FCC RADIO TEST REPORT

FCC ID	:	**UZ7TM2000**
Equipment	:	**Trailer Monitoring Unit**
Brand Name	:	**ZEBRA**
Model Name	:	**TM2000**
Applicant	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Manufacturer	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Standard	:	**FCC Part 15 Subpart C §15.247**

The product was received on Feb. 07, 2022 and testing was performed from Feb. 08, 2022 to Mar. 22, 2022. 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 variant report apply exclusively to the tested model / sample. Without written approval from 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 333, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issue Date
FR850206-04A	01	Initial issue of report	Apr. 21, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.247(a)(2)	6dB Bandwidth	Not Required	-
-	2.1049	99% Occupied Bandwidth	Not Required	-
3.1	15.247(b)	Power Output Measurement	Pass	-
-	15.247(e)	Power Spectral Density	Not Required	-
-	15.247(d)	Conducted Band Edges	Not Required	-
		Conducted Spurious Emission	Not Required	-
3.2	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	1.60 dB under the limit at 2389.905 MHz
-	15.207	AC Conducted Emission	Not Required	-
3.3	15.203 & 15.247(b)	Antenna Requirement	Pass	-

Note:

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

2. This is a variant report by external antenna replacement. All the test cases were performed on original report which can be referred to Sporton Report Number FR850206A.

Declaration of Conformity:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results. 2. The measurement uncertainty please refer to this report "Uncertainty of Evaluation".
Comments and Explanations:
The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Wei Chen

Report Producer: Vivian Hsu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Trailer Monitoring UNIT
Brand Name	ZEBRA
Model Name	TM2000
FCC ID	UZ7TM2000
EUT supports Radios application	WLAN 11a/b/g/n HT20
HW Version	REV B
SW Version	2.0.33
FW Version	2.0.33
MFD	16DEC21
EUT Stage	Engineering Sample

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

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2462 MHz
Maximum Average Output Power to antenna	802.11b: 18.42 dBm / 0.0695 W 802.11g: 16.28 dBm / 0.0425 W 802.11n HT20: 16.26 dBm / 0.0423 W
Maximum Peak Output Power to antenna	802.11b: 20.99 dBm / 0.1256 W 802.11g: 23.07 dBm / 0.2028 W 802.11n HT20: 23.09 dBm / 0.2037 W
Antenna Type / Gain	Omni-directional Antenna with gain 1.54 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

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 made to the EUT during the testing.

1.4 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	03CH07-HY, TH02-HY

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

FCC designation No.: TW1190

1.5 Applicable Standards

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

- FCC Part 15 Subpart C §15.247
- 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 the test items were validated and recorded in accordance with the standards without any modification during the testing.
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

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: 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 find X plane as worst plane.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

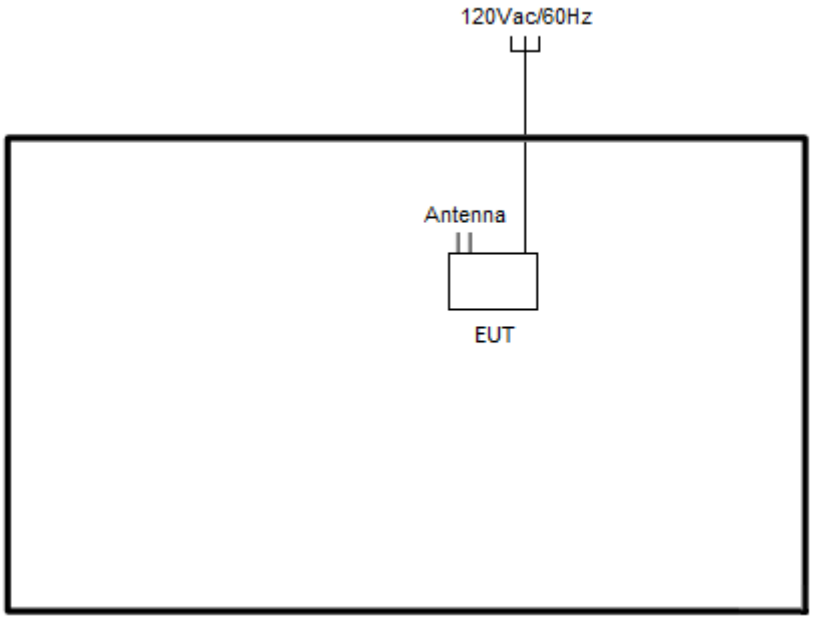
The final test modes consider the modulation and the worst data rates as shown in the table below.

Modulation	Data Rate
802.11b	**1 Mbps**
802.11g	**6 Mbps**
802.11n HT20	**MCS0**

Ch. #	2400-2483.5 MHz		
	802.11b	802.11g	802.11n HT20
Low	01	01	01
Middle	06	06	06
High	11	11	11

Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System



2.4 EUT Operation Test Setup

The RF test items, utility “Putty Release 0.60” 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 Output Power Measurement

3.1.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna with directional gain greater than 6 dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

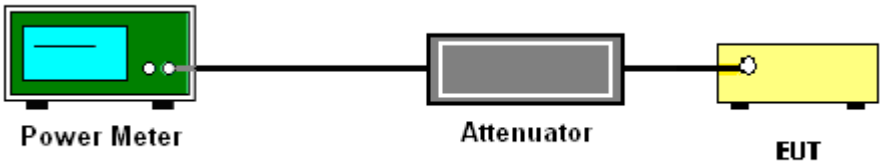
3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.3 PKPM1
2. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
3. The RF output of EUT is connected to the power meter by RF cable and attenuator. The path loss is compensated to the results for each measurement.
4. Set the maximum power setting and enable the EUT to transmit continuously.
5. Measure the conducted output power and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of Peak Output Power

Test Engineer :	Hank Hsu	Temperature :	21~25℃
		Relative Humidity :	51~54%

2.4GHz Band Single Antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	20.52	-		30.00	-	1.54	-	22.06	-	36.00	-	Pass
11b	1Mbps	1	6	2437	20.99	-		30.00	-	1.54	-	22.53	-	36.00	-	Pass
11b	1Mbps	1	11	2462	20.02	-		30.00	-	1.54	-	21.56	-	36.00	-	Pass
11g	6Mbps	1	1	2412	23.05	-		30.00	-	1.54	-	24.59	-	36.00	-	Pass
11g	6Mbps	1	6	2437	23.07	-	-	30.00	-	1.54	-	24.61	-	36.00	-	Pass
11g	6Mbps	1	11	2462	22.68	-		30.00	-	1.54	-	24.22	-	36.00	-	Pass
HT20	MCS0	1	1	2412	22.75	-		30.00	-	1.54	-	24.29	-	36.00	-	Pass
HT20	MCS0	1	6	2437	**23.09**	-		30.00	-	1.54	-	24.63	-	36.00	-	Pass
HT20	MCS0	1	11	2462	21.79	-		30.00	-	1.54	-	23.33	-	36.00	-	Pass

3.1.6 Test Result of Average Output Power (Reporting Only)

Test Engineer :	Hank Hsu	Temperature :	21~25℃
		Relative Humidity :	51~54%

2.4GHz Band Single Antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	18.02	-		30.00	-	1.54	-	19.56	-	36.00	-	Pass
11b	1Mbps	1	6	2437	**18.42**	-		30.00	-	1.54	-	19.96	-	36.00	-	Pass
11b	1Mbps	1	11	2462	17.60	-		30.00	-	1.54	-	19.14	-	36.00	-	Pass
11g	6Mbps	1	1	2412	15.14	-		30.00	-	1.54	-	16.68	-	36.00	-	Pass
11g	6Mbps	1	6	2437	16.28	-	-	30.00	-	1.54	-	17.82	-	36.00	-	Pass
11g	6Mbps	1	11	2462	13.62	-		30.00	-	1.54	-	15.16	-	36.00	-	Pass
HT20	MCS0	1	1	2412	14.77	-		30.00	-	1.54	-	16.31	-	36.00	-	Pass
HT20	MCS0	1	6	2437	16.26	-		30.00	-	1.54	-	17.80	-	36.00	-	Pass
HT20	MCS0	1	11	2462	12.91	-		30.00	-	1.54	-	14.45	-	36.00	-	Pass

3.2 Radiated Band Edges and Spurious Emission Measurement

3.2.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device is measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

