



FCC CO-LOCATION RADIO TEST REPORT

FCC ID : 2AWRO-8762
Equipment : Wireless Tablet
Model Name : T76N2B
Applicant : Abyssal Plain LLC
CASTLE HILLS
1100 NW LOOP 410, SUITE 700, SAN
ANTONIO, TEXAS, 78213
Standard : FCC Part 15 Subpart E §15.407

The product was received on Oct. 16, 2020 and testing was started from Nov. 03, 2020 and completed on Nov. 09, 2020. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The 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

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



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History of this test report

Report No.	Version	Description	Issued Date
FR072932-01D	01	Initial issue of report	Dec. 02, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)
3.1	15.407(b)	Unwanted Emissions	Pass
3.2	15.203 15.407(a)	Antenna Requirement	Pass

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: Celery Wei

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Wireless Tablet
Model Name	T76N2B
FCC ID	2AWRO-8762
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE

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
Antenna Type / Gain	<Bluetooth LE> Ant. 1 : PIFA Antenna with gain 1.3 dBi Ant. 2 : PIFA Antenna with gain 1.8 dBi <5180 MHz ~ 5240 MHz> Ant. 1 : PIFA Antenna with gain 2.5 dBi Ant. 2 : PIFA Antenna with gain 1.3 dBi
Type of Modulation	Bluetooth LE : GFSK 802.11a/n : OFDM (BPSK/QPSK/16QAM/64QAM) 802.11ac : OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)

Note: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

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.
	03CH13-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 Publication No. 558074 D01 DTS Meas. Guidance v05r02
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.

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		5150-5250MHz	
Bluetooth - LE (1Mbps)		802.11ac VHT80	
Channel	Freq. (MHz)	Channel	Freq. (MHz)
39	2480	42	5210

2.2 Test Mode

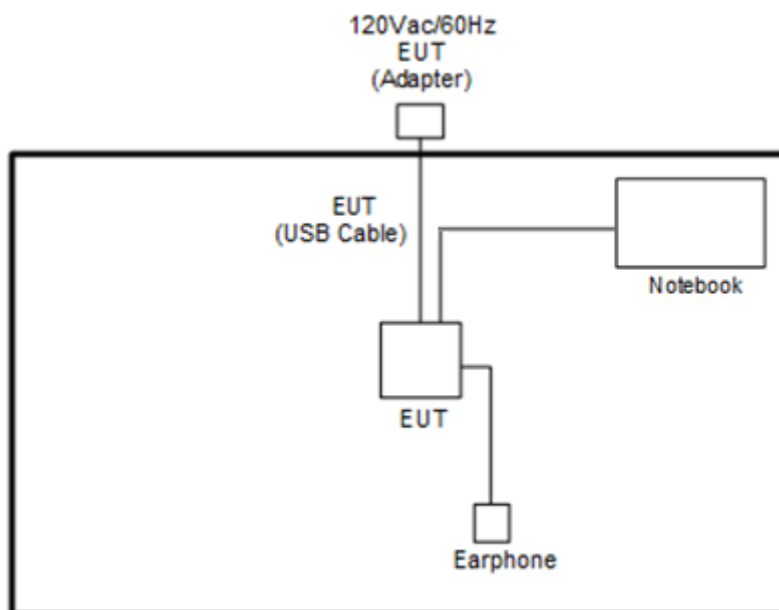
Final test modes are considering the modulation and worse data rates as below table.

<Co-Location>

Modulation	Data Rate
Bluetooth - LE for Ant. 1 + 5GHz 802.11ac VHT80 Ant. 1	1Mbps + MCS0
Bluetooth - LE for Ant. 2 + 5GHz 802.11ac VHT80 Ant. 2	1Mbps + MCS0

Remark: All the tests were performed with Adapter (AP15).

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	Lenovo	L570	NA	NA	AC I/P : Unshielded, 1.2m DC O/P : Shielded, 1.8m
2.	Earphone	N/A	N/A	N/A	NA	Unshielded, 1.15m

2.5 EUT Operation Test Setup

The RF test items, utility “CMD” 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) 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.

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

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

- (2) 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

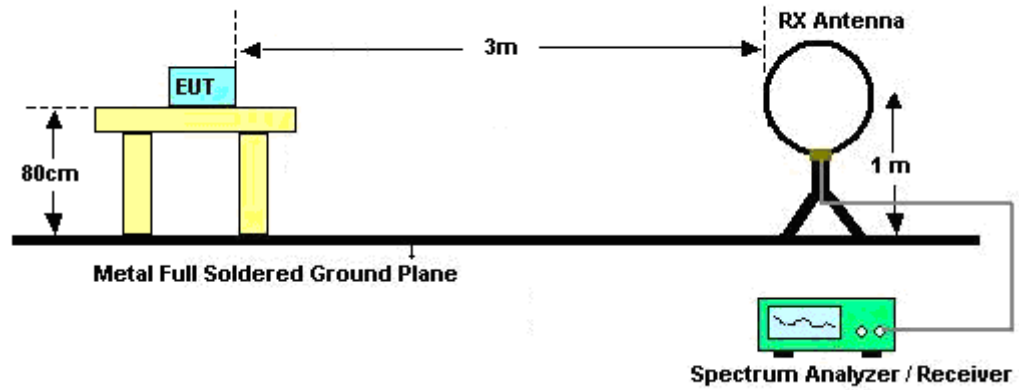
See list of measuring equipment of this test report.

3.1.3 Test Procedures

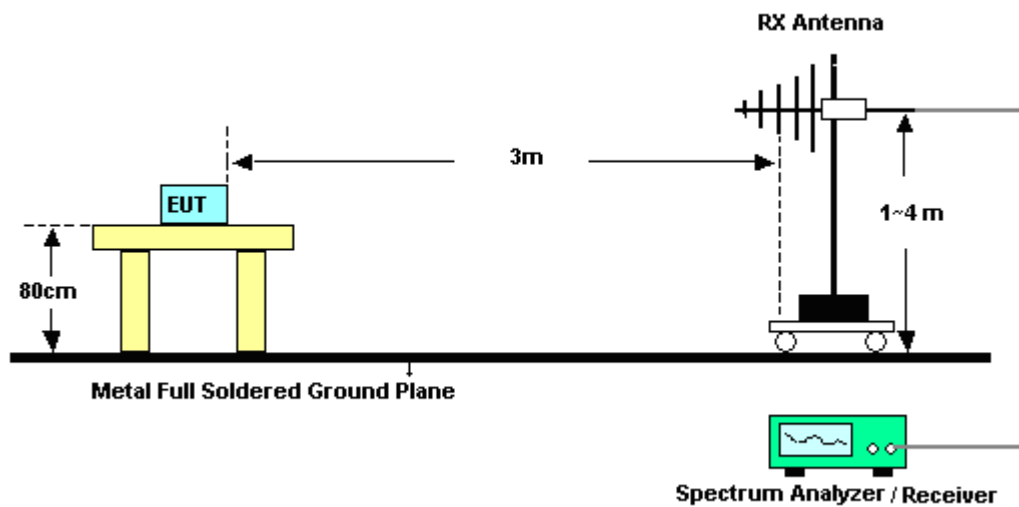
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
(1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.1.4 Test Setup

