FCC TEST REPORT (15.247)

REPORT NO.:	RF110311C24A R1
MODEL NO.:	MC75A6HF
FCC ID:	UZ7MC75A6HF
RECEIVED:	Mar. 07, 2011
TESTED:	Mar. 07 ~ Mar. 18, 2011
ISSUED:	Jun. 03, 2011

APPLICANT:	Motorola Solutions Inc.
ADDRESS:	One Motorola Plaza, Holtsville, NY 11742-1300 USA

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien 244, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Mar. 22, 2011
RF110311C24A R1	Modified item 3.1 description	Jun. 03, 2011

1. CERTIFICATION

PRODUCT:	Mobile Computer
MODEL NO.:	MC75A6HF
BRAND:	Motorola
APPLICANT:	Motorola Solutions Inc.
TESTED:	Mar. 07 ~ Mar. 18, 2011
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 15, Subpart C (Section 15.247)**
	ANSI C63.4-2003
	ANSI C63.10-2009

The above equipment (Model: MC75A6HF) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Andrea Hsia / Specialist , **DATE :** Jun. 03, 2011

APPROVED BY : Gary Chang / Assistant Manager , **DATE :** Jun. 03, 2011

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –14.39dB at 0.150MHz.
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is –6.5dB at 39.62MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is IPEX not a standard connector.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	2.44dB
Radiated emissions	30MHz ~ 200MHz	2.93dB
	200MHz ~1000MHz	2.95dB
	1GHz ~ 18GHz	2.26dB
	18GHz ~ 40GHz	1.94dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Mobile Computer
MODEL NO.	MC75A6HF
FCC ID	UZ7MC75A6HF
POWER SUPPLY	3.7Vdc (Li-ion battery) 5.4Vdc (Adapter)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps
OPERATING FREQUENCY	**2.4GHz:** 2412 ~ 2472MHz **5.0GHz:** 5745 ~ 5825MHz
NUMBER OF CHANNEL	**2.4GHz:** 13 **5.0GHz:** 5
OUTPUT POWER (PK POWER)	**2.4GHz:** 22.0dBm (158.5mW) **5.0GHz:** 20.6dBm (114.8mW)
ANTENNA TYPE	Refer to NOTE 4 as below
ANTENNA CONNECTOR	Refer to NOTE 4 as below
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Battery

NOTE:

1. The EUT is a Mobile Computer. The test data are separated into following test reports.

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11b/g **WLAN 802.11a (5745~5825 MHz)**	FCC Part 15, Subpart C (Section 15.247)	RF110311C24A R1
WLAN 802.11a (5180~5320MHz, 5500~5700MHz)	FCC Part 15, Subpart E (Section 15.407)	RF110311C24A-1 R1
WLAN 802.11a (For DFS report) (5260~5320MHz, 5500~5700MHz)	FCC Part 15, Subpart E (Section 15.407)	RF110311C24A-3
BLUETOOTH	FCC Part 15, Subpart C (Section 15.247)	RF110311C24A-2 R1
RF ID	FCC Part 15, Subpart C (Section 15.225, 15.215)	RF110311C24A-4 R1
GSM 850 / WCDMA 850	FCC Part 22	RF110311C24A-5 R1
GSM 1900 / WCDMA 1900	FCC Part 24	RF110311C24A-6 R1

2. The EUT configuration is as below

BRAND	MODEL	DESCRIPTION
Motorola	MC75A6HF	HSDPA BB Numeric Camera

3. The EUT uses the following Li-ion battery:

BATTERY (1.5X)	
BRAND:	MOTOROLA
PART NUMBER:	82-71364-05
RATING:	3.7Vdc, 3600mAh, 13.3Wh

4. The EUT used two antennas listed as below:

ANTENNA ITEM	ANTENNA TYPE	TX/RX FUNCTION	ANTENNA CONNECTER	ANTENNA GAIN (dBi)	
				2.4GHz	5.0GHz
MAIN ANTENNA	inverted F	TX/RX	IPEX	1.09	5.30
AUX. ANTENNA	Planar inverted	RX only	IPEX	1.38	5.30

5. The following accessories are for optional units only.

PRODUCT	BRAND	MODEL	DESCRIPTION
RS232 charging cable	Motorola	25-102776-02R	1.2m non-shielded cable with one core
USB charging cable	Motorola	25-102775-02R	1.5m shielded cable with one core
Headset	Motorola	50-11300-050R	VR10 headset 0.8m non-shielded cable with one core
Power Supply Adaptor	Motorola	EADP-16BB A	I/P: 100-240Vac, 50-60Hz, 0.4A O/P: 5.4Vdc, 3A 1.8m non-shielded cable without core

6. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

FOR 2.4GHz:

13 channels are provided for 802.11b, 802.11g:

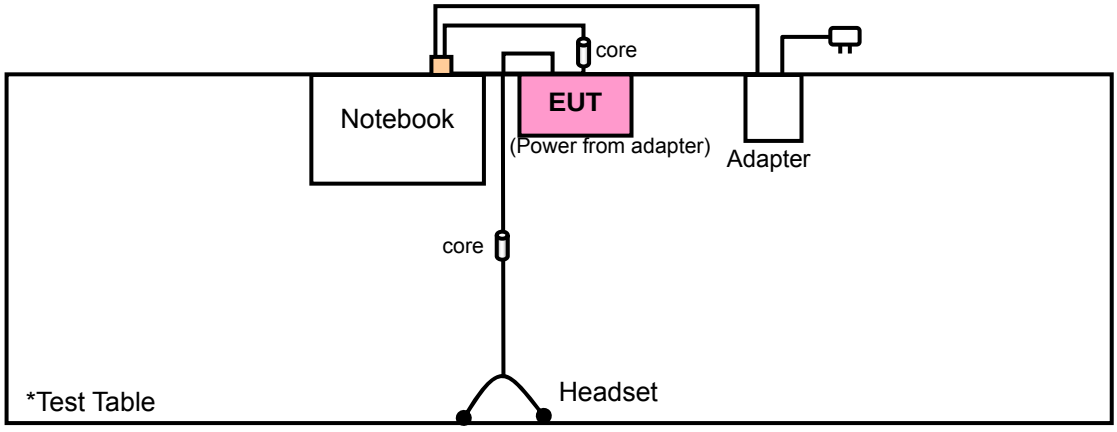
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	8	2447MHz
2	2417MHz	9	2452MHz
3	2422MHz	10	2457MHz
4	2427MHz	11	2462MHz
5	2432MHz	12	2467MHz
6	2437MHz	13	2472MHz
7	2442MHz		

FOR 5.0GHz (5745 ~ 5825MHz):

5 channels are provided for 802.11a:

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR 2.4GHz:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0	Y
802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0	Y

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11g	1 to 13	6	OFDM	BPSK	6.0	Y

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 13	6	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 13	1, 11, 12, 13	DSSS	DBPSK	1.0
802.11g	1 to 13	1, 11, 12, 13	OFDM	BPSK	6.0

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	22deg. C, 65%RH, 1006 hPa 25deg. C, 68%RH, 1006 hPa	120Vac, 60Hz	Frank Wang Sun Lin
RE<1G	22deg. C, 65%RH, 1006 hPa	120Vac, 60Hz	Sun Lin
PLC	25deg. C, 65%RH, 1017 hPa	120Vac, 60Hz	Frank Wang
APCM	22deg. C, 65%RH, 1014 hPa	120Vac, 60Hz	Sun Lin

FOR 5.0GHz:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0	Y

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11a	149 to 165	165	OFDM	BPSK	6.0	Y

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	149 to 165	165	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	149 to 165	149, 165	OFDM	BPSK	6.0

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	22deg. C, 65%RH, 1006 hPa	120Vac, 60Hz	Frank Wang
RE<1G	22deg. C, 65%RH, 1006 hPa	120Vac, 60Hz	Sun Lin
PLC	25deg. C, 65%RH, 1017 hPa	120Vac, 60Hz	Frank Wang
APCM	22deg. C, 65%RH, 1014 hPa	120Vac, 60Hz	Sun Lin

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)
ANSI C63.4-2003
ANSI C63.10-2009

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	PP05L	12130898320	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE: All power cords of the above support units are non-shielded (1.8m).

4. TEST TYPES AND RESULTS (FOR 2.4GHz)

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Aug. 04, 2010	Aug. 03, 2011
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 09, 2010	Jul. 08, 2011
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 30, 2010	Apr. 29, 2011
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Aug. 02, 2010	Aug. 01, 2011
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 27, 2010	Dec. 26, 2011
Preamplifier Agilent	8449B	3008A01910	Sep. 09, 2010	Sep. 08, 2011
Preamplifier Agilent	8447D	2944A10638	Nov. 03, 2010	Nov. 02, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 14, 2010	May 13, 2011
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 20, 2010	Aug. 19, 2011
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA

NOTE:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC 7450F-4.

4.1.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. 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 from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

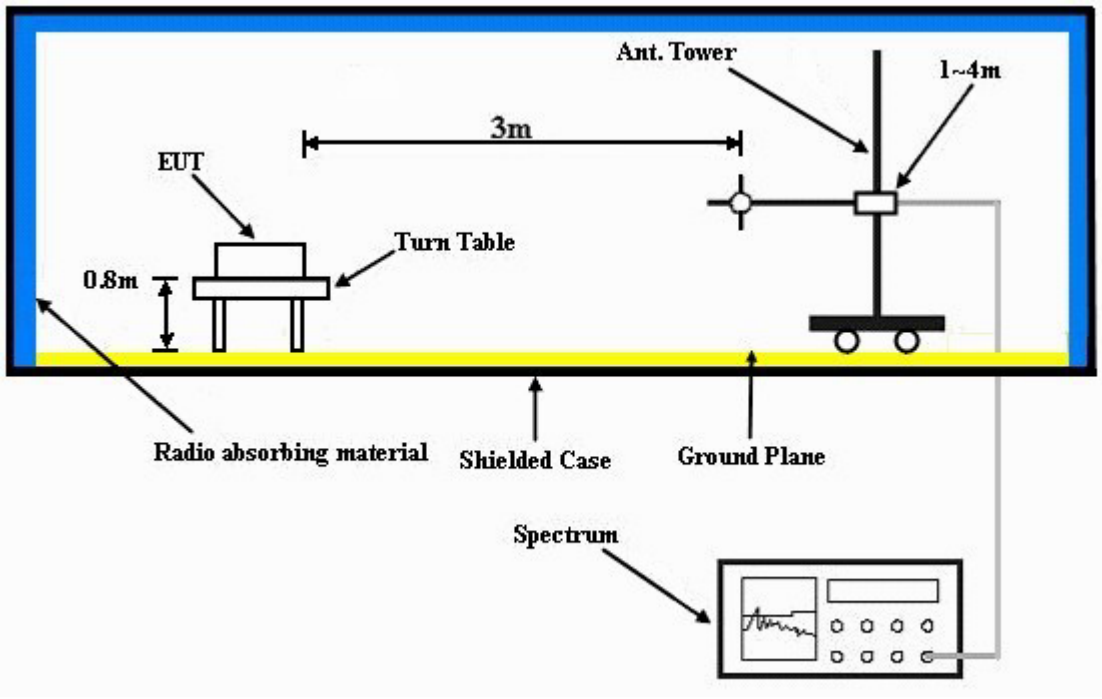
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

a. Connected the EUT to a notebook via USB cable and placed on a testing table.
b. The EUT runs a test program (provided by manufacture) to transmit at specific channel.
c. The necessary accessories enable the system in full functions.

4.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA:
802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.3 PK	74.0	-14.7	1.05 H	154	28.80	30.50
2	2390.00	43.4 AV	54.0	-10.6	1.05 H	154	12.90	30.50
3	*2412.00	99.7 PK			1.05 H	154	69.10	30.60
4	*2412.00	93.5 AV			1.05 H	154	62.90	30.60
5	4824.00	44.1 PK	74.0	-29.9	1.04 H	158	7.50	36.60
6	4824.00	32.2 AV	54.0	-21.8	1.04 H	158	-4.40	36.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.2 PK	74.0	-19.8	1.00 V	306	23.70	30.50
2	2390.00	42.8 AV	54.0	-11.2	1.00 V	306	12.30	30.50
3	*2412.00	95.5 PK			1.00 V	306	64.90	30.60
4	*2412.00	89.5 AV			1.00 V	306	58.90	30.60
5	4824.00	47.5 PK	74.0	-26.5	1.07 V	182	10.90	36.60
6	4824.00	37.0 AV	54.0	-17.0	1.07 V	182	0.40	36.60

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	99.8 PK			1.03 H	190	69.10	30.70
2	*2437.00	93.2 AV			1.03 H	190	62.50	30.70
3	4874.00	45.2 PK	74.0	-28.8	1.00 H	160	8.50	36.70
4	4874.00	35.4 AV	54.0	-18.6	1.00 H	160	-1.30	36.70
5	7311.00	52.2 PK	74.0	-21.8	1.06 H	321	8.90	43.30
6	7311.00	38.2 AV	54.0	-15.8	1.06 H	321	-5.10	43.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	95.3 PK			1.00 V	305	64.60	30.70
2	*2437.00	89.1 AV			1.00 V	305	58.40	30.70
3	4874.00	48.0 PK	74.0	-26.0	1.04 V	192	11.30	36.70
4	4874.00	41.5 AV	54.0	-12.5	1.04 V	192	4.80	36.70
5	7311.00	51.2 PK	74.0	-22.8	1.08 V	254	7.90	43.30
6	7311.00	37.5 AV	54.0	-16.5	1.08 V	254	-5.80	43.30

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.3 PK			1.03 H	183	69.50	30.80
2	*2462.00	93.8 AV			1.03 H	183	63.00	30.80
3	2483.50	61.4 PK	74.0	-12.6	1.03 H	183	30.50	30.90
4	2483.50	44.2 AV	54.0	-9.8	1.03 H	183	13.30	30.90
5	4924.00	45.9 PK	74.0	-28.1	1.00 H	161	9.10	36.80
6	4924.00	38.5 AV	54.0	-15.5	1.00 H	161	1.70	36.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	95.9 PK			1.10 V	155	65.10	30.80
2	*2462.00	89.4 AV			1.10 V	155	58.60	30.80
3	2483.50	59.3 PK	74.0	-14.7	1.10 V	155	28.40	30.90
4	2483.50	43.5 AV	54.0	-10.5	1.10 V	155	12.60	30.90
5	4924.00	50.2 PK	74.0	-23.8	1.05 V	182	13.40	36.80
6	4924.00	45.9 AV	54.0	-8.1	1.05 V	182	9.10	36.80

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 12	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1006 hPa	TESTED BY	Sun Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	88.1 PK			1.08 H	210	57.30	30.80
2	*2467.00	81.3 AV			1.08 H	210	50.50	30.80
3	2485.00	55.7 PK	74.0	-18.3	1.12 H	230	24.80	30.90
4	2485.00	43.1 AV	54.0	-10.9	1.12 H	230	12.20	30.90
5	4934.00	44.1 PK	74.0	-29.9	1.20 H	210	7.30	36.80
6	4934.00	37.1 AV	54.0	-16.9	1.20 H	210	0.30	36.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	83.5 PK			1.05 V	122	52.70	30.80
2	*2467.00	77.1 AV			1.05 V	122	46.30	30.80
3	2485.00	51.0 PK	74.0	-23.0	1.09 V	314	20.10	30.90
4	2485.00	41.2 AV	54.0	-12.8	1.09 V	314	10.30	30.90
5	4934.00	47.5 PK	74.0	-26.5	1.20 V	134	10.70	36.80
6	4934.00	41.2 AV	54.0	-12.8	1.20 V	134	4.40	36.80

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 13	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1006 hPa	TESTED BY	Sun Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	88.9 PK			1.15 H	210	58.10	30.80
2	*2472.00	81.6 AV			1.15 H	210	50.80	30.80
3	2483.50	62.4 PK	74.0	-11.6	1.12 H	180	31.50	30.90
4	2483.50	41.2 AV	54.0	-12.8	1.12 H	180	10.30	30.90
5	4944.00	41.3 PK	74.0	-32.7	1.17 H	144	4.40	36.90
6	4944.00	30.5 AV	54.0	-23.5	1.17 H	144	-6.40	36.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	83.4 PK			1.42 V	258	52.60	30.80
2	*2472.00	76.6 AV			1.42 V	258	45.80	30.80
3	2483.50	56.4 PK	74.0	-17.6	1.24 V	200	25.50	30.90
4	2483.50	38.2 AV	54.0	-15.8	1.24 V	200	7.30	30.90
5	4944.00	46.1 PK	74.0	-27.9	1.10 V	105	9.20	36.90
6	4944.00	40.0 AV	54.0	-14.0	1.10 V	105	3.10	36.90

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.8 PK	74.0	-14.2	1.02 H	217	29.30	30.50
2	2390.00	44.1 AV	54.0	-9.9	1.02 H	217	13.60	30.50
3	*2412.00	97.8 PK			1.02 H	217	67.20	30.60
4	*2412.00	87.2 AV			1.02 H	217	56.60	30.60
5	4824.00	43.0 PK	74.0	-31.0	1.00 H	198	6.40	36.60
6	4824.00	29.9 AV	54.0	-24.1	1.00 H	198	-6.70	36.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.6 PK	74.0	-19.4	1.15 V	138	24.10	30.50
2	2390.00	43.4 AV	54.0	-10.6	1.15 V	138	12.90	30.50
3	*2412.00	93.0 PK			1.15 V	138	62.40	30.60
4	*2412.00	82.8 AV			1.15 V	138	52.20	30.60
5	4824.00	43.4 PK	74.0	-30.6	1.00 V	218	6.80	36.60
6	4824.00	30.5 AV	54.0	-23.5	1.00 V	218	-6.10	36.60

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.0 PK			1.00 H	217	70.30	30.70
2	*2437.00	90.3 AV			1.00 H	217	59.60	30.70
3	4874.00	42.6 PK	74.0	-31.4	1.00 H	176	5.90	36.70
4	4874.00	30.1 AV	54.0	-23.9	1.00 H	176	-6.60	36.70
5	7311.00	49.0 PK	74.0	-25.0	1.00 H	28	5.70	43.30
6	7311.00	36.2 AV	54.0	-17.8	1.00 H	28	-7.10	43.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	95.7 PK			1.12 V	135	65.00	30.70
2	*2437.00	85.3 AV			1.12 V	135	54.60	30.70
3	4874.00	46.5 PK	74.0	-27.5	1.62 V	158	9.80	36.70
4	4874.00	31.2 AV	54.0	-22.8	1.62 V	158	-5.50	36.70
5	7311.00	49.4 PK	74.0	-24.6	1.00 V	292	6.10	43.30
6	7311.00	36.6 AV	54.0	-17.4	1.00 V	292	-6.70	43.30

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	98.3 PK			1.00 H	218	67.50	30.80
2	*2462.00	87.8 AV			1.00 H	218	57.00	30.80
3	2483.50	61.1 PK	74.0	-12.9	1.00 H	218	30.20	30.90
4	2483.50	45.8 AV	54.0	-8.2	1.00 H	218	14.90	30.90
5	4924.00	42.8 PK	74.0	-31.2	1.00 H	195	6.00	36.80
6	4924.00	29.7 AV	54.0	-24.3	1.00 H	195	-7.10	36.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	93.1 PK			1.30 V	132	62.30	30.80
2	*2462.00	82.8 AV			1.30 V	132	52.00	30.80
3	2483.50	55.7 PK	74.0	-18.3	1.30 V	132	24.80	30.90
4	2483.50	43.8 AV	54.0	-10.2	1.30 V	132	12.90	30.90
5	4924.00	43.1 PK	74.0	-30.9	1.00 V	215	6.30	36.80
6	4924.00	30.3 AV	54.0	-23.7	1.00 V	215	-6.50	36.80

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 12	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1006 hPa	TESTED BY	Sun Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	87.5 PK			1.06 H	184	56.70	30.80
2	*2467.00	77.1 AV			1.06 H	184	46.30	30.80
3	2483.50	62.1 PK	74.00	-11.9	1.08 H	145	31.20	30.90
4	2483.50	42.1 AV	54.00	-11.9	1.08 H	145	11.20	30.90
5	4934.00	41.2 PK	74.00	-32.8	1.03 H	119	4.40	36.80
6	4934.00	29.6 AV	54.00	-24.4	1.09 H	119	-7.20	36.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2467.00	82.0 PK			1.07 V	144	61.20	30.80
2	*2467.00	70.8 AV			1.07 V	144	40.00	30.80
3	2483.50	56.1 PK	74.00	-17.9	1.06 V	210	25.20	30.90
4	2483.50	38.1 AV	54.00	-15.9	1.06 V	210	7.20	30.90
5	4934.00	37.2 PK	74.00	-36.8	1.20 V	284	0.40	36.80
6	4934.00	27.8 AV	54.00	-26.2	1.20 V	284	-9.00	36.80

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 13	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1006 hPa	TESTED BY	Sun Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	87.4 PK			1.02 H	155	56.60	30.80
2	*2472.00	76.8 AV			1.02 H	155	46.00	30.80
3	2483.50	62.3 PK	74.00	-11.7	1.08 H	261	31.40	30.90
4	2483.50	43.2 AV	54.00	-10.8	1.08 H	261	12.30	30.90
5	4944.00	40.8 PK	74.00	-33.2	1.22 H	88	3.90	36.90
6	4944.00	28.4 AV	54.00	-25.6	1.22 H	88	-8.50	36.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2472.00	82.4 PK			1.05 V	120	51.60	30.80
2	*2472.00	71.9 AV			1.05 V	120	41.10	30.80
3	2483.50	56.6 PK	74.00	-17.4	1.22 V	254	25.70	30.90
4	2483.50	42.0 AV	54.00	-12.0	1.22 V	254	11.10	30.90
5	4944.00	37.8 PK	74.00	-36.2	1.03 V	158	0.90	36.90
6	4944.00	27.8 AV	54.00	-26.2	1.03 V	158	-9.10	36.90

