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. 27, 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
FR010316F	01	Initial issue of report	Apr. 30, 2020
FR010316F	02	1. Add original report description and revise summary of test result 2. Revise FW Version 3. Revise specification of accessories table 4. Revise test data of appendix a.	May 06, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403 (i)	6dB & 26dB Bandwidth	Pass	Please refer to Sporton Report Number FR010720F
-	2.1049	99% Occupied Bandwidth	Reporting only	Please refer to Sporton Report Number FR010720F
3.1	15.407 (a)	Maximum Conducted Output Power	Pass	-
-	15.407 (a)	Power Spectral Density	Pass	Please refer to Sporton Report Number FR010720F
3.2	15.407(b)	Unwanted Emissions	Pass	Under limit 3.09 dB at 11650.000 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 FR010720F
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 FR010720F 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: Cindy Liu

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/Nabe03091333: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 (TypeA plug to TypeC 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	
Tx/Rx Frequency Range	5725 MHz ~ 5850 MHz
Maximum Output Power	802.11a : 17.81 dBm / 0.0604 W 802.11n HT20 : 17.81 dBm / 0.0604 W 802.11n HT40 : 17.71 dBm / 0.0590 W 802.11ac VHT20: 17.91 dBm / 0.0618 W 802.11ac VHT40: 17.81 dBm / 0.0604 W 802.11ac VHT80: 17.91 dBm / 0.0618 W
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Antenna Gain / Gain	PIFA Antenna with gain 2.5 dBi

1.3 Modification of EUT

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

1.4 Testing Location

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

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

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	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
Test Site No.	**Sporton Site No.**
	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)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155#	5775	165	5825

Note:

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

2.2 Test Mode

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

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 1 (Charging from AC adapter) + Battery 1 for Sample 1
Remark: For Radiated Test Cases, the tests were performed with Battery 1, USB Cable 1 and Sample 1	

Ch. #		Band IV：5725-5850 MHz			
		802.11a	802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
L	Low	-	-	-	-
M	Middle	-	-	-	155
H	High	165	165	159	-

Remark: For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.

802.11a RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	Data Rate (bps)
		6M
CH 149	5745	17.61
CH 157	5785	**17.81**
CH 165	5825	17.61

802.11n HT20 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 149	5745	17.21
CH 157	5785	**17.81**
CH 165	5825	17.31

802.11n HT40 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 151	5755	17.51
CH 159	5795	**17.71**

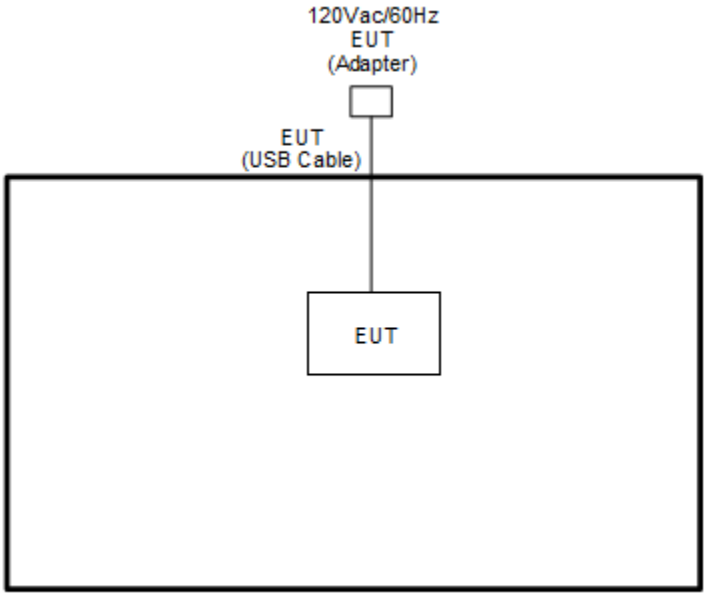
802.11ac VHT20 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 149	5745	17.31
CH 157	5785	**17.91**
CH 165	5825	17.41

802.11ac VHT40 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 151	5755	17.61
CH 159	5795	**17.81**

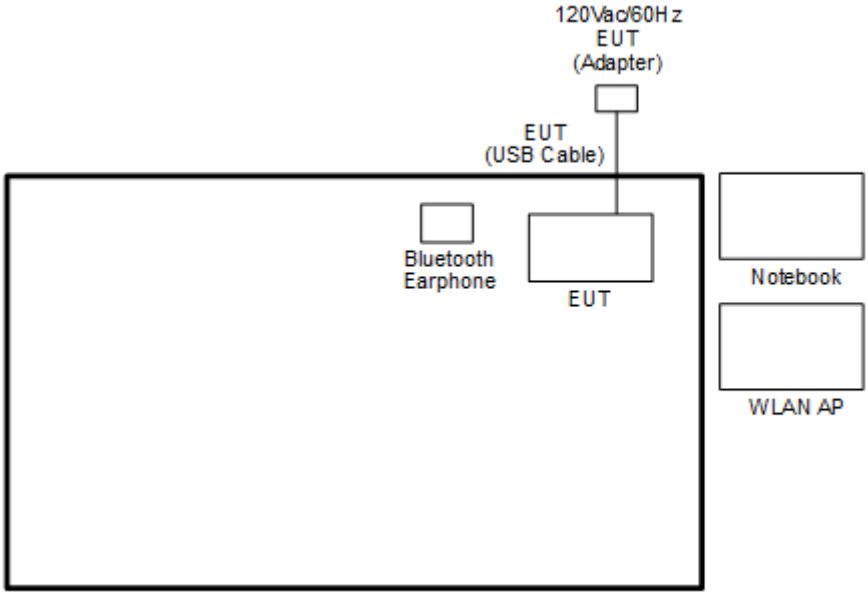
802.11ac VHT80 RF Output Power (dBm)		
Power vs. Channel		
Channel	Frequency (MHz)	MCS Index
		MCS0
CH 155	5775	**17.91**

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission 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 3400	FCC DoC	N/A	AC I/P： Unshielded, 1.2m DC O/P： Shielded, 1.8m
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

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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.

