FCC RADIO TEST REPORT

FCC ID	:	**PPQLILYW131**
Equipment	:	**WLAN Module**
Brand Name	:	**LITEON**
Model Name	:	**LILY-W131**
Applicant	:	**LITE-ON Technology Corporation Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City 23585, Taiwan (R.O.C)**
Manufacturer	:	**LITE-ON Technology Corporation Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City 23585, Taiwan (R.O.C)**
Standard	:	**FCC Part 15 Subpart C §15.247**

The product was received on Jul. 17, 2023 and testing was performed from Aug. 17, 2023 to Oct. 31, 2023. 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 partial 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
FR371710A	01	Initial issue of report	Nov. 09, 2023

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(b)	Power Output Measurement	Pass	-
3.2	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	0.63 dB under the limit at 4824.00 MHz
3.3	15.207	AC Conducted Emission	Pass	9.94 dB under the limit at 0.20 MHz
3.4	15.203	Antenna Requirement	Pass	-

Note: The test voltage (220Vac/60Hz) and set up were by manufacturer definition

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: Yun Huang
Report Producer: Rebecca Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
General Specs	Wi-Fi 2.4GHz 802.11b/g/n
Installed into the Host	Equipment name: AC Charging Station_IC 80A Brand name: LITEON Model Name: EX-1193-1, EX-1193-3, EX-1193-5, EX-1193-1-48, EX-1193-3-48, EX-1193-5-48
Antenna Type	Dipole Antenna

Antenna information		
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	3.3

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 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.**
	CO05-HY

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

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	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
Test Site No.	**Sporton Site No.**
	TH05-HY, 03CH13-HY

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

FCC designation No.: TW1190 and TW3786

1.4 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 15.247 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.

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

b. AC power line Conducted Emission was tested under maximum output power.

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 include the worst data rates for each modulation shown in the table below.

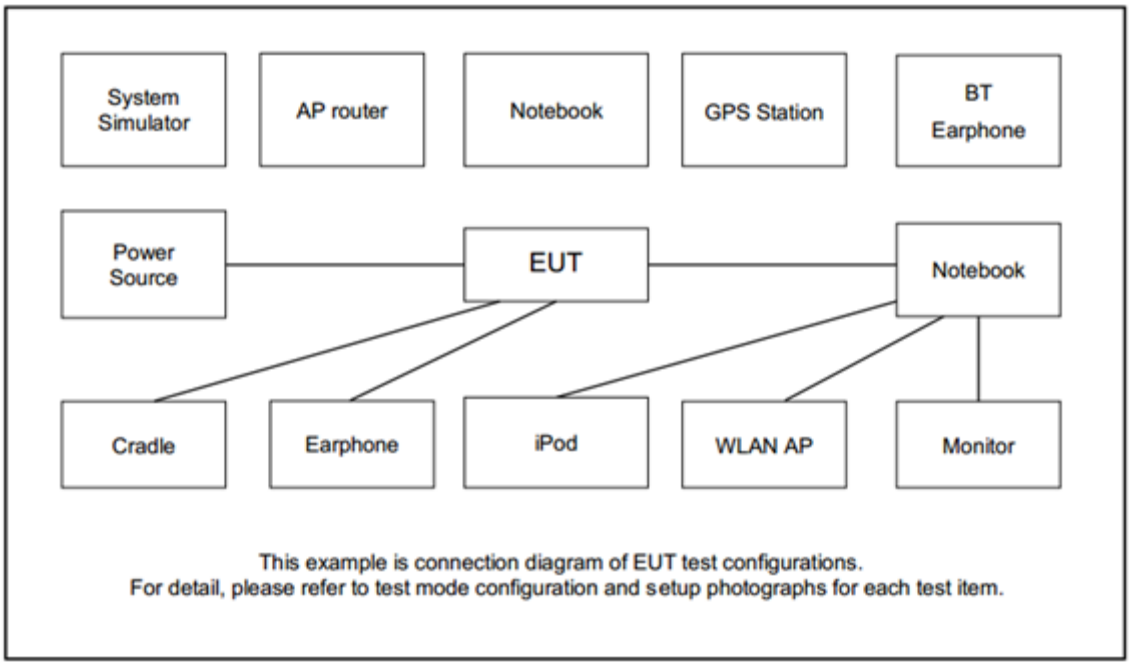
Modulation	Data Rate
802.11b	**1 Mbps**
802.11g	**6 Mbps**
802.11n HT20	**MCS0**

Test Cases	
AC Conducted Emission	Mode 1 :WLAN Tx + Power Cable

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 “labtool v2.0.0.92 and DutApiWiFi8801BrdigeEth” 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.

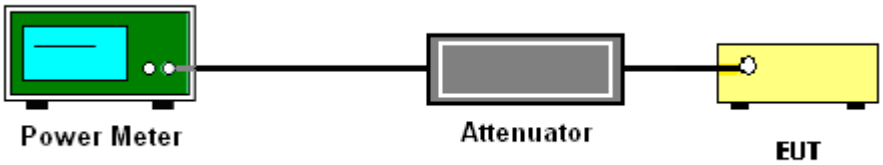
3.1.2 Measuring Instruments

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

Please refer to Appendix A.

3.1.6 Test Result of Average Output Power (Reporting Only)

Please refer to Appendix A.

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.

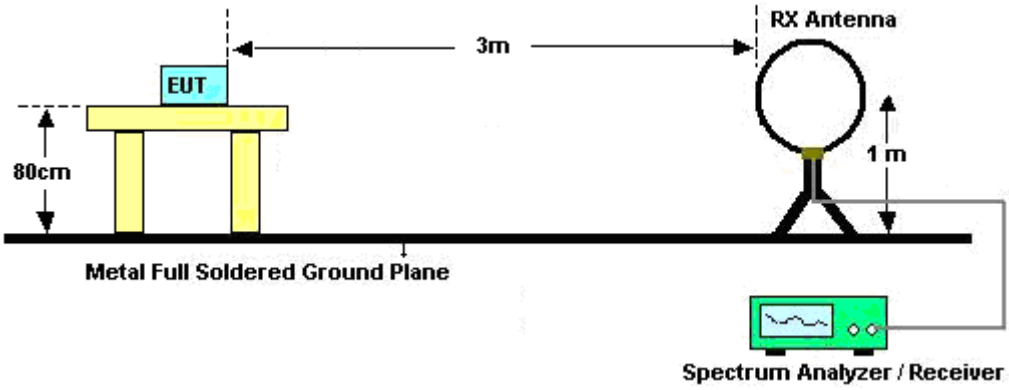
3.2.3 Test Procedures

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 “-“.

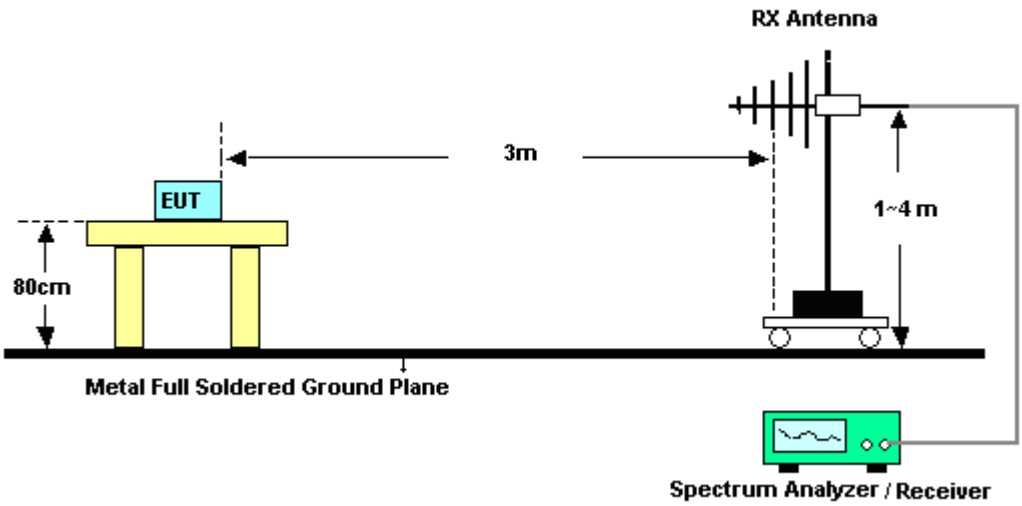
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with 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

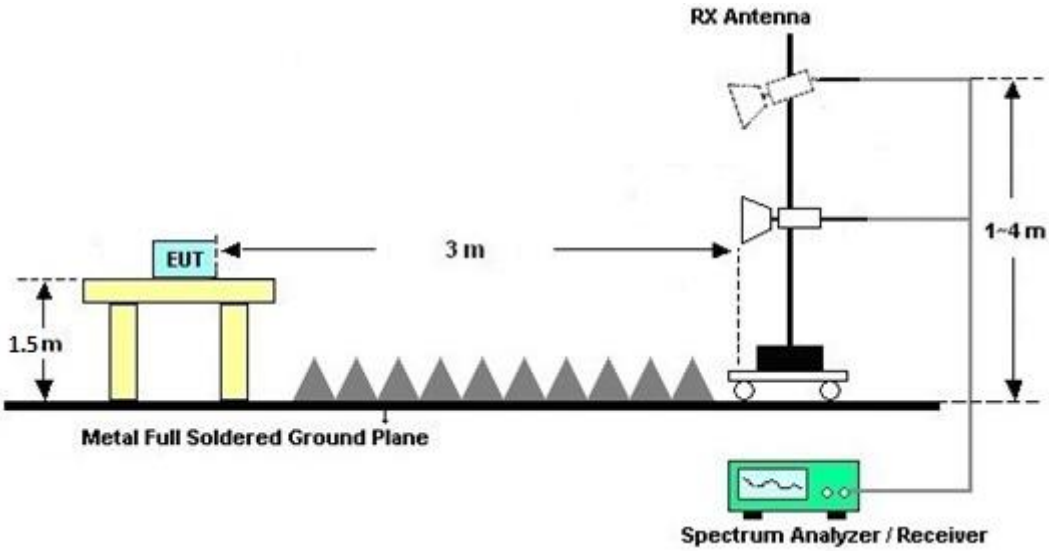
For radiated emissions below 30MHz



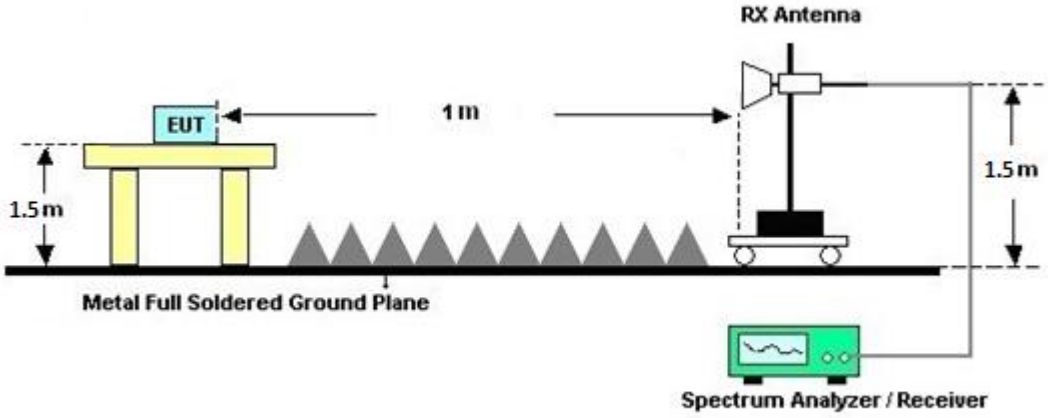
For radiated emissions from 30MHz to 1GHz



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 C and D.

