FCC/IC - TEST REPORT

Report Number	:	**68.940.21.0067.01**	Date of Issue:	September 30, 2021
Model	:	**NL59**		
Product Type	:	Nanoleaf Lines		
Applicant	:	NANOGRID LIMITED		
Address	:	Room 1301, 13/F, Excel Centre, 483A Castle Peak Road, Lai Chi Kok, Kowloon, HONG KONG		
Production Facility	:	SEVECO GLOBAL LTD.		
Address	:	2 Jianxiang St. Hanxishui Chashan Town, 523377 Dongguan, Guangdong, PEOPLE'S REPUBLIC OF CHINA		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	32		

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1 Table of Contents

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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, Nantou Checkpoint Road 2, Nanshan District, Shenzhen City, 518052, P. R. China
FCC Registration Number:	514049
FCC Designation Number:	CN5009
ISED#:	10320A
CAB identifier:	CN0077
Telephone: Fax:	86 755 8828 6998 86 755 8828 5299

3 Description of the Equipment under Test

Product/PMN:	Nanoleaf Lines
Model no./HVIN:	NL59
HMN:	NIL
FCC ID:	2AEWY-NL59
IC:	20489-NL59
Ratings:	100-240VAC; 50/60Hz; 47.5W
Adapter:	Model: DSL-42WA-42 420100 Input: 100-240VAC; 50/60Hz; 1.0A Output: 42.0VDC; 1.0A; 42.0W
RF Transmission Frequency:	2405MHz-2480MHz
No. of Operated Channel:	16
Modulation:	QPSK
Antenna Type:	Integral Antenna
Antenna Gain:	2.15dBi
Description of the EUT:	The Equipment Under Test (EUT) is a Nanoleaf Lines supports 2.4GHz Thread functions.

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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
RSS-Gen Issue 5, Amendment 2, February 2021	RSS-Gen — General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 2 February 2017	Digital Transmission Systems (DTS), Frequency Hopping Systems (FHSS) and License-Exempt Local Area Network (LE-LAN) Devices

All the test methods were according to KDB558074 D01 DTS Meas Guidance v05r02 and ANSI C63.10 (2013).

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5 Summary of Test Results

Technical Requirements					
FCC Part 15 Subpart C/RSS-247 Issue 2/RSS-Gen Issue 5					
Test Condition			Pages	Test Result	Test Site
§15.207	RSS-GEN 8.8	Conducted emission AC power port	10	Pass	Site 1
§15.247(b)(1)	RSS-247 Clause 5.4(b)	Conducted AV output power for FHSS	--	N/A	--
§15.247(b)(3)	RSS-247 Clause 5.4(d)	Conducted peak output power for DTS	13	Pass	Site 1
§15.247(e)	RSS-247 Clause 5.2(b)	Power spectral density	19	Pass	Site 1
§15.247(a)(2)	RSS-247 Clause 5.2(a)	6dB bandwidth	15	Pass	Site 1
§15.247(a)(1)	RSS-247 Clause 5.1(a)	20dB Occupied bandwidth	--	N/A	--
--	RSS-GEN 6.7	99% Occupied Bandwidth	17	Pass	Site 1
§15.247(a)(1)	RSS-247 Clause 5.1(b)	Carrier frequency separation	--	N/A	--
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(d)	Number of hopping frequencies	--	N/A	--
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(d)	Dwell Time	--	N/A	--
§15.247(d)	RSS-247 Clause 5.5	Spurious RF conducted emissions	21	Pass	Site 1
§15.247(d)	RSS-247 Clause 5.5	Band edge	25	Pass	Site 1
§15.247(d) & §15.209 & §15.205	RSS-247 Clause 5.5 & RSS-GEN 6.13 RSS-GEN 8.9 RSS-GEN 8.10	Spurious radiated emissions for transmitter	27	Pass	Site 1
§15.203	RSS-GEN 6.8	Antenna requirement	See note 1	Pass	--

Remark 1: N/A – Not Applicable.
Note 1: The EUT uses an Integrated Metal Antenna 2.15dBi max. According 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: 2AEWY-NL59 and IC: 20489-NL59 complies with Section 15.207, 15.205, 15.209, 15.247 of the FCC Part 15, Subpart C Rules; RSS-Gen Issue 5 and RSS-247 issue 2.

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: July 19, 2021

Testing Start Date: July 19, 2021

Testing End Date: August 23, 2021

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Reviewed by:	Prepared by:	Tested by:
Dawi Xu	Henry Chen	Louise Liu
EMC Project Manager	EMC Project Engineer	EMC Test Engineer

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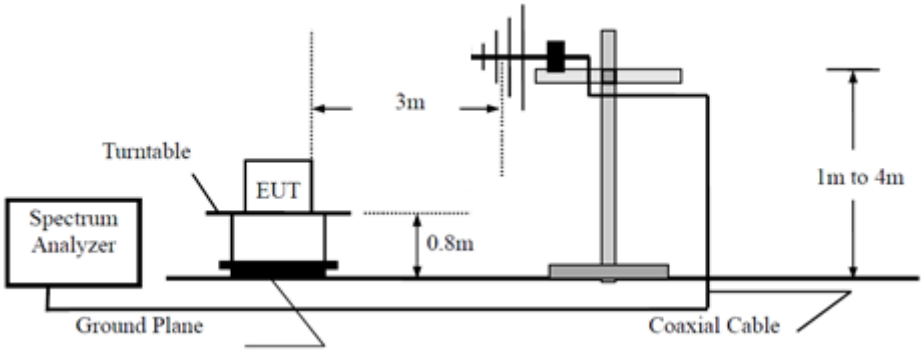
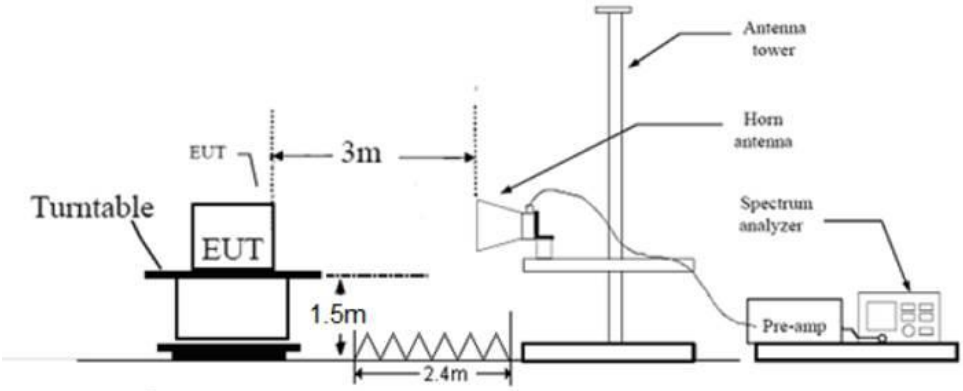
7 Test Setups