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

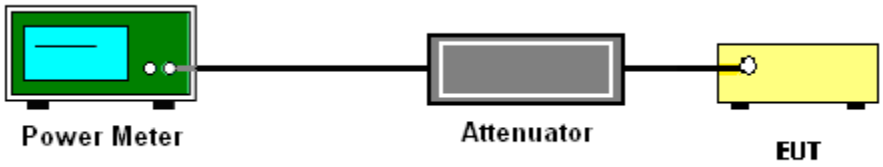
3.1.3 Test Procedures

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

Method PM-G (Measurement using a gated RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Test Engineer :	Kathy Chen	Temperature :	21~25℃
		Relative Humidity :	51~54%

Band IV							
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)		
					Ant 1	Ant 2	SUM
11a	6Mbps	1	149	5745	17.61	-	-
11a	6Mbps	1	157	5785	17.81	-	
11a	6Mbps	1	165	5825	17.61	-	
HT20	MCS0	1	149	5745	17.21	-	
HT20	MCS0	1	157	5785	17.81	-	
HT20	MCS0	1	165	5825	17.31	-	
HT40	MCS0	1	151	5755	17.51	-	
HT40	MCS0	1	159	5795	17.71	-	
VHT20	MCS0	1	149	5745	17.31	-	
VHT20	MCS0	1	157	5785	17.91	-	
VHT20	MCS0	1	165	5825	17.41	-	
VHT40	MCS0	1	151	5755	17.61	-	
VHT40	MCS0	1	159	5795	17.81	-	
VHT80	MCS0	1	155	5775	17.91	-	

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 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(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.

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/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

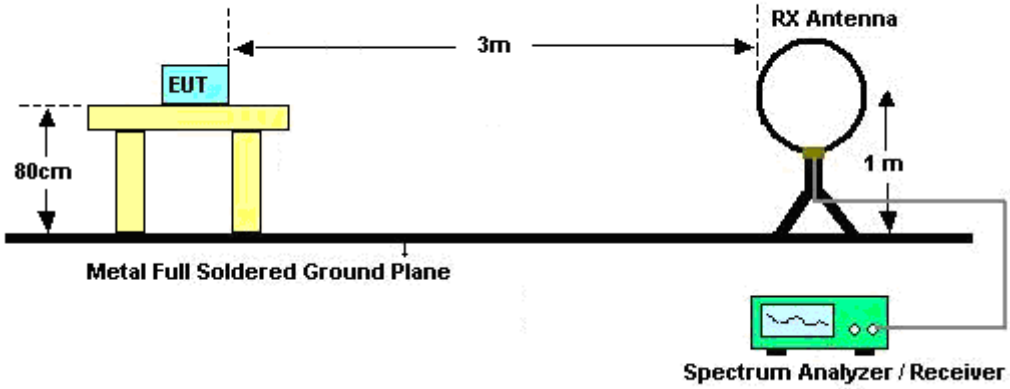
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW ≥ 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.

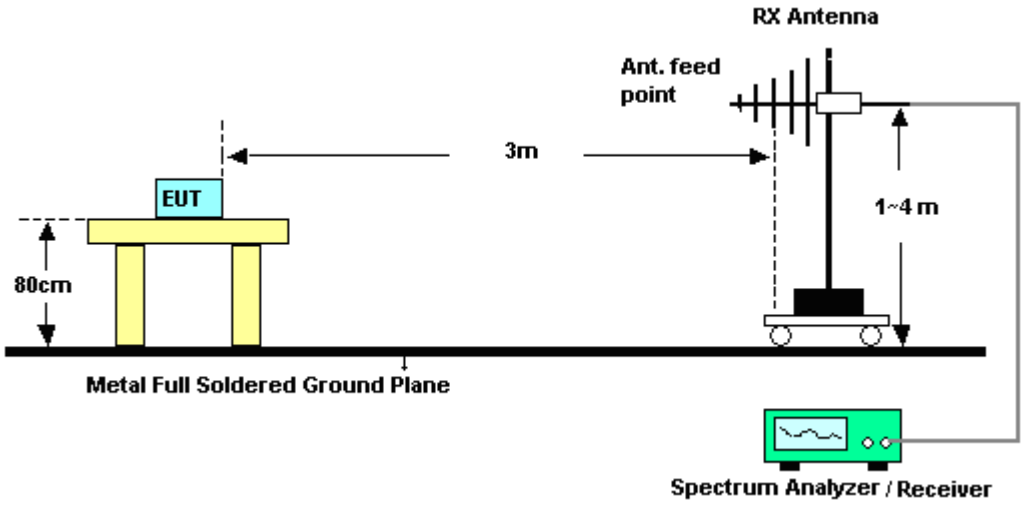
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband 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

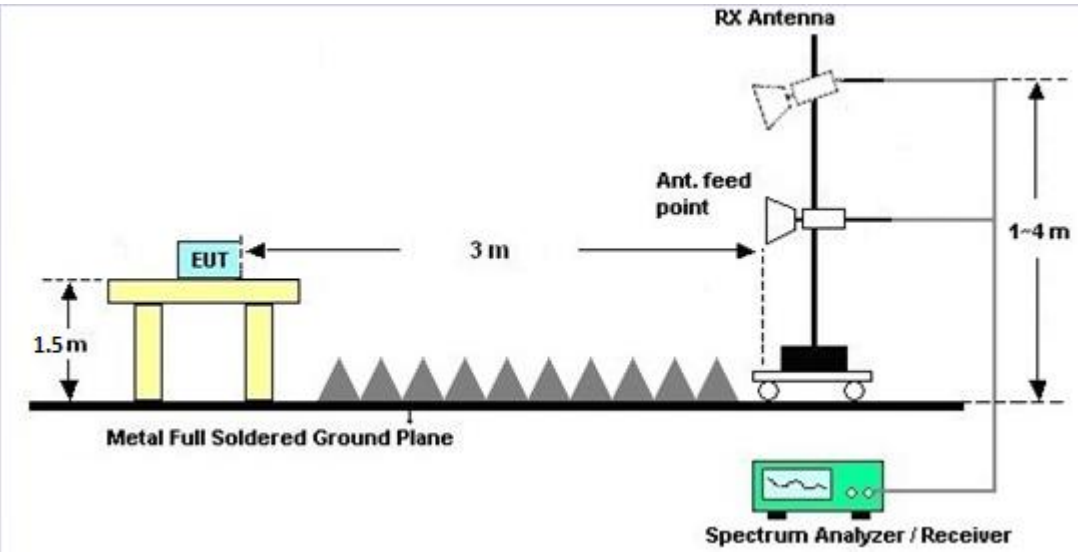
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.2.5 Test Results of Radiated 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 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 Unwanted Radiated Emission (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 (dBμV)	
	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.

