



FCC CERTIFICATION TEST REPORT

REPORT NO.: FC130121C10
MODEL NO.: Ex-Handy 08 .3 – A
(Refer to item 3.1 for more details)
FCC ID: XAM500045GR01
RECEIVED: Jan. 21, 2013
TESTED: Mar. 13, 2013 ~ Mar. 14, 2013
ISSUED: Mar. 28, 2013

APPLICANT: ecom instruments GmbH

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FC130121C10	Original release	Mar. 28, 2013



1 CERTIFICATION

PRODUCT: GSM/WCDMA Mobile Phone
MODEL: Ex-Handy 08 .3 – A (Refer to item 3.1 for more details)
BRAND: ecom
TYPE NUMBER: P35F009AB
APPLICANT: ecom instruments GmbH
TEST SAMPLE: Identical Prototype
TESTED: Mar. 13, 2013 ~ Mar. 14, 2013
STANDARD: **FCC Part 15, Subpart B, Class B**
ICES-003:2012 Issue 5, Class B
ANSI C63.4:2009

The above equipment (Model: Ex-Handy 08 .3 – A) 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 : Vera Huang , **DATE** : Mar. 28, 2013
Vera Huang / Specialist

APPROVED BY : Derrick Dai , **DATE** : Mar. 28, 2013
Derrick Dai / Assistant Manager

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 Issue 5, Class B	Conducted emission test	PASS	Meet the requirement of limit. Minimum passing margin is -3.43dB at 0.31797MHz.
	Radiated emission test (30MHz~40GHz)	PASS	Meet the requirement of limit. Minimum passing margin is -3.45dB at 88.45MHz.

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	GSM/WCDMA Mobile Phone
MODEL NO.	Ex-Handy 08 .3 – A (Refer to NOTE as below)
POWER SUPPLY	5.0Vdc (adapter) 3.7Vdc (Li-ion battery)
I/O PORTS	Refer to users' manual
ACCESSORY DEVICES	Refer to Note

NOTE:

1. The detail information of model names and the differences of two samples are as below.

Model	Sample	Battery & Cover	SW				Colors
			Camera*	LWP*	PTT*	ATT*	
Ex-Handy 08 .0 – A	Z1 (Sample A)	Ex-BPH-08HC or Ex-BPH-08SC Battery	No	No	No	No	Black and Yellow
Ex-Handy 08 .1 – A			No	Yes	No	No	Yellow, colored keys
Ex-Handy 08 .2 – A			Yes	No	No	No	Black and Yellow
Ex-Handy 08 .3 – A			Yes	Yes	No	No	Yellow, colored keys
Ex-Handy 08 .4 – A			No	No	Yes	No	Black and Yellow
Ex-Handy 08 .5 – A			Yes	No	Yes	No	Black and Yellow
Ex-Handy 08 .4 – ATT		Ex-BPH-08HC	No	No	Yes	Yes	Black and Yellow
Ex-Handy 08 .5 – ATT			Yes	No	Yes	Yes	Black and Yellow
Ex-HSPA 08 .0 – A	Z2 (Sample B)	Ex-BPH 28 Battery + Normal cover or NFC cover	No	No	No	No	Black
Ex-HSPA 08 .1 – A			No	Yes	No	No	Yellow, colored keys
Ex-HSPA 08 .2 – A			Yes	No	No	No	Black
Ex-HSPA 08 .3 – A			Yes	Yes	No	No	Yellow, colored keys
Ex-HSPA 08 .4 – A			No	No	Yes	No	Black
Ex-HSPA 08 .5 – A			Yes	No	Yes	No	Black

***Camera:** The camera application.

***LWP:** Lone worker protection mobile application.

***PTT:** Push to talk application.

***ATT:** SW customizations for carrier AT&T, Firmware change from MTK's generic implementation to ADAPT implementation.

2. The HW differences between Sample A and Sample B.

- ✧ Rear housing difference.
- ✧ Foolproof to prevent misuse of regular battery on Sample A phones.
- ✧ Cavity width is smaller in Sample B to make the regular battery stay put.
- ✧ Sample A and Sample B use different battery and cover.

