

RF TEST REPORT

FCC / ISED

APPLICANT

Owl Labs Inc.

MODEL NAME

MTW405

FCC ID

2ALXJ-MTW405

ISED ID

22676-MTW405

REPORT NUMBER

HA240429-OWL-001-R10

TEST REPORT

Date of Issue

June 5, 2024

Test Site

Hyundai C-Tech, Inc. dba HCT America, Inc.
1726 Ringwood Ave, San Jose, CA 95131, USA

Applicant	Owl Labs Inc.
Applicant Address	33-1/2 Union Square Somerville, MA 02143 U.S.A.
FCC ID	2ALXJ-MTW405
ISED ID	22676-MTW405
Model Name	MTW405
EUT Type	360-Degree Video Conferencing Platform
Modulation Type	OFDMA
FCC Classification	Unlicensed National Information Infrastructure (NII)
FCC Rule Part(s)	Part 15.407
ISED Rule Part(s)	RSS-247 Issue 3 (August 2023) RSS-Gen Issue 5 Amd 2 (February 2021)
Test Procedure	ANSI C63.10-2013, KDB 789033 D02 v02r01, KDB 662911 D01

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures required. The results of testing in this report apply only to the product which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Hyundai C-Tech, Inc. dba HCT America, Inc. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

Tested By

John Park

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REVISION HISTORY

The revision history for this document is shown in table.

TEST REPORT NO.	DATE	DESCRIPTION
HA240429-OWL-001-R10	June 5, 2024	Initial Issue

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1. GENERAL INFORMATION

EUT DESCRIPTION

Model	MTW405
EUT Type	Meeting Owl 4+
Serial Number	Conducted : M4FC1324001C Radiated :M4FV13240003
Power Supply	20 V d.c. (USB type C - External adaptor)
RF Specification	WIFI 2.4 GHz : 802.11b/g/ n(HT20, HT40)/ ac(VHT20, VHT40)/ ax(HE20, HE40) WIFI 5 GHz : 802.11a/n(HT20/40)/ ac(VHT20/40/80)/ ax(HE20, HE40, HE80) Bluetooth 5.0 LE (1M / BR / EDR)
Transmitter Chain	WIFI 2.4 GHz / 5 GHz : 2x2 MIMO Bluetooth LE / Bluetooth BR/EDR : SISO
Operating Environment	Indoor
Operating Temperature	5 °C ~ +30 °C

RF SPECIFICATION SUBJECT TO THE REPORT

RF Specification	IEEE 802.11ax (HE20, HE40, HE80)	
Transmitter Chain	2 x 2 MIMO	
Frequency Range ¹⁾	U-NII 2a	20 MHz BW : 5260 MHz – 5320 MHz 40 MHz BW : 5270 MHz – 5310 MHz 80 MHz BW : 5290 MHz
	U-NII 2c	20 MHz BW : 5500 MHz – 5720 MHz (Straddle at 5720 MHz) 40 MHz BW : 5510 MHz – 5710 MHz (Straddle at 5710 MHz) 80 MHz BW : 5530 MHz – 5690 MHz (Straddle at 5690 MHz)
Max. RF Output Power	U-NII 2a	20.29 dBm (0.107 W)
	U-NII 2c	19.72 dBm (0.094 W)
	U-NII 2c/3	19.54 dBm (0.090 W)
Modulation Type	OFDMA	
Operating Modes	☐ Master	
	☐ Slave with radar detection	
	☒ Slave without radar detection	
TPC Feature ²⁾	☒ TPC function	☐ No TPC function
Antenna Specification ³⁾	ANT1	Antenna Type : PCB Antenna Antenna Model : CU23001-1 Antenna Brand: antenova Peak Gain : 3.8 dBi
	ANT2	Antenna Type : PCB Antenna Antenna Model : CU23002-1 Antenna Brand: antenova Peak Gain : 3.2 dBi
Firmware Version ⁴⁾	6.4.21.22	
Hardware Version ⁴⁾	OWL-900-00027 Rev 5	
Date(s) of Tests	May 12, 2024 ~ June 5, 2024	

Note :

1. The device cannot operate in the frequency range 5600 – 5650 MHz in Canada
2. The EUT employs the TPC mechanism having the capability to operate at least 6 dB below the highest RF output.
3. Antenna information is based on the document provided.
4. Firmware and Hardware Version are as received by the client.

ANTENNA CONFIGURATION

The device employs 2x2 MIMO technologies with possible configurations below.

Frequency	Configuration	SDM	Beamforming	CDD
		ANT1 + ANT2	ANT1 + ANT2	ANT1 + ANT2
2.4 GHz	802.11b	-	-	O
	802.11g	-	-	O
	802.11n	O	-	O
	802.11ac	O	O	O
	802.11ax	O	O	O
5 GHz	802.11a	-	-	O
	802.11n	O	-	O
	802.11ac	O	O	O
	802.11ax	O	O	O

The equipment under test supports Cyclic Diversity mode.

CDD mode was picked as worst case for testing even though the device support both CDD and SDM, Beamforming.

ANTENNA DIRECTIONAL GAIN

Antenna Type	Type	RF Technology	Frequency	Gain (Ant 1)	Gain (Ant 2)
PCB	Dipole	802.11b/g/n	2.4 GHz	2.90 dBi	2.90 dBi
PCB	Dipole	802.11a/n/ac	5 GHz	3.80 dBi	3.20 dBi

Directional Gain (2.4 GHz : Uncorrelated) = $10 \log[(10^{(2.90/10)} + 10^{(2.90/10)}) / 2] = 2.90 \text{ dBi}$

Directional Gain (5 GHz : Uncorrelated) = $10 \log[(10^{(3.80/10)} + 10^{(3.20/10)}) / 2] = 3.51 \text{ dBi}$

Directional Gain (2.4 GHz : Correlated) = $10 \log[(10^{(2.90/20)} + 10^{(2.90/20)})^2 / 2] = 5.91 \text{ dBi}$

Directional Gain (5 GHz : Correlated) = $10 \log[(10^{(3.80/20)} + 10^{(3.20/20)})^2 / 2] = 6.52 \text{ dBi}$

Beamforming Directional Gain (2.4 GHz) = $2.90 \text{ dBi} + 10 \log(2) = 5.91 \text{ dBi}$

Beamforming Directional Gain (5 GHz) = $3.51 \text{ dBi} + 10 \log(2) = 6.52 \text{ dBi}$

OPERATING FREQUENCY CHANNELS

Band	Frequency (MHz)	Channel	802.11a	802.11n HT20	802.11ac VHT20	802.11ax HE20
U-NII 2a	5260	52	O	O	O	O
	5280	56	O	O	O	O
	5300	60	O	O	O	O
	5320	64	O	O	O	O
U-NII 2c	5500	100	O	O	O	O
	5520	104	O	O	O	O
	5540	108	O	O	O	O
	5560	112	O	O	O	O
	5580	116	O	O	O	O
	5600	120	O	O	O	O
	5620	124	O	O	O	O
	5640	128	O	O	O	O
	5660	132	O	O	O	O
	5680	136	O	O	O	O
Straddle	5700	140	O	O	O	O
	5720	144	O	O	O	O

Band	Frequency (MHz)	Channel	802.11n HT40	802.11ac VHT40	802.11ax HE40
U-NII 2a	5270	54	O	O	O
	5310	62	O	O	O
U-NII 2c	5510	102	O	O	O
	5550	110	O	O	O
	5590	118	O	O	O
	5630	126	O	O	O
Straddle	5670	134	O	O	O
	5710	142	O	O	O

Band	Frequency (MHz)	Channel	802.11ac VHT80	802.11ax HE80
U-NII 2a	5290	58	O	O
U-NII 2c	5530	106	O	O
	5610	122	O	O
Straddle	5690	138	O	O

Note :

1. Straddle channels between U-NII 2c and U-NII 3
2. The device cannot operate in the frequency range 5600 – 5650 MHz in Canada

SUMMARY OF TARGET POWER TABLE

U-NII 2 Band		Target Power / Chain
Mode	Tone	
802.11ax HE20	SU	17 dBm $\pm$ 2 dB
	242T	17 dBm $\pm$ 2 dB
	106T	14 dBm $\pm$ 2 dB
	52T	11 dBm $\pm$ 2 dB
	26T	8 dBm $\pm$ 2 dB
802.11ax HE40	SU	14 dBm $\pm$ 2 dB
	484T	14 dBm $\pm$ 2 dB
	242T	14 dBm $\pm$ 2 dB
	106T	14 dBm $\pm$ 2 dB
	52T	11 dBm $\pm$ 2 dB
	26T	8 dBm $\pm$ 2 dB
802.11ax HE80	Full	12 dBm $\pm$ 2 dB
	996T	12 dBm $\pm$ 2 dB
	484T	12 dBm $\pm$ 2 dB
	242T	12 dBm $\pm$ 2 dB
	106T	12 dBm $\pm$ 2 dB
	52T	11 dBm $\pm$ 2 dB
	26T	8 dBm $\pm$ 2 dB

2. METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated December 14, 2017 entitled "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (UNII) Devices Part15, Subpart E" and ANSI C63.10 (Version : 2013) 'the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices' were used in the measurement.

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.407 under the FCC Rules Part 15 Subpart E. / the RSS-GEN issue 5 and 2, RSS-247 issue 3.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz. Above 1GHz with 1.5m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. Also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emission, the relative positions of this hand-held transmitter (EUT) were rotated through three orthogonal axes according to the requirements in Section 8 of ANSI C63.10. (Version: 2013)

DESCRIPTION OF TEST MODES

The EUT has been tested at 5 GHz WLAN test mode. Qualcomm Radio Control Tool was used to control the channels, power level setting at continuous TX and normal RX mode.

3. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment's, which is traceable to recognized national standards. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

4. FACILITIES AND ACCREDITATIONS

FACILITIES

The SAC (Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at 1726 Ringwood Avenue, San Jose, California 95131, USA.

The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.

CABID : 25729



EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- (1) The antenna of this E.U.T is permanently attached and there is no provision for connection to an external antenna.
- (2) The E.U.T Complies with the requirement of §15.203

According to RSS-Gen Issue 5 Amd 2 (Section 6.8) :

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013.

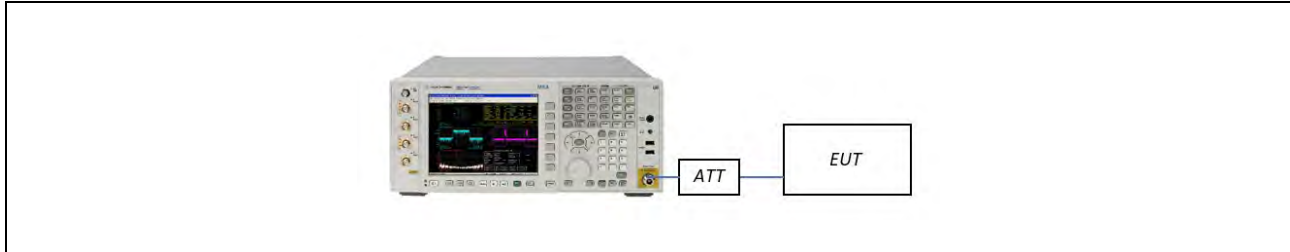
All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty
Output Power, Conducted	± 0.54 dB
Frequency Tolerance	± 16.78 kHz
Occupied Bandwidth	± 120.66 kHz
Unwanted Emissions, Conducted	± 0.54 dB
Radiated Emissions (below 1 GHz)	± 5.70 dB
Radiated Emissions (Above 1 GHz)	± 5.25 dB

7. DESCRIPTION OF TESTS

7.1. DUTY CYCLE

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.

Measurement is performed in accordance with the section B.2 in KDB 789033 D02 v02r01.

The largest available value of RBW is 8 MHz and VBW is 50 MHz.

The zero-span method of measuring duty cycle shall not be used if $T \leq 6.25$ microseconds. ($50/6.25 = 8$)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are $> 50/T$.

- RBW = 8 MHz (the largest available value)
- VBW = 8 MHz ($\geq$ RBW)
- SPAN = 0 Hz
- Detector = Peak
- Number of points in sweep > 100
- Trace mode = Clear write
- Measure T_{total} and T_{on}
- Calculate Duty Cycle = T_{on} / T_{total} and Duty Cycle Factor = $10 \cdot \log(1/\text{Duty Cycle})$

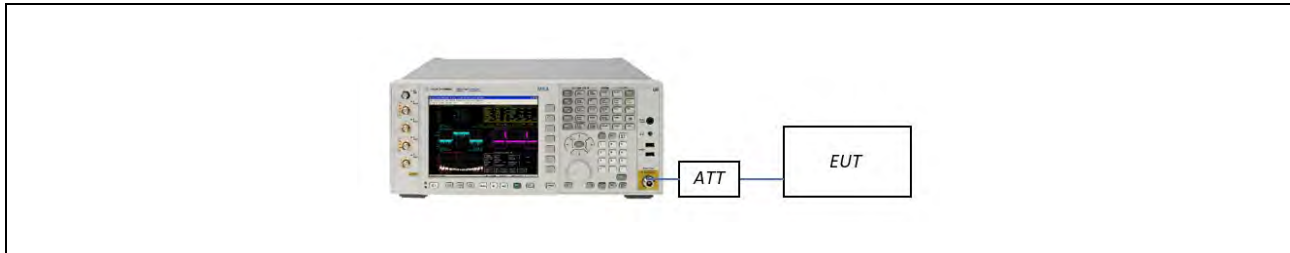
7.2. 6 dB BANDWIDTH / 26 dB BANDWIDTH / 99 % OCCUPIED BANDWIDTH

LIMIT

Emission bandwidth was measured to define the minimum frequency range which the spectrum is integrated for maximum conducted output power measurement.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

TEST SETUP



TEST PROCEDURE (26 dB Bandwidth)

Testing was performed according to the section C.1 in KDB 789033 D02 v02r01.
The transmitter output is connected to the spectrum analyzer.

- RBW = Approximately 1 % of the emission bandwidth
- VBW > RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

TEST PROCEDURE (6 dB Bandwidth)

Testing was performed according to the procedure C.1 in KDB 789033 D02 v02r01.
The transmitter output is connected to the Spectrum Analyzer.

- RBW = 100 kHz
- VBW $\geq 3 \times$ RBW
- Detector = Peak
- Trace mode = Max hold
- Allow the trace to stabilize
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST PROCEDURE (99% Bandwidth)

Testing was performed according to the section D in KDB 789033 D02 v02r01.
The transmitter output is connected to the spectrum analyzer.

- RBW = 1% ~ 5% of the occupied bandwidth
- VBW $\cong$ 3 x RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- Allow the trace to stabilize

Note:

1. The bandwidth measurement function from the spectrum analyzer is used to measure X dB bandwidth.
2. 26 dB bandwidth is used to determine the conducted power limits.

7.3. OUTPUT POWER

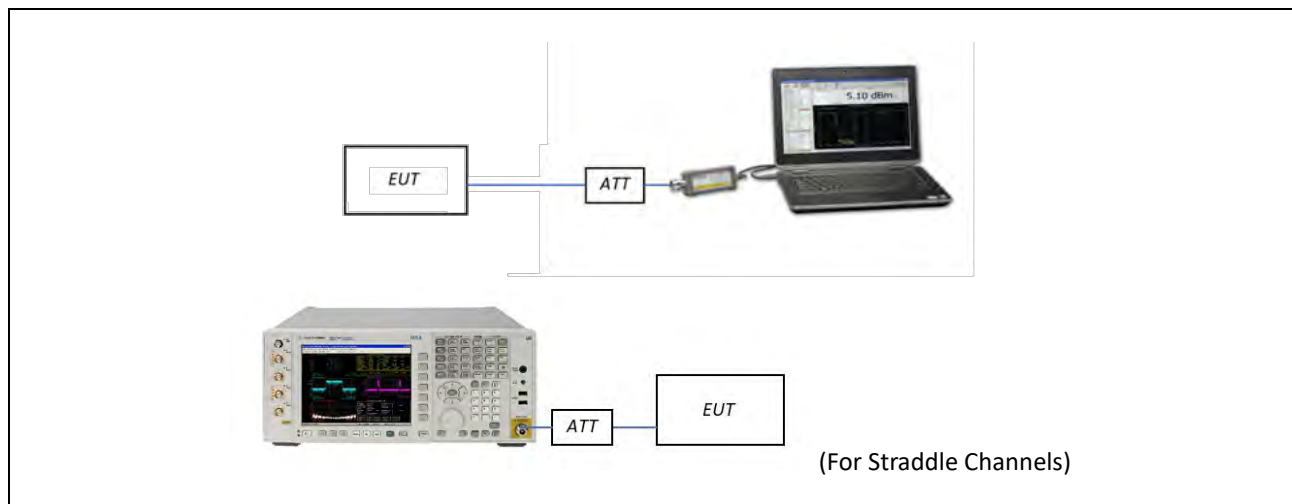
LIMIT

Band	47 CFR §15.407(a)(2)	RSS-247, 6.2.2.1 / 6.2.3.1
U-NII 2a	$\leq 250 \text{ mW}$ or $\leq 11 \text{ dBm} + 10 \log (B)$ Whichever is less (where B is the 26 dB Emission BW in MHz)	$\leq 250 \text{ mW}$ or $\leq 11 \text{ dBm} + 10 \log (B)$ $\leq 1 \text{ W e.i.r.p.}$ or $\leq 17 \text{ dBm} + 10 \log (B) \text{ e.i.r.p.}$ Whichever power is less (where B is 99% BW in MHz)
U-NII 2c		

Band	47 CFR §15.407(a)(3)(i)	RSS-247, 6.2.4.2
U-NII 3	$\leq 30 \text{ dBm/500 kHz}$	$\leq 30 \text{ dBm/500 kHz}$

If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST SETUP



TEST PROCEDURE (Power Meter)

Refer to the section E.3 in KDB 789033 D02 v02r01

The transmitter output is connected to the Average Power meter

- Measure the duty cycle.
- Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

Add $10\log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times

TEST PROCEDURE (Spectrum Analyzer)

Refer to the section E.2.d) in KDB 789033 D02 v02r01

The transmitter output is connected to the Spectrum Analyzer.

Spectrum analyzer's integrated band power measurement function was used.

- Measure the duty cycle.
- Set span to encompass the 26 dB EBW of the signal.
- RBW = 1 MHz
- VBW $\geq$ 3 MHz
- Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
- Sweep time = auto.
- Detector = RMS.
- Do not use sweep triggering. Allow the sweep to "free run".
- Trace average at least 100 traces in power averaging (RMS) mode
- Integrated bandwidth = EBW

Add $10\log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times

Sample Calculation

- Conducted Output Power (Average) = Reading Value + ATT loss + Cable loss + Duty Cycle Factor

7.4. POWER SPECTRAL DENSITY

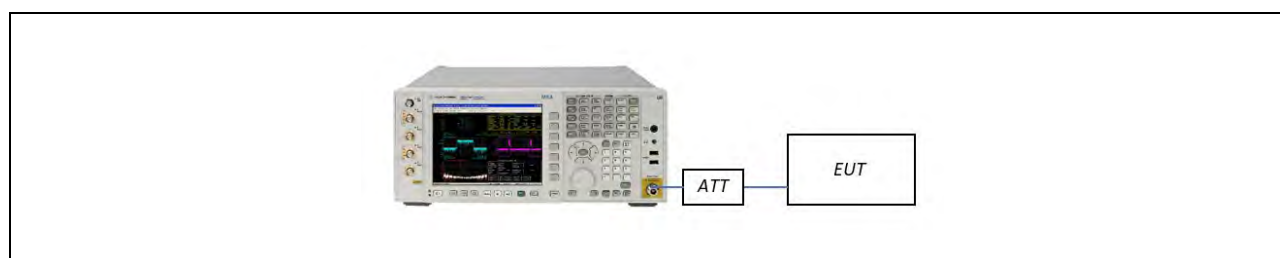
LIMIT

Band	47 CFR §15.407(a)(2)	RSS-247, 6.2.2.1 / 6.2.3.1
U-NII 2a	$\leq 11 \text{ dBm/MHz}$	$\leq 11 \text{ dBm/MHz}$
U-NII 2c		

Band	47 CFR §15.407(a)(3)(i)	RSS-247, 6.2.4.2
U-NII 3	$\leq 30 \text{ dBm/500 kHz}$	$\leq 30 \text{ dBm/500 kHz}$

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST SETUP



TEST PROCEDURE

Refer to the section F in KDB 789033 D02 v02r01.

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- RBW = 1 MHz (510 kHz for UNII 3)
- VBW $\geq 3 \text{ MHz}$
- Number of points in sweep $\geq 2 \times \text{span/RBW}$.
- Sweep time = auto.
- Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- Do not use sweep triggering. Allow the sweep to “free run”.
- Trace average at least 100 traces in power averaging (RMS) mode
- Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
- If Method SA-2 was used, add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum.

Sample Calculation

Total PSD (Average) = Reading Value + ATT loss + Cable loss + Duty Cycle Factor

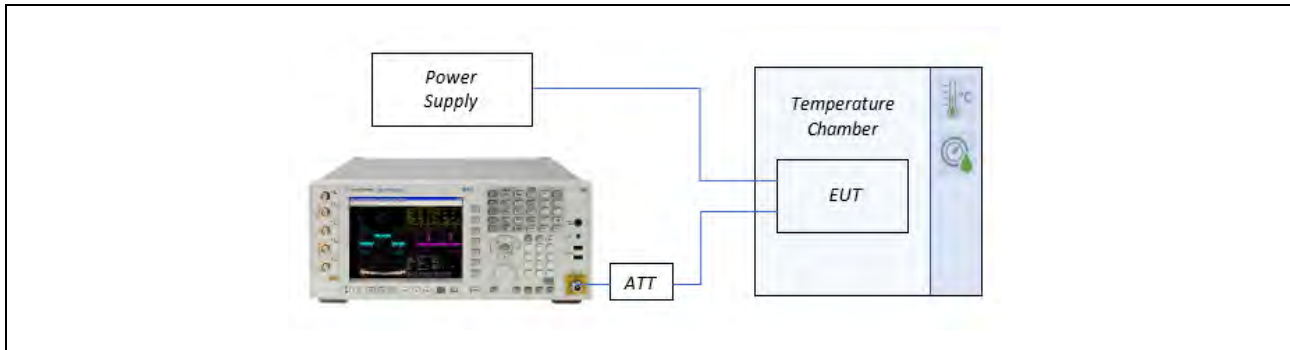
7.5. FREQUENCY STABILITY

LIMIT

§15.407(g) / RSS-Gen, 8.8

Fundamental emissions of the radio devices should be kept within at least the central 80% of its permitted operating frequency band to minimize the possibility of out of band operation.

TEST SETUP



TEST PROCEDURE

- The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between - 30 °C and 50 °C.
- The temperature was incremented by 10 °C intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.
- The primary supply voltage is varied from 85% to 115% of the nominal value for non-hand carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.
- While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

7.6. UNDESIRABLE EMISSION

LIMIT

Frequency Band		Limit
U-NII 2a	☒	In accordance with 47 CFR § 15.407(b)(2) / RSS-247, 6.2.2.2 All emissions outside the 5.15-5.35 GHz band shall not exceed an -27 dBm/MHz e.i.r.p.
U-NII 2c	☒	In accordance with 47 CFR § 15.407(b)(3) / RSS-247, 6.2.3.2 All emissions outside the 5.47-5.725 GHz band shall not exceed an -27 dBm/MHz e.i.r.p.

Emissions at the straddle channels comply with the rules for the band which the signal spans over.

RADIATION EMISSION LIMIT

FCC : 47 CFR § 15.209		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

ISED : RSS-GEN Section 8.9		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	6.37/F(kHz)	300
0.490 – 1.705	63.7/F(kHz)	30
1.705 – 30	0.08	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

RECEIVER RADIATED EMISSION LIMIT

ISED : RSS-GEN Section 7.3		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

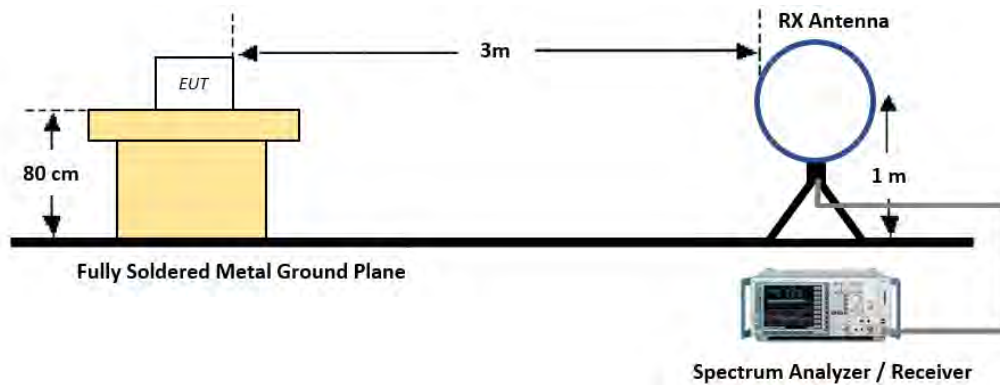
RESTRICTED BANDS OF OPERATION

FCC : 47 CFR § 15.205(a)				
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
0.090 - 0.110	12.29 - 12.293	149.9 - 150.05	1660.0 - 1710.0	8025 - 8500
0.495 - 0.505	12.51975 - 12.52025	156.52475 - 156.52525	1718.8 - 1722.2	9000 - 9200
2.1735 - 2.1905	12.57675 - 12.57725	156.7 - 156.9	2200.0 - 2300.0	9300 - 9500
4.125 - 4.128	13.36 - 13.41	162.0125 - 167.17	2310.0 - 2390.0	10600 - 12700
4.17725 - 4.17775	16.42 - 16.423	167.72 - 173.2	2483.5 - 2500.0	13250 - 13400
4.20725 - 4.20775	16.69475 - 16.69525	240.0 - 285.0	2690.0 - 2900.0	14470 - 14500
6.215 - 6.218	16.80425 - 16.80475	322.0 - 335.4	3260.0 - 3267.0	15350 - 16200
6.26775 - 6.26825	25.5 - 25.67	399.9 - 410.0	3332.0 - 3339.0	17700 - 21400
6.31175 - 6.31225	37.5 - 38.25	608.0 - 614.0	3345.8 - 3358.0	22010 - 23120
8.291 - 8.294	73 - 74.6	960.0 - 1240.0	3600.0 - 4400.0	23600 - 24000
8.362 - 8.366	74.8 - 75.2	1300.0 - 1427.0	4500.0 - 5150.0	31200 - 31800
8.37625 - 8.38675	108 - 121.94	1435.0 - 1626.5	5350.0 - 5460.0	36430 - 36500
8.41425 - 8.41475	123 - 138	1645.5 - 1646.5	7250.0 - 7750.0	Above 38600

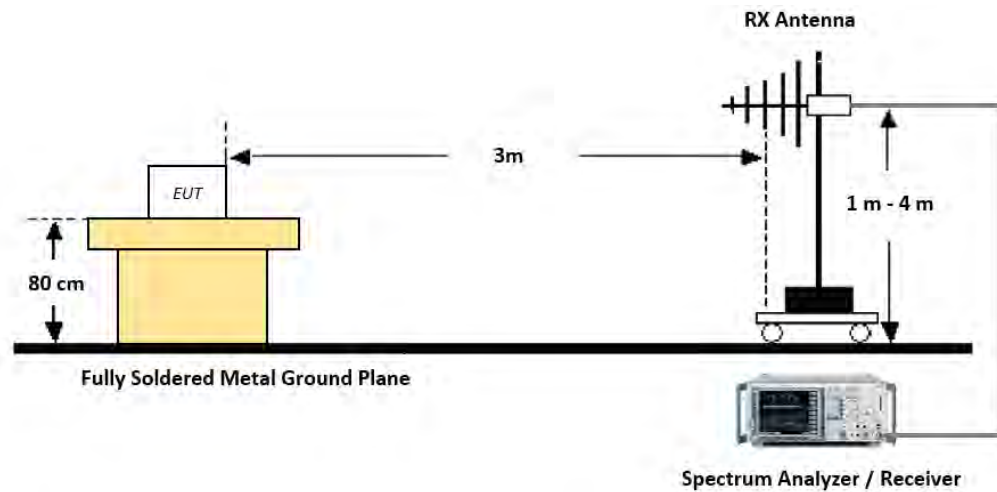
ISED : RSS-GEN Section 8.10				
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
0.090 - 0.110	8.37625 - 8.38675	108 - 138	1660 - 1710	8025 - 8500
0.495 - 0.505	8.41425 - 8.41475	149.9 - 150.05	1718.8 - 1722.2	9000 - 9200
2.1735 - 2.1905	12.29 - 12.293	156.52475 - 156.52525	2200 - 2300	9300 - 9500
3.020 - 3.026	12.51975 - 12.52025	156.7 - 156.9	2310 - 2390	10600 - 12700
4.125 - 4.128	12.57675 - 12.57725	162.0125 - 167.17	2483.5 - 2500	13250 - 13400
4.17725 - 4.17775	13.36 - 13.41	167.72 - 173.2	2655 - 2900	14470 - 14500
4.20725 - 4.20775	16.42 - 16.423	240 - 285	3260 - 3267	15350 - 16200
5.677 - 5.683	16.69475 - 16.69525	322 - 335.4	3332 - 3339	17700 - 21400
6.215 - 6.218	16.80425 - 16.80475	399.9 - 410	3345.8 - 3358	22010 - 23120
6.26775 - 6.26825	25.5 - 25.67	608 - 614	3500 - 4400	23600 - 24000
6.31175 - 6.31225	37.5 - 38.25	960 - 1427	4500 - 5150	31200 - 31800
8.291 - 8.294	73 - 74.6	1435 - 1626.5	5350 - 5460	36430 - 36500
8.362 - 8.366	74.8 - 75.2	1645.5 - 1646.5	7250 - 7750	Above 38600

TEST SETUP

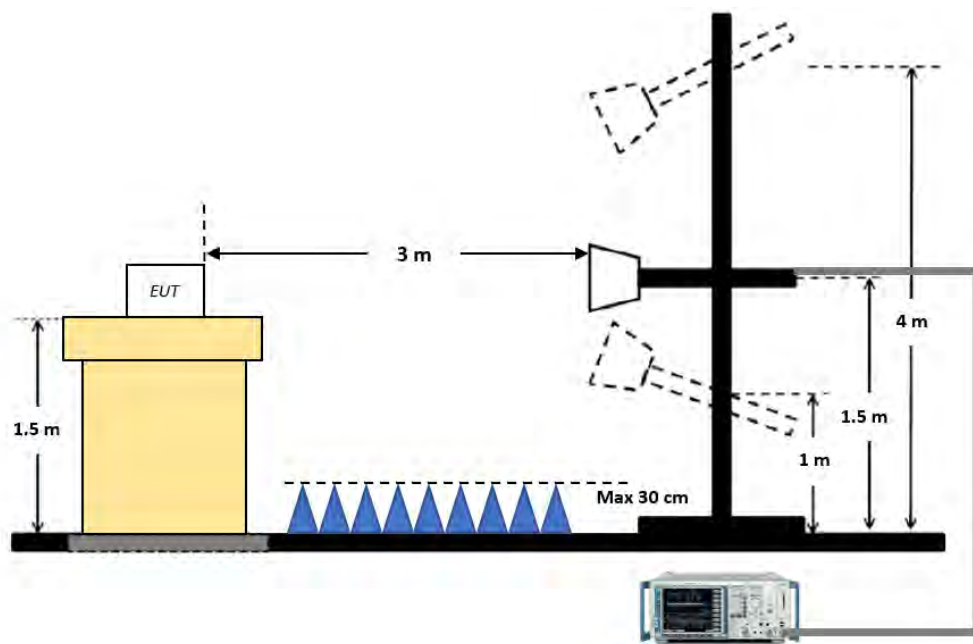
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (BELOW 30 MHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3m from the EUT
3. The EUT is placed on a turntable, which is 0.8m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor (0.009 MHz – 0.490 MHz) = $40 \cdot \log(3 \text{ m}/300 \text{ m}) = -80 \text{ dB}$
Measurement Distance: 3 m
7. Distance Correction Factor (0.490 MHz – 30 MHz) = $40 \cdot \log(3 \text{ m}/30 \text{ m}) = -40 \text{ dB}$
Measurement Distance: 3 m
8. Spectrum Setting
 - Frequency Range = 9 kHz ~ 30 MHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 9 kHz
 - VBW $\geq 3 \cdot \text{RBW}$
9. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)
10. There is a comparison data both open-field test site and alternative test site – semi-Anechoic chamber according to 414788 D01. And the results are properly calibrated.

TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (30 MHz – 1 GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. Spectrum Setting
 - (1) Measurement Type (Peak):
 - Measured Frequency Range: 30 MHz – 1 GHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 100 kHz
 - VBW $\geq 3 \cdot \text{RBW}$
 - (2) Measurement Type(Quasi-peak):
 - Measured Frequency Range: 30 MHz – 1 GHz
 - Detector = Quasi-Peak
 - RBW = 120 kHz
6. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)

TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (ABOVE 1 GHz)

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

(1) Measurement Type(Peak, G.5 in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW $\geq$ 3 MHz
- Detector = Peak
- Sweep Time = auto
- Trace mode = Max hold
- Allow sweeps to continue until the trace stabilizes.
- Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately $1/x$, where x is the duty cycle.

(2) Measurement Type(Average, G.6.d in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW(Duty cycle $\geq$ 98 percent) = $VBW \leq RBW/100$ (i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 percent) = $VBW \geq 1/T$, where T is the minimum transmission duration.
- The analyzer is set to linear detector mode.
- Detector = Peak.
- Sweep time = auto.
- Trace mode = Max hold.
- Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of $1/x$, where x is the duty cycle.

9. Measurement value only up to 6 maximum emissions noted or would be lesser if no specific emissions from the EUT are recorded (i.e.: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor

10. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency (or 40 GHz whichever comes first)

11. Sample Calculation

(1) Total (Peak) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G)

(2) Total (Average, Duty $\geq$ 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G)

(3) Total (Average, Duty < 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G) + Duty Cycle Factor

TEST PROCEDURE OF RADIATED RESTRICTED BAND EDGE

1. Radiated test is performed with hopping off (if there is any)
2. The EUT is placed on a turntable, which is 1.5 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

(1) Measurement Type(Peak, G.5 in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW $\geq$ 3 MHz
- Detector = Peak
- Sweep Time = auto
- Trace mode = Max hold
- Allow sweeps to continue until the trace stabilizes.
- Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately $1/x$, where x is the duty cycle.

(2) Measurement Type(Average, G.6.d in KDB 789033 v02r01):

- RBW = 1 MHz
- $VBW(\text{Duty cycle} \geq 98 \text{ percent}) = VBW \leq RBW/100(\text{i.e., } 10 \text{ kHz})$ but not less than 10 Hz.
- $VBW(\text{Duty cycle is } < 98 \text{ percent}) = VBW \geq 1/T$, where T is the minimum transmission duration.
- The analyzer is set to linear detector mode.
- Detector = Peak.
- Sweep time = auto.
- Trace mode = Max hold.
- Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of $1/x$, where x is the duty cycle.

9. Sample Calculation

(1) Total (Peak) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L)

(2) Total (Average, Duty $\geq$ 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G)

(3) Total (Average, Duty $<$ 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G) + Duty Cycle Factor

7.7. AC POWER LINE CONDUCTED EMISSIONS

LIMIT

47 CFR § 15.207 / RSS-GEN Section 8.8

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

*Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

TEST SETUP

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.

According to FCC KDB 174176 D01 Line Conducted FAQ v01r01 :

Devices Operating Above 30 MHz

For a device with a permanent or detachable antenna operating above 30 MHz, measurements must be performed with the antenna connected as specified in clause 6.2 of ANSI C63.10-2013.

Devices Operating Below 30 MHz

For a device with a permanent or detachable antenna operating at or below 30 MHz, the FCC will accept measurements performed with a suitable dummy load in lieu of the antenna under the following conditions:

- (1) Perform the AC power-line conducted tests with the antenna connected to determine compliance with Section 15.207 limits outside the transmitter's fundamental emission band;
- (2) Retest with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network which simulates the antenna in the fundamental frequency band. All measurements must be performed as specified in clause 6.2 of ANSI C63.10-2013.

Sample Calculation

Quasi-peak(Final Result) = Reading Value + Correction Factor

8. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26 dB Bandwidth	§15.407	N/A (For power measurement)	Conducted	-
6 dB Bandwidth ⁽¹⁾	§15.407(e)	≥ 500 kHz		PASS
Maximum Conducted Output Power	§15.407(a)(2) §15.407(a)(3)(i)	cf. Section 7.3		PASS
Power Spectral Density	§15.407(a)(2) §15.407(a)(3)(i)	cf. Section 7.4		PASS
Frequency Stability	§15.407(g) §2.1055	Maintained within the band		PASS ⁽²⁾
AC Power line Conducted Emissions	§15.207 §15.407(b)(9)	cf. Section 7.7		PASS ⁽²⁾
Undesirable Emissions	§15.407(b)(2) §15.407(b)(3)	cf. Section 7.6	Radiated	PASS
Radiated Spurious Emissions	§15.209 §15.407(b)(9)	cf. Section 7.6		PASS
Radiated Restricted Band Edge	§15.407(b)(7) §15.205(a)	cf. Section 7.6		PASS

Note :

1. 6 dB bandwidth was measured for the straddle channels spanning between U-NII 2c and U-NII 3 bands
2. Evaluated in a separate non-ax test report

Test Description	ISED Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth ⁽¹⁾	RSS-247, 6.2.4.2	≥ 500 kHz	Conducted	PASS
Occupied bandwidth	RSS-Gen, 6.7	N/A		-
Maximum Conducted Output Power	RSS-247, 6.2.2 1 a RSS-247, 6.2.3.1 a RSS-247, 6.2.4.2	cf. Section 7.3		PASS
Maximum e.i.r.p.	RSS-247, 6.2.2.1 b RSS-247, 6.2.3.1 b RSS-247, 6.2.4.2	cf. Section 7.3		PASS
Power Spectral Density	RSS-247, 6.2.2 1 a RSS-247, 6.2.3.1 a RSS-247, 6.2.4.1	≤ 11 dBm/ MHz EIRP		PASS
Frequency Stability	RSS-Gen, 8.11	should be kept within at least the central 80% of its permitted operating frequency band in order to minimize the possibility of out-of-band operation.		PASS ⁽²⁾
AC Power line Conducted Emissions	RSS-Gen, 8.8	cf. Section 7.7		PASS ⁽²⁾
Undesirable Emissions	RSS-247, 6.2.2.2 RSS-247, 6.2.3 2	cf. Section 7.6	Radiated	PASS
Radiated Spurious Emissions	RSS-Gen, 8.9	cf. Section 7.6		PASS
Radiated Restricted Band Edge	RSS-Gen, 8.10	cf. Section 7.6		PASS
Receiver Spurious Emissions	RSS-Gen, 7.3	cf. Section 7.6		PASS

Note :

1. 6 dB bandwidth was measured for the straddle channels spanning between U-NII 2c and U-NII 3 bands
2. Evaluated in a separate non-ax test report

WORST CASE CONFIGURATION

1. EUT Axis

- All X, Y, and Z positions for horizontal / vertical antenna polarization were investigated to find the worst-case position.
- X position was selected for the final evaluation.

2. Operations with all the data rates available were investigated for each different channel BW mode. Lowest data rate was selected as the worst case.

3. Radiated test was performed at the worst case 2 x TX CDD mode

- The target power of SISO mode per chain is the same as the target power of MIMO mode per chain.

4. Worst-case test mode

- All the RU tone for each bandwidth were investigated, and the modes below were reported as the worst-case conditions.

U-NII 2 Band		Tone	RU Offset
Test	Mode		
All Conducted Tests	802.11ax HE20	SU	-
		106T	53, 54
		52T	37, 38, 40 (39)
		26T	0, 4, 8 (3, 5)
	802.11ax HE40	SU	-
		242T	61, 62
		106T	53, 54, 56 (55)
	802.11ax HE80	SU	-
Radiated Emission Tests	802.11ax HE20	SU	-
		106T	53, 54
		26T	0, 4, 8
	802.11ax HE40	SU	-
		242T	61, 62
	802.11ax HE80	SU	-
		484T	65, 66

* The value in parentheses is the RU offset additionally evaluated in the straddle channel

WORST CASE DATA RATE

Mode	Worst Case Data Rate
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0

CHANNEL UNDER TEST

Mode (U-NII 2a)	Low Channel (MHz)	Mid Channel (MHz)	High Channel (MHz)
802.11ax HE20	5260	5300	5320
802.11ax HE40	5270	-	5310
802.11ax HE80	5290		

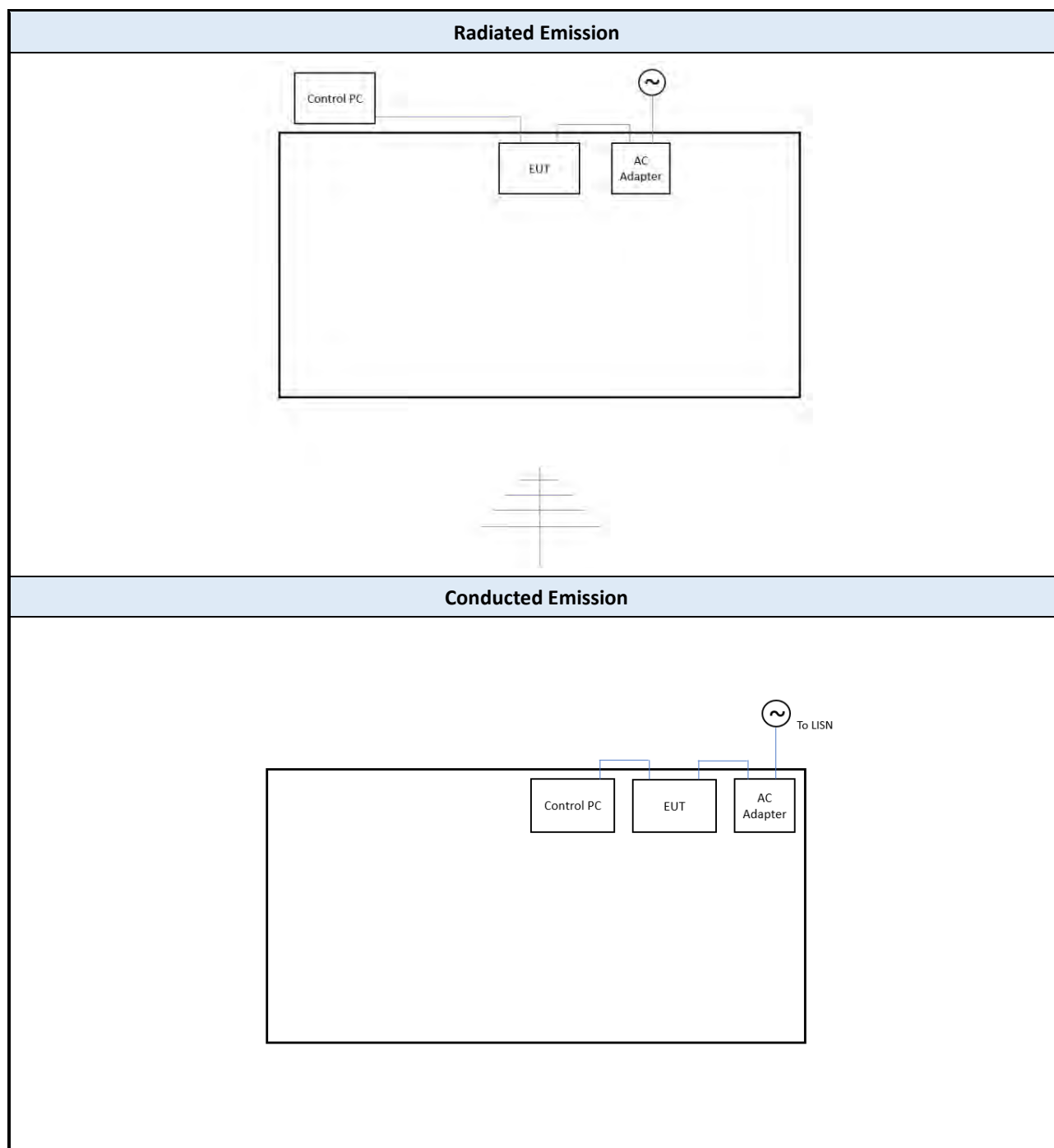
Mode (U-NII 2c)	Low Channel (MHz)	Mid Channel (MHz)	High Channel (MHz)
802.11ax HE20	5500	5580	5700
802.11ax HE40	5510	5550	5670
802.11ax HE80	5530	-	5610

Mode (Straddle)	Low Channel (MHz)	Mid Channel (MHz)	High Channel (MHz)
802.11ax HE20	5720 ⁽¹⁾		
802.11ax HE40	5710 ⁽¹⁾		
802.11ax HE80	5690 ⁽¹⁾		

Note :

1. Straddle channels : U-NII 2c and U-NII 3 bands

TEST CONFIGURATION



LIST OF SUPPORT EQUIPMENT

Equipment Type	Model No.	Serial No.	Manufacturer	Qty	Note
Power Supply	PA-1650-58	165058LT33803287PEA01	LITEON	1	Input : 100-240 V a.c., 50-60 Hz, 1.6 A Output : 20 V d.c., 3.25 A
Laptop	14-dq1038wrn	5CD04524LL	HP	1	For EUT control

9. TEST RESULT

9.1 DUTY CYCLE

Duty cycle is 100 % continuous.

9.2 6 dB BANDWIDTH / 26 dB BANDWIDTH / 99% BANDWIDTH

U-NII 2 Band				99% Bandwidth (MHz)		26 dB Bandwidth (MHz)	
Mode / Tone	Frequency (MHz)	Channel	Offset	Chain 0	Chain 1	Chain 0	Chain 1
802.11ax HE20 / SU	5260	52	-	18.889	18.860	20.550	20.421
	5300	60	-	18.865	18.905	20.323	20.614
	5320	64	-	18.913	18.887	20.845	20.535
	5500	100	-	18.847	18.897	20.611	20.520
	5580	116	-	18.891	18.879	20.565	20.422
	5700	140	-	18.838	18.866	20.581	20.351
802.11ax HE20 / 106T	5260	52	53	16.945	17.617	19.770	19.827
			54	14.672	17.165	16.848	19.668
	5300	60	53	16.112	14.007	19.805	16.517
			54	18.217	18.195	19.727	19.662
	5320	64	53	18.170	10.204	19.417	17.771
			54	17.500	17.065	19.034	18.451
	5500	100	53	17.843	17.765	20.571	19.074
			54	15.457	14.667	16.999	16.244
	5580	116	53	17.535	15.046	18.789	20.304
			54	15.958	17.835	17.348	19.789
	5700	140	53	17.567	17.660	18.997	18.974
			54	10.732	17.832	16.711	19.636
802.11ax HE20 / 52T	5260	52	37	15.317	18.278	16.360	19.650
			38	16.469	16.424	17.370	17.637
			40	18.221	11.191	19.512	14.363
	5300	60	37	14.915	18.225	19.769	19.601
			38	14.037	16.005	18.596	17.863
			40	17.667	17.206	18.653	18.394
	5320	64	37	17.090	16.108	18.609	17.484
			38	15.233	14.098	17.115	16.015
			40	17.272	15.899	19.809	17.080
	5500	100	37	17.024	10.375	18.355	12.941
			38	15.959	11.329	16.700	12.637
			40	16.344	17.143	19.628	18.100
	5580	116	37	18.010	17.997	19.876	19.269
			38	14.517	16.067	15.363	18.532
			40	17.476	15.841	18.848	17.536
	5700	140	37	14.818	16.000	16.122	17.345
			38	14.196	16.488	15.999	17.432
			40	12.180	15.939	13.895	17.185

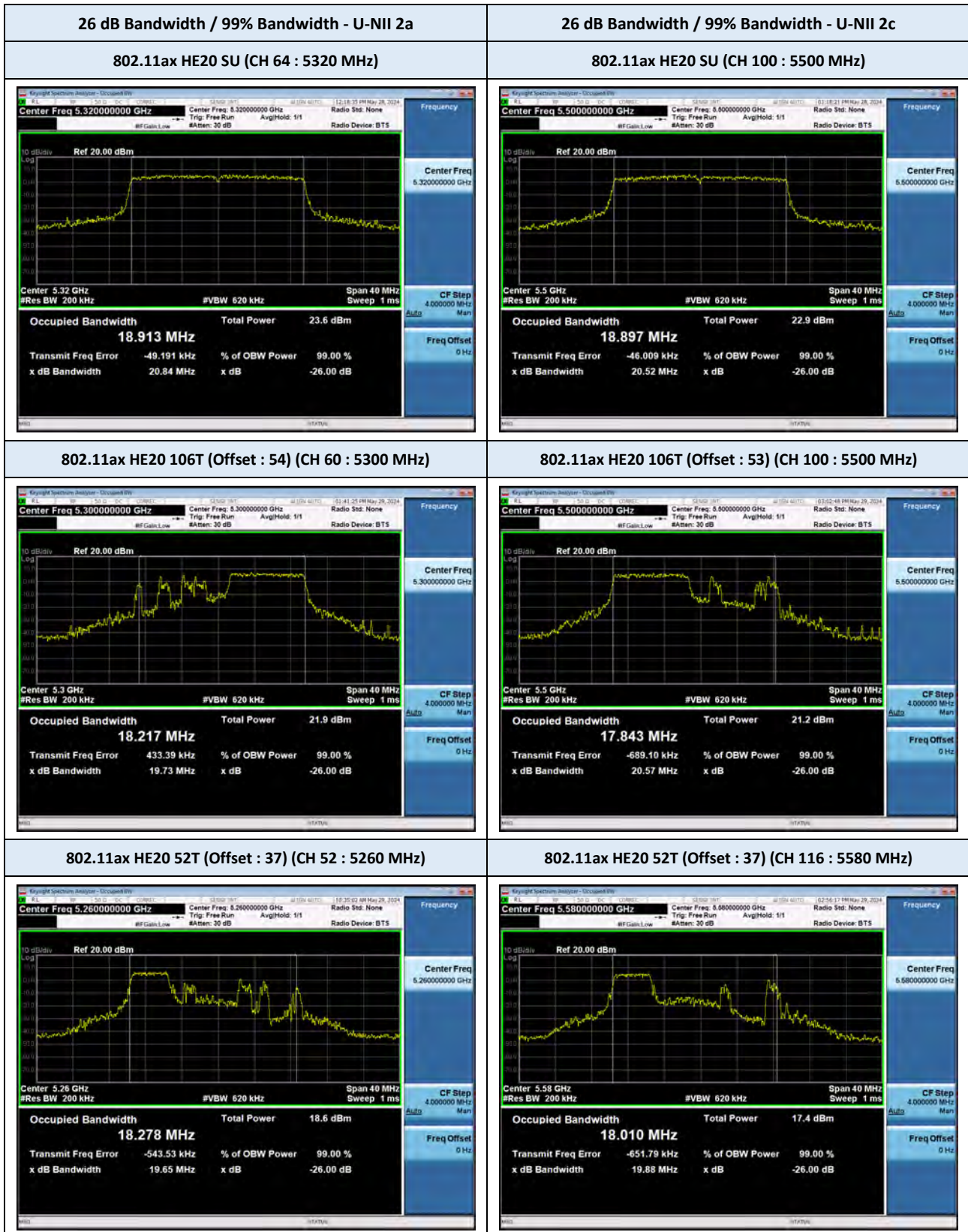
U-NII 2 Band				99% Bandwidth (MHz)		26 dB Bandwidth (MHz)	
Mode / Tone	Frequency (MHz)	Channel	Offset	Chain 0	Chain 1	Chain 0	Chain 1
802.11ax HE20 / 26T	5260	52	0	15.132	15.795	19.564	16.781
			4	10.164	10.347	11.028	14.786
			8	16.060	16.632	17.039	17.836
	5300	60	0	17.994	16.785	19.203	17.765
			4	11.915	16.667	16.652	17.229
			8	18.310	17.563	19.431	18.856
	5320	64	0	13.753	14.361	14.680	15.418
			4	13.466	14.865	18.516	15.580
			8	17.564	17.737	18.512	18.927
	5500	100	0	14.933	16.879	15.567	17.702
			4	10.512	15.494	14.400	16.381
			8	17.638	17.830	18.491	18.732
	5580	116	0	15.767	15.812	16.927	16.747
			4	12.286	12.588	13.794	15.268
			8	17.496	13.777	18.846	14.843
	5700	140	0	15.221	18.095	16.182	19.132
			4	15.285	15.199	18.104	15.685
			8	13.858	15.990	15.215	19.383
802.11ax HE40 / SU	5270	54	-	37.616	37.773	40.038	39.886
	5310	62	-	37.680	37.626	40.288	39.661
	5510	102	-	37.720	37.773	39.892	39.639
	5550	110	-	37.687	37.650	39.856	40.082
	5670	134	-	37.675	37.692	39.925	39.915
802.11ax HE40 / 242T	5270	54	61	36.854	34.857	39.419	37.635
			62	36.563	35.101	39.188	40.998
	5310	62	61	36.586	27.946	42.372	33.309
			62	36.573	37.437	38.629	40.002
	5510	102	61	25.221	37.469	42.472	40.680
			62	37.260	37.134	40.493	40.410
	5550	110	61	37.247	35.386	39.927	37.922
			62	33.823	35.223	36.472	38.546
	5670	134	61	36.400	37.529	43.447	40.619
			62	37.304	36.453	40.054	38.975

U-NII 2 Band				99% Bandwidth (MHz)		26 dB Bandwidth (MHz)	
Mode / Tone	Frequency (MHz)	Channel	Offset	Chain 0	Chain 1	Chain 0	Chain 1
802.11ax HE40 / 106T	5270	54	53	36.865	35.886	39.497	37.672
			54	32.017	19.292	38.312	31.984
			56	34.199	35.308	36.838	37.779
	5310	62	53	30.683	37.342	32.809	40.132
			54	32.109	29.448	33.998	31.155
			56	36.426	36.753	38.545	38.547
	5510	102	53	34.467	36.864	36.893	39.887
			54	27.976	35.746	28.878	37.429
			56	36.615	36.595	38.528	39.227
	5550	110	53	36.886	36.008	38.912	37.931
			54	15.516	16.131	30.039	22.505
			56	37.548	33.711	39.605	39.459
802.11ax HE80 / SU	5670	134	53	37.517	29.990	39.442	31.679
			54	33.068	24.951	34.491	33.612
			56	37.168	36.558	39.152	39.660
	5290	58	-	77.231	77.235	82.077	81.245
	5530	106	-	76.967	77.100	81.397	80.962
	5610	122	-	77.075	77.072	80.897	80.928

Straddle Channel : U-NII 2c/3 Bands					99% Bandwidth (MHz)		26 dB Bandwidth (MHz)	
Mode / Tone	Frequency (MHz)	Channel	Offset	Band	Chain 0	Chain 1	Chain 0	Chain 1
802.11ax HE20 / SU	5720	144	-	U-NII 2c	14.504	14.502	15.329	15.175
			-	U-NII 3	4.547	4.536	5.408	5.194
802.11ax HE20 / 106T	5720	144	53	U-NII 2c	14.606	14.570	15.965	15.884
				U-NII 3	5.178	4.485	5.871	5.106
			54	U-NII 2c	13.821	13.641	14.947	14.465
				U-NII 3	4.716	4.703	5.685	5.682
802.11ax HE20 / 52T	5720	144	37	U-NII 2c	14.686	14.709	15.750	15.733
			37	U-NII 3	5.006	4.852	5.941	5.140
			38	U-NII 2c	13.596	13.600	14.582	14.325
			38	U-NII 3	4.910	4.295	5.823	5.120
			39	U-NII 2c	13.729	13.473	14.432	14.245
			39	U-NII 3	5.012	5.084	4.723	4.695
			40	U-NII 2c	14.049	13.936	15.428	14.948
			40	U-NII 3	4.423	4.486	5.501	5.474
802.11ax HE20 / 26T	5720	144	0	U-NII 2c	14.719	14.694	15.569	15.562
			0	U-NII 3	5.842	5.547	6.605	6.452
			3	U-NII 2c	13.578	13.433	14.272	14.145
			3	U-NII 3	4.962	4.522	5.701	5.265
			5	U-NII 2c	13.527	13.317	14.283	14.165
			5	U-NII 3	5.373	5.225	6.108	6.003
			8	U-NII 2c	13.973	14.000	16.369	16.250
			8	U-NII 3	4.742	4.690	5.756	5.786
802.11ax HE40 / SU	5710	142	-	U-NII 2c	33.713	33.784	34.970	34.974
			-	U-NII 3	4.296	4.246	5.197	5.182
802.11ax HE40 / 242T	5710	142	61	U-NII 2c	33.576	33.810	36.545	36.598
			61	U-NII 3	10.902	6.200	19.931	7.584
			62	U-NII 2c	33.500	33.162	35.563	35.111
			62	U-NII 3	5.218	4.787	6.628	6.448
802.11ax HE40 / 106T	5710	142	53	U-NII 2c	33.257	33.671	35.774	35.881
			53	U-NII 3	8.664	6.608	8.822	7.426
			54	U-NII 2c	32.36	32.58	34.69	34.28
			54	U-NII 3	7.97	4.71	8.22	5.47
			55	U-NII 2c	32.23	32.86	34.36	34.36
			55	U-NII 3	9.04	7.30	9.94	8.05
			56	U-NII 2c	33.36	33.46	34.31	34.35
			56	U-NII 3	4.62	4.60	6.11	6.07
802.11ax HE80 / SU	5690	138	-	U-NII 2c	73.031	73.058	75.091	75.513
			-	U-NII 3	4.928	4.880	6.549	6.081

Straddle Channel : U-NII 2c/3 Bands					6 dB Bandwidth (MHz)		
Mode / Tone	Frequency (MHz)	Channel	Offset	Band	Chain 0	Chain 1	Limit
802.11ax HE20 / SU	5720	144	-	U-NII 3	4.441	4.488	≥ 0.5
802.11ax HE20 / 106T	5720	144	53	U-NII 2c	2.991	3.269	
			54	U-NII 2c	4.468	4.466	
802.11ax HE20 / 52T	5720	144	37	U-NII 2c	2.956	3.230	
			38	U-NII 2c	3.089	3.323	
			39	U-NII 2c	2.449	2.466	
			40	U-NII 2c	4.091	4.096	
802.11ax HE20 / 26T	5720	144	0	U-NII 2c	3.162	3.323	
			3	U-NII 2c	3.011	3.343	
			5	U-NII 2c	3.025	3.322	
			8	U-NII 2c	2.090	2.084	
802.11ax HE40 / SU	5710	142	-	U-NII 2c	3.932	3.990	
802.11ax HE40 / 242T	5710	142	61	U-NII 2c	2.921	3.264	
			62	U-NII 2c	4.004	3.995	
802.11ax HE40 / 106T	5710	142	53	U-NII 2c	2.916	3.245	
			54	U-NII 2c	2.929	3.457	
			55	U-NII 2c	3.322	3.465	
			56	U-NII 2c	3.929	3.936	
802.11ax HE80 / SU	5690	138	-	U-NII 2c	3.995	3.989	

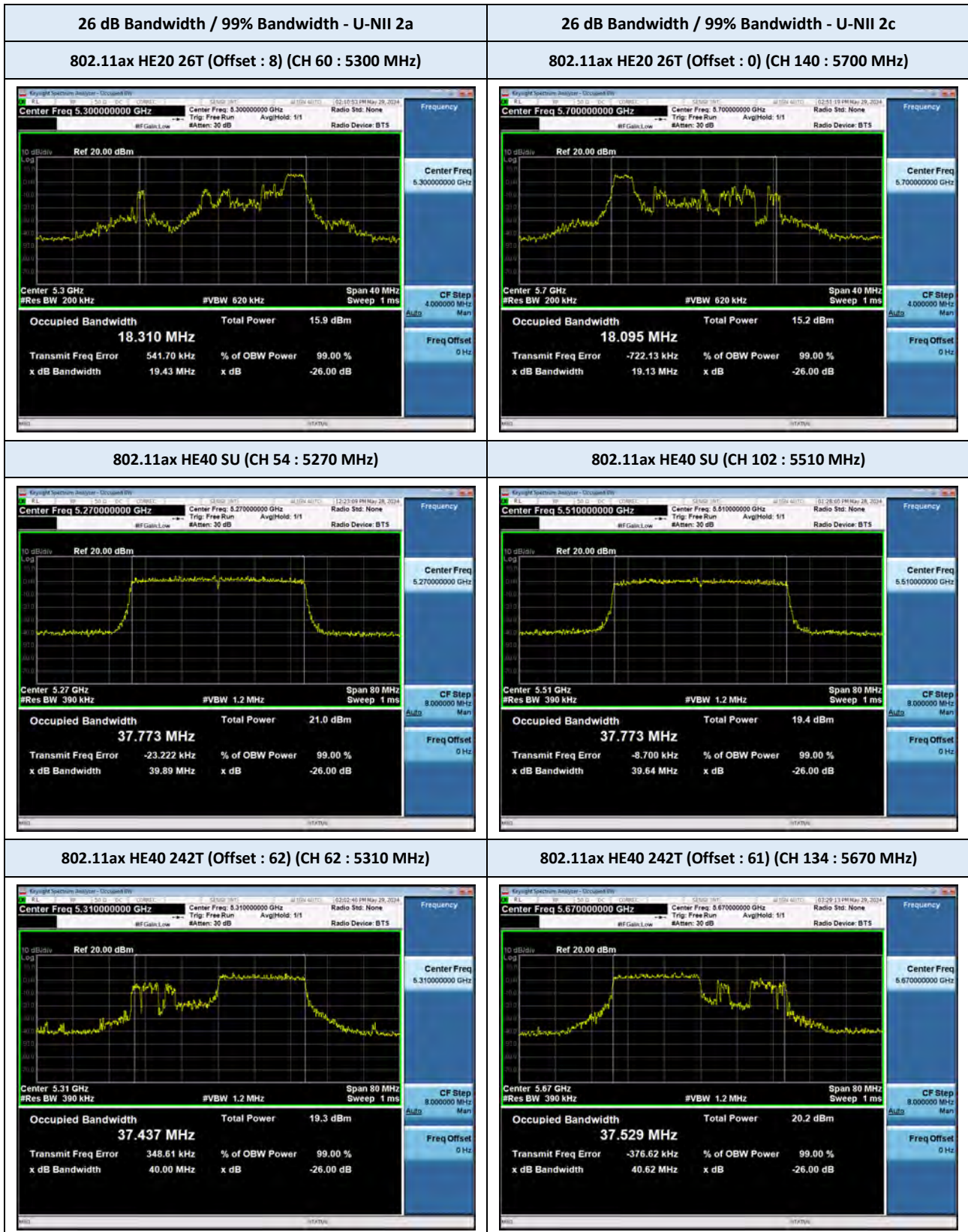
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

