FCC CO-LOCATION RADIO TEST REPORT

FCC ID	:	**A4R-H2D**
Equipment	:	**Interactive internet streaming device**
Model Name	:	**H2D**
Applicant	:	**Google LLC** **1600 Amphitheatre Parkway,** **Mountain View, California, 94043 USA**
Standard	:	**FCC Part 15 Subpart E §15.407**

The product was received on Jun. 05, 2019 and testing was started from Jun. 24, 2019 and completed on Aug. 03, 2019. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

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

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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History of this test report

Report No.	Version	Description	Issued Date
FR960558G	01	Initial issue of report	Aug. 13, 2019
FR960558G	02	1. Remove description of out-of-band emission for KDB789033 D02 v02r01 G)2)c) 2. Revised 11a Ch40 band edge data at co-location 11b Ch06 + 11a Ch40	Sep. 02, 2019
FR960558G	03	1. Revise the description of EUT supported radio to 802.15.4 2. Revised Connection Diagram of Test System config.	Sep. 20, 2019

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(b)	Unwanted Emissions	Pass	Under limit 3.77 dB at 5150.000 MHz
3.2	15.203 15.407(a)	Antenna Requirement	Pass	-

Remark: Not required means after assessing, test items are not necessary to carry out.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Dara Chiu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Interactive internet streaming device
Model Name	H2D
FCC ID	A4R-H2D
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE 802.15.4
EUT Stage	Identical Prototype

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

EUT Information List	
No.	S/N
#1	96030EXANZZ0X0
#2	96050EXANZZ2T3

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz 5180 MHz ~ 5240 MHz 5745 MHz ~ 5825 MHz
Antenna Type / Gain	**<Bluetooth-LE>** Ant. 1 : PIFA Antenna type with gain 3.01 dBi **<802.15.4>** Ant. 3 : PIFA Antenna type with gain 2.96 dBi **<2400 MHz ~ 2483.5 MHz>** Ant. 1 : PIFA Antenna type with gain 3.01 dBi Ant. 2 : PIFA Antenna type with gain 3.82 dBi **<5180 MHz ~ 5240 MHz>** Ant. 1 : PIFA Antenna type with gain 3.49 dBi Ant. 2 : PIFA Antenna type with gain 4.82 dBi Ant. 3 : PIFA Antenna type with gain 4.46 dBi Ant. 4 : PIFA Antenna type with gain 4.08 dBi **<5745 MHz ~ 5825 MHz>** Ant. 1 : PIFA Antenna type with gain 4.62 dBi Ant. 2 : PIFA Antenna type with gain 5.40 dBi Ant. 3 : PIFA Antenna type with gain 4.01 dBi Ant. 4 : PIFA Antenna type with gain 4.98 dBi
Type of Modulation	Bluetooth LE : GFSK 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.15.4: O-QPSK

1.3 Modification of EUT

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

1.4 Testing Location

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

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

FCC Designation No. TW0007

1.5 Applicable Standards

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

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- 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: radiation 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

2400-2483.5 MHz Bluetooth -LE		2400-2483.5 MHz 802.15.4	
Channel	**Freq. (MHz)**	**Channel**	**Freq. (MHz)**
19	2440	18	2440

2400-2483.5 MHz 802.11b		5150~5250 MHz 802.11a	
Channel	**Freq. (MHz)**	**Channel**	**Freq. (MHz)**
6	2437	40	5200
		157	5785

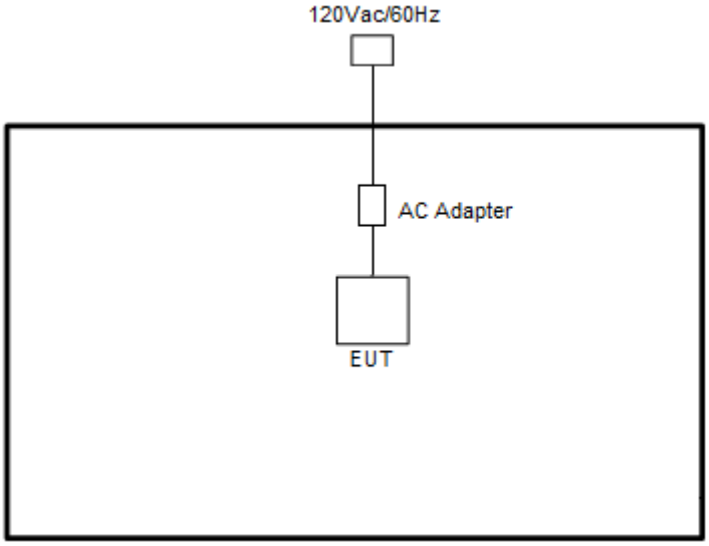
2.2 Test Mode

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

<Co-Location>

Modulation	Data Rate
Bluetooth – LE Ch. 19 (2440MHz) for Ant. 1 + 5GHz 802.11a Ch. 40 (5200MHz) for MIMO Ant. 1+2+3+4	1Mbps + 6Mbps
Bluetooth – LE Ch. 19 (2440MHz) for Ant. 1 + 5GHz 802.11a Ch. 157 (5785MHz) for MIMO Ant. 1+2+3+4	1Mbps + 6Mbps
802.15.4 Ch. 18 (2440MHz) for Ant. 3 + 5GHz 802.11a Ch. 40 (5200MHz) for MIMO Ant. 1+2+3+4	250KHz + 6Mbps
802.15.4 Ch.18 (2440MHz) for Ant. 3 + 5GHz 802.11a Ch. 157 (5785MHz) for MIMO Ant. 1+2+3+4	250KHz + 6Mbps
2.4GHz 802.11b Ch. 06 (2437MHz) for MIMO Ant. 1+2 + 5GHz 802.11a Ch. 40 (5200MHz) for MIMO Ant. 1+2+3+4	1Mbps + 6Mbps
2.4GHz 802.11b Ch. 06 (2437MHz) for MIMO Ant. 1+2 + 5GHz 802.11a Ch. 157 (5785MHz) for MIMO Ant. 1+2+3+4	1Mbps + 6Mbps

2.3 Connection Diagram of Test System



2.4 EUT Operation Test Setup

The RF test items, utility “QRCT 4.0.00108” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Unwanted Emissions Measurement

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

3.1.1 Limit of Unwanted Emissions

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

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

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

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

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

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

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

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

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of −27 dBm/MHz.

(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

   Section 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

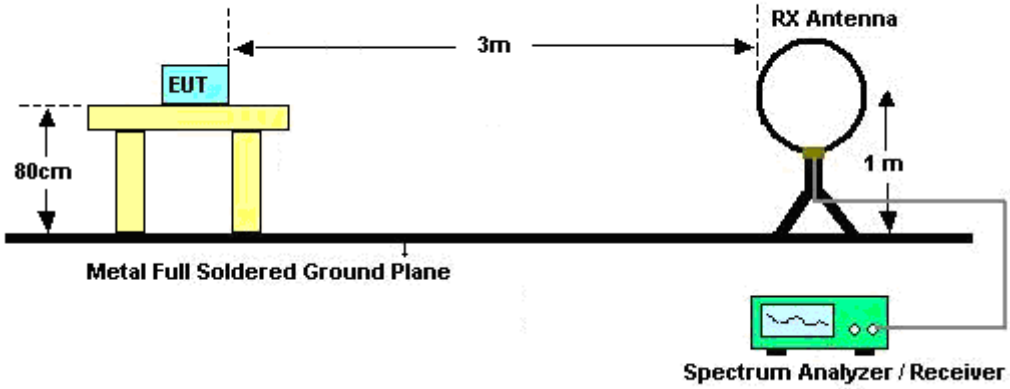
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- 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.

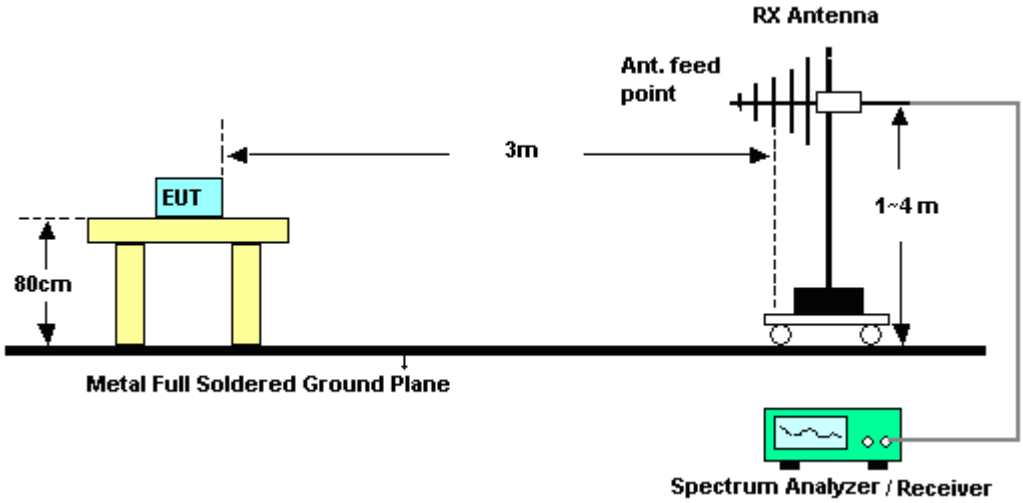
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

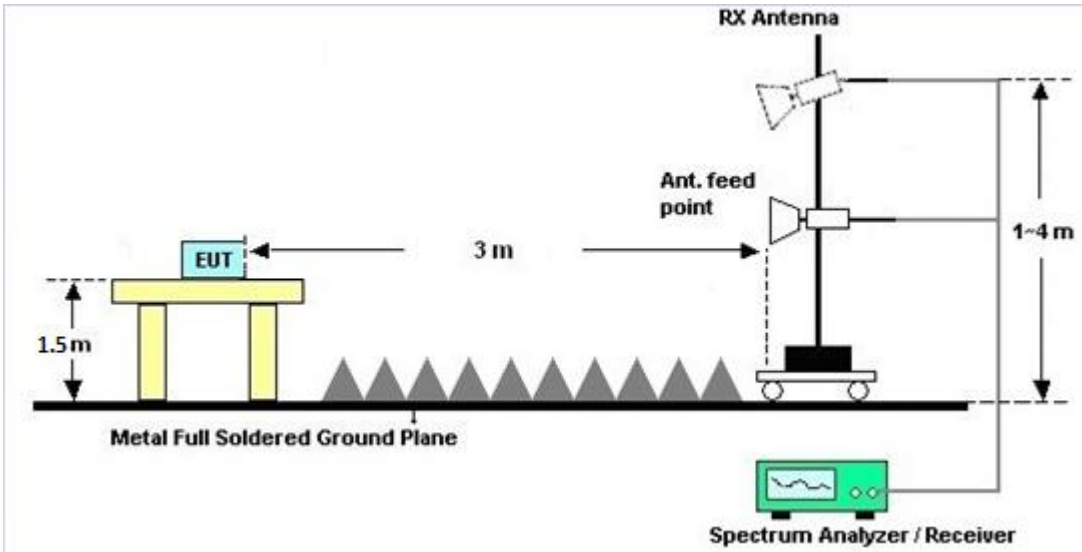
For radiated emissions below 30MHz



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 was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.1.6 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 Antenna Requirements

3.2.1 Standard Applicable

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

3.2.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.2.3 Antenna Gain

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

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jan. 07, 2019	Jun. 24, 2019 ~Avg. 03, 2019	Jan. 06, 2020	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	37059&01	30MHz~1GHz	Oct. 13, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Oct. 12, 2019	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	9120D-132 8	1GHz ~ 18GHz	Nov. 09, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Nov. 08, 2019	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170 584	18GHz ~ 40GHz	Dec. 05, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Dec. 04, 2019	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 25, 2019	Jun. 24, 2019 ~Avg. 03, 2019	Mar. 24, 2020	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A023 75	1GHz~26.5GHz	May 27, 2019	Jun. 24, 2019 ~Avg. 03, 2019	May 26, 2020	Radiation (03CH12-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 20, 2019	Jun. 24, 2019 ~Avg. 03, 2019	May 19, 2020	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 06, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Dec. 05, 2019	Radiation (03CH12-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 26, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Dec. 25, 2019	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705 26	10Hz~44GHz	Mar. 19, 2019	Jun. 24, 2019 ~Avg. 03, 2019	Mar. 18, 2020	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP140349	N/A	Oct. 22, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Oct. 21, 2019	Radiation (03CH12-HY)
Filter	Wainwright	WLK4-1000-1 530-6000-40S S	SN11	1 GHz Lowpass	Sep. 16, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Sep. 15, 2019	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000 -60SS	SN3	3 GHz Highpass	Sep. 16, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Sep. 15, 2019	Radiation (03CH12-HY)
Filter	Woken	WHKX8-5272. 5-6750-18000 -40ST	SN2	6.75G Highpass	Sep. 17, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Sep.16, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCGV2400/ 2483-2390/24 93-35/10SS	SN4	2.4G	Nov. 02, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Nov. 01, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCJV12-51 20-5150-5350 -5380-40SS	SN1	5GBand1~2	Mar. 15, 2019	Jun. 24, 2019 ~Avg. 03, 2019	Mar. 14, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCJV12-56 95-5725-5850 -5880-40SS	SN6	5GBand4	Jul. 04, 2019	Jun. 24, 2019 ~Avg. 03, 2019	Jul. 03, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30M-18G	Mar. 13, 2019	Jun. 24, 2019 ~Avg. 03, 2019	Mar. 12, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 16, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Oct. 15, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Oct. 16, 2018	Jun. 24, 2019 ~Avg. 03, 2019	Oct. 15, 2019	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jun. 24, 2019 ~Avg. 03, 2019	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jun. 24, 2019 ~Avg. 03, 2019	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jun. 24, 2019 ~Avg. 03, 2019	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-00098 9	N/A	N/A	Jun. 24, 2019 ~Avg. 03, 2019	N/A	Radiation (03CH12-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.10**

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.70**

Appendix A. Radiated Spurious Emission

Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	**Temperature :**	25°C
		Relative Humidity :	61%

2.4GHz 2440MHz + 5GHz 5200MHz

BLE(1M)_Tx_Ch19+11a_Tx_Ch40 (Band Edge @ 3m)

