



FCC TEST REPORT

REPORT NO.: RF980817A03

MODEL NO.: 1392

RECEIVED: Aug. 17, 2009

TESTED: Aug. 25 ~ 28, 2009

ISSUED: Sep. 2, 2009

APPLICANT: MICROSOFT CORPORATION

ADDRESS: ONE MICROSOFT WAY REDMOND, WA
98052-6399, U.S.A

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

LAB LOCATION: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou
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1. CERTIFICATION

PRODUCT: Microsoft Wireless Keyboard
BRAND NAME: Microsoft®
MODEL NO.: 1392
APPLICANT: MICROSOFT CORPORATION
TESTED: Aug. 25 ~ 28, 2009
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: FCC Part 15, Subpart C (Section 15.249),
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:** Sep. 2, 2009
(Celia Chen / Senior Specialist)

TECHNICAL ACCEPTANCE : Jamison Chan , **DATE:** Sep. 2, 2009
Responsible for RF (Jamison Chan / Supervisor)

APPROVED BY : Ken Liu , **DATE:** Sep. 2, 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 15.249)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	Conducted Emission Test	N/A	The EUT power from batteries
15.209 15.249 15.249 (d)	Radiated Emission Test Band Edge Measurement Limit: 50dB less than the peak value of fundamental frequency or meet radiated emission limit in section 12.209	PASS	Minimum passing margin is -7.38dB at 2390.00MHz
15.249 (b)(2)	Frequency Tolerance Limit: $\pm 0.001\%$	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
Radiated emissions	Below 1GHz	3.72 dB
	Above 1GHz	2.89 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Microsoft Wireless Keyboard
MODEL NO.	1392
FCC ID	C3K1392
POWER SUPPLY	3.0Vdc from batteries
MODULATION TYPE	GFSK
OPERATING FREQUENCY	2403MHz ~2480MHz
NUMBER OF CHANNEL	24
ANTENNA TYPE	Printed antenna with -4.78dBi gain
DATA CABLE	N/A
I/O PORTS	N/A
ASSOCIATED DEVICES	N/A

NOTE:

1. The EUT is a Microsoft Wireless Keyboard, which is a transceiver.
2. The EUT has 3 samples, which are defined as their serial no. as follows:

Product	Model No.	Serial no.
Microsoft Wireless Keyboard	1392	145
		207
		243

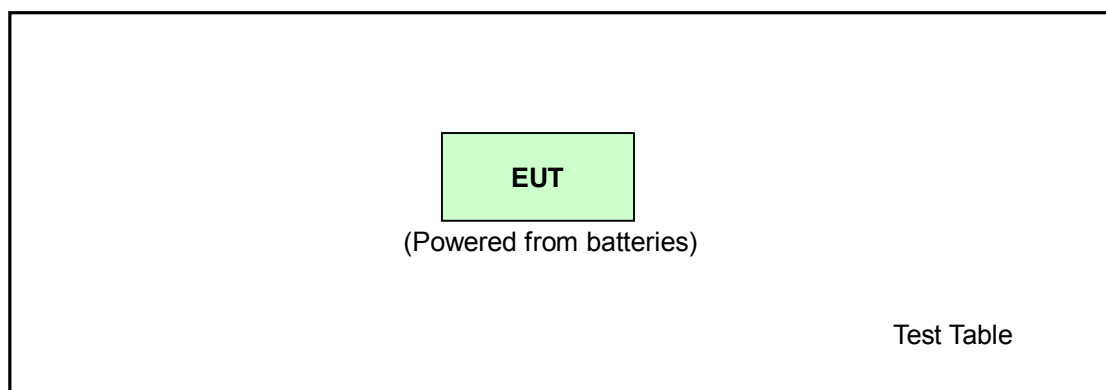
3. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

24 channels are provided to this EUT:

Channel Group	Order they appear by pressing lest button	Frequency (MHz)	Channel Group	Order they appear by pressing lest button	Frequency (MHz)
Subset A	1	2403	Subset D	4	2405
	7	2419		10	2425
	19	2468		16	2444
	13	2478		22	2452
Subset B	2	2429	Subset E	5	2423
	8	2450		11	2446
	14	2470		17	2456
	20	2480		23	2474
Subset C	3	2421	Subset F	6	2417
	9	2431		12	2427
	21	2454		18	2448
	15	2472		24	2476

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	Note	√	√	√	-

Where PLC: Power Line Conducted Emission

RE<1G RE: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

Note: No need to concern of Conducted Emission due to the EUT is powered by batteries.

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.

AVAILABLE CHANNEL	TESTED CHANNEL	SERIAL NO.	MODULATION TYPE
1 to 24	1	145, 207, 243	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.

AVAILABLE CHANNEL	TESTED CHANNEL	SERIAL NO.	MODULATION TYPE
1 to 24	1, 16, 20	145, 207, 243	GFSK

FREQUENCY TOLERANCE:

- 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.

