

TEST REPORT

APPLICANT

Eight Sleep, Inc.

MODEL NAME

10506

FCC ID

2AYXT61100005

ISED

29927-61100005

REPORT NUMBER

HA260519-GGC-002-R04-02

TEST REPORT

Date of Issue
August 19, 2026

Test Site
HCT America, Inc.
840 Yosemite Way, Milpitas, CA 95035, USA

Applicant	Eight Sleep, Inc.
Applicant Address	915 Broadway, Suite 1301, New York, NY 10010, USA
FCC ID	2AYXT61100005
ISED	29927-61100005
EUT Type	Smart Sleep System with Bluetooth, BLE, 2.4 GHz and 5 GHz WLAN
Modulation Type	OFDM
FCC Classification	Unlicensed National Information Infrastructure (U-NII)
FCC Rule Part(s)	Part 15.407
ISED Rule Part(s)	RSS-247 Issue 4 (July 2025) RSS-Gen Issue 5 and 2 (February 2021)
Test Procedure	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, 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 people taking them.

Authorized & Released By:



Dan Corona
Technical Manager

Tested By:



Joe Vang
RF Engineer

REVISION HISTORY

The revision history for this document is shown in table.

TEST REPORT NO.	REVISION	DATE	DESCRIPTION
HA260519-GGC-002-R04	0	August 11, 2026	Initial Issue
HA260519-GGC-002-R04-01	1	August 17, 2026	- Updated test procedure, - Directional antenna gain, page typo and fixed antenna gains - Added receiver mode plots.
HA260519-GGC-002-R04-02	2	August 19, 2026	- Updated antenna configuration, - Input SISO data - Update max output power

TABLE OF CONTENTS

1. GENERAL INFORMATION	4
2. METHODOLOGY	6
3. INSTRUMENT CALIBRATION	6
4. FACILITIES AND ACCREDITATIONS	7
5. ANTENNA REQUIREMENTS	8
6. MEASUREMENT UNCERTAINTY	9
7. DESCRIPTION OF TESTS	10
8. SUMMARY OF TEST RESULTS	24
9. TEST RESULT	27
9.1 DUTY CYCLE	27
9.2 26 dB BANDWIDTH / 99% BANDWIDTH	28
9.3 6 dB BANDWIDTH / 99% BANDWIDTH	30
9.4 OUTPUT POWER	34
9.5 POWER SPECTRAL DENSITY	36
9.6 RADIATED SPURIOUS EMISSIONS	40
9.7 RADIATED RESTRICTED BAND EDGES	47
9.8 POWERLINE CONDUCTED EMISSIONS	51
10. LIST OF TEST EQUIPMENT	53
APPENDIX A. TEST SETUP PHOTOS	54
APPENDIX B. PHOTOGRAPHS OF EUT	55

1. GENERAL INFORMATION

EUT DESCRIPTION

Model	10506
Product Name	Smart Pod
Serial Number	Conducted: 6131A8AA Radiated: 6131A8AB
Power Supply	110–240 VAC
RF Specification	BLE, Bluetooth 5.1 LE (BR / EDR / 1M / 2M), WIFI 2.4 GHz: 802.11b /g/ n (HT20, HT40), WIFI 5 GHz: 802.11a/n(HT20/40)/ac (80)
Transmitter Chain	1

RF SPECIFICATION SUBJECT TO THE REPORT

RF Specification	802.11a/n(HT20/40)/ ac(80)	
Transmitter Chain	1	
Frequency Range	U-NII-1	20 MHz BW: 5180 MHz – 5240 MHz 40 MHz BW: 5190 MHz – 5230 MHz 80 MHz BW: 5210 MHz
	U-NII-3	20 MHz BW: 5745 MHz – 5825 MHz 40 MHz BW: 5755 MHz – 5795 MHz 80 MHz BW: 5775 MHz
Straddle channel	Not Supported	
Max. RF Output Power	19.80 dBm (95.50 mW)	
Modulation Type	OFDM: 11a, HT20, HT40 & ac80	
Antenna Specification ¹⁾	Antenna Type: FPC flex antenna Peak Gain: Antenna 1: 4.45 dBi Antenna 2: 3.69 dBi	
Firmware Version ²⁾	1b1d5b7efcbd0d4b999a4514ad6b24d9274d060	
Hardware Version ²⁾	10506	
Date(s) of Tests	July 21, 2026, ~ August 14, 2026	
Test Environment	Temperature: 18.9°C ~ 25°C Humidity: 35% ~ 50% R.H.	

Note:

1. Antenna information is based on the document provided.
2. Firmware and Hardware Version are as received by the client.

OPERATING FREQUENCY CHANNELS

Band	Bandwidth (MHz)	Channel	Frequency (MHz)
U-NII 1	20	36	5180
		40	5200
		44	5220
		48	5240
	40	38	5190
		46	5230
	80	42	5210
Band	Bandwidth (MHz)	Channel	Frequency (MHz)
U-NII 3	20	149	5745
		153	5765
		157	5785
		161	5805
		165	5825
	40	151	5755
		159	5795
	80	155	5775

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 (U-NII) Devices Part15, Subpart E” and ANSI C63.10 (Version: 2020) ‘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 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 4.

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: 2020) 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 the highest emission. Also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. 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: 2020)

DESCRIPTION OF TEST MODES

The EUT has been tested at 5 GHz WLAN test mode. Power level setting at continuous TX and normal RX mode for each 802.11a/n(HT20/40) /ac (VHT20/40/80).

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, which is traceable to recognize national standards. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version: 2017).

4. FACILITIES AND ACCREDITATIONS

FACILITIES

HCT America, Inc. holds A2LA accreditation (certificate no. 4201.01) covering all testing included in the scope of this report. All tests were conducted at the facilities listed below.

	Address	ISED CABID	ISED Company Number	FCC Registration	FCC Designation Number
☒	840 Yosemite Way, Milpitas, CA 95035 USA	US0198	25729	898494	US01202
☐	1177 Comstock Road, Hollister, CA 95023 USA	US0198	25729	898494	US01202



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 6 (Section 5.2):

In the case of transmitters with detachable antenna(s), a list of all antenna types that are permitted to be used with the transmitter, indicating the maximum permissible antenna gain (and unit, e.g., dBi) and the required impedance, shall be provided for equipment certification. If the transmitter has multiple antenna ports, this list shall indicate the allowed port for each antenna in the list. The test report shall demonstrate the compliance of the transmitter with the limits specified in the applicable RSS when the transmitter is equipped with any antenna type from this list. If the tests were performed only on worst-case configurations, the test report shall include the rationale for selecting the tested configurations and why they are worst-case.

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2020.

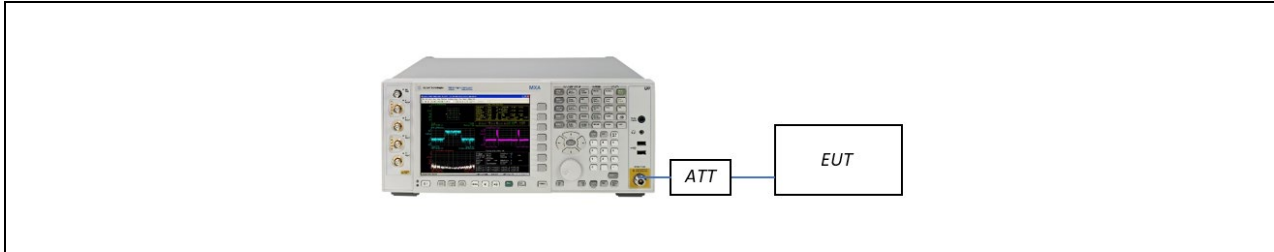
All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine 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)	± 5.29 dB
Radiated Emissions (Above 1 GHz)	± 4.29 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 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 $> 50/T$.

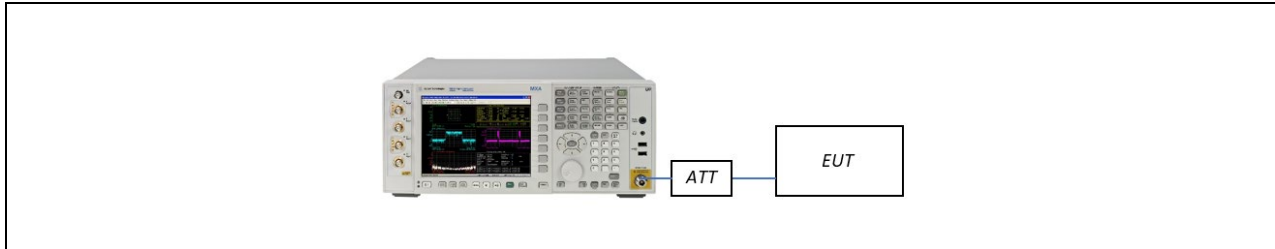
- RBW = 8 MHz (the largest available value)
- VBW = 8 MHz ($\geq$ RBW)
- SPAN = 0 Hz
- Detector = Peak
- Number of points in sweep > 100
- Trace mode = Clear write
- Measure T_{total} and T_{on}
- Calculate Duty Cycle = T_{on} / T_{total} and Duty Cycle Factor = $10 \cdot \log(1/\text{Duty Cycle})$

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.

TEST SETUP



TEST PROCEDURE (26 dB Bandwidth)

Testing was performed according to section C in KDB 789033 D02 v02r01.

The transmitter output is connected to the spectrum analyzer.

The Spectrum Analyzer setting:

- 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 section C in KDB 789033 D02 v02r01.

The transmitter output is connected to the spectrum analyzer.

The Spectrum Analyzer setting:

- RBW = Approximately 1 % of the emission bandwidth
- VBW $\geq 3 \times$ RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- 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 section D in KDB 789033 D02 v02r01.

The transmitter output is connected to the spectrum analyzer.

- RBW = 1% ~ 5% of the occupied bandwidth
- VBW $\approx 3 \times$ 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. MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

Band		47 CFR §15.407(a)(1)	
U-NII 1	☐	Master (Outdoor)	$\leq 1 \text{ W} (= 30 \text{ dBm})$ $\leq 125 \text{ mW} (= 21 \text{ dBm})$ EIRP at max elevation angle (30°) from horizon
	☐	Master (Indoor)	$\leq 1 \text{ W} (= 30 \text{ dBm})$
	☒	Client	$\leq 250 \text{ mW} (= 24 \text{ dBm})$

Band	RSS-247, Section 7.3.1.2
U-NII 1	$\leq 200 \text{ mW e.i.r.p.}$ or $\leq 10 + 10 \log(B) \text{ dBm e.i.r.p.}$ whichever power is less, where B is 99% bandwidth in MHz

Band	47 CFR §15.407(a)(2)	RSS-247, 7.3.2.2 / 7.3.3.2
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, 7.3.4.3
U-NII 3	$\leq 1 \text{ W} (= 30\text{dBm})$	$\leq 1 \text{ W} (= 30\text{dBm})$

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

The transmitter output is connected to wideband gated RF power meter.

TX condition of the EUT is the actual operating mode by RF test program.

The power meter setting:

Peak Power (Section E (3)(a) in KDB 789033 D02 v02r01, Subclause 12.4.3.1 in ANSI 63.10-2020)

Measurements are performed using a wideband gated RF power meter, provided the gate parameters are configured to measure power exclusively when the Equipment Under Test (EUT) operates at its maximum power control level.

Average Power (Section E (3)(b) in KDB 789033 D02 v02r01, Subclause 12.4.3.2 in ANSI 63.10-2020)

Measurements are performed using a wideband gated RF power meter, provided the gate parameters are configured to measure power exclusively when the Equipment Under Test (EUT) operates at its maximum power control level. Because the measurement is captured only during the active (ON) state of the transmitter, a duty cycle correction factor is not required.

Sample Calculation

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

7.4. POWER SPECTRAL DENSITY

LIMIT

Band		47 CFR §15.407(a)(1)	
U-NII 1	☐	Master Device	≤ 17 dBm/MHz
	☒	Client Device	≤ 11 dBm/MHz

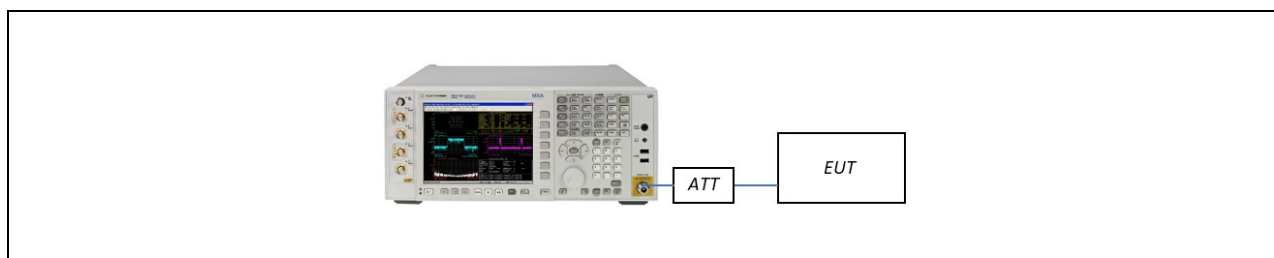
Band	RSS-247, Section 7.3.1.2
U-NII 1	≤ 10 dBm/MHz e.i.r.p.