BLE+WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1 1+2+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BLE(1M) CH19 2440MHz		2377.62	55.77	-18.23	74	44.76	27.54	16.61	33.14	203	236	P	H
		2335.76	46.61	-7.39	54	35.45	27.69	16.56	33.09	203	236	A	H
	*	2440	111.73	-	-	100.86	27.42	16.67	33.22	203	236	P	H
	*	2440	110.93	-	-	100.06	27.42	16.67	33.22	203	236	A	H
		2492.65	55.59	-18.41	74	44.84	27.31	16.72	33.28	203	236	P	H
		2499.16	45.96	-8.04	54	35.23	27.3	16.72	33.29	203	236	A	H
		2325.54	55.82	-18.18	74	44.6	27.75	16.55	33.08	233	354	P	V
		2339.96	46.38	-7.62	54	35.25	27.66	16.57	33.1	233	354	A	V
	*	2440	115.72	-	-	104.85	27.42	16.67	33.22	233	354	P	V
	*	2440	114.88	-	-	104.01	27.42	16.67	33.22	233	354	A	V
		2488.87	56.73	-17.27	74	45.97	27.32	16.72	33.28	233	354	P	V
		2489.92	46.3	-7.7	54	35.54	27.32	16.72	33.28	233	354	A	V
802.11a CH 40 5200MHz		5147.68	55.53	-18.47	74	47.28	31.9	9.82	33.47	285	332	P	H
		5149.24	48.12	-5.88	54	39.86	31.9	9.83	33.47	285	332	A	H
	*	5200	121.52	-	-	113.38	31.7	9.9	33.46	285	332	P	H
	*	5200	114.04	-	-	105.9	31.7	9.9	33.46	285	332	A	H
		5371.52	51.48	-22.52	74	43.42	31.39	10.11	33.44	285	332	P	H
		5376	44.76	-9.24	54	36.68	31.4	10.12	33.44	285	332	A	H
		5149.5	57.91	-16.09	74	49.65	31.9	9.83	33.47	325	234	P	V
		5150	50.23	-3.77	54	41.97	31.9	9.83	33.47	325	234	A	V
	*	5200	121.76	-	-	113.62	31.7	9.9	33.46	325	234	P	V
	*	5200	114.12	-	-	105.98	31.7	9.9	33.46	325	234	A	V
		5416.88	50.81	-23.19	74	42.51	31.57	10.17	33.44	325	234	P	V
		5376	43.13	-10.87	54	35.05	31.4	10.12	33.44	325	234	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE(1M)_Tx_Ch19+11a_Tx_Ch40 (Harmonic @ 3m)

BLE+WIFI Ant. 1 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE(1M) CH19 2440MHz + 802.11a CH 40 5200MHz		4880	53.06	-20.94	74	45.85	31.1	9.6	33.49	100	185	P	H
		4880	43.04	-10.96	54	35.83	31.1	9.6	33.49	100	185	A	H
		7320	43.44	-30.56	74	52.11	36.56	13.94	59.17	100	0	P	H
		10400	46.63	-21.57	68.2	51.54	39.7	16.25	60.86	100	0	P	H
		15600	45.14	-28.86	74	48.47	37.8	20.35	61.48	100	0	P	H
		4880	52.38	-21.62	74	45.17	31.1	9.6	33.49	100	230	P	V
		4880	43.4	-10.6	54	36.19	31.1	9.6	33.49	100	230	A	V
		7320	43.55	-30.45	74	52.22	36.56	13.94	59.17	100	0	P	V
		10400	46.27	-21.93	68.2	51.18	39.7	16.25	60.86	100	0	P	V
		15600	46.75	-27.25	74	50.08	37.8	20.35	61.48	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2440MHz + 5GHz 5785MHz

BLE(1M)_Tx_Ch19+11a_Tx_Ch157 (Band Edge @ 3m)

BLE Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE(1M) CH19 2440MHz		2324.84	56.62	-17.38	74	45.4	27.75	16.55	33.08	198	229	P	H
		2327.22	46.35	-7.65	54	35.14	27.74	16.55	33.08	198	229	A	H
	*	2440	112.44	-	-	101.57	27.42	16.67	33.22	198	229	P	H
	*	2440	110.39	-	-	99.52	27.42	16.67	33.22	198	229	A	H
		2489.5	55.69	-18.31	74	44.93	27.32	16.72	33.28	198	229	P	H
		2488.17	46.13	-7.87	54	35.38	27.32	16.71	33.28	198	229	A	H
		2358.72	55.85	-18.15	74	44.8	27.58	16.59	33.12	216	360	P	V
		2376.08	46.33	-7.67	54	35.31	27.55	16.61	33.14	216	360	A	V
	*	2440	115.95	-	-	105.08	27.42	16.67	33.22	216	360	P	V
	*	2440	-115.45	-	-	104.58	27.42	16.67	33.22	216	360	A	V
		2489.43	57.58	-16.42	74	46.82	27.32	16.72	33.28	216	360	P	V
		2483.62	46.16	-7.84	54	35.39	27.33	16.71	33.27	216	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5643.8	52.42	-15.78	68.2	43.71	31.71	10.45	33.45	117	288	P	H
		5697.6	57.79	-45.64	103.43	48.78	31.99	10.48	33.46	117	288	P	H
		5715.8	65.24	-44.39	109.63	56.18	32.03	10.49	33.46	117	288	P	H
		5724.8	63.77	-57.97	121.74	54.68	32.05	10.5	33.46	117	288	P	H
	*	5785	120.88	-	-	111.65	32.17	10.53	33.47	117	288	P	H
	*	5785	112.94	-	-	103.71	32.17	10.53	33.47	117	288	A	H
		5851.2	62.06	-57.4	119.46	52.65	32.3	10.59	33.48	117	288	P	H
		5858.2	67.44	-42.46	109.9	58.01	32.32	10.59	33.48	117	288	P	H
		5879.8	56.8	-44.83	101.63	47.31	32.36	10.61	33.48	117	288	P	H
		5932.6	50.93	-17.27	68.2	41.23	32.53	10.66	33.49	117	288	P	H
		5644.6	51.82	-16.38	68.2	43.11	31.71	10.45	33.45	236	93	P	V
		5692.6	58.34	-41.4	99.74	49.36	31.96	10.48	33.46	236	93	P	V
		5713.8	70.47	-38.6	109.07	61.41	32.03	10.49	33.46	236	93	P	V
		5724.8	64.62	-57.12	121.74	55.53	32.05	10.5	33.46	236	93	P	V
	*	5785	124.01	-	-	114.78	32.17	10.53	33.47	236	93	P	V
	*	5785	115.95	-	-	106.72	32.17	10.53	33.47	236	93	A	V
		5852.4	72.91	-43.82	116.73	63.5	32.3	10.59	33.48	236	93	P	V
		5855.2	69.81	-40.93	110.74	60.39	32.31	10.59	33.48	236	93	P	V
		5892.4	56.15	-36.14	92.29	46.63	32.38	10.62	33.48	236	93	P	V
		5938.2	52.52	-15.68	68.2	42.8	32.55	10.66	33.49	236	93	P	V

Remark

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

BLE(1M)_Tx_Ch19+11a_Tx_Ch157 (Harmonic @ 3m)

BLE+WIFI Ant. 1/ 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE(1M) CH19 2440MHz + 802.11a CH 157 5785MHz		4880	52.81	-21.19	74	45.6	31.1	9.6	33.49	100	185	P	H
		4880	43.03	-10.97	54	35.82	31.1	9.6	33.49	100	185	A	H
		7320	42.9	-31.1	74	51.57	36.56	13.94	59.17	100	0	P	H
		11570	46.15	-27.85	74	51.68	39.66	17.07	62.26	100	0	P	H
		17355	51.38	-16.82	68.2	46.45	41.4	22.35	58.82	100	0	P	H
		4880	53.34	-20.66	74	46.13	31.1	9.6	33.49	100	230	P	V
		4880	43.33	-10.67	54	36.12	31.1	9.6	33.49	100	230	A	V
		7320	42.54	-31.46	74	51.21	36.56	13.94	59.17	100	0	P	V
		11570	46.01	-27.99	74	51.54	39.66	17.07	62.26	100	0	P	V
		17355	52.52	-15.68	68.2	47.59	41.4	22.35	58.82	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2440MHz + 5GHz 5200MHz

802.15.4_Tx_Ch18+11a_Tx_Ch40 (Band Edge @ 3m)

802.15.4 + WIFI Ant. 3/ 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.15.4 CH18 2440MHz		2387.56	54.94	-19.06	74	43.95	27.52	16.63	33.16	355	2	P	H
		2389.94	45.22	-8.78	54	34.23	27.52	16.63	33.16	355	2	A	H
	*	2440	116.6	-	-	105.73	27.42	16.67	33.22	355	2	P	H
	*	2440	114.8	-	-	103.93	27.42	16.67	33.22	355	2	A	H
		2497.56	55.09	-18.91	74	44.36	27.3	16.72	33.29	355	2	P	H
		2484	45.56	-8.44	54	34.79	27.33	16.71	33.27	355	2	A	H
		2346.82	55.75	-18.25	74	44.66	27.62	16.58	33.11	400	255	P	V
		2314.76	45.27	-8.73	54	33.99	27.81	16.54	33.07	400	255	A	V
	*	2440	111.69	-	-	100.82	27.42	16.67	33.22	400	255	P	V
	*	2440	110.01	-	-	99.14	27.42	16.67	33.22	400	255	A	V
		2487.24	55.58	-18.42	74	44.81	27.33	16.71	33.27	400	255	P	V
		2484.72	45.22	-8.78	54	34.45	27.33	16.71	33.27	400	255	A	V
802.11a CH 40 5200MHz		5149.5	56.32	-17.68	74	48.06	31.9	9.83	33.47	285	333	P	H
		5148.46	48.04	-5.96	54	39.78	31.9	9.83	33.47	285	333	A	H
	*	5200	121.38	-	-	113.24	31.7	9.9	33.46	285	333	P	H
	*	5200	113.75	-	-	105.61	31.7	9.9	33.46	285	333	A	H
		5365.36	50.64	-23.36	74	42.61	31.36	10.11	33.44	285	333	P	H
		5376	44.44	-9.56	54	36.36	31.4	10.12	33.44	285	333	A	H
		5149.5	57.26	-16.74	74	49	31.9	9.83	33.47	326	229	P	V
		5150	49.89	-4.11	54	41.63	31.9	9.83	33.47	326	229	A	V
	*	5200	121.98	-	-	113.84	31.7	9.9	33.46	326	229	P	V
	*	5200	114.4	-	-	106.26	31.7	9.9	33.46	326	229	A	V
		5368.72	51.78	-22.22	74	43.74	31.37	10.11	33.44	326	229	P	V
		5376	43.16	-10.84	54	35.08	31.4	10.12	33.44	326	229	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

802.15.4_Tx_Ch18+11a_Tx_Ch40 (Harmonic @ 3m)

802.15.4+ WIFI Ant. 3/ 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.15.4 CH18 2440MHz + 802.11a CH 40 5200MHz		4880	52.09	-21.91	74	44.88	31.1	9.6	33.49	100	180	P	H
		4880	42.54	-11.46	54	35.33	31.1	9.6	33.49	100	180	A	H
		7320	43.06	-30.94	74	51.73	36.56	13.94	59.17	100	0	P	H
		10400	45.66	-22.54	68.2	50.57	39.7	16.25	60.86	100	0	P	H
		15600	45.2	-28.8	74	48.53	37.8	20.35	61.48	100	0	P	H
		4880	52.29	-21.71	74	45.08	31.1	9.6	33.49	100	230	P	V
		4880	43.2	-10.8	54	35.99	31.1	9.6	33.49	100	230	A	V
		7320	42.52	-31.48	74	51.19	36.56	13.94	59.17	100	0	P	V
		10400	46.6	-21.6	68.2	51.51	39.7	16.25	60.86	100	0	P	V
		15600	47.1	-26.9	74	50.43	37.8	20.35	61.48	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2440MHz + 5GHz 5785MHz

802.15.4_Tx_Ch18+11a_Tx_Ch157 (Band Edge @ 3m)

802.15.4 Ant. 3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.15.4 CH18 2440MHz		2336.88	55.13	-18.87	74	43.98	27.68	16.56	33.09	345	6	P	H
		2389.24	45.77	-8.23	54	34.78	27.52	16.63	33.16	345	6	A	H
	*	2440	117.81	-	-	106.94	27.42	16.67	33.22	345	6	P	H
	*	2440	115.45	-	-	104.58	27.42	16.67	33.22	345	6	A	H
		2483.5	55.36	-18.64	74	44.59	27.33	16.71	33.27	345	6	P	H
		2483.76	46.07	-7.93	54	35.3	27.33	16.71	33.27	345	6	A	H
		2389.38	55.78	-18.22	74	44.79	27.52	16.63	33.16	395	254	P	V
		2343.74	45.51	-8.49	54	34.4	27.64	16.57	33.1	395	254	A	V
	*	2440	113.94	-	-	103.07	27.42	16.67	33.22	395	254	P	V
	*	2440	112.14	-	-	101.27	27.42	16.67	33.22	395	254	A	V
		2491.53	55.56	-18.44	74	44.8	27.32	16.72	33.28	395	254	P	V
		2490.76	45.45	-8.55	54	34.69	27.32	16.72	33.28	395	254	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5602.6	50.83	-17.37	68.2	42.05	31.79	10.43	33.44	117	288	P	H
		5697.6	61.14	-42.29	103.43	52.13	31.99	10.48	33.46	117	288	P	H
		5717	70.36	-39.6	109.96	61.3	32.03	10.49	33.46	117	288	P	H
		5724.8	66.72	-55.02	121.74	57.63	32.05	10.5	33.46	117	288	P	H
	*	5785	121.42	-	-	112.19	32.17	10.53	33.47	117	288	P	H
	*	5785	113.51	-	-	104.28	32.17	10.53	33.47	117	288	A	H
		5851.4	65.44	-53.57	119.01	56.03	32.3	10.59	33.48	117	288	P	H
		5859.4	67.36	-42.21	109.57	57.93	32.32	10.59	33.48	117	288	P	H
		5878.2	55.35	-47.47	102.82	45.86	32.36	10.61	33.48	117	288	P	H
		5932.6	51.6	-16.6	68.2	41.9	32.53	10.66	33.49	117	288	P	H
		5603.6	52.15	-16.05	68.2	43.37	31.79	10.43	33.44	235	95	P	V
		5692.8	58.54	-41.35	99.89	49.56	31.96	10.48	33.46	235	95	P	V
		5712.4	69.2	-39.47	108.67	60.15	32.02	10.49	33.46	235	95	P	V
		5725	65.3	-56.9	122.2	56.21	32.05	10.5	33.46	235	95	P	V
	*	5785	124.22	-	-	114.99	32.17	10.53	33.47	235	95	P	V
	*	5785	116.25	-	-	107.02	32.17	10.53	33.47	235	95	A	V
		5852.8	72.69	-43.13	115.82	63.27	32.31	10.59	33.48	235	95	P	V
		5871.6	66.54	-39.61	106.15	57.08	32.34	10.6	33.48	235	95	P	V
		5875.2	59.41	-45.64	105.05	49.93	32.35	10.61	33.48	235	95	P	V
		5945.4	52.85	-15.35	68.2	43.09	32.58	10.67	33.49	235	95	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