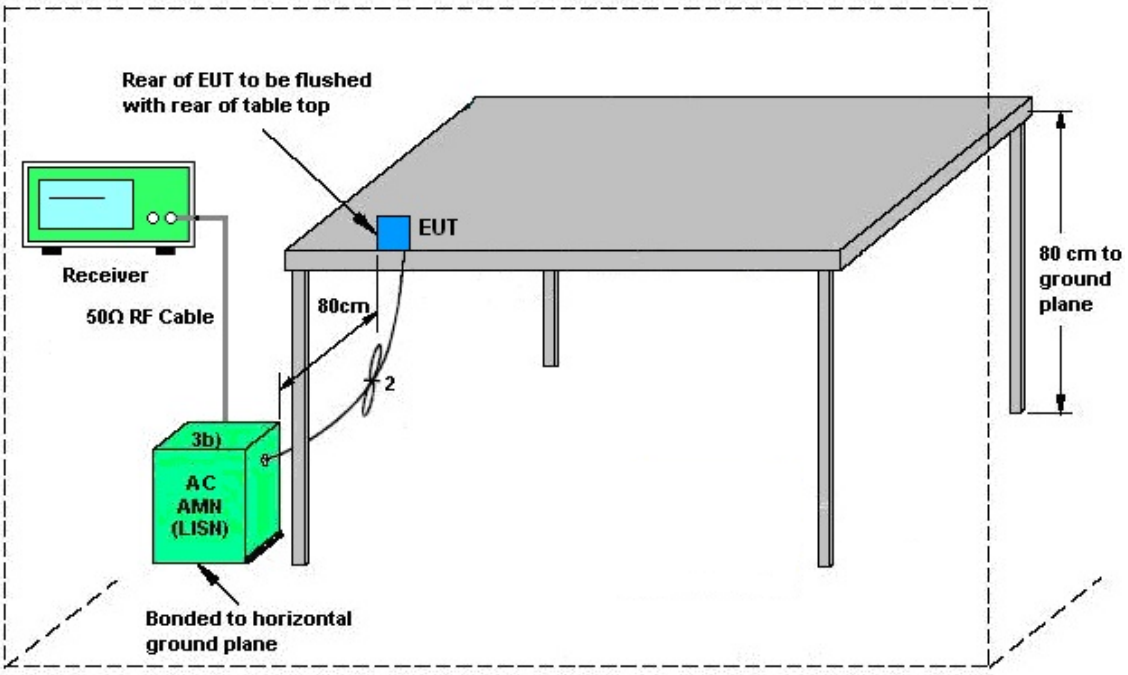
3.3.2 Measuring Instruments

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



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

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. 31, 2020~ Apr. 08, 2020	Jun. 16, 2020	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 10	10MHz~6GHz	Dec. 23, 2019	Mar. 31, 2020~ Apr. 08, 2020	Dec. 22, 2020	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Jul. 15, 2019	Mar. 31, 2020~ Apr. 08, 2020	Jul. 14, 2020	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Aug. 22, 2019	Mar. 31, 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	SCHWARZBECK	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	SCHWARZBECK	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)

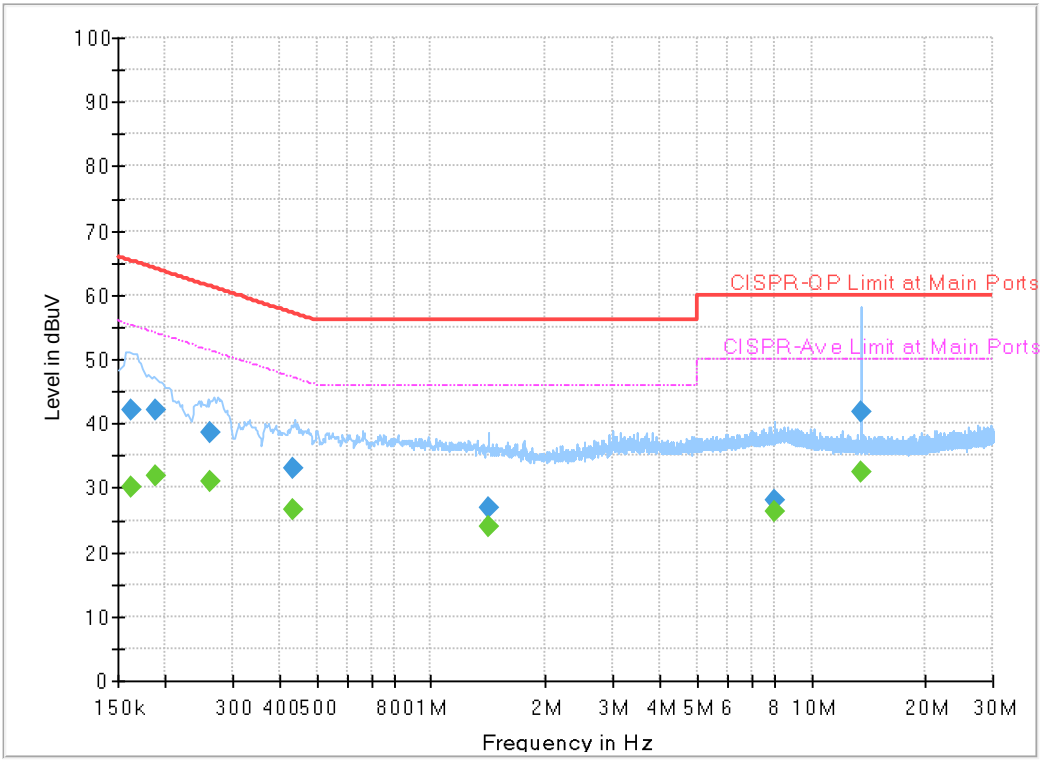
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.6**

