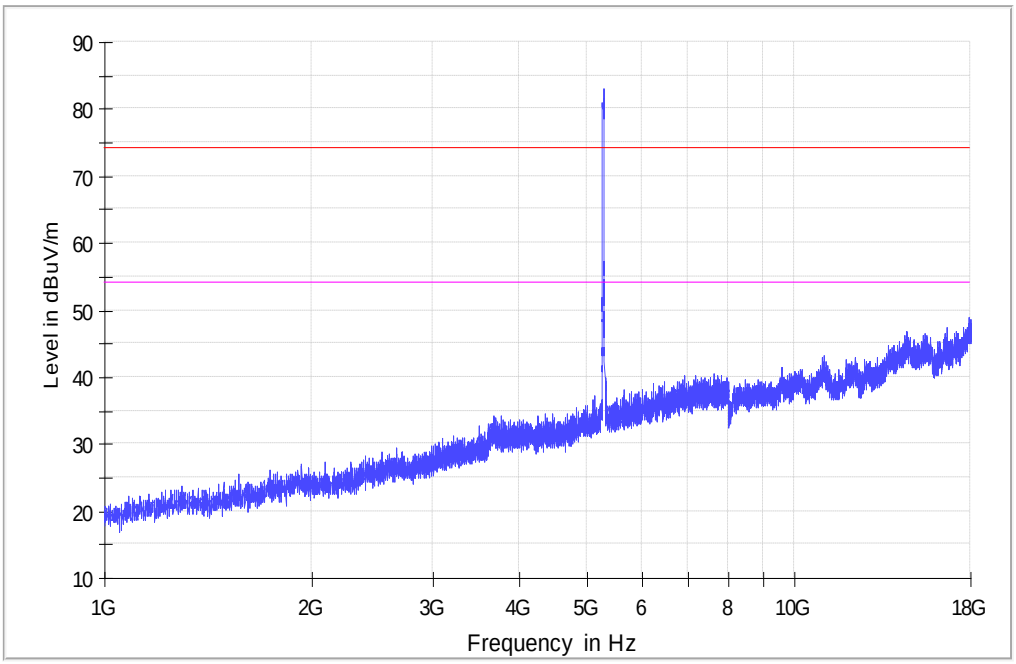
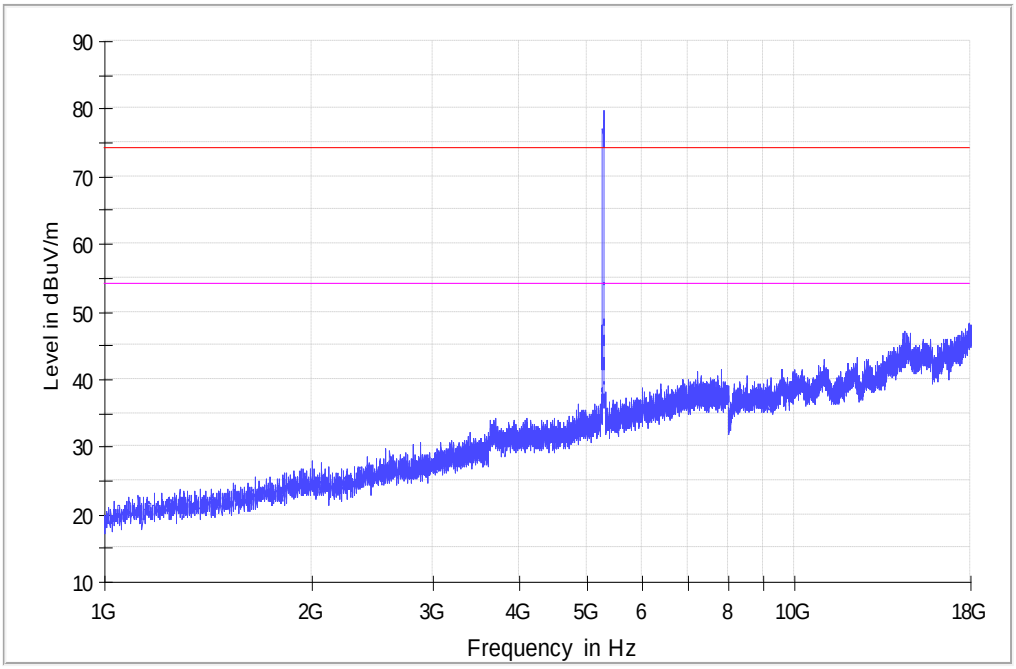
1-18G

