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FCC CERTIFICATION TEST REPORT

REPORT NO.: FD990712C03
MODEL NO.: F-01C
RECEIVED: Jul. 12, 2010
TESTED: Aug. 12 ~ Aug. 17, 2010
ISSUED: Aug. 23, 2010

APPLICANT: FUJITSU LIMITED

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ISSUED BY: Bureau Veritas Consumer Products Services
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1. CERTIFICATION

PRODUCT: Mobile phone

BRAND: FOMA

MODEL: F-01C

APPLICANT: FUJITSU LIMITED

TESTED: Aug. 12 ~ Aug. 17, 2010

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart B, Class B

ANSI C63.4-2003

The above equipment (Model: F-01C) 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 : Pettie Chen , **DATE** : Aug. 23, 2010
Pettie Chen / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE** : Aug. 23, 2010
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE** : Aug. 23, 2010
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Standard Section	Test Type	Result	Remark
FCC Part 15, Subpart B, Class B	Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.72dB at 3.313MHz.
	Radiated Emission	PASS	Meet the requirement of limit. Minimum passing margin is -2.00dB at 148.57MHz.

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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	2.44 dB
Radiated emissions	150MHz ~ 200MHz	3.34 dB
	200MHz ~ 1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Mobile phone
MODEL NO.	F-01C
POWER SUPPLY	3.7Vdc (Li-ion battery) 5.4Vdc (Adapter)
MODULATION TYPE	For WLAN: CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM For Bluetooth: GFSK, $\pi/4$ -DQPSK, 8DPSK For RFID: ASK For WCDMA 850: WCDMA (Band 5) / HSDPA / HSUPA For GSM 1900: GMSK
FREQUENCY RANGE	For WLAN: 2412 ~ 2462MHz For Bluetooth: 2402 ~ 2480MHz For RFID: 13.56MHz For WCDMA 850: 826.4MHz ~ 846.6MHz For GSM 1900: 1850.2MHz ~ 1909.8MHz
NUMBER OF CHANNEL	For WLAN: 11 For Bluetooth: 79 For RFID: 1 For WCDMA 850: 102 For GSM 1900: 299
ANTENNA TYPE	For WLAN: Monopole antenna with -1.5dBi gain For Bluetooth: Monopole Antenna with -1.5dBi gain For WCDMA 850: Integral antenna with 0dBi gain (EUT open) Integral antenna with -2dBi gain (EUT close) For GSM 1900: Integral antenna with 0dBi gain (EUT open) Integral antenna with -2dBi gain (EUT close)
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Battery

NOTE:

1. The EUT is powered by the following adapter and battery.

ADAPTER (NOT FOR SALE)	
BRAND	SMK
INPUT POWER	100-240Vac, 0.12A, 50-60Hz
OUTPUT POWER	5.4Vdc, 700mA

BATTERY	
BRAND	Fujitsu Limited
MODEL	F18
RATING	3.7Vdc, 960mAh

2. The test item of HDMI & USB interface mode was tested by clients' requests and presented in this report.
3. IMEI Code: 352146040009594
4. The above EUT information was 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 with following modes and presented in the test report.

TEST MODE	DESCRIPTION	TEST ITEM
A1	EUT HDMI mode, X Axis	All tests
A2	EUT HDMI mode, Y Axis	Radiated Emission Test only
A3	EUT HDMI mode, Z Axis	Radiated Emission Test only
B1	EUT USB mode, X Axis	All tests
B2	EUT USB mode, Y Axis	Radiated Emission Test only
B3	EUT USB mode, Z Axis	Radiated Emission Test only

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	HP	NC6000	CNU411DXNL	FCC DoC Approved
2	PRINTER	EPSON	LQ-300+	DCGY054146	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008277	IFAXDM1414
4	TV	SANYO	SMT-32KE5	NA	NA

