FCC TEST REPORT

REPORT NO.: RF980630A05

MODEL NO.: W8A5

RECEIVED: July 1, 2009

TESTED: July 13 ~ 15, 2009

ISSUED: July 20, 2009

APPLICANT: AVerMedia INFORMATION, Inc

ADDRESS: 5F, 135,Jian Yi Rd., Chung Ho City, Taipei Hsien, Taiwan

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

LAB LOCATION: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien, 244 Taiwan

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1. CERTIFICATION

PRODUCT:	AVerPen Cradle
BRAND NAME:	AVerMedia
MODEL NO.:	W8A5
APPLICANT:	AVerMedia INFORMATION, Inc
TESTED:	July 13 ~ 15, 2009
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.4-2003

The above equipment 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 : Celia Chen , **DATE:** July 20, 2009
(Celia Chen / Senior Specialist)

TECHNICAL ACCEPTANCE : Jamison Chan , **DATE:** July 20, 2009
Responsible for RF
(Jamison Chan / Supervisor)

APPROVED BY : Ken Liu , **DATE:** July 20, 2009
(Ken Liu / Assistant Manager)

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	Minimum passing margin is –21.25dB at 0.158MHz
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 –4.43dB at 70.82MHz
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.

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:

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

Measurement	Frequency	Uncertainty
Conducted emissions	150kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 1GHz	3.72 dB
	1GHz ~ 40GHz	2.89 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	AVerPen Cradle
MODEL NO.	W8A5
FCC ID	XKIPPDDPEN09-2
POWER SUPPLY	5Vdc from host equipment
MODULATION TYPE	GFSK
OUTPUT POWER	1.005mW
OPERATING FREQUENCY	2404MHz ~ 2478MHz
NUMBER OF CHANNEL	75
ANTENNA TYPE	Printed antenna with -3.23dBi gain
DATA CABLE	Shielded USB cable (1.0m)
I/O PORTS	USB port
ASSOCIATED DEVICES	N/A

NOTE:

1. The EUT is an AVerPen Cradle, which is a transceiver.

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

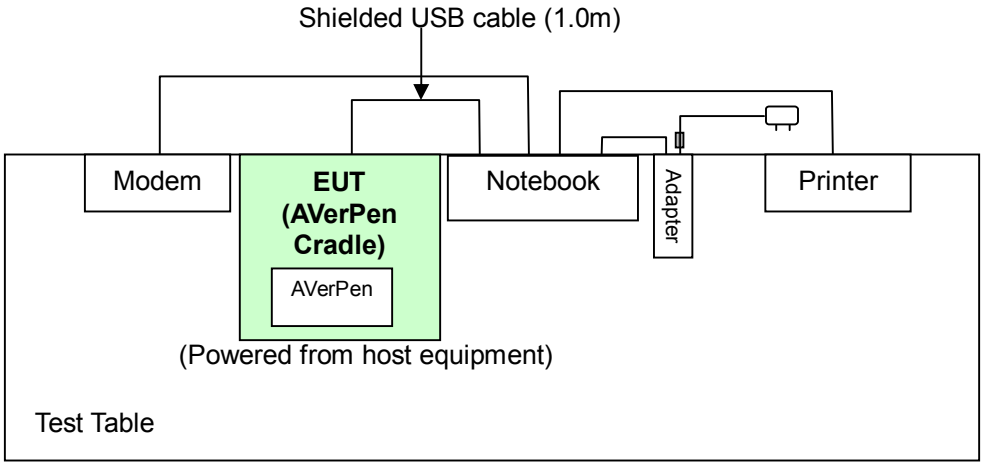
3.2 DESCRIPTION OF TEST MODES

75 channels are provided to this EUT:

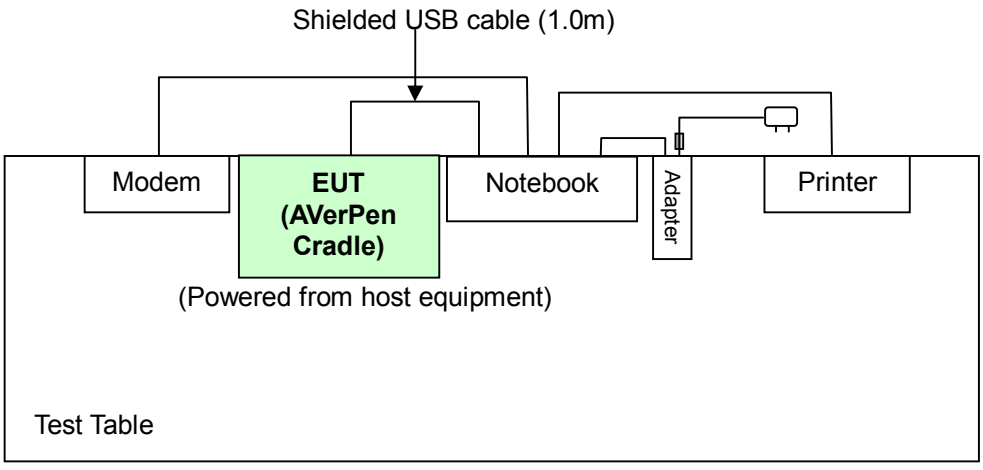
CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2404	20	2424	40	2444	60	2464
1	2405	21	2425	41	2445	61	2465
2	2406	22	2426	42	2446	62	2466
3	2407	23	2427	43	2447	63	2467
4	2408	24	2428	44	2448	64	2468
5	2409	25	2429	45	2449	65	2469
6	2410	26	2430	46	2450	66	2470
7	2411	27	2431	47	2451	67	2471
8	2412	28	2432	48	2452	68	2472
9	2413	29	2433	49	2453	69	2473
10	2414	30	2434	50	2454	70	2474
11	2415	31	2435	51	2455	71	2475
12	2416	32	2436	52	2456	72	2476
13	2417	33	2437	53	2457	73	2477
14	2418	34	2438	54	2458	74	2478
15	2419	35	2439	55	2459		
16	2420	36	2440	56	2460		
17	2421	37	2441	57	2461		
18	2422	38	2442	58	2462		
19	2423	39	2443	59	2463		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

FOR MODE A:



FOR MODE B:



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
A	√	√	√	√	For AVerPen Cradle + AVerPen
B	√	-	-	-	For AVerPen Cradle

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

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
A	0 to 74	0	GFSK
B	0 to 74	0	GFSK

RADIATED EMISSION TEST (BELOW 1 GHz):

☒ 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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
A	0 to 74	0	GFSK

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ 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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
A	0 to 74	0, 38, 74	GFSK

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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
A	0 to 74	0, 74	GFSK

ANTENNA PORT CONDUCTED 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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
A	0 to 74	0, 38, 74	GFSK

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

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

NOTE: The product 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 COMPUTER	DELL	PP05L	20375526736	FCC DoC Approved
2	PRINTER	EPSON	LQ-300+	DCGY017054	FCC DoC Approved
3	MODEM	ACEEX	1414	980020520	IFAXDM1414
4	AVerPen	AVerMedia	W6A5	N/A	XKIPPDPEN09-1

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	1.8m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core
3	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.
4	N/A

NOTE: (1) All power cords of the above support units are non-shielded (1.8m).

(2) The support unit 4 was provided by client.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Mar. 05, 2009	Mar. 04, 2010
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100218	Nov. 26, 2008	Nov. 25, 2009
LISN With Adapter (for EUT)	AD10	C10Ada-001	Nov. 26, 2008	Nov. 25, 2009
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100219	Nov. 20, 2008	Nov. 19, 2009
Software	ADT_Cond_V7.3.7	NA	NA	NA
Software	ADT_ISN_V7.3.7	NA	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	Feb. 26, 2009	Feb. 25, 2010
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 27, 2009	Feb. 26, 2010

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 Shielded Room No. 10.
3. The VCCI Site Registration No. C-1852.

4.1.3 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.

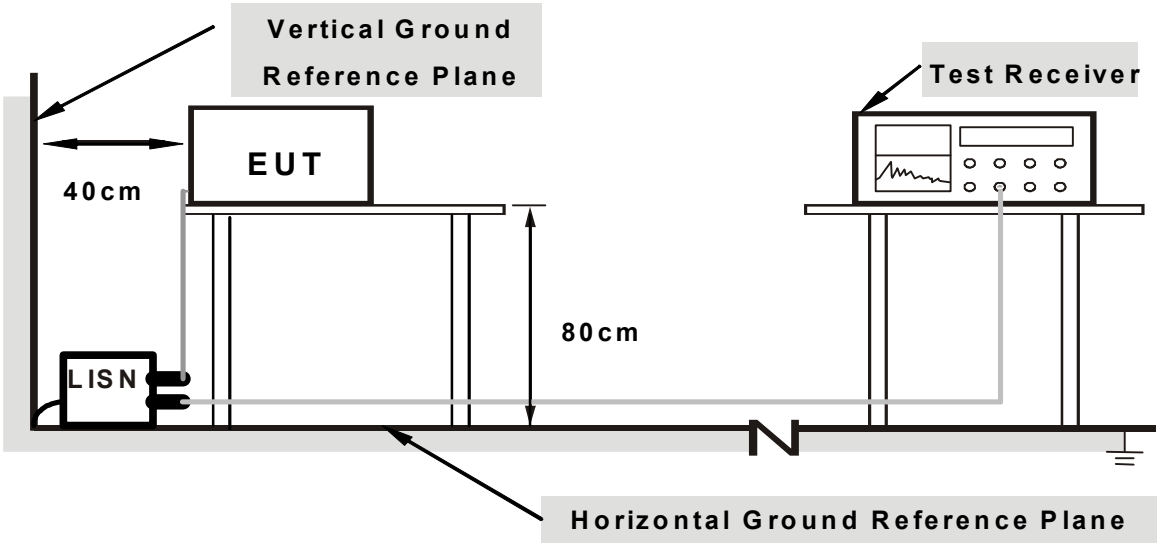
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 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 related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

a. Connected the EUT to a notebook placed on a testing table.
b. The notebook ran a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The notebook ran a test program (provided by manufacturer) to enable EUT and AVerPen under transmission/receiving condition continuously at specific channel frequency. **(For Mode B only)**
d. The notebook sent messages to printer and the printer printed them out
e. The notebook sent messages to modem.
f. Repeated c ~ f.

