

FCC TEST REPORT (15.407)

REPORT NO.: RF140630C01-1

MODEL NO.: F-02G

FCC ID: VQK-F02G

RECEIVED: Aug. 05, 2014

TESTED: Aug. 16 ~ Sep. 10, 2014

ISSUED: Sep. 12, 2014

APPLICANT: FUJITSU LIMITED

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ISSUED BY: Bureau Veritas Consumer Products Services

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140630C01-1	Original release.	Sep. 12, 2014

Report No.: RF140630C01-1 4 of 73 Report Format Version 5.3.0



1. CERTIFICATION

PRODUCT: Smart Phone

MODEL: F-02G

BRAND: FUJITSU

APPLICANT: FUJITSU LIMITED

TESTED: Aug. 16 ~ Sep. 10, 2014

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

ANSI C63.10-2009

The above equipment (model: F-02G) 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: (2 LIVE CHOW, DATE: Sep. 12, 2014)

Celine Chou / Specialist

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 E (SECTION 15.407)					
STANDARD SECTION	TEST TYPE	RESULT	REMARK		
15.407(b)(6)	AC Power Conducted Emissions		Meet the requirement of limit. Minimum passing margin is -3.01dB at 0.49064MHz.		
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement		Meet the requirement of limit. Minimum passing margin is -3.2dB at 10580.00MHz.		
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.		
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.		
15.407(e)	6dB bandwidth		Meet the requirement of limit. (U-NII-3 Band only)		
15.407(g)	Frequency Stability	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
Dadistad ausicaisea	30MHz ~ 200MHz	3.63 dB
	200MHz ~1000MHz	3.64 dB
Radiated emissions	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 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	Smart Phone	
MODEL NO.	F-02G	
POWER SUPPLY MODULATION TYPE	3.8Vdc (Battery) 5Vdc (Adapter or cradle when normal charging) 9Vdc (Adapter or cradle when quick charging) 256QAM, 64QAM, 16QAM, QPSK, BPSK	
MODULATION TECHNOLOGY	OFDM	
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 150.0Mbps 802.11ac: up to 433.3Mbps	
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz	
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 3 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)	
OUTPUT POWER	5180 ~ 5240MHz: 36.983mW 5260 ~ 5320MHz: 36.983mW 5500 ~ 5700MHz: 37.670mW	
ANTENNA TYPE	λ/4 Monopole antenna with -0.4dBi gain	
ANTENNA CONNECTOR	N/A	
DATA CABLE	N/A	
I/O PORTS	Refer to user's manual	
ACCESSORY DEVICES	Refer to Note as below	



NOTE:

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

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX
802.11ac (VHT20)	1TX
802.11ac (VHT40)	1TX
802.11ac (VHT80)	1TX

^{*} The modulation and bandwidth are similar for 802.11n mode for 20MHz / 40MHz and 802.11ac mode for 20MHz / 40MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT contains the following accessories.

PRODUCT	BRAND	MODEL	DESCRIPTION
Battery	NTT docomo	NA	3.8Vdc, 3500mA, 13.3Wh
Cradle	Fujitsu Limited	F47	Input: 5.0Vdc, 1.5A 9.0Vdc, 1.5A Output: 5.0Vdc, 1.5A 9.0Vdc, 1.5A

3. The following adapter is support unit only.

PRODUCT	BRAND	MODEL	DESCRIPTION
			Input: 100-240Vac, 0.12A, 50-60Hz, 0.4A
			Output: 5.0Vdc, 1.5A
Adapter	NTT docomo	AC Adaptor 05	9.0Vdc, 1.5A
			Power line:
			1.25m cable with two cores attached on adapter

- 4. SW version is R15Ae.
- 5. HW version is V2.1.0.
- 6. IMEI Code: 354014060011288.
- 7. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
42	5210MHz

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY	
54	5270 MHz	62	5310 MHz	

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
58	5290MHz



FOR 5500 ~ 5700MHz

8 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

3 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

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

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY	
106	5530MHz	



3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE		APPLICA	ABLE TO		DESCRIPTION		
MODE	RE≥1G	RE<1G	PLC	APCM	DESCRIPTION		
Α	√	\checkmark	√	\checkmark	Powered by adapter		
В	-	V	V	-	Powered by cradle		

Where

RE≥1G: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on X-plane.

2. "-"means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Α	802.11a		36 to 48	36, 40, 48	OFDM	BPSK	6.0
Α	802.11n (HT20)	E100 E040	36 to 48	36, 40, 48	OFDM	BPSK	6.5
Α	802.11n (HT40)	5180-5240	38 to 46	38, 46	OFDM	BPSK	13.5
Α	802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
Α	802.11a		52 to 64	52, 60, 64	OFDM	BPSK	6.0
Α	802.11n (HT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.5
Α	802.11n (HT40)	3200-3320	54 to 62	54, 62	OFDM	BPSK	13.5
Α	802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
Α	802.11a		100 to 140	100, 116, 140	OFDM	BPSK	6.0
Α	802.11n (HT20)	5500 5700	100 to 140	100, 116, 140	OFDM	BPSK	6.5
Α	802.11n (HT40)	5500-5700	102 to 134	102, 110, 134	OFDM	BPSK	13.5
Α	802.11ac (VHT80)		106	106	OFDM	BPSK	29.3

RADIATED EMISSION TEST (BELOW 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

⊠ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5320	36 to 64	36	OFDM	BPSK	6.0
A, B	802.11a	5500-5700	100 to 140	30	OFDM	BPSK	6.0



POWER LINE CONDUCTED EMISSION TEST:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5320	36 to 64	36	OFDM	BPSK	6.0
A, B	802.11a	5500-5700	100 to 140	30	OFDM	BPSK	6.0

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	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Α	802.11a		36 to 48	36, 40, 48	OFDM	BPSK	6.0
Α	802.11n (HT20)	E100 E040	36 to 48	36, 40, 48	OFDM	BPSK	6.5
Α	802.11n (HT40)	5180-5240	38 to 46	38, 46	OFDM	BPSK	13.5
Α	802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
Α	802.11a		52 to 64	52, 60, 64	OFDM	BPSK	6.0
Α	802.11n (HT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.5
Α	802.11n (HT40)	3200-3320	54 to 62	54, 62	OFDM	BPSK	13.5
Α	802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
Α	802.11a		100 to 140	100, 116, 140	OFDM	BPSK	6.0
Α	802.11n (HT20)	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.5
А	802.11n (HT40)	5500-5700	102 to 134	102, 110, 134	OFDM	BPSK	13.5
Α	802.11ac (VHT80)		106	106	OFDM	BPSK	29.3

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
PLC	25deg. C, 70%RH	120Vac, 60Hz	Jones Chang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee



3.3 DUTY CYCLE OF TEST SIGNAL

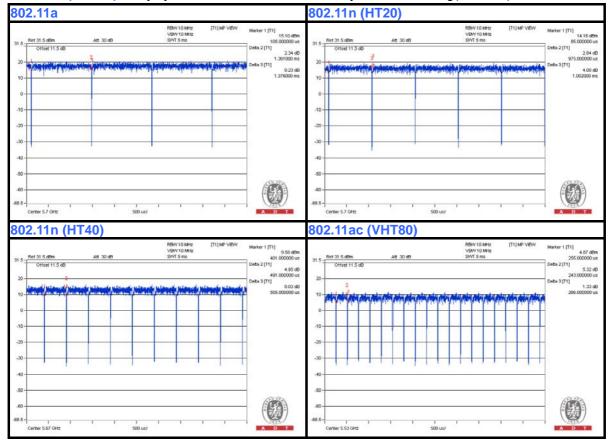
802.11a: Duty cycle = 1.361/1.376 = 0.989, Duty cycle of test signal is > 98%, duty factor is not required.

802.11n (HT20), 802.11n (HT40), 802.11ac (VHT80): Duty cycle of test signal is < 98 %, duty factor is required.

