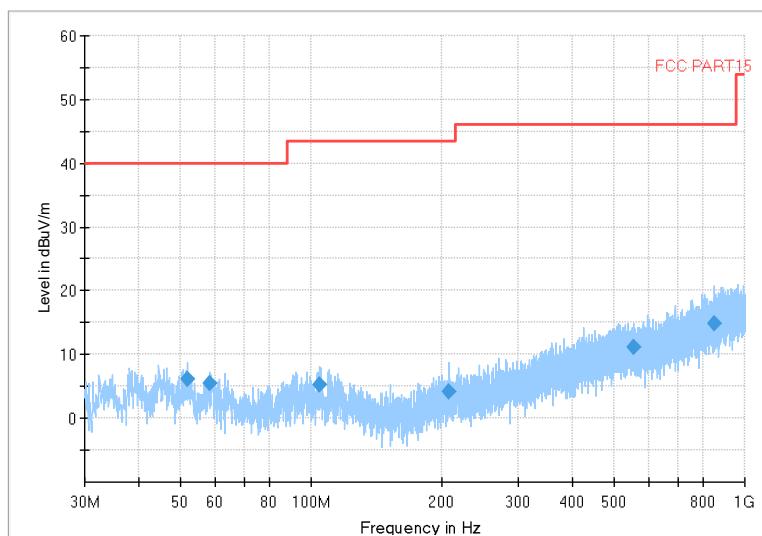


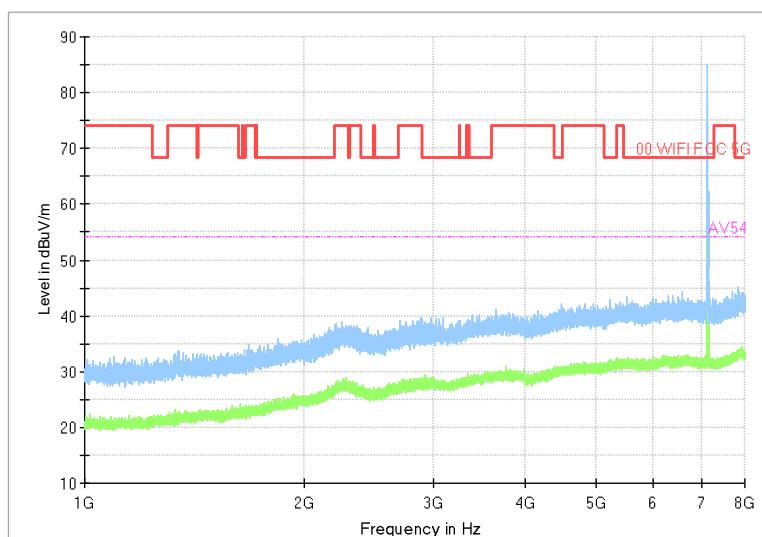


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

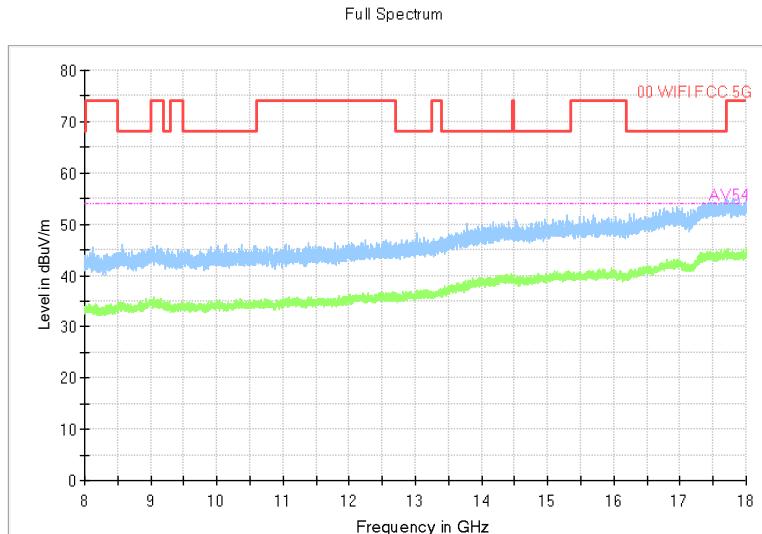


Full Spectrum



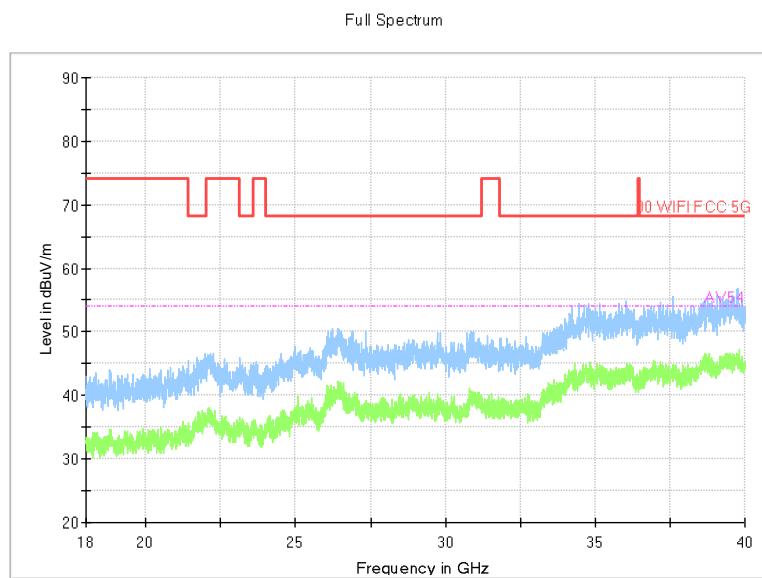


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE20)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE20)

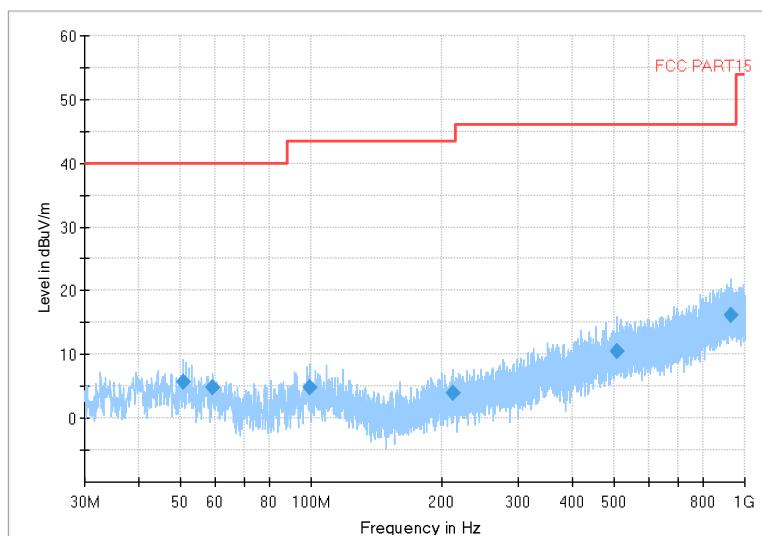
Carrier frequency (MHz): 5965

Channel No.:3

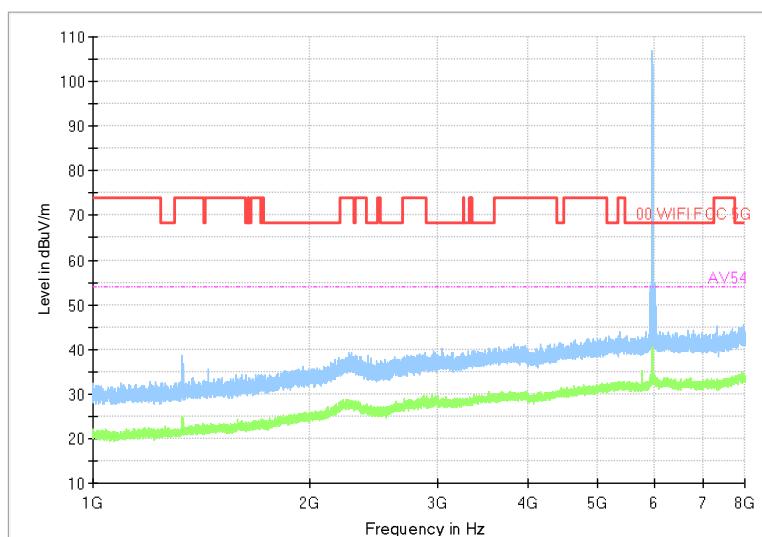


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

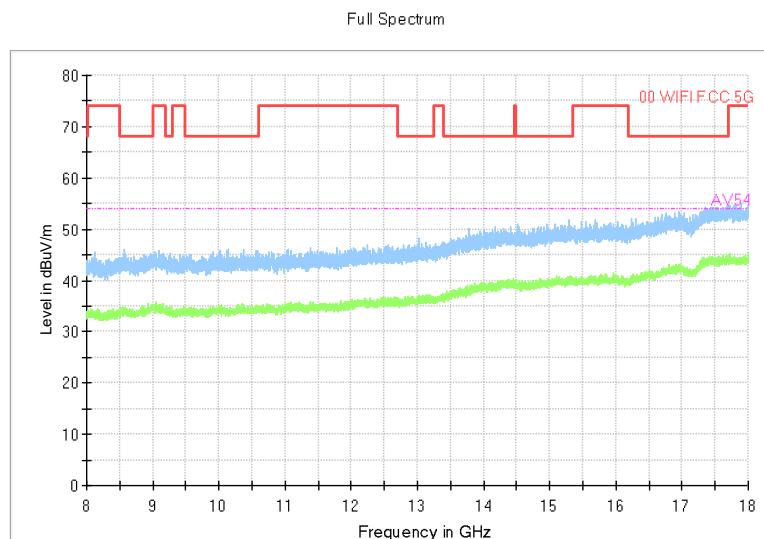


Full Spectrum



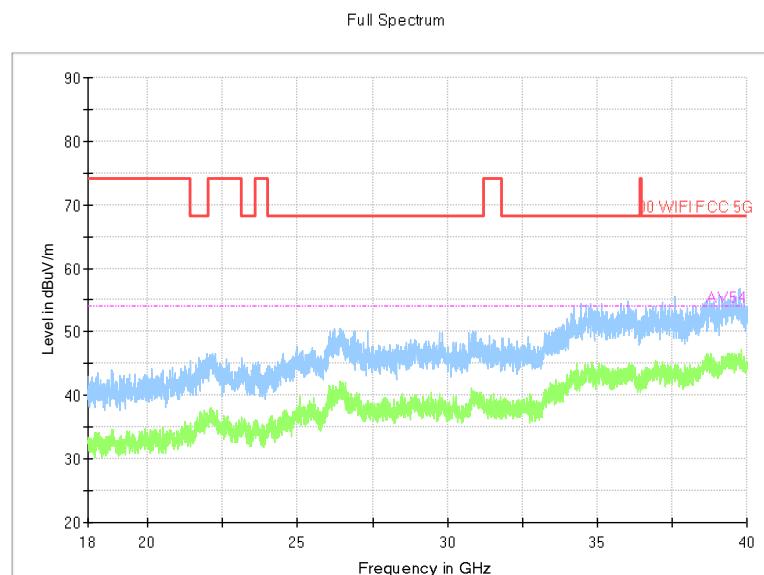


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)

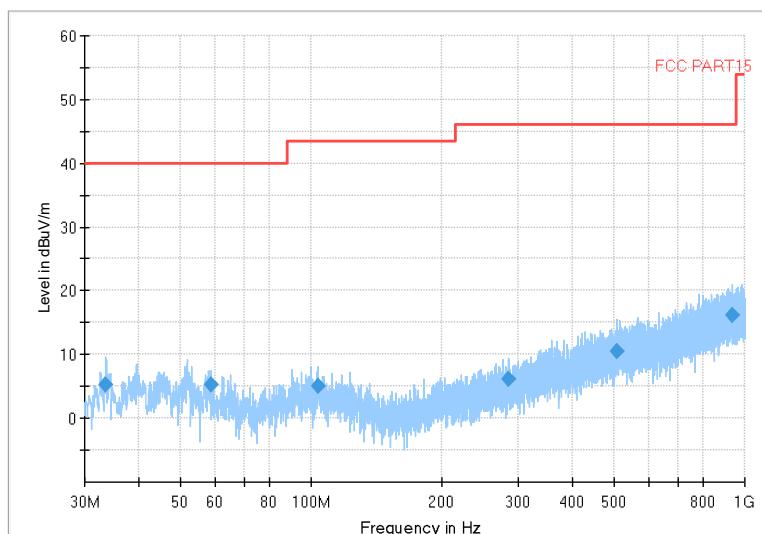
Carrier frequency (MHz): 6165

Channel No.:43

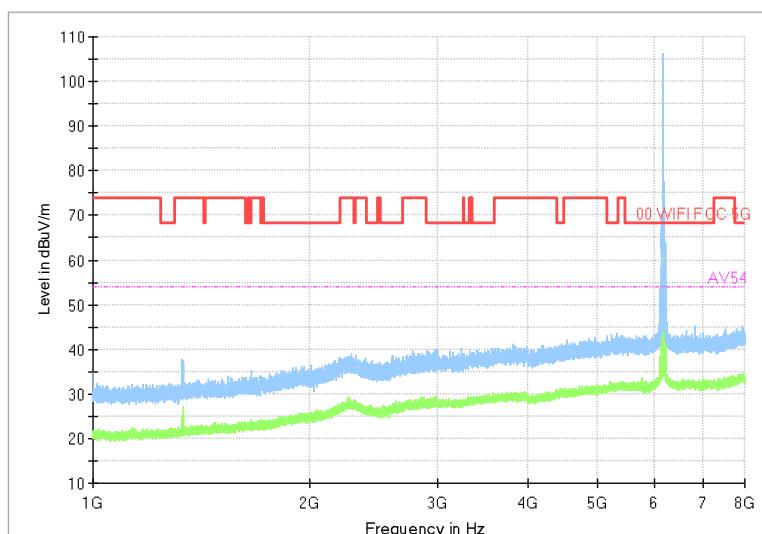


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

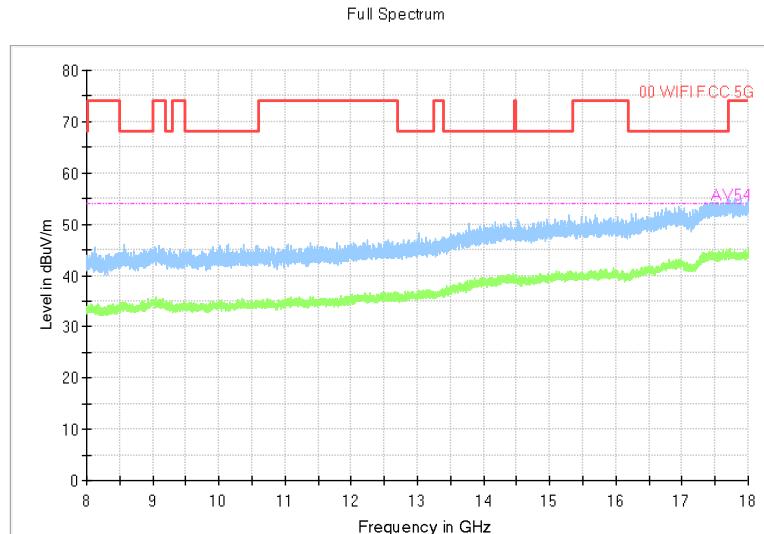


Full Spectrum



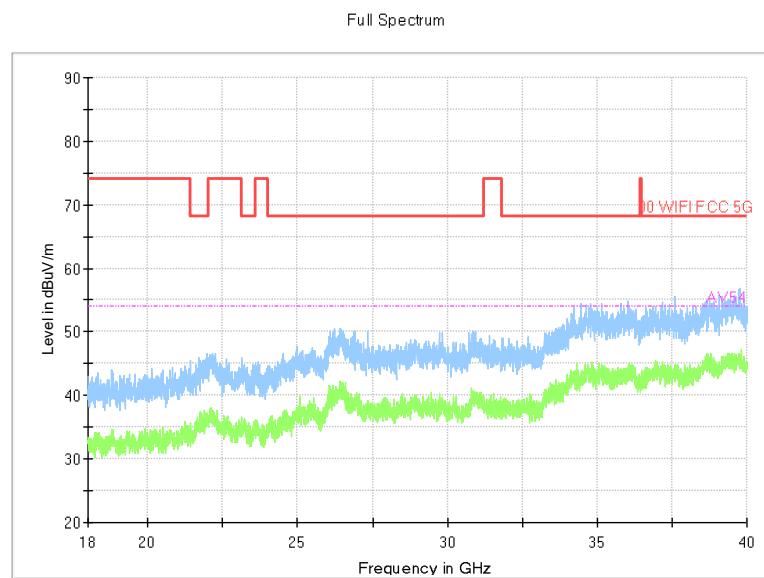


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)

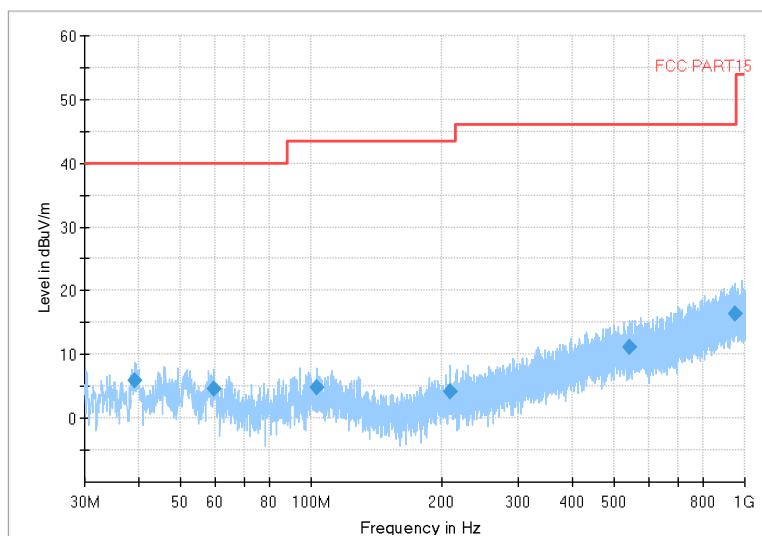
Carrier frequency (MHz): 6405

Channel No.:91

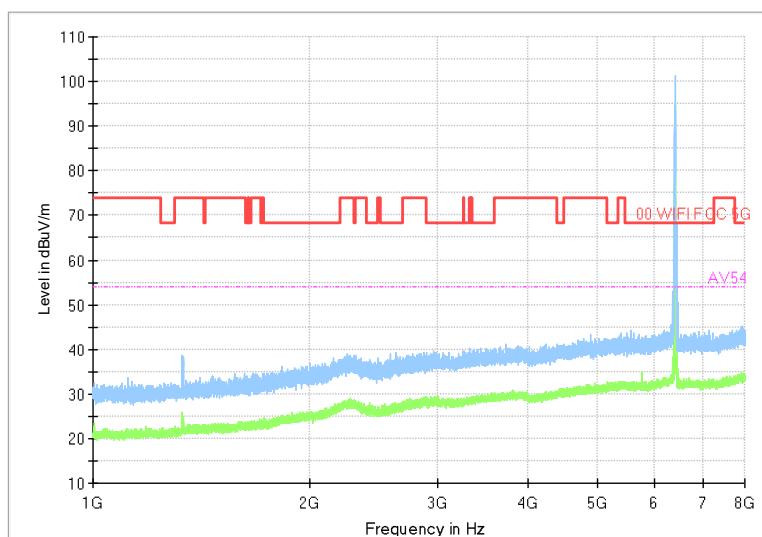


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum



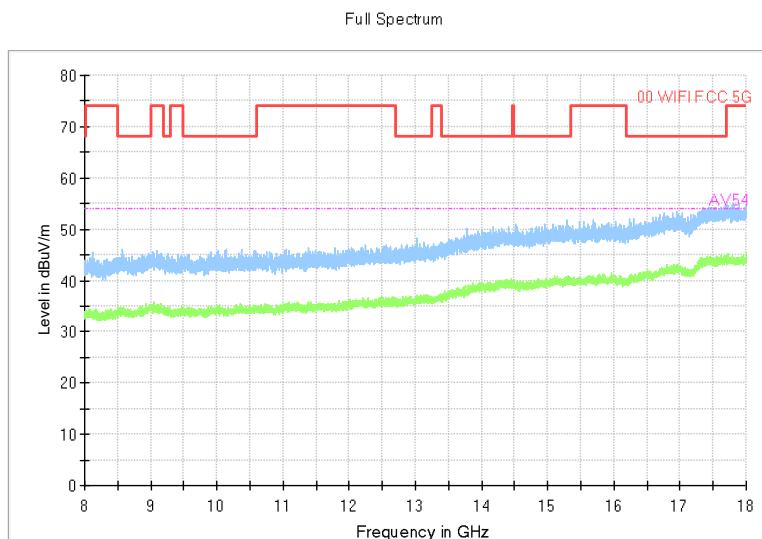
Full Spectrum



Frequency Range: 1GHz -8GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)

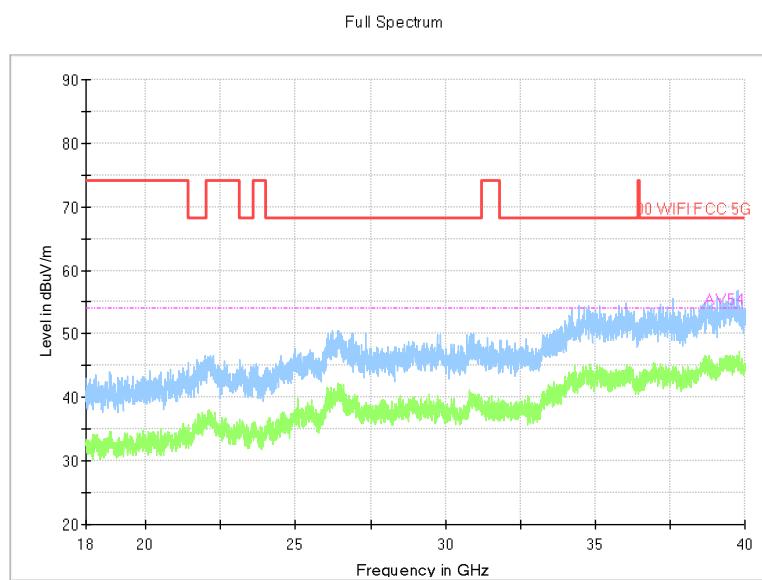


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)

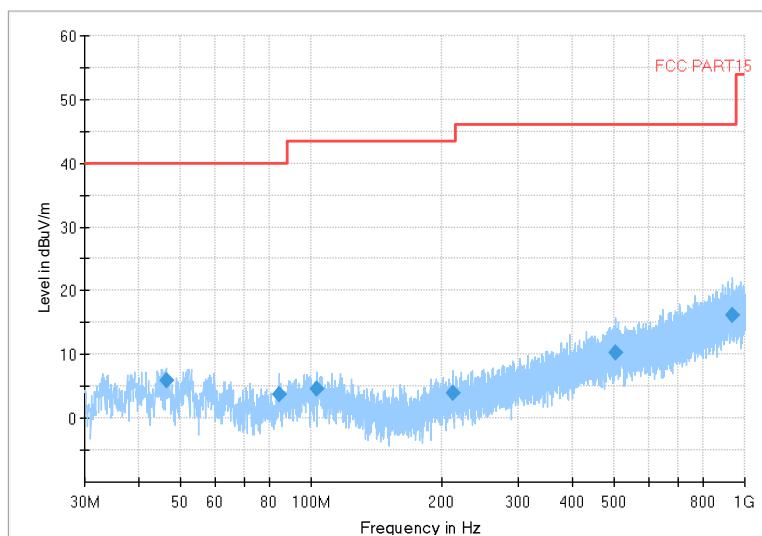
Carrier frequency (MHz): 6445

Channel No.:99

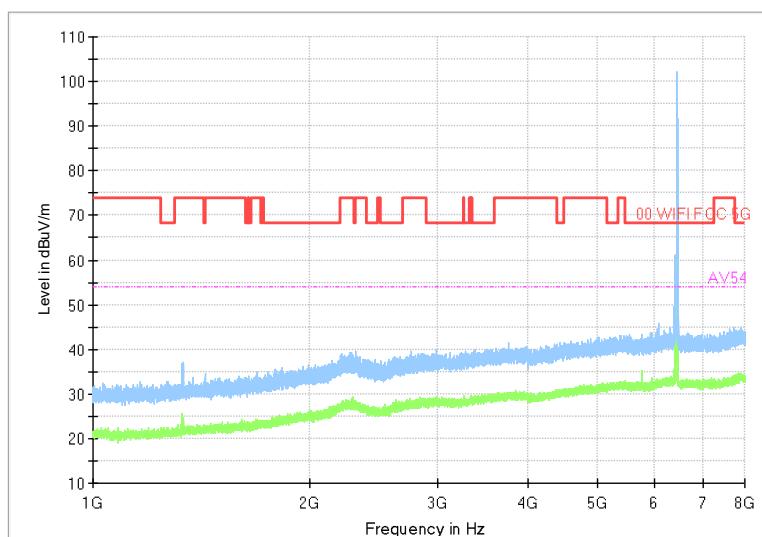


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

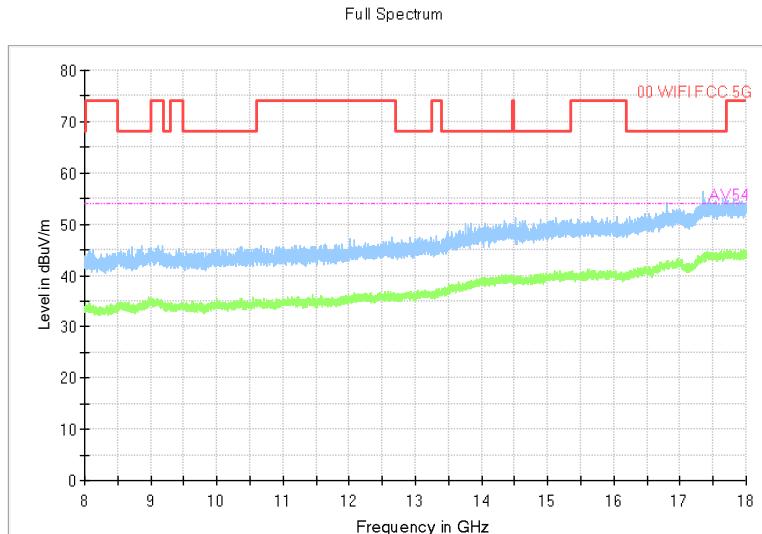


Full Spectrum



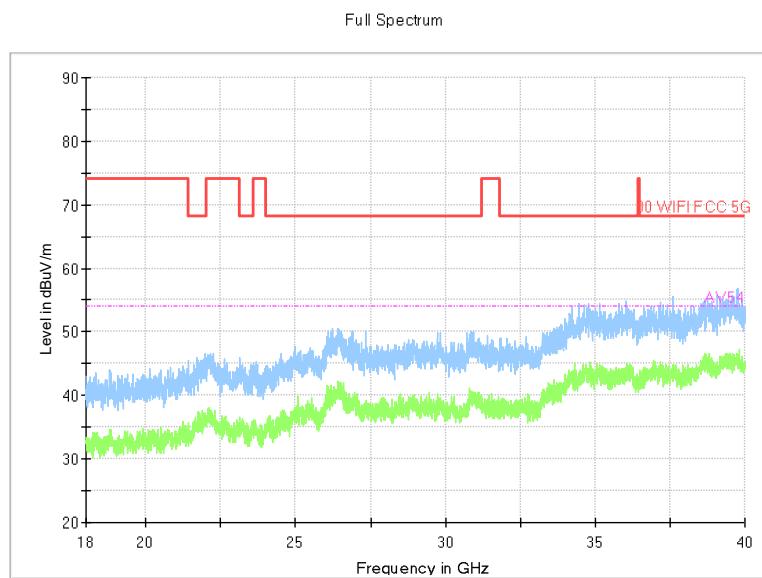


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)

