

FCC CERTIFICATION TEST REPORT

REPORT NO.: FC120910C28

MODEL NO.: F-04E

RECEIVED: Sep. 10, 2012

TESTED: Sep. 28 ~ Oct. 01, 2012

ISSUED: Oct. 14, 2012

APPLICANT: FUJITSU LIMITED

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FD120910C28	Original release	Oct. 14, 2012

1 CERTIFICATION

PRODUCT: Mobile Phone
MODEL: F-04E
BRAND: Xi
APPLICANT: FUJITSU LIMITED
TEST SAMPLE: ENGINEERING SAMPLE
TESTED: Sep. 28 ~ Oct. 01, 2012
STANDARD: **FCC Part 15, Subpart B, Class B**
ICES-003:2012, Class B
ANSI C63.4:2009

The above equipment (Model: F-04E) 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 : Rita Yi , **DATE** : Oct. 14, 2012
Rita Yi / Senior Specialist

APPROVED BY : David Liu , **DATE** : Oct. 14, 2012
David Liu / Senior Engineer

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications.

EMISSION			
Standard	Test Type	Result	Remarks
FCC Part 15, Subpart B, Class B ICES-003:2012, Class B	Conducted emission test	PASS	Meet the requirement of limit. Minimum passing margin is -9.31dB at 2.43466MHz.
	Radiated emission test (30MHz~40GHz)	PASS	Meet the requirement of limit. Minimum passing margin is -4.60dB at 181.620MHz.

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 emission	150kHz ~ 30MHz	2.44 dB
Radiated emission	30MHz ~ 1GHz	4.12 dB
	Above 1GHz	2.26 dB

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Mobile Phone
MODEL NO.	F-04E
POWER SUPPLY	3.8Vdc (Li-ion battery) 5.0Vdc (Adapter)
I/O PORTS	Refer to users' manual
DATA CABLE	1.8m USB shielded cable, with 2 cores.
ACCESSORY DEVICES	Battery
FCC ID	VQK-F04E

NOTE:

1. The EUT consumes power from the following internal Li-ion battery.

BRAND	Fujitsu Limited
MODEL	F28
RATING	3.8Vdc, 2420mAh

2. The following accessory is for optional units only.

PRODUCT	BRAND	MODEL	DESCRIPTION
ADAPTER	NTT Docomo	TA08017-B219	I/P: 100-240Vac, 220mA O/P: 5.0Vdc, 1800mA
USB cable	NA	NA	1.05m non-shielded cable w/o core

3. IMEI Code: 354022050012844.
4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

The EUT was pre-tested under following modes.

Mode	Band	Wi-Fi	Power from	Other Condition
Mode 1	GSM 850 Idle	2.4GHz Idle	Adapter	With earphone, GPS Rx
Mode 2	PCS1900 Idle	5.0GHz Idle	Adapter	With earphone, MPEG4
Mode 3	WCDMA850 Idle	2.4GHz Idle	USB Cable	With earphone, USB Link + GPS Rx

For the above modes, the worst conducted emission test was found in **Mode 1** and the worst radiated emission was found in **Mode 3**. Therefore only the test data of the modes were recorded in this report.



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.

For Conducted Test

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	BLUETOOTH EARPHONE	ELECOM	LBT-MPHS400	NA	NA
2	EARPHONE+MIC	APPLE	MB770EF/B	NA	NA
3	WIRELESS AP	BUFFALO	WBR2-G54	34059544811648	FDI-04600142-0
4	CMU 200 UPGRADE WITH WCDMA FUNCTION	R&S	CMU200	123112	NA
5	GPS ANTENNA	ETEK	SA-200,RA-46	2006918,4608261	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8m shielded VGA cable with 2 cores
3	NA
4	NA
5	NA

NOTE:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items 3-5 acted as communication partners to transfer data.



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For Radiated Test

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	E6400	HJ2M32S	FCC DoC Approved
2	24" LCD MONITOR	DELL	U2410	CN082WXD-728 72-OCR-02HL	FCC DoC Approved
3	USB PRINTER	EPSON	T22	MEEZ070220	FCC DoC Approved
4	EXTERNAL USB 1.1 FLOPPY	SONY	MPF82E	50010133	NA
5	USB MOUSE	DELL	M056U0	349007043	FCC DoC Approved
6	BLUETOOTH EARPHONE	ELECOM	LBT-MPHS400	NA	NA
7	EARPHONE+MIC	APPLE	MB770EF/B	NA	NA
8	WIRELESS AP	BUFFALO	WBR2-G54	34059544811648	FDI-04600142-0
9	CMU 200 UPGRADE WITH WCDMA FUNCTION	R&S	CMU200	123112	NA
10	GPS ANTENNA	ETEK	SA-200,RA-46	2006918,460826 1	NA

