

FCC TEST REPORT

REPORT NO.: RF140729C08A-4

MODEL NO.: DCH-G021

FCC ID : KA2CHG021A1

RECEIVED: Oct. 24, 2014

TESTED: Oct. 29 ~ Nov. 03, 2014

ISSUED: Nov. 04, 2014

APPLICANT : D-LINK CORPORATION

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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
RF140729C08A-4	Original release	Nov. 04, 2014



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1 CERTIFICATION

PRODUCT: Wireless smart hub

MODEL: DCH-G021

BRAND: D-Link

APPLICANT: D-LINK CORPORATION

TESTED: Oct. 29 ~ Nov. 03, 2014

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart C (Section 15.231)

This report is issued as a supplementary report of **RF140729C08-4**. This report shall be used combined together with its original report.

PREPARED BY : Polly Chen , **DATE:** Nov. 04, 2014
Polly Chen / Specialist

APPROVED BY : Ken Liu , **DATE:** Nov. 04, 2014
Ken Liu / Senior Manager

NOTE: Test items for conducted emission and radiated emission below 1GHz test were performed for this addendum. Other testing data refer to original report.

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.231)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -17.18dB at 0.59158MHz.
15.209 15.231(b)	Radiated Emission Test	PASS	Meet the requirement of limit. Minimum passing margin is -44.4dB at 45.52MHz.
15.231(c)	Emission Bandwidth Measurement	N/A	Refer to NOTE below
15.231(a)	De-activation	N/A	Refer to NOTE below
15.203	Antenna Requirement	PASS	No antenna connector is used.

NOTE: Test items for conducted emission and radiated emission below 1GHz test were performed for this addendum. Other testing data refer to original report.

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	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless smart hub
MODEL NO.	DCH-G021
POWER SUPPLY	12Vdc (Adapter)
MODULATION TYPE	2-FSK, 4-FSK, GFSK, MSK and OOK
CARRIER FREQUENCY	431MHz ~ 437MHz
NUMBER OF CHANNEL	61
ANTENNA TYPE	PCB antenna with -2.9dBi gain
ANTENNA CONNECTOR	NA
DATA CABLE	NA
I/O PORTS	Refer to User's Manual
ACCESSORY DEVICE	Adapter

NOTE:

1. This is a supplementary report of RF140729C08-4. This report shall be combined together with its original report.
2. This report is prepared for FCC class II permissive change. The difference compared with the original report is adding one adapter. Therefore, test items for conducted emission and radiated emission below 1GHz test had been re-tested and presented in this report.
3. The EUT consumes power from the following adapters.

Original adapter

BRAND:	JENTEC TECHNOLOGY CO., LTD.
MODEL:	CH1812-B
INPUT:	100-240Vac, 50-60Hz, 0.5A
OUTPUT:	12Vdc, 1.5A
POWER LINE:	1.55m cable with 1 core attached on adapter

New adapter

BRAND:	D-Link
MODEL:	AMS3-1201500FU
INPUT:	100-240Vac, 50/60Hz, 0.5A/45VA
OUTPUT:	12Vdc, 1.5A
POWER LINE:	1.2m cable without core attached on adapter

4. The above EUT information is declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

61 channels were provided to this EUT.

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
1	431.0	18	432.7	35	434.4	52	436.1
2	431.1	19	432.8	36	434.5	53	436.2
3	431.2	20	432.9	37	434.6	54	436.3
4	431.3	21	433.0	38	434.7	55	436.4
5	431.4	22	433.1	39	434.8	56	436.5
6	431.5	23	433.2	40	434.9	57	436.6
7	431.6	24	433.3	41	435.0	58	436.7
8	431.7	25	433.4	42	435.1	59	436.8
9	431.8	26	433.5	43	435.2	60	436.9
10	431.9	27	433.6	44	435.3	61	437.0
11	432.0	28	433.7	45	435.4		
12	432.1	29	433.8	46	435.5		
13	432.2	30	433.9	47	435.6		
14	432.3	31	434.0	48	435.7		
15	432.4	32	434.1	49	435.8		
16	432.5	33	434.2	50	435.9		
17	432.6	34	434.3	51	436.0		



3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE<1G	PLC	
-	√	√	EUT + new adapter

Where **RE≥1G**: Radiated Emission above 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 Z-plane.

