

FCC Test Report

Report No.: RF180808C26D

FCC ID: PY318300418

Test Model: WAC564

Received Date: Aug. 08, 2018

Test Date: Aug. 23 ~ Oct. 04, 2018 (For Radiated Emission Test and AC Power Conducted Emissions of Test Mode A)

Sep. 10, 2019 (For all tests except Radiated Emission Test and AC Power Conducted Emissions of Test Mode A)

Jan. 22, 2020 (For Test Mode B)

Issued Date: Jan. 31, 2020

Applicant: NETGEAR, INC.

Address: 350 East Plumeria Drive San Jose, CA 95134

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

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

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, Taiwan

FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RF180808C26D	Original release	Jan. 31, 2020

1 Certificate of Conformity

Product: Insight Instant Mesh 4-port WiFi Extender

Brand: NETGEAR

Test Model: WAC564

Sample Status: Engineering sample

Applicant: NETGEAR, INC.

Test Date: Aug. 23 ~ Oct. 04, 2018 (For Radiated Emission Test and AC Power Conducted Emissions of Test Mode A)
Sep. 10, 2019 (For all tests except Radiated Emission Test and AC Power Conducted Emissions of Test Mode A)
Jan. 22, 2020 (For Test Mode B)

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 RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen, **Date:** Jan. 31, 2020
Pettie Chen / Senior Specialist

Approved by : Bruce Chen, **Date:** Jan. 31, 2020
Bruce Chen / Senior Project Engineer

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 -12.89dB at 0.15800MHz.
15.407(b)(1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.4dB at 5470.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX not a standard connector.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Insight Instant Mesh 4-port WiFi Extender
Brand	NETGEAR
Test Model	WAC564
Sample Status	Engineering sample
Power Supply Rating	12Vdc from adapter
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 600Mbps 802.11ac: up to 1733.3Mbps
Operating Frequency	5260 ~ 5320MHz, 5500 ~ 5700MHz
Number of Channel	5260 ~ 5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5500 ~ 5700MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 11 802.11n (HT40), 802.11ac (VHT40): 5 802.11ac (VHT80): 2
Conducted Output Power	CDD Mode: 5260 ~ 5320MHz: 208.019mW 5500 ~ 5700MHz: 203.974mW Beamforming Mode: 5260 ~ 5320MHz: 204.651mW 5500 ~ 5700MHz: 161.322mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	NA
Cable Supplied	NA

Note:

1. This report is prepared for FCC class II permissive change. The differences compared with the original report (BV CPS report no.: RF180808C26-1) are as below.
 - a. adding a model, a product name, an adapter for different outward appearance and firmware.
*The firmware change only affects DFS test.
 - b. adding 5.26GHz to 5.32GHz and 5.50GHz to 5.70GHz by software.

2. The EUT incorporates a MIMO function. Physically, the EUT provides 4 completed transmitters and 4 receivers.

Band	Modulation Mode	Beamforming Mode	TX Function
5GHz U-NII-2A Band	802.11a	Not Support	2TX
	802.11n (HT20)	Support (CDD / NSS=1)	2TX
	802.11n (HT40)	Support (CDD / NSS=1)	2TX
	802.11ac (VHT20)	Support (CDD / NSS=1)	2TX
	802.11ac (VHT40)	Support (CDD / NSS=1)	2TX
	802.11ac (VHT80)	Support (CDD / NSS=1)	2TX
5GHz U-NII-2C Band	802.11a	Not Support	4TX
	802.11n (HT20)	Support (CDD / NSS=1)	4TX
	802.11n (HT40)	Support (CDD / NSS=1)	4TX
	802.11ac (VHT20)	Support (CDD / NSS=1)	4TX
	802.11ac (VHT40)	Support (CDD / NSS=1)	4TX
	802.11ac (VHT80)	Support (CDD / NSS=1)	4TX

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

* For 5GHz band 802.11n and 802.11ac, CDD mode is the worst case for final radiated emission and power line conducted emission tests after pretesting CDD mode and beamforming mode.

3. The following antenna was provided to the EUT.

Ant. Type	Dipole					
Connector Type	I-PEX (WLAN)					
Directional Antenna Gain (dBi)						
Item	2.4G	5G Band 1	5G Band 2	5G Band 3	5G Band 4	
					Nss1	Nss2
-	2.61	4.18	4.18	7.43	7.43	4.86

4. The EUT uses following adapters. (Adapter 2, 3 are new)

Adapter 1	
Brand	NETGEAR
Model	2ABL030F1 NJ
PN	332-10948-01
Input Power	100-240Vac, 50/60Hz 1.0A
Output Power	12Vdc, 2.5A
Power Line	1.8m power cable without core attached on adapter

Adapter 2 (New)	
Brand	NETGEAR
Model	AD2067F10107LF
PN	332-10944-01
Input Power	100-240Vac, 50/60Hz 1.0A
Output Power	12Vdc, 2.5A
Power Line	1.8m power cable without core attached on adapter

Adapter 3 (New)	
Brand	NETGEAR
Model	AD2067M20107LF
PN	332-11074-01
Input Power	100-240Vac, 50/60Hz 1.0A
Output Power	12Vdc, 2.5A
Power Line	1.8m power cable without core attached on adapter

*Adapter 2 & 3 are identical to each other, except the plug type for different country, therefore only adapter 3 was for final test and presented in the test report.

5. Spurious emission of the simultaneous operation (2.4GHz and 5GHz) has been evaluated and no non-compliance was found.

3.2 Description of Test Modes

For 5260 ~ 5320MHz:

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

For 5500 ~ 5700MHz:

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

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

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

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

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Powered by adapter 1
B	-	√	√	-	Powered by adapter 3

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement
PLC: Power Line Conducted Emission

RE<1G: Radiated Emission below 1GHz
APCM: Antenna Port Conducted Measurement

Note:

1. The EUT was positioned on the Z-plane during testing.
2. “-” means no effect.
3. Radiated emission (below 1GHz) and power line conducted emission test items chosen the worst maximum power.

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	TX Function
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	2TX
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5	2TX
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5	2TX
	802.11ac (VHT80)		58	58	OFDM	29.3	2TX
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0	4TX
	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	6.5	4TX
	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	13.5	4TX
	802.11ac (VHT80)		106 to 122	106, 122	OFDM	29.3	4TX

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	TX Function
A, B	802.11a	5260-5320	52 to 64	60	OFDM	6.0	2TX
A, B	802.11n (HT20)	5500-5700	100 to 140	100	OFDM	6.5	4TX

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	TX Function
A, B	802.11a	5260-5320	52 to 64	60	OFDM	6.0	2TX
A, B	802.11n (HT20)	5500-5700	100 to 140	100	OFDM	6.5	4TX

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	TX Function
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	2TX
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5	2TX
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5	2TX
	802.11ac (VHT80)		58	58	OFDM	29.3	2TX
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0	4TX
	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	6.5	4TX
	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	13.5	4TX
	802.11ac (VHT80)		106 to 122	106, 122	OFDM	29.3	4TX

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	25 deg. C, 68% RH	120Vac, 60Hz	Noah Chang
RE<1G	25 deg. C, 70% RH	120Vac, 60Hz	Noah Chang
PLC	25 deg. C, 64% RH	120Vac, 60Hz	Jones Chang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Ivan Tseng

3.3 Duty Cycle of Test Signal

For 5260-5320MHz:

Duty cycle of test signal is > 98%, duty factor is not required

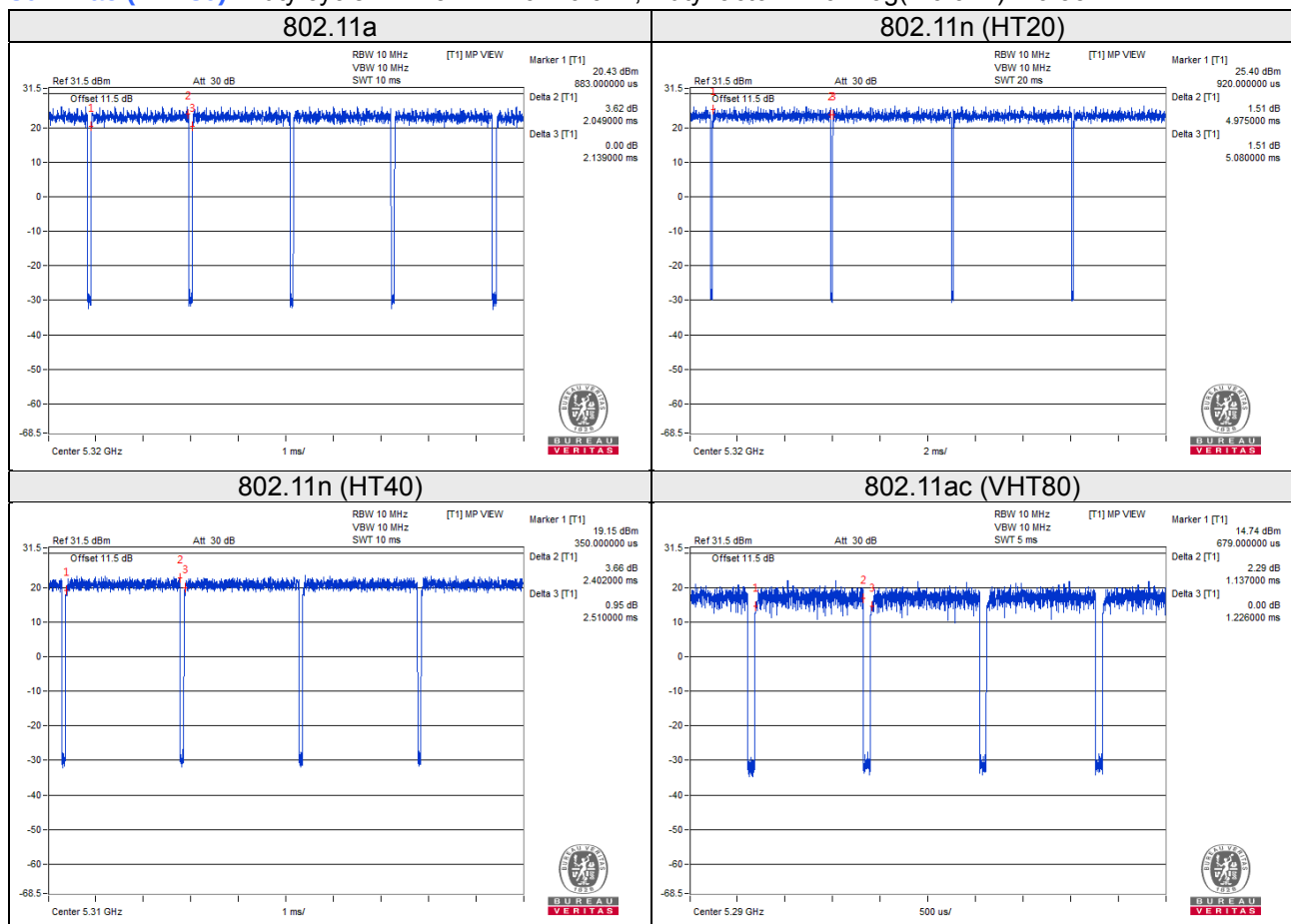
Duty cycle of test signal is < 98 %, duty factor is required

802.11a: Duty cycle = $2.049/2.139 = 0.958$, Duty factor = $10 * \log(1/0.958) = 0.19$

802.11n (HT20): Duty cycle = $4.975/5.08 = 0.979$, Duty factor = $10 * \log(1/0.979) = 0.09$

802.11n (HT40): Duty cycle = $2.402/2.510 = 0.956$, Duty factor = $10 * \log(1/0.956) = 0.20$

802.11ac (VHT80): Duty cycle = $1.137/1.226 = 0.927$, Duty factor = $10 * \log(1/0.927) = 0.33$



For 5500-5700MHz:

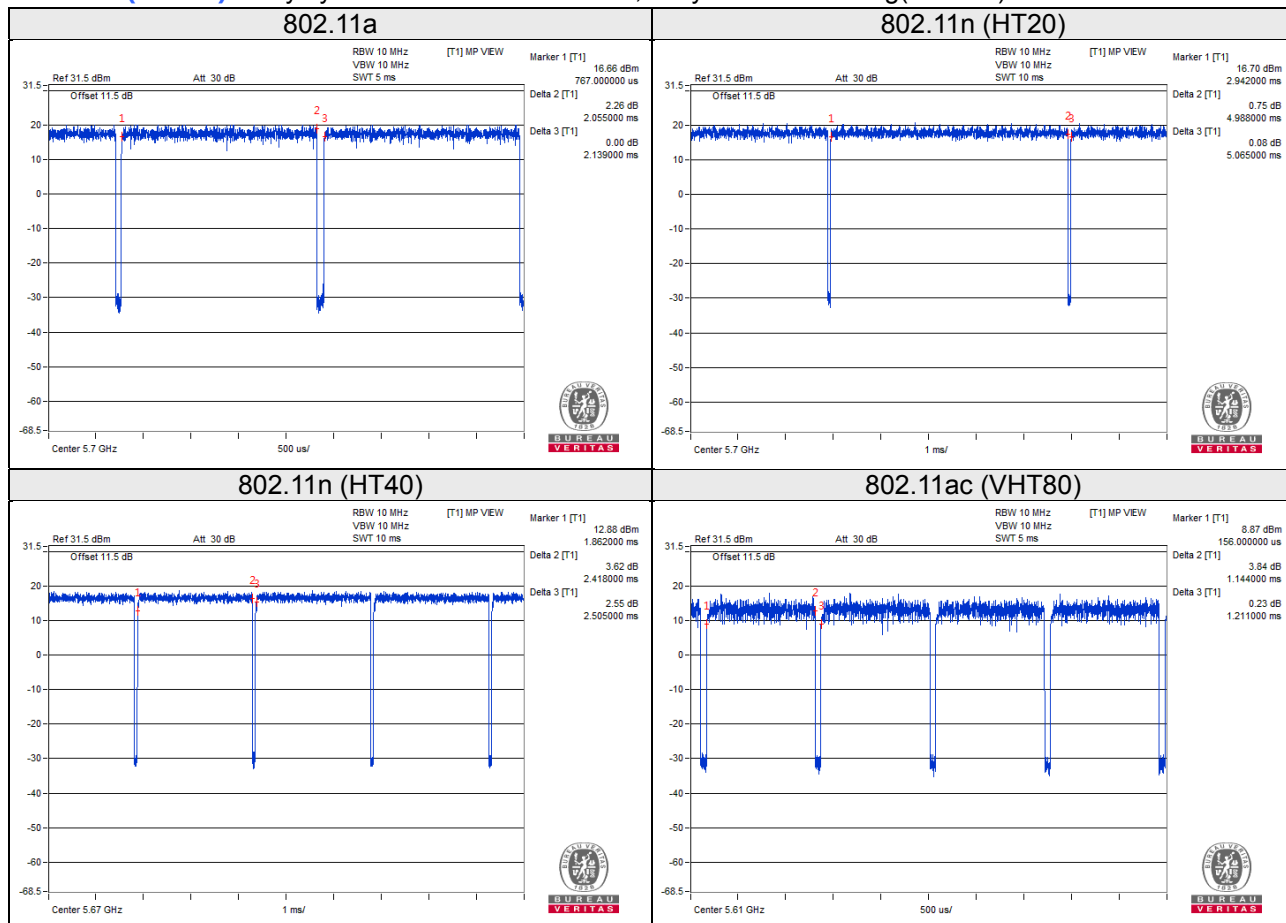
Duty cycle of test signal is > 98%, duty factor is not required
Duty cycle of test signal is < 98 %, duty factor is required

