FCC RADIO TEST REPORT

FCC ID	:	**UZ7TM2000**
Equipment	:	**Trailer Monitoring Unit**
Brand Name	:	**ZEBRA**
Model Name	:	**TM2000**
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 May 08, 2018 and testing was started from May 08, 2018 and completed on Jun, 03, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Approved by: Jones Tsai

SPORTON INTERTIONAL 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
FR850206B	01	Initial issue of report	Jun. 19, 2018

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i)	26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	Under limit 4.29 dB at 5727.640 MHz
3.5	15.207	AC Conducted Emission	Pass	Under limit 9.66 dB at 0.611 MHz
3.6	15.407(c)	Automatically Discontinue Transmission	Pass	-
3.7	15.203 15.407(a)	Antenna Requirement	Pass	-

Reviewed by: Joseph Lin

Report Producer: Nancy Yang

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Trailer Monitoring Unit
Brand Name	ZEBRA
Model Name	TM2000
FCC ID	UZ7TM2000
EUT supports Radios application	WLAN 11a/b/g/n HT20
HW Version	EV 3.0
SW Version	2.0.14
FW Version	2.0.14
MFD	15APR2018
EUT Stage	Engineering Sample

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11a : 12.99 dBm / 0.0199 W 802.11n HT20 : 13.05 dBm / 0.0202 W **<5260 MHz ~ 5320 MHz>** 802.11a : 12.95 dBm / 0.0197 W 802.11n HT20 : 12.83 dBm / 0.0192 W **<5500 MHz ~ 5700 MHz >** 802.11a : 13.00 dBm / 0.0200 W 802.11n HT20 : 12.85 dBm / 0.0193 W
99% Occupied Bandwidth	802.11a : 17.70 MHz 802.11n HT20 : 18.85 MHz
Antenna Gain / Gain	**<5150 MHz ~ 5250 MHz>** Omni-directional Antenna with gain 2.71 dBi **<5250 MHz ~ 5350 MHz>** Omni-directional Antenna with gain 0.54 dBi **<5470 MHz ~ 5725 MHz>** Omni-directional Antenna with gain 0.33 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

Note: WLAN operation in 5600 MHz ~ 5650 MHz is notched.

1.3 Modification of EUT

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

1.4 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	**Sporton Site No.**		
	TH05-HY	CO05-HY	03CH07-HY

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

1.5 Applicable Standards

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

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- 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).

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
	-	-	-	-
	40	5200	48	5240
	-	-		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	-	-	-	-
	56	5280	64	5320
	-	-		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	-	-	116	5580
	104	5520	132	5660
	-	-	-	-
	108	5540	136	5680
	-	-	140	5700

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

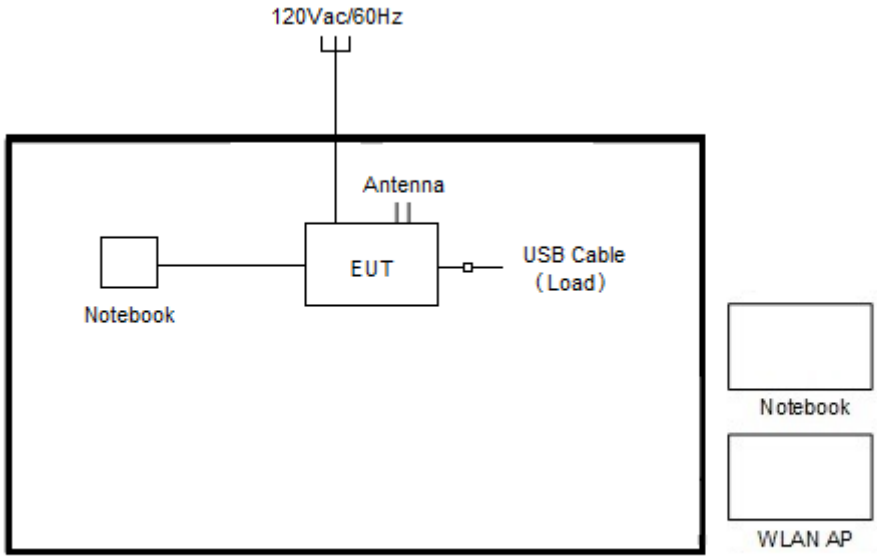
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + 3D Camera + RGB Camera + RJ45 Link with Notebook + TEC cooling

802.11a mode										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	Data Rate (bps)	Channel	Data Rate (bps)						
		6M		9M	12M	18M	24M	36M	48M	54M
Duty Cycle (%)		66.67		57.50	50.49	41.04	34.19	26.62	20.77	19.69
CH 36	5180	12.99	CH 36	12.98	12.87	12.87	12.75	12.85	12.73	12.59
CH 44	5220	12.97								
CH 48	5240	12.93								
CH 52	5260	12.78	CH 64	12.59	12.42	12.87	12.79	12.76	12.59	12.72
CH 60	5300	12.94								
CH 64	5320	12.95								
CH 100	5500	12.45	CH 116	12.87	12.57	12.63	12.47	12.51	12.46	12.56
CH 116	5580	13.00								
CH 140	5700	12.76								

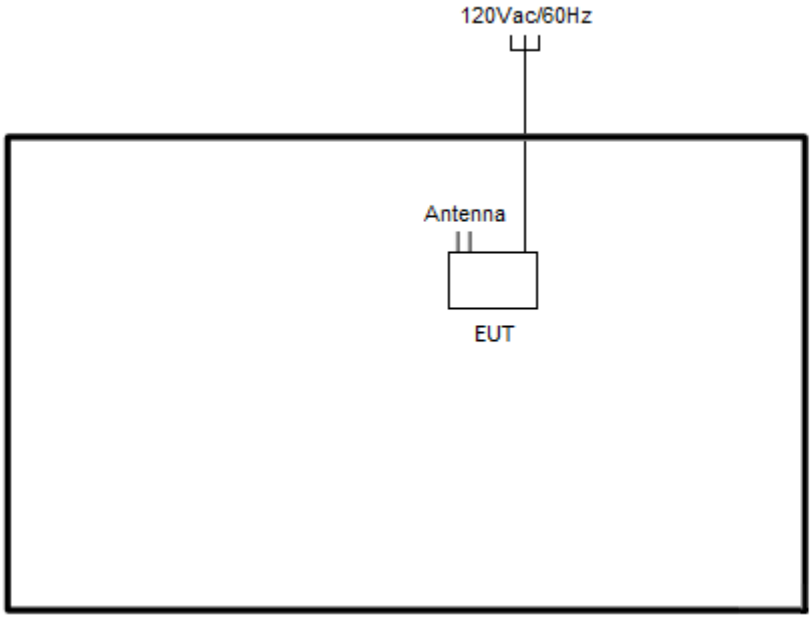
802.11n HT20 mode										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	MCS Index	Channel	MCS Index						
		MCS0		MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Duty Cycle (%)		65.31		49.00	39.29	32.89	25.55	20.16	19.69	18.40
CH 36	5180	13.05	CH 36	13.00	12.78	13.03	12.96	12.91	12.73	12.86
CH 44	5220	12.83								
CH 48	5240	12.91								
CH 52	5260	12.65	CH 64	12.44	12.79	12.61	12.71	12.67	12.29	12.60
CH 60	5300	12.49								
CH 64	5320	12.83								
CH 100	5500	12.85	CH 100	12.42	12.80	12.55	12.44	12.61	11.97	12.48
CH 116	5580	12.75								
CH 140	5700	12.66								

2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<Radiation 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.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,1.8m
2.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility “Putty” 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.

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2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

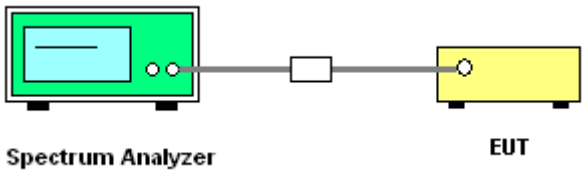
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) ≥ 3 * RBW.
8. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

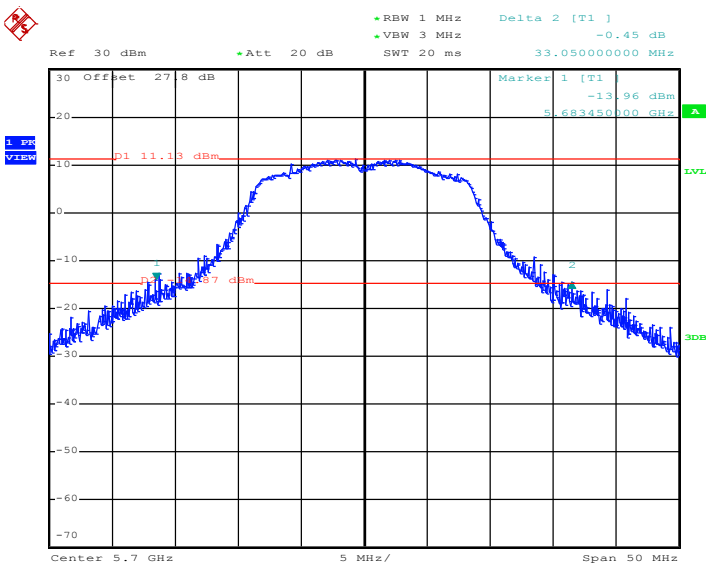
Test Engineer :	Kai Liao and Lena Lo	Temperature :	21~25℃
		Relative Humidity :	51~54%

Band I													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)	
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2
11a	6Mbps	1	36	5180	17.60	-	25.83	-	-		22.46	-
11a	6Mbps	1	44	5220	17.60	-	25.90	-	-		22.46	-
11a	6Mbps	1	48	5240	17.45	-	25.75	-	-		22.42	-
VHT20	MCS0	1	36	5180	18.45	-	27.00	-	-		22.66	-
VHT20	MCS0	1	44	5220	18.55	-	27.05	-	-		22.68	-
VHT20	MCS0	1	48	5240	18.65	-	26.95	-	-		22.71	-

Band II															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)	
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2
11a	6Mbps	1	52	5260	17.50	-	25.90	-	23.43	-	29.43	-	23.98	-
11a	6Mbps	1	60	5300	17.65	-	26.55	-	23.47	-	29.47	-	23.98	-
11a	6Mbps	1	64	5320	17.70	-	25.25	-	23.48	-	29.48	-	23.98	-
HT20	MCS0	1	52	5260	18.60	-	26.90	-	23.70	-	29.70	-	23.98	-
HT20	MCS0	1	60	5300	18.55	-	26.45	-	23.68	-	29.68	-	23.98	-
HT20	MCS0	1	64	5320	18.85	-	27.50	-	23.75	-	29.75	-	23.98	-

Band III														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)	
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2
11a	6Mbps	1	100	5500	17.55	-	25.90	-	23.44	-	29.44	-	23.98	-
11a	6Mbps	1	116	5580	17.65	-	30.45	-	23.47	-	29.47	-	23.98	-
11a	6Mbps	1	140	5700	17.70	-	30.65	-	23.48	-	29.48	-	23.98	-
HT20	MCS0	1	100	5500	18.75	-	28.95	-	23.73	-	29.73	-	23.98	-
HT20	MCS0	1	116	5580	18.75	-	31.35	-	23.73	-	29.73	-	23.98	-
HT20	MCS0	1	140	5700	18.70	-	33.05	-	23.72	-	29.72	-	23.98	-

Maximum 26dB Bandwidth



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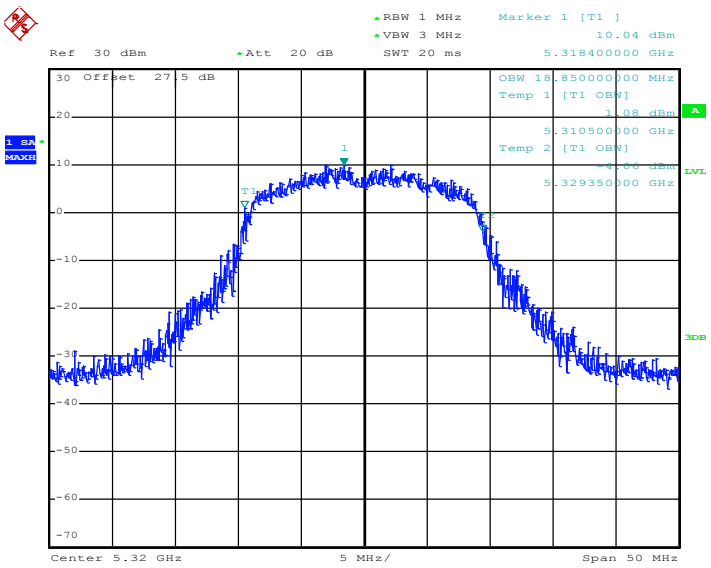
Maximum 99% Occupied Bandwidth



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Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Maximum Conducted Output Power Measurement

3.2.1 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 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz.

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.

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

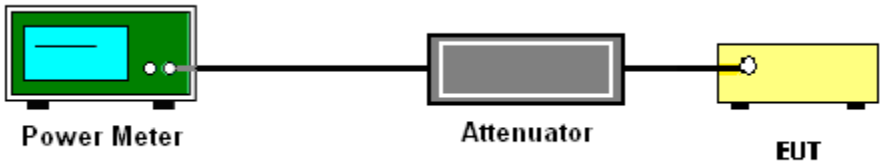
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Engineer :	Kai Liao and Lena Lo	Temperature :	21~25℃
		Relative Humidity :	51~54%

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	1.76	-	12.99	-	-	24.00	-	2.71	-	Pass
11a	6Mbps	1	44	5220	1.76	-	12.97	-	-	24.00	-	2.71	-	Pass
11a	6Mbps	1	48	5240	1.76	-	12.93	-	-	24.00	-	2.71	-	Pass
HT20	MCS0	1	36	5180	1.85	-	13.05	-	-	24.00	-	2.71	-	Pass
HT20	MCS0	1	44	5220	1.85	-	12.83	-	-	24.00	-	2.71	-	Pass
HT20	MCS0	1	48	5240	1.85	-	12.91	-	-	24.00	-	2.71	-	Pass

FCC Band II															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	52	5260	1.76	-	12.78	-	-	23.98	-	0.54	-	26.99	Pass
11a	6Mbps	1	60	5300	1.76	-	12.94	-	-	23.98	-	0.54	-	26.99	Pass
11a	6Mbps	1	64	5320	1.76	-	12.95	-	-	23.98	-	0.54	-	26.99	Pass
HT20	MCS0	1	52	5260	1.85	-	12.65	-	-	23.98	-	0.54	-	26.99	Pass
HT20	MCS0	1	60	5300	1.85	-	12.49	-	-	23.98	-	0.54	-	26.99	Pass
HT20	MCS0	1	64	5320	1.85	-	12.83	-	-	23.98	-	0.54	-	26.99	Pass

FCC Band III															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	100	5500	1.76	-	12.45	-	-	23.98	-	0.33	-	26.99	Pass
11a	6Mbps	1	116	5580	1.76	-	13.00	-	-	23.98	-	0.33	-	26.99	Pass
11a	6Mbps	1	140	5700	1.76	-	12.76	-	-	23.98	-	0.33	-	26.99	Pass
HT20	MCS0	1	100	5500	1.85	-	12.85	-	-	23.98	-	0.33	-	26.99	Pass
HT20	MCS0	1	116	5580	1.85	-	12.75	-	-	23.98	-	0.33	-	26.99	Pass
HT20	MCS0	1	140	5700	1.85	-	12.66	-	-	23.98	-	0.33	-	26.99	Pass

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<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 power spectral density shall not exceed 11 dBm in any 1.0 MHz band. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1.0 MHz band.

For the 5.25–5.725 GHz bands:

The maximum power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

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.

