

FCC VERIFICATION TEST REPORT

REPORT NO.: FV130726C18

MODEL NO.: DPH-154

RECEIVED: Jul. 14, 2013

TESTED: Jul. 25, 2013 ~ Sep. 17, 2013

ISSUED: Sep. 23, 2013

APPLICANT: Cisco Systems, Inc

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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
FV130726C18	Original release.	Sep. 23, 2013

1 CERTIFICATION

PRODUCT: Femtocell

BRAND: Cisco

MODEL NO.: DPH-154

APPLICANT: Cisco Systems, Inc

TESTED: Jul. 25, 2013 ~ Jul. 27, 2013

TEST SAMPLE: Production Unit

STANDARD: FCC Part 15, Subpart B, Class B

ICES-003:2012 Issue 5, Class B

ANSI C63.4:2009

Canada RSS-310 Issue 3 (2010-12)

Canada RSS-Gen Issue 3 (2010-12)

The above equipment (Model: DPH-154) 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** : Sep. 23, 2013
Vera Huang / Specialist

APPROVED BY : Derrick Dai , **DATE** : Sep. 23, 2013
Derrick Dai / Assistant Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications.

Standard			Test Type	Result	Remarks
FCC Part 15, Subpart B, Class B	RSS-310	RSS-Gen	Conducted emission test	PASS	Meet the requirement of limit Minimum passing margin is -11.72dB at 0.57578MHz
	Section 3.1	Section 7.2.2			
ICES-003:2012 Issue 5, Class B	Section 3.1	Section 7.2.3.2	Radiated emission test (30MHz~18GHz)	PASS	Meet the requirement of limit. Minimum passing margin is -5.62dB at 77.97MHz

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

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

PRODUCT	Femtocell
MODEL NO.	DPH-154
POWER SUPPLY	12Vdc (adapter)
DATA CABLE	Refer to NOTE as below
ACCESSORY DEVICE	Refer to NOTE as below
P/N	SC-DPH154-4U-ATT
S/N	FOC1733N56V

NOTE:

1. The EUT contains following accessory devices.

ITEM	BRAND	MODEL	SPECIFICATION
Adapter	DVE	DSA-12PFA-09 FUS	Input: 100-240Vac, 50~60Hz, 0.5A Output: 12Vdc, 1A
Yellow Ethernet Cable	Evernew	P/N: CAT.5UTP24AWG*4P	3m non-shielded cable

2. The above EUT information is declared by manufacturer and for more detailed feature description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

The EUT was tested with the following modes.

Test Mode	Test Condition
Conducted Emission Test	
1	WCDMA850 Link + GPS Rx + Nokia Phone 1 (Voice Link) + Nokia Phone 2 (Voice Link) + Sony Phone 3 (Data Link) + SmartBits Traffic (0.2%) + Adapter <LAN 100Mbps>
2	WCDMA1900 Link + GPS Rx + Nokia Phone 1 (Voice Link) + Nokia Phone 2 (Voice Link) + Sony Phone 3 (Data Link) + SmartBits Traffic (0.2%) + Adapter <LAN 100Mbps>
Radiated Emission Test	
1	WCDMA850 Link + GPS Rx + Nokia Phone 1 (Voice Link) + Nokia Phone 2 (Voice Link) + Sony Phone 3 (Data Link) + SmartBits Traffic (0.2%) + Adapter <LAN 100Mbps>
2	WCDMA1900 Link + GPS Rx + Nokia Phone 1 (Voice Link) + Nokia Phone 2 (Voice Link) + Sony Phone 3 (Data Link) + SmartBits Traffic (0.2%) + Adapter <LAN 100Mbps>
3	WCDMA850 Link + GPS Rx + Nokia Phone 1 (Voice Link) + Nokia Phone 2 (Voice Link) + Sony Phone 3 (Data Link) + SmartBits Traffic (1%) + Adapter <LAN 10Mbps>
4	WCDMA1900 Link + GPS Rx + Nokia Phone 1 (Voice Link) + Nokia Phone 2 (Voice Link) + Sony Phone 3 (Data Link) + SmartBits Traffic (1%) + Adapter <LAN 10Mbps>

NOTE:

