

FCC Test Report

Report No.: RF160624C13-4

FCC ID: B32CARBON10S

Test Model: Carbon 10 Stand Printer

Received Date: Jun. 24, 2016

Test Date: Jul. 18, 2016 ~ Jul. 26, 2016

Issued Date: Aug. 04, 2016

Applicant: Verifone, Inc.

Address: 1400 West Stanford Ranch Road Suite 200 Rocklin CA 95765 USA

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
(R.O.C)

Test Location: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan
Hsien 333, Taiwan, R.O.C.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results.....	6
2.1 Measurement Uncertainty.....	6
2.2 Modification Record	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.....	10
3.3 Duty Cycle of Test Signal	12
3.4 Description of Support Units	13
3.4.1 Configuration of System under Test	13
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 Limits of Unwanted Emission Out of the Restricted Bands	14
4.1.3 Test Instruments	15
4.1.4 Test Procedures.....	16
4.1.5 Deviation from Test Standard	16
4.1.6 Test Set Up	17
4.1.7 EUT Operating Conditions.....	17
4.1.8 Test Results	18
4.2 Conducted Emission Measurement.....	55
4.2.1 Limits of Conducted Emission Measurement	55
4.2.2 Test Instruments	55
4.2.3 Test Procedures.....	56
4.2.4 Deviation from Test Standard	56
4.2.5 Test Setup.....	56
4.2.6 EUT Operating Conditions.....	56
4.2.7 Test Results	57
4.3 Transmit Power Measurement.....	59
4.3.1 Limits of Transmit Power Measurement	59
4.3.2 Test Setup.....	59
4.3.3 Test Instruments	60
4.3.4 Test Procedure	60
4.3.5 Deviation from Test Standard	60
4.3.6 EUT Operating Conditions.....	60
4.3.7 Test Result	61
4.4 Peak Power Spectral Density Measurement	66
4.4.1 Limits of Peak Power Spectral Density Measurement	66
4.4.2 Test Setup.....	66
4.4.3 Test Instruments	66
4.4.4 Test Procedures.....	66
4.4.5 Deviation from Test Standard	67
4.4.6 EUT Operating Conditions.....	67
4.4.7 Test Results	68
4.5 Frequency Stability	72
4.5.1 Limit of Frequency Stability Measurement	72
4.5.2 Test Setup.....	72
4.5.3 Test Instruments	72
4.5.4 Test Procedure	72
4.5.5 Deviation from Test Standard	72

4.5.6 EUT Operating Condition	72
4.5.7 Test Results	73
4.6 6 dB Bandwidth Measurment.....	74
4.6.1 Limits of 6 dB Bandwidth Measurement.....	74
4.6.2 Test Setup.....	74
4.6.3 Test Instruments	74
4.6.4 Test Procedure	74
4.6.5 Deviation from Test Standard	74
4.6.6 EUT Operating Condition	74
4.6.7 Test Results	75
5 Pictures of Test Arrangements.....	77
Appendix – Information on the Testing Laboratories	78

Release Control Record

Issue No.	Description	Date Issued
RF160624C13-4	Original Release	Aug. 04, 2016

1 Certificate of Conformity

Product: Carbon 10 Stand Printer

Brand: Verifone

Test Model: Carbon 10 Stand Printer

Sample Status: Identical Prototype

Applicant: Verifone, Inc.

Test Date: Jul. 18, 2016 ~ Jul. 26, 2016

Standards: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2013

The above equipment 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 : Evonne Liu, **Date:** Aug. 04, 2016
Evonne Liu / Specialist

Approved by : Stanley Wu, **Date:** Aug. 04, 2016
Stanley Wu / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -27.44 dB at 0.40391 MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin above 1Ghz is -3.64 dB at 5470 MHz.
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)	6 dB Bandwidth	Pass	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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Carbon 10 Stand Printer
Brand	Verifone
Test Model	Carbon 10 Stand Printer
Status of EUT	Identical Prototype
Power Supply Rating	24 Vdc (adapter)
Modulation Type	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/ 6.0 Mbps 802.11n: up to MCS7
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
Output Power	13.55 mW for 5180 ~ 5240 MHz 13.37 mW for 5260 ~ 5320 MHz 12.39 mW for 5500 ~ 5700 MHz 11.64 mW for 5745 ~ 5825 MHz
Antenna Type	PCB antenna with 2.67 dBi gain (5180 ~ 5240 MHz) PCB antenna with 2.97 dBi gain (5260 ~ 5320 MHz) PCB antenna with 3.93 dBi gain (5500 ~ 5700 MHz) PCB antenna with 3.93 dBi gain (5745 ~ 5825 MHz)
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

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

Modulation Mode	Tx Function
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter (90W)	Verifone	FSP090-AAAN2	I/P: 100-240Vac, 50/60Hz, 1200mA O/P: 24Vdc, 3750mA 1.4m shielded cable with 1 core
BT/WLAN Module	Murata	SP-DU1BW-K	--
Tablet (Optional Equipment)	Verifone	Carbon 10	--

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

3.2 Description of Test Modes

FOR 5180 ~ 5240 MHz

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

FOR 5260 ~ 5320 MHz

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
56	5280	64	5320

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	62	5310

FOR 5500 ~ 5700 MHz

11 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600		

5 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	126	5630
110	5550	134	5670
118	5590		

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

RE<1G: Radiated Emission below 1 GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1 GHz):

☒ 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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 44, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 44, 48	OFDM	BPSK	MCS0
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	MCS0
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	MCS0
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	MCS0
-		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	MCS0

Radiated Emission Test (Below 1 GHz):

☒ 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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11n (HT40)	38 to 46	38	OFDM	BPSK	MCS0
-	5260-5320	802.11n (HT40)	54 to 62	62	OFDM	BPSK	MCS0
-	5500-5700	802.11n (HT40)	102 to 134	102	OFDM	BPSK	MCS0
-	5745-5825	802.11n (HT40)	151 to 159	151	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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5500-5700	802.11n (HT40)	102 to 134	102	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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 44, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 44, 48	OFDM	BPSK	MCS0
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	MCS0
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	MCS0
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	MCS0
-		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	MCS0

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Getaz Yang
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Getaz Yang
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Toby Tian
APCM	25 deg. C, 65 % RH	24 Vdc	Taylor Liu

3.3 Duty Cycle of Test Signal

802.11a: Duty cycle = $1.426/1.530 = 0.931$, Duty factor = $10 * \log(1/0.931) = 0.31$

802.11n (HT20): Duty cycle = $1.322/1.434 = 0.921$, Duty factor = $10 * \log(1/0.921) = 0.35$

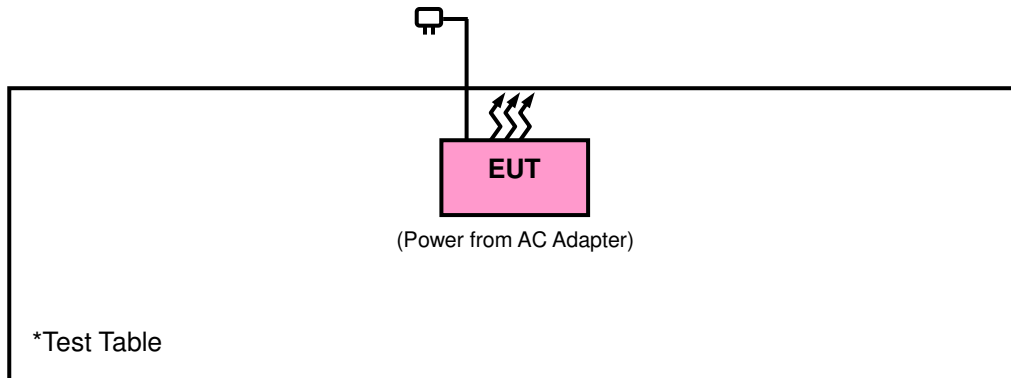
802.11n (HT40): Duty cycle = $657/761 = 0.863$, Duty factor = $10 * \log(1/0.863) = 0.64$



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.4.1 Configuration of System under Test



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 E (15.407)

789033 D02 General UNII Test Procedures New Rules v01r02

ANSI C63.10-2013

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 20 dB 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:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000 MHz, 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 20 dB 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 Procedures New Rules v01r02	Field Strength at 3 m	
	PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
15.407(b)(2)		
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 10 MHz 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:

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 21, 2016	Jan. 20, 2017
Spectrum Analyzer Agilent	N9010A	MY52220314	Sep.03, 2015	Sep. 02, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 04, 2016	Jan. 03, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Jan. 08, 2016	Jan. 07, 2017
Loop Antenna	EM-6879	269	Jul. 31, 2015	Jul. 30, 2016
Preamplifier EMCI	EMC 012645	980115	Dec. 21, 2015	Dec. 20, 2016
Preamplifier EMCI	EMC 184045	980116	Dec. 21, 2015	Dec. 20, 2016
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2015	Dec. 27, 2016
Power Meter Anritsu	ML2495A	1232002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor Anritsu	MA2411B	1207325	Sep. 21, 2015	Sep. 20, 2016
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 12, 2015	Oct. 11, 2016
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 12, 2015	Oct. 11, 2016
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 12, 2015	Oct. 11, 2016
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

- 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 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC7450F-10.