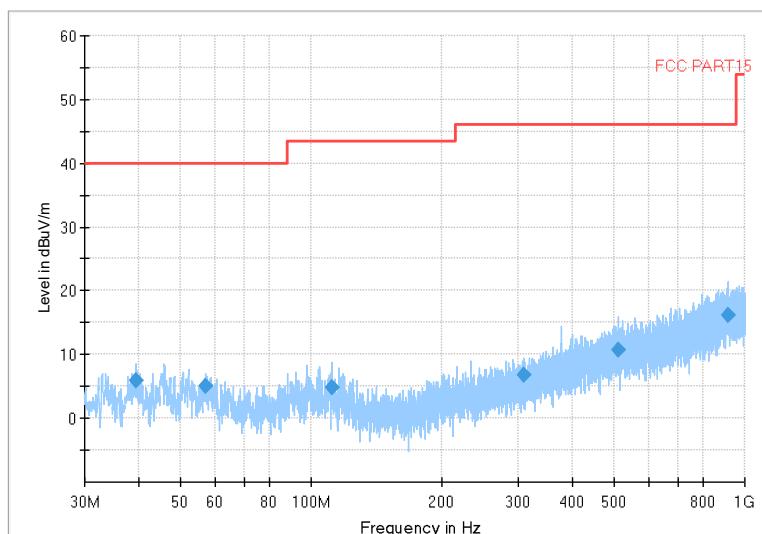
Carrier frequency (MHz): 6485

Channel No.:107



Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

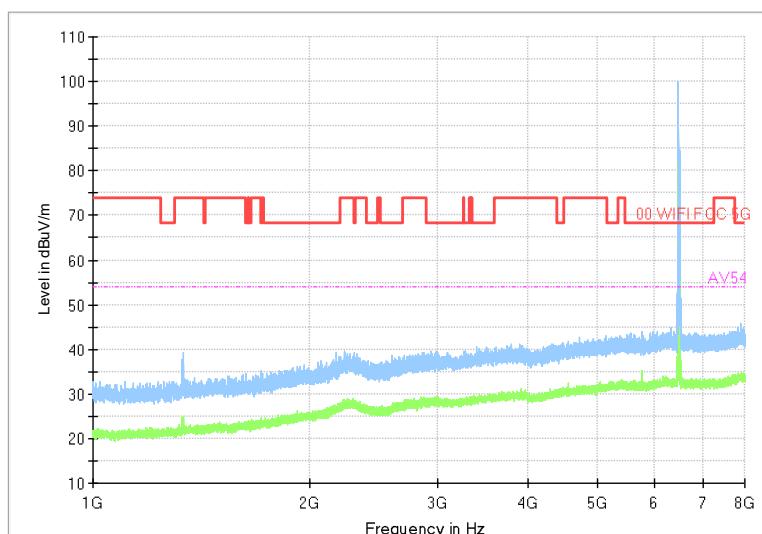


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ax(HE40)

Full Spectrum



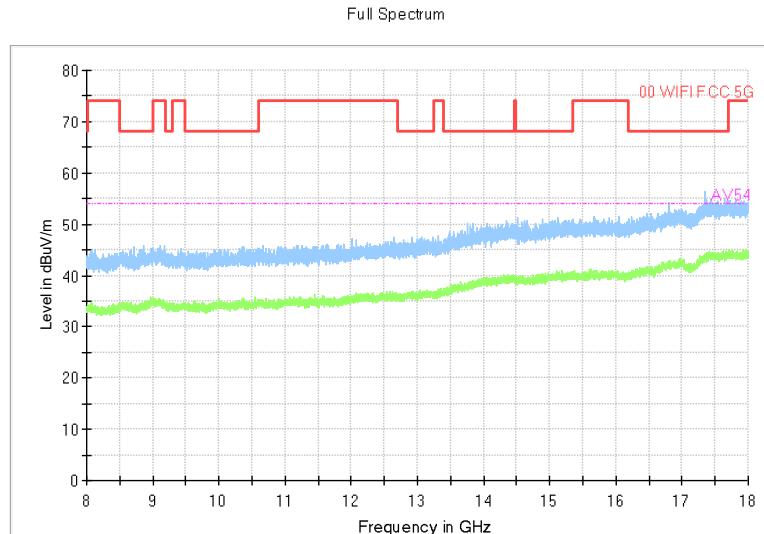
Frequency Range: 1GHz -8GHz

Detector: Av mode and PK mode

Test Mode: 802.11ax(HE40)

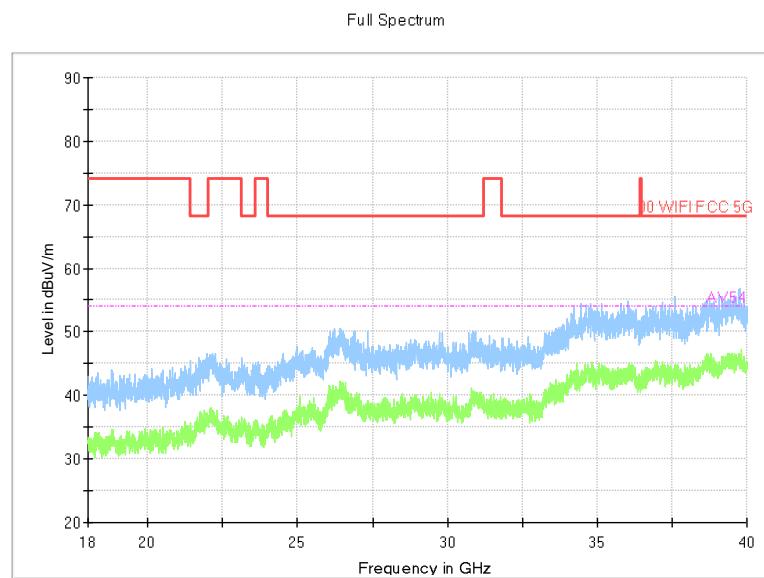


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)

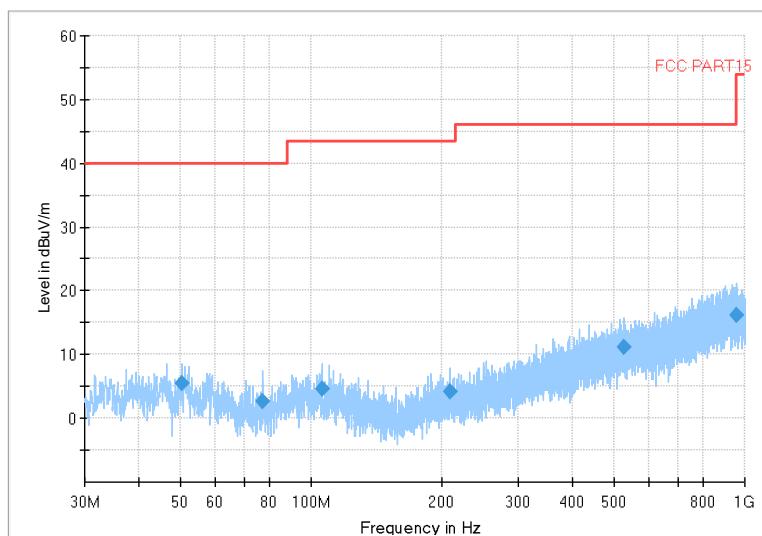
Carrier frequency (MHz): 6565

Channel No.:123

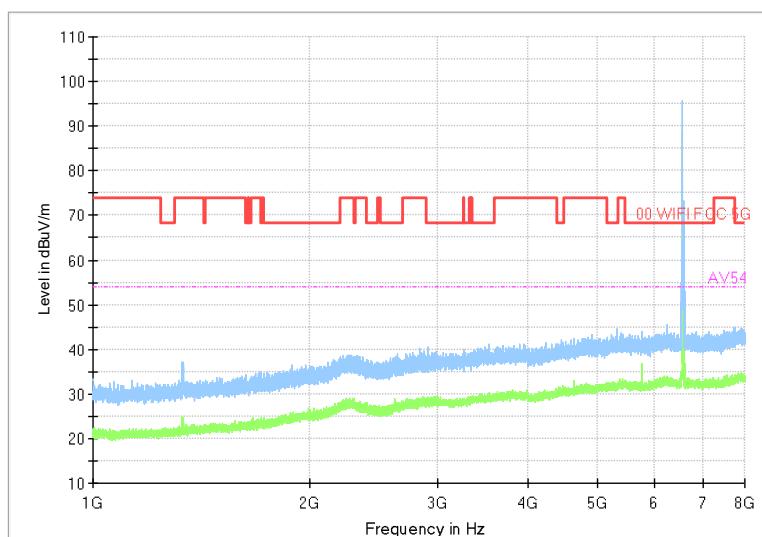


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

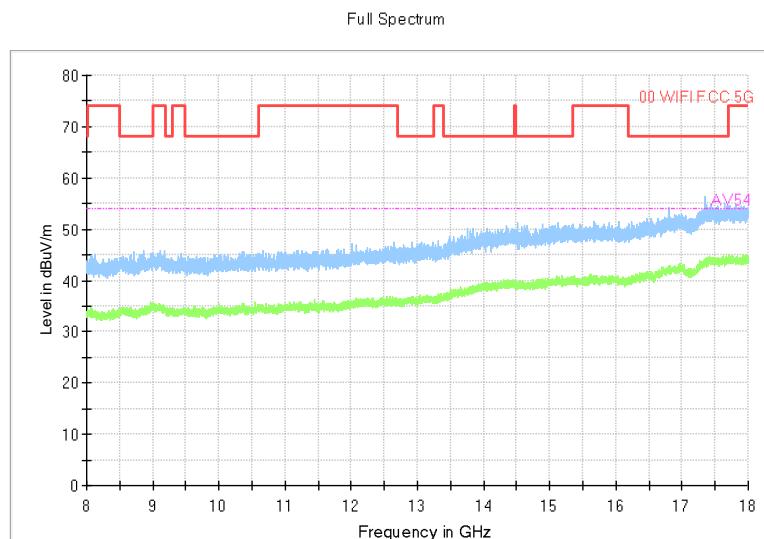


Full Spectrum



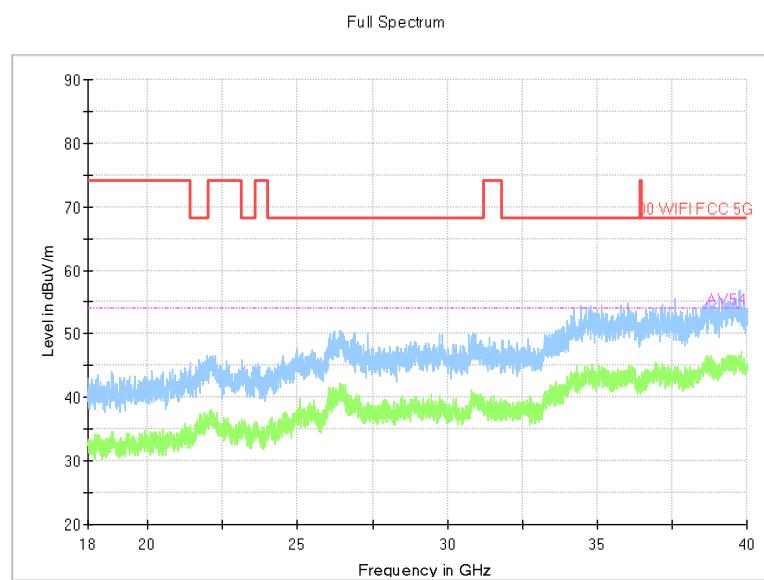


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)

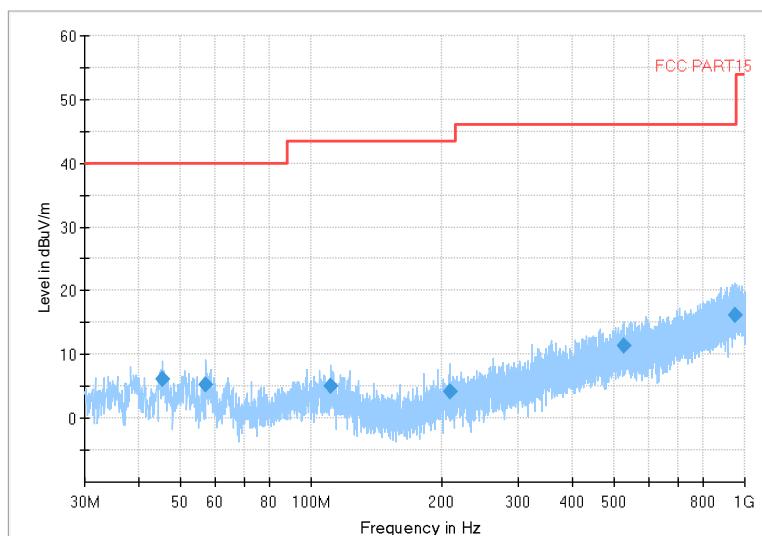
Carrier frequency (MHz): 6685

Channel No.:147



Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

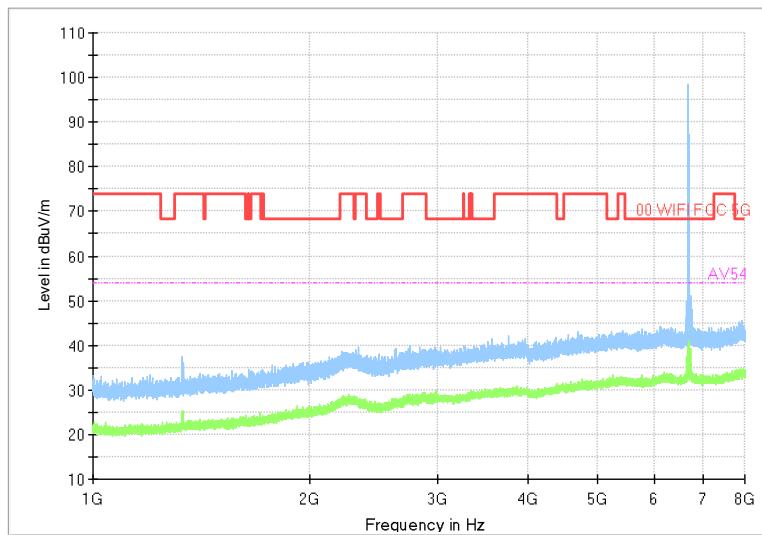


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11ax(HE40)

Full Spectrum



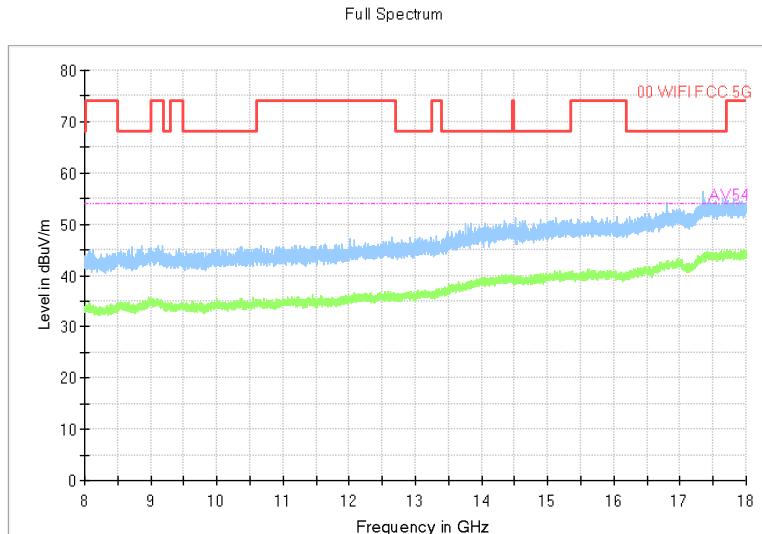
Frequency Range: 1GHz -8GHz

Detector: Av mode and PK mode

Modulation type: 802.11ax(HE40)

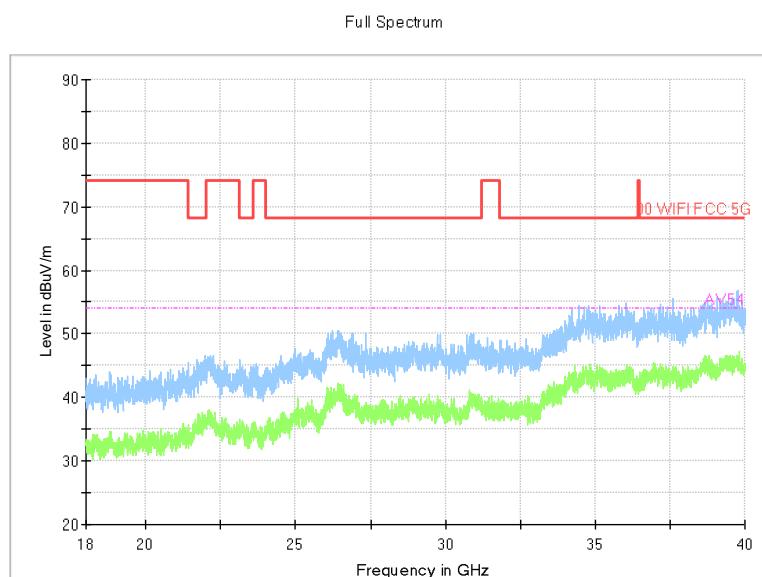


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)

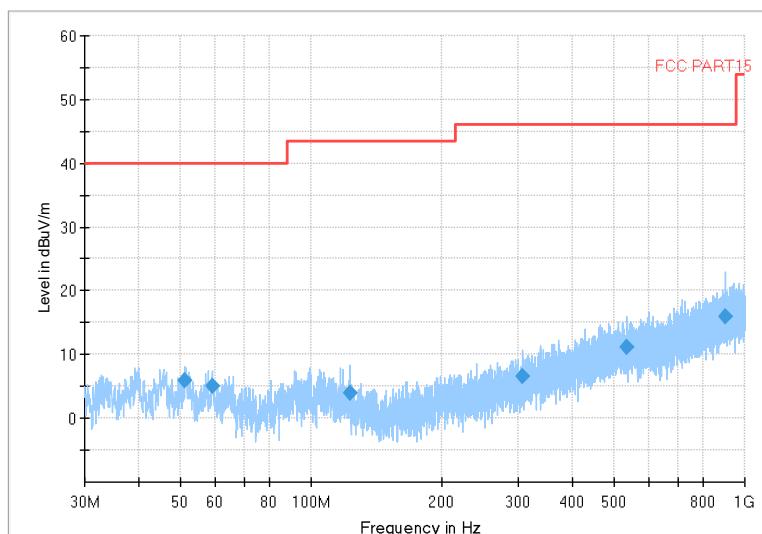
Carrier frequency (MHz): 6845

Channel No.:179

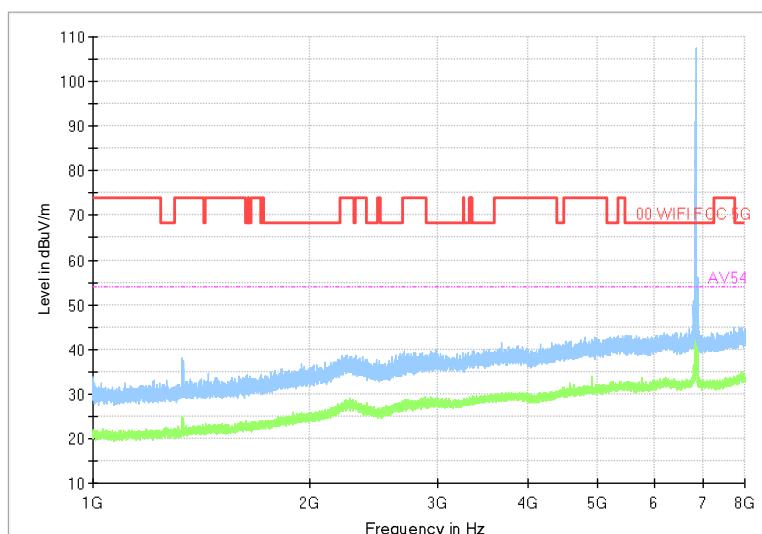


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

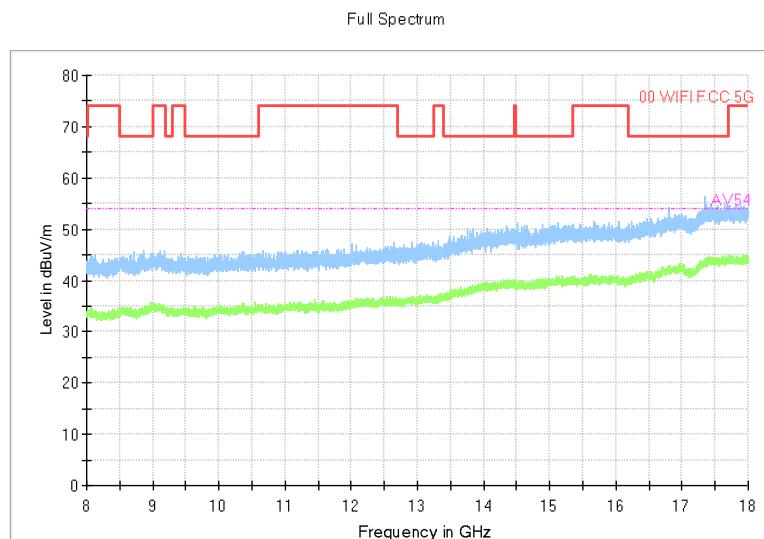


Full Spectrum



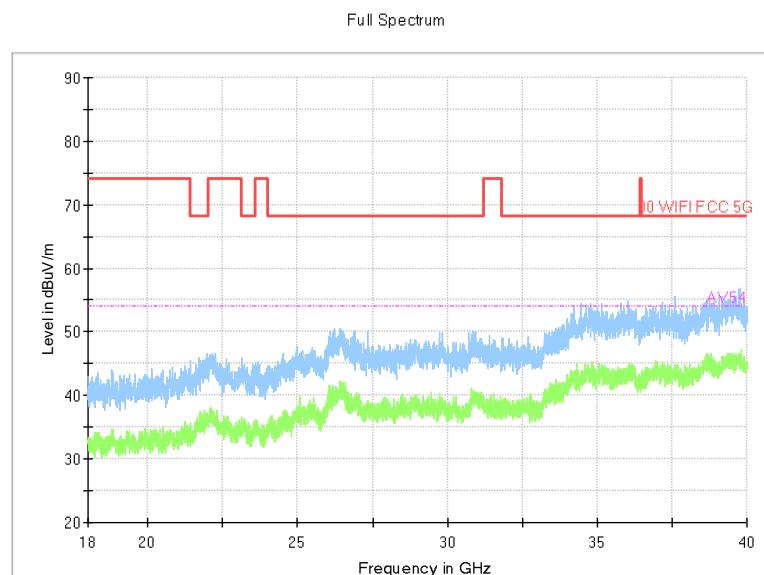


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)



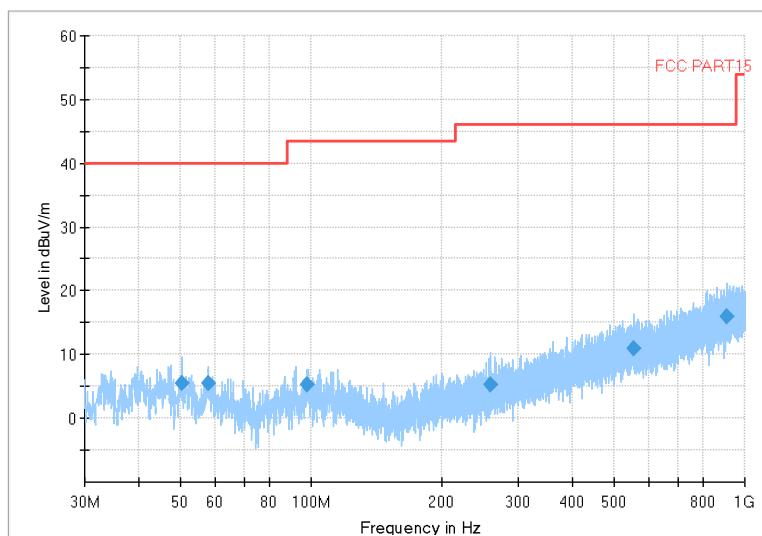
Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)

Carrier frequency (MHz): 6925
Channel No.:195



Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

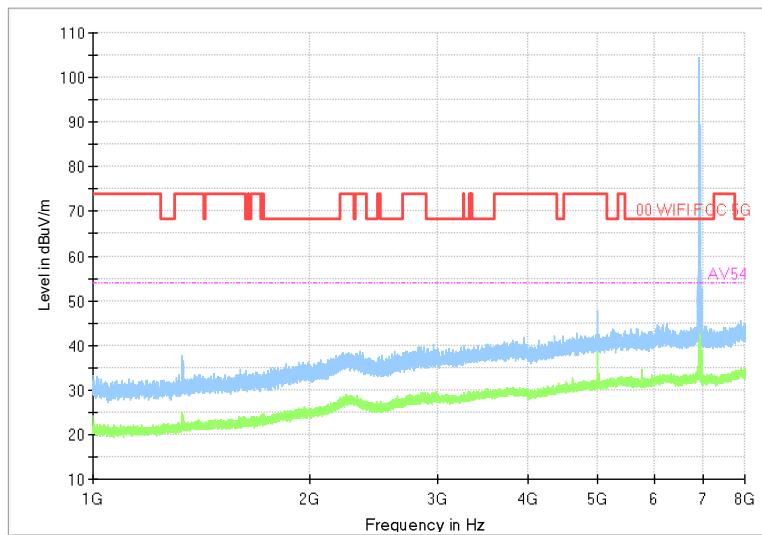


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11ax(HE40)