RADIATED EMISSION TEST (BELOW 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL (MHz)	MODULATION TYPE
1 to 61	1, 61	2-FSK

POWER LINE CONDUCTED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations.

AVAILABLE CHANNEL	TESTED CHANNEL (MHz)	MODULATION TYPE
1 to 61	1, 61	2-FSK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	24deg. C, 66%RH	120Vac, 60Hz	Alan Wu
PLC	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

3.3 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 (15.231)
ANSI C63.10-2009

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 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.

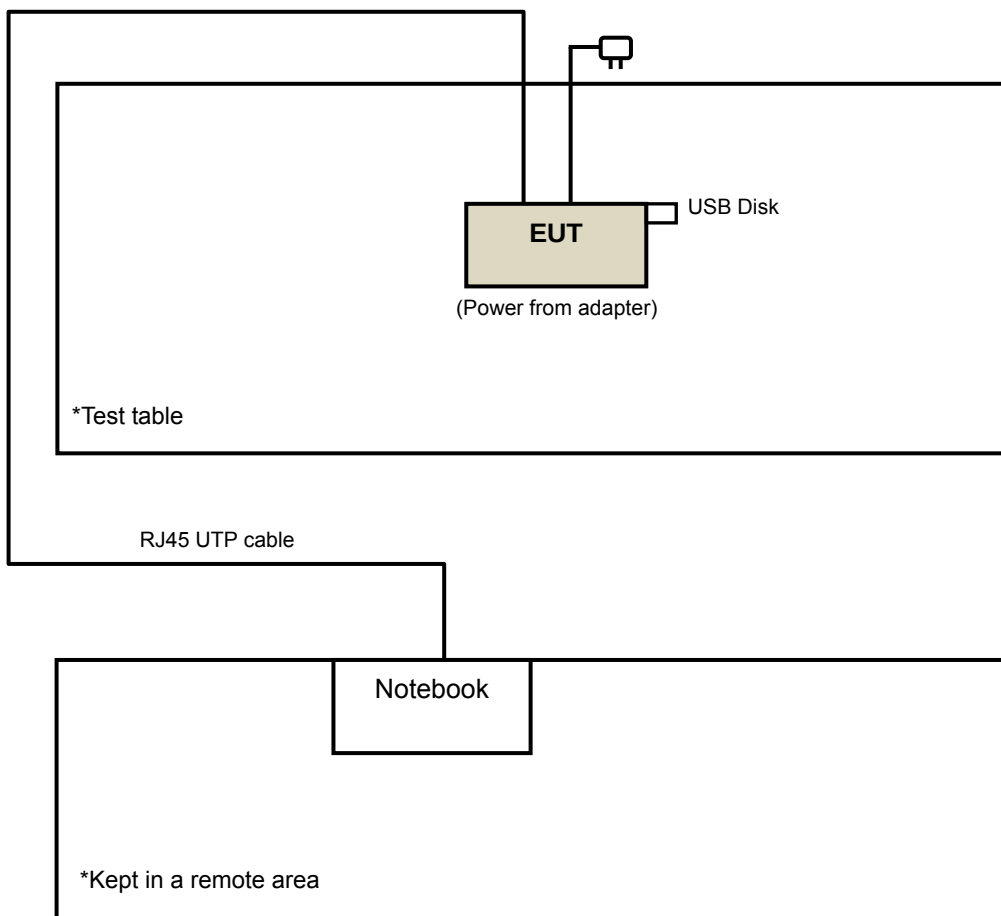
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	D531	CN-0XM006-48643 -81U-2610	QDS-BRCM1020
2	USB DISK	SANDISK	SDCZ6-1024	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 UTP cable
2	NA

NOTE:

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



4 TEST PROCEDURE AND RESULT

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.231 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental		Field Strength of Spurious	
	uV/meter	dBuV/meter	uV/meter	dBuV/meter
40.66 ~ 40.70	2250	67.04	225	48.04
70 ~ 130	1250	61.94	125	41.94
130 ~ 174	1250 ~ 3750	61.94 ~ 71.48	125 ~ 375	41.94 ~ 51.48
174 ~ 260	3750	71.48	75	37.50
260 ~ 470	3750 ~ 12500	71.48 ~ 81.94	375 ~ 1250	51.48 ~ 61.94
Above 470	12500	81.94	1250	61.94

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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. 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.