4.1.4 Test Procedures

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. 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 height of 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

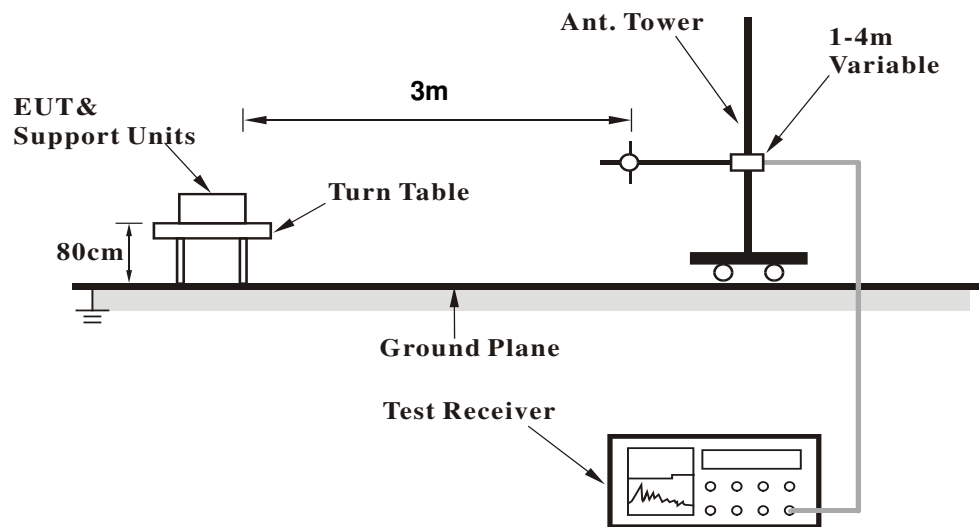
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle $\geq 98 \%$) for Average detection (AV) at frequency above 1 GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 Deviation from Test Standard

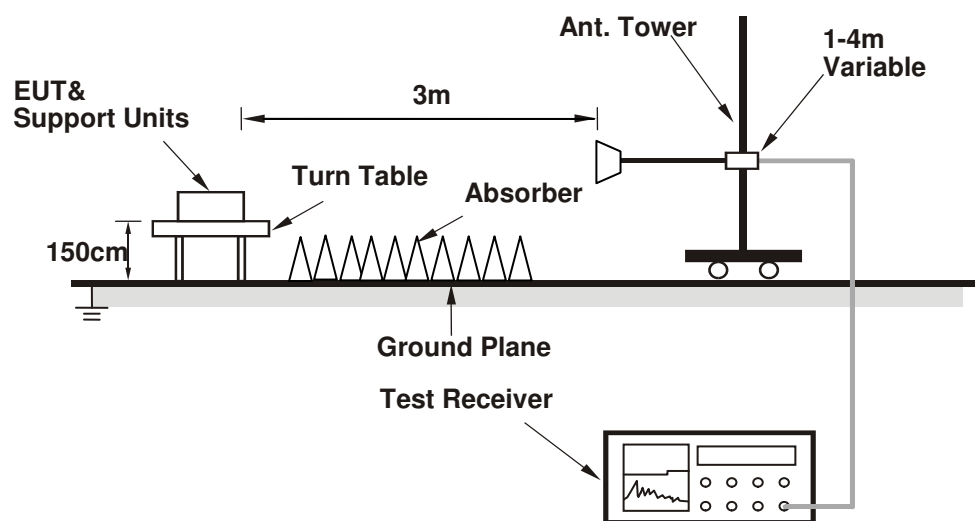
No deviation.

4.1.6 Test Set Up

<Frequency Range below 1 GHz>



<Frequency Range above 1 GHz>



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

4.1.7 EUT Operating Conditions

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

4.1.8 Test Results

Above 1 GHz Data :

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino 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
5148	44.06	43.86	54	-9.94	31.32	6.2	37.32	100	83	Average
5148	61.15	60.95	74	-12.85	31.32	6.2	37.32	100	83	Peak
5180	92.92	92.69			31.35	6.22	37.34	100	83	Average
5180	101.33	101.1			31.35	6.22	37.34	100	83	Peak
5450	38.77	37.95	54	-15.23	31.56	6.34	37.08	100	83	Average
5450	60.1	59.28	74	-13.9	31.56	6.34	37.08	100	83	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino 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
5144	43.28	43.08	54	-10.72	31.32	6.2	37.32	100	347	Average
5144	59.84	59.64	74	-14.16	31.32	6.2	37.32	100	347	Peak
5180	91.31	91.08			31.35	6.22	37.34	100	347	Average
5180	100.11	99.88			31.35	6.22	37.34	100	347	Peak
5428	38.76	38.04	54	-15.24	31.53	6.32	37.13	100	347	Average
5428	60.13	59.41	74	-13.87	31.53	6.32	37.13	100	347	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 44	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5108	38.81	38.61	54	-15.19	31.29	6.19	37.28	107	77	Average
5108	60.91	60.71	74	-13.09	31.29	6.19	37.28	107	77	Peak
5220	92.3	92.05			31.37	6.24	37.36	107	77	Average
5220	101.25	101			31.37	6.24	37.36	107	77	Peak
5374	38.69	38.07	54	-15.31	31.49	6.31	37.18	107	77	Average
5374	60.1	59.48	74	-13.9	31.49	6.31	37.18	107	77	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5040	38.92	38.77	54	-15.08	31.24	6.15	37.24	100	347	Average
5040	60.66	60.51	74	-13.34	31.24	6.15	37.24	100	347	Peak
5220	91.99	91.74			31.37	6.24	37.36	100	347	Average
5220	100.73	100.48			31.37	6.24	37.36	100	347	Peak
5378	38.75	38.11	54	-15.25	31.51	6.31	37.18	100	347	Average
5378	60.26	59.62	74	-13.74	31.51	6.31	37.18	100	347	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5220 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5086	38.77	38.6	54	-15.23	31.27	6.17	37.27	100	78	Average
5086	60.41	60.24	74	-13.59	31.27	6.17	37.27	100	78	Peak
5240	93.02	92.7			31.39	6.25	37.32	100	78	Average
5240	101.81	101.49			31.39	6.25	37.32	100	78	Peak
5458	38.88	38.06	54	-15.12	31.56	6.34	37.08	100	78	Average
5458	60.71	59.89	74	-13.29	31.56	6.34	37.08	100	78	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5030	38.57	38.43	54	-15.43	31.23	6.15	37.24	100	345	Average
5030	60.02	59.88	74	-13.98	31.23	6.15	37.24	100	345	Peak
5240	91.46	91.14			31.39	6.25	37.32	100	345	Average
5240	100.03	99.71			31.39	6.25	37.32	100	345	Peak
5450	38.85	38.03	54	-15.15	31.56	6.34	37.08	100	345	Average
5450	60.41	59.59	74	-13.59	31.56	6.34	37.08	100	345	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5110	39.03	38.83	54	-14.97	31.29	6.19	37.28	166	234	Average
5110	60.42	60.22	74	-13.58	31.29	6.19	37.28	166	234	Peak
5260	92.1	91.71			31.41	6.25	37.27	166	234	Average
5260	101.39	101			31.41	6.25	37.27	166	234	Peak
5434	39.38	38.64	54	-14.62	31.55	6.32	37.13	166	234	Average
5434	60.14	59.4	74	-13.86	31.55	6.32	37.13	166	234	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5014	38.76	38.63	54	-15.24	31.21	6.15	37.23	198	164	Average
5014	61.14	61.01	74	-12.86	31.21	6.15	37.23	198	164	Peak
5260	93.56	93.17			31.41	6.25	37.27	198	164	Average
5260	102.19	101.8			31.41	6.25	37.27	198	164	Peak
5410	39.66	39	54	-14.34	31.52	6.32	37.18	198	164	Average
5410	60.41	59.75	74	-13.59	31.52	6.32	37.18	198	164	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5084	38.83	38.66	54	-15.17	31.27	6.17	37.27	167	235	Average
5084	59.85	59.68	74	-14.15	31.27	6.17	37.27	167	235	Peak
5300	92.93	92.41			31.44	6.27	37.19	167	235	Average
5300	101.77	101.25			31.44	6.27	37.19	167	235	Peak
5444	41.02	40.26	54	-12.98	31.55	6.34	37.13	167	235	Average
5444	60.61	59.85	74	-13.39	31.55	6.34	37.13	167	235	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5090	38.87	38.67	54	-15.13	31.28	6.19	37.27	198	164	Average
5090	60	59.8	74	-14	31.28	6.19	37.27	198	164	Peak
5300	94.27	93.75			31.44	6.27	37.19	198	164	Average
5300	102.87	102.35			31.44	6.27	37.19	198	164	Peak
5418	41.07	40.4	54	-12.93	31.53	6.32	37.18	198	164	Average
5418	60.84	60.17	74	-13.16	31.53	6.32	37.18	198	164	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5300 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5014	38.58	38.45	54	-15.42	31.21	6.15	37.23	166	234	Average
5014	59.69	59.56	74	-14.31	31.21	6.15	37.23	166	234	Peak
5320	91.04	90.49			31.45	6.29	37.19	166	234	Average
5320	101.25	100.7			31.45	6.29	37.19	166	234	Peak
5388	41.61	40.97	54	-12.39	31.51	6.31	37.18	166	234	Average
5388	60.83	60.19	74	-13.17	31.51	6.31	37.18	166	234	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5026	38.85	38.71	54	-15.15	31.23	6.15	37.24	200	121	Average
5026	59.74	59.6	74	-14.26	31.23	6.15	37.24	200	121	Peak
5320	93.99	93.44			31.45	6.29	37.19	200	121	Average
5320	102.69	102.14			31.45	6.29	37.19	200	121	Peak
5394	41.29	40.65	54	-12.71	31.51	6.31	37.18	200	121	Average
5394	60.4	59.76	74	-13.6	31.51	6.31	37.18	200	121	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5320 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5420	40.68	40.01	54	-13.32	31.53	6.32	37.18	164	239	Average
5420	60.75	60.08	74	-13.25	31.53	6.32	37.18	164	239	Peak
5470	60.73	59.9	68.2	-7.47	31.57	6.34	37.08	164	239	Peak
5500	89.06	88.13			31.6	6.36	37.03	164	239	Average
5500	98.64	97.71			31.6	6.36	37.03	164	239	Peak
5725	58.52	57.24	68.2	-9.68	31.96	6.75	37.43	164	239	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5420	44.69	44.02	54	-9.31	31.53	6.32	37.18	211	163	Average
5420	60.45	59.78	74	-13.55	31.53	6.32	37.18	211	163	Peak
5470	60.34	59.51	68.2	-7.86	31.57	6.34	37.08	211	163	Peak
5500	94.73	93.8			31.6	6.36	37.03	211	163	Average
5500	103.63	102.7			31.6	6.36	37.03	211	163	Peak
5725	59.66	58.38	68.2	-8.54	31.96	6.75	37.43	211	163	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5500 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5438	38.28	37.52	54	-15.72	31.55	6.34	37.13	153	239	Average
5438	60.49	59.73	74	-13.51	31.55	6.34	37.13	153	239	Peak
5470	58.19	57.36	68.2	-10.01	31.57	6.34	37.08	153	239	Peak
5580	88.3	87.26			31.71	6.49	37.16	153	239	Average
5580	97.51	96.47			31.71	6.49	37.16	153	239	Peak
5725	59.22	57.94	68.2	-8.98	31.96	6.75	37.43	153	239	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5358	38.48	37.87	54	-15.52	31.48	6.31	37.18	199	165	Average
5358	60.35	59.74	74	-13.65	31.48	6.31	37.18	199	165	Peak
5470	58.48	57.65	68.2	-9.72	31.57	6.34	37.08	199	165	Peak
5580	94.98	93.94			31.71	6.49	37.16	199	165	Average
5580	103.86	102.82			31.71	6.49	37.16	199	165	Peak
5725	61.15	59.87	68.2	-7.05	31.96	6.75	37.43	199	165	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5438	38.62	37.86	54	-15.38	31.55	6.34	37.13	184	263	Average
5438	60.48	59.72	74	-13.52	31.55	6.34	37.13	184	263	Peak
5470	58.73	57.9	68.2	-9.47	31.57	6.34	37.08	184	263	Peak
5700	88.82	87.63			31.9	6.69	37.4	184	263	Average
5700	98.47	97.28			31.9	6.69	37.4	184	263	Peak
5725	61.39	60.11	68.2	-6.81	31.96	6.75	37.43	184	263	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5420	38.76	38.09	54	-15.24	31.53	6.32	37.18	202	167	Average
5420	61.14	60.47	74	-12.86	31.53	6.32	37.18	202	167	Peak
5470	58.83	58	68.2	-9.37	31.57	6.34	37.08	202	167	Peak
5700	94.26	93.07			31.9	6.69	37.4	202	167	Average
5700	103.38	102.19			31.9	6.69	37.4	202	167	Peak
5725	63.18	61.9	68.2	-5.02	31.96	6.75	37.43	202	167	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	59.79	58.6	68.2	-8.41	31.93	6.69	37.43	108	66	Peak
*5725	61.26	59.98	78.2	-16.94	31.96	6.75	37.43	108	66	Peak
5745	90.63	89.36			31.99	6.75	37.47	108	66	Average
5745	99.82	98.55			31.99	6.75	37.47	108	66	Peak
*5850	59.19	57.67	78.2	-19.01	32.15	6.88	37.51	108	66	Peak
*5861	59.05	57.42	68.2	-9.15	32.18	6.95	37.5	108	66	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	61.96	60.77	68.2	-6.24	31.93	6.69	37.43	116	231	Peak
*5725	61.24	59.96	78.2	-16.96	31.96	6.75	37.43	116	231	Peak
5745	92.94	91.67			31.99	6.75	37.47	116	231	Average
5745	102.19	100.92			31.99	6.75	37.47	116	231	Peak
*5850	59.68	58.16	78.2	-18.52	32.15	6.88	37.51	116	231	Peak
*5861	60.07	58.44	68.2	-8.13	32.18	6.95	37.5	116	231	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745 MHz: Fundamental Frequency
- *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	58.52	57.33	68.2	-9.68	31.93	6.69	37.43	103	65	Peak
*5725	58.92	57.64	78.2	-19.28	31.96	6.75	37.43	103	65	Peak
5785	90.43	89.11			32.04	6.82	37.54	103	65	Average
5785	99.96	98.64			32.04	6.82	37.54	103	65	Peak
*5850	59.32	57.8	78.2	-18.88	32.15	6.88	37.51	103	65	Peak
*5861	60.56	58.93	68.2	-7.64	32.18	6.95	37.5	103	65	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	60.85	59.66	68.2	-7.35	31.93	6.69	37.43	102	242	Peak
*5725	62.41	61.13	78.2	-15.79	31.96	6.75	37.43	102	242	Peak
5785	93.5	92.18			32.04	6.82	37.54	102	242	Average
5785	103.98	102.66			32.04	6.82	37.54	102	242	Peak
*5850	61.54	60.02	78.2	-16.66	32.15	6.88	37.51	102	242	Peak
*5861	61.17	59.54	68.2	-7.03	32.18	6.95	37.5	102	242	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	58.92	57.73	68.2	-9.28	31.93	6.69	37.43	108	70	Peak
*5725	58.47	57.19	78.2	-19.73	31.96	6.75	37.43	108	70	Peak
5825	91.39	89.92			32.12	6.88	37.53	108	70	Average
5825	100.56	99.09			32.12	6.88	37.53	108	70	Peak
*5850	60.53	59.01	78.2	-17.67	32.15	6.88	37.51	108	70	Peak
*5861	58.79	57.16	68.2	-9.41	32.18	6.95	37.5	108	70	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	58.97	57.78	68.2	-9.23	31.93	6.69	37.43	114	238	Peak
*5725	59.27	57.99	78.2	-18.93	31.96	6.75	37.43	114	238	Peak
5825	92.85	91.38			32.12	6.88	37.53	114	238	Average
5825	102.69	101.22			32.12	6.88	37.53	114	238	Peak
*5850	66.92	65.4	78.2	-11.28	32.15	6.88	37.51	114	238	Peak
*5861	59.62	57.99	68.2	-8.58	32.18	6.95	37.5	114	238	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825 MHz: Fundamental Frequency
- *: Out of Restricted Band