11n HT20 IN THE 5.3GHz BAND
CH56

Horizontal



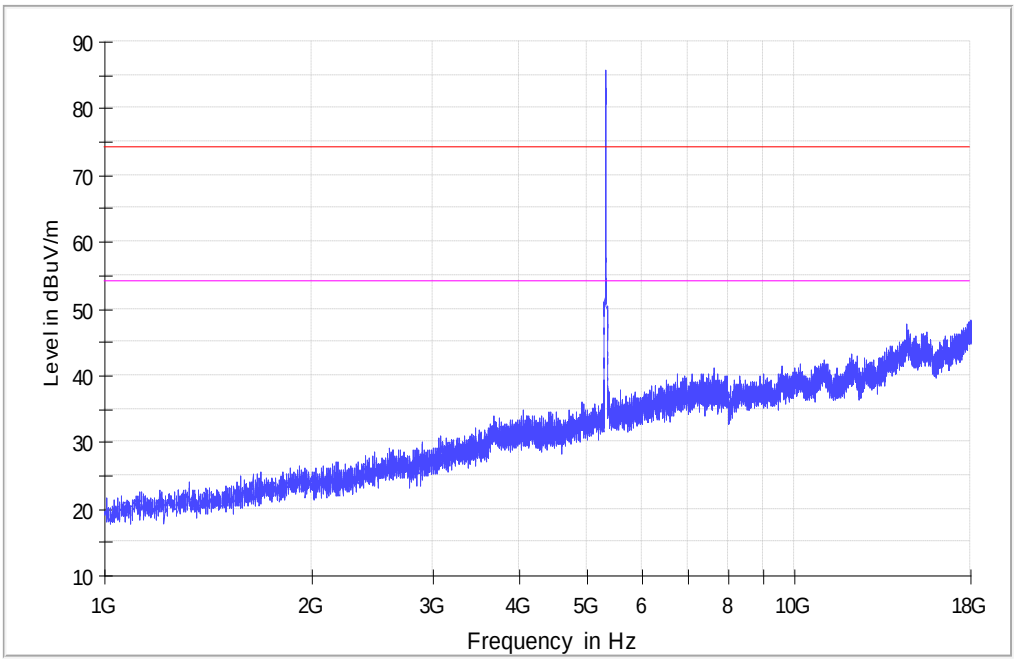
Vertical



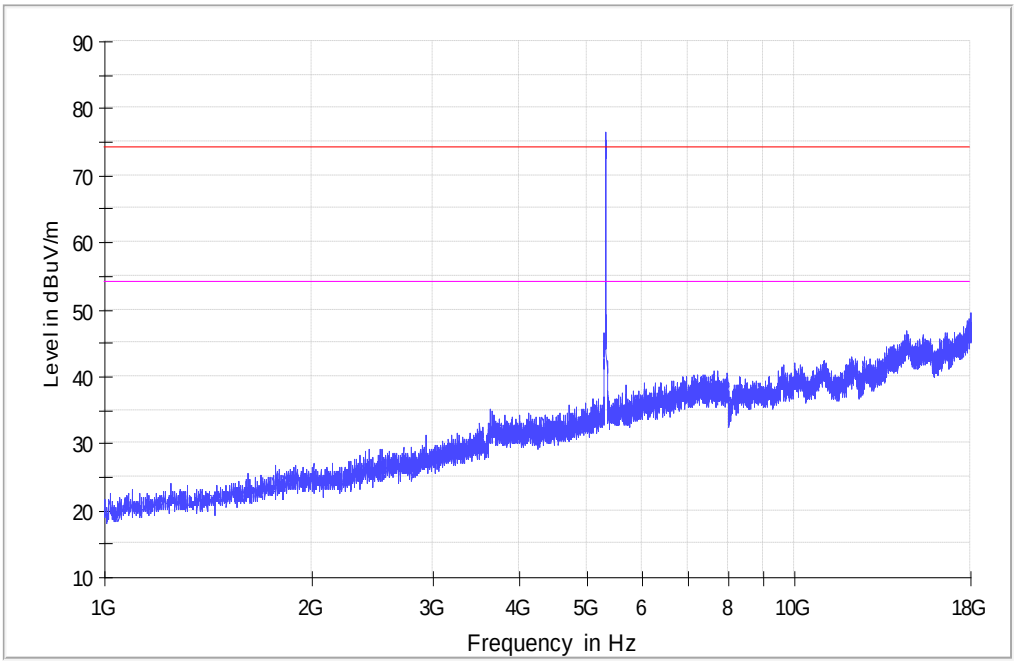
1-18G

11n HT20 IN THE 5.3GHz BAND
CH64

Horizontal



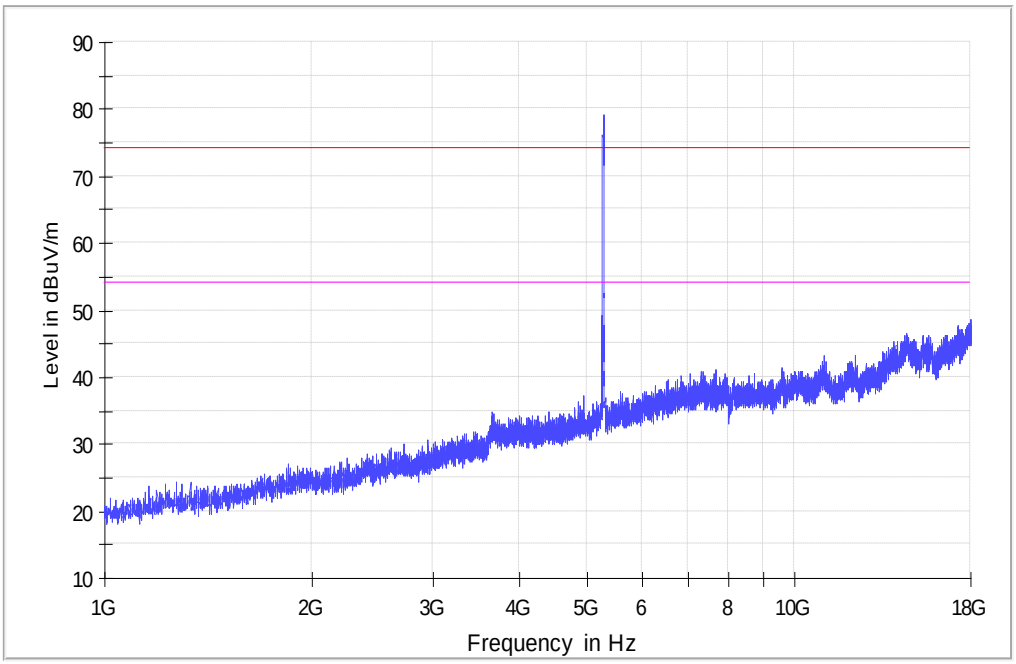
Vertical



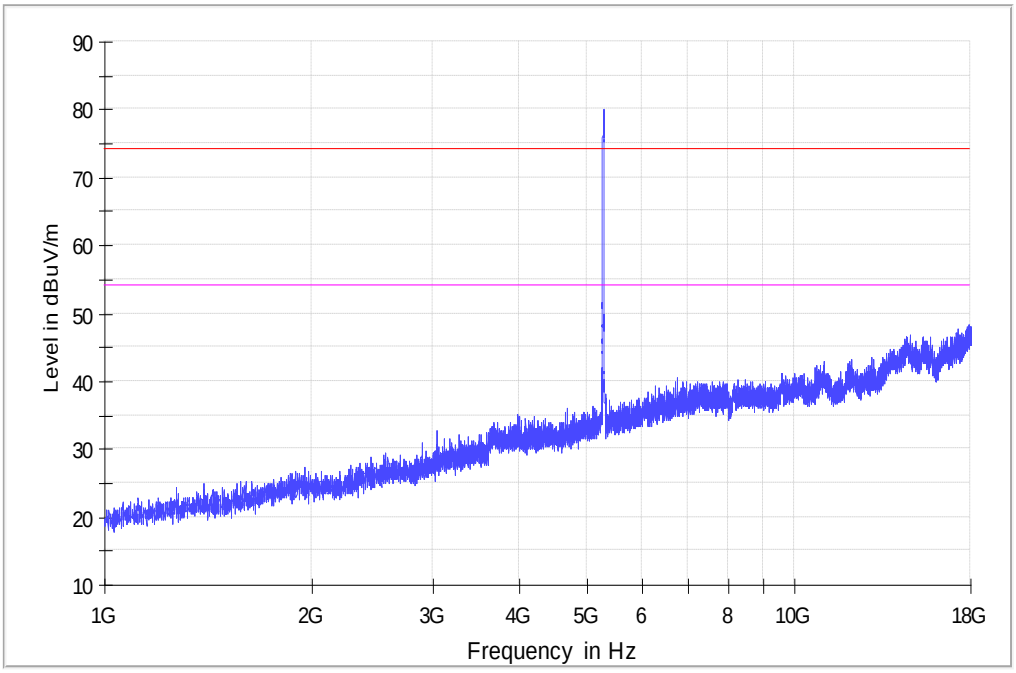
1-18G

11n HT40 IN THE 5.3GHz BAND
CH54

Horizontal



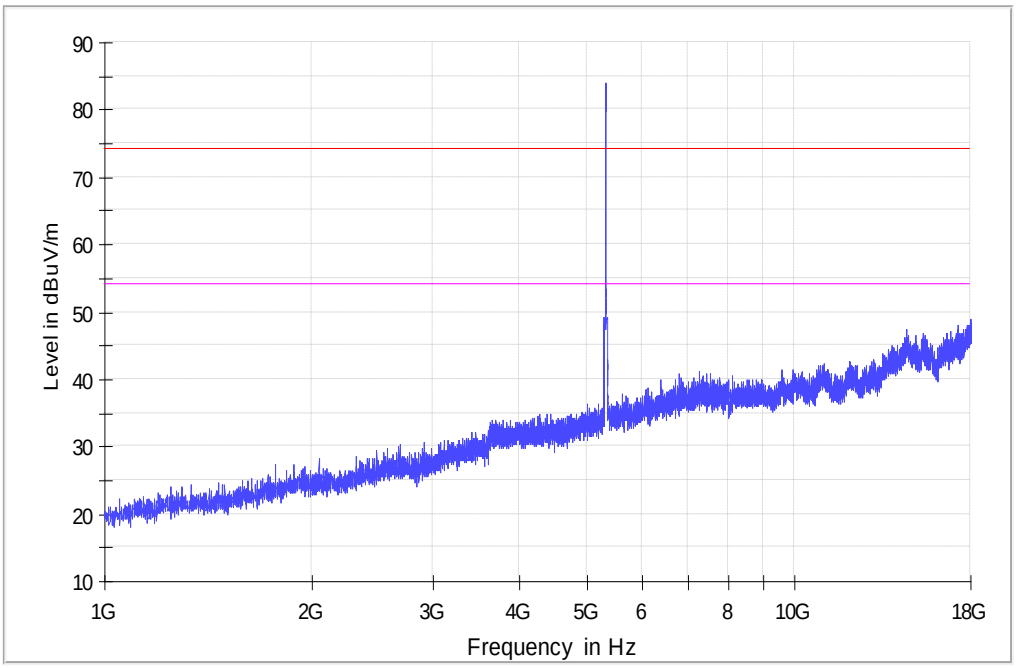
Vertical



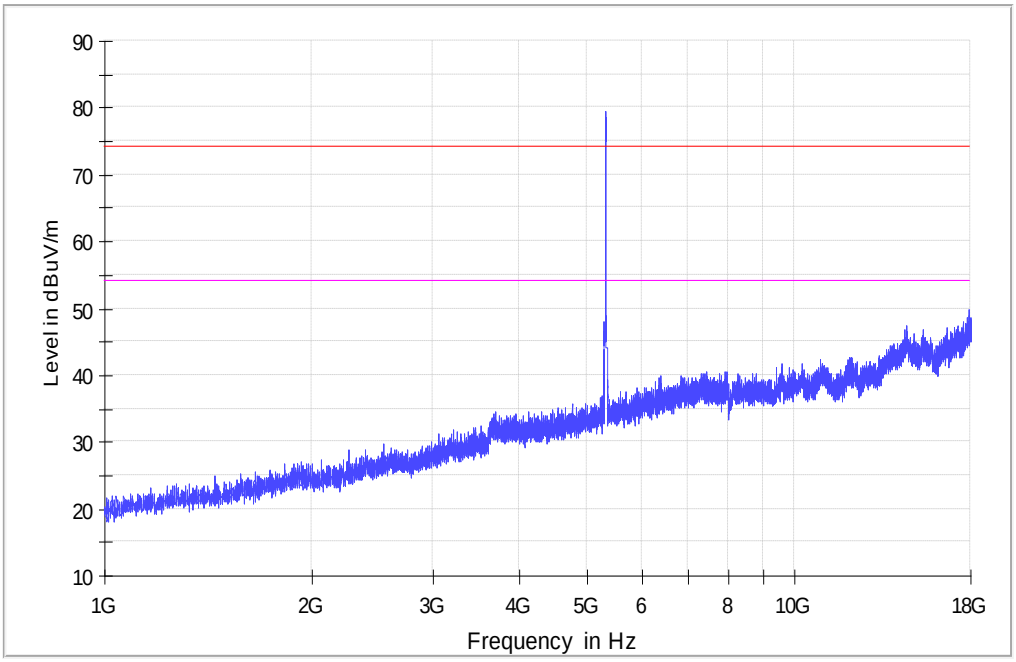
1-18G

11n HT40 IN THE 5.3GHz BAND
CH62

Horizontal



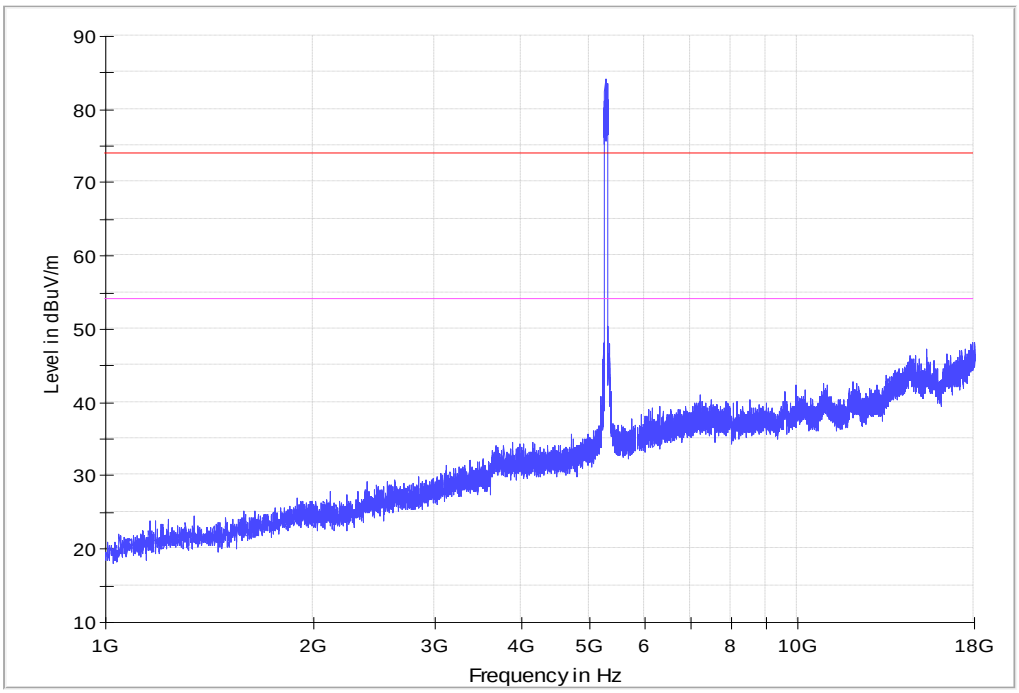
Vertical



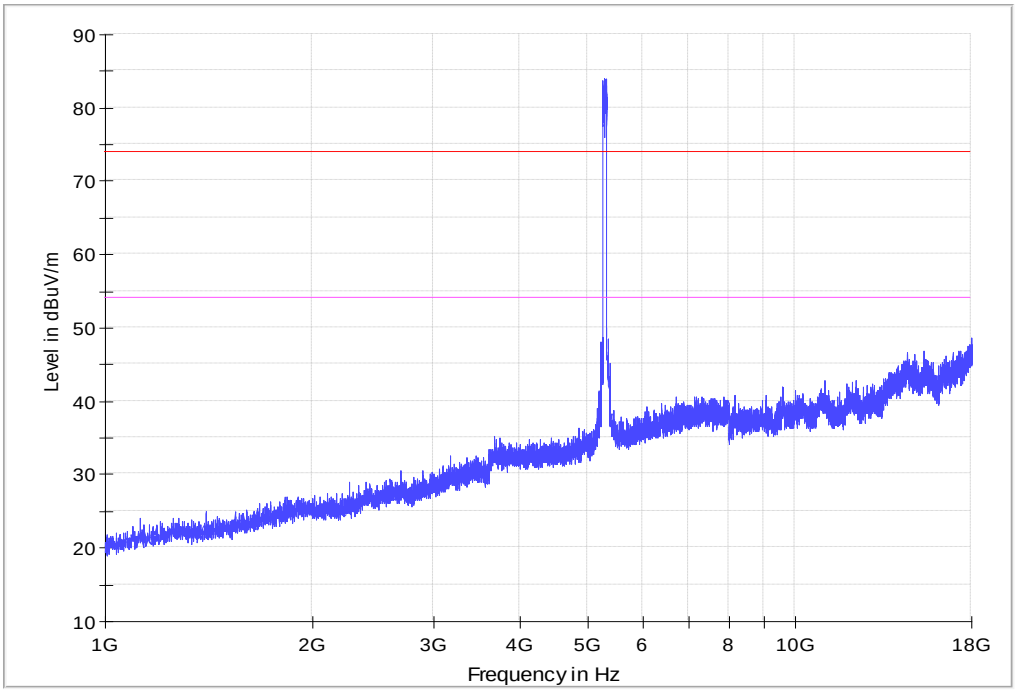
1-18G

11ac VHT80 IN THE 5.3GHz BAND
CH58

Horizontal



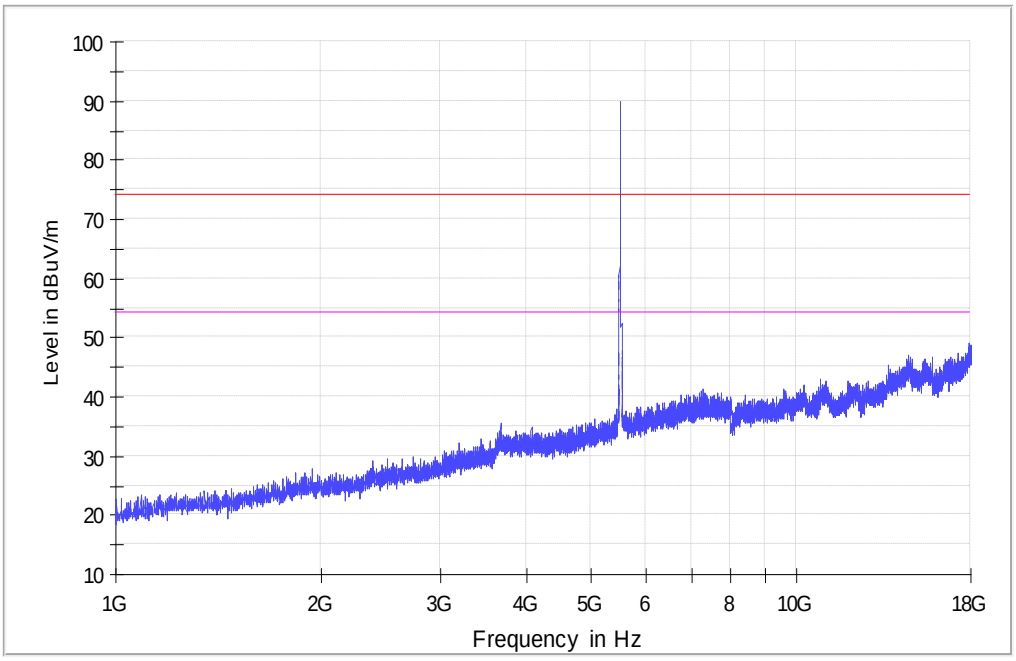
Vertical



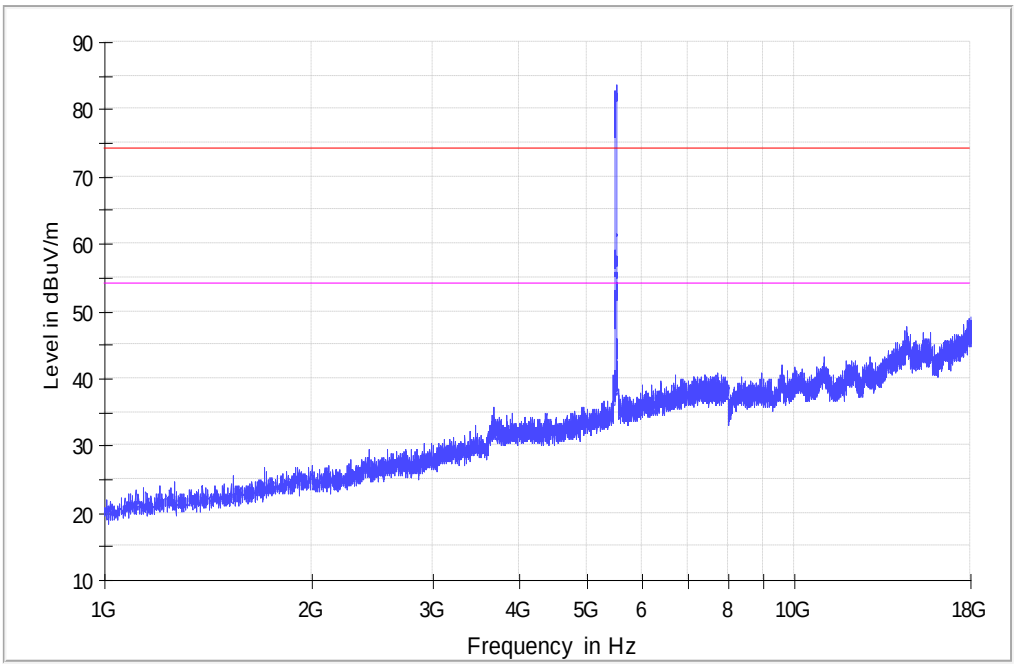
1-18G