AVAILABLE CHANNEL	TESTED CHANNEL	SERIAL NO.	MODULATION TYPE
1 to 24	1, 16, 20	145	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.

AVAILABLE CHANNEL	TESTED CHANNEL	SERIAL NO.	MODULATION TYPE
1 to 24	1, 20	145	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. (15.249)

ANSI C63.4-2003

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

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together without any necessary accessory or support unit.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

N/A

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, 15.249 as following:

15.209 Limit		
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
15.249 Limit		
Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 ~ 928 MHz	50	500
2400 ~ 2483.5 MHz	50	500
5725 ~ 5875 MHz	50	500
24 ~ 24.25 GHz	250	2500

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. 10, 2009	Aug. 09, 2010
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. 20, 2009	Aug. 19, 2010
ROHDE & SCHWARZ Spectrum Analyzer	FSP 40	100036	Apr. 03, 2009	Apr. 02, 2010

- NOTE:**
1. The calibration interval of the above test instruments is 12/24 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.

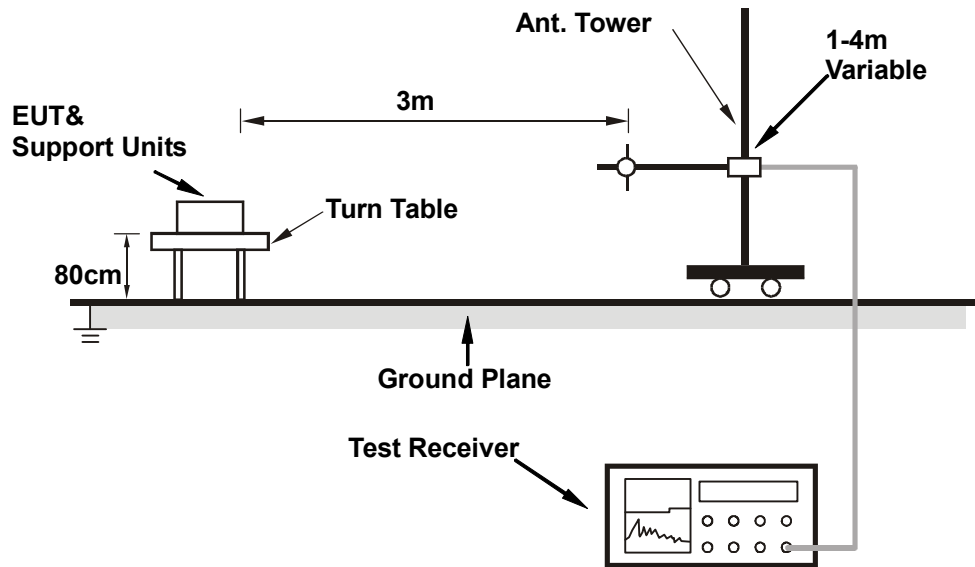
NOTE:

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

Set the EUT under transmission condition continuously at specific channel frequency.

4.2.7 TEST RESULTS

ABOVE 1GHz DATA (For Fundamental, Harmonics)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 1008 hPa	TESTED BY	Chad Lee
SERIAL NO.	243		

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	59.23 PK	74.00	-14.77	1.00 H	32	24.16	35.07
2	2390.00	46.62 AV	54.00	-7.38	1.00 H	32	11.55	35.07
3	2400.00	53.62 PK	74.00	-20.38	1.00 H	32	18.53	35.09
4	2400.00	23.08 AV	54.00	-30.92	1.00 H	32	-12.01	35.09
5	*2403.00	94.82 PK	114.00	-19.18	1.00 H	32	59.72	35.10
6	*2403.00	64.28 AV	94.00	-29.72	1.00 H	32	29.18	35.10
7	4806.00	51.78 PK	74.00	-22.22	1.00 H	16	8.79	42.99
8	4806.00	21.24 AV	54.00	-32.76	1.00 H	16	-21.75	42.99

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	63.49 PK	74.00	-10.51	1.00 V	197	28.42	35.07
2	2390.00	46.59 AV	54.00	-7.41	1.00 V	197	11.52	35.07
3	2400.00	53.99 PK	74.00	-20.01	1.00 V	197	18.90	35.09
4	2400.00	23.45 AV	54.00	-30.55	1.00 V	197	-11.64	35.09
5	*2403.00	95.19 PK	114.00	-18.81	1.00 V	197	60.09	35.10
6	*2403.00	64.65 AV	94.00	-29.35	1.00 V	197	29.55	35.10
7	4806.00	53.41 PK	74.00	-20.59	1.00 V	9	10.42	42.99
8	4806.00	22.87 AV	54.00	-31.13	1.00 V	9	-20.12	42.99