3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

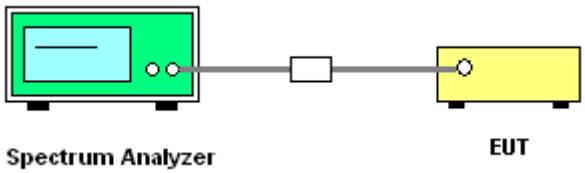
 # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

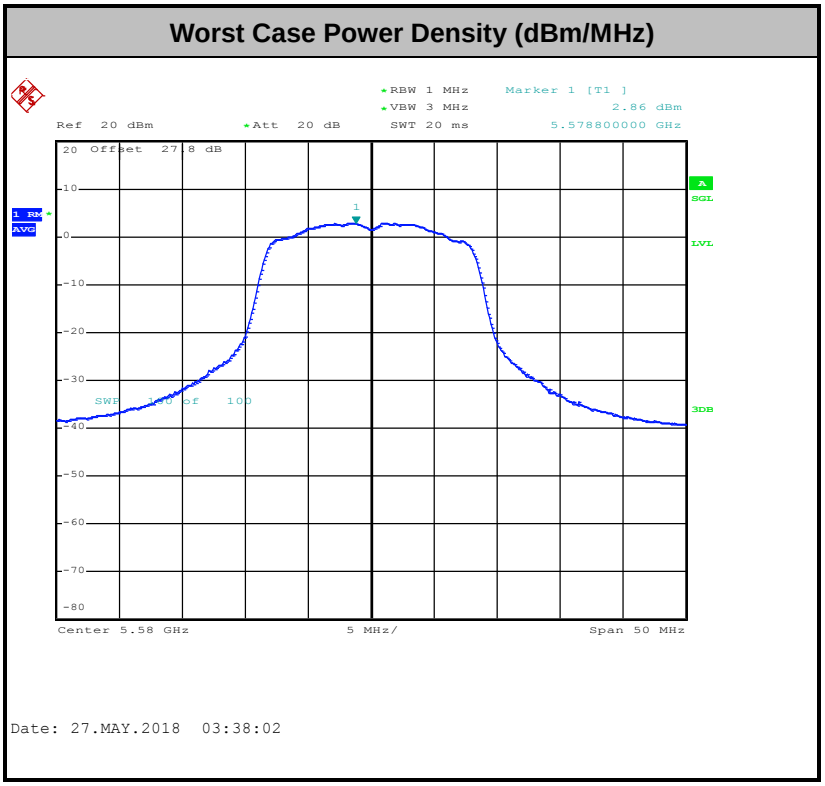
Test Engineer :	Kai Liao and Lena Lo	Temperature :	21~25℃
		Relative Humidity :	51~54%

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	1.76	-	3.52	-	-	11.00	-	2.71	-	Pass
11a	6Mbps	1	44	5220	1.76	-	3.52	-		11.00	-	2.71	-	Pass
11a	6Mbps	1	48	5240	1.76	-	3.28	-		11.00	-	2.71	-	Pass
HT20	MCS0	1	36	5180	1.85	-	3.15	-		11.00	-	2.71	-	Pass
HT20	MCS0	1	44	5220	1.85	-	3.23	-		11.00	-	2.71	-	Pass
HT20	MCS0	1	48	5240	1.85	-	2.97	-		11.00	-	2.71	-	Pass

Band II														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	52	5260	1.76	-	3.20	-	-	11.00	-	0.54	-	Pass
11a	6Mbps	1	60	5300	1.76	-	3.08	-		11.00	-	0.54	-	Pass
11a	6Mbps	1	64	5320	1.76	-	3.01	-		11.00	-	0.54	-	Pass
HT20	MCS0	1	52	5260	1.85	-	2.44	-		11.00	-	0.54	-	Pass
HT20	MCS0	1	60	5300	1.85	-	2.06	-		11.00	-	0.54	-	Pass
HT20	MCS0	1	64	5320	1.85	-	2.19	-		11.00	-	0.54	-	Pass

Band III														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	100	5500	1.76	-	3.58	-	-	11.00	-	0.33	-	Pass
11a	6Mbps	1	116	5580	1.76	-	4.62	-		11.00	-	0.33	-	Pass
11a	6Mbps	1	140	5700	1.76	-	3.38	-		11.00	-	0.33	-	Pass
HT20	MCS0	1	100	5500	1.85	-	3.60	-		11.00	-	0.33	-	Pass
HT20	MCS0	1	116	5580	1.85	-	4.45	-		11.00	-	0.33	-	Pass
HT20	MCS0	1	140	5700	1.85	-	2.91	-		11.00	-	0.33	-	Pass

Worst Case Power Density (dBm/MHz)



3.4 Unwanted Emissions Measurement

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

3.4.1 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.

$$E=\frac{1000000\sqrt{30P}}{3}$$ 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) Section 15.407(b)(1) to (b)(3) specify the unwanted emission limits 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.[3]

(ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.[4]

Note 3: An out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit.

Note 4: Only devices with antenna gains of 10 dBi or less may be approved using the emission limits specified in Section 15.247(d) till March 2, 2018; all other devices operating in this band must use the mask specified in Section 15.407(b)(4)(i).

3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 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

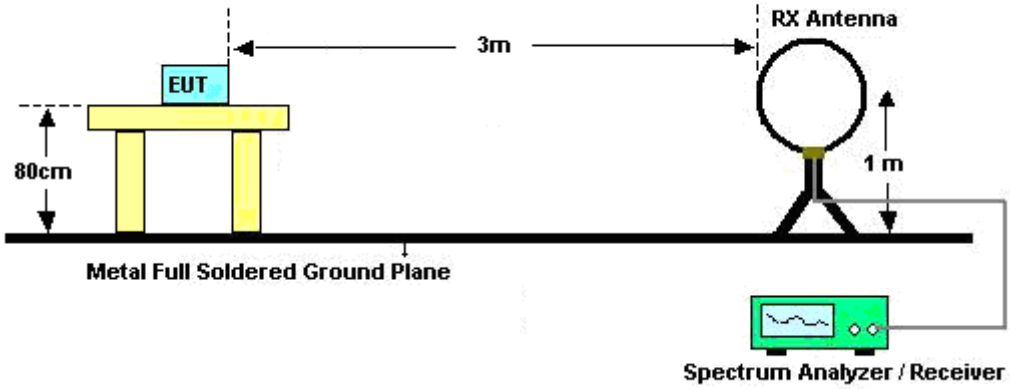
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- 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.

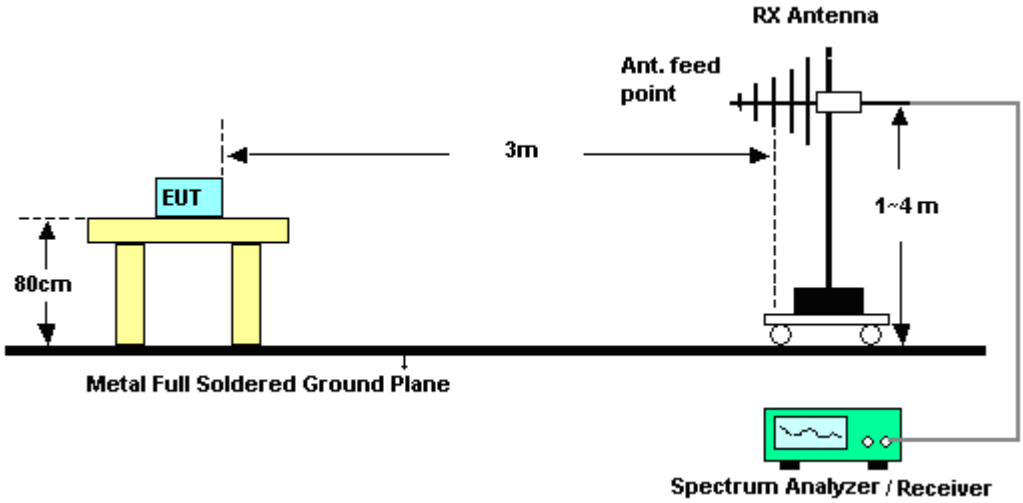
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.4.4 Test Setup

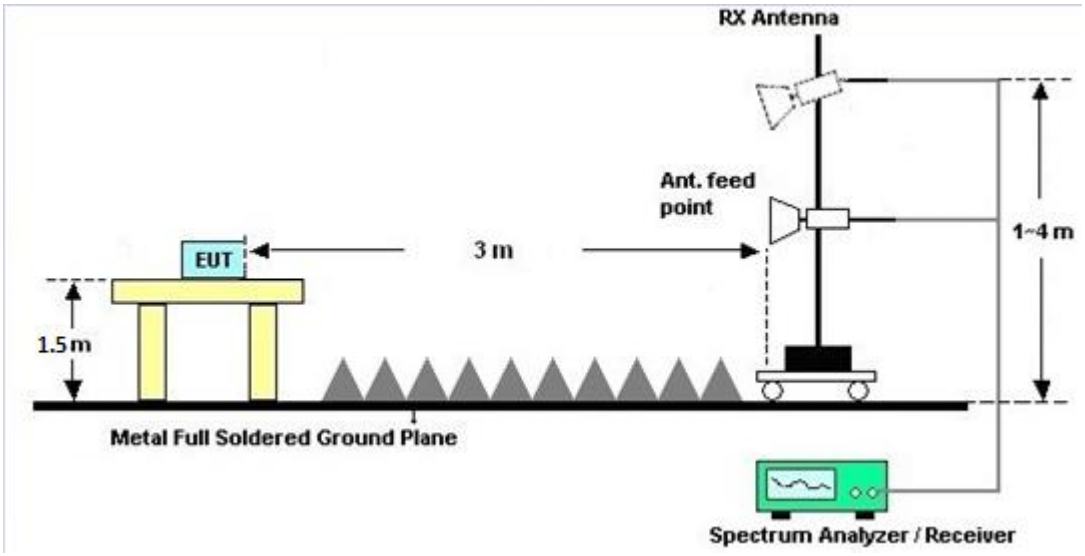
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

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

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

3.4.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.

3.5 AC Conducted Emission Measurement

3.5.1 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.

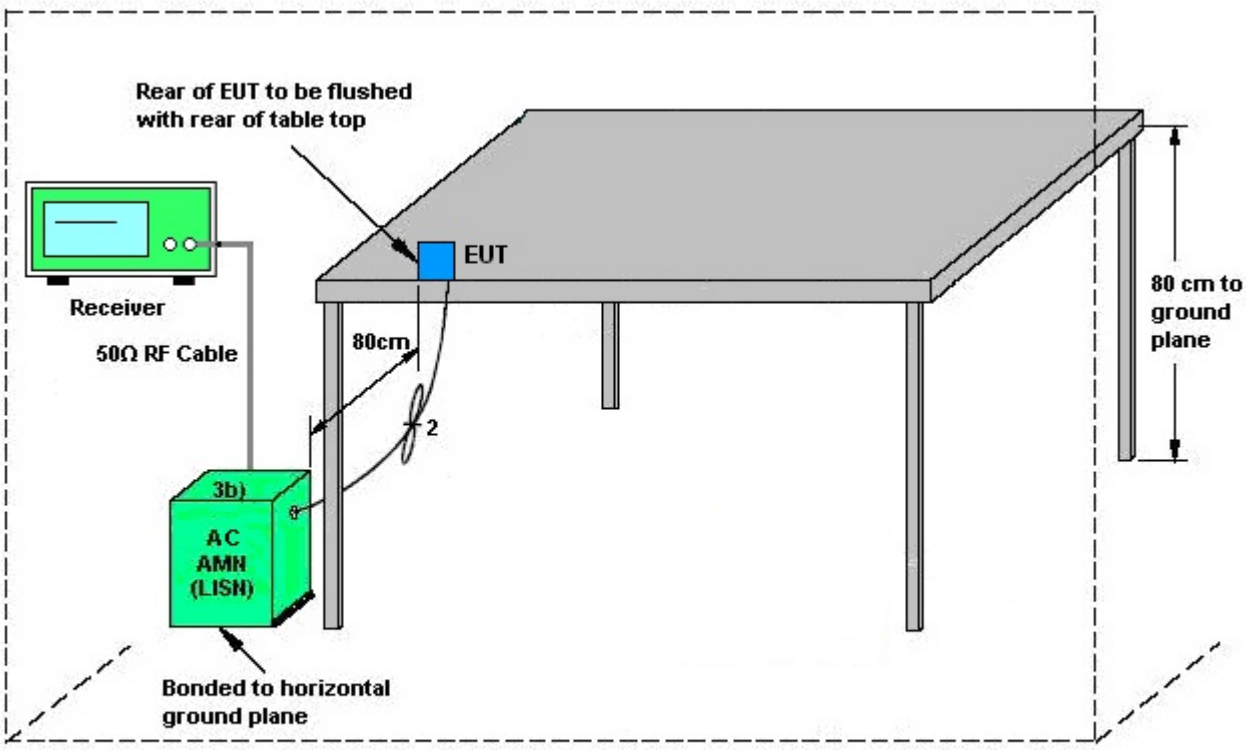
3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 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.

3.5.4 Test Setup



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

3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix A.

3.6 Automatically Discontinue Transmission

3.6.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 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
Power Meter	Anritsu	ML2495A	1132003	N/A	Aug. 09, 2017	May 08, 2018~ May 27, 2018	Aug. 08, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GHz	Aug. 09, 2017	May 08, 2018~ May 27, 2018	Aug. 08, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 21, 2017	May 08, 2018~ May 27, 2018	Nov. 20, 2018	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	May 12, 2018	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	3.6GHz	Dec. 08, 2017	May 12, 2018	Dec. 07, 2018	Conduction (CO05-HY)
ISN	TESEQ	ISN T8-Cat6	38909	N/A	Jan. 29, 2018	May 12, 2018	Jan. 28, 2019	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 30, 2017	May 12, 2018	Nov. 29, 2018	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	May 12, 2018	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 03, 2018	May 12, 2018	Jan. 02, 2019	Conduction (CO05-HY)
ISN Cable	Woken	RG-400	N/A	N/A	Jan. 05, 2018	May 12, 2018	Jan. 04, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 03, 2018	May 12, 2018	Jan. 02, 2019	Conduction (CO05-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D&00800N1D01N-06	35419&03	30MHz to 1GHz	Dec. 18, 2017	May 31, 2018~ Jun. 03, 2018	Dec. 17, 2018	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 23, 2017	May 31, 2018~ Jun. 03, 2018	Aug. 22, 2018	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Nov. 10, 2017	May 31, 2018~ Jun. 03, 2018	Nov. 09, 2018	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590075	1GHz ~ 18GHz	Apr. 25, 2018	May 31, 2018~ Jun. 03, 2018	Apr. 24, 2019	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	May 21, 2018	May 31, 2018~ Jun. 03, 2018	May 20, 2019	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 30, 2017	May 31, 2018~ Jun. 03, 2018	Oct. 29, 2018	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Apr. 17, 2018	May 31, 2018~ Jun. 03, 2018	Apr. 16, 2019	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	May 31, 2018~ Jun. 03, 2018	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	May 31, 2018~ Jun. 03, 2018	N/A	Radiation (03CH07-HY)
Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz, VSWR : 2.5:1 max	Jul. 18, 2017	May 31, 2018~ Jun. 03, 2018	Jul. 17, 2018	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz- 40GHz	Nov. 10, 2017	May 31, 2018~ Jun. 03, 2018	Nov. 09, 2018	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A (MXE)	MY53290053	20Hz to 26.5GHz	Jan. 16, 2018	May 31, 2018~ Jun. 03, 2018	Jan. 15, 2019	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	8050400465 6H	N/A	N/A	May 31, 2018~ Jun. 03, 2018	N/A	Radiation (03CH07-HY)
Filter	Microwave	H1G013G1	SN477215	1.0G High Pass	Dec. 07, 2017	May 31, 2018~ Jun. 03, 2018	Dec. 06, 2018	Radiation (03CH07-HY)
Filter	Wainwright	WLKS1200-8SS	SN3	1.2G Low Pass	Nov. 21, 2017	May 31, 2018~ Jun. 03, 2018	Nov. 20, 2018	Radiation (03CH07-HY)
Filter	Microwave	H3G018G1	SN477220	3.0G High Pass	Nov. 21, 2017	May 31, 2018~ Jun. 03, 2018	Nov. 20, 2018	Radiation (03CH07-HY)
Filter	Microwave	WHKX7.0/26.5G-6SS	SN4	7G High Pass	Nov. 21, 2017	May 31, 2018~ Jun. 03, 2018	Nov. 20, 2018	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4, MY28655/4	9KHz~30MHz	Jan. 02, 2018	May 31, 2018~ Jun. 03, 2018	Jan. 01, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 27, 2018	May 31, 2018~ Jun. 03, 2018	Feb. 26, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 27, 2018	May 31, 2018~ Jun. 03, 2018	Feb. 26, 2019	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 27, 2018	May 31, 2018~ Jun. 03, 2018	Feb. 26, 2019	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.70**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.70**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.50**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.20**

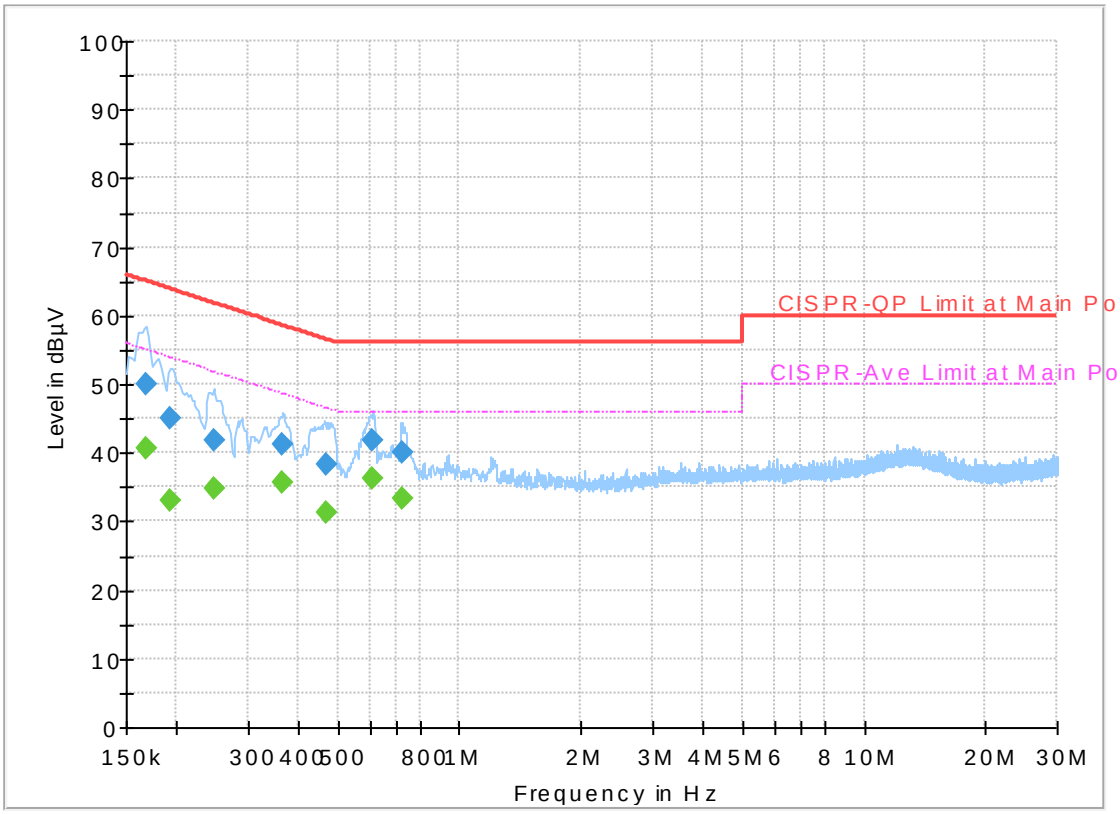
Appendix A. AC Conducted Emission Test Results

Test Engineer :	Kai Chun Chu	**Temperature :**	25~27℃
		Relative Humidity :	50~52%