802.11n (HT20): Duty cycle = 0.975/1.002 = 0.973, Duty factor = $10 * \log(1/0.973) = 0.12$

802.11n (HT40): Duty cycle = 0.491/0.505 = 0.972, Duty factor = $10 * \log(1/0.972) = 0.12$

802.11ac (VHT80): Duty cycle = 0.243/0.266 = 0.914, Duty factor = $10 * \log(1/0.914) = 0.39$





3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Adapter	NTT docomo	AC Adaptor 05	NA	NA

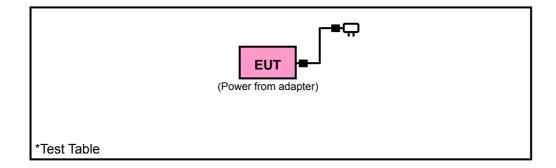
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE:

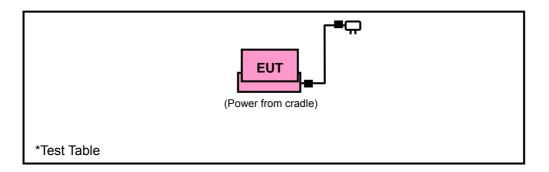
- 1. For item 1: 1.25m DC cable with 2 cores.
- 2. Item 1 is provided by the client.

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST

TEST MODE A



TEST MODE B





3.5 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 E (15.407)
789033 D02 General UNII Test Procedures New Rules v01
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

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT			
789033 D02 General UNII Test	FIELD STRENGTH AT 3m			
Procedures New Rules v01	PK: 74 (dBµV/m)	AV: 54 (dBμV/m)		
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m		
15.407(b)(1)				
15.407(b)(2)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)		
15.407(b)(3)				
15.407(b)(4)	PK: -27 (dBm/MHz) ^{*1} PK: -17 (dBm/MHz) ^{*2}	PK: 68.2 (dBµV/m) ^{*1} PK: 78.2 (dBµV/m) ^{*2}		

NOTE: *1 beyond 10MHz of the band edge *2 within 10 MHz of band edge

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

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



4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 29, 2013	Nov. 28, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Feb. 11, 2014	Feb. 10, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Feb. 25, 2014	Feb. 24, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 12, 2013	Sep. 11, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 17, 2014	Feb. 16, 2015
Preamplifier	8449B	3008A01911	Aug. 22, 2013	Aug. 21, 2014
Agilent	04496	3006A01911	Aug. 22, 2014	Aug. 21, 2015
Preamplifier Agilent	8447D	2944A10638	Oct. 18, 2013	Oct. 17, 2014
RF signal cable	CHOOSE SY 404	248780/4	Aug. 26, 2013	Aug. 25, 2014
HUBER+SUHNNER	SUCOFLEX 104	309222/4 274092/4	Aug. 26, 2014	Aug. 25, 2015
RF signal cable Worken	5D-FB	Cable-HYCH9-01	Aug. 11, 2014	Aug. 10, 2015
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2013	Oct. 17, 2014
High Speed Peak Power Meter	ML2495A	0824011	Jul. 26, 2014	Jul. 25, 2015
Power Sensor	MA2411B	0738171	Jul. 26, 2014	Jul. 25, 2015
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 9, 2014	Jun. 08, 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 test was performed in HwaYa Chamber 9.
- 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 4. The FCC Site Registration No. is 215374.
- 5. The IC Site Registration No. is IC 7450F-9.



4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for 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 ≥ 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.

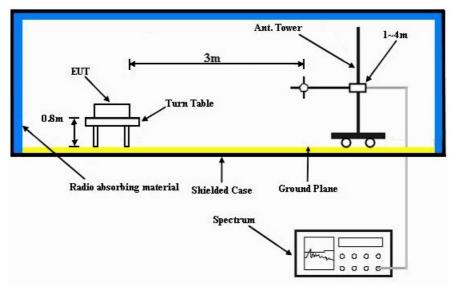
4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

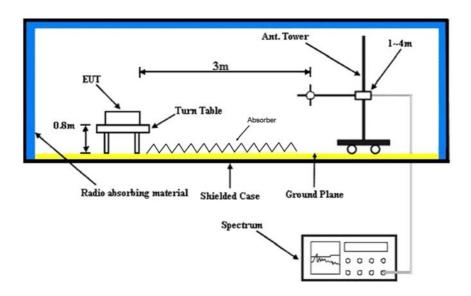


4.1.6 TEST SETUP

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 CONDITION

TEST MODE A

Set the EUT under transmission condition continuously at specific channel frequency.

TEST MODE B

- a. Plugged the EUT into the cradle and placed them on the test table.
- b. Set the EUT under transmission condition continuously at specific channel frequency.



4.1.8 TEST RESULTS

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 36	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	4500.00	56.5 PK	74.0	-17.5	1.00 H	347	55.60	0.90	
2	4500.00	44.2 AV	54.0	-9.8	1.00 H	347	43.30	0.90	
3	*5180.00	98.0 PK			1.00 H	347	58.60	39.40	
4	*5180.00	87.2 AV			1.00 H	347	47.80	39.40	
5	#10360.00	59.9 PK	74.0	-14.1	1.00 H	20	46.00	13.90	
6	#10360.00	46.5 AV	54.0	-7.5	1.00 H	20	32.60	13.90	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	4500.00	56.8 PK	74.0	-17.2	1.00 V	232	55.90	0.90	
2	4500.00	44.3 AV	54.0	-9.7	1.00 V	232	43.40	0.90	
								00.10	
3	*5180.00	99.2 PK			1.00 V	230	59.80	39.40	
3	*5180.00 *5180.00	99.2 PK 88.2 AV			1.00 V 1.00 V	230 230	59.80 48.80	39.40 39.40	
			74.0	-13.9					

- 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 of the restricted band.



CHANNEL	TX Channel 40	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	99.3 PK			1.00 H	349	59.80	39.50		
2	*5200.00	88.5 AV			1.00 H	349	49.00	39.50		
3	#10400.00	59.4 PK	74.0	-14.6	1.00 H	22	45.30	14.10		
4	#10400.00	47.0 AV	54.0	-7.0	1.00 H	22	32.90	14.10		
		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)		
NO .		LEVEL			HEIGHT	ANGLE	VALUE	FACTOR		
	(MHz)	LEVEL (dBuV/m)			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV)	FACTOR (dB/m)		
1	(MHz) *5200.00	LEVEL (dBuV/m) 100.5 PK			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV) 61.00	FACTOR (dB/m) 39.50		

- 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 of the restricted band.



CHANNEL	TX Channel 48	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5240.00	99.2 PK			1.00 H	346	59.60	39.60
2	*5240.00	88.4 AV			1.00 H	346	48.80	39.60
3	5460.00	58.2 PK	74.0	-15.8	1.00 H	346	55.40	2.80
4	5460.00	44.8 AV	54.0	-9.2	1.00 H	346	42.00	2.80
5	#10480.00	61.7 PK	74.0	-12.3	1.00 H	25	46.40	15.30
6	#10480.00	48.3 AV	54.0	-5.7	1.00 H	25	33.00	15.30
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5240.00	99.9 PK			1.00 V	238	60.30	39.60
2	*5240.00	89.5 AV			1.00 V	238	49.90	39.60
3	5460.00	57.7 PK	74.0	-16.3	1.00 V	238	54.90	2.80
4	5460.00	44.9 AV	54.0	-9.1	1.00 V	238	42.10	2.80
5	#10480.00	61.4 PK	74.0	-12.6	1.00 V	129	46.10	15.30
6	#10480.00	48.5 AV	54.0	-5.5	1.00 V	129	33.20	15.30

- 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 of the restricted band.