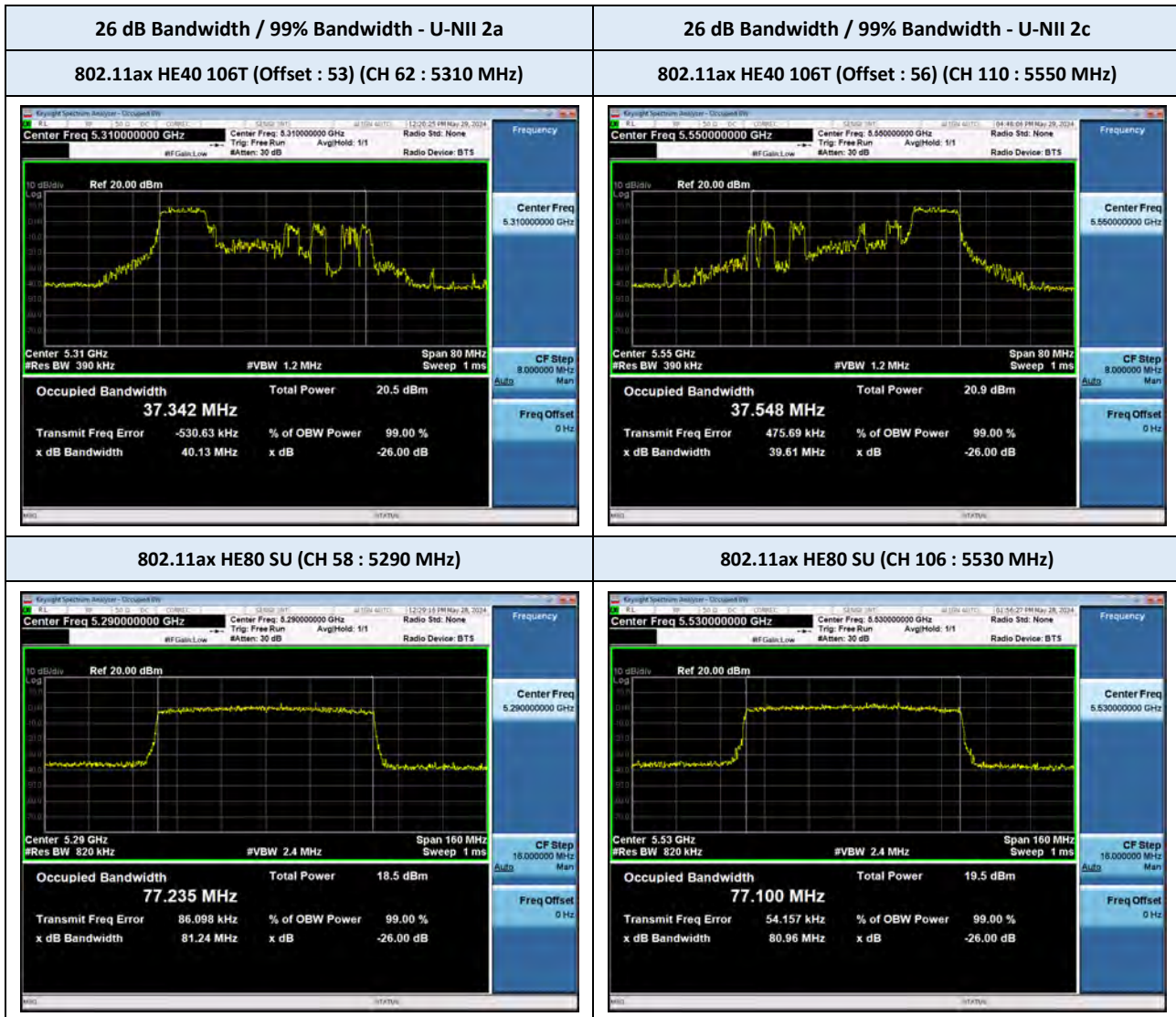
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

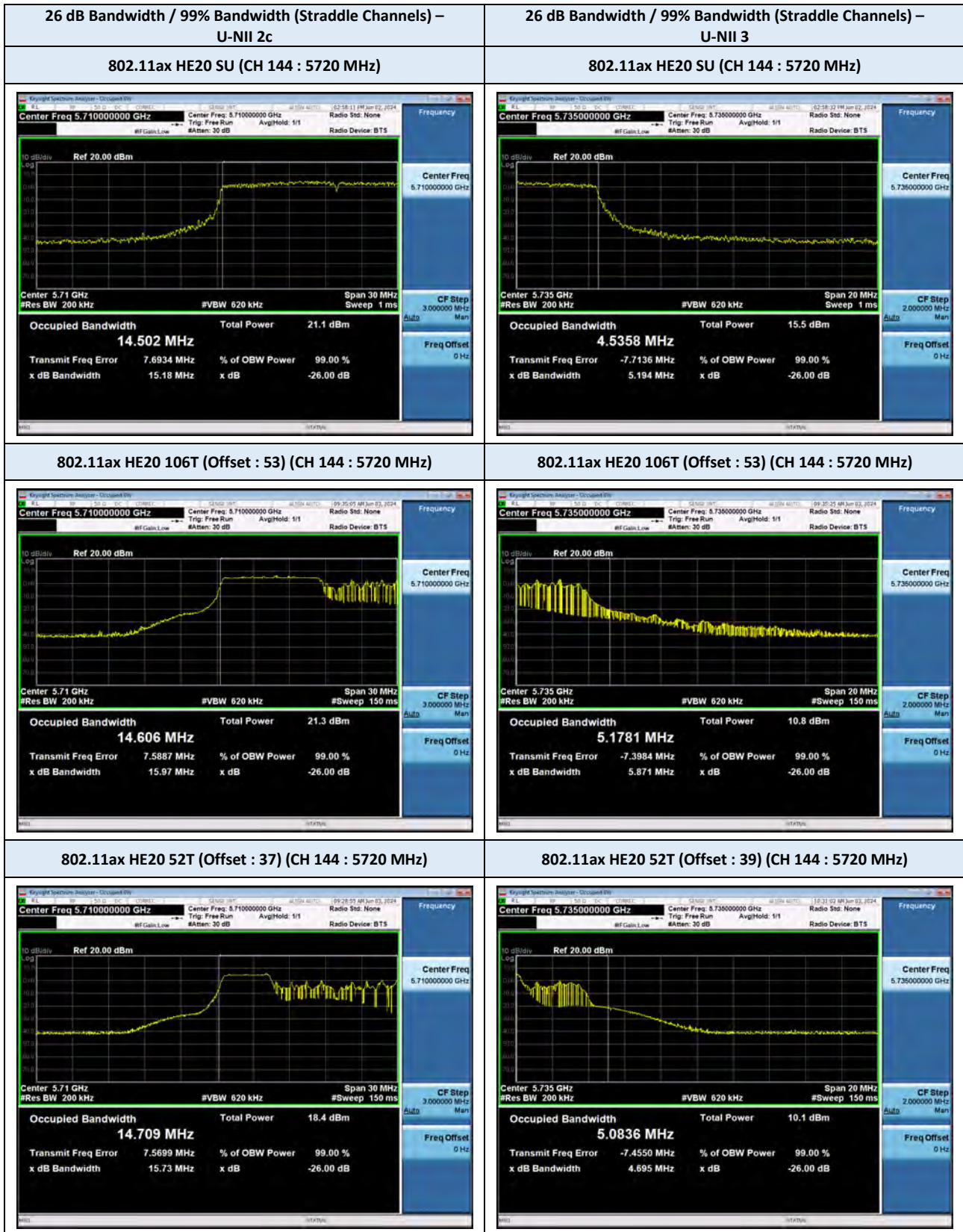
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

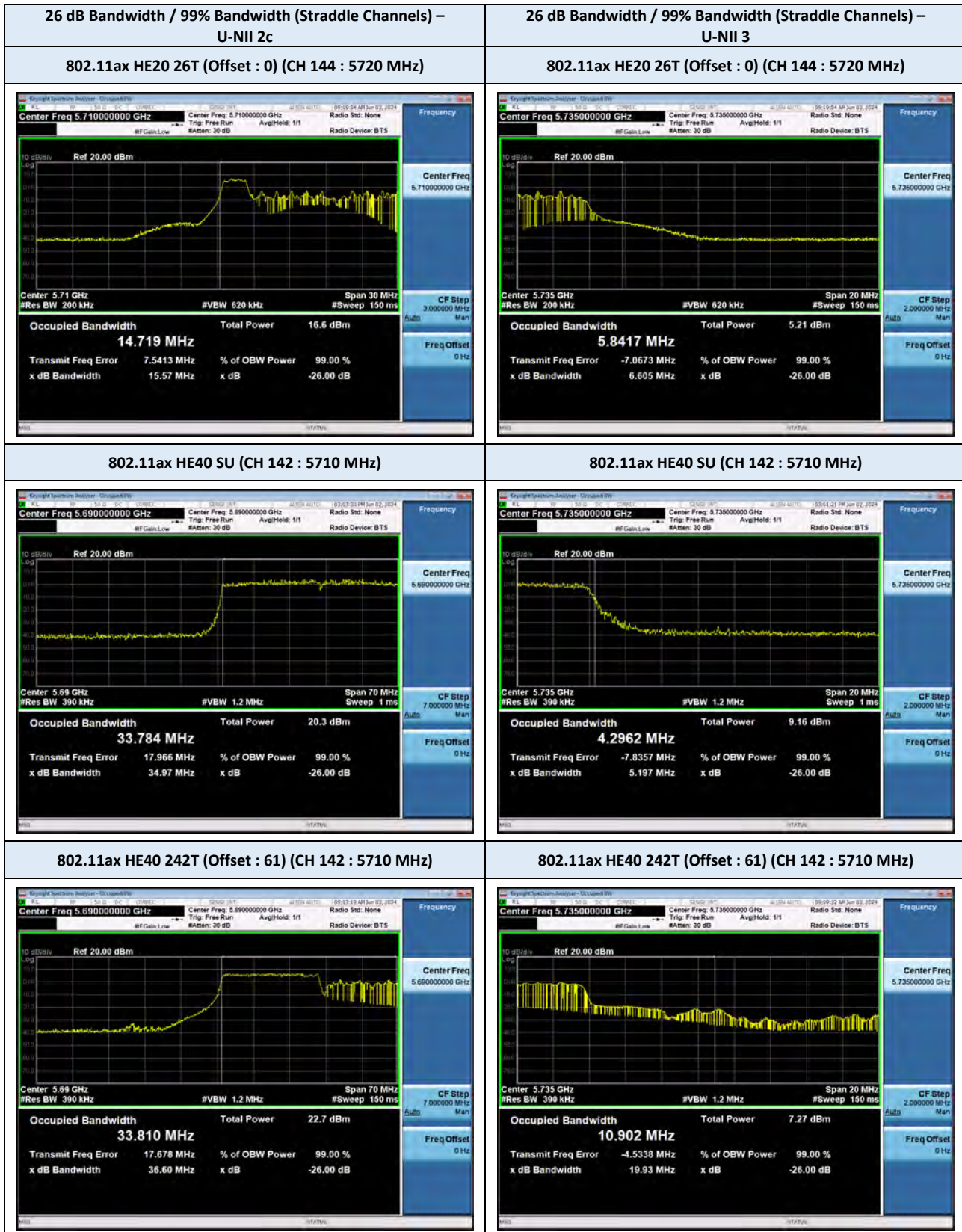
TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone

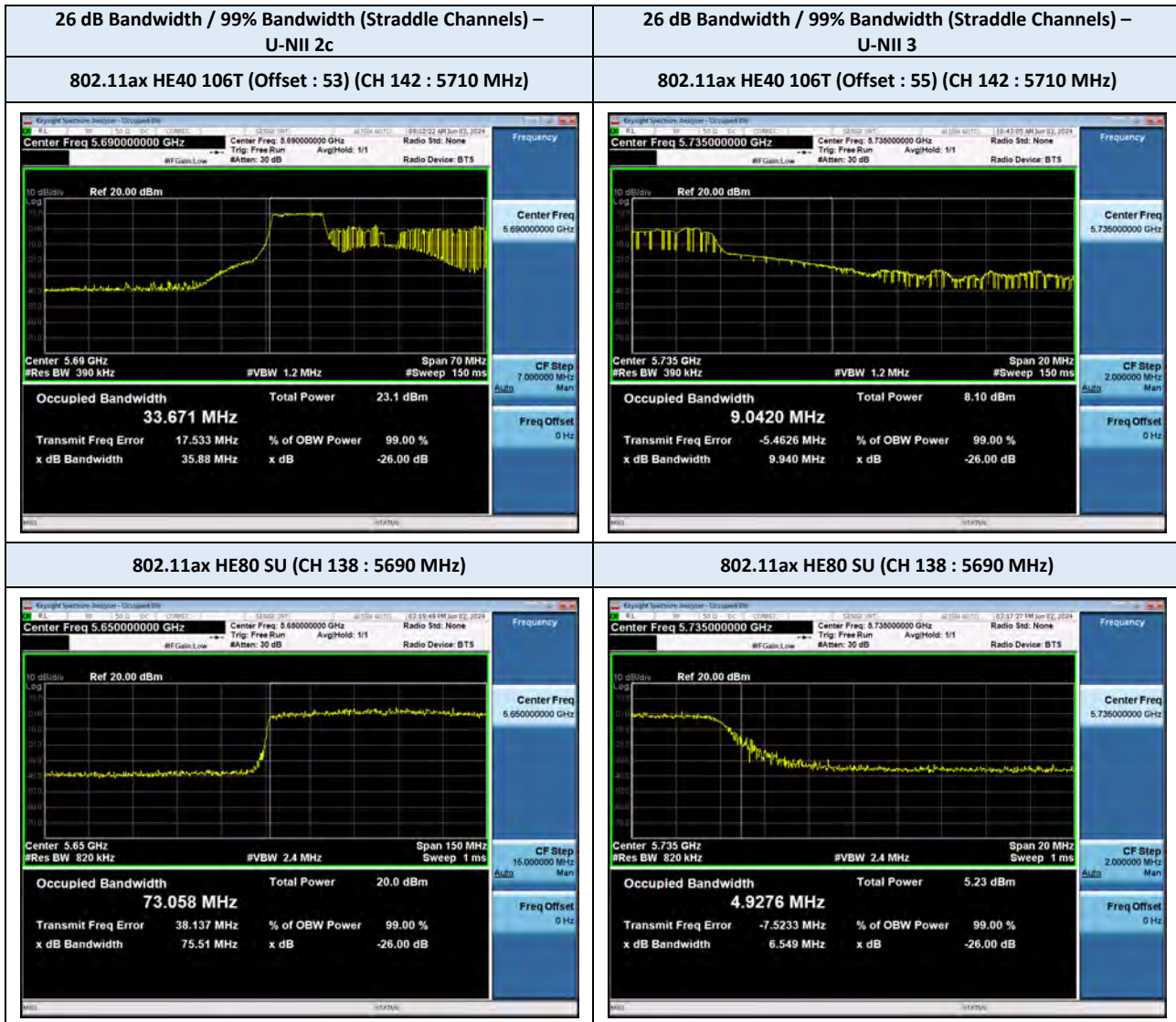
TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone

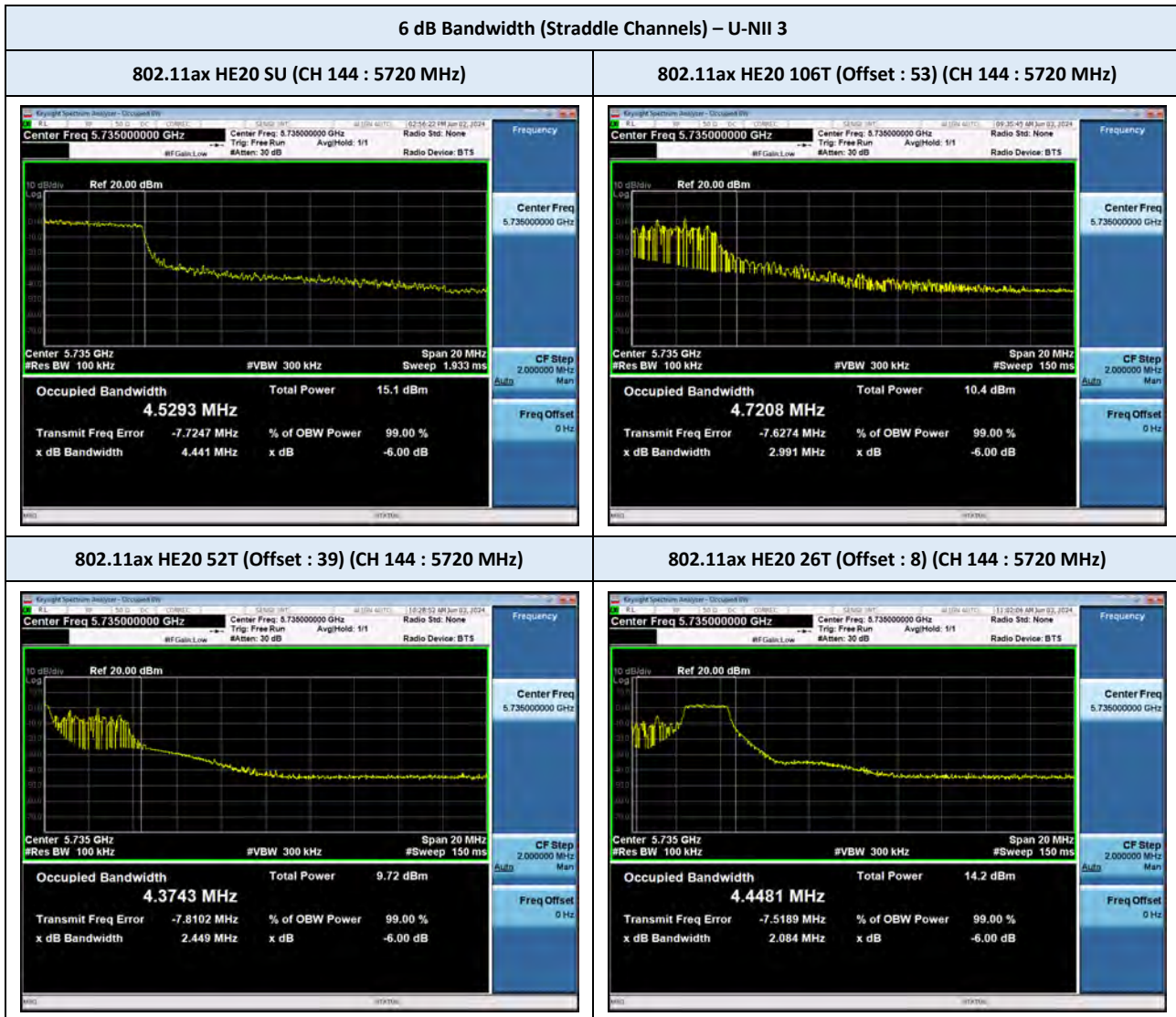
TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone

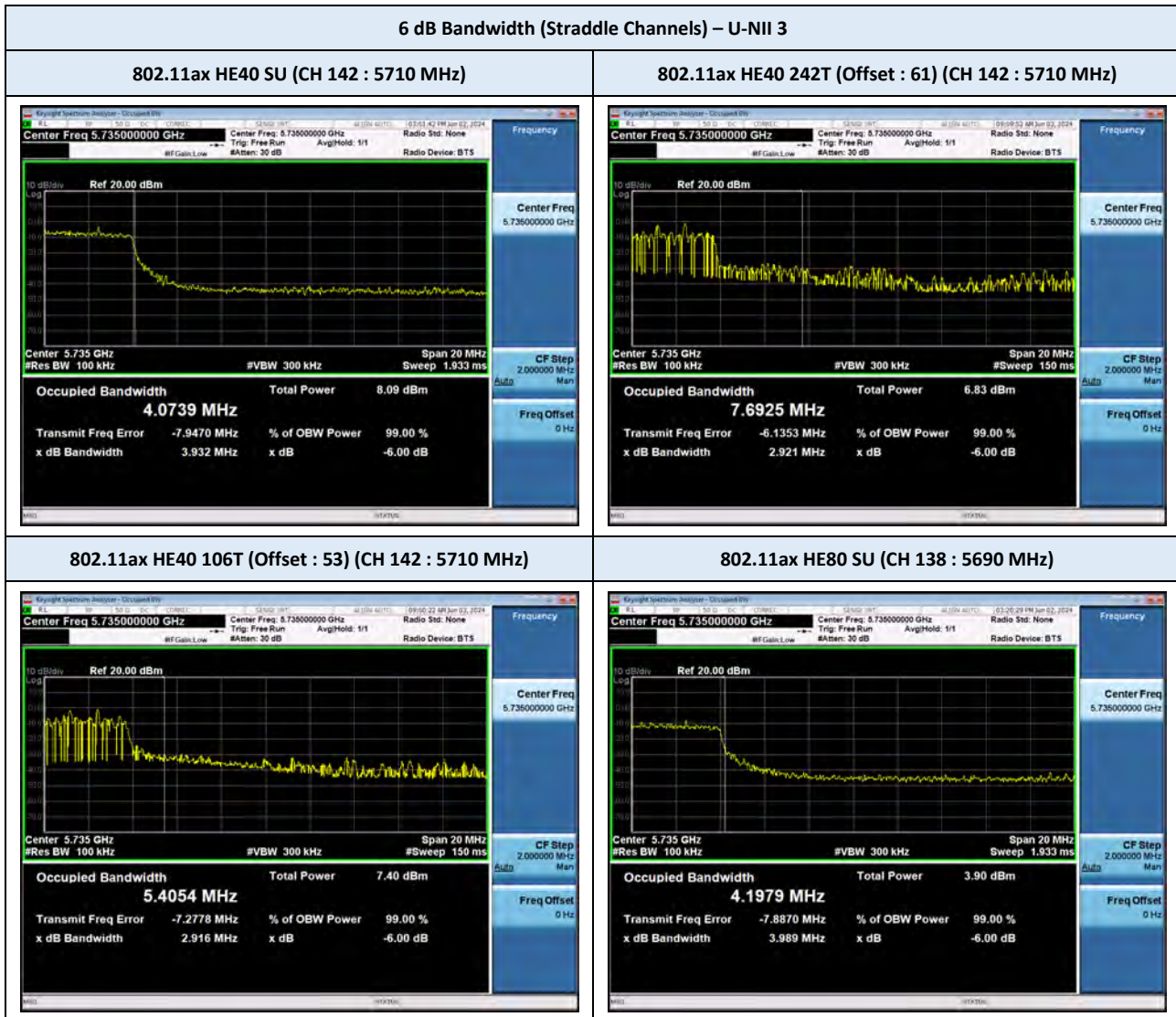
TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone

TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone

9.3 OUTPUT POWER

U-NII 2 Band				Test Result				Limit (dBm)
Mode / Tone	Frequency (MHz)	Channel	Offset	Measured Power (dBm)		Duty Factor (dB)	Total Power (dBm)	
				Chain 0	Chain 1		All Chain	
802.11ax HE20 / SU	5260	52	-	17.74	16.70	-	20.26	23.24
	5300	60	-	17.78	16.71	-	20.29	23.24
	5320	64	-	17.12	16.31	-	19.75	23.24
	5500	100	-	16.97	16.42	-	19.72	23.23
	5580	116	-	16.38	15.22	-	18.85	23.24
	5700	140	-	17.03	16.34	-	19.71	23.23
802.11ax HE20 / 106T	5260	52	53	15.70	14.83	-	18.30	22.77
			54	15.07	13.99	-	17.58	22.14
	5300	60	53	15.46	14.81	-	18.15	21.94
			54	14.92	14.26	-	17.61	23.08
	5320	64	53	14.76	14.28	-	17.54	20.57
			54	14.67	13.93	-	17.32	22.80
	5500	100	53	14.38	14.33	-	17.37	22.98
			54	14.15	13.93	-	17.05	22.14
	5580	116	53	13.65	12.64	-	16.19	22.25
			54	13.91	13.23	-	16.59	22.51
	5700	140	53	14.52	14.11	-	17.33	22.93
			54	14.17	13.96	-	17.08	20.79
802.11ax HE20 / 52T	5260	52	37	12.51	11.66	-	15.11	22.33
			38	12.36	11.54	-	14.98	22.63
			40	12.18	10.97	-	14.62	20.97
	5300	60	37	12.29	11.71	-	15.02	22.22
			38	12.21	11.48	-	14.87	21.95
			40	11.90	11.15	-	14.55	22.84
	5320	64	37	11.70	11.23	-	14.48	22.55
			38	11.54	11.10	-	14.34	21.97
			40	11.66	10.84	-	14.28	22.49
	5500	100	37	11.38	11.44	-	14.42	20.64
			38	11.50	11.40	-	14.46	21.02
			40	11.07	10.90	-	13.99	22.61
	5580	116	37	10.57	9.57	-	13.11	23.03
			38	10.79	9.97	-	13.41	22.10
			40	10.89	10.35	-	13.64	22.48
	5700	140	37	11.35	10.99	-	14.18	22.19
			38	11.54	11.20	-	14.38	22.00
			40	10.99	10.86	-	13.94	21.34

Note :

1. Conducted Output Power Limit

The limit was calculated to be 99 % according to the ISED rule, which is a worst case limit

- U-NII 2 (20 MHz BW) : Min [10 log(250mW), 11+10 log(99% OBW)] dBm
- U-NII 2 (40/80 MHz BW) : 10 log(250mW) = 23.98 dBm

2. Duty factor is not applied since the duty cycle is 100 %.

U-NII 2 Band				Test Result				Limit (dBm)
Mode / Tone	Frequency (MHz)	Channel	Offset	Measured Power (dBm)		Duty Factor (dB)	Total Power (dBm)	
				Chain 0	Chain 1		All Chain	
802.11ax HE20 / 26T	5260	52	0	9.70	8.54	-	12.17	22.28
			4	9.18	8.18	-	11.72	20.55
			8	9.05	7.90	-	11.52	22.54
	5300	60	0	9.32	8.36	-	11.88	22.73
			4	9.19	8.28	-	11.77	21.24
			8	8.80	7.95	-	11.40	22.93
	5320	64	0	8.71	7.95	-	11.36	21.86
			4	8.62	7.94	-	11.30	21.77
			8	8.84	7.73	-	11.33	22.93
	5500	100	0	8.21	8.34	-	11.29	22.22
			4	8.36	8.23	-	11.30	20.70
			8	8.05	7.58	-	10.83	22.94
	5580	116	0	7.60	6.45	-	10.07	22.46
			4	7.71	7.05	-	10.41	21.37
			8	7.72	7.27	-	10.51	21.87
	5700	140	0	8.33	8.09	-	11.22	22.30
			4	8.48	8.11	-	11.31	22.30
			8	7.83	7.75	-	10.80	21.90
802.11ax HE40 / SU	5270	54	-	15.17	14.15	-	17.70	23.46
	5310	62	-	12.83	11.83	-	15.37	23.46
	5510	102	-	12.94	12.46	-	15.72	23.46
	5550	110	-	13.32	12.36	-	15.88	23.46
	5670	134	-	13.78	12.87	-	16.36	23.46
802.11ax HE40 / 242T	5270	54	61	15.77	14.81	-	18.32	23.46
			62	14.00	12.92	-	16.50	23.46
	5310	62	61	13.26	12.44	-	15.88	23.46
			62	12.87	12.00	-	15.46	23.46
	5510	102	61	13.17	12.98	-	16.08	23.46
			62	12.79	12.71	-	15.76	23.46
	5550	110	61	13.59	13.03		16.33	23.46
			62	13.15	12.54		15.86	23.46
	5670	134	61	13.59	12.83	-	16.24	23.46
			62	14.00	13.51	-	16.77	23.46

Note :

1. Conducted Output Power Limit

The limit was calculated to be 99 % according to the ISED rule, which is a worst case limit

- U-NII 2 (20 MHz BW) : Min [10 log(250mW), 11+10 log(99% OBW)] dBm
- U-NII 2 (40/80 MHz BW) : 10 log(250mW) = 23.98 dBm

2. Duty factor is not applied since the duty cycle is 100 %.

U-NII 2 Band				Test Result				Limit (dBm)
Mode / Tone	Frequency (MHz)	Channel	Offset	Measured Power (dBm)		Duty Factor (dB)	Total Power (dBm)	
				Chain 0	Chain 1		All Chain	
802.11ax HE40 / 106T	5270	54	53	15.54	14.65	-	18.13	23.46
			54	15.58	14.54	-	18.10	23.46
			56	15.37	14.15	-	17.81	23.46
	5310	62	53	14.18	13.26	-	16.75	23.46
			54	13.81	12.95	-	16.41	23.46
			56	13.39	12.33	-	15.90	23.46
	5510	102	53	13.53	13.54	-	16.55	23.46
			54	13.71	13.45	-	16.59	23.46
			56	13.09	13.16	-	16.14	23.46
	5550	110	53	14.03	13.48	-	16.77	23.46
			54	14.22	13.59	-	16.93	23.46
			56	13.43	12.86	-	16.16	23.46
802.11ax HE80 / SU	5670	134	53	14.01	13.20	-	16.63	23.46
			54	14.23	13.61	-	16.94	23.46
			56	14.70	14.26	-	17.50	23.46
	5290	58	-	12.07	10.90	-	14.53	23.46
	5530	106	-	12.55	11.90	-	15.25	23.46
	5610	122	-	12.63	11.37	-	15.06	23.46

Note :

1. Conducted Output Power Limit

The limit was calculated to be 99 % according to the ISED rule, which is a worst case limit

- U-NII 2 (20 MHz BW) : Min [10 log(250mW), 11+10 log(99% OBW)] dBm
- U-NII 2 (40/80 MHz BW) : 10 log(250mW) = 23.98 dBm

2. Duty factor is not applied since the duty cycle is 100 %.

Straddle Channel : U-NII 2c/3 Bands					Test Result				Limit (dBm)
Mode / Tone	Frequency (MHz)	Channel	Offset	Band	Measured Power (dBm)		Duty Factor (dB)	Total Power (dBm)	
					Chain 0	Chain 1		All Chain	
802.11ax HE20 / SU	5720	144	-	U-NII 2c	15.73	15.16	-	18.46	22.09
				U-NII 3	10.01	9.86	-	12.95	29.48
				Combined	16.76	16.28	-	19.54	-
802.11ax HE20 / 106T	5720	144	53	U-NII 2c	14.14	13.83	-	17.00	22.11
				U-NII 3	-12.96	-12.23	-	-9.57	29.48
				Combined	14.15	13.84	-	17.01	-
			54	U-NII 2c	10.83	10.62	-	13.74	21.83
				U-NII 3	11.53	11.38	-	14.46	29.48
				Combined	14.20	14.03	-	17.13	-
802.11ax HE20 / 52T	5720	144	37	U-NII 2c	11.15	10.85	-	14.01	22.15
				U-NII 3	-11.44	-14.47	-	-9.69	29.48
				Combined	11.17	10.87	-	14.03	-
			38	U-NII 2c	11.11	10.86	-	14.00	21.81
				U-NII 3	-17.91	-16.30	-	-14.02	29.48
				Combined	11.11	10.87	-	14.00	-
			39	U-NII 2c	10.83	10.59	-	13.72	21.77
				U-NII 3	0.98	0.97	-	3.98	29.48
				Combined	11.26	11.04	-	14.16	-
			40	U-NII 2c	-5.86	-5.53	-	-2.68	21.92
				U-NII 3	11.05	10.96	-	14.02	29.48
				Combined	11.13	11.06	-	14.11	-
802.11ax HE20 / 26T	5720	144	0	U-NII 2c	8.17	7.79	-	10.99	22.15
				U-NII 3	-28.14	-23.99	-	-22.57	29.48
				Combined	8.17	7.79	-	10.99	-
			3	U-NII 2c	8.05	7.92	-	11.00	21.76
				U-NII 3	-24.48	-18.76	-	-17.73	29.48
				Combined	8.05	7.93	-	11.00	-
			5	U-NII 2c	8.18	8.05	-	11.12	21.72
				U-NII 3	-19.51	-15.55	-	-14.08	29.48
				Combined	8.19	8.06	-	11.14	-
			8	U-NII 2c	-10.27	-11.58	-	-7.87	21.93
				U-NII 3	8.12	7.98	-	11.06	29.48
				Combined	8.18	8.02	-	11.11	-

Note :

1. Conducted Output Power Limit

The limit was calculated to be 99 % according to the ISED rule, which is a worst case limit.

