




TR3818-5G-A

Equipment Under Test:	SONA TI351
Requirement(s):	eCFR 47 Part 15.407 RSS-247
Test Date(s):	06/19/2024-10/01/2024
Prepared for:	Ezurio Attn: Brian Petted W66 N220 Commerce Ct. Cedarburg, WI 53012

Report Issued by: Dylan Rosenfeldt, EMC Engineer	
Signature: 	Date: 10/22/2024
Report Reviewed by: Adam Alger, Manager EMC Laboratory	
Signature: 	Date: 10/22/2024
Report Constructed by: Dylan Rosenfeldt, EMC Engineer	
Signature: 	Date: 10/22/2024

This test report may not be reproduced, except in full, without approval of Ezurio

Company: Ezurio	Page 1 of 64	Name: SONA TI351
Report: TR3818-5G		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008

CONTENTS

Contents.....	2
Ezurio Test Services in Review	3
1 Test Report Summary	4
2 Client Information.....	5
2.1 Equipment Under Test (EUT) Information.....	5
2.2 Product Description.....	5
2.3 Modifications Incorporated for Compliance	5
2.4 Deviations and Exclusions from Test Specifications.....	5
2.5 EUT Information	5
2.6 Antenna Information	6
2.7 Test Channels.....	7
2.8 Power Table and Reduced Video Bandwidth for Average Measurements	7
3 Worst Case Test Results Summary.....	8
4 References	9
5 Uncertainty Summary	10
6 Test Data	11
6.1 Antenna Port Conducted Emissions	11
6.2 Radiated Emissions	42
6.3 AC Mains Conducted Emissions.....	61
7 Revision History	64

Ezurio Test Services in Review

The Ezurio laboratory located at W66 N220 Commerce Court Cedarburg, Wisconsin, 53012 USA is recognized through the following organizations:



A2LA – American Association for Laboratory Accreditation

Accreditation based on ISO/IEC 17025:2017 with Electrical (EMC) Scope

A2LA Certificate Number: 1255.01

Scope of accreditation includes all test methods listed herein unless otherwise noted



Federal Communications Commission (FCC) – USA

Accredited Test Firm Registration Number: 953492

Recognition of two 3 meter Semi-Anechoic Chambers



Innovation, Science and Economic Development Canada

Accredited U.S. Identification Number: US0218

Recognition of two 3 meter Semi-Anechoic Chambers

Company: Ezurio	Page 3 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008

1 TEST REPORT SUMMARY

During **06/19/2024-10/01/2024** the Equipment Under Test (EUT), **SONA TI351**, as provided by Ezurio was tested to the following requirements:

Operation in the 5.15-5.25 and 5.25-5.35 GHz bands

Requirements	Description	Method	Compliant
15.407(b)(1), (2), & (10) 15.209 RSS-247 Clause 6.2.1 & 6.2.2 RSS-GEN	Spurious Radiated Emissions in Restricted Bands 30-40000 MHz	ANSI C63.10 12.7	Yes
15.407(a)(5) RSS-247 Clause 6.2.1 & 6.2.2	26dB and 99% Occupied Bandwidth	ANSI C63.10 12.5	Yes
15.407(a)(1) & (2) RSS-247 Clause 6.2.1 & 6.2.2	RF Output Power	ANSI C63.10 12.4	Yes
15.407(b)(1) & (2) RSS-247 Clause 6.2.1 & 6.2.2	Conducted Out-of-band Emissions	ANSI C63.10 12.7	Yes
15.407(a)(1)(2) RSS-247 Claus 6.2.1 & 6.2.2	Power Spectral Density	ANSI C63.10 12.6	Yes
15.407(b)(9) 15.207 RSS-GEN	AC Conducted Emissions	ANSI C63.10 6.2	Yes
15.407(g)	Frequency Stability	ANSI C63.10 6.8	Reported

Notice:

The results relate only to the item tested as configured and described in this report. Any additional configurations, modes of operation, or modifications made to the equipment under test after the specified test date(s) are at the decision of the client and may not apply to the data seen in this test report.

The decision rule for Pass / Fail assessment to the specification or standard listed in this test report has been agreed upon by the client and laboratory to be as follows:

Measurement Type	Rule
Emissions – Amplitude	0.5 dB below specified limit
Emissions – Frequency	1% less than the specification
Immunity	Tested at specified level

2 CLIENT INFORMATION

Company Name	Ezurio
Contact Person	Brian Petted
Address	W66 N220 Commerce Ct. Cedarburg, WI 53012

2.1 Equipment Under Test (EUT) Information

The following information has been supplied by the client

Product Name	SONA TI351
Model Number	SONA TI351
Serial Number	00013 00008
FCC ID	SQG-SONATI351
IC ID	3147A-SONATI351

2.2 Product Description

The TI351 is based upon TI CC3351 Wi-Fi 6 chipset. Feature-set includes 802.11 a/b/g/n/ac/ax Wi-Fi 6 and Bluetooth Low Energy v5.4.

2.3 Modifications Incorporated for Compliance

None noted at time of test

2.4 Deviations and Exclusions from Test Specifications

None noted at time of test

2.5 EUT Information

Power Supply – INPUT:100-240VAC 50/60 Hz 0.3A

OUTPUT: 5VDC 2A

Firmware - image-imx8mp-evk-rdvk 1.0.0.5

Ancillary Equipment

Development Kit, NXP 8MPLUS-BB

Power Supply: INPUT: 100-240 VAC 50/60Hz

OUTPUT: USB Type C 45W, 5V/3A; 9V/3A; 15V/3 A; 20V/2.25 A

HP Elitebook 840G1

TeraTerm Version: 5.1

2.6 Antenna Information

Manufacturer	Model	Part Number	Dimension	Type	Peak Gain (dBi)	
					2400-2500 MHz	4900-5925 MHz
Ezurio	FlexPIFA 6E	EFB2471A3S-10MH4L	16mm X 36mm X 2.5mm	PIFA	2.2	3.9
Ezurio	Mini NanoBlade Flex 6E	EMF2471A3S-10MH4L	36mm X 12mm X 0.3mm	PCB Dipole	2.4	4.4
Ezurio	FlexPIFA	001-0021	38.5mm X 12.7mm X 2.5mm	PIFA	2.5	3.0
Joymax Electronics	N/A	TWX-100BRS3B	137mm X 13mm	Dipole	2.0	4.0
Ezurio	FlexPIFA	EFB2455A3S-15MH4L	2.5mm X 38.6mm X 12.7mm	PIFA	2.5	3.0
Ezurio	Mini NanoBlade Flex	EMF2449A1-10MH4L	36mm x 12mm x 0.1mm	PIFA	2.8	3.4
Ezurio	NanoBlade	ENB2449A1-10MH4L	50.8mm x 16.5mm	PCB Dipole	3.2	4.1

2.7 Test Channels

Channel	Frequency (MHz)	Bandwidth (MHz)	Data Rates
36	5180	20	802.11a – 6 and 54 Mbps 802.11n – MCS0 and MCS7 802.11ac – MCS0 and MCS7 802.11ax – MCS0 and MCS7
40	5200	20	
48	5240	20	
52	5260	20	
56	5280	20	
64	5320	20	
100	5500	20	
116	5580	20	
144	5720	20	
157	5745	20	
161	5785	20	
165	5825	20	

2.8 Power Table and Reduced Video Bandwidth for Average Measurements

802.11	Channel BW (MHz)	Data Rate	Minimum Average VBW (Hz)
a	20	6 Mbps	211
a	20	54 Mbps	1838
n	20	MCS0	215
n	20	MCS7	545
ac	20	MCS0	215
ac	20	MCS7	543
ax	20	MCS0	217
ax	20	MCS7	545
ax RU26	20	MCS0	240
ax RU26	20	MCS7	2096
ax RU52	20	MCS0	474
ax RU52	20	MCS7	3663
ax RU106	20	MCS0	967
ax RU106	20	MCS7	6098
ax RU242	20	MCS0	2101
ax RU242	20	MCS7	9174

3 WORST CASE TEST RESULTS SUMMARY

UNII-1

Requirement	Radio	Channel and Data Rate	Frequency (MHz)	Measurement	Limit	Margin
15.407(a)(5) RSS-247 Clause 6.2.1 26dB Bandwidth	802.11ax	40 MCS0	5200	21.37 MHz	0.500 MHz	20.87 MHz
15.407(a)(1) RSS-247 Clause 6.2.1 Output Power	802.11ac	48 MCS0	5240	14.8 dBm	24.0 dBm	9.2 dB
15.407(a)(1) RSS-247 Clause 6.2.1 PSD	802.11ax	48 MCS7 RU26	5240	9.3 dBm	11 dBm/MHz	1.7 dB
15.407(b)(1) RSS-247 Clause 6.2.1 Restricted Band	802.11ax	36 MCS7 RU52	5145.2	-29.2 dBm	-27.0 dBm	2.2 dB
15.407(b)(9) RSS-GEN AC Conducted	802.11a	100 6Mbps	0.204	60.1 dBμV	63.4 dBμV	3.3 dB

UNII-2A

Requirement	Radio	Channel and Data Rate	Frequency (MHz)	Measurement	Limit	Margin
15.407(a)(5) RSS-247 Clause 6.2.1 26dB Bandwidth	802.11ax	56 MCS0	5200	21.76 MHz	0.500 MHz	21.26 MHz
15.407(a)(1) RSS-247 Clause 6.2.1 Output Power	802.11a	64 6Mbps	5320	15.0 dBm	24.0 dBm	9.0 dB
15.407(a)(1) RSS-247 Clause 6.2.1 PSD	802.11ax	56 MCS0 RU26	5280	8.8 dBm	11 dBm/MHz	2.2 dB
15.407(b)(1) RSS-247 Clause 6.2.1 Restricted Band	802.11ax	64 MCS7 RU242	5352.4	-43.2 dBm	-41.2 dBm	2.0 dB

4 REFERENCES

Publication	Edition	Date	AMD 1	AMD 2
FCC eCFR 47 Part 15	-	2024	-	-
ANSI C63.10	-	2020	-	-
RSS-247	3	2023	-	-
RSS-GEN	5	2018	2019	2021
KDB 558074 D01	-	2019	-	-

5 UNCERTAINTY SUMMARY

Using the guidance of the following publications the calculated measurement uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level, using a coverage factor of $k = 2$.

References

CISPR 16-4-1

CISPR 16-4-2

CISPR 32

ANSI C63.23

A2LA P103

A2LA P103c

ETSI TR 100-028

Measurement Type	Configuration	Uncertainty \pm
Radiated Emissions	Biconical Antenna	5.0 dB
Radiated Emissions	Log Periodic Antenna	5.3 dB
Radiated Emissions	Horn Antenna	4.7 dB
AC Line Conducted Emissions	Artificial Mains Network	3.4 dB
Telecom Conducted Emissions	Asymmetric Artificial Network	4.9 dB
Disturbance Power Emissions	Absorbing Clamp	4.1 dB
Radiated Immunity	3 Volts/meter	2.2 dB
Conducted Immunity	CDN/EM/BCI	2.4/3.5/3.4 dB
EFT Burst/Surge	Peak pulse voltage	164 volts
ESD Immunity	15 kV level	1377 Volts

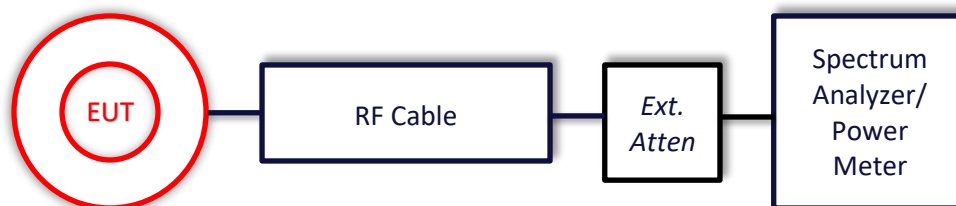
Parameter	ETSI U.C. \pm	U.C. \pm
Radio Frequency, from F0	1×10^{-7}	0.55×10^{-7}
Occupied Channel Bandwidth	5 %	2 %
RF conducted Power (Power Meter)	1.5 dB	1.2 dB
RF conducted emissions (Spectrum Analyzer)	3.0 dB	1.7 dB
All emissions, radiated	6.0 dB	5.3 dB
Temperature	1° C	0.65° C
Humidity	5 %	2.9 %
Supply voltages	3 %	1 %

6 TEST DATA

6.1 Antenna Port Conducted Emissions

Description of Measurement	<p>The direct measurement of emissions at the antenna port of the EUT is achieved by use of a RF connection to a spectrum analyzer or power meter.</p> <p>The cable and attenuator factors are loaded into the analyzer or power meter allowing for direct measurement readings without the need for further corrections.</p>
Example Calculations	<p>Measurement (dBm) + Cable factor (dB) + External Attenuator (dB) = Corrected Reading (dBm)</p> <p>Margin (dB) = Limit (dBm) – Corrected Reading (dBm)</p>

Block Diagram



6.1.1 26dB Emission Bandwidth and 99% Occupied Bandwidth

Operator	Dylan Rosenfeldt	QA	Anthony Smith
Temperature	22.5°C-22.7°C	R.H. %	45.0%-59.2%
Test Date	7/2/2024 7/3/2024 7/8/2024	Location	Conducted RF Bench
Requirement	15.407 (a)(5) RSS-247 Clause 6.2.1 & 6.2.2	Method	ANSI C63.10 12.5

Limits: The minimum 26 dB bandwidth shall be at least 500 kHz

Test Parameters

Frequency	5150-5350 MHz		
RBW	510 kHz	VBW	2MHz
Detector(s)	Peak	Settings	Max Hold

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	6/13/2024	6/12/2025	Active Verification
EE 960088	Analyzer – EMI Receiver	Agilent	N9038A	MY51210138	4/10/2024	4/10/2025	Active Calibration
EE 960087	Analyzer – Spectrum	Agilent	N9010A	MY53400296	4/11/2024	4/11/2025	Active Calibration

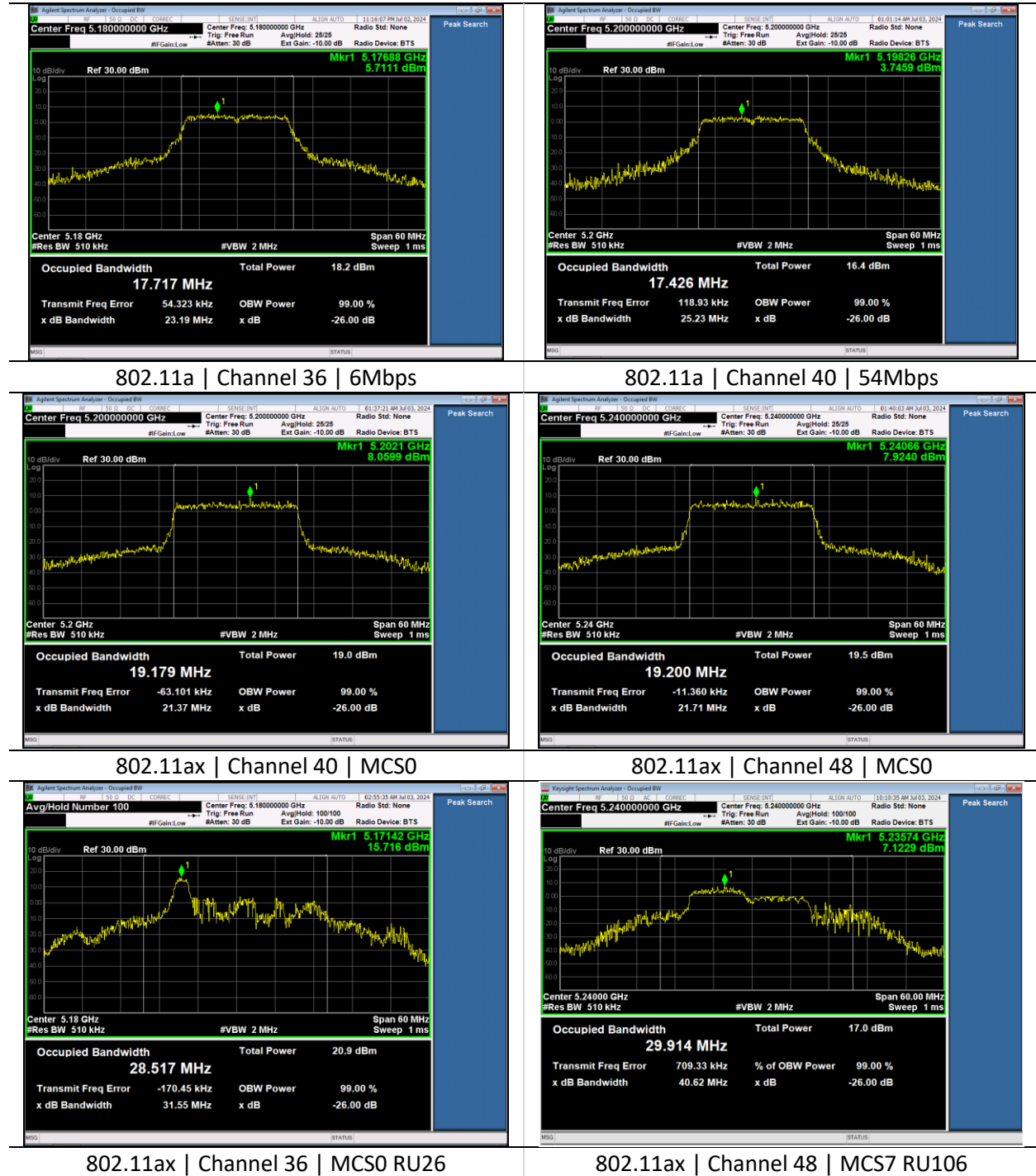
EUT Parameters

Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx
Frequency	5180-5320 MHz	Channel	See 2.8

