

FCC TEST REPORT (15.247)

REPORT NO.: RF141117C22
MODEL NO.: TC75AH
FCC ID: H9PTC75AH
RECEIVED: Nov. 17, 2014
TESTED: Dec. 06, 2014 ~ Jan. 25, 2015
ISSUED: Feb. 16, 2015

APPLICANT: Symbol Technologies, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.)
Ltd., Taoyuan Branch

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan
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TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	6
3. GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	8
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	9
3.3 DESCRIPTION OF SUPPORT UNITS	11
3.3.1 CONFIGURATION OF SYSTEM UNDER TEST	11
3.4 DUTY CYCLE TEST SIGNAL	12
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	13
4. TEST TYPES AND RESULTS	14
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	14
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	14
4.1.2 TEST INSTRUMENTS	15
4.1.3 TEST PROCEDURES	17
4.1.4 DEVIATION FROM TEST STANDARD	17
4.1.5 TEST SETUP	18
4.1.6 EUT OPERATING CONDITIONS	19
4.1.7 TEST RESULTS	20
4.2 CONDUCTED EMISSION MEASUREMENT	46
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	46
4.2.2 TEST INSTRUMENTS	46
4.2.3 TEST PROCEDURES	47
4.2.4 DEVIATION FROM TEST STANDARD	47
4.2.5 TEST SETUP	48
4.2.6 EUT OPERATING CONDITIONS	48
4.2.7 TEST RESULTS	49
4.3 6dB BANDWIDTH MEASUREMENT	51
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT	51
4.3.2 TEST SETUP	51
4.3.3 TEST INSTRUMENTS	51
4.3.4 TEST PROCEDURE	51
4.3.5 DEVIATION FROM TEST STANDARD	51
4.3.6 EUT OPERATING CONDITIONS	51
4.3.7 TEST RESULTS	52
4.4 CONDUCTED OUTPUT POWER	54
4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	54
4.4.2 TEST SETUP	54
4.4.3 TEST INSTRUMENTS	54
4.4.4 TEST PROCEDURES	54
4.4.5 DEVIATION FROM TEST STANDARD	54
4.4.6 EUT OPERATING CONDITIONS	54
4.4.7 TEST RESULTS	55
4.5 POWER SPECTRAL DENSITY MEASUREMENT	58
4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	58
4.5.2 TEST SETUP	58
4.5.3 TEST INSTRUMENTS	58
4.5.4 TEST PROCEDURE	58
4.5.5 DEVIATION FROM TEST STANDARD	58
4.5.6 EUT OPERATING CONDITION	58



A D T

4.5.7	TEST RESULTS.....	59
4.6	CONDUCTED OUT OF BAND EMISSION MEASUREMENT	61
4.6.1	LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT	61
4.6.2	TEST SETUP	61
4.6.3	TEST INSTRUMENTS	61
4.6.4	TEST PROCEDURE	61
4.6.5	DEVIATION FROM TEST STANDARD	61
4.6.6	EUT OPERATING CONDITION.....	61
4.6.7	TEST RESULTS.....	62
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	68
6.	INFORMATION ON THE TESTING LABORATORIES	69
7.	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	70



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF141117C22	Original release	Feb. 16, 2015



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1. CERTIFICATION

PRODUCT: Touch Computer

MODEL NO.: TC75AH

BRAND: Symbol

APPLICANT: Symbol Technologies, Inc.

TESTED: Dec. 06, 2014 ~ Jan. 25, 2015

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart C (Section 15.247)

ANSI C63.10-2009

The above equipment (model: TC75AH) 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 : Gina Liu , **DATE** : Feb. 16, 2015

Gina Liu / Specialist

APPROVED BY : Sam Chen , **DATE** : Feb. 16, 2015

Sam Chen / Senior Project Engineer

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)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -8.09dB at 0.18963MHz.
15.205 & 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.07dB at 2484MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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	Touch Computer
MODEL NO.	TC75AH
POWER SUPPLY	5.4Vdc (adapter or host equipment) 3.7Vdc (Li-ion battery)
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 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to MCS7
OPERATING FREQUENCY	2412 ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz)
OUTPUT POWER	250.03mW for 2412 ~ 2462MHz
ANTENNA TYPE	PIFA antenna with 1.12dBi gain
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below
HW VERSION	DV3
SW VERSION	Android version : 4.4.3 Build number : 91-23257-K-07-04-00-D3

NOTE:

1. The EUT contains following accessory devices.

ITEM	BRAND	MODEL	SPECIFICATION
Adapter	Motorola	86-14000-249R	I/P: 100-240Vac, 50/60Hz, 0.6A O/P: 5.4Vdc, 3A
Battery	Symbol	82-171249-02	3.7Vdc, 4500mAh
Charging only Cable Cup	Symbol	CHG-TC7X-CBL1-01	0.2m non-shielded cable w/o core
Earphone 1	Symbol / Zebra	HDST-25MM-PTVP-01	1.3m non-shielded cable w/o core
Earphone 2	Symbol / Zebra	RCH51	1.05m shielded cable w/o core
TC7X SNAP ON AUDIO ADAPTER	Symbol / Zebra	ADP-TC7X-AUDIO1-01	--
Snap On USB Cable	Symbol / Zebra	CBL-TC7X-USB1-01	1.8m non-shielded cable with core

2. The EUT provides 1 completed transmitter and 1 receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	1TX

3. 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

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		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	EUT + Earphone 1
B	√	√	-	-	EUT + Earphone 2
C	√	√	-	-	EUT + U-cup cable + USB cable

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A, C	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0
B		1 to 11	11	OFDM	BPSK	MCS0

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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A, C	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0
B		1 to 11	11	OFDM	BPSK	MCS0

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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (20MHz)	1 to 11	11	OFDM	BPSK	MCS0

BANDEDGE MEASUREMENT:

- ☒ 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ 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	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Toby Tian
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Anson Lin, Toby Tian
PLC	25deg. C, 65%RH	120Vac, 60Hz	Toby Tian
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao

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.

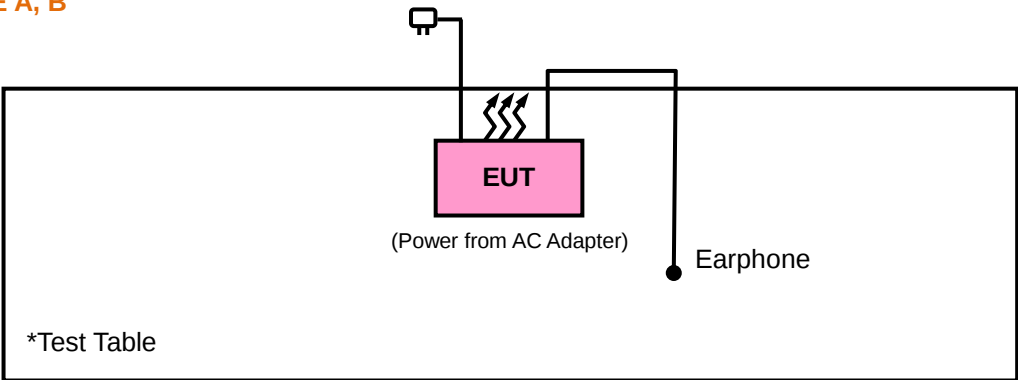
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	Inspiron 14R	8LRKKW1	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

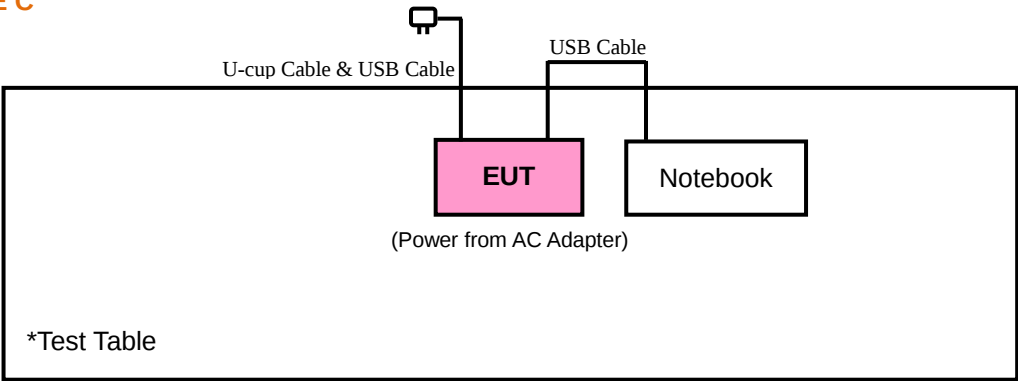
NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 as a communication partner to transfer data.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