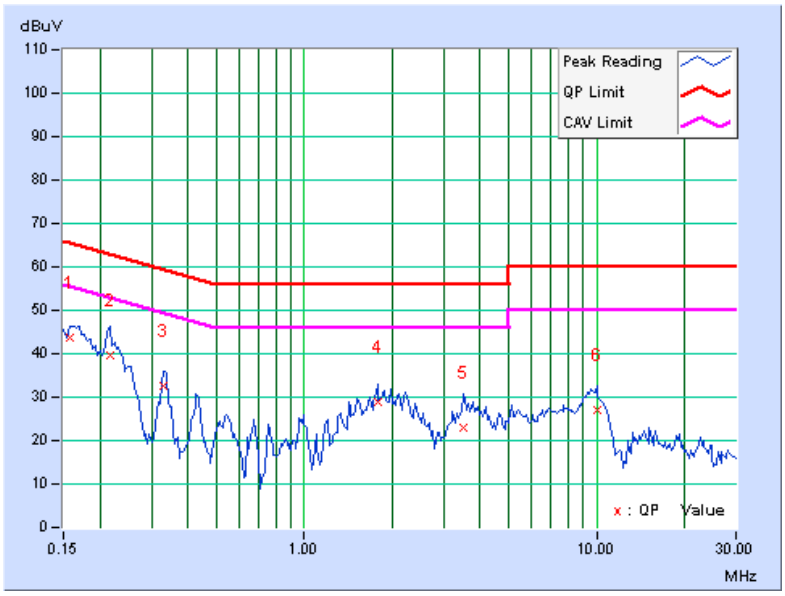
4.1.7 TEST RESULTS

CONDUCTED DATA

TEST MODE	A		
CHANNEL	Channel 0	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line 1
ENVIRONMENTAL CONDITIONS	23deg. C, 67% RH, 1007hPa	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.12	43.46	-	43.58	-	65.58	55.58	-22.00	-
2	0.216	0.13	39.37	-	39.50	-	62.96	52.96	-23.46	-
3	0.330	0.18	32.58	-	32.76	-	59.46	49.46	-26.69	-
4	1.785	0.27	28.44	-	28.71	-	56.00	46.00	-27.29	-
5	3.488	0.34	22.58	-	22.92	-	56.00	46.00	-33.08	-
6	9.996	0.65	26.44	-	27.09	-	60.00	50.00	-32.91	-

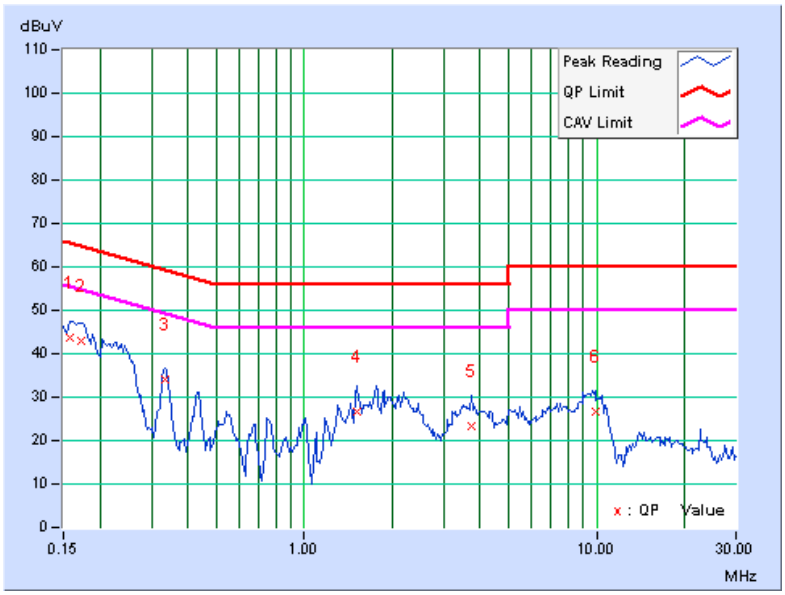
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	A		
CHANNEL	Channel 0	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line 2
ENVIRONMENTAL CONDITIONS	23deg. C, 67% RH, 1007hPa	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.09	43.56	-	43.65	-	65.58	55.58	-21.93	-
2	0.173	0.09	42.73	-	42.82	-	64.79	54.79	-21.97	-
3	0.334	0.16	33.76	-	33.92	-	59.36	49.36	-25.44	-
4	1.519	0.24	26.41	-	26.65	-	56.00	46.00	-29.35	-
5	3.738	0.30	23.15	-	23.45	-	56.00	46.00	-32.55	-
6	9.887	0.52	26.13	-	26.65	-	60.00	50.00	-33.35	-

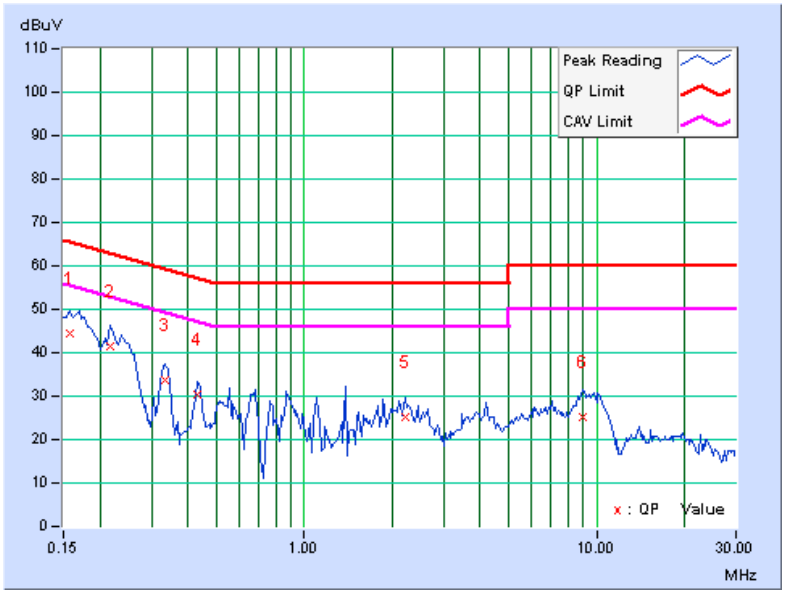
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	B		
CHANNEL	Channel 0	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line 1
ENVIRONMENTAL CONDITIONS	23deg. C, 67% RH, 1007hPa	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.158**	**0.12**	**44.21**	**-**	**44.33**	**-**	**65.58**	**55.58**	**-21.25**	**-**
2	0.216	0.13	41.32	-	41.45	-	62.96	52.96	-21.51	-
3	0.334	0.19	33.60	-	33.79	-	59.36	49.36	-25.57	-
4	0.431	0.22	30.02	-	30.24	-	57.23	47.23	-26.99	-
5	2.223	0.29	24.99	-	25.28	-	56.00	46.00	-30.72	-
6	8.973	0.60	24.50	-	25.10	-	60.00	50.00	-34.90	-

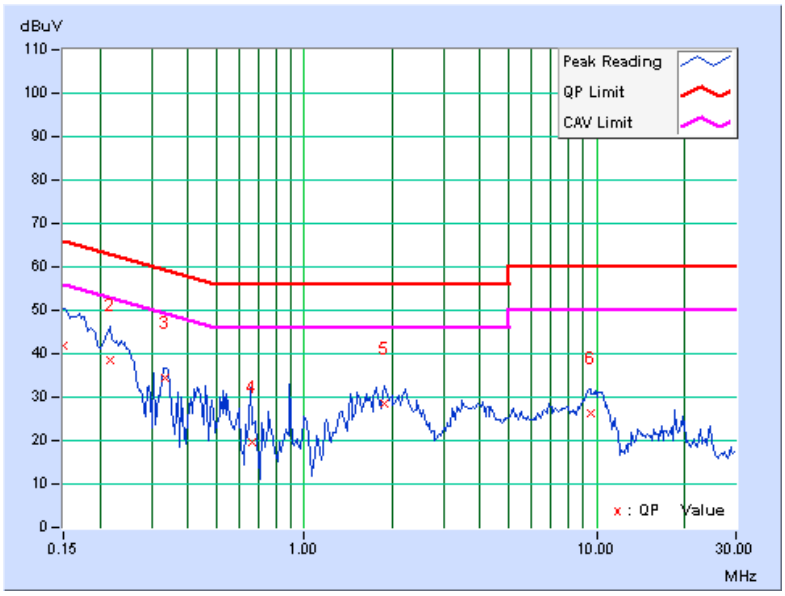
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



TEST MODE	B		
CHANNEL	Channel 0	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line 2
ENVIRONMENTAL CONDITIONS	23deg. C, 67% RH, 1007hPa	**TESTED BY**	Jamison Chan

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.09	41.71	-	41.80	-	66.00	56.00	-24.20	-
2	0.216	0.10	38.43	-	38.53	-	62.96	52.96	-24.43	-
3	0.334	0.16	34.19	-	34.35	-	59.36	49.36	-25.01	-
4	0.665	0.21	19.56	-	19.77	-	56.00	46.00	-36.23	-
5	1.875	0.25	28.32	-	28.57	-	56.00	46.00	-27.43	-
6	9.602	0.51	25.73	-	26.24	-	60.00	50.00	-33.76	-

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.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	May 04, 2009	May 03, 2010
HP Preamplifier	8449B	3008A01924	Sep. 03, 2008	Sep. 02, 2009
HP Preamplifier	8449B	3008A01292	Aug. 06, 2008	Aug. 05, 2009
ROHDE & SCHWARZ TEST RECEIVER	ESI7	836697/012	Dec. 04, 2008	Dec. 03, 2009
Schwarzbeck Antenna	VULB 9168	137	Apr. 29, 2009	Apr. 28, 2010
Schwarzbeck Antenna	VHBA 9123	480	Apr. 21, 2009	Apr. 20, 2010
EMCO Horn Antenna	3115	6714	Oct. 17, 2008	Oct. 16, 2009
EMCO Horn Antenna	3115	9312-4192	Apr. 17, 2009	Apr. 16, 2010
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	ADT_Radiated_V 7.6.15.9.2	NA	NA	NA
SUHNER RF cable	SF104-26.5	CABLE-CH6-17m -01	Aug. 22, 2008	Aug. 21, 2009
ROHDE & SCHWARZ Spectrum Analyzer	FSP 40	100036	Apr. 03, 2009	Apr. 02, 2010

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 horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.
4. The Industry Canada Reference No. IC 7450E-6.
5. The FCC Site Registration No. is 447212.

4.2.3 TEST PROCEDURES

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 room. 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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 method or average method as specified and then reported in data sheet.

