



# FCC RADIO TEST REPORT

FCC ID : UZ7TC26BK  
Equipment : Touch computer  
Brand Name : Zebra  
Model Name : TC26BK  
Applicant : Zebra Technologies Corporation  
1 Zebra Plaza, Holtsville, NY 11742  
Manufacturer : Zebra Technologies Corporation  
1 Zebra Plaza, Holtsville, NY 11742  
Standard : FCC Part 15 Subpart E §15.407

The product was received on Mar. 12, 2020 and testing was started from Mar. 18, 2020 and completed on Apr. 24, 2020. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications Laboratory, 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.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

*Louis Wu*

Approved by: Louis Wu

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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### History of this test report

Report No.	Version	Description	Issued Date
FR010316E	01	Initial issue of report	Apr. 30, 2020
FR010316E	02	<ol style="list-style-type: none"><li>1. Add original report description and revise summary of test result</li><li>2. Revise FW Version</li><li>3. Revise specification of accessories table</li></ol>	May 06, 2020



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403(i)	26dB Bandwidth	Pass	Please refer to Sporton Report Number FR010720E
-	2.1049	99% Occupied Bandwidth	Reporting only	Please refer to Sporton Report Number FR010720E
3.1	15.407(a)	Maximum Conducted Output Power	Pass	-
-	15.407(a)	Power Spectral Density	Pass	Please refer to Sporton Report Number FR010720E
3.2	15.407(b)	Unwanted Emissions	Pass	Under limit 2.53 dB at 5469.760 MHz
3.3	15.207	AC Conducted Emission	Pass	Under limit 17.50 dB at 13.560 MHz
-	15.407(c)	Automatically Discontinue Transmission	Pass	Please refer to Sporton Report Number FR010720E
3.4	15.203 15.407(a)	Antenna Requirement	Pass	-

**Remark:** This is a variant report which can be referred Product Equality Declaration. All the test cases were performed on original report which can be referred to Sporton Report Number FR010720E as appendix F. Based on the original report, the test cases were verified.

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by: Wii Chang**

**Report Producer: Dara Chiu**



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Touch computer
Brand Name	Zebra
Model Name	TC26BK
FCC ID	UZ7TC26BK
Sample 1	Single-WAN, WLAN, GMS, SE4710, NFC, 3GB/32GB, Rear camera and Front camera, 2-pin connector
Sample 2	Single-WAN, WLAN, GMS, No Scanner, NFC, 3GB/32GB, Rear camera and Front camera, No back connector
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC/GNSS WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	EV1.7
SW Version	Android version 10
OS Version	FUSION_QA_2_1.0.0.008_Q
FW Version	Zebra/TC26PA/TC26:10/03-09-09.00-QN-U00-PRD/Nabe030 91333:userdebug/test-keys
MFD	22FEB20
EUT Stage	Engineering sample

Remark: The above EUT's information was declared by manufacturer.

Specification of Accessories				
AC Adapter	Brand Name	Zebra	Part Number	PWR-WUA5V12W0US
Battery 1	Brand Name	Zebra	Part Number	BT-000409-00
Battery 2	Brand Name	Zebra	Part Number	BT-000409-50
Battery 3	Brand Name	Zebra	Part Number	BT-000411-08
USB Cable 1 (Type A plug to Type C plug)	Brand Name	Zebra	Part Number	CBL-TC5X-USBC2A-01
USB Cable 2 (Type A plug to Type C plug)	Brand Name	Zebra	Part Number	CBL-TC2Y-USBC90A-01
Headset 3.5mm type with PTT/micassy	Brand Name	Zebra	Part Number	HDST-35MM-PTVP-01
Adapter Cable PTT headset (3.5mm to 3.5mm)	Brand Name	Zebra	Part Number	CBL-TC51-HDST35-01
Snap on Trigger handle	Brand Name	Zebra	Part Number	TRG-TC2Y-SNP1-01
Belt Holster	Brand Name	Zebra	Part Number	SG-TC2Y-HLSTR1-01
Wearable Arm Mount	Brand Name	Zebra	Part Number	SG-TC2Y-ARMNT-01

Supported Unit Used in Test Configuration and System				
Type C to 3.5mm headset adaptor	Brand Name	Google	Part Number	Pixel-2-2XL

## 1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx/Rx Frequency Range</b>	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5720 MHz
<b>Maximum Output Power to Antenna</b>	<p><b>&lt;5180 MHz ~ 5240 MHz&gt;</b>            802.11a : 17.71 dBm / 0.0590 W            802.11n HT20 : 17.31 dBm / 0.0538 W            802.11n HT40 : 17.91 dBm / 0.0618 W            802.11ac VHT20: 17.41 dBm / 0.0551 W            802.11ac VHT40: 17.99 dBm / 0.0630 W            802.11ac VHT80: 17.71 dBm / 0.0590 W</p> <p><b>&lt;5260 MHz ~ 5320 MHz&gt;</b>            802.11a : 20.11 dBm / 0.1026 W            802.11n HT20 : 19.91 dBm / 0.0979 W            802.11n HT40 : 19.61 dBm / 0.0914 W            802.11ac VHT20: 20.01 dBm / 0.1002 W            802.11ac VHT40: 19.71 dBm / 0.0935 W            802.11ac VHT80: 16.11 dBm / 0.0408 W</p> <p><b>&lt;5500 MHz ~ 5720 MHz&gt;</b>            802.11a : 19.11 dBm / 0.0815 W            802.11n HT20 : 19.21 dBm / 0.0834 W            802.11n HT40 : 18.41 dBm / 0.0693 W            802.11ac VHT20: 19.31 dBm / 0.0853 W            802.11ac VHT40: 18.51 dBm / 0.0710 W            802.11ac VHT80: 18.91 dBm / 0.0778 W</p>
<b>Type of Modulation</b>	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
<b>Antenna Type / Gain</b>	<p><b>&lt;5180 MHz ~ 5240 MHz&gt;</b>            PIFA Antenna with gain 2.7 dBi</p> <p><b>&lt;5260 MHz ~ 5320 MHz&gt;</b>            PIFA Antenna with gain 2.7 dBi</p> <p><b>&lt;5500 MHz ~ 5720MHz &gt;</b>            PIFA Antenna with gain 3.2 dBi</p>

## 1.3 Modification of EUT

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



### 1.4 Testing Location

<b>Test Site</b>	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory	
<b>Test Site Location</b>	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	
	TH05-HY	CO05-HY

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

<b>Test Site</b>	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory	
<b>Test Site Location</b>	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	
	03CH12-HY	

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

FCC designation No.: TW1190 and TW0007

### 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 414788 D01 Radiated Test Site v01r01.
- ♦ 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: conduction emission (150 kHz to 30 MHz), 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 and Accessory. The worst cases (Y plane with Adapter) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

### 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 <sup>#</sup>	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 <sup>#</sup>	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 <sup>#</sup>	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 <sup>#</sup>	5610	128	5640

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	138 <sup>#</sup>	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 "<sup>#</sup>" were 802.11ac VHT80.

## 2.2 Test Mode

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

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1: WLAN (5GHz) Link + Bluetooth Link + NFC On + USB Cable (Charging from AC adapter) + Battery 1 for Sample 1
<b>Remark:</b> For Radiated Test Cases, the tests were performed with Battery 1 and Sample 1.	



Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11a	802.11a	802.11a
L	Low	36	-	-
M	Middle	-	-	-
H	High	-	64	140
Straddle		-	-	-

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT20	802.11ac VHT20	802.11ac VHT20
L	Low	36	-	100
M	Middle	-	-	-
H	High	-	64	-
Straddle		-	-	-

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT40	802.11ac VHT40	802.11ac VHT40
L	Low	38	-	102
M	Middle	-	-	-
H	High	-	62	-
Straddle		-	-	-

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	-
M	Middle	42	58	-
H	High	-	-	-
Straddle		-	-	138



802.11a RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	Data Rate (bps)
		6M
CH 036	5180	17.71
CH 044	5220	17.41
CH 048	5240	17.51
CH 052	5260	20.11
CH 060	5300	19.91
CH 064	5320	20.11
CH 100	5500	18.91
CH 116	5580	19.11
CH 140	5700	16.01
CH 144*	5720	19.11

Note: The above Frequency and Channel in "\*" were straddle Channel.

802.11n HT20 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 036	5180	17.31
CH 044	5220	17.01
CH 048	5240	17.21
CH 052	5260	19.51
CH 060	5300	19.71
CH 064	5320	19.91
CH 100	5500	19.21
CH 116	5580	18.91
CH 140	5700	15.91
CH 144*	5720	19.11

Note: The above Frequency and Channel in "\*" were straddle Channel.



802.11n HT40 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 038	5190	17.91
CH 046	5230	17.71
CH 054	5270	19.61
CH 062	5310	16.61
CH 102	5510	17.81
CH 110	5550	18.11
CH 134	5670	17.91
CH 142*	5710	18.41

Note: The above Frequency and Channel in "\*" were straddle Channel.

802.11ac VHT20 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 036	5180	17.41
CH 044	5220	17.11
CH 048	5240	17.31
CH 052	5260	19.61
CH 060	5300	19.81
CH 064	5320	20.01
CH 100	5500	19.31
CH 116	5580	19.01
CH 140	5700	16.01
CH 144*	5720	19.21

Note: The above Frequency and Channel in "\*" were straddle Channel.



802.11ac VHT40 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 038	5190	17.99
CH 046	5230	17.81
CH 054	5270	19.71
CH 062	5310	16.71
CH 102	5510	17.91
CH 110	5550	18.21
CH 134	5670	18.01
CH 142*	5710	18.51

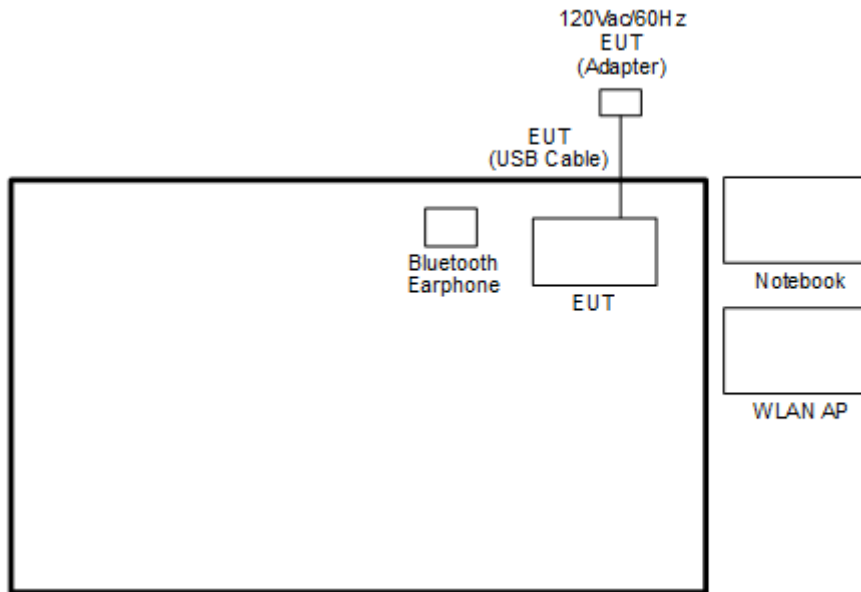
Note: The above Frequency and Channel in "\*" were straddle Channel.