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

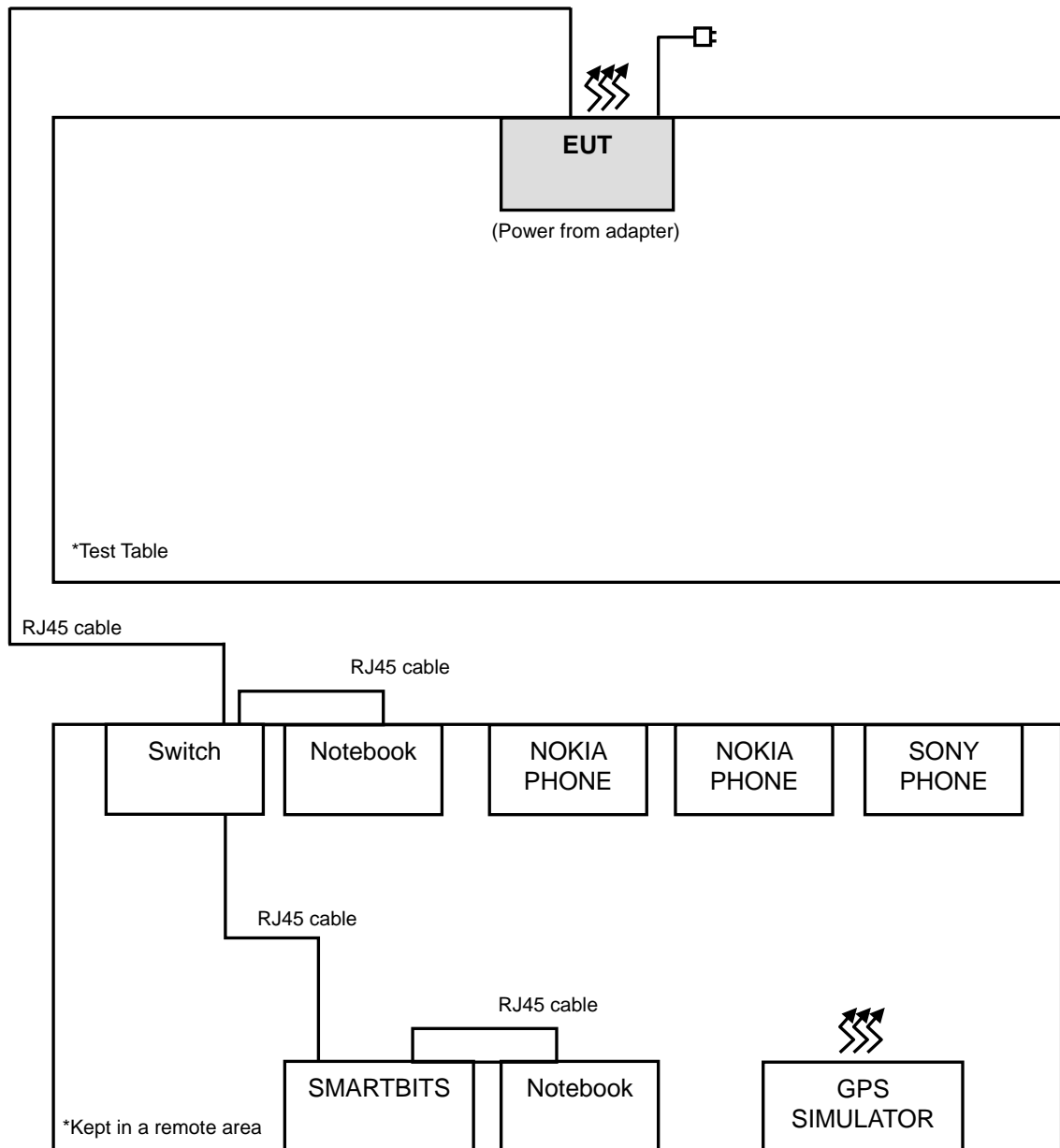
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PHONE X 2	NOKIA	N/A	N/A	QMNRM-455
2	PHONE X 1	SONY	N/A	N/A	PY7A8880001
3	Switch	Cisco	897VA	FGL16222615	N/A
4	NOTEBOOK	DELL	E6400	HJ2M32S	N/A
5	NOTEBOOK PC	SONY	SVS151A12P	275548477001087	N/A
6	GPS SIMULATOR	PENDULUM	GSG-54	191121	N/A
7	SMARTBITS	Spirent	SMB-600B	E06011309	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	N/A
3	12m cable; Non-shield ; RJ45 connector; w/o core (Between Switch and EUT)
4	2m cable; Non-shield ; RJ45 connector; w/o core (Between a Notebook and Switch)
5	3m cable; Non-shield ; RJ45 connector; w/o core (Between a Notebook and Smartbits)
6	N/A
7	2m cable; Non-shield ; RJ45 connector; w/o core (Between Smartbits and Switch)

