

FCC Test Report

Report No.: RF150528E05C

FCC ID: TLZ-CU300

Test Model: AW-CU300A

Series Model: AW-CU300

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Release Control Record

Issue No.	Description	Date Issued
RF150528E05C	Original release.	Apr. 29, 2016

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -19.29dB at 0.37266MHz.
15.205 / 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.8dB at 302.40MHz.

NOTE: 1 This report is prepared for FCC Class II change. (Changed the PCB size is extended and added model name, flash component, one antenna).

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	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.86 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.43 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	IEEE 802.11 b/g/n WLAN Microcontroller Module
Brand	AzureWave
Test Model	AW-CU300A
Series Model	AW-CU300
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n : up to 72.2Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	11
Output Power	802.11b: 100.231mW 802.11g: 204.644mW 802.11n (HT20): 162.555mW
Antenna Type	Please see Note
Antenna Connector	Please see Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC Class II change. The difference compared with the Report No.: RF150528E05 design is as the following:

- ◆ Changed the PCB size is extended and added model name , flash component as below table:

Original		
Brand	Model No.	Remark
AzureWave	AW-CU300	-
Newly		
Brand	Model No.	Remark
AzureWave	AW-CU300A	PCB size is extended added flash component

From the above models, model: AW-CU300A was selected as representative model for the test and its data was recorded in this report.

- ◆ Added 1 new antenna(No. 9) as below table:

Original							
Antenna No	Brand	Model	Gain (dBi) (Including cable loss)	Antenna Type	Connector Type	Frequency range (GHz to GHz)	Cable Length (mm)
1(Internal)	AzureWave	AW-CU300 ANT	5.12	PCB	NA	2.4~2.4835	NA
2(External)	TAOGLAS	FXP73.07.0100A	3	Monopole	I-PEX	2.4~2.4835	100
3(External)	TAOGLAS	PC11.07.0100A	3	Dipole	I-PEX	2.4~2.4835	100
4(External)	TAOGLAS	FXP74.07.0100A	4	PIFA	I-PEX	2.4~2.4835	100
5(External)	TAOGLAS	GW.17.07.0250E	2.7	Dipole	I-PEX	2.4~2.4835	250
6(External)	TAOGLAS	PC17.07.0070A	0.9	PIFA	I-PEX	2.4~2.4835	70
7(External)	LAIRD	NanoBlue-IP04_MAF94045	2	Monopole	I-PEX	2.4~2.4835	100
8(External)	MAG.LAYERS	EDA_1313_2G4C1-A16	2.39	Dipole	I-PEX	2.4~2.4835	150
Newly							
Antenna No	Brand	Model	Gain (dBi) (Including cable loss)	Antenna Type	Connector Type	Frequency range (GHz to GHz)	Cable Length (mm)
9(External)	LAIRD	EBL2400A1-23UFL	2.45	Dipole	I-PEX	2.4~2.4835	230

Antennas 1~4 were chosen for final test.

2. According to above conditions, only radiated emissions below 1GHz / conducted emissions need to be performed. And all data was verified to meet the requirements.
3. The EUT incorporates a SISO function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1TX	1RX
802.11g	6 ~ 54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX

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

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE<1G	PLC	
1	√	√	With antenna 1 (PCB)
2	√	-	With antenna 2 (Monopole)
3	√	-	With antenna 3 (Dipole)
4	√	-	With antenna 4 (PIFA)

Where **RE<1G**: Radiated Emission below 1GHz **PLC**: Power Line Conducted Emission

NOTE 1: "-" means no effect.

NOTE 2: In original report, Antenna placement had been investigated on the positioned of each 3 axis.

Following worst case were found as listed below.

Antenna	Worst position
PCB	Y-plane
Monopole	Y-plane
PIFA	X-plane

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE<1G	21deg. C, 67%RH	120Vac, 60Hz	Gary Cheng
PLC	25deg. C, 65%RH	120Vac, 60Hz	Wythe Lin

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.