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

BELOW 1GHz WORST-CASE DATA：802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	61.01	27.0 QP	40.0	-13.0	1.50 H	238	13.70	13.30
2	154.33	29.2 QP	43.5	-14.3	1.50 H	105	15.30	13.90
3	230.16	30.6 QP	46.0	-15.4	1.75 H	358	18.60	12.00
4	300.16	32.9 QP	46.0	-13.1	1.25 H	175	19.20	13.70
5	700.68	37.2 QP	46.0	-8.8	1.00 H	268	14.40	22.80
6	1002.04	38.5 QP	54.0	-15.5	2.00 H	337	11.70	26.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.62	33.1 QP	40.0	-6.9	1.00 V	127	20.60	12.50
2	61.01	32.4 QP	40.0	-7.6	1.00 V	154	19.10	13.30
3	500.42	27.6 QP	46.0	-18.4	1.00 V	85	8.30	19.30
4	632.63	28.9 QP	46.0	-17.1	1.50 V	46	6.70	22.20
5	700.68	34.5 QP	46.0	-11.5	1.25 V	289	11.70	22.80
6	786.23	28.7 QP	46.0	-17.3	2.00 V	55	3.70	25.00

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 23, 2010	Nov. 22, 2011
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 30, 2010	Dec. 29, 2011
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 06, 2011	Jan. 05, 2012
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jul. 08, 2010	Jul. 07, 2011
V-LISN SCHWARZBECK	NNBL 8226-2	8226-142	Jul. 12, 2010	Jul. 11, 2011
LISN ROHDE & SCHWARZ	ENV216	100072	Jun. 11, 2010	Jun. 10, 2011
Software ADT	ADT_Cond_ V7.3.7	NA	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

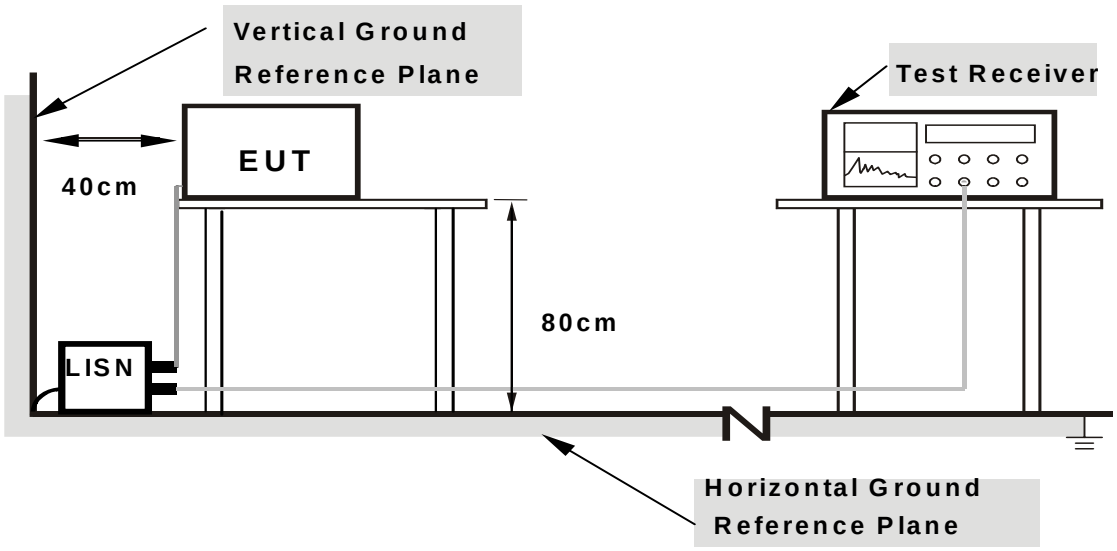
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 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

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

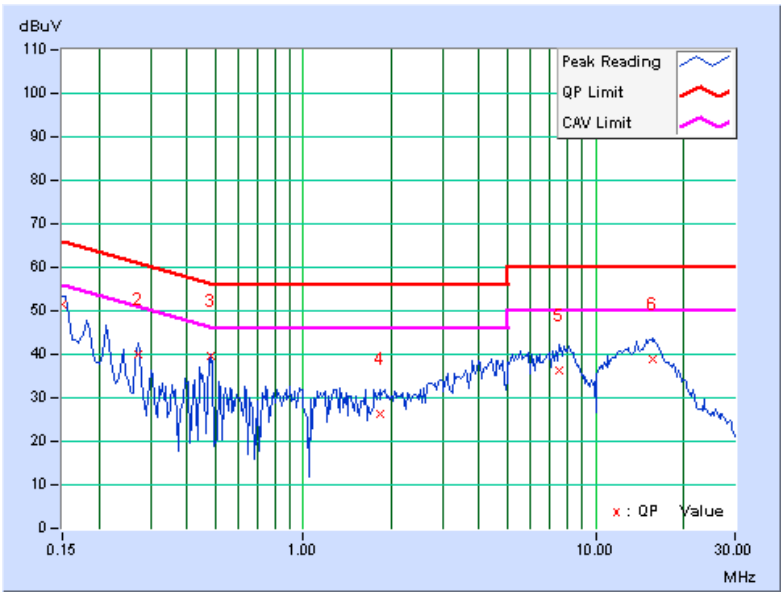
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g

PHASE	Line 1	6dB BANDWIDTH	9kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.150**	**0.15**	**51.46**	**-**	**51.61**	**-**	**66.00**	**56.00**	**-14.39**	**-**
2	0.271	0.16	39.90	-	40.06	-	61.08	51.08	-21.03	-
3	0.482	0.17	39.39	-	39.56	-	56.30	46.30	-16.74	-
4	1.828	0.21	25.98	-	26.19	-	56.00	46.00	-29.81	-
5	7.516	0.46	35.66	-	36.12	-	60.00	50.00	-23.88	-
6	15.762	0.91	37.91	-	38.82	-	60.00	50.00	-21.18	-

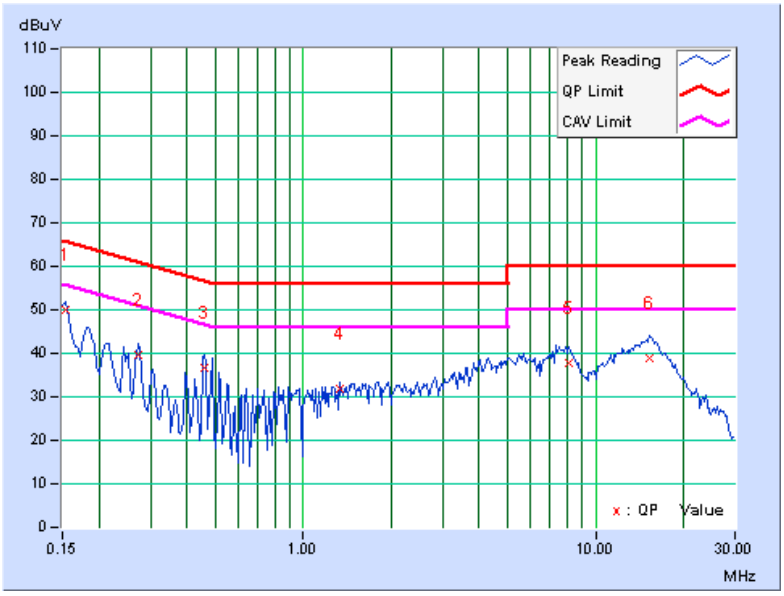
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



PHASE	Line 2	6dB BANDWIDTH	9kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.16	49.81	-	49.97	-	65.79	55.79	-15.82	-
2	0.271	0.18	39.62	-	39.80	-	61.08	51.08	-21.29	-
3	0.459	0.19	36.39	-	36.58	-	56.72	46.72	-20.14	-
4	1.336	0.22	31.62	-	31.84	-	56.00	46.00	-24.16	-
5	8.121	0.44	37.32	-	37.76	-	60.00	50.00	-22.24	-
6	15.371	0.74	38.22	-	38.96	-	60.00	50.00	-21.04	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100039	Jan. 11, 2011	Jan. 10, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

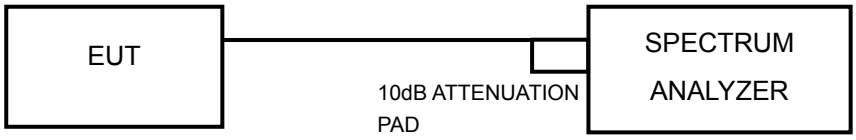
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

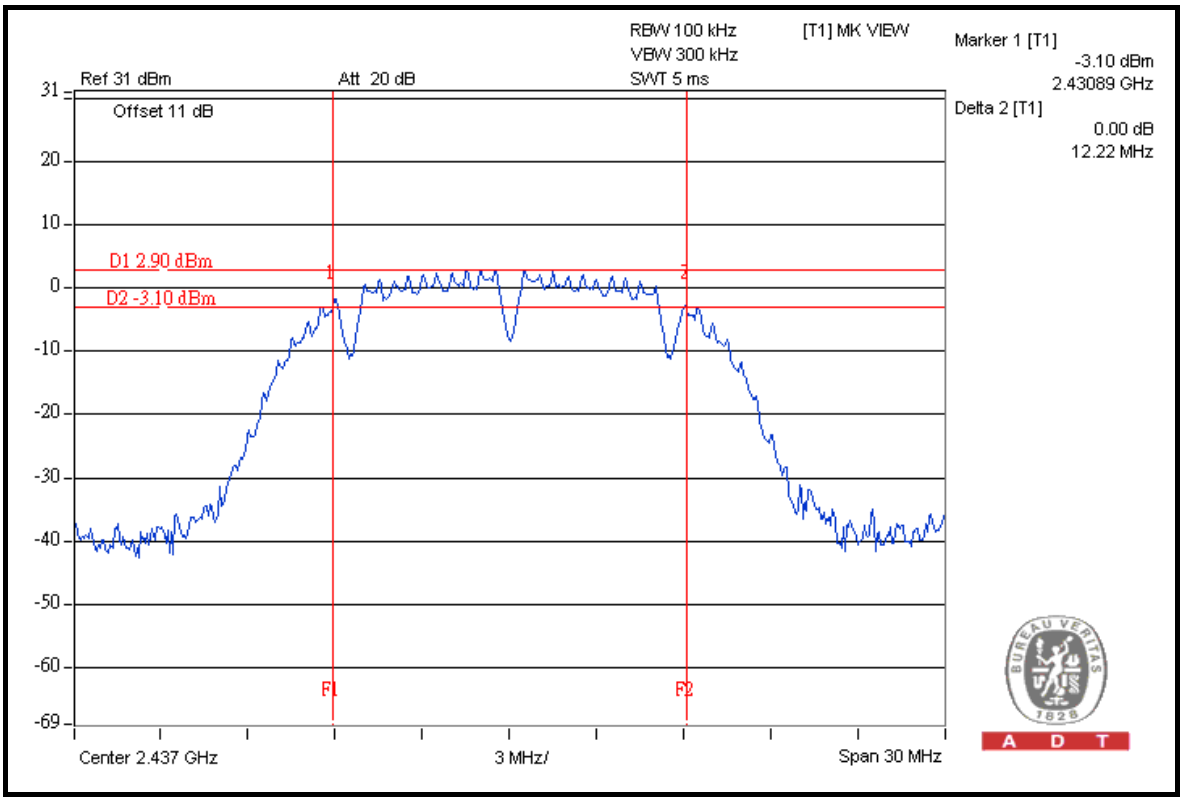
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	12.18	0.5	PASS
6	2437	12.22	0.5	PASS
11	2462	12.11	0.5	PASS
12	2467	12.12	0.5	PASS
13	2472	12.16	0.5	PASS

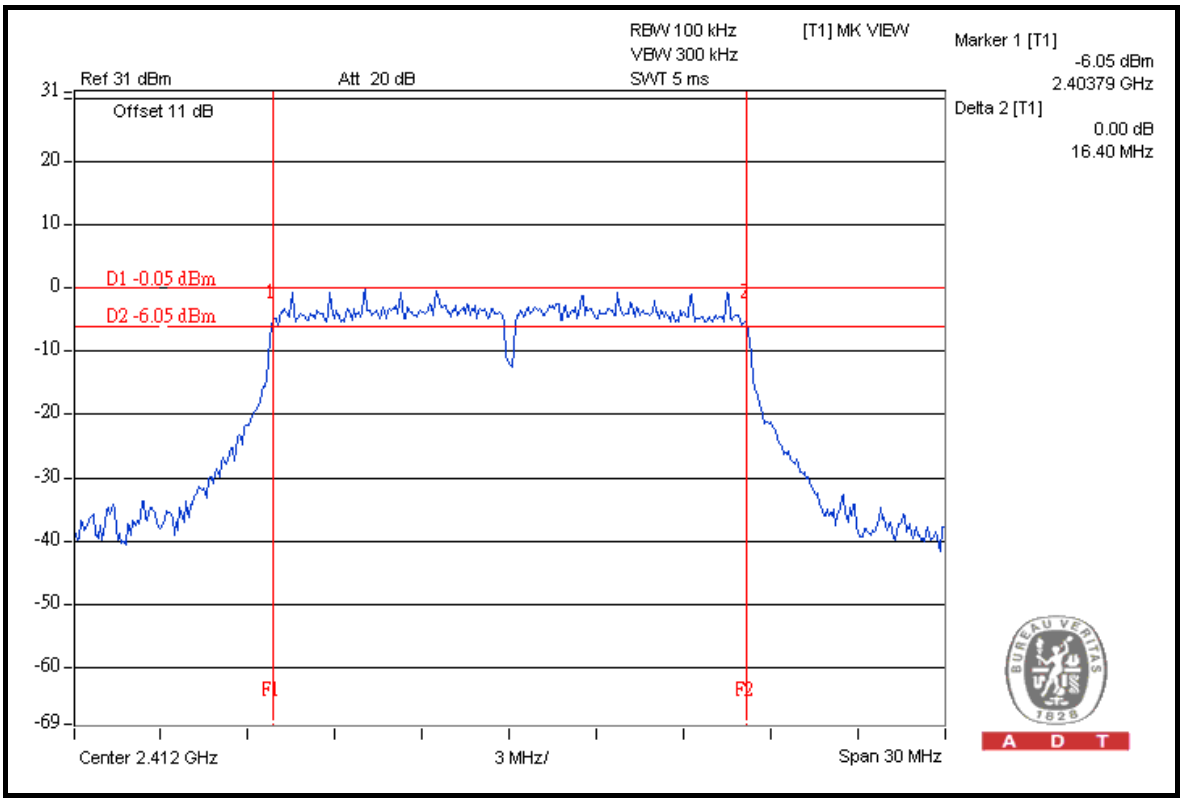
CH 6



802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.40	0.5	PASS
6	2437	16.39	0.5	PASS
11	2462	16.38	0.5	PASS
12	2467	16.35	0.5	PASS
13	2472	16.37	0.5	PASS

CH 1



4.4 MAXIMUM OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT

The Maximum Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
High Speed Peak Power Meter	ML2495A	0842014	Apr. 21, 2010	Apr. 20, 2011
Power Sensor	MA2411B	0738404	Apr. 21, 2010	Apr. 20, 2011

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Measurement Bandwidth of ML2495A is 65MHz greater than 6dB bandwidth of emission.

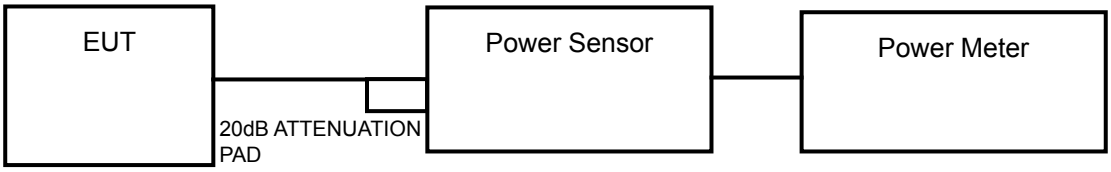
4.4.3 TEST PROCEDURES

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	POWER OUTPUT (mW)	POWER OUTPUT (dBm)	POWER LIMIT (dBm)	PASS / FAIL
1	2412	53.7	17.3	30	PASS
6	2437	51.3	17.1	30	PASS
11	2462	52.5	17.2	30	PASS
12	2467	2.5	3.9	30	PASS
13	2472	2.4	3.8	30	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	POWER OUTPUT (mW)	POWER OUTPUT (dBm)	POWER LIMIT (dBm)	PASS / FAIL
1	2412	134.9	21.3	30	PASS
6	2437	158.5	22.0	30	PASS
11	2462	138.0	21.4	30	PASS
12	2467	14.5	11.6	30	PASS
13	2472	14.1	11.5	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100039	Jan. 11, 2011	Jan. 10, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.5.3 TEST PROCEDURE

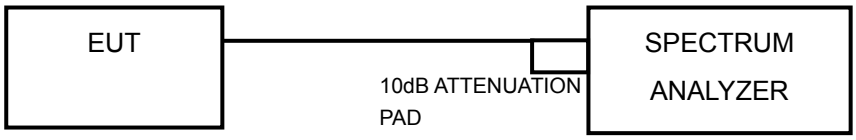
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation.

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

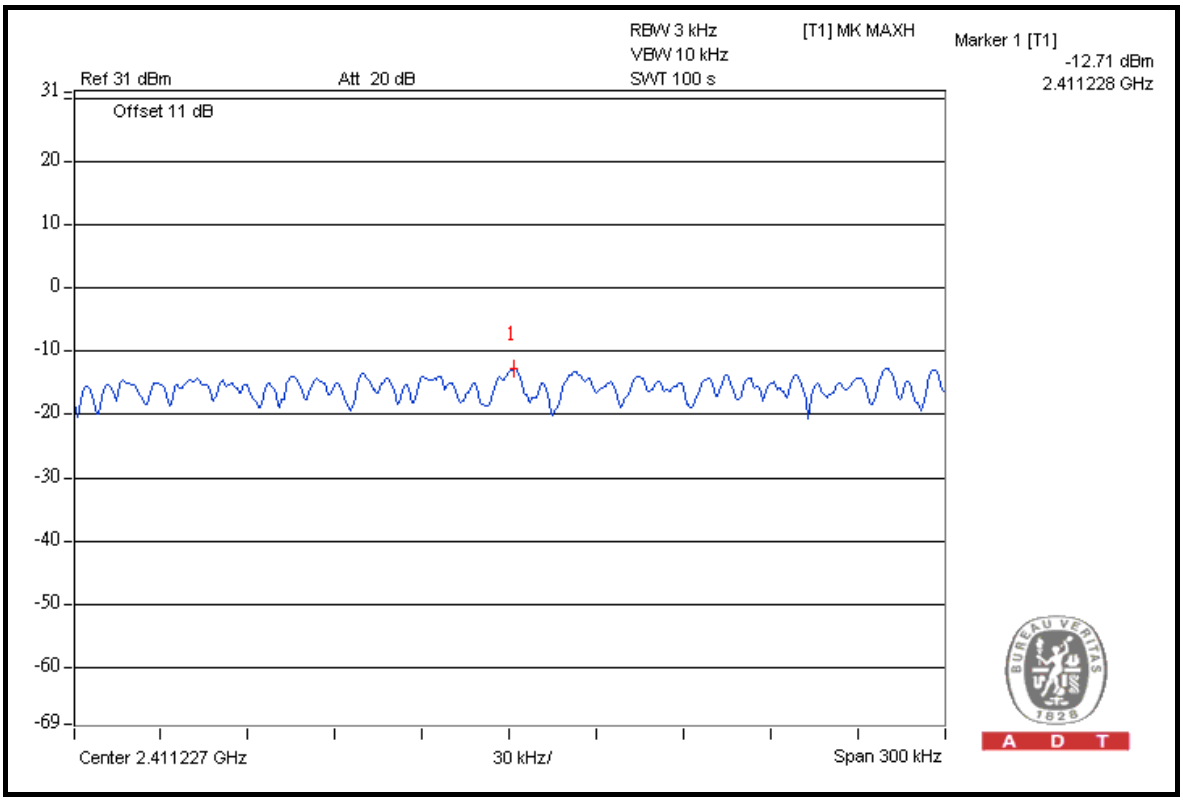
Same as Item 4.3.6.

