Certificate #6613.01

TEST REPORT

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9,02600 Espoo, Finland

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9,02600 Espoo, Finland
Product:	Smart phone
Brand Name:	HMD
Model Name:	TA-1600/TA-1688
FCC ID:	2AJOTTA-1600
Date of tests:	Apr. 08, 2024 ~ Aug. 08, 2024

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart E, Section 15.407**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
Xu Hanwen Date: Aug. 08, 2024	Sun Peibo Date: Aug. 08, 2024

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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RELEASE CONTROL RECORD

Issue No.	Description	Date Issued
PSU-NQN2403180115RF04	Original release	Aug. 08, 2024

1 SUMMARY OF TEST RESULTS

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Test Lab
15.407(b)(9)	AC Power Conducted Emissions	Compliance	A
15.407(b)(6)(9)	Radiated Emissions	Compliance	A
15.407(b)(7)	In-Band Emission (Mask)	Compliance	A
15.407(a)(11)	Emission Bandwidth Measurement	Compliance	A
15.407(a)(7)(8)	Maximum Power Spectral Density	Compliance	A
15.407 (d)(6)	Contention-based Protocol.	Compliance	A
15.407(a)(7)(8)	RF Output Power	Compliance	B
15.407(d)(5)	Operational restrictions for 6 GHz U-NII devices	Declaration by applicant	A
15.203	Antenna Requirement	Compliance	A

Note:

1. Except the data of RSE and Band Edge Measurement, other data please refer to Appendix D.
2. 802.11ax support full RU tone and partial RU tone, both full RU and partial RU-left (for low CH) and RU-mid (for mid CH) and partial RU-Right (for high CH) are tested for conducted power/PSD/In-Band Emission,all the other test case were performed with full RU with its maximum power/PSD.
3. Preliminary Investigation scans were completed to compare Full RU Tone modes and Single User Tone modes. It was found that SU modes were the worst case over Full RU-Tone mode in every instance, and the physical waveforms of SU mode and FULL RU-Tone are the same, and both FULL RU-Tone mode have lower power than SU mode. Therefore, only SU mode was report as it is representative of Full RU-Tone worst case scenario.
4. WIFI-6e supports SISO&MIMO mode,the whole testing has assessed the MIMO mode by referring to their maximum conducted power. and the 802.11ax HE40/80/160MHz RU26T/52T/106T/242T modes are cover by the 11ax HE20MHz modes, the 802.11ax HE80/160MHz RU484T modes are cover by the 11ax HE40MHz modes, the 802.11ax HE160MHz RU996T modes are cover by the 11ax HE80MHz modes.
5. These devices are under control of a low-power indoor access point
6. Only the worse data was reported.

***Test Lab Information Reference**

Lab A:

BV 7Layers Communications Technology (Shenzhen) Co., Ltd

Lab Address:

Room B37, Warehouse A5, No.3 Chiwan 4th Road, Zhaoshang Street, Nanshan District Shenzhen, Guangdong, People's Republic of China

Accredited Test Lab Cert 3939.01

The FCC Site Registration No. : 525120; Designation No. : CN1171;

Lab B:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

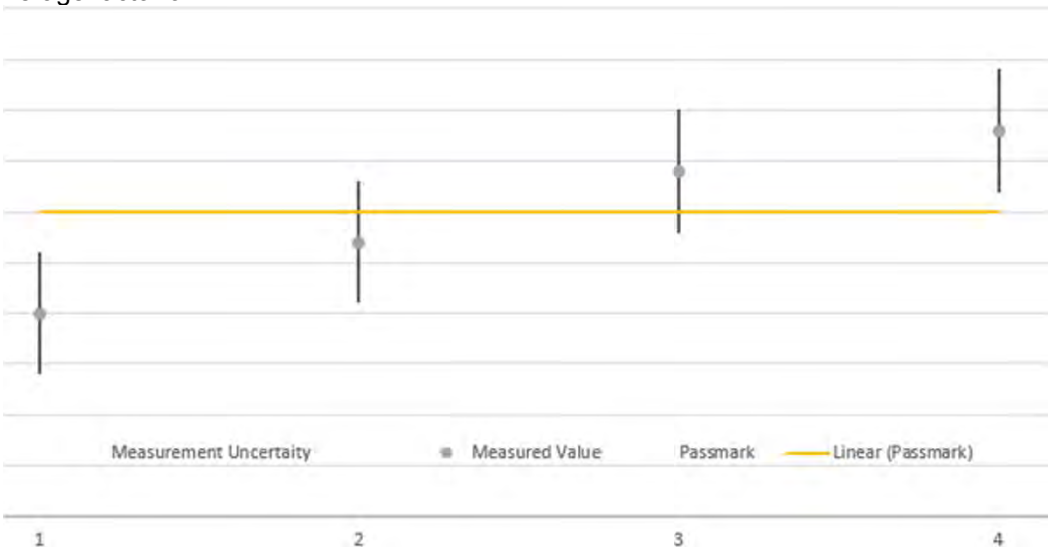
The FCC Site Registration No. is 434559; The Designation No. is CN1325.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~150KHz	±2.87
	150KHz ~ 30MHz	±3.36
Radiated emissions	9KHz ~ 30MHz	2.80dB
	30MHz ~ 1GMHz	4.65dB
	1GHz ~ 18GHz	5.01dB
	18GHz ~ 40GHz	4.10dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.

1.2 MODIFICATION RECORD

There were no modifications required for compliance.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	Smart phone
BRAND*	HMD
MODEL NAME*	TA-1600/TA-1688
NOMINAL VOLTAGE*	9.0Vdc (adapter) 3.89Vdc (battery)
MODULATION TYPE*	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
MODULATION TECHNOLOGY*	OFDM, OFDMA
TRANSFER RATE	802.11ax: up to 2401.9Mbps
OPERATING FREQUENCY	Low-power Indoor client 5.945 GHz ~ 6.425 GHz 6.425 GHz ~ 6.525 GHz 6.525 GHz ~ 6.875 GHz 6.875 GHz ~ 7.125 GHz
NUMBER OF CHANNEL	802.11ax (HE20): 60 802.11ax (HE40): 29 802.11ax (HE80): 14 802.11ax (HE160): 7
OUTPUT EIRP POWER	16.54dB/ 45.08mW for 5945 ~ 6425MHz 16.4dB/ 43.65mW for 6425 ~ 6525MHz 16.18dB/ 41.50mW for 6525 ~ 6875MHz 17.26dB/ 53.21mW for 6875 ~ 7125MHz
ANTENNA TYPE*	ANT 8: PIFA Antenna with -4 dBi For 5945 ~ 6425MHz PIFA Antenna with -4 dBi For 6425 ~ 6525MHz PIFA Antenna with -4dBi For 6525 ~ 6875MHz PIFA Antenna with -4dBi For 6875 ~ 7125MHz ANT 11: PIFA Antenna with -4 dBi For 5945 ~ 6425MHz PIFA Antenna with -4 dBi For 6425 ~ 6525MHz PIFA Antenna with -4 dBi For 6525 ~ 6875MHz PIFA Antenna with -4 dBi For 6875 ~ 7125MHz
HW VERSION*	V2
SW VERSION*	00WW_0_340
I/O PORTS	Refer to user's manual
CABLE SUPPLIED*	N/A

NOTE:

1. *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

3. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

4. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function
802.11ax (HE20)	2TX
802.11ax (HE40)	2TX
802.11ax (HE80)	2TX
802.11ax (HE160)	2TX

5. WLAN 2.4GHz & WLAN 5GHz technology cannot transmit at the same time.

6. List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
LCD Panel	BOE	BOE	BF066XMM-TL4-F900	6.55inch, AMOLED;
Back cover	BIEL	BIEL	Panda-X	158mm*73mm*0.6mm
Bezel	BIEL	BIEL	6103HG02-T6	160 mm_76 mm_8.5 mm
Photo Camera 1	AAC	AAC	P50AD01	50MP,AF
Photo Camera 2	AAC	AAC	W13FD02	13MP Ultra Wide, FF
Video Camera 1	AAC	AAC	T50AD01	50MP Tele, AF
Video Camera 2	AAC	AAC	MA8SD01	108MP+OIS, AF
CPU	Qualcomm	Qualcomm	SM-7435-1-PSP1026-TR-00-0-AB	Platform Baseband Chip_PSP_mmW_8 core_SMT
eMMC1 (=ROM1)	Samsung	Samsung	KM8L9001JM-B624T07	uMCP_254-ball FBGA_128GB_LPDDR4X_64Gb_SMT
eMMC2 (=ROM2)	Samsung	Samsung	KM8F9001JM-B813T07	uMCP_254-ball FBGA_256GB_LPDDR4X_64Gb_SMT
eMMC3 (=ROM3)	Samsung	Samsung	KM8F9001MM-B830T07	uMCP_254-ball FBGA_256GB_LPDDR4X_96Gb_SMT
Battery	HMD	Gaoyuan	HBA4633AA	RatedCapacity:4500mAh/17.51Wh

7. The differences between the first and second supply as follows and the specifications and RF parameters are the same.

Key Component list						
No.	Component	Description	**First supply**		**Second supply**	
			Supplier	Spec	Supplier	Spec
1	USB/ Analog audio headsets	Analog Audio Switch	Dioo	DIO4480WL25 Analog switch & MUX_WLCSP25_2.7-5.5V_3-Channel_1000MHz_SMT	Will	WAS4780C-25/TR Analog switch & MUX_CSP-25L_2.7-5.5V_2-Channel_950MHz_SMT

2	Wireless charge	Load Switch	SGM	SGM2575ADYG/TR Load Switch_34 mΩ_11 W_WLCSP_SGM2575ADY G/TR_SGM	Dioo	DIO7290WL4 Load Switch_85 mΩ_11 W_WLCSP-4
3	Sensor	Barometer	Bosch	BMP580 Baroceptor _LGA-10_±0.05 hPa_48 bit_ SMT	Go er mic ro	SPL07-003 Baroceptor_10pin LGA_0.5Pa/°C_24 bit_SMT
4	Sensor	eCOMPASS	VTC	AF6837 Magnetic field sensor_WLCSP_10 LSB/μT_16 bit_I2C_SMT	Memsic	MMC5603NJL Ecompass_MMC56 03NJL_M EMSIC_MCOs
5	RF IC	LNA	Will	WS7916DF-6/TR RF_LNA_6-pin DFN_1150 MHz to 1615_SMT	Awinic	AW5005EDNR RF_LNA_AW5005 EDNR_Awi nic
6	Receiver	SP2T	Will	WS78022D-6/TR DFN-6_0.1GHz - 3.8GHz_SPDT_GPIO_SMT	Champ hill	QX8612GD 0.7 to 2.7GHz_SPDT_2 W_GPIO
7	USB connector	USB type-C connector	LETCON	15-16815-105-M1 USB TYPE C Connector_0.9 mm_16 pin_Female Head (elastic end)_Horizontal_None-waterproof_4.27 mm_Gold_SMT_480M	HRD	UC141-0B100DR0 USB TYPE C Connector_0.9 mm_16 pin_Female Head (elastic end)_Horizontal_No ne- waterproof_4.3 mm_Gold_SMT_48 0M

2.2 DESCRIPTION OF TEST MODES

U-NII-5 band: Low-power Indoor client

25 channels are provided for 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
2	5935 MHz	1	5955 MHz	5	5975 MHz	9	5995 MHz
13	6015 MHz	17	6035 MHz	21	6055 MHz	25	6075 MHz
29	6095 MHz	33	6115 MHz	37	6135 MHz	41	6155 MHz
45	6175 MHz	49	6195 MHz	53	6215 MHz	57	6235 MHz
61	6255 MHz	65	6275 MHz	69	6295 MHz	73	6315 MHz
77	6335 MHz	81	6355 MHz	85	6375 MHz	89	6395 MHz
93	6415 MHz						

12 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	5965 MHz	11	6005 MHz	19	6045 MHz	27	6085 MHz
35	6125 MHz	43	6165 MHz	51	6205 MHz	59	6245 MHz
67	6285 MHz	75	6325 MHz	83	6365 MHz	91	6405 MHz

6 channel is provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
7	5985 MHz	23	6065 MHz	39	6145 MHz	55	6225 MHz
71	6305 MHz	87	6385 MHz				

3 channel is provided for 802.11ax (HE160):

Channel	Frequency	Channel	Frequency	Channel	Frequency
15	6025 MHz	47	6185 MHz	79	6345 MHz

U-NII-6 band: Low-power Indoor client

5 channels are provided for 802.11a, 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
97	6435 MHz	101	6455 MHz	105	6475 MHz	109	6495 MHz
113	6515 MHz						

3 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency
99	6445 MHz	107	6485 MHz	*115	6525 MHz

2 channel are provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
103	6465 MHz	*119	6545 MHz

1 channel are provided for 802.11ax (HE160):

Channel	Frequency
*111	6465 MHz

U-NII-7 band: Low-power Indoor client

18 channels are provided for 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
117	6535 MHz	121	6555 MHz	125	6575 MHz	129	6595 MHz
133	6615 MHz	137	6635 MHz	141	6655 MHz	145	6675 MHz
149	6695 MHz	153	6715 MHz	157	6735 MHz	161	6755 MHz
165	6775 MHz	169	6795 MHz	173	6815 MHz	177	6835 MHz
181	6855 MHz	*185	6875 MHz				

9 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
123	6565 MHz	131	6605 MHz	139	6645 MHz	147	6685 MHz
155	6725 MHz	163	6765 MHz	171	6805 MHz	179	6845 MHz
*187	6885 MHz						

4 channels are provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
135	6625 MHz	151	6705 MHz	167	6785 MHz	*183	6865 MHz

2 channels are provided for 802.11ax (HE160):

Channel	Frequency	Channel	Frequency
143	6665 MHz	*175	6825 MHz

U-NII-8 band: Under control of a Low-power Indoor AP

12 channels are provided for 802.11a, 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
189	6895 MHz	193	6915 MHz	197	6935 MHz	201	6955 MHz
205	6975 MHz	209	6995 MHz	213	7015 MHz	217	7035 MHz
221	7055 MHz	225	7075 MHz	229	7095 MHz	233	7115 MHz

5 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency
195	6925 MHz	203	6965 MHz	211	7005 MHz
219	7045 MHz	227	7085 MHz		

2 channel is provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
199	6945 MHz	215	7025 MHz

1 channel is provided for 802.11ax (HE160):

Channel	Frequency
207	6985 MHz

Note: * mean this's straddle channel and operating under control by Low-power indoor AP only.

2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO						DESCRIPTION
	RE 1G	RE<1G	IBE	PLC	CBP	APCM	
A	√	√	√	√	√	√	Powered by Adapter/Battery
B	√	√	-	-	-	-	Powered by Notebook

Where **RE 1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement
IBE: In-Band Emission (MASK) **CBP:**Contention Based Protocol

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on Z-plane (for mode A).
2. "-": Means no effect.

Radiated Emission Measurement (Above 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQUENCY BAND (MHZ)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A,B	802.11ax (HE20)	5945-6425	1 to 93	1, 45, 93	OFDM	BPSK	MCS0
		6425-6525	97 to 113	97, 105, 113	OFDM	BPSK	MCS0
		6525-6875	117 to 185	117, 149, 185	OFDM	BPSK	MCS0
		6875-7125	185 to 233	189, 209, 233	OFDM	BPSK	MCS0
A,B	802.11ax (HE40)	5945-6425	3 to 91	3, 43 , 91	OFDM	BPSK	MCS0
		6425-6525	99 to 115	99, 115	OFDM	BPSK	MCS0
		6525-6875	115 to 187	123, 147, 179	OFDM	BPSK	MCS0
		6875-7125	187 to 227	195, 203, 227	OFDM	BPSK	MCS0
A,B	802.11ax (HE80)	5945-6425	7 to 87	7, 39, 87	OFDM	BPSK	MCS0
		6425-6525	103 to 119	103	OFDM	BPSK	MCS0
		6525-6875	119 to 183	135, 151, 183	OFDM	BPSK	MCS0
		6875-7125	183 to 215	199, 215	OFDM	BPSK	MCS0
A,B	802.11ax (HE160)	5945-6425	15 to 79	15, 47, 79	OFDM	BPSK	MCS0
		6425-6525	111	111	OFDM	BPSK	MCS0
		6525-6875	143 to 175	143 , 175	OFDM	BPSK	MCS0
		6875-7125	175 to 207	207	OFDM	BPSK	MCS0

Radiated Emission Measurement (Below 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQUENCY BAND (MHZ)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A,B	802.11ax (HE80)	6525-6855	119 to 183	135	OFDM	BPSK	MCS0

In-Band Emission (MASK) Measurement:

EUT CONFIGURE MODE	MODE	FREQUENCY BAND (MHZ)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	802.11ax (HE20)	5945-6425	1 to 93	1, 45, 93	OFDM	BPSK	MCS0
		6425-6525	97 to 113	97, 105, 113	OFDM	BPSK	MCS0
		6525-6875	117 to 185	117, 149, 185	OFDM	BPSK	MCS0
		6875-7125	185 to 233	189, 209, 233	OFDM	BPSK	MCS0
A	802.11ax (HE40)	5945-6425	3 to 91	3, 43 , 91	OFDM	BPSK	MCS0
		6425-6525	99 to 115	99, 115	OFDM	BPSK	MCS0
		6525-6875	115 to 187	123, 147, 179	OFDM	BPSK	MCS0
		6875-7125	187 to 227	195, 203, 227	OFDM	BPSK	MCS0
A	802.11ax (HE80)	5945-6425	7 to 87	7, 39, 87	OFDM	BPSK	MCS0
		6425-6525	103 to 119	103	OFDM	BPSK	MCS0
		6525-6875	119 to 183	135, 151, 183	OFDM	BPSK	MCS0
		6875-7125	183 to 215	199, 215	OFDM	BPSK	MCS0
A	802.11ax (HE160)	5945-6425	15 to 79	15, 47, 79	OFDM	BPSK	MCS0
		6425-6525	111	111	OFDM	BPSK	MCS0
		6525-6875	143 to 175	143 , 175	OFDM	BPSK	MCS0
		6875-7125	175 to 207	207	OFDM	BPSK	MCS0

Power Line Conducted Emission Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQUENCY BAND (MHZ)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	802.11ax (HE80)	6525-6875	119 to 183	135	OFDM	BPSK	MCS0

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQUENCY BAND (MHZ)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	802.11ax (HE20)	5945-6425	1 to 93	1, 45, 93	OFDM	BPSK	MCS0
		6425-6525	97 to 113	97, 105, 113	OFDM	BPSK	MCS0
		6525-6875	117 to 185	117, 149, 185	OFDM	BPSK	MCS0
		6875-7125	185 to 233	189, 209, 233	OFDM	BPSK	MCS0
A	802.11ax (HE40)	5945-6425	3 to 91	3, 43 , 91	OFDM	BPSK	MCS0
		6425-6525	99 to 115	99, 115	OFDM	BPSK	MCS0
		6525-6875	115 to 187	123, 147, 179	OFDM	BPSK	MCS0
		6875-7125	187 to 227	195, 203, 227	OFDM	BPSK	MCS0
A	802.11ax (HE80)	5945-6425	7 to 87	7, 39, 87	OFDM	BPSK	MCS0
		6425-6525	103 to 119	103	OFDM	BPSK	MCS0
		6525-6875	119 to 183	135, 151, 183	OFDM	BPSK	MCS0
		6875-7125	183 to 215	199, 215	OFDM	BPSK	MCS0
A	802.11ax (HE160)	5945-6425	15 to 79	15, 47, 79	OFDM	BPSK	MCS0
		6425-6525	111	111	OFDM	BPSK	MCS0
		6525-6875	143 to 175	143 , 175	OFDM	BPSK	MCS0
		6875-7125	175 to 207	207	OFDM	BPSK	MCS0

Contention Based Protocol Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQUENCY BAND (MHZ)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	802.11ax (HE20)	5945-6425	1 to 93	53	OFDM	BPSK	MCS0
		6425-6525	97 to 113	101	OFDM	BPSK	MCS0
		6525-6875	117 to 185	149	OFDM	BPSK	MCS0
		6875-7125	185 to 233	197	OFDM	BPSK	MCS0
A	802.11ax (HE160)	5945-6425	15 to 79	47	OFDM	BPSK	MCS0
		6425-6525	111	111	OFDM	BPSK	MCS0
		6525-6875	143 to 175	175	OFDM	BPSK	MCS0
		6875-7125	175 to 207	207	OFDM	BPSK	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE 1G	23 deg. C, 69% RH	DC 9.0V By Adapter	Hanwen Xu
RE<1G	23 deg. C, 69% RH	DC 9.0V By Adapter	Hanwen Xu
PLC	23 deg. C, 69% RH	DC 9.0V By Adapter	Hanwen Xu
APCM	25 deg. C, 60% RH	DC 3.89V By Battery	Hanwen Xu

2.3 DUTY CYCLE OF TEST SIGNAL

Please Refer to Appendix D Of this test report.

2.4 DESCRIPTION OF SUPPORT UNITS

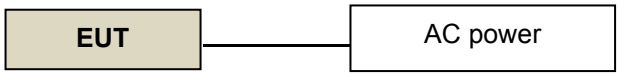
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Desktop	Lenovo	M73 SFF	PC04GRQV	N/A
2	Desktop	Lenovo	M73 SFF	PC06CS27	N/A
3	Laptop	Lenovo	Thinkpad L440	R90FTFKN	N/A
4	Router	ASUS	GT-AXE11000	M9IG04X400984RVB	N/A

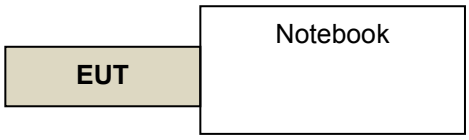
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 1.5m
2	AC Line: Unshielded, Detachable 1.5m
3	AC Line: Unshielded, Detachable 1.5m
4	AC Line: Unshielded, Detachable 1.5m

2.4.1 CONFIGURATION OF SYSTEM UNDER TEST

Mode A



Mode B



2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS AND REFERENCES

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10:2020

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 987594 D02 EMC Measurement v01r01

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

3 TEST TYPES AND RESULTS

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Frequencies (MHz)	EIRP Limit	Equivalent Field Strength at 3m
5925MHz > F > 7125MHz	Peak:-7 (dBm/MHz)	88.2(dBμV/m)
	Average: -27 (dBm/MHz)	68.2(dBμV/m)

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts).

3.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Nov. 14,23	Nov. 13,26
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 17,24	Feb. 16,25
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 17,24	Feb. 16,25
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.03, 23	Sep.02, 24
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120-3	3.2.06	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	N/A	May. 06,23	May. 05,24
10dB Attenuator	JFW/USA	50HF-010-SMA	N/A	May. 05,24	May. 04,25
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 27,24	Mar. 26,25
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,23	May. 05,24
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 05,24	May. 04,25
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.10,23	May.09,24
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.09,24	May.08,25
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 16,24	Feb. 15,25
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 11,23	Aug. 10,24
Power Meter	Anritsu	ML2495A	1506002	Feb. 13,24	Feb. 12,25
Power Sensor	Anritsu	MA2411B	1339352	Feb. 13,24	Feb. 12,25
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.02,23	Sep.01,24

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Chamber.
3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

3.1.3 TEST PROCEDURES

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) 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. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.

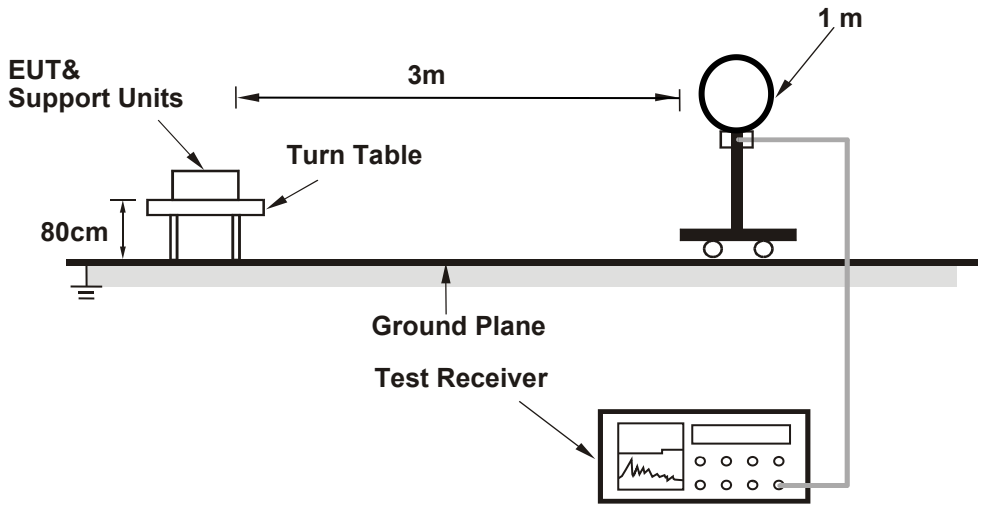
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
   Nss 1
   (802.11a: RBW = 1MHz, VBW = 1kHz; 802.11ax (HE20): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE40): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE80): RBW = 1MHz, VBW = 1kHz)
   Nss 2
   (802.11ax (HE20): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE40): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE80): RBW = 1MHz, VBW = 1kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

3.1.4 DEVIATION FROM TEST STANDARD

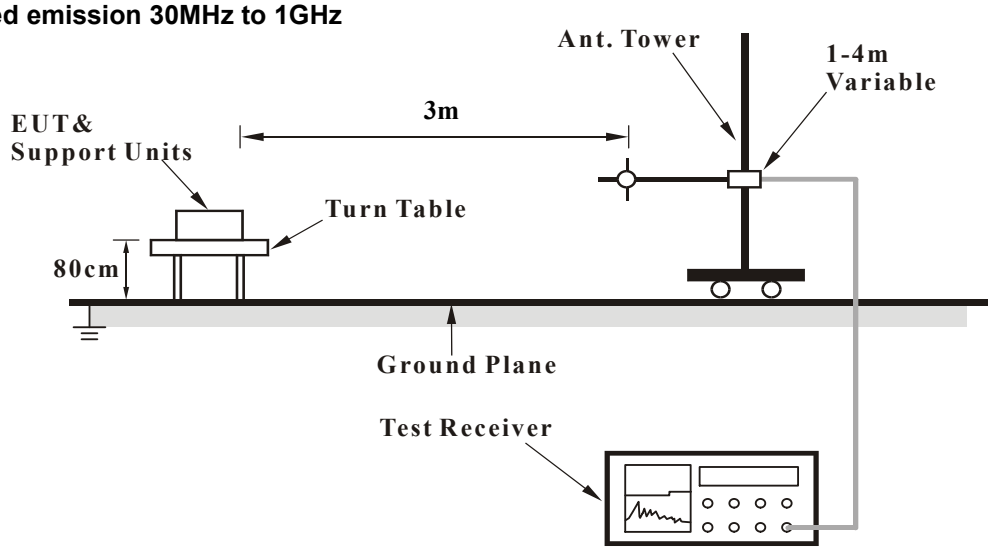
No deviation.

3.1.5 TEST SETUP

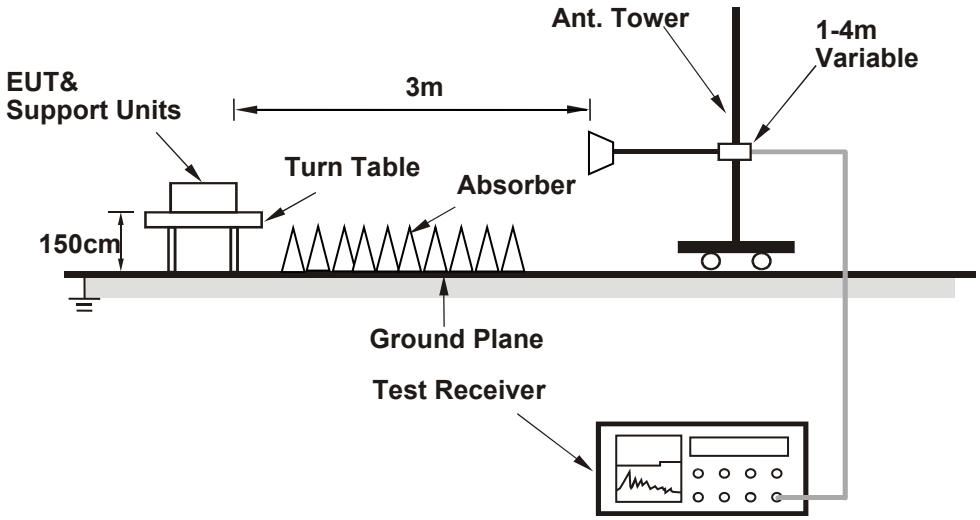
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

3.1.6 EUT OPERATING CONDITIONS

Mode A
a. EUT connected to the Notebook through dock via USB cable.
b. The EUT under transmission condition continuously at specific channel frequency.

Mode B
a. EUT plugged into the Notebook.
b. The EUT under transmission condition continuously at specific channel frequency.

3.1.7 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BAND EDGE MEASUREMENT

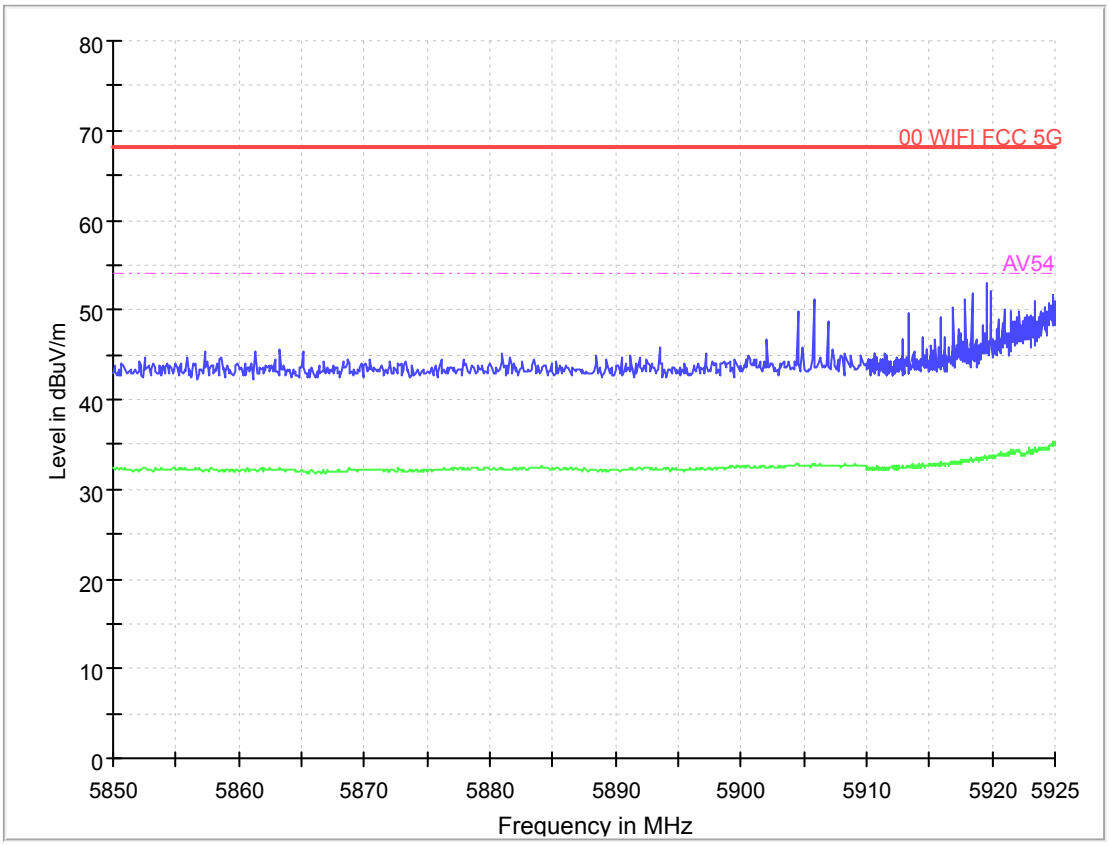
Full Mode

Left

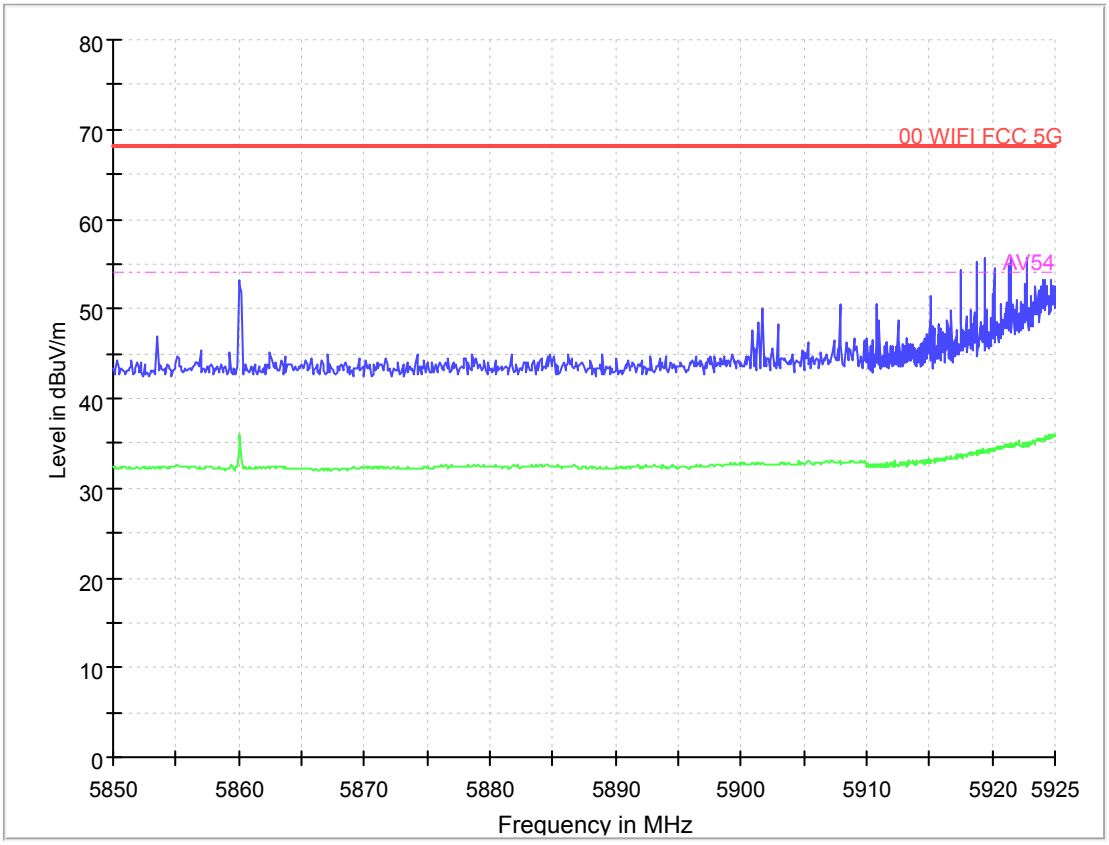
802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



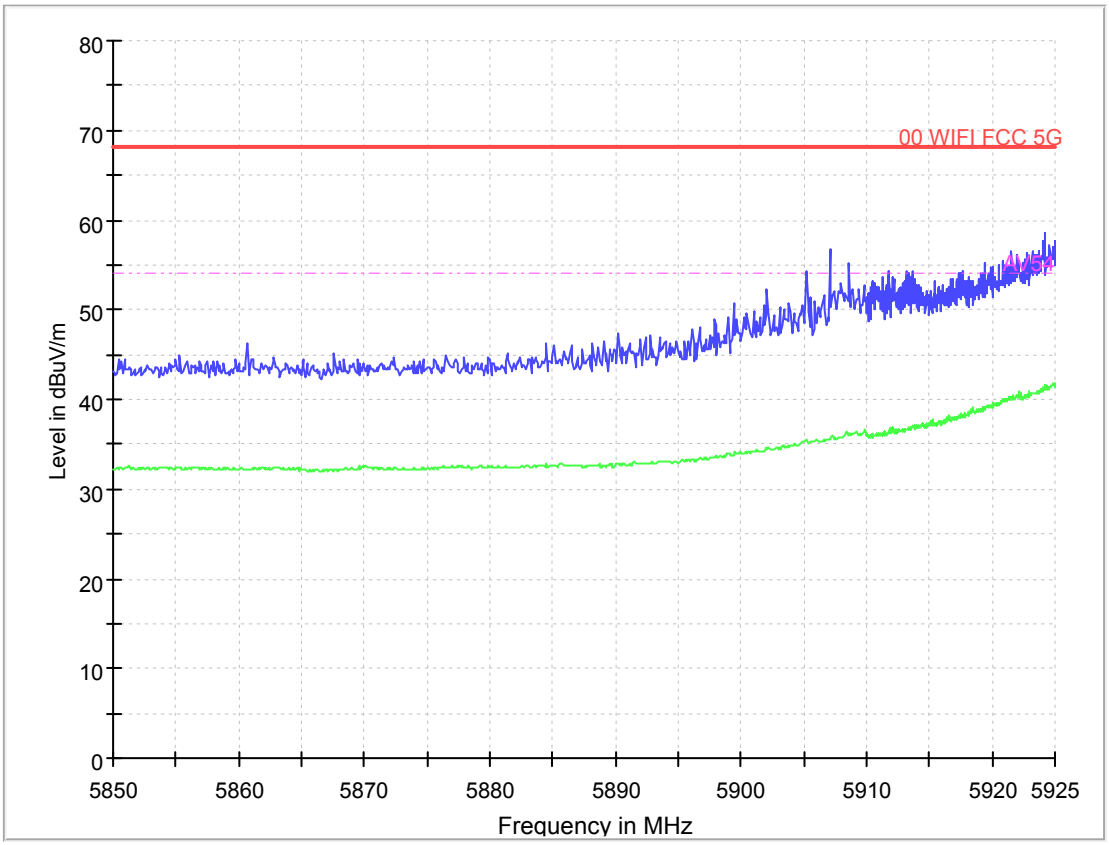
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



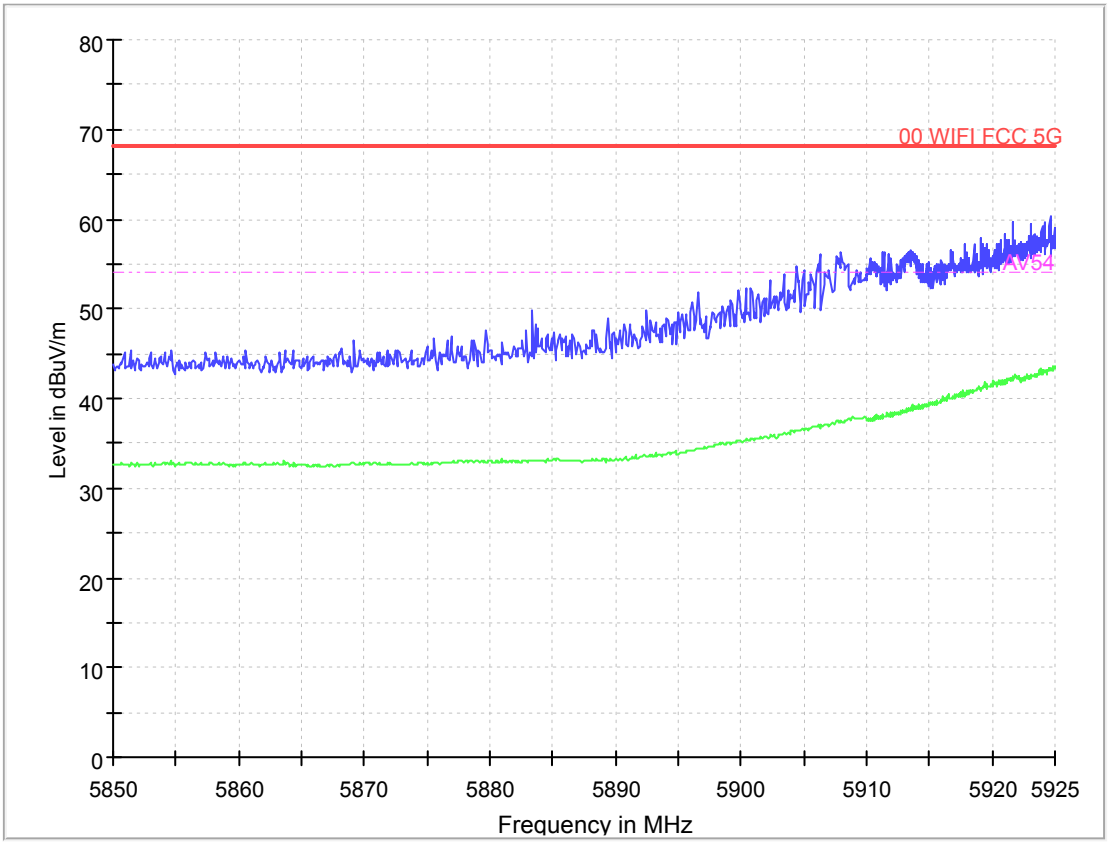
802.11ax (40MHz)

CHANNEL	TX Channel 3	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



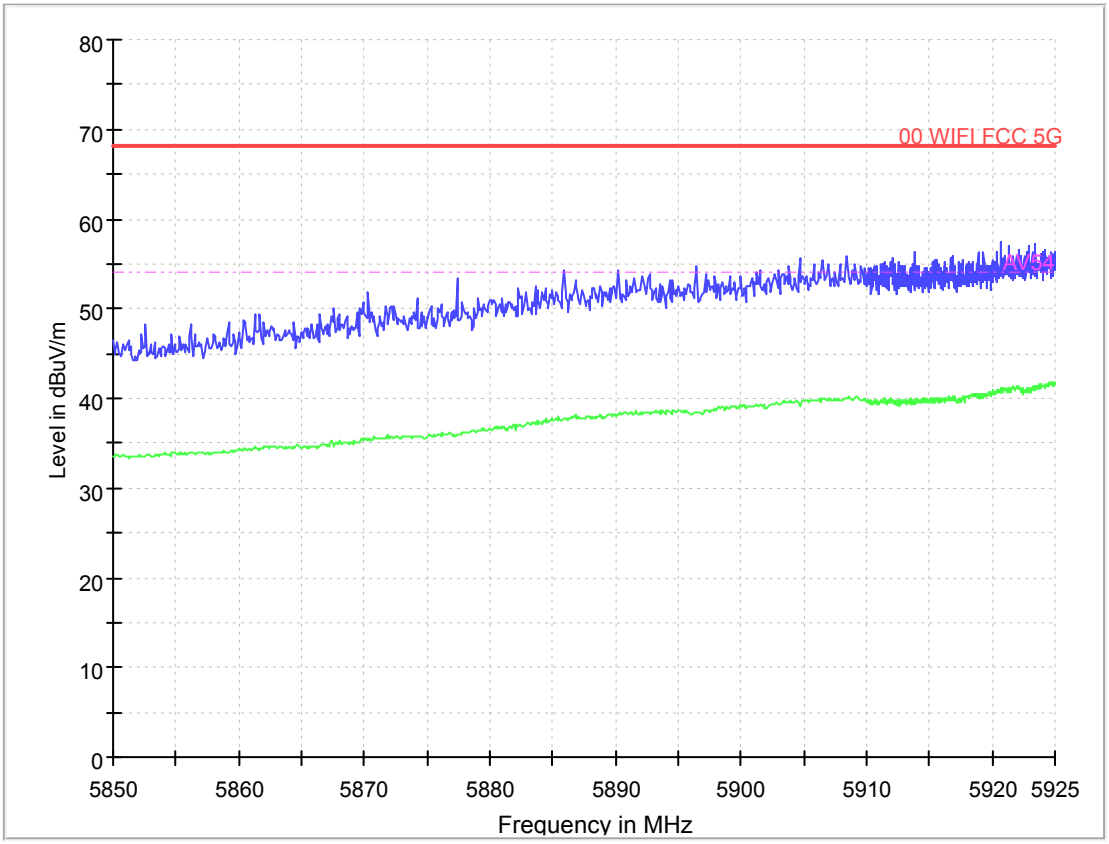
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



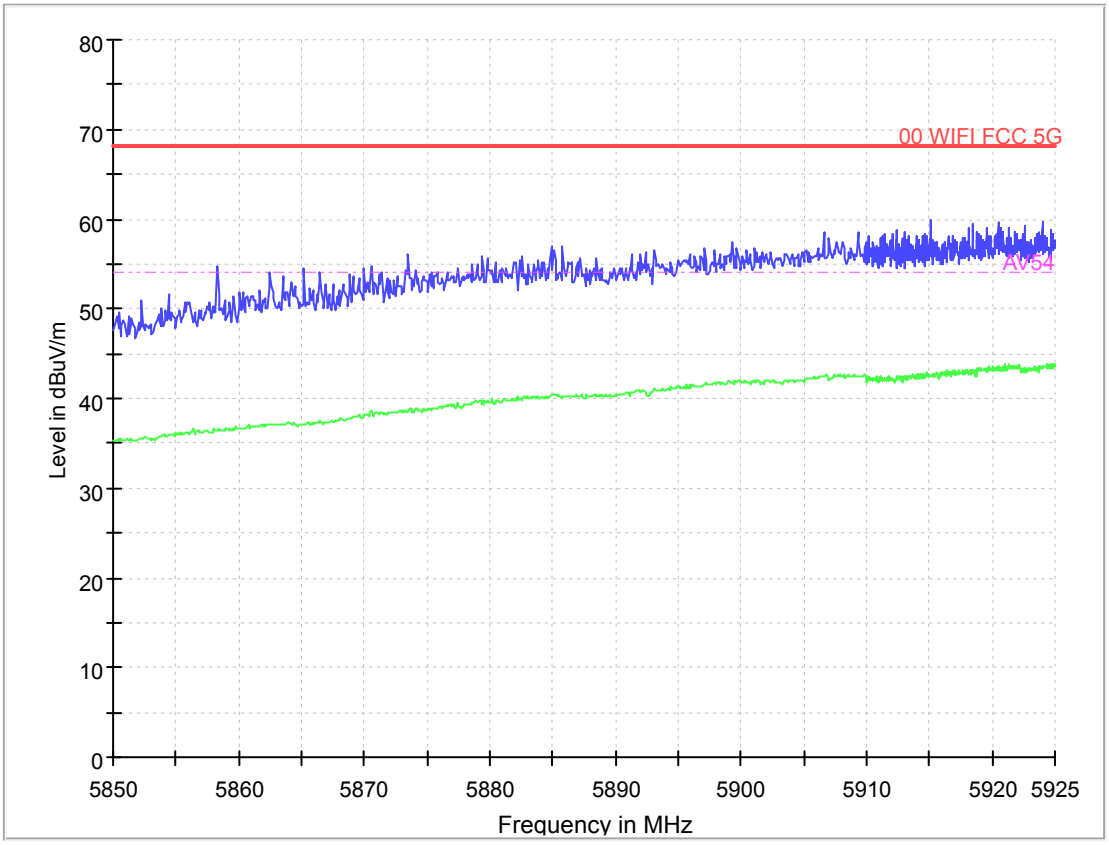
802.11ax (80MHz)

CHANNEL	TX Channel 7	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



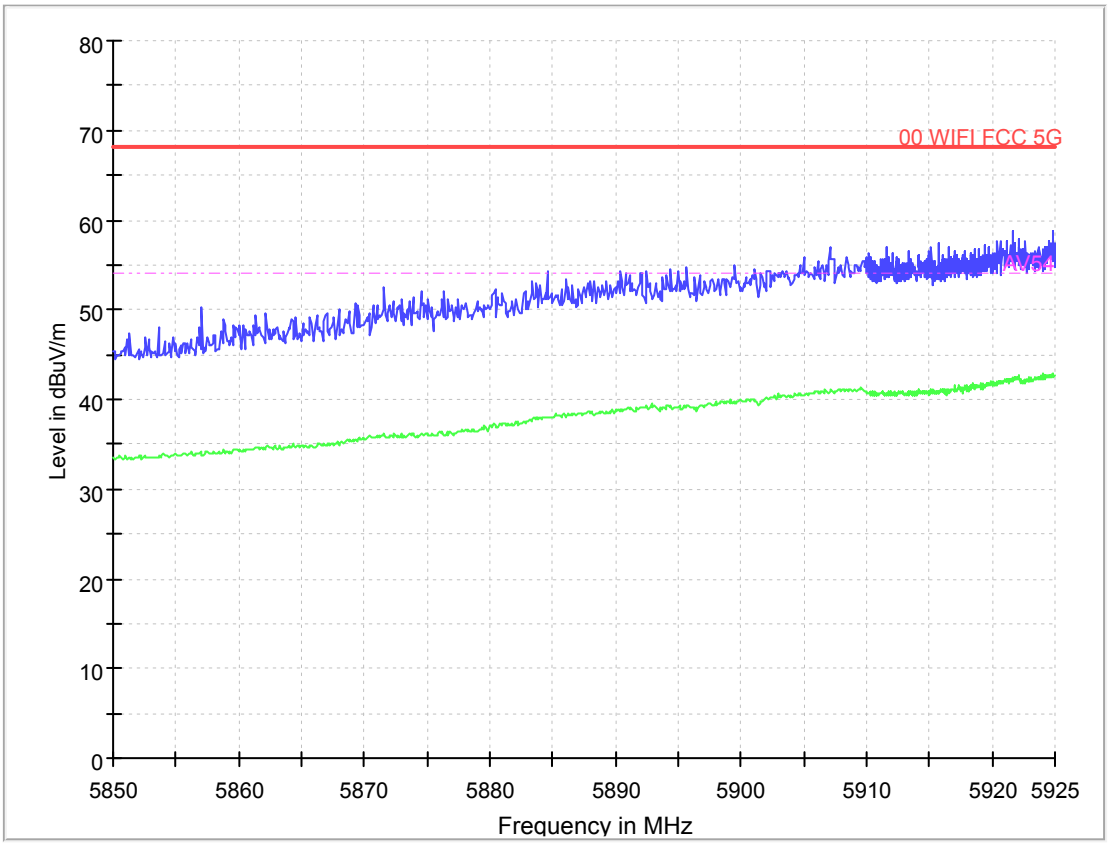
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



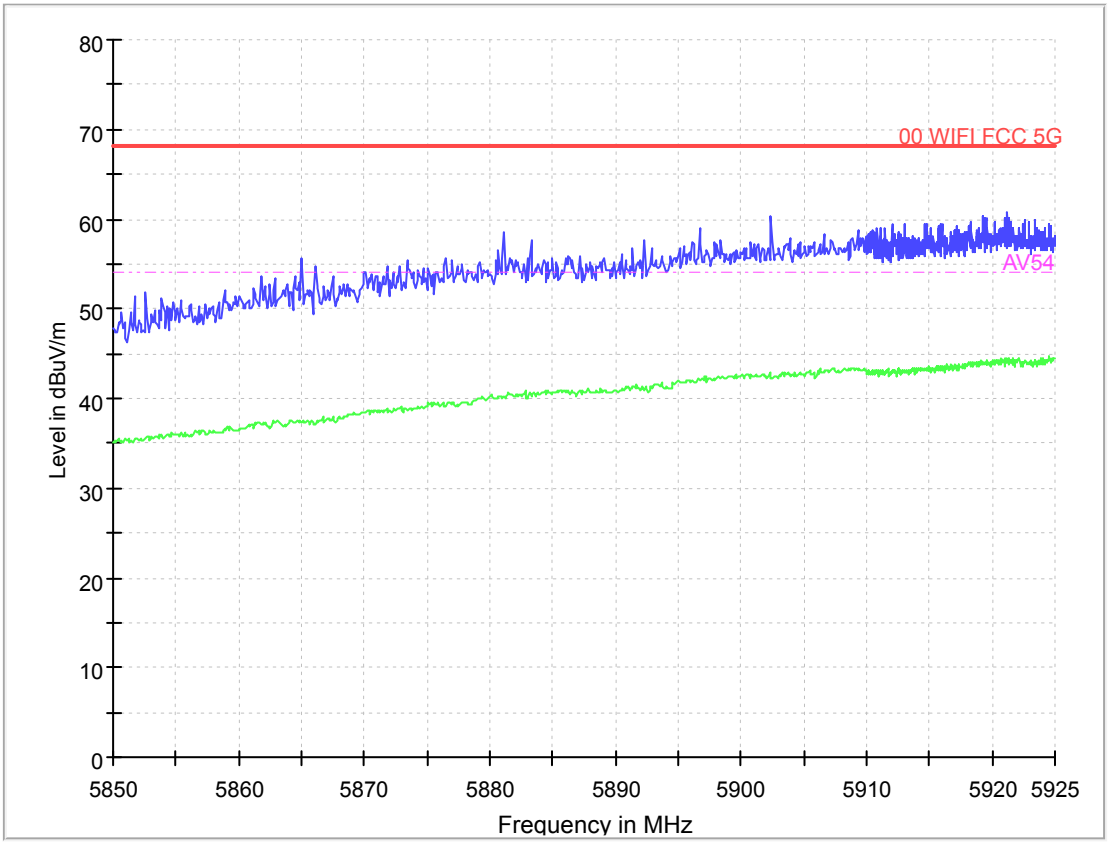
802.11ax (160MHz)

CHANNEL	TX Channel 15	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

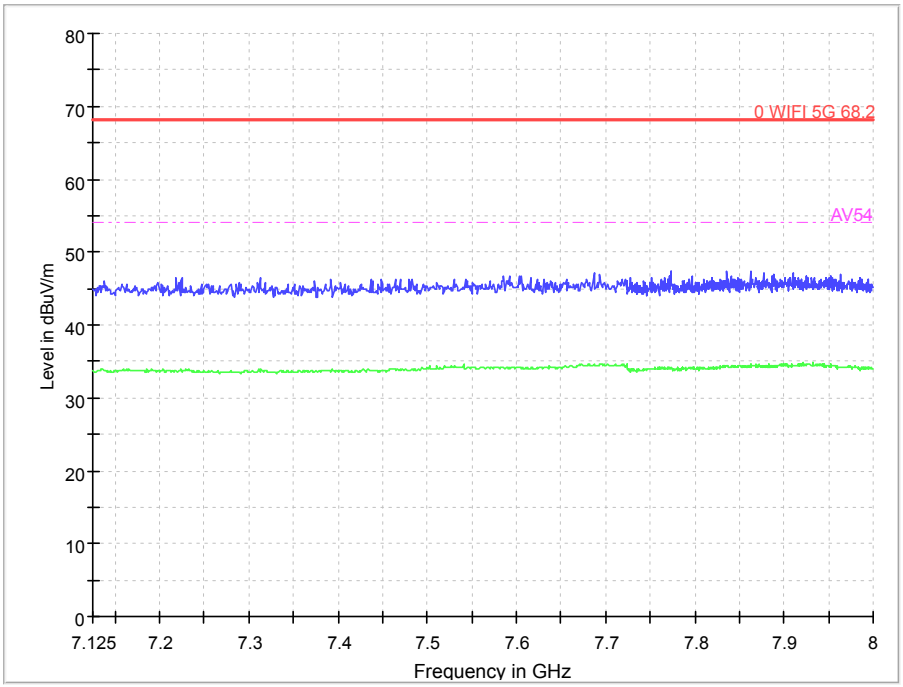


Right

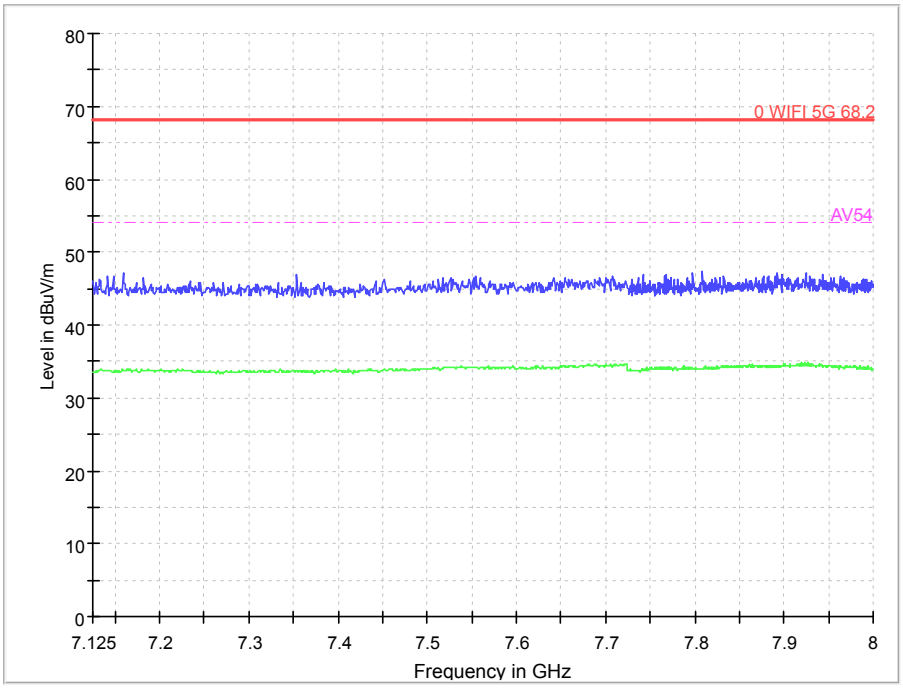
802.11ax (20MHz)