802.11a: Duty cycle = $2.055/2.139 = 0.961$, Duty factor = $10 * \log(1/0.961) = 0.17$

802.11n (HT20): Duty cycle = $4.988/5.065 = 0.985$

802.11n (HT40): Duty cycle = $2.418/2.505 = 0.965$, Duty factor = $10 * \log(1/0.965) = 0.15$

802.11ac (VHT80): Duty cycle = $1.144/1.211 = 0.945$, Duty factor = $10 * \log(1/0.945) = 0.25$



3.4 Description of Support Units

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

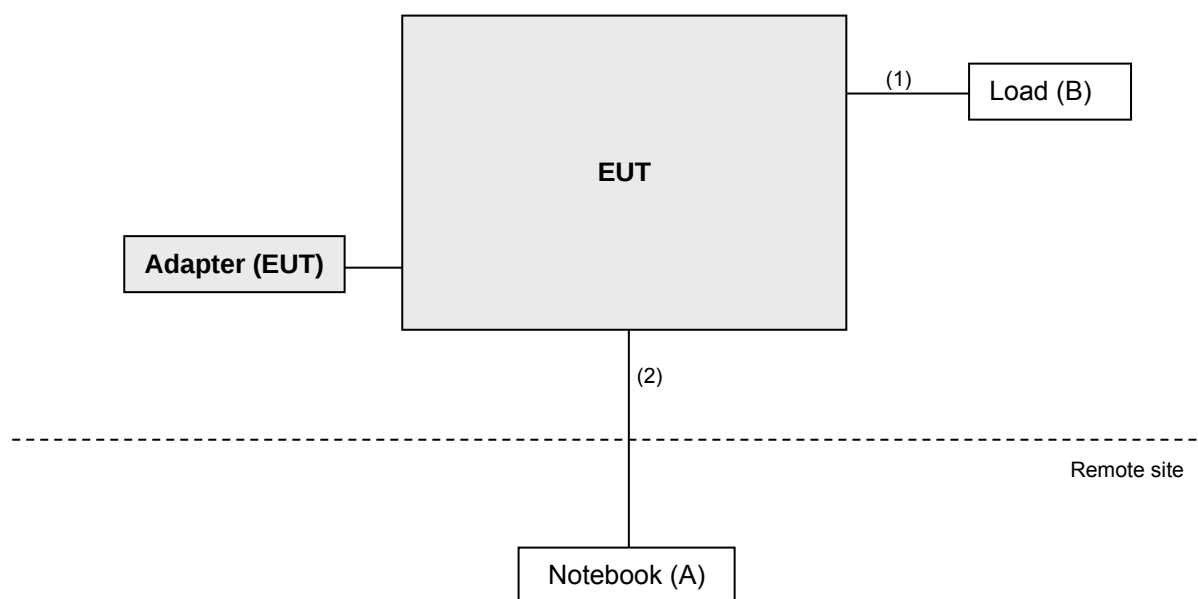
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	6RP2YM1	FCC DoC Approved	-
B.	Load	N/A	N/A	N/A	N/A	-

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45	3	1.8	N	0	-
2.	RJ45	1	10	N	0	-

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)

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10:2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note:

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

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v02r01			Field Strength at 3m	
			PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*1} beyond 75 MHz or more above of the band edge.			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

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

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

4.1.2 Test Instruments

Test Date: Aug. 23 ~ Oct. 04, 2018

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	May 29, 2018	May 28, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 25, 2018	Sep. 24, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 25, 2018	Nov. 24, 2019
Loop Antenna TESEQ	HLA 6121	45745	Jun. 14, 2018	Jun. 13, 2019
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Aug. 08, 2018	Aug. 07, 2019
Preamplifier KEYSIGHT (Above 1GHz)	83017A	MY53270295	Jul. 02, 2018	Jul. 01, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 08, 2018	Aug. 07, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 08, 2018	Aug. 07, 2019
RF signal cable WOKEN	8D-FB	Cable-CH4-01	Aug. 08, 2018	Aug. 07, 2019
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Nov. 14, 2018	Nov. 13, 2019
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY5519000 4/MY55190007/MY55210 005	Jul. 17, 2018	Jul. 16, 2019
Peak Power Analyzer KEYSIGHT (For 8TX & 160M bandwidth)	8990B	MY51000485	Feb. 09, 2018	Feb. 08, 2019

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.

Test Date: Sep. 10, 2019

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jan. 03, 2019	Jan. 02, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 25, 2018	Sep. 24, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 25, 2018	Nov. 24, 2019
Loop Antenna TESEQ	HLA 6121	45745	Jul. 01, 2019	Jun. 30, 2020
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Jul. 11, 2019	Jul. 10, 2020
Preamplifier KEYSIGHT (Above 1GHz)	83017A	MY53270295	Jun. 11, 2019	Jun. 10, 2020
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH4-01	Aug. 20, 2019	Aug. 19, 2020
RF Coaxial Cable EMCI	EMC102-KM-KM-3000	150929	Aug. 20, 2019	Aug. 19, 2020
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	Aug. 20, 2019	Aug. 19, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Jul. 11, 2019	Jul. 10, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Jul. 11, 2019	Jul. 10, 2020
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Nov. 14, 2018	Nov. 13, 2019
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	Jul. 15, 2019	Jul. 14, 2020
Peak Power Analyzer KEYSIGHT (For 8TX & 160M bandwidth)	8990B	MY51000485	Jan. 14, 2019	Jan. 13, 2020

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

2. The test was performed in HwaYa Chamber 4.

Test Date: Jan. 22, 2020

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 31, 2019	Dec. 30, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 23, 2019	Sep. 22, 2020
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Nov. 11, 2019	Nov. 10, 2020
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Nov. 24, 2019	Nov. 23, 2020
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
Loop Antenna TESEQ	HLA 6121	45745	Jul. 01, 2019	Jun. 30, 2020
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Jul. 11, 2019	Jul. 10, 2020
Preamplifier KEYSIGHT (Above 1GHz)	83017A	MY53270295	Jun. 11, 2019	Jun. 10, 2020
RF Coaxial Cable WORKEN With 5dB PAD	8D-FB	Cable-CH4-01	Aug. 20, 2019	Aug. 19, 2020
RF Coaxial Cable EMCI	EMC102-KM-KM-3000	150929	Aug. 20, 2019	Aug. 19, 2020
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	Aug. 20, 2019	Aug. 19, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Jul. 11, 2019	Jul. 10, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Jul. 11, 2019	Jul. 10, 2020
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 05, 2019	Sep. 04, 2020
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	Jul. 15, 2019	Jul. 14, 2020

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- 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.
- The test-receiver system was set to peak and average detect 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:

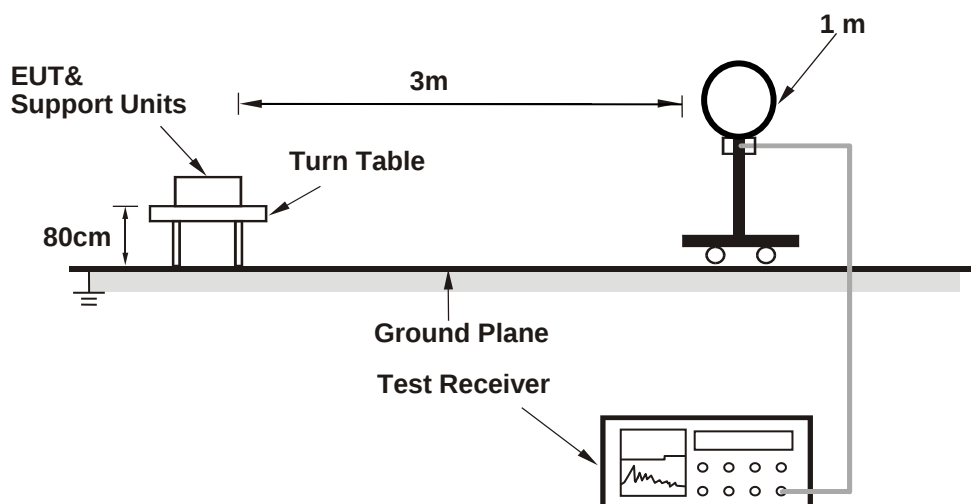
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
 (For 5GHz Band 2: 802.11a: RBW = 1MHz, VBW = 1kHz; 802.11n (HT20): RBW = 1MHz, VBW = 300Hz; 802.11n (HT40): RBW = 1MHz, VBW = 1kHz; 802.11ac (VHT80): RBW = 1MHz, VBW = 1kHz;
 For 5GHz Band 3: 802.11a: RBW = 1MHz, VBW = 1kHz; 802.11n (HT20): RBW = 1MHz, VBW = 10Hz; 802.11n (HT40): RBW = 1MHz, VBW = 1kHz ; 802.11ac (VHT80): RBW = 1 MHz, VBW = 1kHz)
- All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

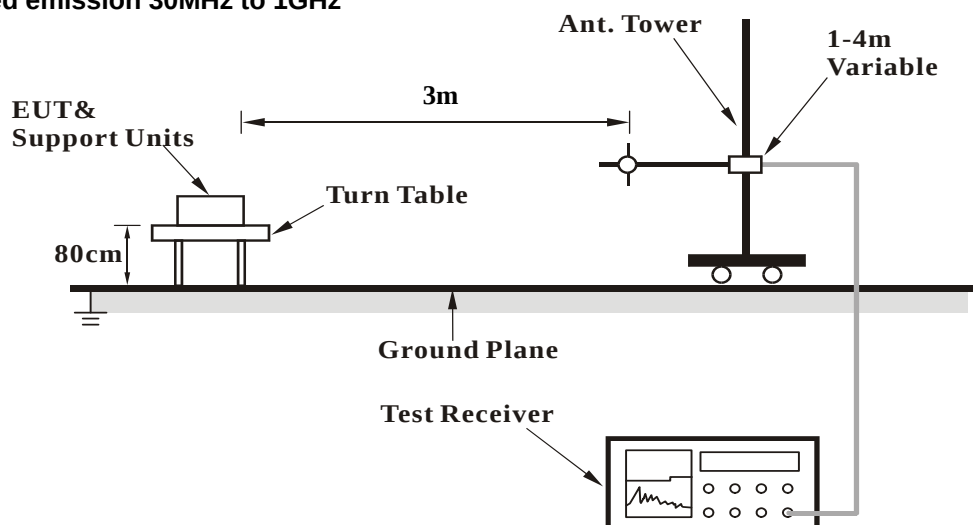
No deviation.

4.1.5 Test Setup

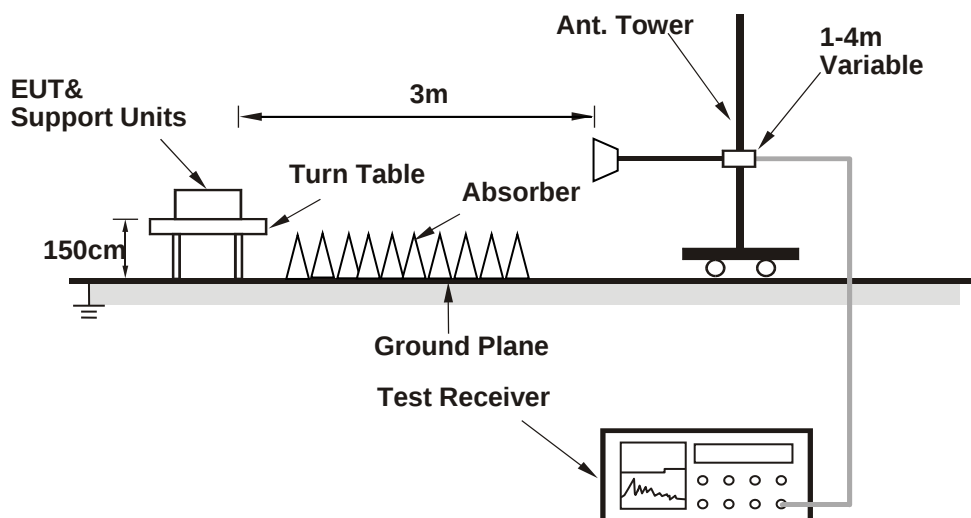
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".
- The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.8 PK	74.0	-24.2	1.96 H	192	38.0	11.8
2	5150.00	46.9 AV	54.0	-7.1	1.96 H	192	35.1	11.8
3	*5260.00	106.9 PK			1.96 H	192	66.4	40.5
4	*5260.00	97.6 AV			1.96 H	192	57.1	40.5
5	#10520.00	60.8 PK	68.2	-7.4	2.66 H	293	38.5	22.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.5 PK	74.0	-13.5	1.00 V	145	48.7	11.8
2	5150.00	47.3 AV	54.0	-6.7	1.00 V	145	35.5	11.8
3	*5260.00	116.0 PK			1.00 V	145	75.5	40.5
4	*5260.00	106.4 AV			1.00 V	145	65.9	40.5
5	#10520.00	61.3 PK	68.2	-6.9	1.99 V	252	39.0	22.3

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.9 PK			1.98 H	239	65.5	40.4
2	*5300.00	96.0 AV			1.98 H	239	55.6	40.4
3	10600.00	60.7 PK	74.0	-13.3	2.56 H	153	38.4	22.3
4	10600.00	47.9 AV	54.0	-6.1	2.56 H	153	25.6	22.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	114.5 PK			1.00 V	133	74.1	40.4
2	*5300.00	104.2 AV			1.00 V	133	63.8	40.4
3	10600.00	61.0 PK	74.0	-13.0	2.59 V	208	38.7	22.3
4	10600.00	48.4 AV	54.0	-5.6	2.59 V	208	26.1	22.3

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.4 PK			1.97 H	236	64.8	40.6
2	*5320.00	95.5 AV			1.97 H	236	54.9	40.6
3	5350.00	62.7 PK	74.0	-11.3	1.97 H	236	50.8	11.9
4	5350.00	47.9 AV	54.0	-6.1	1.97 H	236	36.0	11.9
5	10640.00	60.4 PK	74.0	-13.6	2.33 H	102	37.9	22.5
6	10640.00	47.8 AV	54.0	-6.2	2.33 H	102	25.3	22.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	114.1 PK			1.07 V	133	73.5	40.6
2	*5320.00	104.2 AV			1.07 V	133	63.6	40.6
3	5350.00	67.0 PK	74.0	-7.0	1.07 V	133	55.1	11.9
4	5350.00	50.0 AV	54.0	-4.0	1.07 V	133	38.1	11.9
5	10640.00	60.9 PK	74.0	-13.1	2.56 V	248	38.4	22.5
6	10640.00	48.3 AV	54.0	-5.7	2.56 V	248	25.8	22.5