U-NII-1 Measurements

Channel	Mode	Data Rate	99% OBW (MHz)	26dB EBW (MHz)
36	802.11a	6M	17.717	23.19
40	802.11a	6M	17.784	22.47
48	802.11a	6M	17.772	24.37
36	802.11a	54M	17.967	24.10
40	802.11a	54M	17.426	25.23
48	802.11a	54M	17.916	25.19
36	802.11n	MCS0	18.461	21.98
40	802.11n	MCS0	18.249	21.77
48	802.11n	MCS0	18.363	22.74
36	802.11n	MCS7	18.438	26.46
40	802.11n	MCS7	18.395	24.69
48	802.11n	MCS7	18.403	23.97
36	802.11ac	MCS0	18.497	22.32
40	802.11ac	MCS0	18.295	22.28
48	802.11ac	MCS0	18.352	22.21
36	802.11ac	MCS7	18.418	24.38
40	802.11ac	MCS7	18.461	24.51
48	802.11ac	MCS7	18.307	23.53
36	802.11ax	MCS0	19.183	22.10
40	802.11ax	MCS0	19.179	21.37
48	802.11ax	MCS0	19.200	21.71
36	802.11ax	MCS7	19.289	25.06
40	802.11ax	MCS7	19.291	24.33
48	802.11ax	MCS7	19.393	24.74
36	802.11ax	MCS0 RU26	28.517	31.55
40	802.11ax	MCS0 RU26	29.040	36.31
48	802.11ax	MCS0 RU26	29.085	34.16
36	802.11ax	MCS7 RU26	27.443	37.00
40	802.11ax	MCS7 RU26	27.225	35.63
48	802.11ax	MCS7 RU26	27.095	33.15
36	802.11ax	MCS0 RU52	29.609	36.23
40	802.11ax	MCS0 RU52	28.933	36.53
48	802.11ax	MCS0 RU52	29.135	36.69
36	802.11ax	MCS7 RU52	28.065	38.06
40	802.11ax	MCS7 RU52	28.460	39.68
48	802.11ax	MCS7 RU52	28.151	37.93
36	802.11ax	MCS0 RU106	31.368	40.71
40	802.11ax	MCS0 RU106	30.907	41.45
48	802.11ax	MCS0 RU106	30.874	41.01
36	802.11ax	MCS7 RU106	29.939	40.57
40	802.11ax	MCS7 RU106	30.847	43.19
48	802.11ax	MCS7 RU106	29.914	40.62
36	802.11ax	MCS0 RU242	32.607	44.89
40	802.11ax	MCS0 RU242	32.414	42.76
48	802.11ax	MCS0 RU242	32.641	43.15
36	802.11ax	MCS7 RU242	31.551	42.97
40	802.11ax	MCS7 RU242	32.703	43.80
48	802.11ax	MCS7 RU242	31.459	42.83

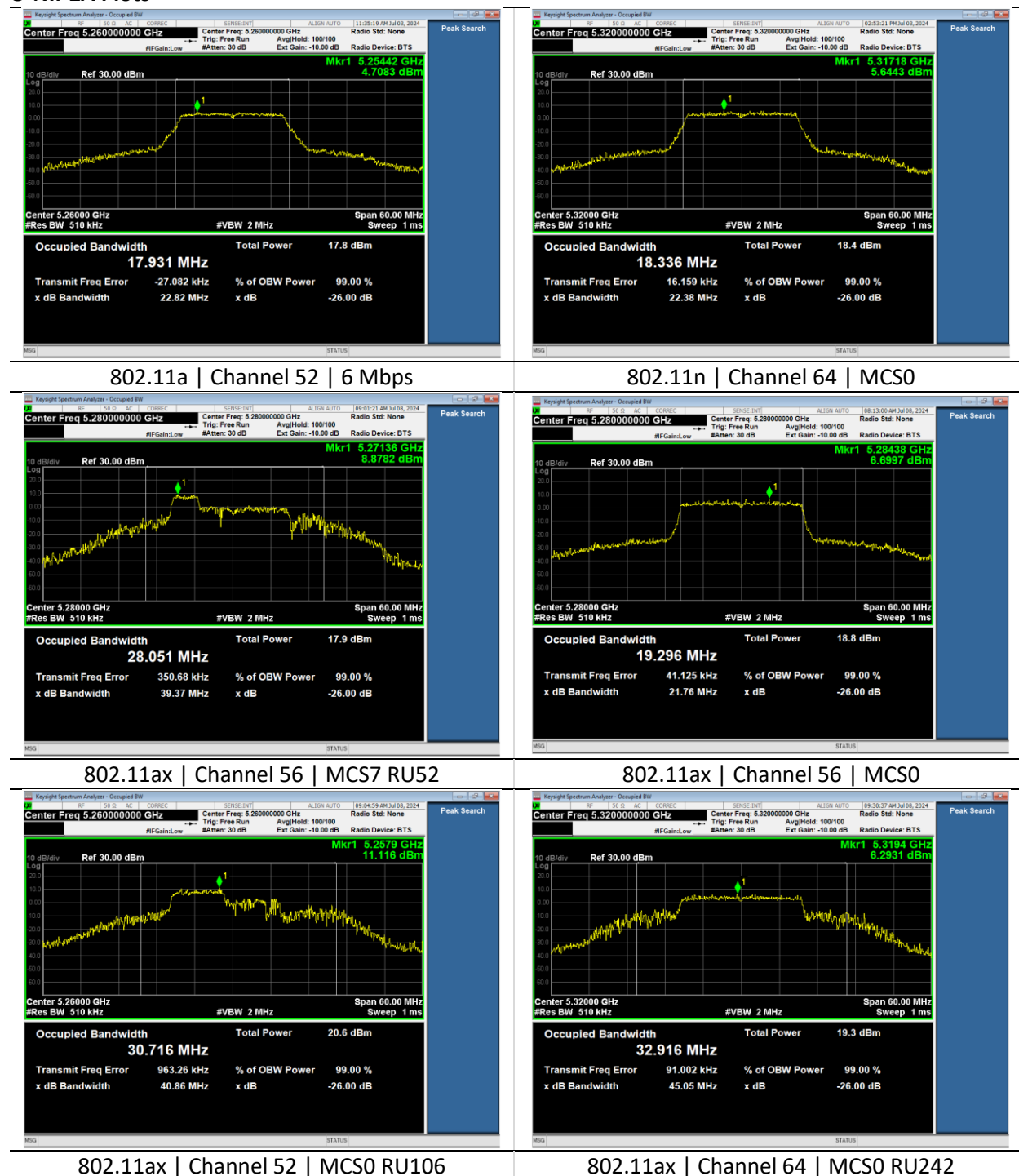
U-NII-1 Plots



U-NII-2A Measurements

Channel	Mode	Data Rate	99% OBW (MHz)	26dB EBW (MHz)
52	802.11a	6M	17.931	22.82
56	802.11a	6M	18.043	25.60
64	802.11a	6M	17.915	25.37
52	802.11a	54M	18.358	25.55
56	802.11a	54M	18.315	24.89
64	802.11a	54M	18.048	25.54
52	802.11n	MCS0	18.417	21.98
56	802.11n	MCS0	18.343	22.05
64	802.11n	MCS0	18.336	22.38
52	802.11n	MCS7	18.497	25.45
56	802.11n	MCS7	18.669	23.77
64	802.11n	MCS7	18.582	26.20
52	802.11ac	MCS0	18.319	22.21
56	802.11ac	MCS0	18.368	22.06
64	802.11ac	MCS0	18.427	22.17
52	802.11ac	MCS7	18.726	25.37
56	802.11ac	MCS7	18.581	24.67
64	802.11ac	MCS7	18.554	24.10
52	802.11ax	MCS0	19.379	22.04
56	802.11ax	MCS0	19.296	21.76
64	802.11ax	MCS0	19.225	21.97
52	802.11ax	MCS7	19.436	25.40
56	802.11ax	MCS7	19.481	26.12
64	802.11ax	MCS7	19.399	25.17
52	802.11ax	MCS0 RU26	28.939	41.32
56	802.11ax	MCS0 RU26	29.422	33.38
64	802.11ax	MCS0 RU26	28.363	32.12
52	802.11ax	MCS7 RU26	27.601	37.25
56	802.11ax	MCS7 RU26	28.616	36.11
64	802.11ax	MCS7 RU26	28.109	37.12
52	802.11ax	MCS0 RU52	28.866	36.54
56	802.11ax	MCS0 RU52	30.387	37.03
64	802.11ax	MCS0 RU52	29.103	38.12
52	802.11ax	MCS7 RU52	27.566	38.81
56	802.11ax	MCS7 RU52	28.051	39.37
64	802.11ax	MCS7 RU52	27.741	36.88
52	802.11ax	MCS0 RU106	30.716	40.86
56	802.11ax	MCS0 RU106	31.944	41.83
64	802.11ax	MCS0 RU106	30.880	40.14
52	802.11ax	MCS7 RU106	29.580	41.37
56	802.11ax	MCS7 RU106	30.133	42.17
64	802.11ax	MCS7 RU106	30.080	42.64
52	802.11ax	MCS0 RU242	32.263	45.11
56	802.11ax	MCS0 RU242	33.115	44.33
64	802.11ax	MCS0 RU242	32.916	45.05
52	802.11ax	MCS7 RU242	32.489	43.25
56	802.11ax	MCS7 RU242	32.465	45.55
64	802.11ax	MCS7 RU242	31.631	45.99

U-NII-2A Plots



6.1.2 RF Output Power

Operator	Dylan Rosenfeldt	QA	Anthony Smith
Temperature	21.8°C-22.6°C	R.H. %	43.6%-50.9%
Test Date	08/15/2024-08/21/2024	Location	RF Conducted Bench
Requirement	15.407 (a)(1) & (2) RSS-247 Clause 6.2.1 & 6.2.2	Method	ANSI C63.10 12.4 AVGSA-2

Limit: 5150-5250: The maximum conducted output power of the intentional radiator shall not exceed 250 mW.

5250-5350: The maximum conducted output power of the intentional radiator shall not exceed 250 mW or 11dBm+10log(B), whichever is lower; where B is the 26dB emission bandwidth

Test Parameters

Frequency	5150-5350 MHz	Setup	Antenna Port
RBW	1 MHz	VBW	3 MHz
Detector(s)	Average (RMS)	Settings	Trace Average Span: 30 MHz 50 MHz
Example Calculations	Average Output Power = Measured Power + 10*log(1/D) where D is the duty cycle.		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	6/13/2024	6/12/2025	Active Verification
EE 960087	Analyzer – Spectrum	Agilent	N9010A	MY53400296	4/11/2024	4/11/2025	Active Calibration

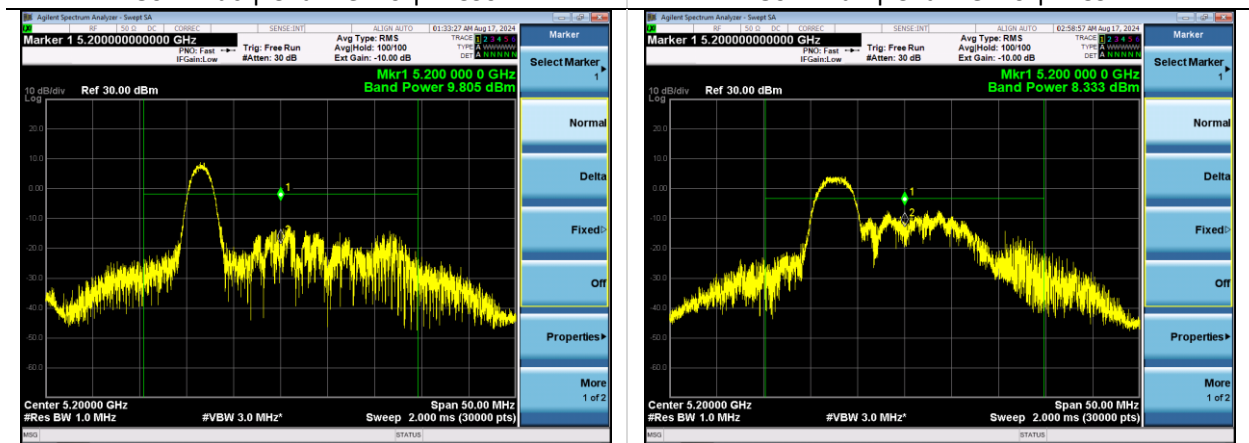
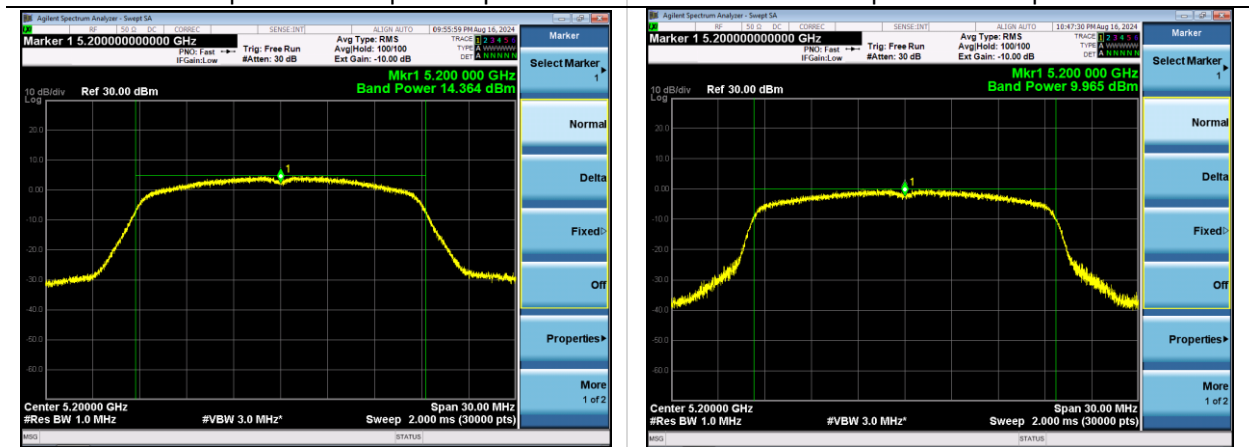
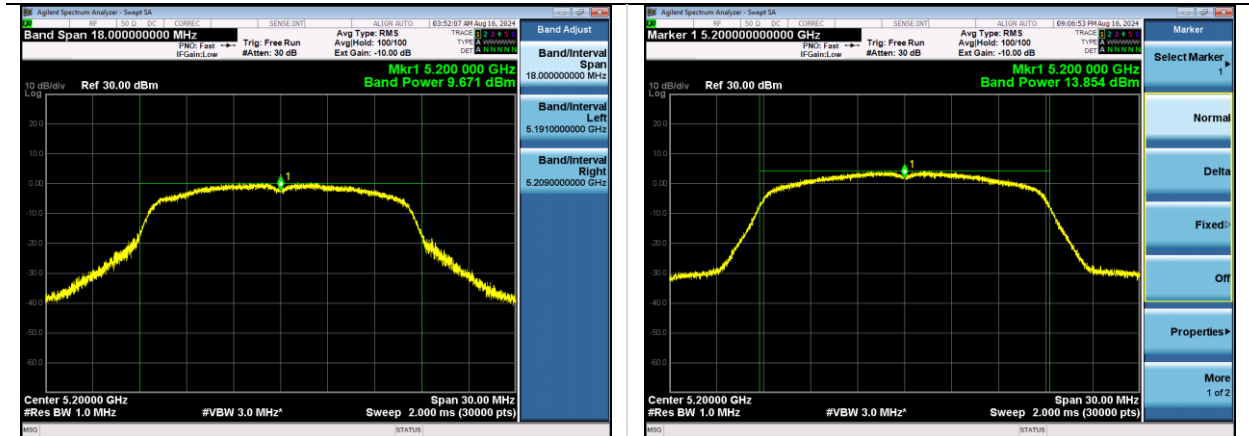
EUT Parameters

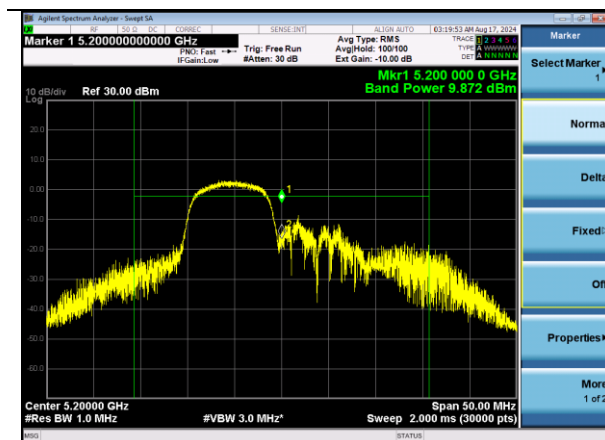
Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx
Frequency	5180-5320 MHz	Channel	See 2.9

U-NII-1 Measurements

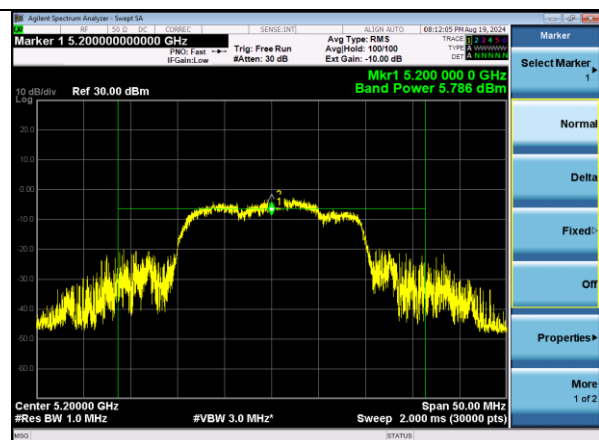
Mode	Rate	Channel	Average Output Power (dBm)	Duty Cycle Correction (dB)	Corrected Output Power (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a	6 Mbps	36	14.5	0.1	14.6	24	9.4	30
		40	14.4	0.1	14.5	24	9.5	30
		48	14.6	0.1	14.7	24	9.3	30
	54 Mbps	36	9.5	0.8	10.3	24	13.7	30
		40	9.7	0.8	10.5	24	13.5	30
		48	9.9	0.8	10.7	24	13.3	30
802.11n	MCS0	36	14.5	0.1	14.6	24	9.4	30
		40	13.9	0.1	14.0	24	10.0	30
		48	14.4	0.1	14.5	24	9.5	30
	MCS7	36	10.0	0.2	10.2	24	13.8	30
		40	10.0	0.2	10.2	24	13.8	30
		48	10.2	0.2	10.4	24	13.6	30
802.11ac	MCS0	36	13.6	0.1	13.7	24	10.3	30
		40	14.4	0.1	14.5	24	9.5	30
		48	14.7	0.1	14.8	24	9.2	30
	MCS7	36	10.0	0.2	10.2	24	13.8	30
		40	10.1	0.2	10.3	24	13.7	30
		48	10.6	0.2	10.8	24	13.2	30
802.11ax	MCS0	36	13.1	0.1	13.2	24	10.8	29
		40	14.2	0.1	14.3	24	9.7	30
		48	14.5	0.1	14.6	24	9.4	30
	MCS7	36	9.7	0.2	9.9	24	14.1	29
		40	10.0	0.2	10.2	24	13.8	30
		48	10.3	0.2	10.5	24	13.5	30
802.11ax	MCS0 RU26	36	9.7	0.3	10.0	24	14.0	26
		40	9.8	0.3	10.1	24	13.9	30
		48	9.9	0.3	10.2	24	13.8	30
	MCS7 RU26	36	8.8	1.7	10.5	24	13.5	26
		40	8.3	1.7	10.0	24	14.0	30
		48	8.9	1.7	10.6	24	13.4	30
802.11ax	MCS0 RU52	36	9.3	0.5	9.8	24	14.2	26
		40	9.5	0.5	10.0	24	14.0	30
		48	10.0	0.5	10.5	24	13.5	30
	MCS7 RU52	36	8.2	2.7	10.9	24	13.1	26
		40	8.3	2.7	11.0	24	13.0	30
		48	7.8	2.7	10.5	24	13.5	30
802.11ax	MCS0 RU106	36	9.5	0.9	10.4	24	13.6	26
		40	9.9	0.9	10.8	24	13.2	30
		48	9.9	0.9	10.8	24	13.2	30
	MCS7 RU106	36	6.9	3.9	10.8	24	13.2	26
		40	6.8	3.9	10.7	24	13.3	30
		48	7.1	3.9	11.0	24	13.0	30
802.11ax	MCS0 RU242	36	8.4	1.7	10.1	24	13.9	25
		40	8.6	1.7	10.3	24	13.7	30
		48	9.0	1.7	10.7	24	13.3	30
	MCS7 RU242	36	5.6	5.0	10.6	24	13.4	25
		40	5.8	5.0	10.8	24	13.2	30
		48	6.1	5.0	11.1	24	12.9	30

