FCC CO-LOCATION RADIO TEST REPORT

FCC ID	:	**UZ7MC945A**
Equipment	:	**Mobile Computer**
Brand Name	:	**ZEBRA**
Model Name	:	**MC945A**
Applicant	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Manufacturer	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Standard	:	**FCC Part 15 Subpart E §15.407**

The product was received on Dec. 07, 2023 and testing was performed from Jan. 15, 2024 to Jan. 18, 2024. We, Sporton International Inc. Wensan 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 from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory
No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issue Date
FR3N2802G	01	Initial issue of report	Feb. 05, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(b)	Unwanted Emissions	Pass	3.66 dB under the limit at 5149.76 MHz
3.2	15.203 15.407(a)	Antenna Requirement	Pass	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”.

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Keven Cheng

Report Producer: Ming Chen

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Computer
Brand Name	ZEBRA
Model Name	MC945A
FCC ID	UZ7MC945A
Sample 1	SE4770 + with Camera
Sample 2	SE5800 + with Camera
Sample 3	SE4770 + without Camera
Sample 4	SE5800 + without Camera
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/NFC/GNSS WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
HW Version	DV2
SW Version	13-10-31.00-TN-U00-PRD-NEM-04
FW Version	FUSION_QA_6_1.1.0.004_T
MFD	10NOV23
EUT Stage	Identical Prototype

Specification of Accessories				
Adapter USB Wall Charger	**Brand Name**	Zebra	**Part Number**	PWR-WUA5V12W0US
Battery 1 Standard Battery (7000mAh)	**Brand Name**	Zebra	**Model Number**	BT-000370
Battery 2 Standard Battery (7000mAh)	**Brand Name**	Zebra	**Model Number**	BT-000370B
Earphone USB-C Audio Headset	**Brand Name**	Zebra	**Part Number**	HDST-USBC-PTT1-01
USB Cable (Type C to Type A)	**Brand Name**	Zebra	**Part Number**	CBL-TC2X-USBC-01
Holster	**Brand Name**	Zebra	**Part Number**	SG-MC9X-SHLSTG-01
USB Cable (CUP)	**Brand Name**	Zebra	**Part Number**	CBL-MC93-USBCHG-01

1.2 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Product Specification is subject to this standard</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>2402 MHz ~ 2480 MHz
2412 MHz ~ 2462 MHz
5180 MHz ~ 5240 MHz</td></tr>
<tr><td>Antenna Type / Gain</td><td><Bluetooth – LE>
<Ant. 6>: PIFA Antenna Antenna with gain 1.95 dBi
<2412 MHz ~ 2462 MHz>
<Ant. 6>: PIFA Antenna Antenna with gain 1.95 dBi
<Ant. 7>: PIFA Antenna Antenna with gain 2.51 dBi
<5180 MHz ~ 5240MHz>
<Ant. 6>: PIFA Antenna Antenna with gain 2.21 dBi
<Ant. 7>: PIFA Antenna Antenna with gain 2.21 dBi</td></tr>
<tr><td>Type of Modulation</td><td>Bluetooth LE: GFSK
802.11b: DSSS (DBPSK / DQPSK / CCK)
802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM)</td></tr>
<tr><td>Antenna Function for Transmitter</td><td>
<table>
<tr><td></td><td>Ant. 6</td><td>Ant. 7</td></tr>
<tr><td>Bluetooth-LE</td><td>V</td><td>-</td></tr>
<tr><td>802.11b</td><td>V</td><td>-</td></tr>
<tr><td>802.11b/a MIMO</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

Remark:

1. MIMO Ant. 6+7 is a calculated result from sum of the power MIMO Ant. 6 and MIMO Ant. 7.
2. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.3 Modification of EUT

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

1.4 Testing Location

<table>
<tr><td>Test Site</td><td>Sporton International Inc. Wensan Laboratory</td></tr>
<tr><td>Test Site Location</td><td>No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist.,
Taoyuan City 333010, Taiwan (R.O.C.)
TEL: +886-3-327-0868
FAX: +886-3-327-0855</td></tr>
<tr><td rowspan="2">Test Site No.</td><td>Sporton Site No.</td></tr>
<tr><td>03CH20-HY</td></tr>
</table>

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

FCC designation No.: TW3786

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 Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02
- 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.
- 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.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

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). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and only the worst case emissions were reported in this report.

2.1 Carrier Frequency and Channel

2400-2483.5 MHz	
Bluetooth - LE	
Channel	Freq. (MHz)
39	2480

2400-2483.5 MHz		5150-5250 MHz	
802.11b		802.11a	
Channel	Freq. (MHz)	Channel	Freq. (MHz)
06	2437	44	5220

Remark: During the Radiated Spurious Emission test, the EUT turn on the WWAN functions simultaneously.

2.2 Test Mode

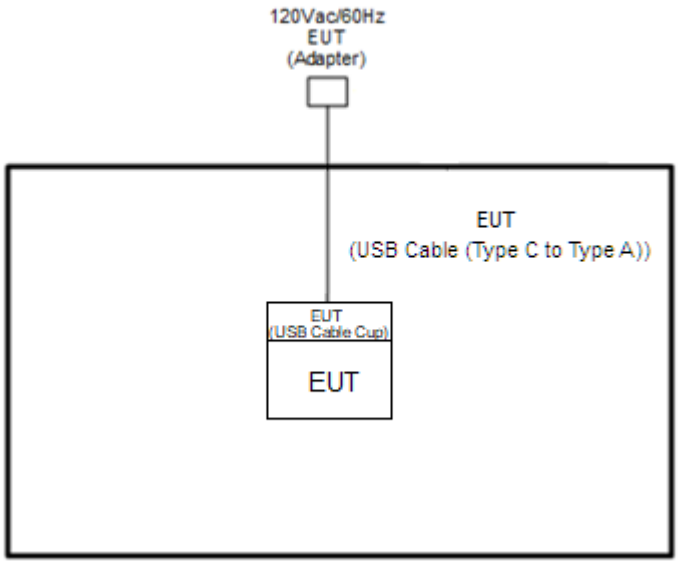
Final test modes are considering the modulation and worse data rates as below table.

<Co-Location>

Modulation	Data Rate
2.4GHz 802.11b for MIMO <Ant. 6+7> + 5GHz 802.11a for MIMO <Ant. 6+7> + LTE Band 48	MCS0 + MCS0 + QPSK
Bluetooth-LE for Ant. 6 + 2.4GHz 802.11b for Ant. 7 + 5GHz 802.11a for MIMO <Ant. 6+7> + LTE Band 48	GFSK + MCS0 + MCS0 + QPSK

Remark: All the tests were performed with Battery 1 Standard Battery (7000mAh) and Sample 1.

2.3 Connection Diagram of Test System



2.4 EUT Operation Test Setup

The RF test items, utility “QRCT 4.0.00206.0” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 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.

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/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

Please refer to the measuring equipment list in 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.