CHANNEL	TX Channel 227	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



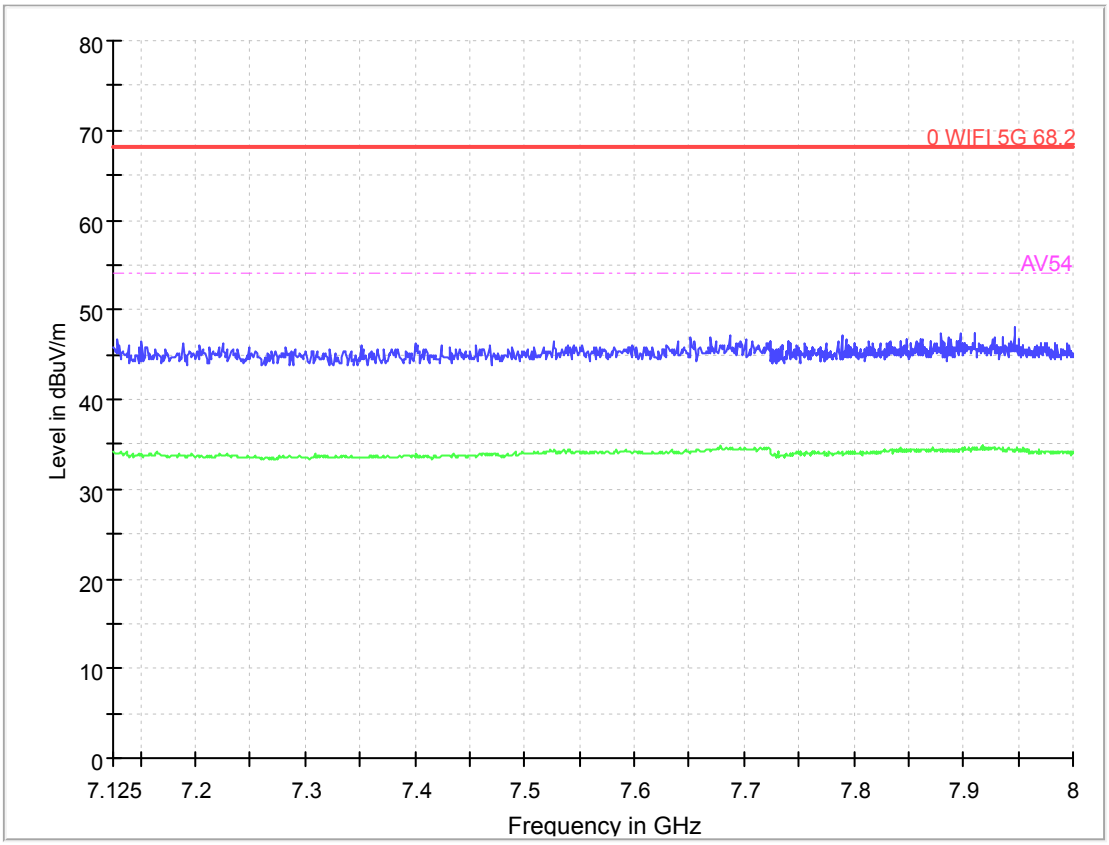
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



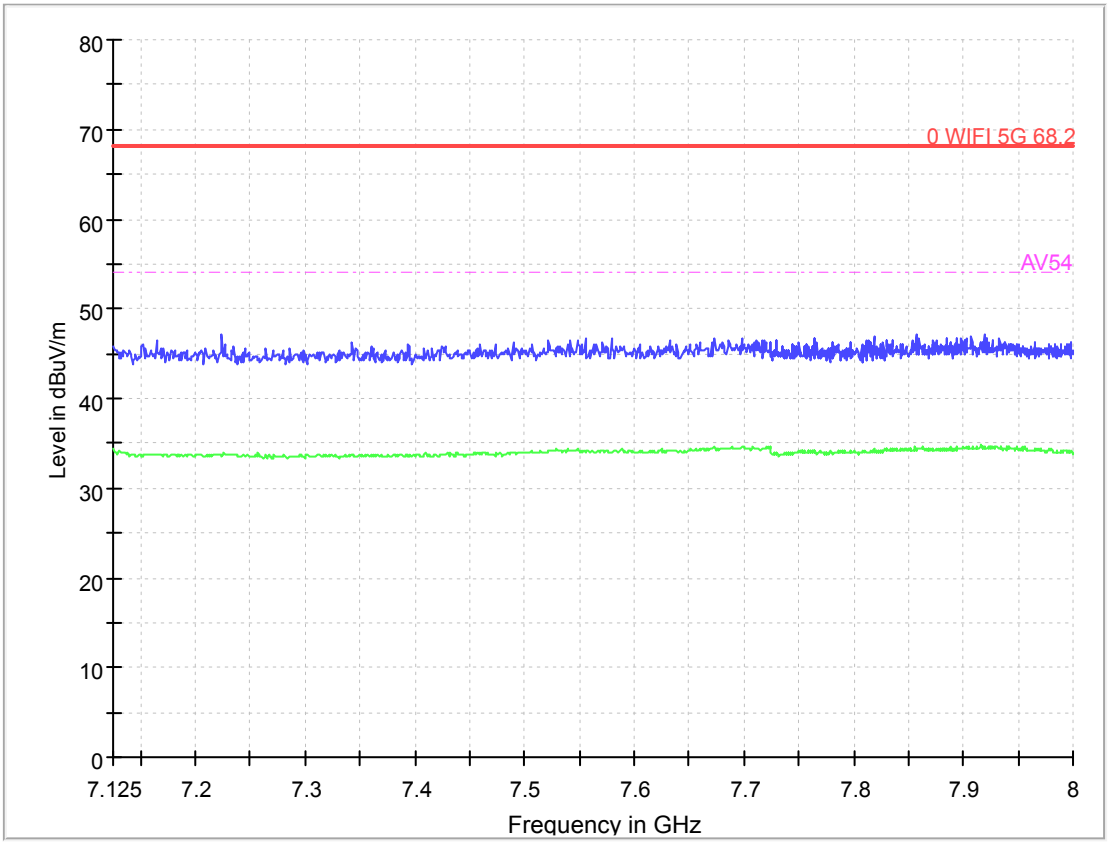
802.11ax (40MHz)

CHANNEL	TX Channel 227	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



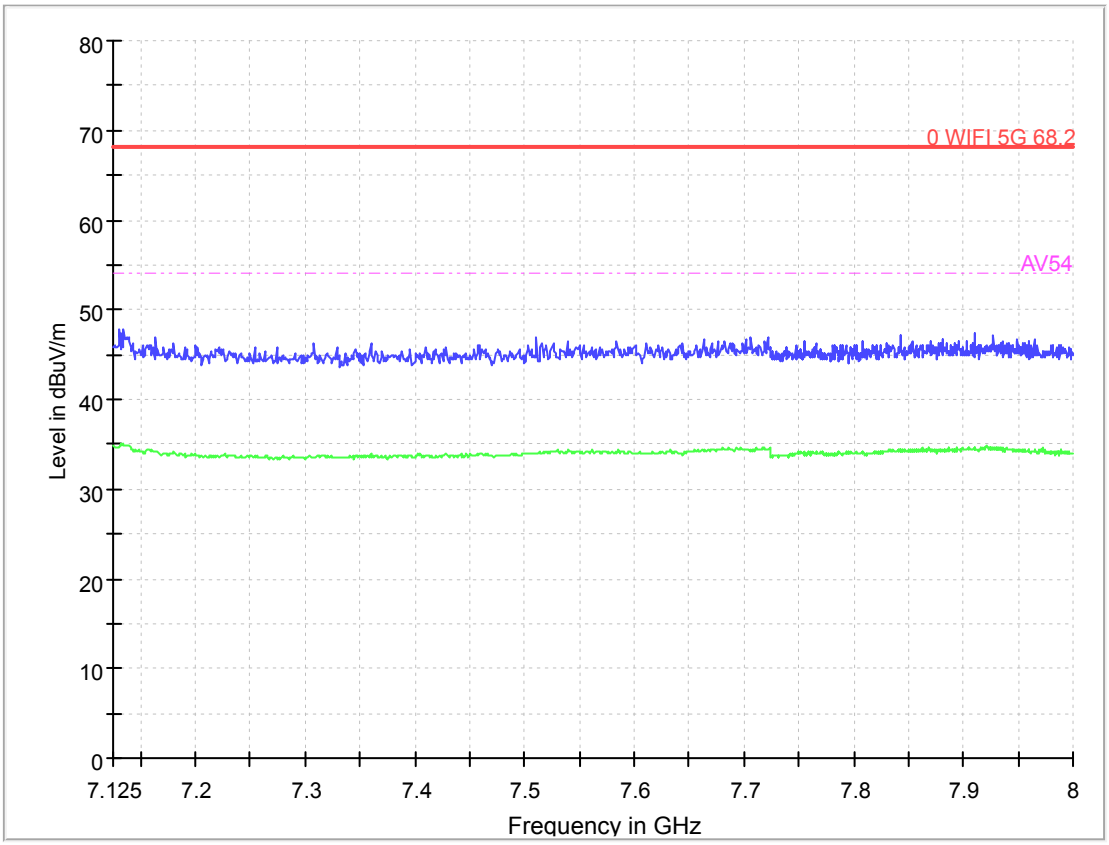
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



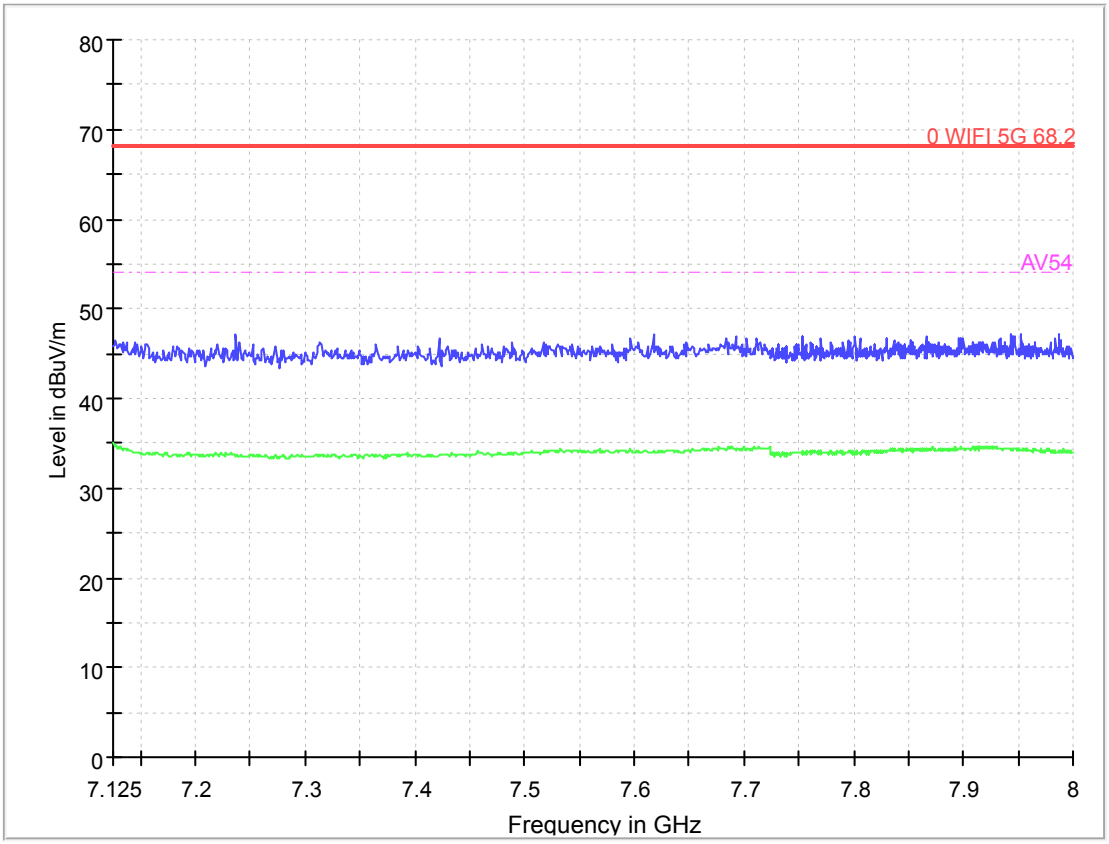
802.11ax (80MHz)

CHANNEL	TX Channel 215	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



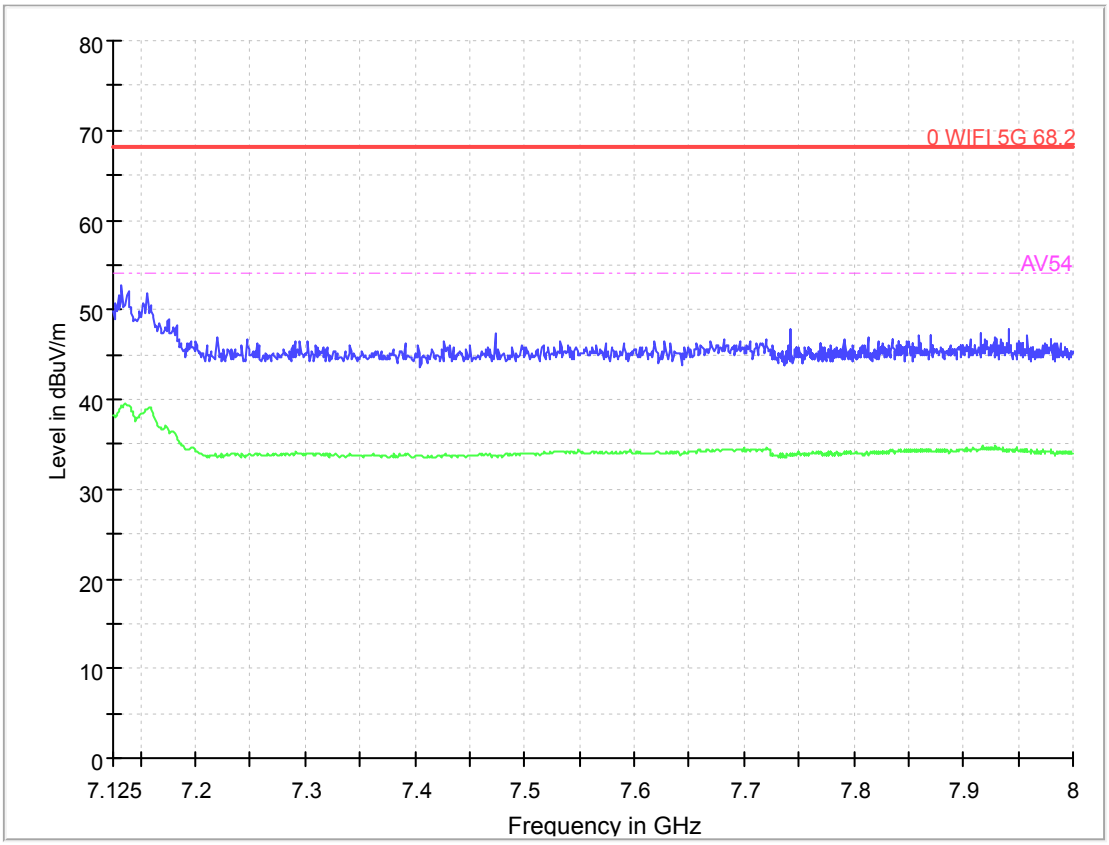
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



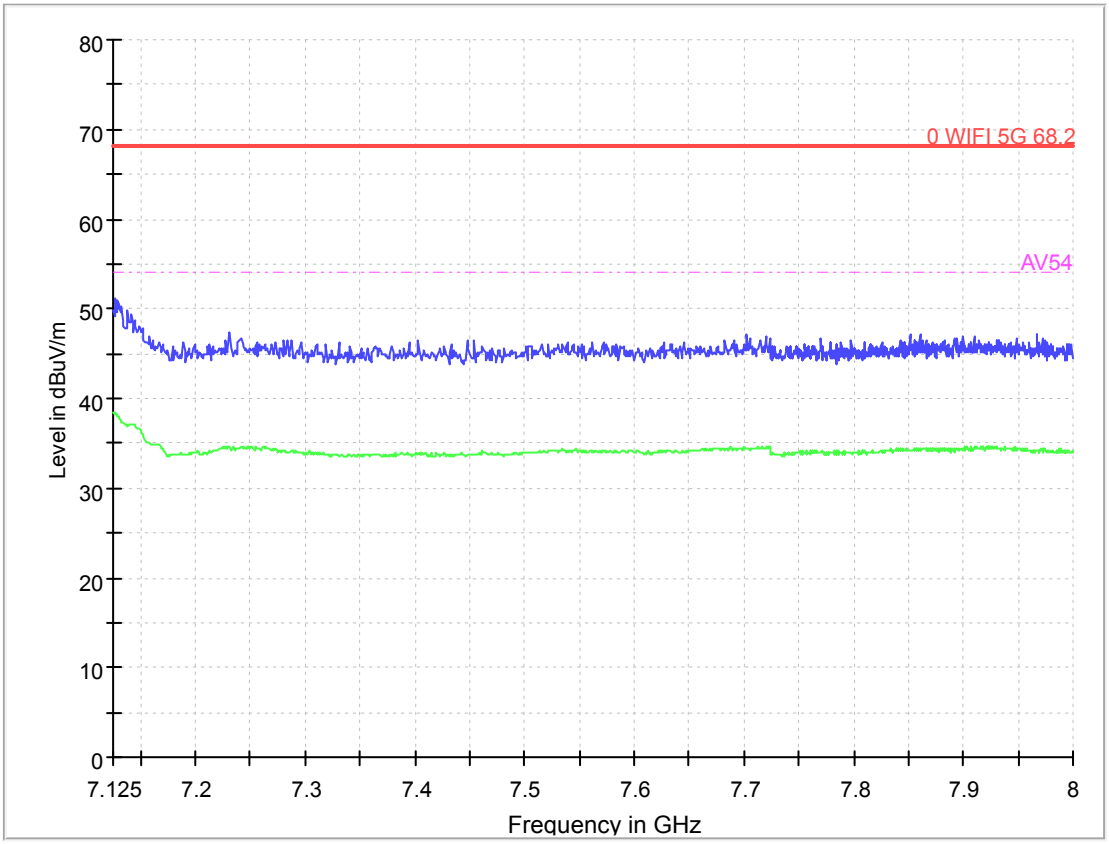
802.11ax (160MHz)

CHANNEL	TX Channel 207	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

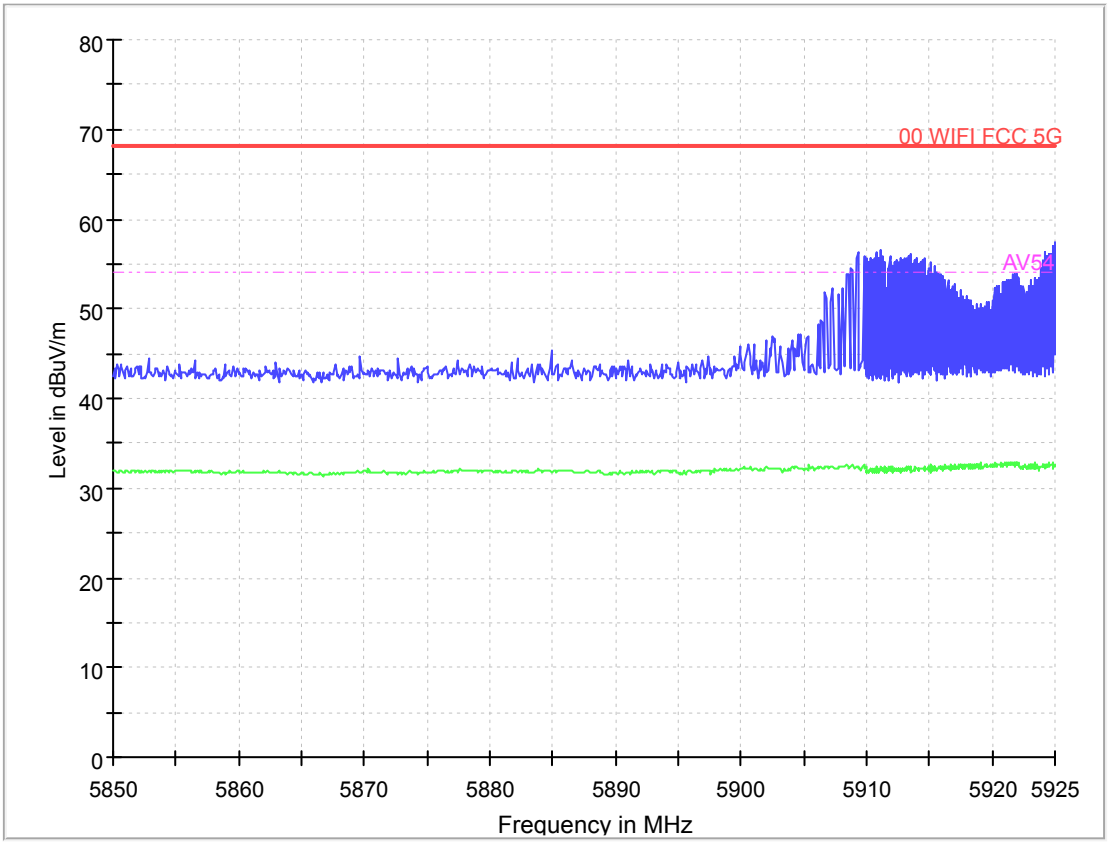


RU Mode
Left

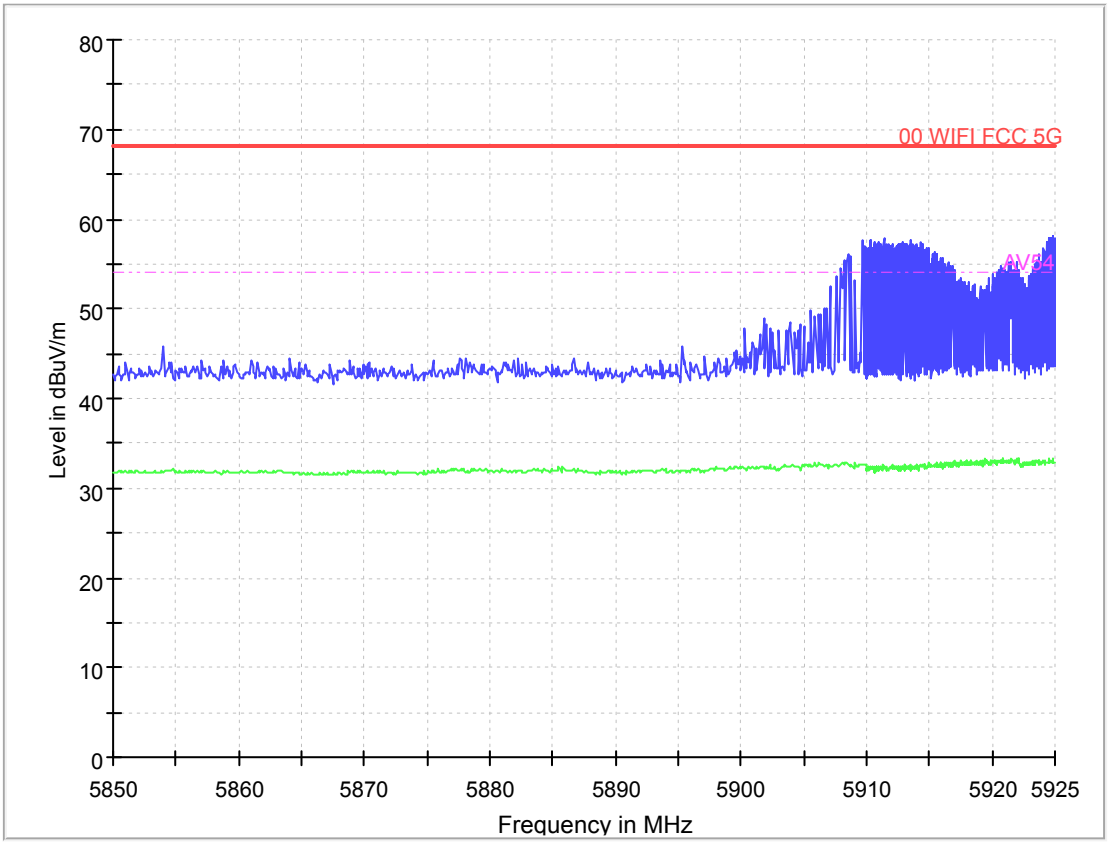
802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



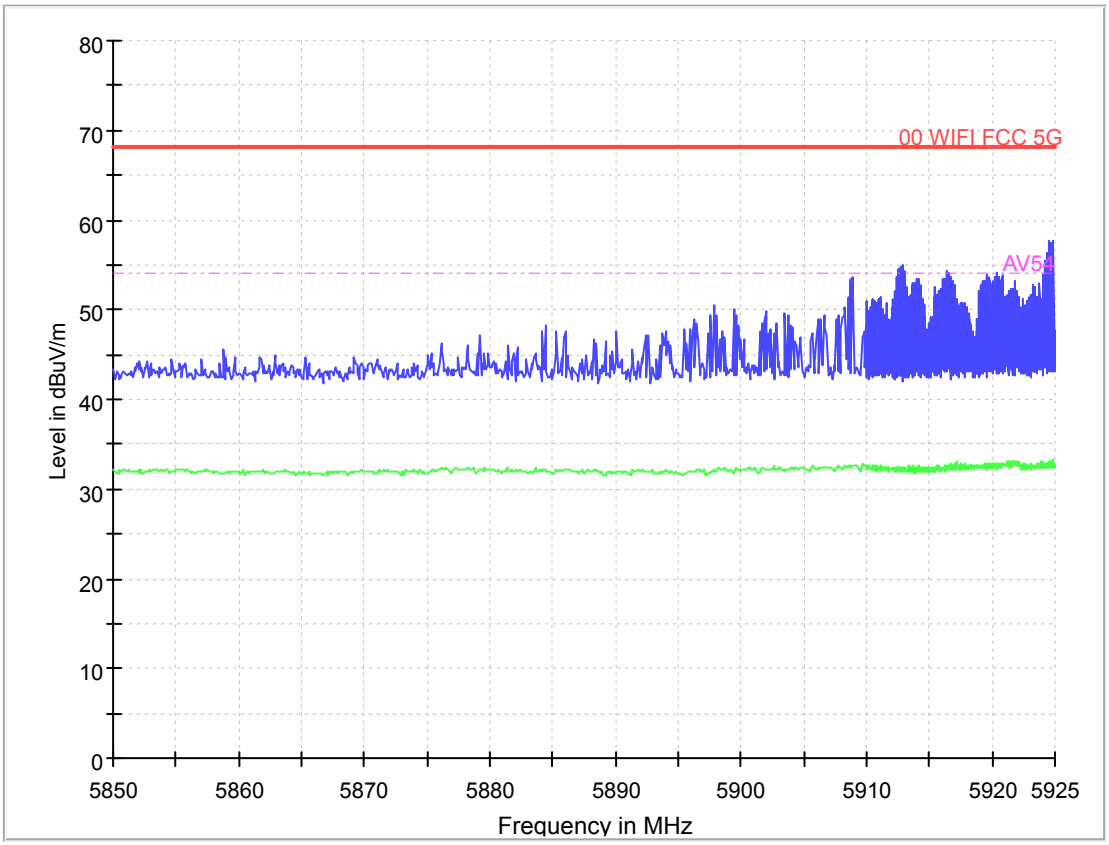
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



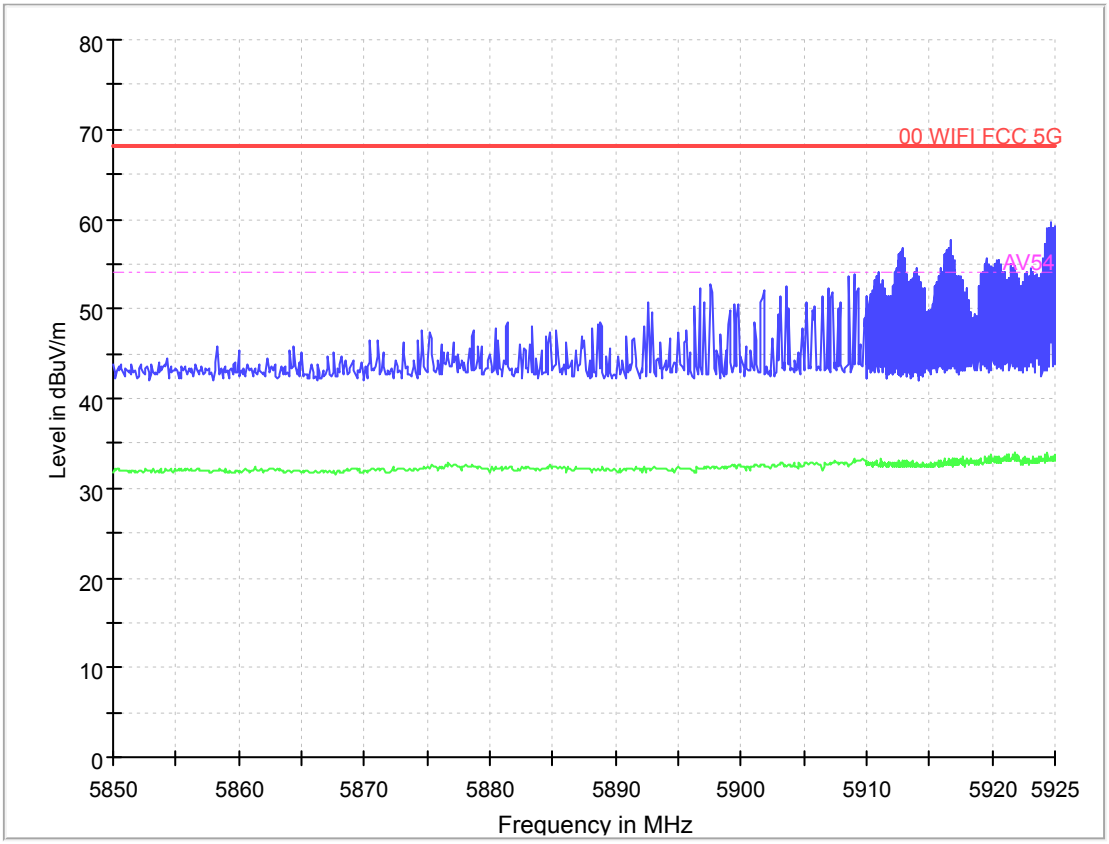
802.11ax (40MHz)

CHANNEL	TX Channel 3	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



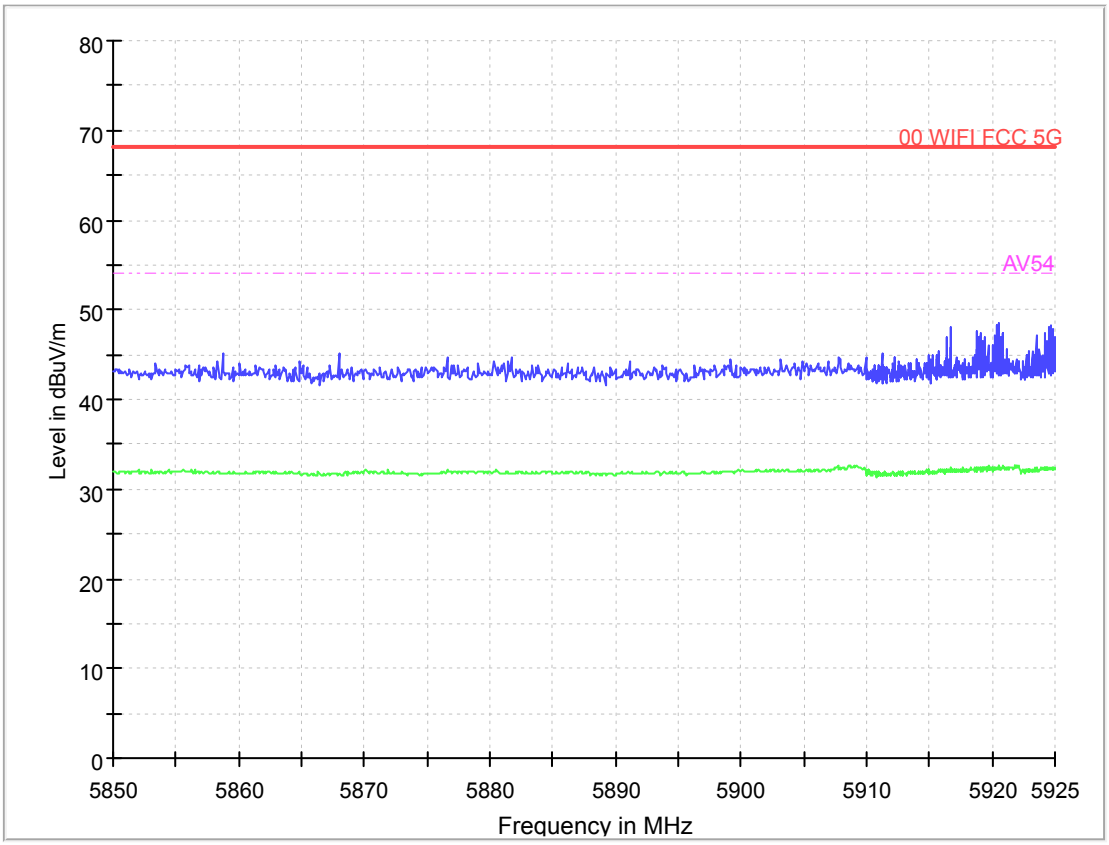
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



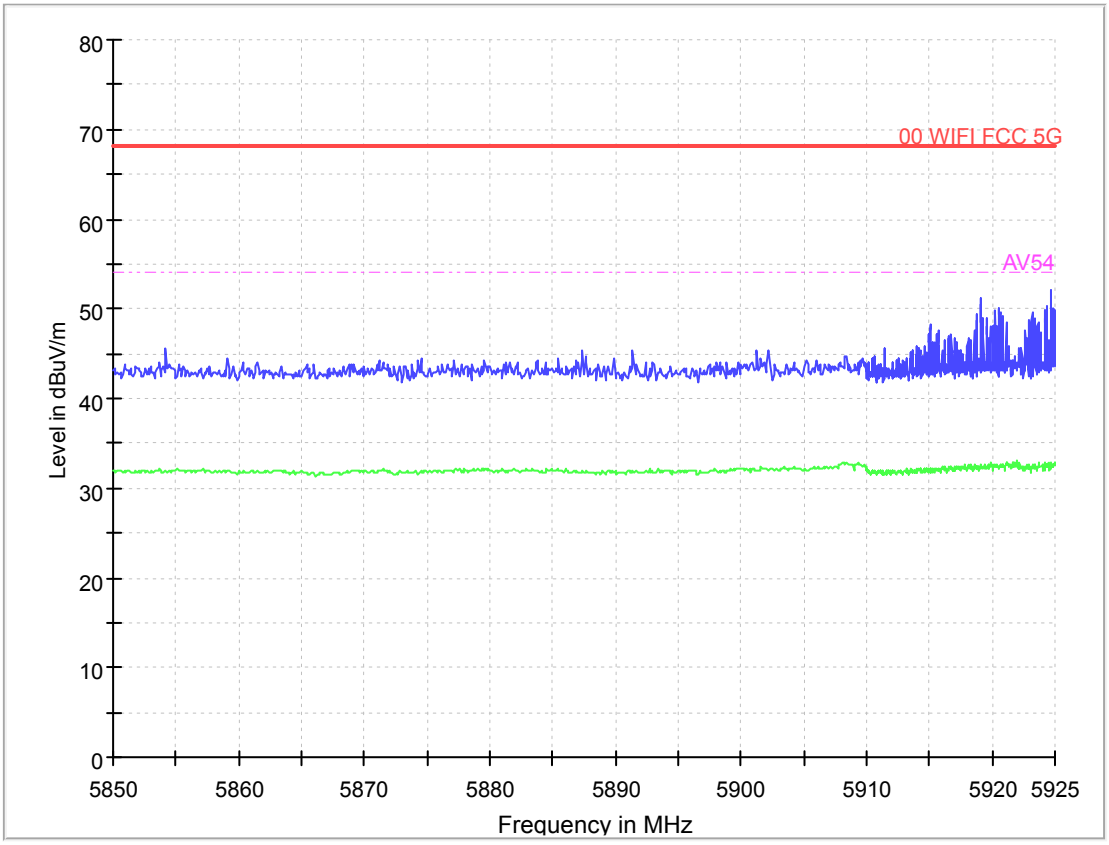
802.11ax (80MHz)

CHANNEL	TX Channel 7	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



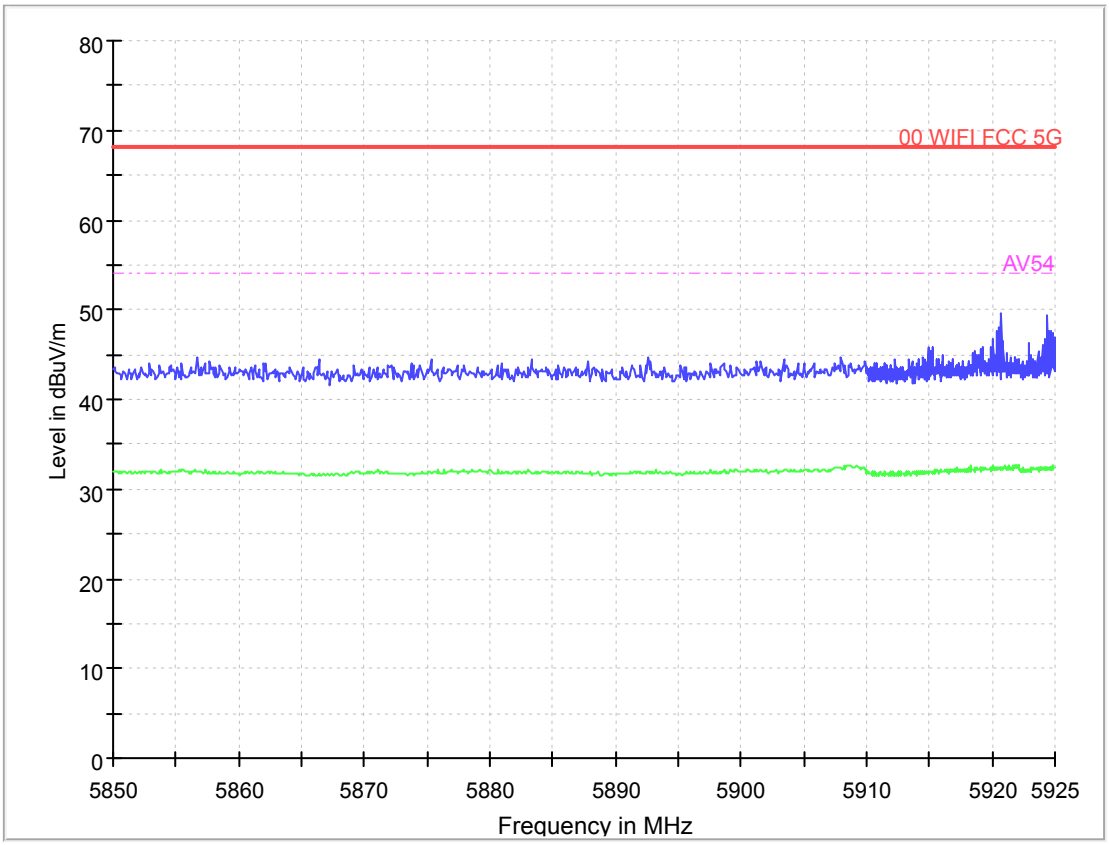
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



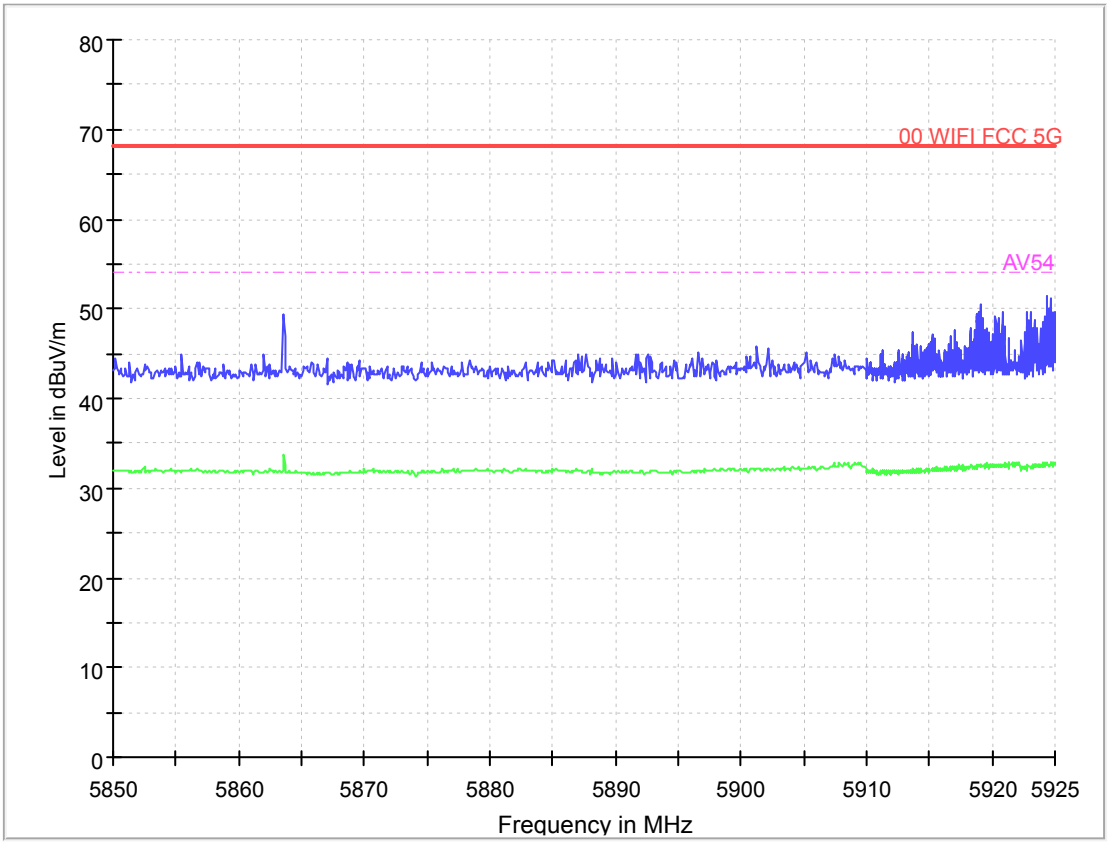
802.11ax (160MHz)

CHANNEL	TX Channel 15	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

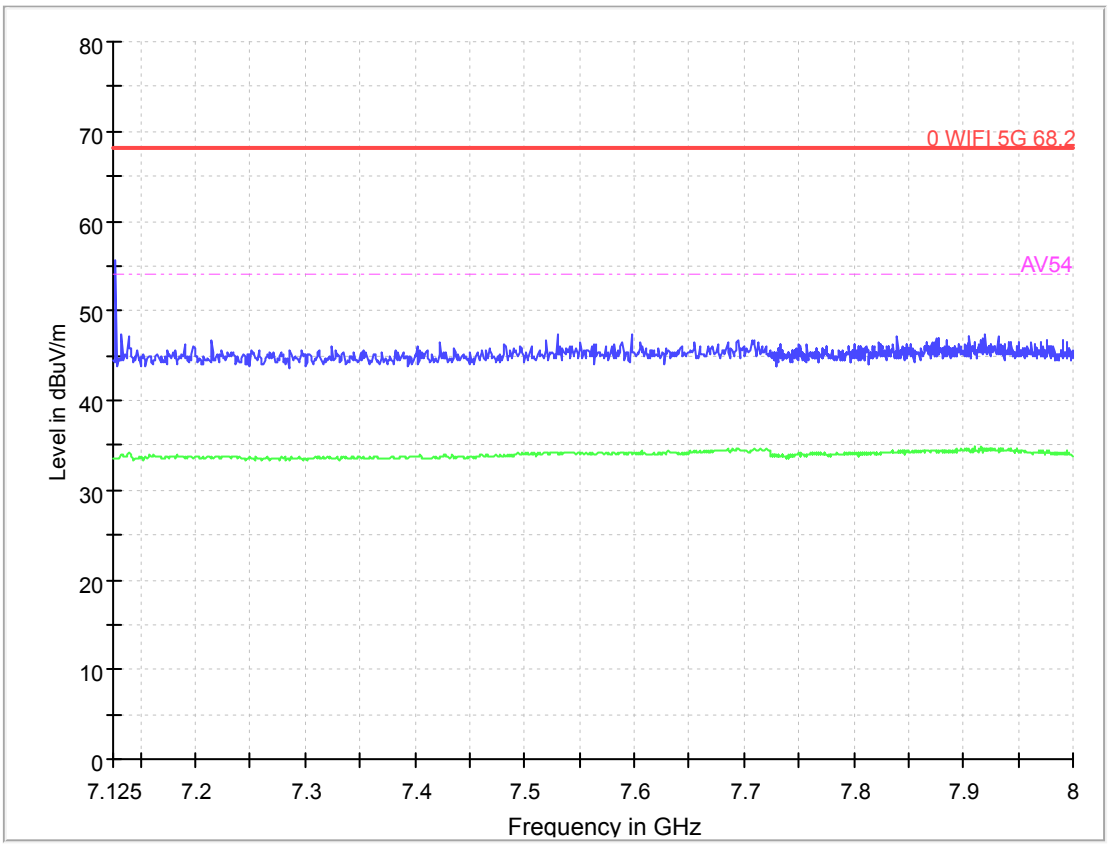


Right

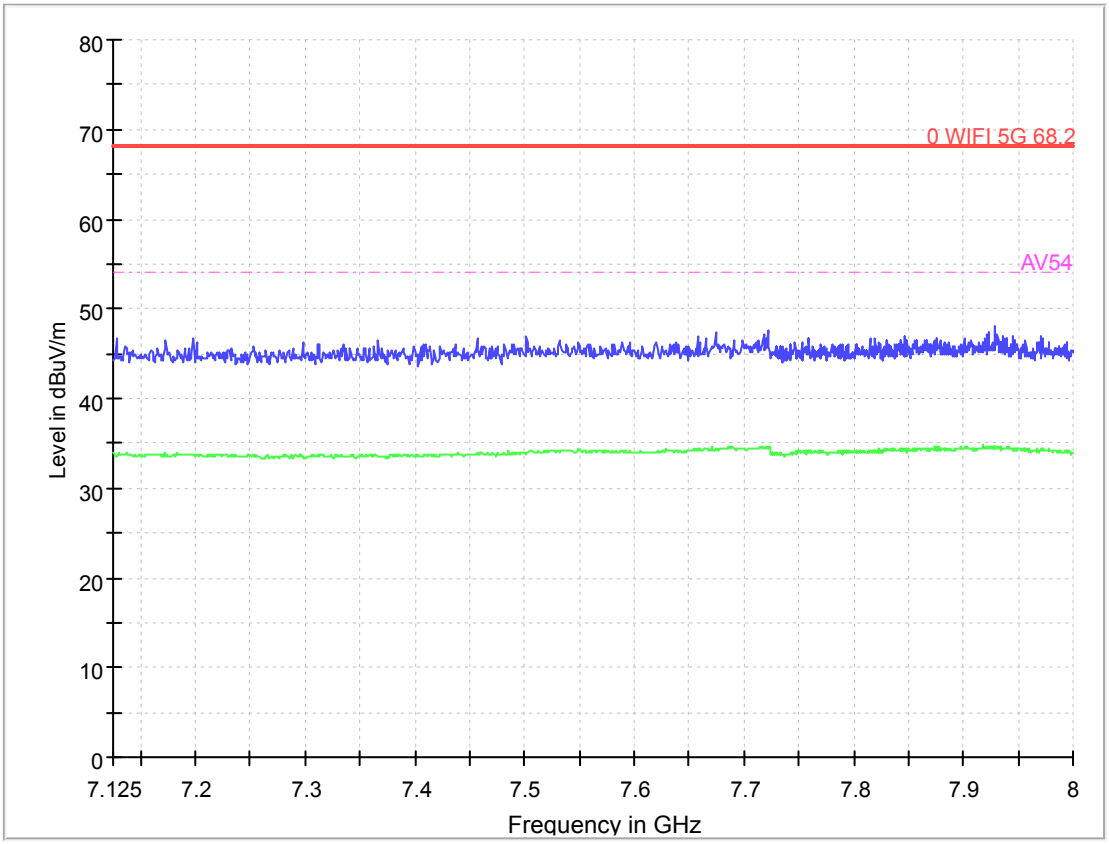
802.11ax (20MHz)

CHANNEL	TX Channel 227	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



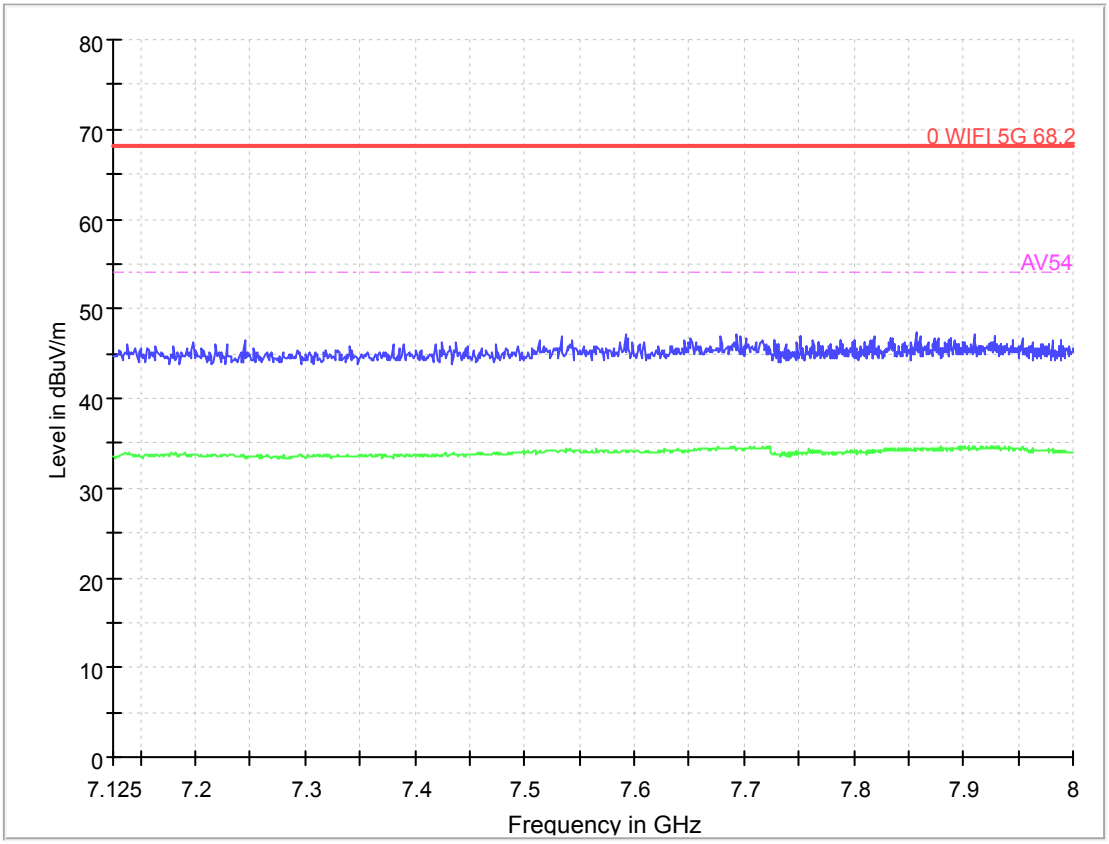
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



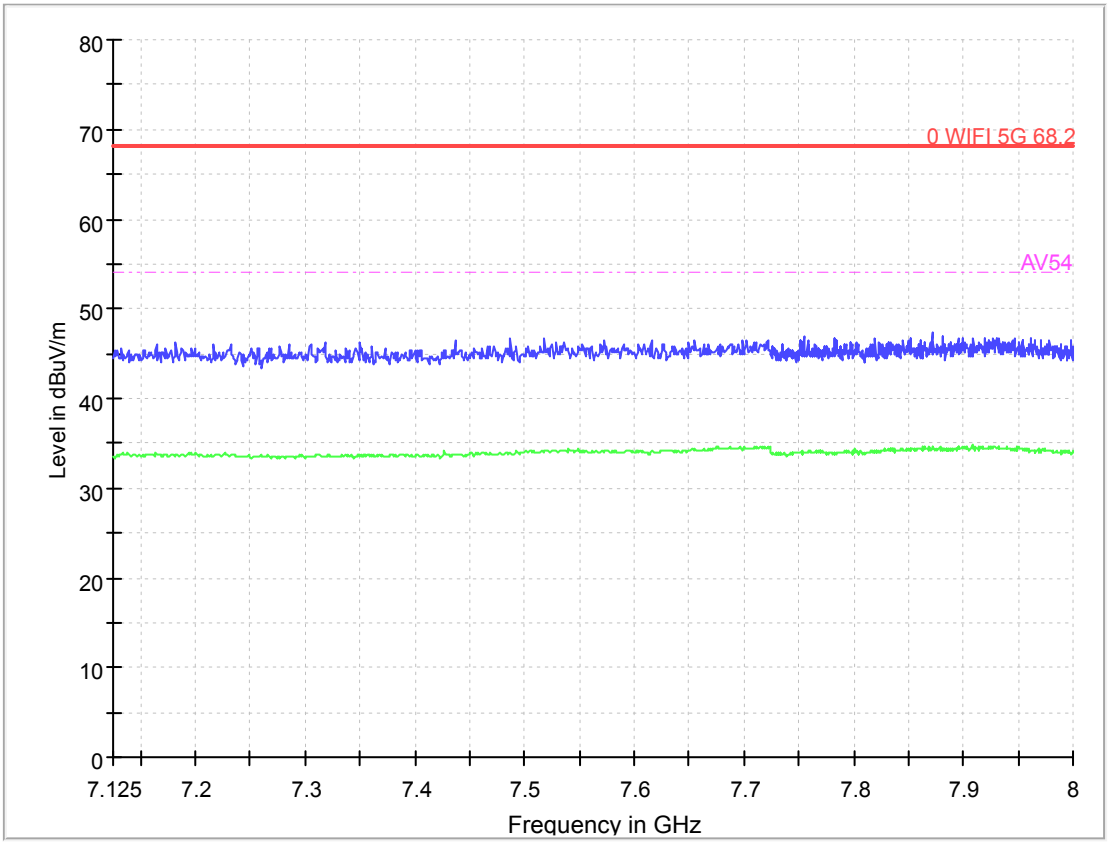
802.11ax (40MHz)

CHANNEL	TX Channel 227	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



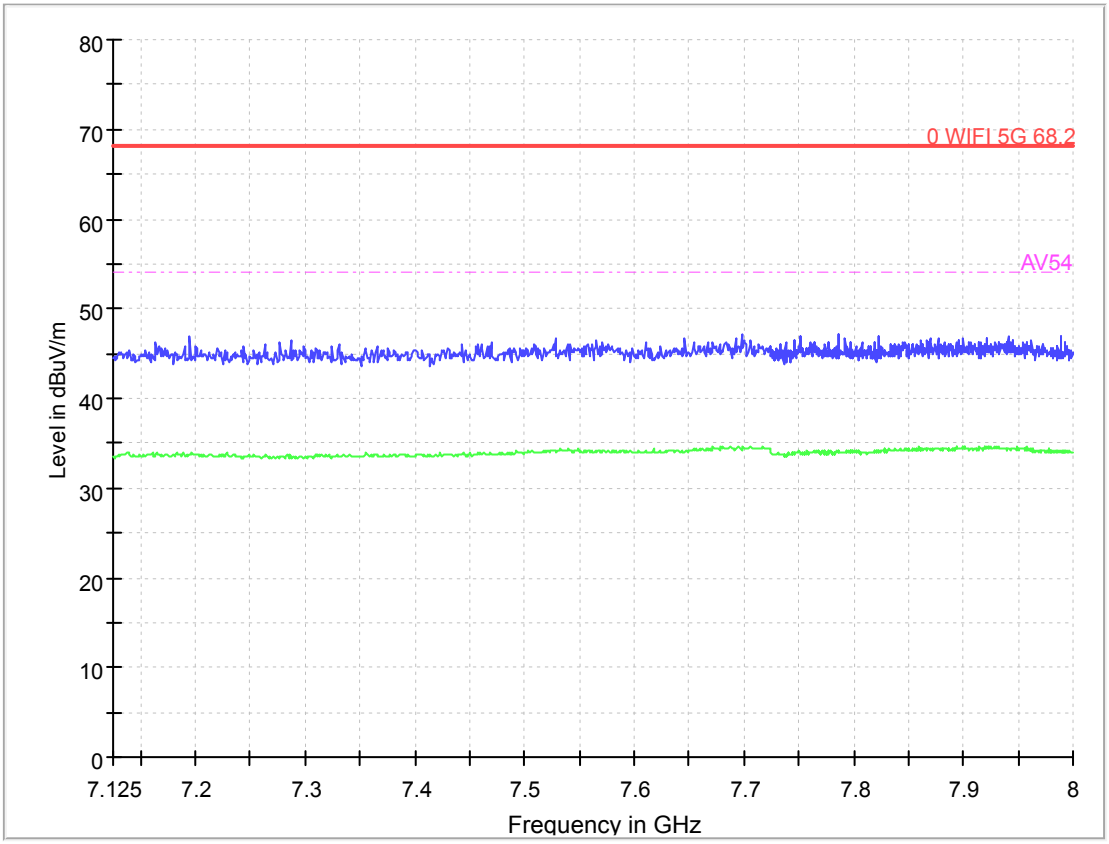
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