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

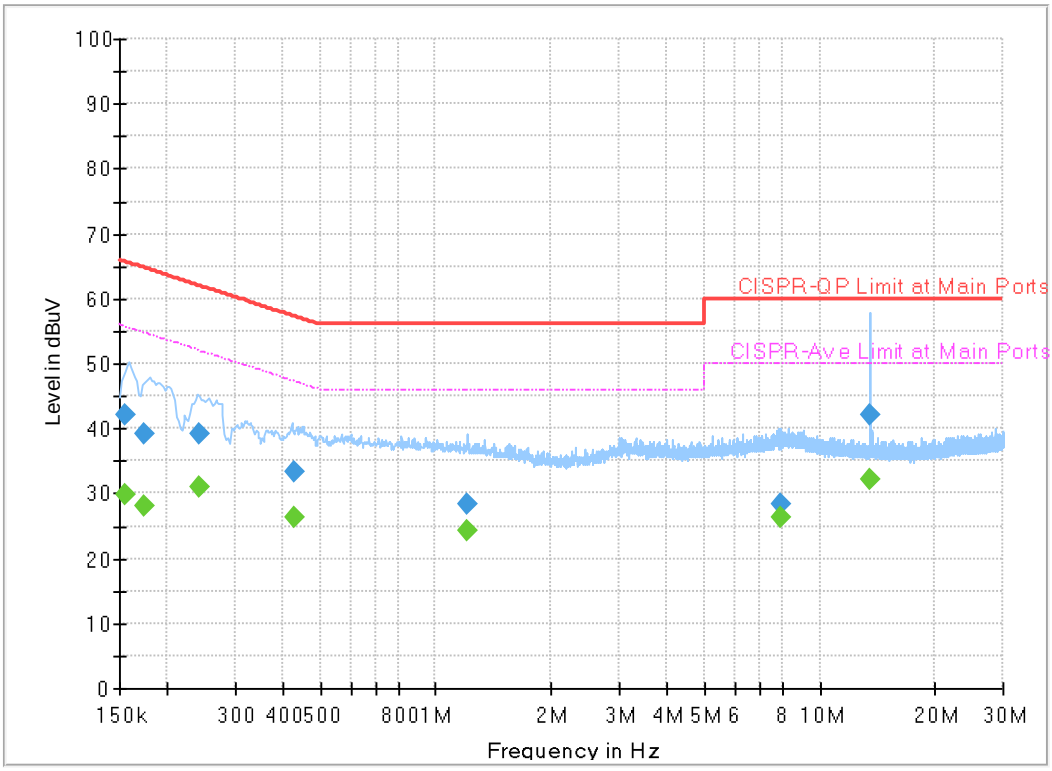
Test Engineer :	Howard Huang	Temperature :	21~24℃
		Relative Humidity :	42~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line



Final Result

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℃
		Relative Humidity :	42~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Final Result