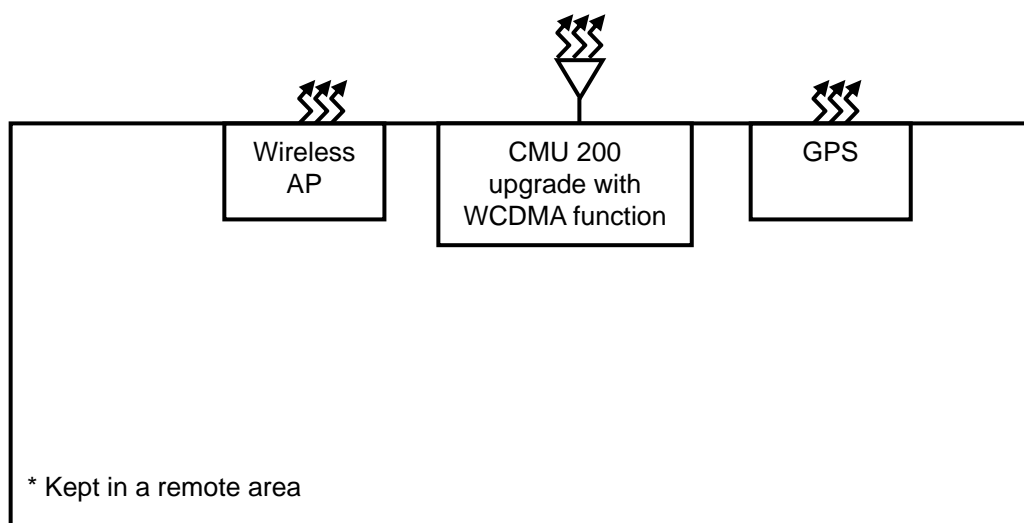
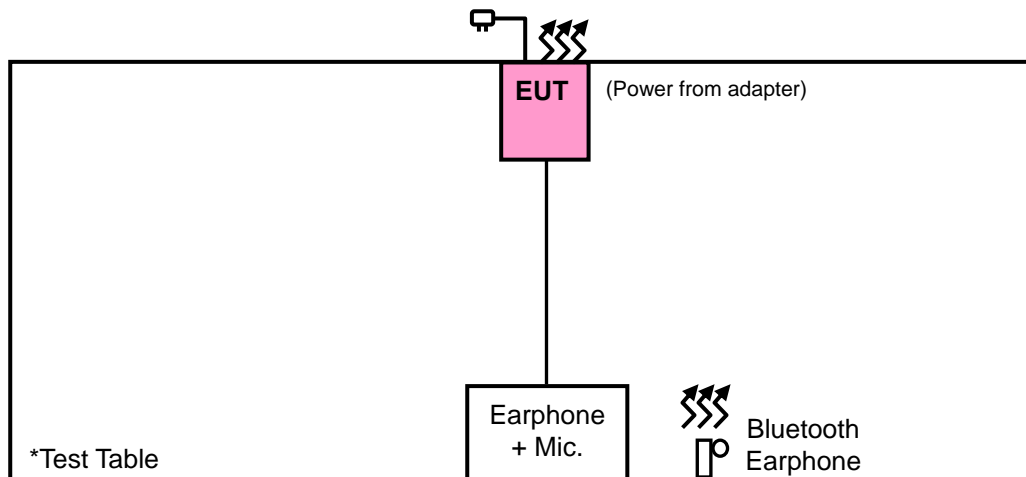
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8m shielded VGA cable with 2 cores
3	1.8m shielded cable, terminated with USB connector, w/o core
4	1.8m USB cable with 1 core
5	1.8m foil shielded wire, USB Connector, w/o core.
6	NA
7	1.8m non-shielded audio cable, w/o core.
8	NA
9	NA
10	

NOTE:

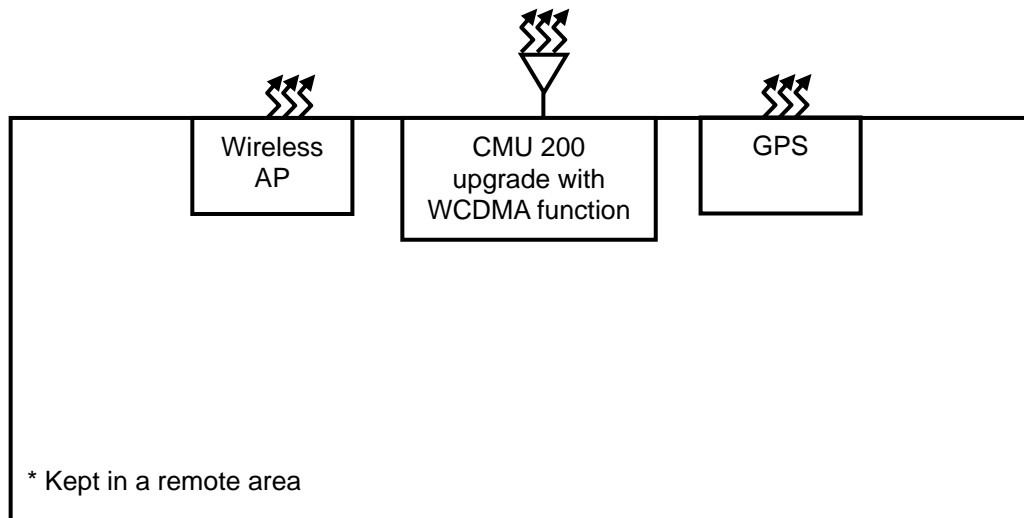
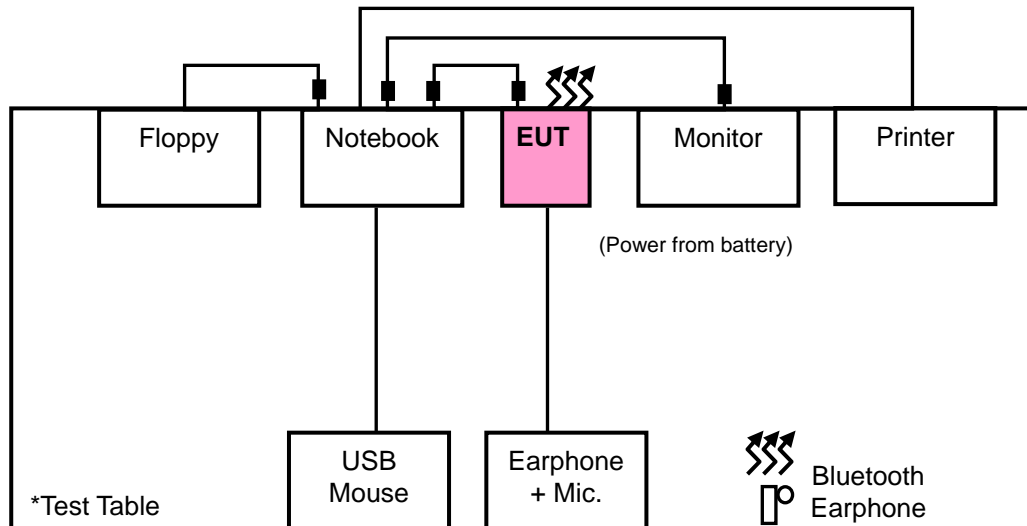
1. All power cords of the above support units are non-shielded (1.8m).
2. Items 7-10 acted as communication partners to transfer data.

3.4 CONFIGURATION OF SYSTEM UNDER TEST

For Conducted Test



For Radiated Test



4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD:

FCC Part 15, Subpart B (section: 15.107)

ICES-003:2012 Issue 5 (section: 6.1)

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15-0.5	79	66	66-56	56-46
0.5-5	73	60	56	46
5-30	73	60	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.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 23, 2011	Nov. 22, 2012
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2012	Jul. 01, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 07, 2012	Feb. 06, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

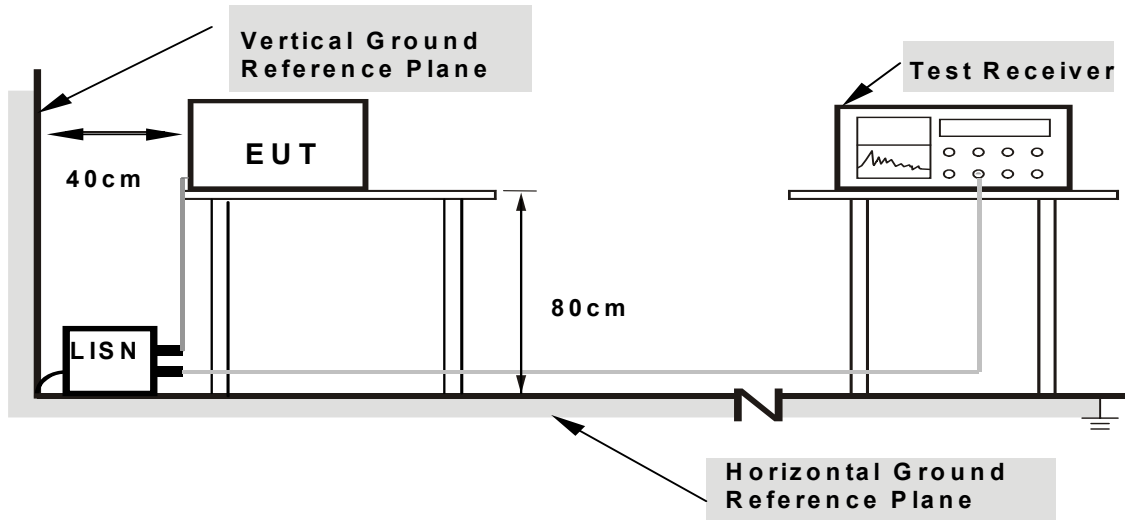
4.1.3 TEST PROCEDURES

- 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 150 kHz to 30 MHz was searched. Emission levels under Limit - 20dB was not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

4.1.6 EUT OPERATING CONDITIONS

Conducted Test

- a. Placed the EUT on the testing table.
- b. EUT ran the GPS program.
- c. EUT searched satellite signal and identified longitude & latitude.
- d. The EUT linked with the GPS antenna, which acted as communication partner.
- e. The EUT linked with the wireless AP, universal radio communication tester, which acted as communication partners.
- f. Set the EUT functions of GSM idle mode.
- g. The necessary accessories enable the system in full functions.

