

FCC Test Report

Report No.: RF150116D04-2

FCC ID: P27DLC200SUS

Test Model: DLC-200SUS

Series Model: DLC-200Sxxx (where "x" is blank, number or any characters)

Received Date: Jan. 16, 2015

Test Date: Feb. 4 ~ Mar. 5, 2015

Issued Date: May 29, 2015

Applicant: Sercomm Corp.

Address: 8F, No. 3-1, YuangQu St., NanKang, Taipei 115, Taiwan, R.O.C. (NanKang

Software Park)

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

(R.O.C.)





This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.



Table of Contents

R	lelease	e Control Record	3
1	C	Certificate of Conformity	4
2		Summary of Test Results	5
	2.1 2.2	Measurement Uncertainty	
3	G	General Information	6
	3.1 3.2 3.2.1 3.3 3.3.1 3.4	General Description of EUT Description of Test Modes Test Mode Applicability and Tested Channel Detail Description of Support Units Configuration of System under Test General Description of Applied Standards	7 8 9
4	Т	Fest Types and Results	. 11
	4.1.3 4.1.4 4.1.5 4.1.6 4.1.7 4.2.1 4.2.2 4.2.3 4.2.4 4.2.5 4.2.6 4.2.7	Test Instruments Test Procedures Deviation from Test Standard Test Set Up. EUT Operating Conditions Test Results. Conducted Emission Measurement Limits of Conducted Emission Measurement Test Instruments Test Procedures Deviation from Test Standard Test Setup EUT Operating Conditions Test Results.	11 . 12 . 13 . 13 . 14 . 15 . 17 . 17 . 18 . 18 . 18 . 19
5	F	Pictures of Test Arrangements	. 21
Α	append	dix – Information on the Testing Laboratories	. 22



Release Control Record

Issue No.	Description	Date Issued
RF150116D04-2	Original release.	May 29, 2015



1 Certificate of Conformity

Product: Digital Life Controller

Brand: Sercomm

Test Model: DLC-200SUS

Series Model: DLC-200Sxxx (where "x" is blank, number or any characters)

Sample Status: Engineering sample

Applicant: Sercomm Corp.

Test Date: Feb. 4 ~ Mar. 5, 2015

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.249)

ANSI C63.10:2009

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by: May 29, 2015

Celia Chen / Senior Specialist

Approved by : , **Date:** May 29, 2015

Rex Lai / Assistant Manager



2 Summary of Test Results

	47 CFR FCC Part 15, Subpart C (SECTION 15.249)					
FCC Clause	Test Item	Result	Remarks			
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.04dB at 0.20477MHz.			
15.209 15.249 15.249 (d)	Radiated Emission Test Band Edge Measurement Limit: 50dB less than the peak value of fundamental frequency or meet radiated emission limit in section 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -7.4dB at 7310.92MHz.			

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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	3.43 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1000MHz	4.00 dB
Radiated Emissions above 1 GHz	1GHz ~ 40GHz	3.36 dB

2.2 Modification Record

There were no modifications required for compliance.



3 General Information

3.1 General Description of EUT

Product	Digital Life Controller			
Brand	Sercomm			
Test Model	DLC-200SUS			
Series Model	DLC-200Sxxx (where "x" is blank, number or any characters)			
Model Difference	Marketing Differentiation			
Status of EUT	Engineering sample			
Power Supply Rating	55Vdc or 56Vdc from PoE or 7.4Vdc from battery			
Modulation Type	FSK			
Transfer Rate	40Kbps			
Operating Frequency	916.0MHz			
Number of Channel	1			
Antenna Type	Dipole antenna with 2.51dBi gain			
Antenna Connector	I-PEX			
Accessory Device	Refer to note below			
Data Cable Supplied	N/A			

Note:

1. The EUT uses following PoE (support unit provided by client) or battery (accessory device).

Support u	Support unit				
	Brand	Microsemi			
PoE 1	Model	PD-9001GR/AT/AC			
POEI	Input Power	100-240V, 50/60Hz, 0.67A			
	Output Power	55V, 0.6A			
	Brand	PHIHONG			
PoE 2	Model	POE31U-1AT(SC)-R			
POE Z	Input Power	100-240V, 0.8A, 50-60Hz			
	Output Power	56V, 0.536A			
Accessory	Accessory device				
	Brand	Simplo			
Battery	Model	DLC-200S			
	Rating	7.4V, 8100mAh, 59.9Wh			

After pre-tested above power source, the **PoE 2** was the worst case, therefore, only its test data was recorded in this report.