3. The EUT contains the following accessories.

Item	Brand	Model	Specification
Adapter	Sonim	3202	Input: 100-240Vac, 150mA Output: 5Vdc, 700mA
Battery 1 for Sample A	ecom	Ex-BPH-08HC	Rating: 3.7Vdc, 1960mAh
Battery 2 for Sample A	ecom	Ex-BPH-08SC	Rating: 3.7Vdc, 1280mAh
Battery for Sample B	ecom	Ex-BPH 28	Rating: 3.7Vdc, 1950mAh
Earphone	NA	ME-816B5-C	1.5m non-shielded cable w/o core
USB cable	ecom	NA	1.1m shielded cable with safety box
Holster	NA	NA	--
Back Cove 1 for Sample B	NA	NA	w/ connector (NFC01350)
Back Cove 2 for Sample B	NA	NA	w/o connector

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 tested with following modes.

Test Mode	Sample	Test Condition
Conducted Emission		
1	A	GSM850 Idle + BT Idle + Battery 1 + USB Cable + Adapter + Earphone + GPS Rx
2	A	PCS1900 Idle + BT Idle + Battery 2 + USB Cable + Adapter + Earphone + Camera
3	A	WCDMA850 Idle + BT Idle + Battery 2 + USB Cable + USB Link + Earphone + MPEG4
4	B	GSM850 Idle + BT Idle + Battery + USB Cable + Adapter + Earphone + GPS Rx + Back Cover 1
5	B	PCS1900 Idle + BT Idle + Battery + USB Cable + Adapter + Earphone + Camera + Back Cover 2
6	B	WCDMA1900 Idle + BT Idle + Battery + USB Cable + USB Link + Earphone + MPEG4 + Back Cover 2
Radiated Emission		
1	A	GSM850 Idle + BT Idle + Battery 1 + USB Cable + Adapter + Earphone + GPS Rx
2	A	PCS1900 Idle + BT Idle + Battery 2 + USB Cable + Adapter + Earphone + Camera
3	A	WCDMA850 Idle + BT Idle + Battery 2 + USB Cable + USB Link + Earphone + MPEG4
4	B	GSM850 Idle + BT Idle + Battery + USB Cable + Adapter + Earphone + GPS Rx + Back Cover 1
5	B	PCS1900 Idle + BT Idle + Battery + USB Cable + Adapter + Earphone + Camera + Back Cover 2
6	B	WCDMA1900 Idle + BT Idle + Battery + USB Cable + USB Link + Earphone + MPEG4 + Back Cover 1

NOTE:

1. For conducted emission test, test mode 6 was the worst case and only this mode was presented in this report.
2. For radiated emission test, test mode 3 was the worst case and only this mode was presented 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.