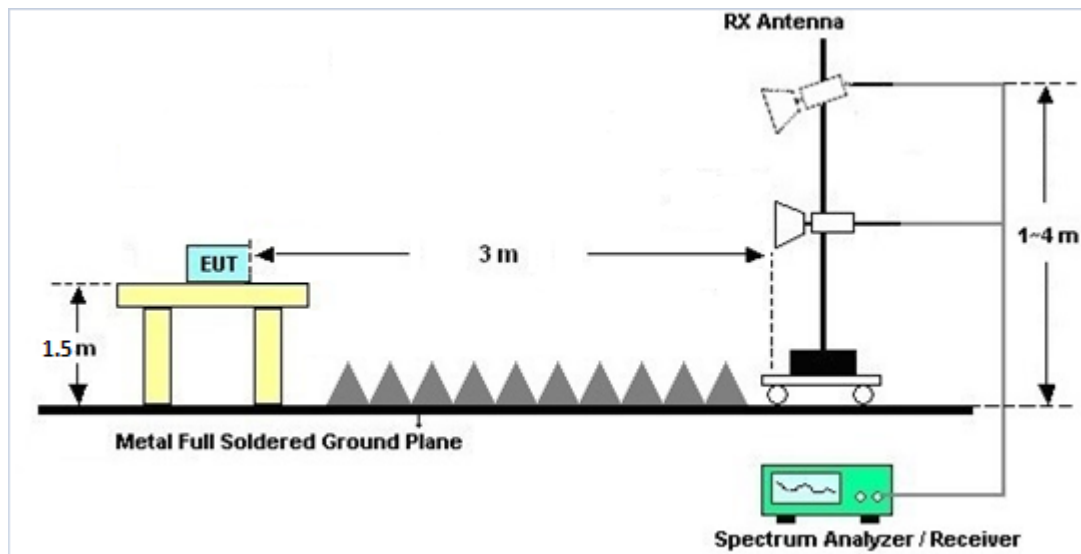
For radiated emissions below 30MHz



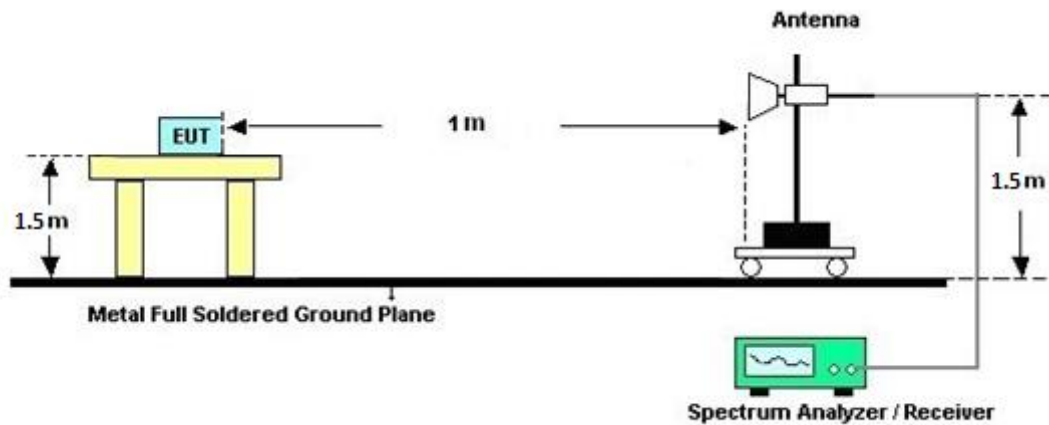
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated emissions above 18GHz





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	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jan. 09, 2020	Nov. 03, 2020~ Nov. 09, 2020	Jan. 08, 2021	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL6111D&00 800N1D01N-0 6	41912&05	30MHz to 1GHz	Feb. 09, 2020	Nov. 03, 2020~ Nov. 09, 2020	Feb. 08, 2021	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Dec. 27, 2019	Nov. 03, 2020~ Nov. 09, 2020	Dec. 26, 2020	Radiation (03CH15-HY)
Horn Antenna	SCHWARZB ECK	BBHA 9120 D	9120D-0211 4	1-18GHz	Aug. 04, 2020	Nov. 03, 2020~ Nov. 09, 2020	Aug. 03, 2021	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZB ECK	BBHA 9170	BBHA91705 84	18GHz- 40GHz	Dec. 10, 2019	Nov. 03, 2020~ Nov. 09, 2020	Dec. 09, 2020	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-3 03	1710001800 055006	1GHz~18GHz	May 07, 2020	Nov. 03, 2020~ Nov. 09, 2020	May 06, 2021	Radiation (03CH15-HY)
Preamplifier	Keysight	83017A	MY5327019 5	1GHz~26.5GHz	Aug. 21, 2020	Nov. 03, 2020~ Nov. 09, 2020	Aug. 21, 2021	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Nov. 03, 2020~ Nov. 09, 2020	Dec. 12, 2020	Radiation (03CH15-HY)
Spectrum Analyzer	Keysight	N9010A	MY5420048 5	10Hz~44GHz	Feb. 10, 2020	Nov. 03, 2020~ Nov. 09, 2020	Feb. 09, 2021	Radiation (03CH15-HY)
Spectrum Analyzer	Agilent	E4446A	MY5018013 6	3Hz~44GHz	May 04, 2020	Nov. 03, 2020~ Nov. 09, 2020	May 03, 2021	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Nov. 03, 2020~ Nov. 09, 2020	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Nov. 03, 2020~ Nov. 09, 2020	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24(k 5)	RK-000451	N/A	N/A	Nov. 03, 2020~ Nov. 09, 2020	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY36980/4	30M-18G	Apr. 14, 2020	Nov. 03, 2020~ Nov. 09, 2020	Apr. 13, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9838/4P E	30M-18G	Apr. 14, 2020	Nov. 03, 2020~ Nov. 09, 2020	Apr. 13, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY37710/4	30M-18G	Apr. 17, 2020	Nov. 03, 2020~ Nov. 09, 2020	Apr. 16, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz-40GHz	Feb. 25, 2020	Nov. 03, 2020~ Nov. 09, 2020	Feb. 24, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz-40GHz	Feb. 25, 2020	Nov. 03, 2020~ Nov. 09, 2020	Feb. 24, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4P E	9kHz~30MHz	Mar. 12, 2020	Nov. 03, 2020~ Nov. 09, 2020	Mar. 11, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WLK4-1000-1 530-8000-40S S	SN4	1.53G Low Pass	Jul. 03, 2020	Nov. 03, 2020~ Nov. 09, 2020	Jul. 02, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000- 40ST	SN6	6.75GHz High Pass Filter	Jul. 03, 2020	Nov. 03, 2020~ Nov. 09, 2020	Jul. 02, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000- 60ST	SN4	3GHz High Pass Filter	Sep. 16, 2020	Nov. 03, 2020~ Nov. 09, 2020	Sep. 15, 2021	Radiation (03CH15-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.3
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9
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Appendix A. Radiated Spurious Emission