NOTE:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items 4-7 acted as communication partners to transfer data.
3. Items 1-3 were provided by client.

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)

Canada RSS-310 Issue 3 (section: 3.1)

Canada RSS-Gen Issue 3 (section: 7.2.2)

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	100312	Jul. 02, 2013	Jul. 01, 2014
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.

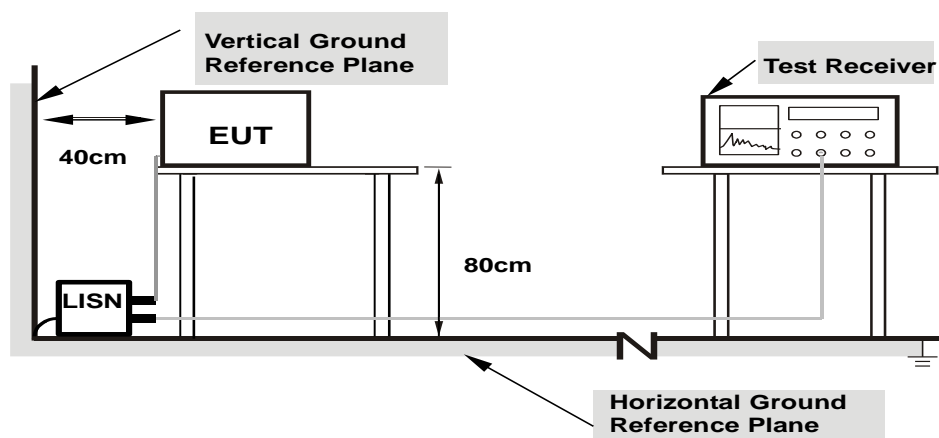
4.1.3 TEST PROCEDURES

- 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

- Placed the EUT on the testing table.
- EUT charged from adapter.
- EUT linked with switch via RJ45 cable.
- Switch and SmartBits linked with Notebooks via RJ45 cable.
- Notebook ran test program to enable all functions.
- The EUT linked with the GPS simulator and Phones, which acted as communication partners.

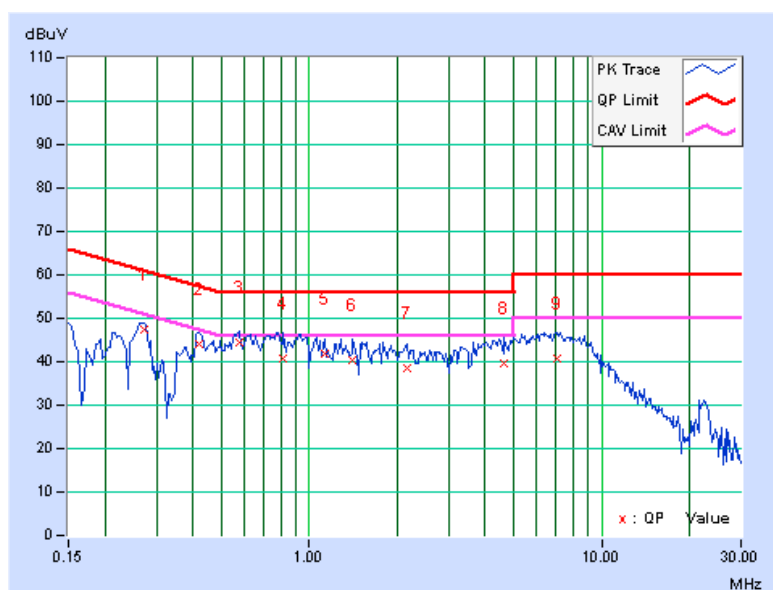
4.1.7 TEST RESULTS

INPUT POWER	120 Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 61% RH	PHASE	Line 1
TESTED BY	Rolan Zheng		