- REMARKS:**
- Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 - Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 - The other emission levels were very low against the limit.
 - Margin value = Emission level – Limit value.
 - “ * “ : Fundamental frequency
 - The average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:
 $20 \log (\text{Duty cycle}) = 20 \log (0.24 \text{ ms} / 8.08 \text{ ms}) = -30.54 \text{ dB}$
 Please see page 17 for plotted duty.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 16	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 1008 hPa	TESTED BY	Chad Lee
SERIAL NO.	243		

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	*2444.00	93.26 PK	114.00	-20.74	1.00 H	334	58.08	35.18
2	*2444.00	62.72 AV	94.00	-31.28	1.00 H	334	27.54	35.18
3	4888.00	53.31 PK	74.00	-20.69	1.00 H	188	10.15	43.16
4	4888.00	22.77 AV	54.00	-31.23	1.00 H	188	-20.39	43.16
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	*2444.00	93.25 PK	114.00	-20.75	1.00 V	95	58.07	35.18
2	*2444.00	62.71 AV	94.00	-31.29	1.00 V	95	27.53	35.18
3	4888.00	53.79 PK	74.00	-20.21	1.00 V	16	10.63	43.16
4	4888.00	23.25 AV	54.00	-30.75	1.00 V	16	-19.91	43.16

- 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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:
 $20 \log (\text{Duty cycle}) = 20 \log (0.24 \text{ ms} / 8.08 \text{ ms}) = -30.54 \text{ dB}$
 Please see page 17 for plotted duty.



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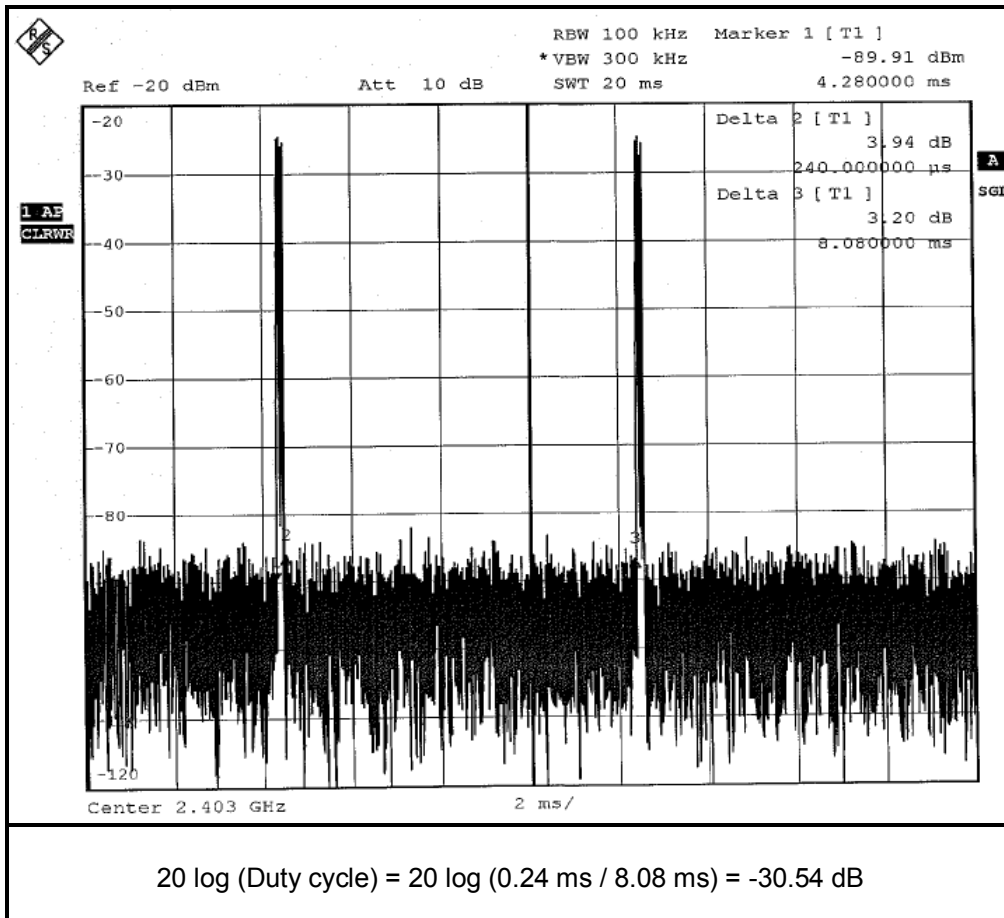
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 20	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH 1008 hPa	TESTED BY	Chad Lee
SERIAL NO.	243		