Full Spectrum



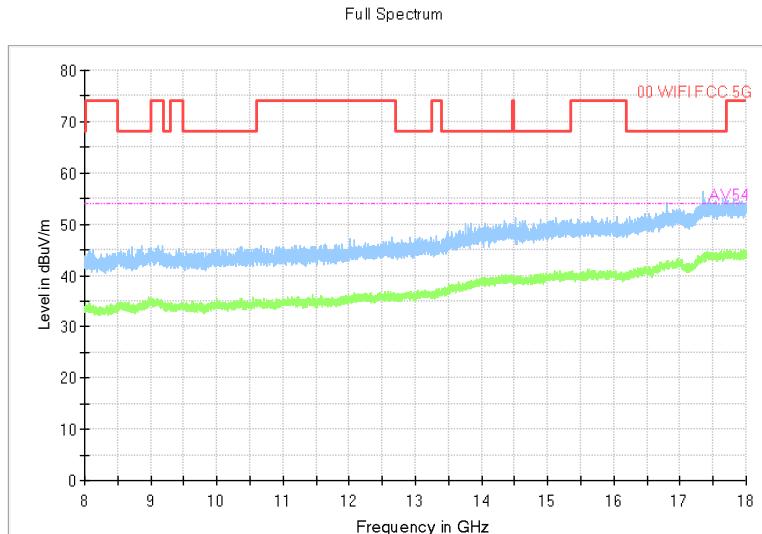
Frequency Range: 1GHz -8GHz

Detector: Av mode and PK mode

Modulation type: 802.11ax(HE40)

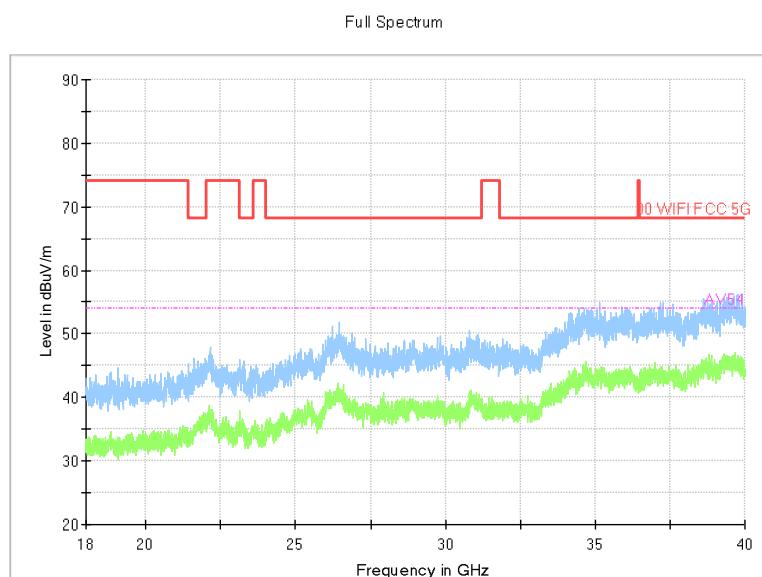


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)

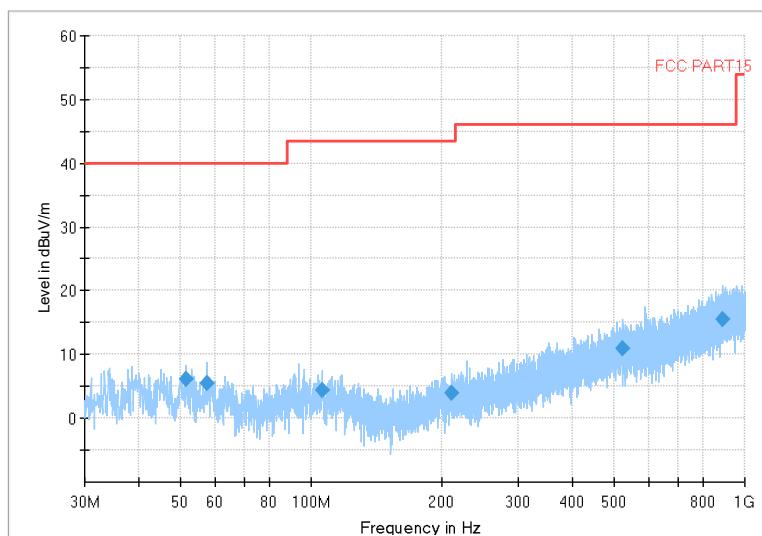
Carrier frequency (MHz): 7005

Channel No.:211

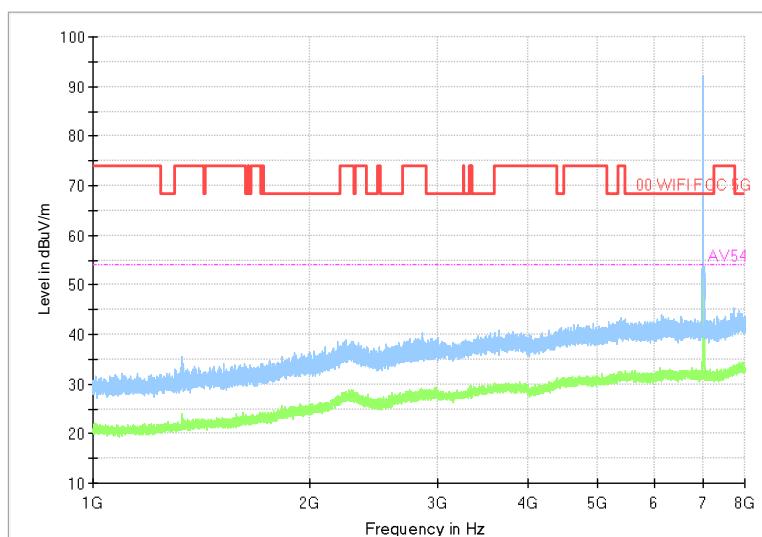


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

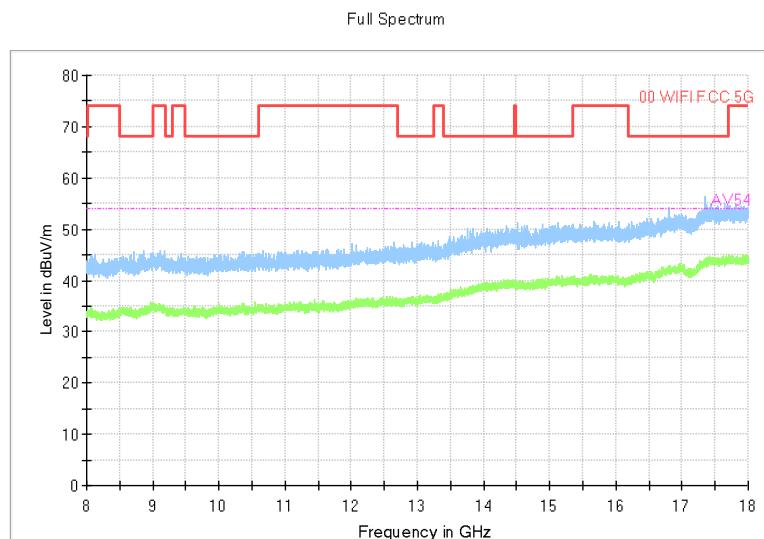


Full Spectrum



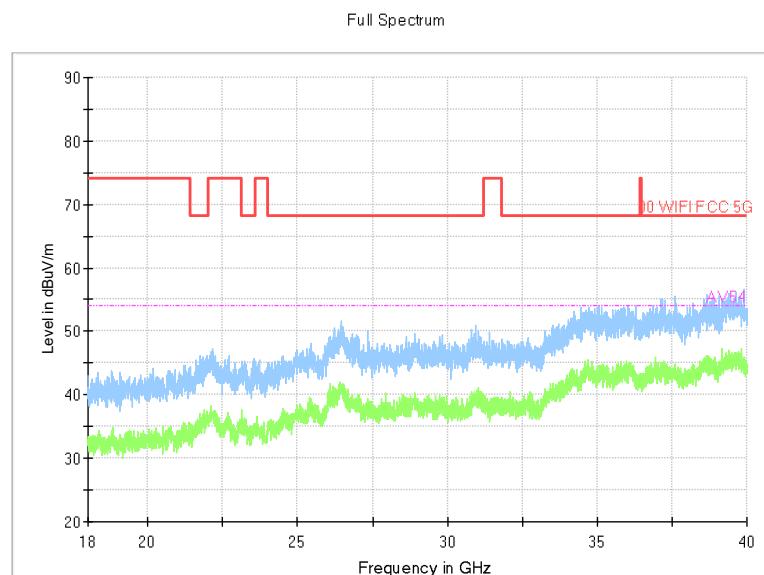


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)



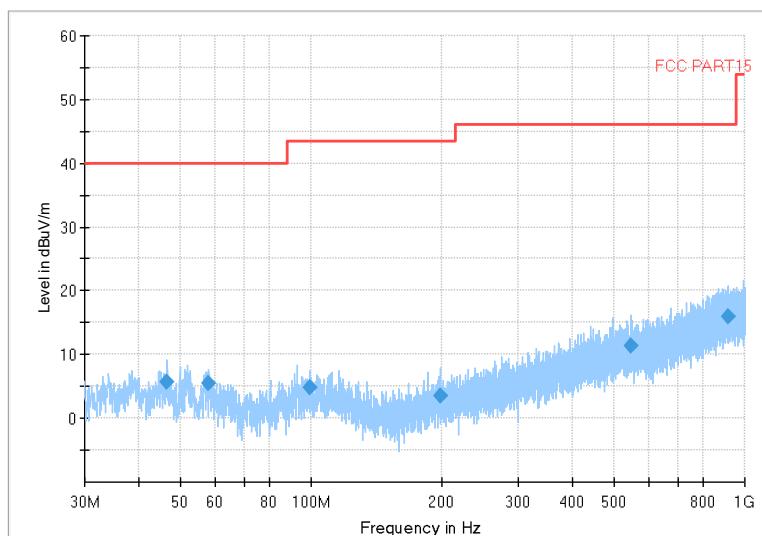
Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE40)

Carrier frequency (MHz): 7085
Channel No.:227



Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

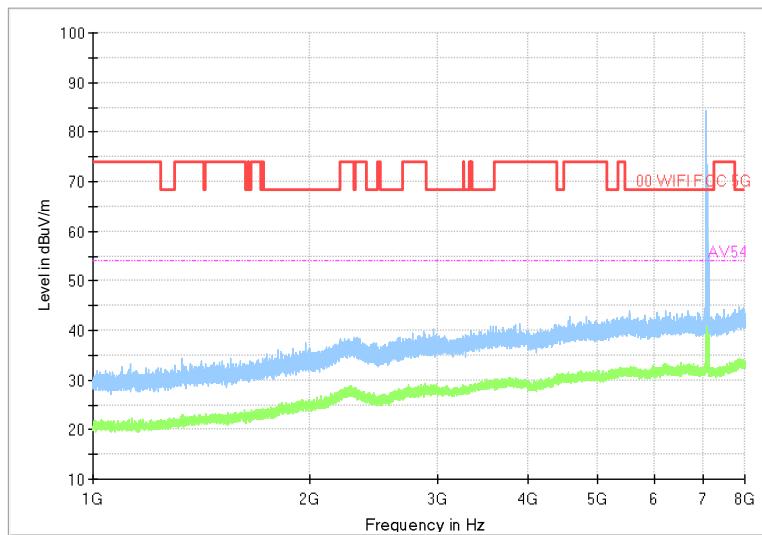


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ax(HE40)

Full Spectrum



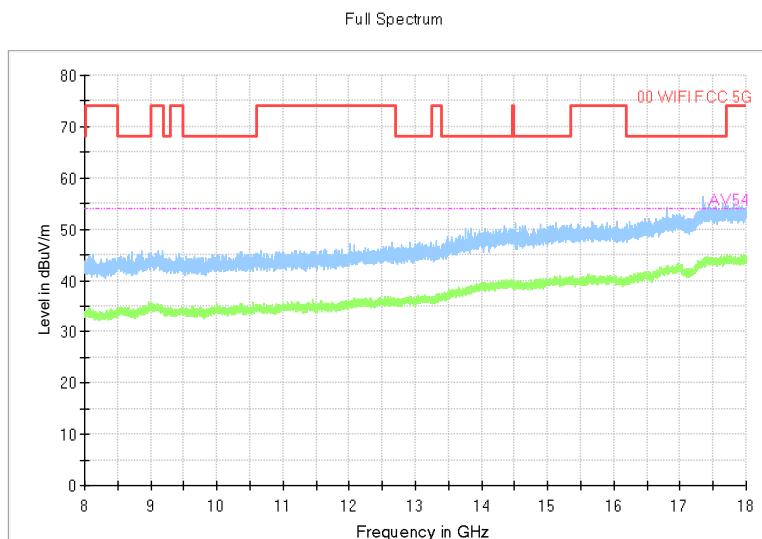
Frequency Range: 1GHz -8GHz

Detector: Av mode and PK mode

Test Mode: 802.11ax(HE40)

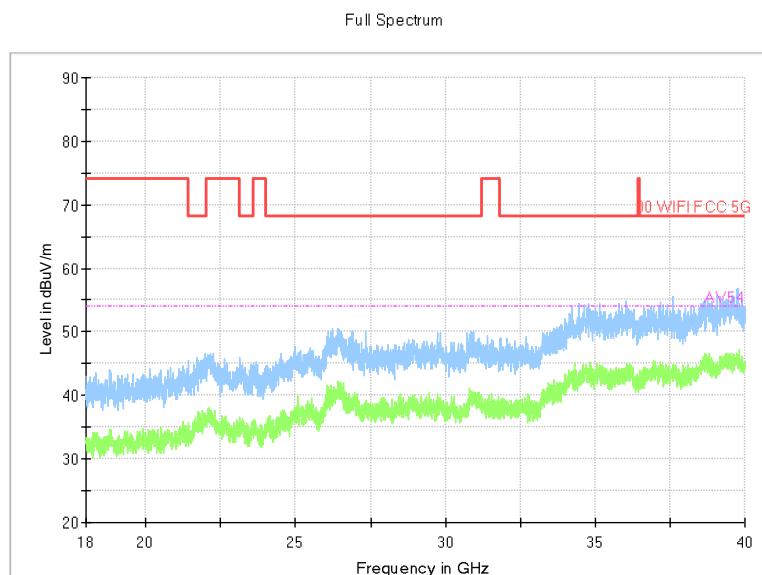


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE40)

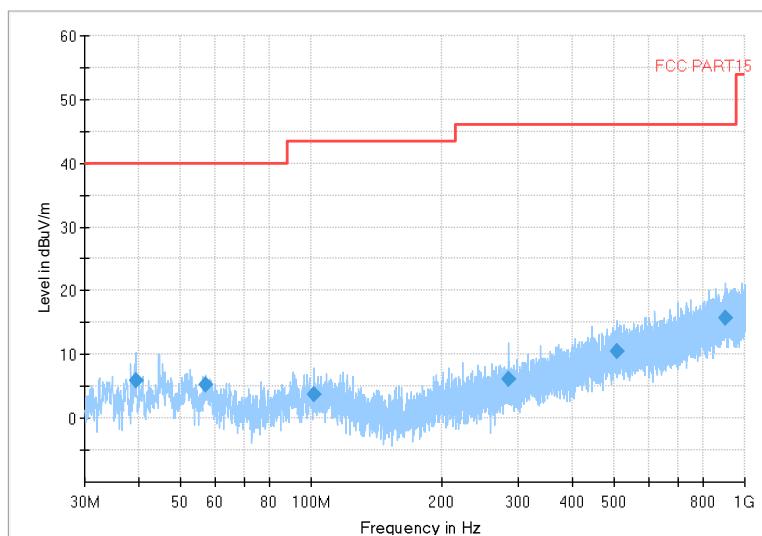
Carrier frequency (MHz): 5985

Channel No.:7

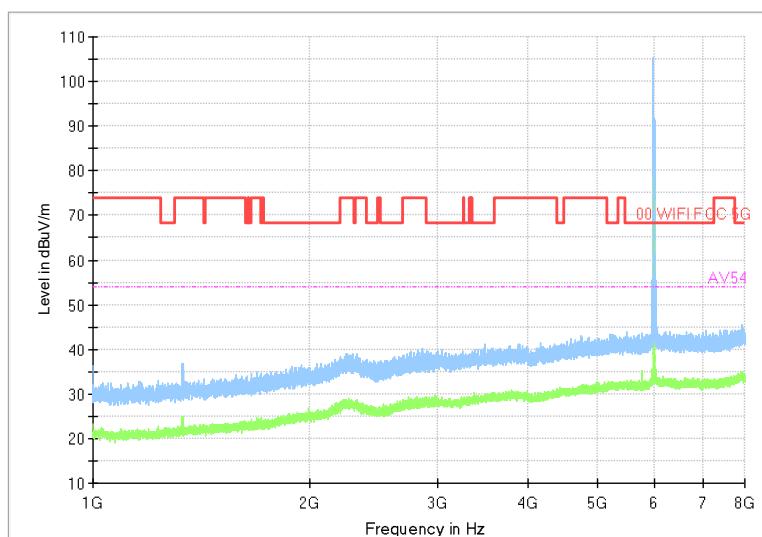


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

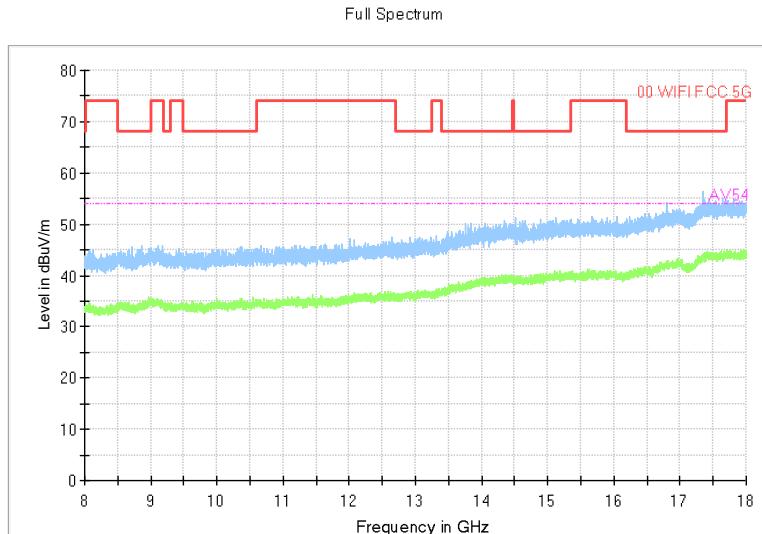


Full Spectrum



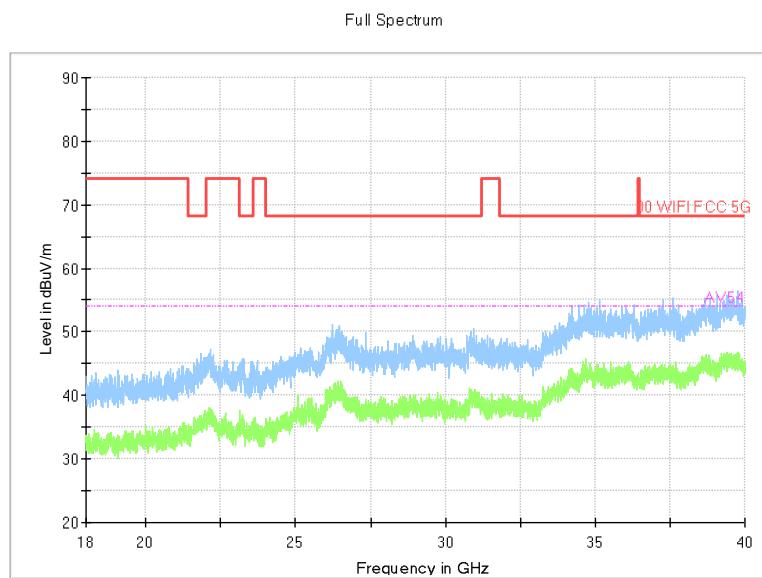


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

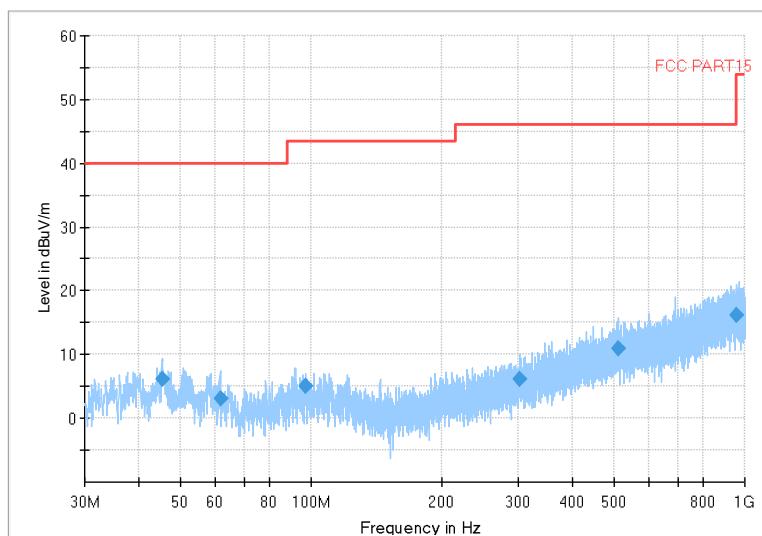
Carrier frequency (MHz): 6145

Channel No.:39



Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

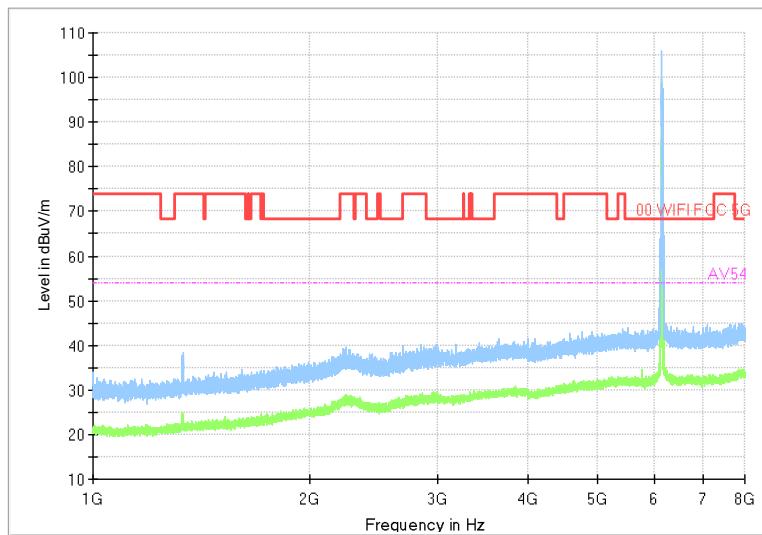


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ax(HE80)

Full Spectrum



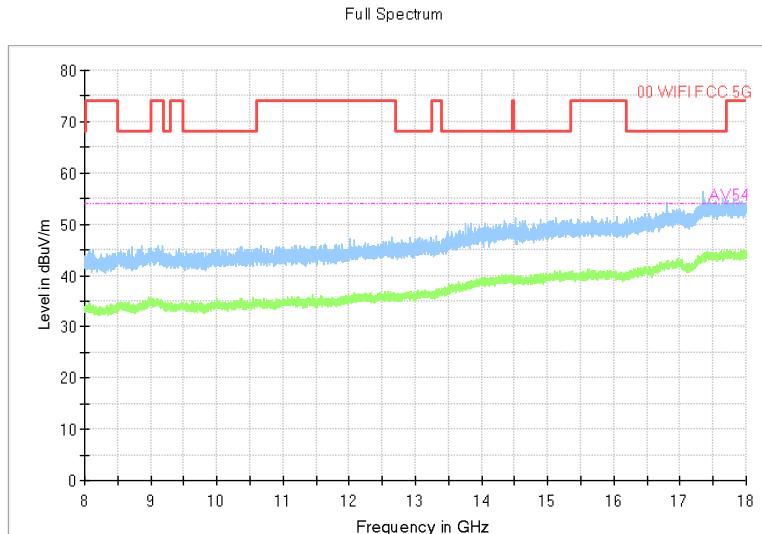
Frequency Range: 1GHz -8GHz

Detector: Av mode and PK mode

Test Mode: 802.11ax(HE80)

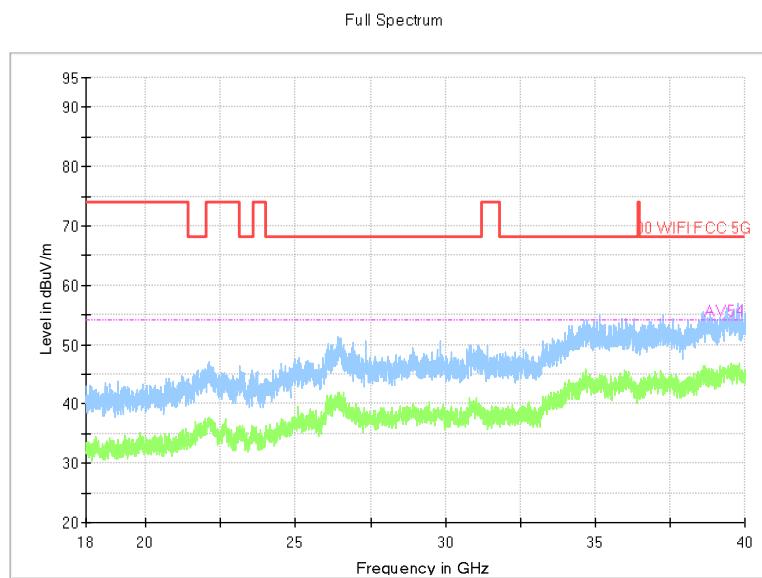


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)



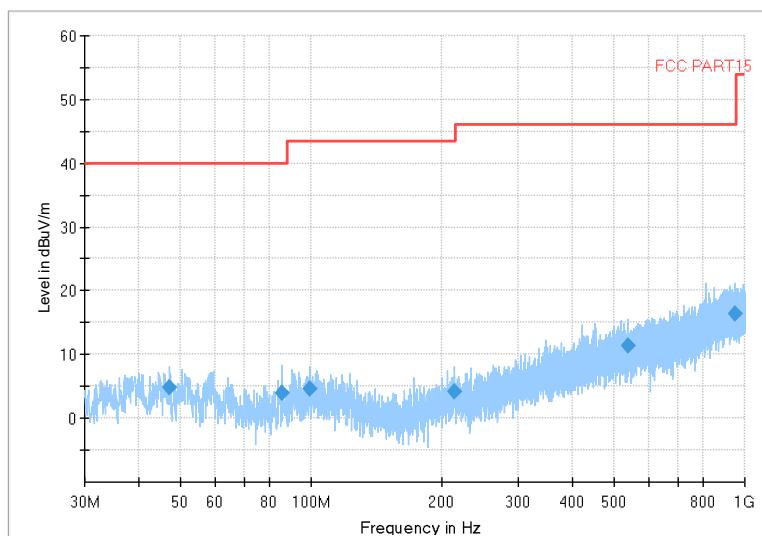
Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)

