



FCC RF Test Report

APPLICANT : Getac Technology Corporation.
EQUIPMENT : WLAN module
BRAND NAME : Getac
MODEL NAME : 8265NGW
FCC ID : QYL8265NG
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

This is a partial report. The product testing was completed on Jul. 13, 2018. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

This report contains data that were produced under subcontract by Laboratory SPORTON INTERNATIONAL INC.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.

Approved by: Eric Shih / Manager



Sporton International (Shenzhen) Inc.

***1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City
Guangdong Province 518055 China***



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR570164-39D	Rev. 01	Initial issue of report	Jul. 31, 2018

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	Pass	-
3.2	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	Pass	Under limit 10.21 dB at 5350.080 MHz
3.3	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-

Remark: Except Conducted output power and Unwanted Emissions is carrying out, For other test data please refer to Intel Report No.: 160321-01.TR01 for WLAN module (Model: 8265NGW).



1 General Description

1.1 Applicant

Getac Technology Corporation.

5F., Building A, No. 209, Sec.1, Nangang Rd., Nangang Dist., Taipei City 11568, Taiwan, R.O.C.

1.2 Product Feature of Equipment Under Test

WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac, NFC, GNSS and Digitizer.

Product Specification subjective to this standard	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna GPS: PATCH Antenna NFC: Loop Antenna Digitizer: Loop Antenna

The product was installed into Tablet (Brand Name: Getac, Model Name: RX10) during test, and all tests were performed with SKU A

SKU Table		
RX10 SKU		
	SKU A	SKU B
CPU	i5	M3
DDR	8G	4G
SSD	256GB	128GB
Panel	FHD	FHD
Digitizer	Support	Not Support
WLAN/BT	Support	Not Support
WWAN	Support	Not Support
GPS	Support	Not Support
RFID	Support	Not Support
Battery	5800mAh & 2160mAh	2160mAh

1.3 Modification of EUT

No modifications are made to the EUT during all test items.

1.4 Testing Location

SPORTON INTERNATIONAL INC. is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and under the FCC-recognized accredited testing laboratories by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist. Taoyuan City Taiwan Tel: 886-3-327-3456 FAX: +886-3-327-0978		
Test Site No.	Sporton Site No.	FCC designation No.	FCC Test Firm Registration No.
	TH05-HY	TW1190	553509

Note: Test data subcontracted Conducted power in section 3.1 of this report.

Sporton International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No is CN5019.

Test Site	Sporton International (Shenzhen) Inc.	
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398	
Test Site No.	Sporton Site No.	FCC Test Firm Registration No.
	03CH01-SZ	577730

Note: The test site complies with ANSI C63.4 2014 requirement.



1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for Ant. 1, Z plane for Ant. 2 and MIMO Ant. 1+2) were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42 [#]	5210		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58 [#]	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106 [#]	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
TDWR Channel	118*	5590	124	5620
	120	5600	126*	5630
	122 [#]	5610	128	5640

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	138 [#]	5690	144	5720
	142*	5710		

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Single Antenna

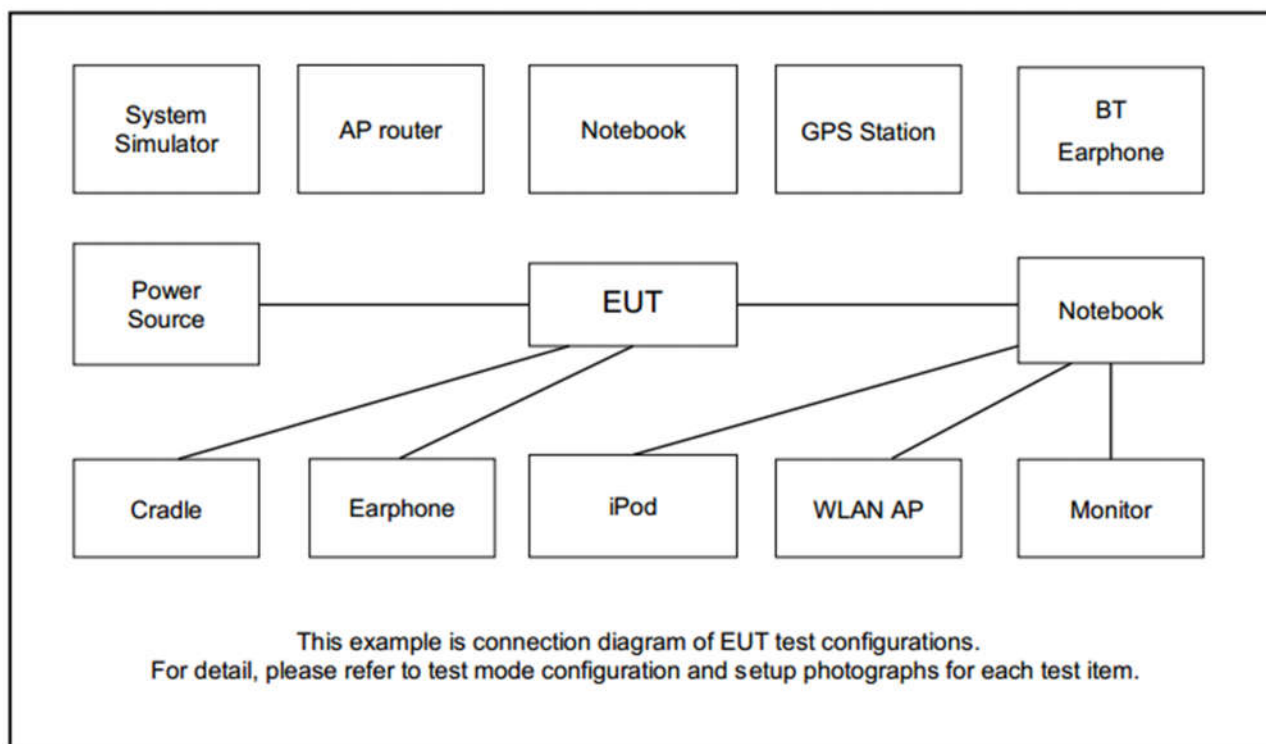
Modulation	Data Rate
802.11n HT20	MCS0
802.11ac VHT80	MCS0

MIMO Antenna

Modulation	Data Rate
802.11n HT20	MCS0
802.11ac VHT80	MCS0

Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11n HT20	802.11ac VHT80
L	Low	-	-
M	Middle	-	-
H	High	64	-
Straddle		-	138

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Earphone	Apple	MC690ZP/A	N/A	Shielded, 1.0m	N/A

2.5 EUT Operation Test Setup

The RF test items, programmed RF utility, "DRTU" installed in the notebook make the EUT provide functions like channel selection and power level for continuous transmitting signals.



3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

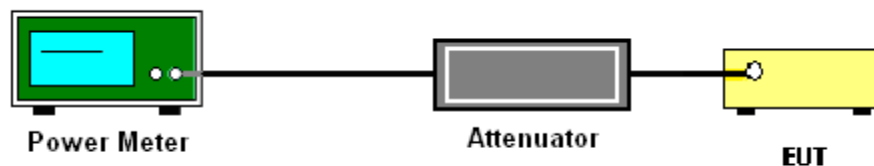
The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.2.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz .

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz . Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz .

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

Frequency (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



EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.2

Note: The following formula is used to convert the EIRP to field strength.

$$\text{EIRP} = E_{\text{Meas}} + 20\log(d_{\text{Meas}}) - 104.7$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

3.2.2 Measuring Instruments

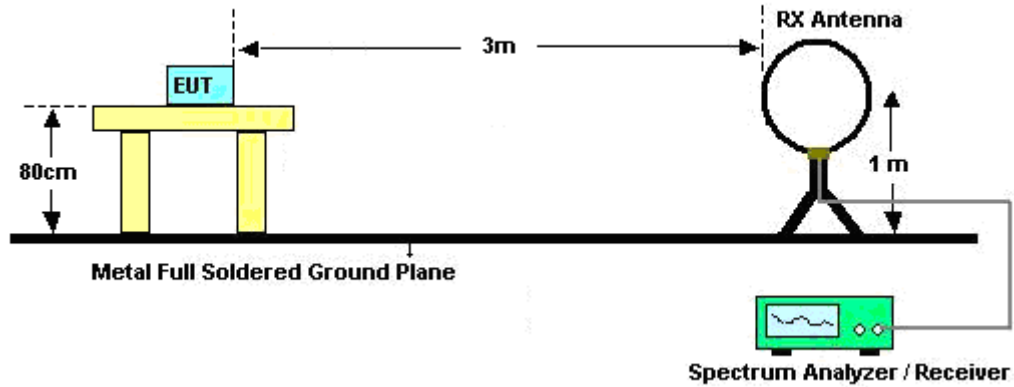
The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

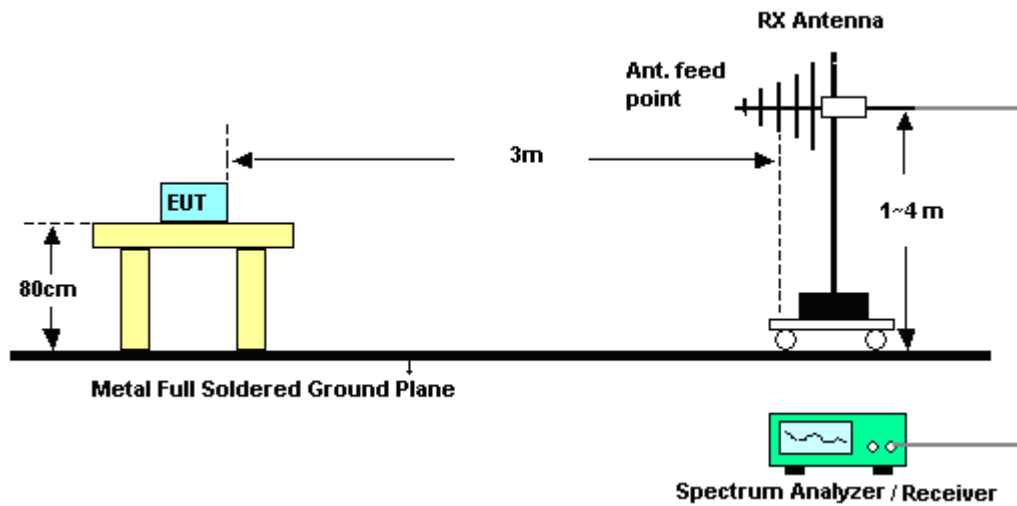
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.2.4 Test Setup

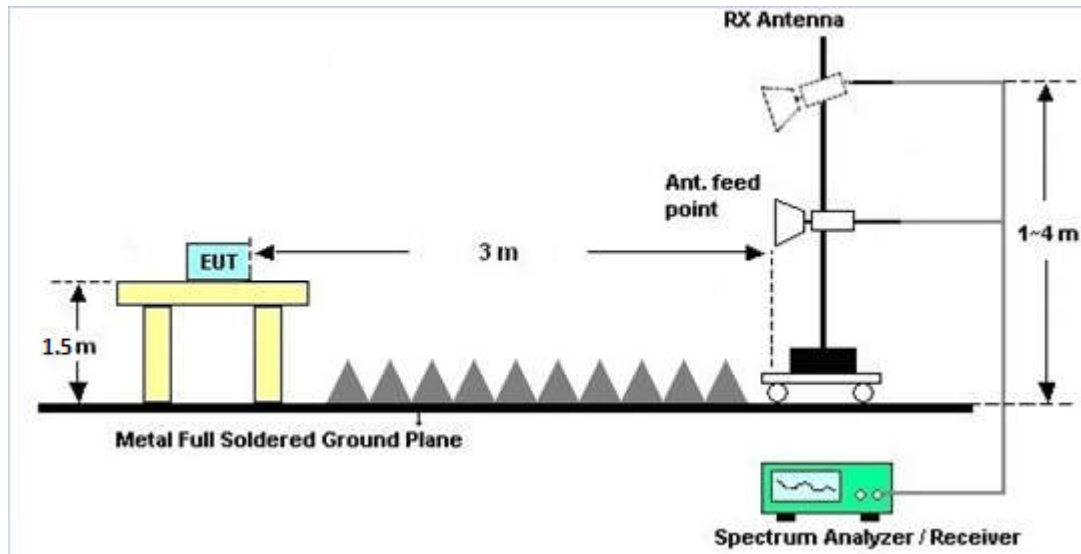
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



**3.2.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.2.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

3.2.7 Duty Cycle

Please refer to Appendix D.

3.2.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix B and C.

3.3 Antenna Requirements

3.3.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.3.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = GANT + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(\text{NANT}/\text{NSS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

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

Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain GANT is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
Band I	0.90	2.44	2.44	2.44	0.00	0.00
Band II	0.38	2.22	2.22	2.22	0.00	0.00
Band III	0.81	1.57	1.57	1.57	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1240001	N/A	Sep. 07, 2017	Jun. 19, 2018~ Jun. 20, 2018	Sep. 06, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1207349	300MHz~40GHz	Sep. 07, 2017	Jun. 19, 2018~ Jun. 20, 2018	Sep. 06, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 21, 2017	Jun. 19, 2018~ Jun. 20, 2018	Nov. 20, 2018	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Mar. 01, 2018	Jun. 19, 2018~ Jun. 20, 2018	Feb. 28, 2019	Conducted (TH05-HY)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Apr. 19, 2018	Jul. 06, 2018~ Jul. 13, 2018	Apr. 18, 2019	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 14, 2018	Jul. 06, 2018~ Jul. 13, 2018	May 13, 2019	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Apr. 19, 2018	Jul. 06, 2018~ Jul. 13, 2018	Apr. 18, 2019	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	119436	1GHz~18GHz	Jul. 28, 2017	Jul. 06, 2018~ Jul. 13, 2018	Jul. 27, 2018	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Mar. 30, 2018	Jul. 06, 2018~ Jul. 13, 2018	Mar. 29, 2019	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 19, 2018	Jul. 06, 2018~ Jul. 13, 2018	Apr. 18, 2019	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-001018 00-30-10P-R	1707137	1GHz~18GHz	Oct. 19, 2017	Jul. 06, 2018~ Jul. 13, 2018	Oct. 18, 2018	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270104	0.5GHz~26.5Ghz	Oct. 19, 2017	Jul. 06, 2018~ Jul. 13, 2018	Oct. 18, 2018	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 18, 2017	Jul. 06, 2018~ Jul. 13, 2018	Jul. 17, 2018	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	6160100019 85	N/A	NCR	Jul. 06, 2018~ Jul. 13, 2018	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jul. 06, 2018~ Jul. 13, 2018	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required



5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.8 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.3 dB
--	--------

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Lena Lo	Temperature:	21~25	°C
Test Date:	2018/6/19~2018/6/20	Relative Humidity:	51~54	%