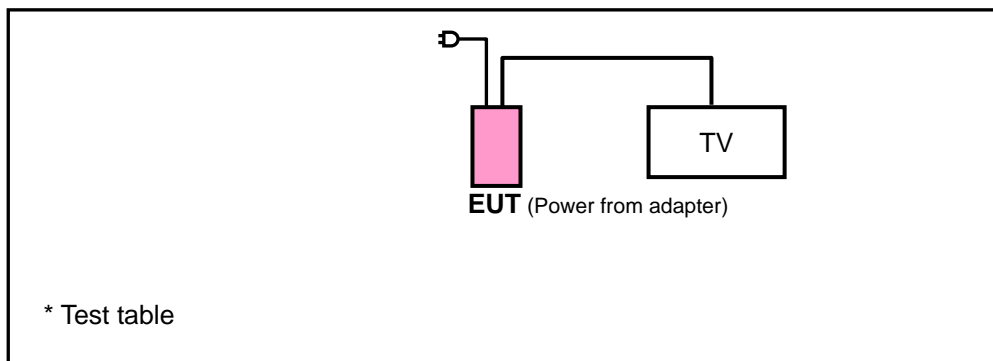
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	0.8m USB cable.
2	1.8m braid shielded wire, DB25 connector, w/o core.
3	1.2m braid shielded wire, DB25 & DB9 connector, w/o core.
4	1.5m shielded HDMI cable w/o core

NOTE:

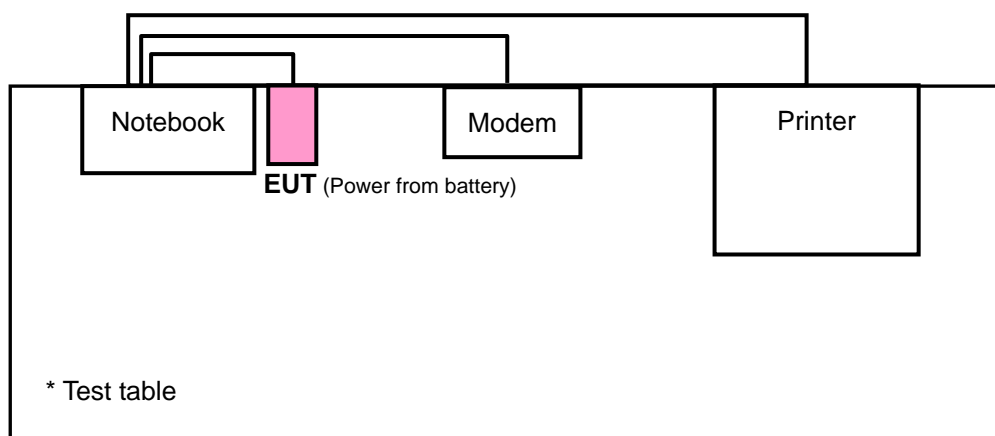
1. All power cords of the above support units are non shielded (1.8m).
2. The USB cable & HDMI cable were supplied from the client.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

Test Mode A1 ~ A3



Test Mode B1 ~ B3



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 B, Class B

ANSI C63.4-2003

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.109 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



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4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 21, 2009	Dec. 20, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Dec. 31, 2009	Dec. 30, 2010
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 27, 2010	Apr. 26, 2011
HORN Antenna SCHWARZBECK	9120D	9120D-405	Feb. 03, 2010	Feb. 02, 2011
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2009	Dec. 24, 2010
Preamplifier Agilent	8447D	2944A10633	Nov. 10, 2009	Nov. 09, 2010
Preamplifier Agilent	8449B	3008A01964	Nov. 09, 2009	Nov. 08, 2010
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 14, 2010	May 13, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 14, 2010	May 13, 2011
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	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 3.
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 988962.
5. The IC Site Registration No. is IC 7450F-3.

4.1.3 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.