7.1 Radiated test setups

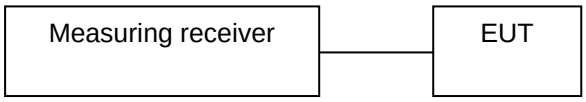
Below 1GHz



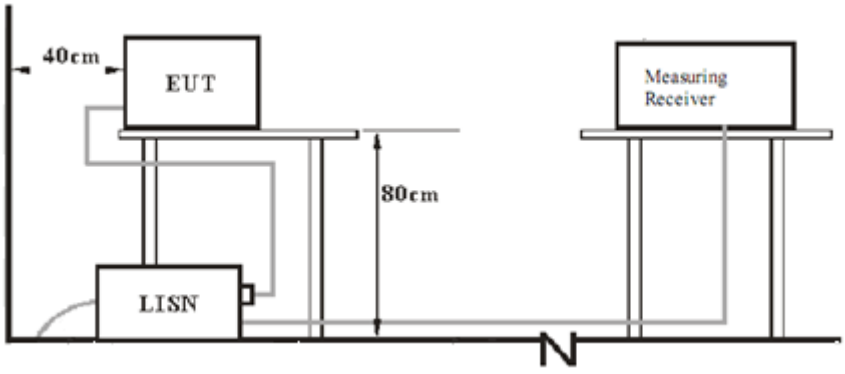
Above 1GHz



7.2 Conducted RF test setups



7.3 AC Power Line Conducted Emission test setups



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8 Systems test configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model no.	S/N
---	---	---	---
---	---	---	---
---	---	---	---

Test software information:

Test Software Version	QA tool	
Modulation	Setting TX Power	Packet Type
GFSK	60	---

The system was configured to channel 11, 19, and 26 for the test.

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9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing line

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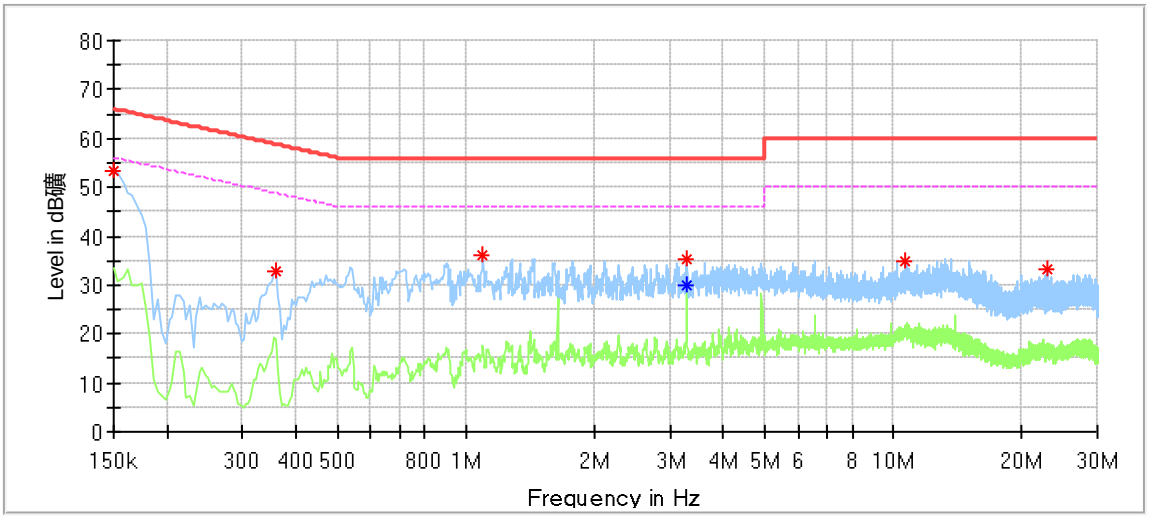
Conducted Emission

Product Type	:	Nanoleaf Lines
M/N	:	NL59
Operating Condition	:	Normal working with transmitting
Test Specification	:	Power Line, Live
Comment	:	AC 120V/60Hz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	53.20	---	66.00	12.80	L1	9.63
0.358000	32.70	---	58.78	26.08	L1	9.64
1.098000	36.24	---	56.00	19.76	L1	9.66
3.282000	35.15	---	56.00	20.85	L1	9.72
3.282000	---	29.74	46.00	16.26	L1	9.72
10.610000	34.88	---	60.00	25.12	L1	9.88
22.850000	33.03	---	60.00	26.97	L1	10.07

Remark：
Level=Reading Level + Correction Factor
Correction Factor=Cable Loss + LISN Factor
(The Reading Level is recorded by software which is not shown in the sheet)

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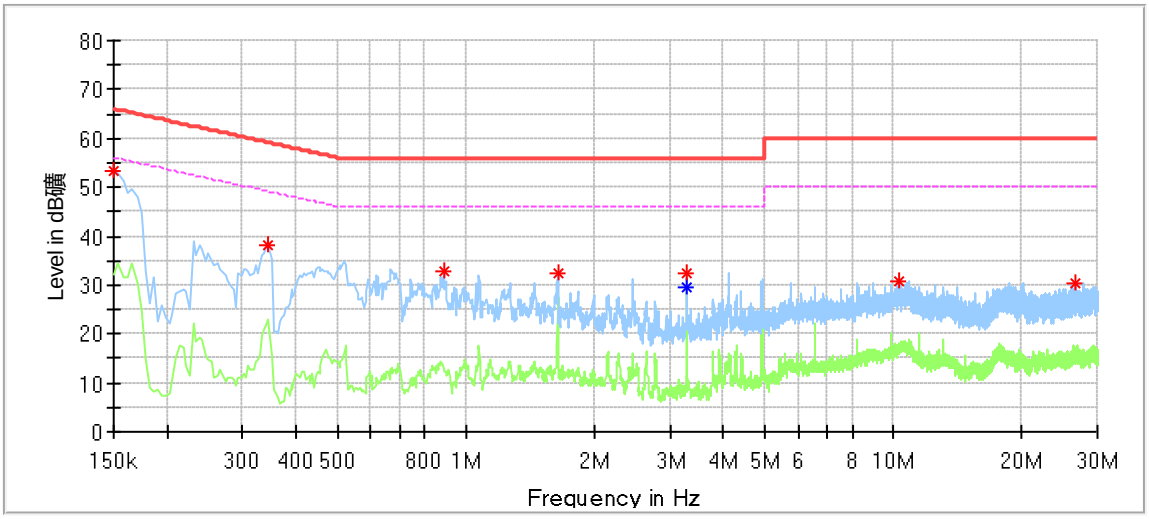
Conducted Emission

Product Type	:	Nanoleaf Lines
M/N	:	NL59
Operating Condition	:	Normal working with transmitting
Test Specification	:	Power Line, Neutral
Comment	:	AC 120V/60Hz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	53.53	---	66.00	12.47	N	9.61
0.346000	38.25	---	59.06	20.81	N	9.64
0.890000	32.75	---	56.00	23.25	N	9.65
1.642000	32.58	---	56.00	23.42	N	9.67
3.282000	32.60	---	56.00	23.40	N	9.71
3.282000	---	29.68	46.00	16.32	N	9.71
10.290000	30.69	---	60.00	29.31	N	9.87
26.690000	30.56	---	60.00	29.44	N	10.09

Remark：
Level=Reading Level + Correction Factor
Correction Factor=Cable Loss + LISN Factor
(The Reading Level is recorded by software which is not shown in the sheet)

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9.2 Conducted peak output power

Test Method

1. Connect the power meter to the EUT
   a) The EUT is configured to transmit continuously, or to transmit with a constant duty factor.
   b) At all times the EUT is transmitting at its maximum power control level.
   c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Adjust the measurement in dBm by adding 10log (1/x), where x is the duty cycle to the measurement result.

Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

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

Test result as below table

Frequency MHz	Conducted peak Output Power dBm	Antenna Gain dBi	EIRP dBm	Result
Top channel 2405MHz	5.79	2.15	7.94	Pass
Middle channel 2445MHz	5.31	2.15	7.46	Pass
Bottom channel 2480MHz	4.64	2.15	6.79	Pass

Note:

EIRP [dBm] = A [dBm] + G[dBi]. Where, A = Average Power, G = Antenna Gain

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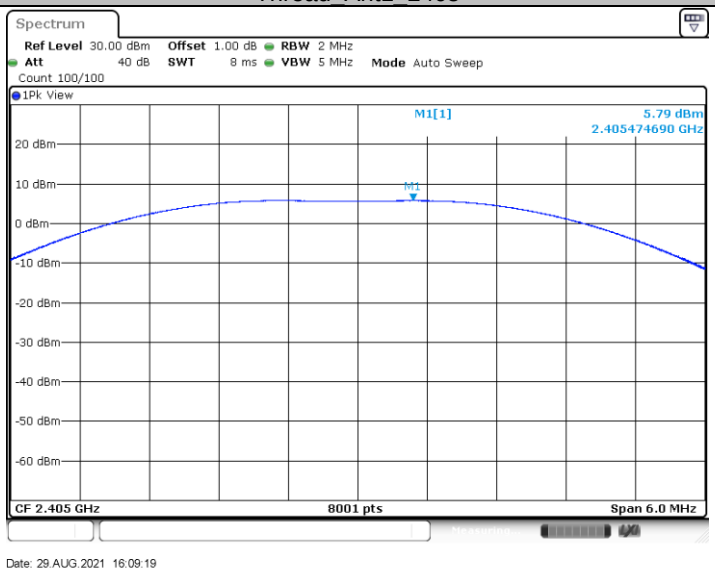
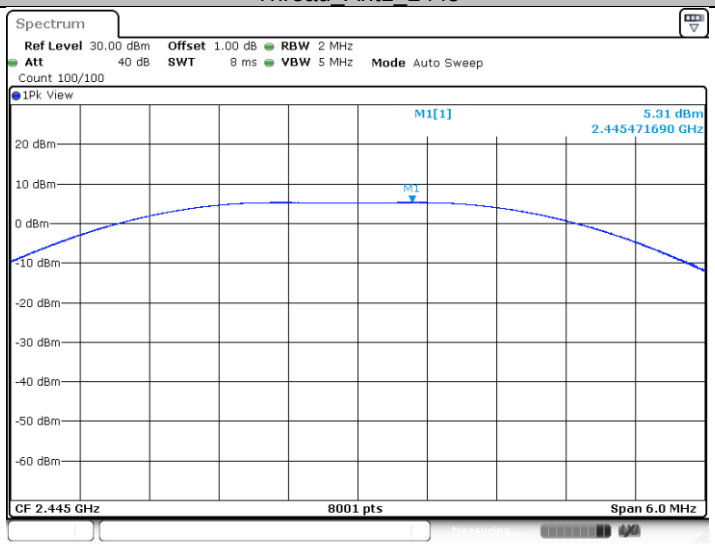
Test Graphs

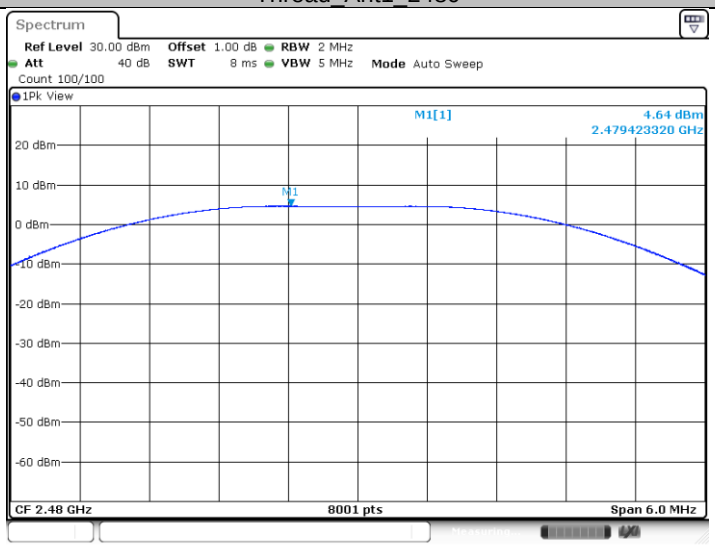
Thread_Ant1_2405



Thread_Ant1_2445



Thread_Ant1_2480



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9.3 6dB bandwidth

Test Method

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.

Limit

Limit [kHz]
⩾500

Test result

Test Mode	Channel (MHz)	Result (MHz)	Limit (KHz)	Verdict
Thread	2405	1.648	≥500	PASS
Thread	2440	1.652	≥500	PASS
Thread	2480	1.652	≥500	PASS

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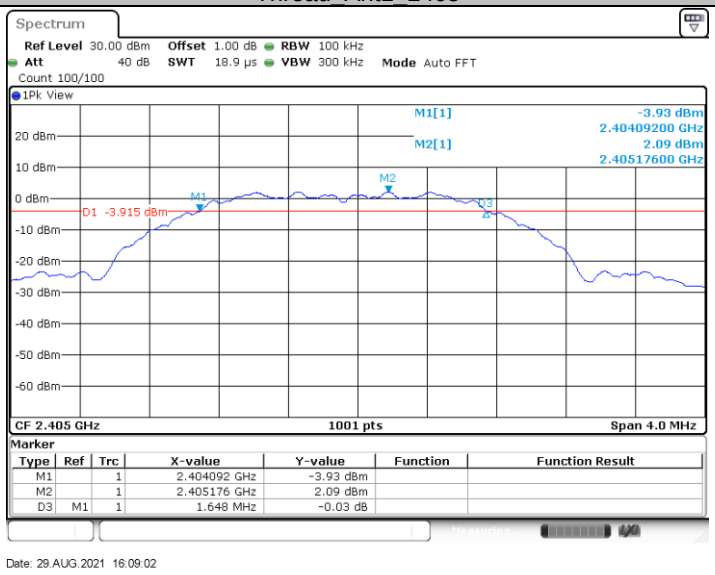
Test Graphs

