

# FCC TEST REPORT

REPORT NO.: RF121017D11B-1

MODEL NO.: ASUS CUBE WITH GOOGLE TV RC FCC ID: MSQ-QUBERC01U

**RECEIVED:** Apr. 30, 2013

**TESTED:** Apr. 30, 2013

**ISSUED:** May 10, 2013

**APPLICANT:** ASUSTEK COMPUTER INC.

ADDRESS: 4F, No.150, LI-TE RD., PEITOU, TAIPEI, TAIWAN, R.O.C.

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

**LAB LOCATION:** No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.



## Table of Contents

RELE	ASE CONTROL RECORD	3
1.	CERTIFICATION	4
2. 2.1	SUMMARY OF TEST RESULTS MEASUREMENT UNCERTAINTY	
3. 3.1 3.2 3.2.1 3.3 3.3.1 3.4	GENERAL INFORMATION GENERAL DESCRIPTION OF EUT DESCRIPTION OF TEST MODES TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL DESCRIPTION OF SUPPORT UNITS CONFIGURATION OF SYSTEM UNDER TEST GENERAL DESCRIPTION OF APPLIED STANDARDS	6 7 8 9 9 9 10
4. 4.1 4.2.1 4.2.2 4.2.3 4.2.3 4.2.4 4.2.5 4.2.6 4.2.7	TEST TYPES AND RESULTS CONDUCTED EMISSION MEASUREMENT RADIATED EMISSION AND BAND EDGE MEASUREMENT LIMITS OF RADIATED EMISSION AND BAND EDGE MEASUREMENT TEST INSTRUMENTS TEST PROCEDURES DEVIATION FROM TEST STANDARD TEST SETUP EUT OPERATING CONDITIONS TEST RESULTS	11 11 12 13 13 14 14
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	20
6.	INFORMATION ON THE TESTING LABORATORIES	21
7.	APPENDIX A – MODIFICATION RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	22



## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121017D11B-1	Original release	May 10, 2013



#### **1. CERTIFICATION**

PRODUCT: Media Streamer RC BRAND: ASUS MODEL NO.: ASUS CUBE WITH GOOGLE TV RC APPLICANT: ASUSTeK COMPUTER INC. TESTED: Apr. 30, 2013 TEST SAMPLE: MASS-PRODUCTION STANDARDS: FCC Part 15, Subpart C (Section 15.249) ANSI C63.10-2009

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 / Senior Specialist)

DATE: May 10, 2013

APPROVED BY

(Ken Liu / Senior Manager)

**DATE:** May 10, 2013



## **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 PARAGRAPH	TEST TYPE	RESULT	REMARK		
15.207	Conducted Emission Test	N/A	Power supply is 3.0Vdc 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 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -8.9dB at 2390.00MHz.		

#### 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
Dedicted enviseigne	30MHz ~ 1GHz	4.30 dB
Radiated emissions	Above 1GHz	3.36 dB



#### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

EUT	Media Streamer RC
MODEL NO.	ASUS CUBE WITH GOOGLE TV RC
POWER SUPPLY	3.0Vdc from batteries
MODULATION TYPE	GFSK
OPERATING FREQUENCY	2403MHz ~ 2480MHz
NUMBER OF CHANNEL	70
ANTENNA TYPE	Printed monopole antenna with 1.88dBi gain
DATA CABLE	N/A
I/O PORT	N/A
ACCESSORY DEVICES	N/A

#### NOTE:

- 1. This report is a supplementary report of original one (BV CPS report no.: RF121017D11-1 R1) issued on Mar. 14, 2013 to verify test result for adding extra channels through software enabling.
- 2. The changes are meeting the software changes of the permissive changes rules; therefore this report is prepared for FCC class II permissive change.
- 3. The EUT is a Media Streamer RC.
- 4. The above EUT information is 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

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
1	2403	21	2429	41	2449	61	2468
2	2410	22	2430	42	2450	62	2468.5
3	2411	23	2431	43	2451	63	2469
4	2412	24	2432	44	2452	64	2470
5	2413	25	2433	45	2453	65	2470.5
6	2414	26	2434	46	2454	66	2471
7	2415	27	2435	47	2455	67	2472
8	2416	28	2436	48	2456	68	2472.5
9	2417	29	2437	49	2457	69	2473
10	2418	30	2438	50	2458	70	2480
11	2419	31	2439	51	2459		
12	2420	32	2440	52	2460		
13	2421	33	2441	53	2461		
14	2422	34	2442	54	2462		
15	2423	35	2443	55	2463		
16	2424	36	2444	56	2464		
17	2425	37	2445	57	2465		
18	2426	38	2446	58	2466		
19	2427	39	2447	59	2466.5		
20	2428	40	2448	60	2467		

