

## FCC Test Report

**Report No.:** RF120530E05E

**FCC ID:** KA2AP2690B1

**Test Model:** DAP-2690

**Received Date:** Oct. 26, 2015

**Test Date:** Nov. 02 to 12, 2015

**Issued Date:** Nov. 17, 2015

**Applicant:** D-Link Corporation

**Address:** No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C.

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

**Lab Address:** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (1):** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (3):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 Summary of Test Results</b> .....	<b>5</b>
2.1 Measurement Uncertainty.....	5
2.2 Modification Record.....	5
<b>3 General Information</b> .....	<b>6</b>
3.1 General Description of EUT.....	6
3.2 Description of Test Modes.....	9
3.2.1 Test Mode Applicability and Tested Channel Detail.....	10
3.3 Description of Support Units.....	11
3.3.1 Configuration of System under Test.....	12
3.4 General Description of Applied Standards.....	14
<b>4 Test Types and Results</b> .....	<b>15</b>
4.1 Radiated Emission Measurement.....	15
4.1.1 Limits of Radiated Emission Measurement.....	15
4.1.2 Test Instruments.....	16
4.1.3 Test Procedures.....	17
4.1.4 Deviation from Test Standard.....	17
4.1.5 Test Setup.....	18
4.1.6 EUT Operating Conditions.....	18
4.1.7 Test Results.....	19
4.2 Conducted Emission Measurement.....	20
4.2.1 Limits of Conducted Emission Measurement.....	20
4.2.2 Test Instruments.....	20
4.2.3 Test Procedures.....	21
4.2.4 Deviation from Test Standard.....	21
4.2.5 Test Setup.....	21
4.2.6 EUT Operating Conditions.....	21
4.2.7 Test Results (Mode 1).....	22
4.2.8 Test Results (Mode 2).....	24
4.2.9 Test Results (Mode 3).....	26
<b>5 Pictures of Test Arrangements</b> .....	<b>28</b>
<b>Appendix – Information on the Testing Laboratories</b> .....	<b>29</b>



A D T

### Release Control Record

Issue No.	Description	Date Issued
RF120530E05E	Original release.	Nov. 17, 2015



### 1 Certificate of Conformity

**Product:** DAP-2690 AirPremier N Dual Band Concurrent PoE Access Point

**Brand:** D-Link

**Test Model:** DAP-2690

**Sample Status:** MASS-PRODUCTION

**Applicant:** D-Link Corporation

**Test Date:** Nov. 02 to 12, 2015

**Standards:** 47 CFR FCC Part 15, Subpart C (Section 15.247)  
ANSI C63.10: 2013

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 :** Midoli Peng , **Date:** Nov. 17, 2015  
Midoli Peng / Specialist

**Approved by :** May Chen , **Date:** Nov. 17, 2015  
May Chen / Manager

## 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 -3.47dB at 0.41359MHz.
15.205 / 15.209	Radiated Emissionst	PASS	Meet the requirement of limit. Minimum passing margin is -3.0dB at 108.96MHz.

NOTE: 1 The EUT was operating in 2400 ~ 2483.5MHz, 5150~5250MHz and 5725~5850MHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz. For the 5150~5250MHz and 5725~5850MHz RF parameters was recorded in another test report.

2 This report is prepared for FCC Class II change. (Added one new adapter).

### 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	2.86 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.19 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	DAP-2690 AirPremier N Dual Band Concurrent PoE Access Point
Brand	D-Link
Test Model	DAP-2690
Status of EUT	MASS-PRODUCTION
Power Supply Rating	DC 48V from Power adapter or POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	<b>For 15.407</b> 5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz
	<b>For 15.247</b> 2.412 ~ 2.462GHz
Number of Channel	<b>For 15.407</b> 9 for 802.11a, 802.11n (HT20) 4 for 802.11n (HT40)
	<b>For 15.247</b> 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
Output Power	<b>For 15.407(5.18 ~ 5.24GHz)</b> 802.11a: 476.199mW 802.11n (HT20): 480.816mW 802.11n (HT40): 523.384mW
	<b>For 15.407(5.745 ~ 5.825GHz)</b> 802.11a: 477.909mW 802.11n (HT20): 468.143mW 802.11n (HT40): 258.64mW
	<b>For 15.247</b> 802.11b: 283.170mW 802.11g: 424.097mW 802.11n (HT20): 266.886mW 802.11n (HT40): 62.886mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
	POE x 1
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC Class II change. The difference compared with the Report No.: RF120530E05 R1 design is as the following:

