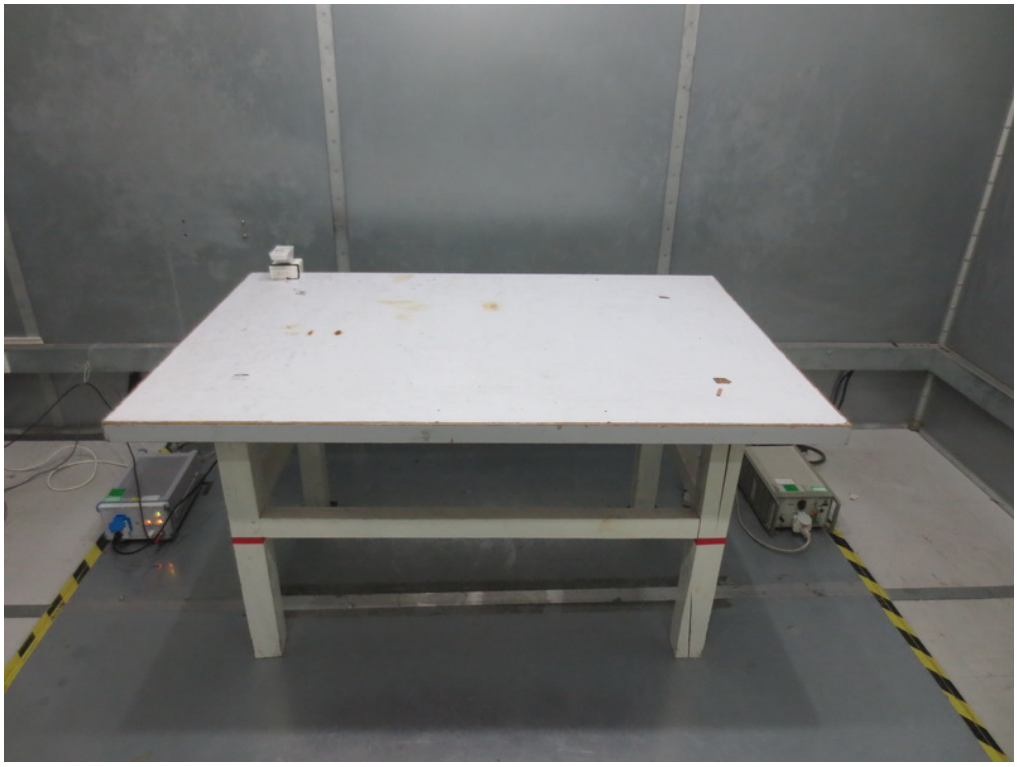
Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

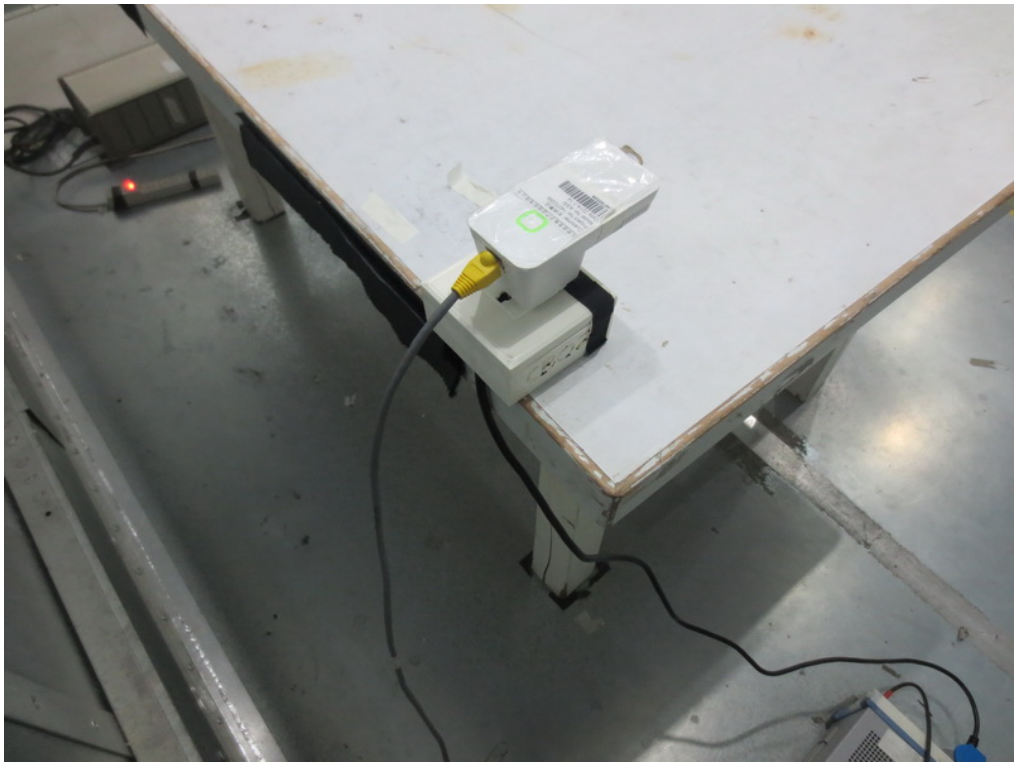
Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