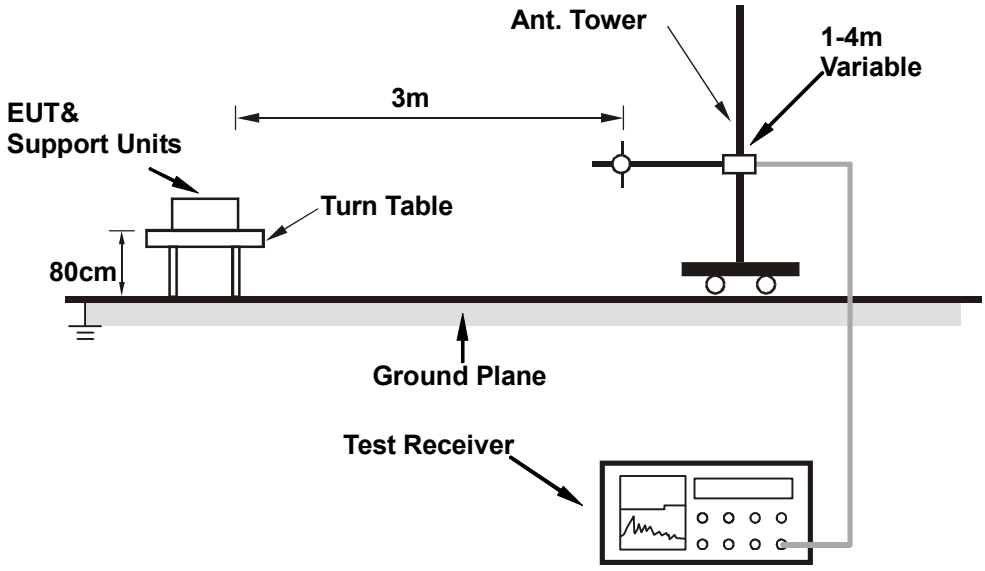
NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Same as item 4.1.6.

4.2.7 TEST RESULTS

ABOVE 1GHz DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 0	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH 1002 hPa	TESTED BY	Nick Chen

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	1602.00	53.34 PK	74.00	-20.66	1.00 H	117	21.42	31.92
2	1602.00	42.77 AV	54.00	-11.23	1.00 H	117	10.85	31.92
3	2390.00	66.86 PK	74.00	-7.14	1.02 H	115	31.79	35.07
4	2390.00	47.08 AV	54.00	-6.92	1.02 H	115	12.01	35.07
5	2400.00	58.13 PK	74.00	-15.87	1.02 H	115	23.04	35.09
6	2400.00	42.56 AV	54.00	-11.44	1.02 H	115	7.47	35.09
7	*2404.00	100.41 PK			1.02 H	115	65.31	35.10
8	*2404.00	84.84 AV			1.02 H	115	49.74	35.10
9	4808.00	54.07 PK	74.00	-19.93	1.00 H	121	11.07	43.00
10	4808.00	42.20 AV	54.00	-11.80	1.00 H	121	-0.80	43.00

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.
5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 0	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH 1002 hPa	TESTED BY	Nick Chen

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	1602.00	49.73 PK	74.00	-24.27	1.00 V	273	17.81	31.92
2	1602.00	38.99 AV	54.00	-15.01	1.00 V	273	7.07	31.92
3	2390.00	64.86 PK	74.00	-9.14	1.00 V	193	29.79	35.07
4	2390.00	46.77 AV	54.00	-7.23	1.00 V	193	11.70	35.07
5	2400.00	54.51 PK	74.00	-19.49	1.00 V	193	19.42	35.09
6	2400.00	39.69 AV	54.00	-14.31	1.00 V	193	4.60	35.09
7	*2404.00	96.79 PK			1.00 V	193	61.69	35.10
8	*2404.00	81.97 AV			1.00 V	193	46.87	35.10
9	4808.00	54.22 PK	74.00	-19.78	1.12 V	80	11.22	43.00
10	4808.00	42.23 AV	54.00	-11.77	1.12 V	80	-0.77	43.00

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.
5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH 1002 hPa	TESTED BY	Nick Chen

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	1628.00	53.45 PK	74.00	-20.55	1.00 H	113	21.41	32.04
2	1628.00	43.35 AV	54.00	-10.65	1.00 H	113	11.31	32.04
3	*2442.00	100.86 PK			1.00 H	124	65.69	35.17
4	*2442.00	85.10 AV			1.00 H	124	49.93	35.17
5	4884.00	54.47 PK	74.00	-19.53	1.00 H	122	11.32	43.15
6	4884.00	43.02 AV	54.00	-10.98	1.00 H	122	-0.13	43.15
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	1628.00	50.14 PK	74.00	-23.86	1.00 V	91	18.10	32.04
2	1628.00	42.87 AV	54.00	-11.13	1.00 V	91	10.83	32.04
3	*2442.00	96.26 PK			1.00 V	196	61.09	35.17
4	*2442.00	81.75 AV			1.00 V	196	46.58	35.17
5	4884.00	54.16 PK	74.00	-19.84	1.00 V	297	11.01	43.15
6	4884.00	42.14 AV	54.00	-11.86	1.00 V	297	-1.01	43.15

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 74	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH 1002 hPa	TESTED BY	Nick Chen

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	1652.00	55.23 PK	74.00	-18.77	1.00 H	116	23.08	32.15
2	1652.00	46.63 AV	54.00	-7.37	1.00 H	116	14.48	32.15
3	*2478.00	99.30 PK			1.00 H	121	64.05	35.25
4	*2478.00	83.86 AV			1.00 H	121	48.61	35.25
5	2483.50	53.66 PK	74.00	-20.34	1.00 H	121	18.40	35.26
6	2483.50	38.22 AV	54.00	-15.78	1.00 H	121	2.96	35.26
7	4956.00	54.78 PK	74.00	-19.22	1.00 H	117	11.49	43.29
8	4956.00	42.21 AV	54.00	-11.79	1.00 H	117	-1.08	43.29
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	1652.00	51.45 PK	74.00	-22.55	1.00 V	272	19.30	32.15
2	1652.00	42.47 AV	54.00	-11.53	1.00 V	272	10.32	32.15
3	*2478.00	94.30 PK			1.00 V	193	59.05	35.25
4	*2478.00	80.33 AV			1.00 V	193	45.08	35.25
5	2483.50	48.66 PK	74.00	-25.34	1.00 V	194	13.40	35.26
6	2483.50	34.69 AV	54.00	-19.31	1.00 V	194	-0.57	35.26
7	4956.00	54.91 PK	74.00	-19.09	1.00 V	126	11.62	43.29
8	4956.00	43.00 AV	54.00	-11.00	1.00 V	126	-0.29	43.29

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 0	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH 1002 hPa	TESTED BY	Nick Chen

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	**70.82**	**35.57 QP**	**40.00**	**-4.43**	**1.13 H**	**169**	**23.59**	**11.98**
2	179.68	29.45 QP	43.50	-14.05	1.08 H	262	16.87	12.58
3	199.12	34.72 QP	43.50	-8.78	1.21 H	226	23.44	11.28
4	354.63	33.92 QP	46.00	-12.08	1.34 H	304	17.08	16.84
5	733.69	35.95 QP	46.00	-10.05	1.21 H	55	10.48	25.47
6	801.72	39.60 QP	46.00	-6.40	1.11 H	208	12.96	26.64
7	865.87	34.17 QP	46.00	-11.83	1.27 H	244	6.57	27.60
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	96.09	35.24 QP	43.50	-8.26	1.05 V	292	26.66	8.58
2	193.29	28.73 QP	43.50	-14.77	1.11 V	202	17.08	11.65
3	467.38	33.03 QP	46.00	-12.97	1.12 V	241	12.90	20.13
4	733.69	36.08 QP	46.00	-9.92	1.24 V	238	10.61	25.47
5	801.72	33.82 QP	46.00	-12.18	1.10 V	187	7.18	26.64
6	865.87	38.21 QP	46.00	-7.79	1.03 V	244	10.61	27.60

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.

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.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100036	Apr. 03, 2009	Apr. 02, 2010

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

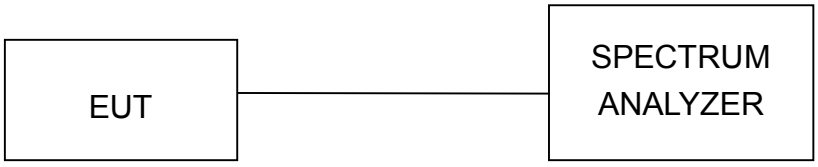
4.3.3 TEST PROCEDURE

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

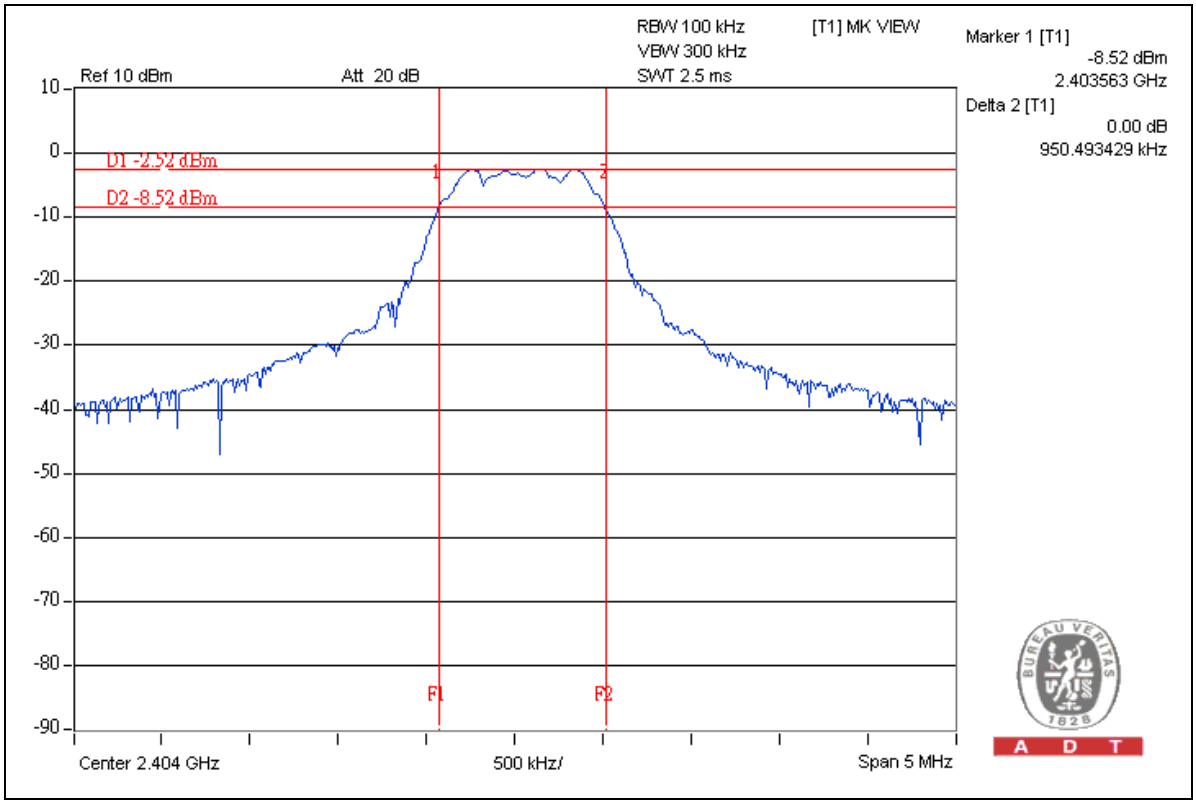
The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