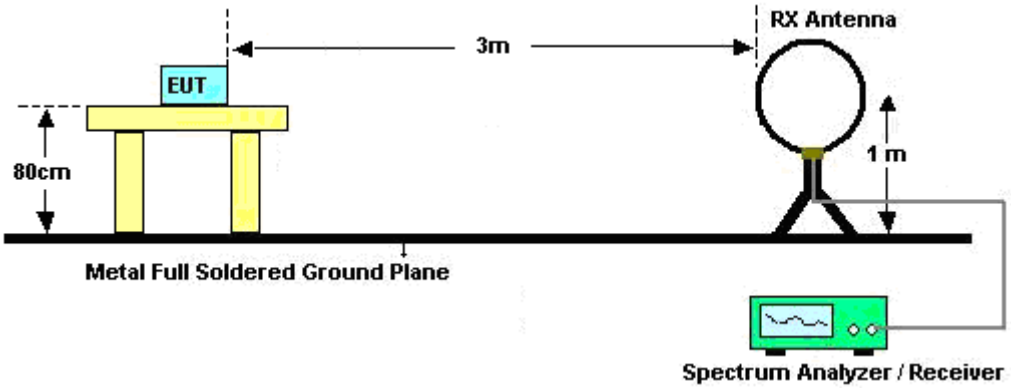
   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (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

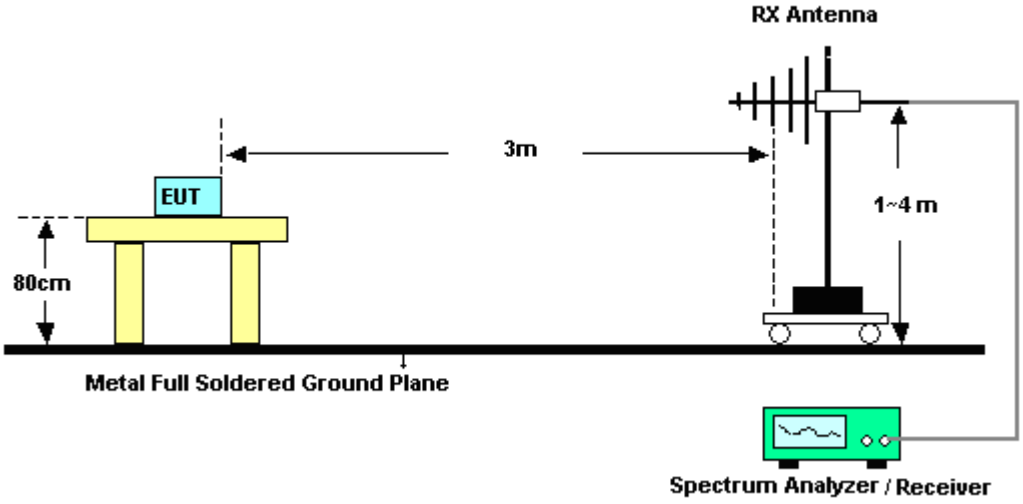
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is 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 is 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. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-“.
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-“.

3.1.4 Test Setup

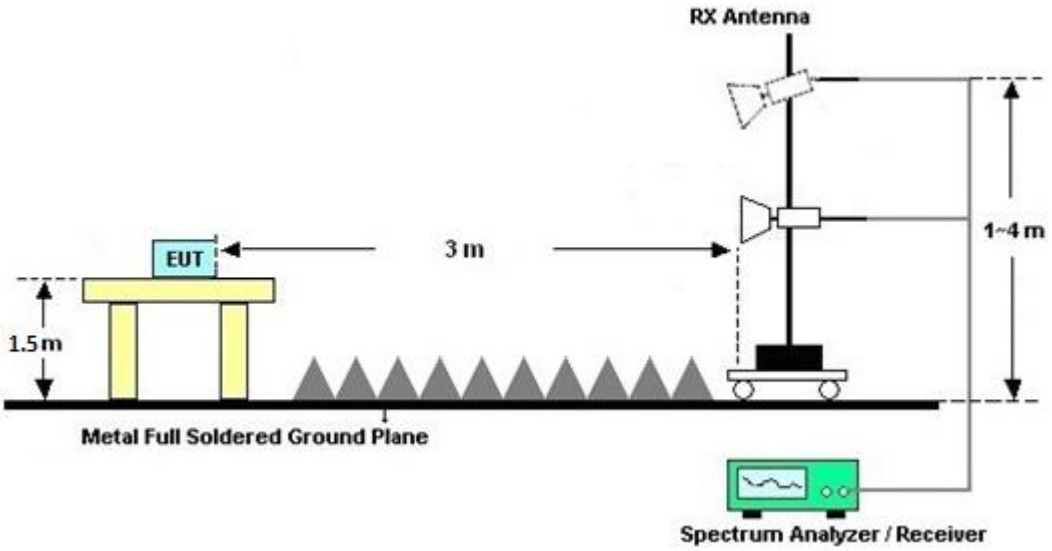
For radiated emissions below 30MHz



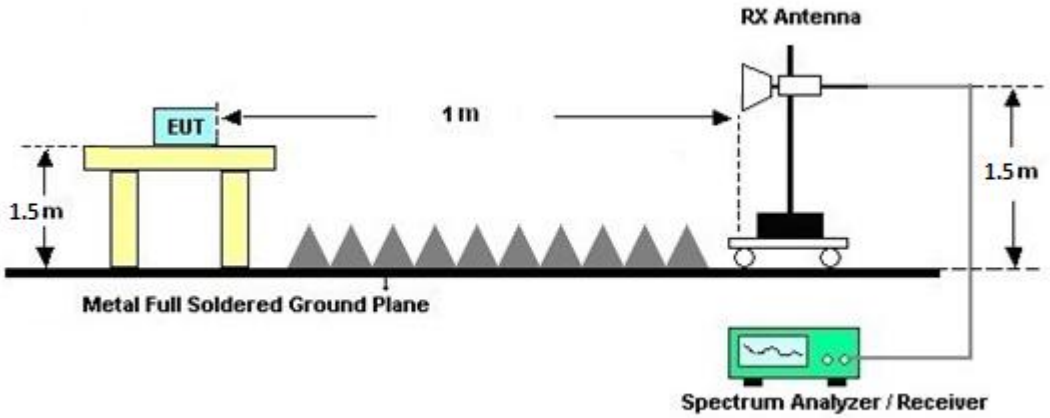
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test 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 adequate comparison measurement 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

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.2.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	N/A	Oct. 06, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Oct. 05, 2024	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Sep. 11, 2024	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060873	18GHz~40GHz	Sep. 06, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Sep. 05, 2024	Radiation (03CH20-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Jan. 15, 2024 ~ Jan. 18, 2024	N/A	Radiation (03CH20-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Jan. 15, 2024 ~ Jan. 18, 2024	N/A	Radiation (03CH20-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Jan. 15, 2024 ~ Jan. 18, 2024	N/A	Radiation (03CH20-HY)
Signal Analyzer	Keysight	N9010B	MY60240520	N/A	Dec. 12, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Dec. 11, 2024	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802N1 D01N-06	55606 & 08	30MHz~1GHz	Oct. 20, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Oct. 19, 2024	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	02360	1GHz-18GHz	Oct. 30, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Oct. 29, 2024	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jul. 10, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Jul. 09, 2024	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 01, 2024	Jan. 15, 2024 ~ Jan. 18, 2024	Dec. 31, 2024	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 13, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Nov. 12, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804015/2,804027/2	N/A	Jan. 18, 2023	Jan. 15, 2024 ~ Jan. 16, 2024	Jan. 17, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804015/2,804027/2	N/A	Jan. 17, 2024	Jan. 17, 2024 ~ Jan. 18, 2024	Jan. 16, 2025	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 28, 2023	Jan. 15, 2024 ~ Jan. 18, 2024	Mar. 27, 2024	Radiation (03CH20-HY)
Software	Audix	N/A	RK-002156	N/A	N/A	Jan. 15, 2024 ~ Jan. 18, 2024	N/A	Radiation (03CH20-HY)

5 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.4 dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.5 dB**

Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.6 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.4 dB**

Appendix A. Radiated Spurious Emission

Test Engineer :	John Chuang, David Dai and Howard Huang	Temperature :	19.3~23.4°C
		Relative Humidity :	65.9~70.3%