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

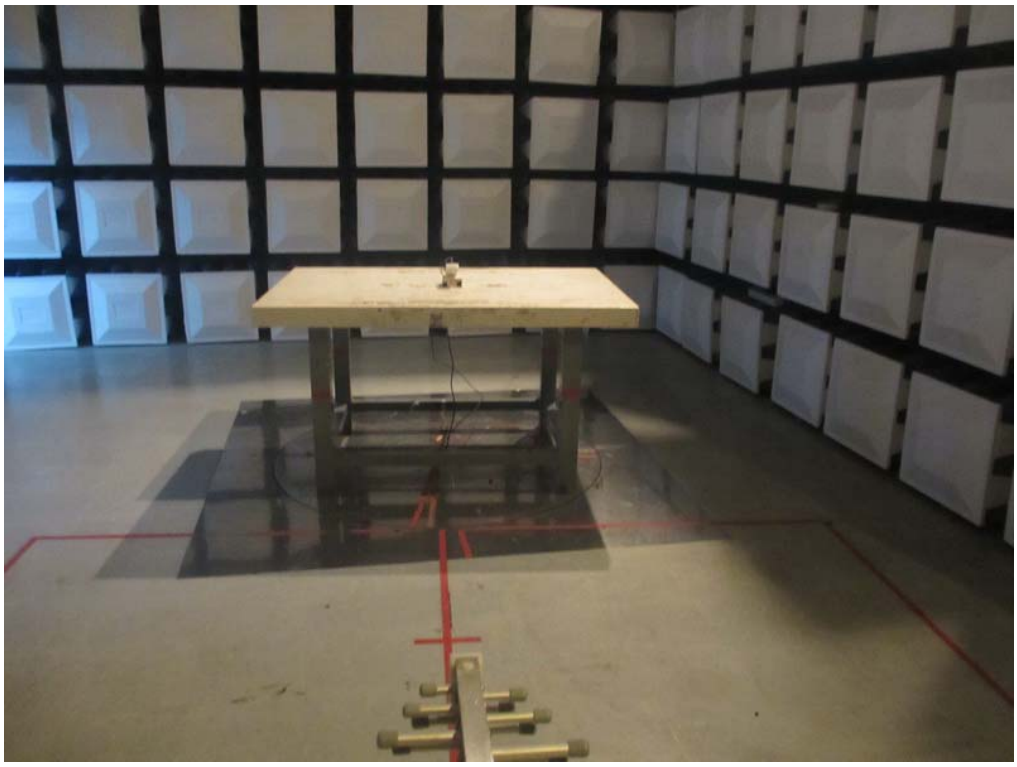
Conducted Measurement Photos





Radiated Measurement Photos

9KHz to 30MHz



Radiated Measurement Photos

30MHz to 1000MHz

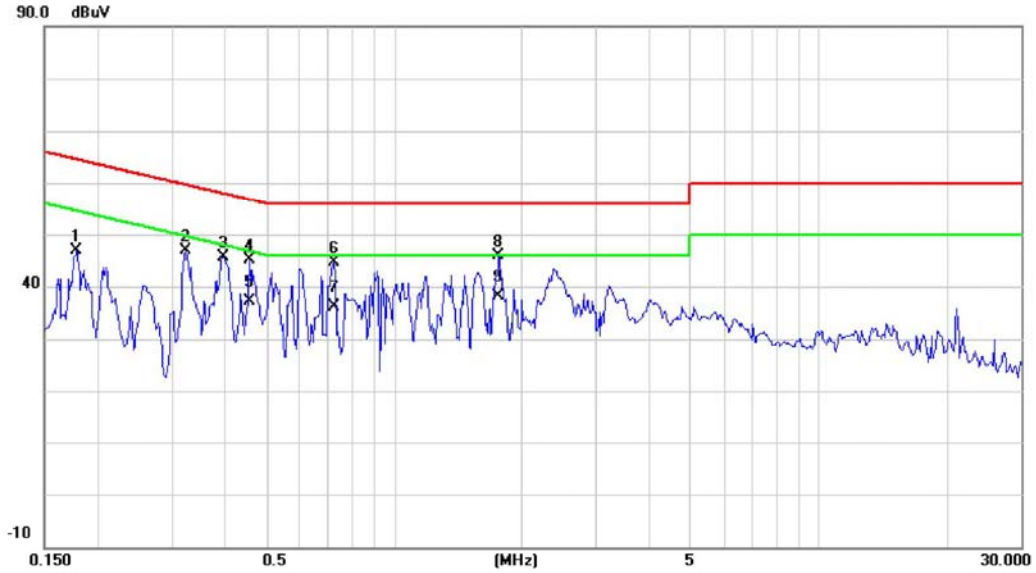
Radiated Measurement Photos

Above 1000MHz

ATTACHMENT A - CONDUCTED EMISSION

Test Mode :	TX MODE

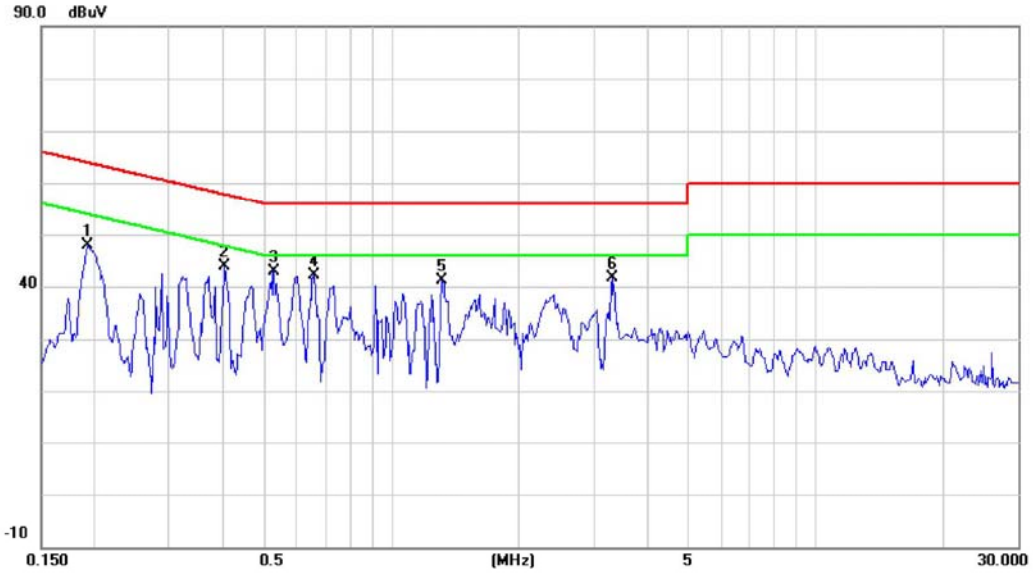
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1785	37.39	9.49	46.88	64.56	-17.68	peak	
2		0.3215	37.27	9.51	46.78	59.67	-12.89	peak	
3		0.3960	36.12	9.52	45.64	57.94	-12.30	peak	
4		0.4585	35.56	9.53	45.09	56.72	-11.63	peak	
5		0.4585	27.61	9.53	37.14	46.72	-9.58	AVG	
6		0.7235	35.00	9.55	44.55	56.00	-11.45	peak	
7		0.7235	26.53	9.55	36.08	46.00	-9.92	AVG	
8		1.7620	36.17	9.60	45.77	56.00	-10.23	peak	
9	*	1.7620	28.41	9.60	38.01	46.00	-7.99	AVG	

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		0.1930	38.37	9.49	47.86	63.91	-16.05	peak	
2		0.4040	34.26	9.51	43.77	57.77	-14.00	peak	
3	*	0.5292	33.44	9.52	42.96	56.00	-13.04	peak	
4		0.6573	32.48	9.53	42.01	56.00	-13.99	peak	
5		1.3218	31.51	9.56	41.07	56.00	-14.93	peak	
6		3.3125	31.90	9.62	41.52	56.00	-14.48	peak	

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

Test Mode:	TX Mode 2412MHz

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit(QP) (dBuV/m)	Margin (dB)	Note
0.0093	0°	65.15	24.30	89.45	128.23	-38.78	AVG
0.0093	0°	76.35	24.30	100.65	148.23	-47.58	PEAK
0.0254	0°	68.25	23.96	92.21	119.51	-27.30	AVG
0.0254	0°	77.35	23.96	101.31	139.51	-38.20	PEAK
0.0297	0°	57.36	23.69	81.05	118.15	-37.10	AVG
0.0297	0°	62.32	23.69	86.01	138.15	-52.14	PEAK
0.0362	0°	58.16	23.27	81.43	116.43	-35.00	AVG
0.0362	0°	67.48	23.27	90.75	136.43	-45.68	PEAK
0.5410	0°	18.92	19.93	38.85	72.94	-34.09	QP
1.7587	0°	18.95	19.52	38.47	69.54	-31.07	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit(QP) (dBuV/m)	Margin (dB)	Note
0.0095	90°	72.35	24.30	96.65	128.08	-31.43	AVG
0.0095	90°	81.56	24.30	105.86	148.08	-42.22	PEAK
0.0252	90°	57.18	23.97	81.15	119.58	-38.43	AVG
0.0252	90°	62.35	23.97	86.32	139.58	-53.26	PEAK
0.0339	90°	58.75	23.42	82.17	117.00	-34.83	AVG
0.0339	90°	53.55	23.42	76.97	137.00	-60.03	PEAK
0.0478	90°	57.15	22.54	79.69	114.02	-34.33	AVG
0.0478	90°	68.05	22.54	90.59	134.02	-43.43	PEAK
0.4952	90°	17.75	19.81	37.56	73.71	-36.15	QP
1.7186	90°	18.63	19.53	38.16	69.54	-31.38	QP

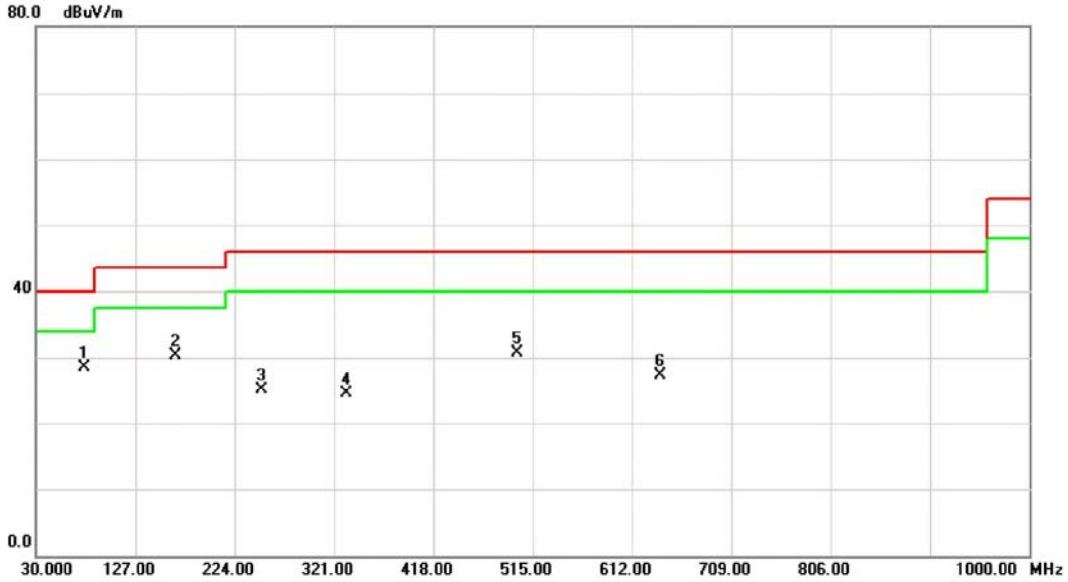
Remark:

(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.

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

Test Mode:	TX B MODE CHANNEL 01

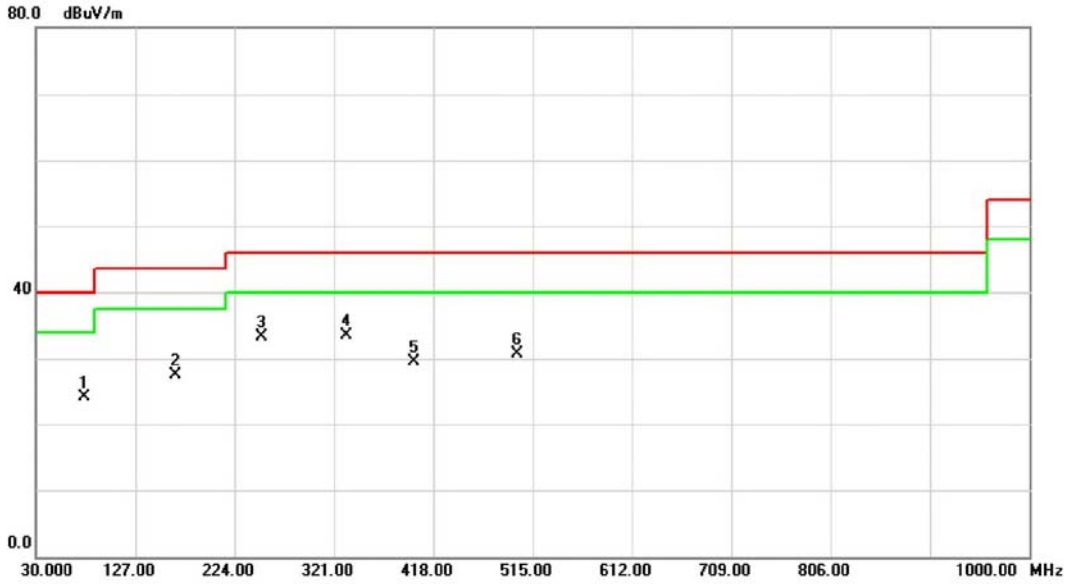
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	77.5300	45.57	-17.05	28.52	40.00	-11.48	peak	
2		166.7700	43.44	-13.12	30.32	43.50	-13.18	peak	
3		250.1900	39.29	-14.20	25.09	46.00	-20.91	peak	
4		333.6100	36.00	-11.57	24.43	46.00	-21.57	peak	
5		499.4800	41.26	-10.52	30.74	46.00	-15.26	peak	
6		640.1300	33.14	-5.76	27.38	46.00	-18.62	peak	