MODE A, B



MODE C



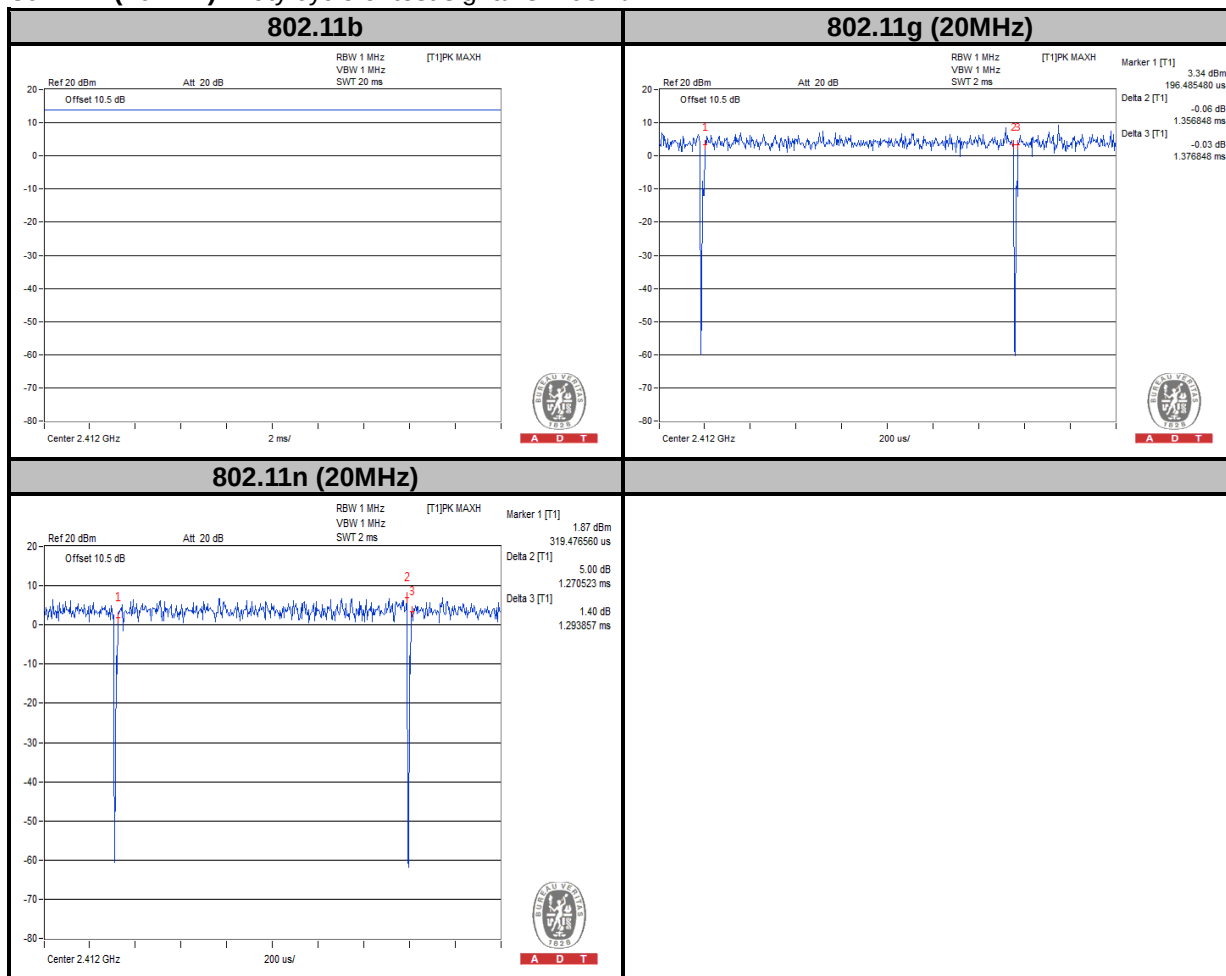
3.4 DUTY CYCLE TEST SIGNAL

WLAN 2.4GHz

802.11b: Duty cycle of test signal is 100 %

802.11g: Duty cycle of test signal is > 98 %

802.11n (20MHz): Duty cycle of test signal is > 98 %



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)

558074 D01 DTS Meas Guidance v03r02

ANSI C63.10-2009

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent Technologies	N9038A	MY52260177	May. 19, 2014	May. 18, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2013	Dec. 20, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 27, 2014	Feb. 26, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 19, 2014	Feb. 18, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Aug. 27, 2014	Aug. 26, 2015
Loop Antenna	HFH2-Z2	100070	Mar. 06, 2014	Mar. 05, 2016
Preamplifier EMCI	EMC 012645	980115	Dec. 26, 2013	Dec. 25, 2014
Preamplifier EMCI	EMC 184045	980116	Jan. 13, 2014	Jan. 12, 2015
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2013	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2014	Oct. 17, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2014	Oct. 17, 2015
RF signal cable Worken	RG-213	NA	Nov. 07, 2014	Nov. 06, 2015
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Power Meter	ML2495A	1232002	Sep. 17, 2014	Sep. 16, 2015
Power Sensor	MA2411B	1207325	Sep. 17, 2014	Sep. 16, 2015

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent Technologies	N9038A	MY52260177	May. 19, 2014	May. 18, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 10, 2014	Dec. 09, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 27, 2014	Feb. 26, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 19, 2014	Feb. 18, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Aug. 27, 2014	Aug. 26, 2015
Loop Antenna	HFH2-Z2	100070	Mar. 06, 2014	Mar. 05, 2016
Preamplifier EMCI	EMC 012645	980115	Dec. 12, 2014	Dec. 11, 2015
Preamplifier EMCI	EMC 184045	980116	Jan. 09, 2015	Jan. 08, 2016
Preamplifier EMCI	EMC 330H	980112	Dec. 25, 2014	Dec. 24, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2014	Oct. 17, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2014	Oct. 17, 2015
RF signal cable Worken	RG-213	NA	Nov. 07, 2014	Nov. 06, 2015
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Power Meter	ML2495A	1232002	Sep. 17, 2014	Sep. 16, 2015
Power Sensor	MA2411B	1207325	Sep. 17, 2014	Sep. 16, 2015

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

4.1.3 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. Height of receiving antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to 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:

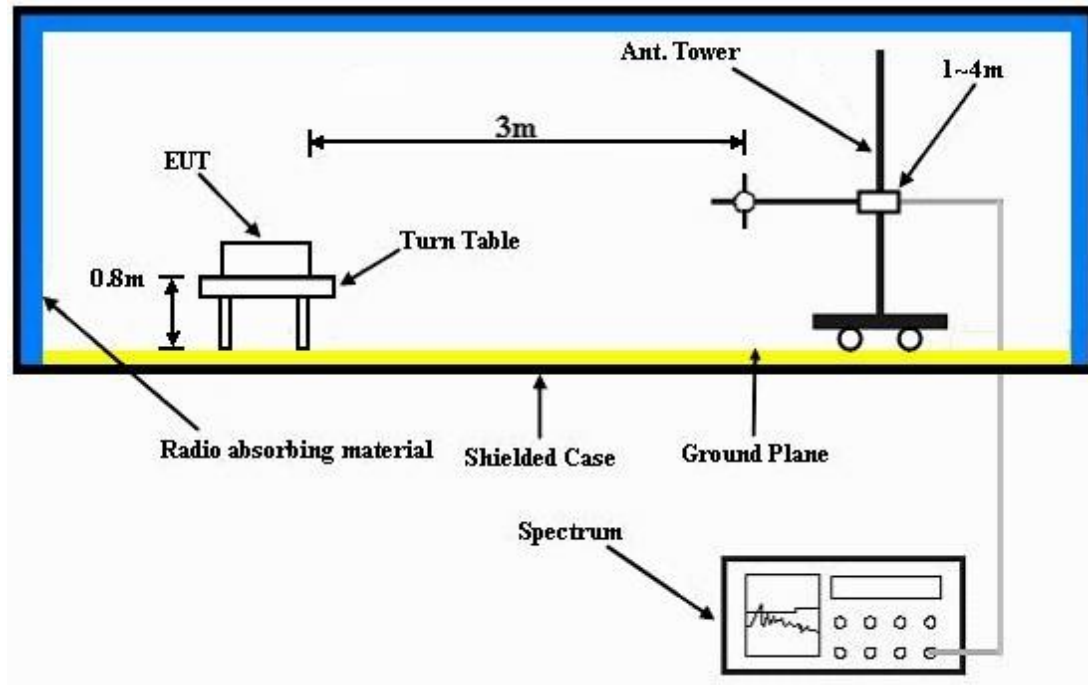
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

4.1.4 DEVIATION FROM TEST STANDARD

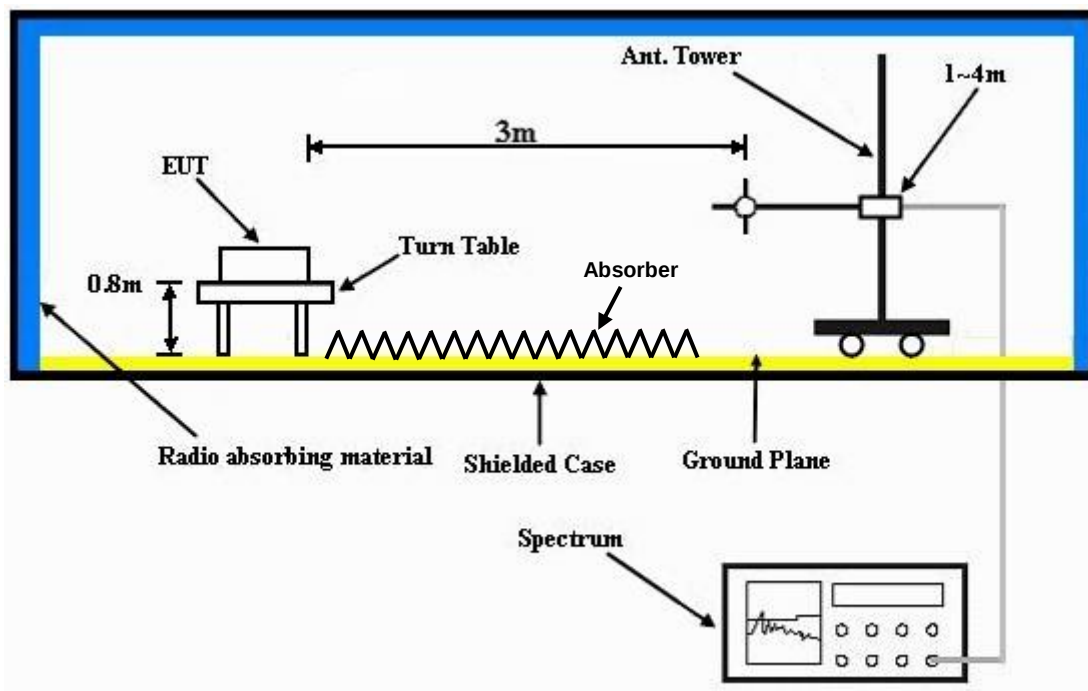
No deviation.