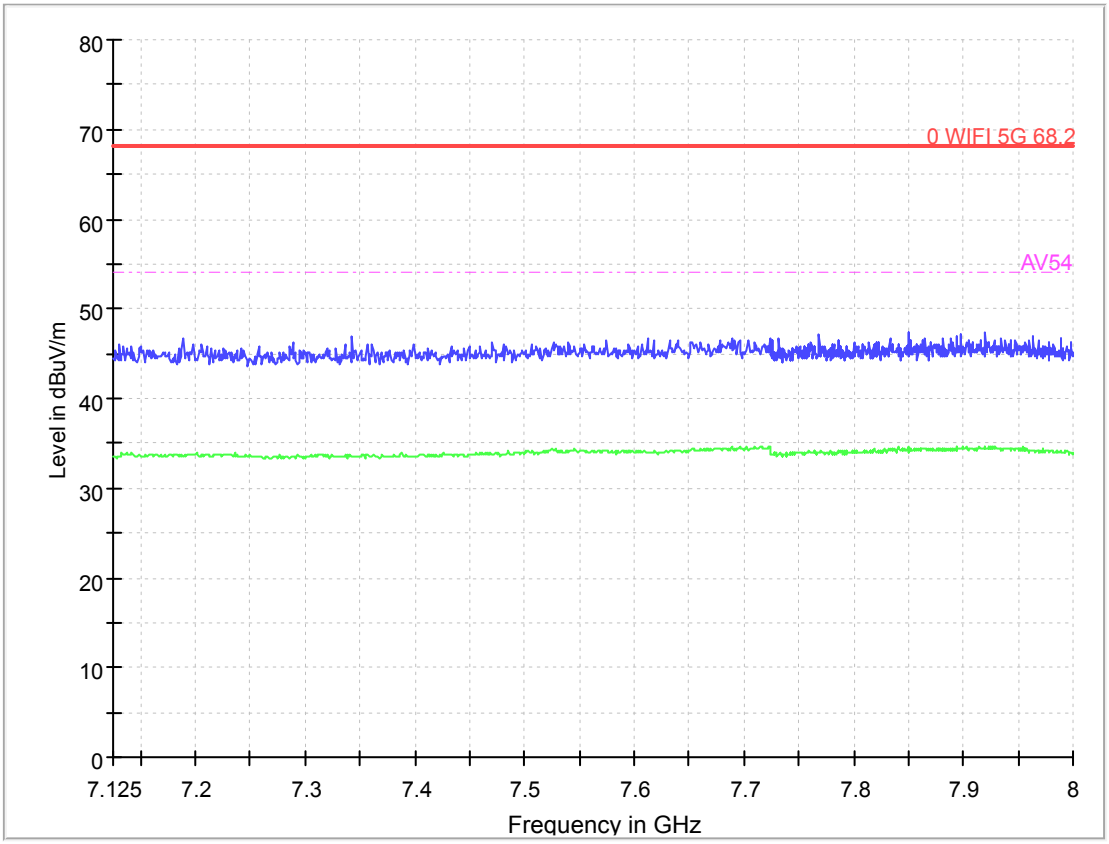
802.11ax (80MHz)

CHANNEL	TX Channel 215	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



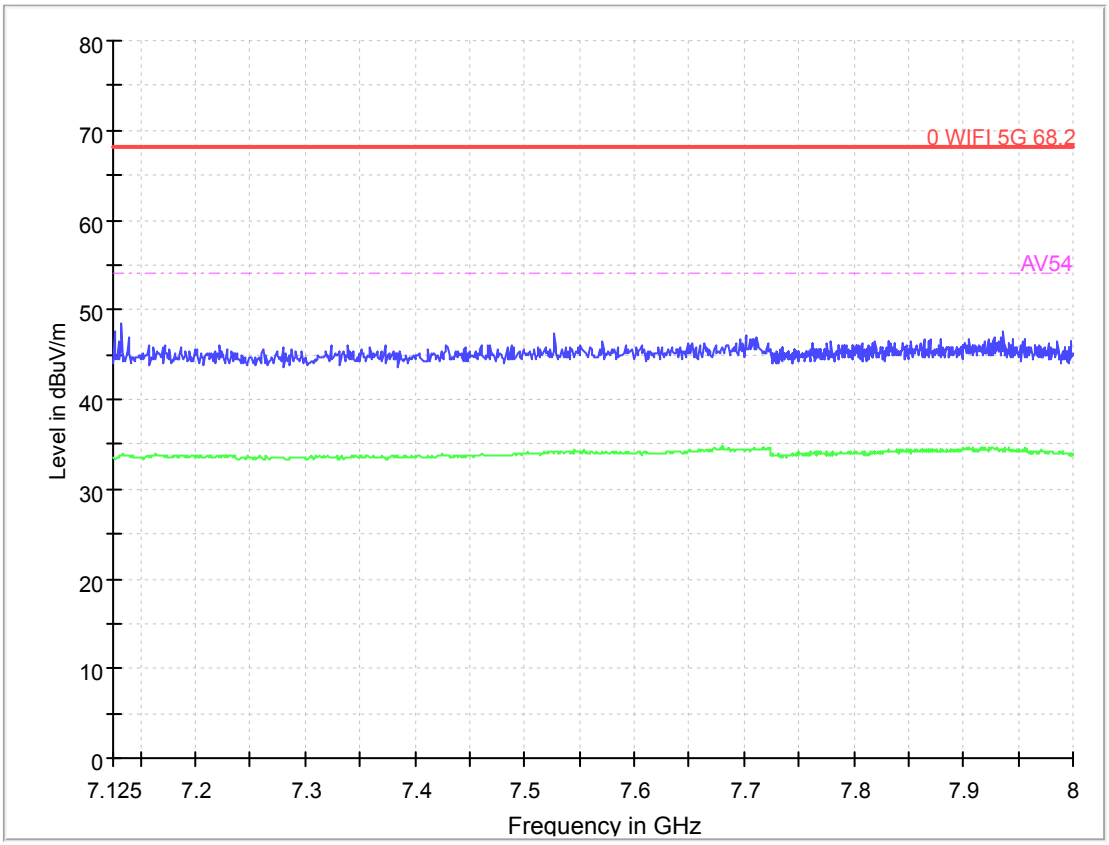
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



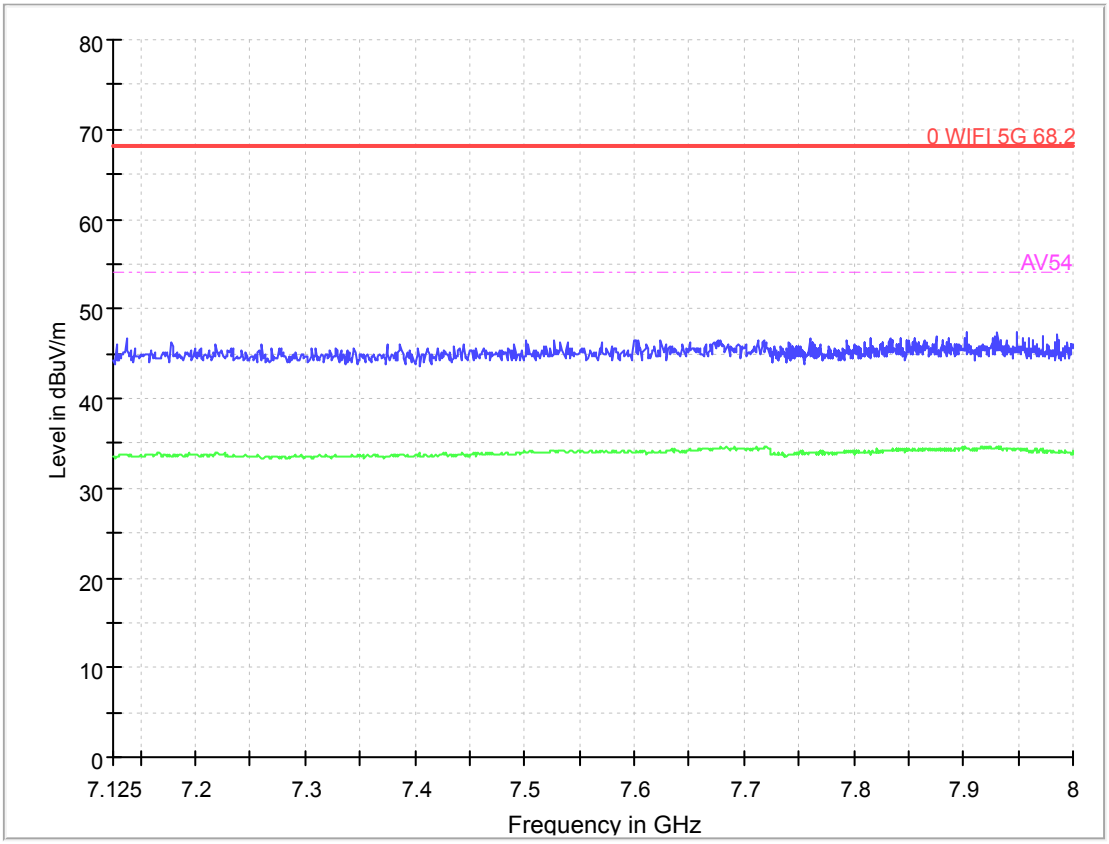
802.11ax (160MHz)

CHANNEL	TX Channel 207	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M



RADIATED EMISSION

Note：H and V are scanned, and the data only shows the worst

BELOW 1GHz WORST-CASE DATA:-

30 MHz – 1GHz data:

802.11ax (80MHz)

CHANNEL	TX Channel 135	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

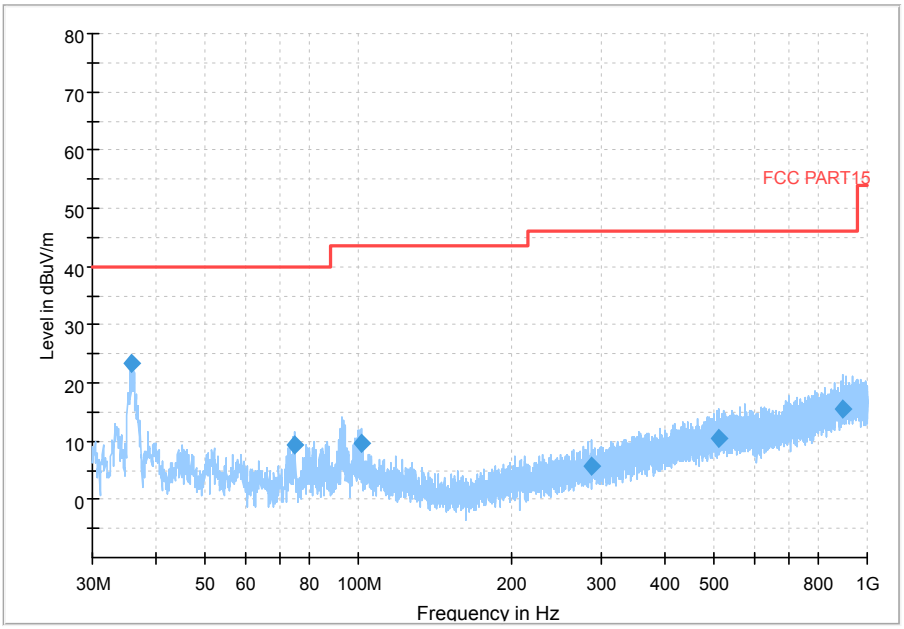
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
35.917000	23.25	40.00	16.75	10.0	120.000	100.0	V	0.0	-19.9
74.814000	9.29	40.00	30.71	10.0	120.000	100.0	V	0.0	-22.2
101.343500	9.63	43.50	33.87	10.0	120.000	100.0	V	0.0	-19.5
287.923000	5.76	46.00	40.24	10.0	120.000	100.0	V	0.0	-17.4
509.810500	10.33	46.00	35.67	10.0	120.000	100.0	V	0.0	-12.0
892.524000	15.43	46.00	30.57	10.0	120.000	100.0	V	0.0	-5.7

REMARKS:

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Limit value – Emission level.

Full Spectrum



ABOVE 1GHz WORST-CASE DATA:

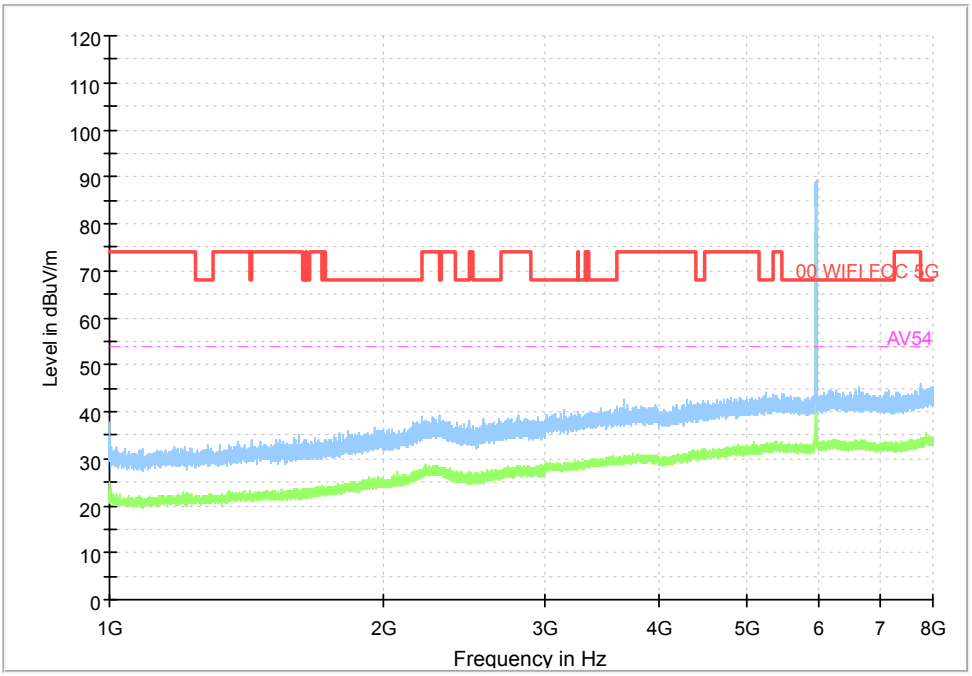
Note1: For higher frequency, the emission is too low to be detected.

Full Mode

802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

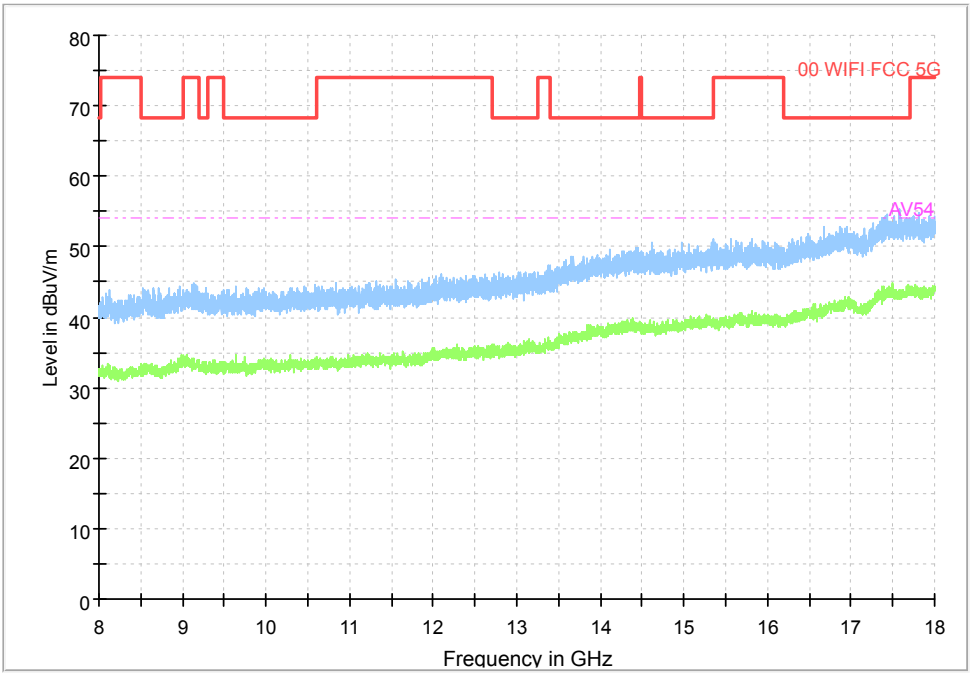
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

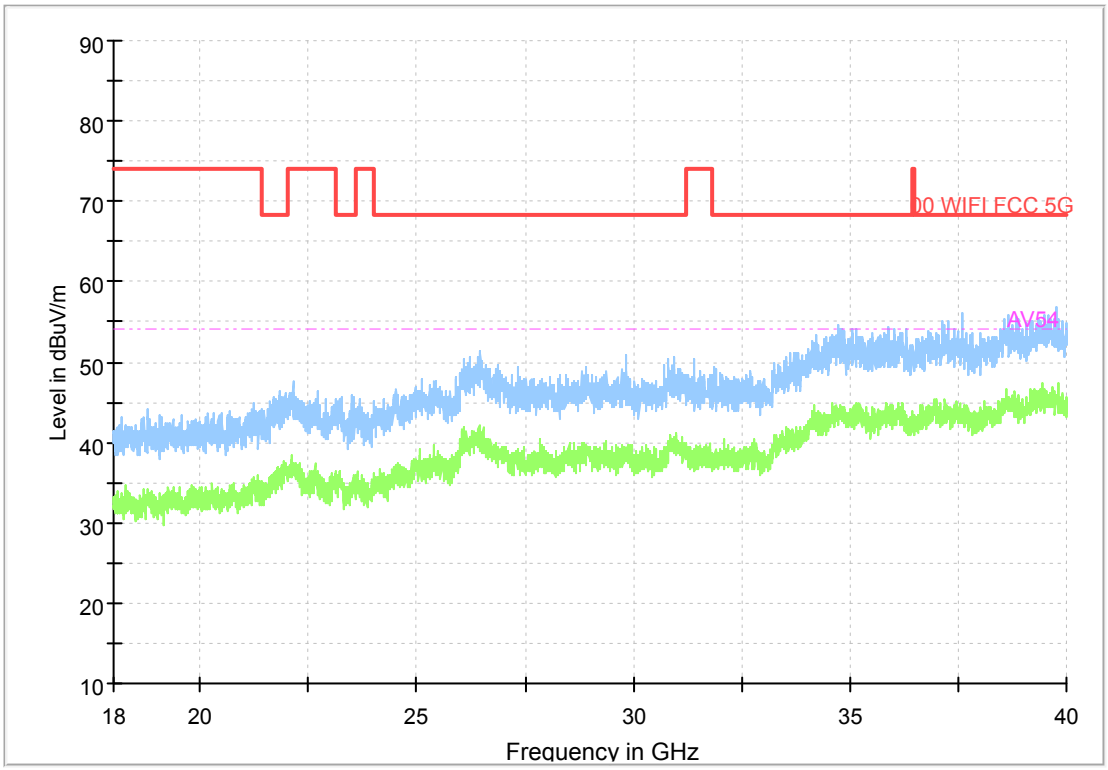
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

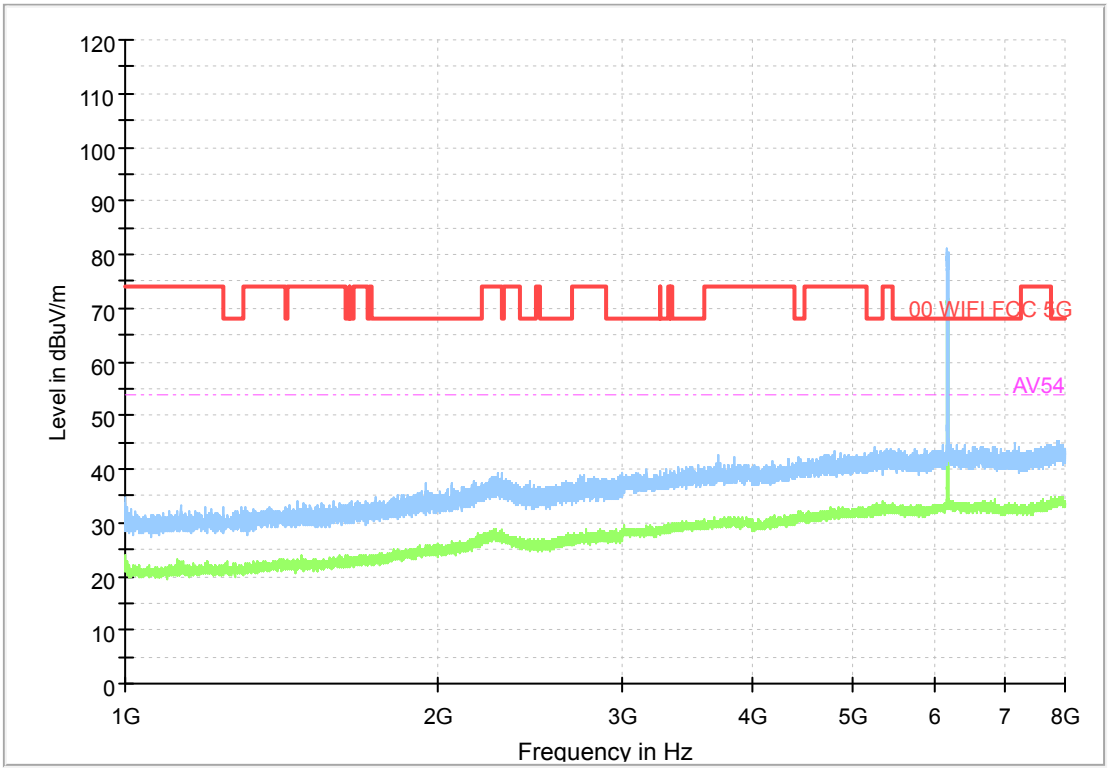
Full Spectrum



802.11ax (20MHz

CHANNEL	TX Channel 45	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

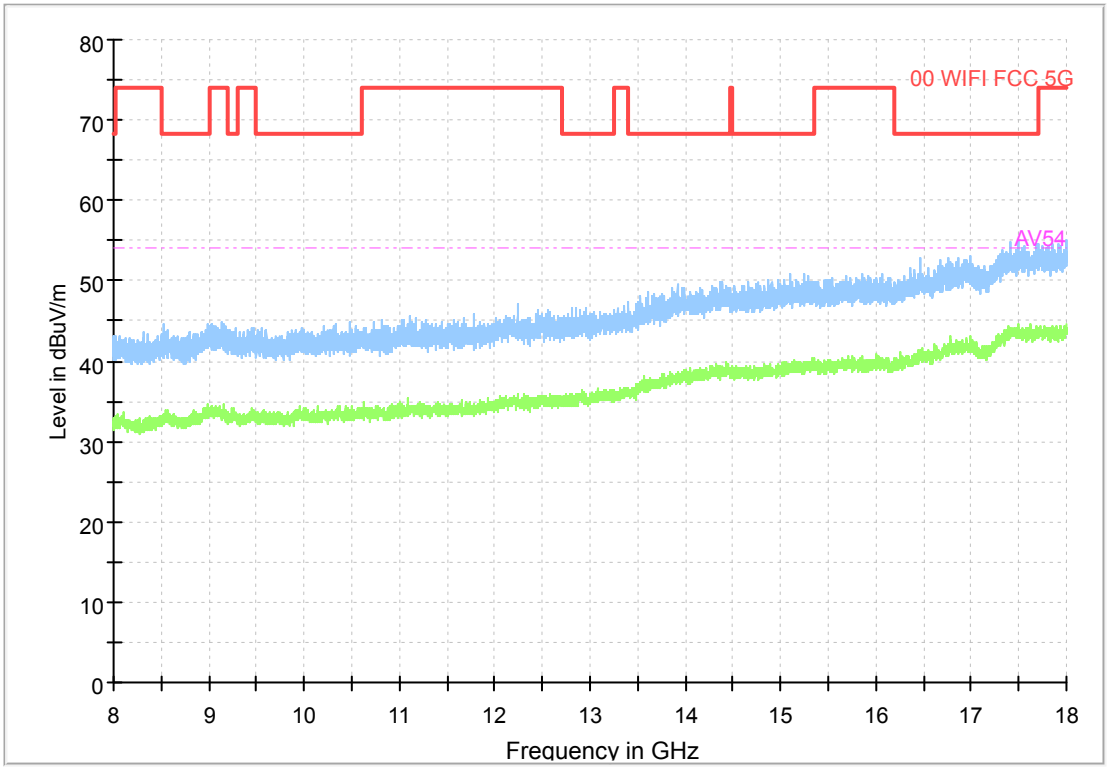
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 45	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

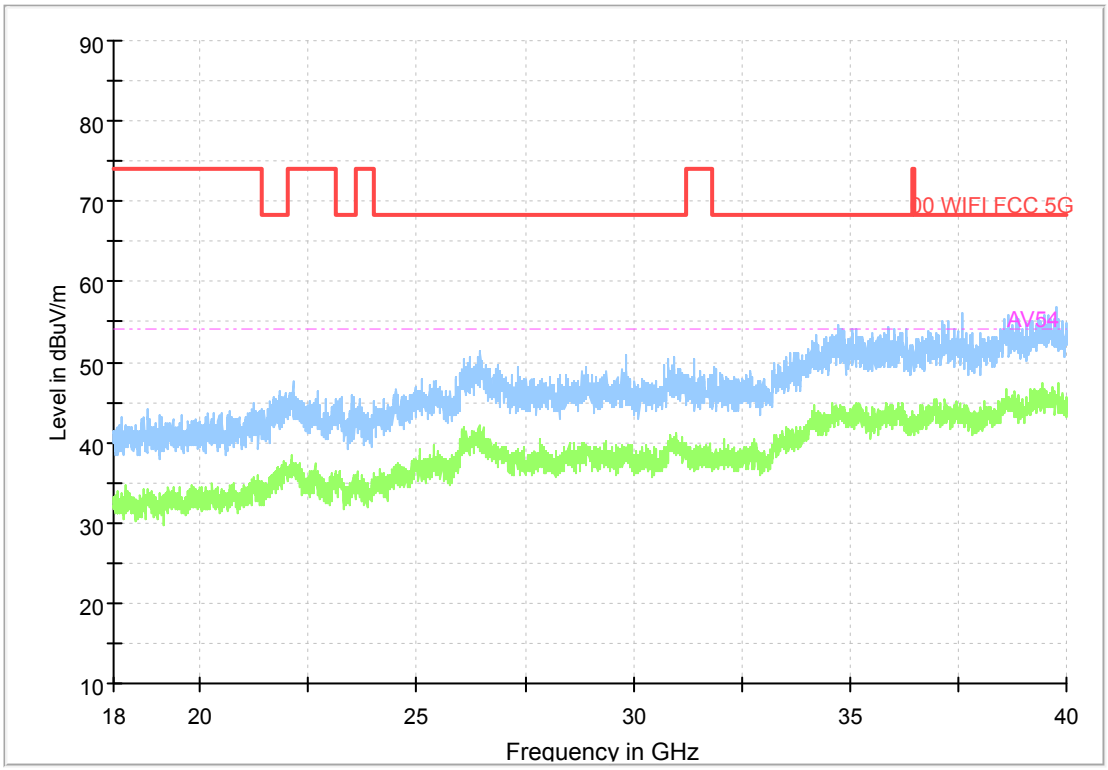
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 45	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

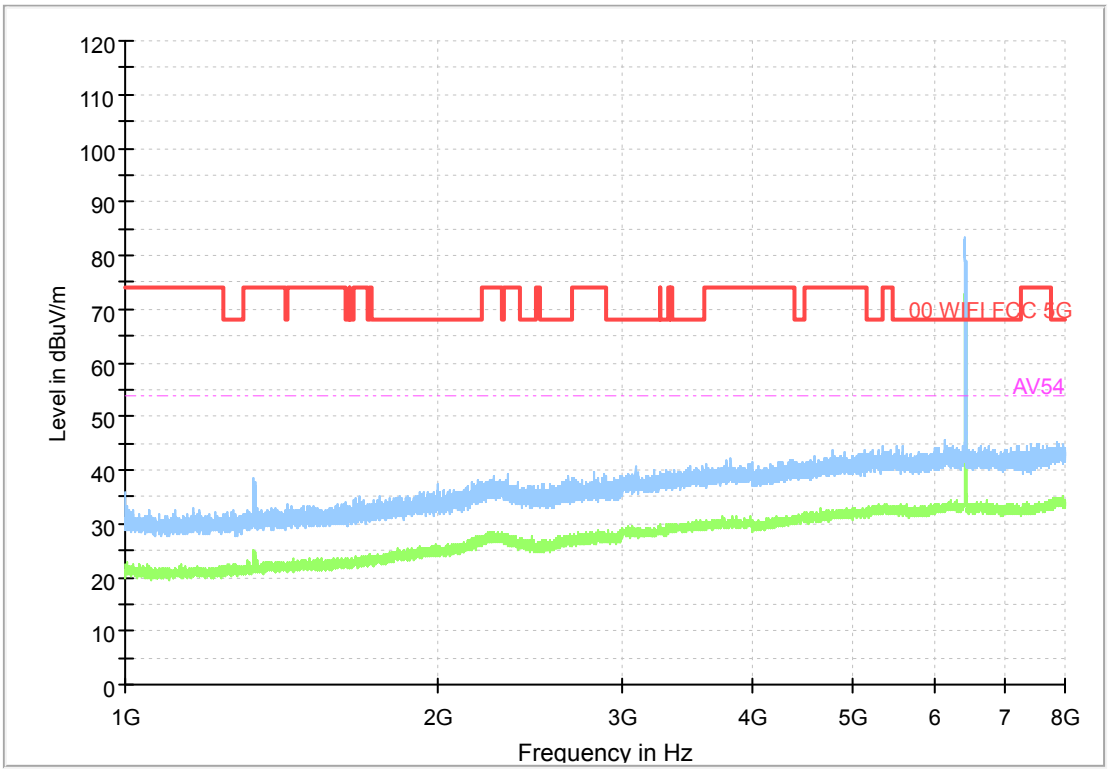
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

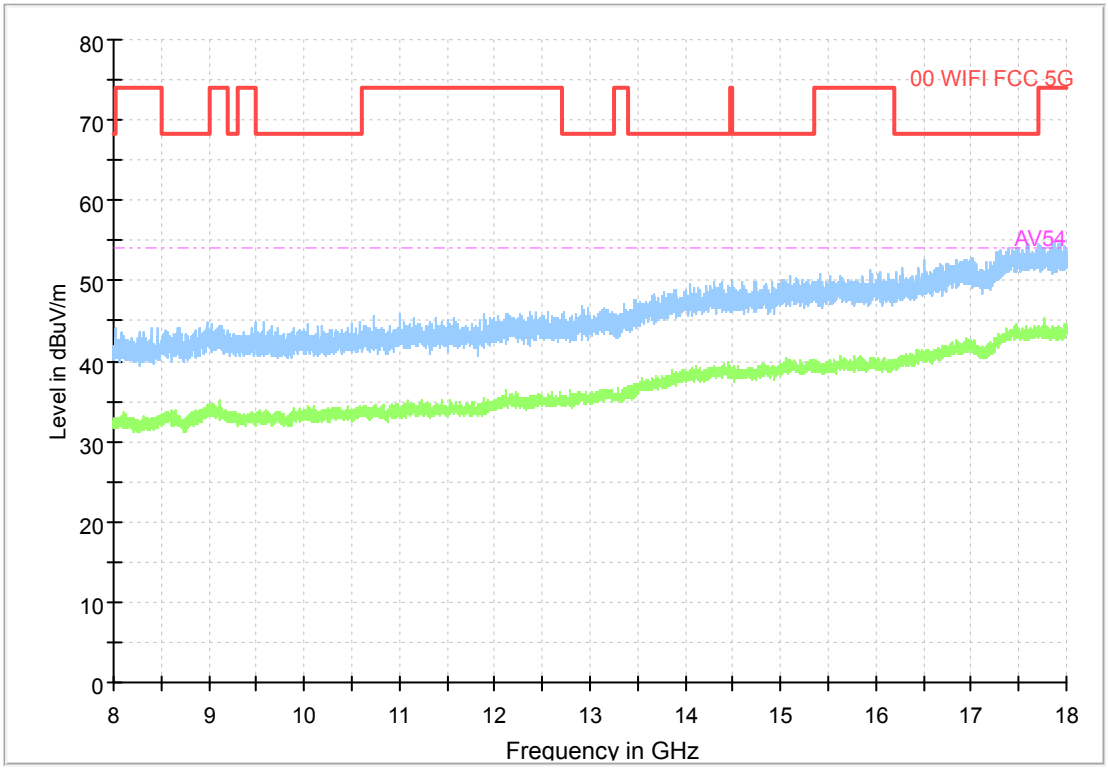
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

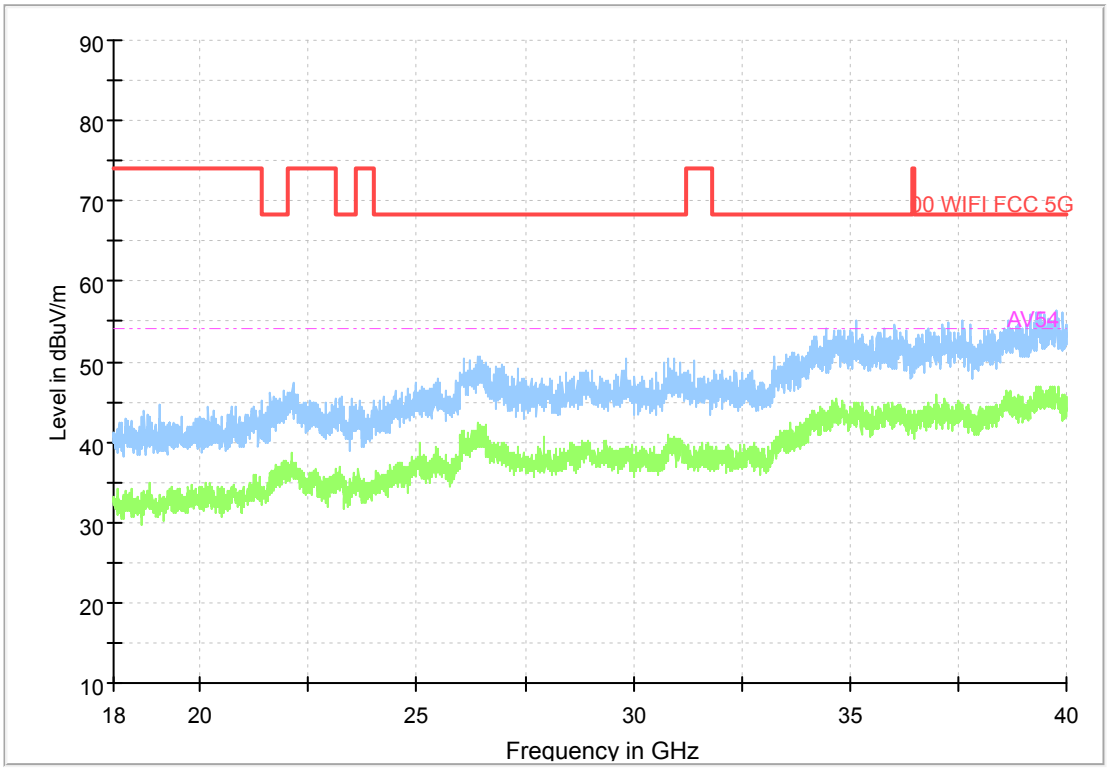
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

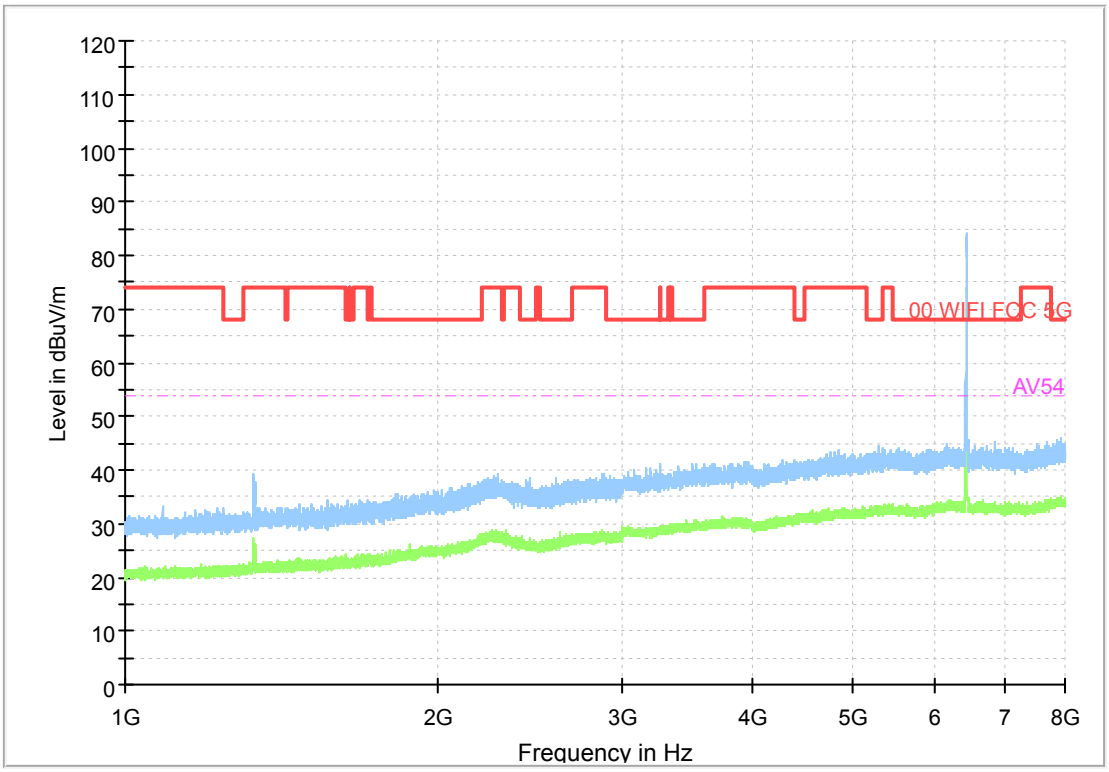
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 97	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

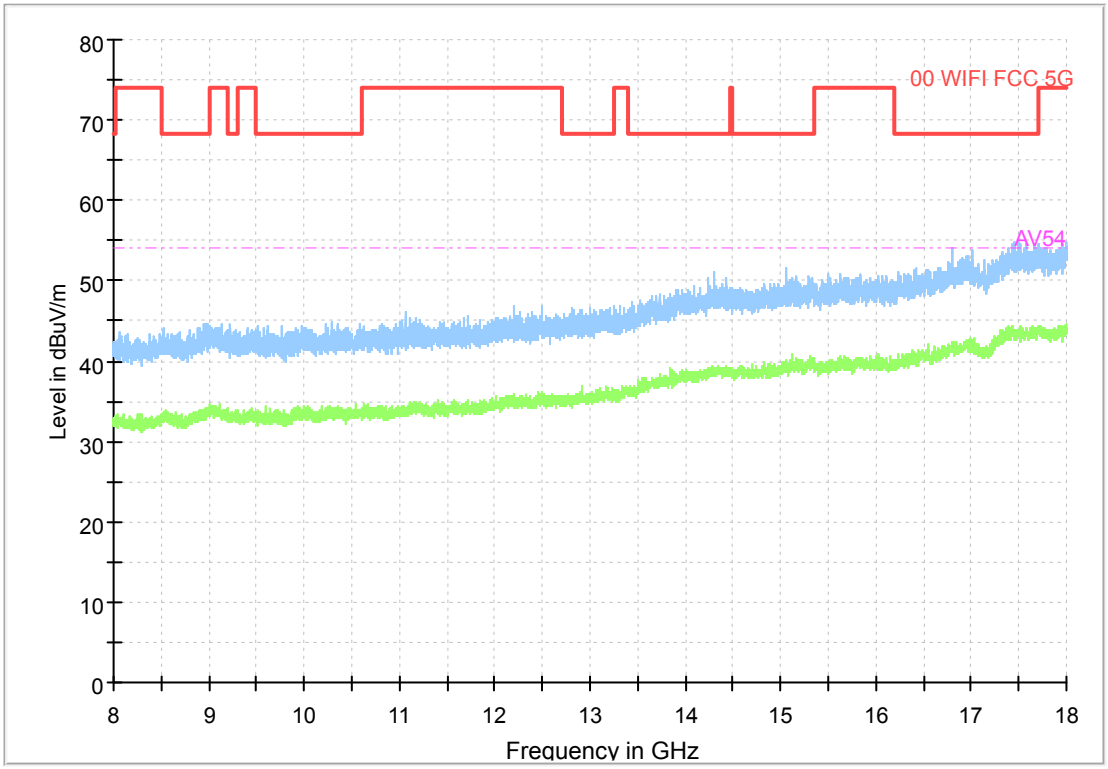
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 97	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

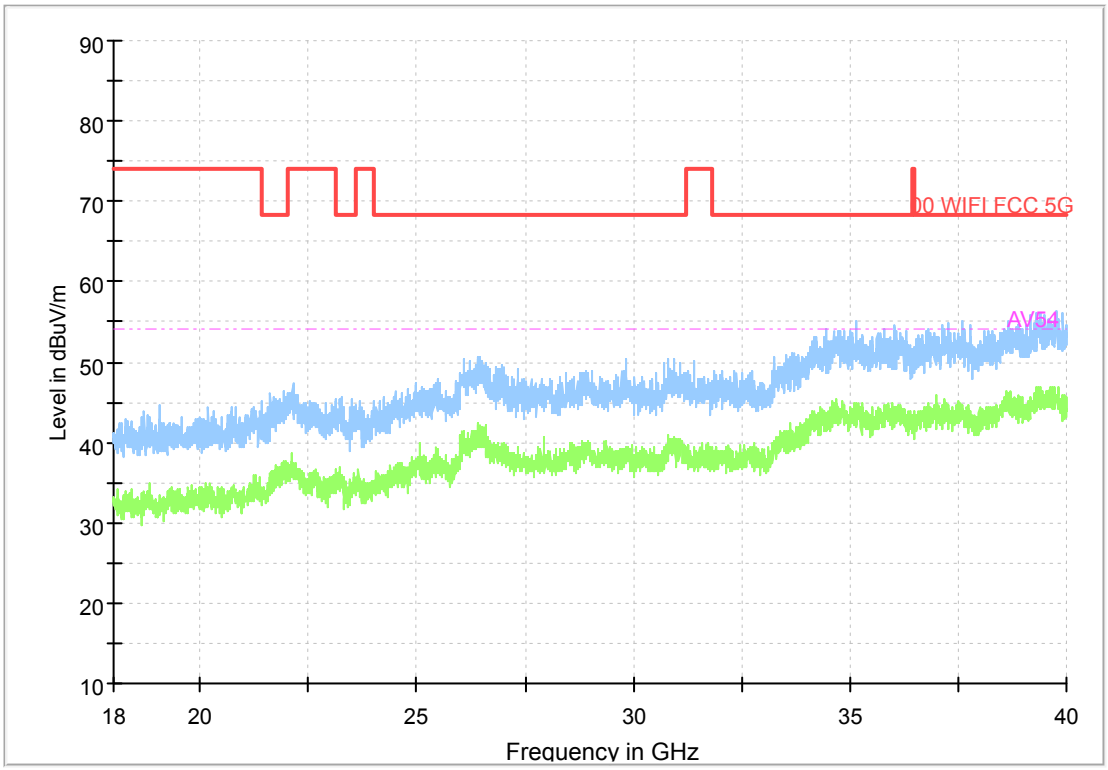
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 97	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

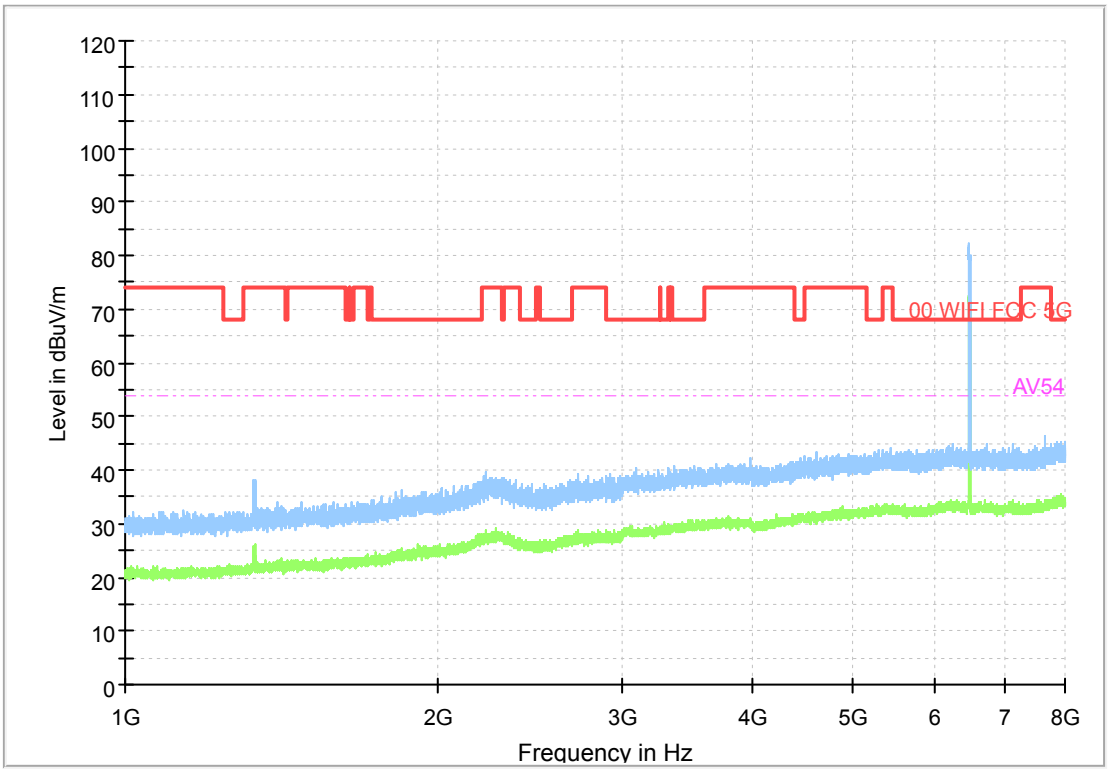
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 105	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

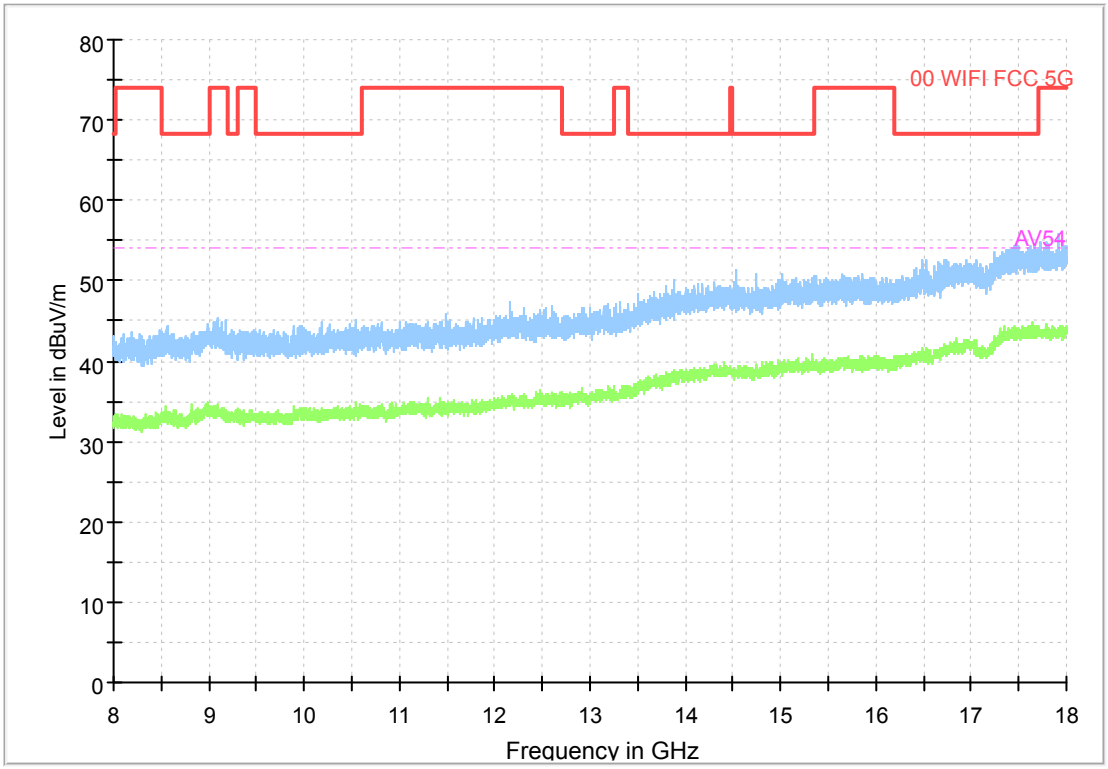
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 105	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

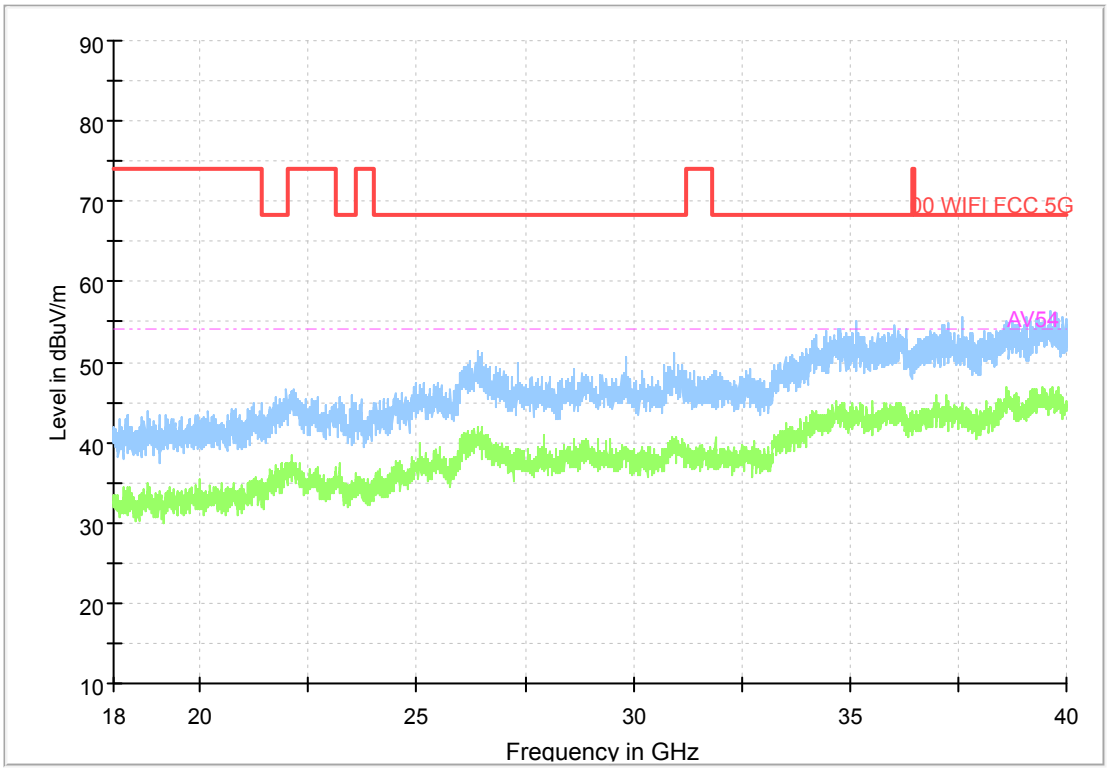
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 105	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

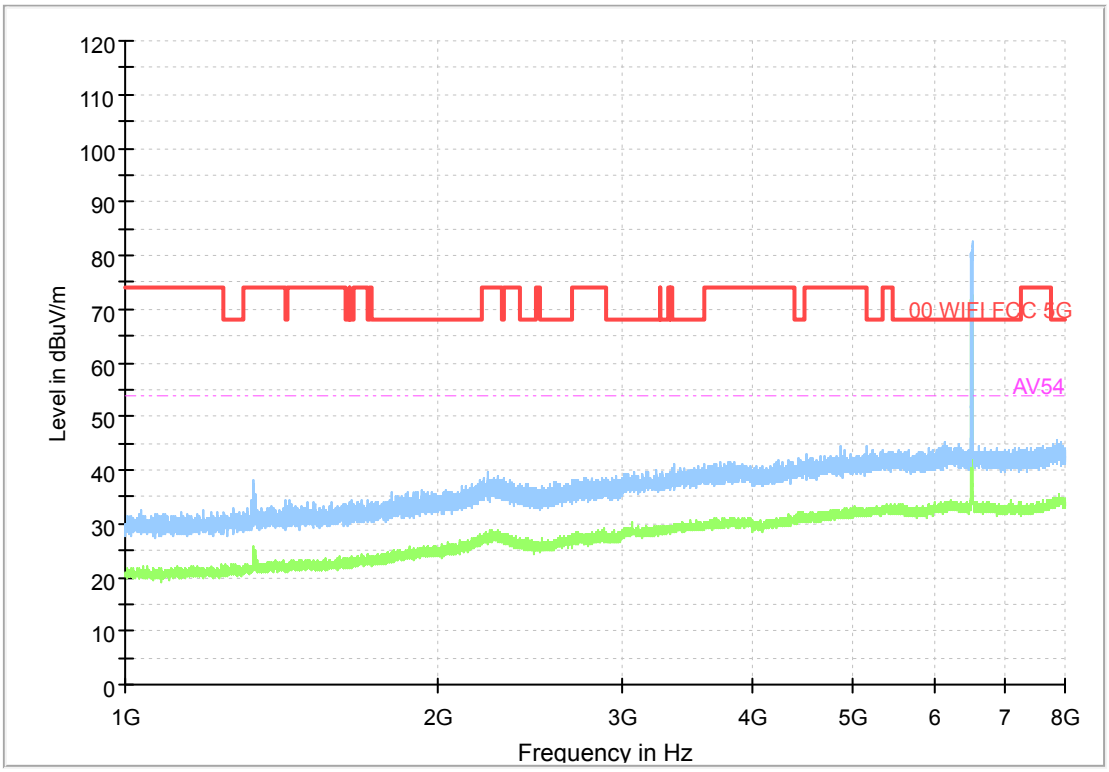
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 113	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

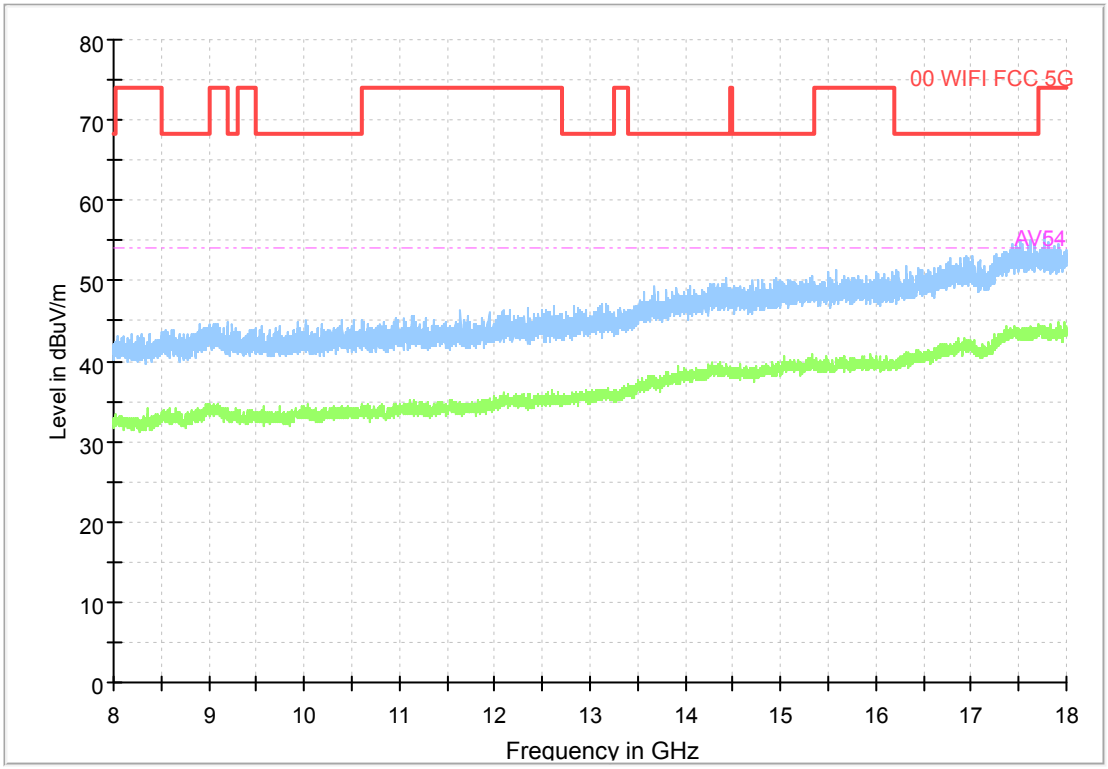
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 113	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