Radiated Test

- a. Placed the EUT on the testing table.
- b. The notebook sent "H" patterns to the monitor, and the monitor displayed them.
- c. The notebook sent "H" patterns to the printer, and the printer printed them.
- d. The notebook communicated data with the external floppy.
- e. EUT ran the GPS program.
- f. EUT searched satellite signal and identified longitude & latitude.
- g. The EUT linked with the GPS antenna, which acted as communication partner.
- h. The EUT linked with the wireless AP, universal radio communication tester, which acted as communication partners.
- i. Set the EUT functions of WCDMA, WLAN, Bluetooth idle mode.
- j. The necessary accessories enable the system in full functions.

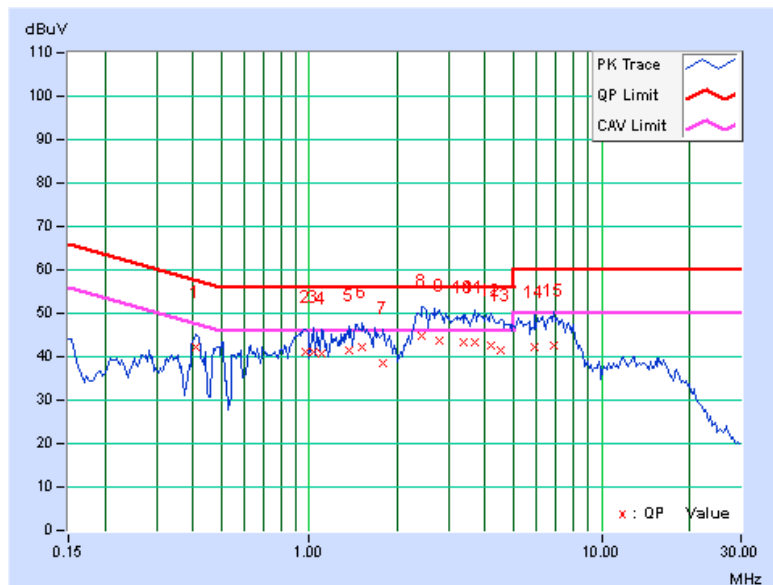
4.1.7 TEST RESULTS

INPUT POWER (SYSTEM)	120 Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 63% RH	PHASE	Line 1
TESTED BY	Ariel Lin		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.41036	0.16	41.93	31.24	42.09	31.40	57.64	47.64	-15.55	-16.24
2	0.96885	0.21	41.08	29.36	41.29	29.57	56.00	46.00	-14.71	-16.43
3	1.03125	0.21	40.81	29.05	41.02	29.26	56.00	46.00	-14.98	-16.74
4	1.10911	0.21	40.44	30.38	40.65	30.59	56.00	46.00	-15.35	-15.41
5	1.37500	0.22	41.13	32.50	41.35	32.72	56.00	46.00	-14.65	-13.28
6	1.52344	0.23	41.97	32.95	42.20	33.18	56.00	46.00	-13.80	-12.82
7	1.78906	0.23	38.19	30.51	38.42	30.74	56.00	46.00	-17.58	-15.26
8	2.43466	0.26	44.49	36.43	44.75	36.69	56.00	46.00	-11.25	-9.31
9	2.78906	0.28	43.36	35.19	43.64	35.47	56.00	46.00	-12.36	-10.53
10	3.37109	0.31	43.06	34.62	43.37	34.93	56.00	46.00	-12.63	-11.07
11	3.66933	0.32	42.95	34.47	43.27	34.79	56.00	46.00	-12.73	-11.21
12	4.18750	0.35	42.39	33.19	42.74	33.54	56.00	46.00	-13.26	-12.46
13	4.50391	0.36	41.07	31.90	41.43	32.26	56.00	46.00	-14.57	-13.74
14	5.87772	0.41	41.92	30.91	42.33	31.32	60.00	50.00	-17.67	-18.68
15	6.87628	0.45	41.99	30.10	42.44	30.55	60.00	50.00	-17.56	-19.45

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.