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.0 PK	74.0	-15.0	1.86 H	246	46.5	12.5
2	5460.00	47.4 AV	54.0	-6.6	1.86 H	246	34.9	12.5
3	#5470.00	60.9 PK	68.2	-7.3	1.86 H	246	48.4	12.5
4	*5500.00	108.7 PK			1.86 H	246	67.2	41.5
5	*5500.00	98.5 AV			1.86 H	246	57.0	41.5
6	11000.00	60.2 PK	74.0	-13.8	2.86 H	300	37.5	22.7
7	11000.00	47.7 AV	54.0	-6.3	2.86 H	300	25.0	22.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.7 PK	74.0	-13.3	1.09 V	147	48.2	12.5
2	5460.00	47.6 AV	54.0	-6.4	1.09 V	147	35.1	12.5
3	#5470.00	61.4 PK	68.2	-6.8	1.09 V	147	48.9	12.5
4	*5500.00	116.6 PK			1.09 V	147	75.1	41.5
5	*5500.00	106.8 AV			1.09 V	147	65.3	41.5
6	11000.00	60.5 PK	74.0	-13.5	2.81 V	360	37.8	22.7
7	11000.00	48.0 AV	54.0	-6.0	2.81 V	360	25.3	22.7

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.2 PK			1.76 H	244	66.4	41.8
2	*5580.00	98.3 AV			1.76 H	244	56.5	41.8
3	11160.00	59.7 PK	74.0	-14.3	2.63 H	286	37.0	22.7
4	11160.00	47.7 AV	54.0	-6.3	2.63 H	286	25.0	22.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	117.7 PK			1.22 V	203	75.9	41.8
2	*5580.00	106.8 AV			1.22 V	203	65.0	41.8
3	11160.00	60.1 PK	74.0	-13.9	3.05 V	331	37.4	22.7
4	11160.00	47.9 AV	54.0	-6.1	3.05 V	331	25.2	22.7

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.1 PK			1.80 H	129	66.0	42.1
2	*5700.00	97.4 AV			1.80 H	129	55.3	42.1
3	#5725.00	61.7 PK	68.2	-6.5	1.80 H	129	48.9	12.8
4	11400.00	60.2 PK	74.0	-13.8	2.92 H	261	36.4	23.8
5	11400.00	49.0 AV	54.0	-5.0	2.92 H	261	25.2	23.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	117.5 PK			1.24 V	221	75.4	42.1
2	*5700.00	106.9 AV			1.24 V	221	64.8	42.1
3	#5725.00	62.4 PK	68.2	-5.8	1.24 V	221	49.6	12.8
4	11400.00	60.7 PK	74.0	-13.3	2.77 V	104	36.9	23.8
5	11400.00	49.5 AV	54.0	-4.5	2.77 V	104	25.7	23.8

Remarks:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.0 PK	74.0	-14.0	1.96 H	197	48.2	11.8
2	5150.00	46.9 AV	54.0	-7.1	1.96 H	197	35.1	11.8
3	*5260.00	107.5 PK			1.96 H	197	67.0	40.5
4	*5260.00	97.4 AV			1.96 H	197	56.9	40.5
5	#10520.00	61.1 PK	68.2	-7.1	2.75 H	263	38.8	22.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.8 PK	74.0	-14.2	1.29 V	145	48.0	11.8
2	5150.00	47.5 AV	54.0	-6.5	1.29 V	145	35.7	11.8
3	*5260.00	116.8 PK			1.29 V	145	76.3	40.5
4	*5260.00	105.7 AV			1.29 V	145	65.2	40.5
5	#10520.00	61.4 PK	68.2	-6.8	2.80 V	213	39.1	22.3

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.1 PK			1.84 H	238	64.7	40.4
2	*5300.00	95.0 AV			1.84 H	238	54.6	40.4
3	10600.00	60.3 PK	74.0	-13.7	2.99 H	201	38.0	22.3
4	10600.00	47.2 AV	54.0	-6.8	2.99 H	201	24.9	22.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	115.5 PK			1.42 V	148	75.1	40.4
2	*5300.00	104.3 AV			1.42 V	148	63.9	40.4
3	10600.00	60.5 PK	74.0	-13.5	2.16 V	237	38.2	22.3
4	10600.00	47.7 AV	54.0	-6.3	2.16 V	237	25.4	22.3

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	104.4 PK			1.59 H	191	63.8	40.6
2	*5320.00	94.4 AV			1.59 H	191	53.8	40.6
3	5350.00	61.6 PK	74.0	-12.4	1.59 H	191	49.7	11.9
4	5350.00	47.7 AV	54.0	-6.3	1.59 H	191	35.8	11.9
5	10640.00	60.5 PK	74.0	-13.5	2.32 H	241	38.0	22.5
6	10640.00	47.2 AV	54.0	-6.8	2.32 H	241	24.7	22.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	114.6 PK			1.19 V	145	74.0	40.6
2	*5320.00	103.8 AV			1.19 V	145	63.2	40.6
3	5350.00	65.4 PK	74.0	-8.6	1.19 V	145	53.5	11.9
4	5350.00	50.9 AV	54.0	-3.1	1.19 V	145	39.0	11.9
5	10640.00	60.9 PK	74.0	-13.1	2.03 V	309	38.4	22.5
6	10640.00	47.6 AV	54.0	-6.4	2.03 V	309	25.1	22.5

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.9 PK	74.0	-15.1	1.88 H	246	46.4	12.5
2	5460.00	46.7 AV	54.0	-7.3	1.88 H	246	34.2	12.5
3	#5470.00	60.3 PK	68.2	-7.9	1.88 H	246	47.8	12.5
4	*5500.00	108.4 PK			1.88 H	246	66.9	41.5
5	*5500.00	98.3 AV			1.88 H	246	56.8	41.5
6	11000.00	60.6 PK	74.0	-13.4	3.29 H	320	37.9	22.7
7	11000.00	47.7 AV	54.0	-6.3	3.29 H	320	25.0	22.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.3 PK	74.0	-13.7	1.18 V	204	47.8	12.5
2	5460.00	47.9 AV	54.0	-6.1	1.18 V	204	35.4	12.5
3	#5470.00	62.3 PK	68.2	-5.9	1.18 V	204	49.8	12.5
4	*5500.00	117.5 PK			1.18 V	204	76.0	41.5
5	*5500.00	106.7 AV			1.18 V	204	65.2	41.5
6	11000.00	60.8 PK	74.0	-13.2	2.74 V	102	38.1	22.7
7	11000.00	48.1 AV	54.0	-5.9	2.74 V	102	25.4	22.7

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.5 PK			1.90 H	188	66.7	41.8
2	*5580.00	97.7 AV			1.90 H	188	55.9	41.8
3	11160.00	59.7 PK	74.0	-14.3	2.56 H	271	37.0	22.7
4	11160.00	47.9 AV	54.0	-6.1	2.56 H	271	25.2	22.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	117.5 PK			1.22 V	203	75.7	41.8
2	*5580.00	106.7 AV			1.22 V	203	64.9	41.8
3	11160.00	60.2 PK	74.0	-13.8	2.09 V	243	37.5	22.7
4	11160.00	48.1 AV	54.0	-5.9	2.09 V	243	25.4	22.7

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	110.8 PK			3.87 H	192	68.7	42.1
2	*5700.00	100.1 AV			3.87 H	192	58.0	42.1
3	#5725.00	61.8 PK	68.2	-6.4	3.87 H	192	49.0	12.8
4	11400.00	60.6 PK	74.0	-13.4	2.45 H	102	36.8	23.8
5	11400.00	48.9 AV	54.0	-5.1	2.45 H	102	25.1	23.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	116.9 PK			1.24 V	223	74.8	42.1
2	*5700.00	106.2 AV			1.24 V	223	64.1	42.1
3	#5725.00	63.1 PK	68.2	-5.1	1.24 V	223	50.3	12.8
4	11400.00	60.9 PK	74.0	-13.1	2.93 V	217	37.1	23.8
5	11400.00	49.1 AV	54.0	-4.9	2.93 V	217	25.3	23.8

Remarks:

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

802.11n (HT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.6 PK	74.0	-13.4	1.95 H	198	48.8	11.8
2	5150.00	46.5 AV	54.0	-7.5	1.95 H	198	34.7	11.8
3	*5270.00	103.2 PK			1.95 H	198	62.8	40.4
4	*5270.00	93.7 AV			1.95 H	198	53.3	40.4
5	#10540.00	59.8 PK	68.2	-8.4	1.08 H	306	37.6	22.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.5 PK	74.0	-13.5	1.50 V	145	48.7	11.8
2	5150.00	47.5 AV	54.0	-6.5	1.50 V	145	35.7	11.8
3	*5270.00	112.3 PK			1.50 V	145	71.9	40.4
4	*5270.00	102.9 AV			1.50 V	145	62.5	40.4
5	#10540.00	60.2 PK	68.2	-8.0	2.91 V	244	38.0	22.2

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	100.1 PK			1.09 H	130	59.6	40.5
2	*5310.00	91.0 AV			1.09 H	130	50.5	40.5
3	5350.00	58.4 PK	74.0	-15.6	1.09 H	130	46.5	11.9
4	5350.00	46.8 AV	54.0	-7.2	1.09 H	130	34.9	11.9
5	10620.00	60.8 PK	74.0	-13.2	2.01 H	309	38.5	22.3
6	10620.00	47.3 AV	54.0	-6.7	2.01 H	309	25.0	22.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	110.1 PK			1.00 V	148	69.6	40.5
2	*5310.00	101.0 AV			1.00 V	148	60.5	40.5
3	5350.00	66.0 PK	74.0	-8.0	1.00 V	148	54.1	11.9
4	5350.00	49.4 AV	54.0	-4.6	1.00 V	148	37.5	11.9
5	10620.00	61.1 PK	74.0	-12.9	2.56 V	298	38.8	22.3
6	10620.00	47.5 AV	54.0	-6.5	2.56 V	298	25.2	22.3

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.8 PK	74.0	-15.2	1.08 H	182	46.3	12.5
2	5460.00	47.1 AV	54.0	-6.9	1.08 H	182	34.6	12.5
3	#5470.00	61.5 PK	68.2	-6.7	1.08 H	182	49.0	12.5
4	*5510.00	105.3 PK			1.08 H	182	63.7	41.6
5	*5510.00	95.5 AV			1.08 H	182	53.9	41.6
6	11020.00	62.5 PK	74.0	-11.5	2.95 H	302	39.8	22.7
7	11020.00	49.2 AV	54.0	-4.8	2.95 H	302	26.5	22.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.7 PK	74.0	-12.3	1.60 V	98	49.2	12.5
2	5460.00	49.0 AV	54.0	-5.0	1.60 V	98	36.5	12.5
3	#5470.00	64.0 PK	68.2	-4.2	1.60 V	98	51.5	12.5
4	*5510.00	114.4 PK			1.60 V	98	72.8	41.6
5	*5510.00	104.3 AV			1.60 V	98	62.7	41.6
6	11020.00	62.6 PK	74.0	-11.4	2.59 V	263	39.9	22.7
7	11020.00	49.5 AV	54.0	-4.5	2.59 V	263	26.8	22.7

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	105.5 PK			3.05 H	188	63.8	41.7
2	*5550.00	96.1 AV			3.05 H	188	54.4	41.7
3	11100.00	61.3 PK	74.0	-12.7	1.50 H	214	38.4	22.9
4	11100.00	49.1 AV	54.0	-4.9	1.50 H	214	26.2	22.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	114.5 PK			1.17 V	190	72.8	41.7
2	*5550.00	105.1 AV			1.17 V	190	63.4	41.7
3	11100.00	61.8 PK	74.0	-12.2	2.58 V	244	38.9	22.9
4	11100.00	49.3 AV	54.0	-4.7	2.58 V	244	26.4	22.9

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	107.4 PK			3.64 H	202	65.7	41.7
2	*5670.00	97.8 AV			3.64 H	202	56.1	41.7
3	#5725.00	61.2 PK	68.2	-7.0	3.64 H	202	48.4	12.8
4	11340.00	61.2 PK	74.0	-12.8	1.01 H	26	37.9	23.3
5	11340.00	49.1 AV	54.0	-4.9	1.01 H	26	25.8	23.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	114.7 PK			1.17 V	180	73.0	41.7
2	*5670.00	104.5 AV			1.17 V	180	62.8	41.7
3	#5725.00	62.2 PK	68.2	-6.0	1.17 V	180	49.4	12.8
4	11340.00	61.6 PK	74.0	-12.4	2.85 V	210	38.3	23.3
5	11340.00	49.6 AV	54.0	-4.4	2.85 V	210	26.3	23.3

Remarks:

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

802.11ac (VHT80)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.1 PK	74.0	-12.9	1.02 H	136	49.3	11.8
2	5150.00	45.9 AV	54.0	-8.1	1.02 H	136	34.1	11.8
3	*5290.00	97.4 PK			1.02 H	136	57.0	40.4
4	*5290.00	88.3 AV			1.02 H	136	47.9	40.4
5	5350.00	58.3 PK	74.0	-15.7	1.02 H	136	46.4	11.9
6	5350.00	46.3 AV	54.0	-7.7	1.02 H	136	34.4	11.9
7	#10580.00	61.0 PK	68.2	-7.2	2.59 H	226	38.8	22.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.1 PK	74.0	-13.9	1.00 V	149	48.3	11.8
2	5150.00	47.9 AV	54.0	-6.1	1.00 V	149	36.1	11.8
3	*5290.00	106.4 PK			1.00 V	149	66.0	40.4
4	*5290.00	97.3 AV			1.00 V	149	56.9	40.4
5	5350.00	64.5 PK	74.0	-9.5	1.00 V	149	52.6	11.9
6	5350.00	50.7 AV	54.0	-3.3	1.00 V	149	38.8	11.9
7	#10580.00	61.3 PK	68.2	-6.9	2.56 V	221	39.1	22.2

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.5 PK	74.0	-14.5	1.10 H	182	47.0	12.5
2	5460.00	47.3 AV	54.0	-6.7	1.10 H	182	34.8	12.5
3	#5470.00	61.1 PK	68.2	-7.1	1.10 H	182	48.6	12.5
4	*5530.00	103.0 PK			1.10 H	182	61.3	41.7
5	*5530.00	92.7 AV			1.10 H	182	51.0	41.7
6	#5725.00	58.6 PK	68.2	-9.6	1.10 H	182	45.8	12.8
7	11060.00	61.3 PK	74.0	-12.7	1.99 H	332	38.5	22.8
8	11060.00	49.0 AV	54.0	-5.0	1.99 H	332	26.2	22.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.9 PK	74.0	-11.1	1.39 V	264	50.4	12.5
2	5460.00	50.8 AV	54.0	-3.2	1.39 V	264	38.3	12.5
3	#5470.00	66.8 PK	68.2	-1.4	1.39 V	264	54.3	12.5
4	*5530.00	111.9 PK			1.39 V	264	70.2	41.7
5	*5530.00	101.7 AV			1.39 V	264	60.0	41.7
6	#5725.00	61.6 PK	68.2	-6.6	1.39 V	264	48.8	12.8
7	11060.00	61.5 PK	74.0	-12.5	2.93 V	306	38.7	22.8
8	11060.00	49.3 AV	54.0	-4.7	2.93 V	306	26.5	22.8