U-NII-1 Plots





802.11ax | Channel 40 | MCS0 RU106



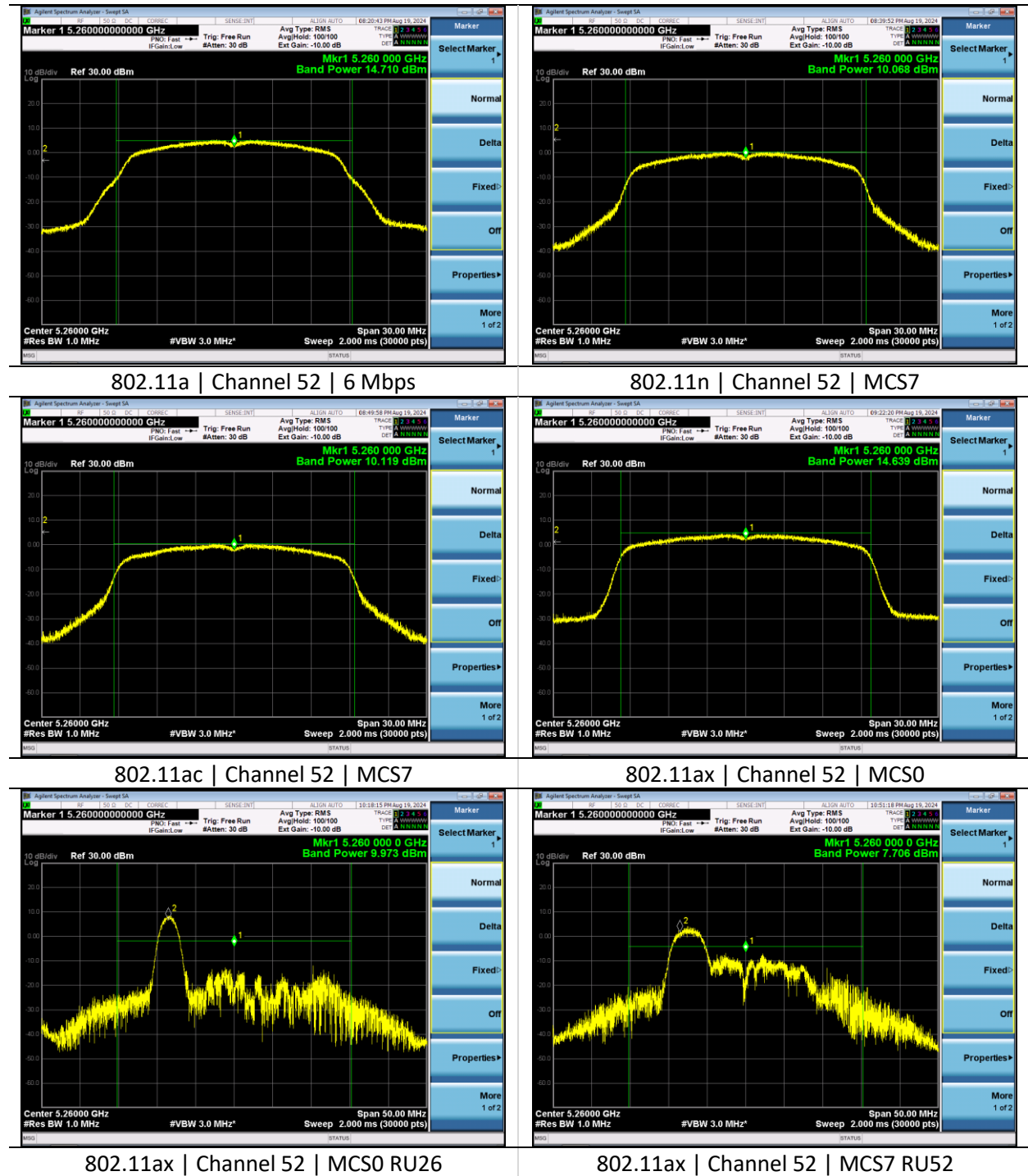
802.11ax | Channel 40 | MCS7 RU242

Company: Ezurio	Page 20 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008

U-NII-2A Measurements

Mode	Rate	Channel	Average Output Power (dBm)	Duty Cycle Correction (dB)	Corrected Output Power (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a	6 Mbps	52	14.7	0.1	14.8	24	9.2	30
		56	14.5	0.1	14.6	24	9.4	30
		64	14.9	0.1	15.0	24	9.0	30
	54 Mbps	52	9.7	0.8	10.5	24	13.5	30
		56	9.8	0.8	10.6	24	13.4	30
		64	10.1	0.8	10.9	24	13.1	30
802.11n	MCS0	52	14.5	0.1	14.6	24	9.4	30
		56	14.5	0.1	14.6	24	9.4	30
		64	14.8	0.1	14.9	24	9.1	30
	MCS7	52	10.1	0.2	10.3	24	13.7	30
		56	10.2	0.2	10.4	24	13.6	30
		64	10.5	0.2	10.7	24	13.3	30
802.11ac	MCS0	52	14.5	0.1	14.6	24	9.4	30
		56	14.5	0.1	14.6	24	9.4	30
		64	14.7	0.1	14.8	24	9.2	30
	MCS7	52	10.1	0.2	10.3	24	13.7	30
		56	10.2	0.2	10.4	24	13.6	30
		64	10.5	0.2	10.7	24	13.3	30
802.11ax	MCS0	52	14.6	0.1	14.7	24	9.3	30
		56	14.4	0.1	14.5	24	9.5	30
		64	14.6	0.1	14.7	24	9.3	30
	MCS7	52	10.0	0.2	10.2	24	13.8	30
		56	10.2	0.2	10.4	24	13.6	30
		64	10.2	0.2	10.4	24	13.6	30
802.11ax	MCS0 RU26	52	10.0	0.3	10.3	24	13.7	30
		56	9.9	0.3	10.2	24	13.8	30
		64	8.0	0.3	8.3	24	15.7	23
	MCS7 RU26	52	8.4	1.7	10.1	24	13.9	30
		56	8.9	1.7	10.6	24	13.4	30
		64	6.8	1.7	8.5	24	15.5	23
802.11ax	MCS0 RU52	52	9.8	0.5	10.3	24	13.7	30
		56	9.8	0.5	10.3	24	13.7	30
		64	8.0	0.5	8.5	24	15.5	23
	MCS7 RU52	52	7.7	2.7	10.4	24	13.6	30
		56	8.4	2.7	11.1	24	12.9	30
		64	6.6	2.7	9.3	24	14.7	23
802.11ax	MCS0 RU106	52	9.9	0.9	10.8	24	13.2	30
		56	10.0	0.9	10.9	24	13.1	30
		64	8.4	0.9	9.3	24	14.7	24
	MCS7 RU106	52	7.4	3.9	11.3	24	12.7	30
		56	7.6	3.9	11.5	24	12.5	30
		64	6.5	3.9	10.4	24	13.6	24
802.11ax	MCS0 RU242	52	9.2	1.7	10.9	24	13.1	30
		56	9.3	1.7	11.0	24	13.0	30
		64	8.4	1.7	10.1	24	13.9	24
	MCS7 RU242	52	6.3	5.0	11.3	24	12.7	30
		56	6.4	5.0	11.4	24	12.6	30
		64	5.5	5.0	10.5	24	13.5	24

U-NII-2A Plots



Company: Ezurio

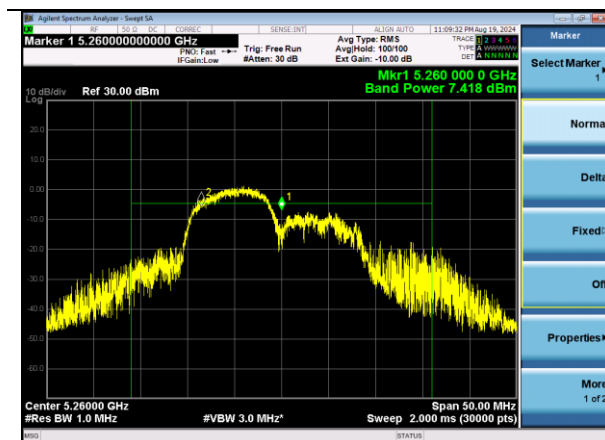
Report: TR3818-5G-A

Quote: C-3818

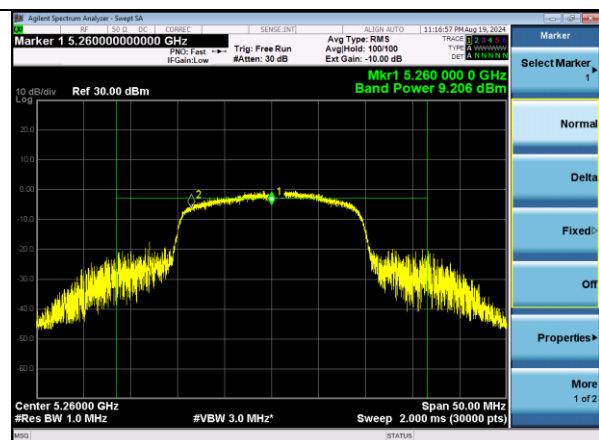
Name: SONA TI351

Model: SONA TI351

Serial: 00013 | 00008



802.11ax | Channel 52 | MCS7 RU106



802.11ax | Channel 52 | MCS0 RU242

Company: Ezurio	Page 23 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008

6.1.3 Power Spectral Density

Operator	Dylan Rosenfeldt	QA	Anthony Smith
Temperature	21.8°C-22.6°C	R.H. %	43.6%-50.9%
Test Date	08/15/2024-08/21/2024	Location	RF Conducted Bench
Requirement	15.407 (a)(1) & (2) RSS-247 Clause 6.2.1 & 6.2.2	Method	ANSI C63.10 12.6 AVGPSD-2

Limits: Power spectral density shall not be greater than 11 dBm in any 1 MHz band.

Test Parameters

Frequency	5150-5350 MHz	Detector(s)	Average (RMS)
RBW	1 MHz	VBW	3 MHz
Notes	The same method of determining the conducted output power shall be used to determine the power spectral density		
Example Calculations	Average PSD = Measured PSD + 10*log(1/D) where D is the duty cycle.		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	6/13/2024	6/12/2025	Active Verification
EE 960087	Analyzer – Spectrum	Agilent	N9010A	MY53400296	4/11/2024	4/11/2025	Active Calibration

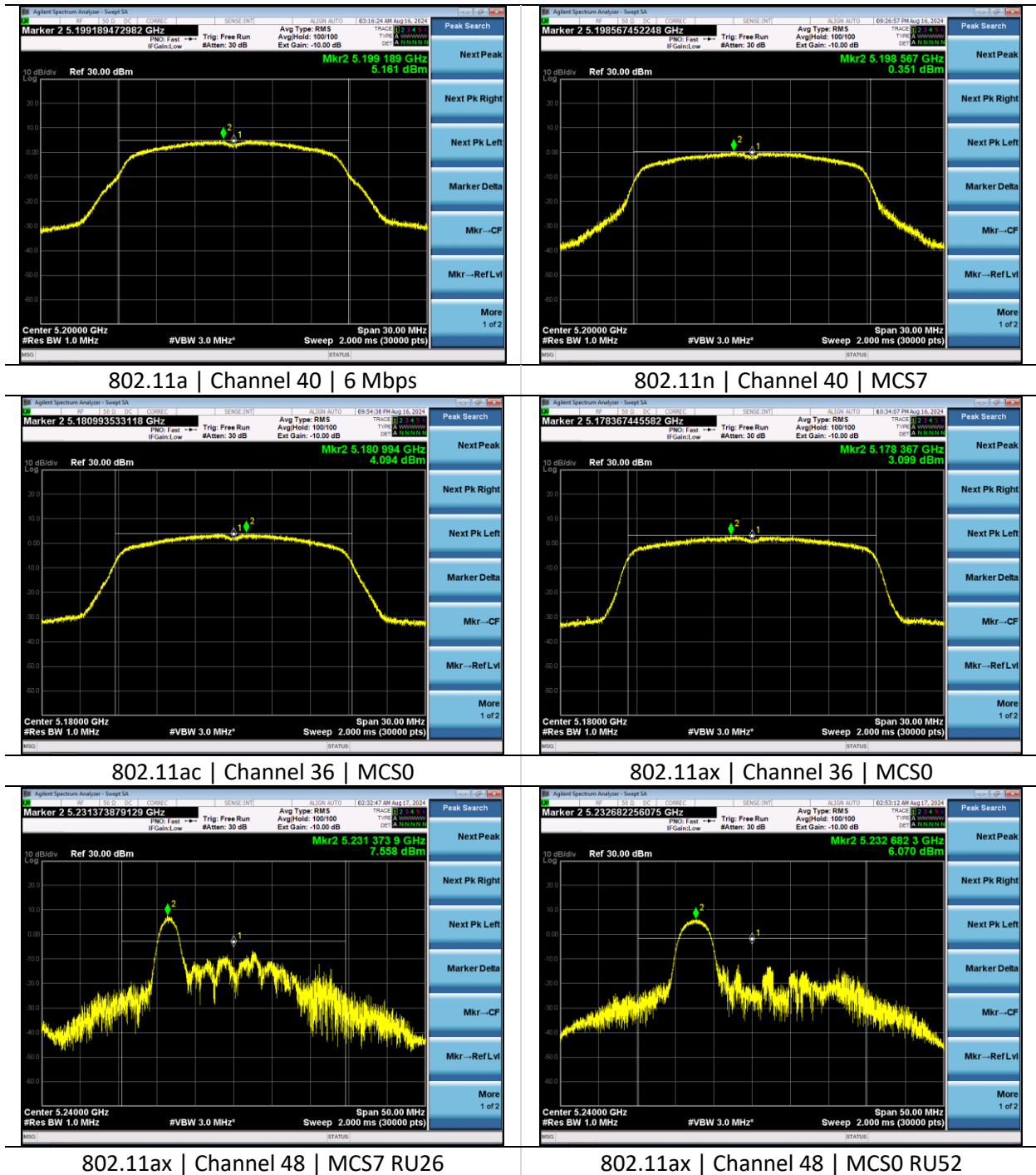
EUT Parameters

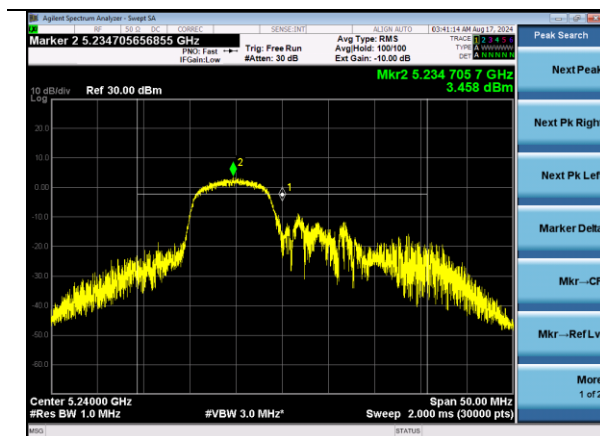
Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx
Frequency	5180-5320 MHz	Channel	See 2.9

