

FCC TEST REPORT (CO-LOCATED)

REPORT NO.: RF131220C10-2
MODEL NO.: XR600
FCC ID: SK6-XR630
RECEIVED: Dec. 12, 2013
TESTED: Mar. 04 ~ Mar. 06, 2014
ISSUED: Mar. 10, 2014

APPLICANT: Xirrus, INC.

ADDRESS: 2101 Corporate Center Drive Thousand Oaks,
California 91320

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.



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.



A D T

TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1. CERTIFICATION	4
2. SUMMARY OF TEST RESULTS	5
2.1 MEASUREMENT UNCERTAINTY	5
3. GENERAL INFORMATION	6
3.1 GENERAL DESCRIPTION OF EUT	6
3.2 DESCRIPTION OF TEST MODES	8
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	10
3.3 DESCRIPTION OF SUPPORT UNITS	13
3.3.1 CONFIGURATION OF SYSTEM UNDER TEST	14
3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS	15
4. TEST TYPES AND RESULTS	16
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	16
4.1.3 TEST INSTRUMENTS	17
4.1.4 TEST PROCEDURES	18
4.1.5 DEVIATION FROM TEST STANDARD	18
4.1.6 TEST SETUP	19
4.1.7 EUT OPERATING CONDITIONS	20
4.1.8 TEST RESULTS	21
4.2 CONDUCTED EMISSION MEASUREMENT	37
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	37
4.2.2 TEST INSTRUMENTS	37
4.2.3 TEST PROCEDURES	38
4.2.4 DEVIATION FROM TEST STANDARD	38
4.2.5 TEST SETUP	39
4.2.6 EUT OPERATING CONDITIONS	39
4.2.7 TEST RESULTS	40
5. PHOTOGRAPHS OF THE TEST CONFIGURATION	52
6. INFORMATION ON THE TESTING LABORATORIES	53
7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	54



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131220C10-2	Original release	Mar. 10, 2014

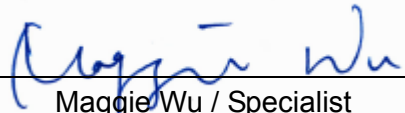


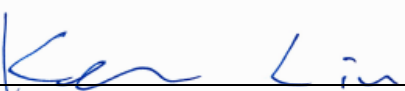
A D T

1. CERTIFICATION

PRODUCT: 802.11ac 3x3 AP
MODEL NO.: XR600
BRAND: Xirrus
APPLICANT: Xirrus, INC.
TESTED: Mar. 04 ~ Mar. 06, 2014
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: XR600) 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 :** Mar. 10, 2014
Maggie Wu / Specialist

APPROVED BY :  , **DATE :** Mar. 10, 2014
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)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -7.04dB at 3.56343MHz.
15.247(d) 15.407(b/1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 348.76, 449.87 & 550.97MHz.

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	3.19 dB
	200MHz ~1000MHz	3.21 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	802.11ac 3x3 AP
MODEL NO.	XR600
POWER SUPPLY	55Vdc (PoE)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 256QAM, 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 802.11ac: up to 1300.0Mbps
OPERATING FREQUENCY	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5180 ~ 5240MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) 5.0GHz: 5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (VHT80) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (VHT80)
OUTPUT POWER	437.397mW for 2412 ~ 2462MHz 48.202mW for 5180 ~ 5240MHz 289.740mW for 5745 ~ 5825MHz
ANTENNA TYPE	For 2.4GHz: Monopole antenna with 4.08dBi gain For 5.0GHz: Monopole antenna with 5.97dBi gain
ANTENNA CONNECTOR	I-PEX
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

1. The EUT is collocated two dual band RF modules (Radio 1, Radio 2), which cannot co-transmit in the same band.
2. The EUT incorporates a MIMO function. Physically, the EUT provides 3 completed transmitters and 3 receivers.

MODULATION MODE	TX FUNCTION
802.11b	3TX
802.11g	3TX
802.11a	3TX
802.11n (20MHz) (MCS 16-23)	3TX
802.11n (40MHz) (MCS 16-23)	3TX
802.11ac (VHT80)	3TX

3. The EUT was powered by the following POE (provided as a support unit only).

BRAND	PowerDsine
MODEL	PD9001G
INPUT POWER	100-250Vac, 50/60Hz, 0.8A
OUTPUT POWER	55Vdc, 0.60A

4. The above EUT information was 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

FOR 2412 ~ 2462MHz:

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

FOR 5180 ~ 5240MHz:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
42	5210MHz

FOR 5745 ~ 5825MHz:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
155	5775MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	
-	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

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. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	2412 ~ 2462	1 to 11	6 + 40	BPSK
		5180 ~ 5240	36 to 48		BPSK
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	2412 ~ 2462	1 to 11	6 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
-	802.11n (20MHz) (Radio 1) + 802.11b (Radio 2)	5180 ~ 5240	36 to 48	36 + 11	BPSK
		2412 ~ 2462	1 to 11		DBPSK
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	5180 ~ 5240	36 to 48	36 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
-	802.11a (Radio 1) + 802.11b (Radio 2)	5745 ~ 5825	149 to 165	157 + 11	BPSK
		2412 ~ 2462	1 to 11		DBPSK
-	802.11a (Radio 1) + 802.11n (20MHz) (Radio 2)	5745 ~ 5825	149 to 165	157 + 40	BPSK
		5180 ~ 5240	36 to 48		BPSK

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. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	2412 ~ 2462	1 to 11	6 + 40	BPSK
		5180 ~ 5240	36 to 48		BPSK
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	2412 ~ 2462	1 to 11	6 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
-	802.11n (20MHz) (Radio 1) + 802.11b (Radio 2)	5180 ~ 5240	36 to 48	36 + 11	BPSK
		2412 ~ 2462	1 to 11		DBPSK
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	5180 ~ 5240	36 to 48	36 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
-	802.11a (Radio 1) + 802.11b (Radio 2)	5745 ~ 5825	149 to 165	157 + 11	BPSK
		2412 ~ 2462	1 to 11		DBPSK
-	802.11a (Radio 1) + 802.11n (20MHz) (Radio 2)	5745 ~ 5825	149 to 165	157 + 40	BPSK
		5180 ~ 5240	36 to 48		BPSK

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. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	2412 ~ 2462	1 to 11	6 + 40	BPSK
		5180 ~ 5240	36 to 48		BPSK
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	2412 ~ 2462	1 to 11	6 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
-	802.11n (20MHz) (Radio 1) + 802.11b (Radio 2)	5180 ~ 5240	36 to 48	36 + 11	BPSK
		2412 ~ 2462	1 to 11		DBPSK
-	802.11n (20MHz) (Radio 1) + 802.11n (20MHz) (Radio 2)	5180 ~ 5240	36 to 48	36 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
-	802.11a (Radio 1) + 802.11b (Radio 2)	5745 ~ 5825	149 to 165	157 + 11	BPSK
		2412 ~ 2462	1 to 11		DBPSK
-	802.11a (Radio 1) + 802.11n (20MHz) (Radio 2)	5745 ~ 5825	149 to 165	157 + 40	BPSK
		5180 ~ 5240	36 to 48		BPSK



A D T

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE $\geq$ 1G	22deg. C, 69%RH	120Vac, 60Hz	Brad Tung,
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Jones Chang
PLC	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

**A D T**

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.