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	*2480.00	93.07 PK	114.00	-20.93	1.09 H	63	57.82	35.25
2	*2480.00	62.53 AV	94.00	-31.47	1.09 H	63	27.28	35.25
3	2483.50	50.00 PK	74.00	-24.00	1.09 H	63	14.74	35.26
4	2483.50	19.46 AV	54.00	-34.54	1.09 H	63	-15.80	35.26
5	4960.00	52.28 PK	74.00	-21.72	1.00 H	15	8.98	43.30
6	4960.00	21.74 AV	54.00	-32.26	1.00 H	15	-21.56	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	*2480.00	91.00 PK	114.00	-23.00	1.00 V	200	55.75	35.25
2	*2480.00	60.46 AV	94.00	-33.54	1.00 V	200	25.21	35.25
3	2483.50	47.93 PK	74.00	-26.07	1.00 V	200	12.67	35.26
4	2483.50	17.39 AV	54.00	-36.61	1.00 V	200	-17.87	35.26
5	4960.00	52.40 PK	74.00	-21.60	1.00 V	33	9.10	43.30
6	4960.00	21.86 AV	54.00	-32.14	1.00 V	33	-21.44	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
 6. The average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:
 $20 \log (\text{Duty cycle}) = 20 \log (0.24 \text{ ms} / 8.08 \text{ ms}) = -30.54 \text{ dB}$
 Please see page 17 for plotted duty.



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BELOW 1GHz WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1008 hPa	TESTED BY	Chad Lee
SERIAL NO.	145		

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	64.99	20.36 QP	40.00	-19.64	1.22 H	325	7.85	12.51
2	780.34	25.14 QP	46.00	-20.86	1.08 H	250	-1.15	26.29
3	801.72	25.00 QP	46.00	-21.00	1.56 H	100	-1.64	26.64
4	844.49	25.09 QP	46.00	-20.91	1.43 H	94	-2.22	27.31
5	865.87	26.22 QP	46.00	-19.78	1.50 H	100	-1.39	27.60
6	889.20	26.25 QP	46.00	-19.75	1.23 H	274	-1.65	27.90
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	68.88	21.92 QP	40.00	-18.08	1.05 V	244	9.67	12.25
2	758.96	24.49 QP	46.00	-21.51	1.12 V	67	-1.45	25.94
3	811.44	24.91 QP	46.00	-21.09	1.42 V	52	-1.88	26.79
4	826.99	25.50 QP	46.00	-20.50	1.00 V	19	-1.54	27.04
5	869.76	25.74 QP	46.00	-20.26	1.50 V	211	-1.92	27.65
6	898.92	28.99 QP	46.00	-17.01	1.25 V	259	0.96	28.03

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1008 hPa	TESTED BY	Chad Lee
SERIAL NO.	207		

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	76.65	20.87 QP	40.00	-19.13	1.52 H	10	10.31	10.56
2	751.18	24.04 QP	46.00	-21.96	1.13 H	238	-1.77	25.81
3	807.56	24.84 QP	46.00	-21.16	1.43 H	127	-1.89	26.73
4	815.33	25.34 QP	46.00	-20.66	1.26 H	73	-1.51	26.85
5	863.93	26.20 QP	46.00	-19.80	1.51 H	292	-1.38	27.58
6	902.81	27.34 QP	46.00	-18.66	1.00 H	283	-0.73	28.07
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	68.88	22.15 QP	40.00	-17.85	1.42 V	148	9.90	12.25
2	780.34	25.18 QP	46.00	-20.82	1.06 V	247	-1.11	26.29
3	790.06	24.66 QP	46.00	-21.34	1.51 V	115	-1.79	26.45
4	823.11	25.48 QP	46.00	-20.52	1.22 V	91	-1.50	26.98
5	871.70	26.00 QP	46.00	-20.00	1.50 V	106	-1.68	27.68
6	951.40	27.11 QP	46.00	-18.89	1.63 V	187	-1.50	28.61

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1008 hPa	TESTED BY	Chad Lee
SERIAL NO.	243		

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	63.05	20.49 QP	40.00	-19.51	1.26 H	61	7.86	12.63
2	780.34	24.95 QP	46.00	-21.05	1.87 H	298	-1.34	26.29
3	799.78	25.02 QP	46.00	-20.98	1.42 H	64	-1.59	26.61
4	842.55	25.31 QP	46.00	-20.69	1.36 H	13	-1.97	27.28
5	869.76	26.01 QP	46.00	-19.99	1.42 H	1	-1.64	27.65
6	895.03	27.15 QP	46.00	-18.85	1.25 H	148	-0.82	27.98
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	76.65	27.35 QP	40.00	-12.65	1.55 V	94	16.79	10.56
2	743.41	24.65 QP	46.00	-21.35	1.29 V	10	-1.02	25.67
3	753.13	24.64 QP	46.00	-21.36	1.74 V	139	-1.21	25.85
4	809.50	24.90 QP	46.00	-21.10	1.08 V	106	-1.86	26.76
5	826.99	26.25 QP	46.00	-19.75	1.13 V	265	-0.79	27.04
6	865.87	26.07 QP	46.00	-19.93	1.25 V	115	-1.53	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.