Remarks:

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

CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.2 PK	74.0	-14.8	3.70 H	203	46.7	12.5
2	5460.00	47.0 AV	54.0	-7.0	3.70 H	203	34.5	12.5
3	#5470.00	60.7 PK	68.2	-7.5	3.70 H	203	48.2	12.5
4	*5610.00	104.6 PK			3.70 H	203	62.9	41.7
5	*5610.00	94.8 AV			3.70 H	203	53.1	41.7
6	#5725.00	59.7 PK	68.2	-8.5	3.70 H	203	46.9	12.8
7	11220.00	61.0 PK	74.0	-13.0	1.52 H	104	38.4	22.6
8	11220.00	48.8 AV	54.0	-5.2	1.52 H	104	26.2	22.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.4 PK	74.0	-13.6	1.27 V	268	47.9	12.5
2	5460.00	48.0 AV	54.0	-6.0	1.27 V	268	35.5	12.5
3	#5470.00	62.6 PK	68.2	-5.6	1.27 V	268	50.1	12.5
4	*5610.00	110.8 PK			1.27 V	268	69.1	41.7
5	*5610.00	101.3 AV			1.27 V	268	59.6	41.7
6	#5725.00	63.1 PK	68.2	-5.1	1.27 V	268	50.3	12.8
7	11220.00	61.3 PK	74.0	-12.7	2.83 V	108	38.7	22.6
8	11220.00	49.2 AV	54.0	-4.8	2.83 V	108	26.6	22.6

Remarks:

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

Below 1GHz Worst-Case Data:

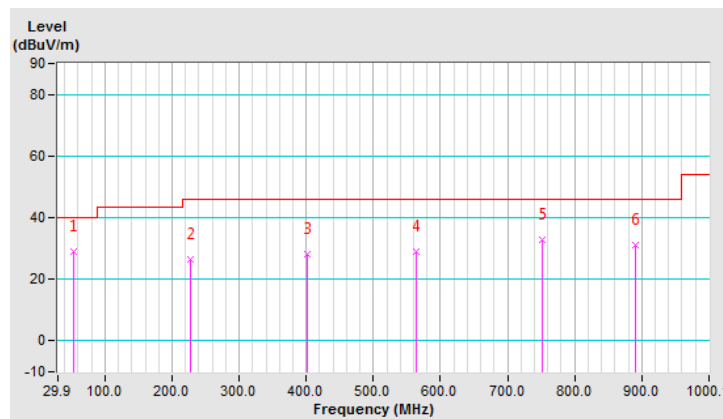
802.11a

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	53.18	28.9 QP	40.0	-11.1	1.01 H	102	37.6	-8.7
2	227.82	26.3 QP	46.0	-19.7	1.01 H	252	37.8	-11.5
3	402.46	28.1 QP	46.0	-17.9	1.01 H	326	34.5	-6.4
4	563.51	29.0 QP	46.0	-17.0	1.50 H	294	32.8	-3.8
5	751.73	32.7 QP	46.0	-13.3	1.01 H	13	31.6	1.1
6	891.44	31.2 QP	46.0	-14.8	1.50 H	153	27.8	3.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report

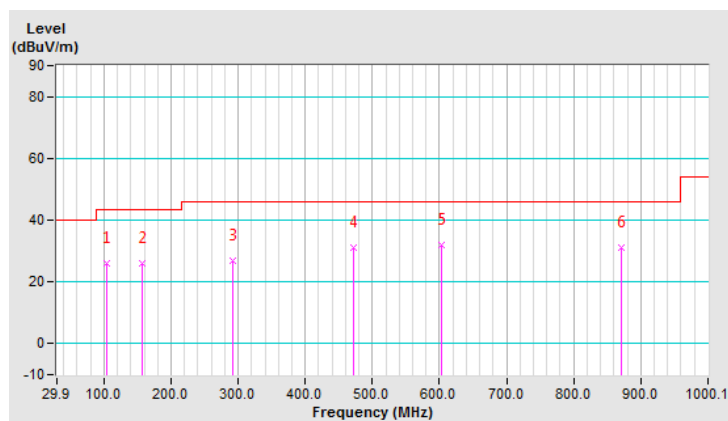


CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	103.64	25.9 QP	43.5	-17.6	1.00 V	280	38.6	-12.7
2	157.97	26.2 QP	43.5	-17.3	1.00 V	6	34.7	-8.5
3	291.85	26.8 QP	46.0	-19.2	1.50 V	163	34.9	-8.1
4	472.31	31.1 QP	46.0	-14.9	1.00 V	147	36.3	-5.2
5	602.32	32.0 QP	46.0	-14.0	1.00 V	120	34.2	-2.2
6	870.09	31.2 QP	46.0	-14.8	1.00 V	319	28.1	3.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report



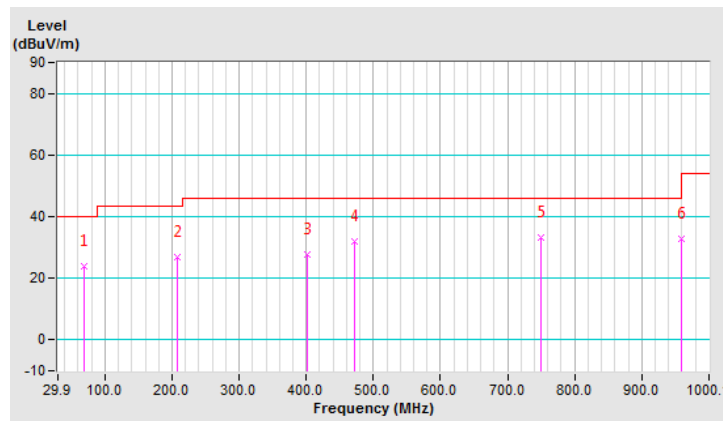
802.11n (HT20)

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	68.71	24.0 QP	40.0	-16.0	1.50 H	166	34.1	-10.1
2	208.42	26.7 QP	43.5	-16.8	1.50 H	259	38.4	-11.7
3	402.46	27.8 QP	46.0	-18.2	1.00 H	339	34.2	-6.4
4	472.31	32.0 QP	46.0	-14.0	1.50 H	13	37.2	-5.2
5	749.79	33.1 QP	46.0	-12.9	1.00 H	17	32.1	1.0
6	959.35	32.9 QP	46.0	-13.1	1.00 H	215	28.3	4.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report

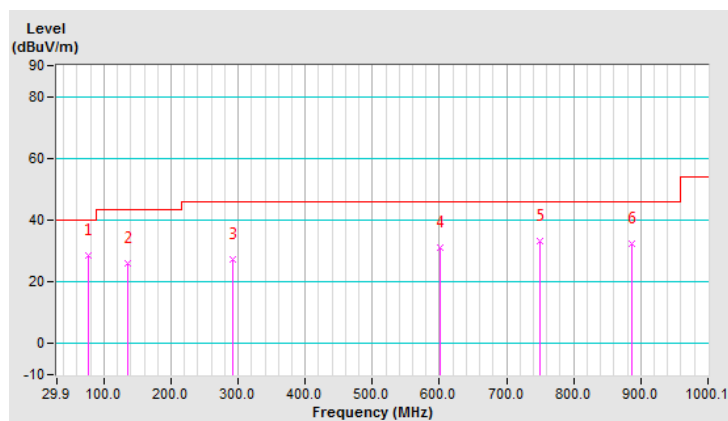


CHANNEL	TX Channel 100	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	76.47	28.6 QP	40.0	-11.4	1.50 V	5	40.2	-11.6
2	134.68	26.2 QP	43.5	-17.3	1.50 V	59	35.9	-9.7
3	291.85	27.3 QP	46.0	-18.7	1.50 V	185	35.4	-8.1
4	600.38	31.2 QP	46.0	-14.8	1.01 V	122	33.5	-2.3
5	749.79	33.1 QP	46.0	-12.9	1.50 V	129	32.1	1.0
6	887.56	32.2 QP	46.0	-13.8	1.50 V	17	28.9	3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report



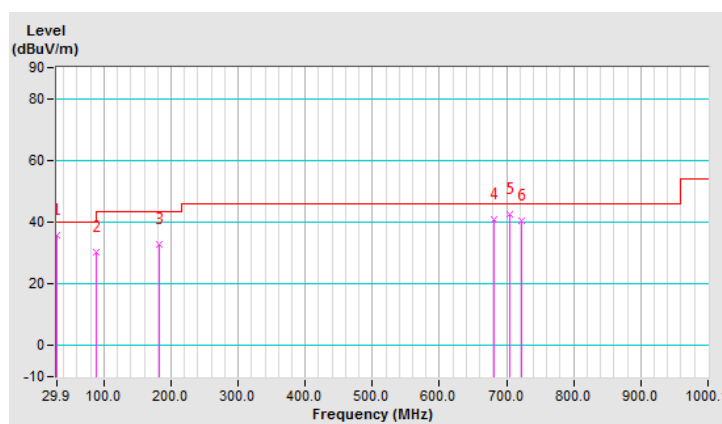
802.11a

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	29.90	35.9 QP	40.0	-4.1	1.50 H	283	45.7	-9.8
2	88.11	30.1 QP	43.5	-13.4	1.00 H	7	44.1	-14.0
3	183.19	32.9 QP	43.5	-10.6	1.00 H	127	43.3	-10.4
4	681.87	40.8 QP	46.0	-5.2	1.00 H	176	39.0	1.8
5	705.16	42.4 QP	46.0	-3.6	1.00 H	163	40.1	2.3
6	722.62	40.6 QP	46.0	-5.4	1.50 H	160	37.9	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report

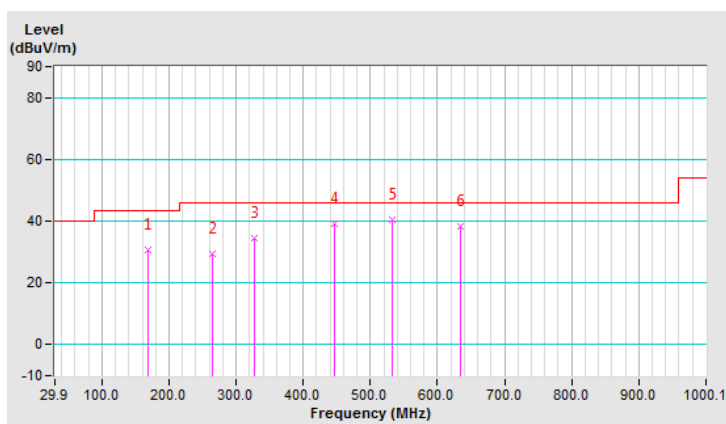


CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	169.61	30.5 QP	43.5	-13.0	1.50 V	295	39.6	-9.1
2	264.69	29.6 QP	46.0	-16.4	1.00 V	295	38.1	-8.5
3	326.78	34.5 QP	46.0	-11.5	1.00 V	214	41.1	-6.6
4	447.09	39.3 QP	46.0	-6.7	1.00 V	210	42.9	-3.6
5	532.46	40.3 QP	46.0	-5.7	1.00 V	305	42.3	-2.0
6	633.36	38.3 QP	46.0	-7.7	1.50 V	305	37.6	0.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report



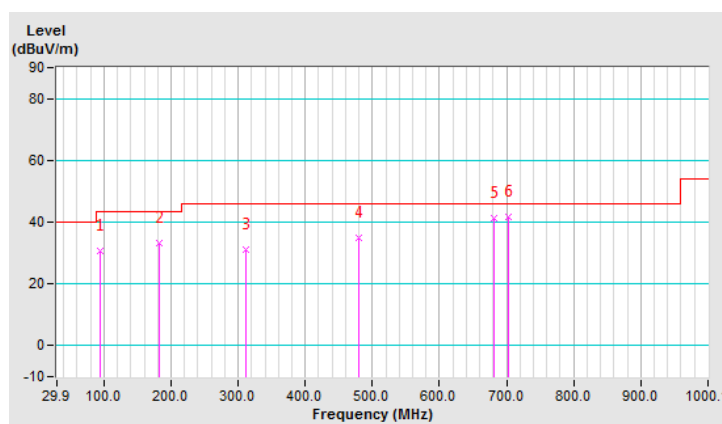
802.11n (HT20)

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	93.93	30.6 QP	43.5	-12.9	2.00 H	11	44.5	-13.9
2	183.19	33.4 QP	43.5	-10.1	1.00 H	136	43.8	-10.4
3	311.26	31.1 QP	46.0	-14.9	1.00 H	148	38.0	-6.9
4	480.07	35.1 QP	46.0	-10.9	1.00 H	214	38.1	-3.0
5	681.87	41.3 QP	46.0	-4.7	1.50 H	156	39.5	1.8
6	703.22	41.9 QP	46.0	-4.1	1.50 H	163	39.6	2.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report

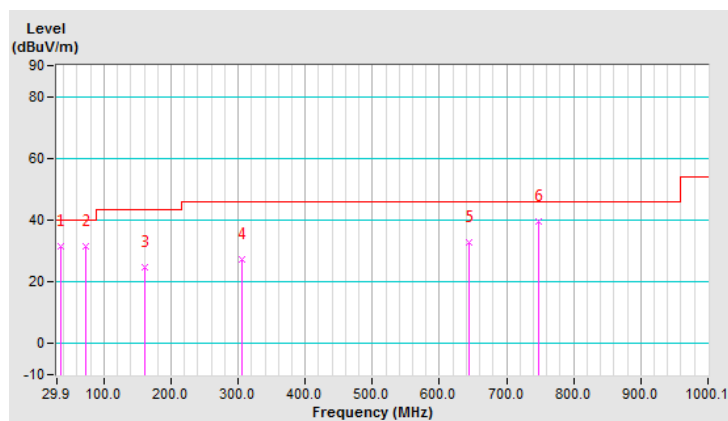


CHANNEL	TX Channel 100	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.72	31.5 QP	40.0	-8.5	1.00 V	4	41.2	-9.7
2	72.59	31.6 QP	40.0	-8.4	1.00 V	112	42.6	-11.0
3	161.85	24.8 QP	43.5	-18.7	1.00 V	6	33.4	-8.6
4	305.44	27.1 QP	46.0	-18.9	1.00 V	6	34.2	-7.1
5	645.01	33.0 QP	46.0	-13.0	1.00 V	321	31.9	1.1
6	747.85	39.5 QP	46.0	-6.5	1.00 V	305	35.6	3.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report



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 0.50MHz.

4.2.2 Test Instruments

Test Date: Oct. 04, 2018

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102412	Feb. 08, 2018	Feb. 07, 2019
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 05, 2018	Sep. 04, 2019
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Feb. 05, 2018	Feb. 04, 2019
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Aug. 13, 2018	Aug. 12, 2019
Software ADT	BV ADT_Conf_ V7.3.7.4	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-12047.