4.5.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-12.7	8	PASS
6	2437	-12.7	8	PASS
11	2462	-12.8	8	PASS
12	2467	-26.1	8	PASS
13	2472	-26.0	8	PASS

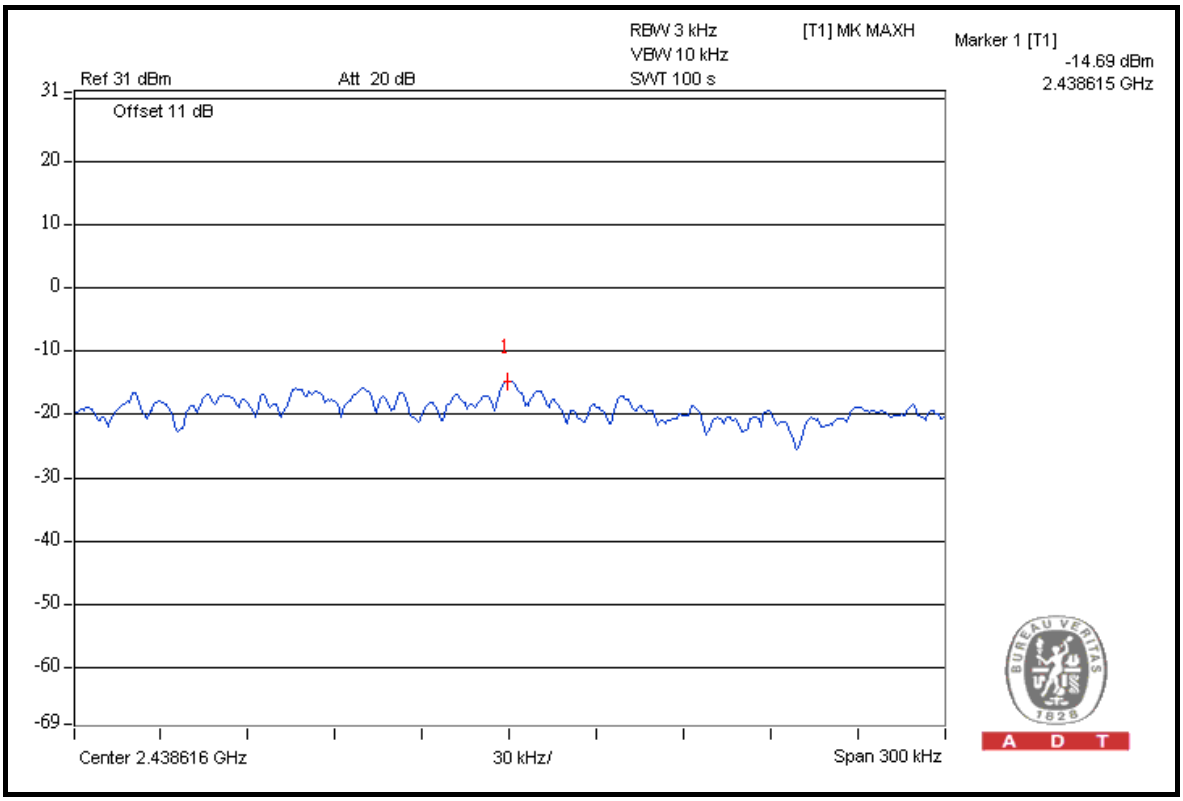
CH 1



802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-15.4	8	PASS
6	2437	-14.7	8	PASS
11	2462	-15.3	8	PASS
12	2467	-26.2	8	PASS
13	2472	-26.5	8	PASS

CH 6



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100039	Jan. 11, 2011	Jan. 10, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 300kMHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW =100kHz, VBW = 300kHz; Average RBW = 1MHz, VBW = 10Hz) are attached on the following pages.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation.

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6.

4.6.6 TEST RESULTS

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b

RESTRICT BAND (2310 ~ 2390 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2412.00 (PK)	99.7	49.80	49.90	74.00
2412.00 (AV)	93.5	55.88	37.62	54.00

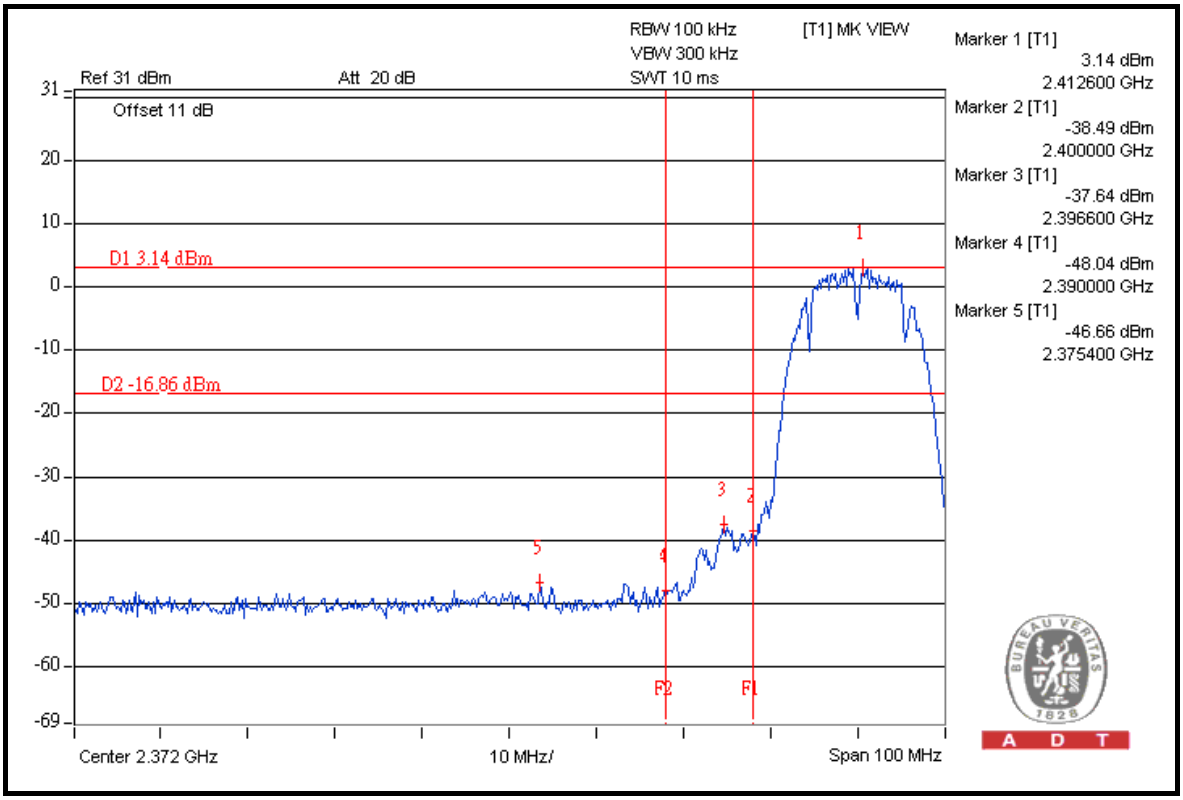
RESTRICT BAND (2483.5 ~ 2500 MHz)

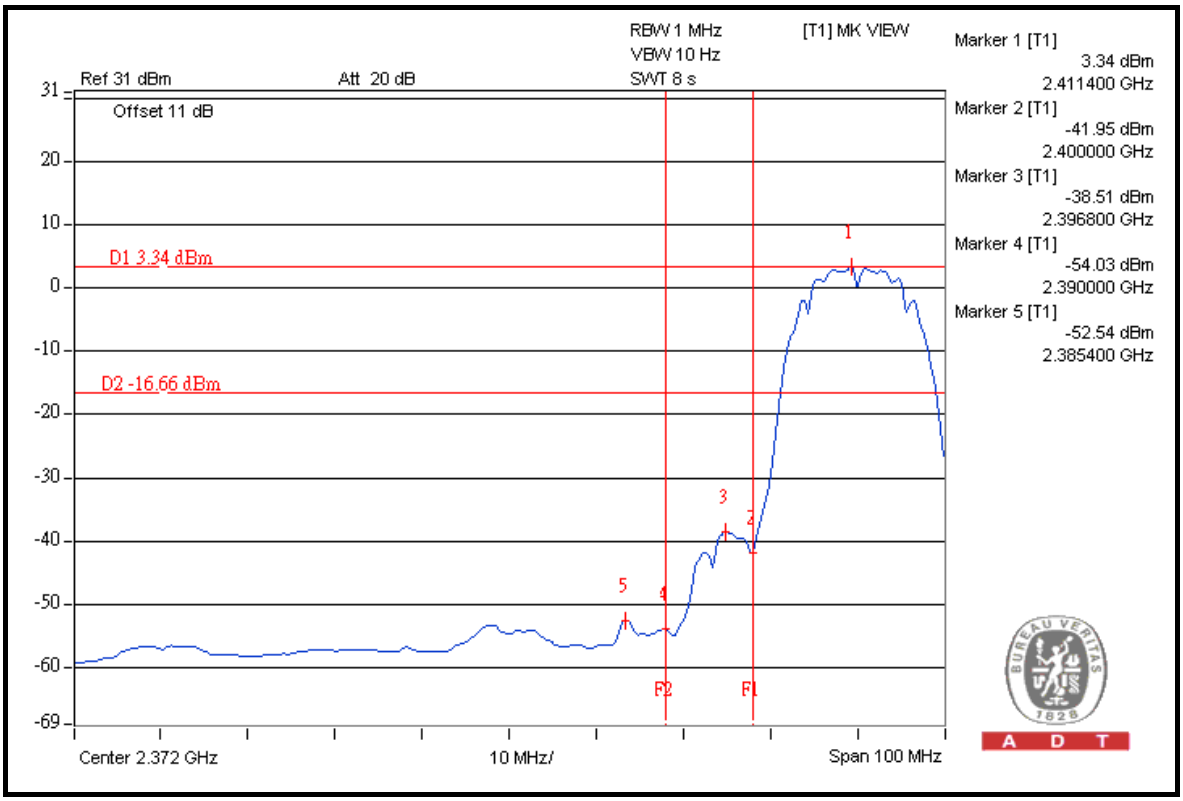
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2462.00 (PK)	100.3	49.87	50.43	74.00
2462.00 (AV)	93.8	56.17	37.63	54.00
2467.00 (PK)	88.1	38.73	49.37	74.00
2467.00 (AV)	81.3	51.45	29.85	54.00
2472.00 (PK)	88.9	36.47	52.43	74.00
2472.00 (AV)	81.6	42.24	39.36	54.00

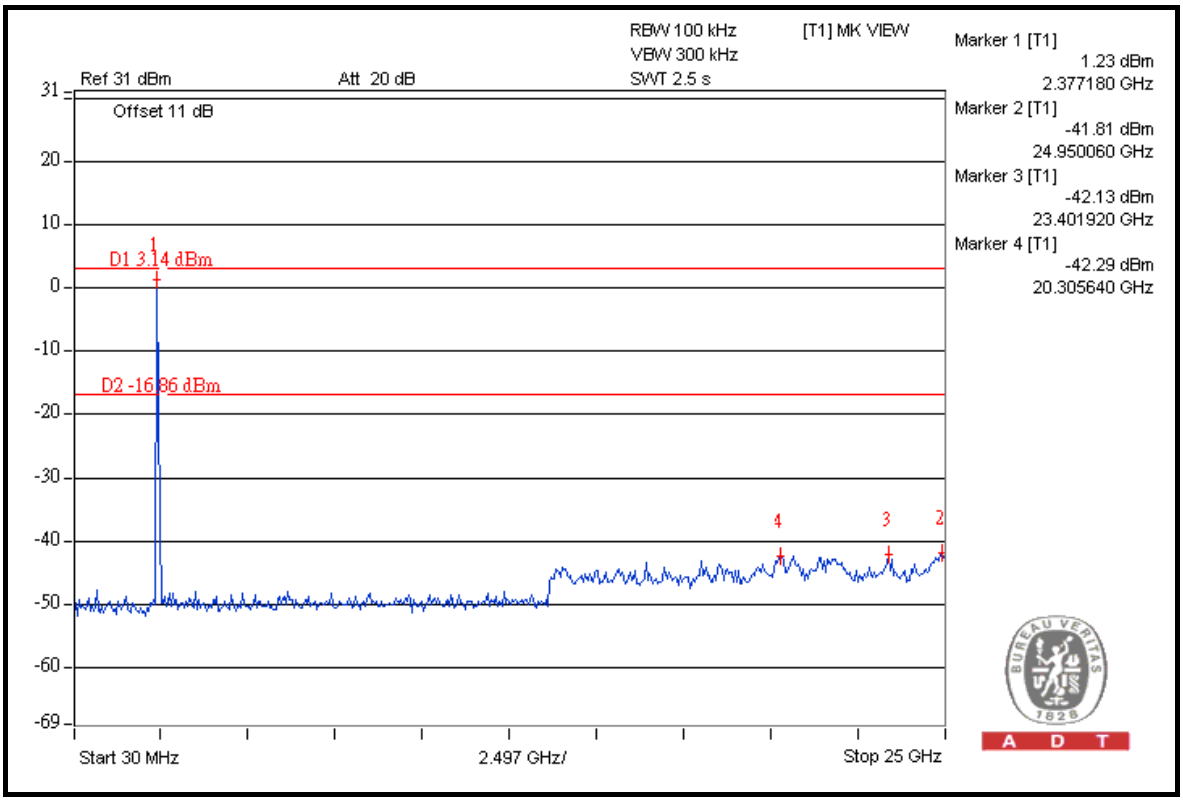
NOTE:

1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 6 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.

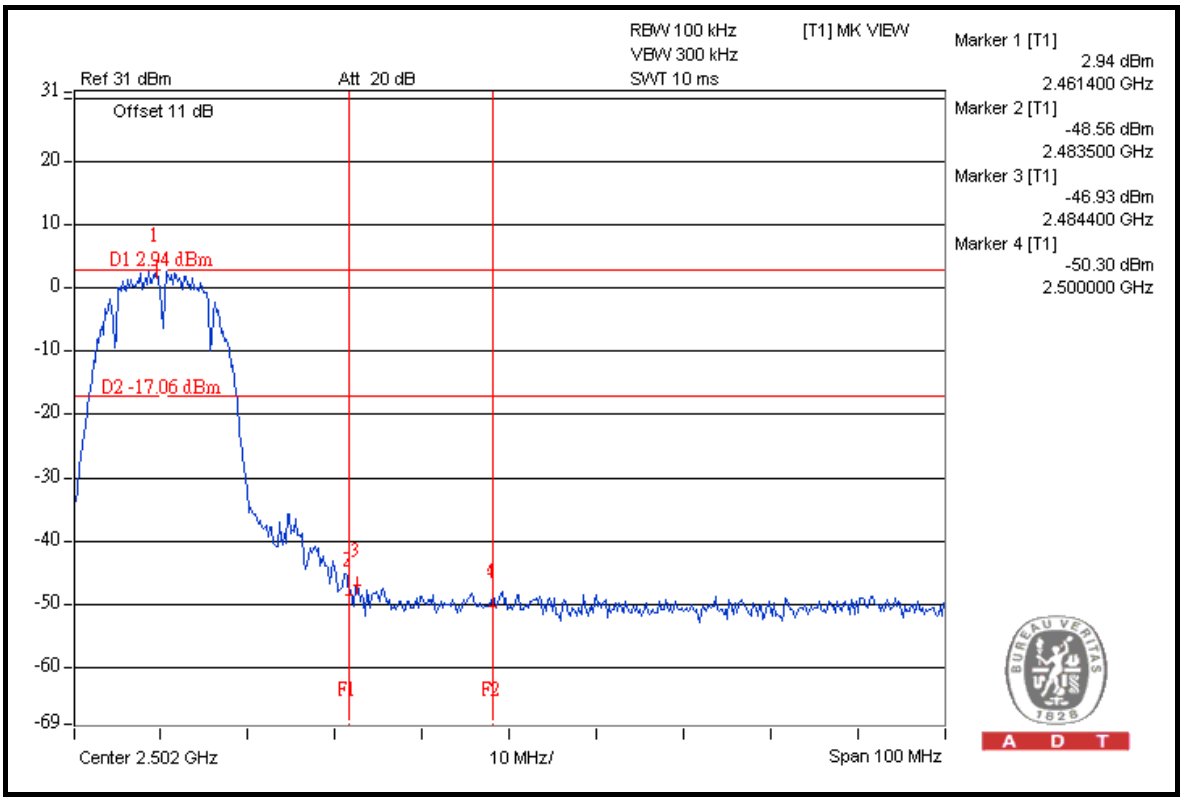
CH 1

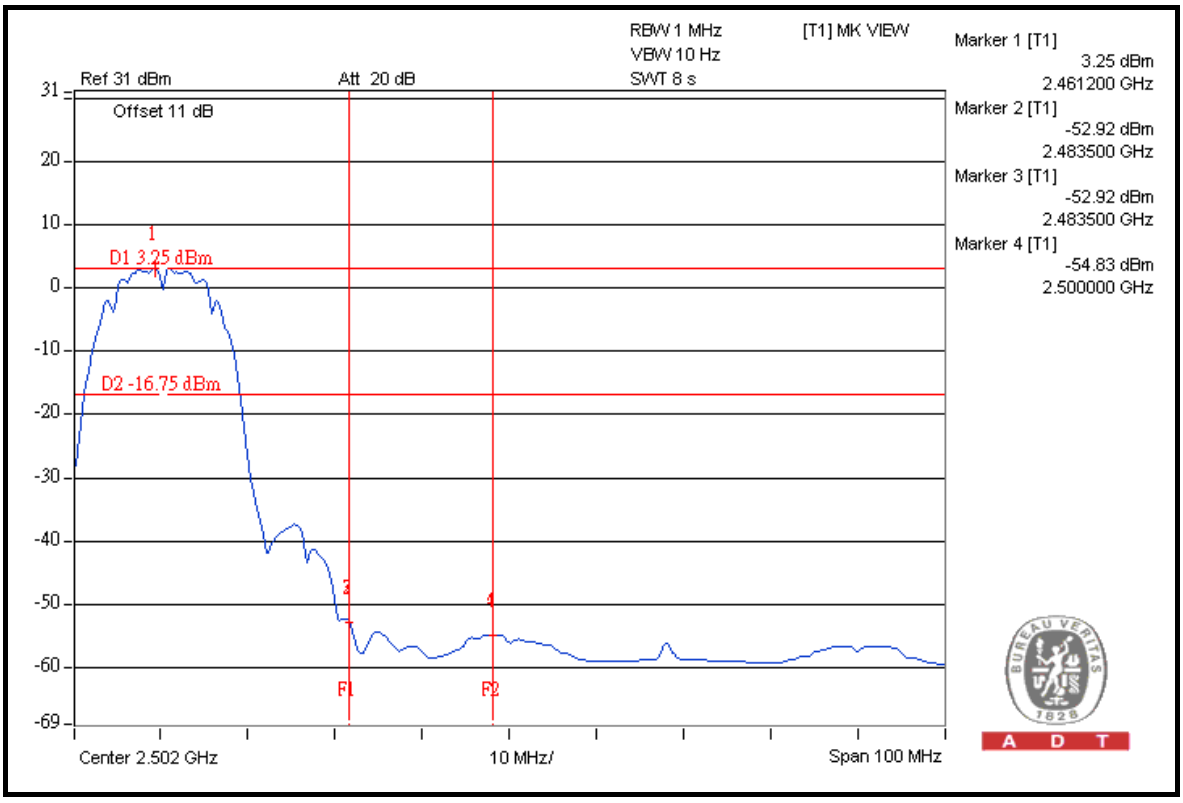

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 3.14 dBm
D2 -16.86 dBm
Marker 1 [T1]
3.14 dBm
2.412600 GHz
Marker 2 [T1]
-38.49 dBm
2.400000 GHz
Marker 3 [T1]
-37.64 dBm
2.396600 GHz
Marker 4 [T1]
-48.04 dBm
2.390000 GHz
Marker 5 [T1]
-46.66 dBm
2.375400 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz

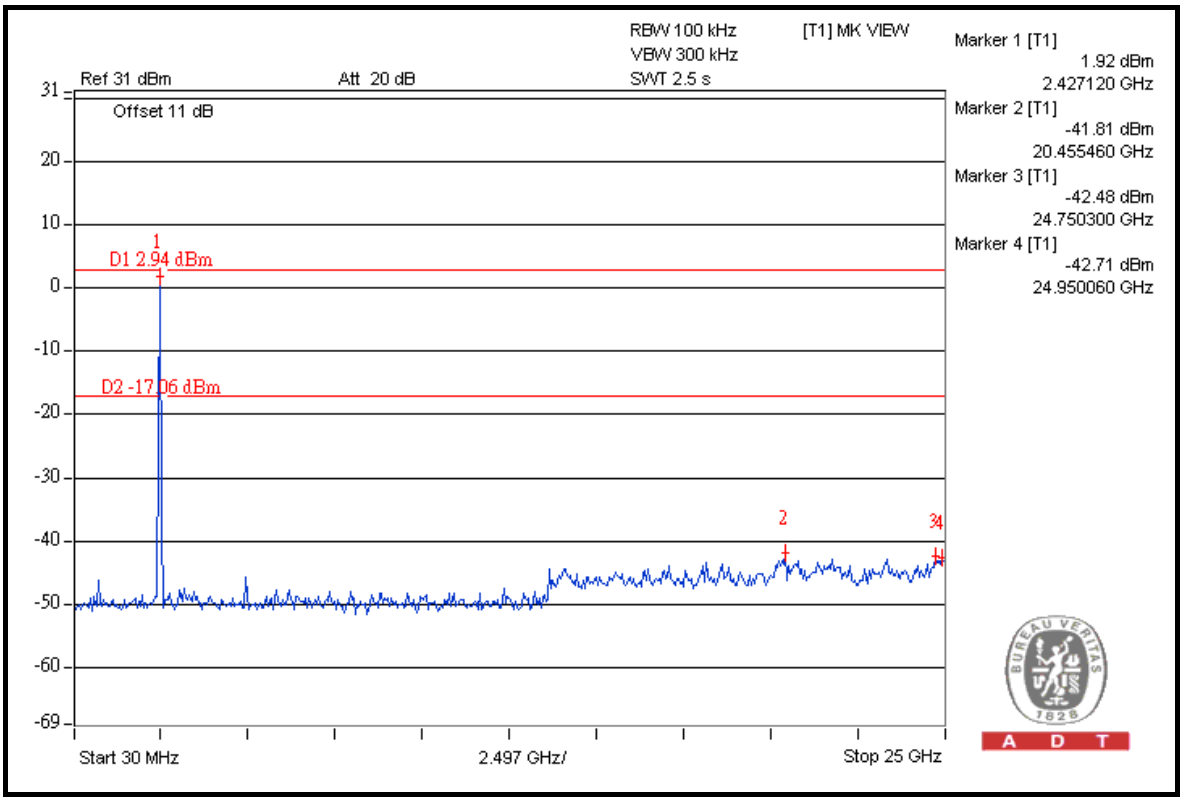

RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 3.34 dBm
D2 -16.66 dBm
Marker 1 [T1]
3.34 dBm
2.411400 GHz
Marker 2 [T1]
-41.95 dBm
2.400000 GHz
Marker 3 [T1]
-38.51 dBm
2.396800 GHz
Marker 4 [T1]
-54.03 dBm
2.390000 GHz
Marker 5 [T1]
-52.54 dBm
2.385400 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 3.14 dBm
D2 -16.86 dBm
Marker 1 [T1]
1.23 dBm
2.377180 GHz
Marker 2 [T1]
-41.81 dBm
24.950060 GHz
Marker 3 [T1]
-42.13 dBm
23.401920 GHz
Marker 4 [T1]
-42.29 dBm
20.305640 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