70 channels are provided to this EUT:



#### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

	EUT		APPLICA	ABLE TO		DESCRIPTION		
	CONFIGURE MODE	PLC	RE <sup>3</sup> 1G	RE<1G	BM	DESCRIPTION		
	-	Note 1	$\checkmark$	$\checkmark$	$\checkmark$	-		
		C: Power Lii <1G: Radiat		ed Emission 1 below 1GH		<sup>:3</sup> 1 <b>G:</b> Radiated Emissi I: Bandedge Measure		
		T had been				EUT is powered by ba ch 3 axis. The worst c	tteries. ase was found when positior	ied of
RAD		ON TES	T (ABOVI	<u>E 1 GHz):</u>				
	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations axis and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.							
$\boxtimes$	between avai architecture).	lable mod	lulations a	xis and ar	tenna po	orts (if EUT with ar	ntenna diversity	ons
_	between avai architecture).	lable mod annel(s) w	ulations a	xis and ar	tenna po	orts (if EUT with ar	ntenna diversity	ons
_	between avai architecture). Following cha	lable mod annel(s) w	ulations a as (were) AVAILABI	xis and ar selected f	tenna po	orts (if EUT with an	ntenna diversity elow.	ons
	between avai architecture). Following cha EUT CONFIGUR - 	lable mod annel(s) w REMODE SION TES been cor lable mod	AVAILABI T (BELO) Inducted to Iulations a	xis and ar selected f LE CHANNE to 70 N 1 GHz): determine xis and ar	e the wor tenna po	orts (if EUT with an aal test as listed be <b>STED CHANNEL</b> 1, 33, 70	ntenna diversity elow. <u>MODULATION TYPE</u> GFSK n all possible combinati ntenna diversity	
	between avai architecture). Following cha EUT CONFIGUR - 	lable mod annel(s) w REMODE SION TES s been cor lable mod annel(s) w	AVAILABI T (BELOV Nducted to Julations a	xis and ar selected f LE CHANNE to 70 N 1 GHz): determine xis and ar	tenna po or the fir L TE e the wor tenna po or the fir	orts (if EUT with an aal test as listed be <b>STED CHANNEL</b> 1, 33, 70 Test-case mode from orts (if EUT with an	ntenna diversity elow. <u>MODULATION TYPE</u> GFSK n all possible combinati ntenna diversity	

#### BANDEDGE MEASUREMENT:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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
-	1 to 70	1, 70	GFSK

#### **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE <sup>3</sup> 1G	23deg. C, 77% RH	3.0Vdc	Dalen Dai
RE<1G	23deg. C, 77% RH	3.0Vdc	Dalen Dai
BM	23deg. C, 77% RH	3.0Vdc	Dalen Dai



## 3.3 DESCRIPTION OF SUPPORT UNITS

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

## 3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

EUT (Powered from batteries)	
	Test table



#### 3.4 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 (Section 15.249)

ANSI C63.10-2009

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



#### 4. TEST TYPES AND RESULTS

#### 4.1 CONDUCTED EMISSION MEASUREMENT

N/A

#### 4.2 RADIATED EMISSION AND BAND EDGE MEASUREMENT

# 4.2.1 LIMITS OF RADIATED EMISSION AND BAND EDGE MEASUREMENT

The field strength of emissions from intentional radiators operate d within these frequency bands shall comply with the following

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

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits as below table, whichever is the lesser attenuation

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. 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	Feb. 26, 2013	Feb. 25, 2014
HP Preamplifier	8449B	3008A01201	Feb. 26, 2013	Feb. 25, 2014
Agilent Spectrum Analyzer	E4446A	MY46180403	Jun. 13, 2012	Jun. 12, 2013
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Oct. 11, 2012	Oct. 10, 2013
Schwarzbeck Antenna	VULB 9168	137	Mar. 20, 2013	Mar. 19, 2014
Schwarzbeck Antenna	VHBA 9123	480	May 22, 2012	May 21, 2013
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	SF102	CABLE-CH6	Aug. 19, 2012	Aug. 18, 2013
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	May 18, 2012	May 17, 2013
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	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 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