2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+LTE B48 Link

WIFI 802.11b (Band edge @ 3m)

WIFI Ant	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
6+7		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 06 2437MHz		2386.64	50.57	-23.43	74	40.36	27.25	19.2	36.24	100	65	P	H
		2389.52	40.44	-13.56	54	30.21	27.26	19.21	36.24	100	65	A	H
	*	2437	113.48	-	-	103	27.45	19.29	36.26	100	65	P	H
	*	2437	110.42	-	-	99.94	27.45	19.29	36.26	100	65	A	H
		2494.32	50.73	-23.27	74	39.94	27.68	19.39	36.28	100	65	P	H
		2483.52	40.3	-13.7	54	29.57	27.63	19.37	36.27	100	65	A	H
													H
													H
													H
													H
													H
													H
		2364.88	50.29	-23.71	74	40.22	27.16	19.14	36.23	100	35	P	V
		2388.24	39.85	-14.15	54	29.63	27.25	19.21	36.24	100	35	A	V
	*	2437	110.9	-	-	100.42	27.45	19.29	36.26	100	35	P	V
	*	2437	107.63	-	-	97.15	27.45	19.29	36.26	100	35	A	V
		2493.6	50.9	-23.1	74	40.12	27.67	19.39	36.28	100	35	P	V
		2483.92	40.31	-13.69	54	29.57	27.64	19.37	36.27	100	35	A	V
													V
													V
													V
													V
													V
													V

2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz+LTE B48 Link

WIFI 802.11a (Band edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
6+7		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5147.16	56.65	-17.35	74	47.65	32.91	13.87	37.78	100	120	P	H
		5150	45.5	-8.5	54	36.52	32.9	13.86	37.78	100	120	A	H
	*	5220	116.28	-	-	107.25	32.96	13.9	37.83	100	120	P	H
	*	5220	110.55	-	-	101.52	32.96	13.9	37.83	100	120	A	H
		5389.44	48.03	-25.97	74	38.77	32.86	14.35	37.95	100	120	P	H
		5454.96	38.41	-15.59	54	29.05	32.99	14.37	38	100	120	A	H
													H
													H
													H
													H
													H
802.11a													H
CH 44		5146.64	52.93	-21.07	74	43.93	32.91	13.87	37.78	100	44	P	V
5220MHz		5149.24	44.13	-9.87	54	35.14	32.9	13.87	37.78	100	44	A	V
	*	5220	114.35	-	-	105.32	32.96	13.9	37.83	100	44	P	V
	*	5220	108.13	-	-	99.1	32.96	13.9	37.83	100	44	A	V
		5446.28	47.53	-26.47	74	38.16	32.99	14.37	37.99	100	44	P	V
		5350.52	38.18	-15.82	54	29.15	32.7	14.25	37.92	100	44	A	V
													V
													V
													V
													V
													V
													V

2.4GHz 2400~2483.5MHz + Band 1 - 5150~5250MHz+LTE B48 Link

11b_Tx_Ch06+11a_Tx_Ch44 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
6+7		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		4874	47.91	-26.09	74	39.48	32.5	13.49	37.56			P	H
		5760	57.55	-10.65	68.2	47.14	33.84	14.54	37.97	100	55	P	H
		6960	57.67	-10.53	68.2	43.91	35.92	16.16	38.32	252	359	P	H
		7311	53.42	-20.58	74	38.5	36.9	16.63	38.61	314	40	P	H
		7311	46.12	-7.88	54	31.2	36.9	16.63	38.61	314	40	A	H
		10440	51.33	-16.87	68.2	34.98	38.74	19.08	41.47			P	H
		15660	52.64	-21.36	74	35.03	37.92	24.31	44.62	100	262	P	H
		15660	42.78	-11.22	54	25.17	37.92	24.31	44.62	100	262	A	H
													H
													H
802.11b													H
Ch06													H
+		4874	47.77	-26.23	74	39.34	32.5	13.49	37.56			P	V
802.11a		5760	55.88	-12.32	68.2	45.47	33.84	14.54	37.97	383	75	P	V
Ch44		6960	56.08	-12.12	68.2	42.32	35.92	16.16	38.32	332	58	P	V
		7311	52.38	-21.62	74	37.46	36.9	16.63	38.61	119	22	P	V
		7311	45.06	-8.94	54	30.14	36.9	16.63	38.61	119	22	A	V
		10440	51.33	-16.87	68.2	34.98	38.74	19.08	41.47			P	V
		15660	52.77	-21.23	74	35.16	37.92	24.31	44.62	100	349	P	V
		15660	42.83	-11.17	54	25.22	37.92	24.31	44.62	100	349	A	V
													V
													V
													V
													V

BLE +2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+LTE B48 Link

BLE(2M) (Band edge @ 3m)

BLE	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
	*	2480	95.92	-	-	85.21	27.62	19.36	36.27	291	82	P	H
	*	2480	94.42	-	-	83.71	27.62	19.36	36.27	291	82	A	H
		2484.4	50.57	-23.43	74	39.83	27.64	19.37	36.27	291	82	P	H
		2491.8	42.23	-11.77	54	31.46	27.67	19.38	36.28	291	82	A	H
													H
													H
													H
													H
													H
													H
													H
													H
BLE													
CH 39													
2480MHz	*	2480	99.46	-	-	88.75	27.62	19.36	36.27	100	343	P	V
	*	2480	97.93	-	-	87.22	27.62	19.36	36.27	100	343	A	V
		2495.32	51.16	-22.84	74	40.37	27.68	19.39	36.28	100	343	P	V
		2490.16	43.03	-10.97	54	32.27	27.66	19.38	36.28	100	343	A	V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI 802.11b (Band edge @ 3m)

WIFI Ant 7	Note	Frequency (MHz)	Level (dBµV/m)	Margin (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)
		2389.04	49.6	-24.4	74	39.37	27.26	19.21	36.24	399	243	P	H
		2374	39.28	-14.72	54	29.16	27.2	19.16	36.24	399	243	A	H
	*	2437	107.6	-	-	97.12	27.45	19.29	36.26	399	243	P	H
	*	2437	104.33	-	-	93.85	27.45	19.29	36.26	399	243	A	H
		2493.44	50.29	-23.71	74	39.51	27.67	19.39	36.28	399	243	P	H
		2495.52	39.95	-14.05	54	29.16	27.68	19.39	36.28	399	243	A	H
													H
													H
													H
													H
													H
11b CH 06 2437MHz													H
		2387.76	49.66	-24.34	74	39.44	27.25	19.21	36.24	105	341	P	V
		2378.64	39.25	-14.75	54	29.1	27.21	19.18	36.24	105	341	A	V
	*	2437	107.66	-	-	97.18	27.45	19.29	36.26	105	341	P	V
	*	2437	104.34	-	-	93.86	27.45	19.29	36.26	105	341	A	V
		2484.4	50.29	-23.71	74	39.55	27.64	19.37	36.27	105	341	P	V
		2483.52	40.22	-13.78	54	29.49	27.63	19.37	36.27	105	341	A	V
													V
													V
													V
													V
													V
													V