802.11ac VHT80 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 042	5210	17.71
CH 058	5290	16.11
CH 106	5530	15.51
CH 122	5610	18.61
CH 138*	5690	18.91

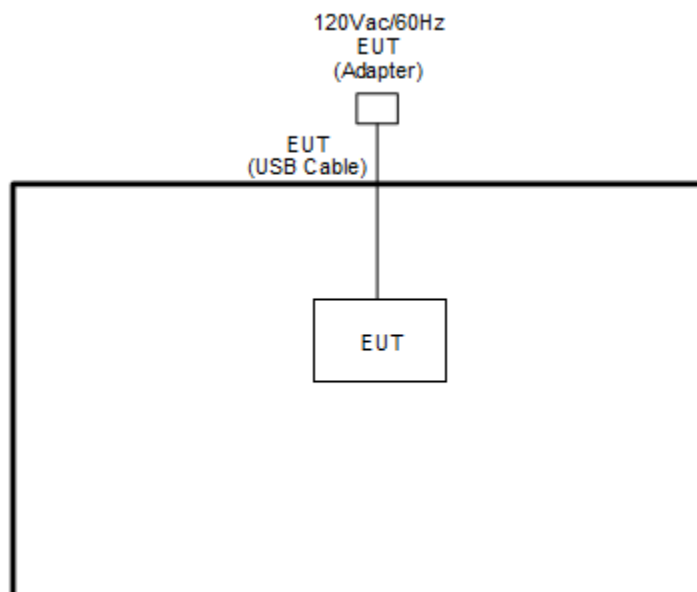
Note: The above Frequency and Channel in "\*" were straddle Channel.

## 2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<WLAN Tx Mode>





## 2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude E3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

## 2.5 EUT Operation Test Setup

The RF test items, utility "QRCT V3.0.303.0" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and 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 the 5.15–5.25 GHz bands:**

- 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 an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

**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

See list of measuring equipment of this test report.



### 3.1.3 Test Procedures

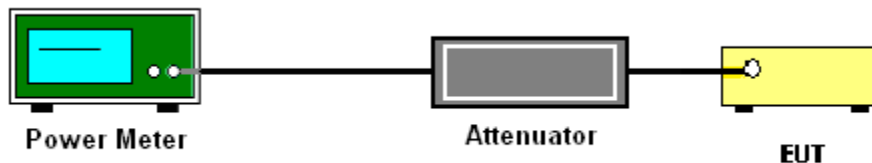
The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (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

Test Engineer :	Richard Qiu	Temperature :	21~25°C
		Relative Humidity :	51~54%

FCC Band I single antenna												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant. 1	Ant. 2	SUM	Ant. 1	Ant. 2	Ant. 1	Ant. 2	
11a	6Mbps	1	36	5180	17.71	-	-	24.00	-	2.70	-	Pass
11a	6Mbps	1	44	5220	17.41	-	-	24.00	-	2.70	-	Pass
11a	6Mbps	1	48	5240	17.51	-	-	24.00	-	2.70	-	Pass
HT20	MCS0	1	36	5180	17.31	-	-	24.00	-	2.70	-	Pass
HT20	MCS0	1	44	5220	17.01	-	-	24.00	-	2.70	-	Pass
HT20	MCS0	1	48	5240	17.21	-	-	24.00	-	2.70	-	Pass
HT40	MCS0	1	38	5190	17.91	-	-	24.00	-	2.70	-	Pass
HT40	MCS0	1	46	5230	17.71	-	-	24.00	-	2.70	-	Pass
VHT20	MCS0	1	36	5180	17.41	-	-	24.00	-	2.70	-	Pass
VHT20	MCS0	1	44	5220	17.11	-	-	24.00	-	2.70	-	Pass
VHT20	MCS0	1	48	5240	17.31	-	-	24.00	-	2.70	-	Pass
VHT40	MCS0	1	38	5190	17.99	-	-	24.00	-	2.70	-	Pass
VHT40	MCS0	1	46	5230	17.81	-	-	24.00	-	2.70	-	Pass
VHT80	MCS0	1	42	5210	17.71	-	-	24.00	-	2.70	-	Pass



FCC Band II single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant. 1	Ant. 2	SUM	Ant. 1	Ant. 2	Ant. 1	Ant. 2		
11a	6Mbps	1	52	5260	20.11	-	-	23.98	-	2.70	-	30	Pass
11a	6Mbps	1	60	5300	19.91	-	-	23.98	-	2.70	-	30	Pass
11a	6Mbps	1	64	5320	20.11	-	-	23.98	-	2.70	-	30	Pass
HT20	MCS0	1	52	5260	19.51	-	-	23.98	-	2.70	-	30	Pass
HT20	MCS0	1	60	5300	19.71	-	-	23.98	-	2.70	-	30	Pass
HT20	MCS0	1	64	5320	19.91	-	-	23.98	-	2.70	-	30	Pass
HT40	MCS0	1	54	5270	19.61	-	-	23.98	-	2.70	-	30	Pass
HT40	MCS0	1	62	5310	16.61	-	-	23.98	-	2.70	-	30	Pass
VHT20	MCS0	1	52	5260	19.61	-	-	23.98	-	2.70	-	30	Pass
VHT20	MCS0	1	60	5300	19.81	-	-	23.98	-	2.70	-	30	Pass
VHT20	MCS0	1	64	5320	20.01	-	-	23.98	-	2.70	-	30	Pass
VHT40	MCS0	1	54	5270	19.71	-	-	23.98	-	2.70	-	30	Pass
VHT40	MCS0	1	62	5310	16.71	-	-	23.98	-	2.70	-	30	Pass
VHT80	MCS0	1	58	5290	16.11	-	-	23.98	-	2.70	-	30	Pass



FCC Band III single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant. 1	Ant. 2	SUM	Ant. 1	Ant. 2	Ant. 1	Ant. 2		
11a	6Mbps	1	100	5500	18.91	-	-	23.98	-	3.20	-	30	Pass
11a	6Mbps	1	116	5580	19.11	-		23.98	-	3.20	-	30	Pass
11a	6Mbps	1	140	5700	16.01	-		23.98	-	3.20	-	30	Pass
HT20	MCS0	1	100	5500	19.21	-		23.98	-	3.20	-	30	Pass
HT20	MCS0	1	116	5580	18.91	-		23.98	-	3.20	-	30	Pass
HT20	MCS0	1	140	5700	15.91	-		23.98	-	3.20	-	30	Pass
HT40	MCS0	1	102	5510	17.81	-		23.98	-	3.20	-	30	Pass
HT40	MCS0	1	110	5550	18.11	-		23.98	-	3.20	-	30	Pass
HT40	MCS0	1	134	5670	17.91	-		23.98	-	3.20	-	30	Pass
VHT20	MCS0	1	100	5500	19.31	-		23.98	-	3.20	-	30	Pass
VHT20	MCS0	1	116	5580	19.01	-		23.98	-	3.20	-	30	Pass
VHT20	MCS0	1	140	5700	16.01	-		23.98	-	3.20	-	30	Pass
VHT40	MCS0	1	102	5510	17.91	-		23.98	-	3.20	-	30	Pass
VHT40	MCS0	1	110	5550	18.21	-		23.98	-	3.20	-	30	Pass
VHT40	MCS0	1	134	5670	18.01	-		23.98	-	3.20	-	30	Pass
VHT80	MCS0	1	106	5530	15.51	-		23.98	-	3.20	-	30	Pass
VHT80	MCS0	1	122	5610	18.61	-		23.98	-	3.20	-	30	Pass



FCC Band III straddle channel single antenna													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant. 1	Ant. 2	SUM	Ant. 1	Ant. 2	Ant. 1	Ant. 2		
11a	6Mbps	1	144	5720	19.11	-	-	23.80	-	3.20	-	30	Pass
HT20	MCS0	1	144	5720	19.11	-		23.98	-	3.20	-	30	Pass
HT40	MCS0	1	142	5710	18.41	-		23.98	-	3.20	-	30	Pass
VHT20	MCS0	1	144	5720	19.21	-		23.98	-	3.20	-	30	Pass
VHT40	MCS0	1	142	5710	18.51	-		23.98	-	3.20	-	30	Pass
VHT80	MCS0	1	138	5690	18.91	-		23.98	-	3.20	-	30	Pass

### 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

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

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



EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.3

(3) KDB789033 D02 v02r01 G)2)c)

- (i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.
- (ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

### 3.2.2 Measuring Instruments

See list of measuring equipment 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 ≥ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold



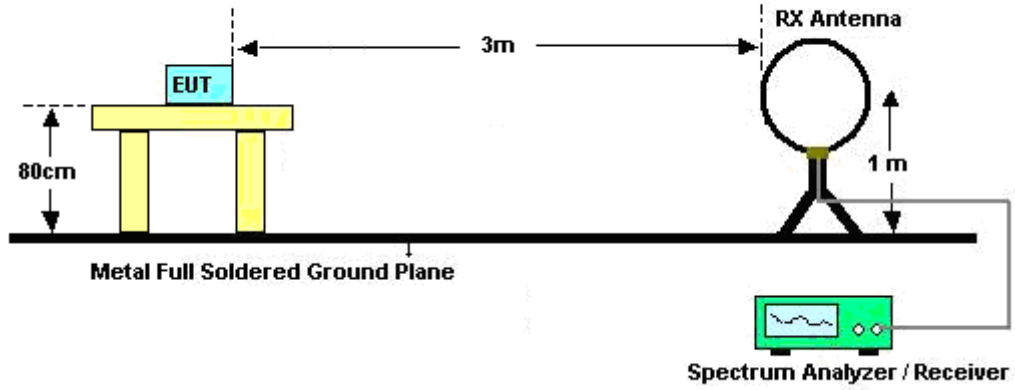
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- 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.

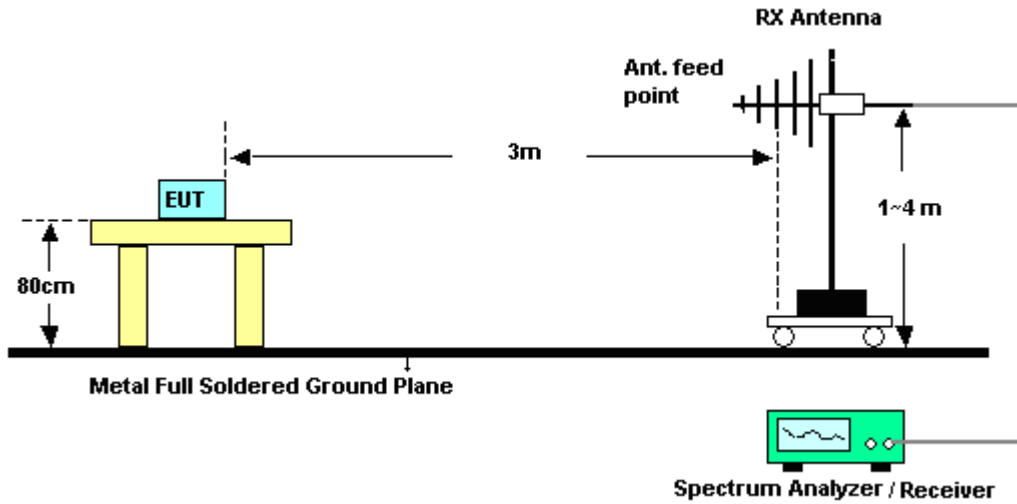


### 3.2.4 Test Setup

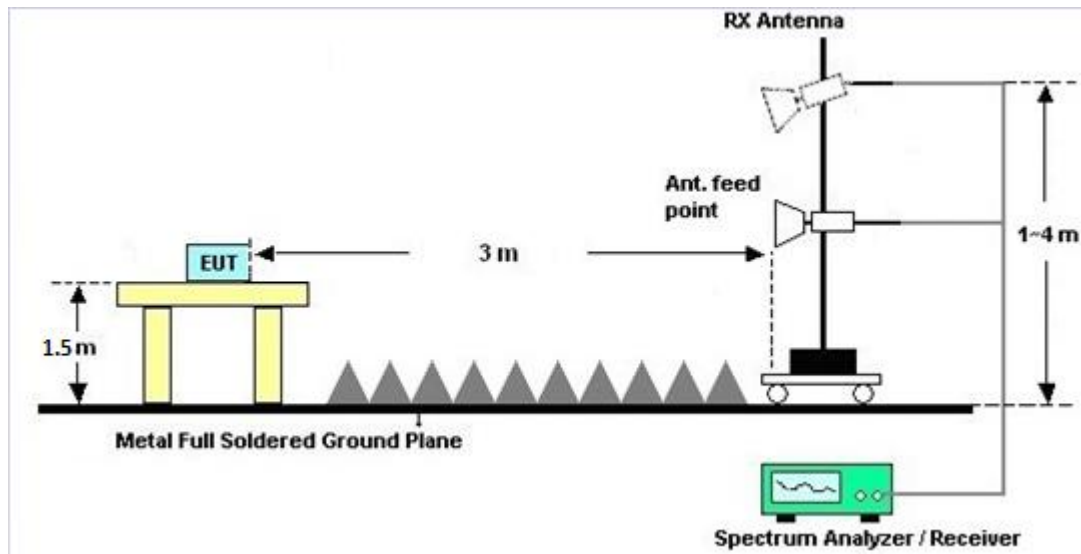
For radiated emissions below 30MHz



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 alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, 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 AC Conducted Emission Measurement

#### 3.3.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

#### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

### 3.3.4 Test Setup



### 3.3.5 Test Result of AC Conducted Emission

Please refer to Appendix A.



