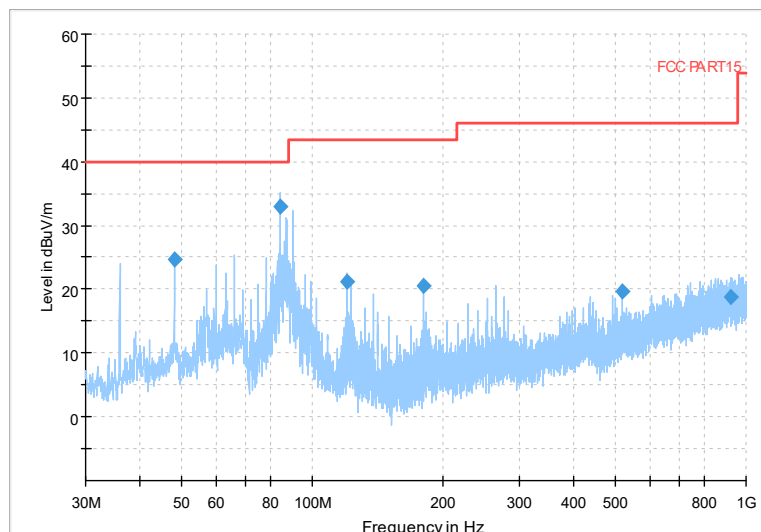


Full Spectrum

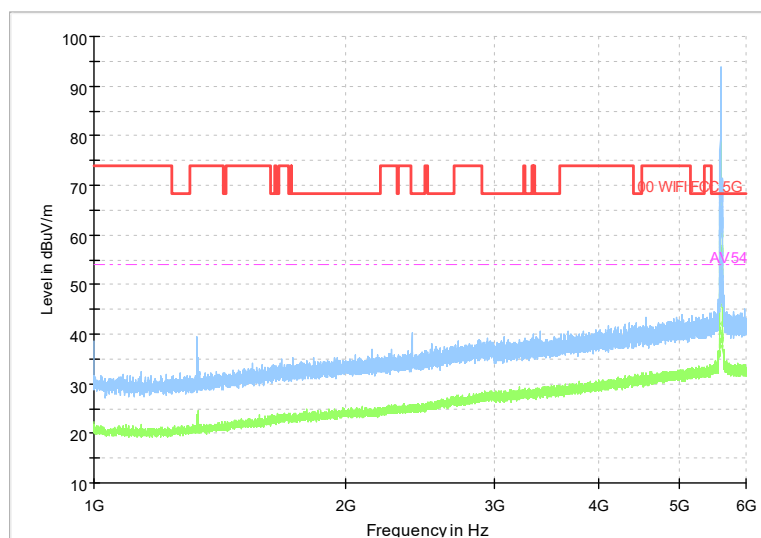


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

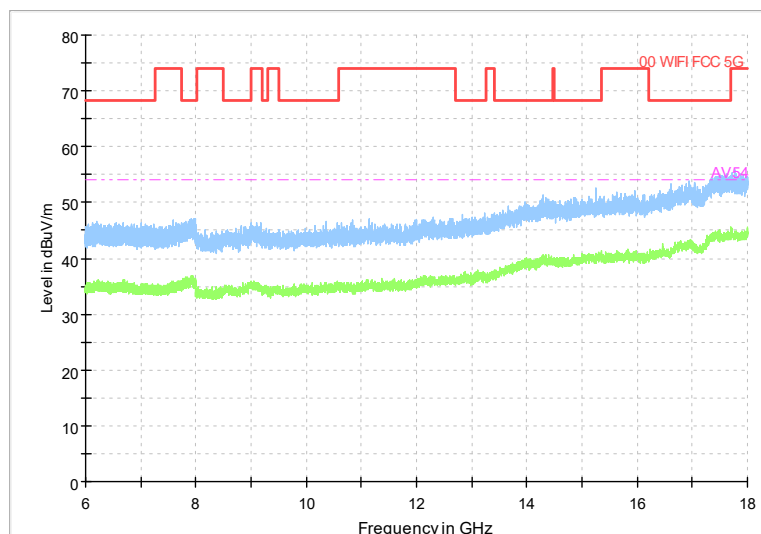


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

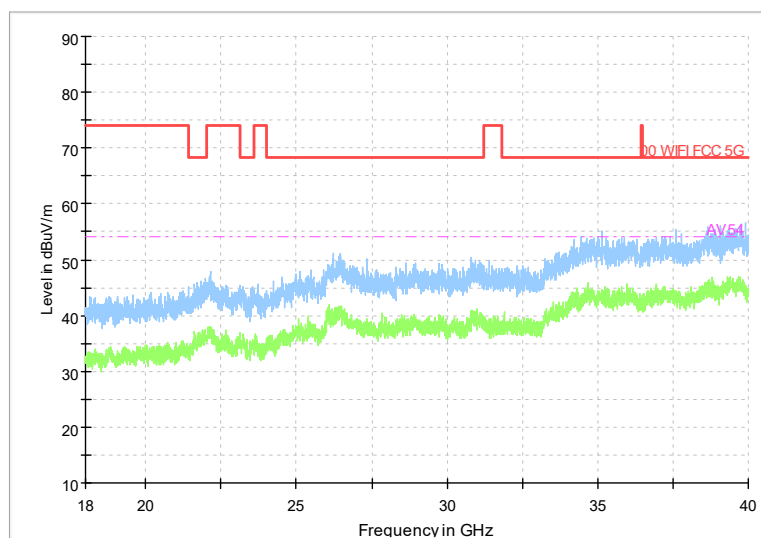


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum



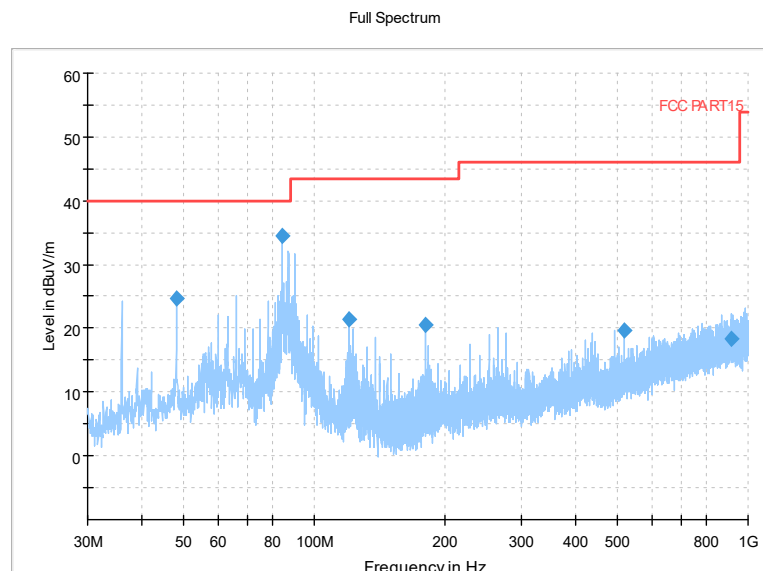
Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Carrier frequency (MHz): 5700

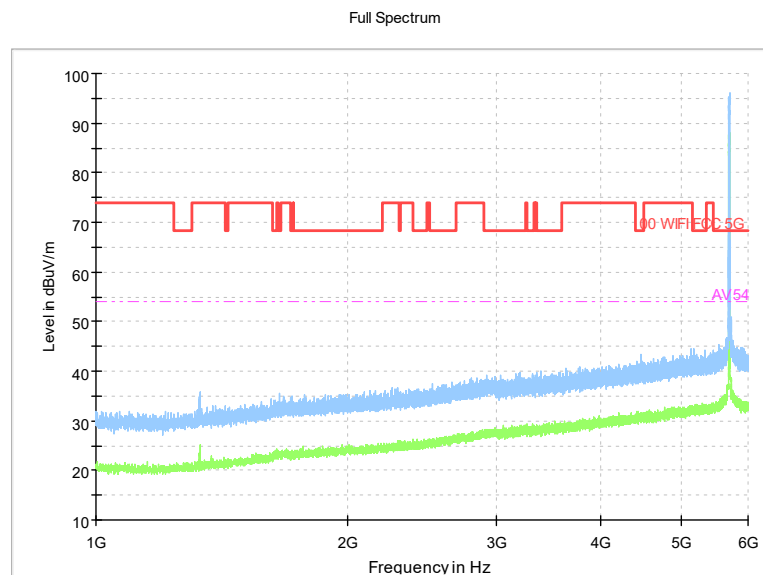
Channel No.:140



Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11a

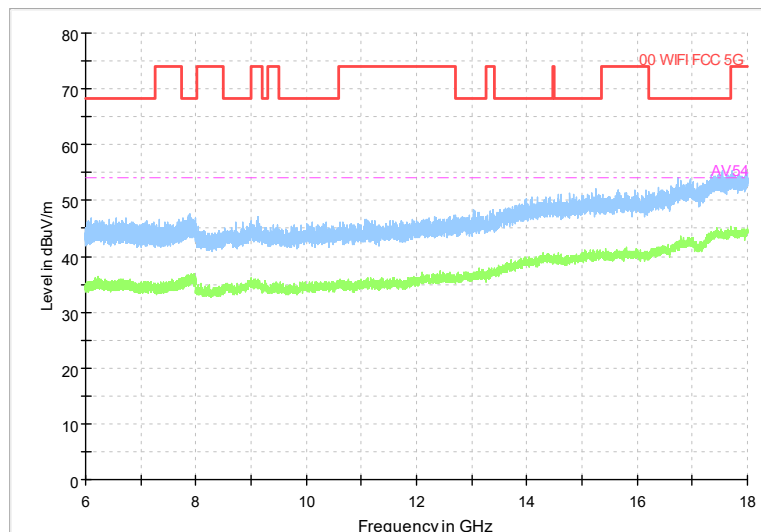


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

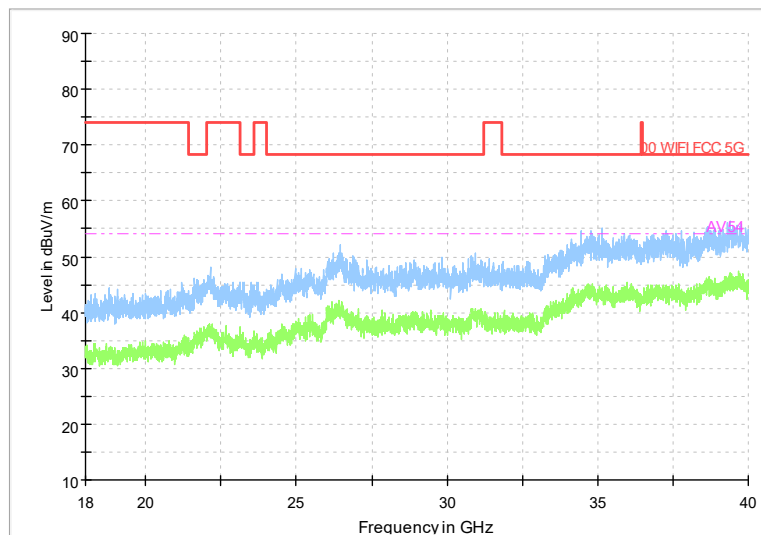


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

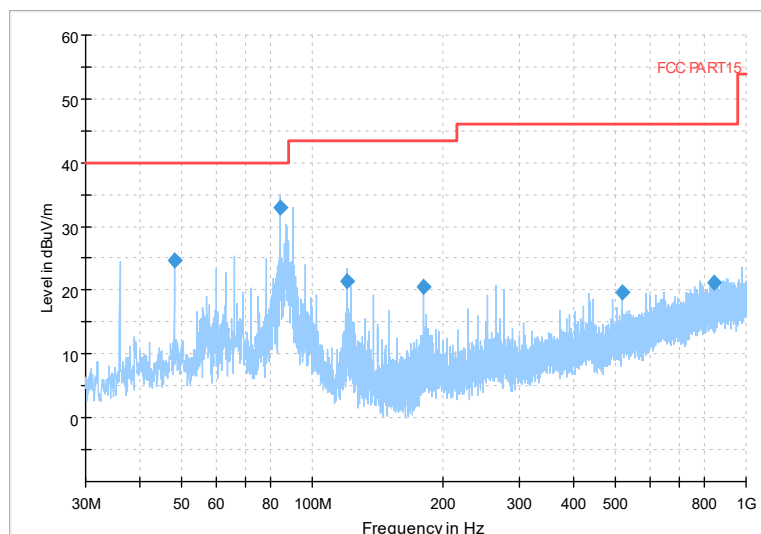


Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

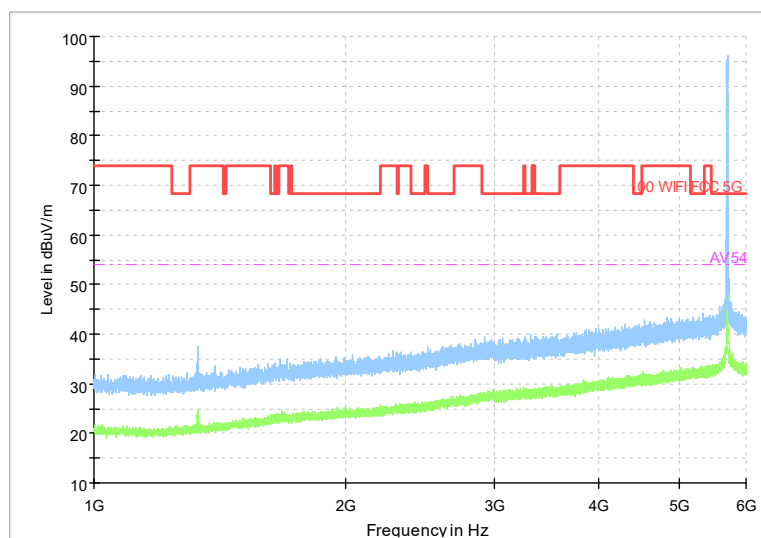


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11n(HT20)