4.1.5 TEST SETUP

Frequency Range 30MHz ~ 1GHz



Frequency Range above 1GHz



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

4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on a testing table.
- b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA

MODE A

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2388	46.71	53.76	54	-7.29	26.91	3.54	37.5	104	162	Average
2388	58.31	65.36	74	-15.69	26.91	3.54	37.5	104	162	Peak
2412	105.01	112.03			26.96	3.54	37.52	104	162	Average
2412	109.08	116.1			26.96	3.54	37.52	104	162	Peak
2486	34.24	40.81	54	-19.76	27.15	3.6	37.32	104	162	Average
2486	56.54	63.11	74	-17.46	27.15	3.6	37.32	104	162	Peak
4824	41.83	58.15	54	-12.17	30.99	5.77	53.08	100	162	Average
4824	45.45	61.77	74	-28.55	30.99	5.77	53.08	100	162	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2386	43.61	50.68	54	-10.39	26.91	3.52	37.5	100	31	Average
2386	56.84	63.91	74	-17.16	26.91	3.52	37.5	100	31	Peak
2412	102.35	109.37			26.96	3.54	37.52	100	31	Average
2412	106.58	113.6			26.96	3.54	37.52	100	31	Peak
2486	34.5	41.07	54	-19.5	27.15	3.6	37.32	100	31	Average
2486	56.13	62.7	74	-17.87	27.15	3.6	37.32	100	31	Peak
4824	47.89	64.21	54	-6.11	30.99	5.77	53.08	119	186	Average
4824	49.11	65.43	74	-24.89	30.99	5.77	53.08	119	186	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2358	35.91	43.09	54	-18.09	26.81	3.5	37.49	106	20	Average
2358	55.13	62.31	74	-18.87	26.81	3.5	37.49	106	20	Peak
2437	105.06	111.9			27.06	3.56	37.46	106	20	Average
2437	109.12	115.96			27.06	3.56	37.46	106	20	Peak
2486	37.22	43.79	54	-16.78	27.15	3.6	37.32	106	20	Average
2486	56.63	63.2	74	-17.37	27.15	3.6	37.32	106	20	Peak
4874	44.48	60.67	54	-9.52	31.06	5.8	53.05	100	203	Average
4874	46.74	62.93	74	-27.26	31.06	5.8	53.05	100	203	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2356	34.5	41.68	54	-19.5	26.81	3.5	37.49	125	28	Average
2356	55.66	62.84	74	-18.34	26.81	3.5	37.49	125	28	Peak
2437	102.38	109.22			27.06	3.56	37.46	125	28	Average
2437	106	112.84			27.06	3.56	37.46	125	28	Peak
2488	35.87	42.37	54	-18.13	27.2	3.62	37.32	125	28	Average
2488	55.53	62.03	74	-18.47	27.2	3.62	37.32	125	28	Peak
4874	46.81	63	54	-7.19	31.06	5.8	53.05	103	178	Average
4874	48.11	64.3	74	-25.89	31.06	5.8	53.05	103	178	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2386	33.68	40.75	54	-20.32	26.91	3.52	37.5	128	116	Average
2386	56.86	63.93	74	-17.14	26.91	3.52	37.5	128	116	Peak
2462	105.48	112.19			27.1	3.58	37.39	128	116	Average
2462	109.76	116.47			27.1	3.58	37.39	128	116	Peak
2484	50.19	56.76	54	-3.81	27.15	3.6	37.32	128	116	Average
2484	60.34	66.91	74	-13.66	27.15	3.6	37.32	128	116	Peak
4924	40.18	56.26	54	-13.82	31.12	5.83	53.03	120	150	Average
4924	46.36	62.44	74	-27.64	31.12	5.83	53.03	120	150	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2350	32.92	40.14	54	-21.08	26.77	3.5	37.49	122	316	Average
2350	55.27	62.49	74	-18.73	26.77	3.5	37.49	122	316	Peak
2462	102.48	109.19			27.1	3.58	37.39	122	316	Average
2462	106.79	113.5			27.1	3.58	37.39	122	316	Peak
2484	46.68	53.25	54	-7.32	27.15	3.6	37.32	122	316	Average
2484	58.59	65.16	74	-15.41	27.15	3.6	37.32	122	316	Peak
4924	48.08	64.16	54	-5.92	31.12	5.83	53.03	121	220	Average
4924	51.53	67.61	74	-22.47	31.12	5.83	53.03	121	220	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462MHz: Fundamental frequency.

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	43.83	50.9	54	-10.17	26.91	3.54	37.52	128	105	Average
2390	62.86	69.93	74	-11.14	26.91	3.54	37.52	128	105	Peak
2412	95.95	102.97			26.96	3.54	37.52	128	105	Average
2412	105.62	112.64			26.96	3.54	37.52	128	105	Peak
2484	34.62	41.19	54	-19.38	27.15	3.6	37.32	128	105	Average
2484	55.98	62.55	74	-18.02	27.15	3.6	37.32	128	105	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	43.03	50.1	54	-10.97	26.91	3.54	37.52	123	318	Average
2390	60.23	67.3	74	-13.77	26.91	3.54	37.52	123	318	Peak
2412	94.01	101.03			26.96	3.54	37.52	123	318	Average
2412	103.55	110.57			26.96	3.54	37.52	123	318	Peak
2484	34.43	41	54	-19.57	27.15	3.6	37.32	123	318	Average
2484	56.33	62.9	74	-17.67	27.15	3.6	37.32	123	318	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.46	44.53	54	-16.54	26.91	3.54	37.52	132	243	Average
2390	56.21	63.28	74	-17.79	26.91	3.54	37.52	132	243	Peak
2437	100.32	107.16			27.06	3.56	37.46	132	243	Average
2437	110.12	116.96			27.06	3.56	37.46	132	243	Peak
2486	40.88	47.45	54	-13.12	27.15	3.6	37.32	132	243	Average
2486	57.49	64.06	74	-16.51	27.15	3.6	37.32	132	243	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2334	35.53	42.8	54	-18.47	26.72	3.48	37.47	124	315	Average
2334	55.21	62.48	74	-18.79	26.72	3.48	37.47	124	315	Peak
2437	98.19	105.03			27.06	3.56	37.46	124	315	Average
2437	108.06	114.9			27.06	3.56	37.46	124	315	Peak
2484	39.63	46.2	54	-14.37	27.15	3.6	37.32	124	315	Average
2484	55.95	62.52	74	-18.05	27.15	3.6	37.32	124	315	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2328	33.55	40.82	54	-20.45	26.72	3.48	37.47	128	89	Average
2328	55.86	63.13	74	-18.14	26.72	3.48	37.47	128	89	Peak
2462	96.43	103.14			27.1	3.58	37.39	128	89	Average
2462	106.06	112.77			27.1	3.58	37.39	128	89	Peak
2484	50.43	57	54	-3.57	27.15	3.6	37.32	128	89	Average
2484	68.88	75.45	74	-5.12	27.15	3.6	37.32	128	89	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2378	33.24	40.36	54	-20.76	26.86	3.52	37.5	124	316	Average
2378	56.04	63.16	74	-17.96	26.86	3.52	37.5	124	316	Peak
2462	94.18	100.89			27.1	3.58	37.39	124	316	Average
2462	103.64	110.35			27.1	3.58	37.39	124	316	Peak
2484	47.7	54.27	54	-6.3	27.15	3.6	37.32	124	316	Average
2484	69.69	76.26	74	-4.31	27.15	3.6	37.32	124	316	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462MHz: Fundamental frequency.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	47.36	54.43	54	-6.64	26.91	3.54	37.52	130	92	Average
2390	66.85	73.92	74	-7.15	26.91	3.54	37.52	130	92	Peak
2412	96.52	103.54			26.96	3.54	37.52	130	92	Average
2412	106.28	113.3			26.96	3.54	37.52	130	92	Peak
2492	35.3	41.73	54	-18.7	27.2	3.62	37.25	130	92	Average
2492	56.01	62.44	74	-17.99	27.2	3.62	37.25	130	92	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	45.5	52.57	54	-8.5	26.91	3.54	37.52	125	314	Average
2390	64.03	71.1	74	-9.97	26.91	3.54	37.52	125	314	Peak
2412	94.34	101.36			26.96	3.54	37.52	125	314	Average
2412	103.81	110.83			26.96	3.54	37.52	125	314	Peak
2498	34.82	41.25	54	-19.18	27.2	3.62	37.25	125	314	Average
2498	55.66	62.09	74	-18.34	27.2	3.62	37.25	125	314	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2386	38.17	45.24	54	-15.83	26.91	3.52	37.5	131	92	Average
2386	55.09	62.16	74	-18.91	26.91	3.52	37.5	131	92	Peak
2437	99.09	105.93			27.06	3.56	37.46	131	92	Average
2437	108.86	115.7			27.06	3.56	37.46	131	92	Peak
2490	41.51	48.01	54	-12.49	27.2	3.62	37.32	131	92	Average
2490	56.64	63.14	74	-17.36	27.2	3.62	37.32	131	92	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2348	36.49	43.71	54	-17.51	26.77	3.5	37.49	123	316	Average
2348	55.46	62.68	74	-18.54	26.77	3.5	37.49	123	316	Peak
2437	97.19	104.03			27.06	3.56	37.46	123	316	Average
2437	106.8	113.64			27.06	3.56	37.46	123	316	Peak
2490	40.47	46.97	54	-13.53	27.2	3.62	37.32	123	316	Average
2490	56.11	62.61	74	-17.89	27.2	3.62	37.32	123	316	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2334	33.53	40.8	54	-20.47	26.72	3.48	37.47	127	89	Average
2334	54.55	61.82	74	-19.45	26.72	3.48	37.47	127	89	Peak
2462	96.82	103.53			27.1	3.58	37.39	127	89	Average
2462	106.26	112.97			27.1	3.58	37.39	127	89	Peak
2484	52.93	59.5	54	-1.07	27.15	3.6	37.32	127	89	Average
2484	69.26	75.83	74	-4.74	27.15	3.6	37.32	127	89	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2376	33.37	40.49	54	-20.63	26.86	3.52	37.5	124	316	Average
2376	55.39	62.51	74	-18.61	26.86	3.52	37.5	124	316	Peak
2462	94.45	101.16			27.1	3.58	37.39	124	316	Average
2462	103.84	110.55			27.1	3.58	37.39	124	316	Peak
2484	50.44	57.01	54	-3.56	27.15	3.6	37.32	124	316	Average
2484	69.17	75.74	74	-4.83	27.15	3.6	37.32	124	316	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462MHz: Fundamental frequency.



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MODE B**802.11n (20MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2326	33.42	40.69	54	-20.58	26.72	3.48	37.47	127	72	Average
2326	55.62	62.89	74	-18.38	26.72	3.48	37.47	127	72	Peak
2462	96.19	102.9			27.1	3.58	37.39	127	72	Average
2462	105.74	112.45			27.1	3.58	37.39	127	72	Peak
2486	52.78	59.35	54	-1.22	27.15	3.6	37.32	127	72	Average
2486	69.89	76.46	74	-4.11	27.15	3.6	37.32	127	72	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2318	33.16	40.43	54	-20.84	26.72	3.48	37.47	119	316	Average
2318	55.31	62.58	74	-18.69	26.72	3.48	37.47	119	316	Peak
2462	94.03	100.74			27.1	3.58	37.39	119	316	Average
2462	103.54	110.25			27.1	3.58	37.39	119	316	Peak
2484	50.28	56.85	54	-3.72	27.15	3.6	37.32	119	316	Average
2484	69.71	76.28	74	-4.29	27.15	3.6	37.32	119	316	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462MHz: Fundamental frequency.