EUT Information

Report NO :	850206
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line

Full Spectrum



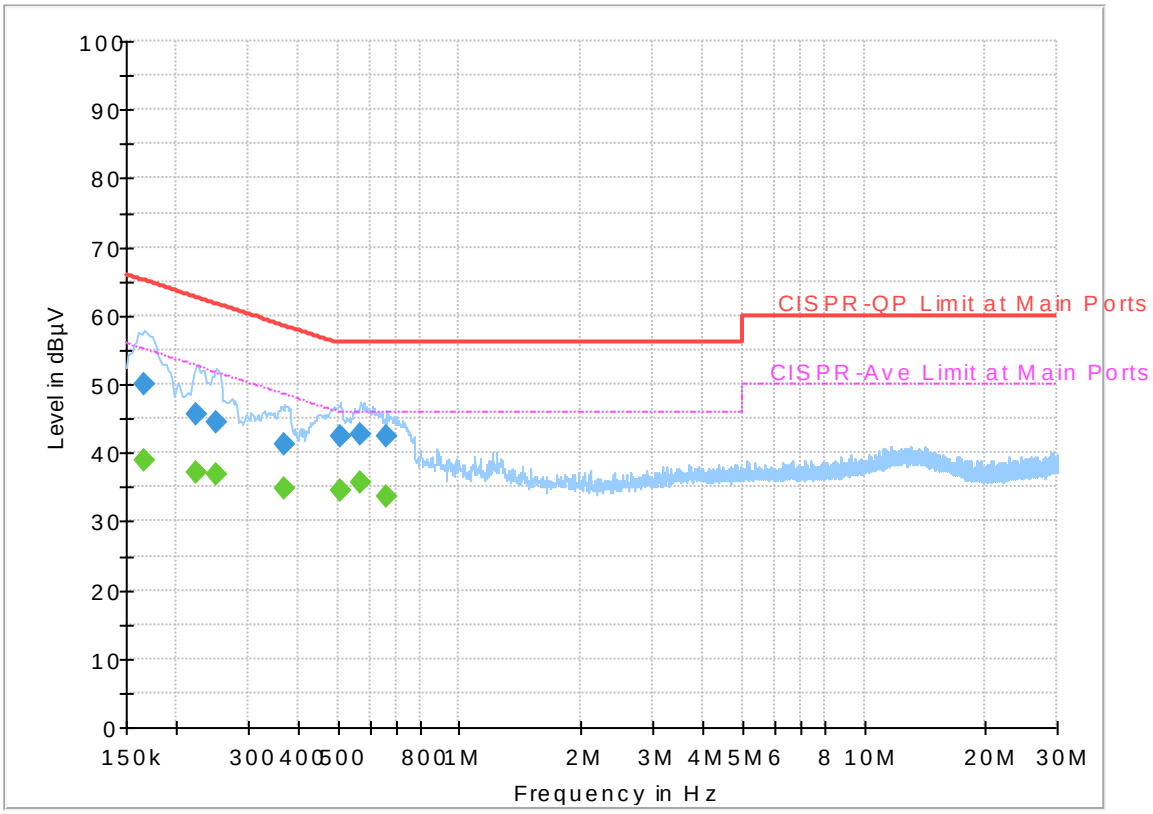
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.168000	---	40.64	55.06	14.42	L1	OFF	19.5
0.168000	50.07	---	65.06	14.99	L1	OFF	19.5
0.192750	---	32.95	53.92	20.97	L1	OFF	19.5
0.192750	45.08	---	63.92	18.84	L1	OFF	19.5
0.246750	---	34.72	51.87	17.15	L1	OFF	19.5
0.246750	41.72	---	61.87	20.15	L1	OFF	19.5
0.366000	---	35.62	48.59	12.97	L1	OFF	19.5
0.366000	41.09	---	58.59	17.50	L1	OFF	19.5
0.469500	---	31.35	46.52	15.17	L1	OFF	19.5
0.469500	38.31	---	56.52	18.21	L1	OFF	19.5
0.611250	---	36.34	46.00	9.66	L1	OFF	19.5
0.611250	41.83	---	56.00	14.17	L1	OFF	19.5
0.719250	---	33.37	46.00	12.63	L1	OFF	19.5
0.719250	40.10	---	56.00	15.90	L1	OFF	19.5

EUT Information

Report NO :	850206
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.165750	---	38.96	55.17	16.21	N	OFF	19.5
0.165750	50.01	---	65.17	15.16	N	OFF	19.5
0.224250	---	37.25	52.66	15.41	N	OFF	19.5
0.224250	45.72	---	62.66	16.94	N	OFF	19.5
0.251250	---	36.74	51.72	14.98	N	OFF	19.5
0.251250	44.33	---	61.72	17.39	N	OFF	19.5
0.370500	---	34.79	48.49	13.70	N	OFF	19.5
0.370500	41.31	---	58.49	17.18	N	OFF	19.5
0.507750	---	34.50	46.00	11.50	N	OFF	19.5
0.507750	42.39	---	56.00	13.61	N	OFF	19.5
0.568500	---	35.64	46.00	10.36	N	OFF	19.5
0.568500	42.62	---	56.00	13.38	N	OFF	19.5
0.663000	---	33.64	46.00	12.36	N	OFF	19.5
0.663000	42.47	---	56.00	13.53	N	OFF	19.5

Appendix B. Radiated Spurious Emission

Test Engineer :	Jesse Wang and Stan Hsieh	Temperature :	21~23°C
		Relative Humidity :	51~54%

Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 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)
802.11a CH 36 5180MHz		5032.24	49.66	-24.34	74	39.71	34.25	10.83	35.13	186	332	P	H
		5148.46	40.47	-13.53	54	30.17	34.41	11.03	35.14	186	332	A	H
	*	5180	101.71	-	-	91.36	34.46	11.03	35.14	186	332	P	H
	*	5180	93.21	-	-	82.86	34.46	11.03	35.14	186	332	A	H
													H
													H
		5146.38	52.72	-21.28	74	42.42	34.41	11.03	35.14	219	0	P	V
		5150	44.05	-9.95	54	33.75	34.41	11.03	35.14	219	0	A	V
	*	5180	107.67	-	-	97.32	34.46	11.03	35.14	219	0	P	V
	*	5180	100.21	-	-	89.86	34.46	11.03	35.14	219	0	A	V
													V
													V
802.11a CH 44 5220MHz		5101.14	49.41	-24.59	74	39.25	34.34	10.96	35.14	184	332	P	H
		5128.44	39.97	-14.03	54	29.76	34.39	10.96	35.14	184	332	A	H
	*	5220	101.48	-	-	91.02	34.5	11.1	35.14	184	332	P	H
	*	5220	93.22	-	-	82.76	34.5	11.1	35.14	184	332	A	H
		5448.8	49.63	-24.37	74	38.76	34.83	11.2	35.16	184	332	P	H
		5455.24	40.56	-13.44	54	29.69	34.83	11.2	35.16	184	332	A	H
		5142.74	49.37	-24.63	74	39.07	34.41	11.03	35.14	221	360	P	V
		5141.18	40.91	-13.09	54	30.61	34.41	11.03	35.14	221	360	A	V
	*	5220	107.48	-	-	97.02	34.5	11.1	35.14	221	360	P	V
	*	5220	100.2	-	-	89.74	34.5	11.1	35.14	221	360	A	V
		5437.6	49.49	-24.51	74	38.64	34.81	11.2	35.16	221	360	P	V
		5457.48	40.52	-13.48	54	29.65	34.83	11.2	35.16	221	360	A	V

802.11a CH 48 5240MHz		5128.18	49.78	-24.22	74	39.57	34.39	10.96	35.14	194	332	P	H
		5111.54	40.44	-13.56	54	30.26	34.36	10.96	35.14	194	332	A	H
	*	5240	100.89	-	-	90.39	34.53	11.11	35.14	194	332	P	H
	*	5240	93.41	-	-	82.91	34.53	11.11	35.14	194	332	A	H
		5389.72	49.9	-24.1	74	39.16	34.74	11.15	35.15	194	332	P	H
		5406.8	40.41	-13.59	54	29.66	34.76	11.15	35.16	194	332	A	H
		5119.34	49.2	-24.8	74	39.02	34.36	10.96	35.14	237	335	P	V
		5144.04	40.42	-13.58	54	30.12	34.41	11.03	35.14	237	335	A	V
	*	5240	108.45	-	-	97.95	34.53	11.11	35.14	237	335	P	V
	*	5240	100.73	-	-	90.23	34.53	11.11	35.14	237	335	A	V
		5384.68	49.52	-24.48	74	38.78	34.74	11.15	35.15	237	335	P	V
		5430.6	40.46	-13.54	54	29.61	34.81	11.2	35.16	237	335	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 1 5150~5250MHz

WIFI 802.11a (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 36 5180MHz		10360	44.42	-23.78	68.2	49.72	37.19	16.84	59.33	100	0	P	H
		15540	47.13	-26.87	74	43.24	40.43	20.05	56.59	100	0	P	H
													H
													H
		10360	44.01	-24.19	68.2	49.31	37.19	16.84	59.33	100	0	P	V
		15540	46.33	-27.67	74	42.44	40.43	20.05	56.59	100	0	P	V
													V
													V
802.11a CH 44 5220MHz		10440	45.38	-22.82	68.2	50.42	37.25	16.98	59.27	100	0	P	H
		15660	48.12	-25.88	74	44.08	40.52	20.09	56.57	100	0	P	H
													H
													H
		10440	45.77	-22.43	68.2	50.81	37.25	16.98	59.27	100	0	P	V
		15660	47.15	-26.85	74	43.11	40.52	20.09	56.57	100	0	P	V
													V
													V
802.11a CH 48 5240MHz		10480	45.35	-22.85	68.2	50.25	37.29	17.03	59.22	100	0	P	H
		15720	46.55	-27.45	74	42.43	40.58	20.1	56.56	100	0	P	H
													H
													H
		10480	44.88	-23.32	68.2	49.78	37.29	17.03	59.22	100	0	P	V
		15720	46.62	-27.38	74	42.5	40.58	20.1	56.56	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 802.11n HT20 (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)
		5073.32	49.38	-24.62	74	39.29	34.32	10.9	35.13	186	332	P	H
		5150	40.68	-13.32	54	30.38	34.41	11.03	35.14	186	332	A	H
	*	5180	100.5	-	-	90.15	34.46	11.03	35.14	186	332	P	H
	*	5180	93.05	-	-	82.7	34.46	11.03	35.14	186	332	A	H
802.11n													H
HT20													H
CH 36		5149.5	52.91	-21.09	74	42.61	34.41	11.03	35.14	221	0	P	V
5180MHz		5148.72	44.1	-9.9	54	33.8	34.41	11.03	35.14	221	0	A	V
	*	5180	107.85	-	-	97.5	34.46	11.03	35.14	221	0	P	V
	*	5180	99.86	-	-	89.51	34.46	11.03	35.14	221	0	A	V
													V
													V
		5114.92	49.35	-24.65	74	39.17	34.36	10.96	35.14	164	332	P	H
		5139.36	40.07	-13.93	54	29.86	34.39	10.96	35.14	164	332	A	H
	*	5220	99.08	-	-	88.62	34.5	11.1	35.14	164	332	P	H
	*	5220	91.29	-	-	80.83	34.5	11.1	35.14	164	332	A	H
802.11n		5393.08	49.36	-24.64	74	38.62	34.74	11.15	35.15	164	332	P	H
HT20		5456.92	40.47	-13.53	54	29.6	34.83	11.2	35.16	164	332	A	H
CH 44		5070.98	50.18	-23.82	74	40.12	34.29	10.9	35.13	221	360	P	V
5220MHz		5136.76	40.88	-13.12	54	30.67	34.39	10.96	35.14	221	360	A	V
	*	5220	107.4	-	-	96.94	34.5	11.1	35.14	221	360	P	V
	*	5220	99.82	-	-	89.36	34.5	11.1	35.14	221	360	A	V
		5430.32	49	-25	74	38.15	34.81	11.2	35.16	221	360	P	V
		5426.68	40.47	-13.53	54	29.65	34.78	11.2	35.16	221	360	A	V

		5072.8	49.25	-24.75	74	39.16	34.32	10.9	35.13	194	332	P	H
		5086.32	40.01	-13.99	54	29.92	34.32	10.9	35.13	194	332	A	H
	*	5240	100.59	-	-	90.09	34.53	11.11	35.14	194	332	P	H
	*	5240	93.16	-	-	82.66	34.53	11.11	35.14	194	332	A	H
802.11n		5442.64	50.57	-23.43	74	39.72	34.81	11.2	35.16	194	332	P	H
HT20		5392.24	40.36	-13.64	54	29.62	34.74	11.15	35.15	194	332	A	H
CH 48		5032.76	49.18	-24.82	74	39.23	34.25	10.83	35.13	237	335	P	V
5240MHz		5113.88	40.42	-13.58	54	30.24	34.36	10.96	35.14	237	335	A	V
	*	5240	108.25	-	-	97.75	34.53	11.11	35.14	237	335	P	V
	*	5240	100.55	-	-	90.05	34.53	11.11	35.14	237	335	A	V
		5444.6	49.41	-24.59	74	38.56	34.81	11.2	35.16	237	335	P	V
		5375.16	40.43	-13.57	54	29.73	34.71	11.14	35.15	237	335	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 1 5150~5250MHz

WIFI 802.11n HT20 (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)
		10360	44.23	-23.97	68.2	49.53	37.19	16.84	59.33	100	0	P	H
		15540	48.28	-25.72	74	44.39	40.43	20.05	56.59	100	0	P	H
802.11n													H
HT20													H
CH 36		10360	44.43	-23.77	68.2	49.73	37.19	16.84	59.33	100	0	P	V
5180MHz		15540	47.94	-26.06	74	44.05	40.43	20.05	56.59	100	0	P	V
													V
													V
		10440	44.84	-23.36	68.2	49.88	37.25	16.98	59.27	100	0	P	H
		15660	48.38	-25.62	74	44.34	40.52	20.09	56.57	100	0	P	H
802.11n													H
HT20													H
CH 44		10440	45.36	-22.84	68.2	50.4	37.25	16.98	59.27	100	0	P	V
5220MHz		15660	48.23	-25.77	74	44.19	40.52	20.09	56.57	100	0	P	V
													V
													V
		10480	44.65	-23.55	68.2	49.55	37.29	17.03	59.22	100	0	P	H
		15720	47.68	-26.32	74	43.56	40.58	20.1	56.56	100	0	P	H
802.11n													H
HT20													H
CH 48		10480	44.66	-23.54	68.2	49.56	37.29	17.03	59.22	100	0	P	V
5240MHz		15720	48.91	-25.09	74	44.79	40.58	20.1	56.56	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	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)
802.11a CH 52 5260MHz		5137.55	48.76	-25.24	74	38.55	34.39	10.96	35.14	178	332	P	H
		5136.85	39.93	-14.07	54	29.72	34.39	10.96	35.14	178	332	A	H
	*	5260	100.77	-	-	90.24	34.57	11.11	35.15	178	332	P	H
	*	5260	93.07	-	-	82.54	34.57	11.11	35.15	178	332	A	H
		5389.44	49.49	-24.51	74	38.75	34.74	11.15	35.15	178	332	P	H
		5440.08	40.48	-13.52	54	29.63	34.81	11.2	35.16	178	332	A	H
		5090.65	48.87	-25.13	74	38.76	34.34	10.9	35.13	298	330	P	V
		5135.1	40.4	-13.6	54	30.19	34.39	10.96	35.14	298	330	A	V
	*	5260	107.56	-	-	97.03	34.57	11.11	35.15	298	330	P	V
	*	5260	100.32	-	-	89.79	34.57	11.11	35.15	298	330	A	V
		5417.04	49.29	-24.71	74	38.52	34.78	11.15	35.16	298	330	P	V
		5438.64	40.43	-13.57	54	29.58	34.81	11.2	35.16	298	330	A	V
802.11a CH 60 5300MHz		5070	48.71	-25.29	74	38.65	34.29	10.9	35.13	171	332	P	H
		5140	39.98	-14.02	54	29.75	34.41	10.96	35.14	171	332	A	H
	*	5300	100.89	-	-	90.3	34.62	11.12	35.15	171	332	P	H
	*	5300	93.6	-	-	83.01	34.62	11.12	35.15	171	332	A	H
		5364.72	50.42	-23.58	74	39.72	34.71	11.14	35.15	171	332	P	H
		5453.04	40.54	-13.46	54	29.67	34.83	11.2	35.16	171	332	A	H
		5147.7	49.45	-24.55	74	39.15	34.41	11.03	35.14	293	288	P	V
		5149.45	40.38	-13.62	54	30.08	34.41	11.03	35.14	293	288	A	V
	*	5300	107.76	-	-	97.17	34.62	11.12	35.15	293	288	P	V
	*	5300	100.06	-	-	89.47	34.62	11.12	35.15	293	288	A	V
		5425.44	49.86	-24.14	74	39.04	34.78	11.2	35.16	293	288	P	V
		5352	41.06	-12.94	54	30.38	34.69	11.14	35.15	293	288	A	V