BLE +2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+LTE B48 Link

WIFI 802.11a (Band edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
6+7		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5146.9	59.67	-14.33	74	50.67	32.91	13.87	37.78	400	34	P	H
		5149.76	50.34	-3.66	54	41.35	32.9	13.87	37.78	400	34	A	H
	*	5220	113.19	-	-	104.16	32.96	13.9	37.83	400	34	P	H
	*	5220	107.1	-	-	98.07	32.96	13.9	37.83	400	34	A	H
		5372.08	47.37	-26.63	74	38.21	32.79	14.31	37.94	400	34	P	H
		5417.44	38	-16	54	28.66	32.93	14.38	37.97	400	34	A	H
													H
													H
													H
													H
													H
802.11a													H
CH 44		5145.86	60.34	-13.66	74	51.34	32.91	13.87	37.78	205	300	P	V
5220MHz		5149.76	50.13	-3.87	54	41.14	32.9	13.87	37.78	205	300	A	V
	*	5220	115.39	-	-	106.36	32.96	13.9	37.83	205	300	P	V
	*	5220	109.45	-	-	100.42	32.96	13.9	37.83	205	300	A	V
		5352.48	49.08	-24.92	74	40.04	32.71	14.25	37.92	205	300	P	V
		5350.24	40.31	-13.69	54	31.28	32.7	14.25	37.92	205	300	A	V
													V
													V
													V
													V
													V
													V

BLE +2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+LTE B48 Link

BLE(2M)_Tx_Ch39 +11b_Tx_Ch06+11a_Tx_Ch44 (Harmonic @ 3m)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
6+7		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BLE_Tx_Ch39 + 802.11b Ch06 + 802.11a Ch44		4874	47.98	-26.02	74	39.55	32.5	13.49	37.56	-	-	P	H
		4960	47.46	-26.54	74	38.38	32.94	13.77	37.63	-	-	P	H
		5760	57.64	-10.56	68.2	47.23	33.84	14.54	37.97	199	303	P	H
		6960	58.21	-9.99	68.2	44.45	35.92	16.16	38.32	318	319	P	H
		7311	54.23	-19.77	74	39.31	36.9	16.63	38.61	302	72	P	H
		7311	46.74	-7.26	54	31.82	36.9	16.63	38.61	302	72	A	H
		7440	47.79	-26.21	74	33.27	36.52	16.71	38.71			P	H
		10440	51.96	-16.24	68.2	35.61	38.74	19.08	41.47			P	H
		15660	52.71	-21.29	74	35.1	37.92	24.31	44.62	300	358	P	H
		15660	42.8	-11.2	54	25.19	37.92	24.31	44.62	300	358	A	H
													H
													H
		4874	47.27	-26.73	74	38.84	32.5	13.49	37.56	-	-	P	V
		4960	47.57	-26.43	74	38.49	32.94	13.77	37.63	-	-	P	V
		5760	56.13	-12.07	68.2	45.72	33.84	14.54	37.97	184	359	P	V
		6960	57.42	-10.78	68.2	43.66	35.92	16.16	38.32	170	40	P	V
		7311	53.05	-20.95	74	38.13	36.9	16.63	38.61	209	97	P	V
		7311	45.74	-8.26	54	30.82	36.9	16.63	38.61	209	97	A	V
		7440	47.98	-26.02	74	33.46	36.52	16.71	38.71	-	-	P	V
		10440	50.28	-17.92	68.2	33.93	38.74	19.08	41.47	-	-	P	V
		15660	52.92	-21.08	74	35.31	37.92	24.31	44.62	200	260	P	V
		15660	42.88	-11.12	54	25.27	37.92	24.31	44.62	200	260	A	V
													V
													V

Emission above 18GHz

BLE(2M)_Tx_Ch39 +802.11b_Tx_Ch06+802.11a_Tx_Ch44+LTE B48 Link (SHF @ 1m)

Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
6+7		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BLE_Tx_Ch39 + 802.11b Ch06 + 802.11a Ch44 SHF		38796	50.23	-23.77	74	40.09	44.7	27.17	61.73	-	-	P	H
		38796	40.18	-13.82	54	30.04	44.7	27.17	61.73	-	-	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		38726	50.07	-23.93	74	40.01	44.51	27.16	61.61	-	-	P	V
		38726	40.06	-13.94	54	30	44.51	27.16	61.61	-	-	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against limit line.
3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.

Emission below 1GHz

BLE(2M)_Tx_Ch39 +802.11b_Tx_Ch06+802.11a_Tx_Ch44+LTE B48 Link (LF @ 3m)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
6+7		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		31.7	25.27	-14.73	40	35.55	24.19	1.29	35.76	-	-	P	H
		129.28	23.24	-20.26	43.5	38.9	17.74	2.23	35.63	-	-	P	H
		151.04	24.14	-19.36	43.5	40.03	17.31	2.39	35.59	-	-	P	H
		654.4	30.44	-15.56	46	33.47	26.48	4.77	34.28	-	-	P	H
		747.2	33.89	-12.11	46	34.46	28.23	5.1	33.9	-	-	P	H
		892.8	38.56	-7.44	46	37.44	28.86	5.57	33.31	-	-	P	H
													H
													H
BLE_Tx_Ch39													H
+													H
802.11b													H
Ch06													H
+		30	30.45	-9.55	40	39.89	25.01	1.31	35.76	-	-	P	V
802.11a		60.6	25.73	-14.27	40	47.57	12.31	1.56	35.71	-	-	P	V
Ch44		87.46	25.77	-14.23	40	45.13	14.5	1.83	35.69	-	-	P	V
LF		562.4	29.23	-16.77	46	32.97	26.34	4.48	34.56	-	-	P	V
		747.2	35.43	-10.57	46	36	28.23	5.1	33.9	-	-	P	V
		900.8	35.76	-10.24	46	34.45	29.01	5.59	33.29	-	-	P	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against limit line.
3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.

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.	
0+1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

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

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

Appendix B. Radiated Spurious Emission

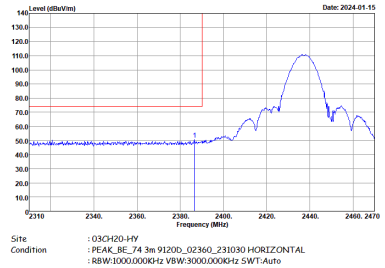
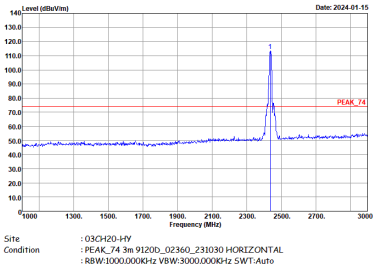
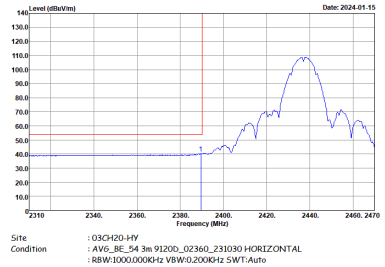
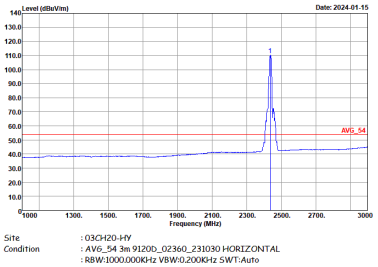
Test Engineer :	John Chuang, David Dai and Howard Huang	**Temperature :**	19.3~23.4°C
		Relative Humidity :	65.9~70.3%

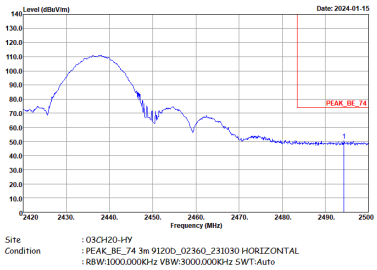
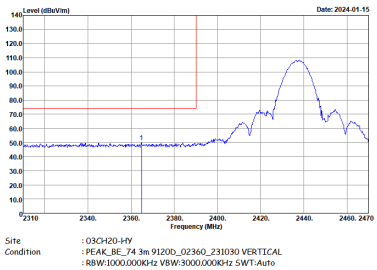
Note symbol