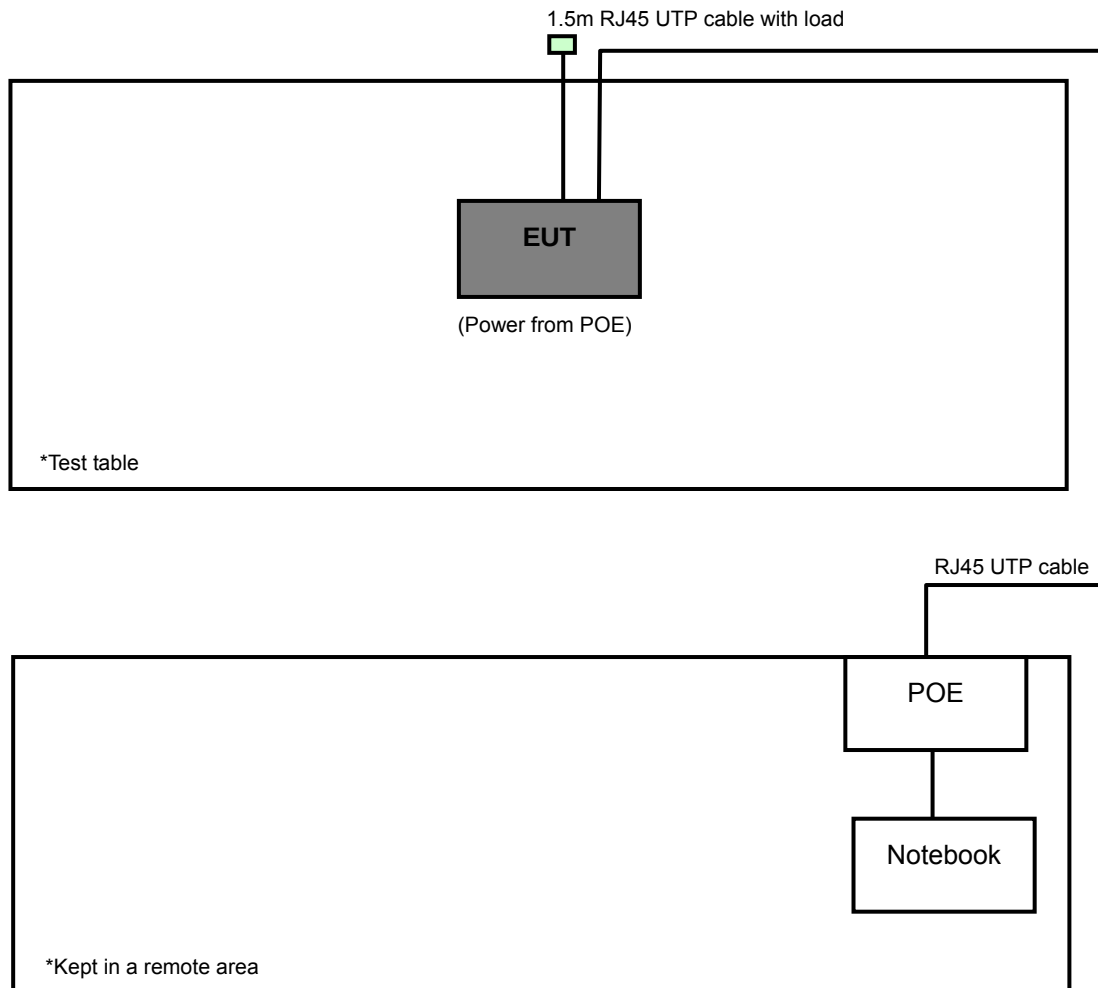
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	D531	CN-0XM006-4864 3-81U-2973	QDS-BRCM1020
2	POE	PowerDsine	PD9001G	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	3m RJ45 UTP cable
2	1.5m RJ45 UTP cable

NOTE:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 ~ 2 acted as a communication partner to transfer data.
3. Item 2 was provided by the manufacturer.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specification of the EUT declared by 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 AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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. 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:

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



A D T

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Sep. 09, 2013	Sep. 08, 2014
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	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01961	Oct. 28, 2013	Oct. 27, 2014
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 26, 2013	Aug. 25, 2014
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
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2013	Oct. 17, 2014
High Speed Peak Power Meter	ML2495A	0824011	Jul. 29, 2013	Jul. 28, 2014
Power Sensor	MA2411B	0738171	Jul. 29, 2013	Jul. 28, 2014

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.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

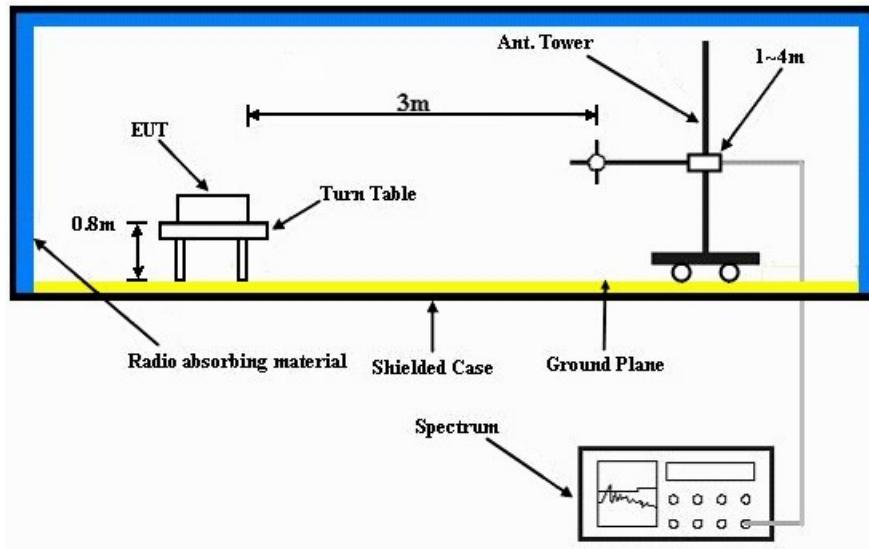
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution 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.

4.1.5 DEVIATION FROM TEST STANDARD

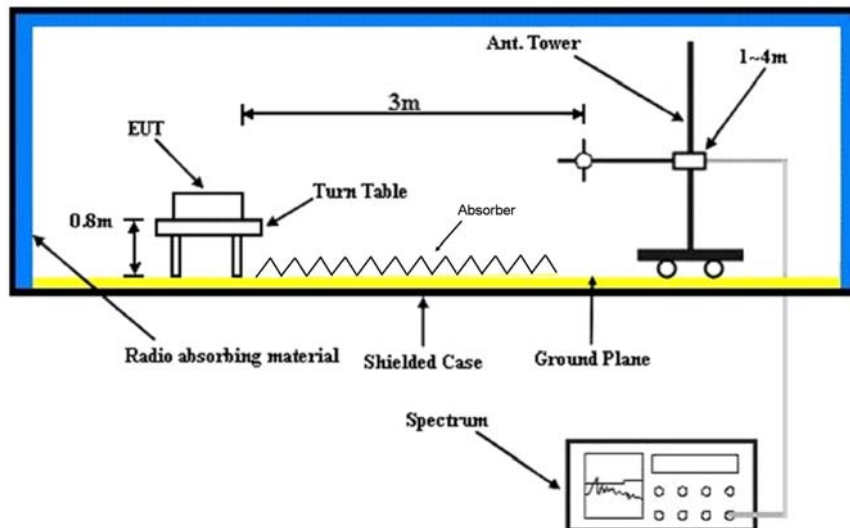
No deviation.

4.1.6 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



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

4.1.7 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared notebook and POE to act as communication partners and placed them outside of testing area.
- c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- d. The communication partner sent data to EUT by command "PING".