Carrier frequency (MHz): 6385
Channel No.:87

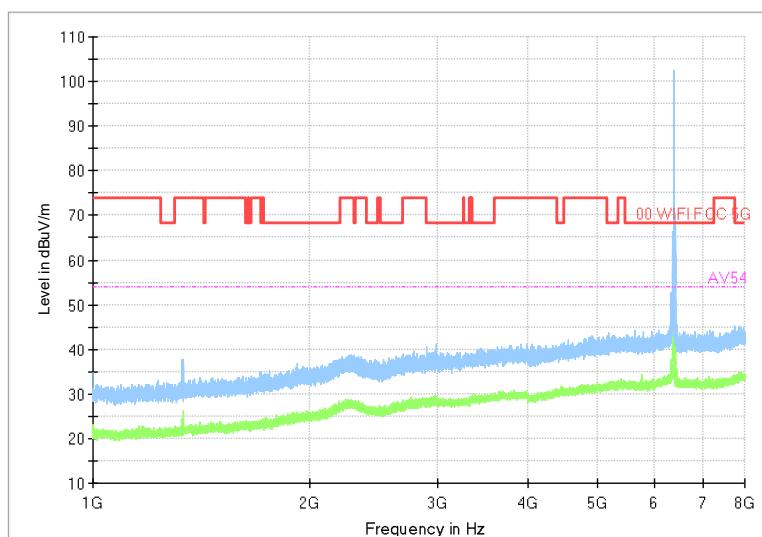


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum



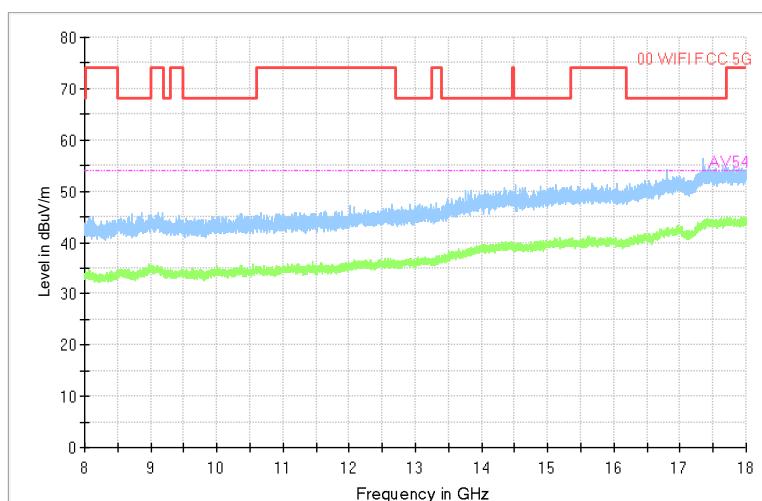
Full Spectrum





Test Report No.: PSU-NQN2502260117RF04

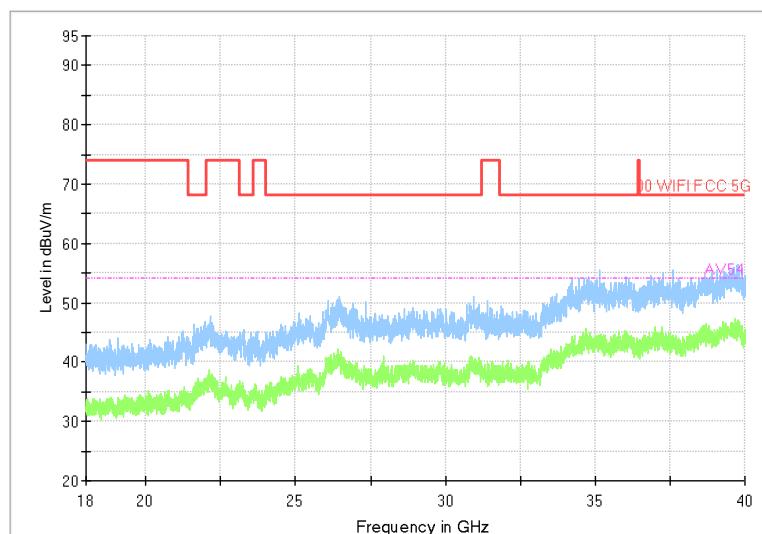
Full Spectrum



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

Full Spectrum



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

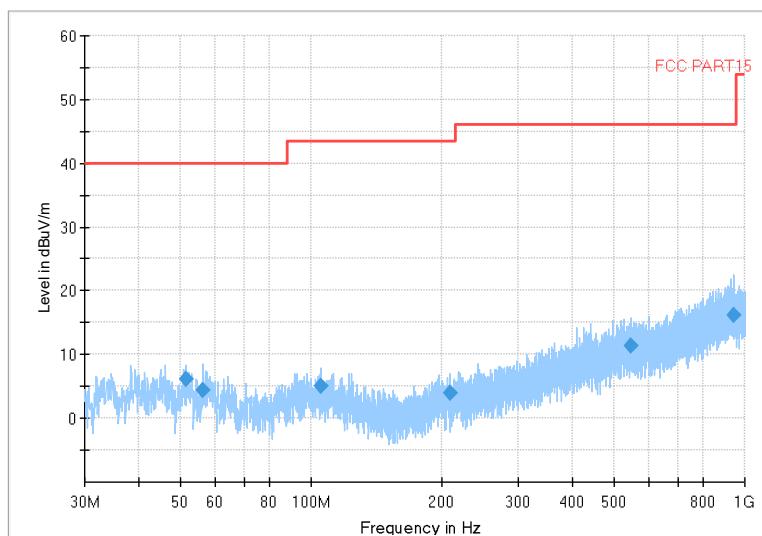
Carrier frequency (MHz): 6465

Channel No.:103

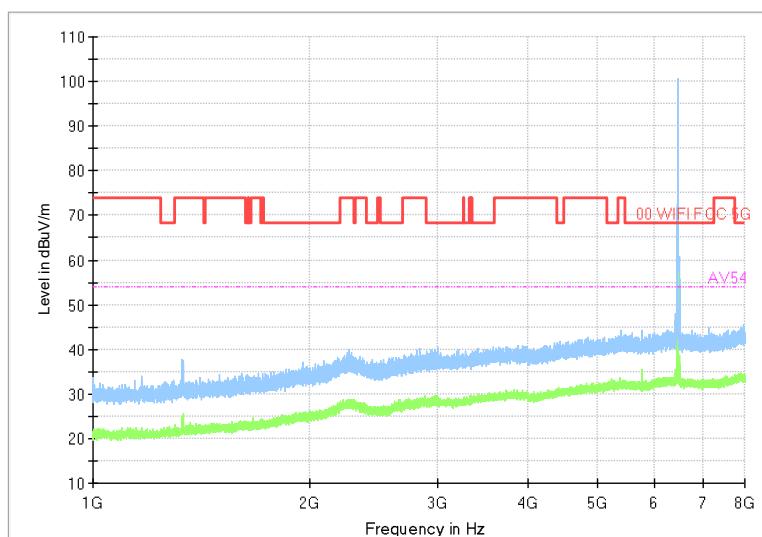


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

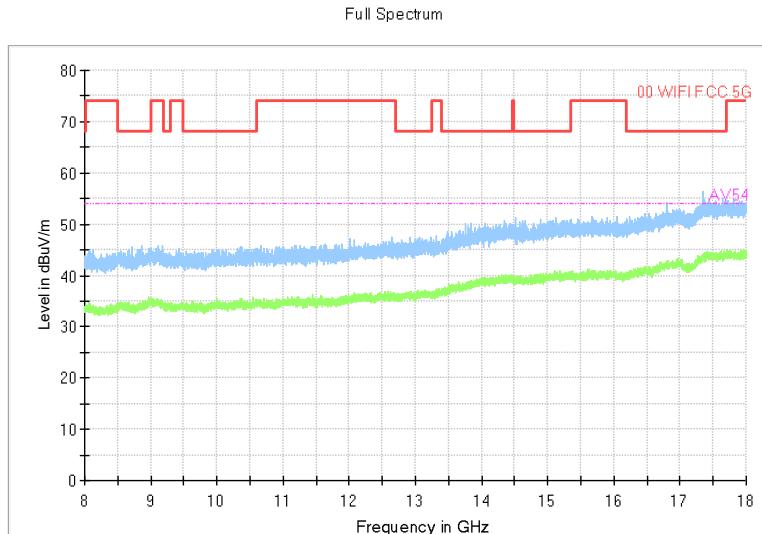


Full Spectrum



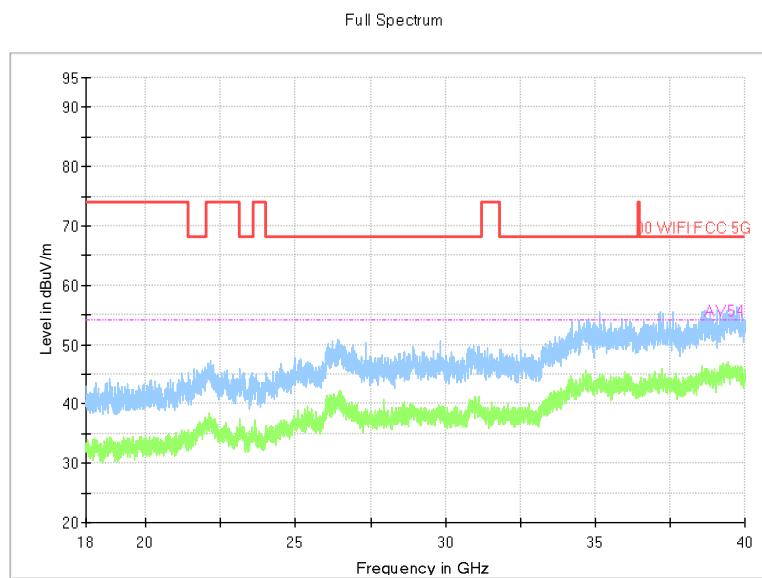


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)



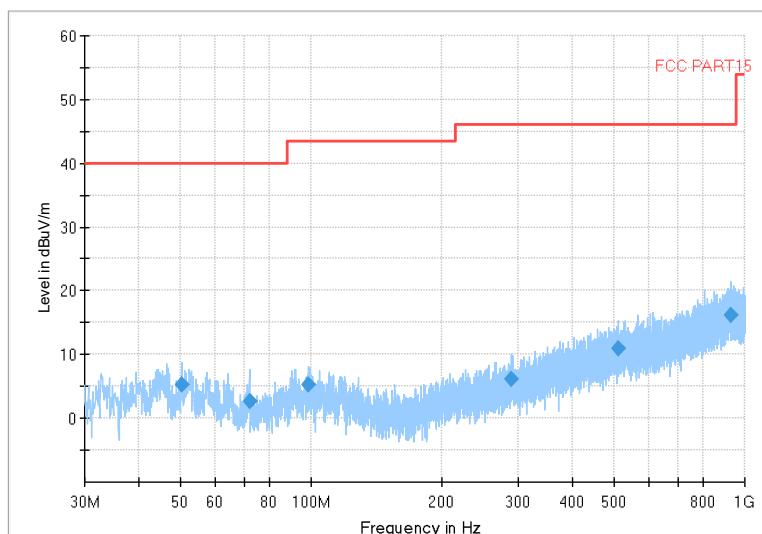
Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)

Carrier frequency (MHz): 6625
Channel No.:135

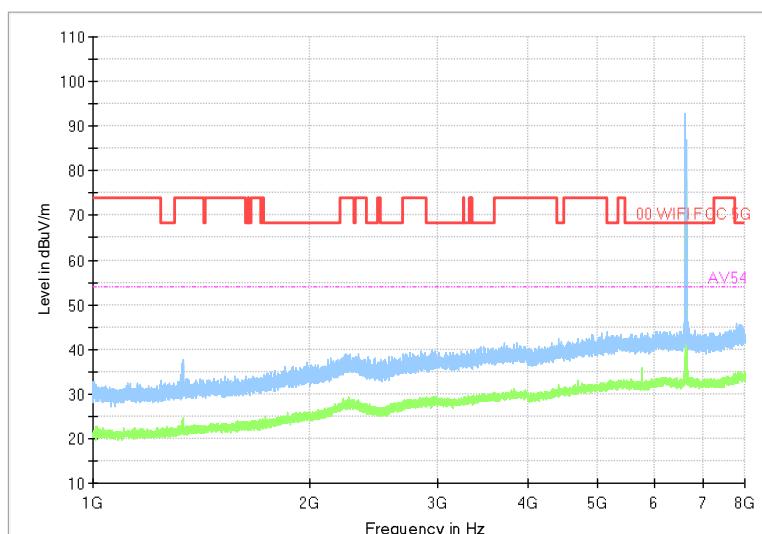


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

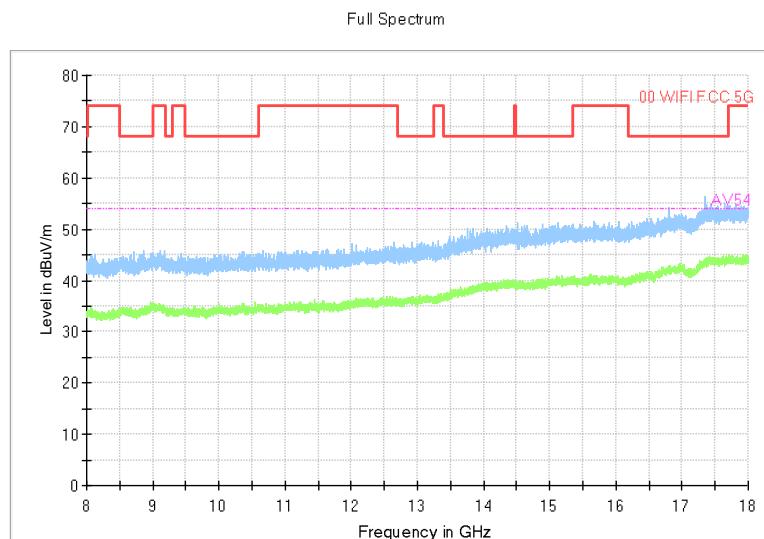


Full Spectrum



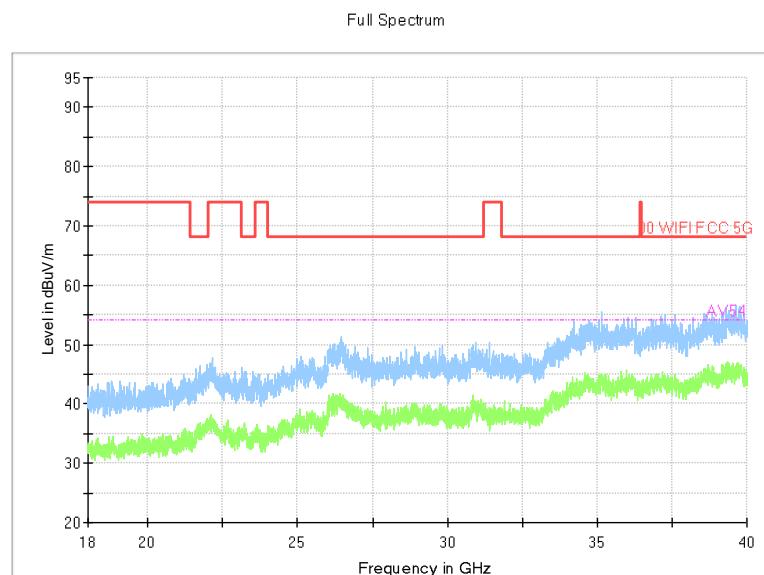


Test Report No.: PSU-NQN2502260117RF04



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)

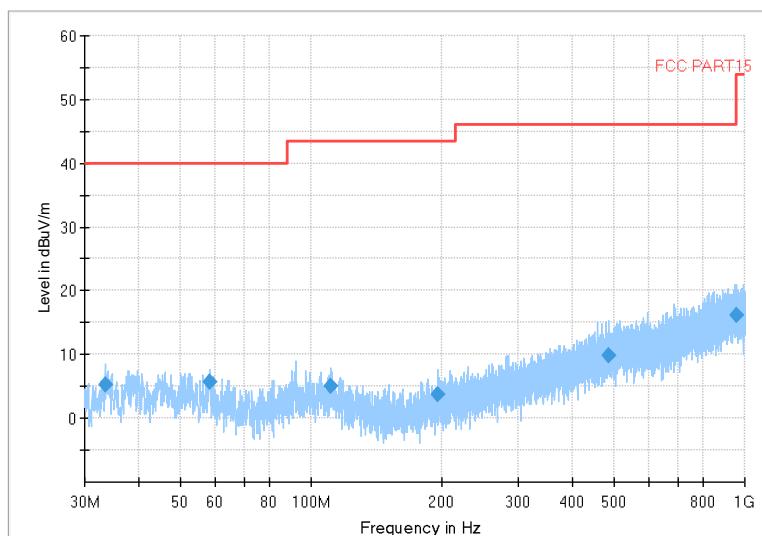
Carrier frequency (MHz): 6705

Channel No.:151

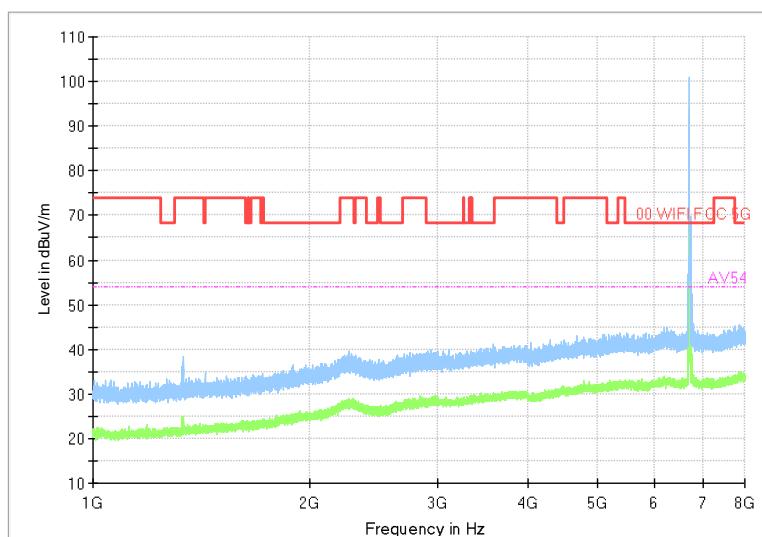


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum



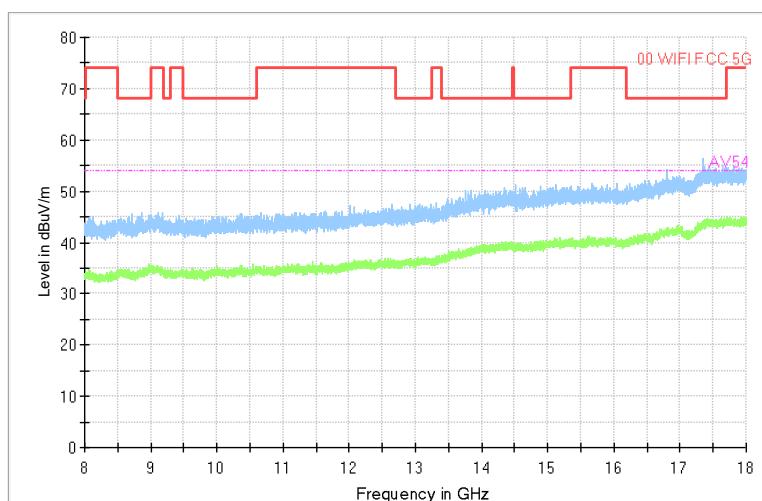
Full Spectrum





Test Report No.: PSU-NQN2502260117RF04

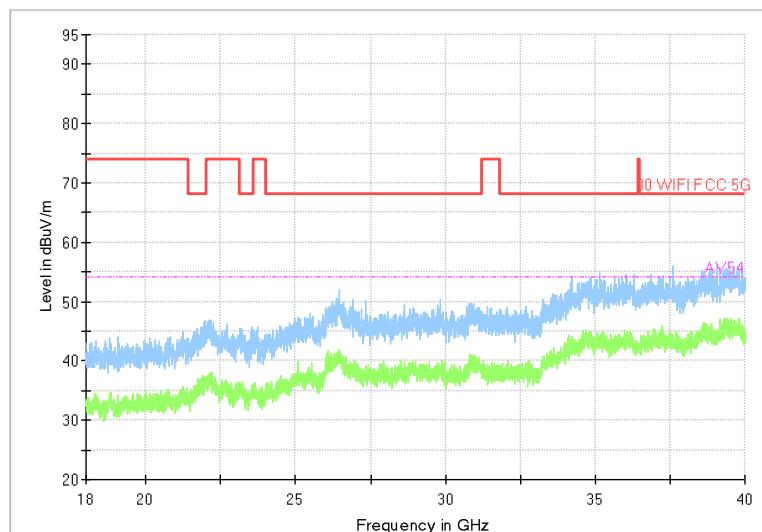
Full Spectrum



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

Full Spectrum



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

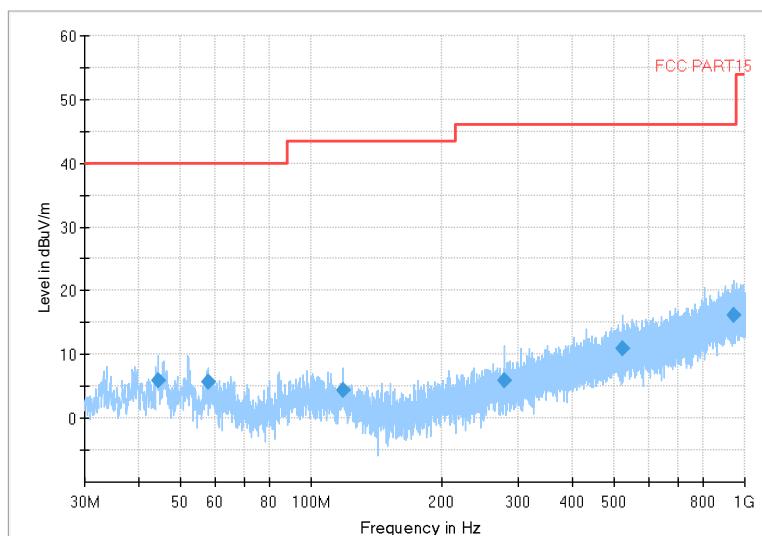
Carrier frequency (MHz): 6785

Channel No.:167

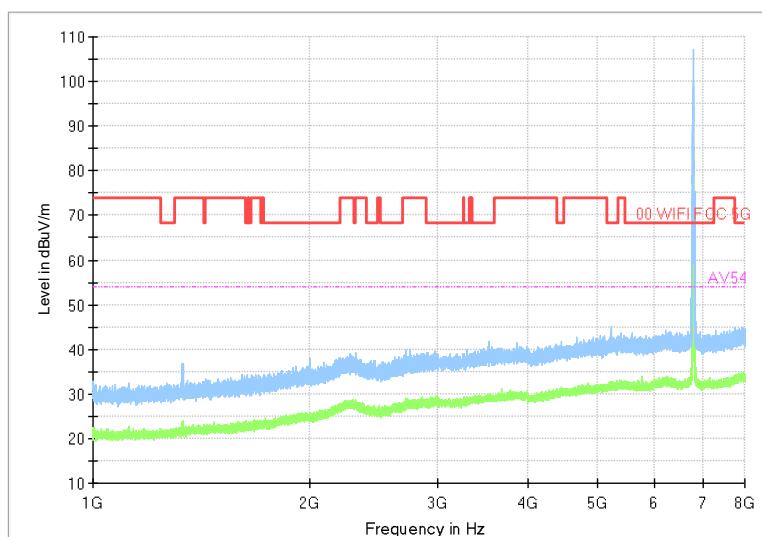


Test Report No.: PSU-NQN2502260117RF04

Full Spectrum



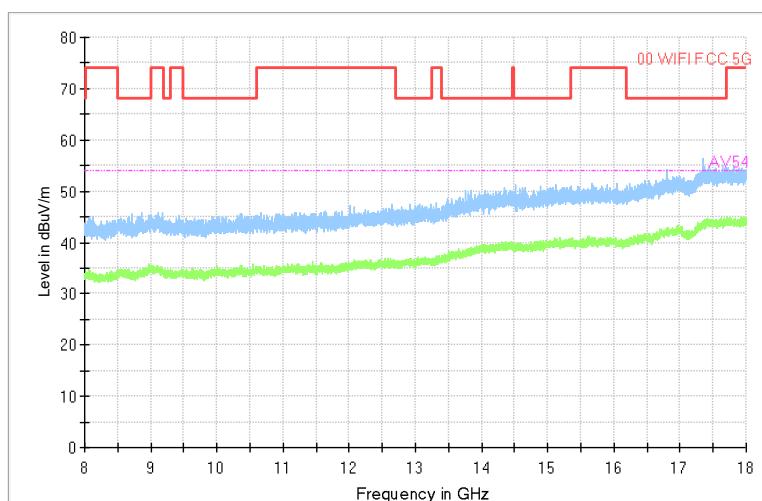
Full Spectrum





Test Report No.: PSU-NQN2502260117RF04

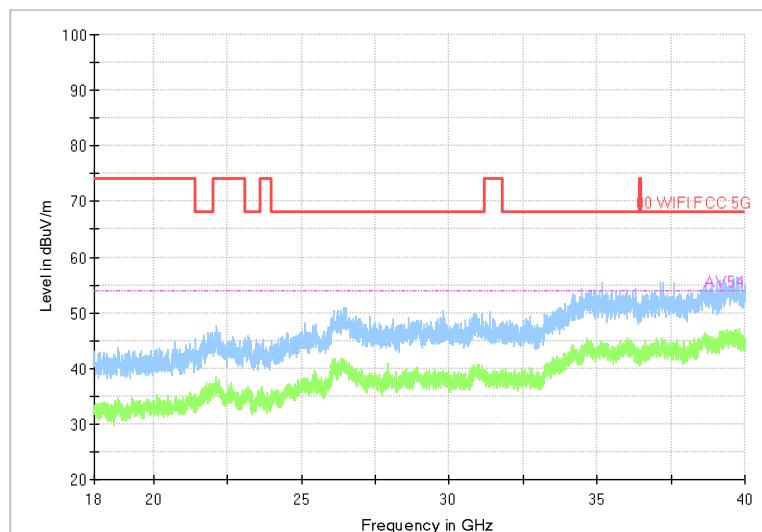
Full Spectrum



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

Full Spectrum



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

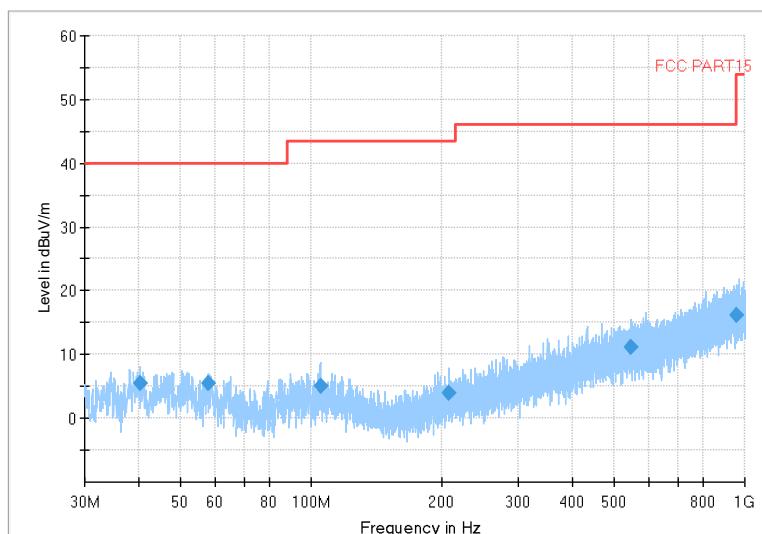
Carrier frequency (MHz): 6945

Channel No.:199



Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

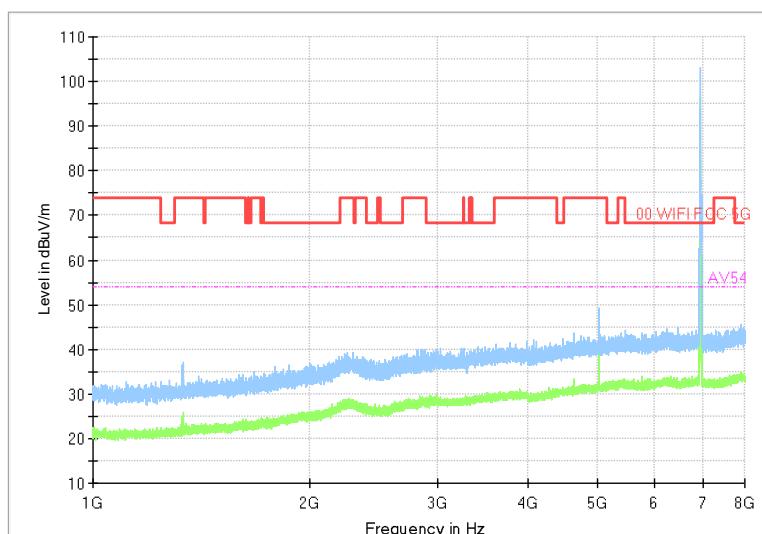


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ax(HE80)