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 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
	*	5825	107.25	-	-	94.21	32.15	9.82	28.93	247	297	P	H
	*	5825	96.56	-	-	83.52	32.15	9.82	28.93	247	297	A	H
		5852.8	57.24	-58.58	115.82	44.13	32.21	9.85	28.95	247	297	P	H
		5866.8	57.81	-49.68	107.49	44.68	32.23	9.86	28.96	247	297	P	H
		5906.8	57.85	-23.78	81.63	44.59	32.33	9.91	28.98	247	297	P	H
		5947	57.18	-11.02	68.2	43.74	32.49	9.95	29	247	297	P	H
													H
802.11a													H
CH 165	*	5825	101.48	-	-	88.44	32.15	9.82	28.93	200	164	P	V
5825MHz	*	5825	90.97	-	-	77.93	32.15	9.82	28.93	200	164	A	V
		5851	56.69	-63.23	119.92	43.59	32.2	9.85	28.95	200	164	P	V
		5874.6	56.59	-48.72	105.31	43.43	32.25	9.87	28.96	200	164	P	V
		5918.6	57.19	-15.73	72.92	43.88	32.37	9.92	28.98	200	164	P	V
		5939	57.96	-10.24	68.2	44.56	32.46	9.94	29	200	164	P	V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 165 5825MHz		11650	59.05	-14.95	74	64.13	39.4	17.85	62.33	309	0	P	H
		11650	46.04	-7.96	54	51.12	39.4	17.85	62.33	309	0	A	H
		17475	50.67	-17.53	68.2	45.25	42	21.46	58.04	100	0	P	H
													H
		11650	63.78	-10.22	74	68.86	39.4	17.85	62.33	311	0	P	V
		11650	50.48	-3.52	54	55.56	39.4	17.85	62.33	311	0	A	V
		17475	50.84	-17.36	68.2	45.42	42	21.46	58.04	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	5825	108.61	-	-	95.57	32.15	9.82	28.93	246	297	P	H
	*	5825	97.86	-	-	84.82	32.15	9.82	28.93	246	297	A	H
		5853.2	59.11	-55.79	114.9	46	32.21	9.85	28.95	246	297	P	H
		5855	57.97	-52.83	110.8	44.86	32.21	9.85	28.95	246	297	P	H
		5906.4	57.74	-24.19	81.93	44.48	32.33	9.91	28.98	246	297	P	H
		5931.2	57.82	-10.38	68.2	44.46	32.42	9.93	28.99	246	297	P	H
802.11ac													H
VHT20													H
CH 165	*	5825	102.77	-	-	89.73	32.15	9.82	28.93	201	159	P	V
5825MHz	*	5825	91.94	-	-	78.9	32.15	9.82	28.93	201	159	A	V
		5854	57.42	-55.66	113.08	44.31	32.21	9.85	28.95	201	159	P	V
		5859.8	57.06	-52.39	109.45	43.93	32.22	9.86	28.95	201	159	P	V
		5899.8	57.74	-29.07	86.81	44.51	32.3	9.9	28.97	201	159	P	V
		5938	57.53	-10.67	68.2	44.14	32.45	9.94	29	201	159	P	V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11650	63.07	-10.93	74	68.15	39.4	17.85	62.33	303	0	P	H
		11650	47.79	-6.21	54	52.87	39.4	17.85	62.33	303	0	A	H
802.11ac		17475	51.62	-16.58	68.2	46.2	42	21.46	58.04	100	0	P	H
VHT20													H
CH 165		11650	65.95	-8.05	74	71.03	39.4	17.85	62.33	312	1	P	V
5825MHz		11650	50.91	-3.09	54	55.99	39.4	17.85	62.33	312	1	A	V
		17475	50.53	-17.67	68.2	45.11	42	21.46	58.04	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5634	55.85	-12.35	68.2	43.44	31.66	9.58	28.83	253	305	P	H
		5662	56.34	-20.77	77.11	43.91	31.65	9.62	28.84	253	305	P	H
		5708.2	57.14	-50.36	107.5	44.5	31.83	9.68	28.87	253	305	P	H
		5723	56.44	-61.2	117.64	43.73	31.89	9.69	28.87	253	305	P	H
	*	5795	106.09	-	-	93.14	32.09	9.78	28.92	253	305	P	H
	*	5795	95.31	-	-	82.36	32.09	9.78	28.92	253	305	A	H
		5852.8	57.37	-58.45	115.82	44.26	32.21	9.85	28.95	253	305	P	H
		5863.4	57.12	-51.33	108.45	43.98	32.23	9.86	28.95	253	305	P	H
		5880.4	57.86	-43.33	101.19	44.68	32.26	9.88	28.96	253	305	P	H
		5927.6	57.97	-10.23	68.2	44.62	32.41	9.93	28.99	253	305	P	H
802.11ac													H
VHT40													H
CH 159		5637.4	55.7	-12.5	68.2	43.29	31.65	9.59	28.83	314	224	P	V
5795MHz		5695	56.29	-45.22	101.51	43.71	31.78	9.66	28.86	314	224	P	V
		5704.4	56.15	-50.28	106.43	43.52	31.82	9.67	28.86	314	224	P	V
		5723.6	55.63	-63.38	119.01	42.93	31.89	9.69	28.88	314	224	P	V
	*	5795	100.67	-	-	87.72	32.09	9.78	28.92	314	224	P	V
	*	5795	90.07	-	-	77.12	32.09	9.78	28.92	314	224	A	V
		5853	56.67	-58.69	115.36	43.56	32.21	9.85	28.95	314	224	P	V
		5859.6	57.08	-52.43	109.51	43.95	32.22	9.86	28.95	314	224	P	V
		5913.6	56.83	-19.78	76.61	43.55	32.35	9.91	28.98	314	224	P	V
		5942.4	57.36	-10.84	68.2	43.94	32.47	9.95	29	314	224	P	V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11590	59.41	-14.59	74	64.3	39.64	17.79	62.32	301	359	P	H
		11590	47.82	-6.18	54	52.71	39.64	17.79	62.32	301	359	A	H
802.11ac		17385	52.73	-15.47	68.2	47.99	41.6	21.35	58.21	100	0	P	H
VHT40													H
CH 159		11590	62.12	-11.88	74	67.01	39.64	17.79	62.32	298	0	P	V
5795MHz		11590	50.58	-3.42	54	55.47	39.64	17.79	62.32	298	0	A	V
		17385	51.01	-17.19	68.2	46.27	41.6	21.35	58.21	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5606	55.94	-12.26	68.2	43.42	31.78	9.55	28.81	197	306	P	H
		5698	61.46	-42.27	103.73	48.87	31.79	9.66	28.86	197	306	P	H
		5720	67.92	-42.88	110.8	55.22	31.88	9.69	28.87	197	306	P	H
		5724.6	68.8	-52.49	121.29	56.08	31.9	9.7	28.88	197	306	P	H
	*	5775	103.03	-	-	90.12	32.05	9.76	28.9	197	306	P	H
	*	5775	93.77	-	-	80.86	32.05	9.76	28.9	197	306	A	H
		5853.6	62.77	-51.22	113.99	49.66	32.21	9.85	28.95	197	306	P	H
		5861	61.48	-47.64	109.12	48.35	32.22	9.86	28.95	197	306	P	H
		5875.4	59.12	-45.78	104.9	45.96	32.25	9.87	28.96	197	306	P	H
		5938.2	57.99	-10.21	68.2	44.6	32.45	9.94	29	197	306	P	H
802.11ac													H
VHT80													H
CH 155		5636.4	55.93	-12.27	68.2	43.52	31.65	9.59	28.83	302	214	P	V
5775MHz		5687.6	58.93	-37.12	96.05	46.39	31.75	9.65	28.86	302	214	P	V
		5720	63.53	-47.27	110.8	50.83	31.88	9.69	28.87	302	214	P	V
		5724.8	64.44	-57.3	121.74	51.72	31.9	9.7	28.88	302	214	P	V
	*	5775	96.73	-	-	83.82	32.05	9.76	28.9	302	214	P	V
	*	5775	87.89	-	-	74.98	32.05	9.76	28.9	302	214	A	V
		5852	59.67	-57.97	117.64	46.57	32.2	9.85	28.95	302	214	P	V
		5866.2	58.71	-48.95	107.66	45.58	32.23	9.86	28.96	302	214	P	V
		5919.8	58.87	-13.16	72.03	45.56	32.38	9.92	28.99	302	214	P	V
		5942.8	58.41	-9.79	68.2	44.99	32.47	9.95	29	302	214	P	V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11550	56.38	-17.62	74	61.14	39.8	17.75	62.31	300	359	P	H
		11550	46.41	-7.59	54	51.17	39.8	17.75	62.31	300	359	A	H
802.11ac		17325	50.83	-17.37	68.2	46.7	41.17	21.28	58.32	100	0	P	H
VHT80													H
CH 155		11550	60.66	-13.34	74	65.42	39.8	17.75	62.31	291	356	P	V
5775MHz		11550	50.36	-3.64	54	55.12	39.8	17.75	62.31	291	356	A	V
		17325	51.49	-16.71	68.2	47.36	41.17	21.28	58.32	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

5GHz WIFI 802. 11ac VHT20 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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)
		30.97	24.88	-15.12	40	30	24.01	0.51	29.64	-	-	P	H
		95.96	30.63	-12.87	43.5	44.07	15.34	0.83	29.61	-	-	P	H
		155.13	22.75	-20.75	43.5	34.51	16.59	1.21	29.56	-	-	P	H
		713.85	37.6	-8.4	46	36.55	26.65	2.97	28.57	100	0	P	H
		838.01	33.92	-12.08	46	30.16	28.72	3.45	28.41	-	-	P	H
		927.25	36.34	-9.66	46	31.18	29.61	3.71	28.16	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT20		44.55	30.11	-9.89	40	42.24	16.98	0.55	29.66	-	-	P	V
LF		71.71	23.51	-16.49	40	40.13	12.26	0.79	29.67	-	-	P	V
		95.96	25.16	-18.34	43.5	38.6	15.34	0.83	29.61	-	-	P	V
		721.61	33.05	-12.95	46	31.6	27.01	3.02	28.58	-	-	P	V
		811.82	33.38	-12.62	46	30.65	27.82	3.36	28.45	-	-	P	V
		940.83	36.67	-9.33	46	30.92	30.22	3.68	28.15	100	0	P	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against limit line.