Full Spectrum

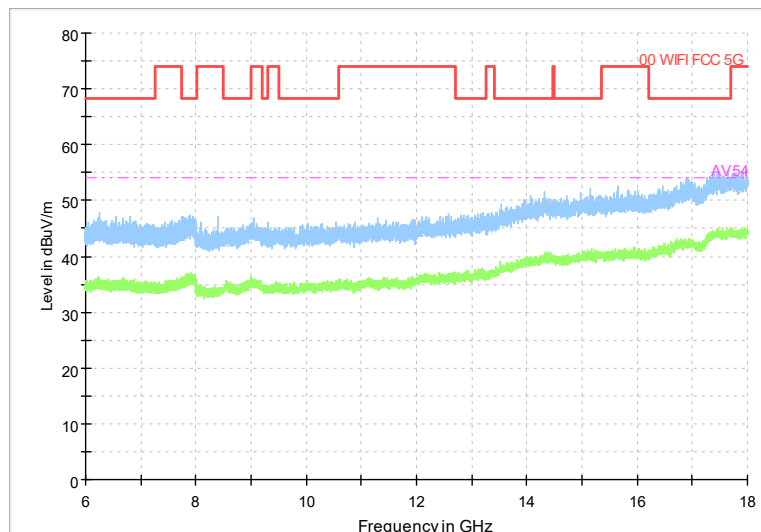


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

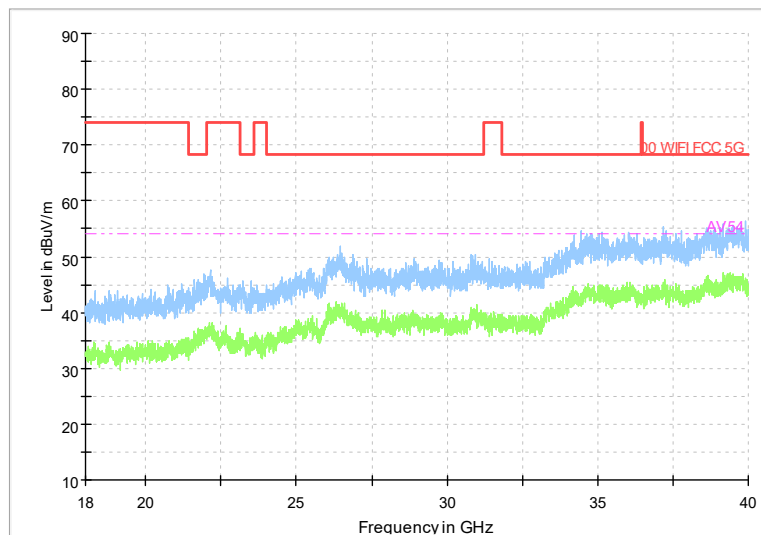


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

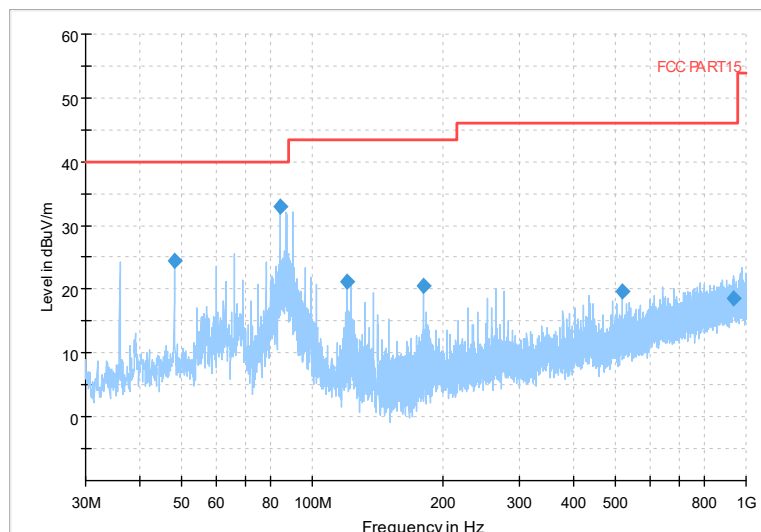


Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

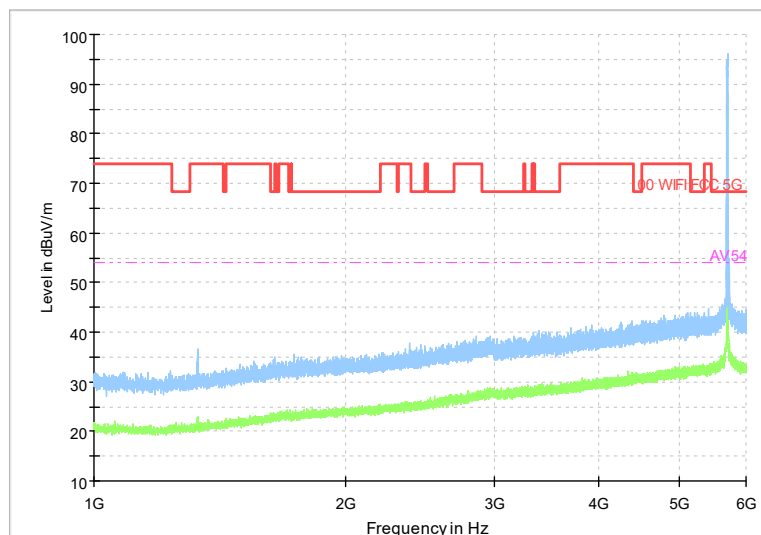


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

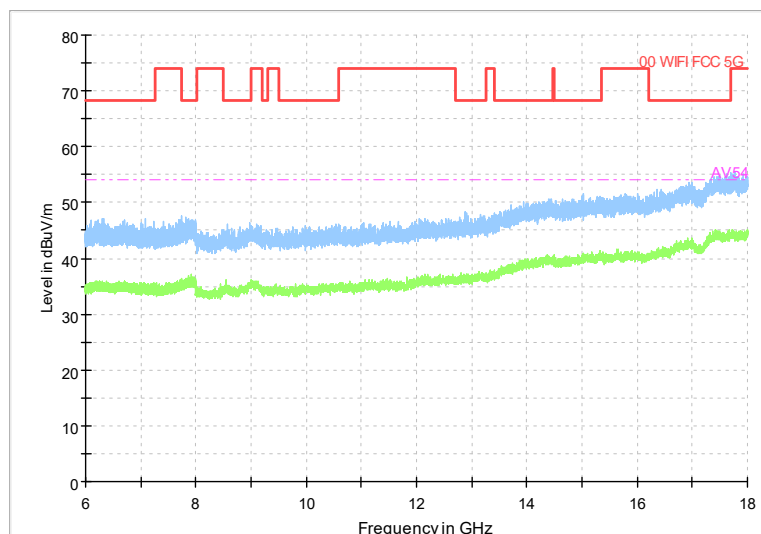


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

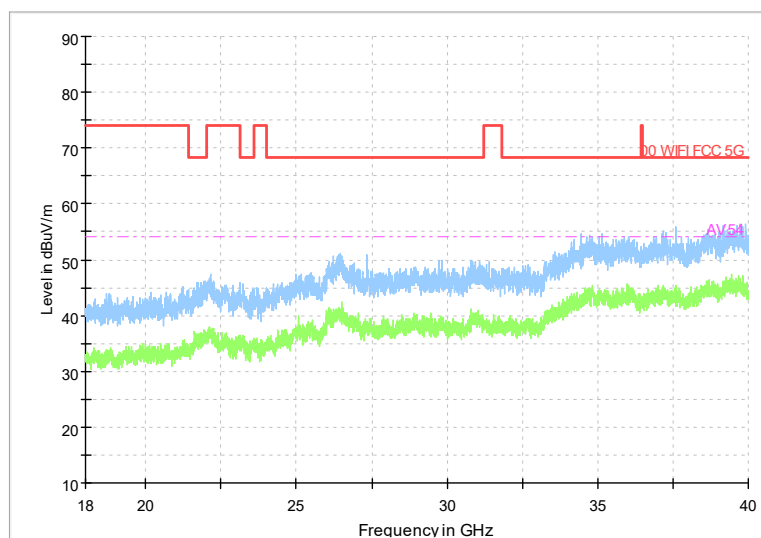


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum



Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

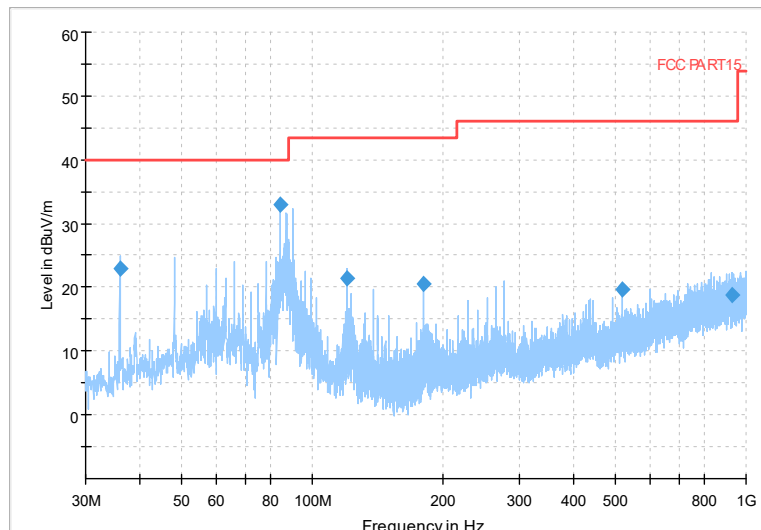
Test Mode: 802.11ac(VHT20)