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ABOVE 1GHz DATA (For Spurious Emission)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	145		

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	2748.00	46.22 PK	74.00	-27.78	1.00 H	66	9.82	36.40
2	2748.00	32.56 AV	54.00	-21.44	1.00 H	66	-3.84	36.40
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	2748.00	46.25 PK	74.00	-27.75	1.00 V	159	9.85	36.40
2	2748.00	31.99 AV	54.00	-22.01	1.00 V	159	-4.41	36.40

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 16	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	145		

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	2795.00	47.88 PK	74.00	-26.12	1.00 H	16	11.29	36.59
2	2795.00	33.25 AV	54.00	-20.75	1.00 H	16	-3.34	36.59
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	2795.00	44.85 PK	74.00	-29.15	1.00 V	25	8.26	36.59
2	2795.00	33.06 AV	54.00	-20.94	1.00 V	25	-3.53	36.59

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 20	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	145		

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	2836.00	46.11 PK	74.00	-27.89	1.00 H	16	9.33	36.78
2	2836.00	33.72 AV	54.00	-20.28	1.00 H	16	-3.06	36.78
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	2836.00	47.88 PK	74.00	-26.12	1.00 V	115	11.10	36.78
2	2836.00	33.06 AV	54.00	-20.94	1.00 V	115	-3.72	36.78

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	207		

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	2748.00	47.66 PK	74.00	-26.34	1.00 H	54	11.26	36.40
2	2748.00	32.54 AV	54.00	-21.46	1.00 H	54	-3.86	36.40
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	2748.00	47.59 PK	74.00	-26.41	1.00 V	152	11.19	36.40
2	2748.00	32.48 AV	54.00	-21.52	1.00 V	152	-3.92	36.40

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 16	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	207		

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	2795.00	47.92 PK	74.00	-26.08	1.00 H	15	11.33	36.59
2	2795.00	32.81 AV	54.00	-21.19	1.00 H	15	-3.78	36.59
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	2795.00	47.55 PK	74.00	-26.45	1.00 V	221	10.96	36.59
2	2795.00	32.61 AV	54.00	-21.39	1.00 V	221	-3.98	36.59

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 20	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	207		

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	2836.00	47.89 PK	74.00	-26.11	1.00 H	106	11.11	36.78
2	2836.00	32.91 AV	54.00	-21.09	1.00 H	106	-3.87	36.78
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	2836.00	47.92 PK	74.00	-26.08	1.00 V	101	11.14	36.78
2	2836.00	32.81 AV	54.00	-21.19	1.00 V	101	-3.97	36.78

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	243		

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	2748.00	43.75 PK	74.00	-30.25	1.00 H	52	7.35	36.40
2	2748.00	30.26 AV	54.00	-23.74	1.00 H	52	-6.14	36.40
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	2748.00	43.66 PK	74.00	-30.34	1.00 V	106	7.26	36.40
2	2748.00	30.12 AV	54.00	-23.88	1.00 V	106	-6.28	36.40

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 16	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	243		

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	2795.00	42.58 PK	74.00	-31.42	1.00 H	112	5.99	36.59
2	2795.00	30.82 AV	54.00	-23.18	1.00 H	112	-5.77	36.59
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	2795.00	42.55 PK	74.00	-31.45	1.00 V	15	5.96	36.59
2	2795.00	30.69 AV	54.00	-23.31	1.00 V	15	-5.90	36.59

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 20	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	3.0Vdc	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 76%RH 1007 hPa	TESTED BY	Chad Lee
SERIAL NO.	243		

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	2836.00	47.22 PK	74.00	-26.78	1.00 H	184	10.44	36.78
2	2836.00	33.15 AV	54.00	-20.85	1.00 H	184	-3.63	36.78
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	2836.00	47.09 PK	74.00	-26.91	1.00 V	66	10.31	36.78
2	2836.00	32.68 AV	54.00	-21.32	1.00 V	66	-4.10	36.78

- 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 FREQUENCY TOLERANCE MEASUREMENT

4.3.1 LIMITS OF FREQUENCY TOLERANCE MEASUREMENT

Limit : $\pm 0.001\%$

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100035	MAR. 24, 2009	MAR. 23, 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 frequency tolerance of the carrier signal shall be maintained within $\pm 0.001\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 EUT OPERATING CONDITION

Same as Item 4.2.6



4.3.6 TEST RESULTS

SERIAL NO.	145		
INPUT POWER	3.0Vdc	CHANNEL	1, 16, 20
ENVIRONMENTAL CONDITIONS	25deg. C, 71% RH, 1007hPa	TESTED BY	Nick Chen