4.1.8 TEST RESULTS

ABOVE 1GHz DATA

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 40	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*2437.00	114.4 PK			1.75 H	82	82.40	32.00
2	*2437.00	105.6 AV			1.75 H	82	73.60	32.00
3	4874.00	48.6 PK	74.0	-25.4	1.33 H	130	43.60	5.00
4	4874.00	38.1 AV	54.0	-15.9	1.33 H	130	33.10	5.00
5	*5200.00	100.5 PK			1.39 H	288	61.20	39.30
6	*5200.00	90.1 AV			1.39 H	288	50.80	39.30
7	10400.00	57.3 PK	74.0	-16.7	1.00 H	250	41.10	16.20
8	10400.00	46.6 AV	54.0	-7.4	1.00 H	250	30.40	16.20
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	*2437.00	107.6 PK			1.00 V	129	75.60	32.00
2	*2437.00	100.5 AV			1.00 V	129	68.50	32.00
3	4874.00	46.5 PK	74.0	-27.5	1.20 V	123	41.50	5.00
4	4874.00	35.5 AV	54.0	-18.5	1.20 V	123	30.50	5.00
5	*5200.00	107.8 PK			1.50 V	241	68.50	39.30
6	*5200.00	98.5 AV			1.50 V	241	59.20	39.30
7	10400.00	57.6 PK	74.0	-16.4	1.11 V	188	41.40	16.20
8	10400.00	46.6 AV	54.0	-7.4	1.11 V	188	30.40	16.20

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



A D T

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 165	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*2437.00	114.3 PK			1.77 H	75	82.30	32.00
2	*2437.00	105.0 AV			1.77 H	75	73.00	32.00
3	4874.00	48.7 PK	74.0	-25.3	1.05 H	130	43.70	5.00
4	4874.00	38.1 AV	54.0	-15.9	1.05 H	130	33.10	5.00
5	*5825.00	106.3 PK			1.00 H	30	66.00	40.30
6	*5825.00	95.5 AV			1.00 H	30	55.20	40.30
7	#5850.00	65.3 PK	86.3	-21.0	1.00 H	30	58.70	6.60
8	#5850.00	54.5 AV	75.5	-21.0	1.00 H	30	47.90	6.60
9	11650.00	59.8 PK	74.0	-14.2	1.18 H	188	41.70	18.10
10	11650.00	48.0 AV	54.0	-6.0	1.18 H	188	29.90	18.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 165	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*2437.00	107.9 PK			1.00 V	152	75.90	32.00
2	*2437.00	101.0 AV			1.00 V	152	69.00	32.00
3	4874.00	46.5 PK	74.0	-27.5	1.03 V	225	41.50	5.00
4	4874.00	35.6 AV	54.0	-18.4	1.03 V	225	30.60	5.00
5	*5825.00	112.5 PK			1.30 V	332	72.20	40.30
6	*5825.00	101.7 AV			1.30 V	332	61.40	40.30
7	#5850.00	71.5 PK	92.5	-21.0	1.30 V	332	64.90	6.60
8	#5850.00	60.7 AV	81.7	-21.0	1.30 V	332	54.10	6.60
9	11650.00	59.9 PK	74.0	-14.1	1.06 V	100	41.80	18.10
10	11650.00	48.2 AV	54.0	-5.8	1.06 V	100	30.10	18.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.



A D T

802.11n (20MHz) + 802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 36 + CH 11	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*2462.00	145.6 PK			1.55 H	70	113.40	32.20
2	*2462.00	141.9 AV			1.55 H	70	109.70	32.20
3	#2483.50	95.8 PK	125.6	-29.8	1.40 H	90	63.50	32.30
4	#2483.50	78.5 AV	121.9	-43.4	1.40 H	90	46.20	32.30
5	4924.00	55.0 PK	74.0	-19.0	1.11 H	25	50.00	5.00
6	4924.00	44.0 AV	54.0	-10.0	1.11 H	25	39.00	5.00
7	5150.00	57.2 PK	74.0	-16.8	1.27 H	303	51.80	5.40
8	5150.00	45.9 AV	54.0	-8.1	1.27 H	303	40.50	5.40
9	*5180.00	100.3 PK			1.27 H	303	61.00	39.30
10	*5180.00	90.4 AV			1.27 H	303	51.10	39.30
11	10360.00	57.4 PK	74.0	-16.6	1.15 H	43	41.40	16.00
12	10360.00	47.2 AV	54.0	-6.8	1.15 H	43	31.20	16.00

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- "*": Fundamental frequency.
- "#": The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 36 + CH 11	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*2462.00	140.9 PK			1.00 V	130	108.70	32.20
2	*2462.00	137.2 AV			1.00 V	130	105.00	32.20
3	#2483.50	92.9 PK	120.9	-28.0	1.00 V	133	60.60	32.30
4	#2483.50	77.5 AV	117.2	-39.7	1.00 V	133	45.20	32.30
5	4924.00	54.7 PK	74.0	-19.3	1.18 V	225	49.70	5.00
6	4924.00	43.2 AV	54.0	-10.8	1.18 V	225	38.20	5.00
7	5150.00	58.4 PK	74.0	-15.6	1.05 V	8	53.00	5.40
8	5150.00	46.3 AV	54.0	-7.7	1.05 V	8	40.90	5.40
9	*5180.00	107.6 PK			1.05 V	8	68.30	39.30
10	*5180.00	97.5 AV			1.05 V	8	58.20	39.30
11	10360.00	57.5 PK	74.0	-16.5	1.10 V	23	41.50	16.00
12	10360.00	47.6 AV	54.0	-6.4	1.10 V	23	31.60	16.00

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
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.



A D T

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 36 + CH 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	5150.00	57.4 PK	74.0	-16.6	1.27 H	308	52.00	5.40
2	5150.00	45.9 AV	54.0	-8.1	1.27 H	308	40.50	5.40
3	*5180.00	100.4 PK			1.27 H	308	61.10	39.30
4	*5180.00	90.2 AV			1.27 H	308	50.90	39.30
5	*5825.00	106.7 PK			1.00 H	30	66.40	40.30
6	*5825.00	95.9 AV			1.00 H	30	55.60	40.30
7	#5850.00	65.7 PK	86.7	-21.0	1.00 H	30	59.10	6.60
8	#5850.00	54.9 AV	75.9	-21.0	1.00 H	30	48.30	6.60
9	10360.00	57.5 PK	74.0	-16.5	1.05 H	50	41.50	16.00
10	10360.00	47.2 AV	54.0	-6.8	1.05 H	50	31.20	16.00
11	11650.00	59.9 PK	74.0	-14.1	1.25 H	170	41.80	18.10
12	11650.00	48.1 AV	54.0	-5.9	1.25 H	170	30.00	18.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 36 + CH 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	5150.00	58.4 PK	74.0	-15.6	1.07 V	303	53.00	5.40
2	5150.00	46.4 AV	54.0	-7.6	1.07 V	303	41.00	5.40
3	*5180.00	107.8 PK			1.10 V	296	68.50	39.30
4	*5180.00	97.2 AV			1.10 V	296	57.90	39.30
5	*5825.00	112.8 PK			1.27 V	335	72.50	40.30
6	*5825.00	102.0 AV			1.27 V	335	61.70	40.30
7	#5850.00	71.8 PK	92.8	-21.0	1.27 V	335	65.20	6.60
8	#5850.00	61.0 AV	82.0	-21.0	1.27 V	335	54.40	6.60
9	10360.00	57.5 PK	74.0	-16.5	1.08 V	316	41.50	16.00
10	10360.00	47.5 AV	54.0	-6.5	1.08 V	316	31.50	16.00
11	11650.00	60.0 PK	74.0	-14.0	1.30 V	95	41.90	18.10
12	11650.00	48.0 AV	54.0	-6.0	1.30 V	95	29.90	18.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.