Thread_Ant1_2405



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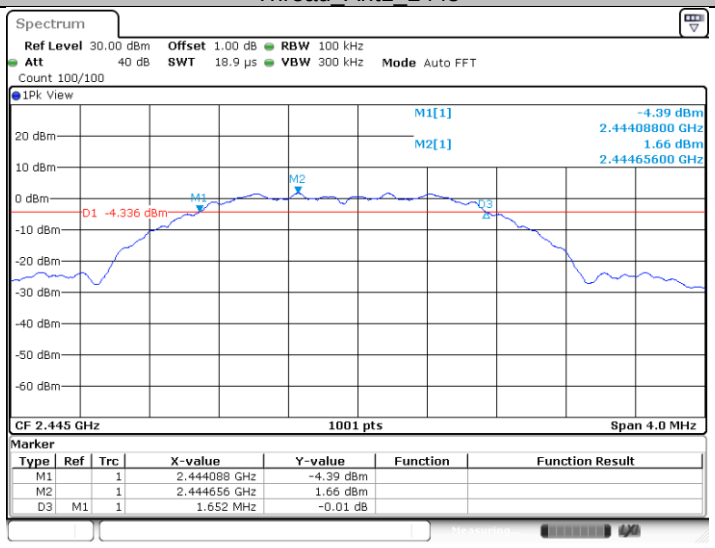

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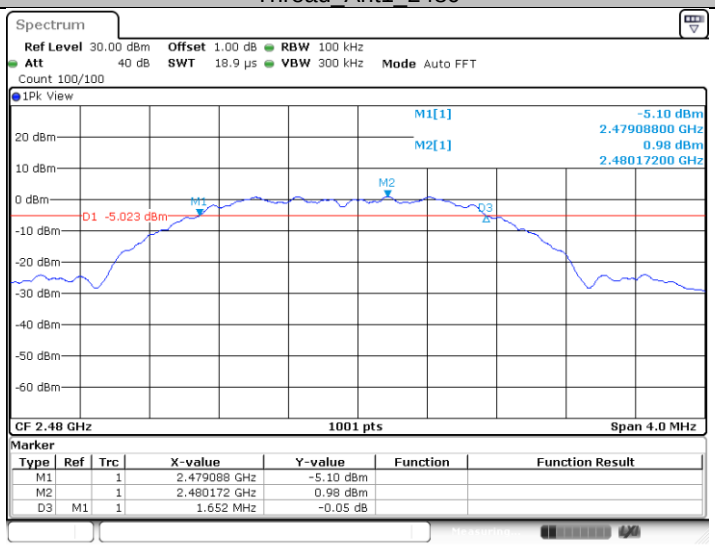

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9.4 99% bandwidth

Test Method

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.

Limit

Limit [kHz]

Test result

Test Mode	Channel (MHz	Result (MHz)	Limit	Verdict
Thread	2405	2.25	---	PASS
Thread	2445	2.25	---	PASS
Thread	2480	2.254	---	PASS

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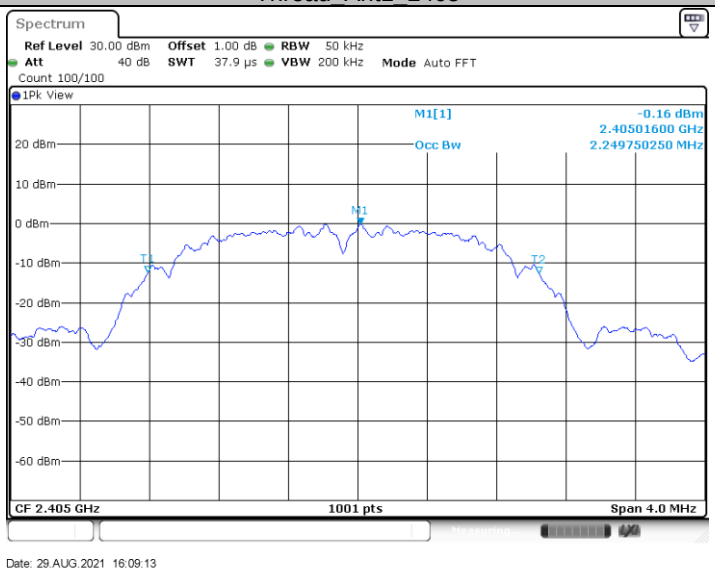
Test Graphs

Thread_Ant1_2405



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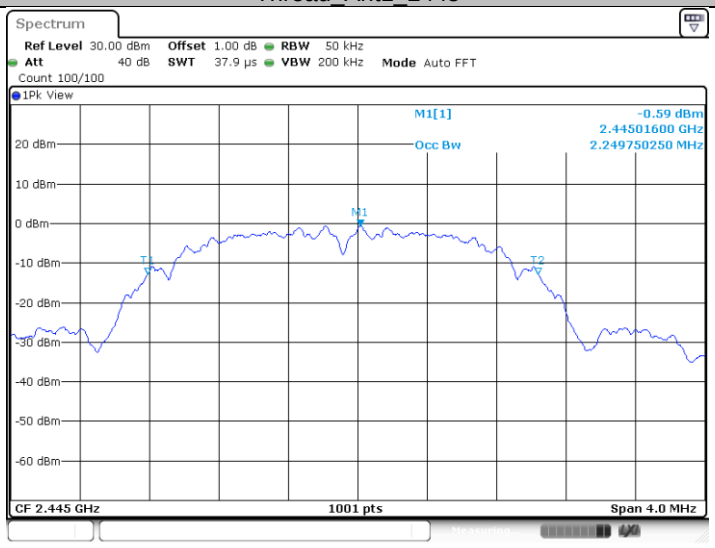
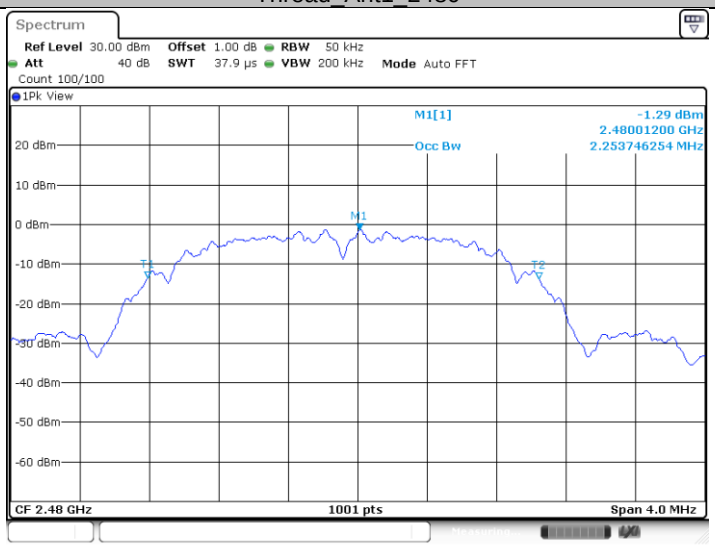


Thread_Ant1_2480



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9.5 Power spectral density

Test Method

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

1. 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.
2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
3. Repeat above procedures until other frequencies measured were completed.