Full Spectrum



Frequency Range: 1GHz -8GHz

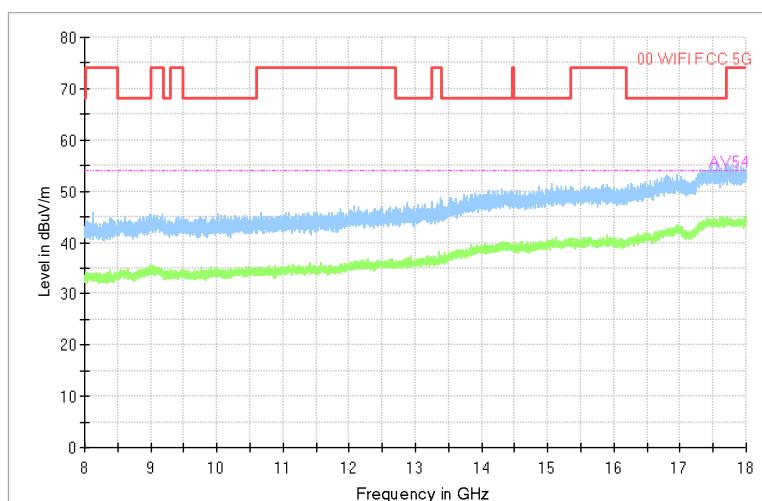
Detector: Av mode and PK mode

Test Mode: 802.11ax(HE80)



Test Report No.: PSU-NQN2502260117RF04

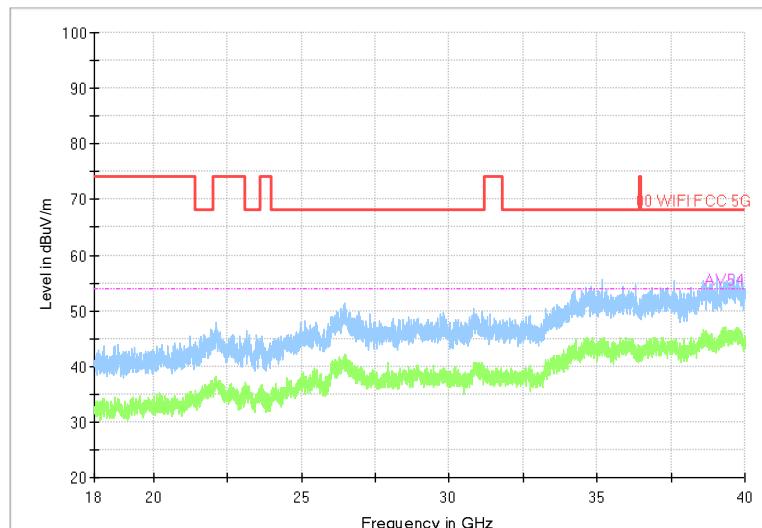
Full Spectrum



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)

Full Spectrum



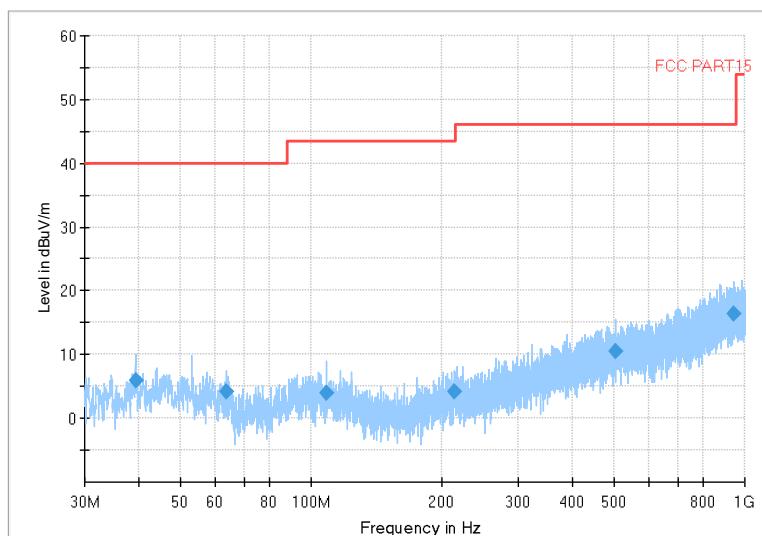
Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Test Mode: 802.11ax(HE80)

Carrier frequency (MHz): 7025
Channel No.:215



Test Report No.: PSU-NQN2502260117RF04

Full Spectrum

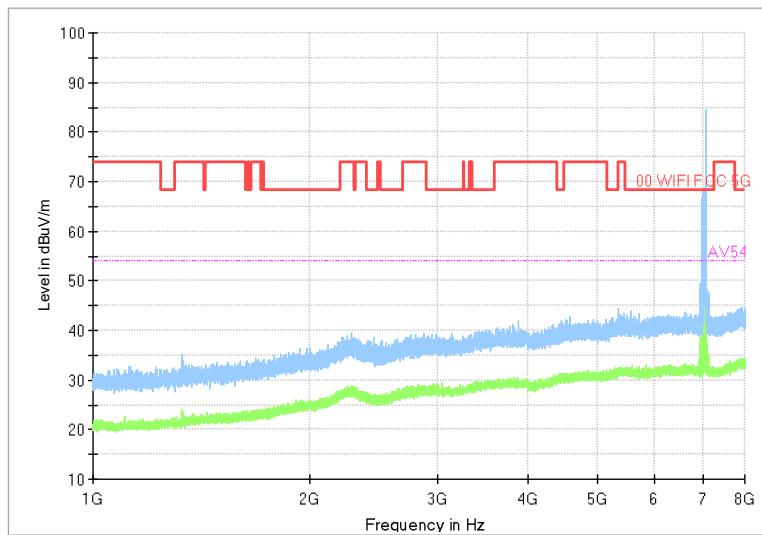


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11ax(HE80)

Full Spectrum



Frequency Range: 1GHz -8GHz

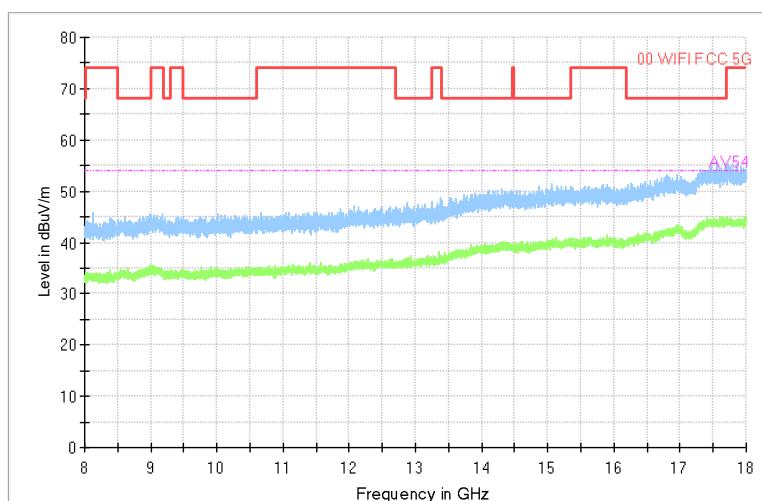
Detector: Av mode and PK mode

Modulation type: 802.11ax(HE80)



Test Report No.: PSU-NQN2502260117RF04

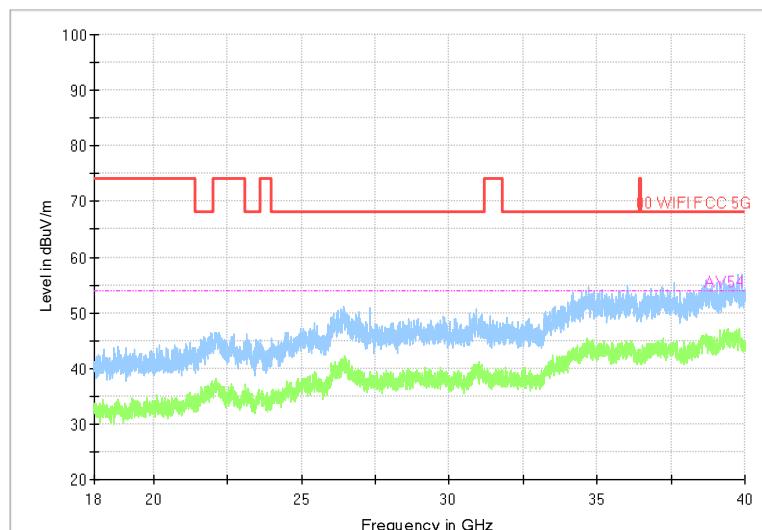
Full Spectrum



Comment

Frequency Range: 8GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)

Full Spectrum



Frequency Range: 18GHz -40GHz
Detector: Av mode and PK mode
Modulation type: 802.11ax(HE80)



3.2 IN-BAND EMISSION (MASK) MEASUREMENT

3.2.1 LIMITS OF IN-BAND EMISSION (MASK) MEASUREMENT

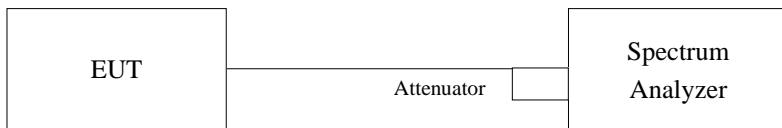
Test Item	Frequencies (MHz)	(X) dBc * 1
Emission Mask	At 1 MHz outside of channel edge	20
	At one channel bandwidth from the channel center ^{*2}	28
	At one- and one-half times the channel bandwidth away from channel center ^{*3}	40
	More than one- and one-half times the channel bandwidth	40

* 1 : The power spectral density must be suppressed by "x" dB

* 2 : At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression,

* 3 : At frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression.

3.2.2 TEST SETUP



3.2.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	R&S	ESW 44	101973	Mar.28,24	Mar.27,26
Open Switch and Control Unit	R&S	OSP-B157W8	100836	N/A	N/A
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A03	182185	Mar.29,24	Mar.28,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Hygrothermograph	DELI	20210528	SZ015	Sep.06,23	Sep.05,25
PC	LENOVO	E14	HRSW0024	N/A	N/A
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.27,24	Apr.26,25
Test Software	EMC32	EMC32	N/A	N/A	N/A
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26
Power Meter	R&S	NRX	102380	Mar.28,24	Mar.27,26
Power Meter probe	R&S	NRP6A	102942	Mar.28,24	Mar.27,26



NOTE:

1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.

3.2.4 TEST PROCEDURE

- a. Connect output of the antenna port to a spectrum analyzer and adjust appropriate attenuation.
- b. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2020. (Determine the channel edge.)
- c. Measure the power spectral density (for emissions mask reference) using the following procedure:
 - a) Set the span to encompass the entire 26 dB EBW of the signal.
 - b) Set RBW = same RBW used for 26 dB EBW measurement.
 - c) Set VBW $\geq 3 \times$ RBW
 - d) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$.
 - e) Sweep time = auto.
 - f) Detector = RMS (i.e., power averaging)
 - g) Trace average at least 100 traces in power averaging (rms) mode.
 - h) Use the peak search function on the instrument to find the peak of the spectrum.
- d. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
 - a) Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
 - b) Suppressed by 28 dB at one channel bandwidth from the channel center.
 - c) Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
- e. Adjust the span to encompass the entire mask as necessary and clear trace.
- f. Trace average at least 100 traces in power averaging (rms) mode.
- g. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask

3.2.5 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.2.6 TEST RESULTS

Please Refer to Appendix A Of this test report.



3.3 CONDUCTED EMISSION MEASUREMENT

3.3.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	102749	Mar.28,24	Mar.27,26
ELEKTRA test software	Rohde&Schwarz	ELEKTRA	NA	N/A	N/A
LISN network	Rohde&Schwarz	ENV216	102640	Mar.28,24	Mar.27,26
CABLE	Rohde&Schwarz	W61.01	N/A	Apr.27,24	Apr.26,25
CABLE	Rohde&Schwarz	W601	N/A	Apr.27,24	Apr.26,25

NOTE: 1. The test was performed in CE shielded room.

2. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to CEPREI/CHINA, GRRG/CHINA and NIM/CHINA.

3.3.3 TEST PROCEDURES

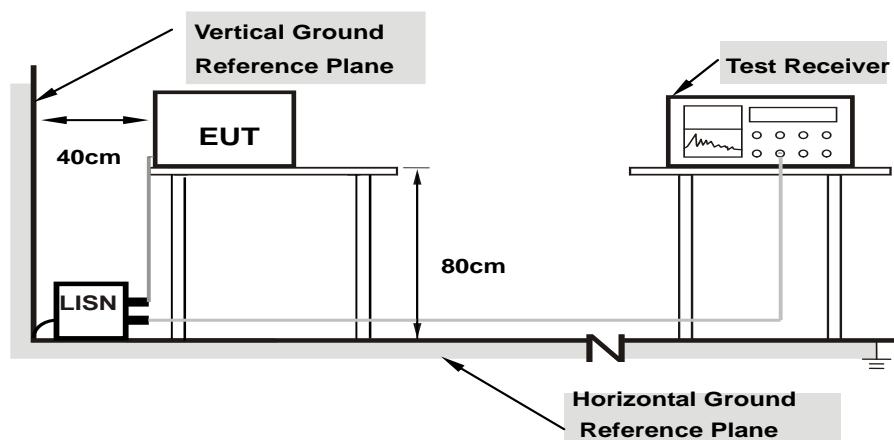
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

3.3.4 DEVIATION FROM TEST STANDARD

No deviation.

3.3.5 TEST SETUP



Note: 1. Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.3.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

3.3.7 TEST RESULTS

N/A

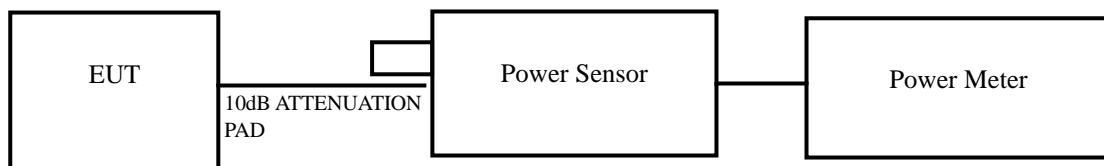


3.4 TRANSMIT POWER MEASUREMENT

3.4.1 LIMITS OF TRANSMIT POWER MEASUREMENT

Operation Band	EUT Category	Limit
		Max Average Power
U-NII-5 U-NII-6 U-NII-7 U-NII-8	Client Devices (controlled of an indoor AP)	EIRP 24 dBm
U-NII-5 U-NII-7	Client Devices (controlled of a Standard Power AP)	EIRP 30 dBm

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.2.3 to get information on the above instrument.

3.4.4 TEST PROCEDURE

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

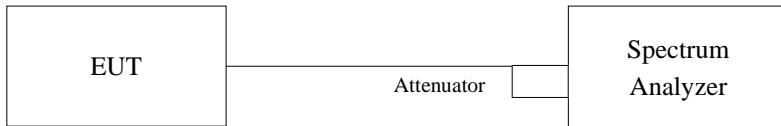
3.4.7 TEST RESULT

Please Refer to Appendix A Of this test report.



3.5 EMISSION BANDWIDTH MEASUREMENT

3.5.1 TEST SETUP



3.5.2 TEST INSTRUMENTS

Refer to section 3.2.3 to get information of above instrument.

3.5.3 TEST PROCEDURE

For 99% Occupied Bandwidth

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

For 26dB Bandwidth

- a. Set RBW = approximately 1% of the emission bandwidth.
- b. Set the VBW > RBW.
- c. Detector = Peak.
- d. Trace mode = max hold.
- e. Measure the maximum width of the emission that is 26 dB down from the peak 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%.

3.5.4 TEST RESULT

Please Refer to Appendix A Of this test report.

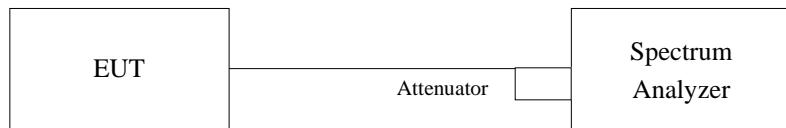


3.6 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

3.6.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Operation Band	EUT Category	Limit
		Peak Power Density (EIRP)
U-NII-5 U-NII-6 U-NII-7 U-NII-8	Client Devices (controlled of an indoor AP)	-1 dBm/MHz
U-NII-5 U-NII-7	Client Devices (controlled of a Standard Power AP)	17 dBm/MHz

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.2.3 to get information on the above instrument.



3.6.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP level.
- e. Follow ANSI 63.10 and KDB 412172 D01 v01r01, EIRP Value (dBm) = Field Strength Value (dB μ V/m) + Correction Factor @ 3m.
- f. Correction Factor (dB) @ 3m = $20\log(D) - 104.7$; where D is the measurement distance @3m=-95.23dB

Note: Spectrum analyzer setting as below:

Method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to "free run".
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and add $10 \log (1/\text{duty cycle})$

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 EUT OPERATING CONDITIONS

Same as 3.3.6.

3.6.7 TEST RESULTS

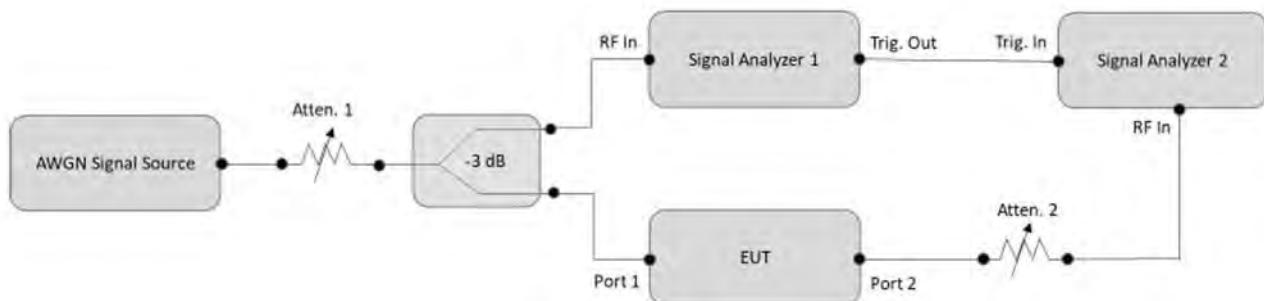
Please Refer to Appendix A Of this test report.

3.7 CONTENTION BASED PROTOCOL MEASUREMENT

3.7.1 LIMITS OF CONTENTION BASED PROTOCOL MEASUREMENT

Unlicensed indoor low-power devices must detect co-channel radio frequency power that is at least -62 dBm (The threshold is referenced to a 0 dBi antenna gain.) or lower. Additionally, indoor low-power devices must detect co-channel energy with 90% or greater certainty.

3.7.2 TEST SETUP



3.7.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	102749	Mar.28,24	Mar.27,26
ELEKTRA test software	Rohde&Schwarz	ELEKTRA	NA	N/A	N/A
LISN network	Rohde&Schwarz	ENV216	102640	Mar.28,24	Mar.27,26
CABLE	Rohde&Schwarz	W61.01	N/A	Apr.27,24	Apr.26,25
CABLE	Rohde&Schwarz	W601	N/A	Apr.27,24	Apr.26,25



3.7.4 TEST PROCEDURE

- a. Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
- b. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters (set as following section 4.7.5 EUT operating condition).
- c. Determine number of times detection threshold test as following table,

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Same as EUT transmission
$BW_{Inc} < BW_{EUT} \leq 2xBW_{Inc}$	Once	Contained within BW_{EUT}
$2xBW_{Inc} < BW_{EUT} \leq 4xBW_{Inc}$	Twice. (Incumbent transmission is contained within BW_{EUT})	Closely to the lower edge and upper edge of the EUT Channel
$BW_{EUT} > 4xBW_{Inc}$	Three times	Closely to the lower edge ,in the middle and upper edge of the EUT Channel

- d. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use step c table to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
- e. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT.
- f. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
- g. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
- h. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
- i. Refer to step c table to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step d, choose a different center frequency for the AWGN signal and repeat the process.

3.7.5 EUT OPERATING CONDITION

Set the EUT to transmit with a constant duty cycle and relative operating parameters which including power level, operating frequency, modulation and bandwidth.

3.7.6 TEST RESULTS

Please Refer to Appendix A Of this test report.



3.8 ANTENNA REQUIREMENTS

3.8.1 STANDARD APPLICABLE

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.8.2 ANTENNA CONNECTED CONSTRUCTION

An embedded-in antenna design is used.

3.8.3 ANTENNA GAIN

According to FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain=GANT +Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain= $10 \log(N_{ANT}/N_{SS})$ dB;

For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for $N_{ANT} \leq 4$;

The EUT supports Cyclic Delay Diversity (CDD) mode,

For power measurements, the directional GANT is set equal to the antenna having the highest gain as following formulas.

Directional Gain = Max.Gain + Array Gain.

For PSD measurements, the directional GANT is calculation is following F)2)f)ii of KDB 662911 D01 v02r01. The directional gain is calculated as following table.

6GHz	Band	Ant 0 (dBi)	Ant 1 (dBi)	DG For Power (dBi)
	U-NII 5	3.52	3.52	3.52
	U-NII 6	3.52	3.52	-4
	U-NII 7	3.52	3.52	-4
	U-NII 8	3.52	3.52	-4

NOTE :DG= directional gain, Power Limit Reduction = DG For Power Gain -6dbi<0

PSD Limit Reduction = DG For PSD – 6dBi<0. Therefore, it is not necessary to reduce maximum peak output power and PSD limit.

4 PICTURES OF TEST ARRANGEMENTS

Please refer to the attached file (Test Setup Photo).