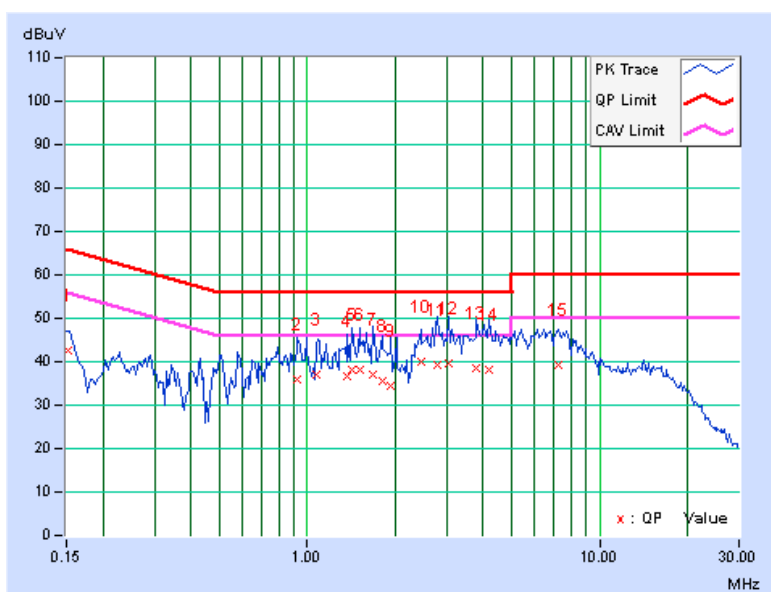


INPUT POWER (SYSTEM)	120 Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 63% RH	PHASE	Line 2
TESTED BY	Ariel Lin		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15263	0.24	42.48	39.37	42.72	39.61	65.86	55.86	-23.14	-16.25
2	0.92344	0.29	35.63	26.42	35.92	26.71	56.00	46.00	-20.08	-19.29
3	1.08075	0.30	36.77	26.69	37.07	26.99	56.00	46.00	-18.93	-19.01
4	1.37500	0.32	36.34	27.86	36.66	28.18	56.00	46.00	-19.34	-17.82
5	1.42969	0.32	37.76	29.43	38.08	29.75	56.00	46.00	-17.92	-16.25
6	1.51435	0.32	37.98	29.05	38.30	29.37	56.00	46.00	-17.70	-16.63
7	1.67188	0.33	36.67	28.88	37.00	29.21	56.00	46.00	-19.00	-16.79
8	1.80859	0.33	35.33	27.05	35.66	27.38	56.00	46.00	-20.34	-18.62
9	1.93750	0.34	34.09	24.49	34.43	24.83	56.00	46.00	-21.57	-21.17
10	2.44531	0.36	39.65	32.85	40.01	33.21	56.00	46.00	-15.99	-12.79
11	2.78125	0.38	39.06	32.22	39.44	32.60	56.00	46.00	-16.56	-13.40
12	3.03388	0.40	39.06	31.55	39.46	31.95	56.00	46.00	-16.54	-14.05
13	3.80469	0.44	38.00	30.88	38.44	31.32	56.00	46.00	-17.56	-14.68
14	4.18359	0.46	37.71	30.65	38.17	31.11	56.00	46.00	-17.83	-14.89
15	7.20313	0.56	38.74	29.26	39.30	29.82	60.00	50.00	-20.70	-20.18

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 MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD:

FCC Part 15, Subpart B (section: 15.109)

ICES-003:2012 Issue 5 (section: 6.2)

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

Radiated Emissions Limits at 10 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B/ ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	39	29.5	40	30
88-216	43.5	33.1		
216-230	46.4	35.6		
230-960			47	37
960-1000	49.5	43.5		
1000-3000	Avg: 49.5	Avg: 43.5	Not defined	Not defined
Above 3000	Peak: 69.5	Peak: 63.5	Not defined	Not defined

Radiated Emissions Limits at 3 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	49.5	40	50.5	40.5
88-216	54	43.5		
216-230	56.9	46		
230-960				
960-1000	60	54	57.5	47.5
1000-3000	Avg: 60 Peak: 80	Avg: 54 Peak: 74	Avg: 56 Peak: 76	Avg: 50 Peak: 70
Above 3000			Avg: 60 Peak: 80	Avg: 54 Peak: 74

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. Emission level (dB μ V/m) = 20 log Emission level (μ V/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. QP detector shall be applied if not specified.