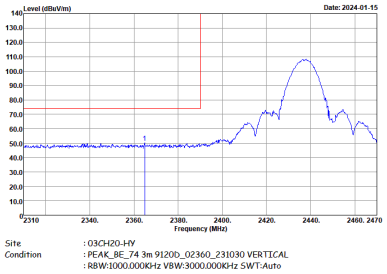
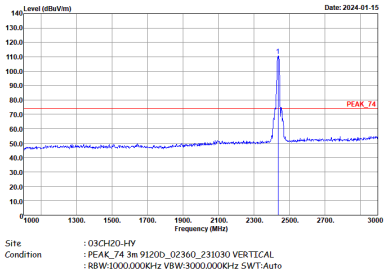
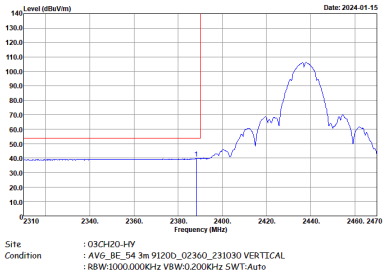
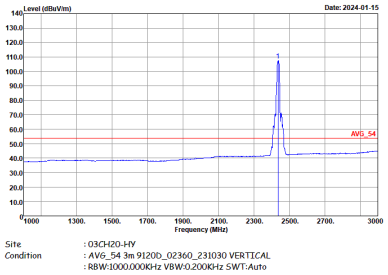
-L	**Low channel location**
-R	**High channel location**

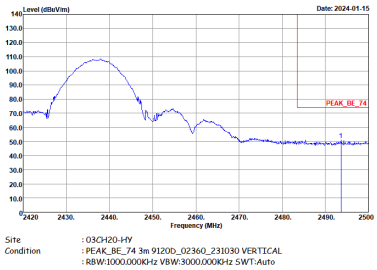
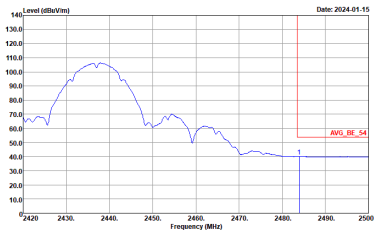
2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+ LTE B48 Link

WIFI 802.11b (Band Edge @ 3m)

WLAN	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
6+7	Horizontal	Fundamental
Peak		
Avg.		

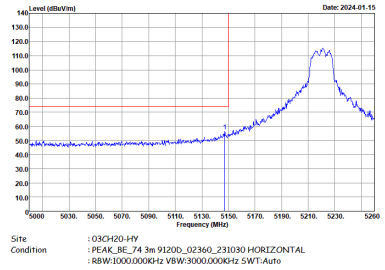
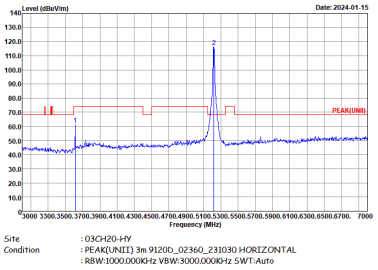
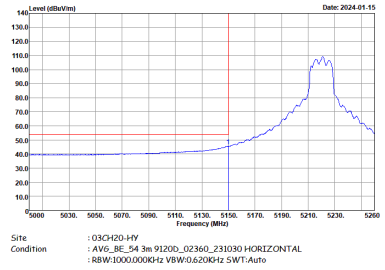
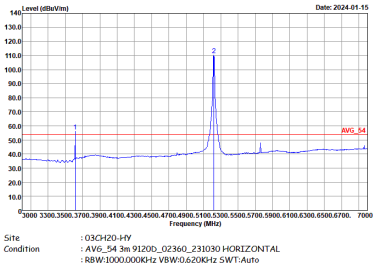
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
6+7	Horizontal	Fundamental
Peak		-
Avg.		-

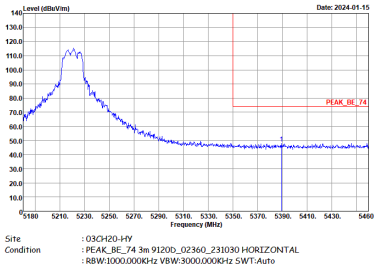
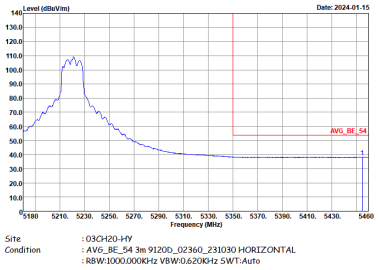
WLAN	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
6+7	Vertical	Fundamental
Peak		
Avg.		

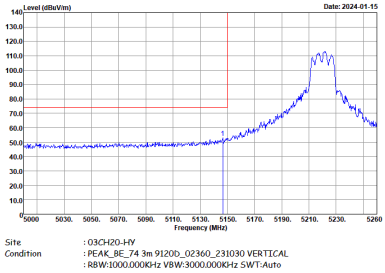
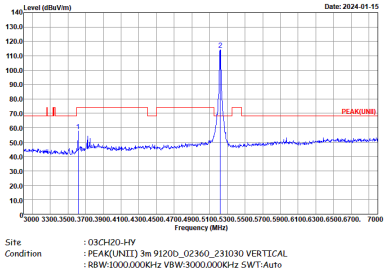
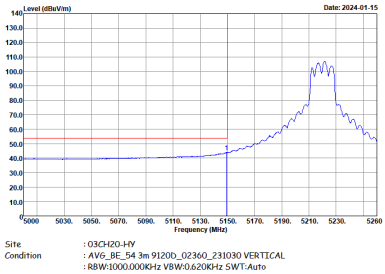
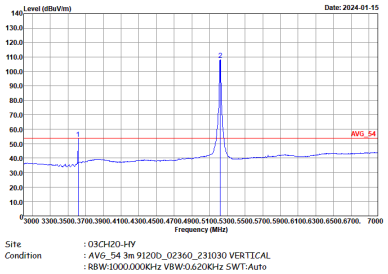
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
6+7	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	-
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:0.200KHz SWT:Auto	-

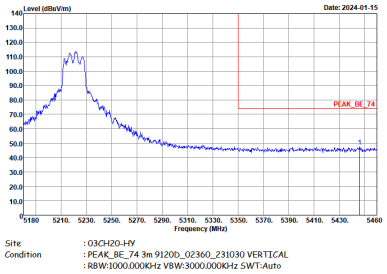
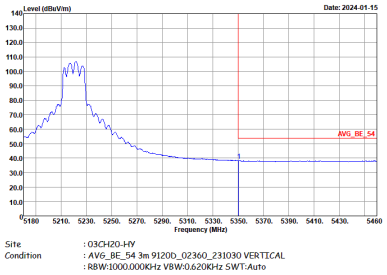
2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+ LTE B48 Link

WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	11a_Tx_Ch44 5220MHz	
6+7	Horizontal	Fundamental
Peak		
Avg.		