Test Mode:	TX B MODE CHANNEL 01

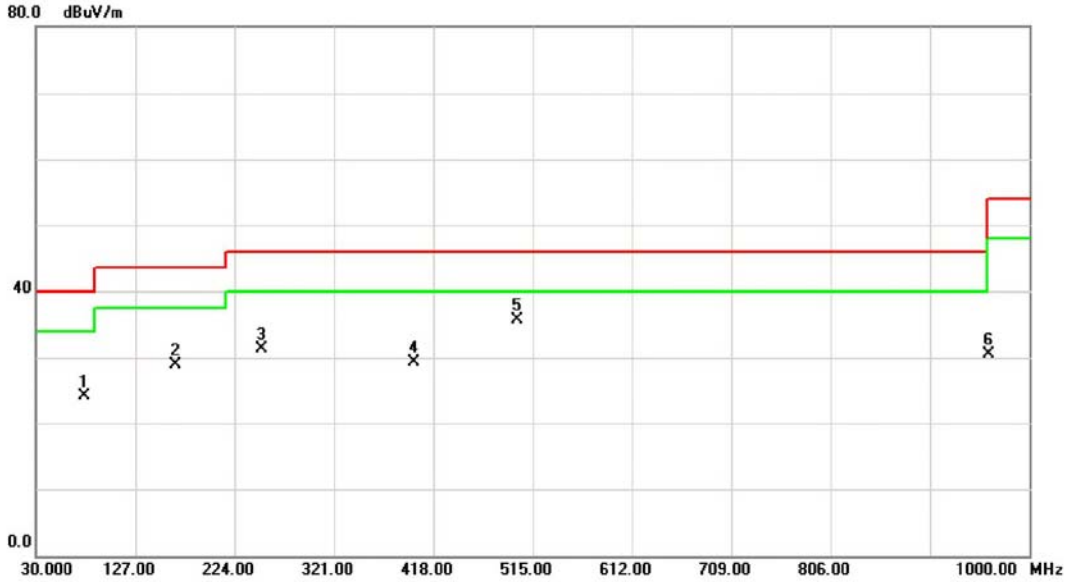
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		77.5300	41.16	-17.05	24.11	40.00	-15.89	peak	
2		166.7700	40.60	-13.12	27.48	43.50	-16.02	peak	
3		250.1900	47.53	-14.20	33.33	46.00	-12.67	peak	
4	*	333.6100	45.14	-11.57	33.57	46.00	-12.43	peak	
5		399.5700	39.29	-9.70	29.59	46.00	-16.41	peak	
6		500.4500	41.23	-10.52	30.71	46.00	-15.29	peak	

Test Mode:	TX B MODE CHANNEL 06

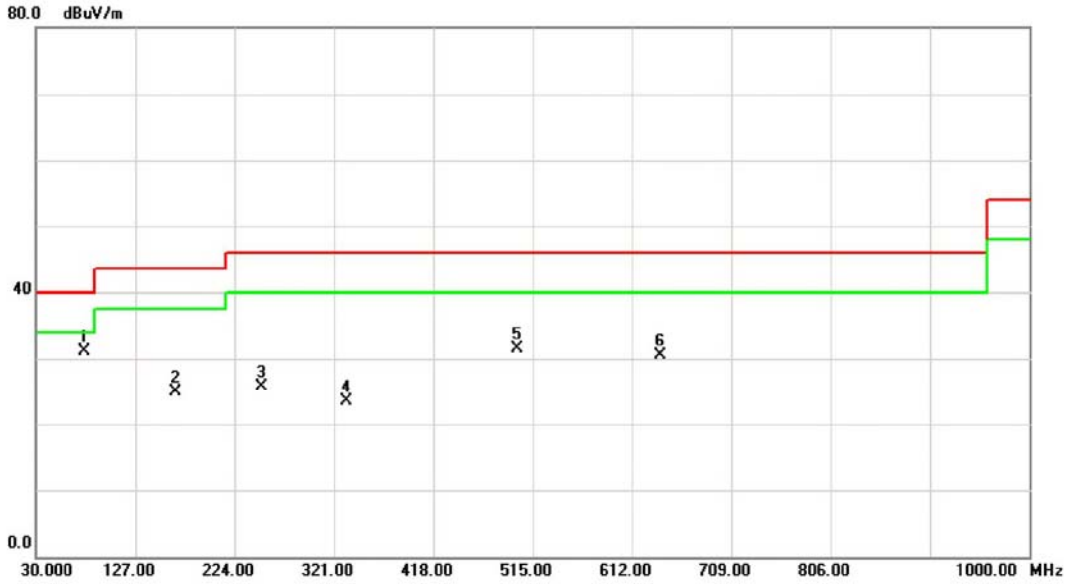
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		77.5300	41.10	-17.05	24.05	40.00	-15.95	peak	
2		166.7700	42.10	-13.12	28.98	43.50	-14.52	peak	
3		250.1900	45.51	-14.20	31.31	46.00	-14.69	peak	
4		399.5700	39.07	-9.70	29.37	46.00	-16.63	peak	
5	*	500.4500	46.28	-10.52	35.76	46.00	-10.24	peak	
6		960.2300	30.77	-0.33	30.44	54.00	-23.56	peak	

Test Mode:	TX B MODE CHANNEL 06

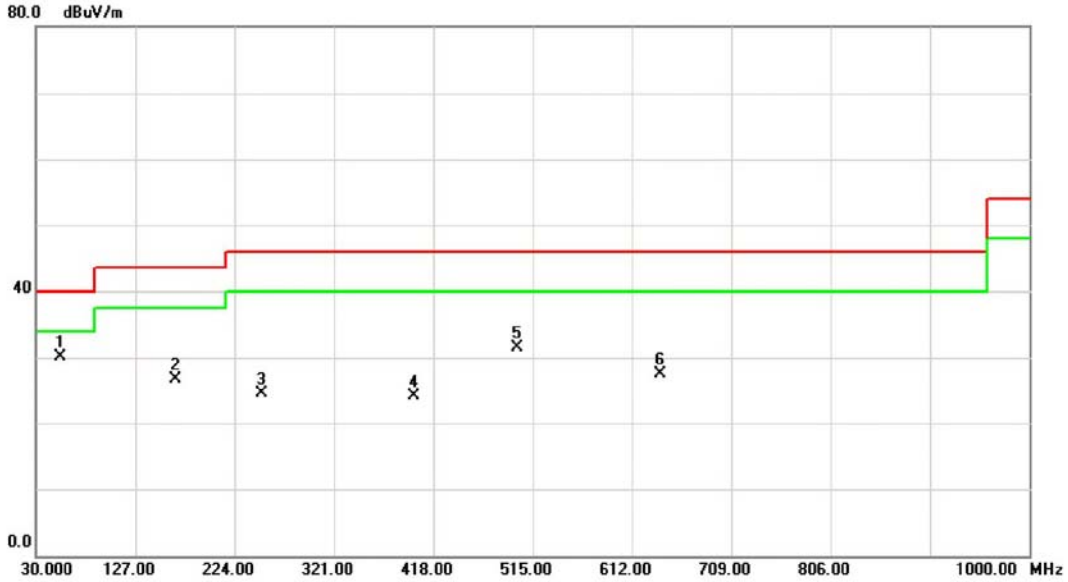
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	77.5300	48.12	-17.05	31.07	40.00	-8.93	peak	
2		166.7700	38.04	-13.12	24.92	43.50	-18.58	peak	
3		250.1900	40.00	-14.20	25.80	46.00	-20.20	peak	
4		333.6100	34.99	-11.57	23.42	46.00	-22.58	peak	
5		500.4500	42.06	-10.52	31.54	46.00	-14.46	peak	
6		640.1300	36.18	-5.76	30.42	46.00	-15.58	peak	