TEST RESULTS DATA
Average Power Table

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	0.04	0.06	13.48	13.44		24.00	24.00	0.90	2.44	Pass
11a	6Mbps	1	44	5220	0.04	0.06	13.32	13.12		24.00	24.00	0.90	2.44	Pass
11a	6Mbps	1	48	5240	0.04	0.06	13.16	13.38		24.00	24.00	0.90	2.44	Pass
HT20	MCS0	1	36	5180	0.09	0.07	13.48	13.41		24.00	24.00	0.90	2.44	Pass
HT20	MCS0	1	44	5220	0.09	0.07	13.33	13.20		24.00	24.00	0.90	2.44	Pass
HT20	MCS0	1	48	5240	0.09	0.07	13.19	13.38		24.00	24.00	0.90	2.44	Pass
HT40	MCS0	1	38	5190	0.11	0.14	13.44	13.22		24.00	24.00	0.90	2.44	Pass
HT40	MCS0	1	46	5230	0.11	0.14	13.29	13.47		24.00	24.00	0.90	2.44	Pass
VHT20	MCS0	1	36	5180	0.07	0.07	13.47	13.39		24.00	24.00	0.90	2.44	Pass
VHT20	MCS0	1	44	5220	0.07	0.07	13.30	13.19		24.00	24.00	0.90	2.44	Pass
VHT20	MCS0	1	48	5240	0.07	0.07	13.13	13.35		24.00	24.00	0.90	2.44	Pass
VHT40	MCS0	1	38	5190	0.14	0.14	13.41	13.20		24.00	24.00	0.90	2.44	Pass
VHT40	MCS0	1	46	5230	0.14	0.14	13.25	13.46		24.00	24.00	0.90	2.44	Pass
VHT80	MCS0	1	42	5210	0.24	0.26	13.26	13.49		24.00	24.00	0.90	2.44	Pass
HT20	MCS0	2	36	5180	0.11	0.11	10.43	10.47	13.46	24.00		2.44		Pass
HT20	MCS0	2	44	5220	0.11	0.11	10.34	10.41	13.39	24.00		2.44		Pass
HT20	MCS0	2	48	5240	0.11	0.11	10.17	10.52	13.36	24.00		2.44		Pass
HT40	MCS0	2	38	5190	0.16	0.16	10.38	10.30	13.35	24.00		2.44		Pass
HT40	MCS0	2	46	5230	0.16	0.16	10.43	10.47	13.46	24.00		2.44		Pass
VHT20	MCS0	2	36	5180	0.15	0.15	10.42	10.44	13.44	24.00		2.44		Pass
VHT20	MCS0	2	44	5220	0.15	0.15	10.33	10.40	13.38	24.00		2.44		Pass
VHT20	MCS0	2	48	5240	0.15	0.15	10.15	10.51	13.35	24.00		2.44		Pass
VHT40	MCS0	2	38	5190	0.30	0.29	10.37	10.29	13.34	24.00		2.44		Pass
VHT40	MCS0	2	46	5230	0.30	0.29	10.24	10.31	13.29	24.00		2.44		Pass
VHT80	MCS0	2	42	5210	0.54	0.57	10.11	10.65	13.40	24.00		2.44		Pass

TEST RESULTS DATA
Average Power Table

FCC Band II															
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	52	5260	0.04	0.06	13.11	13.16		-	-	0.38	2.22	26.99	Pass
11a	6Mbps	1	60	5300	0.04	0.06	13.45	13.09		-	-	0.38	2.22	26.99	Pass
11a	6Mbps	1	64	5320	0.04	0.06	13.07	13.24		-	-	0.38	2.22	26.99	Pass
HT20	MCS0	1	52	5260	0.09	0.07	13.23	13.17		-	-	0.38	2.22	26.99	Pass
HT20	MCS0	1	60	5300	0.09	0.07	13.42	13.11		-	-	0.38	2.22	26.99	Pass
HT20	MCS0	1	64	5320	0.09	0.07	13.16	13.25		-	-	0.38	2.22	26.99	Pass
HT40	MCS0	1	54	5270	0.11	0.14	13.48	13.48		-	-	0.38	2.22	26.99	Pass
HT40	MCS0	1	62	5310	0.11	0.14	13.35	13.45		-	-	0.38	2.22	26.99	Pass
VHT20	MCS0	1	52	5260	0.07	0.07	13.17	13.15		-	-	0.38	2.22	26.99	Pass
VHT20	MCS0	1	60	5300	0.07	0.07	13.41	13.08		-	-	0.38	2.22	26.99	Pass
VHT20	MCS0	1	64	5320	0.07	0.07	13.12	13.22		-	-	0.38	2.22	26.99	Pass
VHT40	MCS0	1	54	5270	0.14	0.14	13.47	13.47		-	-	0.38	2.22	26.99	Pass
VHT40	MCS0	1	62	5310	0.14	0.14	13.32	13.44		-	-	0.38	2.22	26.99	Pass
VHT80	MCS0	1	58	5290	0.24	0.26	13.18	13.18		-	-	0.38	2.22	26.99	Pass
HT20	MCS0	2	52	5260	0.11	0.11	10.25	10.40	13.34	-	-	2.22	-	26.99	Pass
HT20	MCS0	2	60	5300	0.11	0.11	10.49	10.25	13.38	-	-	2.22	-	26.99	Pass
HT20	MCS0	2	64	5320	0.11	0.11	10.83	9.96	13.43	-	-	2.22	-	26.99	Pass
HT40	MCS0	2	54	5270	0.16	0.16	10.35	10.53	13.45	-	-	2.22	-	26.99	Pass
HT40	MCS0	2	62	5310	0.16	0.16	10.28	10.52	13.41	-	-	2.22	-	26.99	Pass
VHT20	MCS0	2	52	5260	0.15	0.15	10.21	10.38	13.31	-	-	2.22	-	26.99	Pass
VHT20	MCS0	2	60	5300	0.15	0.15	10.46	10.24	13.36	-	-	2.22	-	26.99	Pass
VHT20	MCS0	2	64	5320	0.15	0.15	10.67	9.95	13.34	-	-	2.22	-	26.99	Pass
VHT40	MCS0	2	54	5270	0.30	0.29	10.33	10.46	13.41	-	-	2.22	-	26.99	Pass
VHT40	MCS0	2	62	5310	0.30	0.29	10.27	10.40	13.35	-	-	2.22	-	26.99	Pass
VHT80	MCS0	2	58	5290	0.54	0.57	10.54	10.39	13.48	-	-	2.22	-	26.99	Pass