- ◆ Upgraded the standard to section 15.407 under new rule.
- ◆ Change one new adapter as below table:

Original adapter		
Brand	Model No.	Spec.
LEI	MU24-B480050-A1	Input: 100-240V, 1.0A, 50/60Hz Output: 48V, 0.5A DC output cable (Unshielded, 1.5m)
Newly adapter		
Brand	Model No.	Spec.
LEI	MU24A5480050-A1	Input: 100-240V, 0.7A, 50/60Hz Output: 48V, 0.5A DC output cable (Unshielded, 1.2m)

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. There are 2.4GHz and 5GHz technology used for the EUT.
4. The emission of the simultaneous operation (2.4GHz & 5GHz) has been evaluated and no non-compliance was found.
5. The EUT must be supplied with POE or a power adapter as following table:

POE 1		
Brand	Model No.	Spec.
Lanready	PE03G	Output: 12-48V , 1A
POE 2		
Manufacture	Model No.	Spec.
Bothhand	EBU-101G-T2 LF	Output: 48V, 0.4A
Adapter		
Brand	Model No.	Spec.
LEI	MU24A5480050-A1	Input: 100-240V, 0.7A, 50/60Hz Output: 48V, 0.5A DC output cable (Unshielded, 1.2m)

6. The EUT was pre-tested in chamber under the following modes:

Pre-test Mode	Description
<b>Mode A</b>	<b>EUT + new adapter</b>
Mode B	EUT + POE 1 + new adapter
Mode C	EUT + POE 2 + new adapter

The worse radiated emission was found in **Mode A**. Therefore only the test data of the modes were recorded in this report.

7. The antennas provided to the EUT, please refer to the following table:

For 2.4GHz					
Transmitter Circuit	Manufacture	Model name	Antenna Gain	Antenna Type	Connector
			Gain (dBi)		
Chain (0)	WHA YU GROUP	NP-9022	4.29	Dipole	SMA Plug Reverse
Chain (1)	WHA YU GROUP	NP-9022	4.29	Dipole	SMA Plug Reverse
For 5GHz					
Transmitter Circuit	Manufacture	Model name	Antenna Gain	Antenna Type	Connector
			Gain (dBi)		
Chain (0)	WHA YU GROUP	SSR-12968	5G Band1: 5.646 5G Band2: 6.270 5G Band3: 5.428 5G Band4: 5.264	Dipole	SMA Plug Reverse
Chain (1)	WHA YU GROUP	SSR-12968	5G Band1: 5.646 5G Band2: 6.270 5G Band3: 5.428 5G Band4: 5.264	Dipole	SMA Plug Reverse

8. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	2TX	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
5GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX

9. 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		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

### 3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE<1G	PLC	
1	√	√	EUT : Laying-flat type + new adapter
2	-	√	EUT : Laying-flat type + POE 1 + new adapter
3	-	√	EUT : Laying-flat type + POE 2 + new adapter

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

**NOTE:** 1. The test mode was reference to the worst case in the original test report.  
2. "-" means no effect.

#### **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	TESTED BY
<b>RE&lt;1G</b>	26deg. C, 70%RH	120Vac, 60Hz	Jyunchun Lin
<b>PLC</b>	24deg. C, 56%RH	120Vac, 60Hz	Jason Huang
	25deg. C, 57%RH		

### 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.	NOTEBOOK COMPUTER	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab

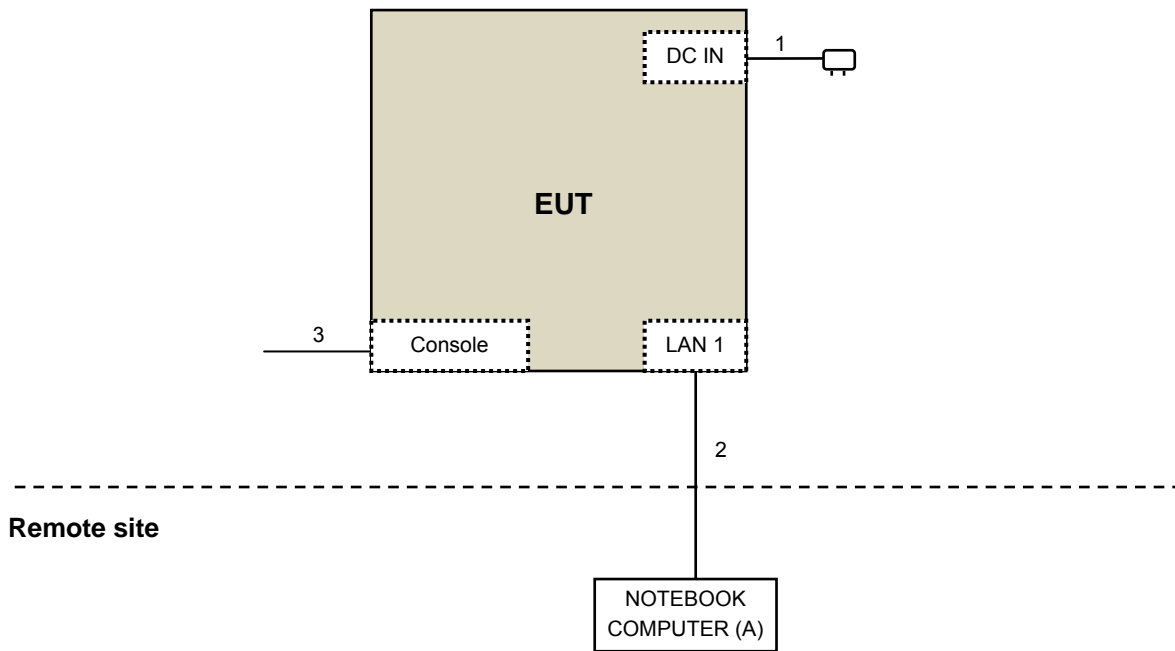
Note:

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

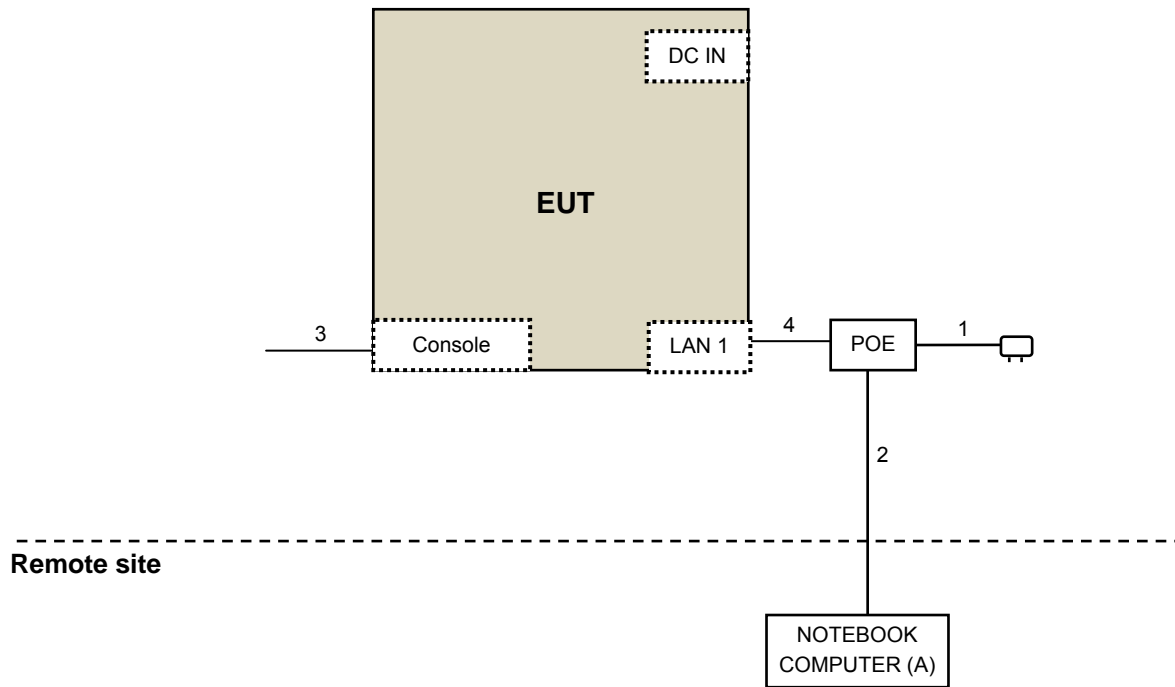
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC	1	1.2	No	0	Supplied by Client
2.	RJ45	1	10	No	0	Provided by Lab
3.	Console	1	1.8	No	0	Provided by Lab
4.	RJ45	1	3	No	0	Provided by Lab