802.11a CH 64 5320MHz	*	5320	101.06	-	-	90.44	34.64	11.13	35.15	187	332	P	H
	*	5320	93.63	-	-	83.01	34.64	11.13	35.15	187	332	A	H
		5398.24	49.54	-24.46	74	38.78	34.76	11.15	35.15	187	332	P	H
		5350.08	41.07	-12.93	54	30.39	34.69	11.14	35.15	187	332	A	H
													H
													H
	*	5320	106.84	-	-	96.22	34.64	11.13	35.15	278	289	P	V
	*	5320	99.24	-	-	88.62	34.64	11.13	35.15	278	289	A	V
		5350.72	53.05	-20.95	74	42.37	34.69	11.14	35.15	278	289	P	V
		5350.88	43.47	-10.53	54	32.79	34.69	11.14	35.15	278	289	A	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 (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 52 5260MHz		10520	45.26	-22.94	68.2	50.03	37.32	17.09	59.18	100	0	P	H
		15780	47.81	-26.19	74	43.65	40.62	20.08	56.54	100	0	P	H
													H
													H
		10520	45.05	-23.15	68.2	49.82	37.32	17.09	59.18	100	0	P	V
		15780	47.87	-26.13	74	43.71	40.62	20.08	56.54	100	0	P	V
													V
													V
802.11a CH 60 5300MHz		10600	45.17	-28.83	74	49.6	37.42	17.21	59.06	100	0	P	H
		15900	46.41	-27.59	74	42.03	40.72	20.18	56.52	100	0	P	H
													H
													H
		10600	45.34	-28.66	74	49.77	37.42	17.21	59.06	100	0	P	V
		15900	47.02	-26.98	74	42.64	40.72	20.18	56.52	100	0	P	V
													V
													V
802.11a CH 64 5320MHz		10640	46.07	-27.93	74	50.36	37.47	17.25	59.01	100	0	P	H
		15960	48.49	-25.51	74	43.99	40.77	20.24	56.51	100	0	P	H
													H
													H
		10640	45.62	-28.38	74	49.91	37.47	17.25	59.01	100	0	P	V
		15960	47.52	-26.48	74	43.02	40.77	20.24	56.51	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 802.11n HT20 (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)
		5068.6	49.34	-24.66	74	39.28	34.29	10.9	35.13	178	332	P	H
		5123.9	39.93	-14.07	54	29.72	34.39	10.96	35.14	178	332	A	H
	*	5260	100.14	-	-	89.61	34.57	11.11	35.15	178	332	P	H
	*	5260	92.69	-	-	82.16	34.57	11.11	35.15	178	332	A	H
802.11n		5454.24	50.22	-23.78	74	39.35	34.83	11.2	35.16	178	332	P	H
HT20		5421.12	40.42	-13.58	54	29.6	34.78	11.2	35.16	178	332	A	H
CH 52		5029.4	49.35	-24.65	74	39.4	34.25	10.83	35.13	298	330	P	V
5260MHz		5127.4	40.38	-13.62	54	30.17	34.39	10.96	35.14	298	330	A	V
	*	5260	107.87	-	-	97.34	34.57	11.11	35.15	298	330	P	V
	*	5260	100.08	-	-	89.55	34.57	11.11	35.15	298	330	A	V
		5410.56	49.15	-24.85	74	38.4	34.76	11.15	35.16	298	330	P	V
		5424.48	40.41	-13.59	54	29.59	34.78	11.2	35.16	298	330	A	V
		5065.1	49.41	-24.59	74	39.35	34.29	10.9	35.13	171	332	P	H
		5139.65	39.91	-14.09	54	29.68	34.41	10.96	35.14	171	332	A	H
	*	5300	100.17	-	-	89.58	34.62	11.12	35.15	171	332	P	H
	*	5300	92.81	-	-	82.22	34.62	11.12	35.15	171	332	A	H
802.11n		5426.88	49.19	-24.81	74	38.37	34.78	11.2	35.16	171	332	P	H
HT20		5453.76	40.41	-13.59	54	29.54	34.83	11.2	35.16	171	332	A	H
CH 60		5025.55	49.47	-24.53	74	39.52	34.25	10.83	35.13	298	288	P	V
5300MHz		5140.7	40.61	-13.39	54	30.31	34.41	11.03	35.14	298	288	A	V
	*	5300	106.84	-	-	96.25	34.62	11.12	35.15	298	288	P	V
	*	5300	99.12	-	-	88.53	34.62	11.12	35.15	298	288	A	V
		5352	49.76	-24.24	74	39.08	34.69	11.14	35.15	298	288	P	V
		5351.04	40.97	-13.03	54	30.29	34.69	11.14	35.15	298	288	A	V

	*	5320	100.76	-	-	90.14	34.64	11.13	35.15	173	332	P	H
	*	5320	92.83	-	-	82.21	34.64	11.13	35.15	173	332	A	H
		5370.08	49.6	-24.4	74	38.9	34.71	11.14	35.15	173	332	P	H
		5351.04	41.27	-12.73	54	30.59	34.69	11.14	35.15	173	332	A	H
802.11n													H
HT20													H
CH 64	*	5320	106.87	-	-	96.25	34.64	11.13	35.15	278	289	P	V
5320MHz	*	5320	98.98	-	-	88.36	34.64	11.13	35.15	278	289	A	V
		5353.28	51.56	-22.44	74	40.88	34.69	11.14	35.15	278	289	P	V
		5350.08	44.2	-9.8	54	33.52	34.69	11.14	35.15	278	289	A	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 802.11n HT20 (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)
		10520	44.44	-23.76	68.2	49.21	37.32	17.09	59.18	100	0	P	H
		15780	49.64	-24.36	74	45.48	40.62	20.08	56.54	100	0	P	H
802.11n													H
HT20													H
CH 52		10520	45.48	-22.72	68.2	50.25	37.32	17.09	59.18	100	0	P	V
5260MHz		15780	48.31	-25.69	74	44.15	40.62	20.08	56.54	100	0	P	V
													V
													V
		10600	45.15	-28.85	74	49.58	37.42	17.21	59.06	100	0	P	H
		15900	47.2	-26.8	74	42.82	40.72	20.18	56.52	100	0	P	H
802.11n													H
HT20													H
CH 60		10600	45.65	-28.35	74	50.08	37.42	17.21	59.06	100	0	P	V
5300MHz		15900	47.47	-26.53	74	43.09	40.72	20.18	56.52	100	0	P	V
													V
													V
		10640	46.31	-27.69	74	50.6	37.47	17.25	59.01	100	0	P	H
		15960	48.28	-25.72	74	43.78	40.77	20.24	56.51	100	0	P	H
802.11n													H
HT20													H
CH 64		10640	46.45	-27.55	74	50.74	37.47	17.25	59.01	100	0	P	V
5320MHz		15960	47.94	-26.06	74	43.44	40.77	20.24	56.51	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	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)
802.11a CH 100 5500MHz		5371.92	49.76	-24.24	74	39.06	34.71	11.14	35.15	309	237	P	H
		5468.24	52.25	-15.95	68.2	41.31	34.85	11.25	35.16	309	237	P	H
		5453.04	40.89	-13.11	54	30.02	34.83	11.2	35.16	309	237	A	H
	*	5500	100.79	-	-	89.8	34.9	11.25	35.16	309	237	P	H
	*	5500	93.49	-	-	82.5	34.9	11.25	35.16	309	237	A	H
													H
		5458	51.58	-22.42	74	40.71	34.83	11.2	35.16	107	338	P	V
		5465.84	56.48	-11.72	68.2	45.54	34.85	11.25	35.16	107	338	P	V
		5459.6	43.62	-10.38	54	32.75	34.83	11.2	35.16	107	338	A	V
	*	5500	109.22	-	-	98.23	34.9	11.25	35.16	107	338	P	V
	*	5500	101.8	-	-	90.81	34.9	11.25	35.16	107	338	A	V
													V
802.11a CH 116 5580MHz		5421.04	49.93	-24.07	74	39.11	34.78	11.2	35.16	335	233	P	H
		5462.8	48.28	-19.92	68.2	37.34	34.85	11.25	35.16	335	233	P	H
		5430.16	40.47	-13.53	54	29.62	34.81	11.2	35.16	335	233	A	H
	*	5580	102.41	-	-	91.24	35	11.35	35.18	335	233	P	H
	*	5580	94.5	-	-	83.33	35	11.35	35.18	335	233	A	H
		5737.91	50.5	-17.7	68.2	38.97	35.24	11.5	35.21	335	233	P	H
		5452.72	51.67	-22.33	74	40.8	34.83	11.2	35.16	100	339	P	V
		5466.64	51.74	-16.46	68.2	40.8	34.85	11.25	35.16	100	339	P	V
		5459.68	43.03	-10.97	54	32.16	34.83	11.2	35.16	100	339	A	V
	*	5580	109.49	-	-	98.32	35	11.35	35.18	100	339	P	V
	*	5580	102.08	-	-	90.91	35	11.35	35.18	100	339	A	V
		5732.24	51.81	-16.39	68.2	40.31	35.21	11.5	35.21	100	339	P	V

802.11a CH 140 5700MHz	*	5700	100.55	-	-	89.12	35.17	11.46	35.2	305	308	P	H
	*	5700	92.36	-	-	80.93	35.17	11.46	35.2	305	308	A	H
		5726.04	55.07	-13.13	68.2	43.56	35.21	11.5	35.2	305	308	P	H
													H
													H
													H
	*	5700	107.03	-	-	95.6	35.17	11.46	35.2	100	339	P	V
	*	5700	99.58	-	-	88.15	35.17	11.46	35.2	100	339	A	V
		5727.24	62.81	-5.39	68.2	51.3	35.21	11.5	35.2	100	339	P	V
													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 (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 100 5500MHz		11000	49.97	-24.03	74	53.11	37.9	17.46	58.5	100	0	P	H
		16500	49.31	-18.89	68.2	43.2	41.8	20.51	56.2	100	0	P	H
													H
													H
		11000	46.1	-27.9	74	49.24	37.9	17.46	58.5	100	0	P	V
		16500	49.72	-18.48	68.2	43.61	41.8	20.51	56.2	100	0	P	V
													V
													V
802.11a CH 116 5580MHz		11160	47.48	-26.52	74	49.71	38.07	17.8	58.1	100	0	P	H
		16740	49.58	-18.62	68.2	42.96	41.94	20.69	56.01	100	0	P	H
													H
													H
		11160	47.25	-26.75	74	49.48	38.07	17.8	58.1	100	0	P	V
		16740	49.77	-18.43	68.2	43.15	41.94	20.69	56.01	100	0	P	V
													V
													V
802.11a CH 140 5700MHz		11400	47.41	-26.59	74	48.63	38.3	18.02	57.54	100	0	P	H
		17100	51.21	-16.99	68.2	43.98	41.96	21.05	55.78	100	0	P	H
													H
													H
		11400	46.13	-27.87	74	47.35	38.3	18.02	57.54	100	0	P	V
		17100	49.51	-18.69	68.2	42.28	41.96	21.05	55.78	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 802.11n HT20 (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)
		5422	49.66	-24.34	74	38.84	34.78	11.2	35.16	305	235	P	H
		5466.64	51.5	-16.7	68.2	40.56	34.85	11.25	35.16	305	235	P	H
		5459.92	40.9	-13.1	54	30.03	34.83	11.2	35.16	305	235	A	H
	*	5500	101.69	-	-	90.7	34.9	11.25	35.16	305	235	P	H
802.11n	*	5500	93.94	-	-	82.95	34.9	11.25	35.16	305	235	A	H
HT20													H
CH 100		5459.76	52.3	-21.7	74	41.43	34.83	11.2	35.16	107	339	P	V
5500MHz		5464.88	59.8	-8.4	68.2	48.86	34.85	11.25	35.16	107	339	P	V
		5460	44.52	-9.48	54	33.65	34.83	11.2	35.16	107	339	A	V
	*	5500	109.67	-	-	98.68	34.9	11.25	35.16	107	339	P	V
	*	5500	101.78	-	-	90.79	34.9	11.25	35.16	107	339	A	V
													V
		5409.04	49.65	-24.35	74	38.9	34.76	11.15	35.16	334	233	P	H
		5461.12	48.83	-19.37	68.2	37.91	34.83	11.25	35.16	334	233	P	H
		5457.28	40.55	-13.45	54	29.68	34.83	11.2	35.16	334	233	A	H
	*	5580	102.13	-	-	90.96	35	11.35	35.18	334	233	P	H
802.11n	*	5580	94.08	-	-	82.91	35	11.35	35.18	334	233	A	H
HT20		5750.825	50.32	-17.88	68.2	38.76	35.24	11.53	35.21	334	233	P	H
CH 116		5451.52	50.86	-23.14	74	39.99	34.83	11.2	35.16	100	338	P	V
5580MHz		5467.84	50.07	-18.13	68.2	39.13	34.85	11.25	35.16	100	338	P	V
		5457.28	41.26	-12.74	54	30.39	34.83	11.2	35.16	100	338	A	V
	*	5580	109.28	-	-	98.11	35	11.35	35.18	100	338	P	V
	*	5580	101.81	-	-	90.64	35	11.35	35.18	100	338	A	V
		5734.13	50.81	-17.39	68.2	39.31	35.21	11.5	35.21	100	338	P	V

	*	5700	100.81	-	-	89.38	35.17	11.46	35.2	289	308	P	H
	*	5700	93.43	-	-	82	35.17	11.46	35.2	289	308	A	H
		5728.6	56.92	-11.28	68.2	45.41	35.21	11.5	35.2	289	308	P	H
													H
802.11n													H
HT20													H
CH 140	*	5700	107.48	-	-	96.05	35.17	11.46	35.2	100	338	P	V
5700MHz	*	5700	99.21	-	-	87.78	35.17	11.46	35.2	100	338	A	V
		5727.64	63.91	-4.29	68.2	52.4	35.21	11.5	35.2	100	338	P	V
													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 802.11n HT20 (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)
		11000	46.29	-27.71	74	49.43	37.9	17.46	58.5	100	0	P	H
		16500	49.91	-18.29	68.2	43.8	41.8	20.51	56.2	100	0	P	H
802.11n													H
HT20													H
CH 100		11000	45.53	-28.47	74	48.67	37.9	17.46	58.5	100	0	P	V
5500MHz		16500	48.77	-19.43	68.2	42.66	41.8	20.51	56.2	100	0	P	V
													V
													V
		11160	46.8	-27.2	74	49.03	38.07	17.8	58.1	100	0	P	H
		16740	50.64	-17.56	68.2	44.02	41.94	20.69	56.01	100	0	P	H
802.11n													H
HT20													H
CH 116		11160	47.8	-26.2	74	50.03	38.07	17.8	58.1	100	0	P	V
5580MHz		16740	49.88	-18.32	68.2	43.26	41.94	20.69	56.01	100	0	P	V
													V
													V
		11400	47.04	-26.96	74	48.26	38.3	18.02	57.54	100	0	P	H
		17100	50.06	-18.14	68.2	42.83	41.96	21.05	55.78	100	0	P	H
802.11n													H
HT20													H
CH 140		11400	46.82	-27.18	74	48.04	38.3	18.02	57.54	100	0	P	V
5700MHz		17100	50.77	-17.43	68.2	43.54	41.96	21.05	55.78	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

WIFI 802.11n HT20 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	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)
802.11n HT20 LF		30.54	22.59	-17.41	40	27.48	24.09	1.2	30.18	-	-	P	H
		134.76	28.78	-14.72	43.5	39.46	17.4	1.96	30.04	-	-	P	H
		288.12	28.89	-17.11	46	37.17	18.91	2.75	29.94	-	-	P	H
		363	33.97	-12.03	46	40.22	20.68	3	29.93	100	0	P	H
		486.9	29.65	-16.35	46	32.35	23.64	3.56	29.9	-	-	P	H
		951.7	33.85	-12.15	46	26.93	30.44	5.03	28.55	-	-	P	H
													H
													H
													H
													H
													H
													H
		30	29.57	-10.43	40	33.95	24.6	1.2	30.18	100	0	P	V
		199.83	22.26	-21.24	43.5	35.04	14.91	2.27	29.96	-	-	P	V
		291.09	25.43	-20.57	46	33.65	18.97	2.75	29.94	-	-	P	V
		376.3	35.24	-10.76	46	41.24	20.88	3.04	29.92	-	-	P	V
		477.1	35.26	-10.74	46	38.13	23.47	3.56	29.9	-	-	P	V
		592.6	34.25	-11.75	46	34.81	25.44	3.85	29.85	-	-	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

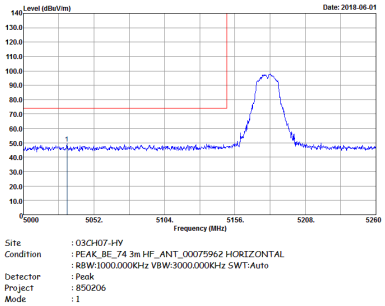
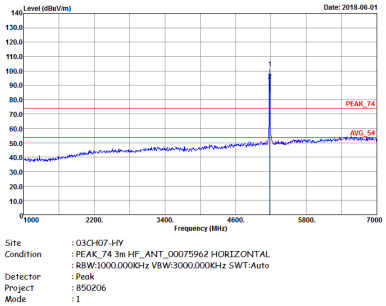
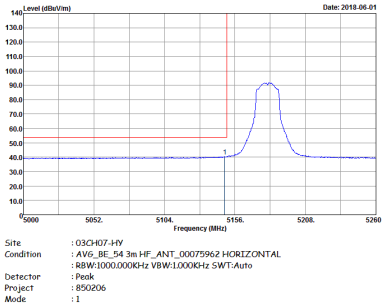
Test Engineer :	Jesse Wang and Stan Hsieh	**Temperature :**	21~23°C
		Relative Humidity :	51~54%

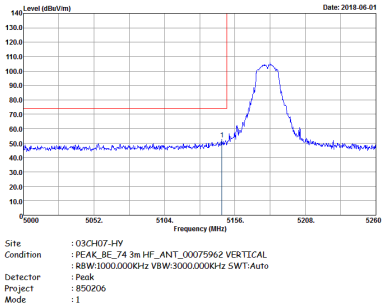
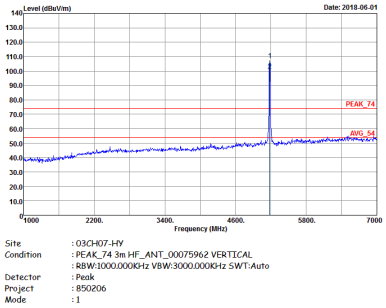
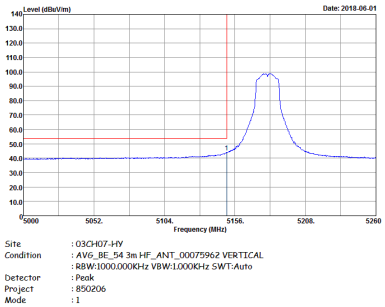
Note symbol