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

3.2.2 Measuring Instruments

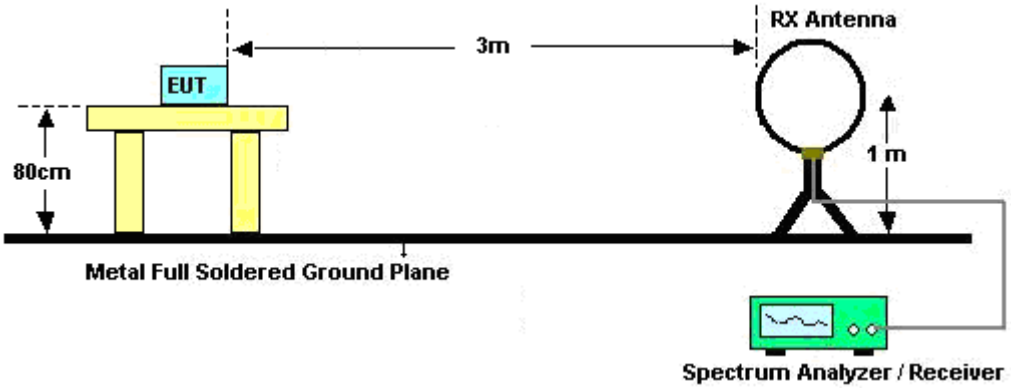
Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

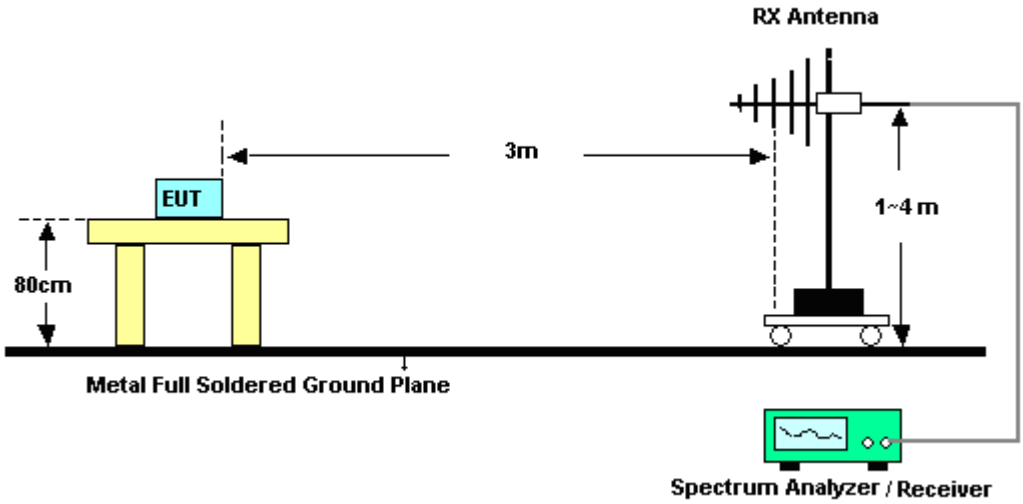
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. 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.
4. The EUT is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
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 "-".
8. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW = 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3 MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - 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.

3.2.4 Test Setup

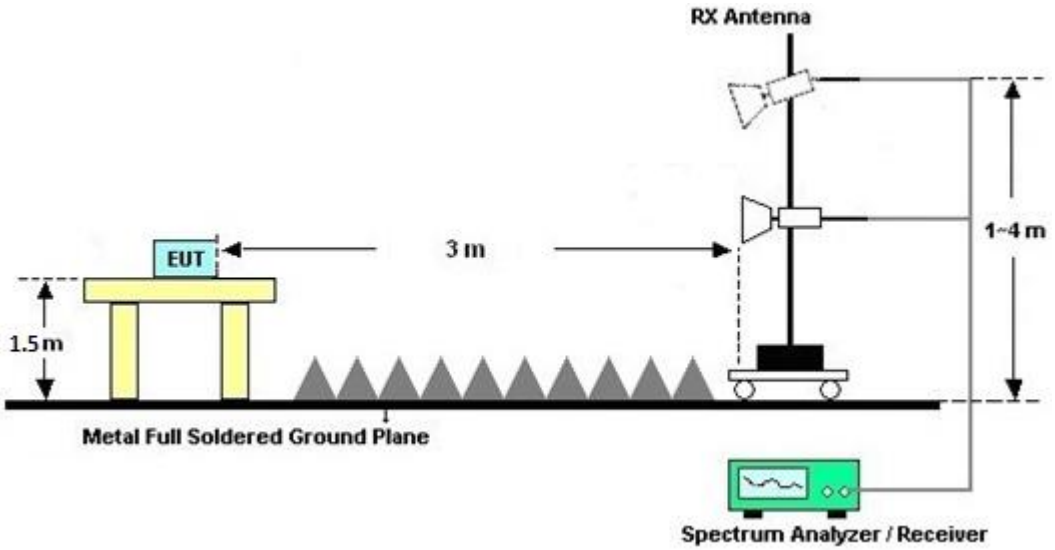
For radiated emissions below 30MHz



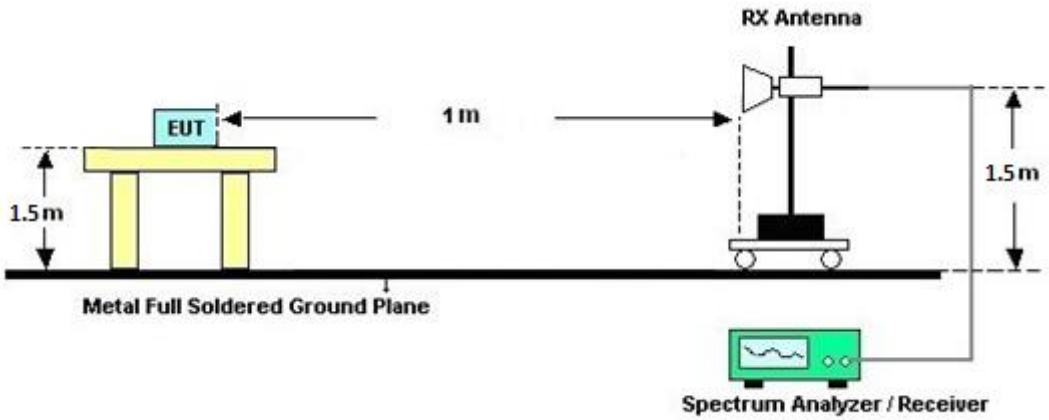
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



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

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is 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 comes out very similar.

3.2.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix A and B.

3.2.7 Duty Cycle

Please refer to Appendix C.

3.2.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix A and B.

3.3 Antenna Requirements

3.3.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. 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.

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.3.3 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
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 28, 2021	Mar. 18, 2022~ Mar. 22, 2022	Apr. 27, 2022	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 03, 2021	Mar. 18, 2022~ Mar. 22, 2022	Dec. 02, 2022	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	Mar. 18, 2022~ Mar. 22, 2022	Jan. 06, 2023	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 22, 2021	Mar. 18, 2022~ Mar. 22, 2022	Apr. 21, 2022	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 04, 2021	Mar. 18, 2022~ Mar. 22, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 04, 2021	Mar. 18, 2022~ Mar. 22, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Jul. 23, 2021	Mar. 18, 2022~ Mar. 22, 2022	Jul. 22, 2022	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jul. 22, 2021	Mar. 18, 2022~ Mar. 22, 2022	Jul. 21, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682/4	30MHz to 18GHz	Feb. 23, 2022	Mar. 18, 2022~ Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 18, 2022~ Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 18, 2022~ Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 17, 2021	Mar. 18, 2022~ Mar. 22, 2022	Sep. 16, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 23, 2022	Mar. 18, 2022~ Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	801606/2	9KHz ~ 40GHz	Apr. 03, 2021	Mar. 18, 2022~ Mar. 22, 2022	Apr. 02, 2022	Radiation (03CH07-HY)
Controller	EMEC	EM1000	N/A	Control Ant Mast	N/A	Mar. 18, 2022~ Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Controller	MF	MF-7802	N/A	Control Turn table	N/A	Mar. 18, 2022~ Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Mar. 18, 2022~ Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Mar. 18, 2022~ Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Attenuator	HONOVA	5910 SMA-50-005-1 9-NE	ATT-36	N/A	Oct. 30, 2021	Mar. 18, 2022~ Mar. 22, 2022	Oct. 29, 2022	Radiation (03CH07-HY)
Software	Audix	E3	N/A	N/A	N/A	Mar. 18, 2022~ Mar. 22, 2022	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB1148	N/A	Oct. 25, 2021	Mar. 18, 2022~ Mar. 22, 2022	Oct. 24, 2022	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 30, 2021	Mar. 18, 2022~ Mar. 22, 2022	Nov. 29, 2022	Radiation (03CH07-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Feb. 08, 2022~ Feb. 25, 2022	Nov. 15, 2022	Conducted (TH02-HY)
USB Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	Feb. 08, 2022~ Feb. 25, 2022	Dec. 15, 2022	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	932001	N/A	Sep. 30, 2021	Feb. 08, 2022~ Feb. 25, 2022	Sep. 29, 2022	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	846202	300MHz~40GH z	Sep. 30, 2021	Feb. 08, 2022~ Feb. 25, 2022	Sep. 29, 2022	Conducted (TH02-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Feb. 08, 2022~ Feb. 25, 2022	Aug. 29, 2022	Conducted (TH02-HY)
Switch Control Manframe	E-IUSTRUME NT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	Feb. 08, 2022~ Feb. 25, 2022	Aug. 11, 2022	Conducted (TH02-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.1 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.8 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.0 dB**