2. 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

1 channel is provided to this EUT.

Channel	Frequency	
1	916.0MHz	



3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE	APPLICABLE TO			DESCRIPTION
MODE	RE ³ 1G	RE<1G	PLC	
-	√	√	√	-

Where

RE31G: Radiated Emission above 1GHz &

Bandedge Measurement

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on X-plane.

Radiated Emission Test (Above 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	1	1	FSK

Radiated Emission Test (Below 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	1	1	FSK

Power Line Conducted Emission Test:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	1	1	FSK

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (PoE)	TESTED BY
RE ³ 1G	21deg. C, 70%RH	120Vac, 60Hz	Dalen Dai
RE<1G	21deg. C, 70%RH	120Vac, 60Hz	Dalen Dai
PLC	22deg. C, 78%RH	120Vac, 60Hz	Justin Liu



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.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	A. EUT Sercomm		DLC-200SUS	-	-	-
B.	PoE	PHIHONG	POE31U-1AT(SC)-R	N/A	N/A	Supplied by client
C.	Notebook	DELL	E5410	BW33YM1	FCC DoC Approved	Provided by Lab

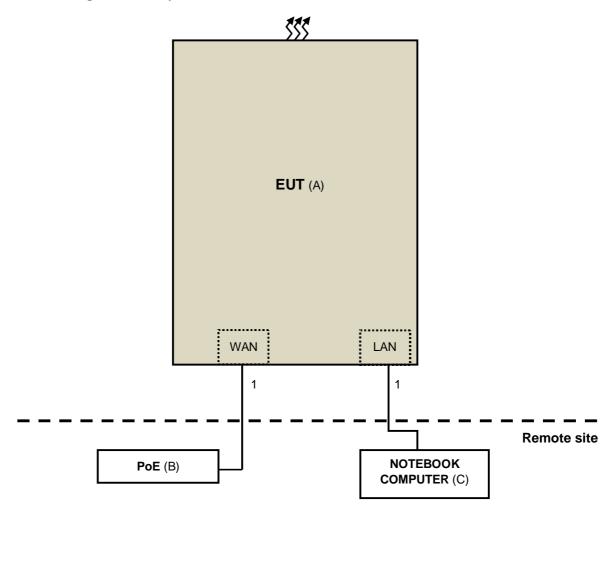
Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN cable	2	10	N	0	Provided by Lab

Note: The core(s) is(are) originally attached to the cable(s).

3.3.1 Configuration of System under Test





3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.249)

ANSI C63.10-2009

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 ~ 928 MHz	50	500
2400 ~ 2483.5 MHz	50	500
5725 ~ 5875 MHz	50	500
24 ~ 24.25 GHz	250	2500

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits as below table, whichever is the lesser attenuation

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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