Band	47 CFR §15.407(a)(2)	RSS-247, 7.3.2.2 / 7.3.3.2
U-NII 2a	≤ 11 dBm/MHz	≤ 11 dBm/MHz
U-NII 2c		

Band	47 CFR §15.407(a)(3)(i)	RSS-247, 7.3.4.3
U-NII 3	≤ 30 dBm/500 kHz	≤ 30 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 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 MHz
- Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
- 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. UNDESIRABLE EMISSION

LIMIT

Frequency Band	Limit
U-NII 1	In accordance with 47 CFR §15.407(b)(1) / In accordance with RSS-247, Section 7.3.1.3 All emissions outside the 5.15-5.35 GHz band shall not exceed an –27 dBm/MHz e.i.r.p.

Frequency Band	Limit
U-NII 2a	In accordance with 47 CFR § 15.407(b)(2) / RSS-247, 7.3.2.3 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, 7.3.3.3 All emissions outside the 5.47-5.725 GHz band shall not exceed an –27 dBm/MHz e.i.r.p.

Frequency Band	Limit
U-NII 3	In accordance with 47 CFR § 15.407(b)(4) / RSS-247, 7.3.4.4 All emissions shall be limited to a level of –27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

For ISSED, the 26 dB bandwidth may fall into the 5250-5350 MHz band; however, if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing dynamic frequency selection (DFS) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band.

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 7.4.3		
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 7.4.3		
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

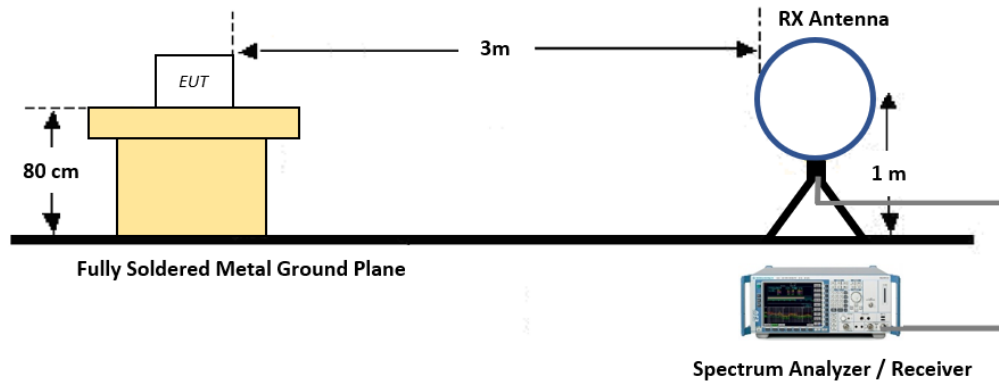
RESTRICTED BANDS OF OPERATION

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

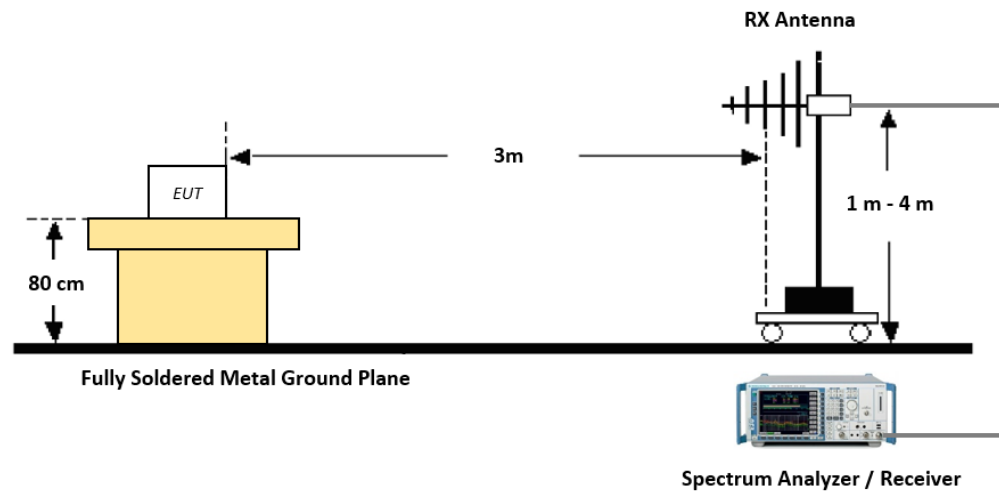
ISED: RSS-GEN Section 7.5				
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
0.090 - 0.110	8.37625 - 8.38675	108 - 138	1660 - 1710	8025 - 8500
0.495 - 0.505	8.41425 - 8.41475	149.9 - 150.05	1718.8 - 1722.2	9000 - 9200
2.1735 - 2.1905	12.29 - 12.293	156.52475 - 156.52525	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

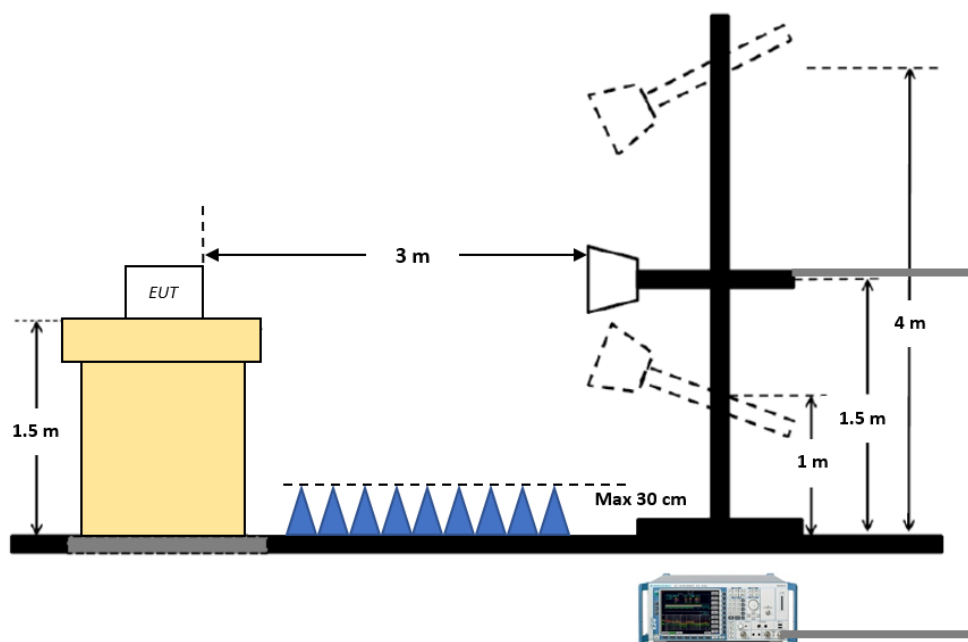
Below 30 MHz



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 to 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 to 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 to 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which varies from 1m to 4m to find 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 less 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

*Additional

For measurements above 1 GHz emission, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for preliminary scan. For final measurements resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz as applicable for average measurements.

Radiated emissions were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

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 to 360 degrees to determine the position of maximum emission level.
5. EUT is set 3 m away from the receiving antenna, which varies from 1m to 4m to find 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 (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. 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

7.6. 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 situated on a wooden table 80 cm above the reference ground plane.
2. EUT is connected via LISN to 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 C63.10-2020 and must accommodate changes of ANSI C63.10-2020+Cor 1-2023.

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 powerline 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 C63.10-2020 and must accommodate changes of ANSI C63.10-2020+Cor 1-2023.

Sample Calculation

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

8. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	ISED Part Section(s)	Test Limit	Test Condition	Test Result
26dB Bandwidth	§15.407	RSS-Gen, 6	N/A (For power measurement) (For Report Purpose only)	Conducted	-
6dB Bandwidth	§15.407(e)	RSS-247, 7.3.4.2	>500 kHz (5725-5850 MHz) (UNII-3)		PASS
Maximum Conducted Output Power	§15.407(a) (1)(2)(3)	RSS-247, 7.3.1.2	cf. Section 7.3		PASS
Power Spectral Density	§15.407(a) (1)(2)(3)	RSS-247, 7.3.1.2 RSS-247, 7.3.4.3	cf. Section 7.4		PASS
AC Power line Conducted Emissions	§15.207 §15.407(b)(9)	RSS-Gen, 8.8	cf. Section 7.7		PASS
Undesirable Emissions	§15.407(b) (1)(2)(3)(4) §15.407(b) (5)(iii)	RSS-247, 7.3.1.3 RSS-247, 7.3.4.4	cf. Section 7.6	Radiated	PASS
Radiated Spurious Emissions	§15.209 §15.407(b)(9)	RSS-Gen, 7.4.3	cf. Section 7.6		PASS
Radiated Restricted Band Edge	§15.407(b) (9)(10) §15.205	RSS-Gen 7.5	cf. Section 7.6		PASS

WORST CASE CONFIGURATION

RADIATED TEST

1. EUT Axis

- All X and Y positions for horizontal / vertical antenna polarization were investigated to find the worst-case position.
- Y 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.

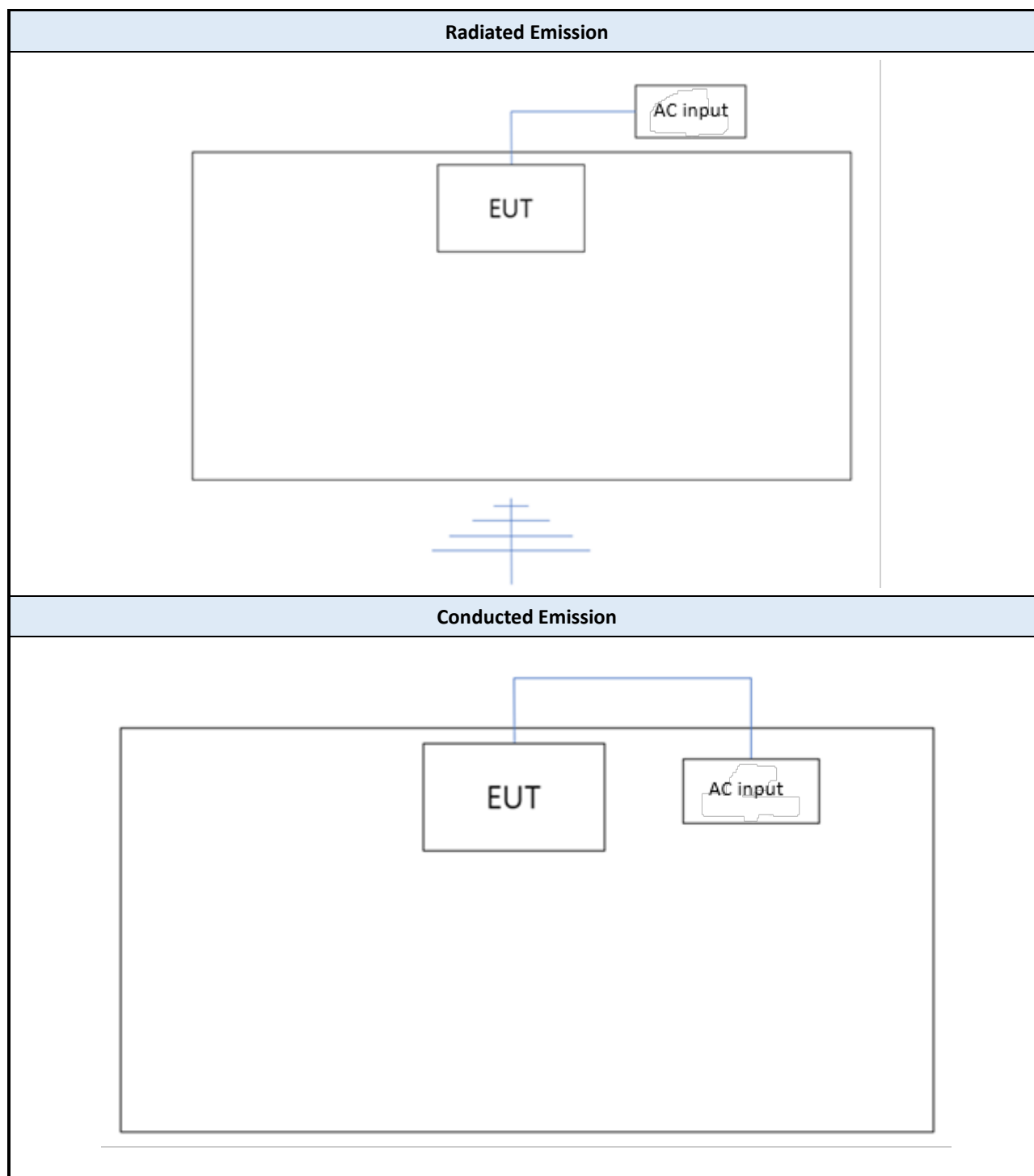
CONDUCTED TEST

1. AC line conducted emission test was performed at the worst-case transmission mode.

WORST CASE DATA RATES AS PROVIDED BY THE MANUFACTURER WERE:

Mode	Worst Case Data Rate
802.11a	6 Mbps
802.11n	MCS0
802.11ac	MCS0

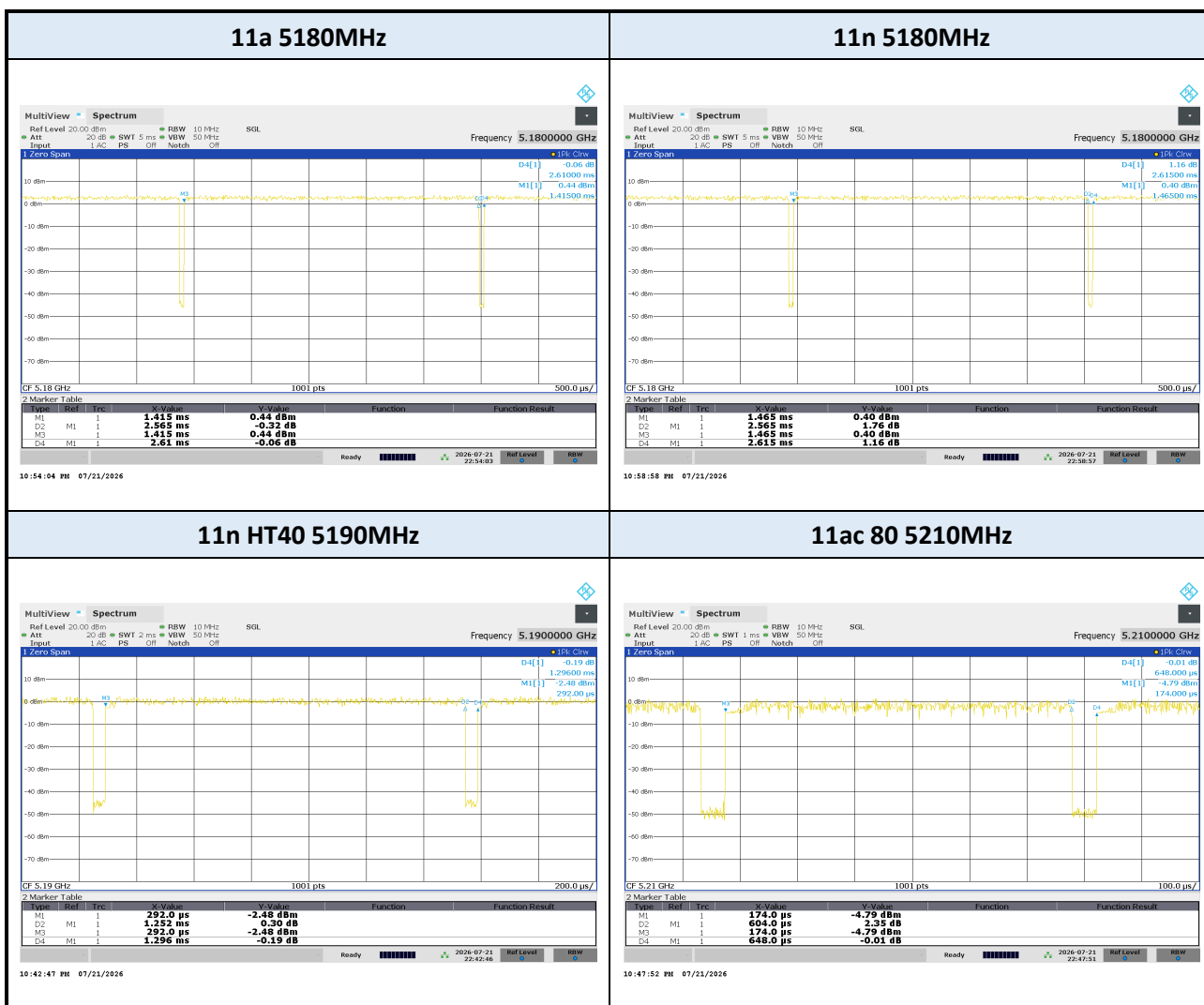
TEST CONFIGURATION



9. TEST RESULT

9.1 DUTY CYCLE

Mode	Data Rate	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Factor (dB)	VBW(1/T) (kHz)
11a	6Mbps	2.565	2.61	0.983	0	0.010
11n HT20	MCS0	2.565	2.615	0.981	0	0.010
11n HT40	MCS0	1.252	1.296	0.966	0.15	0.799
11 ac80	MCS0	.604	.648	0.932	0.31	1.656



9.2 26 dB BANDWIDTH / 99% BANDWIDTH

[ANT1]

Mode: 802.11a			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Band	Frequency (MHz)	Channel		
UNII1	5180	36	17.997	27.16
	5200	40	17.970	27.42
	5240	48	17.861	26.39

Mode: 802.11n(HT20)			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Band	Frequency (MHz)	Channel		
UNII1	5180	36	17.615	20.20
	5200	40	17.623	20.24
	5240	48	17.622	20.27

Mode: 802.11n(HT40)			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Band	Frequency (MHz)	Channel		
UNII1	5190	38	36.021	40.48
	5230	46	36.284	54.52

Mode: 802.11ac(VHT80)			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Mode	Frequency (MHz)	Channel		
UNII1	5210	42	75.742	81.47

[ANT2]

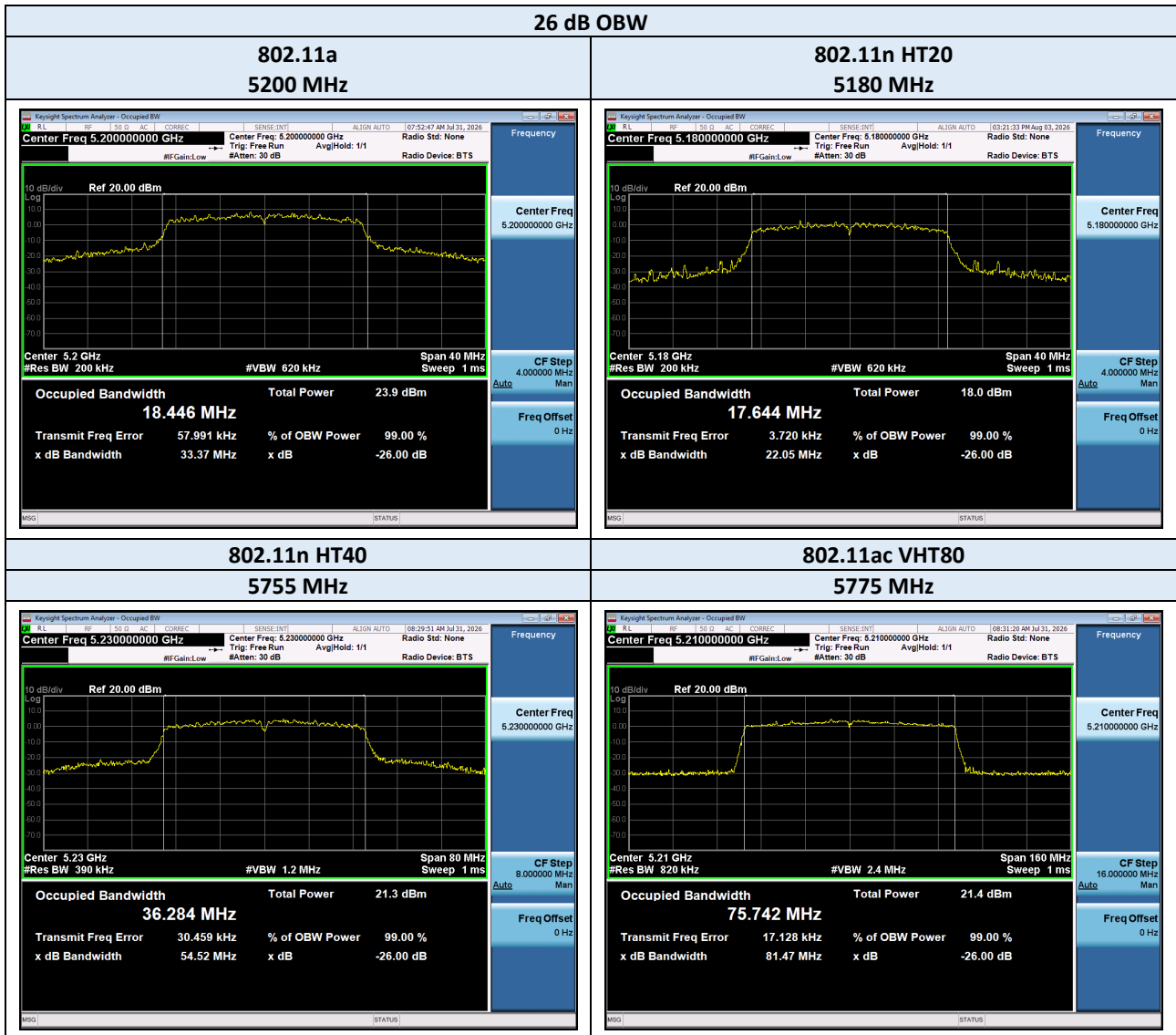
Mode: 802.11a			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Band	Frequency (MHz)	Channel		
UNII1	5180	36	18.584	32.38
	5200	40	18.446	33.37
	5240	48	18.483	30.34

Mode: 802.11n(HT20)			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Band	Frequency (MHz)	Channel		
UNII1	5180	36	17.644	22.05
	5200	40	17.613	20.24
	5240	48	17.610	20.16

Mode: 802.11n(HT40)			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Band	Frequency (MHz)	Channel		
UNII1	5190	38	36.084	39.84
	5230	46	36.318	50.52

Mode: 802.11ac(VHT80)			99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Mode	Frequency (MHz)	Channel		
UNII1	5210	42	75.243	80.20

TEST PLOTS



Note:

- To simplify the report, attached plots were only the widest 26 dB BW Channel

9.3 6 dB BANDWIDTH / 99% BANDWIDTH

[ANT1]

Mode: 802.11a			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5745	149	15.18	> 0.5
	5785	157	15.08	> 0.5
	5825	165	15.93	> 0.5

Mode: 802.11n (HT20)			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5745	149	15.17	> 0.5
	5785	157	16.01	> 0.5
	5825	165	15.13	> 0.5

Mode: 802.11n(HT40)			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5755	151	33.89	> 0.5
	5795	159	32.66	> 0.5

Mode: 802.11ac (VHT80)			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5775	155	75.17	> 0.5

[ANT2]

Mode: 802.11a			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5745	149	15.15	> 0.5
	5785	157	15.16	> 0.5
	5825	165	15.11	> 0.5

Mode: 802.11n (HT20)			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5745	149	15.15	> 0.5
	5785	157	15.15	> 0.5
	5825	165	15.07	> 0.5

Mode: 802.11n(HT40)			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5755	151	33.83	> 0.5
	5795	159	35.05	> 0.5

Mode: 802.11ac (VHT80)			6dB Bandwidth (MHz)	Limit (MHz)
Mode	Frequency (MHz)	Channel		
UNII3	5775	155	75.14	> 0.5

[ANT1]

Mode: 802.11a			99% Bandwidth (MHz)
Band	Frequency (MHz)	Channel	
UNII3	5745	149	21.653
	5785	157	21.387
	5825	165	21.082

Mode: 802.11n(HT20)			99% Bandwidth (MHz)
Band	Frequency (MHz)	Channel	
UNII3	5745	149	24.388
	5785	157	24.895
	5825	165	25.109

Mode: 802.11n(HT40)			99% Bandwidth (MHz)
Band	Frequency (MHz)	Channel	
UNII3	5755	151	36.443
	5795	159	36.381

Mode: 802.11ac(VHT80)			99% Bandwidth (MHz)
Mode	Frequency (MHz)	Channel	
UNII3	5775	155	75.668

[ANT2]