### 3.3.1 Configuration of System under Test

With adapter:



With POE:



### 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)**

**558074 D01 DTS Meas Guidance v03r03**

**662911 D01 Multiple Transmitter Output v02r01**

ANSI C63.10-2013

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 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 30dB 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	MY54450088	July 24, 2015	July 23, 2016
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-06	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Feb. 03, 2015	Feb. 02, 2016
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 03, 2015	Apr. 02, 2016
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	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 test was performed in 966 Chamber No. 4.
3. The FCC Site Registration No. is 292998
4. The CANADA Site Registration No. is 20331-2
5. Tested Date: Nov. 09, 2015

#### 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.

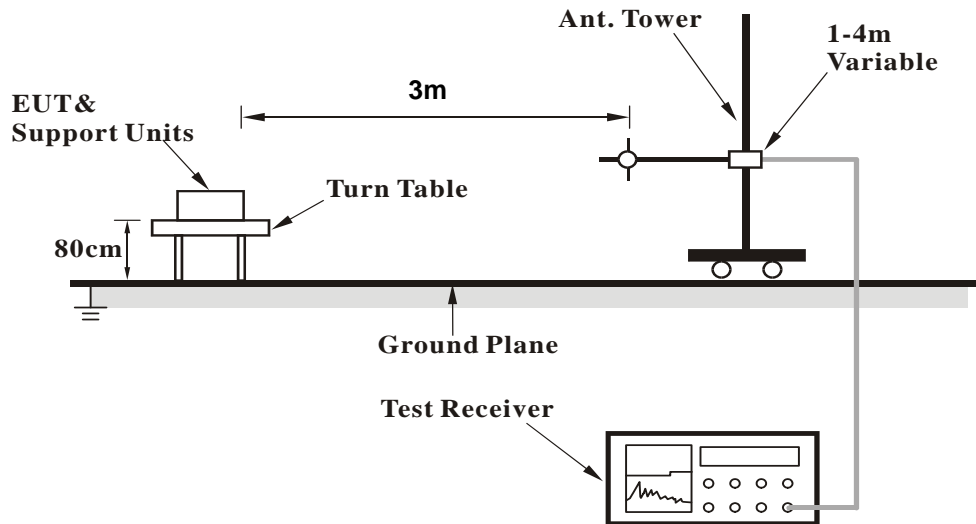
**Note:**

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 remote site.
2. Controlling software (artgui.exe Ver: 2.3) has been activated to set the EUT on specific status.

4.1.7 Test Results

Below 1GHz Data

802.11g

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	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	82.21	30.1 QP	40.0	-9.9	2.50 H	251	50.55	-20.45
2	85.19	33.9 QP	40.0	-6.2	2.00 H	293	54.66	-20.81
3	108.64	37.1 QP	43.5	-6.4	1.50 H	81	55.26	-18.14
4	375.00	28.1 QP	46.0	-17.9	1.00 H	53	40.41	-12.31
5	450.03	29.3 QP	46.0	-16.8	1.50 H	126	39.18	-9.93
6	500.01	30.0 QP	46.0	-16.0	1.50 H	129	39.21	-9.18

**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	37.54	37.0 QP	40.0	-3.1	1.00 V	202	53.01	-16.06
<b>2</b>	<b>108.96</b>	<b>40.5 QP</b>	<b>43.5</b>	<b>-3.0</b>	<b>1.50 V</b>	<b>52</b>	<b>58.55</b>	<b>-18.09</b>
3	186.15	34.6 QP	43.5	-8.9	1.00 V	360	52.16	-17.53
4	375.00	38.2 QP	46.0	-7.8	1.50 V	360	50.48	-12.31
5	675.00	38.6 QP	46.0	-7.4	1.00 V	173	44.35	-5.77
6	900.02	42.0 QP	46.0	-4.0	1.00 V	157	44.05	-2.09