Test Mode:	TX B MODE CHANNEL 11

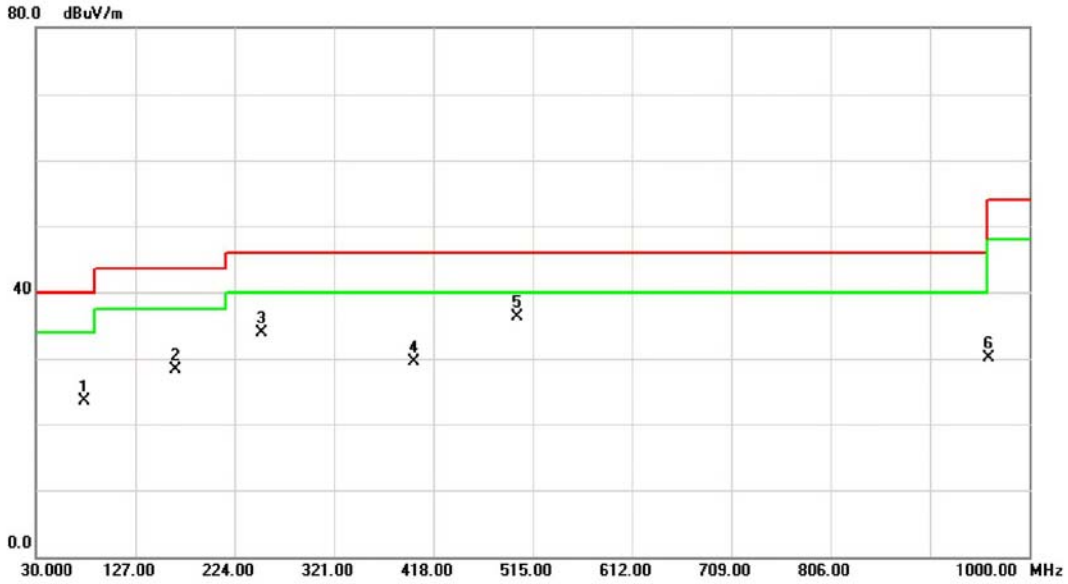
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	54.2500	44.56	-14.51	30.05	40.00	-9.95	peak	
2		166.7700	39.82	-13.12	26.70	43.50	-16.80	peak	
3		250.1900	38.73	-14.20	24.53	46.00	-21.47	peak	
4		399.5700	33.72	-9.70	24.02	46.00	-21.98	peak	
5		500.4500	42.09	-10.52	31.57	46.00	-14.43	peak	
6		640.1300	33.34	-5.76	27.58	46.00	-18.42	peak	

Test Mode:	TX B MODE CHANNEL 11

Horizontal

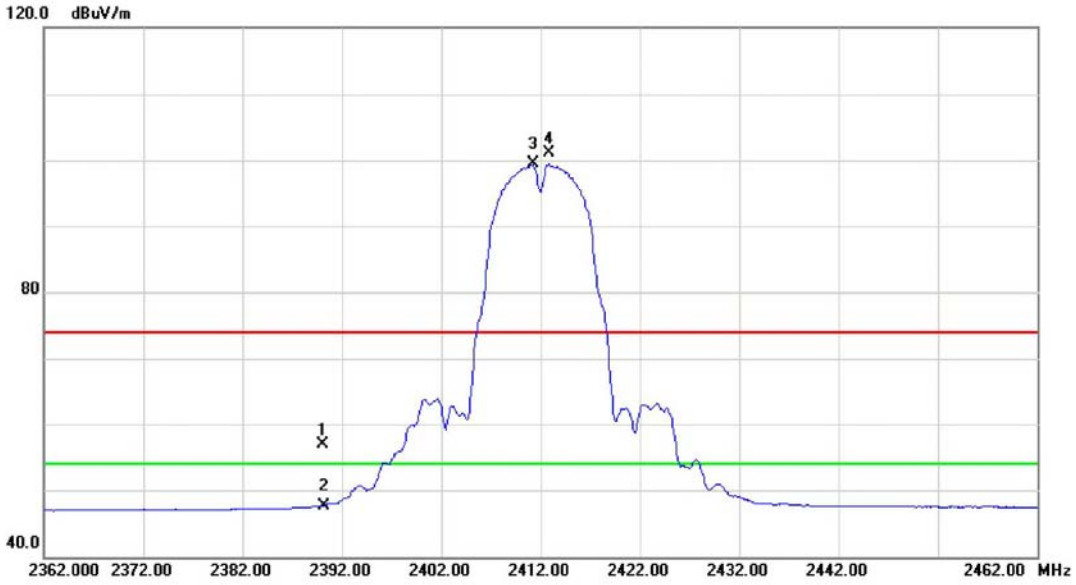


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		77.5300	40.57	-17.05	23.52	40.00	-16.48	peak	
2		166.7700	41.43	-13.12	28.31	43.50	-15.19	peak	
3		250.1900	48.04	-14.20	33.84	46.00	-12.16	peak	
4		399.5700	39.12	-9.70	29.42	46.00	-16.58	peak	
5	*	500.4500	46.79	-10.52	36.27	46.00	-9.73	peak	
6		960.2300	30.48	-0.33	30.15	54.00	-23.85	peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

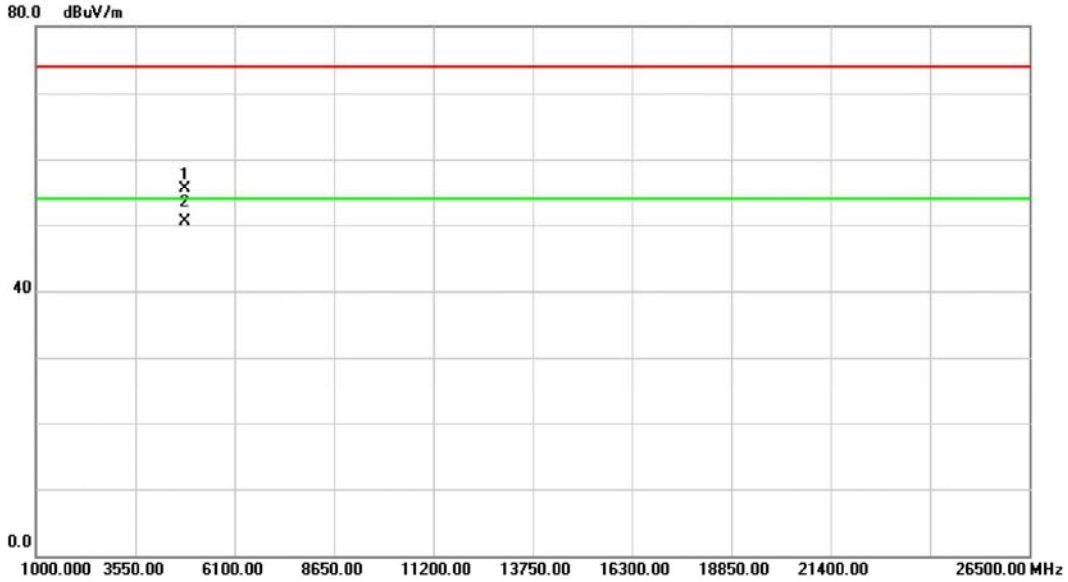
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	23.53	33.38	56.91	74.00	-17.09	peak	
2		2390.000	14.32	33.38	47.70	54.00	-6.30	AVG	
3	*	2411.200	65.97	33.44	99.41	54.00	45.41	AVG	
4	X	2412.900	67.73	33.44	101.17	74.00	27.17	peak	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

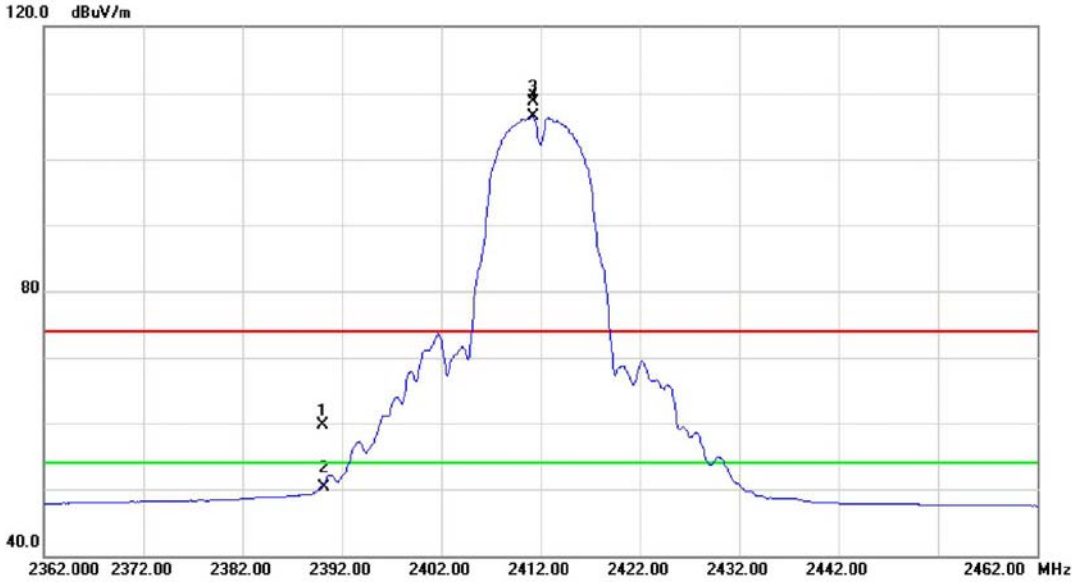
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.960	49.00	6.44	55.44	74.00	-18.56	peak	
2	*	4823.980	44.10	6.44	50.54	54.00	-3.46	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