A D T

802.11a + 802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 157 + CH 11	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*2462.00	113.3 PK			1.38 H	90	81.10	32.20
2	*2462.00	109.8 AV			1.38 H	90	77.60	32.20
3	2483.50	63.6 PK	74.0	-10.4	1.44 H	94	31.30	32.30
4	2483.50	46.3 AV	54.0	-7.7	1.44 H	94	14.00	32.30
5	4924.00	50.0 PK	74.0	-24.0	1.10 H	345	45.00	5.00
6	4924.00	39.0 AV	54.0	-15.0	1.10 H	345	34.00	5.00
7	*5785.00	106.9 PK			1.00 H	53	66.60	40.30
8	*5785.00	96.1 AV			1.00 H	53	55.80	40.30
9	11570.00	59.8 PK	74.0	-14.2	1.09 H	74	41.60	18.20
10	11570.00	47.7 AV	54.0	-6.3	1.09 H	74	29.50	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)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 157 + CH 11	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*2462.00	109.0 PK			1.07 V	99	76.80	32.20
2	*2462.00	105.5 AV			1.07 V	99	73.30	32.20
3	2483.50	60.6 PK	74.0	-13.4	1.07 V	99	28.30	32.30
4	2483.50	45.5 AV	54.0	-8.5	1.07 V	99	13.20	32.30
5	4924.00	49.9 PK	74.0	-24.1	1.28 V	52	44.90	5.00
6	4924.00	38.6 AV	54.0	-15.4	1.28 V	52	33.60	5.00
7	*5785.00	113.0 PK			1.00 V	280	72.70	40.30
8	*5785.00	102.4 AV			1.00 V	280	62.10	40.30
9	11570.00	60.0 PK	74.0	-14.0	1.06 V	200	41.80	18.20
10	11570.00	47.7 AV	54.0	-6.3	1.06 V	200	29.50	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)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.



A D T

802.11a + 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 157 + CH 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Tung

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	*5200.00	100.6 PK			1.00 H	4	61.30	39.30
2	*5200.00	89.8 AV			1.00 H	4	50.50	39.30
3	*5785.00	106.5 PK			1.00 H	37	66.20	40.30
4	*5785.00	95.5 AV			1.00 H	37	55.20	40.30
5	10400.00	57.6 PK	74.0	-16.4	1.12 H	323	41.40	16.20
6	10400.00	46.7 AV	54.0	-7.3	1.12 H	323	30.50	16.20
7	11570.00	59.5 PK	74.0	-14.5	1.09 H	300	41.30	18.20
8	11570.00	47.3 AV	54.0	-6.7	1.09 H	300	29.10	18.20
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	*5200.00	107.9 PK			1.37 V	265	68.60	39.30
2	*5200.00	98.2 AV			1.37 V	265	58.90	39.30
3	*5785.00	113.0 PK			1.00 V	303	72.70	40.30
4	*5785.00	102.2 AV			1.00 V	303	61.90	40.30
5	10400.00	58.2 PK	74.0	-15.8	1.18 V	252	42.00	16.20
6	10400.00	47.0 AV	54.0	-7.0	1.18 V	252	30.80	16.20
7	11570.00	59.9 PK	74.0	-14.1	1.15 V	253	41.70	18.20
8	11570.00	47.9 AV	54.0	-6.1	1.15 V	253	29.70	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)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * ”: Fundamental frequency.



A D T

BELOW 1GHz DATA

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Jones Chang

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	164.06	31.4 QP	43.5	-12.1	1.49 H	270	45.20	-13.80
2	348.76	40.8 QP	46.0	-5.2	1.00 H	89	52.30	-11.50
3	449.87	42.5 QP	46.0	-3.5	1.49 H	131	51.70	-9.20
4	550.97	37.9 QP	46.0	-8.1	1.49 H	146	45.30	-7.40
5	751.23	39.4 QP	46.0	-6.6	1.49 H	11	42.40	-3.00
6	827.06	42.3 QP	46.0	-3.7	1.00 H	307	44.10	-1.80
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	70.73	32.6 QP	40.0	-7.4	1.00 V	326	48.80	-16.20
2	348.76	40.9 QP	46.0	-5.1	1.50 V	319	52.40	-11.50
3	449.87	41.6 QP	46.0	-4.4	1.00 V	213	50.80	-9.20
4	550.97	44.8 QP	46.0	-1.2	1.00 V	356	52.20	-7.40
5	751.23	39.0 QP	46.0	-7.0	1.50 V	353	42.00	-3.00
6	827.06	44.0 QP	46.0	-2.0	1.00 V	165	45.80	-1.80

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



A D T

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 6 + CH 165	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Jones Chang

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	57.12	29.0 QP	40.0	-11.0	1.50 H	250	43.60	-14.60
2	348.76	41.2 QP	46.0	-4.8	1.00 H	93	52.70	-11.50
3	449.87	42.3 QP	46.0	-3.7	1.50 H	130	51.50	-9.20
4	550.97	38.6 QP	46.0	-7.4	1.50 H	144	46.00	-7.40
5	751.23	40.2 QP	46.0	-5.8	1.00 H	223	43.20	-3.00
6	827.06	41.2 QP	46.0	-4.8	1.00 H	60	43.00	-1.80
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	348.76	40.5 QP	46.0	-5.5	1.49 V	317	52.00	-11.50
2	449.87	41.2 QP	46.0	-4.8	1.00 V	202	50.40	-9.20
3	550.97	45.0 QP	46.0	-1.0	1.00 V	353	52.40	-7.40
4	599.58	35.4 QP	46.0	-10.6	1.49 V	154	41.50	-6.10
5	751.23	38.8 QP	46.0	-7.2	1.49 V	324	41.80	-3.00
6	827.06	41.8 QP	46.0	-4.2	1.00 V	12	43.60	-1.80

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



A D T

802.11n (20MHz) + 802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 36 + CH 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Jones Chang

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	348.76	42.1 QP	46.0	-3.9	1.00 H	79	53.60	-11.50
2	449.87	41.0 QP	46.0	-5.0	1.00 H	119	50.20	-9.20
3	550.97	34.0 QP	46.0	-12.0	1.50 H	270	41.40	-7.40
4	650.13	34.1 QP	46.0	-11.9	1.00 H	101	39.30	-5.20
5	751.23	42.8 QP	46.0	-3.2	2.00 H	228	45.80	-3.00
6	799.84	37.5 QP	46.0	-8.5	1.09 H	216	39.60	-2.10
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	70.73	32.9 QP	40.0	-7.1	1.00 V	12	49.10	-16.20
2	348.76	44.3 QP	46.0	-1.7	1.00 V	237	55.80	-11.50
3	449.87	39.9 QP	46.0	-6.1	1.00 V	209	49.10	-9.20
4	550.97	44.3 QP	46.0	-1.7	1.00 V	5	51.70	-7.40
5	650.13	36.1 QP	46.0	-9.9	1.40 V	3	41.30	-5.20
6	751.23	35.6 QP	46.0	-10.4	2.00 V	5	38.60	-3.00

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



A D T

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 36 + CH 165	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Jones Chang

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	156.28	30.1 QP	43.5	-13.4	1.00 H	258	43.80	-13.70
2	348.76	41.5 QP	46.0	-4.5	1.00 H	93	53.00	-11.50
3	449.87	33.3 QP	46.0	-12.7	1.00 H	159	42.50	-9.20
4	550.97	34.1 QP	46.0	-11.9	1.50 H	121	41.50	-7.40
5	751.23	39.3 QP	46.0	-6.7	1.00 H	228	42.30	-3.00
6	827.06	40.8 QP	46.0	-5.2	2.00 H	6	42.60	-1.80
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	72.67	32.9 QP	40.0	-7.1	1.00 V	353	49.80	-16.90
2	348.76	35.3 QP	46.0	-10.7	1.00 V	226	46.80	-11.50
3	374.04	34.8 QP	46.0	-11.2	1.00 V	219	45.50	-10.70
4	449.87	41.2 QP	46.0	-4.8	1.00 V	205	50.40	-9.20
5	550.97	44.2 QP	46.0	-1.8	1.49 V	342	51.60	-7.40
6	751.23	37.5 QP	46.0	-8.5	2.00 V	346	40.50	-3.00