Carrier frequency (MHz): 5745

Channel No.:149

Full Spectrum

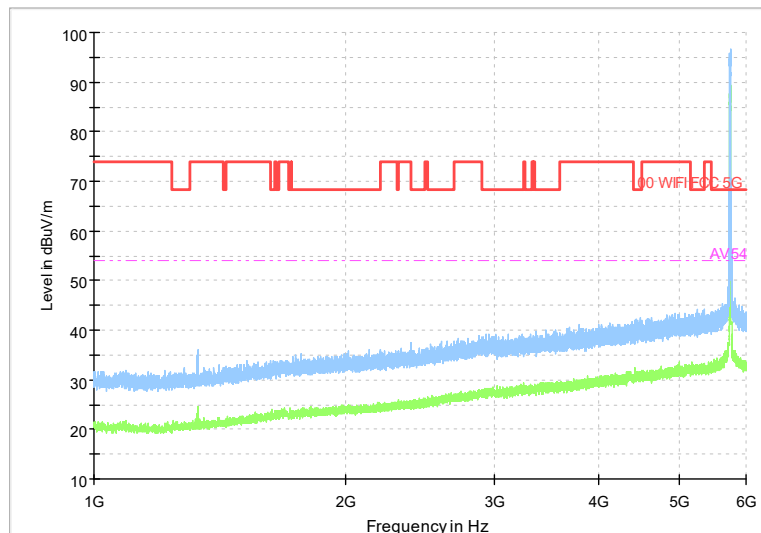


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11a

Full Spectrum

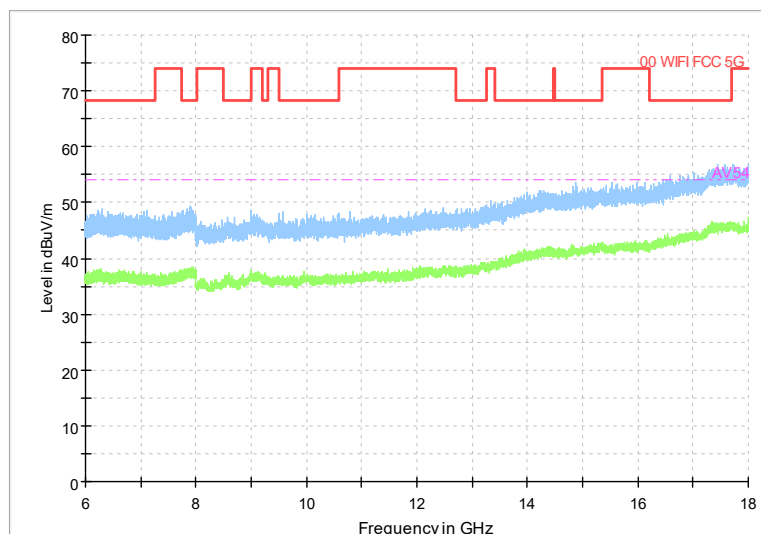


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

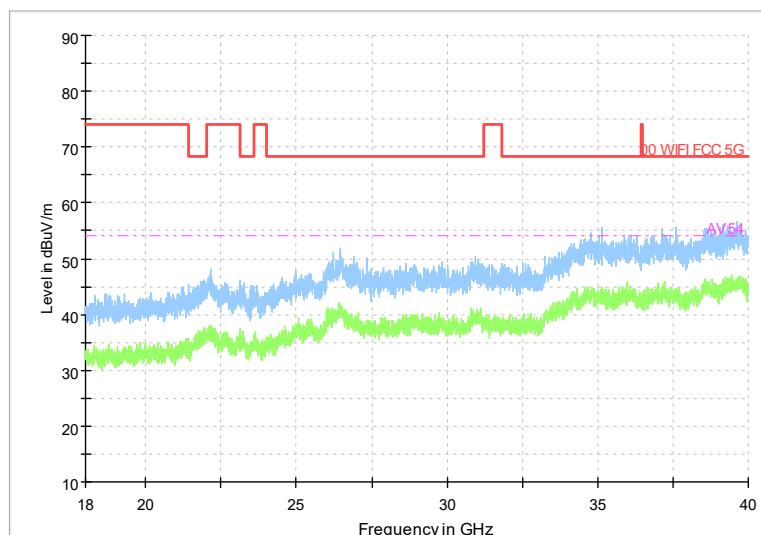


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

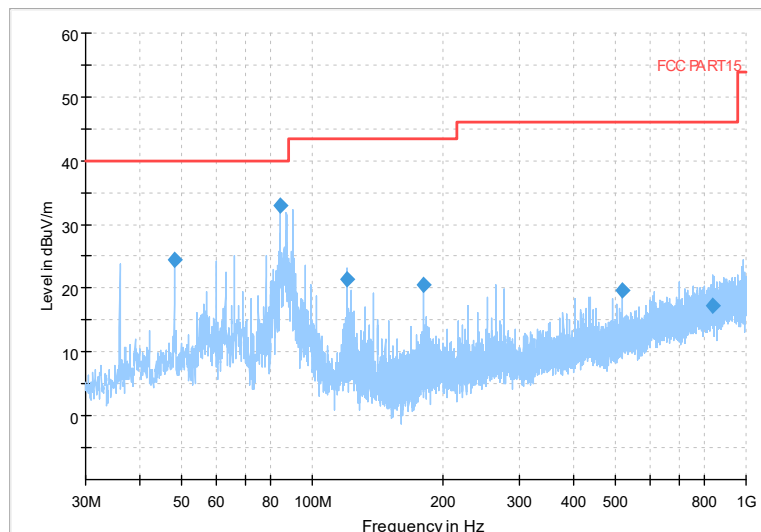


Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

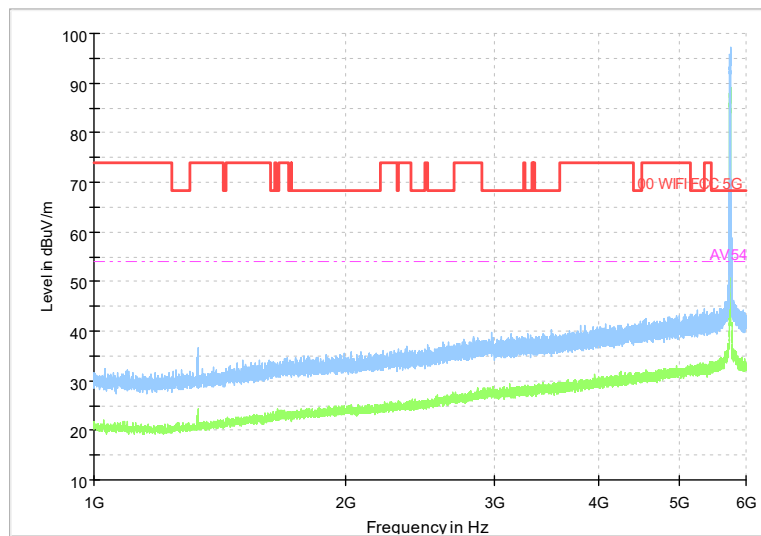


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11n(HT20)

Full Spectrum

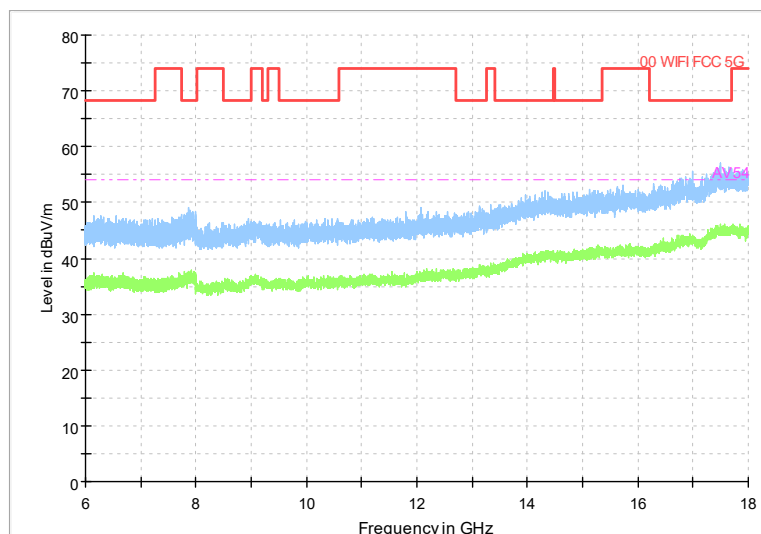


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

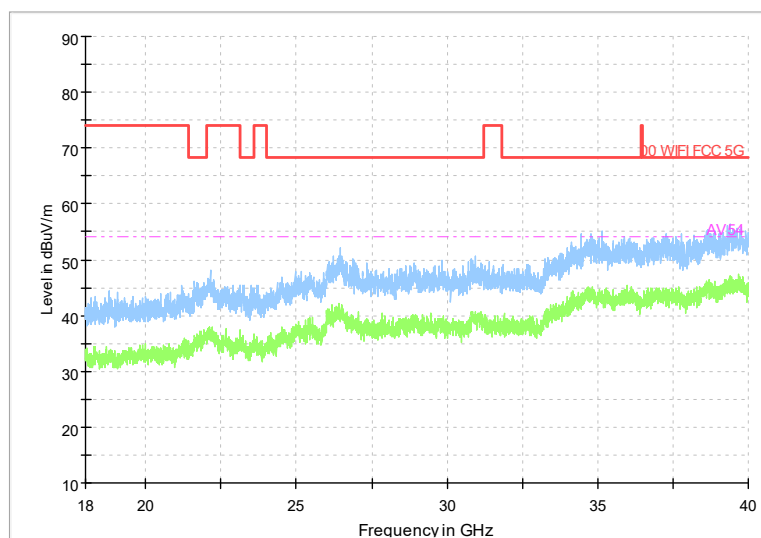


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

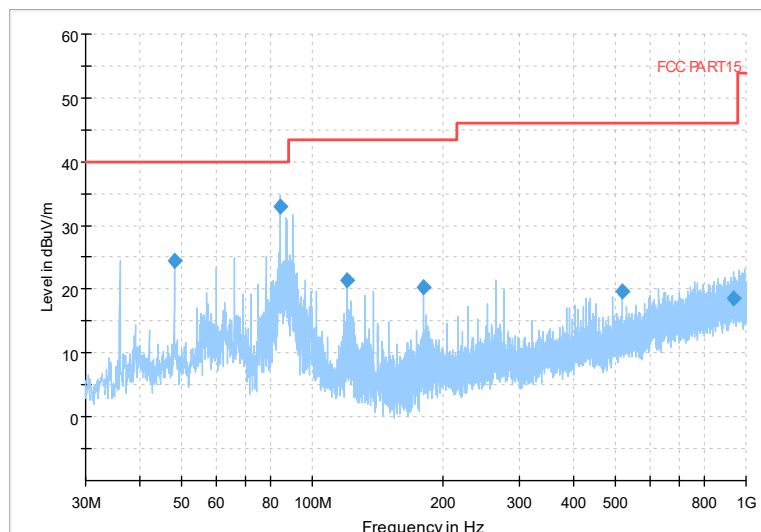


Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

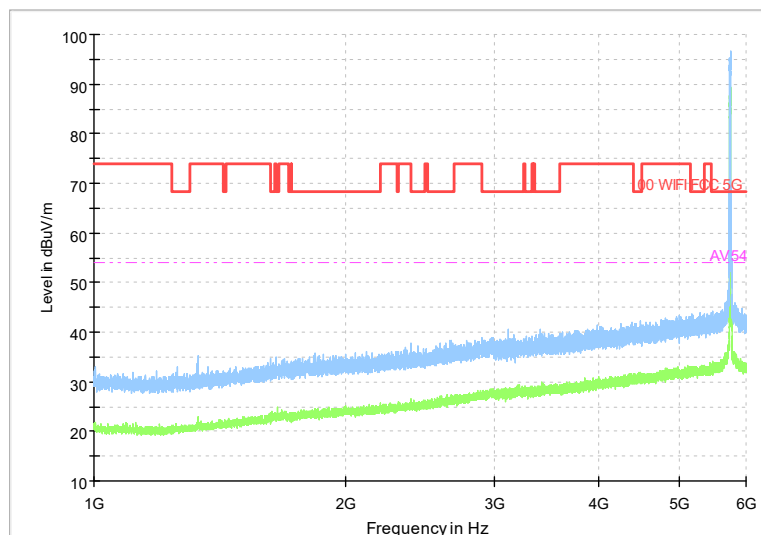


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

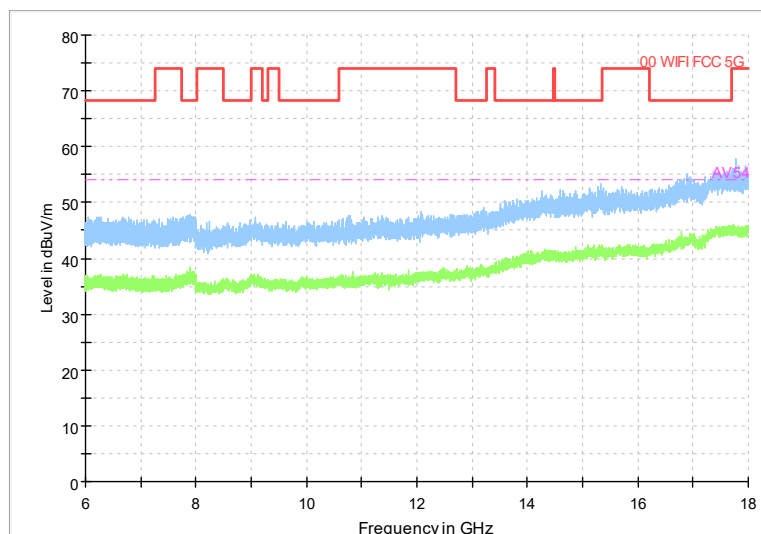


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

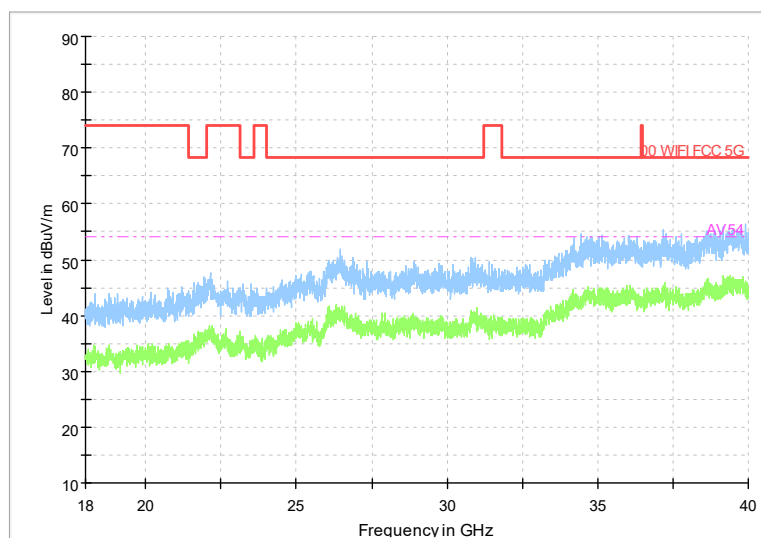


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum



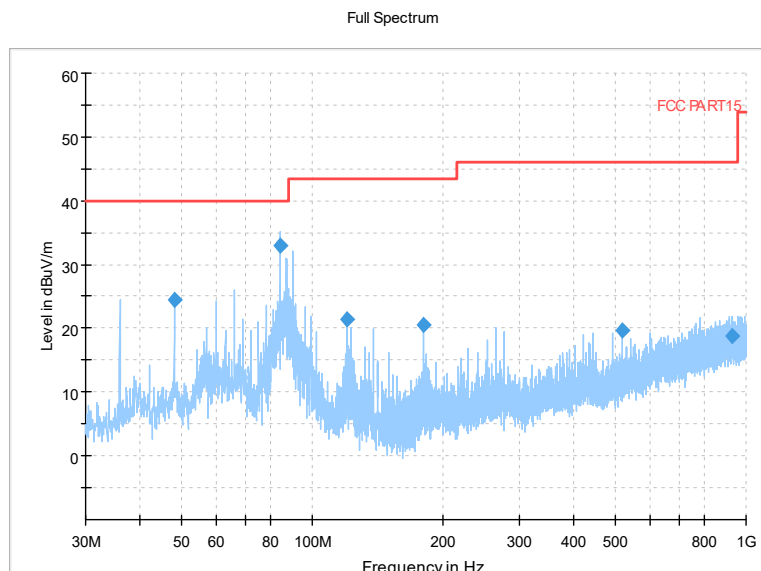
Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Carrier frequency (MHz): 5785