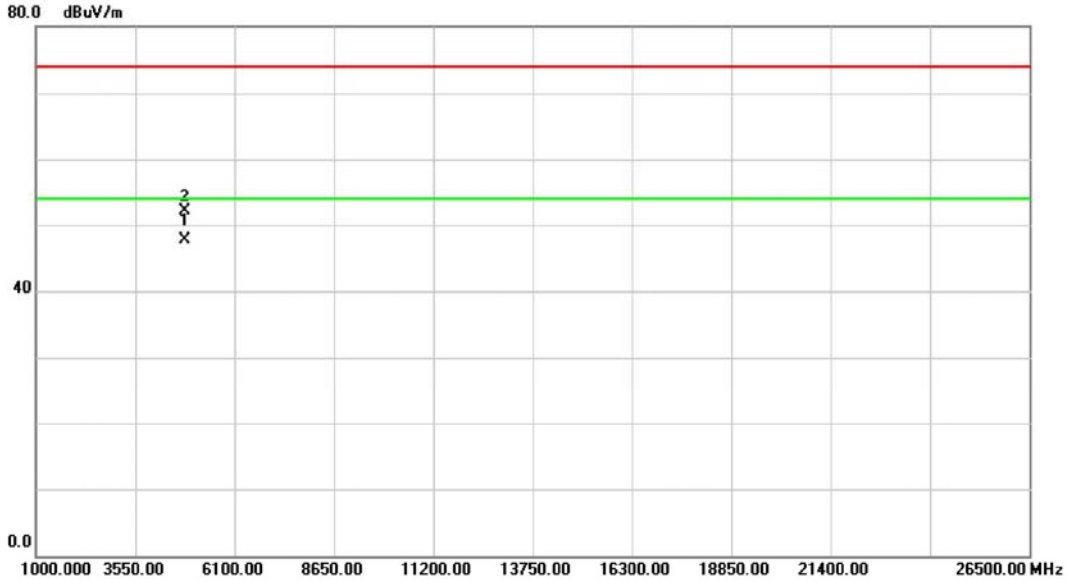
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	26.37	33.38	59.75	74.00	-14.25	peak	
2		2390.000	16.92	33.38	50.30	54.00	-3.70	AVG	
3	X	2411.200	75.25	33.44	108.69	74.00	34.69	peak	
4	*	2411.200	73.09	33.44	106.53	54.00	52.53	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

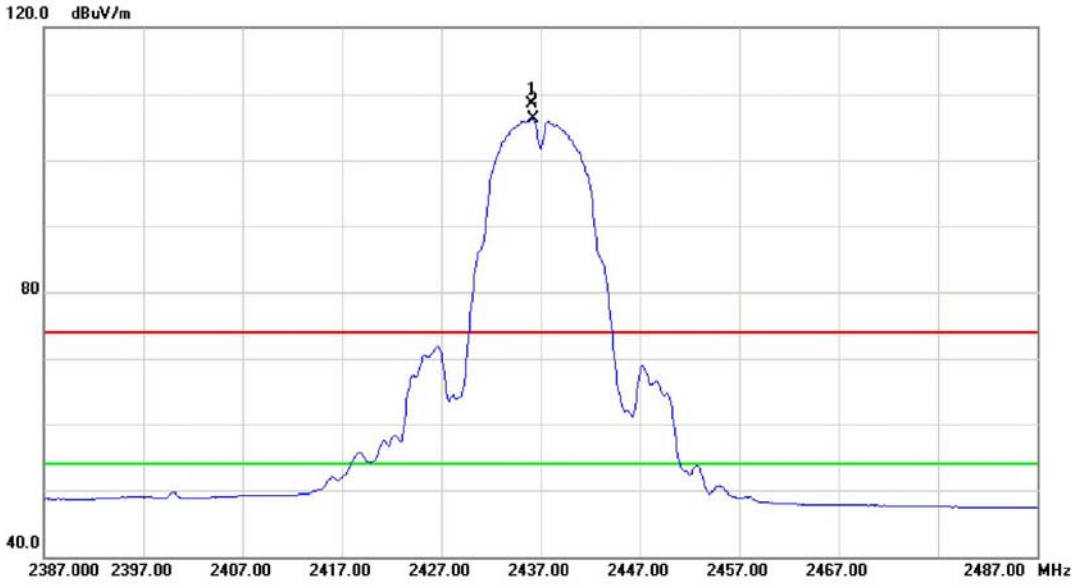
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4823.940	41.25	6.44	47.69	54.00	-6.31	AVG	
2		4823.980	45.65	6.44	52.09	74.00	-21.91	peak	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

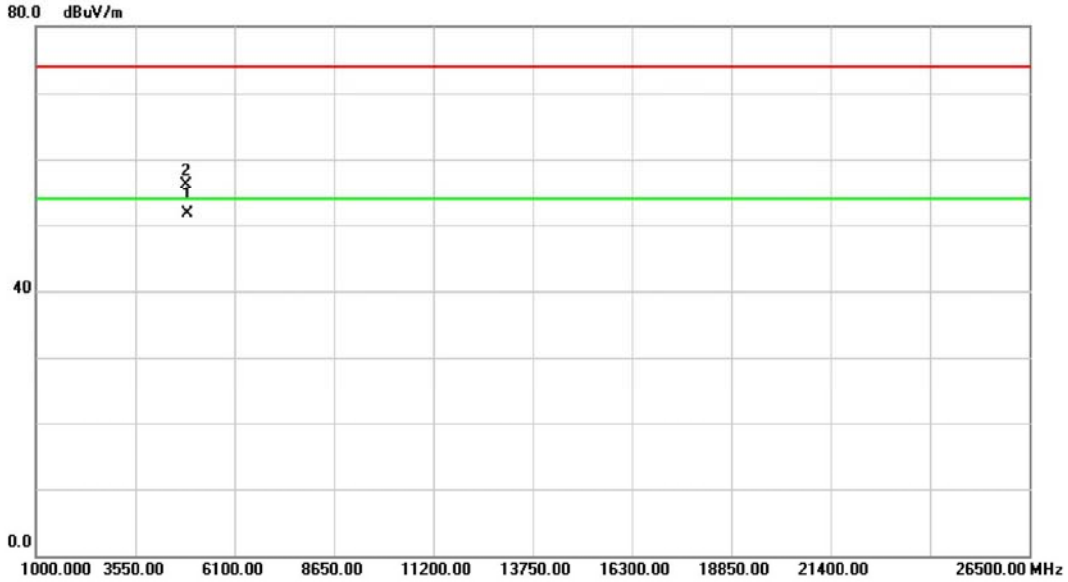
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.100	75.01	33.50	108.51	74.00	34.51	peak	
2	*	2436.200	72.82	33.50	106.32	54.00	52.32	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

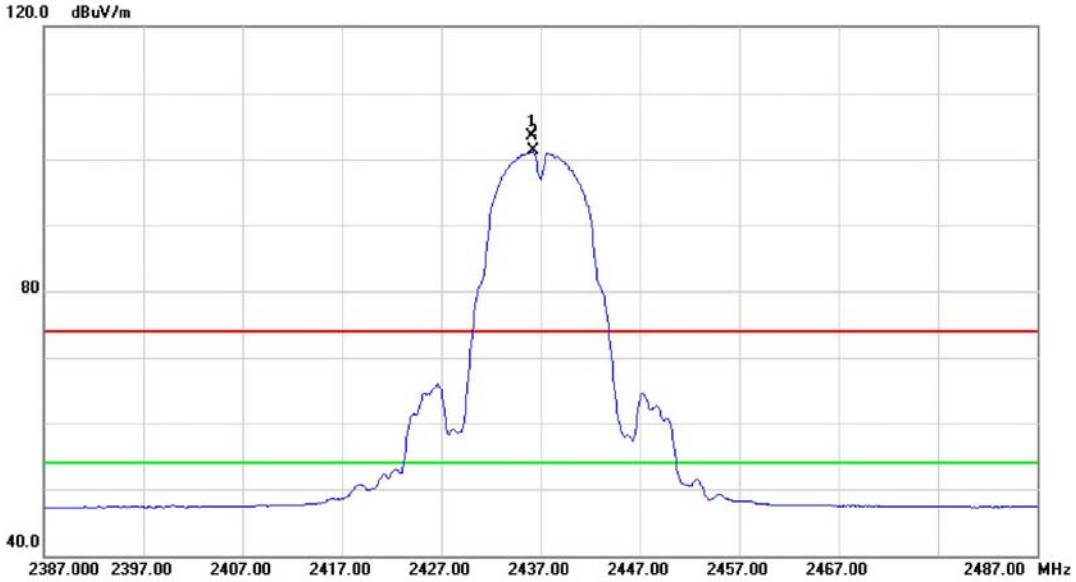
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4873.920	45.23	6.55	51.78	54.00	-2.22	AVG	
2		4873.980	49.53	6.55	56.08	74.00	-17.92	peak	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