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



A D T

802.11a + 802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 157 + CH 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Jones Chang

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	156.28	31.7 QP	43.5	-11.8	1.00 H	253	45.40	-13.70
2	348.76	41.5 QP	46.0	-4.5	1.40 H	112	53.00	-11.50
3	374.04	36.4 QP	46.0	-9.6	1.00 H	230	47.10	-10.70
4	449.87	36.4 QP	46.0	-9.6	1.24 H	220	45.60	-9.20
5	550.97	36.5 QP	46.0	-9.5	1.24 H	49	43.90	-7.40
6	751.23	37.7 QP	46.0	-8.3	2.00 H	57	40.70	-3.00
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	57.12	32.0 QP	40.0	-8.0	1.25 V	330	46.60	-14.60
2	348.76	45.0 QP	46.0	-1.0	1.25 V	237	56.50	-11.50
3	374.04	37.4 QP	46.0	-8.6	1.25 V	230	48.10	-10.70
4	449.87	37.9 QP	46.0	-8.1	1.00 V	107	47.10	-9.20
5	550.97	45.0 QP	46.0	-1.0	1.40 V	335	52.40	-7.40
6	1000.10	38.8 QP	54.0	-15.2	1.25 V	168	37.70	1.10

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



A D T

802.11a + 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 157 + CH 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Jones Chang

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	348.76	44.5 QP	46.0	-1.5	1.00 H	199	56.00	-11.50
2	374.04	36.3 QP	46.0	-9.7	1.00 H	224	47.00	-10.70
3	449.87	34.3 QP	46.0	-11.7	1.00 H	56	43.50	-9.20
4	550.97	35.1 QP	46.0	-10.9	1.25 H	199	42.50	-7.40
5	650.13	34.5 QP	46.0	-11.5	1.00 H	207	39.70	-5.20
6	751.23	39.6 QP	46.0	-6.4	2.00 H	203	42.60	-3.00
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	348.76	43.1 QP	46.0	-2.9	1.00 V	257	54.60	-11.50
2	449.87	37.8 QP	46.0	-8.2	1.00 V	111	47.00	-9.20
3	500.42	35.5 QP	46.0	-10.5	1.00 V	217	43.80	-8.30
4	550.97	44.6 QP	46.0	-1.4	1.20 V	341	52.00	-7.40
5	751.23	34.1 QP	46.0	-11.9	1.00 V	20	37.10	-3.00
6	1000.10	37.8 QP	54.0	-16.2	1.50 V	307	36.70	1.10

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	ESCS30	100289	Nov. 29, 2013	Nov. 28, 2014
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 13, 2014	Feb. 12, 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

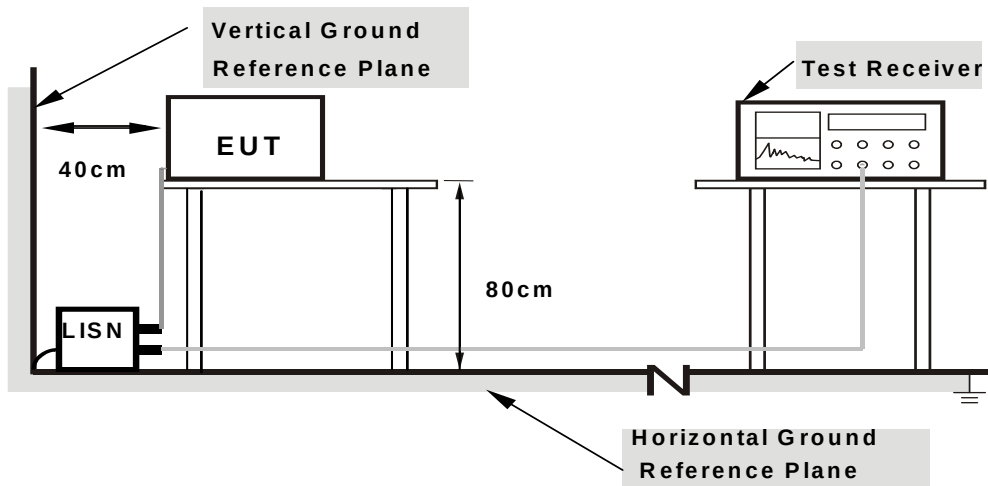
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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. Emissions levels under (Limit - 20dB) were 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 DATA:

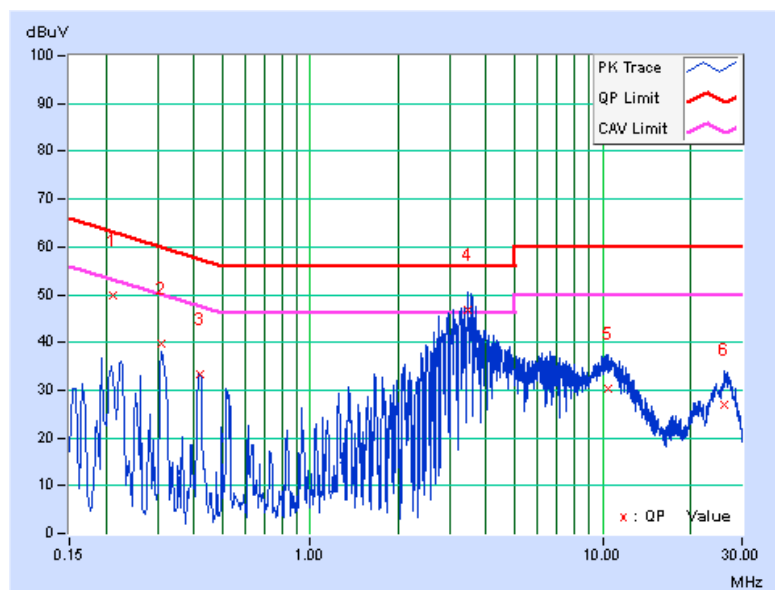
802.11n (20MHz) + 802.11n (20MHz)

CHANNEL	CH 6 + CH 40	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.21234	0.07	49.82	36.05	49.89	36.12	63.11	53.11	-13.22	-16.99
2	0.31021	0.08	39.78	33.52	39.86	33.60	59.96	49.96	-20.11	-16.37
3	0.41979	0.08	33.28	30.21	33.36	30.29	57.45	47.45	-24.09	-17.16
4	3.47741	0.21	46.54	29.91	46.75	30.12	56.00	46.00	-9.25	-15.88
5	10.48413	0.54	29.86	21.19	30.40	21.73	60.00	50.00	-29.60	-28.27
6	26.19451	1.23	25.84	19.97	27.07	21.20	60.00	50.00	-32.93	-28.80