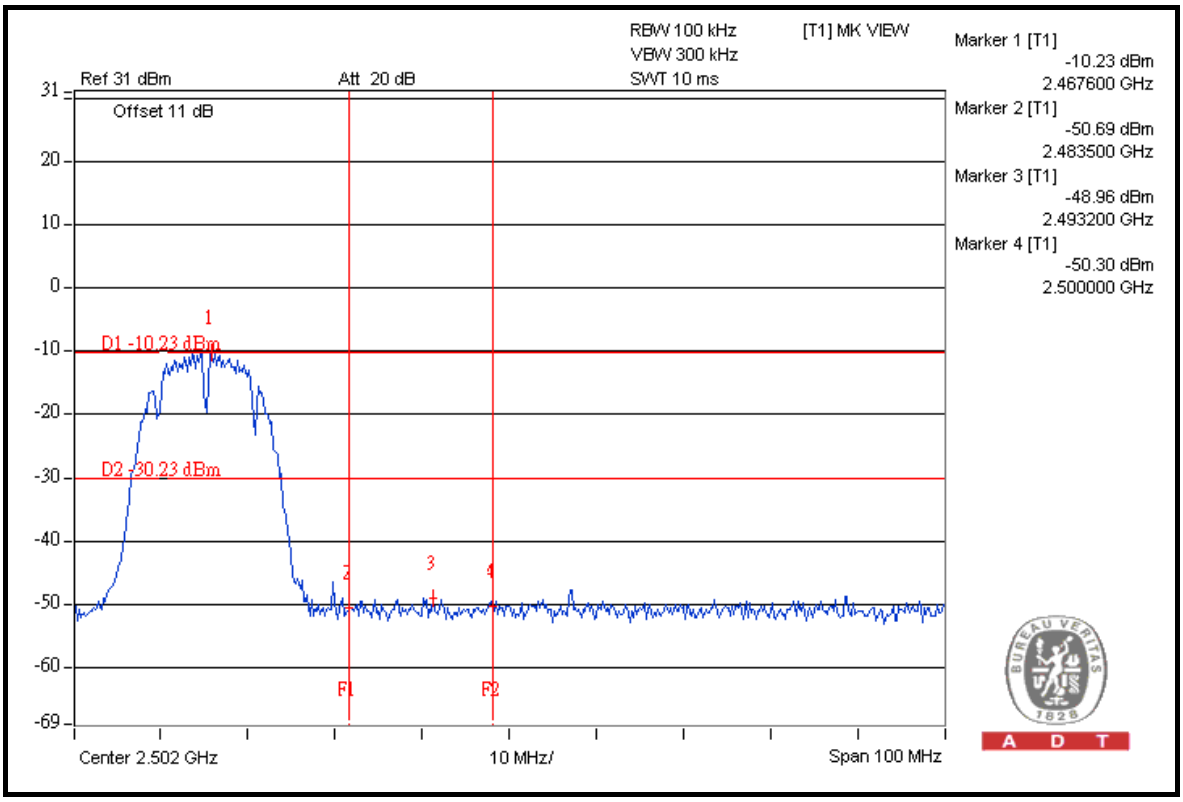
CH 11

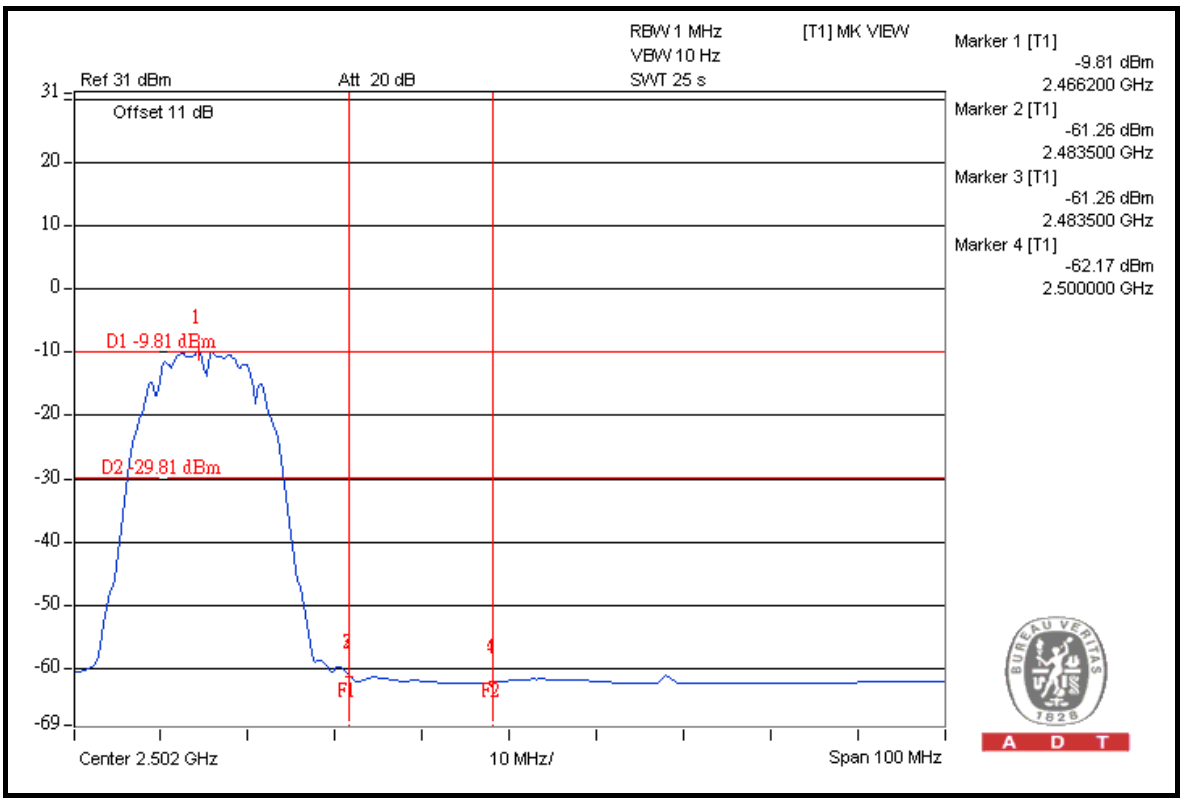

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 2.94 dBm
D2 -17.06 dBm
Marker 1 [T1]
2.94 dBm
2.461400 GHz
Marker 2 [T1]
-48.56 dBm
2.483500 GHz
Marker 3 [T1]
-46.93 dBm
2.484400 GHz
Marker 4 [T1]
-50.30 dBm
2.500000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz

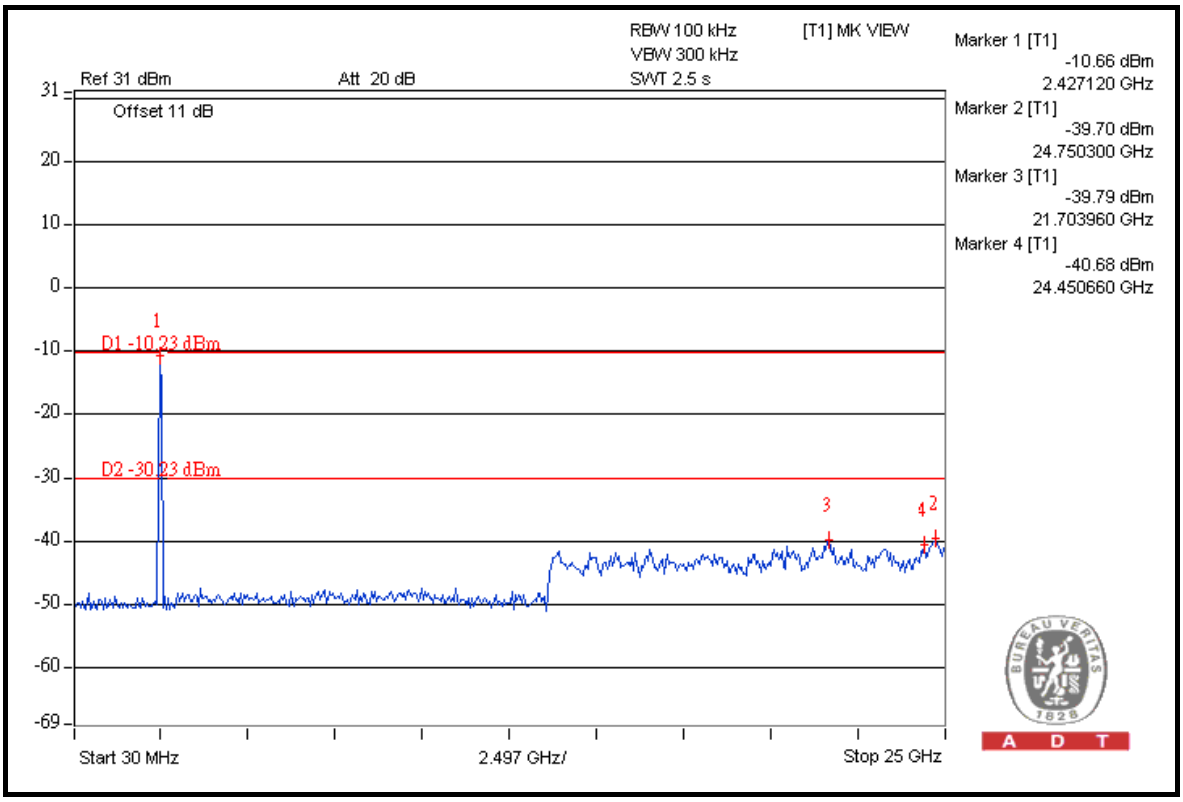

RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 3.25 dBm
D2 -16.75 dBm
Marker 1 [T1]
3.25 dBm
2.461200 GHz
Marker 2 [T1]
-52.92 dBm
2.483500 GHz
Marker 3 [T1]
-52.92 dBm
2.483500 GHz
Marker 4 [T1]
-54.83 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 2.94 dBm
D2 -17.06 dBm
Marker 1 [T1]
1.92 dBm
2.427120 GHz
Marker 2 [T1]
-41.81 dBm
20.455460 GHz
Marker 3 [T1]
-42.48 dBm
24.750300 GHz
Marker 4 [T1]
-42.71 dBm
24.950060 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

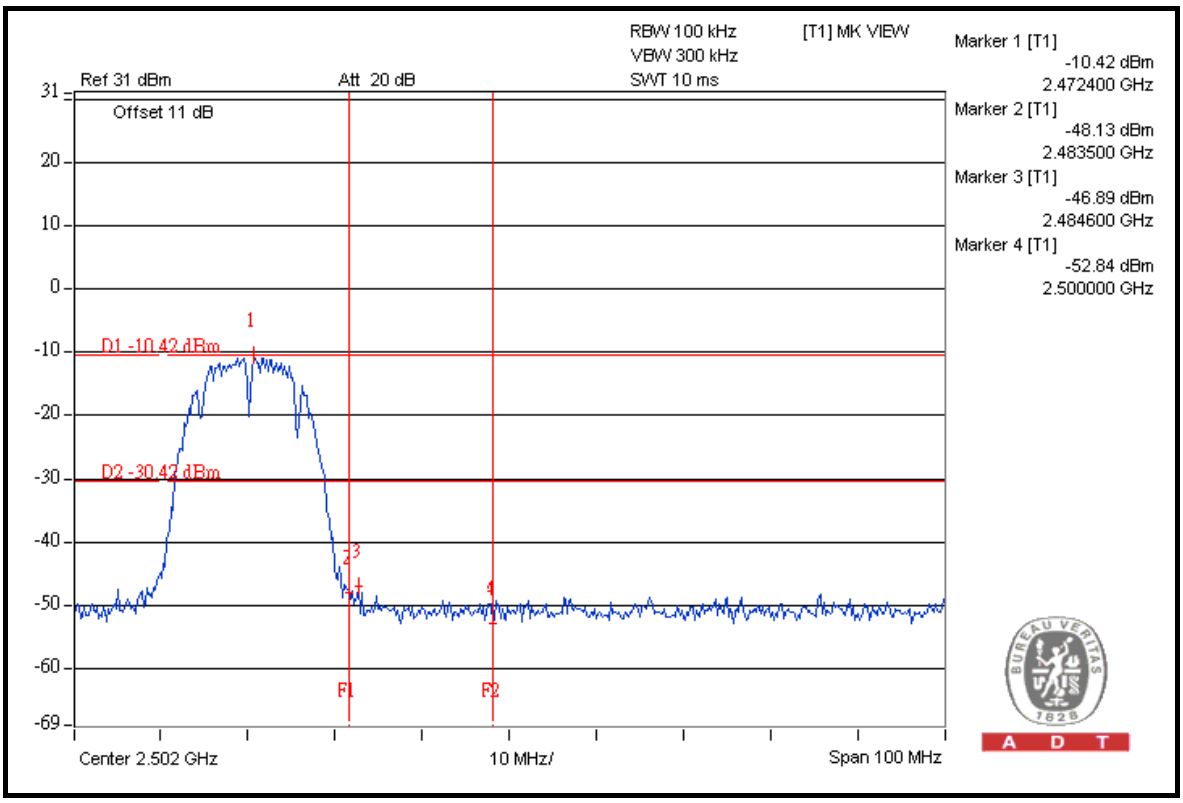
CH 12

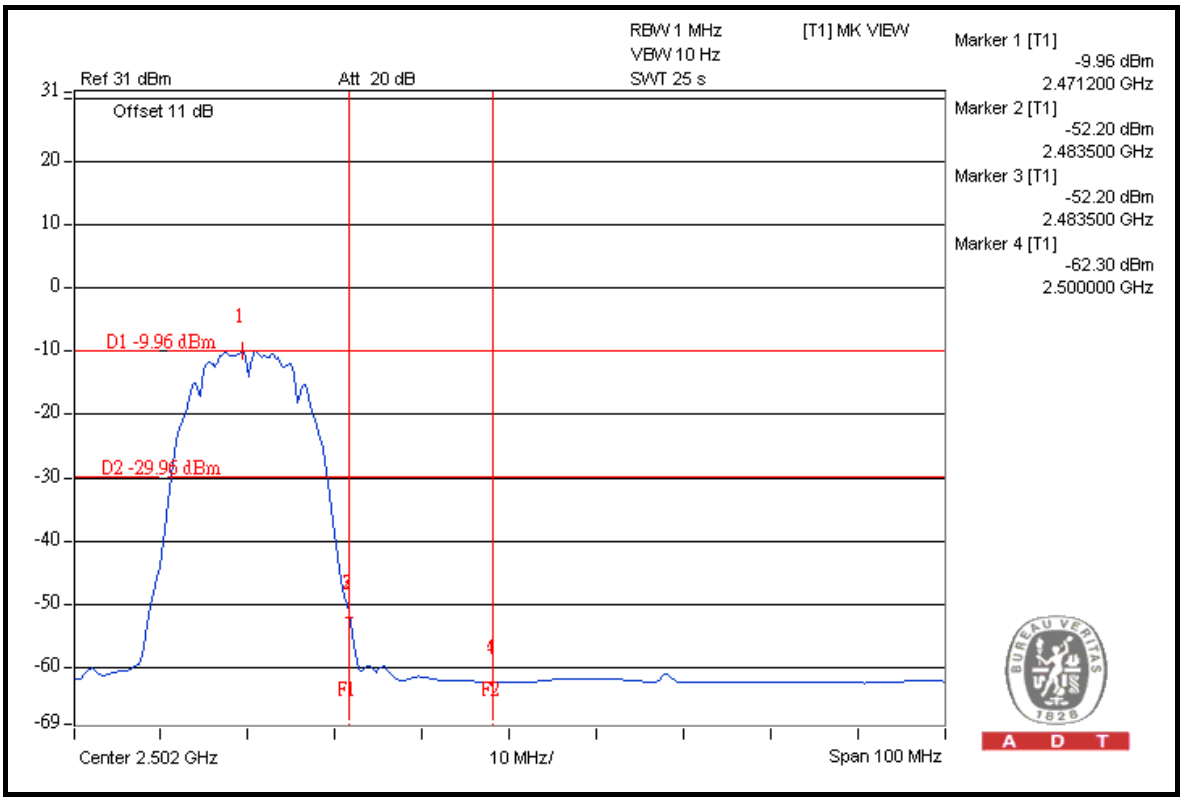

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-10.23 dBm
2.467600 GHz
Marker 2 [T1]
-50.69 dBm
2.483500 GHz
Marker 3 [T1]
-48.96 dBm
2.493200 GHz
Marker 4 [T1]
-50.30 dBm
2.500000 GHz
D1 -10.23 dBm
D2 -30.23 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz

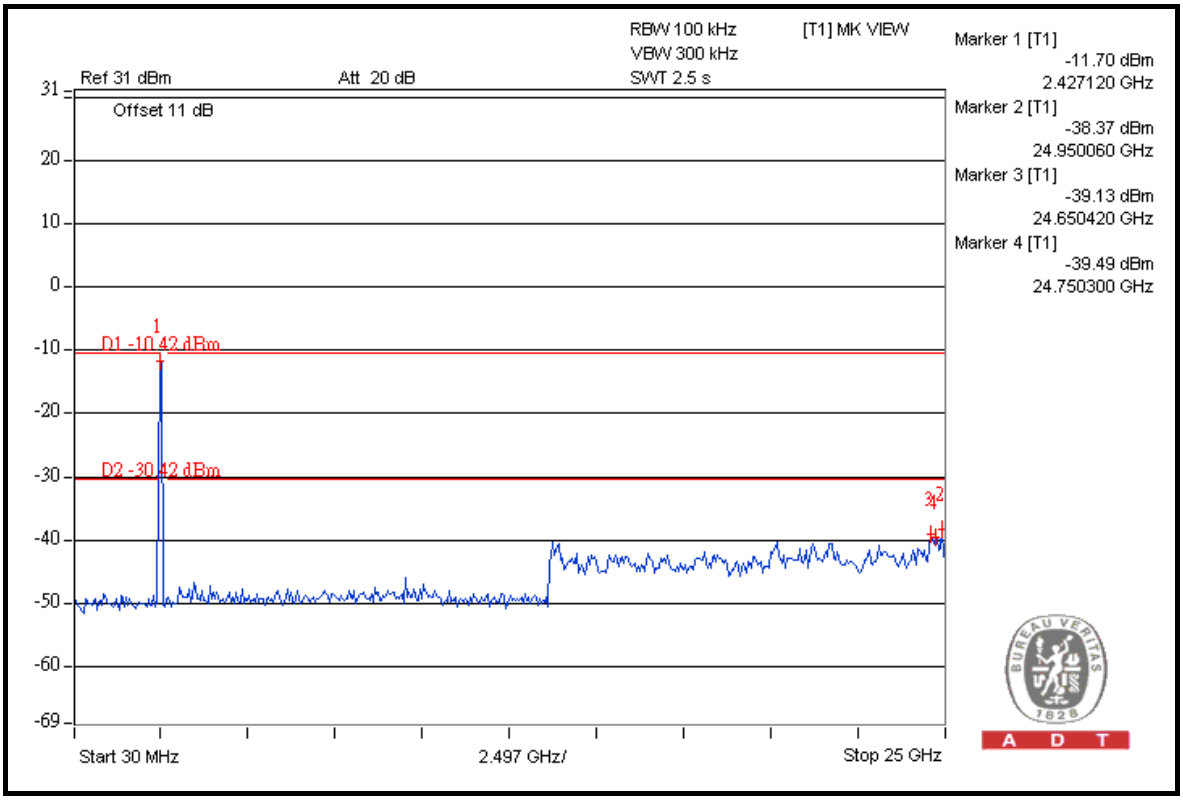

RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-9.81 dBm
2.466200 GHz
Marker 2 [T1]
-61.26 dBm
2.483500 GHz
Marker 3 [T1]
-61.26 dBm
2.483500 GHz
Marker 4 [T1]
-62.17 dBm
2.500000 GHz
D1 -9.81 dBm
D2 -29.81 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-10.66 dBm
2.427120 GHz
Marker 2 [T1]
-39.70 dBm
24.750300 GHz
Marker 3 [T1]
-39.79 dBm
21.703960 GHz
Marker 4 [T1]
-40.68 dBm
24.450660 GHz
D1 -10.23 dBm
D2 -30.23 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH 13