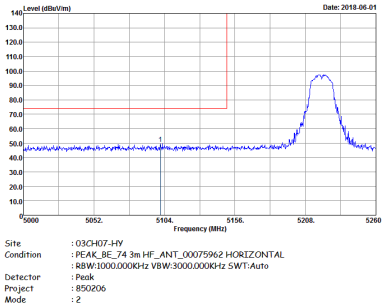
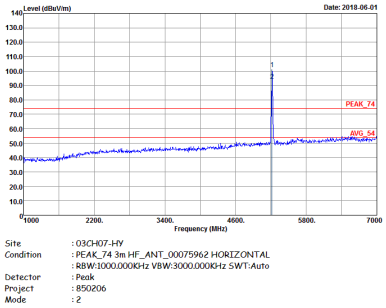
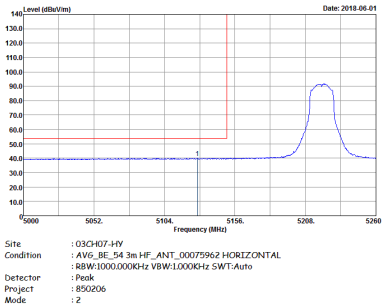
-L	**Low channel location**
-R	**High channel location**

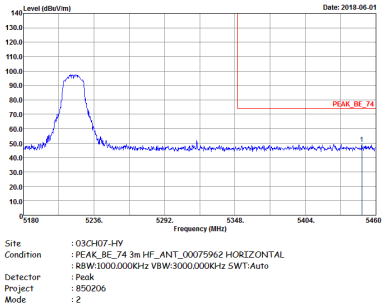
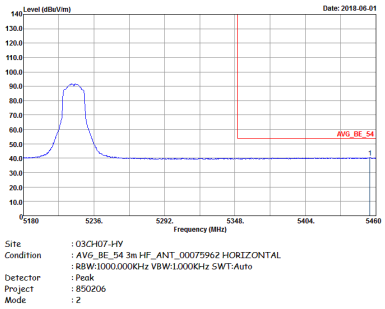
Band 1 - 5150~5250MHz

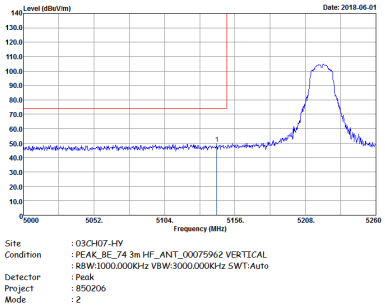
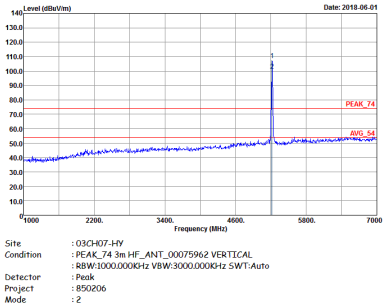
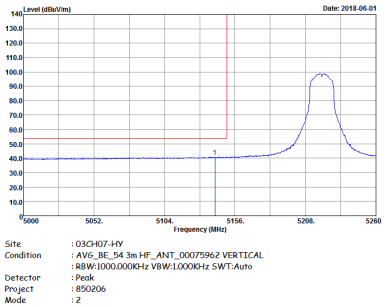
WIFI 802.11a (Band Edge @ 3m)

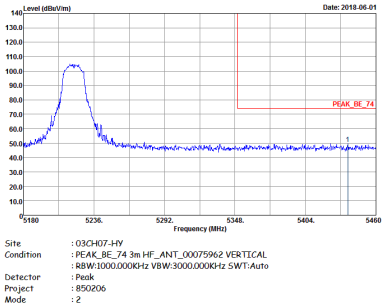
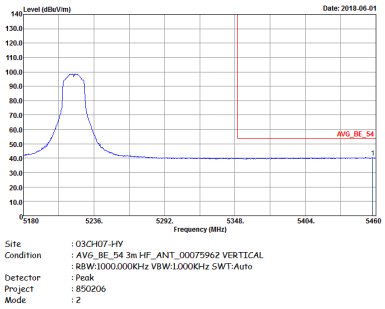
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

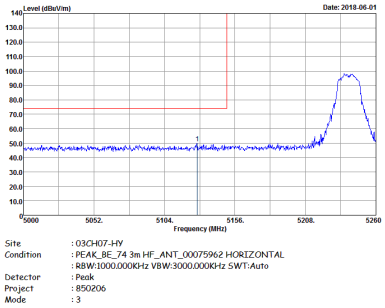
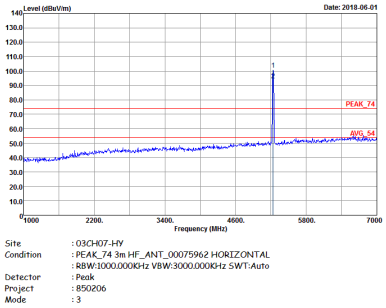
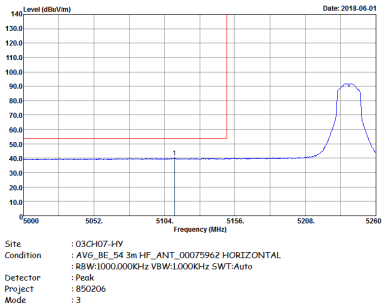
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

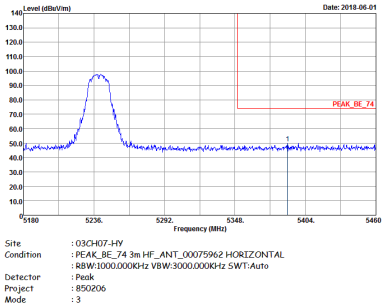
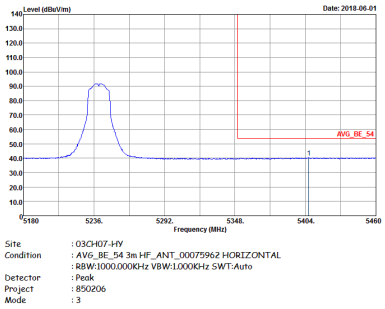
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

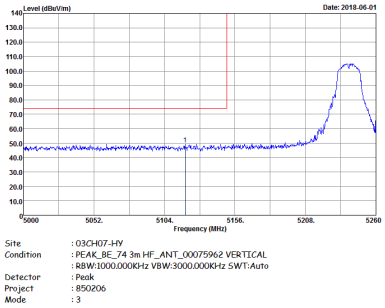
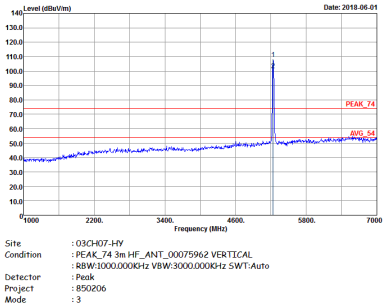
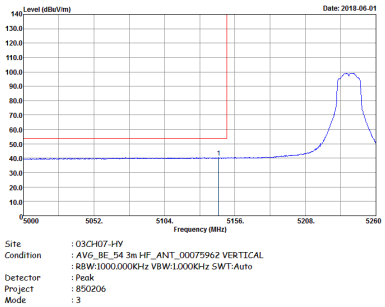
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

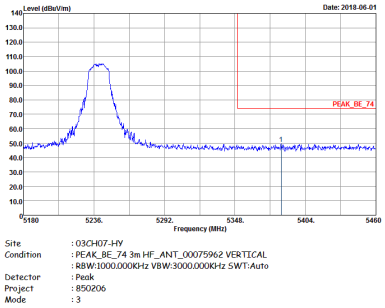
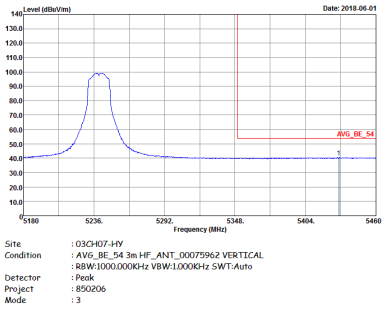
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

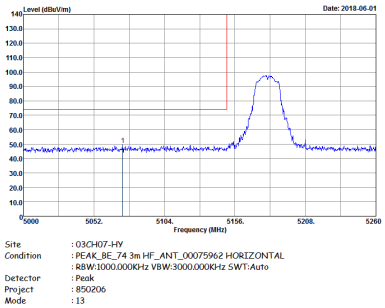
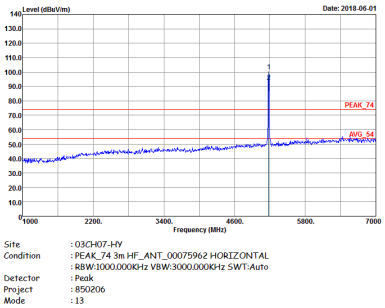
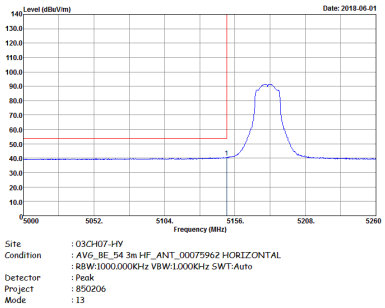
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

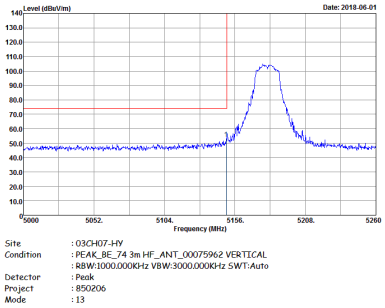
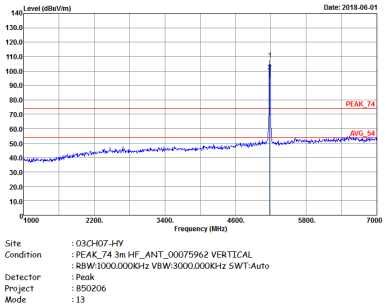
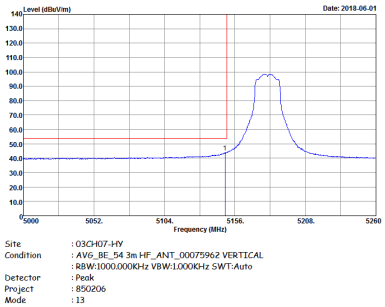
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

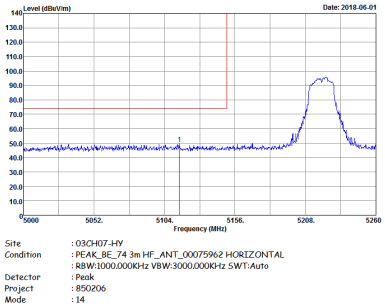
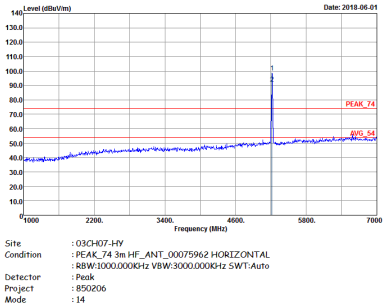
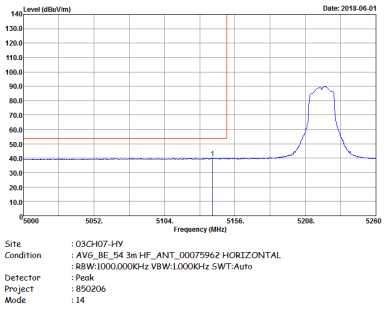
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

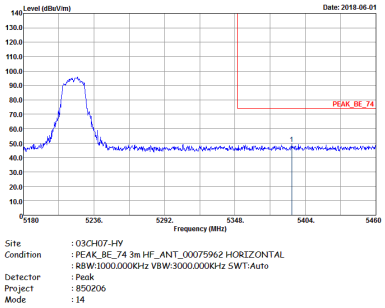
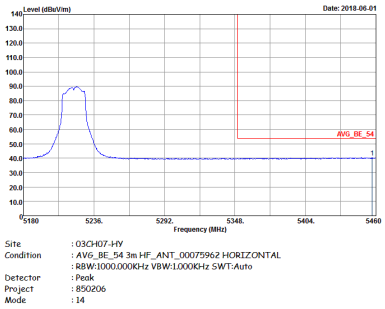
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

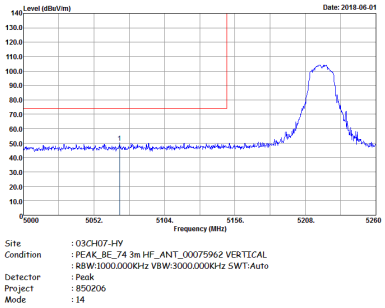
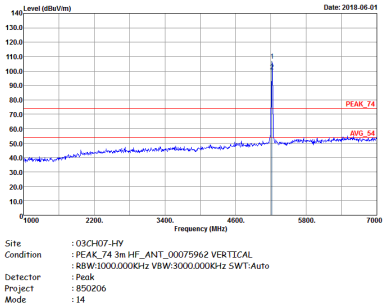
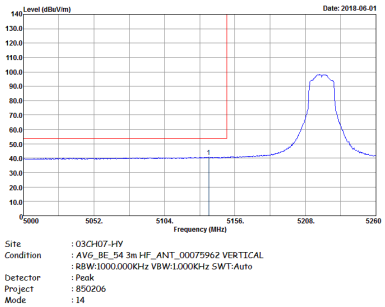
Band 1 5150~5250MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

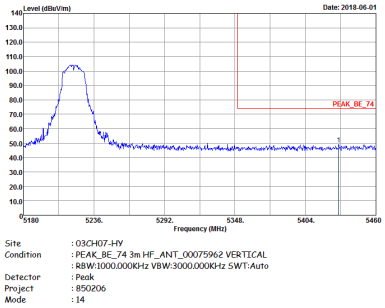
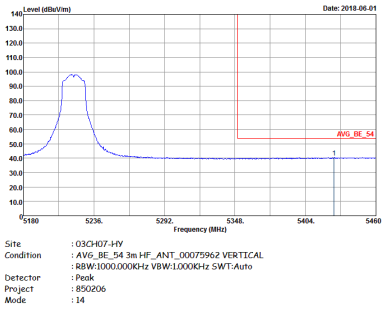
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

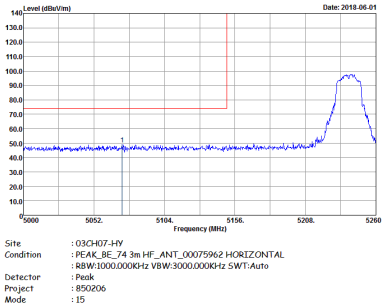
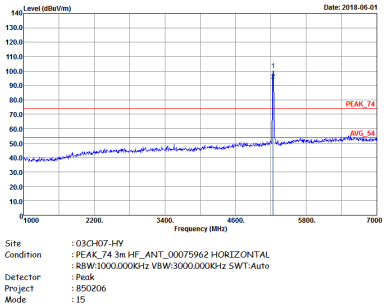
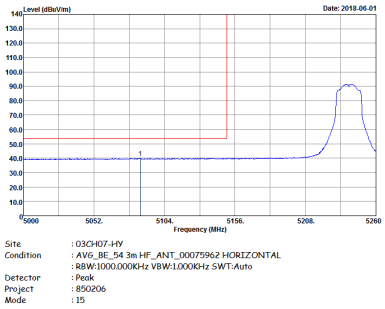
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

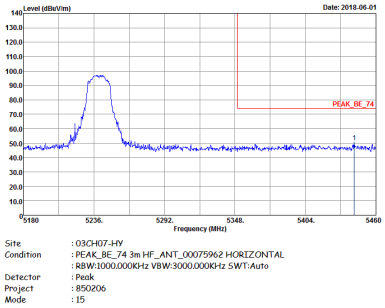
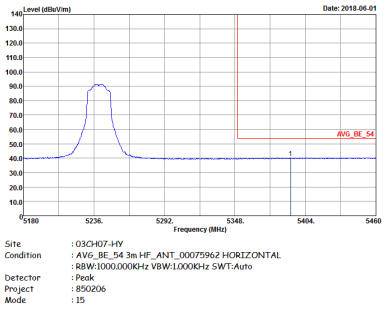
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH44 5220MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

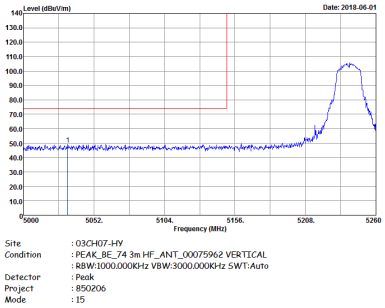
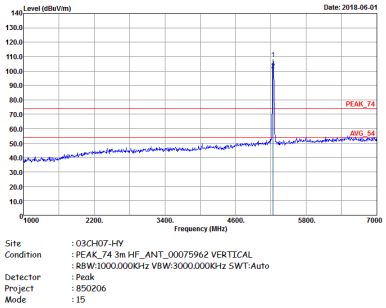
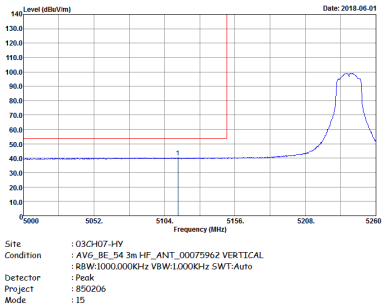
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH44 5220MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

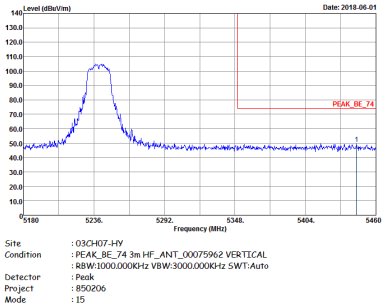
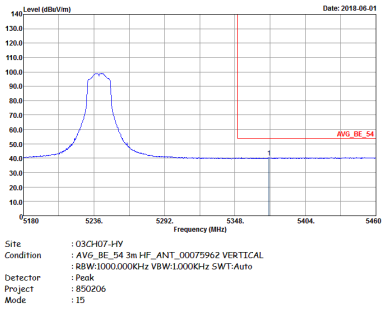
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH44 5220MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH44 5220MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH48 5240MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