CH 1

TEST CONDITION				Carrier Frequency (MHz)	Frequency Drift (kHz)	Frequency error (%)
Tnom(°C)	20	Vnom(V)	3.0	2402.9911	0	0
Tmin(°C)	-20	Vmin(V)	2.55	2403.0014	10.3	0.0004286
		Vmax(V)	3.45	2403.0035	12.4	0.0000874
Tmax(°C)	50	Vmin(V)	2.55	2402.9947	3.6	0.0001498
		Vmax(V)	3.45	2402.9968	5.7	0.0002372
Limit : ±0.001%						

CH 16

TEST CONDITION				Carrier Frequency (MHz)	Frequency Drift (kHz)	Frequency error (%)
Tnom(°C)	20	Vnom(V)	3.0	2443.9912	0	0
Tmin(°C)	-20	Vmin(V)	2.55	2444.0016	10.4	0.0004255
		Vmax(V)	3.45	2444.0035	12.3	0.0005033
Tmax(°C)	50	Vmin(V)	2.55	2443.9956	4.4	0.0001800
		Vmax(V)	3.45	2443.9988	7.6	0.0003110
Limit : ±0.001%						

CH 20

TEST CONDITION				Carrier Frequency (MHz)	Frequency Drift (kHz)	Frequency error (%)
Tnom(°C)	20	Vnom(V)	3.0	2479.9911	0	0
Tmin(°C)	-20	Vmin(V)	2.55	2480.0020	10.9	0.0004395
		Vmax(V)	3.45	2480.0043	13.2	0.0005323
Tmax(°C)	50	Vmin(V)	2.55	2479.9939	2.8	0.0001129
		Vmax(V)	3.45	2479.9974	6.3	0.0002540
Limit : ±0.001%						

4.4 BAND EDGES MEASUREMENT

4.4.1 LIMITS OF BAND EDGES MEASUREMENT

Below –50dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP 40	100035	MAR. 24, 2009	MAR. 23, 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 PROCEDURE

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

The spectrum plots are attached on the following pages.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 EUT OPERATING CONDITION