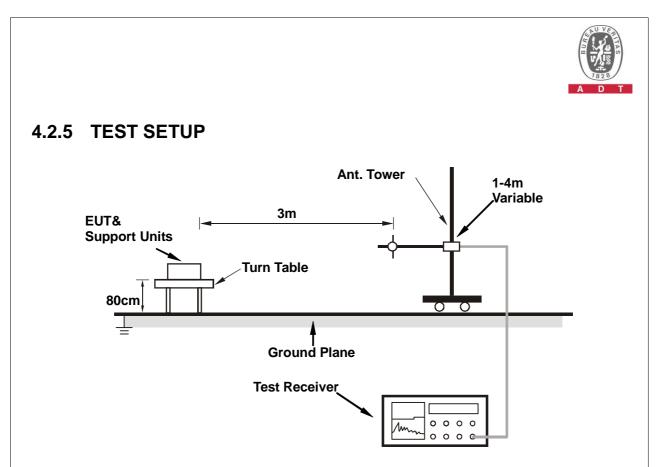
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on 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 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 Quasi-peak detection 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. All modes of operation were investigated and the worst-case emissions are reported.

## 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.



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

## 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

CHANNEL	TX Channel 1	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

	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	61.9 PK	74.0	-12.1	1.29 H	63	29.63	32.25	
2	2390.00	45.1 AV	54.0	-8.9	1.29 H	63	12.81	32.25	
3	2400.00	58.6 PK	74.0	-15.4	1.29 H	63	26.35	32.29	
4	2400.00	31.9 AV	54.0	-22.1	1.29 H	63	-0.35	32.29	
5	*2403.00	100.9 PK	114.0	-13.1	1.29 H	63	68.64	32.30	
6	*2403.00	74.2 AV	94.0	-19.8	1.29 H	63	41.94	32.30	
7	4806.00	55.9 PK	74.0	-18.1	1.13 H	108	16.49	39.39	
8	4806.00	29.2 AV	54.0	-24.8	1.13 H	108	-10.21	39.39	
		ANTENNA	<b>POLARIT</b>	Y & TEST DI	STANCE: V	ERTICAL A	Т 3 М		
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	60.6 PK	74.0	-13.4	1.12 V	91	28.32	32.25	
2	2390.00	45.0 AV	54.0	-9.0	1.12 V	91	12.71	32.25	
3	2400.00	55.9 PK	74.0	-18.1	1.12 V	91	23.59	32.29	
4	2400.00	29.2 AV	54.0	-24.8	1.12 V	91	-3.11	32.29	
5	*2403.00	98.2 PK	114.0	-15.8	1.12 V	91	65.88	32.30	
6	*2403.00	71.5 AV	94.0	-22.5	1.12 V	91	39.18	32.30	
7	4806.00	59.3 PK	74.0	-14.7	1.11 V	263	19.92	39.39	
8	4806.00	32.6 AV	54.0	-21.4	1.11 V	263	-6.78	39.39	

#### **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) – Pre-Amplifier Factor (dB) if use.
- 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 (Duty cycle) = 20 log (0.38 ms / 8.22 ms) = -26.7 dB
  Please see page 18 for plotted duty.



CHANNEL	TX Channel 33	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

	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	*2441.00	101.6 PK	114.0	-12.4	1.00 H	67	71.20	30.43	
2	*2441.00	74.9 AV	94.0	-19.1	1.00 H	67	44.50	30.43	
3	4882.00	57.4 PK	74.0	-16.6	1.34 H	114	20.63	36.79	
4	4882.00	30.7 AV	54.0	-23.3	1.34 H	114	-6.07	36.79	
		ANTENNA		Y & TEST DI	STANCE: V	ERTICAL A	Т 3 М		
NO.	NO. FREQ. (MHz) EMISSION LEVEL (dBuV/m) LIMIT (dBuV/m) MARGIN (dB) ANTENNA HEIGHT (m) (Degree) RAW VALUE (dBuV) (dBuV) (dB/m)								
1	*2441.00	99.4 PK	114.0	-14.6	1.00 V	93	68.97	30.43	
2	*2441.00	72.7 AV	94.0	-21.3	1.00 V	93	42.27	30.43	
3	4882.00	60.5 PK	74.0	-13.5	1.16 V	154	23.72	36.79	
4	4882.00	33.8 AV	54.0	-20.2	1.16 V	154	-2.98	36.79	

#### **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) – Pre-Amplifier Factor (dB) if use.
- 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 (Duty cycle) = 20 log (0.38 ms / 8.22 ms) = -26.7 dB
  Please see page 18 for plotted duty.