MODE C

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	47.81	54.88	54	-6.19	26.91	3.54	37.52	134	242	Average
2390	67.12	74.19	74	-6.88	26.91	3.54	37.52	134	242	Peak
2412	96.54	103.56			26.96	3.54	37.52	134	242	Average
2412	106.25	113.27			26.96	3.54	37.52	134	242	Peak
2492	34.79	41.22	54	-19.21	27.2	3.62	37.25	134	242	Average
2492	55.68	62.11	74	-18.32	27.2	3.62	37.25	134	242	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	47.09	54.16	54	-6.91	26.91	3.54	37.52	118	188	Average
2390	66	73.07	74	-8	26.91	3.54	37.52	118	188	Peak
2412	96.33	103.35			26.96	3.54	37.52	118	188	Average
2412	105.97	112.99			26.96	3.54	37.52	118	188	Peak
2498	34.77	41.2	54	-19.23	27.2	3.62	37.25	118	188	Average
2498	55.66	62.09	74	-18.34	27.2	3.62	37.25	118	188	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2388	38.85	45.9	54	-15.15	26.91	3.54	37.5	136	244	Average
2388	56.24	63.29	74	-17.76	26.91	3.54	37.5	136	244	Peak
2437	98.39	105.23			27.06	3.56	37.46	136	244	Average
2437	108.39	115.23			27.06	3.56	37.46	136	244	Peak
2500	41.1	47.53	54	-12.9	27.2	3.62	37.25	136	244	Average
2500	57.27	63.7	74	-16.73	27.2	3.62	37.25	136	244	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2386	37.49	44.56	54	-16.51	26.91	3.52	37.5	117	191	Average
2386	57.23	64.3	74	-16.77	26.91	3.52	37.5	117	191	Peak
2437	98.2	105.04			27.06	3.56	37.46	117	191	Average
2437	108.06	114.9			27.06	3.56	37.46	117	191	Peak
2492	40.3	46.73	54	-13.7	27.2	3.62	37.25	117	191	Average
2492	57.62	64.05	74	-16.38	27.2	3.62	37.25	117	191	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2366	33.88	41.05	54	-20.12	26.81	3.52	37.5	134	243	Average
2366	57.37	64.54	74	-16.63	26.81	3.52	37.5	134	243	Peak
2462	95.91	102.62			27.1	3.58	37.39	134	243	Average
2462	105.66	112.37			27.1	3.58	37.39	134	243	Peak
2484	52.82	59.39	54	-1.18	27.15	3.6	37.32	134	243	Average
2484	69.34	75.91	74	-4.66	27.15	3.6	37.32	134	243	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2374	33.72	40.84	54	-20.28	26.86	3.52	37.5	118	190	Average
2374	55.89	63.01	74	-18.11	26.86	3.52	37.5	118	190	Peak
2462	95.41	102.12			27.1	3.58	37.39	118	190	Average
2462	105.23	111.94			27.1	3.58	37.39	118	190	Peak
2484	52.45	59.02	54	-1.55	27.15	3.6	37.32	118	190	Average
2484	68.89	75.46	74	-5.11	27.15	3.6	37.32	118	190	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462MHz: Fundamental frequency.

BELOW 1GHz WORST-CASE DATA:

MODE A

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
43.5	23.32	40.13	40	-16.68	13.59	0.71	31.11	108	64	Peak
75.63	28.39	49.77	40	-11.61	9.33	0.94	31.65	114	323	Peak
155.01	25.87	43.52	43.5	-17.63	12.72	1.37	31.74	138	257	Peak
351.1	21.26	36.71	46	-24.74	14.17	2.23	31.85	118	1	Peak
502.3	22.1	33.55	46	-23.9	17.37	2.79	31.61	131	225	Peak
622.7	24.27	33.39	46	-21.73	19.88	3.16	32.16	134	113	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30	29.98	48.57	40	-10.02	11.98	0.57	31.14	108	346	Peak
75.36	30.74	52.12	40	-9.26	9.33	0.94	31.65	115	75	Peak
135.03	30.34	48.82	43.5	-13.16	12.01	1.27	31.76	103	228	Peak
311.9	20.28	36.88	46	-25.72	13.24	2.1	31.94	119	267	Peak
486.9	20.92	32.91	46	-25.08	17.06	2.74	31.79	137	228	Peak
580.7	23.62	33.54	46	-22.38	19.17	3.03	32.12	107	234	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.69	23.45	40.25	40	-16.55	13.58	0.7	31.08	101	330	Peak
75.09	27.59	48.77	40	-12.41	9.57	0.93	31.68	106	312	Peak
150.69	26.24	43.8	43.5	-17.26	12.71	1.34	31.61	105	120	Peak
360.2	20.6	35.92	46	-25.4	14.38	2.27	31.97	105	210	Peak
504.4	21.86	33.26	46	-24.14	17.42	2.79	31.61	103	81	Peak
663.3	25.71	33.95	46	-20.29	20.37	3.29	31.9	110	203	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
41.88	29.17	45.98	40	-10.83	13.56	0.68	31.05	120	335	Peak
75.63	30.49	51.87	40	-9.51	9.33	0.94	31.65	133	216	Peak
134.76	30.67	49.15	43.5	-12.83	12.01	1.27	31.76	118	322	Peak
318.2	20.23	36.63	46	-25.77	13.38	2.12	31.9	134	264	Peak
419	21.28	35.11	46	-24.72	15.71	2.5	32.04	138	297	Peak
586.3	23.22	33	46	-22.78	19.3	3.05	32.13	135	47	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.96	24.43	41.23	40	-15.57	13.58	0.7	31.08	129	93	Peak
74.82	30.31	51.49	40	-9.69	9.57	0.93	31.68	114	198	Peak
176.61	27.22	46.44	43.5	-16.28	11.1	1.48	31.8	100	205	Peak
377	21.93	36.74	46	-24.07	14.8	2.33	31.94	116	29	Peak
521.2	21.84	32.78	46	-24.16	17.79	2.85	31.58	118	104	Peak
683.6	25.29	33.14	46	-20.71	20.62	3.37	31.84	131	278	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.08	30.77	49.18	40	-9.23	12.14	0.57	31.12	123	167	Peak
74.55	32.5	53.68	40	-7.5	9.57	0.93	31.68	101	236	Peak
134.49	30.93	49.41	43.5	-12.57	12.01	1.27	31.76	117	132	Peak
314.7	20.36	36.86	46	-25.64	13.31	2.11	31.92	103	267	Peak
482	20.97	33.12	46	-25.03	16.96	2.72	31.83	140	9	Peak
638.8	24.86	33.67	46	-21.14	20.08	3.21	32.1	112	328	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.96	24.39	41.19	40	-15.61	13.58	0.7	31.08	133	43	Peak
74.82	28.87	50.05	40	-11.13	9.57	0.93	31.68	118	100	Peak
175.8	27.54	46.67	43.5	-15.96	11.19	1.47	31.79	119	63	Peak
360.2	20.82	36.14	46	-25.18	14.38	2.27	31.97	139	271	Peak
520.5	22.41	33.35	46	-23.59	17.79	2.85	31.58	133	233	Peak
671.7	25.43	33.44	46	-20.57	20.48	3.33	31.82	108	38	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.81	31.33	49.74	40	-8.67	12.14	0.57	31.12	120	89	Peak
73.74	32.09	53.06	40	-7.91	9.81	0.93	31.71	109	42	Peak
135.3	30.82	49.21	43.5	-12.68	12.08	1.27	31.74	118	19	Peak
308.4	20.15	36.85	46	-25.85	13.15	2.08	31.93	111	249	Peak
475	21.06	33.4	46	-24.94	16.83	2.7	31.87	128	336	Peak
638.1	24.91	33.74	46	-21.09	20.07	3.2	32.1	114	92	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.69	24.66	41.46	40	-15.34	13.58	0.7	31.08	105	339	Peak
74.55	28.55	49.73	40	-11.45	9.57	0.93	31.68	105	9	Peak
175.8	26.78	45.91	43.5	-16.72	11.19	1.47	31.79	130	292	Peak
368.6	20.82	35.86	46	-25.18	14.59	2.3	31.93	132	114	Peak
497.4	21.6	33.22	46	-24.4	17.27	2.77	31.66	120	142	Peak
629	24.55	33.55	46	-21.45	19.96	3.18	32.14	107	153	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.81	31.03	49.44	40	-8.97	12.14	0.57	31.12	129	3	Peak
72.93	31.52	52.29	40	-8.48	10.05	0.92	31.74	135	305	Peak
135.57	30.77	49.16	43.5	-12.73	12.08	1.27	31.74	121	21	Peak
309.1	20.4	37.09	46	-25.6	13.17	2.08	31.94	133	295	Peak
495.3	20.99	32.69	46	-25.01	17.23	2.76	31.69	139	107	Peak
638.1	24.61	33.44	46	-21.39	20.07	3.2	32.1	108	353	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.42	23.65	40.45	40	-16.35	13.58	0.7	31.08	111	208	Peak
74.82	28.42	49.6	40	-11.58	9.57	0.93	31.68	131	304	Peak
175.53	26.77	45.9	43.5	-16.73	11.19	1.47	31.79	133	271	Peak
351.1	21.46	36.91	46	-24.54	14.17	2.23	31.85	134	214	Peak
498.1	21.56	33.15	46	-24.44	17.29	2.77	31.65	114	266	Peak
646.5	24.27	32.91	46	-21.73	20.17	3.23	32.04	110	212	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.81	30.5	48.91	40	-9.5	12.14	0.57	31.12	133	255	Peak
74.55	31.63	52.81	40	-8.37	9.57	0.93	31.68	128	60	Peak
134.76	31.2	49.68	43.5	-12.3	12.01	1.27	31.76	102	111	Peak
309.8	19.53	36.22	46	-26.47	13.17	2.08	31.94	133	122	Peak
433.7	20.47	33.93	46	-25.53	16	2.55	32.01	134	200	Peak
573.7	23.59	33.66	46	-22.41	19.01	3.02	32.1	132	6	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