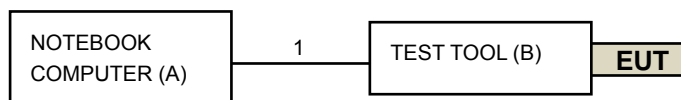
No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC	Provided by Lab
B	TEST TOOL	AzureWave	NA	NA	NA	Supplied by client

NOTE:

1. All power cords of the above support units are non-shielded (1.8 m).

No.	Cable	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Number)	Remark
1	USB	1	1.6	Yes	0	Provided by Lab

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 (15.247)

KDB 558074 D01 DTS Meas Guidance v03r05

ANSI C63.10-2013

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

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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
Test Receiver Agilent	N9038A	MY51210202	Dec. 16, 2015	Dec. 15, 2016
Pre-Amplifier ^(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna ^(*) Electro-Metrics	EM-6879	264	Dec. 16, 2014	Dec. 15, 2016
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 11, 2015	Nov. 10, 2016
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Jan. 07, 2016	Jan. 06, 2017
RF Cable	8D-FB	CHHCAB-001-1	Oct. 04, 2015	Oct. 03, 2016
		CHHCAB-001-2		
	RF-141	CHHCAB-004	Oct. 04, 2015	Oct. 03, 2016
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA
Boresight Antenna Fixture	NA	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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Loop antenna was used for all emissions below 30 MHz.
4. The test was performed in 966 Chamber No. H.
5. The FCC Site Registration No. is 797305.
6. The CANADA Site Registration No. is IC 7450H-3.
7. Tested Date: Apr. 08, 2016

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.

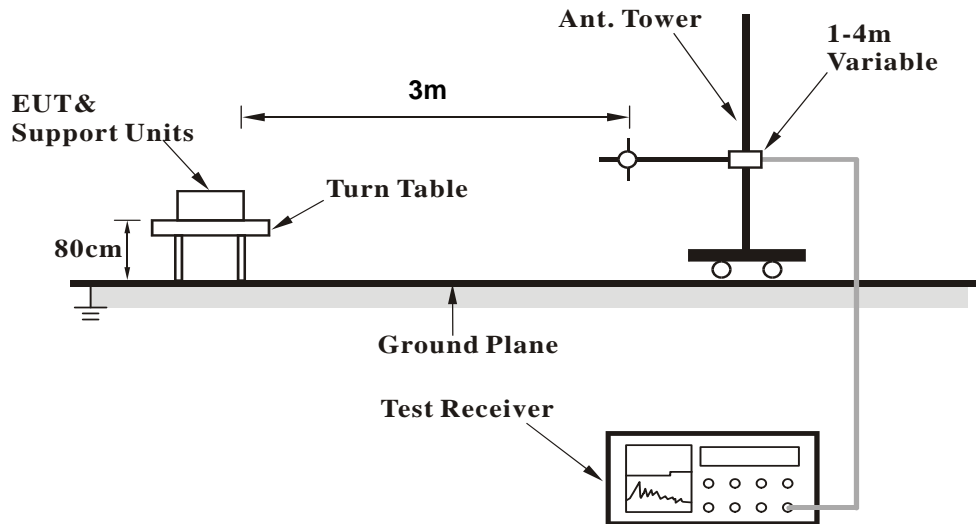
Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. 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

1. Connect the EUT with the support unit A (Notebook computer) which is placed on a testing table.
2. The communication partner run test program "DutApiWiFi8845BrdigeUart.exe" to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 Test Results (Mode 1)

Below 1GHz Data:

802.11g

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	48.80	26.7 QP	40.0	-13.3	1.10 H	109	39.94	-13.24
2	150.14	34.8 QP	43.5	-8.7	1.10 H	204	47.60	-12.82
3	216.00	35.2 QP	43.5	-8.3	1.00 H	74	51.27	-16.09
4	295.77	40.5 QP	46.0	-5.5	1.10 H	109	52.57	-12.08
5	321.16	39.2 QP	46.0	-6.8	1.10 H	306	50.26	-11.06
6	609.40	33.4 QP	46.0	-12.6	1.20 H	178	37.83	-4.45

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	33.60	33.2 QP	40.0	-6.8	1.20 V	102	47.67	-14.47
2	48.90	36.1 QP	40.0	-3.9	1.10 V	102	49.37	-13.24
3	146.80	35.8 QP	43.5	-7.7	1.20 V	170	48.65	-12.88
4	199.99	34.8 QP	43.5	-8.7	1.10 V	300	50.77	-15.98
5	302.40	42.2 QP	46.0	-3.8	1.10 V	128	54.04	-11.80
6	322.80	37.8 QP	46.0	-8.2	1.10 V	114	48.79	-11.00

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

4.1.8 Test Results (Mode 2)

Below 1GHz Data:

802.11g

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	146.90	34.4 QP	43.5	-9.1	1.10 H	207	47.25	-12.87
2	261.10	35.4 QP	46.0	-10.6	1.20 H	100	49.02	-13.58
3	293.42	39.8 QP	46.0	-6.2	1.10 H	101	51.96	-12.19
4	323.44	38.3 QP	46.0	-7.7	1.10 H	195	49.25	-10.97
5	604.60	32.4 QP	46.0	-13.6	1.10 H	10	36.95	-4.57
6	699.78	31.4 QP	46.0	-14.6	1.10 H	100	34.79	-3.37

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	48.14	35.0 QP	40.0	-5.0	1.10 V	107	48.20	-13.22
2	146.41	35.1 QP	43.5	-8.4	1.10 V	106	48.02	-12.91
3	199.02	34.7 QP	43.5	-8.8	1.10 V	317	50.68	-16.00
4	217.50	33.4 QP	46.0	-12.6	1.10 V	106	49.46	-16.09
5	304.29	41.8 QP	46.0	-4.2	1.10 V	41	53.51	-11.74
6	475.44	34.7 QP	46.0	-11.3	1.20 V	110	42.43	-7.73

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

4.1.9 Test Results (Mode 3)

Below 1GHz Data:

802.11g

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	147.32	35.0 QP	43.5	-8.5	1.10 H	218	47.85	-12.83
2	216.14	34.8 QP	46.0	-11.2	1.10 H	70	50.86	-16.09
3	289.14	39.9 QP	46.0	-6.1	1.10 H	142	52.25	-12.35
4	324.80	39.2 QP	46.0	-6.8	1.10 H	309	50.14	-10.94
5	604.60	35.0 QP	46.0	-11.0	1.10 H	105	39.59	-4.57
6	698.80	35.5 QP	46.0	-10.5	1.10 H	107	38.91	-3.37

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	147.22	34.0 QP	43.5	-9.5	1.00 V	210	46.86	-12.84
2	216.01	36.6 QP	46.0	-9.5	1.00 V	200	52.64	-16.09
3	291.77	40.5 QP	46.0	-5.5	1.10 V	115	52.76	-12.26
4	324.25	39.1 QP	46.0	-6.9	1.10 V	104	50.07	-10.95
5	609.28	34.3 QP	46.0	-11.7	1.00 V	110	38.73	-4.45
6	713.11	34.2 QP	46.0	-11.8	1.00 V	112	37.45	-3.25

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

4.1.10 Test Results (Mode 4)

Below 1GHz Data:

802.11g

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	143.90	33.8 QP	43.5	-9.7	1.60 H	209	46.76	-12.99
2	232.38	34.4 QP	46.0	-11.6	1.10 H	151	49.26	-14.86
3	285.90	39.4 QP	46.0	-6.6	1.10 H	106	51.81	-12.43
4	335.90	39.6 QP	46.0	-6.4	1.10 H	110	50.41	-10.77
5	609.02	33.3 QP	46.0	-12.7	1.10 H	105	37.75	-4.46
6	699.38	36.1 QP	46.0	-9.9	1.10 H	104	39.48	-3.37

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	33.93	27.8 QP	40.0	-12.2	1.00 V	18	42.20	-14.39
2	47.14	35.8 QP	40.0	-4.2	1.10 V	101	49.11	-13.33
3	147.20	34.8 QP	43.5	-8.7	1.10 V	191	47.62	-12.84
4	199.99	32.9 QP	43.5	-10.6	1.00 V	343	48.89	-15.98
5	304.60	41.9 QP	46.0	-4.1	1.10 V	100	53.59	-11.73
6	329.43	37.4 QP	46.0	-8.6	1.20 V	109	48.24	-10.80

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

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	100375	May 06, 2015	May 05, 2016
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Sep. 01, 2015	Aug. 31, 2016
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 11, 2015	June 10, 2016
RF Cable	5D-FB	COCCAB-001	Mar. 08, 2016	Mar. 07, 2017
50 ohms Terminator	N/A	EMC-03	Sep. 23, 2015	Sep. 22, 2016
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2015	Sep. 30, 2016
50 ohms Terminator	E1-011315	13	Dec. 11 2015	Dec. 10 2016
Software BVADT	BVADT_Cond_ V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.
4. Tested Date: Apr. 11, 2016