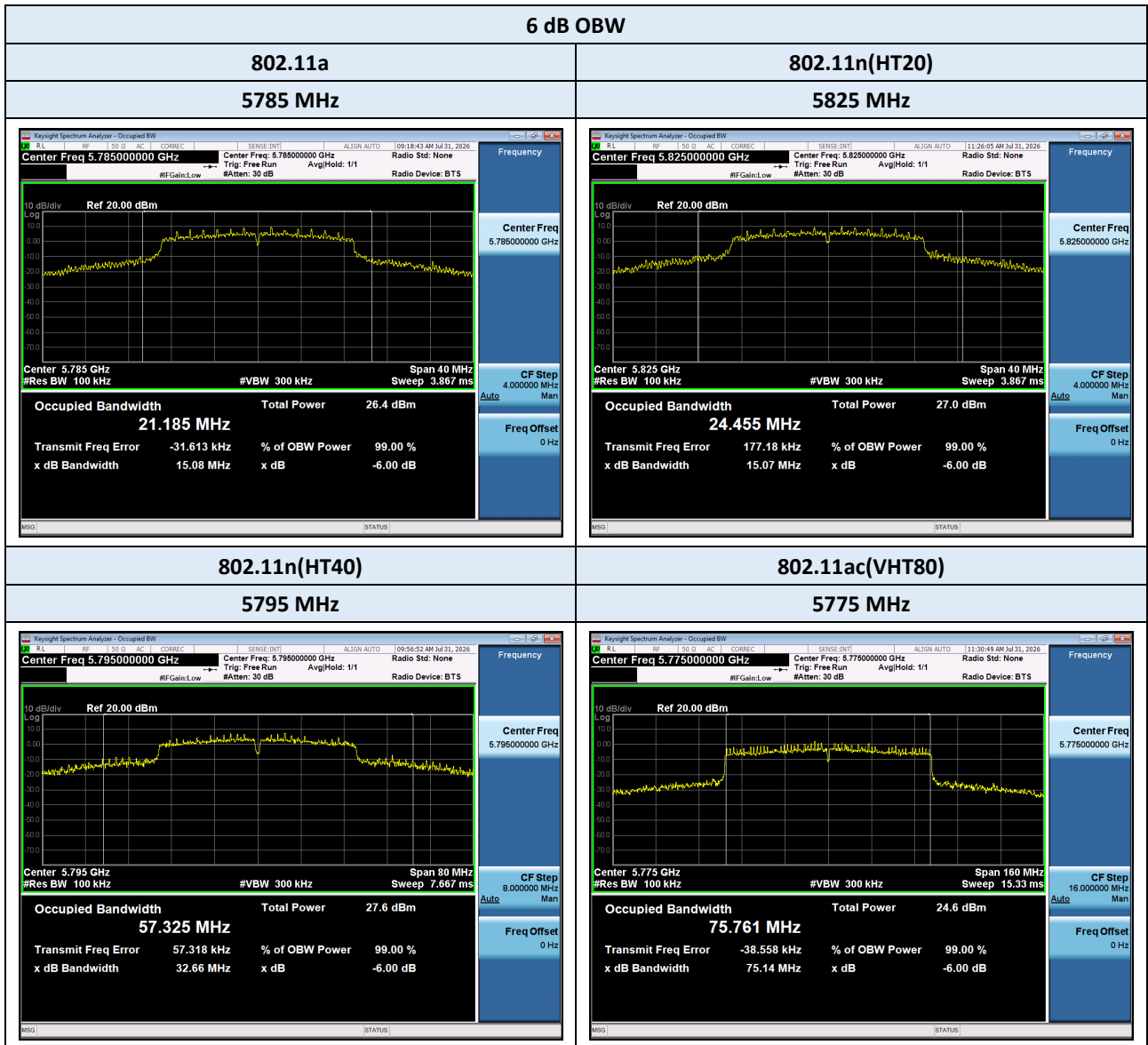
Mode: 802.11a			99% Bandwidth (MHz)
Band	Frequency (MHz)	Channel	
UNII3	5745	149	20.618
	5785	157	21.133
	5825	165	20.811

Mode: 802.11n(HT20)			99% Bandwidth (MHz)
Band	Frequency (MHz)	Channel	
UNII3	5745	149	24.388
	5785	157	24.978
	5825	165	25.609

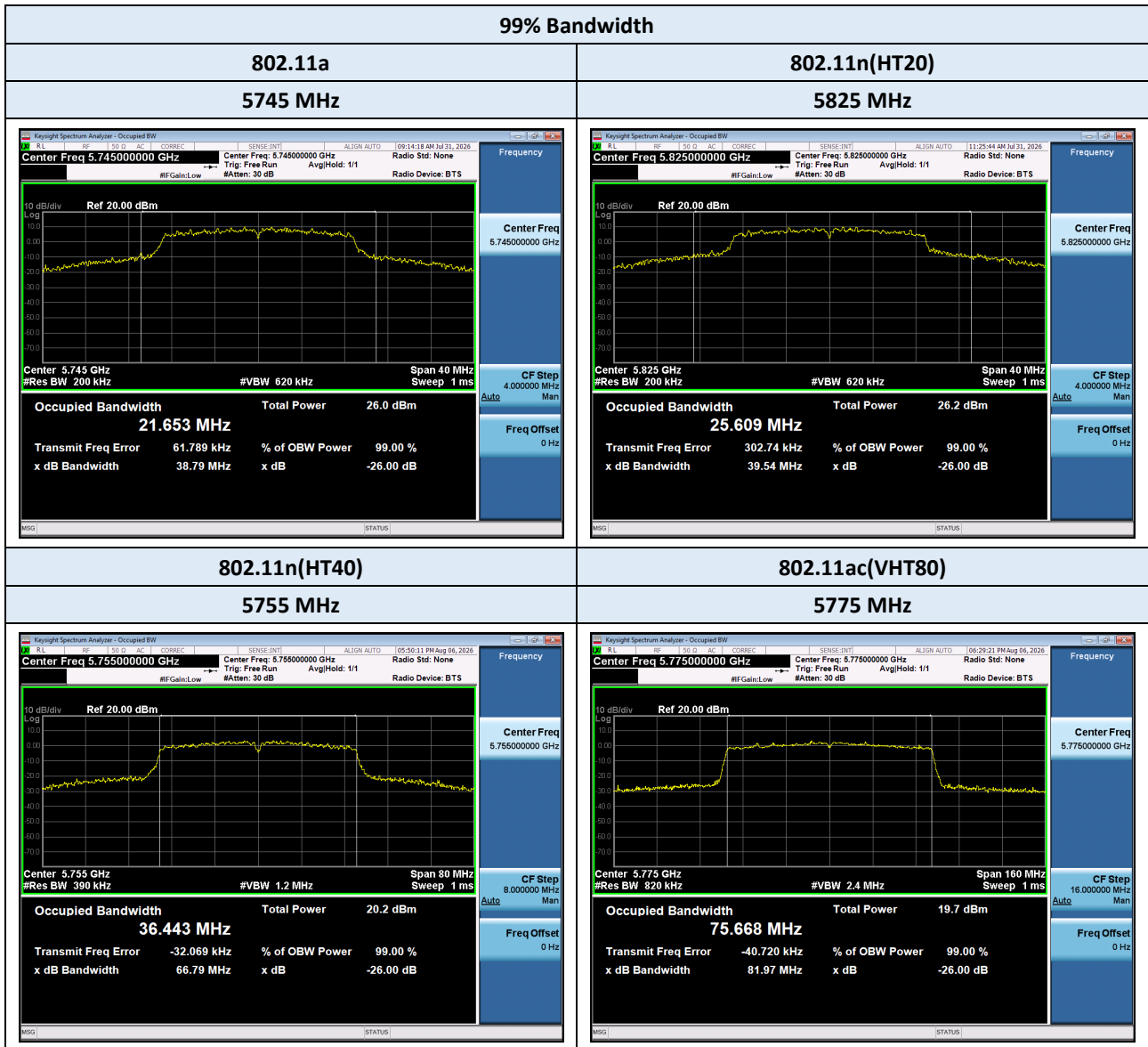
Mode: 802.11n(HT40)			99% Bandwidth (MHz)
Band	Frequency (MHz)	Channel	
UNII3	5755	151	36.229
	5795	159	36.282

Mode: 802.11ac(VHT80)			99% Bandwidth (MHz)
Mode	Frequency (MHz)	Channel	
UNII3	5775	155	75.827

TEST PLOTS



TEST PLOTS



Note:

1. To simplify the report, attached plots were the worst-case bandwidth.

9.4 OUTPUT POWER

[ANT1]

Mode: 802.11a				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel	Data Rate	Conducted Power	EIRP		
UNII1	5180	36	6 Mbps	15.56	20.01	24.00	22.55 e.i.r.p
	5200	40	6 Mbps	15.31	19.76	24.00	22.55 e.i.r.p
	5240	48	6 Mbps	15.67	20.12	24.00	22.52 e.i.r.p
UNII3	5745	149	6 Mbps	18.70	-	30.00	30.00
	5785	157	6 Mbps	18.86	-	30.00	30.00
	5825	165	6 Mbps	18.95	-	30.00	30.00

Mode: 802.11n(HT20)				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel		Conducted Power	EIRP		
UNII1	5180	36		11.05	15.50	24.00	22.46 e.i.r.p
	5200	40		10.79	15.24	24.00	22.46 e.i.r.p
	5240	48		11.07	15.52	24.00	22.46 e.i.r.p
UNII3	5745	149		19.12	-	30.00	30.00
	5785	157		19.17	-	30.00	30.00
	5825	165		19.29	-	30.00	30.00

Mode: 802.11n(HT40)				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel		Conducted Power	EIRP		
UNII1	5190	38		14.20	18.65	24.00	23 e.i.r.p
	5230	46		14.35	18.80	24.00	23 e.i.r.p
UNII3	5755	151		19.72	-	30.00	30.00
	5795	159		19.72	-	30.00	30.00

Mode: 802.11ac(VHT80)				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel		Conducted Power	EIRP		
UNII1	5210	42		13.41	17.86	24.00	23 e.i.r.p
UNII3	5775	155		16.31	-	30.00	30.00

Note:

1. ISED limit: MIN [10 log(200 mW = 23.01 dBm), 10+10log(99% Bandwidth)] for UNII1
2. Directional Antenna Gain: 4.45 dBi
3. EIRP = Conducted Power + Directional Antenna Gain
3. Duty factor is not applied since the duty cycle is 100 %.

[ANT2]

Mode: 802.11a				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel	Date Rate	Conducted Power	EIRP		
UNII1	5180	36	MCS0	16.82	20.51	24.00	22.46 e.i.r.p
	5200	40	MCS0	16.78	20.47	24.00	22.46 e.i.r.p
	5240	48	MCS0	16.77	20.46	24.00	22.46 e.i.r.p
UNII3	5745	149	MCS0	18.51	-	30.00	30.00
	5785	157	MCS0	18.74	-	30.00	30.00
	5825	165	MCS0	18.98	-	30.00	30.00

Mode: 802.11n(HT20)				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel		Conducted Power	EIRP		
UNII1	5180	36		11.44	15.13	24.00	22.46 e.i.r.p
	5200	40		11.48	15.17	24.00	22.46 e.i.r.p
	5240	48		11.54	15.23	24.00	22.46 e.i.r.p
UNII3	5745	149		18.87	-	30.00	30.00
	5785	157		18.98	-	30.00	30.00
	5825	165		19.29	-	30.00	30.00

Mode: 802.11n(HT40)				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel		Conducted Power	EIRP		
UNII1	5190	38		14.21	17.90	24.00	23 e.i.r.p
	5230	46		14.24	17.93	24.00	23 e.i.r.p
UNII3	5755	151		19.70	-	30.00	30.00
	5795	159		19.80	-	30.00	30.00

Mode: 802.11ac(VHT80)				Test Result(dBm)		FCC Limit (dBm)	ISED Limit ⁽¹⁾ (dBm)
Band	Frequency (MHz)	Channel		Conducted Power	EIRP		
UNII1	5210	42		13.43	17.12	24.00	23 e.i.r.p
UNII3	5775	155		16.01	-	30.00	30.00

Note:

1. ISED limit: MIN [10 log(200 mW = 23.01 dBm), 10+10log(99% Bandwidth)] for UNII1
2. Directional Antenna Gain: 3.69 dBi
3. EIRP = Conducted Power + Directional Antenna Gain
3. Duty factor is not applied since the duty cycle is 100 %.

9.5 POWER SPECTRAL DENSITY

[ANT1]

Mode: 802.11a				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel	Data Rate	Total PSD ⁽¹⁾	Max EIRP		
UNII1	5180	36	MCS0	5.102	9.552	11.00	10 e.i.r.p
	5200	40	MCS0	5.112	9.562	11.00	10 e.i.r.p
	5240	48	MCS0	5.296	9.746	11.00	10 e.i.r.p
UNII3	5745	149	MCS0	5.525	-	30 dBm/500 kHz	30 dBm/500 kHz
	5785	157	MCS0	5.674	-	30 dBm/500 kHz	30 dBm/500 kHz
	5825	165	MCS0	5.921	-	30 dBm/500 kHz	30 dBm/500 kHz

Mode: 802.11n(HT20)				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel		Total PSD ⁽¹⁾	Max EIRP		
UNII1	5180	36		0.758	5.208	11.00	10 e.i.r.p
	5200	40		0.493	4.943	11.00	10 e.i.r.p
	5240	48		0.778	5.228	11.00	10 e.i.r.p
UNII3	5745	149		6.017	-	30 dBm/500 kHz	30 dBm/500 kHz
	5785	157		6.027	-	30 dBm/500 kHz	30 dBm/500 kHz
	5825	165		6.385	-	30 dBm/500 kHz	30 dBm/500 kHz

Mode: 802.11n(HT40)				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel		Total PSD ⁽¹⁾	Max EIRP		
UNII1	5190	38		1.017	5.467	11.00	10 e.i.r.p
	5230	46		1.128	5.578	11.00	10 e.i.r.p
UNII3	5755	151		3.483	-	30 dBm/500 kHz	30 dBm/500 kHz
	5795	159		3.576	-	30 dBm/500 kHz	30 dBm/500 kHz

Mode: 802.11ac(VHT80)				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel		Total PSD ⁽¹⁾	Max EIRP		
UNII1	5210	42		-3.087	-1.363	11.00	10 e.i.r.p
UNII3	5775	155		-2.437	-	30 dBm/500 kHz	30 dBm/500 kHz