Appendix A. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	23.2~25.4°C
		Relative Humidity :	52.5~53.6%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2320.815	54.35	-19.65	74	39.99	31.52	18.23	35.39	266	237	P	H
		2387.7	44.08	-9.92	54	29.65	31.4	18.44	35.41	266	237	A	H
	*	2412	103.06	-	-	88.48	31.5	18.5	35.42	266	237	P	H
	*	2412	99.72	-	-	85.14	31.5	18.5	35.42	266	237	A	H
													H
													H
		2386.86	55.6	-18.4	74	41.17	31.4	18.44	35.41	313	333	P	V
		2387.805	48.51	-5.49	54	34.08	31.4	18.44	35.41	313	333	A	V
	*	2412	111.4	-	-	96.82	31.5	18.5	35.42	313	333	P	V
	*	2412	108.23	-	-	93.65	31.5	18.5	35.42	313	333	A	V
													V
													V
802.11b CH 06 2437MHz		2364.6	54.15	-19.85	74	39.78	31.4	18.38	35.41	266	65	P	H
		2388.82	43.44	-10.56	54	29.01	31.4	18.44	35.41	266	65	A	H
	*	2437	103.3	-	-	88.5	31.7	18.53	35.43	266	65	P	H
	*	2437	100.15	-	-	85.35	31.7	18.53	35.43	266	65	A	H
		2485.23	54.62	-19.38	74	39.38	32.08	18.61	35.45	266	65	P	H
		2495.38	44.44	-9.56	54	29.12	32.16	18.62	35.46	266	65	A	H
		2344.02	54.73	-19.27	74	40.4	31.42	18.31	35.4	242	336	P	V
		2388.96	43.77	-10.23	54	29.34	31.4	18.44	35.41	242	336	A	V
	*	2437	111.92	-	-	97.12	31.7	18.53	35.43	242	336	P	V
	*	2437	108.58	-	-	93.78	31.7	18.53	35.43	242	336	A	V
		2487.05	56.22	-17.78	74	40.97	32.1	18.6	35.45	242	336	P	V
		2485.51	45.89	-8.11	54	30.65	32.08	18.61	35.45	242	336	A	V

802.11b CH 11 2462MHz	*	2462	102.81	-	-	87.78	31.9	18.57	35.44	299	66	P	H
	*	2462	99.63	-	-	84.6	31.9	18.57	35.44	299	66	A	H
		2494.2	54.74	-19.26	74	39.43	32.15	18.62	35.46	299	66	P	H
		2486.92	44.94	-9.06	54	29.69	32.1	18.6	35.45	299	66	A	H
													H
													H
	*	2462	111.34	-	-	96.31	31.9	18.57	35.44	239	326	P	V
	*	2462	107.96	-	-	92.93	31.9	18.57	35.44	239	326	A	V
		2488.2	58.38	-15.62	74	43.12	32.11	18.6	35.45	239	326	P	V
		2490.24	49.53	-4.47	54	34.25	32.12	18.61	35.45	239	326	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4824	44.2	-29.8	74	55.39	34.05	12.73	57.97	-	-	P	H
		14472	47.95	-26.05	74	44.87	39.54	21.64	58.1	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
802.11b CH 01 2412MHz													H
		4824	47.54	-26.46	74	58.73	34.05	12.73	57.97	-	-	P	V
		14472	52.59	-21.41	74	49.51	39.54	21.64	58.1	226	176	P	V
		14472	49.41	-4.59	54	46.33	39.54	21.64	58.1	226	176	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4874	44.61	-29.39	74	55.72	34.05	12.75	57.91	-	-	P	H
		7311	42.3	-31.7	74	49.53	35.64	15.04	57.91	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
802.11b CH 06 2437MHz													H
		4874	47.19	-26.81	74	58.3	34.05	12.75	57.91	-	-	P	V
		7311	44.44	-29.56	74	51.67	35.64	15.04	57.91	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4924	43.27	-30.73	74	54.28	34.05	12.79	57.85	-	-	P	H
		7386	40.48	-33.52	74	47.59	35.87	15	57.98	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
802.11b CH 11 2462MHz													H
		4924	46.18	-27.82	74	57.19	34.05	12.79	57.85	-	-	P	V
		7386	41.15	-32.85	74	48.26	35.87	15	57.98	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

Remark

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

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.905	56.98	-17.02	74	42.55	31.4	18.45	35.42	266	236	P	H
		2389.695	45.98	-8.02	54	31.54	31.4	18.45	35.41	266	236	A	H
	*	2412	102.18	-	-	87.6	31.5	18.5	35.42	266	236	P	H
	*	2412	94.78	-	-	80.2	31.5	18.5	35.42	266	236	A	H
													H
													H
		2389.8	67.37	-6.63	74	52.94	31.4	18.45	35.42	314	336	P	V
		2389.905	52.4	-1.6	54	37.97	31.4	18.45	35.42	314	336	A	V
	*	2412	110.46	-	-	95.88	31.5	18.5	35.42	314	336	P	V
	*	2412	103.09	-	-	88.51	31.5	18.5	35.42	314	336	A	V
													V
													V
802.11g CH 06 2437MHz		2369.5	53.68	-20.32	74	39.3	31.4	18.39	35.41	265	66	P	H
		2386.3	44.15	-9.85	54	29.72	31.4	18.44	35.41	265	66	A	H
	*	2437	103.39	-	-	88.59	31.7	18.53	35.43	265	66	P	H
	*	2437	95.96	-	-	81.16	31.7	18.53	35.43	265	66	A	H
		2496.29	54.37	-19.63	74	39.04	32.17	18.62	35.46	265	66	P	H
		2493.84	45.19	-8.81	54	29.88	32.15	18.62	35.46	265	66	A	H
		2388.12	54.13	-19.87	74	39.7	31.4	18.44	35.41	245	332	P	V
		2385.04	44.49	-9.51	54	30.07	31.4	18.43	35.41	245	332	A	V
	*	2437	111.48	-	-	96.68	31.7	18.53	35.43	245	332	P	V
	*	2437	104.23	-	-	89.43	31.7	18.53	35.43	245	332	A	V
		2494.68	56.38	-17.62	74	41.06	32.16	18.62	35.46	245	332	P	V
		2483.62	46.15	-7.85	54	30.93	32.07	18.6	35.45	245	332	A	V

802.11g CH 11 2462MHz	*	2462	101	-	-	85.97	31.9	18.57	35.44	299	63	P	H
	*	2462	93.33	-	-	78.3	31.9	18.57	35.44	299	63	A	H
		2484.2	56.15	-17.85	74	40.92	32.07	18.61	35.45	299	63	P	H
		2483.52	45.42	-8.58	54	30.2	32.07	18.6	35.45	299	63	A	H
													H
													H
	*	2462	109.82	-	-	94.79	31.9	18.57	35.44	239	321	P	V
	*	2462	101.62	-	-	86.59	31.9	18.57	35.44	239	321	A	V
		2483.84	62.25	-11.75	74	47.03	32.07	18.6	35.45	239	321	P	V
		2483.76	49.34	-4.66	54	34.12	32.07	18.6	35.45	239	321	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4824	43.54	-30.46	74	54.73	34.05	12.73	57.97	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
802.11g CH 01 2412MHz													H
		4824	44.55	-29.45	74	55.74	34.05	12.73	57.97	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4874	41.35	-32.65	74	52.46	34.05	12.75	57.91	-	-	P	H
		7311	41.34	-32.66	74	48.57	35.64	15.04	57.91	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
802.11g CH 06 2437MHz													H
		4874	42.98	-31.02	74	54.09	34.05	12.75	57.91	-	-	P	V
		7311	42.13	-31.87	74	49.36	35.64	15.04	57.91	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4924	40.71	-33.29	74	51.72	34.05	12.79	57.85	-	-	P	H
		7386	39.76	-34.24	74	46.87	35.87	15	57.98	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
802.11g CH 11 2462MHz													H
		4924	42.46	-31.54	74	53.47	34.05	12.79	57.85	-	-	P	V
		7386	40.72	-33.28	74	47.83	35.87	15	57.98	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