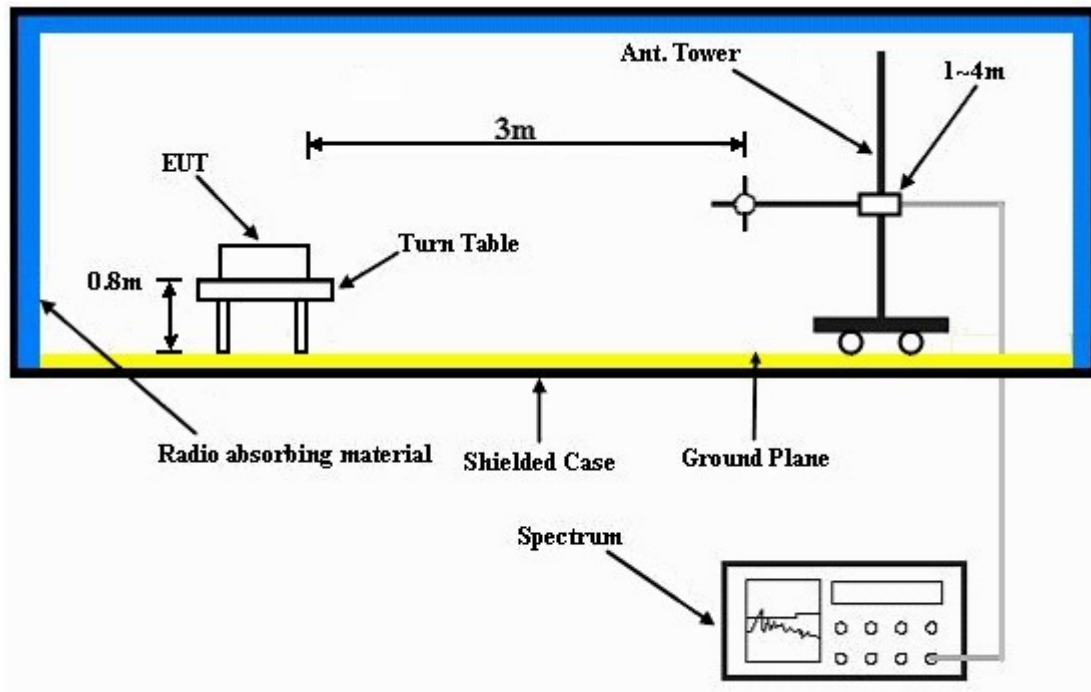
NOTE:

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 1 MHz 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.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

Test Mode A1 ~ A3

- EUT connected to TV and placed on a testing table.
- The EUT play the film to TV via the HDMI cable and TV displayed it.

Test Mode B1 ~ B3

- EUT connected to NB and placed on a testing table.
- NB executes EMC TEST tool to read data and write data to microSD of EUT via USB cable.
- The necessary accessories enable the system in full functions.

4.1.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

EUT TEST CONDITION		MEASUREMENT DETAIL	
INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1008 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	A1	TESTED BY	Long Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	148.57	41.50 QP	43.50	-2.00	1.00 H	223	27.20	14.30
2	222.38	37.70 QP	46.00	-8.30	1.50 H	151	26.30	11.40
3	298.21	36.60 QP	46.00	-9.40	1.00 H	244	22.00	14.60
4	372.09	41.10 QP	46.00	-4.90	2.50 H	244	24.70	16.40
5	445.98	31.00 QP	46.00	-15.00	2.50 H	277	12.60	18.40
6	492.64	30.50 QP	46.00	-15.50	2.00 H	157	10.90	19.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	34.80 QP	40.00	-5.20	1.25 V	340	21.30	13.50
2	148.50	40.20 QP	43.50	-3.30	1.50 V	10	25.90	14.30
3	222.38	35.80 QP	46.00	-10.20	2.00 V	160	24.40	11.40
4	298.21	35.70 QP	46.00	-10.30	2.00 V	52	21.10	14.60
5	372.09	37.50 QP	46.00	-8.50	1.25 V	73	21.10	16.40
6	445.98	33.70 QP	46.00	-12.30	1.00 V	181	15.30	18.40