Note:

1. Duty factor is not applied since the duty cycle is 100 %.
2. Directional Antenna Gain = 4.45 dBi
3. Max EIRP = Total PSD + Directional Antenna Gain

[ANT2]

Mode: 802.11a				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel	Data Rate	Total PSD ⁽¹⁾	Max EIRP		
UNII1	5180	36	MCS0	6.621	9.981	11.00	10 e.i.r.p
	5200	40	MCS0	6.436	9.796	11.00	10 e.i.r.p
	5240	48	MCS0	6.405	9.765	11.00	10 e.i.r.p
UNII3	5745	149	MCS0	5.534		30 dBm/500 kHz	30 dBm/500 kHz
	5785	157	MCS0	6.085		30 dBm/500 kHz	30 dBm/500 kHz
	5825	165	MCS0	5.873		30 dBm/500 kHz	30 dBm/500 kHz

Mode: 802.11n(HT20)				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel		Total PSD ⁽¹⁾	Max EIRP		
UNII1	5180	36		1.279	4.969	11.00	10 e.i.r.p
	5200	40		1.279	4.969	11.00	10 e.i.r.p
	5240	48		1.237	4.927	11.00	10 e.i.r.p
UNII3	5745	149		6.063	-	30 dBm/500 kHz	30 dBm/500 kHz
	5785	157		5.859	-	30 dBm/500 kHz	30 dBm/500 kHz
	5825	165		6.443	-	30 dBm/500 kHz	30 dBm/500 kHz

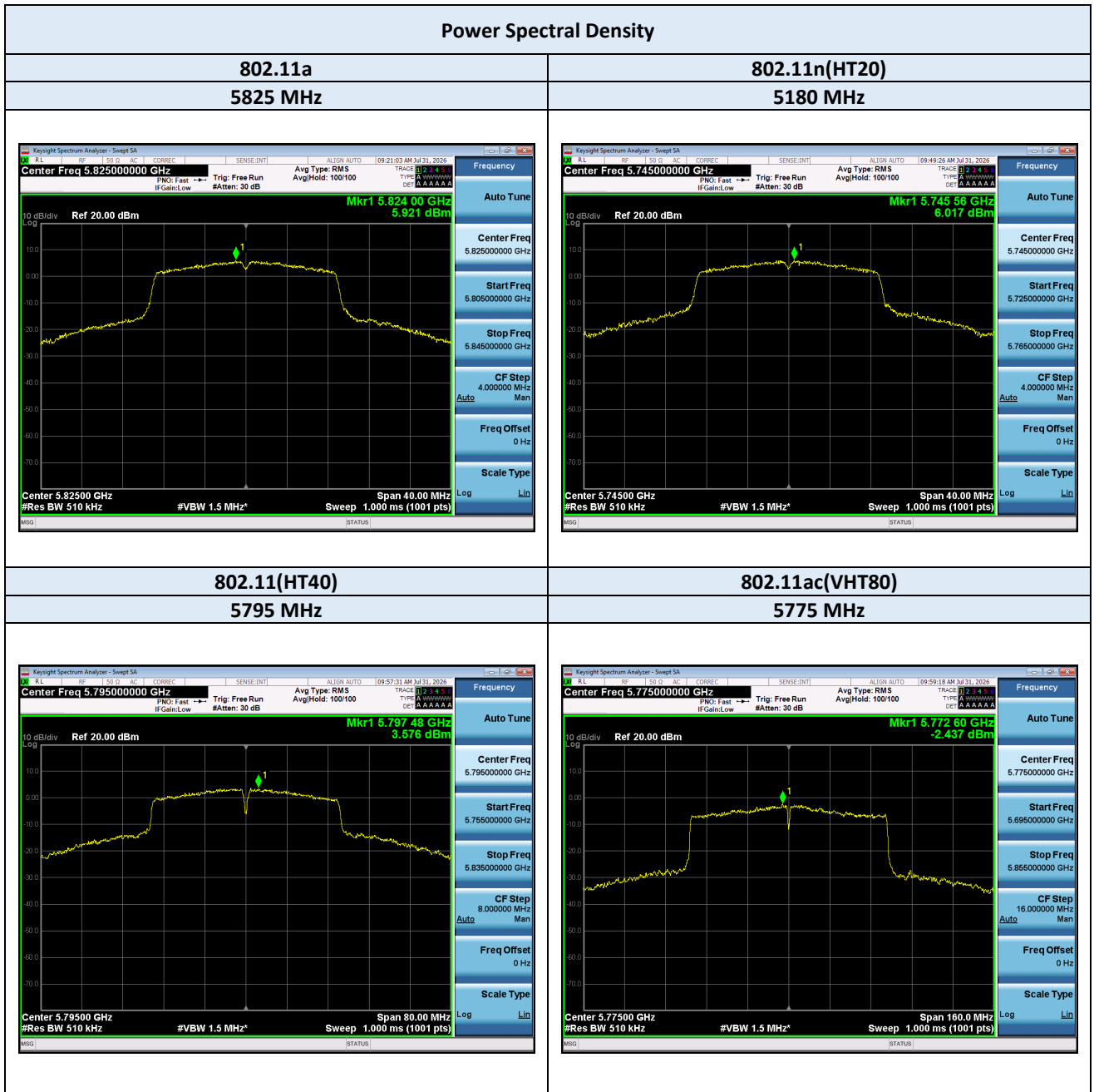
Mode: 802.11n(HT40)				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel		Total PSD ⁽¹⁾	Max EIRP		
UNII1	5190	38		0.818	4.508	11.00	10 e.i.r.p
	5230	46		0.969	4.659	11.00	10 e.i.r.p
UNII3	5755	151		3.779	-	30 dBm/500 kHz	30 dBm/500 kHz
	5795	159		3.857	-	30 dBm/500 kHz	30 dBm/500 kHz

Mode: 802.11ac(VHT80)				Test Result(dBm/MHz)		FCC Limit (dBm/MHz)	ISED EIRP Limit (dBm/MHz)
Band	Frequency (MHz)	Channel		Total PSD ⁽¹⁾	Max EIRP		
UNII1	5210	42		-3.038	0.652	11.00	10 e.i.r.p
UNII3	5775	155		-2.861	-	30 dBm/500 kHz	30 dBm/500 kHz

Note:

1. Duty factor is not applied since the duty cycle is 100 %.
2. Directional Antenna Gain = 3.69 dBi
3. Max EIRP = Total PSD + Directional Antenna Gain

TEST PLOTS(ANT1)



Note:

1. The worst plots are reported for test results

TEST PLOTS(ANT2)



Note:

1. The worst plots are reported for test results

9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range: 9 kHz ~ 30 MHz

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. The Measured value of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
2. Distance extrapolation factor = $40\log(\text{specific distance} / \text{test distance})$ (dB)
3. Limit line = specific Limits (dBuV) + Distance extrapolation factor

Frequency Range: Below 1 GHz

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. ¹⁾ (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
42.304	V	45.22	18.66	26.56	40.00	13.44	QPK
42.387	H	51.55	18.60	32.95	40.00	7.05	QPK
390.009	H	57.12	22.58	34.54	46.00	11.46	QPK
479.564	H	52.44	25.21	27.23	46.00	18.77	QPK

Note(s):

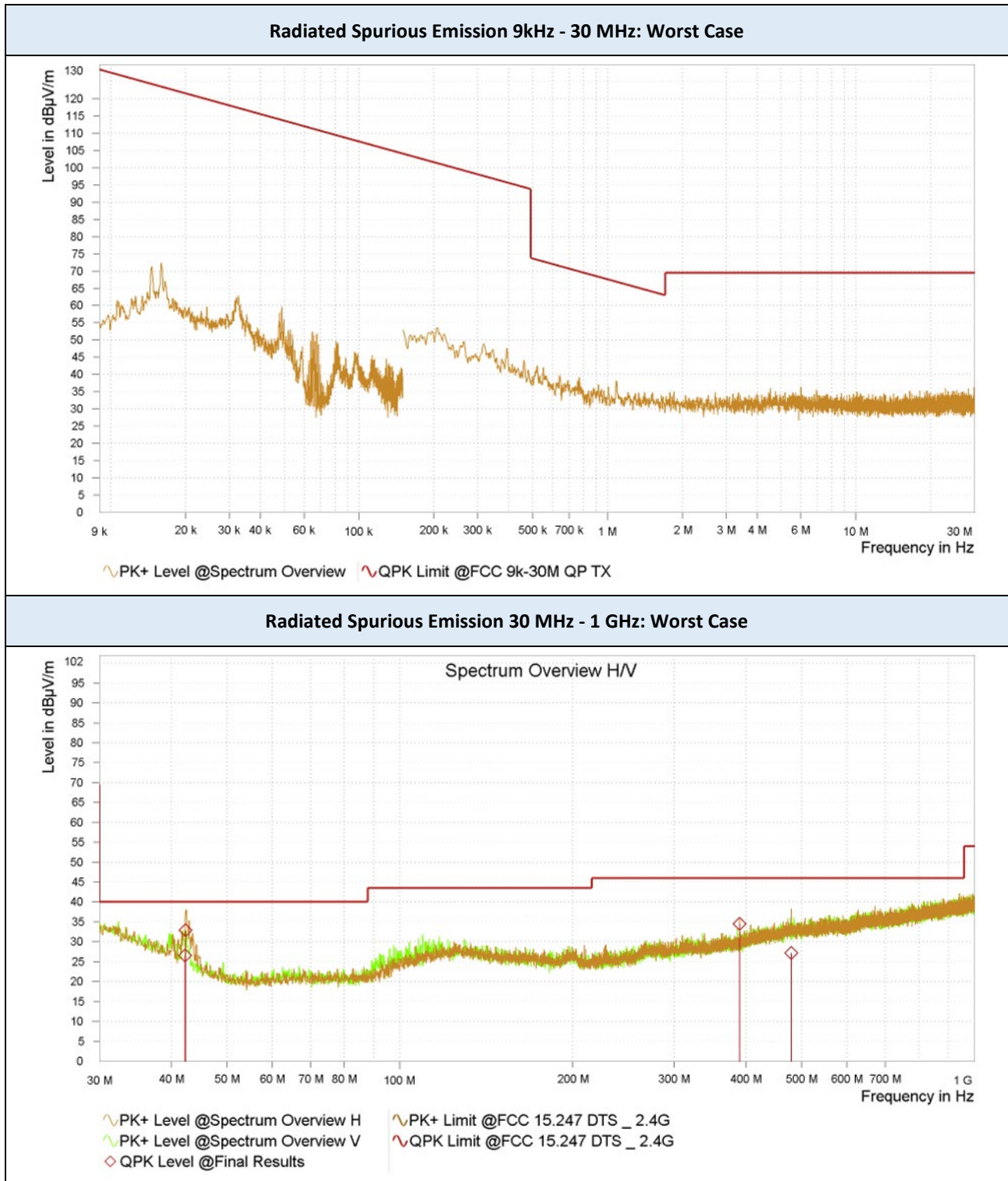
1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.

Frequency Range: Above 1 GHz

Band	Test Mode	Test Frequency (MHz)	Frequency (MHz)	PK Level	PK Limit	PK Margin	AV Level	AV Limit	AV Margin	Factor	Polarization
UNIII1	802.11a	5180	10356.70	57.26	68.2	10.94	44.76	54	9.24	-7.31	V
			10362.80	50.77	68.2	17.43	38.59	54	15.41	-7.34	H
			15533.30	49.78	74	24.22	38.24	54	15.76	-5.13	V
			15542.20	50.03	74	23.97	37.97	54	16.03	-5.30	H
		5200	10,397.10	60.76	68.2	7.44	47.48	54	6.52	-7.41	V
			10,398.80	55.3	68.2	12.9	43.12	54	10.88	-7.44	H
			15,598.00	49.94	74	24.06	38.35	54	15.65	-5.35	H
			15,598.40	51.85	74	22.15	38.93	54	15.07	-5.1	V
		5240	10,476.60	62.06	68.2	6.14	50.23	54	3.77	-7.19	V
			10,478.20	56.86	68.2	11.34	44.52	54	9.48	-7.24	H
			15,710.80	50.21	74	23.79	38.58	54	15.42	-5.11	H
			15,717.90	50.72	74	23.28	39.06	54	14.94	-4.83	V
	802.11n (HT20)	5180	10358.90	55.99	68.2	12.21	43.99	54	10.01	-7.37	V
			10360.00	57.56	68.2	10.64	46.14	54	7.86	-7.38	H
			15532.40	49.95	74	24.05	38.05	54	15.95	-5.31	H
			15,543.00	51.04	74	22.96	38.88	54	15.12	-5.11	V
		5200	10,396.80	58.78	68.2	9.42	46.25	54	7.75	-7.4	H
			10,400.20	62.58	68.2	5.62	49.95	54	4.05	-7.42	V
			15,531.40	49.58	74	24.42	38.11	54	15.89	-5.3	H
			15,547.00	50.47	74	23.53	38.16	54	15.84	-5.12	V
		5240	10,477.10	60.49	68.2	7.71	46.85	54	7.15	-7.23	H
			10,482.50	57.4	68.2	10.8	44.89	54	9.11	-7.2	V
			15,718.20	51.91	74	22.09	39.83	54	14.17	-4.84	V
			15,727.70	50.56	74	23.44	38.55	54	15.45	-5.21	H
	802.11n (HT40)	5190	10378.50	55.81	68.2	12.39	42.93	54	10.92	-7.35	H
			10382.70	60.91	68.2	7.29	47.29	54	6.56	-7.33	V
			15563.00	49.94	74	24.06	38.28	54	15.57	-5.3	H
			15,573.50	50.46	74	23.54	38.96	54	14.89	-5.14	V
		5230	10,458.80	55.14	68.2	13.06	41.51	54	12.34	-7.17	H
			10,459.50	58.91	68.2	9.29	46.91	54	6.94	-7.14	V
			15,686.40	50.06	74	23.94	38.58	54	15.27	-5.11	H
			15,686.40	50.77	74	23.23	38.84	54	15.01	-4.91	V
	802.11ac (VHT80)	5210	10,428.70	54.29	68.2	13.91	40.96	54	12.73	-7.25	H
			10,438.80	56.55	68.2	11.65	44.16	54	9.53	-7.29	V
			15,631.70	50.28	74	23.72	38.38	54	15.31	-5.11	V
			15,632.80	50.06	74	23.94	38.18	54	15.51	-5.3	H