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

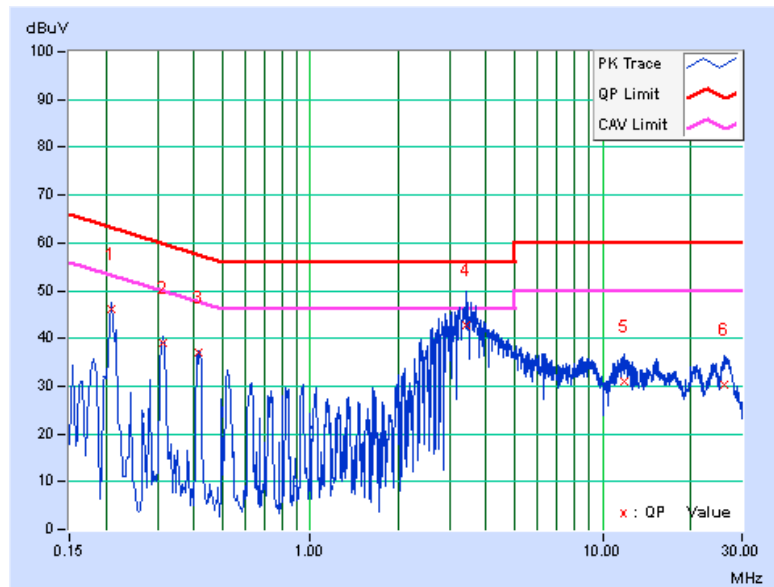


CHANNEL	CH 6 + CH 40	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20865	0.05	46.10	40.73	46.15	40.78	63.26	53.26	-17.11	-12.48
2	0.31432	0.06	39.13	34.83	39.19	34.89	59.86	49.86	-20.66	-14.96
3	0.41670	0.07	36.84	34.16	36.91	34.23	57.51	47.51	-20.60	-13.28
4	3.43049	0.19	42.53	29.49	42.72	29.68	56.00	46.00	-13.28	-16.32
5	11.80180	0.52	30.55	20.75	31.07	21.27	60.00	50.00	-28.93	-28.73
6	26.07330	1.04	29.33	23.18	30.37	24.22	60.00	50.00	-29.63	-25.78

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



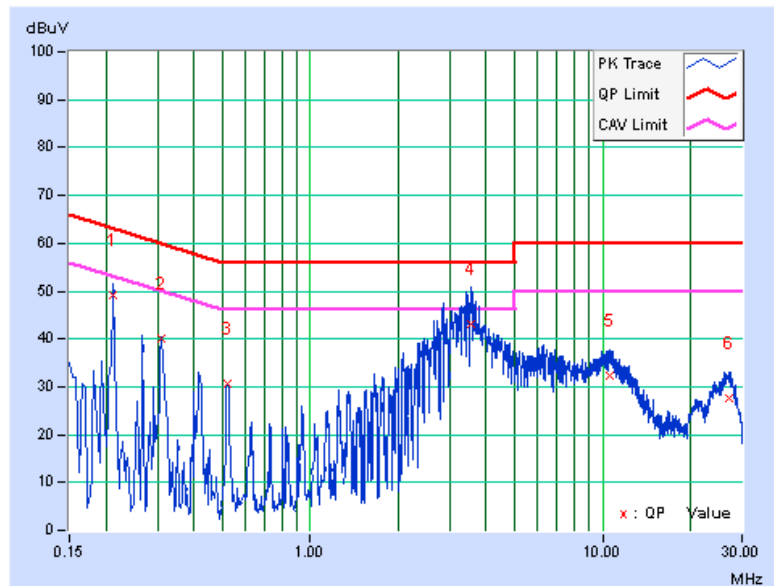
802.11n (20MHz) + 802.11n (20MHz)

CHANNEL	CH 6 + CH 165	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.21256	0.07	49.14	35.45	49.21	35.52	63.10	53.10	-13.89	-17.58
2	0.31031	0.08	40.14	34.33	40.22	34.41	59.96	49.96	-19.75	-15.56
3	0.51856	0.09	30.39	26.74	30.48	26.83	56.00	46.00	-25.52	-19.17
4	3.52824	0.21	42.89	30.65	43.10	30.86	56.00	46.00	-12.90	-15.14
5	10.53496	0.54	31.83	22.11	32.37	22.65	60.00	50.00	-27.63	-27.35
6	26.92959	1.25	26.38	20.43	27.63	21.68	60.00	50.00	-32.37	-28.32

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

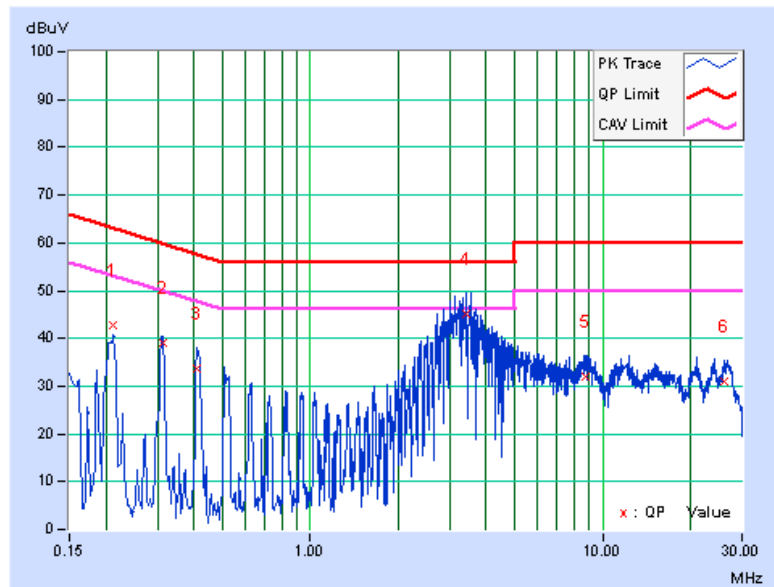


CHANNEL	CH 6 + CH 165	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.21226	0.05	42.81	35.41	42.86	35.46	63.12	53.12	-20.26	-17.66
2	0.31185	0.06	38.95	35.14	39.01	35.20	59.92	49.92	-20.91	-14.72
3	0.40800	0.07	33.53	24.71	33.60	24.78	57.69	47.69	-24.09	-22.91
4	3.43440	0.19	44.92	32.80	45.11	32.99	56.00	46.00	-10.89	-13.01
5	8.69726	0.39	31.47	21.09	31.86	21.48	60.00	50.00	-28.14	-28.52
6	26.07721	1.04	29.90	23.93	30.94	24.97	60.00	50.00	-29.06	-25.03

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



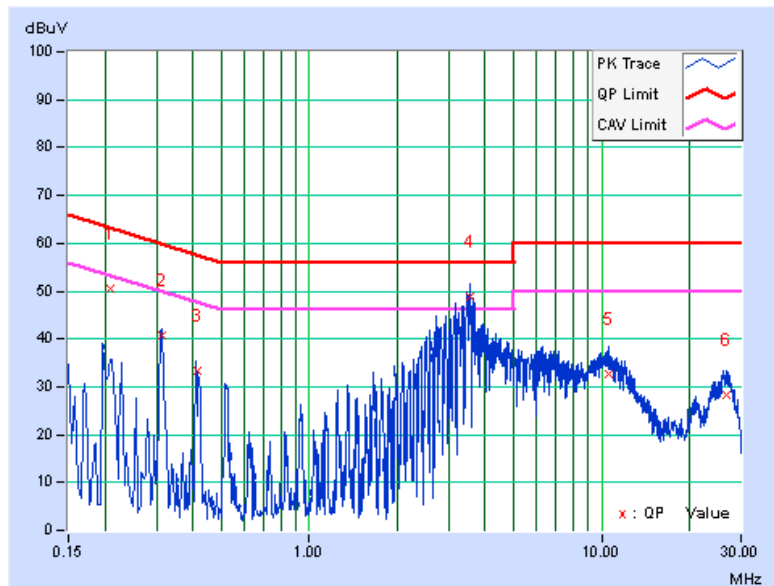
802.11n (20MHz) + 802.11b

CHANNEL	CH 36 + CH 11	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20812	0.07	50.57	39.31	50.64	39.38	63.28	53.28	-12.64	-13.90
2	0.31185	0.08	40.55	36.36	40.63	36.44	59.92	49.92	-19.30	-13.49
3	0.41656	0.08	33.32	30.81	33.40	30.89	57.52	47.52	-24.12	-16.63
4	3.56343	0.21	48.75	34.75	48.96	34.96	56.00	46.00	-7.04	-11.04
5	10.54669	0.54	32.01	21.92	32.55	22.46	60.00	50.00	-27.45	-27.54
6	26.85139	1.25	27.07	21.15	28.32	22.40	60.00	50.00	-31.68	-27.60