3.2.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

3.3 AC Conducted Emission Measurement

3.3.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

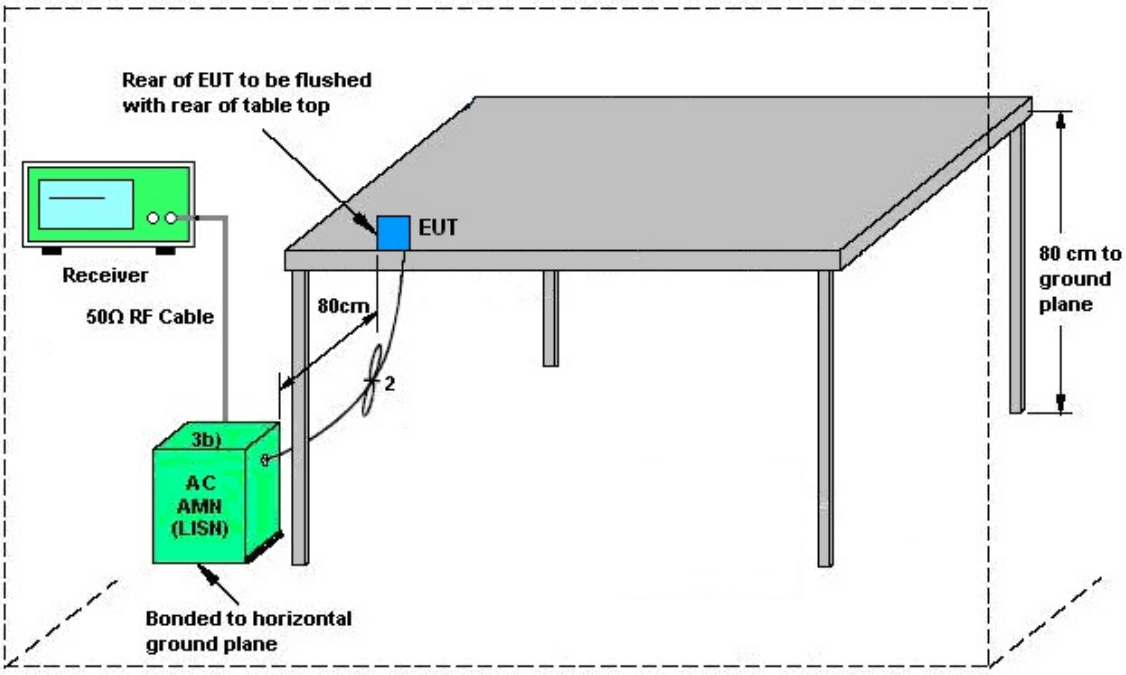
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.3.4 Test Setup



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

3.3.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.4 Antenna Requirements

3.4.1 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.

3.4.2 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
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Oct. 27, 2023~ Oct. 31, 2023	Sep. 11, 2024	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9K~30M	Mar. 07, 2023	Oct. 27, 2023~ Oct. 31, 2023	Mar. 06, 2024	Radiation (03CH13-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 07, 2022	Oct. 27, 2023~ Oct. 31, 2023	Dec. 06, 2023	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00993	18GHz-40GHz	Nov. 24, 2022	Oct. 27, 2023~ Oct. 31, 2023	Nov. 23, 2023	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803953/2	30MHz~40GHz	Dec. 20, 2022	Oct. 27, 2023~ Oct. 31, 2023	Dec. 19, 2023	Radiation (03CH13-HY)
Amplifier	SONOMA	310N	187282	9kHz~1GHz	Dec. 14, 2022	Oct. 27, 2023~ Oct. 31, 2023	Dec. 13, 2023	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	40103 & 07	30MHz~1GHz	Apr. 23, 2023	Oct. 27, 2023~ Oct. 31, 2023	Apr. 22, 2024	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02038	1GHz~18GHz	Jul. 31, 2023	Oct. 27, 2023~ Oct. 31, 2023	Jul. 30, 2024	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 16, 2023	Oct. 27, 2023~ Oct. 31, 2023	May 15, 2024	Radiation (03CH13-HY)
Preamplifier	EM Electronics	EM01G18G	060803	1GHz~18GHz	Jan. 10, 2023	Oct. 27, 2023~ Oct. 31, 2023	Jan. 09, 2024	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 23, 2023	Oct. 27, 2023~ Oct. 31, 2023	Mar. 22, 2024	Radiation (03CH13-HY)
Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN12	1.53GHz Low Pass Filter	Sep. 12, 2023	Oct. 27, 2023~ Oct. 31, 2023	Sep. 11, 2024	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0SS	SN2	3GHz High Pass Filter	Jul. 10, 2023	Oct. 27, 2023~ Oct. 31, 2023	Jul. 09, 2024	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30MHz~18GHz	Feb. 08, 2023	Oct. 27, 2023~ Oct. 31, 2023	Feb. 07, 2024	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	804793/4	30MHz~18GHz	Feb. 08, 2023	Oct. 27, 2023~ Oct. 31, 2023	Feb. 07, 2024	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24961/4	30MHz~18GHz	Feb. 08, 2023	Oct. 27, 2023~ Oct. 31, 2023	Feb. 07, 2024	Radiation (03CH13-HY)
Hygrometer	TECPEL	DTM-303B	TP140325	N/A	Nov. 07, 2022	Oct. 27, 2023~ Oct. 31, 2023	Nov. 06, 2023	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Oct. 27, 2023~ Oct. 31, 2023	N/A	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Oct. 27, 2023~ Oct. 31, 2023	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Oct. 27, 2023~ Oct. 31, 2023	N/A	Radiation (03CH13-HY)
Software	Audix	N/A	RK-001124	N/A	N/A	Oct. 27, 2023~ Oct. 31, 2023	N/A	Radiation (03CH13-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 17, 2022	Aug. 17, 2023~ Oct. 23, 2023	Nov. 16, 2023	Conducted (TH05-HY)
Power Meter	Anritsu	ML2495A	1036004	N/A	Jul. 27, 2023	Aug. 17, 2023~ Oct. 23, 2023	Jul. 26, 2024	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Jul. 27, 2023	Aug. 17, 2023~ Oct. 23, 2023	Jul. 26, 2024	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101906	10Hz - 40GHz (amp)	Jul. 25, 2023	Aug. 17, 2023~ Oct. 23, 2023	Jul. 24, 2024	Conducted (TH05-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Oct. 19, 2023	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2022	Oct. 19, 2023	Nov. 30, 2023	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 17, 2022	Oct. 19, 2023	Nov. 16, 2023	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 17, 2022	Oct. 19, 2023	Nov. 16, 2023	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Oct. 19, 2023	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	9kHz-200MHz	Jul. 28, 2023	Oct. 19, 2023	Jul. 27, 2024	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 29, 2022	Oct. 19, 2023	Dec. 28, 2023	Conduction (CO05-HY)

5 Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.5 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.5 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.2 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))	5.3 dB

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu	Temperature:	21~25	°C
Test Date:	2023/08/17~2023/10/23	Relative Humidity:	51~54	%

Report Number : FR371710A

TEST RESULTS DATA
Peak Output Power

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	18.09	-		30.00	-	3.30	-	21.39	-	36.00	-	Pass
11b	1Mbps	1	6	2437	16.66	-		30.00	-	3.30	-	19.96	-	36.00	-	Pass
11b	1Mbps	1	11	2462	17.00	-		30.00	-	3.30	-	20.30	-	36.00	-	Pass
11g	6Mbps	1	1	2412	19.50	-		30.00	-	3.30	-	22.80	-	36.00	-	Pass
11g	6Mbps	1	6	2437	21.40	-		30.00	-	3.30	-	24.70	-	36.00	-	Pass
11g	6Mbps	1	11	2462	18.45	-		30.00	-	3.30	-	21.75	-	36.00	-	Pass
HT20	MCS0	1	1	2412	18.60	-		30.00	-	3.30	-	21.90	-	36.00	-	Pass
HT20	MCS0	1	6	2437	21.15	-		30.00	-	3.30	-	24.45	-	36.00	-	Pass
HT20	MCS0	1	11	2462	16.95	-		30.00	-	3.30	-	20.25	-	36.00	-	Pass

Note: Measured power (dBm) has offset with cable loss.