4.1.2 TEST INSTRUMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 06, 2014	Oct. 05, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSU 43	100115	Dec. 18, 2013	Dec. 17, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Feb. 26, 2014	Feb. 25, 2015
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 05, 2014	Jan. 04, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 17, 2014	Feb. 16, 2015
Preamplifier Agilent	8449B	3008A01961	Oct. 18, 2014	Oct. 17, 2015
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2014	Oct. 17, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 09, 2014	Aug. 08, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 09, 2014	Aug. 08, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 09, 2014	Aug. 08, 2015
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table BV ADT	TT100.	TT93021704	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021704	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 4.
 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 460141.
 5. The IC Site Registration No. is IC7450F-4.

4.1.3 TEST PROCEDURE

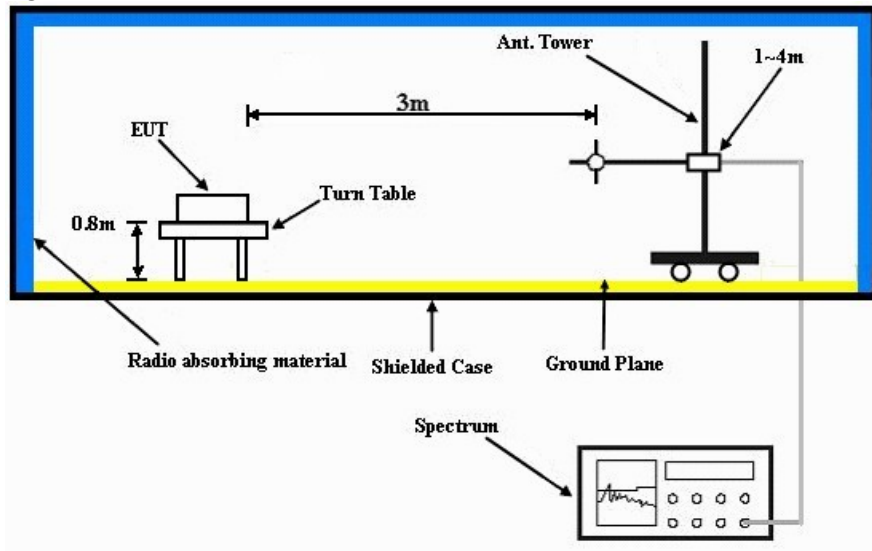
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 TEST SETUP

Frequency range 30MHz~1GHz



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

4.1.5 EUT OPERATING CONDITION

- Placed the EUT on a testing table.
- Prepared notebook to act as communication partner and placed it outside of testing area.
- Set the EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.

4.1.6 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	431MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH	TESTED BY	Alan Wu

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	74.62	23.1 QP	80.8	-57.7	1.50 H	173	39.90	-16.80
2	107.60	34.5 QP	80.8	-46.3	1.50 H	118	51.80	-17.30
3	142.52	34.1 QP	80.8	-46.7	1.00 H	273	48.20	-14.10
4	183.26	22.6 QP	80.8	-58.2	1.25 H	105	38.10	-15.50
5	549.92	24.6 QP	80.8	-56.2	1.50 H	291	32.80	-8.20
6	749.74	28.7 QP	80.8	-52.1	1.00 H	71	32.30	-3.60
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	43.58	36.3 QP	80.8	-44.5	1.00 V	8	50.50	-14.20
2	74.62	32.4 QP	80.8	-48.4	1.00 V	8	49.20	-16.80
3	107.60	34.5 QP	80.8	-46.3	1.49 V	212	51.80	-17.30
4	140.58	30.2 QP	80.8	-50.6	1.00 V	128	44.40	-14.20
5	363.68	23.5 QP	80.8	-57.3	1.49 V	61	34.80	-11.30
6	676.02	24.4 QP	80.8	-56.4	1.75 V	8	30.00	-5.60

