FCC TEST REPORT

REPORT NO.:	RF131119D05
MODEL NO.:	1636
FCC ID:	C3K1636
RECEIVED:	Nov. 19, 2013
TESTED:	Nov. 20 ~ 26, 2013
ISSUED:	Dec. 20, 2013

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 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.

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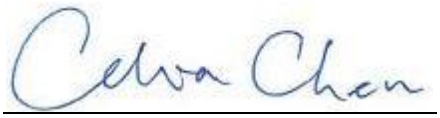
RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131119D05	Original release	Dec. 20, 2013

1. CERTIFICATION

PRODUCT: Wireless transceiver
BRAND NAME: Microsoft
MODEL NO.: 1636
APPLICANT: MICROSOFT CORPORATION
TESTED: Nov. 20 ~ 26, 2013
TEST SAMPLE: ENGINEERING SAMPLE
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 :  , **DATE:** Dec. 20, 2013
(Celia Chen / Senior Specialist)

APPROVED BY :  , **DATE:** Dec. 20, 2013
(Rex Lai / 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 PARAGRAPH	**TEST TYPE**	**RESULT**	**REMARK**
15.207	Conducted Emission Test	PASS	Meet the requirement of limit. Minimum passing margin is -8.22dB at 0.71641MHz.
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 -7.7dB 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
Conducted emissions	150kHz ~ 30MHz	2.41 dB
Radiated emissions	30MHz ~ 1GHz	4.30 dB
	Above 1GHz	3.36 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless transceiver
MODEL NO.	1636
POWER SUPPLY	5Vdc from host equipment
MODULATION TYPE	GFSK
OPERATING FREQUENCY	2403MHz ~ 2480MHz
NUMBER OF CHANNEL	78
ANTENNA TYPE	PCB antenna with -8.69dBi gain
DATA CABLE	N/A
I/O PORT	USB port
ACCESSORY DEVICES	N/A

NOTE:

1. The EUT is a Wireless transceiver.
2. The EUT has serial samples, which are defined as their serial numbers as follows:

Model No.	Serial no.
1636	EV1-479, EV1-446, EV1-162

3. 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

78 channels are provided to this EUT:

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		
20	2422	40	2442	60	2462		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE³1G	RE<1G	BM	FT	
-	√	√	√	√	√	-

Where **PLC:** Power Line Conducted Emission **RE³1G:** Radiated Emission above 1GHz
RE<1G: Radiated Emission below 1GHz **BM:** Bandedge Measurement
FT: Frequency Tolerance

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	SERIAL NO.	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	EV1-479	1 to 78	1	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 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	SERIAL NO.	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	EV1-479, EV1-446, EV1-162	1 to 78	1, 39, 78	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 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	SERIAL NO.	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	EV1-479, EV1-446, EV1-162	1 to 78	1	GFSK

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	SERIAL NO.	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	EV1-479,	1 to 78	1, 78	GFSK

FREQUENCY TOLERANCE:

☒ 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	SERIAL NO.	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	EV1-479,	1 to 78	1, 39, 78	GFSK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	25deg. C, 75% RH	120Vac, 60Hz	Joey Liu
RE<1G	25deg. C, 75% RH	120Vac, 60Hz	Joey Liu
PLC	24deg. C, 60% RH	120Vac, 60Hz	Koven Chuang
BM	25deg. C, 75% RH	120Vac, 60Hz	Joey Liu
FT	16deg. C, 72% RH	120Vac, 60Hz	Saxon Lee