802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino 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
5148	41.27	41.07	54	-12.73	31.32	6.2	37.32	100	78	Average
5148	61.21	61.01	74	-12.79	31.32	6.2	37.32	100	78	Peak
5180	91.91	91.68			31.35	6.22	37.34	100	78	Average
5180	101.7	101.47			31.35	6.22	37.34	100	78	Peak
5436	38.86	38.12	54	-15.14	31.55	6.32	37.13	100	78	Average
5436	61.22	60.48	74	-12.78	31.55	6.32	37.13	100	78	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino 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
5010	40.44	40.33	54	-13.56	31.21	6.13	37.23	100	346	Average
5010	60.63	60.52	74	-13.37	31.21	6.13	37.23	100	346	Peak
5180	90.87	90.64			31.35	6.22	37.34	100	346	Average
5180	100.21	99.98			31.35	6.22	37.34	100	346	Peak
5458	38.94	38.12	54	-15.06	31.56	6.34	37.08	100	346	Average
5458	60.12	59.3	74	-13.88	31.56	6.34	37.08	100	346	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 44	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5020	38.69	38.57	54	-15.31	31.21	6.15	37.24	100	80	Average
5020	60.58	60.46	74	-13.42	31.21	6.15	37.24	100	80	Peak
5220	92.56	92.31			31.37	6.24	37.36	100	80	Average
5220	101.68	101.43			31.37	6.24	37.36	100	80	Peak
5400	38.88	38.22	54	-15.12	31.52	6.32	37.18	100	80	Average
5400	60.71	60.05	74	-13.29	31.52	6.32	37.18	100	80	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5074	38.84	38.67	54	-15.16	31.27	6.17	37.27	100	345	Average
5074	59.69	59.52	74	-14.31	31.27	6.17	37.27	100	345	Peak
5220	91.26	91.01			31.37	6.24	37.36	100	345	Average
5220	100.04	99.79			31.37	6.24	37.36	100	345	Peak
5406	38.98	38.32	54	-15.02	31.52	6.32	37.18	100	345	Average
5406	60.03	59.37	74	-13.97	31.52	6.32	37.18	100	345	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5220 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emissino 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
5032	38.71	38.57	54	-15.29	31.23	6.15	37.24	100	78	Average
5032	60.13	59.99	74	-13.87	31.23	6.15	37.24	100	78	Peak
5240	92.74	92.42			31.39	6.25	37.32	100	78	Average
5240	101.58	101.26			31.39	6.25	37.32	100	78	Peak
5410	38.75	38.09	54	-15.25	31.52	6.32	37.18	100	78	Average
5410	60.77	60.11	74	-13.23	31.52	6.32	37.18	100	78	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emissino 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
5032	38.62	38.48	54	-15.38	31.23	6.15	37.24	100	345	Average
5032	60.1	59.96	74	-13.9	31.23	6.15	37.24	100	345	Peak
5240	90.42	90.1			31.39	6.25	37.32	100	345	Average
5240	100.08	99.76			31.39	6.25	37.32	100	345	Peak
5442	38.68	37.92	54	-15.32	31.55	6.34	37.13	100	345	Average
5442	60.16	59.4	74	-13.84	31.55	6.34	37.13	100	345	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5112	38.86	38.66	54	-15.14	31.29	6.19	37.28	167	235	Average
5112	60.17	59.97	74	-13.83	31.29	6.19	37.28	167	235	Peak
5260	91.43	91.04			31.41	6.25	37.27	167	235	Average
5260	99.99	99.6			31.41	6.25	37.27	167	235	Peak
5446	39.43	38.66	54	-14.57	31.56	6.34	37.13	167	235	Average
5446	60.38	59.61	74	-13.62	31.56	6.34	37.13	167	235	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5148	38.88	38.68	54	-15.12	31.32	6.2	37.32	197	164	Average
5148	59.97	59.77	74	-14.03	31.32	6.2	37.32	197	164	Peak
5260	92.61	92.22			31.41	6.25	37.27	197	164	Average
5260	101.13	100.74			31.41	6.25	37.27	197	164	Peak
5424	39.52	38.85	54	-14.48	31.53	6.32	37.18	197	164	Average
5424	60.49	59.82	74	-13.51	31.53	6.32	37.18	197	164	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5064	38.79	38.62	54	-15.21	31.25	6.17	37.25	175	235	Average
5064	60.11	59.94	74	-13.89	31.25	6.17	37.25	175	235	Peak
5300	91.93	91.41			31.44	6.27	37.19	175	235	Average
5300	100.87	100.35			31.44	6.27	37.19	175	235	Peak
5352	40.31	39.72	54	-13.69	31.48	6.29	37.18	175	235	Average
5352	60.02	59.43	74	-13.98	31.48	6.29	37.18	175	235	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5086	38.76	38.59	54	-15.24	31.27	6.17	37.27	187	165	Average
5086	60.02	59.85	74	-13.98	31.27	6.17	37.27	187	165	Peak
5300	92.97	92.45			31.44	6.27	37.19	187	165	Average
5300	101.75	101.23			31.44	6.27	37.19	187	165	Peak
5380	40.55	39.91	54	-13.45	31.51	6.31	37.18	187	165	Average
5380	60.08	59.44	74	-13.92	31.51	6.31	37.18	187	165	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5300 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5050	38.82	38.68	54	-15.18	31.24	6.15	37.25	175	235	Average
5050	59.7	59.56	74	-14.3	31.24	6.15	37.25	175	235	Peak
5320	91.41	90.86			31.45	6.29	37.19	175	235	Average
5320	100.33	99.78			31.45	6.29	37.19	175	235	Peak
5446	41.31	40.54	54	-12.69	31.56	6.34	37.13	175	235	Average
5446	61.32	60.55	74	-12.68	31.56	6.34	37.13	175	235	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5094	38.69	38.5	54	-15.31	31.28	6.19	37.28	196	166	Average
5094	60.72	60.53	74	-13.28	31.28	6.19	37.28	196	166	Peak
5320	93.12	92.57			31.45	6.29	37.19	196	166	Average
5320	101.96	101.41			31.45	6.29	37.19	196	166	Peak
5422	42.51	41.84	54	-11.49	31.53	6.32	37.18	196	166	Average
5422	60.29	59.62	74	-13.71	31.53	6.32	37.18	196	166	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5320 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5366	40.63	40.01	54	-13.37	31.49	6.31	37.18	144	241	Average
5366	60.21	59.59	74	-13.79	31.49	6.31	37.18	144	241	Peak
5470	58.7	57.87	68.2	-9.5	31.57	6.34	37.08	144	241	Peak
5500	88.9	87.97			31.6	6.36	37.03	144	241	Average
5500	98.39	97.46			31.6	6.36	37.03	144	241	Peak
5725	59.36	58.08	68.2	-8.84	31.96	6.75	37.43	144	241	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5402	43.15	42.49	54	-10.85	31.52	6.32	37.18	212	158	Average
5402	60.23	59.57	74	-13.77	31.52	6.32	37.18	212	158	Peak
5470	63.33	62.5	68.2	-4.87	31.57	6.34	37.08	212	158	Peak
5500	94.74	93.81			31.6	6.36	37.03	212	158	Average
5500	103.77	102.84			31.6	6.36	37.03	212	158	Peak
5725	59.33	58.05	68.2	-8.87	31.96	6.75	37.43	212	158	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5500 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5436	38.37	37.63	54	-15.63	31.55	6.32	37.13	153	240	Average
5436	60.73	59.99	74	-13.27	31.55	6.32	37.13	153	240	Peak
5470	57.97	57.14	68.2	-10.23	31.57	6.34	37.08	153	240	Peak
5580	87.89	86.85			31.71	6.49	37.16	153	240	Average
5580	97.36	96.32			31.71	6.49	37.16	153	240	Peak
5725	58.53	57.25	68.2	-9.67	31.96	6.75	37.43	153	240	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5394	38.49	37.85	54	-15.51	31.51	6.31	37.18	198	164	Average
5394	59.88	59.24	74	-14.12	31.51	6.31	37.18	198	164	Peak
5470	58.2	57.37	68.2	-10	31.57	6.34	37.08	198	164	Peak
5580	94.13	93.09			31.71	6.49	37.16	198	164	Average
5580	103.43	102.39			31.71	6.49	37.16	198	164	Peak
5725	58.89	57.61	68.2	-9.31	31.96	6.75	37.43	198	164	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5580 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5448	38.66	37.89	54	-15.34	31.56	6.34	37.13	182	266	Average
5448	60.92	60.15	74	-13.08	31.56	6.34	37.13	182	266	Peak
5470	60.5	59.67	68.2	-7.7	31.57	6.34	37.08	182	266	Peak
5700	88.8	87.61			31.9	6.69	37.4	182	266	Average
5700	98.48	97.29			31.9	6.69	37.4	182	266	Peak
5725	63.67	62.39	68.2	-4.53	31.96	6.75	37.43	182	266	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5406	38.62	37.96	54	-15.38	31.52	6.32	37.18	200	173	Average
5406	60.83	60.17	74	-13.17	31.52	6.32	37.18	200	173	Peak
5470	59.92	59.09	68.2	-8.28	31.57	6.34	37.08	200	173	Peak
5700	94.32	93.13			31.9	6.69	37.4	200	173	Average
5700	103.37	102.18			31.9	6.69	37.4	200	173	Peak
5725	63.96	62.68	68.2	-4.24	31.96	6.75	37.43	200	173	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	60.05	58.86	68.2	-8.15	31.93	6.69	37.43	101	70	Peak
*5725	61.5	60.22	78.2	-16.7	31.96	6.75	37.43	101	70	Peak
5745	90	88.73			31.99	6.75	37.47	101	70	Average
5745	98.71	97.44			31.99	6.75	37.47	101	70	Peak
*5850	59.67	58.15	78.2	-18.53	32.15	6.88	37.51	101	70	Peak
*5861	59.82	58.19	68.2	-8.38	32.18	6.95	37.5	101	70	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	61.3	60.11	68.2	-6.9	31.93	6.69	37.43	115	238	Peak
*5725	64.02	62.74	78.2	-14.18	31.96	6.75	37.43	115	238	Peak
5745	92.52	91.25			31.99	6.75	37.47	115	238	Average
5745	102.85	101.58			31.99	6.75	37.47	115	238	Peak
*5850	59.57	58.05	78.2	-18.63	32.15	6.88	37.51	115	238	Peak
*5861	60.06	58.43	68.2	-8.14	32.18	6.95	37.5	115	238	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745 MHz: Fundamental Frequency
- *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	60.38	59.19	68.2	-7.82	31.93	6.69	37.43	102	70	Peak
*5725	59.19	57.91	78.2	-19.01	31.96	6.75	37.43	102	70	Peak
5785	89.82	88.5			32.04	6.82	37.54	102	70	Average
5785	98.7	97.38			32.04	6.82	37.54	102	70	Peak
*5850	59.12	57.6	78.2	-19.08	32.15	6.88	37.51	102	70	Peak
*5861	58.93	57.3	68.2	-9.27	32.18	6.95	37.5	102	70	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	59.56	58.37	68.2	-8.64	31.93	6.69	37.43	102	241	Peak
*5725	59.76	58.48	78.2	-18.44	31.96	6.75	37.43	102	241	Peak
5785	91.96	90.64			32.04	6.82	37.54	102	241	Average
5785	102.4	101.08			32.04	6.82	37.54	102	241	Peak
*5850	60.13	58.61	78.2	-18.07	32.15	6.88	37.51	102	241	Peak
*5861	60.19	58.56	68.2	-8.01	32.18	6.95	37.5	102	241	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	59.48	58.29	68.2	-8.72	31.93	6.69	37.43	100	70	Peak
*5725	59.42	58.14	78.2	-18.78	31.96	6.75	37.43	100	70	Peak
5825	90.7	89.23			32.12	6.88	37.53	100	70	Average
5825	99.96	98.49			32.12	6.88	37.53	100	70	Peak
*5850	60.48	58.96	78.2	-17.72	32.15	6.88	37.51	100	70	Peak
*5861	59.29	57.66	68.2	-8.91	32.18	6.95	37.5	100	70	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	58.93	57.74	68.2	-9.27	31.93	6.69	37.43	114	242	Peak
*5725	59.76	58.48	78.2	-18.44	31.96	6.75	37.43	114	242	Peak
5825	92.76	91.29			32.12	6.88	37.53	114	242	Average
5825	102.73	101.26			32.12	6.88	37.53	114	242	Peak
*5850	59.76	58.24	78.2	-18.44	32.15	6.88	37.51	114	242	Peak
*5861	60.84	59.21	68.2	-7.36	32.18	6.95	37.5	114	242	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825 MHz: Fundamental Frequency
- *: Out of Restricted Band