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-10.42 dBm
2.472400 GHz
Marker 2 [T1]
-48.13 dBm
2.483500 GHz
Marker 3 [T1]
-46.89 dBm
2.484600 GHz
Marker 4 [T1]
-52.84 dBm
2.500000 GHz
D1 -10.42 dBm
D2 -30.42 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -9.96 dBm
D2 -29.96 dBm
Marker 1 [T1]
-9.96 dBm
2.471200 GHz
Marker 2 [T1]
-52.20 dBm
2.483500 GHz
Marker 3 [T1]
-52.20 dBm
2.483500 GHz
Marker 4 [T1]
-62.30 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -10.42 dBm
D2 -30.42 dBm
Marker 1 [T1]
-11.70 dBm
2.427120 GHz
Marker 2 [T1]
-38.37 dBm
24.950060 GHz
Marker 3 [T1]
-39.13 dBm
24.650420 GHz
Marker 4 [T1]
-39.49 dBm
24.750300 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

802.11g

RESTRICT BAND (2310 ~ 2390 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2412.00 (PK)	97.8	45.04	52.76	74.00
2412.00 (AV)	87.2	47.50	39.70	54.00

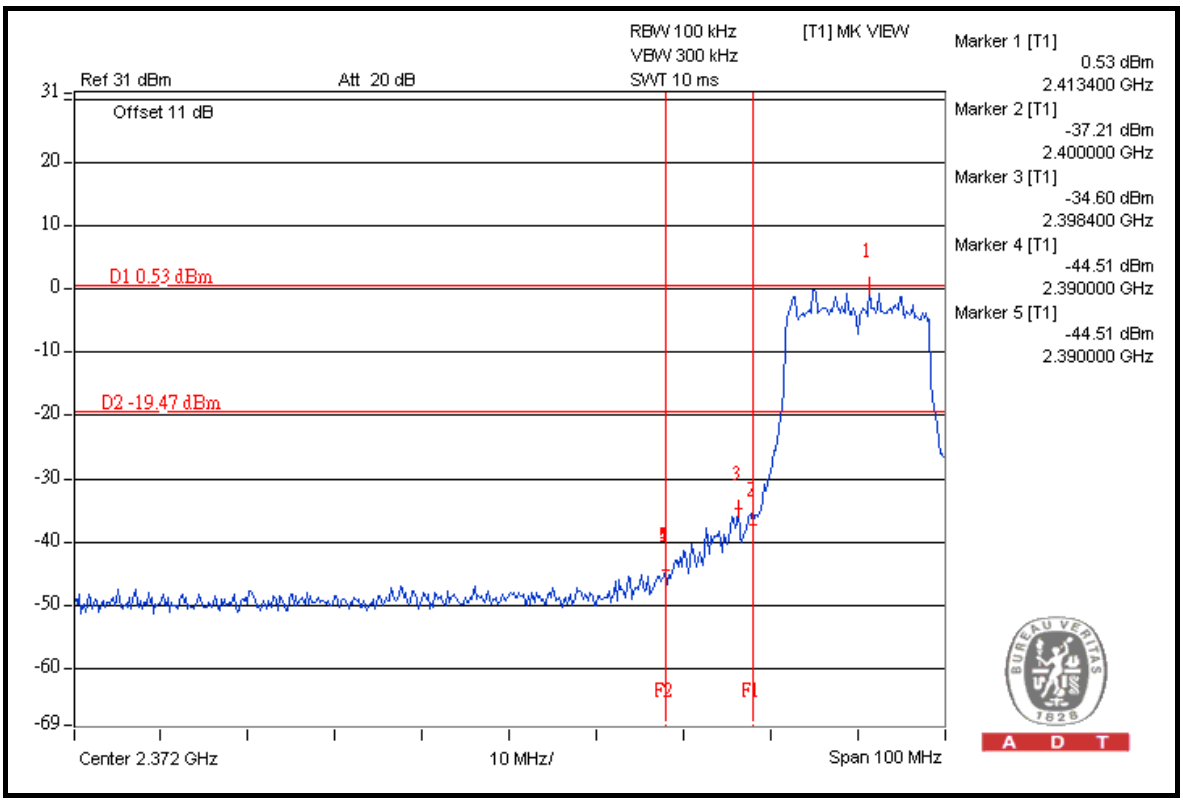
RESTRICT BAND (2483.5 ~ 2500 MHz)

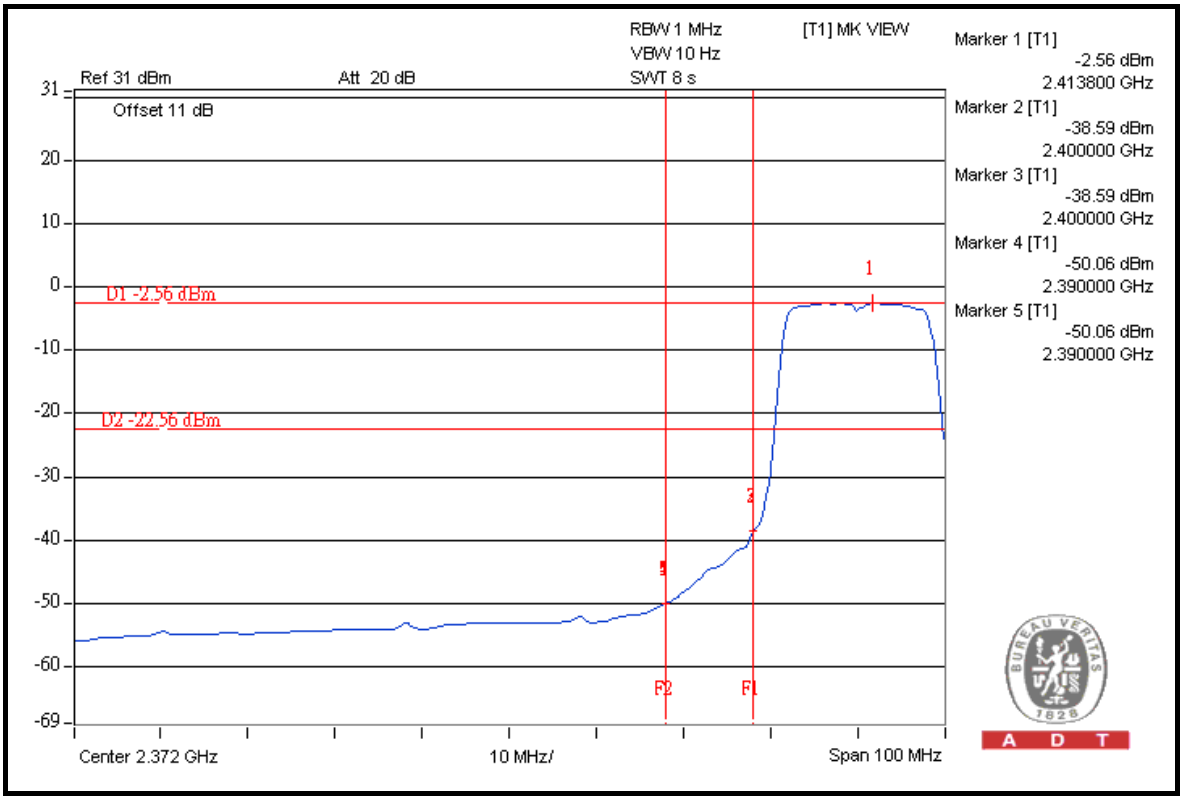
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2462.00 (PK)	98.3	44.77	53.53	74.00
2462.00 (AV)	87.8	47.52	40.28	54.00
2467.00 (PK)	87.5	37.64	49.86	74.00
2467.00 (AV)	77.1	45.62	31.48	54.00
2472.00 (PK)	87.4	35.48	51.92	74.00
2472.00 (AV)	76.8	37.43	39.37	54.00

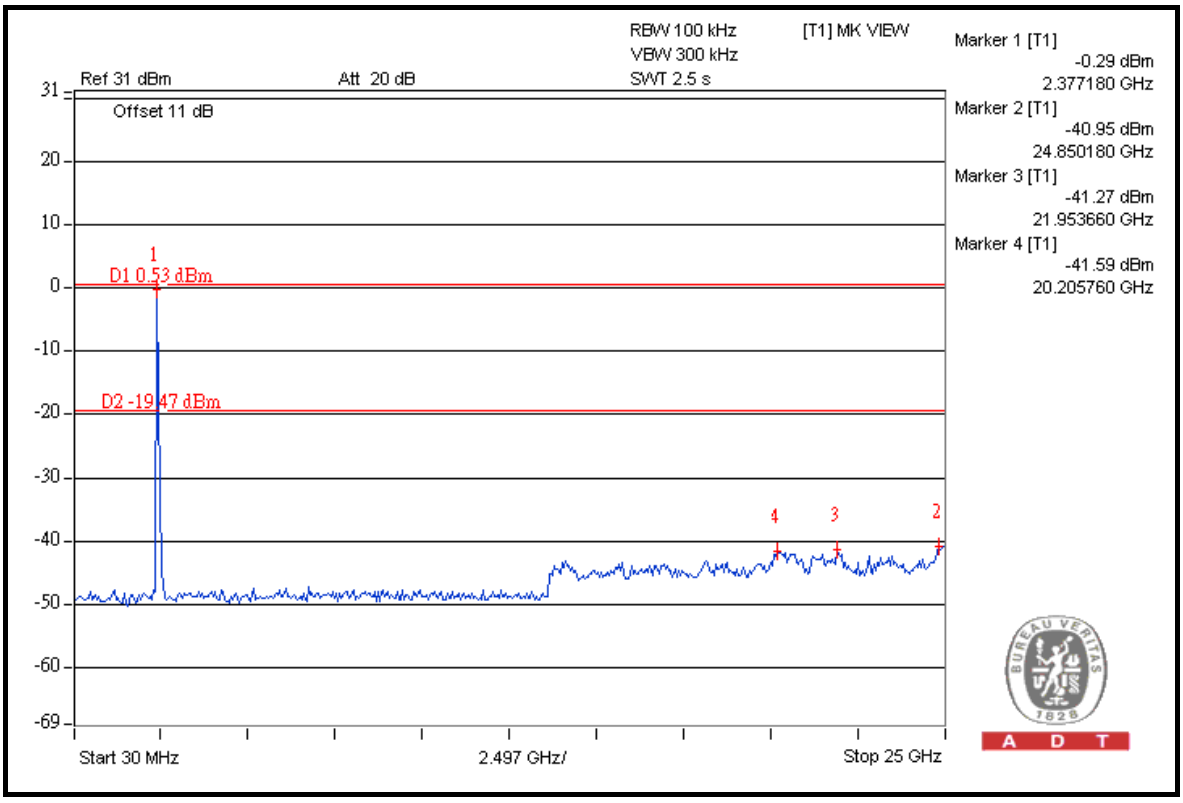
NOTE:

1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 6 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.

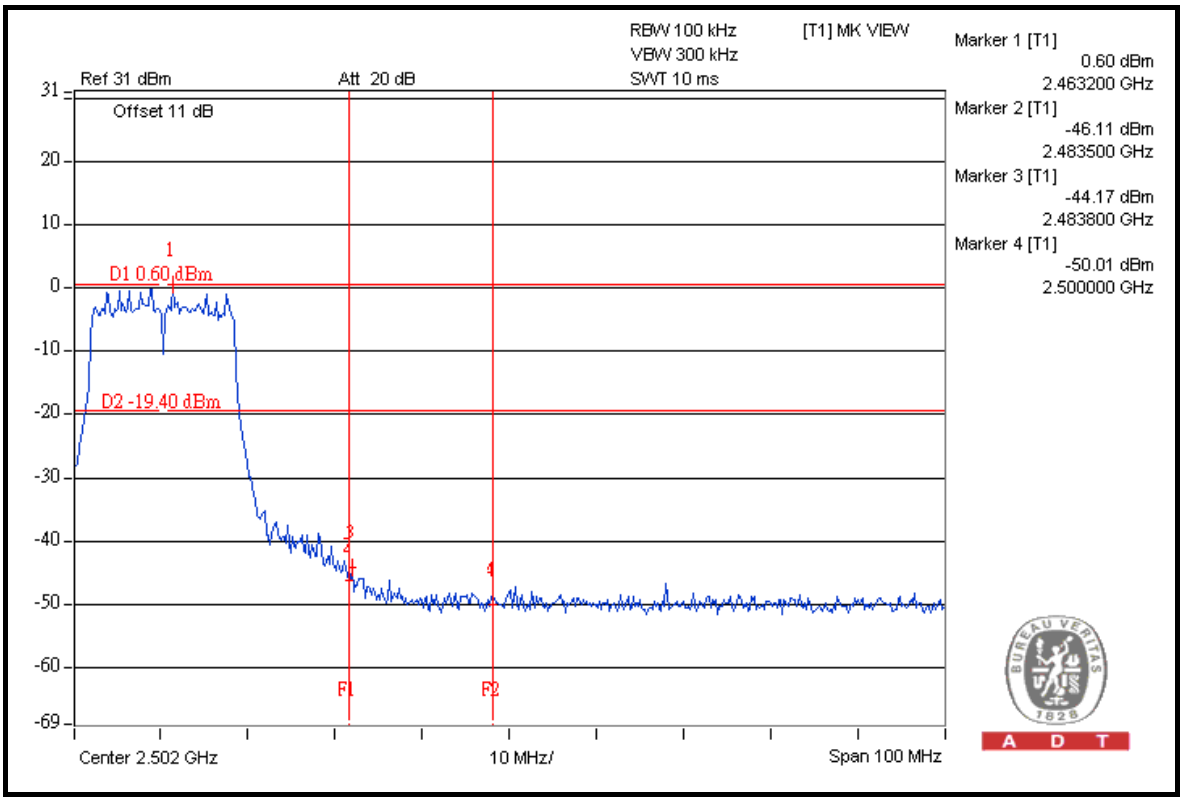
CH 1

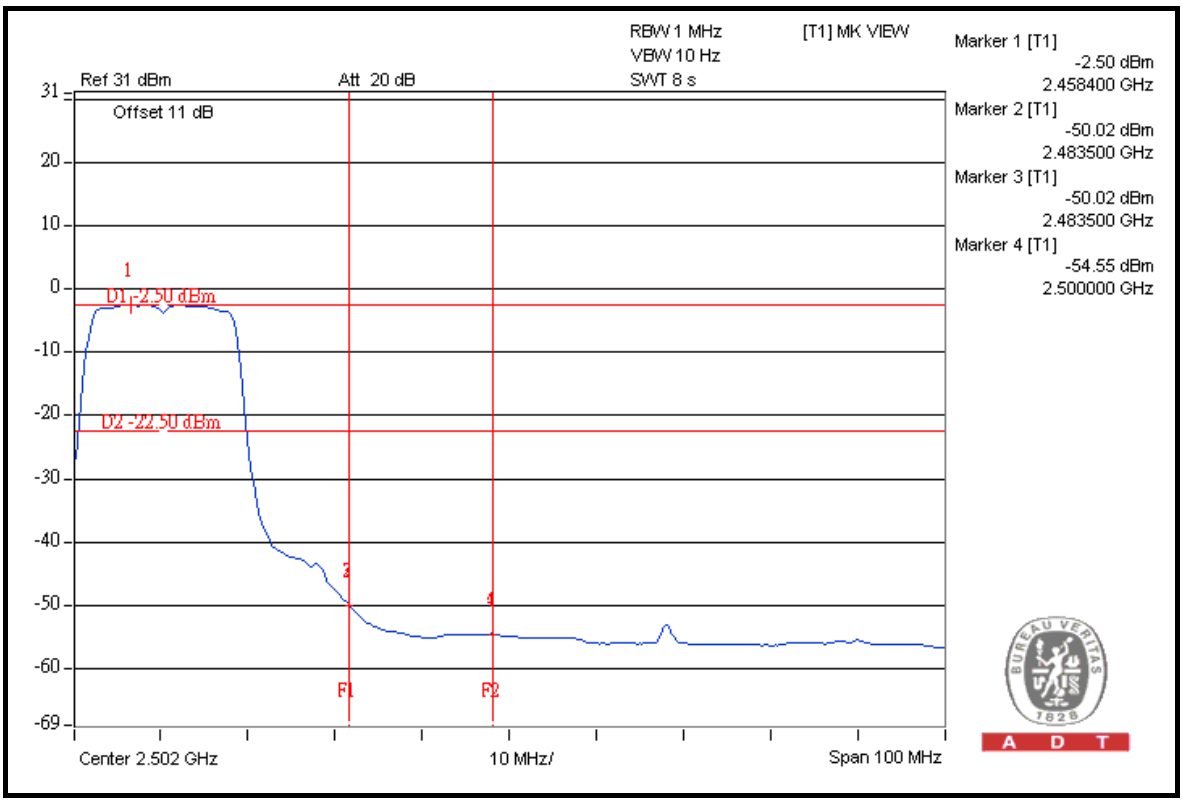

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 0.53 dBm
D2 -19.47 dBm
Marker 1 [T1]
0.53 dBm
2.413400 GHz
Marker 2 [T1]
-37.21 dBm
2.400000 GHz
Marker 3 [T1]
-34.60 dBm
2.398400 GHz
Marker 4 [T1]
-44.51 dBm
2.390000 GHz
Marker 5 [T1]
-44.51 dBm
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz

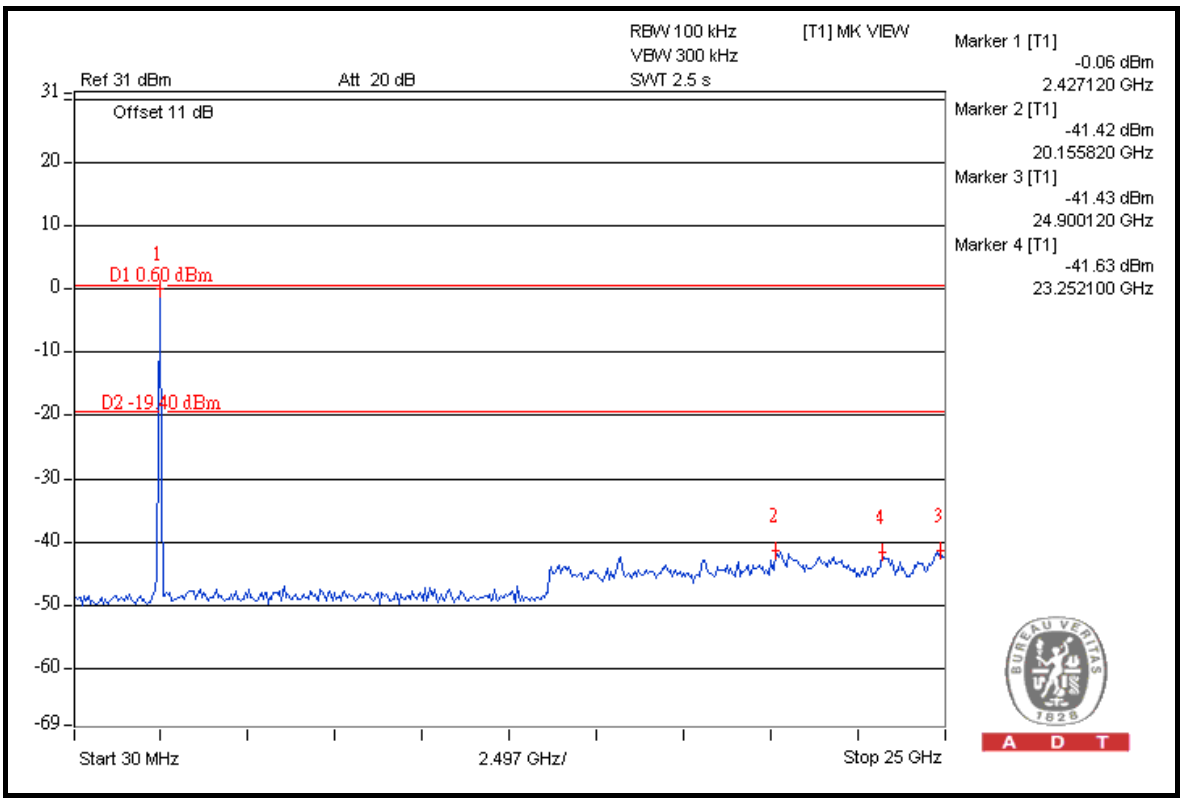

RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -2.56 dBm
D2 -22.56 dBm
Marker 1 [T1]
-2.56 dBm
2.413800 GHz
Marker 2 [T1]
-38.59 dBm
2.400000 GHz
Marker 3 [T1]
-38.59 dBm
2.400000 GHz
Marker 4 [T1]
-50.06 dBm
2.390000 GHz
Marker 5 [T1]
-50.06 dBm
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 0.53 dBm
D2 -19.47 dBm
Marker 1 [T1]
-0.29 dBm
2.377180 GHz
Marker 2 [T1]
-40.95 dBm
24.850180 GHz
Marker 3 [T1]
-41.27 dBm
21.953660 GHz
Marker 4 [T1]
-41.59 dBm
20.205760 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