4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 26, 2015	Feb. 25, 2016
HP Preamplifier	8449B	3008A01201	Feb. 26, 2015	Feb. 25, 2016
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Mar. 01, 2015	Feb. 28, 2016
Agilent Spectrum	E4446A	MY51100050	Oct. 24, 2014	Oct. 23, 2015
Agilent TEST RECEIVER	N9038A	MY51210129	Jan. 20, 2015	Jan. 19, 2016
Schwarzbeck Antenna	VULB 9168	139	Feb. 04, 2015	Feb. 03, 2016
Schwarzbeck Antenna	VHBA 9123	480	May 29, 2013	May 28, 2015
Schwarzbeck Horn Antenna	BBHA-9170	212	Feb. 09, 2015	Feb. 08, 2016
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Feb. 10, 2015	Feb. 09, 2016
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	ADT_Radiated_V7.6.15.9.4	NA	NA	NA
SUHNER RF cable	SF104	CABLE-CH6	Aug. 15, 2014	Aug. 14, 2015
SUHNER RF cable	SF102	Cable-CH8-3.6m	Aug. 15, 2014	Aug. 14, 2015
EMCO Horn Antenna	3115	00028257	Feb. 05, 2015	Feb. 04, 2016
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 29, 2014	Sep. 28, 2015
Anritsu Power Sensor	MA2411B	0738404	Apr. 21, 2014	Apr. 20, 2015
Anritsu Power Meter	ML2495A	0842014	Apr. 21, 2014	Apr. 20, 2015

NOTE: 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.

- 2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 3. The test was performed in Chamber No. 6.
- 4. The Industry Canada Reference No. IC 7450E-6.
- 5. The FCC Site Registration No. is 447212.



4.1.3 Test Procedures

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. 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 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. 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 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

- 1. For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the ground at 3 meter chamber room for test
- 2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- 4. All modes of operation were investigated and the worst-case emissions are reported.

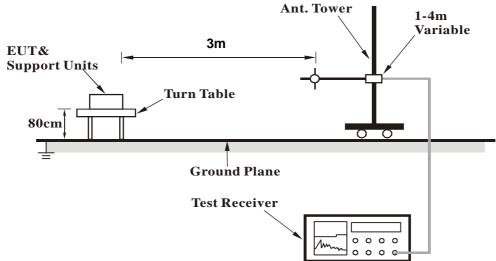
111	Deviation from T	ant Ctondord
414	Deviation from 1	est Standard

No deviation.

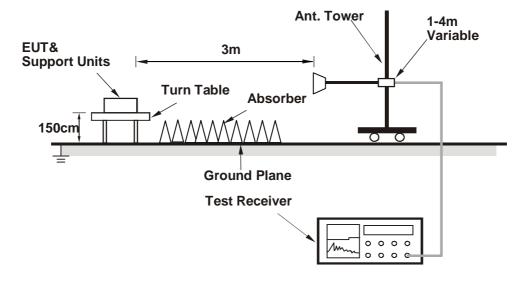


4.1.5 Test Set Up

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Conditions

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



4.1.7 Test Results

Below 1GHz Data:

CHANNEL	TX Channel 1	DETECTOR	Quasi-Peak (QP)
		FUNCTION	Peak (PK)
FREQUENCY RANGE	30MHz ~ 1GHz		Average (AV)

	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	113.71	34.5 QP	43.5	-9.0	1.44 H	331	51.11	-16.59
2	205.72	34.1 QP	43.5	-9.4	1.82 H	190	50.25	-16.13
3	266.58	34.3 QP	46.0	-11.7	1.59 H	0	47.47	-13.16
4	499.96	37.9 QP	46.0	-8.1	1.27 H	98	46.29	-8.35
5	724.52	37.9 QP	46.0	-8.1	1.84 H	159	42.31	-4.43
6	*916.00	93.3 PK	114.0	-20.7	1.17 H	75	94.26	-0.98
7	*916.00	92.9 AV	94.0	-1.2	1.17 H	75	93.83	-0.98
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
						TABLE		
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)
NO.	-	LEVEL			HEIGHT	ANGLE	VALUE	FACTOR
	(MHz)	LEVEL (dBuV/m)	(dBuV/m)	(dB)	HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV)	FACTOR (dB/m)
1	(MHz) 58.52	LEVEL (dBuV/m) 31.5 QP	(dBuV/m) 40.0	(dB) -8.5	HEIGHT (m) 1.54 V	ANGLE (Degree)	VALUE (dBuV) 45.55	FACTOR (dB/m) -14.06
1 2	(MHz) 58.52 113.86	LEVEL (dBuV/m) 31.5 QP 35.8 QP	(dBuV/m) 40.0 43.5	-8.5 -7.8	HEIGHT (m) 1.54 V 1.36 V	ANGLE (Degree) 83 212	VALUE (dBuV) 45.55 52.73	FACTOR (dB/m) -14.06 -16.98
1 2 3	(MHz) 58.52 113.86 401.12	LEVEL (dBuV/m) 31.5 QP 35.8 QP 36.2 QP	(dBuV/m) 40.0 43.5 46.0	-8.5 -7.8 -9.8	HEIGHT (m) 1.54 V 1.36 V 1.42 V	ANGLE (Degree) 83 212 85	VALUE (dBuV) 45.55 52.73 46.59	FACTOR (dB/m) -14.06 -16.98 -10.38
1 2 3 4	(MHz) 58.52 113.86 401.12 491.53	LEVEL (dBuV/m) 31.5 QP 35.8 QP 36.2 QP 36.2 QP	(dBuV/m) 40.0 43.5 46.0 46.0	-8.5 -7.8 -9.8	HEIGHT (m) 1.54 V 1.36 V 1.42 V 1.71 V	83 212 85 149	VALUE (dBuV) 45.55 52.73 46.59 44.90	FACTOR (dB/m) -14.06 -16.98 -10.38 -8.74