Test Report No.: PSU-NQN2502260117RF04

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

6 APPENDIX A: RLAN

EMISSION BANDWIDTH

TEST RESULT

U-NII-5

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5955MHz	6175MHz	6415MHz
802.11a	Chain0	25.284	23.873	23.666
802.11a	Chain1	25.733	23.251	23.476
802.11ax HE20	Chain0	25.625	22.403	23.693
802.11ax HE20	Chain1	22.447	22.036	24.837

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5965MHz	6165MHz	6405MHz
802.11ax HE40	Chain0	39.287	39.181	39.399
802.11ax HE40	Chain1	39.172	39.226	39.383

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5985MHz	6145MHz	6385MHz
802.11ax HE80	Chain0	79.742	79.911	79.723
802.11ax HE80	Chain1	79.720	80.030	80.090

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			5955MHz	6175MHz	6415MHz
802.11ax HE20	26T 0	Chain0	19.960	19.660	19.962
802.11ax HE20	26T 0	Chain1	20.333	20.050	19.725

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			5965MHz	6165MHz	6405MHz
802.11ax HE40	26T 0	Chain0	19.368	19.294	19.160
802.11ax HE40	26T 0	Chain1	19.258	19.167	19.320



Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			5985MHz	6145MHz	6385MHz
802.11ax HE80	26T 0	Chain0	20.135	19.496	20.631
802.11ax HE80	26T 0	Chain1	20.390	20.316	20.639

U-NII-6

Test Mode	Antenna	26dB Bandwidth (MHz)		
		6435MHz	6475MHz	6515MHz
802.11a	Chain0	23.090	23.388	24.580
802.11a	Chain1	23.101	22.989	23.625
802.11ax HE20	Chain0	26.905	24.337	25.058
802.11ax HE20	Chain1	26.451	26.071	24.614

Test Mode	Antenna	26dB Bandwidth (MHz)		
		6445MHz	---	6525MHz
802.11ax HE40	Chain0	59.385	---	69.274
802.11ax HE40	Chain1	72.484	---	54.020

Test Mode	Antenna	26dB Bandwidth (MHz)		
		6465MHz	---	---
802.11ax HE80	Chain0	79.984	---	---
802.11ax HE80	Chain1	79.926	---	---

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6435MHz	6475MHz	6515MHz
802.11ax HE20	26T 0	Chain0	20.112	20.029	19.739
802.11ax HE20	26T 0	Chain1	20.349	20.202	19.757

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6445MHz	---	6525MHz
802.11ax HE40	26T 0	Chain0	19.109	---	19.152
802.11ax HE40	26T 0	Chain1	18.576	---	19.196

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6465MHz	---	---
802.11ax HE80	26T 0	Chain0	19.601	---	---
802.11ax HE80	26T 0	Chain1	20.072	---	---



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Test Mode	Antenna	26dB Bandwidth (MHz)		
		6535MHz	6695MHz	6875MHz
802.11a	Chain0	23.909	23.188	23.410
802.11a	Chain1	23.315	22.722	23.284
802.11ax HE20	Chain0	21.629	21.954	21.132
802.11ax HE20	Chain1	24.055	20.871	22.097

Test Mode	Antenna	26dB Bandwidth (MHz)		
		6565MHz	6685MHz	6845MHz
802.11ax HE40	Chain0	39.272	39.272	39.499
802.11ax HE40	Chain1	39.275	39.302	39.143

Test Mode	Antenna	26dB Bandwidth (MHz)		
		6545MHz	6705MHz	6865MHz
802.11ax HE80	Chain0	80.320	79.928	79.678
802.11ax HE80	Chain1	79.718	79.866	79.912

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6535MHz	6695MHz	6875MHz
802.11ax HE20	26T 0	Chain0	19.954	20.196	20.363
802.11ax HE20	26T 0	Chain1	20.358	19.944	20.272

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6565MHz	6685MHz	6845MHz
802.11ax HE40	26T 0	Chain0	18.939	18.955	18.964
802.11ax HE40	26T 0	Chain1	19.088	19.430	18.879

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6545MHz	6705MHz	6865MHz
802.11ax HE80	26T 0	Chain0	20.516	20.095	20.527
802.11ax HE80	26T 0	Chain1	19.751	20.665	20.571



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Test Mode	Antenna	26dB Bandwidth (MHz)		
		6895MHz	6995MHz	7115MHz
802.11a	Chain0	24.548	23.536	24.117
802.11a	Chain1	22.147	25.007	22.761
802.11ax HE20	Chain0	27.532	38.722	24.216
802.11ax HE20	Chain1	28.043	37.015	21.075

Test Mode	Antenna	26dB Bandwidth (MHz)		
		6885MHz	6965MHz	7085MHz
802.11ax HE40	Chain0	39.237	39.235	39.117
802.11ax HE40	Chain1	39.193	39.264	39.432

Test Mode	Antenna	26dB Bandwidth (MHz)		
		6945MHz	---	7025MHz
802.11ax HE80	Chain0	79.796	---	79.940
802.11ax HE80	Chain1	79.870	---	79.807

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6895MHz	6995MHz	7115MHz
802.11ax HE20	26T 0	Chain0	20.338	20.014	20.053
802.11ax HE20	26T 0	Chain1	20.856	19.935	19.875

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6885MHz	6965MHz	7085MHz
802.11ax HE40	26T 0	Chain0	19.196	18.994	19.254
802.11ax HE40	26T 0	Chain1	19.158	19.329	19.068

Test Mode	Tones/ RU Index	Antenna	26dB Bandwidth (MHz)		
			6945MHz	---	7025MHz
802.11ax HE80	26T 0	Chain0	19.516	---	21.007
802.11ax HE80	26T 0	Chain1	20.190	---	20.009

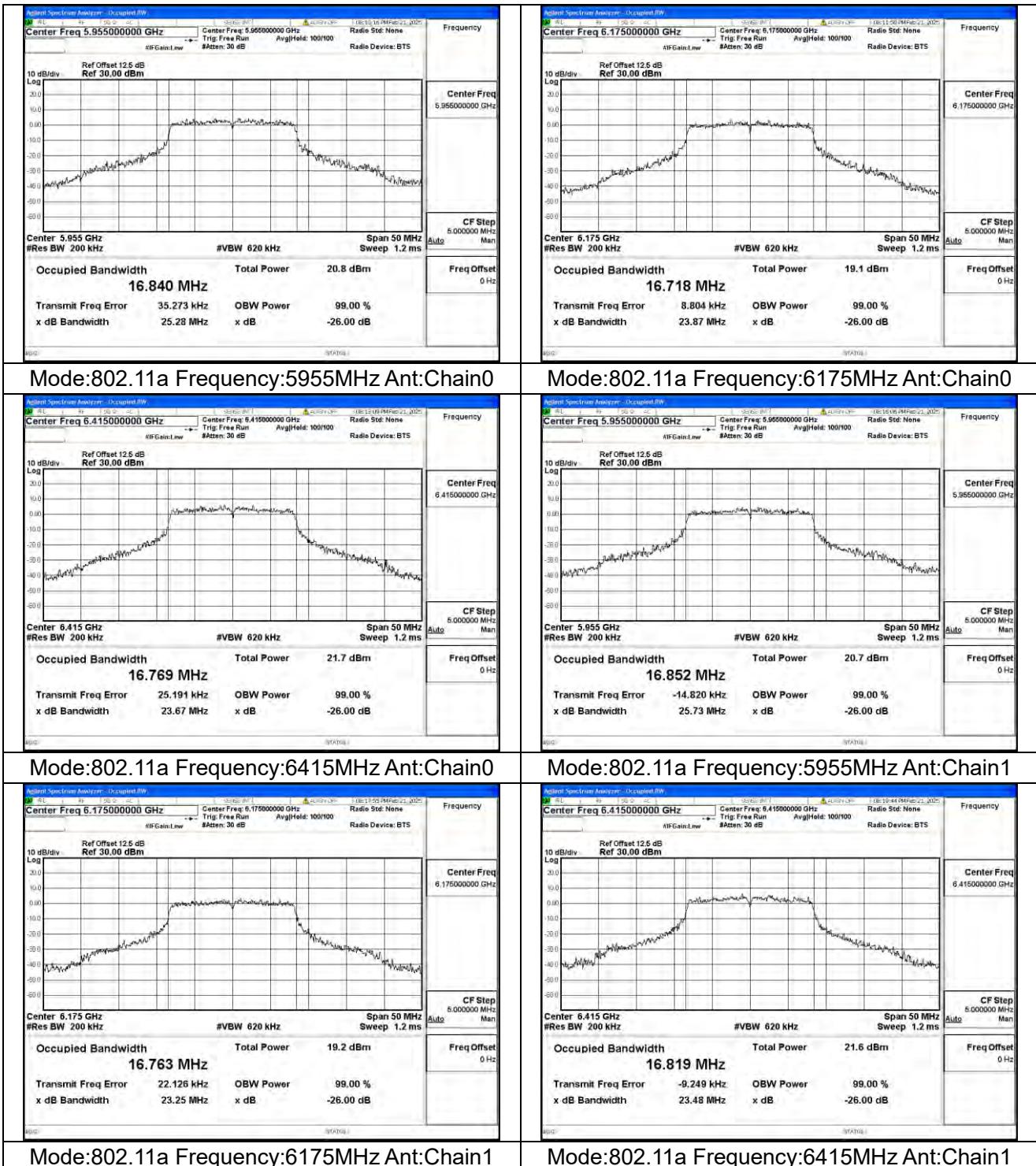


Test Report No.: PSU-NQN2502260117RF04

TEST GRAPHS

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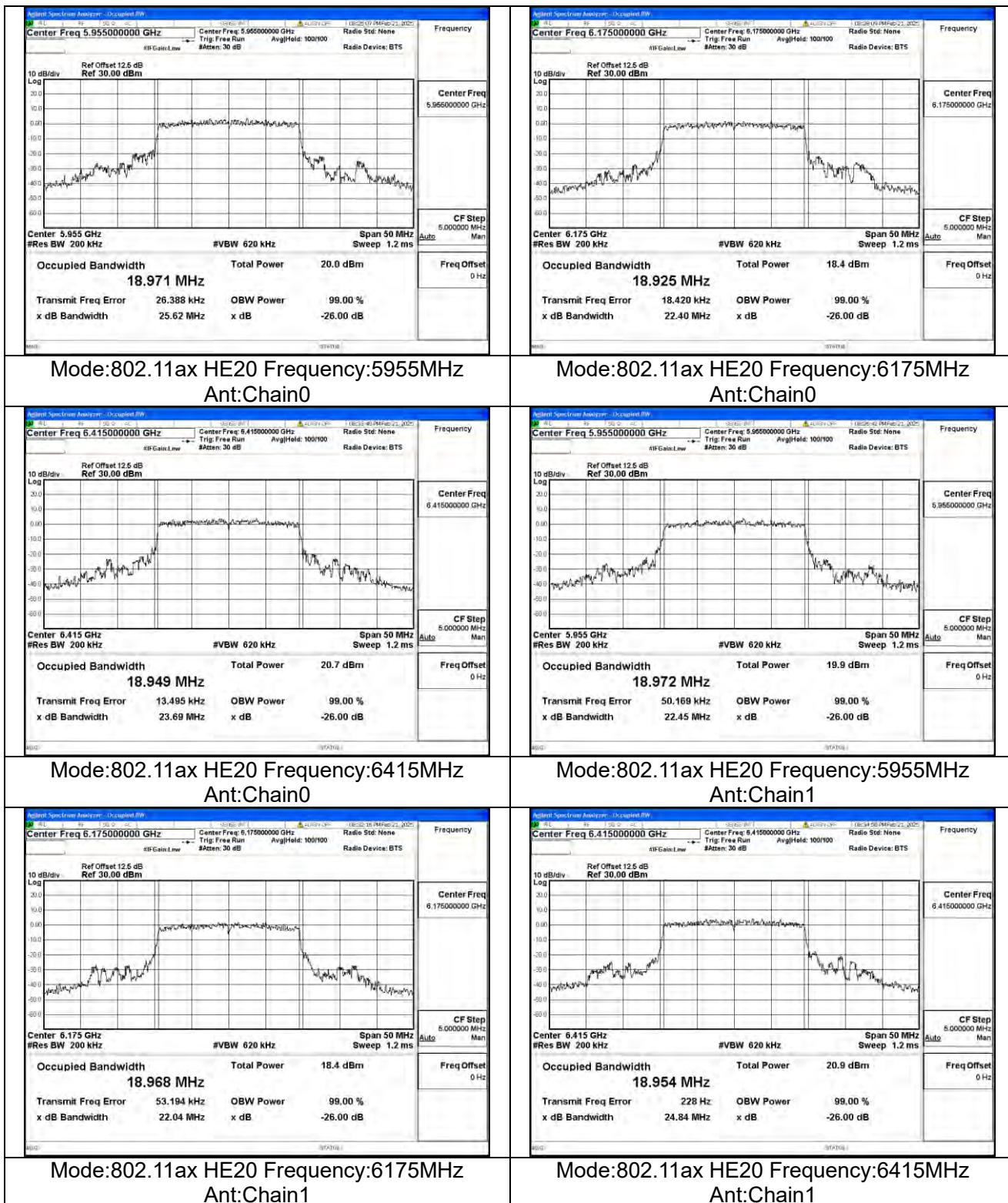
Test Mode: 802.11a





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Test Report No.: PSU-NQN2502260117RF04

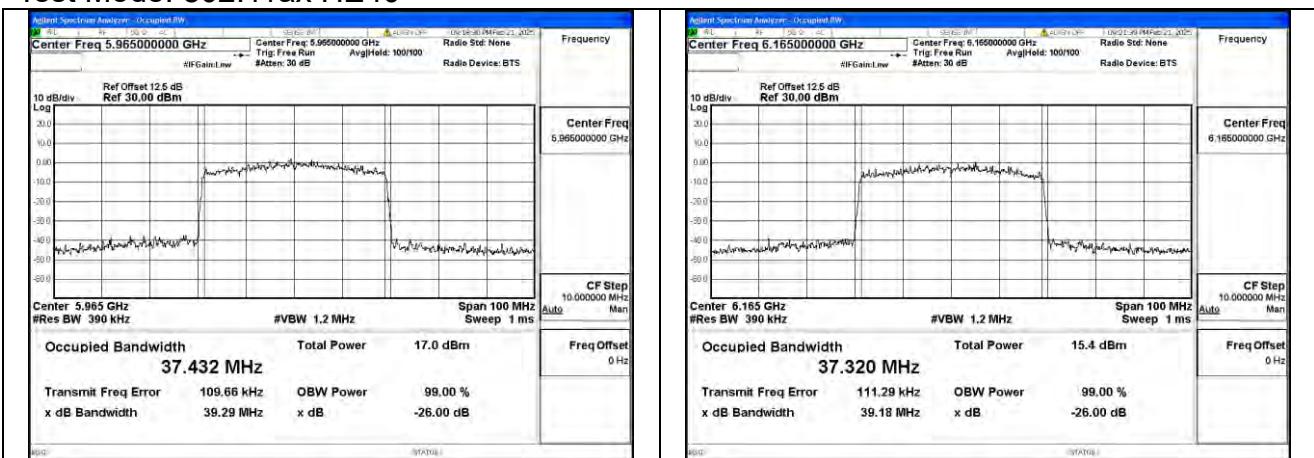




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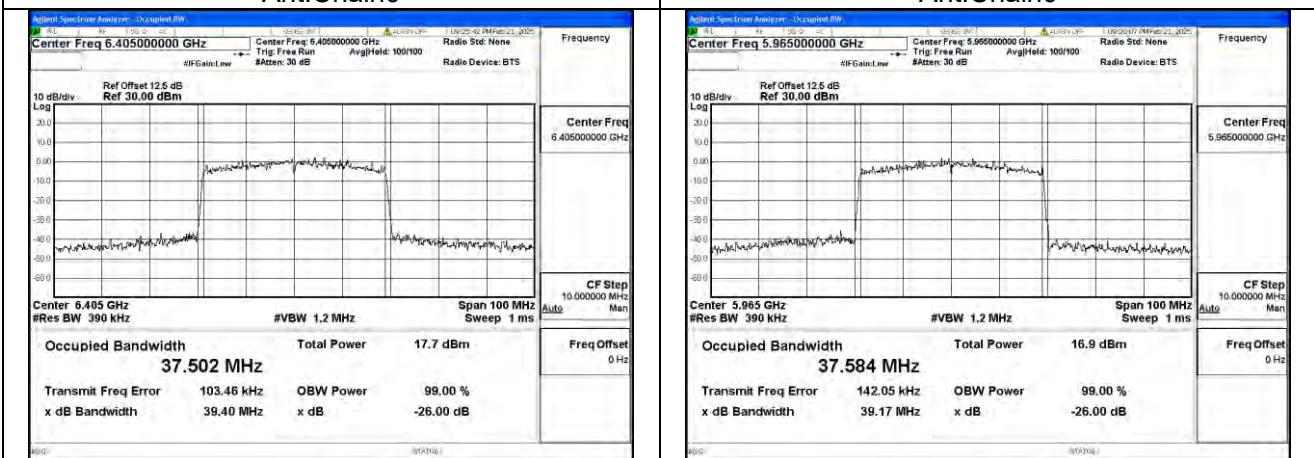
Test Report No.: PSU-NQN2502260117RF04

Test Mode: 802.11ax HE40



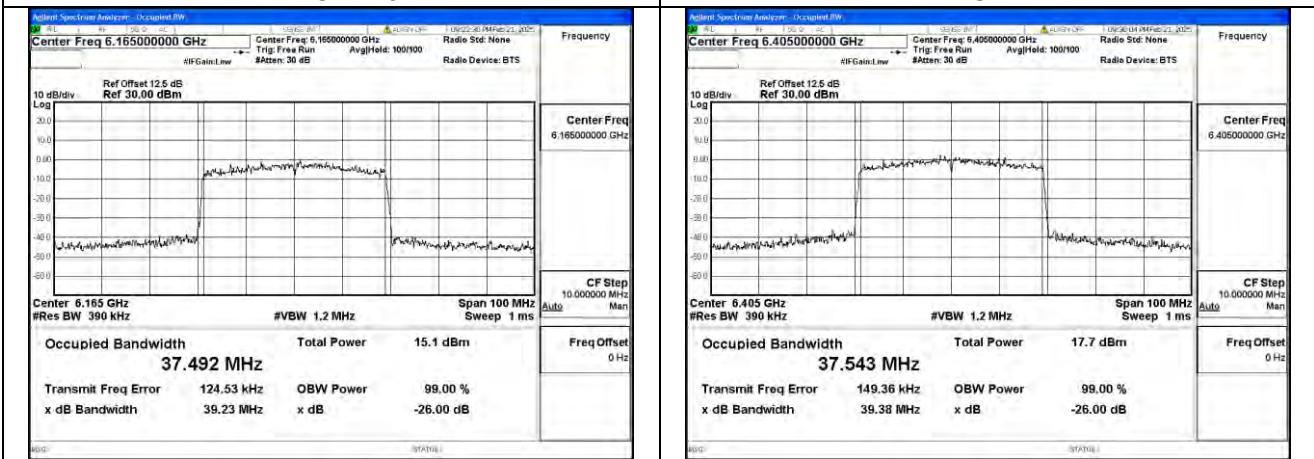
Mode:802.11ax HE40 Frequency:5965MHz
Ant:Chain0

Mode:802.11ax HE40 Frequency:6165MHz
Ant:Chain0



Mode:802.11ax HE40 Frequency:6405MHz
Ant:Chain0

Mode:802.11ax HE40 Frequency:5965MHz
Ant:Chain1



Mode:802.11ax HE40 Frequency:6165MHz
Ant:Chain1

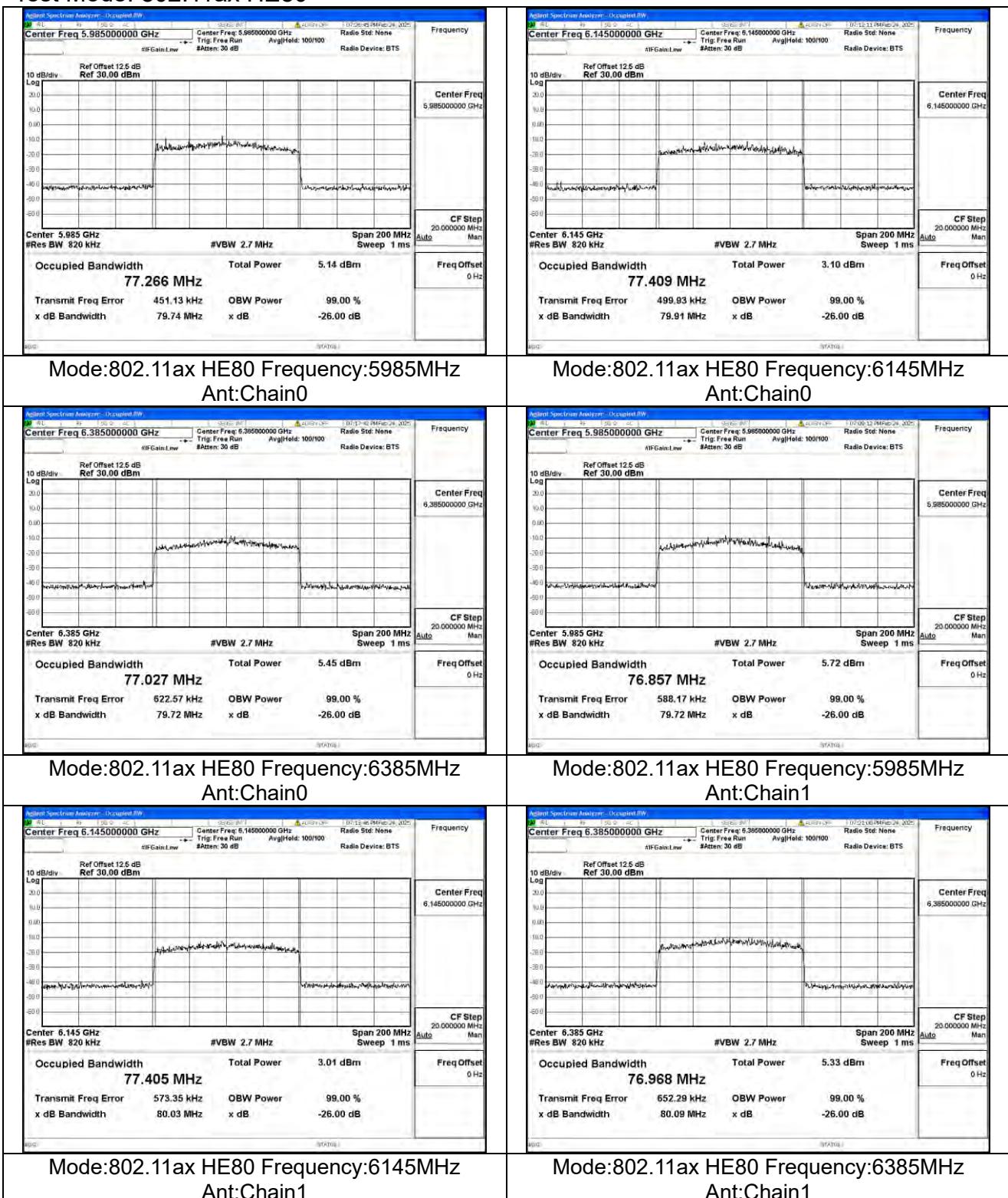
Mode:802.11ax HE40 Frequency:6405MHz
Ant:Chain1



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Test Report No.: PSU-NQN2502260117RF04

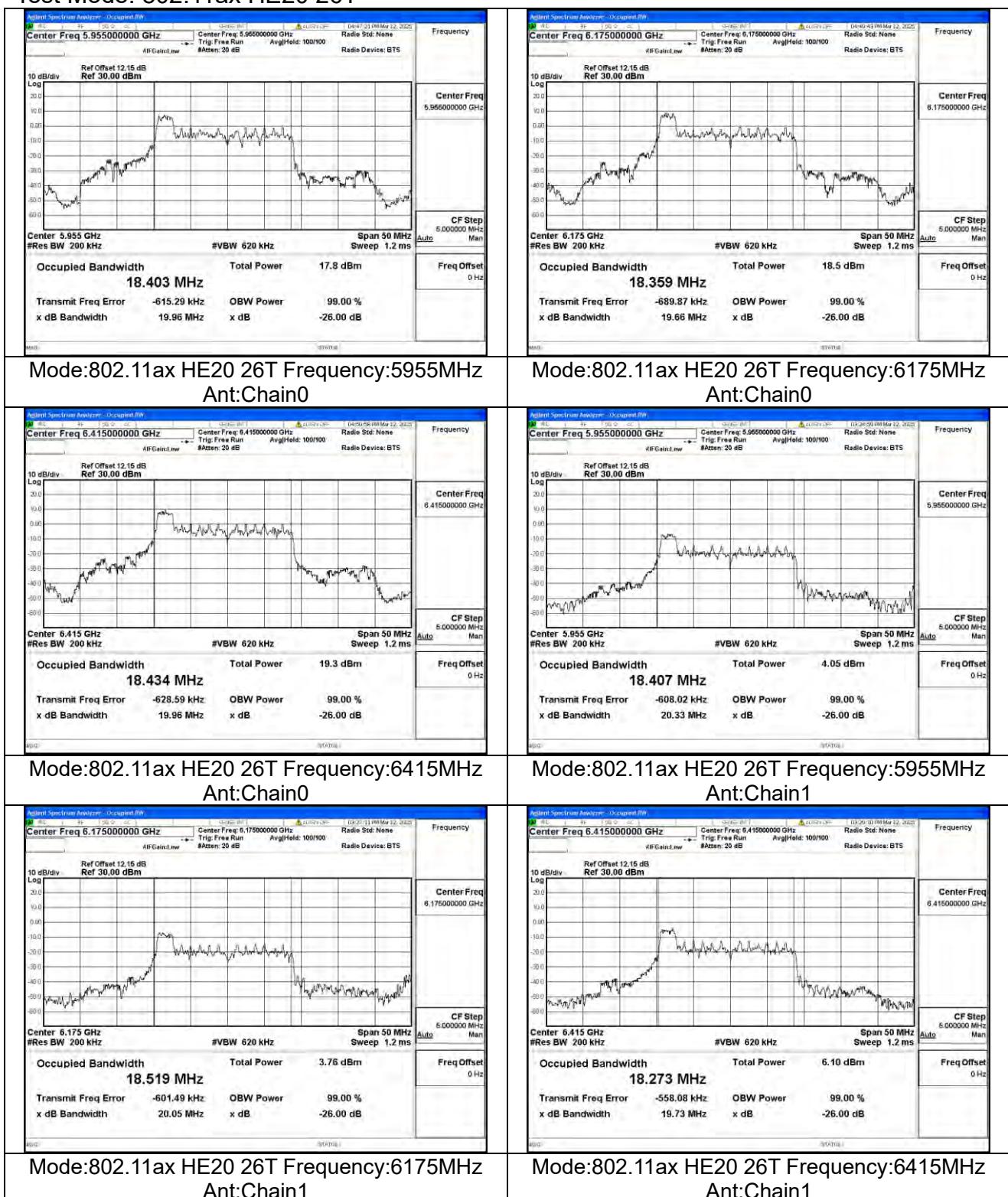
Test Mode: 802.11ax HE80





Test Report No.: PSU-NQN2502260117RF04

Test Mode: 802.11ax HE20 26T

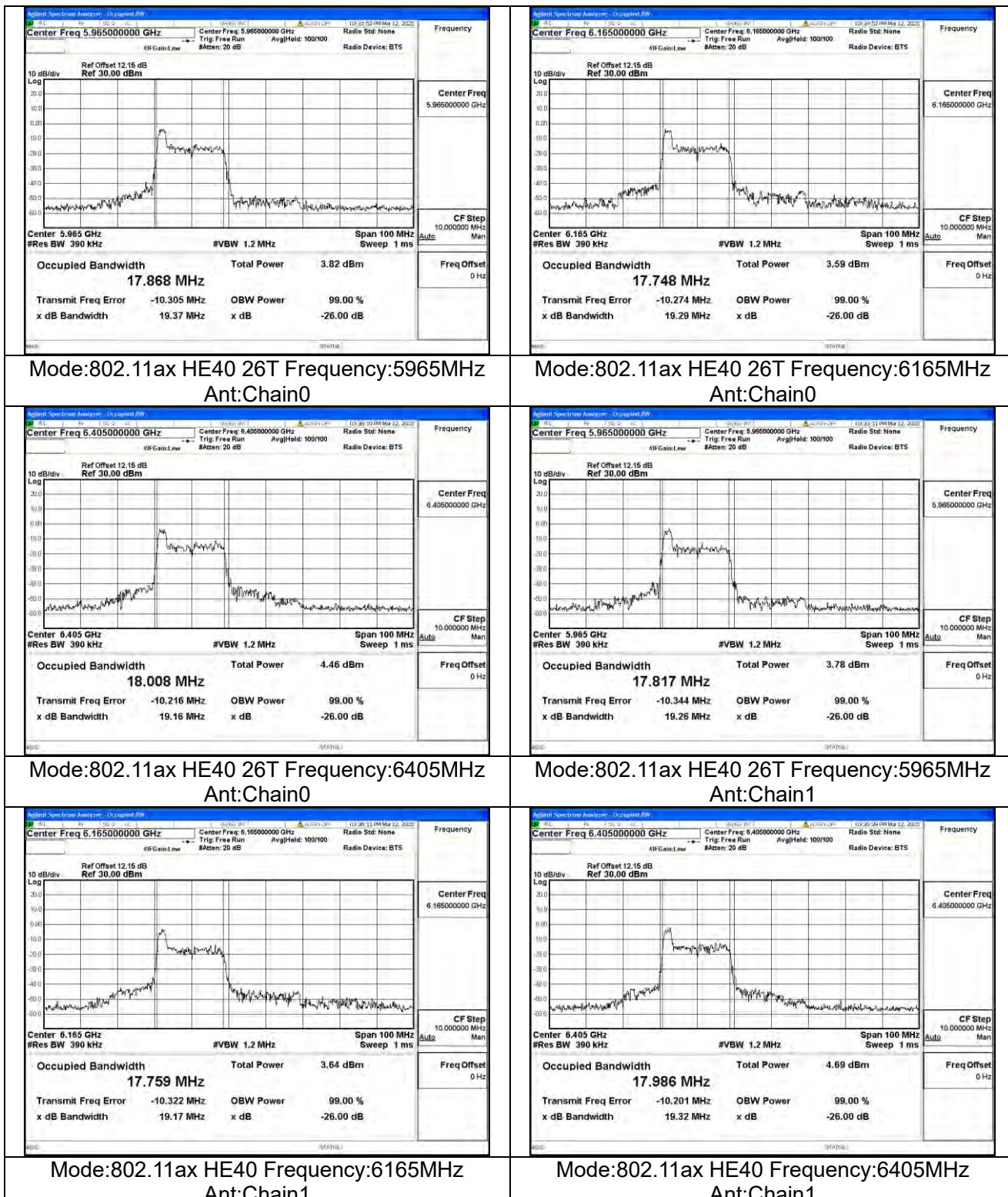


Test Mode: 802.11ax HE40



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Test Report No.: PSU-NQN2502260117RF04

