FCC - TEST REPORT

Report Number	:	**68.950.22.1053.01**	Date of Issue:	**2023-03-15**
Model	:	SUPER HOGSTER LRF 35mm, SUPER YOTER LRF 50mm		
Product Type	:	Thermal Reflex Sight		
Applicant	:	IRay Technology Co., Ltd.		
Address	:	11Guiyang Street, YANTAI Economic and Technological, Development Area, 264006 Yantai, PEOPLE'S REPUBLIC OF CHINA		
Manufacturer	:	IRay Technology Co., Ltd.		
Address	:	11Guiyang Street, YANTAI Economic and Technological, Development Area, 264006 Yantai, PEOPLE'S REPUBLIC OF CHINA		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	**62**		

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2 Details about the Test Laboratory

Details about the Test Laboratory
Test Site 1

Company name:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch Building 12 & 13, Zhiheng Wisdomland Business Park, Guankou Erlu, Nantou, Nanshan District, Shenzhen, Guangdong, China
Telephone:	86 755 8828 6998
Fax:	86 755 8828 5299
FCC Registration No.:	514049
FCC Designation Number:	CA5009

3 Description of the Equipment Under Test

Product:	Thermal Reflex Sight
Model no.:	SUPER HOGSTER LRF 35mm, SUPER YOTER LRF 50mm
FCC ID:	2AYGT-2S-00
Rating:	6.0VDC, 1.5VDC AA*4 battery
Options and accessories:	USB Cable
RF Transmission Frequency:	2412MHz-2462MHz
No. of Operated Channel:	11
Modulation:	DSSS, OFDM
Antenna Type:	Internal Antenna
Antenna Gain:	2.5dBi
Description of the EUT:	The Equipment Under Test (EUT) is an Thermal Reflex Sight which support Wi-Fi. The TX and RX range is 2412MHz – 2462MHz for 2.4GHz Wi-Fi

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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2020 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to
KDB 558074 D01 15.247 Meas Guidance v05r02,
ANSI C63.10 (2013).

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5 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition		Pages	Test Site	Test Result		
				Pass	Fail	N/A
§15.207	Conducted emission AC power port	/	Site 1	☐	☐	☒
§15.247 (b) (1)	Conducted peak output power	10	Site 1	☒	☐	☐
§15.247(a)(1)	20dB bandwidth	---	---	☐	☐	☒
§15.247(a)(1)	Carrier frequency separation	---	---	☐	☐	☒
§15.247(a)(1)(iii)	Number of hopping frequencies	---	---	☐	☐	☒
§15.247(a)(1)(iii)	Dwell Time	---	---	☐	☐	☒
§15.247(a)(2)	6dB bandwidth and 99% Occupied Bandwidth	11	Site 1	☒	☐	☐
§15.247(e)	Power spectral density	20	Site 1	☒	☐	☐
§15.247(d)	Spurious RF conducted emissions	24	Site 1	☒	☐	☐
§15.247(d)	Band edge	35	Site 1	☒	☐	☐
§15.247(d)	Spurious radiated emissions for transmitter	39	Site 1	☒	☐	☐
§15.203	Antenna requirement	See note 2		☒	☐	☐

Note 1: N/A=Not Applicable.
Note 2: The EUT uses an internal antenna, which gain is 2.5 dBi. In accordance to §15.203, It is considered sufficiently to comply with the provisions of this section.

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6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AYGT-2S-00, complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

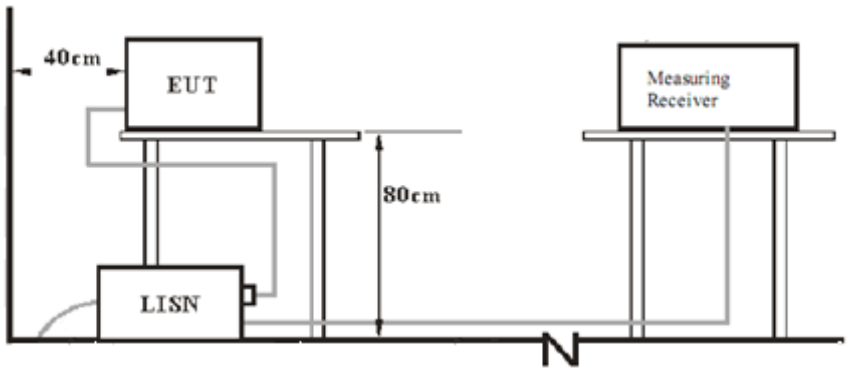
Sample Received Date:	2022-11-17
Testing Start Date:	2022-11-29
Testing End Date:	2022-12-13

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Reviewed by:	Prepared by:	Tested by:
John Zhi	Warlen Song	Carry Cai
Project Manager	Project Engineer	Test Engineer

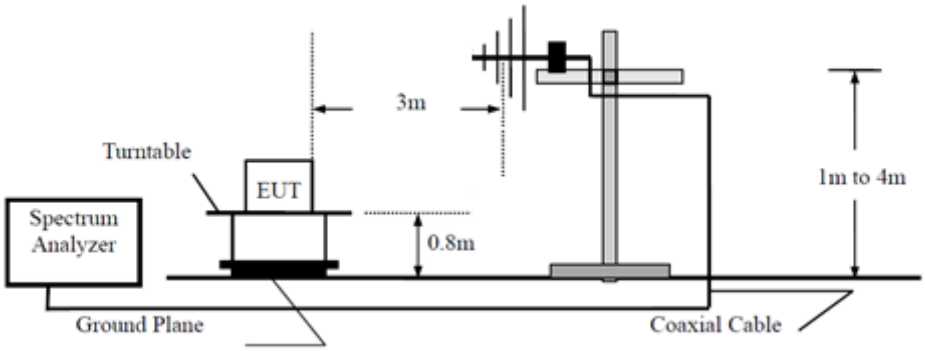
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

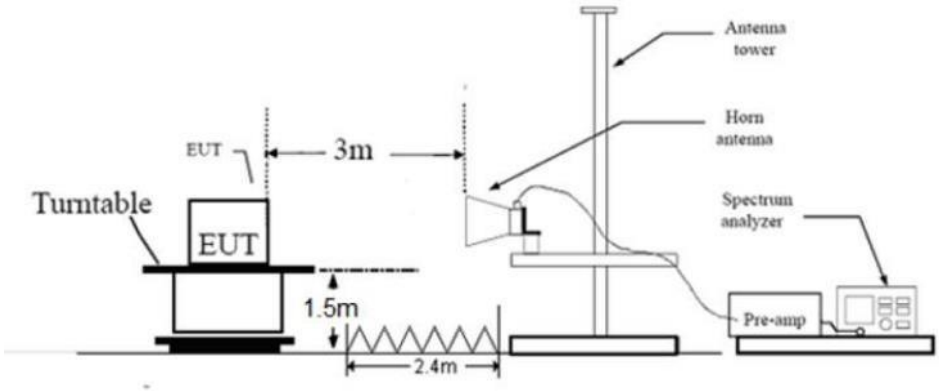


7.2 Radiated test setups

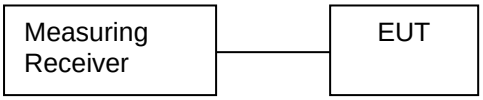
Below 1GHz



Above 1GHz



7.3 Conducted RF test setups



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8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
PC	Lenovo	X240	---

The system was configured to non-hopping mode.

Non-hopping mode: The system was configured to operate at a signal channel transmitting. The test software allows the configuration and operation at the worst-case duty and the highest transmit power.

Power Setting:

Operation Mode	Setting
11b	17
11g	17
11n20	17

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9 Technical Requirement

9.1 Conducted peak output power

Test Method

1. The EUT was placed on 0.8m height table, the RF output of EUT was connected to the power meter by RF cable. The path loss was compensated to the results for each measurement.
2. Setting the highest output power level of the EUT
3. Record the power value.

Limits

According to §15.247 (b) (3), conducted peak output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

Test result as below table

802.11b_ modulation Test Result

Frequency (MHz)	Conducted Peak Output Power (dBm)	Result
	Ant 1	
Low channel 2412MHz	16.9	Pass
Middle channel 2437MHz	16.9	Pass
High channel 2462MHz	17.4	Pass

802.11g_ modulation Test Result

Frequency (MHz)	Conducted Peak Output Power (dBm)	Result
	Ant 1	
Low channel 2412MHz	17.3	Pass
Middle channel 2437MHz	17.4	Pass
High channel 2462MHz	17.5	Pass

802.11n20_ modulation Test Result

Frequency (MHz)	Conducted Peak Output Power (dBm)	Result
	Ant 1	
Low channel 2412MHz	17.5	Pass
Middle channel 2437MHz	17.6	Pass
High channel 2462MHz	17.8	Pass

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9.2 6dB bandwidth and 99% Occupied Bandwidth

Test Method for 6 dB Bandwidth

1. Use the following spectrum analyzer settings:
RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

Test Method for 99 % Bandwidth

1. Use the following spectrum analyzer settings:
RBW=1% to 5% of the actual occupied, VBW≥3RBW, Sweep = auto,
Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

Limit [kHz]
≥500

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6dB Bandwidth

TestMode	Antenna	Channel [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
11B	Ant0	2412	7.640	2408.040	2415.680	0.5	PASS
	Ant0	2437	10.160	2431.640	2441.800	0.5	PASS
	Ant0	2462	7.360	2458.240	2465.600	0.5	PASS
11G	Ant0	2412	16.440	2403.760	2420.200	0.5	PASS
	Ant0	2437	16.440	2428.760	2445.200	0.5	PASS
	Ant0	2462	16.440	2453.760	2470.200	0.5	PASS
11N20	Ant0	2412	15.800	2403.800	2419.600	0.5	PASS
	Ant0	2437	15.400	2429.400	2444.800	0.5	PASS
	Ant0	2462	15.720	2454.200	2469.920	0.5	PASS

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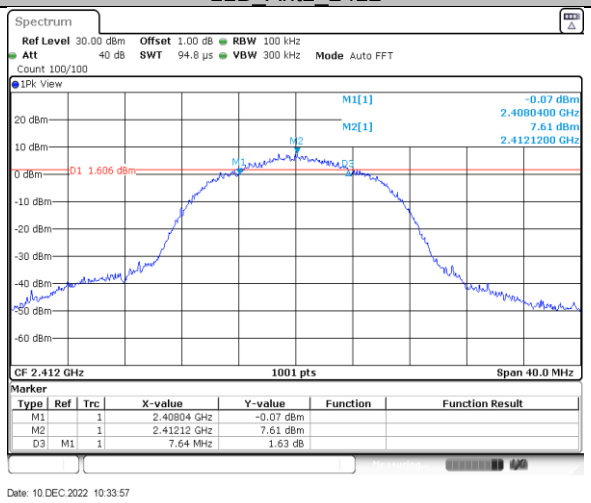

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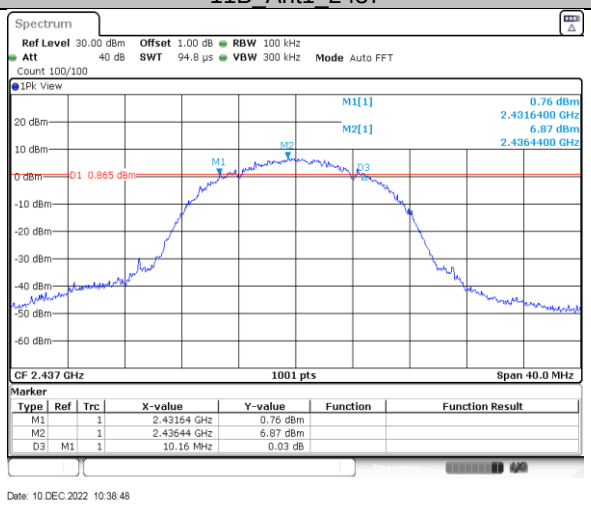

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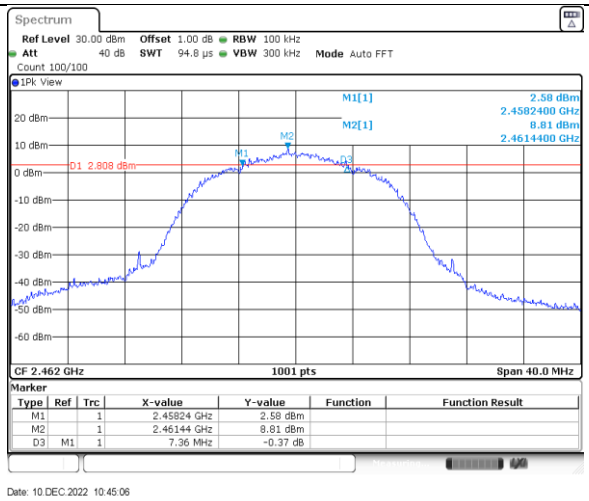

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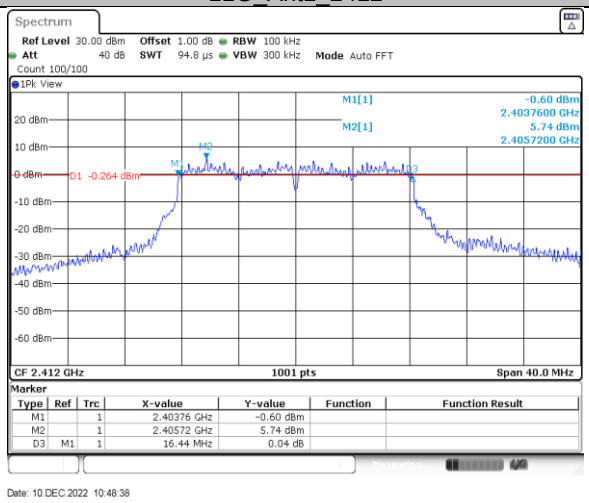

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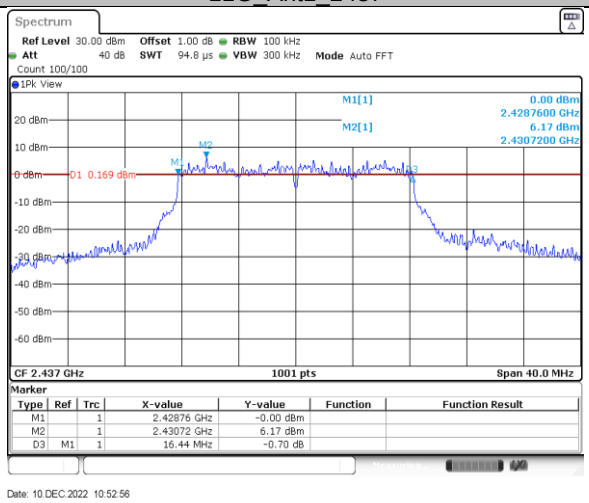

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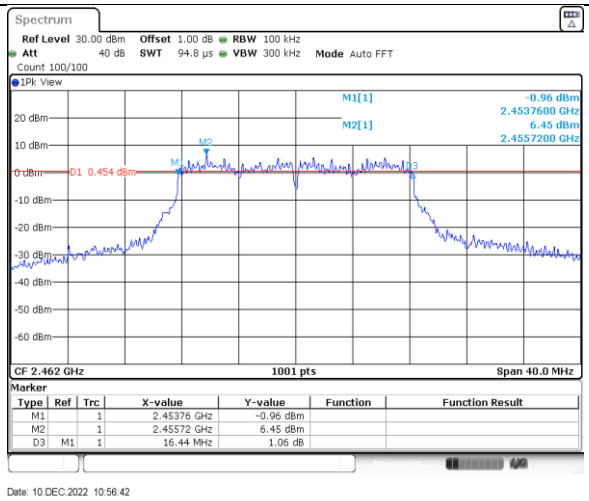

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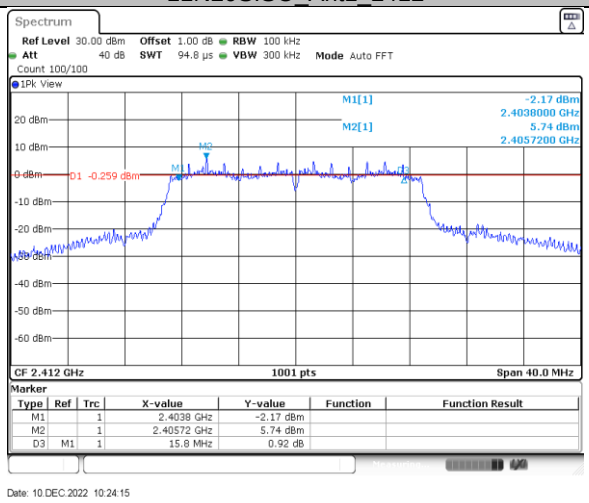