Report Number : FR371710A

TEST RESULTS DATA
Average Output Power
(Reporting Only)

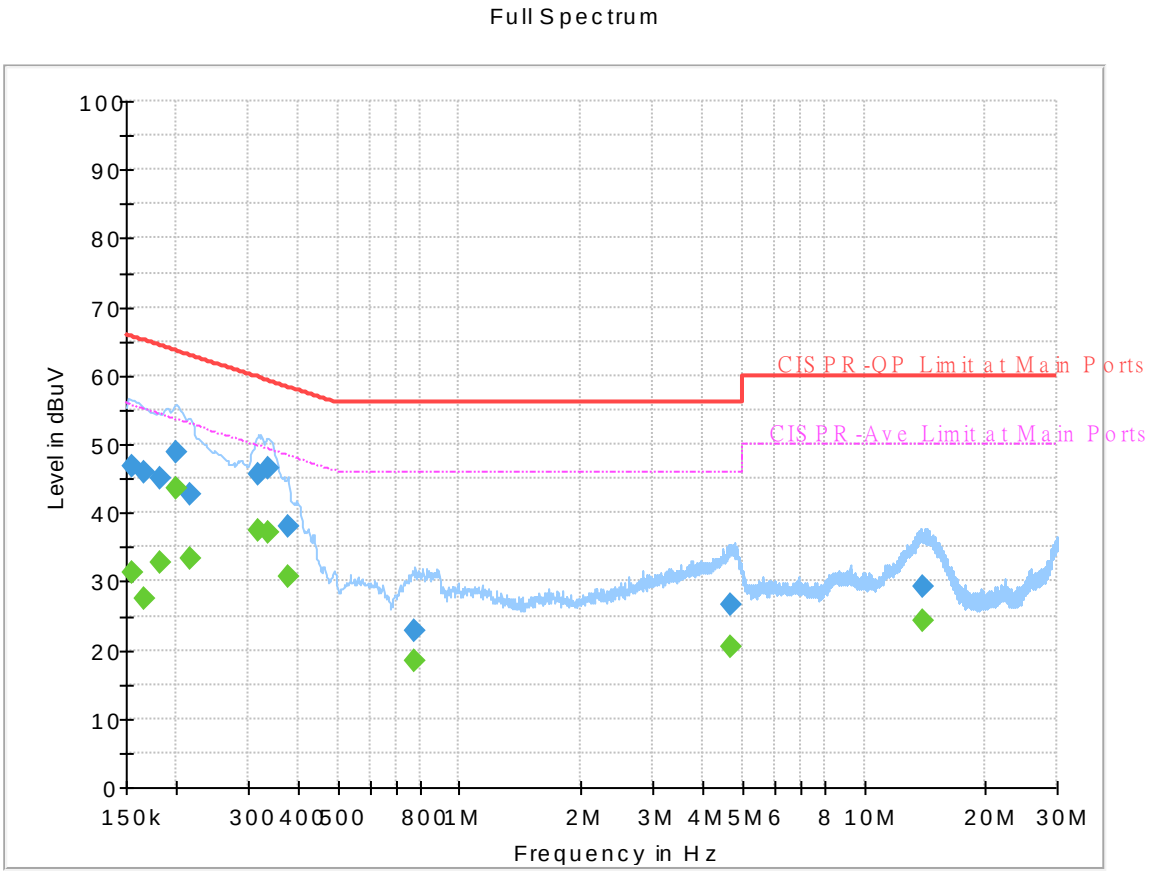
2.4GHz Band Single Antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	15.60	-		30.00	-	3.30	-	18.90	-	36.00	-	Pass
11b	1Mbps	1	6	2437	13.99	-		30.00	-	3.30	-	17.29	-	36.00	-	Pass
11b	1Mbps	1	11	2462	14.36	-		30.00	-	3.30	-	17.66	-	36.00	-	Pass
11g	6Mbps	1	1	2412	9.50	-		30.00	-	3.30	-	12.80	-	36.00	-	Pass
11g	6Mbps	1	6	2437	11.70	-		30.00	-	3.30	-	15.00	-	36.00	-	Pass
11g	6Mbps	1	11	2462	8.27	-		30.00	-	3.30	-	11.57	-	36.00	-	Pass
HT20	MCS0	1	1	2412	9.20	-		30.00	-	3.30	-	12.50	-	36.00	-	Pass
HT20	MCS0	1	6	2437	11.40	-		30.00	-	3.30	-	14.70	-	36.00	-	Pass
HT20	MCS0	1	11	2462	6.94	-		30.00	-	3.30	-	10.24	-	36.00	-	Pass

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	**Temperature :**	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO :	371710
Test Mode :	Mode 1
Test Voltage :	220Vac/60Hz
Phase :	Line



Final_Result

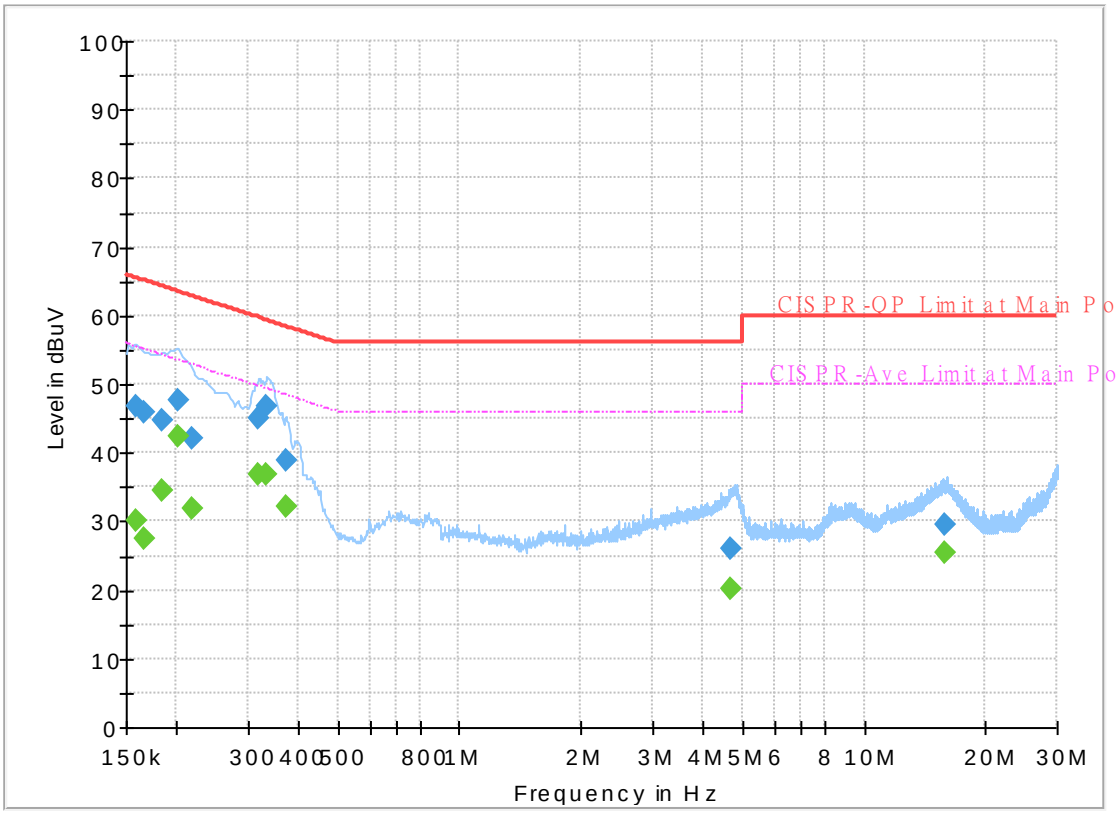
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154500	---	31.37	55.75	24.38	L1	OFF	19.8
0.154500	46.81	---	65.75	18.94	L1	OFF	19.8
0.165750	---	27.39	55.17	27.78	L1	OFF	19.8
0.165750	45.91	---	65.17	19.26	L1	OFF	19.8
0.181500	---	32.66	54.42	21.76	L1	OFF	19.8
0.181500	44.95	---	64.42	19.47	L1	OFF	19.8
0.199500	---	43.69	53.63	9.94	L1	OFF	19.8
0.199500	48.73	---	63.63	14.90	L1	OFF	19.8
0.215250	---	33.43	53.00	19.57	L1	OFF	19.8
0.215250	42.59	---	63.00	20.41	L1	OFF	19.8
0.318750	---	37.51	49.74	12.23	L1	OFF	19.8
0.318750	45.62	---	59.74	14.12	L1	OFF	19.8
0.336750	---	37.10	49.28	12.18	L1	OFF	19.8
0.336750	46.47	---	59.28	12.81	L1	OFF	19.8
0.377250	---	30.85	48.34	17.49	L1	OFF	19.8
0.377250	37.90	---	58.34	20.44	L1	OFF	19.8
0.777750	---	18.55	46.00	27.45	L1	OFF	19.8
0.777750	22.69	---	56.00	33.31	L1	OFF	19.8
4.672500	---	20.55	46.00	25.45	L1	OFF	19.9
4.672500	26.69	---	56.00	29.31	L1	OFF	19.9
14.059500	---	24.12	50.00	25.88	L1	OFF	19.9

14.059500	**29.28**	**---**	**60.00**	**30.72**	**L1**	**OFF**	**19.9**

EUT Information

Report NO :	371710
Test Mode :	Mode 1
Test Voltage :	220Vac/60Hz
Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.159000	---	30.02	55.52	25.50	N	OFF	19.8
0.159000	46.91	---	65.52	18.61	N	OFF	19.8
0.165750	---	27.62	55.17	27.55	N	OFF	19.8
0.165750	46.05	---	65.17	19.12	N	OFF	19.8
0.183750	---	34.49	54.31	19.82	N	OFF	19.8
0.183750	44.79	---	64.31	19.52	N	OFF	19.8
0.201750	---	42.31	53.54	11.23	N	OFF	19.8
0.201750	47.64	---	63.54	15.90	N	OFF	19.8
0.217500	---	31.98	52.91	20.93	N	OFF	19.8
0.217500	42.18	---	62.91	20.73	N	OFF	19.8
0.316500	---	36.75	49.80	13.05	N	OFF	19.8
0.316500	45.11	---	59.80	14.69	N	OFF	19.8
0.334500	---	36.83	49.34	12.51	N	OFF	19.8
0.334500	46.87	---	59.34	12.47	N	OFF	19.8
0.372750	---	32.16	48.44	16.28	N	OFF	19.8
0.372750	38.91	---	58.44	19.53	N	OFF	19.8
4.699500	---	20.09	46.00	25.91	N	OFF	19.9
4.699500	26.17	---	56.00	29.83	N	OFF	19.9
15.839250	---	25.40	50.00	24.60	N	OFF	20.0
15.839250	29.45	---	60.00	30.55	N	OFF	20.0