11a IN THE 5.6GHz BAND
CH100

Horizontal



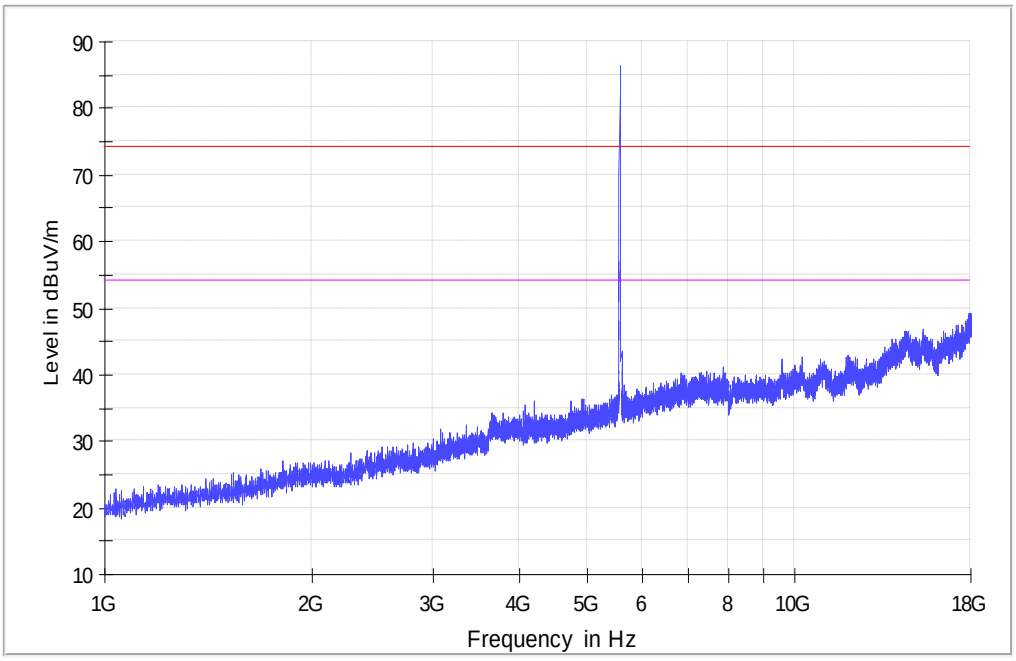
Vertical



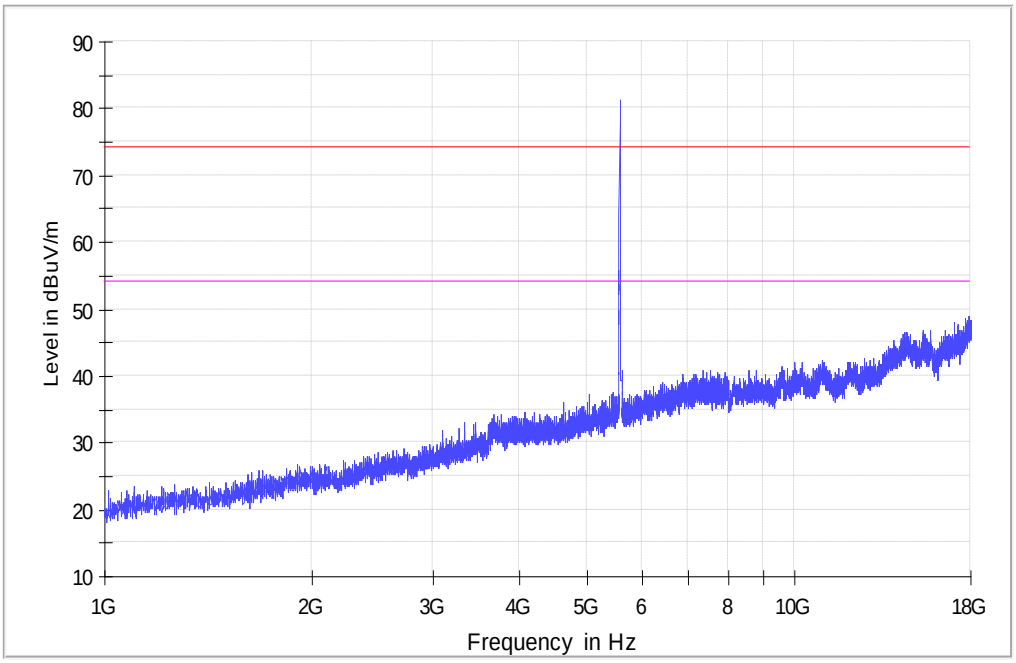
1-18G

11a IN THE 5.6GHz BAND
CH120

Horizontal



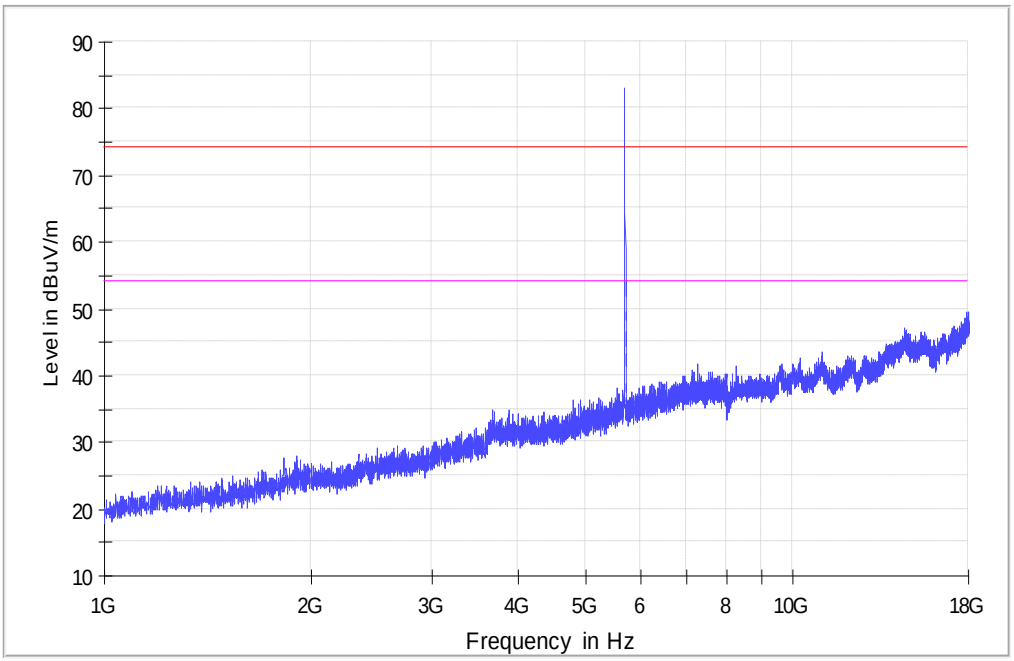
Vertical



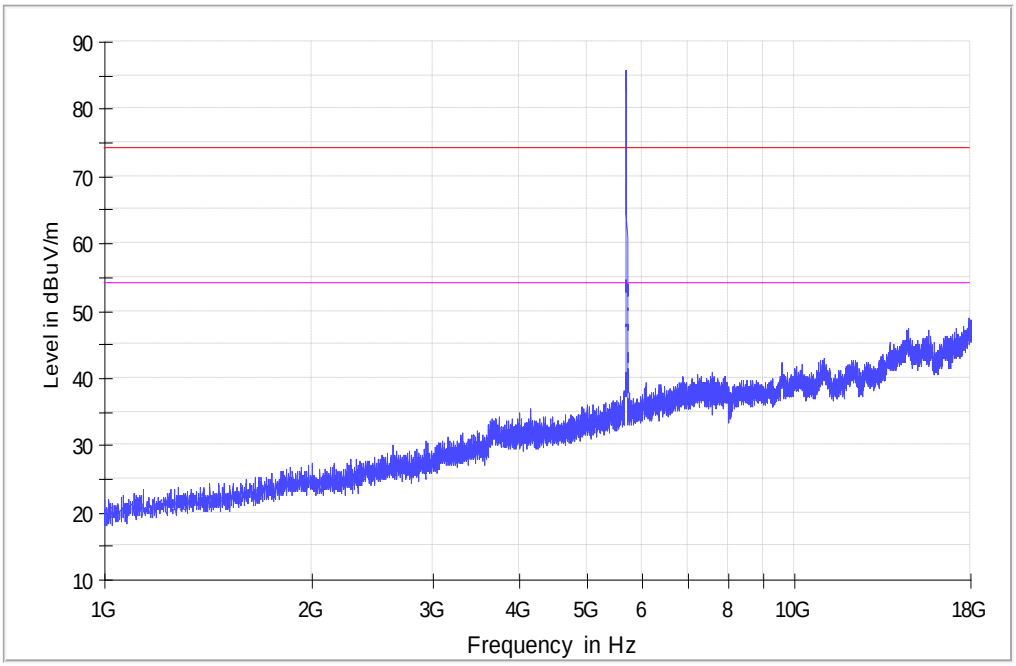
1-18G

11a IN THE 5.6GHz BAND
CH140

Horizontal



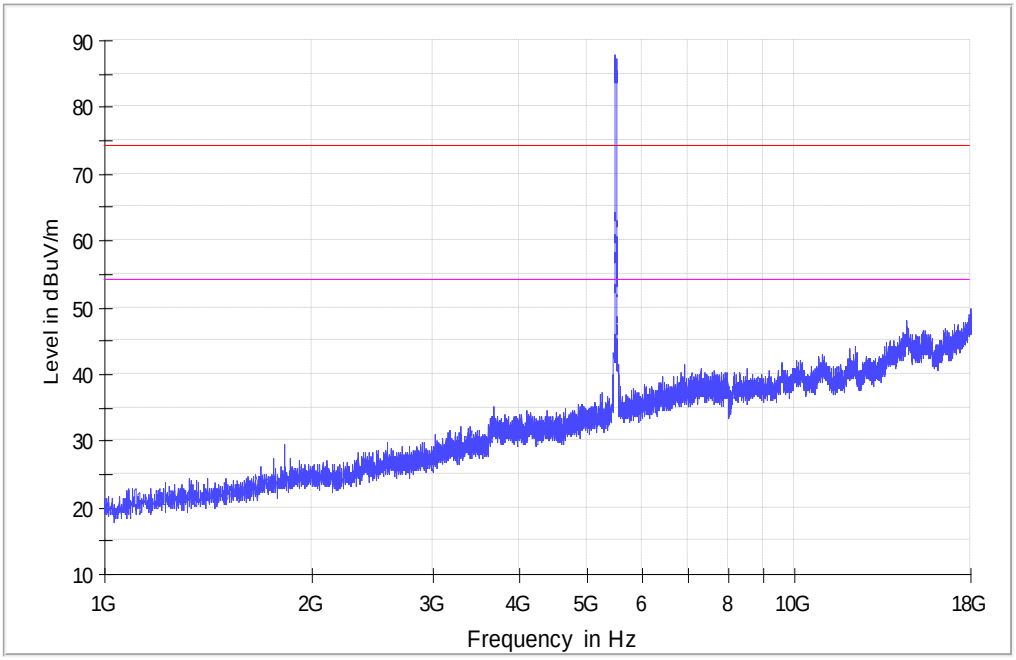
Vertical



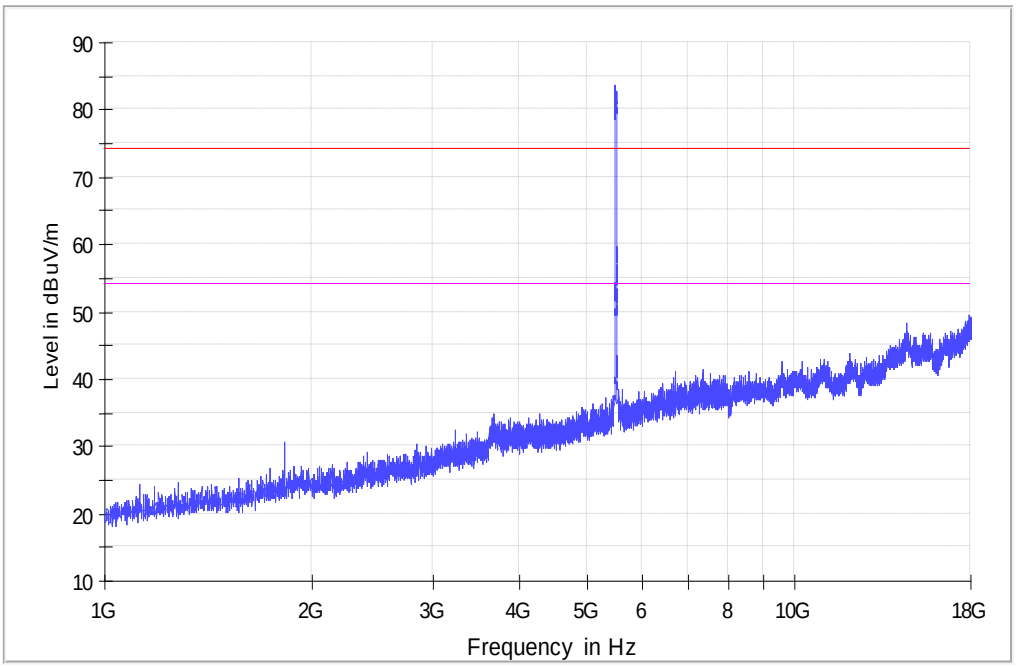
1-18G

11n HT20 IN THE 5.6GHz BAND
CH100

Horizontal



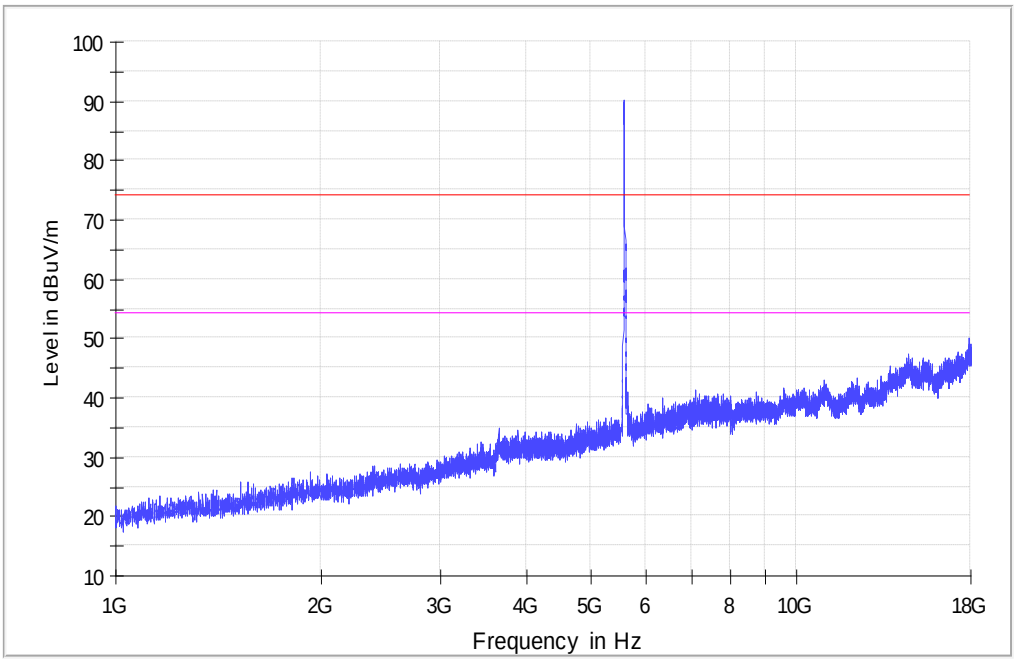
Vertical



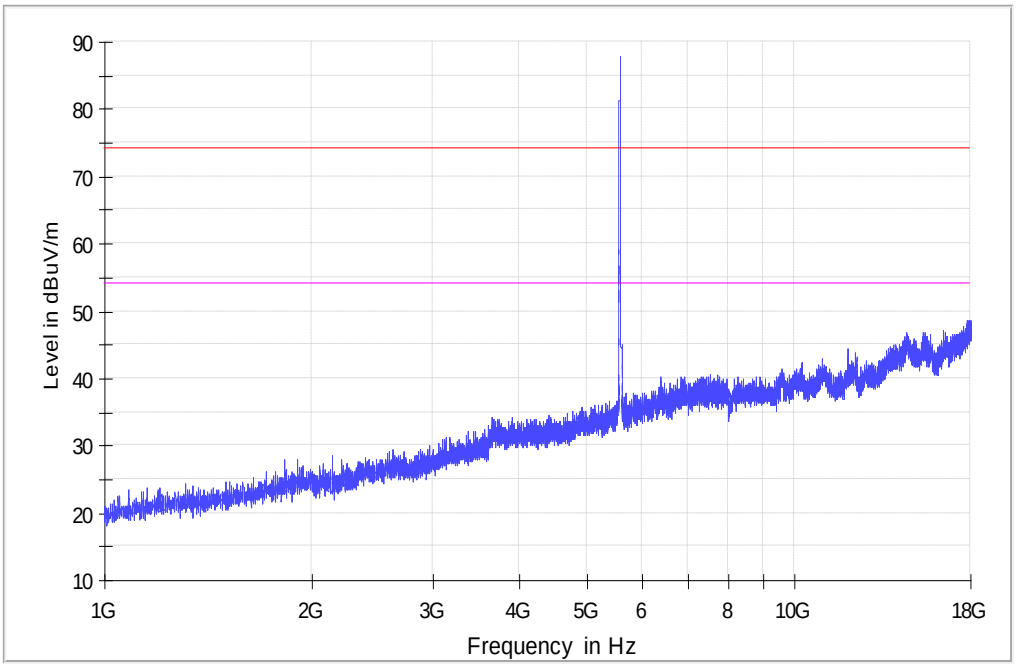
1-18G

11n HT20 IN THE 5.6GHz BAND
CH120

Horizontal



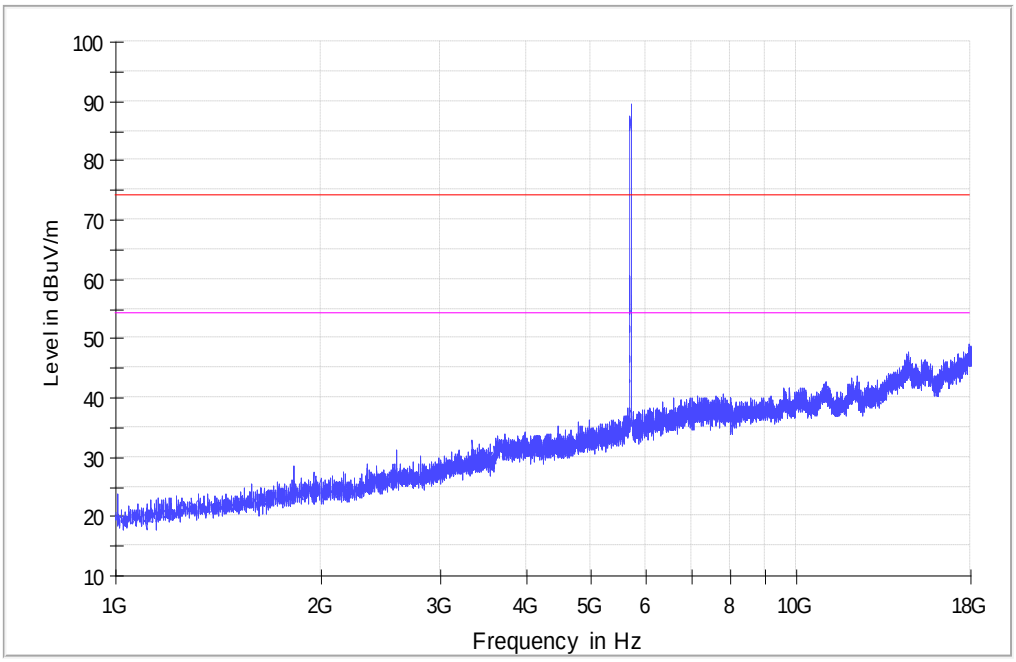
Vertical



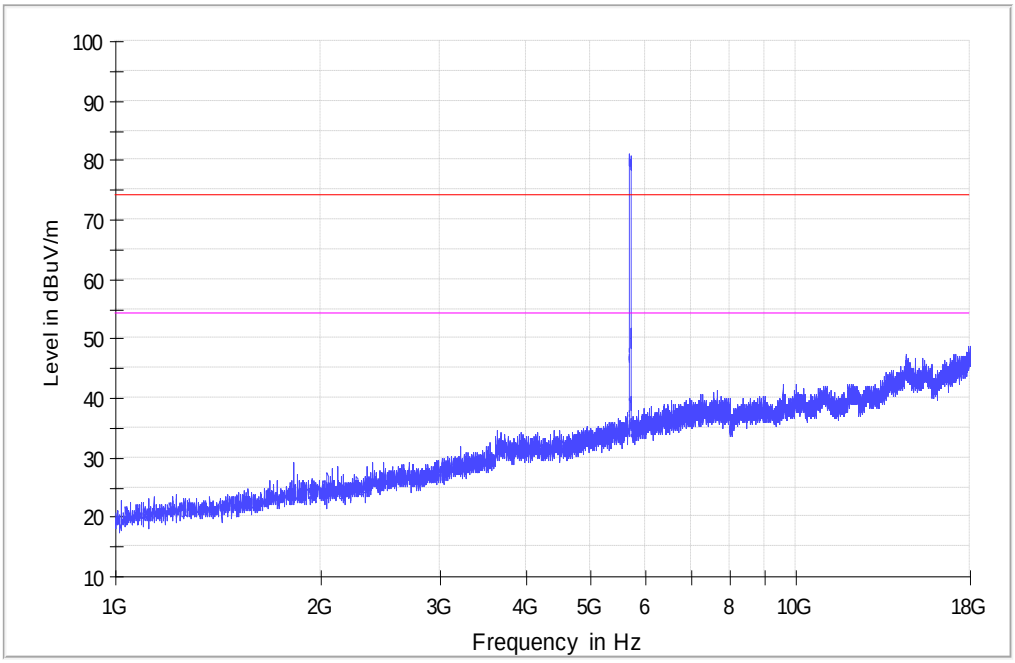
1-18G