3.3 DESCRIPTION OF SUPPORT UNITS

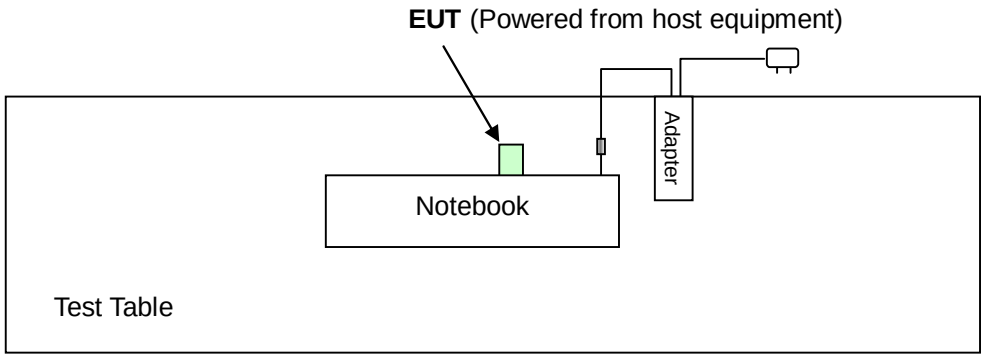
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP27L	8SNZ12S	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

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

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



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

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.

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

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	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100276	Jan. 07, 2013	Jan. 06, 2014
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100219	Nov. 17, 2013	Nov. 16, 2014
LISN With Adapter (for EUT)	AD10	C10Ada-001	Nov. 17, 2013	Nov. 16, 2014
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100218	Nov. 25, 2013	Nov. 24, 2014
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. 19, 2013	Feb. 18, 2014
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 06, 2013	Feb. 05, 2014

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.

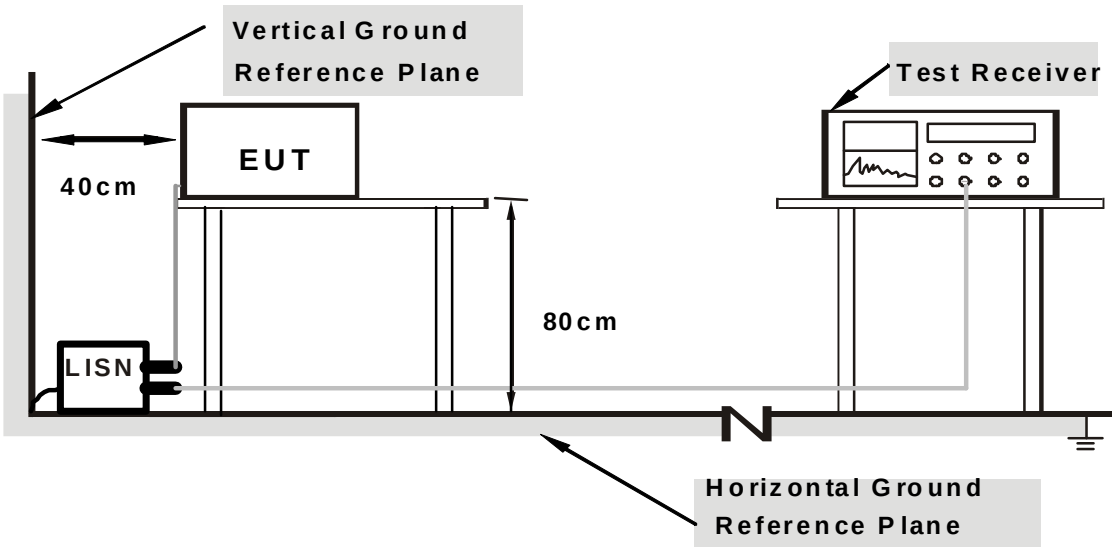
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



Note: Support units were connected to second LISN.