**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. 09, 2015	Mar. 08, 2016
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
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: Nov. 02 to 12, 2015

4.2.3 Test Procedures

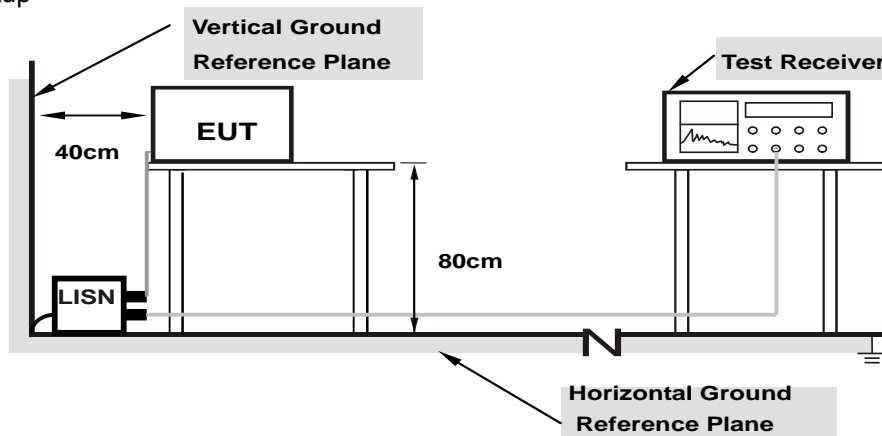
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

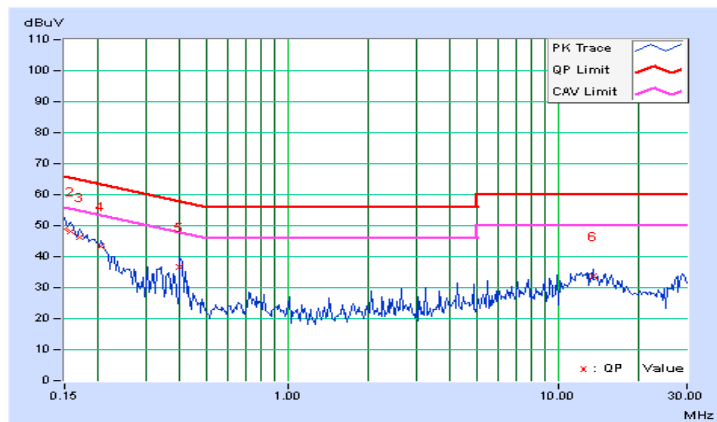
4.2.7 Test Results (Mode 1)

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

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	10.38	38.63	27.04	49.01	37.42	66.00	56.00	-16.99	-18.58
2	0.15781	10.37	37.72	25.59	48.09	35.96	65.58	55.58	-17.48	-19.61
3	0.16953	10.36	35.79	23.82	46.15	34.18	64.98	54.98	-18.83	-20.80
4	0.20469	10.34	32.92	24.93	43.26	35.27	63.42	53.42	-20.16	-18.15
5	0.40000	10.37	26.15	22.27	36.52	32.64	57.85	47.85	-21.33	-15.21
6	13.43359	11.13	22.59	20.15	33.72	31.28	60.00	50.00	-26.28	-18.72