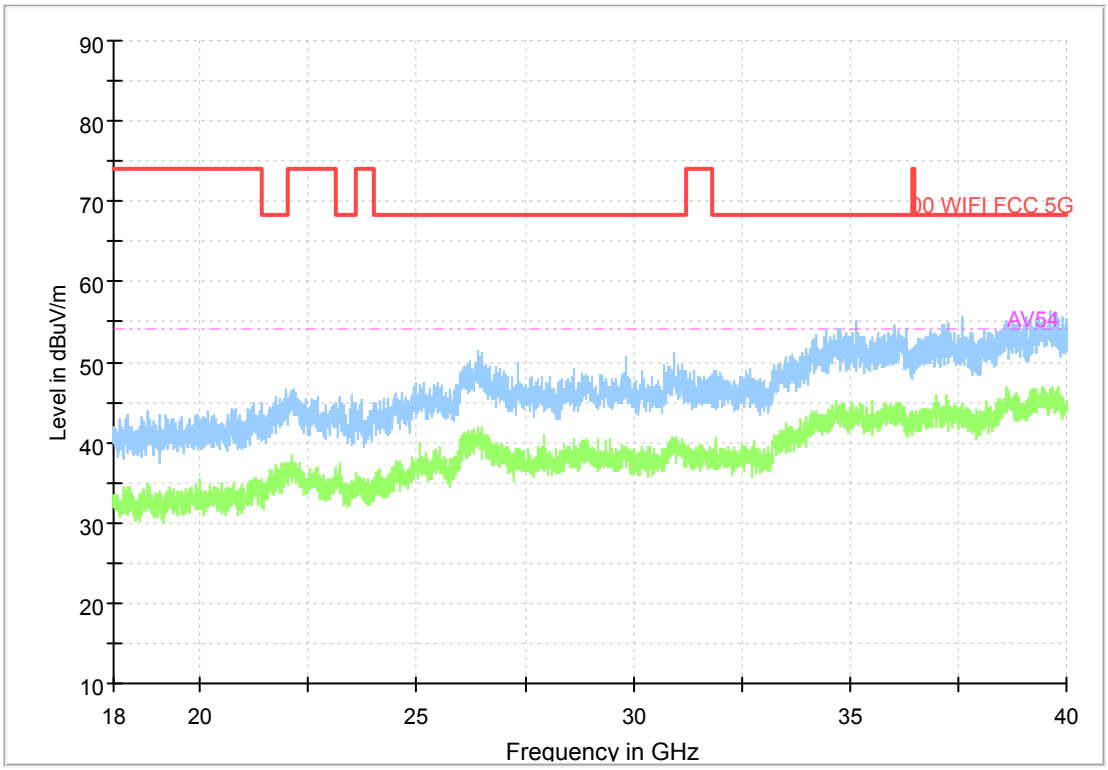
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 113	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

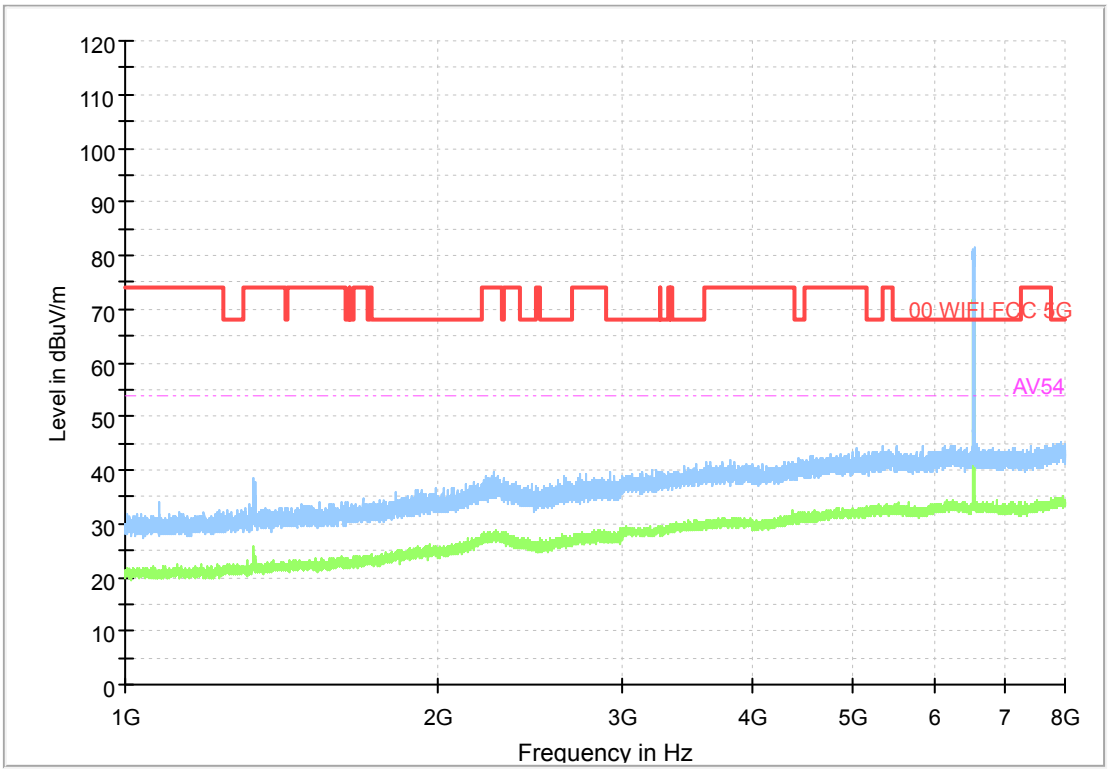
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 117	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

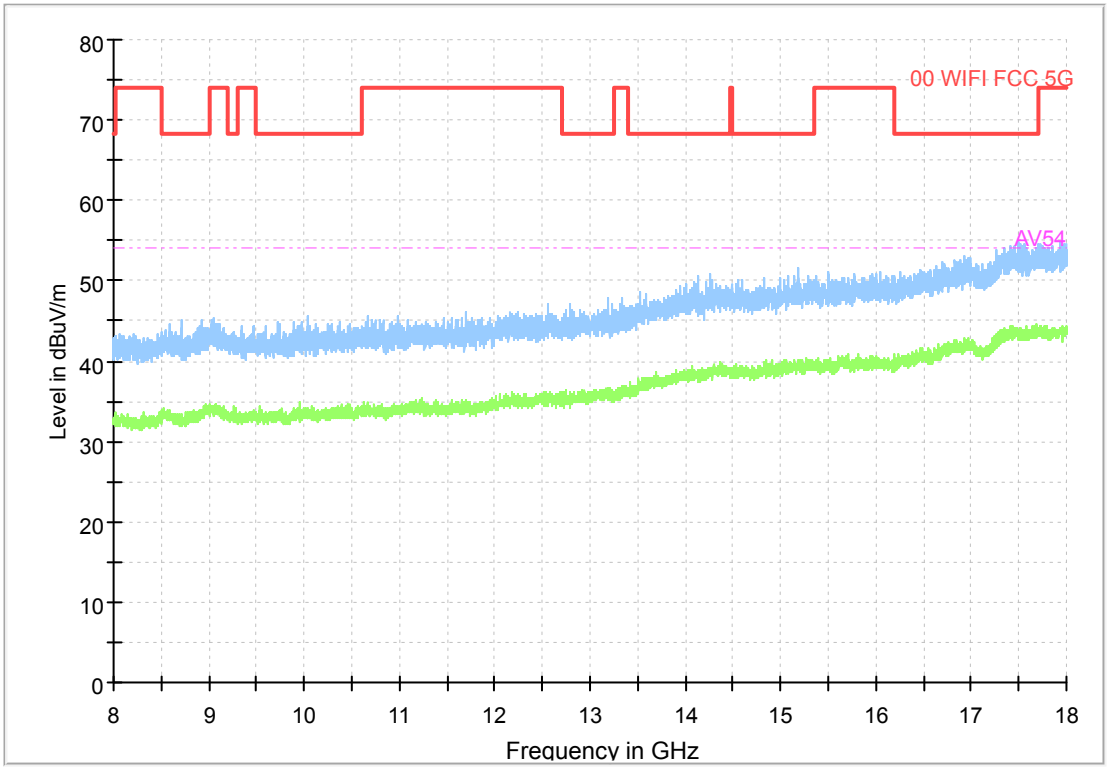
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 117	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

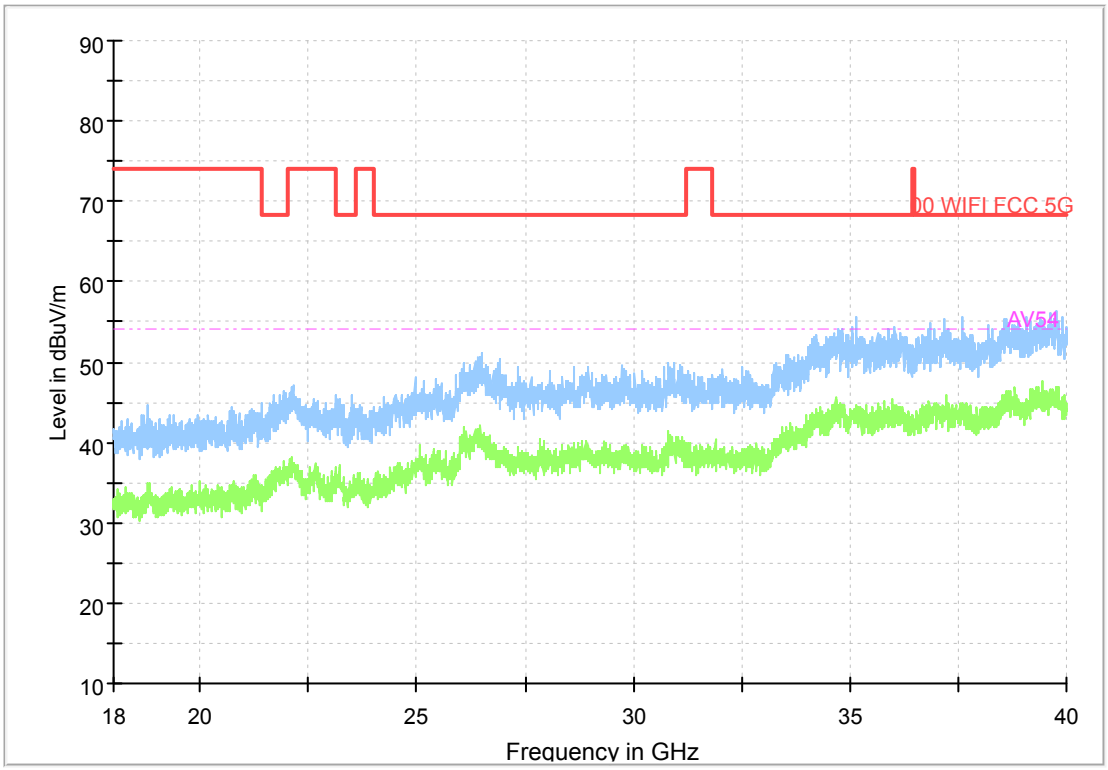
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 117	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

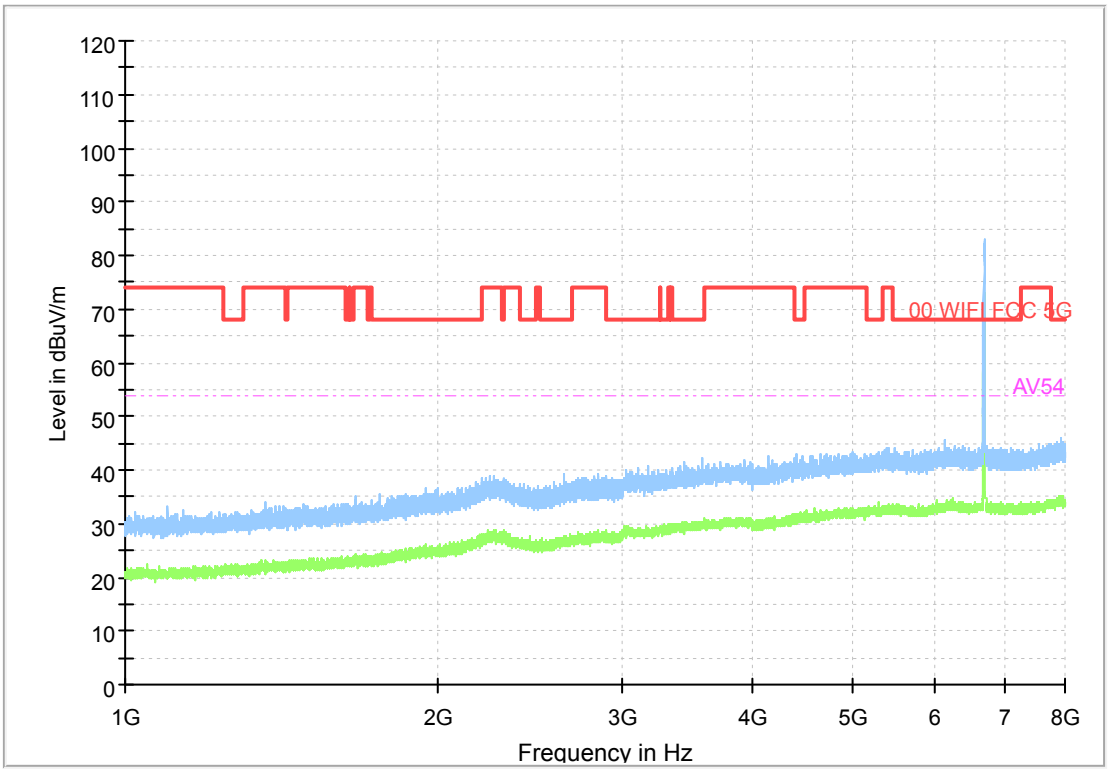
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

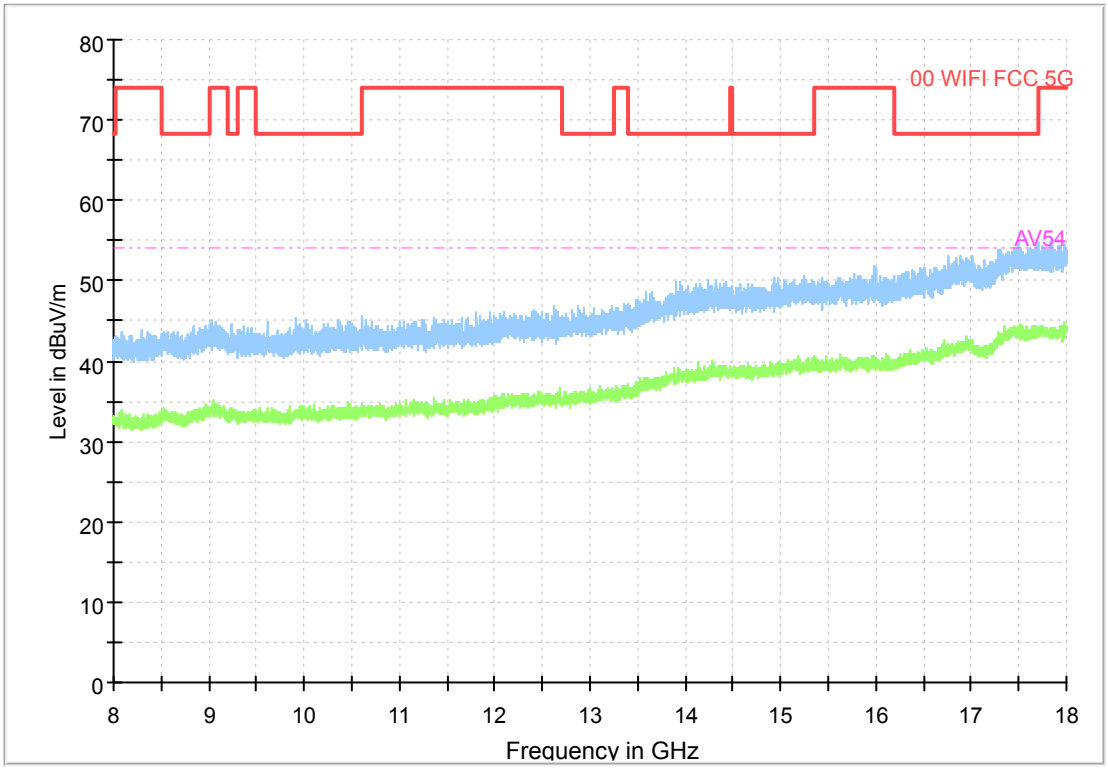
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

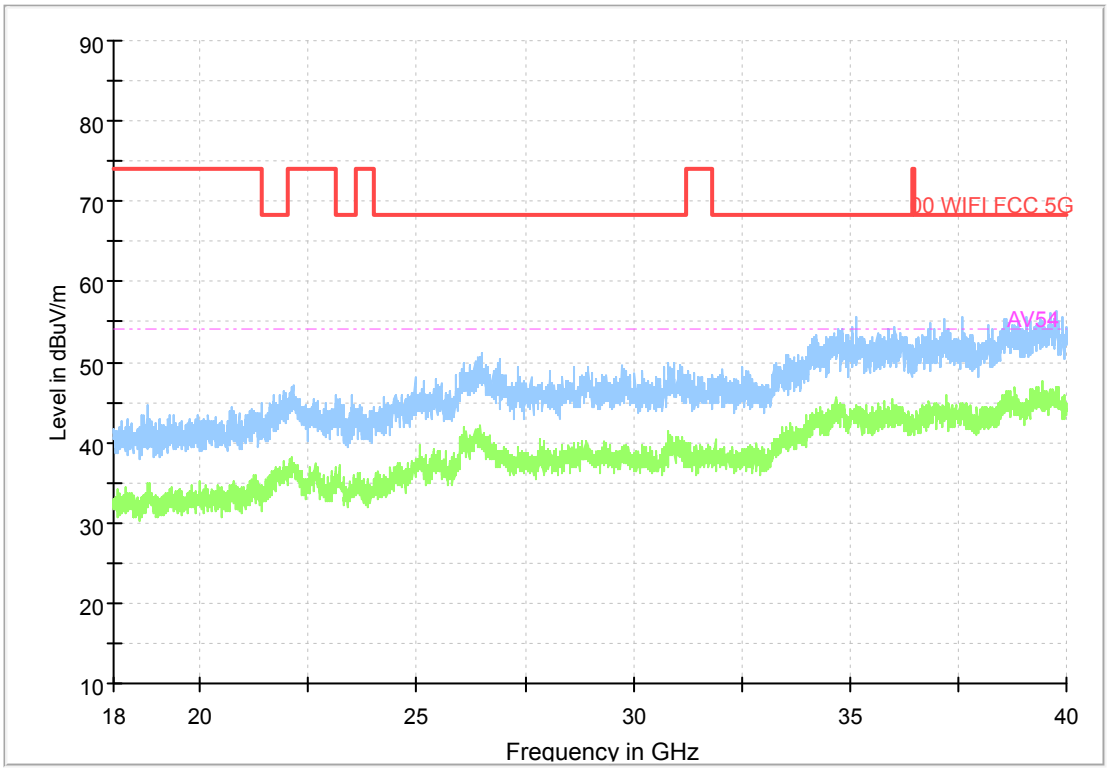
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

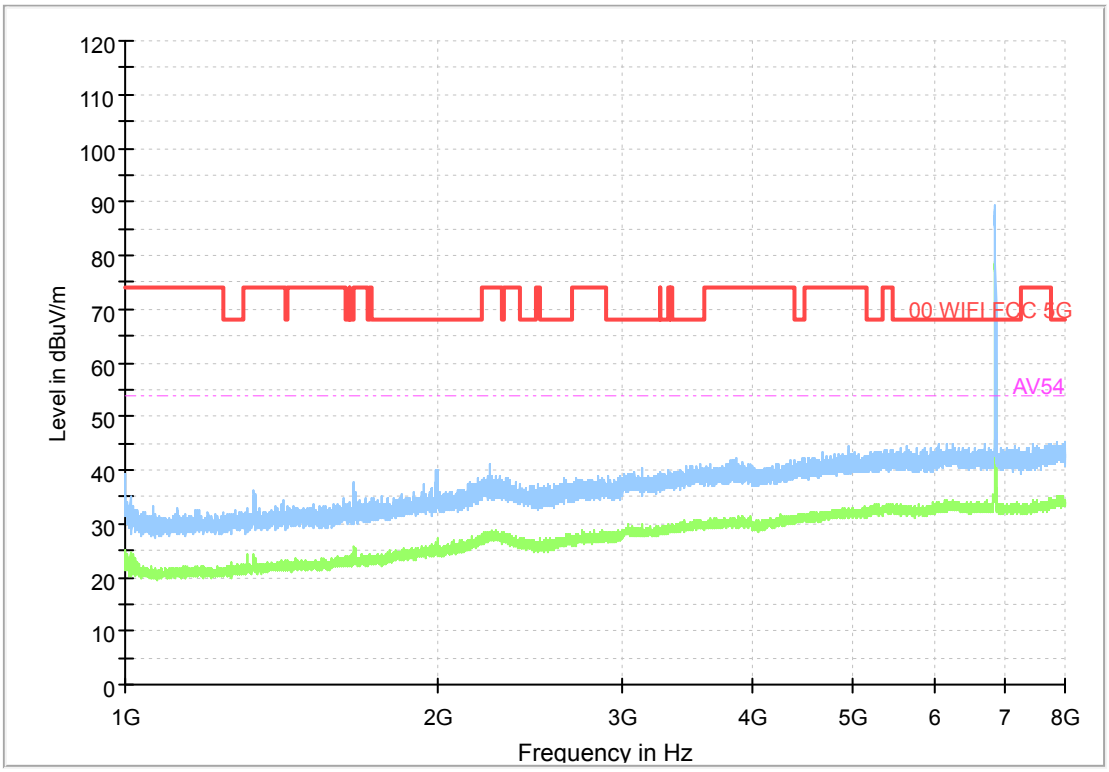
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 181	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

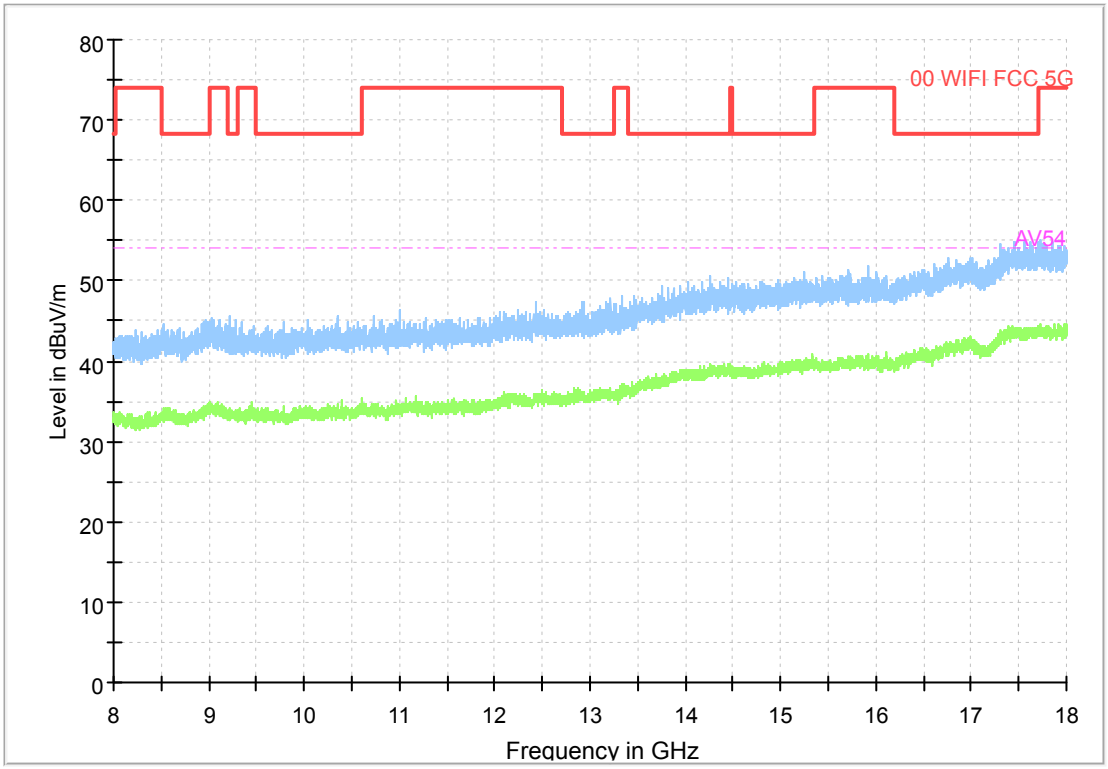
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 181	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

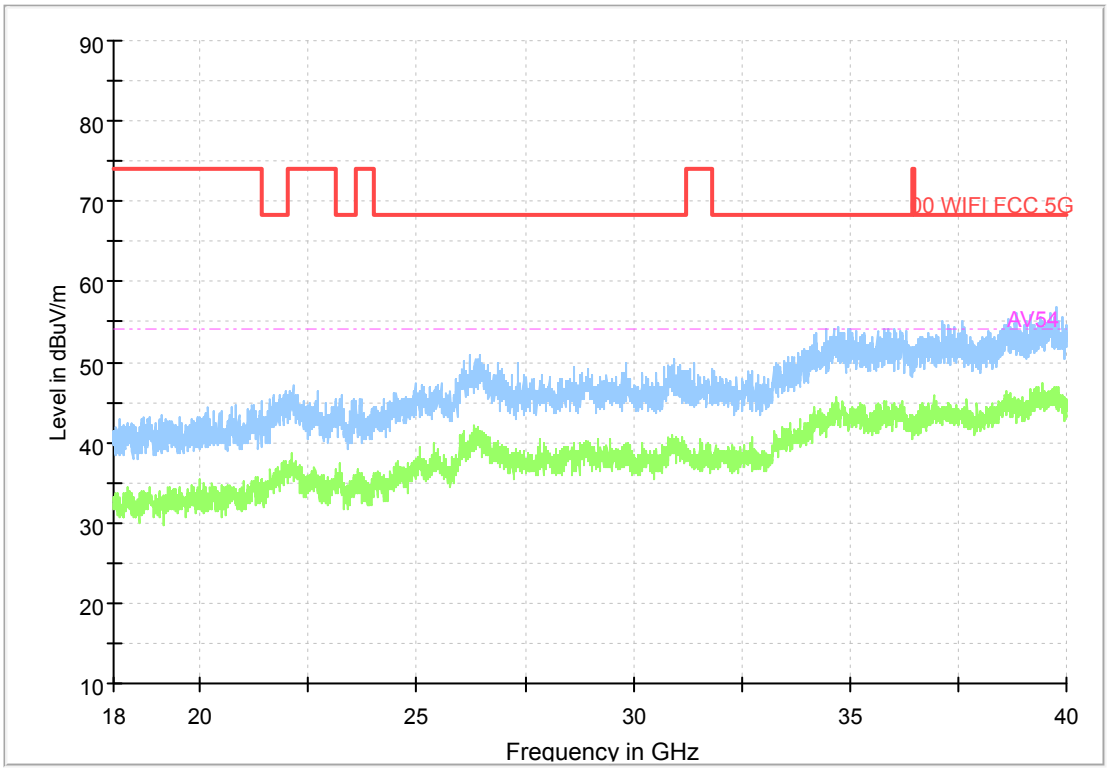
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 181	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

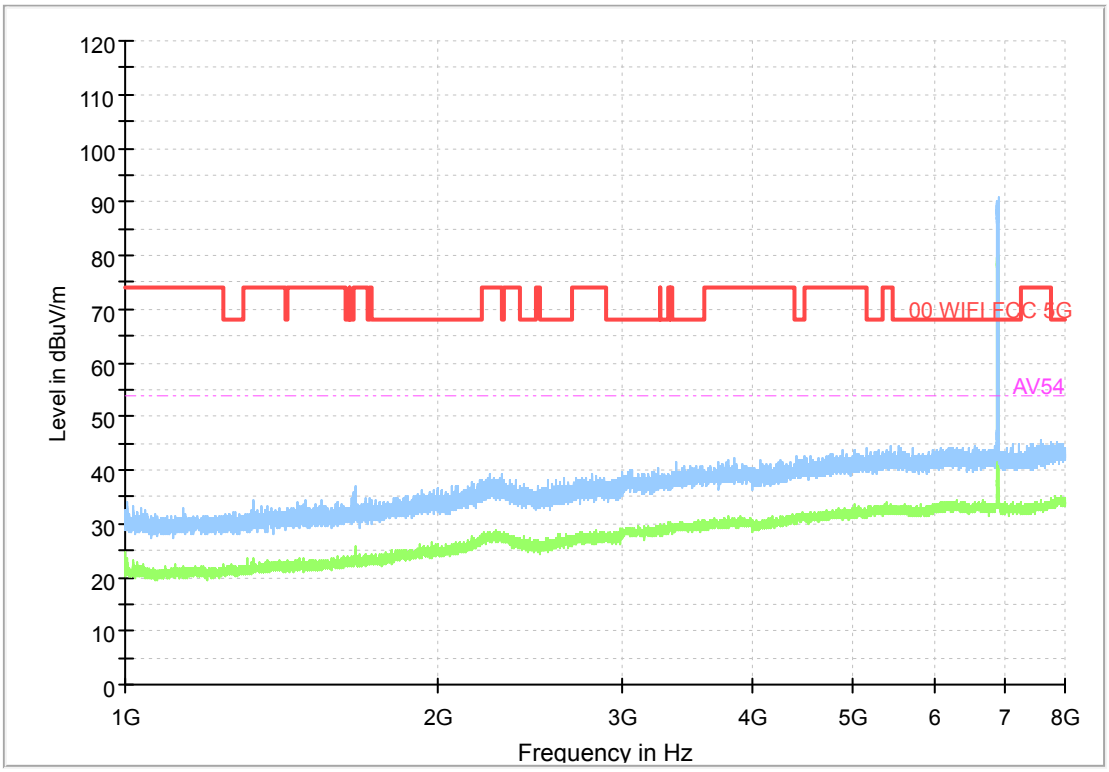
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 189	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

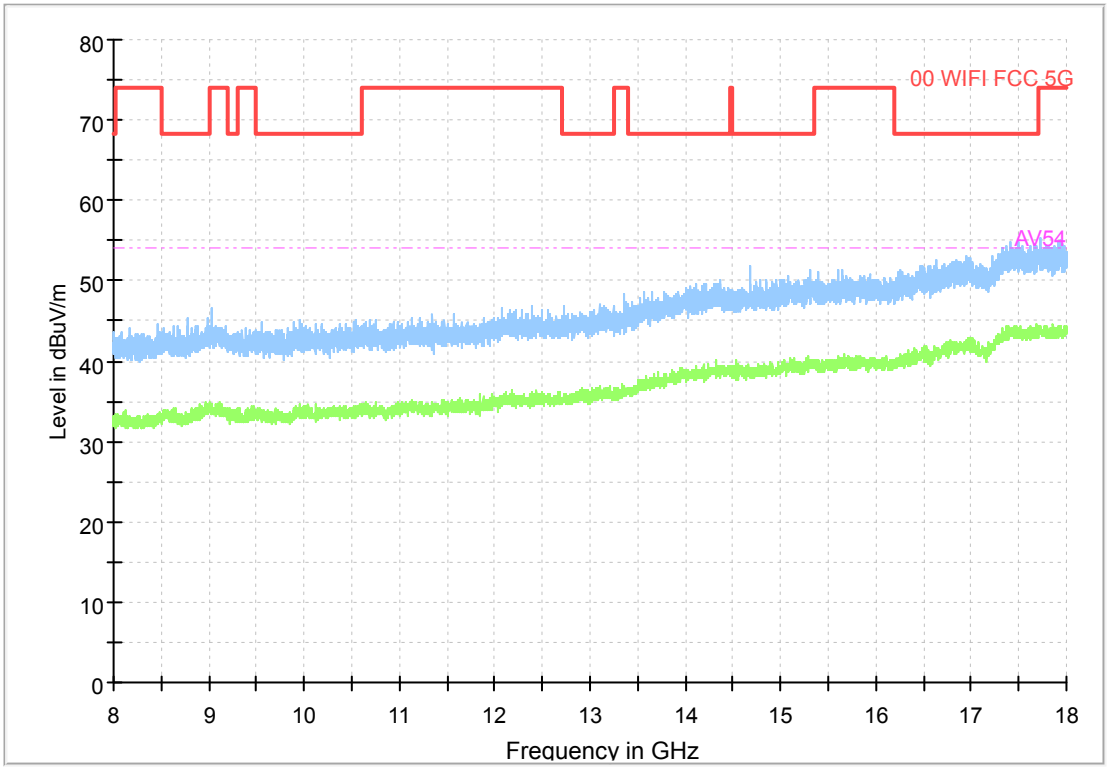
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 189	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

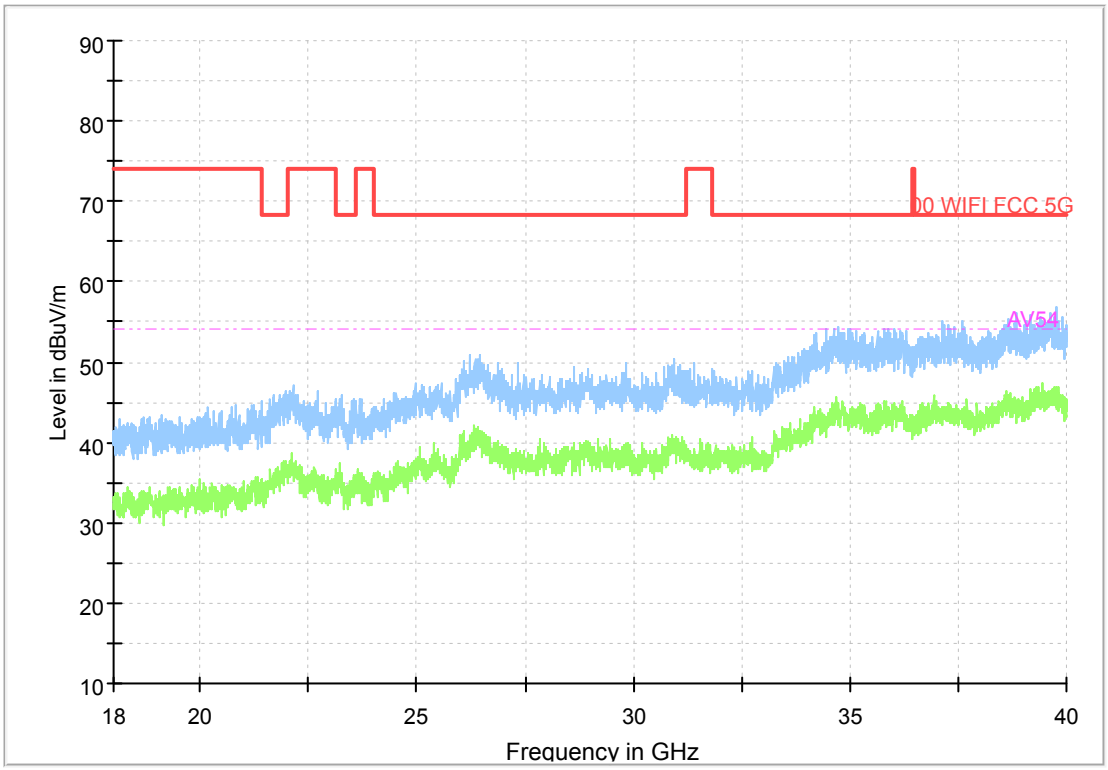
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 189	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

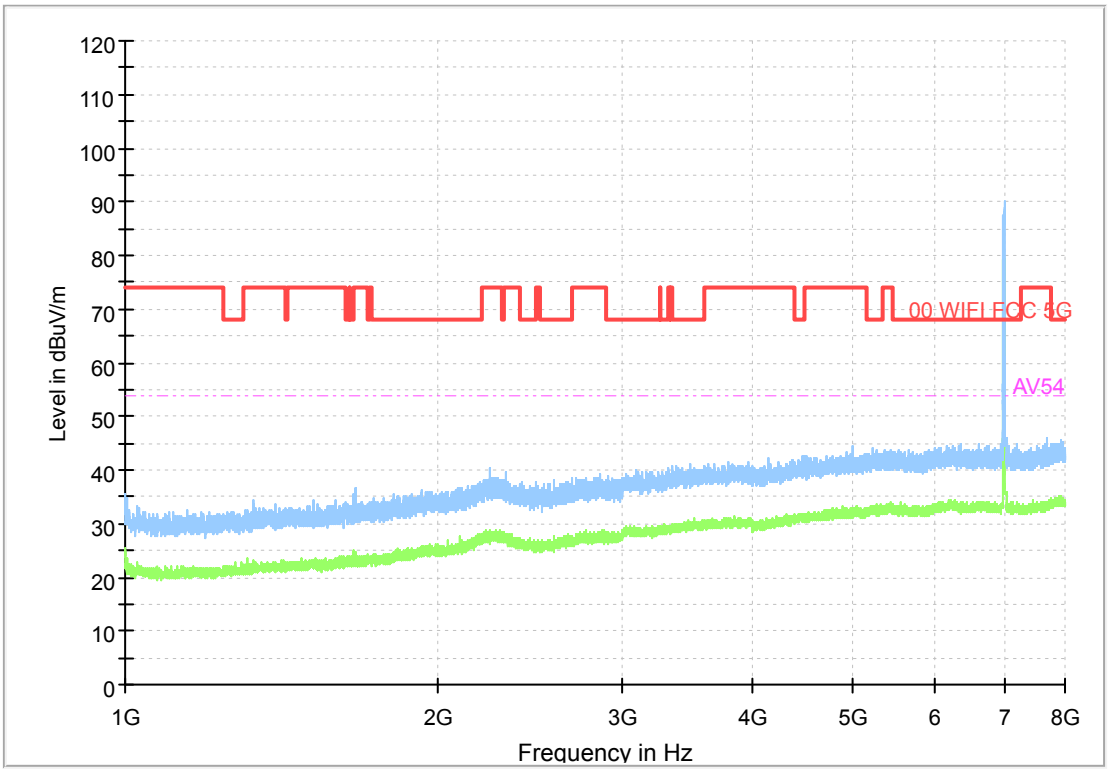
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 209	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

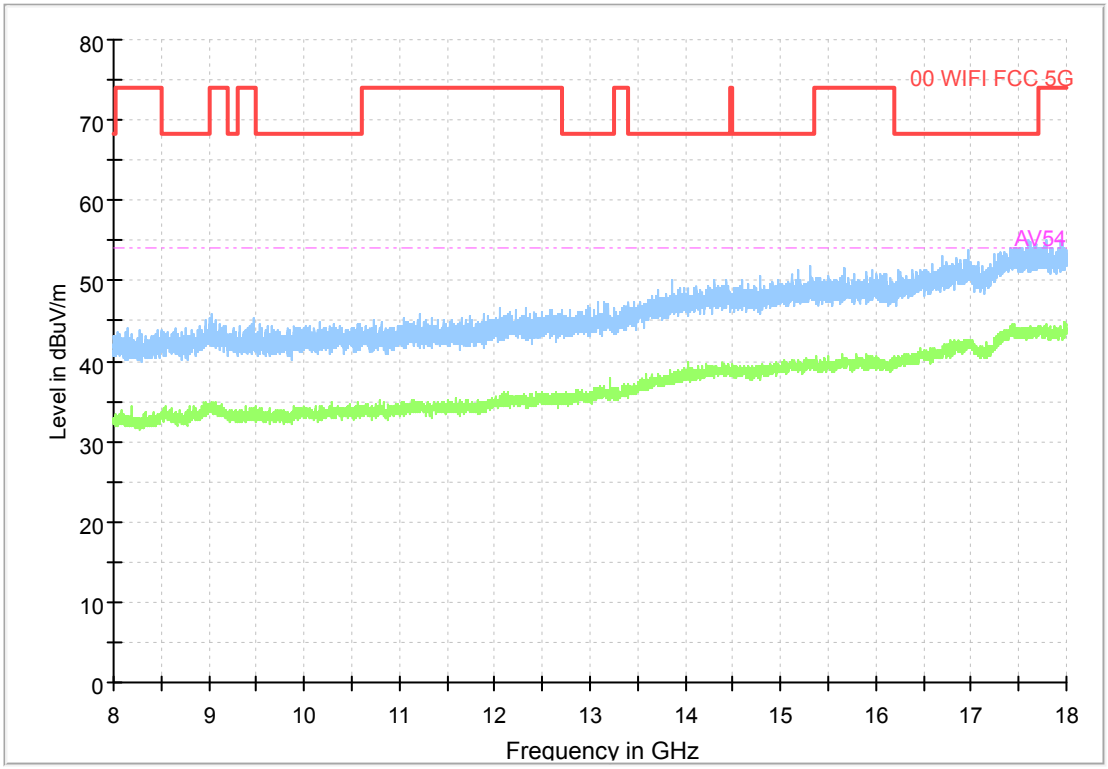
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

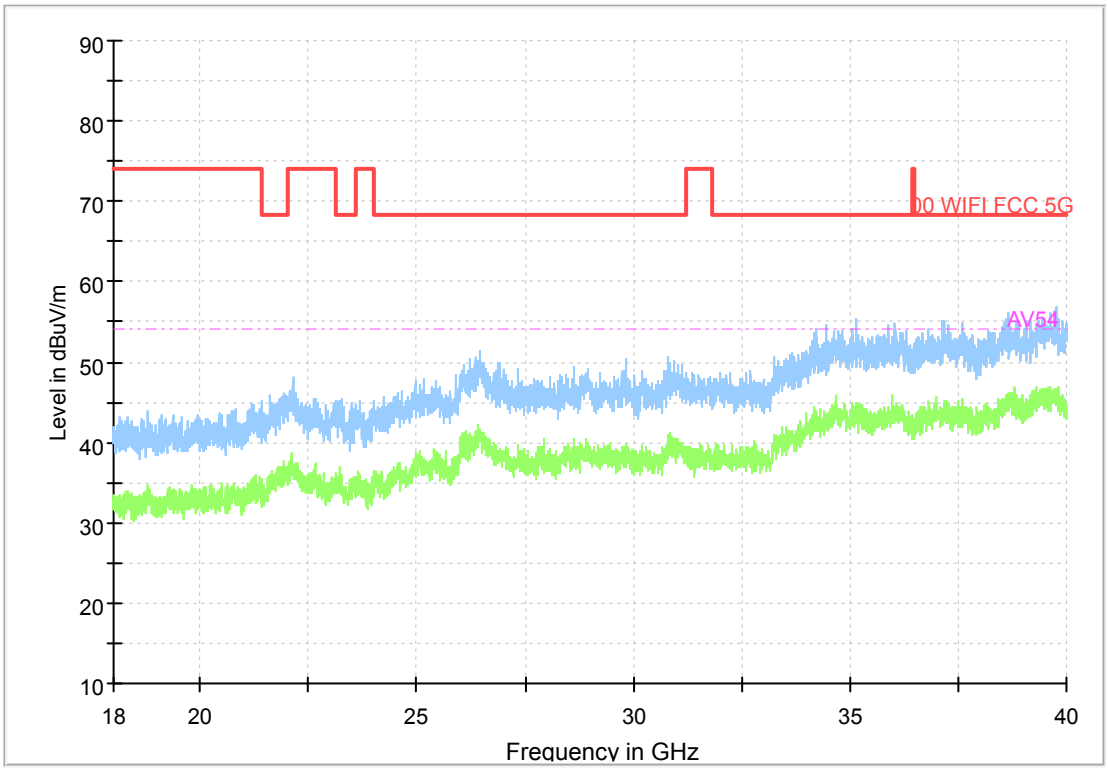
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

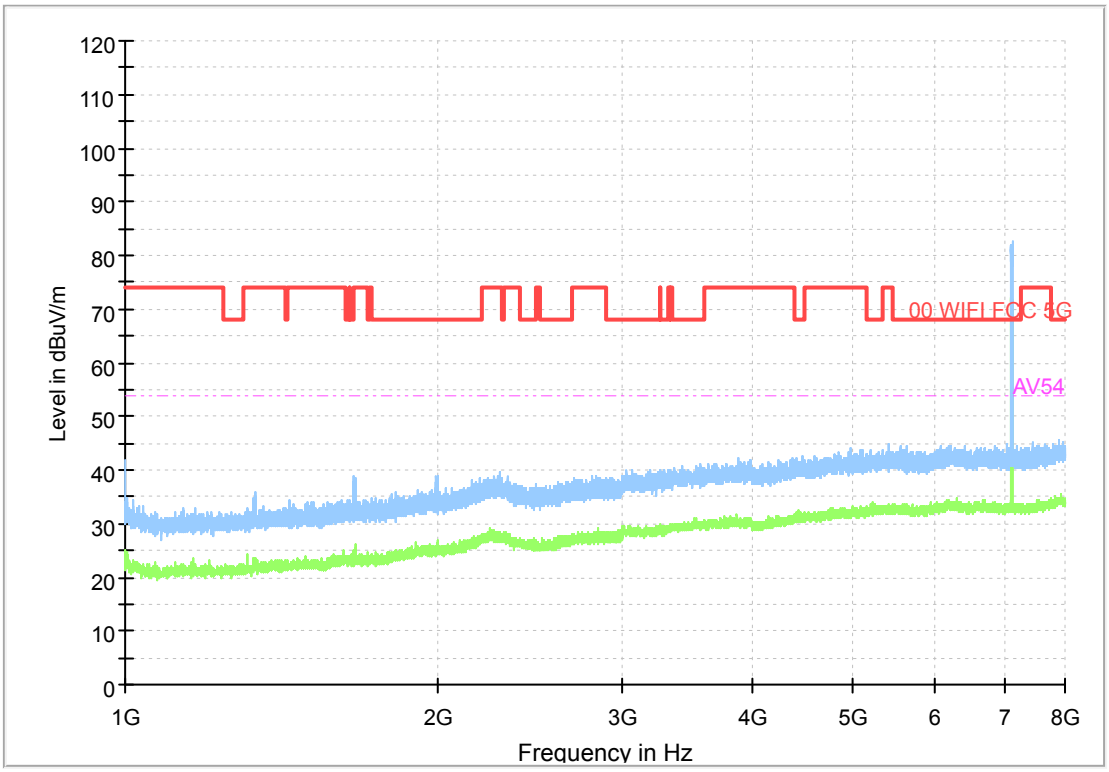
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 233	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

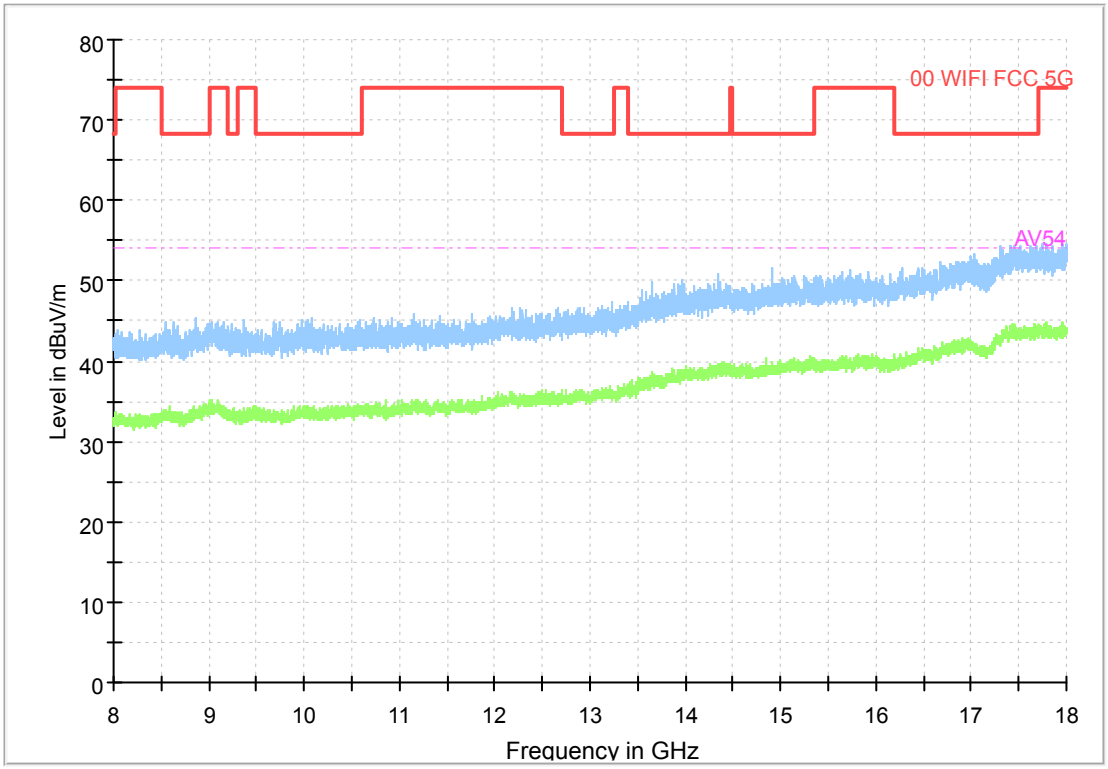
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

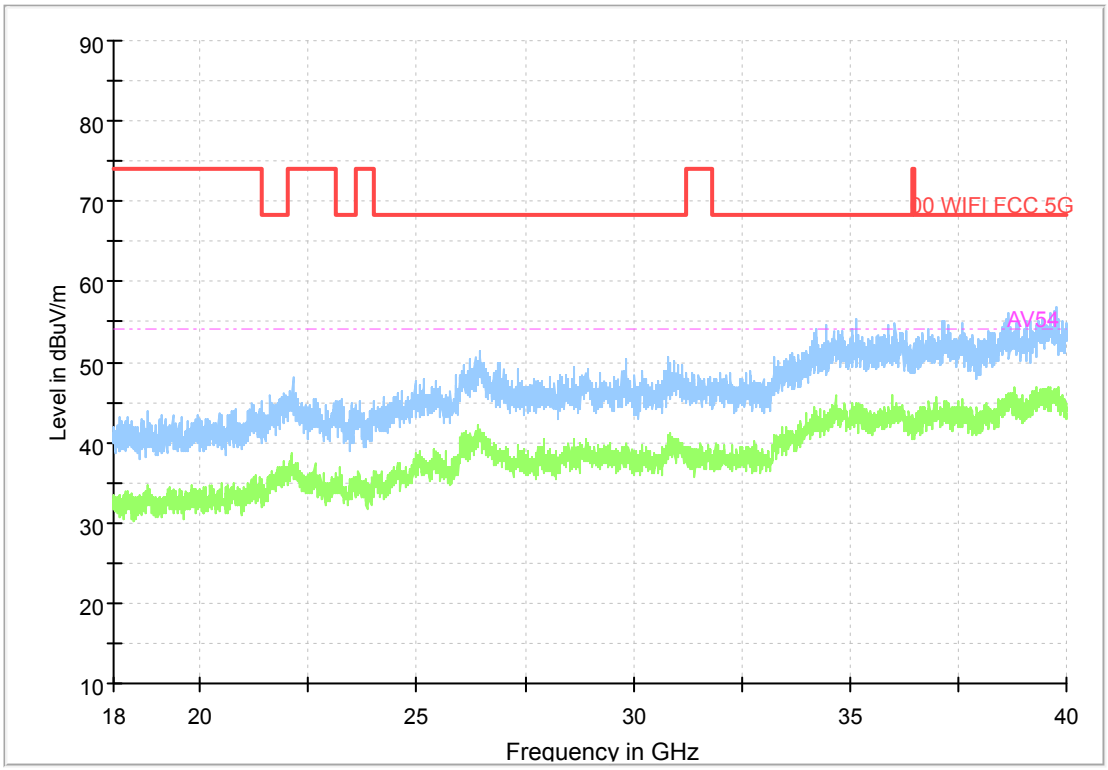
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

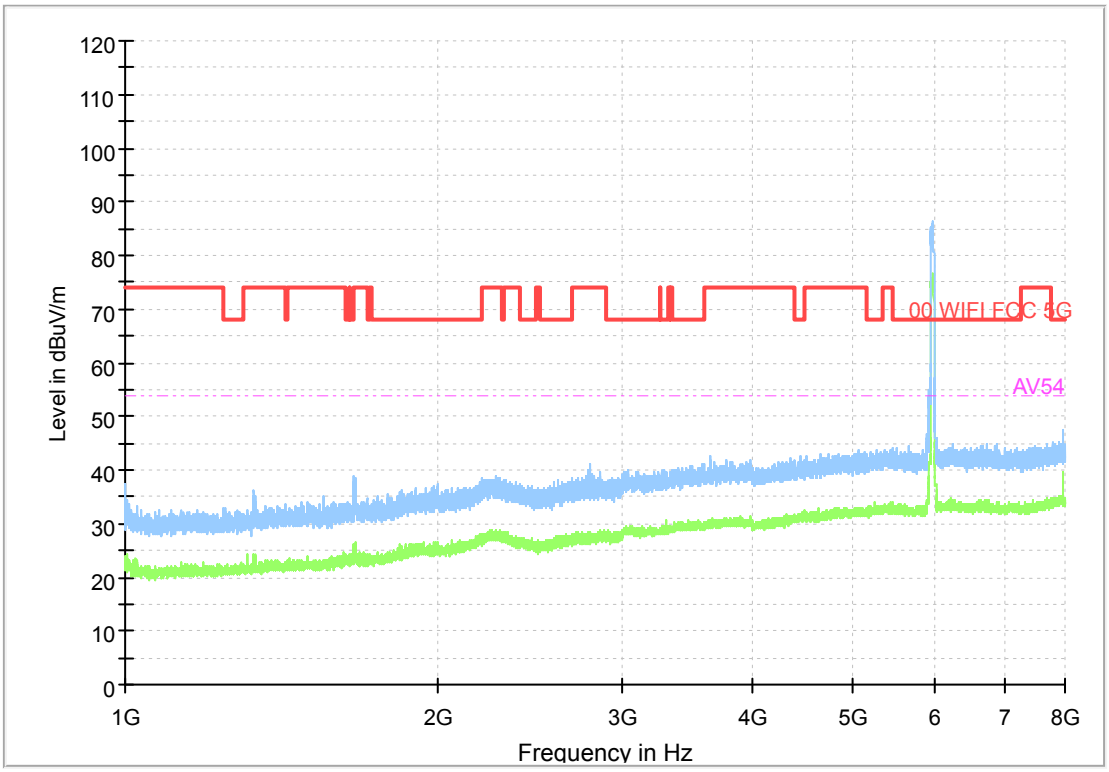
Full Spectrum



802.11ax (40MHz

CHANNEL	TX Channel 3	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

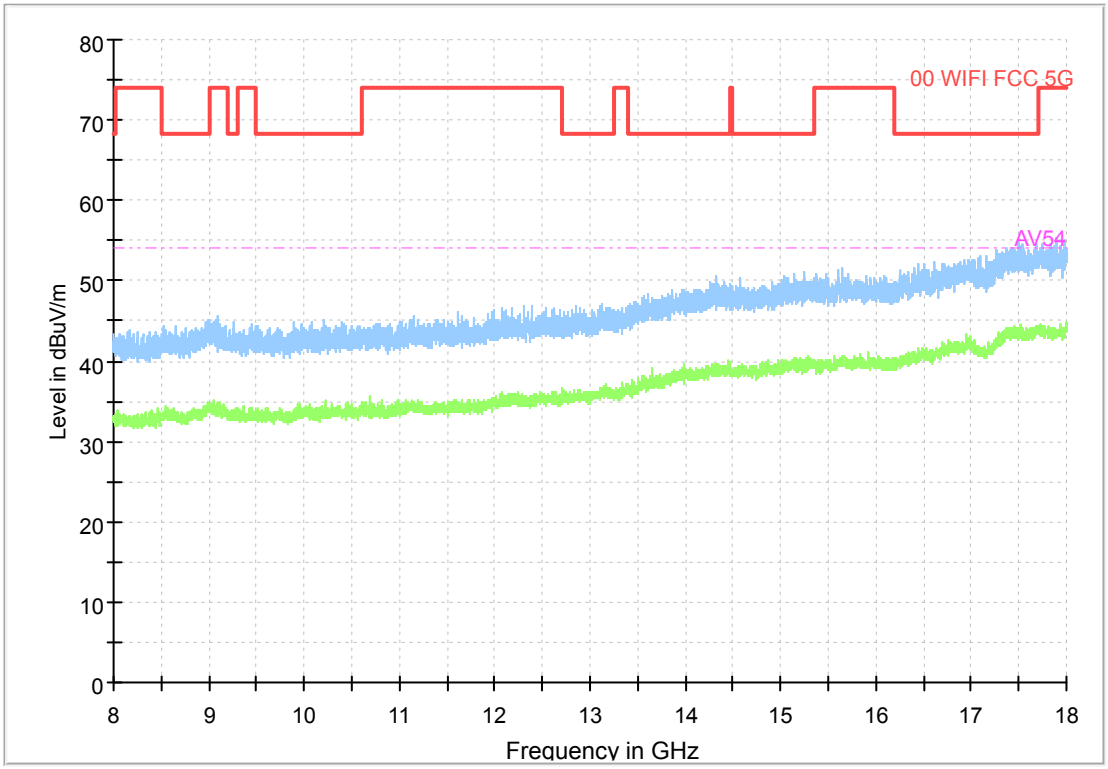
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 3	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

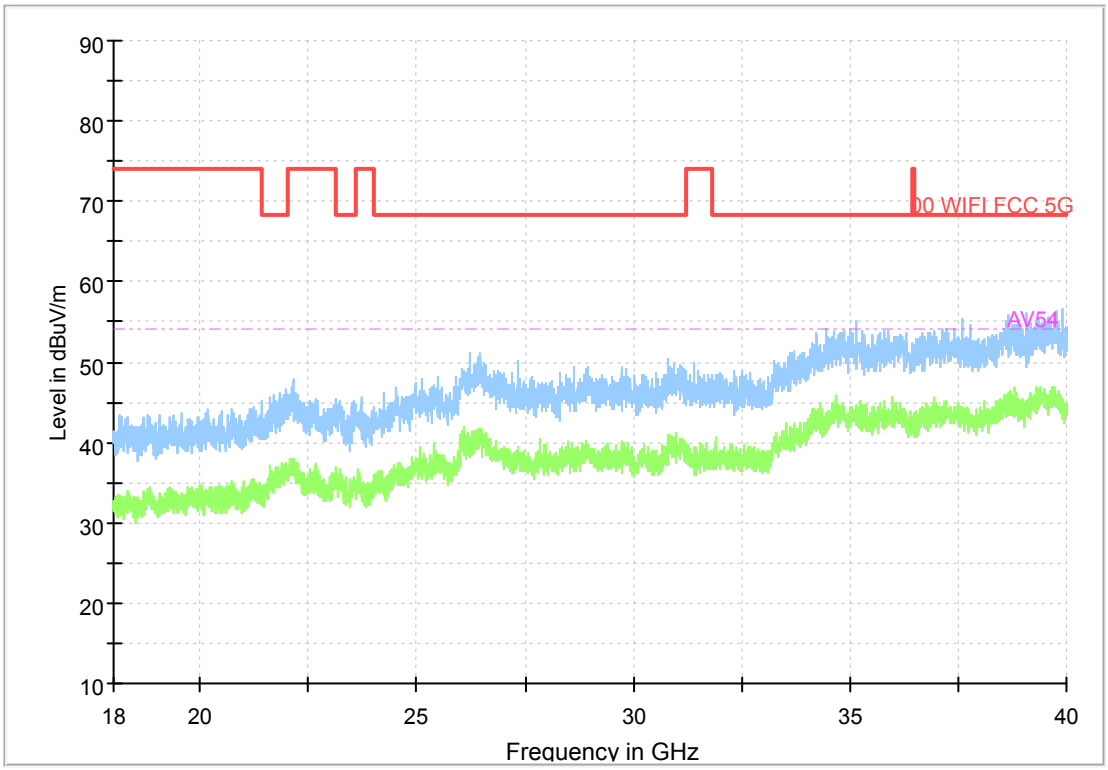
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 3	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