11n HT20 IN THE 5.6GHz BAND
CH140

Horizontal



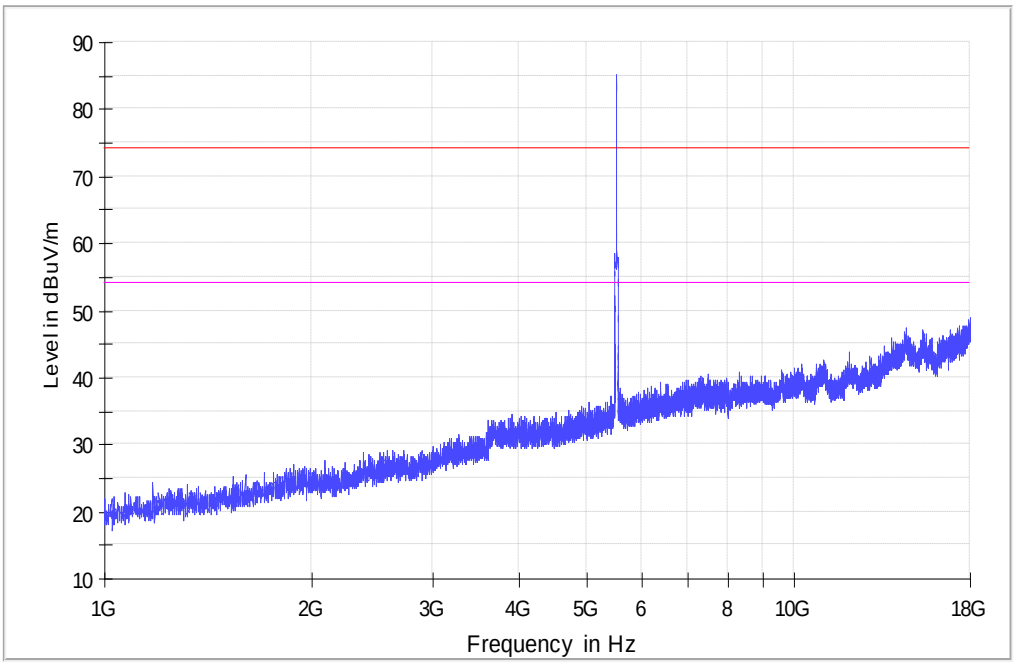
Vertical



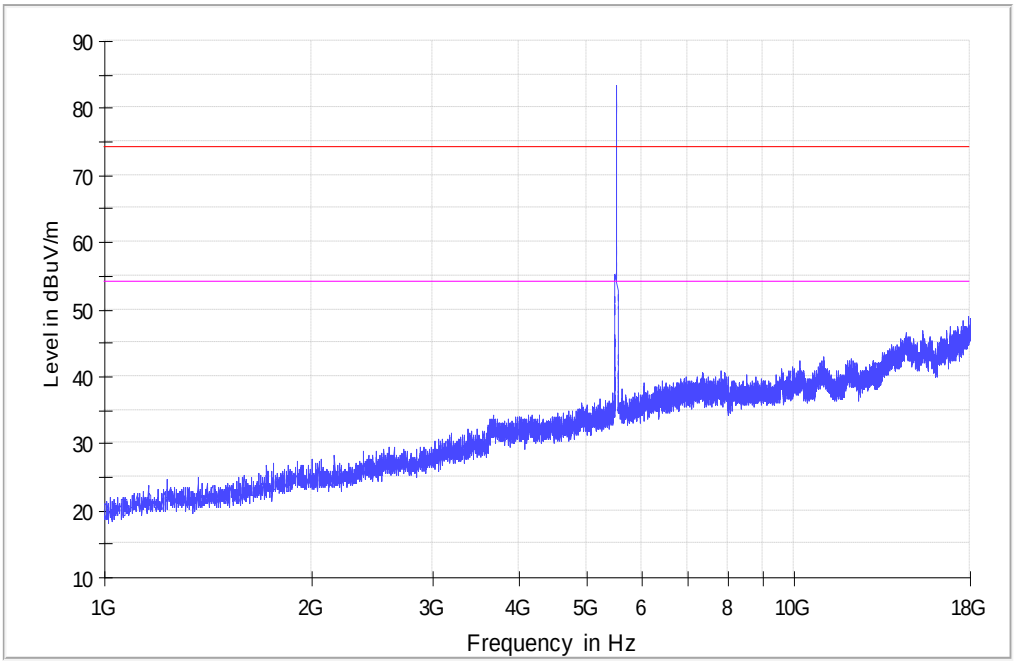
1-18G

11n HT40 IN THE 5.6GHz BAND
CH102

Horizontal



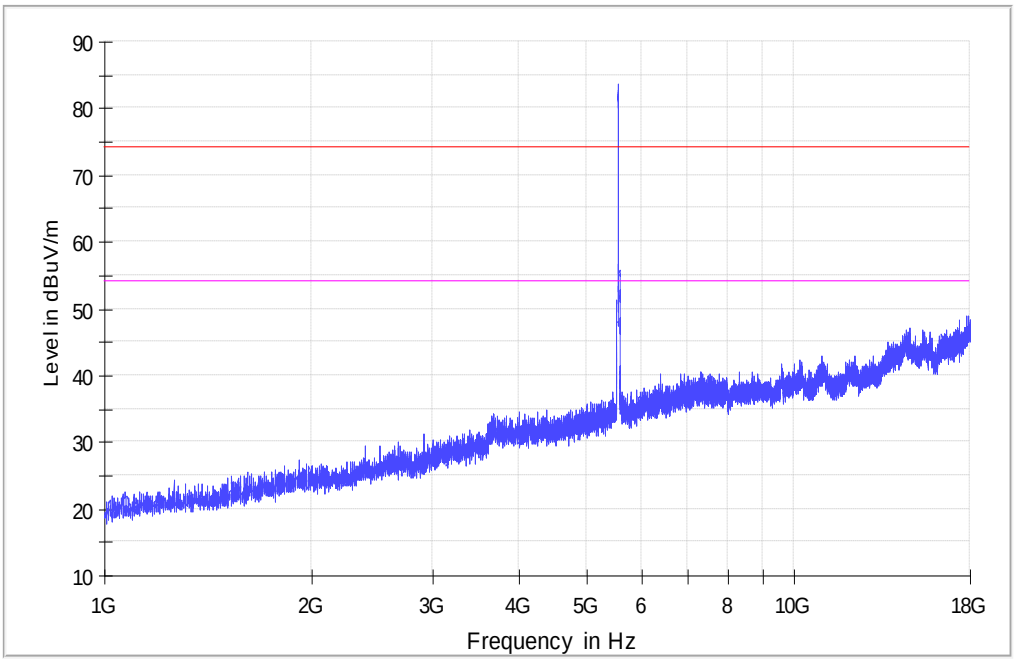
Vertical



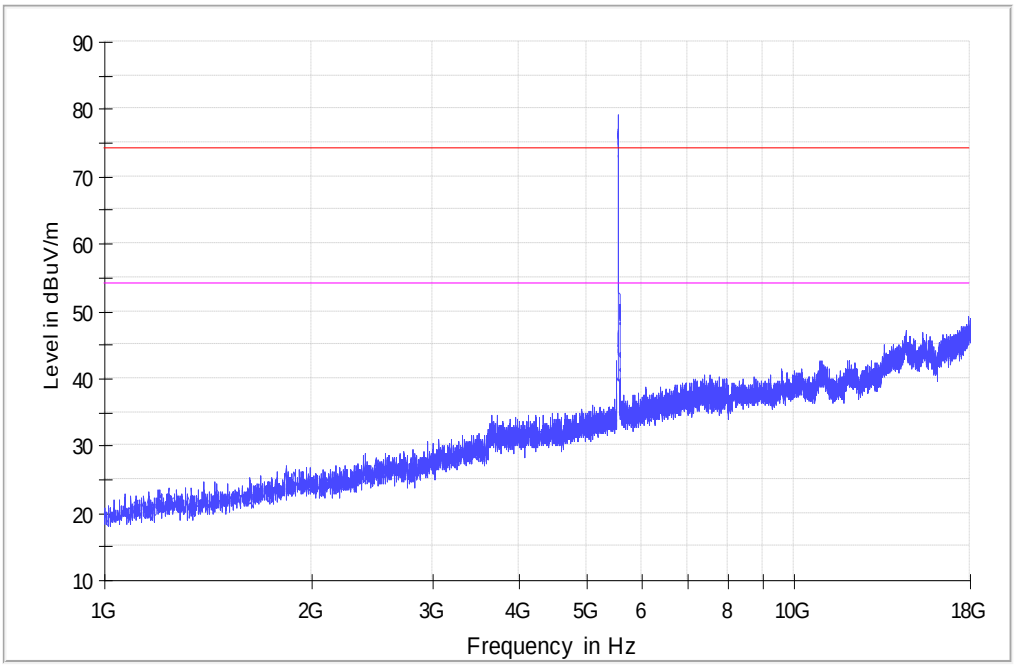
1-18G

11n HT40 IN THE 5.6GHz BAND
CH118

Horizontal



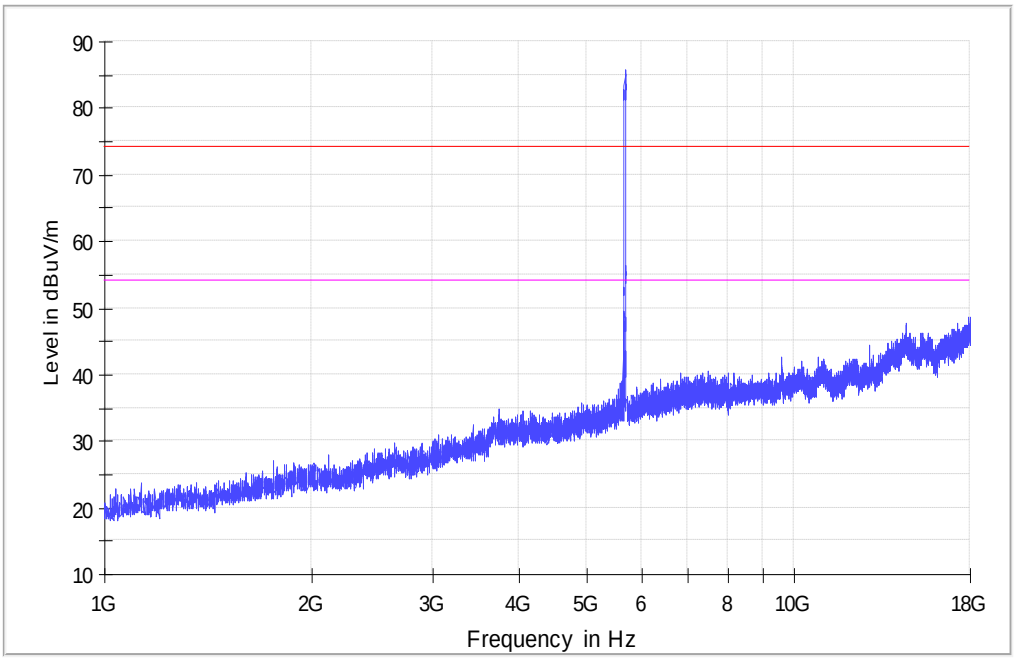
Vertical



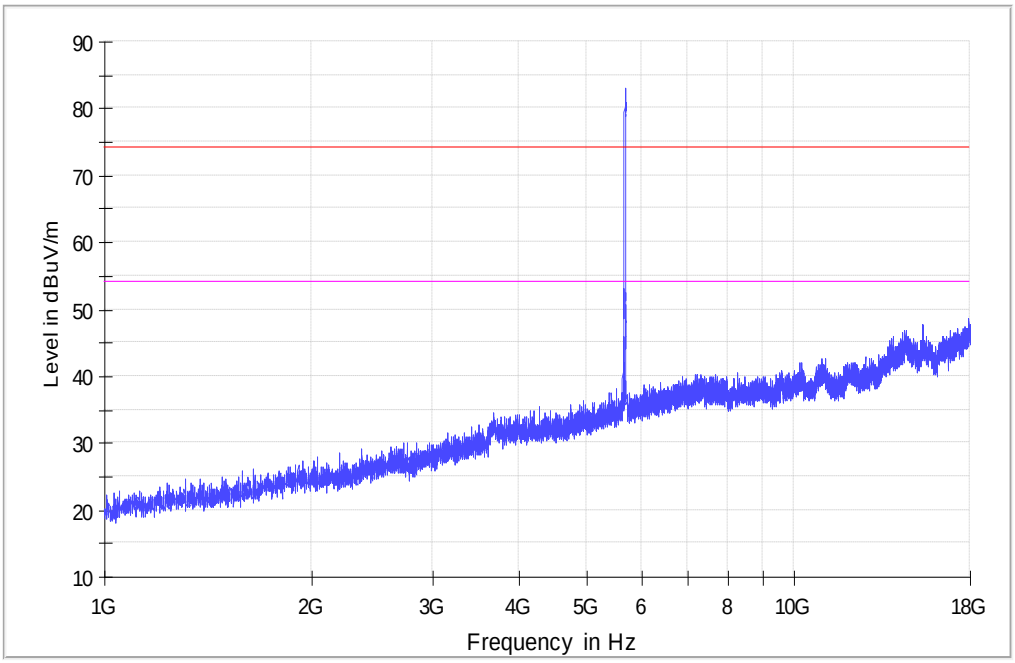
1-18G

11n HT40 IN THE 5.6GHz BAND
CH134

Horizontal



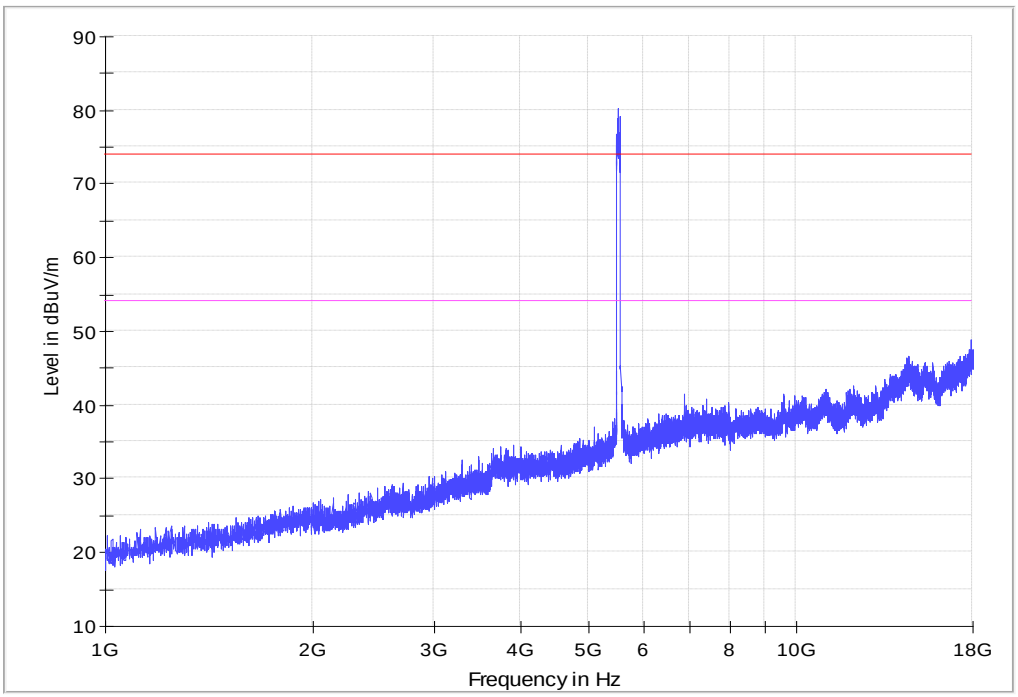
Vertical



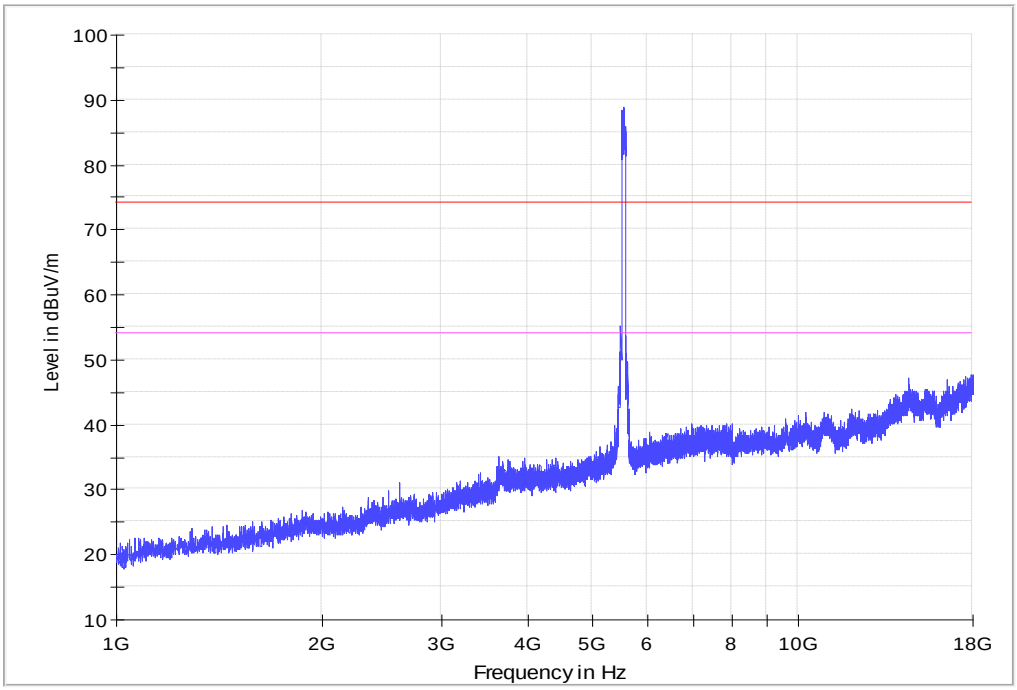
1-18G

11ac VHT80 IN THE 5.6GHz BAND
CH106

Horizontal



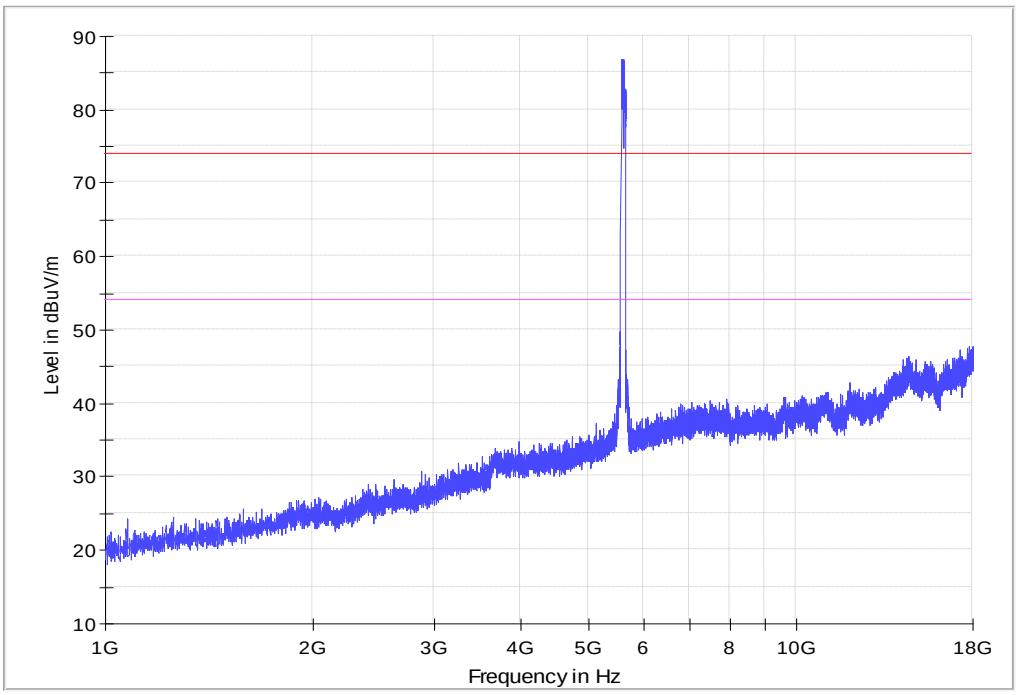
Vertical



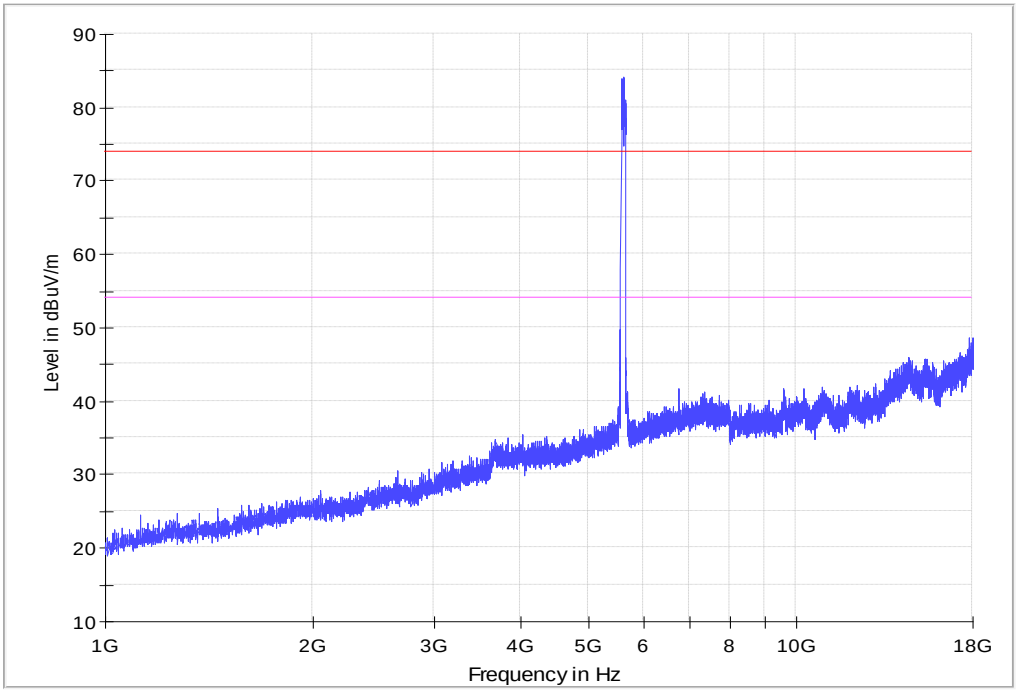
1-18G