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

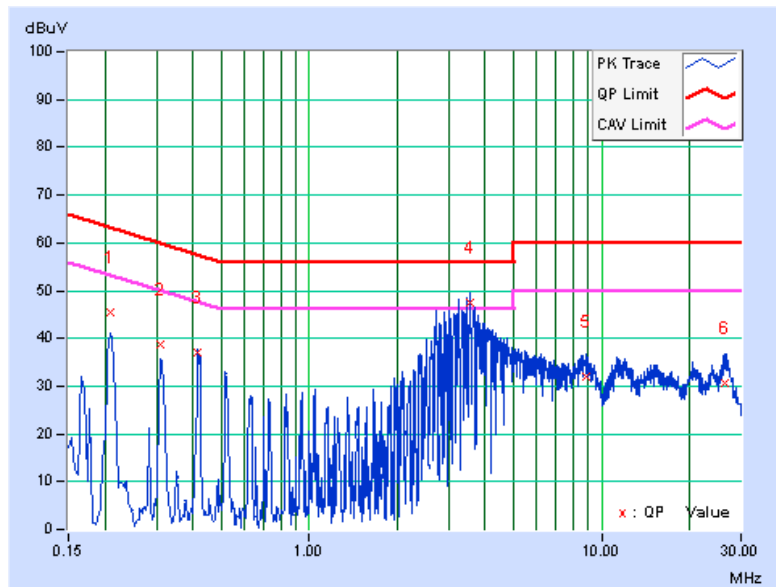


CHANNEL	CH 36 + CH 11	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20865	0.05	45.33	40.78	45.38	40.83	63.26	53.26	-17.88	-12.43
2	0.31021	0.06	38.54	33.65	38.60	33.71	59.96	49.96	-21.36	-16.25
3	0.41588	0.07	36.81	34.96	36.88	35.03	57.53	47.53	-20.65	-12.50
4	3.56343	0.19	47.32	33.98	47.51	34.17	56.00	46.00	-8.49	-11.83
5	8.84584	0.40	31.49	19.95	31.89	20.35	60.00	50.00	-28.11	-29.65
6	26.50731	1.05	29.59	23.52	30.64	24.57	60.00	50.00	-29.36	-25.43

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



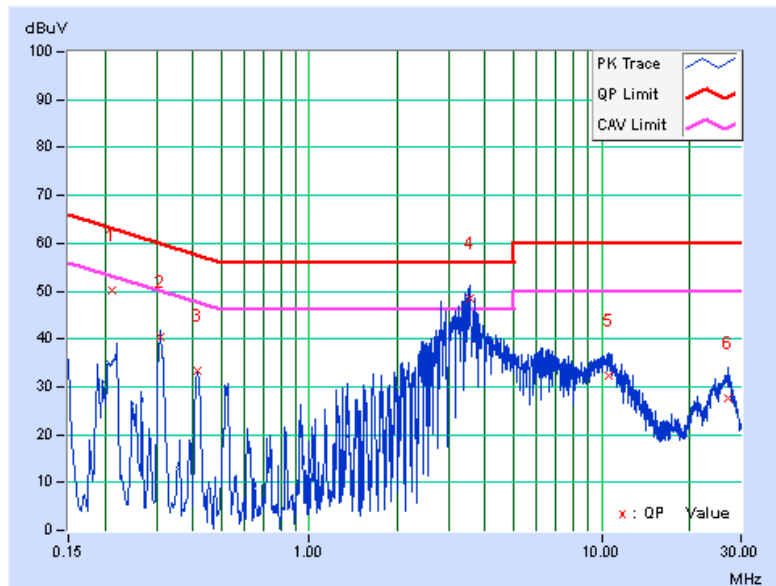
802.11n (20MHz) + 802.11n (20MHz)

CHANNEL	CH 36 + CH 165	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.21134	0.07	49.96	37.45	50.03	37.52	63.15	53.15	-13.12	-15.63
2	0.31031	0.08	40.28	35.02	40.36	35.10	59.96	49.96	-19.61	-14.87
3	0.41560	0.08	33.40	30.58	33.48	30.66	57.54	47.54	-24.05	-16.87
4	3.55561	0.21	48.29	34.59	48.50	34.80	56.00	46.00	-7.50	-11.20
5	10.55451	0.54	31.90	21.62	32.44	22.16	60.00	50.00	-27.56	-27.84
6	27.24630	1.26	26.48	20.37	27.74	21.63	60.00	50.00	-32.26	-28.37

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

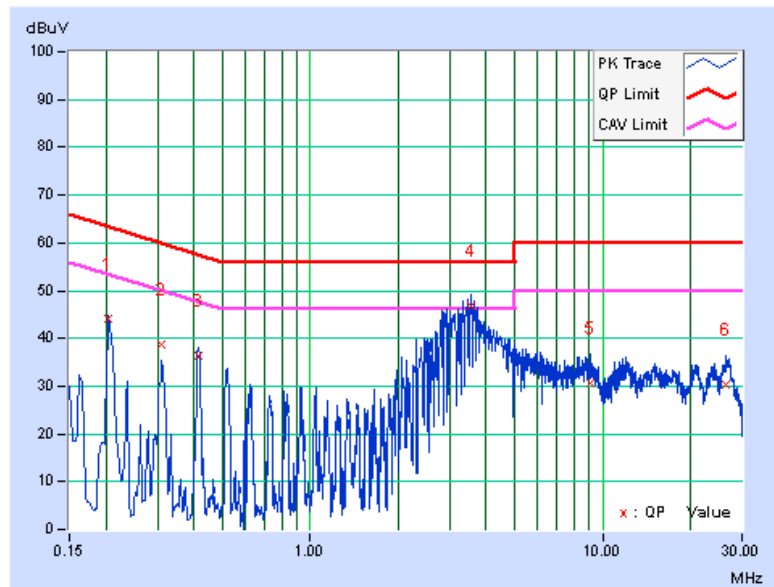


CHANNEL	CH 36 + CH 165	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20474	0.05	43.96	37.71	44.01	37.76	63.42	53.42	-19.41	-15.66
2	0.31021	0.06	38.57	34.11	38.63	34.17	59.96	49.96	-21.33	-15.79
3	0.41233	0.07	36.30	31.67	36.37	31.74	57.60	47.60	-21.23	-15.86
4	3.56734	0.19	46.57	31.57	46.76	31.76	56.00	46.00	-9.24	-14.24
5	9.04916	0.40	30.37	18.81	30.77	19.21	60.00	50.00	-29.23	-30.79
6	26.49558	1.05	29.38	23.39	30.43	24.44	60.00	50.00	-29.57	-25.56

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



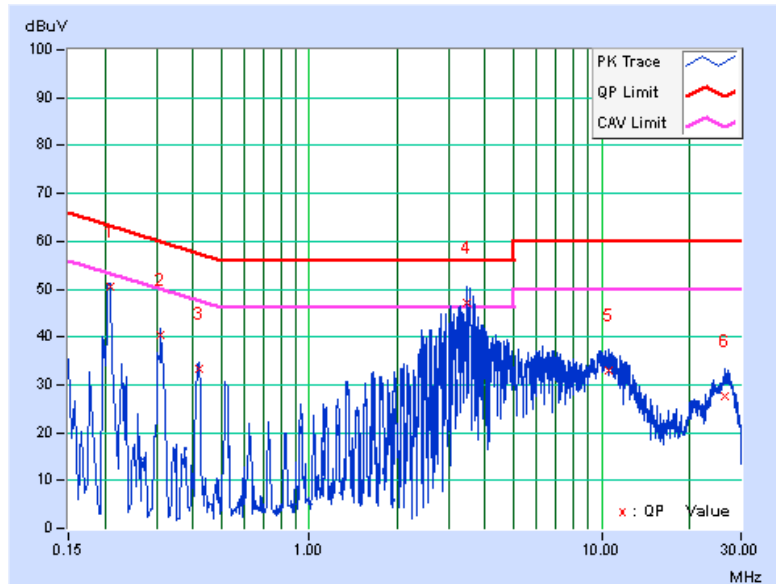
802.11a + 802.11b

CHANNEL	CH 157 + CH 11	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20865	0.07	50.51	39.51	50.58	39.58	63.26	53.26	-12.68	-13.68
2	0.31031	0.08	40.41	35.56	40.49	35.64	59.96	49.96	-19.48	-14.33
3	0.41890	0.08	33.30	29.90	33.38	29.98	57.47	47.47	-24.09	-17.49
4	3.45395	0.21	46.97	33.48	47.18	33.69	56.00	46.00	-8.82	-12.31
5	10.52323	0.54	32.58	22.10	33.12	22.64	60.00	50.00	-26.88	-27.36
6	26.37046	1.23	26.46	20.26	27.69	21.49	60.00	50.00	-32.31	-28.51

