FCC TEST REPORT

(CO-LOCATED)

REPORT NO.:	RF120720C10I-1
MODEL NO.:	WS-AP3715i
FCC ID:	QXO-AP3715I
RECEIVED:	Jun. 12, 2013
TESTED:	Oct. 05 ~ Oct. 07, 2013
ISSUED:	Oct. 09, 2013

APPLICANT:	Enterasys Networks, Inc.
ADDRESS:	9 Northeastern Blvd. Salem, NH 03079

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120720C10I-1	Original release	Oct. 09, 2013

1. CERTIFICATION

PRODUCT: Wireless 802.11abgn Access Point
MODEL: WS-AP3715i
BRAND: Enterasys
APPLICANT: Enterasys Networks, Inc.
TESTED: Oct. 05 ~ Oct. 07, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2009

The above equipment (model: WS-AP3715i) 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 : _____ **, DATE :** Oct. 09, 2013
Ivy Lin / Specialist

APPROVED BY : _____ **, DATE :** Oct. 09, 2013
Ken Liu / Senior Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247) FCC PART 15, SUBPART E (SECTION 15.407)			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207 15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -8.41dB at 0.53281MHz.
15.247(d) 15.407(b/1/2/3) (b)(5)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.5dB at 2390.00MHz & 2483.50MHz

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	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 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

EUT	Wireless 802.11abgn Access Point
MODEL NO.	WS-AP3715i
POWER SUPPLY	5Vdc (host equipment)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 450.0Mbps
OPERATING FREQUENCY	**2.4GHz:** 2412 ~ 2462MHz **5.0GHz:** 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	**2.4GHz:** 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) **5.0GHz:** **5260 ~ 5320MHz:** 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) **5500 ~ 5700MHz:** 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	241.28mW for 2412 ~ 2462MHz 108.329mW for 5260 ~ 5320MHz 111.548mW for 5500 ~ 5700MHz
ANTENNA TYPE	**2.4GHz:** PIFA antenna with 5dBi gain **5.0GHz:** PIFA antenna with 6dBi gain
ANTENNA CONNECTOR	IPEX
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to the original BV ADT report no. RF120720C10F-2. The difference compared with original report is adding 5260 ~ 5320MHz & 5500 ~ 5700MHz. Therefore, the EUT was re-tested and presented in the test report.
2. The EUT provides three completed transmitters and three receivers.

MODULATION MODE	TX FUNCTION
802.11b	3TX
802.11g	3TX
802.11a	3TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX

3. 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

FOR 2.4GHz:

11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

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 (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

8 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	134	5670 MHz
110	5550 MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE≥1G:** Radiated Emission above 1GHz **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	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	2412 ~ 2462	1 to 11	6 + 140	OFDM	BPSK	7.2
-	802.11n (20MHz)	5260-5320, 5500-5700	52 to 64, 100 to 140		OFDM	BPSK	6.0

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	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	2412 ~ 2462	1 to 11	6 + 140	OFDM	BPSK	7.2
-	802.11n (20MHz)	5260-5320, 5500-5700	52 to 64, 100 to 140		OFDM	BPSK	6.0

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	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	2412 ~ 2462	1 to 11	6 + 140	OFDM	BPSK	7.2
-	802.11n (20MHz)	5260-5320, 5500-5700	52 to 64, 100 to 140		OFDM	BPSK	6.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	24deg. C, 66%RH	120Vac, 60Hz	Alan Wu
RE<1G	24deg. C, 66%RH	120Vac, 60Hz	Alan Wu
PLC	26deg. C, 67%RH	120Vac, 60Hz	Alan Wu