Note symbol

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

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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 CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

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

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

Appendix C. Radiated Spurious Emission Plots

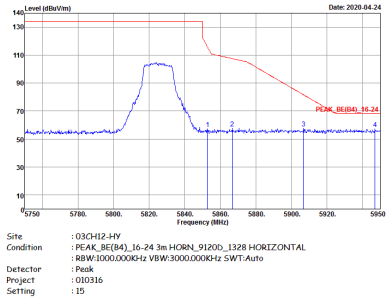
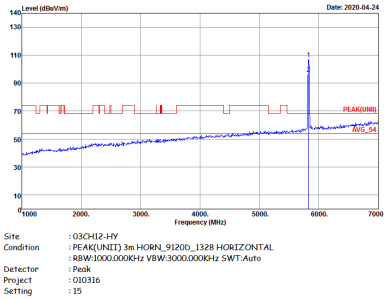
Test Engineer :	Jack Cheng , Lance Chiang and Chuan Chu	**Temperature :**	19.2~26.8°C
		Relative Humidity :	53.5~69%

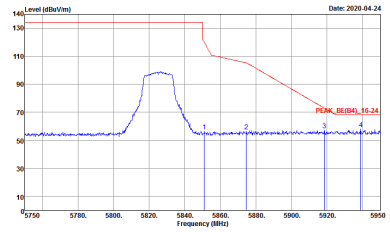
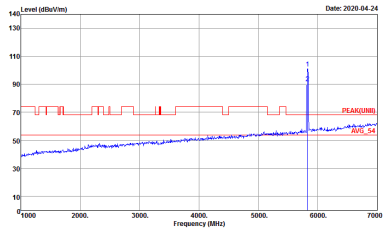
Note symbol

-L	**Low channel location**
-R	**High channel location**

Band 4 - 5725~5850MHz

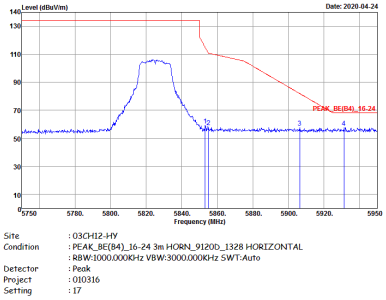
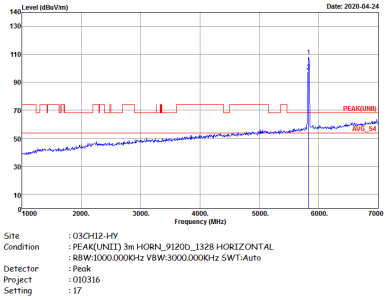
WIFI 802.11a (Band Edge @ 3m)

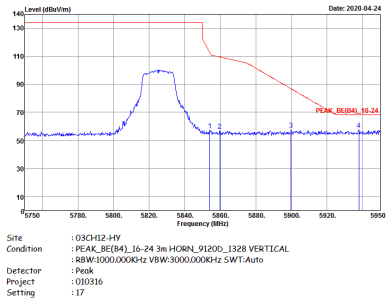
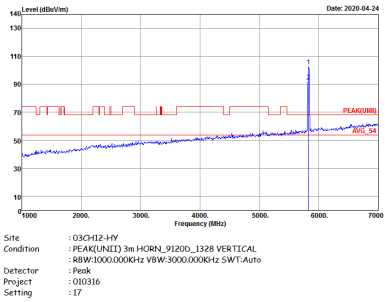
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 15	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 15

Band 4 5725~5850MHz

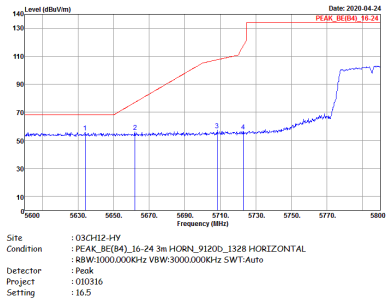
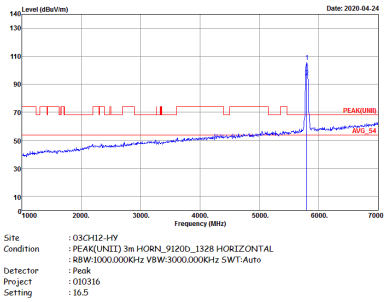
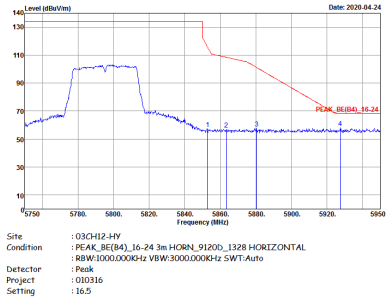
WIFI 802.11ac VHT20 (Band Edge @ 3m)

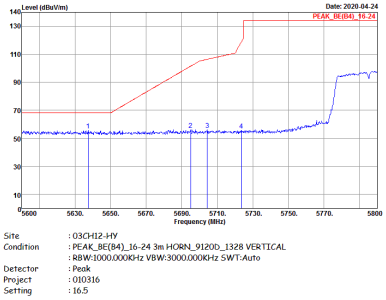
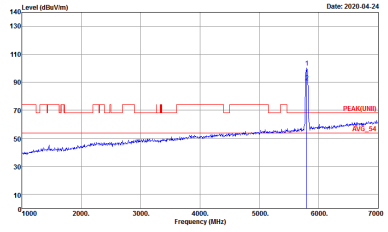
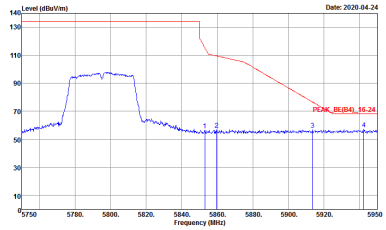
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak Avg.		

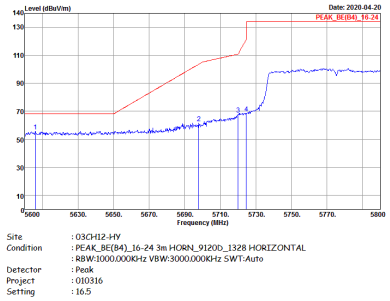
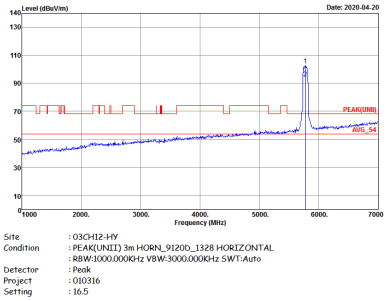
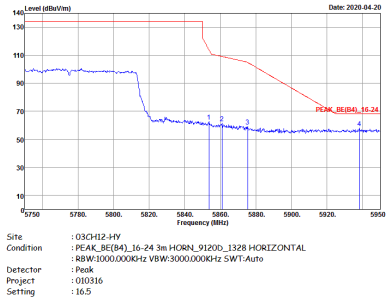
Band 4 5725~5850MHz