U-NII-1 Measurements

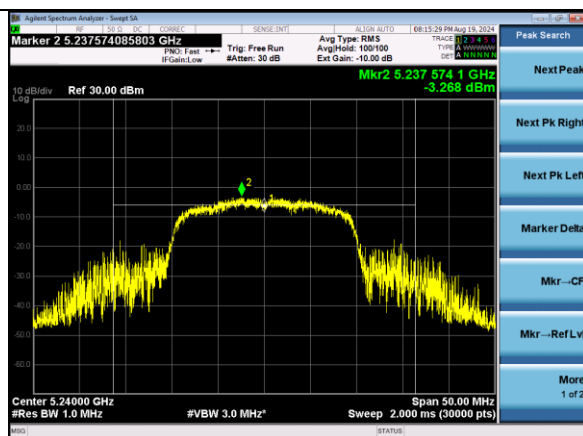
Mode	Rate	Channel	Average PSD (dBm)	Duty Cycle Correction (dB)	Corrected PSD (dBm)	Limit (dBm/MHz)	Margin (dB)	Power Setting
802.11a	6 Mbps	36	5.4	0.1	5.5	11	5.5	30
		40	5.2	0.1	5.3	11	5.7	30
		48	5.3	0.1	5.4	11	5.6	30
	54 Mbps	36	0.2	0.8	1.0	11	10.0	30
		40	0.5	0.8	1.3	11	9.7	30
		48	0.6	0.8	1.4	11	9.6	30
802.11n	MCS0	36	4.8	0.1	4.9	11	6.1	30
		40	4.3	0.1	4.4	11	6.6	30
		48	4.8	0.1	4.9	11	6.1	30
	MCS7	36	0.9	0.2	1.1	11	9.9	30
		40	0.4	0.2	0.6	11	10.4	30
		48	0.8	0.2	1.0	11	10.0	30
802.11ac	MCS0	36	4.1	0.1	4.2	11	6.8	30
		40	4.8	0.1	4.9	11	6.1	30
		48	5.3	0.1	5.4	11	5.6	30
	MCS7	36	0.5	0.2	0.7	11	10.3	30
		40	0.6	0.2	0.8	11	10.2	30
		48	1.2	0.2	1.4	11	9.6	30
802.11ax	MCS0	36	3.1	0.1	3.2	11	7.8	29
		40	4.3	0.1	4.4	11	6.6	30
		48	4.5	0.1	4.6	11	6.4	30
	MCS7	36	-0.2	0.2	0.0	11	11.0	29
		40	-0.1	0.2	0.1	11	10.9	30
		48	0.4	0.2	0.6	11	10.4	30
802.11ax	MCS0 RU26	36	8.5	0.3	8.8	11	2.2	26
		40	8.7	0.3	9.0	11	2.0	30
		48	8.7	0.3	9.0	11	2.0	30
	MCS7 RU26	36	7.3	1.7	9.0	11	2.0	26
		40	6.6	1.7	8.3	11	2.7	30
		48	7.6	1.7	9.3	11	1.7	30
802.11ax	MCS0 RU52	36	5.8	0.5	6.3	11	4.7	26
		40	5.7	0.5	6.2	11	4.8	30
		48	6.1	0.5	6.6	11	4.4	30
	MCS7 RU52	36	4.2	2.7	6.9	11	4.1	26
		40	4.1	2.7	6.8	11	4.2	30
		48	4.1	2.7	6.8	11	4.2	30
802.11ax	MCS0 RU106	36	2.8	0.9	3.7	11	7.3	26
		40	3.1	0.9	4.0	11	7.0	30
		48	3.5	0.9	4.4	11	6.6	30
	MCS7 RU106	36	0.3	3.9	4.2	11	6.8	26
		40	0.1	3.9	4.0	11	7.0	30
		48	0.4	3.9	4.3	11	6.7	30
802.11ax	MCS0 RU242	36	-0.7	1.7	1.0	11	10.0	25
		40	-1.2	1.7	0.5	11	10.5	30
		48	-0.7	1.7	1.0	11	10.0	30
	MCS7 RU242	36	-2.9	5.0	2.1	11	8.9	25
		40	-2.8	5.0	2.2	11	8.8	30
		48	-3.3	5.0	1.7	11	9.3	30

U-NII-1 Plots





802.11ax | Channel 48 | MCS0 RU106

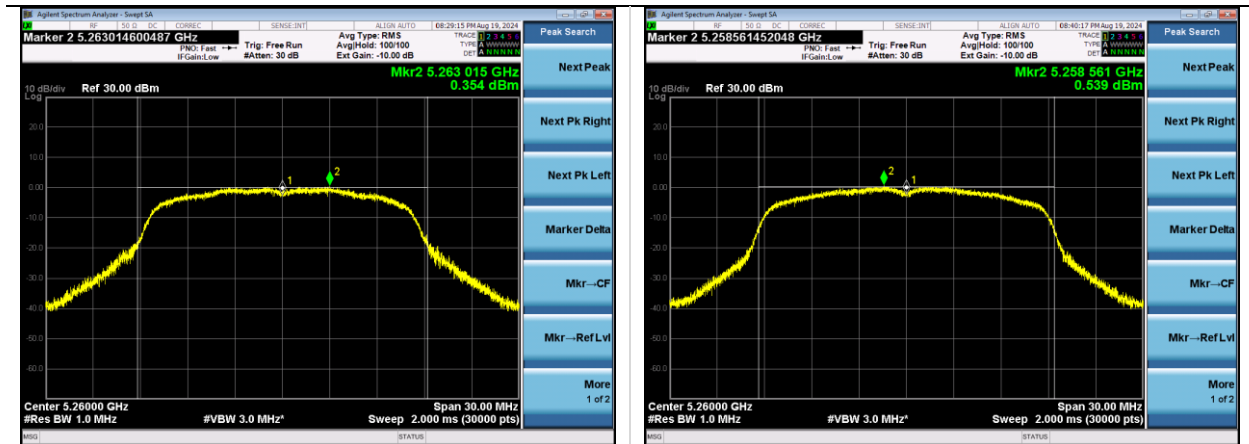


802.11ax | Channel 48 | MCS7 RU242

U-NII-2A Measurements

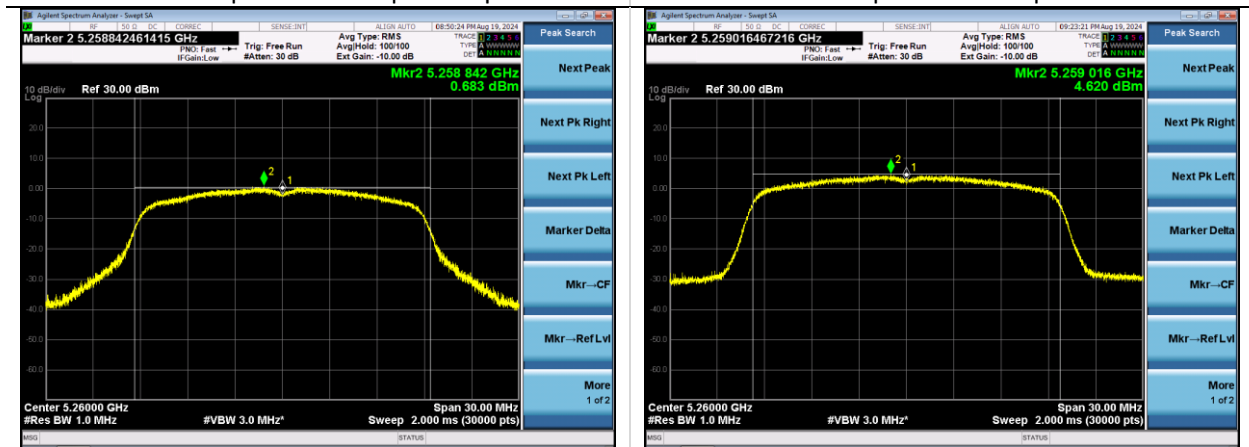
Mode	Rate	Channel	Average PSD (dBm)	Duty Cycle Correction (dB)	Corrected PSD (dBm)	Limit (dBm/MHz)	Margin (dB)	Power Setting
802.11a	6 Mbps	52	5.4	0.1	5.5	11	5.5	30
		56	5.3	0.1	5.4	11	5.6	30
		64	5.5	0.1	5.6	11	5.4	30
	54 Mbps	52	0.4	0.8	1.2	11	9.8	30
		56	0.6	0.8	1.4	11	9.6	30
		64	0.9	0.8	1.7	11	9.3	30
802.11n	MCS0	52	5.0	0.1	5.1	11	5.9	30
		56	4.9	0.1	5.0	11	6.0	30
		64	5.2	0.1	5.3	11	5.7	30
	MCS7	52	0.5	0.2	0.7	11	10.3	30
		56	0.7	0.2	0.9	11	10.1	30
		64	1.0	0.2	1.2	11	9.8	30
802.11ac	MCS0	52	4.9	0.1	5.0	11	6.0	30
		56	4.9	0.1	5.0	11	6.0	30
		64	5.0	0.1	5.1	11	5.9	30
	MCS7	52	0.7	0.2	0.9	11	10.1	30
		56	0.8	0.2	1.0	11	10.0	30
		64	1.0	0.2	1.2	11	9.8	30
802.11ax	MCS0	52	4.6	0.1	4.7	11	6.3	30
		56	4.6	0.1	4.7	11	6.3	30
		64	4.5	0.1	4.6	11	6.4	30
	MCS7	52	-0.2	0.2	0.0	11	11.0	30
		56	0.2	0.2	0.4	11	10.6	30
		64	0.2	0.2	0.4	11	10.6	30
802.11ax	MCS0 RU26	52	8.4	0.3	8.7	11	2.3	30
		56	8.5	0.3	8.8	11	2.2	30
		64	6.7	0.3	7.0	11	4.0	23
	MCS7 RU26	52	7.1	1.7	8.8	11	2.2	30
		56	7.1	1.7	8.8	11	2.2	30
		64	5.5	1.7	7.2	11	3.8	23
802.11ax	MCS0 RU52	52	6.0	0.5	6.5	11	4.5	30
		56	6.3	0.5	6.8	11	4.2	30
		64	4.3	0.5	4.8	11	6.2	23
	MCS7 RU52	52	4.0	2.7	6.7	11	4.3	30
		56	4.5	2.7	7.2	11	3.8	30
		64	2.7	2.7	5.4	11	5.6	23
802.11ax	MCS0 RU106	52	3.2	0.9	4.1	11	6.9	30
		56	3.6	0.9	4.5	11	6.5	30
		64	1.9	0.9	2.8	11	8.2	24
	MCS7 RU106	52	1.2	3.9	5.1	11	5.9	30
		56	1.3	3.9	5.2	11	5.8	30
		64	0.1	3.9	4.0	11	7.0	24
802.11ax	MCS0 RU242	52	-0.4	1.7	1.3	11	9.7	30
		56	-0.2	1.7	1.5	11	9.5	30
		64	-1.3	1.7	0.4	11	10.6	24
	MCS7 RU242	52	-3.0	5.0	2.0	11	9.0	30
		56	-2.5	5.0	2.5	11	8.5	30
		64	-3.5	5.0	1.5	11	9.5	24

U-NII-2A Plots



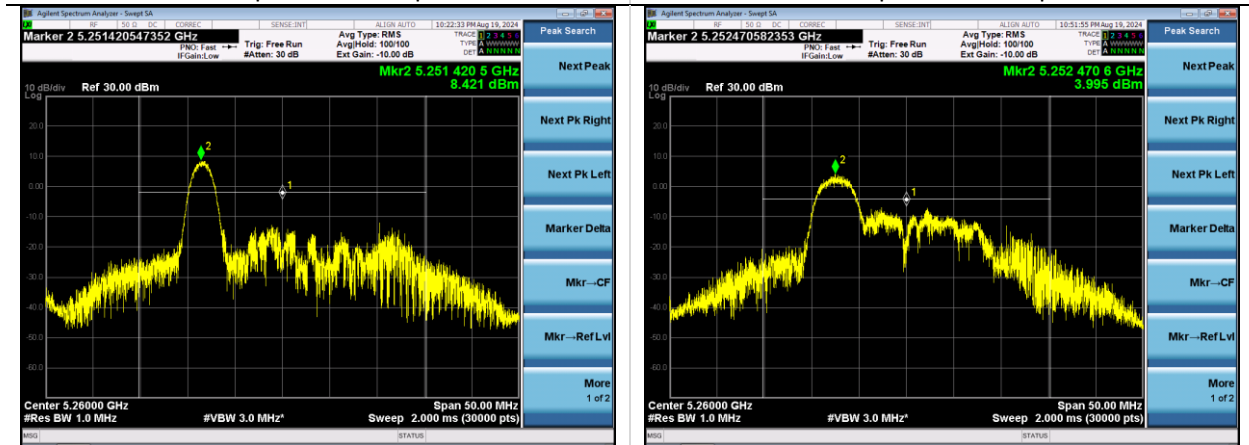
802.11a | Channel 52 | 54 Mbps

802.11n | Channel 52 | MCS7



802.11ac | Channel 52 | MCS7

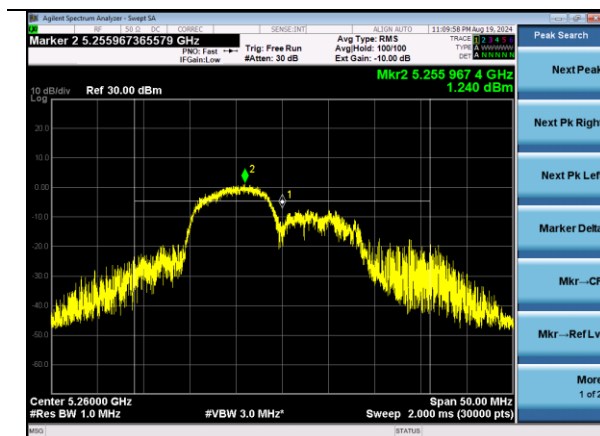
802.11ax | Channel 52 | MCS0



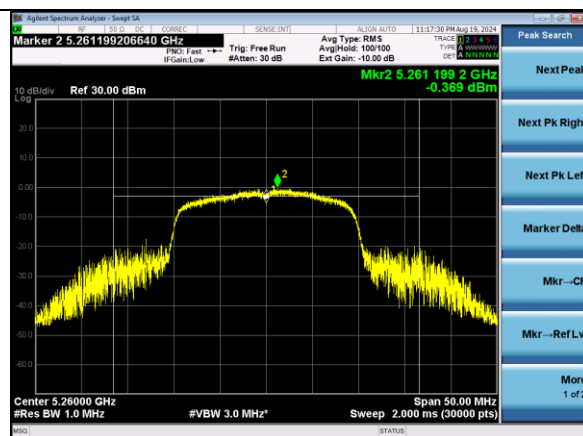
802.11ax | Channel 52 | MCS0 RU26

802.11ax | Channel 52 | MCS7 RU52

Company: Ezurio	Page 29 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008



802.11ax | Channel 52 | MCS7 RU106



802.11ax | Channel 52 | MCS7 RU242

6.1.4 Out of Band Emissions – Band Edge

Operator	Dylan Rosenfeldt	QA	Anthony Smith
Temperature	22.4°C-23.2°C	R.H. %	43.4%-55.1%
Test Date	08/08/2024-08/14/2024	Location	Conducted RF Bench
Requirement	15.407(b)(1) & (2) RSS-247 Clause 6.2.1 & 6.2.2	Method	ANSI C63.10 12.7

Limits: For transmitters operating in the 5.15-5.25 GHz band and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

15.209 Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Peak Limit (dBμV/m)
30-88	40.0	-	-
88-216	43.5	-	-
216-960	46.0	-	-
960-1000	54.0	-	-
1000-40000	-	54.0	74.0

Test Parameters

Frequency	30-40000 MHz	Setup	Antenna Port
RBW	1 MHz	VBW	3 MHz
Detector(s)	Peak and Average (RMS)		
Notes	Peak antenna gain 4.4 dBi		
Example Calculations	Correction Factor = $20 \log (1/D)$, where D is the duty cycle		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	6/13/2024	6/12/2025	Active Verification
EE 960087	Analyzer – Spectrum	Agilent	N9010A	MY53400296	4/11/2024	4/11/2025	Active Calibration
EE 960088	Analyzer - EMI Receiver	Agilent	N9038A	MY51210138	4/10/2024	4/10/2025	Active Calibration

Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx
Frequency	5180-5320 MHz	Channel	See 2.9

U-NII-1 Measurements – Lower Band Edge

Mode	Rate	Channel	Measurement Type	Frequency (MHz)	Measurement (dBm)	Corrected Measurement (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a	6 Mbps	36	Peak	5148.2	-37.3	-32.9	-27.0	5.9	30
		36	Average	5149.4	-50.5	-46.0	-41.2	4.8	30
	54 Mbps	36	Peak	5149.2	-41.5	-37.1	-27.0	10.1	30
		36	Average	5149.7	-55.9	-50.7	-41.2	9.5	30
802.11n	MCS0	36	Peak	5149.3	-37.2	-32.8	-27.0	5.8	30
		36	Average	5150.0	-48.6	-44.1	-41.2	2.9	30
	MCS7	36	Peak	5150.0	-44.3	-39.9	-27.0	12.9	30
		36	Average	5149.7	-54.9	-50.3	-41.2	9.1	30
802.11ac	MCS0	36	Peak	5149.1	-36.3	-31.9	-27.0	4.9	30
		36	Average	5150.0	-49.0	-44.5	-41.2	3.3	30
	MCS7	36	Peak	5149.2	-37.8	-33.4	-27.0	6.4	30
		36	Average	5149.3	-55.2	-50.6	-41.2	9.4	30
802.11ax	MCS0	36	Peak	5148.8	-37.1	-32.7	-27.0	5.7	29
		36	Average	5148.8	-48.5	-44.0	-41.2	2.8	29
	MCS7	36	Peak	5148.3	-39.0	-34.6	-27.0	7.6	29
		36	Average	5149.3	-53.7	-49.2	-41.2	8.0	29
802.11ax	MCS0	40	Peak	5149.6	-47.6	-43.1	-27.0	16.1	30
		40	Average	5149.1	-57.1	-52.6	-41.2	11.4	30
	MCS7	40	Peak	5144.7	-49.7	-45.3	-27.0	18.3	30
		40	Average	5149.8	-60.2	-55.6	-41.2	14.4	30

Mode	Rate	Channel	Measurement Type	Frequency (MHz)	Measurement (dBm)	Corrected Measurement (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11ax	MCS0	36	Peak	5138.9	-36.8	-32.4	-27.0	5.4	26
	RU26	36	Average	5150.0	-50.5	-45.8	-41.2	4.6	26
	MCS7	36	Peak	5145.3	-33.8	-29.4	-27.0	2.4	26
	RU26	36	Average	5149.6	-51.4	-45.3	-41.2	4.1	26
802.11ax	MCS0	36	Peak	5149.2	-35.9	-31.5	-27.0	4.5	26
	RU52	36	Average	5146.6	-53.8	-48.9	-41.2	7.7	26
	MCS7	36	Peak	5145.2	-33.6	-29.2	-27.0	2.2	26
	RU52	36	Average	5138.1	-54.7	-47.6	-41.2	6.4	26
802.11ax	MCS0	36	Peak	5147.6	-38.0	-33.6	-27.0	6.6	26
	RU106	36	Average	5149.5	-54.7	-49.4	-41.2	8.2	26
	MCS7	36	Peak	5145.9	-37.6	-33.2	-27.0	6.2	26
	RU106	36	Average	5146.2	-55.9	-47.6	-41.2	6.4	26
802.11ax	MCS0	36	Peak	5140.7	-37.4	-33.0	-27.0	6.0	25
	RU242	36	Average	5146.1	-52.6	-46.5	-41.2	5.3	25
	MCS7	36	Peak	5139.2	-36.6	-32.2	-27.0	5.2	25
	RU242	36	Average	5146.9	-53.6	-44.2	-41.2	3.0	25
802.11ax	MCS0	40	Peak	5149.2	-42.7	-38.3	-27.0	11.3	30
	RU26	40	Average	4866.5	-54.9	-50.2	-41.2	9.0	30
	MCS7	40	Peak	5149.8	-43.6	-39.2	-27.0	12.2	30
	RU26	40	Average	4866.6	-56.4	-50.3	-41.2	9.1	30
802.11ax	MCS0	40	Peak	5149.9	-43.9	-39.5	-27.0	12.5	30
	RU52	40	Average	4868.1	-57.3	-52.4	-41.2	11.2	30
	MCS7	40	Peak	5148.1	-44.7	-40.3	-27.0	13.3	30
	RU52	40	Average	4868.6	-59.0	-51.9	-41.2	10.7	30
802.11ax	MCS0	40	Peak	5145.6	-44.6	-40.2	-27.0	13.2	30
	RU106	40	Average	5141.9	-60.3	-55.0	-41.2	13.8	30
	MCS7	40	Peak	5148.5	-44.0	-39.6	-27.0	12.6	30
	RU106	40	Average	5143.2	-62.0	-53.7	-41.2	12.5	30
802.11ax	MCS0	40	Peak	5145.2	-47.3	-42.9	-27.0	15.9	30
	RU242	40	Average	5148.1	-59.3	-53.2	-41.2	12.0	30
	MCS7	40	Peak	5133.1	-46.7	-42.3	-27.0	15.3	30
	RU242	40	Average	5145.5	-61.1	-51.7	-41.2	10.5	30