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

4.1.6 EUT OPERATING CONDITIONS

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

4.1.7 TEST RESULTS

SERIAL NO.: EV1-479

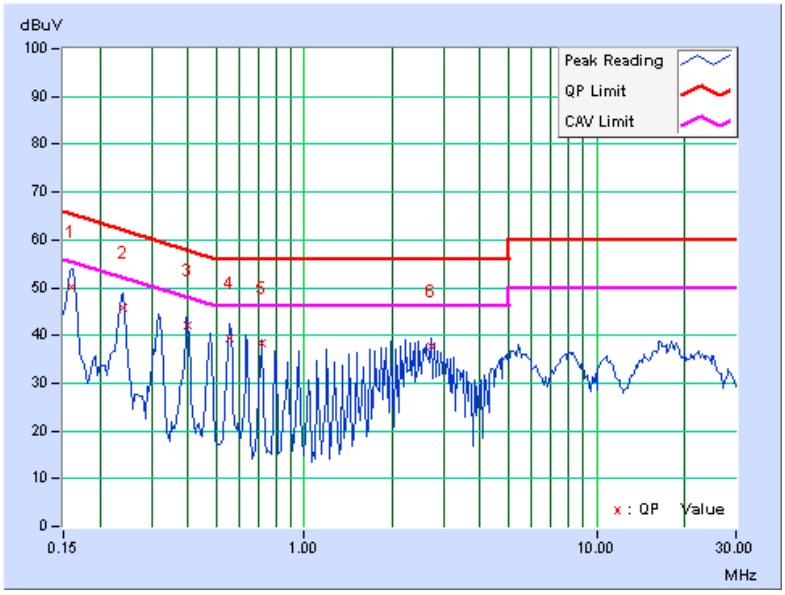
CONDUCTED WORST-CASE DATA

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 1		

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	0.15916	0.14	50.00	43.96	50.14	44.10	65.51	55.51	-15.37	-11.41
2	0.23856	0.15	45.54	39.99	45.69	40.14	62.15	52.15	-16.46	-12.01
3	0.39745	0.17	41.82	38.08	41.99	38.25	57.91	47.91	-15.92	-9.66
4	0.55625	0.18	39.18	36.55	39.36	36.73	56.00	46.00	-16.64	-9.27
5	**0.71641**	**0.18**	**38.28**	**37.60**	**38.46**	**37.78**	**56.00**	**46.00**	**-17.54**	**-8.22**
6	2.70313	0.26	37.41	35.95	37.67	36.21	56.00	46.00	-18.33	-9.79

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission Level – Limit value
4. Correction Factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

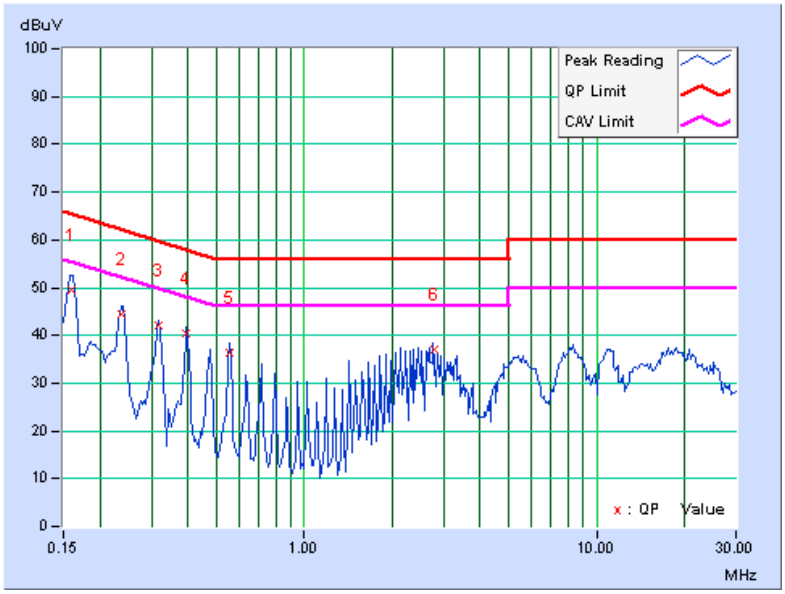


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 1		

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	0.15907	0.11	49.36	41.87	49.47	41.98	65.51	55.51	-16.05	-13.54
2	0.23794	0.12	44.25	36.94	44.37	37.06	62.17	52.17	-17.80	-15.11
3	0.31776	0.13	41.99	40.28	42.12	40.41	59.77	49.77	-17.65	-9.36
4	0.39609	0.14	40.24	37.54	40.38	37.68	57.93	47.93	-17.56	-10.26
5	0.55625	0.14	36.26	33.23	36.40	33.37	56.00	46.00	-19.60	-12.63
6	2.77616	0.22	36.69	34.39	36.91	34.61	56.00	46.00	-19.09	-11.39

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission Level – Limit value
4. Correction Factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