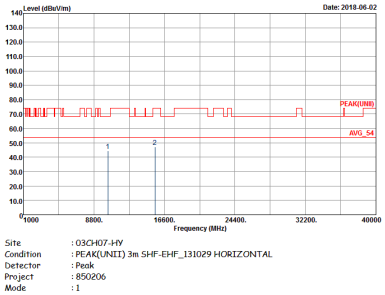
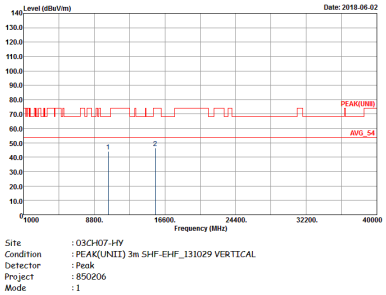
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH48 5240MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

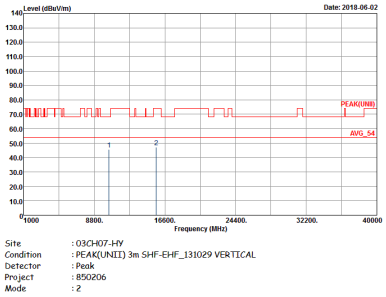
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH48 5240MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

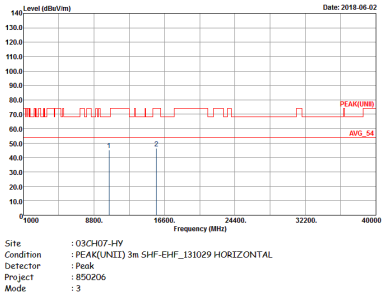
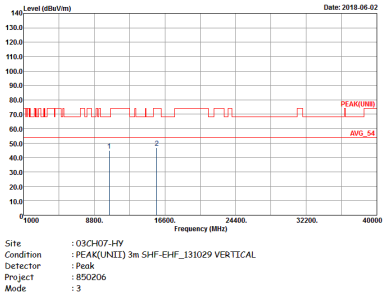
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11n HT20 CH48 5240MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

Band 1 - 5150~5250MHz

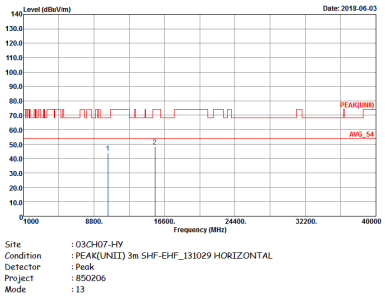
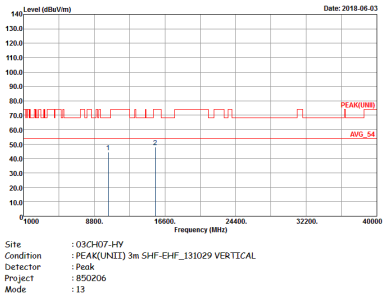
WIFI 802.11a (Harmonic @ 3m)

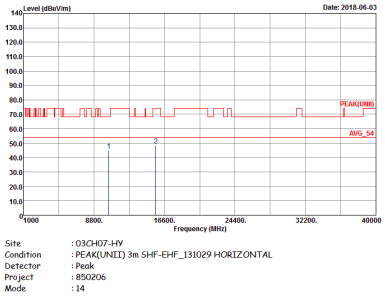
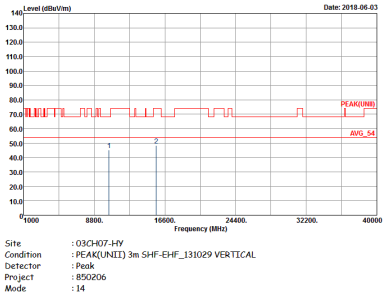
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH36 5180MHz	
1	Horizontal	Vertical
Peak Avg.		

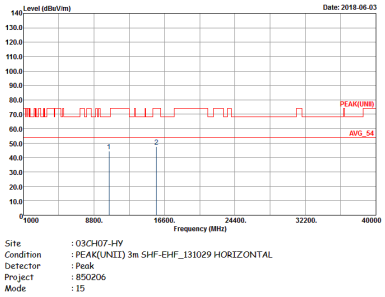
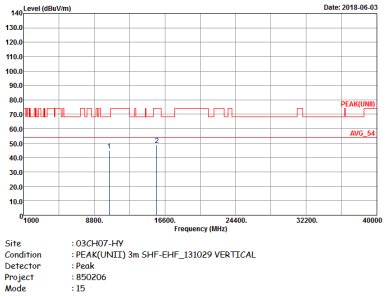
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH44 5220MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH48 5240MHz	
1	Horizontal	Vertical
Peak Avg.		

Band 1 5150~5250MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

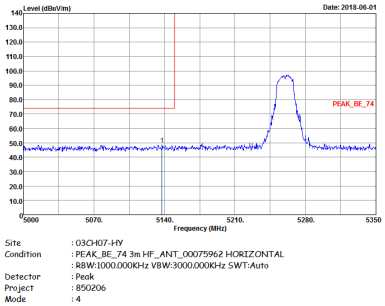
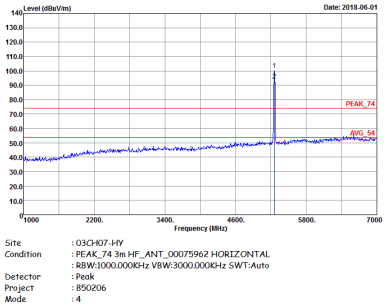
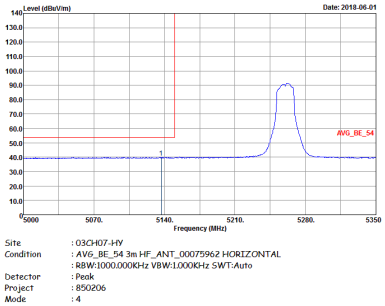
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH36 5180MHz	
1	Horizontal	Vertical
Peak Avg.		

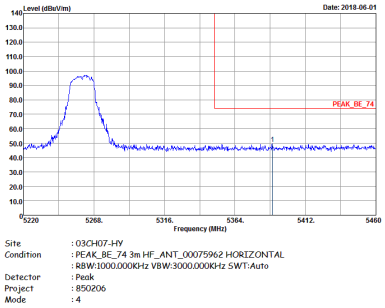
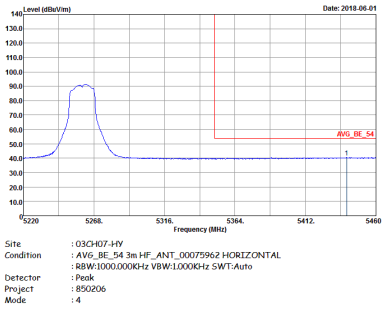
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH44 5220MHz	
1	Horizontal	Vertical
Peak Avg.		

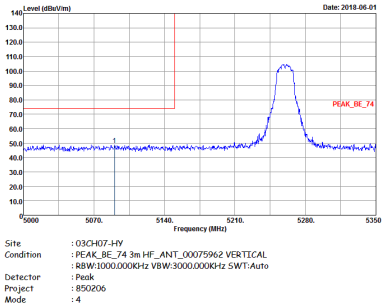
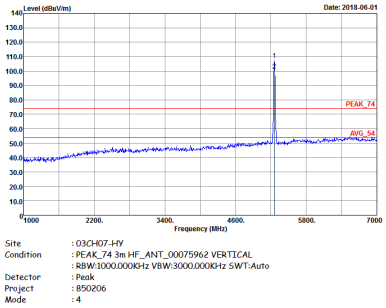
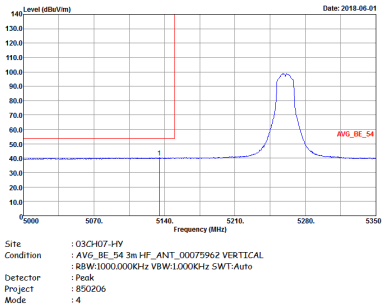
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11n HT20 CH48 5240MHz	
1	Horizontal	Vertical
Peak Avg.		

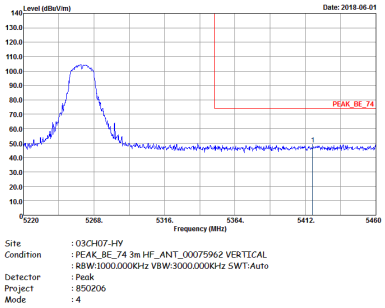
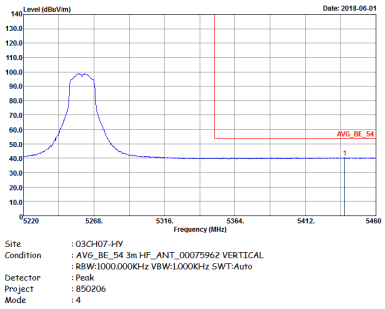
Band 2 - 5250~5350MHz

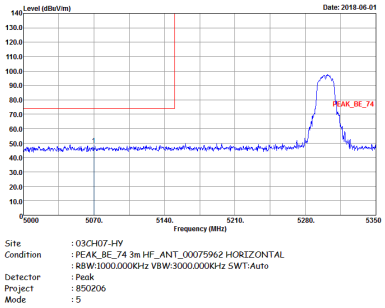
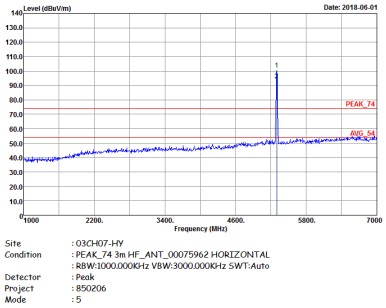
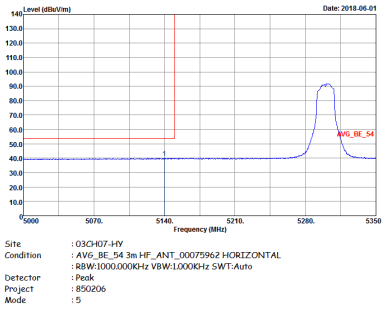
WIFI 802.11a (Band Edge @ 3m)

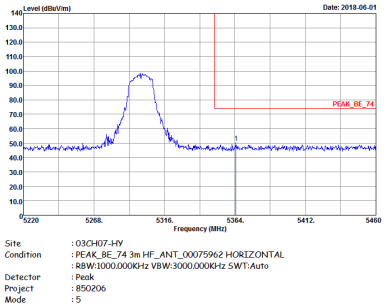
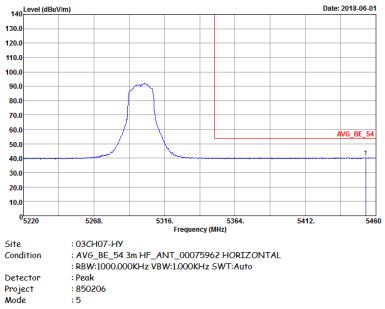
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH52 5260MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

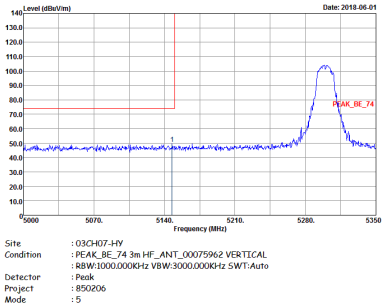
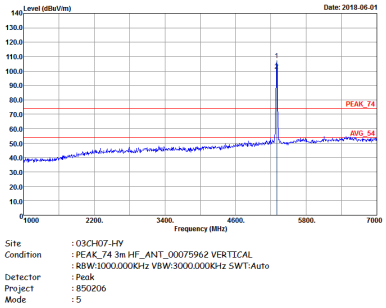
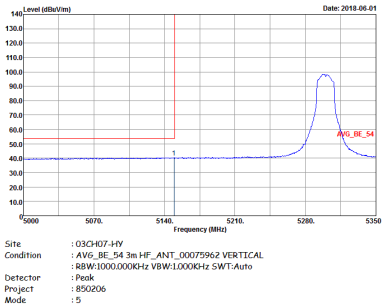
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH52 5260MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

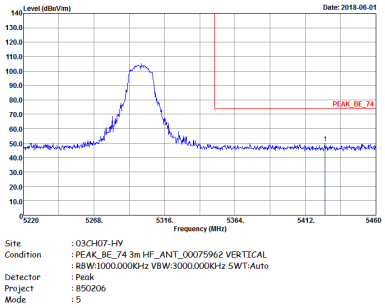
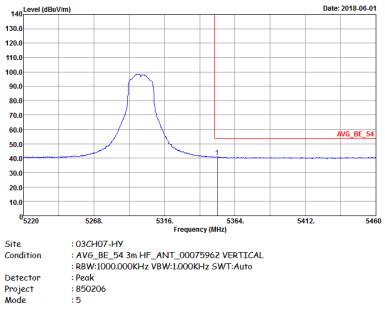
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH52 5260MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

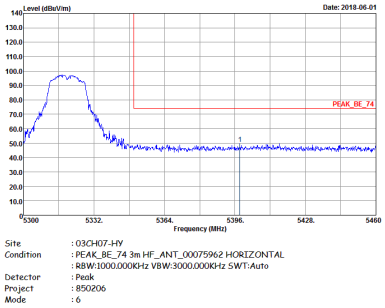
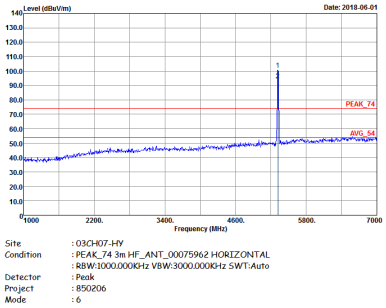
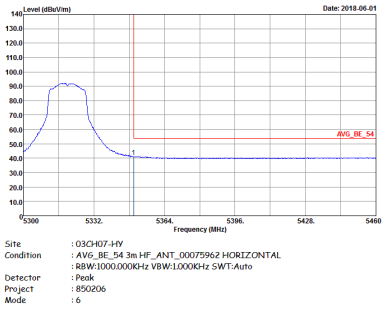
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH52 5260MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

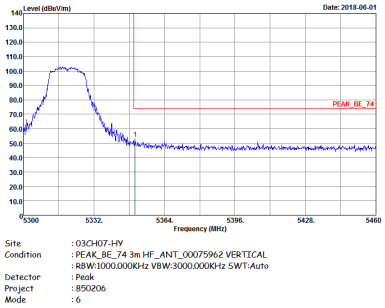
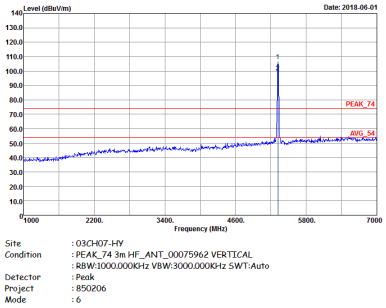
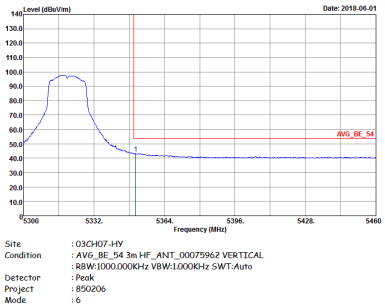
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH60 5300MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH60 5300MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

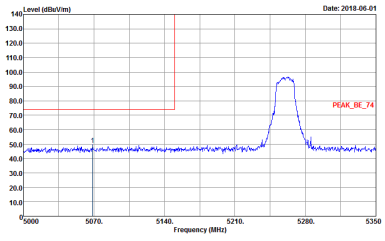
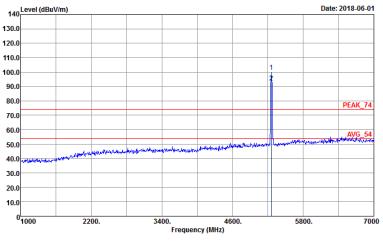
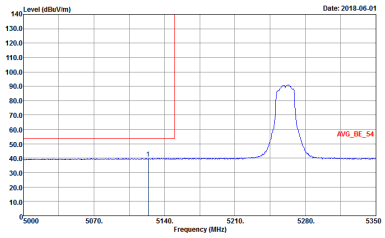
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH60 5300MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

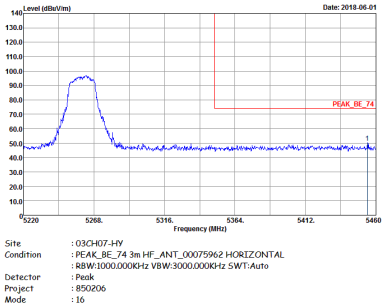
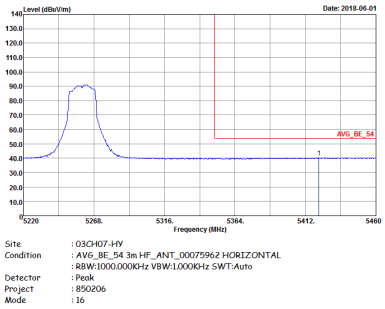
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH60 5300MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

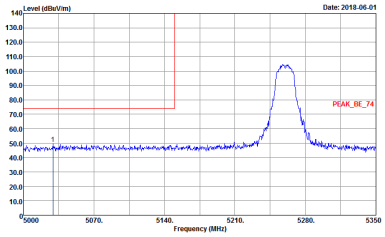
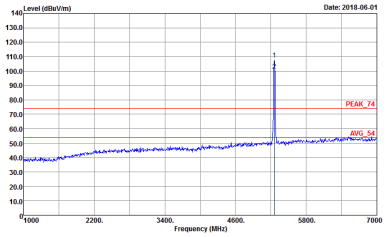
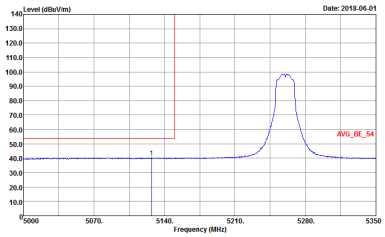
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