TEST RESULTS DATA
Average Power Table

FCC Band III															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	100	5500	0.04	0.06	13.43	13.33		-	-	0.81	1.57	26.99	Pass
11a	6Mbps	1	116	5580	0.04	0.06	13.38	13.36		-	-	0.81	1.57	26.99	Pass
11a	6Mbps	1	140	5700	0.04	0.06	13.22	13.08		-	-	0.81	1.57	26.99	Pass
HT20	MCS0	1	100	5500	0.09	0.07	13.47	13.33		-	-	0.81	1.57	26.99	Pass
HT20	MCS0	1	116	5580	0.09	0.07	13.41	13.29		-	-	0.81	1.57	26.99	Pass
HT20	MCS0	1	140	5700	0.09	0.07	13.32	13.47		-	-	0.81	1.57	26.99	Pass
HT20	MCS0	1	144	5720	0.09	0.07	13.13	13.49		-	-	0.81	1.57	26.99	Pass
HT40	MCS0	1	102	5510	0.11	0.14	13.42	13.26		-	-	0.81	1.57	26.99	Pass
HT40	MCS0	1	110	5550	0.11	0.14	13.40	13.47		-	-	0.81	1.57	26.99	Pass
HT40	MCS0	1	134	5670	0.11	0.14	13.21	13.31		-	-	0.81	1.57	26.99	Pass
HT40	MCS0	1	142	5710	0.11	0.14	13.45	13.49		-	-	0.81	1.57	26.99	Pass
VHT20	MCS0	1	100	5500	0.07	0.07	13.46	13.28		-	-	0.81	1.57	26.99	Pass
VHT20	MCS0	1	116	5580	0.07	0.07	13.39	13.24		-	-	0.81	1.57	26.99	Pass
VHT20	MCS0	1	140	5700	0.07	0.07	13.27	13.46		-	-	0.81	1.57	26.99	Pass
VHT20	MCS0	1	144	5720	0.07	0.07	13.11	13.48		-	-	0.81	1.57	26.99	Pass
VHT40	MCS0	1	102	5510	0.14	0.14	13.39	13.23		-	-	0.81	1.57	26.99	Pass
VHT40	MCS0	1	110	5550	0.14	0.14	13.38	13.45		-	-	0.81	1.57	26.99	Pass
VHT40	MCS0	1	134	5670	0.14	0.14	13.20	13.29		-	-	0.81	1.57	26.99	Pass
VHT40	MCS0	1	142	5710	0.14	0.14	13.44	13.48		-	-	0.81	1.57	26.99	Pass
VHT80	MCS0	1	106	5530	0.24	0.26	13.45	13.34		-	-	0.81	1.57	26.99	Pass
VHT80	MCS0	1	122	5610	0.24	0.26	13.33	13.37		-	-	0.81	1.57	26.99	Pass
VHT80	MCS0	1	138	5690	0.24	0.26	13.20	13.46		-	-	0.81	1.57	26.99	Pass
HT20	MCS0	2	100	5500	0.11	0.11	10.71	10.09	13.42	-	-	1.57		26.99	Pass
HT20	MCS0	2	116	5580	0.11	0.11	10.58	10.35	13.48	-	-	1.57		26.99	Pass
HT20	MCS0	2	140	5700	0.11	0.11	10.29	10.63	13.48	-	-	1.57		26.99	Pass
HT20	MCS0	2	144	5720	0.11	0.11	10.14	10.68	13.43	-	-	1.57		26.99	Pass
HT40	MCS0	2	102	5510	0.16	0.16	10.72	10.19	13.47	-	-	1.57		26.99	Pass
HT40	MCS0	2	110	5550	0.16	0.16	10.30	10.46	13.39	-	-	1.57		26.99	Pass
HT40	MCS0	2	134	5670	0.16	0.16	10.58	10.34	13.47	-	-	1.57		26.99	Pass
HT40	MCS0	2	142	5710	0.16	0.16	10.49	10.40	13.46	-	-	1.57		26.99	Pass
VHT20	MCS0	2	100	5500	0.15	0.15	10.63	10.07	13.37	-	-	1.57		26.99	Pass
VHT20	MCS0	2	116	5580	0.15	0.15	10.54	10.34	13.45	-	-	1.57		26.99	Pass
VHT20	MCS0	2	140	5700	0.15	0.15	10.28	10.60	13.45	-	-	1.57		26.99	Pass
VHT20	MCS0	2	144	5720	0.15	0.15	10.11	10.67	13.41	-	-	1.57		26.99	Pass
VHT40	MCS0	2	102	5510	0.30	0.29	10.71	9.94	13.35	-	-	1.57		26.99	Pass
VHT40	MCS0	2	110	5550	0.30	0.29	10.29	10.21	13.26	-	-	1.57		26.99	Pass
VHT40	MCS0	2	134	5670	0.30	0.29	10.57	10.33	13.46	-	-	1.57		26.99	Pass
VHT40	MCS0	2	142	5710	0.30	0.29	10.46	10.37	13.43	-	-	1.57		26.99	Pass
VHT80	MCS0	2	106	5530	0.54	0.57	10.45	10.45	13.46	-	-	1.57		26.99	Pass
VHT80	MCS0	2	122	5610	0.54	0.57	10.28	10.54	13.42	-	-	1.57		26.99	Pass
VHT80	MCS0	2	138	5690	0.54	0.57	10.16	10.60	13.40	-	-	1.57		26.99	Pass



Appendix B. Radiated Spurious Emission

Test Engineer :	Vikki He	Temperature :	24~25°C
		Relative Humidity :	48~49%



Band 2 - 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 64 5320MHz	*	5320	100.14	-	-	89.39	32.15	11.7	33.1	110	27	P	H
	*	5320	93.2	-	-	82.45	32.15	11.7	33.1	110	27	A	H
		5355.36	52.76	-21.24	74	41.94	32.18	11.74	33.1	110	27	P	H
		5350.08	42.03	-11.97	54	31.21	32.18	11.74	33.1	110	27	A	H
	*	5320	98.15	-	-	87.4	32.15	11.7	33.1	147	224	P	V
	*	5320	91.62	-	-	80.87	32.15	11.7	33.1	147	224	A	V
		5352.16	50.43	-23.57	74	39.61	32.18	11.74	33.1	147	224	P	V
		5350.08	41.4	-12.6	54	30.58	32.18	11.74	33.1	147	224	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 2 5250~5350MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 64 5320MHz		10640	50.45	-23.55	74	51.8	39.93	14.68	55.96	152	135	P	H
		15960	49.04	-24.96	74	51.58	36.69	16.64	55.87	173	245	P	H
		10640	50.13	-23.87	74	51.48	39.93	14.68	55.96	152	135	P	V
		15960	49.6	-24.4	74	52.14	36.69	16.64	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac	*	5690	95.65	-	-	84.08	32.3	12.37	33.1	100	34	P	H
VHT80	*	5690	89.05	-	-	77.48	32.3	12.37	33.1	100	34	A	H
CH 138	*	5690	91.06	-	-	79.49	32.3	12.37	33.1	110	217	P	V
5690MHz	*	5690	85.16	-	-	73.59	32.3	12.37	33.1	110	217	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 3 - Straddle Channel

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		11380	50.51	-23.49	74	50.95	40.23	14.85	55.52	150	360	P	H
VHT80		17070	50.3	-23.7	74	48.25	40.53	17.87	56.35	150	0	P	H
CH 138		11380	50.34	-23.66	74	50.78	40.23	14.85	55.52	150	360	P	V
5690MHz		17070	50.85	-23.15	74	48.8	40.53	17.87	56.35	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 - 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 64 5320MHz	*	5320	100.73	-	-	89.98	32.15	11.7	33.1	107	233	P	H
	*	5320	94.11	-	-	83.36	32.15	11.7	33.1	107	233	A	H
		5350.88	55.26	-18.74	74	44.44	32.18	11.74	33.1	107	233	P	H
		5350.08	43.79	-10.21	54	32.97	32.18	11.74	33.1	107	233	A	H
	*	5320	98.15	-	-	87.4	32.15	11.7	33.1	147	224	P	V
	*	5320	91.62	-	-	80.87	32.15	11.7	33.1	147	224	A	V
		5352.16	50.43	-23.57	74	39.61	32.18	11.74	33.1	147	224	P	V
		5350.08	41.4	-12.6	54	30.58	32.18	11.74	33.1	147	224	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 2 5250~5350MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 64 5320MHz		10640	50.98	-23.02	74	52.33	39.93	14.68	55.96	152	135	P	H
		15960	49.01	-24.99	74	51.55	36.69	16.64	55.87	173	245	P	H
		10640	50.08	-23.92	74	51.43	39.93	14.68	55.96	152	135	P	V
		15960	48.97	-25.03	74	51.51	36.69	16.64	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac	*	5690	96.76	-	-	85.19	32.3	12.37	33.1	141	223	P	H
VHT80	*	5690	90.55	-	-	78.98	32.3	12.37	33.1	141	223	A	H
CH 138	*	5690	92.01	-	-	80.44	32.3	12.37	33.1	110	217	P	V
5690MHz	*	5690	86.11	-	-	74.54	32.3	12.37	33.1	110	217	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 3 - Straddle Channel