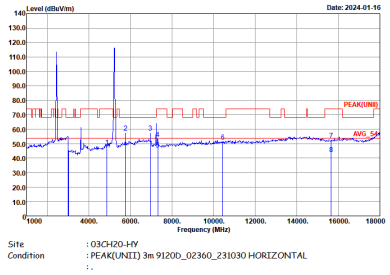
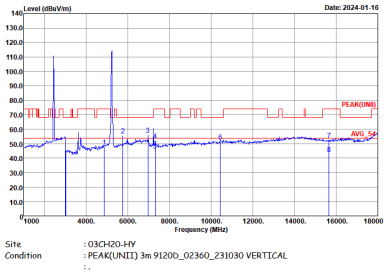
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	11a_Tx_Ch44 5220MHz	
6+7	Horizontal	Fundamental
Peak		-
Avg.		-

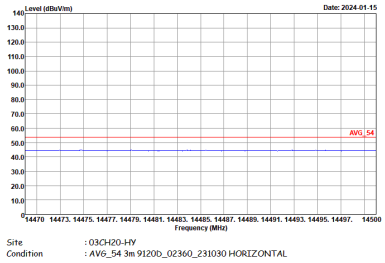
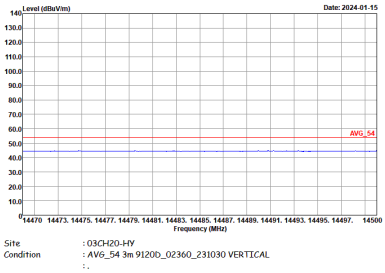
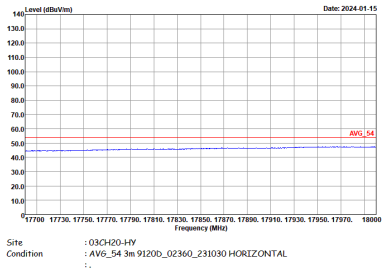
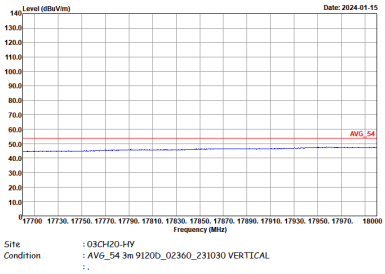
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	11a_Tx_Ch44 5220MHz	
6+7	Vertical	Fundamental
Peak		
Avg.		

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	11a_Tx_Ch44 5220MHz	
6+7	Vertical	Fundamental
Peak		-
Avg.		-

2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+ LTE B48 Link

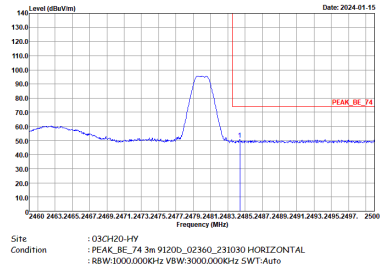
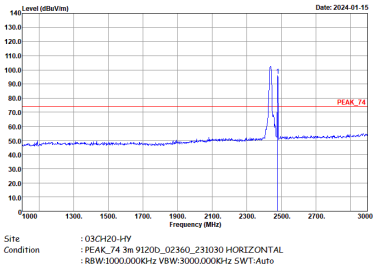
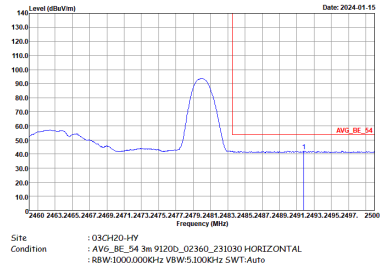
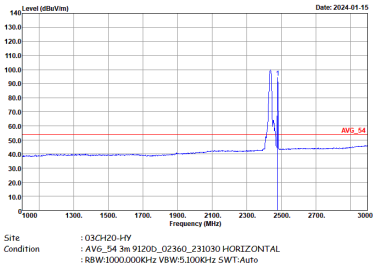
11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 (Harmonic @ 3m)

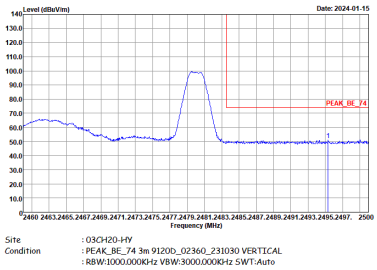
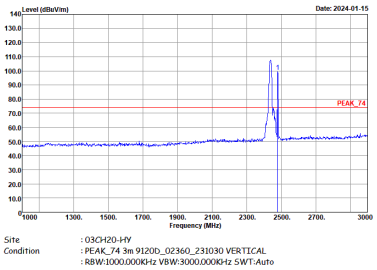
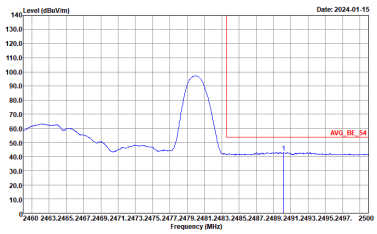
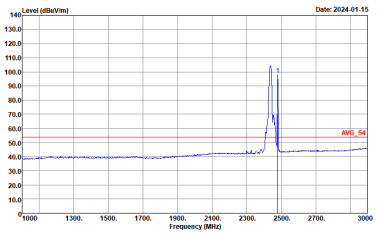
WIFI	2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz Harmonic @ 3m	
ANT	11ax(HE20)_Tx_Ch11+11ax(HE40)_Tx_Ch38	
6+7	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz Harmonic @ 3m	
ANT	11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 20M	
6+7	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

BLE +2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+ LTE B48 Link

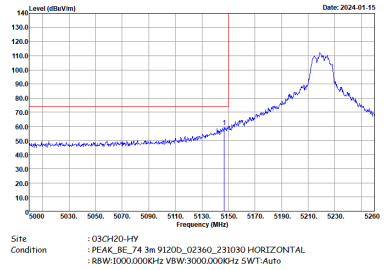
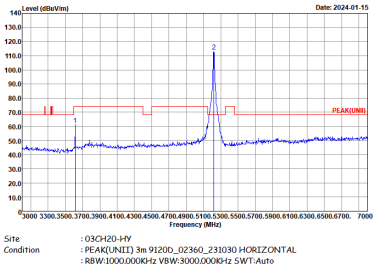
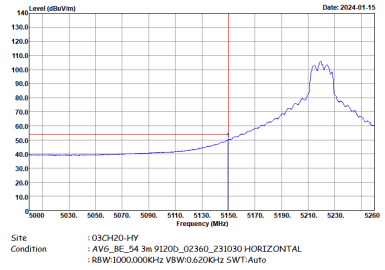
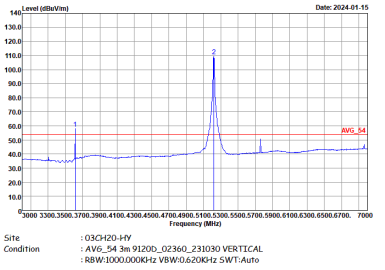
BLE (Band Edge @ 3m)

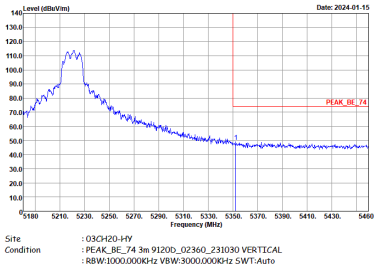
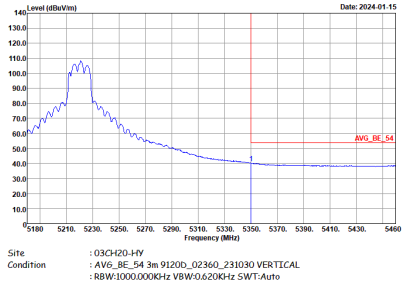
WLAN	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE_Tx_Ch39	
6	Horizontal	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AV6_BE_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:5.100KHz SWT:Auto	 Site : 03CH20-HY Condition : AV6_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:5.100KHz SWT:Auto