11ac VHT80 IN THE 5.6GHz BAND
CH122

Horizontal



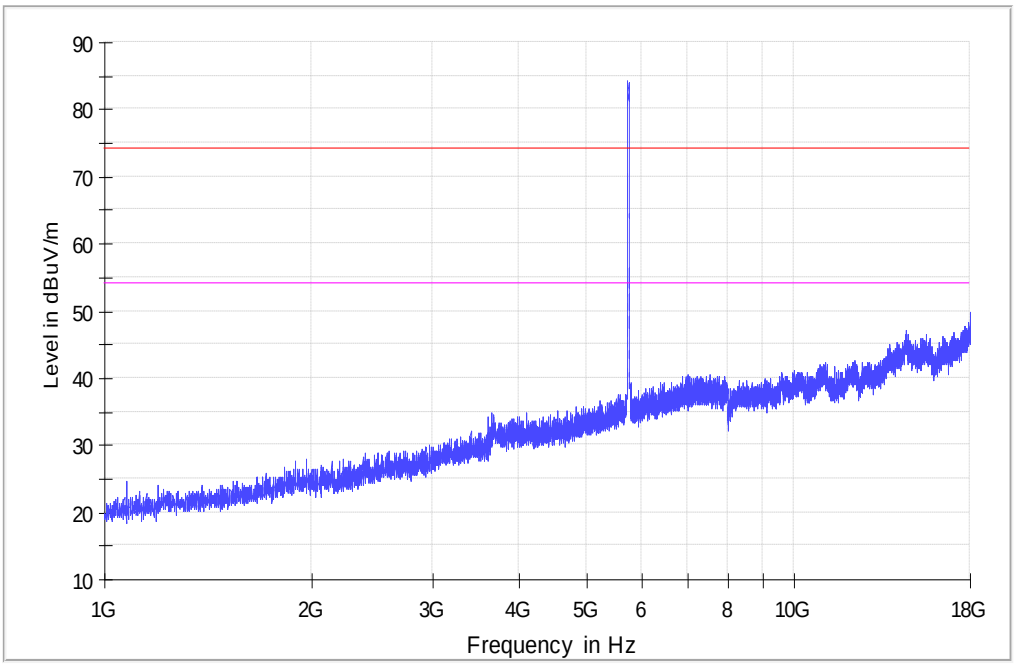
Vertical



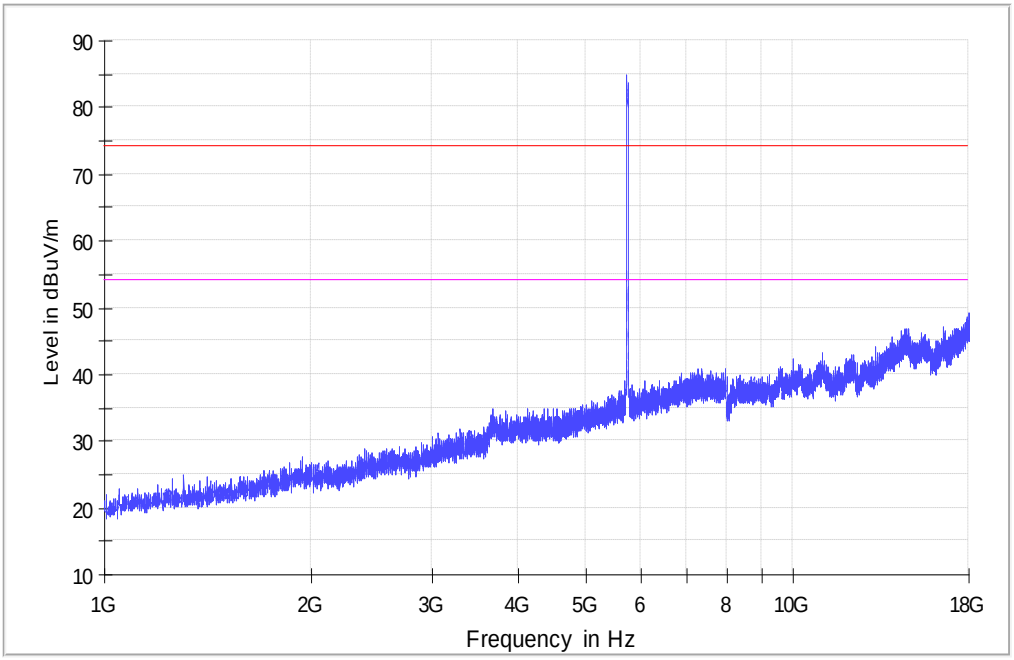
1-18G

11a IN THE 5.8GHz BAND
CH149

Horizontal



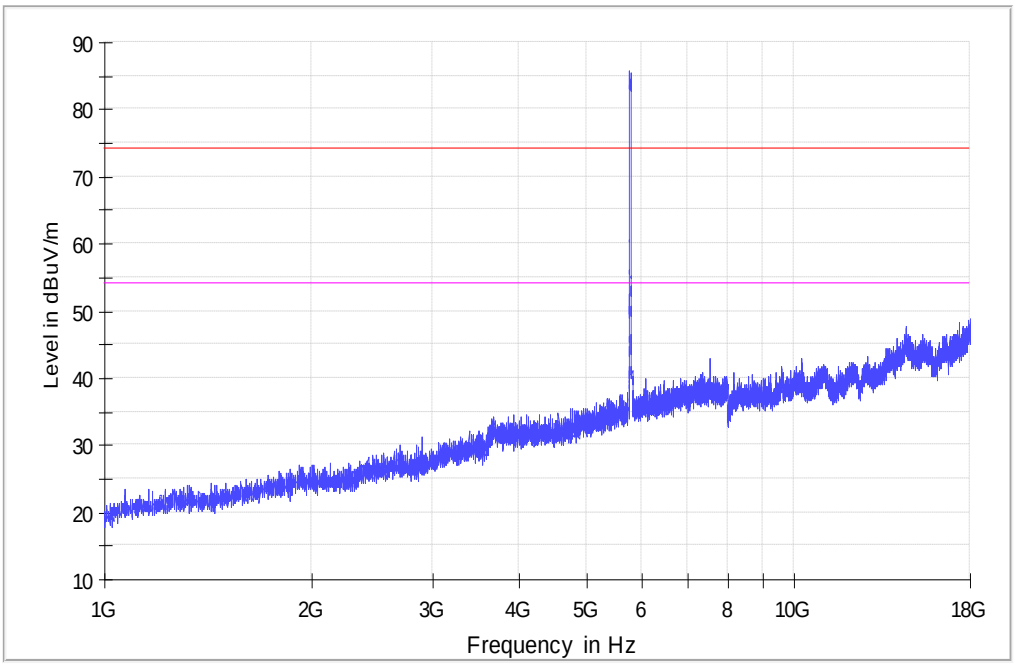
Vertical



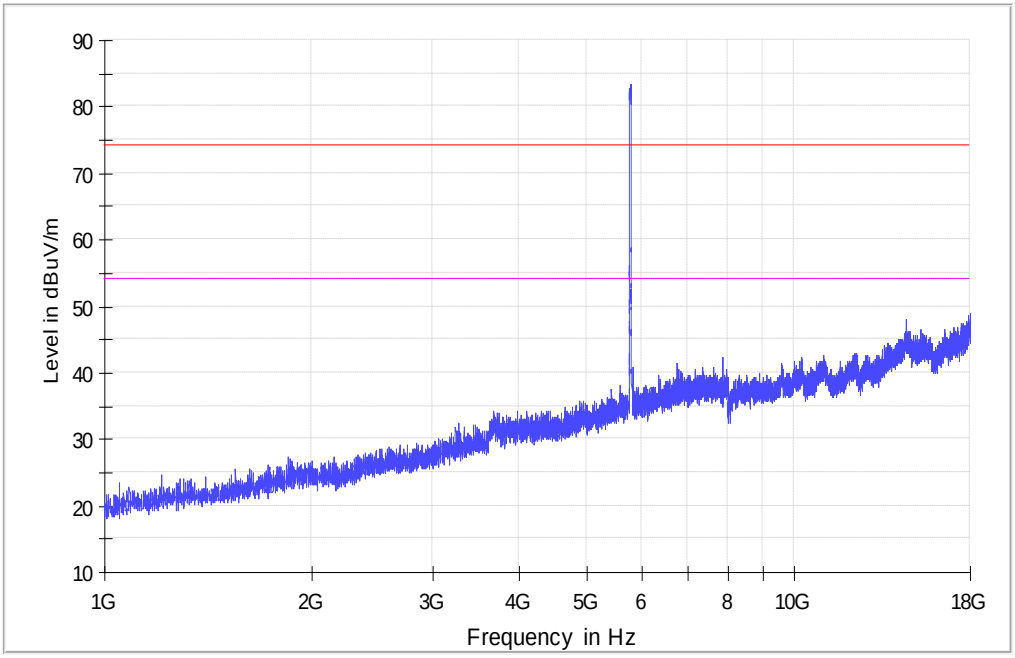
1-18G

11a IN THE 5.8GHz BAND
CH157

Horizontal



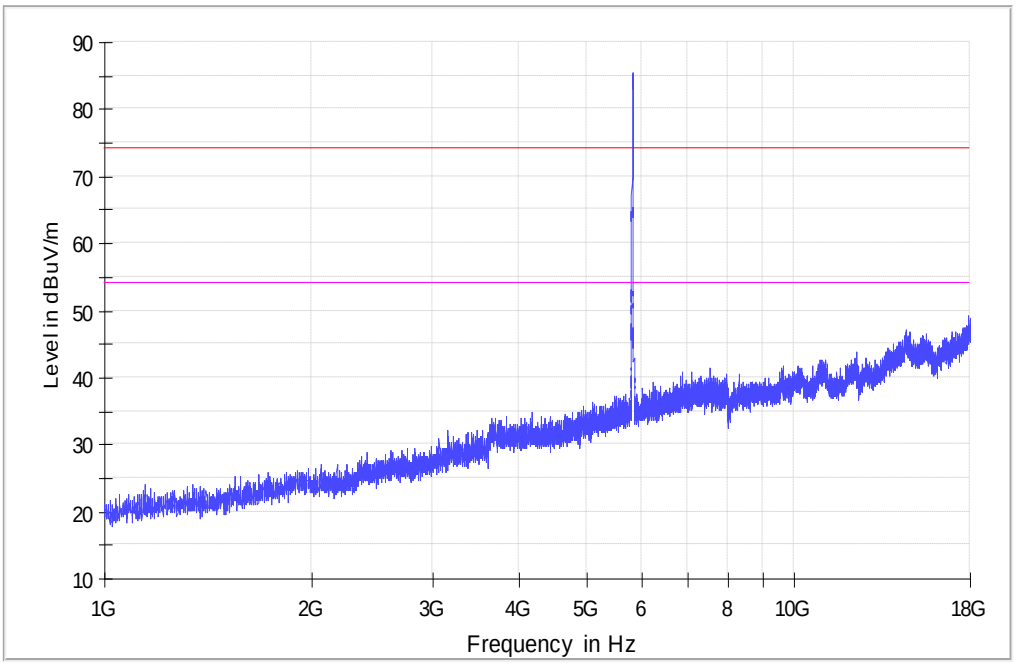
Vertical



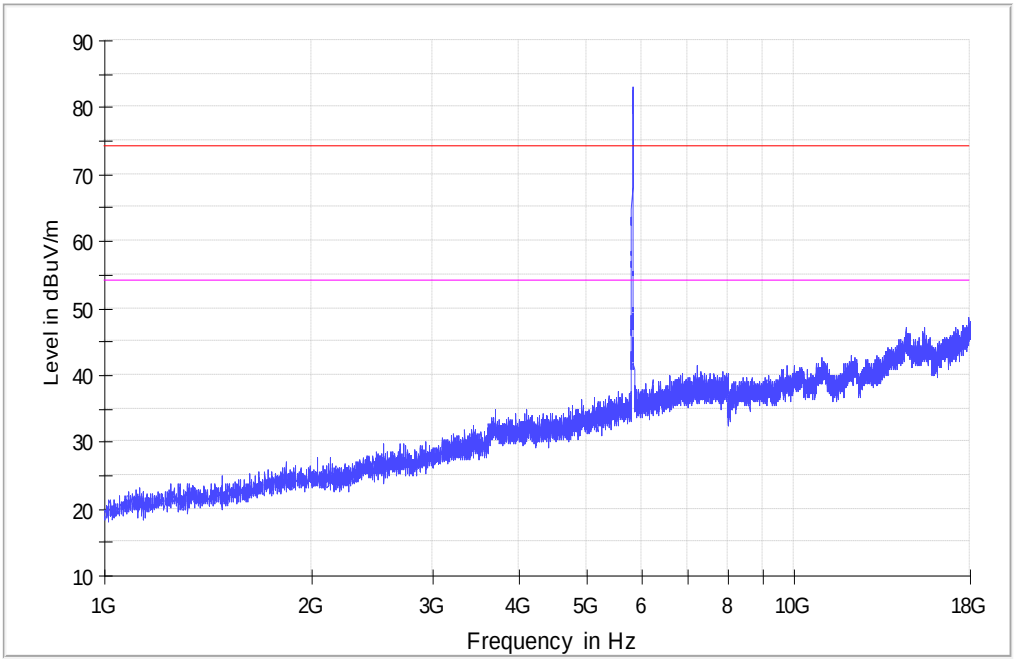
1-18G

11a IN THE 5.8GHz BAND
CH165

Horizontal



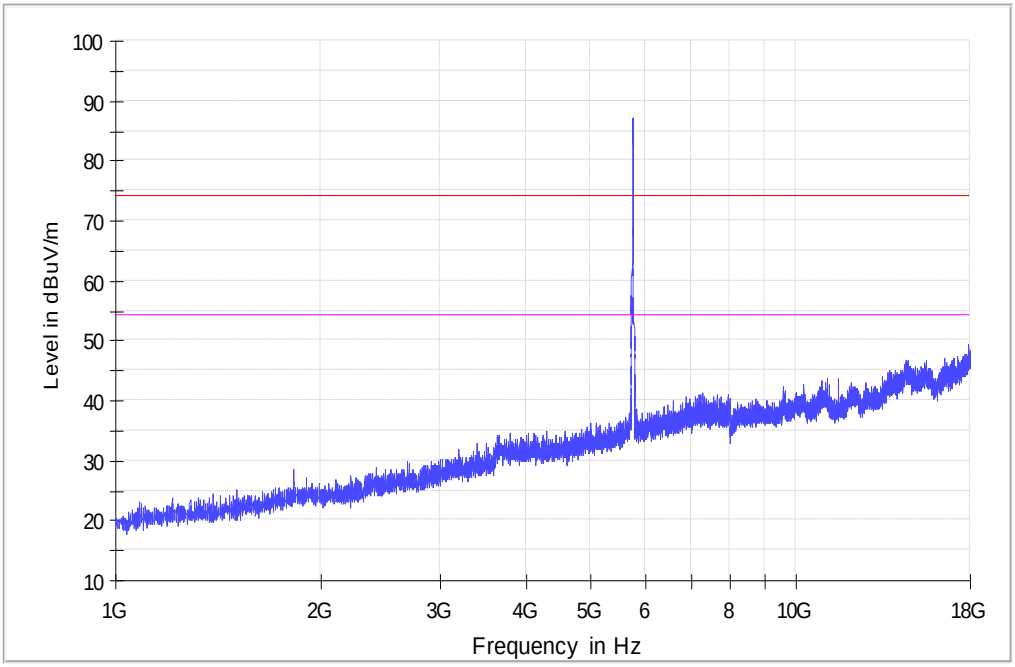
Vertical



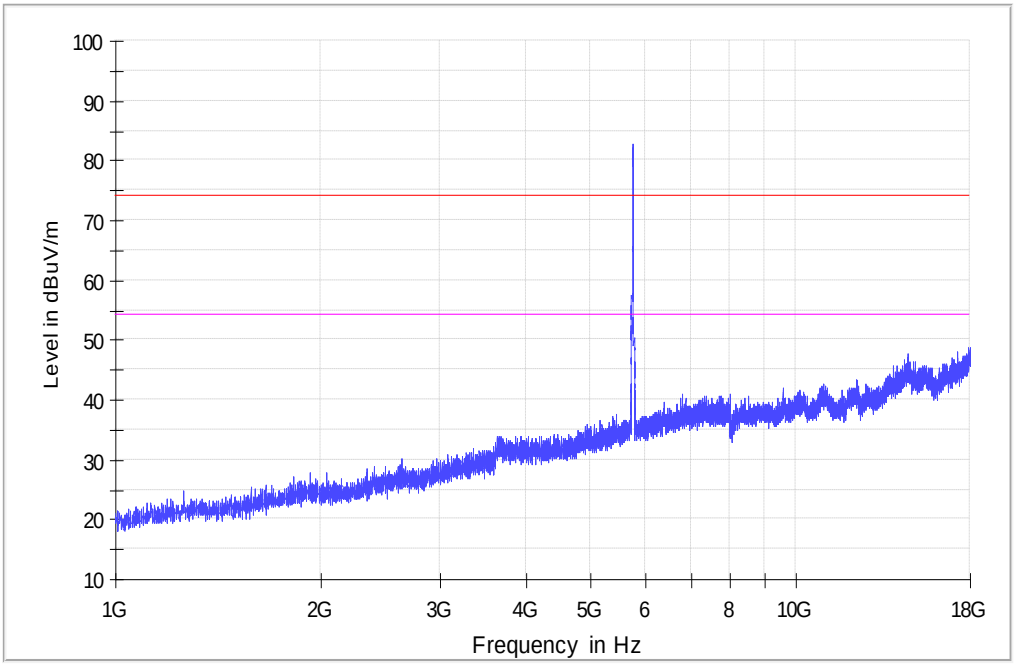
1-18G

11n HT20 IN THE 5.8GHz BAND
CH149

Horizontal



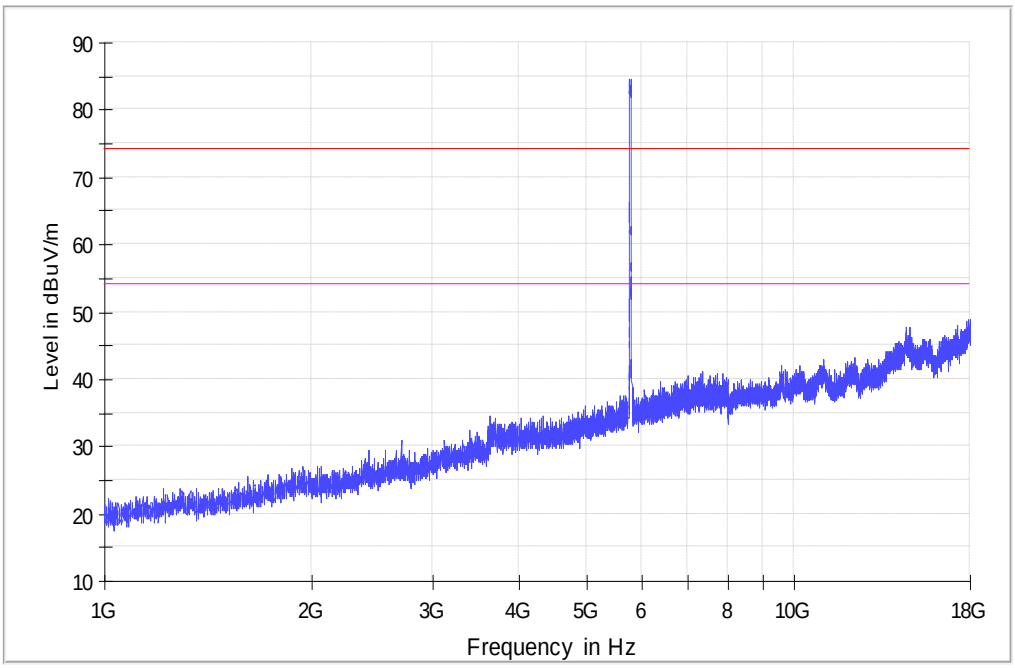
Vertical



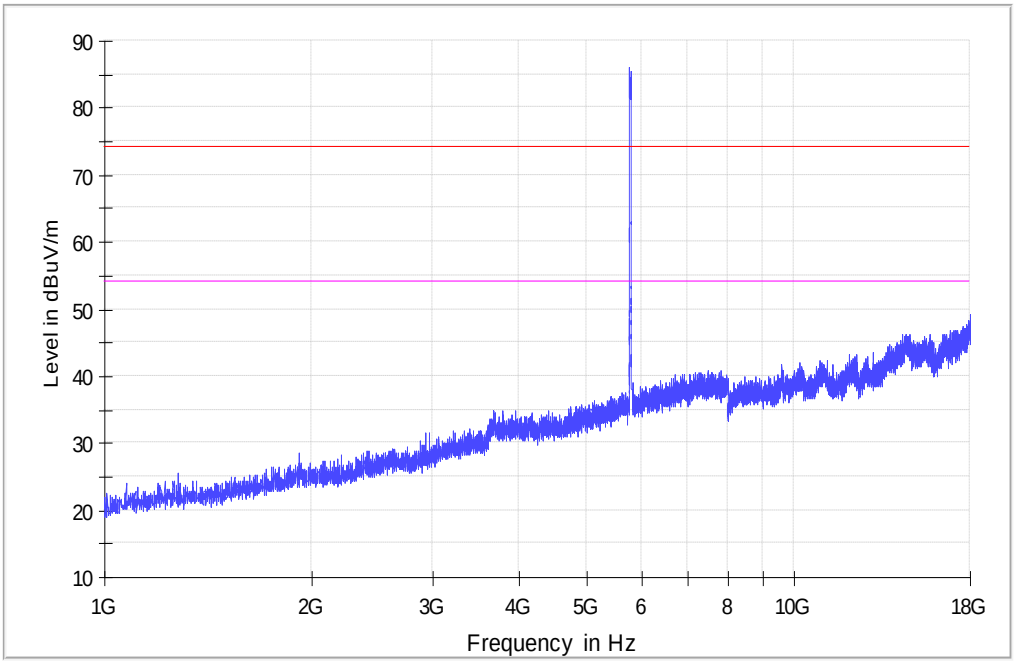
1-18G