Appendix C. Radiated Spurious Emission

Test Engineer :	Rain Lee, Jacky Hung, and Mancy Chou	Temperature :	20~26°C
		Relative Humidity :	40~65%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2389.905	53.94	-20.06	74	49.22	27.5	14.34	37.12	175	167	P	H
		2386.125	45.02	-8.98	54	40.34	27.46	14.34	37.12	175	167	A	H
	*	2412	107.8	-	-	103.06	27.5	14.36	37.12	175	167	P	H
	*	2412	104.63	-	-	99.89	27.5	14.36	37.12	175	167	A	H
													H
													H
		2382.87	52.43	-21.57	74	47.78	27.43	14.34	37.12	397	112	P	V
		2386.125	42.48	-11.52	54	37.8	27.46	14.34	37.12	397	112	A	V
	*	2412	102.5	-	-	97.76	27.5	14.36	37.12	397	112	P	V
	*	2412	99.36	-	-	94.62	27.5	14.36	37.12	397	112	A	V
													V
802.11b CH 06 2437MHz		2380.98	52.12	-21.88	74	47.5	27.41	14.33	37.12	160	180	P	H
		2389.8	41.32	-12.68	54	36.6	27.5	14.34	37.12	160	180	A	H
	*	2437	100.56	-	-	95.7	27.6	14.39	37.13	160	180	P	H
	*	2437	97.44	-	-	92.58	27.6	14.39	37.13	160	180	A	H
		2493.98	54.87	-19.13	74	49.76	27.8	14.45	37.14	160	180	P	H
		2484.53	41.87	-12.13	54	36.77	27.8	14.44	37.14	160	180	A	H
		2386.02	52.96	-21.04	74	48.28	27.46	14.34	37.12	399	112	P	V
		2389.38	41.2	-12.8	54	36.49	27.49	14.34	37.12	399	112	A	V
	*	2437	95.62	-	-	90.76	27.6	14.39	37.13	399	112	P	V
	*	2437	92.49	-	-	87.63	27.6	14.39	37.13	399	112	A	V
		2493	52.68	-21.32	74	47.57	27.8	14.45	37.14	399	112	P	V
		2489.71	41.78	-12.22	54	36.68	27.8	14.44	37.14	399	112	A	V

WIFI	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)
802.11b CH 11 2462MHz	*	2462	100.39	-	-	95.48	27.62	14.42	37.13	152	182	P	H
	*	2462	97.21	-	-	92.3	27.62	14.42	37.13	152	182	A	H
		2487.56	53.38	-20.62	74	48.28	27.8	14.44	37.14	152	182	P	H
		2487.8	42.82	-11.18	54	37.72	27.8	14.44	37.14	152	182	A	H
													H
													H
	*	2462	95.91	-	-	91	27.62	14.42	37.13	382	106	P	V
	*	2462	92.86	-	-	87.95	27.62	14.42	37.13	382	106	A	V
		2488.4	53.07	-20.93	74	47.97	27.8	14.44	37.14	382	106	P	V
		2487.48	42.25	-11.75	54	37.15	27.8	14.44	37.14	382	106	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	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)
802.11b CH 01 2412MHz		4824	53.59	-20.41	74	71.26	32.44	7.23	57.34	105	101	P	H
		4824	51.43	-2.57	54	69.1	32.44	7.23	57.34	105	101	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		4824	54.42	-19.58	74	72.09	32.44	7.23	57.34	207	178	P	V
		4824	53.37	-0.63	54	71.04	32.44	7.23	57.34	207	178	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI	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)
		4874	45.33	-28.67	74	62.62	32.65	7.26	57.2	-	-	P	H
		7311	45.79	-28.21	74	56.81	36.96	8.85	56.83	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
802.11b CH 06 2437MHz		4874	48.12	-25.88	74	65.41	32.65	7.26	57.2	207	176	P	V
		4874	45.15	-8.85	54	62.44	32.65	7.26	57.2	207	176	A	V
		7311	45.7	-28.3	74	56.72	36.96	8.85	56.83	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI	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)
802.11b CH 11 2462MHz		4924	43.78	-30.22	74	60.72	32.84	7.28	57.06	-	-	P	H
		7386	44.77	-29.23	74	56.3	36.58	8.85	56.96	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		4924	48.06	-25.94	74	65	32.84	7.28	57.06	194	177	P	V
		4924	44.8	-9.2	54	61.74	32.84	7.28	57.06	194	177	A	V
		7386	44.34	-29.66	74	55.87	36.58	8.85	56.96	-	-	P	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	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)
802.11g CH 01 2412MHz		2389.905	60.65	-13.35	74	55.93	27.5	14.34	37.12	174	168	P	H
		2390	48.45	-5.55	54	43.73	27.5	14.34	37.12	174	168	A	H
	*	2412	105	-	-	100.26	27.5	14.36	37.12	174	168	P	H
	*	2412	97.35	-	-	92.61	27.5	14.36	37.12	174	168	A	H
													H
													H
		2389.065	55.52	-18.48	74	50.81	27.49	14.34	37.12	396	113	P	V
		2390	43.91	-10.09	54	39.19	27.5	14.34	37.12	396	113	A	V
	*	2412	99.58	-	-	94.84	27.5	14.36	37.12	396	113	P	V
	*	2412	91.87	-	-	87.13	27.5	14.36	37.12	396	113	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	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)
802.11g CH 01 2412MHz		4824	44.04	-29.96	74	61.71	32.44	7.23	57.34	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		4824	44.01	-29.99	74	61.68	32.44	7.23	57.34	-	-	P	V
													V
													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	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)
802.11n HT20 CH 01 2412MHz		2389.275	61.17	-12.83	74	56.46	27.49	14.34	37.12	201	180	P	H
		2390	47.42	-6.58	54	42.7	27.5	14.34	37.12	201	180	A	H
	*	2412	106.67	-	-	101.93	27.5	14.36	37.12	201	180	P	H
	*	2412	97.58	-	-	92.84	27.5	14.36	37.12	201	180	A	H
													H
													H
		2389.485	55.35	-18.65	74	50.64	27.49	14.34	37.12	397	113	P	V
		2390	43.41	-10.59	54	38.69	27.5	14.34	37.12	397	113	A	V
	*	2412	100.98	-	-	96.24	27.5	14.36	37.12	397	113	P	V
	*	2412	92.43	-	-	87.69	27.5	14.36	37.12	397	113	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2388.26	51.96	-22.04	74	47.26	27.48	14.34	37.12	193	169	P	H
		2389.94	41.42	-12.58	54	36.7	27.5	14.34	37.12	193	169	A	H
	*	2437	102.73	-	-	97.87	27.6	14.39	37.13	193	169	P	H
	*	2437	93.66	-	-	88.8	27.6	14.39	37.13	193	169	A	H
		2496.92	52.98	-21.02	74	47.87	27.8	14.45	37.14	193	169	P	H
		2489.29	42.02	-11.98	54	36.92	27.8	14.44	37.14	193	169	A	H
		2327.92	52.16	-21.84	74	47.78	27.2	14.29	37.11	399	114	P	V
		2389.8	41.25	-12.75	54	36.53	27.5	14.34	37.12	399	114	A	V
	*	2437	96.35	-	-	91.49	27.6	14.39	37.13	399	114	P	V
	*	2437	87.55	-	-	82.69	27.6	14.39	37.13	399	114	A	V
		2500	52.76	-21.24	74	47.64	27.8	14.46	37.14	399	114	P	V
		2490.34	41.83	-12.17	54	36.73	27.8	14.44	37.14	399	114	A	V

WIFI	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)
802.11n HT20 CH 11 2462MHz	*	2462	97.26	-	-	92.35	27.62	14.42	37.13	193	186	P	H
	*	2462	88.24	-	-	83.33	27.62	14.42	37.13	193	186	A	H
		2484.12	53.48	-20.52	74	48.38	27.8	14.44	37.14	193	186	P	H
		2483.52	41.67	-12.33	54	36.57	27.8	14.44	37.14	193	186	A	H
													H
													H
	*	2462	92.07	-	-	87.16	27.62	14.42	37.13	383	95	P	V
	*	2462	83.14	-	-	78.23	27.62	14.42	37.13	383	95	A	V
		2495.2	51.29	-22.71	74	46.18	27.8	14.45	37.14	383	95	P	V
		2483.52	39.71	-14.29	54	34.61	27.8	14.44	37.14	383	95	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	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)
		4874	41.61	-32.39	74	58.9	32.65	7.26	57.2	-	-	P	H
		7311	44.95	-29.05	74	55.97	36.96	8.85	56.83	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
802.11n													H
HT20													H
CH 06		4874	43.43	-30.57	74	60.72	32.65	7.26	57.2	-	-	P	V
2437MHz		7311	45.11	-28.89	74	56.13	36.96	8.85	56.83	-	-	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 above 18GHz

2.4GHz WIFI 802.11b (SHF)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11b SHF		24417	39.67	-34.33	74	56.87	38.77	-2.5	53.47	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		24462	40.45	-33.55	74	57.65	38.73	-2.5	53.43	-	-	P	V
													V
													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

2.4GHz WIFI 802.11b (LF)

WIFI	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)
2.4GHz 802.11b LF		87.24	31.14	-8.86	40	47.27	14.88	1.13	32.14	-	-	P	H
		155.01	31.77	-11.73	43.5	45.57	16.89	1.42	32.11	-	-	P	H
		256.53	39.32	-6.68	46	50.17	19.48	1.73	32.06	-	-	P	H
		310.5	36.62	-9.38	46	47.35	19.46	1.87	32.06	-	-	P	H
		449.8	34.87	-11.13	46	41.41	23.26	2.15	31.95	-	-	P	H
		549.9	38.58	-7.42	46	42.92	25.41	2.36	32.11	-	-	P	H
													H
													H
													H
													H
													H
													H
		51.33	33.28	-6.72	40	50.27	14.23	0.98	32.2	-	-	P	V
		154.74	35.46	-8.04	43.5	49.24	16.9	1.42	32.1	-	-	P	V
		255.72	38.84	-7.16	46	49.82	19.36	1.72	32.06	-	-	P	V
		349.7	32.44	-13.56	46	42.12	20.46	1.93	32.07	-	-	P	V
		449.8	35.35	-10.65	46	41.89	23.26	2.15	31.95	-	-	P	V
		549.9	35.7	-10.3	46	40.04	25.41	2.36	32.11	-	-	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 **Margin** 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	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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		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. Margin (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. Margin (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. Margin (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 D. Radiated Spurious Emission Plots