3.3 DESCRIPTION OF SUPPORT UNITS

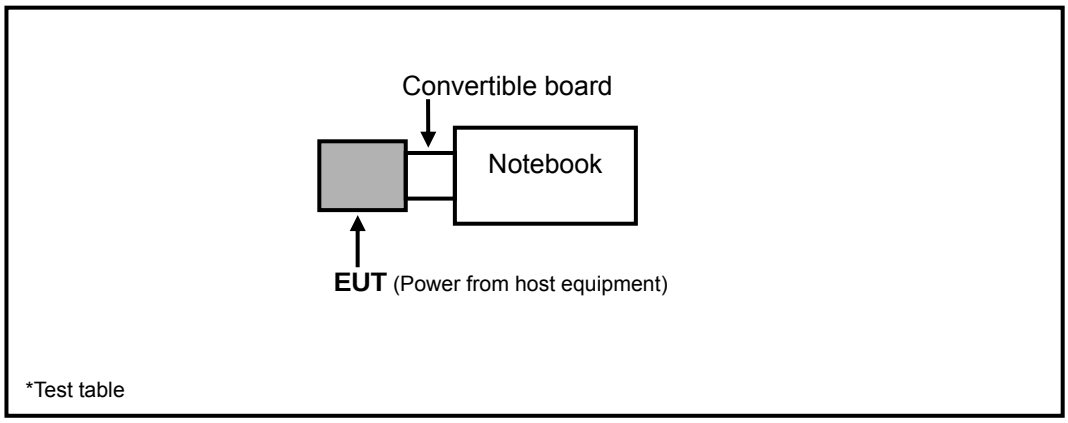
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	D531	CN-0XM006-48643-81U-2610	QDS-BRCM1020
2	CONVERTIBLE BOARD	NA	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

NOTE:
1. All power cords of the above support units are non shielded (1.8m).
2. Item 2 was provided by the manufacturer and used to control EUT transmit at specific channel.

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 (Section 15.247)
FCC Part 15, Subpart E (Section 15.407)
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.

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:

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 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBµV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
	PK	PK
	-27	68.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 16, 2012	Nov. 15, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Mar. 22, 2013	Mar. 21, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	209	Sep. 12, 2013	Sep. 11, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309222/4 248780/4 274392/4	Aug. 22, 2013	Aug. 21, 2014
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2013	Aug. 10, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 25, 2012	Oct. 24, 2013

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 9.

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 215374.

5. The IC Site Registration No. is IC 7450F-9.

4.1.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

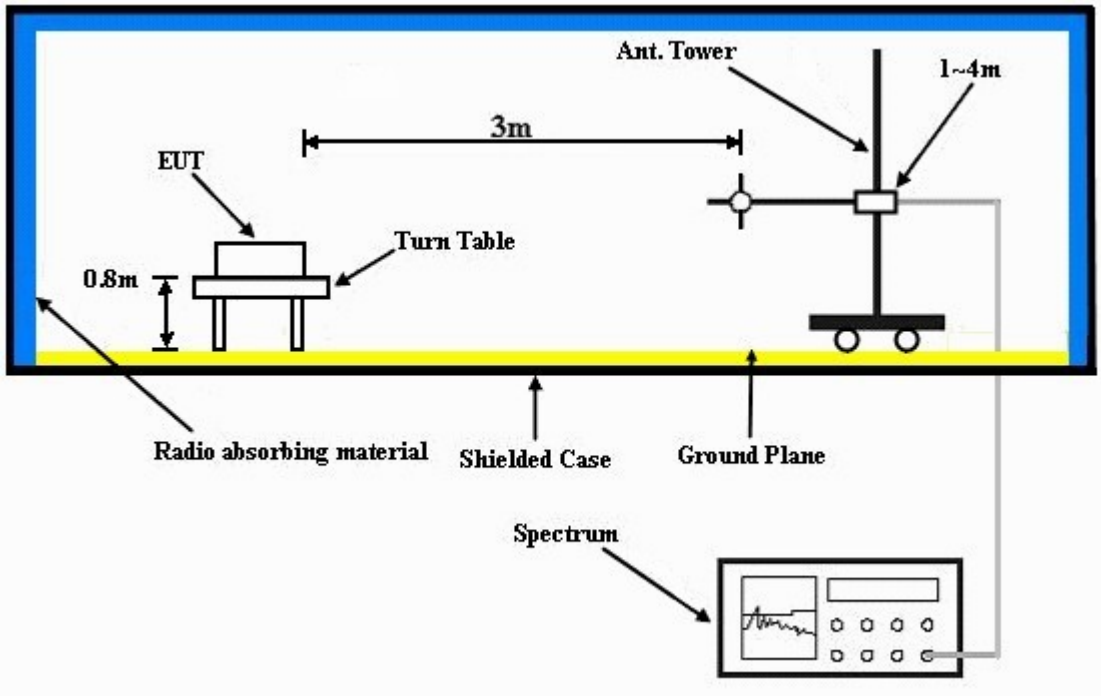
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) 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 1kHz(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.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