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802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.69	23.58	40.38	40	-16.42	13.58	0.7	31.08	118	316	Peak
75.63	27.79	49.17	40	-12.21	9.33	0.94	31.65	114	166	Peak
175.53	27.12	46.25	43.5	-16.38	11.19	1.47	31.79	106	141	Peak
350.4	20.54	36	46	-25.46	14.15	2.23	31.84	105	192	Peak
488.3	20.87	32.84	46	-25.13	17.08	2.74	31.79	103	128	Peak
669.6	25.73	33.8	46	-20.27	20.44	3.31	31.82	115	154	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.27	30.1	48.69	40	-9.9	11.98	0.57	31.14	134	33	Peak
75.36	30.89	52.27	40	-9.11	9.33	0.94	31.65	133	4	Peak
134.76	30.66	49.14	43.5	-12.84	12.01	1.27	31.76	123	124	Peak
313.3	19.61	36.18	46	-26.39	13.26	2.1	31.93	119	174	Peak
473.6	20.54	32.94	46	-25.46	16.79	2.69	31.88	109	232	Peak
628.3	24.14	33.17	46	-21.86	19.95	3.17	32.15	120	199	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.69	23.72	40.52	40	-16.28	13.58	0.7	31.08	112	355	Peak
75.63	27.2	48.58	40	-12.8	9.33	0.94	31.65	104	90	Peak
175.8	26.77	45.9	43.5	-16.73	11.19	1.47	31.79	115	298	Peak
360.2	20.54	35.86	46	-25.46	14.38	2.27	31.97	100	108	Peak
513.5	22.4	33.54	46	-23.6	17.62	2.82	31.58	103	188	Peak
681.5	25.01	32.89	46	-20.99	20.6	3.36	31.84	113	309	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.81	29.9	48.31	40	-10.1	12.14	0.57	31.12	114	282	Peak
74.82	31.04	52.22	40	-8.96	9.57	0.93	31.68	106	200	Peak
135.03	30.84	49.32	43.5	-12.66	12.01	1.27	31.76	121	123	Peak
318.9	20.17	36.55	46	-25.83	13.4	2.12	31.9	132	216	Peak
486.9	21.03	33.02	46	-24.97	17.06	2.74	31.79	111	125	Peak
643.7	24.83	33.53	46	-21.17	20.14	3.22	32.06	123	47	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Toby Tian

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
64.02	23.3	42.51	40	-16.7	11.47	0.86	31.54	127	168	Peak
71.58	31.87	52.43	40	-8.13	10.29	0.91	31.76	125	249	Peak
119.91	26.09	45.78	43.5	-17.41	11.02	1.19	31.9	102	9	Peak
338.5	20.95	36.71	46	-25.05	13.87	2.19	31.82	131	331	Peak
421.8	20.38	34.14	46	-25.62	15.77	2.51	32.04	115	4	Peak
519.8	22.39	33.34	46	-23.61	17.77	2.85	31.57	105	57	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.54	30.13	48.54	40	-9.87	12.14	0.57	31.12	129	88	Peak
71.31	29.9	50.46	40	-10.1	10.29	0.91	31.76	121	126	Peak
126.39	32.18	51.43	43.5	-11.32	11.42	1.22	31.89	125	71	Peak
356	19.31	34.69	46	-26.69	14.29	2.25	31.92	101	57	Peak
484.8	21.57	33.63	46	-24.43	17.02	2.73	31.81	140	129	Peak
589.1	24.66	34.4	46	-21.34	19.34	3.06	32.14	131	123	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

MODE B

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
75.9	26.7	48.08	40	-13.3	9.33	0.94	31.65	122	62	Peak
149.07	25.08	42.67	43.5	-18.42	12.68	1.34	31.61	136	314	Peak
175.53	25.18	44.31	43.5	-18.32	11.19	1.47	31.79	138	185	Peak
358.1	20.33	35.68	46	-25.67	14.33	2.26	31.94	123	259	Peak
524.7	22.36	33.25	46	-23.64	17.88	2.86	31.63	140	211	Peak
594	24.67	34.32	46	-21.33	19.46	3.07	32.18	136	322	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
32.97	27.41	45.45	40	-12.59	12.47	0.58	31.09	116	256	Peak
73.74	30.03	51	40	-9.97	9.81	0.93	31.71	101	355	Peak
108.84	30.36	51.19	43.5	-13.14	9.9	1.12	31.85	107	299	Peak
340.6	19.38	35.1	46	-26.62	13.91	2.19	31.82	121	113	Peak
422.5	22.09	35.83	46	-23.91	15.79	2.51	32.04	133	129	Peak
666.8	24.87	33.02	46	-21.13	20.41	3.3	31.86	128	179	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

MODE C

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.96	22.82	39.62	40	-17.18	13.58	0.7	31.08	102	274	Peak
75.09	25.89	47.07	40	-14.11	9.57	0.93	31.68	125	54	Peak
128.28	25.41	44.51	43.5	-18.09	11.55	1.23	31.88	119	252	Peak
345.5	20.99	36.58	46	-25.01	14.03	2.21	31.83	139	134	Peak
422.5	22.99	36.73	46	-23.01	15.79	2.51	32.04	137	37	Peak
621.3	23.91	33.05	46	-22.09	19.87	3.15	32.16	140	296	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
35.94	27.48	44.98	40	-12.52	12.94	0.61	31.05	105	97	Peak
62.13	28.58	47.48	40	-11.42	11.71	0.84	31.45	109	5	Peak
74.55	29.52	50.7	40	-10.48	9.57	0.93	31.68	113	102	Peak
312.6	19.55	36.15	46	-26.45	13.24	2.1	31.94	126	239	Peak
422.5	19.96	33.7	46	-26.04	15.79	2.51	32.04	122	341	Peak
531.7	22.71	33.48	46	-23.29	18.04	2.89	31.7	127	84	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.96	23.51	40.31	40	-16.49	13.58	0.7	31.08	123	149	Peak
74.55	27.25	48.43	40	-12.75	9.57	0.93	31.68	135	18	Peak
129.09	24.01	43.05	43.5	-19.49	11.61	1.23	31.88	136	99	Peak
362.3	20.82	36.05	46	-25.18	14.45	2.28	31.96	127	53	Peak
447.7	21.14	34.22	46	-24.86	16.29	2.61	31.98	137	207	Peak
597.5	23.95	33.55	46	-22.05	19.54	3.08	32.22	115	179	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
41.88	26.69	43.5	40	-13.31	13.56	0.68	31.05	112	57	Peak
74.55	29.17	50.35	40	-10.83	9.57	0.93	31.68	122	275	Peak
107.76	30.42	51.36	43.5	-13.08	9.81	1.11	31.86	135	142	Peak
320.3	19.24	35.58	46	-26.76	13.43	2.12	31.89	107	298	Peak
465.9	20.54	33.17	46	-25.46	16.64	2.67	31.94	107	312	Peak
624.8	24.02	33.12	46	-21.98	19.9	3.16	32.16	118	318	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
75.36	27.87	49.25	40	-12.13	9.33	0.94	31.65	120	287	Peak
128.01	23.57	42.67	43.5	-19.93	11.55	1.23	31.88	139	111	Peak
155.01	25.4	43.05	43.5	-18.1	12.72	1.37	31.74	123	248	Peak
359.5	20.45	35.77	46	-25.55	14.38	2.27	31.97	110	351	Peak
517.7	21.57	32.57	46	-24.43	17.73	2.84	31.57	135	313	Peak
633.9	24.7	33.61	46	-21.3	20.02	3.19	32.12	113	29	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
74.82	29.67	50.85	40	-10.33	9.57	0.93	31.68	120	317	Peak
108.3	30.6	51.43	43.5	-12.9	9.9	1.12	31.85	119	306	Peak
134.49	30.83	49.31	43.5	-12.67	12.01	1.27	31.76	113	43	Peak
320.3	19.46	35.8	46	-26.54	13.43	2.12	31.89	128	326	Peak
449.1	19.62	32.68	46	-26.38	16.31	2.61	31.98	112	28	Peak
595.4	23.78	33.41	46	-22.22	19.5	3.07	32.2	123	240	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

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 0.50MHz.
 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	Apr. 24, 2014	Apr. 23, 2015
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 10, 2014	Jul. 09, 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 2.
 3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

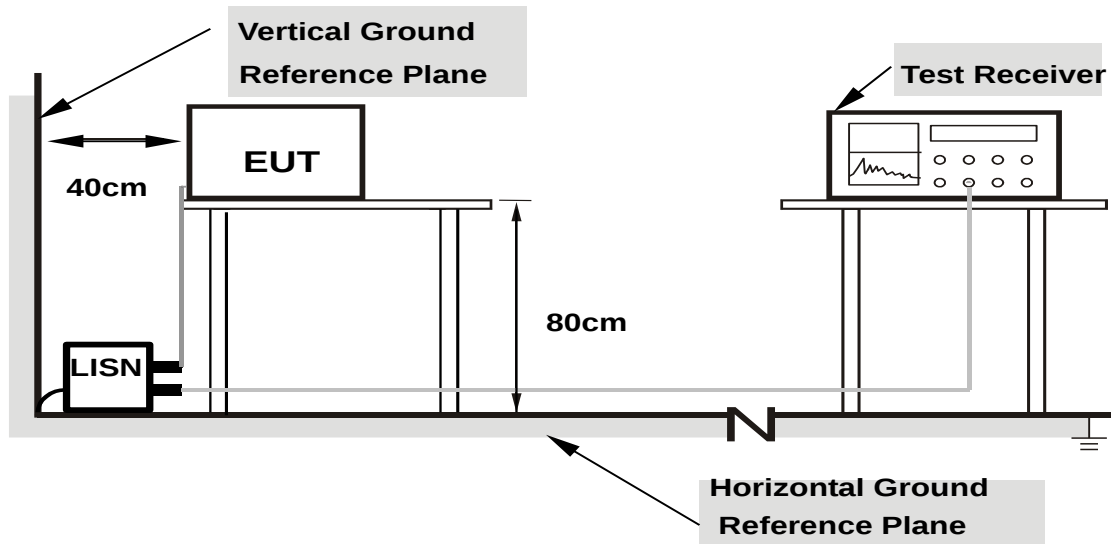
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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 section 4.1.6.