**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

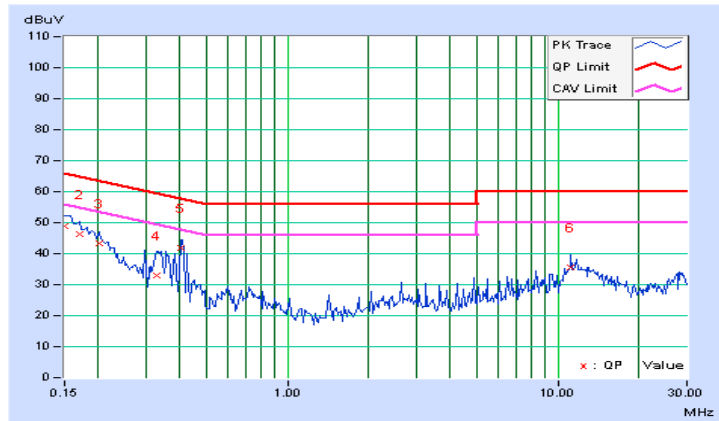


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

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	10.38	38.67	27.33	49.05	37.71	66.00	56.00	-16.95	-18.29
2	0.16953	10.38	35.91	24.12	46.29	34.50	64.98	54.98	-18.69	-20.48
3	0.20078	10.39	33.10	24.65	43.49	35.04	63.58	53.58	-20.09	-18.54
4	0.32969	10.41	22.46	13.73	32.87	24.14	59.46	49.46	-26.59	-25.32
5	0.40494	10.42	31.55	30.65	41.97	41.07	57.75	47.75	-15.78	-6.68
6	11.19531	11.00	24.71	21.12	35.71	32.12	60.00	50.00	-24.29	-17.88

**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



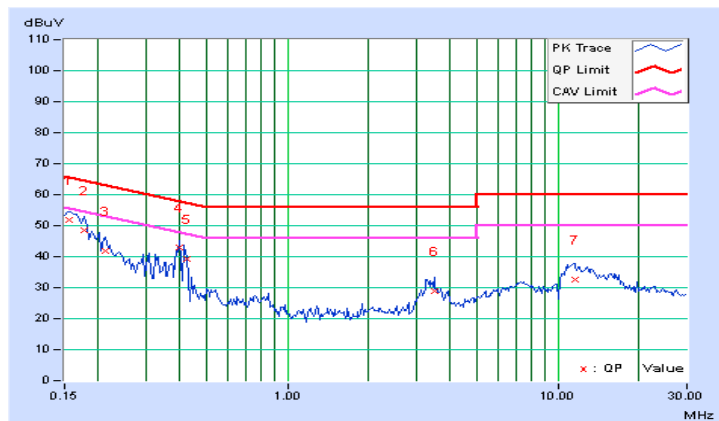
4.2.8 Test Results (Mode 2)

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

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	0.15591	10.38	41.31	30.05	51.69	40.43	65.68	55.68	-13.99	-15.25
2	0.17734	10.36	38.00	26.69	48.36	37.05	64.61	54.61	-16.25	-17.56
3	0.21250	10.34	31.64	21.54	41.98	31.88	63.11	53.11	-21.13	-21.23
4	0.39722	10.37	32.65	30.44	43.02	40.81	57.91	47.91	-14.89	-7.10
5	0.42397	10.37	29.04	23.88	39.41	34.25	57.37	47.37	-17.96	-13.12
6	3.48047	10.53	18.38	11.86	28.91	22.39	56.00	46.00	-27.09	-23.61
7	11.54688	11.00	21.65	16.95	32.65	27.95	60.00	50.00	-27.35	-22.05

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

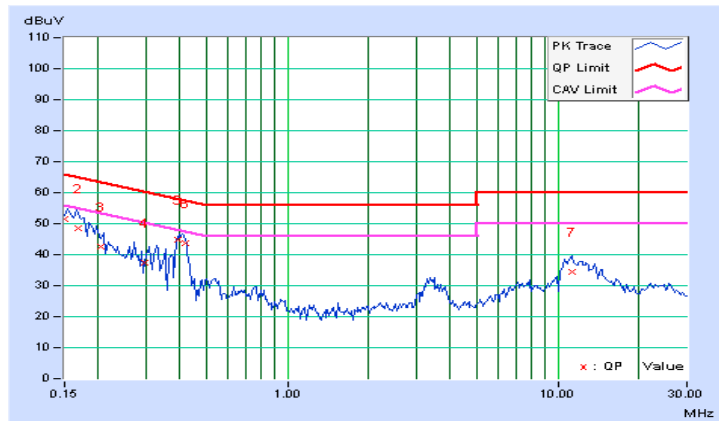


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

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	10.38	41.05	29.60	51.43	39.98	66.00	56.00	-14.57	-16.02
2	0.16812	10.38	38.11	28.14	48.49	38.52	65.05	55.05	-16.56	-16.53
3	0.20438	10.39	32.20	22.55	42.59	32.94	63.43	53.43	-20.84	-20.49
4	0.29784	10.40	26.95	14.39	37.35	24.79	60.30	50.30	-22.95	-25.51
5	0.39556	10.42	34.46	33.34	44.88	43.76	57.95	47.95	-13.07	-4.19
6	0.41756	10.42	33.35	31.28	43.77	41.70	57.50	47.50	-13.73	-5.80
7	11.30078	11.00	23.58	18.71	34.58	29.71	60.00	50.00	-25.42	-20.29