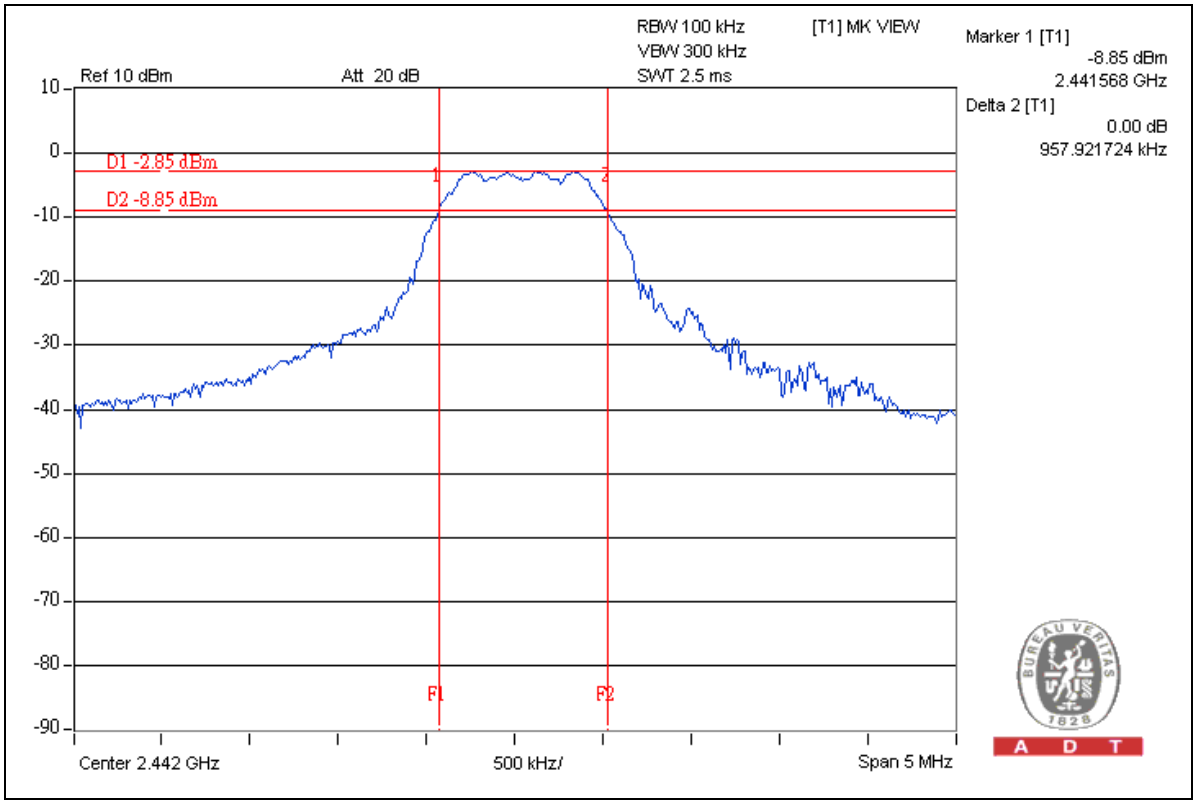
CHANNEL	0, 38, 74	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 70% RH, 1007hPa	TESTED BY	Nick Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
0	2404	0.950	0.5	PASS
38	2442	0.957	0.5	PASS
74	2478	0.949	0.5	PASS

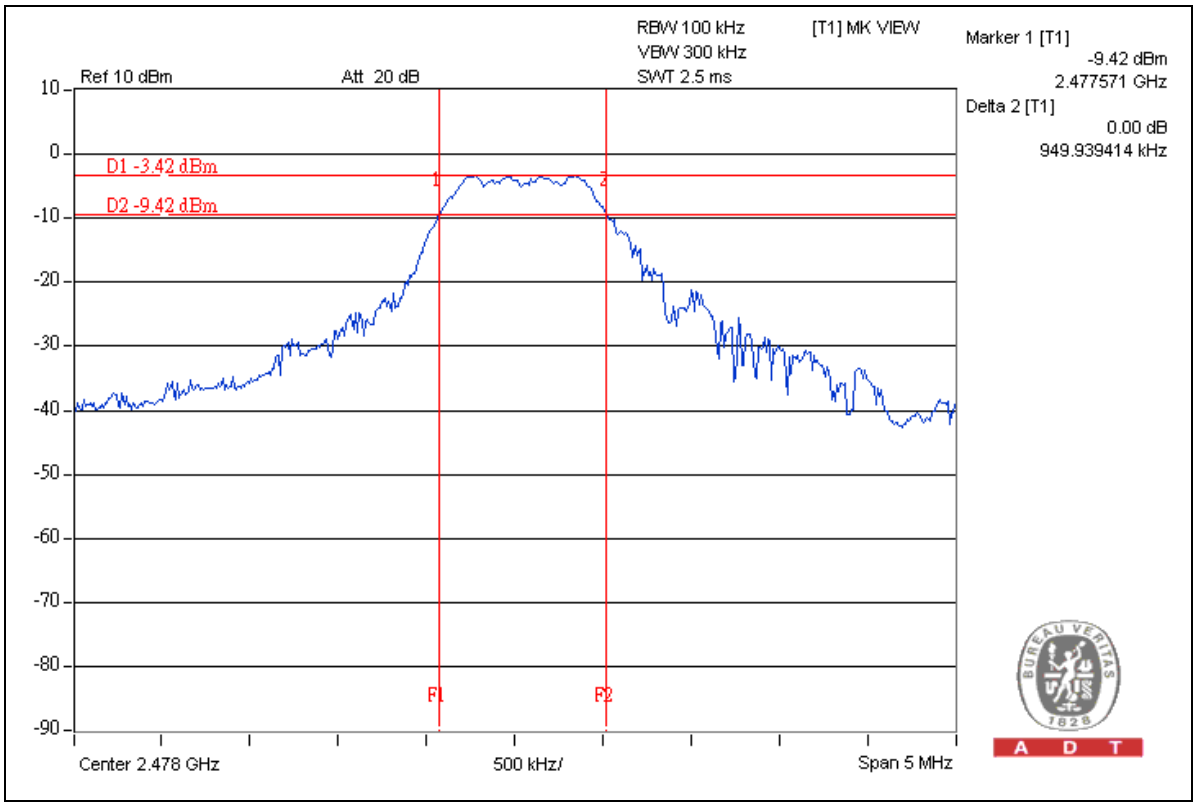
CH 0



CH 38


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-8.85 dBm
2.441568 GHz
Delta 2 [T1]
0.00 dB
957.921724 kHz
Ref 10 dBm
Att 20 dB
D1 -2.85 dBm
D2 -8.85 dBm
F1
F2
Center 2.442 GHz
500 kHz/
Span 5 MHz

CH 74


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-9.42 dBm
2.477571 GHz
Delta 2 [T1]
0.00 dB
949.939414 kHz
Ref 10 dBm
Att 20 dB
D1 -3.42 dBm
D2 -9.42 dBm
F1
F2
Center 2.478 GHz
500 kHz/
Span 5 MHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100036	Apr. 03, 2009	Apr. 02, 2010

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

4.4.3 TEST PROCEDURES

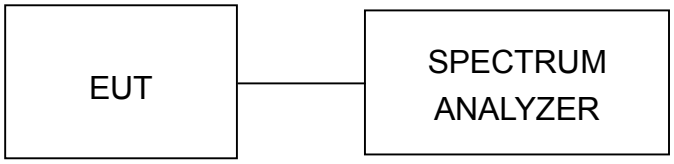
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3 MHz RBW and 10 MHz VBW, the peak value was measured and recorded.
4. Repeat above procedures until all frequencies measured were complete.

Note: The spectrum plots are attached on following pages.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