4.2.7 TEST RESULTS

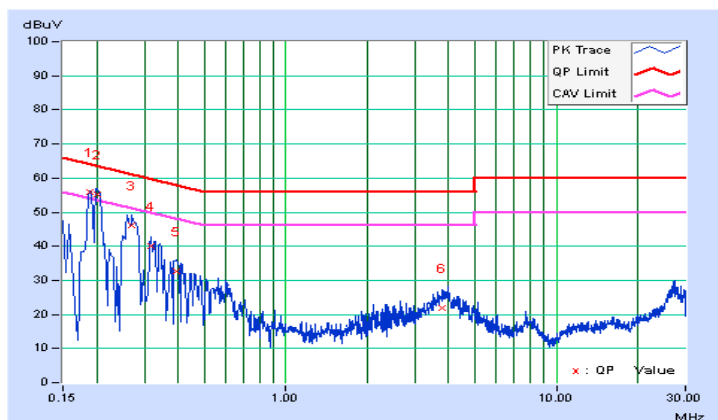
CONDUCTED WORST-CASE DATA :

PHASE	Line 1	6dB BANDWIDTH	9kHz
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18963	0.07	55.89	37.28	55.96	37.35	64.05	54.05	-8.09	-16.70
2	0.19989	0.07	55.09	40.07	55.16	40.14	63.62	53.62	-8.46	-13.48
3	0.26992	0.07	46.17	29.13	46.24	29.20	61.12	51.12	-14.88	-21.92
4	0.31781	0.08	40.09	20.59	40.17	20.67	59.76	49.76	-19.60	-29.10
5	0.39238	0.08	32.69	12.54	32.77	12.62	58.01	48.01	-25.24	-35.39
6	3.80200	0.22	21.51	14.97	21.73	15.19	56.00	46.00	-34.27	-30.81

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

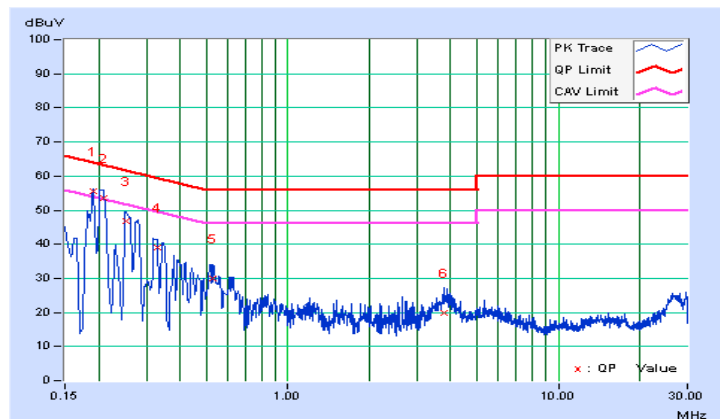


PHASE	Line 2	6dB BANDWIDTH	9kHz
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19000	0.05	55.48	37.03	55.53	37.08	64.04	54.04	-8.51	-16.96
2	0.21000	0.05	53.32	37.82	53.37	37.87	63.21	53.21	-9.83	-15.33
3	0.25400	0.06	46.79	28.63	46.85	28.69	61.63	51.63	-14.78	-22.94
4	0.33000	0.06	38.92	20.60	38.98	20.66	59.45	49.45	-20.47	-28.79
5	0.53000	0.07	29.98	15.60	30.05	15.67	56.00	46.00	-25.95	-30.33
6	3.77400	0.20	19.51	12.12	19.71	12.32	56.00	46.00	-36.29	-33.68

Remarks:

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

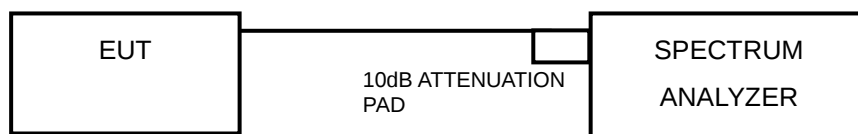


4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.3.4 TEST PROCEDURE

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	9.08	0.5	PASS
6	2437	8.57	0.5	PASS
11	2462	9.08	0.5	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.37	0.5	PASS
6	2437	16.39	0.5	PASS
11	2462	16.40	0.5	PASS

802.11n (20MHz)

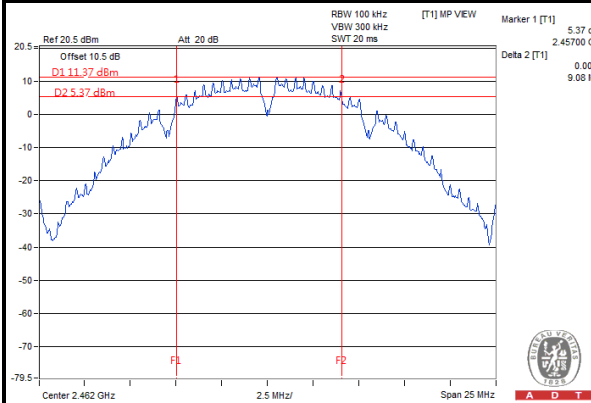
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.58	0.5	PASS
6	2437	17.61	0.5	PASS
11	2462	17.60	0.5	PASS



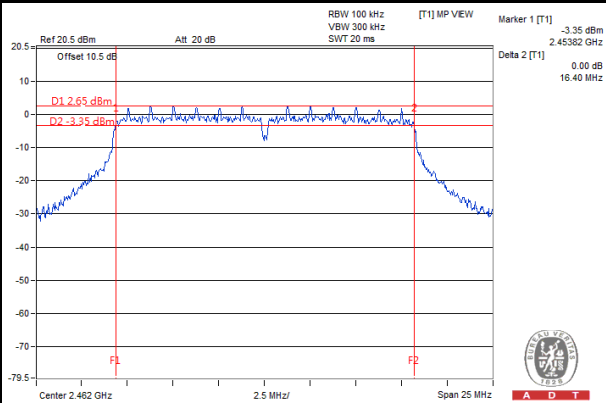
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SPECTRUM PLOT OF WORST VALUE

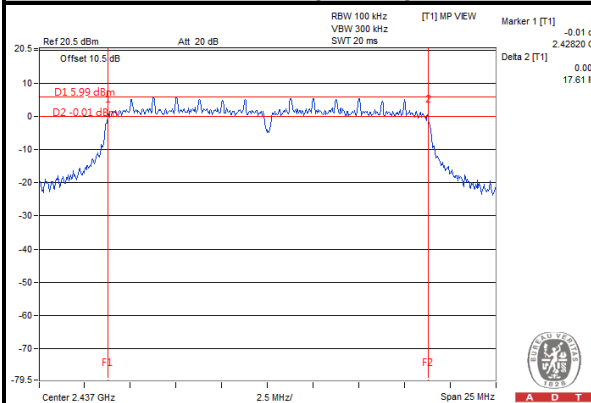
802.11b



802.11g



802.11n (20MHz)

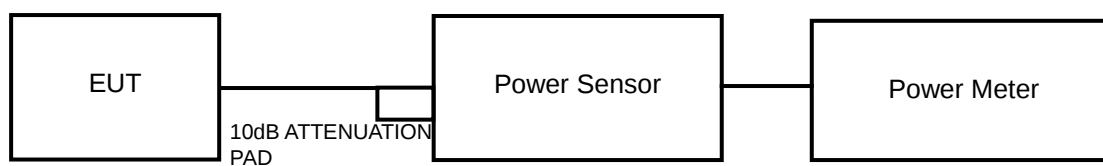


4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.4.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak power level.

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as section 4.3.6.

4.4.7 TEST RESULTS

<FOR PEAK POWER>

802.11b

CHANNEL	FREQUENCY (MHz)	DATA RATE			
		1M bps	2M bps	5.5M bps	11M bps
1	2412	22.88	22.8	22.86	22.85
6	2437	23.01	22.93	22.96	22.98
11	2462	22.42	22.33	22.4	22.41

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS / FAIL
1	2412	194.09	22.88	30	PASS
6	2437	199.99	23.01	30	PASS
11	2462	174.58	22.42	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	DATA RATE							
		6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
1	2412	22.12	21.92	22.11	22.04	21.98	22.05	22.03	21.76
6	2437	23.98	23.97	23.91	23.85	23.61	23.54	23.51	23.35
11	2462	22.11	21.82	22.1	22.03	21.86	22.03	21.86	21.8

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS / FAIL
1	2412	162.93	22.12	30	PASS
6	2437	250.03	23.98	30	PASS
11	2462	162.55	22.11	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	DATA RATE							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	2412	22.14	22.13	22.1	21.99	21.87	21.87	21.9	21.9
6	2437	23.6	23.53	23.52	22.55	23.51	23.45	23.09	22.84
11	2462	22.37	22.11	22.09	22.03	21.89	21.91	21.99	21.95

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS / FAIL
1	2412	163.68	22.14	30	PASS
6	2437	229.09	23.60	30	PASS
11	2462	172.58	22.37	30	PASS

<FOR AVERAGE POWER>

802.11b

CHANNEL	FREQUENCY (MHz)	DATA RATE			
		1M bps	2M bps	5.5M bps	11M bps
1	2412	20.86	20.85	20.84	21.07
6	2437	20.87	20.77	21.18	21.05
11	2462	20.32	20.27	20.31	20.3

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS / FAIL
1	2412	121.90	20.86	30	PASS
6	2437	122.18	20.87	30	PASS
11	2462	107.65	20.32	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	DATA RATE							
		6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
1	2412	14.74	14.7	14.73	14.72	14.71	14.73	14.67	14.7
6	2437	18.5	18.42	18.44	18.45	18.18	16.69	16.76	16.17
11	2462	14.25	14.13	14.2	14.21	14.18	14.22	14.18	14.2

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS / FAIL
1	2412	29.79	14.74	30	PASS
6	2437	70.79	18.5	30	PASS
11	2462	26.61	14.25	30	PASS



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802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	DATA RATE							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	2412	14.79	14.77	14.78	14.76	14.72	14.7	14.73	14.78
6	2437	17.19	17.12	17.15	17.14	17.17	17.14	16.3	15.18
11	2462	14.37	14.35	14.36	14.3	14.33	14.32	14.35	14.34

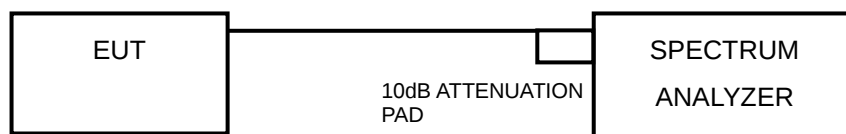
CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS / FAIL
1	2412	30.13	14.79	30	PASS
6	2437	52.36	17.19	30	PASS
11	2462	27.35	14.37	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

- Set the RBW = 3 kHz, VBW = 10 kHz, Detector = peak.
- Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as section 4.3.6.