Test Engineer :	Leo Lee, Mancy CHou and Bigshow Wang	Temperature :	20~25°C
		Relative Humidity :	50~65%

BLE (Band Edge @ 3m)

Ant. Simultaneously	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)
Mode 1 Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42	*	2480	106.95	-	-	92.58	27.74	17.51	30.88	182	176	P	H
	*	2480	106.52	-		92.15	27.74	17.51	30.88	182	176	A	H
		2485.8	56.8	-17.2	74	42.43	27.73	17.52	30.88	182	176	P	H
		2499.2	47.25	-6.75	54	32.87	27.7	17.55	30.87	182	176	A	H
	*	2480	106.13	-	-	91.76	27.74	17.51	30.88	367	164	P	V
	*	2480	105.76	-		91.39	27.74	17.51	30.88	367	164	A	V
		2490.92	56.63	-17.37	74	42.25	27.72	17.53	30.87	367	164	P	V
		2498.64	47.13	-6.87	54	32.76	27.7	17.54	30.87	367	164	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



5GHz 5150~5250MHz (Band Edge @ 3m)

Ant. Simultaneously	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)
Mode 1 Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42		5148.98	63.48	-10.52	74	50.9	32.1	10.49	30.01	100	305	P	H
		5149.76	53.25	-0.75	54	40.67	32.1	10.49	30.01	100	305	A	H
	*	5210	98.41	-	-	86.03	31.82	10.57	30.01	100	305	P	H
	*	5210	90.87	-		78.49	31.82	10.57	30.01	100	305	A	H
		5420.8	51.37	-22.63	74	38.85	31.82	10.69	29.99	100	305	P	H
		5460	42.47	-11.53	54	29.71	32.02	10.73	29.99	100	305	A	H
		5149.76	58.09	-15.91	74	45.51	32.1	10.49	30.01	299	316	P	V
		5150	50.13	-3.87	54	37.55	32.1	10.49	30.01	299	316	A	V
	*	5210	95.54	-	-	83.16	31.82	10.57	30.01	299	316	P	V
	*	5210	88.03	-		75.65	31.82	10.57	30.01	299	316	A	V
		5438.72	51.43	-22.57	74	38.78	31.93	10.71	29.99	299	316	P	V
		5458.6	42.31	-11.69	54	29.55	32.02	10.73	29.99	299	316	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

Ant. Simultaneously	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)
Mode 1 Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42		4960	60.01	-13.99	74	46.94	31.42	11.68	30.03	296	294	P	H
		4960	53.08	-0.92	54	40.01	31.42	11.68	30.03	296	294	A	H
		7440	45.51	-28.49	74	54.21	36.68	13	58.38	100	0	P	H
		10420	48.54	-19.66	68.2	55.22	39.9	14.41	60.99	100	0	P	H
		15630	47.23	-26.77	74	54.2	37.99	17.32	62.28	100	0	P	H
		17989	61.91	-12.09	74	49.86	50.14	19.82	57.91	150	85	P	H
		17989	51.6	-2.4	54	39.55	50.14	19.82	57.91	150	85	A	H
		4960	58.8	-15.2	74	45.73	31.42	11.68	30.03	396	330	P	V
		4960	49.95	-4.05	54	36.88	31.42	11.68	30.03	396	330	A	V
		7440	44.92	-29.08	74	53.62	36.68	13	58.38	100	0	P	V
		10420	48.01	-20.19	68.2	54.69	39.9	14.41	60.99	100	0	P	V
		15630	47.35	-26.65	74	54.32	37.99	17.32	62.28	100	0	P	V
		18000	62.66	-11.34	74	50.23	50.5	19.83	57.9	100	24	P	V
		18000	51.89	-2.11	54	39.46	50.5	19.83	57.9	100	24	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



BLE (Band Edge @ 3m)

Ant. Simultaneously	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)
Mode 2 Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42	*	2480	106.99	-	-	92.62	27.74	17.51	30.88	100	25	P	H
	*	2480	106.58	-		92.21	27.74	17.51	30.88	100	25	A	H
		2487.68	57.41	-16.59	74	43.05	27.72	17.52	30.88	100	25	P	H
		2497.16	47.51	-6.49	54	33.13	27.71	17.54	30.87	100	25	A	H
	*	2480	104.62	-	-	90.25	27.74	17.51	30.88	400	300	P	V
	*	2480	104.21	-		89.84	27.74	17.51	30.88	400	300	A	V
		2494.76	56.79	-17.21	74	42.41	27.71	17.54	30.87	400	300	P	V
		2489.04	47.2	-6.8	54	32.82	27.72	17.53	30.87	400	300	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



5GHz 5150~5250MHz (Band Edge @ 3m)

Ant. Simultaneously	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)
Mode 2 Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42		5136.76	61.36	-12.64	74	48.82	32.07	10.48	30.01	100	100	P	H
		5150	52.86	-1.14	54	40.28	32.1	10.49	30.01	100	100	A	H
	*	5210	101.96	-	-	89.58	31.82	10.57	30.01	100	100	P	H
	*	5210	94.63	-		82.25	31.82	10.57	30.01	100	100	A	H
		5359.76	52.35	-21.65	74	40.25	31.46	10.64	30	100	100	P	H
		5350.24	42.92	-11.08	54	30.88	31.4	10.64	30	100	100	A	H
		5145.34	55.71	-18.29	74	43.14	32.09	10.49	30.01	396	178	P	V
		5149.76	47.51	-6.49	54	34.93	32.1	10.49	30.01	396	178	A	V
	*	5210	94.7	-	-	82.32	31.82	10.57	30.01	396	178	P	V
	*	5210	87.38	-		75	31.82	10.57	30.01	396	178	A	V
		5452.44	52.14	-21.86	74	39.41	32	10.72	29.99	396	178	P	V
		5460	42.29	-11.71	54	29.53	32.02	10.73	29.99	396	178	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