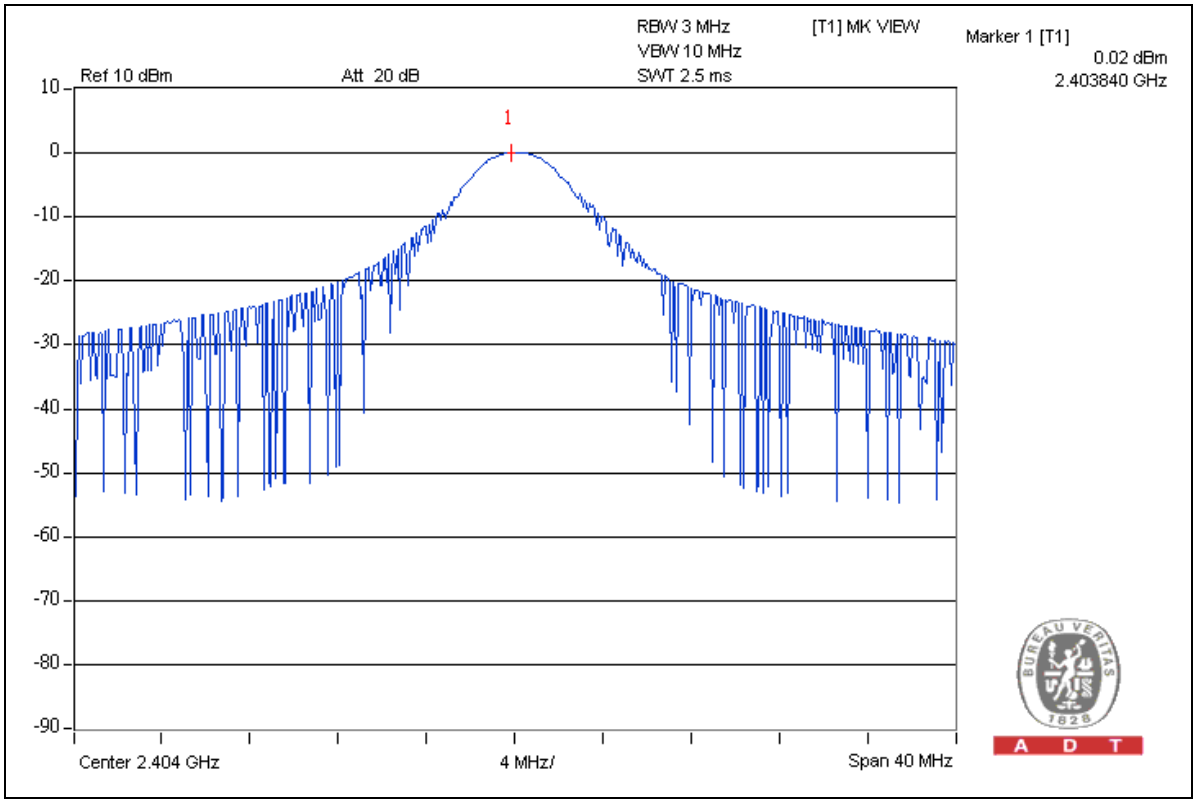
Same as Item 4.3.6

4.4.7 TEST RESULTS

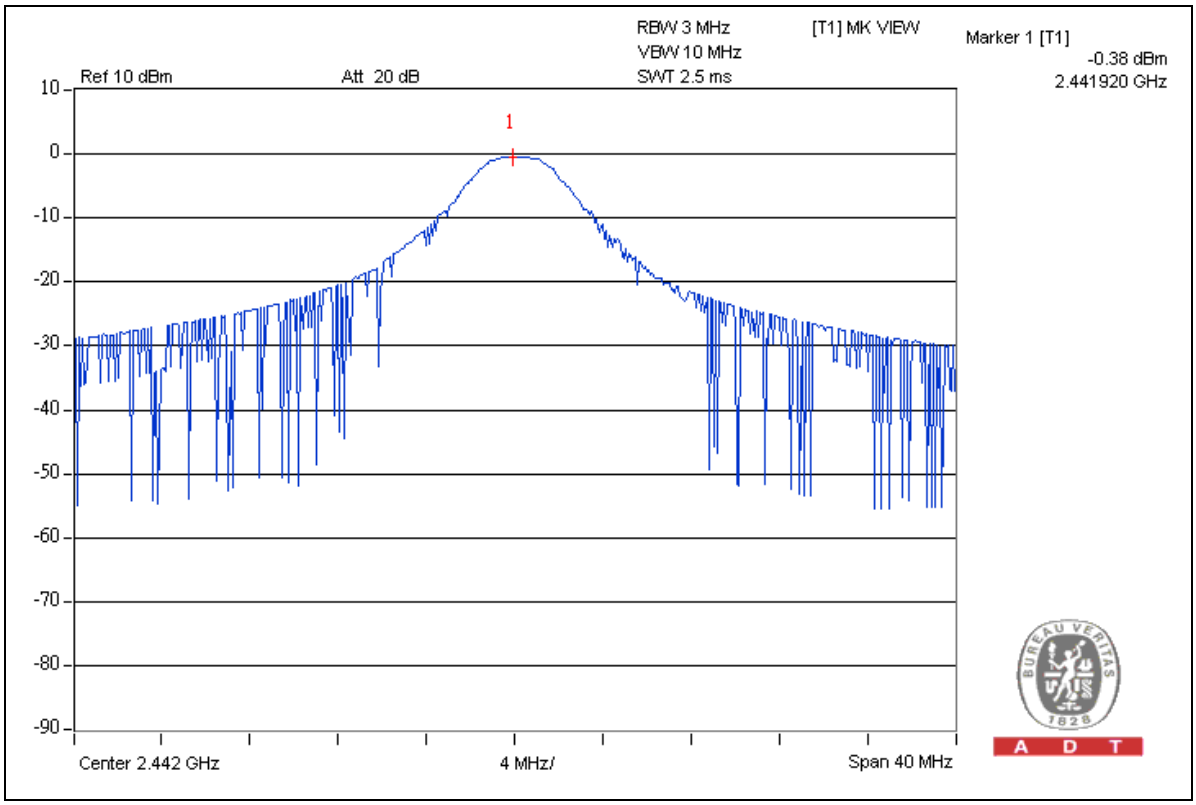
CHANNEL	0, 38, 74	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 70% RH, 1007hPa	**TESTED BY**	Nick Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS/FAIL
0	2404	0.02	1.005	30	PASS
38	2442	-0.38	0.916	30	PASS
74	2478	-0.93	0.807	30	PASS

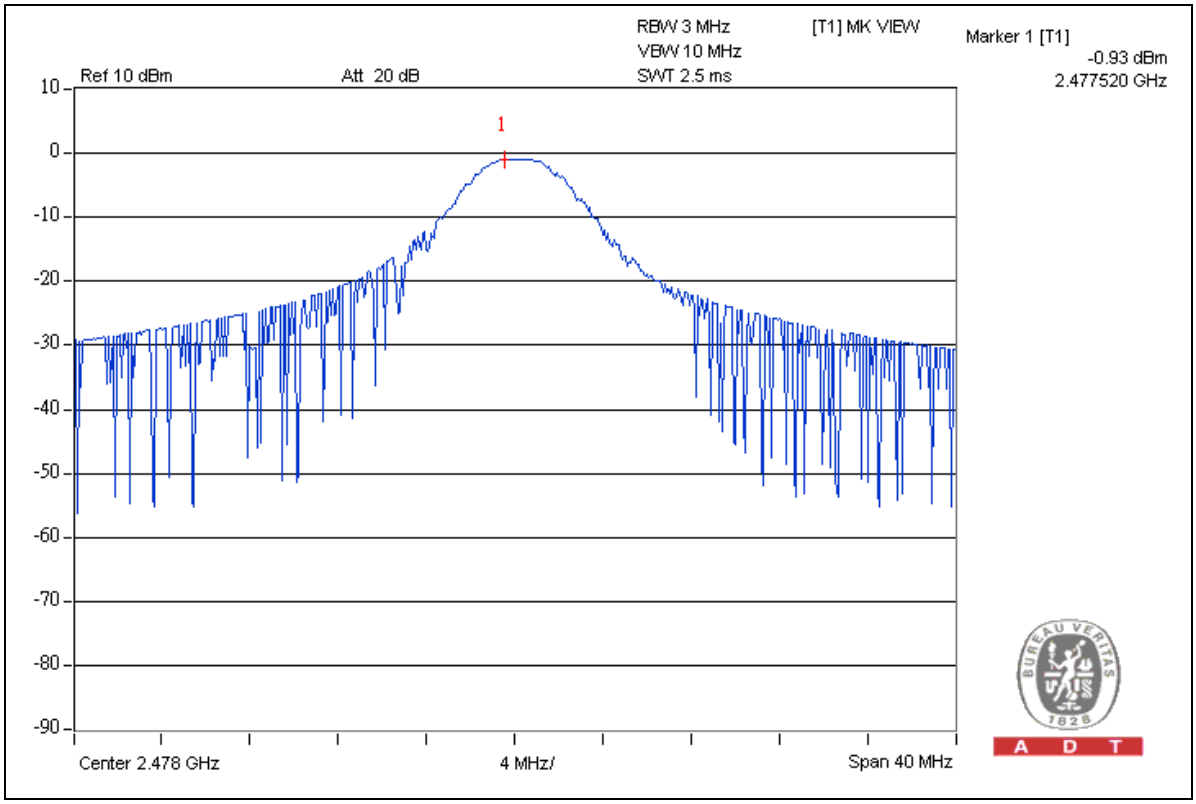
CH 0


RBW 3 MHz
VBW 10 MHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
0.02 dBm
2.403840 GHz
Ref 10 dBm
Att 20 dB
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
1
Center 2.404 GHz
4 MHz/
Span 40 MHz

CH 38


RBW 3 MHz
VBW 10 MHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-0.38 dBm
2.441920 GHz
Ref 10 dBm
Att 20 dB
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
1
Center 2.442 GHz
4 MHz/
Span 40 MHz

CH 74


RBW 3 MHz
VBW 10 MHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-0.93 dBm
2.477520 GHz
Ref 10 dBm
Att 20 dB
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
1
Center 2.478 GHz
4 MHz/
Span 40 MHz

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.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100036	Apr. 03, 2009	Apr. 02, 2010

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

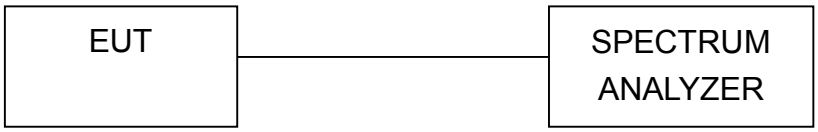
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