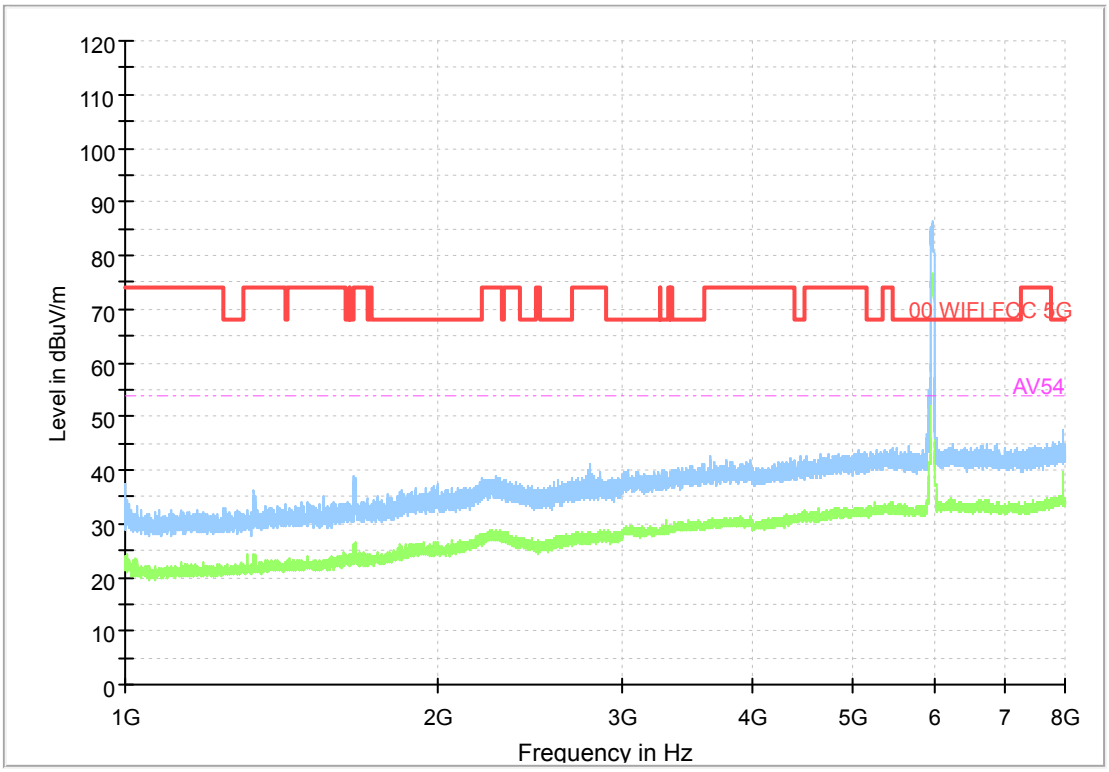
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 43	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

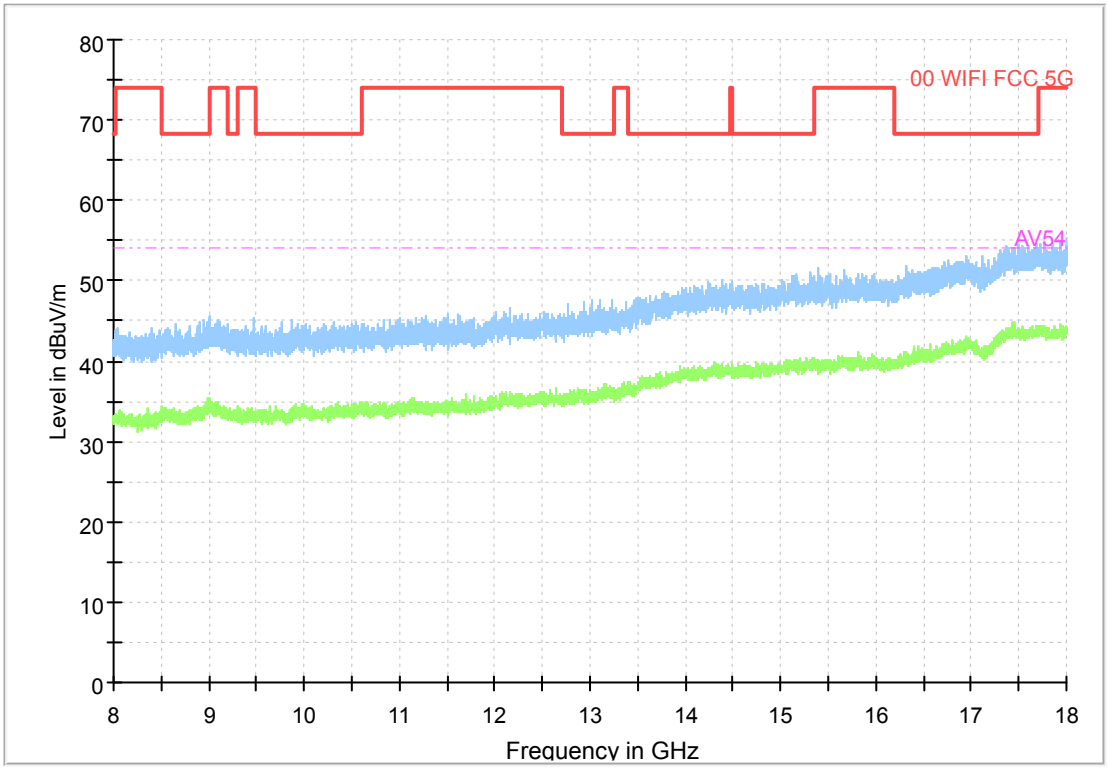
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 43	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

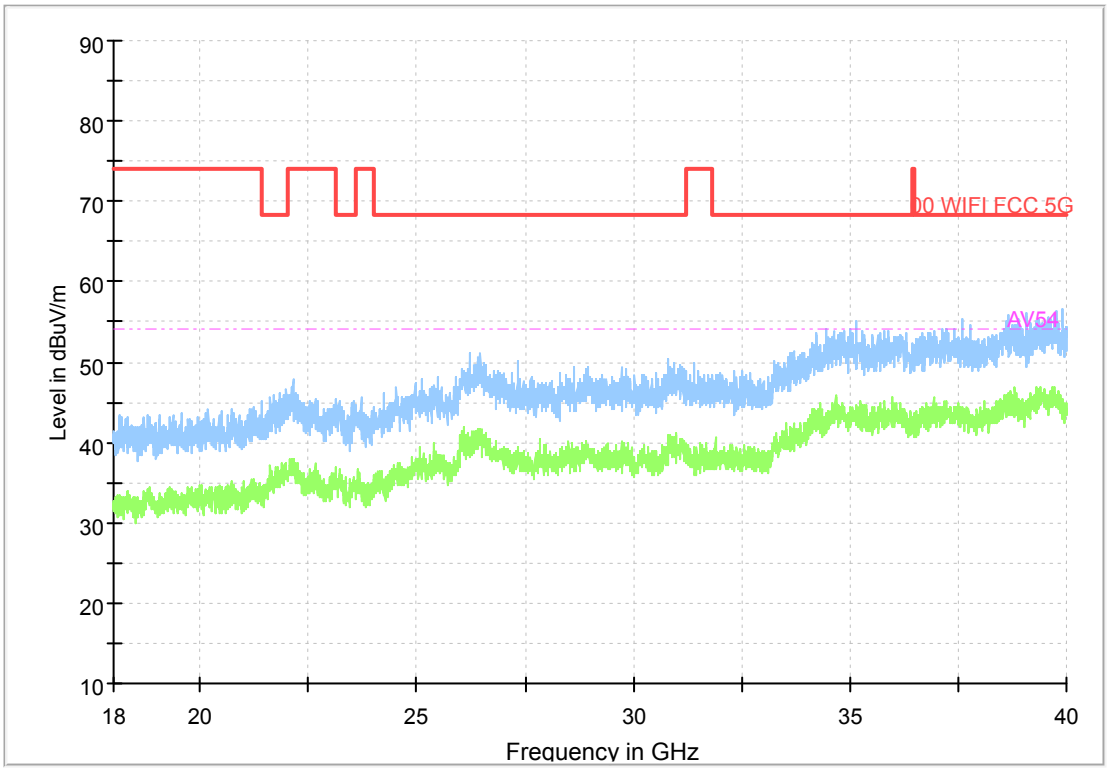
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 43	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

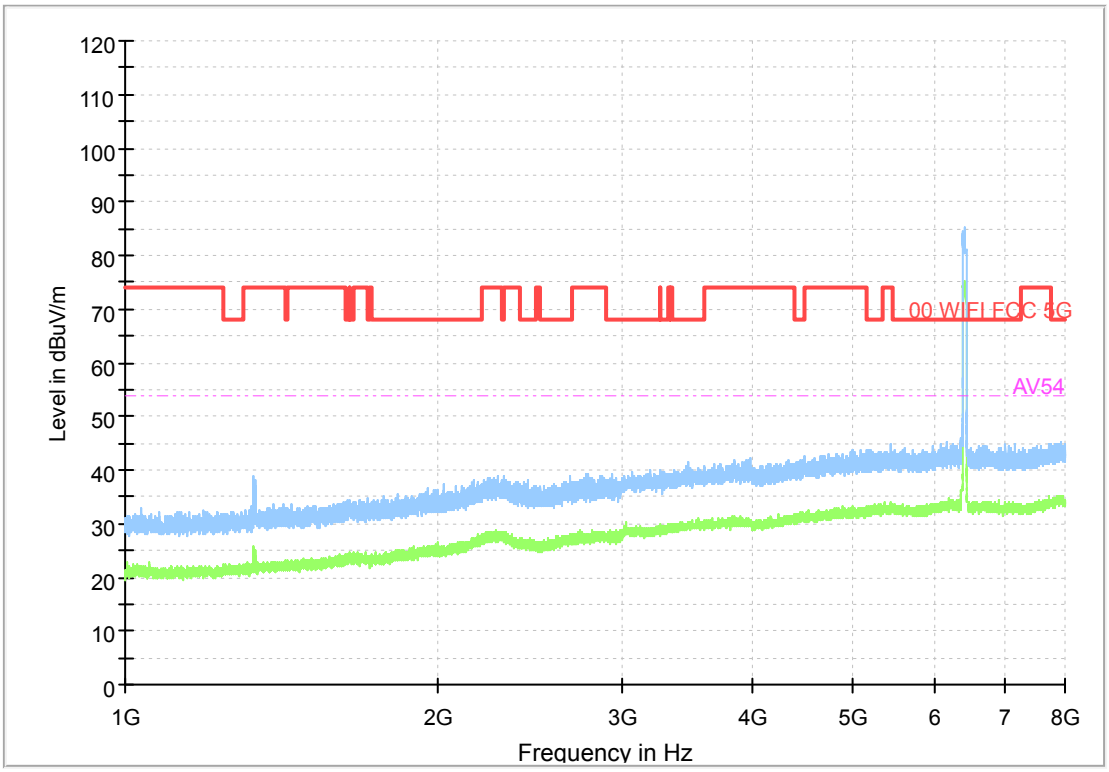
Full Spectrum



802.11ax (40MHz

CHANNEL	TX Channel 19	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

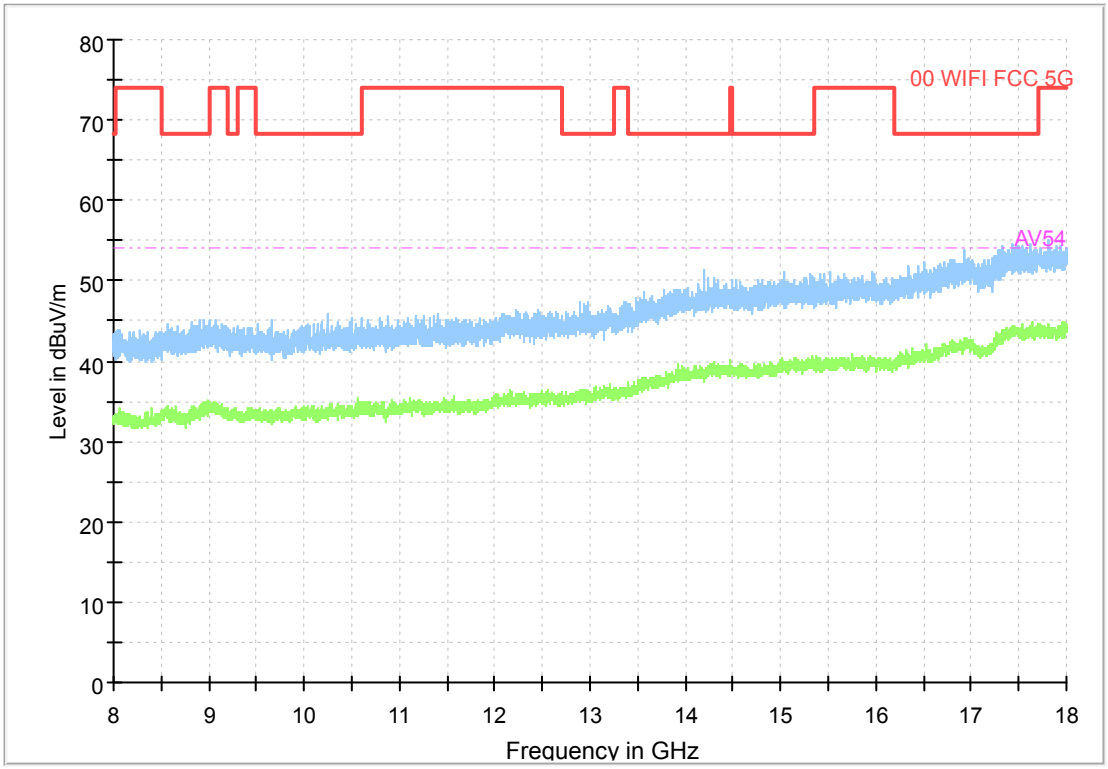
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 19	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

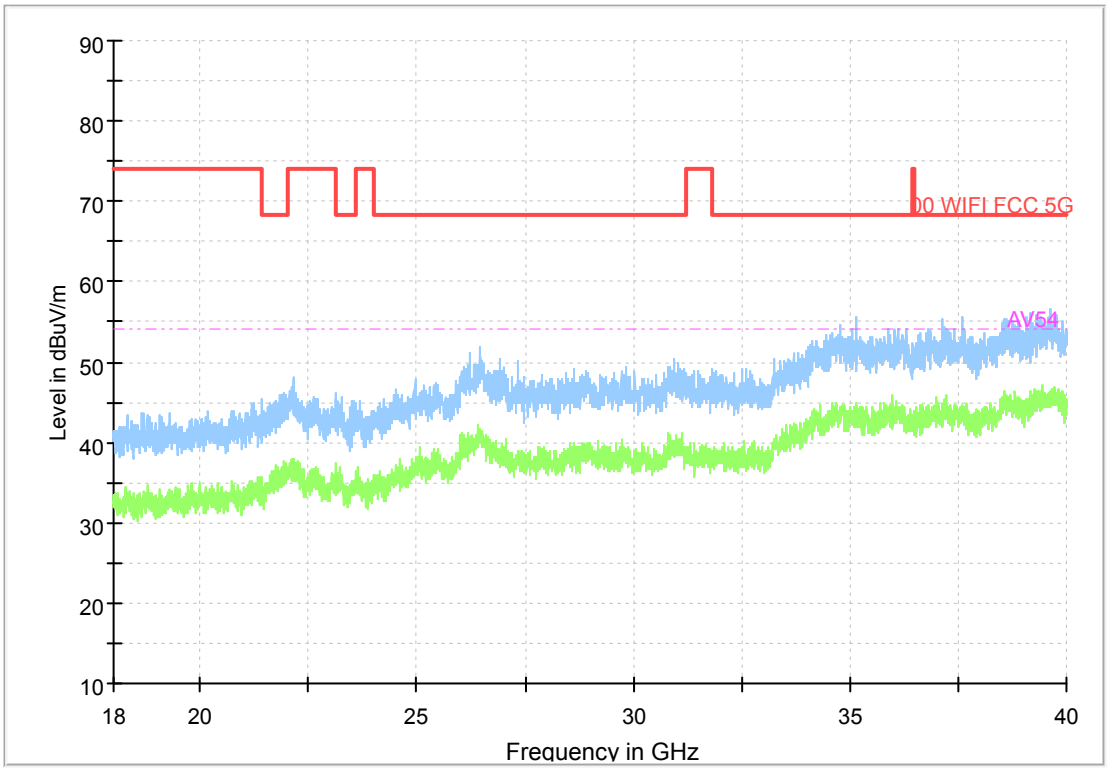
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 19	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

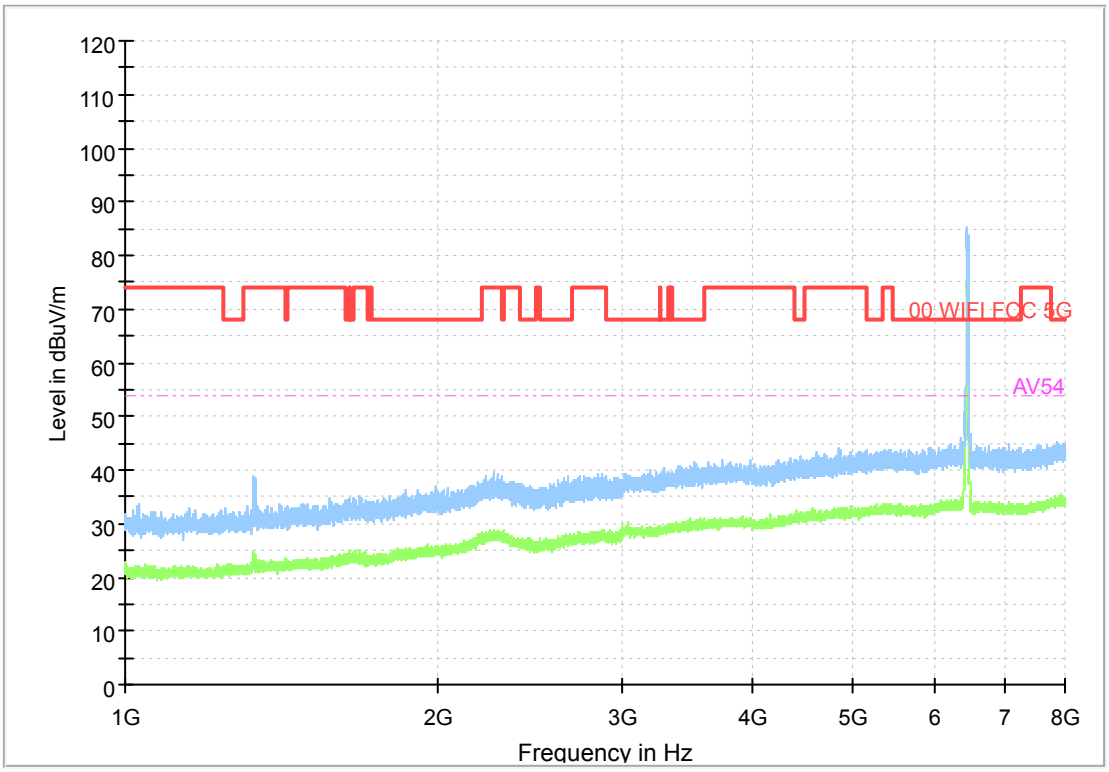
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 99	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

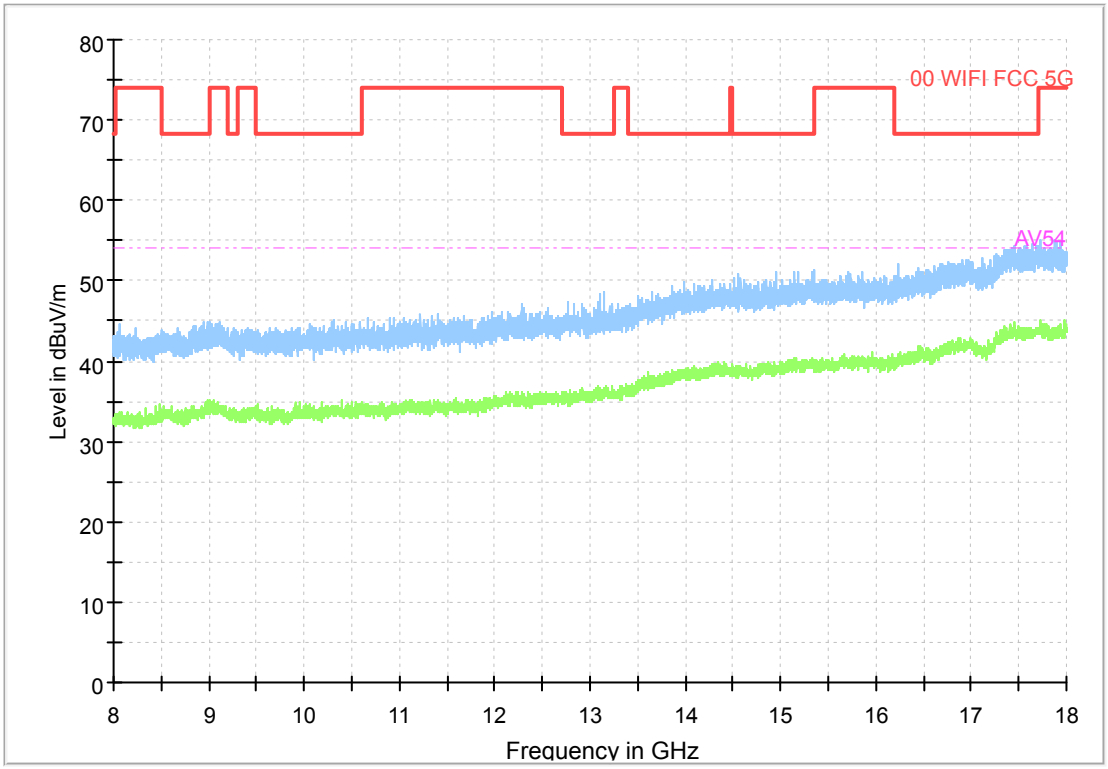
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 99	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

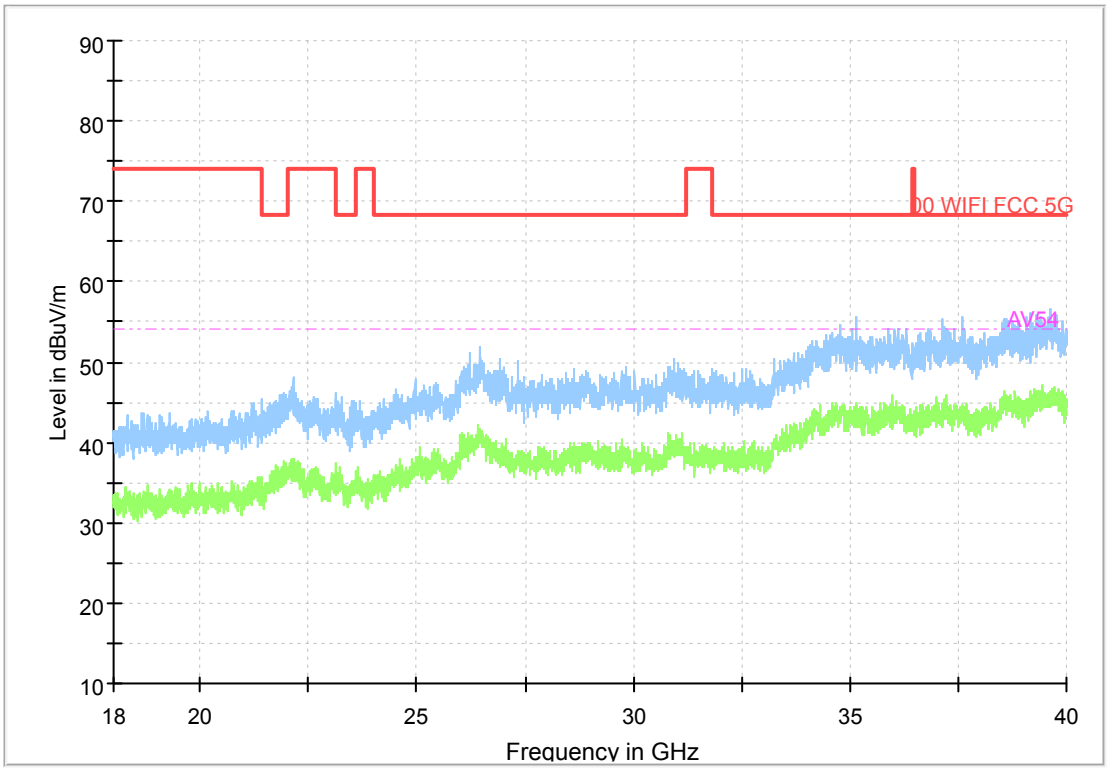
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 99	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

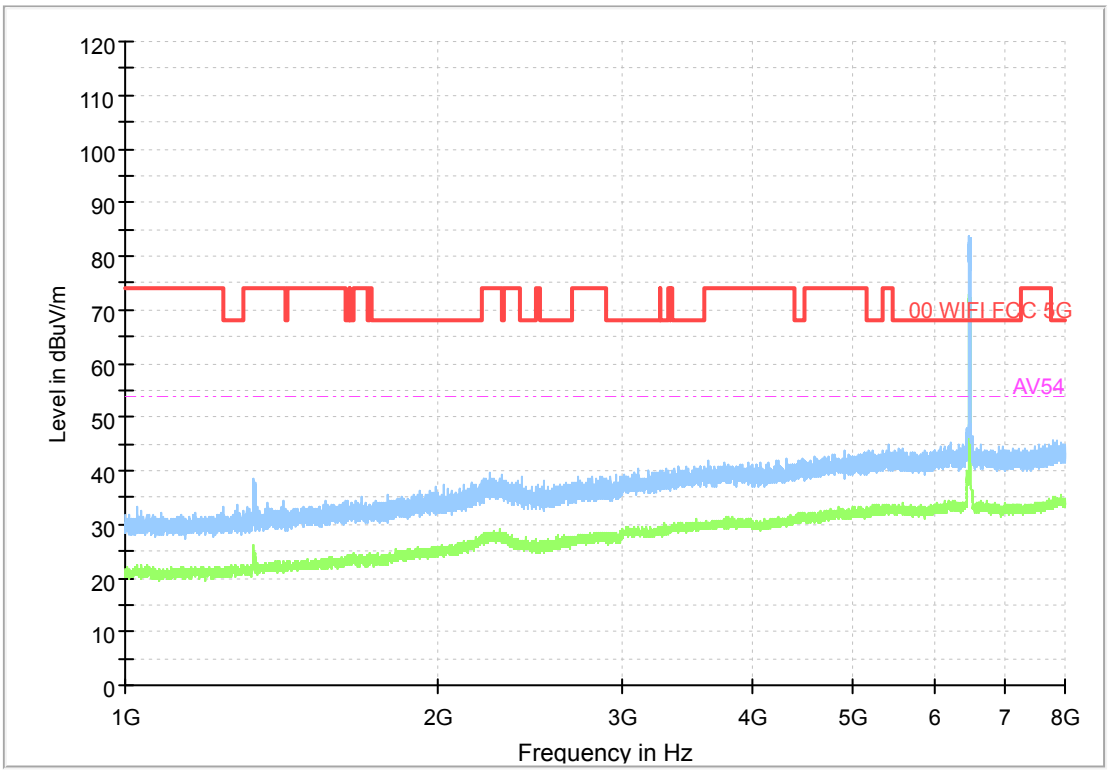
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 107	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

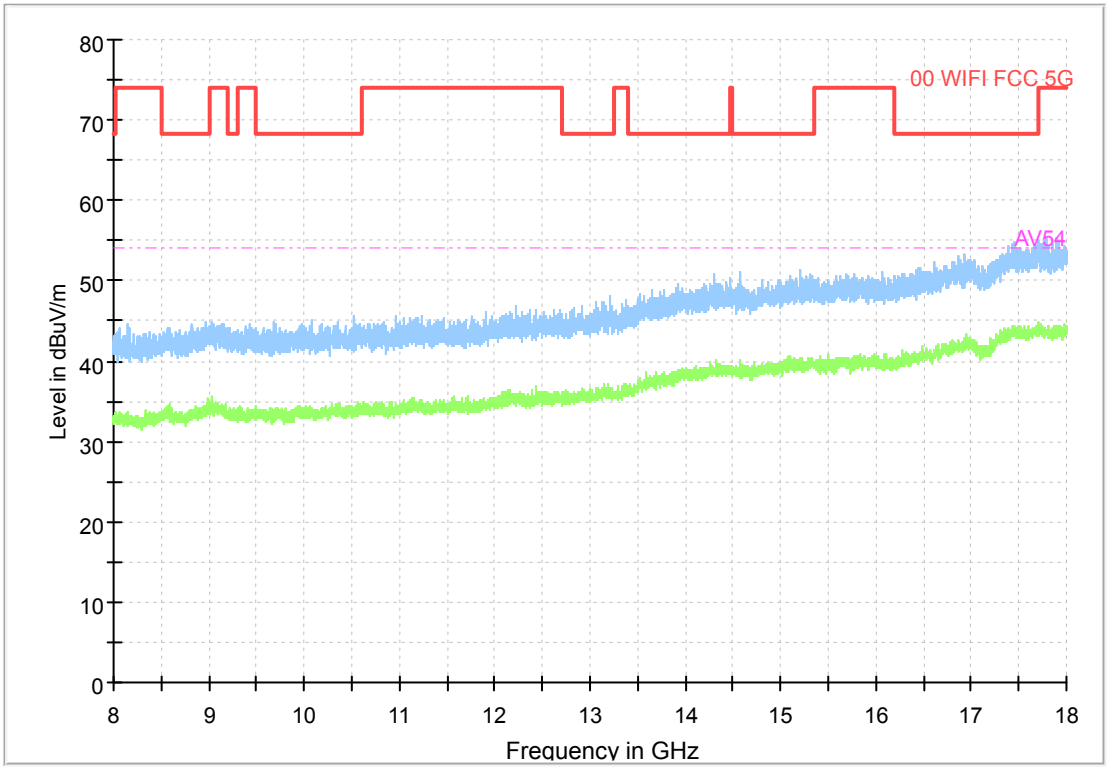
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 107	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

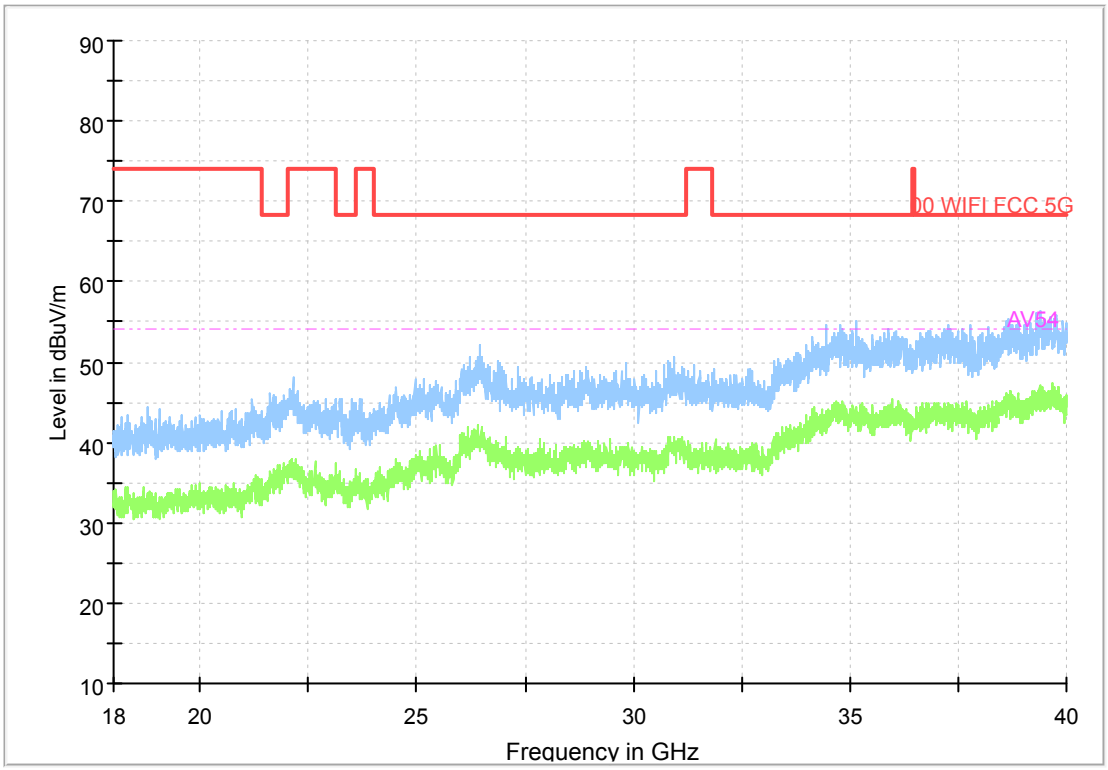
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 107	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

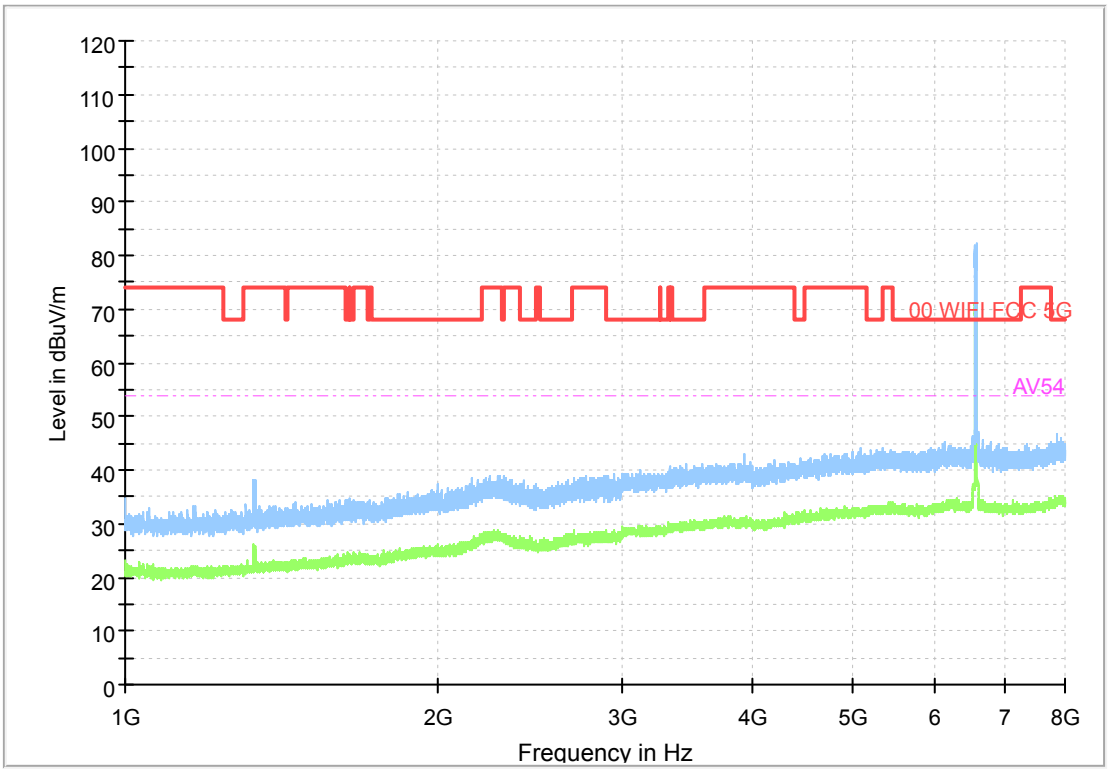
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 123	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

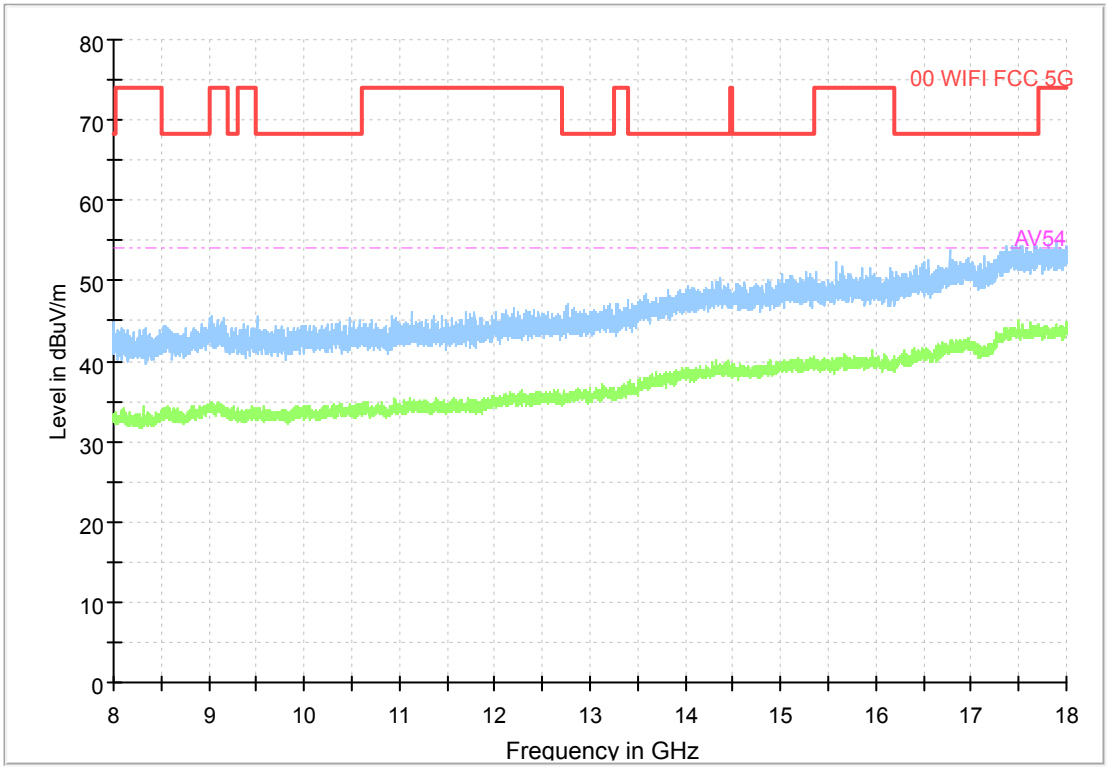
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 123	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

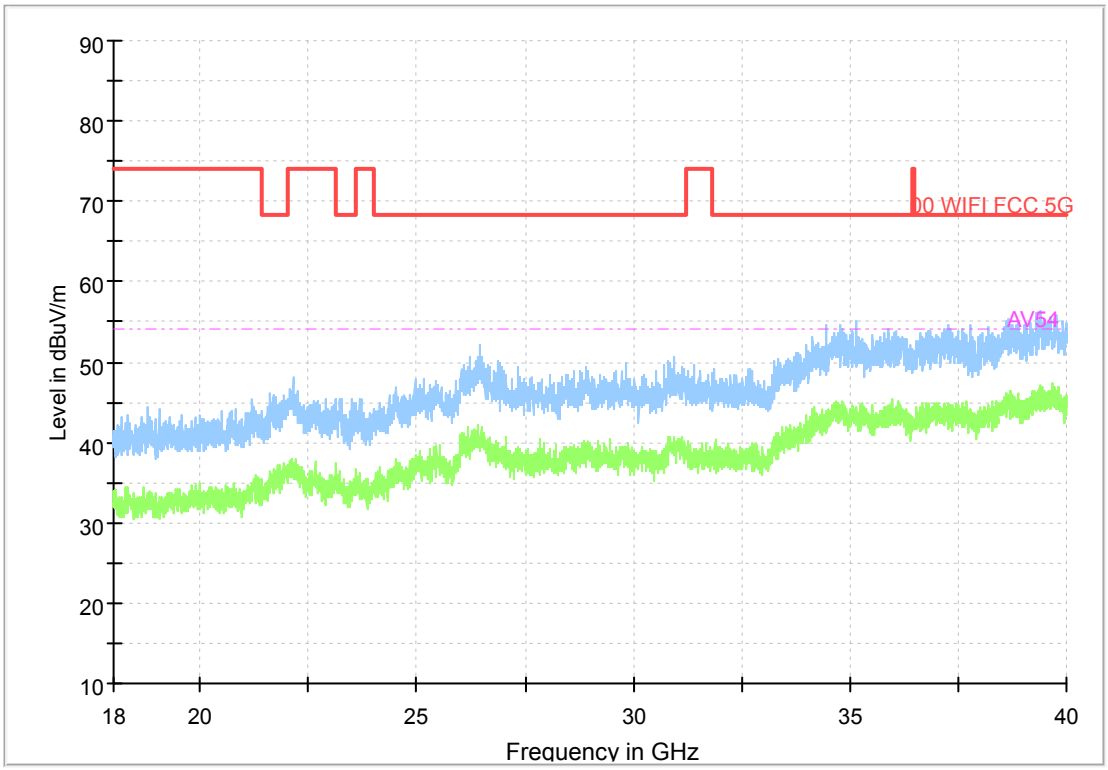
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 123	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

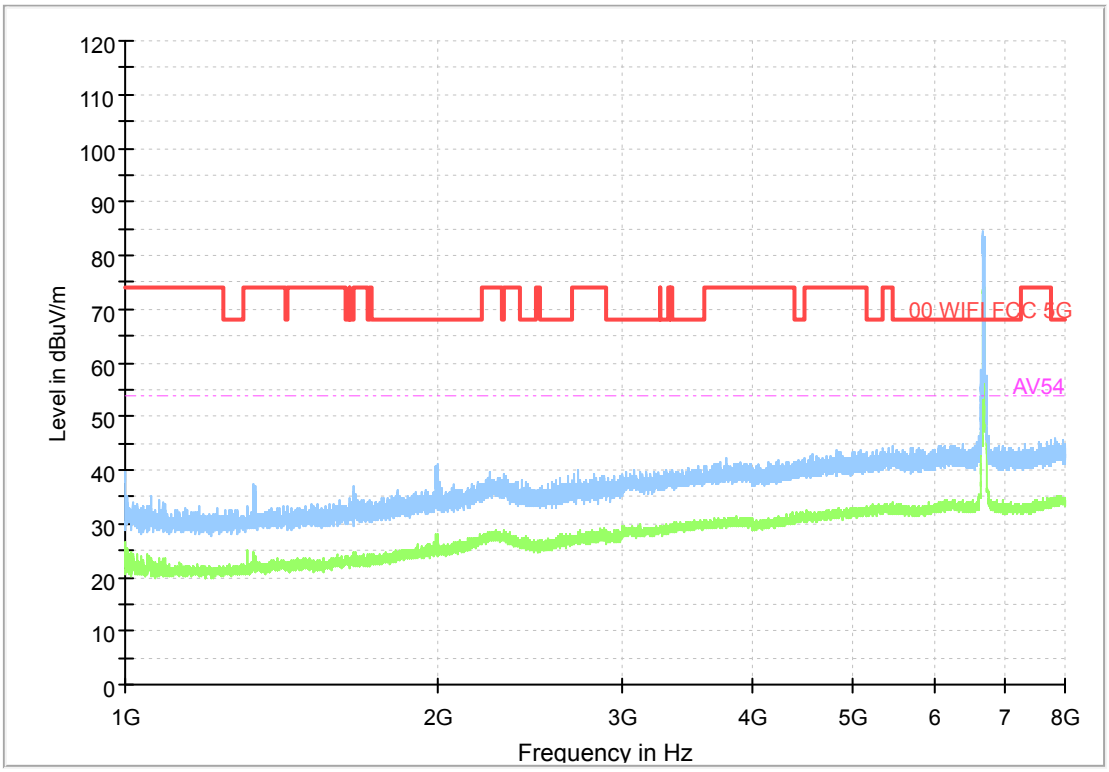
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 147	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

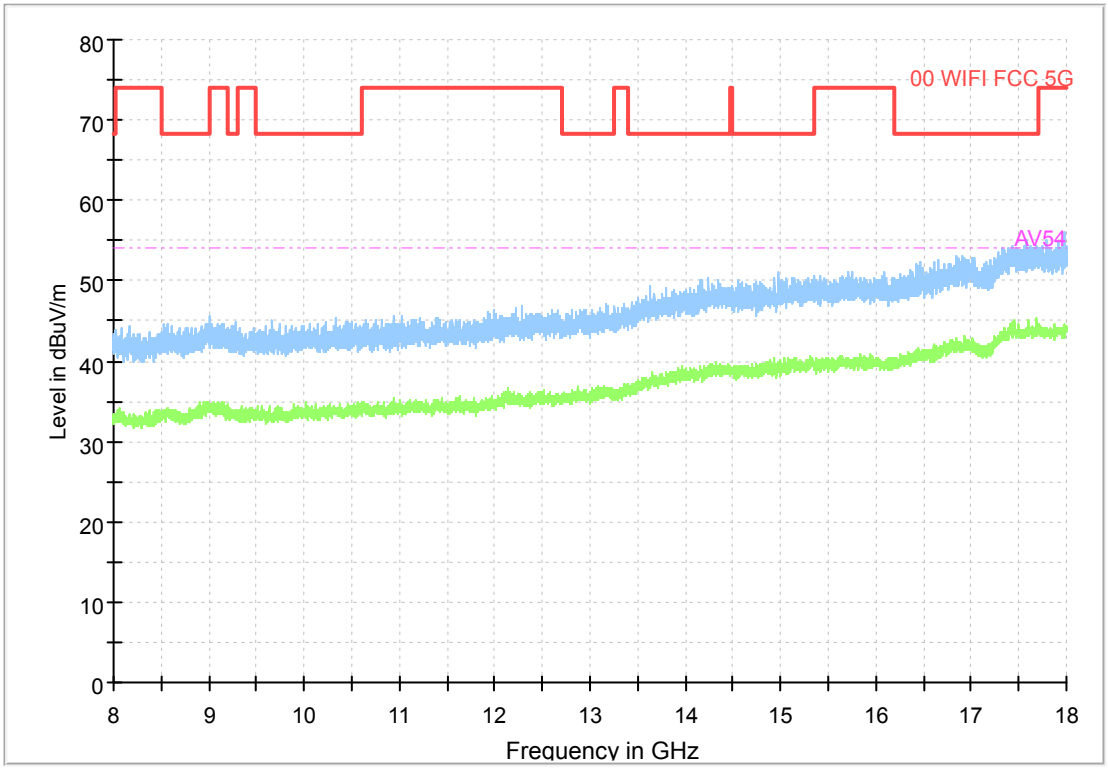
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 147	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

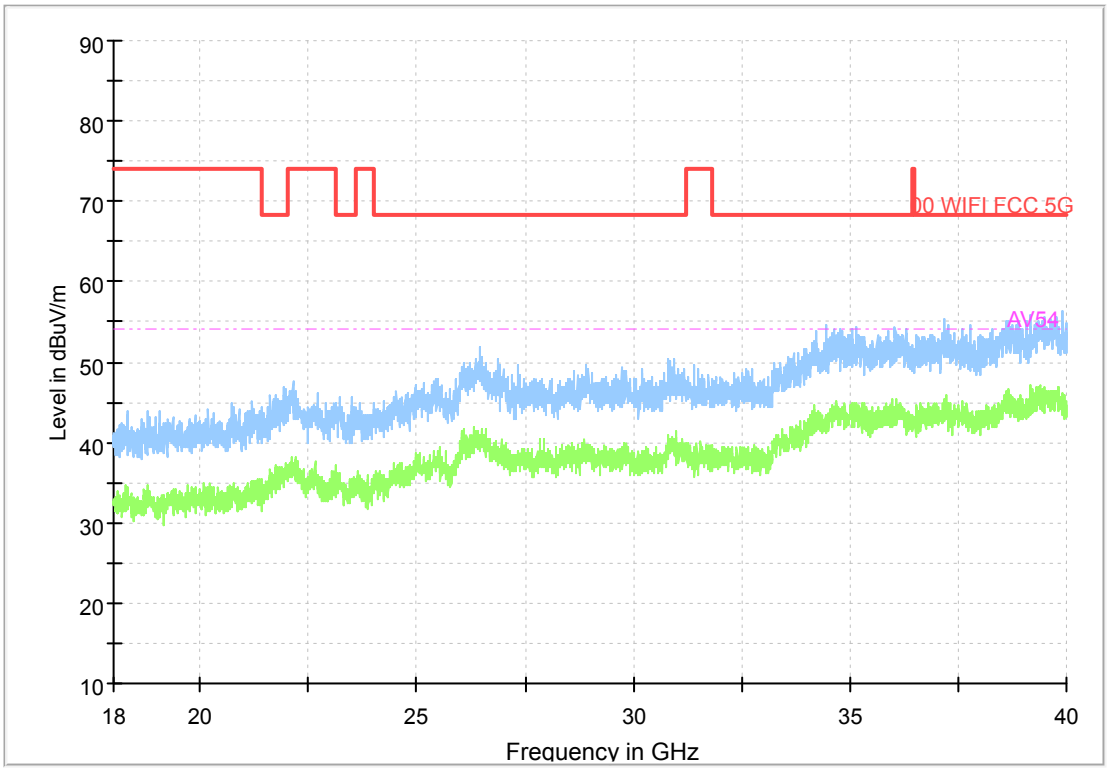
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 147	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

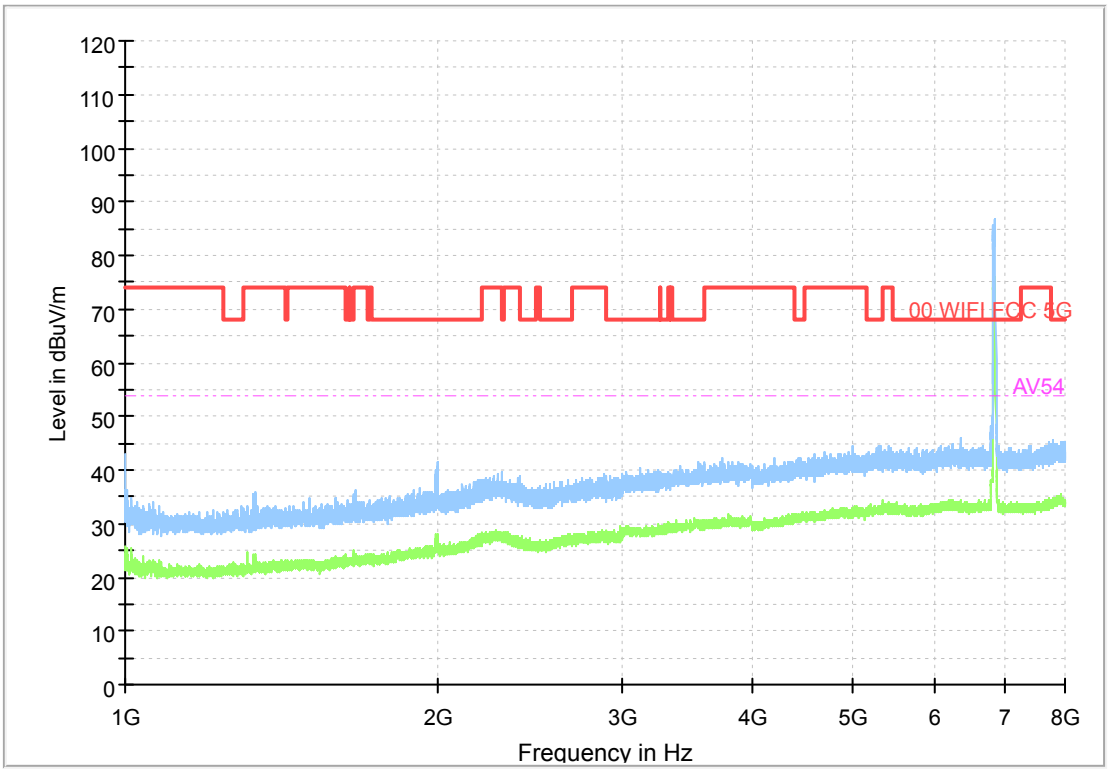
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 179	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

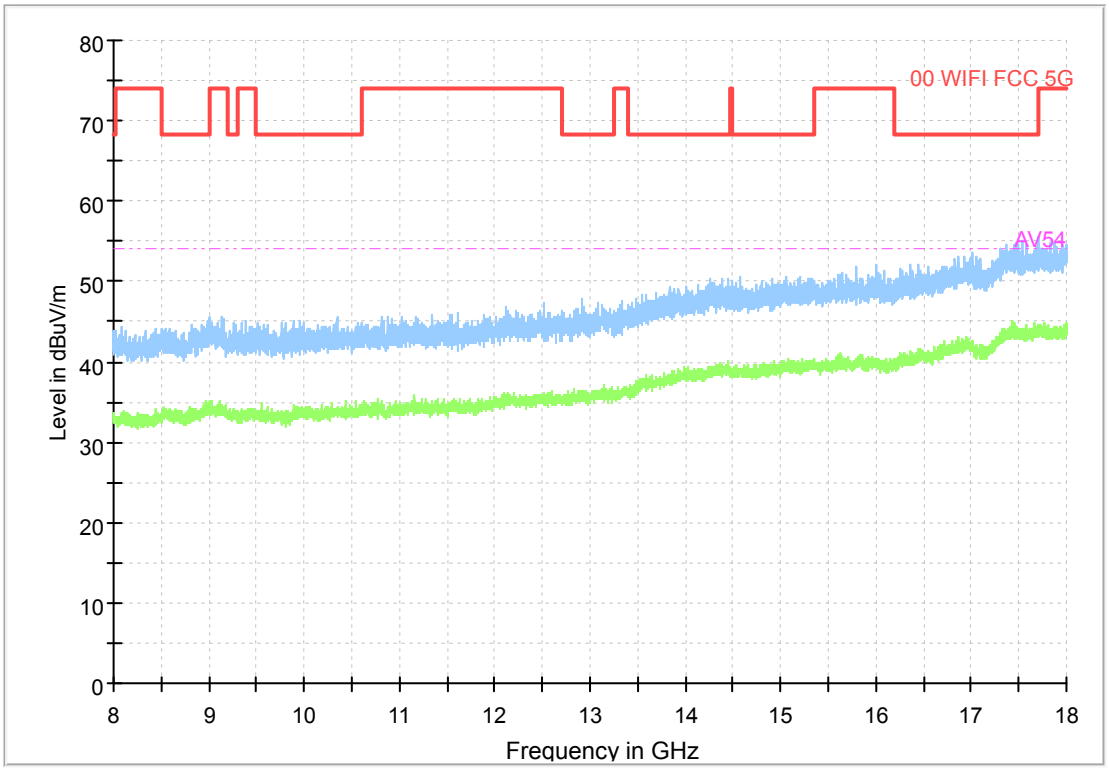
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 179	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

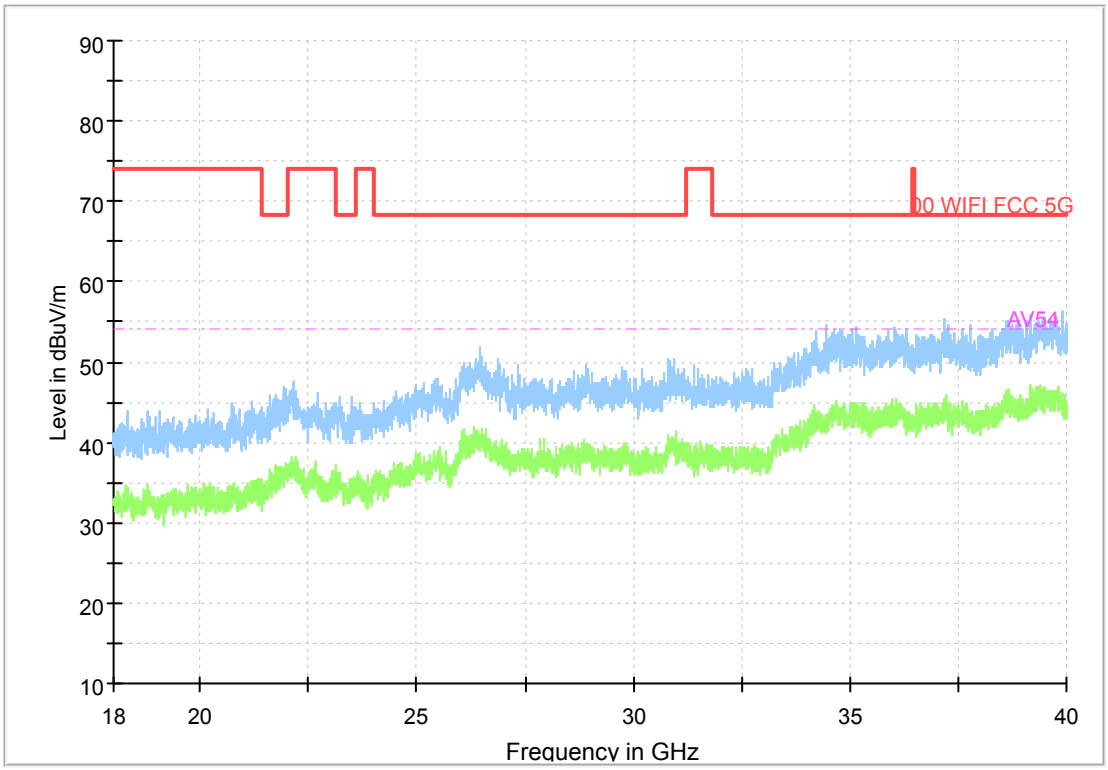
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 179	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

