FCC RF Test Report

APPLICANT	:	LC Future Center Limited Taiwan Branch
EQUIPMENT	:	Notebook
BRAND NAME	:	Lenovo
MODEL NAME	:	TP00086A
FCC ID	:	2AJN7-TP00086A
STANDARD	:	FCC Part 15 Subpart E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

This is a partial report which is included the conducted emission and radiated emission test items. The product was received on Nov. 08, 2016 and testing was completed on Dec. 03, 2016. 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 test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR6N0822E	Rev. 01	Initial issue of report	Dec. 27, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) &15.209(a)	Pass	Under limit 3.60 dB at 60.240 MHz
3.2	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 17.26 dB at 4.870 MHz

1 General Description

1.1 Applicant

LC Future Center Limited Taiwan Branch
7F., No.780, Bei'an Rd., Zhongshan Dist., Taipei City 104, Taiwan (R.O.C.)

1.2 Manufacturer

LC Future Center Limited Taiwan Branch
7F., No.780, Bei'an Rd., Zhongshan Dist., Taipei City 104, Taiwan (R.O.C.)

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Notebook
Brand Name	Lenovo
Model Name	TP00086A
FCC ID	2AJN7-TP00086A
Sample 1	EUT with Antenna 1
Sample 2	EUT with Antenna 2
Integrated WLAN Module	Brand Name: Intel Model Name: 8265NGW
EUT supports Radios application	WCDMA/HSPA/LTE WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
EUT Stage	Production Unit

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

1.4 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Standards-related Product Specification</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>5745 MHz ~ 5825 MHz</td></tr>
<tr><td>Type of Modulation</td><td>802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)</td></tr>
<tr><td>Antenna Function Description</td><td>
<table>
<tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr>
<tr><td>802.11 a/n/ac</td><td>V</td><td>V</td></tr>
<tr><td>802.11 n/ac MIMO</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

Note: MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.

1.5 Modification of EUT

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

1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	**Sporton Site No.**	
	CO05-HY	03CH07-HY

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

1.7 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 v01r03
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

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: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155#	5775	165	5825

Note:

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

2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Single Antenna

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

MIMO Antenna

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0

AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + TF + TC

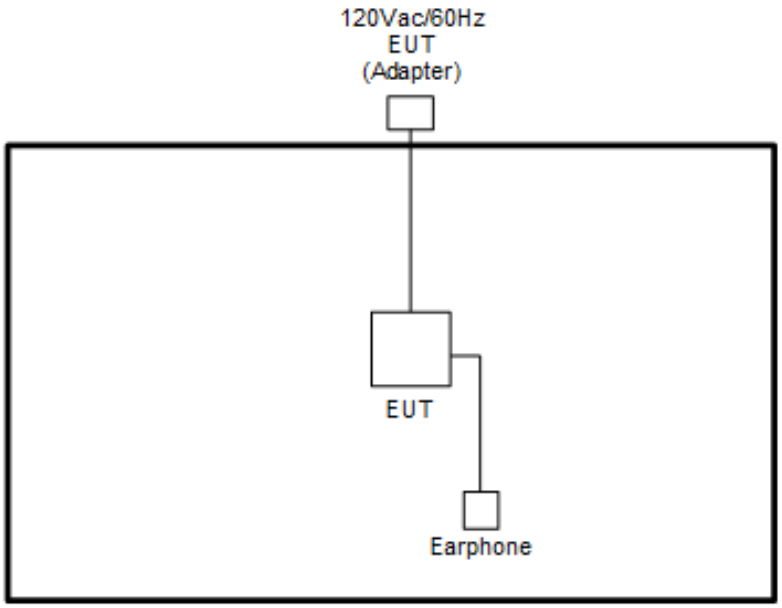
Remark:

1. TF stands for Test Function, and consists of MPEG4 and Camera.
2. TC stands for Test Configuration, and consists of Earphone, USB (HD and iPod), Adapter, SD Card, and DP Cable.

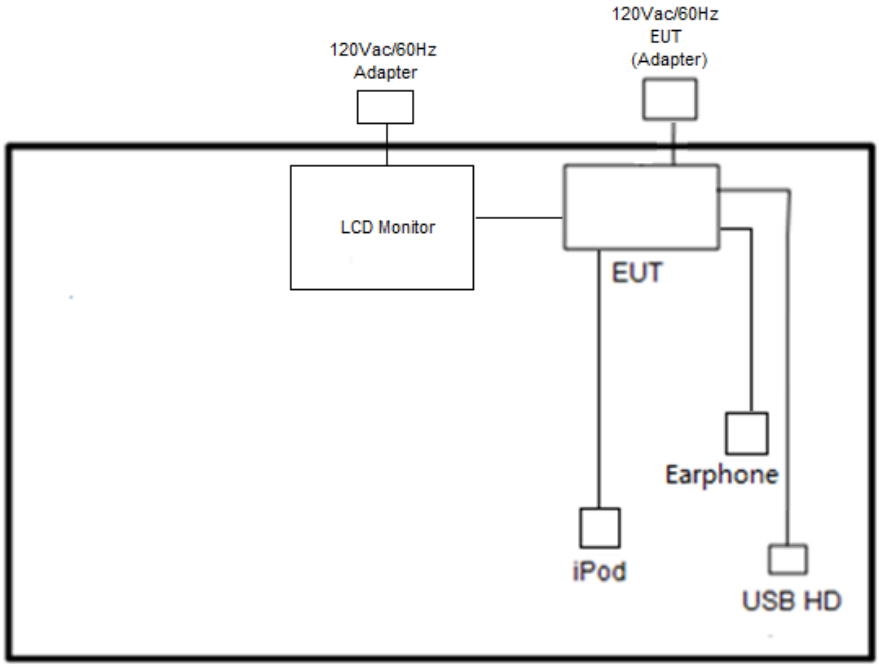
Ch. #		Band IV：5725-5850 MHz			
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LCD Monitor	DELL	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
2.	HD USB	lenovo	F310S	FCC DoC	Shielded, 0.5m	N/A
3.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
4.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
5.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

3 Test Result

3.1 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.1.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5.725-5.85 GHz band:

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

(2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 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)
-17	78.3
- 27	68.3

(3) KDB 789033 D02 General UNII Test Procedures New Rules v01r03 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03. 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

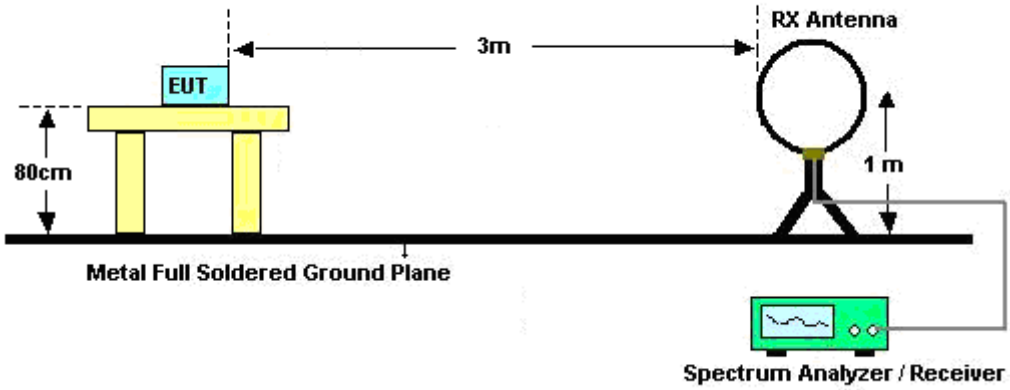
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

   - 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.

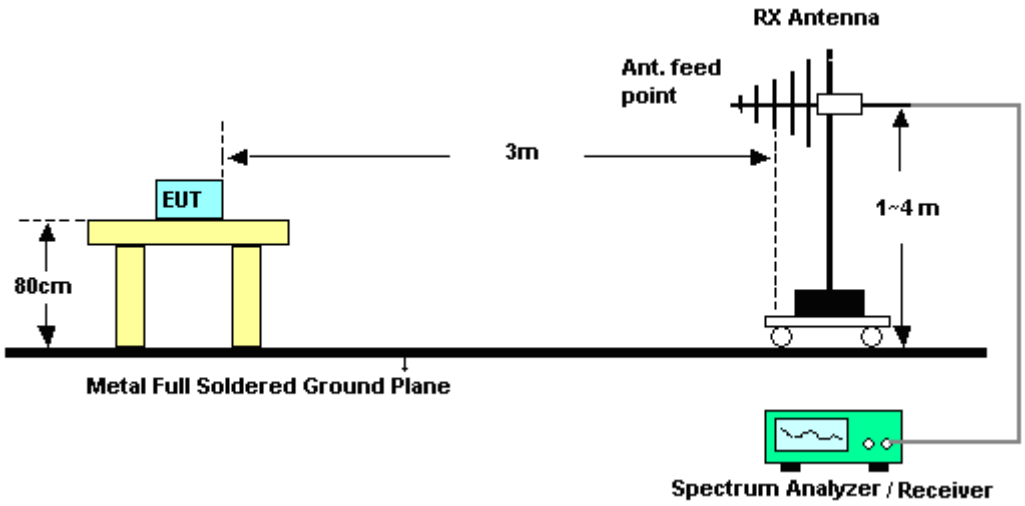
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

3.1.4 Test Setup

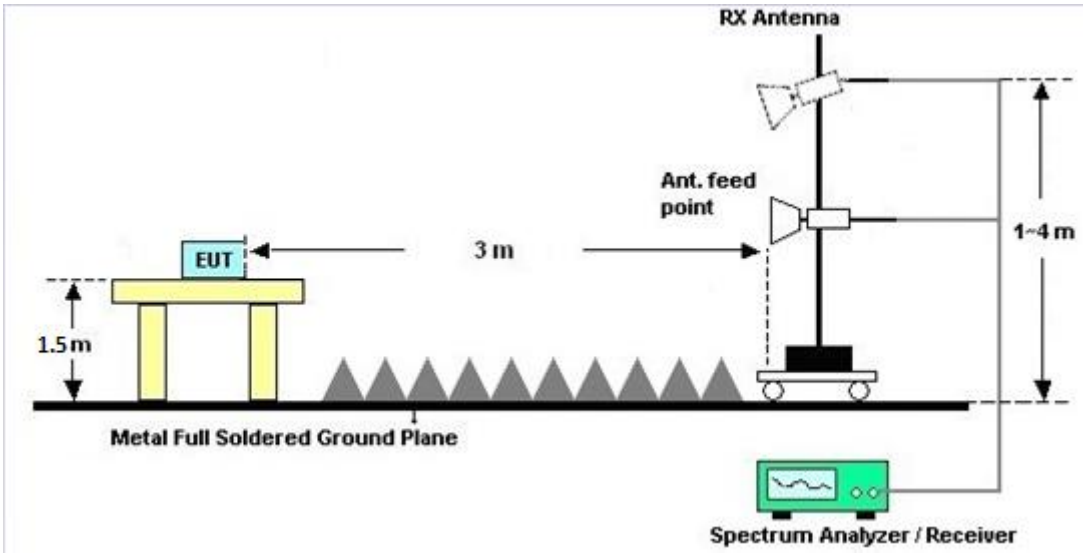
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.1.5 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 per 15.31(o) was not reported.

3.1.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix A and B.

3.1.7 Duty Cycle

Please refer to Appendix C.

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

Please refer to Appendix A and B.

3.2 AC Conducted Emission Measurement

3.2.1 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.

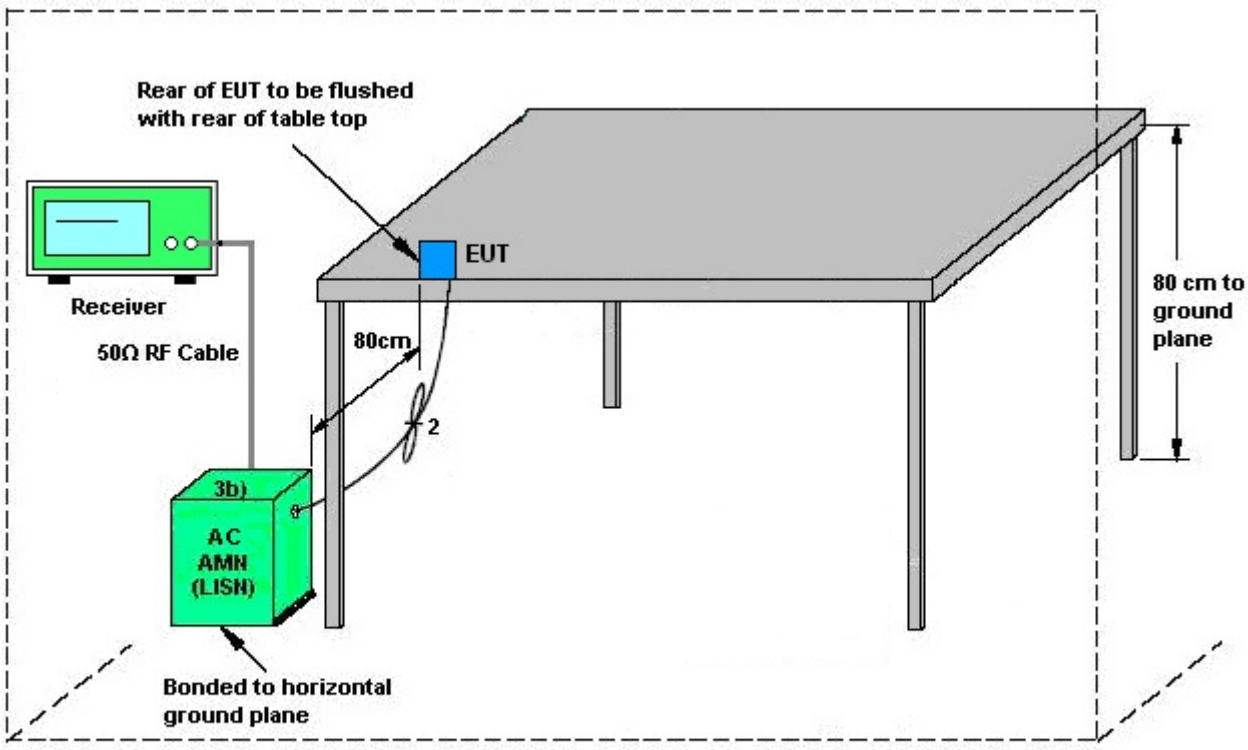
3.2.2 Measuring Instruments

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

3.2.3 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.