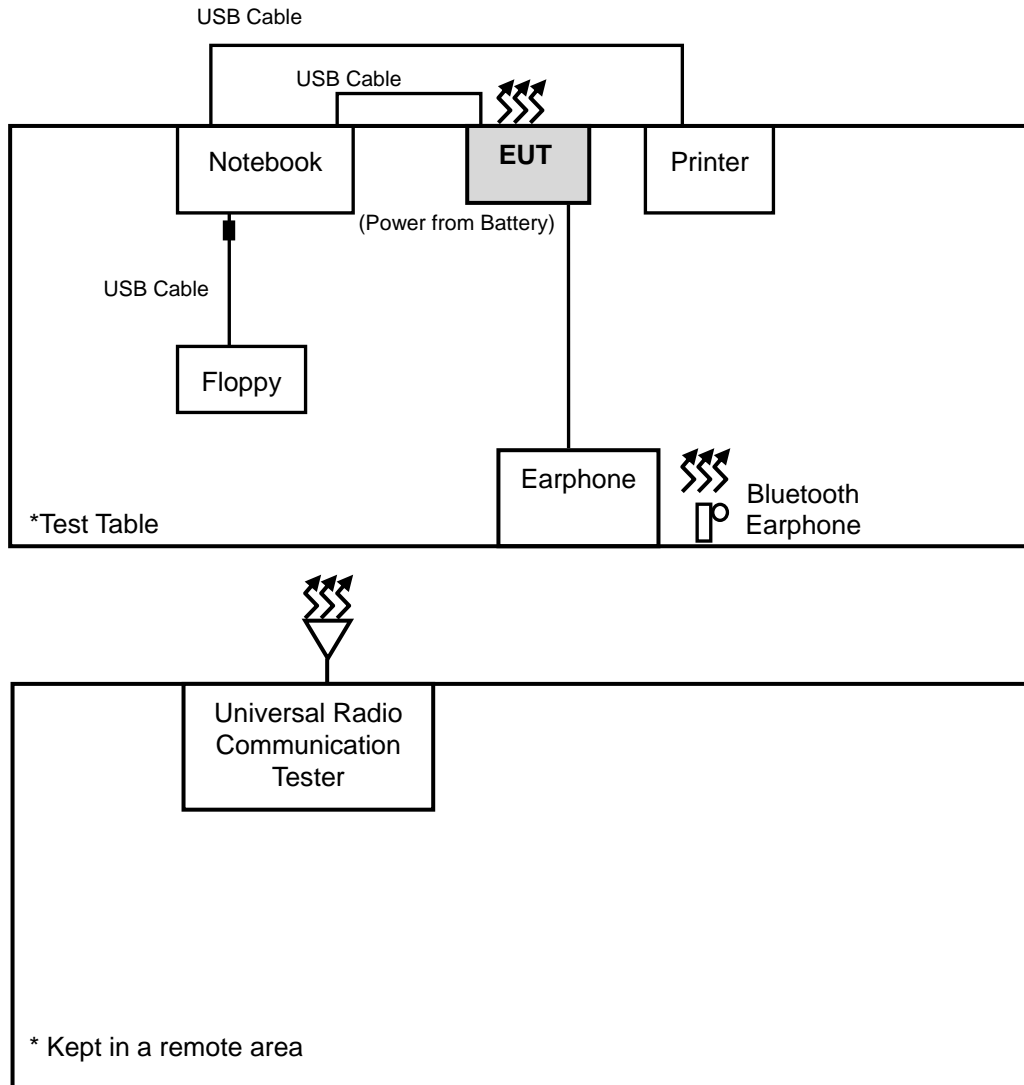
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	BLUETOOTH EARPHONE	ELECOM	LBT-MPHS400	NA	NA
2	NOTEBOOK	DELL	PP36S	27910364464	NA
3	PRINTER	EPSON	LQ-300+	DCGY054105	FCC DoC Approved
4	EXTERNAL USB 1.1 FLOPPY	SONY	MPF82E	50010133	NA
5	UNIVERSAL RADIO COMMUNICATION TESTER	R&S	CMU200	123112	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA
3	1.8m braid shielded wire, DB25 connector, w/o core
4	NA
5	NA

NOTE:

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

3.4 CONFIGURATION OF SYSTEM UNDER 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	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 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 2.
 3. The VCCI Site Registration No. is C-2047.