CHANNEL	TX Channel 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	4500.00	57.0 PK	74.0	-17.0	1.00 H	345	56.10	0.90	
2	4500.00	44.4 AV	54.0	-9.6	1.00 H	345	43.50	0.90	
3	*5260.00	99.5 PK			1.00 H	345	59.90	39.60	
4	*5260.00	88.4 AV			1.00 H	345	48.80	39.60	
5	#10520.00	62.4 PK	74.0	-11.6	1.00 H	10	46.90	15.50	
6	#10520.00	48.9 AV	54.0	-5.1	1.00 H	10	33.40	15.50	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	4500.00	56.7 PK	74.0	-17.3	1.00 V	231	55.80	0.90	
2	4500.00	44.2 AV	54.0	-9.8	1.00 V	231	43.30	0.90	
3	*5260.00	101.4 PK			1.00 V	231	61.80	39.60	
4	*5260.00	90.3 AV			1.00 V	231	50.70	39.60	
5	#10520.00	62.6 PK	74.0	-11.4	1.00 V	124	47.10	15.50	
6	#10520.00	49.1 AV	54.0	-4.9	1.00 V	124	33.60	15.50	

- 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 of the restricted band.



CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5300.00	99.2 PK			1.00 H	344	59.60	39.60
2	*5300.00	88.2 AV			1.00 H	344	48.60	39.60
3	10600.00	61.5 PK	74.0	-12.5	1.00 H	121	45.60	15.90
4	10600.00	48.3 AV	54.0	-5.7	1.00 H	121	32.40	15.90
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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)
NO.		LEVEL			HEIGHT	ANGLE	VALUE	FACTOR
	(MHz)	LEVEL (dBuV/m)			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV)	FACTOR (dB/m)
1	(MHz) *5300.00	LEVEL (dBuV/m) 100.6 PK			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV) 61.00	FACTOR (dB/m) 39.60

- 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.



CHANNEL	TX Channel 64	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5320.00	97.4 PK			1.00 H	351	57.70	39.70	
2	*5320.00	86.8 AV			1.00 H	351	47.10	39.70	
3	5460.00	56.9 PK	74.0	-17.1	1.00 H	351	54.10	2.80	
4	5460.00	43.8 AV	54.0	-10.2	1.00 H	351	41.00	2.80	
5	10640.00	61.9 PK	74.0	-12.1	1.00 H	10	46.00	15.90	
6	10640.00	48.4 AV	54.0	-5.6	1.00 H	10	32.50	15.90	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5320.00	101.2 PK			1.00 V	235	61.50	39.70	
2	*5320.00	90.1 AV			1.00 V	235	50.40	39.70	
3	5460.00	57.1 PK	74.0	-16.9	1.00 V	235	54.30	2.80	
4	5460.00	44.6 AV	54.0	-9.4	1.00 V	235	41.80	2.80	
5	10640.00	61.9 PK	74.0	-12.1	1.00 V	102	46.00	15.90	

- 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.



CHANNEL	TX Channel 100	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	5460.00	57.9 PK	74.0	-16.1	1.09 H	300	55.10	2.80	
2	5460.00	44.8 AV	54.0	-9.2	1.09 H	300	42.00	2.80	
3	#5470.00	58.9 PK	74.0	-15.1	1.19 H	309	56.00	2.90	
4	#5470.00	45.2 AV	54.0	-8.8	1.19 H	309	42.30	2.90	
5	*5500.00	98.0 PK			1.19 H	309	58.10	39.90	
6	*5500.00	87.1 AV			1.19 H	309	47.20	39.90	
7	11000.00	59.4 PK	74.0	-14.6	1.00 H	298	42.40	17.00	
8	11000.00	46.3 AV	54.0	-7.7	1.00 H	298	29.30	17.00	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	5460.00	58.4 PK	74.0	-15.6	1.01 V	186	55.60	2.80	
2	5460.00	44.9 AV	54.0	-9.1	1.01 V	186	42.10	2.80	
3	#5470.00	58.3 PK	74.0	-15.7	1.06 V	191	55.40	2.90	
4	#5470.00	44.7 AV	54.0	-9.3	1.06 V	191	41.80	2.90	
5	*5500.00	102.3 PK			1.06 V	191	62.40	39.90	
6	*5500.00	90.6 AV			1.06 V	191	50.70	39.90	
7	11000.00	59.9 PK	74.0	-14.1	1.00 V	122	42.90	17.00	
						122	·		

- 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 of the restricted band.



CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5580.00	96.8 PK			1.00 H	222	56.80	40.00
2	*5580.00	86.7 AV			1.00 H	222	46.70	40.00
3	11160.00	59.4 PK	74.0	-14.6	1.00 H	13	42.70	16.70
4	11160.00	46.5 AV	54.0	-7.5	1.00 H	13	29.80	16.70
	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
		ANIENNA	APOLARIII	& IESI DI	STANCE: V	ERTICAL A	1 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)
NO .		EMISSION LEVEL	LIMIT	MARGIN	ANTENNA HEIGHT	TABLE ANGLE	RAW VALUE	FACTOR
	(MHz)	EMISSION LEVEL (dBuV/m)	LIMIT	MARGIN	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)
1	(MHz) *5580.00	EMISSION LEVEL (dBuV/m)	LIMIT	MARGIN	ANTENNA HEIGHT (m) 1.01 V	TABLE ANGLE (Degree)	RAW VALUE (dBuV) 61.10	FACTOR (dB/m) 40.00

- 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.



CHANNEL	TX Channel 140	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5700.00	95.7 PK			1.00 H	224	55.50	40.20	
2	*5700.00	85.1 AV			1.00 H	224	44.90	40.20	
3	#5725.00	56.4 PK	74.0	-17.6	1.00 H	224	53.10	3.30	
4	#5725.00	43.4 AV	54.0	-10.6	1.00 H	224	40.10	3.30	
5	11400.00	61.4 PK	74.0	-12.6	1.00 H	122	45.60	15.80	
6	11400.00	47.5 AV	54.0	-6.5	1.00 H	122	31.70	15.80	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5700.00	96.7 PK			1.00 V	260	56.50	40.20	
2	*5700.00	86.7 AV			1.00 V	260	46.50	40.20	
3	#5725.00	57.0 PK	74.0	-17.0	1.00 V	260	53.70	3.30	
4	#5725.00	43.6 AV	54.0	-10.4	1.00 V	260	40.30	3.30	
5	11400.00	61.7 PK	74.0	-12.3	1.00 V	302	45.90	15.80	
6	11400.00	48.0 AV	54.0	-6.0	1.00 V	302	32.20	15.80	

- 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 of the restricted band.



802.11n (HT20)

CHANNEL	TX Channel 36	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	4500.00	56.6 PK	74.0	-17.4	1.00 H	348	55.70	0.90	
2	4500.00	44.2 AV	54.0	-9.8	1.00 H	348	43.30	0.90	
3	*5180.00	96.5 PK			1.00 H	348	57.10	39.40	
4	*5180.00	85.9 AV			1.00 H	348	46.50	39.40	
5	#10360.00	59.3 PK	74.0	-14.7	1.00 H	329	45.40	13.90	
6	#10360.00	46.3 AV	54.0	-7.7	1.00 H	329	32.40	13.90	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	4500.00	56.4 PK	74.0	-17.6	1.00 V	231	55.50	0.90	
2	4500.00	44.4 AV	54.0	-9.6	1.00 V	231	43.50	0.90	
3	*5180.00	98.2 PK			1.00 V	231	58.80	39.40	
3	*5180.00 *5180.00	98.2 PK 87.1 AV			1.00 V 1.00 V	231 231	58.80 47.70	39.40 39.40	
<u> </u>			74.0	-12.4					

- 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 of the restricted band.



CHANNEL	TX Channel 40	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	99.1 PK			1.00 H	349	59.60	39.50	
2	*5200.00	87.9 AV			1.00 H	349	48.40	39.50	
3	#10400.00	59.8 PK	74.0	-14.2	1.00 H	19	45.70	14.10	
4	#10400.00	46.7 AV	54.0	-7.3	1.00 H	19	32.60	14.10	
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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)	
NO.		LEVEL			HEIGHT	ANGLE	VALUE	FACTOR	
	(MHz)	LEVEL (dBuV/m)			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV)	FACTOR (dB/m)	
1	(MHz) *5200.00	LEVEL (dBuV/m) 98.7 PK			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV) 59.20	FACTOR (dB/m) 39.50	

- 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 of the restricted band.