802.15.4_Tx_Ch18+11a_Tx_Ch157 (Harmonic @ 3m)

802.15.4+ WIFI Ant. 3 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.15.4 CH18 2440MHz + 802.11a CH 157 5785MHz		4880	52.83	-21.17	74	45.62	31.1	9.6	33.49	100	185	P	H
		4880	42.43	-11.57	54	35.22	31.1	9.6	33.49	100	185	A	H
		7320	43.74	-30.26	74	52.41	36.56	13.94	59.17	100	0	P	H
		11570	46.26	-27.74	74	51.79	39.66	17.07	62.26	100	0	P	H
		17355	50.66	-17.54	68.2	45.73	41.4	22.35	58.82	100	0	P	H
		4880	52.98	-21.02	74	45.77	31.1	9.6	33.49	100	230	P	V
		4880	43.54	-10.46	54	36.33	31.1	9.6	33.49	100	230	A	V
		7320	43.6	-30.4	74	52.27	36.56	13.94	59.17	100	0	P	V
		11570	46.88	-27.12	74	52.41	39.66	17.07	62.26	100	0	P	V
		17355	52.06	-16.14	68.2	47.13	41.4	22.35	58.82	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2440MHz + 5GHz 5200MHz

11b_Tx_Ch06+11a_Tx_Ch40 (Band Edge @ 3m)

WIFI Ant. 1+2/ 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
11b CH06 2437MHz		2345.98	56.37	-17.63	74	45.28	27.62	16.58	33.11	112	229	P	H
		2386.02	45.38	-8.62	54	34.38	27.53	16.62	33.15	112	229	A	H
	*	2437	115.66	-	-	104.77	27.43	16.67	33.21	112	229	P	H
	*	2437	112.67	-	-	101.78	27.43	16.67	33.21	112	229	A	H
		2490.55	55.7	-18.3	74	44.94	27.32	16.72	33.28	112	229	P	H
		2483.69	45.48	-8.52	54	34.71	27.33	16.71	33.27	112	229	A	H
		2389.66	58.17	-15.83	74	47.18	27.52	16.63	33.16	231	358	P	V
		2389.24	49.07	-4.93	54	38.08	27.52	16.63	33.16	231	358	A	V
	*	2437	119.35	-	-	108.46	27.43	16.67	33.21	231	358	P	V
	*	2437	116.07	-	-	105.18	27.43	16.67	33.21	231	358	A	V
		2484.95	57.25	-16.75	74	46.48	27.33	16.71	33.27	231	358	P	V
		2484.67	47.22	-6.78	54	36.45	27.33	16.71	33.27	231	358	A	V
802.11a CH 40 5200MHz		5148.72	54.94	-19.06	74	46.68	31.9	9.83	33.47	294	328	P	H
		5148.46	48.01	-5.99	54	39.75	31.9	9.83	33.47	294	328	A	H
	*	5200	121.34	-	-	113.2	31.7	9.9	33.46	294	328	P	H
	*	5200	113.96	-	-	105.82	31.7	9.9	33.46	294	328	A	H
		5360.04	51.64	-22.36	74	43.64	31.34	10.1	33.44	294	328	P	H
		5376.28	43.2	-10.8	54	35.11	31.41	10.12	33.44	294	328	A	H
		5149.76	58.88	-15.12	74	50.62	31.9	9.83	33.47	325	228	P	V
		5150	49.73	-4.27	54	41.47	31.9	9.83	33.47	325	228	A	V
	*	5200	121.65	-	-	113.51	31.7	9.9	33.46	325	228	P	V
	*	5200	114.05	-	-	105.91	31.7	9.9	33.46	325	228	A	V
		5428.36	50.17	-23.83	74	41.81	31.61	10.19	33.44	325	228	P	V
		5434.24	42.5	-11.5	54	34.1	31.64	10.2	33.44	325	228	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

11b_Tx_Ch06+11a_Tx_Ch40 (Harmonic @ 3m)

WIFI Ant. 1+2 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
11b CH06 2437MHz + 802.11a CH 40 5200MHz		4874	51.7	-22.3	74	44.49	31.1	9.6	33.49	100	180	P	H
		4874	42.09	-11.91	54	34.88	31.1	9.6	33.49	100	180	A	H
		7311	44.04	-29.96	74	52.69	36.58	13.95	59.18	100	0	P	H
		10400	46.16	-22.04	68.2	51.07	39.7	16.25	60.86	100	0	P	H
		15600	46.92	-27.08	74	50.25	37.8	20.35	61.48	100	0	P	H
		4874	51.73	-22.27	74	44.52	31.1	9.6	33.49	100	230	P	V
		4874	43.08	-10.92	54	35.87	31.1	9.6	33.49	100	230	A	V
		7311	48.09	-25.91	74	56.74	36.58	13.95	59.18	100	0	P	V
		10400	48.41	-19.79	68.2	53.32	39.7	16.25	60.86	100	0	P	V
		15600	47.78	-26.22	74	51.11	37.8	20.35	61.48	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2440MHz + 5GHz 5785MHz

11b_Tx_Ch06+11a_Tx_Ch157 (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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
11b CH06 2437MHz		2356.76	56.57	-17.43	74	45.51	27.59	16.59	33.12	100	229	P	H
		2389.38	46.51	-7.49	54	35.52	27.52	16.63	33.16	100	229	A	H
	*	2437	115.02	-	-	104.13	27.43	16.67	33.21	100	229	P	H
	*	2437	111.77	-	-	100.88	27.43	16.67	33.21	100	229	A	H
		2487.54	56.23	-17.77	74	45.48	27.32	16.71	33.28	100	229	P	H
		2484.88	45.92	-8.08	54	35.15	27.33	16.71	33.27	100	229	A	H
		2384.06	58.31	-15.69	74	47.31	27.53	16.62	33.15	224	360	P	V
		2386.72	48.17	-5.83	54	37.17	27.53	16.62	33.15	224	360	A	V
	*	2437	120.59	-	-	109.7	27.43	16.67	33.21	224	360	P	V
	*	2437	117.59	-	-	106.7	27.43	16.67	33.21	224	360	A	V
		2486.28	57.77	-16.23	74	47	27.33	16.71	33.27	224	360	P	V
		2484.39	47.47	-6.53	54	36.7	27.33	16.71	33.27	224	360	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 157 5785MHz		5614.6	51	-17.2	68.2	42.24	31.77	10.44	33.45	101	283	P	H
		5698	53.84	-49.89	103.73	44.83	31.99	10.48	33.46	101	283	P	H
		5718.6	62.53	-47.88	110.41	53.45	32.04	10.5	33.46	101	283	P	H
		5722	58.46	-56.9	115.36	49.38	32.04	10.5	33.46	101	283	P	H
	*	5785	121.2	-	-	111.97	32.17	10.53	33.47	101	283	P	H
	*	5785	113.37	-	-	104.14	32.17	10.53	33.47	101	283	A	H
		5850	59.09	-63.11	122.2	49.68	32.3	10.59	33.48	101	283	P	H
		5857.8	62.57	-47.44	110.01	53.14	32.32	10.59	33.48	101	283	P	H
		5878.6	55.18	-47.35	102.53	45.69	32.36	10.61	33.48	101	283	P	H
		5944.8	51.92	-16.28	68.2	42.16	32.58	10.67	33.49	101	283	P	H
		5609.8	50.45	-17.75	68.2	41.68	31.78	10.44	33.45	162	14	P	V
		5697.6	54.96	-48.47	103.43	45.95	31.99	10.48	33.46	162	14	P	V
		5718.4	61.73	-48.62	110.35	52.65	32.04	10.5	33.46	162	14	P	V
		5724.8	65.46	-56.28	121.74	56.37	32.05	10.5	33.46	162	14	P	V
	*	5785	121.07	-	-	111.84	32.17	10.53	33.47	162	14	P	V
	*	5785	113.47	-	-	104.24	32.17	10.53	33.47	162	14	A	V
		5855	59.13	-51.67	110.8	49.71	32.31	10.59	33.48	162	14	P	V
		5856.8	63.89	-46.41	110.3	54.47	32.31	10.59	33.48	162	14	P	V
		5898.2	55.09	-32.9	87.99	45.55	32.4	10.63	33.49	162	14	P	V
		5934	51.78	-16.42	68.2	42.07	32.54	10.66	33.49	162	14	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

11b_Tx_Ch06+11a_Tx_Ch157 (Harmonic @ 3m)

WIFI Ant. 1+2 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
11b CH06 2437MHz + 802.11a CH 157 5785MHz		4874	51.91	-22.09	74	44.7	31.1	9.6	33.49	100	180	P	H
		4874	42.45	-11.55	54	35.24	31.1	9.6	33.49	100	180	A	H
		7311	43.98	-30.02	74	52.63	36.58	13.95	59.18	100	0	P	H
		11570	46.64	-27.36	74	52.17	39.66	17.07	62.26	100	0	P	H
		17355	51.17	-17.03	68.2	46.24	41.4	22.35	58.82	100	0	P	H
		4874	52.45	-21.55	74	45.24	31.1	9.6	33.49	100	230	P	V
		4874	43.2	-10.8	54	35.99	31.1	9.6	33.49	100	230	A	V
		7311	43.91	-30.09	74	52.56	36.58	13.95	59.18	100	0	P	V
		11570	47.15	-26.85	74	52.68	39.66	17.07	62.26	100	0	P	V
		17355	52.29	-15.91	68.2	47.36	41.4	22.35	58.82	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

BLE(1M)_Tx_Ch19+11a_Tx_Ch40 (LF)

BLE+WIFI Ant. 1 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE(1M) CH19 2440MHz + 802.11a CH 40 5200MHz LF		70.74	30.27	-9.73	40	47.22	12.27	1.23	30.45	-	-	P	H
		82.38	30.75	-9.25	40	46.22	13.64	1.33	30.44	-	-	P	H
		130.88	32.55	-10.95	43.5	44.02	17.37	1.56	30.4	-	-	P	H
		399.57	40.24	-5.76	46	45.88	21.62	2.72	29.98	100	342	QP	H
		453.89	38.24	-7.76	46	41.99	23.17	2.95	29.87	102	35	QP	H
		722.58	37.16	-8.84	46	35.67	27.2	3.76	29.47	-	-	P	H
		34.85	32.92	-7.08	40	40.31	22.04	0.83	30.26	100	0	P	V
		68.8	31.35	-8.65	40	48.52	12.08	1.21	30.46	-	-	P	V
		127.97	32.1	-11.4	43.5	43.54	17.42	1.54	30.4	-	-	P	V
		457.77	37.62	-8.38	46	41.3	23.22	2.97	29.87	-	-	P	V
		722.58	35.64	-10.36	46	34.15	27.2	3.76	29.47	-	-	P	V
		891.36	37.6	-8.4	46	33.48	29.04	4.23	29.15	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

BLE(1M)_Tx_Ch19+11a_Tx_Ch157 (LF)

BLE+WIFI Ant. 1 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BLE(1M) CH19 2440MHz + 802.11a CH 157 5785MHz LF		68.8	31.64	-8.36	40	48.81	12.08	1.21	30.46	-	-	P	H
		84.32	31.77	-8.23	40	46.95	13.91	1.35	30.44	-	-	P	H
		131.85	33.83	-9.67	43.5	45.3	17.37	1.56	30.4	-	-	P	H
		400.54	40.3	-5.7	46	45.91	21.65	2.72	29.98	101	348	QP	H
		446.13	38.91	-7.09	46	42.8	23.08	2.92	29.89	100	46	QP	H
		889.42	39.74	-6.26	46	35.62	29.05	4.23	29.16	-	-	P	H
		35.82	30.41	-9.59	40	38.32	21.52	0.84	30.27	100	52	QP	V
		131.85	34.28	-9.22	43.5	45.75	17.37	1.56	30.4	-	-	P	V
		175.5	33.88	-9.62	43.5	47.01	15.3	1.92	30.35	-	-	P	V
		404.42	39.96	-6.04	46	45.36	21.83	2.74	29.97	-	-	P	V
		462.62	38.57	-7.43	46	42.15	23.3	2.98	29.86	-	-	P	V
		894.27	36.63	-9.37	46	32.52	29.02	4.24	29.15	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

802.15.4_Tx_Ch18+11a_Tx_Ch40 (LF)

802.15.4+ WIFI Ant. 1 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.15.4 CH18 2440MHz + 802.11a CH 40 5200MHz LF		41.64	25.42	-14.58	40	36.46	18.4	0.92	30.36	-	-	P	H
		130.88	32	-11.5	43.5	43.47	17.37	1.56	30.4	-	-	P	H
		172.59	30.75	-12.75	43.5	43.72	15.48	1.9	30.35	-	-	P	H
		398.6	35.61	-10.39	46	41.29	21.59	2.71	29.98	100	350	QP	H
		454.86	39.64	-6.36	46	43.36	23.19	2.96	29.87	-	-	P	H
		885.54	39.26	-6.74	46	35.12	29.08	4.22	29.16	-	-	P	H
		40.67	32.5	-7.5	40	43.06	18.87	0.91	30.34	100	35	QP	V
		127	32.2	-11.3	43.5	43.64	17.44	1.52	30.4	-	-	P	V
		176.47	32.57	-10.93	43.5	45.76	15.24	1.92	30.35	-	-	P	V
		408.3	39.1	-6.9	46	44.31	22	2.75	29.96	-	-	P	V
		890.39	39.63	-6.37	46	35.5	29.05	4.23	29.15	-	-	P	V
		913.67	39.22	-6.78	46	34.76	29.25	4.31	29.1	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