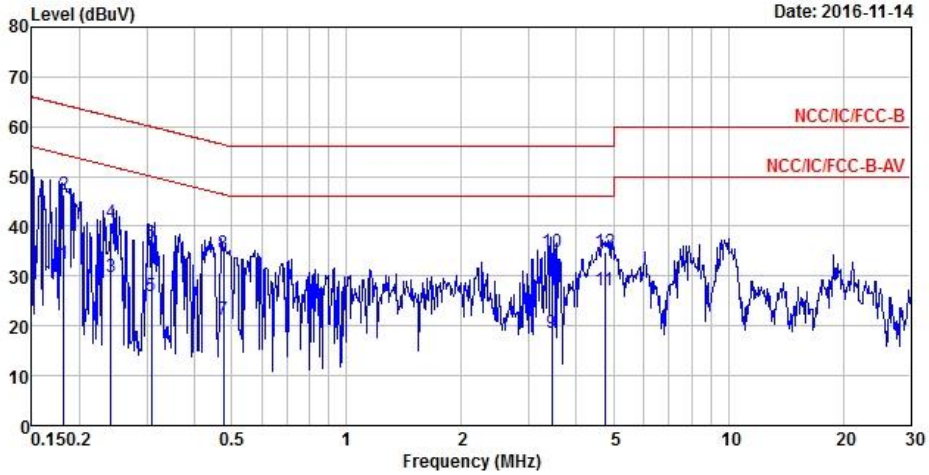
3.2.4 Test Setup



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

3.2.5 Test Result of AC Conducted Emission

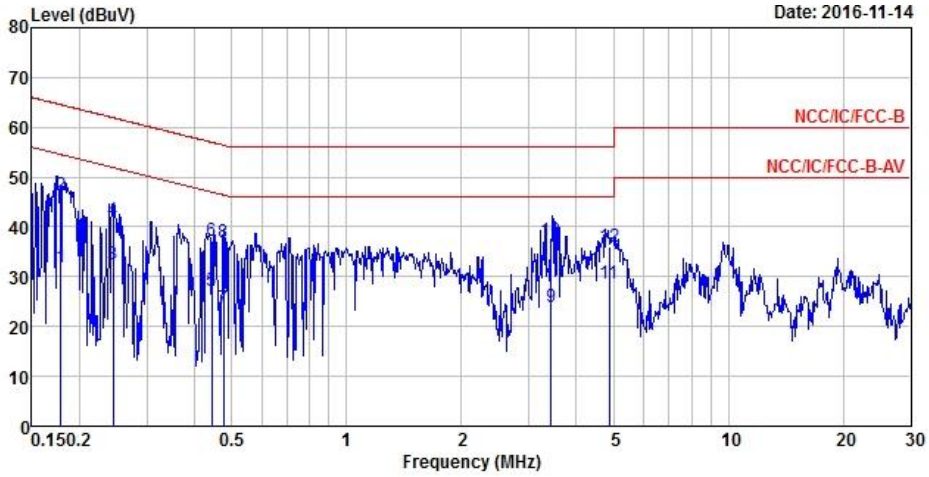
Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	James Chiu	Relative Humidity :	50~53%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (5GHz) Link + TF + TC		



Site : CO04-HY
Condition: NCC/IC/FCC-B LISN-NSLK(8127-477) LINE
EUT : NB (Sierra EM7455+Intel 8265NGW) FCC
Model : Yoda
Power : 120V/60Hz

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Aux Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.18	32.54	-21.87	54.41	22.29	0.11	0.27	9.87	Average
2 MAX	0.18	46.23	-18.18	64.41	35.98	0.11	0.27	9.87	QP
3	0.24	29.79	-22.24	52.03	19.57	0.11	0.24	9.87	Average
4	0.24	40.62	-21.41	62.03	30.40	0.11	0.24	9.87	QP
5	0.31	25.96	-24.04	50.00	15.79	0.12	0.17	9.88	Average
6	0.31	36.56	-23.44	60.00	26.39	0.12	0.17	9.88	QP
7	0.48	21.36	-25.03	46.39	11.26	0.12	0.10	9.88	Average
8	0.48	34.53	-21.86	56.39	24.43	0.12	0.10	9.88	QP
9	3.45	18.69	-27.31	46.00	8.48	0.17	0.14	9.90	Average
10	3.45	34.72	-21.28	56.00	24.51	0.17	0.14	9.90	QP
11	4.75	27.15	-18.85	46.00	16.94	0.19	0.12	9.90	Average
12	4.75	34.73	-21.27	56.00	24.52	0.19	0.12	9.90	QP

Test Mode :	Mode 1	Temperature :	22~24℃
Test Engineer :	James Chiu	Relative Humidity :	50~53%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (5GHz) Link + TF + TC		



Site : CO04-HY
Condition: NCC/IC/FCC-B LISN-NSLK(8127-477) NEUTRAL
EUT : NB (Sierra EM7455+Intel 8265NGW) FCC
Model : Yoda
Power : 120V/60Hz

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Aux Factor	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.18	31.74	-22.82	54.56	21.49	0.11	0.27	9.87	Average
2	0.18	46.20	-18.36	64.56	35.95	0.11	0.27	9.87	QP
3	0.24	32.57	-19.36	51.93	22.35	0.11	0.24	9.87	Average
4	0.24	41.20	-20.73	61.93	30.98	0.11	0.24	9.87	QP
5	0.44	27.24	-19.76	47.00	17.14	0.12	0.10	9.88	Average
6	0.44	37.06	-19.94	57.00	26.96	0.12	0.10	9.88	QP
7	0.48	23.75	-22.64	46.39	13.65	0.12	0.10	9.88	Average
8	0.48	37.01	-19.38	56.39	26.91	0.12	0.10	9.88	QP
9	3.43	23.77	-22.23	46.00	13.56	0.17	0.14	9.90	Average
10	3.43	37.23	-18.77	56.00	27.02	0.17	0.14	9.90	QP
11 MAX	4.87	28.74	-17.26	46.00	18.52	0.20	0.12	9.90	Average
12	4.87	35.98	-20.02	56.00	25.76	0.20	0.12	9.90	QP

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Nov. 14, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Nov. 14, 2016	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Nov. 14, 2016	Dec. 01, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 14, 2015	Nov. 14, 2016	Dec. 13, 2016	Conduction (CO05-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	35419&03	30MHz to 1GHz	Jan. 13, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Jan. 12, 2017	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Aug. 18, 2017	Radiation (03CH07-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20Hz ~ 8.4GHz	Oct. 26, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Oct. 25, 2017	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Nov. 29, 2016 ~ Dec. 03, 2016	Sep. 01, 2017	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590075	1GHz ~ 18GHz	Apr. 15, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Apr. 14, 2017	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	Mar. 18, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Mar. 17, 2017	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 12, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Oct. 11, 2017	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Feb. 27, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Feb. 26, 2017	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Nov. 29, 2016 ~ Dec. 03, 2016	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Nov. 29, 2016 ~ Dec. 03, 2016	N/A	Radiation (03CH07-HY)
Preamplifier	MITEQ	JS44-18004000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Jun. 13, 2017	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 08, 2016	Nov. 29, 2016 ~ Dec. 03, 2016	Nov. 07, 2017	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))	**2.20**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.7**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.5**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.2**

Appendix A. Radiated Spurious Emission

Test Engineer :	Jesse Wang, James Chiu, and Daniel Lee	Temperature :	21~23°C
		Relative Humidity :	47~51%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5618.4	50.62	-17.58	68.2	39.25	34.6	11.89	35.12	353	251	P	H
		5698	51.62	-52.11	103.73	40.16	34.6	12	35.14	353	251	P	H
		5718	61.38	-48.86	110.24	49.86	34.6	12.06	35.14	353	251	P	H
		5723.6	64.3	-54.71	119.01	52.78	34.6	12.06	35.14	353	251	P	H
	*	5745	107.91	-	-	96.35	34.6	12.11	35.15	353	251	P	H
	*	5745	100.36	-	-	88.8	34.6	12.11	35.15	353	251	A	H
													H
													H
		5642.8	52.04	-16.16	68.2	40.62	34.6	11.95	35.13	270	183	P	V
		5692.6	54.84	-44.9	99.74	43.38	34.6	12	35.14	270	183	P	V
		5717.8	63.33	-46.85	110.18	51.81	34.6	12.06	35.14	270	183	P	V
		5722.8	65.96	-51.22	117.18	54.44	34.6	12.06	35.14	270	183	P	V
	*	5745	110.61	-	-	99.05	34.6	12.11	35.15	270	183	P	V
	*	5745	103.26	-	-	91.7	34.6	12.11	35.15	270	183	A	V
													V
													V

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5648.6	50.64	-17.56	68.2	39.22	34.6	11.95	35.13	365	249	P	H
		5669.2	51.77	-30.68	82.45	40.3	34.6	12	35.13	365	249	P	H
		5703.6	51.34	-54.87	106.21	39.82	34.6	12.06	35.14	365	249	P	H
		5722.4	51.16	-65.11	116.27	39.64	34.6	12.06	35.14	365	249	P	H
	*	5785	108.11	-	-	96.5	34.6	12.17	35.16	365	249	P	H
	*	5785	100.71	-	-	89.1	34.6	12.17	35.16	365	249	A	H
		5850.6	50.59	-70.24	120.83	38.88	34.6	12.28	35.17	365	249	P	H
		5867.4	52.8	-54.53	107.33	40.99	34.6	12.39	35.18	365	249	P	H
		5888.4	50.86	-44.39	95.25	39.06	34.6	12.39	35.19	365	249	P	H
		5944.2	52.09	-16.11	68.2	40.07	34.6	12.62	35.2	365	249	P	H
													H
802.11a CH 157 5785MHz													H
		5643.6	52.29	-15.91	68.2	40.87	34.6	11.95	35.13	276	196	P	V
		5666.8	52.84	-27.83	80.67	41.37	34.6	12	35.13	276	196	P	V
		5720	52.42	-58.38	110.8	40.9	34.6	12.06	35.14	276	196	P	V
		5723.6	52.44	-66.57	119.01	40.92	34.6	12.06	35.14	276	196	P	V
	*	5785	110.81	-	-	99.2	34.6	12.17	35.16	276	196	P	V
	*	5785	103.31	-	-	91.7	34.6	12.17	35.16	276	196	A	V
		5853.2	51.86	-63.04	114.9	40.15	34.6	12.28	35.17	276	196	P	V
		5865.2	52.91	-55.03	107.94	41.1	34.6	12.39	35.18	276	196	P	V
		5896.6	52.48	-36.7	89.18	40.68	34.6	12.39	35.19	276	196	P	V
		5926.2	51.75	-16.45	68.2	39.83	34.6	12.51	35.19	276	196	P	V
													V
													V

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	5825	108.41	-	-	96.7	34.6	12.28	35.17	380	245	P	H
	*	5825	101.31	-	-	89.6	34.6	12.28	35.17	380	245	A	H
		5851.4	60.11	-58.9	119.01	48.4	34.6	12.28	35.17	380	245	P	H
		5856.8	58.39	-51.91	110.3	46.68	34.6	12.28	35.17	380	245	P	H
		5896.6	52.09	-37.09	89.18	40.29	34.6	12.39	35.19	380	245	P	H
		5928.2	51.49	-16.71	68.2	39.57	34.6	12.51	35.19	380	245	P	H
													H
802.11a													H
CH 165	*	5825	110.61	-	-	98.9	34.6	12.28	35.17	275	197	P	V
5825MHz	*	5825	103.41	-	-	91.7	34.6	12.28	35.17	275	197	A	V
		5851	64.77	-55.15	119.92	53.06	34.6	12.28	35.17	275	197	P	V
		5863.8	59.8	-48.53	108.33	47.99	34.6	12.39	35.18	275	197	P	V
		5878	53.45	-49.52	102.97	41.64	34.6	12.39	35.18	275	197	P	V
		5946.4	52.07	-16.13	68.2	40.05	34.6	12.62	35.2	275	197	P	V
													V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 149 5745MHz		11490	41.52	-32.48	74	42.43	39.27	17.16	57.34	100	0	P	H
		17232	43.87	-24.33	68.2	36.57	42.43	20.76	55.89	100	0	P	H
													H
													H
		11490	43.07	-30.93	74	43.98	39.27	17.16	57.34	100	0	P	V
		17232	44.33	-23.87	68.2	37.03	42.43	20.76	55.89	100	0	P	V
													V
													V
802.11a CH 157 5785MHz		11570	41.43	-32.57	74	42.26	39.2	17.16	57.19	100	0	P	H
		17352	44.22	-23.98	68.2	37.08	42.24	20.84	55.94	100	0	P	H
													H
													H
		11570	41.77	-32.23	74	42.6	39.2	17.16	57.19	100	0	P	V
		17352	44.47	-23.73	68.2	37.33	42.24	20.84	55.94	100	0	P	V
													V
													V
802.11a CH 165 5825MHz		11650	41.23	-32.77	74	42.04	39.11	17.16	57.08	100	0	P	H
		17472	44.5	-23.7	68.2	37.51	42.05	20.93	55.99	100	0	P	H
													H
													H
		11650	41.62	-32.38	74	42.43	39.11	17.16	57.08	100	0	P	V
		17472	44.48	-23.72	68.2	37.49	42.05	20.93	55.99	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5611	52.25	-15.95	68.2	40.88	34.6	11.89	35.12	353	251	P	H
		5688.8	50.77	-46.17	96.94	39.31	34.6	12	35.14	353	251	P	H
		5719.2	60.1	-50.48	110.58	48.58	34.6	12.06	35.14	353	251	P	H
		5723.6	64.55	-54.46	119.01	53.03	34.6	12.06	35.14	353	251	P	H
	*	5745	107.36	-	-	95.8	34.6	12.11	35.15	353	251	P	H
	*	5745	99.86	-	-	88.3	34.6	12.11	35.15	353	251	A	H
802.11n													H
HT20													H
CH 149		5647	52.31	-15.89	68.2	40.89	34.6	11.95	35.13	270	183	P	V
5745MHz		5700	54.38	-50.82	105.2	42.92	34.6	12	35.14	270	183	P	V
		5718.8	63.97	-46.49	110.46	52.45	34.6	12.06	35.14	270	183	P	V
		5724.8	67.19	-54.55	121.74	55.67	34.6	12.06	35.14	270	183	P	V
	*	5745	110.46	-	-	98.9	34.6	12.11	35.15	270	183	P	V
	*	5745	102.86	-	-	91.3	34.6	12.11	35.15	270	183	A	V
													V
													V

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5639.8	52.11	-16.09	68.2	40.69	34.6	11.95	35.13	365	249	P	H
		5678.2	50.79	-38.32	89.11	39.32	34.6	12	35.13	365	249	P	H
		5713.4	50.94	-58.01	108.95	39.42	34.6	12.06	35.14	365	249	P	H
		5721.4	51.76	-62.23	113.99	40.24	34.6	12.06	35.14	365	249	P	H
	*	5785	107.91	-	-	96.3	34.6	12.17	35.16	365	249	P	H
	*	5785	100.31	-	-	88.7	34.6	12.17	35.16	365	249	A	H
		5852.4	51.32	-65.41	116.73	39.61	34.6	12.28	35.17	365	249	P	H
		5869.2	51.53	-55.29	106.82	39.72	34.6	12.39	35.18	365	249	P	H
		5880.8	51.42	-49.47	100.89	39.61	34.6	12.39	35.18	365	249	P	H
		5929.6	50.36	-17.84	68.2	38.44	34.6	12.51	35.19	365	249	P	H
802.11n													H
HT20													H
CH 157		5620.4	51.84	-16.36	68.2	40.41	34.6	11.95	35.12	276	196	P	V
5785MHz		5694.4	54.04	-47.03	101.07	42.58	34.6	12	35.14	276	196	P	V
		5716.8	52.95	-56.96	109.91	41.43	34.6	12.06	35.14	276	196	P	V
		5724.2	51.77	-68.61	120.38	40.25	34.6	12.06	35.14	276	196	P	V
	*	5785	110.21	-	-	98.6	34.6	12.17	35.16	276	196	P	V
	*	5785	102.61	-	-	91	34.6	12.17	35.16	276	196	A	V
		5852.6	51.89	-64.38	116.27	40.18	34.6	12.28	35.17	276	196	P	V
		5862.8	53.71	-54.9	108.61	41.9	34.6	12.39	35.18	276	196	P	V
		5885.4	53.06	-44.42	97.48	41.26	34.6	12.39	35.19	276	196	P	V
		5942.6	51.84	-16.36	68.2	39.82	34.6	12.62	35.2	276	196	P	V
													V
													V