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 TEST RECEIVER	N9038A	MY51210129	Jan. 03, 2013	Jan. 02, 2014
Schwarzbeck Antenna	VULB 9168	137	Mar. 20, 2013	Mar. 19, 2014
Schwarzbeck Antenna	VHBA 9123	480	May 29, 2013	May 28, 2014
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. 16, 2013	Aug. 15, 2014
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	May 13, 2013	May 12, 2014
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 antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

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

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

NOTE:

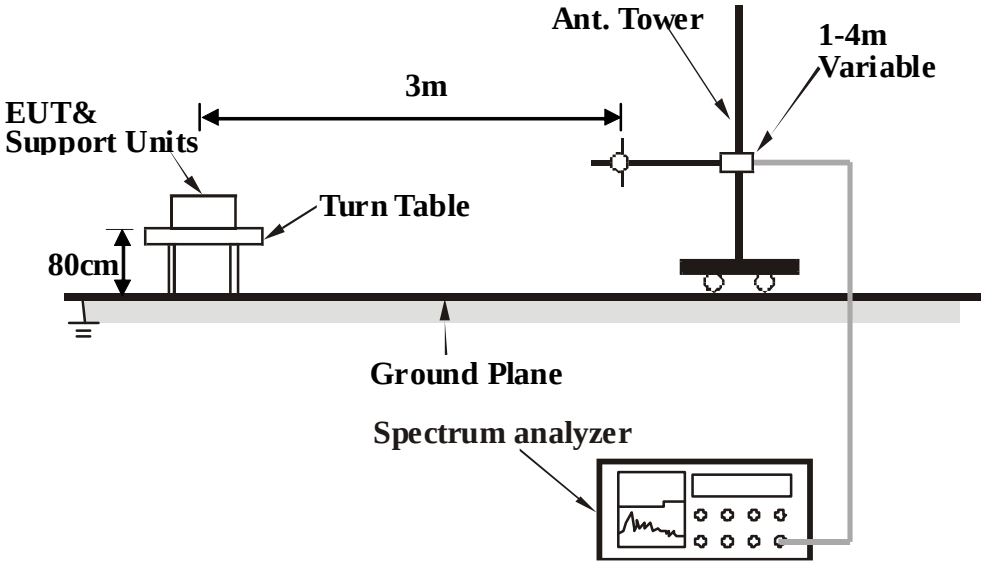
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. All modes of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

4.2.4 DEVIATION FROM TEST STANDARD

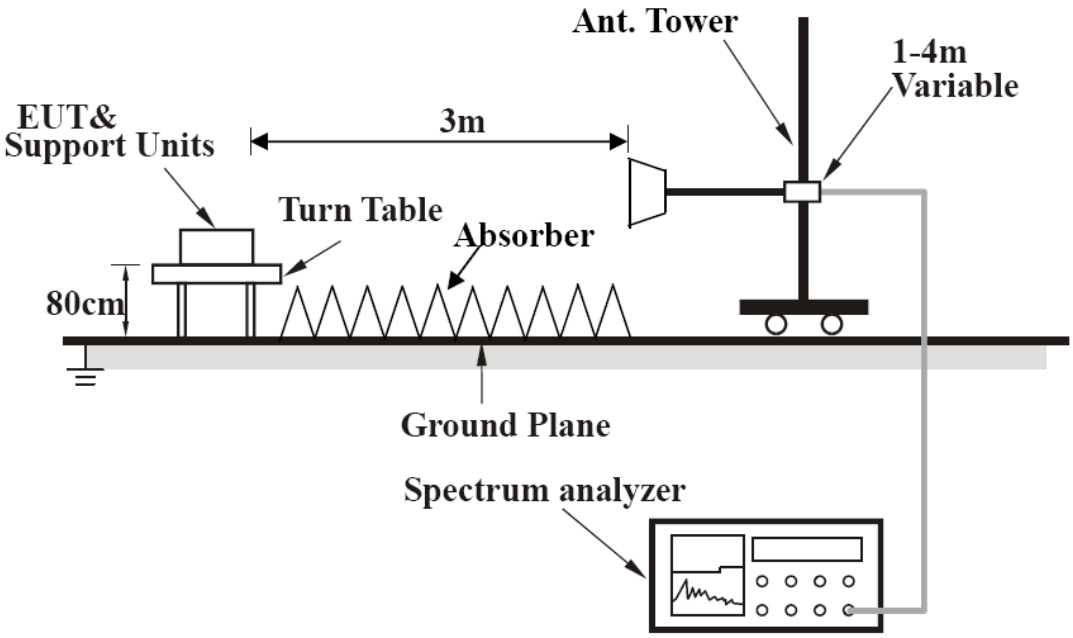
No deviation.