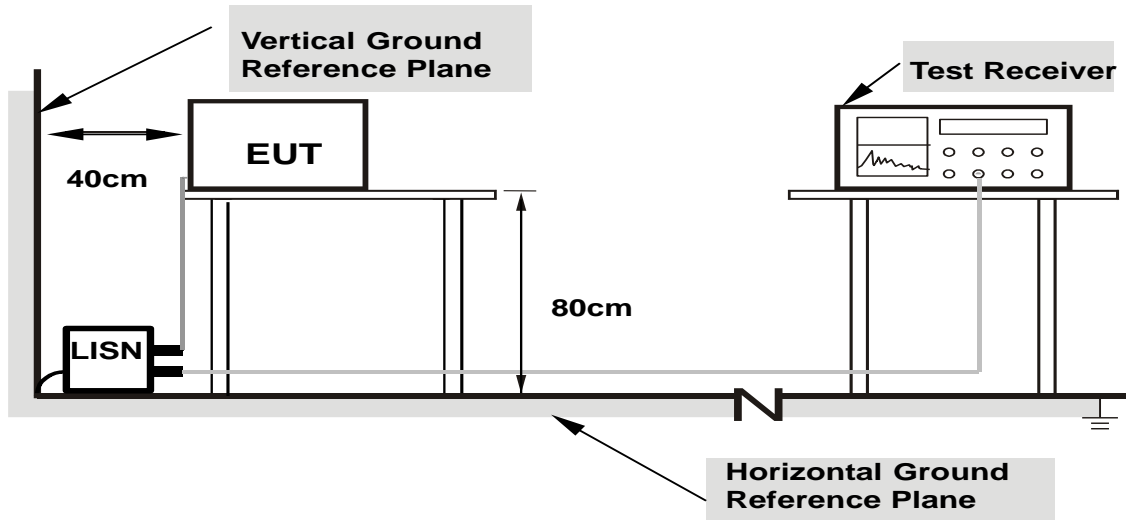
4.1.3 TEST PROCEDURES

- 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

- a. Placed the EUT on the testing table.
- b. EUT linked with Notebook via USB cable.
- c. Notebook ran test program to enable all functions.
- d. Notebook communicated data with floppy.
- e. Notebook sent “H” patterns to the printer and the printer printed “H” patterns.
- f. The EUT linked with Universal Radio Communication Tester, which acted as communication partners.
- g. The necessary accessories enable the system in full functions.

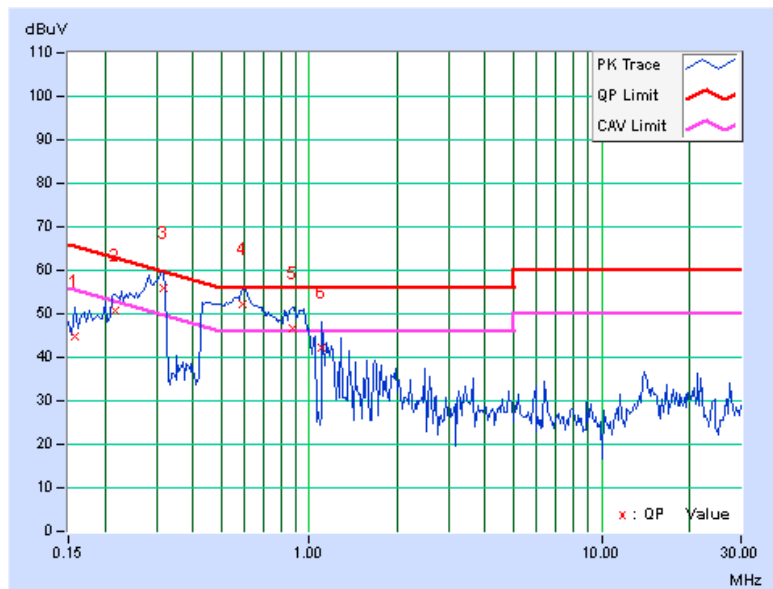
4.1.7 TEST RESULTS

INPUT POWER	120 Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 53% RH	PHASE	Line 1
TESTED BY	Pon Tsai		

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	0.15781	0.19	44.65	36.10	44.84	36.29	65.58	55.58	-20.74	-19.29
2	0.21641	0.20	50.40	41.41	50.60	41.61	62.96	52.96	-12.35	-11.34
3	0.31797	0.21	55.58	46.12	55.79	46.33	59.76	49.76	-3.97	-3.43
4	0.59531	0.24	51.88	40.30	52.12	40.54	56.00	46.00	-3.88	-5.46
5	0.88055	0.28	46.41	35.83	46.69	36.11	56.00	46.00	-9.31	-9.89
6	1.10938	0.29	41.89	24.56	42.18	24.85	56.00	46.00	-13.82	-21.15

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.