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	0.27109	0.21	47.21	36.09	47.42	36.30	61.08	51.08	-13.67	-14.79
2	0.41953	0.22	43.72	30.72	43.94	30.94	57.46	47.46	-13.52	-16.52
3	0.57578	0.24	44.04	29.79	44.28	30.03	56.00	46.00	-11.72	-15.97
4	0.81797	0.27	40.43	27.68	40.70	27.95	56.00	46.00	-15.30	-18.05
5	1.13281	0.29	41.65	26.86	41.94	27.15	56.00	46.00	-14.06	-18.85
6	1.41016	0.30	40.11	26.71	40.41	27.01	56.00	46.00	-15.59	-18.99
7	2.16797	0.33	38.05	26.14	38.38	26.47	56.00	46.00	-17.62	-19.53
8	4.63672	0.41	39.12	29.90	39.53	30.31	56.00	46.00	-16.47	-15.69
9	7.03906	0.45	40.22	32.04	40.67	32.49	60.00	50.00	-19.33	-17.51

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

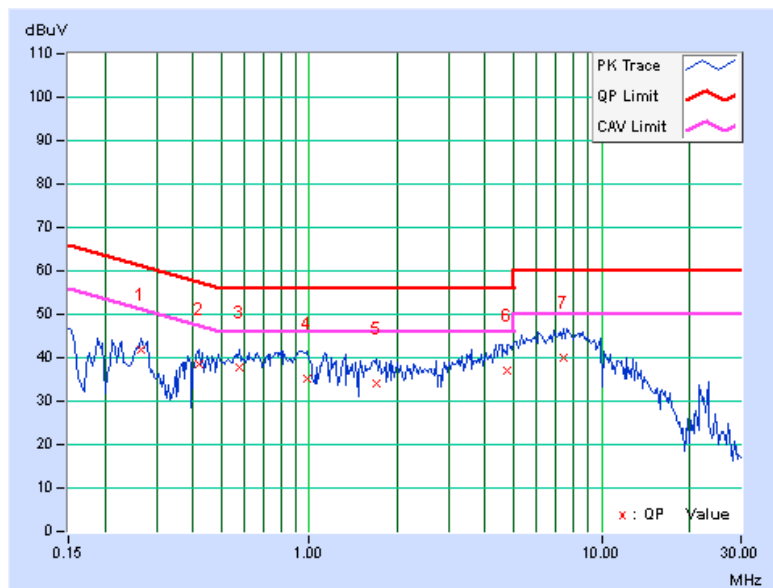


INPUT POWER	120 Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 61% RH	PHASE	Line 2
TESTED BY	Rolan Zheng		

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.26719	0.22	41.62	32.31	41.84	32.53	61.20	51.20	-19.37	-18.68
2	0.41953	0.27	38.16	27.80	38.43	28.07	57.46	47.46	-19.03	-19.39
3	0.57969	0.27	37.40	24.48	37.67	24.75	56.00	46.00	-18.33	-21.25
4	0.98203	0.26	35.01	22.09	35.27	22.35	56.00	46.00	-20.73	-23.65
5	1.69922	0.30	33.78	22.17	34.08	22.47	56.00	46.00	-21.92	-23.53
6	4.77734	0.47	36.73	28.02	37.20	28.49	56.00	46.00	-18.80	-17.51
7	7.43359	0.52	39.56	31.27	40.08	31.79	60.00	50.00	-19.92	-18.21

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)

Canada RSS-310 Issue 3 (section: 3.1)

Canada RSS-Gen Issue 3 (section: 7.2.3.2)

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.