Ant. Simultaneously	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)
Mode 2 Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42		4960	56.02	-17.98	74	42.95	31.42	11.68	30.03	300	55	P	H
		4960	46.44	-7.56	54	33.37	31.42	11.68	30.03	300	55	A	H
		7440	45.9	-28.1	74	54.6	36.68	13	58.38	100	0	P	H
		10420	48.32	-19.88	68.2	55	39.9	14.41	60.99	100	0	P	H
		15630	46.52	-27.48	74	53.49	37.99	17.32	62.28	100	0	P	H
		18000	61.77	-12.23	74	49.34	50.5	19.83	57.9	100	55	P	H
		18000	51.75	-2.25	54	39.32	50.5	19.83	57.9	100	55	A	H
		4960	56.46	-17.54	74	43.39	31.42	11.68	30.03	100	324	P	V
		4960	46.2	-7.8	54	33.13	31.42	11.68	30.03	100	324	A	V
		7440	44.83	-29.17	74	53.53	36.68	13	58.38	100	0	P	V
		10420	47.7	-20.5	68.2	54.38	39.9	14.41	60.99	100	0	P	V
		15630	46.77	-27.23	74	53.74	37.99	17.32	62.28	100	0	P	V
		18000	61.55	-12.45	74	49.12	50.5	19.83	57.9	100	37	P	V
		18000	51.65	-2.35	54	39.22	50.5	19.83	57.9	100	37	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission after 18GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (SHF)

	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
Simultaneously		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
Mode 1		22642	39.12	-34.88	74	41.66	38.64	12.35	53.53	150	0	P	H
Ant 1		36106	44.37	-23.83	68.2	39.54	42.64	18.64	56.45	150	0	P	H
BLE CH39		22224	39.48	-34.52	74	42.44	38.26	12.22	53.44	150	0	P	V
+		36172	44.88	-23.32	68.2	40.09	42.67	18.66	56.54	150	0	P	V
Ant 1													
11ac VHT80													
CH42													
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (SHF)**

Ant. Simultaneously	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)
Mode 2 Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42		23874	39.33	-34.67	74	39.78	40.22	12.63	53.3	150	0	P	H
		37668	44.93	-23.27	68.2	39.82	42.83	18.68	56.4	150	0	P	H
		22928	39.34	-34.66	74	41.97	38.53	12.43	53.59	150	0	P	V
		37800	45.03	-23.17	68.2	39.7	42.94	18.63	56.24	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (LF)

	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
Simultaneously		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
Mode 1 Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42		37.76	27.52	-12.48	40	38.56	20.51	0.79	32.34	-	-	P	H
		62.98	25.88	-14.12	40	44.68	12.26	1.04	32.1	-	-	P	H
		124.09	29.16	-14.34	43.5	42.36	17.72	1.53	32.45	-	-	P	H
		167.74	28.57	-14.93	43.5	43.13	16.04	1.8	32.4	-	-	P	H
		496.57	37.99	-8.01	46	43.52	23.8	3.11	32.44	100	0	P	H
		729.37	32.42	-13.58	46	33.83	27.26	3.77	32.44	-	-	P	H
		37.76	32.69	-7.31	40	43.73	20.51	0.79	32.34	-	-	P	V
		47.46	33.87	-6.13	40	49.59	15.76	0.87	32.35	100	0	P	V
		167.74	30.76	-12.74	43.5	45.32	16.04	1.8	32.4	-	-	P	V
		248.25	28.7	-17.3	46	40.89	17.96	2.26	32.41	-	-	P	V
		496.57	32.39	-13.61	46	37.92	23.8	3.11	32.44	-	-	P	V
		899.12	33.8	-12.2	46	32.9	28.56	4.3	31.96	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (LF)

Ant. Simultaneously	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)
Mode 2 Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42		37.76	27.67	-12.33	40	38.71	20.51	0.79	32.34	-	-	P	H
		124.09	29.61	-13.89	43.5	42.81	17.72	1.53	32.45	-	-	P	H
		167.74	28.9	-14.6	43.5	43.46	16.04	1.8	32.4	-	-	P	H
		248.25	29.54	-16.46	46	41.73	17.96	2.26	32.41	-	-	P	H
		496.57	37.62	-8.38	46	43.15	23.8	3.11	32.44	100	0	P	H
		730.34	34.07	-11.93	46	35.43	27.31	3.77	32.44	-	-	P	H
		47.46	33.62	-6.38	40	49.34	15.76	0.87	32.35	100	0	P	V
		124.09	27.34	-16.16	43.5	40.54	17.72	1.53	32.45	-	-	P	V
		167.74	31.12	-12.38	43.5	45.68	16.04	1.8	32.4	-	-	P	V
		248.25	29.04	-16.96	46	41.23	17.96	2.26	32.41	-	-	P	V
		496.57	33.06	-12.94	46	38.59	23.8	3.11	32.44	-	-	P	V
		715.79	34.87	-11.13	46	36.89	26.67	3.73	32.42	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average 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	Peak or Average
H/V	Horizontal or Vertical

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

	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
Simultaneously		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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

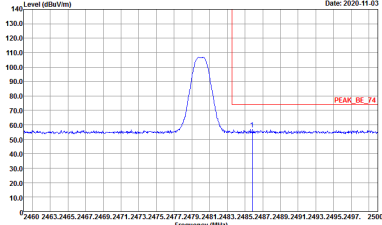
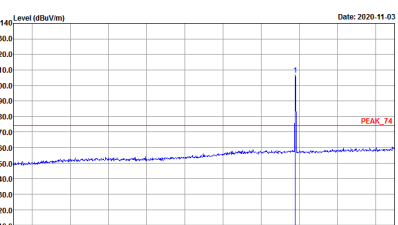
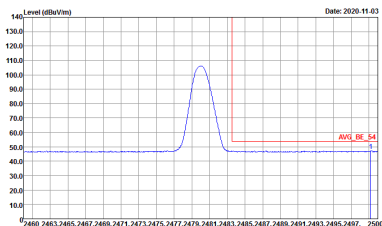
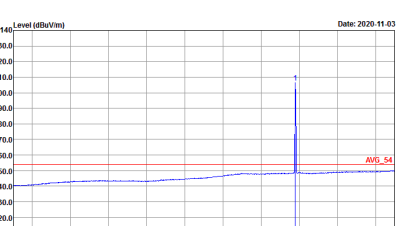
Test Engineer :	Leo Lee, Mancy CHou and Bigshow Wang	Temperature :	20~25°C
		Relative Humidity :	50~65%