Remark

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

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		2389.485	56.61	-17.39	74	42.17	31.4	18.45	35.41	266	236	P	H
		2390	45.75	-8.25	54	31.32	31.4	18.45	35.42	266	236	A	H
	*	2412	101.63	-	-	87.05	31.5	18.5	35.42	266	236	P	H
	*	2412	93.92	-	-	79.34	31.5	18.5	35.42	266	236	A	H
802.11n													H
HT20													H
CH 01		2389.485	65.79	-8.21	74	51.35	31.4	18.45	35.41	313	334	P	V
2412MHz		2389.695	52.14	-1.86	54	37.7	31.4	18.45	35.41	313	334	A	V
	*	2412	109.9	-	-	95.32	31.5	18.5	35.42	313	334	P	V
	*	2412	102.44	-	-	87.86	31.5	18.5	35.42	313	334	A	V
													V
													V
		2386.72	53.66	-20.34	74	39.23	31.4	18.44	35.41	265	66	P	H
		2376.22	44.18	-9.82	54	29.79	31.4	18.4	35.41	265	66	A	H
	*	2437	103.13	-	-	88.33	31.7	18.53	35.43	265	66	P	H
	*	2437	95.67	-	-	80.87	31.7	18.53	35.43	265	66	A	H
802.11n		2493.14	54.6	-19.4	74	39.3	32.15	18.61	35.46	265	66	P	H
HT20		2483.83	45.07	-8.93	54	29.85	32.07	18.6	35.45	265	66	A	H
CH 06		2376.08	54.89	-19.11	74	40.5	31.4	18.4	35.41	244	337	P	V
2437MHz		2388.82	44.49	-9.51	54	30.06	31.4	18.44	35.41	244	337	A	V
	*	2437	111.7	-	-	96.9	31.7	18.53	35.43	244	337	P	V
	*	2437	104.02	-	-	89.22	31.7	18.53	35.43	244	337	A	V
		2492.09	56.07	-17.93	74	40.78	32.14	18.61	35.46	244	337	P	V
		2493.63	45.98	-8.02	54	30.67	32.15	18.62	35.46	244	337	A	V

	*	2462	99.21	-	-	84.18	31.9	18.57	35.44	300	63	P	H
	*	2462	91.95	-	-	76.92	31.9	18.57	35.44	300	63	A	H
		2488	55.04	-18.96	74	39.79	32.1	18.6	35.45	300	63	P	H
		2483.84	45.56	-8.44	54	30.34	32.07	18.6	35.45	300	63	A	H
802.11n													H
HT20													H
CH 11	*	2462	108.01	-	-	92.98	31.9	18.57	35.44	240	327	P	V
2462MHz	*	2462	100.45	-	-	85.42	31.9	18.57	35.44	240	327	A	V
		2483.68	59.22	-14.78	74	44	32.07	18.6	35.45	240	327	P	V
		2483.52	50.09	-3.91	54	34.87	32.07	18.6	35.45	240	327	A	V
													V
													V

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

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4824	41.31	-32.69	74	52.5	34.05	12.73	57.97	-	-	P	H
													H
													H
													H
802.11n													H
HT20													H
CH 01		4824	41.78	-32.22	74	52.97	34.05	12.73	57.97	-	-	P	V
2412MHz													V
													V
													V
													V
													V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4874	40.93	-33.07	74	52.04	34.05	12.75	57.91	-	-	P	H
		7311	41.83	-32.17	74	49.06	35.64	15.04	57.91	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
802.11n													H
HT20													H
CH 06		4874	42.35	-31.65	74	53.46	34.05	12.75	57.91	-	-	P	V
2437MHz		7311	42.61	-31.39	74	49.84	35.64	15.04	57.91	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4924	42.52	-31.48	74	53.53	34.05	12.79	57.85	-	-	P	H
		7386	40.58	-33.42	74	47.69	35.87	15	57.98	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
802.11n													H
HT20													H
CH 11		4924	40.89	-33.11	74	51.9	34.05	12.79	57.85	-	-	P	V
2462MHz		7386	41	-33	74	48.11	35.87	15	57.98	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

Remark

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

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		30	21.79	-18.21	40	26.36	24.57	0.97	30.11	-	-	P	H
		152.58	33.73	-9.77	43.5	44.73	16.88	1.99	29.87	-	-	P	H
		181.2	31.66	-11.84	43.5	44.37	14.95	2.2	29.86	-	-	P	H
		729.1	32.14	-13.86	46	30.23	26.89	4.5	29.48	-	-	P	H
		845.3	31.9	-14.1	46	27.5	28.6	4.88	29.08	-	-	P	H
		960.1	37.78	-16.22	54	30.35	30.83	5.22	28.62	-	-	P	H
													H
													H
													H
													H
													H
													H
		30	28.7	-11.3	40	33.27	24.57	0.97	30.11	-	-	P	V
		91.02	25.64	-17.86	43.5	39.42	14.73	1.52	30.03	-	-	P	V
		145.56	33.01	-10.49	43.5	43.71	17.25	1.93	29.88	-	-	P	V
		496.7	34.32	-11.68	46	36.57	23.8	3.73	29.78	-	-	P	V
		746.6	36.75	-9.25	46	34.08	27.55	4.56	29.44	-	-	P	V
		960.1	39.85	-14.15	54	32.42	30.83	5.22	28.62	-	-	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.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

Appendix B. Radiated Spurious Emission Plots

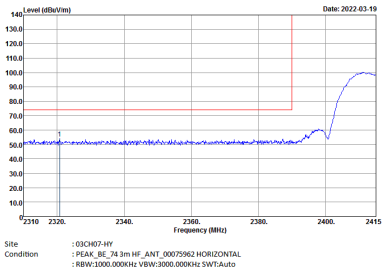
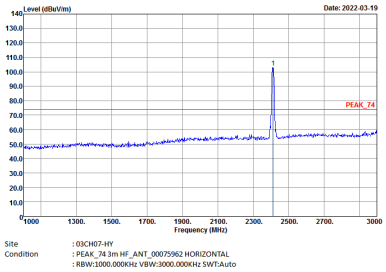
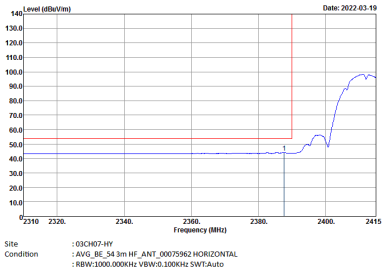
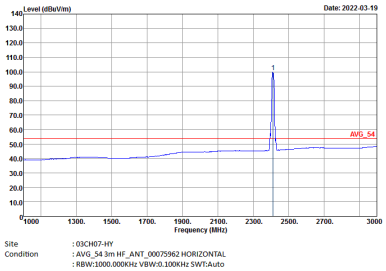
Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	**Temperature :**	23.2~25.4°C
		Relative Humidity :	52.5~53.6%

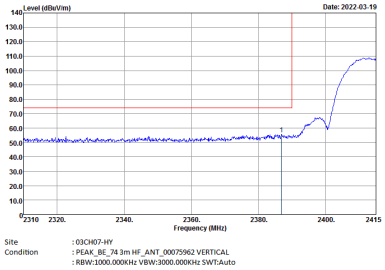
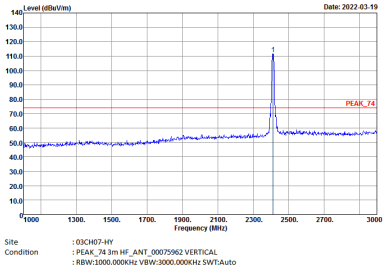
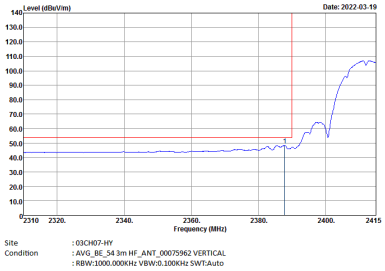
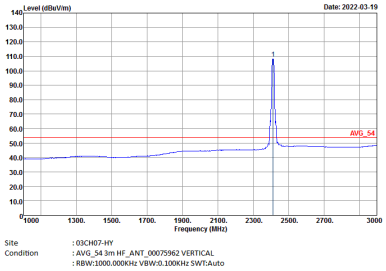
Note symbol

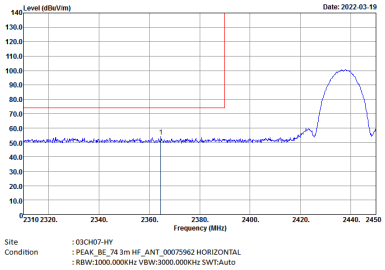
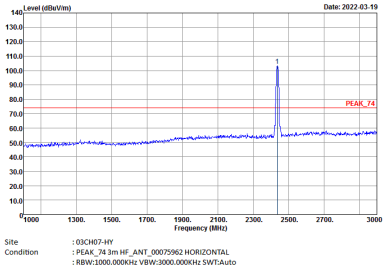
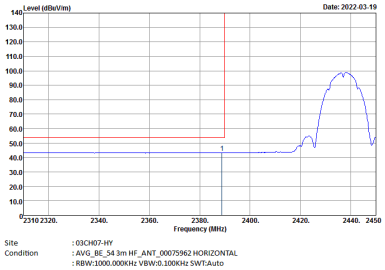
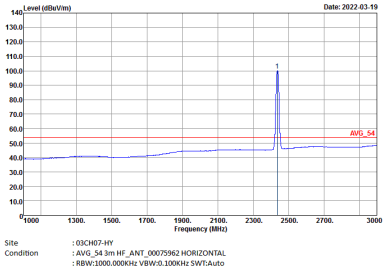
-L	**Low channel location**
-R	**High channel location**