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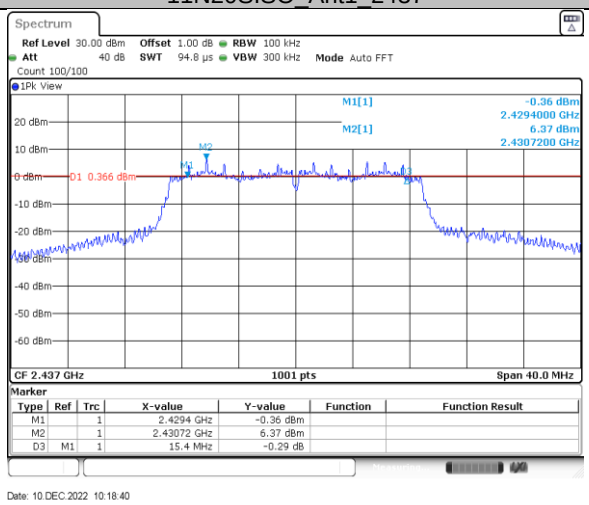

11N20SISO_Ant1_2462

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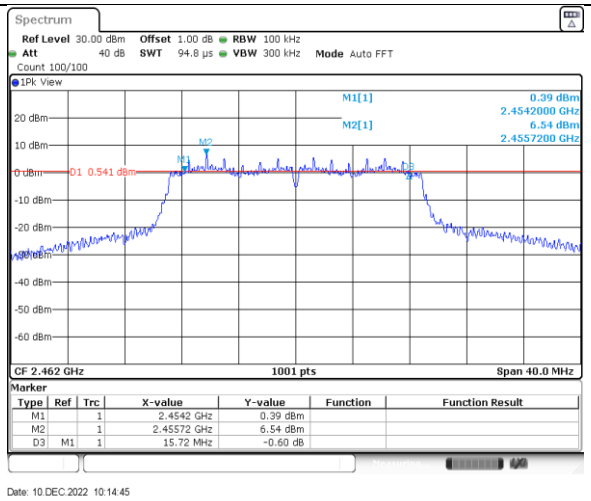

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99% Bandwidth

TestMode	Antenna	Channel [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant0	2412	13.866	2405.087	2418.953	---	PASS
		2437	13.906	2430.047	2443.953	---	PASS
		2462	13.866	2455.047	2468.913	---	PASS
11G	Ant0	2412	17.582	2403.249	2420.831	---	PASS
		2437	17.622	2428.249	2445.871	---	PASS
		2462	17.622	2453.249	2470.871	---	PASS
11N20SISO	Ant0	2412	19.141	2402.569	2421.710	---	PASS
		2437	19.141	2427.569	2446.710	---	PASS
		2462	18.941	2452.649	2471.590	---	PASS

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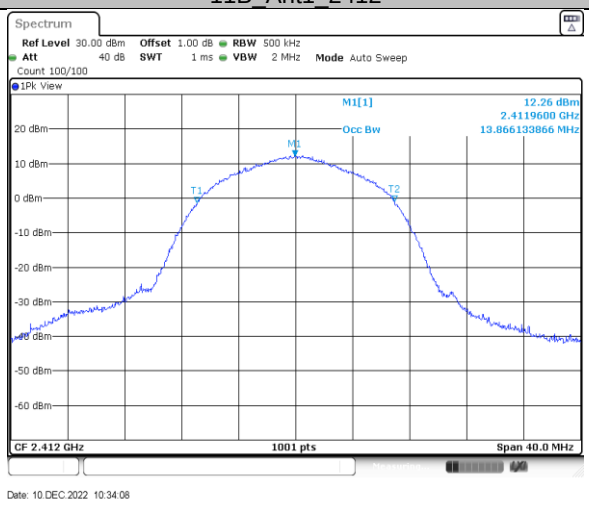

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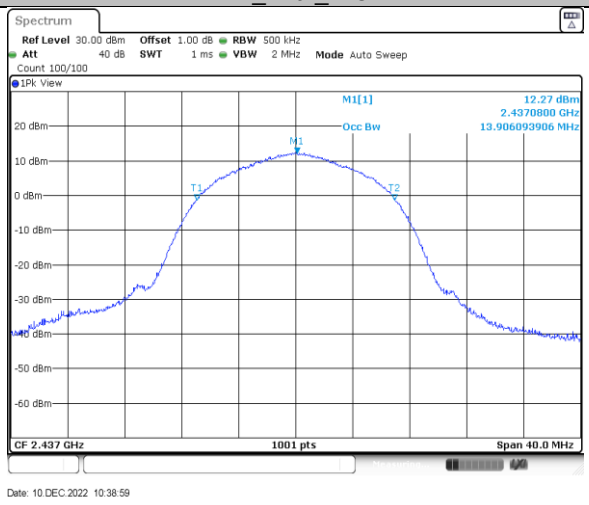

11B_Ant1_2462

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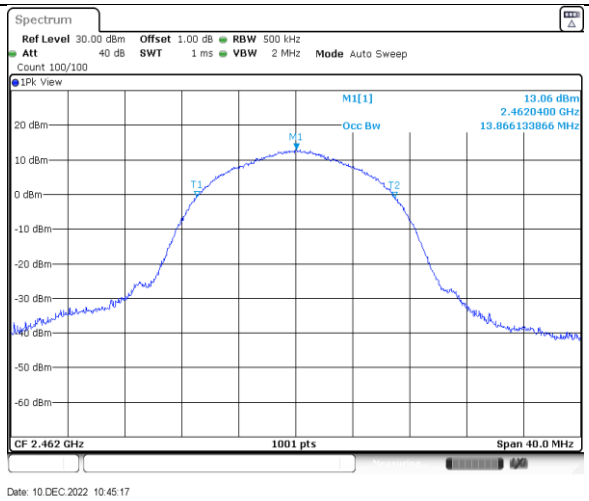

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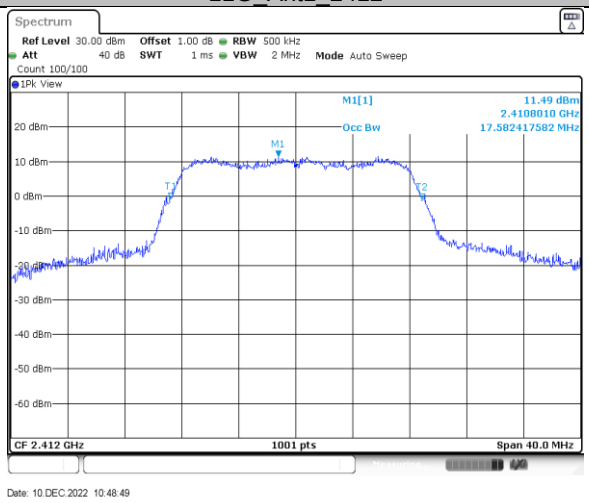

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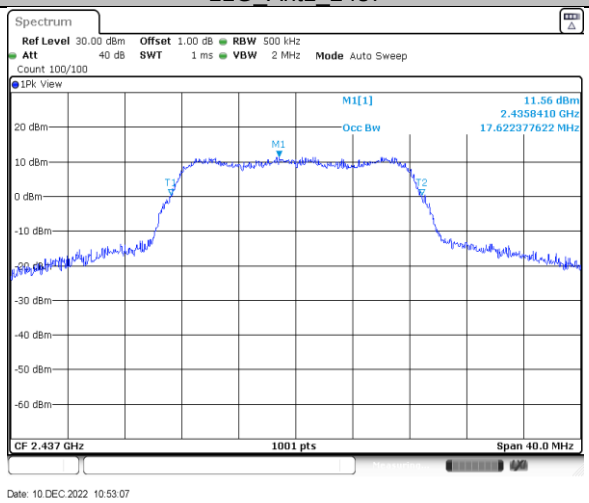

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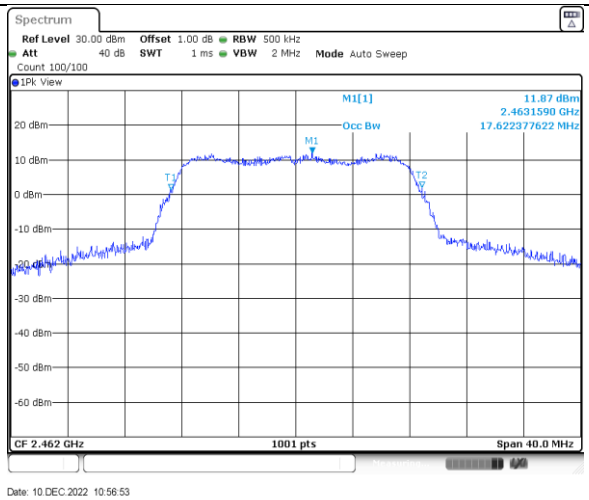

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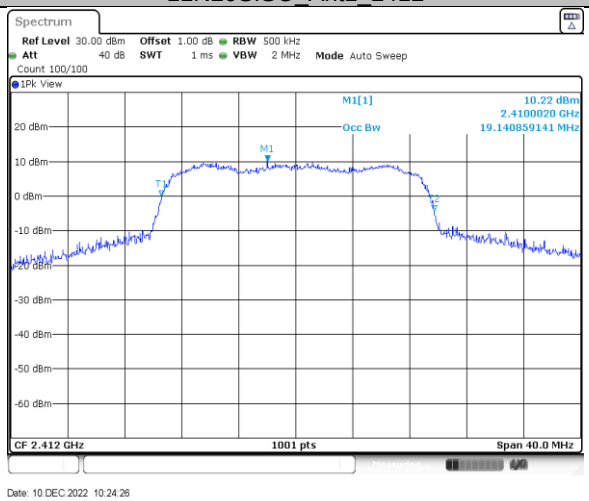

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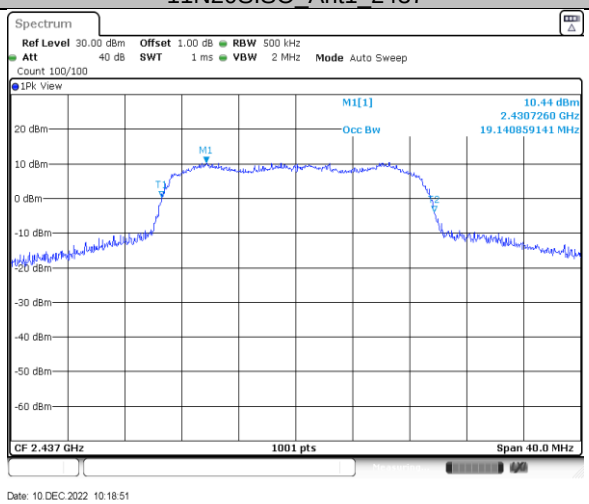

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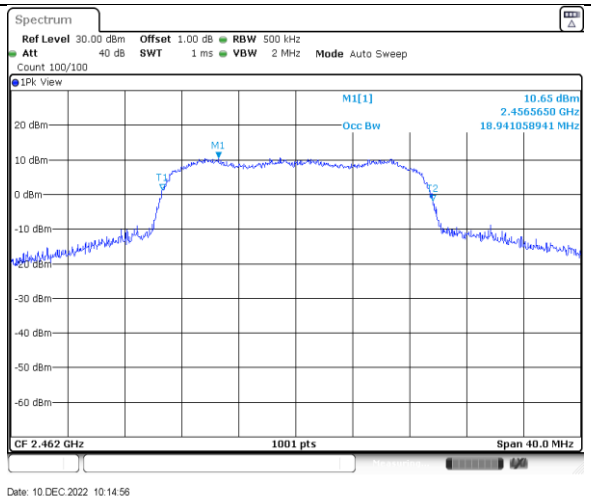

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9.3 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. The RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.
2. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
3. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
4. Repeat above procedures until other frequencies measured were completed.

Limit

Limit [dBm/3KHz
≤8

802.11b modulation Test Result

Frequency (MHz)	Power spectral density (dBm/3KHz)	Limit (dBm)	Result
	Ant 1		
Low channel 2412MHz	-6.99	8	Pass
Middle channel 2437MHz	-6.44	8	Pass
High channel 2462MHz	-5.86	8	Pass

802.11g modulation Test Result

Frequency (MHz)	Power spectral density (dBm/3KHz)	Limit (dBm)	Result
	Ant 1		
Low channel 2412MHz	-9.43	8	Pass
Middle channel 2437MHz	-9.45	8	Pass
High channel 2462MHz	-9.03	8	Pass

802.11n_HT20 modulation Test Result

Frequency (MHz)	Power spectral density (dBm/3KHz)	Limit (dBm)	Result
	Ant 1		
Low channel 2412MHz	-8.13	8	Pass
Middle channel 2437MHz	-8.07	8	Pass
High channel 2462MHz	-8.84	8	Pass

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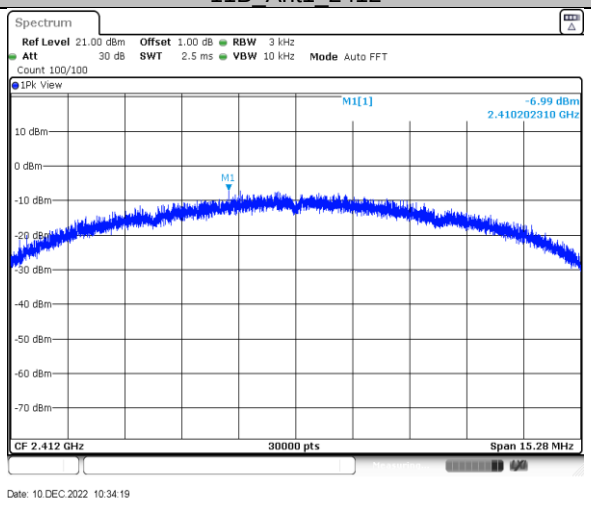
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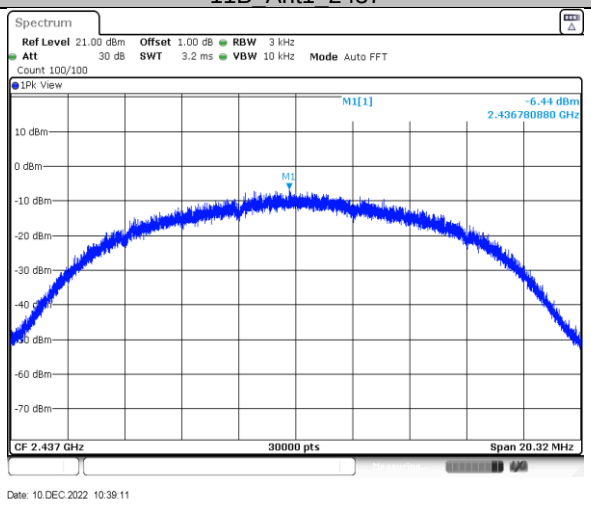
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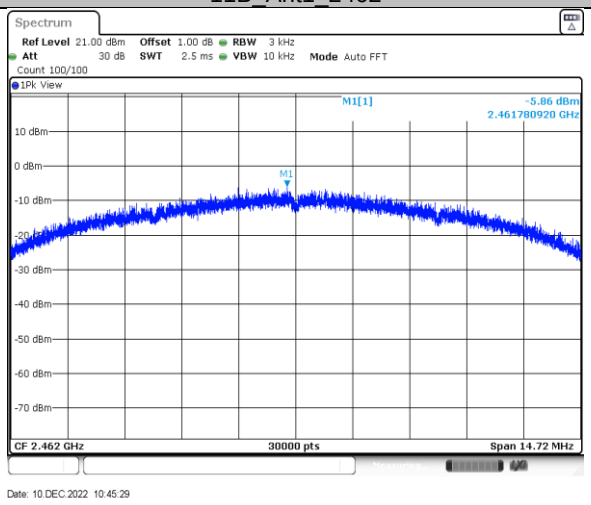
11G_Ant1_2412