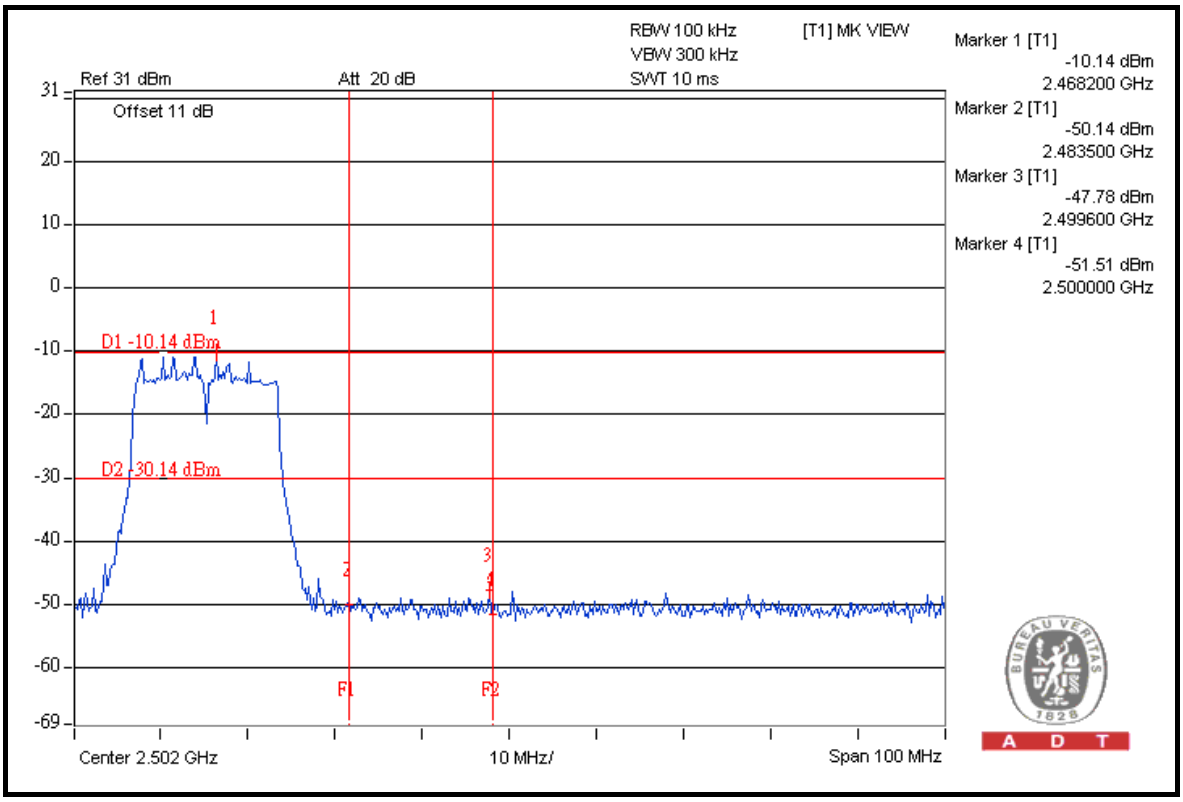
CH 11

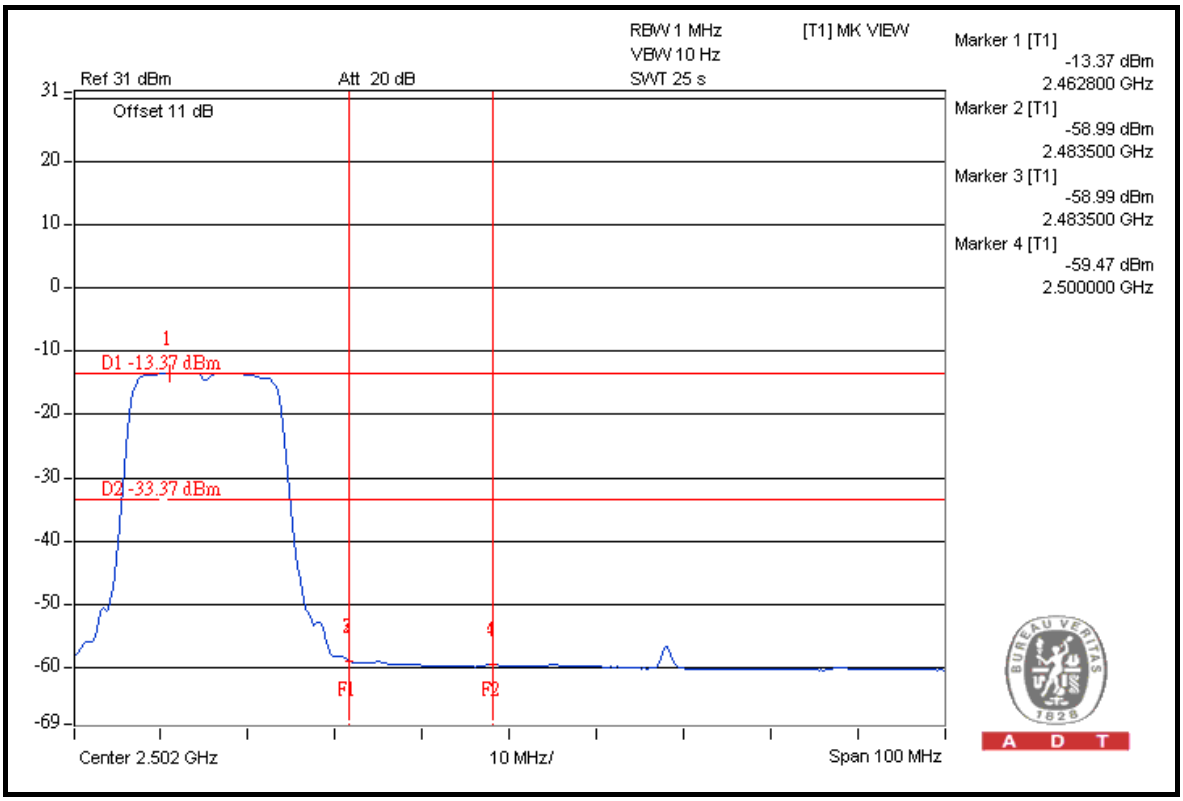

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 0.60 dBm
D2 -19.40 dBm
Marker 1 [T1]
0.60 dBm
2.463200 GHz
Marker 2 [T1]
-46.11 dBm
2.483500 GHz
Marker 3 [T1]
-44.17 dBm
2.483800 GHz
Marker 4 [T1]
-50.01 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz

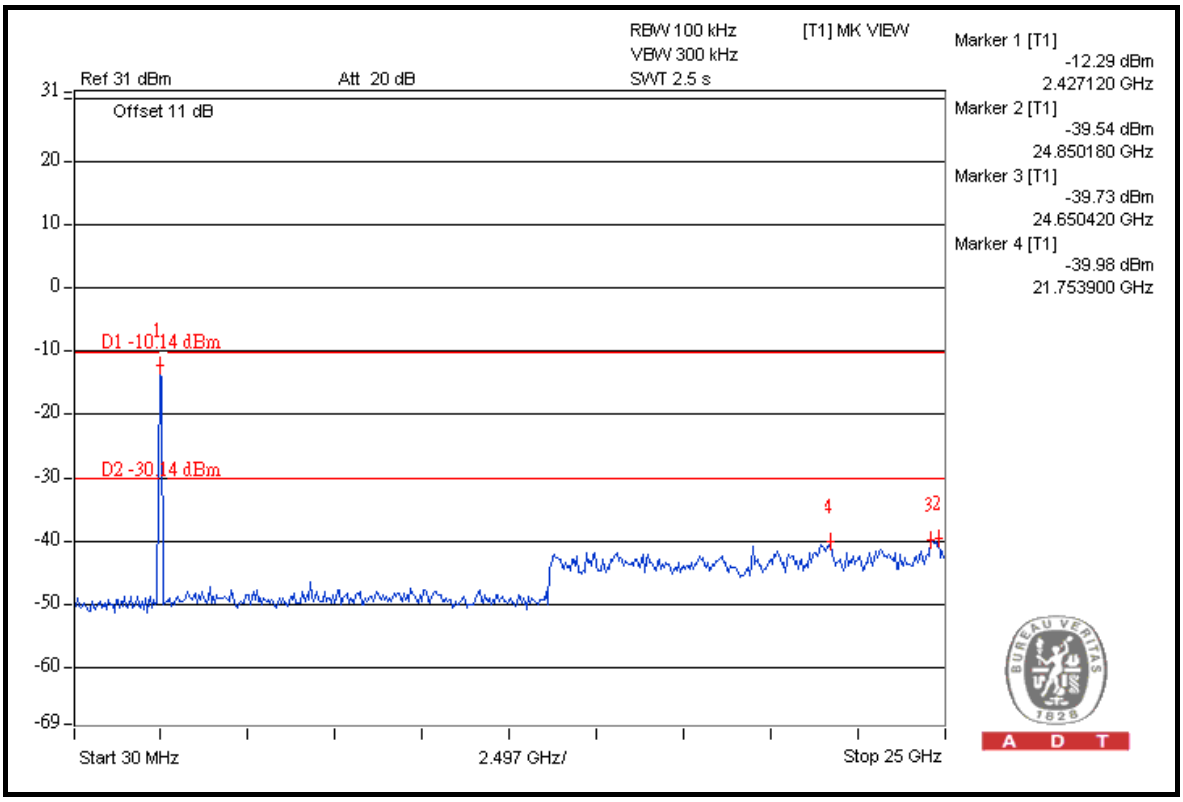

RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-2.50 dBm
2.458400 GHz
Marker 2 [T1]
-50.02 dBm
2.483500 GHz
Marker 3 [T1]
-50.02 dBm
2.483500 GHz
Marker 4 [T1]
-54.55 dBm
2.500000 GHz
D1 -2.50 dBm
D2 -22.50 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-0.06 dBm
2.427120 GHz
Marker 2 [T1]
-41.42 dBm
20.155820 GHz
Marker 3 [T1]
-41.43 dBm
24.900120 GHz
Marker 4 [T1]
-41.63 dBm
23.252100 GHz
D1 0.60 dBm
D2 -19.40 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

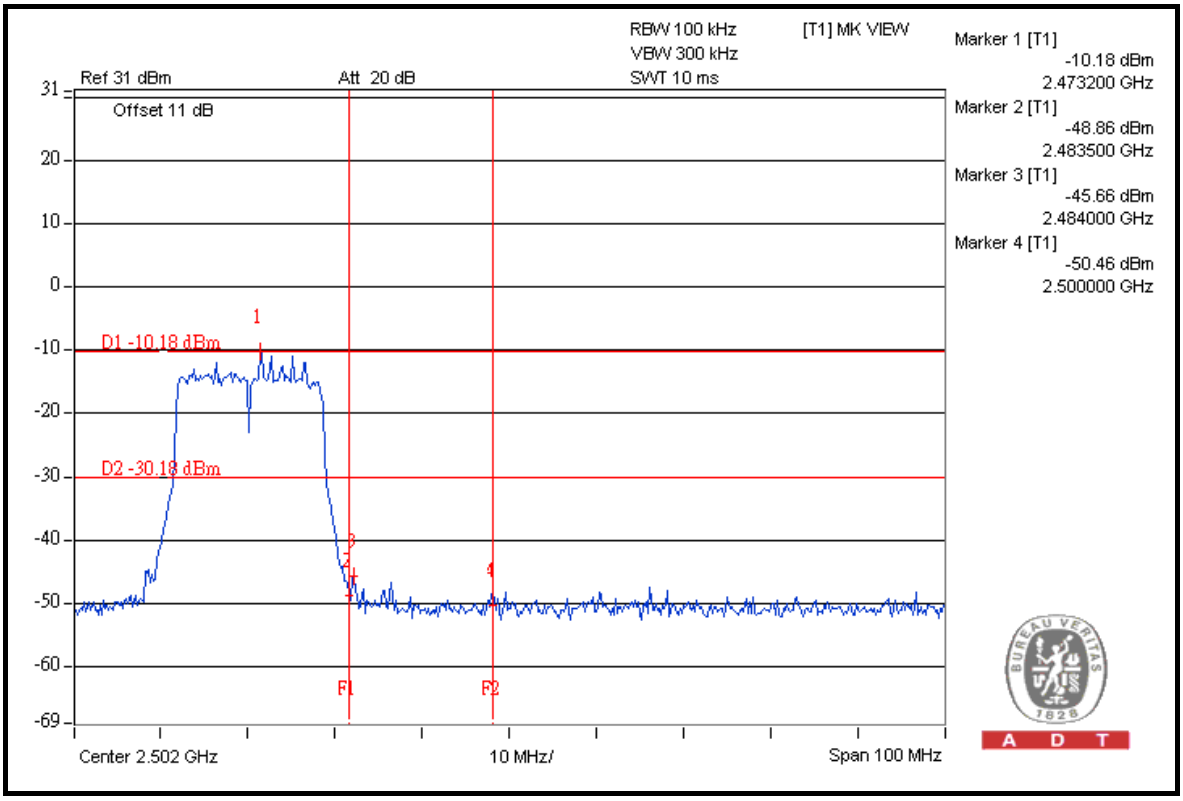
CH 12

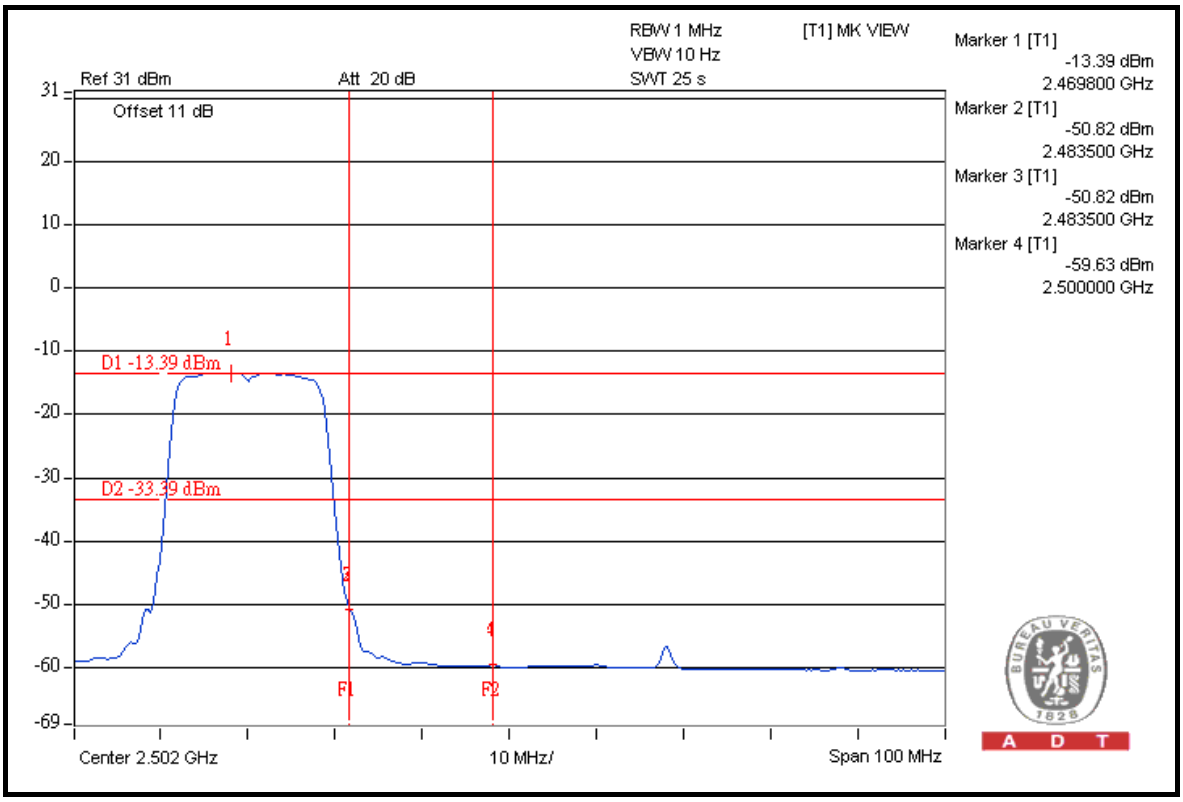

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -10.14 dBm
D2 -30.14 dBm
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
-10.14 dBm
2.468200 GHz
Marker 2 [T1]
-50.14 dBm
2.483500 GHz
Marker 3 [T1]
-47.78 dBm
2.499600 GHz
Marker 4 [T1]
-51.51 dBm
2.500000 GHz

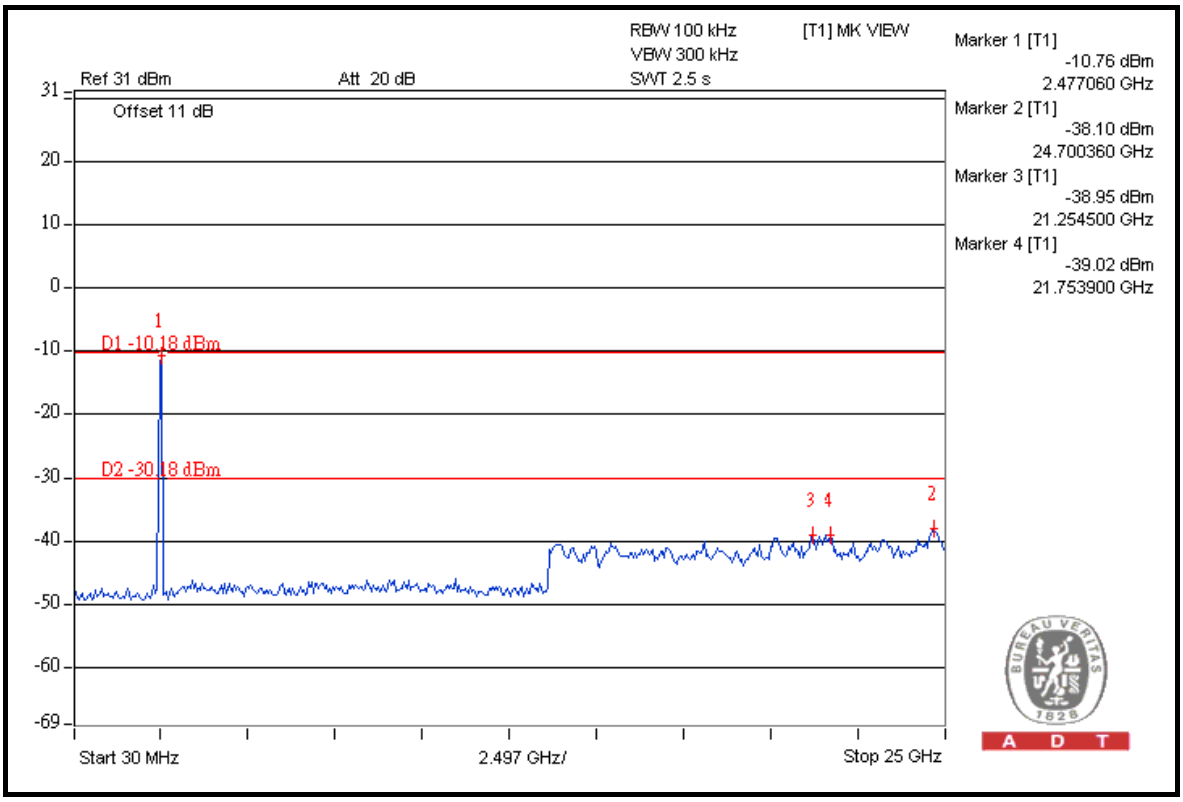

RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
D1 -13.37 dBm
D2 -33.37 dBm
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
-13.37 dBm
2.462800 GHz
Marker 2 [T1]
-58.99 dBm
2.483500 GHz
Marker 3 [T1]
-58.99 dBm
2.483500 GHz
Marker 4 [T1]
-59.47 dBm
2.500000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-12.29 dBm
2.427120 GHz
Marker 2 [T1]
-39.54 dBm
24.850180 GHz
Marker 3 [T1]
-39.73 dBm
24.650420 GHz
Marker 4 [T1]
-39.98 dBm
21.753900 GHz
D1 -10.14 dBm
D2 -30.14 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH 13


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-10.18 dBm
2.473200 GHz
Marker 2 [T1]
-48.86 dBm
2.483500 GHz
Marker 3 [T1]
-45.66 dBm
2.484000 GHz
Marker 4 [T1]
-50.46 dBm
2.500000 GHz
D1 -10.18 dBm
D2 -30.18 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-13.39 dBm
2.469800 GHz
Marker 2 [T1]
-50.82 dBm
2.483500 GHz
Marker 3 [T1]
-50.82 dBm
2.483500 GHz
Marker 4 [T1]
-59.63 dBm
2.500000 GHz
D1 -13.39 dBm
D2 -33.39 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 31 dBm
Att 20 dB
Offset 11 dB
Marker 1 [T1]
-10.76 dBm
2.477060 GHz
Marker 2 [T1]
-38.10 dBm
24.700360 GHz
Marker 3 [T1]
-38.95 dBm
21.254500 GHz
Marker 4 [T1]
-39.02 dBm
21.753900 GHz
D1 -10.18 dBm
D2 -30.18 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

5. TEST TYPES AND RESULTS (FOR 5.0GHz)

5.1 RADIATED EMISSION MEASUREMENT

5.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Aug. 04, 2010	Aug. 03, 2011
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 09, 2010	Jul. 08, 2011
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 30, 2010	Apr. 29, 2011
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Aug. 02, 2010	Aug. 01, 2011
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 27, 2010	Dec. 26, 2011
Preamplifier Agilent	8449B	3008A01910	Sep. 09, 2010	Sep. 08, 2011
Preamplifier Agilent	8447D	2944A10638	Nov. 03, 2010	Nov. 02, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 14, 2010	May 13, 2011
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 20, 2010	Aug. 19, 2011
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Aug. 25, 2010	Aug. 24, 2011

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Chamber 9.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 460141.