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FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

4.2.2 TEST INSTRUMENTS

Frequency range 30MHz~1GHz

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ (V)	ESIB7	100187	Jan. 30, 2012	Jan. 29, 2013
Test Receiver ROHDE & SCHWARZ (H)	ESIB7	100186	Nov. 29, 2011	Nov. 28, 2012
Spectrum Analyzer Agilent	E4446A	MY48250266	Aug. 29, 2012	Aug. 28, 2013
BILOG Antenna SCHWARZBECK (V)	VULB9168	9168-148	Apr. 02, 2012	Apr. 01, 2013
BILOG Antenna SCHWARZBECK (H)	VULB9168	9168-149	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna EMCO	3115 *	5623	Jul. 05, 2012	Jul. 04, 2013
Preamplifier Agilent (V)	8447D	2944A10636	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent (H)	8447D	2944A10637	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8449B	3008A01959	Oct. 29, 2011	Oct. 28, 2012
RF signal cable Woken (V)	8D-FB	Cable-Hych1-01	Oct. 29, 2011	Oct. 28, 2012
RF signal cable Woken (H)	8D-FB	Cable-Hych1-02	Oct. 29, 2011	Oct. 28, 2012
Software ADT	BV ADT_Radiated_ V 7.7.03.7	NA	NA	NA
Antenna Tower (V)	MFA-440	9707	NA	NA
Antenna Tower (H)	MFA-440	970705	NA	NA
Turn Table	DS430	50303	NA	NA
Controller (V)	MF7802	074	NA	NA
Controller (H)	MF7802	08093	NA	NA
Fix tool for Boresight antenna tower	BAF-01	1	NA	NA
RF signal cable EAST COST Microwave	HP 160S-29	NA	Oct. 29, 2011	Oct. 28, 2012

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

2. The test was performed in HwaYa Chamber 1.
3. The FCC Site Registration No. is 477732.
4. The IC Site Registration No. is IC 7450F-1.
5. The VCCI Site Registration No. is R-1893, G-113.



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Frequency range above 1GHz

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	May 11, 2012	May 10, 2013
Spectrum Analyzer Agilent	E4446A	MY48250266	Aug. 29, 2012	Aug. 28, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Apr. 02, 2012	Apr. 01, 2013
RF signal cable Woken	8D-FB	NA	Mar. 24, 2012	Mar. 23, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D *	9120D-405	Feb. 03, 2012	Feb. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Jan. 03, 2012	Jan. 02, 2013
Preamplifier Agilent (Below 1GHz)	8447D	2944A10629	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent (Above 1GHz)	8449B	3008A01959	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNER	SUCOFLEX 104	230132/4	Nov. 03, 2011	Nov. 02, 2012
RF signal cable HUBER+SUHNER	SUCOFLEX 104	309223/4+309 218/4	Nov. 03, 2011	Nov. 02, 2012
Software ADT	BV ADT_Radiated_ V7.6.15.9.3	NA	NA	NA
Antenna Tower ADT	AT100	AT93021702	NA	NA
Turn Table ADT	TT100	TT93021702	NA	NA
Controller ADT	SC100	SC93021702	NA	NA
Fix tool for Boresight antenna tower	BAF-01	2	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 2.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 686814.
 5. The IC Site Registration No. is IC 7450F-2.
 6. The VCCI Site Registration No. is G-18.

4.2.3 TEST PROCEDURES

Frequency range 30MHz~1GHz

- 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 1 meter to 4 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 1GHz.

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-Peak (QP) detection at frequency below 1GHz.

Frequency range above 1GHz

- 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 can be varied from 1 meter to 4 meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect 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 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 and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.

NOTE:

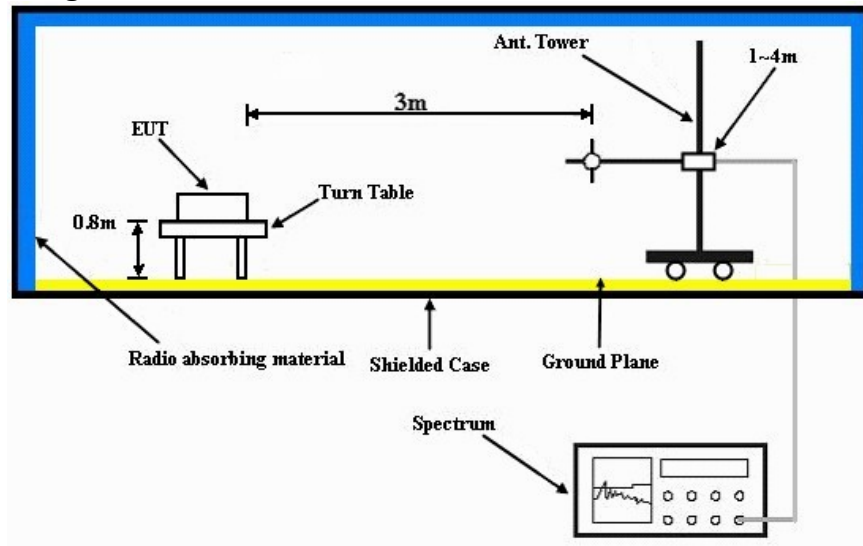
1. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak (PK) detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz for Average (AV) detection at frequency above 1GHz.
2. For measurement of frequency above 1000MHz, the EUT was set 3 meters away from the receiver antenna.