Band	Test Mode	Test Frequency (MHz)	Frequency (MHz)	PK Level	PK Limit	PK Margin	AV Level	AV Limit	AV Margin	Factor	Polarization
UNII3	802.11a	5745	11486.70	61.76	74	12.24	49.24	54	4.76	-6.57	V
			11486.70	64.39	74	9.61	51.99	54	2.01	-6.61	H
			17242.70	52.23	68.2	15.97	39.47	54	14.53	-6.11	V
			17,244.40	50.56	68.2	17.64	38.44	54	15.56	-6.34	H
		5785	11,566.80	64.36	74	9.64	51.82	54	2.18	-6.96	H
			11,571.80	65.26	74	8.74	52.89	54	1.11	-6.81	V
			17,356.40	50.4	68.2	17.8	38.4	54	15.6	-6.1	H
			17,359.80	50.3	68.2	17.9	38.72	54	15.28	-5.82	V
		5825	11,646.70	55.44	74	18.56	43.79	54	10.21	-7.1	H
			11,646.70	64.35	74	9.65	52.56	54	1.44	-7.05	V
			17,468.20	50.32	68.2	17.88	38.51	54	15.49	-5.93	H
			17,478.60	50.96	68.2	17.24	39.23	54	14.77	-5.59	V
	802.11n (HT20)	5745	11486.70	64.86	74	9.14	52.67	54	1.33	-6.61	H
			11486.70	65.76	74	8.24	52.94	54	1.06	-6.57	V
			17234.80	50.92	68.2	17.28	38.74	54	15.26	-6.03	V
			17,241.60	50.09	68.2	18.11	38.42	54	15.58	-6.33	H
		5785	11,566.70	61.05	74	12.95	49.12	54	4.88	-6.96	H
			11,566.80	64.86	74	9.14	52.31	54	1.69	-6.86	V
			17,347.00	50.62	68.2	17.58	38.53	54	15.47	-5.83	V
			17,355.20	50.66	68.2	17.54	38.28	54	15.72	-6.09	H
		5825	11,646.70	62.72	74	11.28	50.73	54	3.27	-7.05	V
			11,651.30	58.98	74	15.02	46.29	54	7.71	-7.06	H
			17,472.90	50.63	68.2	17.57	38.87	54	15.13	-5.62	V
			17,476.60	51.1	68.2	17.1	38.45	54	15.55	-5.9	H
	802.11n (HT40)	5755	11508.70	63.78	74	10.22	51.1	54	2.75	-6.65	V
			11509.50	62.88	74	11.12	50.83	54	3.02	-6.7	H
			17264.60	50.43	68.2	17.77	38.65	54	15.20	-5.97	V
			17,268.20	50.23	68.2	17.97	38.46	54	15.39	-6.2	H
		5795	11,588.80	60.41	74	13.59	48.87	54	4.98	-7	H
			11,589.50	63.74	74	10.26	51.84	54	2.01	-6.9	V
			17,370.70	49.65	68.2	18.55	38.26	54	15.59	-6.13	H
			17,382.80	51.18	68.2	17.02	39.1	54	14.75	-5.94	V
	802.11ac (VHT80)	5775	11,564.10	60.42	74	13.58	46.79	54	6.90	-6.96	H
			11,568.80	60.18	74	13.82	47.58	54	6.11	-6.88	V
			17,318.60	49.97	68.2	18.23	38.67	54	15.02	-5.81	V
			17,327.00	50.16	68.2	18.04	38.36	54	15.33	-5.99	H

■ TEST PLOTS (TX Plot)

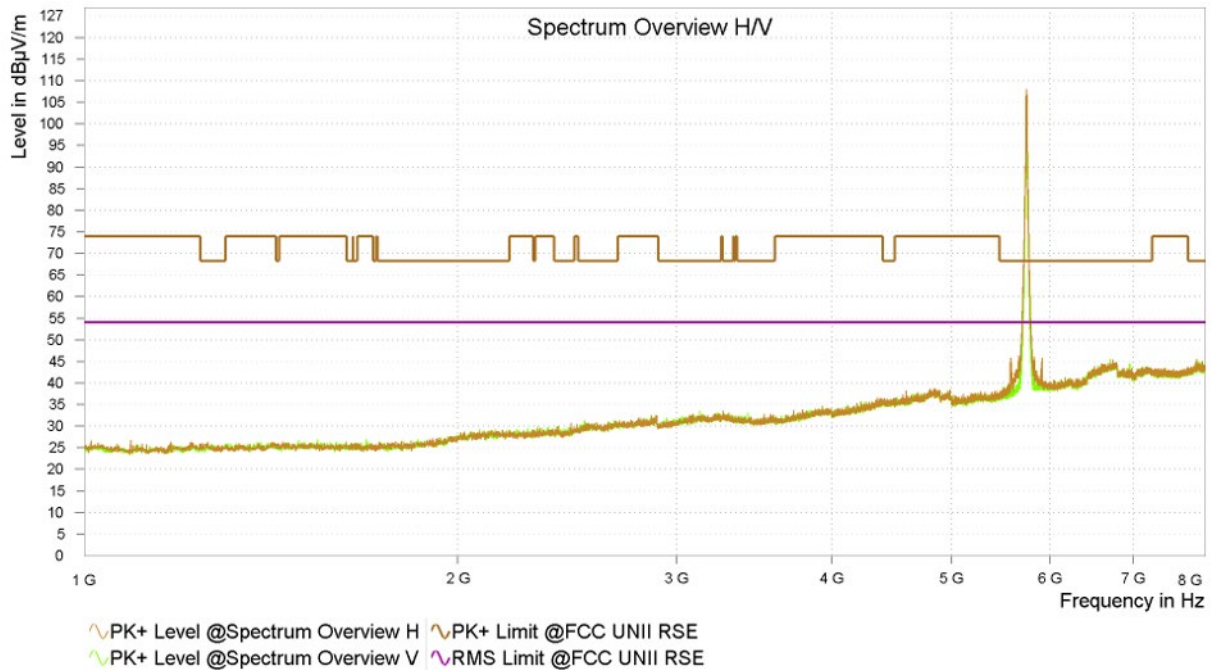


Note:

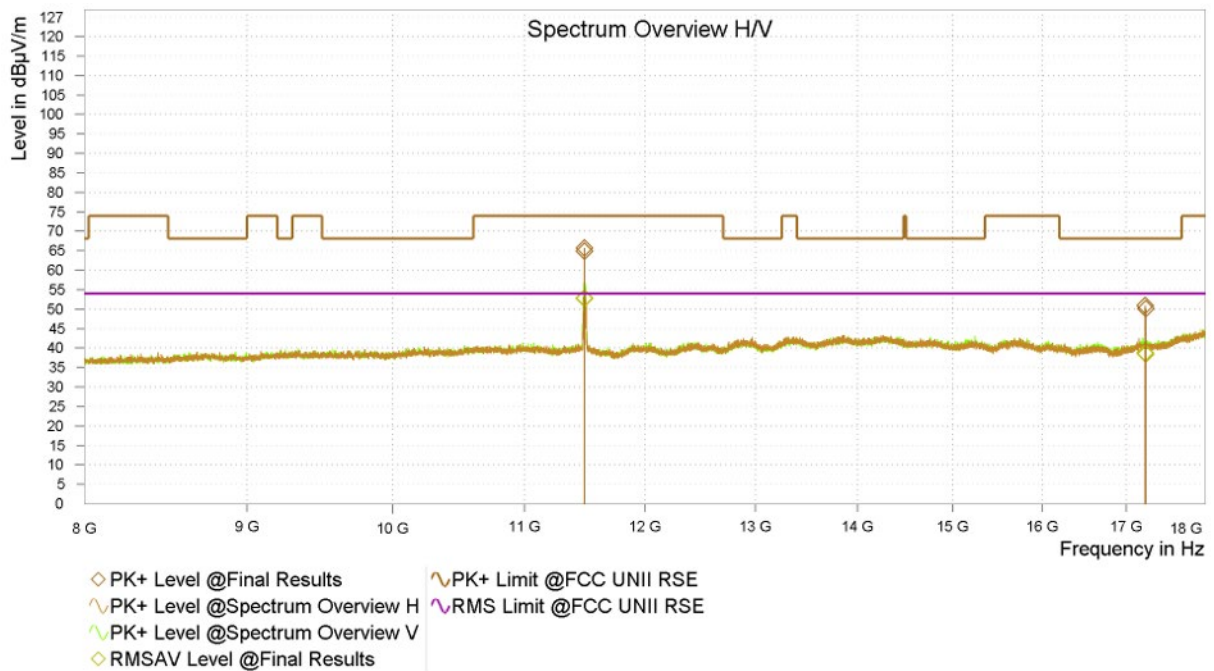
1. The plots include all used factor values for cables, antenna, preamplifier, etc.
2. All modes of operation were investigated, and the worst-case configuration results are reported in this section.

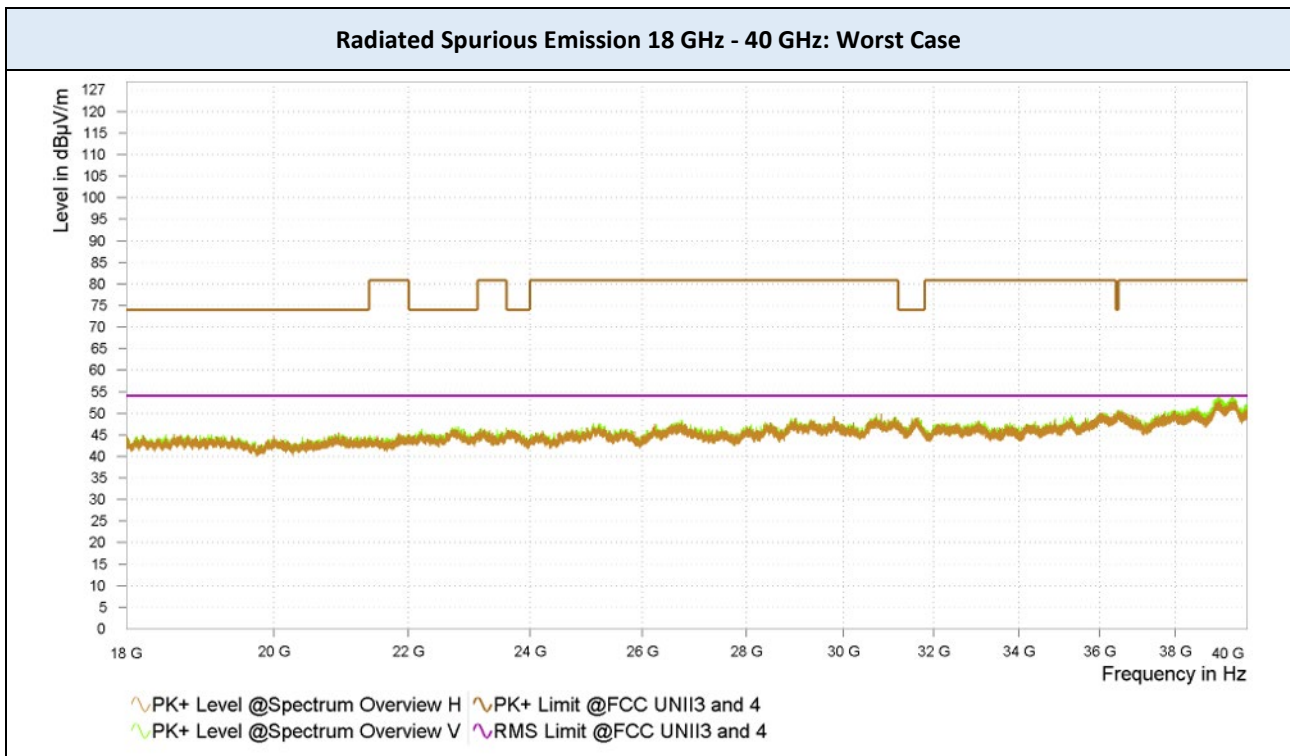
TEST PLOTS TX Plot)