## **3.4 Antenna Requirements**

### **3.4.1 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.

### **3.4.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.

### **3.4.3 Antenna Gain**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H2	41410069	N/A	Jun. 17, 2019	Mar. 18, 2020~ Apr. 08, 2020	Jun. 16, 2020	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 10	10MHz~6GHz	Dec. 23, 2019	Mar. 18, 2020~ Apr. 08, 2020	Dec. 22, 2020	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Jul. 15, 2019	Mar. 18, 2020~ Apr. 08, 2020	Jul. 14, 2020	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Aug. 22, 2019	Mar. 18, 2020~ Apr. 08, 2020	Aug. 21, 2020	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Mar. 27, 2020	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 15, 2019	Mar. 27, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 07, 2019	Mar. 27, 2020	Nov. 06, 2020	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 15, 2019	Mar. 27, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Mar. 27, 2020	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Mar. 27, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Mar. 27, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Dec. 26, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Dec. 25, 2020	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Oct. 12, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Oct. 11, 2020	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 14, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Nov. 13, 2020	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917058 4	18GHz ~ 40GHz	Dec. 10, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Dec. 09, 2020	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 25, 2020	Apr. 18, 2020 ~ Apr. 24, 2020	Mar. 24, 2021	Radiation (03CH12-HY)
Preamplifier	Jet-Power	JPA00101800- 30-10P	1601180002	1GHz~18GHz	Feb. 07, 2020	Apr. 18, 2020 ~ Apr. 24, 2020	Feb. 06, 2021	Radiation (03CH12-HY)
Preamplifier	Keysight	83017A	MY53270148	1GHz~26.5GHz	Dec. 20, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Dec. 19, 2020	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Dec. 12, 2020	Radiation (03CH12-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101408	10Hz~40GHz	Aug. 13, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Aug. 12, 2020	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP161243	N/A	May 11, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	May 10, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30M-18G	Dec. 12, 2019	Apr. 18, 2020 ~ Apr. 24, 2020	Dec. 11, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Feb. 25, 2020	Apr. 18, 2020 ~ Apr. 24, 2020	Feb. 24, 2021	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Feb. 25, 2020	Apr. 18, 2020 ~ Apr. 24, 2020	Feb. 24, 2021	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Apr. 18, 2020 ~ Apr. 24, 2020	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Apr. 18, 2020 ~ Apr. 24, 2020	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Apr. 18, 2020 ~ Apr. 24, 2020	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Apr. 18, 2020 ~ Apr. 24, 2020	N/A	Radiation (03CH12-HY)



## 5 Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.3
-------------------------------------------------------------------------	-----

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1
-------------------------------------------------------------------------	-----

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.6
-------------------------------------------------------------------------	-----

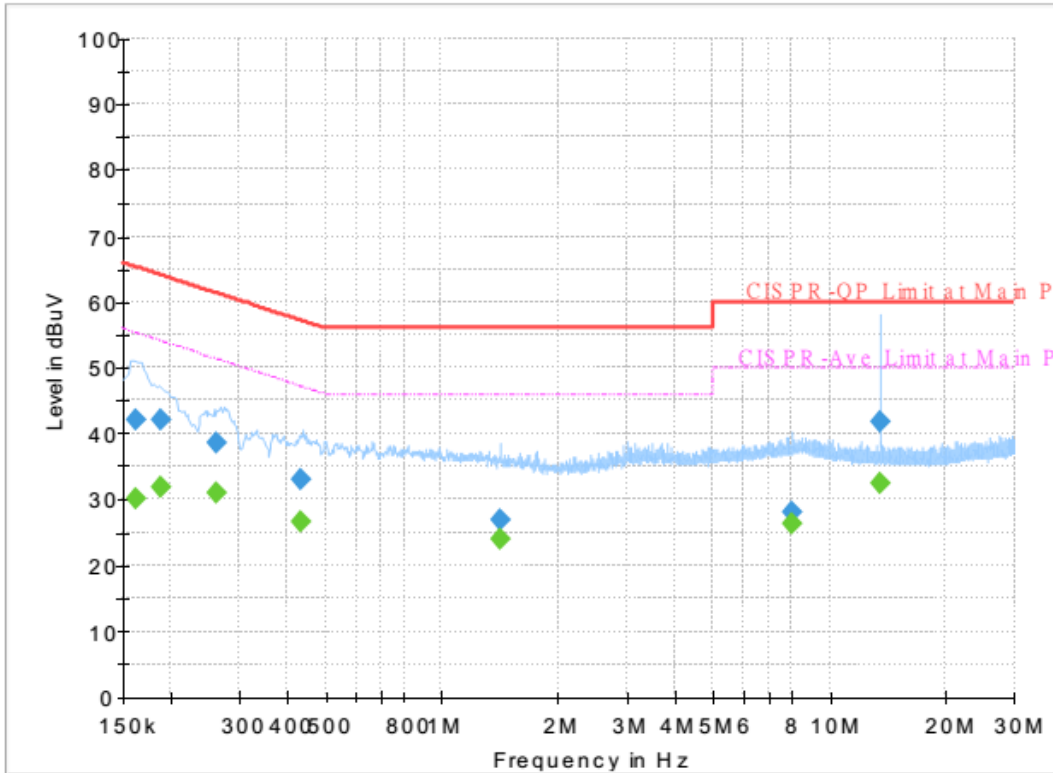
### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.0
-------------------------------------------------------------------------	-----



## Appendix A. AC Conducted Emission Test Results

Test Engineer :	Howard Huang	Temperature :	21~24°C
		Relative Humidity :	42~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line

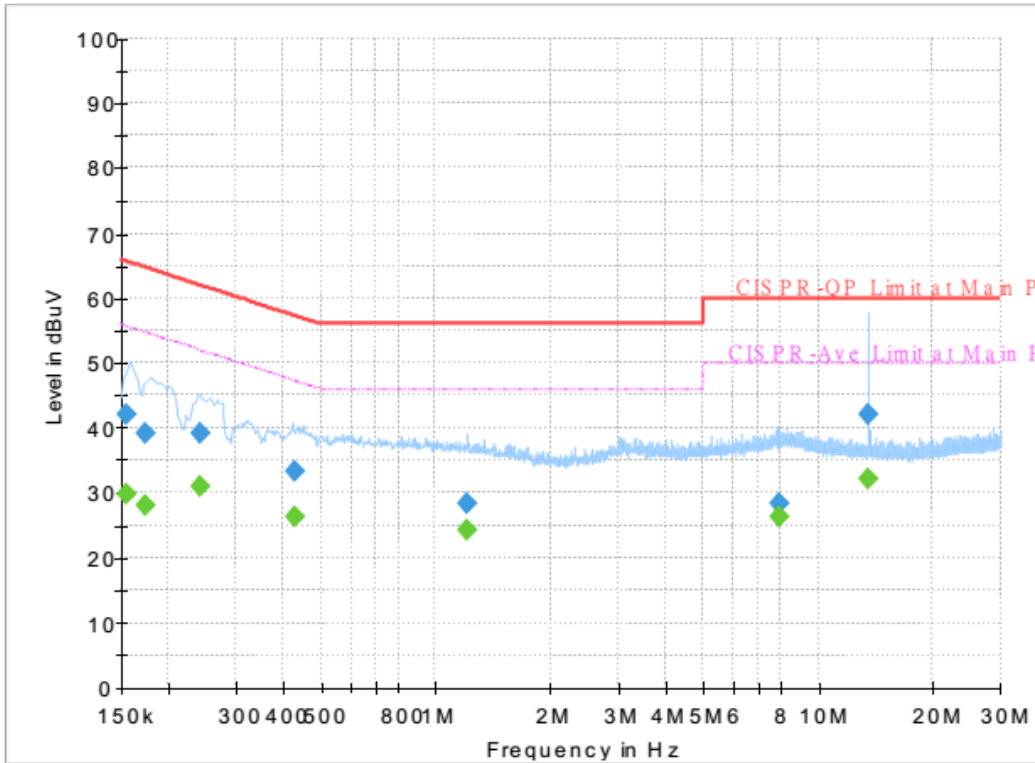


Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.162870	---	30.15	55.32	25.17	L1	OFF	19.6
0.162870	41.97	---	65.32	23.35	L1	OFF	19.6
0.187800	---	31.98	54.13	22.15	L1	OFF	19.6
0.187800	42.08	---	64.13	22.05	L1	OFF	19.6
0.262500	---	30.89	51.35	20.46	L1	OFF	19.6
0.262500	38.65	---	61.35	22.70	L1	OFF	19.6
0.435120	---	26.55	47.15	20.60	L1	OFF	19.6
0.435120	32.96	---	57.15	24.19	L1	OFF	19.6
1.410540	---	23.96	46.00	22.04	L1	OFF	19.6
1.410540	27.04	---	56.00	28.96	L1	OFF	19.6
8.031750	---	26.33	50.00	23.67	L1	OFF	20.0
8.031750	28.17	---	60.00	31.83	L1	OFF	20.0
13.560000	---	32.50	50.00	17.50	L1	OFF	20.2
13.560000	41.93	---	60.00	18.07	L1	OFF	20.2





Test Engineer :	Howard Huang	Temperature :	21~24°C
		Relative Humidity :	42~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154500	---	29.96	55.75	25.79	N	OFF	19.6
0.154500	42.03	---	65.75	23.72	N	OFF	19.6
0.174750	---	28.20	54.73	26.53	N	OFF	19.6
0.174750	39.09	---	64.73	25.64	N	OFF	19.6
0.242610	---	31.12	52.01	20.89	N	OFF	19.6
0.242610	39.29	---	62.01	22.72	N	OFF	19.6
0.426480	---	26.37	47.32	20.95	N	OFF	19.6
0.426480	33.25	---	57.32	24.07	N	OFF	19.6
1.204890	---	24.37	46.00	21.63	N	OFF	19.6
1.204890	28.36	---	56.00	27.64	N	OFF	19.6
7.891620	---	26.27	50.00	23.73	N	OFF	20.0
7.891620	28.25	---	60.00	31.75	N	OFF	20.0
13.560000	---	32.06	50.00	17.94	N	OFF	20.2
13.560000	42.15	---	60.00	17.85	N	OFF	20.2



## Appendix B. Radiated Spurious Emission

Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	Temperature :	19.2~26.8°C
		Relative Humidity :	53.5~69%

**Band 1 - 5150~5250MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI Ant.	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 )	
802.11a CH 36 5180MHz		5108.16	56.19	-17.81	74	44.1	31.88	8.94	28.73	169	309	P	H	
		5148.2	44.06	-9.94	54	32.02	31.8	8.97	28.73	169	309	A	H	
	*	5180	111.09	-	-	99.09	31.74	8.99	28.73	169	309	P	H	
	*	5180	100.91	-	-	88.91	31.74	8.99	28.73	169	309	A	H	
													H	
														H
			5113.62	56.07	-17.93	74	43.98	31.87	8.95	28.73	320	275	P	V
			5111.54	42.29	-11.71	54	30.2	31.88	8.94	28.73	320	275	A	V
	*		5180	104.26	-	-	92.26	31.74	8.99	28.73	320	275	P	V
	*		5180	93.99	-	-	81.99	31.74	8.99	28.73	320	275	A	V
														V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 1 5150~5250MHz**