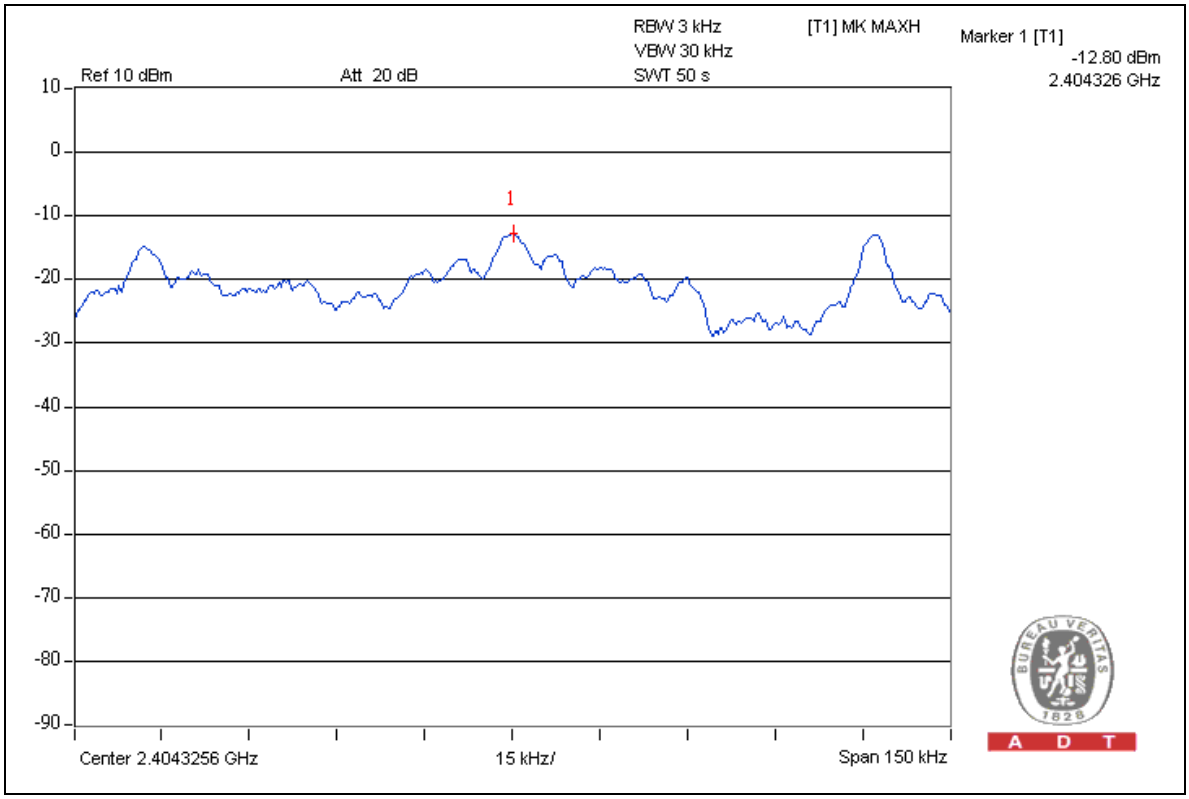
Same as Item 4.3.6

4.5.7 TEST RESULTS

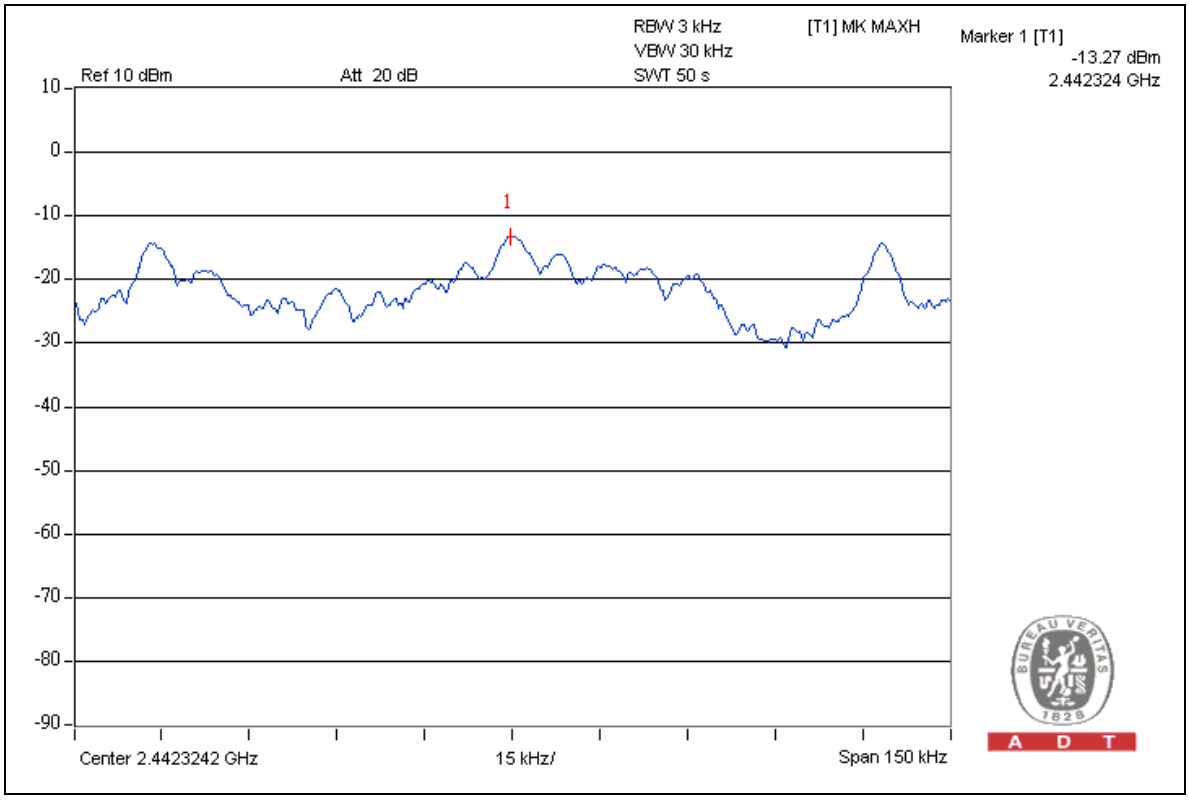
CHANNEL	0, 38, 74	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 70% RH, 1007hPa	TESTED BY	Nick Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
0	2404	-12.80	8	PASS
38	2442	-13.27	8	PASS
74	2478	-13.63	8	PASS

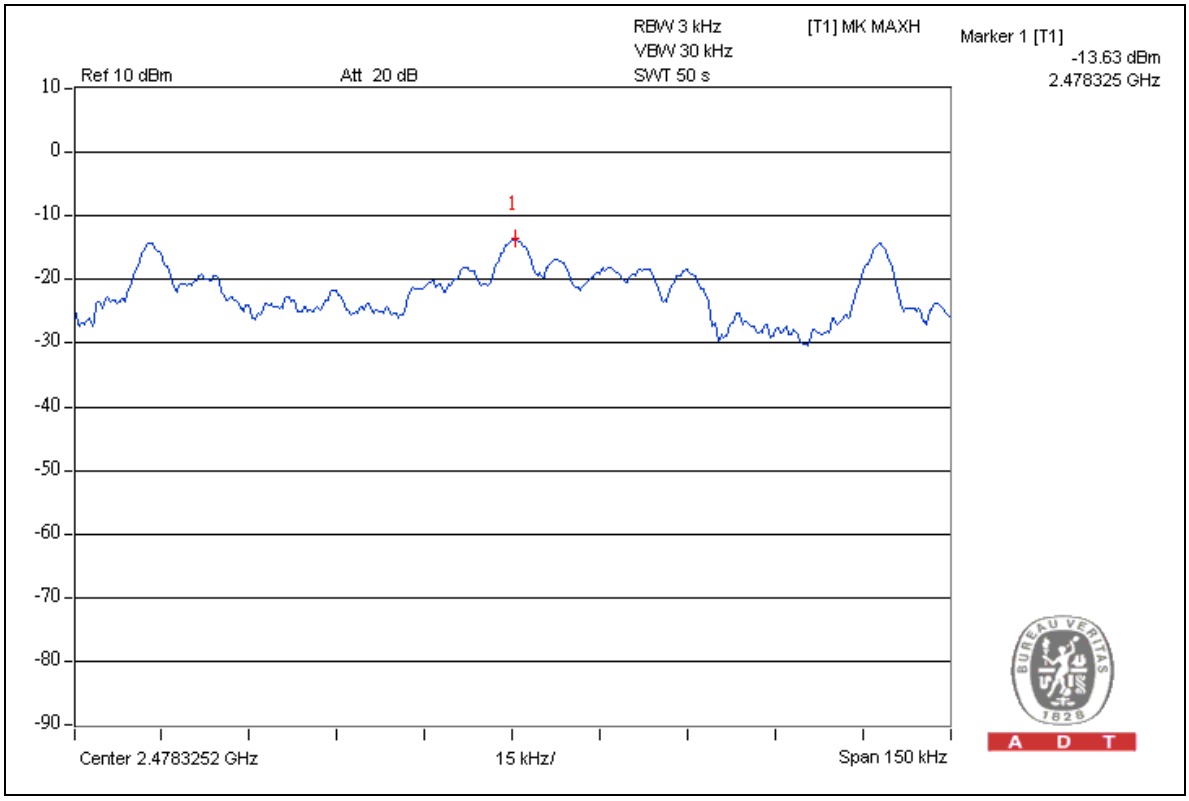
CH 0



CH 38


RBW 3 kHz
VBW 30 kHz
SWT 50 s
[T1] MK MAXH
Marker 1 [T1]
-13.27 dBm
2.442324 GHz
Ref 10 dBm
Att 20 dB
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
1
Center 2.4423242 GHz
15 kHz/
Span 150 kHz

CH 74


RBW 3 kHz
VBW 30 kHz
SWT 50 s
[T1] MK MAXH
Marker 1 [T1]
-13.63 dBm
2.478325 GHz
Ref 10 dBm
Att 20 dB
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
1
Center 2.4783252 GHz
15 kHz/
Span 150 kHz

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.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100036	Apr. 03, 2009	Apr. 02, 2010

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 RBW and VBW of spectrum analyzer to 100 kHz and 300 kHz suitable frequency span including 100 MHz 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

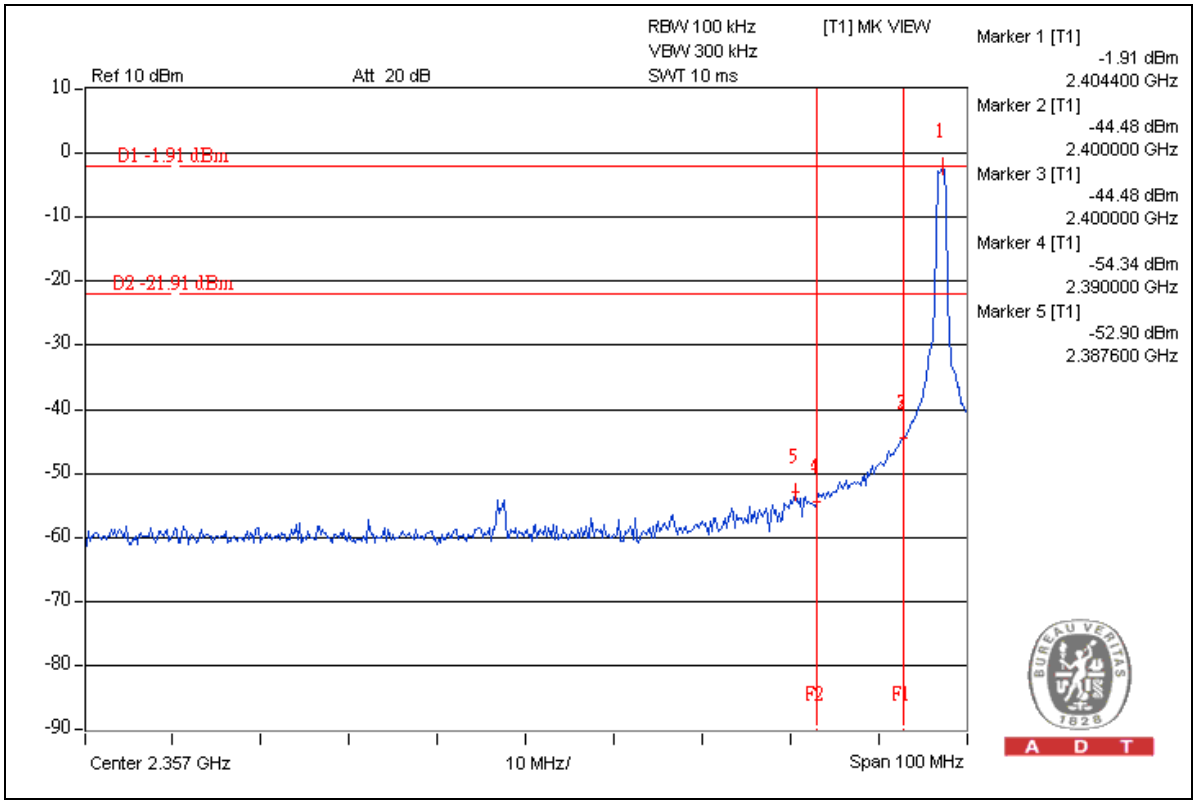
The spectrum plots are attached on the following 6 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