Test Date: Jan. 22, 2020

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 11, 2019	Dec. 10, 2020
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 05, 2019	Sep. 04, 2020
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 21, 2019	Feb. 20, 2020
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 22, 2019	Aug. 21, 2020
Software ADT	BV ADT_Conf_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 1.
3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

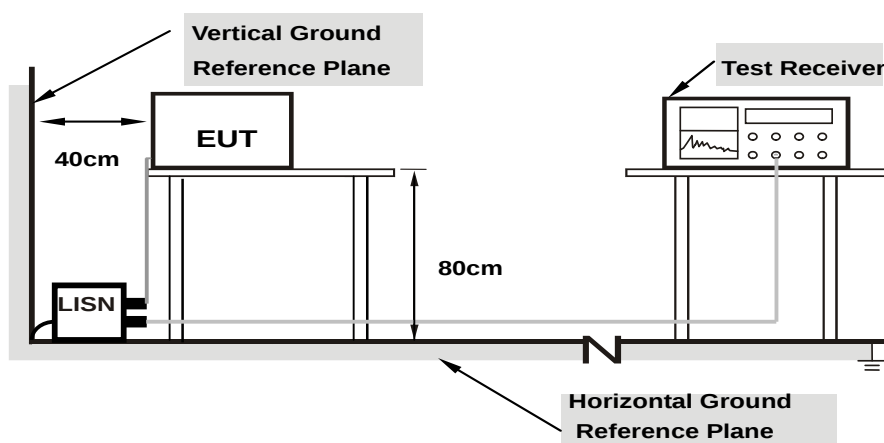
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

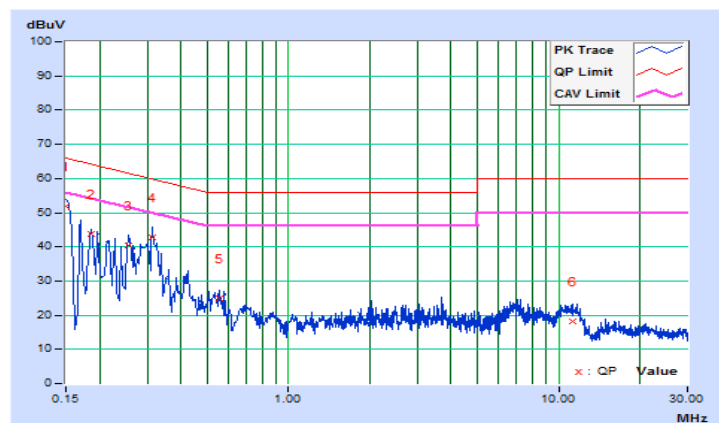
802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 60	Test Mode	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.73	42.29	26.24	52.02	35.97	66.00	56.00	-13.98	-20.03
2	0.18519	9.72	33.96	18.17	43.68	27.89	64.25	54.25	-20.57	-26.36
3	0.25557	9.73	30.73	20.60	40.46	30.33	61.57	51.57	-21.11	-21.24
4	0.31350	9.74	33.14	25.15	42.88	34.89	59.88	49.88	-17.00	-14.99
5	0.55273	9.73	15.08	8.21	24.81	17.94	56.00	46.00	-31.19	-28.06
6	11.23485	9.89	8.14	3.07	18.03	12.96	60.00	50.00	-41.97	-37.04

Remarks:

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

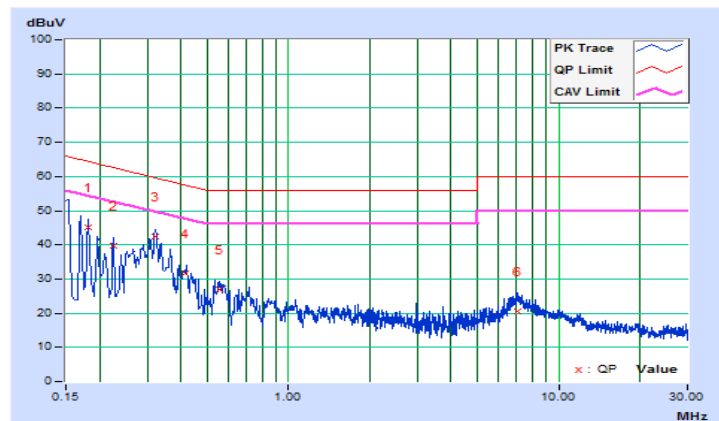


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 60	Test Mode	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18122	9.73	35.43	19.77	45.16	29.50	64.43	54.43	-19.27	-24.93
2	0.22429	9.73	30.01	15.25	39.74	24.98	62.66	52.66	-22.92	-27.68
3	0.32187	9.74	32.58	23.65	42.32	33.39	59.66	49.66	-17.34	-16.27
4	0.41233	9.75	21.85	14.05	31.60	23.80	57.60	47.60	-26.00	-23.80
5	0.55679	9.74	17.35	11.78	27.09	21.52	56.00	46.00	-28.91	-24.48
6	7.01987	9.86	10.55	3.03	20.41	12.89	60.00	50.00	-39.59	-37.11

Remarks:

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



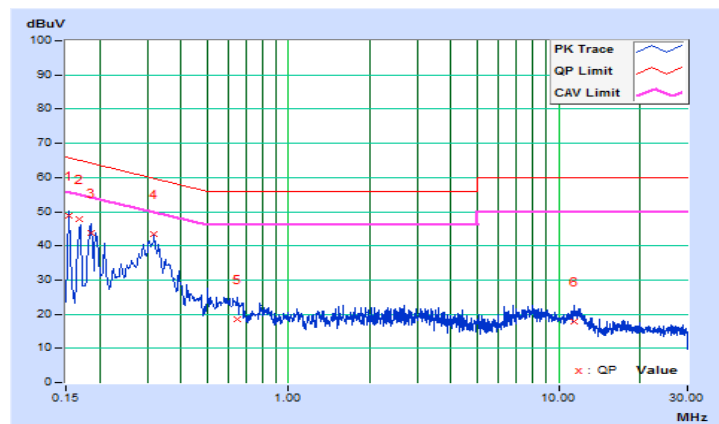
802.11n (HT20)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 100	Test Mode	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.73	39.24	21.60	48.97	31.33	65.79	55.79	-16.82	-24.46
2	0.16922	9.73	37.99	21.44	47.72	31.17	65.00	55.00	-17.28	-23.83
3	0.18519	9.72	33.92	15.20	43.64	24.92	64.25	54.25	-20.61	-29.33
4	0.31849	9.74	33.64	26.07	43.38	35.81	59.75	49.75	-16.37	-13.94
5	0.64657	9.72	8.68	1.96	18.40	11.68	56.00	46.00	-37.60	-34.32
6	11.48118	9.89	7.93	2.75	17.82	12.64	60.00	50.00	-42.18	-37.36

Remarks:

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

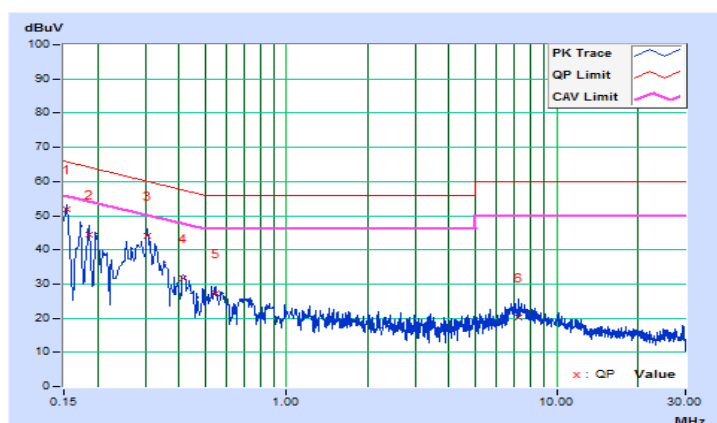


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 100	Test Mode	A

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.72	42.28	25.44	52.00	35.16	65.79	55.79	-13.79	-20.63
2	0.18519	9.73	34.55	18.27	44.28	28.00	64.25	54.25	-19.97	-26.25
3	0.30640	9.74	34.23	27.23	43.97	36.97	60.07	50.07	-16.10	-13.10
4	0.41233	9.75	22.00	14.26	31.75	24.01	57.60	47.60	-25.85	-23.59
5	0.54491	9.74	17.44	11.20	27.18	20.94	56.00	46.00	-28.82	-25.06
6	7.19582	9.86	10.49	3.01	20.35	12.87	60.00	50.00	-39.65	-37.13

Remarks:

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



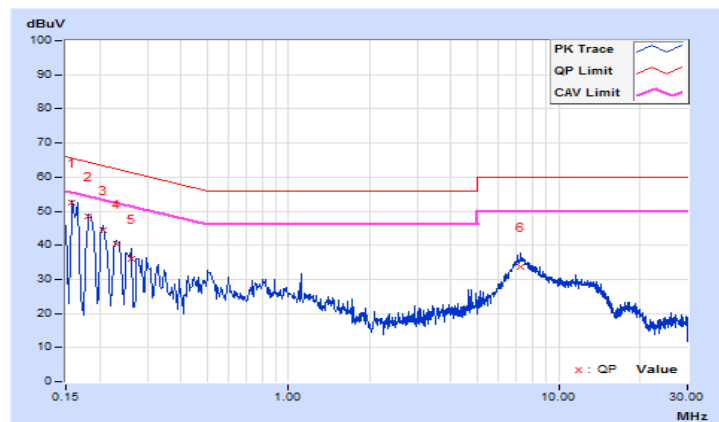
802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 60	Test Mode	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.71	42.97	28.48	52.68	38.19	65.57	55.57	-12.89	-17.38
2	0.18200	9.75	38.87	24.08	48.62	33.83	64.39	54.39	-15.77	-20.56
3	0.20577	9.78	34.56	20.43	44.34	30.21	63.37	53.37	-19.03	-23.16
4	0.22985	9.80	30.44	16.83	40.24	26.63	62.46	52.46	-22.22	-25.83
5	0.26200	9.82	26.08	12.49	35.90	22.31	61.37	51.37	-25.47	-29.06
6	7.22600	10.26	23.42	17.89	33.68	28.15	60.00	50.00	-26.32	-21.85

Remarks:

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

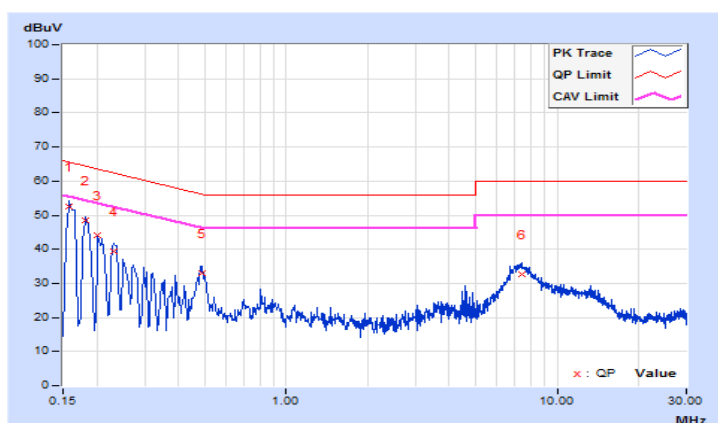


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 60	Test Mode	B

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.70	42.94	28.21	52.64	37.91	65.57	55.57	-12.93	-17.66
2	0.18180	9.76	38.84	23.47	48.60	33.23	64.40	54.40	-15.80	-21.17
3	0.20200	9.80	34.22	18.64	44.02	28.44	63.53	53.53	-19.51	-25.09
4	0.23000	9.81	29.51	15.40	39.32	25.21	62.45	52.45	-23.13	-27.24
5	0.48600	9.87	23.05	15.45	32.92	25.32	56.24	46.24	-23.32	-20.92
6	7.37400	10.20	22.43	16.80	32.63	27.00	60.00	50.00	-27.37	-23.00

Remarks:

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



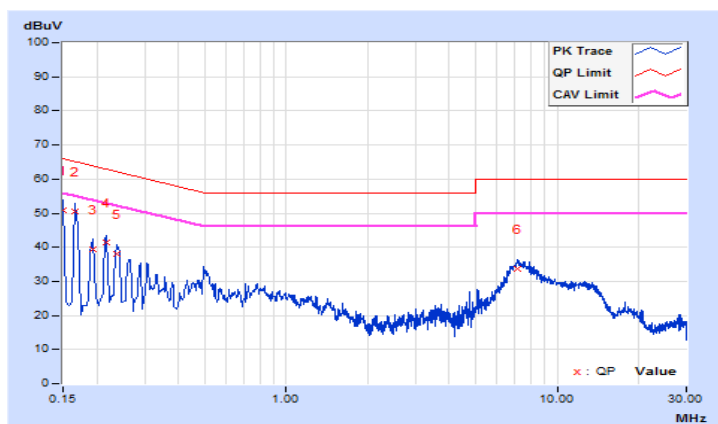
802.11n (HT20)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 100	Test Mode	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.70	41.14	21.65	50.84	31.35	66.00	56.00	-15.16	-24.65
2	0.16600	9.73	40.63	22.34	50.36	32.07	65.16	55.16	-14.80	-23.09
3	0.19367	9.77	29.55	17.17	39.32	26.94	63.88	53.88	-24.56	-26.94
4	0.21748	9.79	31.64	15.73	41.43	25.52	62.91	52.91	-21.48	-27.39
5	0.23785	9.80	28.37	13.75	38.17	23.55	62.17	52.17	-24.00	-28.62
6	7.15400	10.26	23.42	18.10	33.68	28.36	60.00	50.00	-26.32	-21.64

Remarks:

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

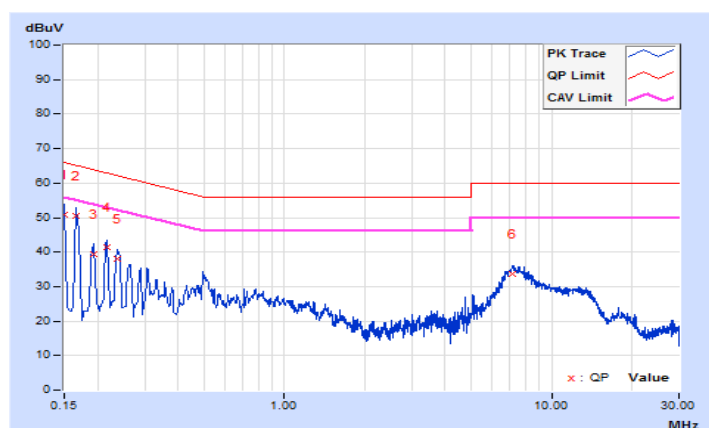


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Channel	TX Channel 100	Test Mode	B

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.68	41.14	21.65	50.82	31.33	66.00	56.00	-15.18	-24.67
2	0.16600	9.72	40.63	22.34	50.35	32.06	65.16	55.16	-14.81	-23.10
3	0.19367	9.78	29.55	17.17	39.33	26.95	63.88	53.88	-24.55	-26.93
4	0.21748	9.81	31.64	15.73	41.45	25.54	62.91	52.91	-21.46	-27.37
5	0.23785	9.81	28.37	13.75	38.18	23.56	62.17	52.17	-23.99	-28.61
6	7.15400	10.19	23.42	18.10	33.61	28.29	60.00	50.00	-26.39	-21.71

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 $\leq$ 125mW(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	250mW (24 dBm)
U-NII-2A	$\sqrt{\quad}$		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	$\sqrt{\quad}$		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3			1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

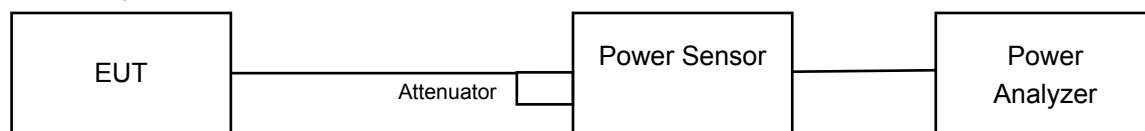
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

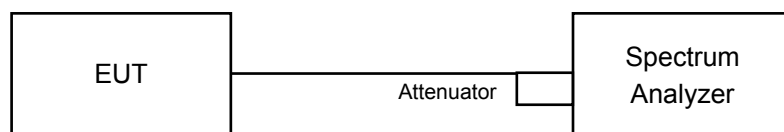
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

For Power Output



For 26dB Bandwidth



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

802.11a, 802.11n (HT20), 802.11n (HT40), 802.11ac (VHT80)

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 and set the detector to average. Duty factor is not added to measured value.