4.2.5 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



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 (For Fundamental, Harmonics)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-479		

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	*2403.00	93.1 PK	114.0	-21.0	1.00 H	207	96.74	-3.69
2	*2403.00	72.9 AV	94.0	-21.2	1.00 H	207	76.54	-3.69
3	4806.00	41.8 PK	74.0	-32.2	1.00 H	211	38.11	3.71
4	4806.00	21.6 AV	54.0	-32.4	1.00 H	211	17.91	3.71
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	*2403.00	90.5 PK	114.0	-23.5	1.00 V	147	94.15	-3.69
2	*2403.00	70.3 AV	94.0	-23.7	1.00 V	147	73.95	-3.69
3	4806.00	41.4 PK	74.0	-32.6	1.00 V	152	37.73	3.71
4	4806.00	21.2 AV	54.0	-32.8	1.00 V	152	17.53	3.71

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).
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 (0.1 ms / 1.02 ms) = -20.2 dB
   Please see page 23 for plotted duty.

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-479		

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	92.8 PK	114.0	-21.2	1.00 H	208	96.30	-3.51
2	*2441.00	72.6 AV	94.0	-21.4	1.00 H	208	76.10	-3.51
3	4882.00	41.9 PK	74.0	-32.1	1.00 H	210	38.14	3.76
4	4882.00	21.7 AV	54.0	-32.3	1.00 H	210	17.94	3.76
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	*2441.00	90.1 PK	114.0	-23.9	1.00 V	92	93.57	-3.51
2	*2441.00	69.9 AV	94.0	-24.1	1.00 V	92	73.37	-3.51
3	4882.00	42.1 PK	74.0	-31.9	1.00 V	102	38.32	3.76
4	4882.00	21.9 AV	54.0	-32.1	1.00 V	102	18.12	3.76

REMARKS:

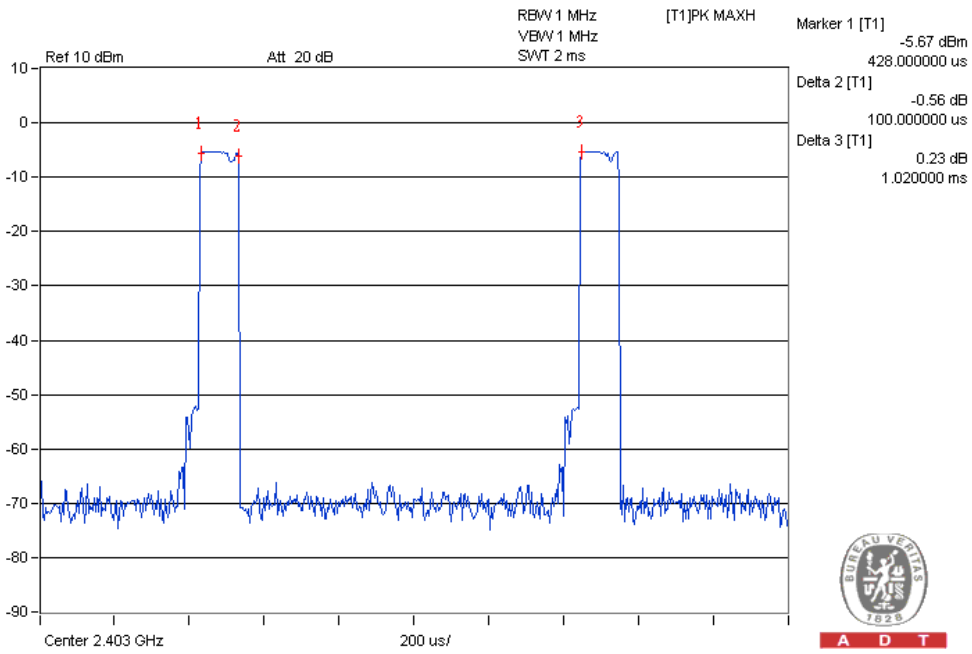
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * " : Fundamental 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 (0.1 ms / 1.02 ms) = -20.2 dB
   Please see page 23 for plotted duty.