802.15.4_Tx_Ch18+11a_Tx_Ch157 (LF)

802.15.4+ WIFI Ant. 1 1+2+3+4	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.15.4 CH18 2440MHz + 802.11a CH 157 5785MHz LF		68.8	32.54	-7.46	40	49.71	12.08	1.21	30.46	-	-	P	H
		135.73	33.89	-9.61	43.5	45.32	17.37	1.59	30.39	-	-	P	H
		177.44	31.33	-12.17	43.5	44.57	15.18	1.93	30.35	-	-	P	H
		395.69	38.32	-7.68	46	44.09	21.52	2.7	29.99	100	349	QP	H
		450.98	38.07	-7.93	46	41.87	23.14	2.94	29.88	100	44	QP	H
		888.45	38.33	-7.67	46	34.21	29.06	4.22	29.16	-	-	P	H
		34.85	28.49	-11.51	40	35.88	22.04	0.83	30.26	100	215	QP	V
		130.88	34.21	-9.29	43.5	45.68	17.37	1.56	30.4	-	-	P	V
		175.5	33.74	-9.76	43.5	46.87	15.3	1.92	30.35	-	-	P	V
		405.39	37.43	-8.57	46	42.79	21.87	2.74	29.97	101	353	QP	V
		720.64	32.97	-13.03	46	31.55	27.13	3.76	29.47	-	-	P	V
		889.42	37.85	-8.15	46	33.73	29.05	4.23	29.16	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

11b_Tx_Ch06+11a_Tx_Ch40 (LF)

WIFI Ant. 1+2 1+2+3+4	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
11b CH06 2437MHz + 802.11a CH 40 5200MHz LF		41.64	32.8	-7.2	40	43.82	18.4	0.93	30.35	-	-	P	H
		131.85	35.05	-8.45	43.5	46.51	17.37	1.56	30.39	-	-	P	H
		335.55	36.66	-9.34	46	44.3	19.91	2.53	30.08	-	-	P	H
		414.12	38.17	-7.83	46	42.97	22.26	2.89	29.95	100	37	QP	H
		707.06	33.09	-12.91	46	31.92	26.77	3.9	29.5	-	-	P	H
		967.99	36.72	-17.28	54	30.17	30.81	4.68	28.94	-	-	P	H
		41.935	32.44	-7.56	40	43.61	18.25	0.94	30.36	100	12	QP	V
		80.44	33.05	-6.95	40	48.85	13.36	1.29	30.45	-	-	P	V
		127.97	35.78	-7.72	43.5	47.21	17.42	1.55	30.4	-	-	P	V
		439.34	39.4	-6.6	46	43.31	22.98	3.01	29.9	-	-	P	V
		924.34	36.27	-9.73	46	31.23	29.55	4.56	29.07	-	-	P	V
		973.81	36.96	-17.04	54	30.42	30.76	4.71	28.93	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

11b_Tx_Ch06+11a_Tx_Ch157 (LF)

WIFI Ant. 1+2 1+2+3+4	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
11b CH06 2437MHz + 802.11a CH 157 5785MHz LF		42.61	25.72	-14.28	40	37.21	17.92	0.95	30.36	-	-	P	H
		124.09	35.46	-8.04	43.5	46.86	17.48	1.52	30.4	-	-	P	H
		410.24	39.79	-6.21	46	44.79	22.09	2.87	29.96	100	0	P	H
		458.74	38.94	-7.06	46	42.47	23.23	3.1	29.86	-	-	P	H
		746.83	34.53	-11.47	46	31.99	27.92	4.03	29.41	-	-	P	H
		975.75	36.94	-17.06	54	30.41	30.74	4.71	28.92	-	-	P	H
		43.062	34.34	-5.66	40	46.06	17.7	0.95	30.37	100	64	QP	V
		80.44	32	-8	40	47.8	13.36	1.29	30.45	-	-	P	V
		123.12	31.53	-11.97	43.5	42.93	17.48	1.52	30.4	-	-	P	V
		412.18	39.06	-6.94	46	43.97	22.17	2.88	29.96	-	-	P	V
		457.77	38.26	-7.74	46	41.8	23.22	3.1	29.86	-	-	P	V
		965.08	36.74	-17.26	54	30.19	30.83	4.67	28.95	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

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

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

Appendix B. Radiated Spurious Emission Plots

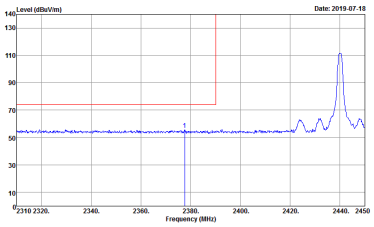
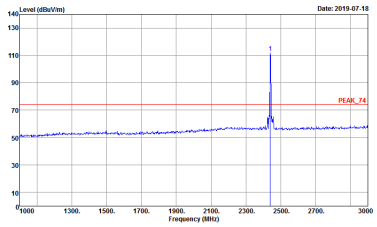
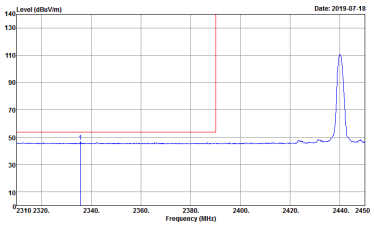
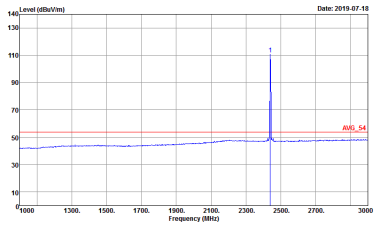
Test Engineer :	Jack Cheng, Lance Chiang, and Chuan Chu	**Temperature :**	25°C
		Relative Humidity :	61%

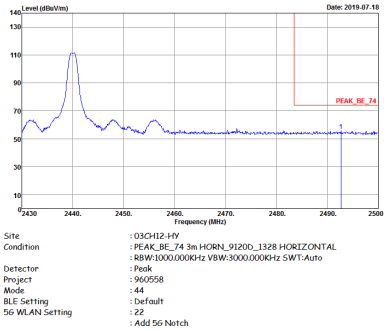
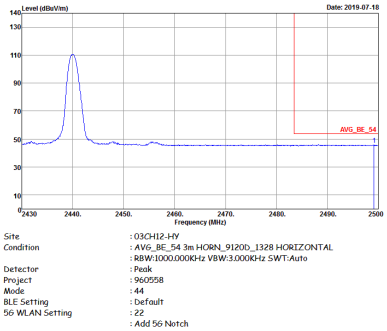
Note symbol

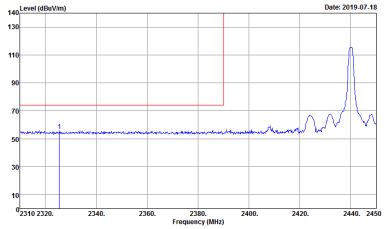
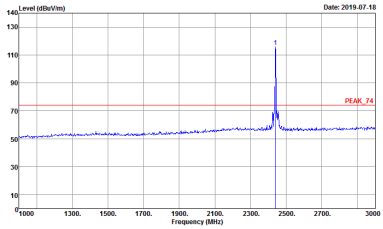
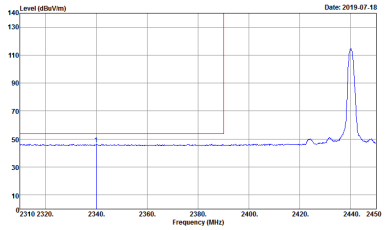
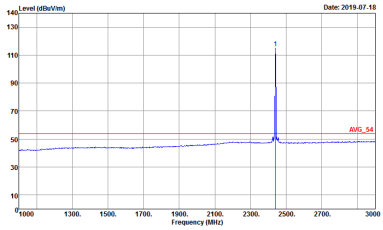
-L	**Low channel location**
-R	**High channel location**

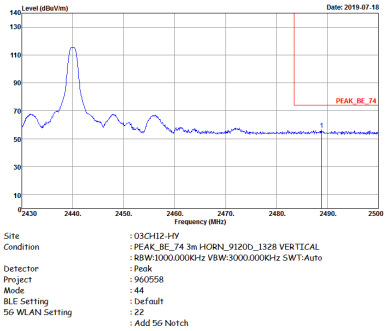
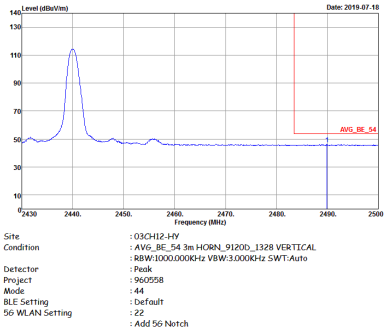
2.4GHz 2400~2483.5MHz+Band 1 - 5150~5250MHz

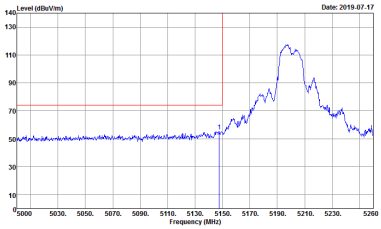
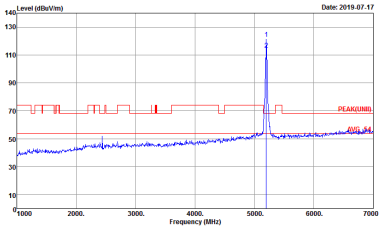
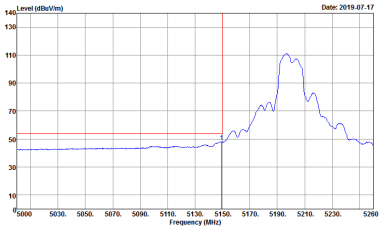
BLE(1M)_Tx_Ch19+11a_Tx_Ch40 (Band Edge @ 3m)

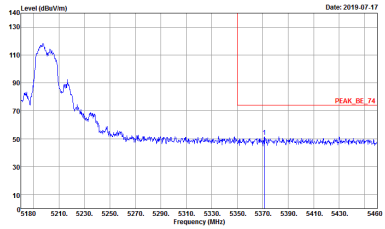
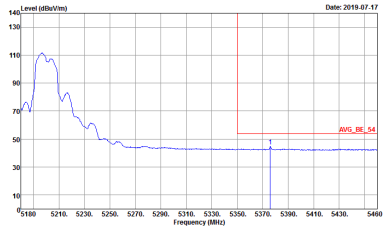
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch

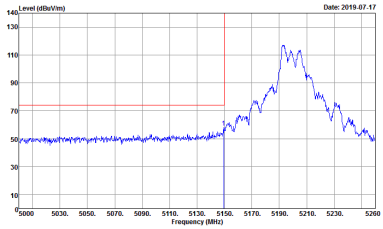
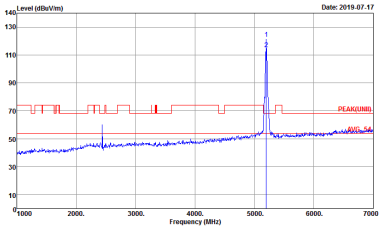
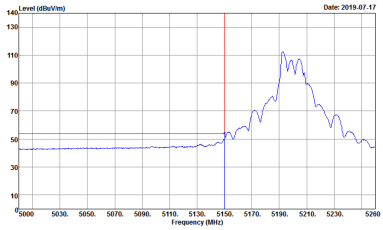
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

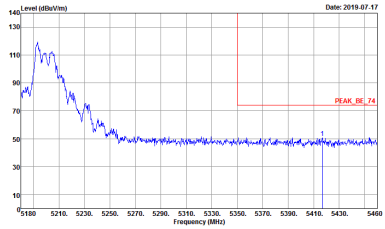
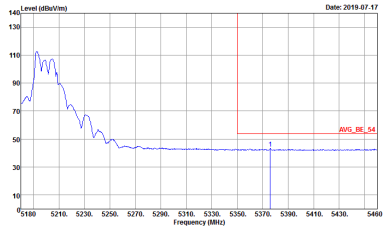
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 5G Notch

BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - L	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH12-HV Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	 Site : 03CH12-HV Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch
Avg.	 Site : 03CH12-HV Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank

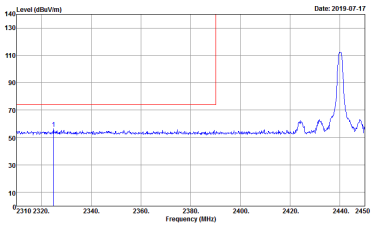
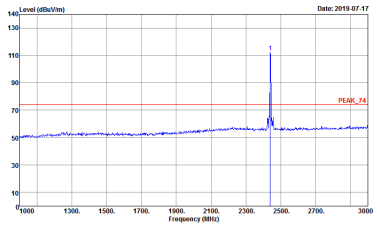
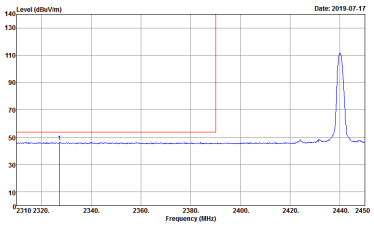
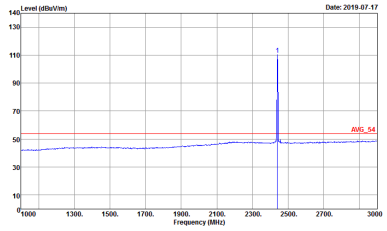
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - R	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank

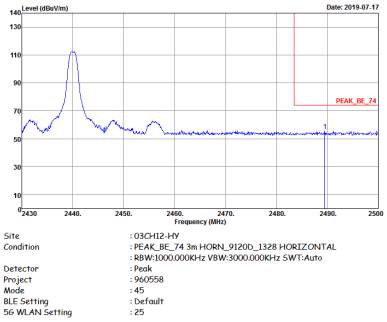
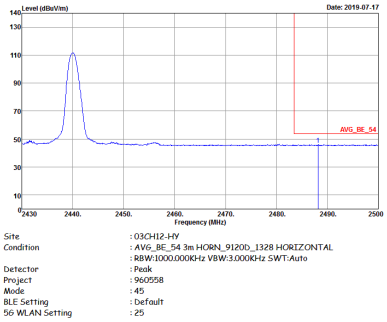
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - L	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH12-HV Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	 Site : 03CH12-HV Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch
Avg.	 Site : 03CH12-HV Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank

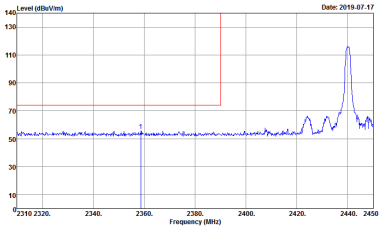
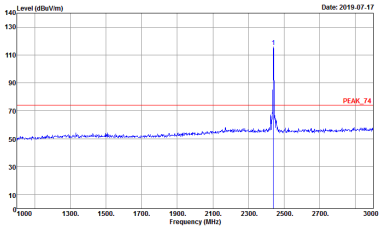
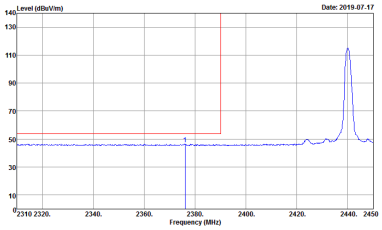
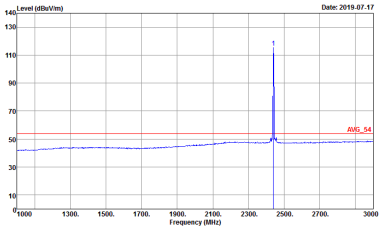
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - R	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 44 BLE Setting : Default 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank

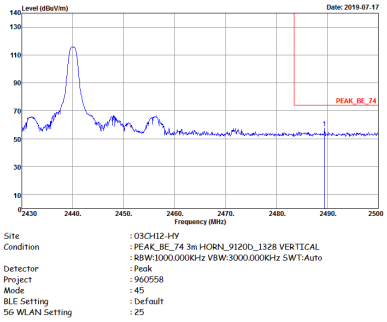
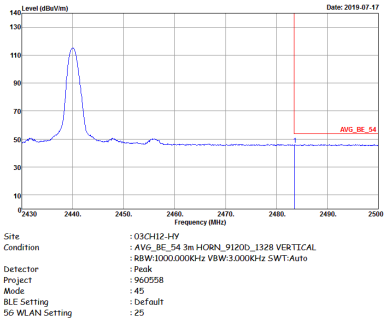
2.4GHz 2400~2483.5MHz+Band 4 - 5725~5850MHz

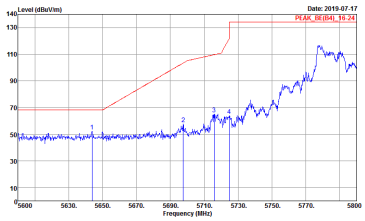
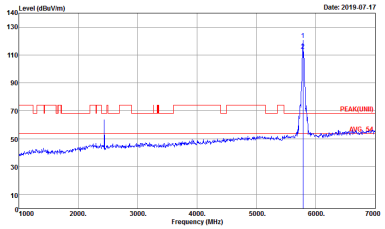
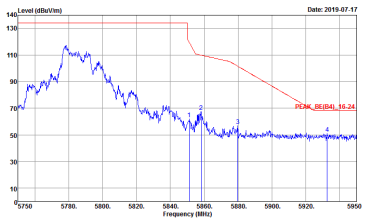
BLE(1M)_Tx_Ch19+11a_Tx_Ch157 (Band Edge @ 3m)

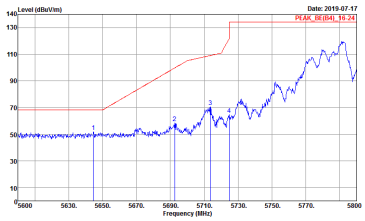
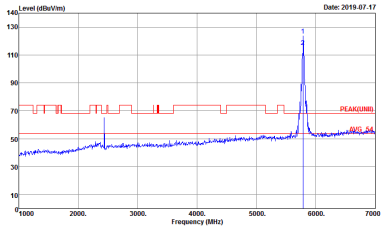
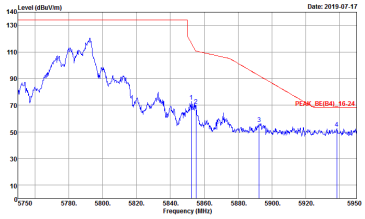
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25

BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25

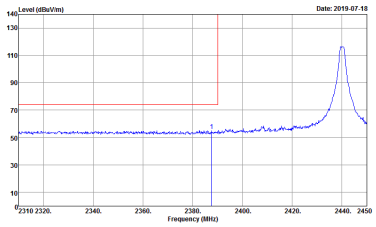
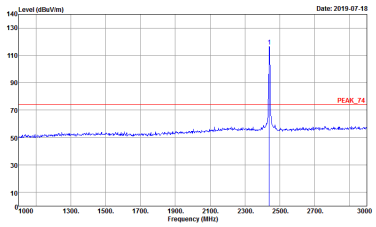
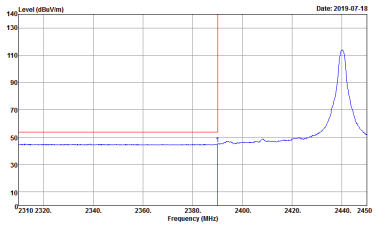
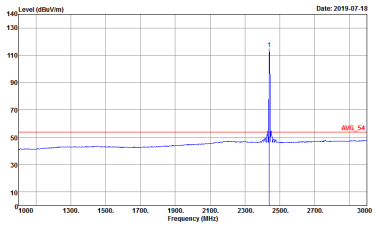
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE CH19 2440MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

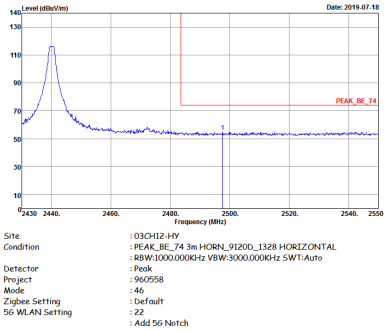
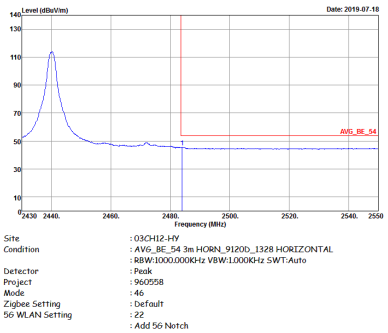
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	Left blank

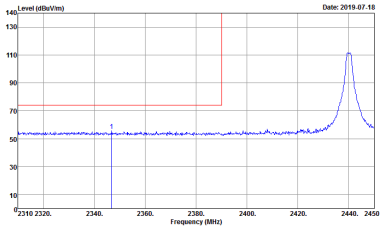
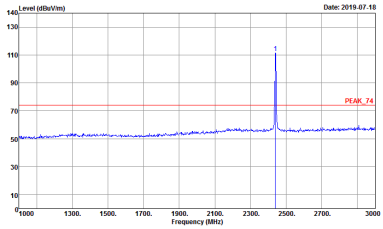
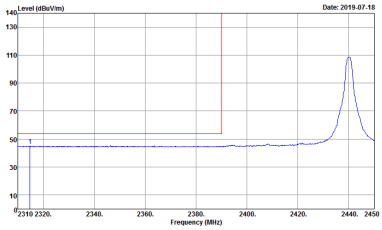
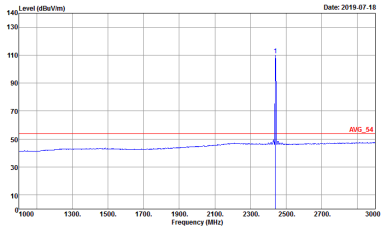
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	Left blank

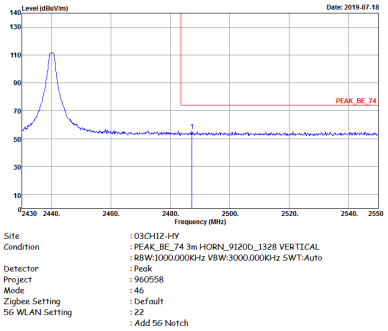
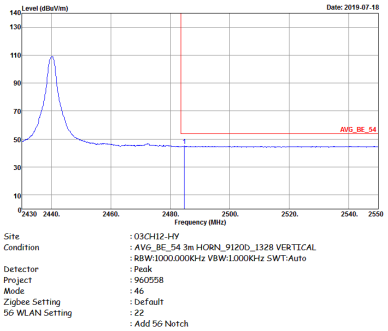
2.4GHz 2400~2483.5MHz+Band 1 - 5150~5250MHz

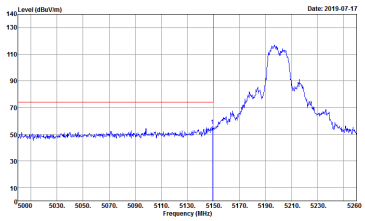
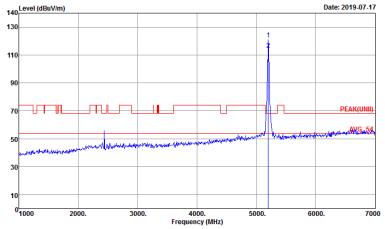
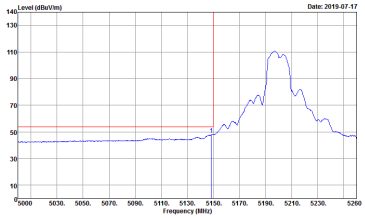
802.15.4_Tx_Ch18+11a_Tx_Ch40 (Band Edge @ 3m)

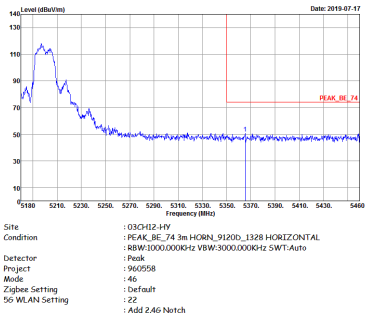
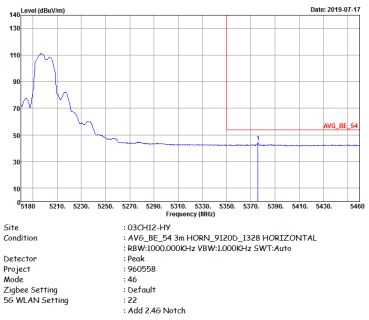
802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - L	
3	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch

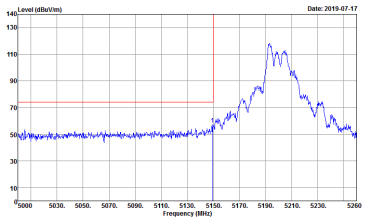
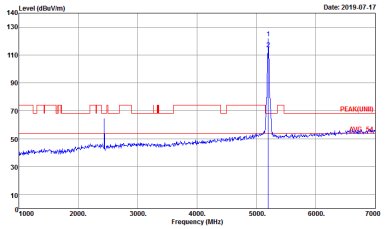
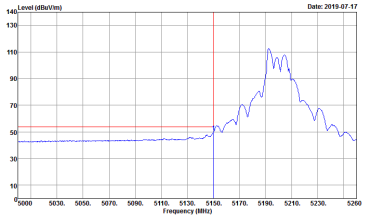
802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - R	
3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

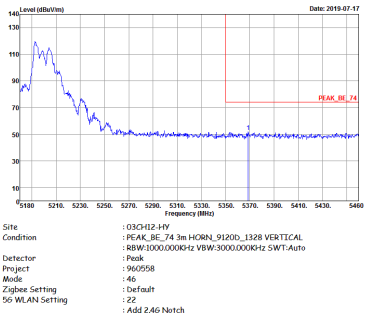
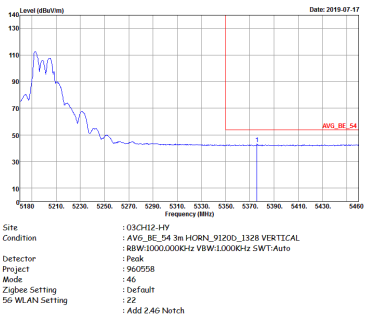
802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - L	
3	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 5G Notch

802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - R	
3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - L	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 2.46 Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 2.46 Notch
Avg.	 Site : 03CH12-HY Condition : AV6_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 2.46 Notch	Left blank

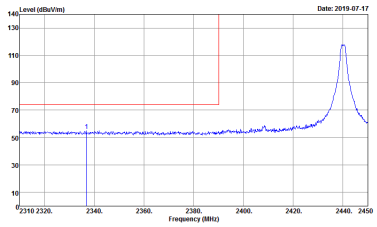
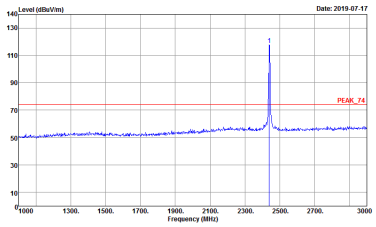
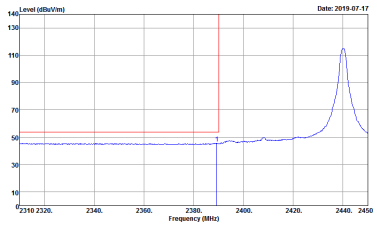
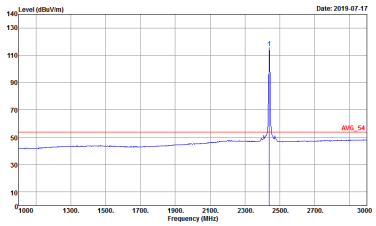
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - R	
1+2+3+4	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