Radiated Spurious Emission 1 GHz - 8 GHz: 802.11n HT20 (CH 149)



Radiated Spurious Emission 8 GHz - 18 GHz: 802.11n HT20 (CH 149)

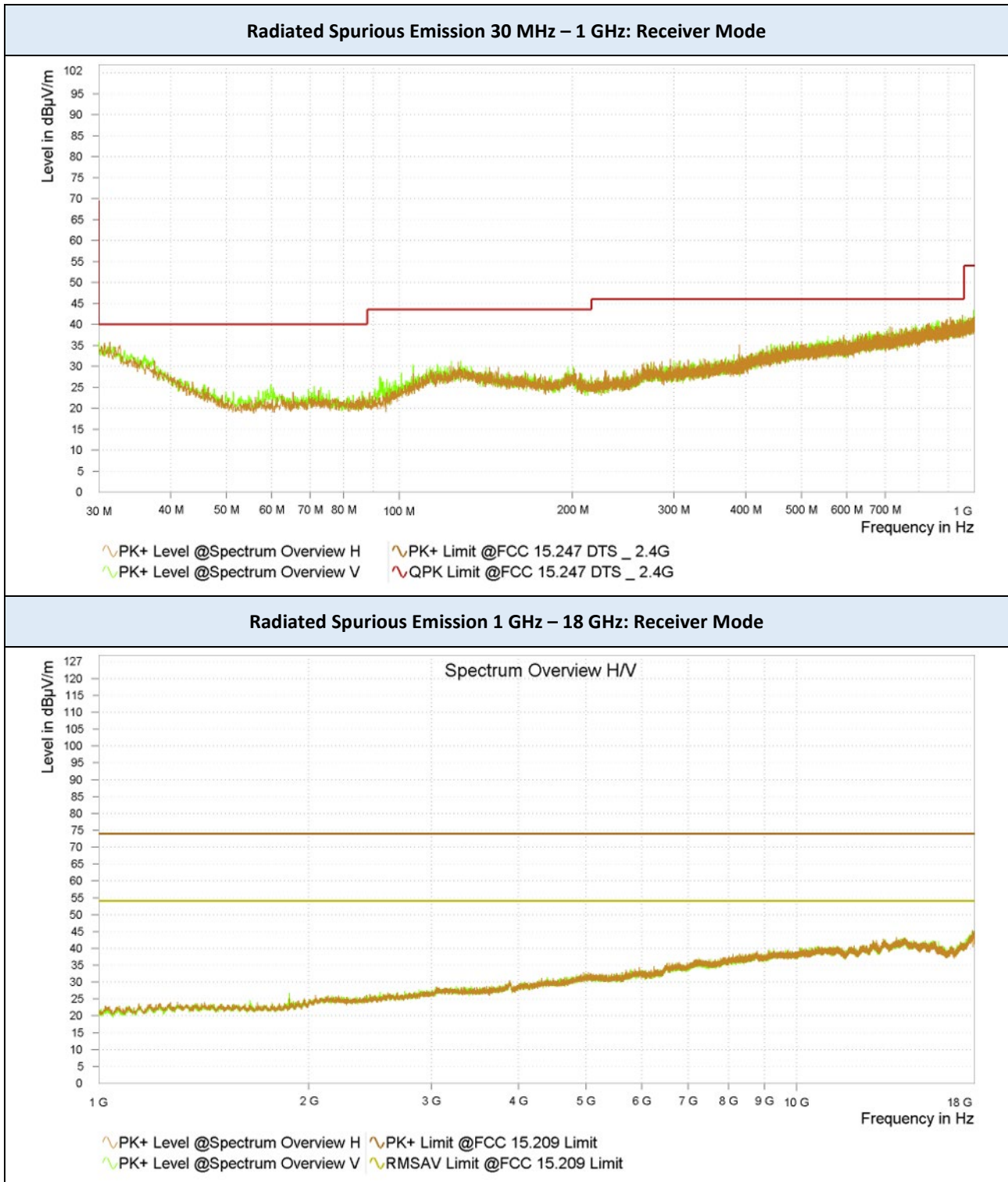




Note:

1. The plots include all used factor values for cables, antenna, preamplifier, etc.
2. All modes of operation were investigated, and the worst-case configuration results are reported in this section.

TEST PLOTS (RX Plot)



9.7 RADIATED RESTRICTED BAND EDGES

[ANT1]

Band	Test Mode	Test Frequency (MHz)	Frequency (MHz)	PK Level	PK Limit	PK Margin	AV Level	AV Limit	AV Margin	Factor	Polarization
UNII1 Low Band Edge	802.11a	5180	5149.76	69.01	74	4.99	52.54	54	1.46	0.32	H
			5149.72	60.62	74	13.38	45.01	54	8.99	0.28	V
	802.11n (HT20)	5180	5149.75	68.49	74	5.51	52.75	54	1.25	0.32	H
			5148.77	64.62	74	9.38	47.66	54	6.34	0.34	V
	802.11n (HT40)	5190	5149.73	61.48	74	12.52	47.36	54	6.49	0.32	H
			5143.68	58.61	74	15.39	39.67	54	14.18	0.33	V
	802.11ac (VHT80)	5210	5148.71	63.77	74	10.23	52.07	54	1.62	0.38	H
			5149.06	56.88	74	17.12	44.63	54	9.06	0.33	V

Band	Test Mode	Test Frequency (MHz)	Frequency (MHz)	PK Level	PK Limit	PK Margin	AV Level	AV Limit	AV Margin	Factor	Polarization
UNII3 Low Band Edge	802.11a	5745	5636.21	54.15	68.20	14.05	-	-	-	1.10	H
			5638.04	49.77	68.20	18.43	-	-	-	0.98	V
	802.11n (HT20)	5745	5607.51	52.42	68.20	15.78	-	-	-	0.85	H
			5641.46	50.08	68.20	18.12	-	-	-	1.01	V
	802.11n (HT40)	5755	5645.56	62.54	68.20	5.66	-	-	-	1.20	H
			5648.92	55.62	68.20	12.58	-	-	-	1.06	V
	802.11ac (VHT80)	5775	5647.18	66.07	68.20	2.13	-	-	-	1.21	H
			5648.51	58.31	68.20	9.89	-	-	-	1.04	V
UNII3 High Band Edge	802.11a	5825	5943.39	51.56	68.20	16.64	-	-	-	2.77	H
			5935.69	51.51	68.20	16.69	-	-	-	2.64	V
	802.11n (HT20)	5825	5937.15	53.21	68.20	14.99	-	-	-	2.76	H
			5928.38	50.92	68.20	17.28	-	-	-	2.60	V
	802.11n (HT40)	5795	5946.84	53.99	68.20	14.21	-	-	-	2.74	H
			5952.20	51.30	68.20	16.90	-	-	-	2.60	V
	802.11ac (VHT80)	5775	5917.93	64.88	73.42	8.54	-	-	-	2.79	H
			5922.44	57.37	70.08	12.71	-	-	-	2.65	V

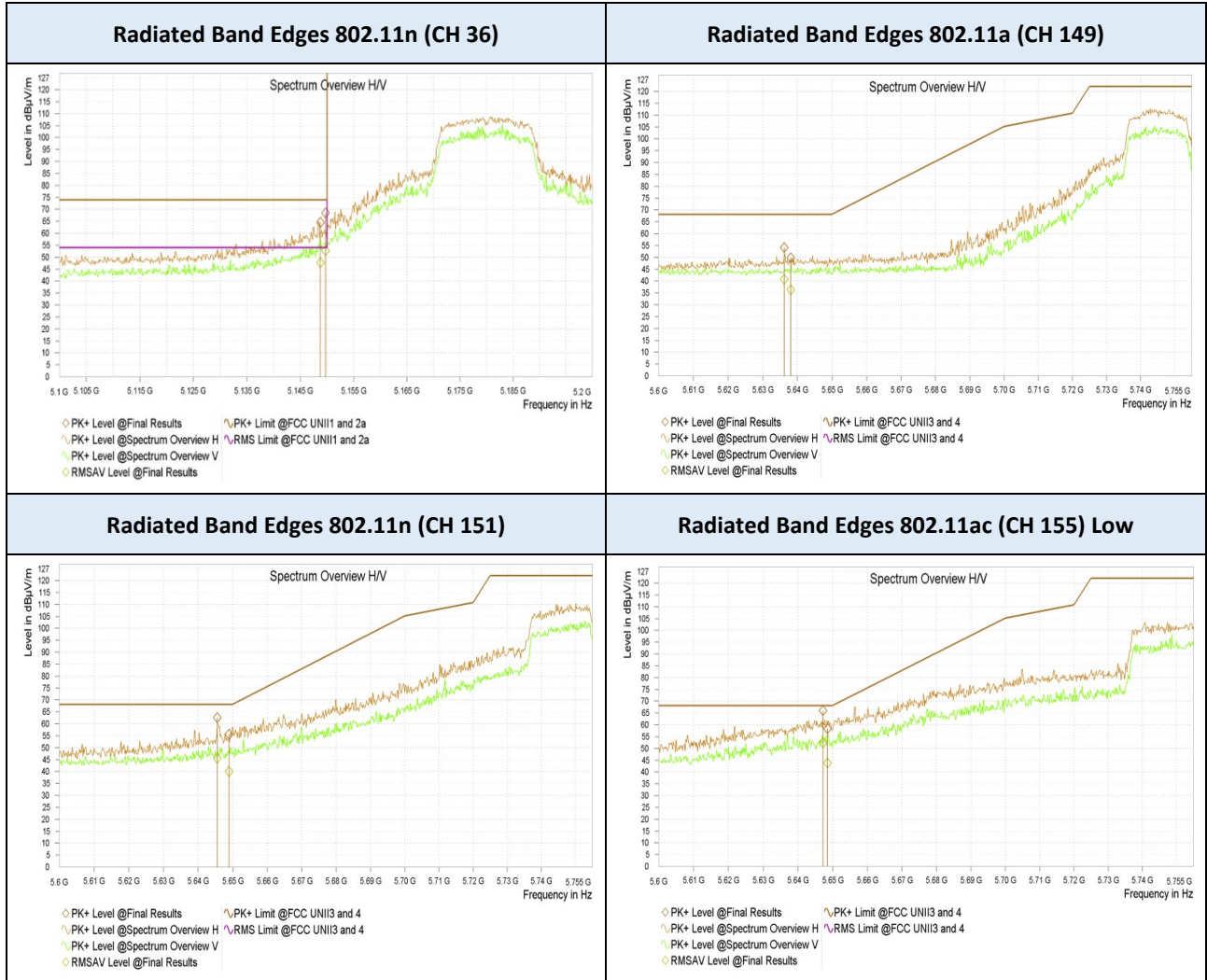
[ANT2]

Band	Test Mode	Test Frequency (MHz)	Frequency (MHz)	PK Level	PK Limit	PK Margin	AV Level	AV Limit	AV Margin	Factor	Polarization
UNII1 Low Band Edge	802.11a	5180	5149.72	69.57	74	4.43	52.86	54	1.14	0.32	H
			5149.83	65.74	74	8.26	48.83	54	5.17	0.27	V
	802.11n (HT20)	5180	5149.72	69.04	74	4.96	52.46	54	1.54	0.32	H
			5149.87	66.69	74	7.31	49.84	54	4.16	0.27	V
	802.11n (HT40)	5190	5149.94	64.38	74	9.62	47.44	54	6.41	0.30	H
			5147.97	60.95	74	13.05	42.45	54	11.40	0.33	V
	802.11ac (VHT80)	5210	5149.70	62.78	74	11.22	50.31	54	3.38	0.32	H
			5145.91	60.83	74	13.17	44.67	54	9.02	0.36	V