For 26dB Bandwidth

- a. Set RBW = approximately 1% of the emission bandwidth.
- b. Set the VBW > RBW.
- c. Detector = Peak.
- d. Trace mode = max hold.
- e. 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:

CDD Mode

802.11a

For U-NII-2A Band

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.73	20.42	204.126	23.10	23.85	Pass
60	5300	20.09	20.25	208.019	23.18	23.81	Pass
64	5320	19.93	20.15	201.915	23.05	23.85	Pass

Note:

For U-NII-2A Band:

Chain 0

1. $11\text{dBm} + 10\log(19.28) = 23.85 < 24\text{dBm}$
2. $11\text{dBm} + 10\log(19.11) = 23.81 < 24\text{dBm}$
3. $11\text{dBm} + 10\log(19.29) = 23.85 < 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(19.65) = 23.93 < 24\text{dBm}$
2. $11\text{dBm} + 10\log(19.93) = 23.99 < 24\text{dBm}$
3. $11\text{dBm} + 10\log(21.53) = 24.33 > 24\text{dBm}$

For U-NII-2C Band

Chan.	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	17.02	16.65	17.24	16.97	199.328	23.00	23.93	Pass
116	5580	17.16	17.05	17.08	16.75	201.064	23.03	23.90	Pass
140	5700	17.05	17.09	17.03	16.93	201.650	23.05	23.94	Pass

Note:

For U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log(20.15) = 24.04 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.17) = 24.04 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.25) = 24.06 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(19.97) = 24.00 < 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.13) = 24.03 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(19.85) = 23.97 < 24\text{dBm}$

Chain 2

1. $11\text{dBm} + 10\log(19.64) = 23.93 < 24\text{dBm}$
2. $11\text{dBm} + 10\log(19.51) = 23.90 < 24\text{dBm}$
3. $11\text{dBm} + 10\log(19.68) = 23.94 < 24\text{dBm}$

Chain 3

1. $11\text{dBm} + 10\log(19.89) = 23.98 < 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.06) = 24.02 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(19.82) = 23.97 < 24\text{dBm}$

802.11n (HT20)

For U-NII-2A Band

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.94	20.25	204.553	23.11	24.00	Pass
60	5300	19.95	20.16	202.608	23.07	24.00	Pass
64	5320	20.13	20.01	203.270	23.08	24.00	Pass

Note:

For U-NII-2A Band:

Chain 0

1. $11\text{dBm} + 10\log(20.30) = 24.07 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.23) = 24.05 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.67) = 24.15 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(20.80) = 24.18 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.88) = 24.19 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(23.48) = 24.70 > 24\text{dBm}$

For U-NII-2C Band

Chan.	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	17.09	17.12	17.02	17.07	203.974	23.10	24.00	Pass
116	5580	17.03	17.07	17.02	17.00	201.868	23.05	24.00	Pass
140	5700	17.18	17.17	17.07	16.85	203.709	23.09	24.00	Pass

Note:

For U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log(20.65) = 24.14 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.80) = 24.18 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.84) = 24.18 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(20.74) = 24.16 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.88) = 24.19 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.67) = 24.15 > 24\text{dBm}$

Chain 2

1. $11\text{dBm} + 10\log(20.73) = 24.16 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.74) = 24.16 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.84) = 24.18 > 24\text{dBm}$

Chain 3

1. $11\text{dBm} + 10\log(20.63) = 24.14 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.74) = 24.16 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.95) = 24.21 > 24\text{dBm}$

802.11n (HT40)

For U-NII-2A Band

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	19.89	20.30	204.651	23.11	24.00	Pass
62	5310	19.85	20.14	199.881	23.01	24.00	Pass

Note:

For U-NII-2A Band:

Chain 0

1. $11\text{dBm} + 10\log(40.90) = 27.11 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(40.61) = 27.08 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(40.52) = 27.07 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(40.67) = 27.09 > 24\text{dBm}$

For U-NII-2C Band

Chan.	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	17.02	17.01	16.99	17.10	201.873	23.05	24.00	Pass
110	5550	17.19	16.91	16.92	17.03	201.121	23.03	24.00	Pass
134	5670	17.18	16.82	17.01	16.92	199.762	23.01	24.00	Pass

Note:

For U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log(40.57) = 27.08 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(40.50) = 27.07 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(40.62) = 27.08 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(40.21) = 27.04 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(40.31) = 27.05 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(40.46) = 27.07 > 24\text{dBm}$

Chain 2

1. $11\text{dBm} + 10\log(40.73) = 27.09 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(40.82) = 27.10 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(40.62) = 27.08 > 24\text{dBm}$

Chain 3

1. $11\text{dBm} + 10\log(40.64) = 27.08 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(40.73) = 27.09 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(40.70) = 27.09 > 24\text{dBm}$

802.11ac (VHT80)

For U-NII-2A Band

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	19.95	19.97	198.167	22.97	24.00	Pass

Note:

For U-NII-2A Band:

Chain 0

$$1. 11\text{dBm} + 10\log(82.91) = 30.18 > 24\text{dBm}$$

Chain 1

$$1. 11\text{dBm} + 10\log(83.53) = 30.21 > 24\text{dBm}$$

For U-NII-2C Band

Chan.	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	17.21	16.82	17.21	16.92	202.492	23.06	24.00	Pass
122	5610	17.02	16.94	17.11	16.89	200.050	23.01	24.00	Pass

Note:

For U-NII-2C Band:

Chain 0

$$1. 11\text{dBm} + 10\log(83.91) = 30.23 > 24\text{dBm}$$

$$2. 11\text{dBm} + 10\log(83.77) = 30.23 > 24\text{dBm}$$

Chain 1

$$1. 11\text{dBm} + 10\log(83.80) = 30.23 > 24\text{dBm}$$

$$2. 11\text{dBm} + 10\log(83.84) = 30.23 > 24\text{dBm}$$

Chain 2

$$1. 11\text{dBm} + 10\log(84.09) = 30.24 > 24\text{dBm}$$

$$2. 11\text{dBm} + 10\log(83.92) = 30.23 > 24\text{dBm}$$

Chain 3

$$1. 11\text{dBm} + 10\log(83.51) = 30.21 > 24\text{dBm}$$

$$2. 11\text{dBm} + 10\log(83.24) = 30.20 > 24\text{dBm}$$

Beamforming Mode

802.11n (HT20)

For U-NII-2A Band

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.94	20.25	204.553	23.11	24.00	Pass
60	5300	19.95	20.16	202.608	23.07	24.00	Pass
64	5320	20.13	20.01	203.270	23.08	24.00	Pass

*5260~5320MHz Directional Gain = 4.18dBi < 6dBi, so the power limit no need to reduce.

Note:

For U-NII-2A Band:

Chain 0

1. $11\text{dBm} + 10\log(20.30) = 24.07 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.23) = 24.05 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.67) = 24.15 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(20.80) = 24.18 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.88) = 24.19 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(23.48) = 24.70 > 24\text{dBm}$

For U-NII-2C Band

Chan.	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	15.89	16.01	16.16	15.97	159.559	22.03	22.57	Pass
116	5580	16.11	16.06	16.14	15.70	159.466	22.03	22.57	Pass
140	5700	16.28	15.99	16.15	15.79	161.322	22.08	22.57	Pass

*5500~5700MHz Directional Gain = 7.43dBi > 6dBi, so the power limit shall be reduced to $24-(7.43-6) = 22.57\text{dBm}$.

Note:

For U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log(20.65) = 24.14 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.80) = 24.18 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.84) = 24.18 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(20.74) = 24.16 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.88) = 24.19 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.67) = 24.15 > 24\text{dBm}$

Chain 2

1. $11\text{dBm} + 10\log(20.73) = 24.16 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.74) = 24.16 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.84) = 24.18 > 24\text{dBm}$

Chain 3

1. $11\text{dBm} + 10\log(20.63) = 24.14 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(20.74) = 24.16 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(20.95) = 24.21 > 24\text{dBm}$

802.11n (HT40)

For U-NII-2A Band

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	19.89	20.30	204.651	23.11	24.00	Pass
62	5310	19.85	20.14	199.881	23.01	24.00	Pass

*5260~5320MHz Directional Gain = 4.18dBi < 6dBi, so the power limit no need to reduce.

Note:

For U-NII-2A Band:

Chain 0

1. 11dBm + 10log (40.90) = 27.11 > 24dBm
2. 11dBm + 10log (40.61) = 27.08 > 24dBm

Chain 1

1. 11dBm + 10log (40.52) = 27.07 > 24dBm
2. 11dBm + 10log (40.67) = 27.09 > 24dBm

For U-NII-2C Band

Chan.	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	15.98	16.02	16.04	16.05	160.073	22.04	22.57	Pass
110	5550	16.01	16.12	15.89	16.09	160.287	22.05	22.57	Pass
134	5670	16.01	16.10	16.06	15.90	159.910	22.04	22.57	Pass

*5500~5700MHz Directional Gain = 7.43dBi > 6dBi, so the power limit shall be reduced to 24-(7.43-6) = 22.57dBm.

Note:

For U-NII-2C Band:

Chain 0

1. 11dBm + 10log (40.57) = 27.08 > 24dBm
2. 11dBm + 10log (40.50) = 27.07 > 24dBm
3. 11dBm + 10log (40.62) = 27.08 > 24dBm

Chain 1

1. 11dBm + 10log (40.21) = 27.04 > 24dBm
2. 11dBm + 10log (40.31) = 27.05 > 24dBm
3. 11dBm + 10log (40.46) = 27.07 > 24dBm

Chain 2

1. 11dBm + 10log (40.73) = 27.09 > 24dBm
2. 11dBm + 10log (40.82) = 27.10 > 24dBm
3. 11dBm + 10log (40.62) = 27.08 > 24dBm

Chain 3

1. 11dBm + 10log (40.64) = 27.08 > 24dBm
2. 11dBm + 10log (40.73) = 27.09 > 24dBm
3. 11dBm + 10log (40.70) = 27.09 > 24dBm

802.11ac (VHT80)

For U-NII-2A Band

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	19.95	19.97	198.167	22.97	24.00	Pass

*5260~5320MHz Directional Gain = 4.18dBi < 6dBi, so the power limit no need to reduce.

Note:

For U-NII-2A Band:

Chain 0

1. $11\text{dBm} + 10\log(82.91) = 30.18 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(83.53) = 30.21 > 24\text{dBm}$

For U-NII-2C Band

Chan.	Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	16.11	15.77	16.25	15.84	159.130	22.02	22.57	Pass
122	5610	16.21	15.95	16.28	15.73	161.011	22.07	22.57	Pass

*5500~5700MHz Directional Gain = 7.43dBi > 6dBi, so the power limit shall be reduced to $24 - (7.43 - 6) = 22.57\text{dBm}$.

Note:

For U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log(83.91) = 30.23 > 24\text{dBm}$

2. $11\text{dBm} + 10\log(83.77) = 30.23 > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(83.80) = 30.23 > 24\text{dBm}$

2. $11\text{dBm} + 10\log(83.84) = 30.23 > 24\text{dBm}$

Chain 2

1. $11\text{dBm} + 10\log(84.09) = 30.24 > 24\text{dBm}$

2. $11\text{dBm} + 10\log(83.92) = 30.23 > 24\text{dBm}$

Chain 3

1. $11\text{dBm} + 10\log(83.51) = 30.21 > 24\text{dBm}$

2. $11\text{dBm} + 10\log(83.24) = 30.20 > 24\text{dBm}$

26dB Bandwidth:
For U-NII-2A Band

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	19.28	19.65
60	5300	19.11	19.93
64	5320	19.29	21.53

802.11n (HT20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	20.30	20.80
60	5300	20.23	20.88
64	5320	20.67	23.48

802.11n (HT40)

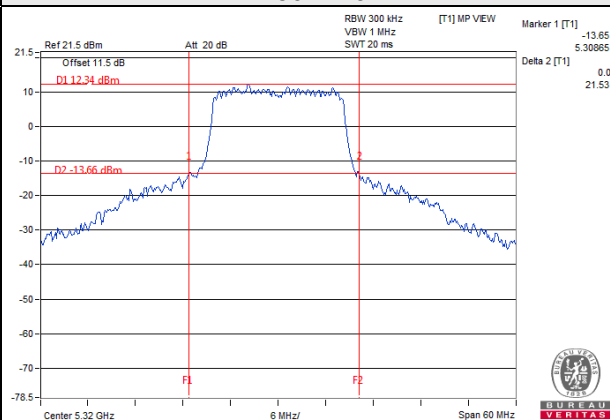
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	40.90	40.52
62	5310	40.61	40.67

802.11ac (VHT80)

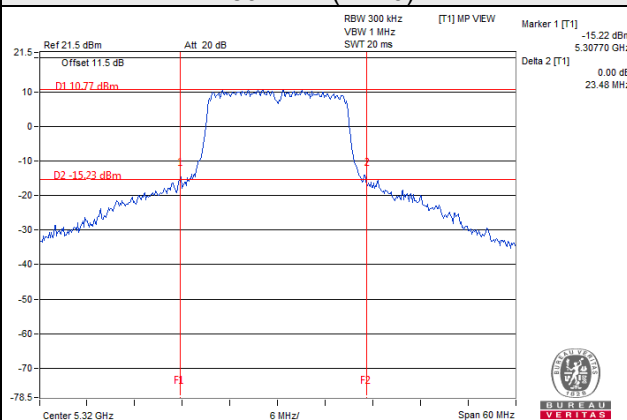
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	82.91	83.53