- U-NII 2 (20 MHz BW) : Min [10 log(250mW), 11+10 log(99% OBW)] dBm
- U-NII 2 (40/80 MHz BW) : 10 log(250mW) = 23.98 dBm
- U-NII 3 : 1 W (30 dBm)

2. Duty factor is not applied since the duty cycle is 100 %.

Straddle Channel : U-NII 2c/3 Bands					Test Result				Limit (dBm)
Mode / Tone	Frequency (MHz)	Channel	Offset	Band	Measured Power (dBm)		Duty Factor (dB)	Total Power (dBm)	
					Chain 0	Chain 1		All Chain	
802.11ax HE40 / SU	5710	142	-	U-NII 2c	13.91	13.36	-	16.65	23.46
				U-NII 3	3.40	3.43	-	6.42	29.48
				Combined	14.28	13.78	-	17.04	-
802.11ax HE40 / 242T	5710	142	61	U-NII 2c	14.34	14.00	-	17.18	23.46
				U-NII 3	-14.41	-27.18	-	-14.18	29.48
				Combined	14.34	14.00	-	17.19	-
			62	U-NII 2c	13.00	13.03	-	16.03	23.46
				U-NII 3	7.17	7.35	-	10.27	29.48
				Combined	14.01	14.07	-	17.05	-
802.11ax HE40 / 106T	5710	142	53	U-NII 2c	14.84	14.34	-	17.61	23.46
				U-NII 3	-23.21	-16.86	-	-15.95	29.48
				Combined	14.84	14.34	-	17.61	-
			54	U-NII 2c	14.84	14.46	-	17.66	23.46
				U-NII 3	-15.41	-27.69	-	-15.16	29.48
				Combined	14.84	14.46	-	17.67	-
			55	U-NII 2c	14.65	14.58	-	17.63	23.46
				U-NII 3	-16.41	-17.83	-	-14.06	29.48
				Combined	14.66	14.59	-	17.63	-
			56	U-NII 2c	11.70	11.79	-	14.76	23.46
				U-NII 3	11.22	11.35	-	14.29	29.48
				Combined	14.47	14.59	-	17.54	-
802.11ax HE80 / SU	5690	138	-	U-NII 2c	13.01	12.40	-	15.73	23.46
				U-NII 3	-1.23	-1.05	-	1.87	29.48
				Combined	13.17	12.59	-	15.90	-

Note :

1. Conducted Output Power Limit

The limit was calculated to be 99 % according to the ISED rule, which is a worst case limit.

- U-NII 2 (20 MHz BW) : Min [10 log(250mW), 11+10 log(99% OBW)] dBm
- U-NII 2 (40/80 MHz BW) : 10 log(250mW) = 23.98 dBm
- U-NII 3 : 1 W (30 dBm)

2. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone and bandwidth

TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone.

TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone.

9.4 POWER SPECTRAL DENSITY

U-NII 2 Band				Test Result				Limit (dBm/MHz)
Mode / Tone	Frequency (MHz)	Channel	Offset	Measured PSD (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	
				Chain 0	Chain 1		All Chain	
802.11ax HE20 / SU	5260	52	-	6.35	5.71	-	9.05	10.48
	5300	60	-	6.47	5.42	-	8.98	10.48
	5320	64	-	5.84	5.21	-	8.55	10.48
	5500	100	-	5.66	5.34	-	8.51	10.48
	5580	116	-	5.44	3.87	-	7.74	10.48
	5700	140	-	5.87	5.39	-	8.65	10.48
802.11ax HE20 / 106T	5260	52	53	7.34	6.66	-	10.02	10.48
			54	6.90	5.81	-	9.40	10.48
	5300	60	53	7.07	6.46	-	9.79	10.48
			54	6.65	5.82	-	9.27	10.48
	5320	64	53	6.50	5.95	-	9.24	10.48
			54	6.51	5.58	-	9.08	10.48
	5500	100	53	6.21	6.16	-	9.20	10.48
			54	5.79	5.92	-	8.87	10.48
	5580	116	53	5.72	4.45	-	8.14	10.48
			54	5.78	4.98	-	8.41	10.48
	5700	140	53	6.30	5.97	-	9.14	10.48
			54	6.05	5.85	-	8.96	10.48
802.11ax HE20 / 52T	5260	52	37	7.31	6.21	-	9.81	10.48
			38	6.99	6.35	-	9.70	10.48
			40	6.98	5.68	-	9.39	10.48
	5300	60	37	7.11	6.44	-	9.80	10.48
			38	6.81	6.25	-	9.55	10.48
			40	6.80	5.94	-	9.40	10.48
	5320	64	37	6.44	6.05	-	9.26	10.48
			38	6.18	6.10	-	9.15	10.48
			40	6.74	5.53	-	9.19	10.48
	5500	100	37	5.99	6.25	-	9.13	10.48
			38	6.15	6.07	-	9.12	10.48
			40	5.84	5.50	-	8.68	10.48
	5580	116	37	5.21	4.22	-	7.75	10.48
			38	5.64	4.60	-	8.16	10.48
			40	5.71	5.06	-	8.41	10.48
	5700	140	37	6.33	5.81	-	9.09	10.48
			38	6.18	5.91	-	9.06	10.48
			40	5.54	5.58	-	8.57	10.48

Note :

1. Conducted PSD limit : 11 dBm/MHz – $\Delta(G_{ANT}$ exceeding from 6 dBi)
2. Duty factor is not applied since the duty cycle is 100 %.

U-NII 2 Band				Test Result				Limit (dBm/MHz)
Mode / Tone	Frequency (MHz)	Channel	Offset	Measured PSD (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	
				Chain 0	Chain 1		All Chain	
802.11ax HE20 / 26T	5260	52	0	7.14	5.99	-	9.61	10.48
			4	5.70	4.66	-	8.22	10.48
			8	6.34	5.51	-	8.95	10.48
	5300	60	0	6.87	6.02	-	9.47	10.48
			4	5.54	4.58	-	8.10	10.48
			8	6.52	5.41	-	9.01	10.48
	5320	64	0	6.24	5.94	-	9.10	10.48
			4	4.92	4.14	-	7.56	10.48
			8	6.38	5.33	-	8.90	10.48
	5500	100	0	5.75	5.94	-	8.85	10.48
			4	4.96	4.60	-	7.79	10.48
			8	5.56	4.93	-	8.27	10.48
	5580	116	0	4.88	4.03	-	7.48	10.48
			4	4.10	3.64	-	6.89	10.48
			8	5.23	4.82	-	8.04	10.48
	5700	140	0	6.14	5.20	-	8.71	10.48
			4	4.71	4.54	-	7.63	10.48
			8	5.36	5.39	-	8.38	10.48
802.11ax HE40 / SU	5270	54	-	0.92	0.03	-	3.51	10.48
	5310	62	-	-1.18	-2.12	-	1.39	10.48
	5510	102	-	-1.08	-1.47	-	1.74	10.48
	5550	110	-	-0.33	-1.41	-	2.17	10.48
	5670	134	-	-0.31	-0.54	-	2.59	10.48
802.11ax HE40 / 242T	5270	54	61	4.29	3.29	-	6.83	10.48
			62	2.31	1.14	-	4.78	10.48
	5310	62	61	2.02	0.73	-	4.43	10.48
			62	1.24	0.92	-	4.09	10.48
	5510	102	61	1.48	1.30	-	4.40	10.48
			62	0.99	0.78	-	3.90	10.48
	5550	110	61	1.86	1.21	-	4.56	10.48
			62	1.58	0.82	-	4.22	10.48
	5670	134	61	1.91	1.31	-	4.63	10.48
			62	2.48	1.88	-	5.20	10.48

Note :

1. Conducted PSD limit : 11 dBm/MHz – Δ(G_{ANT} exceeding from 6 dBi)
2. Duty factor is not applied since the duty cycle is 100 %.

U-NII 2 Band				Test Result				Limit (dBm/MHz)
Mode / Tone	Frequency (MHz)	Channel	Offset	Measured PSD (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	
				Chain 0	Chain 1		All Chain	
802.11ax HE40 / 106T	5270	54	53	7.09	6.47	-	9.80	10.48
			54	7.27	6.56	-	9.94	10.48
			56	6.99	6.14	-	9.60	10.48
	5310	62	53	5.99	5.27	-	8.66	10.48
			54	5.31	4.80	-	8.07	10.48
			56	5.08	4.08	-	7.62	10.48
	5510	102	53	5.37	5.18	-	8.28	10.48
			54	5.52	5.43	-	8.49	10.48
			56	4.77	4.96	-	7.87	10.48
	5550	110	53	5.75	5.44	-	8.61	10.48
			54	6.08	5.46	-	8.79	10.48
			56	5.24	4.68	-	7.98	10.48
802.11ax HE80 / SU	5670	134	53	5.81	4.96	-	8.42	10.48
			54	5.79	5.22	-	8.52	10.48
			56	6.34	5.78	-	9.08	10.48
	5290	58	-	-5.05	-5.96	-	-2.47	10.48
	5530	106	-	-4.66	-5.14	-	-1.88	10.48
	5610	122	-	-4.59	-5.79	-	-2.14	10.48

Note :

1. Conducted PSD limit : 11 dBm/MHz – $\Delta(G_{ANT}$ exceeding from 6 dBi)
2. Duty factor is not applied since the duty cycle is 100 %.

Straddle Channel : U-NII 2c/3 Bands					Test Result				Limit (dBm/MHz) (dBm/500kHz)
Mode / Tone	Frequency (MHz)	Channel	Offset	Band	Measured PSD (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	
					Chain 0	Chain 1		All Chain	
802.11ax HE20 / SU	5720	144	-	U-NII 2c	4.95	4.68	-	7.83	10.48
				U-NII 3	1.54	1.36	-	4.46	29.48
802.11ax HE20 / 106T	5720	144	53	U-NII 2c	5.342	5.179	-	8.27	10.48
				U-NII 3	-15.411	-15.048	-	-12.22	29.48
			54	U-NII 2c	5.443	5.312	-	8.39	10.48
				U-NII 3	2.281	2.023	-	5.16	29.48
802.11ax HE20 / 52T	5720	144	37	U-NII 2c	5.41	5.00	-	8.22	10.48
				U-NII 3	-19.18	-14.13	-	-12.95	29.48
			38	U-NII 2c	5.40	5.20	-	8.31	10.48
				U-NII 3	-18.52	-27.62	-	-18.02	29.48
			39	U-NII 2c	5.37	5.46	-	8.43	10.48
				U-NII 3	1.00	1.21	-	4.12	29.48
			40	U-NII 2c	-2.50	-2.35	-	0.59	10.48
				U-NII 3	2.65	2.04	-	5.36	29.48
802.11ax HE20 / 26T	5720	144	0	U-NII 2c	5.32	4.85	-	8.10	10.48
				U-NII 3	-20.96	-20.72	-	-17.83	29.48
			3	U-NII 2c	5.44	4.65	-	8.07	10.48
				U-NII 3	-21.38	-19.26	-	-17.18	29.48
			5	U-NII 2c	5.09	5.08	-	8.09	10.48
				U-NII 3	-20.27	-20.76	-	-17.50	29.48
			8	U-NII 2c	-15.27	-16.25	-	-12.72	10.48
				U-NII 3	2.26	2.00	-	5.14	29.48
802.11ax HE40 / SU	5710	142	-	U-NII 2c	0.29	-0.14	-	3.09	10.48
				U-NII 3	-5.19	-5.22	-	-2.20	29.48
802.11ax HE40 / 242T	5710	142	61	U-NII 2c	2.714	2.386	-	5.56	10.48
				U-NII 3	-19.22	-19.807	-	-16.49	29.48
			62	U-NII 2c	2.24	2.413	-	5.34	10.48
				U-NII 3	-1.873	-1.635	-	1.26	29.48
802.11ax HE40 / 106T	5710	142	53	U-NII 2c	6.51	6.19	-	9.36	10.48
				U-NII 3	-19.58	-16.76	-	-14.93	29.48
			54	U-NII 2c	6.54	6.26	-	9.41	10.48
				U-NII 3	-19.35	-17.83	-	-15.51	29.48
			55	U-NII 2c	6.42	6.63	-	9.54	10.48
				U-NII 3	-19.95	-19.79	-	-16.86	29.48
			56	U-NII 2c	6.12	6.41	-	9.28	10.48
				U-NII 3	2.20	2.54	-	5.38	29.48
802.11ax HE80 / SU	5690	138	-	U-NII 2c	-3.67	-4.18	-	-0.91	10.48
				U-NII 3	-9.74	-9.77	-	-6.74	29.48

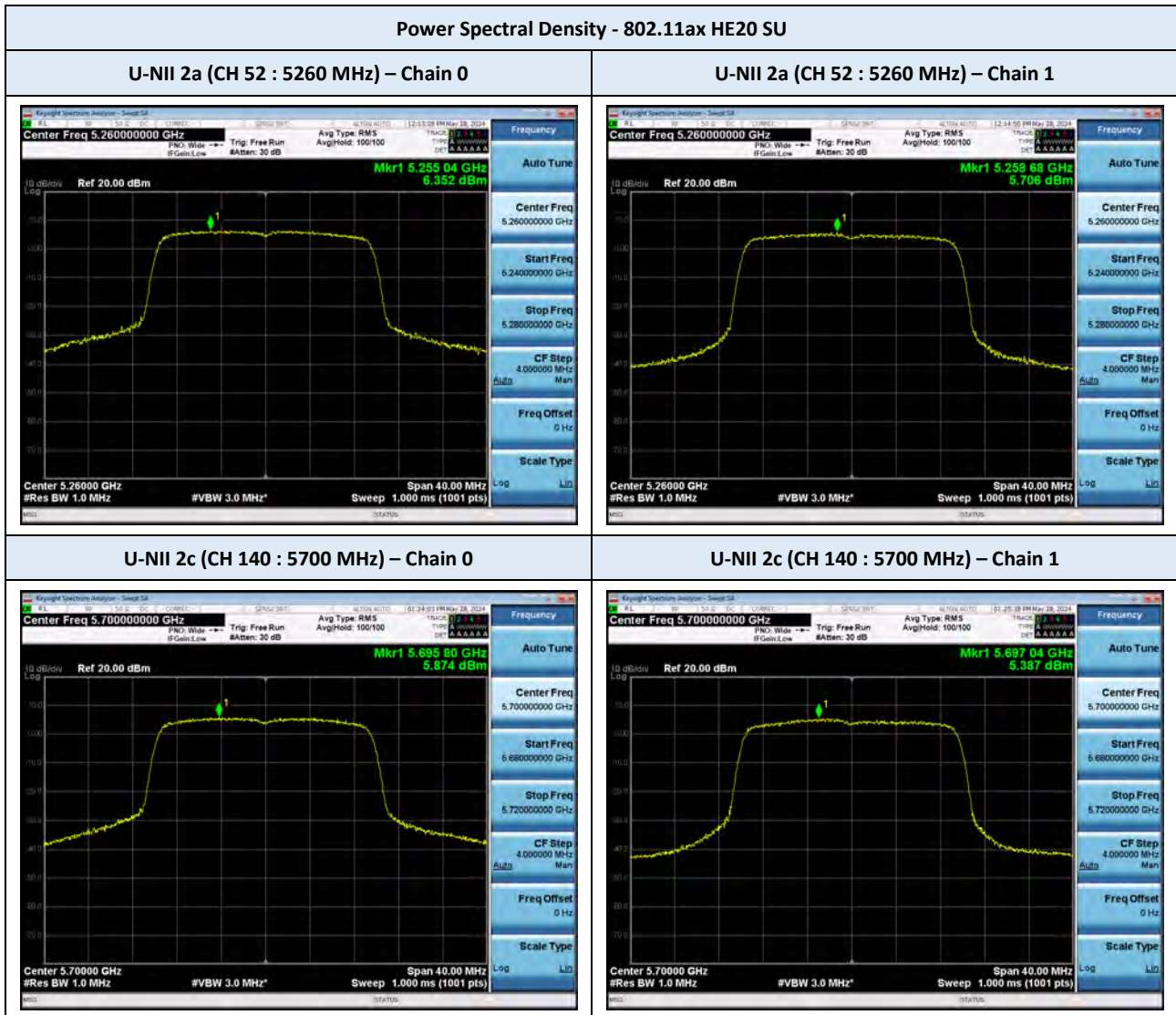
Note :

1. Conducted PSD limit :

- U-NII 2 : 11 dBm/MHz – $\Delta(G_{ANT}$ exceeding from 6 dBi)
- U-NII 3 : 30 dBm/500kHz – $\Delta(G_{ANT}$ exceeding from 6 dBi)

2. Duty factor is not applied since the duty cycle is 100 %.

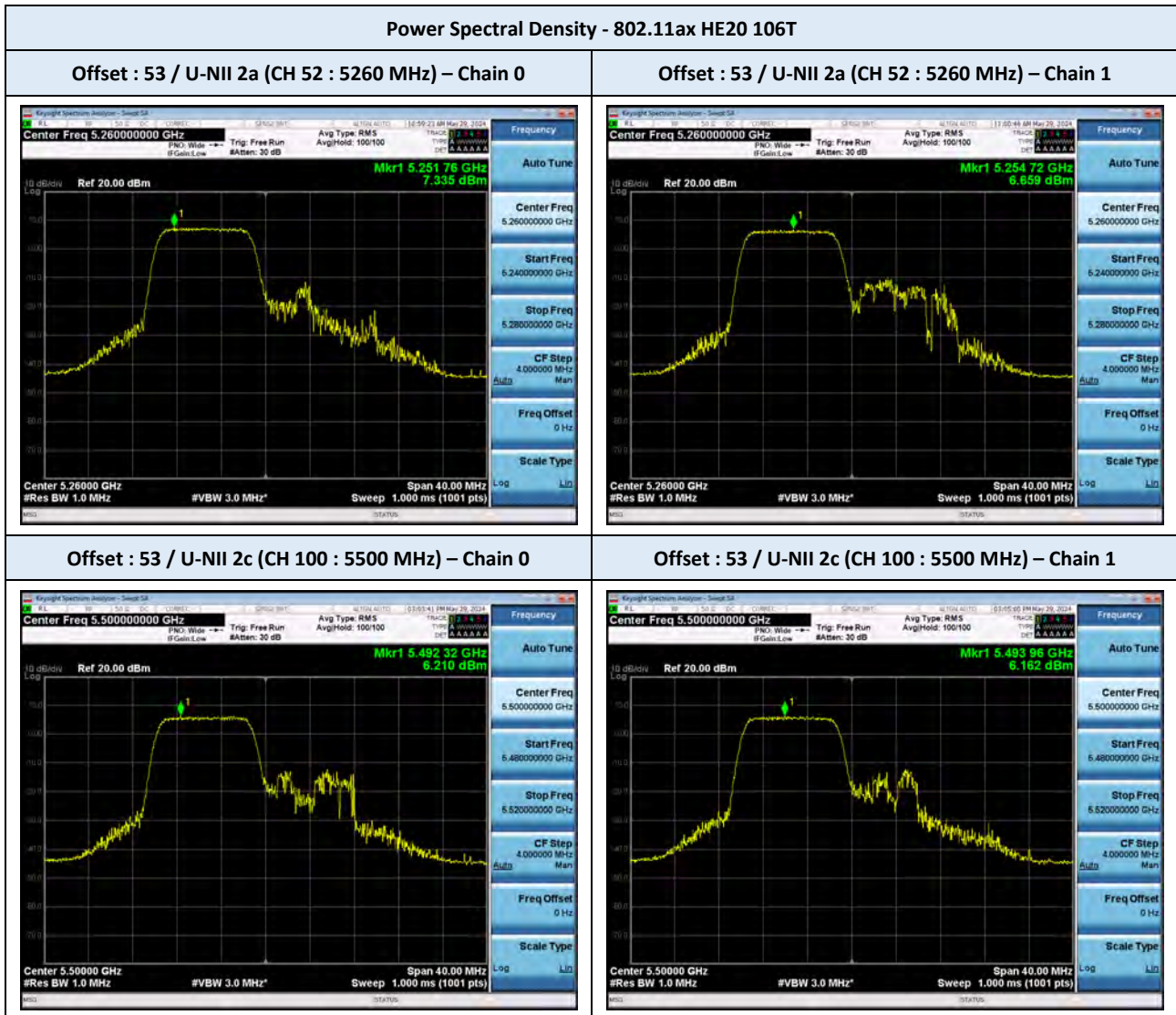
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

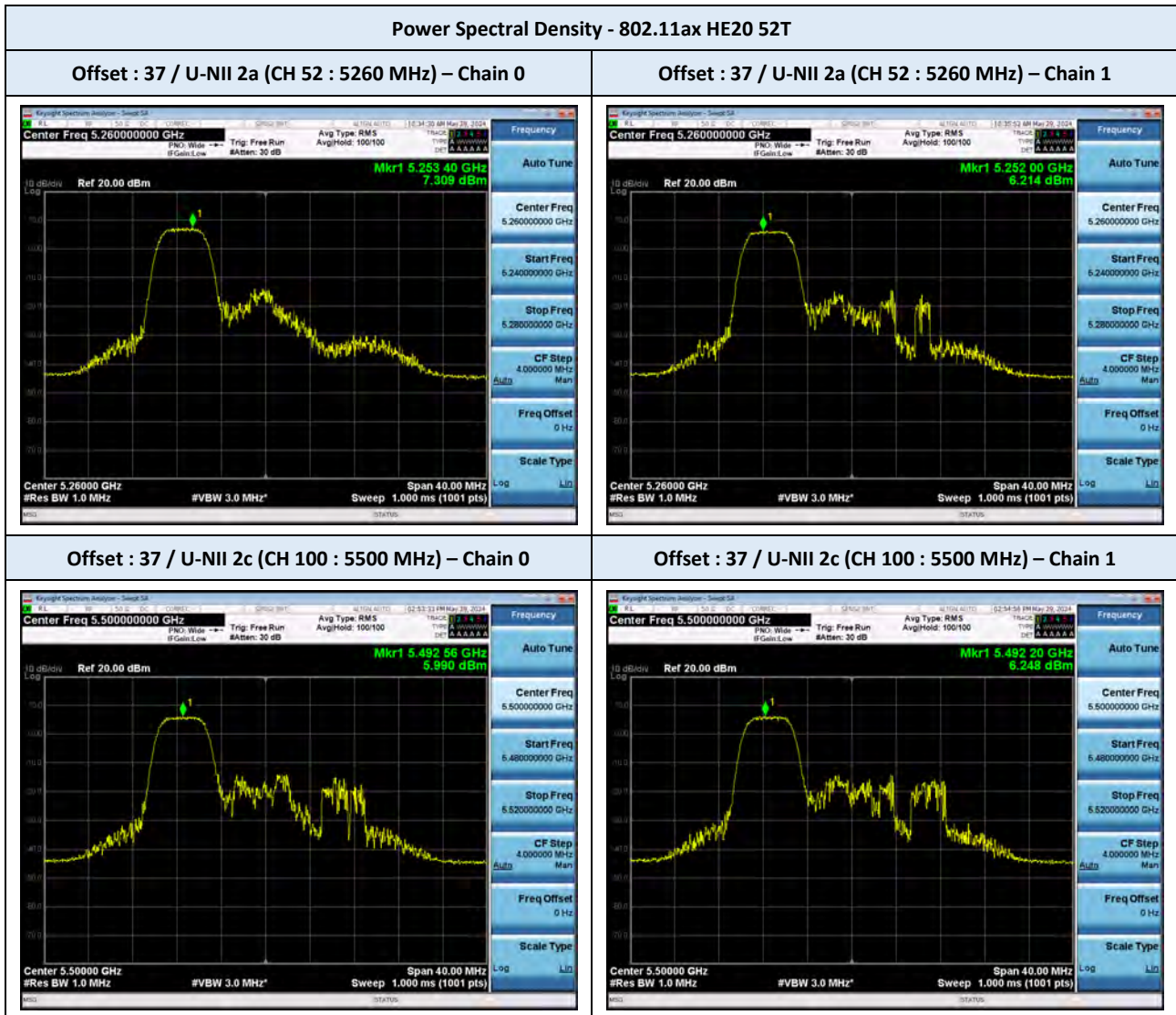
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

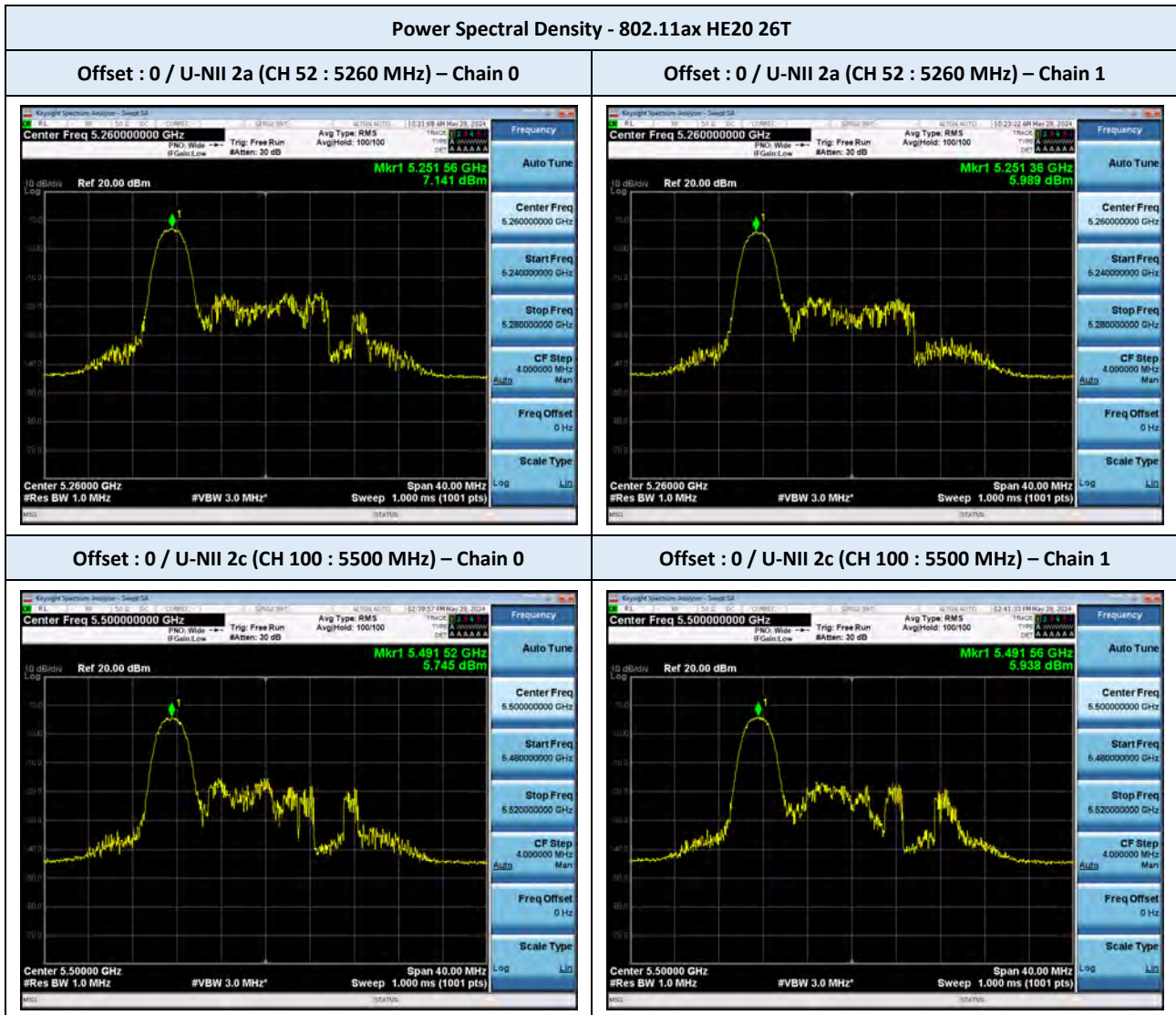
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

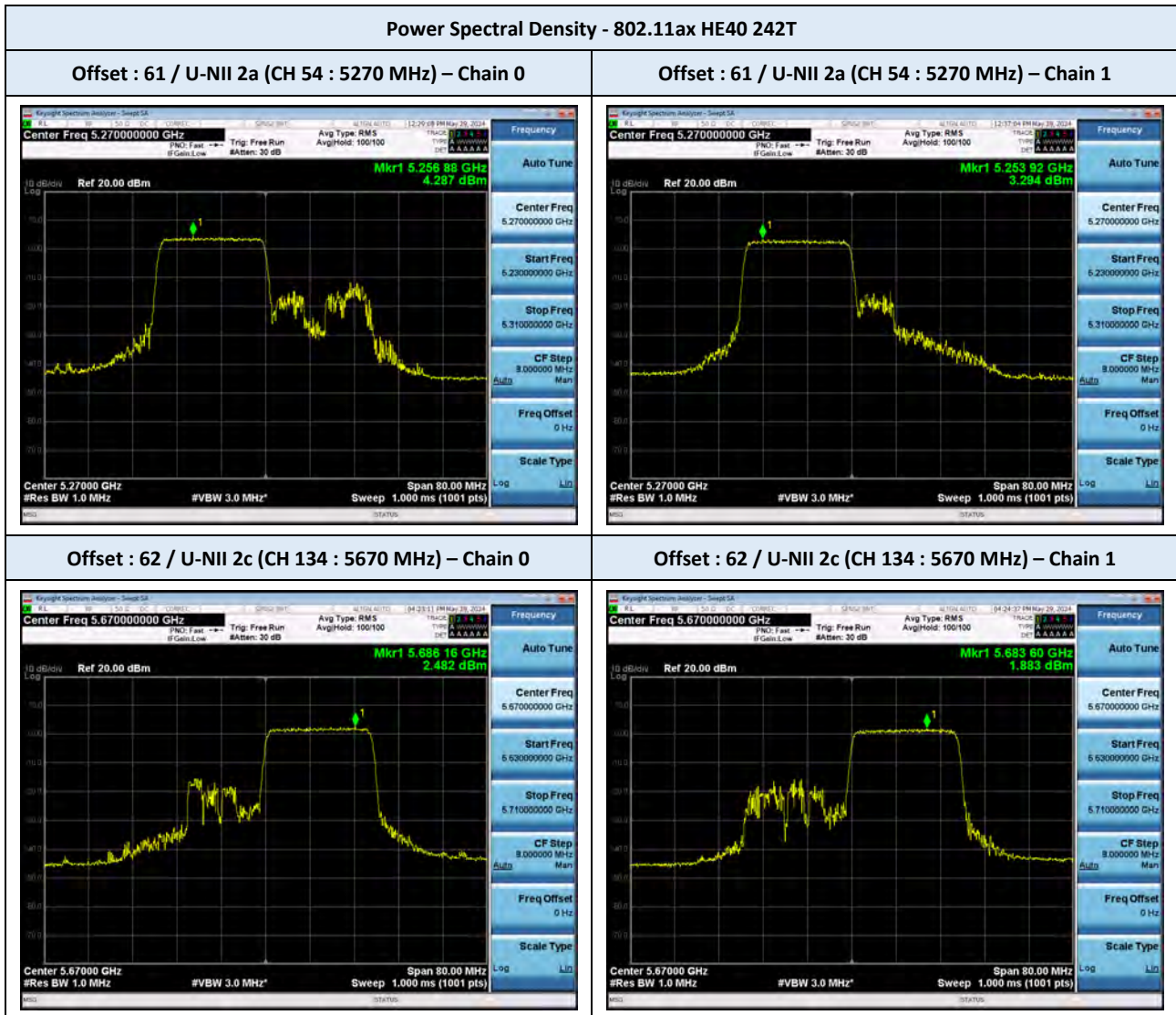
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