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

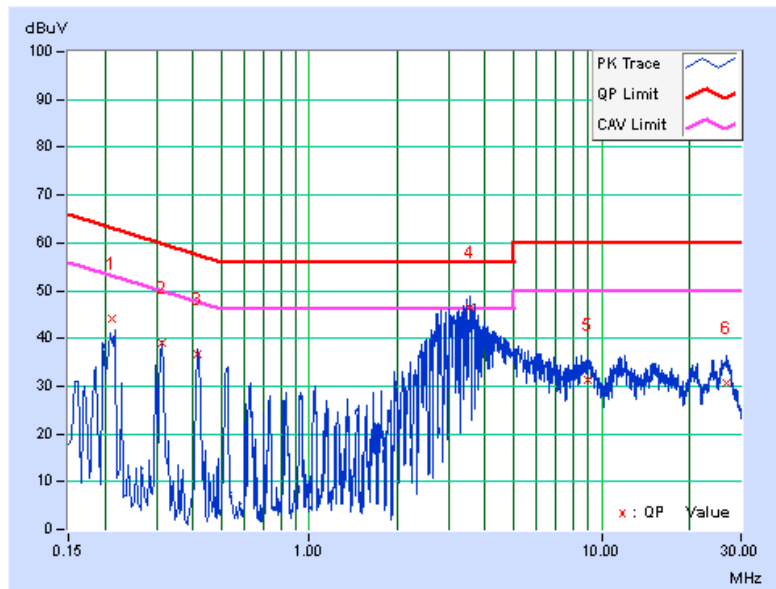


CHANNEL	CH 157 + CH 11	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.21107	0.05	44.10	38.56	44.15	38.61	63.16	53.16	-19.01	-14.55
2	0.31422	0.06	39.02	34.50	39.08	34.56	59.86	49.86	-20.78	-15.30
3	0.41588	0.07	36.68	35.16	36.75	35.23	57.53	47.53	-20.78	-12.30
4	3.54779	0.19	46.44	33.38	46.63	33.57	56.00	46.00	-9.37	-12.43
5	8.96705	0.40	31.00	19.28	31.40	19.68	60.00	50.00	-28.60	-30.32
6	26.85921	1.06	29.59	23.66	30.65	24.72	60.00	50.00	-29.35	-25.28

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



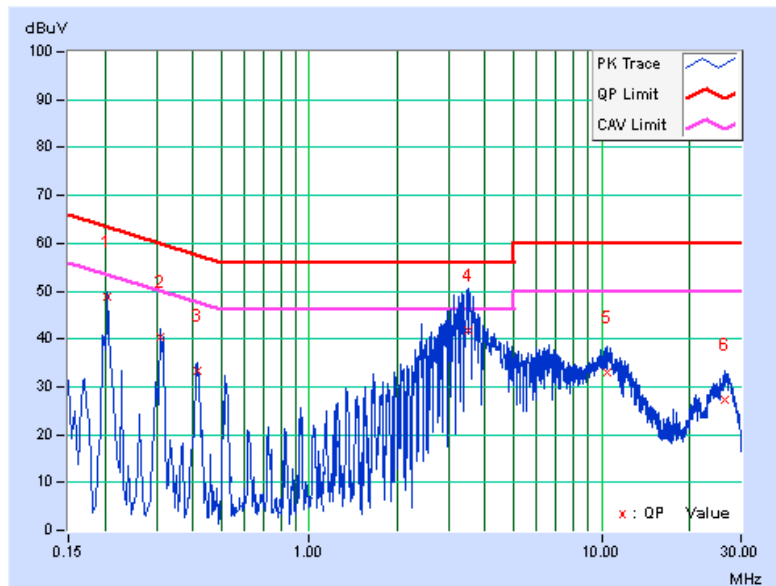
802.11a + 802.11n (20MHz)

CHANNEL	CH 157 + CH 40	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20474	0.07	48.86	36.19	48.93	36.26	63.42	53.42	-14.49	-17.16
2	0.31031	0.08	40.34	35.39	40.42	35.47	59.96	49.96	-19.55	-14.50
3	0.41588	0.08	33.25	30.73	33.33	30.81	57.53	47.53	-24.20	-16.72
4	3.52433	0.21	41.66	29.48	41.87	29.69	56.00	46.00	-14.13	-16.31
5	10.51541	0.54	32.45	21.97	32.99	22.51	60.00	50.00	-27.01	-27.49
6	26.47994	1.23	26.19	20.22	27.42	21.45	60.00	50.00	-32.58	-28.55

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

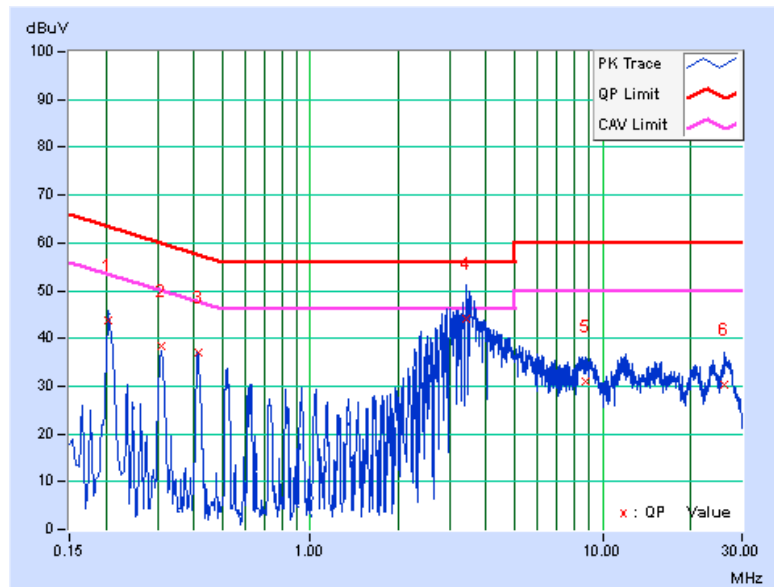


CHANNEL	CH 157 + CH 40	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20474	0.05	43.70	37.64	43.75	37.69	63.42	53.42	-19.67	-15.73
2	0.30939	0.06	38.35	33.20	38.41	33.26	59.99	49.99	-21.58	-16.73
3	0.41451	0.07	36.80	34.43	36.87	34.50	57.56	47.56	-20.69	-13.06
4	3.43440	0.19	43.93	31.95	44.12	32.14	56.00	46.00	-11.88	-13.86
5	8.72463	0.39	30.70	19.87	31.09	20.26	60.00	50.00	-28.91	-29.74
6	26.06157	1.04	29.16	22.83	30.20	23.87	60.00	50.00	-29.80	-26.13

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).



A D T

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

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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



A D T

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.

---END---