5. The IC Site Registration No. is IC 7450F-4.

5.1.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. 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 from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

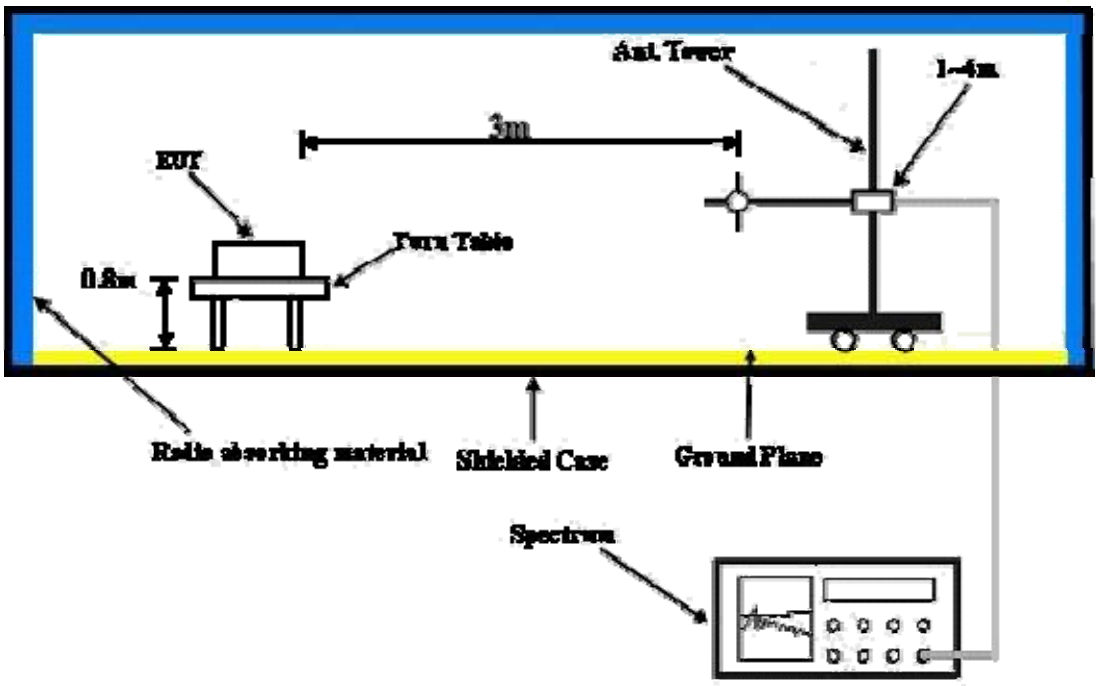
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation.

5.1.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

5.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA:
802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	54.7 PK	71.1	-16.4	1.00 H	354	16.40	38.30
2	#5725.00	42.4 AV	62.3	-19.9	1.00 H	354	4.10	38.30
3	*5745.00	91.1 PK			1.00 H	354	52.70	38.40
4	*5745.00	82.3 AV			1.00 H	354	43.90	38.40
5	11490.00	56.0 PK	74.0	-18.0	1.00 H	288	6.30	49.70
6	11490.00	42.6 AV	54.0	-11.4	1.00 H	288	-7.10	49.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	62.2 PK	78.7	-16.5	1.00 V	218	23.90	38.30
2	#5725.00	45.7 AV	69.9	-24.2	1.00 V	218	7.40	38.30
3	*5745.00	98.7 PK			1.00 V	218	60.30	38.40
4	*5745.00	89.9 AV			1.00 V	218	51.50	38.40
5	11490.00	55.4 PK	74.0	-18.6	1.00 V	189	5.70	49.70
6	11490.00	42.3 AV	54.0	-11.7	1.00 V	189	-7.40	49.70

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	91.1 PK			1.00 H	356	52.60	38.50
2	*5785.00	81.4 AV			1.00 H	356	42.90	38.50
3	11570.00	56.2 PK	74.0	-17.8	1.00 H	201	6.70	49.50
4	11570.00	41.9 AV	54.0	-12.1	1.00 H	201	-7.60	49.50
5	#17355.00	64.2 PK	71.1	-6.9	1.00 H	304	10.60	53.60
6	#17355.00	50.2 AV	61.4	-11.2	1.00 H	304	-3.40	53.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	98.7 PK			1.00 V	235	60.20	38.50
2	*5785.00	89.0 AV			1.00 V	235	50.50	38.50
3	11570.00	55.6 PK	74.0	-18.4	1.00 V	193	6.10	49.50
4	11570.00	41.5 AV	54.0	-12.5	1.00 V	193	-8.00	49.50
5	#17355.00	63.6 PK	78.7	-15.1	1.00 V	240	10.00	53.60
6	#17355.00	49.4 AV	69.0	-19.6	1.00 V	240	-4.20	53.60

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Frank Wang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	90.8 PK			1.10 H	353	52.20	38.60
2	*5825.00	82.0 AV			1.10 H	353	43.40	38.60
3	#5850.00	52.4 PK	70.8	-18.4	1.10 H	353	13.70	38.70
4	#5850.00	40.3 AV	62.0	-21.7	1.10 H	353	1.60	38.70
5	11650.00	56.0 PK	74.0	-18.0	1.00 H	189	6.60	49.40
6	11650.00	41.7 AV	54.0	-12.3	1.00 H	189	-7.70	49.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	98.4 PK			1.00 V	206	59.80	38.60
2	*5825.00	88.6 AV			1.00 V	206	50.00	38.60
3	#5850.00	53.1 PK	78.4	-25.3	1.00 V	206	14.40	38.70
4	#5850.00	41.0 AV	68.6	-27.6	1.00 V	206	2.30	38.70
5	11650.00	55.4 PK	74.0	-18.6	1.00 V	188	6.00	49.40
6	11650.00	41.3 AV	54.0	-12.7	1.00 V	188	-8.10	49.40

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

BELOW 1GHz WORST-CASE DATA：802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH 1006 hPa	TESTED BY	Sun Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	156.28	30.7 QP	43.5	-12.8	1.25 H	40	16.90	13.80
2	232.11	35.8 QP	46.0	-10.2	1.25 H	34	23.70	12.10
3	300.16	35.3 QP	46.0	-10.7	1.25 H	148	21.60	13.70
4	525.69	30.0 QP	46.0	-16.0	1.25 H	37	9.90	20.10
5	700.68	37.9 QP	46.0	-8.1	1.50 H	250	15.10	22.80
6	998.16	40.8 QP	54.0	-13.2	2.00 H	328	14.00	26.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**39.62**	**33.5 QP**	**40.0**	**-6.5**	**1.25 V**	**82**	**21.00**	**12.50**
2	61.01	33.2 QP	40.0	-6.8	1.50 V	235	19.90	13.30
3	156.28	32.1 QP	43.5	-11.4	1.00 V	94	18.30	13.80
4	300.16	33.8 QP	46.0	-12.2	1.75 V	49	20.10	13.70
5	700.68	34.8 QP	46.0	-11.2	1.50 V	10	12.00	22.80
6	998.16	41.2 QP	54.0	-12.8	1.25 V	91	14.40	26.80

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

5.2 CONDUCTED EMISSION MEASUREMENT

5.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.2.2 T EST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 23, 2010	Nov. 22, 2011
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 30, 2010	Dec. 29, 2011
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 06, 2011	Jan. 05, 2012
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jul. 08, 2010	Jul. 07, 2011
V-LISN SCHWARZBECK	NNBL 8226-2	8226-142	Jul. 12, 2010	Jul. 11, 2011
LISN ROHDE & SCHWARZ	ENV216	100072	Jun. 11, 2010	Jun. 10, 2011
Software ADT	ADT_Cond_ V7.3.7	NA	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

5.2.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

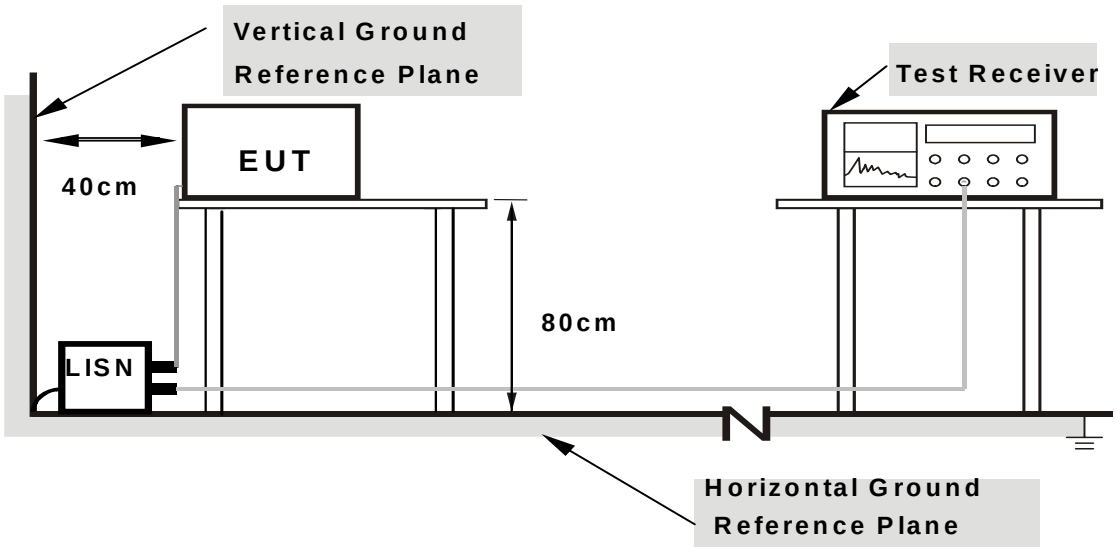
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation.

5.2.5 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

For the actual test configuration, please refer to the attached file (Test Setup Photo).

5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

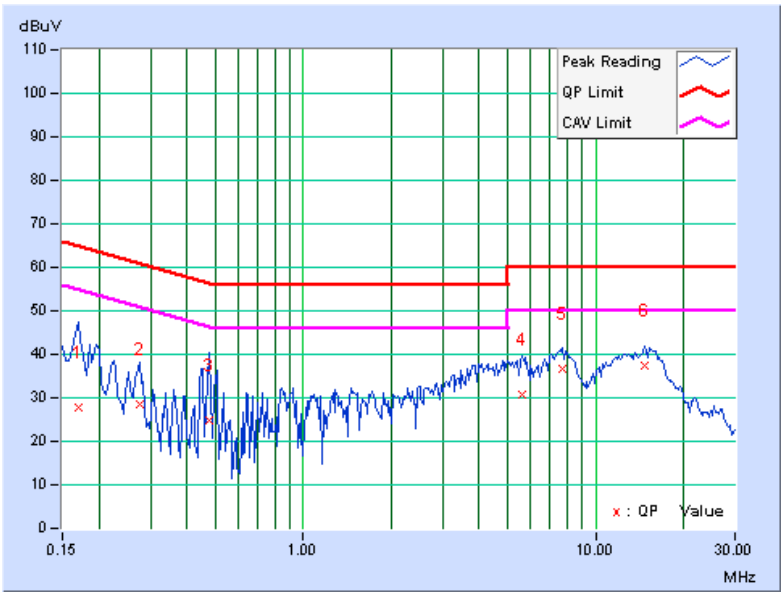
5.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.15	27.63	-	27.78	-	64.98	54.98	-37.21	-
2	0.275	0.16	28.42	-	28.58	-	60.97	50.97	-32.39	-
3	0.474	0.17	24.53	-	24.70	-	56.44	46.44	-31.74	-
4	5.613	0.38	30.26	-	30.64	-	60.00	50.00	-29.36	-
5	7.688	0.47	36.30	-	36.77	-	60.00	50.00	-23.23	-
6	14.785	0.86	36.46	-	37.32	-	60.00	50.00	-22.68	-

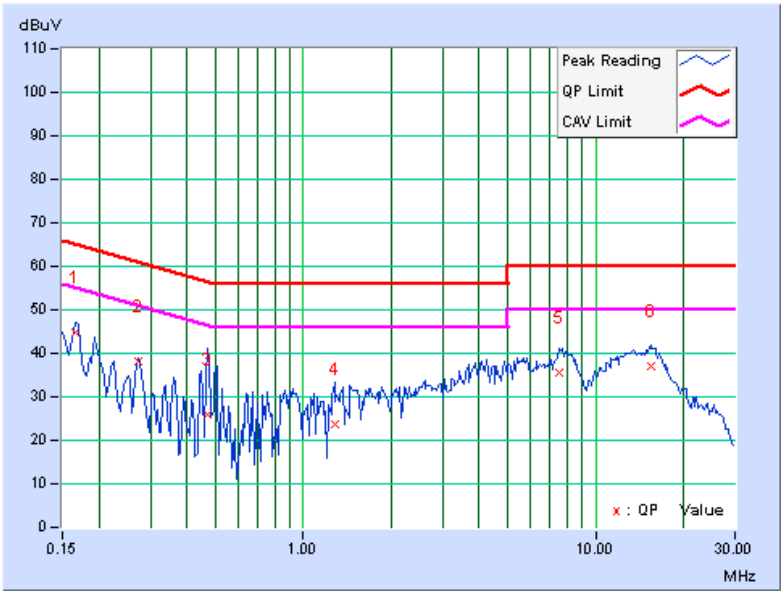
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



PHASE	Line 2	6dB BANDWIDTH	9kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.16	44.72	-	44.88	-	65.18	55.18	-20.30	-
2	0.271	0.18	37.84	-	38.02	-	61.08	51.08	-23.07	-
3	0.470	0.19	25.73	-	25.92	-	56.51	46.51	-30.59	-
4	1.277	0.22	23.38	-	23.60	-	56.00	46.00	-32.40	-
5	7.516	0.43	35.06	-	35.49	-	60.00	50.00	-24.51	-
6	15.438	0.75	36.40	-	37.15	-	60.00	50.00	-22.85	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100039	Jan. 11, 2011	Jan. 10, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

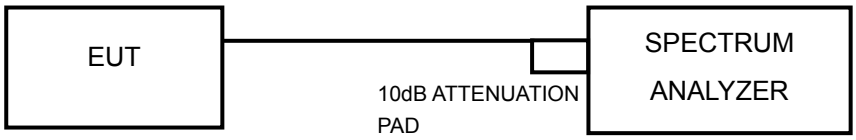
5.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation.

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

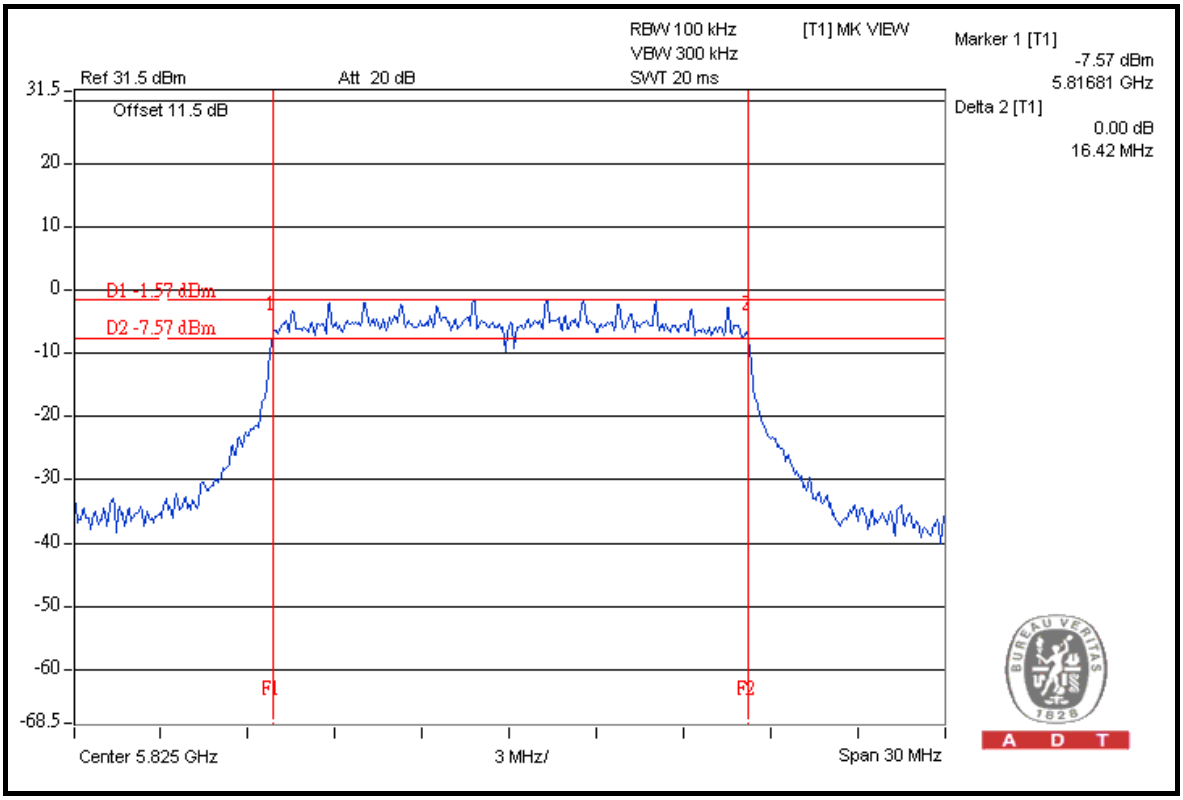
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

5.3.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.41	0.5	PASS
157	5785	16.41	0.5	PASS
165	5825	16.42	0.5	PASS

CH 165



5.4 MAXIMUM OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT

The Maximum Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
High Speed Peak Power Meter	ML2495A	0842014	Apr. 21, 2010	Apr. 20, 2011
Power Sensor	MA2411B	0738404	Apr. 21, 2010	Apr. 20, 2011

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Measurement Bandwidth of ML2495A is 65MHz greater than 6dB bandwidth of emission.

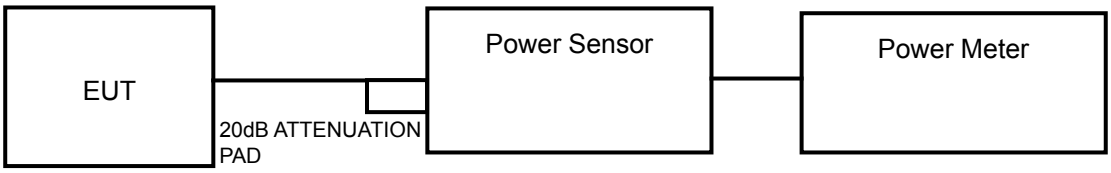
5.4.3 TEST PROCEDURES

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation.

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.3.6.

5.4.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	POWER OUTPUT (mW)	POWER OUTPUT (dBm)	POWER LIMIT (dBm)	PASS / FAIL
149	5745	109.6	20.4	30	PASS
157	5785	114.8	20.6	30	PASS
165	5825	114.8	20.6	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100039	Jan. 11, 2011	Jan. 10, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

5.5.3 TEST PROCEDURE

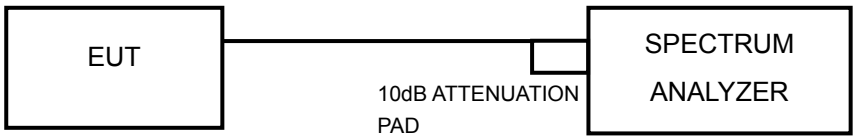
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation.

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

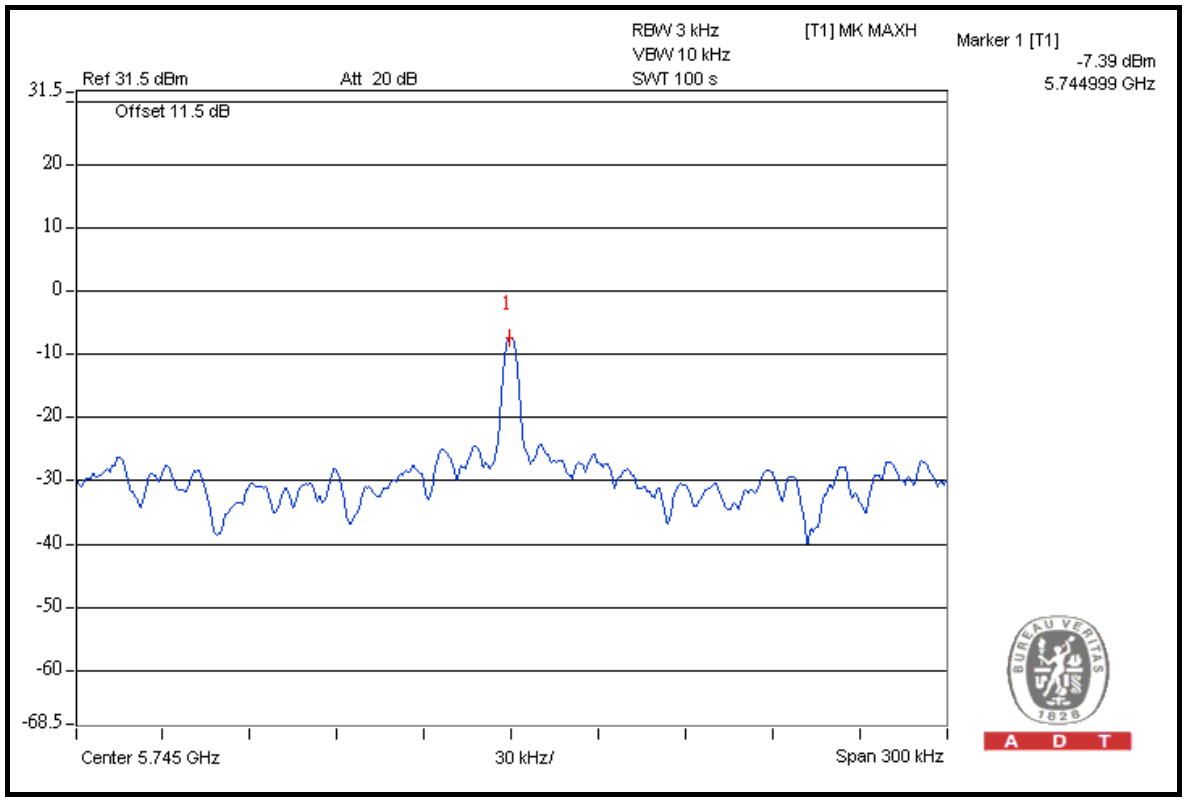
Same as Item 5.3.6.