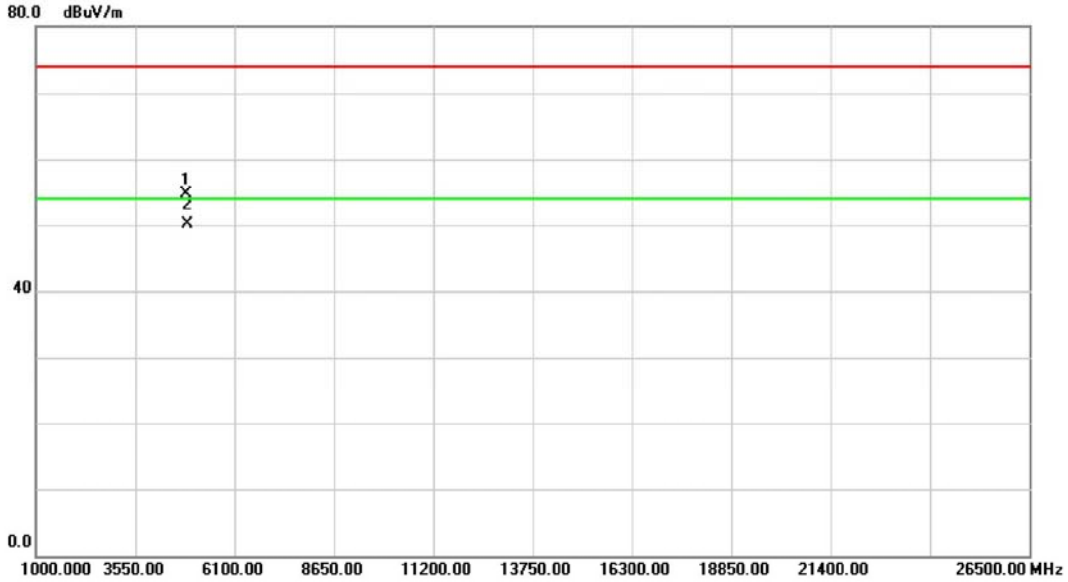
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.100	69.95	33.50	103.45	74.00	29.45	peak	
2	*	2436.200	67.76	33.50	101.26	54.00	47.26	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

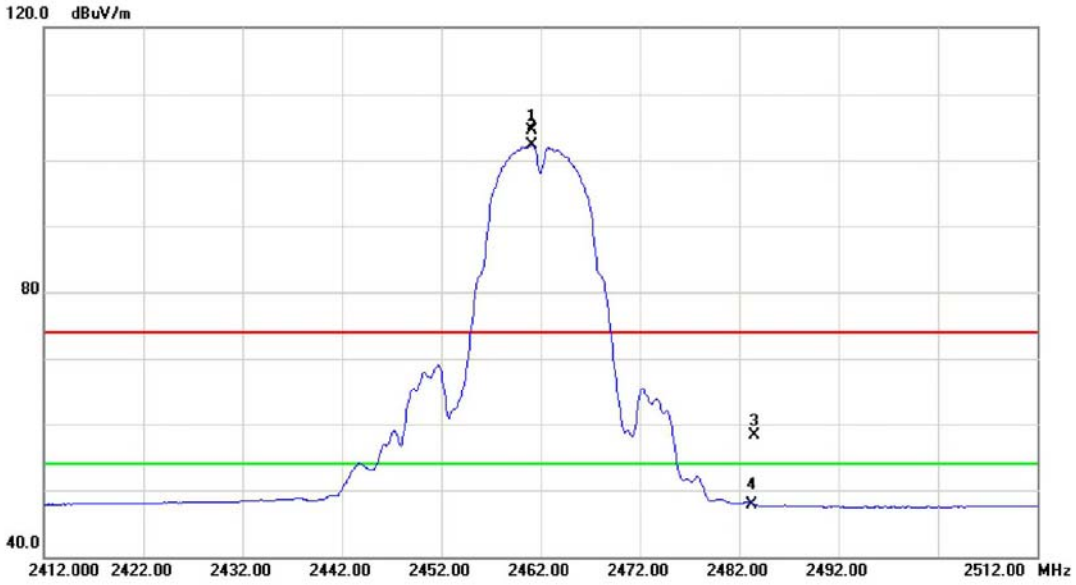
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4873.930	48.19	6.55	54.74	74.00	-19.26	peak	
2	*	4874.010	43.52	6.55	50.07	54.00	-3.93	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

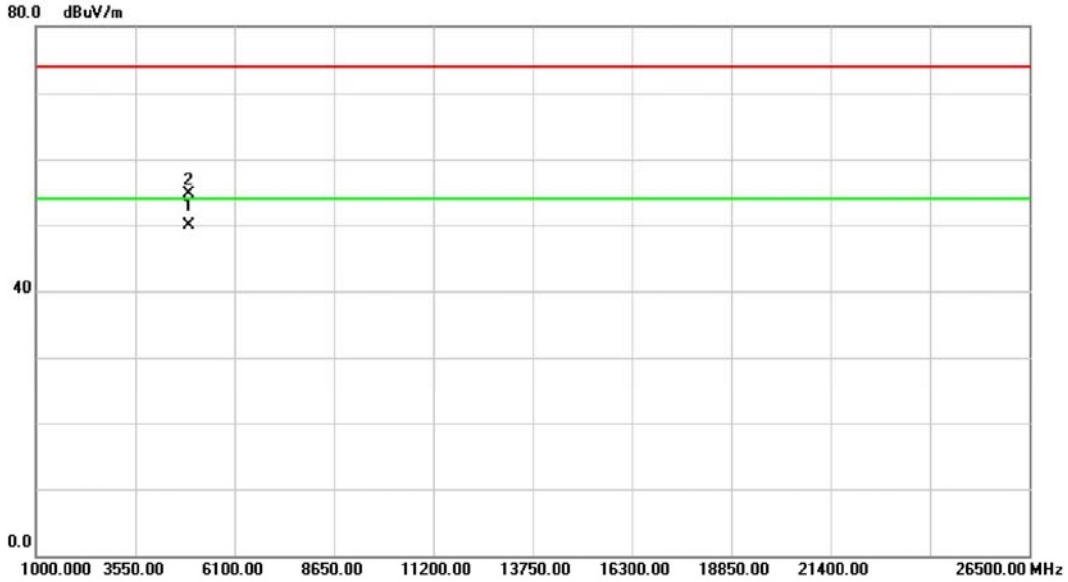
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2461.100	70.99	33.56	104.55	74.00	30.55	peak	
2	*	2461.100	68.81	33.56	102.37	54.00	48.37	AVG	
3		2483.500	24.60	33.62	58.22	74.00	-15.78	peak	
4		2483.500	14.32	33.62	47.94	54.00	-6.06	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

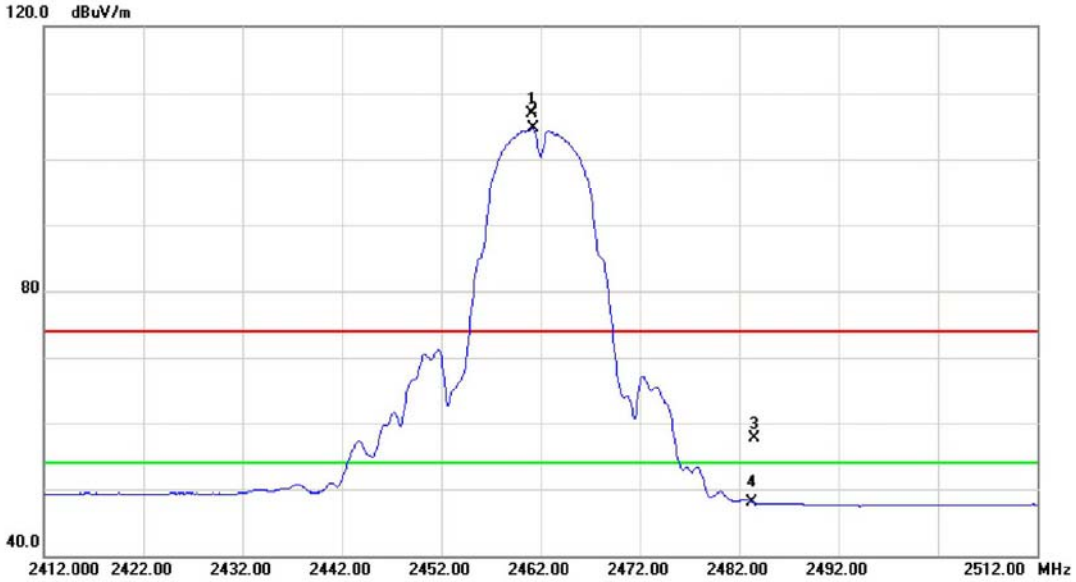
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4924.000	43.19	6.66	49.85	54.00	-4.15	AVG	
2		4924.020	47.95	6.66	54.61	74.00	-19.39	peak	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

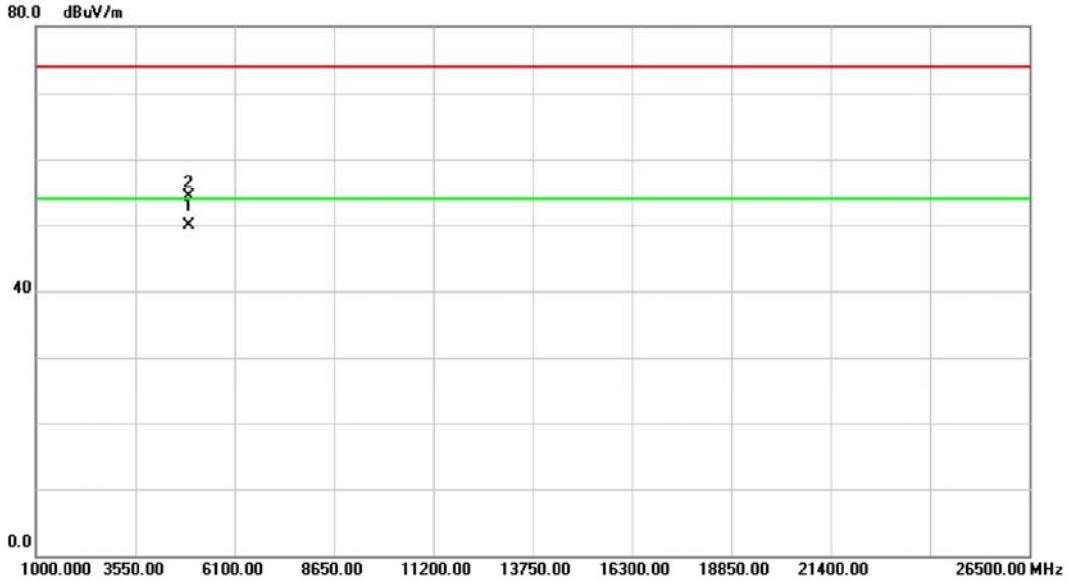
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2461.100	73.37	33.56	106.93	74.00	32.93	peak	
2	*	2461.200	71.19	33.56	104.75	54.00	50.75	AVG	
3		2483.500	24.04	33.62	57.66	74.00	-16.34	peak	
4		2483.500	14.46	33.62	48.08	54.00	-5.92	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