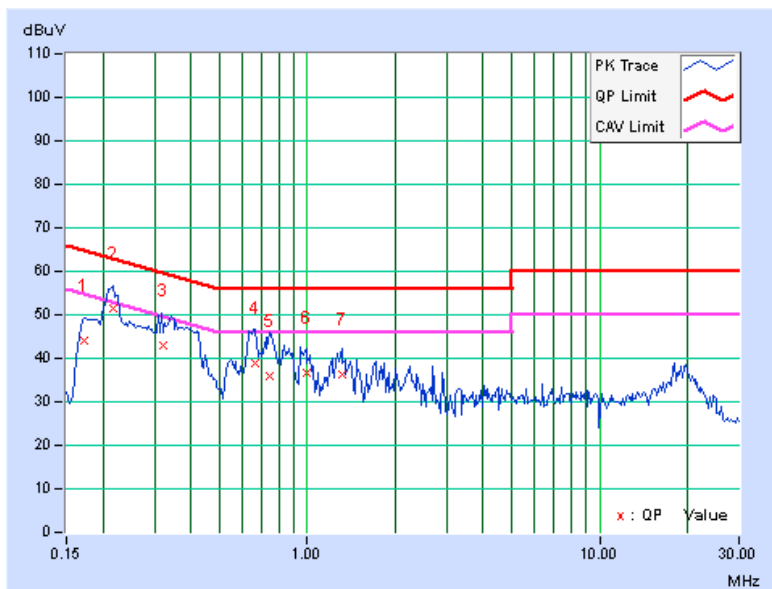
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INPUT POWER (SYSTEM)	120 Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 53% RH	PHASE	Line 2
TESTED BY	Pon Tsai		

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	0.17335	0.19	43.97	22.07	44.16	22.26	64.80	54.80	-20.64	-32.54
2	0.21641	0.20	51.27	46.57	51.47	46.77	62.96	52.96	-11.49	-6.19
3	0.32179	0.24	42.72	34.33	42.96	34.57	59.66	49.66	-16.70	-15.09
4	0.66172	0.27	38.73	30.01	39.00	30.28	56.00	46.00	-17.00	-15.72
5	0.73984	0.26	35.53	22.47	35.79	22.73	56.00	46.00	-20.21	-23.27
6	0.98984	0.26	36.44	25.60	36.70	25.86	56.00	46.00	-19.30	-20.14
7	1.31641	0.28	36.04	24.63	36.32	24.91	56.00	46.00	-19.68	-21.09

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 (dB μ V/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	Not defined	Not defined
1000-3000	Avg: 49.5	Avg: 43.5		
Above 3000	Peak: 69.5	Peak: 63.5	Not defined	Not defined

Radiated Emissions Limits at 3 meters (dB μ V/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			57.5	47.5
960-1000	60	54	Avg: 56 Peak: 76	Avg: 50 Peak: 70
1000-3000	Avg: 60	Avg: 54		
Above 3000	Peak: 80	Peak: 74	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	Dec. 27, 2012	Dec. 26, 2013
Test Receiver ROHDE & SCHWARZ (H)	ESIB7	100186	Nov. 28, 2012	Nov. 27, 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
Preamplifier Agilent (V)	8447D	2944A10636	Oct. 20, 2012	Oct. 19, 2013
Preamplifier Agilent (H)	8447D	2944A10637	Oct. 20, 2012	Oct. 19, 2013
Preamplifier Agilent	8449B	3008A01959	Oct. 25, 2012	Oct. 24, 2013
RF signal cable Woken (V)	8D-FB	Cable-Hych1-01	Oct. 26, 2012	Oct. 25, 2013
RF signal cable Woken (H)	8D-FB	Cable-Hych1-02	Oct. 26, 2012	Oct. 25, 2013
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

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.