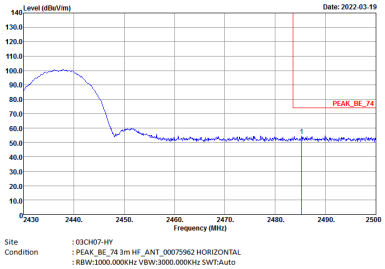
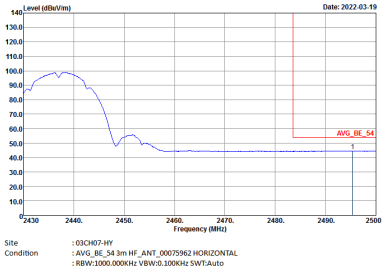
2.4GHz 2400~2483.5MHz

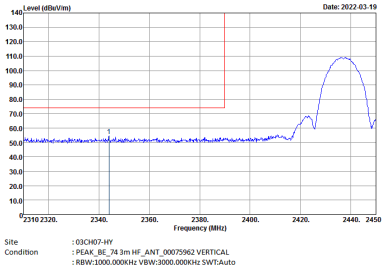
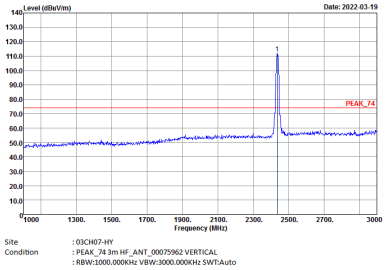
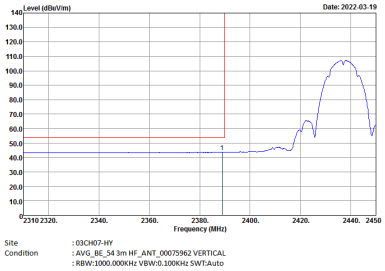
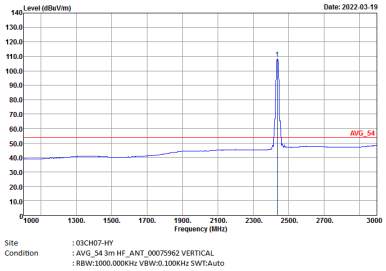
WIFI 802.11b (Band Edge @ 3m)

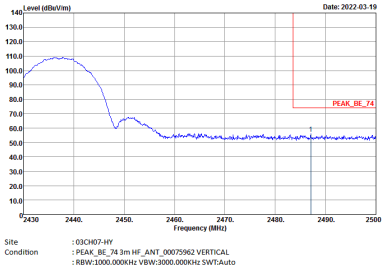
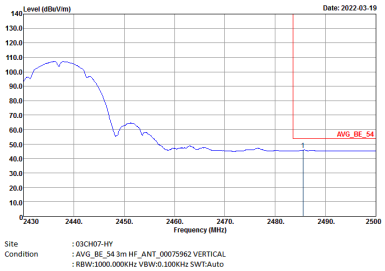
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

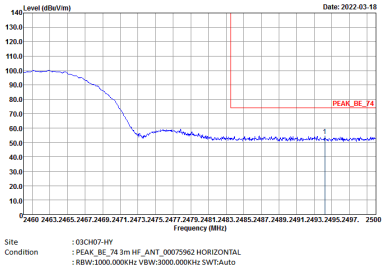
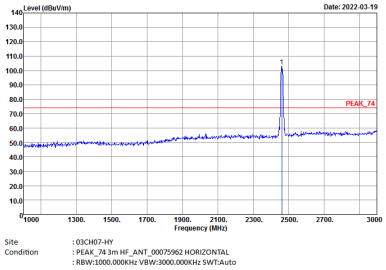
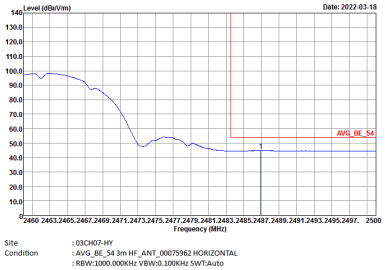
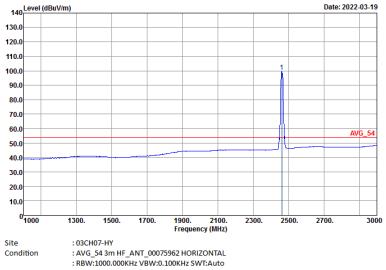
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

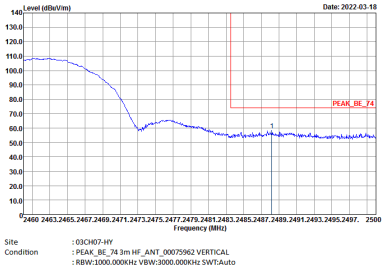
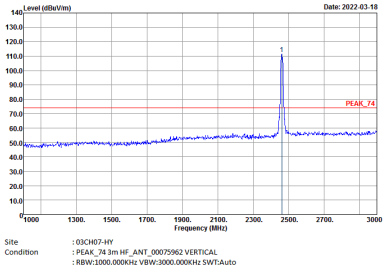
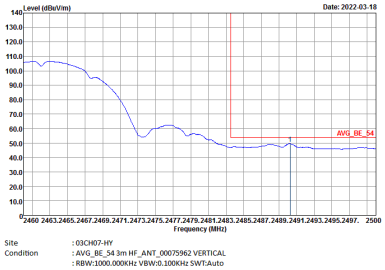
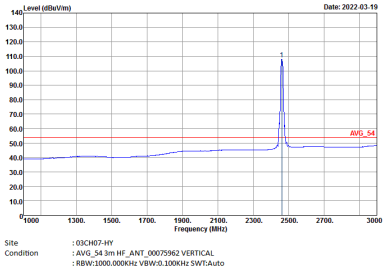
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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

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

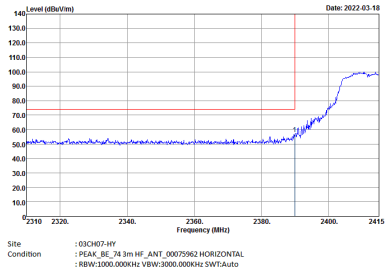
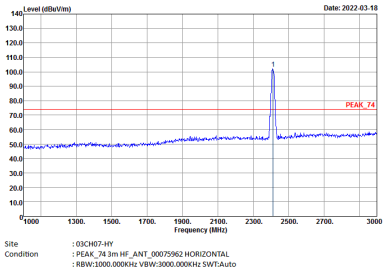
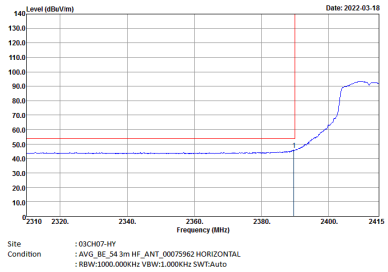
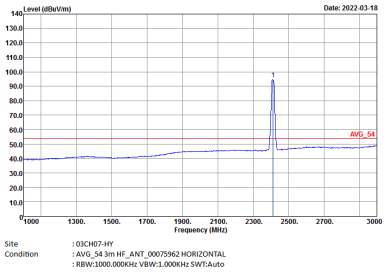
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

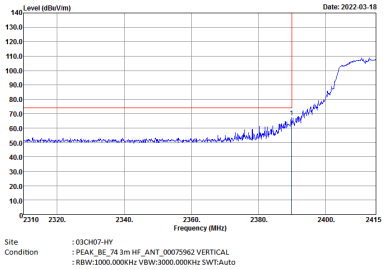
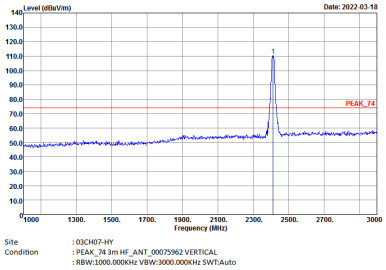
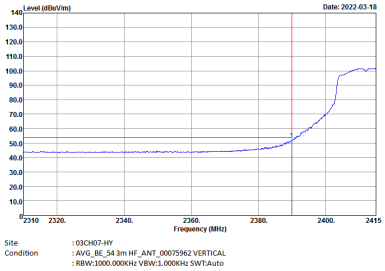
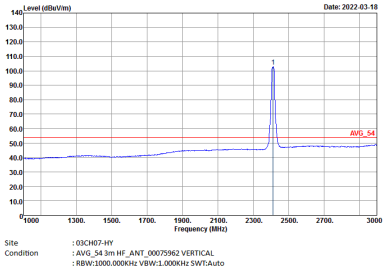
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