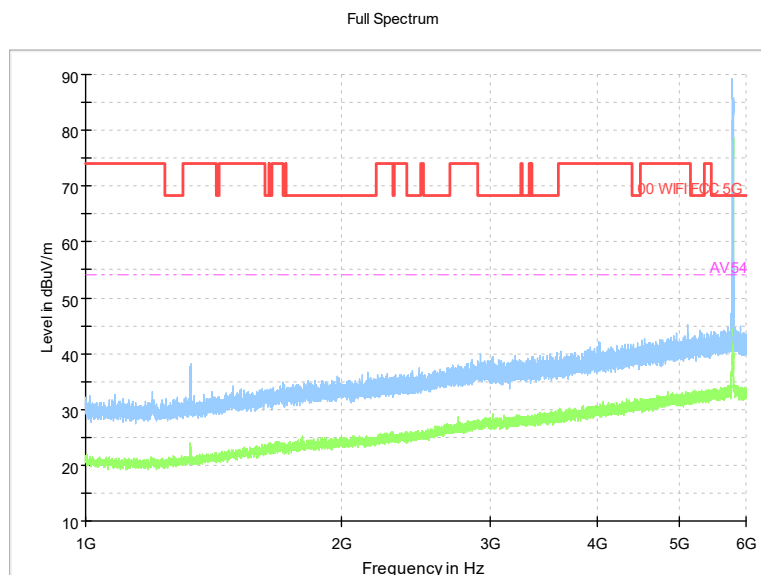
Channel No.:157



Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11a

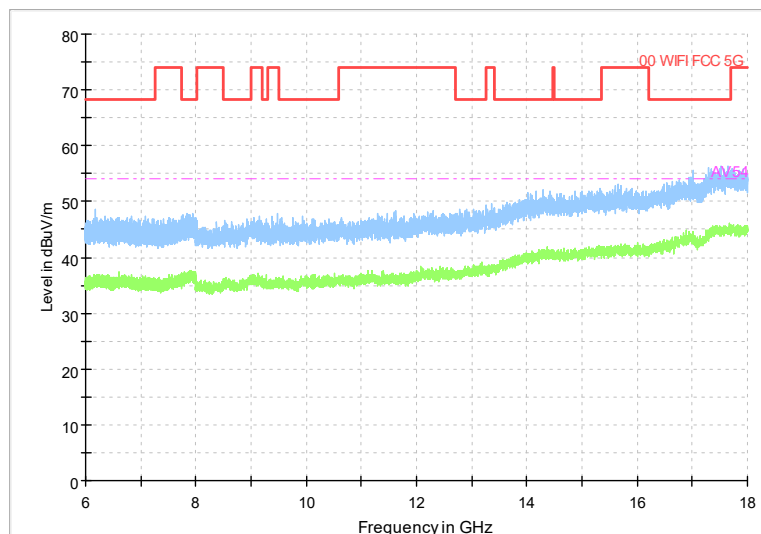


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

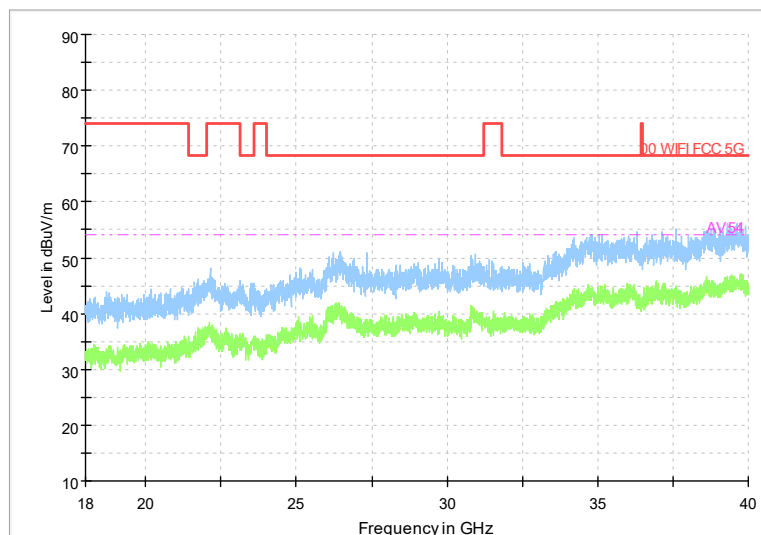


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum



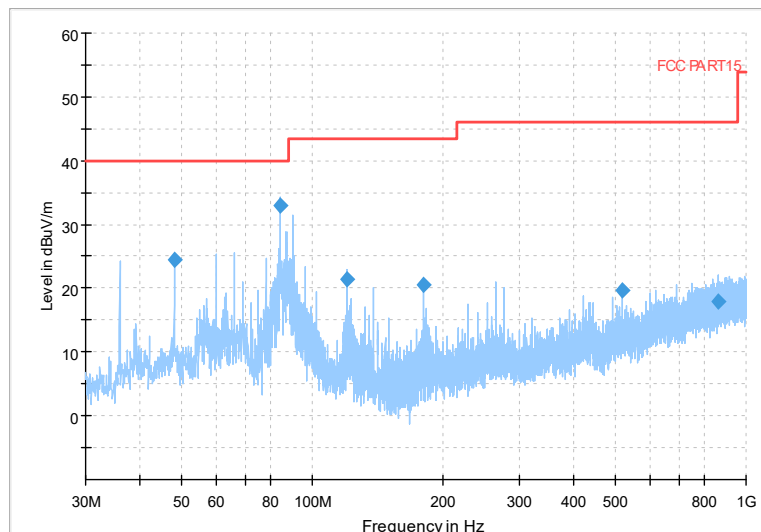
Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11a



Full Spectrum

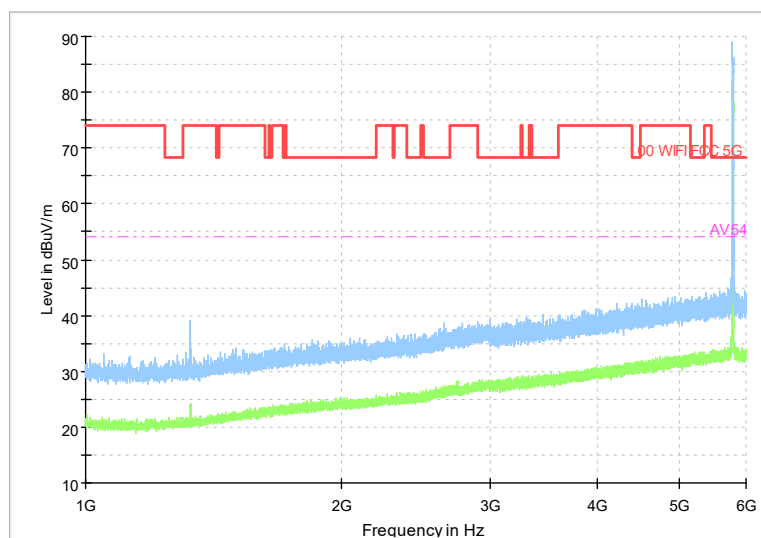


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11n(HT20)

Full Spectrum

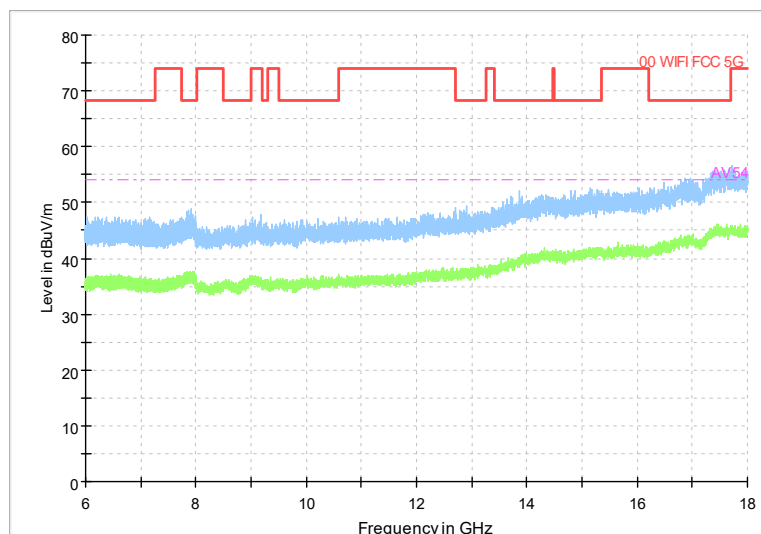


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

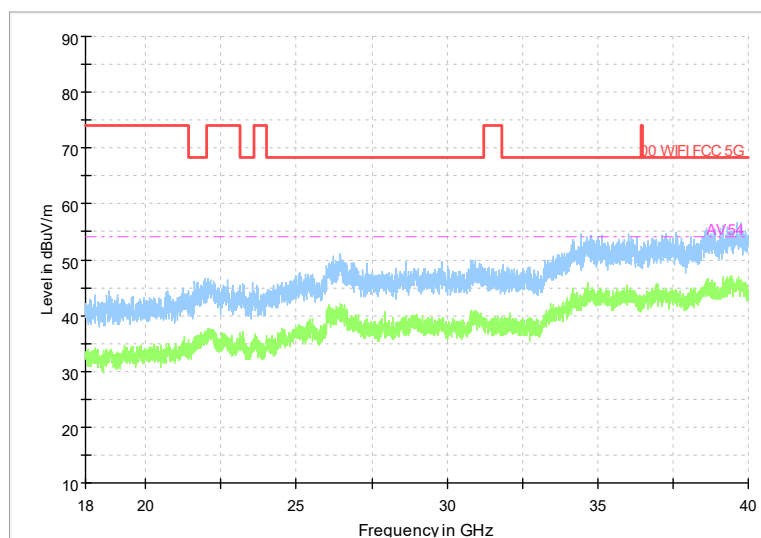


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

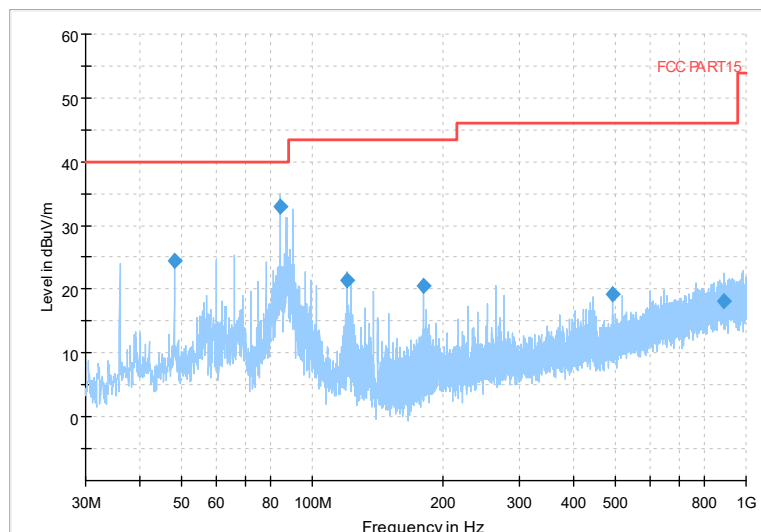


Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)