4.5.7 TEST RESULTS

802.11b

CHANNEL	FREQUENCY (MHz)	PSD (dBm/3kHz)	LIMIT (dBm/3kHz)	PASS / FAIL
1	2412	-2.57	8	PASS
6	2437	-2.01	8	PASS
11	2462	-2.88	8	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	PSD (dBm/3kHz)	LIMIT (dBm/3kHz)	PASS / FAIL
1	2412	-11.29	8	PASS
6	2437	-7.54	8	PASS
11	2462	-11.57	8	PASS

802.11n (20MHz)

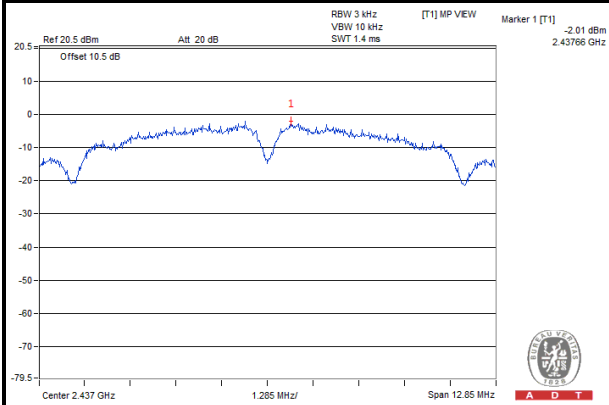
CHANNEL	FREQUENCY (MHz)	PSD (dBm/3kHz)	LIMIT (dBm/3kHz)	PASS / FAIL
1	2412	-10.99	8	PASS
6	2437	-8.64	8	PASS
11	2462	-12.22	8	PASS



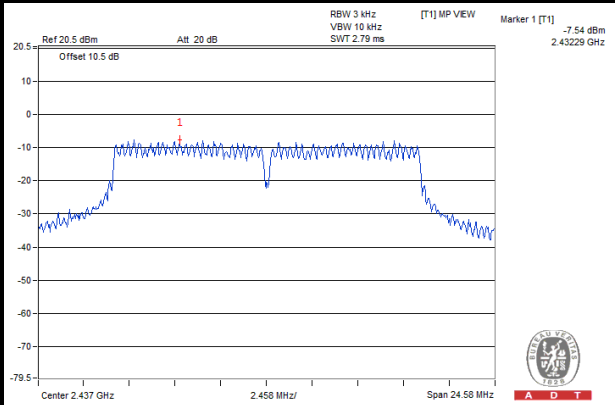
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SPECTRUM PLOT OF WORST VALUE

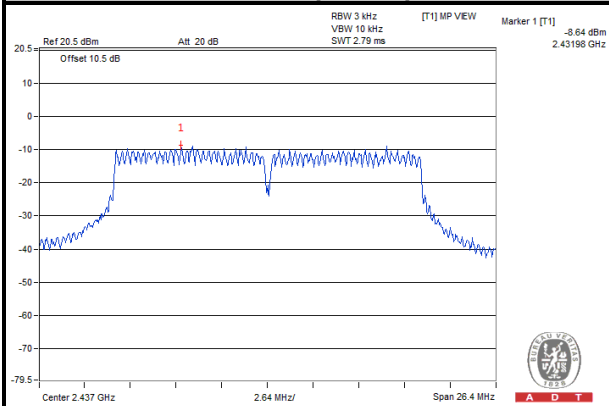
802.11b



802.11g



802.11n (20MHz)

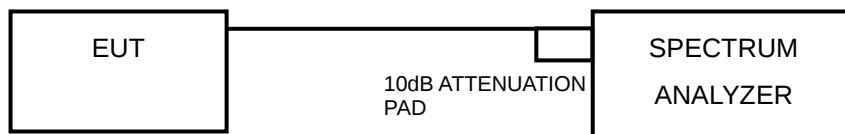


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz .
2. Set the VBW $\geq 300\text{ kHz}$.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz .
2. Set VBW $\geq 300\text{ kHz}$.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as section 4.3.6.

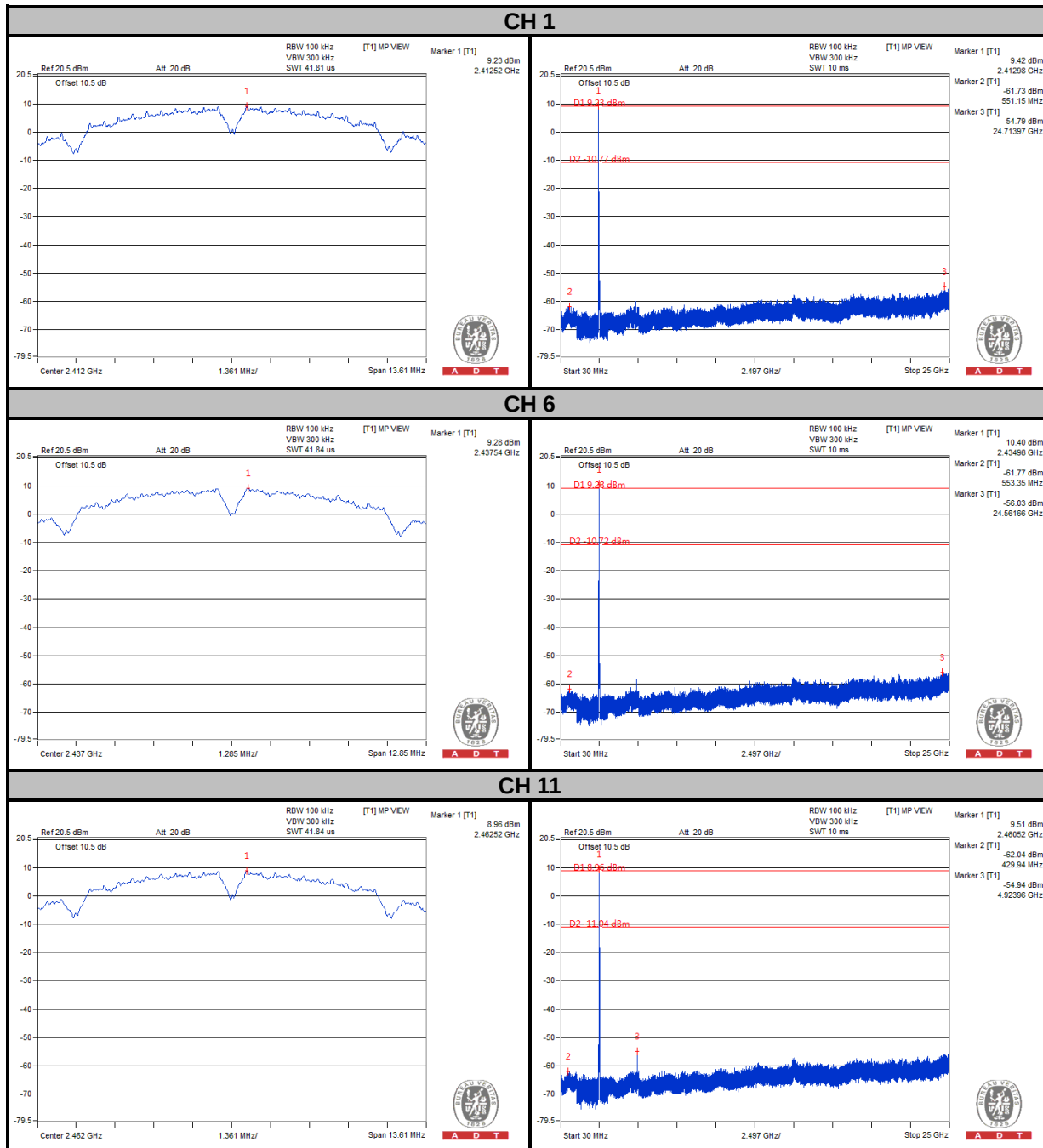


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4.6.7 TEST RESULTS

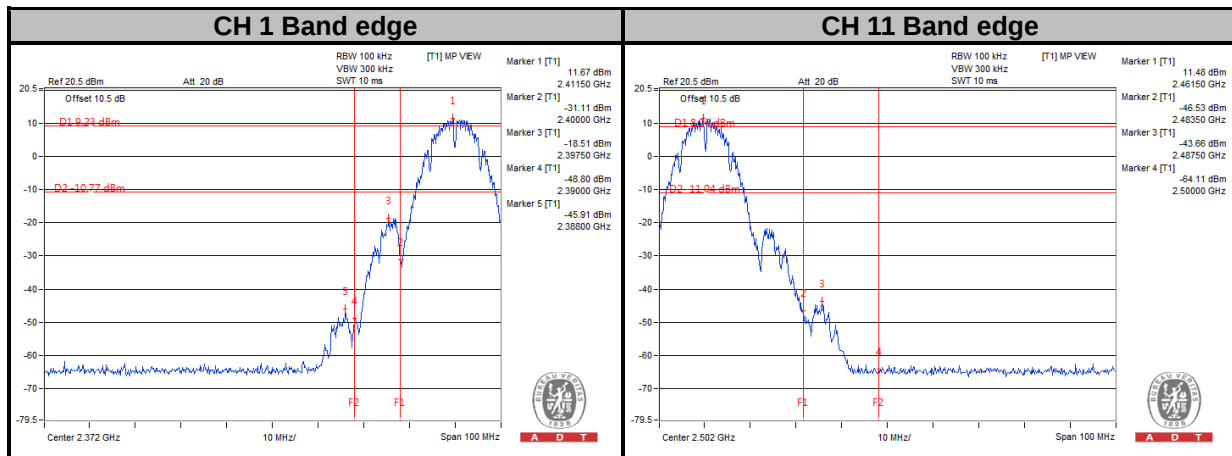
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b





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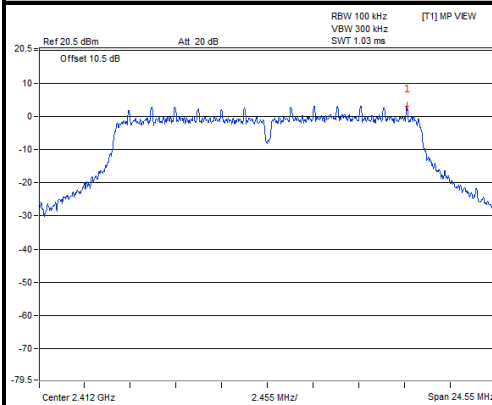