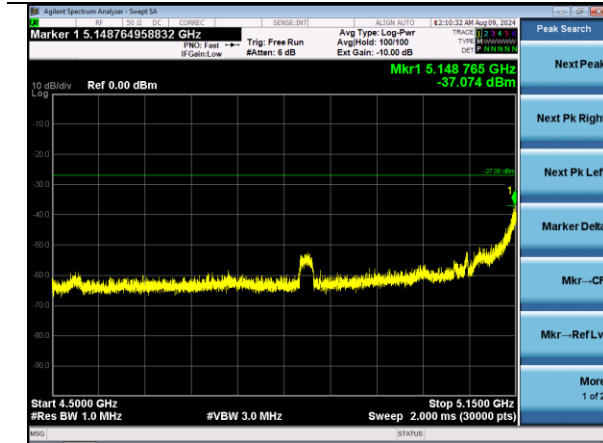
U-NII-2A Measurements – Upper Band Edge

Mode	Rate	Channel	Measurement Type	Frequency (MHz)	Measurement (dBm)	Corrected Measurement (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11a	6 Mbps	64	Peak	5350.1	-40.7	-36.3	-27.0	9.3	30
		64	Average	5351.1	-52.1	-47.6	-41.2	6.4	30
	54 Mbps	64	Peak	5350.9	-36.9	-32.5	-27.0	5.5	30
		64	Average	5350.1	-54.1	-48.9	-41.2	7.7	30
802.11n	MCS0	64	Peak	5350.1	-36.3	-31.9	-27.0	4.9	30
		64	Average	5350.1	-51.3	-46.8	-41.2	5.6	30
	MCS7	64	Peak	5352.5	-42.2	-37.8	-27.0	10.8	30
		64	Average	5350.9	-52.3	-47.7	-41.2	6.5	30
802.11ac	MCS0	64	Peak	5350.3	-37.0	-32.6	-27.0	5.6	30
		64	Average	5350.5	-49.7	-45.2	-41.2	4.0	30
	MCS7	64	Peak	5350.5	-39.6	-35.2	-27.0	8.2	30
		64	Average	5352.7	-53.5	-48.9	-41.2	7.7	30
802.11ax	MCS0	64	Peak	5352.1	-35.3	-30.9	-27.0	3.9	30
		64	Average	5350.1	-48.6	-44.1	-41.2	2.9	30
	MCS7	64	Peak	5353.4	-39.4	-35.0	-27.0	8.0	30
		64	Average	5351.3	-51.6	-47.0	-41.2	5.8	30

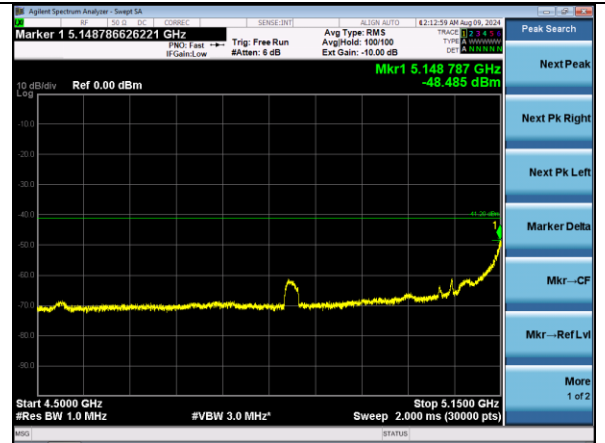
Mode	Rate	Channel	Measurement Type	Frequency (MHz)	Measurement (dBm)	Corrected Measurement (dBm)	Limit (dBm)	Margin (dB)	Power Setting
802.11ax	MCS0	64	Peak	5363.5	-36.8	-32.4	-27.0	5.4	23
	RU26	64	Average	5350.3	-53.3	-48.4	-41.2	7.2	23
	MCS7	64	Peak	5357.5	-33.8	-29.4	-27.0	2.4	23
	RU26	64	Average	5351.4	-55.6	-48.5	-41.2	7.3	23
802.11ax	MCS0	64	Peak	5351.4	-36.6	-32.2	-27.0	5.2	23
	RU52	64	Average	5350.6	-54.3	-49.4	-41.2	8.2	23
	MCS7	64	Peak	5355.1	-35.5	-31.1	-27.0	4.1	23
	RU52	64	Average	5353.8	-54.7	-47.6	-41.2	6.4	23
802.11ax	MCS0	64	Peak	5350.5	-33.6	-29.2	-27.0	2.2	24
	RU106	64	Average	5354.0	-52.4	-47.1	-41.2	5.9	24
	MCS7	64	Peak	5355.5	-35.9	-31.5	-27.0	4.5	24
	RU106	64	Average	5355.2	-53.4	-45.1	-41.2	3.9	24
802.11ax	MCS0	64	Peak	5351.3	-37.2	-32.8	-27.0	5.8	24
	RU242	64	Average	5355.4	-53.2	-47.1	-41.2	5.9	24
	MCS7	64	Peak	5351.8	-34.8	-30.4	-27.0	3.4	24
	RU242	64	Average	5352.4	-52.6	-43.2	-41.2	2.0	24
802.11ax	MCS0	60	Peak	5350.8	-43.4	-39.0	-27.0	12.0	30
	RU26	60	Average	5388.7	-55.5	-50.8	-41.2	9.6	30
	MCS7	60	Peak	5350.6	-39.6	-35.2	-27.0	8.2	30
	RU26	60	Average	5388.8	-56.1	-50.0	-41.2	8.8	30
802.11ax	MCS0	60	Peak	5356.0	-44.6	-40.2	-27.0	13.2	30
	RU52	60	Average	5387.8	-57.7	-52.8	-41.2	11.6	30
	MCS7	60	Peak	5350.6	-41.0	-36.6	-27.0	9.6	30
	RU52	60	Average	5387.3	-58.8	-51.7	-41.2	10.5	30
802.11ax	MCS0	60	Peak	5393.5	-43.5	-39.1	-27.0	12.1	30
	RU106	60	Average	5385.3	-59.9	-54.6	-41.2	13.4	30
	MCS7	60	Peak	5350.6	-36.7	-32.3	-27.0	5.3	30
	RU106	60	Average	5353.9	-60.5	-52.2	-41.2	11.0	30
802.11ax	MCS0	60	Peak	5351.1	-39.8	-35.4	-27.0	8.4	30
	RU242	60	Average	5350.0	-57.7	-51.6	-41.2	10.4	30
	MCS7	60	Peak	5352.4	-42.9	-38.5	-27.0	11.5	30
	RU242	60	Average	5351.2	-56.1	-46.7	-41.2	5.5	30

Worst Case Plots

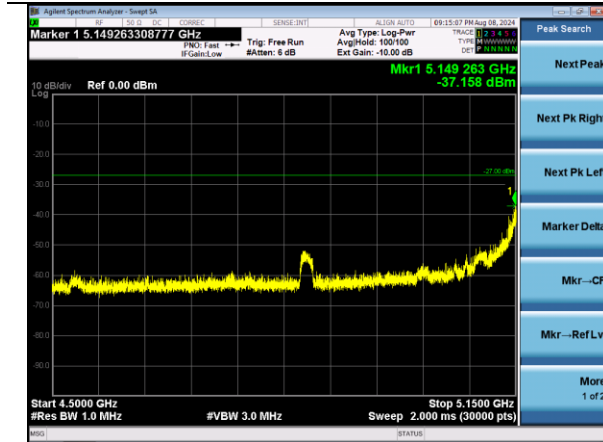
UNII 1



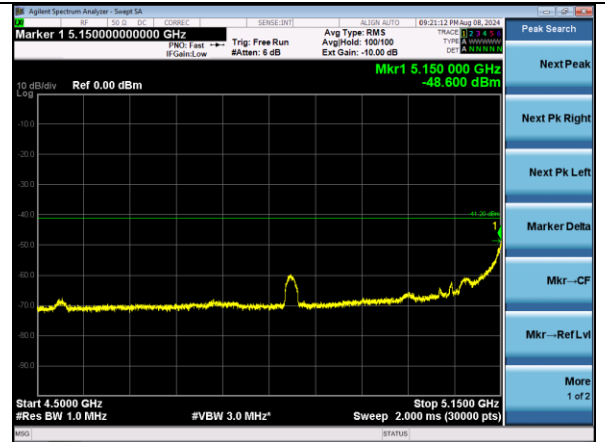
802.11ax | Channel 36 | MCS0 | Peak



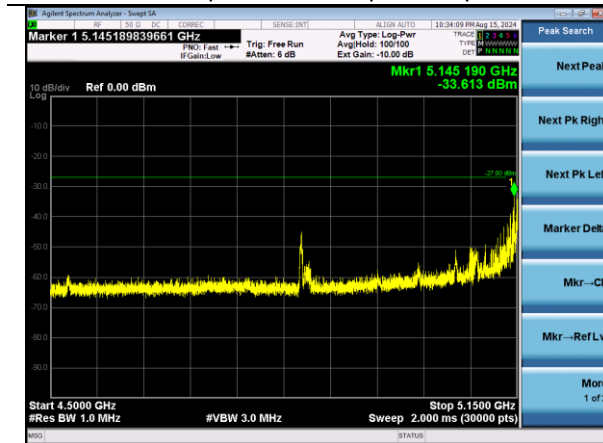
802.11ax | Channel 36 | MCS0 | Average



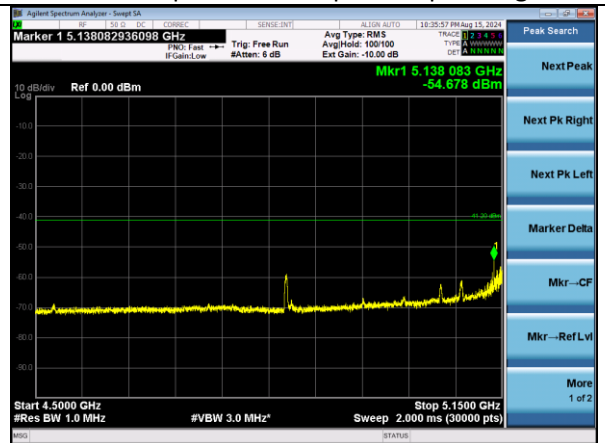
802.11n | Channel 36 | MCS0 | Peak



802.11n | Channel 36 | MCS0 | Average

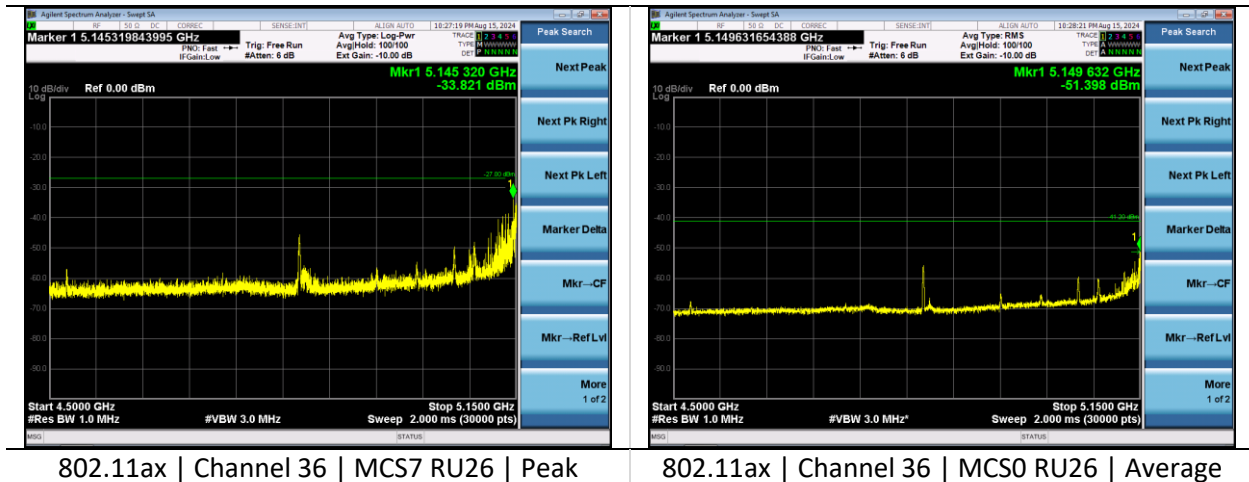


802.11ax | Channel 36 | MCS7 RU52 | Peak

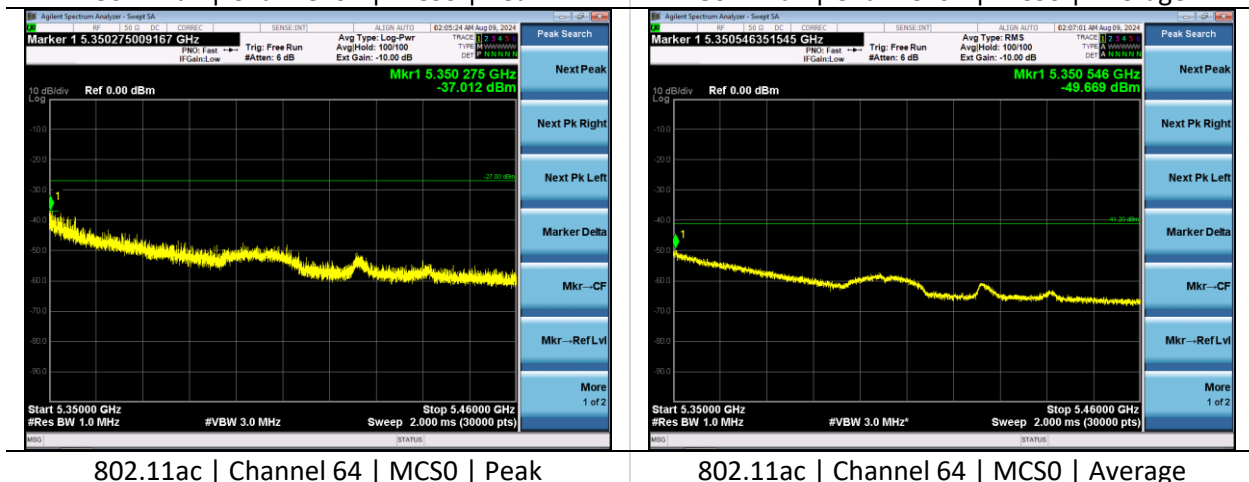
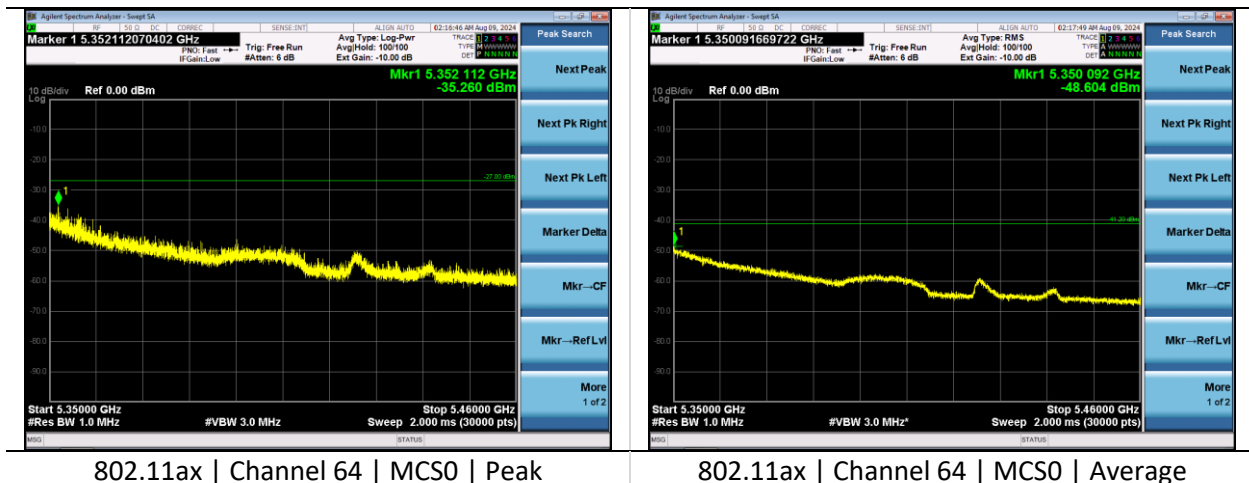


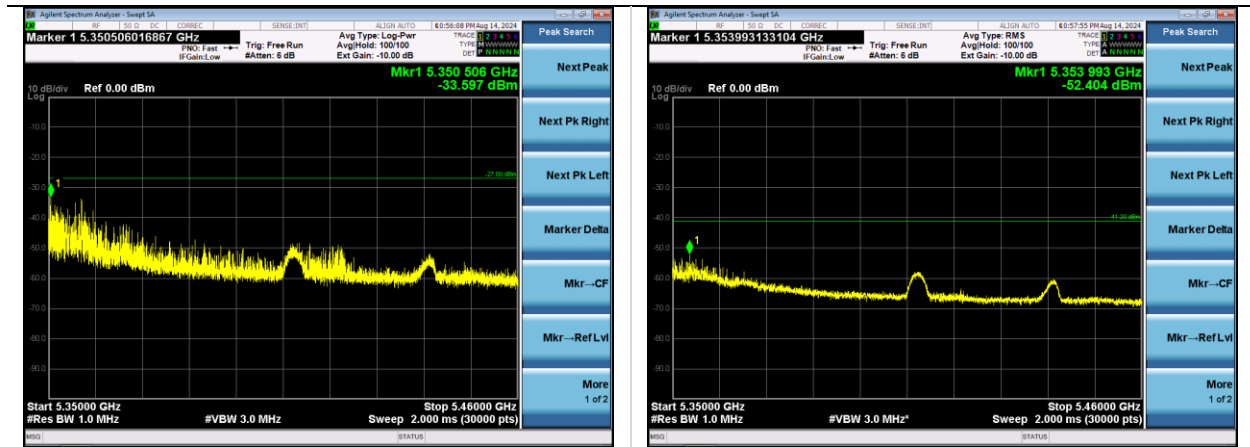
802.11ax | Channel 36 | MCS7 RU52 | Average