Limit

Limit [dBm/3KHz]
⩽8

Test result

Test Mode	Channel (MHz)	Result (dBm)	Limit	Verdict
Thread	2405	-5.32	8	PASS
Thread	2445	-6.02	8	PASS
Thread	2480	-6.56	8	PASS

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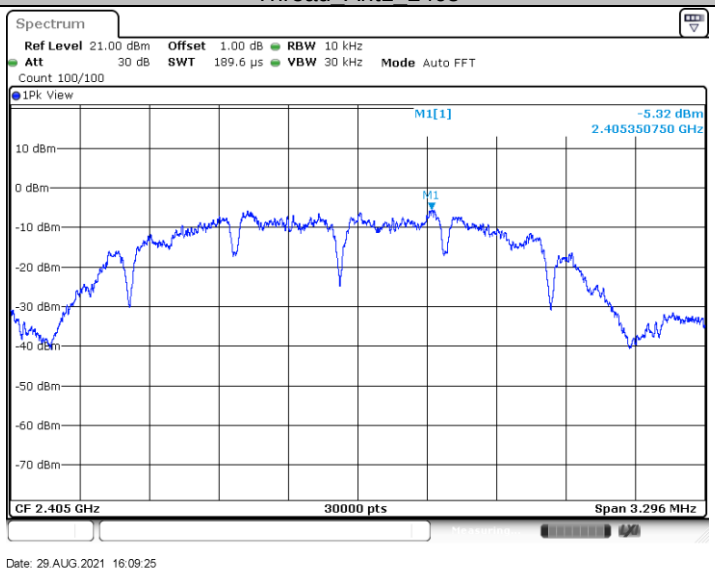
Test Graphs

Thread_Ant1_2405



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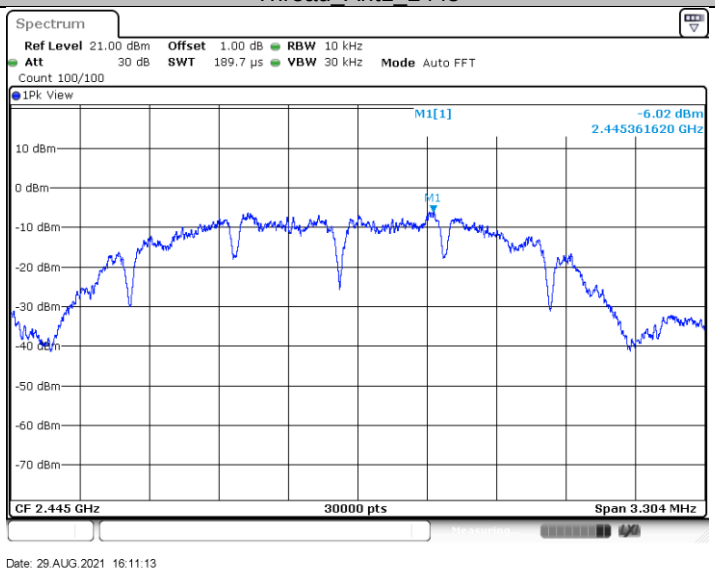
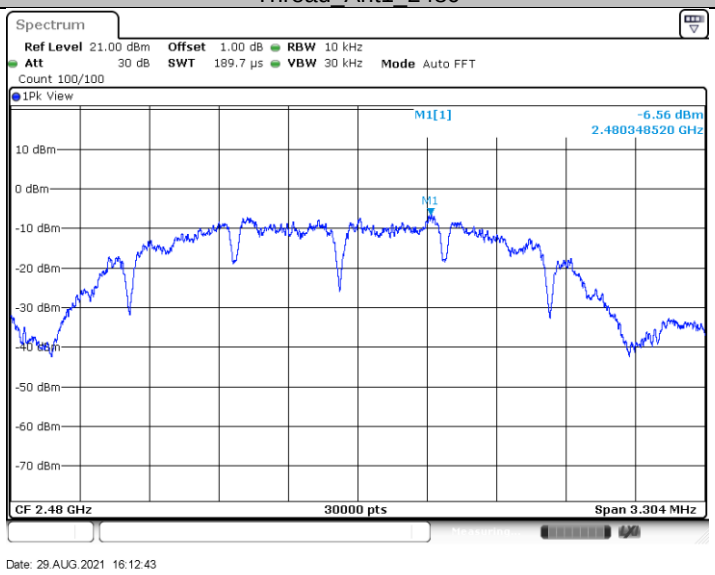


Thread_Ant1_2480



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9.6 Spurious RF conducted emissions

Test Method

1. Establish a reference level by using the following procedure:
   a. Set RBW=100 kHz. VBW≥3RBW. Detector =peak, Sweep time = auto couple, Trace mode = max hold.
   b. Allow trace to fully stabilize, use the peak marker function to determine the maximum PSD level.
2. Use the maximum PSD level to establish the reference level.
   a. Set the center frequency and span to encompass frequency range to be measured.
   b. Use the peak marker function to determine the maximum amplitude level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements, report the three highest emissions relative to the limit.
3. Repeat above procedures until other frequencies measured were completed.