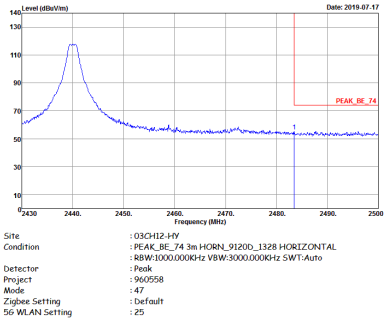
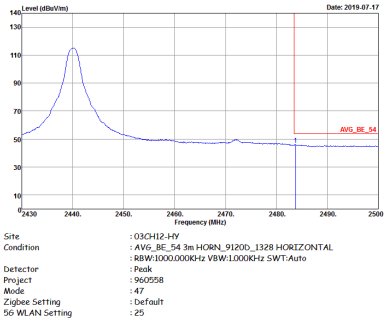
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - L	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 2.46 Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 2.46 Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22 : Add 2.46 Notch	Left blank

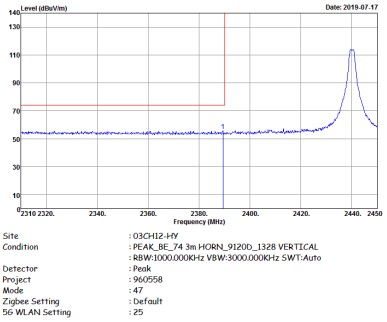
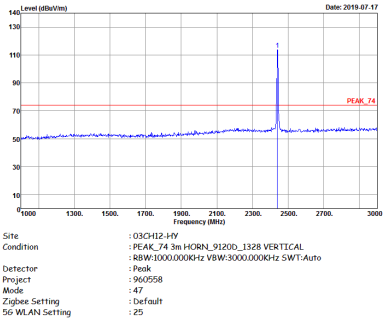
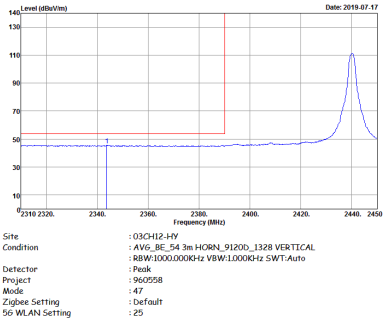
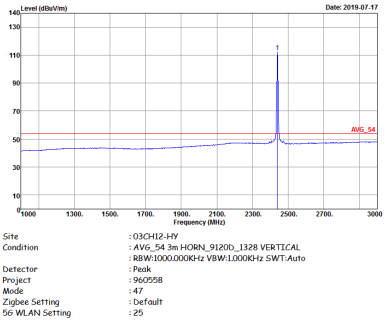
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - R	
1+2+3+4	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

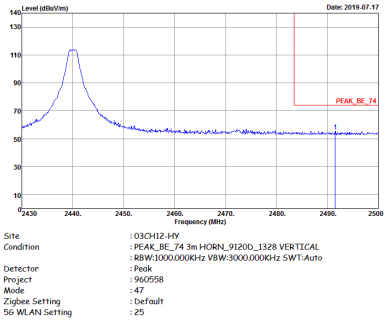
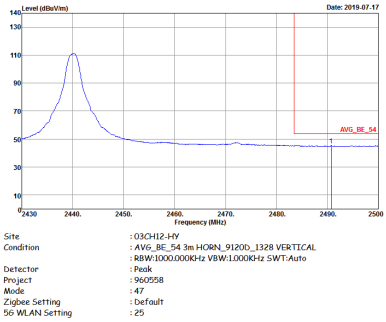
2.4GHz 2400~2483.5MHz+Band 4 - 5725~5850MHz

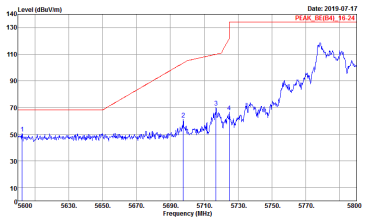
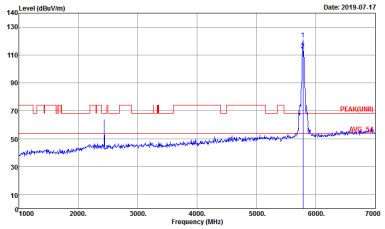
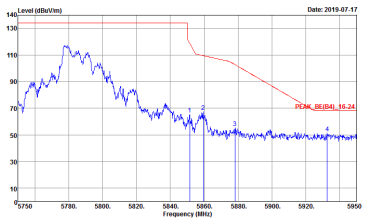
802.15.4_Tx_Ch18+11a_Tx_Ch157 (Band Edge @ 3m)

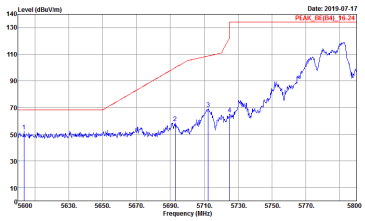
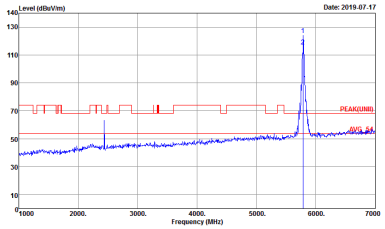
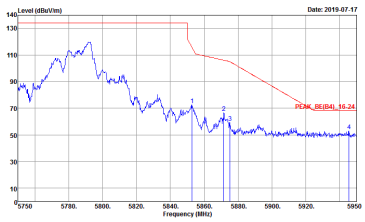
802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - L	
3	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25

802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - R	
3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - L	
3	Vertical	Fundamental
Peak		
Avg.		

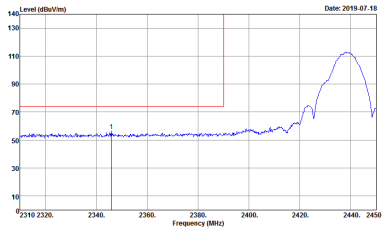
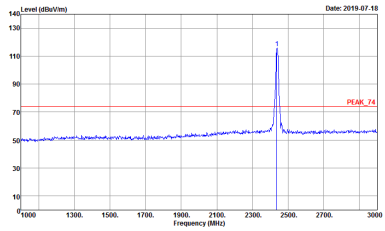
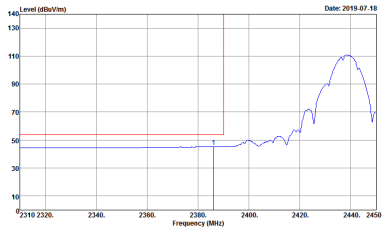
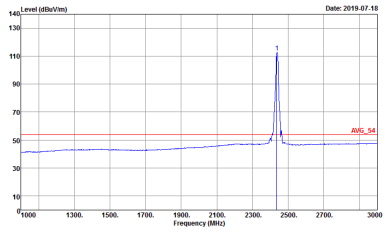
802.15.4	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.15.4 CH18 2440MHz - R	
3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

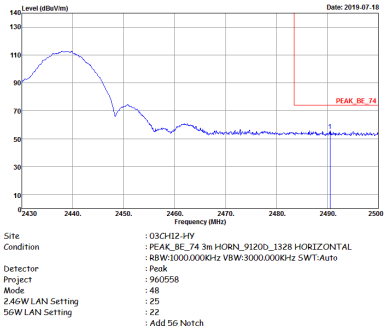
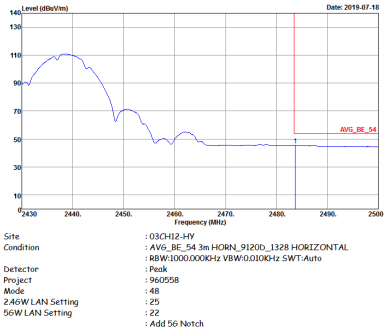
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	Left blank

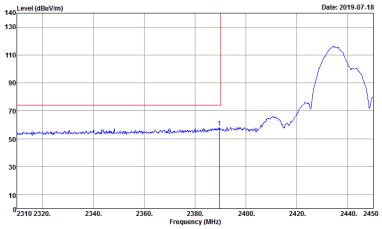
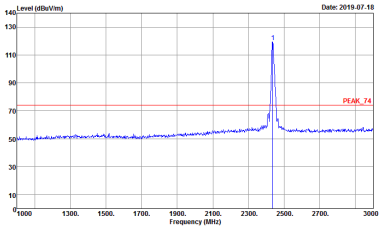
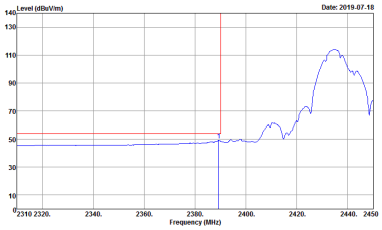
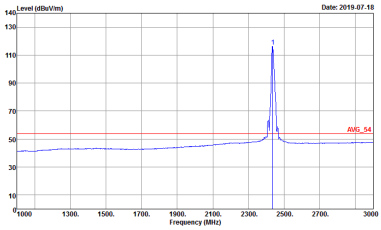
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25 : Add 2.4G Notch	Left blank

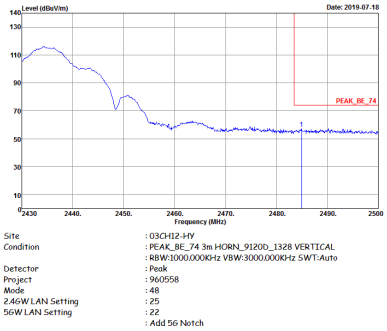
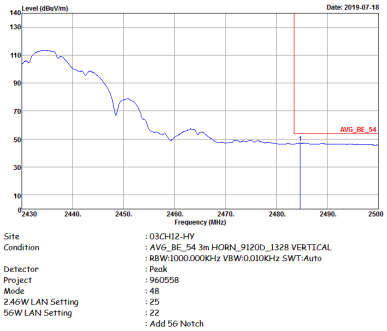
2.4GHz 2400~2483.5MHz+Band 1 - 5150~5250MHz

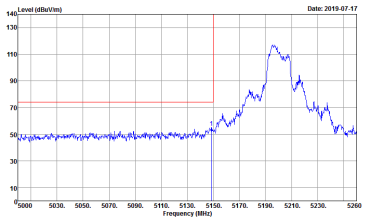
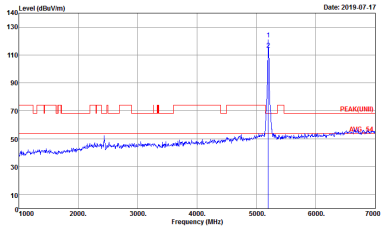
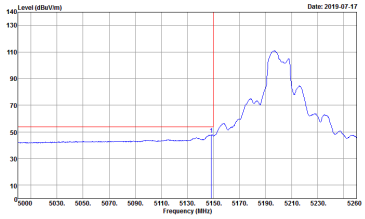
11b_Tx_Ch06+11a_Tx_Ch40 (Band Edge @ 3m)

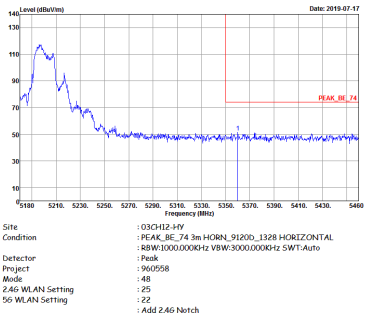
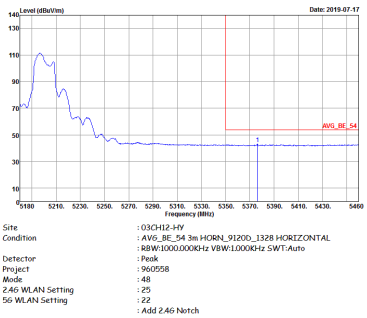
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch

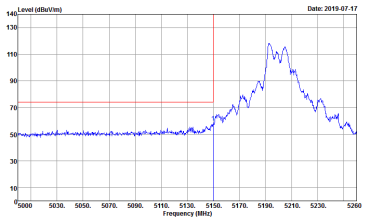
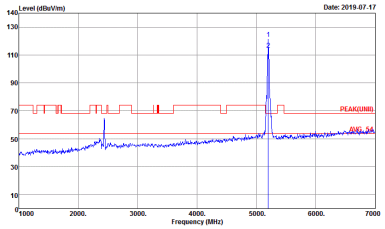
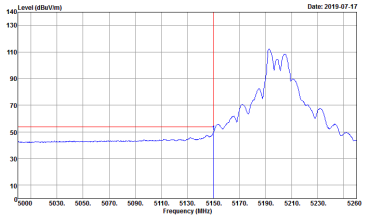
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

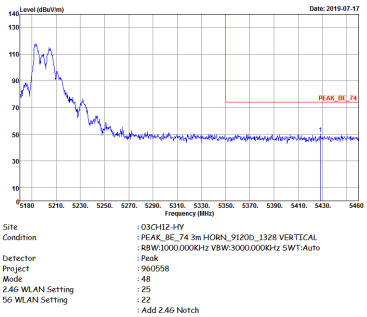
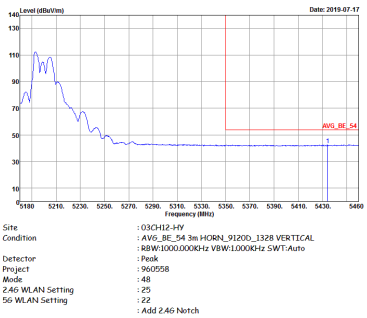
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4GW LAN Setting : 25 5GW LAN Setting : 22 : Add 5G Notch

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - L	
1+2+3+4	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : Add 2.4G Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : Add 2.4G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank

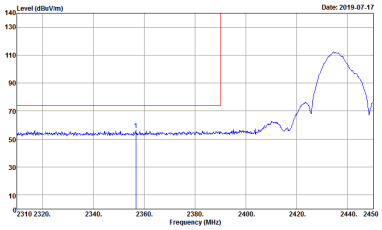
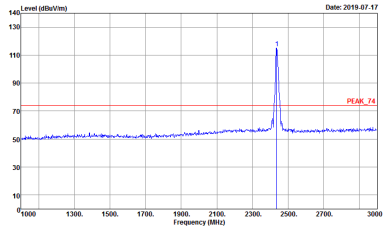
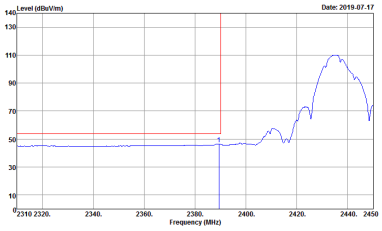
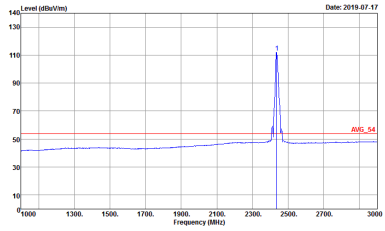
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - R	
1+2+3+4	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