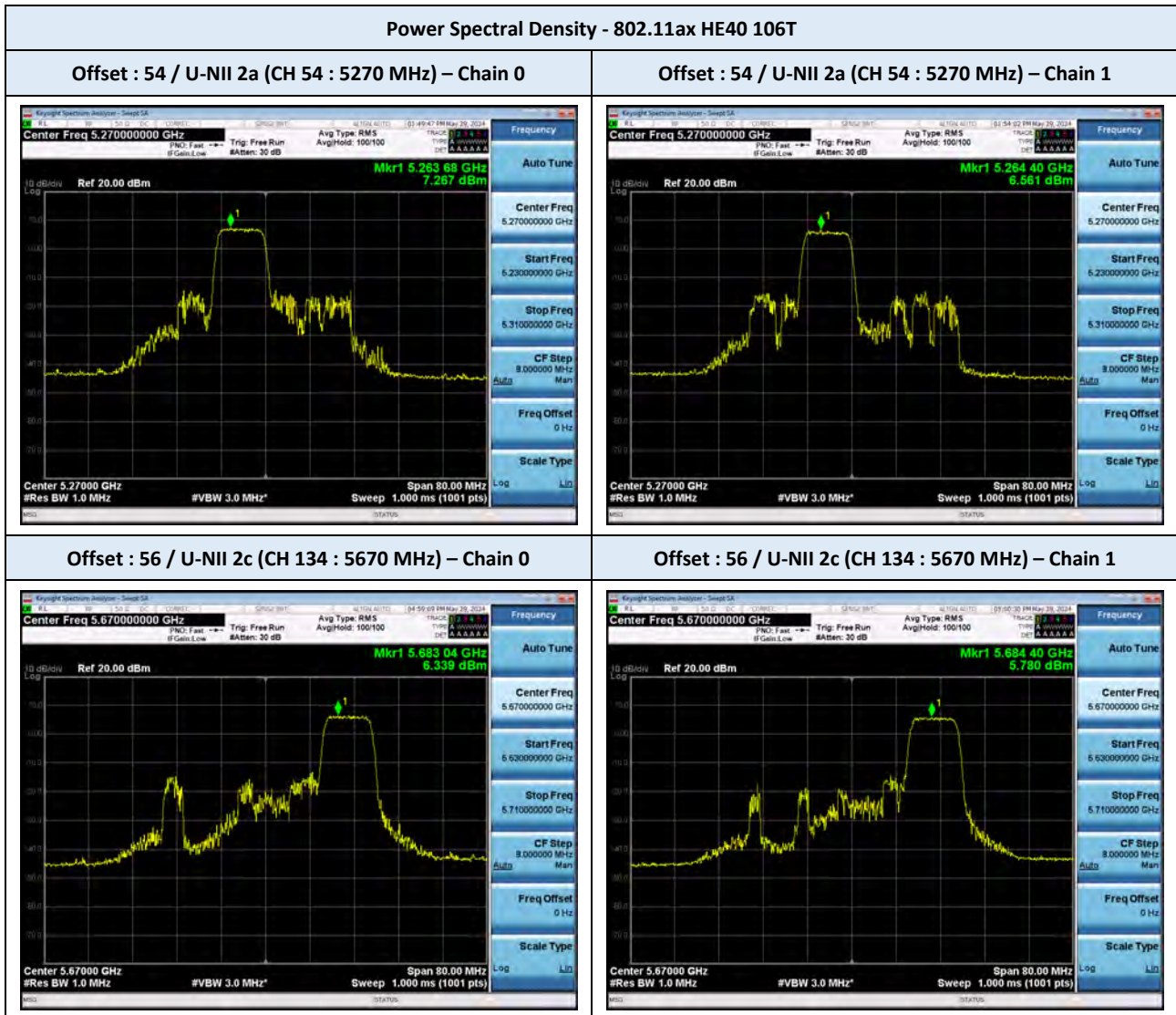
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

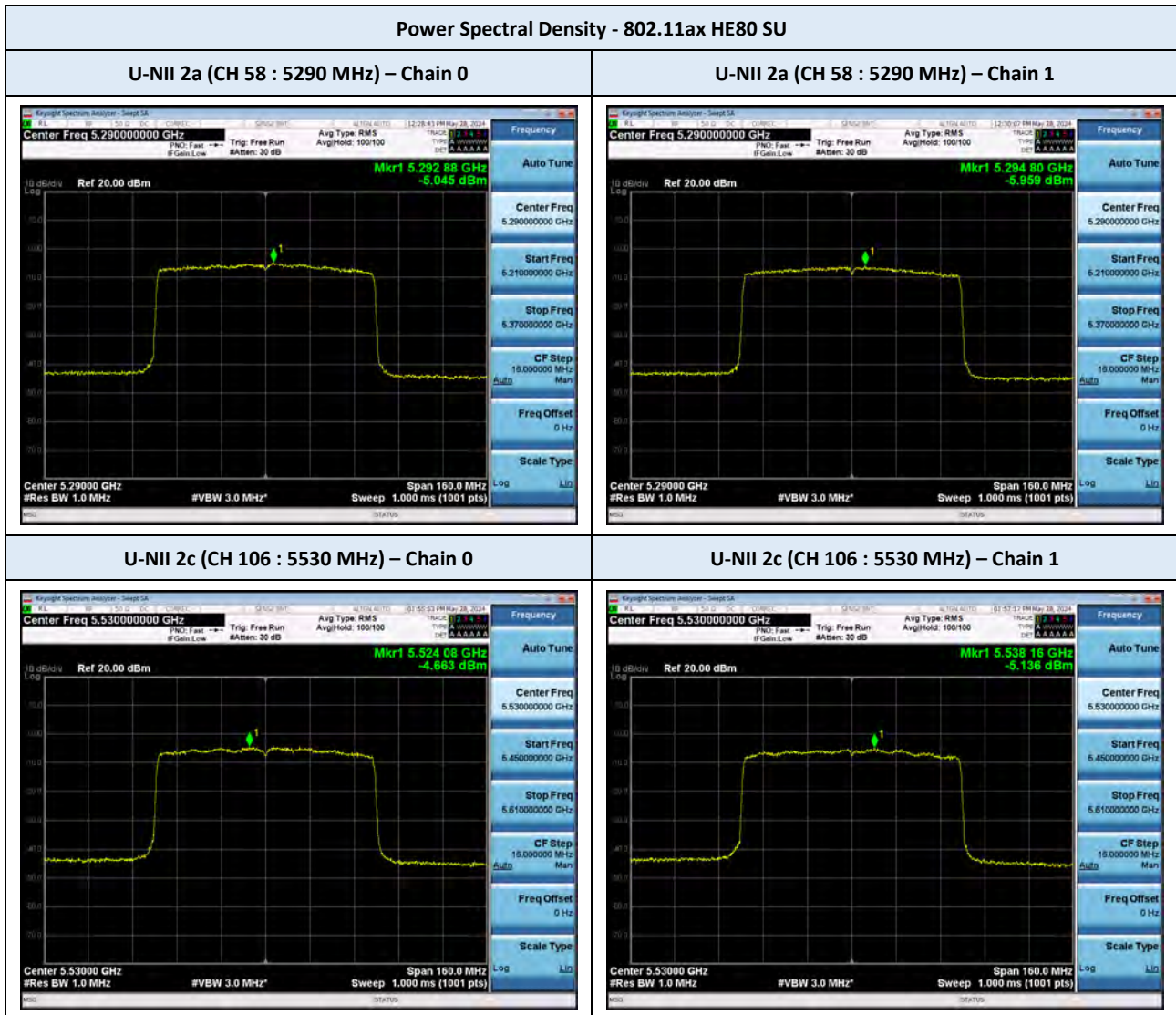
TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

TEST PLOTS



Note :

The worst plots are reported for each tone and bandwidth

TEST PLOTS

Power Spectral Density (Straddle Channels) - 802.11ax HE20 SU

U-NII 2c (CH 144 : 5720 MHz) – Chain 0



U-NII 2c (CH 144 : 5720 MHz) – Chain 1



U-NII 3 (CH 144 : 5720 MHz) – Chain 0



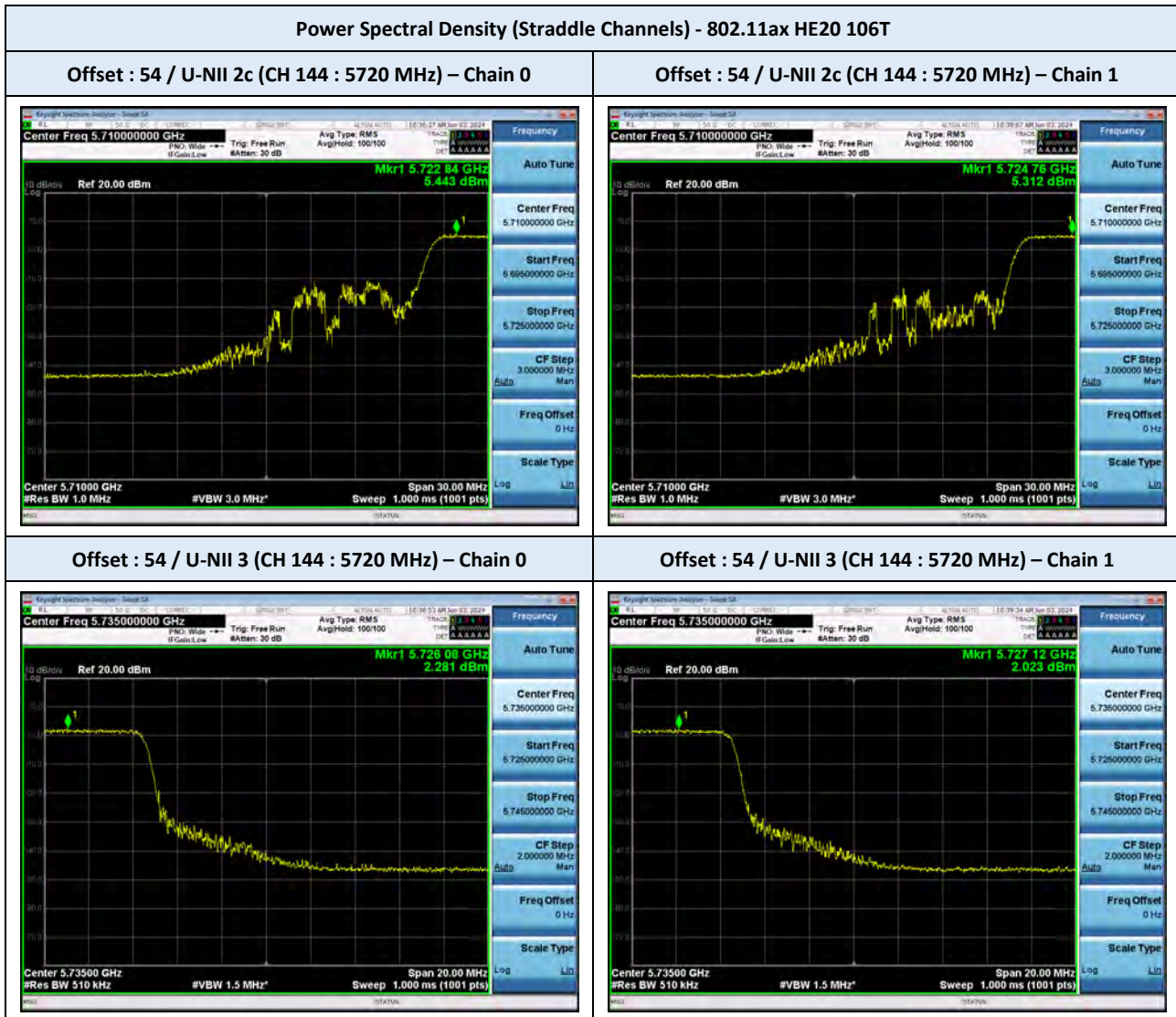
U-NII 3 (CH 144 : 5720 MHz) – Chain 1



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone

TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone and bandwidth

TEST PLOTS

Power Spectral Density (Straddle Channels) - 802.11ax HE20 52T

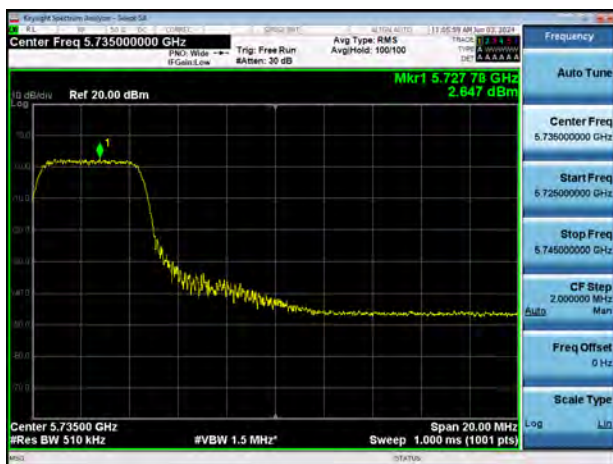
Offset : 39 / U-NII 2c (CH 144 : 5720 MHz) – Chain 0



Offset : 39 / U-NII 2c (CH 144 : 5720 MHz) – Chain 1



Offset : 40 / U-NII 3 (CH 144 : 5720 MHz) – Chain 0



Offset : 40 / U-NII 3 (CH 144 : 5720 MHz) – Chain 1



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone and bandwidth

TEST PLOTS

Power Spectral Density (Straddle Channels) - 802.11ax HE20 26T

Offset : 0 / U-NII 2c (CH 144 : 5720 MHz) – Chain 0



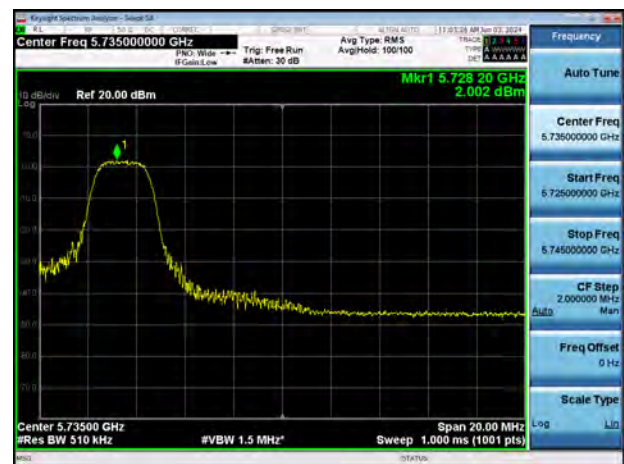
Offset : 0 / U-NII 2c (CH 144 : 5720 MHz) – Chain 1



Offset : 8 / U-NII 3 (CH 144 : 5720 MHz) – Chain 0



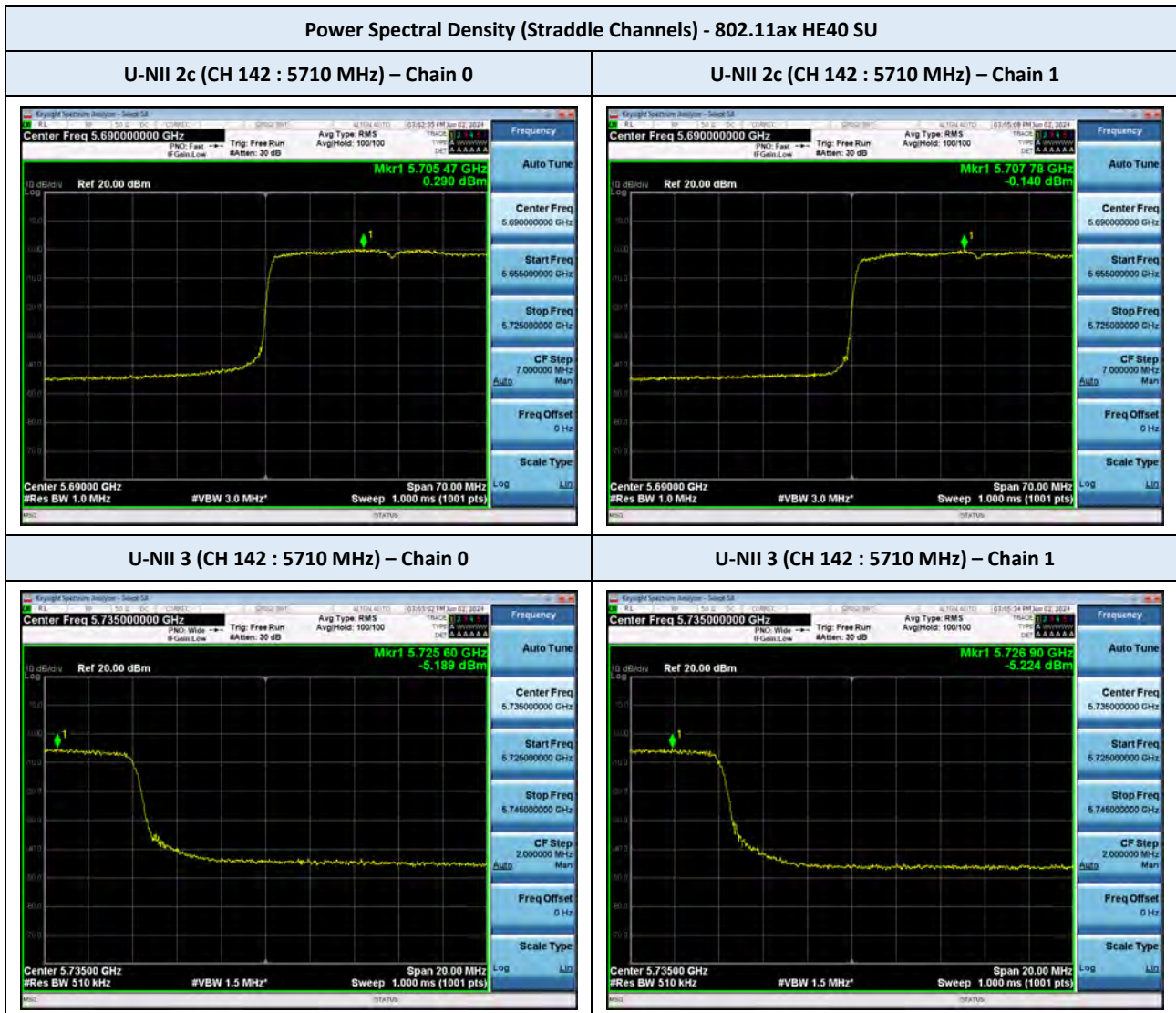
Offset : 8 / U-NII 3 (CH 144 : 5720 MHz) – Chain 1



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone and bandwidth

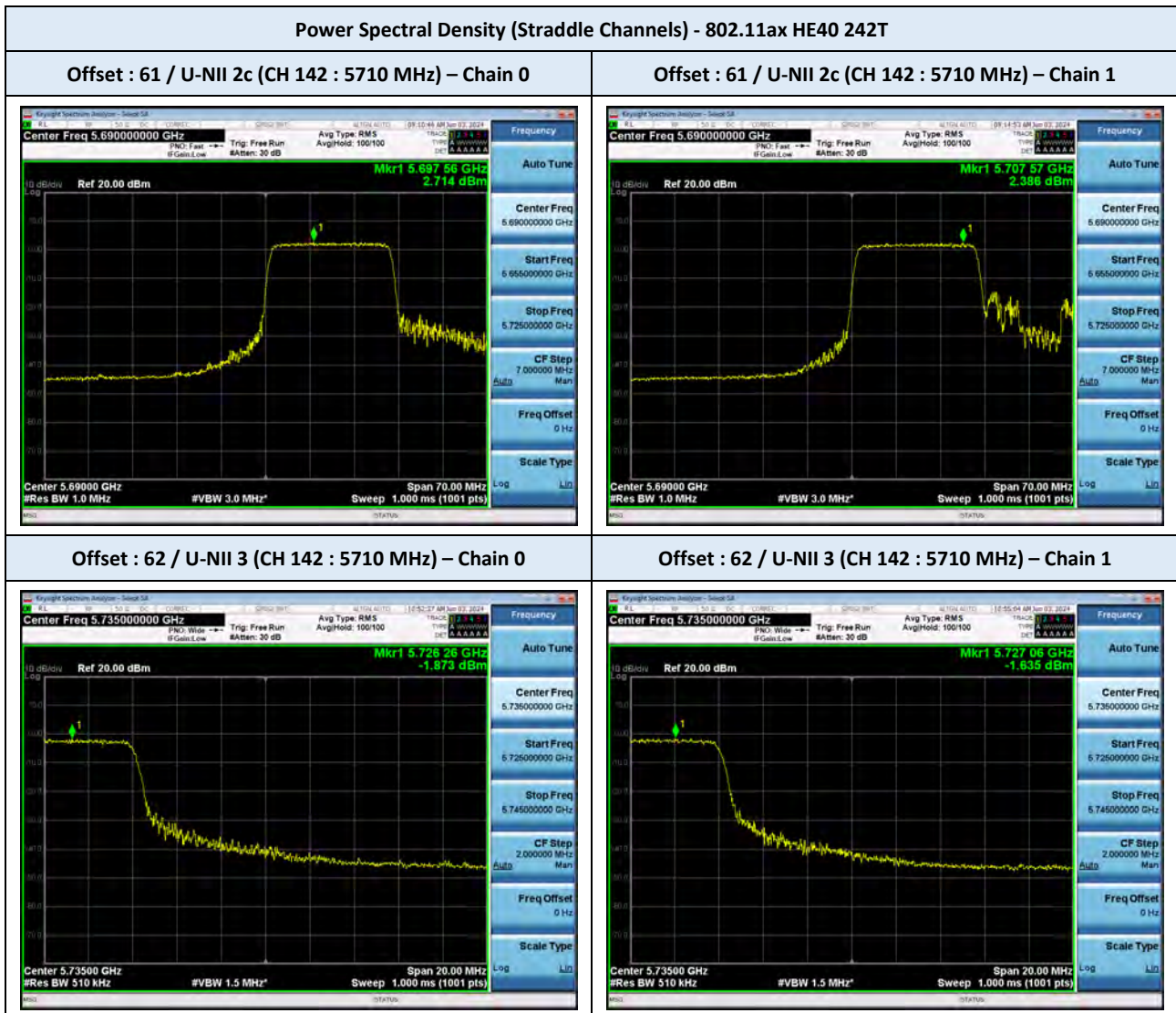
TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone.

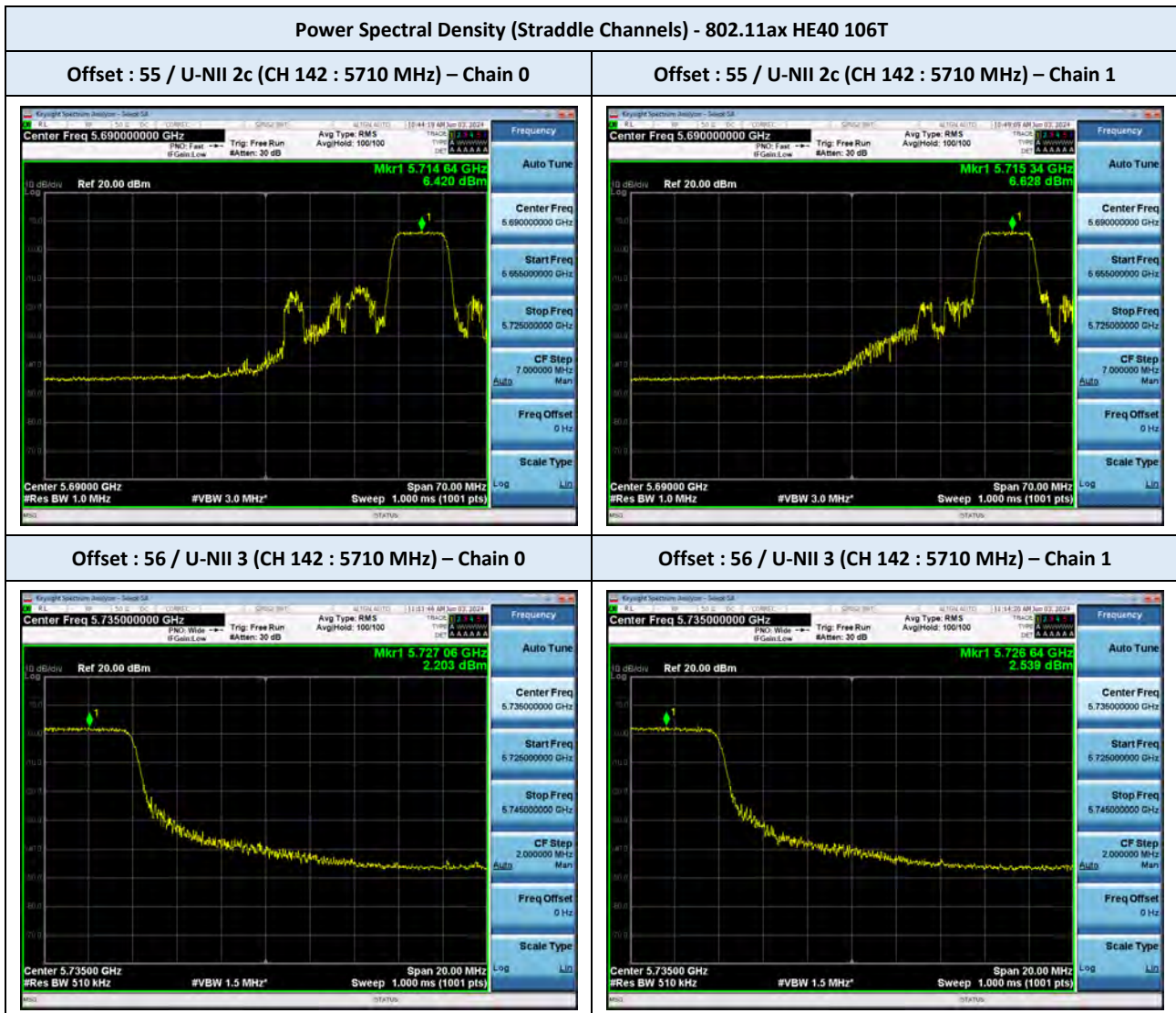
TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone.

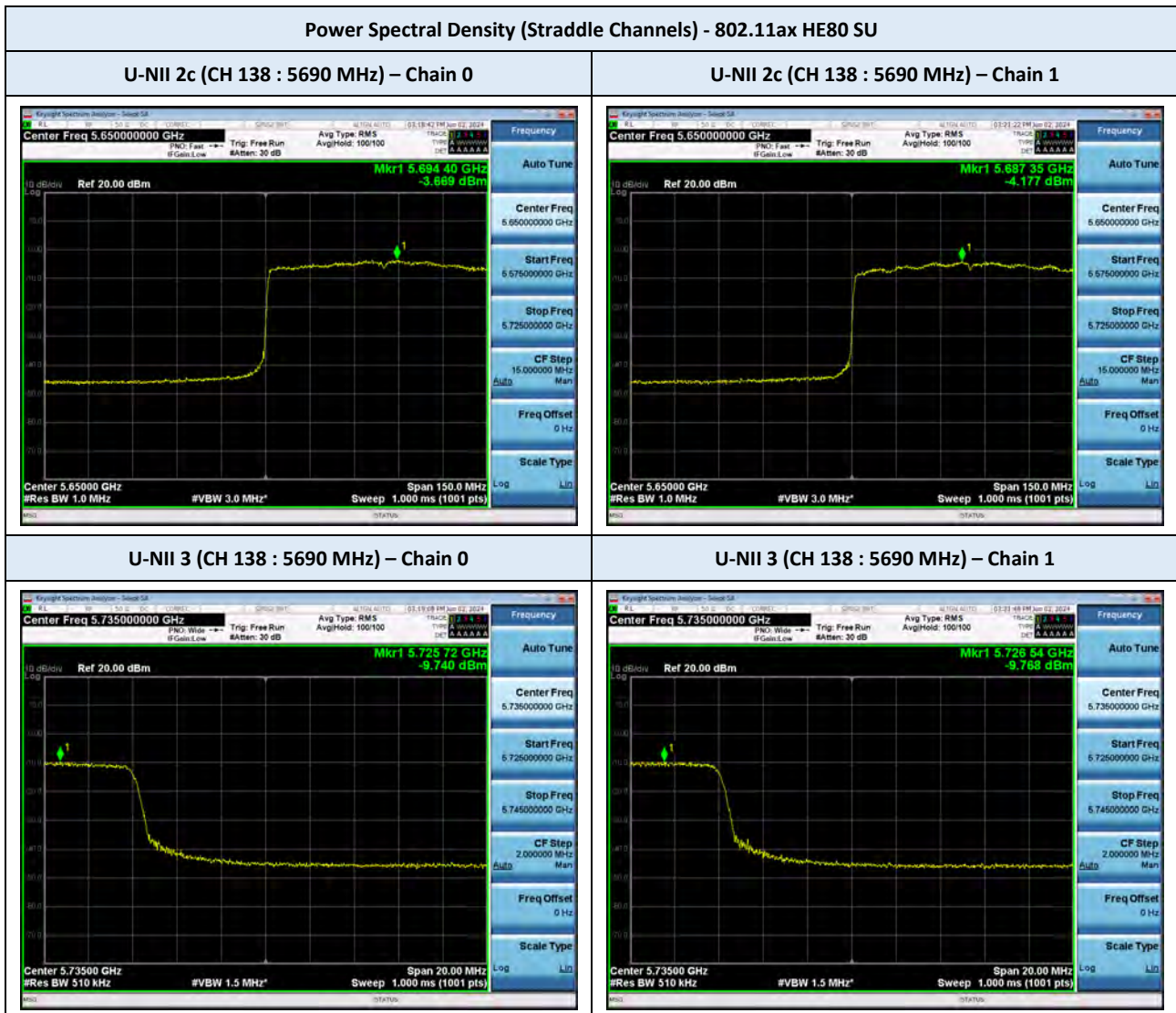
TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone.

TEST PLOTS



Note :

1. Only plots for straddle channels are attached.
2. The worst plots are reported for each tone.

9.5 RADIATED SPURIOUS EMISSIONS

Frequency Range : Below 1 GHz

Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5260 MHz (CH 52)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5300 MHz (CH 60)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5320 MHz (CH 64)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5500 MHz (CH 100)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5580 MHz (CH 116)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5700 MHz (CH 140)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

Frequency Range : Above 1 GHz

Test Mode 802.11ax HE20 (SU) : TX mode

Operating Frequency 5260 MHz (CH 52)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode

Operating Frequency 5300 MHz (CH 60)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode

Operating Frequency 5320 MHz (CH 64)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode

Operating Frequency 5500 MHz (CH 100)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode

Operating Frequency 5580 MHz (CH 116)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (SU) : TX mode

Operating Frequency 5700 MHz (CH 140)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).