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac		11380	50.83	-23.17	74	51.27	40.23	14.85	55.52	150	360	P	H
VHT80		17070	50.47	-23.53	74	48.42	40.53	17.87	56.35	150	0	P	H
CH 138		11380	49.82	-24.18	74	50.26	40.23	14.85	55.52	150	360	P	V
5690MHz		17070	50.33	-23.67	74	48.28	40.53	17.87	56.35	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 - 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 64 5320MHz	*	5320	100.15	-	-	89.4	32.15	11.7	33.1	162	217	P	H
	*	5320	93.77	-	-	83.02	32.15	11.7	33.1	162	217	A	H
		5355.84	50.31	-23.69	74	39.49	32.18	11.74	33.1	162	217	P	H
		5354.72	41.14	-12.86	54	30.32	32.18	11.74	33.1	162	217	A	H
	*	5320	98.15	-	-	87.4	32.15	11.7	33.1	147	224	P	V
	*	5320	91.62	-	-	80.87	32.15	11.7	33.1	147	224	A	V
		5352.16	50.43	-23.57	74	39.61	32.18	11.74	33.1	147	224	P	V
		5350.08	41.4	-12.6	54	30.58	32.18	11.74	33.1	147	224	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 2 5250~5350MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 64 5320MHz		10640	50.8	-23.2	74	52.15	39.93	14.68	55.96	152	135	P	H
		15960	48.56	-25.44	74	51.1	36.69	16.64	55.87	173	245	P	H
		10640	50.45	-23.55	74	51.8	39.93	14.68	55.96	152	135	P	V
		15960	49.13	-24.87	74	51.67	36.69	16.64	55.87	173	245	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac	*	5690	94.86	-	-	83.29	32.3	12.37	33.1	100	34	P	H
VHT80	*	5690	88.01	-	-	76.44	32.3	12.37	33.1	100	34	A	H
CH 138	*	5690	91.72			80.15	32.3	12.37	33.1	400	339	P	V
5690MHz	*	5690	85.37			73.8	32.3	12.37	33.1	400	339	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11380	50.74	-23.26	74	51.18	40.23	14.85	55.52	150	360	P	H
VHT80		17070	49.72	-24.28	74	47.67	40.53	17.87	56.35	150	0	P	H
CH 138		11380	50.32	-23.68	74	50.76	40.23	14.85	55.52	150	360	P	V
5690MHz		17070	50.42	-23.58	74	48.37	40.53	17.87	56.35	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11n HT20 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 LF		30	22.48	-17.52	40	29.55	24.3	0.23	31.6			P	H
		268.62	33.12	-12.88	46	42.7	19.53	1.93	31.04	100	46	P	H
		386.96	31.51	-14.49	46	38.88	21.38	2.35	31.1			P	H
		418.97	29.5	-16.5	46	36.09	22.05	2.46	31.1			P	H
		709	30.01	-15.99	46	32.73	25.2	3.3	31.22			P	H
		874.87	29.81	-16.19	46	30.78	26.57	3.76	31.3			P	H
		33.88	24.09	-15.91	40	33.45	21.94	0.3	31.6			P	V
		68.8	23.01	-16.99	40	41.38	12.66	0.57	31.6			P	V
		268.62	28.61	-17.39	46	38.19	19.53	1.93	31.04			P	V
		386.96	28.7	-17.3	46	36.07	21.38	2.35	31.1			P	V
		570.29	35.45	-10.55	46	39.4	24.34	2.91	31.2	100	154	P	V
		760.41	31.92	-14.08	46	33.97	25.76	3.49	31.3			P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix C. Radiated Spurious Emission

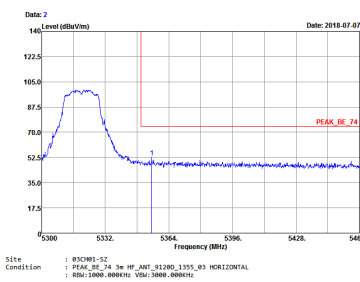
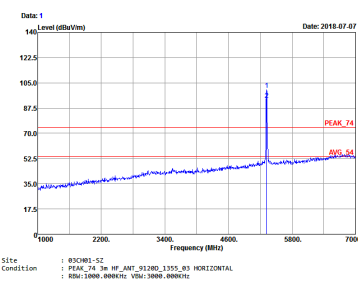
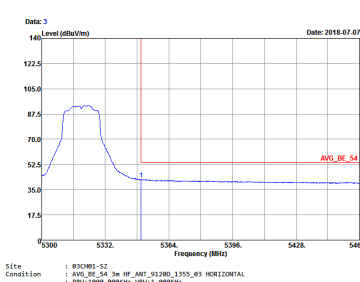
Note symbol

-L	Low channel location
-R	High channel location



Band 2 - 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

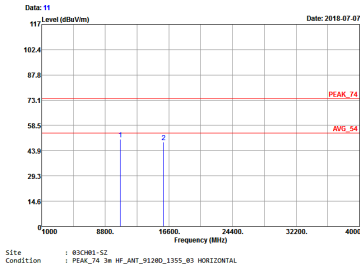
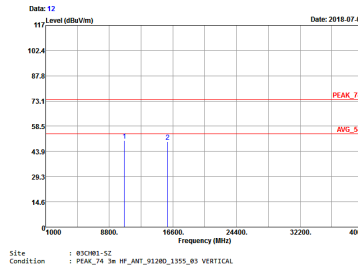
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Horizontal	Fundamental
Peak	 Site Condition : 802.11n HT20 : PEAK_80_74 3m HP_ANT_51280_1355_03 HORIZONTAL : RBW:1000.000kHz VSW:1.0000	 Site Condition : 802.11n HT20 : PEAK_74 3m HP_ANT_51280_1355_03 HORIZONTAL : RBW:1000.000kHz VSW:1.0000
Avg.	 Site Condition : 802.11n HT20 : AVG_80_54 3m HP_ANT_51280_1355_03 HORIZONTAL : RBW:1000.000kHz VSW:1.0000	



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Vertical	Fundamental
Peak	Date: 5 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 0 Frequency (MHz) 5300 5332 5364 5396 5428 5460 Site Condition : 802.11n-52 : PEAK_RE_74 3m HP_ANT_51280_1355_03 VERTICAL : RMS:1000.0000Hz VSW:3000.0000Hz PEAK_RE_74	Date: 4 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 0 Frequency (MHz) 4000 2200 3600 4800 6000 7000 Site Condition : 802.11n-52 : PEAK_74 3m HP_ANT_51280_1355_03 VERTICAL : RMS:1000.0000Hz VSW:3000.0000Hz PEAK_74 AVG_54
Avg.	Date: 6 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 0 Frequency (MHz) 5300 5332 5364 5396 5428 5460 Site Condition : 802.11n-52 : AVG_RE_54 3m HP_ANT_51280_1355_03 VERTICAL : RMS:1000.0000Hz VSW:3000.0000Hz AVG_RE_54	

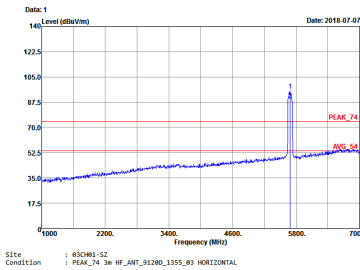
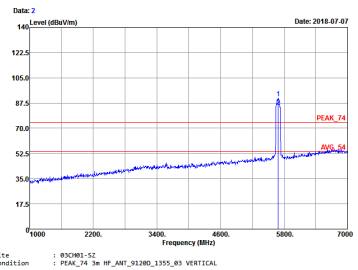


Band 2 - 5250~5350MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

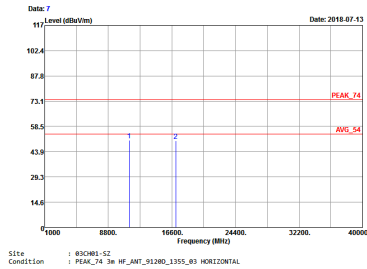
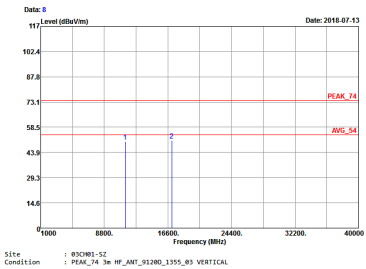
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition : 802.11n HT20 CH64 5320MHz : PEAK_74 3m HF_ANT_91280_1355_03 HORIZONTAL	 Site Condition : 802.11n HT20 CH64 5320MHz : PEAK_74 3m HF_ANT_91280_1355_03 VERTICAL



Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Fundamental @ 3m)

WIFI	Band 3 Straddle Channel Fundamental @ 3m	
ANT	802.11ac VHT80 CH138 5690MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition : 802.11ac VHT80 CH138 5690MHz HORIZONTAL	 Site Condition : 802.11ac VHT80 CH138 5690MHz VERTICAL