Limit

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

Test Result

TestMode	Antenna	Channel	FreqRange	RefLevel	Result	Limit	Verdict
Thread	Ant1	2405	Reference	2.05	2.05	---	PASS
			30~1000	30~1000	-68.1	<=-17.95	PASS
			1000~26500	1000~26500	-51.28	<=-17.95	PASS
		2445	Reference	1.70	1.70	---	PASS
			30~1000	30~1000	-68.13	<=-18.3	PASS
			1000~26500	1000~26500	-50.71	<=-18.3	PASS
		2480	Reference	0.89	0.89	---	PASS
			30~1000	30~1000	-67.71	<=-19.11	PASS
			1000~26500	1000~26500	-50.39	<=-19.11	PASS

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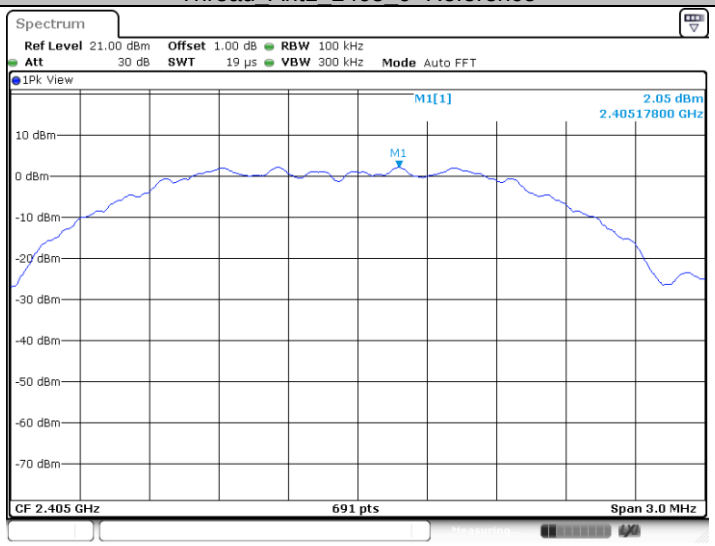
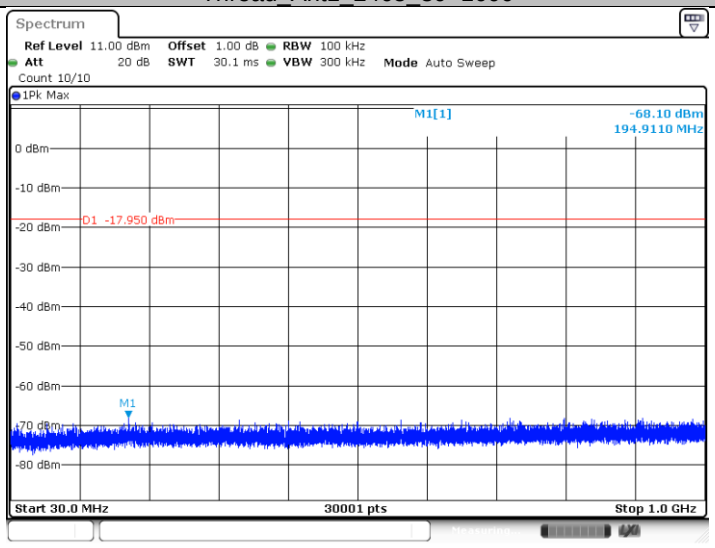
Test Graphs

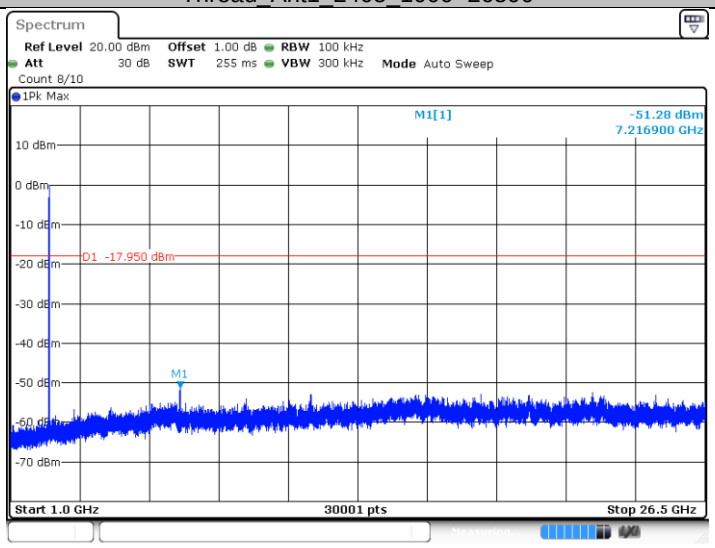
Thread_Ant1_2405_0~Reference



Thread_Ant1_2405_30~1000



Thread_Ant1_2405_1000~26500



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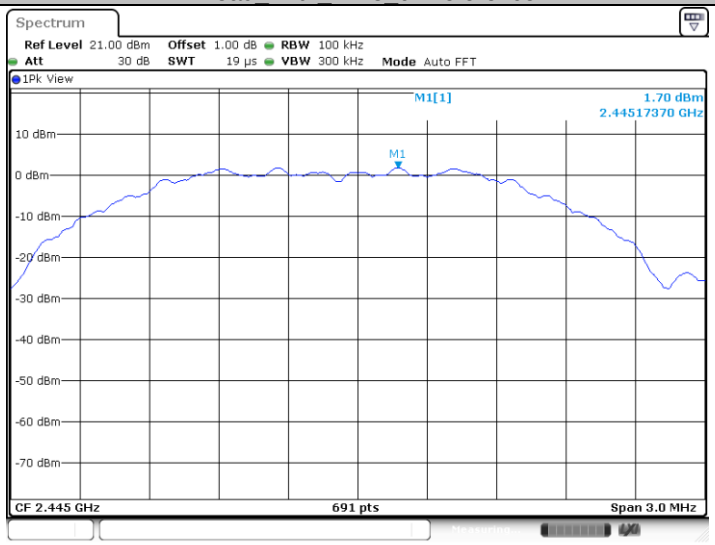
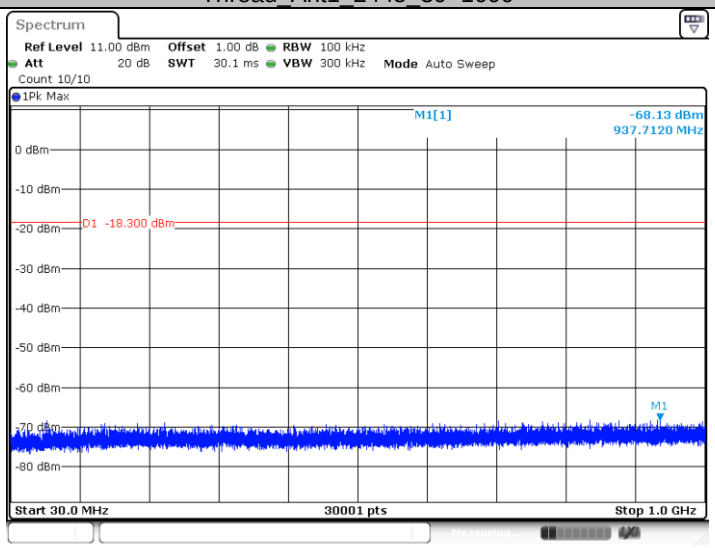
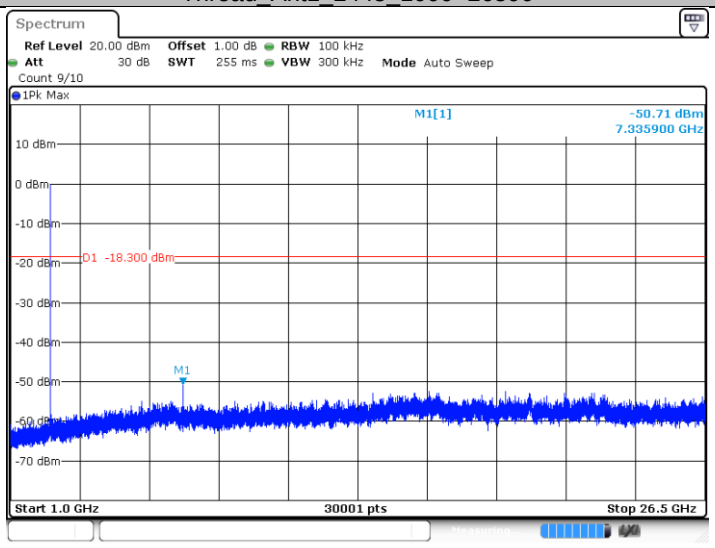
Thread_Ant1_2445_0~Reference