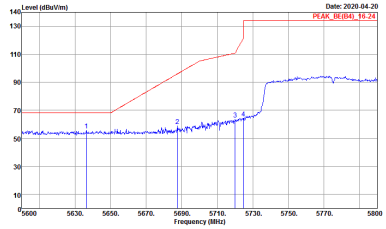
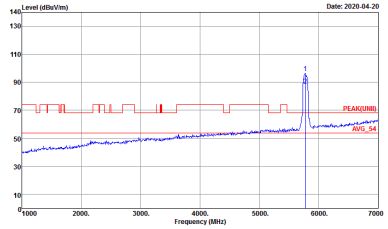
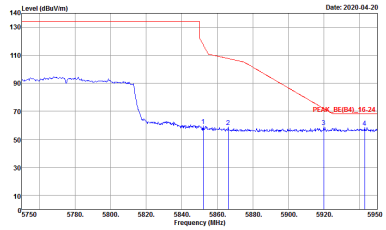
WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16.5	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16.5
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16.5	Left blank

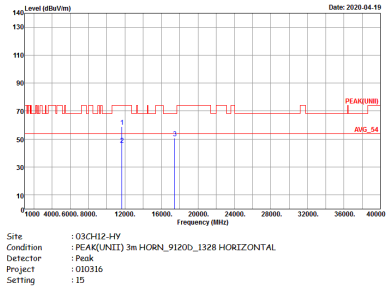
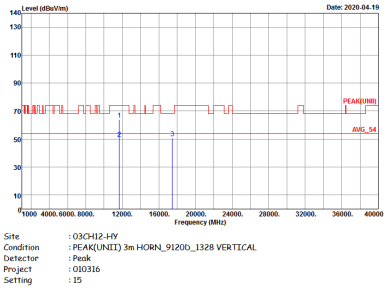
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16.5	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16.5
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 010316 Setting : 16.5	Left blank

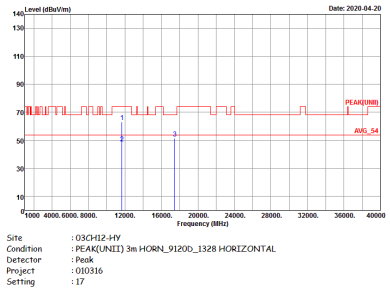
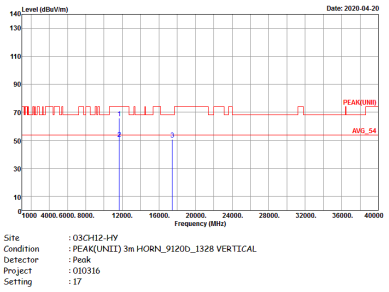
Band 4 - 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.		

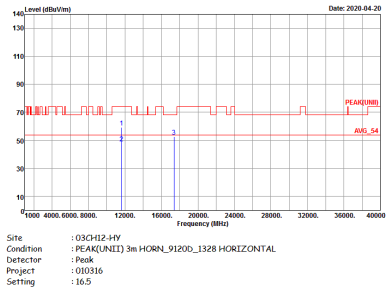
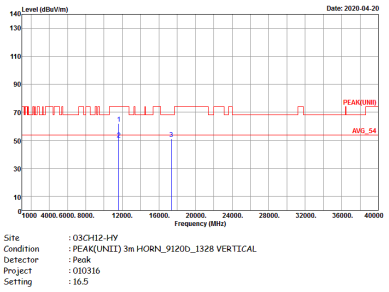
Band 4 5725~5850MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH165 5825MHz	
1	Horizontal	Vertical
Peak Avg.		

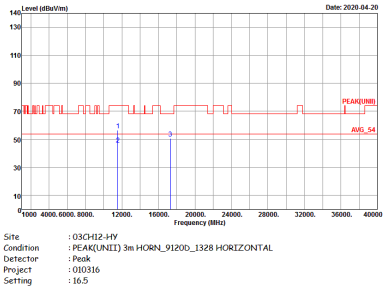
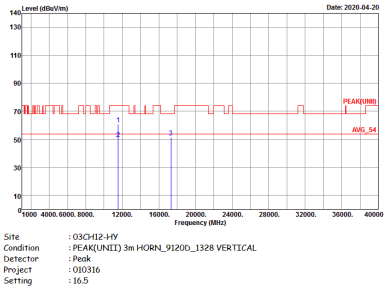
Band 4 5725~5850MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH159 5795MHz	
1	Horizontal	Vertical
Peak Avg.		

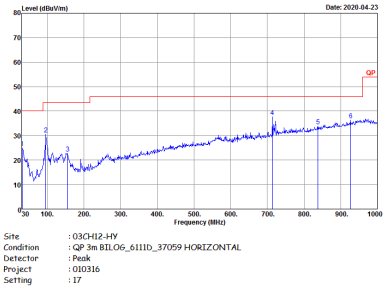
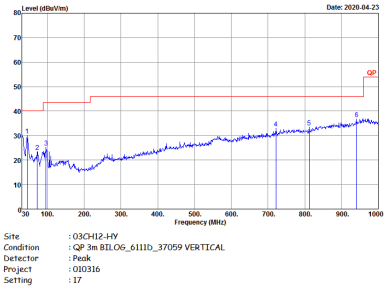
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

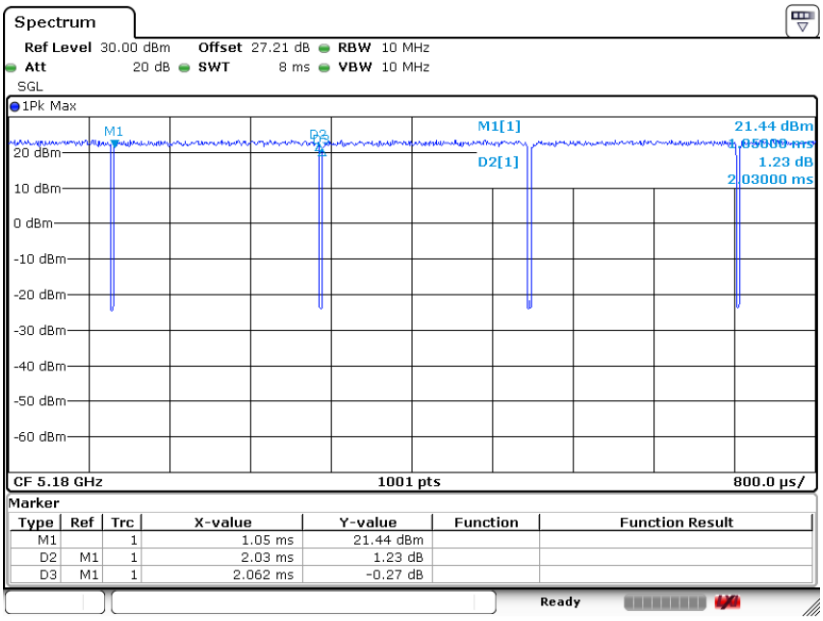
5GHz WIFI 802.11ac VHT20 (LF)