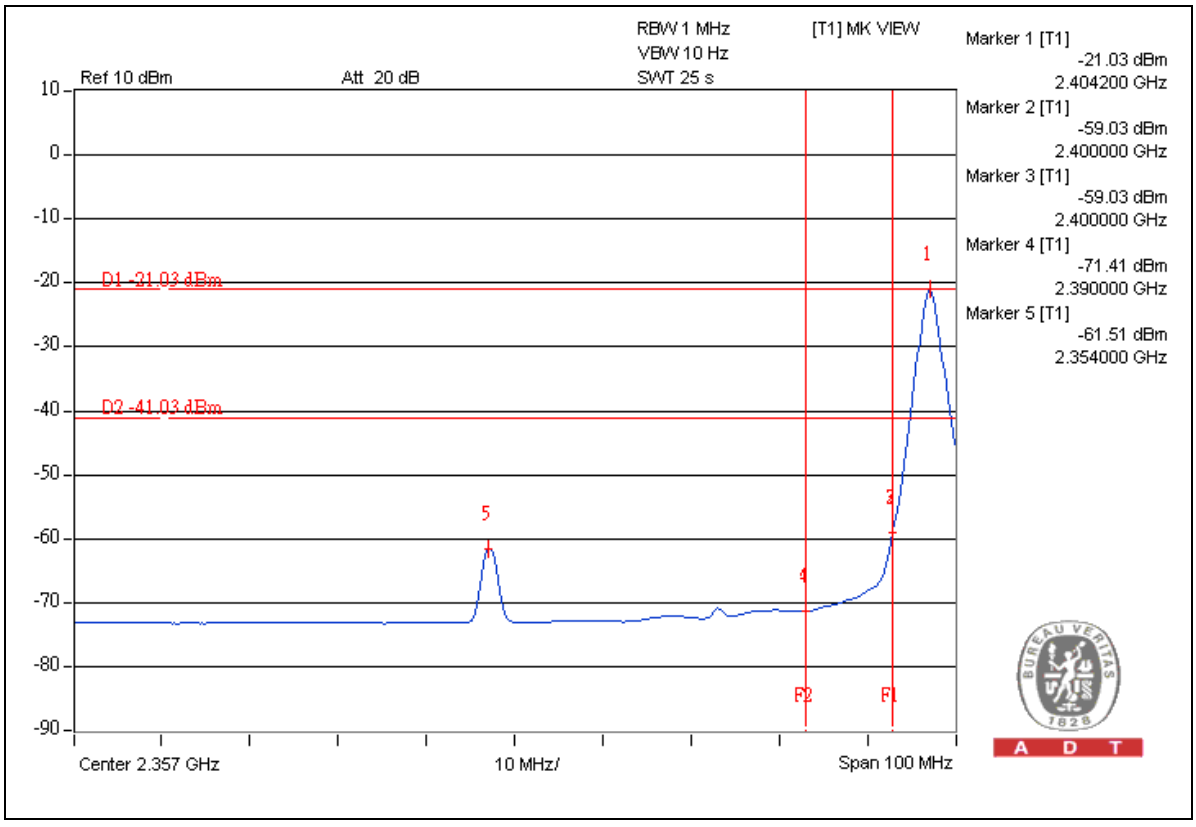
Note 1:
The band edge emission plot on the next page shows 50.99dBc between carrier maximum power and local maximum emission in restrict band (2.3876GHz). The emission of carrier strength list in the test result of channel 0 at the item 4.2.7 is 100.41dBuV/m (Peak), so the maximum field strength in restrict band is 100.41-50.99=49.42dBuV/m which is under 74dBuV/m limit.

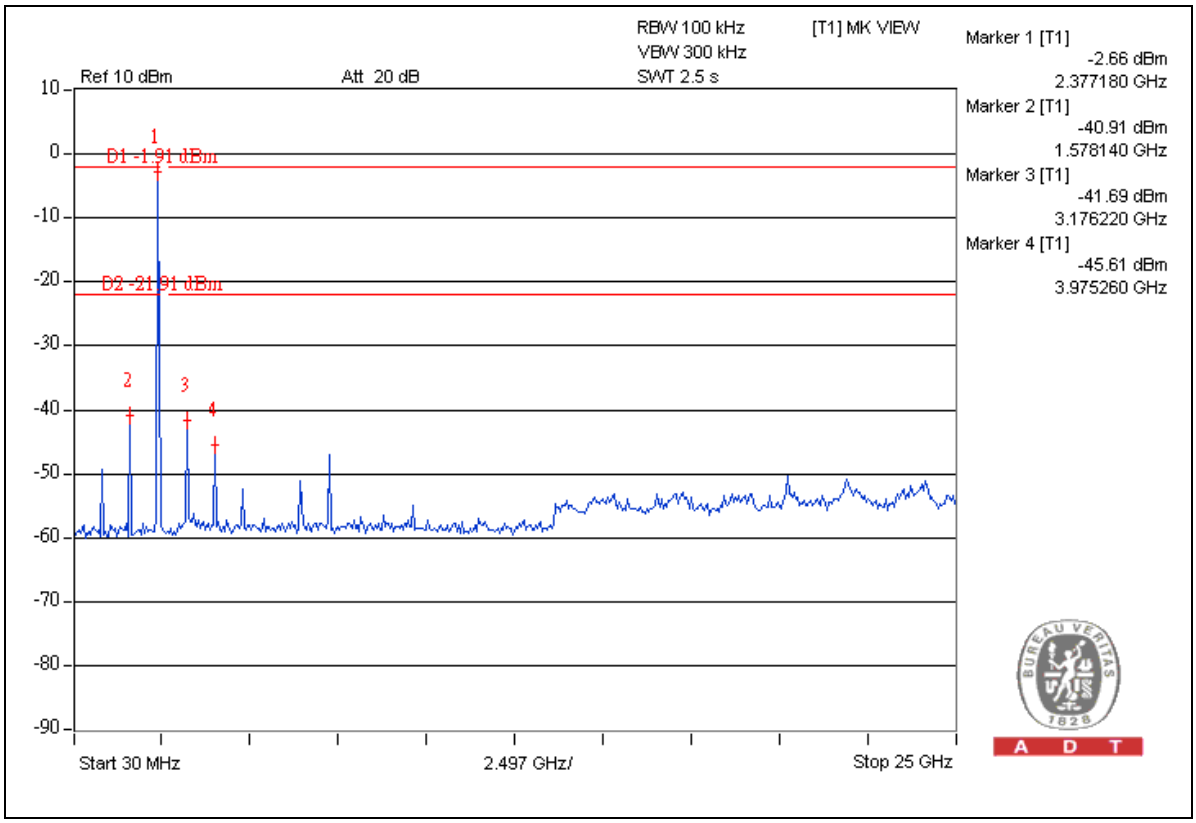
The band edge emission plot the next page shows 40.48dBc between carrier maximum power and local maximum emission in restrict band (2.3540GHz). The emission of carrier strength list in the test result of channel 0 at the item 4.2.7 is 84.84dBuV/m (Average), so the maximum field strength in restrict band is 84.84-40.48=44.36dBuV/m which is under 54dBuV/m limit.

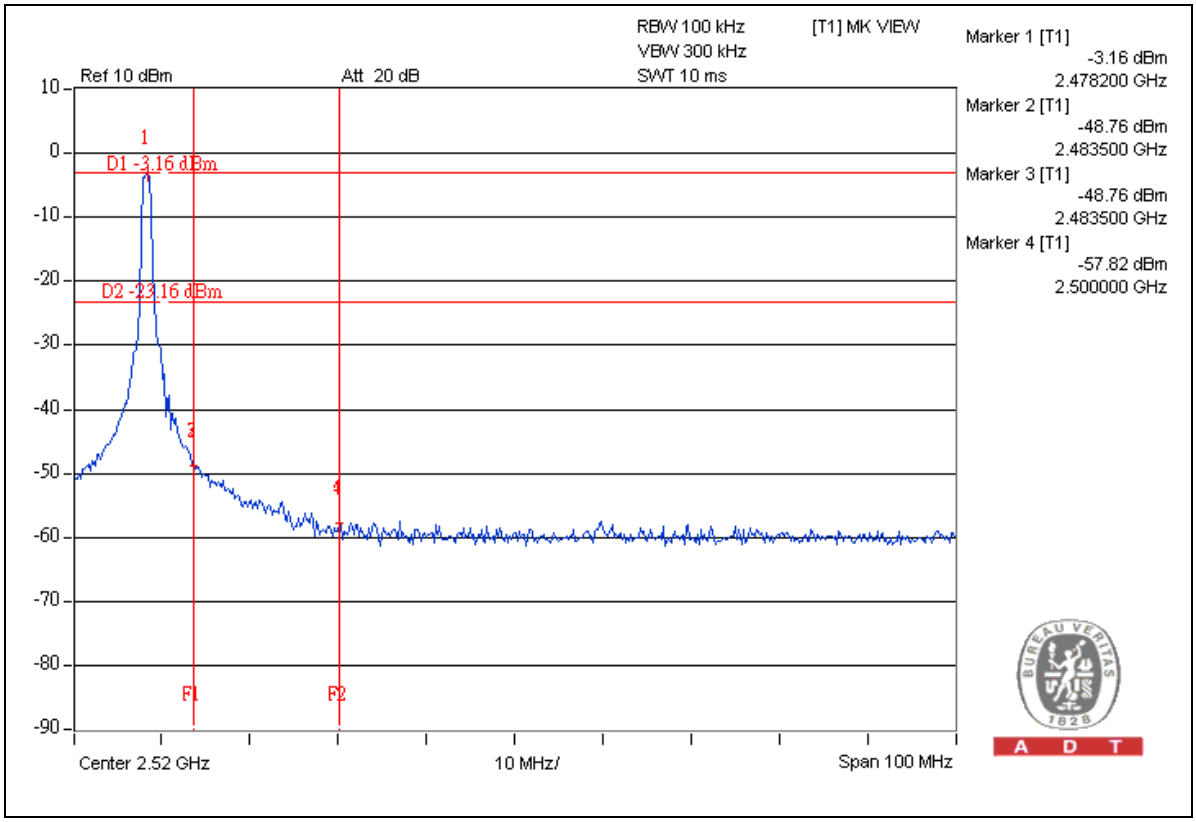
Note 2:
The band edge emission plot on the next second page shows 45.60dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 74 at the item 4.2.7 is 99.30dBuV/m (Peak), so the maximum field strength in restrict band is 99.30-45.60=53.70dBuV/m which is under 74dBuV/m limit.