Frequency Range : Above 1 GHz

Test Mode 802.11ax HE20 (26T Offset : 0) : TX mode
Operating Frequency 5260 MHz (CH 52)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (26T Offset : 0) : TX mode
Operating Frequency 5300 MHz (CH 60)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (26T Offset : 0) : TX mode
Operating Frequency 5320 MHz (CH 64)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (26T Offset : 4) : TX mode
Operating Frequency 5500 MHz (CH 100)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (26T Offset : 4) : TX mode
Operating Frequency 5580 MHz (CH 116)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 (26T Offset : 4) : TX mode
Operating Frequency 5700 MHz (CH 140)

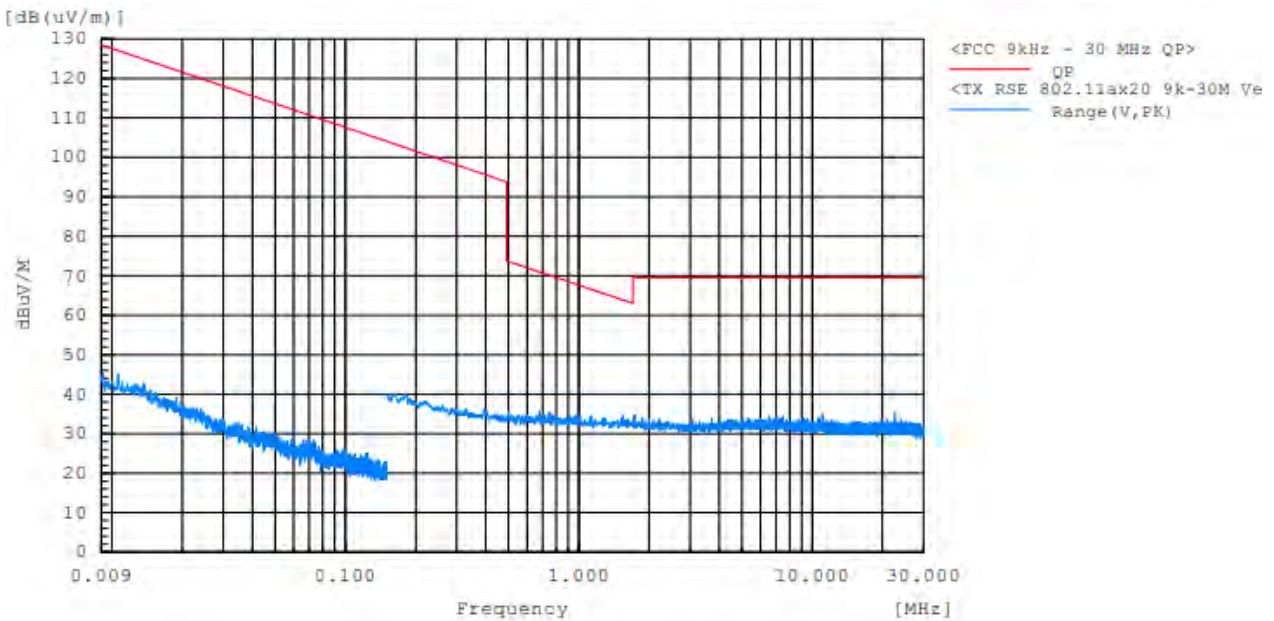
Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Note(s) :

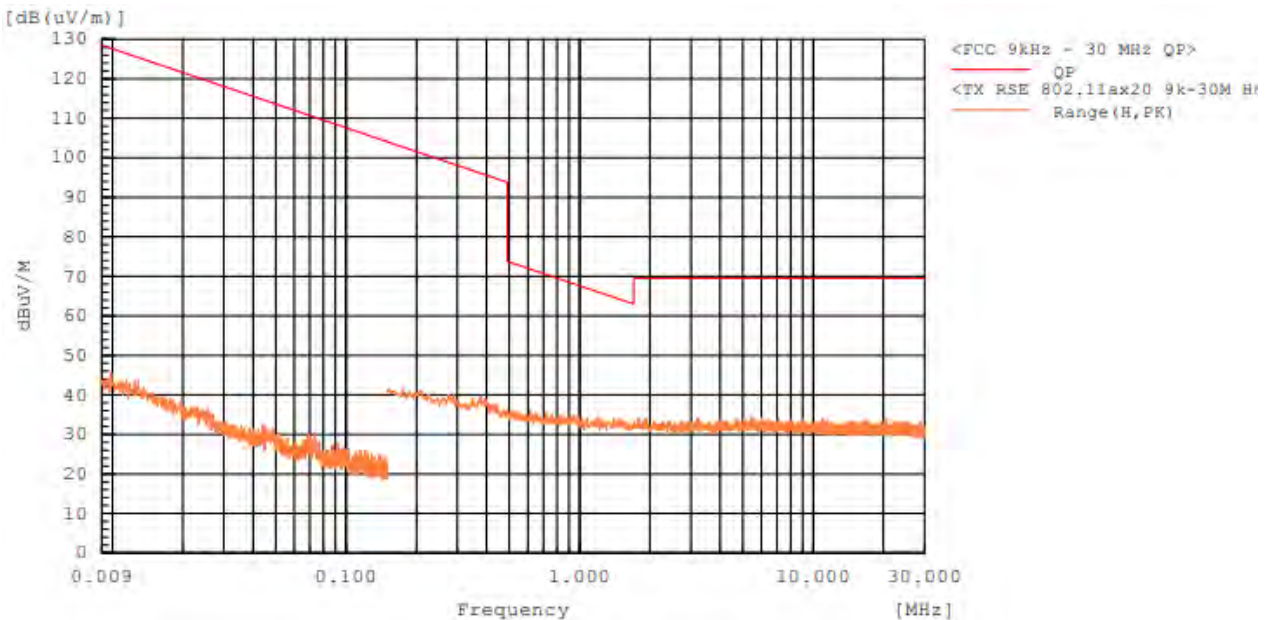
1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).

■ TEST PLOTS

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 90°) : 802.11ax HE20 (SU) (CH 52) in U-NII 2a



Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 180°) : 802.11ax HE20 (SU) (CH 52) in U-NII 2a

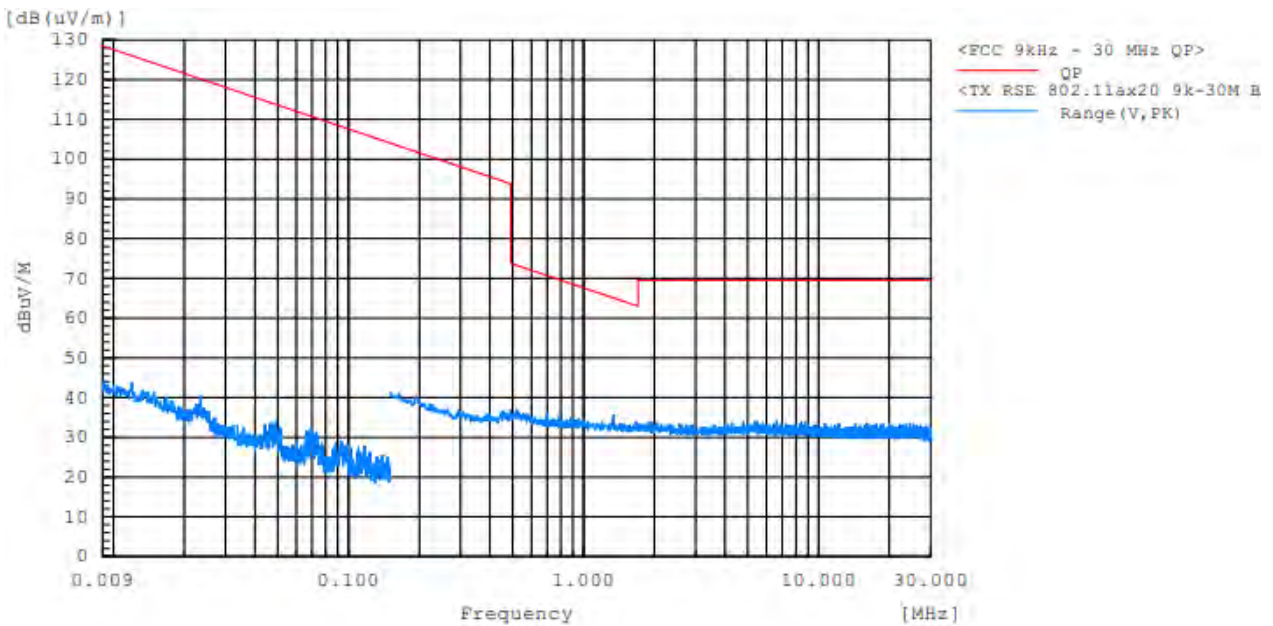


Note:

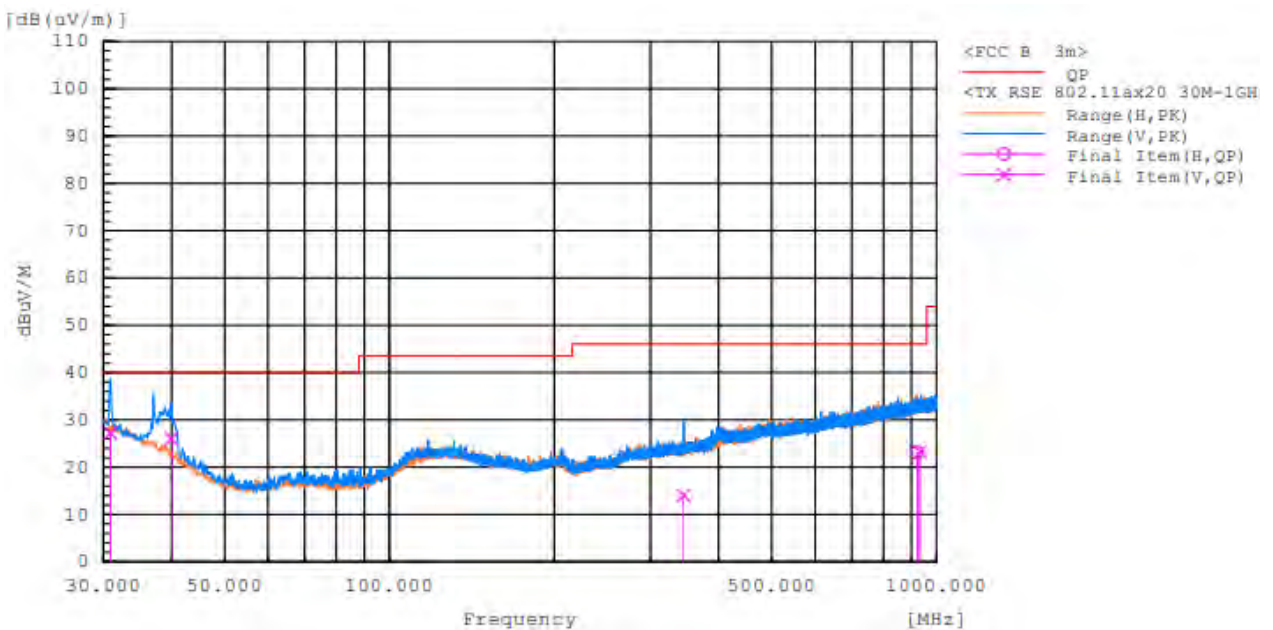
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position Bent-over) : 802.11ax HE20 (SU) (CH 52) in U-NII 2a



Radiated Spurious Emission 30 MHz – 1 GHz : 802.11ax HE20 (SU) (CH 52) in U-NII 2a

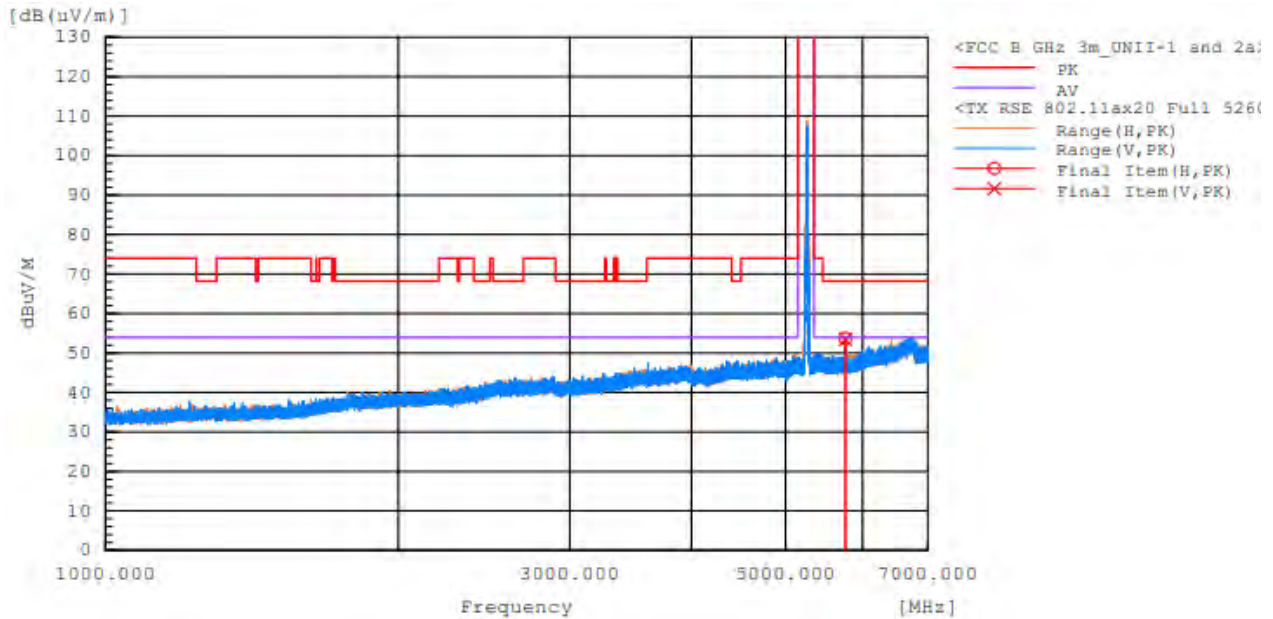


Note:

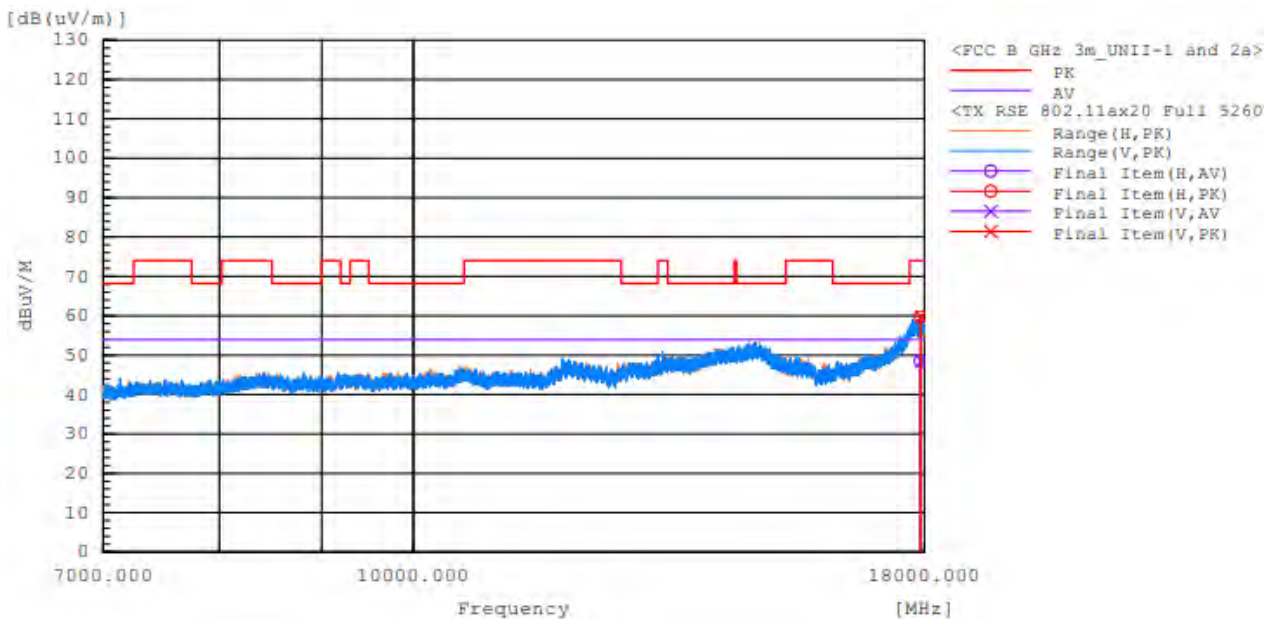
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

TEST PLOTS

Radiated Spurious Emission 1 GHz - 7 GHz : 802.11ax HE20 (SU) (CH 52) in U-NII 2a



Radiated Spurious Emission 7 GHz - 18 GHz : 802.11ax HE20 (SU) (CH 52) in U-NII 2a

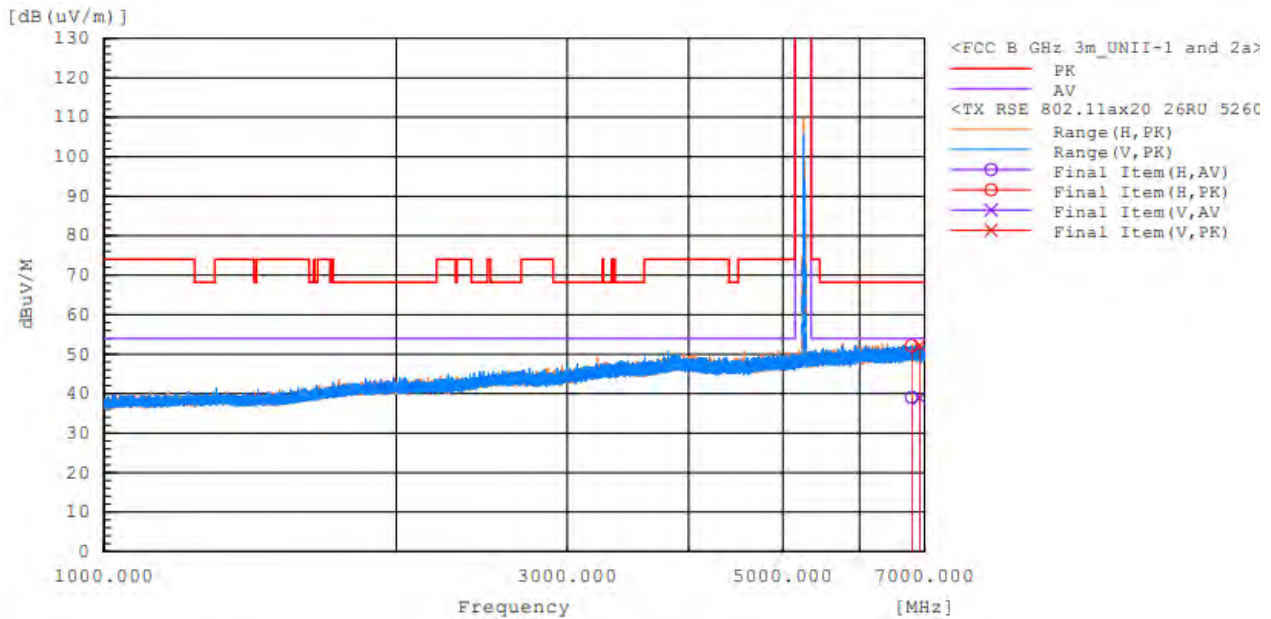


Note:

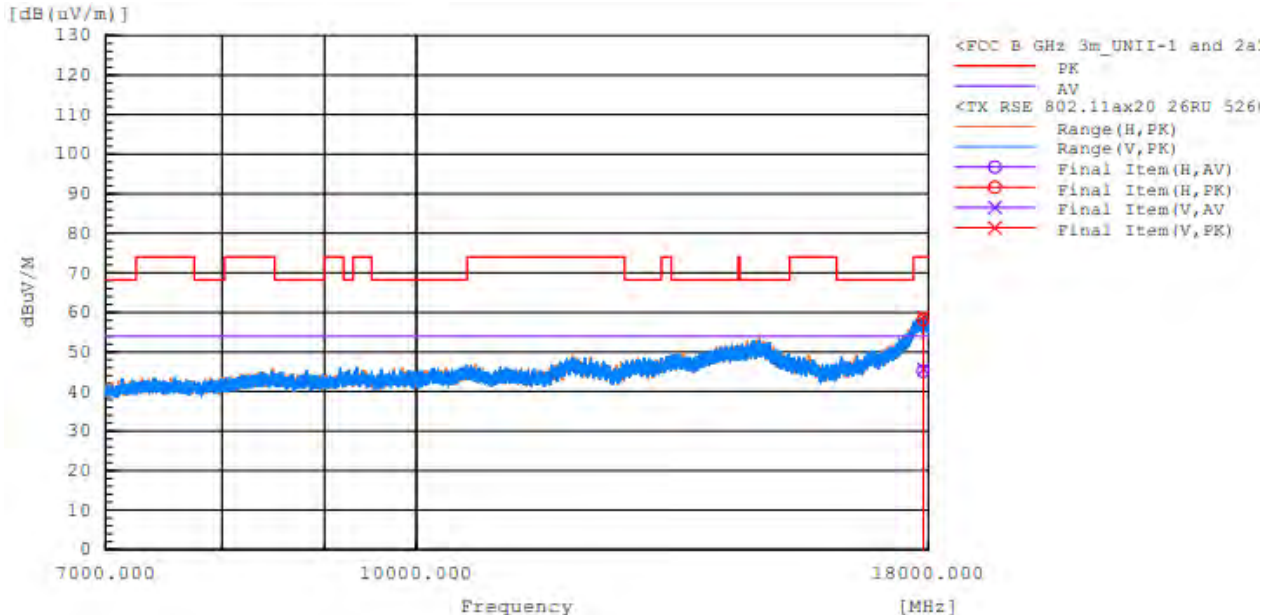
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

TEST PLOTS

Radiated Spurious Emission 1 GHz - 7 GHz : 802.11ax HE20 (26T Offset : 0) (CH 52) in U-NII 2a



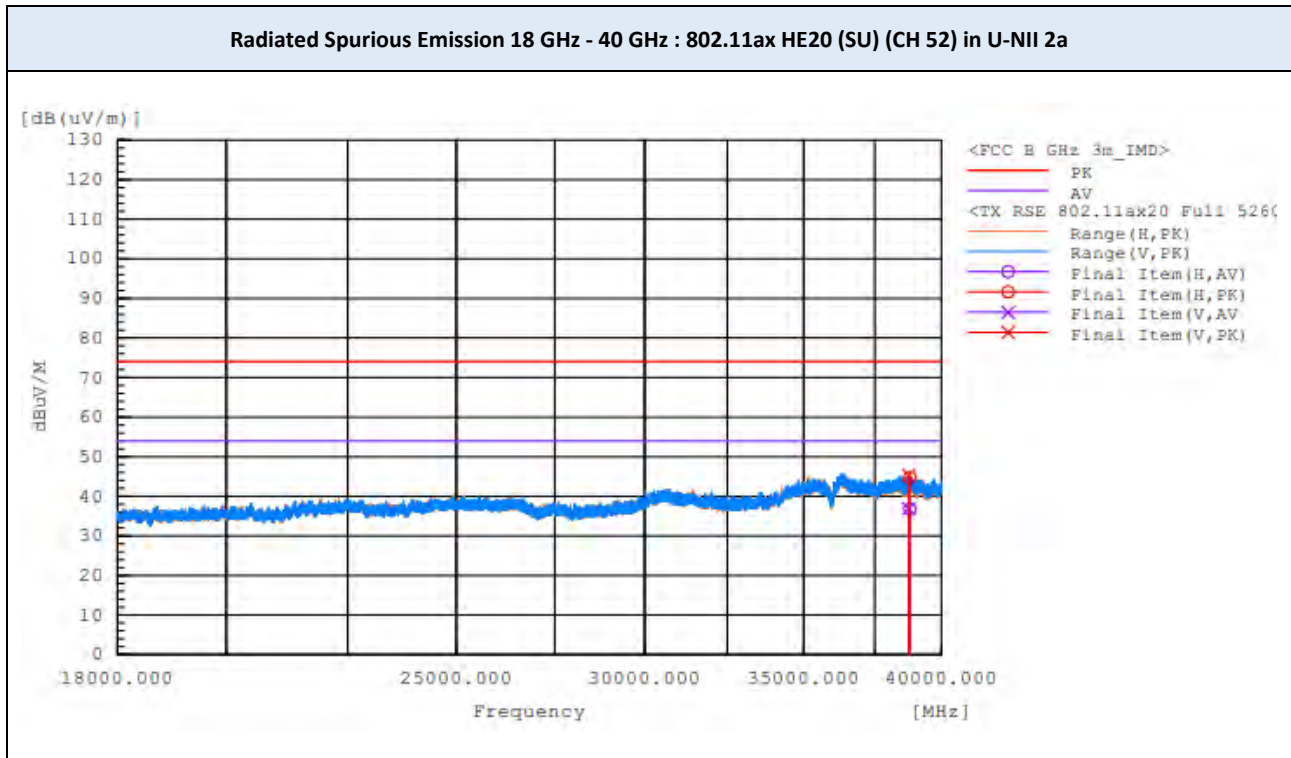
Radiated Spurious Emission 7 GHz - 18 GHz : 802.11ax HE20 (26T Offset : 0) (CH 52) in U-NII 2a



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS

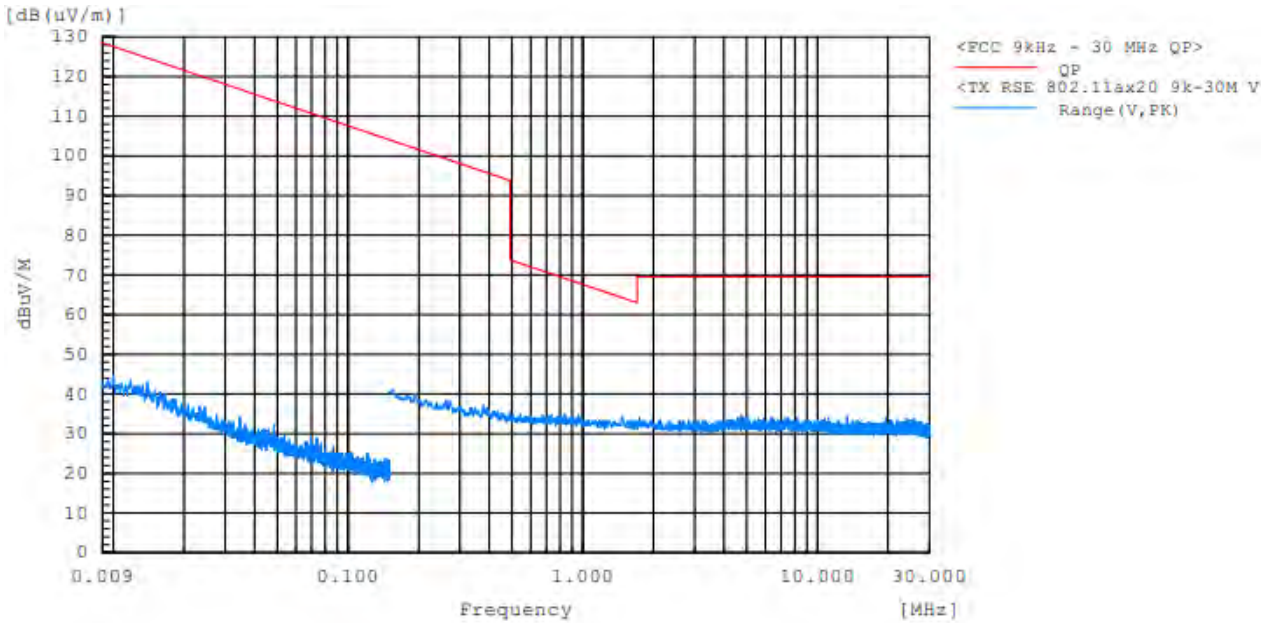


Note:

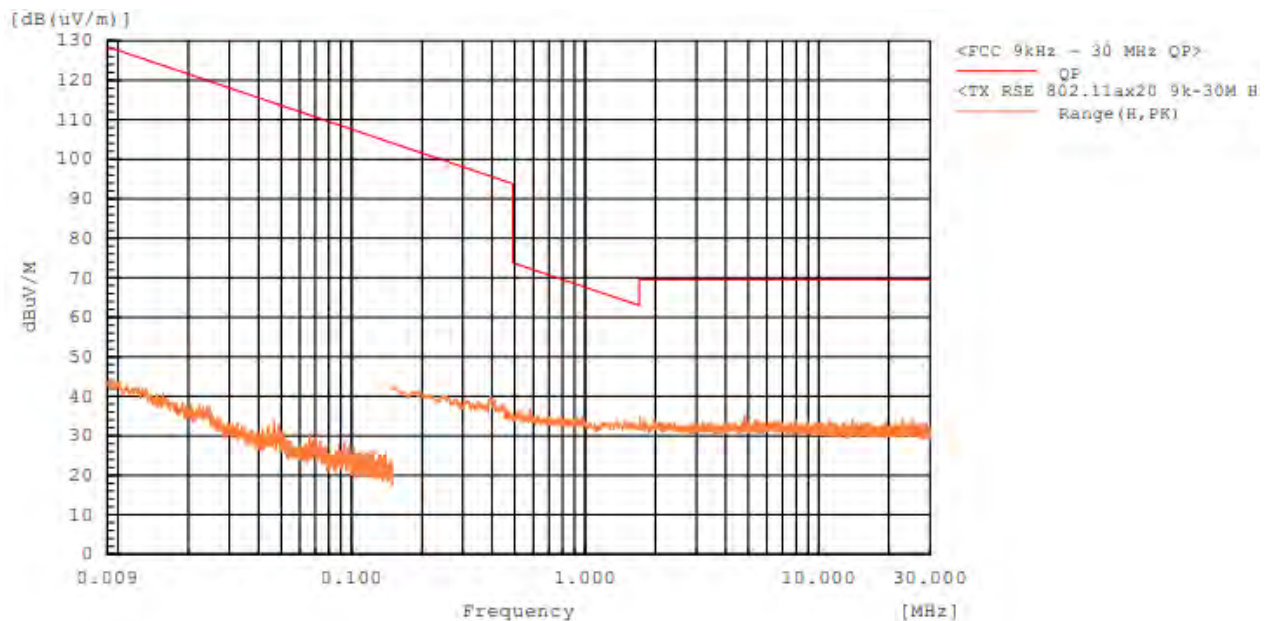
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 90°) : 802.11ax HE20 (SU) (CH 100) in U-NII 2c



Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 180°) : 802.11ax HE20 (SU) (CH 100) in U-NII 2c

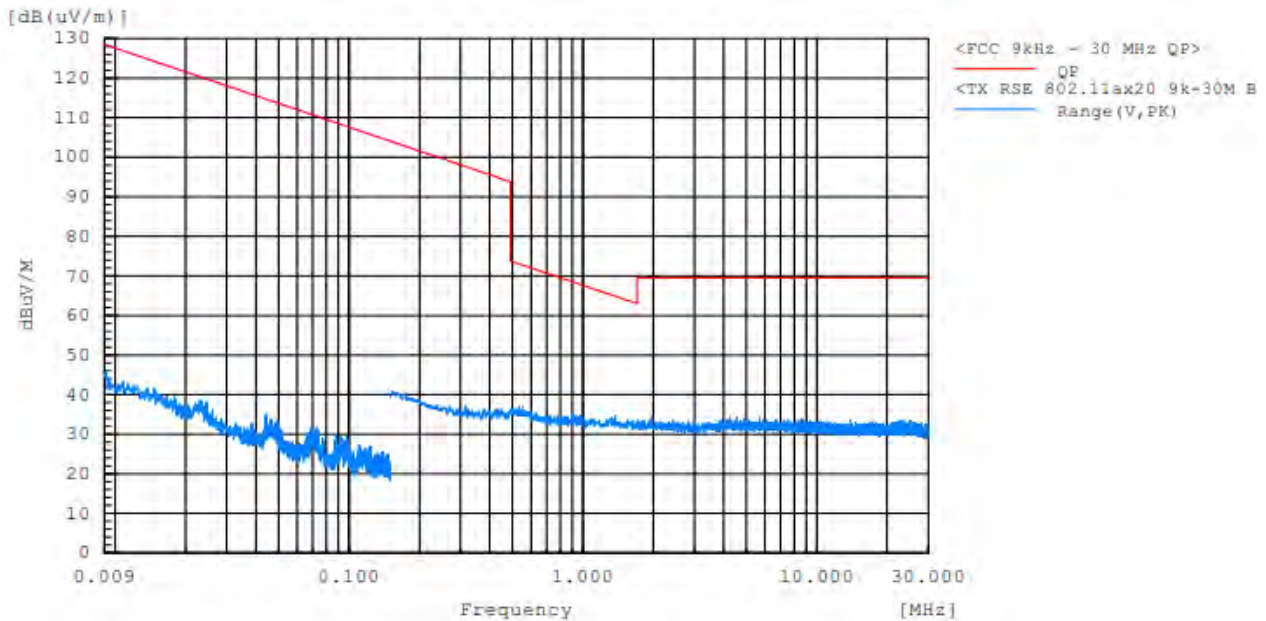


Note:

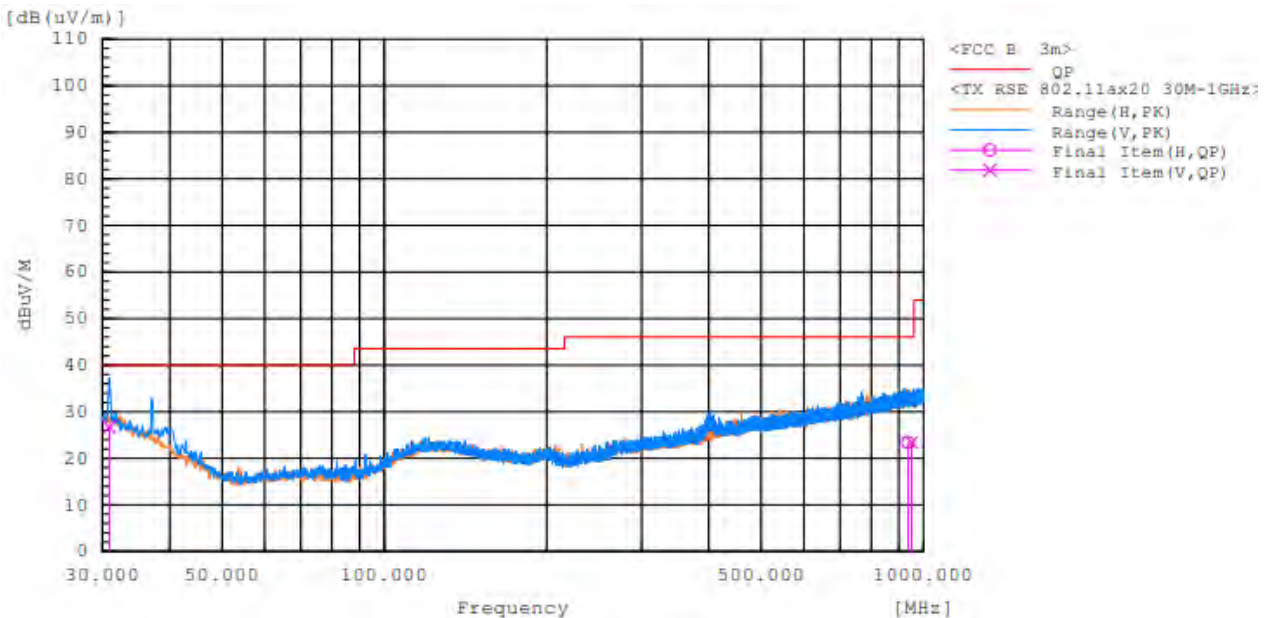
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position Bent-over) : 802.11ax HE20 (SU) (CH 100) in U-NII 2c



Radiated Spurious Emission 30 MHz – 1 GHz : 802.11ax HE20 (SU) (CH 100) in U-NII 2c

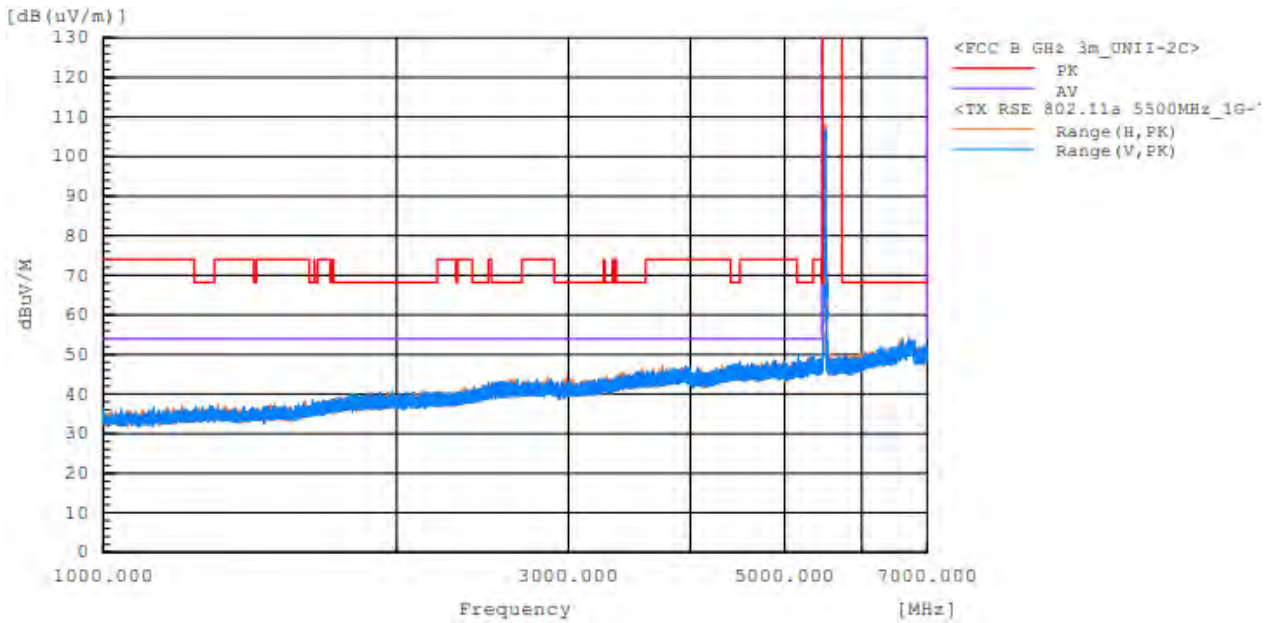


Note:

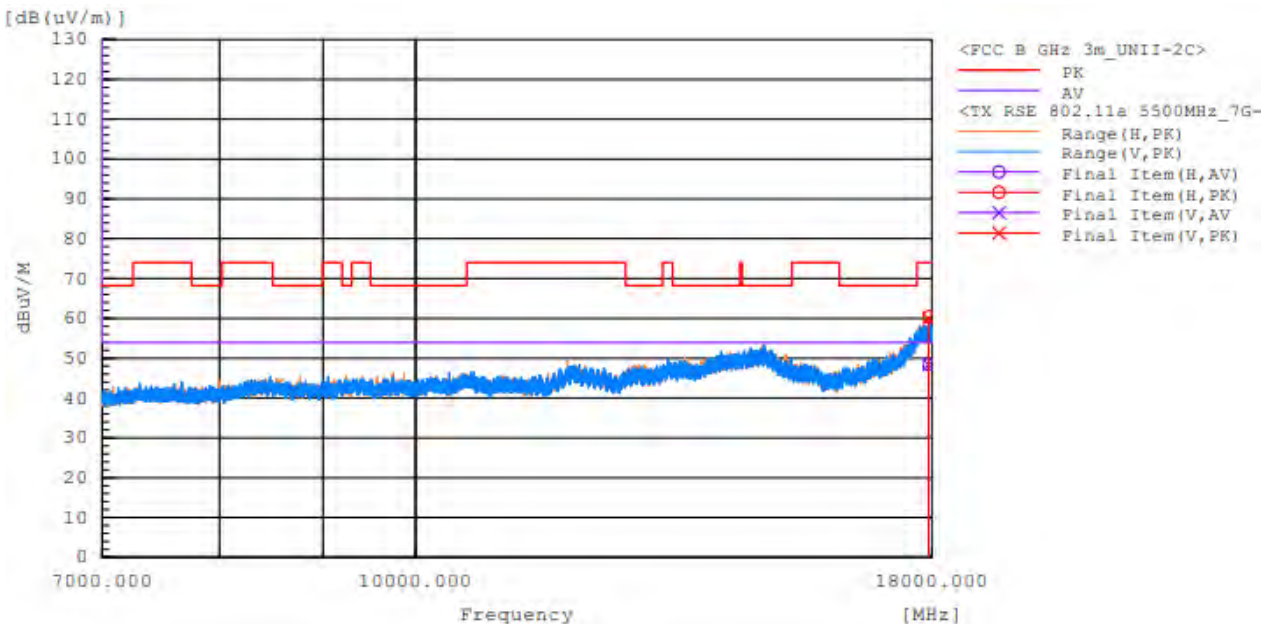
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

TEST PLOTS

Radiated Spurious Emission 1 GHz - 7 GHz : 802.11ax HE20 (SU) (CH 100) in U-NII 2c



Radiated Spurious Emission 7 GHz - 18 GHz : 802.11ax HE20 (SU) (CH 100) in U-NII 2c

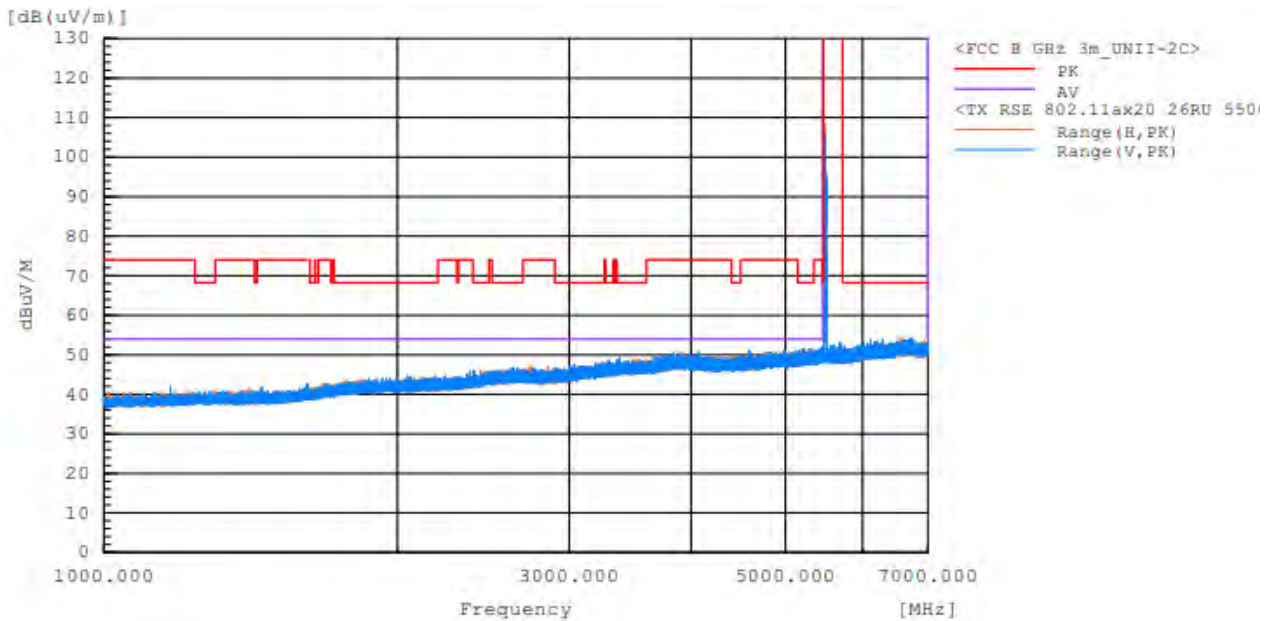


Note:

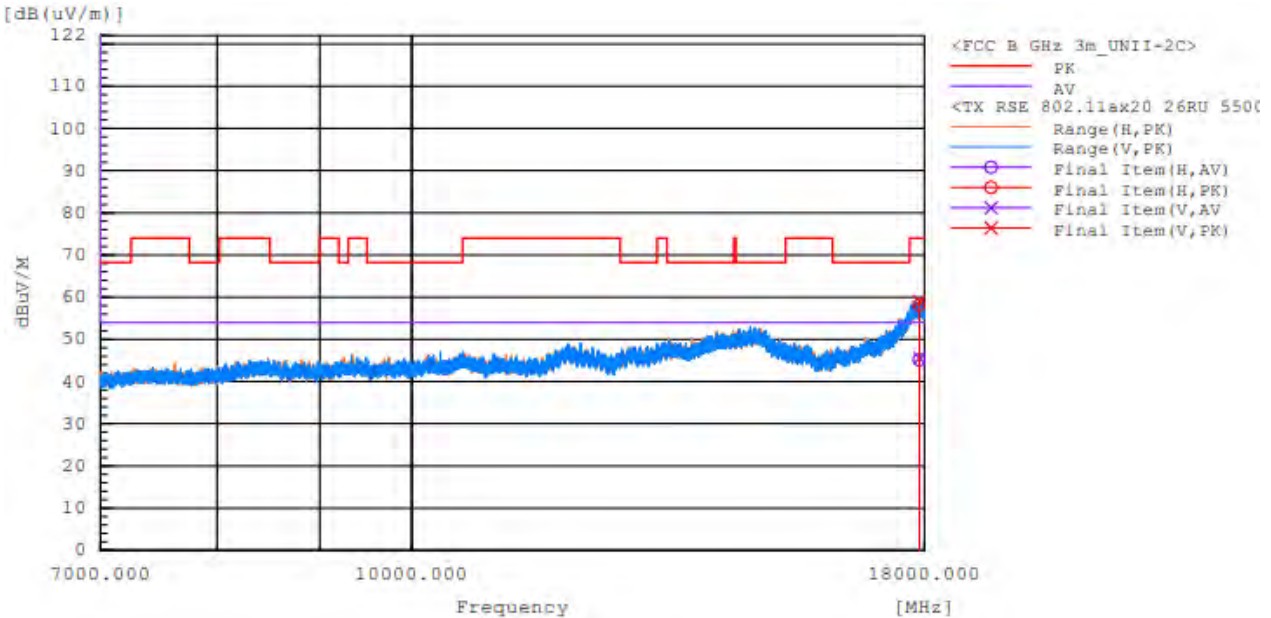
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS

Radiated Spurious Emission 1 GHz - 7 GHz : 802.11ax HE20 (26T Offset : 4) (CH 100) in U-NII 2c



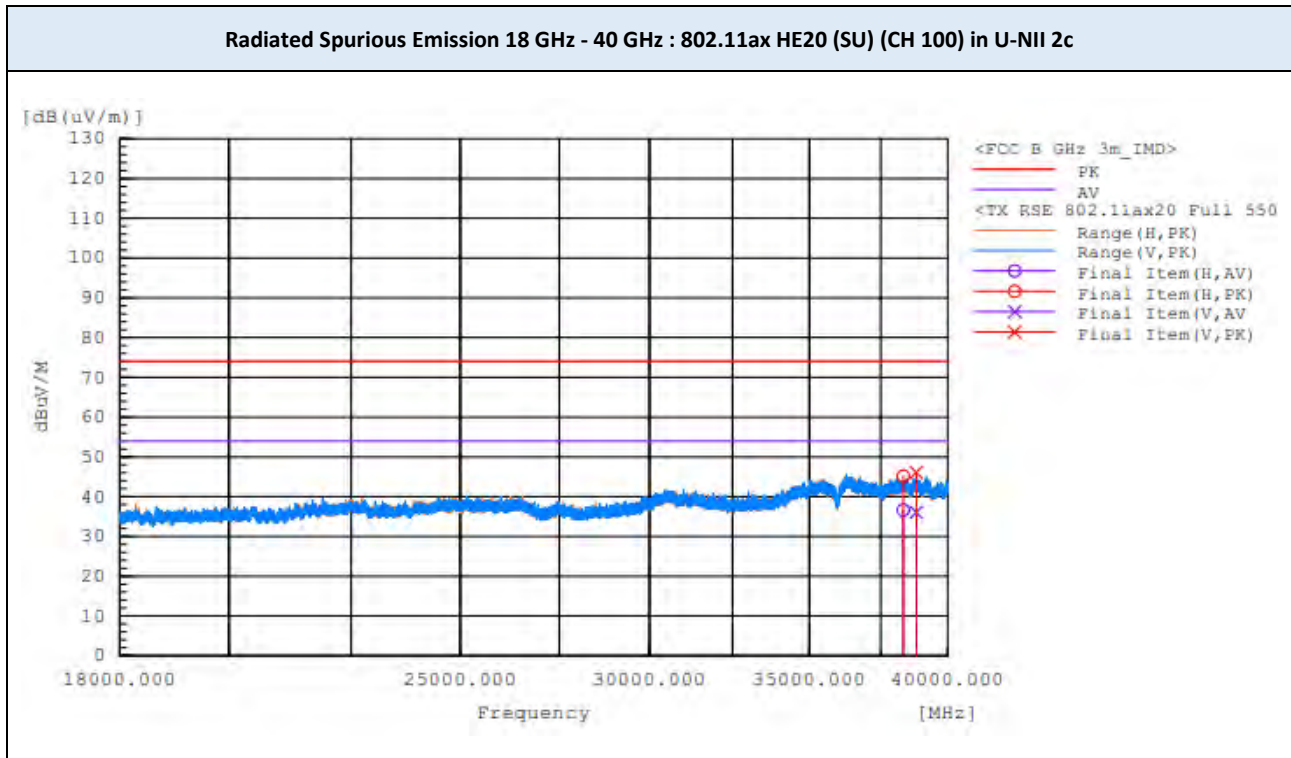
Radiated Spurious Emission 7 GHz - 18 GHz : 802.11ax HE20 (26T Offset : 4) (CH 100) in U-NII 2c



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

9.6 RADIATED RESTRICTED BAND EDGES

Test Mode 802.11ax HE20 (SU) : TX mode
Operating Frequency 5320 MHz (CH 64)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5350.778	H	41.2	58.5	2.1	-	43.3	60.6	54	74	10.7	13.4
5351.546	V	35.6	51.5	2.1	-	37.7	53.6	54	74	16.3	20.4

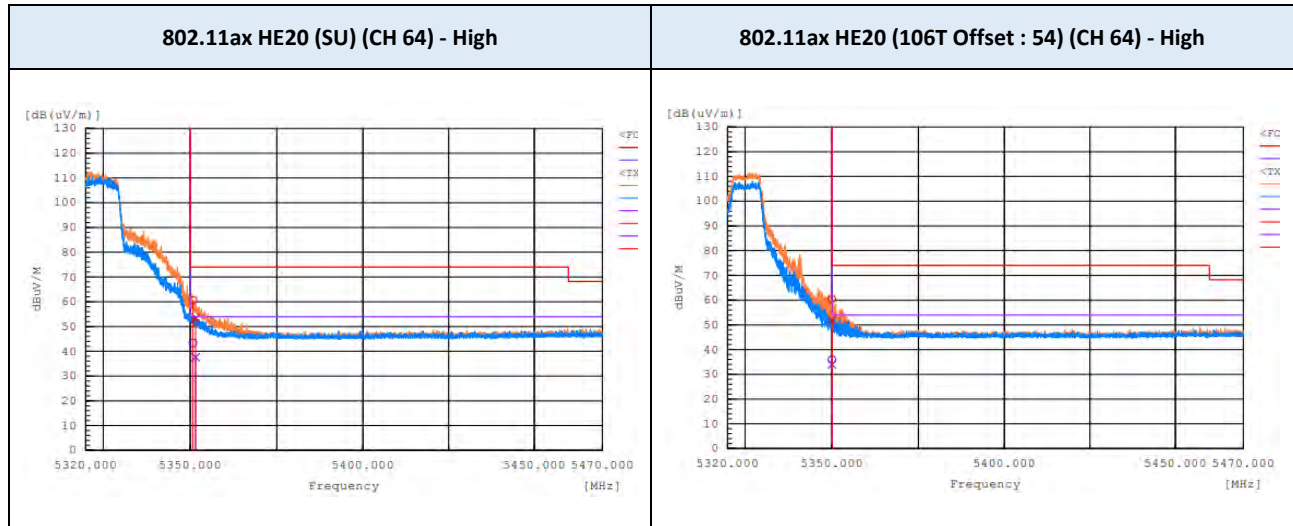
Test Mode 802.11ax HE20 (106T Offset : 54) : TX mode
Operating Frequency 5320 MHz (CH 64)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5350.012	H	33.9	58.3	2.1	-	36.0	60.4	54	74	18.0	13.6
5350.035	V	31.9	49.8	2.1	-	34.0	51.9	54	74	20.0	22.1

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE40 (SU) : TX mode
Operating Frequency 5310 MHz (CH 62)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5350.202	H	49.9	65.7	2.1	-	52.0	67.8	54	74	2.0	6.2
5350.370	V	39.5	57.2	2.1	-	41.6	59.3	54	74	12.4	14.7

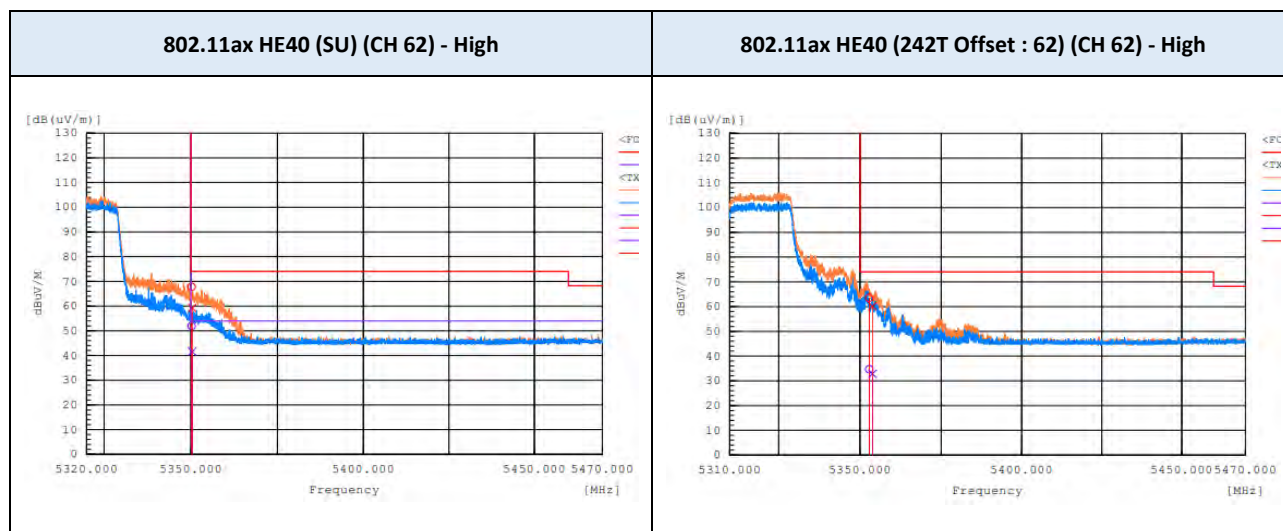
Test Mode 802.11ax HE40 (242T Offset : 62) : TX mode
Operating Frequency 5310 MHz (CH 62)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5353.789	V	30.7	58.0	2.1	-	32.8	60.1	54	74	21.2	13.9
5352.831	H	32.6	61.4	2.1	-	34.7	63.5	54	74	19.3	10.5

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE80 (SU) : TX mode
 Operating Frequency 5290 MHz (CH 58)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5350.314	H	48.5	63.5	2.1	-	50.6	65.6	54	74	3.4	8.4
5350.898	V	40.7	56.3	2.1	-	42.8	58.4	54	74	11.2	15.6

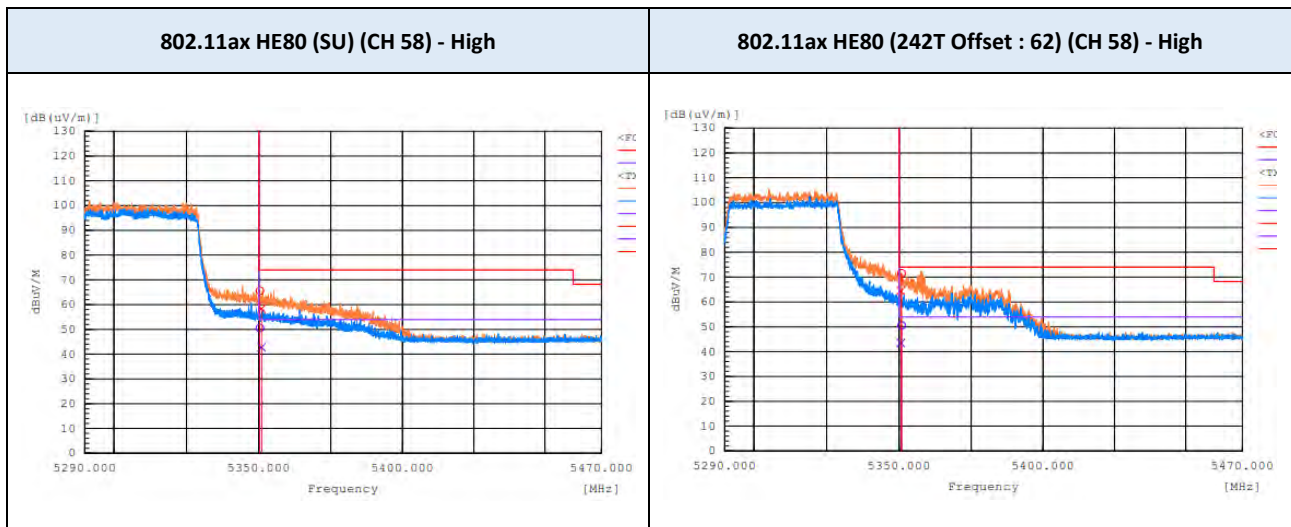
Test Mode 802.11ax HE80 (484T Offset : 66) : TX mode
 Operating Frequency 5290 MHz (CH 58)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5350.514	V	41.4	62.4	2.1	-	43.5	64.5	54	74	10.5	9.5
5350.822	H	48.5	69.4	2.1	-	50.6	71.5	54	74	3.4	2.5

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5500 MHz (CH 100)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5456.725	V	32.2	46.5	2.5	-	34.7	49.0	54	74	19.3	25.0
5459.992	H	33.3	48.5	2.5	-	35.8	51.0	54	74	18.2	23.0
5468.568	H	-	55.9	2.6	-	-	58.5	-	68.2	-	9.7
5469.928	V	-	56.3	2.6	-	-	58.9	-	68.2	-	9.3

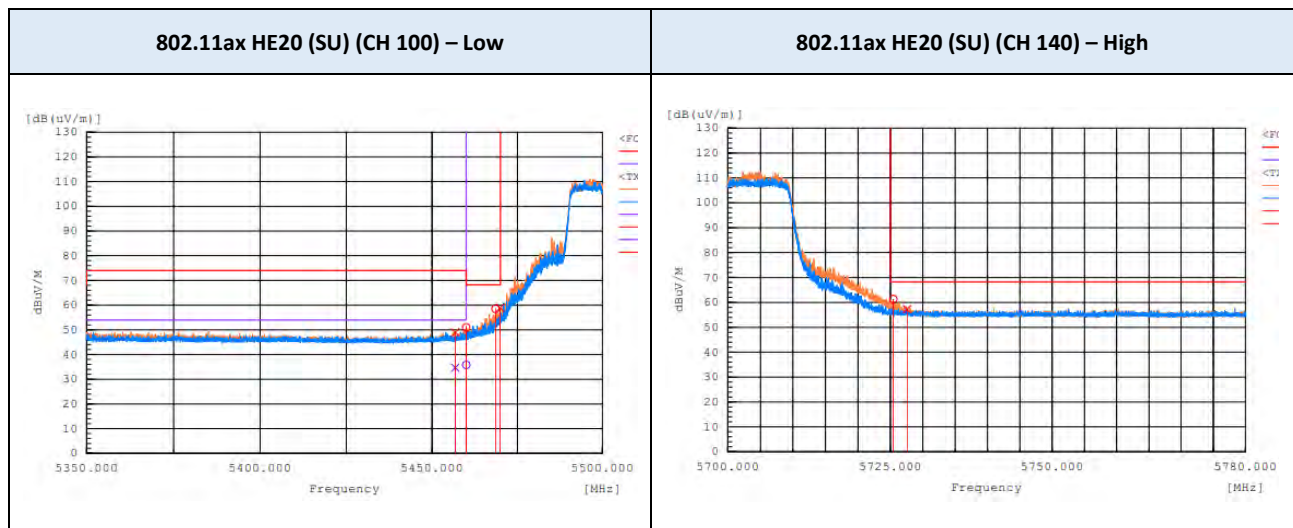
Test Mode 802.11ax HE20 (SU) : TX mode
 Operating Frequency 5700 MHz (CH 140)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr. ¹⁾	PK	PK	PK
5725.445	H	49.0	12.3	61.3	68.2	6.9
5727.566	V	45.0	12.3	57.3	68.2	10.9

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE20 (106T Offset : 53) : TX mode
 Operating Frequency 5500 MHz (CH 100)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5452.110	H	30.5	43.1	2.5	-	33.0	45.6	54	74	21.0	28.4
5459.973	V	30.5	43.7	2.5	-	33.0	46.2	54	74	21.0	27.8
5466.758	H	-	47.3	2.5	-	-	49.8	-	68.2	-	18.4
5466.868	V	-	46.1	2.5	-	-	48.6	-	68.2	-	19.6

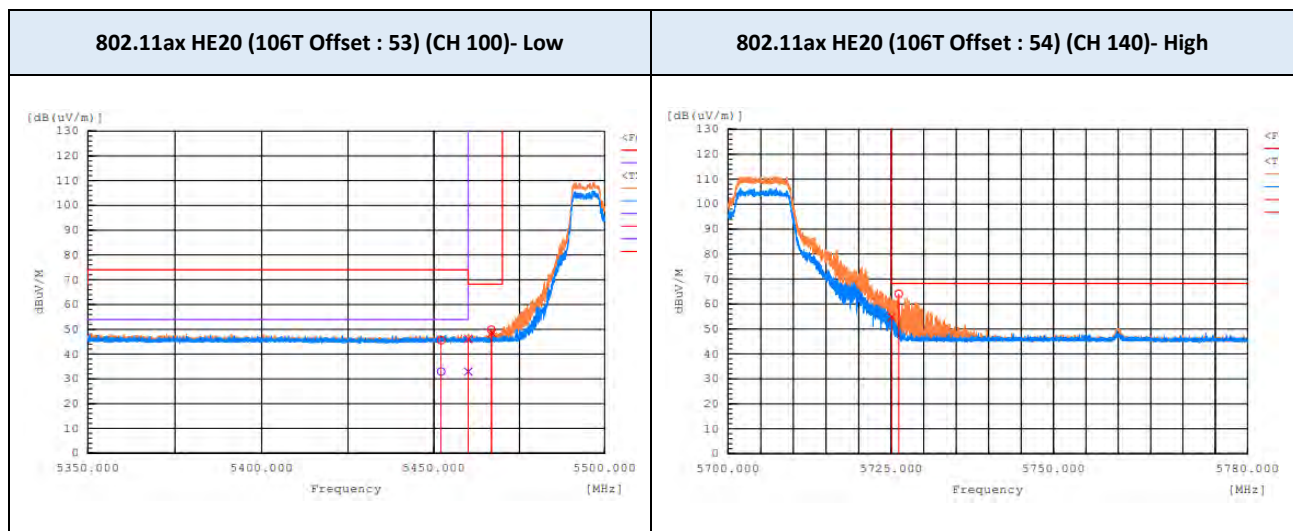
Test Mode 802.11ax HE20 (106T Offset : 54) : TX mode
 Operating Frequency 5700 MHz (CH 140)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr. ¹⁾	PK	PK	PK
5725.052	V	52.0	2.8	54.8	68.2	13.4
5726.185	H	61.3	2.8	64.1	68.2	4.1

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE40 (SU) : TX mode
 Operating Frequency 5510 MHz (CH 102)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5459.910	H	34.2	55.6	2.5	-	36.7	58.1	54	74	17.3	15.9
5459.995	V	34.6	50.7	2.5	-	37.1	53.2	54	74	16.9	20.8
5464.410	V	-	58.0	2.5	-	-	60.5	-	68.2	-	7.7
5466.146	H	-	63.7	2.5	-	-	66.2	-	68.2	-	2.0