Company: Ezurio	Page 35 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008



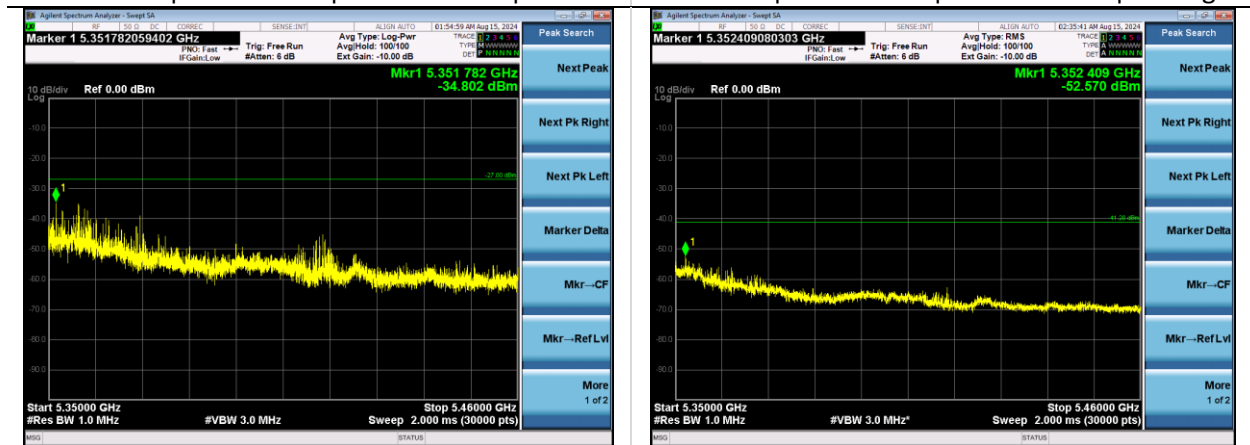
UNII 2A





802.11ax | Channel 64 | MCS0 RU106 | Peak

802.11ax | Channel 64 | MCS0 RU106 | Average



802.11ax | Channel 64 | MCS7 RU242 | Peak

802.11ax | Channel 64 | MCS7 RU242 | Average

6.1.5 Spurious Emissions in Restricted Bands

Operator	Dylan Rosenfeldt	QA	Anthony Smith
Temperature	21.8°C-22.9°C	R.H. %	43.0%-48.5%
Test Date	08/21/2024-08/27/2024	Location	Conducted RF Bench
Requirement	15.407(b)(1),(2),(9), & 10 RSS-247 Clause 6.2.1 & 6.2.2 RSS-GEN	Method	ANSI C63.10 12.7

Limits: For transmitters operating in the 5.15-5.25 GHz band and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

15.209 Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Peak Limit (dBμV/m)
30-88	40.0	-	-
88-216	43.5	-	-
216-960	46.0	-	-
960-1000	54.0	-	-
1000-40000	-	54.0	74.0

Test Parameters

Frequency	30-40000 MHz	Setup	Antenna Port
RBW	1 MHz	VBW	3 MHz
Detector(s)	Peak		
Notes	Peak antenna gain 4.4 dBi		
Example Calculations	Correction Factor = $20 \log (1/D)$, where D is the duty cycle		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	6/13/2024	6/12/2025	Active Verification
EE 960087	Analyzer – Spectrum	Agilent	N9010A	MY53400296	4/11/2024	4/11/2025	Active Calibration

Company: Ezurio	Page 38 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008

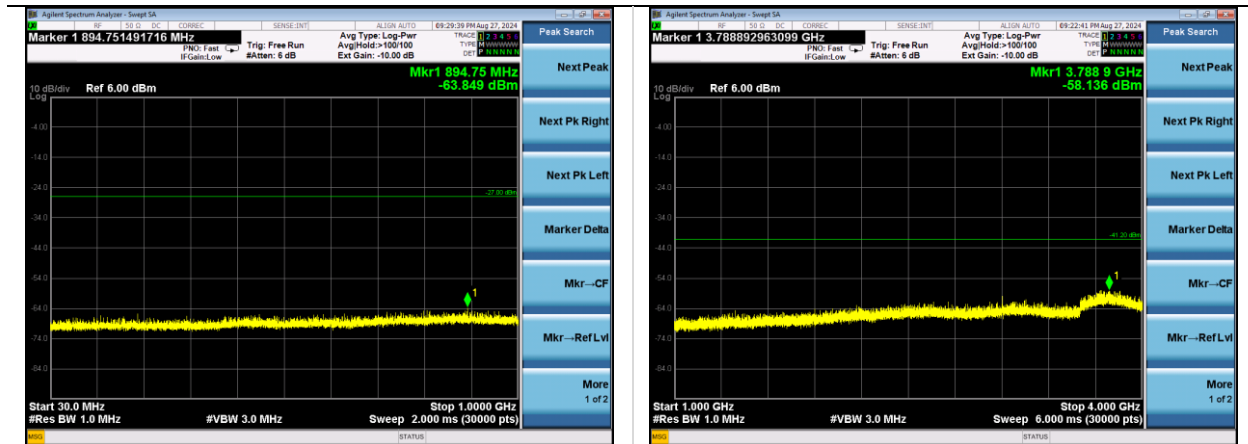
EUT Parameters

Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx
Frequency	5180-5320 MHz	Channel	36, 40, 48, 52, 56, 64

Table

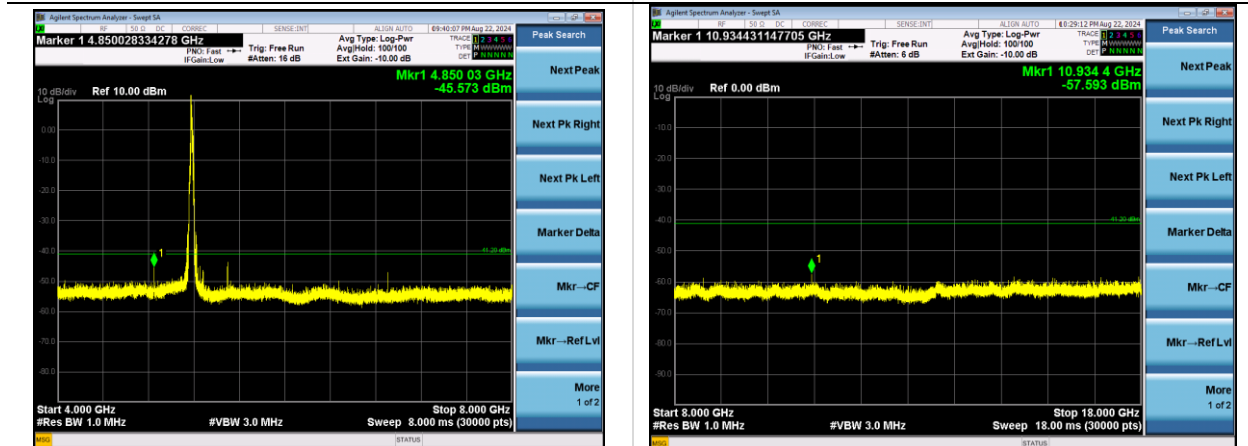
Mode	Rate	Channel	Measurement Type	Frequency (MHz)	Measurement (dBm)	Corrected Measurement (dBm)	Limit (dBm)	Margin (dB)
802.11a	6 Mbps	36	Peak	6906.7	-46.5	-42.1	-27.0	15.1
		52	Peak	5594.4	-40.9	-27.0	13.9	-40.9
		64	Peak	7093.3	-41.5	-27.0	14.5	-41.5
802.11n	MCS0	36	Peak	5510.0	-46.0	-41.6	-27.0	14.6
802.11ac	MCS0	48	Peak	5572.4	-44.8	-40.4	-27.0	13.4
		64	Peak	5658.3	-44.9	-40.5	-27.0	13.5
802.11ax	MCS0 RU26	48	Peak	4904.0	-48.1	-43.7	-27.0	16.7
		48	Average	4904.3	-61.5	-57.1	-41.2	15.9
		52	Peak	5580.6	-41.5	-37.1	-27.0	10.1
		56	Peak	4941.7	-40.1	-35.7	-27.0	8.7
		56	Average	4941.5	-53.4	-49.0	-41.2	7.8
	MCS0 RU52	36	Peak	4848.9	-44.5	-40.1	-27.0	13.1
		36	Average	4848.7	-56.8	-52.4	-41.2	11.2

Worst Case Plots



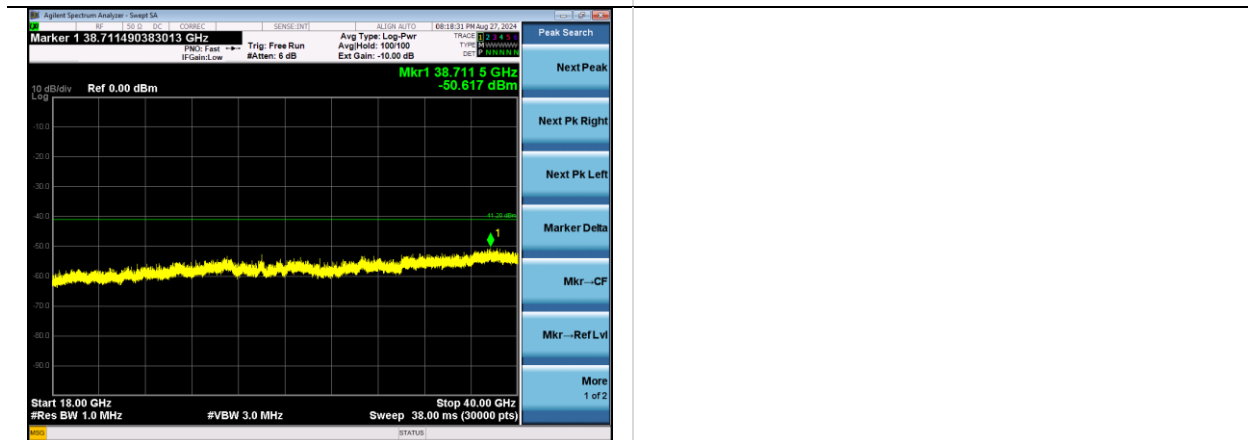
802.11a | Channel 36 | 6 Mbps | 30-1000 MHz

802.11ax | Channel 36 | MCS0 RU26 | 1000-4000 MHz



802.11ax | Channel 36 | MCS0 RU52 | 4000-8000 MHz

802.11ax | Channel 36 | MCS0 RU26 | 8000-18000 MHz



802.11ax | Channel 36 | MCS0 RU26 | 18000-40000 MHz

6.1.6 Frequency Stability

Operator	Dylan Rosenfeldt	QA	Anthony Smith
Temperature	22.9°C	R.H. %	46.4%
Test Date	8/28/2024	Location	RF Conducted Bench
Requirement	15.407(g) RSS-GEN Clause 6.11	Method	ANSI C63.10 6.8

Test Parameters

Frequency	5150-5350 MHz	Voltage	4.3 VDC, 5 VDC, and 5.8 VDC
Detector(s)	Peak	Settings	Max Hold

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	387	06/13/2024	06/12/2025	Active Verification
EE 960088	Analyzer - EMI Receiver	Agilent	N9038A	MY51210138	4/10/2024	4/10/2025	Active Calibration

Table

Voltage	Channel	Center Frequency (Hz)
5	36	5179971619
	40	5199971957
	48	5239971343
5	52	5259971423
	56	5279971710
	64	5319971495
4.3	36	5179971648
	40	5199972445
	48	5239971320
4.3	52	5259971650
	56	5279971652
	64	5319971800
5.8	36	5179971599
	40	5199971748
	48	5239971362
5.8	52	5259971367
	56	5279971989
	64	5319971411

6.2 Radiated Emissions

Description of Measurement	<p>The frequency spectrum is investigated for intentional and / or unintentional signals emanating from the EUT by use of a standardized test site and measurement antenna.</p> <p>The antenna, cable, pre-amp, and other necessary measurement system correction factors are loaded onto the EMI receiver / spectrum analyzer when the measurements are performed allowing the data to be gathered and reported as corrected values.</p> <p>The maximum emissions from the EUT are determined by turn-table azimuth rotation (360°) and scanning of the measurement antenna. Maximized levels are noted at degree values of azimuth, measurement antenna height, and measurement antenna polarity.</p>
Example Calculations	<p>Measurement (dBμV) + Cable factor (dB) + Other (dB) + Antenna Factor (dB/m) = Corrected Reading (dBμV/m)</p> <p>Margin (dB) = Limit (dBμV/m) - Corrected Reading (dBμV/m)</p> <p>Example at 4000 MHz: Reading = 40 dBμV + 3.4 dB + 0.9 dB + 6.5 dB/m = 50.8 dBμV/m Average Limit = 20 log (500) = 54 dBμV/m Margin = 54 dBμV/m - 50.8 dBμV/m = 3.2 dB</p>

Block Diagram



6.2.1 Spurious Radiated Emissions in the Restricted Bands – Cabinet Radiation

Operator	Mitchell Freund Nicole Sedmak Jon Dilley Zachary Brown	QA	Anthony Smith Adam Alger Adam Hauke Dylan Rosenfeldt
Temperature	19.8°C-24.7°C	R.H. %	42.6%-57.5%
Test Date	06/19/2024-08/26/2024	Location	Chamber 3 Chamber 5
Requirement	15.247 (b)(1),(2),(9) & (10) RSS-247 Clause 6.2.1 & 6.2.2 RSS-GEN Clause 8.9	Method	ANSI C63.10 12.7

Limits: For transmitters operating in the 5.15-5.25 GHzband and 5.25-5.35 GHzband: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

15.209 Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Peak Limit (dBμV/m)
30-88	40.0	-	-
88-216	43.5	-	-
216-960	46.0	-	-
960-1000	54.0	-	-
1000-40000	-	54.0	74.0

Test Parameters

Frequency	30-40000 MHz	Distance	3 m
Detector(s)	Peak Trace Peak and Average Final	Table height	<1000 MHz 80cm >1000 MHz 150 cm
RBW	<1000 MHz – 120 kHz >1000 MHz – 1 MHz	VBW	<1000 – 1.2 MHz >1000 MHz – 3 MHz See 2.9

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960007	Antenna - Double Ridge Horn	EMCO	3115	9311-4138	8/10/2024	8/10/2025	Active Calibration
AA 960174	Antenna - Small Horn	ETS Lindgren	3116C-PA	00206880	8/30/2024	8/30/2025	Active Calibration
AA 960153	Filter - High Pass 2.4 GHz	KWM	HPF-L-14186	7272-04	4/11/2024	4/11/2025	Active Calibration
AA 960163	Antenna - Log Periodic	A.H. Systems, Inc.	SAS-512-2	500	8/10/2024	8/10/2025	Active Calibration
AA 960217	Antenna - Biconical	A.H. Systems, Inc.	SAS-540	852	7/17/2024	7/17/2025	Active Calibration
AA 960220	Cable	A.H. Systems, Inc.	SAC-26G-6	552	2/16/2024	2/16/2025	Active Verification
EE 960203	Analyzer - EMI Receiver	Keysight	N9038A	MY56400072	4/11/2024	4/11/2025	Active Calibration
LSC-300	Cable	Chamber 3 Emissions	-	-	1/5/2024	1/5/2025	Active Verification
LSC-500	Cable	Chamber 5 Emissions	-	-	1/8/2024	1/8/2025	Active Verification
AA 960209	Antenna - Low Noise Amplifier	Mini-Circuits	ZVA-213X-S+	037101808	8/10/2024	8/10/2025	Active Verification

EUT Parameters

Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx
EUT	X, Y, Z Plane Orientations Antenna ports terminated with 50 Ω SMA terminators	AE	HP Elitebook 840G1 Development Kit, NXP 8MPLUS-BB
Notes	<1000 MHz Emissions from auxiliary equipment. Not a function of the EUT. Only worst case EUT orientation reported.		