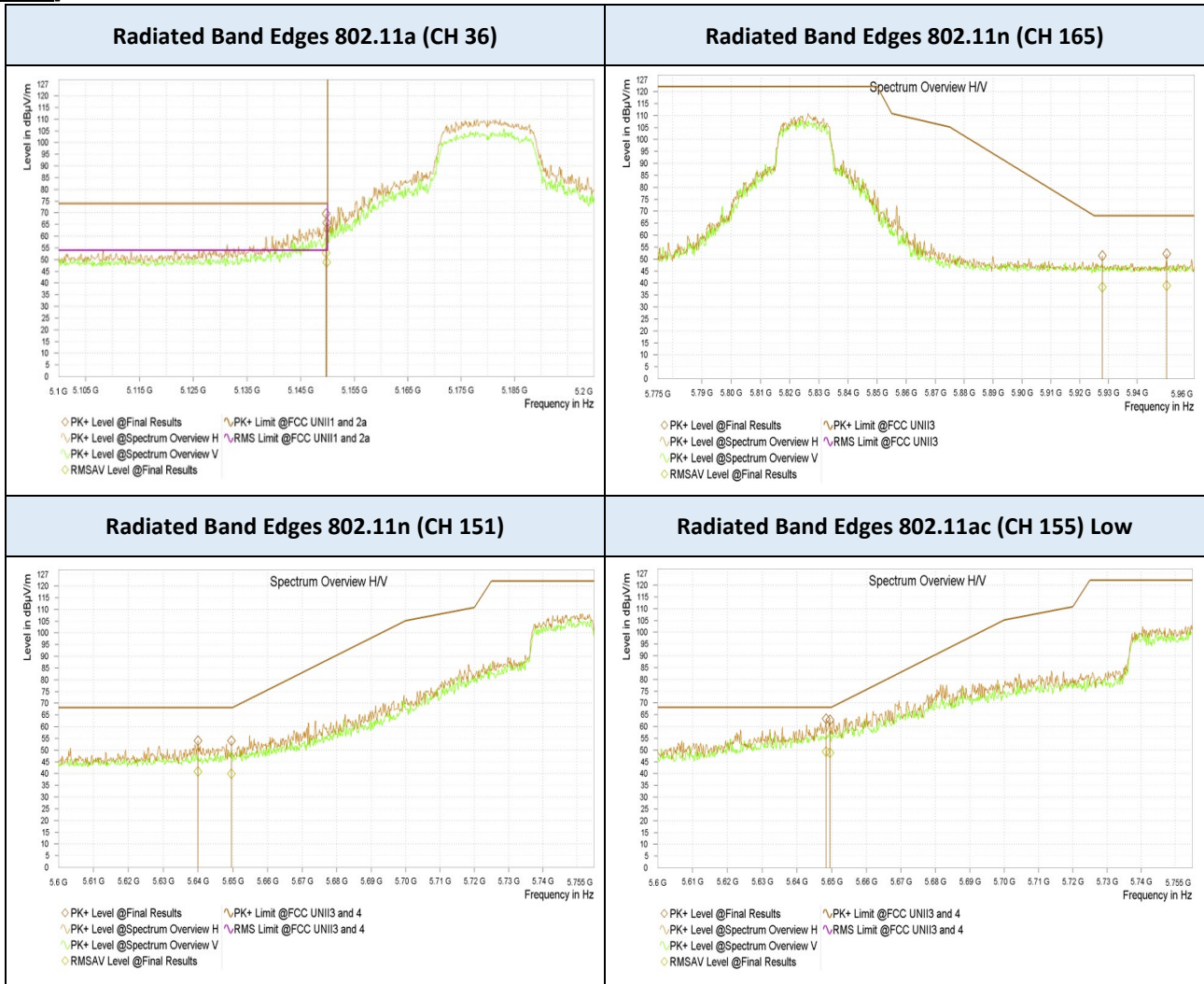
Band	Test Mode	Test Frequency (MHz)	Frequency (MHz)	PK Level	PK Limit	PK Margin	AV Level	AV Limit	AV Margin	Factor	Polarization
UNII3 Low Band Edge	802.11a	5745	5616.54	50.58	68.20	17.62	-	-	-	0.95	H
			5638.06	50.28	68.20	17.92	-	-	-	0.98	V
	802.11n (HT20)	5745	5649.04	52.04	68.20	16.16	-	-	-	1.21	H
			5629.55	49.81	68.20	18.39	-	-	-	0.90	V
	802.11n (HT40)	5755	5640.00	54.07	68.20	14.13	-	-	-	1.11	H
			5649.60	53.94	68.20	14.26	-	-	-	1.07	V
	802.11ac (VHT80)	5775	5648.37	63.34	68.20	4.86	-	-	-	1.18	H
			5649.51	62.74	68.20	5.46	-	-	-	1.07	V
UNII3 High Band Edge	802.11a	5825	5953.47	51.91	68.20	16.29	-	-	-	2.73	H
			5927.38	52.00	68.20	16.20	-	-	-	2.61	V
	802.11n (HT20)	5825	5950.41	52.23	68.20	15.97	-	-	-	2.71	H
			5927.91	51.39	68.20	16.81	-	-	-	2.60	V
	802.11n (HT40)	5795	5926.03	52.79	68.20	15.41	-	-	-	2.78	H
			5956.47	51.74	68.20	16.46	-	-	-	2.58	V
	802.11ac (VHT80)	5775	5923.80	58.55	69.08	10.53	-	-	-	2.80	H
			5925.14	55.80	68.20	12.40	-	-	-	2.64	V

TEST PLOTS

[Ant 1]



[Ant 2]



9.8 POWERLINE CONDUCTED EMISSIONS

Frequency (MHz)	Line	Reading (dBμV)		Corr. ¹⁾ (dB)	Level (dBμV)		Limit (dBμV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.166	N	26.5	17.4	9.6	36.1	27.0	65.1	55.1	29.0	28.1
0.259	N	25.3	15.8	9.6	34.9	25.4	61.5	51.5	26.6	26.1
0.307	N	23.9	14.7	9.6	33.5	24.3	60	50	26.5	25.7
0.437	N	22.8	13.1	9.6	32.4	22.7	57.1	47.1	24.7	24.4
13.561	N	27.2	17.2	10.2	37.4	27.4	60	50	22.6	22.6
17.896	N	26.6	19.3	10.3	36.9	29.6	60	50	23.1	20.4

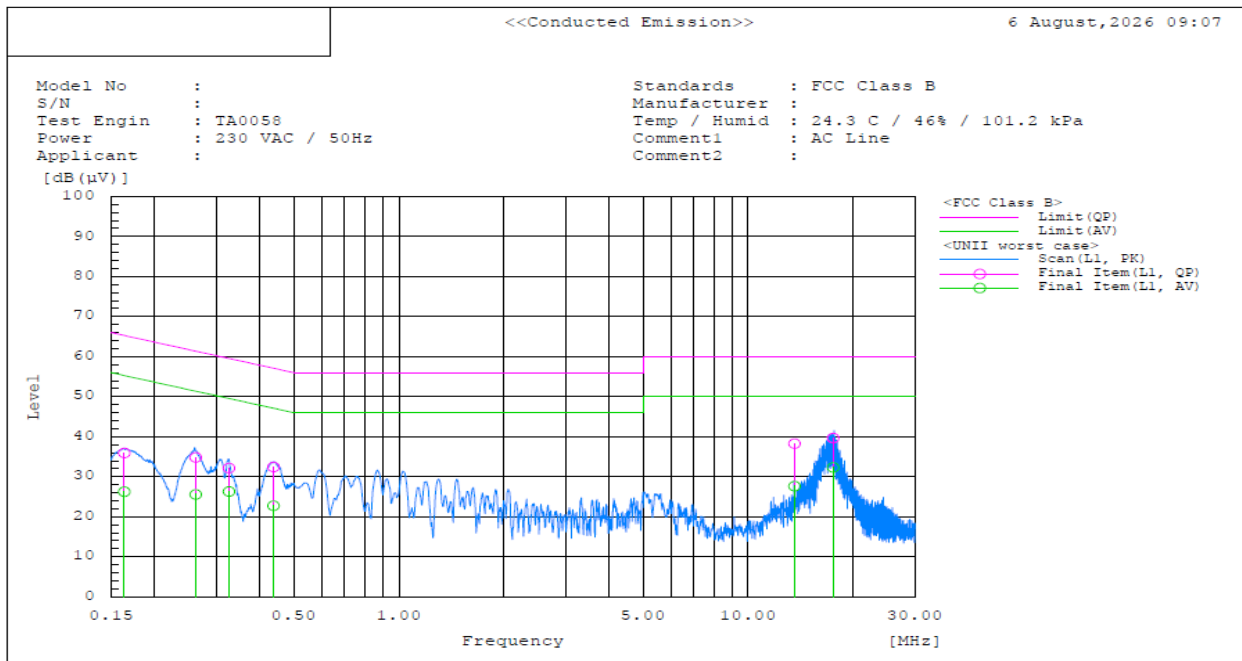
Frequency (MHz)	Line	Reading (dBμV)		Corr. ¹⁾ (dB)	Level (dBμV)		Limit (dBμV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.163	L1	26.4	16.7	9.6	36.0	26.3	65.3	55.3	29.3	29.0
0.262	L1	25.2	16.0	9.6	34.8	25.6	61.4	51.4	26.6	25.8
0.326	L1	22.6	16.8	9.6	32.2	26.4	59.6	49.6	27.4	23.2
0.437	L1	22.9	13.2	9.6	32.5	22.8	57.1	47.1	24.6	24.3
13.561	L1	28.1	17.5	10.2	38.3	27.7	60	50	21.7	22.3
17.506	L1	29.4	22.0	10.3	39.7	32.3	60	50	20.3	17.7

Note:

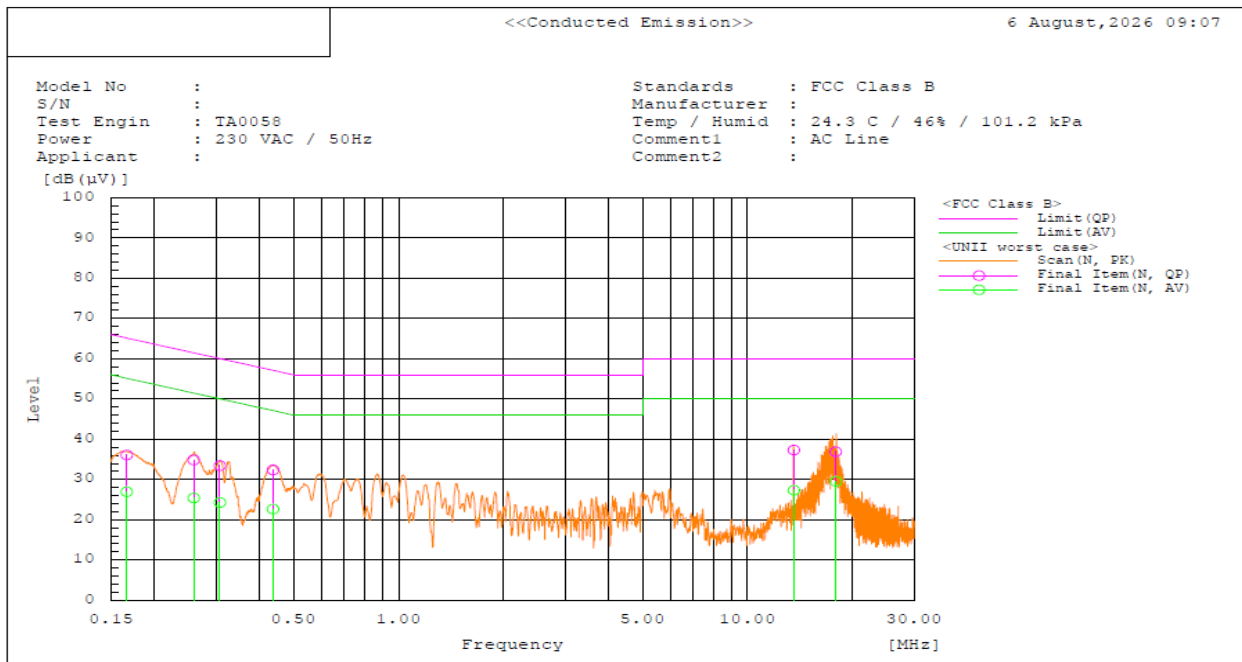
1. Quasi-peak(Final Result) = Reading Value + Correction Factor

■ TEST PLOTS

AC Line Conducted Emission (L1)



AC Line Conducted Emission (N)



10. LIST OF TEST EQUIPMENT

No.	Instrument	Model No.	Calibration Due (mm/dd/yy)	Manufacture	Serial No.
☒	Signal Analyzer (1 Hz ~ 44.0 GHz)	ESW44	08/05/2026	Rohde & Schwarz	103176
☒	Signal Analyzer (20 Hz ~ 26.5 GHz)	N9020A	10/09/2026	Keysight	MY53280148
☒	Attenuator (20 dB, DC ~ 26.5 GHz)	8493C 20 dB	10/14/2026	KEYSIGHT	9072
☒	Loop Antenna (0.009 ~ 30 MHz)	HLA 6121	03/03/2027	TESEQ	43964
☒	BI-LOG Antenna (30 MHz ~ 6 GHz)	JB6	02/27/2027	Sunol	A060916
☒	Horn Antenna (1 GHz ~ 18 GHz)	BBHA 9120 D	07/15/2027	Schwarzbeck	03023
☒	Horn Antenna (15 GHz ~ 40 GHz)	BBHA 9170	01/21/2027	Schwarzbeck	1342
☒	RF Switch Matrix System	HRSMS-VL	01/02/2027	HCT Ltd.	2-51-001
☒	Power Meter	OSP150+OSP-B157W8	06/26/2027	Rohde & Schwarz	100872
☒	EMI Test Receiver	ESR3	07/23/2027	Rohde & Schwarz	102363
☒	LISN	ENV216	08/28/2026	Rohde & Schwarz	101550
☒	Temperature & Humidity Chamber	SH-662	08/05/2026	ESPEC	93024017
☒	Test Software	R&S*ELEKTRA	-	Rohde & Schwarz	-

Note:

- 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