Band 3 - Straddle Channel
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 3 Straddle Channel Harmonic @ 3m	
ANT	802.11n HT20 CH138 5690MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 83CH01-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_03 HORIZONTAL	 Site : 83CH01-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_03 VERTICAL

Band 2 - 5250~5350MHz

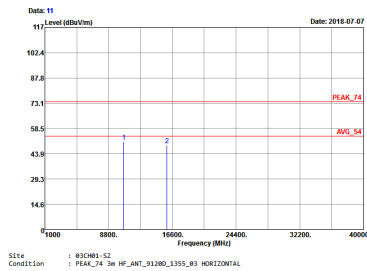
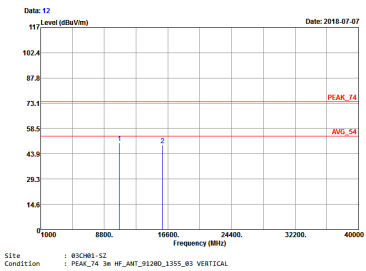
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI		Band 2 5250~5350MHz Band Edge @ 3m	
ANT		802.11n HT20 CH64 5320MHz	
2	Horizontal	Fundamental	
Peak	Site : 83CWB1-SZ Condition : PEAK_RH_74 In HP_ANT_91280_1355_83 HORIZONTAL RBW:1000.000Hz VBW:1000.000Hz	Site : 83CWB1-SZ Condition : PEAK_FL_74 In HP_ANT_91280_1355_83 HORIZONTAL RBW:1000.000Hz VBW:1000.000Hz	
Avg.	Site : 83CWB1-SZ Condition : AVG_RH_54 In HP_ANT_91280_1355_83 HORIZONTAL RBW:1000.000Hz VBW:0.0100Hz	Site : 83CWB1-SZ Condition : AVG_FL_54 In HP_ANT_91280_1355_83 HORIZONTAL RBW:1000.000Hz VBW:0.0100Hz	

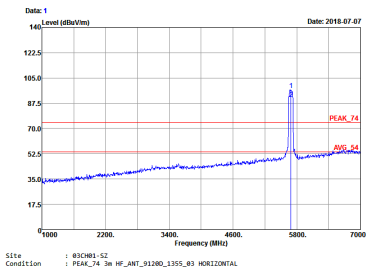
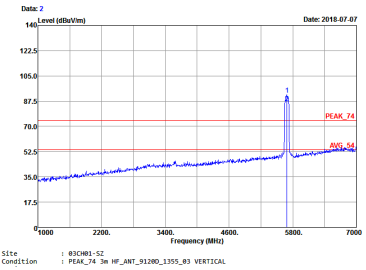


WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
2	Vertical	Fundamental
Peak	Date: 5 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 0 Frequency (MHz) 5300 5332 5364 5396 5428 5460 Site : 83CH01-SZ Condition : PEAK_BE_74 3m HP_ANT_51280_1355_03 VERTICAL RSM:1000.000KHz VSW:3000.000KHz PEAK_BE_74	Date: 4 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 0 Frequency (MHz) 4000 2200 3400 4600 5800 7000 Site : 83CH01-SZ Condition : PEAK_74 3m HP_ANT_51280_1355_03 VERTICAL RSM:1000.000KHz VSW:3000.000KHz PEAK_74 AVG_54
Avg.	Date: 6 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 0 Frequency (MHz) 5300 5332 5364 5396 5428 5460 Site : 83CH01-SZ Condition : AVG_BE_54 3m HP_ANT_51280_1355_03 VERTICAL RSM:1000.000KHz VSW:3000.000KHz AVG_BE_54	

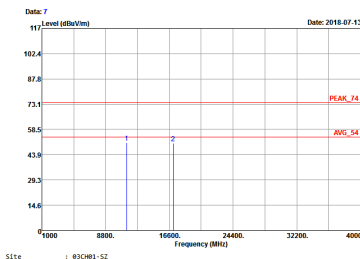
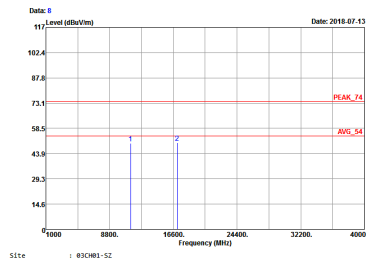
Band 2 - 5250~5350MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 83CH01-52 Condition : PEAK_74 3m HF_ANT_91280_1355_83 HORIZONTAL	 Site : 83CH01-52 Condition : PEAK_74 3m HF_ANT_91280_1355_83 VERTICAL

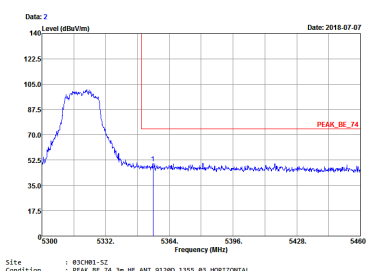
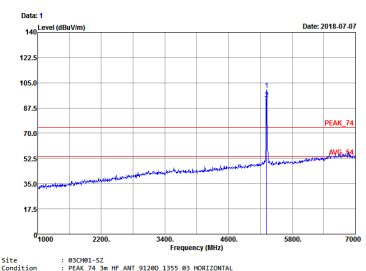
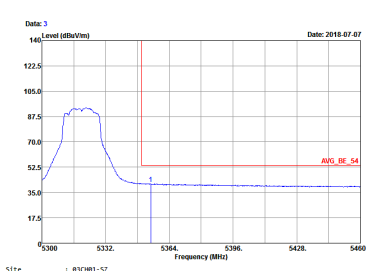
Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Fundamental @ 3m)

WIFI	Band 3 Straddle Channel Fundamental @ 3m	
ANT	802.11ac VHT80 CH138 5690MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 83CH01-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_83 HORIZONTAL	 Site : 83CH01-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_83 VERTICAL

Band 3 - Straddle Channel
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 3 Straddle Channel Harmonic @ 3m	
ANT	802.11n HT20 CH138 5690MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 83CH01-S2 Condition : PEAK_74 3m HF_ANT_91280_1355_03 HORIZONTAL	 Site : 83CH01-S2 Condition : PEAK_74 3m HF_ANT_91280_1355_03 VERTICAL

Band 2 - 5250~5350MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1+2	Horizontal	Fundamental
Peak	 Site Condition : 03CWM1-S2 : PEAK_BE_74 3m HP_ANT_51280_1355_03 HORIZONTAL : RBW:100K;VBW:1.000KHz	 Site Condition : 03CWM1-S2 : PEAK_74 3m HP_ANT_51280_1355_03 HORIZONTAL : RBW:100K;VBW:300K;VM:3000.000KHz
Avg.	 Site Condition : 03CWM1-S2 : AVG_BE_54 3m HP_ANT_51280_1355_03 HORIZONTAL : RBW:100K;VBW:1.000KHz	



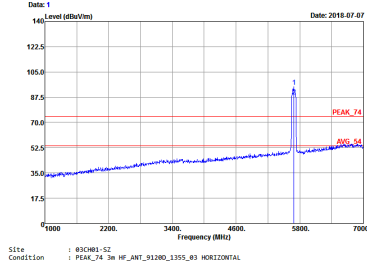
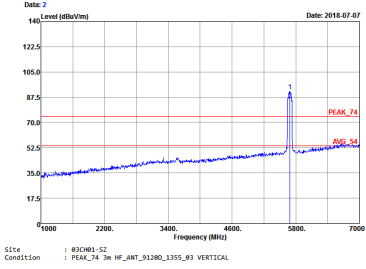
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1+2	Vertical	Fundamental
Peak	Date: 5 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 5300 5332 5364 5396 5428 5460 Frequency (MHz) Site : 83CH01-SZ Condition : PEAK_RE_74 3m HP_ANT_51280_1355_03 VERTICAL RSM:1000.000KHz VSW:3000.000KHz	Date: 4 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 1000 2200 3400 4600 5800 7000 Frequency (MHz) Site : 83CH01-SZ Condition : PEAK_74 3m HP_ANT_51280_1355_03 VERTICAL RSM:1000.000KHz VSW:3000.000KHz
Avg.	Date: 6 Level (dBuV/m) 140 122.5 105.0 87.5 70.0 52.5 35.0 17.5 5300 5332 5364 5396 5428 5460 Frequency (MHz) Site : 83CH01-SZ Condition : AVG_RE_54 3m HP_ANT_51280_1355_03 VERTICAL RSM:1000.000KHz VSW:3000.000KHz	