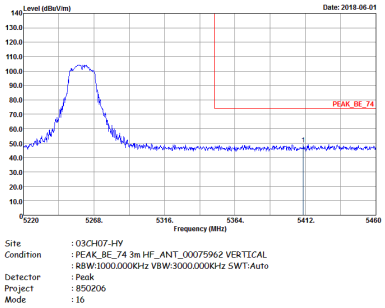
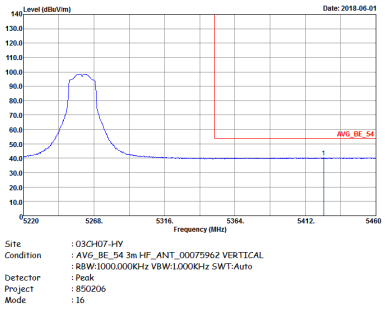
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11a CH64 5320MHz	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

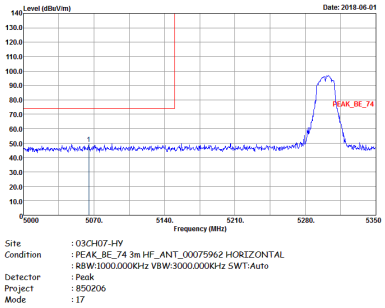
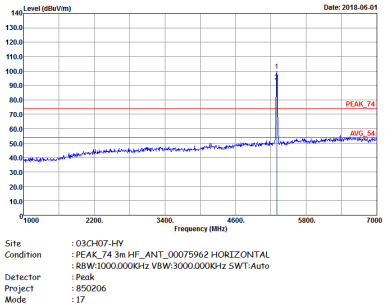
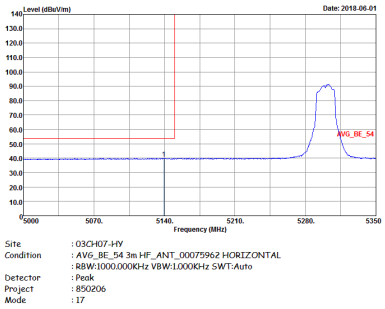
Band 2 5250~5350MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

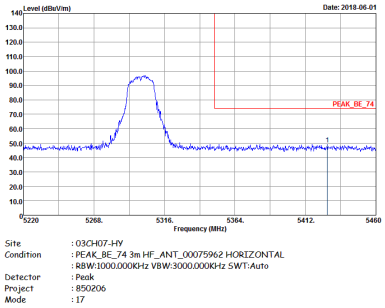
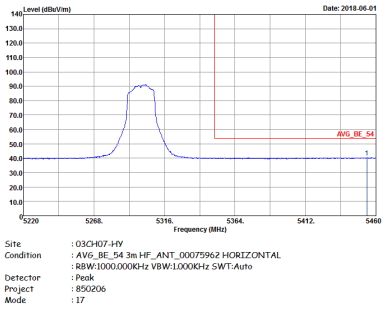
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH52 5260MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 16	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 16
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 16	Left blank

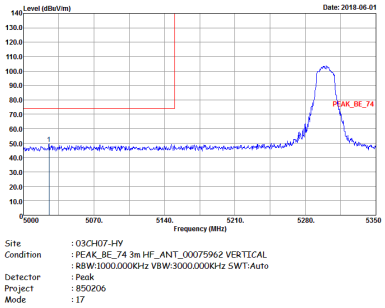
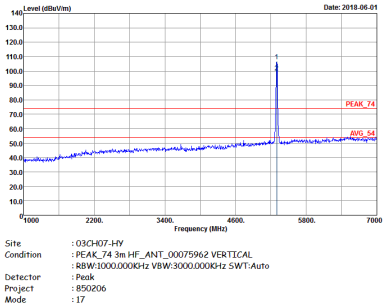
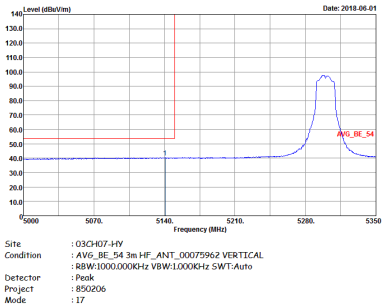
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH52 5260MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

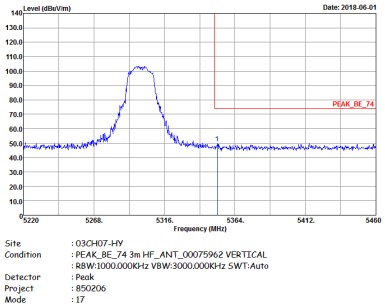
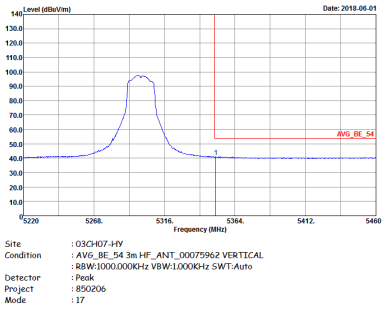
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH52 5260MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 16	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 16
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 16	Left blank

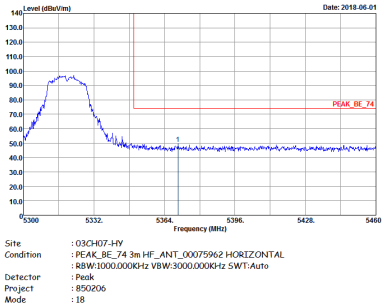
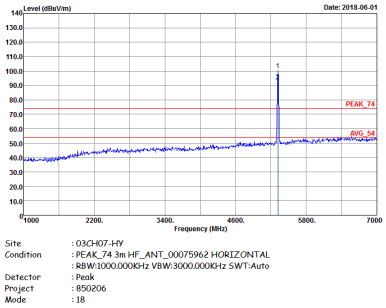
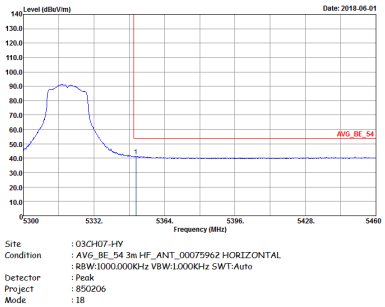
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH52 5260MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

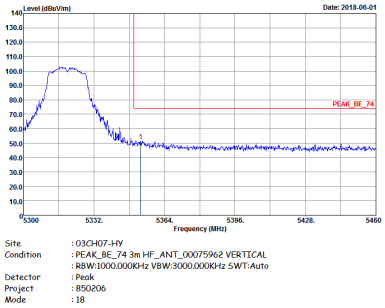
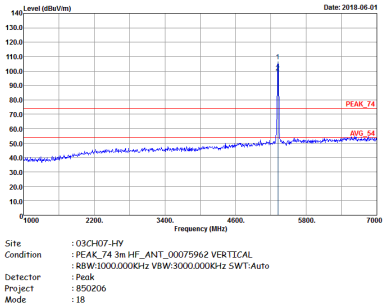
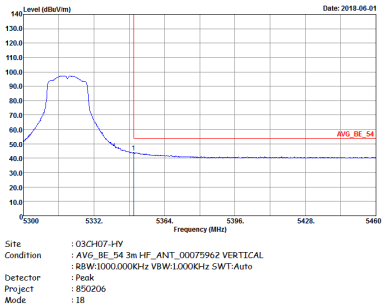
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH60 5300MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH60 5300MHz - R	
1	Horizontal	Vertical
Peak		Left blank
Avg.		Left blank

WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH60 5300MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

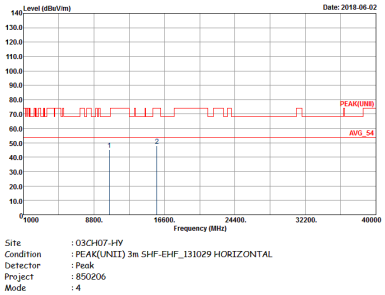
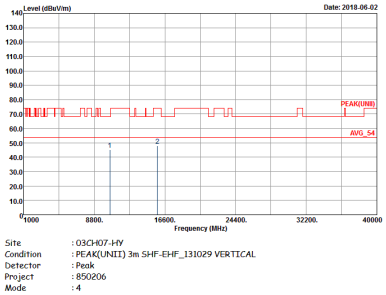
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH60 5300MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

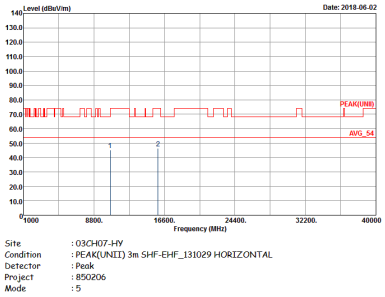
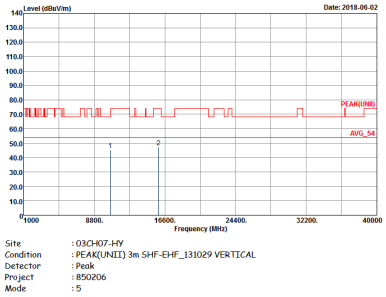
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 18	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 18
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 18	Left blank

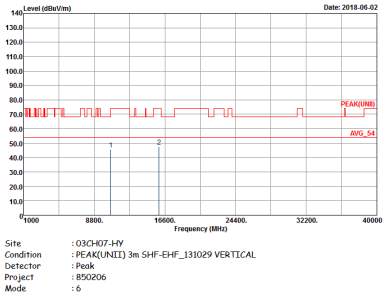
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

Band 2 - 5250~5350MHz

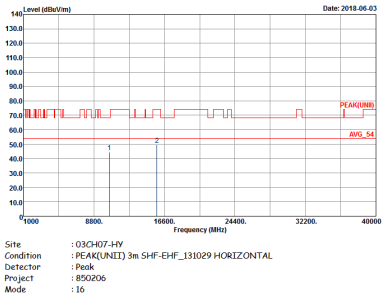
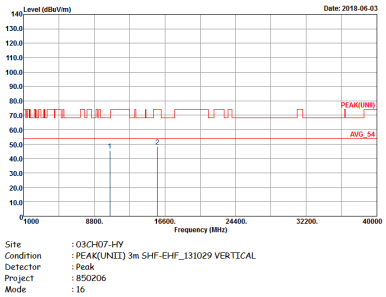
WIFI 802.11a (Harmonic @ 3m)

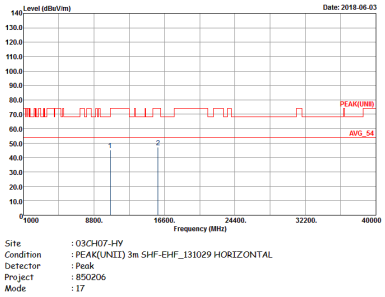
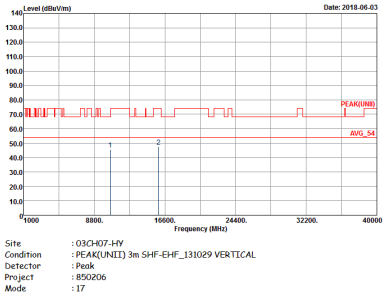
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH52 5260MHz	
1	Horizontal	Vertical
Peak Avg.		

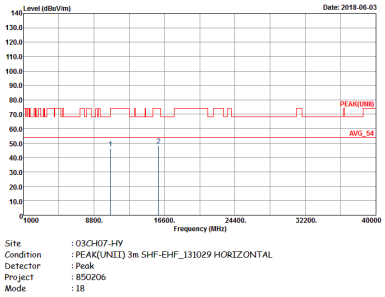
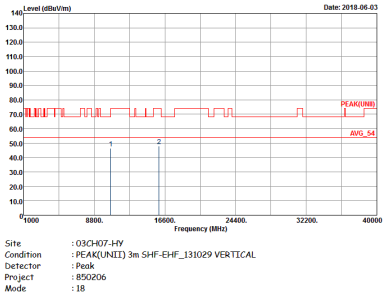
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH60 5300MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH64 5320MHz	
1	Horizontal	Vertical
Peak Avg.		

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

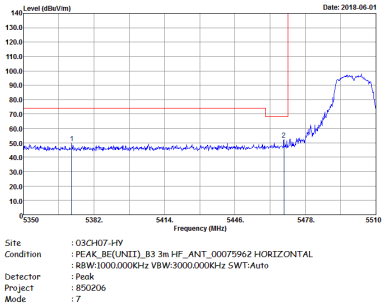
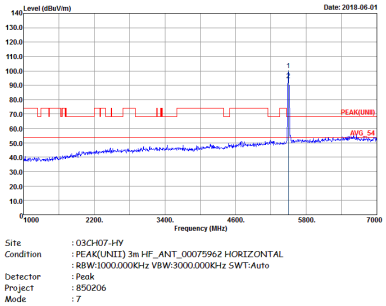
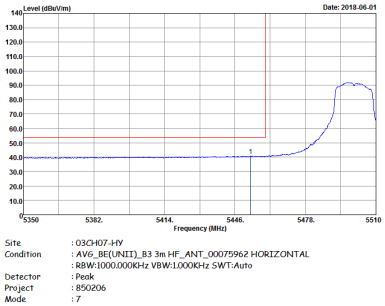
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH52 5260MHz	
1	Horizontal	Vertical
Peak Avg.		

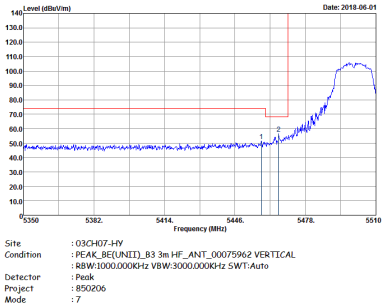
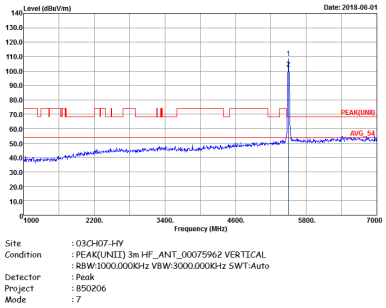
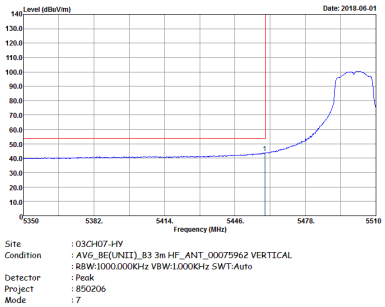
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH60 5300MHz	
1	Horizontal	Vertical
Peak Avg.		

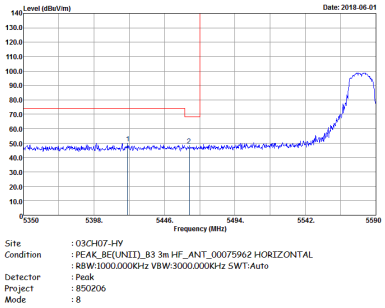
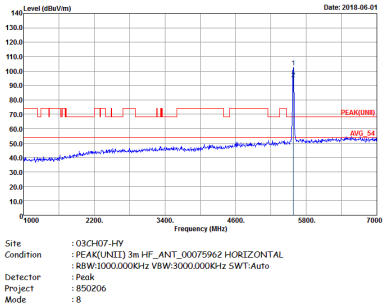
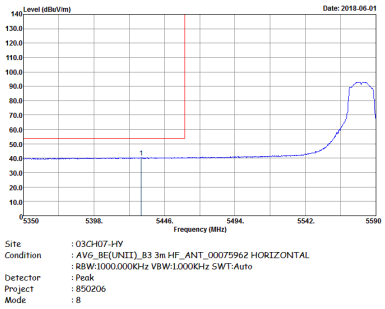
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11n HT20 CH64 5320MHz	
1	Horizontal	Vertical
Peak Avg.		