Full Spectrum

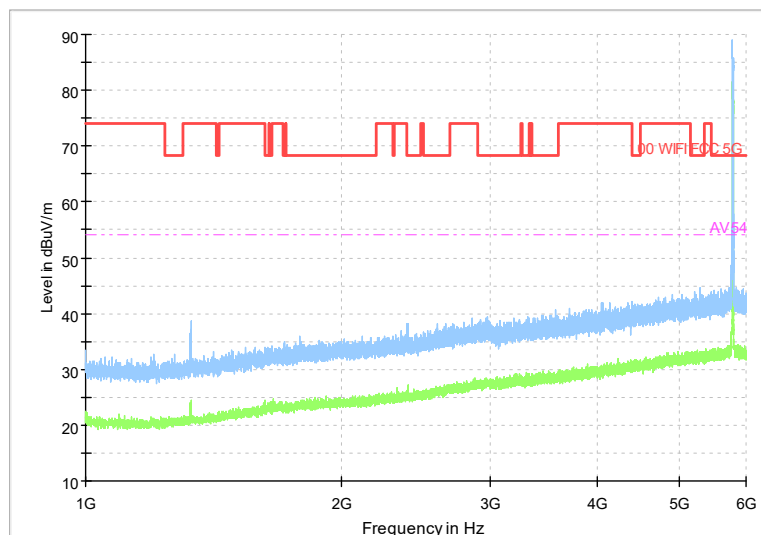


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

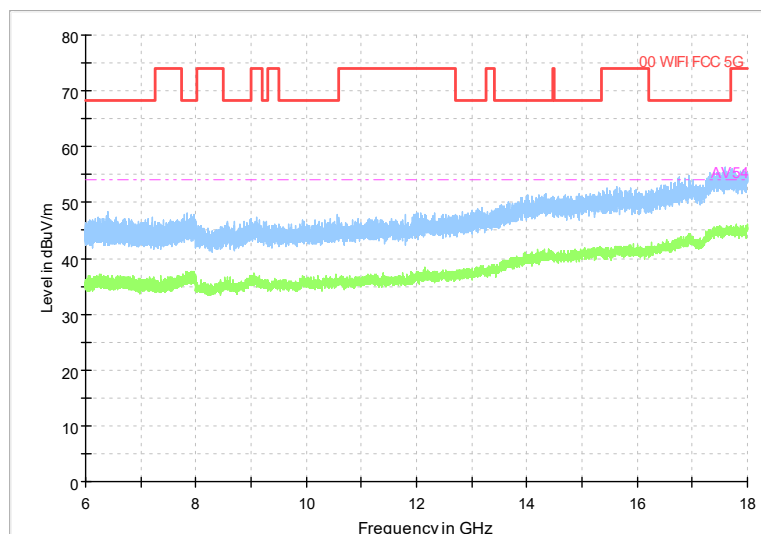


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

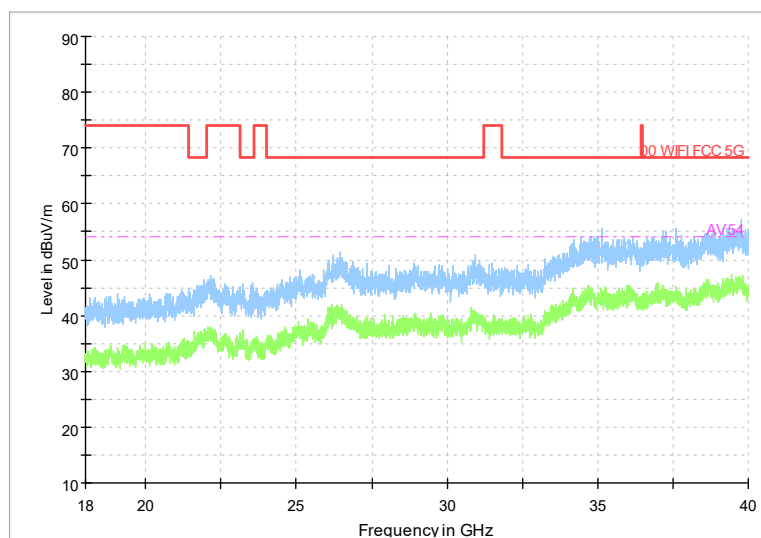


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum



Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)



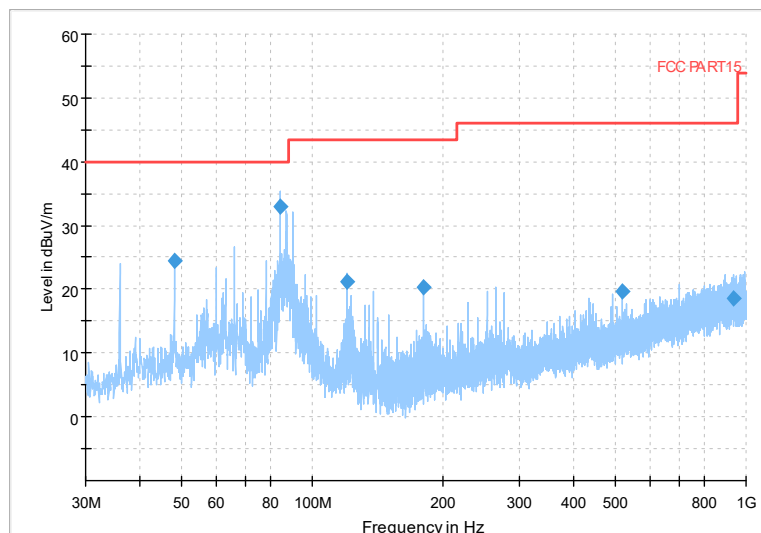
BUREAU  
VERITAS

Test Report No.: PSU-NQN2506100110RF03

Carrier frequency (MHz): 5825

Channel No.:165

Full Spectrum

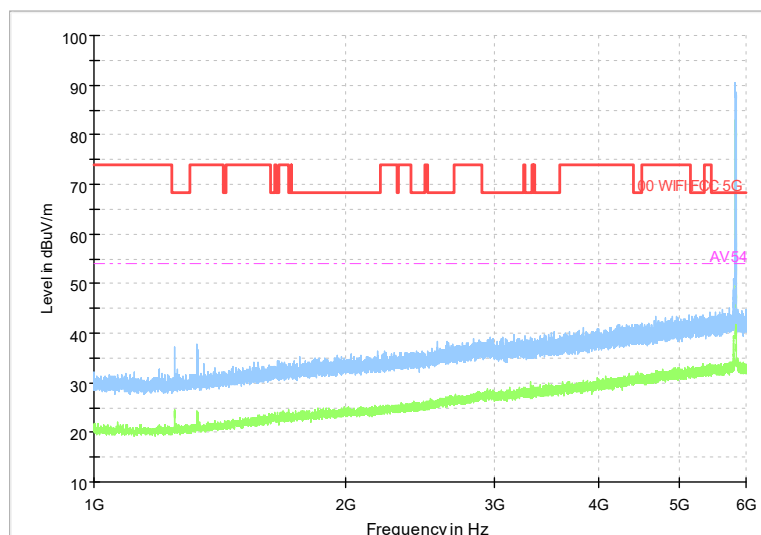


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11a

Full Spectrum

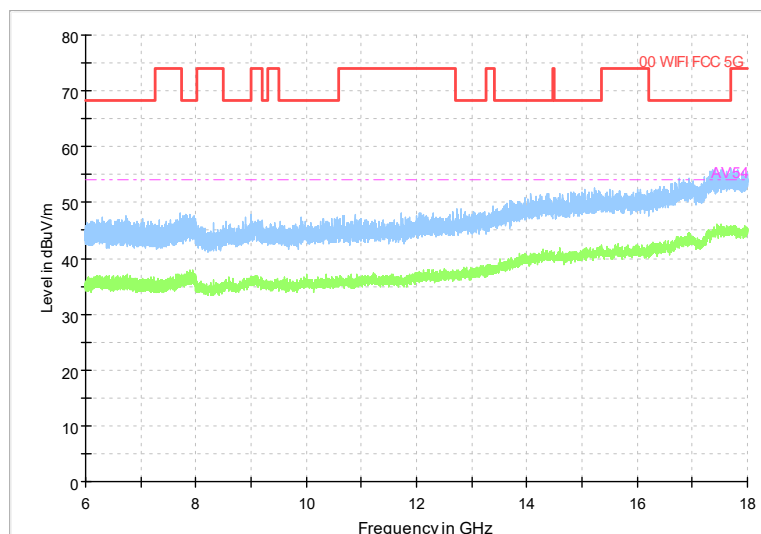


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

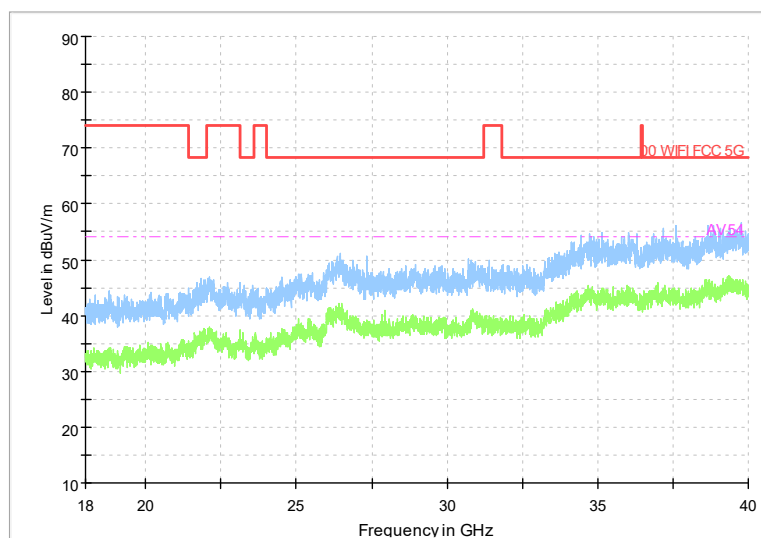


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

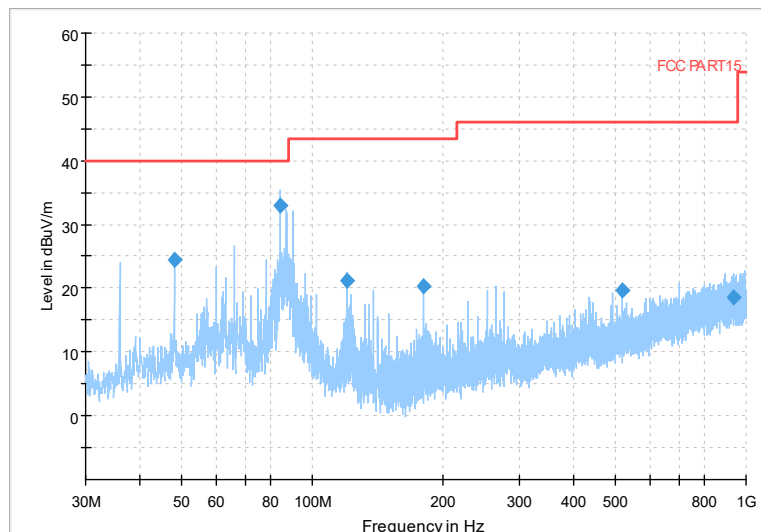


Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11a

Full Spectrum

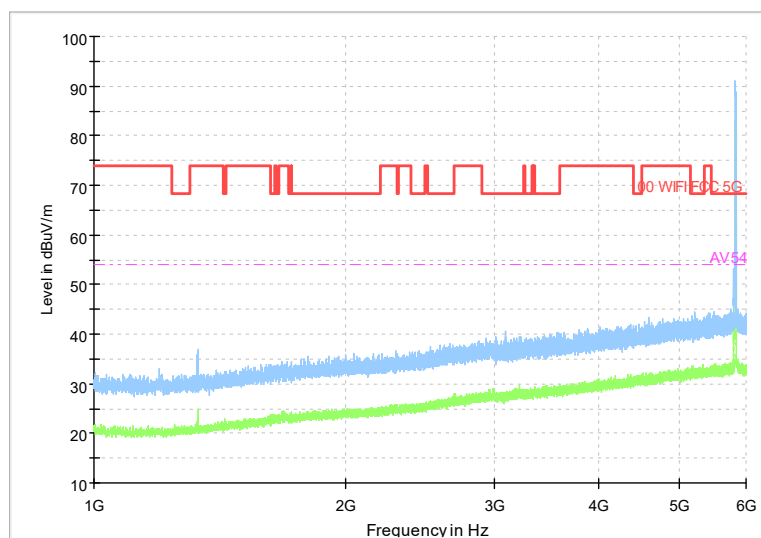


Frequency Range: 30MHz -1GHz

Detector: QP mode

Modulation type: 802.11n(HT20)