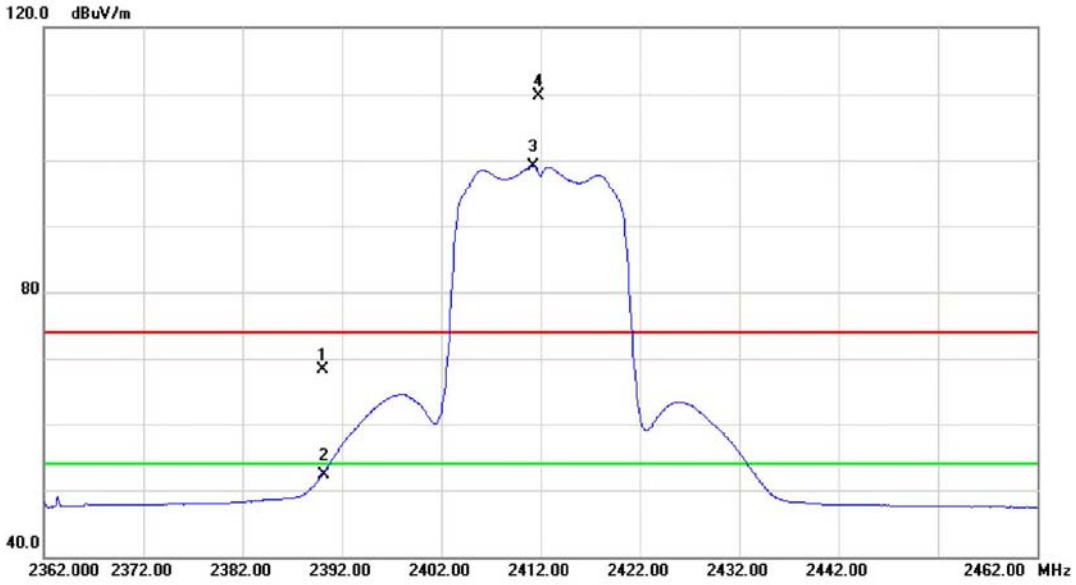
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4923.940	43.31	6.66	49.97	54.00	-4.03	AVG	
2		4923.970	47.56	6.66	54.22	74.00	-19.78	peak	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

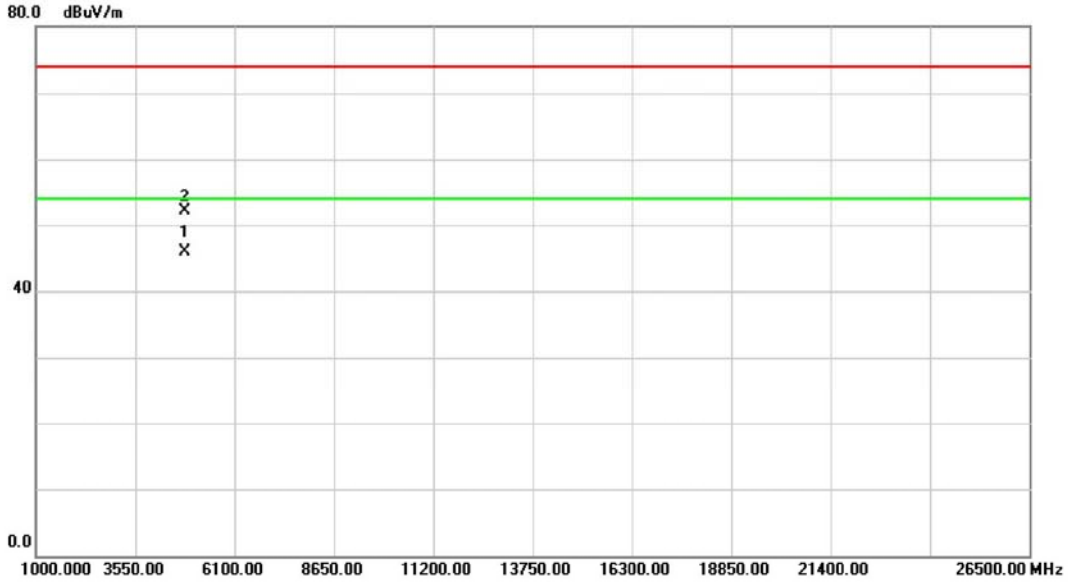
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	34.83	33.38	68.21	74.00	-5.79	peak	
2		2390.000	18.96	33.38	52.34	54.00	-1.66	AVG	
3	*	2411.200	65.65	33.44	99.09	54.00	45.09	AVG	
4	X	2411.800	76.28	33.44	109.72	74.00	35.72	peak	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

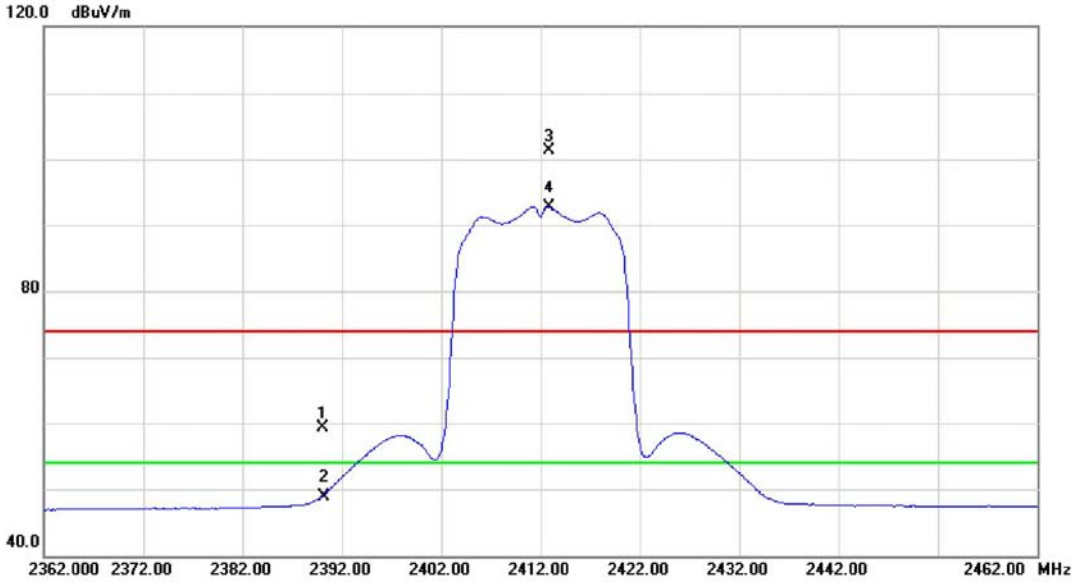
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4823.980	39.50	6.44	45.94	54.00	-8.06	AVG	
2		4824.060	45.70	6.44	52.14	74.00	-21.86	peak	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

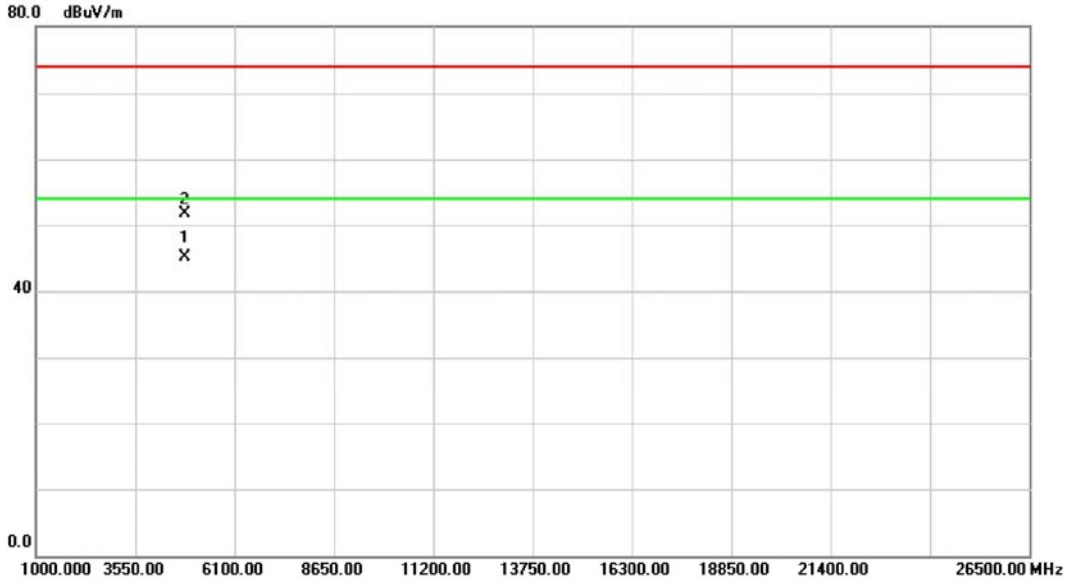
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	25.94	33.38	59.32	74.00	-14.68	peak	
2		2390.000	15.61	33.38	48.99	54.00	-5.01	AVG	
3	X	2412.800	67.83	33.44	101.27	74.00	27.27	peak	
4	*	2412.800	59.26	33.44	92.70	54.00	38.70	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