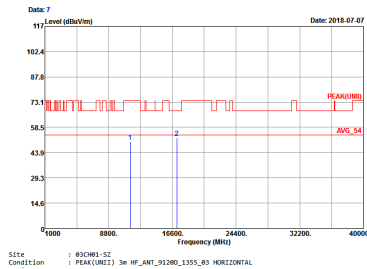
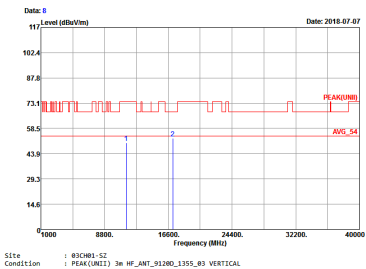
Band 2 - 5250~5350MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1+2	Horizontal	Vertical
Peak Avg.	Date: 11 Level (dBuV/m) Site : 83CH81-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_83 HORIZONTAL	Date: 12 Level (dBuV/m) Site : 83CH81-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_83 VERTICAL

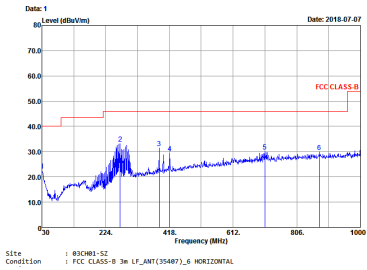
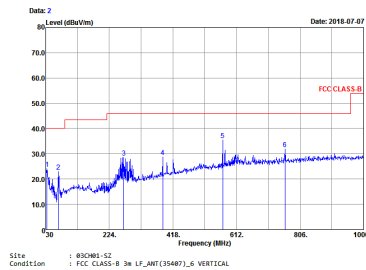
Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Fundamental @ 3m)

WIFI	Band 3 Straddle Channel Fundamental @ 3m	
ANT	802.11ac VHT80 CH138 5690MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 83CH81-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_83 HORIZONTAL	 Site : 83CH81-SZ Condition : PEAK_74 3m HF_ANT_91280_1355_83 VERTICAL

Band 3 - Straddle Channel
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 3 Straddle Channel Harmonic @ 3m	
ANT	802.11n HT20 CH138 5690MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site Condition : 83CH81-S2 : PEAK(UNIT) 3m HP_ANT_91280_1355_83 HORIZONTAL	 Site Condition : 83CH81-S2 : PEAK(UNIT) 3m HP_ANT_91280_1355_83 VERTICAL

Emission below 1GHz
5GHz WIFI 802.11n HT20 (LF)

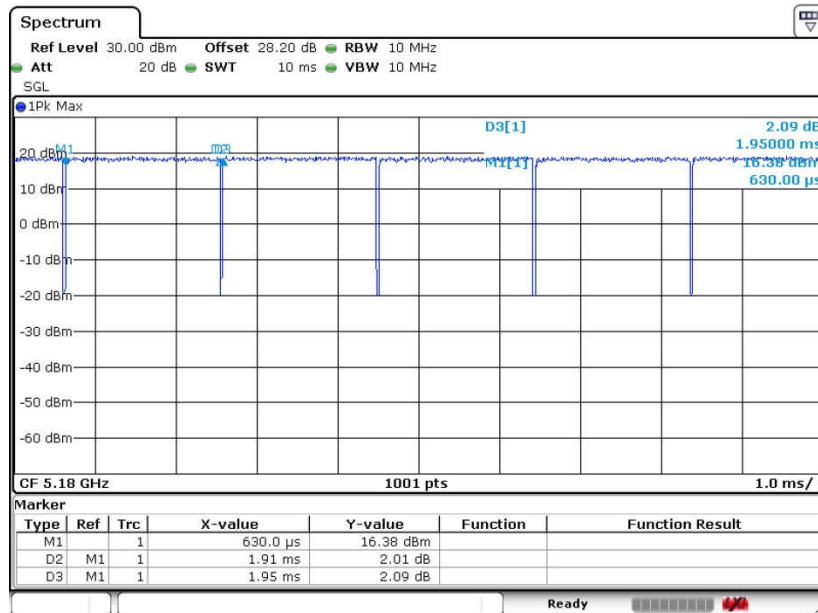
WIFI	5GHz WIFI	
ANT	802.11n HT20 LF	
2	Horizontal	Vertical
QP / Peak	 Site : 83CH01-SZ Condition : FCC CLASS-B 3m LF_ANT(35487)_5 HORIZONTAL	 Site : 83CH01-SZ Condition : FCC CLASS-B 3m LF_ANT(35487)_6 VERTICAL

Appendix D. Duty Cycle Plots

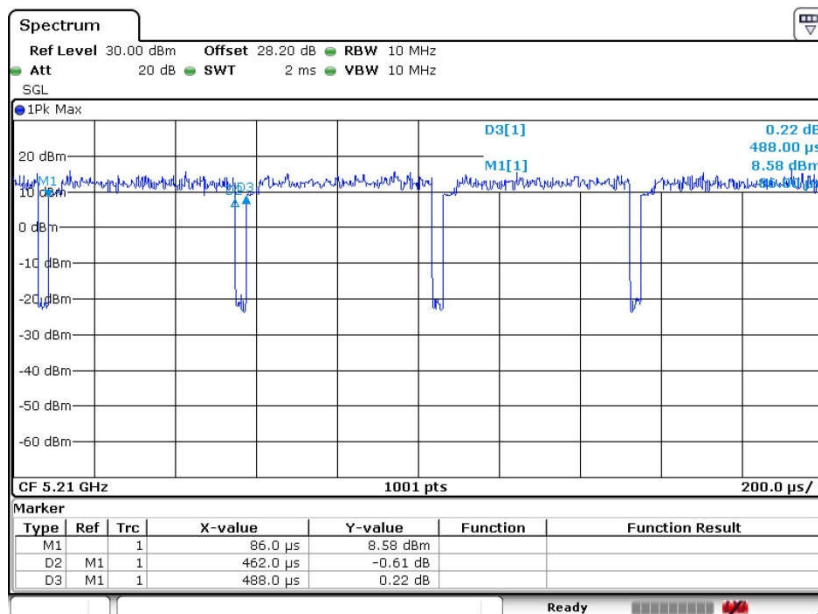
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1	5GHz 802.11n HT20	97.95	1.910	0.524	1KHz
1	5GHz 802.11ac VHT80	94.67	0.462	2.165	3KHz
2	5GHz 802.11n HT20	98.45	-	-	10Hz
2	5GHz 802.11ac VHT80	94.26	0.460	2.174	3KHz
1+2	5GHz 802.11n HT20 for Ant.1	97.45	1.910	0.524	1KHz
1+2	5GHz 802.11n HT20 for Ant.2	97.45	1.910	0.524	1KHz
1+2	5GHz 802.11ac VHT80 for Ant.1	88.28	0.256	3.906	10KHZ
1+2	5GHz 802.11ac VHT80 for Ant.2	87.67	0.256	3.906	10KHZ