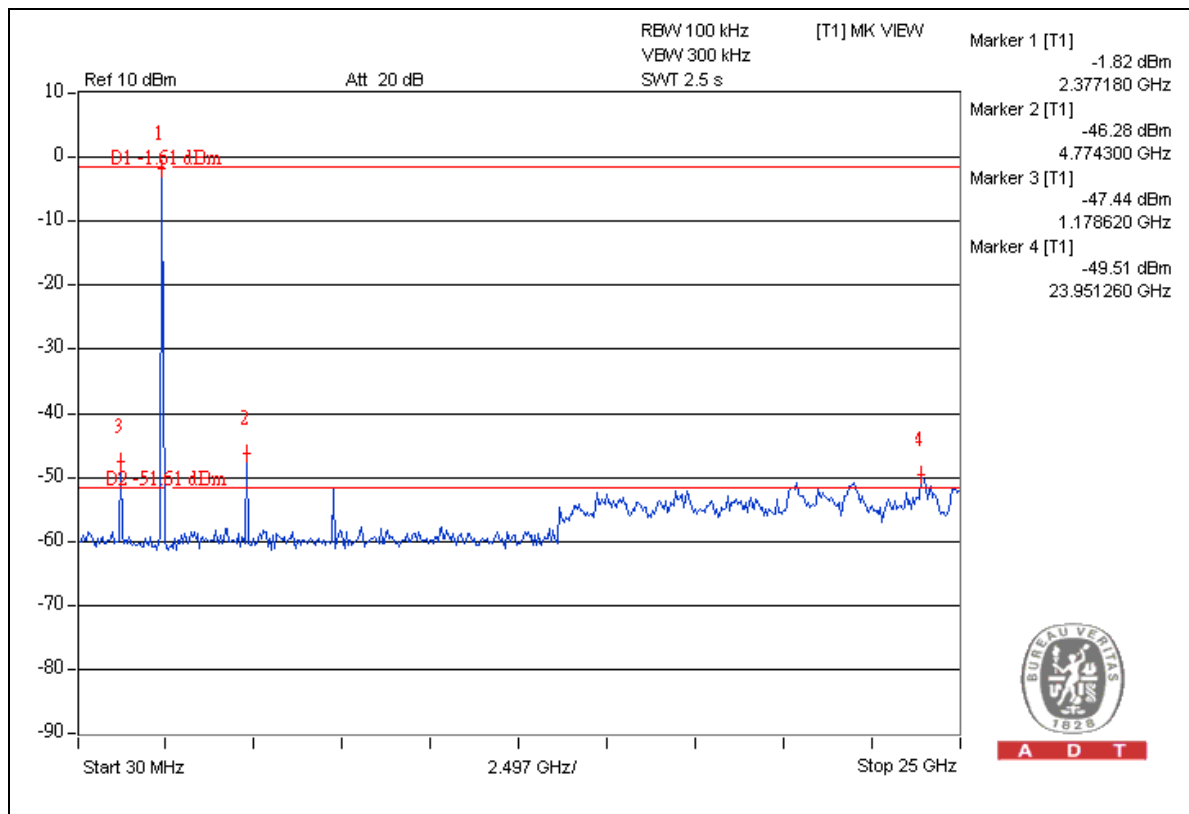
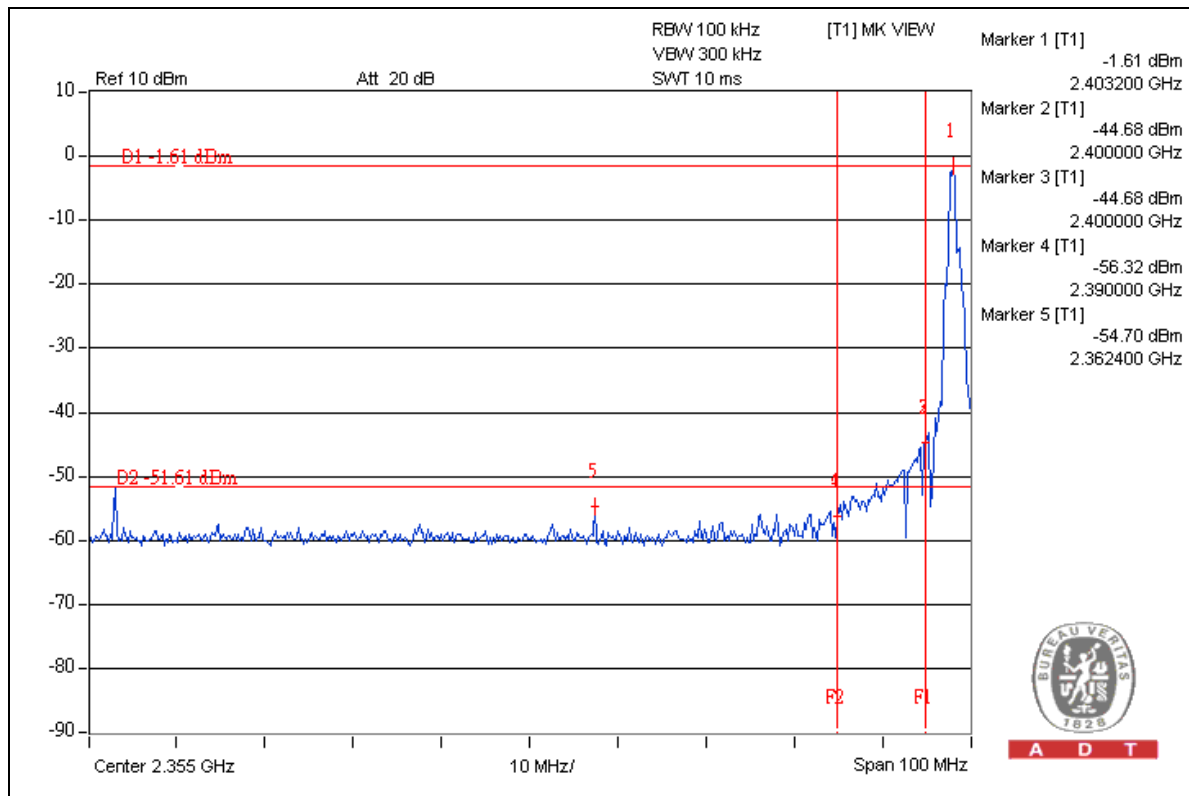
Same as Item 4.2.6

4.4.6 TEST RESULTS

The spectrum plots are attached on the following 4 images. D1 line indicates the highest level, and D2 line indicates the 50dB offset below D1. It shows compliance with the requirement in part 15.249(d).