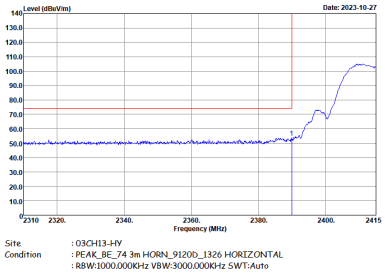
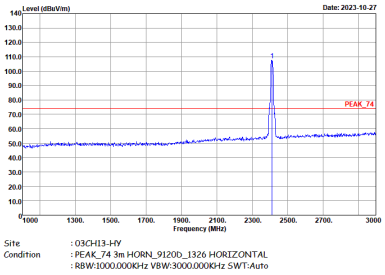
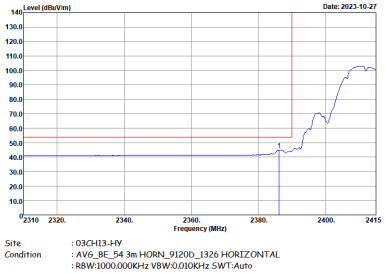
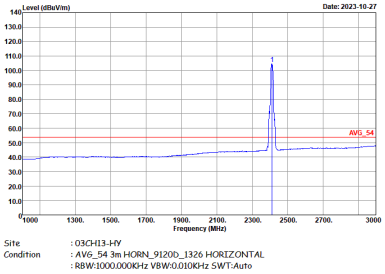
Test Engineer :	Rain Lee, Jacky Hung, and Mancy Chou	**Temperature :**	20~26°C
		Relative Humidity :	40~65%

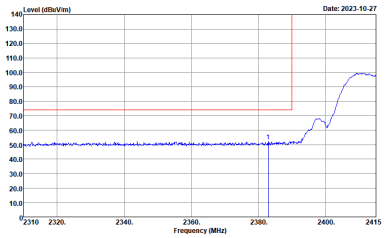
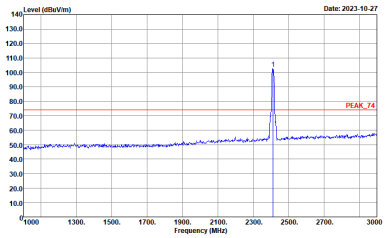
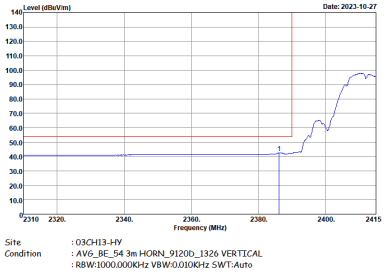
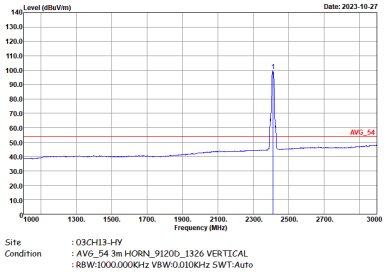
Note symbol

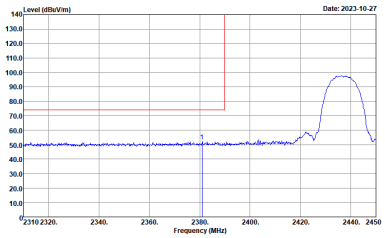
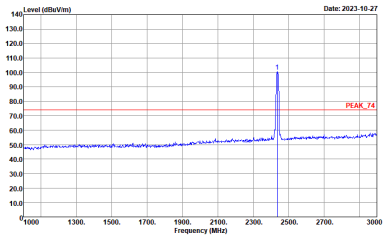
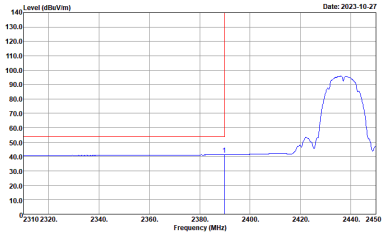
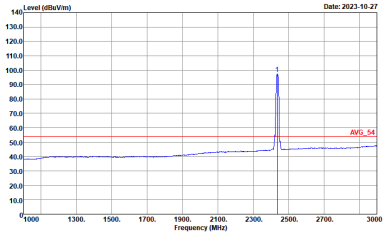
-L	**Low channel location**
-R	**High channel location**

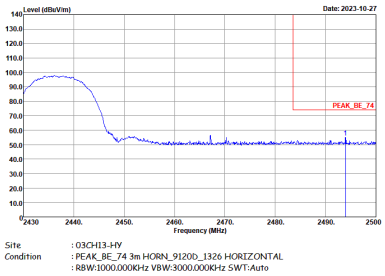
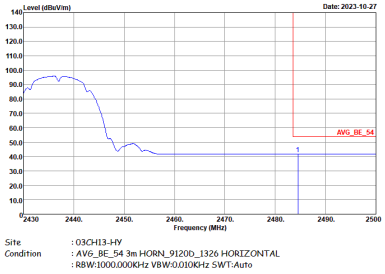
2.4GHz 2400~2483.5MHz

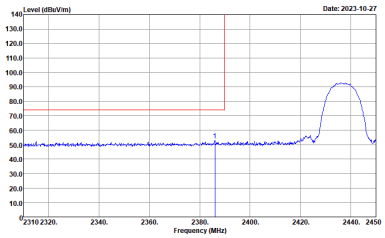
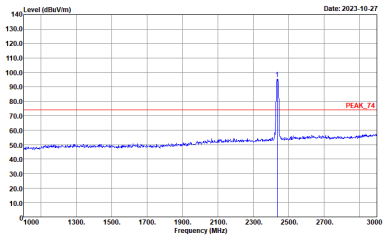
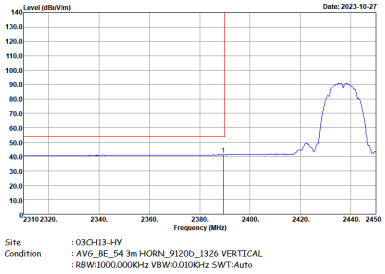
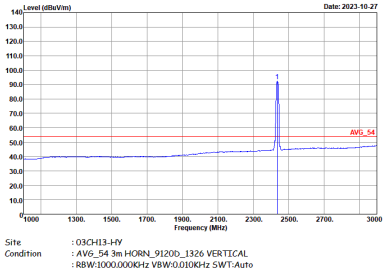
WIFI 802.11b (Band Edge @ 3m)

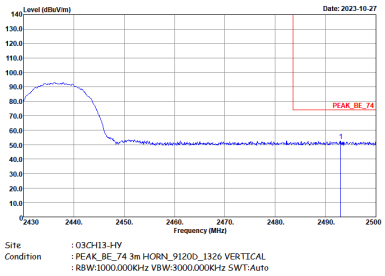
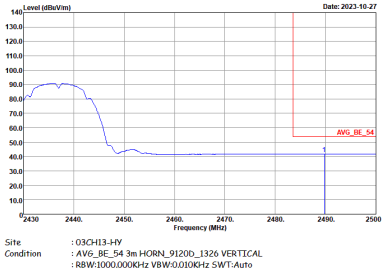
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH01 2412MHz	
	Horizontal	Fundamental
Peak		
Avg.		

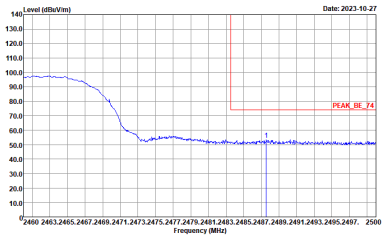
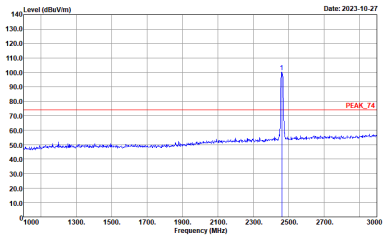
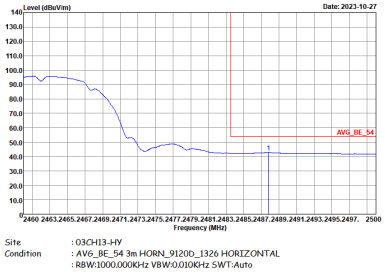
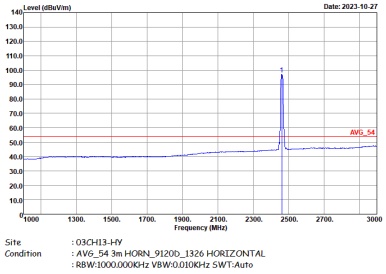
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH01 2412MHz	
	Vertical	Fundamental
Peak		
Avg.		