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	437MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH	TESTED BY	Alan Wu

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	80.44	23.0 QP	80.8	-57.8	1.50 H	203	41.30	-18.30
2	105.66	34.8 QP	80.8	-46.0	1.50 H	119	52.40	-17.60
3	142.52	34.3 QP	80.8	-46.5	1.00 H	291	48.40	-14.10
4	233.70	20.6 QP	80.8	-60.2	1.00 H	252	36.10	-15.50
5	524.70	24.4 QP	80.8	-56.4	2.00 H	294	32.90	-8.50
6	749.74	29.9 QP	80.8	-50.9	1.00 H	86	33.50	-3.60
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	45.52	36.4 QP	80.8	-44.4	1.00 V	29	50.60	-14.20
2	74.62	32.0 QP	80.8	-48.8	1.00 V	8	48.80	-16.80
3	107.60	34.8 QP	80.8	-46.0	1.50 V	195	52.10	-17.30
4	140.58	30.8 QP	80.8	-50.0	1.00 V	101	45.00	-14.20
5	676.02	25.9 QP	80.8	-54.9	1.00 V	1	31.50	-5.60
6	774.96	26.2 QP	80.8	-54.6	1.50 V	157	29.60	-3.40

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 OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100612	Sep. 30, 2014	Sep. 29, 2015
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 13, 2014	Feb. 12, 2015
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 21, 2014	Jul. 20, 2015
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 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 TEST PROCEDURES

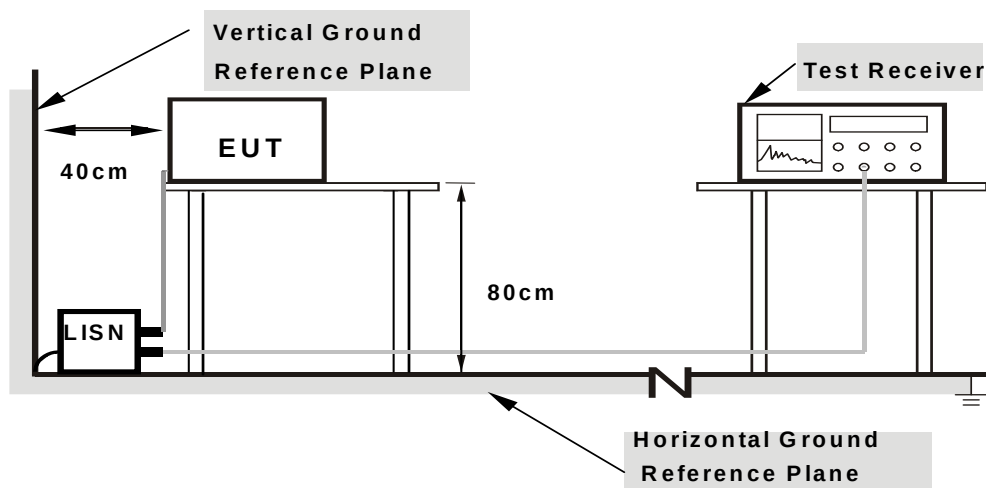
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 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 attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

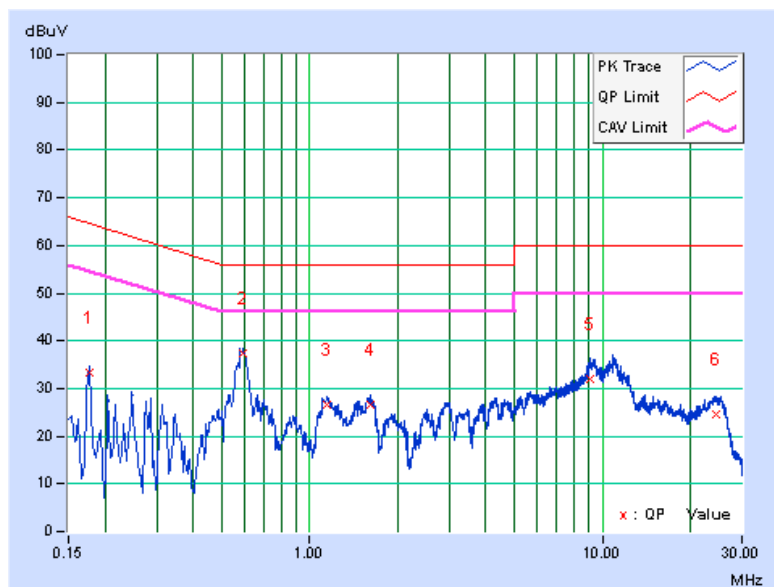
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA :

CHANNEL	431MHz	PHASE	Line 1
6dB BANDWIDTH	9kHz		

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17737	0.07	33.14	22.03	33.21	22.10	64.61	54.61	-31.39	-32.50
2	0.58792	0.09	37.13	28.52	37.22	28.61	56.00	46.00	-18.78	-17.39
3	1.15096	0.12	26.43	18.54	26.55	18.66	56.00	46.00	-29.45	-27.34
4	1.61625	0.13	26.46	19.20	26.59	19.33	56.00	46.00	-29.41	-26.67
5	9.13909	0.47	31.56	24.96	32.03	25.43	60.00	50.00	-27.97	-24.57
6	24.45065	1.17	23.34	17.88	24.51	19.05	60.00	50.00	-35.49	-30.95

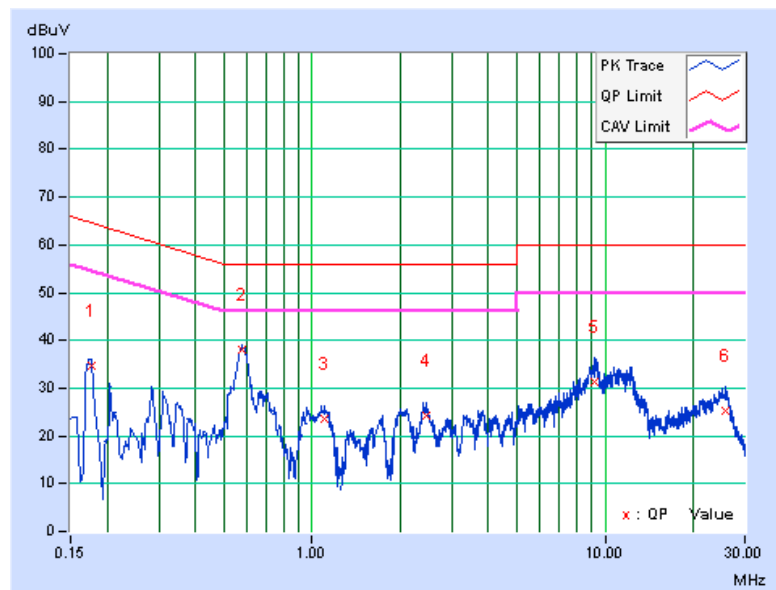
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor + Reading Value



CHANNEL	431MHz	PHASE	Line 2
6dB BANDWIDTH	9kHz		

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17737	0.05	34.68	25.07	34.73	25.12	64.61	54.61	-29.88	-29.49
2	0.57620	0.08	37.92	27.51	38.00	27.59	56.00	46.00	-18.00	-18.41
3	1.10013	0.10	23.55	15.94	23.65	16.04	56.00	46.00	-32.35	-29.96
4	2.44795	0.16	24.14	17.09	24.30	17.25	56.00	46.00	-31.70	-28.75
5	9.15082	0.41	30.82	24.61	31.23	25.02	60.00	50.00	-28.77	-24.98
6	25.70576	1.04	24.30	18.13	25.34	19.17	60.00	50.00	-34.66	-30.83