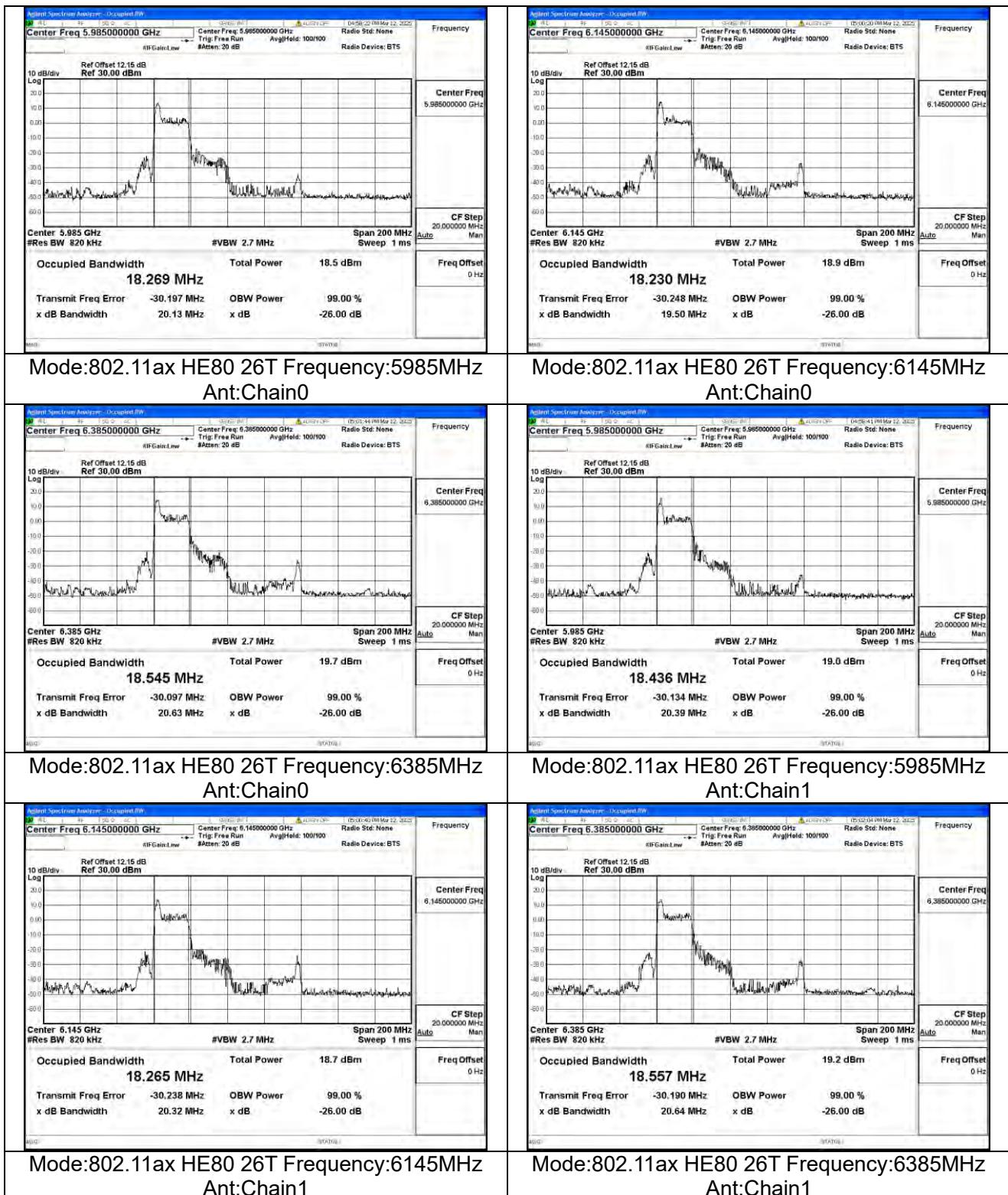


Test Mode: 802.11ax HE80 26T



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Test Report No.: PSU-NQN2502260117RF04

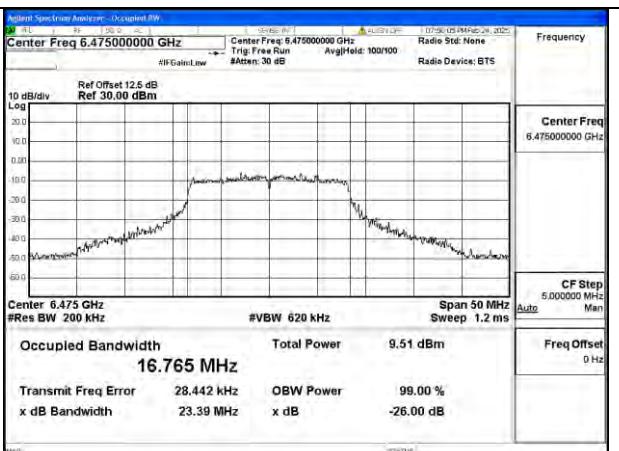
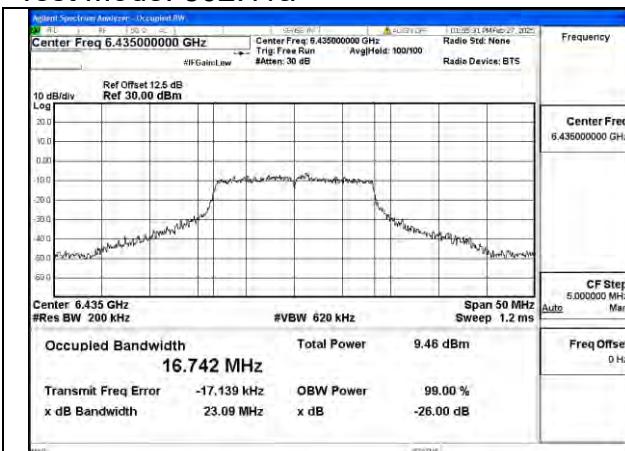




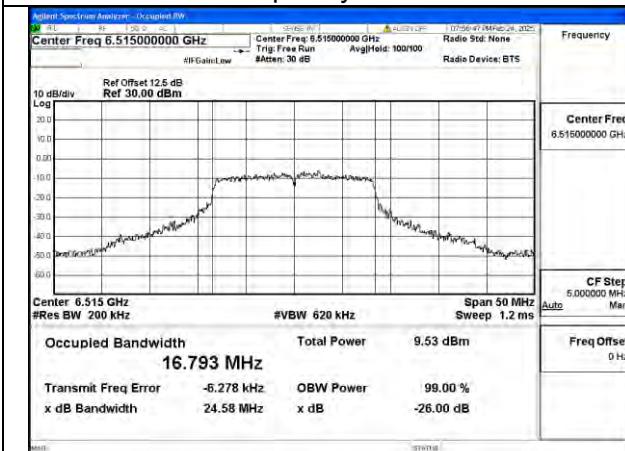
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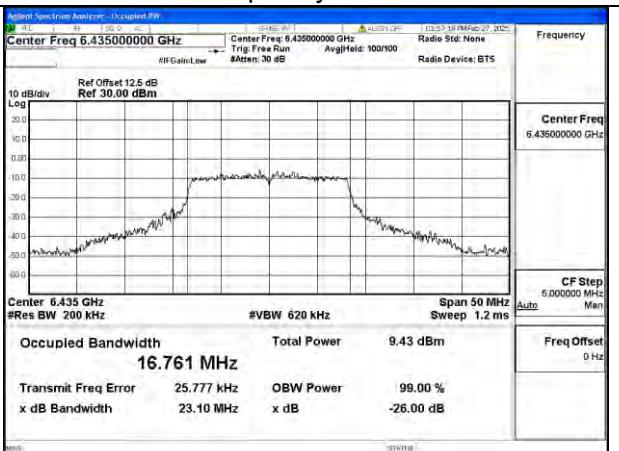
Test Mode: 802.11a



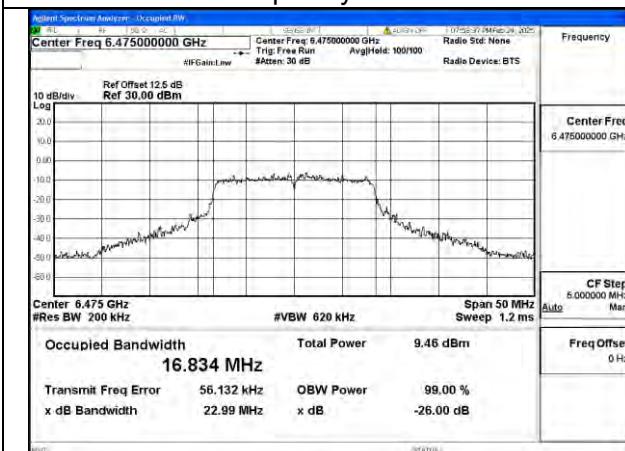
Mode:802.11a Frequency:6435MHz Ant:Chain0



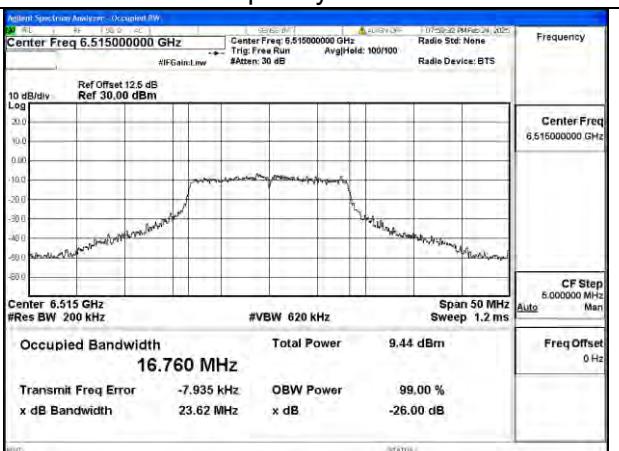
Mode:802.11a Frequency:6435MHz Ant:Chain0



Mode:802.11a Frequency:6515MHz Ant:Chain0



Mode:802.11a Frequency:6435MHz Ant:Chain1



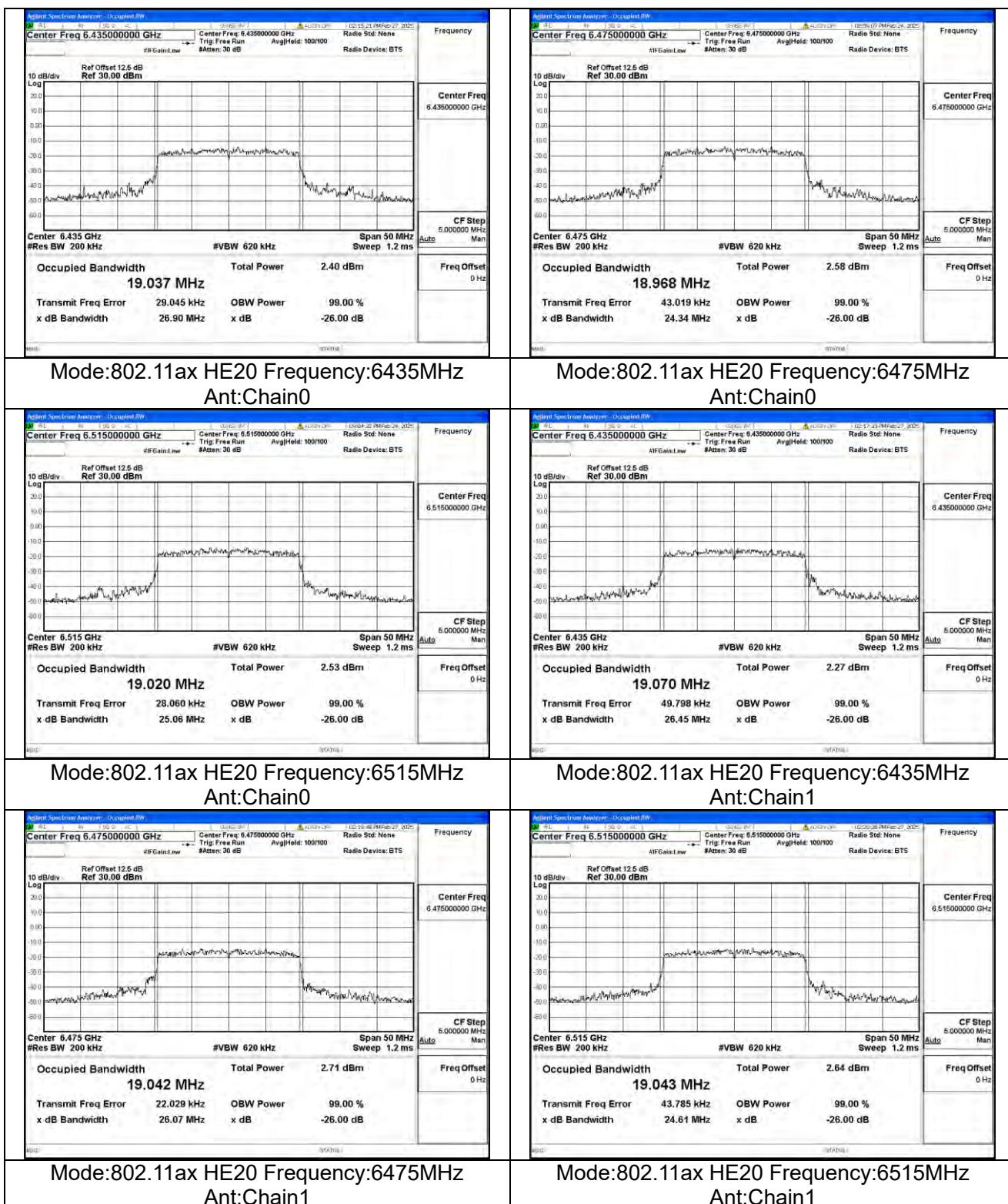
Mode:802.11a Frequency:6475MHz Ant:Chain1

Mode:802.11a Frequency:6515MHz Ant:Chain1



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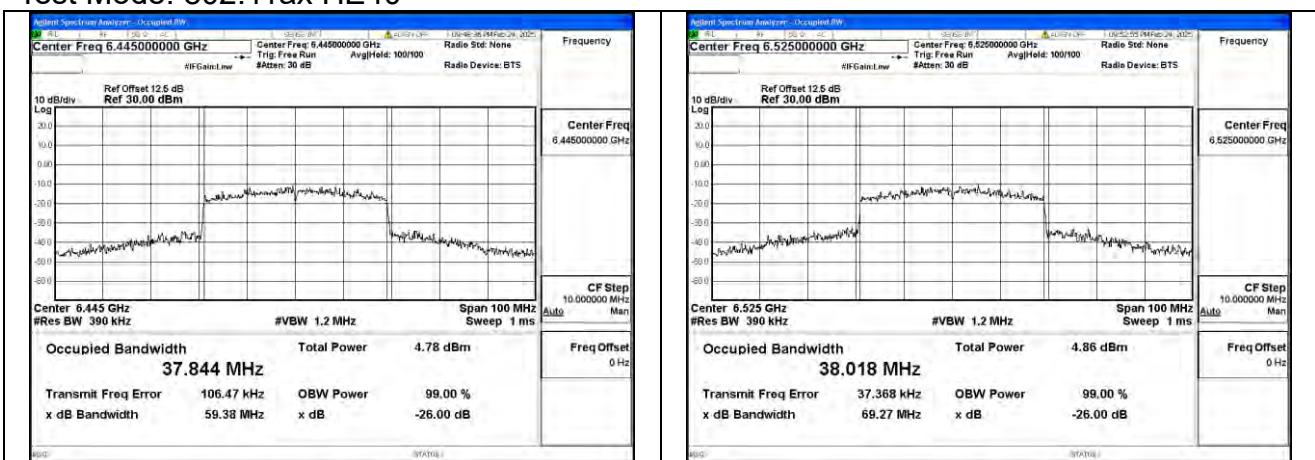
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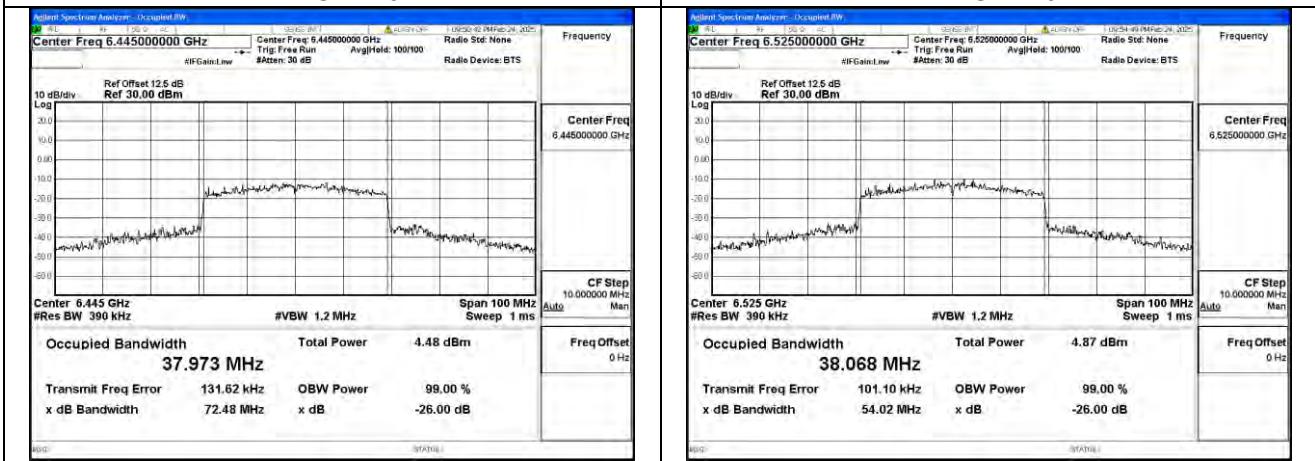
Test Report No.: PSU-NQN2502260117RF04

Test Mode: 802.11ax HE40



Mode:802.11ax HE40 Frequency:6445MHz
Ant:Chain0

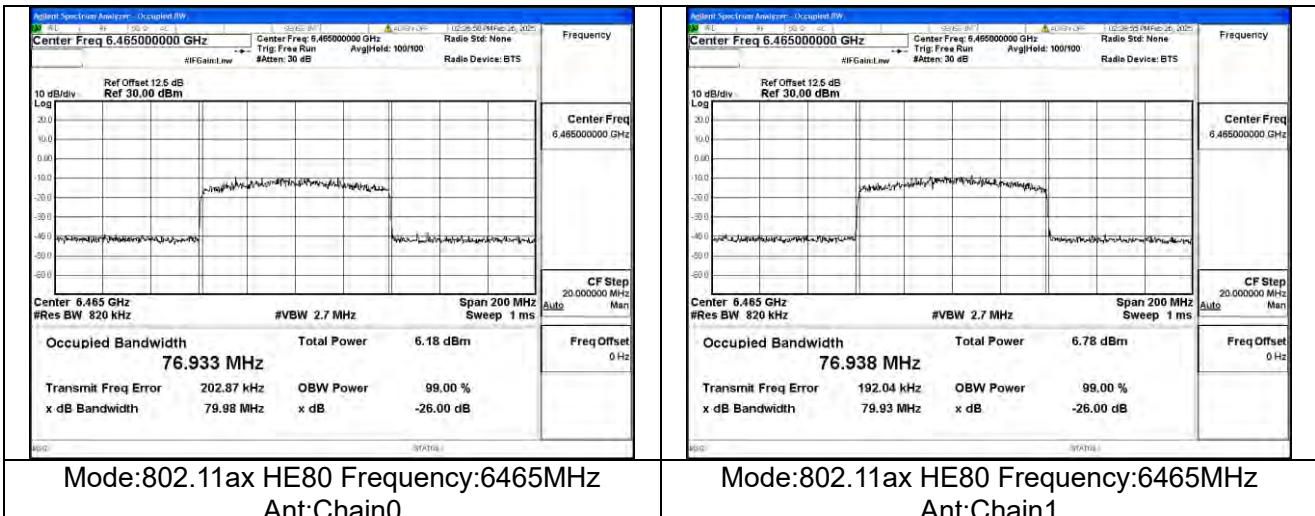
Mode:802.11ax HE40 Frequency:6525MHz
Ant:Chain0



Mode:802.11ax HE40 Frequency:6445MHz
Ant:Chain1

Mode:802.11ax HE40 Frequency:6525MHz
Ant:Chain1

Test Mode: 802.11ax HE80



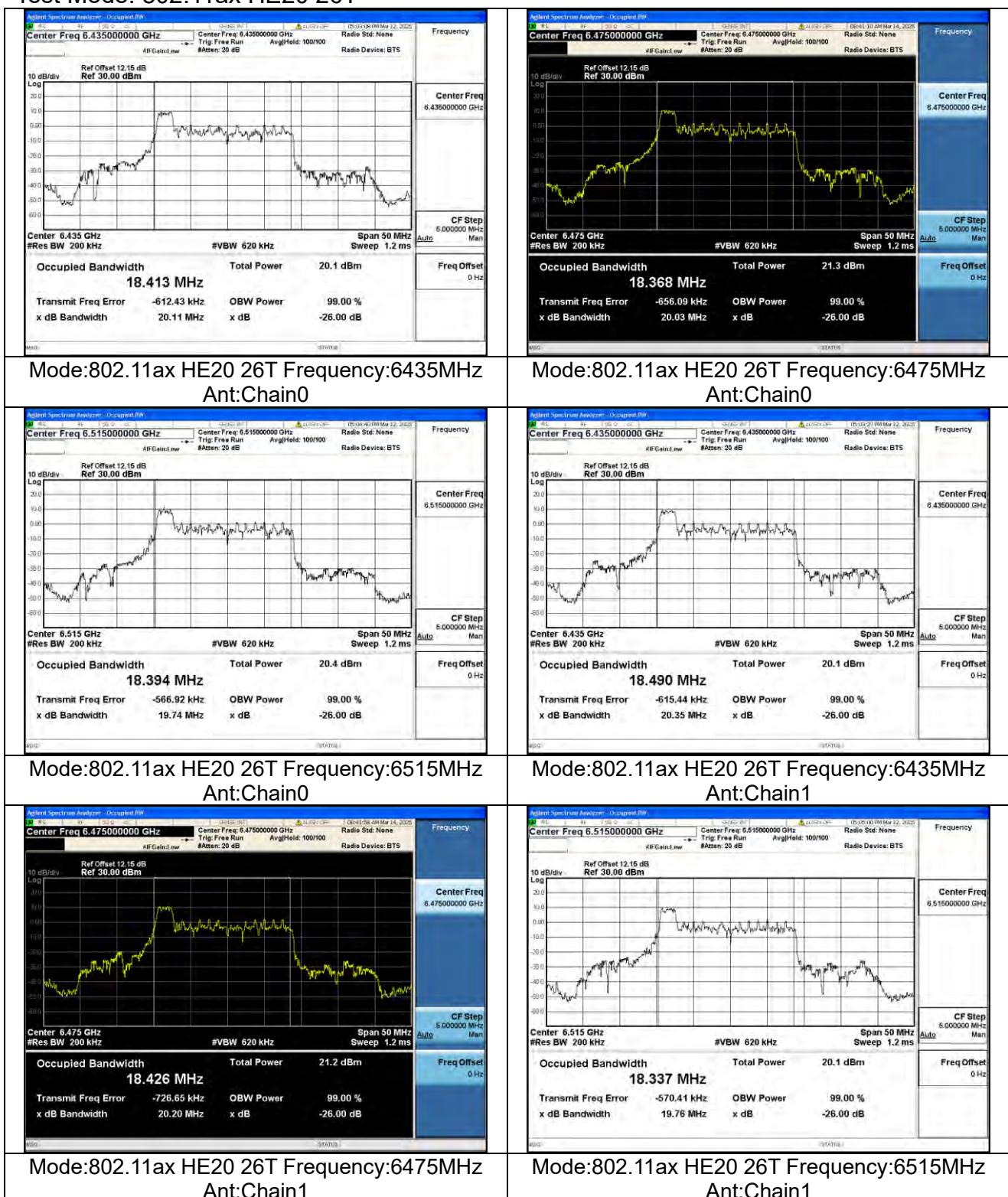
Mode:802.11ax HE80 Frequency:6465MHz
Ant:Chain0