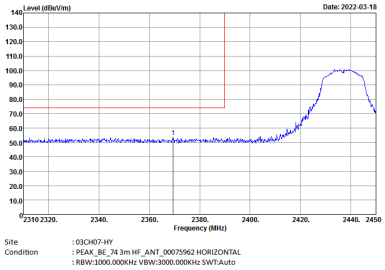
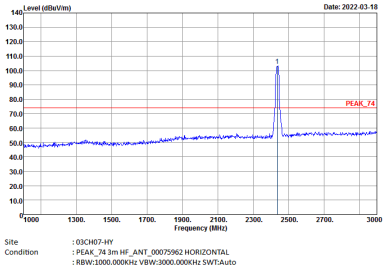
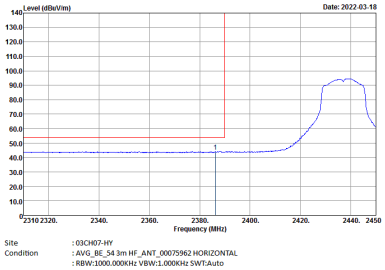
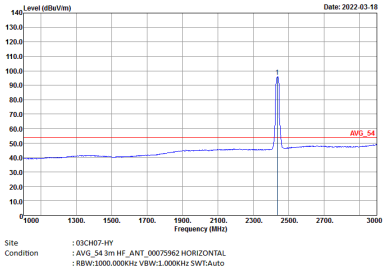
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

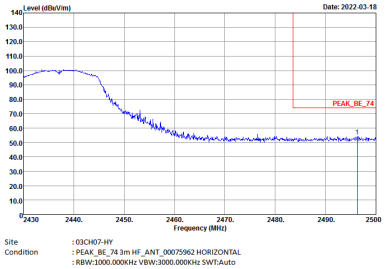
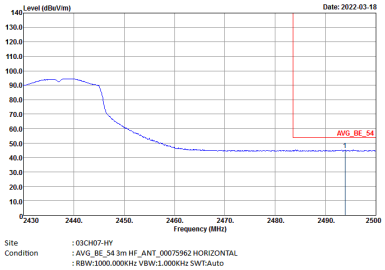
2.4GHz 2400~2483.5MHz

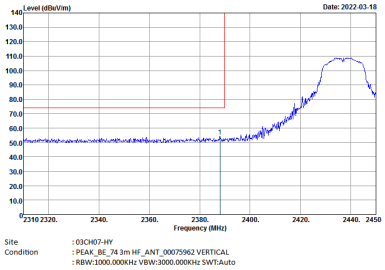
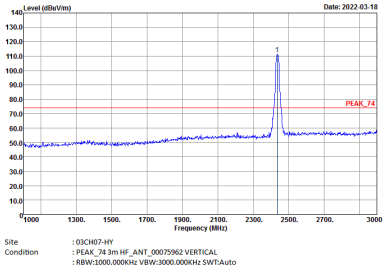
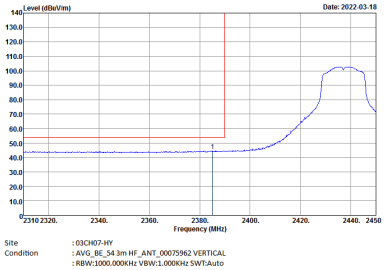
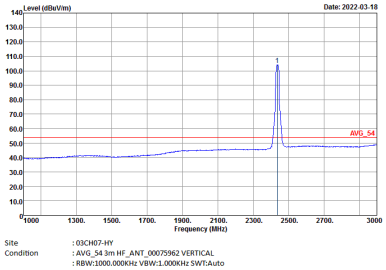
WIFI 802.11g (Band Edge @ 3m)

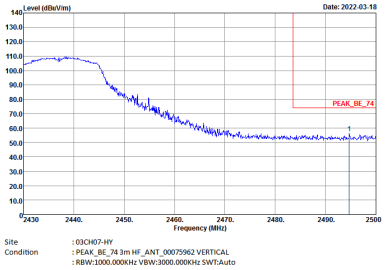
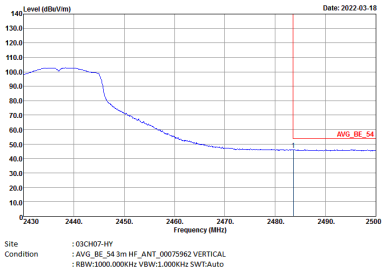
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

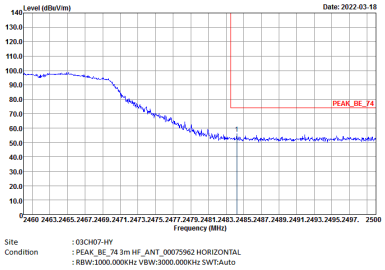
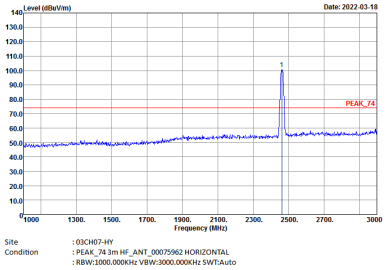
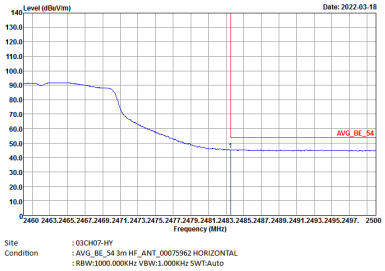
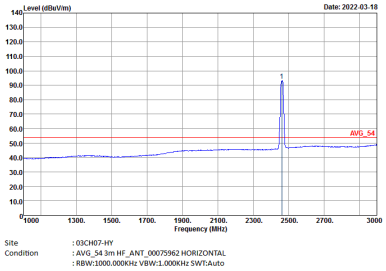
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

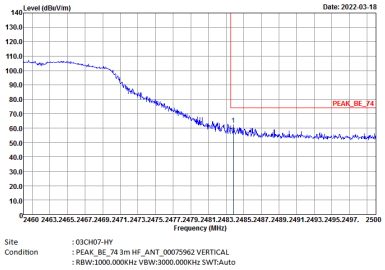
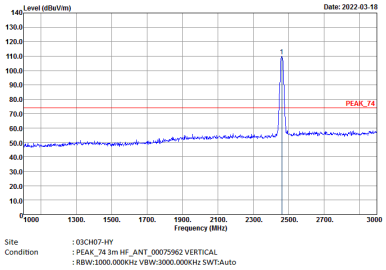
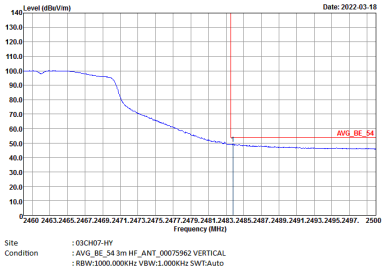
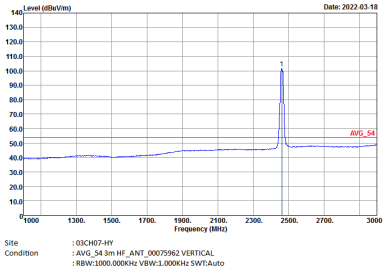
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

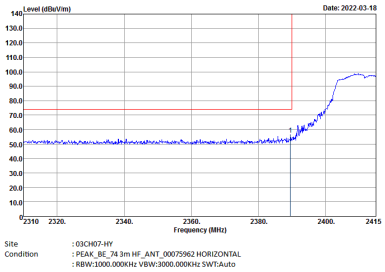
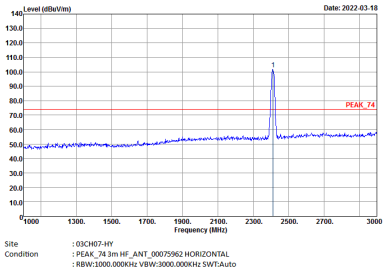
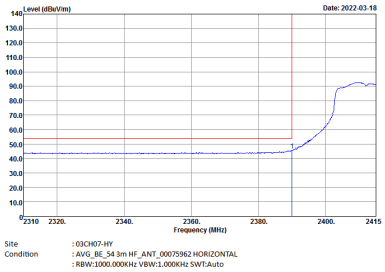
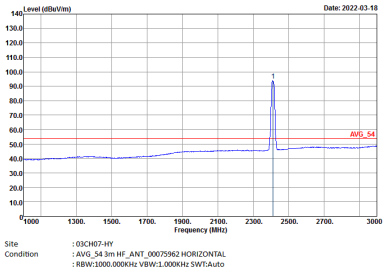
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