WLAN	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BLE_Tx_Ch39	
6	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH20-HY Condition : AV6_BE_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:5.100KHz SWT:Auto	 Site : 03CH20-HY Condition : AV6_54 3m 9120D_02360_231030 VERTICAL : RBW:1000.000KHz VBW:5.100KHz SWT:Auto

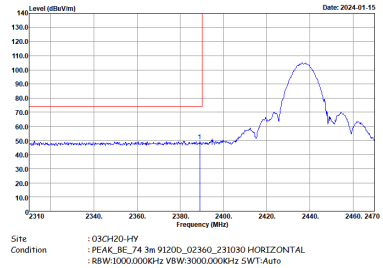
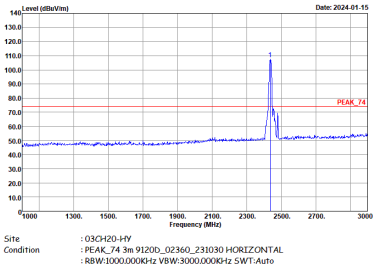
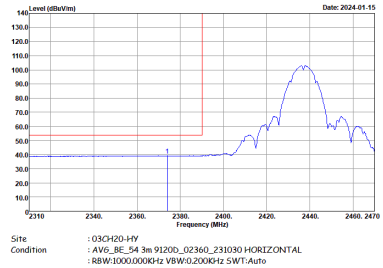
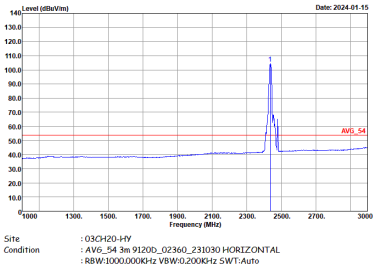
BLE +2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+ LTE B48 Link

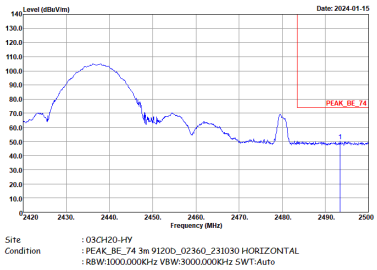
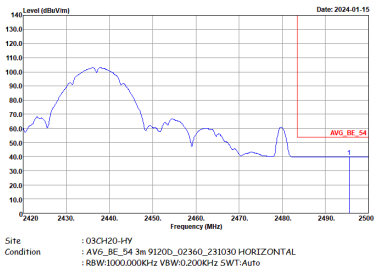
WIFI 802.11a (Band Edge @ 3m)

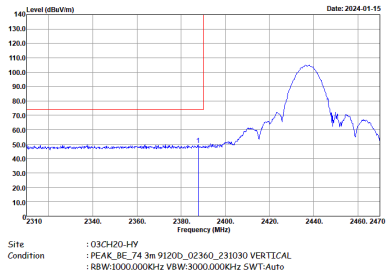
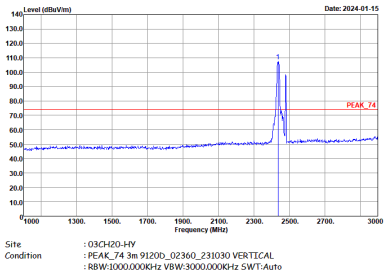
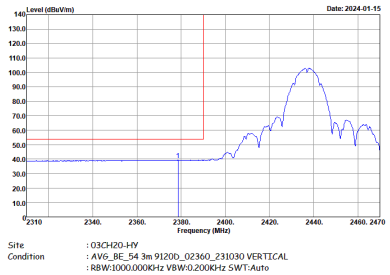
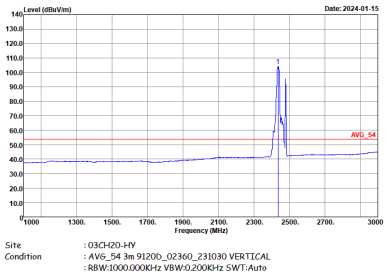
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	11a_Tx_Ch44 5220MHz	
6+7	Horizontal	Fundamental
Peak		
Avg.		

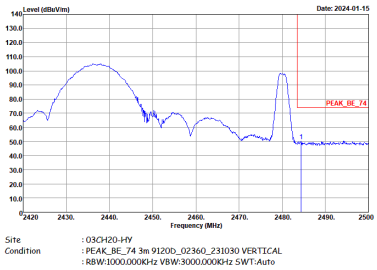
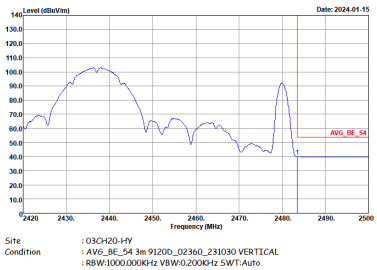
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	11a_Tx_Ch44 5220MHz	
6+7	Horizontal	Fundamental
Peak		-
Avg.		-

WIFI 802.11b (Band Edge @ 3m)

WLAN	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
7	Horizontal	Fundamental
Peak		
Avg.		

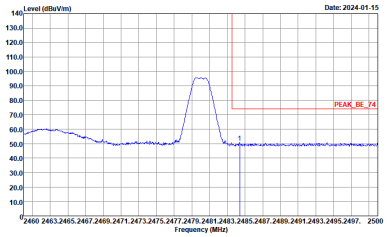
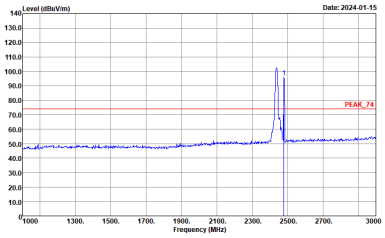
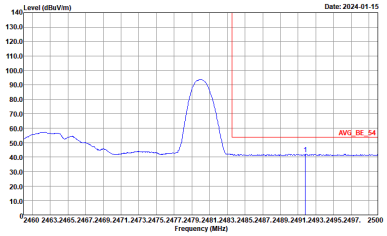
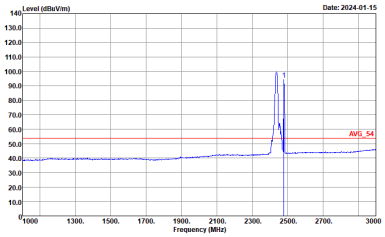
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
7	Horizontal	Fundamental
Peak		-
Avg.		-

WLAN	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
7	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	11b_Tx_Ch06 2437MHz - L	
7	Vertical	Fundamental
Peak		-
Avg.		-

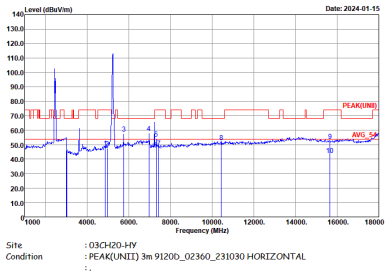
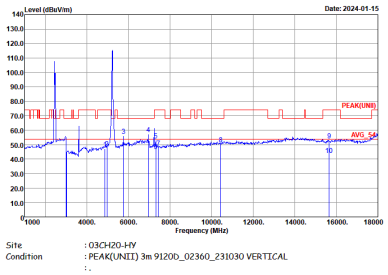
BLE +2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+ LTE B48 Link