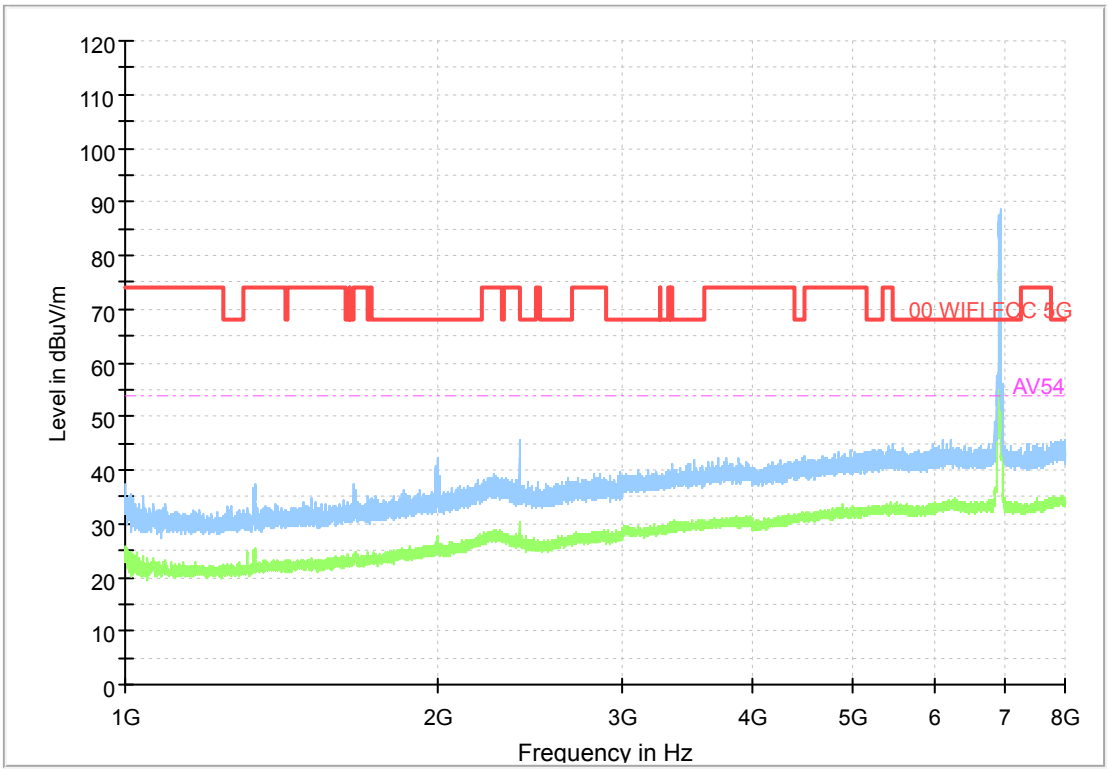
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 195	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

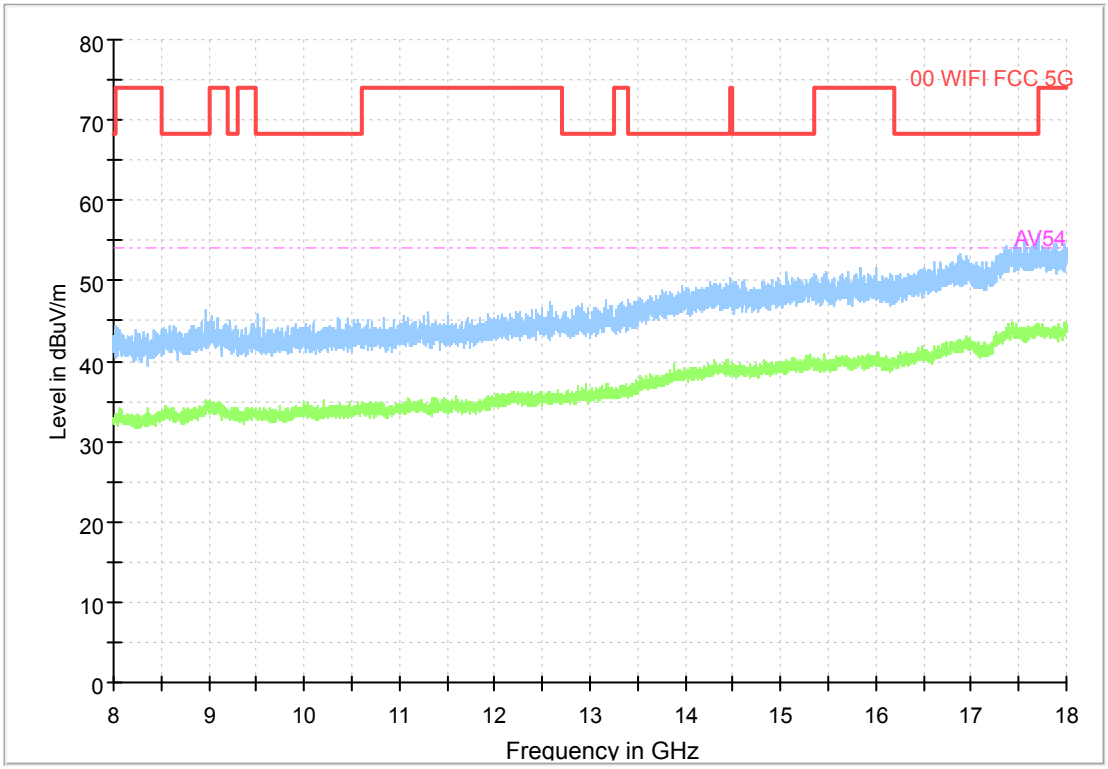
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 195	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

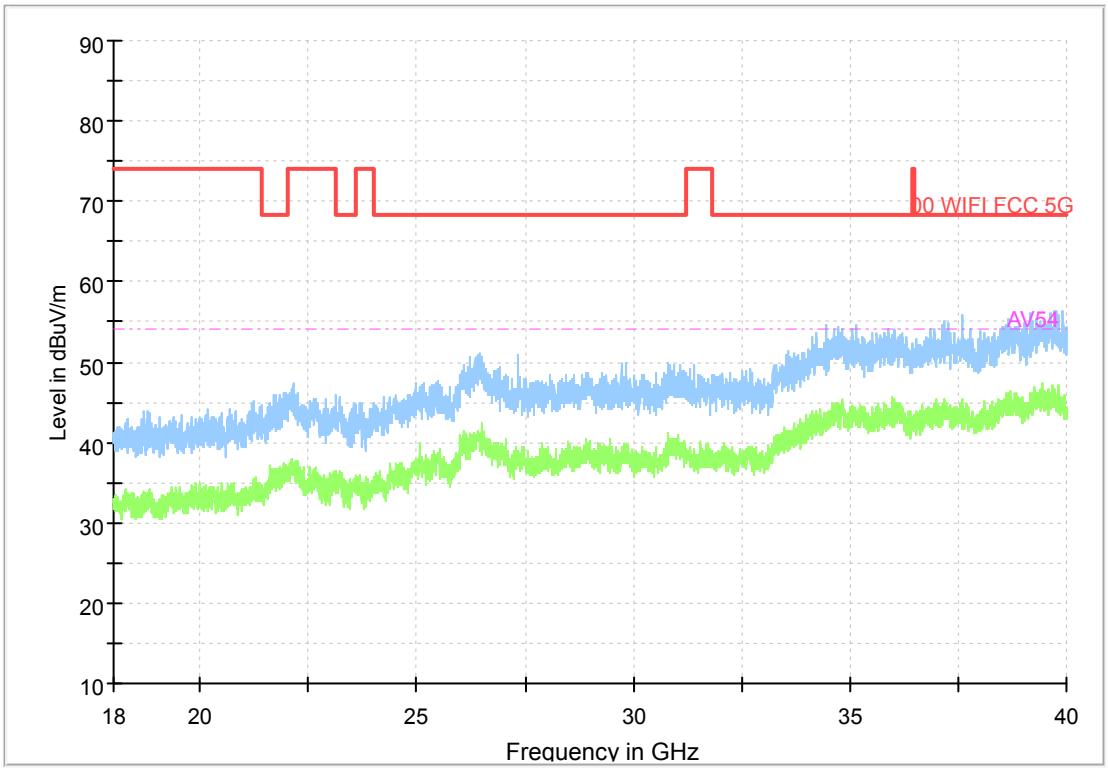
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 195	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

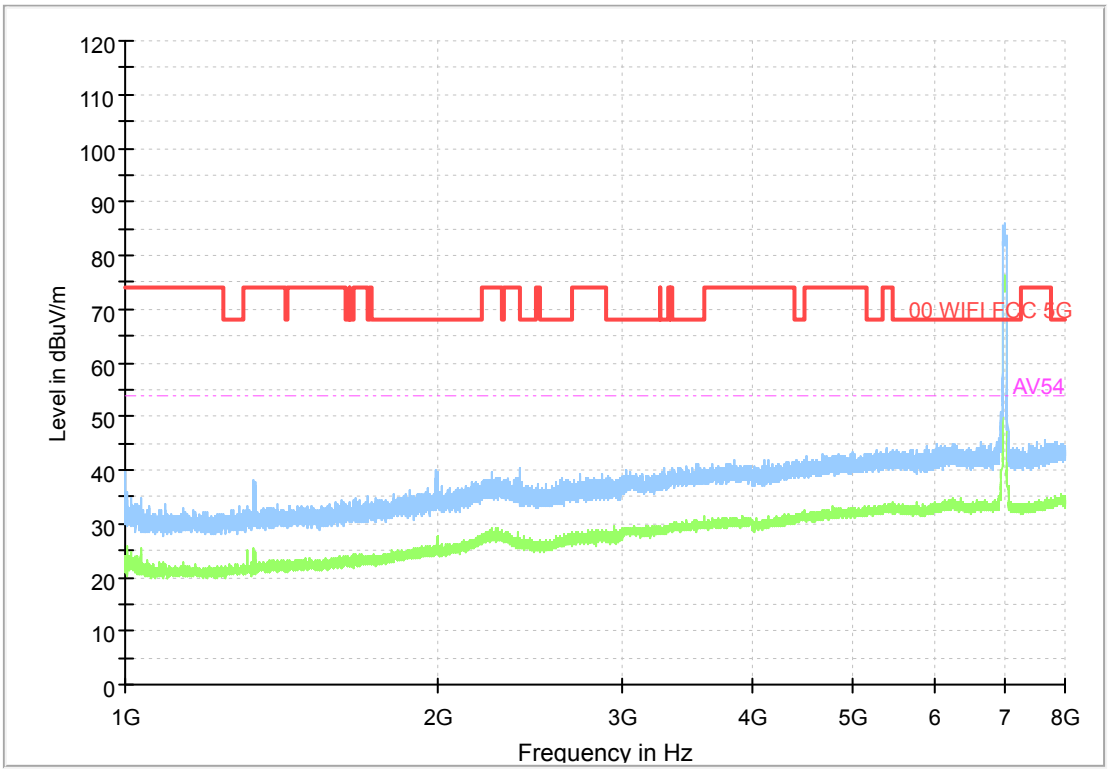
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 211	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

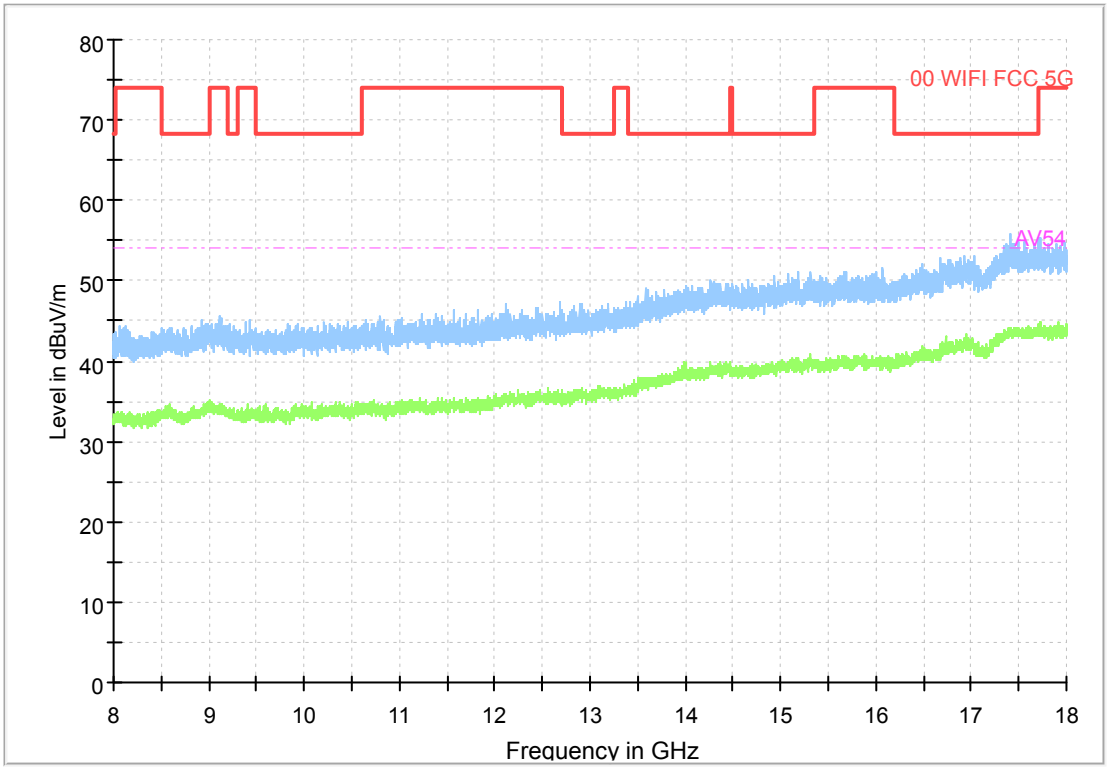
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 211	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

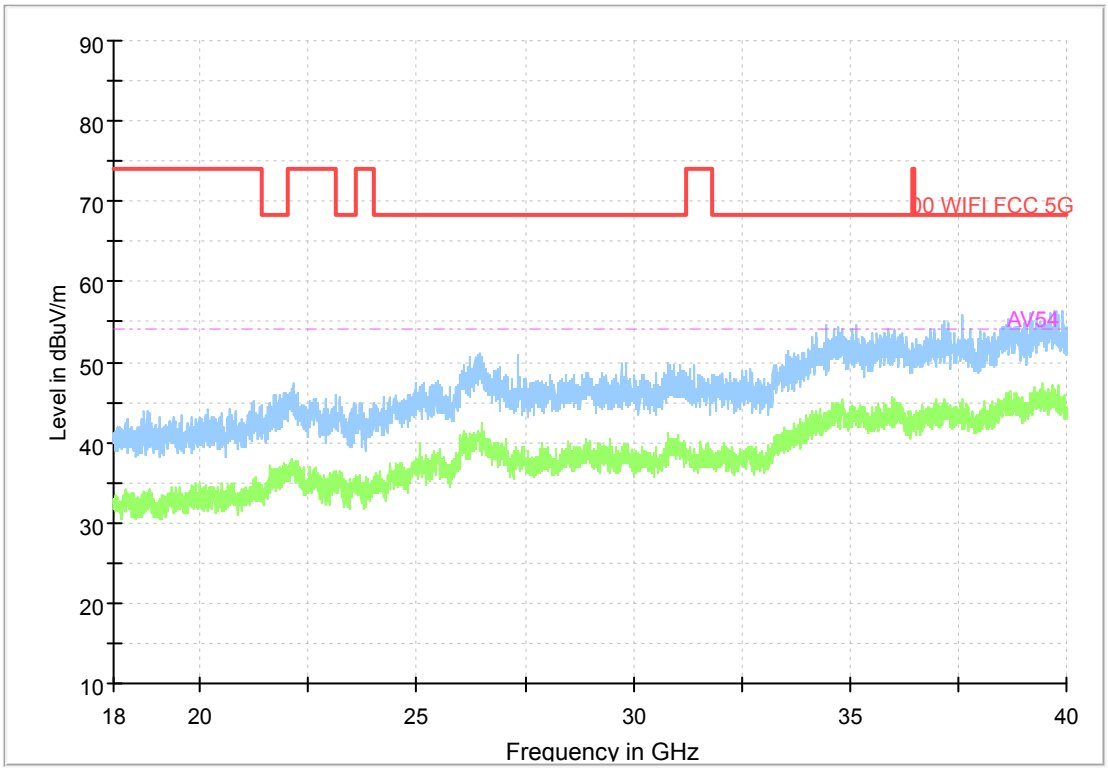
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 211	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

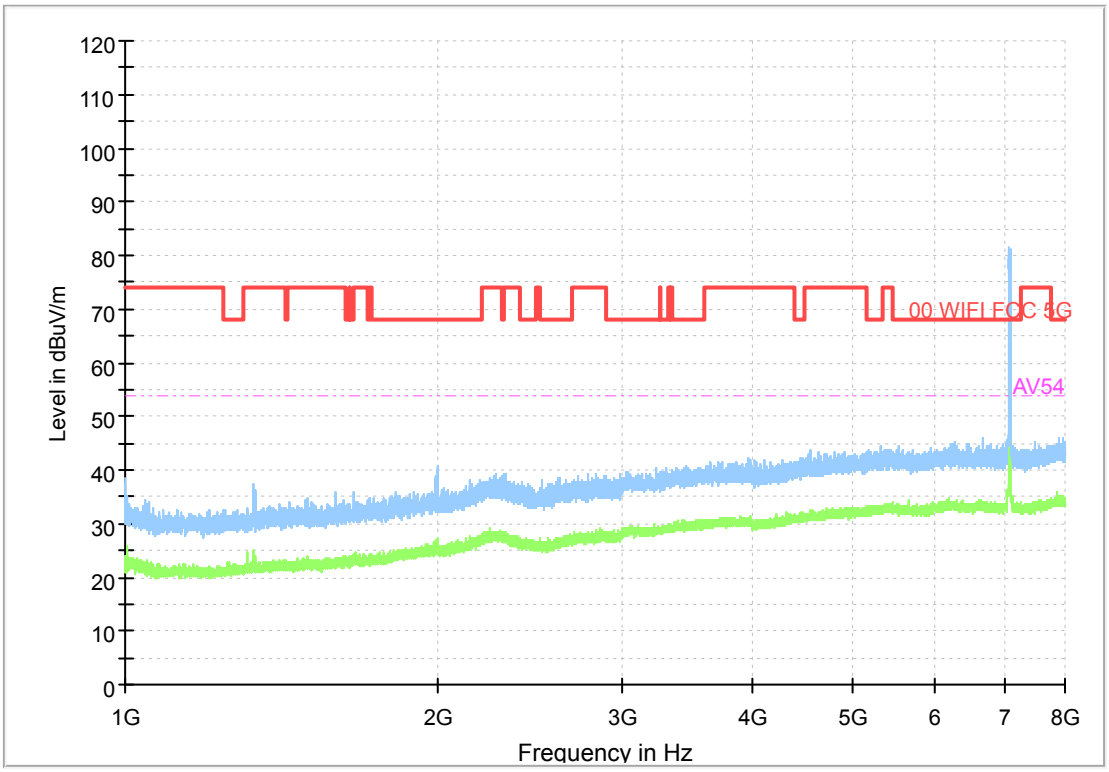
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 227	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

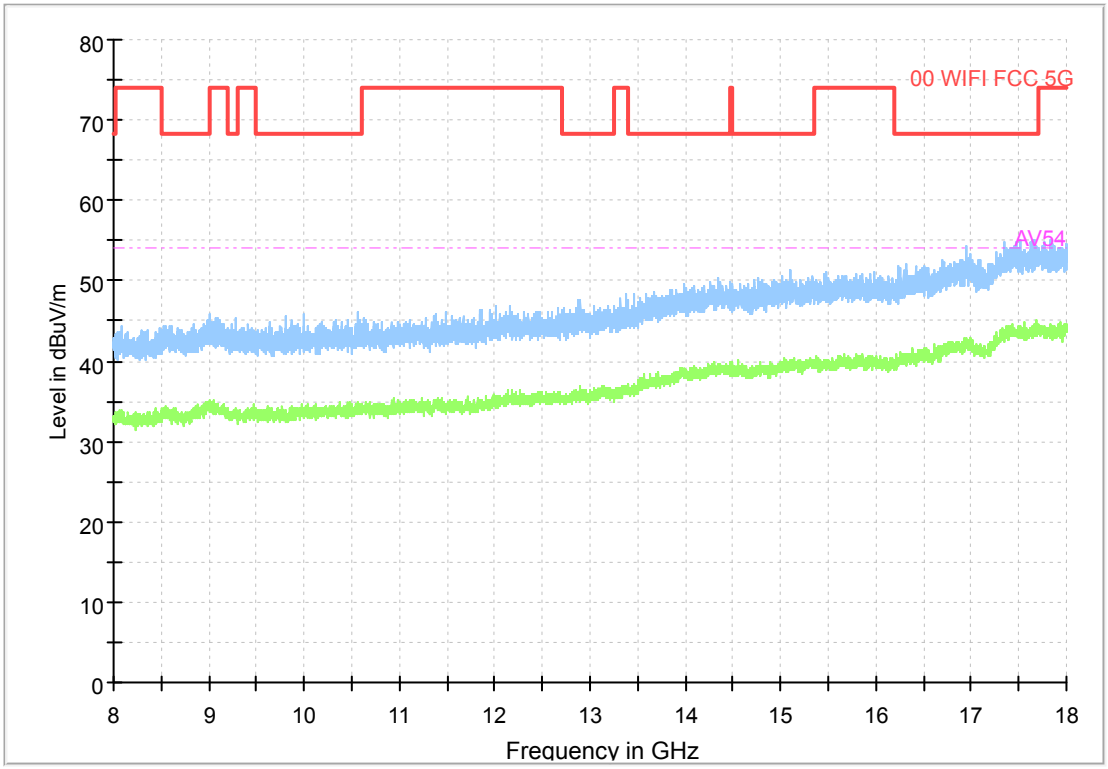
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 227	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

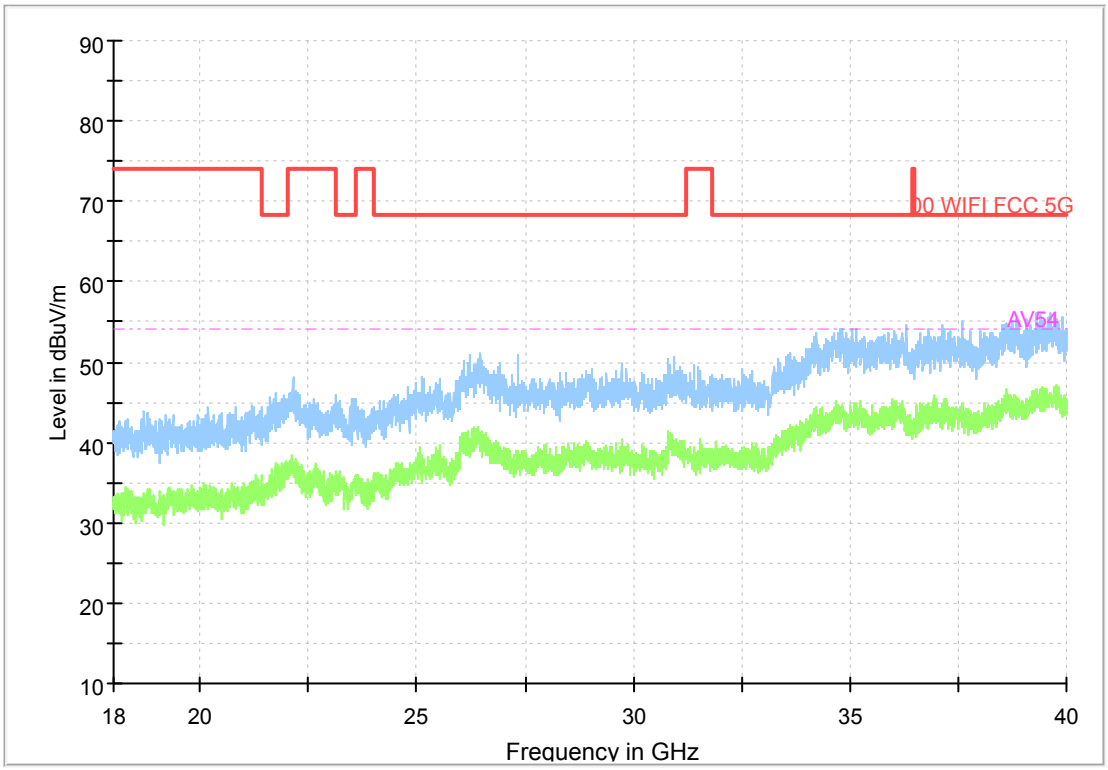
Full Spectrum



802.11ax (40MHz)

CHANNEL	TX Channel 227	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

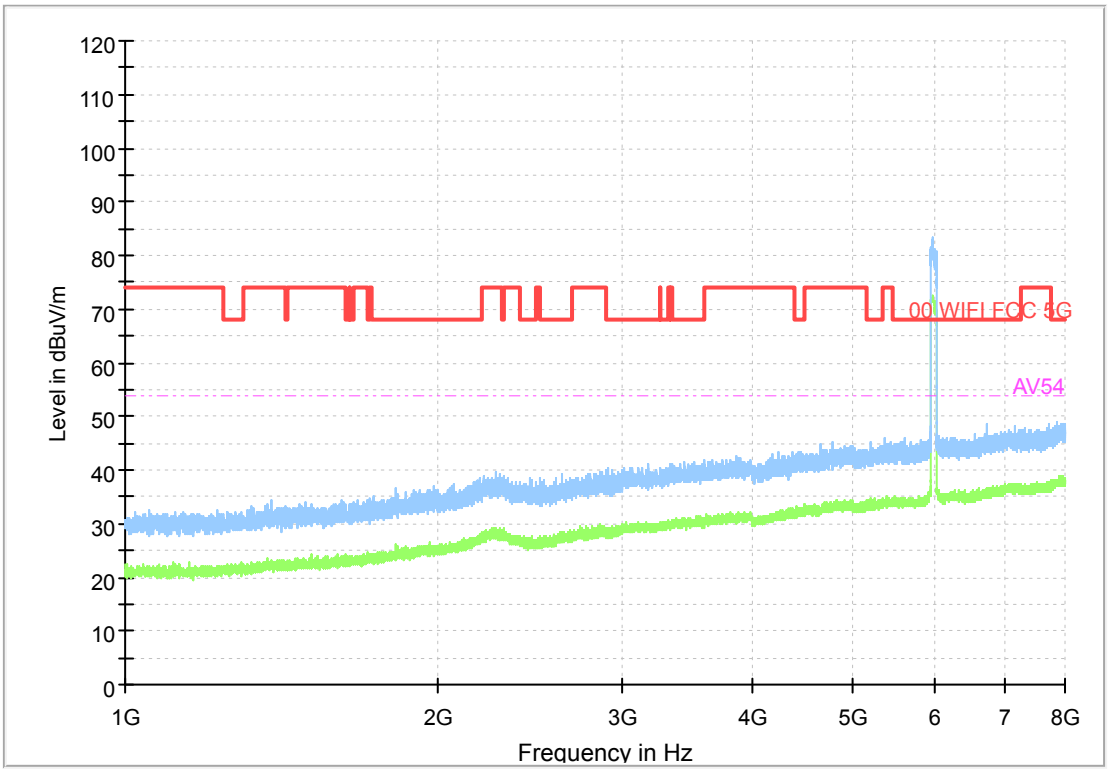
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 7	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

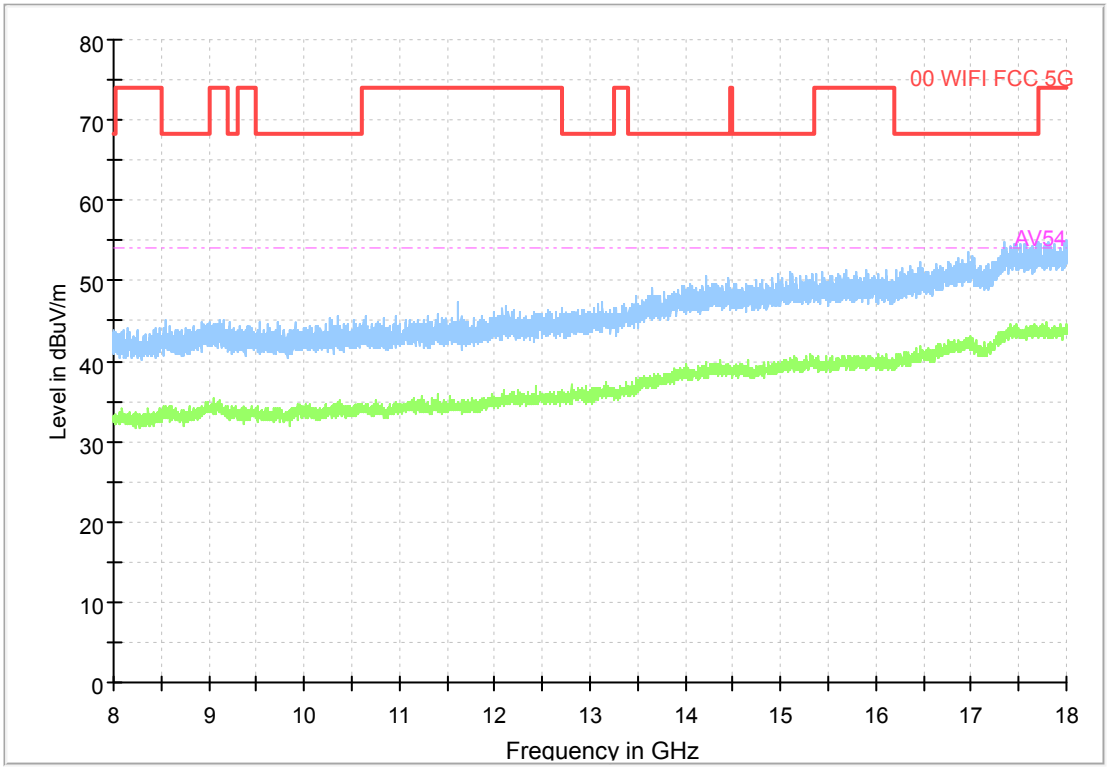
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 7	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

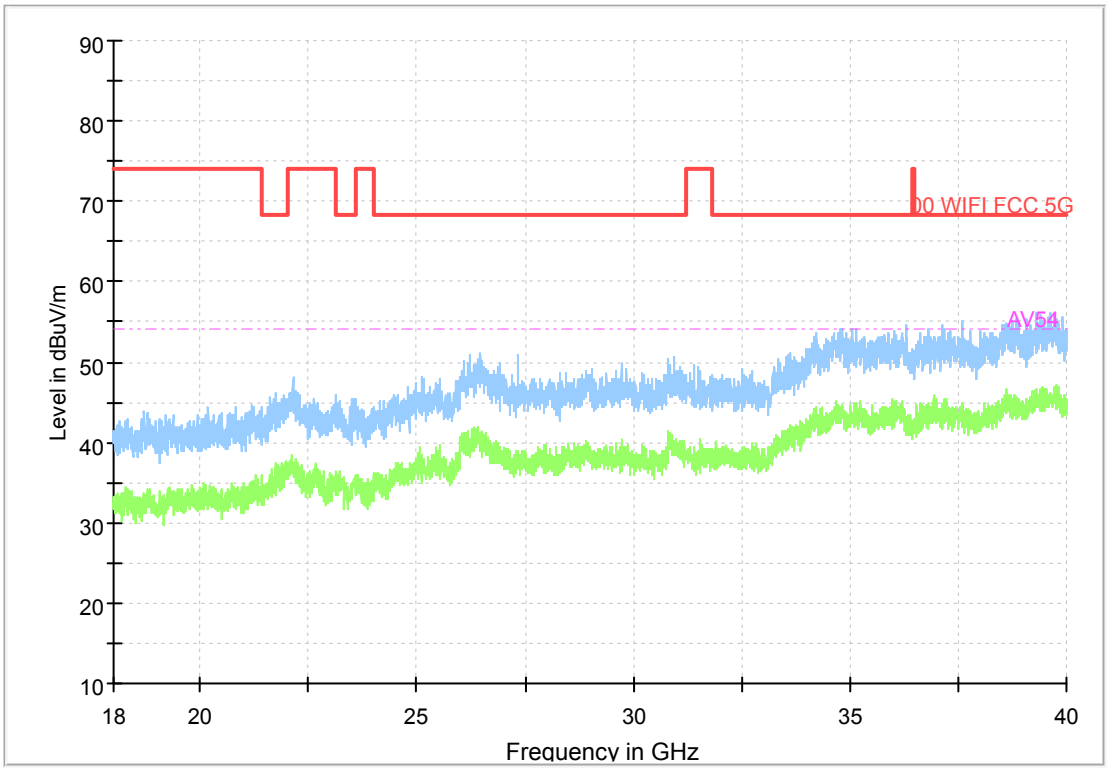
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 7	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

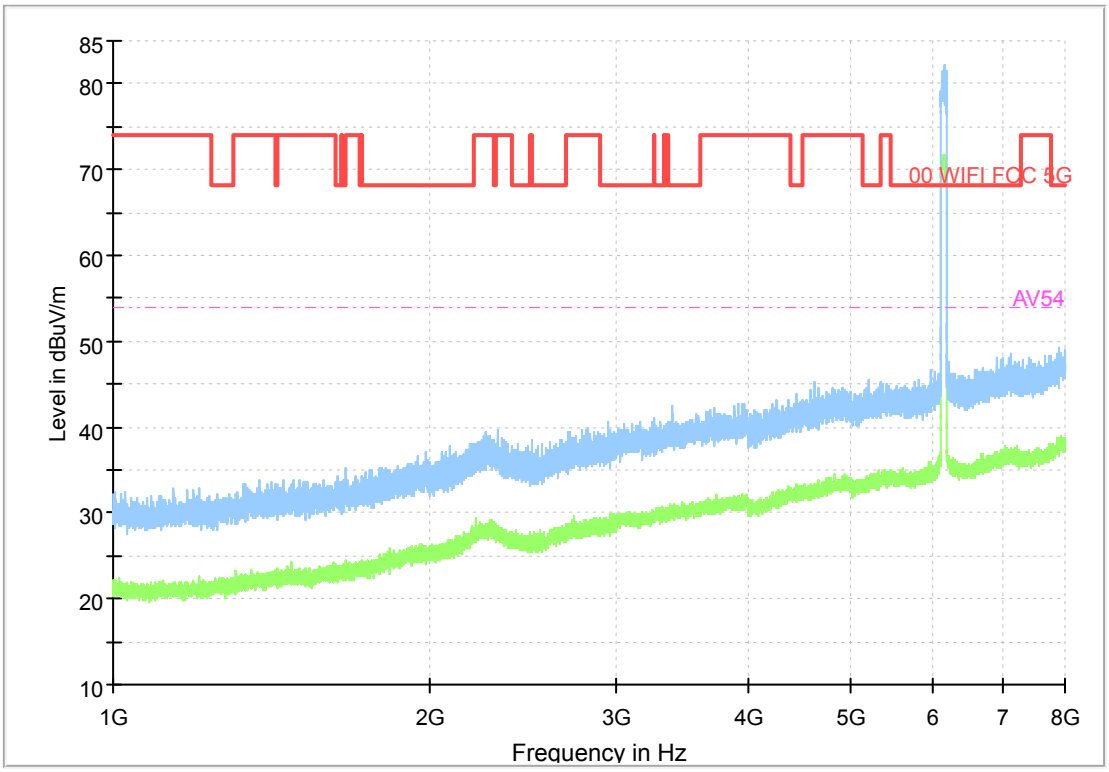
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

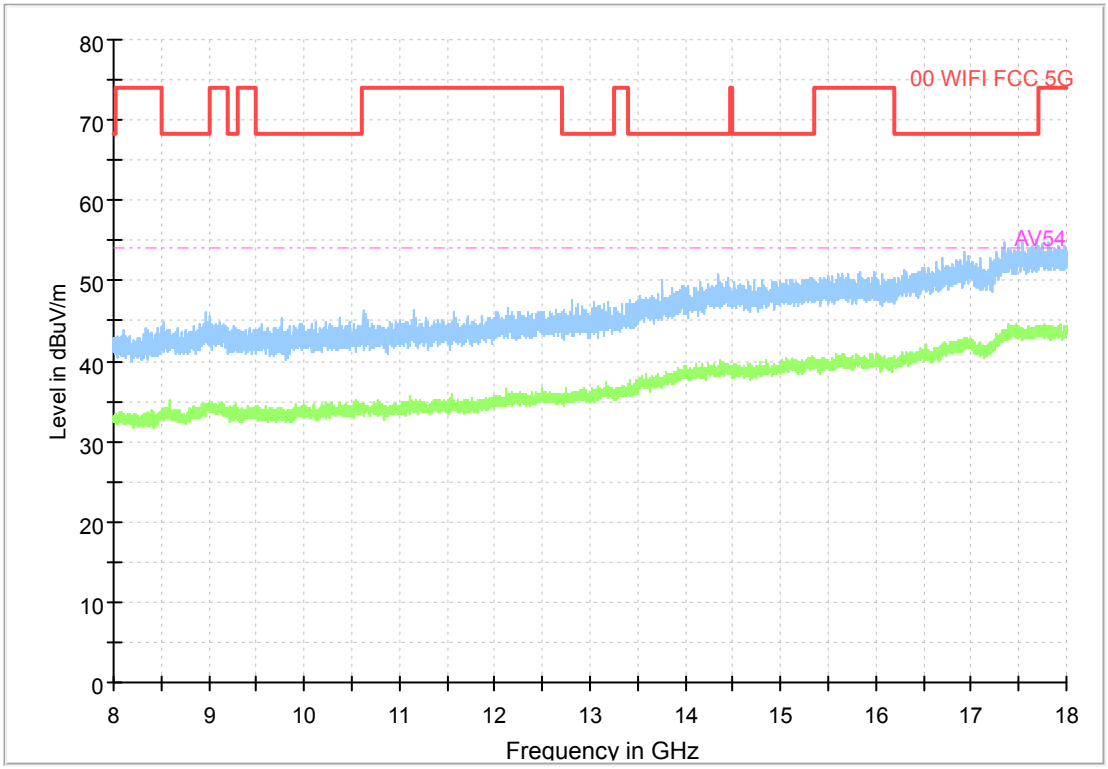
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

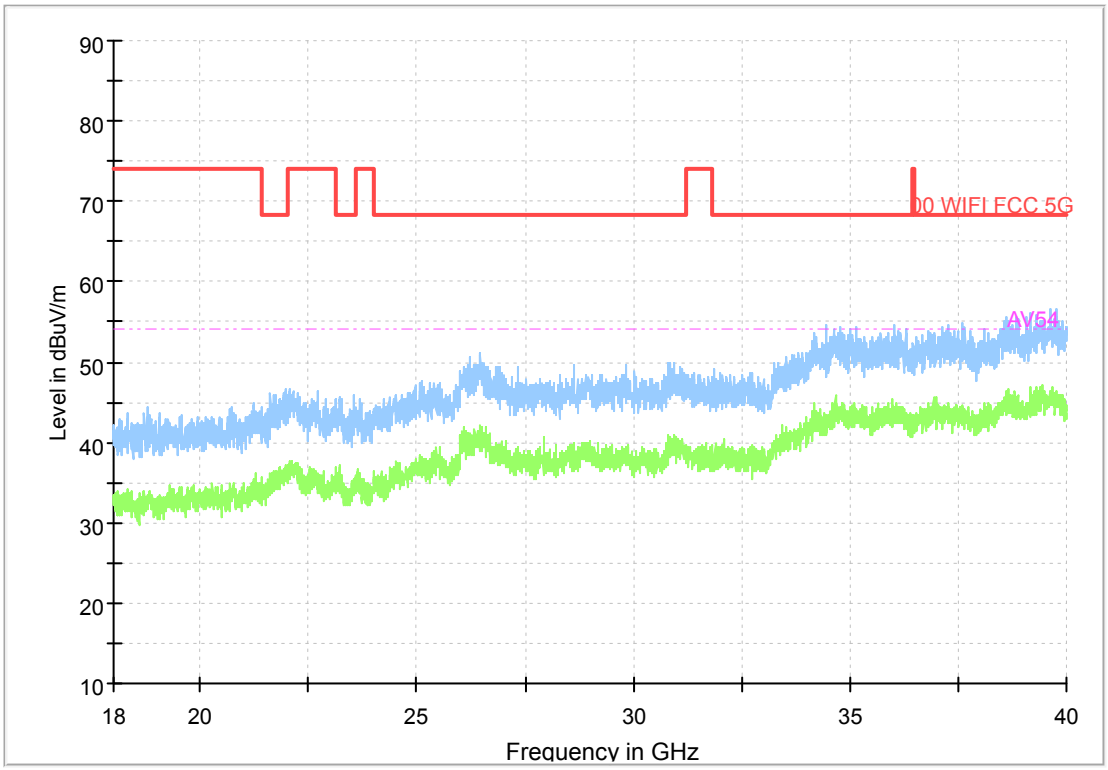
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

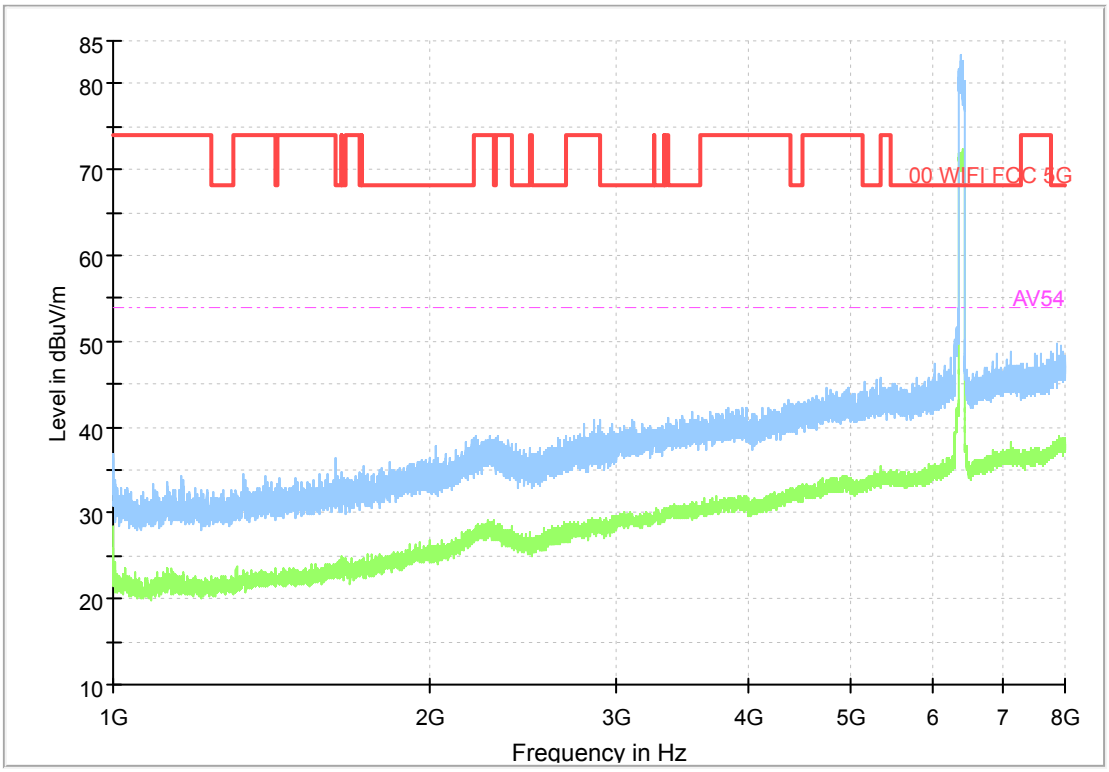
Full Spectrum



802.11ax (80MHz

CHANNEL	TX Channel 87	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

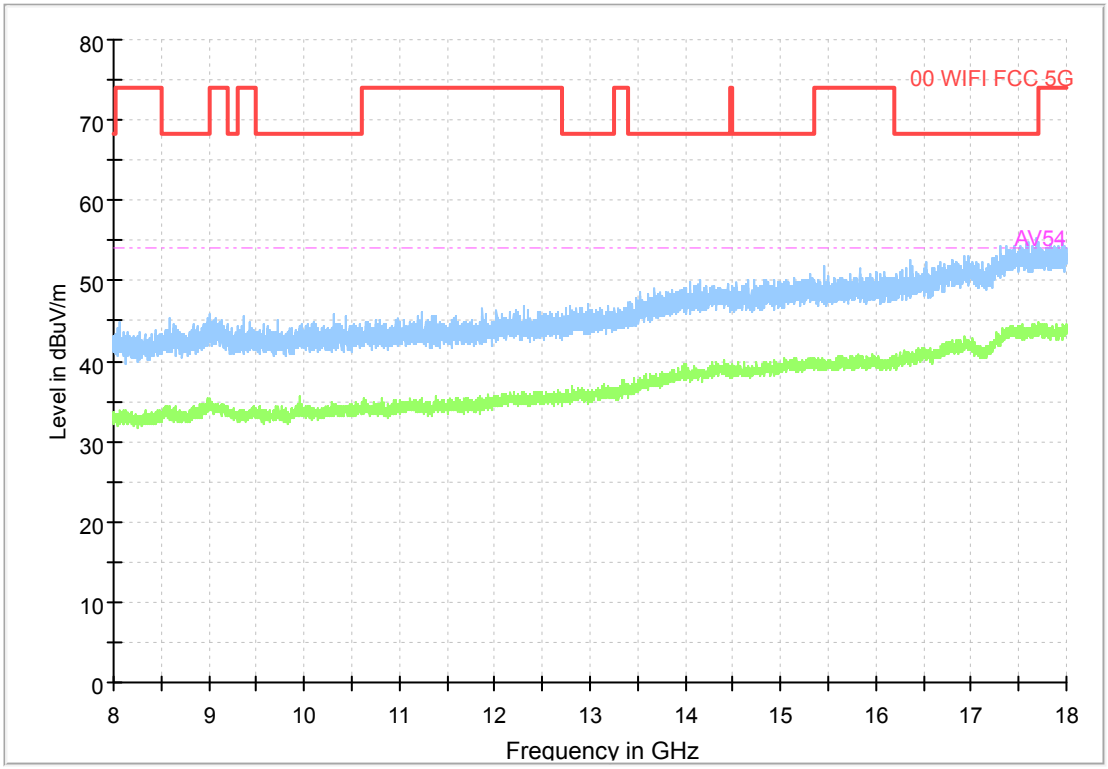
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 87	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

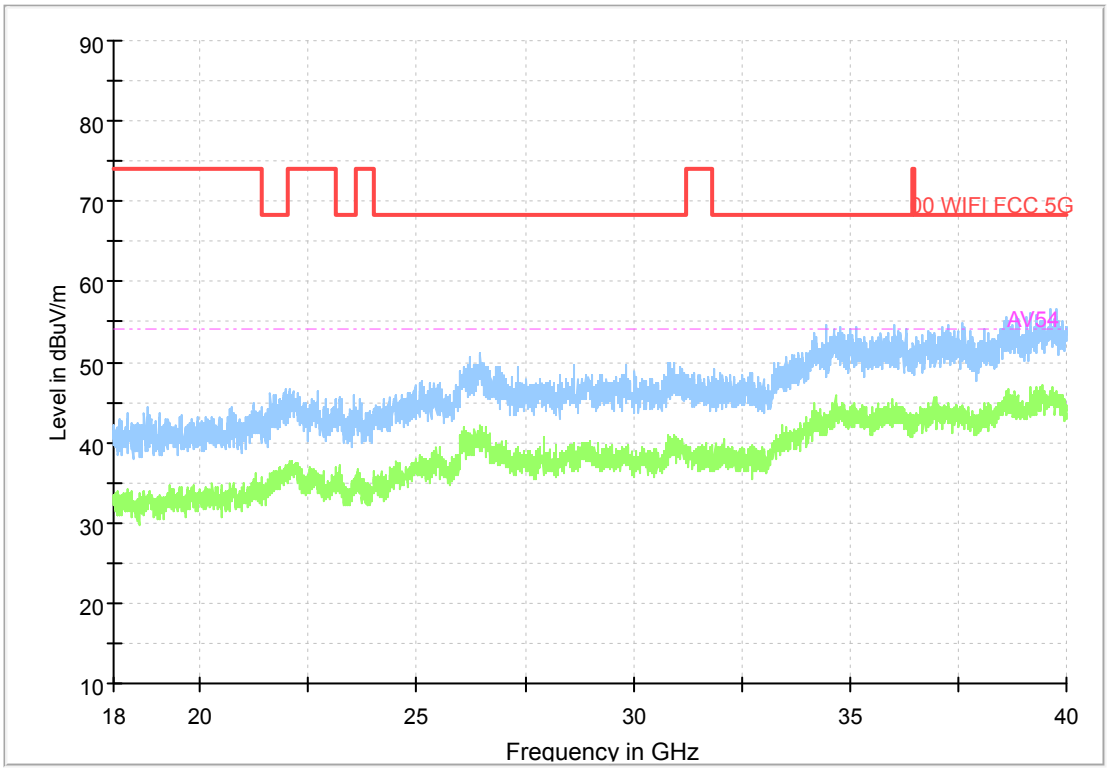
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 87	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

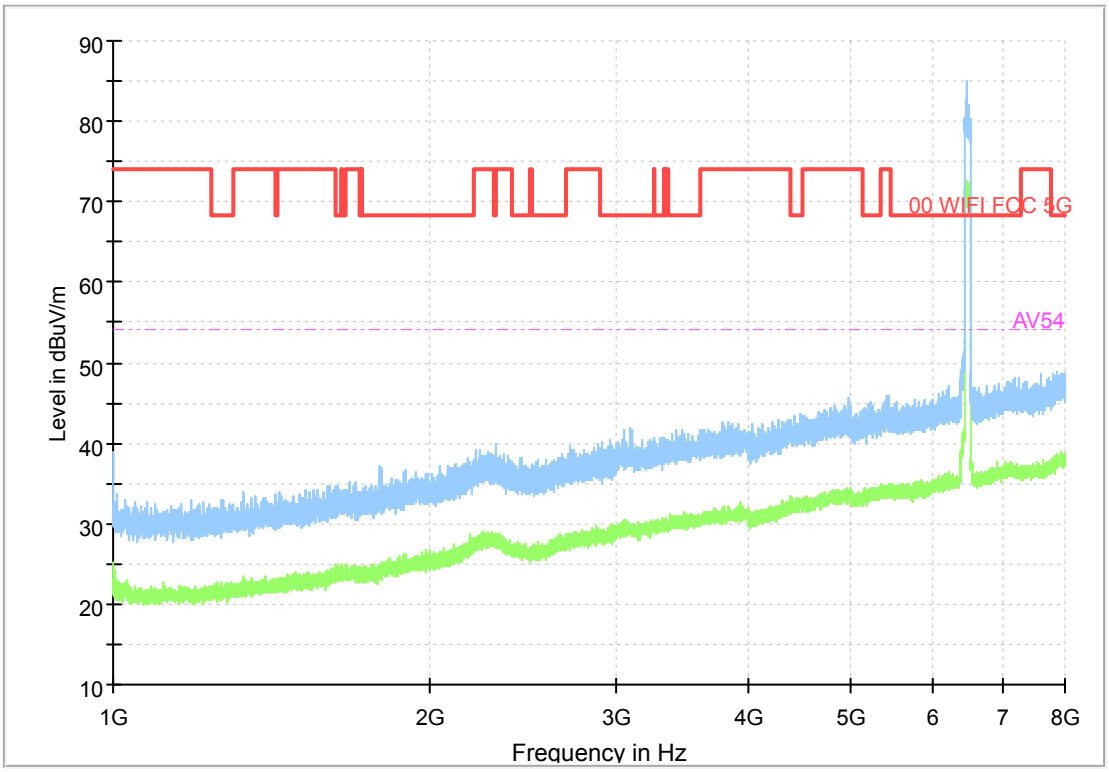
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 103	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

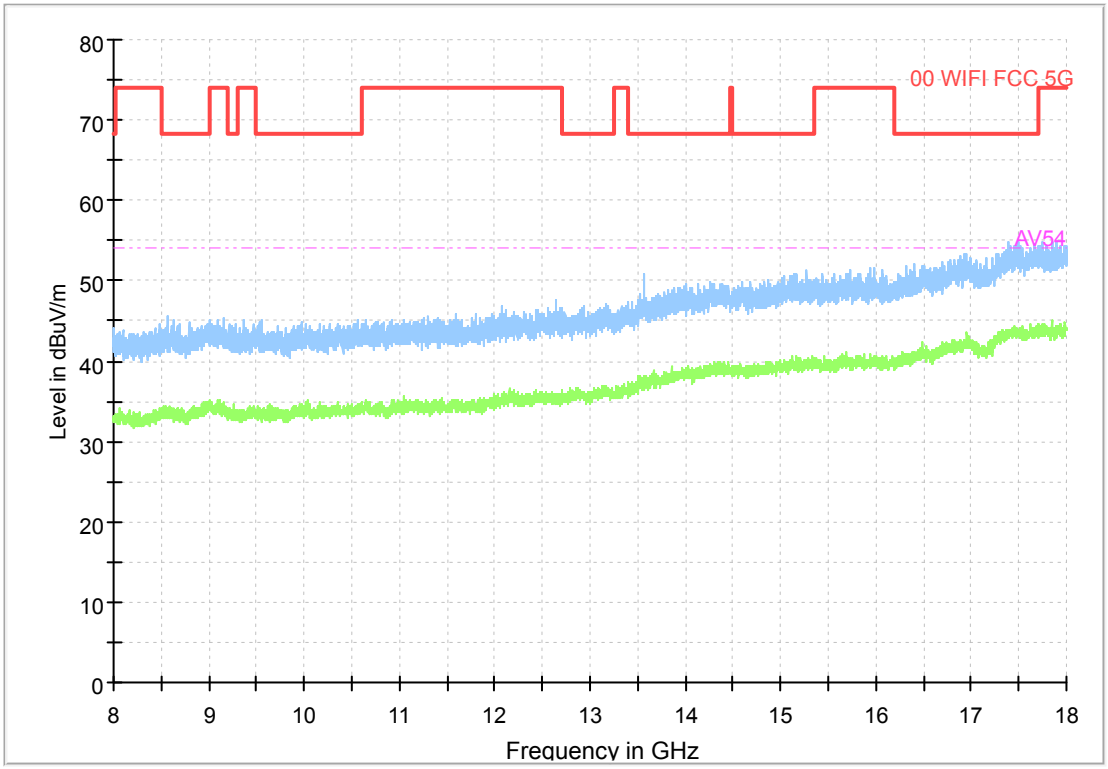
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 103	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

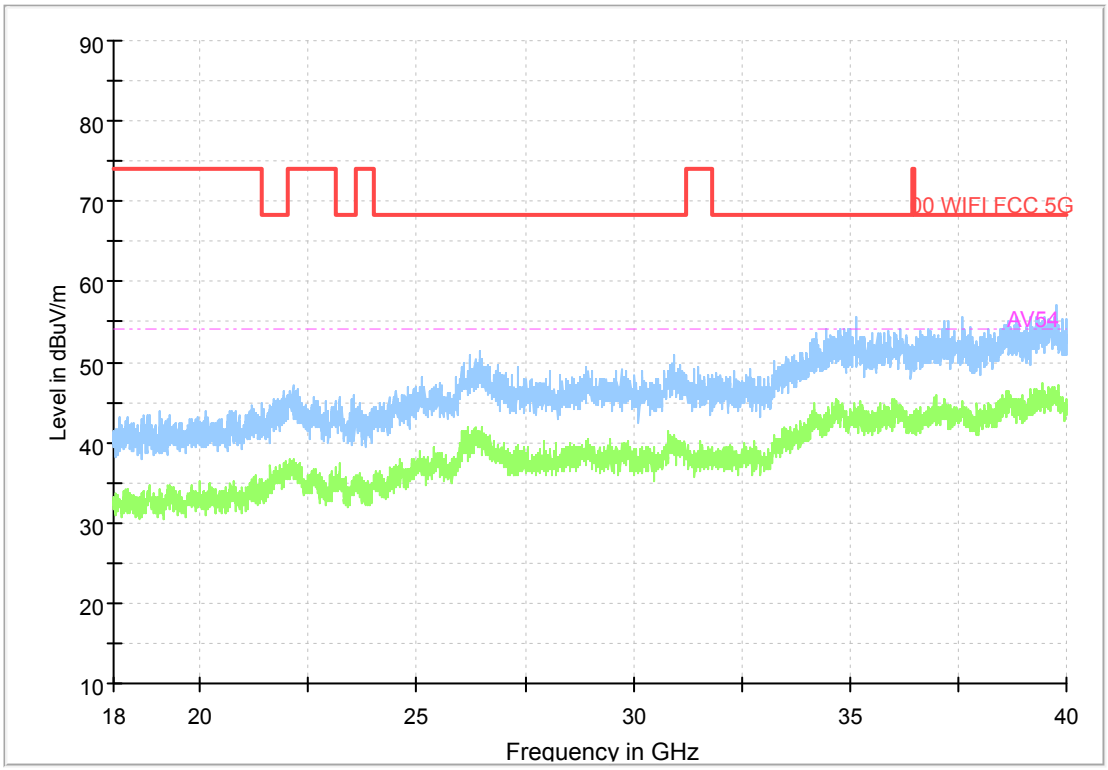
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 103	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