Spectrum Plot of Worst Value

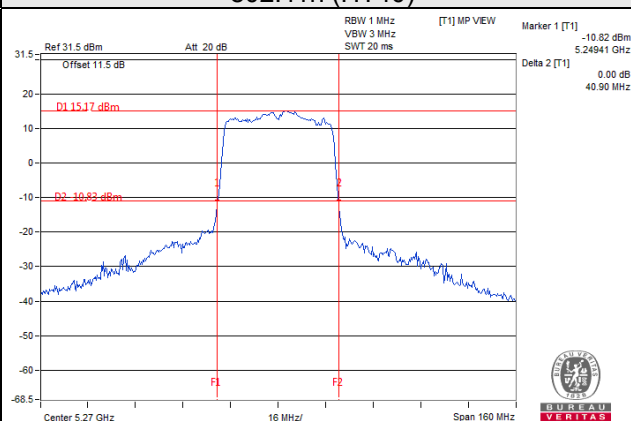
802.11a



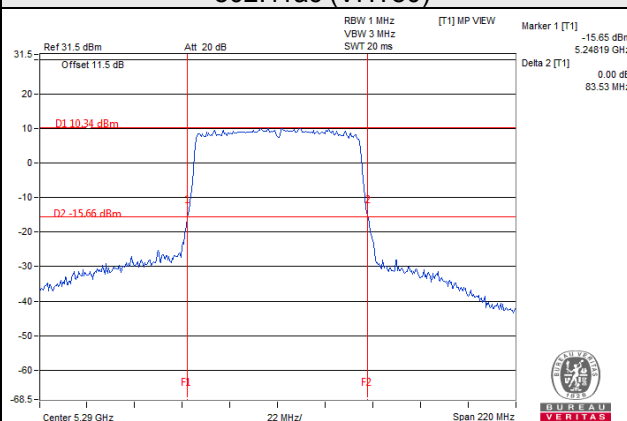
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



For U-NII-2C Band

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	20.15	19.97	19.64	19.89
116	5580	20.17	20.13	19.51	20.06
140	5700	20.25	19.85	19.68	19.82

802.11n (HT20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	20.65	20.74	20.73	20.63
116	5580	20.80	20.88	20.74	20.74
140	5700	20.84	20.67	20.84	20.95

802.11n (HT40)

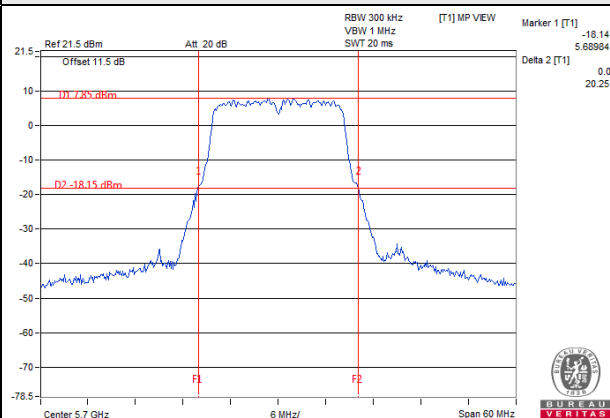
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
102	5510	40.57	40.21	40.73	40.64
110	5550	40.50	40.31	40.82	40.73
134	5670	40.62	40.46	40.62	40.70

802.11ac (VHT80)

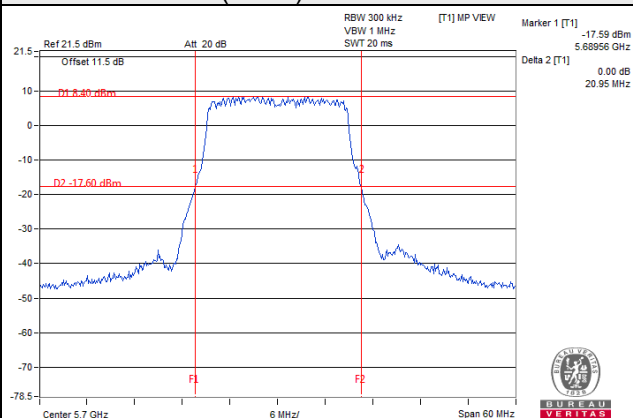
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
106	5530	83.91	83.80	84.09	83.51
122	5610	83.77	83.84	83.92	83.24

Spectrum Plot of Worst Value

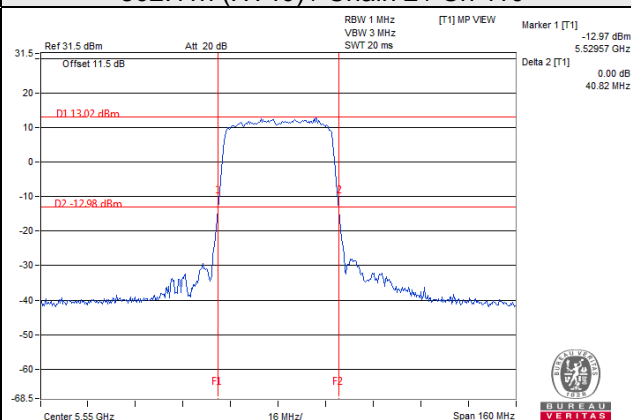
802.11a / Chain 0 / Ch 140



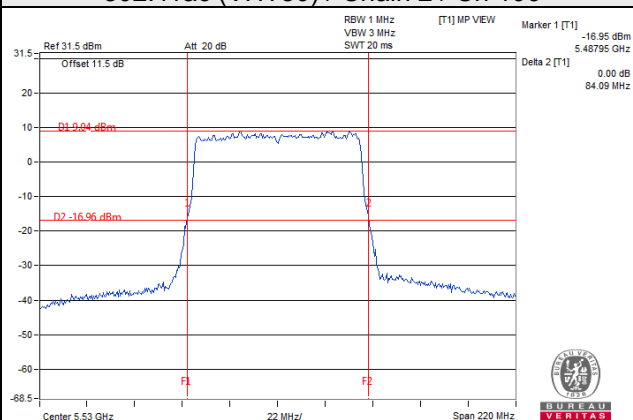
802.11n (HT20) / Chain 3 / Ch 140



802.11n (HT40) / Chain 2 / Ch 110



802.11ac (VHT80) / Chain 2 / Ch 106



EUT Maximum Conducted Power

CDD Mode

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	208.019	23.18
5470~5725	201.650	23.05

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	204.553	23.11
5470~5725	203.974	23.10

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	204.651	23.11
5470~5725	201.873	23.05

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	198.167	22.97
5470~5725	202.492	23.06

Beamforming Mode

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	204.553	23.11
5470~5725	161.322	22.08

802.11n (HT40)

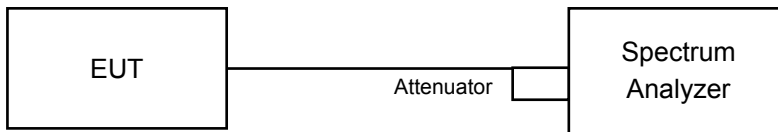
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	204.651	23.11
5470~5725	160.287	22.05

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	198.167	22.97
5470~5725	161.011	22.07

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.4.4 Test Result

For U-NII-2A Band

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	16.32	16.56
60	5300	16.56	16.56
64	5320	16.44	16.56

802.11n (HT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	17.52	17.64
60	5300	17.64	17.64
64	5320	17.76	17.64

802.11n (HT40)

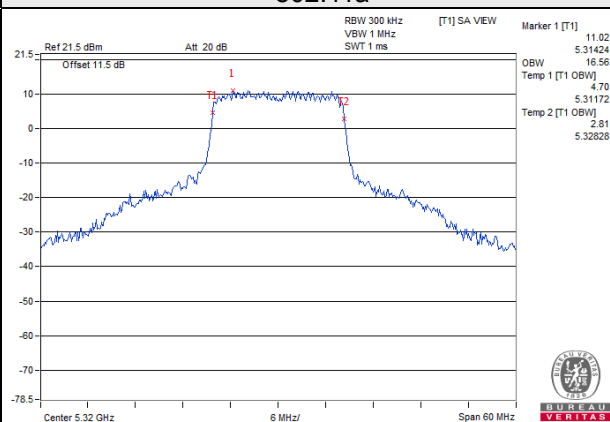
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	36.36	36.12
62	5310	36.12	36.00

802.11ac (VHT80)

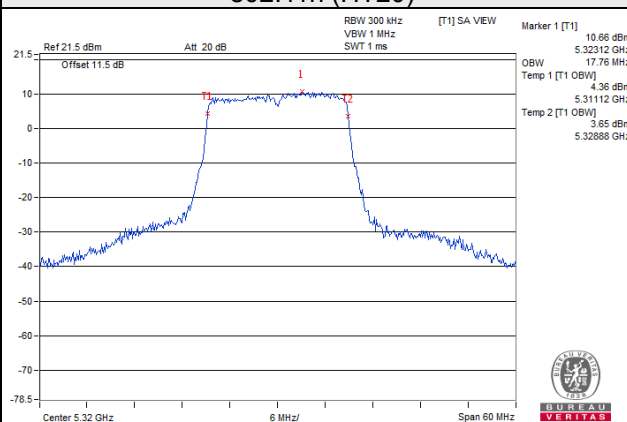
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	75.60	75.84

Spectrum Plot of Worst Value

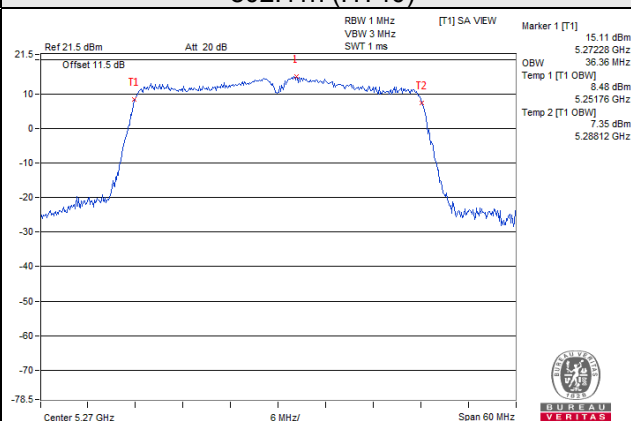
802.11a



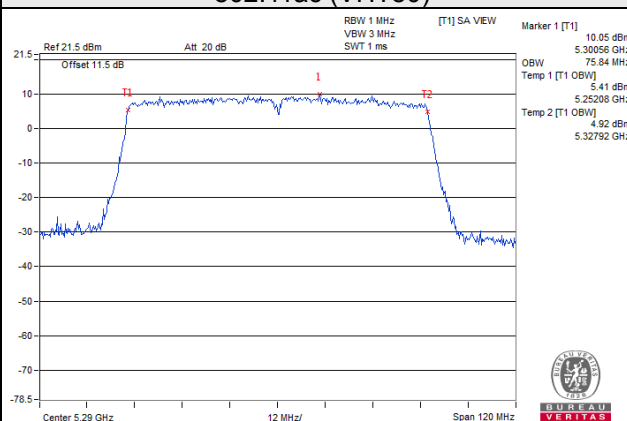
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



For U-NII-2C Band

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	16.56	16.56	16.44	16.56
116	5580	16.56	16.56	16.44	16.56
140	5700	16.56	16.44	16.44	16.56

802.11n (HT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	17.64	17.76	17.64	17.64
116	5580	17.76	17.64	17.64	17.64
140	5700	17.64	17.64	17.64	17.64

802.11n (HT40)

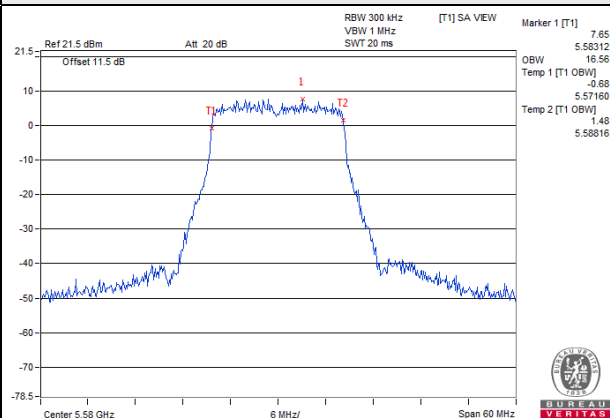
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
102	5510	36.12	36.00	36.12	36.12
110	5550	36.12	36.00	36.12	36.24
134	5670	36.12	36.12	36.12	36.12

802.11ac (VHT80)

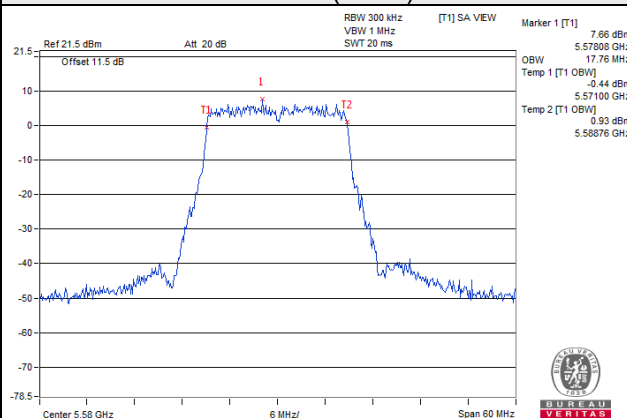
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
106	5530	75.84	75.84	76.08	75.84
122	5610	76.08	76.08	75.84	75.84

Spectrum Plot of Worst Value

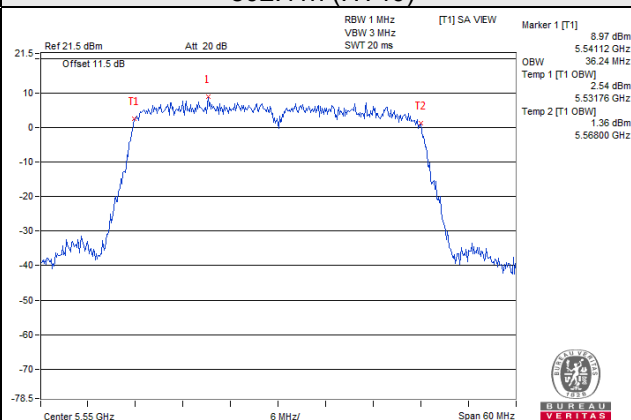
802.11a



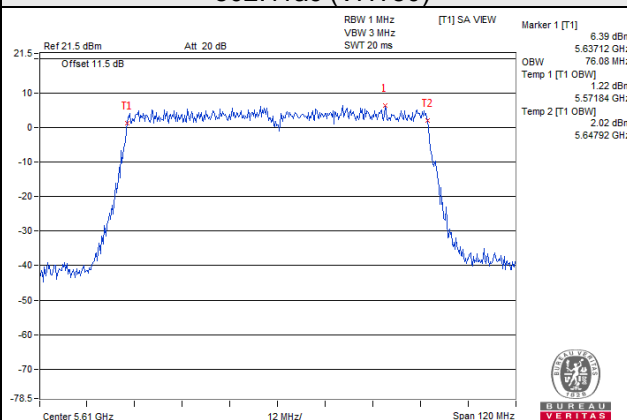
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

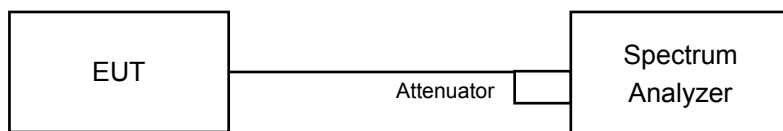


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-2A and U-NII-2C band:

Using method SA-2

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

For U-NII-3 band:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz, Set VBW $\geq$ 1 MHz, Detector = RMS
- Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz} / 300 \text{ kHz})$
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