CHANNEL	TX Channel 70	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

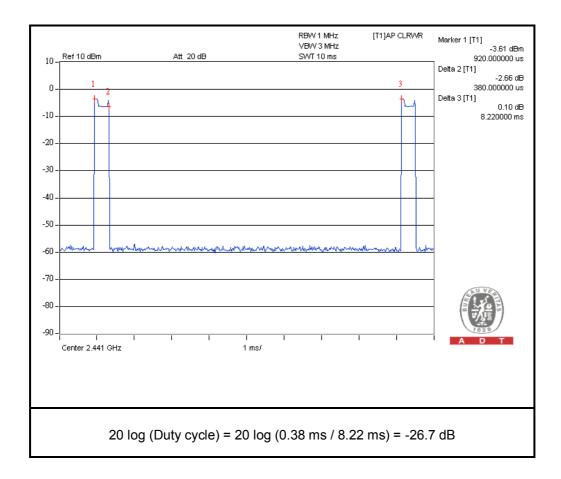
	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	*2480.00	101.0 PK	114.0	-13.0	1.07 H	66	68.38	32.66	
2	*2480.00	74.3 AV	94.0	-19.7	1.07 H	66	41.68	32.66	
3	2483.50	60.2 PK	74.0	-13.8	1.07 H	66	27.57	32.67	
4	2483.50	33.5 AV	54.0	-20.5	1.07 H	66	0.87	32.67	
5	4960.00	61.9 PK	74.0	-12.1	1.37 H	111	22.23	39.66	
6	4960.00	35.2 AV	54.0	-18.8	1.37 H	111	-4.47	39.66	
		ANTENNA	POLARITY	( & TEST DI	STANCE: V	ERTICAL A	T 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	99.1 PK	114.0	-14.9	1.10 V	90	66.41	32.66	
2	*2480.00	72.4 AV	94.0	-21.6	1.10 V	90	39.71	32.66	
3	2483.50	58.3 PK	74.0	-15.7	1.10 V	90	25.60	32.67	
4	2483.50	31.6 AV	54.0	-22.4	1.10 V	90	-1.10	32.67	
5	4960.00	62.8 PK	74.0	-11.2	1.02 V	275	23.11	39.66	
6	4960.00	36.1 AV	54.0	-17.9	1.02 V	275	-3.59	39.66	

**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) – Pre-Amplifier Factor (dB) if use.
- 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 (Duty cycle) = 20 log (0.38 ms / 8.22 ms) = -26.7 dB

Please see page 18 for plotted duty.







#### **BELOW 1GHz WORST-CASE DATA**

CHANNEL	TX Channel 1	DETECTOR	Quaai Baak
FREQUENCY RANGE	Below 1000MHz	FUNCTION	Quasi-Peak

	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	54.25	15.1 QP	40.0	-24.9	1.04 H	292	0.38	14.70	
2	159.98	13.4 QP	43.5	-30.1	1.10 H	11	-1.09	14.51	
3	384.05	20.8 QP	46.0	-25.2	1.36 H	248	2.62	18.15	
4	629.46	23.4 QP	46.0	-22.6	1.27 H	243	-0.91	24.27	
5	815.70	27.2 QP	46.0	-18.8	1.02 H	253	-0.13	27.29	
6	954.41	28.1 QP	46.0	-18.0	1.07 H	127	-1.07	29.12	
		ANTENNA	POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	Т 3 М		
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	79.47	21.9 QP	40.0	-18.1	1.05 V	32	11.54	10.34	
2	98.87	19.5 QP	43.5	-24.0	1.13 V	26	9.83	9.68	
3	176.47	17.5 QP	43.5	-26.0	1.26 V	198	4.21	13.33	
4	547.98	22.2 QP	46.0	-23.8	1.19 V	267	0.03	22.19	
5	744.89	25.7 QP	46.0	-20.3	1.13 V	10	-0.40	26.08	
6	855.47	27.2 QP	46.0	-18.8	1.06 V	275	-0.54	27.74	

#### **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) – Pre-Amplifier Factor (dB) if use.
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.



## 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 according to ISO/IEC 17025.

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: 886-3-3270892

Email: <a href="mailto:service.adt@tw.bureauveritas.com">service.adt@tw.bureauveritas.com</a> Web Site: <a href="mailto:www.bureauveritas-adt.com">www.bureauveritas-adt.com</a>

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



#### 7. APPENDIX A – MODIFICATION RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

----END----