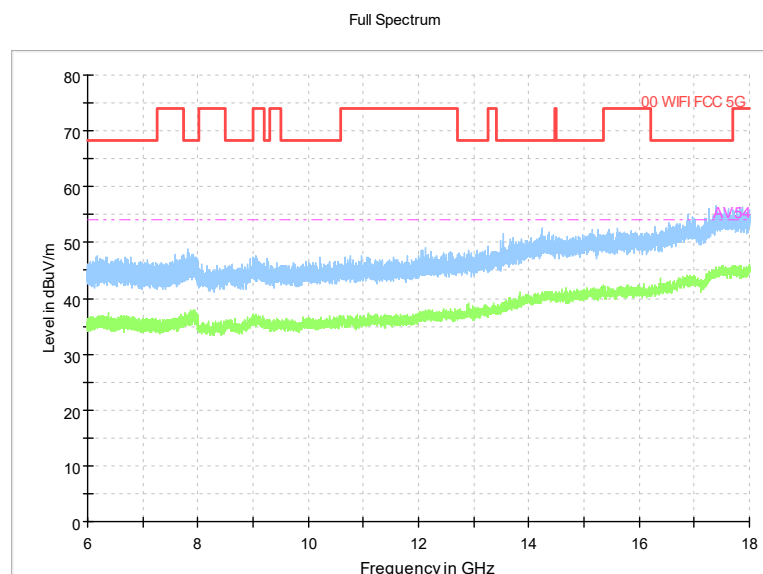
Full Spectrum



Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

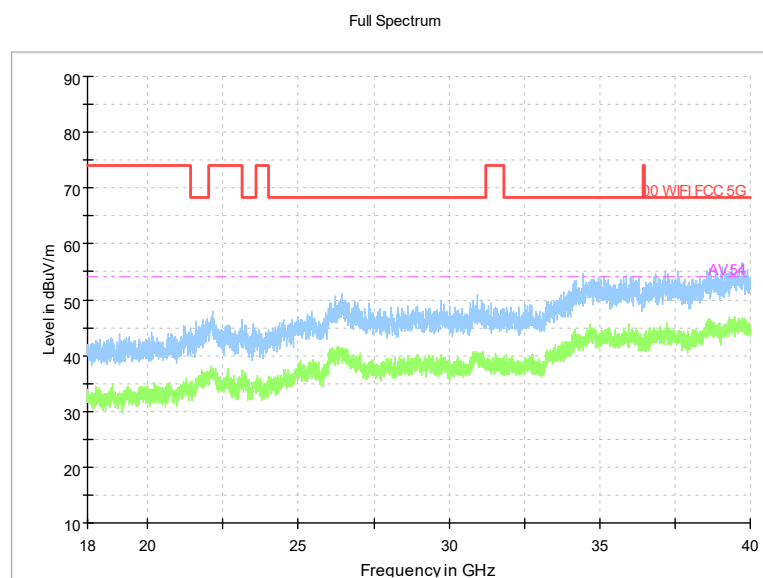
Modulation type: 802.11n(HT20)



Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)



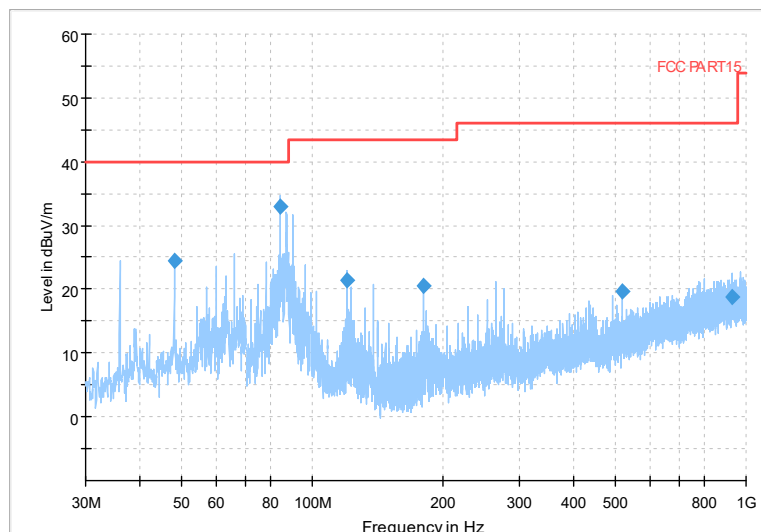
Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Modulation type: 802.11n(HT20)



Full Spectrum

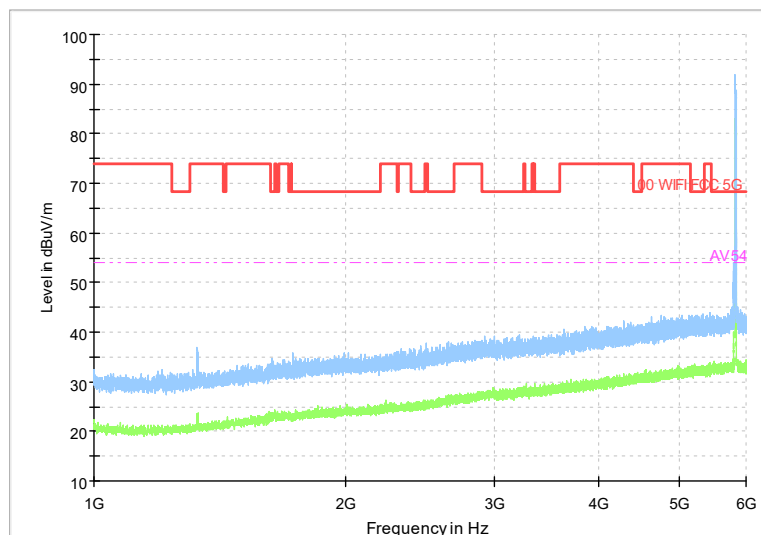


Frequency Range: 30MHz -1GHz

Detector: QP mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

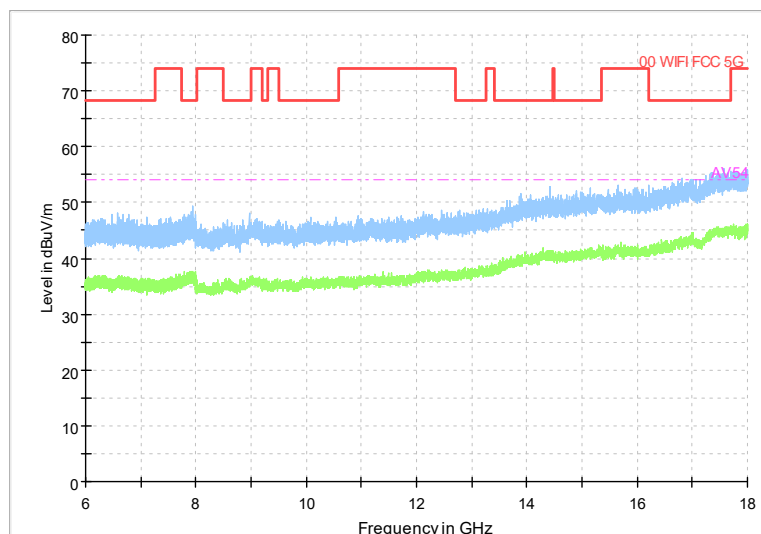


Frequency Range: 1GHz -6GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum

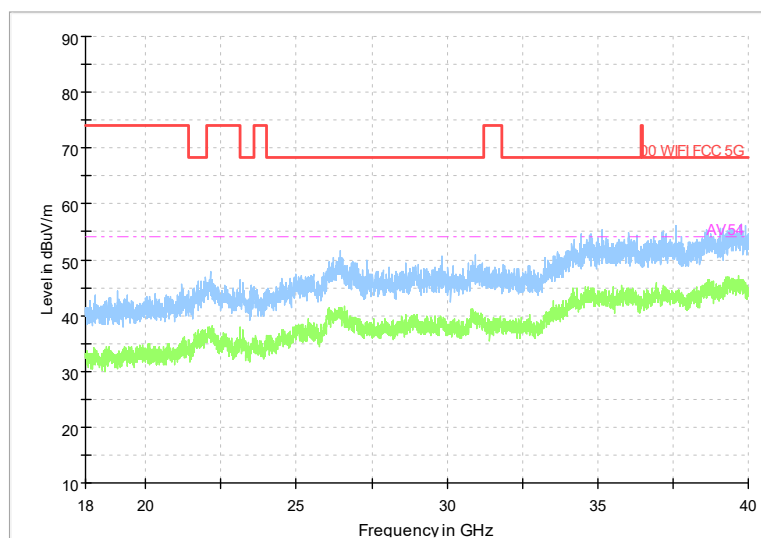


Frequency Range: 6GHz -18GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

Full Spectrum



Frequency Range: 18GHz -40GHz

Detector: Av mode and PK mode

Test Mode: 802.11ac(VHT20)

## 3.2 CONDUCTED EMISSION MEASUREMENT

### 3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

### 3.2.2 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.27,25	Apr.26,26
CABLE	Rohde&Schwarz	W601	N/A	Apr.27,25	Apr.26,26

- NOTE:**
1. The test was performed in CE shielded room.
  2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

### 3.2.3 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.

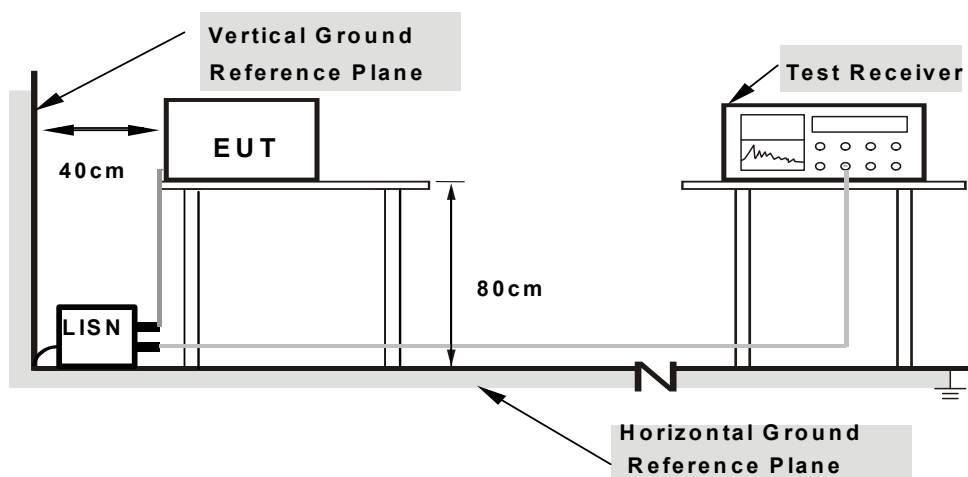
**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.



### 3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

### 3.2.5 TEST SETUP



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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

### 3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.7.

### 3.2.7 TEST RESULTS

N/A



### 3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

#### 3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

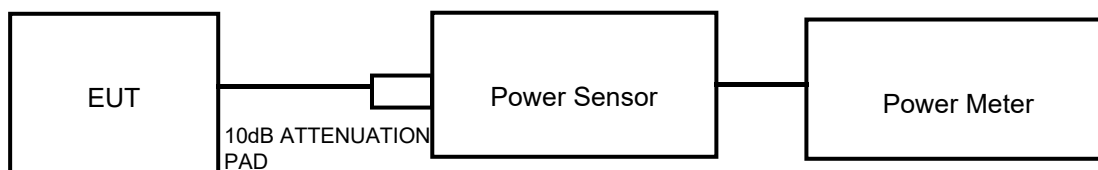
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	<b>B</b>	Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

**NOTE:** Where B is the 26dB emission bandwidth in MHz.

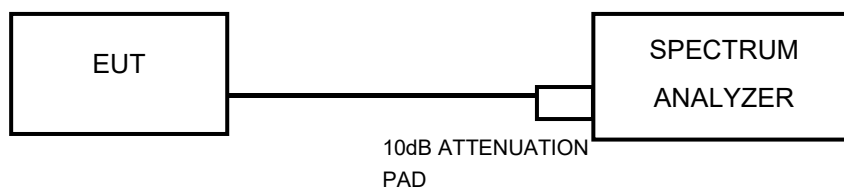
### 3.3.2 TEST SETUP

#### FOR POWER OUTPUT MEASUREMENT

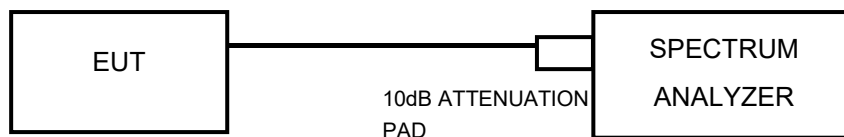
##### 802.11a, 802.11n/ac/ax (20MHz), 802.11 n/ac/ax (40MHz) TEST CONFIGURATION



##### 802.11ac/ax (80MHz) TEST CONFIGURATION



#### FOR 26dB BANDWIDTH





### 3.3.3 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.27,25	Apr.26,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.27,25	Apr.26,26
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.