CHANNEL	TX Channel 48	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY &	& TEST DIS	TANCE: HO	RIZONTAL	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	*5240.00	97.8 PK			1.00 H	347	58.20	39.60
2	*5240.00	86.4 AV			1.00 H	347	46.80	39.60
3	5460.00	58.2 PK	74.0	-15.8	1.00 H	347	55.40	2.80
4	5460.00	45.0 AV	54.0	-9.0	1.00 H	347	42.20	2.80
5	#10480.00	63.3 PK	74.0	-10.7	1.00 H	63	48.00	15.30
6	#10480.00	49.1 AV	54.0	-4.9	1.00 H	63	33.80	15.30
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5240.00	99.4 PK			1.00 V	232	59.80	39.60
2	*5240.00	88.9 AV			1.00 V	232	49.30	39.60
3	5460.00	57.6 PK	74.0	-16.4	1.00 V	232	54.80	2.80
4	5460.00	45.0 AV	54.0	-9.0	1.00 V	232	42.20	2.80
5	#10480.00	62.6 PK	74.0	-11.4	1.00 V	198	47.30	15.30

- 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 of the restricted band.



CHANNEL	TX Channel 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY (& TEST DIS	TANCE: HO	RIZONTAL	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	4500.00	56.6 PK	74.0	-17.4	1.00 H	345	55.70	0.90
2	4500.00	44.2 AV	54.0	-9.8	1.00 H	345	43.30	0.90
3	*5260.00	100.2 PK			1.00 H	345	60.60	39.60
4	*5260.00	89.4 AV			1.00 H	345	49.80	39.60
5	#10520.00	63.0 PK	74.0	-11.0	1.00 H	120	47.50	15.50
6	#10520.00	49.3 AV	54.0	-4.7	1.00 H	120	33.80	15.50
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	4500.00	57.1 PK	74.0	-16.9	1.00 V	232	56.20	0.90
2	4500.00	44.3 AV	54.0	-9.7	1.00 V	232	43.40	0.90
3	*5260.00	100.2 PK			1.00 V	232	60.60	39.60
4	*5260.00	89.2 AV			1.00 V	232	49.60	39.60
5	#10520.00	62.1 PK	74.0	-11.9	1.00 V	29	46.60	15.50
6	#10520.00	49.3 AV	54.0	-4.7	1.00 V	29	33.80	15.50

- 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 of the restricted band.



CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5300.00	99.7 PK			1.00 H	343	60.10	39.60	
2	*5300.00	88.8 AV			1.00 H	343	49.20	39.60	
3	10600.00	62.0 PK	74.0	-12.0	1.00 H	135	46.10	15.90	
4	10600.00	48.4 AV	54.0	-5.6	1.00 H	135	32.50	15.90	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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)	
NO.		LEVEL			HEIGHT	ANGLE	VALUE	FACTOR	
	(MHz)	LEVEL (dBuV/m)			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV)	FACTOR (dB/m)	
1	(MHz) *5300.00	LEVEL (dBuV/m) 101.9 PK			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV) 62.30	FACTOR (dB/m) 39.60	

- 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.



CHANNEL	TX Channel 64	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5320.00	98.3 PK			1.00 H	350	58.60	39.70	
2	*5320.00	86.8 AV			1.00 H	350	47.10	39.70	
3	5460.00	59.0 PK	74.0	-15.0	1.00 H	350	56.20	2.80	
4	5460.00	44.8 AV	54.0	-9.2	1.00 H	350	42.00	2.80	
5	10640.00	64.1 PK	74.0	-9.9	1.00 H	320	48.20	15.90	
6	10640.00	49.5 AV	54.0	-4.5	1.00 H	320	33.60	15.90	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5320.00	100.3 PK			1.00 V	232	60.60	39.70	
2	*5320.00	89.5 AV			1.00 V	232	49.80	39.70	
3	5460.00	58.1 PK	74.0	-15.9	1.00 V	232	55.30	2.80	
4	5460.00	45.1 AV	54.0	-8.9	1.00 V	232	42.30	2.80	
5	10640.00	62.7 PK	74.0	-11.3	1.00 V	9	46.80	15.90	
6	10640.00	49.2 AV	54.0	-4.8	1.00 V	9	33.30	15.90	

- 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.



CHANNEL	TX Channel 100	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY &	& TEST DIS	TANCE: HO	RIZONTAL	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	5460.00	58.2 PK	74.0	-15.8	1.00 H	203	55.40	2.80
2	5460.00	45.0 AV	54.0	-9.0	1.00 H	203	42.20	2.80
3	#5470.00	58.9 PK	74.0	-15.1	1.00 H	201	56.00	2.90
4	#5470.00	45.2 AV	54.0	-8.8	1.00 H	201	42.30	2.90
5	*5500.00	97.5 PK			1.00 H	201	57.60	39.90
6	*5500.00	87.0 AV			1.00 H	201	47.10	39.90
7	11000.00	60.5 PK	74.0	-13.5	1.00 H	139	43.50	17.00
8	11000.00	46.9 AV	54.0	-7.1	1.00 H	139	29.90	17.00
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	5460.00	57.9 PK	74.0	-16.1	1.00 V	243	55.10	2.80
2	5460.00	45.1 AV	54.0	-8.9	1.00 V	243	42.30	2.80
3	#5470.00	58.0 PK	74.0	-16.0	1.07 V	230	55.10	2.90
4	#5470.00	45.2 AV	54.0	-8.8	1.07 V	230	42.30	2.90
5	*5500.00	102.4 PK			1.07 V	230	62.50	39.90
6	*5500.00	90.9 AV			1.07 V	230	51.00	39.90
6 7	*5500.00 11000.00	90.9 AV 60.8 PK	74.0	-13.2	1.07 V 1.00 V	230 60	51.00 43.80	39.90 17.00

- 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 of the restricted band.



CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5580.00	97.2 PK			1.00 H	204	57.20	40.00		
2	*5580.00	86.4 AV			1.00 H	204	46.40	40.00		
3	11160.00	59.9 PK	74.0	-14.1	1.00 H	323	43.20	16.70		
4	11160.00	46.4 AV	54.0	-7.6	1.00 H	323	29.70	16.70		
		ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO. FREQ. (MHz) EMISSION LEVEL (dBuV/m) (dB) ANTENNA TABLE RAW CORRE										
NO.		EMISSION LEVEL			HEIGHT	ANGLE	VALUE	CORRECTION FACTOR (dB/m)		
NO .		EMISSION LEVEL			HEIGHT	ANGLE	VALUE	FACTOR		
	(MHz)	EMISSION LEVEL (dBuV/m)			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV)	FACTOR (dB/m)		
1	(MHz) *5580.00	EMISSION LEVEL (dBuV/m) 98.4 PK			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV) 58.40	FACTOR (dB/m) 40.00		

- 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.



CHANNEL	TX Channel 140	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY (& TEST DIS	TANCE: HO	RIZONTAL	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	*5700.00	93.8 PK			1.00 H	224	53.60	40.20
2	*5700.00	83.2 AV			1.00 H	224	43.00	40.20
3	#5725.00	56.6 PK	74.0	-17.4	1.00 H	224	53.30	3.30
4	#5725.00	43.4 AV	54.0	-10.6	1.00 H	224	40.10	3.30
5	11400.00	61.1 PK	74.0	-12.9	1.00 H	259	45.30	15.80
6	11400.00	47.7 AV	54.0	-6.3	1.00 H	259	31.90	15.80
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5700.00	97.4 PK			1.01 V	238	57.20	40.20
2	*5700.00	86.4 AV			1.01 V	238	46.20	40.20
3	#5725.00	57.0 PK	74.0	-17.0	1.01 V	238	53.70	3.30
4	#5725.00	44.1 AV	54.0	-9.9	1.01 V	238	40.80	3.30
5	11400.00	62.6 PK	74.0	-11.4	1.00 V	113	46.80	15.80
6	11400.00	48.1 AV	54.0	-5.9	1.00 V	113	32.30	15.80

- 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 of the restricted band.