<Ant. 1>

802.11n HT20

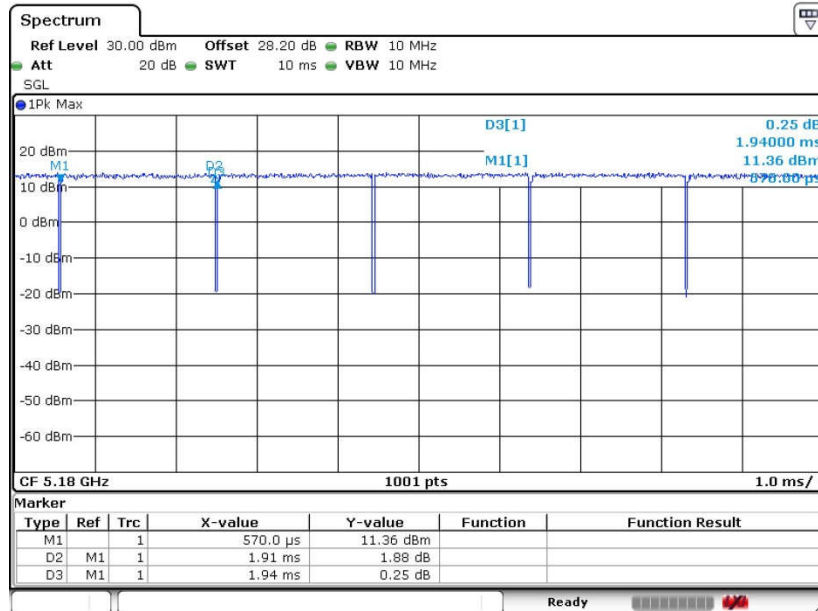


802.11ac VHT80

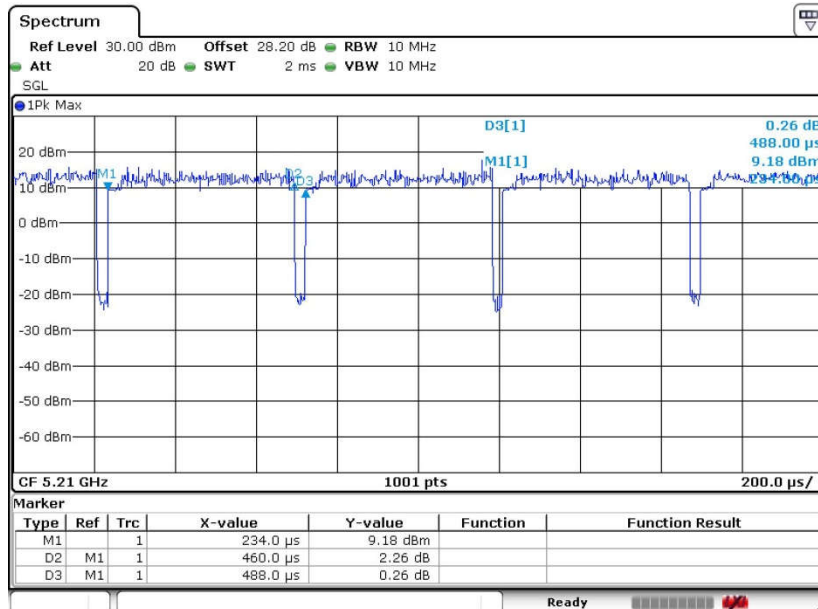


<Ant. 2>

802.11n HT20

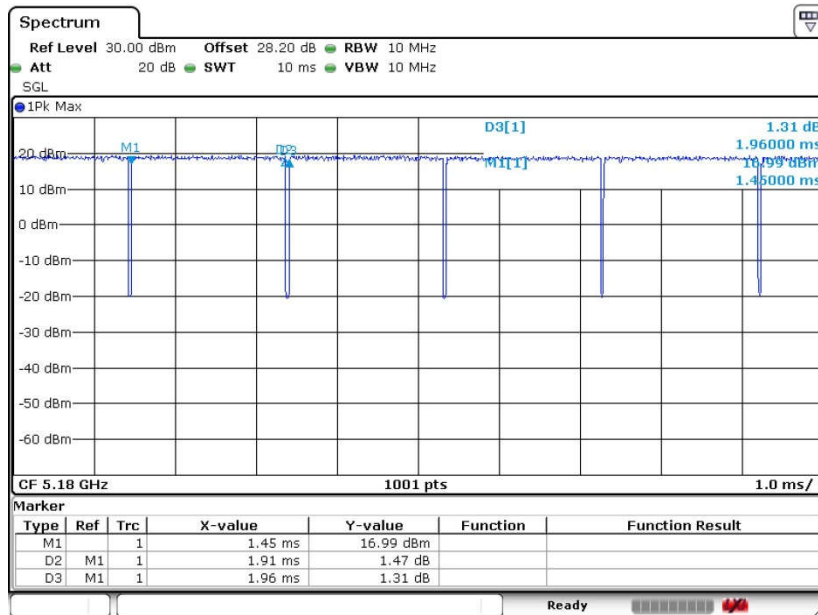


802.11ac VHT80

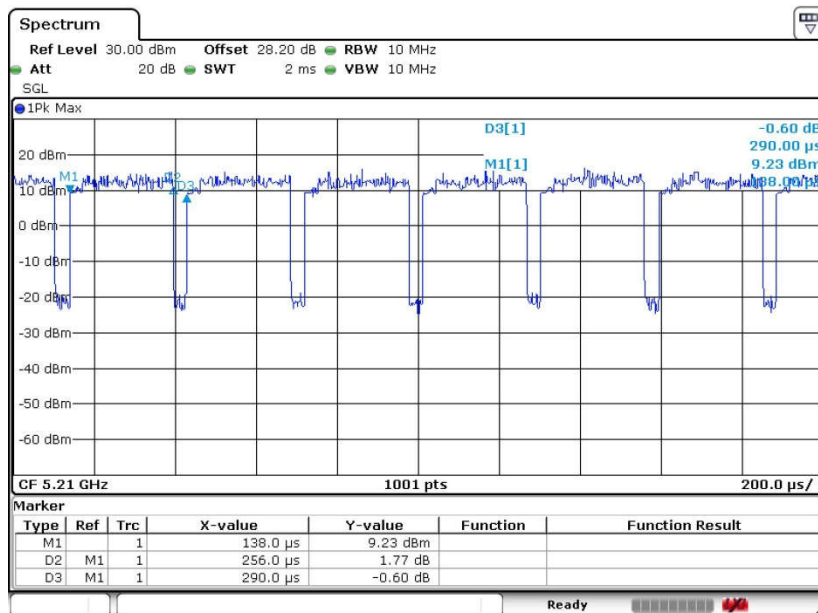


<MIMO Ant. 1>

802.11n HT20

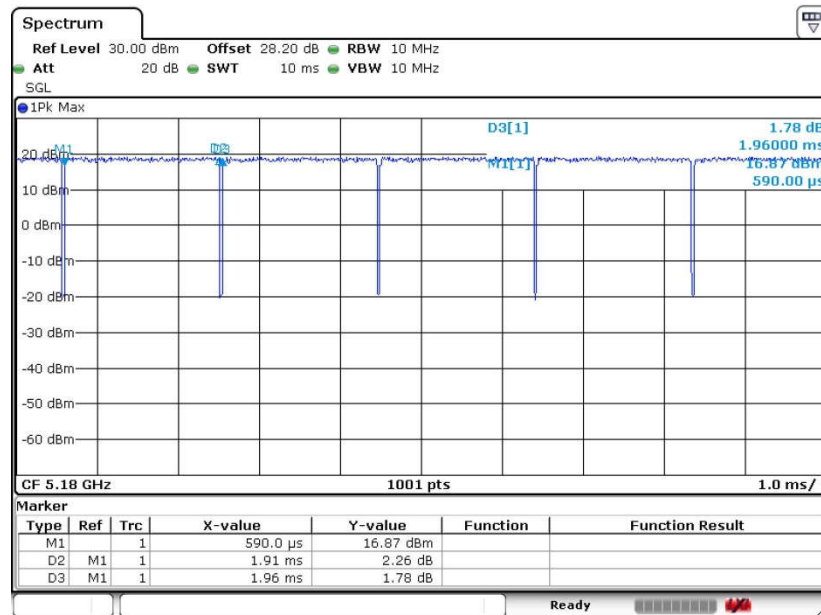


802.11ac VHT80



<MIMO Ant. 2>

802.11n HT20



802.11ac VHT80