### 3.3.4 TEST PROCEDURE

#### FOR POWER MEASUREMENT

##### For 802.11a, 802.11 n/ac/ax (20MHz), 802.11 n/ac/ax (40MHz)

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.

##### For 802.11ac/ax (80MHz)

1. Measure the duty cycle,  $x$ , of the transmitter output signal as described in II.B.
2. Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
3. Set RBW = 1 MHz.
4. Set VBW  $\geq$  3 MHz.
5. Number of points in sweep  $\geq 2 \times \text{span} / \text{RBW}$ . (This ensures that bin-to-bin spacing is  $\leq \text{RBW}/2$ , so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run.”
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
10. Add  $10 \log (1/x)$ , where  $x$  is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add  $10 \log (1/0.25) = 6 \text{ dB}$  if the duty cycle is 25%.



#### **FOR 99 PERCENT OCCUPIED BANDWIDTH**

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW  $\geq 3 \cdot$  RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

#### **FOR 26dB BANDWIDTH**

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) 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%.

#### **FOR 6dB BANDWIDTH**

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. 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.

### 3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

### 3.3.7 TEST RESULTS

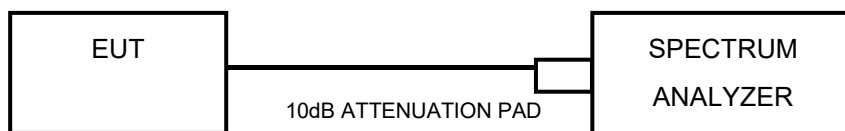
Please Refer to Appendix A Of this test report.

### 3.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

#### 3.4.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Client devices	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

#### 3.4.2 TEST SETUP



#### 3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

#### 3.4.4 TEST PROCEDURES

Using method SA-2(Band1/2/3)

- 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) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add  $10 \log(1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
- 7) Record the max value

Using method SA-2 (Band4)

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 KHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add  $10 \log(500\text{kHz}/\text{RBW})$  to the test result.  $10 \log(500\text{kHz}/300\text{KHZ}) = 2.22\text{dBm}$
- 7) Add  $10 \log(1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
- 8) Record the max value

#### 3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.7.

#### 3.4.7 TEST RESULTS

Please Refer to Appendix A Of this test report.

### 3.5 AUTOMATICALLY DISCONTINUE TRANSMISSION

#### 3.5.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

#### 3.5.2 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

#### 3.5.3 TEST RESULT

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission



### 3.6 ANTENNA REQUIREMENTS

#### 3.6.1 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.

#### 3.6.2 ANTENNA CONNECTED CONSTRUCTION

An embedded-in antenna design is used.

#### 3.6.3 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.

5GHz Band1/2 3/4	Chain0 (dBi)	Chain1 (dBi)	DG For Power (dBi)	DG For PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	3.02	-0.01	3.02	4.65	0.00	0.00

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.



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## 4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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

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



## 6 APPENDIX A: RLAN EMISSION BANDWIDTH

### TEST RESULT

U-NII-1

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5180MHz	5220MHz	5240MHz
802.11a	Chain0	19.81	21.37	23.81
802.11a	Chain1	19.95	22.29	24.48
802.11n HT20	Chain0	22.85	24.64	22.04
802.11n HT20	Chain1	21.32	20.24	20.57
802.11ac VHT20	Chain0	20.20	29.11	25.38
802.11ac VHT20	Chain1	26.79	29.24	28.55

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5190MHz	---	5230MHz
802.11n HT40	Chain0	39.80	---	40.59
802.11n HT40	Chain1	39.75	---	40.95
802.11ac VHT40	Chain0	40.22	---	40.51
802.11ac VHT40	Chain1	40.53	---	40.59

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5210MHz	---	---
802.11ac VHT80	Chain0	81.22	---	---
802.11ac VHT80	Chain1	81.21	---	---



**U-NII-2A**

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5260MHz	5280MHz	5320MHz
802.11a	Chain0	20.02	19.62	19.88
802.11a	Chain1	20.14	20.11	20.12
802.11n HT20	Chain0	20.17	20.73	20.47
802.11n HT20	Chain1	20.46	20.74	20.21
802.11ac VHT20	Chain0	20.24	20.10	20.27
802.11ac VHT20	Chain1	26.52	28.85	28.58

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5270MHz	---	5310MHz
802.11n HT40	Chain0	40.60	---	39.83
802.11n HT40	Chain1	39.74	---	39.75
802.11ac VHT40	Chain0	40.76	---	40.58
802.11ac VHT40	Chain1	40.28	---	40.34

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5290MHz	---	---
802.11ac VHT80	Chain0	82.03	---	---
802.11ac VHT80	Chain1	81.36	---	---

**U-NII-2C**

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5500MHz	5580MHz	5700MHz
802.11a	Chain0	19.77	20.48	20.02
802.11a	Chain1	24.82	22.40	19.87
802.11n HT20	Chain0	20.16	20.79	20.20
802.11n HT20	Chain1	29.85	20.68	20.55
802.11ac VHT20	Chain0	20.23	20.09	20.26
802.11ac VHT20	Chain1	25.47	20.99	20.24

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5510MHz	5590MHz	5670MHz
802.11n HT40	Chain0	40.44	40.54	40.36
802.11n HT40	Chain1	44.48	41.63	40.72
802.11ac VHT40	Chain0	39.90	40.00	40.74
802.11ac VHT40	Chain1	39.98	40.66	40.18

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5530MHz	---	5610MHz
802.11ac VHT80	Chain0	81.84	---	81.74
802.11ac VHT80	Chain1	81.33	---	82.24

**U-NII-3**

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5745MHz	5785MHz	5825MHz
802.11a	Chain0	19.49	20.28	21.51
802.11a	Chain1	19.41	20.40	20.40
802.11n HT20	Chain0	20.49	20.72	20.49
802.11n HT20	Chain1	20.07	20.95	23.72
802.11ac VHT20	Chain0	20.24	20.01	20.34
802.11ac VHT20	Chain1	20.50	20.25	26.73

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5755MHz	---	5795MHz
802.11n HT40	Chain0	40.40	---	40.51
802.11n HT40	Chain1	40.84	---	40.94
802.11ac VHT40	Chain0	44.26	---	46.48
802.11ac VHT40	Chain1	40.61	---	40.10

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5775MHz	---	---
802.11ac VHT80	Chain0	82.07	---	---
802.11ac VHT80	Chain1	81.46	---	---