802.11n (HT40)

CHANNEL	TX Channel 38	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	4500.00	56.1 PK	74.0	-17.9	1.00 H	341	55.20	0.90		
2	4500.00	44.3 AV	54.0	-9.7	1.00 H	341	43.40	0.90		
3	*5190.00	94.7 PK			1.00 H	341	55.20	39.50		
4	*5190.00	85.8 AV			1.00 H	341	46.30	39.50		
5	#10380.00	60.8 PK	74.0	-13.2	1.00 H	109	46.70	14.10		
6	#10380.00	46.9 AV	54.0	-7.1	1.00 H	109	32.80	14.10		
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	4500.00	57.0 PK	74.0	-17.0	1.01 V	231	56.10	0.90		
2	4500.00	44.5 AV	54.0	-9.5	1.01 V	231	43.60	0.90		
3	*5190.00	94.8 PK			1.01 V	231	55.30	39.50		
3	*5190.00 *5190.00	94.8 PK 85.8 AV			1.01 V 1.01 V	231 231	55.30 46.30	39.50 39.50		
<u> </u>			74.0	-12.9						

- 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 of the restricted band.



CHANNEL	TX Channel 46	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5230.00	95.5 PK			1.00 H	339	55.90	39.60		
2	*5230.00	84.8 AV			1.00 H	339	45.20	39.60		
3	5460.00	58.8 PK	74.0	-15.2	1.00 H	339	56.00	2.80		
4	5460.00	45.1 AV	54.0	-8.9	1.00 H	339	42.30	2.80		
5	#10460.00	61.4 PK	74.0	-12.6	1.00 H	15	46.60	14.80		
6	#10460.00	47.6 AV	54.0	-6.4	1.00 H	15	32.80	14.80		
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5230.00	96.2 PK			1.00 V	230	56.60	39.60		
2	*5230.00	84.9 AV			1.00 V	230	45.30	39.60		
3	5460.00	58.3 PK	74.0	-15.7	1.00 V	230	55.50	2.80		
4	5460.00	44.8 AV	54.0	-9.2	1.00 V	230	42.00	2.80		
5	#10460.00	61.6 PK	74.0	-12.4	1.00 V	323	46.80	14.80		
6	#10460.00	48.4 AV	54.0	-5.6	1.00 V	323	33.60	14.80		

- 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 of the restricted band.



CHANNEL	TX Channel 54	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	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	4500.00	56.9 PK	74.0	-17.1	1.00 H	342	56.00	0.90
2	4500.00	44.3 AV	54.0	-9.7	1.00 H	342	43.40	0.90
3	*5270.00	98.3 PK			1.00 H	342	58.70	39.60
4	*5270.00	93.5 AV			1.00 H	342	53.90	39.60
5	#10540.00	62.5 PK	74.0	-11.5	1.00 H	227	46.90	15.60
6	#10540.00	49.1 AV	54.0	-4.9	1.00 H	227	33.50	15.60
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	4500.00	56.7 PK	74.0	-17.3	1.00 V	249	55.80	0.90
2	4500.00	44.2 AV	54.0	-9.8	1.00 V	249	43.30	0.90
3	*5270.00	95.2 PK			1.00 V	249	55.60	39.60
4	*5270.00	88.1 AV			1.00 V	249	48.50	39.60
5	#10540.00	62.7 PK	74.0	-11.3	1.00 V	152	47.10	15.60
6	#10540.00	49.4 AV	54.0	-4.6	1.00 V	152	33.80	15.60

- 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 of the restricted band.



CHANNEL	TX Channel 62	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	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	*5310.00	96.3 PK			1.00 H	347	56.70	39.60
2	*5310.00	85.3 AV			1.00 H	347	45.70	39.60
3	5460.00	58.1 PK	74.0	-15.9	1.00 H	347	55.30	2.80
4	5460.00	44.9 AV	54.0	-9.1	1.00 H	347	42.10	2.80
5	10620.00	62.2 PK	74.0	-11.8	1.00 H	59	46.30	15.90
6	10620.00	49.0 AV	54.0	-5.0	1.00 H	59	33.10	15.90
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5310.00	95.2 PK			1.00 V	265	55.60	39.60
2	*5310.00	83.9 AV			1.00 V	265	44.30	39.60
3	5460.00	58.4 PK	74.0	-15.6	1.00 V	265	55.60	2.80
4	5460.00	45.1 AV	54.0	-8.9	1.00 V	265	42.30	2.80
5	10620.00	61.9 PK	74.0	-12.1	1.00 V	196	46.00	15.90
6	10620.00	48.7 AV	54.0	-5.3	1.00 V	196	32.80	15.90

- 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.



CHANNEL	TX Channel 102	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	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	5460.00	58.3 PK	74.0	-15.7	1.00 H	296	55.50	2.80
2	5460.00	44.9 AV	54.0	-9.1	1.00 H	296	42.10	2.80
3	#5470.00	59.2 PK	74.0	-14.8	1.16 H	290	56.30	2.90
4	#5470.00	45.6 AV	54.0	-8.4	1.16 H	290	42.70	2.90
5	*5510.00	97.8 PK			1.16 H	290	57.90	39.90
6	*5510.00	86.5 AV			1.16 H	290	46.60	39.90
7	11020.00	62.9 PK	74.0	-11.1	1.00 H	268	45.90	17.00
8	11020.00	47.1 AV	54.0	-6.9	1.00 H	268	30.10	17.00
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	5460.00	57.9 PK	74.0	-16.1	1.00 V	209	55.10	2.80
2	5460.00	45.0 AV	54.0	-9.0	1.00 V	209	42.20	2.80
3	#5470.00	58.9 PK	74.0	-15.1	1.08 V	200	56.00	2.90
4	#5470.00	45.6 AV	54.0	-8.4	1.08 V	200	42.70	2.90
5	*5510.00	97.6 PK			1.08 V	200	57.70	39.90
6	*5510.00	86.4 AV			1.08 V	200	46.50	39.90
7	11020.00	59.8 PK	74.0	-14.2	1.00 V	359	42.80	17.00
8	11020.00	46.9 AV	54.0	-7.1	1.00 V	359	29.90	17.00

- 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 of the restricted band.



CHANNEL	TX Channel 110	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5550.00	93.4 PK			1.00 H	334	53.40	40.00		
2	*5550.00	82.4 AV			1.00 H	334	42.40	40.00		
3	11100.00	59.6 PK	74.0	-14.4	1.00 H	29	42.90	16.70		
4	11100.00	46.3 AV	54.0	-7.7	1.00 H	29	29.60	16.70		
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
	FREQ. EMISSION LIMIT MARGIN ANTENNA TABLE RAW CORRECTION									
NO.		LEVEL			HEIGHT	ANGLE	VALUE			
NO.		LEVEL			HEIGHT	ANGLE	VALUE	FACTOR		
	(MHz)	LEVEL (dBuV/m)			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV)	FACTOR (dB/m)		
1	(MHz) *5550.00	LEVEL (dBuV/m) 96.0 PK			HEIGHT (m)	ANGLE (Degree)	VALUE (dBuV) 56.00	FACTOR (dB/m) 40.00		

- 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.



CHANNEL	TX Channel 134	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5670.00	94.7 PK			1.11 H	291	54.50	40.20	
2	*5670.00	83.6 AV			1.11 H	291	43.40	40.20	
3	#5725.00	57.4 PK	74.0	-16.6	1.11 H	291	54.10	3.30	
4	#5725.00	43.3 AV	54.0	-10.7	1.11 H	291	40.00	3.30	
5	11340.00	60.3 PK	74.0	-13.7	1.00 H	298	44.20	16.10	
6	11340.00	47.1 AV	54.0	-6.9	1.00 H	298	31.00	16.10	
		ANTENNA	A POLARITY	/ & TEST D	STANCE: V	ERTICAL A	T 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	*5670.00	96.3 PK			1.00 V	294	56.10	40.20	
2	*5670.00	84.7 AV			1.00 V	294	44.50	40.20	
3	#5725.00	56.1 PK	74.0	-17.9	1.00 V	294	52.80	3.30	
4	#5725.00	44.3 AV	54.0	-9.7	1.00 V	294	41.00	3.30	
5	11340.00	60.7 PK	74.0	-13.3	1.00 V	85	44.60	16.10	
6	11340.00	47.2 AV	54.0	-6.8	1.00 V	85	31.10	16.10	

- 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 of the restricted band.