REMARKS:

- 1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- 2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) Pre-Amplifier Factor(dB)
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission Level Limit value
- 5. " * ": Fundamental frequency.



Above 1GHz Data:

CHANNEL	TX Channel 1	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

	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	2981.27	54.3 PK	74.0	-19.7	1.95 H	312	55.92	-1.61
2	2981.27	38.8 AV	54.0	-15.2	1.95 H	312	40.37	-1.61
3	4579.66	52.5 PK	74.0	-21.5	1.41 H	358	49.75	2.79
4	4579.66	38.2 AV	54.0	-15.8	1.41 H	358	35.38	2.79
5	7310.92	60.7 PK	74.0	-13.3	1.58 H	309	51.36	9.35
6	7310.92	46.2 AV	54.0	-7.8	1.58 H	309	36.89	9.35
		ANTENNA	N POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	3249.81	53.6 PK	74.0	-20.4	2.11 V	352	54.57	-0.95
2	3249.81	39.9 AV	54.0	-14.1	2.11 V	352	40.82	-0.95
3	4579.63	55.2 PK	74.0	-18.8	1.96 V	17	52.38	2.79
4	4579.63	41.3 AV	54.0	-12.7	1.96 V	17	38.47	2.79
5	7310.92	60.9 PK	74.0	-13.1	1.37 V	97	51.53	9.35
6	7310.92	46.6 AV	54.0	-7.4	1.37 V	97	37.22	9.35

REMARKS:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

	Fraguency (MHz)	Conducted I	Limit (dBuV)
	Frequency (MHz)	Quasi-peak	Average
ſ	0.15 - 0.5	66 - 56	56 - 46
ſ	0.50 - 5.0	56	46
	5.0 - 30.0	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 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100292	Dec. 18, 2014	Dec. 17, 2015
ROHDE & SCHWARZ				
Artificial Mains Network	ESH2-Z5	100104	Dec. 04, 2014	Dec. 03, 2015
(for EUT)				
LISN With Adapter (for EUT)	AD10	C09Ada-001	Dec. 04, 2014	Dec. 03, 2015
ROHDE & SCHWARZ				
Artificial Mains Network	ESH3-Z5	847265/023	Oct. 21, 2014	Oct. 20, 2015
(for peripherals)				
SCHWARZBECK				
Artificial Mains Network (For	NNLK8129	8129229	May 08, 2014	May 07, 2015
EUT)				
Software	ADT_Cond_V7.3.7	NA	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C09.01	Feb. 20, 2014	Feb. 19, 2015
SUHNER Terminator				
(For ROHDE & SCHWARZ	65BNC-5001	E1-010789	May 20, 2014	May 19, 2015
LISN)				
ROHDE & SCHWARZ				
Artificial Mains Network (For	ESH3-Z5	100220	Nov. 20, 2014	Nov. 19, 2015
TV EUT)				
LISN With Adapter	100220	N/A	Nov. 20, 2014	Nov. 19, 2015
(for TV EUT)	100220	IN/ <i>P</i> A	1100. 20, 2014	1100. 19, 2015

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

- 2. The test was performed in Shielded Room No. 9.
- 3. The VCCI Site Registration No. C-1312.