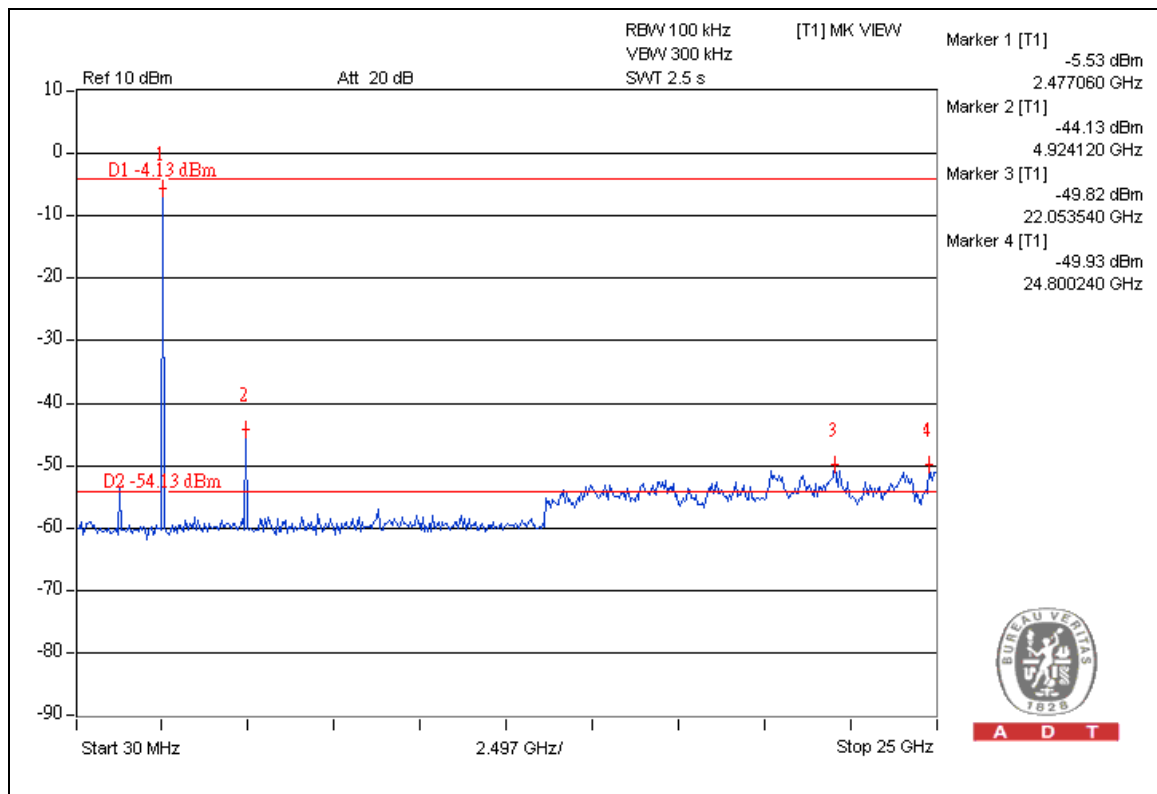
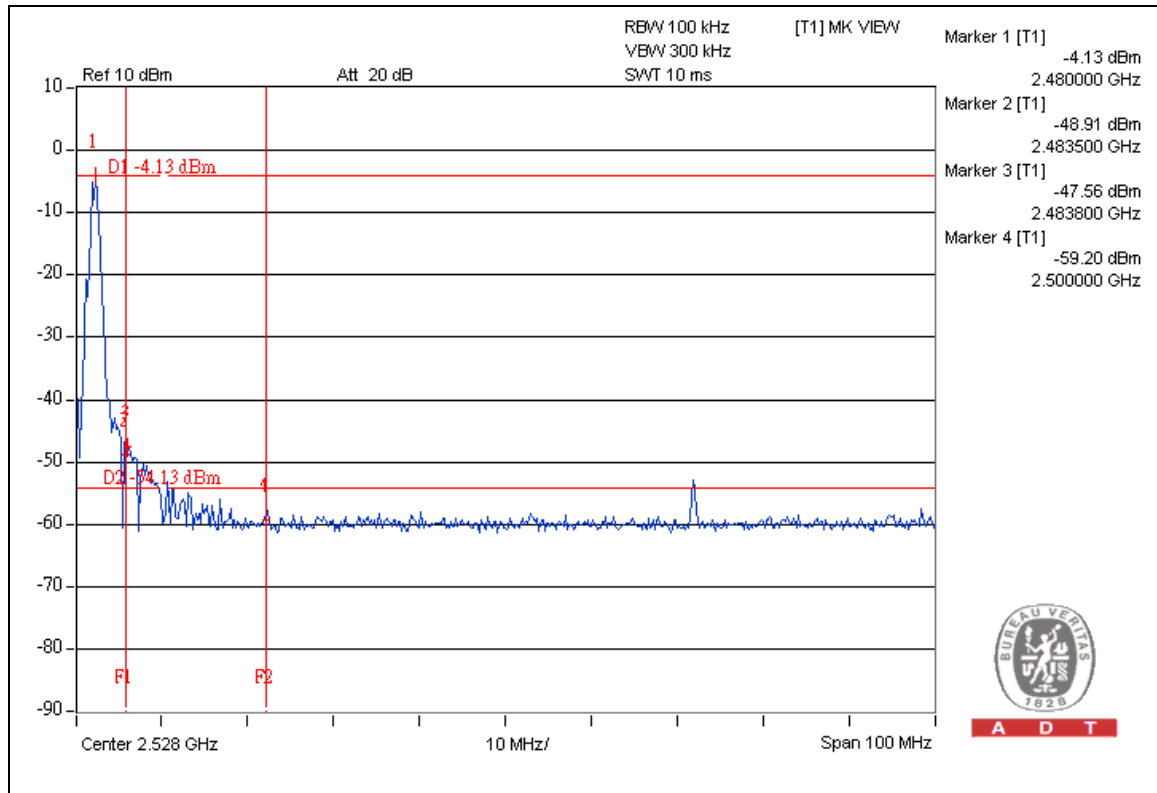


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5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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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---