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	5825	108.31	-	-	96.6	34.6	12.28	35.17	380	245	P	H
	*	5825	100.71	-	-	89	34.6	12.28	35.17	380	245	A	H
		5851	62.03	-57.89	119.92	50.32	34.6	12.28	35.17	380	245	P	H
		5860.2	59.13	-50.21	109.34	47.32	34.6	12.39	35.18	380	245	P	H
		5909	51.96	-28.05	80.01	40.04	34.6	12.51	35.19	380	245	P	H
		5928	50.74	-17.46	68.2	38.82	34.6	12.51	35.19	380	245	P	H
802.11n													H
HT20													H
CH 165	*	5825	110.01	-	-	98.3	34.6	12.28	35.17	275	197	P	V
5825MHz	*	5825	102.81	-	-	91.1	34.6	12.28	35.17	275	197	A	V
		5850	65.11	-57.09	122.2	53.4	34.6	12.28	35.17	275	197	P	V
		5856.4	62.04	-48.37	110.41	50.33	34.6	12.28	35.17	275	197	P	V
		5876	54.69	-49.77	104.46	42.88	34.6	12.39	35.18	275	197	P	V
		5939	51.23	-16.97	68.2	39.32	34.6	12.51	35.2	275	197	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11490	41.88	-32.12	74	42.79	39.27	17.16	57.34	100	0	P	H
		17232	44.66	-23.54	68.2	37.36	42.43	20.76	55.89	100	0	P	H
802.11n													H
HT20													H
CH 149		11490	41.77	-32.23	74	42.68	39.27	17.16	57.34	100	0	P	V
5745MHz		17232	45.07	-23.13	68.2	37.77	42.43	20.76	55.89	100	0	P	V
													V
													V
		11570	41.91	-32.09	74	42.74	39.2	17.16	57.19	100	0	P	H
		17352	45.08	-23.12	68.2	37.94	42.24	20.84	55.94	100	0	P	H
802.11n													H
HT20													H
CH 157		11570	41.09	-32.91	74	41.92	39.2	17.16	57.19	100	0	P	V
5785MHz		17352	44.92	-23.28	68.2	37.78	42.24	20.84	55.94	100	0	P	V
													V
													V
		11650	41.47	-32.53	74	42.28	39.11	17.16	57.08	100	0	P	H
		17472	45.19	-23.01	68.2	38.2	42.05	20.93	55.99	100	0	P	H
802.11n													H
HT20													H
CH 165		11650	40.71	-33.29	74	41.52	39.11	17.16	57.08	100	0	P	V
5825MHz		17472	45.08	-23.12	68.2	38.09	42.05	20.93	55.99	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5611.8	51.22	-16.98	68.2	39.85	34.6	11.89	35.12	351	248	P	H
		5678	53	-35.96	88.96	41.53	34.6	12	35.13	351	248	P	H
		5719.4	60.82	-49.81	110.63	49.3	34.6	12.06	35.14	351	248	P	H
		5724.4	61.1	-59.73	120.83	49.58	34.6	12.06	35.14	351	248	P	H
	*	5755	105.96	-	-	94.4	34.6	12.11	35.15	351	248	P	H
	*	5755	98.16	-	-	86.6	34.6	12.11	35.15	351	248	A	H
		5851.2	51.69	-67.77	119.46	39.98	34.6	12.28	35.17	351	248	P	H
		5858.8	51.17	-58.56	109.73	39.47	34.6	12.28	35.18	351	248	P	H
		5884.6	51.17	-46.9	98.07	39.37	34.6	12.39	35.19	351	248	P	H
		5931.2	49.11	-19.09	68.2	37.19	34.6	12.51	35.19	351	248	P	H
802.11n													H
HT40													H
CH 151		5604.8	53.07	-15.13	68.2	41.7	34.6	11.89	35.12	296	184	P	V
5755MHz		5698.8	58.22	-46.1	104.32	46.76	34.6	12	35.14	296	184	P	V
		5718.4	64.83	-45.52	110.35	53.31	34.6	12.06	35.14	296	184	P	V
		5724.2	68.05	-52.33	120.38	56.53	34.6	12.06	35.14	296	184	P	V
	*	5755	108.46	-	-	96.9	34.6	12.11	35.15	296	184	P	V
	*	5755	100.66	-	-	89.1	34.6	12.11	35.15	296	184	A	V
		5851.4	51.59	-67.42	119.01	39.88	34.6	12.28	35.17	296	184	P	V
		5857	54.06	-56.18	110.24	42.35	34.6	12.28	35.17	296	184	P	V
		5900.4	53.15	-33.21	86.36	41.23	34.6	12.51	35.19	296	184	P	V
		5925.2	50.77	-17.43	68.2	38.85	34.6	12.51	35.19	296	184	P	V
													V
													V

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5641.6	51.27	-16.93	68.2	39.85	34.6	11.95	35.13	346	247	P	H
		5673.6	51.58	-34.12	85.7	40.11	34.6	12	35.13	346	247	P	H
		5712	51.56	-57	108.56	40.04	34.6	12.06	35.14	346	247	P	H
		5721	50.89	-62.19	113.08	39.37	34.6	12.06	35.14	346	247	P	H
	*	5795	105.95	-	-	94.34	34.6	12.17	35.16	346	247	P	H
	*	5795	98.1	-	-	86.49	34.6	12.17	35.16	346	247	A	H
		5851.2	54.96	-64.5	119.46	43.25	34.6	12.28	35.17	346	247	P	H
		5857.8	54.55	-55.46	110.01	42.85	34.6	12.28	35.18	346	247	P	H
		5899	52.94	-34.46	87.4	41.14	34.6	12.39	35.19	346	247	P	H
		5946	50.45	-17.75	68.2	38.43	34.6	12.62	35.2	346	247	P	H
802.11n													H
HT40													H
CH 159		5628	52.42	-15.78	68.2	40.99	34.6	11.95	35.12	290	198	P	V
5795MHz		5696.2	53.18	-49.22	102.4	41.72	34.6	12	35.14	290	198	P	V
		5719.8	53.83	-56.91	110.74	42.31	34.6	12.06	35.14	290	198	P	V
		5722.8	53.33	-63.85	117.18	41.81	34.6	12.06	35.14	290	198	P	V
	*	5795	108.58	-	-	96.97	34.6	12.17	35.16	290	198	P	V
	*	5795	100.72	-	-	89.11	34.6	12.17	35.16	290	198	A	V
		5851.2	58.75	-60.71	119.46	47.04	34.6	12.28	35.17	290	198	P	V
		5864	56.9	-51.38	108.28	45.09	34.6	12.39	35.18	290	198	P	V
		5906.4	52.51	-29.42	81.93	40.59	34.6	12.51	35.19	290	198	P	V
		5946.4	51.97	-16.23	68.2	39.95	34.6	12.62	35.2	290	198	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11510	42.03	-31.97	74	42.87	39.3	17.16	57.3	100	0	P	H
		17268	44.61	-23.59	68.2	37.36	42.37	20.79	55.91	100	0	P	H
802.11n													H
HT40													H
CH 151		11510	41.65	-32.35	74	42.49	39.3	17.16	57.3	100	0	P	V
5755MHz		17268	43.9	-24.3	68.2	36.65	42.37	20.79	55.91	100	0	P	V
													V
													V
		11590	42.58	-31.42	74	43.4	39.18	17.16	57.16	100	0	P	H
		17388	44.29	-23.91	68.2	37.18	42.19	20.87	55.95	100	0	P	H
802.11n													H
HT40													H
CH 159		11590	41.46	-32.54	74	42.28	39.18	17.16	57.16	100	0	P	V
5795MHz		17388	46.12	-22.08	68.2	39.01	42.19	20.87	55.95	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5648.8	52.46	-15.74	68.2	41.04	34.6	11.95	35.13	365	245	P	H
		5667	54.66	-26.16	80.82	43.19	34.6	12	35.13	365	245	P	H
		5709.8	55.93	-52.02	107.95	44.41	34.6	12.06	35.14	365	245	P	H
		5722.8	55.95	-61.23	117.18	44.43	34.6	12.06	35.14	365	245	P	H
	*	5775	103.14	-	-	91.59	34.6	12.11	35.16	365	245	P	H
	*	5775	95.27	-	-	83.72	34.6	12.11	35.16	365	245	A	H
		5853.8	65.14	-48.4	113.54	53.43	34.6	12.28	35.17	365	245	P	H
		5856	65.39	-45.13	110.52	53.68	34.6	12.28	35.17	365	245	P	H
		5878.6	59.42	-43.11	102.53	47.61	34.6	12.39	35.18	365	245	P	H
		5941.6	51.9	-16.3	68.2	39.88	34.6	12.62	35.2	365	245	P	H
802.11ac													H
VHT80													H
CH 155		5644.4	56.02	-12.18	68.2	44.6	34.6	11.95	35.13	290	201	P	V
5775MHz		5672.4	58.49	-26.33	84.82	47.02	34.6	12	35.13	290	201	P	V
		5717	60.3	-49.66	109.96	48.78	34.6	12.06	35.14	290	201	P	V
		5722.8	60.87	-56.31	117.18	49.35	34.6	12.06	35.14	290	201	P	V
	*	5775	106.06	-	-	94.51	34.6	12.11	35.16	290	201	P	V
	*	5775	97.78	-	-	86.23	34.6	12.11	35.16	290	201	A	V
		5853.2	69.58	-45.32	114.9	57.87	34.6	12.28	35.17	290	201	P	V
		5860.6	70.73	-38.5	109.23	58.92	34.6	12.39	35.18	290	201	P	V
		5875.2	60.6	-44.45	105.05	48.79	34.6	12.39	35.18	290	201	P	V
		5948.8	52.84	-15.36	68.2	40.82	34.6	12.62	35.2	290	201	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11550	42.34	-31.66	74	43.17	39.23	17.16	57.22	100	0	P	H
		17328	43.45	-24.75	68.2	36.28	42.29	20.81	55.93	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	41.55	-32.45	74	42.38	39.23	17.16	57.22	100	0	P	V
5775MHz		17328	44.41	-23.79	68.2	37.24	42.29	20.81	55.93	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

5GHz WIFI 802.11ac VHT80 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		30.81	27.66	-12.34	40	32.49	25.46	1.07	31.36	-	-	P	H
		178.5	27.81	-15.69	43.5	42.01	15.51	1.78	31.49	-	-	P	H
		283.53	27	-19	46	36.57	19.42	2.32	31.31	-	-	P	H
		351.8	34.13	-11.87	46	41.6	21.25	2.5	31.22	100	0	P	H
		783	30.99	-15.01	46	30.17	27.53	3.9	30.61	-	-	P	H
		937.7	33.68	-12.32	46	30.17	29.92	4.12	30.53	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11ac													H
VHT80		60.24	36.4	-3.6	40	54.7	12	1.28	31.58	100	0	P	V
LF		101.01	27.3	-16.2	43.5	40.78	16.49	1.55	31.52	-	-	P	V
		276.51	32	-14	46	41.66	19.34	2.32	31.32	-	-	P	V
		731.9	30.25	-15.75	46	30.27	26.92	3.74	30.68	-	-	P	V
		825.7	32.85	-13.15	46	31.12	28.21	4.1	30.58	-	-	P	V
		934.9	33.38	-12.62	46	29.94	29.85	4.12	30.53	-	-	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	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b 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. Level(dBµV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBµV/m)

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

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

= 55.45 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 55.45(dBµV/m) – 74(dBµV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBµV/m)

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

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

= 43.54 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 43.54(dBµV/m) – 54(dBµV/m)

= -10.46(dB)

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

Band 4 - 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5649.6	50.38	-17.82	68.2	39.1	34.6	11.95	35.27	378	247	P	H
		5684.6	52.3	-41.54	93.84	40.98	34.6	12	35.28	378	247	P	H
		5719.6	54.58	-56.11	110.69	43.2	34.6	12.06	35.28	378	247	P	H
		5722.6	58.95	-57.78	116.73	47.57	34.6	12.06	35.28	378	247	P	H
	*	5745	108.99	-	-	97.57	34.6	12.11	35.29	378	247	P	H
	*	5745	100.97	-	-	89.55	34.6	12.11	35.29	378	247	A	H
802.11n													H
HT20													H
CH 149		5603.8	52.22	-15.98	68.2	40.99	34.6	11.89	35.26	296	190	P	V
5745MHz		5697	55.21	-47.78	102.99	43.89	34.6	12	35.28	296	190	P	V
		5719.4	60.26	-50.37	110.63	48.88	34.6	12.06	35.28	296	190	P	V
		5723.8	64.36	-55.1	119.46	52.98	34.6	12.06	35.28	296	190	P	V
	*	5745	113.6	-	-	102.18	34.6	12.11	35.29	296	190	P	V
	*	5745	105.22	-	-	93.8	34.6	12.11	35.29	296	190	A	V
													V
													V

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5644.6	49.74	-18.46	68.2	38.46	34.6	11.95	35.27	311	248	P	H
		5652.4	49.98	-20	69.98	38.7	34.6	11.95	35.27	311	248	P	H
		5710.4	50.98	-57.13	108.11	39.6	34.6	12.06	35.28	311	248	P	H
		5724	50.75	-69.17	119.92	39.37	34.6	12.06	35.28	311	248	P	H
	*	5785	106.66	-	-	95.19	34.6	12.17	35.3	311	248	P	H
	*	5785	99.45	-	-	87.98	34.6	12.17	35.3	311	248	A	H
		5854.4	49.45	-62.72	112.17	37.88	34.6	12.28	35.31	311	248	P	H
		5863.8	50.12	-58.21	108.33	38.44	34.6	12.39	35.31	311	248	P	H
		5879.8	50.52	-51.11	101.63	38.85	34.6	12.39	35.32	311	248	P	H
		5940	49.86	-18.34	68.2	38.08	34.6	12.51	35.33	311	248	P	H
802.11n													H
HT20													H
CH 157		5620.8	52.57	-15.63	68.2	41.28	34.6	11.95	35.26	277	205	P	V
5785MHz		5699.6	53.16	-51.75	104.91	41.84	34.6	12	35.28	277	205	P	V
		5717	55.48	-54.48	109.96	44.1	34.6	12.06	35.28	277	205	P	V
		5723.4	53.26	-65.29	118.55	41.88	34.6	12.06	35.28	277	205	P	V
	*	5785	113.58	-	-	102.11	34.6	12.17	35.3	277	205	P	V
	*	5785	105.56	-	-	94.09	34.6	12.17	35.3	277	205	A	V
		5850.2	53.12	-68.62	121.74	41.55	34.6	12.28	35.31	277	205	P	V
		5855.2	53.63	-57.11	110.74	42.06	34.6	12.28	35.31	277	205	P	V
		5879.4	54.31	-47.62	101.93	42.64	34.6	12.39	35.32	277	205	P	V
		5948.2	51.81	-16.39	68.2	39.92	34.6	12.62	35.33	277	205	P	V
													V
													V

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	5825	109.32	-	-	97.75	34.6	12.28	35.31	380	244	P	H
	*	5825	101.23	-	-	89.66	34.6	12.28	35.31	380	244	A	H
		5850	55.67	-66.53	122.2	44.1	34.6	12.28	35.31	380	244	P	H
		5860.4	53.3	-55.99	109.29	41.62	34.6	12.39	35.31	380	244	P	H
		5887.2	53.17	-42.97	96.14	41.5	34.6	12.39	35.32	380	244	P	H
		5925	50.79	-17.41	68.2	39.01	34.6	12.51	35.33	380	244	P	H
802.11n													H
HT20													H
CH 165	*	5825	111.6	-	-	100.03	34.6	12.28	35.31	288	196	P	V
5825MHz	*	5825	104.33	-	-	92.76	34.6	12.28	35.31	288	196	A	V
		5850	56.86	-65.34	122.2	45.29	34.6	12.28	35.31	288	196	P	V
		5859.2	56.09	-53.53	109.62	44.52	34.6	12.28	35.31	288	196	P	V
		5877.2	54.48	-49.09	103.57	42.81	34.6	12.39	35.32	288	196	P	V
		5950	52.13	-16.07	68.2	40.24	34.6	12.62	35.33	288	196	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11490	41.18	-32.82	74	42.09	39.27	17.16	57.34	100	0	P	H
		17232	45.01	-23.19	68.2	37.71	42.43	20.76	55.89	100	0	P	H
802.11n													H
HT20													H
CH 149		11490	42.75	-31.25	74	43.66	39.27	17.16	57.34	100	0	P	V
5745MHz		17232	45.45	-22.75	68.2	38.15	42.43	20.76	55.89	100	0	P	V
													V
													V
		11570	41.75	-32.25	74	42.58	39.2	17.16	57.19	100	0	P	H
		17352	44.23	-23.97	68.2	37.09	42.24	20.84	55.94	100	0	P	H
802.11n													H
HT20													H
CH 157		11570	41.13	-32.87	74	41.96	39.2	17.16	57.19	100	0	P	V
5785MHz		17352	44.06	-24.14	68.2	36.92	42.24	20.84	55.94	100	0	P	V
													V
													V
		11650	40.78	-33.22	74	41.59	39.11	17.16	57.08	100	0	P	H
		17580	44.41	-23.79	68.2	37.29	42.1	20.98	55.96	100	0	P	H
802.11n													H
HT20													H
CH 165		11650	41.45	-32.55	74	42.26	39.11	17.16	57.08	100	0	P	V
5825MHz		17580	44.89	-23.31	68.2	37.77	42.1	20.98	55.96	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5644.6	51	-17.2	68.2	39.72	34.6	11.95	35.27	380	119	P	H
		5693.8	52.32	-48.31	100.63	41	34.6	12	35.28	380	119	P	H
		5702.6	53.25	-52.68	105.93	41.87	34.6	12.06	35.28	380	119	P	H
		5722.6	55.91	-60.82	116.73	44.53	34.6	12.06	35.28	380	119	P	H
	*	5755	103.85	-	-	92.43	34.6	12.11	35.29	380	119	P	H
	*	5755	94.92	-	-	83.5	34.6	12.11	35.29	380	119	A	H
		5853.8	49.53	-64.01	113.54	37.96	34.6	12.28	35.31	380	119	P	H
		5870.8	50.13	-56.24	106.37	38.45	34.6	12.39	35.31	380	119	P	H
		5924.2	50.67	-18.12	68.79	38.88	34.6	12.51	35.32	380	119	P	H
		5940.4	50.72	-17.48	68.2	38.83	34.6	12.62	35.33	380	119	P	H
802.11n													H
HT40													H
CH 151		5645.4	53.16	-15.04	68.2	41.88	34.6	11.95	35.27	295	183	P	V
5755MHz		5692.8	56.39	-43.5	99.89	45.07	34.6	12	35.28	295	183	P	V
		5708.6	59.95	-47.66	107.61	48.57	34.6	12.06	35.28	295	183	P	V
		5722	60.36	-55	115.36	48.98	34.6	12.06	35.28	295	183	P	V
	*	5755	109.19	-	-	97.77	34.6	12.11	35.29	295	183	P	V
	*	5755	101.2	-	-	89.78	34.6	12.11	35.29	295	183	A	V
		5850	52.08	-70.12	122.2	40.51	34.6	12.28	35.31	295	183	P	V
		5856.8	53.33	-56.97	110.3	41.76	34.6	12.28	35.31	295	183	P	V
		5888.4	52.1	-43.15	95.25	40.43	34.6	12.39	35.32	295	183	P	V
		5940.2	50.89	-17.31	68.2	39	34.6	12.62	35.33	295	183	P	V
													V
													V