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 40GHz, 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	Mar. 19, 2013	Mar. 18, 2014
BILOG Antenna SCHWARZBECK (H)	VULB9168	9168-149	Mar. 19, 2013	Mar. 19, 2014
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 7.7.03.8	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 20, 2013	May 19, 2014
Spectrum Analyzer Agilent	E4446A	MY51100039	Jan. 31, 2013	Jan. 30, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Mar. 20, 2013	Mar. 19, 2014
RF signal cable Woken	8D-FB	NA	Mar. 23, 2013	Mar. 22, 2014
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_ V7.6.15.9.4	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 EAST COST Microwave	HP 160S-29	NA	Oct. 26, 2012	Oct. 25, 2013
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 10 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:

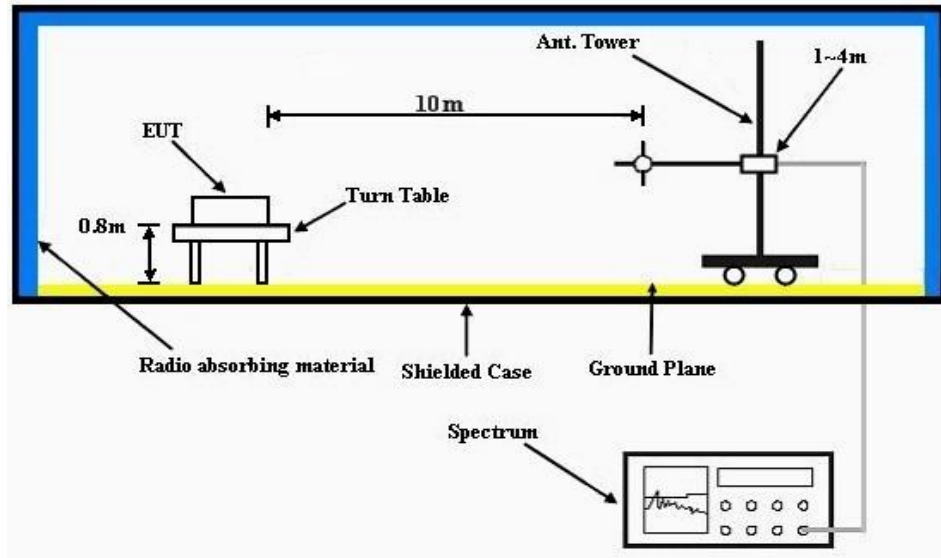
1. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak (PK) detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz for Average (AV) detection at frequency above 1GHz.
2. For measurement of frequency above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

4.2.4 DEVIATION FROM TEST STANDARD

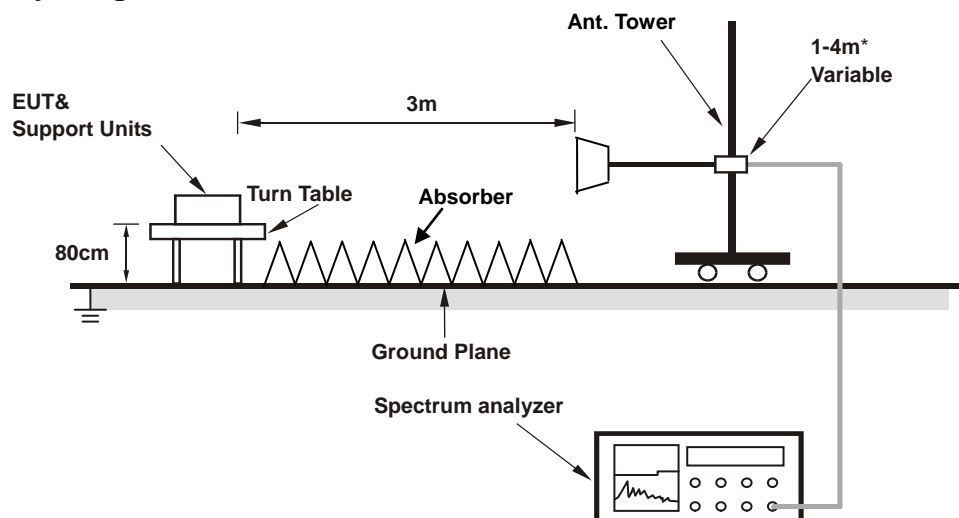
No deviation.