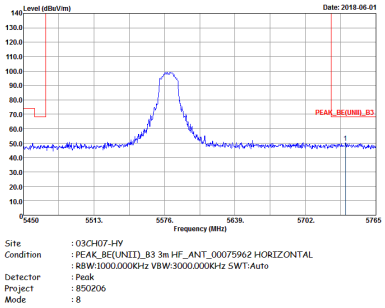
Band 3 - 5470~5725MHz

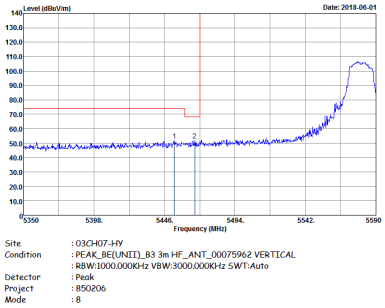
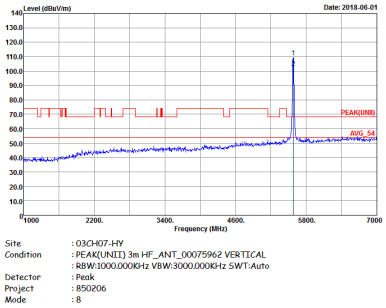
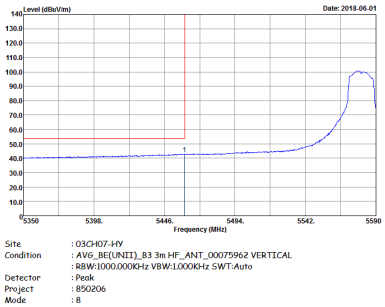
WIFI 802.11a (Band Edge @ 3m)

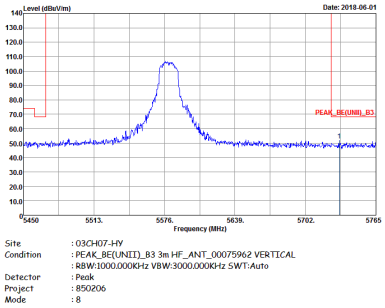
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

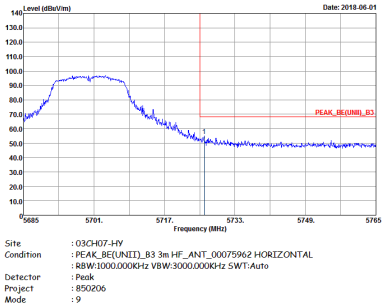
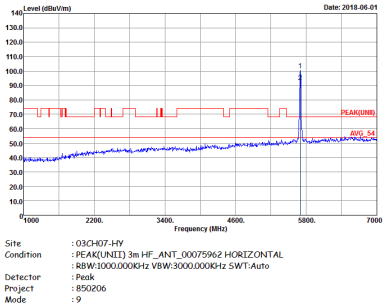
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

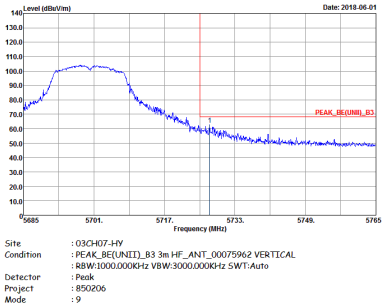
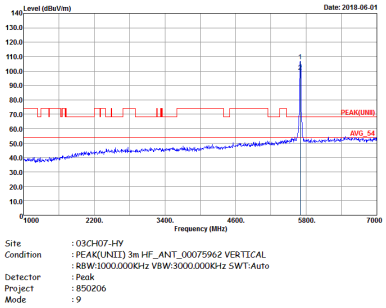
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH116 5580MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH116 5580MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(UNII)_B3 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 8	Left blank

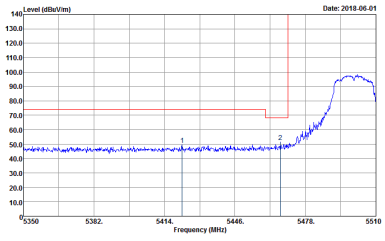
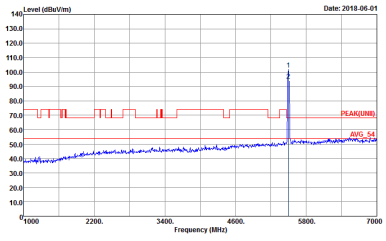
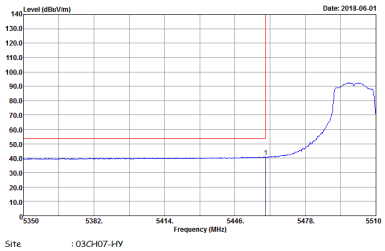
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH116 5580MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

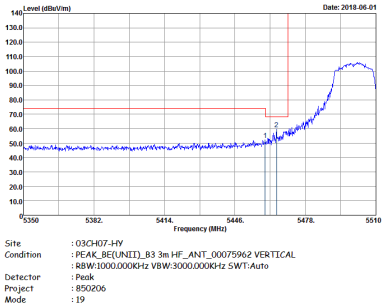
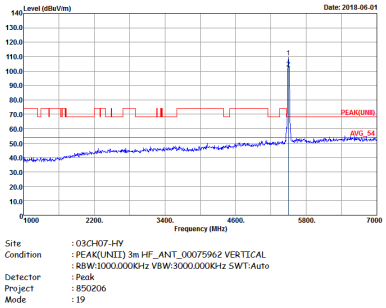
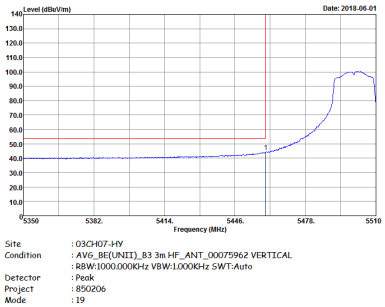
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH116 5580MHz - R	
1	Vertical	Fundamental
Peak		Left blank

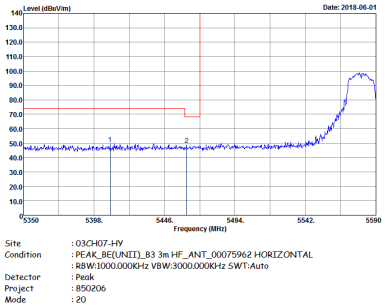
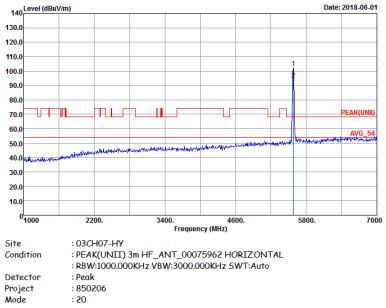
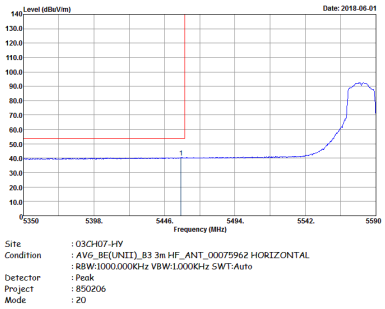
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1	Horizontal	Fundamental
Peak		

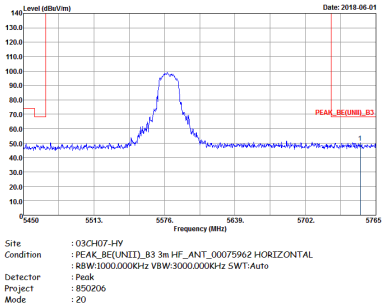
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1	Vertical	Fundamental
Peak		

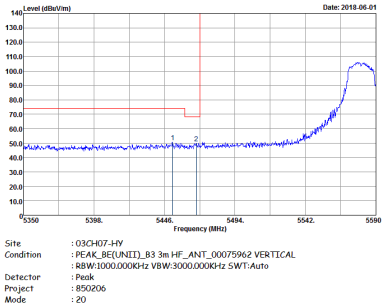
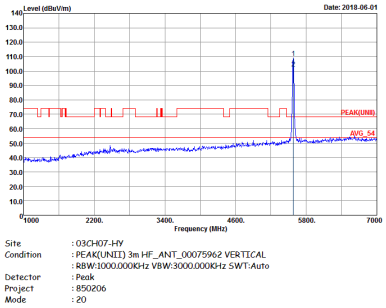
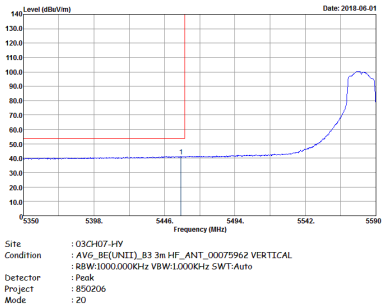
Band 3 5470~5725MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

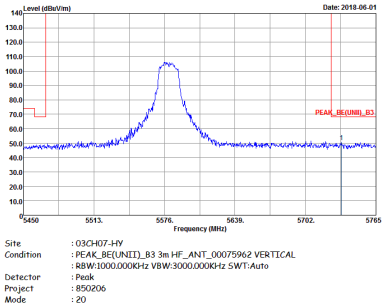
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH100 5500MHz	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

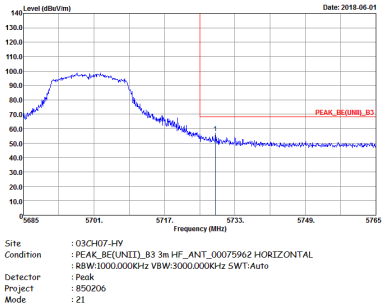
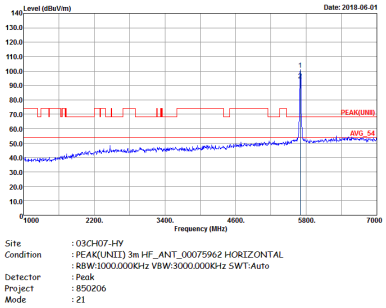
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH100 5500MHz	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

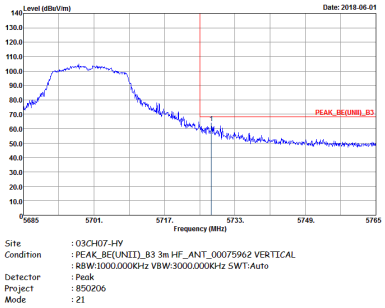
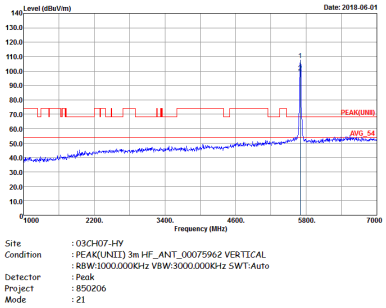
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH116 5580MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		Left blank

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH116 5580MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(UNII)_B3 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 20	Left blank

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH116 5580MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		Left blank

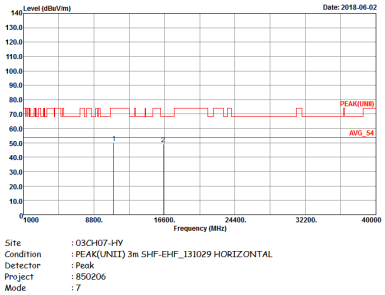
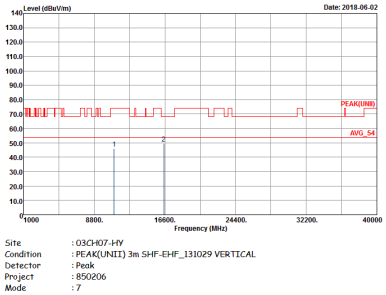
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH116 5580MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE(UNII)_B3 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 850206 Mode : 20	Left blank

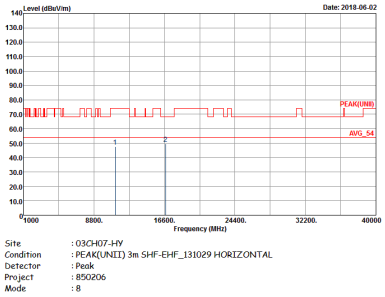
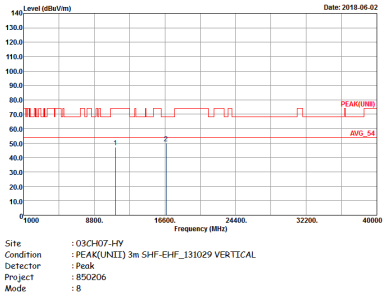
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Horizontal	Fundamental
Peak		

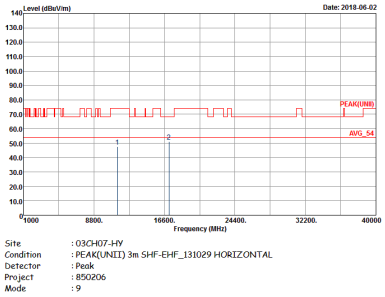
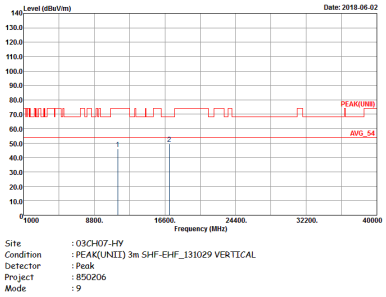
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Vertical	Fundamental
Peak.		

Band 3 - 5470~5725MHz

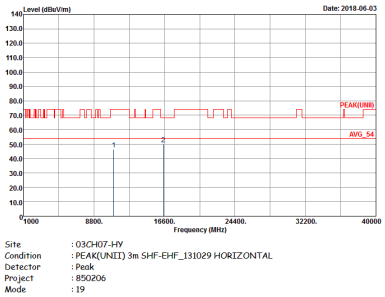
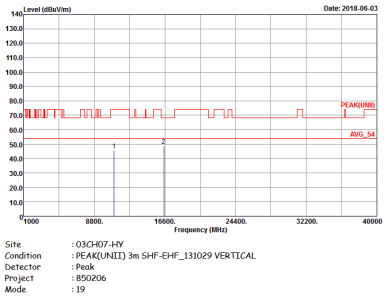
WIFI 802.11a (Harmonic @ 3m)

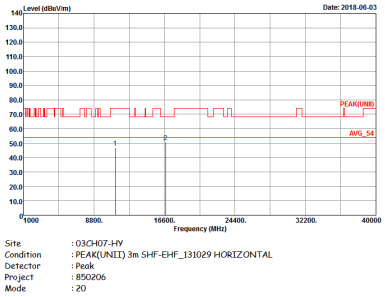
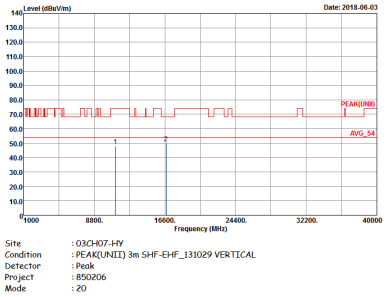
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH100 5500MHz	
1	Horizontal	Vertical
Peak Avg.		

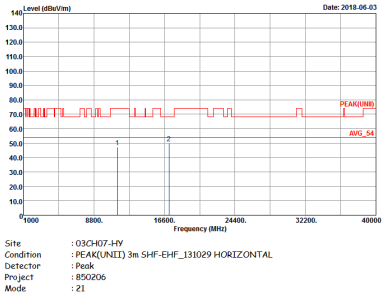
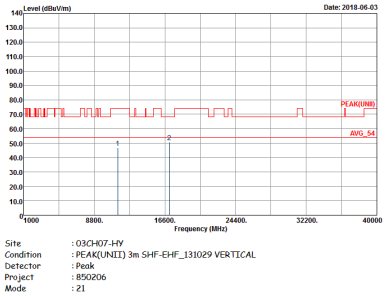
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH116 5580MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11a CH140 5700MHz	
1	Horizontal	Vertical
Peak Avg.		

Band 3 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

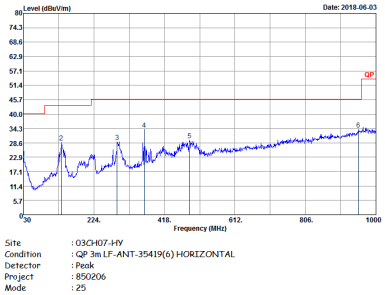
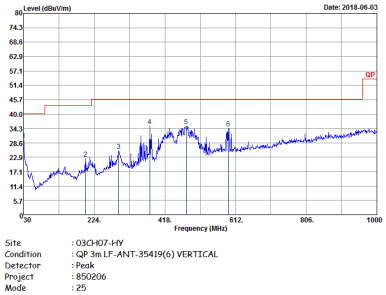
WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH100 5500MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH116 5580MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11n HT20 CH140 5700MHz	
1	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

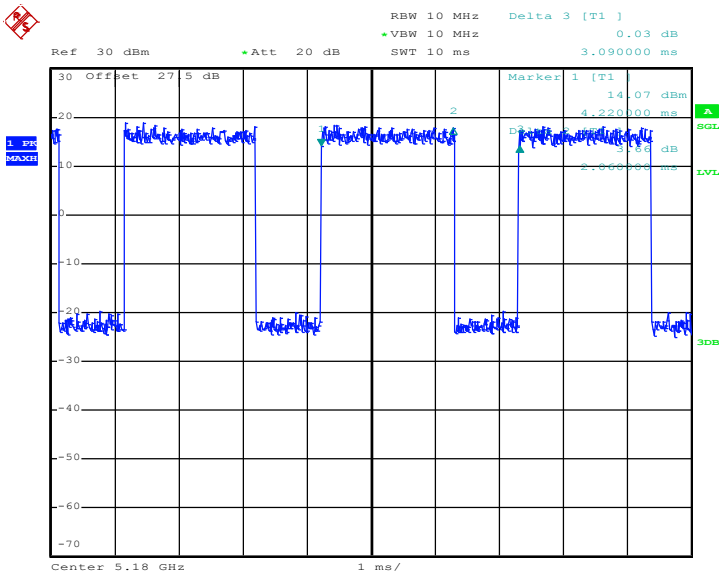
5GHz WIFI 802.11n HT20 (LF)

WIFI	5GHz WIFI	
ANT	802.11n HT20 LF	
1	Horizontal	Vertical
QP / Peak		

Appendix D. Duty Cycle Plots

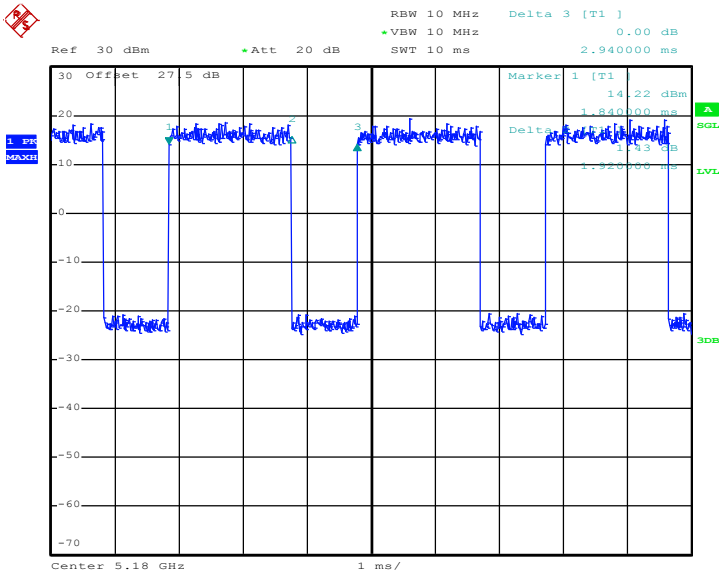
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
802.11a	66.67	2060	0.49	1kHz	1.76
5GHz 802.11n HT20	65.31	1920	0.52	1kHz	1.85

802.11a



Date: 8.MAY.2018 07:57:44

802.11n HT20



Date: 8.MAY.2018 09:14:53