Mode:802.11ax HE80 Frequency:6465MHz
Ant:Chain1



Test Report No.: PSU-NQN2502260117RF04

Test Mode: 802.11ax HE20 26T

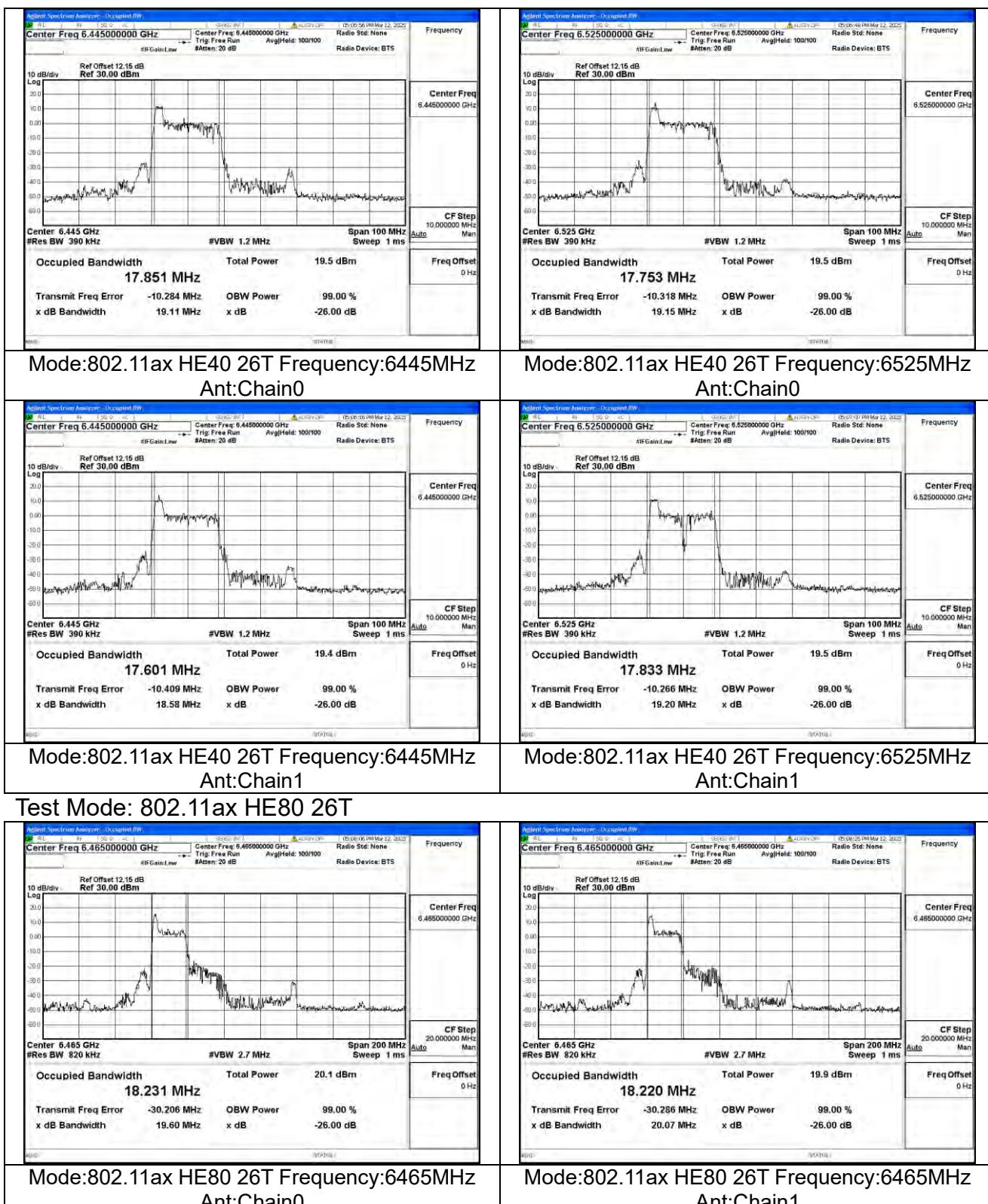


Test Mode: 802.11ax HE40 26T



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Test Report No.: PSU-NQN2502260117RF04

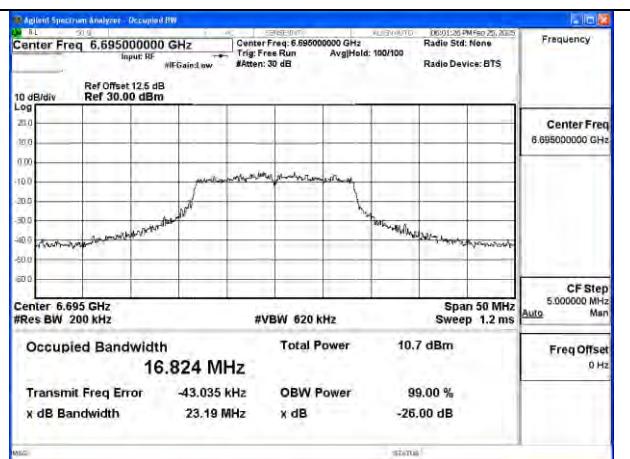
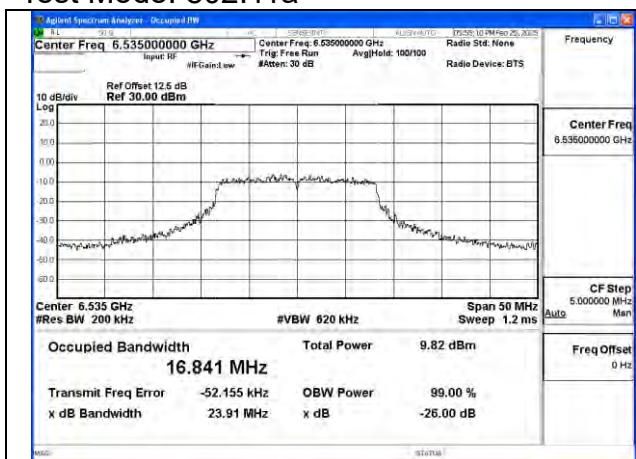




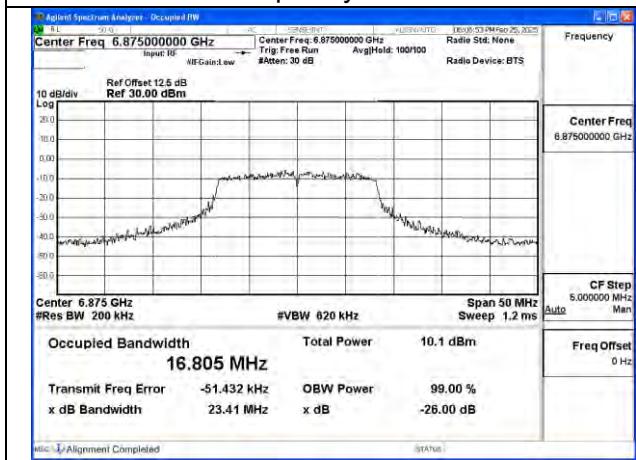
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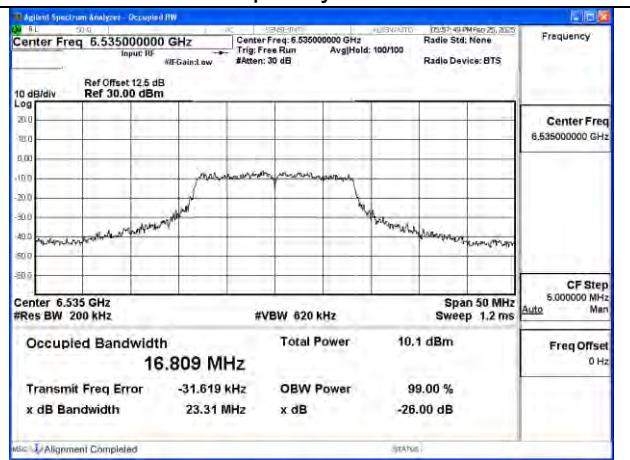
Test Mode: 802.11a



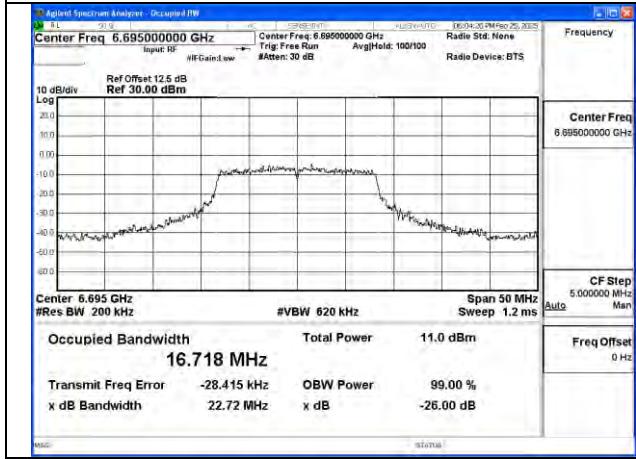
Mode:802.11a Frequency:6535MHz Ant:Chain0



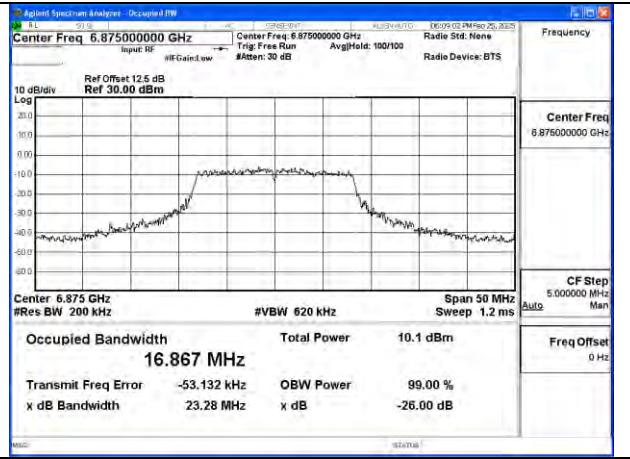
Mode:802.11a Frequency:6695MHz Ant:Chain0



Mode:802.11a Frequency:6875MHz Ant:Chain0



Mode:802.11a Frequency:6535MHz Ant:Chain1



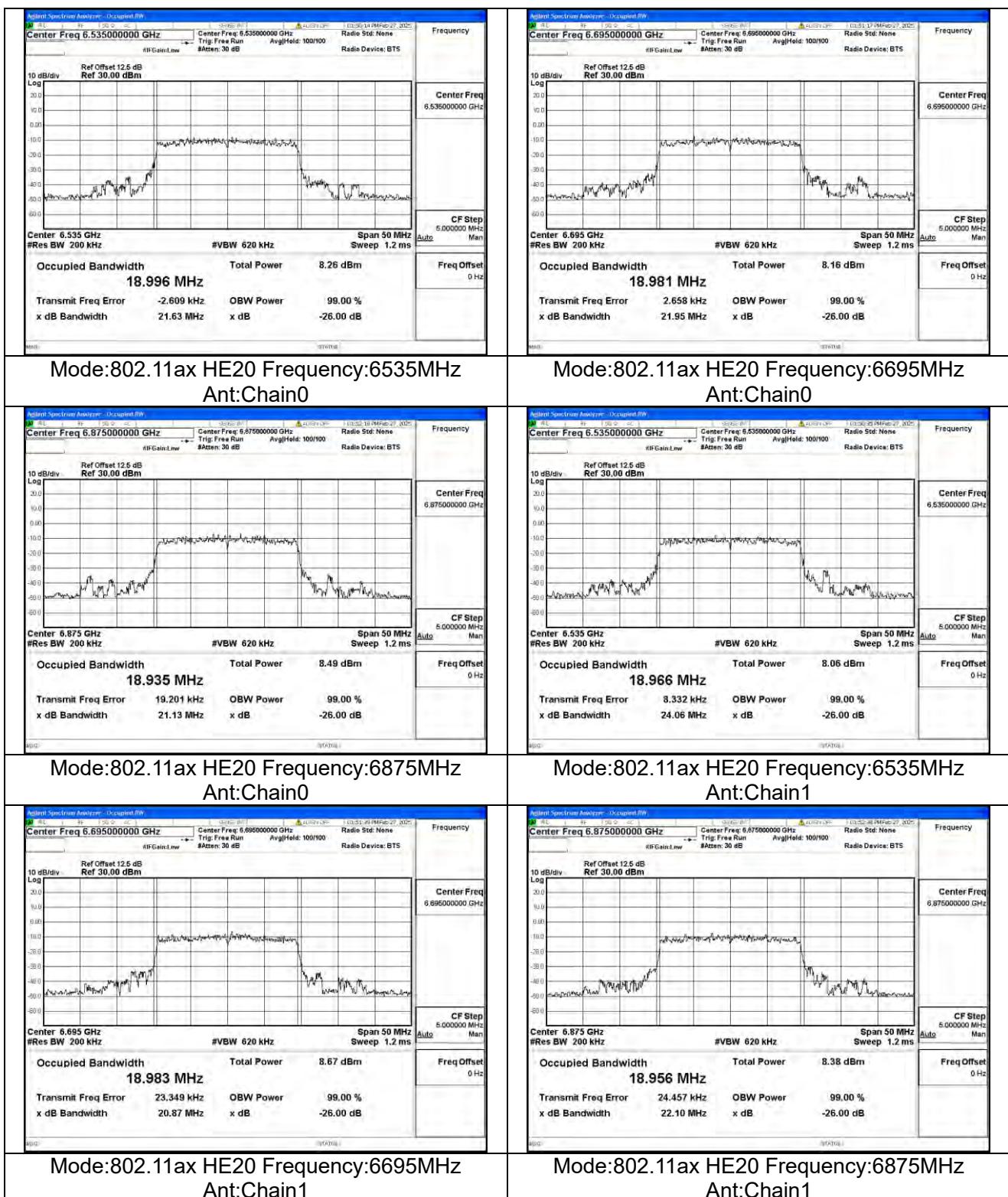
Mode:802.11a Frequency:6695MHz Ant:Chain1

Mode:802.11a Frequency:6875MHz Ant:Chain1



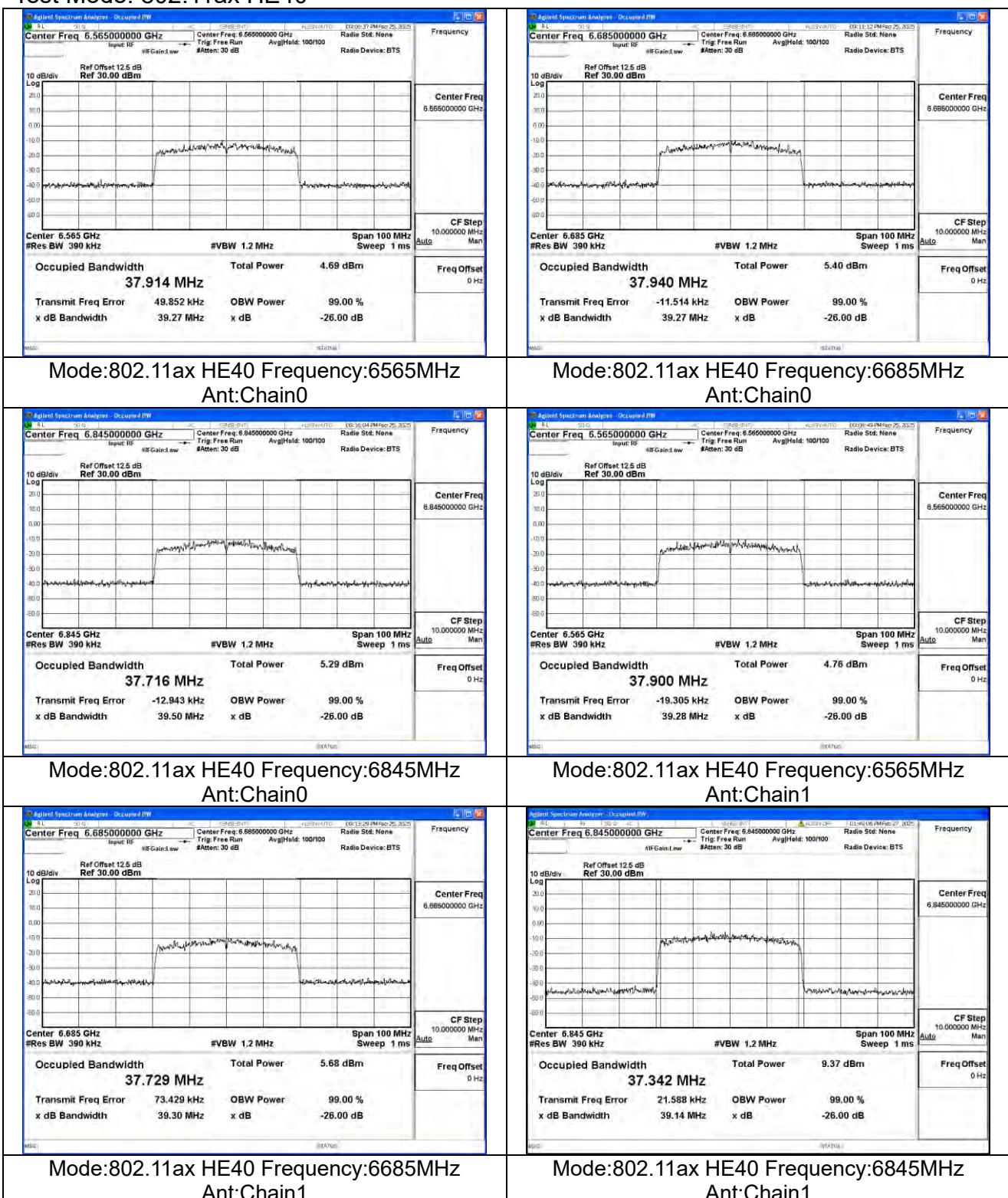
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Test Report No.: PSU-NQN2502260117RF04





Test Mode: 802.11ax HE40

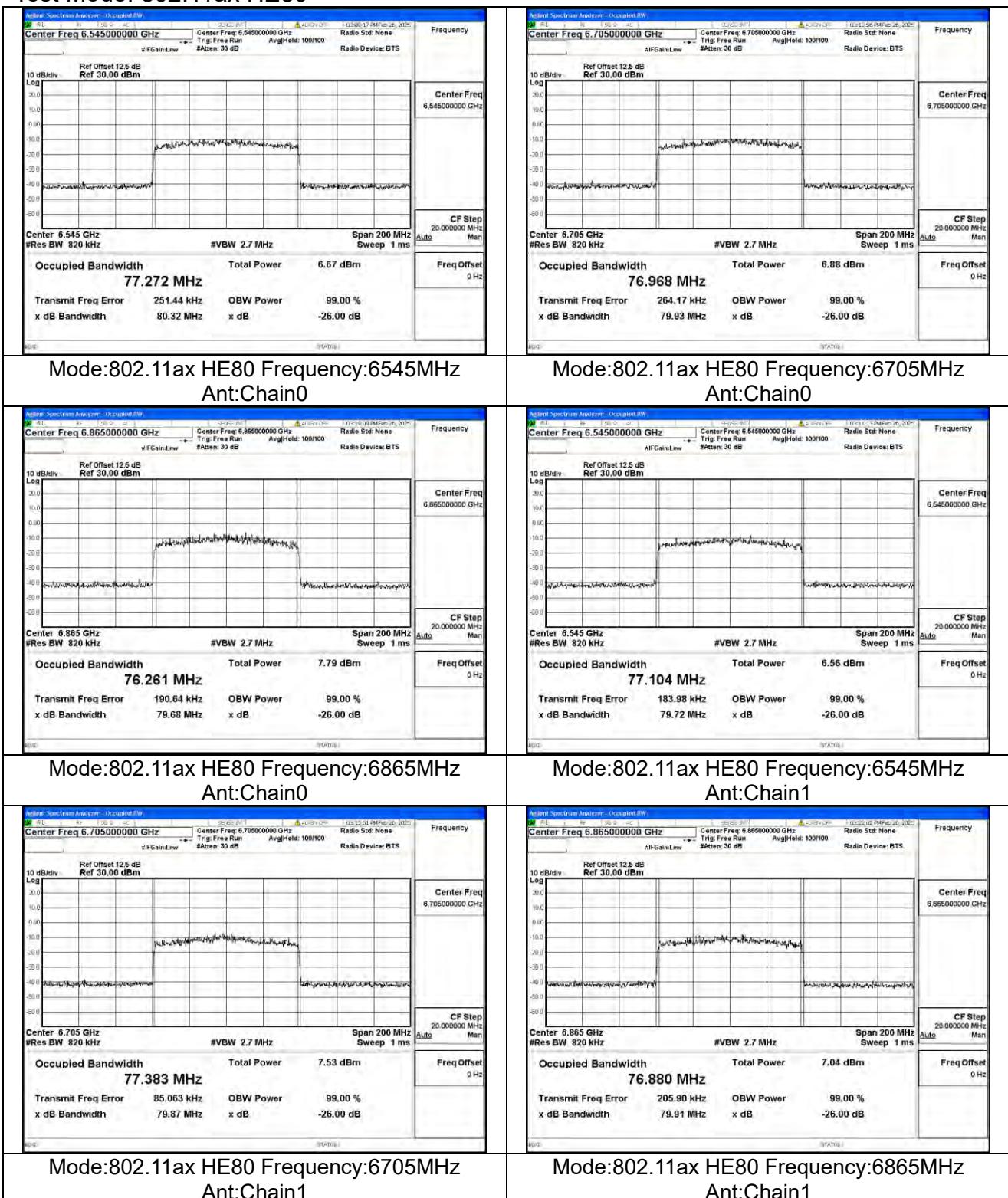




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Test Report No.: PSU-NQN2502260117RF04

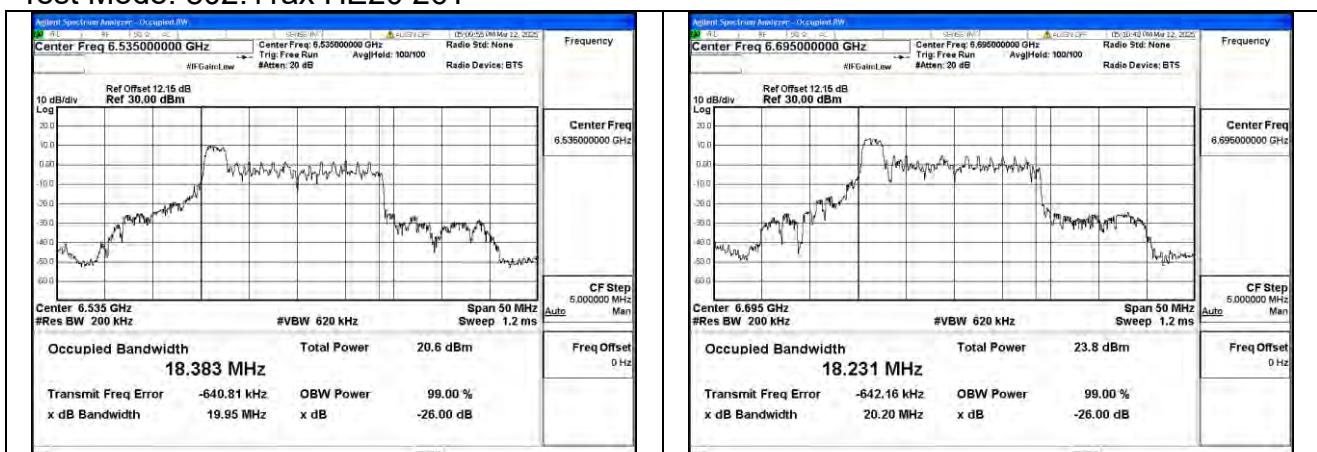
Test Mode: 802.11ax HE80



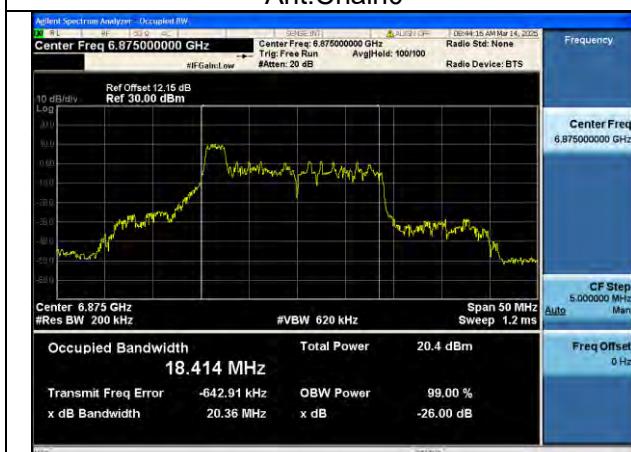


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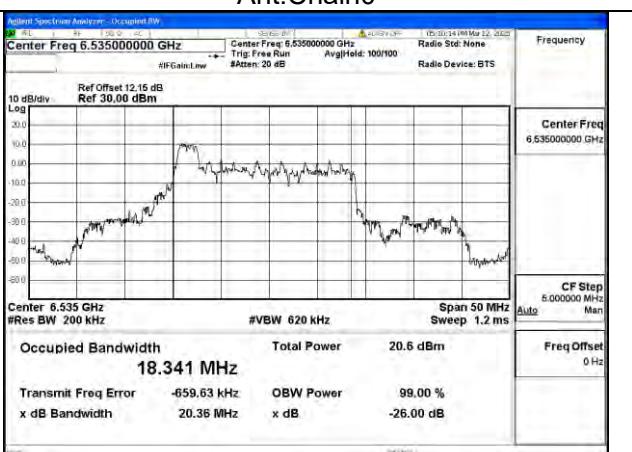
Test Mode: 802.11ax HE20 26T



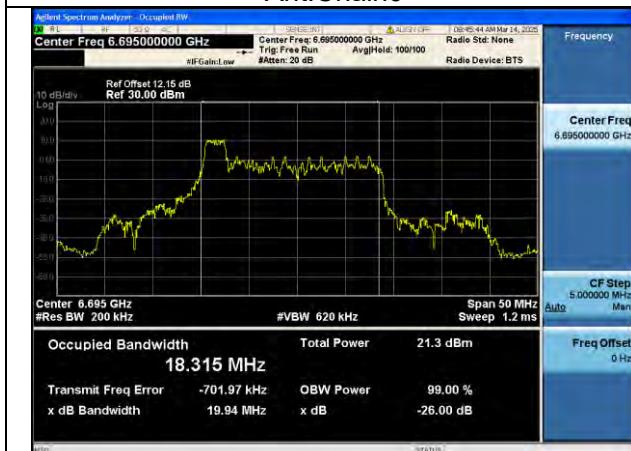
Mode:802.11ax HE20 26T Frequency:6535MHz
Ant:Chain0



Mode:802.11ax HE20 26T Frequency:6695MHz
Ant:Chain0



Mode:802.11ax HE20 26T Frequency:6875MHz
Ant:Chain0



Mode:802.11ax HE20 26T Frequency:6535MHz
Ant:Chain1



Mode:802.11ax HE20 26T Frequency:6695MHz
Ant:Chain1

Mode:802.11ax HE20 26T Frequency:6875MHz
Ant:Chain1

Test Mode: 802.11ax HE40 26T