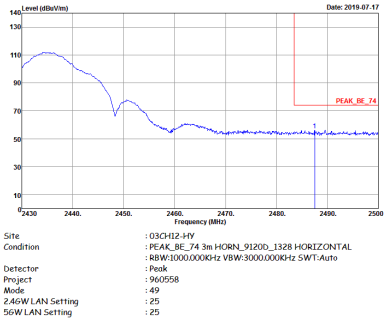
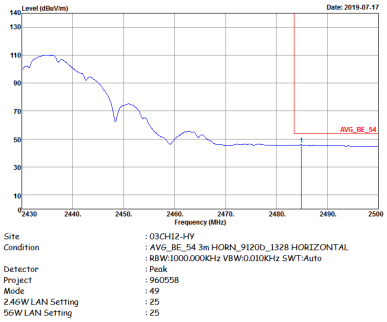
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - L	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : Add 2.4G Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : Add 2.4G Notch
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : Add 2.4G Notch	Left blank

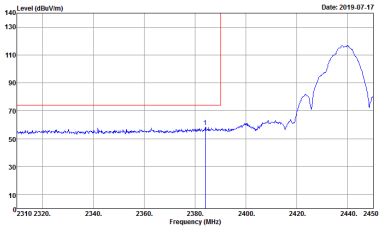
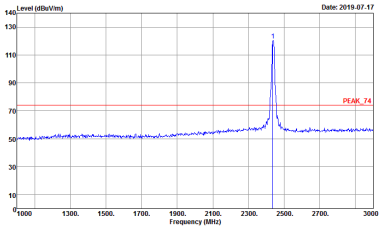
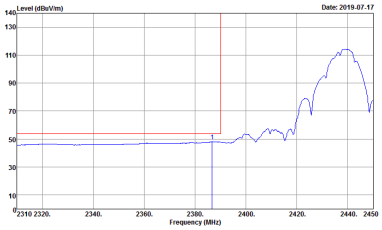
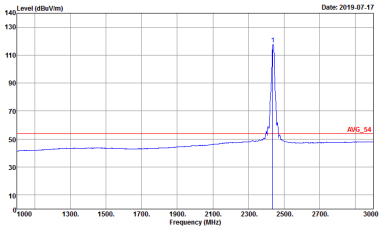
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH40 5200MHz - R	
1+2+3+4	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

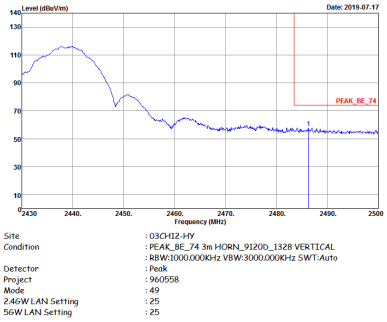
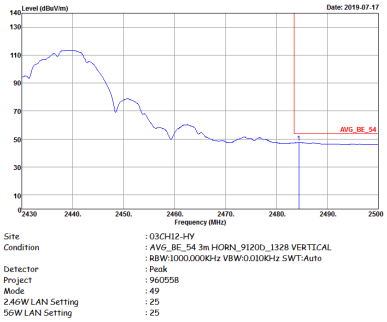
2.4GHz 2400~2483.5MHz+Band 4 - 5725~5850MHz

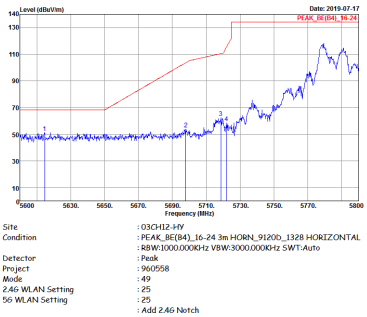
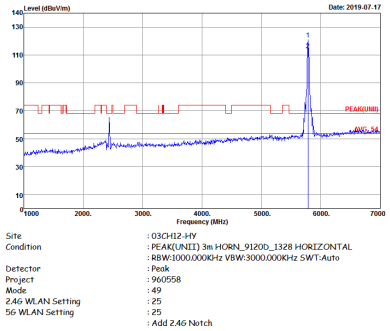
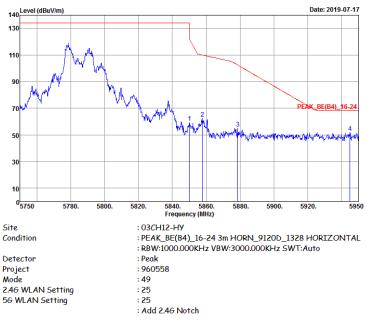
11b_Tx_Ch06+11a_Tx_Ch157 (Band Edge @ 3m)

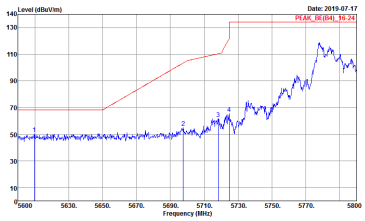
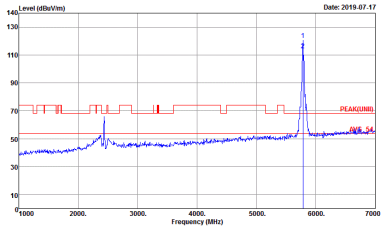
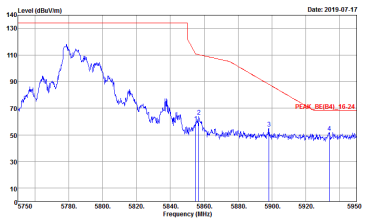
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5GW LAN Setting : 25	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5GW LAN Setting : 25
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5GW LAN Setting : 25	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5GW LAN Setting : 25

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5.6W LAN Setting : 25	 Site : 03CH12-HY Condition : PEAK_74 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5.6W LAN Setting : 25
Avg.	 Site : 03CH12-HY Condition : AVG_BE_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5.6W LAN Setting : 25	 Site : 03CH12-HY Condition : AVG_54 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4GW LAN Setting : 25 5.6W LAN Setting : 25

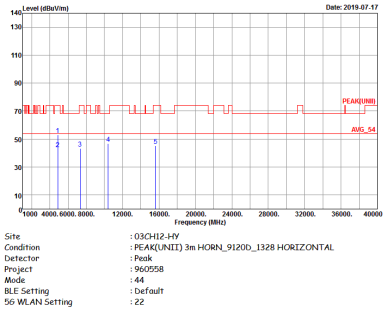
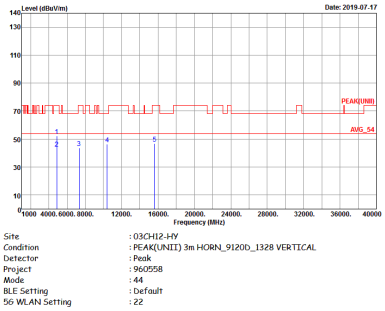
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

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

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2+3+4	Vertical	Fundamental
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4G WLAN Setting : 25 5G WLAN Setting : 25 : Add 2.4G Notch	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4G WLAN Setting : 25 5G WLAN Setting : 25 : Add 2.4G Notch
Peak	 Site : 03CH12-HY Condition : PEAK_BE(B4)_16-24 3m HORN_9120D_1328 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 960558 Mode : 49 2.4G WLAN Setting : 25 5G WLAN Setting : 25 : Add 2.4G Notch	Left blank

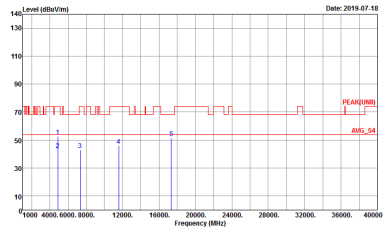
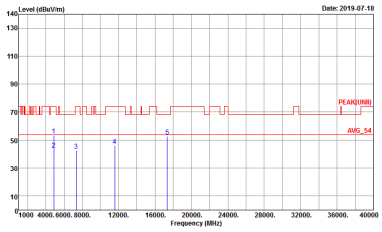
2.4GHz 2400~2483.5MHz+Band 1 - 5150~5250MHz

BLE(1M)_Tx_Ch19+11a_Tx_Ch40 (Harmonic @ 3m)

WIFI	2.4GHz 2440 MHz+5GHz 5200MHz Harmonic @ 3m	
ANT	BLE(1M)_Tx_CH19+11a_Tx_Ch40 2440+5200MHz	
1/ 1+2+3+4	Horizontal	Vertical
Peak Avg.		

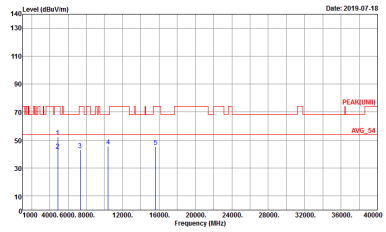
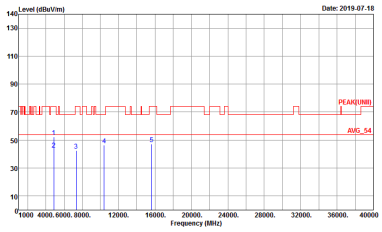
2.4GHz+5GHz 2400~2483.5MHz++Band 4 - 5725~5850MHz

BLE(1M)_Tx_Ch19+11a_Tx_Ch157 (Harmonic @ 3m)

WIFI	2.4GHz 2440 MHz+5GHz 5785MHz Harmonic @ 3m	
ANT	BLE(1M)_Tx_CH19+11a_Tx_Ch157 2440+5785MHz	
1/ 1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 960558 Mode : 45 BLE Setting : Default 5G WLAN Setting : 25

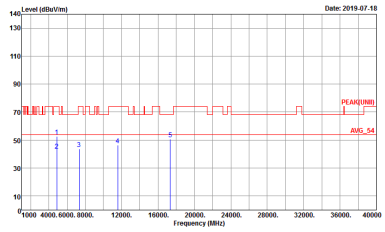
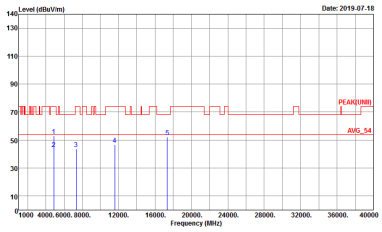
2.4GHz 2400~2483.5MHz+Band 1 - 5150~5250MHz

802.15.4_Tx_Ch18+11a_Tx_Ch40 (Harmonic @ 3m)

WIFI	2.4GHz 2440 MHz+5GHz 5200MHz Harmonic @ 3m	
ANT	802.15.4_Tx_CH18+11a_Tx_Ch40 2440+5200MHz	
3/ 1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 960558 Mode : 46 Zigbee Setting : Default 5G WLAN Setting : 22

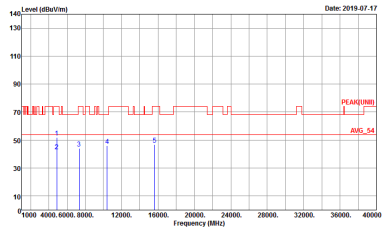
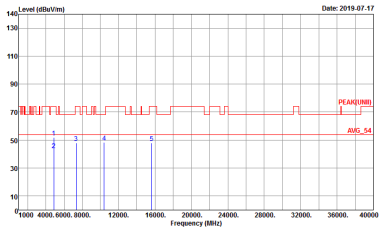
2.4GHz+5GHz 2400~2483.5MHz++Band 4 - 5725~5850MHz

802.15.4_Tx_Ch18+11a_Tx_Ch157 (Harmonic @ 3m)

WIFI	2.4GHz 2440 MHz+5GHz 5785MHz Harmonic @ 3m	
ANT	802.15.4_Tx_Ch18+11a_Tx_Ch157 2440+5785MHz	
3/ 1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 960558 Mode : 47 Zigbee Setting : Default 5G WLAN Setting : 25

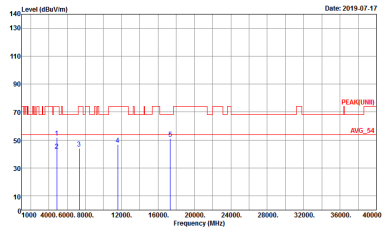
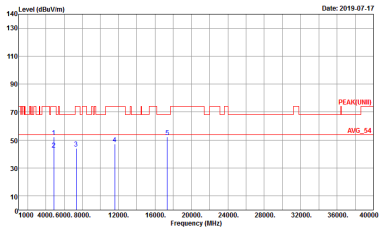
2.4GHz 2400~2483.5MHz+Band 1 - 5150~5250MHz

11b_Tx_Ch06+11a_Tx_Ch40 (Harmonic @ 3m)

WIFI	2.4GHz 2437 MHz+5GHz 5200MHz Harmonic @ 3m	
ANT	11b_Tx_Ch06+11a_Tx_Ch40 2437+5200MHz	
1+2/ 1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 960558 Mode : 48 2.4G WLAN Setting : 25 5G WLAN Setting : 22

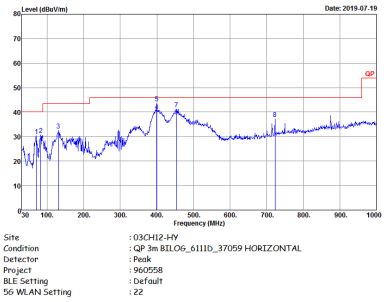
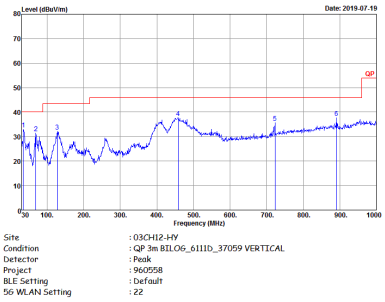
2.4GHz+5GHz 2400~2483.5MHz++Band 4 - 5725~5850MHz