WIFI	5GHz 5725~5850MHz	
ANT	802.11ac VHT20 LF	
1	Horizontal	Vertical
QP / Peak		

Appendix D. Duty Cycle Plots

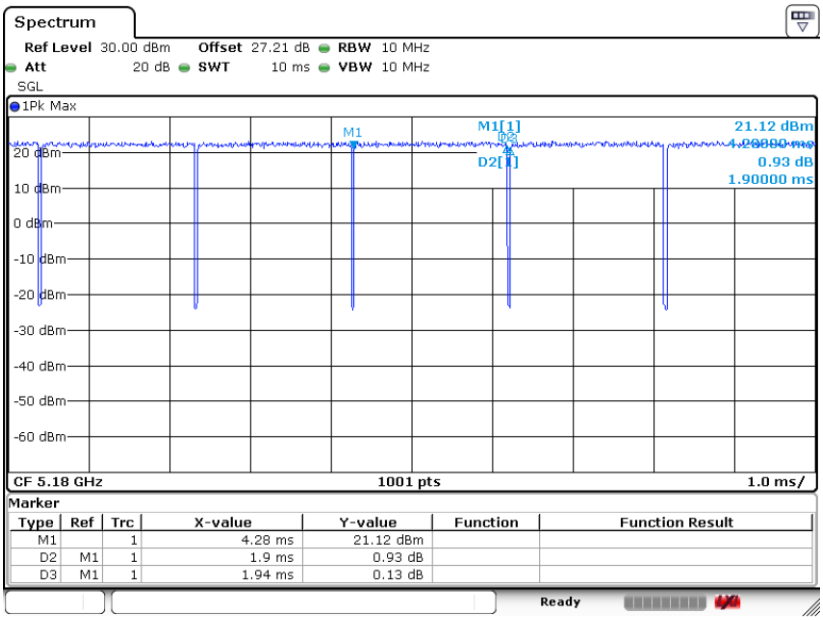
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
802.11a	98.45	-	-	10Hz	0.07
5GHz 802.11ac VHT20	97.94	1900	0.53	1kHz	0.09
5GHz 802.11ac VHT40	95.90	935	1.07	3kHz	0.18
5GHz 802.11ac VHT80	92.68	456	2.19	3kHz	0.33

802.11a



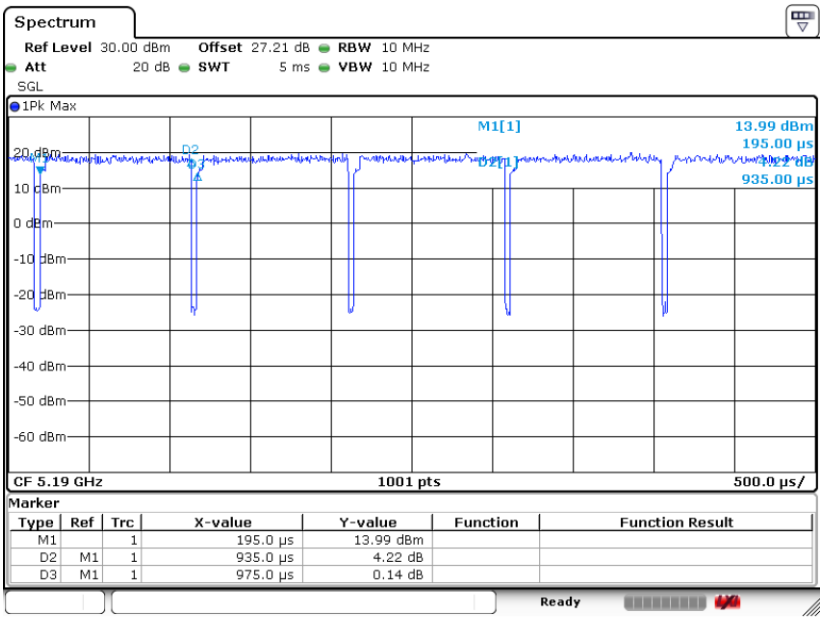
Date: 18.MAR.2020 09:04:35

802.11ac VHT20



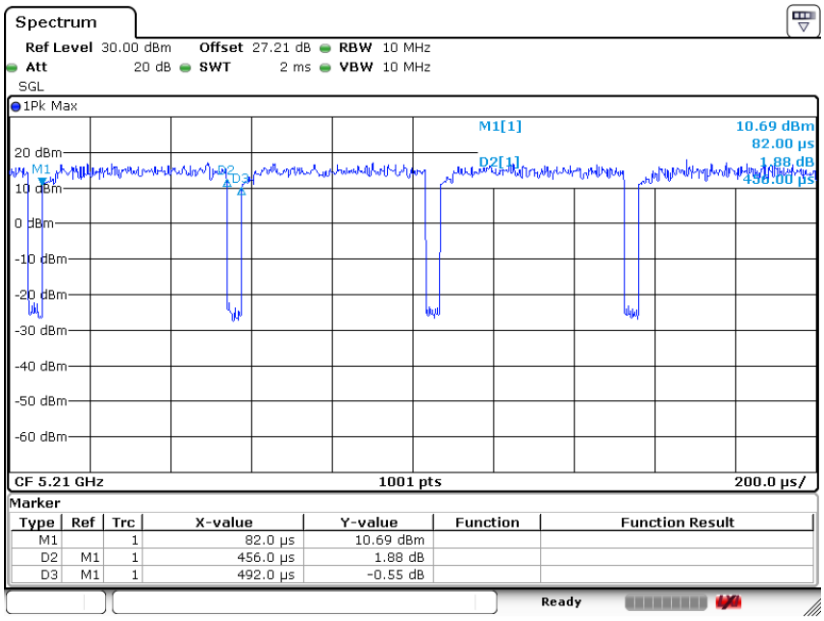
Date: 18.MAR.2020 10:12:21

802.11ac VHT40



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

802.11ac VHT80



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