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-404	Dec. 22, 2012	Dec. 21, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2012	Dec. 24, 2013
Preamplifier Agilent (Below 1GHz)	8447D	2944A10629	Oct. 26, 2012	Oct. 25, 2013
Preamplifier Agilent (Above 1GHz)	8449B	3008A01959	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNER	SUCOFLEX 104	230132/4	Oct. 26, 2012	Oct. 25, 2013
RF signal cable HUBER+SUHNER	SUCOFLEX 104	309223/4+309 218/4	Oct. 26, 2012	Oct. 25, 2013
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
RF signal cable HUBER+SUHNER	SUCOFLEX 102	38218/2+ 37433/2	Oct. 26, 2012	Oct. 25, 2013

- 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 10 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:

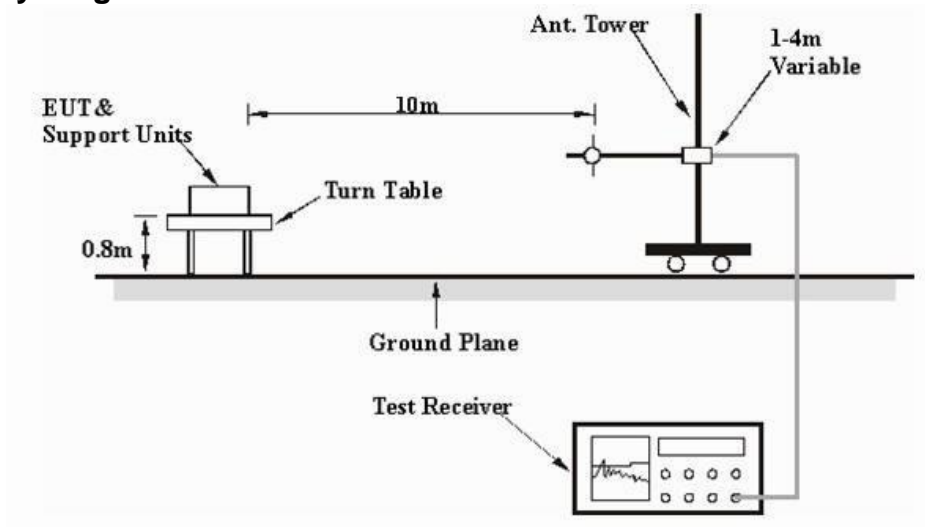
1. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak (PK) detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz for Average (AV) detection at frequency above 1GHz.
2. For measurement of frequency above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

4.2.4 DEVIATION FROM TEST STANDARD

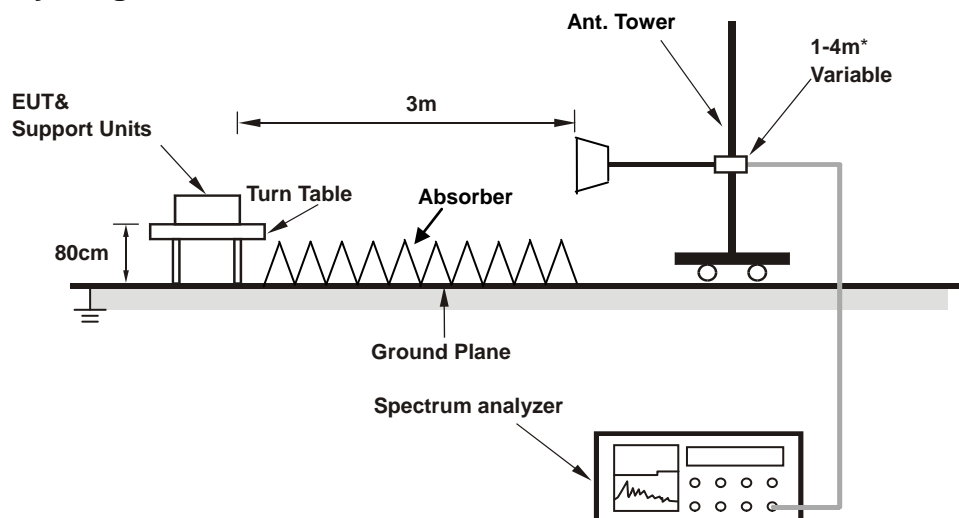
No deviation.