4.2.4 DEVIATION FROM TEST STANDARD

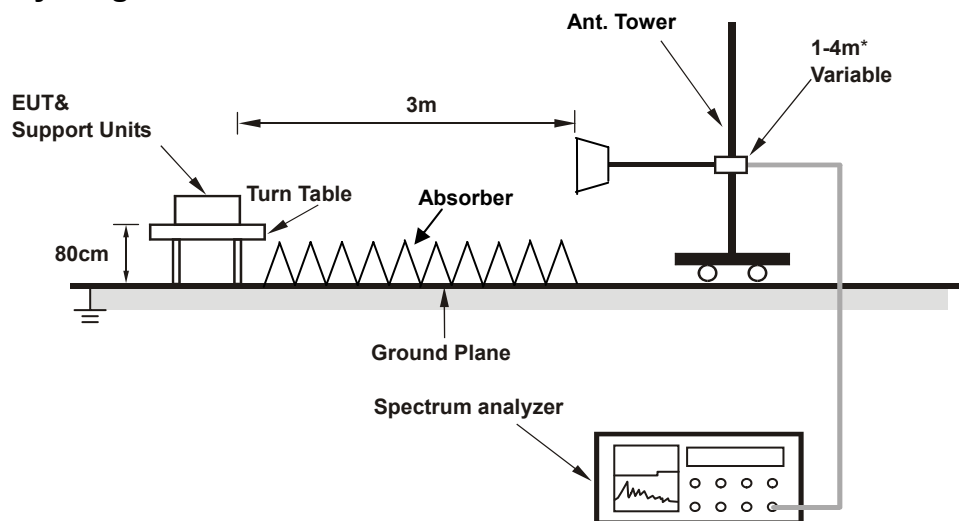
No deviation.

4.2.5 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



* : depends on the EUT height and the antenna 3dB beamwidth both, refer to section 8.3.1.2 of ANSI C63.4:2009.

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

4.2.6 EUT OPERATING CONDITIONS

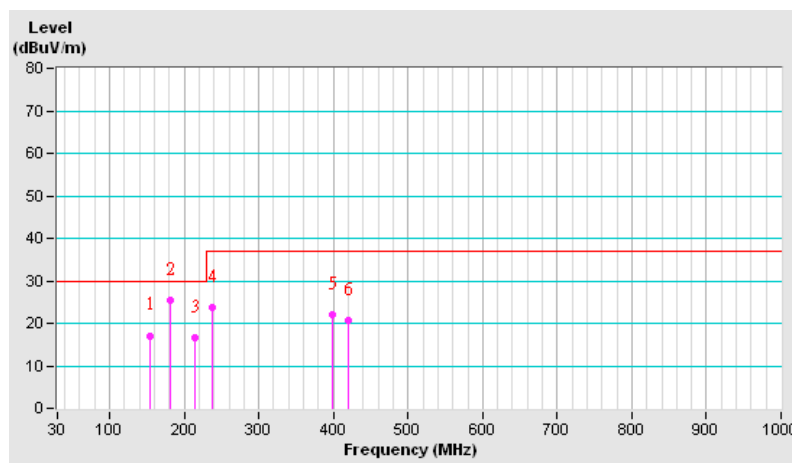
Same as 4.1.6.

4.2.7 TEST RESULTS

INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	30-1000 MHz
DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz	ENVIRONMENTAL CONDITIONS	24deg. C, 64% RH
TESTED BY	Mick Chou		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 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	154.41	17.12 QP	30.00	-12.88	1.00 H	238	2.36	14.76
2	181.62	25.40 QP	30.00	-4.60	4.00 H	327	12.21	13.19
3	214.67	16.45 QP	30.00	-13.55	4.00 H	136	4.21	12.24
4	238.00	23.87 QP	37.00	-13.13	3.00 H	155	10.60	13.27
5	399.34	22.12 QP	37.00	-14.88	2.00 H	34	3.56	18.56
6	420.72	20.75 QP	37.00	-16.25	1.50 H	0	1.59	19.16

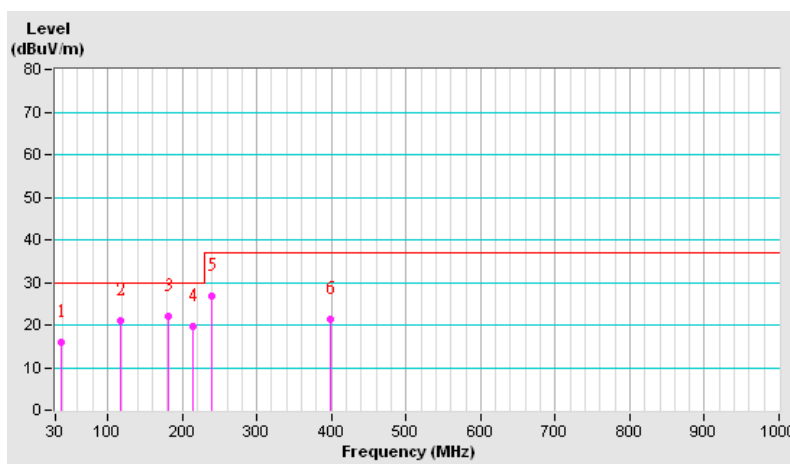
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	30-1000 MHz
DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz	ENVIRONMENTAL CONDITIONS	24deg. C, 64% RH
TESTED BY	Mick Chou		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 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	37.78	15.93 QP	30.00	-14.07	1.00 V	250	2.78	13.15
2	117.47	21.02 QP	30.00	-8.98	3.00 V	144	9.19	11.83
3	181.62	21.92 QP	30.00	-8.08	3.00 V	30	8.63	13.29
4	214.67	19.63 QP	30.00	-10.37	1.00 V	13	7.47	12.16
5	239.94	26.77 QP	37.00	-10.23	1.00 V	150	13.40	13.37
6	399.34	21.36 QP	37.00	-15.64	1.00 V	50	2.80	18.56