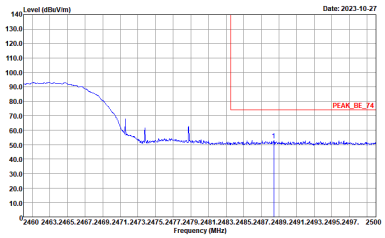
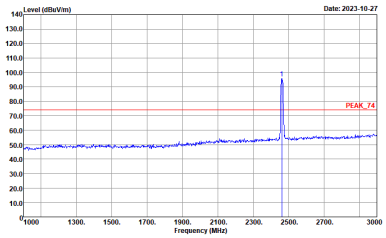
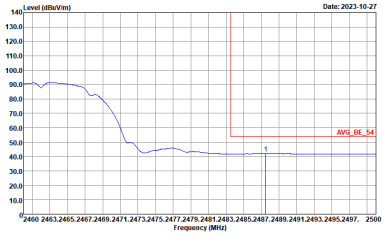
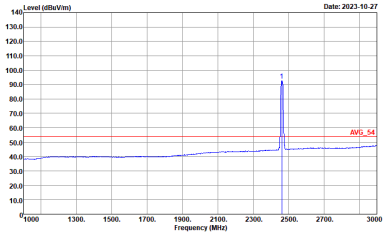
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH06 2437MHz - L	
	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1326 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1326 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

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

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

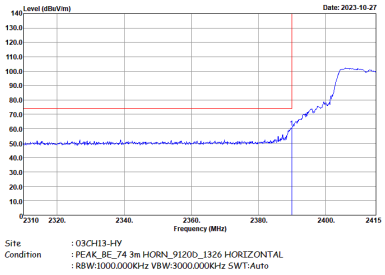
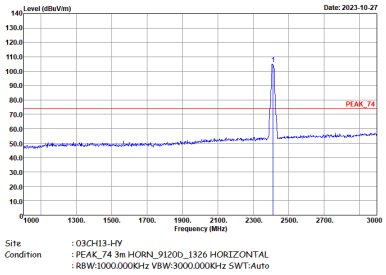
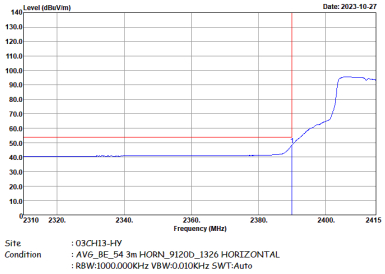
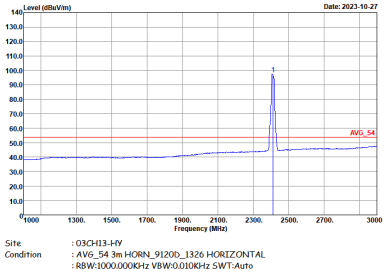
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH06 2437MHz - R	
	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

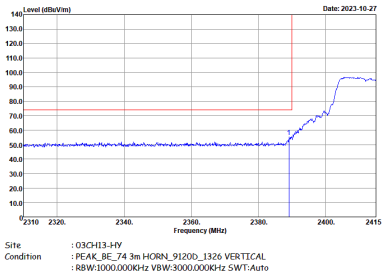
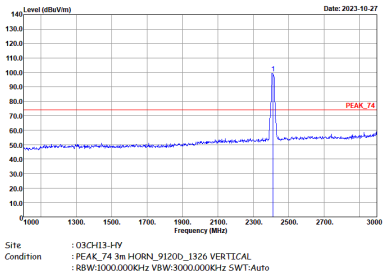
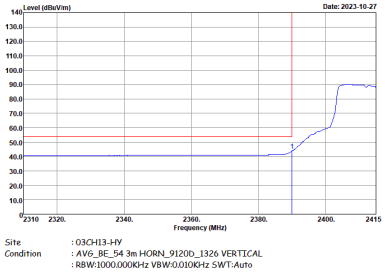
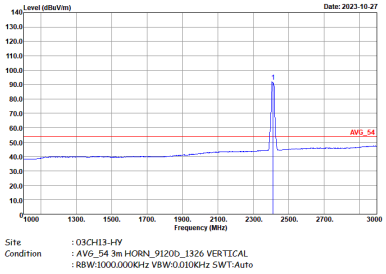
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH11 2462MHz	
	Horizontal	Fundamental
Peak		
Avg.		

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

2.4GHz 2400~2483.5MHz

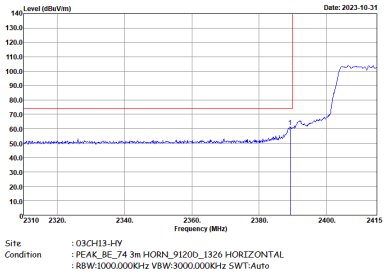
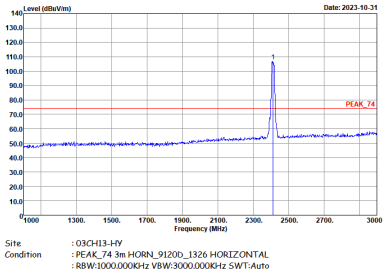
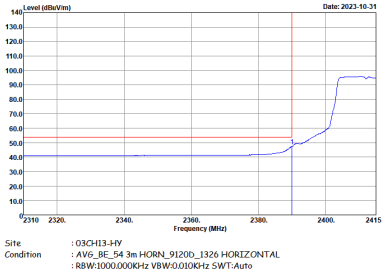
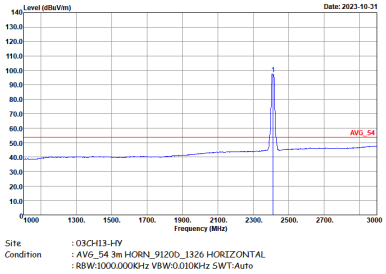
WIFI 802.11g (Band Edge @ 3m)

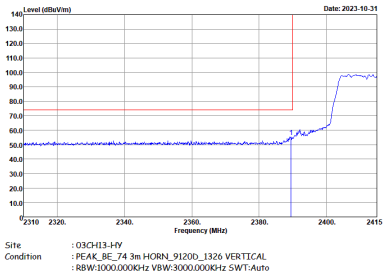
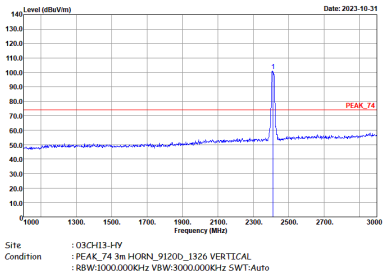
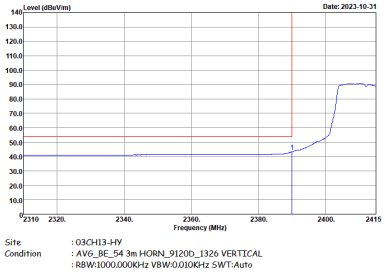
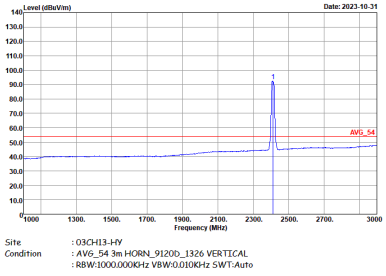
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH01 2412MHz	
	Horizontal	Fundamental
Peak		
Avg.		

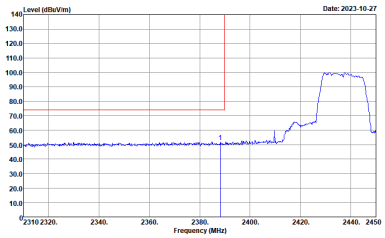
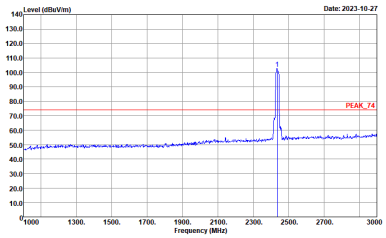
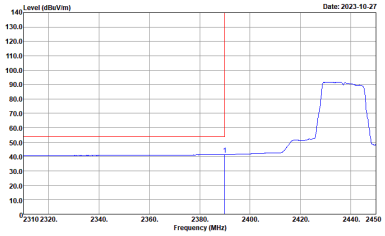
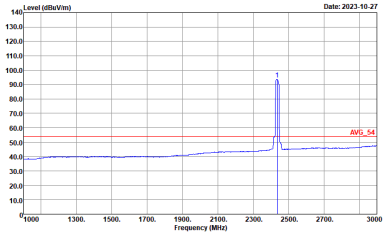
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH01 2412MHz	
	Vertical	Fundamental
Peak		
Avg.		

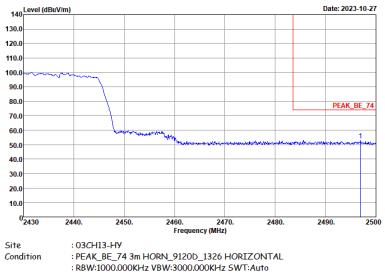
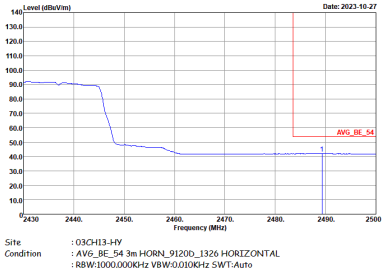
2.4GHz 2400~2483.5MHz

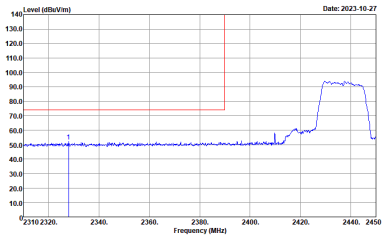
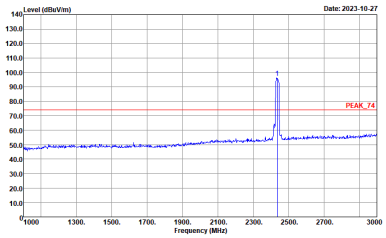
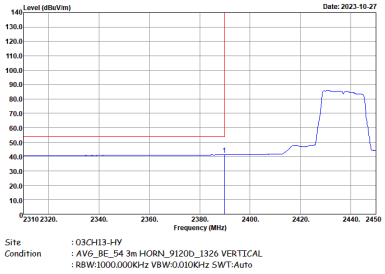
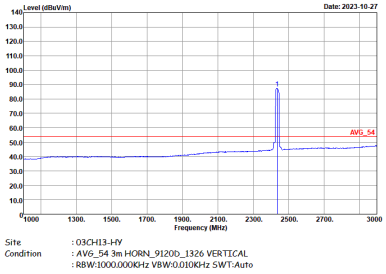
WIFI 802.11n HT20 (Band Edge @ 3m)

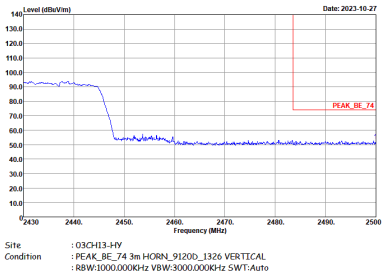
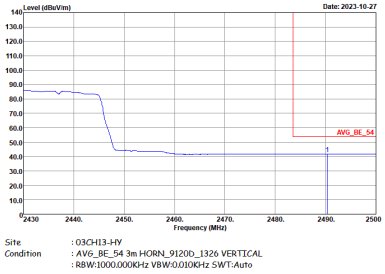
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH01 2412MHz	
	Horizontal	Fundamental
Peak		
Avg.		