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5609.6	50.63	-17.57	68.2	39.4	34.6	11.89	35.26	378	119	P	H
		5676.6	51.53	-36.39	87.92	40.21	34.6	12	35.28	378	119	P	H
		5718	50.7	-59.54	110.24	39.32	34.6	12.06	35.28	378	119	P	H
		5721.4	48.84	-65.15	113.99	37.46	34.6	12.06	35.28	378	119	P	H
	*	5795	104.24	-	-	92.77	34.6	12.17	35.3	378	119	P	H
	*	5795	95.15	-	-	83.68	34.6	12.17	35.3	378	119	A	H
		5850.4	50.72	-70.57	121.29	39.15	34.6	12.28	35.31	378	119	P	H
		5855.4	51.37	-59.32	110.69	39.8	34.6	12.28	35.31	378	119	P	H
		5891.4	51.2	-41.83	93.03	39.53	34.6	12.39	35.32	378	119	P	H
		5927.8	50.54	-17.66	68.2	38.76	34.6	12.51	35.33	378	119	P	H
802.11n													H
HT40													H
CH 159		5621.2	52.1	-16.1	68.2	40.81	34.6	11.95	35.26	295	183	P	V
5795MHz		5655.6	53.65	-18.71	72.36	42.37	34.6	11.95	35.27	295	183	P	V
		5709.8	54.29	-53.66	107.95	42.91	34.6	12.06	35.28	295	183	P	V
		5721.8	53.63	-61.27	114.9	42.25	34.6	12.06	35.28	295	183	P	V
	*	5795	109.12	-	-	97.65	34.6	12.17	35.3	295	183	P	V
	*	5795	100.74	-	-	89.27	34.6	12.17	35.3	295	183	A	V
		5850.8	54.51	-65.87	120.38	42.94	34.6	12.28	35.31	295	183	P	V
		5858.8	53.97	-55.76	109.73	42.4	34.6	12.28	35.31	295	183	P	V
		5887.8	54.62	-41.08	95.7	42.95	34.6	12.39	35.32	295	183	P	V
		5937.6	53.41	-14.79	68.2	41.63	34.6	12.51	35.33	295	183	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11510	41.72	-32.28	74	42.56	39.3	17.16	57.3	100	0	P	H
		17268	43.79	-24.41	68.2	36.54	42.37	20.79	55.91	100	0	P	H
802.11n													H
HT40													H
CH 151		11510	41.87	-32.13	74	42.71	39.3	17.16	57.3	100	0	P	V
5755MHz		17265	44.47	-23.73	68.2	37.22	42.37	20.79	55.91	100	0	P	V
													V
													V
		11590	41.45	-32.55	74	42.27	39.18	17.16	57.16	100	0	P	H
		17388	44.32	-23.88	68.2	37.21	42.19	20.87	55.95	100	0	P	H
802.11n													H
HT40													H
CH 159		11590	41.66	-32.34	74	42.48	39.18	17.16	57.16	100	0	P	V
5795MHz		17388	44.53	-23.67	68.2	37.42	42.19	20.87	55.95	100	0	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		5647.2	50.66	-17.54	68.2	39.38	34.6	11.95	35.27	380	117	P	H
		5679.4	51.72	-38.28	90	40.4	34.6	12	35.28	380	117	P	H
		5719.8	55.51	-55.23	110.74	44.13	34.6	12.06	35.28	380	117	P	H
		5722.4	53.63	-62.64	116.27	42.25	34.6	12.06	35.28	380	117	P	H
	*	5775	101.1	-	-	89.69	34.6	12.11	35.3	380	117	P	H
	*	5775	91.39	-	-	79.98	34.6	12.11	35.3	380	117	A	H
		5851.6	54.2	-64.35	118.55	42.63	34.6	12.28	35.31	380	117	P	H
		5861	54.19	-54.93	109.12	42.51	34.6	12.39	35.31	380	117	P	H
		5878.8	51.8	-50.58	102.38	40.13	34.6	12.39	35.32	380	117	P	H
		5944.2	49.85	-18.35	68.2	37.96	34.6	12.62	35.33	380	117	P	H
802.11ac													H
VHT80													H
CH 155		5631.2	51.96	-16.24	68.2	40.68	34.6	11.95	35.27	297	188	P	V
5775MHz		5697.4	57.59	-45.69	103.28	46.27	34.6	12	35.28	297	188	P	V
		5711.4	58.96	-49.43	108.39	47.58	34.6	12.06	35.28	297	188	P	V
		5720.8	59.33	-53.29	112.62	47.95	34.6	12.06	35.28	297	188	P	V
	*	5775	107.39	-	-	95.98	34.6	12.11	35.3	297	188	P	V
	*	5775	99.73	-	-	88.32	34.6	12.11	35.3	297	188	A	V
		5852.4	61.08	-55.65	116.73	49.51	34.6	12.28	35.31	297	188	P	V
		5867.6	59.23	-48.04	107.27	47.55	34.6	12.39	35.31	297	188	P	V
		5879.4	53.86	-48.07	101.93	42.19	34.6	12.39	35.32	297	188	P	V
		5925	51.54	-16.66	68.2	39.76	34.6	12.51	35.33	297	188	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		11550	43.13	-30.87	74	43.96	39.23	17.16	57.22	100	0	P	H
		17328	43.96	-24.24	68.2	36.79	42.29	20.81	55.93	100	0	P	H
802.11ac													H
VHT80													H
CH 155		11550	41.77	-32.23	74	42.6	39.23	17.16	57.22	100	0	P	V
5775MHz		17328	44.4	-23.8	68.2	37.23	42.29	20.81	55.93	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

5GHz WIFI 802.11n HT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		30.81	27.64	-12.36	40	32.47	25.46	1.07	31.36	100	0	P	H
		212.52	27.65	-15.85	43.5	40.91	16.32	1.87	31.45	-	-	P	H
		276.78	30.14	-15.86	46	39.8	19.34	2.32	31.32	-	-	P	H
		759.2	30.64	-15.36	46	30.16	27.3	3.82	30.64	-	-	P	H
		853	31.81	-14.19	46	29.55	28.72	4.1	30.56	-	-	P	H
		935.6	33.21	-12.79	46	29.75	29.87	4.12	30.53	-	-	P	H
													H
													H
													H
													H
5GHz													H
802.11n													H
HT40		59.16	35.94	-4.06	40	54.14	12.31	1.07	31.58	100	0	P	V
LF		102.36	27.4	-16.1	43.5	40.7	16.67	1.55	31.52	-	-	P	V
		256.26	34.08	-11.92	46	43.77	19.6	2.07	31.36	-	-	P	V
		586.3	27.75	-18.25	46	30.06	25.18	3.36	30.85	-	-	P	V
		754.3	30.54	-15.46	46	30.12	27.25	3.82	30.65	-	-	P	V
		933.5	33.01	-12.99	46	29.62	29.8	4.12	30.53	-	-	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	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b 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. Level(dBµV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBµV/m)

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

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

= 55.45 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 55.45(dBµV/m) – 74(dBµV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBµV/m)

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

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

= 43.54 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 43.54(dBµV/m) – 54(dBµV/m)

= -10.46(dB)

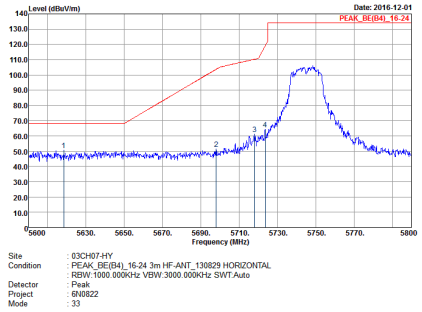
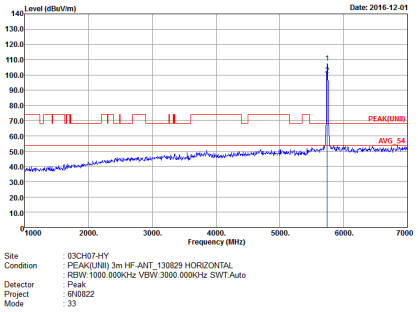
Both peak and average measured complies with the limit line, so test result is "PASS".

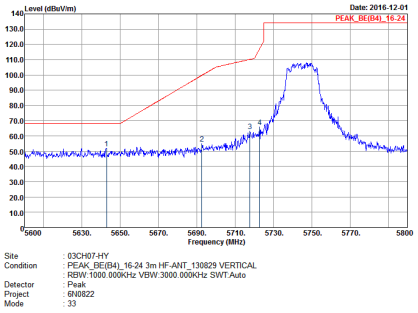
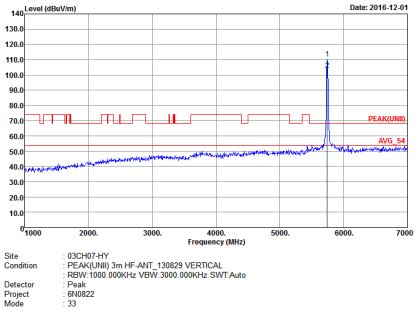
Appendix B. Radiated Spurious Emission Plots

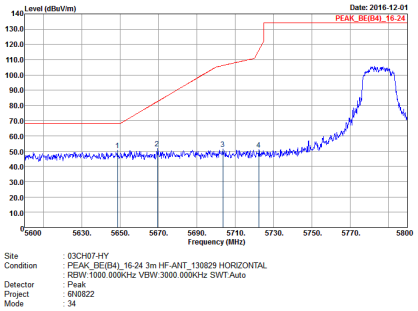
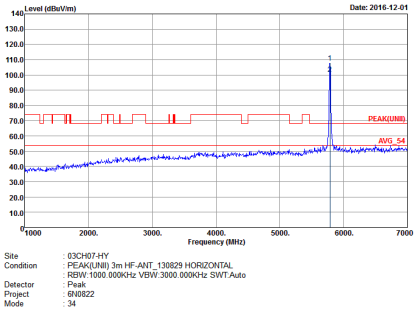
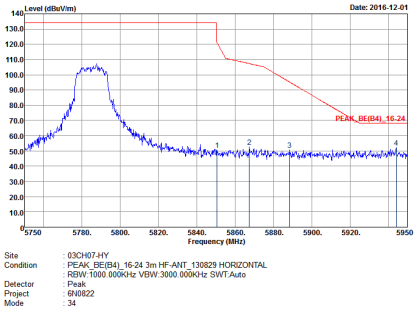
Test Engineer :	Jesse Wang, James Chiu, and Daniel Lee	**Temperature :**	21~23°C
		Relative Humidity :	47~51%

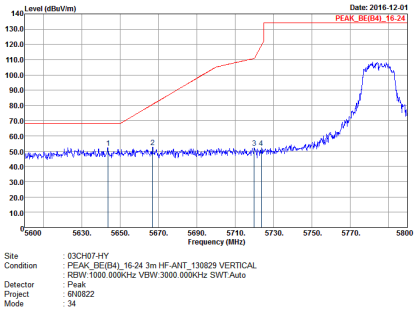
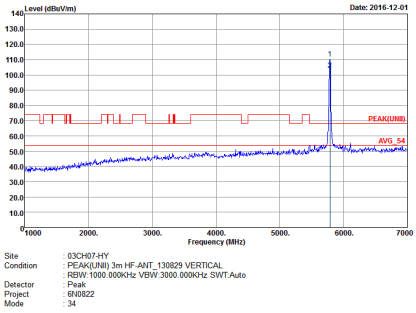
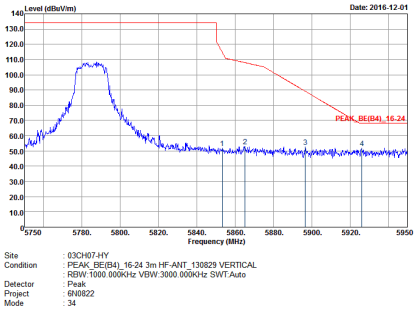
Band 4 - 5725~5850MHz

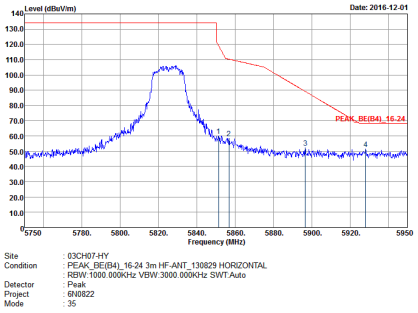
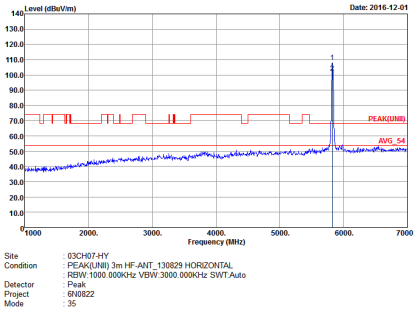
WIFI 802.11a (Band Edge @ 3m)

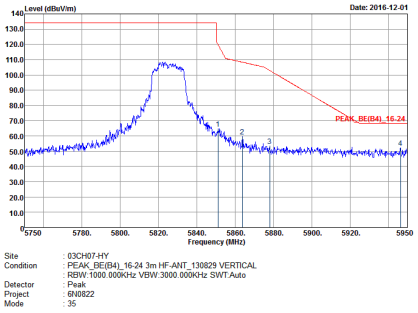
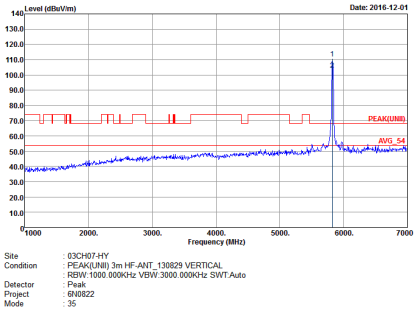
WIFI	**Band 4 5725~5850MHz Band Edge @ 3m**	
ANT	**802.11a CH149 5745MHz**	
2	**Horizontal**	**Fundamental**
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
2	Vertical	Fundamental
Peak		

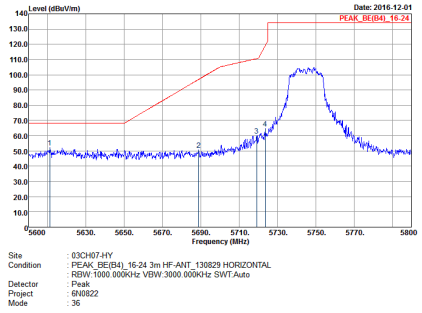
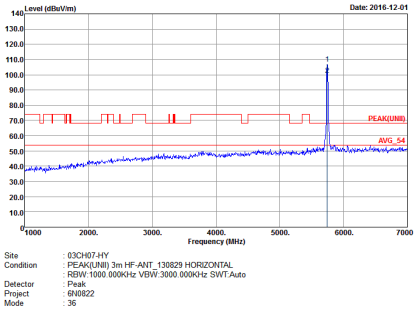
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
2	Horizontal	Fundamental
Peak		
Peak		Left blank