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5150	44.7	44.5	54	-9.3	31.32	6.2	37.32	108	76	Average
5150	63.19	62.99	74	-10.81	31.32	6.2	37.32	108	76	Peak
5190	89.22	88.99			31.35	6.22	37.34	108	76	Average
5190	99.39	99.16			31.35	6.22	37.34	108	76	Peak
5448	38.85	38.08	54	-15.15	31.56	6.34	37.13	108	76	Average
5448	60.44	59.67	74	-13.56	31.56	6.34	37.13	108	76	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5144	43.98	43.78	54	-10.02	31.32	6.2	37.32	100	346	Average
5144	60.44	60.24	74	-13.56	31.32	6.2	37.32	100	346	Peak
5190	89.32	89.09			31.35	6.22	37.34	100	346	Average
5190	98.48	98.25			31.35	6.22	37.34	100	346	Peak
5432	39.14	38.4	54	-14.86	31.55	6.32	37.13	100	346	Average
5432	60.38	59.64	74	-13.62	31.55	6.32	37.13	100	346	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5190 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 46	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5138	39.59	39.38	54	-14.41	31.31	6.2	37.3	100	78	Average
5138	60.02	59.81	74	-13.98	31.31	6.2	37.3	100	78	Peak
5230	90.49	90.18			31.39	6.24	37.32	100	78	Average
5230	99.33	99.02			31.39	6.24	37.32	100	78	Peak
5448	38.98	38.21	54	-15.02	31.56	6.34	37.13	100	78	Average
5448	60.23	59.46	74	-13.77	31.56	6.34	37.13	100	78	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5140	39.3	39.08	54	-14.7	31.32	6.2	37.3	100	346	Average
5140	60.23	60.01	74	-13.77	31.32	6.2	37.3	100	346	Peak
5230	89.17	88.86			31.39	6.24	37.32	100	346	Average
5230	98.27	97.96			31.39	6.24	37.32	100	346	Peak
5440	38.69	37.93	54	-15.31	31.55	6.34	37.13	100	346	Average
5440	60.25	59.49	74	-13.75	31.55	6.34	37.13	100	346	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5230 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 54	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5036	38.95	38.81	54	-15.05	31.23	6.15	37.24	184	237	Average
5036	60.56	60.42	74	-13.44	31.23	6.15	37.24	184	237	Peak
5270	88.59	88.2			31.41	6.25	37.27	184	237	Average
5270	97.28	96.89			31.41	6.25	37.27	184	237	Peak
5408	40.16	39.5	54	-13.84	31.52	6.32	37.18	184	237	Average
5408	61.72	61.06	74	-12.28	31.52	6.32	37.18	184	237	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5122	39.2	39.02	54	-14.8	31.29	6.19	37.3	187	165	Average
5122	59.95	59.77	74	-14.05	31.29	6.19	37.3	187	165	Peak
5270	93	92.61			31.41	6.25	37.27	187	165	Average
5270	99.8	99.41			31.41	6.25	37.27	187	165	Peak
5378	40.6	39.96	54	-13.4	31.51	6.31	37.18	187	165	Average
5378	61.03	60.39	74	-12.97	31.51	6.31	37.18	187	165	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5270 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 62	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5140	39.2	38.98	54	-14.8	31.32	6.2	37.3	188	236	Average
5140	60.22	60	74	-13.78	31.32	6.2	37.3	188	236	Peak
5310	90.03	89.5			31.45	6.27	37.19	188	236	Average
5310	97.91	97.38			31.45	6.27	37.19	188	236	Peak
5352	42.21	41.62	54	-11.79	31.48	6.29	37.18	188	236	Average
5352	61.5	60.91	74	-12.5	31.48	6.29	37.18	188	236	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5022	38.98	38.84	54	-15.02	31.23	6.15	37.24	186	165	Average
5022	61.43	61.29	74	-12.57	31.23	6.15	37.24	186	165	Peak
5310	90.88	90.35			31.45	6.27	37.19	186	165	Average
5310	99.44	98.91			31.45	6.27	37.19	186	165	Peak
5352	43.98	43.39	54	-10.02	31.48	6.29	37.18	186	165	Average
5352	63.69	63.1	74	-10.31	31.48	6.29	37.18	186	165	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5310 MHz: Fundamental Frequency