Thread_Ant1_2445_30~1000



Thread_Ant1_2445_1000~26500



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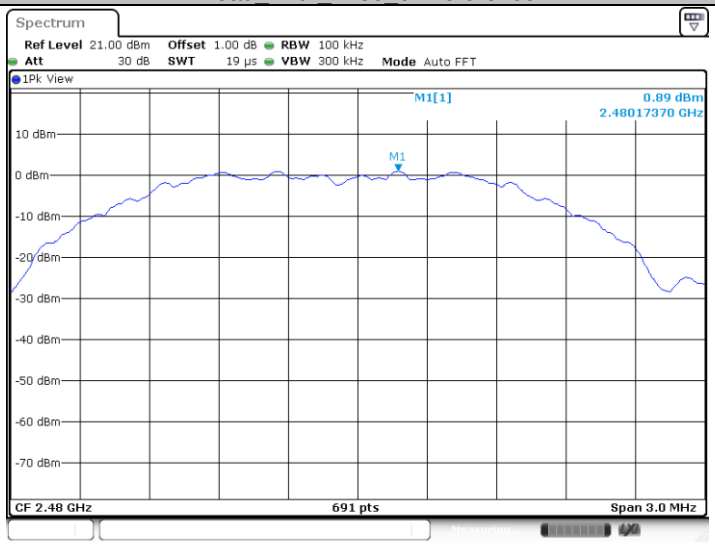
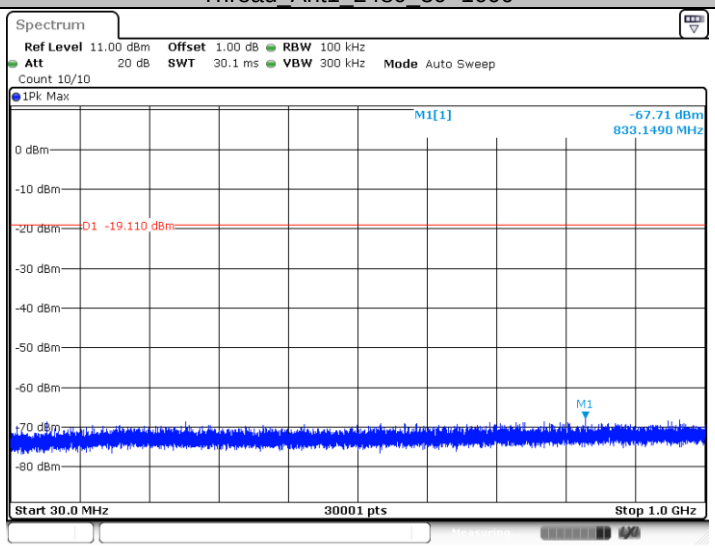
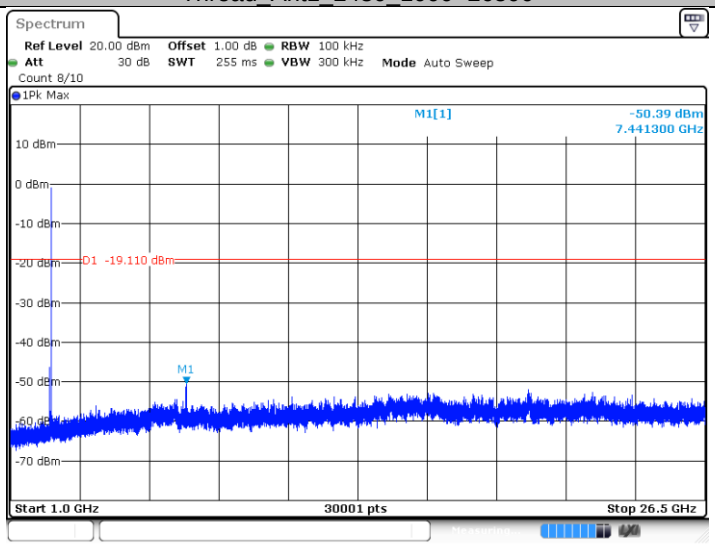
Thread_Ant1_2480_0~Reference



Thread_Ant1_2480_30~1000



Thread_Ant1_2480_1000~26500



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9.7 Band edge

Test Method

1 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.
2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
3 The level displayed must comply with the limit specified in this Section.

Limit

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

Test result

TestMode	Antenna	ChName	Channel	RefLevel	Result	Limit	Verdict
Thread	Ant1	Low	2405	1.02	-52.39	<=-18.98	PASS
		High	2480	0.99	-49.84	<=-19.01	PASS