4.2.3 Test Procedures

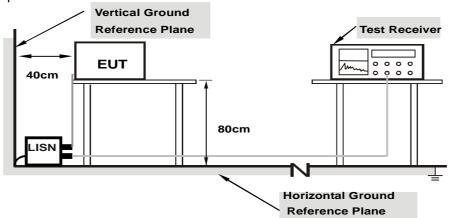
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.



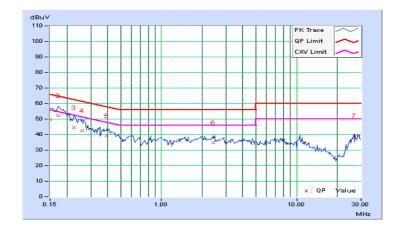
4.2.7 Test Results

Phase Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
----------------	-------------------	-----------------------------------

No	Frequency	Correction Factor	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
	(MHz)	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.20	49.53	31.08	49.73	31.28	66.00	56.00	-16.27	-24.72
2	0.17344	0.20	51.99	30.02	52.19	30.22	64.79	54.79	-12.60	-24.57
3	0.22422	0.21	44.27	23.91	44.48	24.12	62.66	52.66	-18.18	-28.54
4	0.25938	0.22	42.29	25.15	42.51	25.37	61.45	51.45	-18.94	-26.08
5	0.39219	0.25	38.87	27.01	39.12	27.26	58.02	48.02	-18.90	-20.76
6	2.41406	0.40	34.57	23.20	34.97	23.60	56.00	46.00	-21.03	-22.40
7	26.60938	1.03	38.37	34.78	39.40	35.81	60.00	50.00	-20.60	-14.19

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

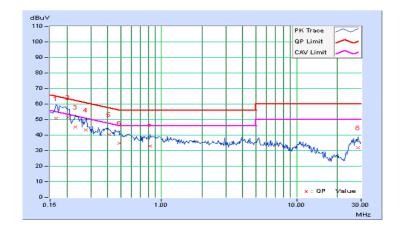




No	Frequency	Correction Factor	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
	(MHz)	(dB)	Q.P.	ÁV.	Q.P.	ÁV.	Q.P.	ÁV.	Q.P.	AV.
1	0.16562	0.21	50.41	33.50	50.62	33.71	65.18	55.18	-14.56	-21.47
2	0.20477	0.22	51.15	31.45	51.37	31.67	63.41	53.41	-12.04	-21.74
3	0.23203	0.23	44.98	25.45	45.21	25.68	62.38	52.38	-17.17	-26.70
4	0.27509	0.24	43.13	27.74	43.37	27.98	60.96	50.96	-17.60	-22.99
5	0.41027	0.26	39.93	30.64	40.19	30.90	57.64	47.64	-17.45	-16.74
6	0.48594	0.27	34.37	22.38	34.64	22.65	56.24	46.24	-21.60	-23.59
7	0.82578	0.31	32.48	20.22	32.79	20.53	56.00	46.00	-23.21	-25.47
8	28.50391	0.50	31.47	26.19	31.97	26.69	60.00	50.00	-28.03	-23.31

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





5 Pictures of Test Arrangements	
Please refer to the attached file (Test Setup Photo).	



Appendix - 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.

Hsin Chu EMC/RF/Telecom Lab

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab

Tel: 886-2-26052180 Tel: 886-3-5935343 Fax: 886-2-26051924 Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232 Fax: 886-3-3270892

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.

--- END ---