**WIFI 802.11a (Harmonic @ 3m)**

WIFI Ant. 1	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)	
802.11a CH 36 5180MHz		10360	53.61	-14.59	68.2	59.39	39.8	16.57	62.15	100	0	P	H	
		15540	47.27	-26.73	74	50.1	38.02	19.79	60.64	100	0	P	H	
													H	
													H	
			10360	53.09	-15.11	68.2	58.87	39.8	16.57	62.15	100	0	P	V
			15540	47	-27	74	49.83	38.02	19.79	60.64	100	0	P	V
														V
														V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT20 CH 36 5180MHz		5148.2	57.41	-16.59	74	45.37	31.8	8.97	28.73	195	297	P	H	
		5149.76	45.03	-8.97	54	32.99	31.8	8.97	28.73	195	297	A	H	
	*	5180	111.78	-	-	99.78	31.74	8.99	28.73	195	297	P	H	
	*	5180	101.39	-	-	89.39	31.74	8.99	28.73	195	297	A	H	
													H	
														H
			5125.84	55.44	-18.56	74	43.37	31.85	8.95	28.73	320	272	P	V
			5139.1	42.52	-11.48	54	30.47	31.82	8.96	28.73	320	272	A	V
		*	5180	103.45	-	-	91.45	31.74	8.99	28.73	320	272	P	V
		*	5180	93.36	-	-	81.36	31.74	8.99	28.73	320	272	A	V
													V	
													V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													

**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT20 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT20 CH 36 5180MHz		10360	53.53	-14.67	68.2	59.31	39.8	16.57	62.15	100	0	P	H	
		15540	47.16	-26.84	74	49.99	38.02	19.79	60.64	100	0	P	H	
													H	
													H	
			10360	52.75	-15.45	68.2	58.53	39.8	16.57	62.15	100	0	P	V
			15540	46.46	-27.54	74	49.29	38.02	19.79	60.64	100	0	P	V
														V
														V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT40 CH 38 5190MHz		5148.98	58.96	-15.04	74	46.92	31.8	8.97	28.73	100	333	P	H
		5148.98	48.19	-5.81	54	36.15	31.8	8.97	28.73	100	333	A	H
	*	5190	105.99	-	-	94	31.72	9	28.73	100	333	P	H
	*	5190	96.04	-	-	84.05	31.72	9	28.73	100	333	A	H
		5415.48	54.8	-19.2	74	42.79	31.46	9.29	28.74	100	333	P	H
		5373.76	42.7	-11.3	54	30.9	31.3	9.24	28.74	100	333	P	H
		5118.3	55.65	-18.35	74	43.57	31.86	8.95	28.73	200	262	P	V
		5150	45.03	-8.97	54	32.99	31.8	8.97	28.73	200	262	A	V
	*	5190	100.19	-	-	88.2	31.72	9	28.73	200	262	P	V
	*	5190	90.19	-	-	78.2	31.72	9	28.73	200	262	A	V
		5425.84	54.97	-19.03	74	42.92	31.5	9.3	28.75	200	262	P	V
	5453.84	42.77	-11.23	54	30.56	31.62	9.34	28.75	200	262	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT40 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT40 CH 38 5190MHz		10380	49.84	-18.36	68.2	55.53	39.9	16.59	62.18	100	0	P	H
		15570	47.06	-26.94	74	49.89	37.96	19.8	60.59	100	0	P	H
													H
													H
		10380	49.84	-18.36	68.2	55.53	39.9	16.59	62.18	100	0	P	V
		15570	47.29	-26.71	74	50.12	37.96	19.8	60.59	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT80 CH 42 5210MHz		5145.6	62.55	-11.45	74	50.5	31.81	8.97	28.73	106	301	P	H
		5143	48.74	-5.26	54	36.69	31.81	8.97	28.73	106	301	A	H
	*	5210	104.07	-	-	92.14	31.64	9.02	28.73	106	301	P	H
	*	5210	94.04	-	-	82.11	31.64	9.02	28.73	106	301	A	H
		5386.36	55.88	-18.12	74	44.02	31.35	9.25	28.74	106	301	P	H
		5377.68	44.81	-9.19	54	33	31.31	9.24	28.74	106	301	A	H
		5147.94	61.93	-12.07	74	49.89	31.8	8.97	28.73	200	252	P	V
		5149.5	46.32	-7.68	54	34.28	31.8	8.97	28.73	200	252	A	V
	*	5210	96.49	-	-	84.56	31.64	9.02	28.73	200	252	P	V
	*	5210	87.21	-	-	75.28	31.64	9.02	28.73	200	252	A	V
		5360.88	54.75	-19.25	74	43.03	31.24	9.22	28.74	200	252	P	V
	5379.08	44.3	-9.7	54	32.48	31.32	9.24	28.74	200	252	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT80 CH 42 5210MHz		10420	51.27	-16.93	68.2	56.92	39.98	16.63	62.26	100	0	P	H
		15630	47.33	-26.67	74	50.18	37.84	19.8	60.49	100	0	P	H
													H
													H
		10420	50.4	-17.8	68.2	56.05	39.98	16.63	62.26	100	0	P	V
		15630	46.1	-27.9	74	48.95	37.84	19.8	60.49	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 2 - 5250~5350MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI Ant. 1	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 )
802.11a CH 64 5320MHz	*	5320	112.69	-	-	100.94	31.32	9.17	28.74	187	293	P	H
	*	5320	102.58	-	-	90.83	31.32	9.17	28.74	187	293	A	H
		5352.16	57.21	-16.79	74	45.53	31.21	9.21	28.74	187	293	P	H
		5350.08	44.89	-9.11	54	33.22	31.2	9.21	28.74	187	293	A	H
													H
													H
	*	5320	105.82	-	-	94.07	31.32	9.17	28.74	320	244	P	V
	*	5320	96.05	-	-	84.3	31.32	9.17	28.74	320	244	A	V
		5444.48	55.11	-18.89	74	42.95	31.58	9.33	28.75	320	244	P	V
		5350.4	42.03	-11.97	54	30.36	31.2	9.21	28.74	320	244	A	V
													V
												V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz**  
**WIFI 802.11a (Harmonic @ 3m)**

WIFI Ant. 1	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 )
802.11a CH 64 5320MHz		10640	56.95	-17.05	74	62.57	39.98	16.86	62.46	148	0	P	H
		10640	42.48	-11.52	54	48.1	39.98	16.86	62.46	148	0	A	H
		15960	47.03	-26.97	74	49.68	37.48	19.83	59.96	100	0	P	H
													H
		10640	58.4	-15.6	74	64.02	39.98	16.86	62.46	243	0	P	V
		10640	45.15	-8.85	54	50.77	39.98	16.86	62.46	243	0	A	V
		15960	47.03	-26.97	74	49.68	37.48	19.83	59.96	100	0	P	V
													V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT20 CH 64 5320MHz	*	5320	112.04	-	-	100.29	31.32	9.17	28.74	194	294	P	H
	*	5320	101.85	-	-	90.1	31.32	9.17	28.74	194	294	A	H
		5352.16	58.14	-15.86	74	46.46	31.21	9.21	28.74	194	294	P	H
		5350.24	45.01	-8.99	54	33.34	31.2	9.21	28.74	194	294	A	H
													H
													H
	*	5320	105.97	-	-	94.22	31.32	9.17	28.74	305	255	P	V
	*	5320	95.83	-	-	84.08	31.32	9.17	28.74	305	255	A	V
		5381.92	54.9	-19.1	74	43.06	31.33	9.25	28.74	305	255	P	V
		5351.2	42.13	-11.87	54	30.46	31.2	9.21	28.74	305	255	A	V
												V	
												V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT20 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT20 CH 64 5320MHz		10640	56.57	-17.43	74	62.19	39.98	16.86	62.46	141	0	P	H
		10640	42.35	-11.65	54	47.97	39.98	16.86	62.46	141	0	A	H
		15960	47.29	-26.71	74	49.94	37.48	19.83	59.96	100	0	P	H
													H
		10640	59.44	-14.56	74	65.06	39.98	16.86	62.46	237	0	P	V
		10640	44.72	-9.28	54	50.34	39.98	16.86	62.46	237	0	A	V
		15960	46.95	-27.05	74	49.6	37.48	19.83	59.96	100	0	P	V
													V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT40 CH 62 5310MHz		5111.52	54.69	-19.31	74	42.6	31.88	8.94	28.73	183	293	P	H
		5124.1	43.21	-10.79	54	31.14	31.85	8.95	28.73	183	293	A	H
	*	5310	105.48	-	-	93.71	31.36	9.15	28.74	183	293	P	H
	*	5310	95.48	-	-	83.71	31.36	9.15	28.74	183	293	A	H
		5351.28	60.47	-13.53	74	48.79	31.21	9.21	28.74	183	293	P	H
		5350.8	49.19	-4.81	54	37.52	31.2	9.21	28.74	183	293	A	H
		5124.44	54.86	-19.14	74	42.79	31.85	8.95	28.73	322	245	P	V
		5100.64	42.8	-11.2	54	30.69	31.9	8.94	28.73	322	245	A	V
	*	5310	98.96	-	-	87.19	31.36	9.15	28.74	322	245	P	V
	*	5310	88.96	-	-	77.19	31.36	9.15	28.74	322	245	A	V
		5411.76	55.46	-18.54	74	43.46	31.45	9.29	28.74	322	245	P	V
	5350.08	43.95	-10.05	54	32.28	31.2	9.21	28.74	322	245	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT40 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT40 CH 62 5310MHz		10620	52.29	-21.71	74	57.86	40.04	16.84	62.45	152	0	P	H	
		10620	39.77	-14.23	54	45.34	40.04	16.84	62.45	152	0	A	H	
		15930	46.43	-27.57	74	49.07	37.54	19.83	60.01	100	0	P	H	
													H	
			10620	49.68	-24.32	74	55.25	40.04	16.84	62.45	100	0	P	V
			15930	47.58	-26.42	74	50.22	37.54	19.83	60.01	100	0	P	V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT80 CH 58 5290MHz		5111.18	54.57	-19.43	74	42.48	31.88	8.94	28.73	187	292	P	H
		5092.48	44.37	-9.63	54	32.3	31.87	8.93	28.73	187	292	A	H
	*	5290	102.19	-	-	90.4	31.4	9.13	28.74	187	292	P	H
	*	5290	92.7	-	-	80.91	31.4	9.13	28.74	187	292	A	H
		5356.32	60.22	-13.78	74	48.52	31.23	9.21	28.74	187	292	P	H
		5350.56	50.7	-3.3	54	39.03	31.2	9.21	28.74	187	292	A	H
		5119	54.1	-19.9	74	42.02	31.86	8.95	28.73	320	253	P	V
		5139.06	44.57	-9.43	54	32.52	31.82	8.96	28.73	320	253	A	V
	*	5290	94.77	-	-	82.98	31.4	9.13	28.74	320	253	P	V
	*	5290	85.85	-	-	74.06	31.4	9.13	28.74	320	253	A	V
		5350.8	55.79	-18.21	74	44.12	31.2	9.21	28.74	320	253	P	V
		5353.2	45.62	-8.38	54	33.94	31.21	9.21	28.74	320	253	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT80 CH 58 5290MHz		10580	49.58	-18.62	68.2	55.15	40.06	16.8	62.43	100	0	P	H
		15870	47.2	-26.8	74	49.98	37.51	19.82	60.11	100	0	P	H
													H
													H
		10580	50.33	-17.87	68.2	55.9	40.06	16.8	62.43	100	0	P	V
		15870	47.41	-26.59	74	50.19	37.51	19.82	60.11	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 3 - 5470~5725MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI Ant. 1	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)
802.11a CH 140 5700MHz	*	5700	107.84	-	-	95.24	31.8	9.66	28.86	174	298	P	H
	*	5700	97.84	-	-	85.24	31.8	9.66	28.86	174	298	A	H
		5739.08	57.43	-10.77	68.2	44.64	31.96	9.71	28.88	174	298	P	H
													H
													H
													H
	*	5700	101.22	-	-	88.62	31.8	9.66	28.86	324	226	P	V
	*	5700	91.24	-	-	78.64	31.8	9.66	28.86	324	226	A	V
		5753.08	56.26	-11.94	68.2	43.41	32.01	9.73	28.89	324	226	P	V
													V
												V	
												V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 3 - 5470~5725MHz**  
**WIFI 802.11a (Harmonic @ 3m)**