11n HT20 IN THE 5.8GHz BAND
CH157

Horizontal



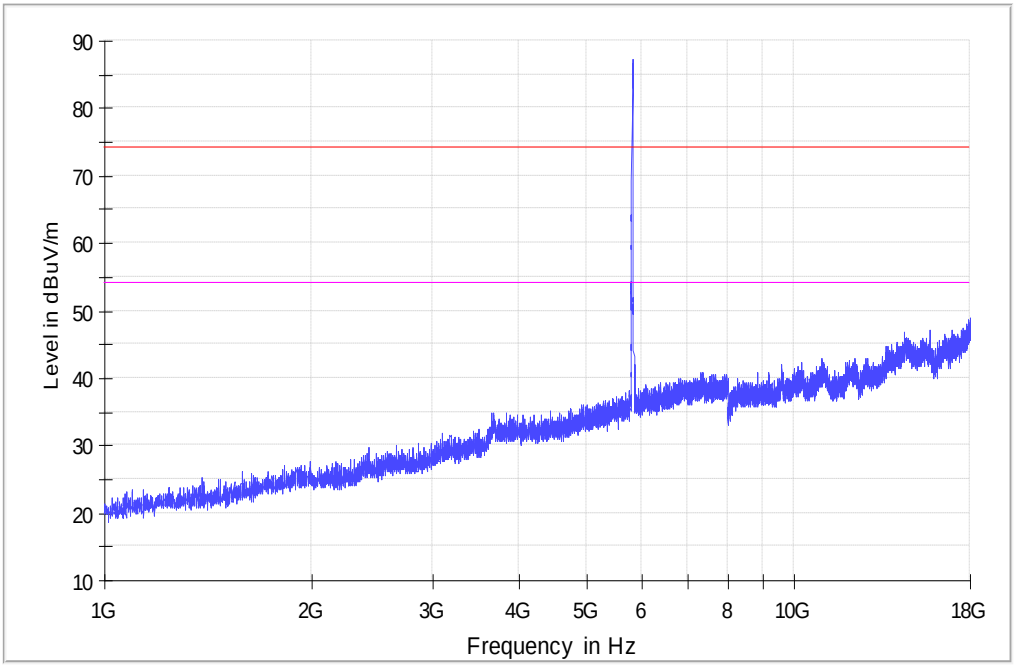
Vertical



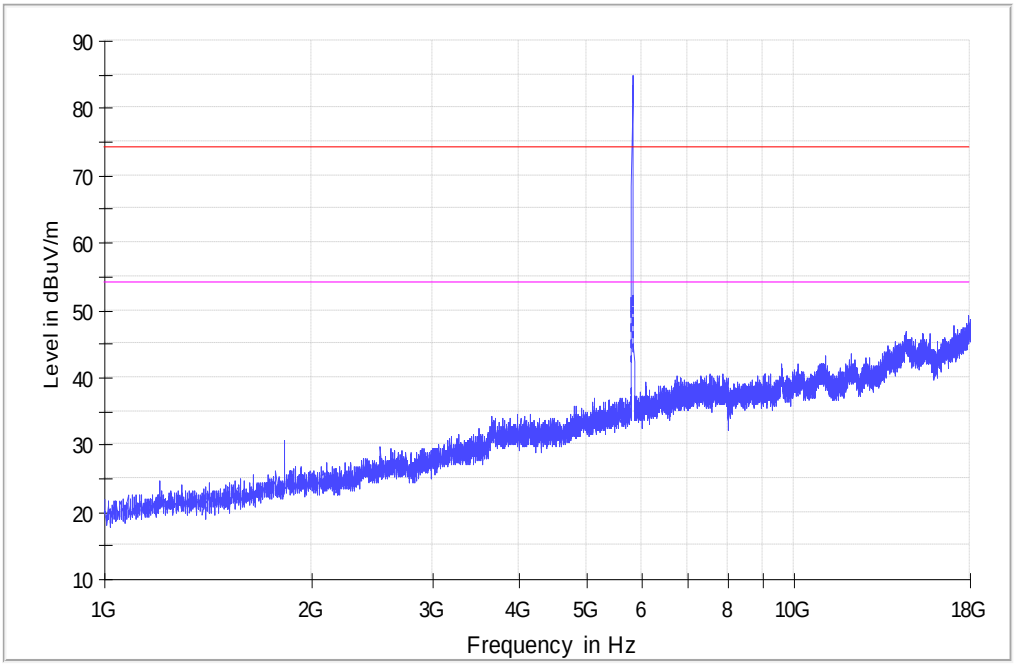
1-18G

11n HT20 IN THE 5.8GHz BAND
CH165

Horizontal



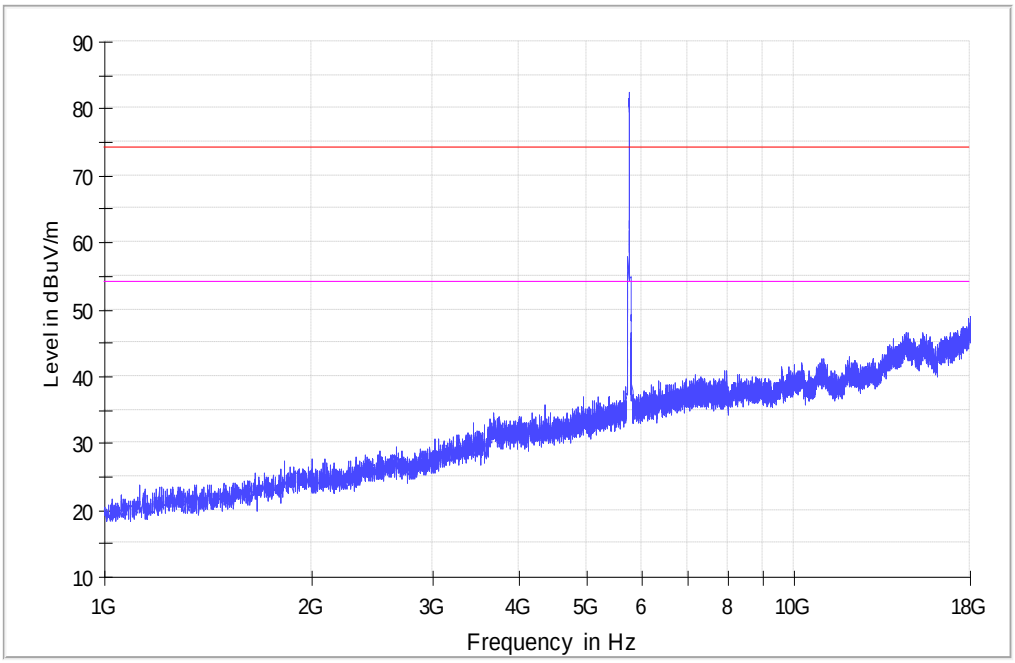
Vertical



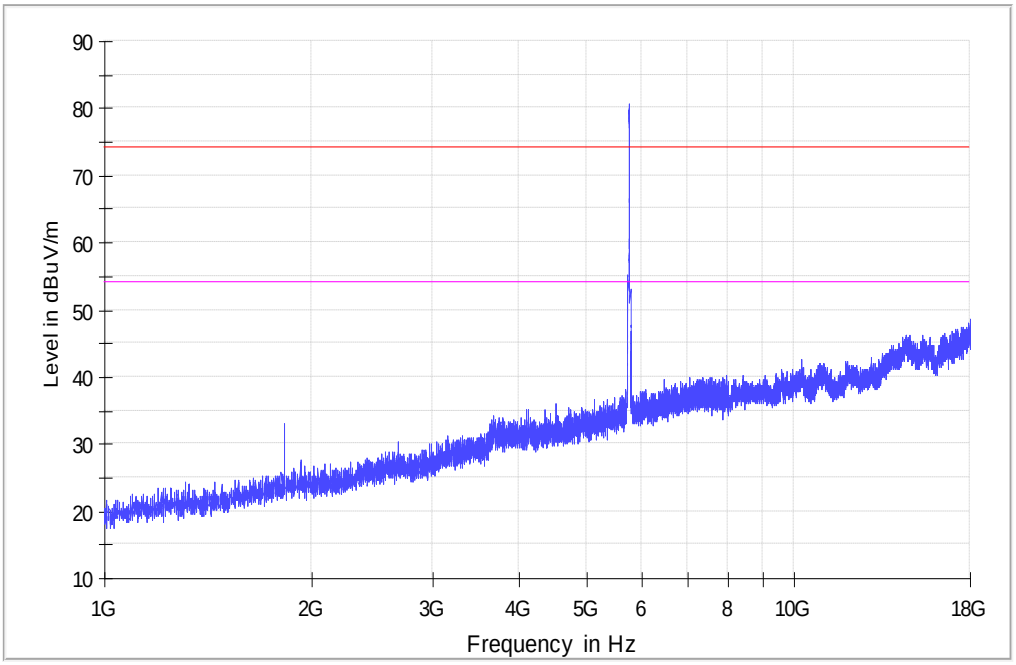
1-18G

11n HT40 IN THE 5.8GHz BAND
CH151

Horizontal



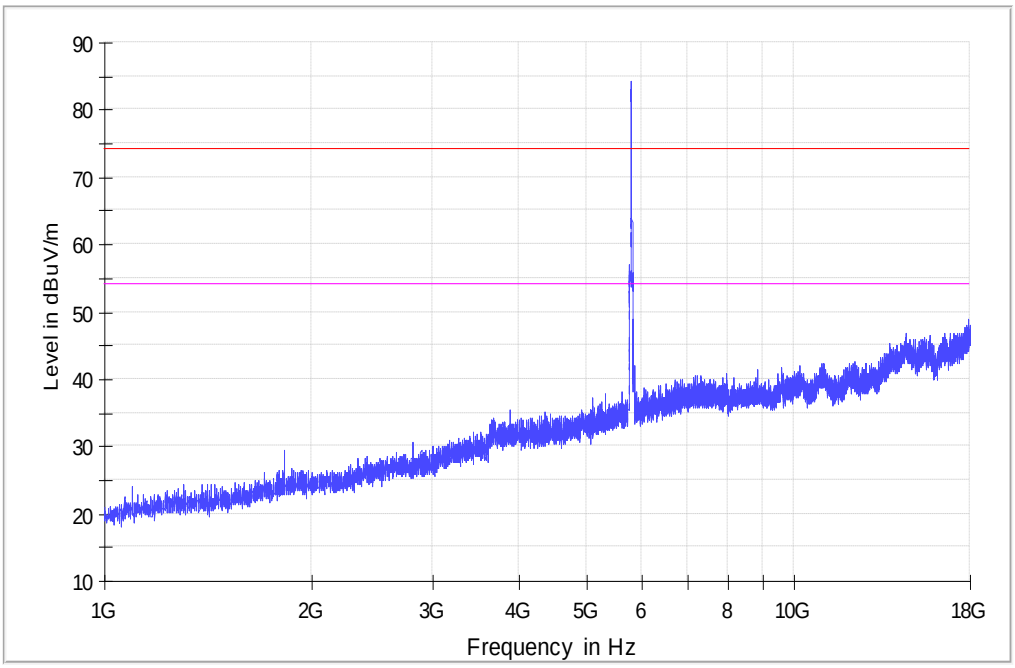
Vertical



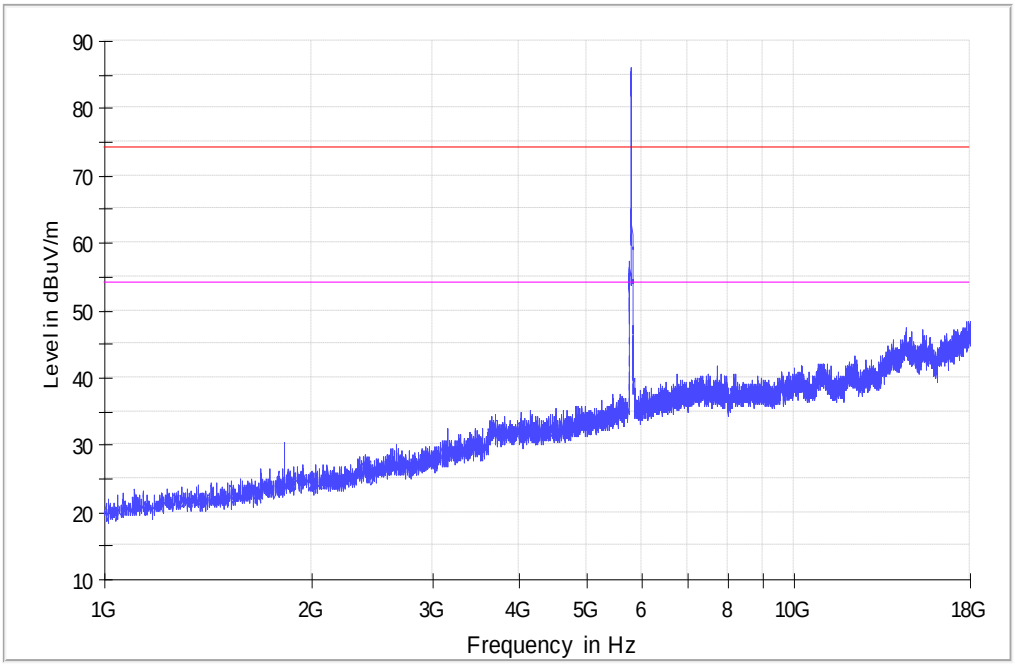
1-18G

11n HT40 IN THE 5.8GHz BAND
CH159

Horizontal

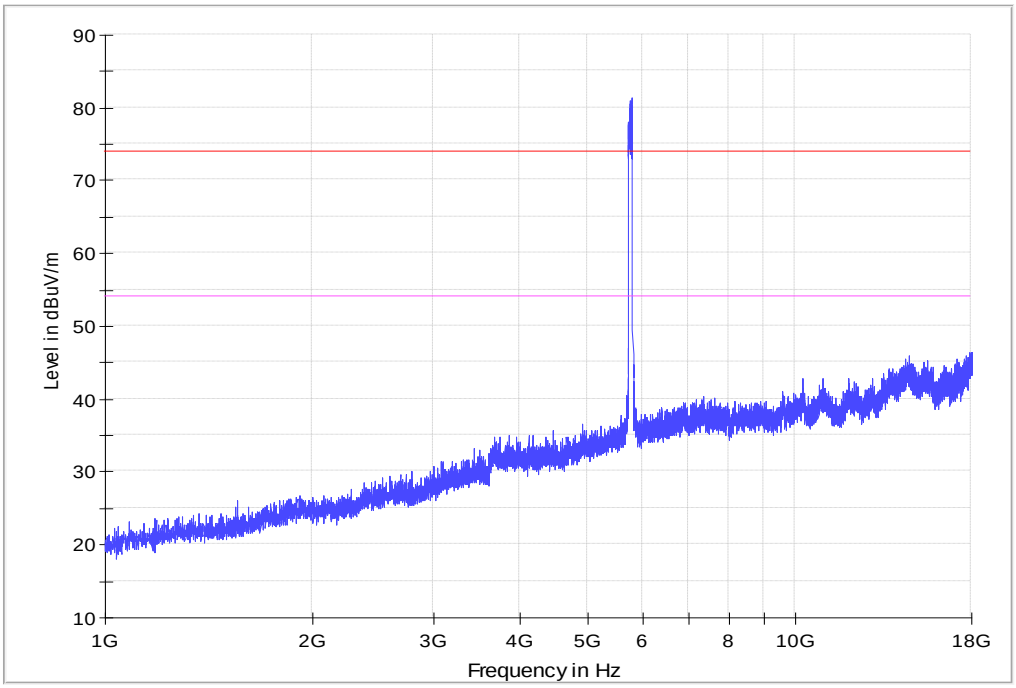


Vertical

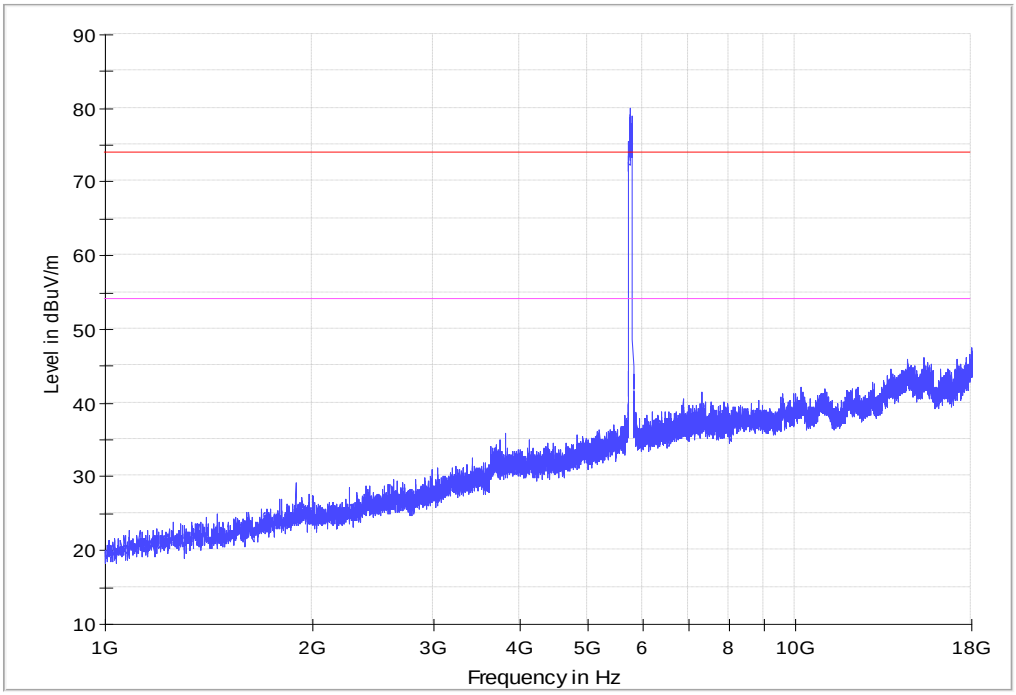


1-18G

11ac VHT80 IN THE 5.8GHz BAND
CH155
Horizontal

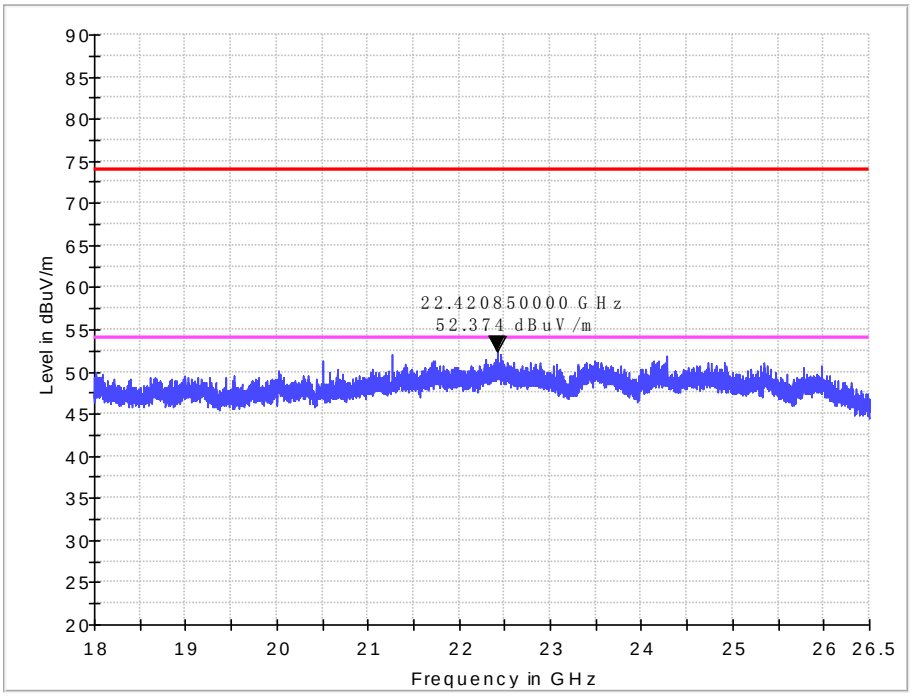


Vertical

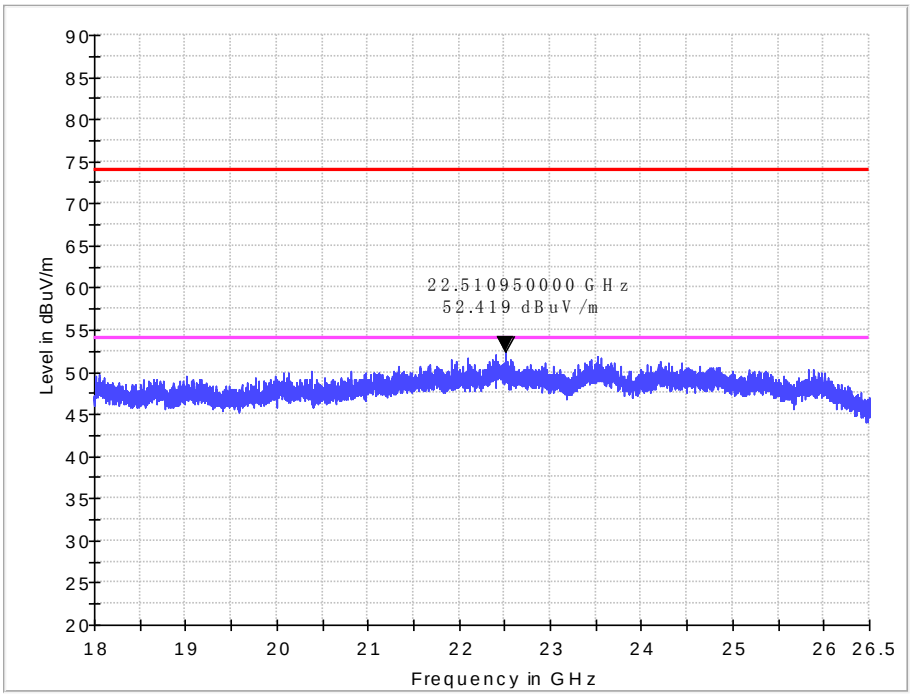