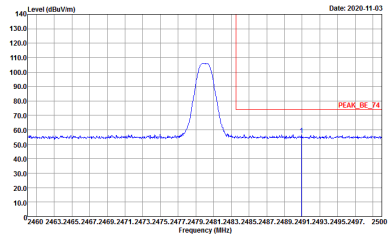
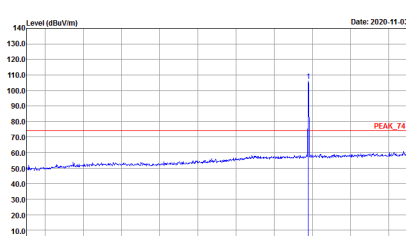
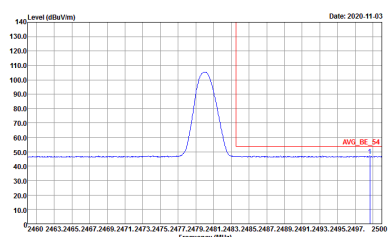
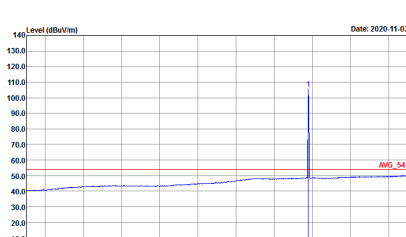
Note symbol

-L	Low channel location
-R	High channel location



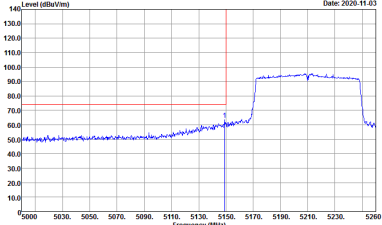
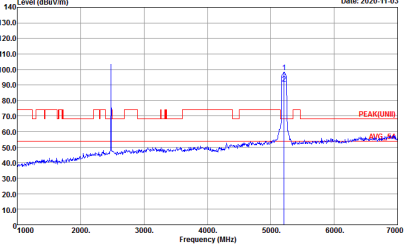
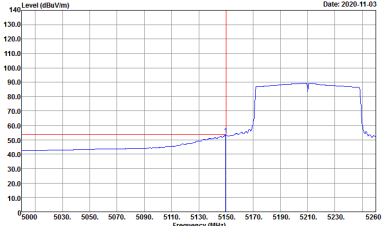
BLE (Band Edge @ 3m)

ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42	
Simultaneously	Horizontal	Fundamental
Peak	 Level (dBm/Hz) vs Frequency (MHz). Date: 2020-11-03. Peak at 2480.5 MHz, level ~110 dBm/Hz. Peak label: PEAK_BE_74. Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Level (dBm/Hz) vs Frequency (MHz). Date: 2020-11-03. Peak at 2480.5 MHz, level ~110 dBm/Hz. Peak label: PEAK_74. Site : 03CH15-HY Condition : PEAK_74 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42
Avg.	 Level (dBm/Hz) vs Frequency (MHz). Date: 2020-11-03. Avg at 2480.5 MHz, level ~110 dBm/Hz. Avg label: AVG_BE_54. Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Level (dBm/Hz) vs Frequency (MHz). Date: 2020-11-03. Avg at 2480.5 MHz, level ~110 dBm/Hz. Avg label: AVG_54. Site : 03CH15-HY Condition : AVG_54 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42

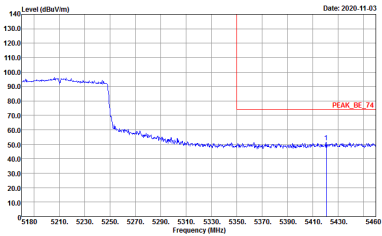
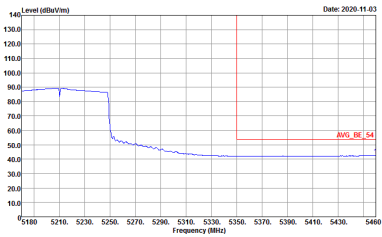
ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Site : 03CH15-HY Condition : PEAK_74 3m HORN_91200_2114 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Site : 03CH15-HY Condition : AVG_54 3m HORN_91200_2114 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42



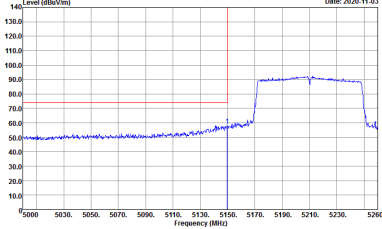
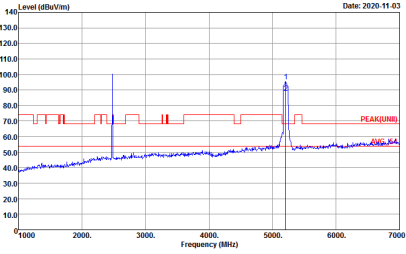
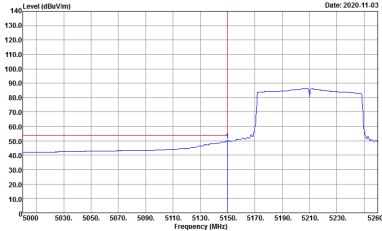
5GHz 5150~5250MHz (Band Edge @ 3m)

ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 VHT80 CH42 - L	
Simultaneously	Horizontal	Fundamental
Peak	 Level (dBuV/m) vs Frequency (MHz) plot showing a sharp peak at 5150 MHz. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 5000 to 5260 MHz. A red vertical line marks the peak at 5150 MHz. Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	 Level (dBuV/m) vs Frequency (MHz) plot showing a sharp peak at 5150 MHz. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 1000 to 7000 MHz. A red vertical line marks the peak at 5150 MHz. Site : 03CH15-HY Condition : PEAK(UNII) 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42
Avg.	 Level (dBuV/m) vs Frequency (MHz) plot showing a sharp peak at 5150 MHz. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 5000 to 5260 MHz. A red vertical line marks the peak at 5150 MHz. Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank

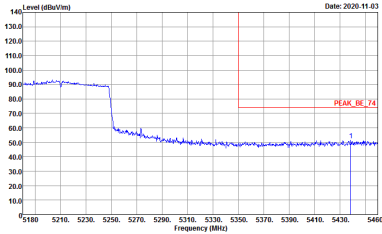
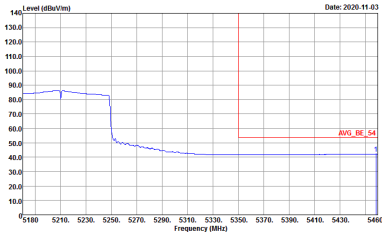


ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42 - R	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank



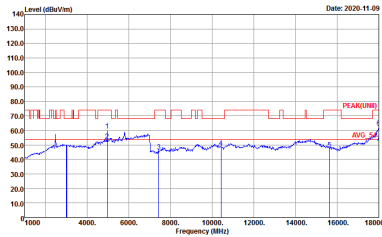
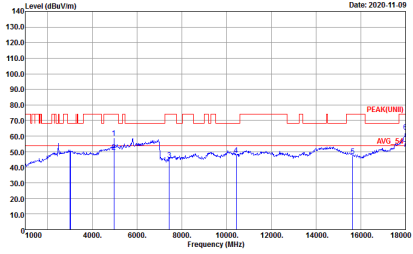
ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42 - L	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_9120D_2114 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Site : 03CH15-HY Condition : PEAK(UNIT) 3m HORN_9120D_2114 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_9120D_2114 VERTICAL Detector : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	Left Blank



ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42 - R	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank

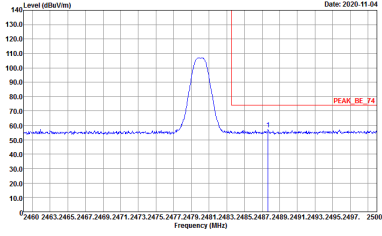
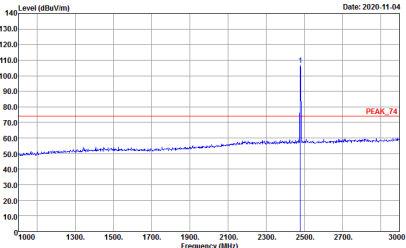
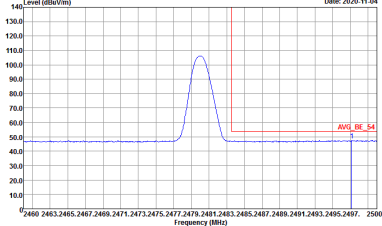
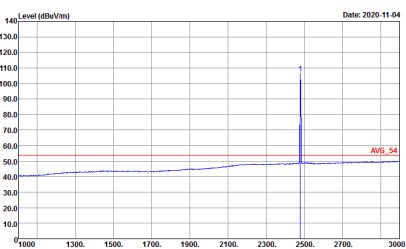


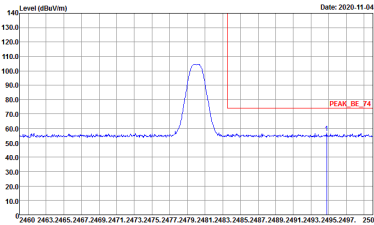
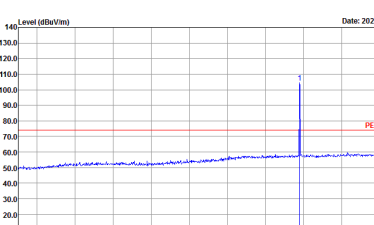
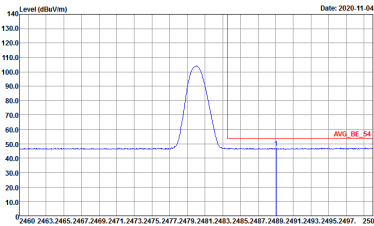
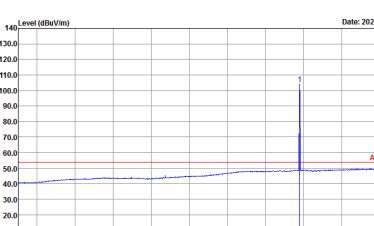
2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42	
Simultaneously	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK(UNIT) 3m HORN_9120D_2114 HORIZONTAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	 Site : 03CH15-HY Condition : PEAK(UNIT) 3m HORN_9120D_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42



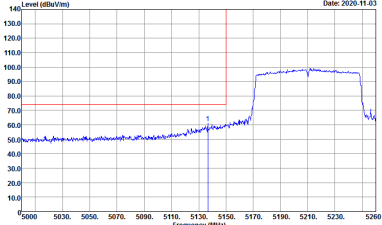
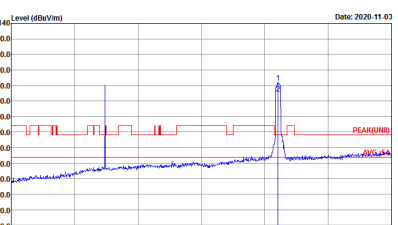
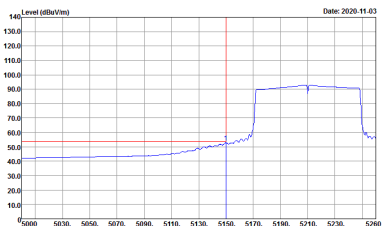
BLE (Band Edge @ 3m)

ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Site : 03CH15-HY Condition : PEAK_74 3m HORN_91200_2114 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 HORIZONTAL Detector : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Site : 03CH15-HY Condition : AVG_54 3m HORN_91200_2114 HORIZONTAL Detector : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42

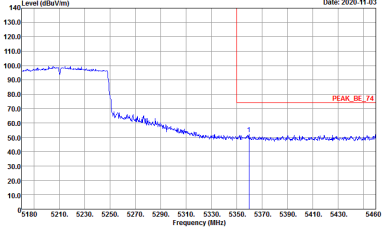
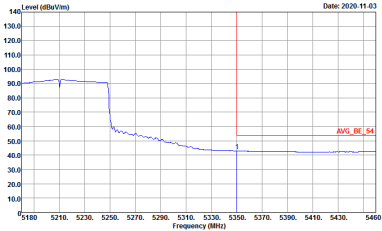
ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_9120D_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Site : 03CH15-HY Condition : PEAK_74 3m HORN_9120D_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_9120D_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42	 Site : 03CH15-HY Condition : AVG_54 3m HORN_9120D_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_Ch42