4.2.3 Test Procedures

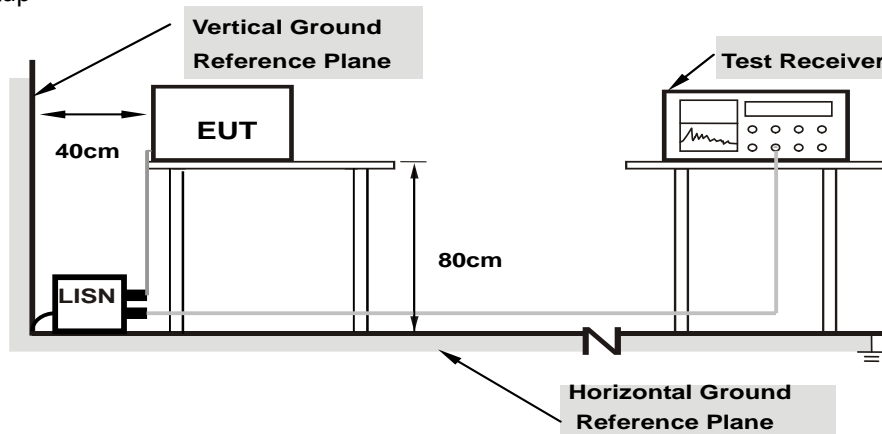
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

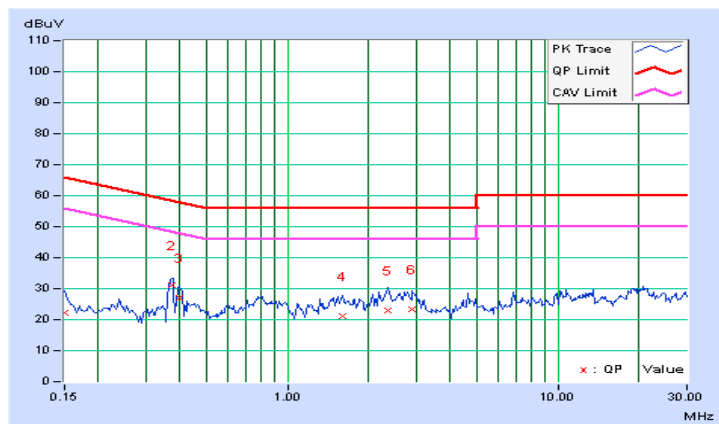
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.32	11.94	4.57	22.26	14.89	66.00	56.00	-43.74	-41.11
2	0.37266	10.30	20.68	18.85	30.98	29.15	58.44	48.44	-27.46	-19.29
3	0.39916	10.30	16.71	15.78	27.01	26.08	57.87	47.87	-30.86	-21.79
4	1.59766	10.25	11.04	5.72	21.29	15.97	56.00	46.00	-34.71	-30.03
5	2.35156	10.29	12.82	7.94	23.11	18.23	56.00	46.00	-32.89	-27.77
6	2.87891	10.33	12.96	8.29	23.29	18.62	56.00	46.00	-32.71	-27.38

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

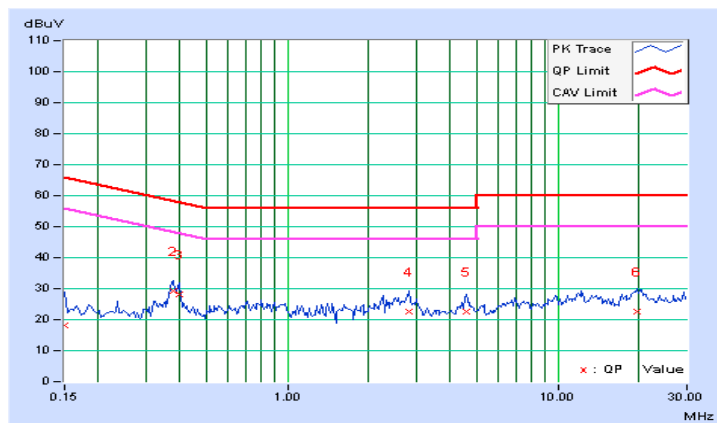


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.30	7.97	5.07	18.27	15.37	66.00	56.00	-47.73	-40.63
2	0.37866	10.28	19.15	15.02	29.43	25.30	58.31	48.31	-28.88	-23.01
3	0.39866	10.28	17.80	16.06	28.08	26.34	57.88	47.88	-29.80	-21.54
4	2.82422	10.33	12.39	6.31	22.72	16.64	56.00	46.00	-33.28	-29.36
5	4.58984	10.45	12.11	7.90	22.56	18.35	56.00	46.00	-33.44	-27.65
6	19.51953	10.96	11.54	6.31	22.50	17.27	60.00	50.00	-37.50	-32.73

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.

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

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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