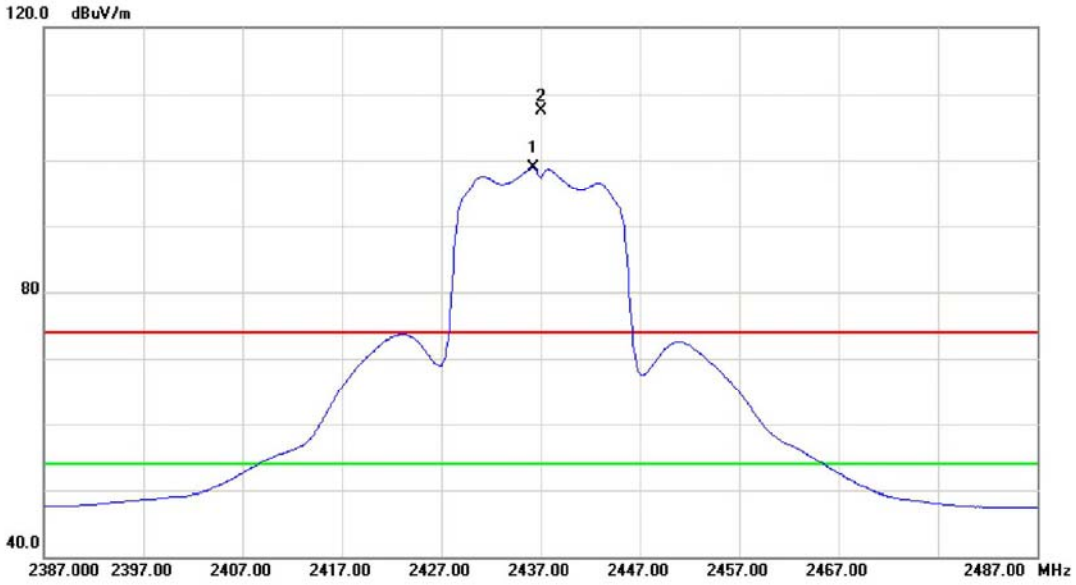
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4823.960	38.75	6.44	45.19	54.00	-8.81	AVG	
2		4823.980	45.25	6.44	51.69	74.00	-22.31	peak	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

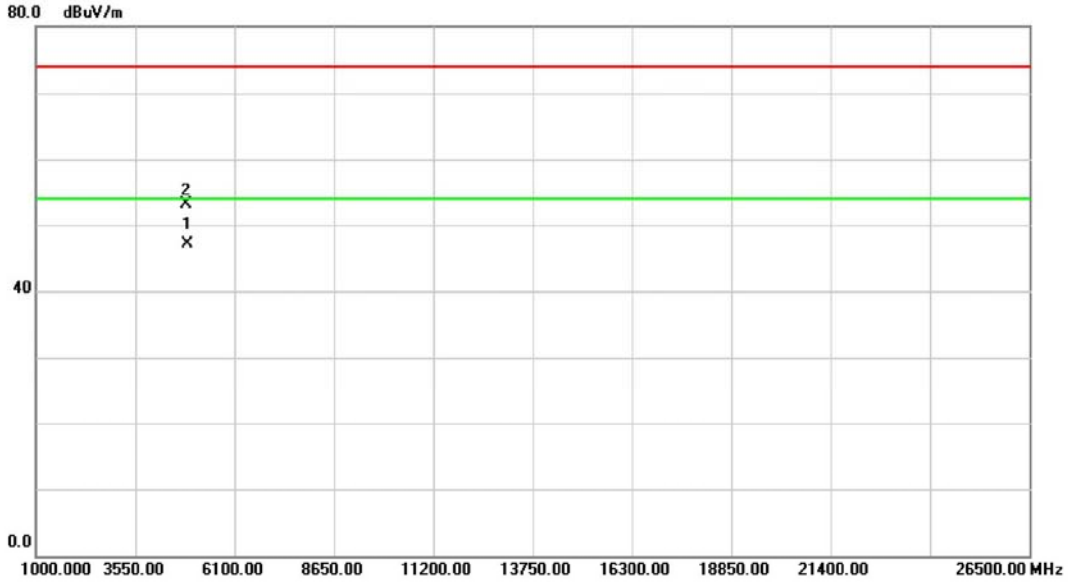
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2436.200	65.33	33.50	98.83	54.00	44.83	AVG	
2	X	2437.000	74.06	33.50	107.56	74.00	33.56	peak	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

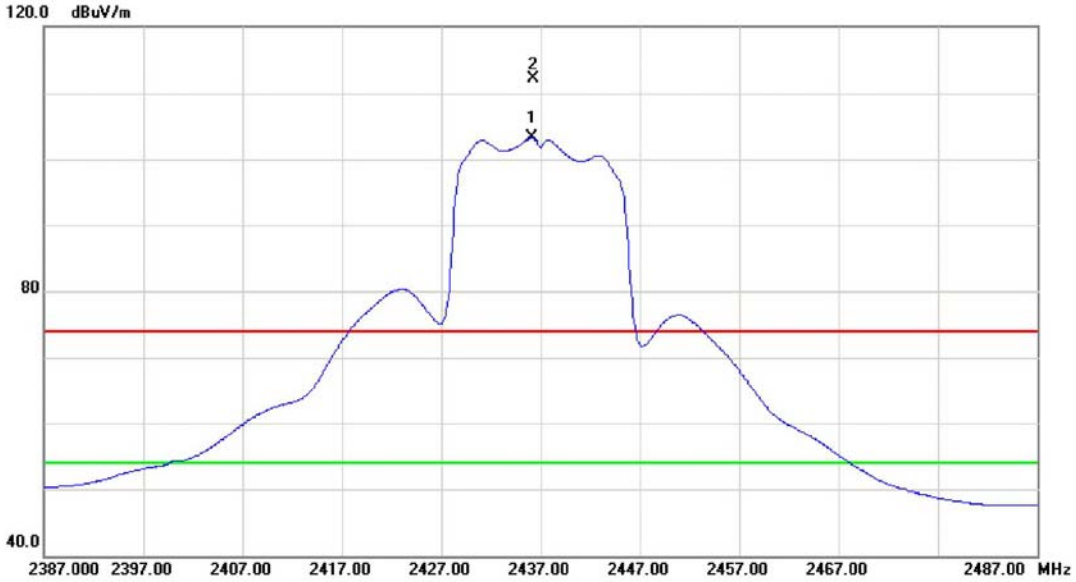
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4873.950	40.63	6.55	47.18	54.00	-6.82	AVG	
2		4874.080	46.53	6.55	53.08	74.00	-20.92	peak	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

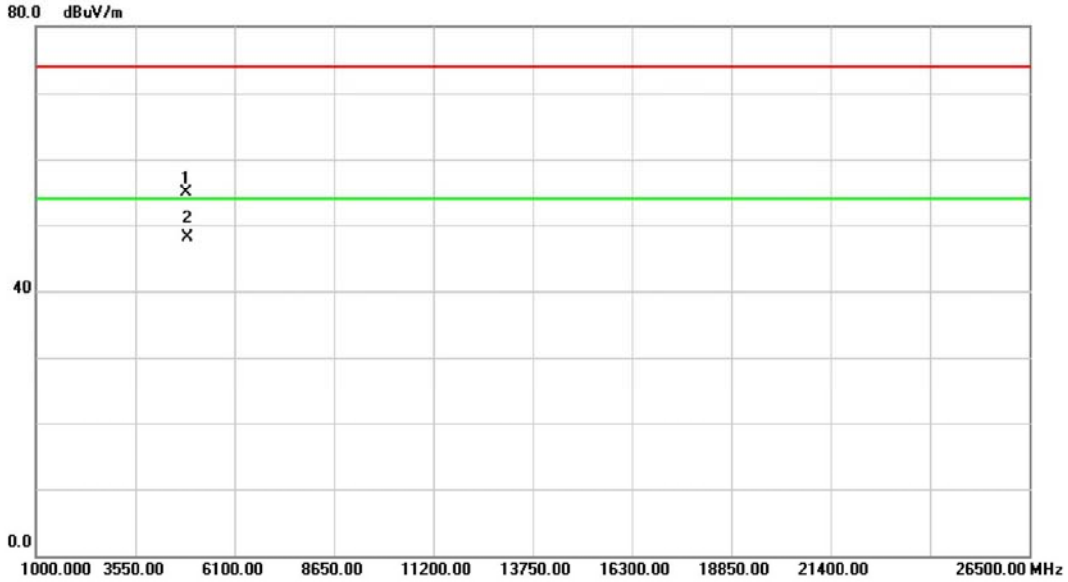
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2436.100	69.75	33.50	103.25	54.00	49.25	AVG	
2	X	2436.300	78.64	33.50	112.14	74.00	38.14	peak	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4873.980	48.29	6.55	54.84	74.00	-19.16	peak	
2	*	4874.110	41.52	6.55	48.07	54.00	-5.93	AVG	