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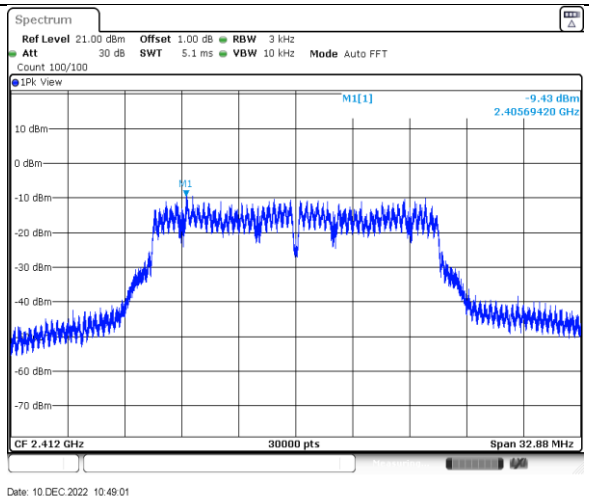
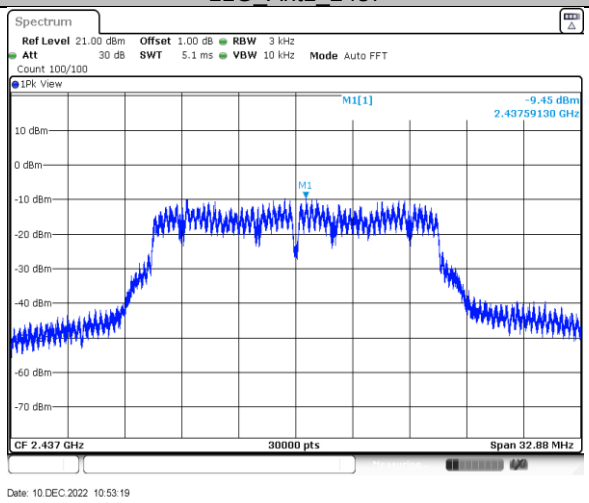
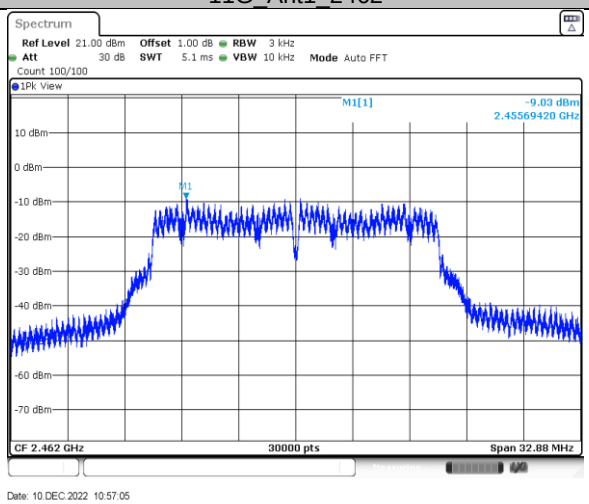


11G_Ant1_2437



11G_Ant1_2462



11N20SISO_Ant1_2412

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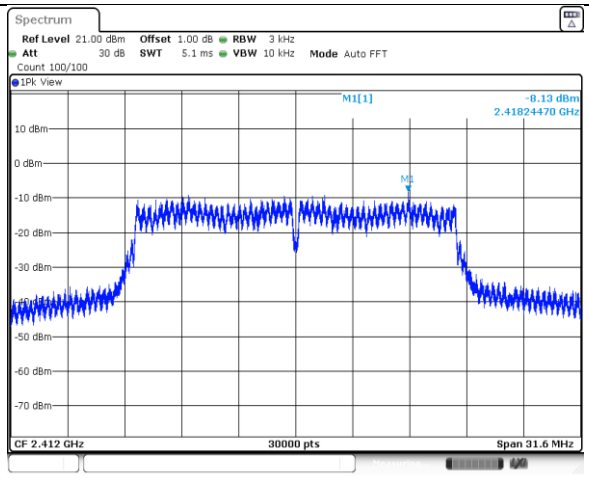
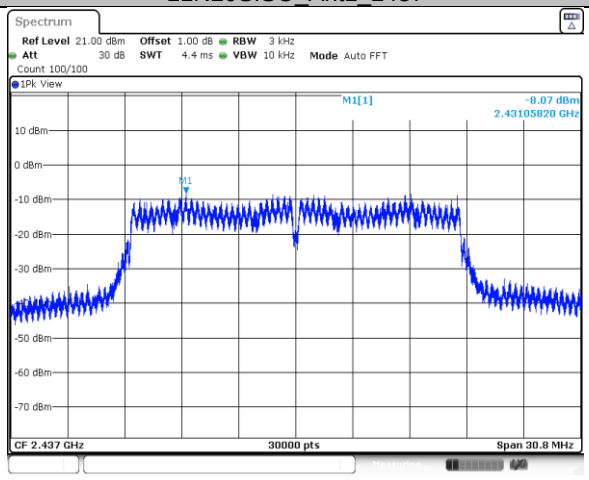
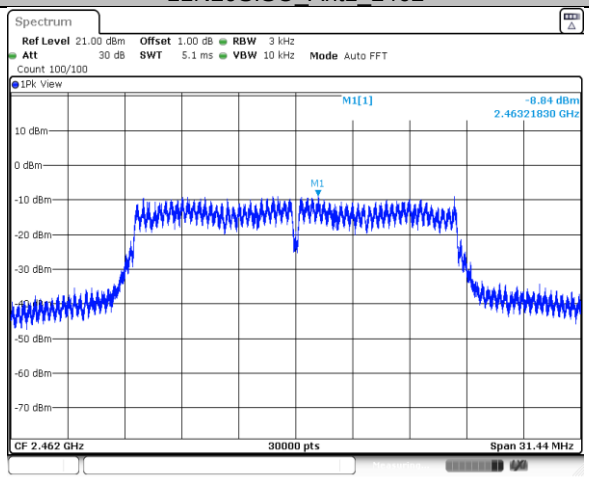


11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



9.4 Spurious RF conducted emissions

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
   RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
3. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
4. The level displayed must comply with the limit specified in this Section. Submit these plots.
5. Repeat above procedures until all frequencies measured were complete.

Limit

Frequency Range MHz	Limit (dBm)
30-25000	-20

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Spurious RF conducted emissions

TestMode	Antenna	Channel(dBm)	FreqRange(MHz)	RefLevel	Result(dBm)	Limit(dBm)	Verdict
11B	Ant0	2412	Reference	6.98 dBm	6.98	---	PASS
			30~1000	30~1000 MHz	-68.45	<=-13.02	PASS
			1000~26500	1000~26500	-39.49	<=-13.02	PASS
	Ant0	2437	Reference	7.56 dBm	7.56	---	PASS
			30~1000	30~1000 MHz	-67.57	<=-12.44	PASS
			1000~26500	1000~26500 MHz	-48.33	<=-12.44	PASS
	Ant0	2462	Reference	7.46 dBm	7.46	---	PASS
			30~1000	30~1000 MHz	-67.89	<=-12.54	PASS
			1000~26500	1000~26500 MHz	-49.86	<=-12.54	PASS
11G	Ant0	2412	Reference	5.67 dBm	5.67	---	PASS
			30~1000	30~1000 MHz	-68.07	<=-14.33	PASS
			1000~26500	1000~26500 MHz	-31.37	<=-14.33	PASS
	Ant0	2437	Reference	6.02 dBm	6.02	---	PASS
			30~1000	30~1000 MHz	-67.92	<=-13.98	PASS
			1000~26500	1000~26500 MHz	-42.58	<=-13.98	PASS
	Ant0	2462	Reference	6.21 dBm	6.21	---	PASS
			30~1000	30~1000 MHz	-68.25	<=-13.79	PASS
			1000~26500	1000~26500 MHz	-38.77	<=-13.79	PASS
11N20SISO	Ant0	2412	Reference	5.45 dBm	5.45	---	PASS
			30~1000	30~1000 MHz	-67.89	<=-14.55	PASS
			1000~26500	1000~26500 MHz	-24.1	<=-14.55	PASS
	Ant0	2437	Reference	5.12 dBm	5.12	---	PASS
			30~1000	30~1000 MHz	-68.16	<=-14.88	PASS
			1000~26500	1000~26500 MHz	-48.99	<=-14.88	PASS
	Ant0	2462	Reference	4.62 dBm	4.62	---	PASS
			30~1000	30~1000 MHz	-67.81	<=-15.38	PASS
			1000~26500	1000~26500 MHz	-34.67	<=-15.38	PASS

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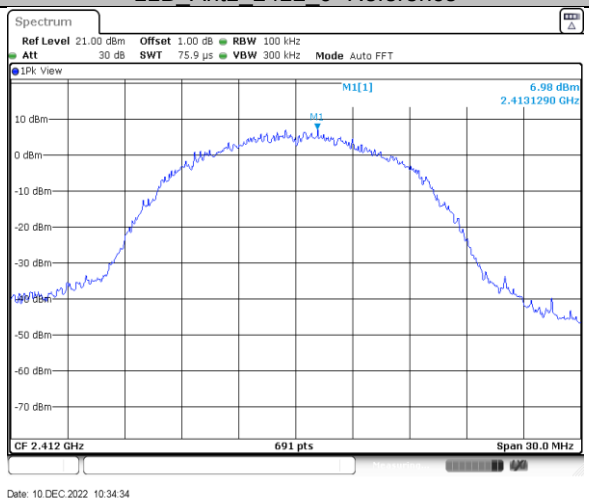
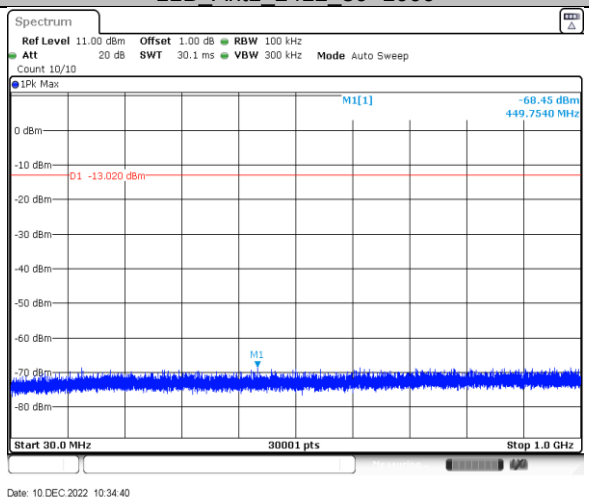
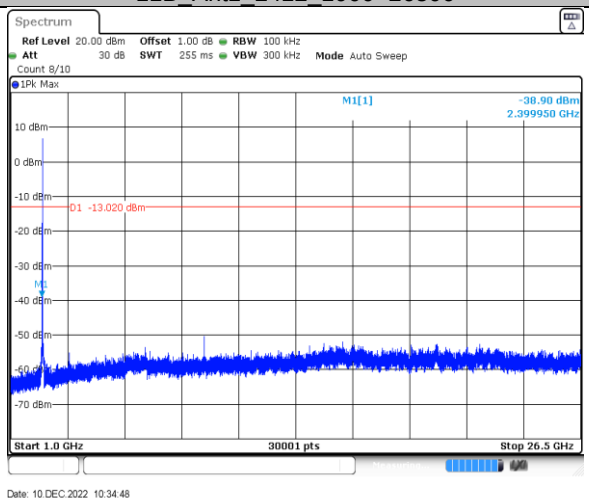
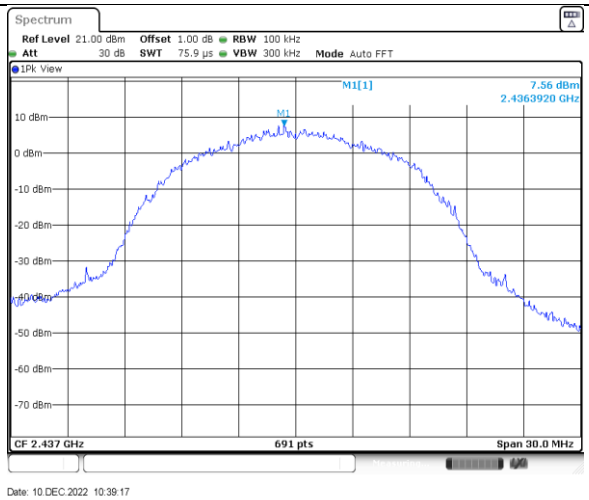
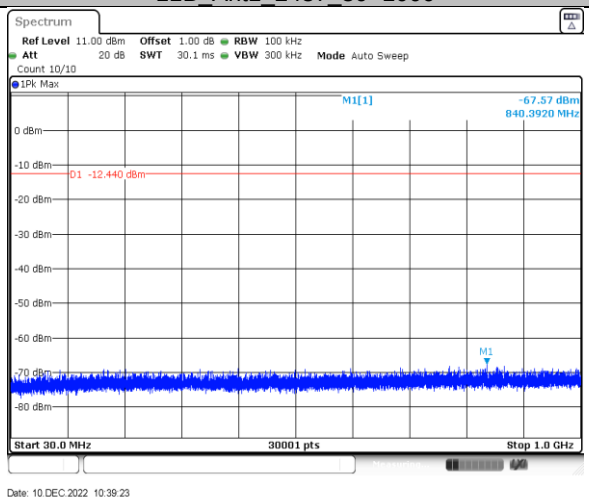
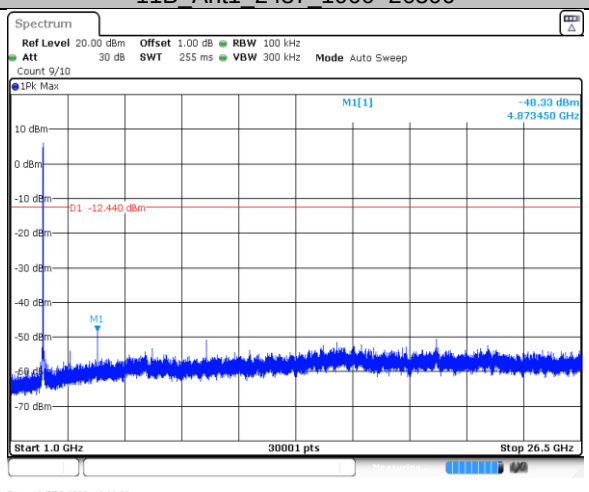
11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

11B_Ant1_2412_1000~26500

11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference

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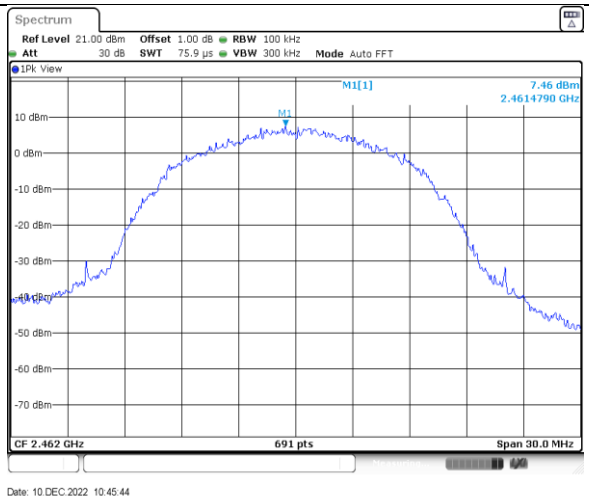
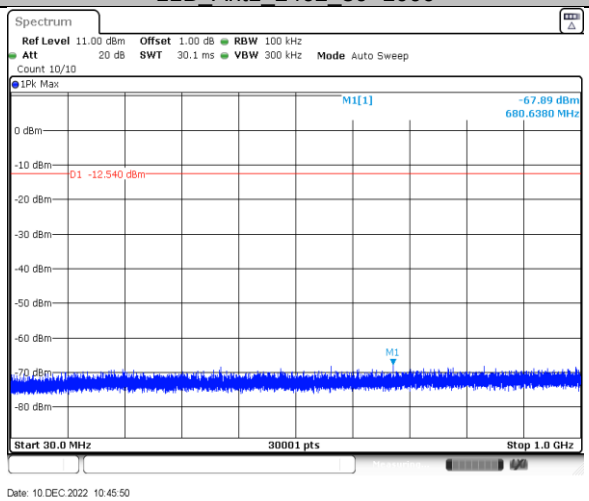
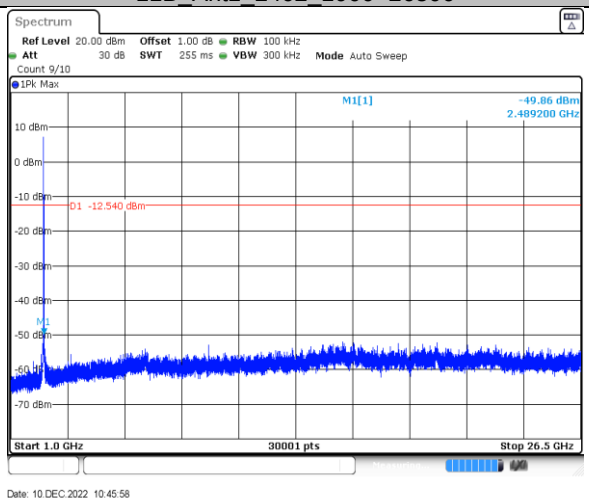