EUT Test Condition		Measurement Detail	
Channel	Channel 102	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5446	40.86	40.09	54	-13.14	31.56	6.34	37.13	142	260	Average
5446	61.48	60.71	74	-12.52	31.56	6.34	37.13	142	260	Peak
5470	60.6	59.77	68.2	-7.6	31.57	6.34	37.08	142	260	Peak
5510	86.88	85.98			31.6	6.36	37.06	142	260	Average
5510	96.5	95.6			31.6	6.36	37.06	142	260	Peak
5725	62.93	61.65	68.2	-5.27	31.96	6.75	37.43	142	260	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5386	42.69	42.05	54	-11.31	31.51	6.31	37.18	210	161	Average
5386	60.87	60.23	74	-13.13	31.51	6.31	37.18	210	161	Peak
5470	64.56	63.73	68.2	-3.64	31.57	6.34	37.08	210	161	Peak
5510	92.83	91.93			31.6	6.36	37.06	210	161	Average
5510	101.93	101.03			31.6	6.36	37.06	210	161	Peak
5725	61.92	60.64	68.2	-6.28	31.96	6.75	37.43	210	161	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5510 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 110	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5448	39.52	38.75	54	-14.48	31.56	6.34	37.13	149	240	Average
5448	61.16	60.39	74	-12.84	31.56	6.34	37.13	149	240	Peak
5470	60.11	59.28	68.2	-8.09	31.57	6.34	37.08	149	240	Peak
5550	85.75	84.74			31.68	6.42	37.09	149	240	Average
5550	95.24	94.23			31.68	6.42	37.09	149	240	Peak
5725	60.72	59.44	68.2	-7.48	31.96	6.75	37.43	149	240	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5422	40.1	39.43	54	-13.9	31.53	6.32	37.18	192	164	Average
5422	60.16	59.49	74	-13.84	31.53	6.32	37.18	192	164	Peak
5470	59.72	58.89	68.2	-8.48	31.57	6.34	37.08	192	164	Peak
5550	91.24	90.23			31.68	6.42	37.09	192	164	Average
5550	101.07	100.06			31.68	6.42	37.09	192	164	Peak
5725	60.21	58.93	68.2	-7.99	31.96	6.75	37.43	192	164	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5550 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 134	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
5432	39.08	38.34	54	-14.92	31.55	6.32	37.13	166	269	Average
5432	61.11	60.37	74	-12.89	31.55	6.32	37.13	166	269	Peak
5470	59.68	58.85	68.2	-8.52	31.57	6.34	37.08	166	269	Peak
5670	86.54	85.38			31.88	6.62	37.34	166	269	Average
5670	95.97	94.81			31.88	6.62	37.34	166	269	Peak
5725	60.65	59.37	68.2	-7.55	31.96	6.75	37.43	166	269	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
5400	39.28	38.62	54	-14.72	31.52	6.32	37.18	204	170	Average
5400	60.77	60.11	74	-13.23	31.52	6.32	37.18	204	170	Peak
5470	59.87	59.04	68.2	-8.33	31.57	6.34	37.08	204	170	Peak
5670	92.51	91.35			31.88	6.62	37.34	204	170	Average
5670	101.65	100.49			31.88	6.62	37.34	204	170	Peak
5725	62.08	60.8	68.2	-6.12	31.96	6.75	37.43	204	170	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5670 MHz: Fundamental Frequency
- 5470 MHz & 5725 MHz: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 151	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	63.2	62.01	68.2	-5	31.93	6.69	37.43	101	66	Peak
*5725	67.19	65.91	78.2	-11.01	31.96	6.75	37.43	101	66	Peak
5755	87.02	85.73			32.01	6.75	37.47	101	66	Average
5755	96.31	95.02			32.01	6.75	37.47	101	66	Peak
*5850	60.35	58.83	78.2	-17.85	32.15	6.88	37.51	101	66	Peak
*5861	60.12	58.49	68.2	-8.08	32.18	6.95	37.5	101	66	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	63.48	62.29	68.2	-4.72	31.93	6.69	37.43	102	241	Peak
*5725	63.26	61.98	78.2	-14.94	31.96	6.75	37.43	102	241	Peak
5755	89.74	88.45			32.01	6.75	37.47	102	241	Average
5755	99.66	98.37			32.01	6.75	37.47	102	241	Peak
*5850	59.45	57.93	78.2	-18.75	32.15	6.88	37.51	102	241	Peak
*5861	58.82	57.19	68.2	-9.38	32.18	6.95	37.5	102	241	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5755 MHz: Fundamental Frequency
- *: Out of Restricted Band

EUT Test Condition		Measurement Detail	
Channel	Channel 159	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
*5714	58.17	56.98	68.2	-10.03	31.93	6.69	37.43	101	66	Peak
*5725	59.39	58.11	78.2	-18.81	31.96	6.75	37.43	101	66	Peak
5795	87.95	86.6			32.07	6.82	37.54	101	66	Average
5795	96.75	95.4			32.07	6.82	37.54	101	66	Peak
*5850	60.22	58.7	78.2	-17.98	32.15	6.88	37.51	101	66	Peak
*5861	59.7	58.07	68.2	-8.5	32.18	6.95	37.5	101	66	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
*5714	59.36	58.17	68.2	-8.84	31.93	6.69	37.43	102	242	Peak
*5725	59.99	58.71	78.2	-18.21	31.96	6.75	37.43	102	242	Peak
5795	90.04	88.69			32.07	6.82	37.54	102	242	Average
5795	99.99	98.64			32.07	6.82	37.54	102	242	Peak
*5850	59.22	57.7	78.2	-18.98	32.15	6.88	37.51	102	242	Peak
*5861	60.78	59.15	68.2	-7.42	32.18	6.95	37.5	102	242	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5795 MHz: Fundamental Frequency
- *: Out of Restricted Band

9 kHz ~ 30 MHz DATA:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz WORST-CASE DATA:

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
64.92	30.44	49.84	40	-9.56	11.35	0.84	31.59	131	78	Peak
166.77	37.87	56.46	43.5	-5.63	12.05	1.13	31.77	105	289	Peak
335.55	29.76	46.05	46	-16.24	13.8	1.73	31.82	122	193	Peak
399.57	28.57	43.46	46	-17.43	15.33	1.91	32.13	128	219	Peak
480.08	26.33	39.2	46	-19.67	16.93	2.05	31.85	136	239	Peak
504.33	29.52	41.61	46	-16.48	17.42	2.1	31.61	107	246	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
144.46	32.82	50.78	43.5	-10.68	12.51	1.16	31.63	117	320	Peak
166.77	34.05	52.64	43.5	-9.45	12.05	1.13	31.77	139	313	Peak
227.88	34.42	54.3	46	-11.58	10.54	1.41	31.83	104	205	Peak
335.55	24.62	40.91	46	-21.38	13.8	1.73	31.82	121	147	Peak
431.58	26.81	40.9	46	-19.19	15.96	1.96	32.01	131	164	Peak
527.61	28.26	39.84	46	-17.74	17.95	2.14	31.67	137	131	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 62	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
64.92	29.22	48.62	40	-10.78	11.35	0.84	31.59	109	117	Peak
144.46	34.01	51.97	43.5	-9.49	12.51	1.16	31.63	111	126	Peak
166.77	38.53	57.12	43.5	-4.97	12.05	1.13	31.77	117	357	Peak
191.99	37.35	57.86	43.5	-6.15	9.91	1.27	31.69	140	36	Peak
250.19	34.68	53.65	46	-11.32	11.48	1.49	31.94	115	171	Peak
336.52	29.56	45.83	46	-16.44	13.82	1.73	31.82	103	304	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
48.43	30.61	47.99	40	-9.39	13.18	0.69	31.25	113	332	Peak
144.46	32.06	50.02	43.5	-11.44	12.51	1.16	31.63	131	189	Peak
166.77	34.12	52.71	43.5	-9.38	12.05	1.13	31.77	105	311	Peak
227.88	34.95	54.83	46	-11.05	10.54	1.41	31.83	129	118	Peak
335.55	25.18	41.47	46	-20.82	13.8	1.73	31.82	126	285	Peak
431.58	27.1	41.19	46	-18.9	15.96	1.96	32.01	139	7	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 102	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
65.89	29.45	49	40	-10.55	11.24	0.85	31.64	138	336	Peak
144.46	33.85	51.81	43.5	-9.65	12.51	1.16	31.63	102	240	Peak
166.77	39.37	57.96	43.5	-4.13	12.05	1.13	31.77	106	72	Peak
250.19	34.95	53.92	46	-11.05	11.48	1.49	31.94	123	263	Peak
504.33	29.4	41.49	46	-16.6	17.42	2.1	31.61	113	219	Peak
527.61	30.46	42.04	46	-15.54	17.95	2.14	31.67	121	215	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
48.43	32.31	49.69	40	-7.69	13.18	0.69	31.25	130	83	Peak
144.46	32.81	50.77	43.5	-10.69	12.51	1.16	31.63	134	14	Peak
166.77	34.32	52.91	43.5	-9.18	12.05	1.13	31.77	127	274	Peak
225.94	34.67	54.61	46	-11.33	10.46	1.4	31.8	118	1	Peak
336.52	24.9	41.17	46	-21.1	13.82	1.73	31.82	102	23	Peak
431.58	26.25	40.34	46	-19.75	15.96	1.96	32.01	118	58	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 151	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Getaz Yang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (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
65.89	32.21	51.76	40	-7.79	11.24	0.85	31.64	109	77	Peak
144.46	34.82	52.78	43.5	-8.68	12.51	1.16	31.63	123	34	Peak
166.77	38.88	57.47	43.5	-4.62	12.05	1.13	31.77	127	155	Peak
250.19	34.66	53.63	46	-11.34	11.48	1.49	31.94	114	322	Peak
276.38	32.11	50.19	46	-13.89	12.25	1.57	31.9	140	252	Peak
359.8	27.77	43.57	46	-18.23	14.38	1.79	31.97	121	56	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (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
48.43	31.92	49.3	40	-8.08	13.18	0.69	31.25	125	20	Peak
99.84	33.31	55.17	43.5	-10.19	9.06	1.04	31.96	106	217	Peak
144.46	32.49	50.45	43.5	-11.01	12.51	1.16	31.63	121	298	Peak
165.8	34.29	52.81	43.5	-9.21	12.15	1.12	31.79	135	231	Peak
227.88	35.28	55.16	46	-10.72	10.54	1.41	31.83	133	340	Peak
335.55	25.17	41.46	46	-20.83	13.8	1.73	31.82	117	45	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 (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