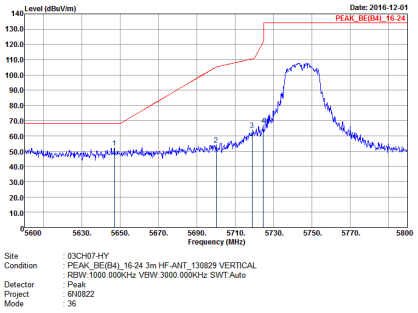
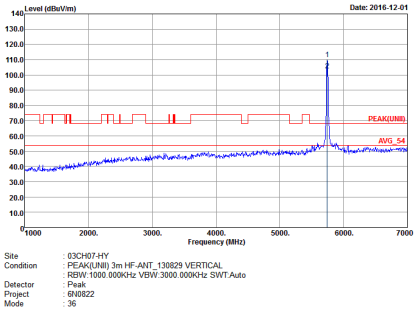
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
2	Vertical	Fundamental
Peak		
Peak		Left blank

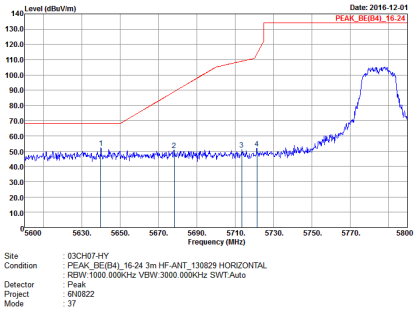
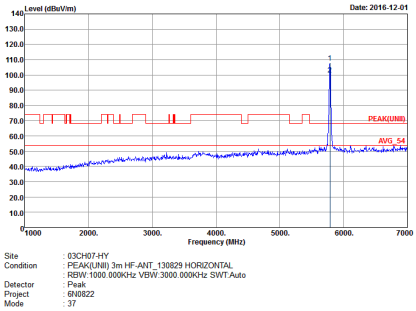
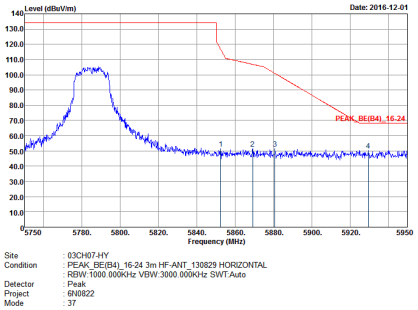
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
2	Horizontal	Fundamental
Peak		

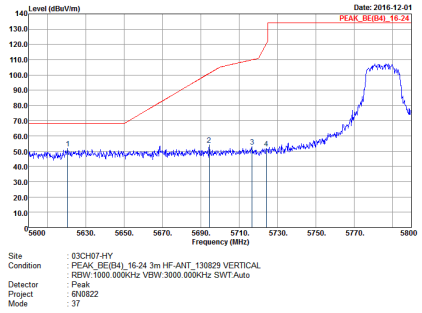
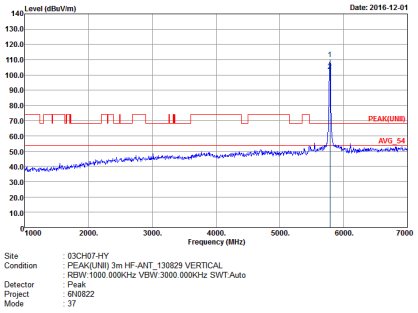
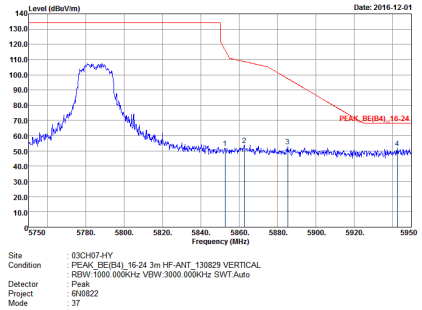
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
2	Vertical	Fundamental
Peak		

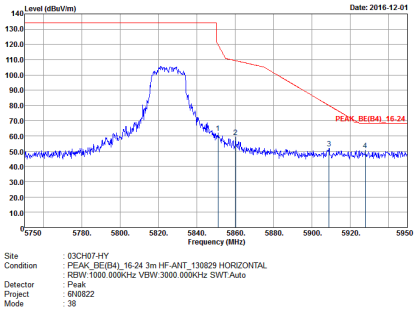
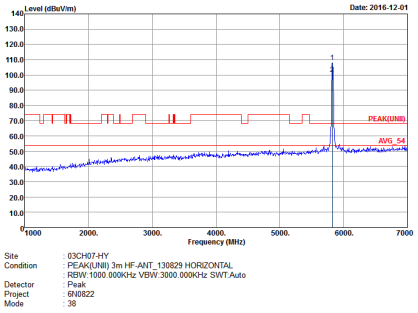
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

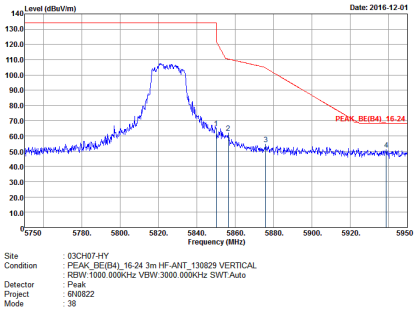
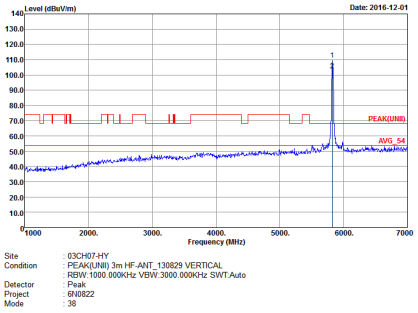
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
2	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
2	Vertical	Fundamental
Peak		

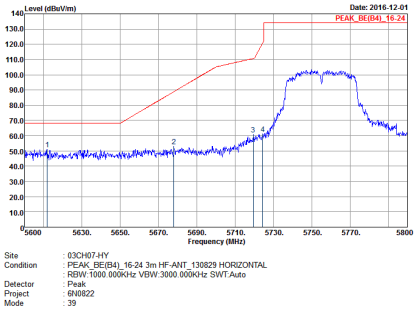
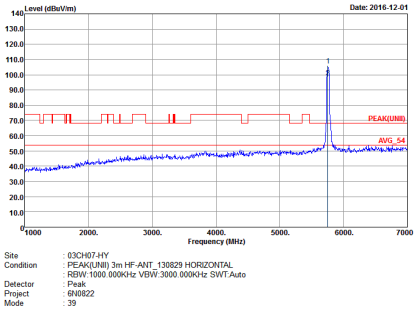
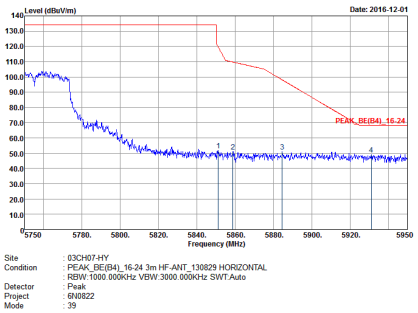
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
2	Horizontal	Fundamental
Peak		
Peak		Left blank

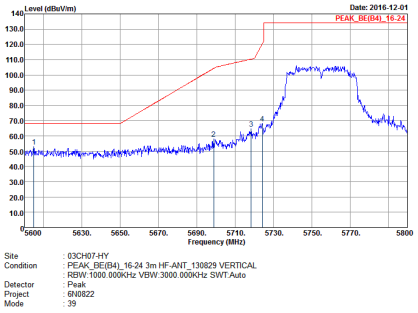
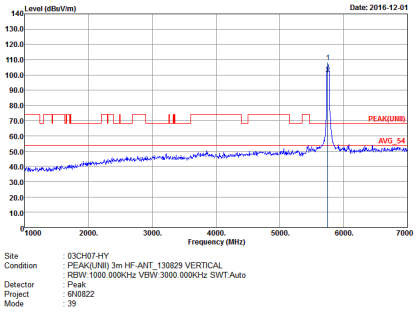
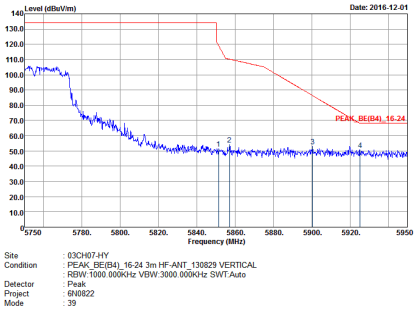
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
2	Vertical	Fundamental
Peak		
Peak		Left blank

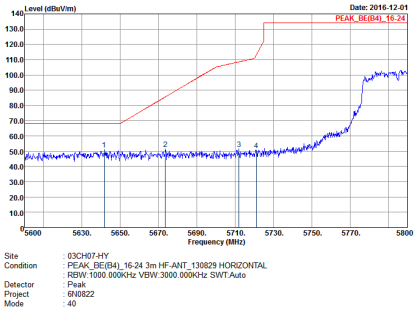
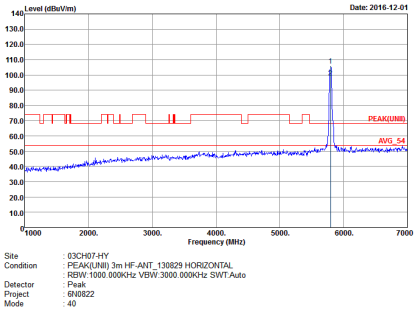
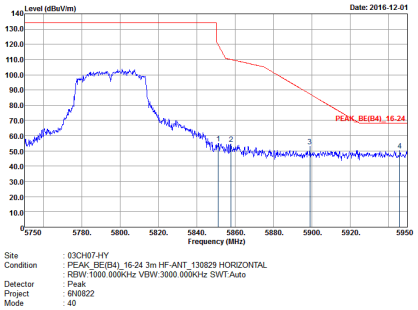
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
2	Horizontal	Fundamental
Peak		

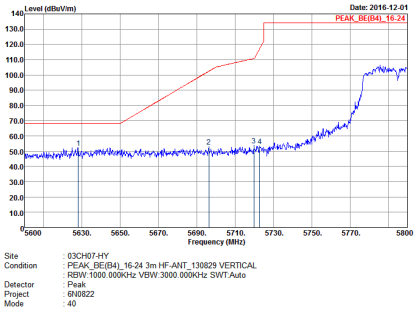
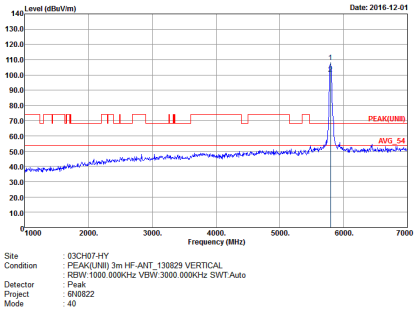
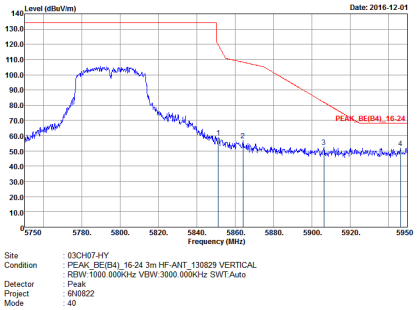
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
2	Vertical	Fundamental
Peak		

Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

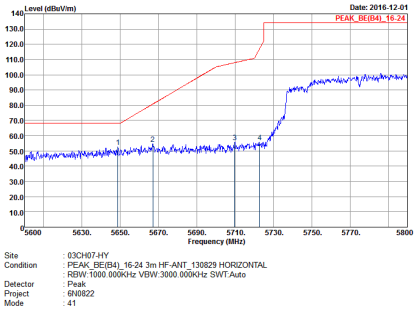
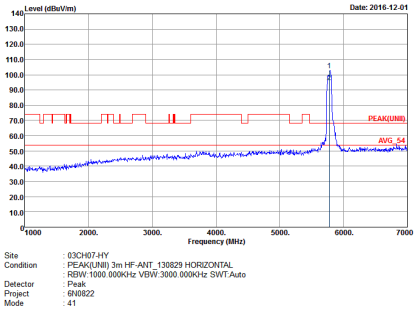
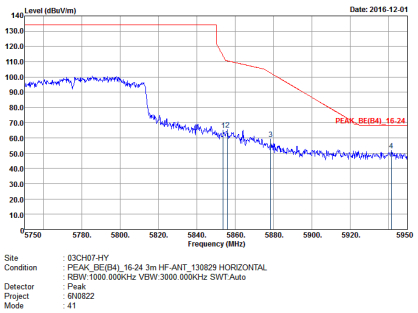
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
2	Horizontal	Fundamental
Peak		
Peak		Left blank

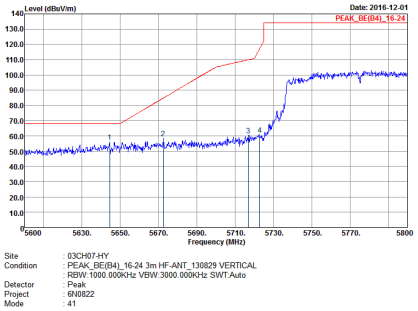
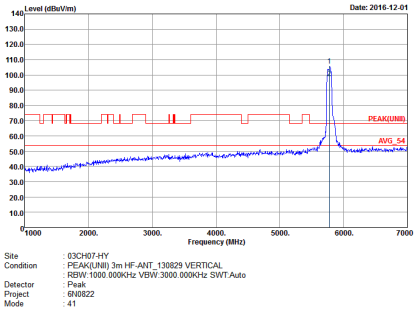
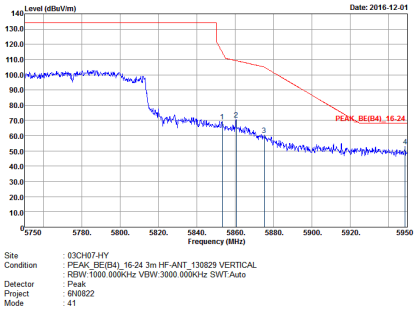
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
2	Vertical	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
2	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
2	Vertical	Fundamental
Peak		
Peak		Left blank

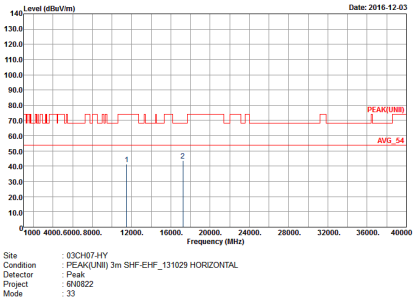
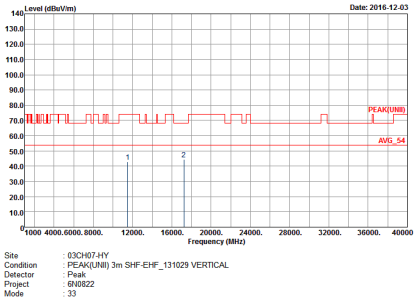
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

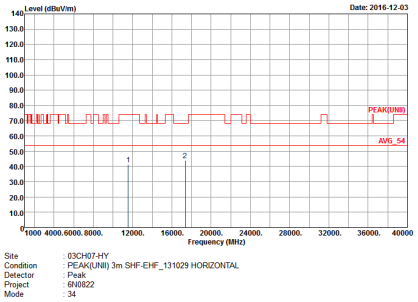
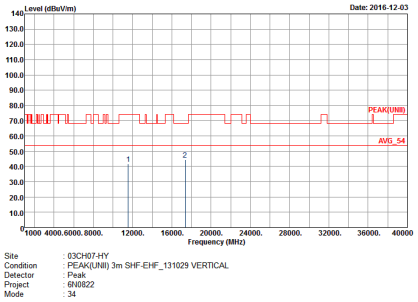
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
2	Horizontal	Fundamental
Peak		
Peak		Left blank

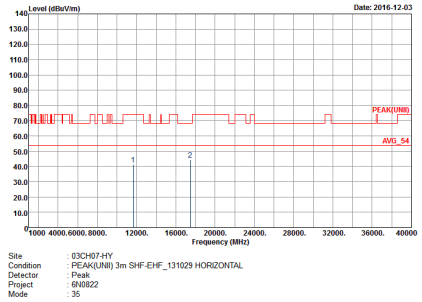
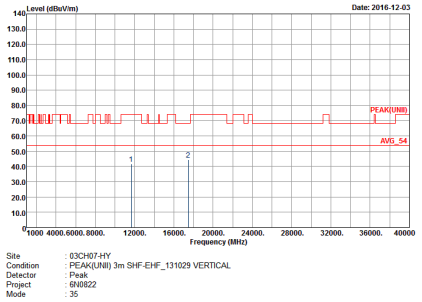
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
2	Vertical	Fundamental
Peak		
Peak		Left blank

Band 4 - 5725~5850MHz

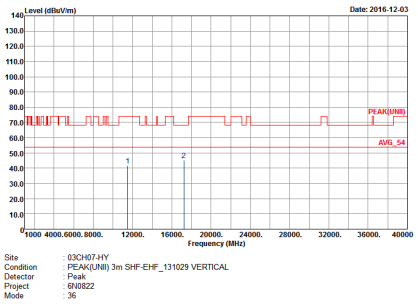
WIFI 802.11a (Harmonic @ 3m)

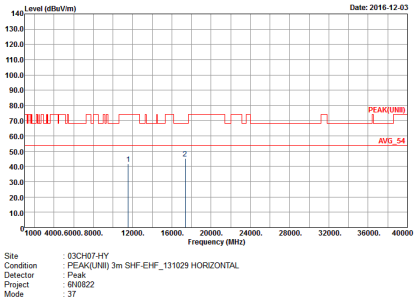
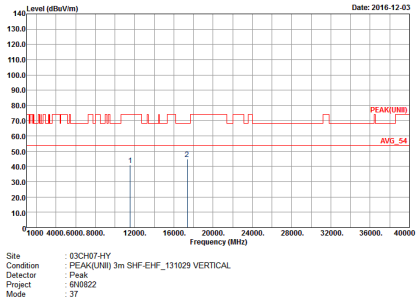
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
2	Horizontal	Vertical
Peak Avg.		