a. Plugged the EUT into notebook via external board and placed them on the testing table.
b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
c. The necessary accessories enable the system in full functions.

4.1.8 TEST RESULTS

ABOVE 1GHz DATA:

802.11n (20MHz) + 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	2390.00	66.2 PK	74.0	-7.8	1.00 H	30	34.30	31.90
2	**2390.00**	**52.5 AV**	**54.0**	**-1.5**	**1.00 H**	**30**	**20.60**	**31.90**
3	*2437.00	114.2 PK			1.00 H	30	82.20	32.00
4	*2437.00	105.1 AV			1.00 H	30	73.10	32.00
5	2483.50	66.5 PK	74.0	-7.5	1.00 H	36	34.20	32.30
6	**2483.50**	**52.5 AV**	**54.0**	**-1.5**	**1.00 H**	**36**	**20.20**	**32.30**
7	4874.00	45.8 PK	74.0	-28.2	1.00 H	220	40.80	5.00
8	4874.00	36.7 AV	54.0	-17.3	1.00 H	220	31.70	5.00
9	*5700.00	105.9 PK			1.00 H	228	65.80	40.10
10	*5700.00	96.2 AV			1.00 H	228	56.10	40.10
11	#5725.00	61.7 PK	74.0	-12.3	1.00 H	228	55.40	6.30
12	#5725.00	48.5 AV	54.0	-5.5	1.00 H	228	42.20	6.30
13	11400.00	57.5 PK	74.0	-16.5	1.00 H	80	39.30	18.20
14	11400.00	45.6 AV	54.0	-8.4	1.00 H	80	27.40	18.20

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH	TESTED BY	Alan Wu

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	2390.00	63.5 PK	74.0	-10.5	1.00 V	78	31.60	31.90
2	2390.00	51.0 AV	54.0	-3.0	1.00 V	78	19.10	31.90
3	*2437.00	112.5 PK			1.00 V	75	80.50	32.00
4	*2437.00	102.4 AV			1.00 V	75	70.40	32.00
5	2483.50	68.0 PK	74.0	-6.0	1.00 V	78	35.70	32.30
6	2483.50	51.5 AV	54.0	-2.5	1.00 V	78	19.20	32.30
7	4874.00	50.5 PK	74.0	-23.5	1.00 V	120	45.50	5.00
8	4874.00	38.4 AV	54.0	-15.6	1.00 V	120	33.40	5.00
9	*5700.00	113.7 PK			1.55 V	55	73.60	40.10
10	*5700.00	104.5 AV			1.55 V	55	64.40	40.10
11	#5725.00	64.5 PK	74.0	-9.5	1.50 V	55	58.20	6.30
12	#5725.00	46.2 AV	54.0	-7.8	1.50 V	55	39.90	6.30
13	11400.00	58.9 PK	74.0	-15.1	1.00 V	20	40.70	18.20
14	11400.00	46.9 AV	54.0	-7.1	1.00 V	20	28.70	18.20