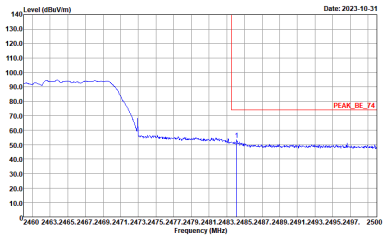
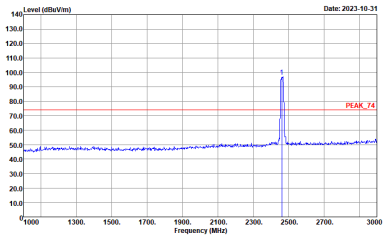
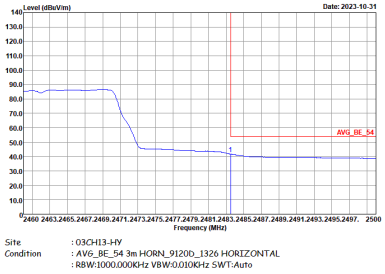
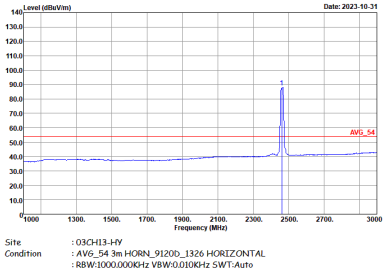
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH01 2412MHz	
	Vertical	Fundamental
Peak		
Avg.		

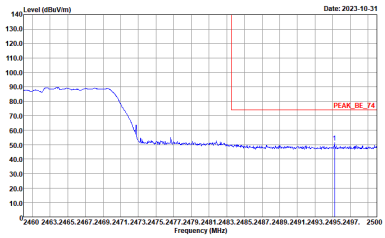
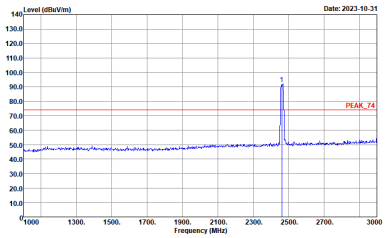
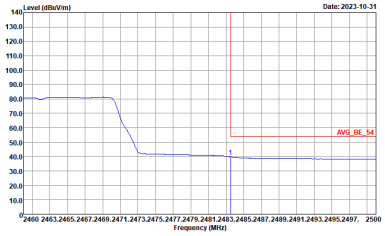
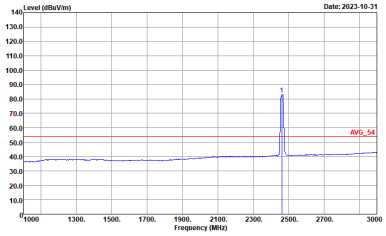
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH06 2437MHz - L	
	Horizontal	Fundamental
Peak		
Avg.		

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

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

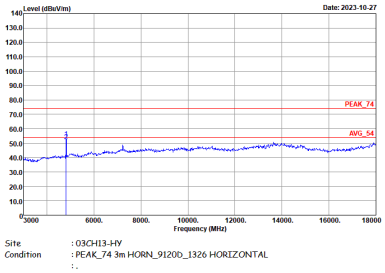
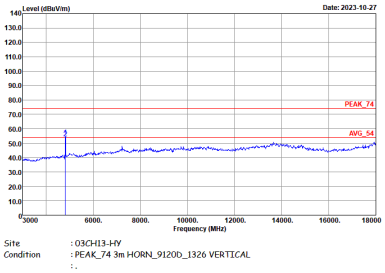
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH06 2437MHz - R	
	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

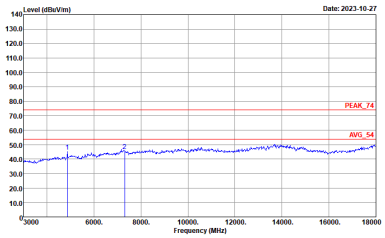
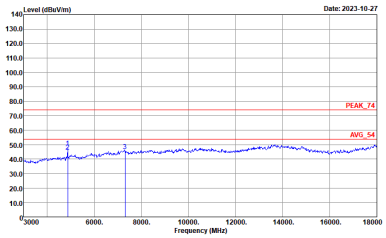
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH11 2462MHz	
	Horizontal	Fundamental
Peak		
Avg.		

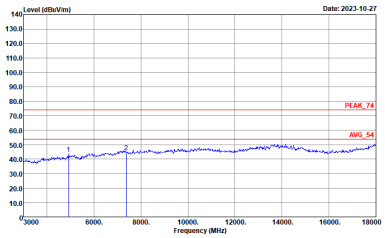
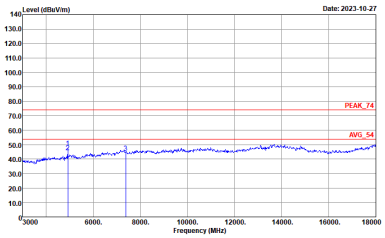
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
	802.11n HT20 CH11 2462MHz	
	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1326 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1326 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

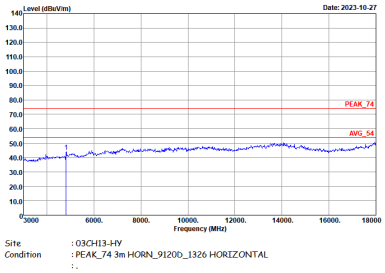
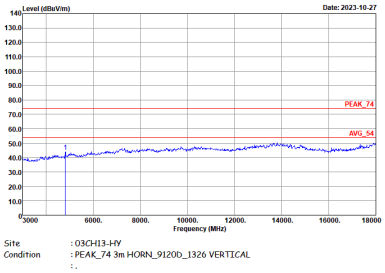
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11b CH01 2412MHz	
	Horizontal	Vertical
Peak Avg.		

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

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11b CH11 2462MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1326 HORIZONTAL : .	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1326 VERTICAL : .

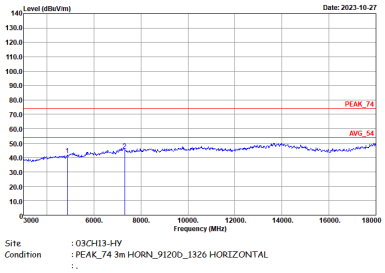
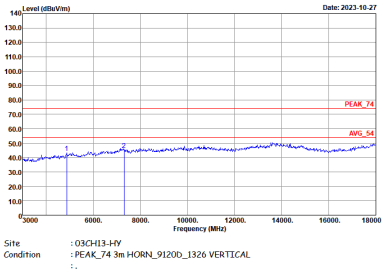
2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

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

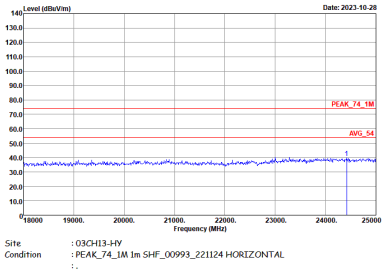
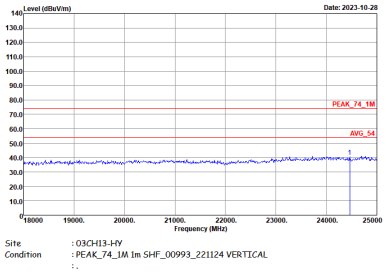
2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

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

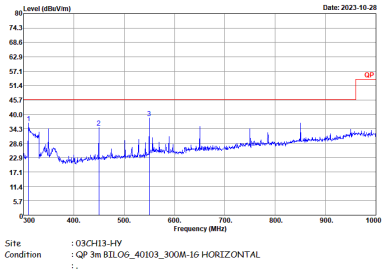
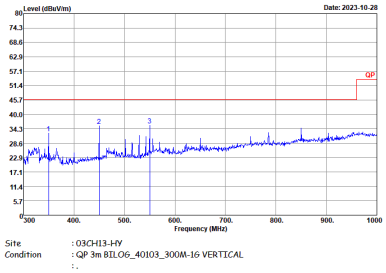
Emission above 18GHz

2.4GHz WIFI 802.11b (SHF @ 1m)

WIFI	2.4GHz 2400~2483.5MHz	
	802.11b SHF	
	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

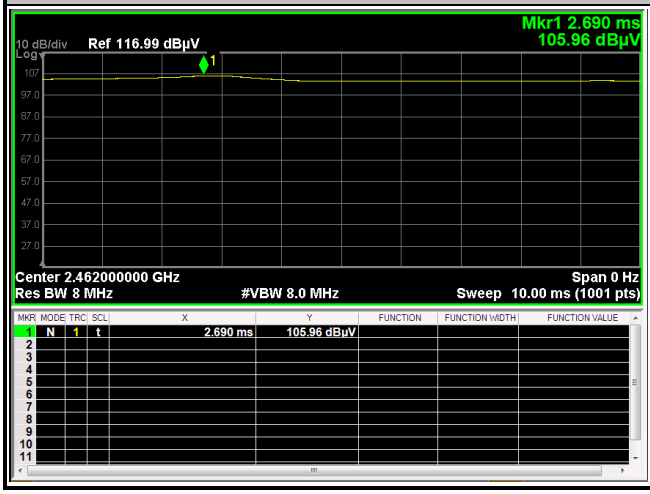
2.4GHz WIFI 802.11b (LF)