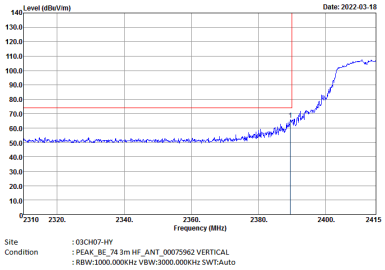
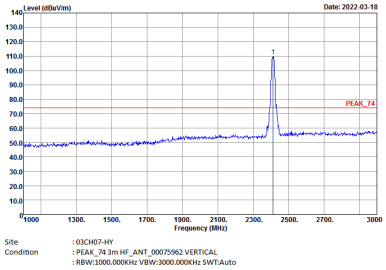
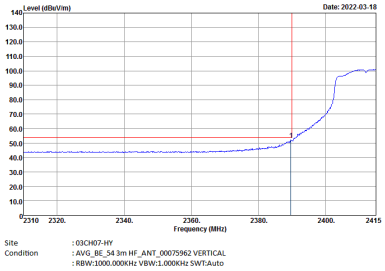
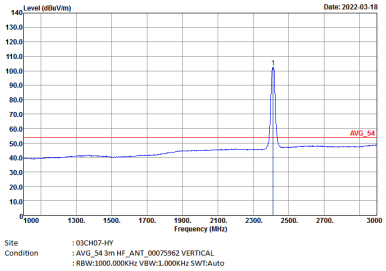
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

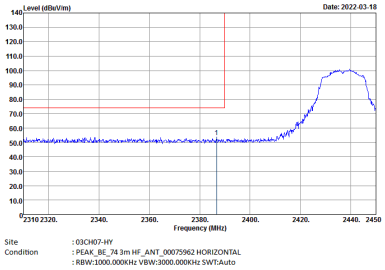
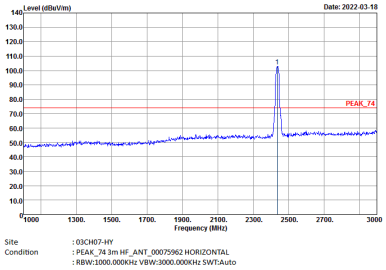
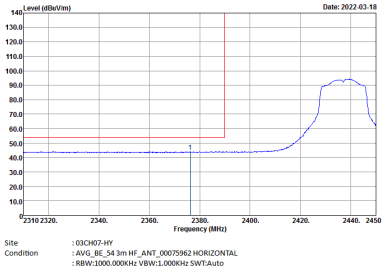
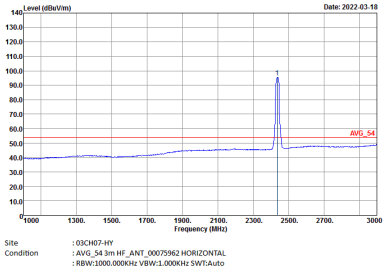
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

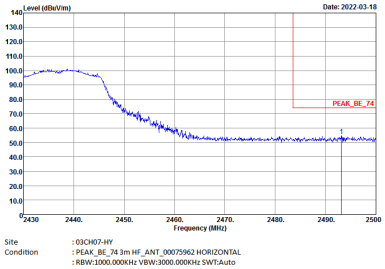
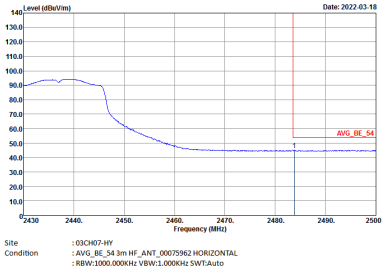
2.4GHz 2400~2483.5MHz

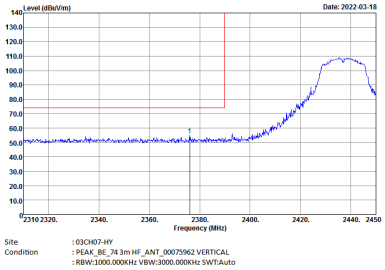
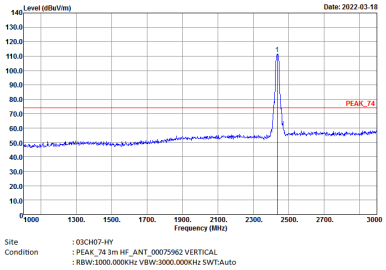
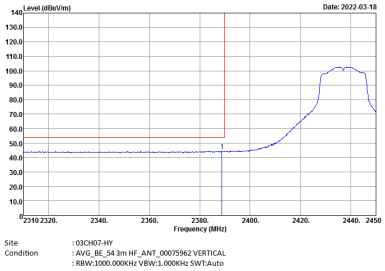
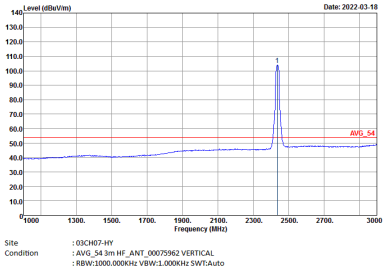
WIFI 802.11n HT20 (Band Edge @ 3m)

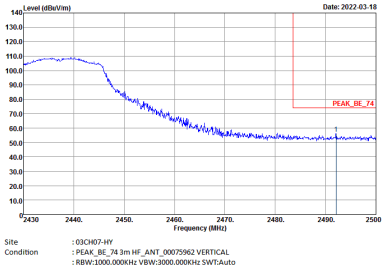
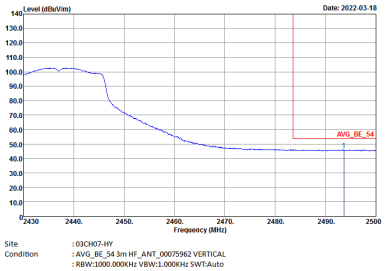
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

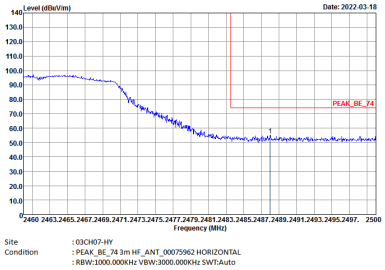
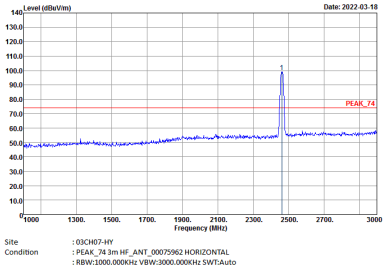
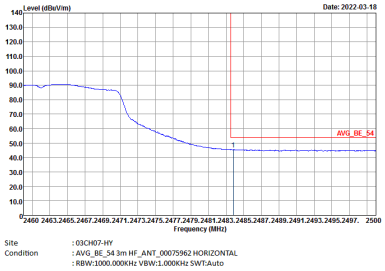
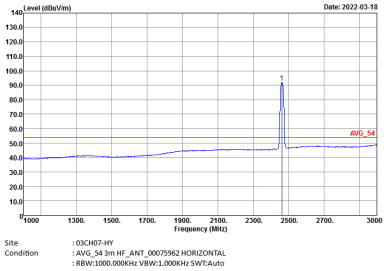
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

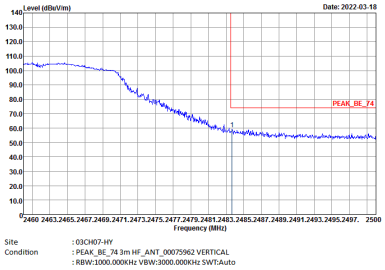
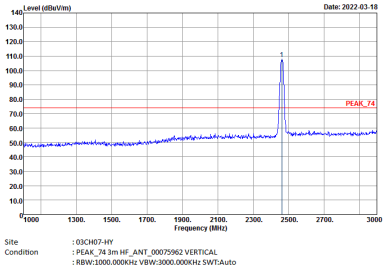
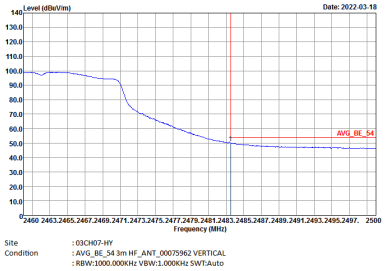
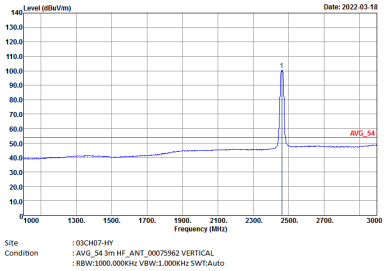
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

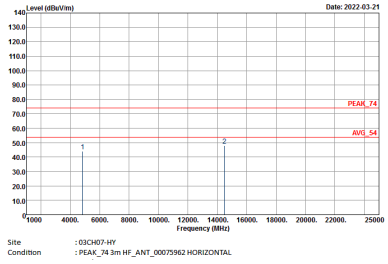
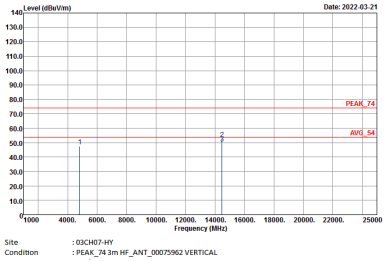
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