18GHz - 26.5GHz

(Worst Case)
Horizontal

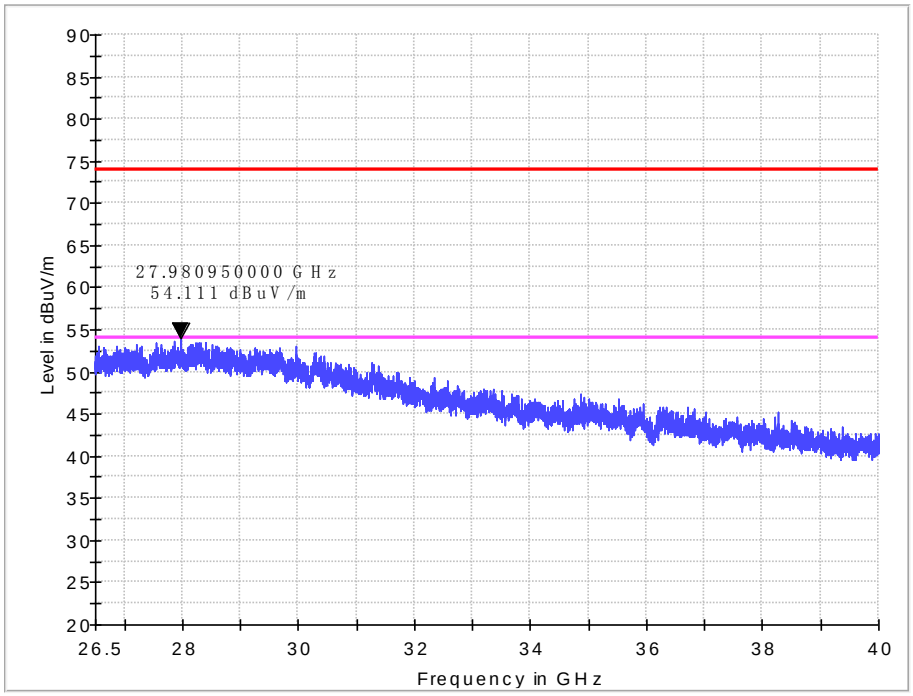


Vertical

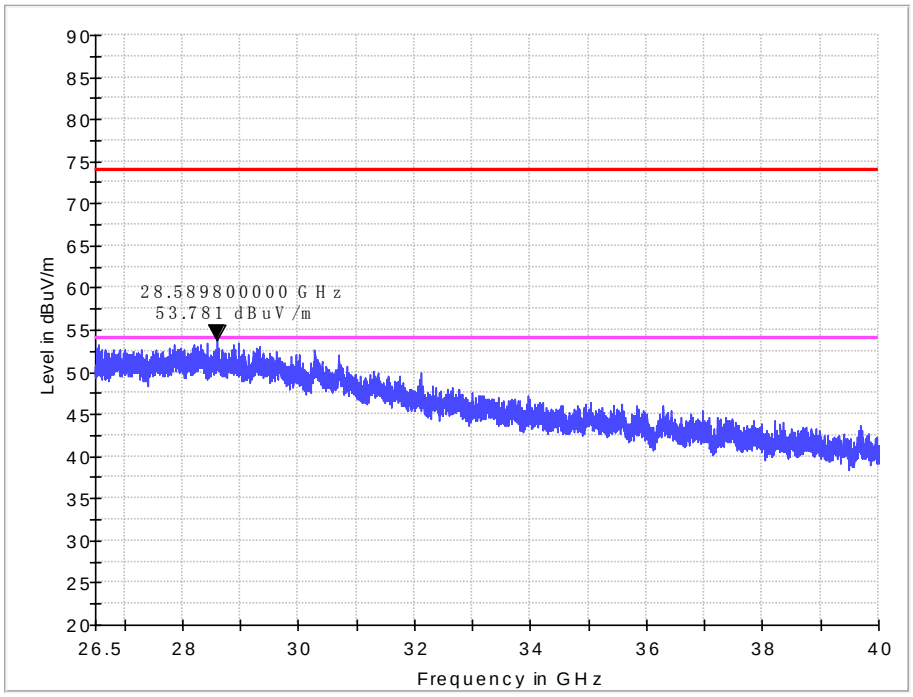


26.5 GHz - 40GHz

(Worst Case)
Horizontals



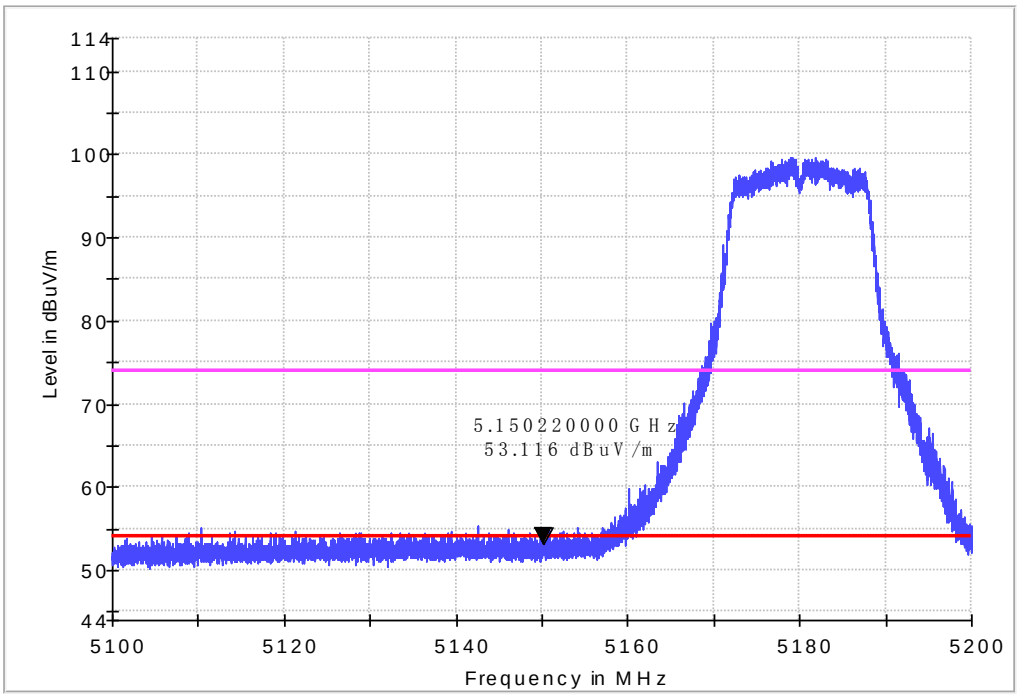
Vertical

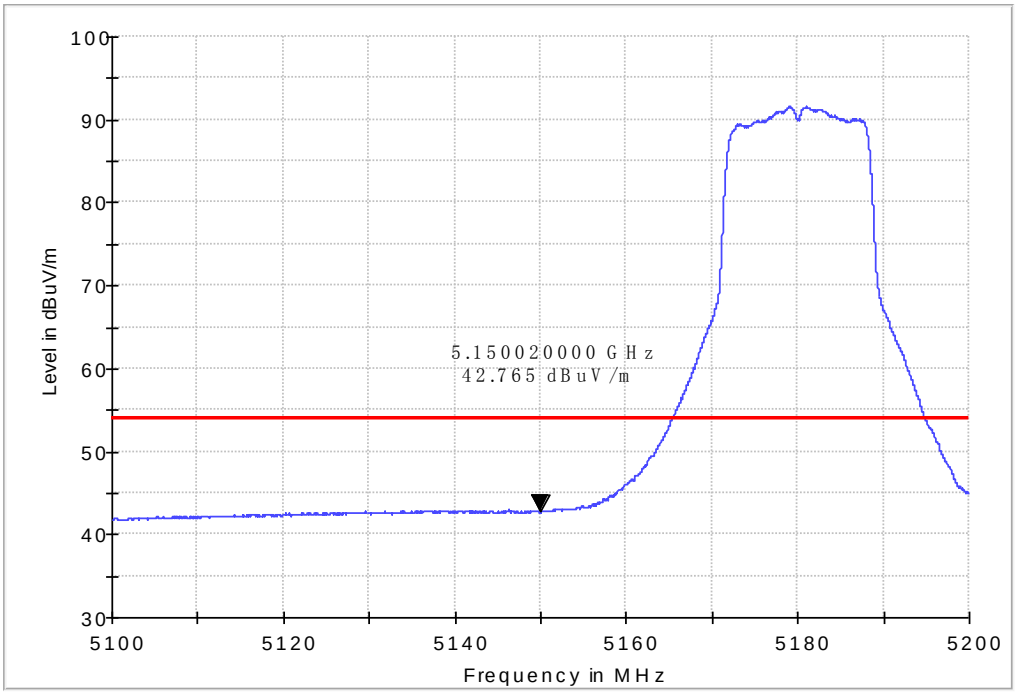


Band edge

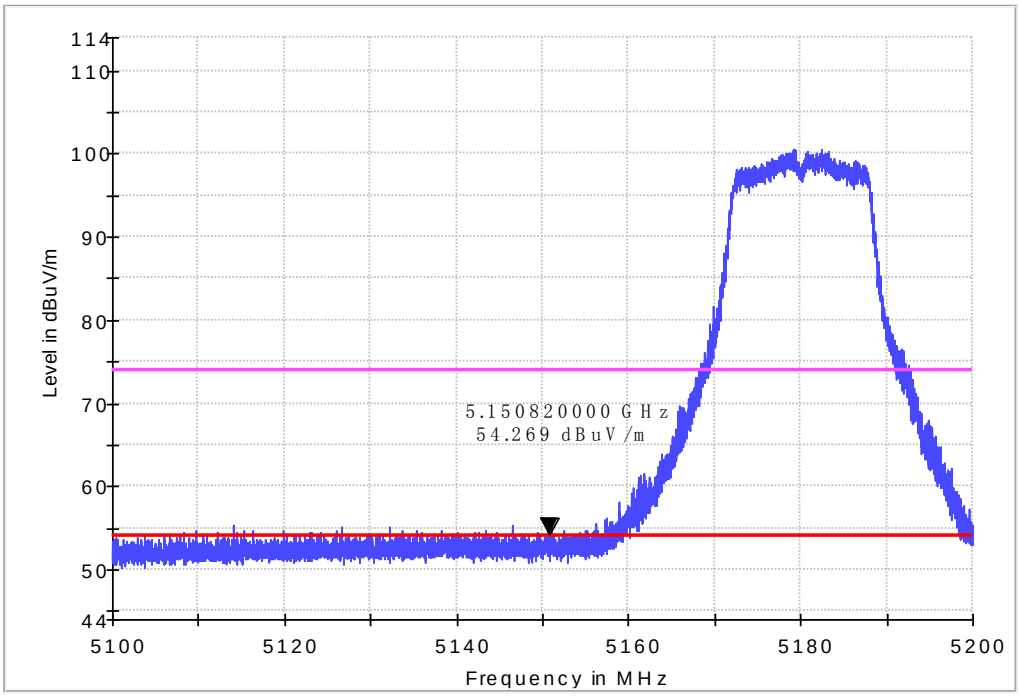
11a IN THE 5.2GHz BAND
CH36

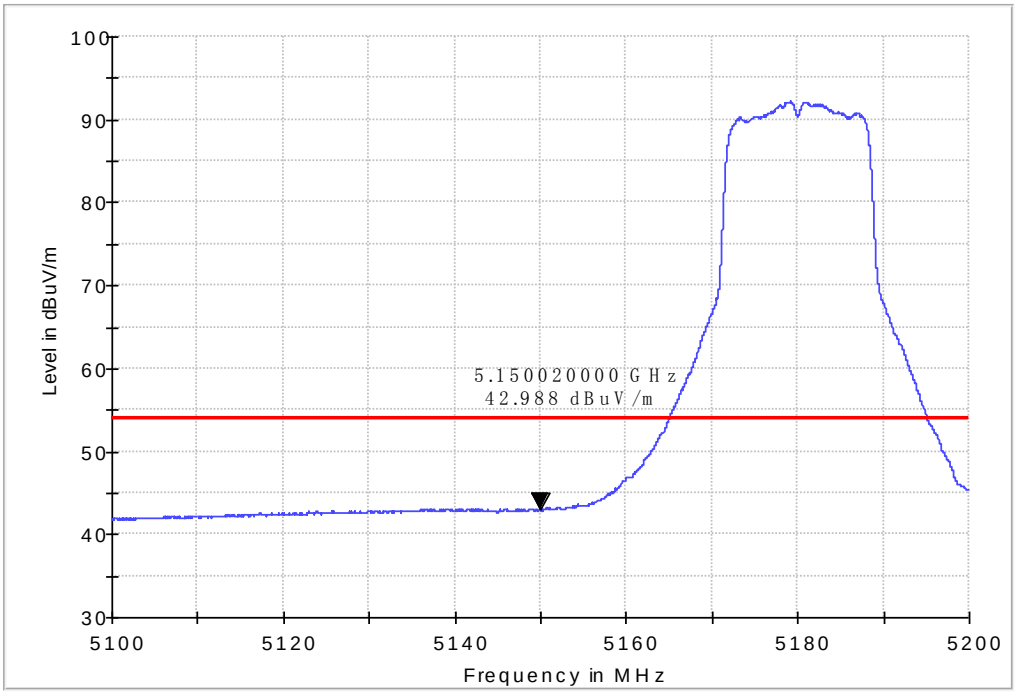
Horizontal





Vertical

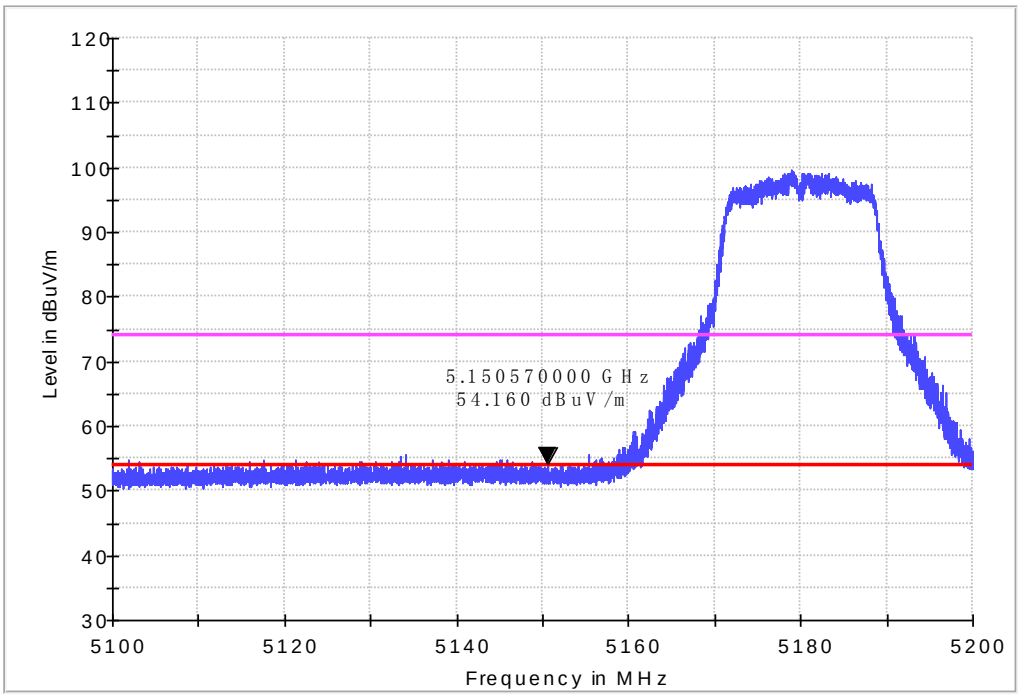

114
110
100
90
80
70
60
50
44
Level in dBuV/m
5.150820000 GHz
54.269 dBuV/m
5100
5120
5140
5160
5180
5200
Frequency in MHz

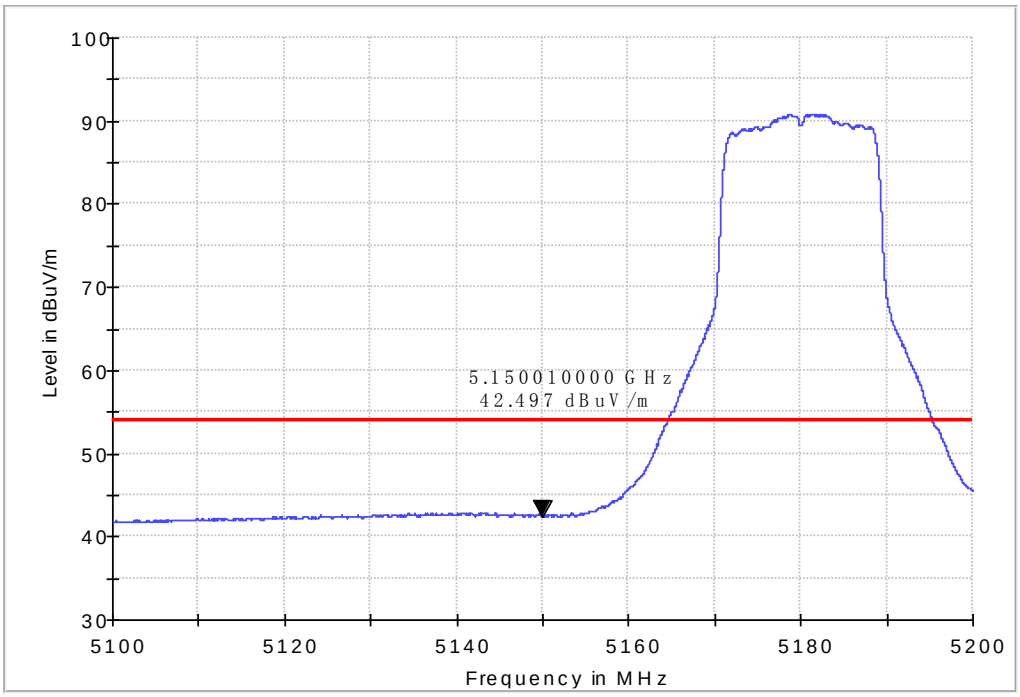

100
90
80
70
60
50
40
30
Level in dBuV/m
5.150020000 GHz
42.988 dBuV/m
5100
5120
5140
5160
5180
5200
Frequency in MHz