- 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.





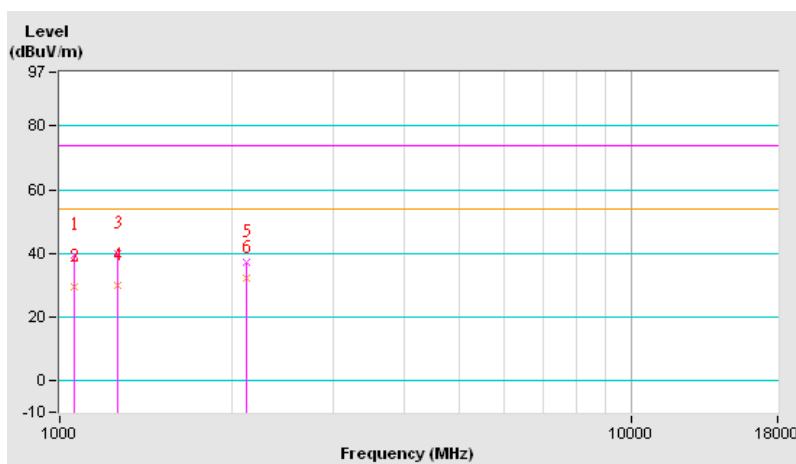
A D T

INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	1-18GHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 60% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	Jones Chang		

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	1060.12	39.50 PK	74.00	-34.50	1.00 H	297	11.50	28.00
2	1060.12	29.35 AV	54.00	-24.65	1.00 H	297	1.35	28.00
3	1260.52	39.99 PK	74.00	-34.01	1.20 H	127	11.32	28.67
4	1260.52	29.89 AV	54.00	-24.11	1.20 H	127	1.22	28.67
5	2122.24	36.98 PK	74.00	-37.02	1.00 H	339	5.81	31.17
6	2122.24	32.35 AV	54.00	-21.65	1.00 H	339	1.18	31.17

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



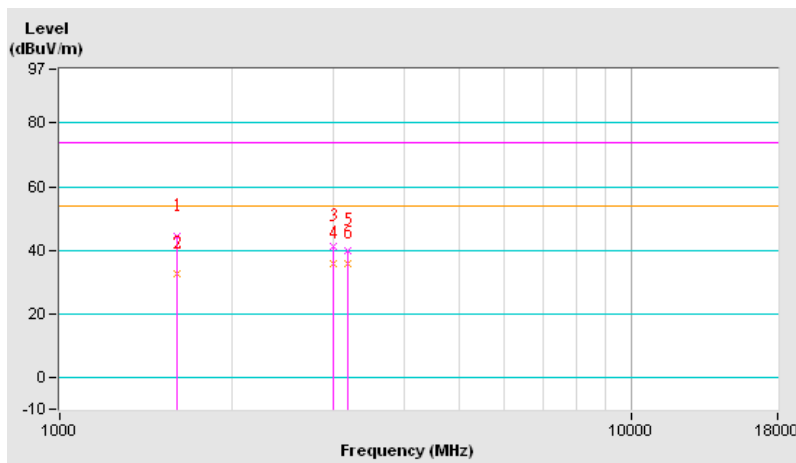


A D T

INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	1-18GHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 60% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	Jones Chang		

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	1600.00	44.28 PK	74.00	-29.72	1.00 V	17	14.59	29.69
2	1600.00	32.76 AV	54.00	-21.24	1.00 V	17	3.07	29.69
3	3000.00	41.16 PK	74.00	-32.84	1.11 V	272	7.01	34.15
4	3000.00	35.78 AV	54.00	-18.22	1.11 V	272	1.63	34.15
5	3184.37	39.94 PK	74.00	-34.06	1.00 V	313	5.45	34.49
6	3184.37	35.57 AV	54.00	-18.43	1.00 V	313	1.08	34.49

- 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 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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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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 any modifications were made to the EUT by the lab during the test.

--- END ---