- 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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1008 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	A2	TESTED BY	Long Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	148.50	39.70 QP	43.50	-3.80	1.00 H	223	25.40	14.30
2	222.38	41.70 QP	46.00	-4.30	1.00 H	187	30.30	11.40
3	298.21	36.30 QP	46.00	-9.70	1.25 H	232	21.70	14.60
4	372.09	41.90 QP	46.00	-4.10	1.00 H	247	25.50	16.40
5	445.98	32.80 QP	46.00	-13.20	1.75 H	220	14.40	18.40
6	515.97	30.20 QP	46.00	-15.80	1.25 H	226	10.00	20.20
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	59.06	32.60 QP	40.00	-7.40	1.00 V	7	19.40	13.20
2	148.50	39.30 QP	43.50	-4.20	1.00 V	235	25.00	14.30
3	222.38	39.30 QP	46.00	-6.70	1.25 V	160	27.90	11.40
4	298.21	31.80 QP	46.00	-14.20	1.25 V	325	17.20	14.60
5	372.09	38.40 QP	46.00	-7.60	1.75 V	76	22.00	16.40
6	445.98	32.20 QP	46.00	-13.80	1.00 V	25	13.80	18.40

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1008 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	A3	TESTED BY	Long Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	148.50	40.30 QP	43.50	-3.20	2.00 H	313	26.00	14.30
2	222.38	40.10 QP	46.00	-5.90	1.50 H	148	28.70	11.40
3	298.21	36.30 QP	46.00	-9.70	1.25 H	58	21.70	14.60
4	372.09	41.80 QP	46.00	-4.20	1.00 H	157	25.40	16.40
5	445.98	33.40 QP	46.00	-12.60	2.00 H	55	15.00	18.40
6	515.97	29.50 QP	46.00	-16.50	1.00 H	223	9.30	20.20
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	59.06	32.40 QP	40.00	-7.60	1.00 V	322	19.20	13.20
2	148.50	39.30 QP	43.50	-4.20	1.00 V	250	25.00	14.30
3	222.38	38.90 QP	46.00	-7.10	2.00 V	205	27.50	11.40
4	298.21	32.50 QP	46.00	-13.50	2.00 V	37	17.90	14.60
5	372.09	41.20 QP	46.00	-4.80	1.50 V	256	24.80	16.40
6	445.98	30.40 QP	46.00	-15.60	1.25 V	241	12.00	18.40

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	
INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1008 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	B1	TESTED BY	Long Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	131.00	34.20 QP	43.50	-9.30	1.25 H	232	21.00	13.20
2	199.05	36.00 QP	43.50	-7.50	1.25 H	166	25.70	10.30
3	372.09	39.20 QP	46.00	-6.80	1.00 H	139	22.80	16.40
4	498.47	33.90 QP	46.00	-12.10	2.50 H	256	14.10	19.80
5	724.01	36.20 QP	46.00	-9.80	1.25 H	304	12.40	23.80
6	916.50	30.30 QP	46.00	-15.70	2.00 H	217	4.10	26.20
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	166.00	31.70 QP	43.50	-11.80	1.00 V	151	17.90	13.80
2	372.09	31.60 QP	46.00	-14.40	1.00 V	235	15.20	16.40
3	467.36	32.60 QP	46.00	-13.40	1.25 V	292	13.60	19.00
4	661.79	30.50 QP	46.00	-15.50	1.50 V	220	7.50	23.00
5	731.79	31.30 QP	46.00	-14.70	1.50 V	172	7.40	23.90
6	916.50	31.50 QP	46.00	-14.50	1.00 V	292	5.30	26.20

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1008 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	B2	TESTED BY	Long Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	131.00	32.40 QP	43.50	-11.10	1.00 H	152	19.20	13.20
2	191.29	32.70 QP	43.50	-10.80	1.03 H	311	21.50	11.20
3	372.09	38.70 QP	46.00	-7.30	1.25 H	102	22.30	16.40
4	469.31	34.50 QP	46.00	-11.50	2.00 H	255	15.50	19.00
5	739.57	34.60 QP	46.00	-11.40	2.00 H	12	10.60	24.00
6	916.50	30.50 QP	46.00	-15.50	1.75 H	312	4.30	26.20
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	103.78	29.90 QP	43.50	-13.60	1.25 V	61	19.30	10.60
2	191.28	34.40 QP	43.50	-9.10	1.25 V	253	23.20	11.20
3	348.76	31.20 QP	46.00	-14.80	1.25 V	94	15.30	15.90
4	467.36	33.60 QP	46.00	-12.40	1.25 V	304	14.60	19.00
5	724.01	34.10 QP	46.00	-11.90	1.50 V	142	10.30	23.80
6	916.50	31.80 QP	46.00	-14.20	1.25 V	274	5.60	26.20