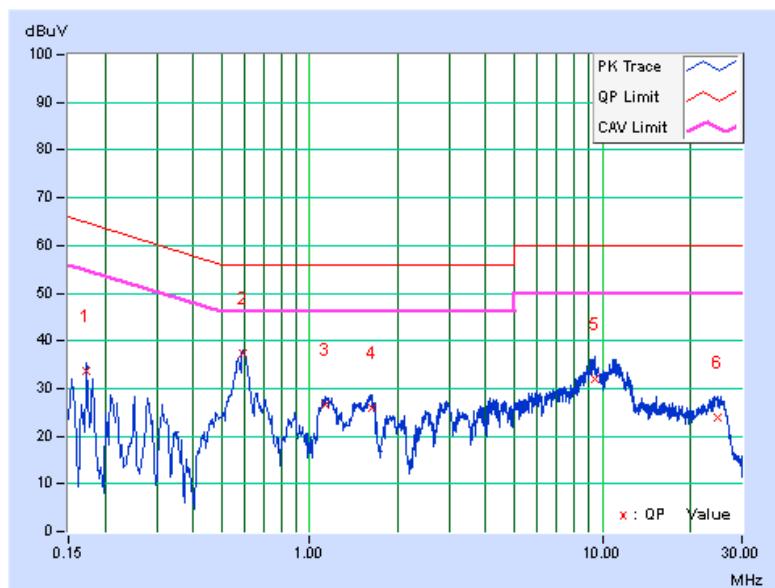
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor + Reading Value



CHANNEL	437MHz	PHASE	Line 1
6dB BANDWIDTH	9kHz		

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17346	0.08	33.45	21.96	33.53	22.04	64.79	54.79	-31.27	-32.76
2	0.59158	0.09	37.32	28.73	37.41	28.82	56.00	46.00	-18.59	-17.18
3	1.13114	0.12	26.37	18.67	26.49	18.79	56.00	46.00	-29.51	-27.21
4	1.63146	0.14	25.65	18.08	25.79	18.22	56.00	46.00	-30.21	-27.78
5	9.42843	0.48	31.57	25.69	32.05	26.17	60.00	50.00	-27.95	-23.83
6	24.82210	1.18	22.71	17.38	23.89	18.56	60.00	50.00	-36.11	-31.44

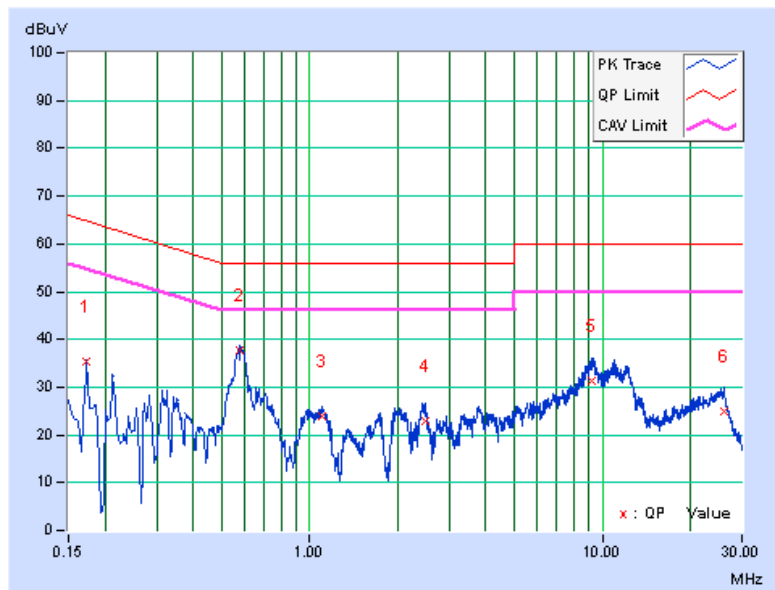
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor + Reading Value



CHANNEL	437MHz	PHASE	Line 2
6dB BANDWIDTH	9kHz		

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17346	0.05	35.14	24.85	35.19	24.90	64.79	54.79	-29.60	-29.89
2	0.58010	0.08	37.73	28.07	37.81	28.15	56.00	46.00	-18.19	-17.85
3	1.10463	0.10	23.88	15.97	23.98	16.07	56.00	46.00	-32.02	-29.93
4	2.47645	0.16	22.78	15.86	22.94	16.02	56.00	46.00	-33.06	-29.98
5	9.18992	0.41	30.89	24.40	31.30	24.81	60.00	50.00	-28.70	-25.19
6	25.96382	1.04	23.95	17.81	24.99	18.85	60.00	50.00	-35.01	-31.15

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor + Reading Value





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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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Tel: 886-3-3183232

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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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7 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

--- END ---