For U-NII-2A Band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	7.68	7.78	0.19	10.93	11.00	Pass
60	5300	6.69	8.23	0.19	10.73	11.00	Pass
64	5320	6.90	8.33	0.19	10.87	11.00	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5260~5320MHz: Directional gain = 4.18dBi < 6dBi, so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	7.51	8.18	0.09	10.96	11.00	Pass
60	5300	6.52	8.35	0.09	10.63	11.00	Pass
64	5320	7.31	8.22	0.09	10.89	11.00	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5260~5320MHz: Directional gain = 4.18dBi < 6dBi, so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
54	5270	7.21	8.07	0.20	10.87	11.00	Pass
62	5310	6.61	8.46	0.20	10.84	11.00	Pass

Note:

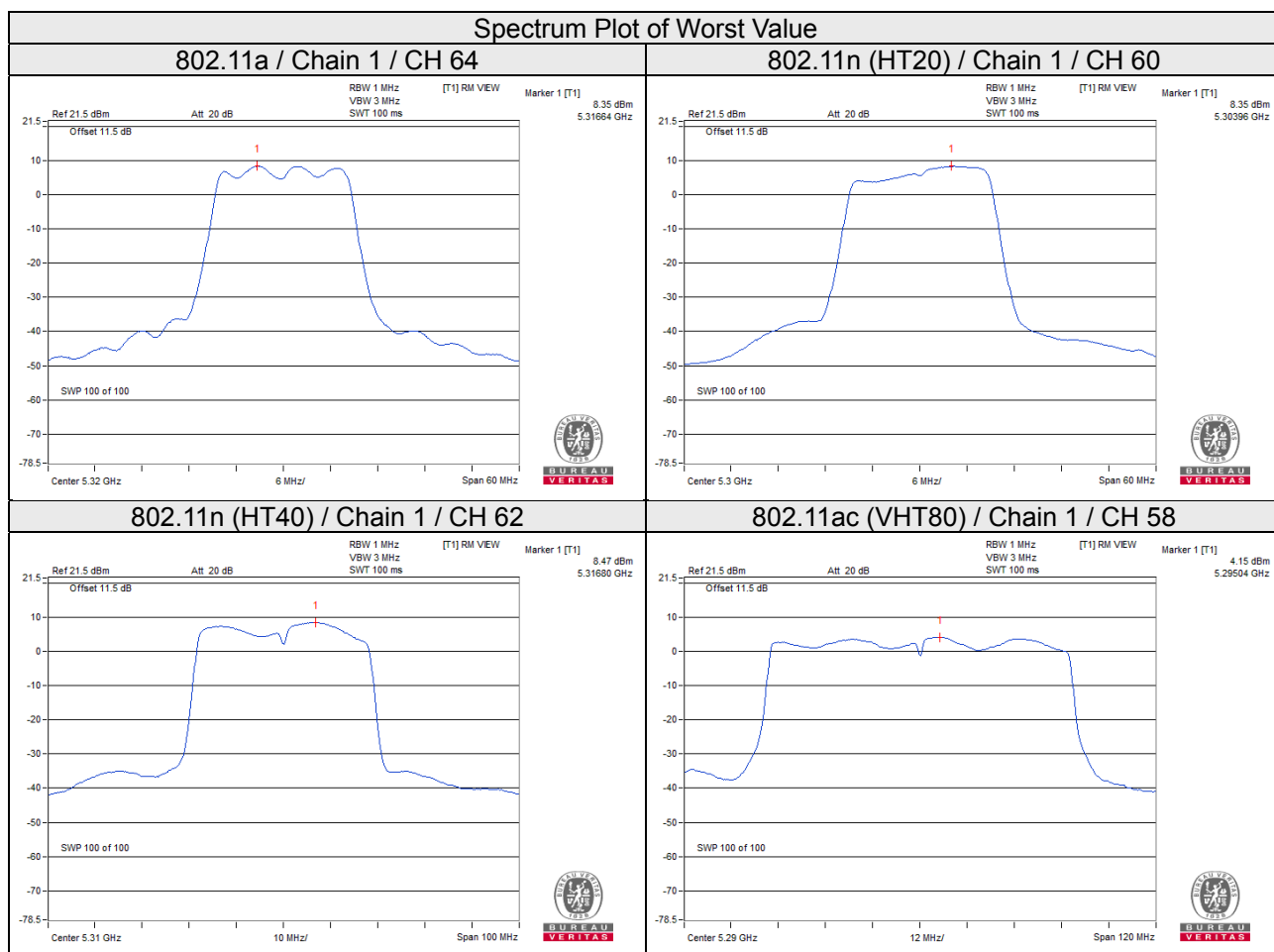
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5260~5320MHz: Directional gain = 4.18dBi < 6dBi, so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
58	5290	2.37	4.11	0.33	6.67	11.00	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5260~5320MHz: Directional gain = 4.18dBi < 6dBi, so the power density limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.



For U-NII-2C Band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	2.75	3.12	3.12	3.52	0.17	9.33	9.57	Pass
116	5580	2.67	2.97	3.61	3.61	0.17	9.42	9.57	Pass
140	5700	2.78	2.99	3.55	3.42	0.17	9.39	9.57	Pass

Note:

1. Method E)2)a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5500~5700MHz: Directional gain = 7.43dBi > 6dBi, so the limit shall be reduced to 11-(7.43-6) = 9.57dBm
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
100	5500	2.56	3.43	3.31	3.69	9.29	9.57	Pass
116	5580	2.92	2.68	3.64	3.60	9.25	9.57	Pass
140	5700	2.84	3.04	3.77	3.41	9.30	9.57	Pass

Note:

1. Method E)2)a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5500~5700MHz: Directional gain = 7.43dBi > 6dBi, so the limit shall be reduced to 11-(7.43-6) = 9.57dBm
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	2.60	3.47	3.30	3.38	0.15	9.37	9.57	Pass
110	5550	2.48	2.33	3.35	3.29	0.15	9.06	9.57	Pass
134	5670	2.49	2.89	3.33	3.05	0.15	9.12	9.57	Pass

Note:

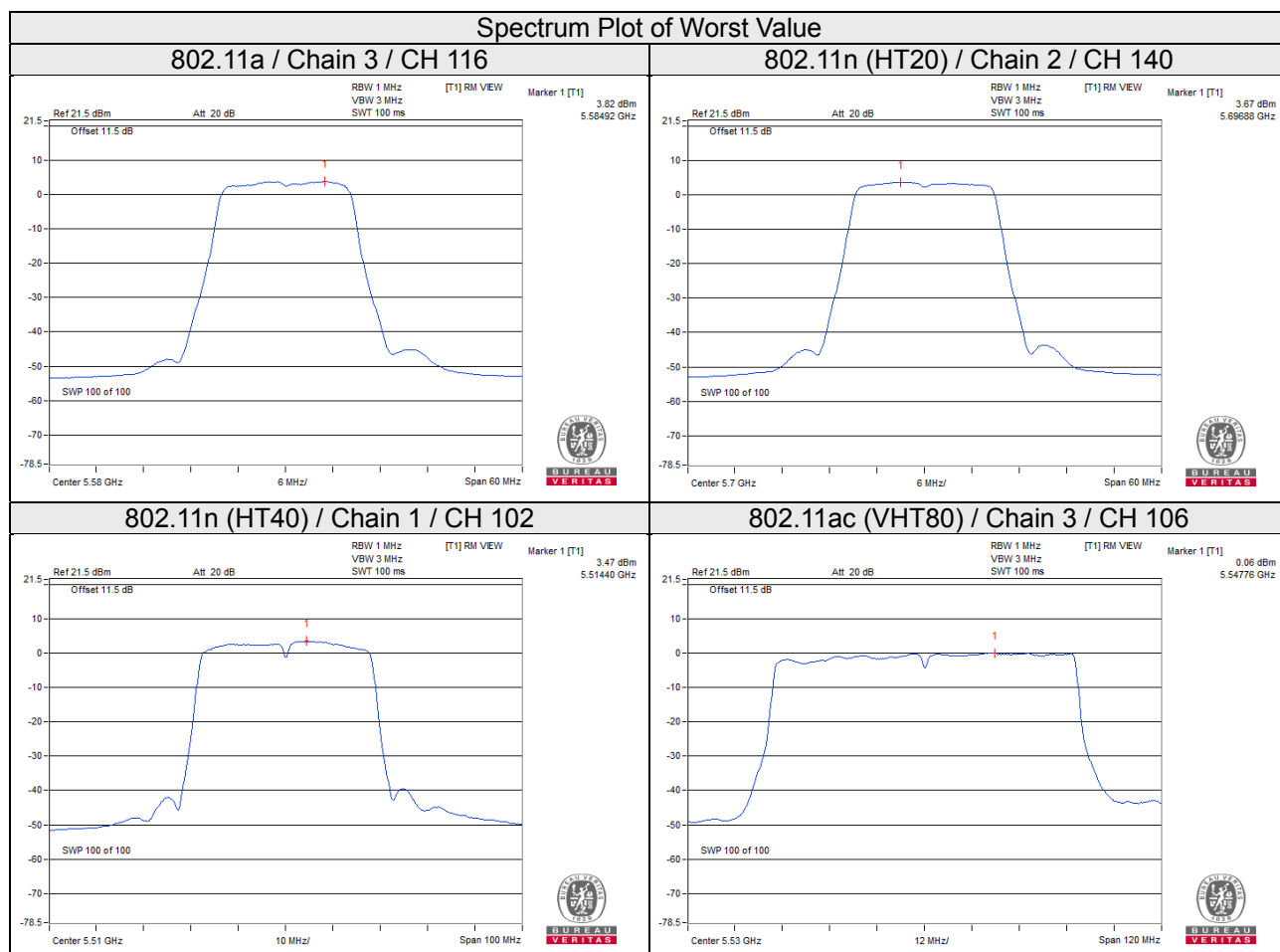
1. Method E)2)a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5500~5700MHz: Directional gain = 7.43dBi > 6dBi, so the limit shall be reduced to 11-(7.43-6) = 9.57dBm
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	-0.82	-0.88	-0.24	0.06	0.25	5.82	9.57	Pass
122	5610	-0.85	-0.62	-0.63	-0.07	0.25	5.74	9.57	Pass

Note:

1. Method E)2)a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5500~5700MHz: Directional gain = 7.43dBi > 6dBi, so the limit shall be reduced to 11-(7.43-6) = 9.57dBm
3. Refer to section 3.3 for duty cycle spectrum plot.

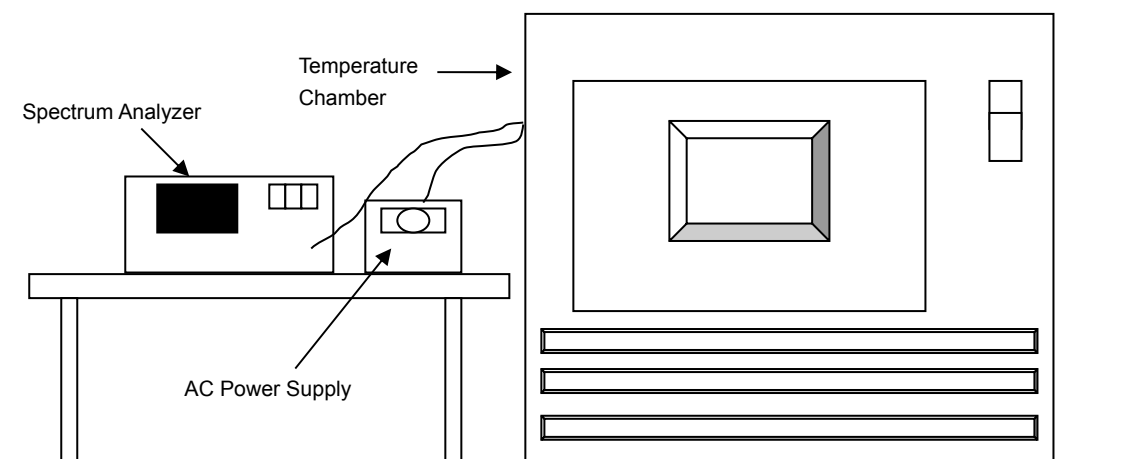


4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Test Date: Sep. 10, 2019

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 25, 2018	Sep. 24, 2019
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 03, 2019	Jun. 02, 2020
Digital Multimeter Fluke	87-III	70360742	Jun. 27, 2019	Jun. 26, 2020
AC Power Supply Extech	CFW-105	E000603	NA	NA
True RMS Clamp Meter / Fluke	325	31130711WS	May 21, 2019	May 20, 2020

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

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5260MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5259.9717	Pass	5259.9762	Pass	5259.9719	Pass	5259.9717	Pass
40	120	5259.9990	Pass	5260.0032	Pass	5259.9994	Pass	5260.0000	Pass
30	120	5259.9877	Pass	5259.9859	Pass	5259.9868	Pass	5259.9880	Pass
20	120	5260.0248	Pass	5260.0238	Pass	5260.0259	Pass	5260.0247	Pass
10	120	5260.0174	Pass	5260.0129	Pass	5260.0173	Pass	5260.0139	Pass
0	120	5259.9997	Pass	5259.9963	Pass	5259.9962	Pass	5259.9952	Pass
-10	120	5260.0070	Pass	5260.0081	Pass	5260.0078	Pass	5260.0060	Pass
-20	120	5259.9941	Pass	5259.9963	Pass	5259.9974	Pass	5259.9939	Pass
-30	120	5260.0253	Pass	5260.0243	Pass	5260.0232	Pass	5260.0209	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5260MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5260.0247	Pass	5260.0237	Pass	5260.0262	Pass	5260.0257	Pass
	120	5260.0248	Pass	5260.0238	Pass	5260.0259	Pass	5260.0247	Pass
	102	5260.0243	Pass	5260.0246	Pass	5260.0255	Pass	5260.0248	Pass

Frequency Stability Versus Temp.

Operating Frequency: 5500MHz

Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5500.0096	Pass	5500.0137	Pass	5500.0089	Pass	5500.0102	Pass
40	120	5500.0051	Pass	5500.0015	Pass	5500.0056	Pass	5500.0020	Pass
30	120	5500.0072	Pass	5500.0098	Pass	5500.0064	Pass	5500.0103	Pass
20	120	5499.9969	Pass	5499.9969	Pass	5499.9965	Pass	5499.9955	Pass
10	120	5500.0165	Pass	5500.0170	Pass	5500.0149	Pass	5500.0158	Pass
0	120	5500.0270	Pass	5500.0278	Pass	5500.0263	Pass	5500.0273	Pass
-10	120	5499.9937	Pass	5499.9914	Pass	5499.9938	Pass	5499.9900	Pass
-20	120	5500.0239	Pass	5500.0216	Pass	5500.0211	Pass	5500.0202	Pass
-30	120	5500.0012	Pass	5500.0038	Pass	5500.0007	Pass	5499.9994	Pass

Frequency Stability Versus Voltage

Operating Frequency: 5500MHz

Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5499.9967	Pass	5499.9979	Pass	5499.9974	Pass	5499.9950	Pass
	120	5499.9969	Pass	5499.9969	Pass	5499.9965	Pass	5499.9955	Pass
	102	5499.9964	Pass	5499.9977	Pass	5499.9973	Pass	5499.9960	Pass

5 Pictures of Test Arrangements

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

Appendix – Information of 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 FCC recognized accredited test firms and 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 Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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