11B_Ant1_2462_30~1000



11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference

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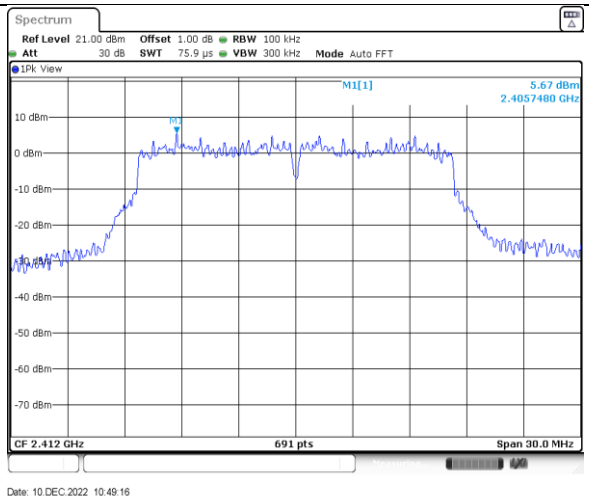

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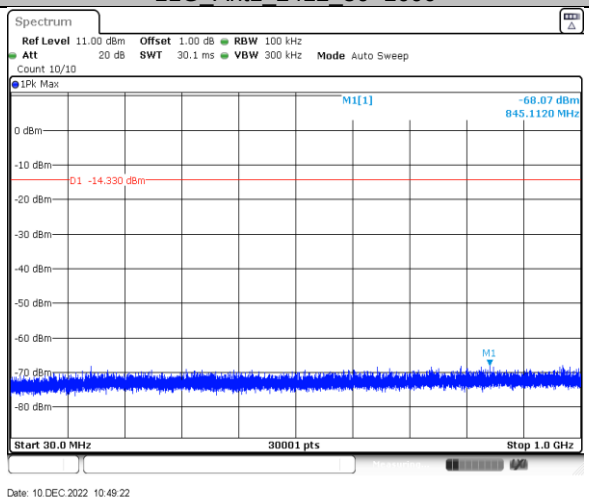
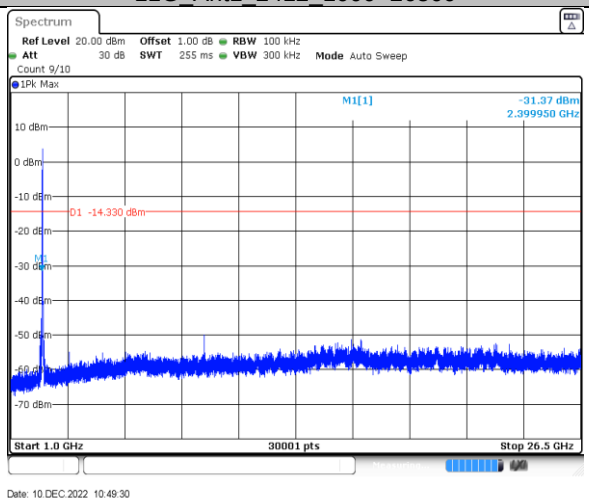


11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference

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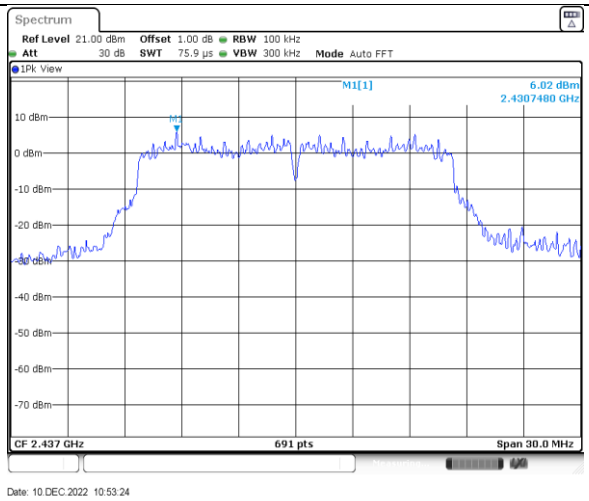

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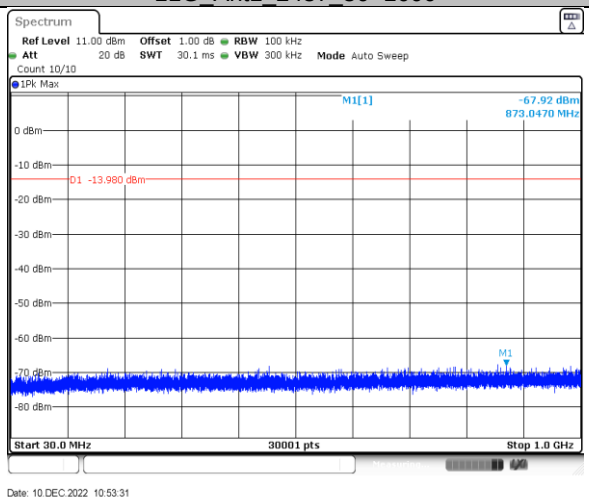
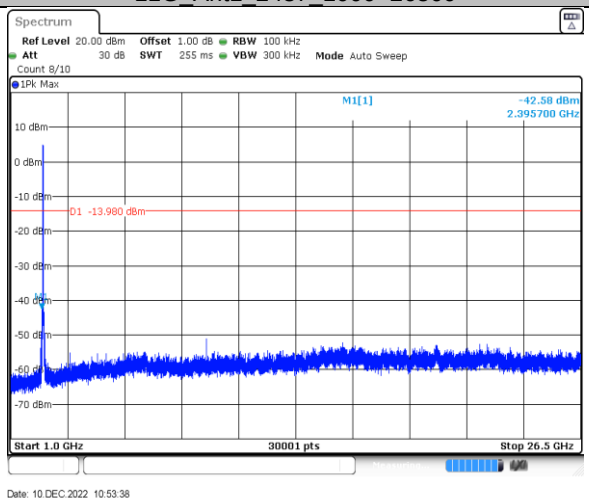


11G_Ant1_2437_1000~26500



11G_Ant1_2462_0~Reference

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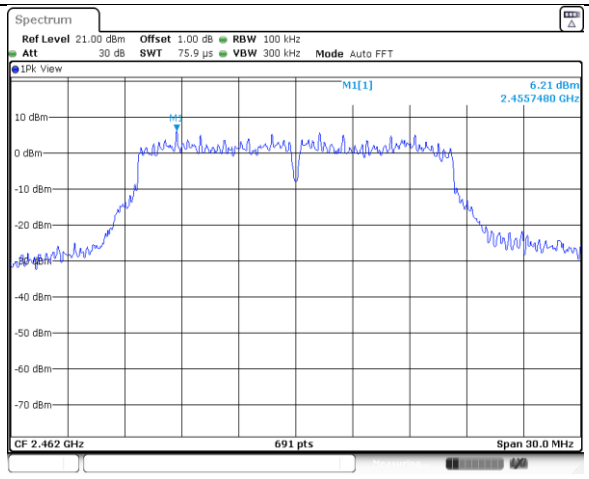

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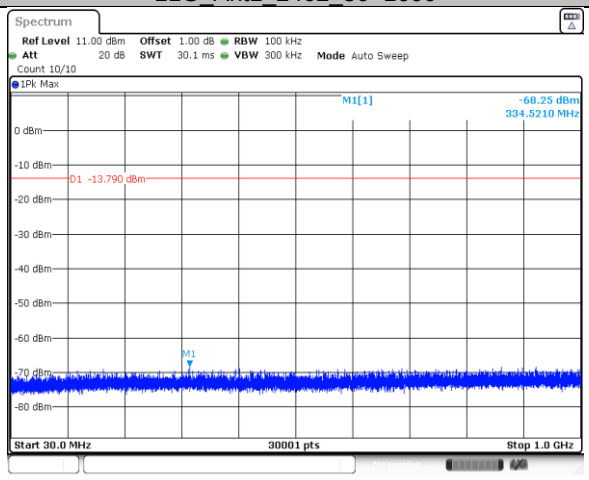
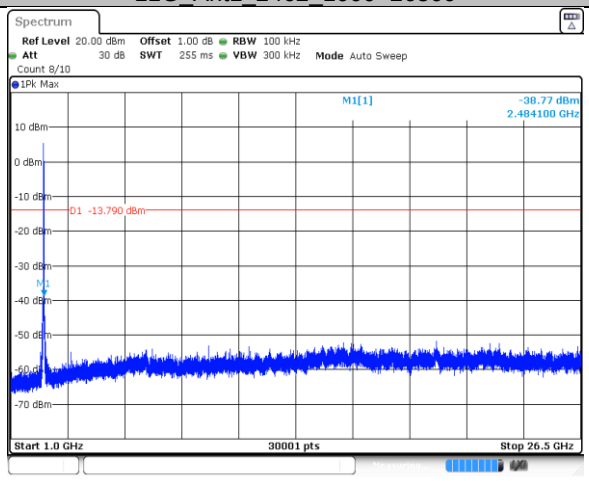


11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference

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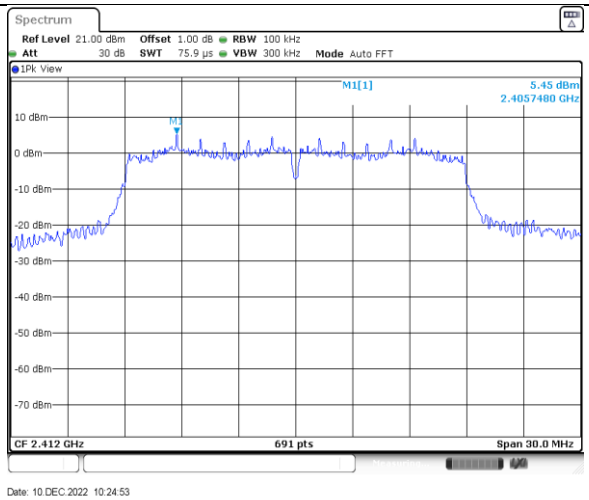
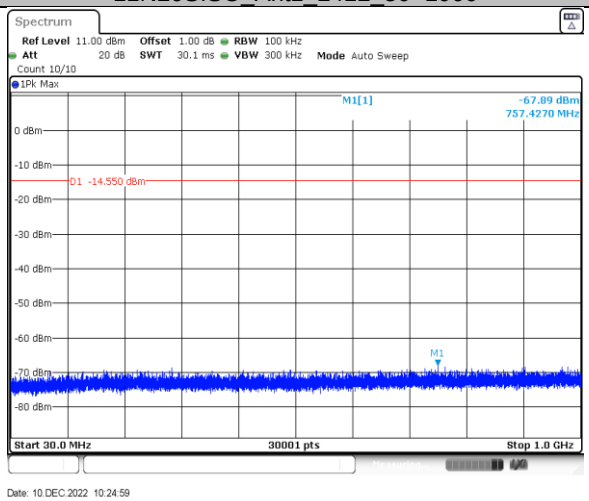
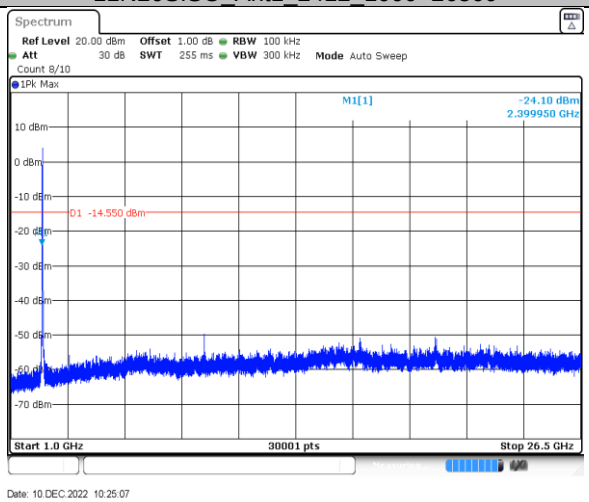


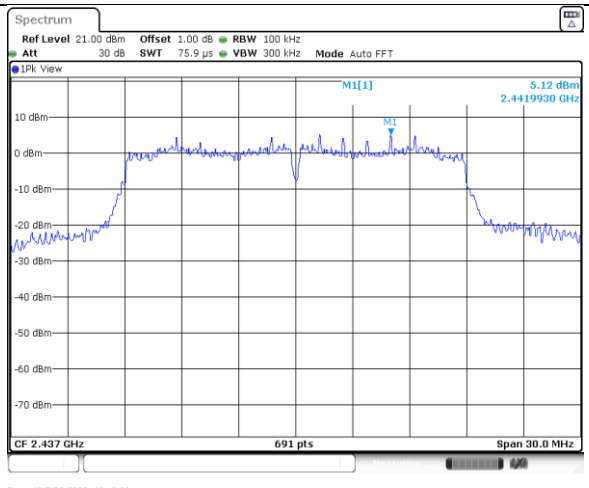
11N20SISO_Ant1_2412_30~1000



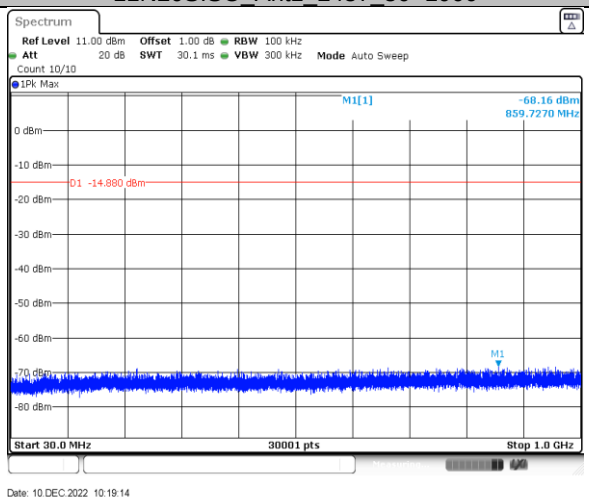
11N20SISO_Ant1_2412_1000~26500



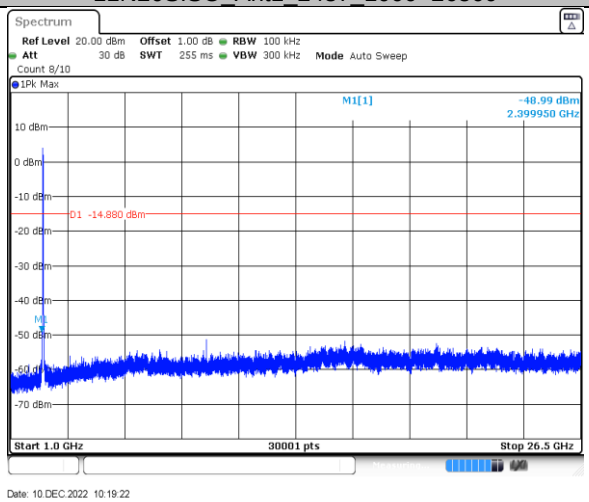
11N20SISO_Ant1_2437_0~Reference



11N20SISO_Ant1_2437_30~1000



11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference

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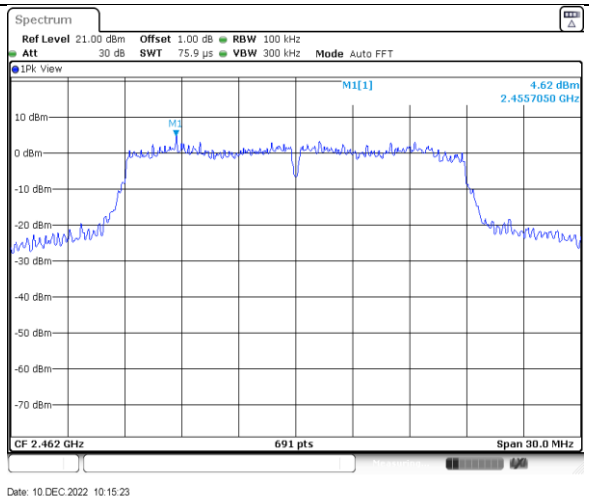
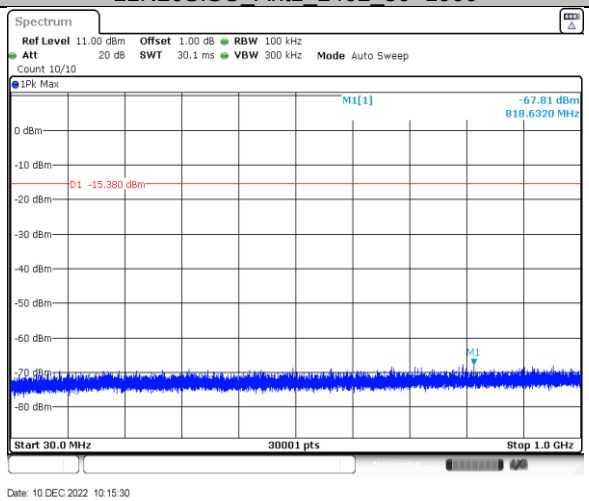
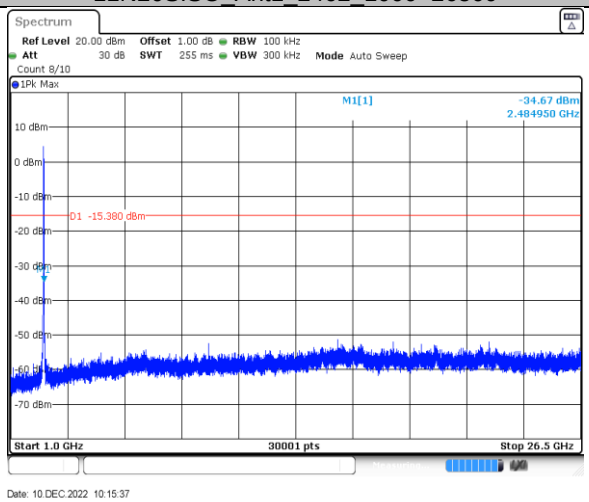


11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



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9.5 Band edge testing

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious
   RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
3. Allow the trace to stabilize, use the peak and delta measurement to record the result.
4. The level displayed must comply with the limit specified in this Section.
5. Repeat the test at the hopping off and hopping on mode, submit all the plots.