CHANNEL	TX Channel 78	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-479		

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	93.4 PK	114.0	-20.7	1.00 H	206	96.68	-3.33
2	*2480.00	73.2 AV	94.0	-20.9	1.00 H	206	76.48	-3.33
3	4960.00	41.7 PK	74.0	-32.3	1.00 H	206	38.02	3.70
4	4960.00	21.5 AV	54.0	-32.5	1.00 H	206	17.82	3.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	*2480.00	89.4 PK	114.0	-24.6	1.00 V	90	92.76	-3.33
2	*2480.00	69.2 AV	94.0	-24.8	1.00 V	90	72.56	-3.33
3	4960.00	42.0 PK	74.0	-32.0	1.00 V	95	38.26	3.70
4	4960.00	21.8 AV	54.0	-32.2	1.00 V	95	18.06	3.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier 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 (Duty cycle) = 20 log (0.1 ms / 1.02 ms) = -20.2 dB
   Please see page 23 for plotted duty.



20 log (Duty cycle) = 20 log (0.1 ms / 1.02 ms) = -20.2 dB

ABOVE 1GHz DATA (For Spurious Emission)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-479		

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	62.5 PK	74.0	-11.5	1.00 H	207	66.21	-3.75
2	**2390.00**	**46.3 AV**	**54.0**	**-7.7**	**1.00 H**	**207**	**50.04**	**-3.75**
3	2400.00	52.9 PK	74.0	-21.1	1.00 H	207	56.60	-3.70
4	2400.00	32.7 AV	54.0	-21.3	1.00 H	207	36.40	-3.70
5	2748.00	40.3 PK	74.0	-33.8	1.00 H	245	42.57	-2.32
6	2748.00	29.4 AV	54.0	-24.7	1.00 H	245	31.67	-2.32
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	61.2 PK	74.0	-12.8	1.00 V	147	64.92	-3.75
2	2390.00	46.1 AV	54.0	-7.9	1.00 V	147	49.89	-3.75
3	2400.00	52.3 PK	74.0	-21.7	1.00 V	147	56.01	-3.70
4	2400.00	32.1 AV	54.0	-21.9	1.00 V	147	35.81	-3.70
5	2748.00	40.3 PK	74.0	-33.7	1.00 V	224	42.58	-2.32
6	2748.00	29.5 AV	54.0	-24.5	1.00 V	224	31.81	-2.32

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-479		

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	2792.00	41.5 PK	74.0	-32.6	1.00 H	239	43.61	-2.16
2	2792.00	29.9 AV	54.0	-24.1	1.00 H	239	32.08	-2.16
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	2792.00	40.5 PK	74.0	-33.5	1.00 V	138	42.67	-2.16
2	2792.00	29.7 AV	54.0	-24.3	1.00 V	138	31.89	-2.16

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

CHANNEL	TX Channel 78	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-479		

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	2483.50	49.2 PK	74.0	-24.8	1.00 H	206	52.53	-3.32
2	2483.50	29.0 AV	54.0	-25.0	1.00 H	206	32.33	-3.32
3	2836.00	40.7 PK	74.0	-33.3	1.00 H	334	42.68	-2.02
4	2836.00	30.7 AV	54.0	-23.4	1.00 H	334	32.67	-2.02
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	2483.50	51.3 PK	74.0	-22.7	1.00 V	90	54.61	-3.32
2	2483.50	31.1 AV	54.0	-22.9	1.00 V	90	34.41	-3.32
3	2836.00	41.6 PK	74.0	-32.4	1.00 V	354	43.62	-2.02
4	2836.00	30.2 AV	54.0	-23.8	1.00 V	354	32.18	-2.02