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

BELOW 1GHz WORST-CASE DATA：

802.11n (20MHz) + 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 116	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	165.80	40.5 QP	43.5	-3.0	1.49 H	4	55.00	-14.50
2	198.55	39.6 QP	43.5	-3.9	1.24 H	59	56.00	-16.40
3	299.52	38.4 QP	46.0	-7.6	1.00 H	66	50.60	-12.20
4	451.07	29.3 QP	46.0	-16.7	2.00 H	1	38.00	-8.70
5	600.36	31.4 QP	46.0	-14.6	1.75 H	95	37.50	-6.10
6	697.09	31.5 QP	46.0	-14.5	1.00 H	101	36.30	-4.80
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	99.72	30.7 QP	43.5	-12.8	1.00 V	21	49.50	-18.80
2	190.98	31.2 QP	43.5	-12.3	1.50 V	126	47.60	-16.40
3	300.02	37.8 QP	46.0	-8.2	1.00 V	14	50.00	-12.20
4	451.07	31.9 QP	46.0	-14.1	1.24 V	107	40.60	-8.70
5	600.18	28.9 QP	46.0	-17.1	1.75 V	351	35.00	-6.10
6	700.23	29.1 QP	46.0	-16.9	1.99 V	252	33.90	-4.80

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)
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 (dBμV)	
	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 0.50MHz.

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	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

4.2.3 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.

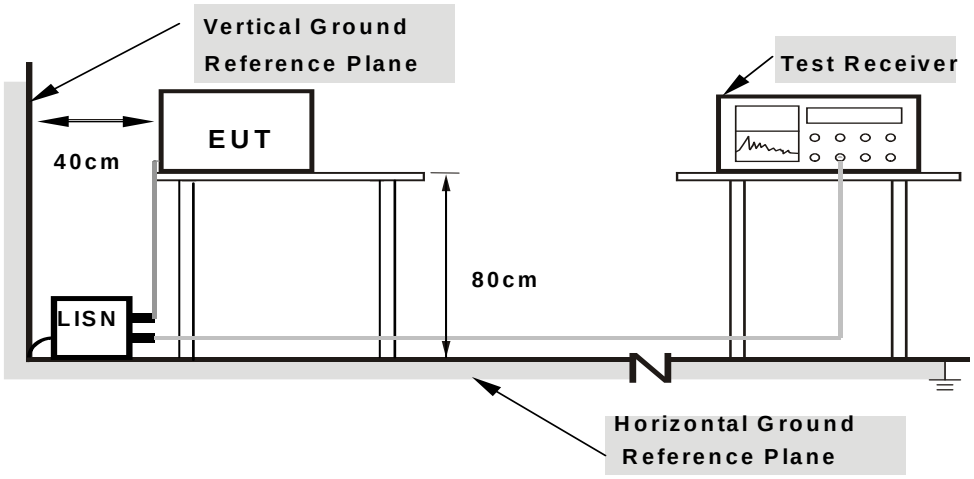
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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 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：