Limit:

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Frequency Range MHz	Limit (dBc)
30-25000	-20

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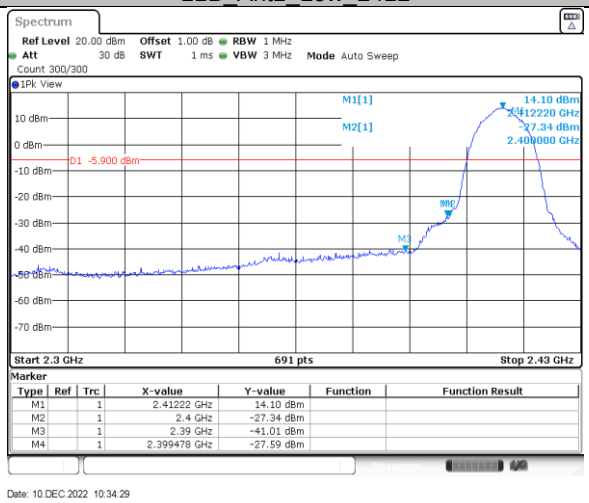
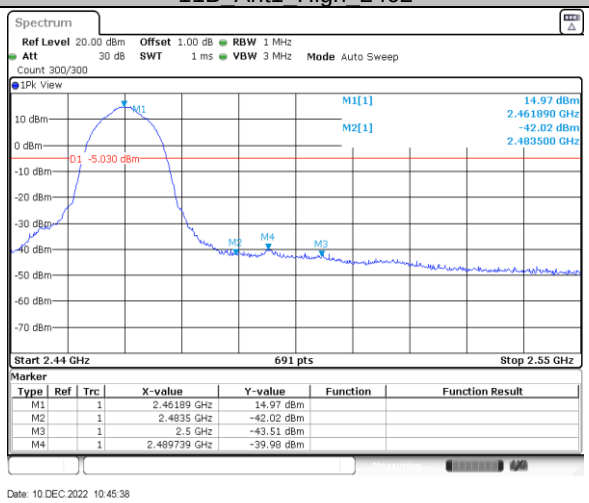
Band edge testing

TestMode	Antenna	ChName	Channel (MHz)	RefLevel (dBm)	Result (dBm)	Limit (dBm)	Verdict
11B	Ant0	Low	2412	14.10	-27.59	<=-5.9	PASS
	Ant0	High	2462	14.97	-39.98	<=-5.03	PASS
11G	Ant0	Low	2412	13.96	-11.57	<=-6.04	PASS
	Ant0	High	2462	15.14	-17.57	<=-4.86	PASS
11N20	Ant0	Low	2412	12.86	-8.04	<=-7.14	PASS
	Ant0	Low	2462	14.07	-12.65	<=-5.93	PASS

11B_Ant1_Low_2412



11B_Ant1_High_2462



11G_Ant1_Low_2412

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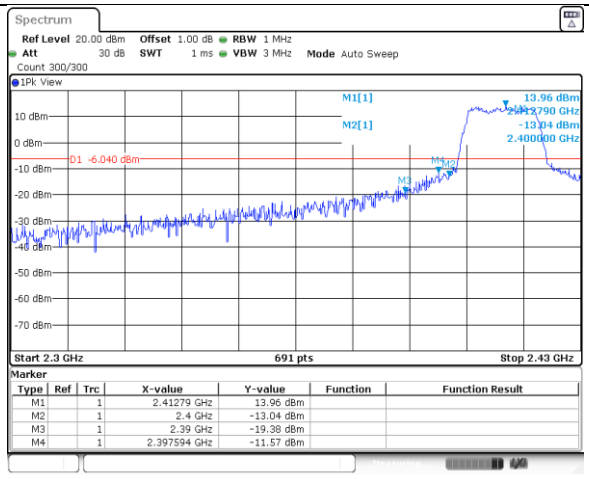
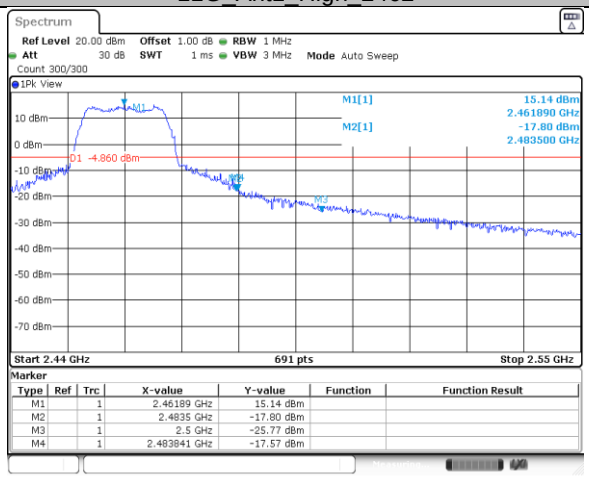
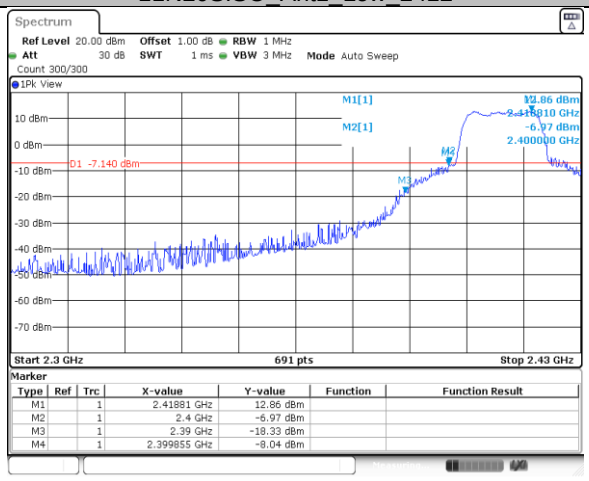


11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462

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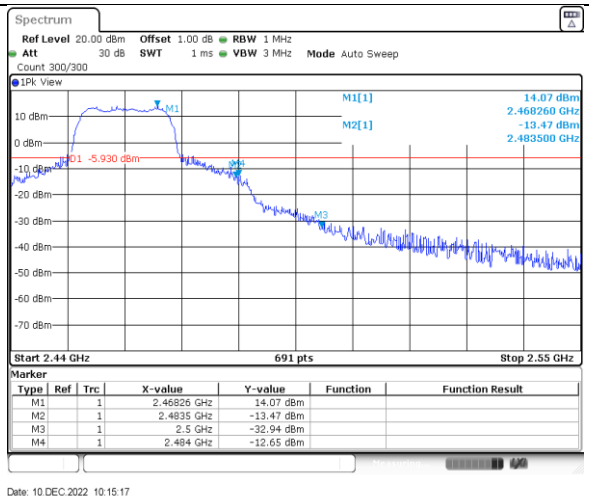

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9.6 Spurious radiated emissions for transmitter

Test Method

1. The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
4. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
5. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
6. Use the following spectrum analyzer settings According to C63.10:
   For Below 1GHz
   Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious
   RBW = 100 KHz to 120KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

   For Peak unwanted emissions Above 1GHz:
   Span = wide enough to capture the peak level of the in-band emission and all spurious
   RBW = 1MHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.
   Procedures for average unwanted emissions measurements above 1000 MHz
   a) RBW = 1MHz.
   b) VBW \ [3 × RBW].
   c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
   d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
   e) Sweep time = auto.
   f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)
   g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
   1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty

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cycle was 50%, then 3 dB shall be added to the measured emission levels.
2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength µV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

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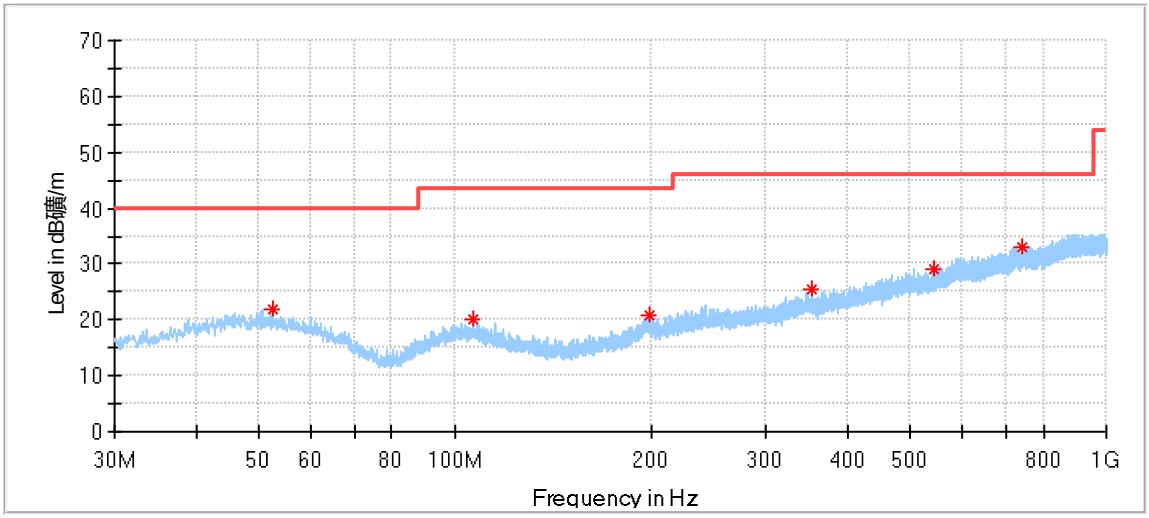
Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Transmitting spurious emission test result as below:

30MHz to 1000MHz:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
52.417778	22.04	40.00	17.96	200.0	H	82.0	20.83
106.845556	20.26	43.50	23.24	200.0	H	0.0	18.35
198.348889	20.67	43.50	22.83	100.0	H	220.0	18.81
353.117778	25.51	46.00	20.49	200.0	H	286.0	22.51
544.369444	29.13	46.00	16.87	100.0	H	38.0	26.14
740.309444	33.18	46.00	12.82	200.0	H	359.0	29.70

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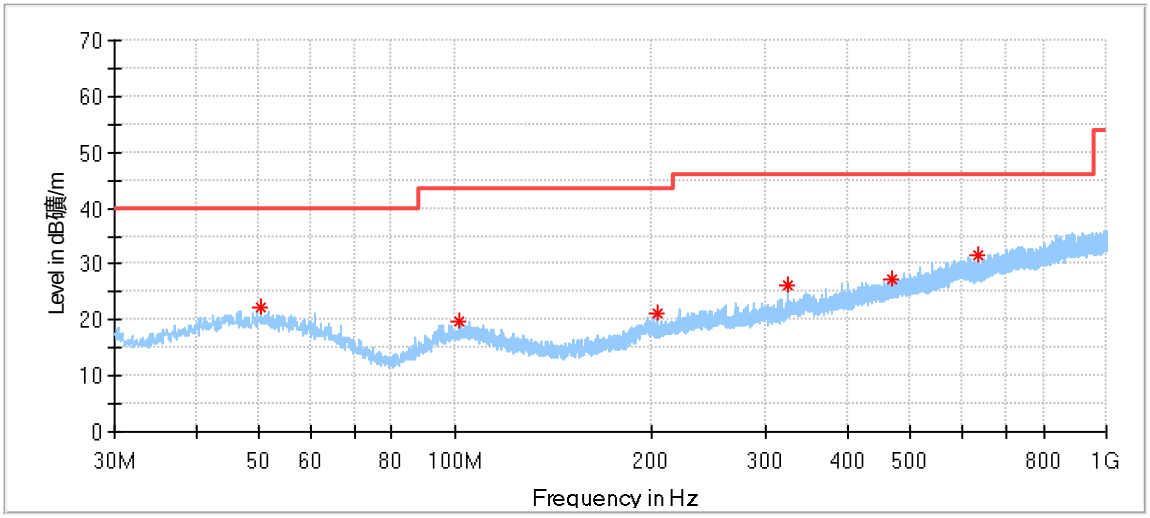

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
50.316111	22.38	40.00	17.62	200.0	V	143.0	20.88
101.402778	19.77	43.50	23.73	200.0	V	0.0	18.52
203.953333	21.09	43.50	22.41	200.0	V	80.0	18.14
323.963889	26.05	46.00	19.95	200.0	V	349.0	21.67
468.709444	27.43	46.00	18.57	200.0	V	107.0	24.72
636.842778	31.44	46.00	14.56	200.0	V	341.0	27.51

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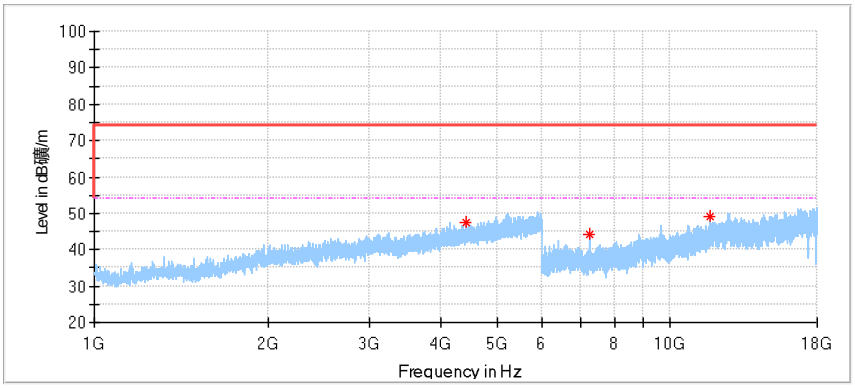
1GHz -18GHz:

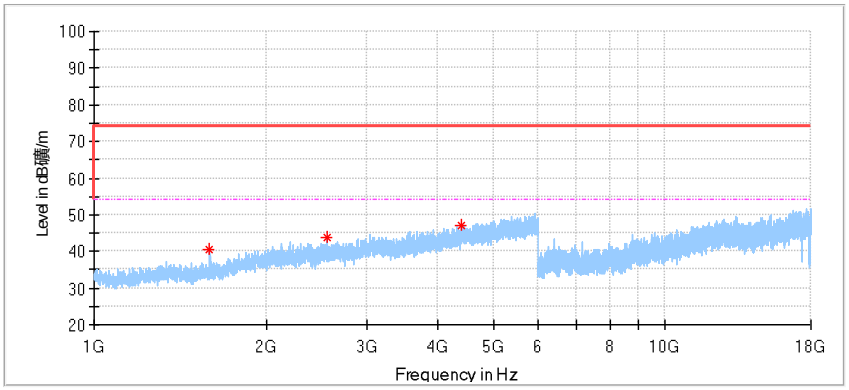
11B-Ant0_2412MHz

Horizontal:



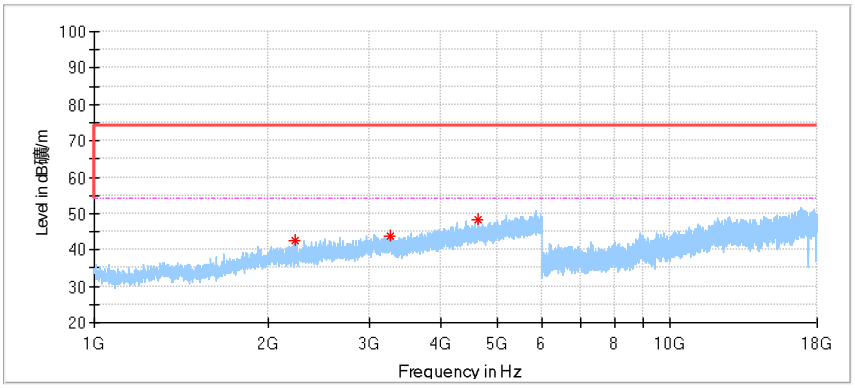
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4413.000000	47.29	74.00	26.71	150.0	H	255.0	2.93
7238.500000	44.05	74.00	29.95	150.0	H	29.0	9.57
11734.000000	48.93	74.00	25.07	150.0	H	330.0	16.50

Vertical



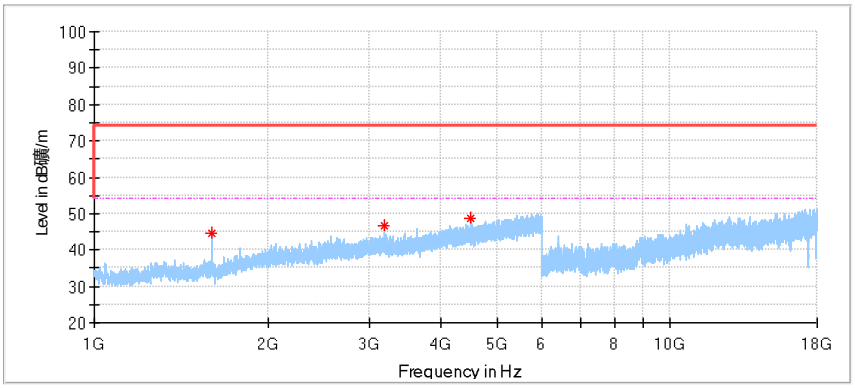
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1594.500000	40.46	74.00	33.54	150.0	V	0.0	-7.96
2565.000000	43.79	74.00	30.21	150.0	V	294.0	-2.27
4389.000000	47.15	74.00	26.85	150.0	V	187.0	2.75

11B-Ant0_2437MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2237.000000	42.71	74.00	31.29	150.0	H	265.0	-3.54
3272.500000	43.93	74.00	30.07	150.0	H	88.0	-0.52
4637.000000	48.33	74.00	25.67	150.0	H	124.0	3.41

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1597.500000	44.57	74.00	29.43	150.0	V	210.0	-7.95
3193.000000	46.76	74.00	27.24	150.0	V	148.0	-0.67
4500.500000	48.80	74.00	25.20	150.0	V	0.0	3.14

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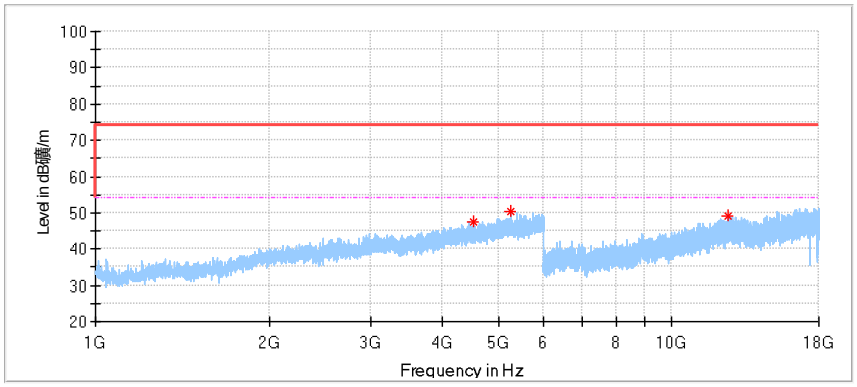
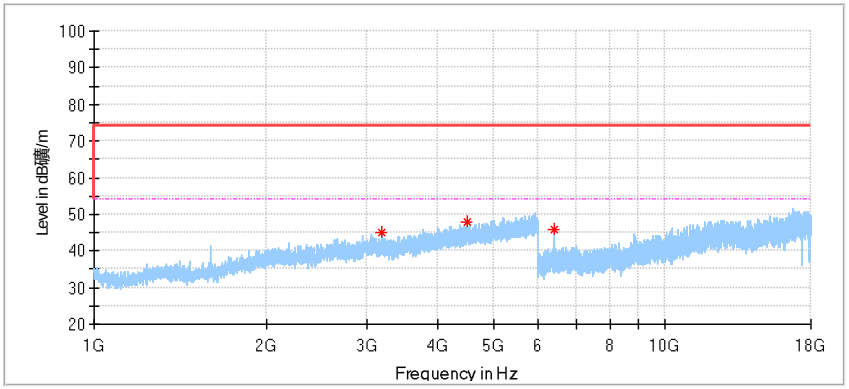
11B-Ant0_2462MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4527.000000	47.49	74.00	26.51	150.0	H	121.0	3.06
5249.500000	50.19	74.00	23.81	150.0	H	9.0	5.39
12534.500000	49.23	74.00	24.77	150.0	H	268.0	17.53

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3198.000000	45.14	74.00	28.86	150.0	V	219.0	-0.69
4493.500000	48.00	74.00	26.00	150.0	V	357.0	3.17
6394.000000	45.84	74.00	28.16	150.0	V	272.0	9.28

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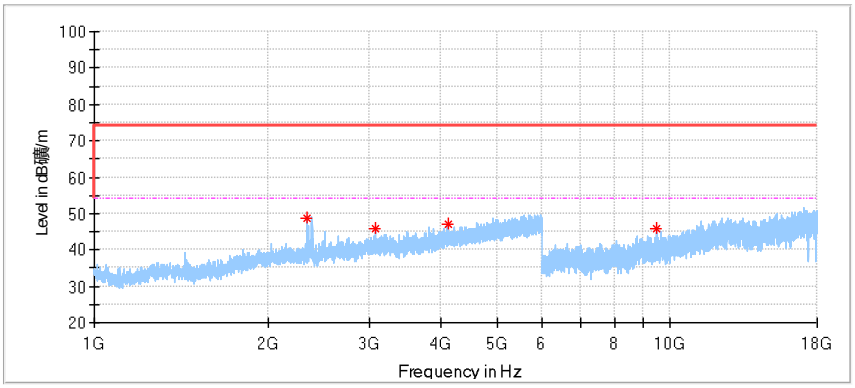
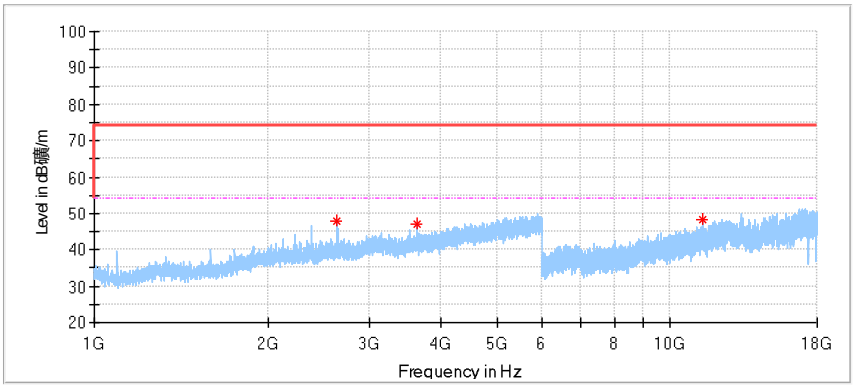
11G-Ant0_2412MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2339.500000	48.71	74.00	25.29	150.0	H	209.0	-3.30
3078.500000	45.86	74.00	28.14	150.0	H	318.0	-0.67
4109.000000	46.91	74.00	27.09	150.0	H	201.0	2.14
9474.000000	45.78	74.00	28.22	150.0	H	215.0	14.09

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2639.500000	47.71	74.00	26.29	150.0	V	183.0	-2.10
3632.000000	47.17	74.00	26.83	150.0	V	69.0	0.19
11400.000000	48.36	74.00	25.64	150.0	V	6.0	15.91

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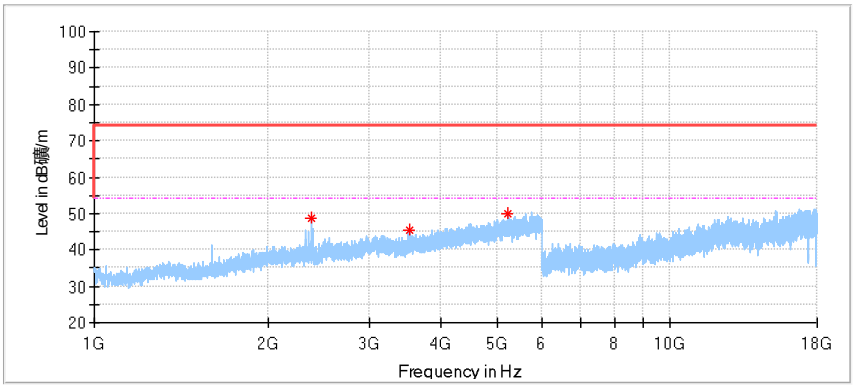
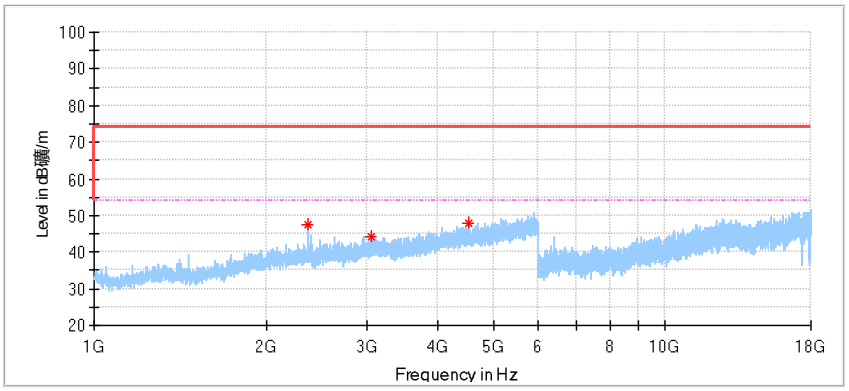
11G-Ant0_2437MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2384.000000	48.85	74.00	25.15	150.0	H	340.0	-3.02
3535.500000	45.39	74.00	28.61	150.0	H	155.0	0.06
5216.500000	49.89	74.00	24.11	150.0	H	0.0	5.48

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2374.000000	47.30	74.00	26.70	150.0	V	23.0	-3.16
3063.500000	44.14	74.00	29.86	150.0	V	319.0	-0.51
4530.500000	47.82	74.00	26.18	150.0	V	221.0	3.05
2374.000000	47.30	74.00	26.70	150.0	V	23.0	-3.16

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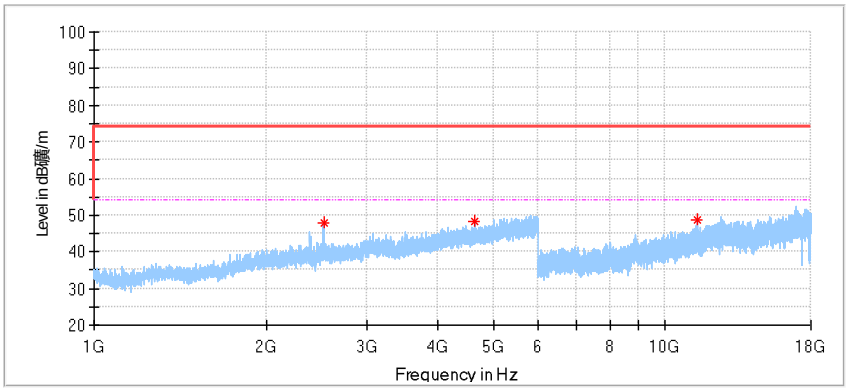
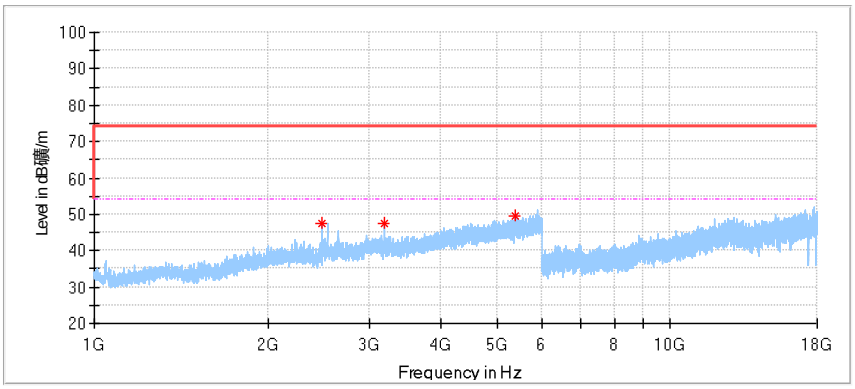
11G-Ant0_2462MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2523.000000	47.90	74.00	26.10	150.0	H	245.0	-2.20
4629.000000	48.24	74.00	25.76	150.0	H	50.0	3.38
11411.000000	48.54	74.00	25.46	150.0	H	269.0	15.92

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2490.000000	47.52	74.00	26.48	150.0	V	253.0	-2.18
3189.500000	47.66	74.00	26.34	150.0	V	293.0	-0.67
5373.000000	49.34	74.00	24.66	150.0	V	226.0	5.32

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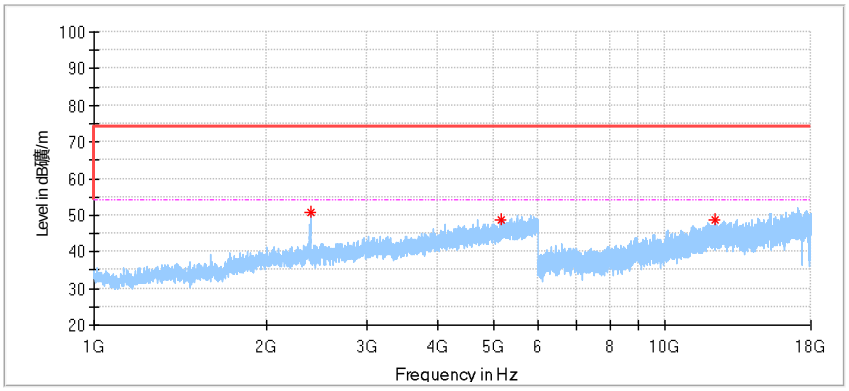
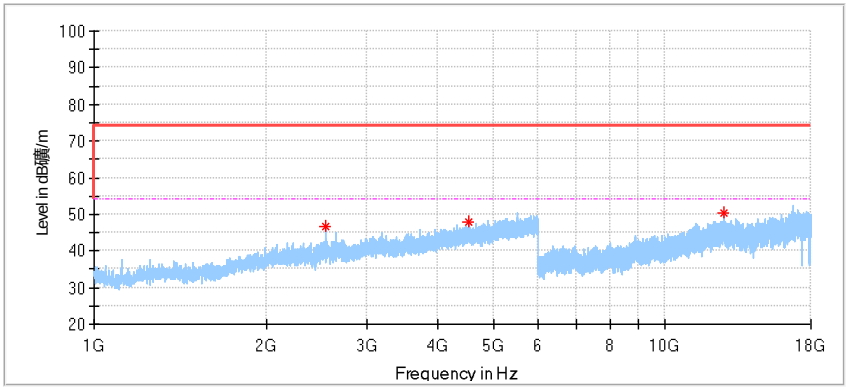
11N-HT20-Ant 1_2412MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2393.500000	50.71	74.00	23.29	150.0	H	253.0	-2.86
5171.500000	48.63	74.00	25.37	150.0	H	59.0	5.32
12220.500000	48.80	74.00	25.20	150.0	H	136.0	17.27