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-446		

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	40.0 PK	74.0	-34.1	1.00 H	154	42.27	-2.32
2	2748.00	29.7 AV	54.0	-24.3	1.00 H	154	32.06	-2.32
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	38.9 PK	74.0	-35.1	1.00 V	164	41.26	-2.32
2	2748.00	29.0 AV	54.0	-25.1	1.00 V	164	31.27	-2.32

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-446		

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	2792.00	40.5 PK	74.0	-33.5	1.00 H	321	42.67	-2.16
2	2792.00	29.9 AV	54.0	-24.1	1.00 H	321	32.07	-2.16
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	2792.00	40.4 PK	74.0	-33.6	1.00 V	147	42.57	-2.16
2	2792.00	29.5 AV	54.0	-24.5	1.00 V	147	31.68	-2.16

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

CHANNEL	TX Channel 78	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-446		

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	40.1 PK	74.0	-34.0	1.00 H	152	42.07	-2.02
2	2836.00	29.0 AV	54.0	-25.0	1.00 H	152	31.06	-2.02
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	40.5 PK	74.0	-33.5	1.00 V	169	42.53	-2.02
2	2836.00	29.7 AV	54.0	-24.3	1.00 V	169	31.72	-2.02

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-162		

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	38.9 PK	74.0	-35.1	1.00 H	248	41.24	-2.32
2	2748.00	29.4 AV	54.0	-24.6	1.00 H	248	31.71	-2.32
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	38.8 PK	74.0	-35.3	1.00 V	127	41.07	-2.32
2	2748.00	28.9 AV	54.0	-25.1	1.00 V	127	31.22	-2.32

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-162		

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	2792.00	39.1 PK	74.0	-34.9	1.00 H	207	41.28	-2.16
2	2792.00	29.7 AV	54.0	-24.3	1.00 H	207	31.87	-2.16
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	2792.00	40.1 PK	74.0	-33.9	1.00 V	127	42.28	-2.16
2	2792.00	29.2 AV	54.0	-24.8	1.00 V	127	31.39	-2.16

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

CHANNEL	TX Channel 78	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		
SERIAL NO.	EV1-162		

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	40.4 PK	74.0	-33.6	1.00 H	217	42.38	-2.02
2	2836.00	30.1 AV	54.0	-23.9	1.00 H	217	32.09	-2.02
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	40.1 PK	74.0	-34.0	1.00 V	360	42.07	-2.02
2	2836.00	29.3 AV	54.0	-24.7	1.00 V	360	31.31	-2.02

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

BELOW 1GHz WORST-CASE DATA

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
SERIAL NO.	EV1-479		

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	135.49	29.5 QP	43.5	-14.0	1.24 H	48	43.35	-13.89
2	232.25	30.4 QP	46.0	-15.6	1.73 H	304	45.54	-15.10
3	264.98	27.0 QP	46.0	-19.0	1.34 H	351	39.80	-12.81
4	347.72	25.9 QP	46.0	-20.1	1.22 H	249	36.47	-10.61
5	399.72	27.7 QP	46.0	-18.3	1.71 H	105	37.35	-9.62
6	416.11	26.7 QP	46.0	-19.3	1.08 H	115	36.06	-9.32
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	34.56	27.7 QP	40.0	-12.3	1.17 V	321	42.77	-15.05
2	67.73	27.3 QP	40.0	-12.7	1.25 V	357	42.73	-15.41
3	135.49	26.2 QP	43.5	-17.3	1.15 V	360	40.08	-13.89
4	233.99	25.0 QP	46.0	-21.0	1.53 V	360	39.85	-14.84
5	416.06	28.1 QP	46.0	-17.9	1.43 V	357	37.39	-9.33
6	508.02	26.6 QP	46.0	-19.4	1.00 V	94	33.75	-7.12