WIFI Ant. 1	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)
802.11a CH 140 5700MHz		11400	61.23	-12.77	74	66.08	39.9	17.61	62.36	227	0	P	H
		11400	46.72	-7.28	54	51.57	39.9	17.61	62.36	227	0	A	H
		17100	49.34	-18.86	68.2	46.96	40.1	21	58.72	100	0	P	H
													H
		11400	65.25	-8.75	74	70.1	39.9	17.61	62.36	304	0	P	V
		11400	50.44	-3.56	54	55.29	39.9	17.61	62.36	304	0	A	V
		17100	49.09	-19.11	68.2	46.71	40.1	21	58.72	100	0	P	V
													V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 3 - 5470~5725MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT20 CH 100 5500MHz		5455.76	57.67	-16.33	74	45.45	31.62	9.35	28.75	186	294	P	H	
		5469.36	59.21	-8.99	68.2	46.92	31.68	9.36	28.75	186	294	P	H	
		5459.6	43.99	-10.01	54	31.75	31.64	9.35	28.75	186	294	A	H	
	*	5500	113.39	-	-	100.93	31.8	9.41	28.75	186	294	P	H	
	*	5500	103.28	-	-	90.82	31.8	9.41	28.75	186	294	A	H	
														H
			5458.48	55.53	-18.47	74	43.3	31.63	9.35	28.75	300	212	P	V
			5465.84	54.98	-13.22	68.2	42.71	31.66	9.36	28.75	300	212	P	V
			5455.44	41.93	-12.07	54	29.72	31.62	9.34	28.75	300	212	A	V
	*		5500	105.96	-	-	93.5	31.8	9.41	28.75	300	212	P	V
	*		5500	95.76	-	-	83.3	31.8	9.41	28.75	300	212	A	V
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													

**Band 3 - 5470~5725MHz**  
**WIFI 802.11ac VHT20 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT20 CH 100 5500MHz		11000	58.12	-15.88	74	63.29	40.2	17.23	62.6	137	0	P	H	
		11000	43.31	-10.69	54	48.48	40.2	17.23	62.6	137	0	A	H	
		16500	47.79	-20.41	68.2	47.62	39	20.37	59.2	100	0	P	H	
														H
			11000	62.07	-11.93	74	67.24	40.2	17.23	62.6	222	0	P	V
			11000	47.3	-6.7	54	52.47	40.2	17.23	62.6	222	0	A	V
			16500	47.74	-20.46	68.2	47.57	39	20.37	59.2	100	0	P	V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 3 - 5470~5725MHz**  
**WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI Ant. 1	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 VHT40 CH 102 5510MHz		5459.92	60.11	-13.89	74	47.87	31.64	9.35	28.75	186	303	P	H
		5469.76	65.67	-2.53	68.2	53.38	31.68	9.36	28.75	186	303	P	H
		5459.92	47.58	-6.42	54	35.34	31.64	9.35	28.75	186	303	A	H
	*	5510	108.02	-	-	95.58	31.78	9.42	28.76	186	303	P	H
	*	5510	97.99	-	-	85.55	31.78	9.42	28.76	186	303	A	H
		5743.58	55.77	-12.43	68.2	42.97	31.97	9.72	28.89	186	303	P	H
		5425.12	54.34	-19.66	74	42.29	31.5	9.3	28.75	287	234	P	V
		5469.76	58.9	-9.3	68.2	46.61	31.68	9.36	28.75	287	234	P	V
		5459.92	43.68	-10.32	54	31.44	31.64	9.35	28.75	287	234	A	V
	*	5510	100.65	-	-	88.21	31.78	9.42	28.76	287	234	P	V
	*	5510	90.95	-	-	78.51	31.78	9.42	28.76	287	234	A	V
		5753.66	55.48	-12.72	68.2	42.63	32.01	9.73	28.89	287	234	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 3 - 5470~5725MHz**  
**WIFI 802.11ac VHT40 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT40 CH 102 5510MHz		11020	49.79	-24.21	74	54.98	40.16	17.24	62.59	100	0	P	H	
		16530	46.81	-21.39	68.2	46.42	39.18	20.39	59.18	100	0	P	H	
													H	
													H	
			11020	56.94	-17.06	74	62.13	40.16	17.24	62.59	229	0	P	V
			11020	44.37	-9.63	54	49.56	40.16	17.24	62.59	229	0	A	V
			16530	47.96	-20.24	68.2	47.57	39.18	20.39	59.18	100	0	P	V
													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 Ant. 1	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 VHT80 CH 138 5690MHz		5440.09	54.32	-19.68	74	42.19	31.56	9.32	28.75	185	297	P	H
		5470	54.15	-14.05	68.2	41.86	31.68	9.36	28.75	185	297	P	H
		5406.55	44.57	-9.43	54	32.6	31.43	9.28	28.74	185	297	A	H
	*	5690	104.39	-	-	91.84	31.76	9.65	28.86	185	297	P	H
	*	5690	95.24	-	-	82.69	31.76	9.65	28.86	185	297	A	H
		5861.25	57	-11.2	68.2	43.87	32.22	9.86	28.95	185	297	P	H
		5416.3	54.78	-19.22	74	42.76	31.47	9.29	28.74	283	244	P	V
		5465.44	54.43	-13.77	68.2	42.16	31.66	9.36	28.75	283	244	P	V
		5459.2	44.39	-9.61	54	32.15	31.64	9.35	28.75	283	244	A	V
	*	5690	96.87	-	-	84.32	31.76	9.65	28.86	283	244	P	V
	*	5690	87.93	-	-	75.38	31.76	9.65	28.86	283	244	A	V
		5937.75	57.94	-10.26	68.2	44.55	32.45	9.94	29	283	244	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 (Harmonic @ 3m)**

WIFI Ant. 1	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 VHT80 CH 138 5690MHz		11380	57.37	-16.63	74	62.29	39.86	17.59	62.37	218	0	P	H	
		11380	46.15	-7.85	54	51.07	39.86	17.59	62.37	218	0	A	H	
		17070	49.63	-18.57	68.2	47.17	40.25	20.98	58.77	100	0	P	H	
													H	
			11380	60.78	-13.22	74	65.7	39.86	17.59	62.37	222	0	P	V
			11380	50.87	-3.13	54	55.79	39.86	17.59	62.37	222	0	A	V
			17070	49.41	-18.79	68.2	46.95	40.25	20.98	58.77	100	0	P	V
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Emission below 1GHz  
WIFI 802.11ac VHT40 (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.		
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )	
802.11ac VHT40 LF		42.61	26.97	-13.03	40	38.07	18.02	0.53	29.65	-	-	P	H	
		95.96	27.37	-16.13	43.5	40.81	15.34	0.83	29.61	-	-	P	H	
		155.13	24.52	-18.98	43.5	36.28	16.59	1.21	29.56	-	-	P	H	
		716.76	38.68	-7.32	46	37.5	26.76	2.99	28.57	100	0	P	H	
		721.61	38.89	-7.11	46	37.44	27.01	3.02	28.58	-	-	P	H	
		885.54	36.04	-9.96	46	31.57	29.03	3.69	28.25	-	-	P	H	
														H
														H
														H
														H
														H
														H
														H
			42.61	33.16	-6.84	40	44.26	18.02	0.53	29.65	-	-	P	V
			95.96	27.19	-16.31	43.5	40.63	15.34	0.83	29.61	-	-	P	V
			262.8	34.69	-11.31	46	42.59	19.73	1.74	29.37	-	-	P	V
			715.79	39.23	-6.77	46	38.09	26.72	2.99	28.57	100	0	P	V
			841.89	34.71	-11.29	46	30.83	28.82	3.46	28.4	-	-	P	V
			930.16	36.42	-9.58	46	31.14	29.74	3.7	28.16	-	-	P	V
														V
													V	
													V	
													V	
													V	
													V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against limit line.													



**Note symbol**

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is <b>over limit</b> line.
P/A	<b>Peak</b> or <b>Average</b>
H/V	<b>Horizontal</b> or <b>Vertical</b>





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

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

**For Peak Limit @ 2390MHz:**

- 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)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 74(dBμV/m)  
= -18.55(dB)

**For Average Limit @ 2390MHz:**

- 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)
- 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 Plots

Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	Temperature :	19.2~26.8°C
		Relative Humidity :	53.5~69%

**Note symbol**

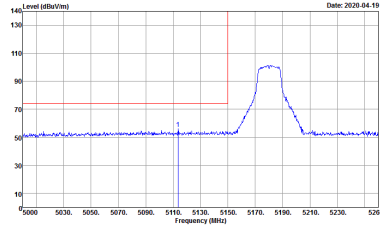
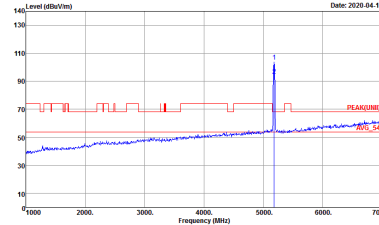
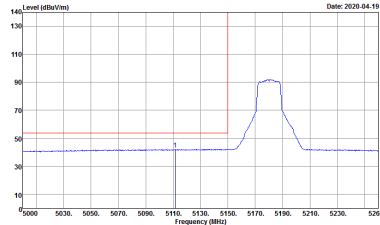
-L	Low channel location
-R	High channel location



**Band 1 - 5150~5250MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 19.5</p>	<p>Site : 03CH12-HY Condition : PEAK(FUND) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 19.5</p>
<b>Avg.</b>	<p>Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 19.5</p>	<b>Left blank</b>



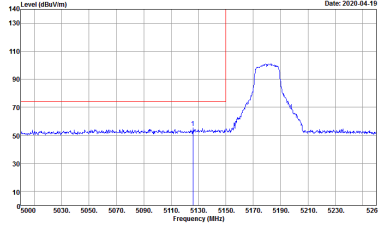
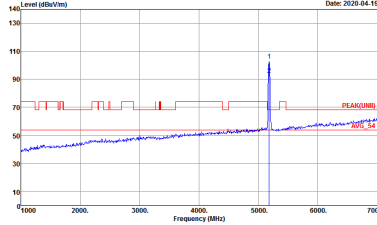
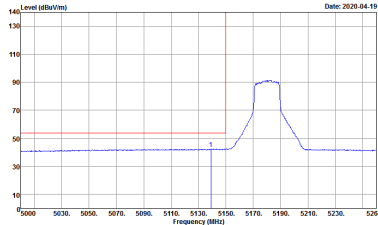
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
1	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-11Y            Condition : PEAK_9C_74 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 19.5</p>	 <p>Site : 03CH2-11Y            Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 19.5</p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-11Y            Condition : AVG_BE_1A 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 19.5</p>	<p><b>Left blank</b></p>



**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH36 5180MHz	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL            RBW:1000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20</p>	<p>Site : 03CH12-HY            Condition : PEAK(UNIT1) 3m HORN_9120D_1328 HORIZONTAL            RBW:1000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20</p>
<b>Avg.</b>	<p>Site : 03CH12-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL            RBW:1000.000KHz VBW:1.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20</p>	<b>Left blank</b>