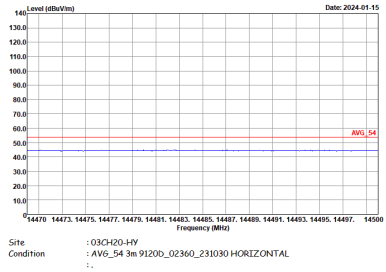
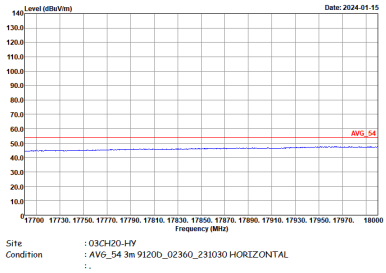
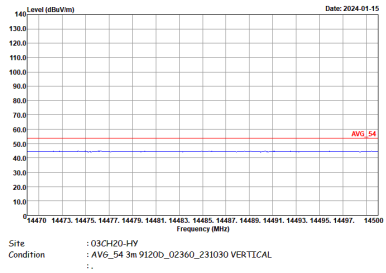
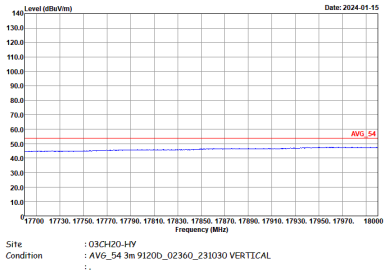
BLE(2M)_Tx_Ch39 (Band edge @ 3m)

	Band 1 5150~5250MHz Band Edge @ 3m	
Ant.	11a_Tx_Ch44 5220MHz	
Simultaneously	Vertical	Fundamental
Peak	 Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto -
Avg.	 Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:5.100KHz SWT:Auto	-  Site : 03CH20-HY Condition : AVG_54 3m 9120D_02360_231030 HORIZONTAL : RBW:1000.000KHz VBW:5.100KHz SWT:Auto

BLE +2.4GHz 2400~2483.5MHz +Band 1 - 5150~5250MHz+ LTE B48 Link

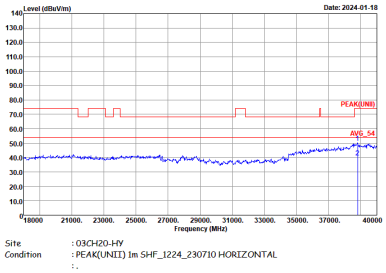
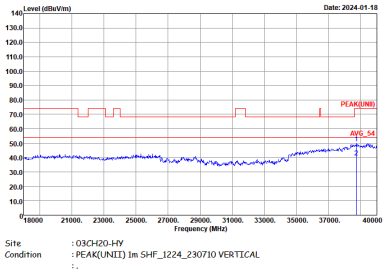
BLE_Tx_(2M)_Ch39+11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 (Harmonic @ 3m)

	2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz Harmonic @ 3m	
Ant.	BLE_Tx_(2M)_Ch39+11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 20M	
Simultaneously	Horizontal	Vertical
Peak Avg.		

	2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz Harmonic @ 3m	
Ant.	BLE_Tx_(2M)_Ch39+11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 20M	
Simultaneously	Horizontal	Vertical
14.47G ~14.5G Avg.		
17.7G ~18G Avg		

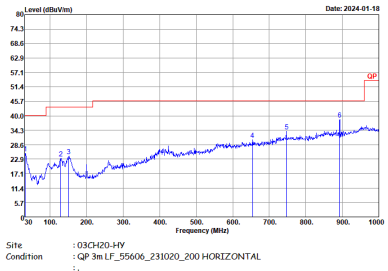
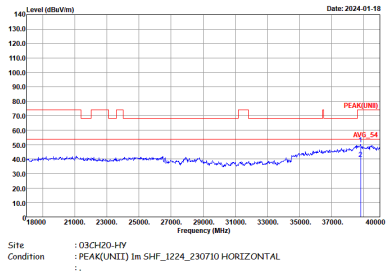
Emission above 18GHz

BLE_Tx_(2M)_Ch39+11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 Link (SHF)

	2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz	
Ant.	BLE_Tx_(2M)_Ch39+11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 20M	
Simultaneously	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

BLE_Tx_(2M)_Ch39+11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 Link (LF)

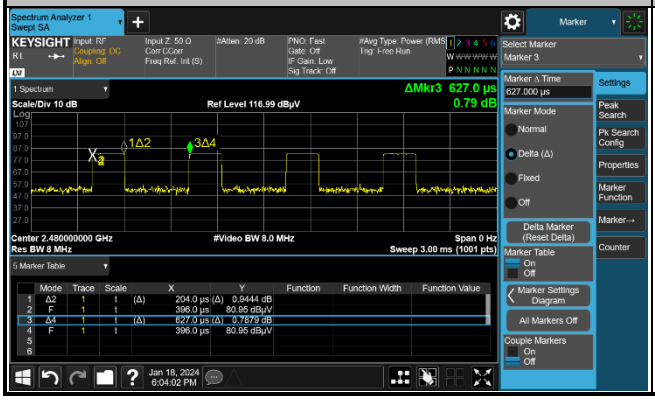
	2.4GHz 2400~2483.5MHz +Band 1 5150~5250MHz LF @ 3m	
Ant.	BLE_Tx_(2M)_Ch39+11b_Tx_Ch06+11a_Tx_Ch44+LTE B48 20M	
Simultaneously	Horizontal	Vertical
QP / Peak		

Appendix C. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
6	Bluetooth - LE for 2Mbps	32.54	204	4.90	5.1kHz
7	2.4GHz 802.11b	85.75	5505	0.18	200Hz
6+7	2.4GHz 802.11b	85.98	5520	0.18	200Hz
6+7	5GHz 802.11a	85.79	1720	0.58	620Hz

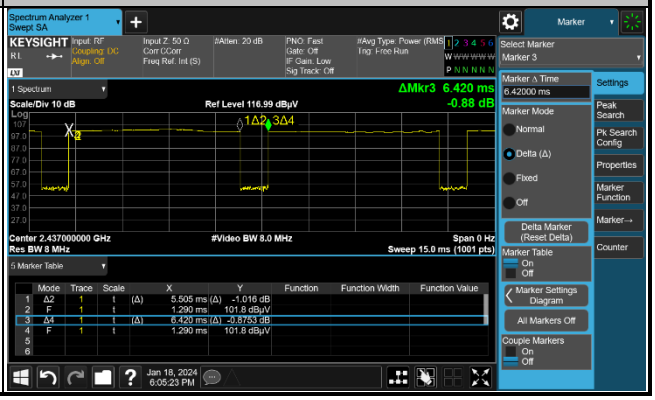
<Ant. 6>

Bluetooth - LE for 2Mbps



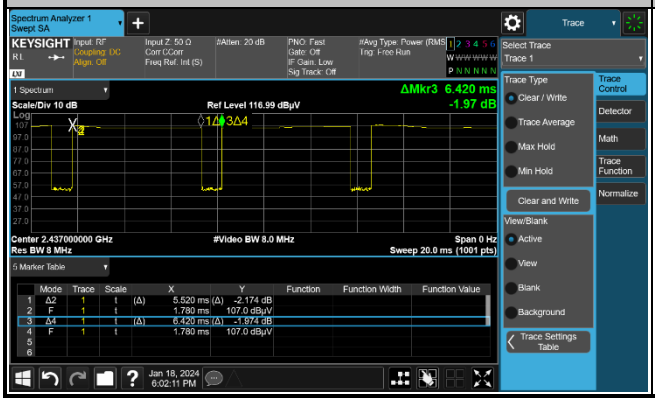
<Ant. 7>

2.4GHz 802.11b



MIMO <Ant. 6+7>

2.4GHz 802.11b



5GHz 802.11a