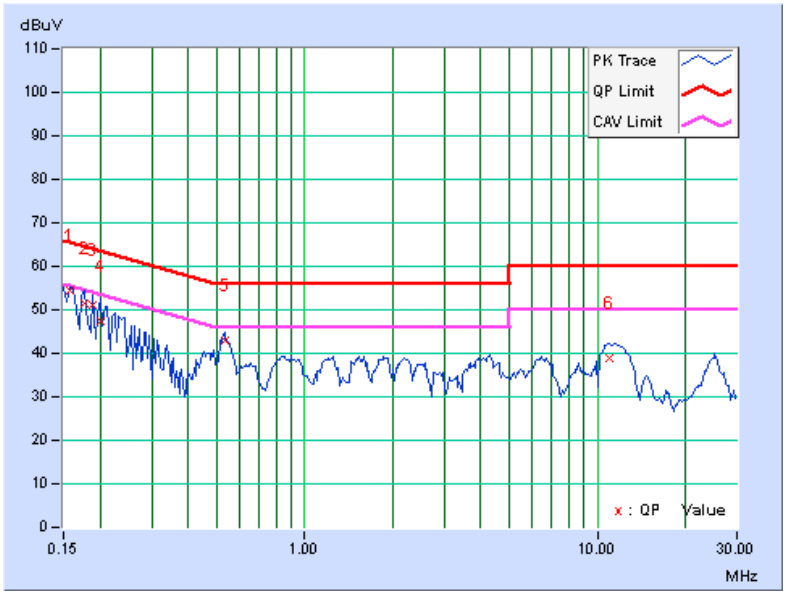
802.11n (20MHz) + 802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 6 + CH 140		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.17	54.29	42.02	54.46	42.19	65.58	55.58	-11.11	-13.38
2	0.17734	0.17	51.29	38.46	51.46	38.63	64.61	54.61	-13.15	-15.98
3	0.18906	0.17	50.80	37.49	50.97	37.66	64.08	54.08	-13.11	-16.42
4	0.20078	0.17	47.37	36.95	47.54	37.12	63.58	53.58	-16.04	-16.46
5	**0.53281**	**0.22**	**42.67**	**37.37**	**42.89**	**37.59**	**56.00**	**46.00**	**-13.11**	**-8.41**
6	10.92969	0.45	38.46	34.20	38.91	34.65	60.00	50.00	-21.09	-15.35

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

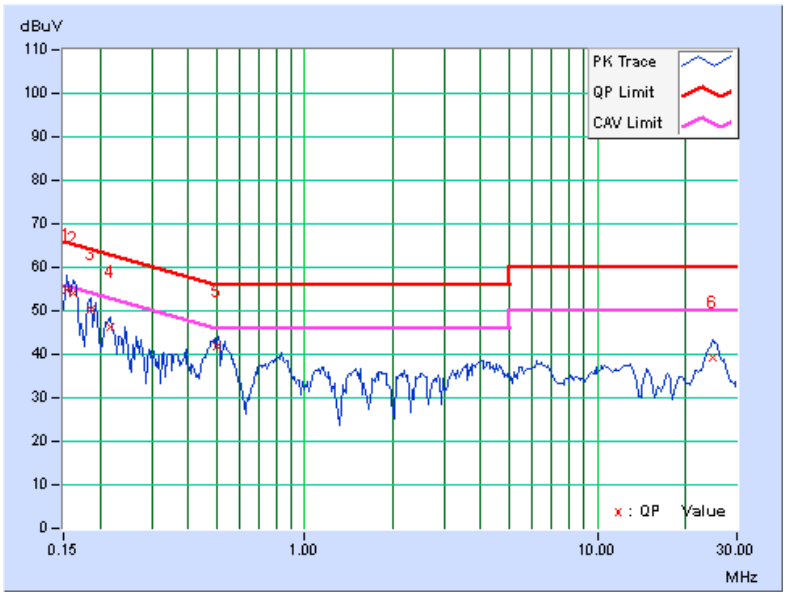


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 6 + CH 140		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.18	54.62	39.25	54.80	39.43	65.79	55.79	-10.98	-16.35
2	0.16172	0.18	53.92	41.66	54.10	41.84	65.38	55.38	-11.27	-13.53
3	0.18516	0.18	50.15	38.29	50.33	38.47	64.25	54.25	-13.92	-15.78
4	0.21641	0.19	46.09	34.98	46.28	35.17	62.96	52.96	-16.68	-17.79
5	0.50000	0.25	41.67	34.12	41.92	34.37	56.00	46.00	-14.08	-11.63
6	24.84375	0.69	38.70	32.86	39.39	33.55	60.00	50.00	-20.61	-16.45

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. 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:

Linko EMC/RF Lab:
Tel: 886-2-26052180
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Hsin Chu EMC/RF Lab:
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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.

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

No modifications were made to the EUT by the lab during the test.

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