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
SERIAL NO.	EV1-446		

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	135.49	27.8 QP	43.5	-15.7	1.22 H	58	41.68	-13.89
2	214.59	26.0 QP	43.5	-17.5	1.53 H	261	41.44	-15.43
3	246.79	27.3 QP	46.0	-18.7	1.61 H	292	41.09	-13.76
4	323.09	25.4 QP	46.0	-20.6	1.17 H	69	36.23	-10.83
5	416.11	26.5 QP	46.0	-19.6	1.36 H	134	35.77	-9.32
6	609.67	25.5 QP	46.0	-20.5	1.43 H	1	30.64	-5.17
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	99.89	23.9 QP	43.5	-19.6	1.24 V	237	41.91	-18.03
2	135.49	27.5 QP	43.5	-16.0	1.37 V	73	41.37	-13.89
3	233.22	30.0 QP	46.0	-16.0	1.43 V	252	44.92	-14.96
4	258.53	30.0 QP	46.0	-16.0	1.56 V	12	43.21	-13.18
5	346.95	26.4 QP	46.0	-19.6	1.67 V	73	37.07	-10.63
6	417.13	27.6 QP	46.0	-18.4	1.21 V	105	36.88	-9.27

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
SERIAL NO.	EV1-162		

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	135.49	27.3 QP	43.5	-16.2	1.27 H	63	41.17	-13.89
2	212.41	26.9 QP	43.5	-16.6	1.34 H	278	42.32	-15.46
3	249.07	28.2 QP	46.0	-17.8	1.17 H	360	41.76	-13.57
4	312.66	25.8 QP	46.0	-20.2	1.47 H	93	36.82	-11.06
5	348.06	27.0 QP	46.0	-19.0	1.55 H	73	37.58	-10.61
6	417.56	28.1 QP	46.0	-17.9	1.17 H	119	37.35	-9.25
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	37.42	27.7 QP	40.0	-12.4	1.13 V	5	42.16	-14.51
2	86.94	24.3 QP	40.0	-15.7	1.27 V	347	43.36	-19.03
3	237.34	24.8 QP	46.0	-21.2	1.78 V	5	39.23	-14.46
4	382.74	27.8 QP	46.0	-18.3	1.53 V	25	37.58	-9.83
5	417.71	29.6 QP	46.0	-16.4	1.64 V	163	38.87	-9.25
6	609.67	25.4 QP	46.0	-20.6	1.27 V	103	30.54	-5.17

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).
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 : ±0.001%

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP 40	100036	May 17, 2013	May 16, 2014

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 ±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.	EV1-479	CHANNEL	1, 39, 78

CH 1

TEST CONDITION			Carrier Frequency (MHz)	Frequency Drift (kHz)	Frequency error (%)
Tnom(℃)	20	Vnom(V)	2402.9820	0.00	0.00000%
Tmin(℃)	-20	Vmin(V)	2402.9818	-0.20	-0.00001%
		Vmax(V)	2402.9822	0.12	0.00000%
Tmax(℃)	55	Vmin(V)	2402.9814	-0.64	-0.00003%
		Vmax(V)	2402.9815	-0.54	-0.00002%
Limit : ±0.001%					

CH 39

TEST CONDITION			Carrier Frequency (MHz)	Frequency Drift (kHz)	Frequency error (%)
Tnom(℃)	20	Vnom(V)	2440.9821	0.00	0.00000%
Tmin(℃)	-20	Vmin(V)	2440.9821	0.00	0.00000%
		Vmax(V)	2440.9823	0.20	0.00001%
Tmax(℃)	55	Vmin(V)	2440.9752	-6.88	-0.00028%
		Vmax(V)	2440.9753	-6.78	-0.00028%
Limit : ±0.001%					

CH 78

TEST CONDITION			Carrier Frequency (MHz)	Frequency Drift (kHz)	Frequency error (%)
Tnom(℃)	20	Vnom(V)	2479.9816	0.00	0.00000%
Tmin(℃)	-20	Vmin(V)	2479.9820	0.32	0.00001%
		Vmax(V)	2479.9815	-0.12	0.00000%
Tmax(℃)	55	Vmin(V)	2479.9763	-5.34	-0.00022%
		Vmax(V)	2479.9764	-5.24	-0.00021%
Limit : ±0.001%					

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:

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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.

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