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1008 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	B3	TESTED BY	Long Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	131.00	33.10 QP	43.50	-10.40	1.50 H	61	19.90	13.20
2	220.44	32.00 QP	46.00	-14.00	1.50 H	289	20.70	11.30
3	372.09	36.30 QP	46.00	-9.70	1.00 H	127	19.90	16.40
4	498.47	34.90 QP	46.00	-11.10	1.00 H	259	15.10	19.80
5	718.18	33.10 QP	46.00	-12.90	1.50 H	238	9.40	23.70
6	914.55	41.30 QP	46.00	-4.70	2.50 H	307	15.20	26.10
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	166.00	30.90 QP	43.50	-12.60	1.25 V	187	17.10	13.80
2	372.09	36.60 QP	46.00	-9.40	1.25 V	250	20.20	16.40
3	467.36	33.90 QP	46.00	-12.10	1.25 V	274	14.90	19.00
4	667.63	32.70 QP	46.00	-13.30	1.50 V	220	9.60	23.10
5	718.18	35.80 QP	46.00	-10.20	1.00 V	223	12.10	23.70
6	832.89	33.70 QP	46.00	-12.30	1.50 V	4	8.70	25.00

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

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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.
 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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 24, 2009	Sep. 23, 2010
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 31, 2009	Dec. 30, 2010
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Aug. 24, 2009	Aug. 23, 2010
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jul. 08, 2010	Jul. 07, 2011
Software ADT	ADT_Cond_ V7.3.7	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 2.
 3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

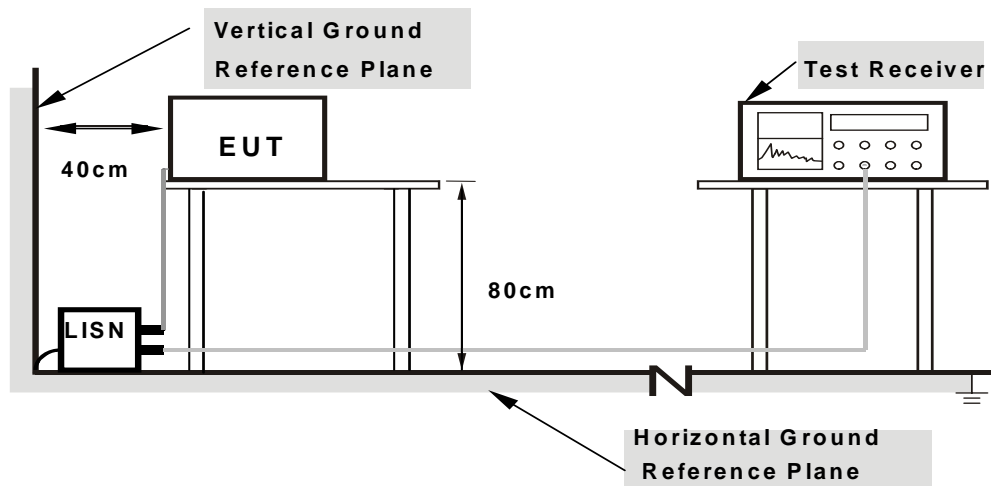
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 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 attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Test Mode A1

- a. EUT connected to TV and placed on a testing table.
- b. The EUT play the film to TV via the HDMI cable and TV displayed it.

Test Mode B1

- a. EUT connected to NB and placed on a testing table.
- b. NB executes EMC TEST tool to read data and write data to microSD of EUT via USB cable.
- c. The necessary accessories enable the system in full functions.