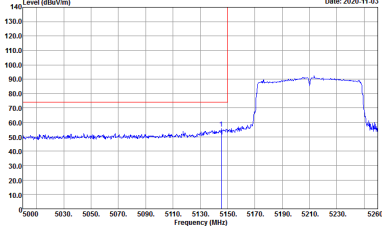
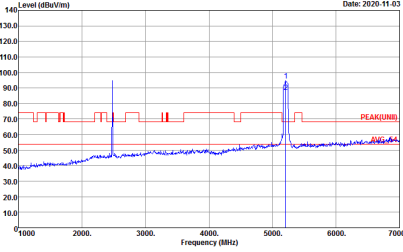
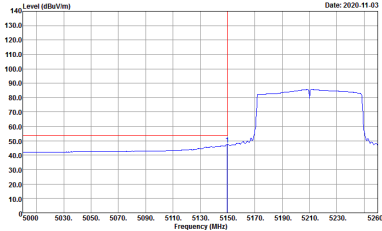
5GHz 5150~5250MHz (Band Edge @ 3m)

ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42 - L	
Simultaneously	Horizontal	Fundamental
Peak	 Level (dBuV/m) vs Frequency (MHz) plot showing a sharp peak at 5150 MHz. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 5000 to 5260 MHz. A red vertical line marks the peak at 5150 MHz. Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	 Level (dBuV/m) vs Frequency (MHz) plot showing a sharp peak at 5150 MHz. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 1000 to 7000 MHz. A red vertical line marks the peak at 5150 MHz. Site : 03CH15-HY Condition : PEAK(UNII) 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42
Avg.	 Level (dBuV/m) vs Frequency (MHz) plot showing a sharp peak at 5150 MHz. The y-axis ranges from 10.0 to 140.0 dBuV/m, and the x-axis ranges from 5000 to 5260 MHz. A red vertical line marks the peak at 5150 MHz. Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank

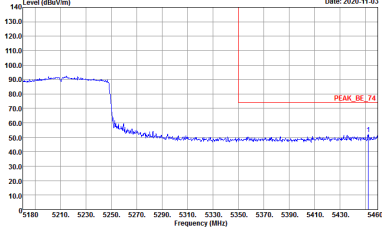
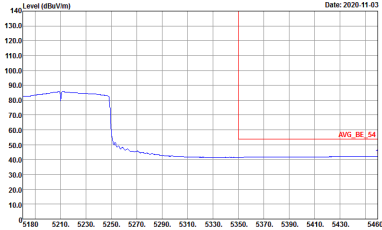


ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42 - R	
Simultaneously	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank



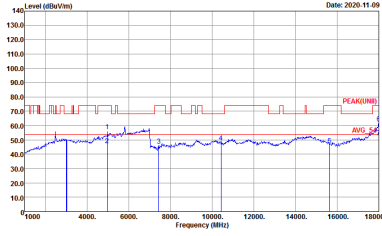
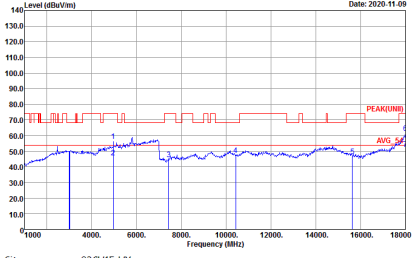
ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42 - L	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_91200_2114 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	 Site : 03CH15-HY Condition : PEAK(UNIT) 3m HORN_91200_2114 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_91200_2114 VERTICAL Detector : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank



ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42 - R	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m HORN_9120D_2114 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m HORN_9120D_2114 VERTICAL Detector : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	Left Blank



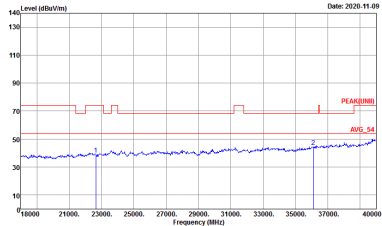
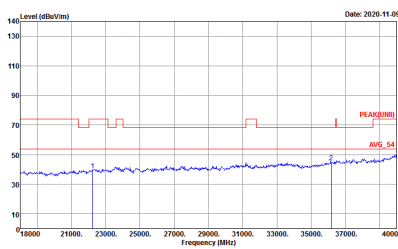
2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (Harmonic @ 3m)

ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42	
Simultaneously	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK(UNIT) 3m HORN_9120D_2114 HORIZONTAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42	 Site : 03CH15-HY Condition : PEAK(UNIT) 3m HORN_9120D_2114 VERTICAL Detector : Peak Project : 072932-01 Mode : BLE_Tx_CH39+11ac(80)_Tx_CH42



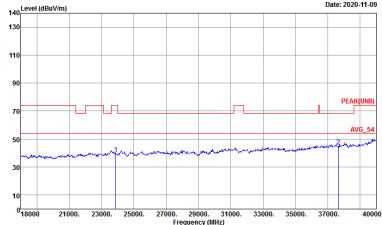
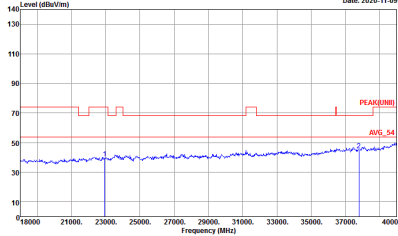
Emission after 18GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (SHF)

ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42	
Simultaneously	Horizontal	Vertical
QP / Peak	 Site : 03CH12-HY Condition : PEAK(UNIT) 1m SHF HORN BBHA9170584 HORIZONTAL Detector : Peak Project : 072932-01	 Site : 03CH12-HY Condition : PEAK(UNIT) 1m SHF HORN BBHA9170584 VERTICAL Detector : Peak Project : 072932-01



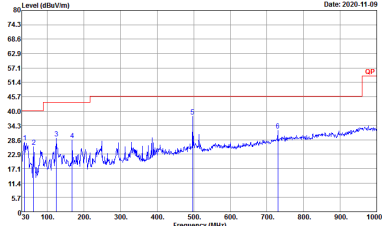
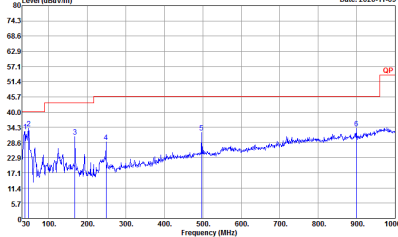
2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (SHF)

ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42	
Simultaneously	Horizontal	Vertical
QP / Peak	 Site : 03CH15-HY Condition : PEAK(UNIT) 1m SHF HORN 88HA9170584 HORIZONTAL Detector : Peak Project : 072932-01	 Site : 03CH15-HY Condition : PEAK(UNIT) 1m SHF HORN 88HA9170584 VERTICAL Detector : Peak Project : 072932-01