11b_Tx_Ch06a_Tx_Ch157 (Harmonic @ 3m)

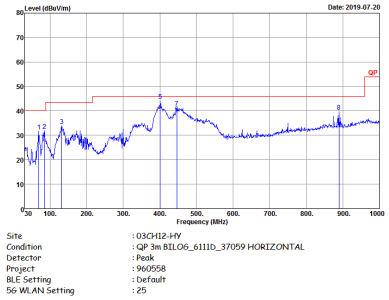
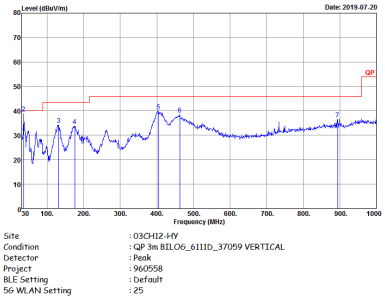
WIFI	2.4GHz 2437 MHz+5GHz 5785MHz Harmonic @ 3m	
ANT	11b_Tx_Ch06+11a_Tx_Ch157 2437+5785MHz	
1+2/ 1+2+3+4	Horizontal	Vertical
Peak Avg.	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 HORIZONTAL Detector : Peak Project : 960558 Mode : 49 2.4G WLAN Setting : 25 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : PEAK(UNII) 3m HORN_9120D_1328 VERTICAL Detector : Peak Project : 960558 Mode : 49 2.4G WLAN Setting : 25 5G WLAN Setting : 25

Emission below 1GHz

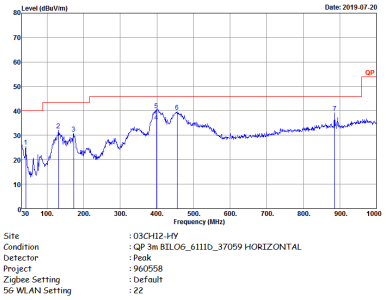
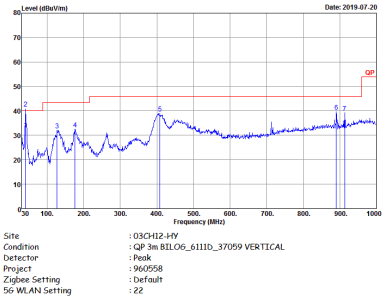
BLE(1M)_Tx_Ch19+11a_Tx_Ch40 (LF)

WIFI	2.4GHz 2440 MHz+5GHz 5200MHz	
ANT	BLE(1M)_Tx_Ch19+11a_Tx_Ch40 LF	
1/ 1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 HORIZONTAL Detector : Peak Project : 960558 BLE Setting : Default 5G WLAN Setting : 22	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 VERTICAL Detector : Peak Project : 960558 BLE Setting : Default 5G WLAN Setting : 22

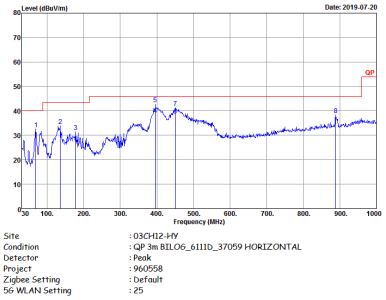
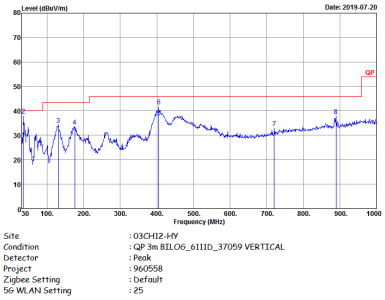
BLE(1M)_Tx_Ch19+11a_Tx_Ch157 (LF)

WIFI	2.4GHz 2440 MHz+5GHz 5785MHz	
ANT	BLE(1M)_Tx_Ch19+11a_Tx_Ch157	
1/ 1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : QP 3m BILO6_6111D_37059 HORIZONTAL Detector : Peak Project : 960558 BLE Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : QP 3m BILO6_6111D_37059 VERTICAL Detector : Peak Project : 960558 BLE Setting : Default 5G WLAN Setting : 25

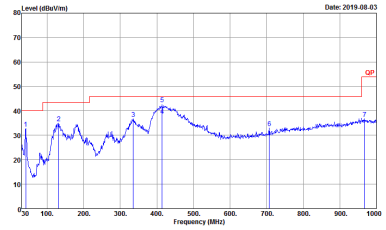
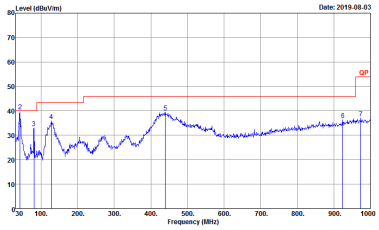
802.15.4_Tx_Ch18+11a_Tx_Ch40 (LF)

WIFI	2.4GHz 2440 MHz+5GHz 5200MHz	
ANT	802.15.4_Tx_Ch18+11a_Tx_Ch40	
3/ 1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : QP 3m BILO6_6111D_37059 HORIZONTAL Detector : Peak Project : 960558 Zigbee Setting : Default 5G WLAN Setting : 22	 Site : 03CH12-HY Condition : QP 3m BILO6_6111D_37059 VERTICAL Detector : Peak Project : 960558 Zigbee Setting : Default 5G WLAN Setting : 22

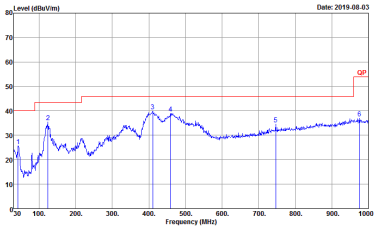
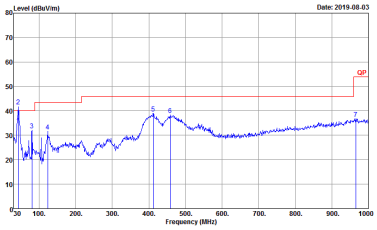
802.15.4_Tx_Ch18+11a_Tx_Ch157 (LF)

WIFI	2.4GHz 2440 MHz+5GHz 5785MHz	
ANT	802.15.4_Tx_Ch18+11a_Tx_Ch157 LF	
3/ 1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 HORIZONTAL Detector : Peak Project : 960558 Zigbee Setting : Default 5G WLAN Setting : 25	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 VERTICAL Detector : Peak Project : 960558 Zigbee Setting : Default 5G WLAN Setting : 25

11b_Tx_Ch06+11a_Tx_Ch40 (LF)

WIFI	2.4GHz 2437 MHz+5GHz 5200MHz	
ANT	11b_Tx_Ch06+11a_Tx_Ch40	
1+2/ 1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 HORIZONTAL Detector : Peak Project : 960558 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : #4 Adapter	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 VERTICAL Detector : Peak Project : 960558 2.4G WLAN Setting : 25 5G WLAN Setting : 22 : #4 Adapter

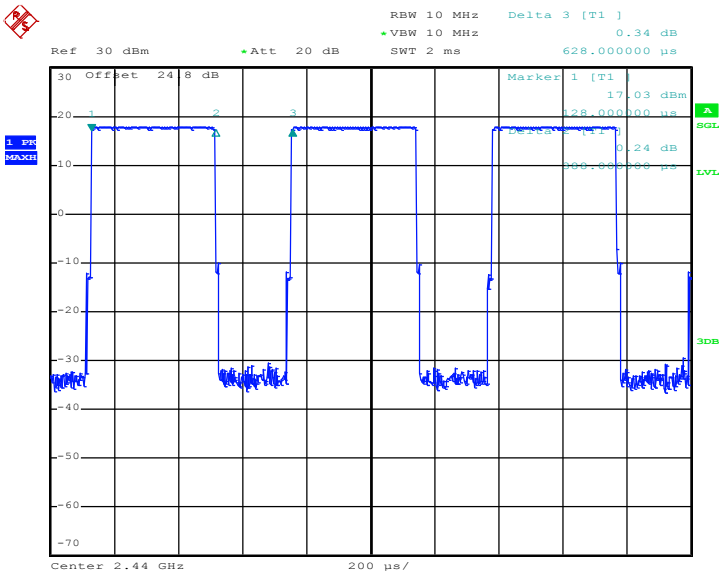
11b_Tx_Ch06+11a_Tx_Ch157 (LF)

WIFI	2.4GHz 2437 MHz+5GHz 5785MHz	
ANT	11b_Tx_Ch06+11a_Tx_Ch157 LF	
1+2/ 1+2+3+4	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 HORIZONTAL Detector : Peak Project : 960558 2.4G WLAN Setting : 25 5G WLAN Setting : 25 : #4 Adapter	 Site : 03CH12-HY Condition : QP 3m BILOG_6111D_37059 VERTICAL Detector : Peak Project : 960558 2.4G WLAN Setting : 25 5G WLAN Setting : 25 : #4 Adapter

Appendix C. Duty Cycle Plots

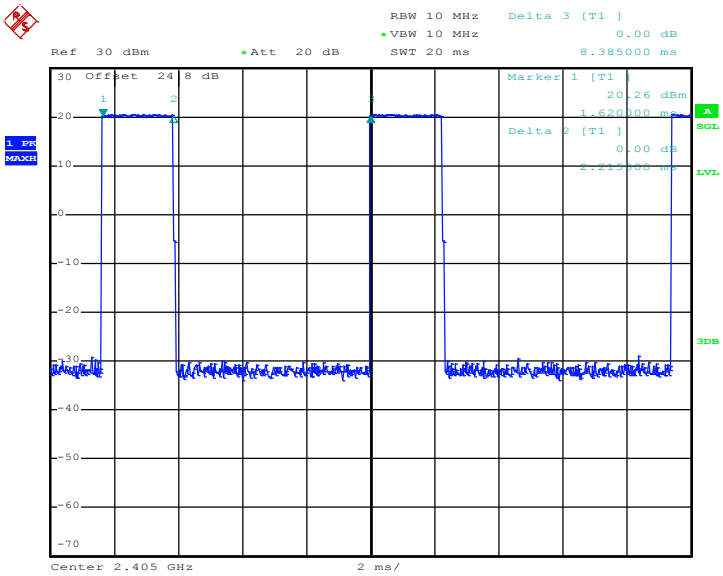
Antenna	Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor (dB)
1	Bluetooth – LE	61.78	388.00	2.58	3kHz	2.09
3	802.15.4	26.42	2215.00	0.45	1kHz	5.78
1+2	802.11b	98.03	12450.00	0.08	10Hz	0.09
1+2+3+4	802.11a	96.71	2060.00	0.49	1kHz	0.15

Bluetooth - LE



Date: 28.JUL.2019 14:46:37

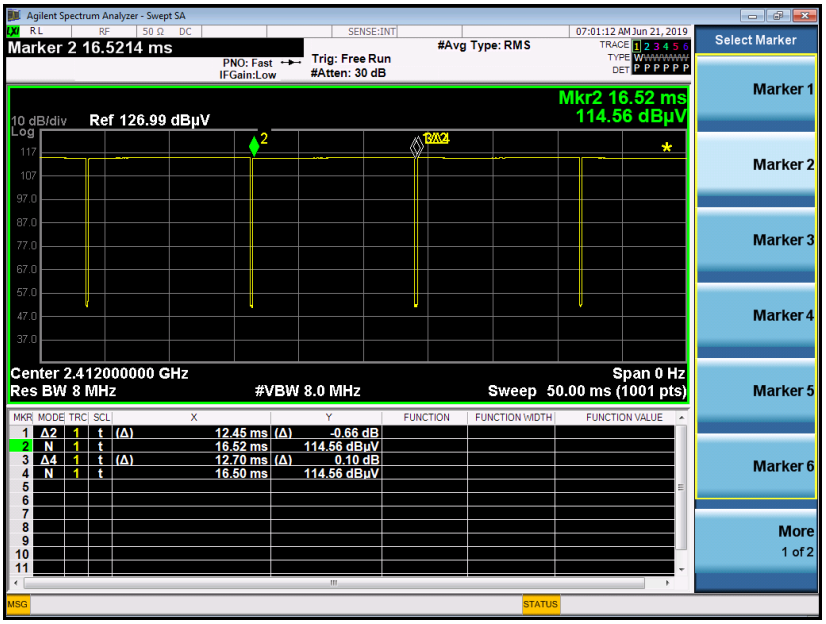
802.15.4



Date: 17.JUL.2019 10:10:32

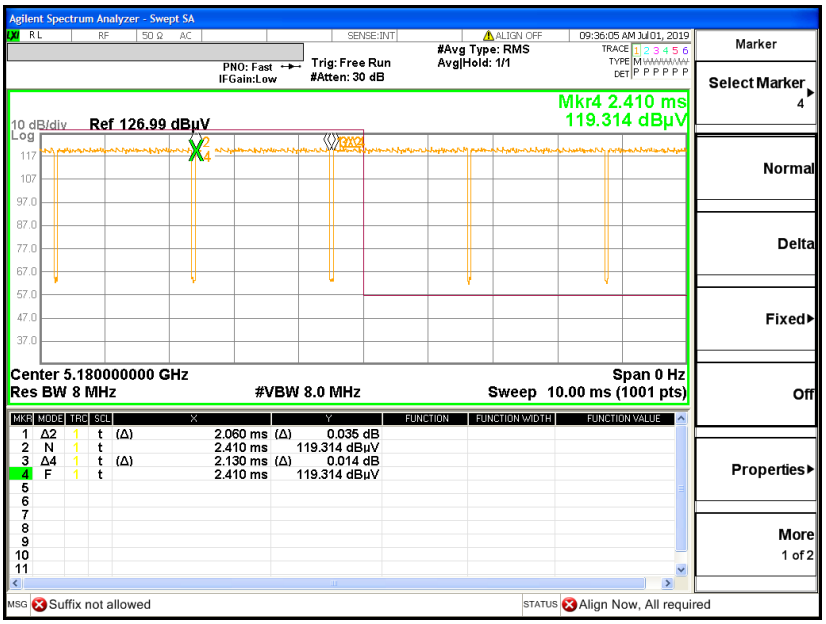
<Ant. 1+2>

802.11b



<Ant. 1+2+3+4>

802.11a



———THE END———