Radiated Spurious – 30-1000 MHz – All Modes

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Quasi-Peak Reading (dB μ V/m)	Quasi-Peak Limit (dB μ V/m)	Margin (dB)
524.0	V	226.0	198.0	26.5	46.0	19.5
699.6	H	183.0	30.0	28.7	46.0	17.3

*The spurious signals detected do not depend on either the operating channel or the modulation mode

1000-40000 MHz – 802.11a

Band Edge

Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
6 Mbps	36	Y Plane	Peak	4937.6	V	50.6	68.2	17.6
	64	X Plane	Peak	5356.8	V	56.0	68.2	12.2
			Average	5356.8	V	44.1	54.0	9.9
54 Mbps	36	Y Plane	Peak	4746.2	V	50.3	68.2	17.9
	64	X Plane	Peak	5354.9	V	56.9	68.2	11.3
			Average	5354.9	V	44.1	54.0	9.9

1000-40000 MHz – 802.11n

Band Edge

Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
MCS0	36	X Plane	Peak	4587.0	V	50.2	68.2	18.0
	64	X Plane	Peak	5362.0	V	56.7	68.2	11.5
			Average	5362.0	V	45.0	54.0	9.0
MCS7	36	X Plane	Peak	4587.0	V	50.2	68.2	18.0
	64	X Plane	Peak	5419.4	V	57.0	68.2	11.2
			Average	5419.4	V	45.6	54.0	8.4

1000-40000 MHz – 802.11ac

Band Edge

Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
MCS0	36	Y Plane	Peak	4893.8	H	51.1	68.2	17.1
	64	X Plane	Peak	5419.4	V	56.6	68.2	11.6
			Average	5419.4	V	44.4	54.0	9.6
MCS7	36	Y Plane	Peak	4903.2	H	50.0	68.2	18.2
	64	X Plane	Peak	5358.7	V	56.8	68.2	11.4
			Average	5358.7	V	44.8	54.0	9.2

1000-40000 MHz – 802.11ax

Band Edge

Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
MCS0	36	X Plane	Peak	4847.2	H	50.6	68.2	17.6
	64	X Plane	Peak	5387.9	V	56.2	68.2	12.0
			Average	5387.9	V	44.3	54.0	9.7
MCS7	36	X Plane	Peak	4877.1	H	49.8	68.2	18.4
	64	X Plane	Peak	5366.1	V	55.9	68.2	12.3
			Average	5366.1	V	44.6	54.0	9.4

1000-40000 MHz – 802.11ax RU26

Band Edge

Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
MCS0	36	X Plane	Peak	4886.9	H	50.2	68.2	18.0
RU26-0	64	X Plane	Peak	5351.3	V	50.4	68.2	17.8
MCS0 RU26-8	36	Y Plane	Peak	4888.8	H	50.3	68.2	17.9
	64	X Plane	Peak	5362.8	V	54.4	68.2	13.8
			Average	5362.8	V	38.5	54.0	15.5

1000-40000 MHz – 802.11ax RU52

Band Edge

Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
MCS0	36	X Plane	Peak	4815.4	V	50.3	68.2	17.9
RU52-37	64	X Plane	Peak	5399.2	V	50.3	68.2	17.9
MCS0	36	Y Plane	Peak	5056.5	H	50.6	68.2	17.6
RU52-40	64	X Plane	Peak	5355.5	V	51.5	68.2	16.7

1000-40000 MHz – 802.11ax RU106

Band Edge

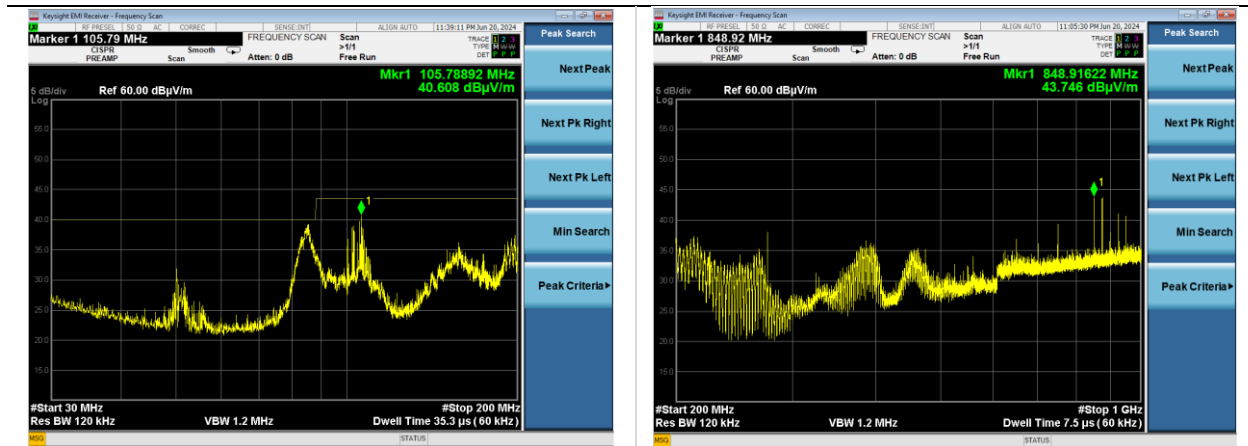
Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
MCS0	36	X Plane	Peak	4812.0	H	50.9	68.2	17.3
RU106-53	64	X Plane	Peak	5353.7	V	50.6	68.2	17.6
MCS0	36	Z Plane	Peak	4782.1	H	50.2	68.2	18.0
RU106-54	64	X Plane	Peak	5396.1	V	51.4	68.2	16.8

1000-40000 MHz – 802.11ax RU242

Band Edge

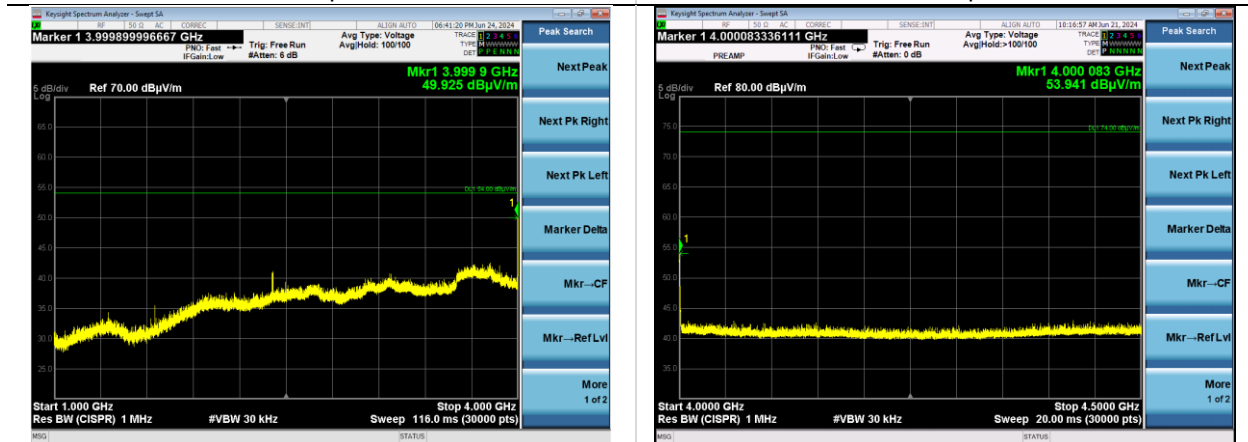
Rate	Channel	EUT Orientation	Measurement Type	Frequency (MHz)	Antenna Polarity	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)
MCS0	36	Y Plane	Peak	4606.7	V	50.4	68.2	17.8
RU242-61	64	X Plane	Peak	5350.4	V	50.1	68.2	18.1

Worst Case Plots



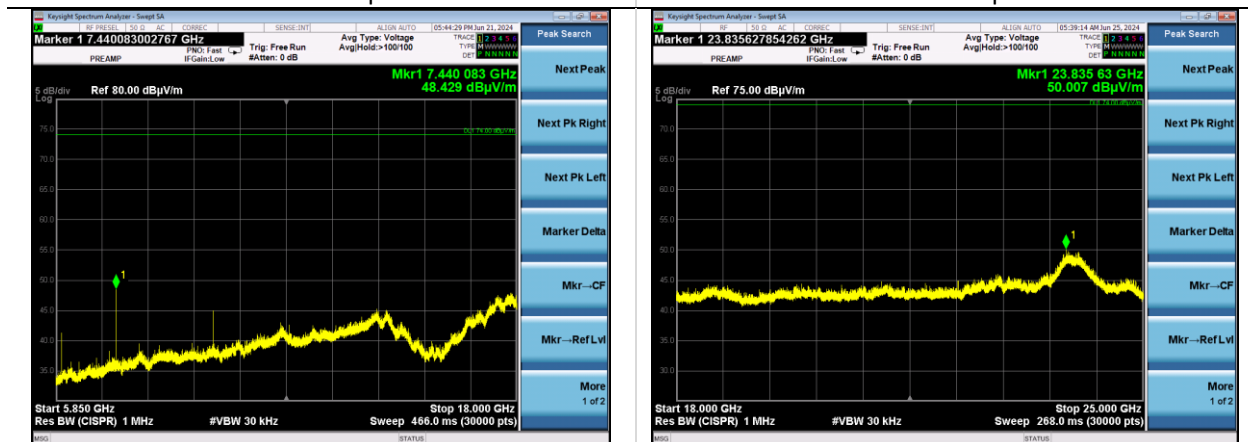
802.11a | Channel 116 | 6 Mbps | Y Plane
30-200 MHz | Horizontal

802.11a | Channel 116 | 6 Mbps | Y Plane
200-1000 MHz | Horizontal



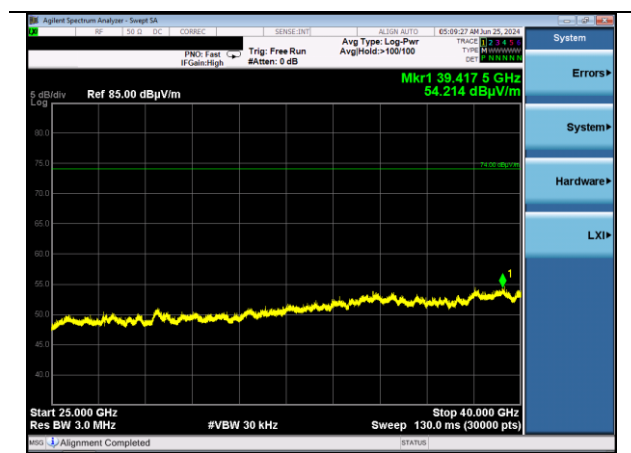
802.11a | Channel 52 | 6 Mbps | X Plane
1000-4000 MHz | Vertical

802.11a | Channel 52 | 6 Mbps | X Plane
4000-4500 MHz | Vertical



802.11a | Channel 36 | 6 Mbps | Y Plane
5470-18000 MHz | Vertical

802.11a | Channel 36 | 6 Mbps | X Plane
18000-25000 MHz | Horizontal



802.11a | Channel 116 | 6 Mbps | X Plane
25000-40000 MHz | Vertical

Company: Ezurio	Page 49 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008

6.2.2 Spurious Radiated Emissions in the Restricted Bands – Chip Antenna

Operator	Mitchell Freund Nicole Sedmak Jon Dilley Zachary Brown	QA	Anthony Smith Adam Alger Adam Hauke Dylan Rosenfeldt
Temperature	19.2°C-24.7°C	R.H. %	47.1%-63.2%
Test Date	07/08/2024-08/26/2024	Location	Chamber 3 Chamber 5
Requirement	15.247 (b)(1),(2),(9) & (10) RSS-247 Clause 6.2.1 & 6.2.2 RSS-GEN Clause 8.9	Method	ANSI C63.10 12.7

Limits: For transmitters operating in the 5.15-5.25 GHz band and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

15.209 Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Peak Limit (dBμV/m)
30-88	40.0	-	-
88-216	43.5	-	-
216-960	46.0	-	-
960-1000	54.0	-	-
1000-40000	-	54.0	74.0

Test Parameters

Frequency	30-40000 MHz	Distance	3 m
Detector(s)	Peak Trace Peak and Average Final	Table height	<1000 MHz 80cm >1000 MHz 150 cm
RBW	<1000 MHz – 120 kHz >1000 MHz – 1 MHz	VBW	<1000 – 1.2 MHz >1000 MHz – 3 MHz See 2.9

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960007	Antenna - Double Ridge Horn	EMCO	3115	9311-4138	8/10/2024	8/10/2025	Active Calibration
AA 960174	Antenna - Small Horn	ETS Lindgren	3116C-PA	00206880	8/30/2024	8/30/2025	Active Calibration
AA 960153	Filter - High Pass 2.4 GHz	KWM	HPF-L-14186	7272-04	4/11/2023	4/11/2025	Active Calibration
AA 960163	Antenna - Log Periodic	A.H. Systems, Inc.	SAS-512-2	500	8/10/2024	8/10/2025	Active Calibration
AA 960217	Antenna - Biconical	A.H. Systems, Inc.	SAS-540	852	7/17/2024	7/17/2025	Active Calibration

Company: Ezurio	Page 50 of 64	Name: SONA TI351
Report: TR3818-5G-A		Model: SONA TI351
Quote: C-3818		Serial: 00013 00008

AA 960220	Cable	A.H. Systems, Inc.	SAC-26G-6	552	2/16/2024	2/16/2025	Active Verification
EE 960203	Analyzer - EMI Receiver	Keysight	N9038A	MY56400072	4/11/2024	4/11/2025	Active Calibration
LSC-300	Cable	Chamber 3 Emissions	-	-	1/5/2024	1/5/2025	Active Verification
LSC-500	Cable	Chamber 5 Emissions	-	-	1/8/2024	1/8/2025	Active Verification
AA 960209	Antenna - Low Noise Amplifier	Mini-Circuits	ZVA-213X-S+	037101808	8/10/2024	8/10/2025	Active Calibration

EUT Parameters

Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx
EUT	X, Y, Z Plane Orientations	AE	HP Elitebook 840G1 Development Kit, NXP 8MPLUS-BB
Notes	<1000 MHz Emissions from auxiliary equipment. Not a function of the EUT. Only worst case EUT orientation reported.		

Radiated Spurious – 30-1000 MHz – All Modes

No Emissions in restricted frequency bands

U-NII-1 Measurements – Lower Band Edge

Peak Measurements

Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11a	6 Mbps	36	5146.3	58.5	68.2	9.7	29
802.11n	MCS0	36	5149.8	59.0	68.2	9.2	30
802.11ac	MCS0	36	5149.8	59.4	68.2	8.8	30
802.11ax	MCS0	36	5148.6	61.7	68.2	6.5	30
802.11a	6 Mbps	40	5122.9	51.8	68.2	16.4	30

Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11ax	MCS0 RU26	36	5141.4	64.1	68.2	4.1	25
802.11ax	MCS0 RU52	36	5145.5	63.8	68.2	4.4	24
802.11ax	MCS0 RU106	36	5062.4	63.6	68.2	4.6	26
802.11ax	MCS0 RU242	36	5103.3	64.5	68.2	3.7	25
802.11ax	MCS0 RU26	40	5144.5	52.5	68.2	15.7	30
802.11ax	MCS0 RU52	40	5100.7	64	68.2	4.2	30
802.11ax	MCS0 RU106	40	5120.9	63.7	68.2	4.5	30
802.11ax	MCS0 RU242	40	5139.3	64	68.2	4.2	30

Average Measurements

Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11a	6 Mbps	36	5150.0	43.3	54.0	10.7	29
802.11n	MCS0	36	5150.0	46.9	54.0	7.1	30
802.11ac	MCS0	36	5150.0	46.7	54.0	7.3	30
802.11ax	MCS0	36	5150.0	48.1	54.0	5.9	30
802.11a	6 Mbps	40	5122.1	39.0	54.0	15.0	30

Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11ax	MCS0 RU26	36	5149.2	51.5	54.0	2.5	25
802.11ax	MCS0 RU52	36	5138.8	51.7	54.0	2.3	24
802.11ax	MCS0 RU106	36	5148.9	51.9	54.0	2.1	26
802.11ax	MCS0 RU242	36	5142.7	52.5	54.0	1.5	25
802.11ax	MCS0 RU26	40	4866.4	40.5	54.0	13.5	30
802.11ax	MCS0 RU52	40	5149.3	51.4	54.0	2.6	30
802.11ax	MCS0 RU106	40	5149.9	51.9	54.0	2.1	30
802.11ax	MCS0 RU242	40	5143.7	52.2	54.0	1.8	30

U-NII-2A Measurements – Upper Band Edge

Peak Measurements

Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11a	6 Mbps	64	5351.7	62.4	68.2	5.8	30
802.11n	MCS0	64	5352.3	62.7	68.2	5.5	30
802.11ac	MCS0	64	5352.1	62.2	68.2	6.0	30
802.11ax	MCS0	64	5351.5	64.5	68.2	3.7	29
802.11ax	MCS0	60	5350.6	58.7	68.2	9.5	30

Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11ax	MCS0 RU26	64	5351.3	61.0	68.2	7.2	22
802.11ax	MCS0 RU52	64	5352.0	62.7	68.2	5.5	23
802.11ax	MCS0 RU106	64	5354.1	63.5	68.2	4.7	23
802.11ax	MCS0 RU242	64	5350.3	62.7	68.2	5.5	23
802.11ax	MCS0 RU26	60	5357.4	58.4	68.2	9.8	30
802.11ax	MCS0 RU52	60	5352.2	58.5	68.2	9.7	28
802.11ax	MCS0 RU106	60	5354.8	60.2	68.2	8.0	27
802.11ax	MCS0 RU242	60	5350.9	62.6	68.2	5.6	27
802.11ax	MCS0 RU26	56	5368.6	56.1	68.2	12.1	30
802.11ax	MCS0 RU52	56	5367.7	56.0	68.2	12.2	30
802.11ax	MCS0 RU106	56	5372.3	55.3	68.2	12.9	30
802.11ax	MCS0 RU242	56	5371.5	55.6	68.2	12.6	30

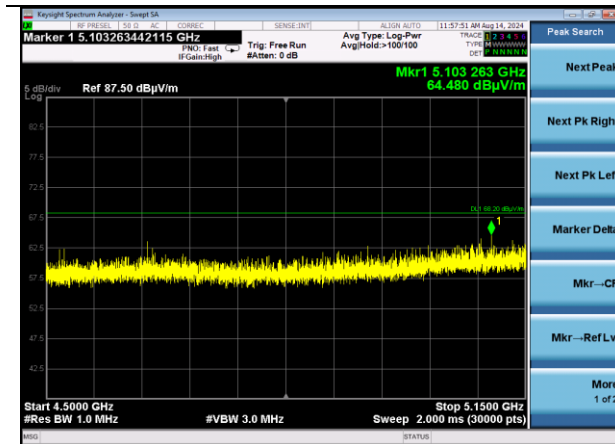
Average Measurements

Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11a	6 Mbps	64	5351.7	62.4	68.2	5.8	30
802.11n	MCS0	64	5352.3	62.7	68.2	5.5	30
802.11ac	MCS0	64	5352.1	62.2	68.2	6.0	30
802.11ax	MCS0	64	5351.5	64.5	68.2	3.7	29
802.11ax	MCS0	60	5350.6	58.7	68.2	9.5	30

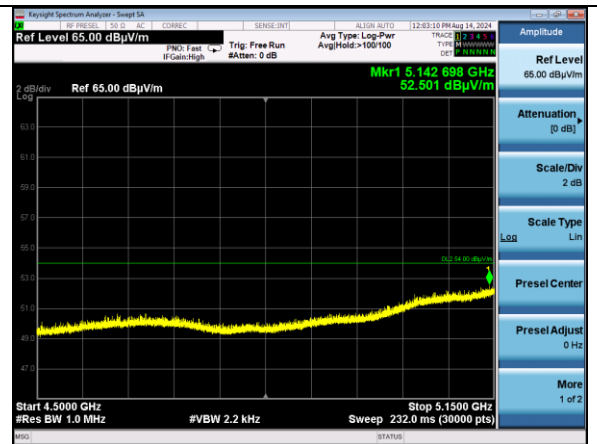
Mode	Rate	Channel	Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Power Setting
802.11ax	MCS0 RU26	64	5408.4	45.2	54.0	8.8	22
802.11ax	MCS0 RU52	64	5408.2	45.3	54.0	8.7	23
802.11ax	MCS0 RU106	64	5351.8	45.6	54.0	8.4	23
802.11ax	MCS0 RU242	64	5352.2	46.7	54.0	7.3	23
802.11ax	MCS0 RU26	60	5388.4	46.7	54	7.3	30
802.11ax	MCS0 RU52	60	5387.3	46.1	54	7.9	28
802.11ax	MCS0 RU106	60	5385.0	41.8	54.0	12.2	27
802.11ax	MCS0 RU242	60	5351.1	41.9	54.0	12.1	27
802.11ax	MCS0 RU26	56	5368.4	43.8	54.0	10.2	30
802.11ax	MCS0 RU52	56	5367.3	42.6	54.0	11.4	30
802.11ax	MCS0 RU106	56	5364.8	41.5	54.0	12.5	30
802.11ax	MCS0 RU242	56	5362.0	41.3	54.0	12.7	30