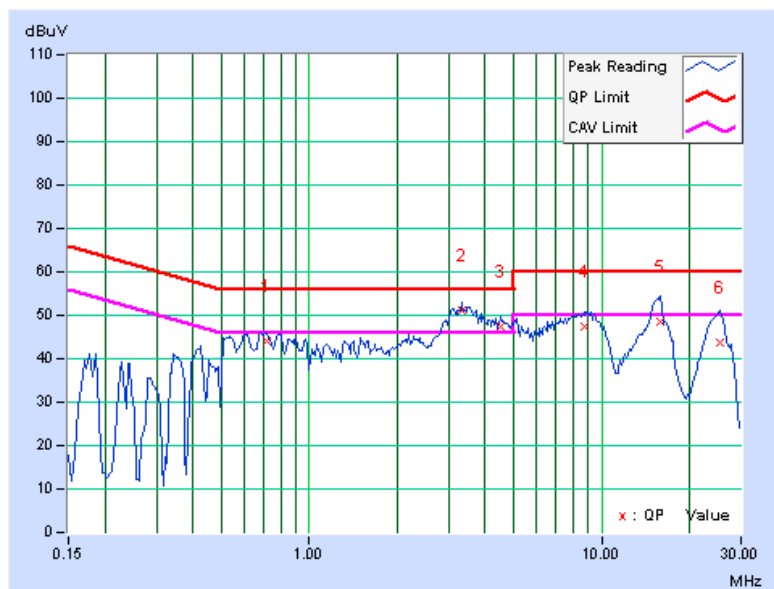
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA:

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A1		

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	0.716	0.21	43.68	-	43.89	-	56.00	46.00	-12.11	-
2	3.313	0.34	50.94	36.33	51.28	36.67	56.00	46.00	-4.72	-9.33
3	4.531	0.35	47.00	33.34	47.35	33.69	56.00	46.00	-8.65	-12.31
4	8.777	0.35	46.95	-	47.30	-	60.00	50.00	-12.70	-
5	15.926	0.54	47.94	-	48.48	-	60.00	50.00	-11.52	-
6	25.535	0.58	42.99	-	43.57	-	60.00	50.00	-16.43	-

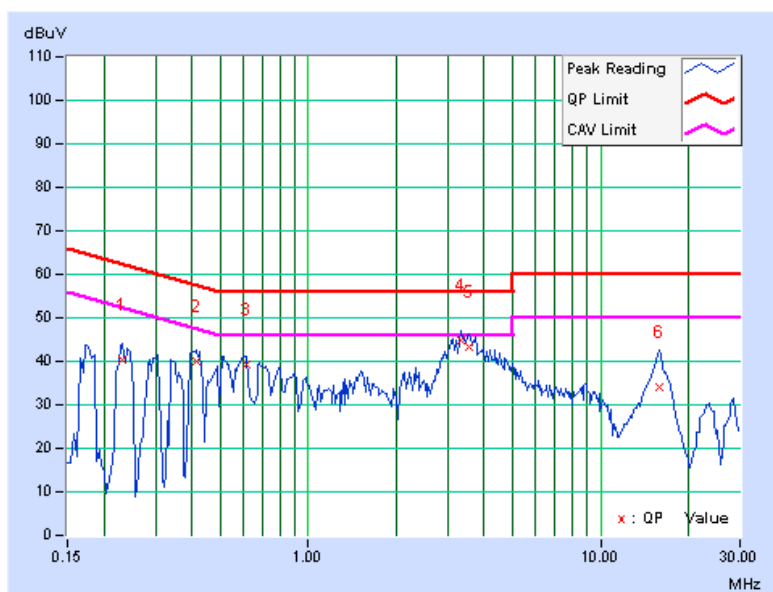
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A1		

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	0.232	0.13	40.40	-	40.53	-	62.38	52.38	-21.84	-
2	0.416	0.16	39.82	-	39.98	-	57.54	47.54	-17.55	-
3	0.611	0.18	39.08	-	39.26	-	56.00	46.00	-16.74	-
4	3.316	0.34	44.64	-	44.98	-	56.00	46.00	-11.02	-
5	3.566	0.35	42.89	-	43.24	-	56.00	46.00	-12.76	-
6	15.973	0.71	33.40	-	34.11	-	60.00	50.00	-25.89	-