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

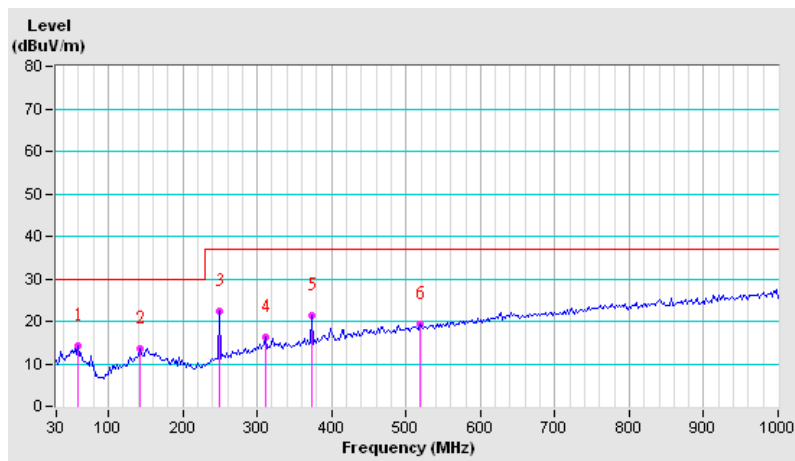
4.2.7 TEST RESULTS

INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 65% RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Daniel Lin		

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	59.16	14.12 QP	30.00	-15.88	4.00 H	138	29.14	-15.02
2	142.75	13.66 QP	30.00	-16.34	3.50 H	142	27.35	-13.69
3	249.66	22.23 QP	37.00	-14.77	3.00 H	76	35.87	-13.64
4	311.86	16.43 QP	37.00	-20.57	2.50 H	95	27.52	-11.09
5	374.07	21.33 QP	37.00	-15.67	3.00 H	277	31.41	-10.08
6	517.92	19.16 QP	37.00	-17.84	2.00 H	269	26.21	-7.05

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

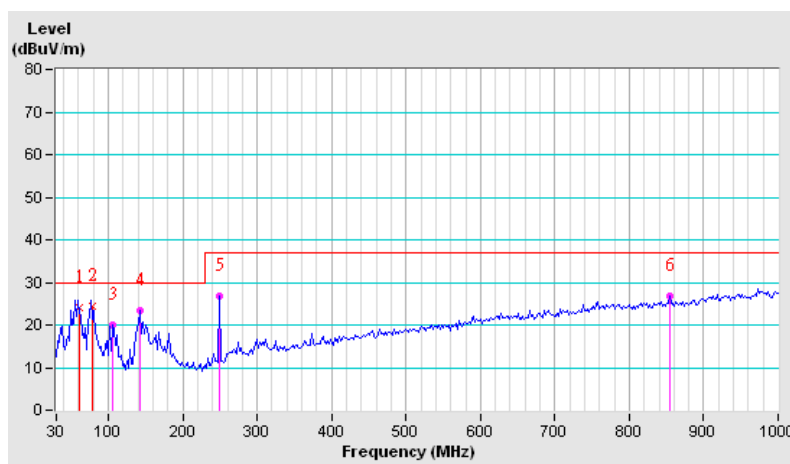


INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	23 deg. C, 65% RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Daniel Lin		

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	60.22	24.11 QP	30.00	-5.89	1.00 V	61	38.79	-14.68
2	77.97	24.38 QP	30.00	-5.62	4.00 V	30	42.08	-17.70
3	105.81	20.00 QP	30.00	-10.00	1.00 V	268	37.45	-17.45
4	142.75	23.33 QP	30.00	-6.67	1.00 V	336	36.84	-13.51
5	249.66	26.87 QP	37.00	-10.13	1.00 V	14	40.13	-13.26
6	854.21	26.77 QP	37.00	-10.23	3.00 V	25	26.36	0.41

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

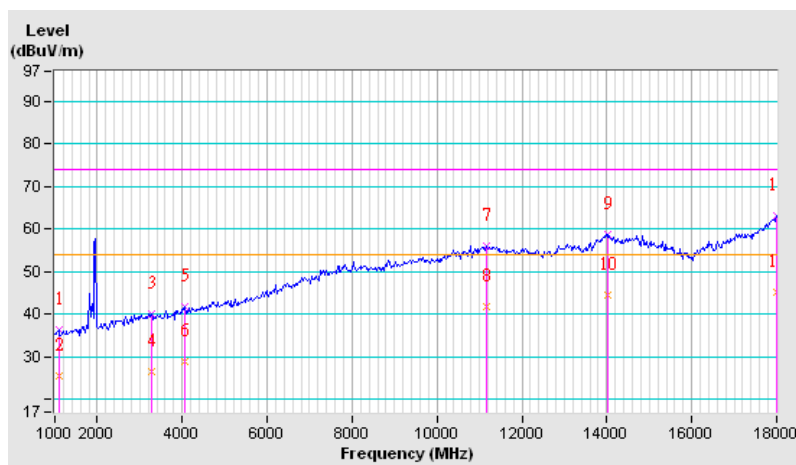


INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	1-18 GHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 71% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	James Chang		