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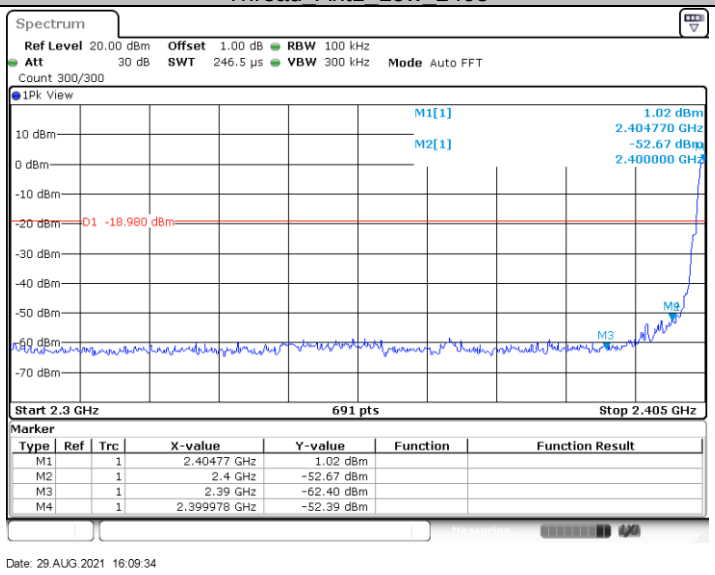
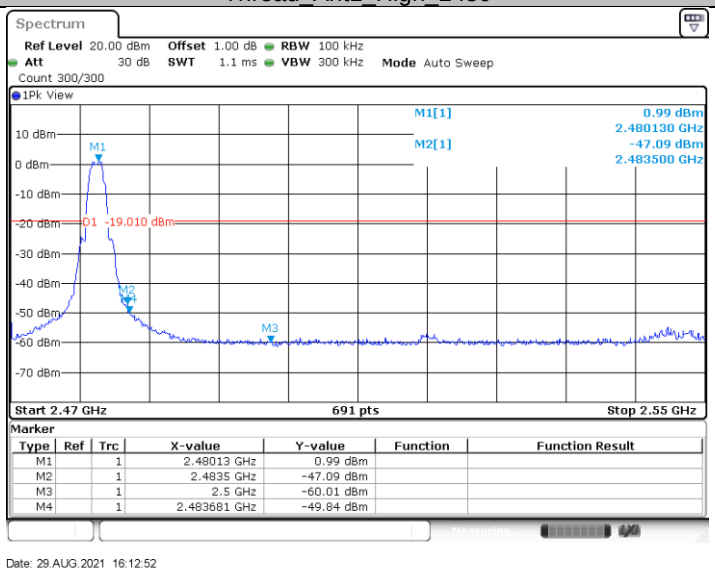
Test Graphs

Thread_Ant1_Low_2405



Thread_Ant1_High_2480



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9.8 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 3meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.

3: 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.

4: 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.

5: Use the following spectrum analyzer settings According to C63.10:

For 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 and VBW = 10Hz for average measurement, Sweep = auto, Detector function = peak, Trace = max hold.

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, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Note:

1: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.

2: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.

3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).

4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

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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 uV/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:

2405MHz (30MHz – 1GHz)

Frequency	Emission Level	Polarization	Limit	Margin	Detector	Corr.	Result
MHz	dBuV/m		dBµV/m	dB		dB	
152.705000	38.07	Horizontal	43.50	5.43	QP	9.69	Pass
34.311111	31.02	Vertical	40.00	8.98	QP	12.23	Pass

2405MHz (Above 1GHz)

Frequency	Emission Level	Polarization	Limit	Margin	Detector	Corr.	Result
MHz	dBuV/m		dBµV/m	dB		dB/m	
2390.140000*	41.11	Horizontal	74.00	32.89	PK	-3.06	Pass
2390.100000*	38.84	Vertical	74.00	35.16	PK	-3.06	Pass
7213.500000	47.68	Horizontal	74.00	26.32	PK	7.06	Pass
4335.000000	48.25	Vertical	74.00	25.75	PK	3.27	Pass

2445MHz (30MHz – 1GHz)

Frequency	Emission Level	Polarization	Limit	Margin	Detector	Corr.	Result
MHz	dBuV/m		dBµV/m	dB		dB	
--	--	Horizontal	--	--	QP	--	Pass
--	--	Vertical	--	--	QP	--	Pass

2445MHz (Above 1GHz)

Frequency	Emission Level	Polarization	Limit	Margin	Detector	Corr.	Result
MHz	dBuV/m		dBµV/m	dB		dB/m	
3978.000000*	47.41	Horizontal	74.00	26.59	PK	2.18	Pass
4866.500000*	49.93	Vertical	74.00	24.07	PK	4.70	Pass

2480MHz (30MHz – 1GHz)

Frequency	Emission Level	Polarization	Limit	Margin	Detector	Corr.	Result
MHz	dBuV/m		dBµV/m	dB		dB	
--	--	Horizontal	--	--	QP	--	Pass
--	--	Vertical	--	--	QP	--	Pass

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2480MHz (Above 1GHz)

Frequency	Emission Level	Polarization	Limit	Margin	Detector	Corr.	Result
MHz	dBuV/m		dBµV/m	dB		dB/m	
2483.570000*	53.72	Horizontal	74.00	20.28	PK	-2.70	Pass
2483.590000*	45.41	Vertical	74.00	28.59	PK	-2.70	Pass
4959.500000*	49.90	Horizontal	74.00	24.10	PK	4.57	Pass
5671.000000	49.93	Vertical	74.00	24.07	PK	5.76	Pass

Remark:

(1) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.

(2) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are the noise floor or attenuated more than 10dB below the permissible limits or the field strength is too small to be measured.

(3) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain.

(4) Below 1GHz: Corrector factor = Antenna Factor + Cable Loss.

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10 Test Equipment List

Radiated Emission 2# 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	2022-6-4
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2022-2-2
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2022-5-24
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2021-10-25
Pre-amplifier	Rohde & Schwarz	SCU 08F2	68-4-29-19-004	08400018	1	2021-10-25
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2022-7-21
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2022-7-27
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 2# 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	2022-6-4
LISN	Rohde & Schwarz	ENV216	68-4-87-19-001	102472	1	2022-6-5
ISN	Rohde & Schwarz	ENY81	68-4-87-14-003	100177	1	2022-6-5
ISN	Rohde & Schwarz	ENY81-CA6	68-4-87-14-004	101664	1	2022-6-5
High Voltage Probe	Schwarzbeck	TK9420(VT9420)	68-4-27-14-001	9420-584	1	2022-6-5
RF Current Probe	Rohde & Schwarz	EZ-17	68-4-27-14-002	100816	1	2022-6-5
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2022-6-3
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	----	1	2022-11-07

RF Conducted Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2022-6-3
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	68-4-93-14-003	101226/100851	1	2022-6-3
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2022-6-3
10dB Attenuator	Weinschel	4M-10	68-4-81-14-003	43152	1	2022-6-3
10dB Attenuator	R&S	DNF	68-4-81-14-004	DNF-001	1	2022-6-3
10dB Attenuator	R&S	DNF	68-4-81-14-005	DNF-002	1	2022-6-3
10dB Attenuator	R&S	DNF	68-4-81-14-006	DNF-003	1	2022-6-3
10dB Attenuator	R&S	DNF	68-4-81-14-007	DNF-004	1	2022-6-3
Test software	Tonscend	System for BT/WIFI	68-4-74-14-006-A13	Version 2.6.77.0518	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	1	2022-11-07

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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

System Measurement Uncertainty	
Items	**Extended Uncertainty**
Uncertainty for Radiated Spurious Emission 25MHz-3000MHz	Horizontal: 4.35dB; Vertical: 4.44dB;
Uncertainty for Radiated Spurious Emission 3000MHz-18000MHz	Horizontal: 4.30dB; Vertical: 4.29dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	Horizontal: 4.51dB; Vertical: 4.50dB;
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10-7 or 1%
Uncertainty for Conducted Emission in new shielding room (68-4-90-19-005) 150kHz-30MHz (for test using AMN ENV216)	3.20dB

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