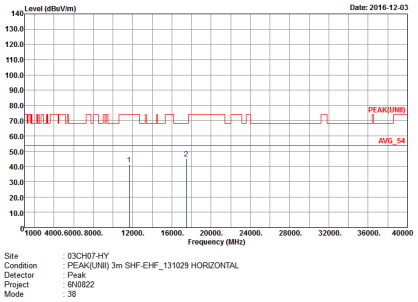
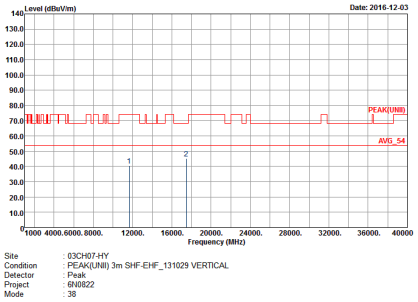
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
2	Horizontal	Vertical
Peak Avg.		

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

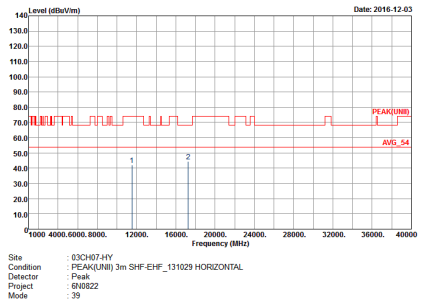
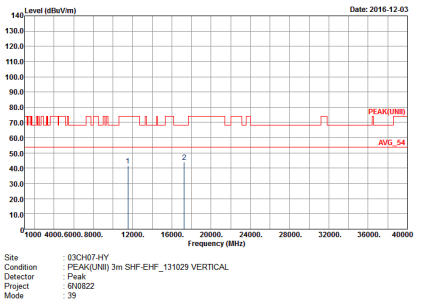
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

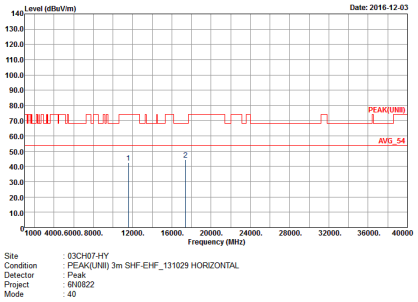
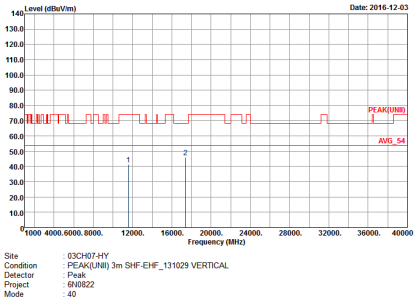
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
2	Horizontal	Vertical
Peak Avg.		

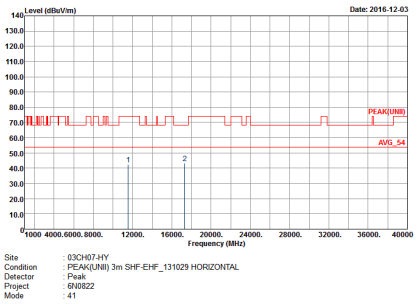
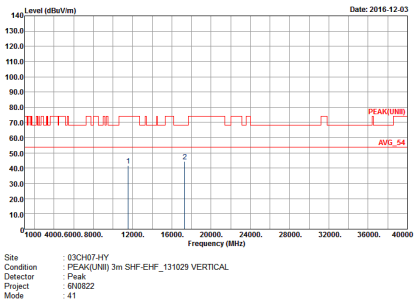
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
2	Horizontal	Vertical
Peak Avg.		

Band 4 5725~5850MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
2	Horizontal	Vertical
Peak Avg.		

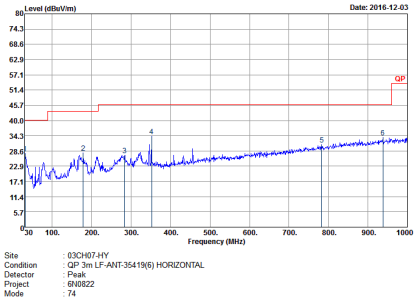
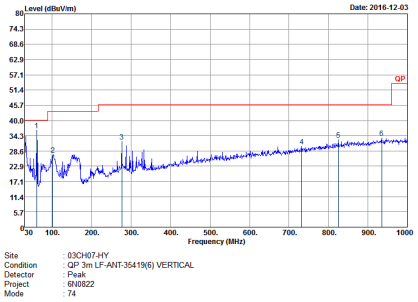
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
2	Horizontal	Vertical
Peak Avg.		

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

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

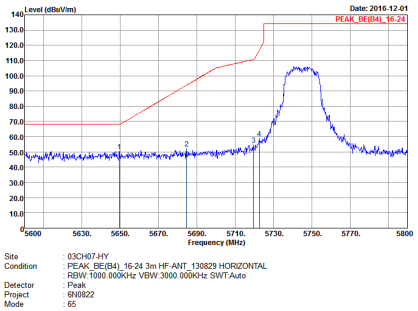
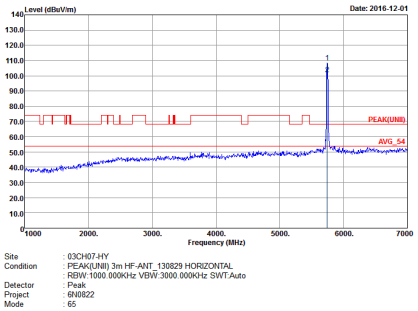
Emission below 1GHz

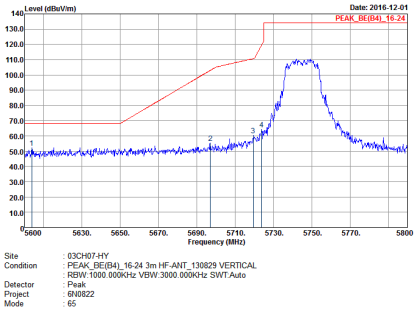
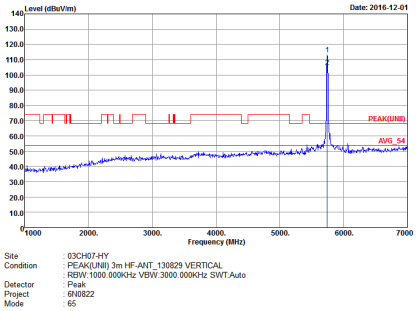
5GHz WIFI 802.11ac VHT80 (LF)

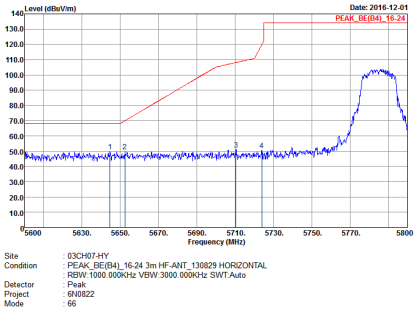
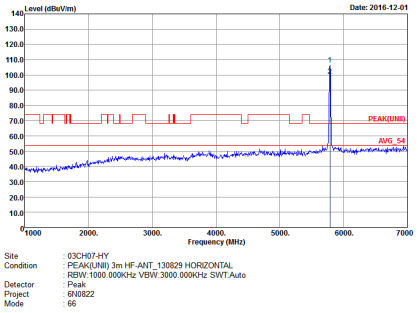
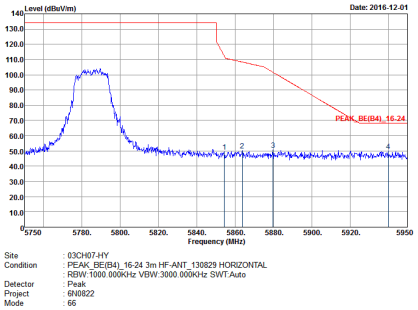
WIFI	5GHz 5725~5850MHz	
ANT	802.11ac VHT80 LF	
2	Horizontal	Vertical
QP / Peak		

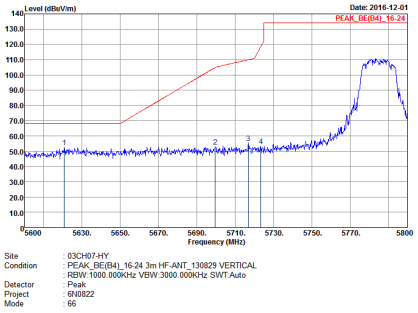
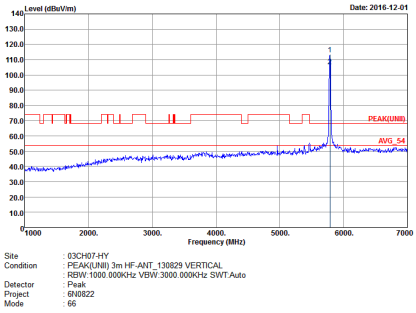
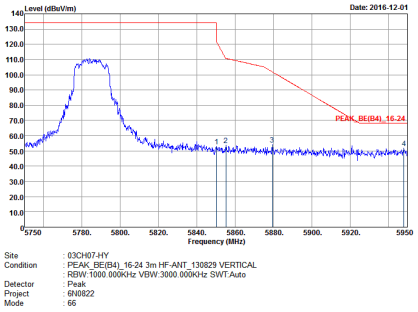
Band 4 - 5725~5850MHz

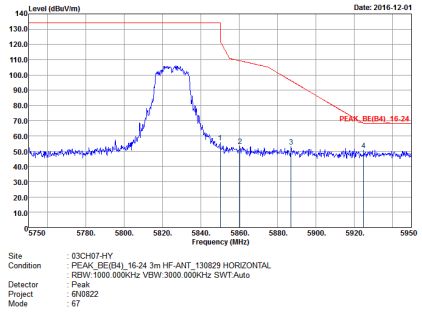
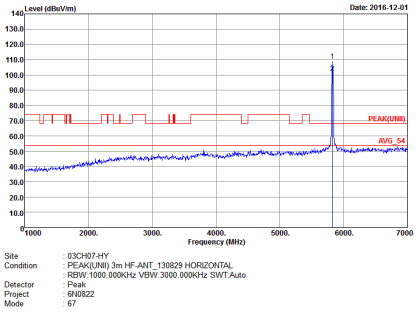
WIFI 802.11n HT20 (Band Edge @ 3m)

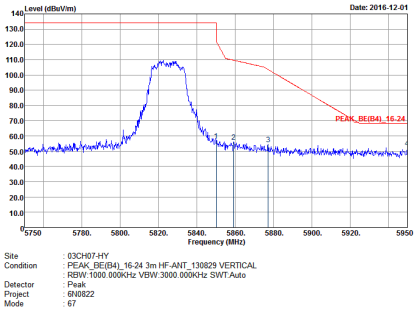
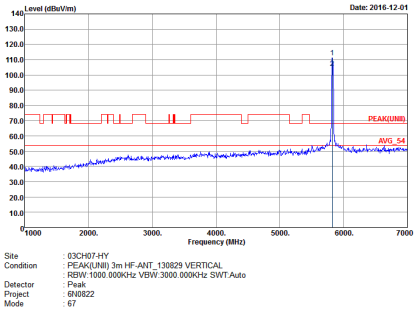
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Vertical	Fundamental
Peak		

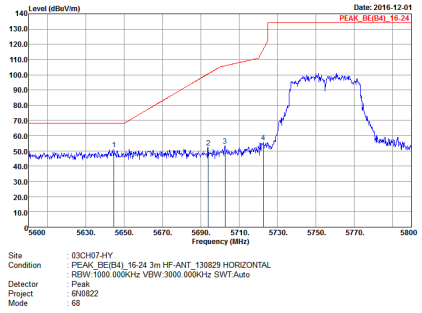
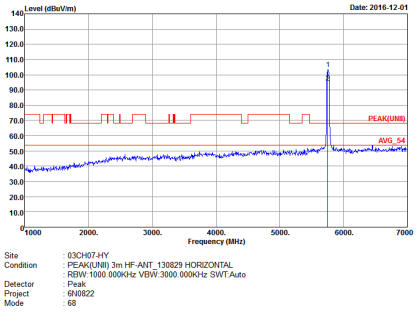
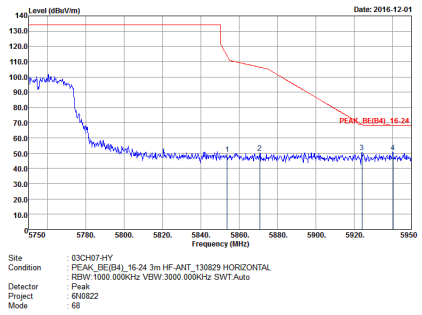
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

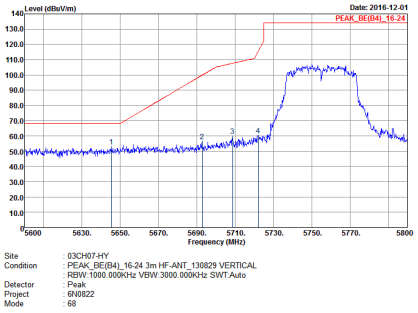
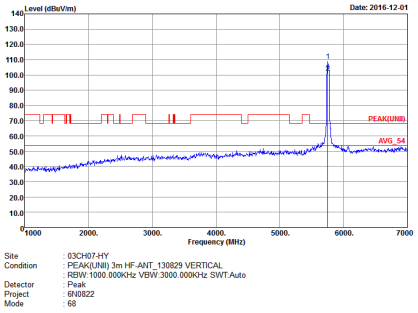
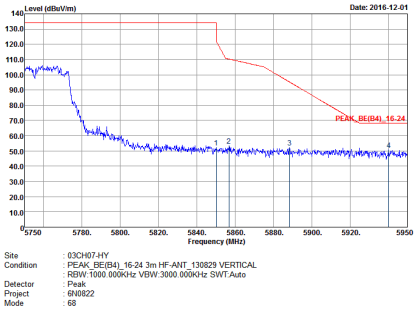
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Vertical	Fundamental
Peak		
Peak		Left blank

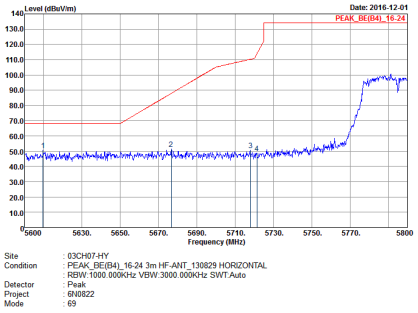
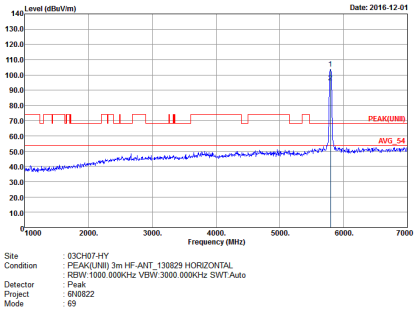
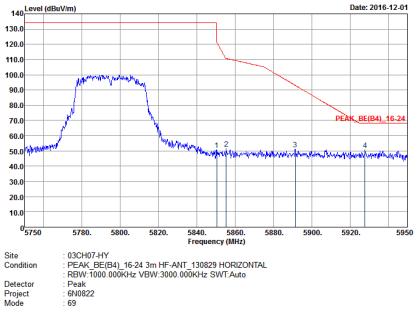
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak		