WIFI	2.4GHz 2400~2483.5MHz	
	802.11b LF	
	Horizontal	Vertical
QP / Peak		

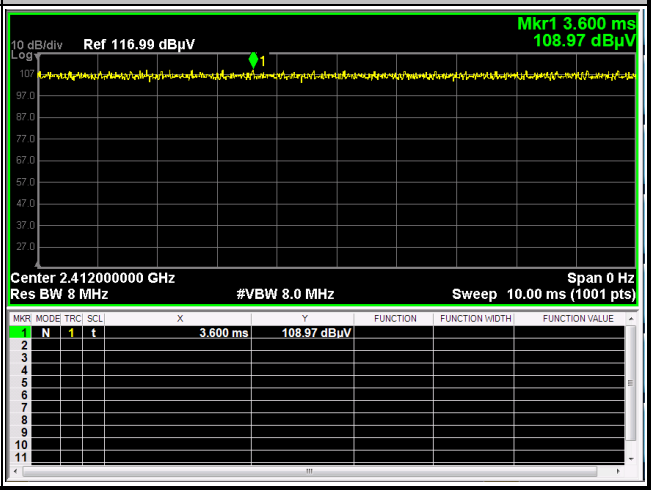
Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	100.00	-	-	10Hz
802.11n HT20	100.00	-	-	10Hz

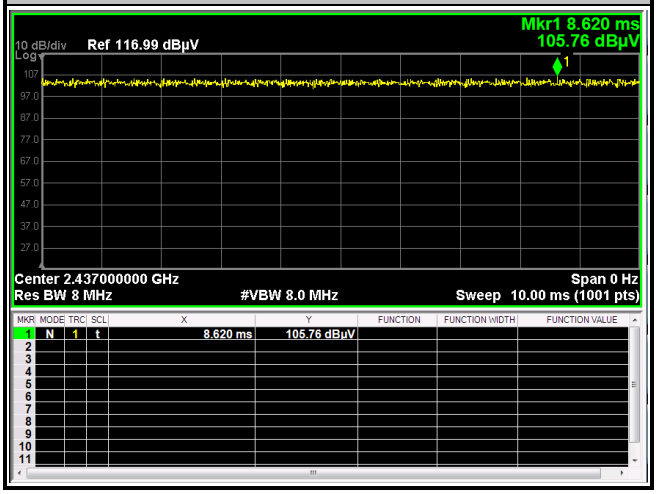
802.11b



802.11g



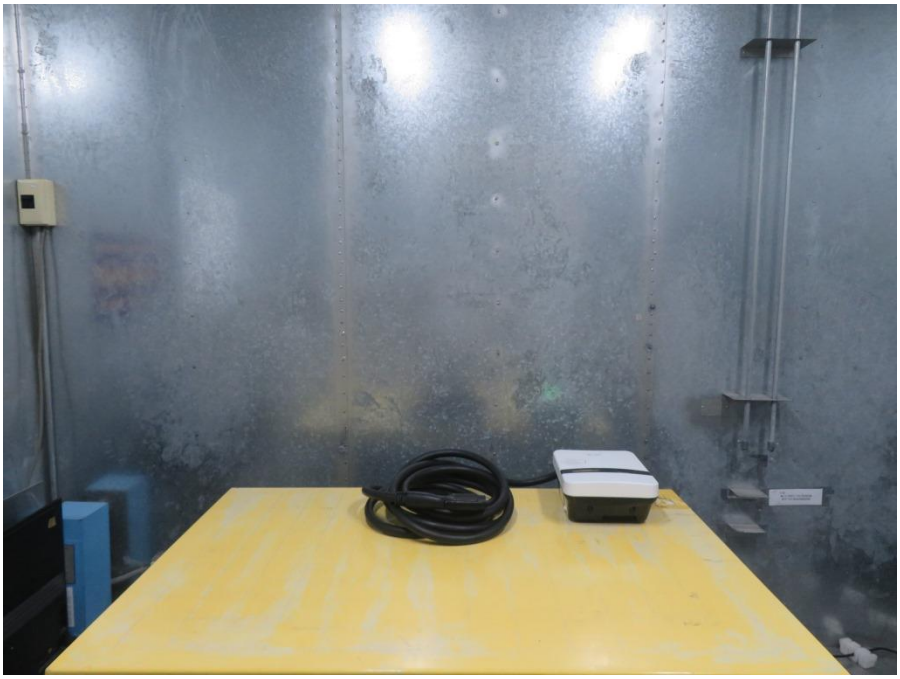
802.11n HT20



Appendix F. Setup Photographs

<Conducted Emission>

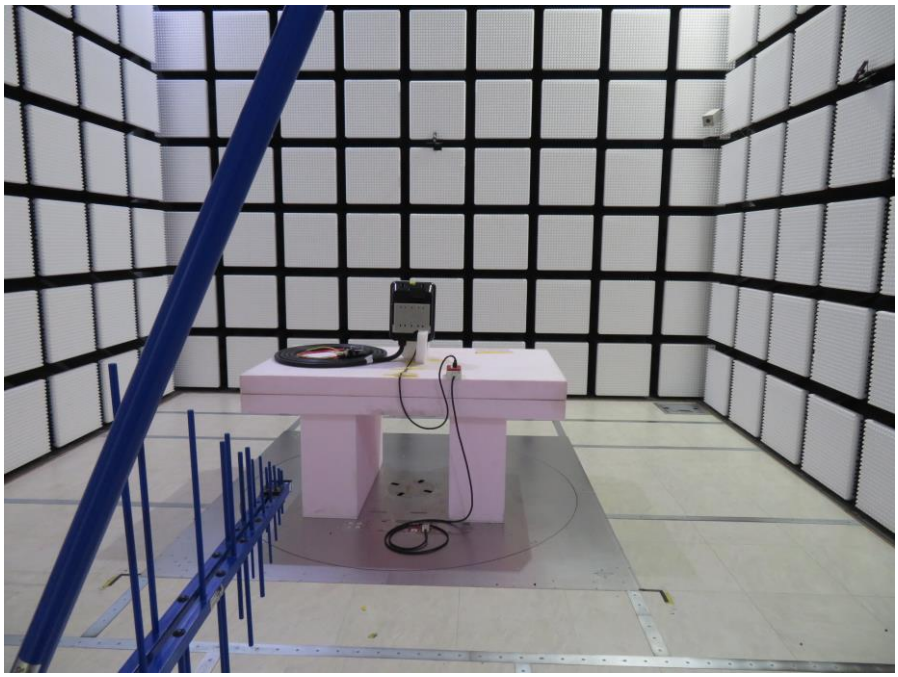
Remote View



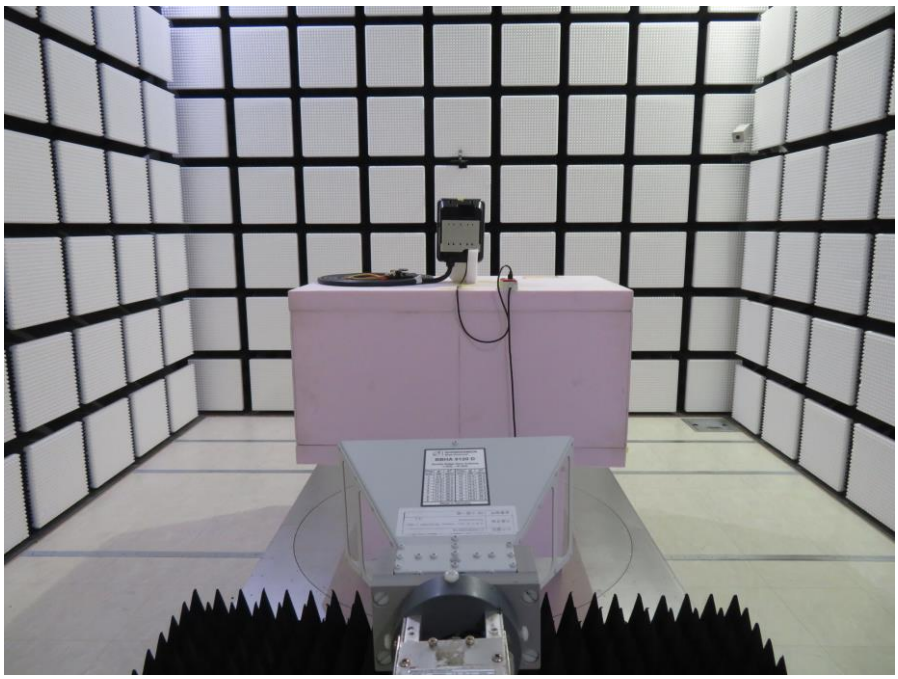
Rear View

<Radiated Emission>

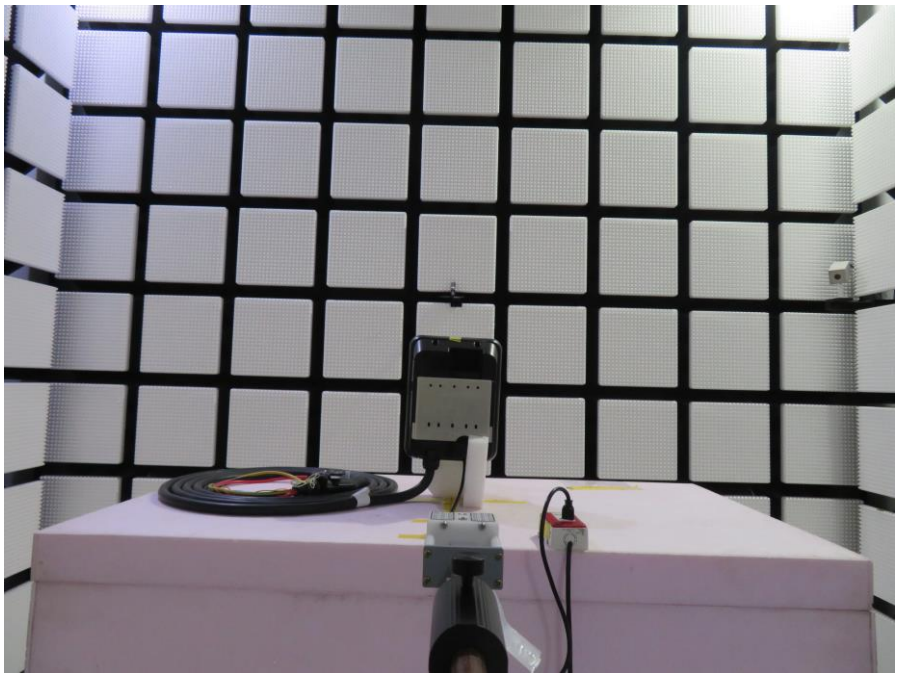
LF



HF



SHF



———THE END———