802.11ac (VHT80)

CHANNEL	TX Channel 42	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	56.0 PK	74.0	-18.0	1.00 H	349	53.70	2.30		
2	5150.00	44.1 AV	54.0	-9.9	1.00 H	349	41.80	2.30		
3	*5210.00	91.1 PK			1.00 H	349	50.60	40.50		
4	*5210.00	81.1 AV			1.00 H	349	40.60	40.50		
5	#10420.00	61.3 PK	74.0	-12.7	1.05 H	324	46.30	15.00		
6	#10420.00	49.5 AV	54.0	-4.5	1.05 H	324	34.50	15.00		
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	56.2 PK	74.0	-17.8	1.00 V	269	53.90	2.30		
2	5150.00	44.4 AV	54.0	-9.6	1.00 V	269	42.10	2.30		
3	*5210.00	91.9 PK			1.00 V	269	51.40	40.50		
4	*5210.00	82.2 AV			1.00 V	269	41.70	40.50		
5	#10420.00	60.5 PK	74.0	-13.5	1.51 V	52	45.50	15.00		
6	#10420.00	49.4 AV	54.0	-4.6	1.51 V	52	34.40	15.00		

- 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 of the restricted band.



CHANNEL	TX Channel 58	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

	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	*5290.00	91.3 PK			1.00 H	347	50.80	40.50	
2	*5290.00	81.6 AV			1.00 H	347	41.10	40.50	
3	5350.00	58.2 PK	74.0	-15.8	1.00 H	347	55.60	2.60	
4	5350.00	46.5 AV	54.0	-7.5	1.00 H	347	43.90	2.60	
5	#10580.00	62.2 PK	74.0	-11.8	1.02 H	284	45.90	16.30	
6	#10580.00	50.8 AV	54.0	-3.2	1.02 H	284	34.50	16.30	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	*5290.00	93.0 PK			1.00 V	269	52.50	40.50	
2	*5290.00	83.3 AV			1.00 V	269	42.80	40.50	
3	5350.00	57.5 PK	74.0	-16.5	1.00 V	269	54.90	2.60	
4	5350.00	46.4 AV	54.0	-7.6	1.00 V	269	43.80	2.60	
	#10580.00	61.9 PK	74.0	-12.1	1.52 V	63	45.60	16.30	
5	#10560.00	01.9 F K	74.0	12.1	1.02 V	00	10.00	10.00	

- 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 of the restricted band.



CHANNEL	TX Channel 106	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	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	5460.00	57.3 PK	74.0	-16.7	1.00 H	328	54.50	2.80
2	5460.00	45.3 AV	54.0	-8.7	1.00 H	328	42.50	2.80
3	#5470.00	58.4 PK	74.0	-15.6	1.00 H	328	55.50	2.90
4	#5470.00	46.4 AV	54.0	-7.6	1.00 H	328	43.50	2.90
5	*5530.00	87.8 PK			1.00 H	328	46.80	41.00
6	*5530.00	77.9 AV			1.00 H	328	36.90	41.00
7	11060.00	63.4 PK	74.0	-10.6	1.05 H	35	45.20	18.20
8	11060.00	50.7 AV	54.0	-3.3	1.05 H	35	32.50	18.20
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	5460.00	57.5 PK	74.0	-16.5	1.08 V	208	54.70	2.80
2	5460.00	46.0 AV	54.0	-8.0	1.08 V	208	43.20	2.80
3	#5470.00	59.0 PK	74.0	-15.0	1.08 V	208	56.10	2.90
4	#5470.00	46.5 AV	54.0	-7.5	1.08 V	208	43.60	2.90
5	*5530.00	95.3 PK			1.08 V	208	54.30	41.00
6	*5530.00	85.4 AV			1.08 V	208	44.40	41.00
7	11060.00	61.8 PK	74.0	-12.2	1.00 V	250	43.60	18.20
8	11060.00	50.7 AV	54.0	-3.3	1.00 V	250	32.50	18.20

- 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 of the restricted band.



BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 36	DETECTOR	Ougsi Book (OD)	
FREQUENCY RANGE	30MHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)	
TEST MODE	Α			

	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	30.00	20.3 QP	40.0	-19.7	2.00 H	77	36.00	-15.70		
2	54.90	19.1 QP	40.0	-20.9	2.00 H	191	32.90	-13.80		
3	70.40	20.1 QP	40.0	-19.9	1.01 H	5	36.20	-16.10		
4	151.20	21.8 QP	43.5	-21.7	2.00 H	255	35.30	-13.50		
5	396.90	25.8 QP	46.0	-20.2	2.00 H	190	36.60	-10.80		
6	468.40	26.4 QP	46.0	-19.6	2.00 H	175	35.90	-9.50		
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 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	33.10	35.6 QP	40.0	-4.4	1.00 V	212	51.40	-15.80		
2	59.50	25.0 QP	40.0	-15.0	1.00 V	329	39.50	-14.50		
3	134.20	20.2 QP	43.5	-23.3	1.00 V	12	35.20	-15.00		
4	155.90	19.3 QP	43.5	-24.2	1.00 V	268	32.70	-13.40		
5	457.50	24.6 QP	46.0	-21.4	1.99 V	153	34.20	-9.60		
6	923.80	30.4 QP	46.0	-15.6	1.99 V	15	31.40	-1.00		

- 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



CHANNEL	TX Channel 36	DETECTOR	Ougsi Book (OD)	
FREQUENCY RANGE	30MHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)	
TEST MODE	В			

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	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	56.40	20.8 QP	40.0	-19.2	1.00 H	188	35.00	-14.20	
2	121.70	24.5 QP	43.5	-19.0	1.99 H	151	40.90	-16.40	
3	163.70	24.8 QP	43.5	-18.7	1.99 H	259	38.90	-14.10	
4	239.90	23.3 QP	46.0	-22.7	1.24 H	130	38.00	-14.70	
5	437.30	31.2 QP	46.0	-14.8	1.99 H	232	40.70	-9.50	
6	647.10	26.7 QP	46.0	-19.3	1.24 H	144	32.40	-5.70	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M		
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	LIMIT MARGIN ANTENNA TABLE RAW CORRECT					
					` '	· • /	•	` '	
1	33.10	33.8 QP	40.0	-6.2	1.01 V	312	49.90	-16.10	
2	33.10 53.30	33.8 QP 29.6 QP	40.0 40.0	-6.2 -10.4	, ,		49.90 43.70		
					1.01 V	312		-16.10	
2	53.30	29.6 QP	40.0	-10.4	1.01 V 1.01 V	312 345	43.70	-16.10 -14.10	
3	53.30 188.60	29.6 QP 25.0 QP	40.0 43.5	-10.4 -18.5	1.01 V 1.01 V 2.00 V	312 345 201	43.70 41.20	-16.10 -14.10 -16.20	

- 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 (dBµV)			
	Quasi-peak	Average		
0.15 ~ 0.5	66 to 56	56 to 46		
0.5 ~ 5	56	46		
5 ~ 30	60	50		

NOTE: 1. The lower limit shall apply at the transition frequencies.

- 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
- 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	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 (EUT)	ESH3-Z5	835239/001	Feb. 13, 2014	Feb. 12, 2015
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 21, 2014	Jul. 20, 2015
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

- 2. The test was performed in HwaYa Shielded Room 1.
- 3. The VCCI Site Registration No. is C-2040.