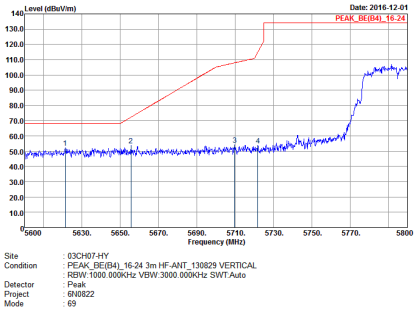
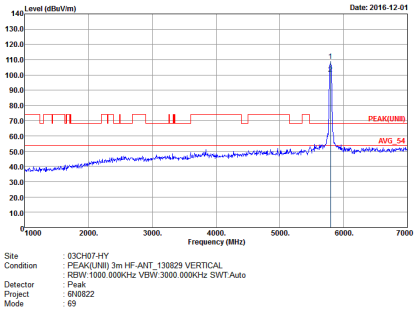
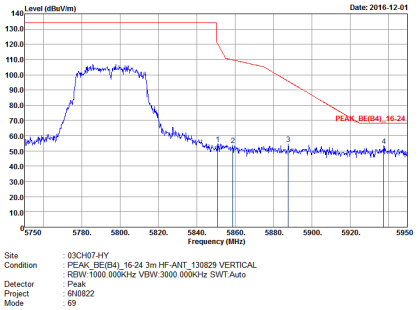
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Vertical	Fundamental
Peak		

Band 4 5725~5850MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

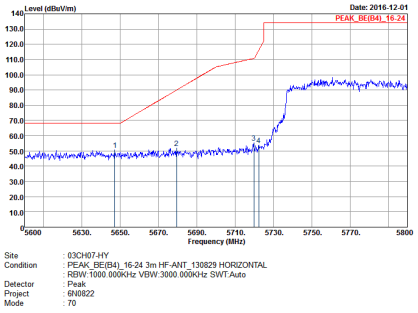
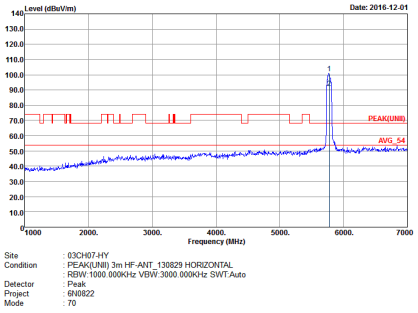
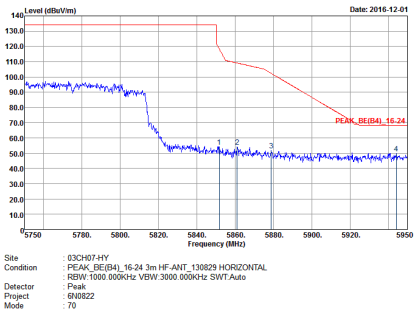
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

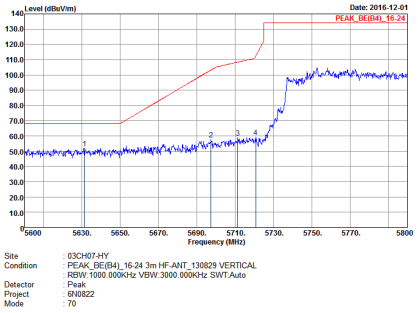
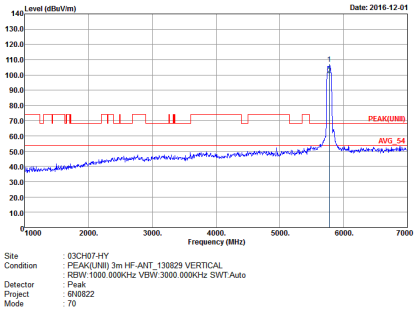
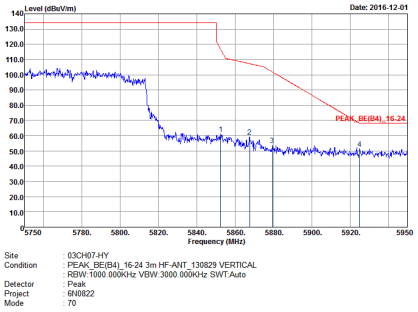
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak		
Peak		Left blank

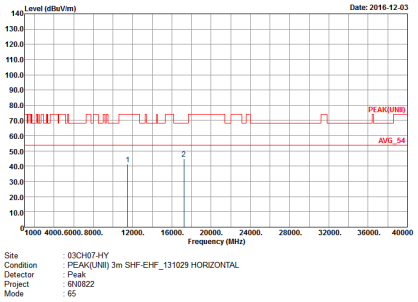
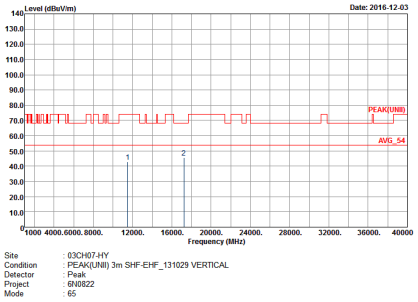
Band 4 5725~5850MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

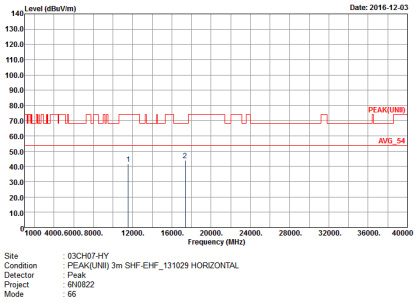
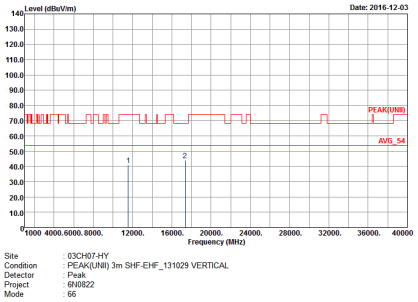
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		
Peak		Left blank

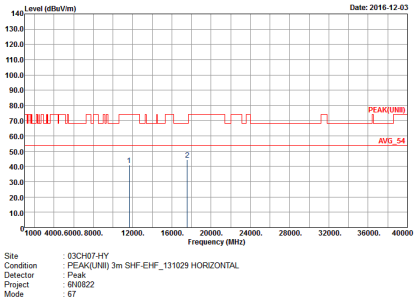
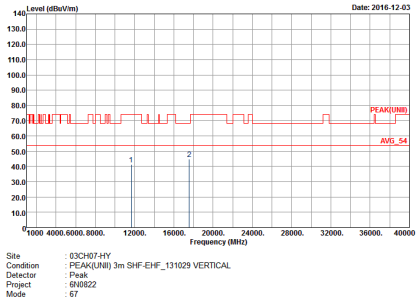
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak		
Peak		Left blank

Band 4 - 5725~5850MHz

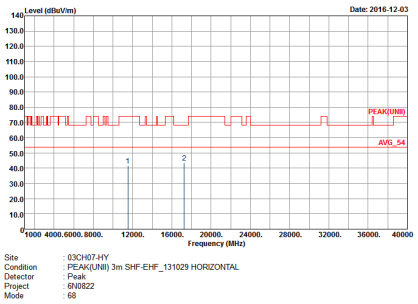
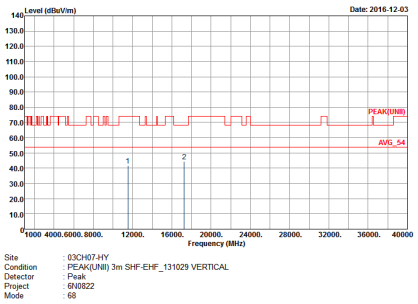
WIFI 802.11n HT20 (Harmonic @ 3m)

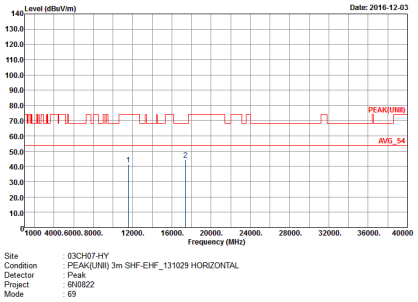
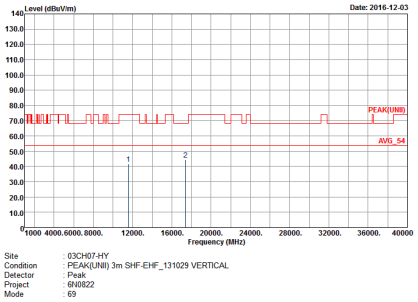
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.		

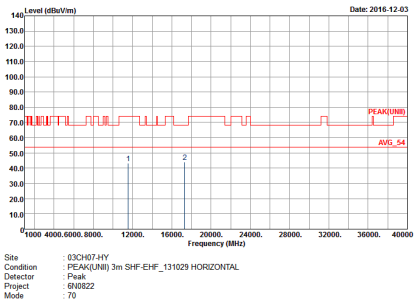
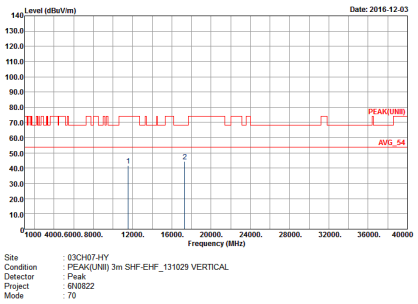
Band 4 5725~5850MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT40 CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.		

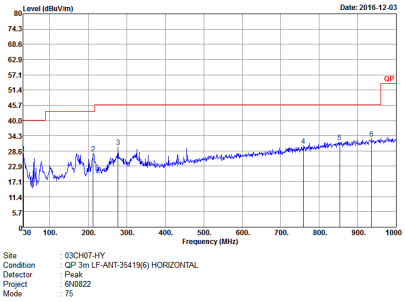
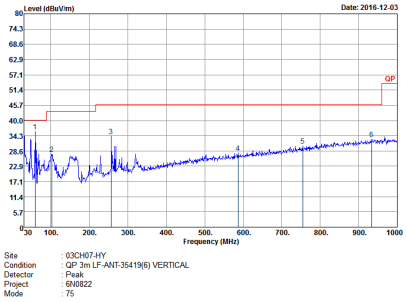
Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ac VHT80 CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

5GHz WIFI 802.11n HT40 (LF)

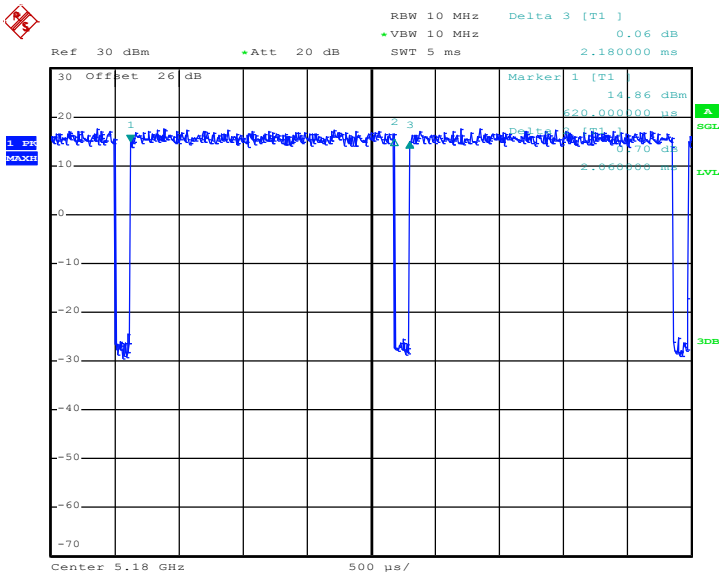
WIFI	5GHz 5725~5850MHz	
ANT	802.11n HT40 LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix C. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1	802.11a	94.5	2060	0.485436893	1kHz
2	802.11a	94.5	2060	0.485436893	1kHz
1	5GHz 802.11n HT20	95.03	1910	0.523560209	1kHz
2	5GHz 802.11n HT20	95.52	1920	0.520833333	1kHz
1+2	5GHz 802.11n HT20 for Ant 1	95.1	970	1.030927835	3kHz
1+2	5GHz 802.11n HT20 for Ant 2	96.08	980	1.020408163	3kHz
1	5GHz 802.11n HT40	96.91	940	1.063829787	3kHz
2	5GHz 802.11n HT40	96.91	940	1.063829787	3kHz
1+2	5GHz 802.11n HT40 for Ant 1	92.45	490	2.040816327	3kHz
1+2	5GHz 802.11n HT40 for Ant 2	92.45	490	2.040816327	3kHz
1	5GHz 802.11n VHT80	93.88	460	2.173913043	3kHz
2	5GHz 802.11n VHT80	93.88	460	2.173913043	3kHz
1+2	5GHz 802.11n VHT80 for Ant 1	86.21	250	4	10kHz
1+2	5GHz 802.11n VHT80 for Ant 2	86.21	250	4	10kHz