4.2.5 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



* : depends on the EUT height and the antenna 3dB beamwidth both.

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

4.2.6 EUT OPERATING CONDITIONS

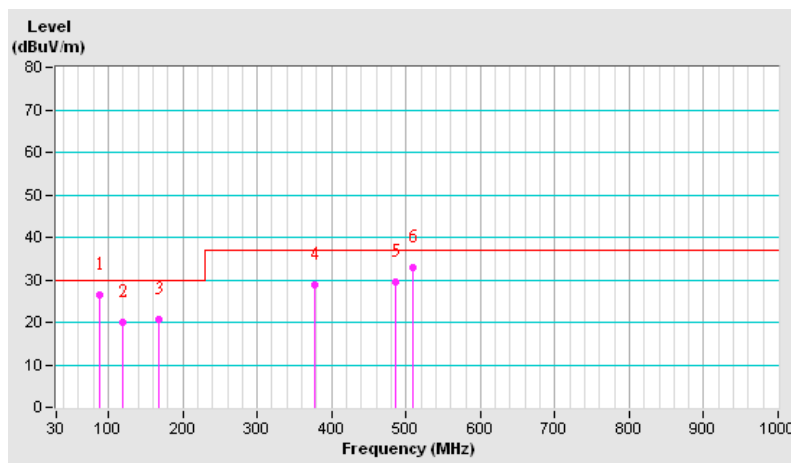
Same as 4.1.6.

4.2.7 TEST RESULTS

INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	18deg. C, 61% RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Felix Chen		

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	88.45	26.55 QP	30.00	-3.45	4.00 H	116	17.85	8.70
2	119.42	19.99 QP	30.00	-10.01	2.50 H	266	7.86	12.13
3	168.12	20.82 QP	30.00	-9.18	4.00 H	339	6.74	14.08
4	377.96	28.84 QP	37.00	-8.16	2.50 H	258	10.85	17.99
5	486.81	29.43 QP	37.00	-7.57	2.50 H	165	8.53	20.90
6	510.14	32.88 QP	37.00	-4.12	1.50 H	21	11.41	21.47

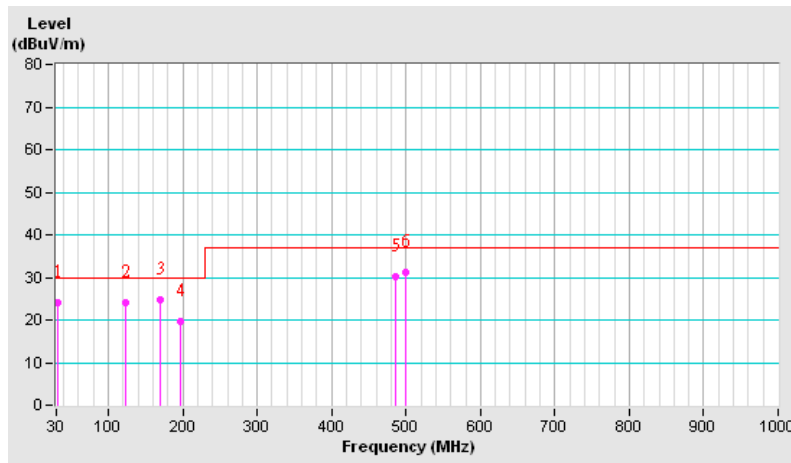
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	18deg. C, 61% RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Felix Chen		

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	31.83	24.23 QP	30.00	-5.77	1.00 V	26	11.66	12.57
2	122.18	24.11 QP	30.00	-5.89	1.00 V	277	11.62	12.49
3	169.22	24.59 QP	30.00	-5.41	1.00 V	184	10.25	14.34
4	196.89	19.74 QP	30.00	-10.26	1.00 V	255	7.61	12.13
5	485.99	30.24 QP	37.00	-6.76	3.50 V	127	8.96	21.28
6	499.88	31.32 QP	37.00	-5.68	2.50 V	162	9.68	21.64