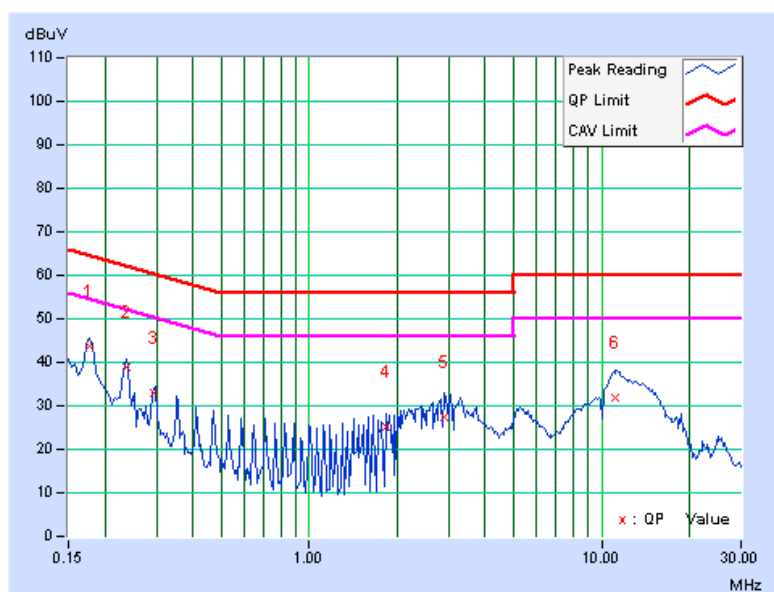
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B1		

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	0.177	0.16	43.60	-	43.76	-	64.61	54.61	-20.85	-
2	0.236	0.16	38.72	-	38.88	-	62.24	52.24	-23.35	-
3	0.296	0.17	32.69	-	32.86	-	60.36	50.36	-27.50	-
4	1.828	0.30	24.82	-	25.12	-	56.00	46.00	-30.88	-
5	2.887	0.33	27.12	-	27.45	-	56.00	46.00	-28.55	-
6	11.184	0.39	31.32	-	31.71	-	60.00	50.00	-28.29	-

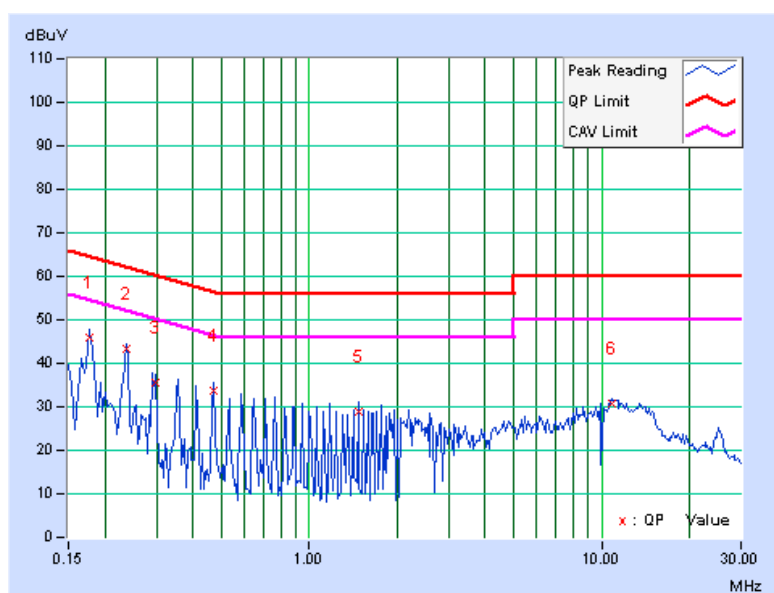
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B1		

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	0.177	0.13	45.71	-	45.84	-	64.61	54.61	-18.77	-
2	0.236	0.14	43.05	-	43.19	-	62.24	52.24	-19.05	-
3	0.297	0.14	35.58	-	35.72	-	60.34	50.34	-24.61	-
4	0.470	0.17	33.51	-	33.68	-	56.51	46.51	-22.83	-
5	1.473	0.26	28.60	-	28.86	-	56.00	46.00	-27.14	-
6	10.840	0.48	30.09	-	30.57	-	60.00	50.00	-29.43	-

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





A D T

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.

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Web Site: www.adt.com.tw

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

7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

--- END ---