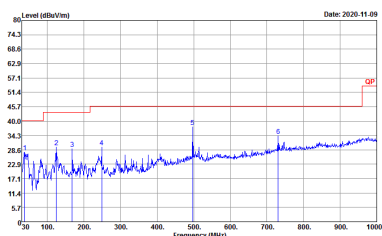
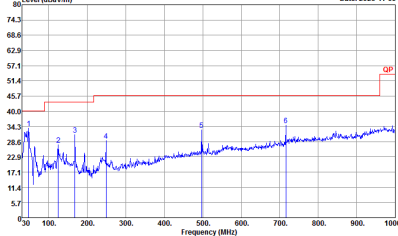
Emission below 1GHz

2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (LF)

ANT	Mode 1: Ant 1 BLE CH39 + Ant 1 11ac VHT80 CH42	
Simultaneously	Horizontal	Vertical
QP / Peak	 Site : 03CH15-HY Condition : QP 3m B1LOG_15_41912 HORIZONTAL Detector : Peak Project : 072932-01	 Site : 03CH15-HY Condition : QP 3m B1LOG_15_41912 VERTICAL Detector : Peak Project : 072932-01



2.4GHz 2400~2483.5MHz, 5GHz 5150~5250MHz (LF)

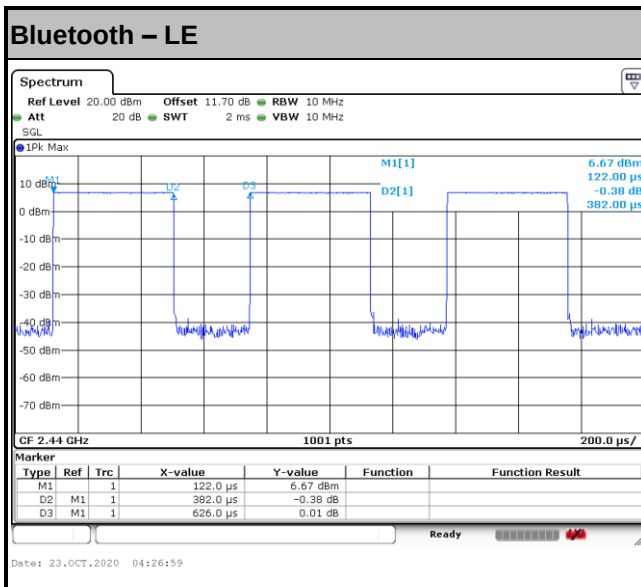
ANT	Mode 2: Ant 2 BLE CH39 + Ant 2 11ac VHT80 CH42	
Simultaneously	Horizontal	Vertical
QP / Peak	 Site : 03CH15-HY Condition : QP 3m BIL06_15_41912 HORIZONTAL Detector : Peak Project : 072932-01	 Site : 03CH15-HY Condition : QP 3m BIL06_15_41912 VERTICAL Detector : Peak Project : 072932-01



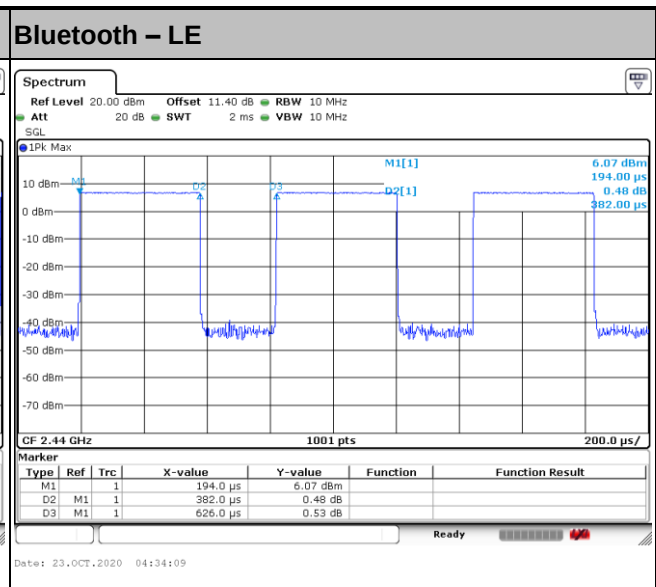
Appendix C. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
1	Bluetooth – LE	61.02	382	2.62	3kHz	2.15
2	Bluetooth – LE	61.02	382	2.62	3kHz	2.15
1	5GHz 802.11 ac VHT80	100.00	-	-	10Hz	0.00
2	5GHz 802.11 ac VHT80	100.00	-	-	10Hz	0.00

<Ant. 1>



<Ant. 2>

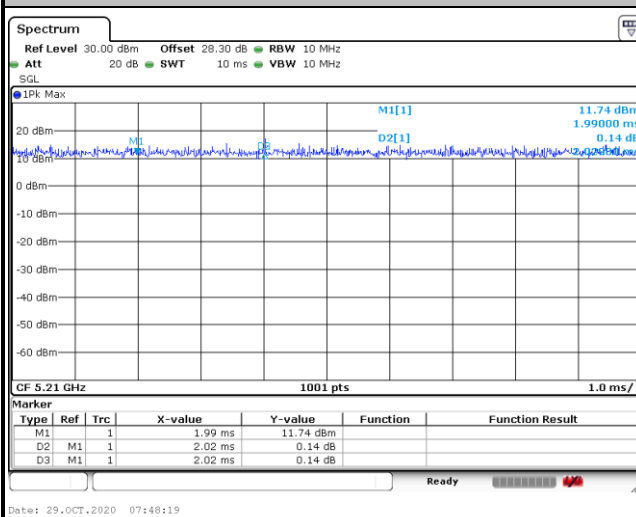




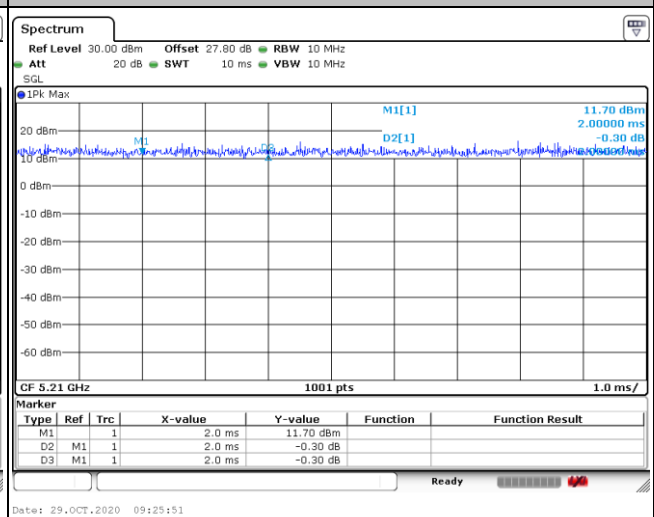
<Ant. 1>

<Ant. 2>

802.11ac VHT80



802.11ac VHT80



—THE END—