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2539.500000	46.87	74.00	27.13	150.0	V	291.0	-2.21
4520.000000	47.91	74.00	26.09	150.0	V	0.0	3.08
12688.500000	50.35	74.00	23.65	150.0	V	216.0	18.09

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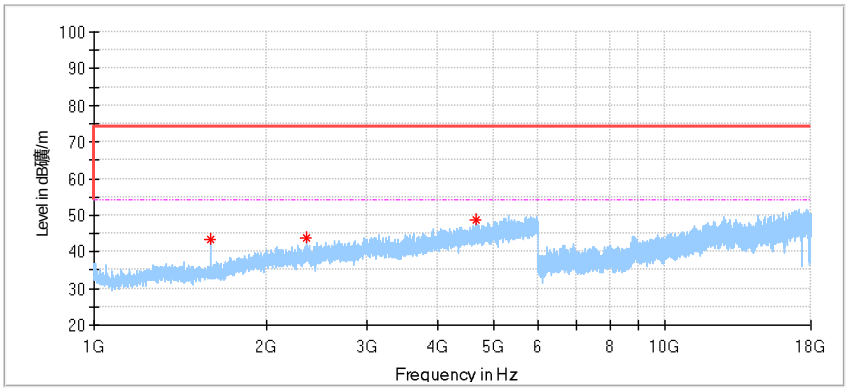
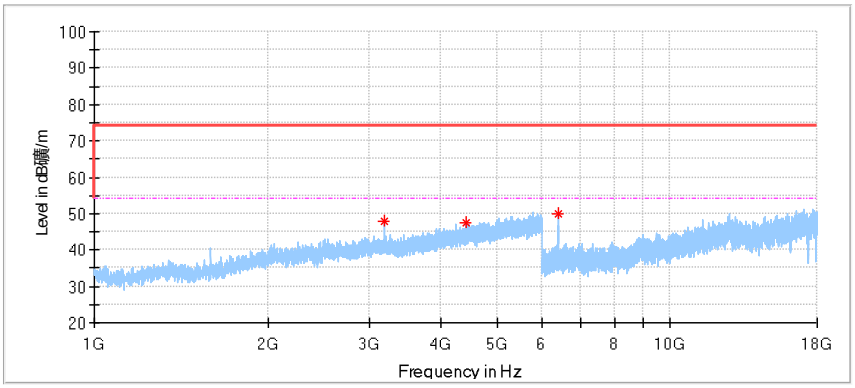
11N-HT20-Ant 1_2437MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1597.000000	43.33	74.00	30.68	150.0	H	294.0	-7.95
2356.000000	43.79	74.00	30.21	150.0	H	276.0	-3.29
4676.000000	48.52	74.00	25.48	150.0	H	85.0	3.57

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3196.500000	47.71	74.00	26.29	150.0	V	157.0	-0.68
4435.000000	47.68	74.00	26.32	150.0	V	59.0	3.02
6386.000000	49.97	74.00	24.03	150.0	V	269.0	9.34

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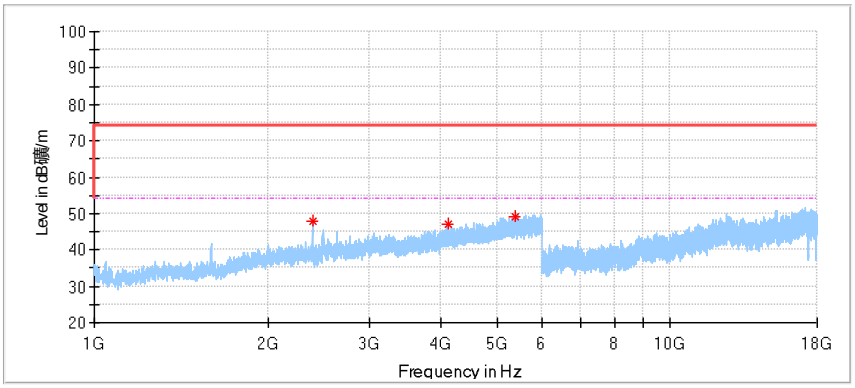
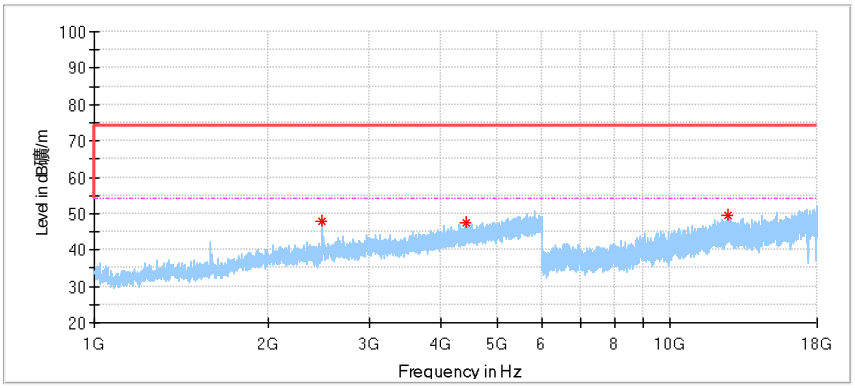
11N-HT20-Ant 1_2462MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2390.000000	48.02	74.00	25.98	150.0	H	267.0	-2.92
4127.000000	46.99	74.00	27.01	150.0	H	4.0	2.13
5381.000000	49.06	74.00	24.94	150.0	H	151.0	5.33

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2491.000000	47.75	74.00	26.25	150.0	V	228.0	-2.18
4411.500000	47.64	74.00	26.36	150.0	V	264.0	2.93
12606.000000	49.74	74.00	24.26	150.0	V	30.0	18.26

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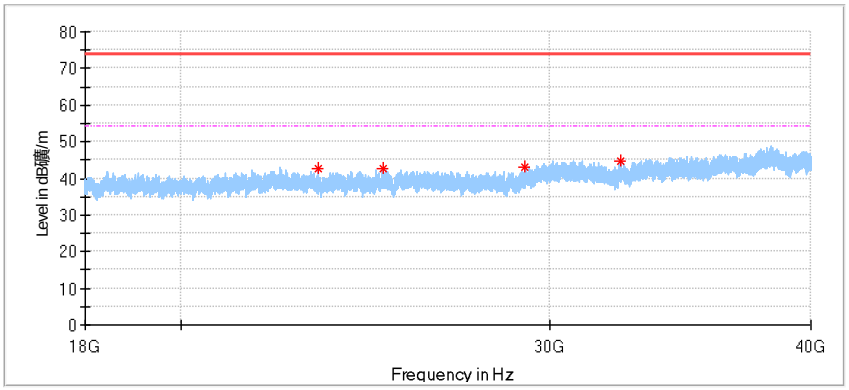
Above 18GHz:

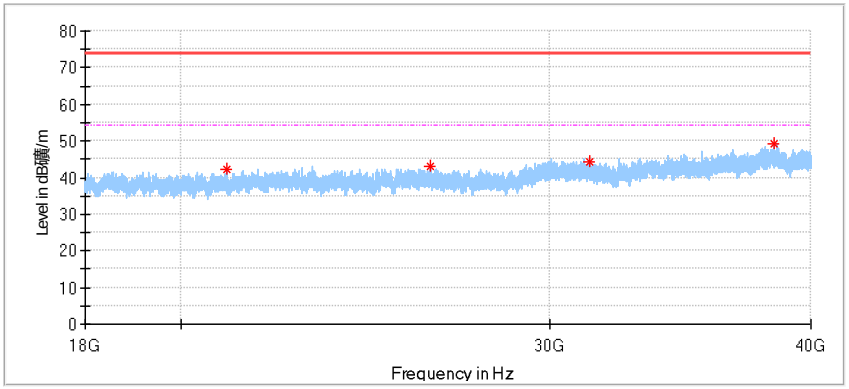
11B_2412MHz

Horizontal:



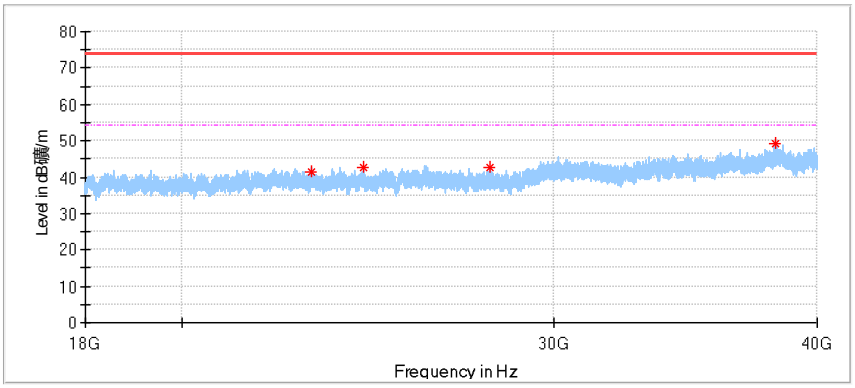
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
23262.125000	42.65	74.00	31.35	150.0	H	0.0	0.12
24976.062500	42.52	74.00	31.48	150.0	H	4.0	1.21
29192.500000	43.25	74.00	30.75	150.0	H	177.0	1.24
32443.687500	44.72	74.00	29.28	150.0	H	207.0	1.95

Vertical



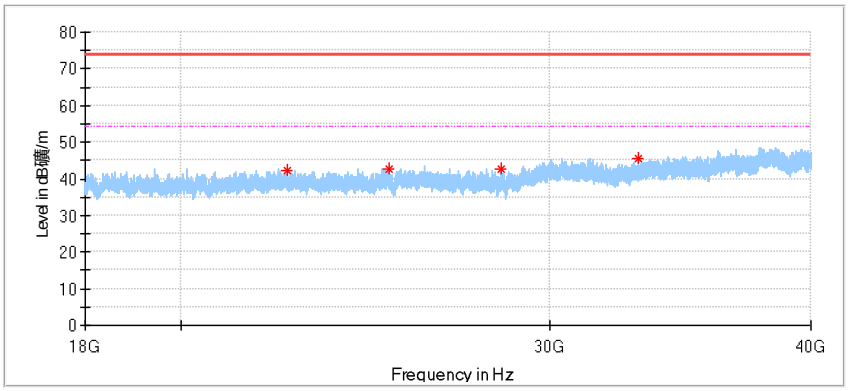
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21040.812500	42.31	74.00	31.69	150.0	V	0.0	-0.62
26336.625000	43.20	74.00	30.80	150.0	V	199.0	1.46
31364.312500	44.42	74.00	29.58	150.0	V	153.0	1.72
38398.812500	49.19	74.00	24.81	150.0	V	16.0	6.57

11B _2437MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
23050.375000	41.43	74.00	32.57	150.0	H	0.0	0.52
24399.937500	42.82	74.00	31.18	150.0	H	264.0	0.59
27979.750000	42.74	74.00	31.26	150.0	H	66.0	1.24
38211.125000	49.39	74.00	24.61	150.0	H	188.0	6.03

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
22480.437500	42.42	74.00	31.58	150.0	V	31.0	0.43
25134.875000	42.76	74.00	31.24	150.0	V	312.0	1.25
28466.500000	42.50	74.00	31.50	150.0	V	0.0	0.96
33080.312500	45.50	74.00	28.50	150.0	V	126.0	2.41

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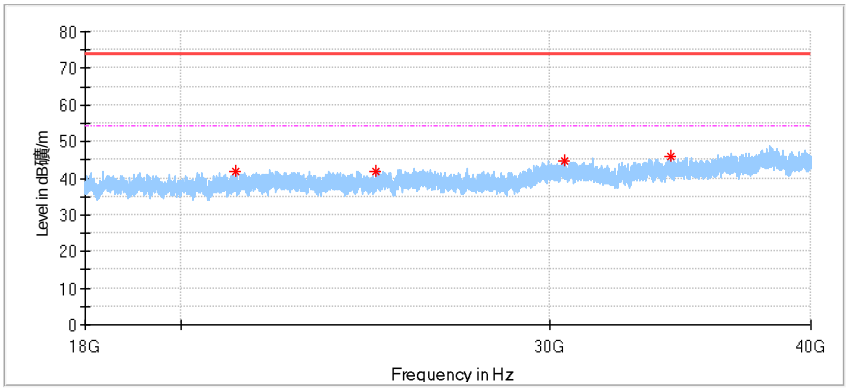
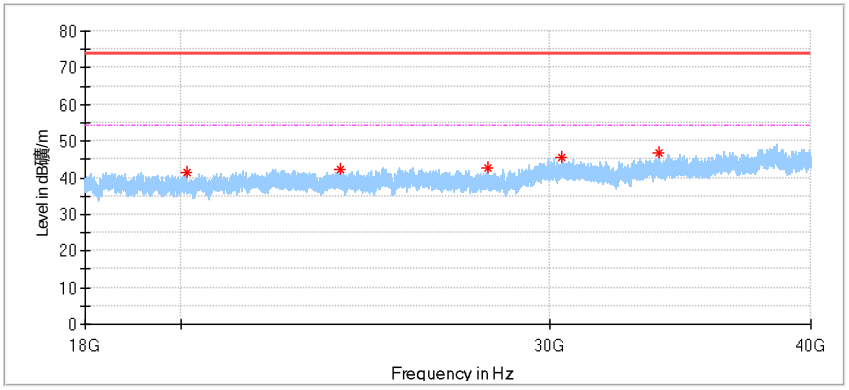
11B _2462MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21223.687500	41.72	74.00	32.28	150.0	H	0.0	-0.55
24784.250000	42.03	74.00	31.97	150.0	H	111.0	0.75
30492.562500	44.79	74.00	29.21	150.0	H	233.0	2.00
34262.812500	45.93	74.00	28.07	150.0	H	80.0	3.56

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20142.937500	41.63	74.00	32.37	150.0	V	265.0	-2.28
23820.375000	42.05	74.00	31.95	150.0	V	4.0	0.60
28023.750000	42.58	74.00	31.42	150.0	V	0.0	1.23
30400.437500	45.34	74.00	28.66	150.0	V	295.0	2.06
33817.312500	46.63	74.00	27.37	150.0	V	326.0	3.10

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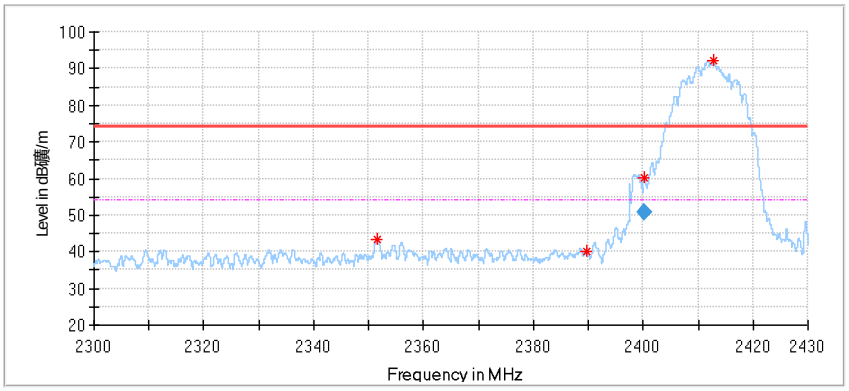
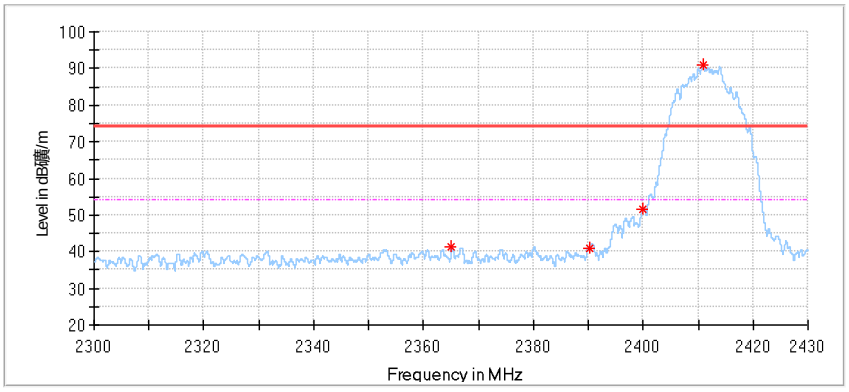
11B-Ant0_2412MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2351.545000	43.47	74.00	30.53	150.0	H	85.0	-3.16
2389.791000	40.21	74.00	33.79	150.0	H	323.0	-2.94
2400.178000	60.39	74.00	13.61	150.0	H	243.0	-2.86
2412.866000	92.36	74.00	-18.36	150.0	H	319.0	-2.71