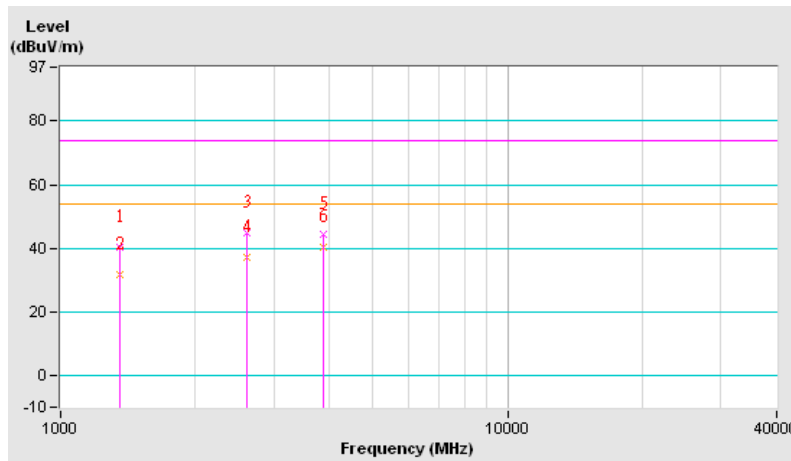
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	1-40GHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	Ben Huang		

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	1360.72	40.28 PK	74.00	-33.72	1.01 H	306	9.83	30.45
2	1360.72	31.52 AV	54.00	-22.48	1.01 H	306	1.07	30.45
3	2611.22	44.83 PK	74.00	-29.17	1.25 H	249	9.26	35.57
4	2611.22	37.35 AV	54.00	-16.65	1.25 H	249	1.78	35.57
5	3873.75	44.44 PK	74.00	-29.56	1.25 H	159	5.29	39.15
6	3873.75	40.34 AV	54.00	-13.66	1.25 H	159	1.19	39.15

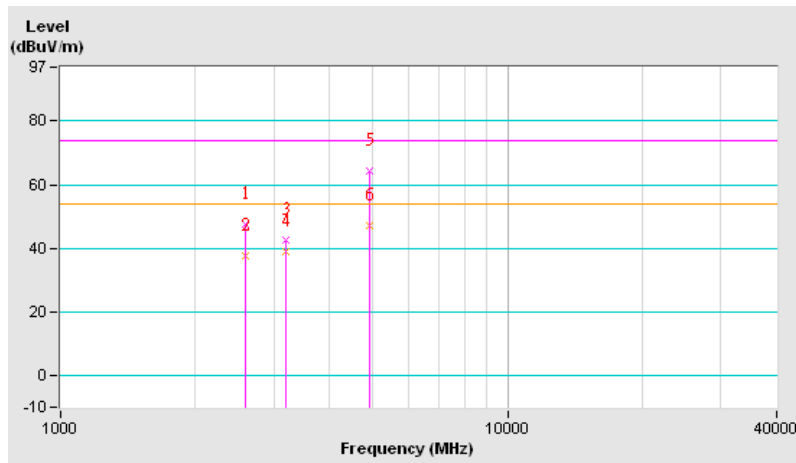
- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	1-40GHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	Ben Huang		

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	2590.48	47.70 PK	74.00	-26.30	1.50 V	190	12.23	35.47
2	2590.48	37.75 AV	54.00	-16.25	1.50 V	190	2.28	35.47
3	3200.40	42.68 PK	74.00	-31.32	1.00 V	175	4.92	37.76
4	3200.40	39.02 AV	54.00	-14.98	1.00 V	175	1.26	37.76
5	4923.41	64.54 PK	74.00	-9.46	1.25 V	190	22.32	42.22
6	4923.41	47.25 AV	54.00	-6.75	1.25 V	190	5.03	42.22

- 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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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.

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