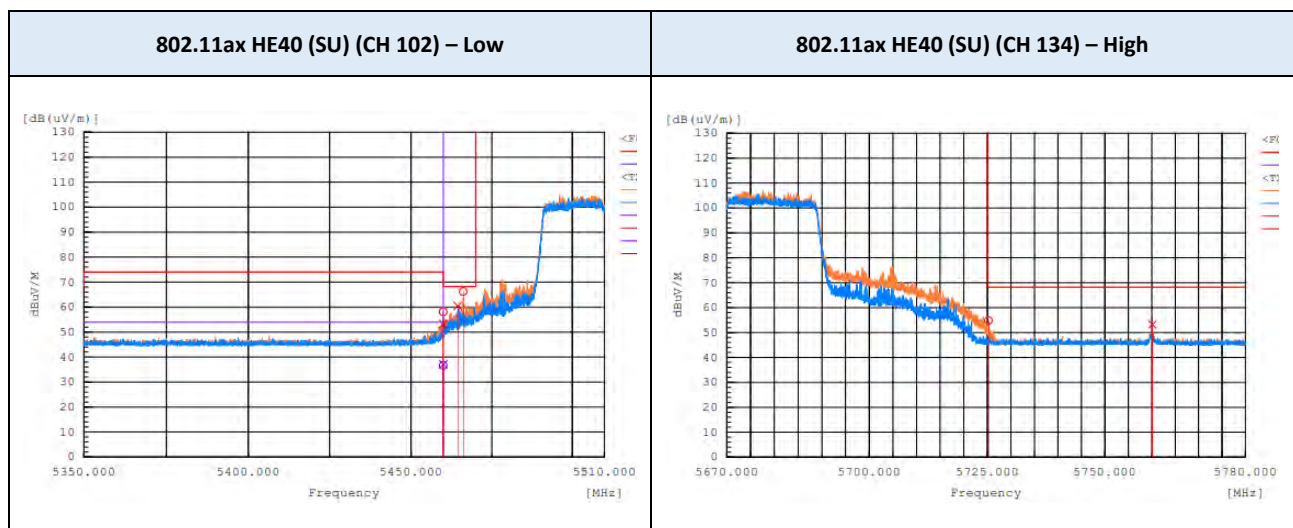
Test Mode 802.11ax HE40 (SU) : TX mode
 Operating Frequency 5670 MHz (CH 134)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr. ¹⁾	PK	PK	PK
5725.215	H	52.0	2.8	54.8	68.2	13.4
5760.101	V	50.4	2.9	53.3	68.2	14.9

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE40 (242T Offset : 61) : TX mode
 Operating Frequency 5510 MHz (CH 102)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5457.956	H	31.6	54.7	2.5	-	34.1	57.2	54	74	19.9	16.8
5458.175	V	30.8	49.3	2.5	-	33.3	51.8	54	74	20.7	22.2
5468.008	H	-	62.0	2.6	-	-	64.6	-	68.2	-	3.6
5468.039	V	-	60.9	2.6	-	-	63.5	-	68.2	-	4.7

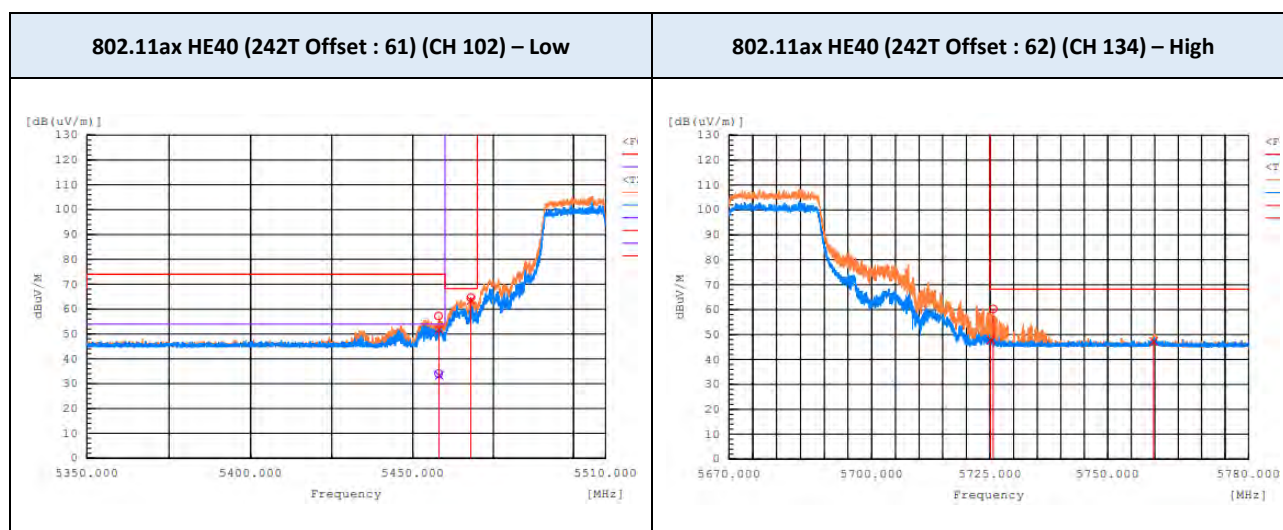
Test Mode 802.11ax HE40 (242T Offset : 62) : TX mode
 Operating Frequency 5670 MHz (CH 134)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr. ¹⁾	PK	PK	PK
5725.155	V	45.0	2.8	47.8	68.2	20.4
5725.682	H	57.5	2.8	60.3	68.2	7.9

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE80 (SU) : TX mode
Operating Frequency 5530 MHz (CH 106)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5458.323	H	42	59.2	2.5	-	44.5	61.7	54	74	9.5	12.3
5459.452	V	39	55.1	2.5	-	41.5	57.6	54	74	12.5	16.4
5466.256	H	-	60.2	2.5	-	-	62.7	-	68.2	-	5.5
5468.270	V	-	55.4	2.6	-	-	58.0	-	68.2	-	10.2

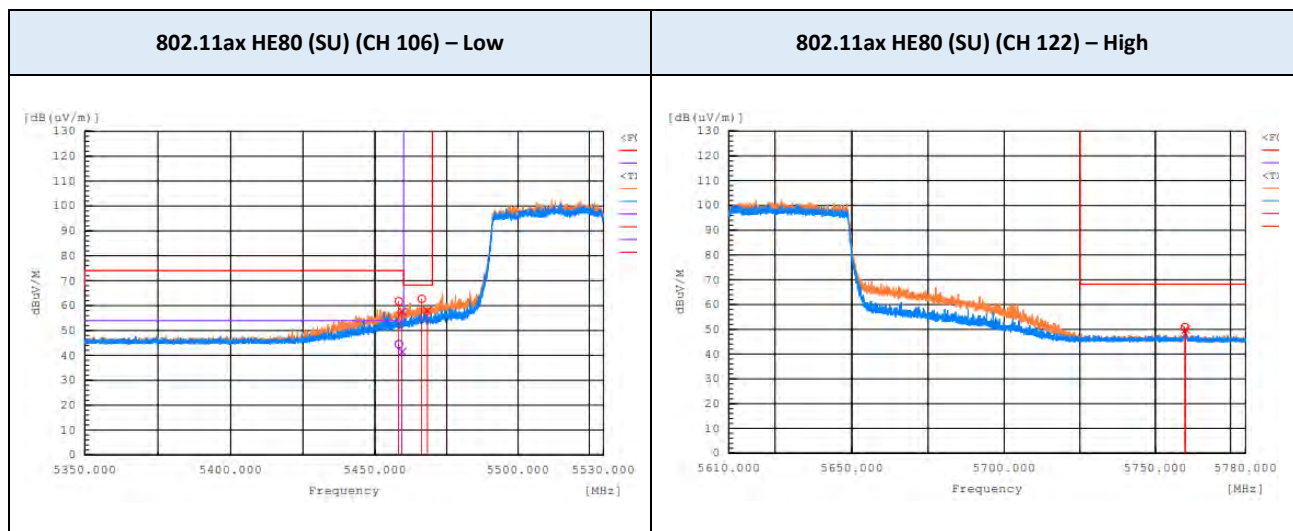
Test Mode 802.11ax HE80 (SU) : TX mode
Operating Frequency 5610 MHz (CH 122)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr. ¹⁾	PK	PK	PK
5759.783	H	48.0	2.9	50.9	68.2	17.3
5760.078	V	47.1	2.9	50.0	68.2	18.2

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



Test Mode 802.11ax HE80 (484T Offset : 65) : TX mode
Operating Frequency 5530 MHz (CH 106)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)		Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr. ¹⁾	Duty	AV	PK	AV	PK	AV	PK
5459.969	V	33	55.2	2.5	-	35.5	57.7	54	74	18.5	16.3
5459.969	H	36.4	59.5	2.5	-	38.9	62.0	54	74	15.1	12.0
5468.106	V	-	60.8	2.6	-	-	63.4	-	68.2	-	4.8
5468.138	H	-	63.3	2.6	-	-	65.9	-	68.2	-	2.3

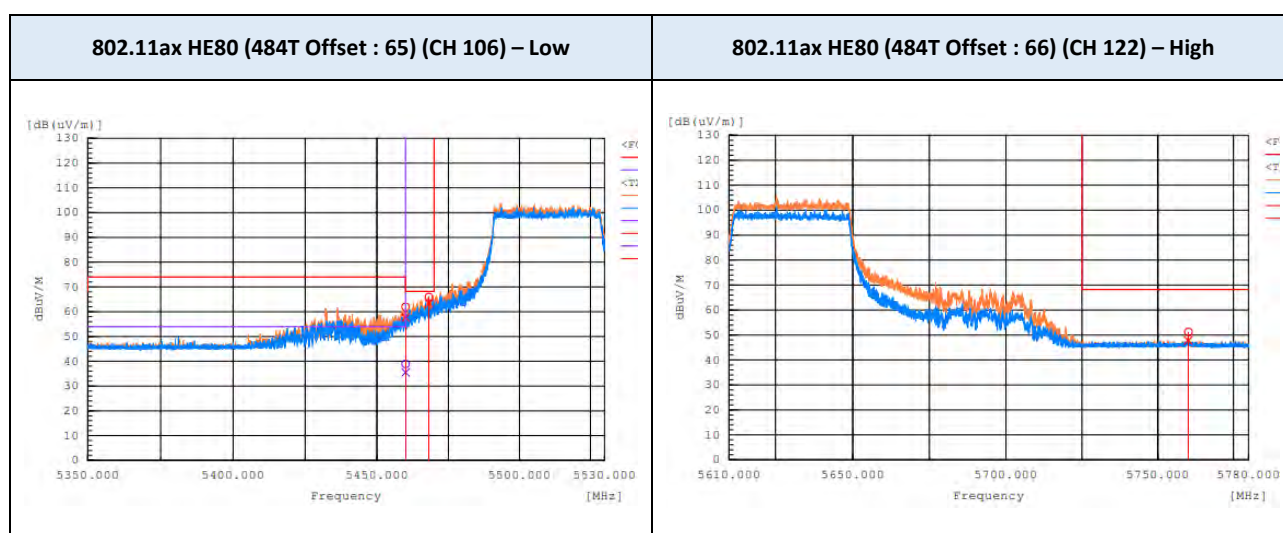
Test Mode 802.11ax HE80 (484T Offset : 66) : TX mode
Operating Frequency 5610 MHz (CH 122)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr. ¹⁾	PK	PK	PK
5759.953	V	44.9	2.9	47.8	68.2	20.4
5760.043	H	48.3	2.9	51.2	68.2	17.0

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
3. Duty factor is not applied since the duty cycle is 100 %.

TEST PLOTS



9.7 RECEIVER SPURIOUS EMISSIONS

Test Mode 802.11ax HE20 : RX mode
 Operating Frequency 5260 MHz (CH 52)

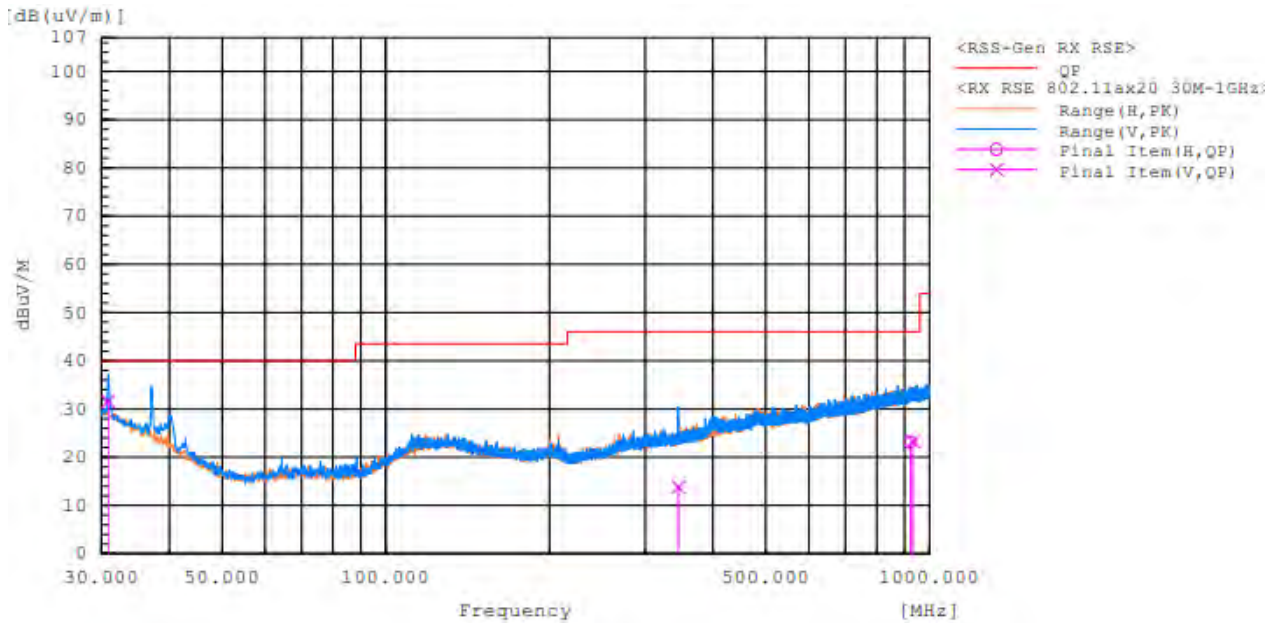
Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

Test Mode 802.11ax HE20 : RX mode
 Operating Frequency 5500 MHz (CH 100)

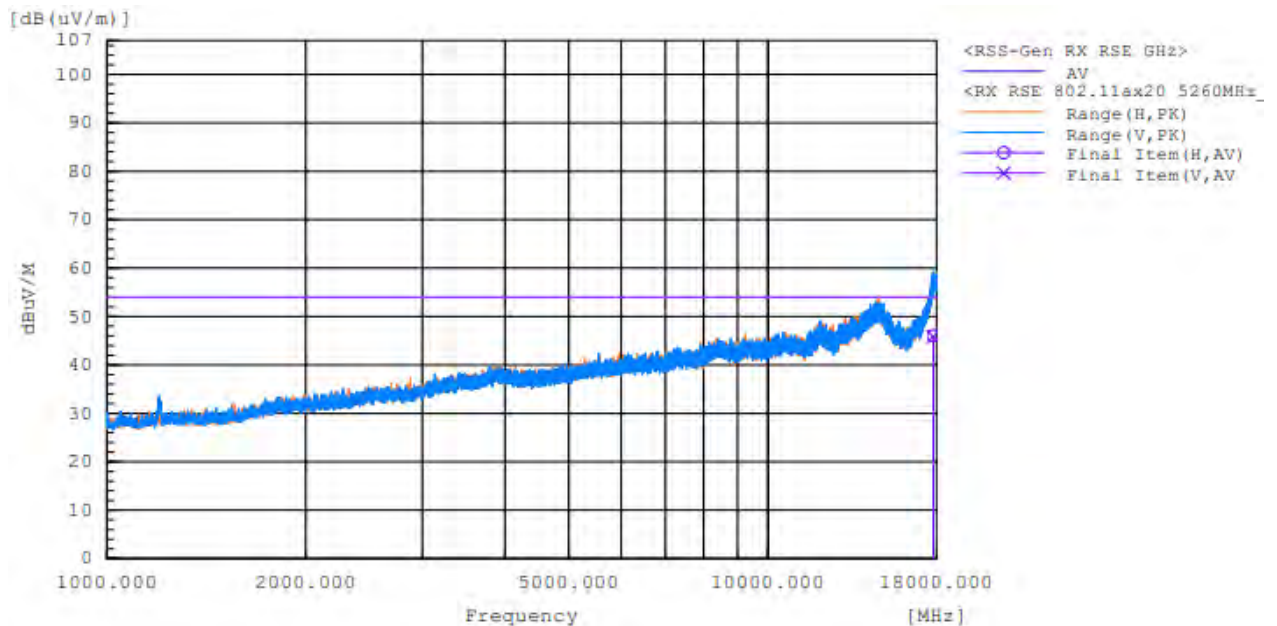
Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peaks found							

■ TEST PLOTS

Radiated Receiver Spurious Emission 30 MHz - 1 GHz : 802.11ax HE20 (SU) (CH 52) in U-NII 2a



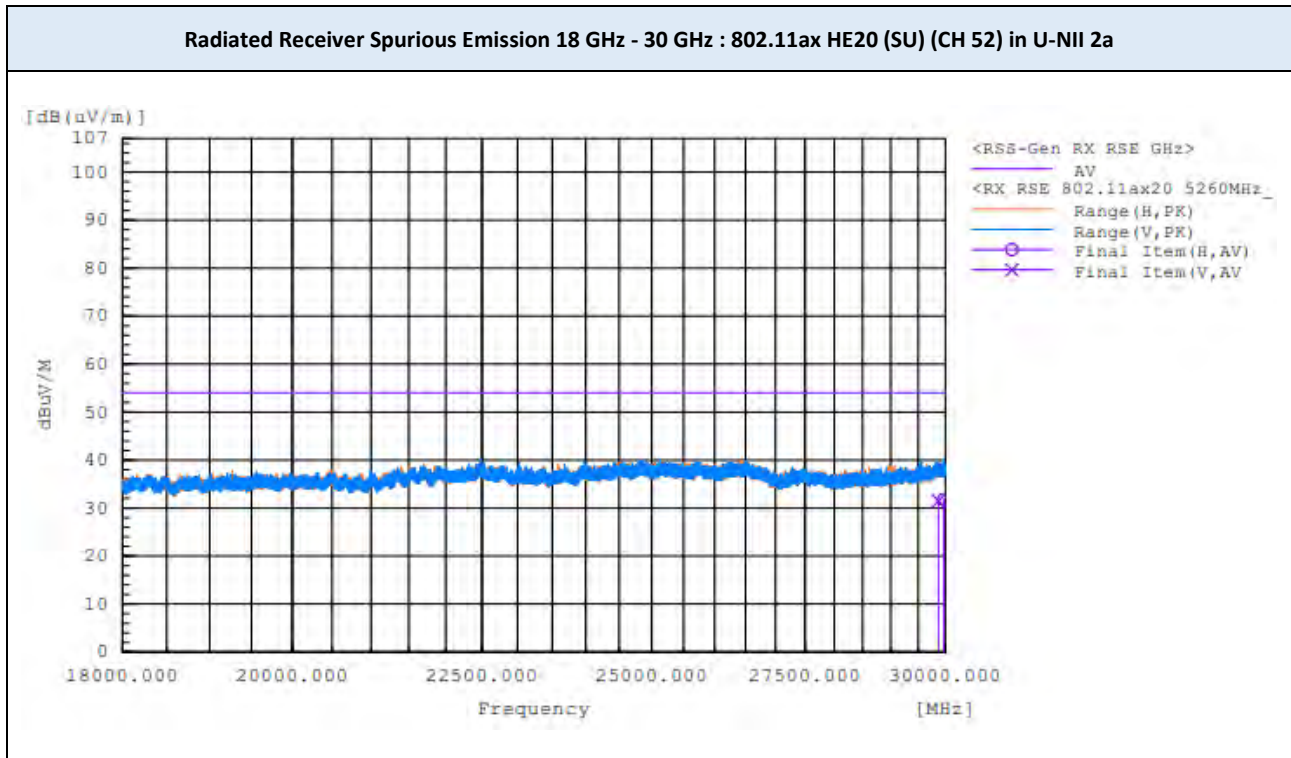
Radiated Receiver Spurious Emission 1 GHz - 18 GHz : 802.11ax HE20 (SU) (CH 52) in U-NII 2a



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS

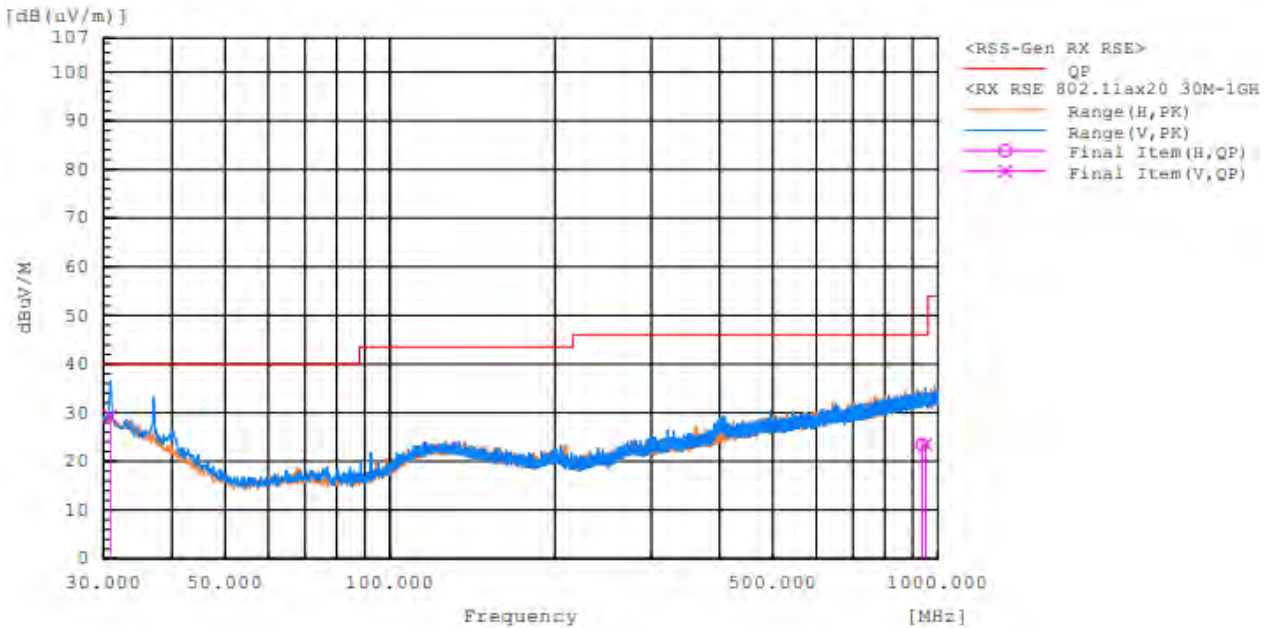


Note:

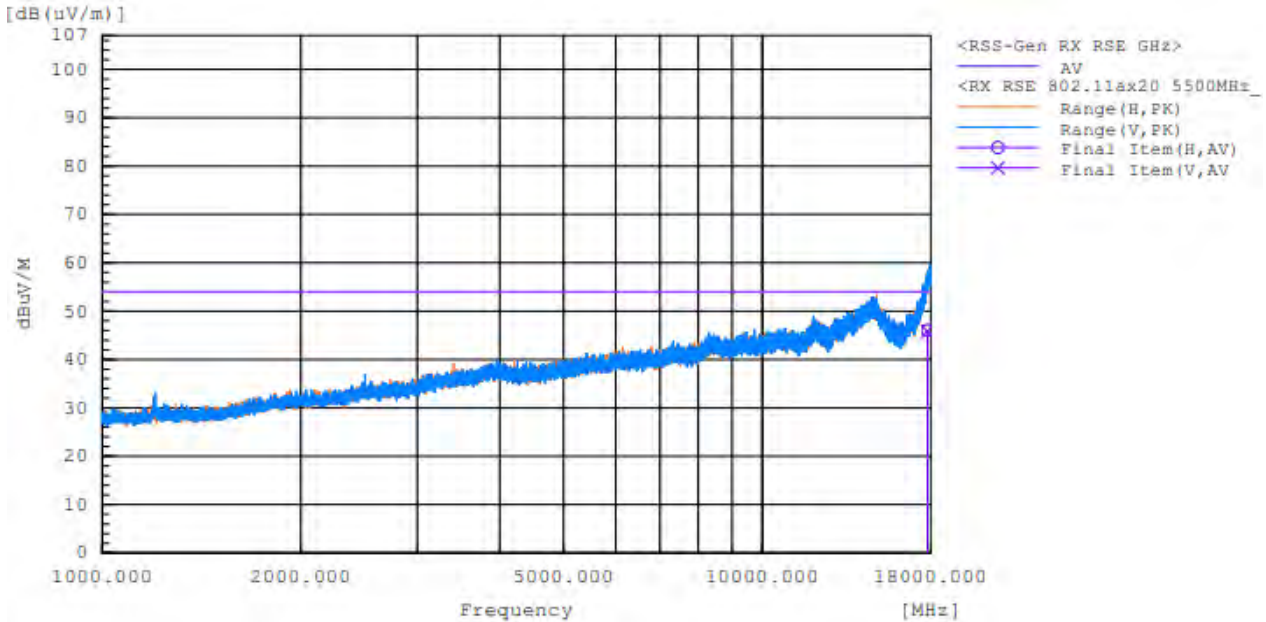
1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

■ TEST PLOTS

Radiated Receiver Spurious Emission 30 MHz - 1 GHz : 802.11ax HE20 (SU) (CH 52) in U-NII 3



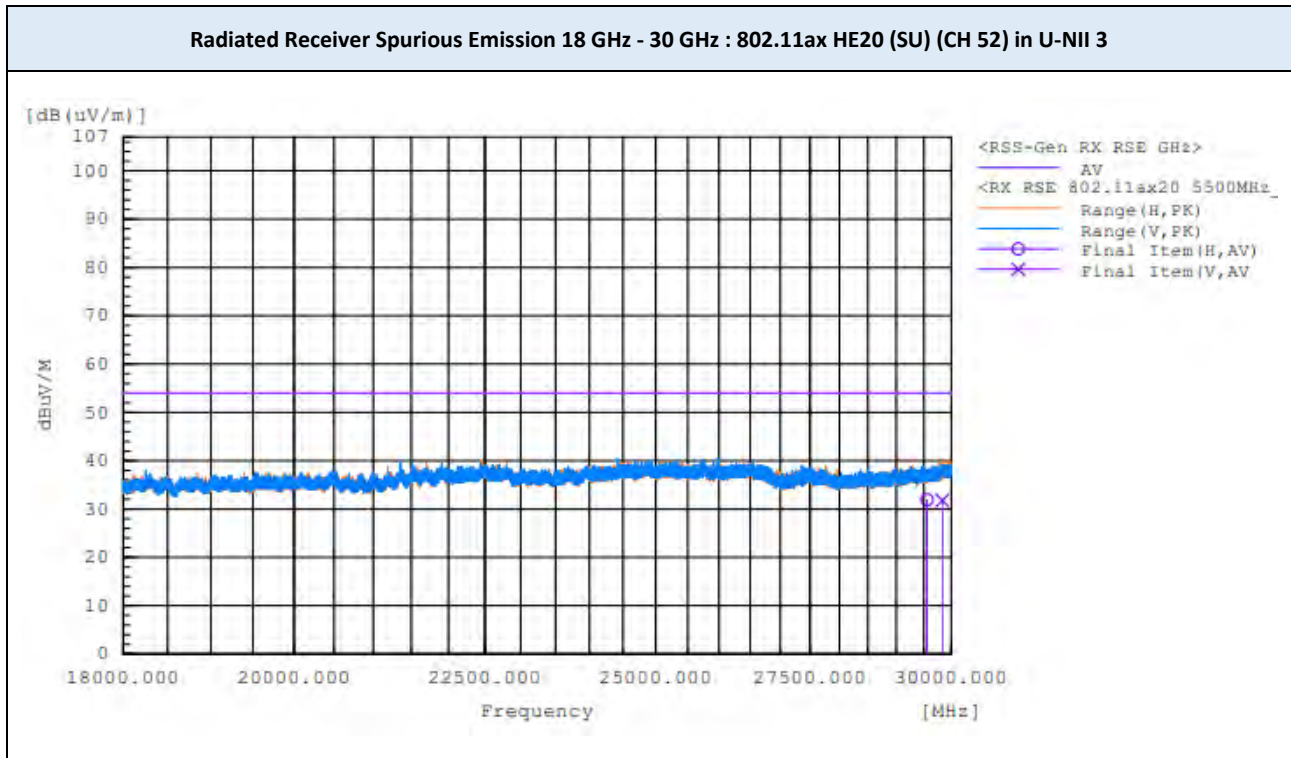
Radiated Receiver Spurious Emission 1 GHz - 18 GHz : 802.11ax HE20 (SU) (CH 52) in U-NII 3



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

TEST PLOTS



Note:

1. There were no major peaks and representative plots are included in this report
2. The plots include all used factor values for cables, antenna, preamplifier, etc.

10. LIST OF TEST EQUIPMENT

No.	Instrument	Model No.	Calibration Due (mm/dd/yy)	Manufacture	Serial No.
☒	Signal Analyzer (20 Hz ~ 40.0 GHz)	ESU40	12/01/2024	Rohde & Schwarz	100529
☒	Signal Analyzer (1 Hz ~ 40.0 GHz)	ESW44	10/24/2024	Rohde & Schwarz	102015
☒	Signal Analyzer (3 Hz ~ 50 GHz)	N9030A	06/30/2024	Keysight	MY53311083
☐	Attenuator (20 dB, DC ~ 26.5 GHz)	8493C 20 dB	02/16/2025	KEYSIGHT	89401
☒	Attenuator (10 dB, DC ~ 26.5 GHz)	8493C 10 dB	09/05/2024	KEYSIGHT	89576
☒	Open Switch with Power Sensor	OSP150	04/01/2025	Rohde & Schwarz	100872
☒	Loop Antenna (0.009 ~ 30 MHz)	HLA 6121	09/12/2025	TESEQ	43964
☒	BI-LOG Antenna (30 MHz ~ 6 GHz)	JB6	03/06/2025	Sunol	A060916
☒	LNA (30 MHz ~ 1GHz)	PAM-103	05/03/2025	Com-Power	18020254
☒	Horn Antenna (1 GHz ~ 18 GHz)	DRH-118	01/03/2025	Sunol	A061616
☒	LNA (1 GHz ~ 18 GHz)	PAM-118A	03/13/2025	Com-Power	18040074
☒	Horn Antenna (18 GHz ~ 40 GHz)	DRH-1840	01/20/2025	Sunol	17121
☒	LNA (18 GHz ~ 40 GHz)	CBL18405045-01	01/05/2025	CERNEX, Inc.	27973
☒	High Pass Filter	WHKX8-6090- 7000-18000-40SS	11/20/2024	Wainwright	23
☒	EMI Test Receiver	ESR3	12/14/2024	Rohde & Schwarz	102363
☒	LISN	ENV216	10/23/2024	Rohde & Schwarz	101550
☒	Temperature & Humidity Chamber	SH-641	08/01/2024	ESPEC	92002929
☒	DC Power Supply	E3632A	06/12/2024	Agilent	MY40028636

Note(s) :

- Equipment listed above that calibrated during the testing period was set for test after the calibration.
- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

APPENDIX A. TEST SETUP PHOTOS

The setup photos are provided as a separate document.

APPENDIX B. PHOTOGRAPHS OF EUT

B.1. EXTERNAL PHOTOS

The external photos are provided as a separate document.

B.2. INTERNAL PHOTOS

The internal photos are provided as a separate document.

END OF TEST REPORT