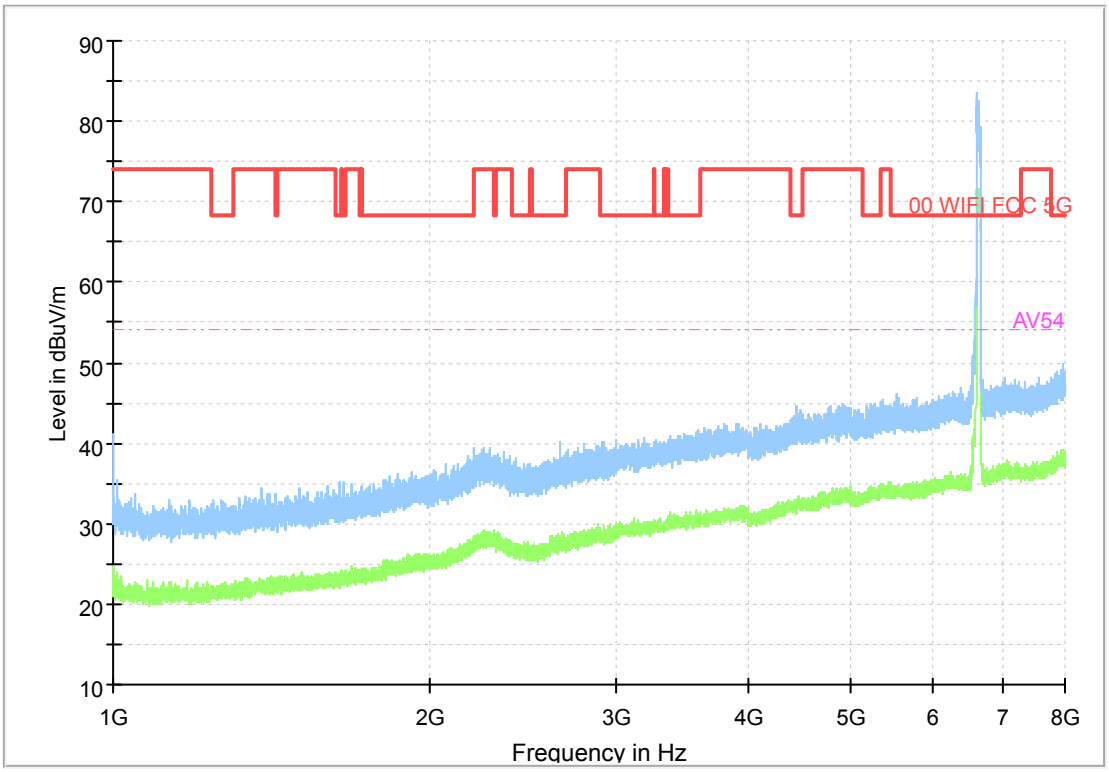
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 135	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

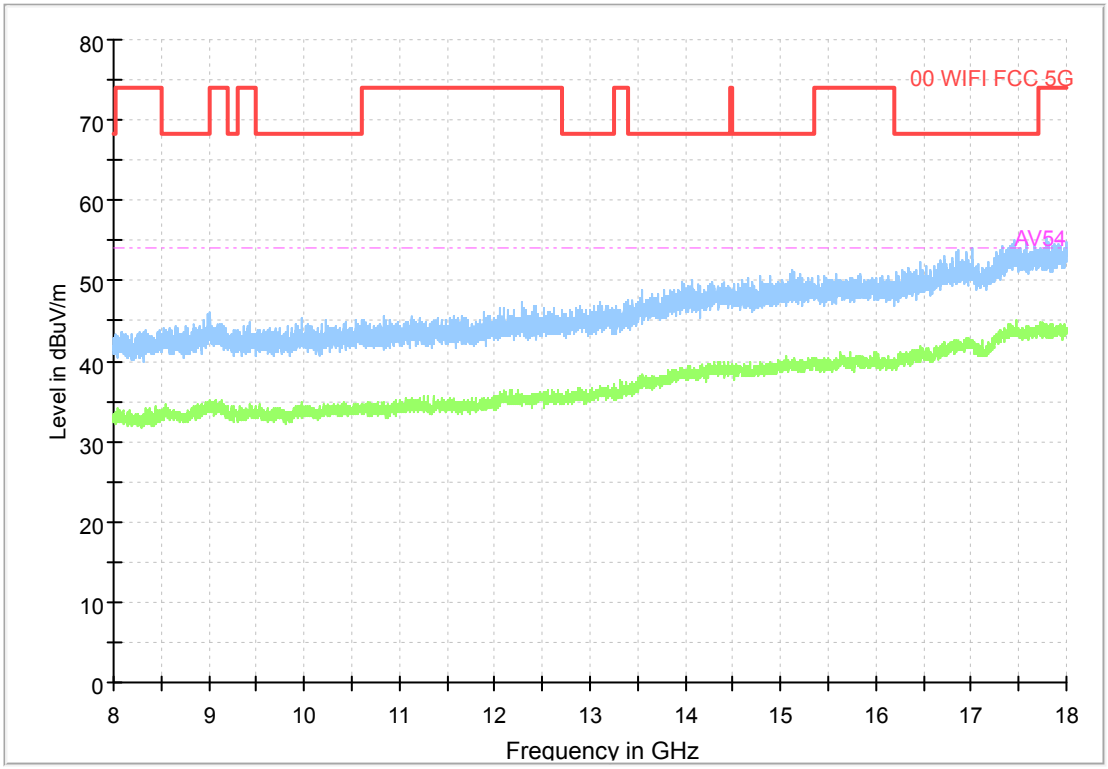
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 135	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

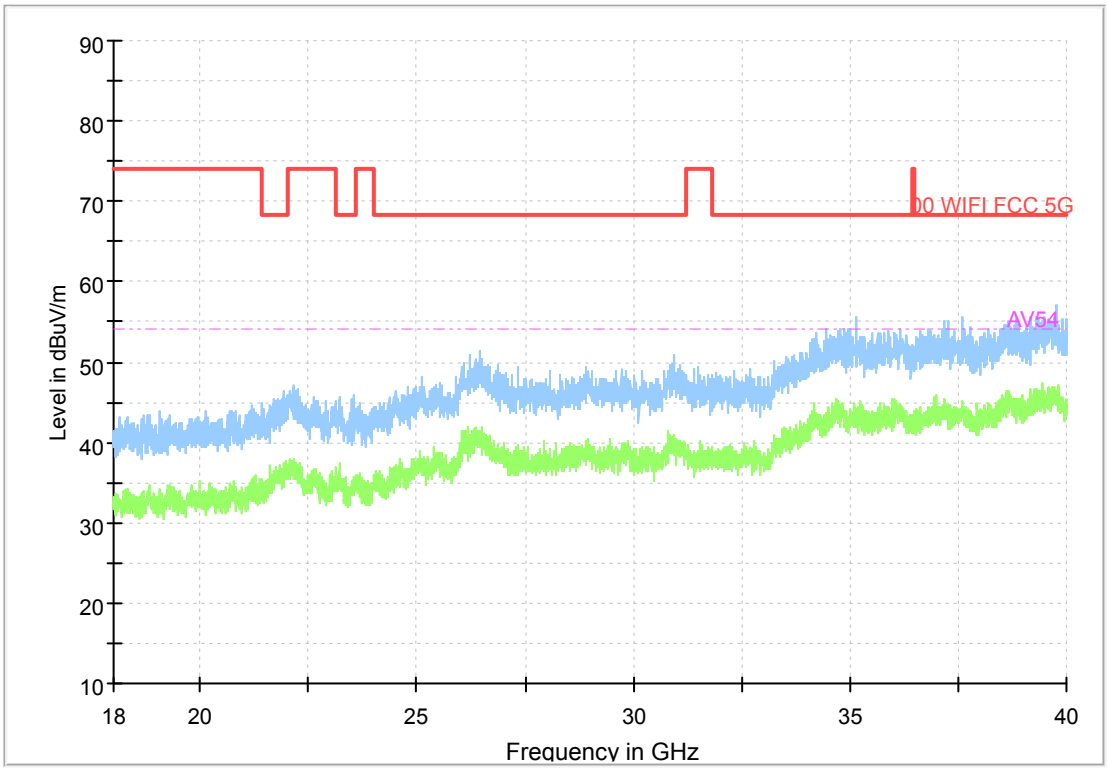
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 135	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

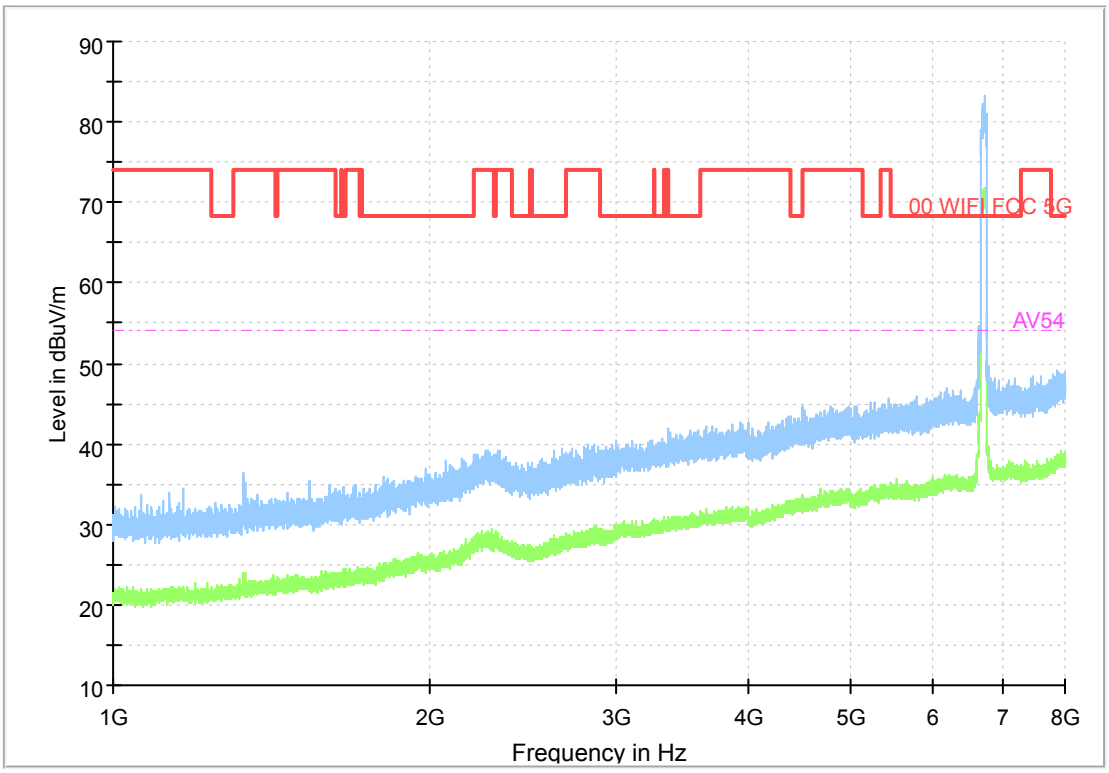
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 151	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

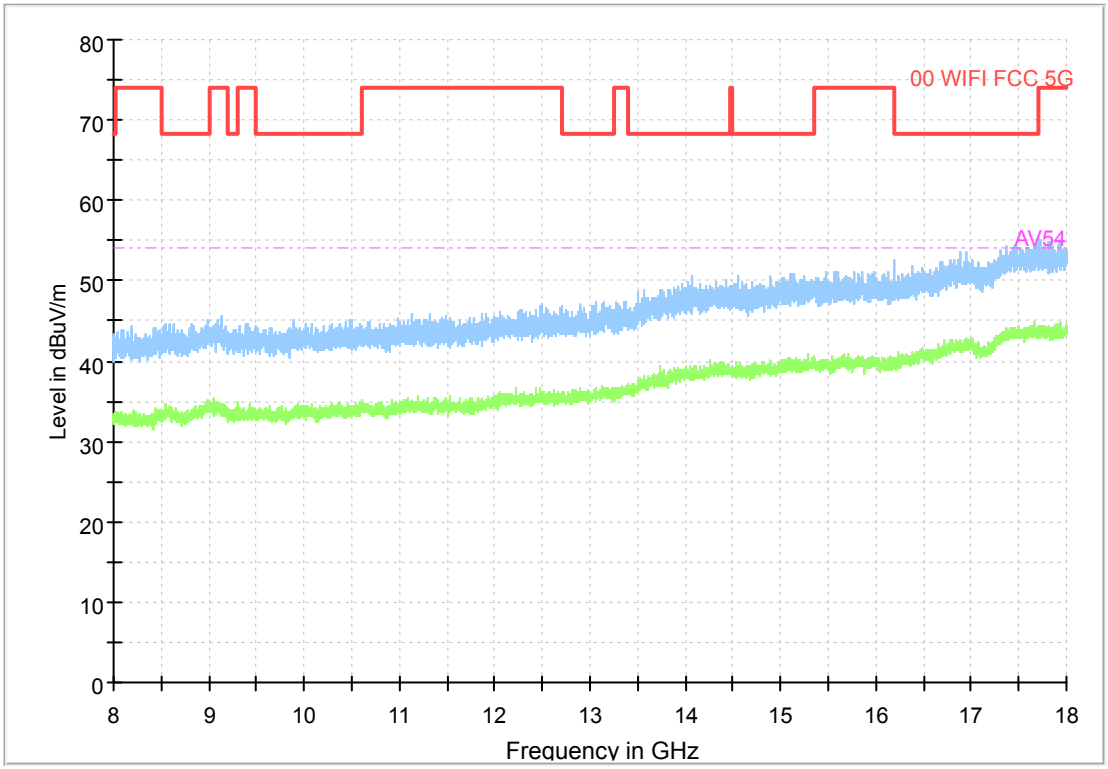
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 151	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

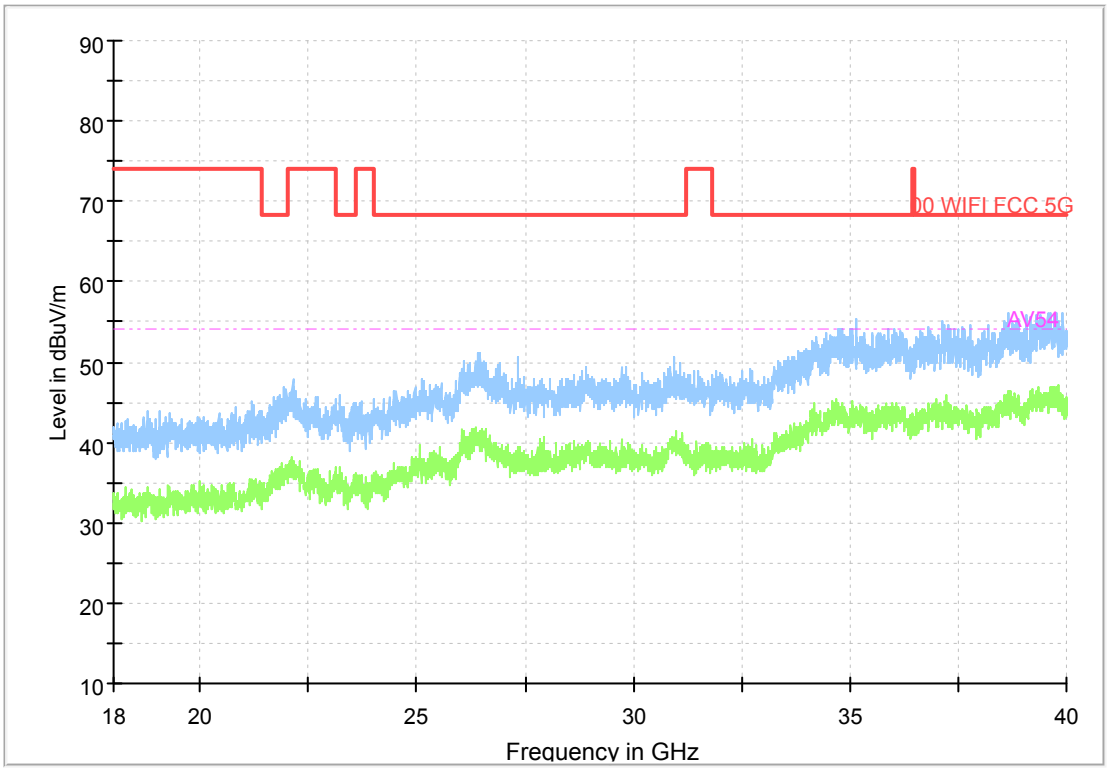
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 151	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

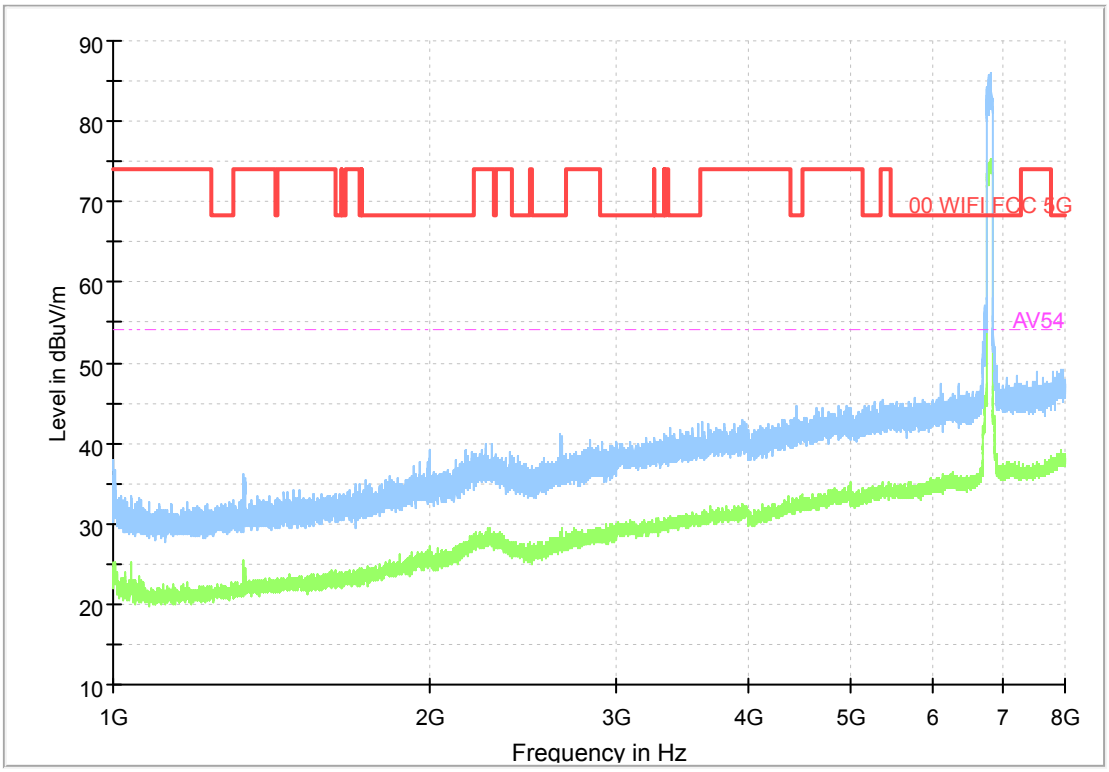
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 167	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

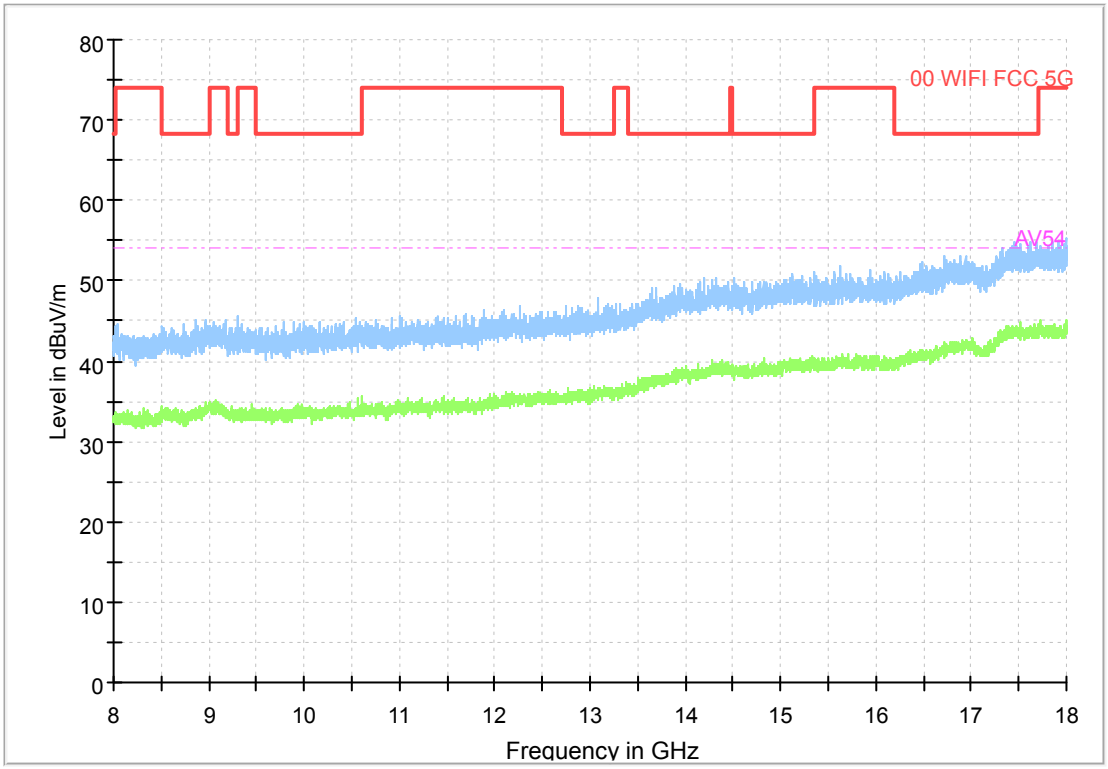
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 167	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

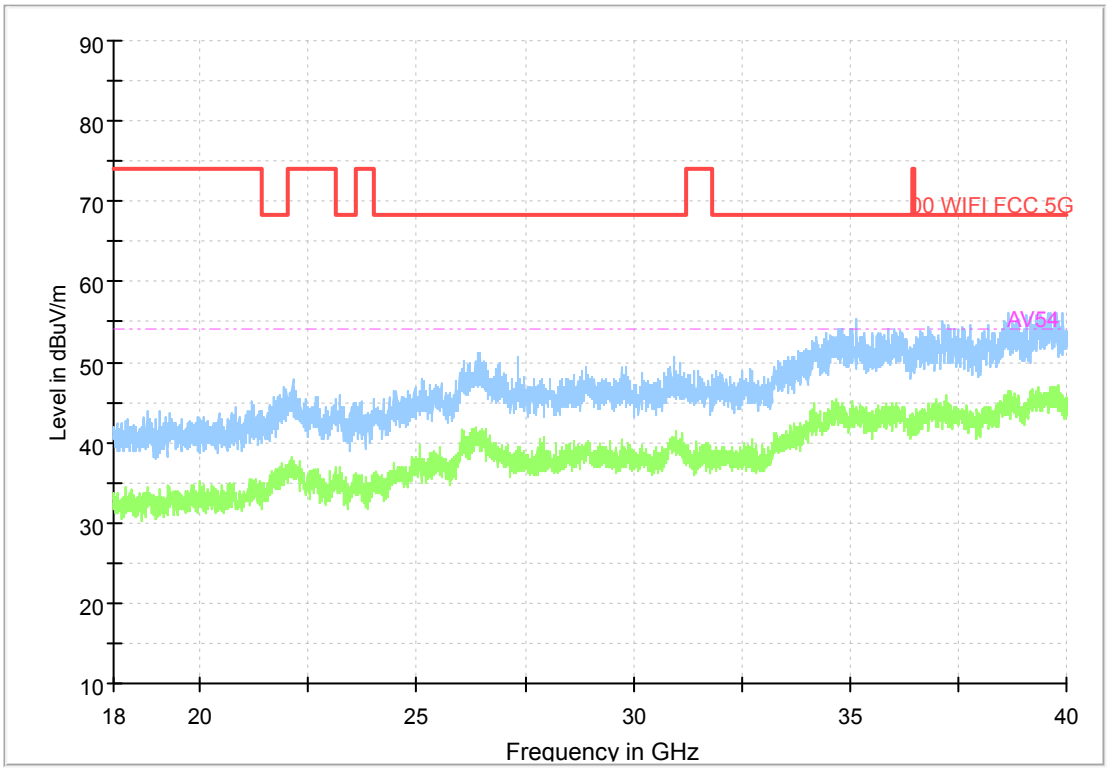
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 167	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

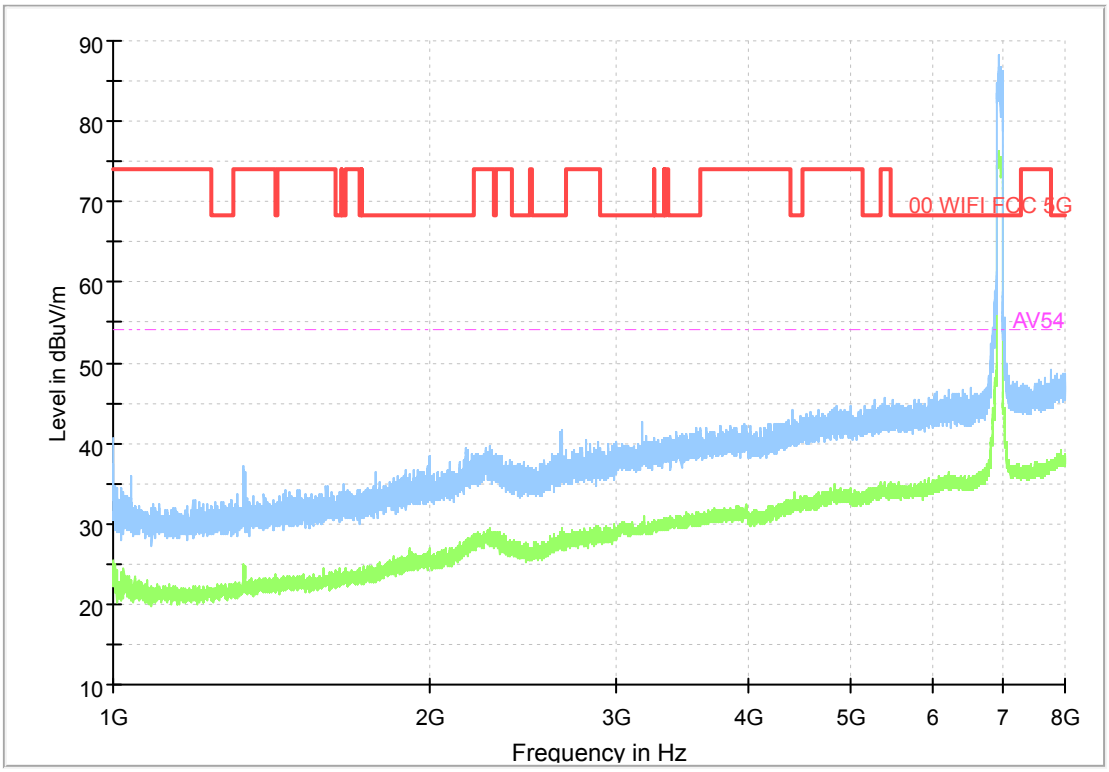
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 199	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

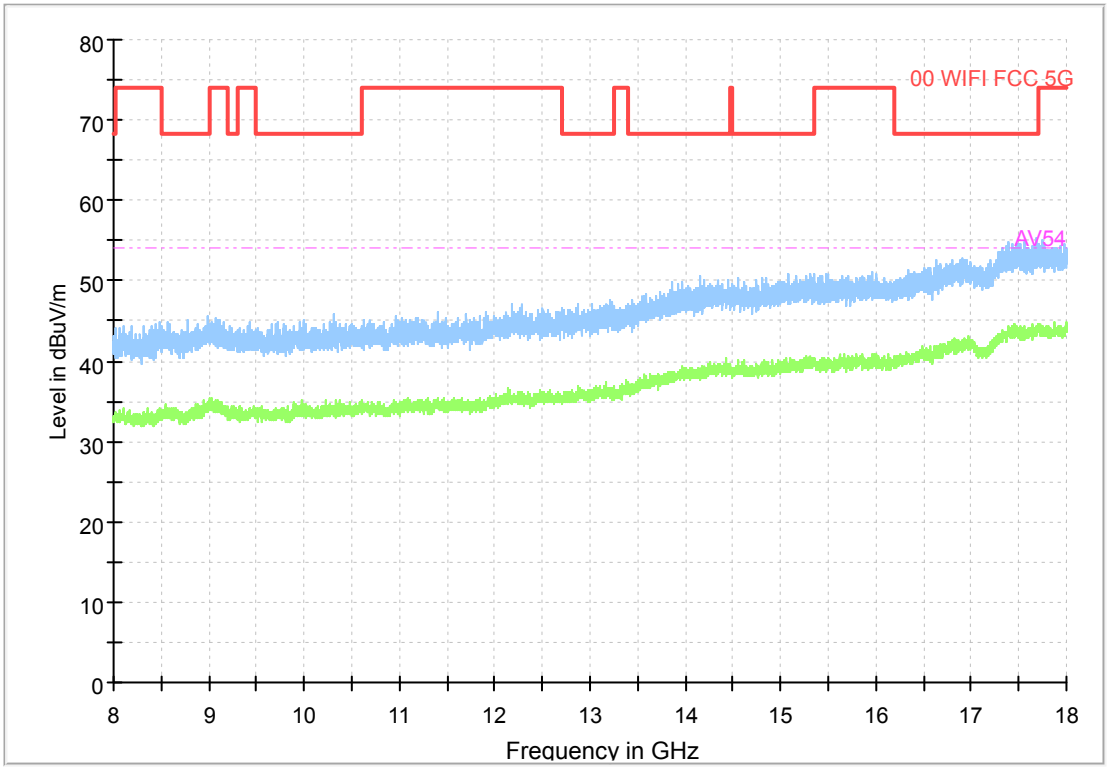
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 199	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

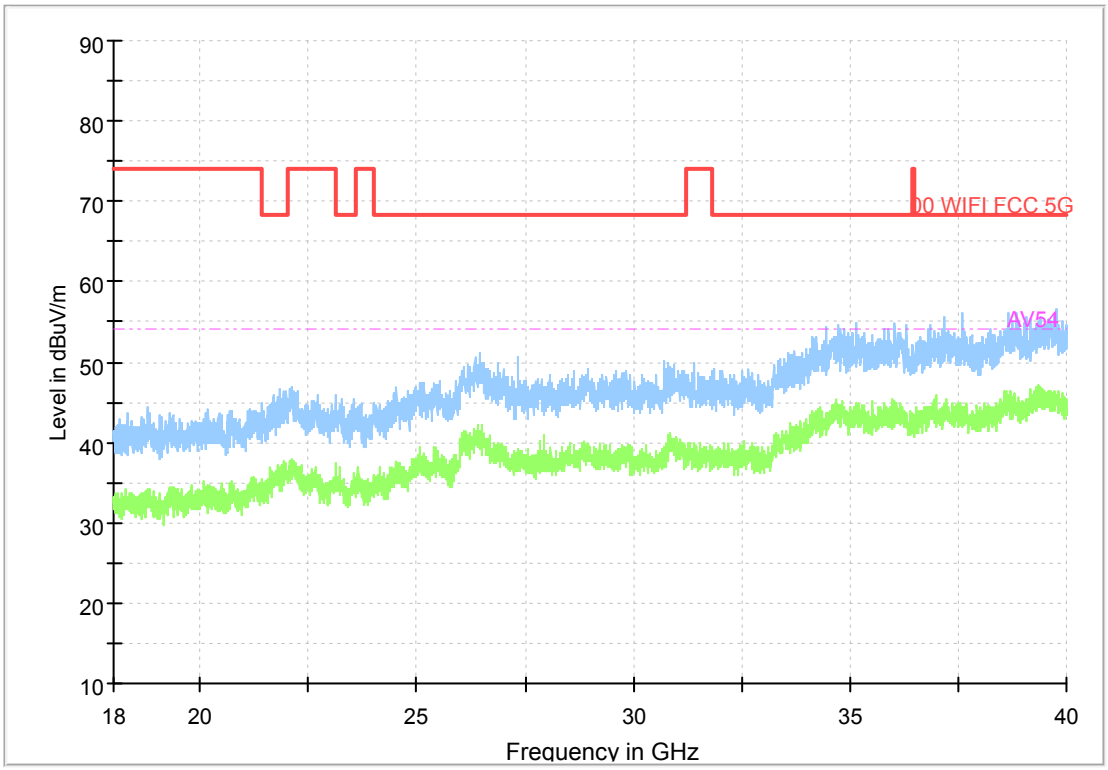
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 199	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

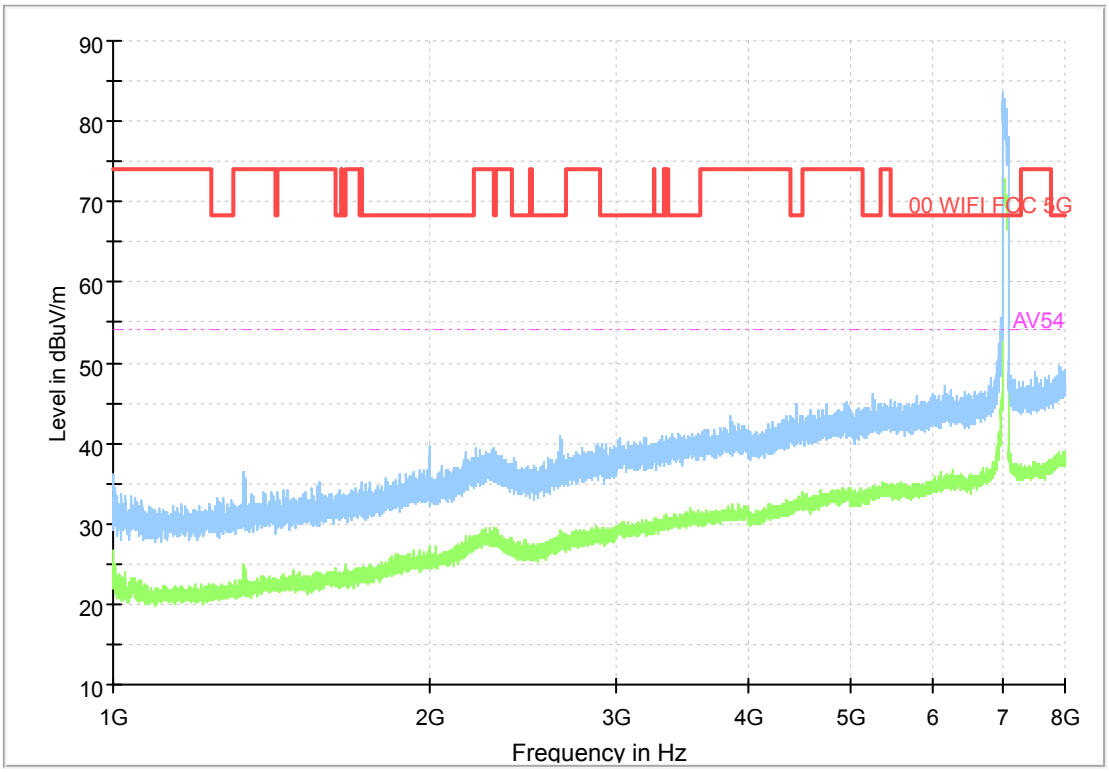
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 215	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

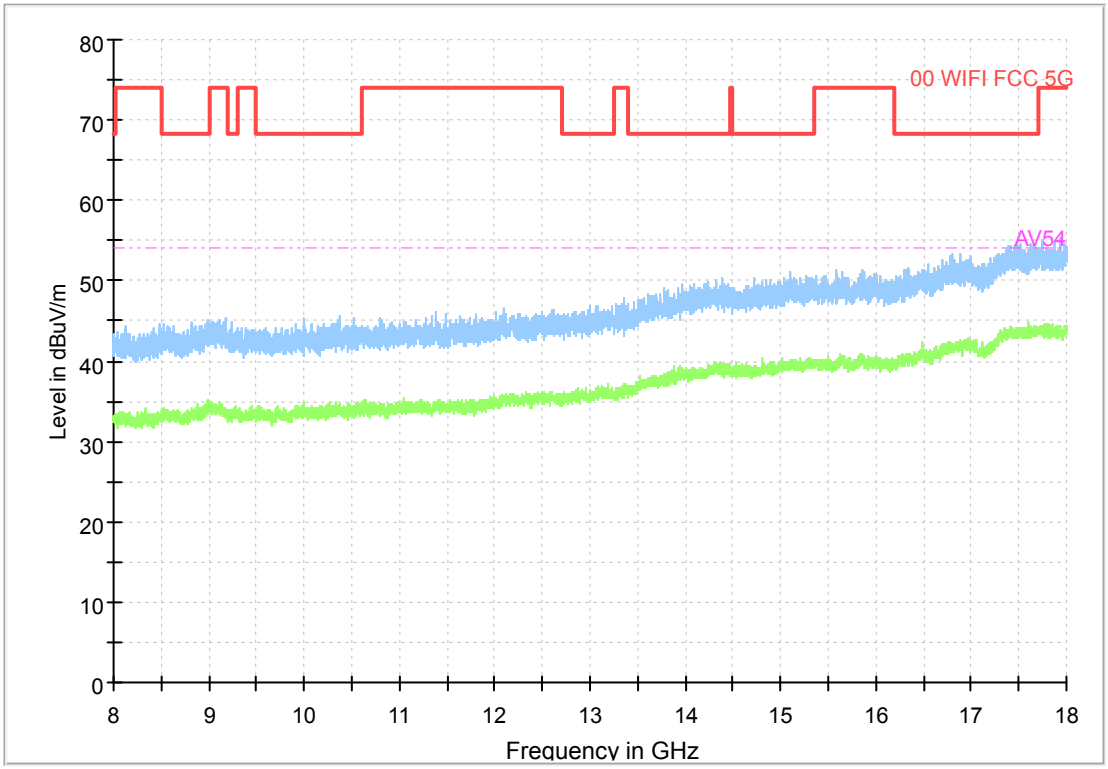
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 215	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

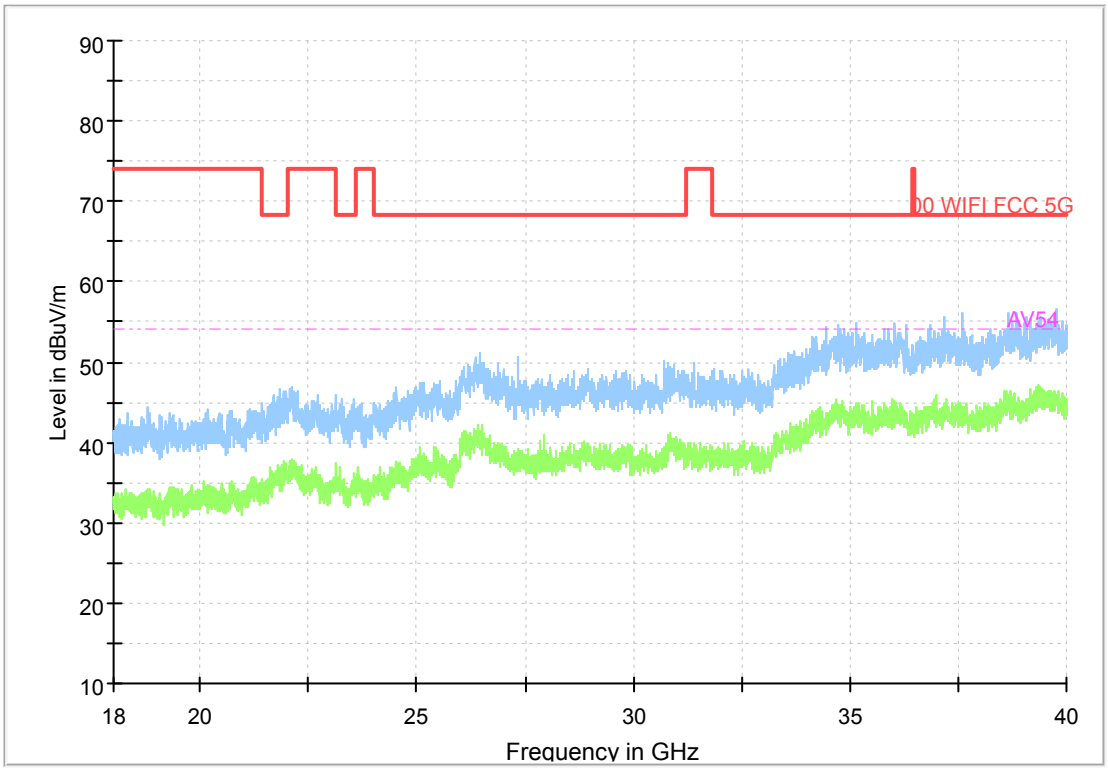
Full Spectrum



802.11ax (80MHz)

CHANNEL	TX Channel 215	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

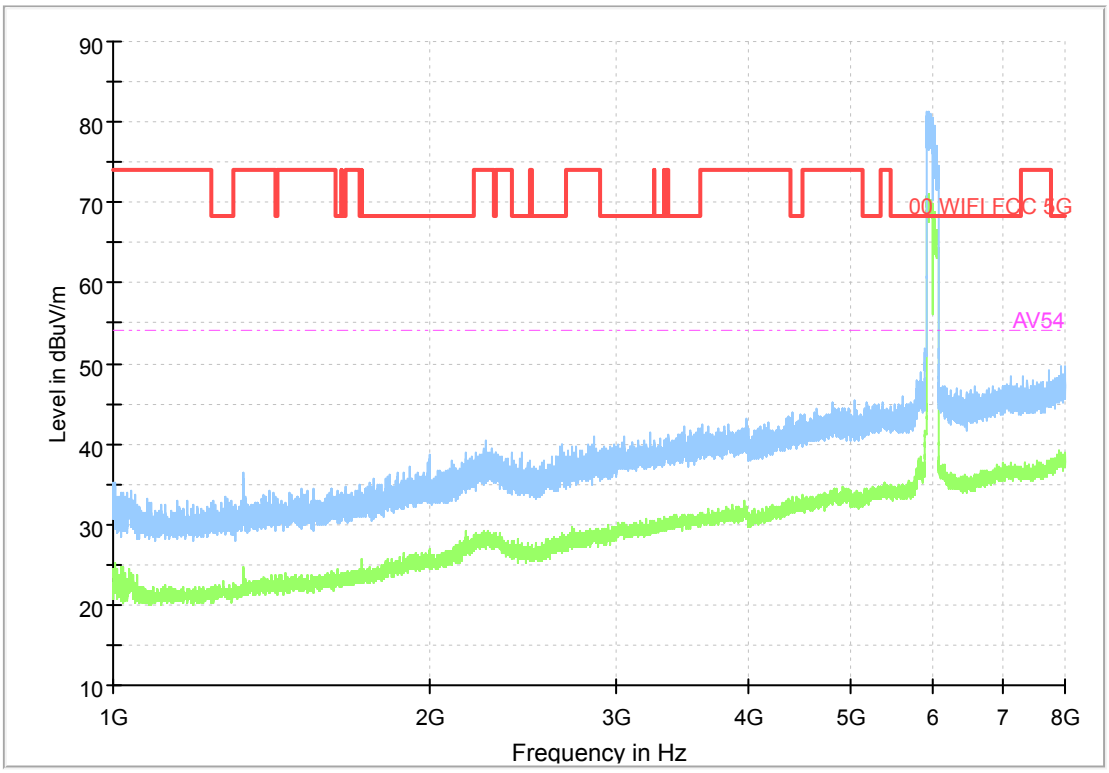
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 15	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

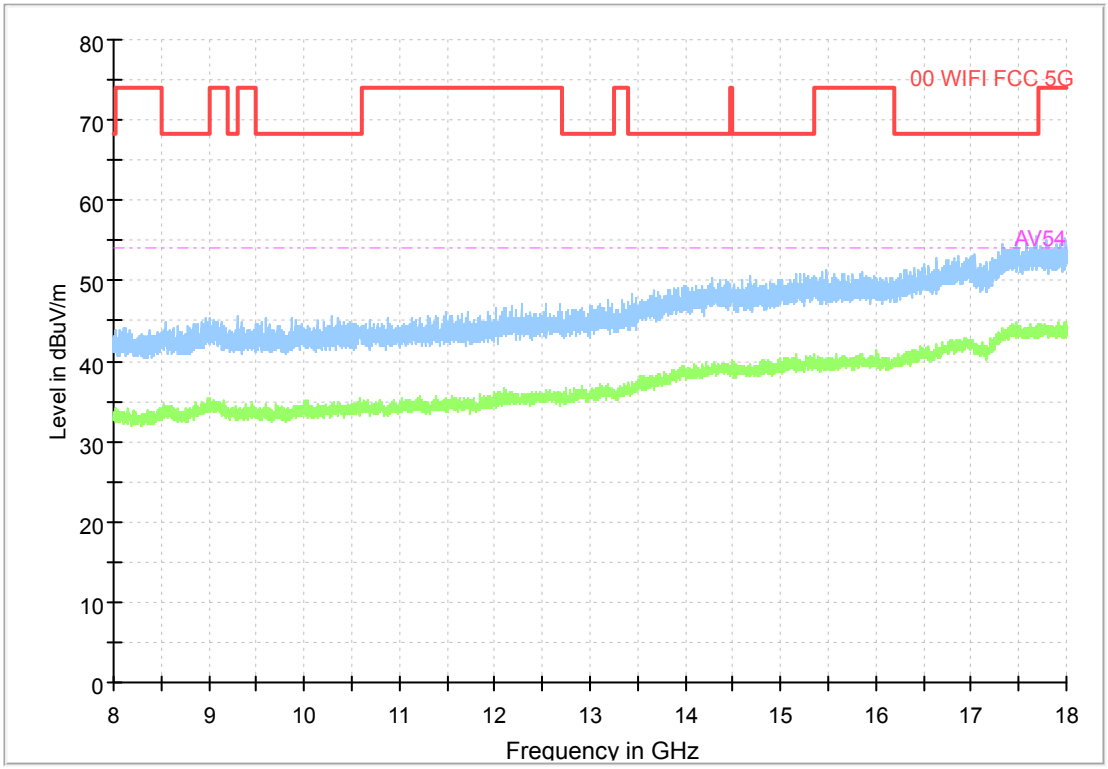
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 15	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

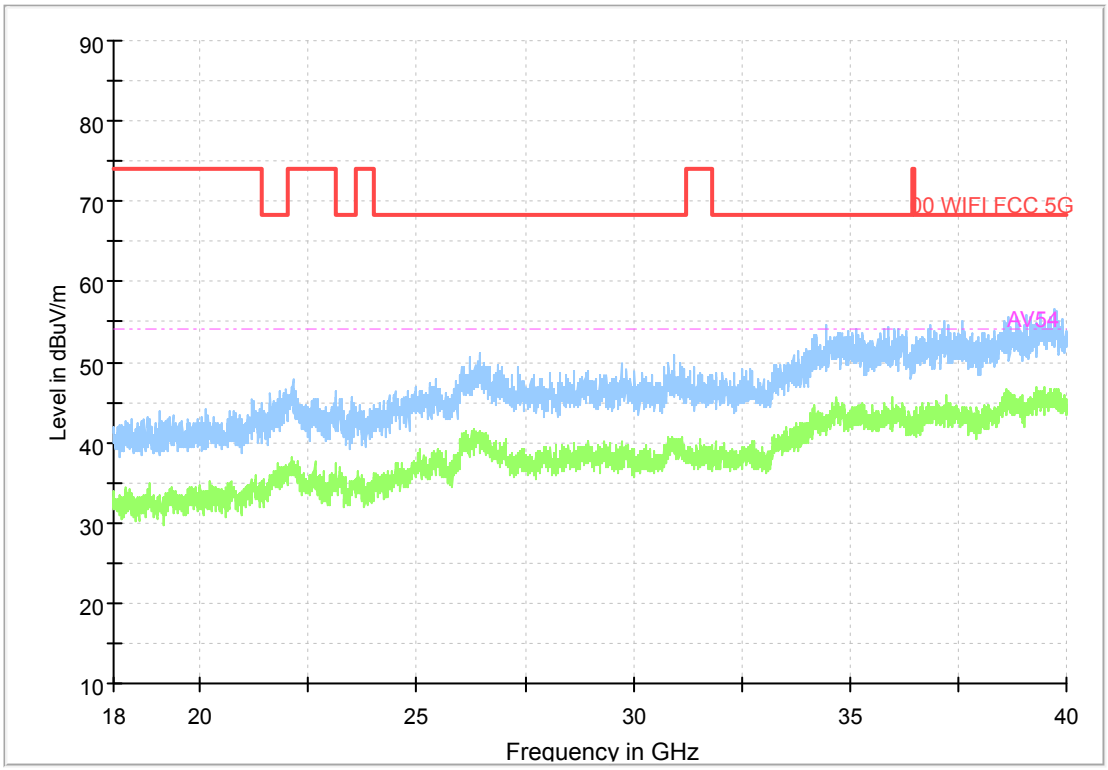
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 15	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

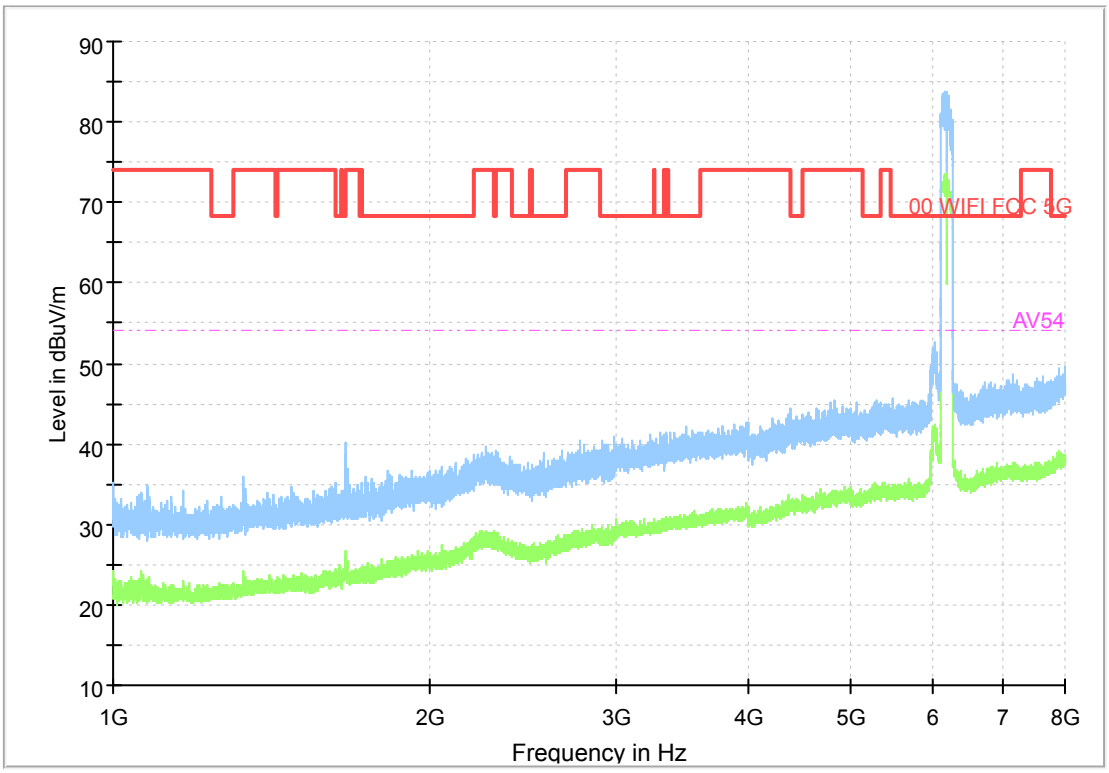
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 47	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

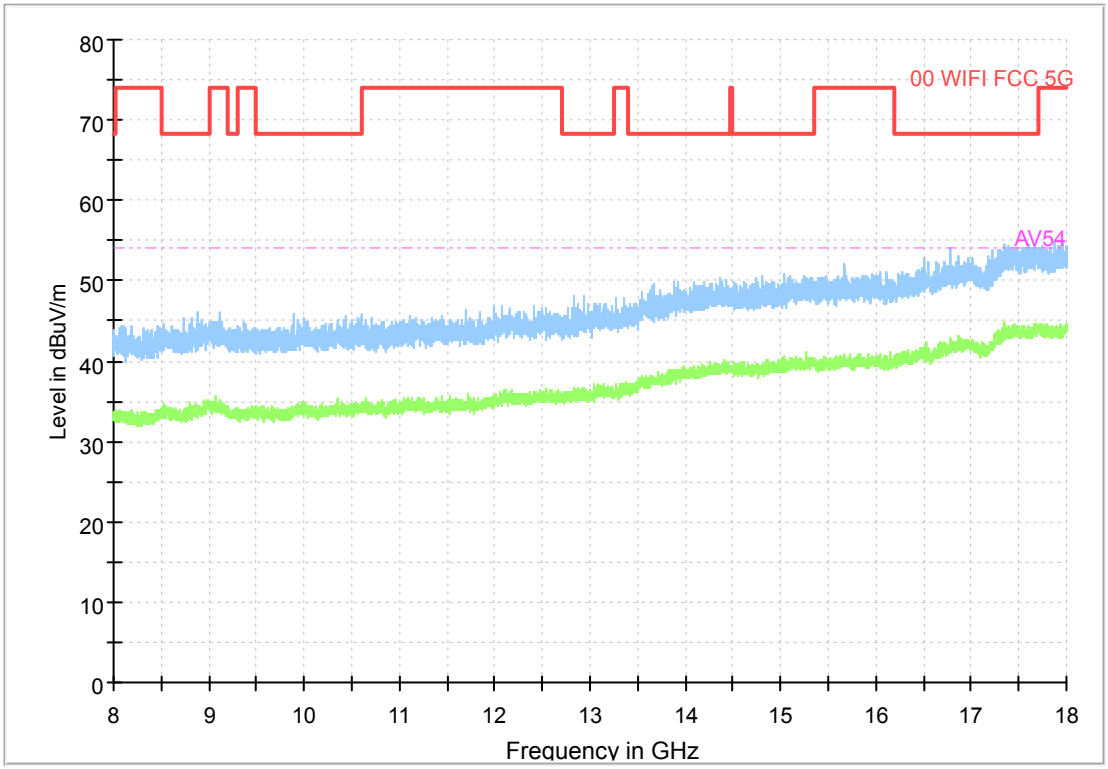
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 47	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

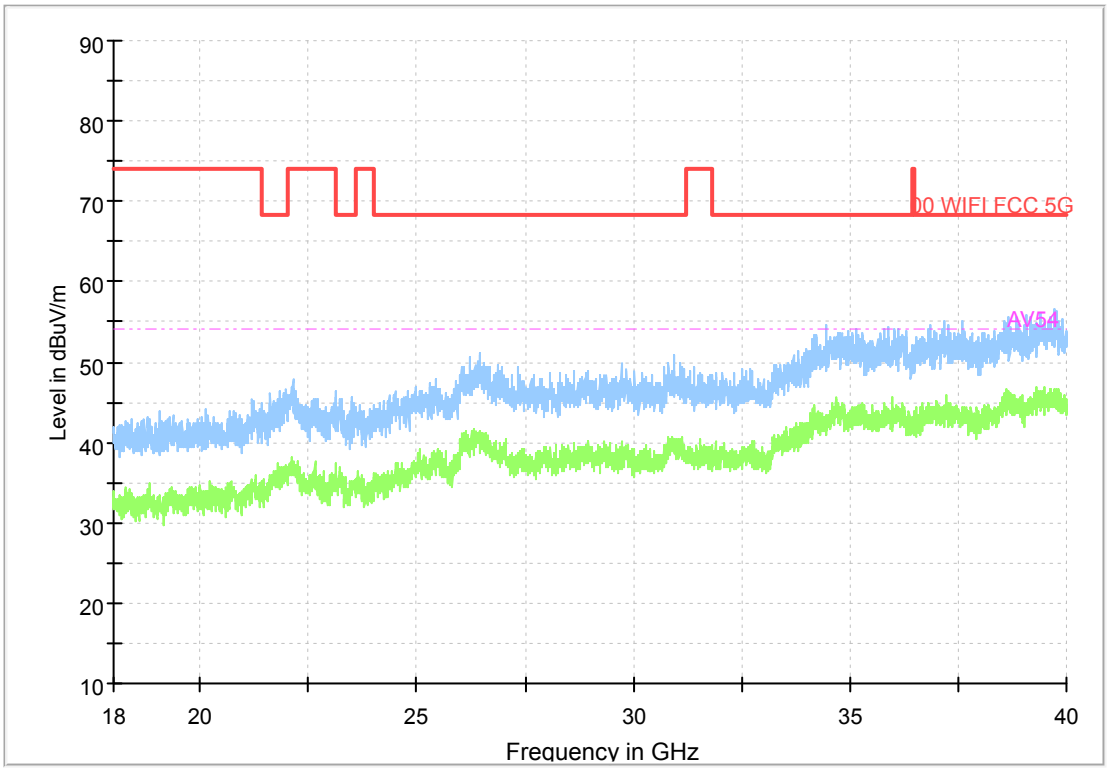
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 47	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