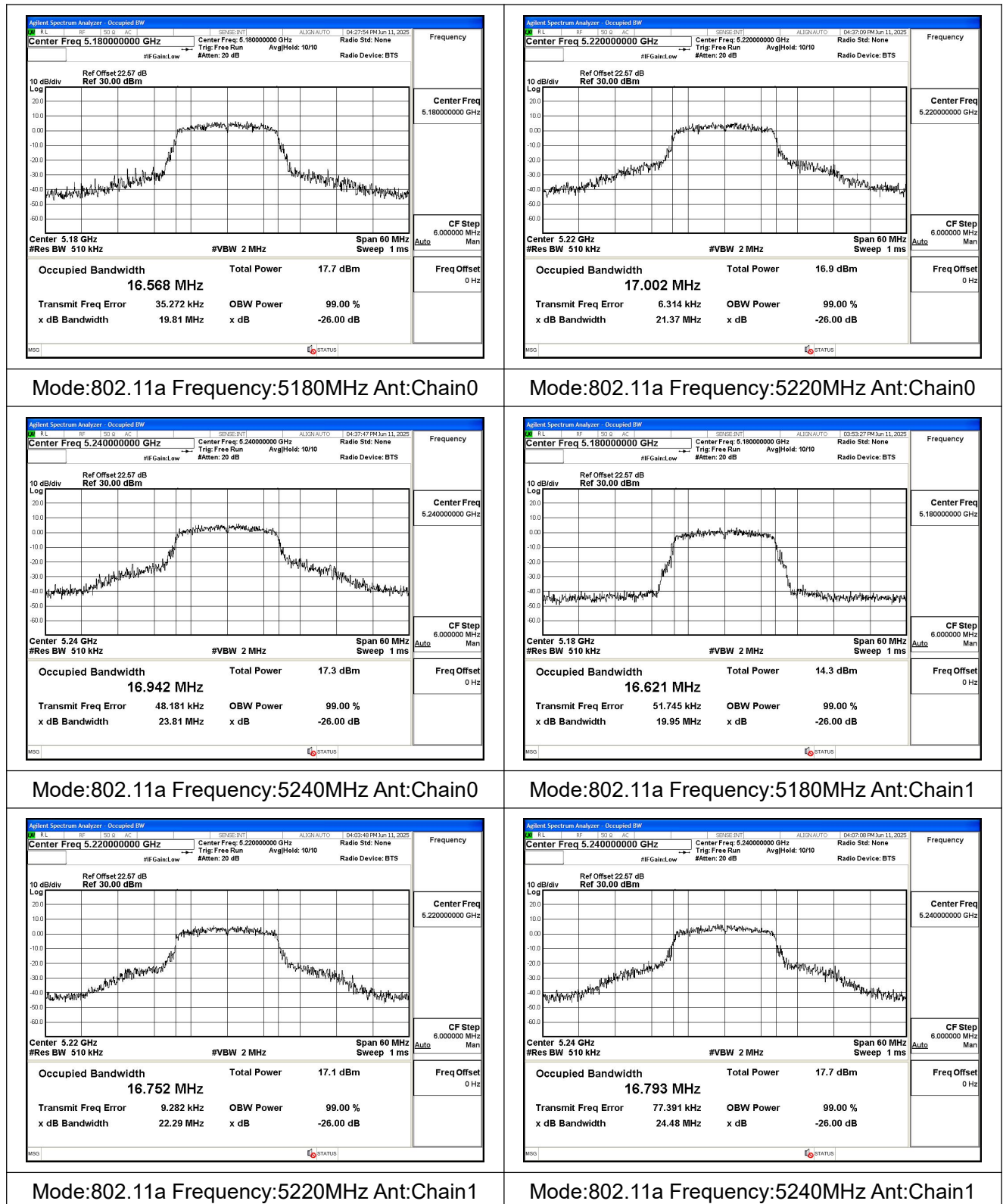
BUREAU  
VERITAS

Test Report No.: PSU-NQN2506100110RF03

## TEST GRAPHS

U-NII-1

Test Mode: 802.11a

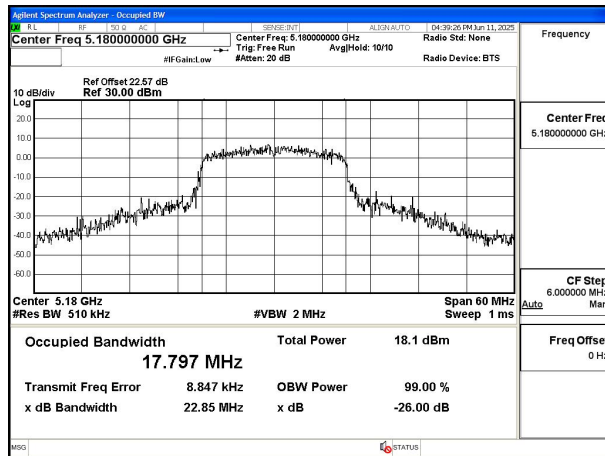




BUREAU  
VERITAS

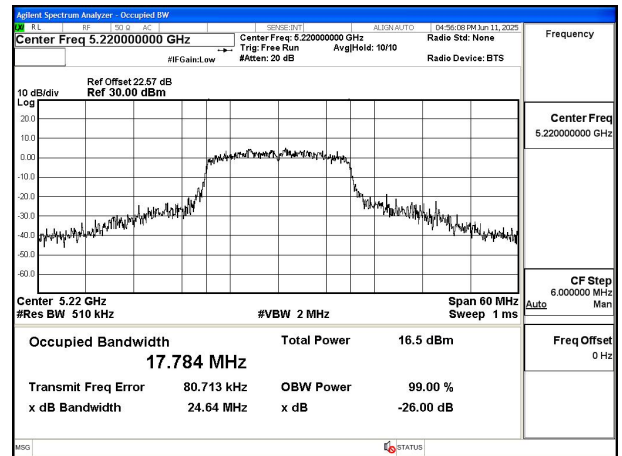
Test Report No.: PSU-NQN2506100110RF03

Test Mode: 802.11n HT20



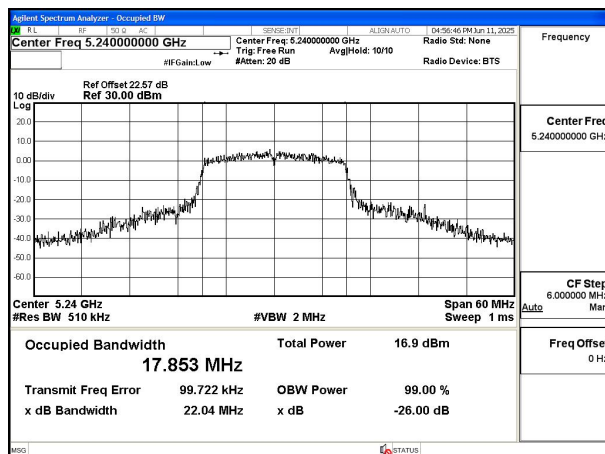
Mode:802.11n HT20 Frequency:5180MHz

Ant:Chain0



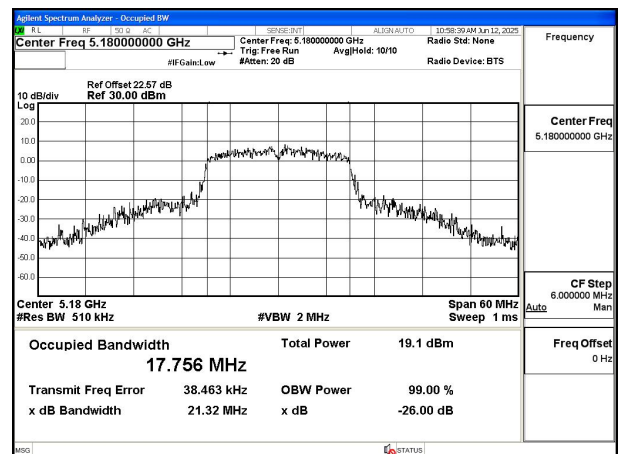
Mode:802.11n HT20 Frequency:5220MHz

Ant:Chain0



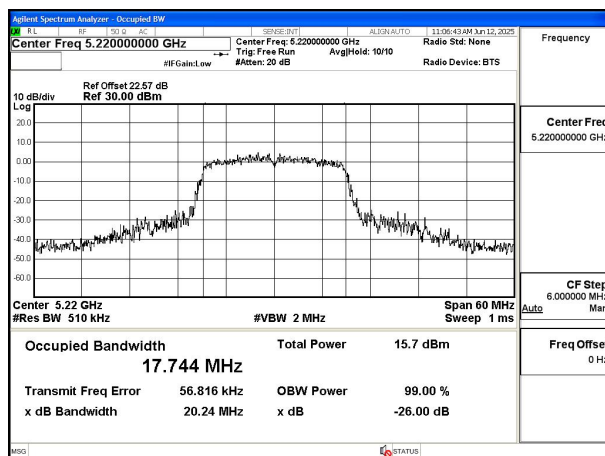
Mode:802.11n HT20 Frequency:5240MHz

Ant:Chain0



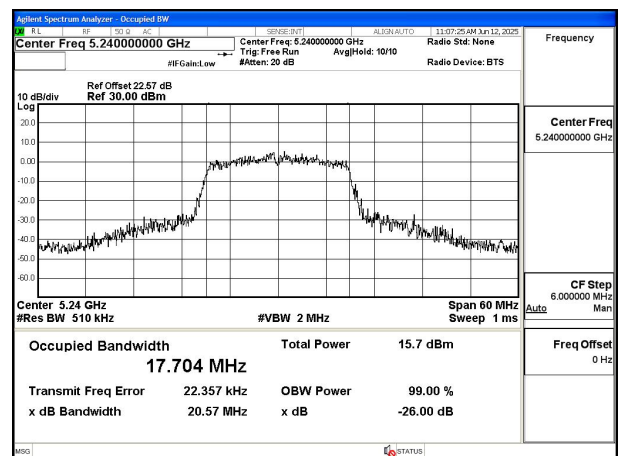
Mode:802.11n HT20 Frequency:5180MHz

Ant:Chain1



Mode:802.11n HT20 Frequency:5220MHz

Ant:Chain1



Mode:802.11n HT20 Frequency:5240MHz

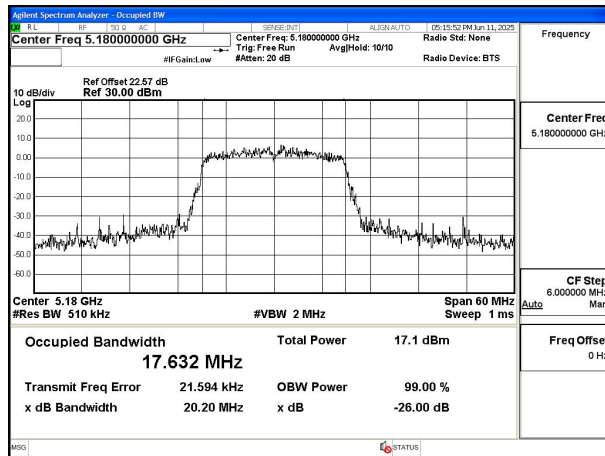
Ant:Chain1



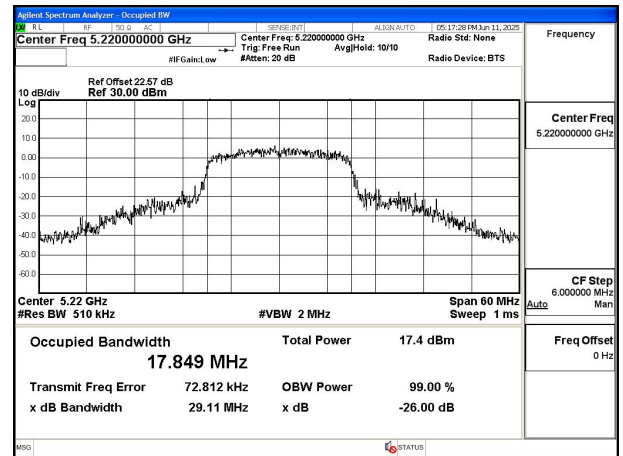
BUREAU  
VERITAS

Test Report No.: PSU-NQN2506100110RF03

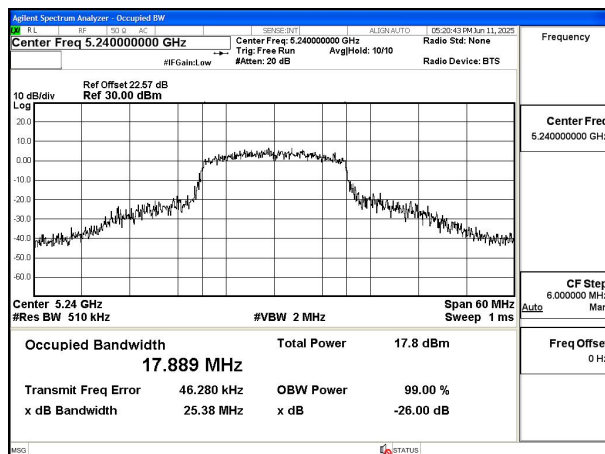
Test Mode: 802.11ac VHT20



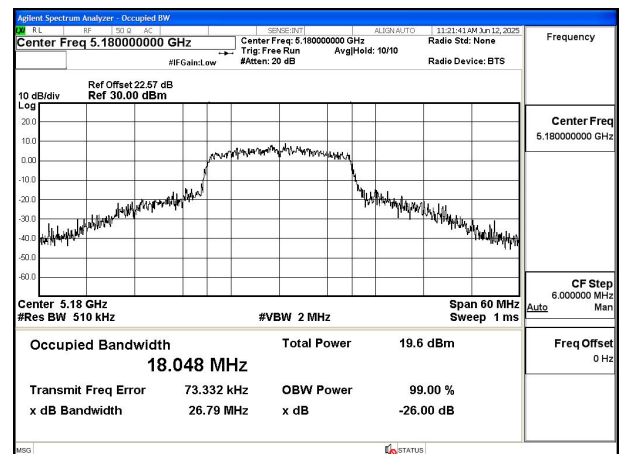
Mode:802.11ac VHT20 Frequency:5180MHz  
Ant:Chain0



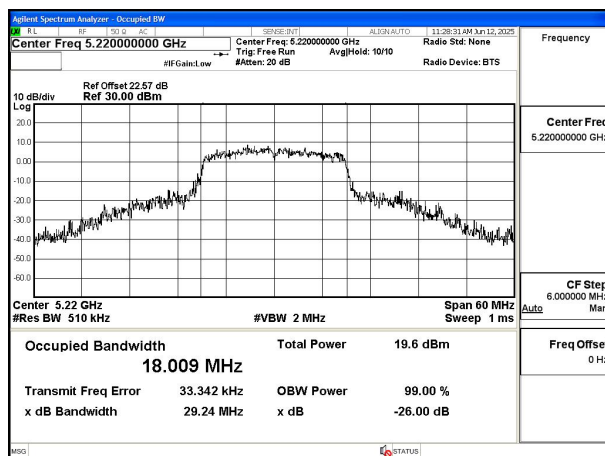
Mode:802.11ac VHT20 Frequency:5220MHz  
Ant:Chain0



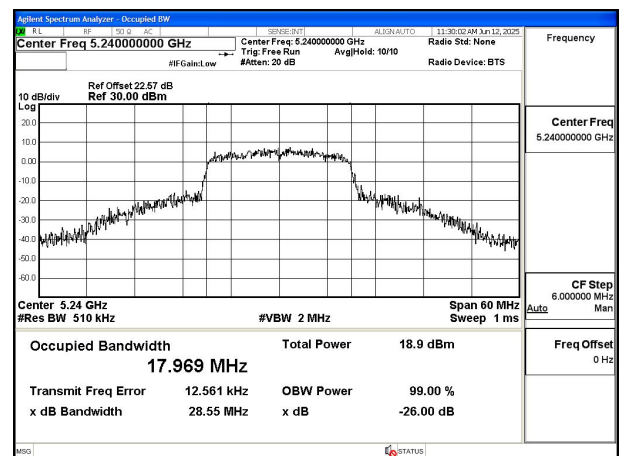
Mode:802.11ac VHT20 Frequency:5240MHz  
Ant:Chain0



Mode:802.11ac VHT20 Frequency:5180MHz  
Ant:Chain1



Mode:802.11ac VHT20 Frequency:5220MHz  
Ant:Chain1



Mode:802.11ac VHT20 Frequency:5240MHz  
Ant:Chain1



Test Mode: 802.11n HT40

<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.190000000 GHz</p> <p>Ref Offset 22.57 dB Ref 30.00 dBm</p> <p>Center Freq 5.190000000 GHz Trig: Free Run #Aver: 20 dB Avg/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Frequency</p> <p>Center Freq 5.190000000 GHz</p> <p>CF Step 10.000000 MHz Auto Man</p> <p>Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Span 100 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.170 MHz Total Power 16.4 dBm Transmit Freq Error 64.086 kHz OBW Power 99.00 % x dB Bandwidth 39.80 MHz x dB -26.00 dB</p> <p>Freq Offset 0 Hz</p> <p>MSO STATUS</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.230000000 GHz</p> <p>Ref Offset 22.57 dB Ref 30.00 dBm</p> <p>Center Freq 5.230000000 GHz Trig: Free Run #Aver: 20 dB Avg/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Frequency</p> <p>Center Freq 5.230000000 GHz</p> <p>CF Step 10.000000 MHz Auto Man</p> <p>Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Span 100 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.268 MHz Total Power 15.7 dBm Transmit Freq Error 147.55 kHz OBW Power 99.00 % x dB Bandwidth 40.59 MHz x dB -26.00 dB</p> <p>Freq Offset 0 Hz</p> <p>MSO STATUS</p>
<p>Mode:802.11n HT40 Frequency:5190MHz</p> <p>Ant:Chain0</p>	<p>Mode:802.11n HT40 Frequency:5230MHz</p> <p>Ant:Chain0</p>
<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.190000000 GHz</p> <p>Ref Offset 22.57 dB Ref 30.00 dBm</p> <p>Center Freq 5.190000000 GHz Trig: Free Run #Aver: 20 dB Avg/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Frequency</p> <p>Center Freq 5.190000000 GHz</p> <p>CF Step 10.000000 MHz Auto Man</p> <p>Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Span 100 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.285 MHz Total Power 16.0 dBm Transmit Freq Error 76.640 kHz OBW Power 99.00 % x dB Bandwidth 39.75 MHz x dB -26.00 dB</p> <p>Freq Offset 0 Hz</p> <p>MSO STATUS</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.230000000 GHz</p> <p>Ref Offset 22.57 dB Ref 30.00 dBm</p> <p>Center Freq 5.230000000 GHz Trig: Free Run #Aver: 20 dB Avg/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Frequency</p> <p>Center Freq 5.230000000 GHz</p> <p>CF Step 10.000000 MHz Auto Man</p> <p>Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Span 100 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.286 MHz Total Power 15.2 dBm Transmit Freq Error 94.943 kHz OBW Power 99.00 % x dB Bandwidth 40.95 MHz x dB -26.00 dB</p> <p>Freq Offset 0 Hz</p> <p>MSO STATUS</p>
<p>Mode:802.11n HT40 Frequency:5190MHz</p> <p>Ant:Chain1</p>	<p>Mode:802.11n HT40 Frequency:5230MHz</p> <p>Ant:Chain1</p>