5.5.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
149	5745	-7.4	8	PASS
157	5785	-8.0	8	PASS
165	5825	-8.1	8	PASS

CH 149



5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100039	Jan. 11, 2011	Jan. 10, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

5.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation.

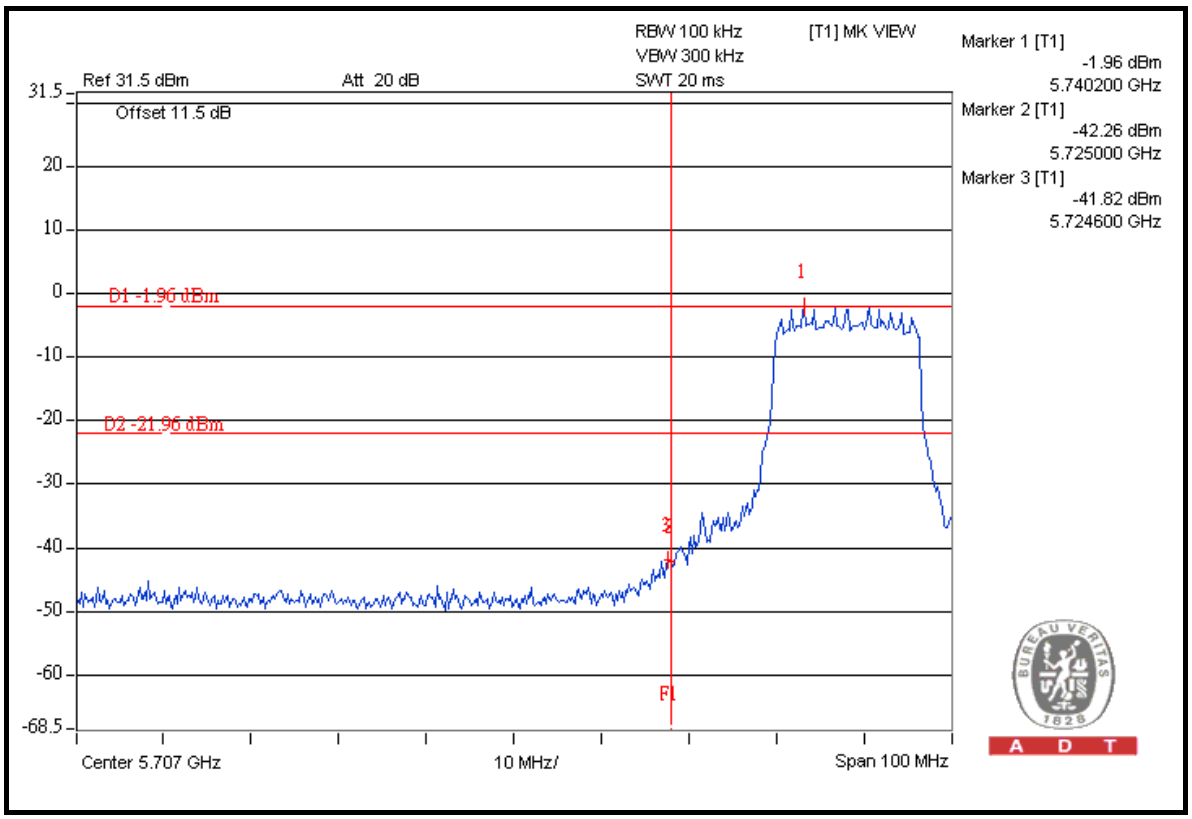
5.6.5 EUT OPERATING CONDITION

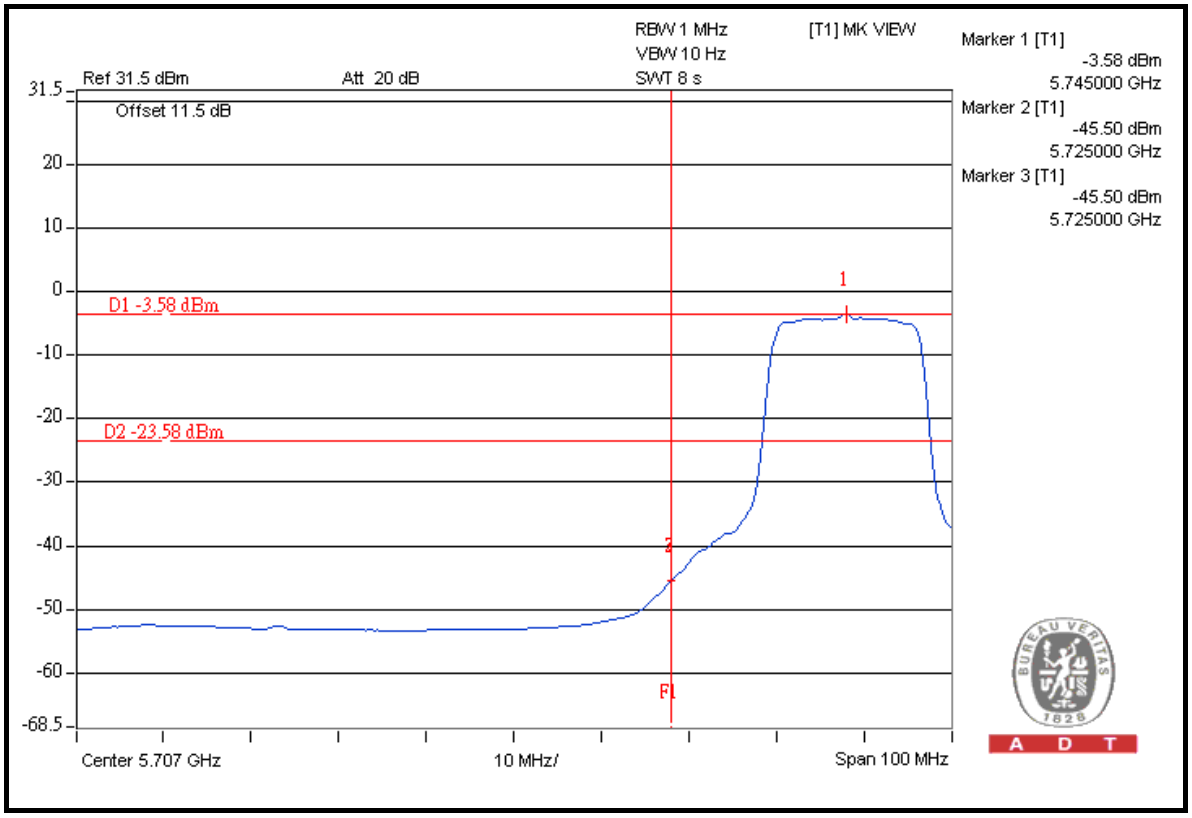
Same as Item 5.3.6.

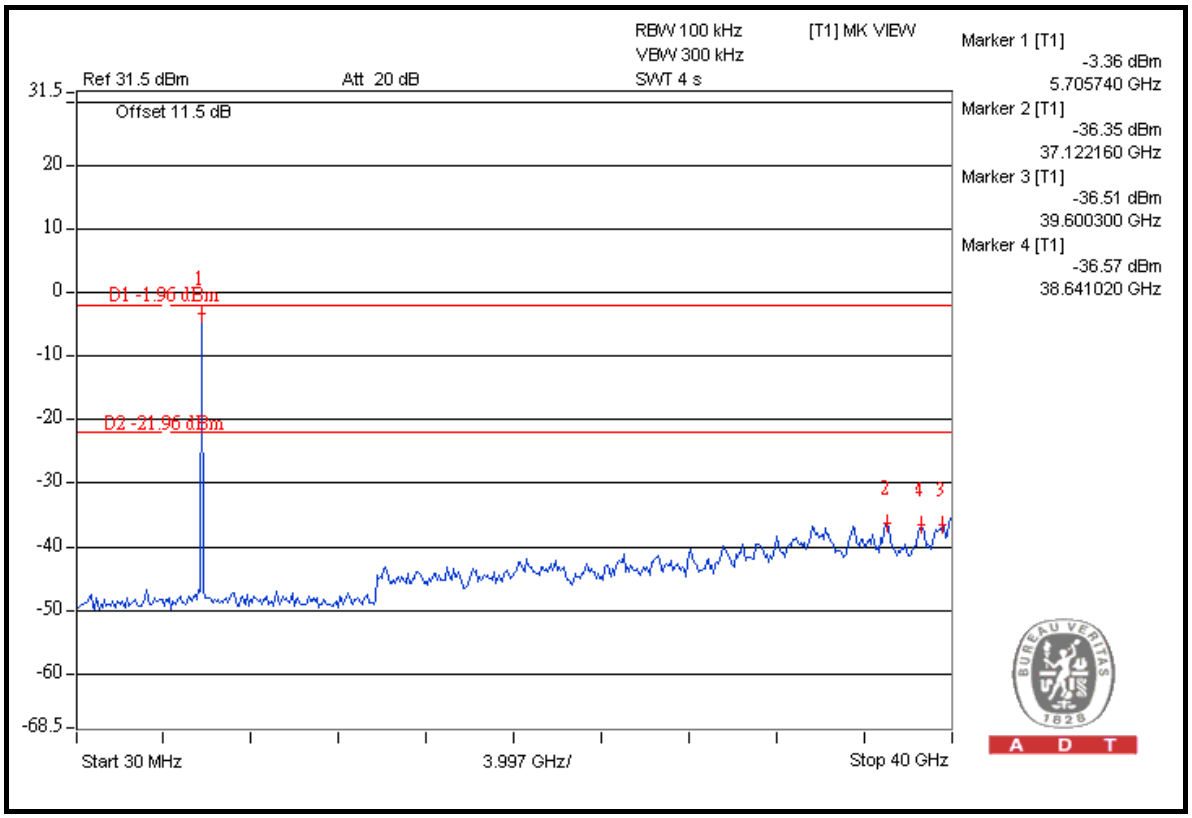
5.6.6 TEST RESULTS

The spectrum plots are attached on the following pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

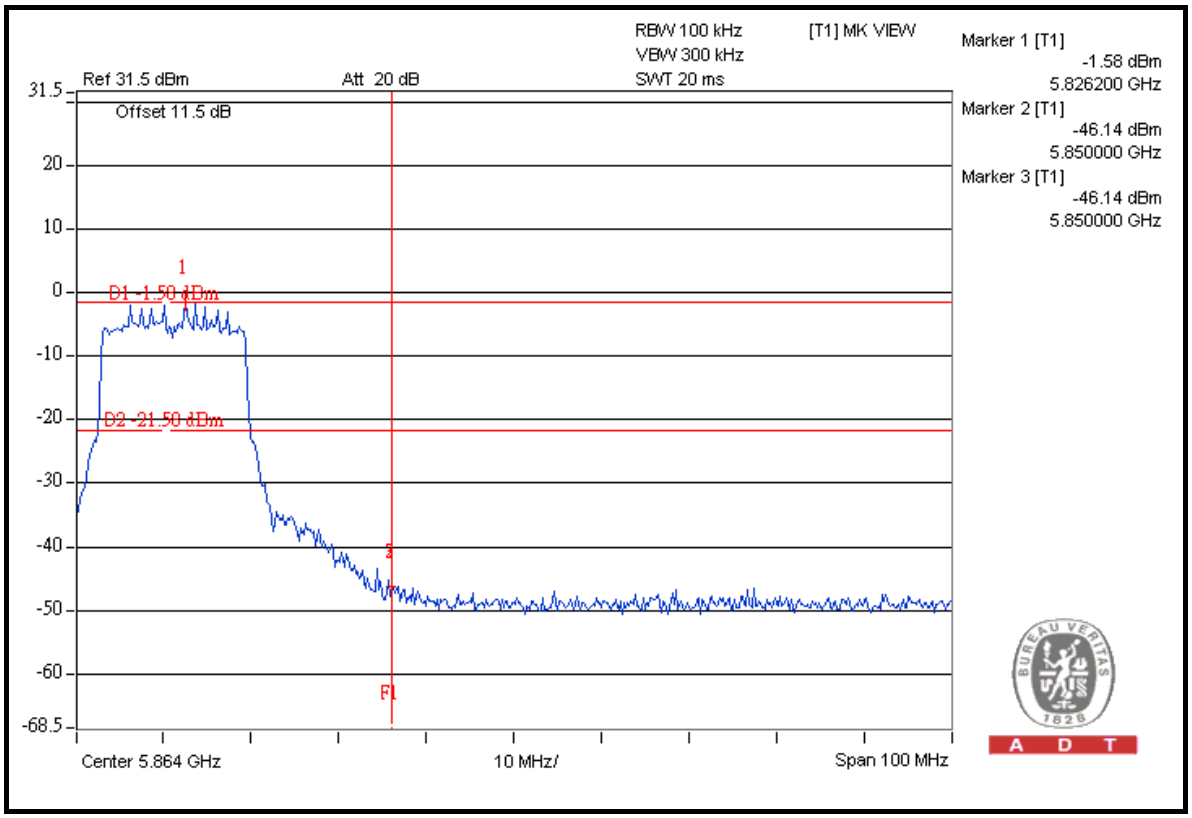
802.11a
Channel 149

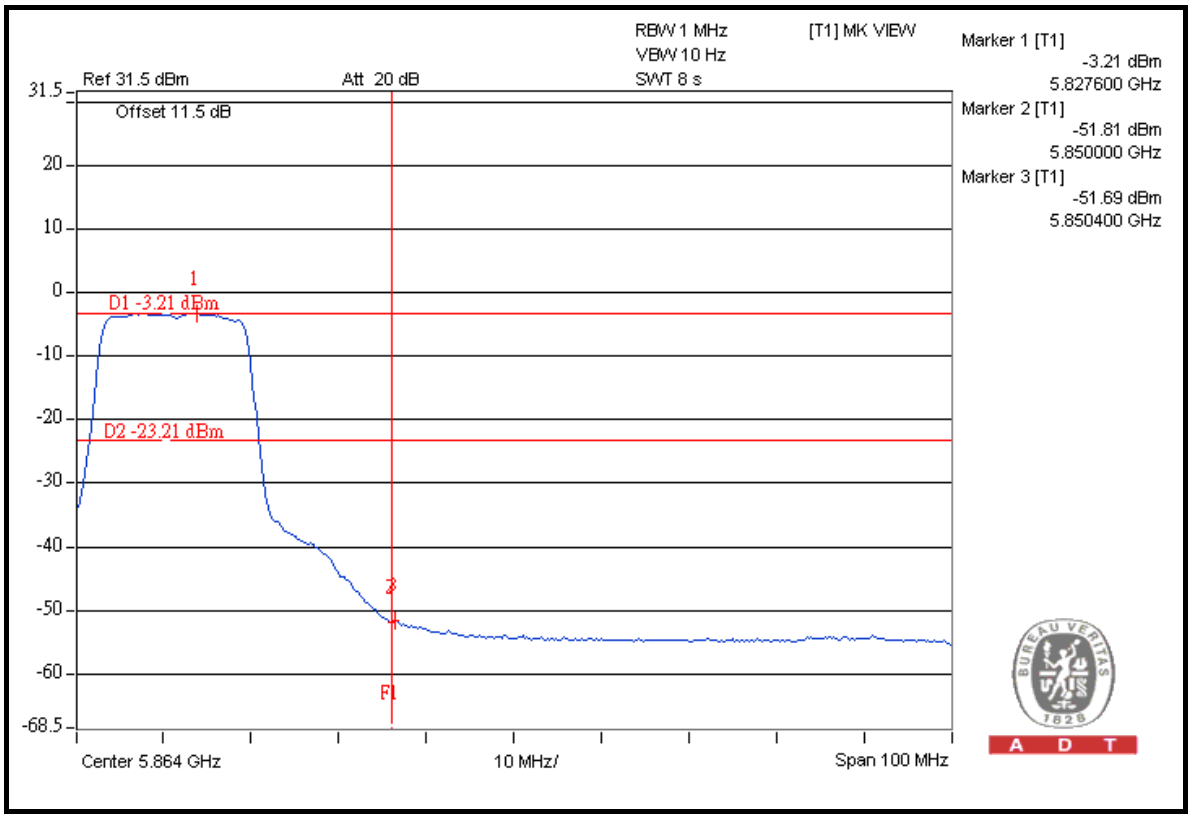


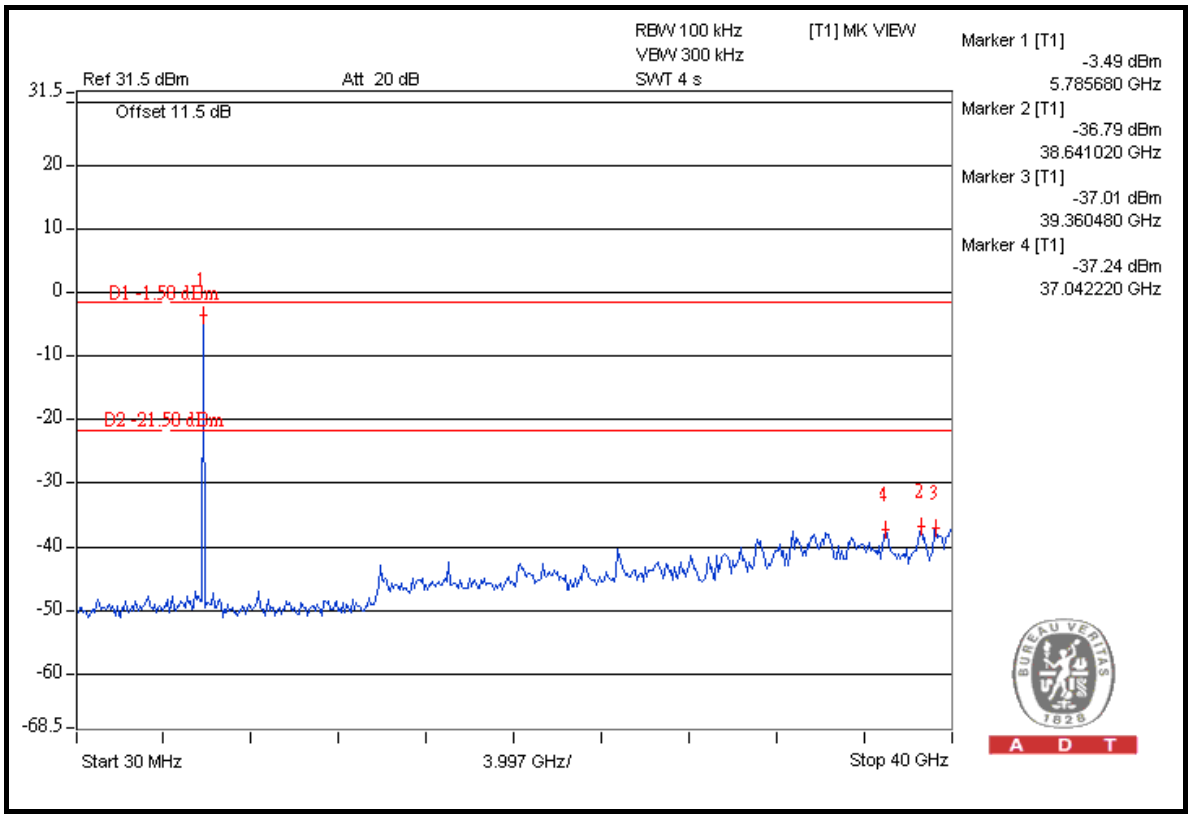



RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Ref 31.5 dBm
Att 20 dB
Offset 11.5 dB
D1 -1.96 dBm
D2 -21.96 dBm
Marker 1 [T1]
-3.36 dBm
5.705740 GHz
Marker 2 [T1]
-36.35 dBm
37.122160 GHz
Marker 3 [T1]
-36.51 dBm
39.600300 GHz
Marker 4 [T1]
-36.57 dBm
38.641020 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

Channel 165


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 31.5 dBm
Att 20 dB
Offset 11.5 dB
D1 -1.50 dBm
D2 -21.50 dBm
Marker 1 [T1]
-1.58 dBm
5.826200 GHz
Marker 2 [T1]
-46.14 dBm
5.850000 GHz
Marker 3 [T1]
-46.14 dBm
5.850000 GHz
Center 5.864 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Marker 1 [T1]
-3.21 dBm
5.827600 GHz
Marker 2 [T1]
-51.81 dBm
5.850000 GHz
Marker 3 [T1]
-51.69 dBm
5.850400 GHz
Ref 31.5 dBm
Att 20 dB
Offset 11.5 dB
31.5
20
10
0
-10
-20
-30
-40
-50
-60
-68.5
D1 -3.21 dBm
D2 -23.21 dBm
Center 5.864 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 4 s
[T1] MK VIEW
Marker 1 [T1]
-3.49 dBm
5.785680 GHz
Marker 2 [T1]
-36.79 dBm
38.641020 GHz
Marker 3 [T1]
-37.01 dBm
39.360480 GHz
Marker 4 [T1]
-37.24 dBm
37.042220 GHz
Ref 31.5 dBm
Att 20 dB
Offset 11.5 dB
31.5
20
10
0
-10
-20
-30
-40
-50
-60
-68.5
D1 -1.50 dBm
D2 -21.50 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

7. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

8. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

--- END ---