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

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Dec. 23, 2015	Dec. 22, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Dec. 26, 2015	Dec. 25, 2016
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 11, 2016	Jan. 10, 2017
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 26, 2016	Jul. 25, 2017
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

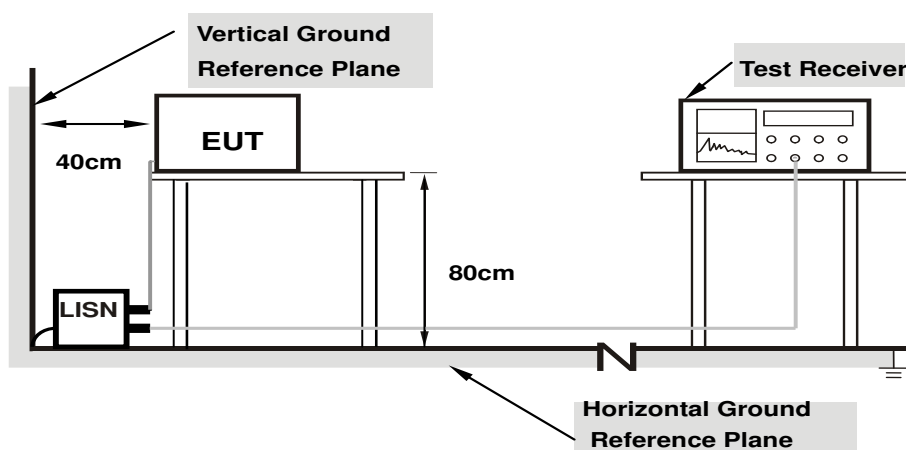
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

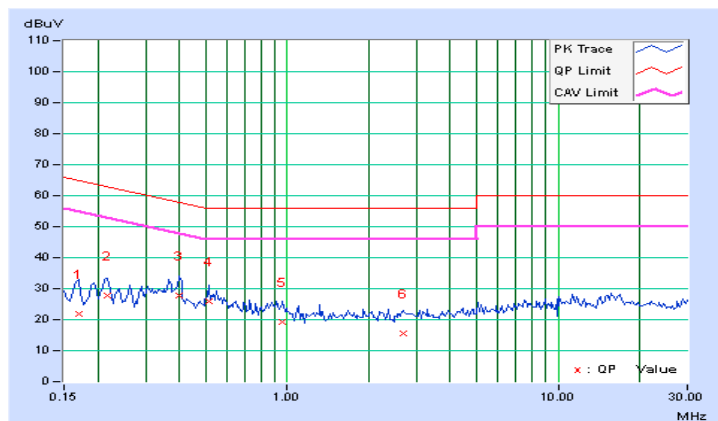
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/7/24

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	0.16953	10.14	11.81	-0.74	21.95	9.40	64.98	54.98	-43.03	-45.58
2	0.21641	10.16	17.76	3.45	27.92	13.61	62.96	52.96	-35.04	-39.35
3	0.40000	10.19	17.74	8.92	27.93	19.11	57.85	47.85	-29.92	-28.74
4	0.51328	10.20	15.55	7.90	25.75	18.10	56.00	46.00	-30.25	-27.90
5	0.95859	10.22	9.13	1.49	19.35	11.71	56.00	46.00	-36.65	-34.29
6	2.69922	10.30	5.14	-6.74	15.44	3.56	56.00	46.00	-40.56	-42.44

Remarks:

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

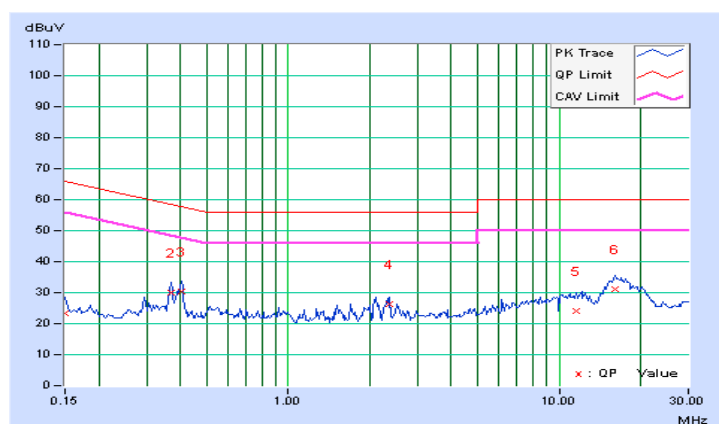


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2016/7/24

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	0.15000	10.13	13.16	4.30	23.29	14.43	66.00	56.00	-42.71	-41.57
2	0.36875	10.19	19.95	6.89	30.14	17.08	58.53	48.53	-28.39	-31.45
3	0.40391	10.19	20.14	7.08	30.33	17.27	57.77	47.77	-27.44	-30.50
4	2.35938	10.32	15.90	2.63	26.22	12.95	56.00	46.00	-29.78	-33.05
5	11.62891	10.59	13.47	-2.14	24.06	8.45	60.00	50.00	-35.94	-41.55
6	16.16797	10.68	20.30	3.10	30.98	13.78	60.00	50.00	-29.02	-36.22

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 Transmit Power Measurement

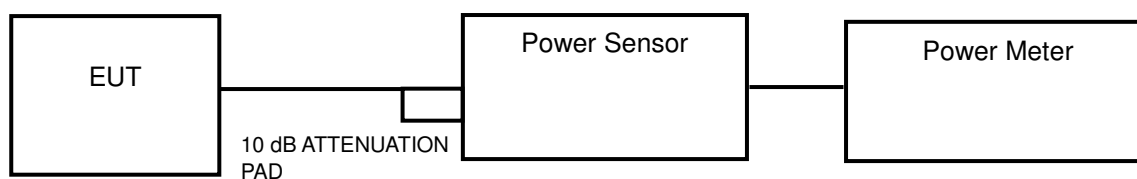
4.3.1 Limits of Transmit Power Measurement

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

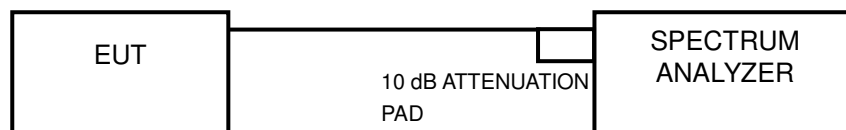
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

<Power Output Measurement>



<26 dB Bandwidth>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

<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.

26 dB Bandwidth

- 1) Set RBW = approximately 1 % of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

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 Result

Power Output:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	13.21	11.21	24	Pass
44	5220	13.55	11.32	24	Pass
48	5240	13.34	11.25	24	Pass
52	5260	13.37	11.26	23.90	Pass
60	5300	13.00	11.14	23.83	Pass
64	5320	12.50	10.97	23.82	Pass
100	5500	11.91	10.76	23.82	Pass
116	5580	12.39	10.93	23.85	Pass
140	5700	12.25	10.88	23.84	Pass
149	5745	11.25	10.51	30	Pass
157	5785	11.64	10.66	30	Pass
165	5825	11.48	10.6	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(19.51) = 23.90 \text{ dBm} < 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(19.20) = 23.83 \text{ dBm} < 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(19.15) = 23.82 \text{ dBm} < 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(19.15) = 23.82 \text{ dBm} < 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(19.26) = 23.85 \text{ dBm} < 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(19.23) = 23.84 \text{ dBm} < 24 \text{ dBm}$.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	10.50	10.21	24	Pass
44	5220	10.74	10.31	24	Pass
48	5240	10.64	10.27	24	Pass
52	5260	10.57	10.24	23.95	Pass
60	5300	10.21	10.09	23.90	Pass
64	5320	10.09	10.04	23.89	Pass
100	5500	9.59	9.82	23.90	Pass
116	5580	10.19	10.08	23.91	Pass
140	5700	10.14	10.06	23.91	Pass
149	5745	9.27	9.67	30	Pass
157	5785	9.38	9.72	30	Pass
165	5825	9.25	9.66	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(19.74) = 23.95 \text{ dBm} < 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(19.49) = 23.90 \text{ dBm} < 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(19.45) = 23.89 \text{ dBm} < 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(19.50) = 23.90 \text{ dBm} < 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(19.55) = 23.91 \text{ dBm} < 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(19.55) = 23.91 \text{ dBm} < 24 \text{ dBm}$.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	11.56	10.63	24	Pass
46	5230	11.59	10.64	24	Pass
54	5270	11.69	10.68	24	Pass
62	5310	11.12	10.46	24	Pass
102	5510	10.38	10.16	24	Pass
110	5550	9.64	9.84	24	Pass
134	5670	10.74	10.31	24	Pass
151	5755	9.16	9.62	30	Pass
159	5795	9.42	9.74	30	Pass

Note:

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

1. $11 \text{ dBm} + 10\log(41.23) = 27.15 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(41.15) = 27.14 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(41.26) = 27.16 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(40.94) = 27.12 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(41.27) = 27.16 \text{ dBm} > 24 \text{ dBm}$.