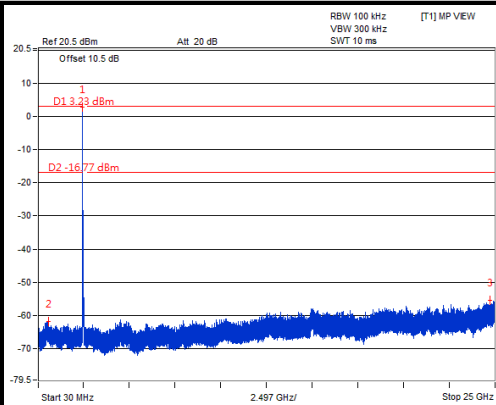
A D T

802.11g

CH 1

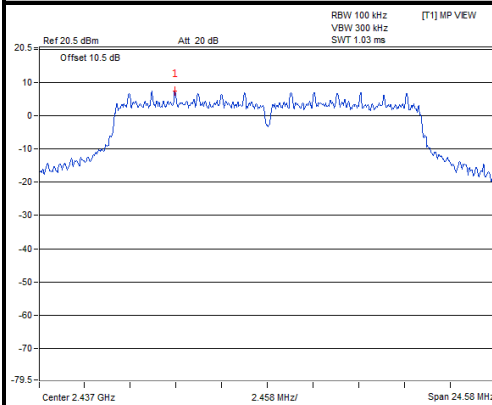


A D T

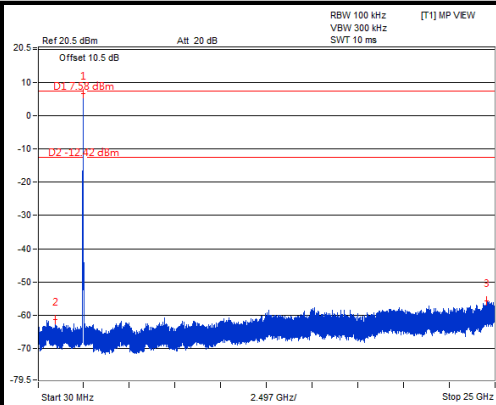


A D T

CH 6

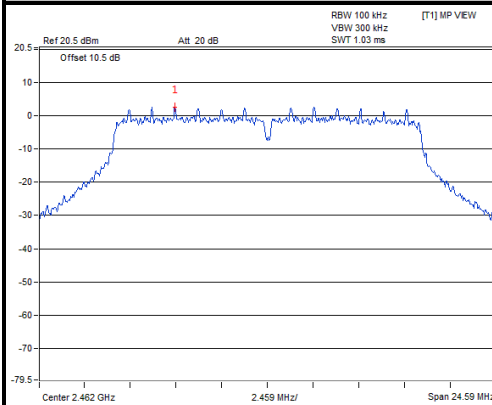


A D T

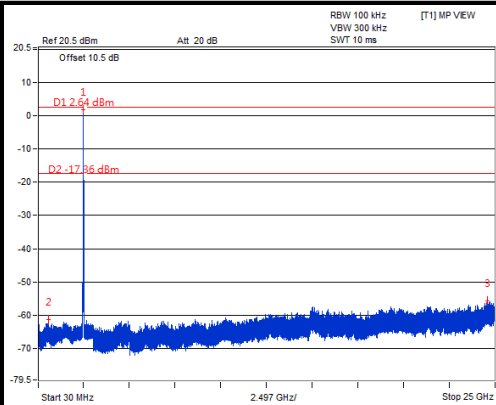


A D T

CH 11



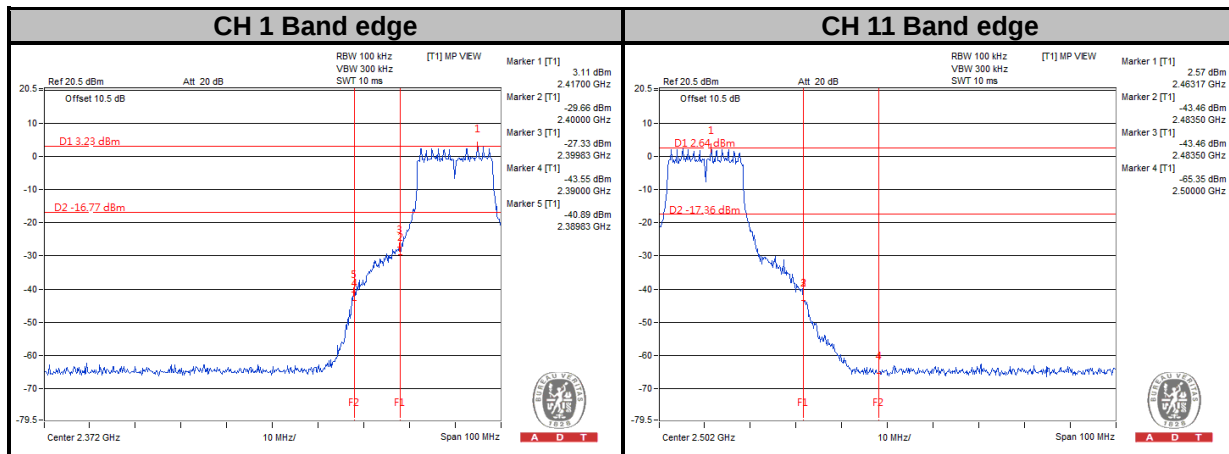
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A D T



A D T

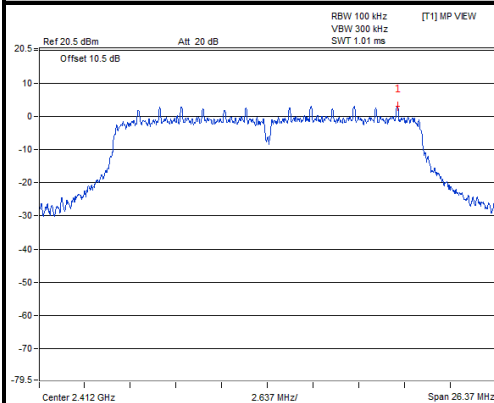




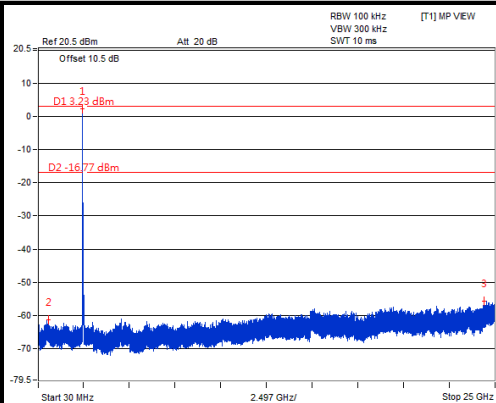
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802.11n (20MHz)

CH 1

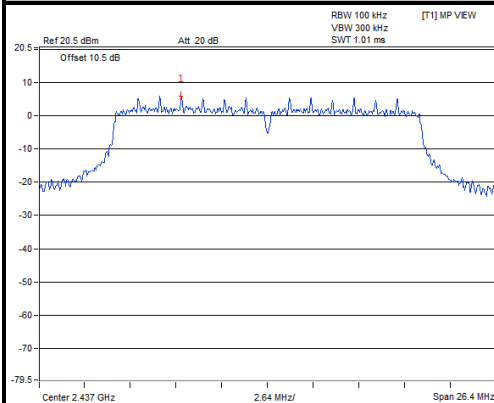


A D T

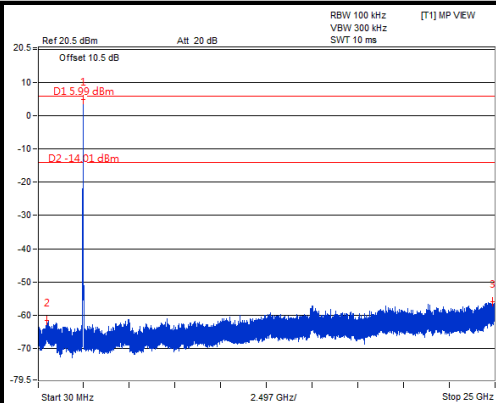


A D T

CH 6

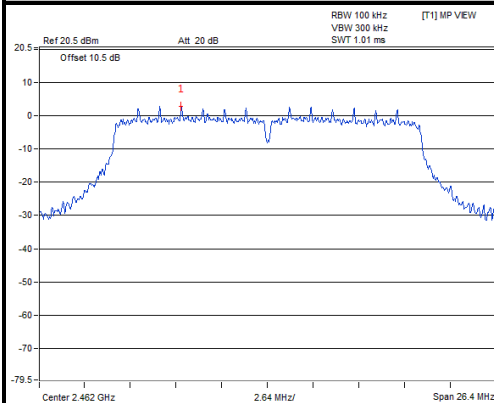


A D T

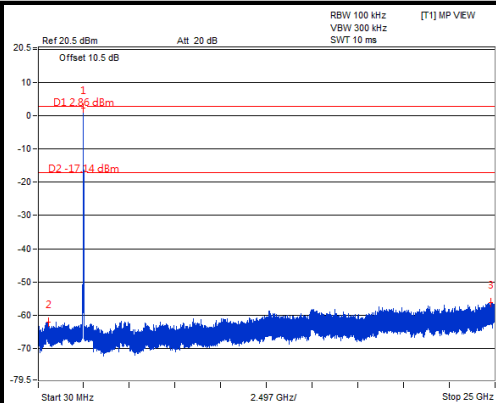


A D T

CH 11



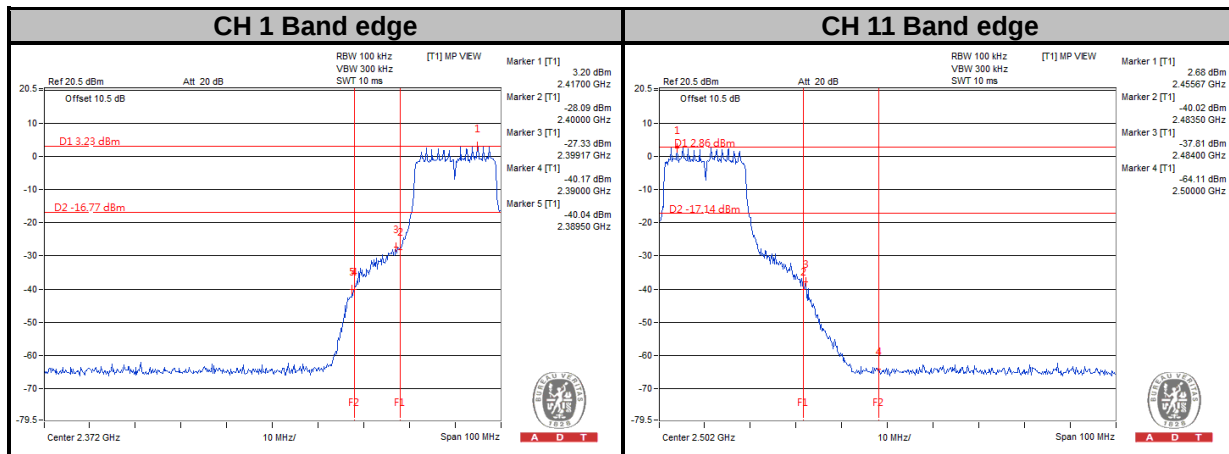
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5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab:

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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.



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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---