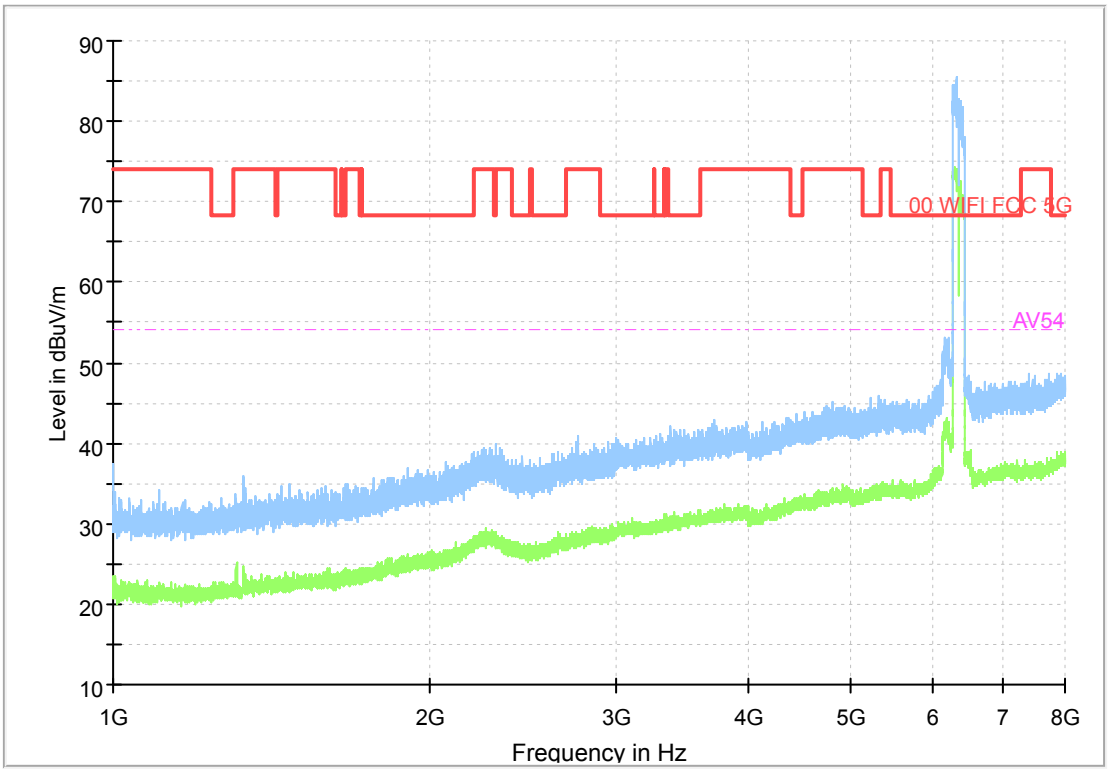
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 79	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

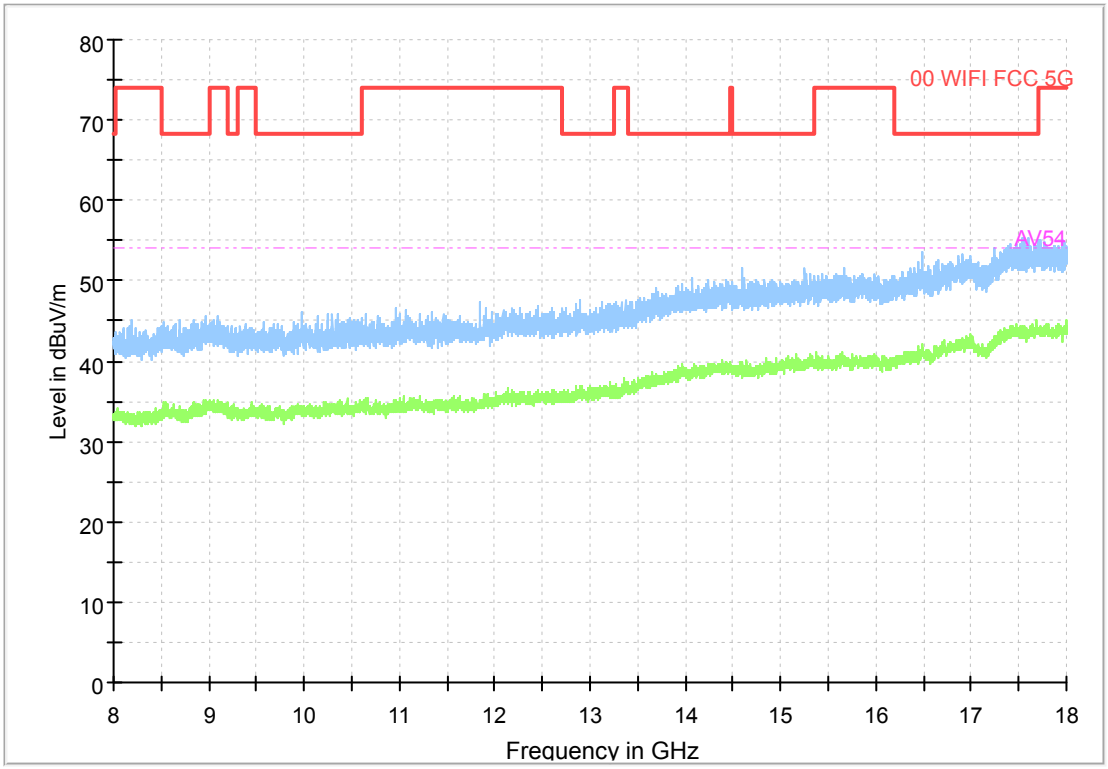
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 79	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

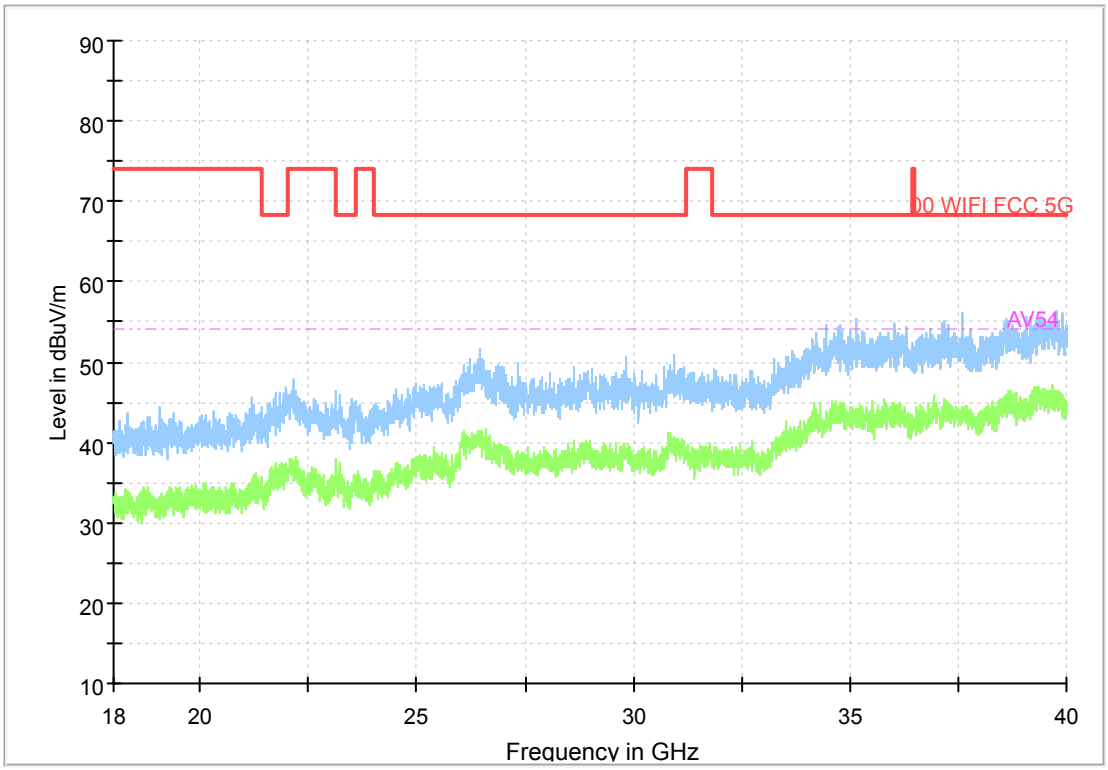
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 79	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

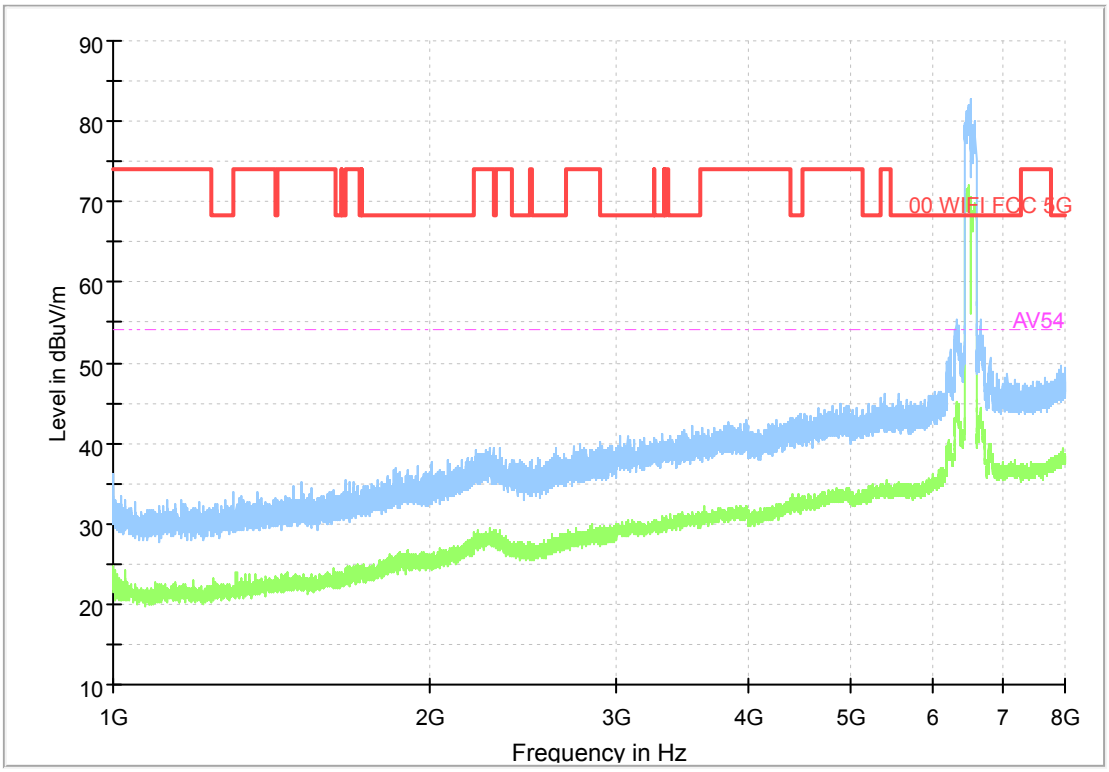
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 111	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

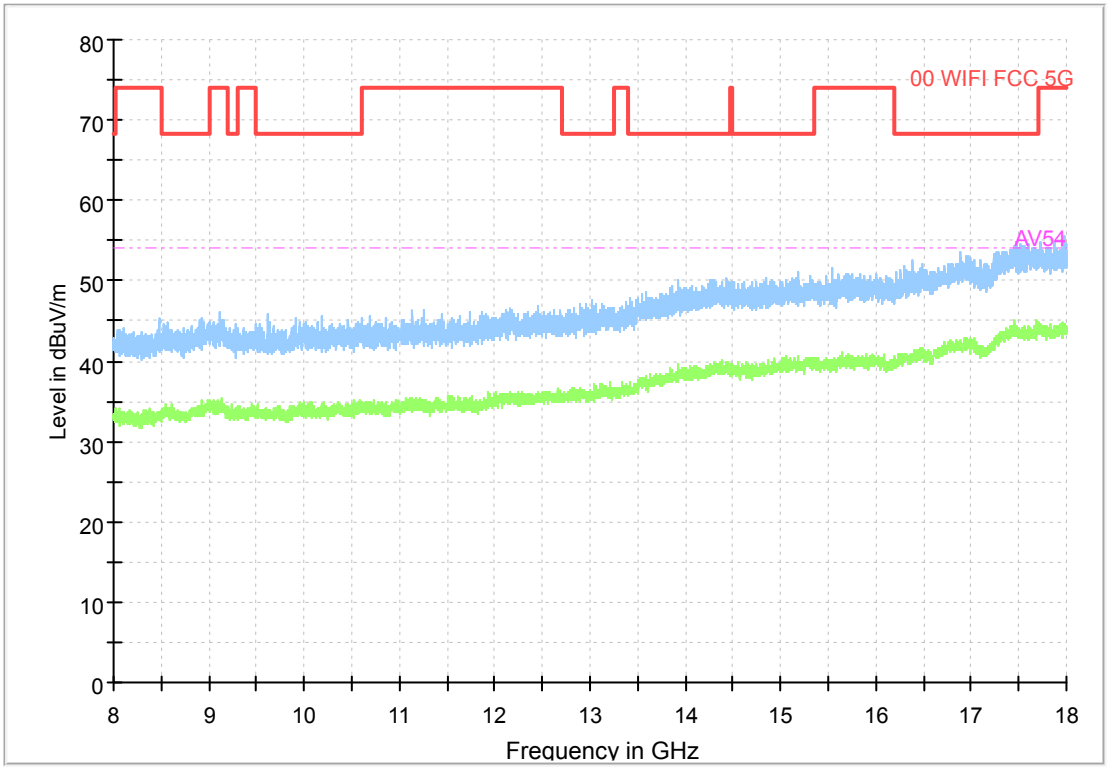
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 111	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

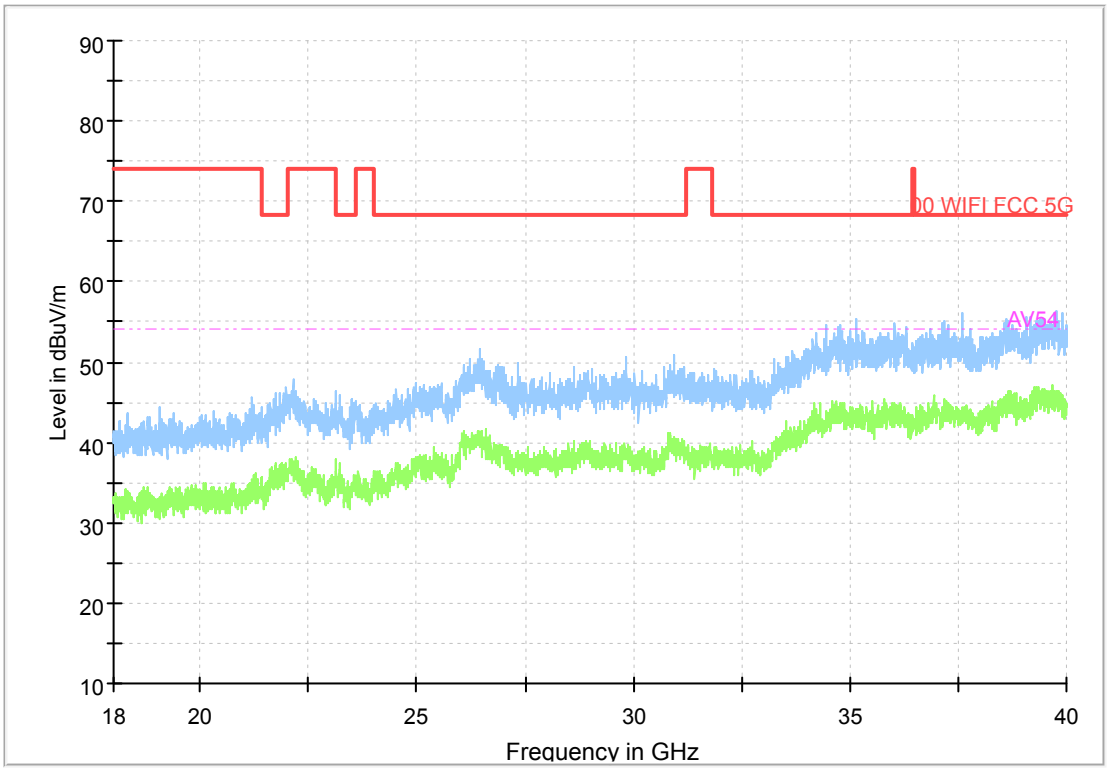
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

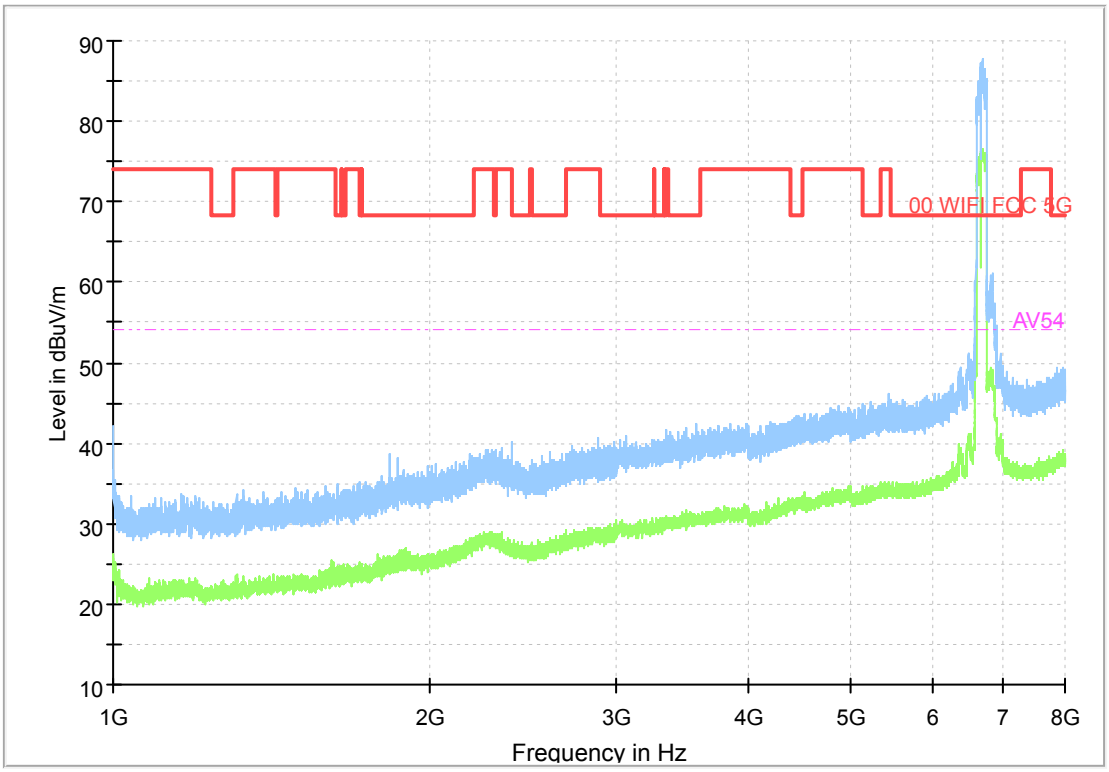
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 143	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

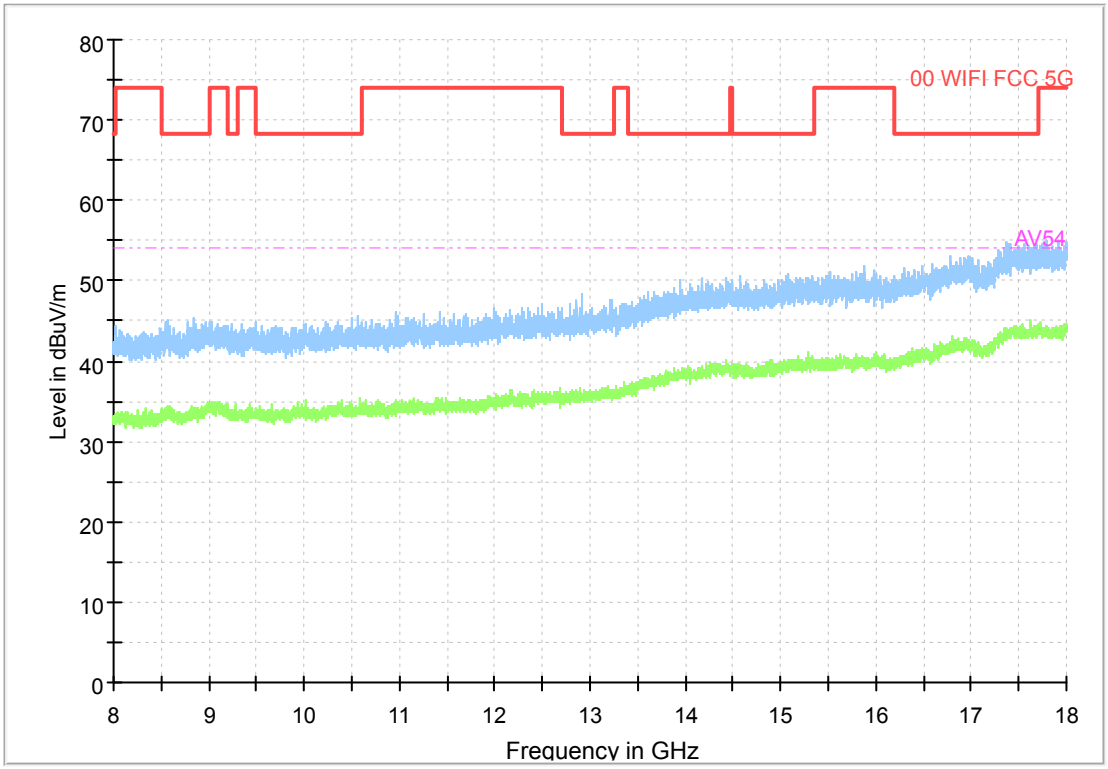
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 143	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

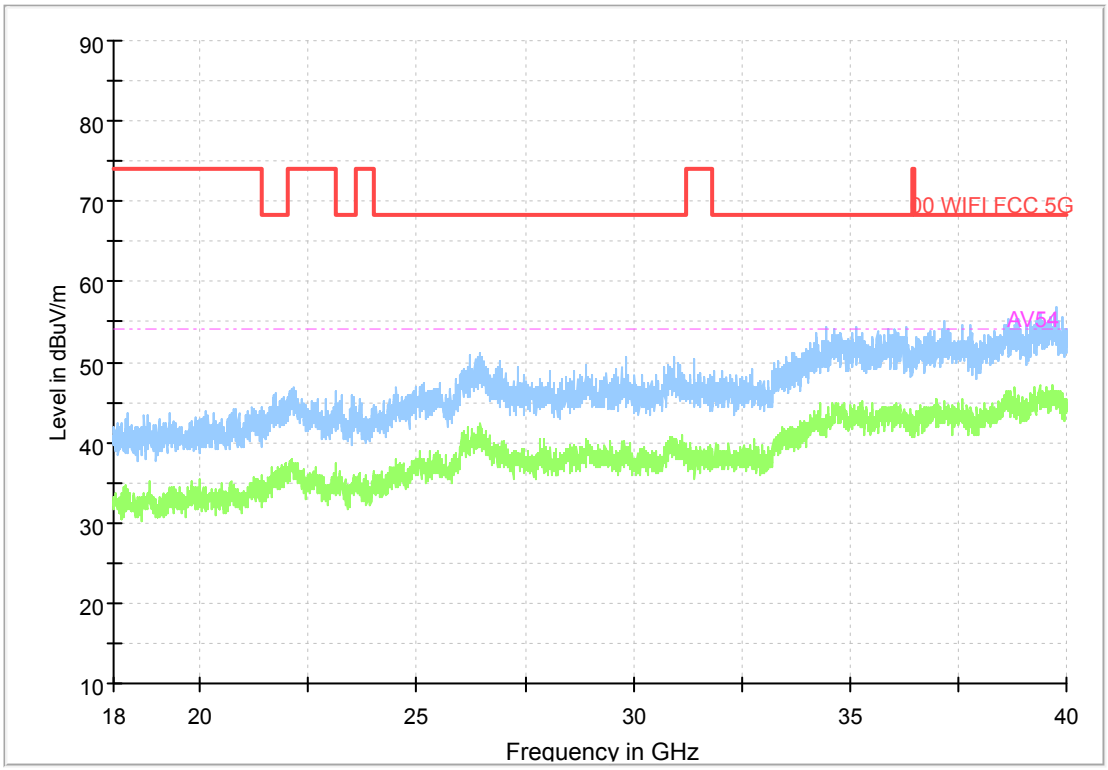
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 143	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

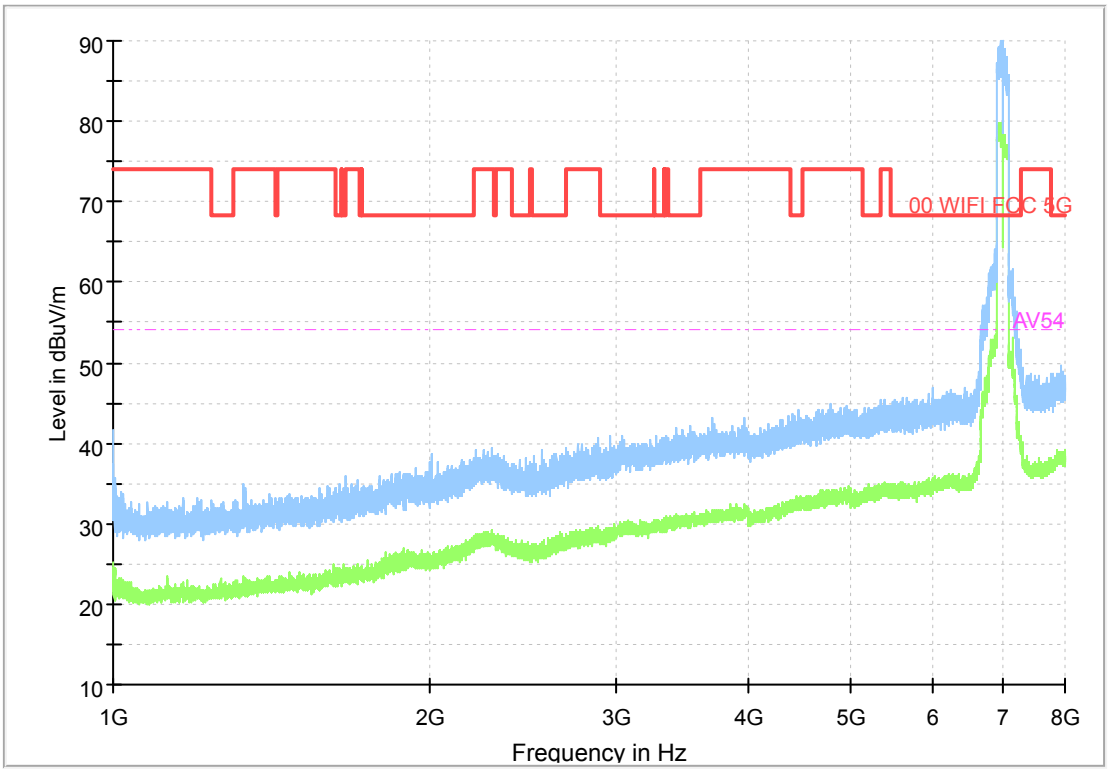
Full Spectrum



802.11ax (160MHz)

CHANNEL	TX Channel 207	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

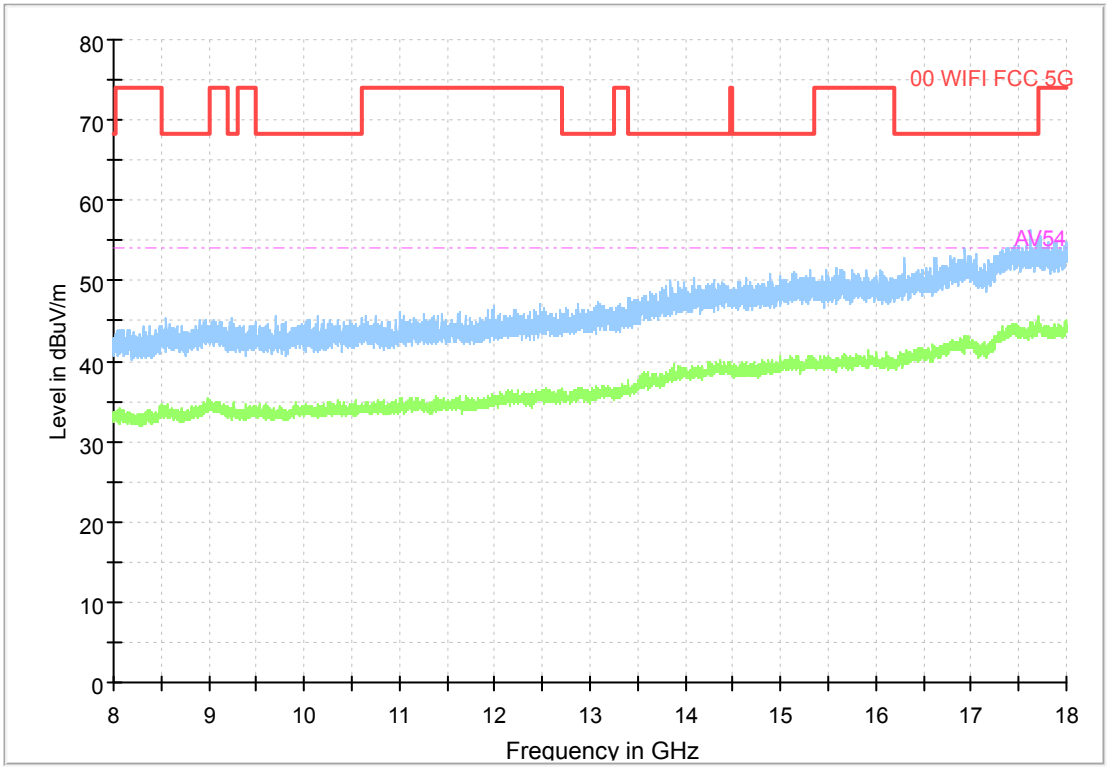
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 207	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

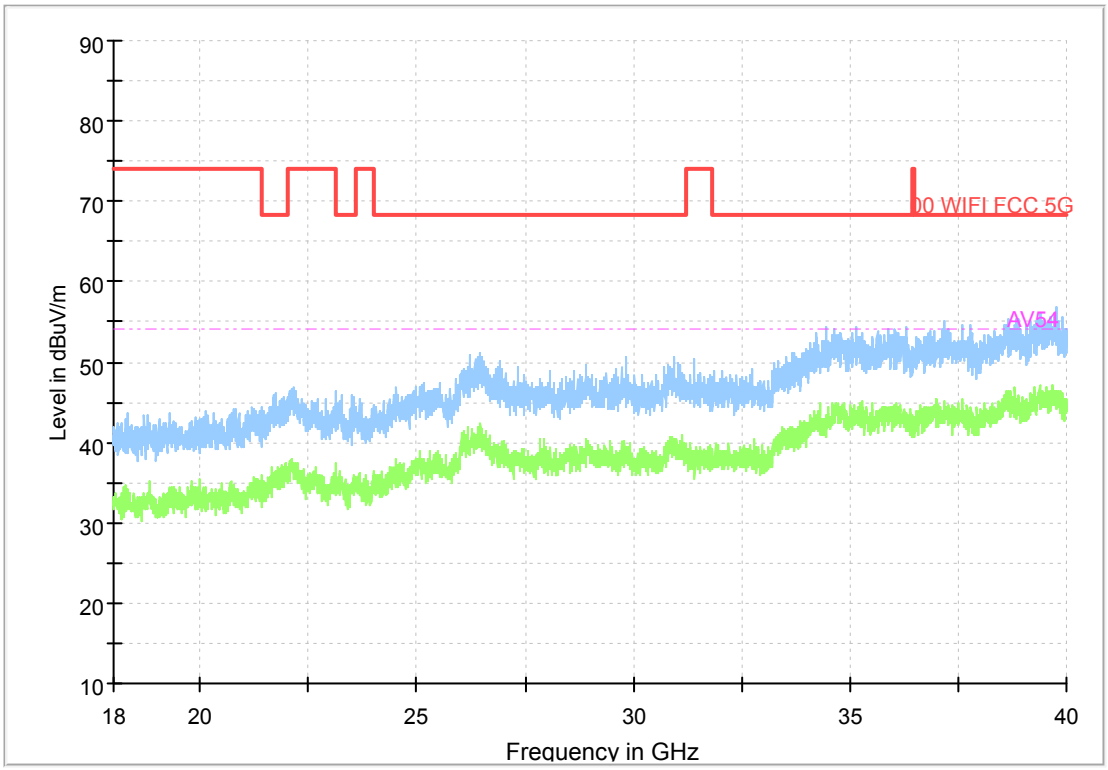
Full Spectrum



802.11ax (160MH)

CHANNEL	TX Channel 207	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

Full Spectrum

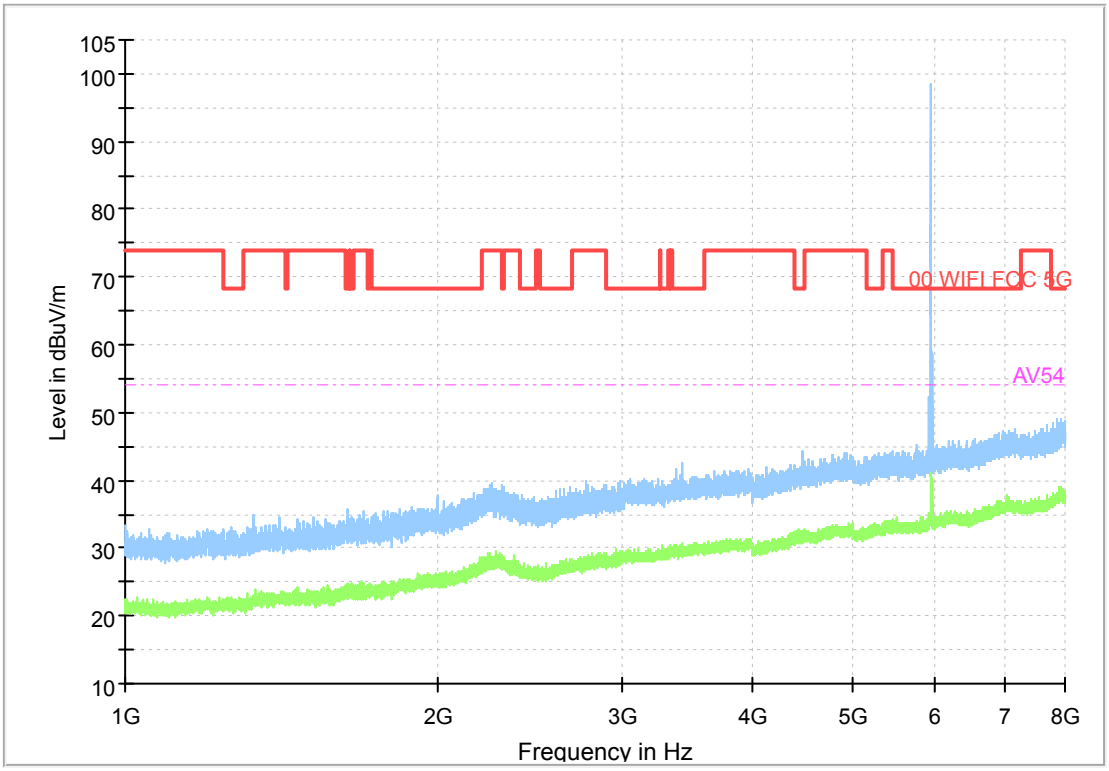


RU Mode

802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

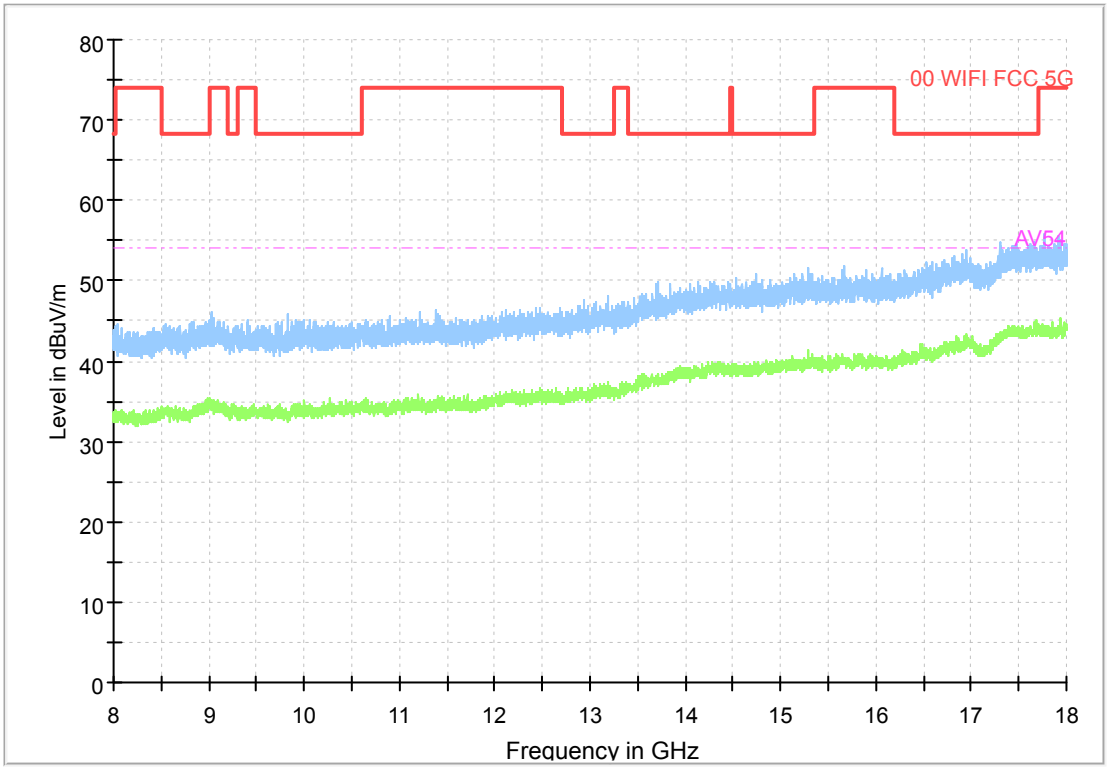
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

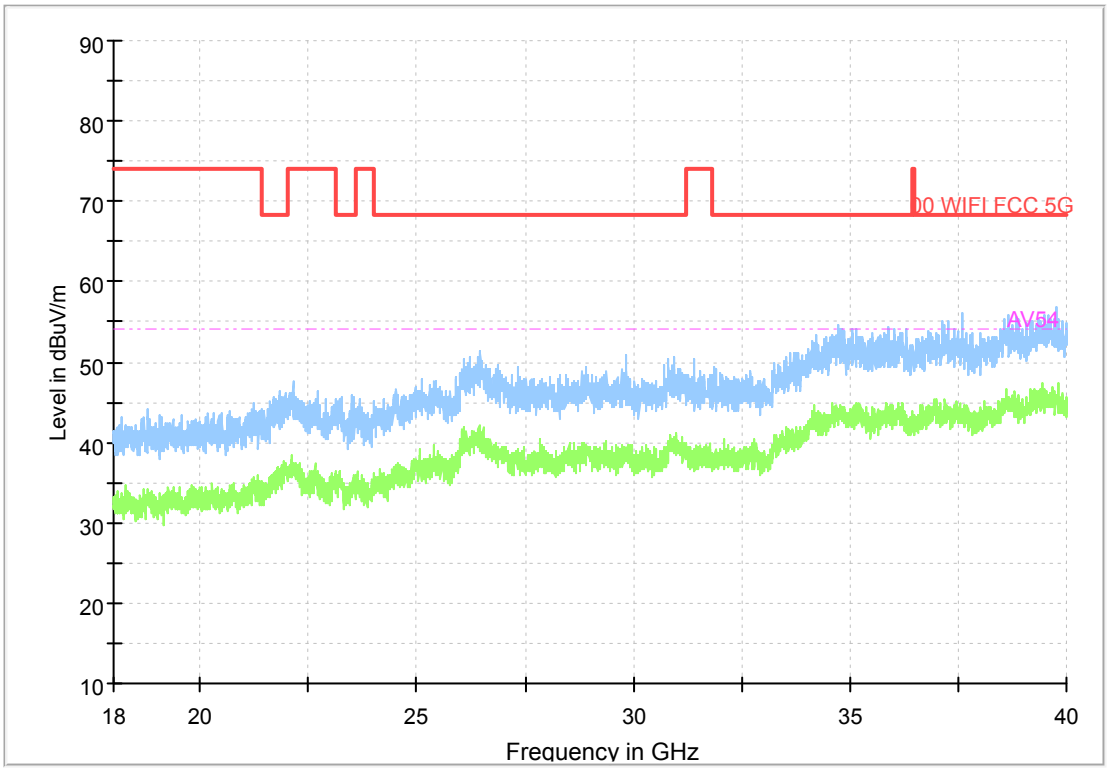
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

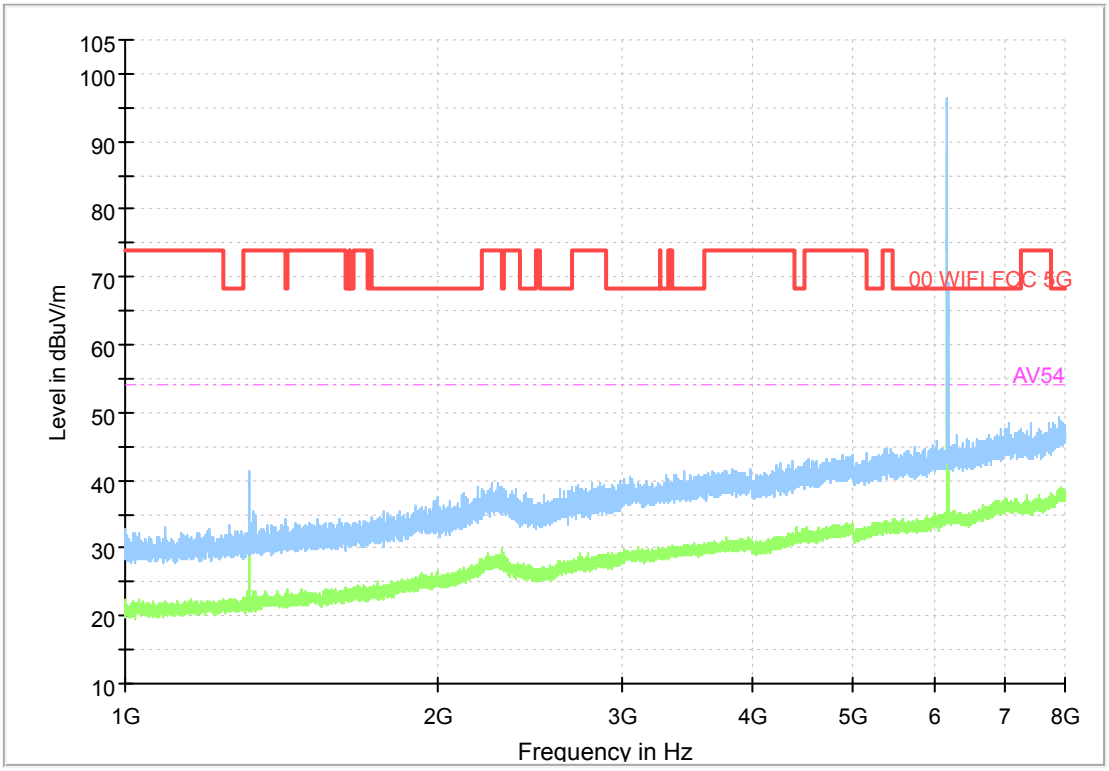
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 45	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

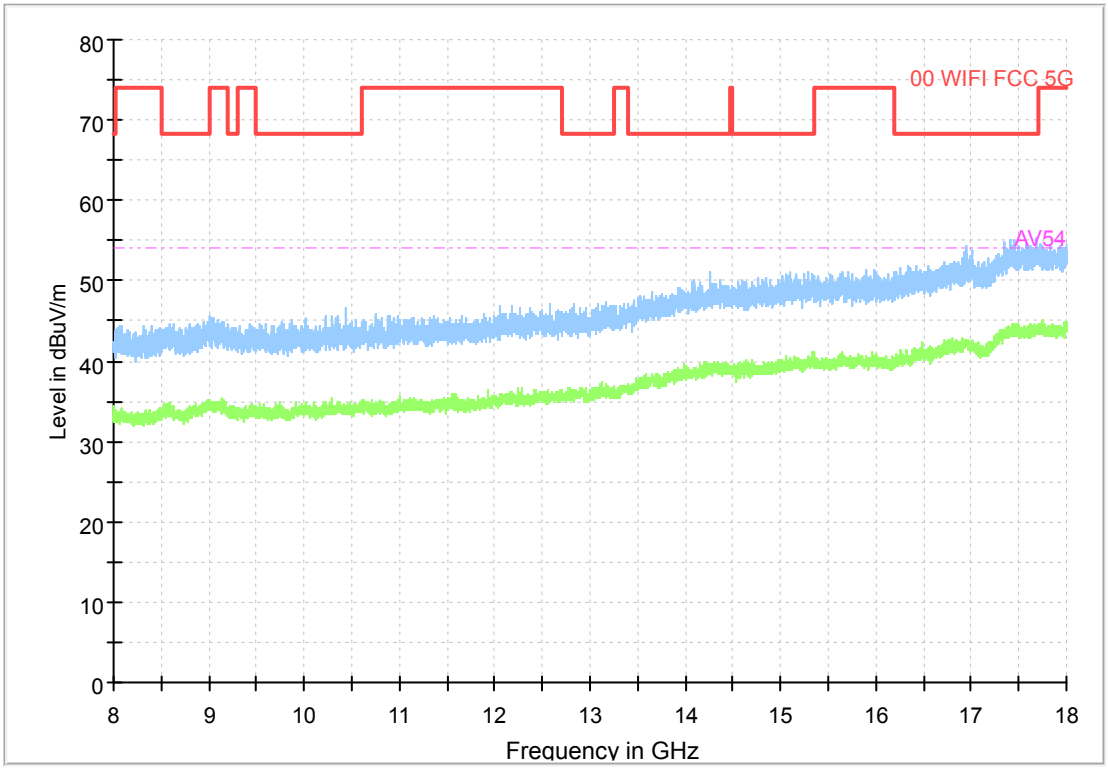
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 45	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

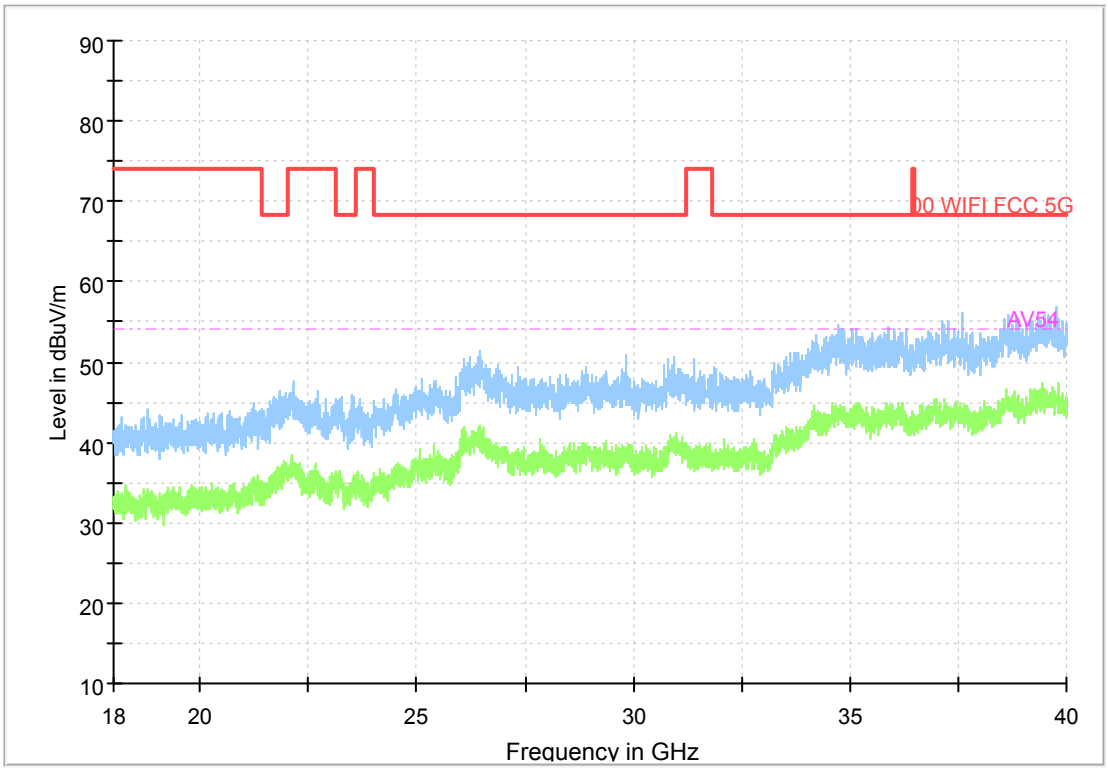
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 45	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

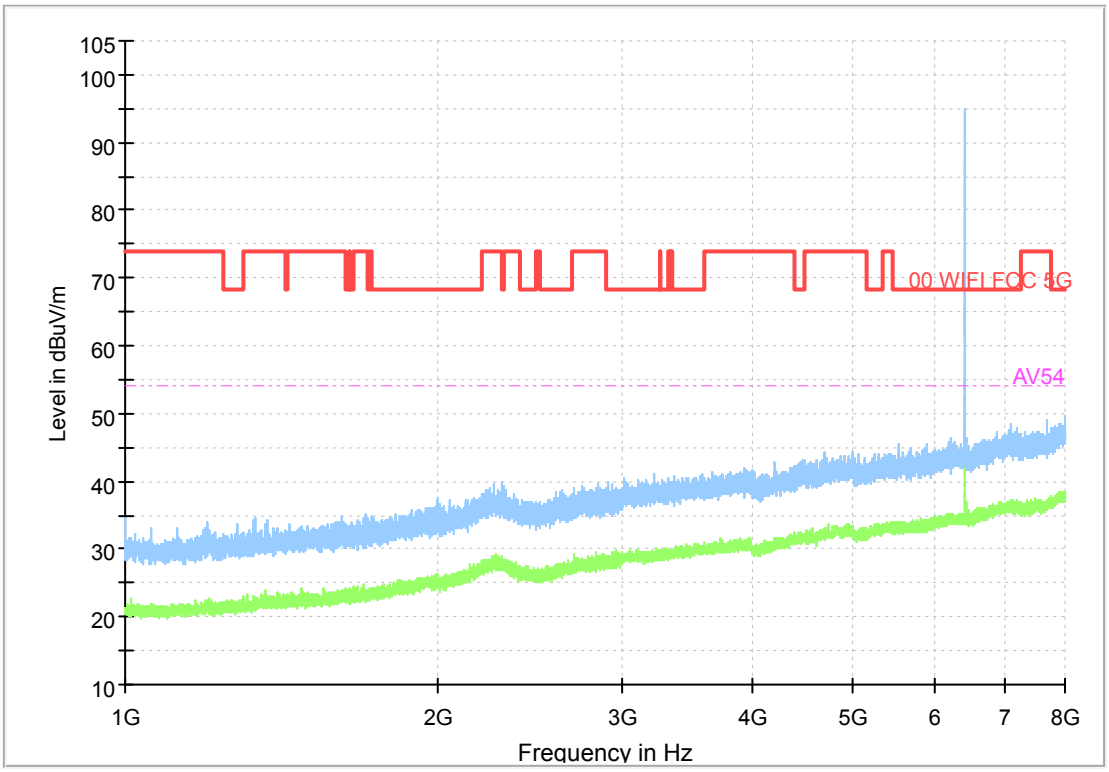
Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1G-8G		

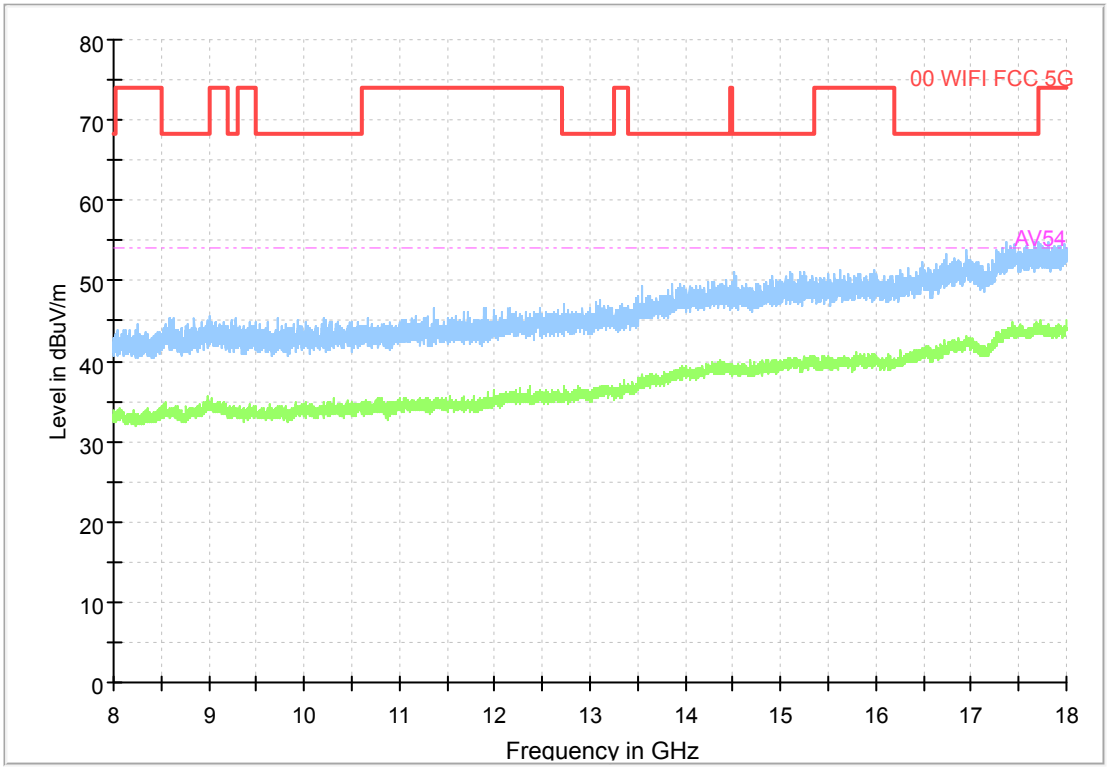
Full Spectrum



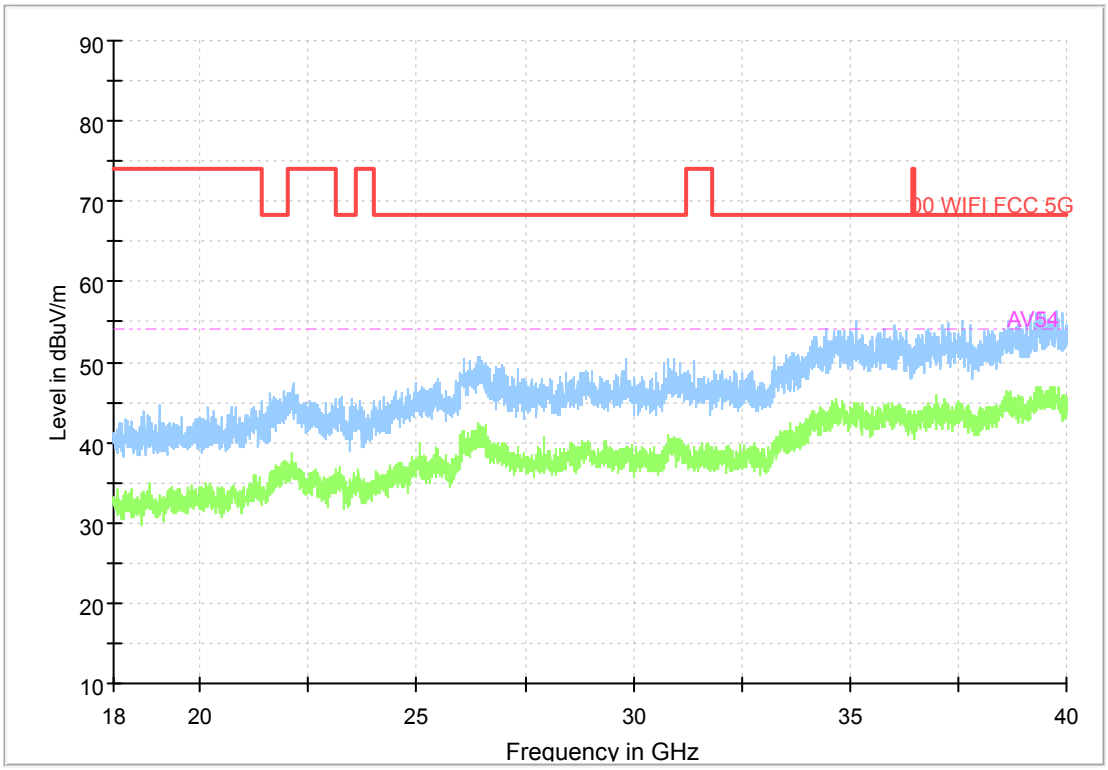
802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	8GHz ~ 18GHz		

Full Spectrum



802.11ax (20MHz)

CHANNEL	TX Channel 93	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18G-40G		

Full Spectrum