26 dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	19.24
44	5220	19.65
48	5240	19.21
52	5260	19.51
60	5300	19.20
64	5320	19.15
100	5500	19.15
116	5580	19.26
140	5700	19.23

802.11n (HT20)

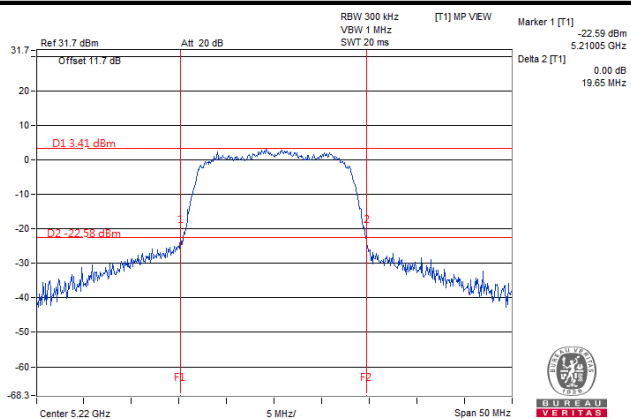
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	19.50
44	5220	19.48
48	5240	19.49
52	5260	19.74
60	5300	19.49
64	5320	19.45
100	5500	19.50
116	5580	19.55
140	5700	19.55

802.11n (HT40)

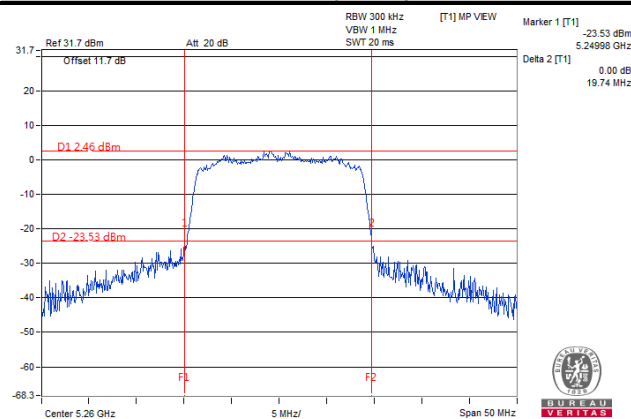
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	41.17
46	5230	41.24
54	5270	41.23
62	5310	41.15
102	5510	41.26
110	5550	40.94
134	5670	41.27

Spectrum Plot of Worst Value

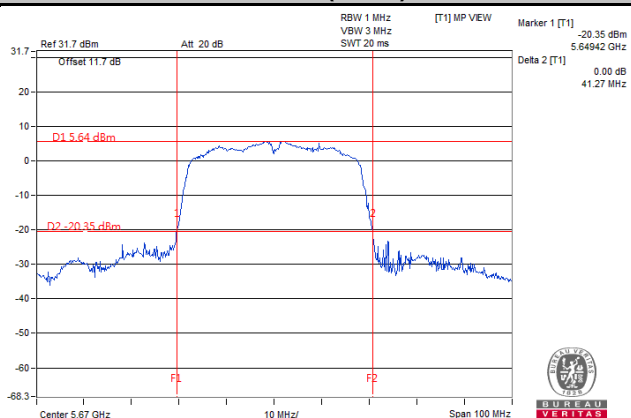
802.11a



802.11n (HT20)



802.11n (HT40)

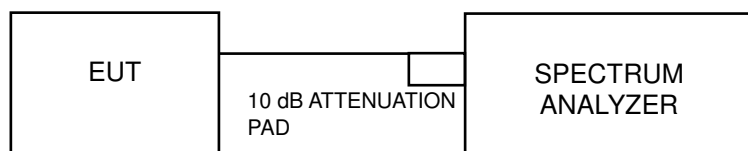


4.4 Peak Power Spectral Density Measurement

4.4.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17 dBm/MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11 dBm/MHz
U-NII-2A	√		11 dBm/MHz
U-NII-2C	√		11 dBm/MHz
U-NII-3	√		30 dBm/500 kHz

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 U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

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

※For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 500 kHz, Set VBW $\geq$ 3 RBW, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
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

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

4.4.7 Test Results

For U-NII-1, U-NII-2A, U-NII-2C Band

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	-0.16	0.31	0.15	11	Pass
44	5220	-0.32	0.31	-0.01	11	Pass
48	5240	-0.28	0.31	0.03	11	Pass
52	5260	0.02	0.31	0.33	11	Pass
60	5300	0.45	0.31	0.76	11	Pass
64	5320	0.64	0.31	0.95	11	Pass
100	5500	1.01	0.31	1.32	11	Pass
116	5580	0.46	0.31	0.77	11	Pass
140	5700	0.07	0.31	0.38	11	Pass

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

802.11n (HT20)

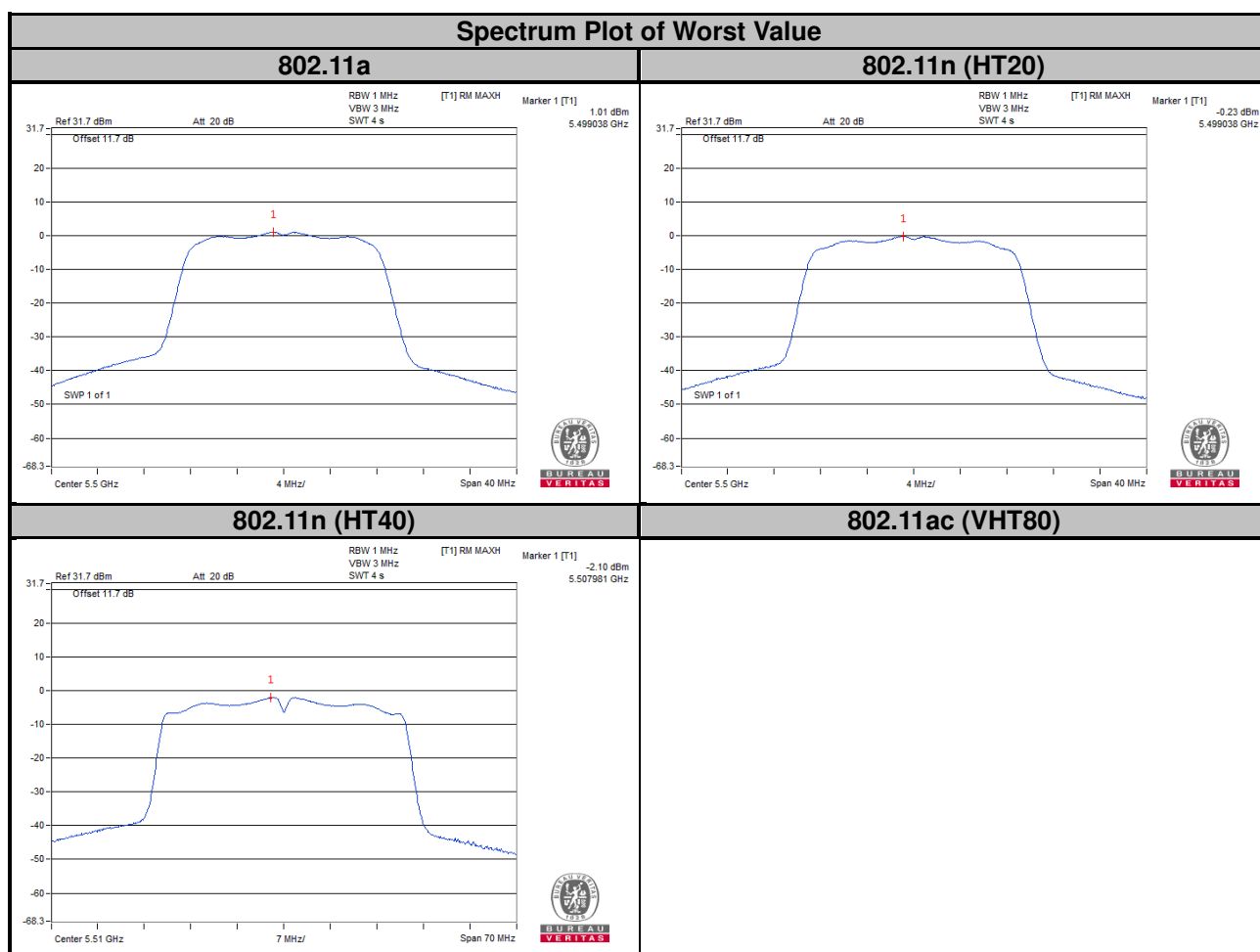
Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	-1.45	0.35	-1.10	11	Pass
44	5220	-1.47	0.35	-1.12	11	Pass
48	5240	-1.41	0.35	-1.06	11	Pass
52	5260	-1.18	0.35	-0.83	11	Pass
60	5300	-0.60	0.35	-0.25	11	Pass
64	5320	-0.50	0.35	-0.15	11	Pass
100	5500	-0.23	0.35	0.12	11	Pass
116	5580	-0.63	0.35	-0.28	11	Pass
140	5700	-0.98	0.35	-0.63	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	-3.23	0.64	-2.59	11	Pass
46	5230	-3.26	0.64	-2.62	11	Pass
54	5270	-2.75	0.64	-2.11	11	Pass
62	5310	-2.41	0.64	-1.77	11	Pass
102	5510	-2.10	0.64	-1.46	11	Pass
110	5550	-2.29	0.64	-1.65	11	Pass
134	5670	-2.74	0.64	-2.10	11	Pass