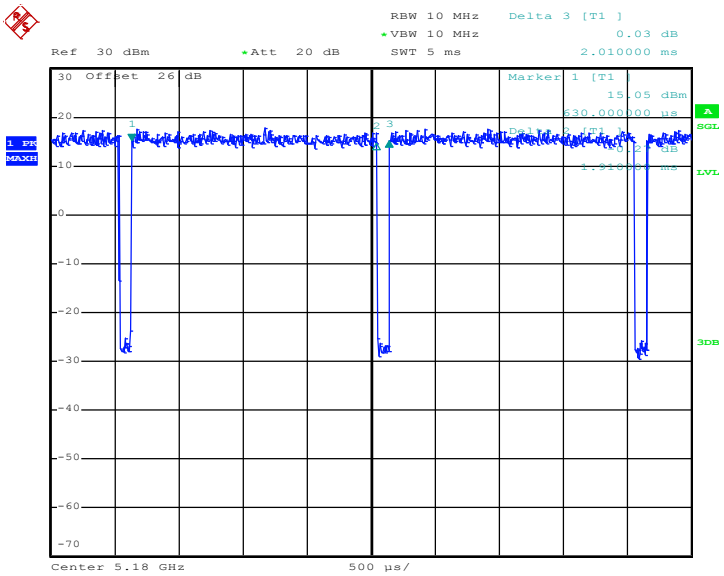
<Ant. 1>

802.11a



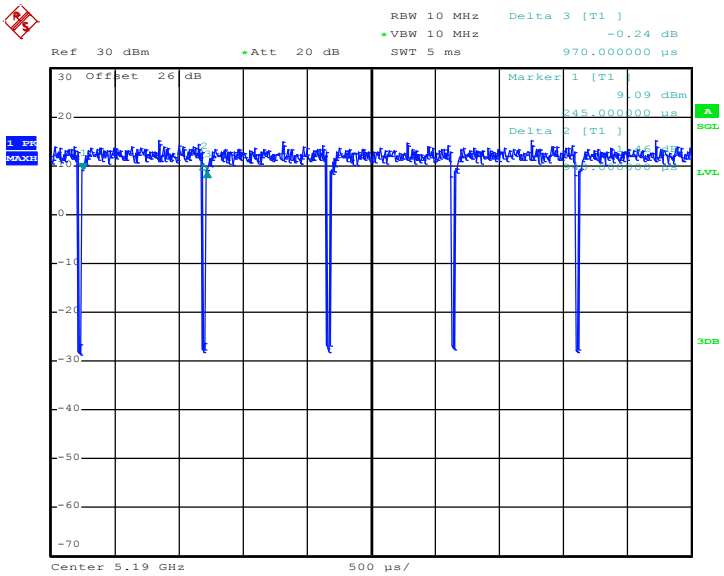
Date: 12.NOV.2016 11:20:28

802.11n HT20



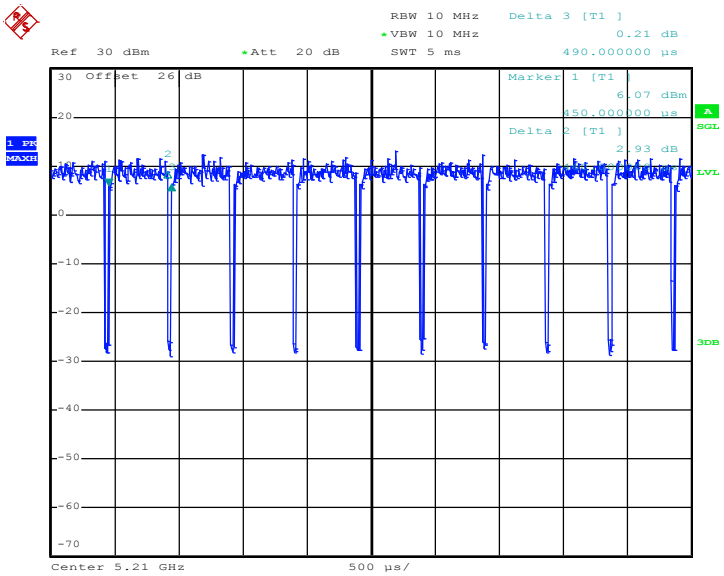
Date: 12.NOV.2016 11:21:12

802.11n HT40



Date: 12.NOV.2016 11:28:00

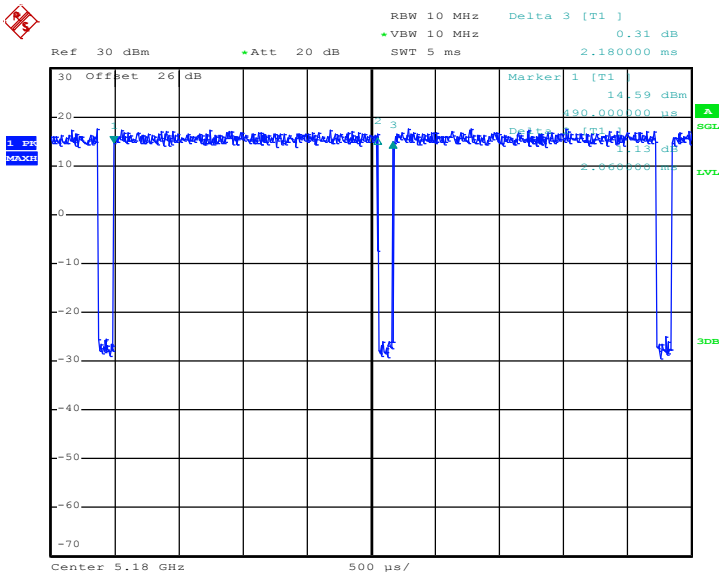
802.11ac VHT80



Date: 12.NOV.2016 14:20:55

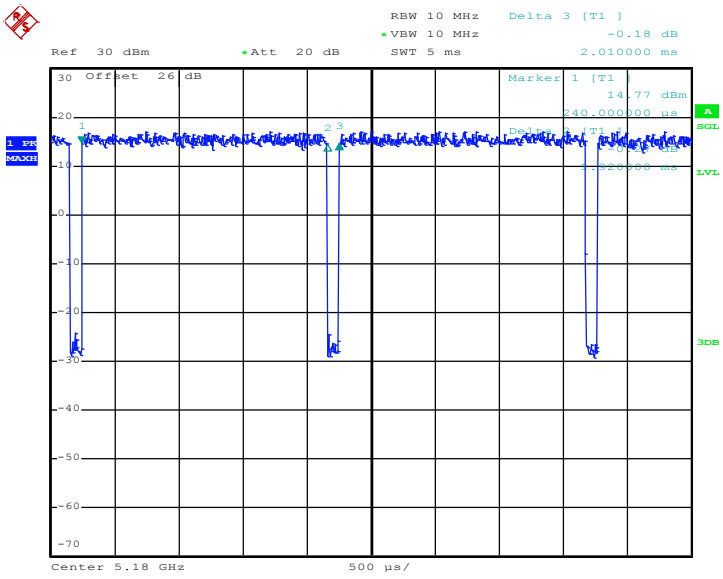
<Ant. 2>

802.11a



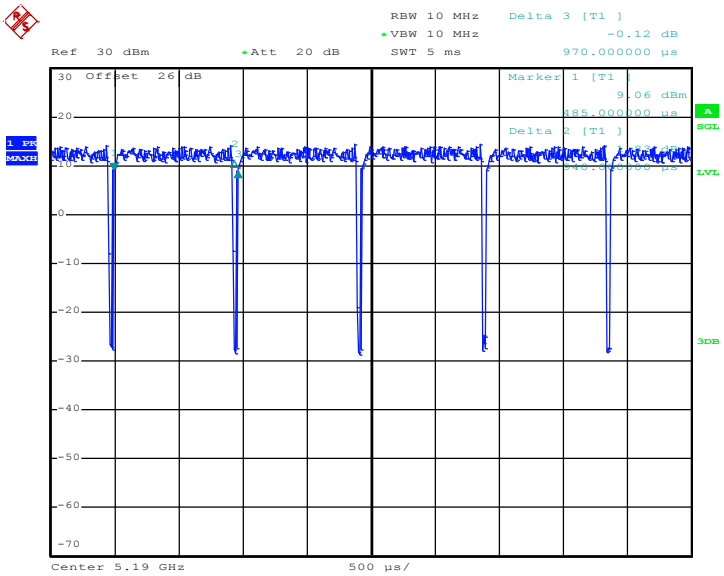
Date: 12.NOV.2016 11:19:06

802.11n HT20



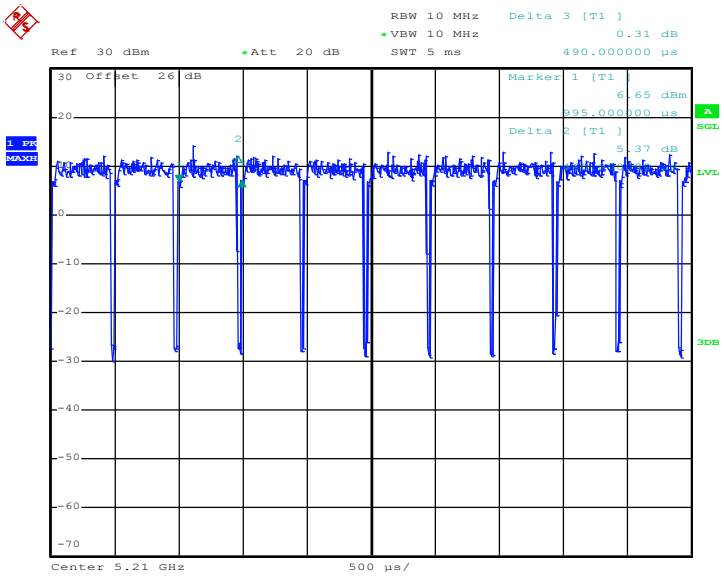
Date: 12.NOV.2016 11:21:47

802.11n HT40



Date: 12.NOV.2016 11:27:23

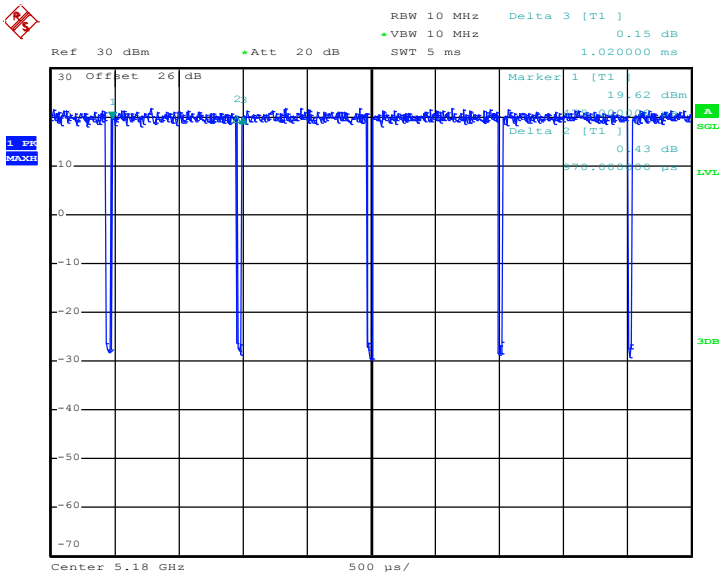
802.11ac VHT80



Date: 12.NOV.2016 14:22:04

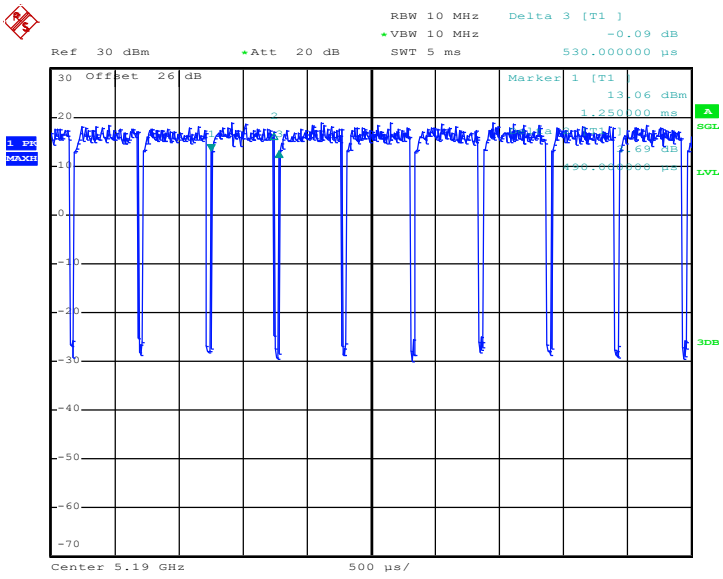
MIMO <Ant. 1+2(1)>

802.11n HT20



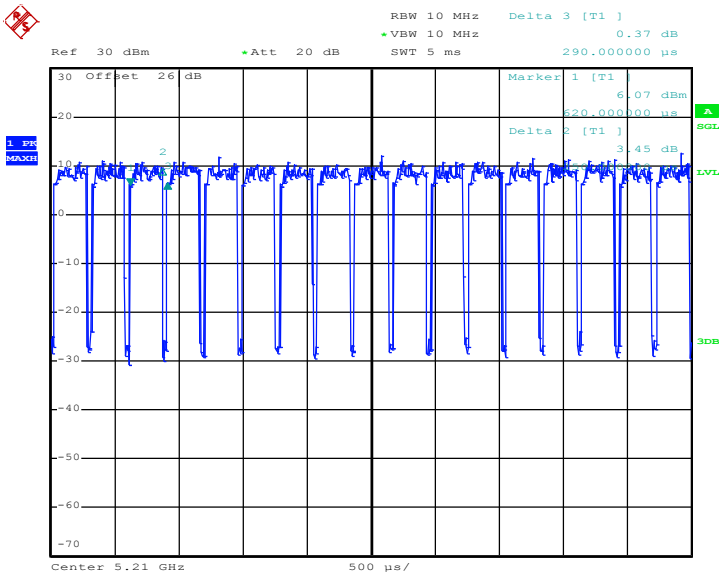
Date: 12.NOV.2016 12:36:05

802.11n HT40



Date: 12.NOV.2016 13:40:41

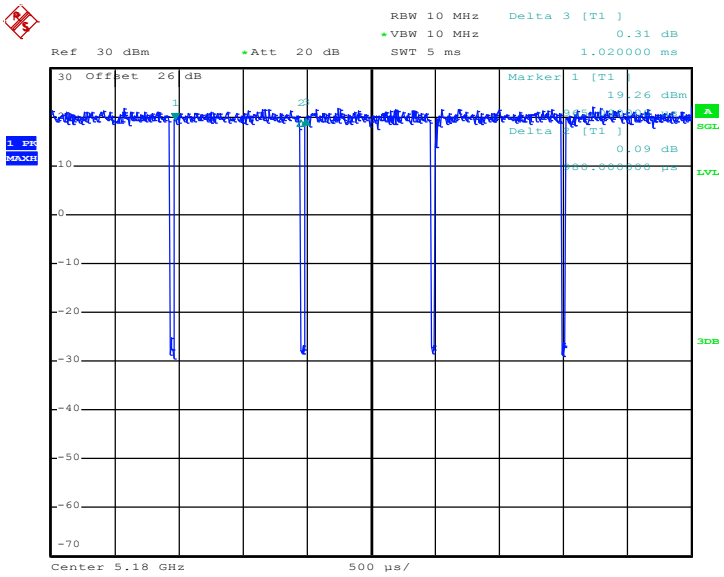
802.11ac VHT80



Date: 12.NOV.2016 14:25:26

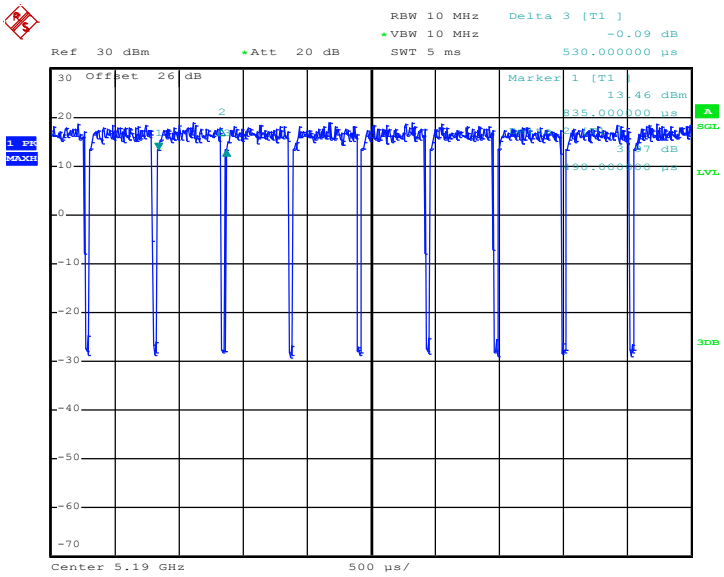
MIMO <Ant. 1+2(2)>

802.11n HT20



Date: 12.NOV.2016 12:36:37

802.11n HT40



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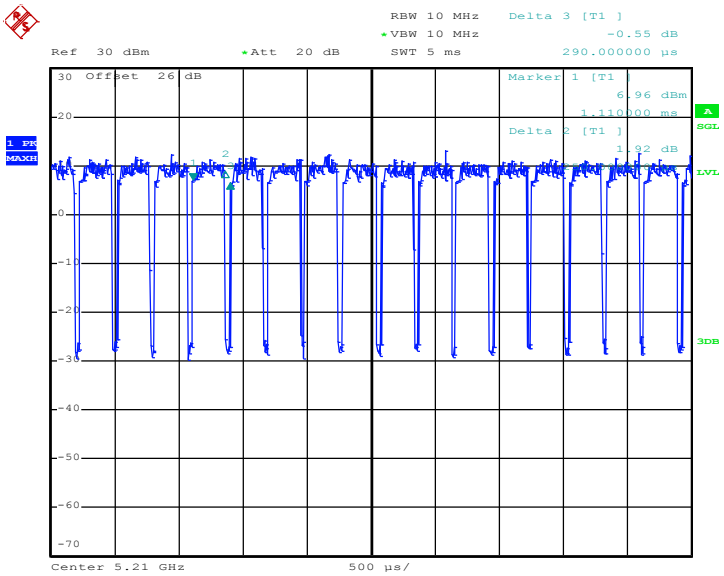
802.11ac VHT80



Date: 12.NOV.2016 14:23:22

Appendix E. Antenna Information

Antenna Information			
Antenna 1	Manufacturer	Amphenol	
	Antenna Type	Main: PIFA Antenna	Aux.: PIFA Antenna
	Part number	LX7847-16-000-C	LX7848-16-000-C
	Peak gain	Main Antenna : WLAN(2.4GHz): -6.76 WLAN(5GHz): -1.84	Aux. Antenna : WLAN(2.4GHz): -6.52 Bluetooth : -6.52 WLAN(5GHz): 0.14
Antenna 2	Manufacturer	Speedwire	
	Antenna Type	Main: PIFA Antenna	Aux.: PIFA Antenna
	Part number	F.0G.ZV-0006-003-00	F.0G.ZV-0006-004-00
	Peak gain	Main Antenna : WLAN(2.4GHz): 1.5 WLAN(5GHz): -1.97	Aux. Antenna : WLAN(2.4GHz): 1.68 Bluetooth : 1.68 WLAN(5GHz): -0.3