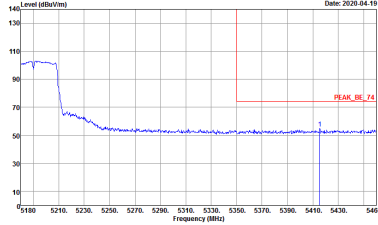
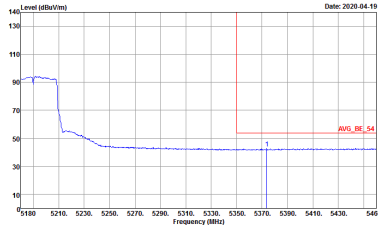
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH36 5180MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH2-11Y            Condition : PEAK_9C_74 3m HORN_9120D_1328 VERTICAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20</p>	 <p>Site : 03CH2-11Y            Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20</p>
Avg.	 <p>Site : 03CH2-11Y            Condition : AVG_BE_14 3m HORN_9120D_1328 VERTICAL            RBW:3000.000KHz VBW:1.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20</p>	Left blank



**Band 1 5150~5250MHz  
WIFI 802.11ac VHT40 (Band Edge @ 3m)**

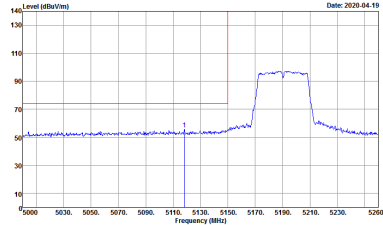
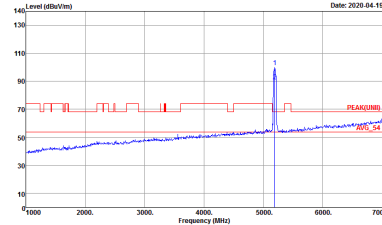
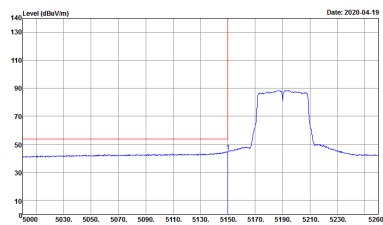
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH38 5190MHz - L	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-11Y Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 17</p>	<p>Site : 03CH12-11Y Condition : PEAK(UNIT1) 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 17</p>
<b>Avg.</b>	<p>Site : 03CH12-11Y Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 17</p>	<b>Left blank</b>



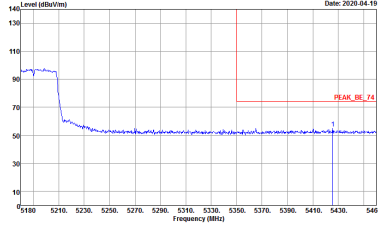
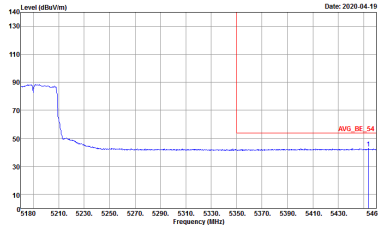
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH38 5190MHz - R	
1	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-11Y            Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-11Y            Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>





WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH38 5190MHz - L	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH12-11Y            Condition : PEAK_8C_74 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	 <p>Site : 03CH12-11Y            Condition : PEAK(UNL) 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>
Avg.	 <p>Site : 03CH12-11Y            Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	Left blank



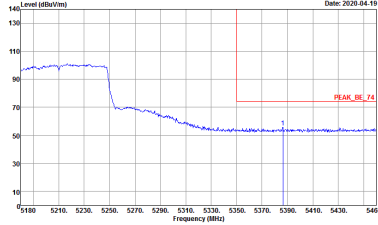
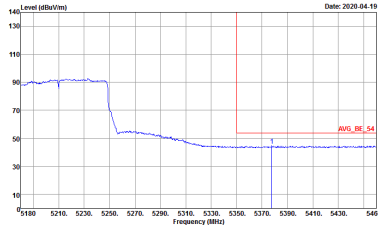
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH38 5190MHz - R	
1	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>



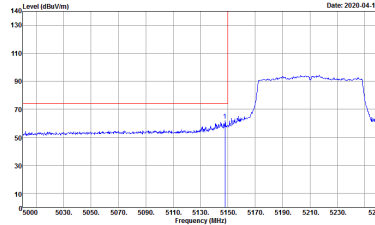
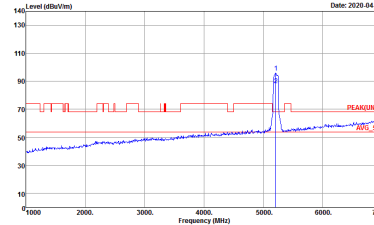
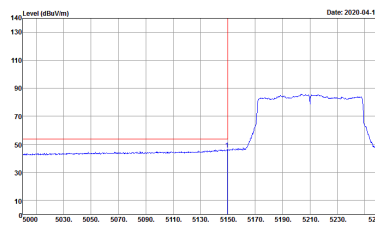
**Band 1 5150~5250MHz**  
**WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH42 5210MHz - L	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-HY            Condition : PEAK_BE_74 3m HORN_91200_1328 HORIZONTAL            RBW:10000000kHz VBW:3000000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	<p>Site : 03CH12-HY            Condition : PEAK(UNIT) 3m HORN_91200_1328 HORIZONTAL            RBW:10000000kHz VBW:3000000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>
<b>Avg.</b>	<p>Site : 03CH12-HY            Condition : AVG_BE_54 3m HORN_91200_1328 HORIZONTAL            RBW:10000000kHz VBW:1000000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	<b>Left blank</b>

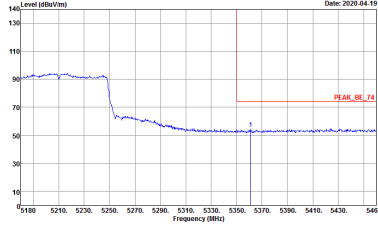
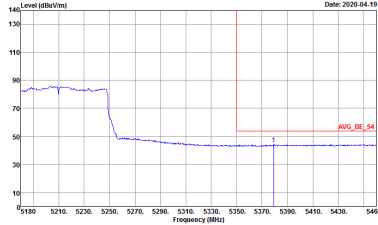


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH42 5210MHz - R	
1	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH42 5210MHz - L	
1	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-11Y            Condition : PEAK_8C_74 3m HORN_9120D_1328 VERTICAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	 <p>Site : 03CH2-11Y            Condition : PEAK(UNL) 3m HORN_9120D_1328 VERTICAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-11Y            Condition : AVG_BE_14 3m HORN_9120D_1328 VERTICAL            RBW:3000.000KHz VBW:10.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH42 5210MHz - R	
1	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL            RBW:10000000Hz VBW:3000000Hz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL            RBW:10000000Hz VBW:1000000Hz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17</p>	<p><b>Left blank</b></p>



**Band 1 - 5150~5250MHz**  
**WIFI 802.11a (Harmonic @ 3m)**

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH36 5180MHz	
1	Horizontal	Vertical
<b>Peak</b> <b>Avg.</b>	<p>Site : 03CH12-HY Condition : PEARLINE1 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 19.5</p>	<p>Site : 03CH12-HY Condition : PEARLINE1 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 19.5</p>



Band 1 5150~5250MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

Table with 2 columns: WIFI (Band 1 5150~5250MHz Harmonic @ 3m), ANT (802.11ac VHT20 CH36 5180MHz). Row 1: 1, Horizontal, Vertical. Each plot shows Level (dBuV/m) vs Frequency (MHz) with Peak and Avg. markers.





**Band 1 5150~5250MHz  
WIFI 802.11ac VHT40 (Harmonic @ 3m)**

<b>WIFI</b>	<b>Band 1 5150~5250MHz Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11ac VHT40 CH38 5190MHz</b>	
<b>1</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak Avg.</b>	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 17</p>	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 17</p>



Band 1 5150~5250MHz  
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH42 5210MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 17</p>	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 17</p>



**Band 2 - 5250~5350MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 010316 Setting : 20.5</p>	<p>Site : 03CH12-HY Condition : PEAK(FUNEL) 3m HORN_9120D_1328 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 010316 Setting : 20.5</p>
<b>Avg.</b>	<p>Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL RBW:1000.000kHz VBW:1.000kHz SWT:Auto Detector : Peak Project : 010316 Setting : 20.5</p>	<b>Left blank</b>



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Vertical	Fundamental
<b>Peak</b>	<p>Site : 03CH12-11Y            Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 20.5</p>	<p>Site : 03CH12-11Y            Condition : PEAK(UM) 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 20.5</p>
<b>Avg.</b>	<p>Site : 03CH12-11Y            Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 20.5</p>	<b>Left blank</b>



**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

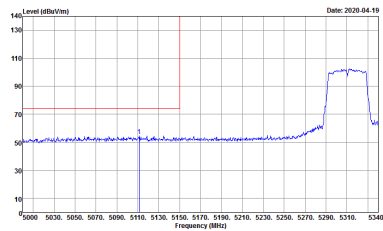
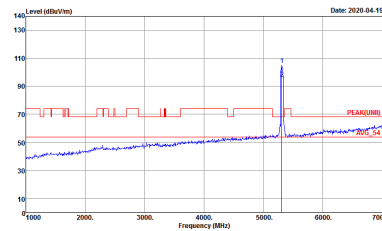
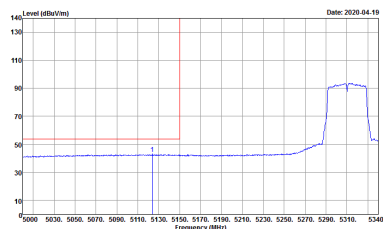
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH64 5320MHz	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH2-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20.5</p>	<p>Site : 03CH2-HY            Condition : PEAK(UNIT) 3m HORN_9120D_1328 HORIZONTAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20.5</p>
<b>Avg.</b>	<p>Site : 03CH2-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL            RBW:3000.000KHz VBW:1.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20.5</p>	<b>Left blank</b>



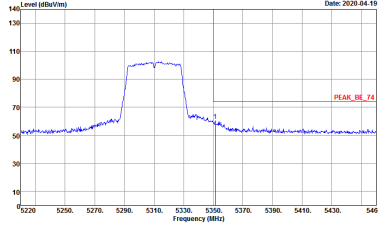
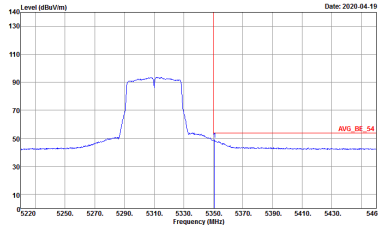
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH64 5320MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH12-11Y            Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 20.5</p>	<p>Site : 03CH12-11Y            Condition : PEAK(FUND) 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 20.5</p>
Avg.	<p>Site : 03CH12-11Y            Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 20.5</p>	Left blank



**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH62 5310 - L	
1	Horizontal	Fundamental
<b>Peak</b>	 <p>Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_91200_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16</p>	 <p>Site : 03CH12-HY Condition : PEAK(UNIT1) 3m HORN_91200_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16</p>
<b>Avg.</b>	 <p>Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_91200_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16</p>	<b>Left blank</b>



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH62 5310 - R	
1	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL            RBW:3000.000kHz VBW:3000.000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 10</p>	<p><b>Left blank</b></p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL            RBW:3000.000kHz VBW:3000.000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 10</p>	<p><b>Left blank</b></p>





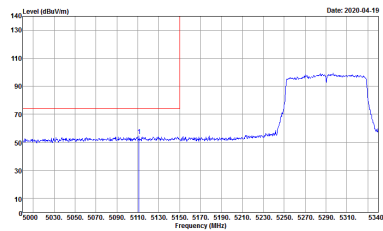
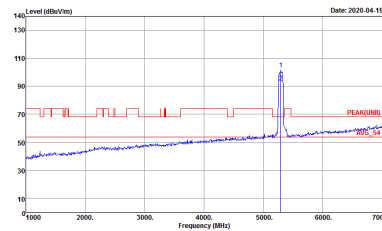
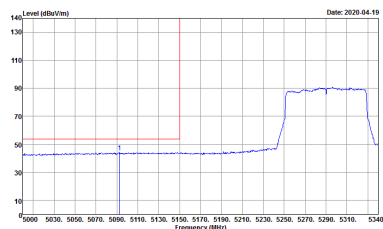
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH62 5310 - L	
1	Vertical	Fundamental
Peak	<p>Site : 03CH2-11Y            Condition : PEAK_9C_74 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 16</p>	<p>Site : 03CH2-11Y            Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 16</p>
Avg.	<p>Site : 03CH2-11Y            Condition : AVG_BE_14 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 16</p>	Left blank