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



For U-NII-3 Band

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-3.33	0.31	-3.02	30	Pass
157	5785	-3.16	0.31	-2.85	30	Pass
165	5825	-2.87	0.31	-2.56	30	Pass

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

802.11n (HT20)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-4.76	0.35	-4.41	30	Pass
157	5785	-4.76	0.35	-4.41	30	Pass
165	5825	-4.29	0.35	-3.94	30	Pass

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

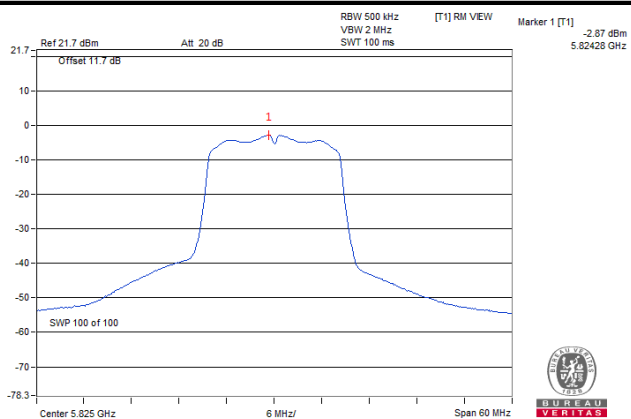
802.11n (HT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500 kHz)	Pass / Fail
151	5755	-7.67	0.64	-7.03	30	Pass
159	5795	-7.37	0.64	-6.73	30	Pass

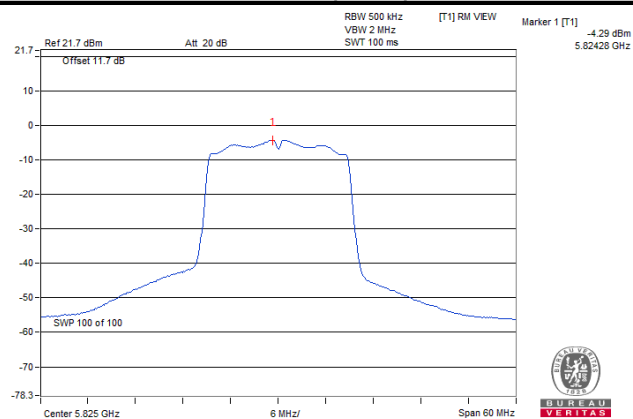
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

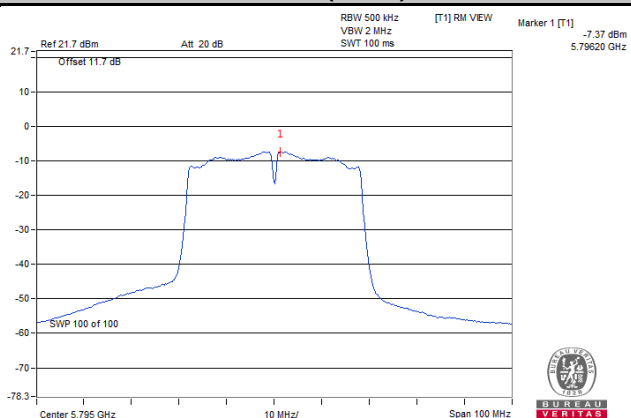
802.11a



802.11n (HT20)



802.11n (HT40)

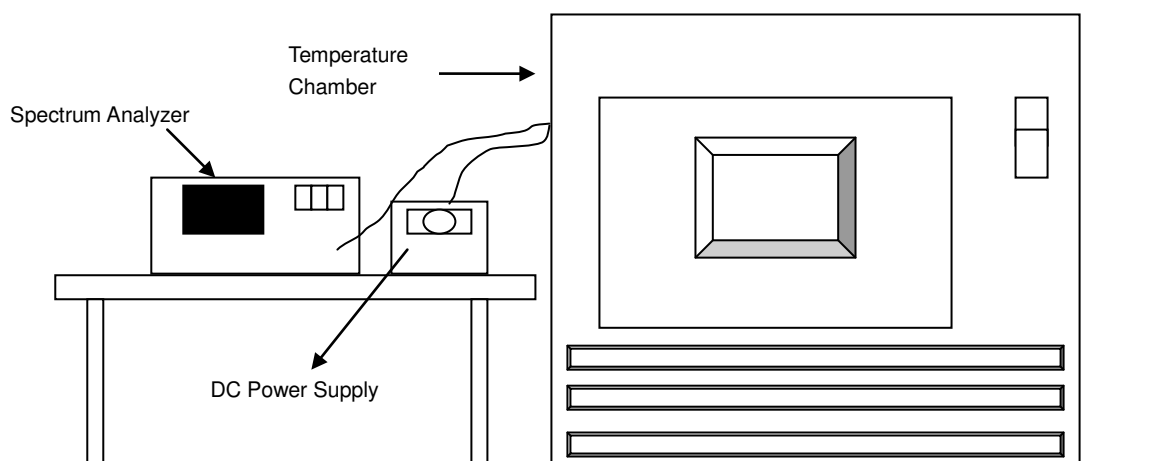


4.5 Frequency Stability

4.5.1 Limit 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

- To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
- The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.
- The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

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

Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
50	24	5320.033079	6.218	5320.033127	6.227	5320.032946	6.193	5320.032946	6.193
40	24	5320.033071	6.216	5320.032675	6.142	5320.033009	6.205	5320.033390	6.276
30	24	5320.033966	6.385	5320.034284	6.444	5320.034140	6.417	5320.034517	6.488
20	24	5320.034913	6.563	5320.035139	6.605	5320.034924	6.565	5320.035314	6.638
10	24	5320.036408	6.844	5320.036818	6.921	5320.036781	6.914	5320.036300	6.823
0	24	5320.035158	6.609	5320.034989	6.577	5320.034956	6.571	5320.034979	6.575
-10	24	5320.033189	6.239	5320.033647	6.325	5320.033134	6.228	5320.033997	6.390
-20	24	5320.033148	6.231	5320.033054	6.213	5320.033046	6.212	5320.033294	6.258
-30	24	5320.032077	6.030	5320.032055	6.025	5320.031777	5.973	5320.031762	5.970

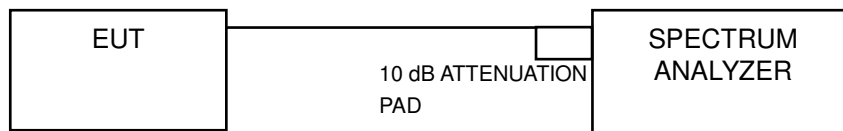
Frequency Stability Versus Temp.									
Operating Frequency: 5320 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	20.4	5320.028520	5.361	5320.028348	5.329	5320.028752	5.405	5320.028696	5.394
	24.0	5320.034913	6.563	5320.035139	6.605	5320.034924	6.565	5320.035314	6.638
	27.6	5320.029891	5.619	5320.029945	5.629	5320.030108	5.659	5320.030450	5.724

4.6 6 dB Bandwidth Measurement

4.6.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100 kHz
- 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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.35	0.5	Pass
157	5785	15.16	0.5	Pass
165	5825	14.81	0.5	Pass

802.11n (HT20)

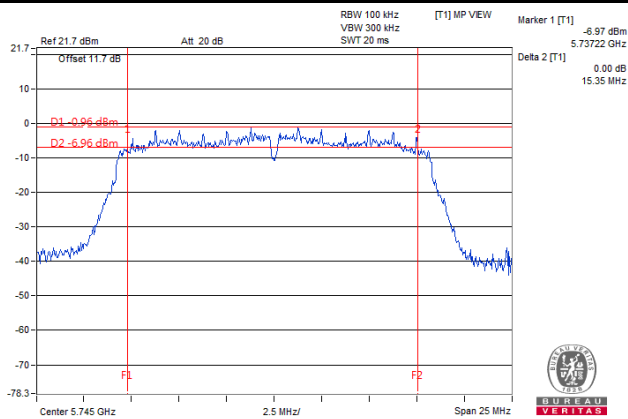
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.13	0.5	Pass
157	5785	15.13	0.5	Pass
165	5825	15.13	0.5	Pass

802.11n (HT40)

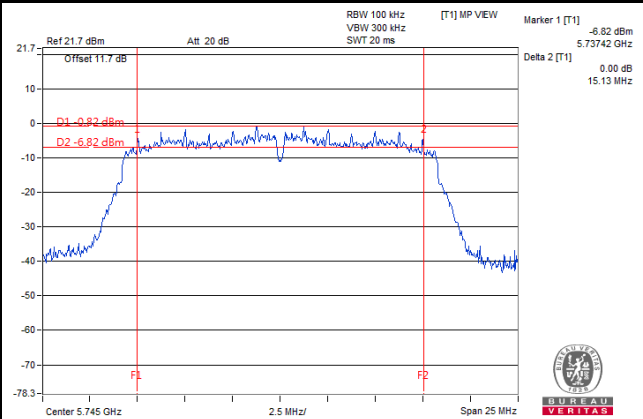
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.16	0.5	Pass
159	5795	35.23	0.5	Pass

Spectrum Plot of Worst Value

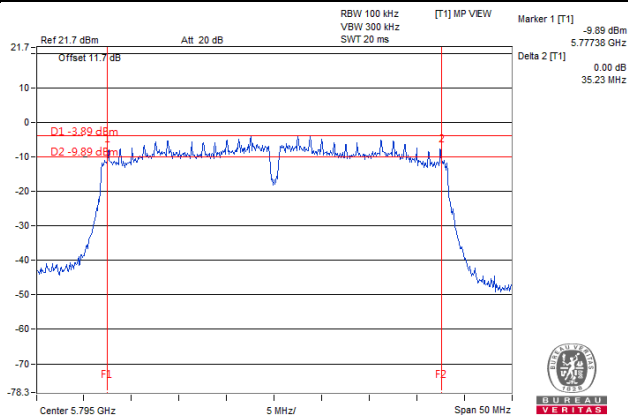
802.11a



802.11n (HT20)



802.11n (HT40)



5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – 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

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety

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.

--- END ---