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2400.178000	50.90	54.00	3.10	150.0	H	243.0	-2.86

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2365.117000	41.26	74.00	32.74	150.0	V	309.0	-3.08
2390.220000	41.00	74.00	33.00	150.0	V	175.0	-2.94
2399.970000	51.77	74.00	22.23	150.0	V	20.0	-2.86
2410.825000	91.04	74.00	-17.04	150.0	V	29.0	-2.73

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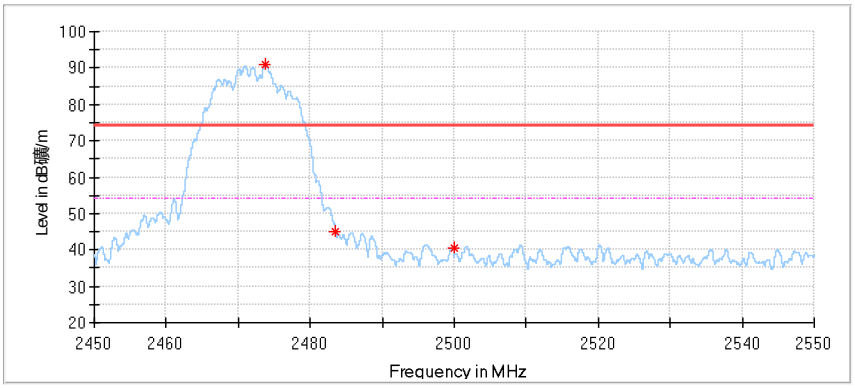
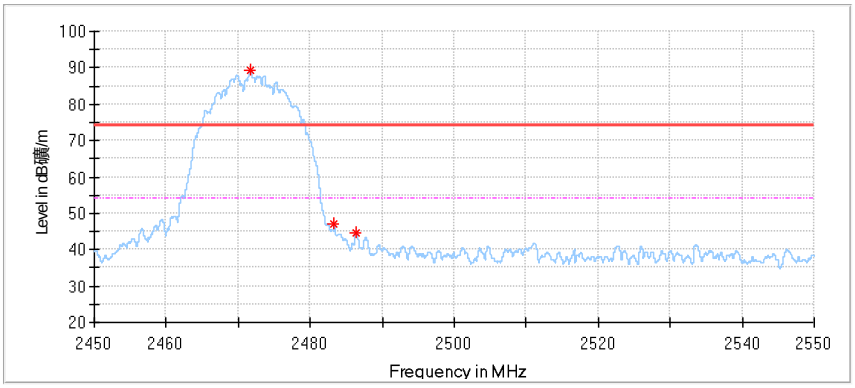
11B-Ant0_2462MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2473.750000	91.16	74.00	-17.16	150.0	H	43.0	-2.24
2483.570000	45.05	74.00	28.95	150.0	H	9.0	-2.20
2499.920000	40.64	74.00	33.36	150.0	H	73.0	-2.14

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2471.670000	89.15	74.00	-15.15	150.0	V	356.0	-2.24
2483.340000	47.09	74.00	26.91	150.0	V	0.0	-2.20
2486.360000	44.60	74.00	29.40	150.0	V	356.0	-2.19

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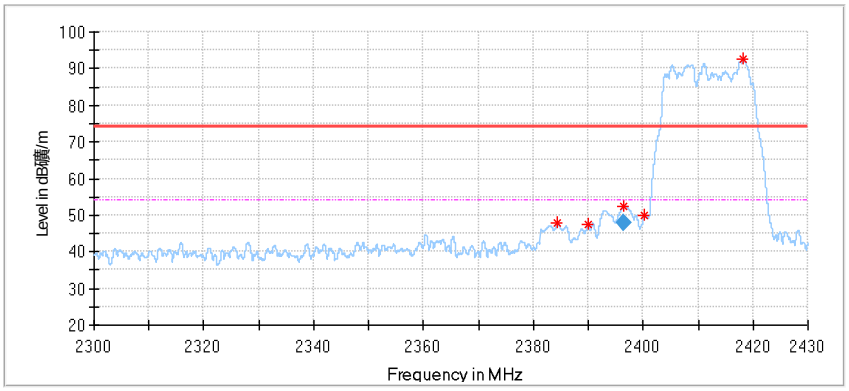
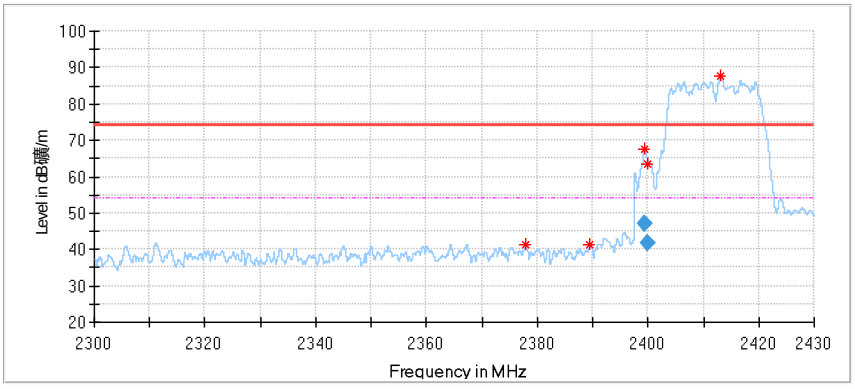
11G-Ant0_2412MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2384.448000	47.73	74.00	26.27	150.0	H	190.0	-2.99
2389.856000	47.42	74.00	26.58	150.0	H	190.0	-2.94
2396.512000	52.55	74.00	21.45	150.0	H	190.0	-2.89
2400.113000	49.88	74.00	24.12	150.0	H	168.0	-2.86
2418.196000	92.58	74.00	-18.58	150.0	H	26.0	-2.65
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
2396.512000	47.85	54.00	6.15	150.0	H	190.0	-2.89

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2377.805000	41.14	74.00	32.86	150.0	V	254.0	-3.05
2389.570000	41.15	74.00	32.85	150.0	V	38.0	-2.95
2399.346000	67.57	74.00	6.43	150.0	V	285.0	-2.86
2399.996000	63.53	74.00	10.47	150.0	V	285.0	-2.86
2413.113000	87.68	74.00	-13.68	150.0	V	285.0	-2.71
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
2399.346000	47.25	54.00	6.75	150.0	V	285.0	-2.86
2399.996000	41.93	54.00	12.07	150.0	V	285.0	-2.86

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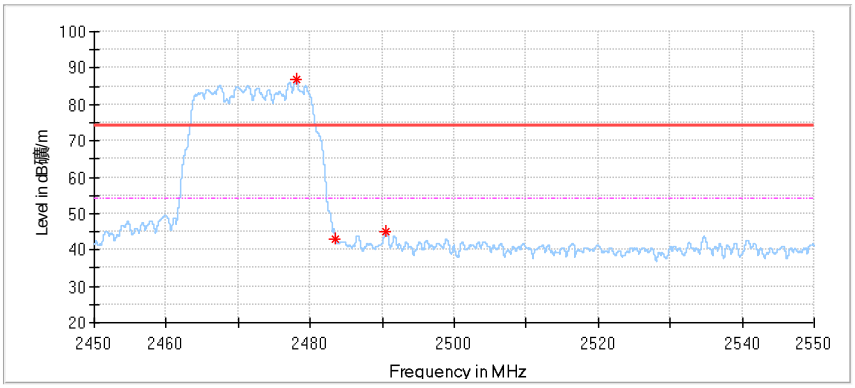
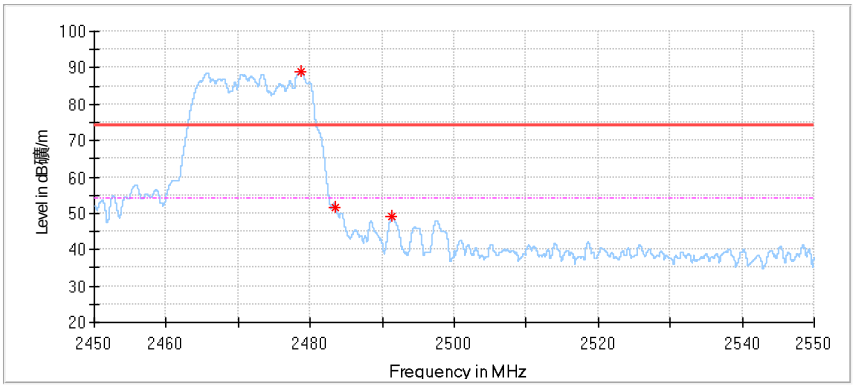
11G-Ant0_2462MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2478.040000	86.68	74.00	-12.68	150.0	H	154.0	-2.22
2483.550000	43.06	74.00	30.94	150.0	H	24.0	-2.20
2490.560000	45.05	74.00	28.95	150.0	H	37.0	-2.17

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2478.640000	89.07	74.00	-15.07	150.0	V	63.0	-2.22
2483.410000	51.64	74.00	22.36	150.0	V	150.0	-2.20
2491.300000	49.12	74.00	24.88	150.0	V	50.0	-2.17

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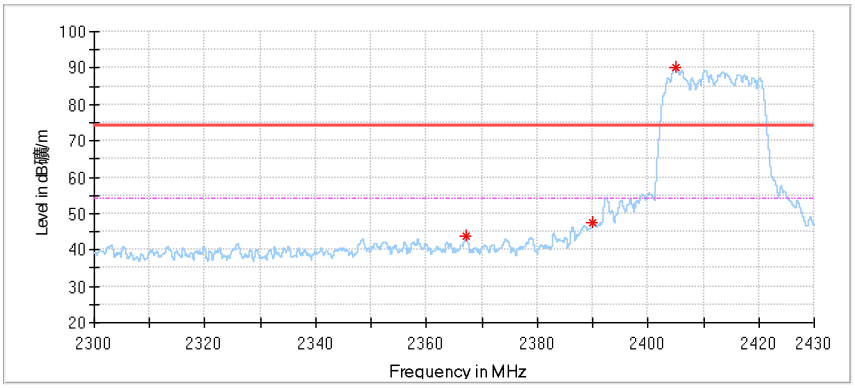
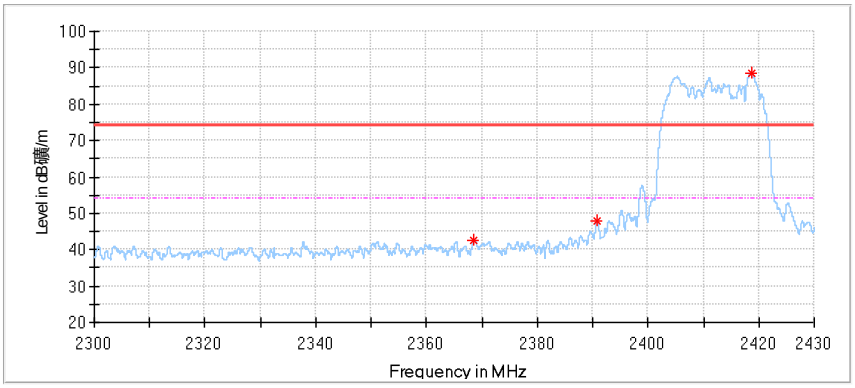
11n20-Ant0_2412MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2367.145000	43.97	74.00	30.03	150.0	H	193.0	-3.08
2389.999000	47.35	74.00	26.65	150.0	H	172.0	-2.94
2405.001000	90.07	74.00	-16.07	150.0	H	154.0	-2.80

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2368.588000	42.69	74.00	31.31	150.0	V	299.0	-3.07
2390.714000	47.71	74.00	26.29	150.0	V	217.0	-2.94
2418.625000	88.57	74.00	-14.57	150.0	V	264.0	-2.64

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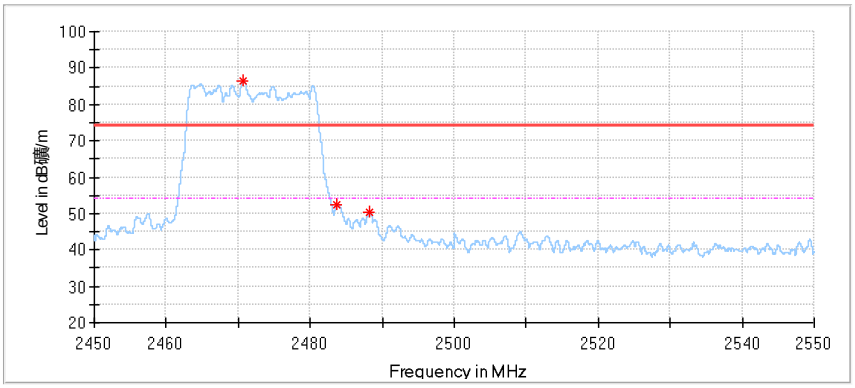
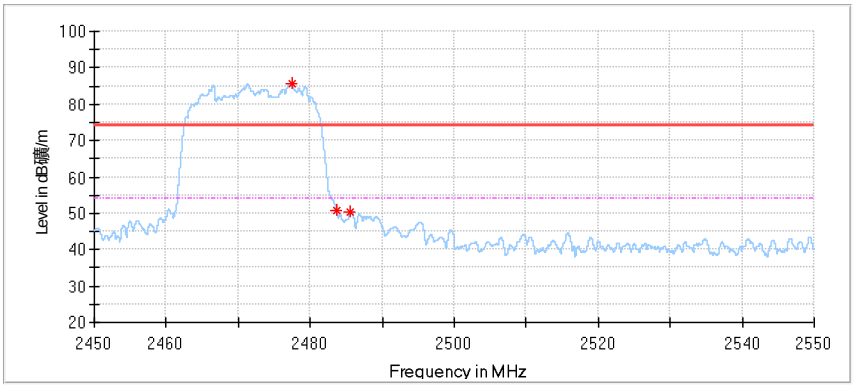
11n20-Ant0_2462MHz
Horizontal:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2470.750000	86.41	74.00	-12.41	150.0	H	61.0	-2.25
2483.690000	52.50	74.00	21.50	150.0	H	61.0	-2.20
2488.190000	50.44	74.00	23.56	150.0	H	61.0	-2.18

Vertical



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2477.390000	85.51	74.00	-11.51	150.0	V	296.0	-2.22
2483.600000	50.60	74.00	23.40	150.0	V	175.0	-2.20
2485.600000	50.43	74.00	23.57	150.0	V	50.0	-2.19

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10 Test Equipment List

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2023-5-28
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2023-1-17
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2023-5-9
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2023-5-28
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-002	100746	1	2023-5-28
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2023-7-12
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2023-7-27
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2023-5-27
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2023-5-28
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-19-002	102590	1	2023-5-27
LISN	Rohde & Schwarz	ENV216	68-4-87-19-001	102472	1	2023-5-27
ISN	Rohde & Schwarz	ENY81	68-4-87-14-003	100177	1	2023-5-27
ISN	Rohde & Schwarz	ENY81-CA6	68-4-87-14-004	101664	1	2023-5-27
High Voltage Probe	Schwarzbeck	TK9420(VT9420)	68-4-27-14-001	9420-584	1	2023-5-27
RF Current Probe	Rohde & Schwarz	EZ-17	68-4-27-14-002	100816	1	2023-5-31
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2023-5-27
Test software	Rohde & Schwarz	EMC32	68-4-90-19-005-A01	Version10.35.02	N/A	N/A
Shielding Room	TDK	CSR #2	68-4-90-19-005	----	3	2025-10-15

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11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV432 or ENV4200)	3.57dB
Uncertainty for Radiated Spurious Emission 25MHz-3000MHz	Horizontal: 4.33dB; Vertical: 4.41dB;
Uncertainty for Radiated Spurious Emission 3000MHz-18000MHz	Horizontal: 4.27dB; Vertical: 4.26dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	Horizontal: 4.52dB; Vertical: 4.51dB;
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10-8 or 1%
Uncertainty Evaluation for Humidity	0.936%
Uncertainty Evaluation for Temperature	0.195 °C

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