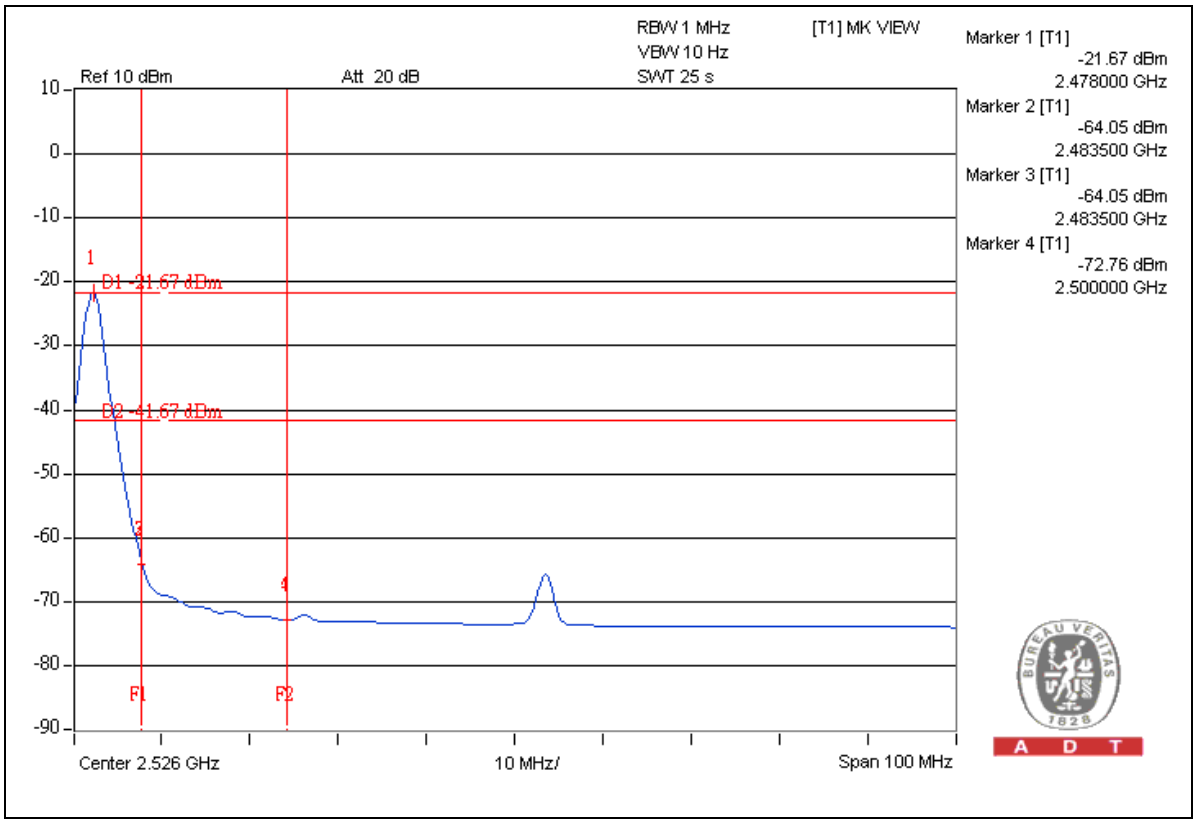
The band edge emission plot on the next third page shows 42.38dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 74 at the item 4.2.7 is 83.86dBuV/m (Average), so the maximum field strength in restrict band is 83.86-42.38=41.48dBuV/m which is under 54dBuV/m limit.

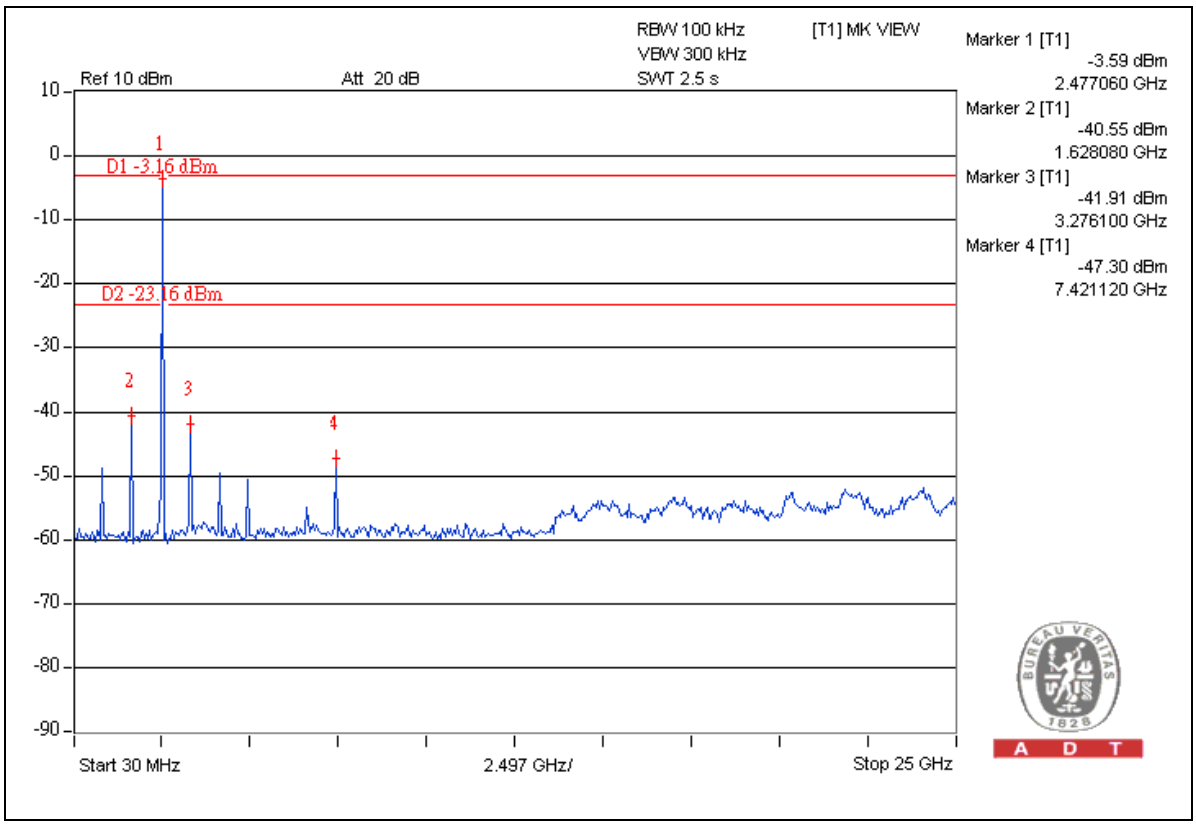

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 10 dBm
Att 20 dB
D1 -1.91 dBm
D2 -21.91 dBm
Marker 1 [T1]
-1.91 dBm
2.404400 GHz
Marker 2 [T1]
-44.48 dBm
2.400000 GHz
Marker 3 [T1]
-44.48 dBm
2.400000 GHz
Marker 4 [T1]
-54.34 dBm
2.390000 GHz
Marker 5 [T1]
-52.90 dBm
2.387600 GHz
Center 2.357 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 10 dBm
Att 20 dB
D1 -21.03 dBm
D2 -41.03 dBm
Marker 1 [T1]
-21.03 dBm
2.404200 GHz
Marker 2 [T1]
-59.03 dBm
2.400000 GHz
Marker 3 [T1]
-59.03 dBm
2.400000 GHz
Marker 4 [T1]
-71.41 dBm
2.390000 GHz
Marker 5 [T1]
-61.51 dBm
2.354000 GHz
Center 2.357 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 10 dBm
Att 20 dB
D1 -1.91 dBm
D2 -21.91 dBm
Marker 1 [T1]
-2.66 dBm
2.377180 GHz
Marker 2 [T1]
-40.91 dBm
1.578140 GHz
Marker 3 [T1]
-41.69 dBm
3.176220 GHz
Marker 4 [T1]
-45.61 dBm
3.975260 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 10 dBm
Att 20 dB
D1 -3.16 dBm
D2 -23.16 dBm
Marker 1 [T1]
-3.16 dBm
2.478200 GHz
Marker 2 [T1]
-48.76 dBm
2.483500 GHz
Marker 3 [T1]
-48.76 dBm
2.483500 GHz
Marker 4 [T1]
-57.82 dBm
2.500000 GHz
F1
F2
Center 2.52 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 10 dBm
Att 20 dB
Marker 1 [T1]
-21.67 dBm
2.478000 GHz
Marker 2 [T1]
-64.05 dBm
2.483500 GHz
Marker 3 [T1]
-64.05 dBm
2.483500 GHz
Marker 4 [T1]
-72.76 dBm
2.500000 GHz
D1 -21.67 dBm
D2 -41.67 dBm
Center 2.526 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 10 dBm
Att 20 dB
Marker 1 [T1]
-3.59 dBm
2.477060 GHz
Marker 2 [T1]
-40.55 dBm
1.628080 GHz
Marker 3 [T1]
-41.91 dBm
3.276100 GHz
Marker 4 [T1]
-47.30 dBm
7.421120 GHz
D1 -3.16 dBm
D2 -23.16 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Printed antenna without connector. The maximum gain of the antenna is -3.23dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. 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 by the following approval agencies according to ISO/IEC 17025.

USA	FCC, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA, CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

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

7. 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 ---