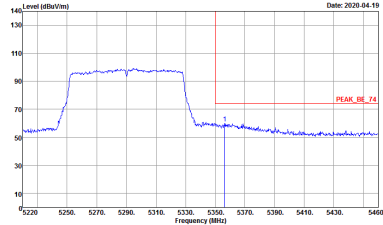
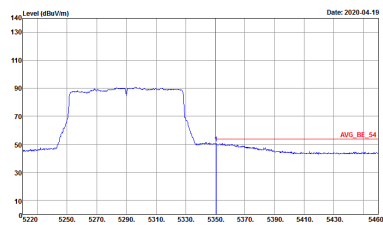
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH62 5310 - R	
1	Vertical	Fundamental
Peak	<p>Site : 03CH2-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 10</p>	Left blank
Avg.	<p>Site : 03CH2-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 10</p>	Left blank



**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - L	
1	Horizontal	Fundamental
<b>Peak</b>	 <p>Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_91200_1328 HORIZONTAL RBW:10000000KHz VBW:3000000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 15.5</p>	 <p>Site : 03CH12-HY Condition : PEAK(UNIT1) 3m HORN_91200_1328 HORIZONTAL RBW:10000000KHz VBW:3000000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 15.5</p>
<b>Avg.</b>	 <p>Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_91200_1328 HORIZONTAL RBW:10000000KHz VBW:100000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 15.5</p>	<b>Left blank</b>

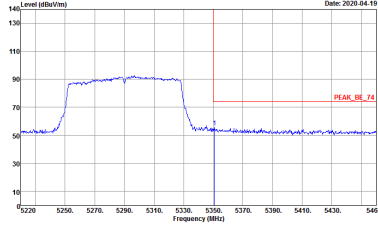
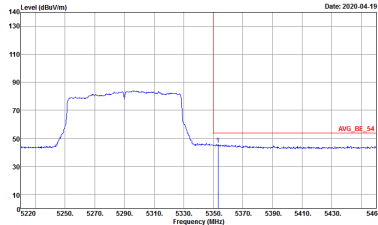


WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - R	
1	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 15.5</p>	<p><b>Left blank</b></p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 15.5</p>	<p><b>Left blank</b></p>



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - L	
1	Vertical	Fundamental
Peak	<p>Site : 03CH2-11Y            Condition : PEAK_8C_74 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 15.5</p>	<p>Site : 03CH2-11Y            Condition : PEAK(UNIT) 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 15.5</p>
Avg.	<p>Site : 03CH2-11Y            Condition : AVG_BE_1M 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 15.5</p>	Left blank



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH58 5290MHz - R	
1	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH2-HY            Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL            RBW:10000000Hz VBW:3000000Hz SWT:Auto            Detector : Peak            Project : 010316            Setting : 15.5</p>	<p><b>Left blank</b></p>
<p><b>Avg.</b></p>	 <p>Site : 03CH2-HY            Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL            RBW:10000000Hz VBW:1000000Hz SWT:Auto            Detector : Peak            Project : 010316            Setting : 15.5</p>	<p><b>Left blank</b></p>



**Band 2 - 5250~5350MHz**  
**WIFI 802.11a (Harmonic @ 3m)**

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Vertical
<p><b>Peak</b> <b>Avg.</b></p>	<p>Site : 03CH12-HY            Condition : PEARLINE1 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 20.5</p>	<p>Site : 03CH12-HY            Condition : PEARLINE1 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 010316            Setting : 20.5</p>



**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT20 (Harmonic @ 3m)**

<b>WIFI</b>	<b>Band 2 5250~5350MHz Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11ac VHT20 CH64 5320MHz</b>	
<b>1</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak</b> <b>Avg.</b>	<p>Site : 03CH12-HY          Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL          Detector : Peak          Project : 010316          Setting : 20.5</p>	<p>Site : 03CH12-HY          Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL          Detector : Peak          Project : 010316          Setting : 20.5</p>





Band 2 5250~5350MHz  
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH62 5310	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 16</p>	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 16</p>



**Band 2 5250~5350MHz**  
**WIFI 802.11ac VHT80 (Harmonic @ 3m)**

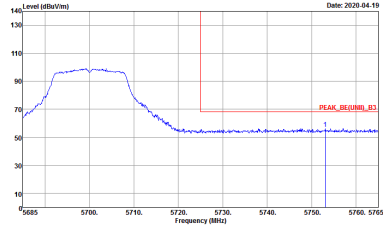
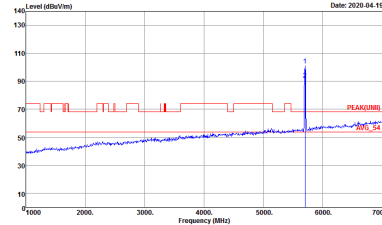
<b>WIFI</b>	<b>Band 2 5250~5350MHz Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11ac VHT80 CH58 5290MHz</b>	
<b>1</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak</b> <b>Avg.</b>	<p>Site : 03CH12-HY          Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL          Detector : Peak          Project : 010316          Setting : 15.5</p>	<p>Site : 03CH12-HY          Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL          Detector : Peak          Project : 010316          Setting : 15.5</p>



**Band 3 - 5470~5725MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-HY            Condition : PEAK_RE(UBI)_B3 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 15</p>	<p>Site : 03CH12-HY            Condition : PEAK(UBI)_B3 3m HORN_9120D_1328 HORIZONTAL            Detector : Peak            Project : 010316            Setting : 15</p>



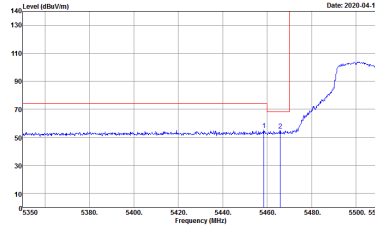
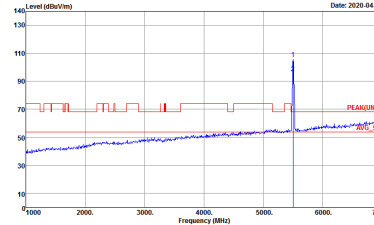
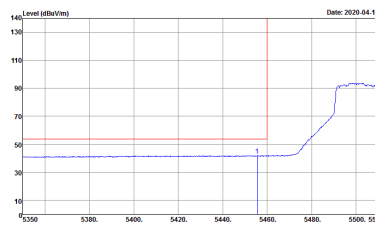
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CHZ-14V            Condition : PEAK(UNII)_B3 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 100316            Setting : 15</p>	 <p>Site : 03CHZ-14V            Condition : PEAK(UNII)_B3 3m HORN_9120D_1328 VERTICAL            Detector : Peak            Project : 100316            Setting : 15</p>



**Band 3 5470~5725MHz  
WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH100 5500MHz	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-HY Condition : PEAK_BE(UNIT1)_B3 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 20.5</p>	<p>Site : 03CH12-HY Condition : PEAK(UNIT1) 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 20.5</p>
<b>Avg.</b>	<p>Site : 03CH12-HY Condition : AVG_BE(UNIT1)_B3 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 20.5</p>	<b>Left blank</b>



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH100 5500MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH12-11Y            Condition : PEAK_BE(UNII)_B3 3m HORN_91200_1328 VERTICAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20.5</p>	 <p>Site : 03CH12-11Y            Condition : PEAK(UNII) 3m HORN_91200_1328 VERTICAL            RBW:3000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20.5</p>
Avg.	 <p>Site : 03CH12-11Y            Condition : AVG_BE(UNII)_B3 3m HORN_91200_1328 VERTICAL            RBW:3000.000KHz VBW:1000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 20.5</p>	Left blank



**Band 3 5470~5725MHz  
WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz - L	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH12-HY Condition : PEAK_BE(UNIT1)_B3 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 17.5</p>	<p>Site : 03CH12-HY Condition : PEAK(UNIT1) 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 17.5</p>
<b>Avg.</b>	<p>Site : 03CH12-HY Condition : AVG_BE(UNIT1)_B3 3m HORN_9120D_1328 HORIZONTAL RBW:3000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 17.5</p>	<b>Left blank</b>



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz - R	
1	Horizontal	Fundamental
Peak	<p>Site : 03CHZ-11Y Condition : PEAK_BE(UNIT)_B3 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 100316 Setting : 17.5</p>	Left blank





WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz - L	
1	Vertical	Fundamental
Peak	<p>Site : 03CH12-11Y            Condition : PEAK_BE(UNIT1)_B3 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17.5</p>	<p>Site : 03CH12-11Y            Condition : PEAK(UNIT1) 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17.5</p>
Avg.	<p>Site : 03CH12-11Y            Condition : AVG_BE(UNIT1)_B3 3m HORN_9120D_1328 VERTICAL            RBW:3000.0000kHz VBW:3000.0000kHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 17.5</p>	Left blank



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz - R	
1	Vertical	Fundamental
Peak	<p>Site : 03CHZ-11Y Condition : PEAK_BE(UNIT)_B3 3m HORN_9120D_1328 VERTICAL RBW:10000000Hz VBW:3000.0000kHz SWT:Auto Detector : Peak Project : 1010316 Setting : 17.5</p>	Left blank



Band 3 - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)

Table with 2 columns: Horizontal and Vertical. Each column contains a spectral plot showing Level (dBuV/m) vs Frequency (MHz) with peak and average markers. Includes metadata like Site, Condition, Detector, Project, and Setting.



Band 3 5470~5725MHz  
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH100 5500MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 20.5</p>	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 20.5</p>



Band 3 5470~5725MHz  
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 010316 Setting : 17.5</p>	<p>Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 010316 Setting : 17.5</p>



Band 3 - Straddle Channel

WIFI 802.11ac VHT80 (Fundamental @ 3m)

WIFI	Band 3 Straddle Channel Fundamental @ 3m	
ANT	802.11ac VHT80 CH138 5690MHz - L	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH12-HY            Condition : STRADDLES U-NIT-1A2A 3m HORN_9120D_1328 HORIZONTAL            RBW:1000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 16.5</p>	<p>Site : 03CH12-HY            Condition : PEAK(U-NIT) 3m HORN_9120D_1328 HORIZONTAL            RBW:1000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 16.5</p>
Avg.	<p>Site : 03CH12-HY            Condition : U-NIT-1A2A AVERAGE 3m HORN_9120D_1328 HORIZONTAL            RBW:1000.000KHz VBW:10.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 16.5</p>	Left blank



WIFI	Band 3 Straddle Channel Fundamental @ 3m	
ANT	802.11ac VHT80 CH138 5690MHz - R	
1	Horizontal	Fundamental
Peak	<p>Site : 03CHZ-14Y Condition : STRADDLES U-NII-142A 3m HORN_91200_1328 HORIZONTAL RBW:100000000Hz VBW:3000.000000Hz SWT:Auto Detector : Peak Project : 100316 Setting : 16.5</p>	Left blank



WIFI	Band 3 Straddle Channel Fundamental @ 3m	
ANT	802.11ac VHT80 CH138 5690MHz - L	
1	Vertical	Fundamental
Peak	<p>Site : 03CH12-HY            Condition : STRADDLES U-NII-1&amp;2A 3m HORN_91200_1328 VERTICAL            RBW:1000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 16.5</p>	<p>Site : 03CH12-HY            Condition : PEAK(U-NII) 3m HORN_91200_1328 VERTICAL            RBW:1000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 16.5</p>
Avg.	<p>Site : 03CH12-HY            Condition : U-NII-1&amp;2A AVERAGE 3m HORN_91200_1328 VERTICAL            RBW:1000.000KHz VBW:3000.000KHz SWT:Auto            Detector : Peak            Project : 010316            Setting : 16.5</p>	Left blank