**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



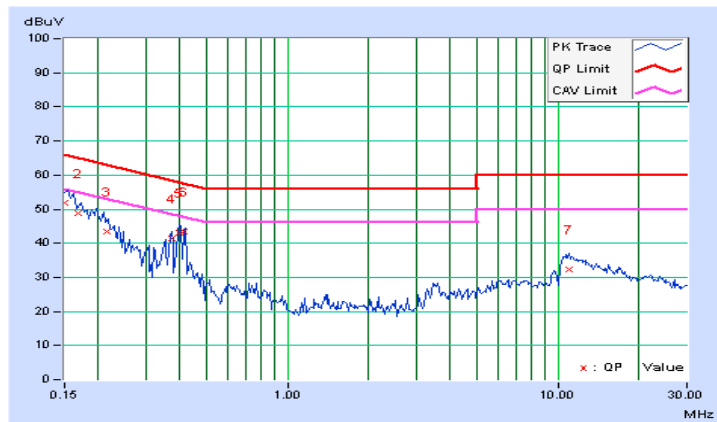
4.2.9 Test Results (Mode 3)

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

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	10.38	41.45	29.08	51.83	39.46	66.00	56.00	-14.17	-16.54
2	0.16922	10.36	38.51	28.04	48.87	38.40	65.00	55.00	-16.12	-16.59
3	0.21534	10.34	33.03	25.77	43.37	36.11	63.00	53.00	-19.62	-16.88
4	0.37359	10.37	30.96	28.47	41.33	38.84	58.42	48.42	-17.09	-9.58
5	0.39659	10.37	32.69	29.61	43.06	39.98	57.92	47.92	-14.87	-7.95
6	0.41584	10.37	32.92	31.61	43.29	41.98	57.53	47.53	-14.24	-5.55
7	11.03516	10.97	21.22	16.24	32.19	27.21	60.00	50.00	-27.81	-22.79

**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

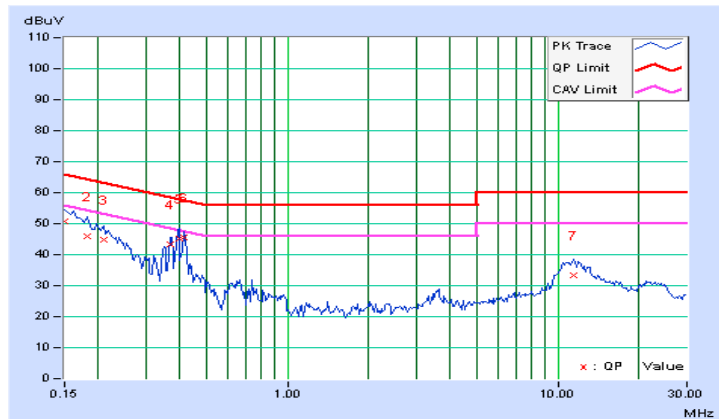


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

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	10.38	40.49	27.61	50.87	37.99	66.00	56.00	-15.13	-18.01
2	0.18125	10.39	35.66	26.56	46.05	36.95	64.43	54.43	-18.38	-17.48
3	0.20859	10.39	34.29	24.22	44.68	34.61	63.26	53.26	-18.58	-18.65
4	0.36875	10.42	33.08	31.66	43.50	42.08	58.53	48.53	-15.03	-6.45
5	0.39609	10.42	34.61	31.33	45.03	41.75	57.93	47.93	-12.91	-6.19
<b>6</b>	<b>0.41359</b>	<b>10.42</b>	<b>35.03</b>	<b>33.69</b>	<b>45.45</b>	<b>44.11</b>	<b>57.58</b>	<b>47.58</b>	<b>-12.13</b>	<b>-3.47</b>
7	11.48438	11.02	22.26	17.55	33.28	28.57	60.00	50.00	-26.72	-21.43

**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:

**Linko EMC/RF Lab**

Tel: 886-2-26052180

Fax: 886-2-26051924

**Hsin Chu EMC/RF/Telecom Lab**

Tel: 886-3-5935343

Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety Lab**

Tel: 886-3-3183232

Fax: 886-3-3270892

**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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

--- END ---