Worst Case Plots – Band Edge

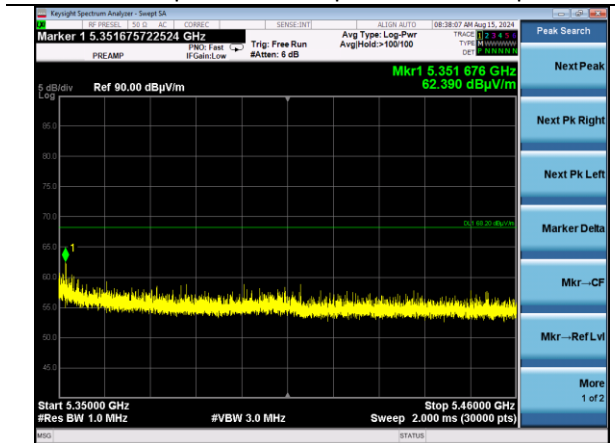




802.11ax | Channel 36 | MCS0 RU242 | Peak



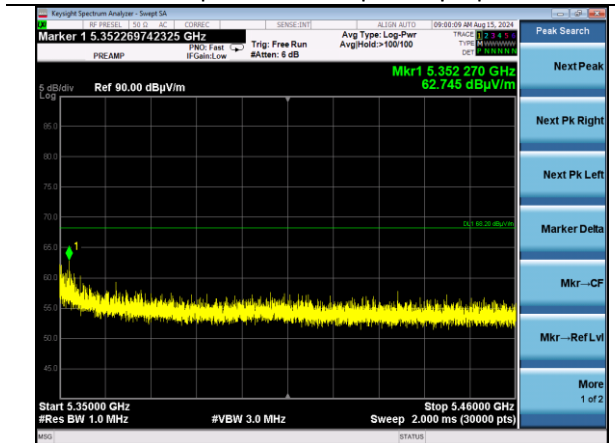
802.11ax | Channel 36 | MCS0 RU242 | Average



802.11a | Channel 64 | 6 Mbps | Peak



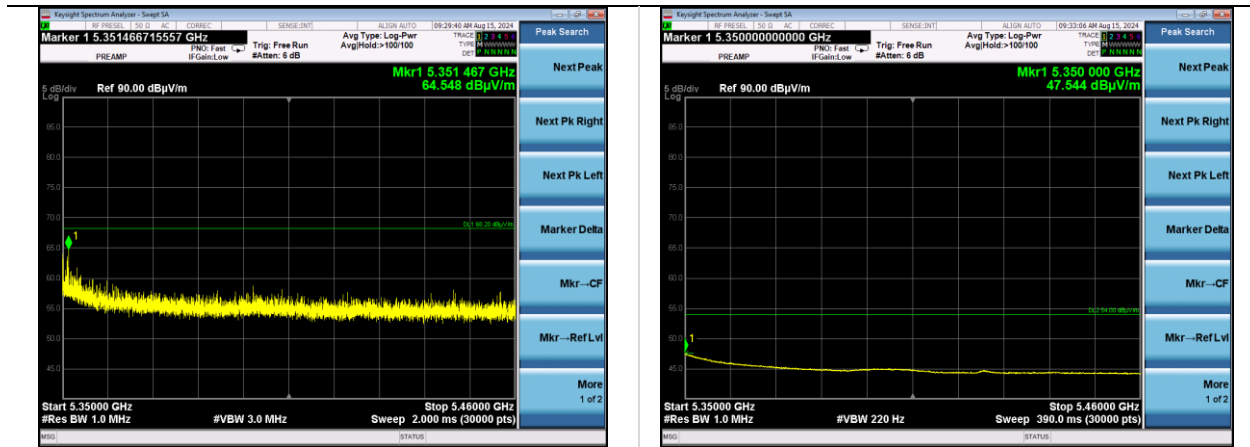
802.11a | Channel 64 | 6 Mbps | Average



802.11n | Channel 64 | MCS0 | Peak

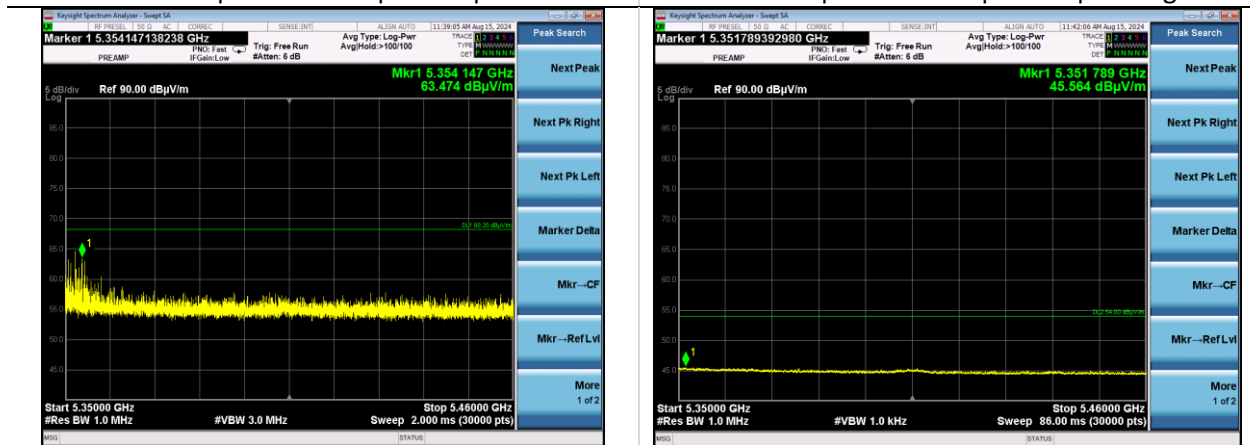


802.11n | Channel 64 | MCS0 | Average



802.11ax | Channel 64 | MCS0 | Peak

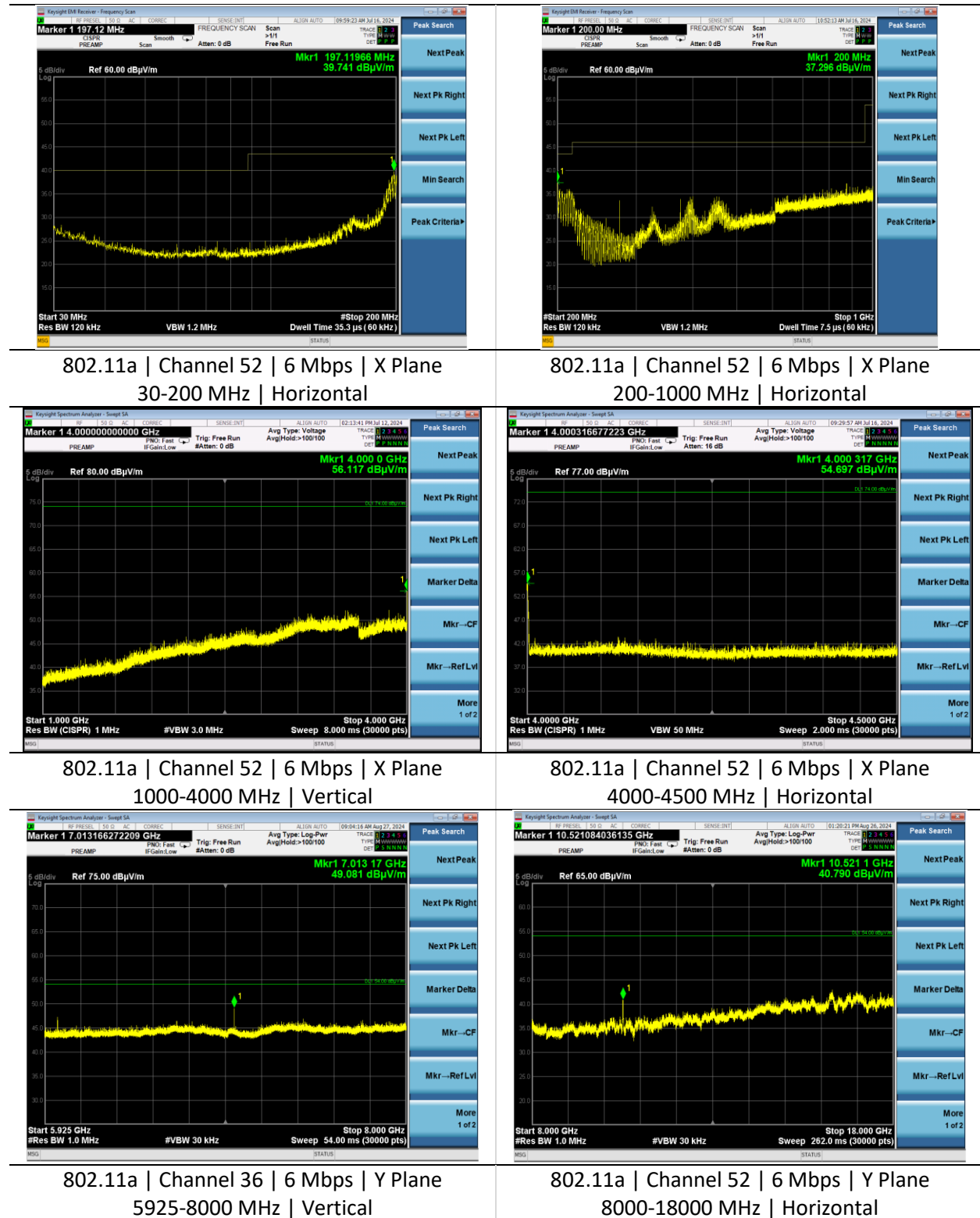
802.11ax | Channel 64 | MCS0 | Average

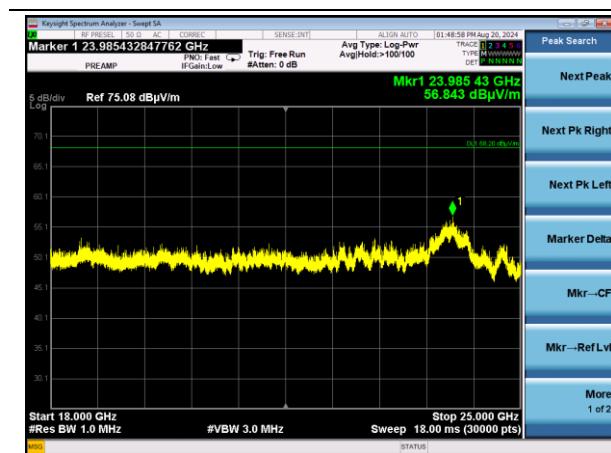


802.11ax | Channel 64 | MCS0 RU106 | Peak

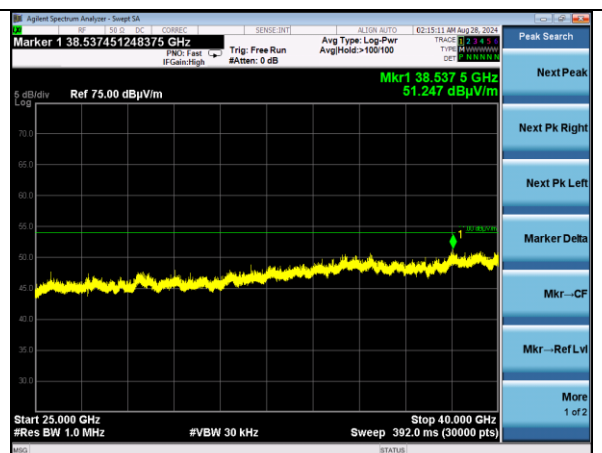
802.11ax | Channel 64 | MCS0 RU106 | Average

Worst Case Plots





802.11a | Channel 52 | 6 Mbps | Z Plane
18000-25000 MHz | Horizontal



802.11a | Channel 52 | 6 Mbps | Y Plane
25000-40000 MHz | Vertical

6.3 AC Mains Conducted Emissions

A line impedance stabilization network (LISN) or artificial mains network (AMN) allows the emissions of the power supply conductors to be measured while isolating the EUT from the supply mains.

Description of Measurement

The AMN, cable, and other necessary measurement system correction factors are loaded onto the EMI receiver when the measurements are performed. The data is gathered and reported as the corrected values.

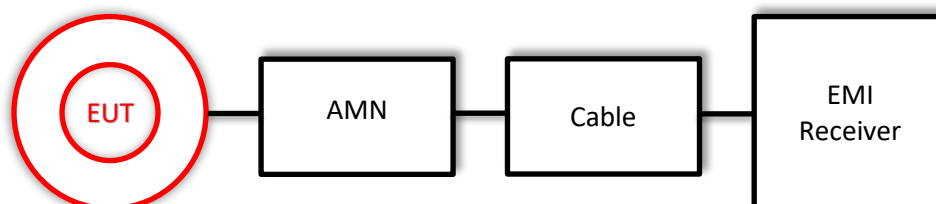
Maximum emissions are determined with a peak max hold trace then measurements at a selection of the highest points are made with quasi-peak and average detectors. Results are recorded and compared to limit for each line. (e.g. line and neutral)

Example Calculations

Measurement (dBμV) + Cable factor (dB) + Other (dB) = Corrected Reading (dBμV)

Margin (dB) = Limit (dBμV) - Corrected Reading (dBμV)

Block Diagram



6.3.1 AC Mains Conducted Emissions

Operator	Dylan Rosenfeldt	QA	Adam Alger, Jon Dilley
Temperature	22.8C	R.H. %	41.8%
Test Date	10/01/2024	Location	AC Conducted Bench
Requirement	15.407(b)(9) RSS-GEN	Method	ANSI C63.10 6.2

Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV)	Average Limit (dBμV)
0.15-0.5	66.0-56.0*	56.0-46.0*
0.5-5	56.0	46.0
5-30	60.0	50.0

*Decreases with the logarithm of the frequency.

Test Parameters

Frequency	0.15-30 MHz	Distance	40 cm from wall 80 cm from LISN
Detector(s)	Peak Trace Quasi-Peak, Average Final	Table height	80 cm
RBW	9 kHz	VBW	62 kHz
Notes	Channel has no effect on emission		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
EE 960088	Analyzer - EMI Receiver	Agilent	N9038A	MY51210138	4/10/2024	4/10/2025	Active Calibration
EE 960089	LISN	COM-POWER	LI-215A	191943	4/10/2024	4/10/2025	Active Calibration
EE 960162	LISN	COM-POWER	LI-215A	191969	4/10/2024	4/10/2025	Active Calibration
LSC-203	Cable	Micro-Coax	UFB311A-0-1440-70U70U	64639 224071-005	1/8/2024	1/8/2025	Active Verification

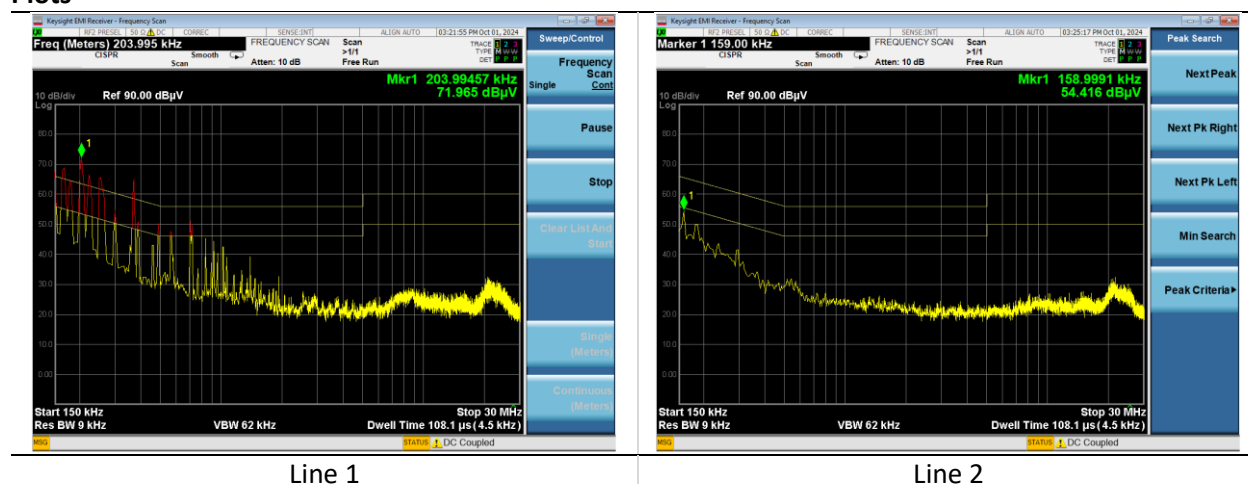
EUT Parameters

Input Power	120 VAC @ 60 Hz	Mode	5 GHz WLAN Tx Channel 100
--------------------	-----------------	-------------	---------------------------

Measurements

Line	Frequency (MHz)	Quasi Peak Reading (dBμV)	Quasi-Peak Limit (dBμV)	Quasi Peak Margin (dB)	Average Reading (dBμV)	Average Limit (dBμV)	Average Margin (dB)
1	0.204	60.1	63.4	3.3	32.4	53.4	21.0
1	0.168	61.7	65.1	3.4	35.0	55.1	20.1
1	0.37	31.5	58.5	27.0	21.6	48.5	26.9
2	0.159	47.7	65.5	17.8	32.8	55.5	22.7
2	0.181	43.8	64.4	20.6	30.8	54.4	23.6
2	0.294	36.7	60.4	23.7	24.8	50.4	25.6

Plots



7 REVISION HISTORY

Version	Date	Notes	Person
0	10/14/2024	Initial Draft	Dylan Rosenfeldt
1	10/22/2024	Final Draft	Dylan Rosenfeldt

END OF REPORT