WIFI	Band 3 Straddle Channel Fundamental @ 3m	
ANT	802.11ac VHT80 CH138 5690MHz - R	
1	Vertical	Fundamental
Peak	<p>Site : 03CHZ-14Y Condition : STRADDLES U-NII-142A 3m HORN_91200_1328 VERTICAL Detector : Peak Project : 100316 Setting : 16.5</p>	Left blank



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

<b>WIFI</b>	<b>Band 3 Straddle Channel Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11ac VHT80 CH138 5690MHz</b>	
<b>1</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak</b> <b>Avg.</b>	<p>Site : 03CH12-HY          Condition : PEAK(LINE) 3m HORN_9120D_1328 HORIZONTAL          Detector : Peak          Project : 010316          Setting : 16.5</p>	<p>Site : 03CH12-HY          Condition : PEAK(LINE) 3m HORN_9120D_1328 VERTICAL          Detector : Peak          Project : 010316          Setting : 16.5</p>



Emission below 1GHz  
5GHz WIFI 802.11ac VHT40 (LF)

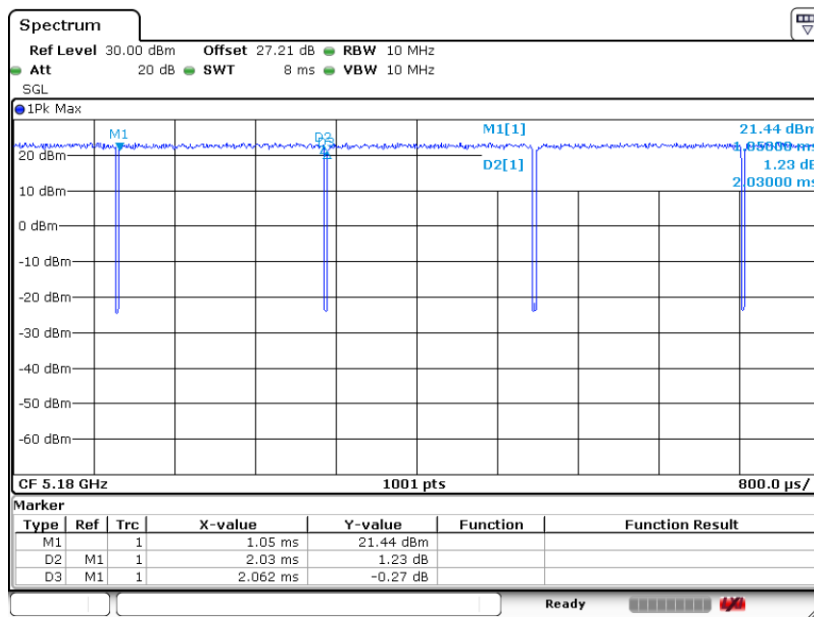
WIFI	5GHz WIFI	
ANT	802.11ac VHT40 LF	
1	Horizontal	Vertical
QP / Peak	<p>Site : 03CH12-HY Condition : QP 3m 81LOS_6111D_37059 HORIZONTAL Detector : Peak Project : 010316 Setting : 175</p>	<p>Site : 03CH12-HY Condition : QP 3m 81LOS_6111D_37059 VERTICAL Detector : Peak Project : 010316 Setting : 175</p>



### Appendix D. Duty Cycle Plots

Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor (dB)
802.11a	98.45	-	-	10Hz	0.07
5GHz 802.11n HT20	98.44	-	-	10Hz	0.07
5GHz 802.11n HT40	96.37	930	1.08	3kHz	0.16
5GHz 802.11ac VHT20	97.94	1900	0.53	1kHz	0.09
5GHz 802.11ac VHT40	95.90	935	1.07	3kHz	0.18
5GHz 802.11ac VHT80	92.68	456	2.19	3kHz	0.33

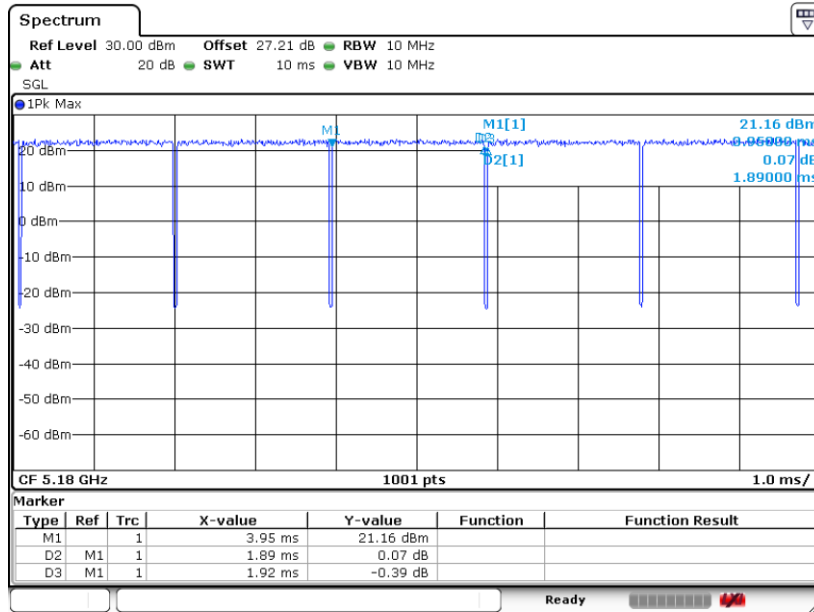
#### 802.11a



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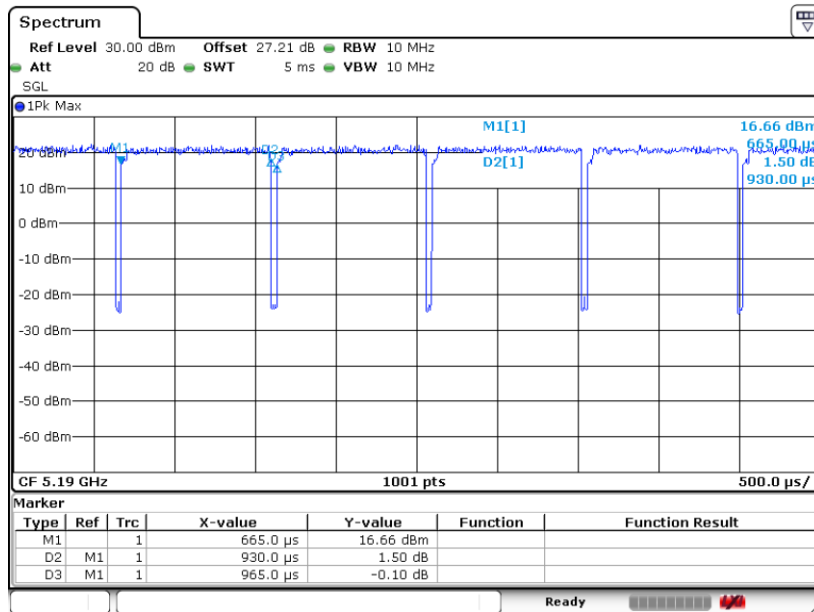


802.11n HT20



Date: 18.MAR.2020 10:57:57

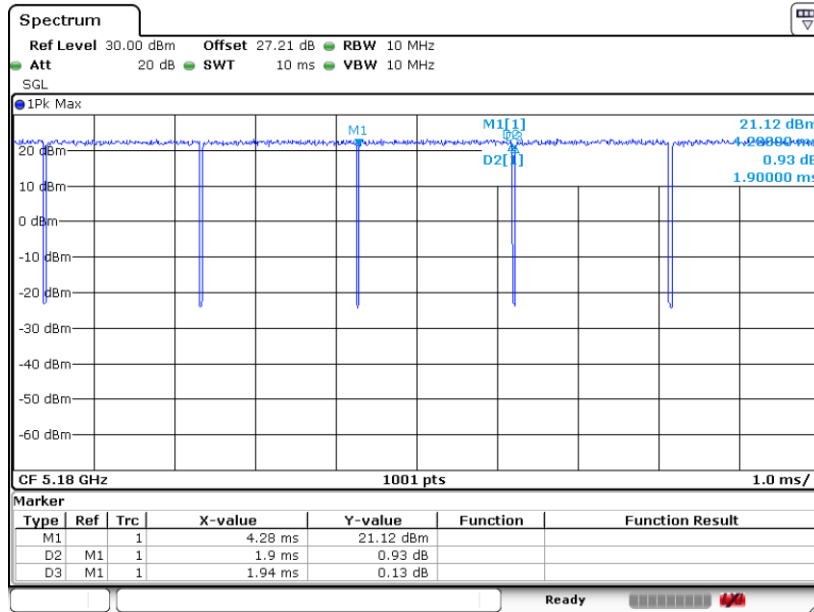
802.11n HT40



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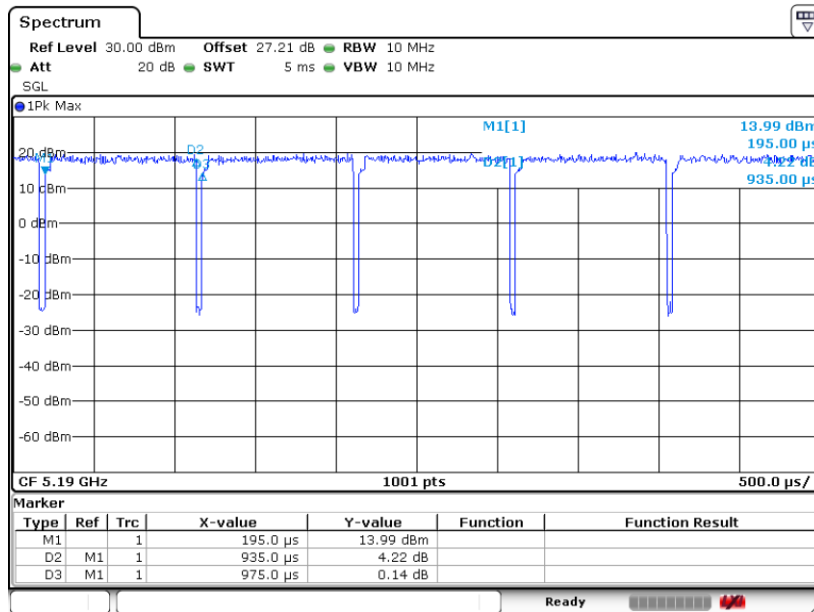


802.11ac VHT20



Date: 18.MAR.2020 10:12:21

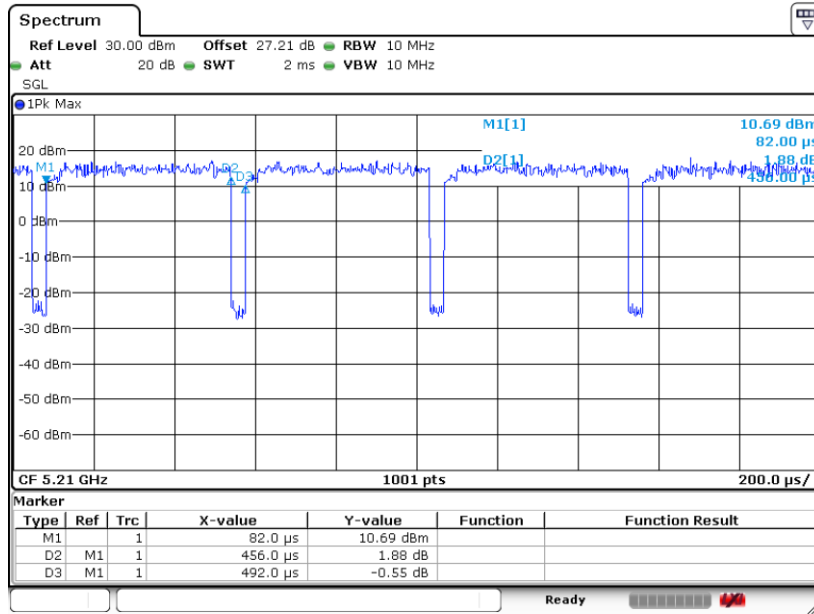
802.11ac VHT40



Date: 18.MAR.2020 10:14:18



802.11ac VHT80



Date: 18.MAR.2020 10:42:38