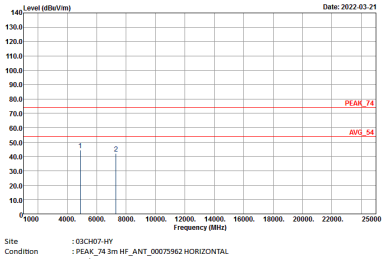
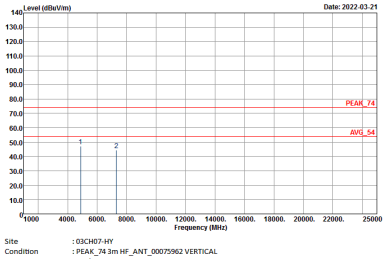
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

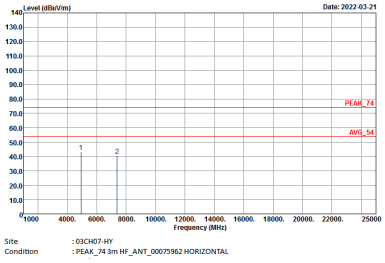
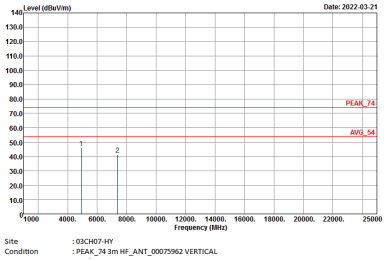
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

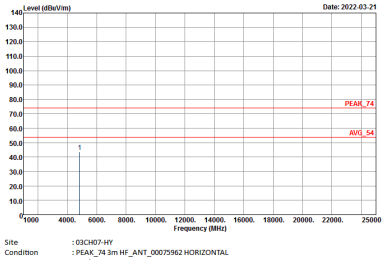
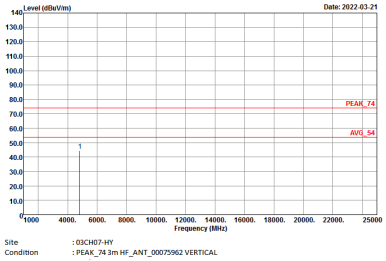
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

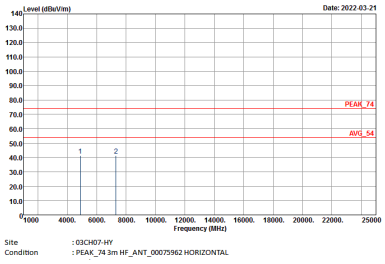
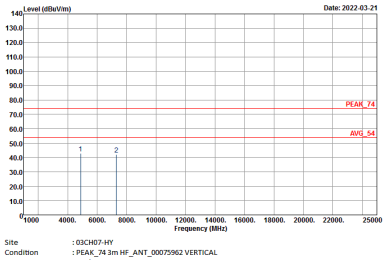
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

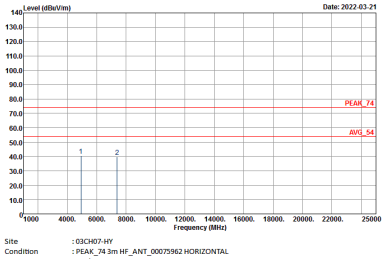
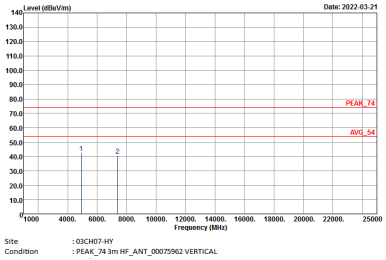
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

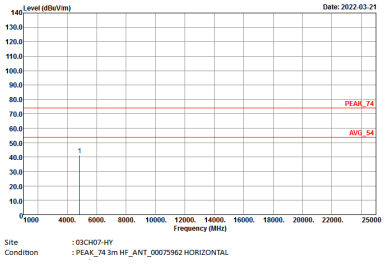
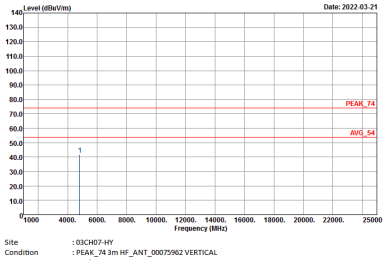
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

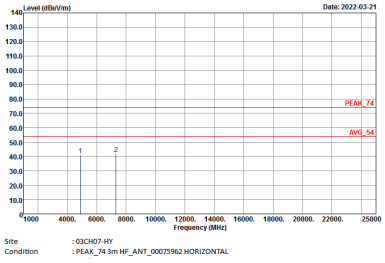
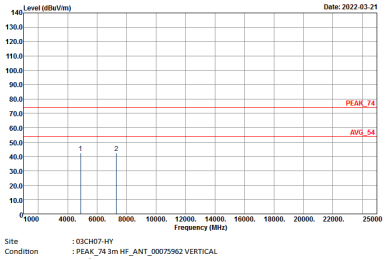
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

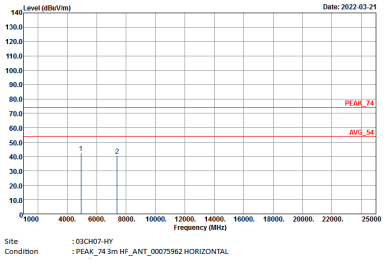
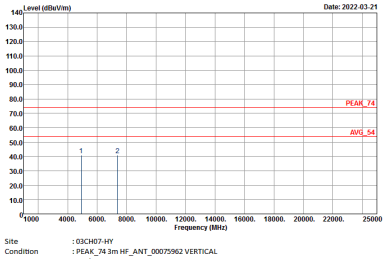
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

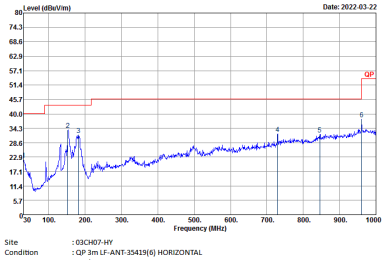
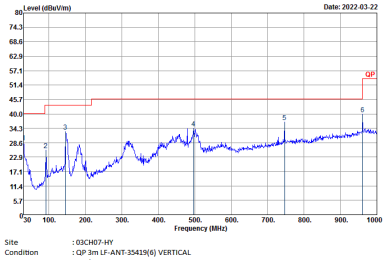
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

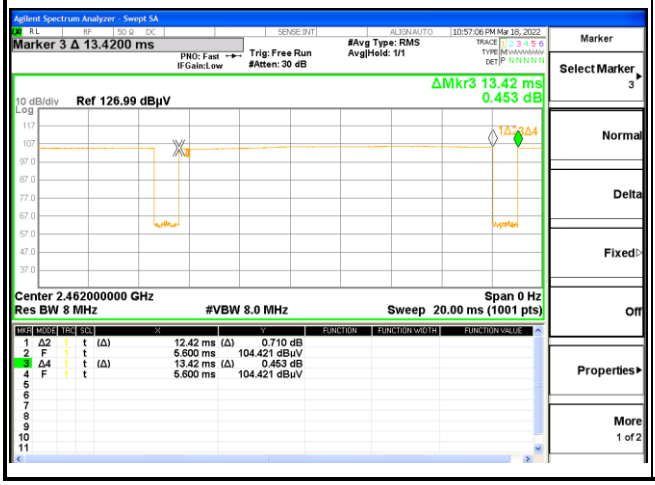
2.4GHz WIFI 802.11g (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g LF	
1	Horizontal	Vertical
QP / Peak		

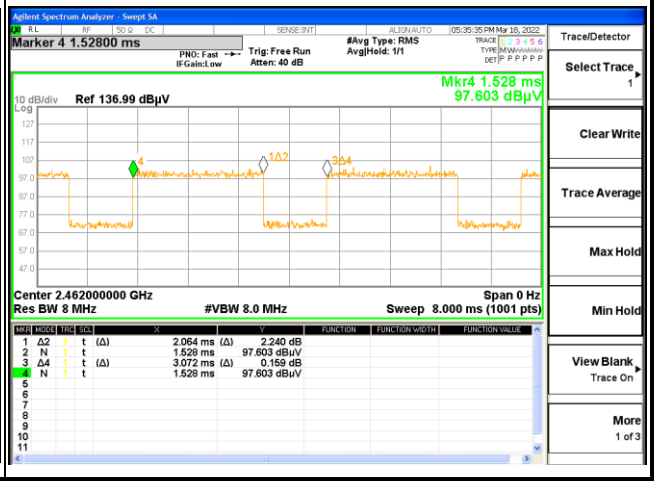
Appendix C. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	92.55	12420	0.08	100Hz
802.11g	67.19	2064	0.48	1kHz
2.4GHz 802.11n HT20	65.63	1925	0.52	1kHz

802.11b



802.11g



802.11n HT20