4.2.3 TEST PROCEDURES

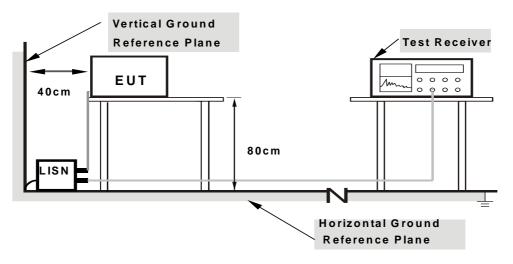
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit 20dB) 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 from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



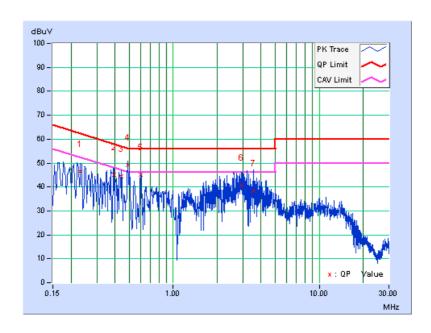
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

No Fr	Freq. Corr.		Readin	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB	(uV)]	[dB	[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.23216	0.09	46.36	35.00	46.45	35.09	62.37	52.37	-15.92	-17.28	
2	0.39242	0.11	44.88	30.96	44.99	31.07	58.01	48.01	-13.02	-16.94	
3	0.44325	0.12	44.28	30.81	44.40	30.93	57.00	47.00	-12.60	-16.07	
4	0.48935	0.12	48.94	41.47	49.06	41.59	56.18	46.18	-7.11	-4.58	
5	0.60185	0.14	44.94	36.40	45.08	36.54	56.00	46.00	-10.92	-9.46	
6	2.93783	0.25	40.47	28.80	40.72	29.05	56.00	46.00	-15.28	-16.95	
7	3.56343	0.26	38.05	26.71	38.31	26.97	56.00	46.00	-17.69	-19.03	

- 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

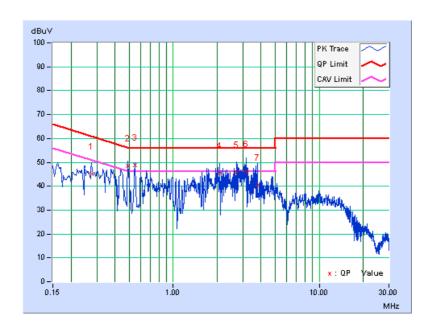




PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. Corr.		Reading Value		Emission Level		Limit		Margin	
NO		Factor	[dB	(uV)]	[dB	(uV)]	[dB	(uV)]	(dl	B)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.27512	0.12	45.16	31.64	45.28	31.76	60.96	50.96	-15.68	-19.20
2	0.49197	0.18	48.17	41.43	48.35	41.61	56.13	46.13	-7.79	-4.53
3	0.54882	0.18	48.71	41.44	48.89	41.62	56.00	46.00	-7.11	-4.38
4	2.08545	0.22	45.36	34.17	45.58	34.39	56.00	46.00	-10.42	-11.61
5	2.72278	0.23	45.48	31.03	45.71	31.26	56.00	46.00	-10.29	-14.74
6	3.18416	0.24	45.79	28.09	46.03	28.33	56.00	46.00	-9.97	-17.67
7	3.75893	0.26	40.31	23.71	40.57	23.97	56.00	46.00	-15.43	-22.03

- 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

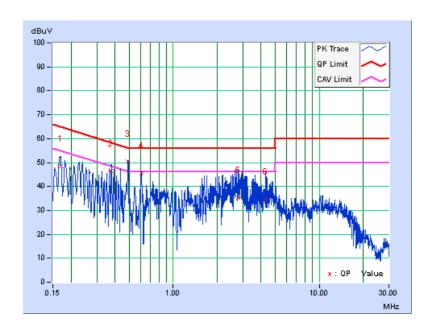




PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	В		

No	Freq. Corr.		Reading Value			Emission Level		Limit		Margin	
NO		Factor	[dB	(uV)]	[dB (uV)]		[dB (uV)]		(dB)		
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.16955	0.10	48.25	36.80	48.35	36.90	64.98	54.98	-16.63	-18.08	
2	0.37678	0.11	46.51	33.71	46.62	33.82	58.35	48.35	-11.73	-14.53	
3	0.49064	0.13	50.31	43.02	50.44	43.15	56.16	46.16	-5.72	-3.01	
4	0.60418	0.14	45.23	36.80	45.37	36.94	56.00	46.00	-10.63	-9.06	
5	2.80489	0.25	35.22	26.57	35.47	26.82	56.00	46.00	-20.53	-19.18	
6	4.28678	0.27	34.55	24.62	34.82	24.89	56.00	46.00	-21.18	-21.11	

- 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

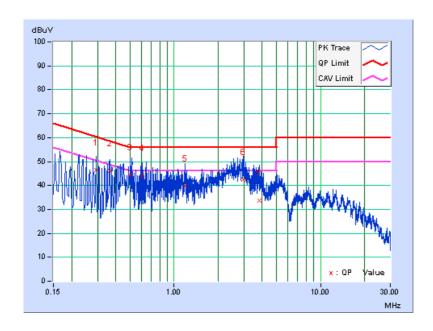




PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	В		

Na	Freq. Corr.		Fred		Emission Level		Limit		Margin	
No	_	ractor	[dB	(uV)]	[dB	(uV)]	[dB	(uV)]	(d	B)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.29467	0.13	46.17	33.98	46.30	34.11	60.39	50.39	-14.09	-16.28
2	0.36505	0.16	46.05	33.66	46.21	33.82	58.61	48.61	-12.41	-14.80
3	0.50190	0.18	44.32	32.50	44.50	32.68	56.00	46.00	-11.50	-13.32
4	0.60356	0.19	44.08	32.28	44.27	32.47	56.00	46.00	-11.73	-13.53
5	1.19397	0.22	39.52	29.98	39.74	30.20	56.00	46.00	-16.26	-15.80
6	2.98866	0.24	42.02	32.44	42.26	32.68	56.00	46.00	-13.74	-13.32
7	3.84104	0.26	33.37	23.56	33.63	23.82	56.00	46.00	-22.37	-22.18

- 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





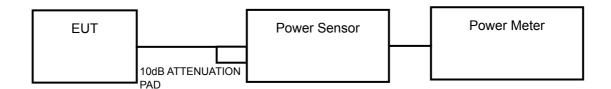
4.3 TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

Operation Band		EUT Category	LIMIT
LI NIII 4	Outdoor Access Point		1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
U-IVII- I		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	\checkmark	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	$\sqrt{}$		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	$\sqrt{}$		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3			1 Watt (30 dBm)

^{*}B is the 26 dB emission bandwidth in megahertz

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.



4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

For 802.11a, 802.11n (HT20), 802.11n (HT40)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

For 802.11ac (VHT80)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to "free run".
- 3) Set RBW = 1 MHz.
- 4) Set VBW ≥ 3 MHz
- 5) Number of points in sweep ≥ 2 Span / RBW.
- 6) Sweep time ≤ (number of points in sweep) * T
- 7) Detector = RMS.
- 8) Trace mode = max hold.
- 9) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

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 specific channel frequencies individually.



4.3.7 TEST RESULTS

POWER OUTPUT:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	34.834	15.42	24	PASS
40	5200	36.983	15.68	24	PASS
48	5240	35.892	15.55	24	PASS
52	5260	36.813	15.66	24	PASS
60	5300	36.983	15.68	24	PASS
64	5320	29.923	14.76	24	PASS
100	5500	32.509	15.12	24	PASS
116	5580	37.670	15.76	24	PASS
140	5700	37.239	15.71	24	PASS

NOTE:

For U-NII-2A, U-NII-2C Band:

```
1. 11dBm + 10log ( 22.70 ) = 24.56 > 24dBm

2. 11dBm + 10log ( 23.32 ) = 24.68 > 24dBm

3. 11dBm + 10log ( 23.01 ) = 24.62 > 24dBm

4. 11dBm + 10log ( 22.79 ) = 24.58 > 24dBm

5. 11dBm + 10log ( 22.58 ) = 24.54 > 24dBm

6. 11dBm + 10log ( 24.17 ) = 24.83 > 24dBm
```

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	27.797	14.44	24	PASS
40	5200	30.409	14.83	24	PASS
48	5240	30.269	14.81	24	PASS
52	5260	30.479	14.84	24	PASS
60	5300	31.477	14.98	24	PASS
64	5320	29.444	14.69	24	PASS
100	5500	23.823	13.77	24	PASS
116	5580	27.925	14.46	24	PASS
140	5700	30.409	14.83	24	PASS

NOTE:

For U-NII-2A, U-NII-2C Band:

1. 11dBm + 10log	(22.40)	=	24.50	>	24dBm
2. 11dBm + 10log	(22.39)	=	24.50	>	24dBm
3. 11dBm + 10log	(22.37)	=	24.50	>	24dBm
4. 11dBm + 10log	(22.41)	=	24.50	>	24dBm
5. 11dBm + 10log	(22.36)	=	24.49	>	24dBm
6. 11dBm + 10log	(22.85)	=	24.59	>	24dBm



802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	26.242	14.19	24	PASS
46	5230	27.164	14.34	24	PASS
54	5270	27.542	14.40	24	PASS
62	5310	25.763	14.11	24	PASS
102	5510	20.845	13.19	24	PASS
110	5550	22.284	13.48	24	PASS
134	5670	24.378	13.87	24	PASS

NOTE:

For U-NII-2A, U-NII-2C Band:

```
1. 11dBm + 10log ( 45.32 ) = 27.56 > 24dBm

2. 11dBm + 10log ( 45.20 ) = 27.55 > 24dBm

3. 11dBm + 10log ( 45.00 ) = 27.53 > 24dBm

4. 11dBm + 10log ( 45.60 ) = 27.59 > 24dBm

5. 11dBm + 10log ( 45.15 ) = 27.55 > 24dBm
```

802.11ac (VHT80)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	20.184	13.05	24	PASS
58	5290	19.953	13.00	24	PASS
106	5530	21.038	13.23	24	PASS

NOTE:

For U-NII-2A, U-NII-2C Band:

```
1. 11dBm + 10log ( 84.70 ) = 30.28 > 24dBm
2. 11dBm + 10log ( 84.73 ) = 30.28 > 24dBm
```



26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	22.70	PASS
60	5300	23.32	PASS
64	5320	23.01	PASS
100	5500	22.79	PASS
116	5580	22.58	PASS
140	5700	24.17	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	22.40	PASS
60	5300	22.39	PASS
64	5320	22.37	PASS
100	5500	22.41	PASS
116	5580	22.36	PASS
140	5700	22.85	PASS

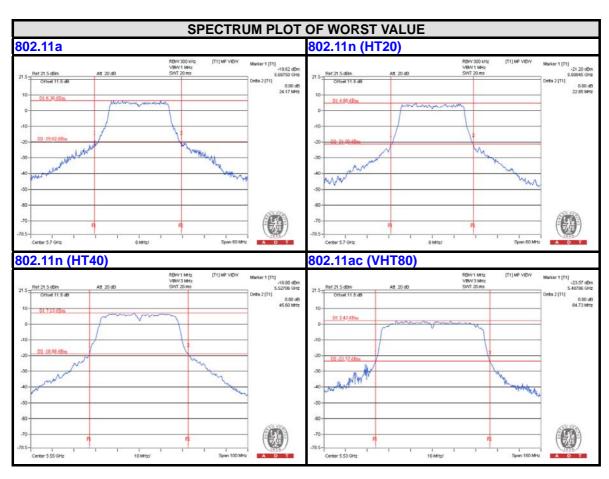
802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	45.32	PASS
62	5310	45.20	PASS
102	5510	45.00	PASS
110	5550	45.60	PASS
134	5670	45.15	PASS

802.11ac (VHT80)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
58	5290	84.70	PASS
106	5530	84.73	PASS







4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Operation Band		EUT Category	LIMIT
		Outdoor Access Point	
11 NIII 4		Fixed point-to-point Access Point	17dBm/ MHz
U-NII-1		Indoor Access Point	
	$\sqrt{}$	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	$\sqrt{}$		11dBm/ MHz
U-NII-2C	$\sqrt{}$		11dBm/ MHz
U-NII-3			30dBm/ MHz

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.



4.4.4 TEST PROCEDURES

For 802.11a:

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value

For 802.11n (HT20), 802.11n (HT40), 802.11ac (VHT80):

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add 10 log (1/duty cycle)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.



4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	2.00	11	PASS
40	5200	2.12	11	PASS
48	5240	2.11	11	PASS
52	5260	2.37	11	PASS
60	5300	2.11	11	PASS
64	5320	1.59	11	PASS
100	5500	1.48	11	PASS
116	5580	2.15	11	PASS
140	5700	1.80	11	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.82	0.12	0.94	11	PASS
40	5200	1.05	0.12	1.17	11	PASS
48	5240	0.79	0.12	0.91	11	PASS
52	5260	1.19	0.12	1.31	11	PASS
60	5300	1.24	0.12	1.36	11	PASS
64	5320	0.35	0.12	0.47	11	PASS
100	5500	-0.16	0.12	-0.04	11	PASS
116	5580	0.66	0.12	0.78	11	PASS
140	5700	0.32	0.12	0.44	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.



802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.37	0.12	-2.25	11	PASS
46	5230	-2.38	0.12	-2.26	11	PASS
54	5270	-1.94	0.12	-1.82	11	PASS
62	5310	-2.34	0.12	-2.22	11	PASS
102	5510	-3.44	0.12	-3.32	11	PASS
110	5550	-2.75	0.12	-2.63	11	PASS
134	5670	-3.53	0.12	-3.41	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-6.86	0.39	-6.47	11	PASS
58	5290	-6.10	0.39	-5.71	11	PASS
106	5530	-7.94	0.39	-7.55	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.





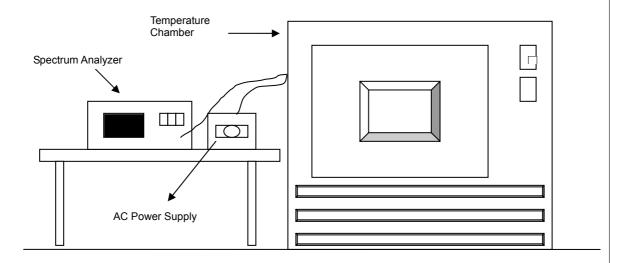


4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.



4.5.4 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.



4.5.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
			OP	ERATING F	REQUENCY:	: 5320MHz			
	POWER	0 MIN	NUTE	2 MIN	NUTE	5 MIN	NUTE	10 MI	NUTE
TEMP. (℃)	SUPPLY (Vac)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
55	120	5320.0045	0.00008	5320.0046	0.00009	5320.0064	0.00012	5320.0088	0.00017
50	120	5319.9809	-0.00036	5319.979	-0.00039	5319.9772	-0.00043	5319.9779	-0.00042
40	120	5320.0152	0.00029	5320.0173	0.00033	5320.0183	0.00034	5320.0161	0.00030
30	120	5320.0041	0.00008	5320.0058	0.00011	5320.0073	0.00014	5320.0065	0.00012
20	120	5320.0118	0.00022	5320.016	0.00030	5320.0137	0.00026	5320.0143	0.00027
10	120	5320.0166	0.00031	5320.0144	0.00027	5320.0156	0.00029	5320.017	0.00032
0	120	5320.0006	0.00001	5320.0014	0.00003	5319.9978	-0.00004	5319.9975	-0.00005
-10	120	5319.9736	-0.00050	5319.9736	-0.00050	5319.9735	-0.00050	5319.9772	-0.00043
-20	120	5320.0046	0.00009	5320.0052	0.00010	5320.0031	0.00006	5320.0035	0.00007

FREQUEMCY STABILITY VERSUS TEMP.									
	OPERATING FREQUENCY: 5320MHz								
	0 MINUTE 2 MINUTE 5 MINUTE 10 MINUTE								NUTE
TEMP. (°C)	POWER SUPPLY (Vac)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
	138	5320.0032	0.00006	5320.0058	0.00011	5320.0064	0.00012	5320.0058	0.00011
20	120	5320.0041	0.00008	5320.0058	0.00011	5320.0073	0.00014	5320.0065	0.00012
	102	5320.0041	0.00008	5320.0055	0.00010	5320.0068	0.00013	5320.0074	0.00014



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: Hsin Chu EMC/RF/Telecom Lab:

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



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

ENGINEERING CHANGES TO THE EUT BY THE LAB
No modifications were made to the EUT by the lab during the test.
END