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	1085.01	36.35 PK	74.00	-37.65	1.24 H	342	45.43	-9.08
2	1085.01	25.44 AV	54.00	-28.56	1.24 H	342	34.52	-9.08
3	3266.67	39.97 PK	74.00	-34.03	1.00 H	85	41.62	-1.65
4	3266.67	26.37 AV	54.00	-27.63	1.00 H	85	28.02	-1.65
5	4060.12	41.75 PK	74.00	-32.25	1.00 H	122	41.14	0.61
6	4060.12	28.93 AV	54.00	-25.07	1.00 H	122	28.32	0.61
7	11171.67	55.93 PK	74.00	-18.07	1.74 H	11	39.71	16.22
8	11171.67	41.68 AV	54.00	-12.32	1.74 H	11	25.46	16.22
9	14033.33	58.79 PK	74.00	-15.21	1.24 H	8	39.36	19.43
10	14033.33	44.32 AV	54.00	-9.68	1.24 H	8	24.89	19.43
11	17999.99	63.25 PK	74.00	-10.75	1.24 H	75	38.88	24.37
12	17999.99	45.17 AV	54.00	-8.83	1.24 H	75	20.80	24.37

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

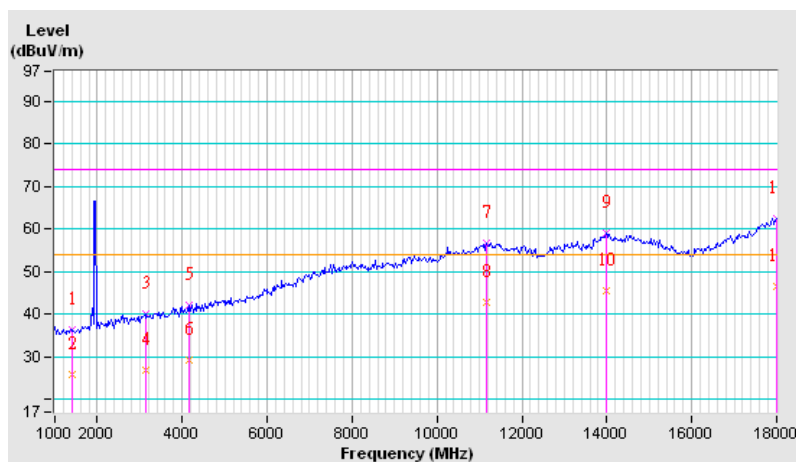


INPUT POWER	120 Vac, 60 Hz	FREQUENCY RANGE	1-18 GHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 71% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	James Chang		

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	1396.67	36.27 PK	74.00	-37.73	1.00 V	321	43.62	-7.35
2	1396.67	25.86 AV	54.00	-28.14	1.00 V	321	33.21	-7.35
3	3125.01	39.92 PK	74.00	-34.08	1.24 V	31	41.72	-1.80
4	3125.01	26.88 AV	54.00	-27.12	1.24 V	31	28.68	-1.80
5	4145.01	42.24 PK	74.00	-31.76	1.24 V	97	41.33	0.91
6	4145.01	29.08 AV	54.00	-24.92	1.24 V	97	28.17	0.91
7	11171.67	56.80 PK	74.00	-17.20	1.74 V	7	40.58	16.22
8	11171.67	42.88 AV	54.00	-11.12	1.74 V	7	26.66	16.22
9	13976.67	59.18 PK	74.00	-14.82	1.00 V	270	39.83	19.35
10	13976.67	45.64 AV	54.00	-8.36	1.00 V	270	26.29	19.35
11	17999.83	62.54 PK	74.00	-11.46	1.74 V	134	38.17	24.37
12	17999.83	46.48 AV	54.00	-7.52	1.74 V	134	22.11	24.37

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

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