Band edge

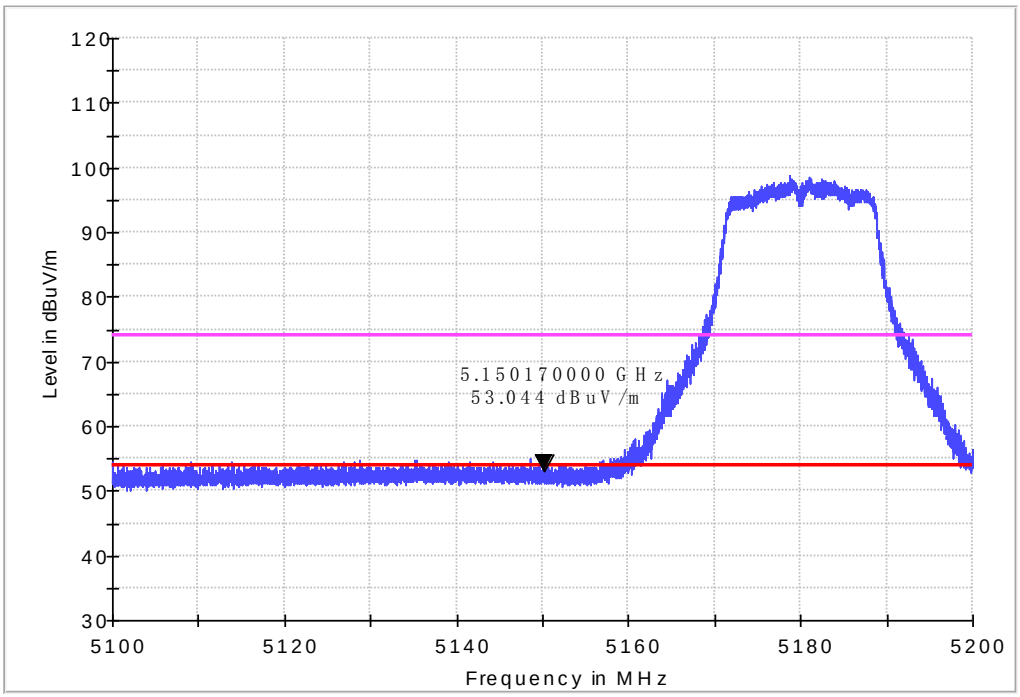
11n HT20 IN THE 5.2GHz BAND
CH36

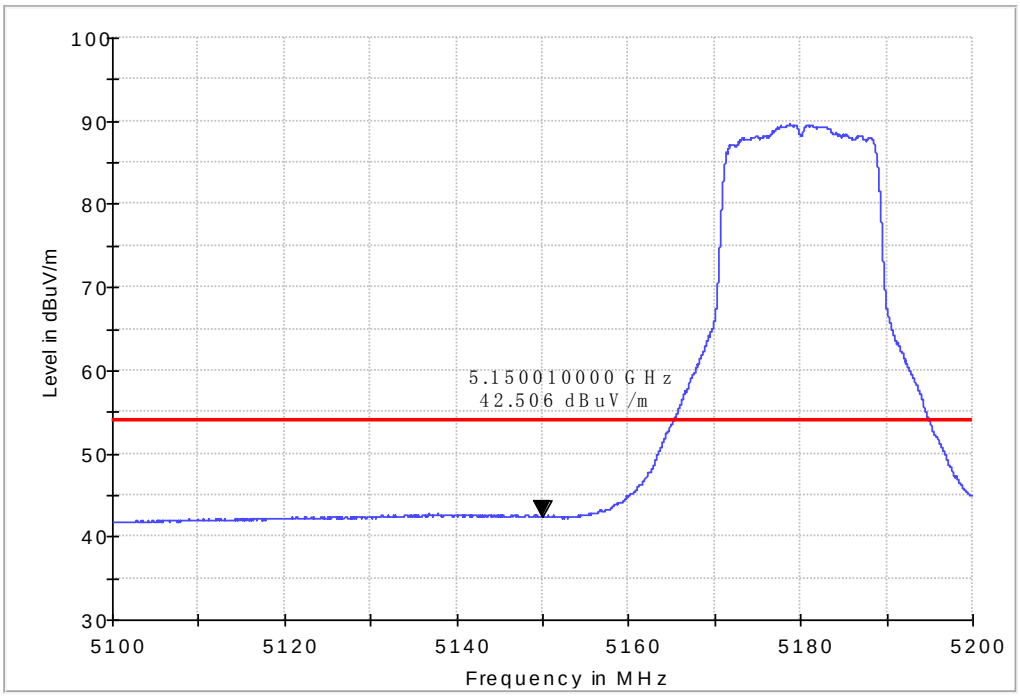
Horizontal





Vertical

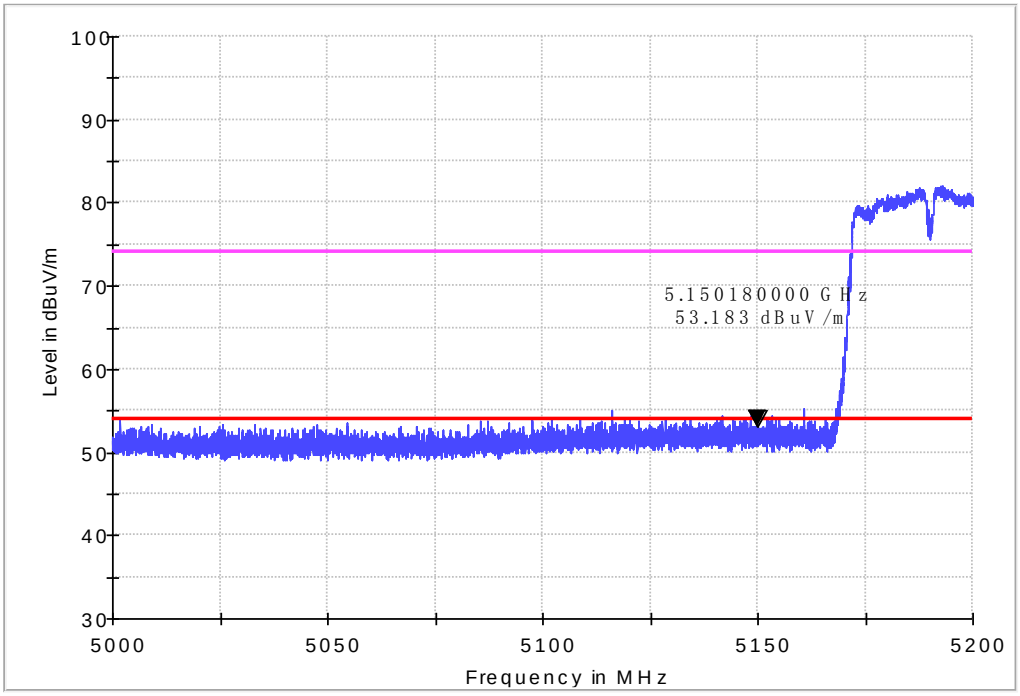

120
110
100
90
80
70
60
50
40
30
Level in dBuV/m
5.150170000 GHz
53.044 dBuV/m
5100
5120
5140
5160
5180
5200
Frequency in MHz

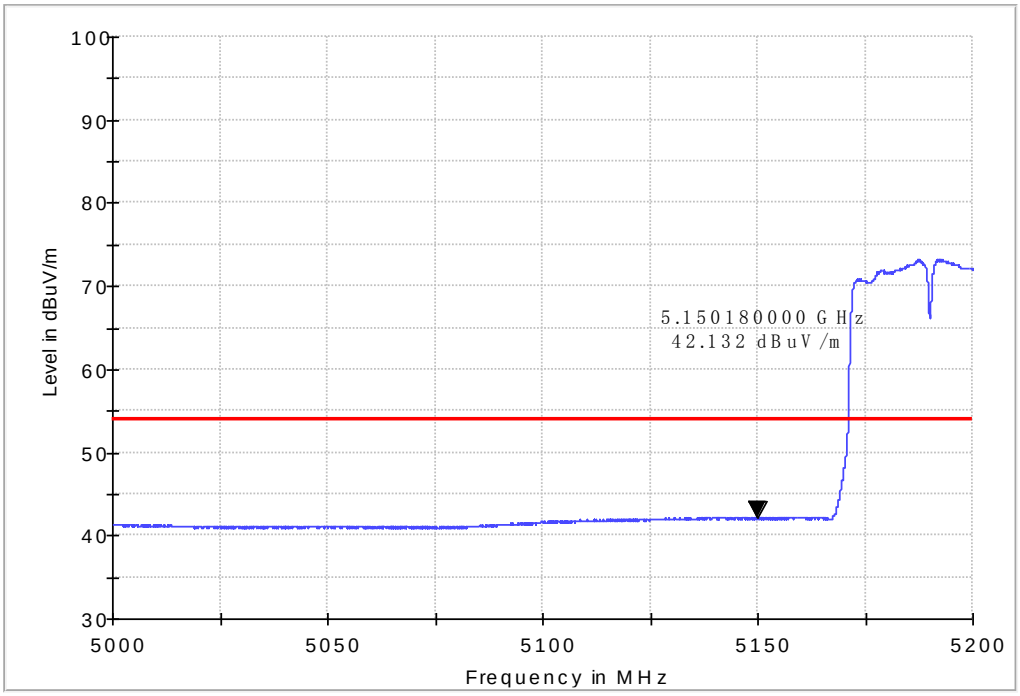

100
90
80
70
60
50
40
30
Level in dBuV/m
5.150010000 GHz
42.506 dBuV/m
5100
5120
5140
5160
5180
5200
Frequency in MHz

Band edge

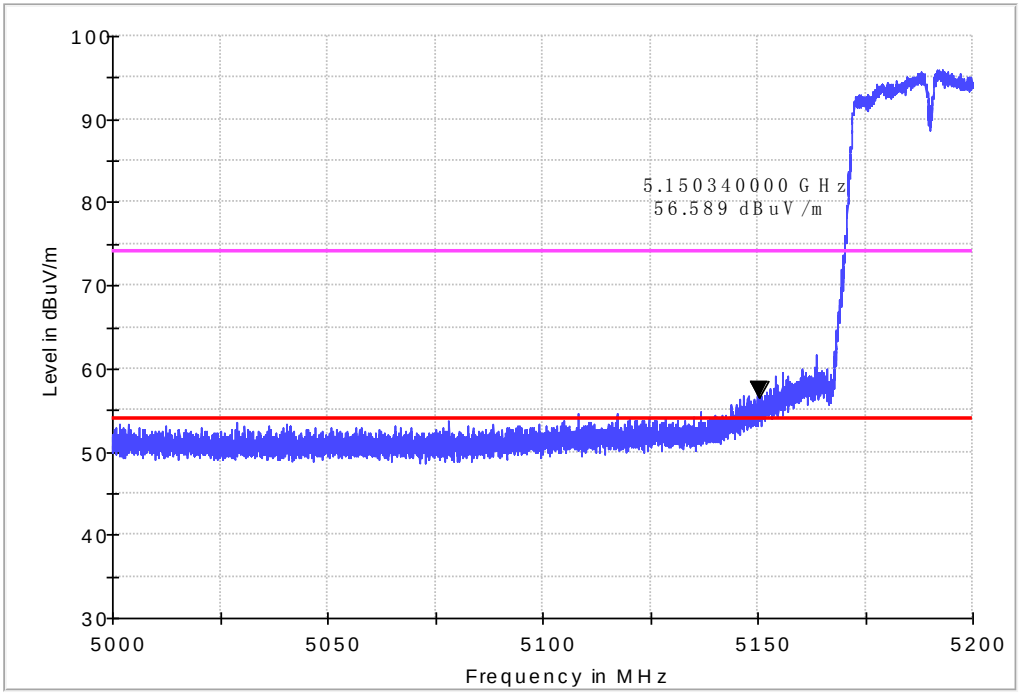
11n HT40 IN THE 5.2GHz BAND
CH38

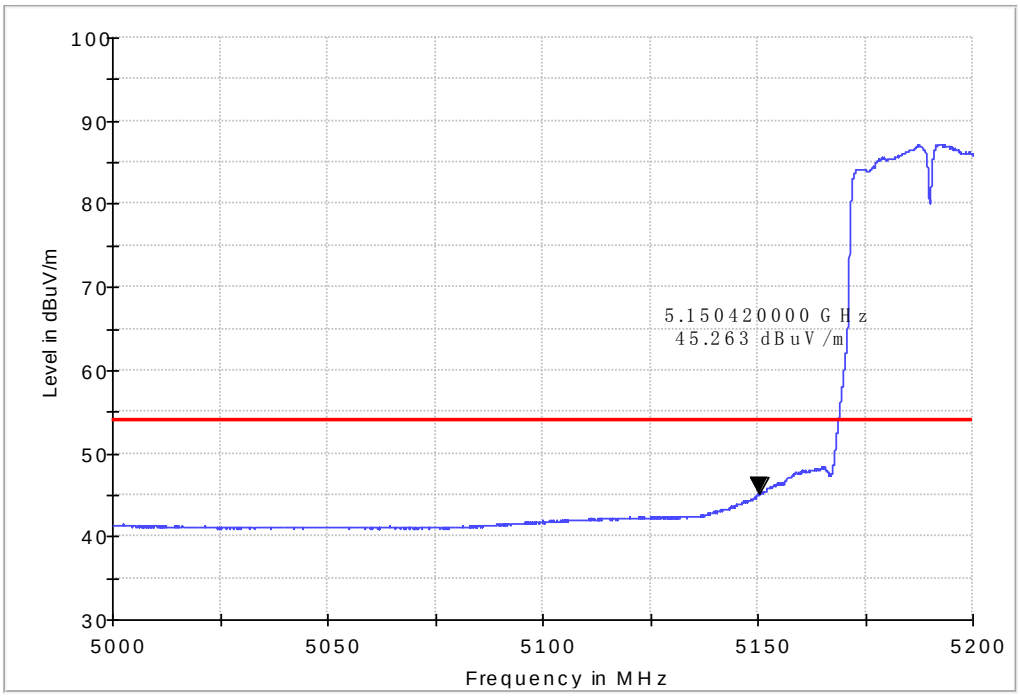
Horizontal





Vertical

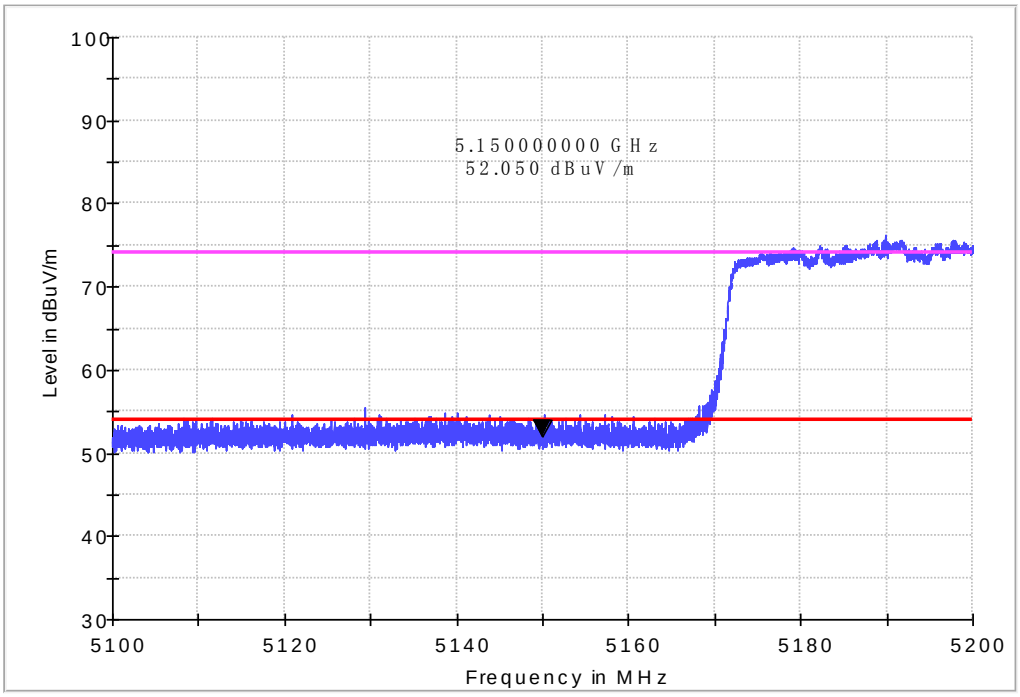

100
90
80
70
60
50
40
30
Level in dBuV/m
5.150340000 GHz
56.589 dBuV/m
5000
5050
5100
5150
5200
Frequency in MHz

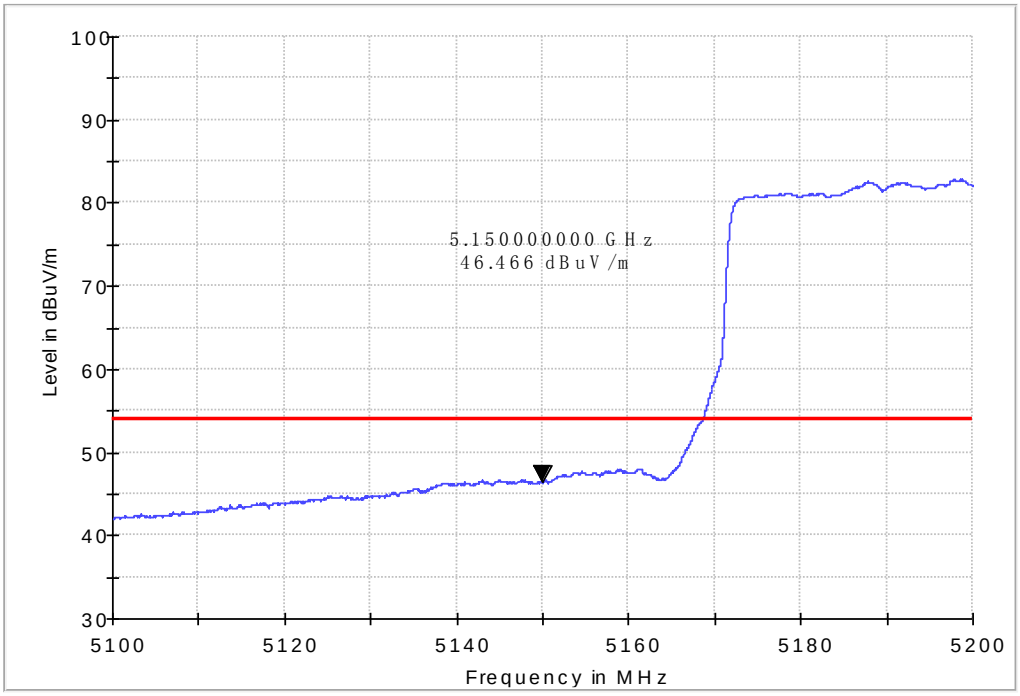

100
90
80
70
60
50
40
30
Level in dBuV/m
5.150420000 GHz
45.263 dBuV/m
5000
5050
5100
5150
5200
Frequency in MHz

Band edge

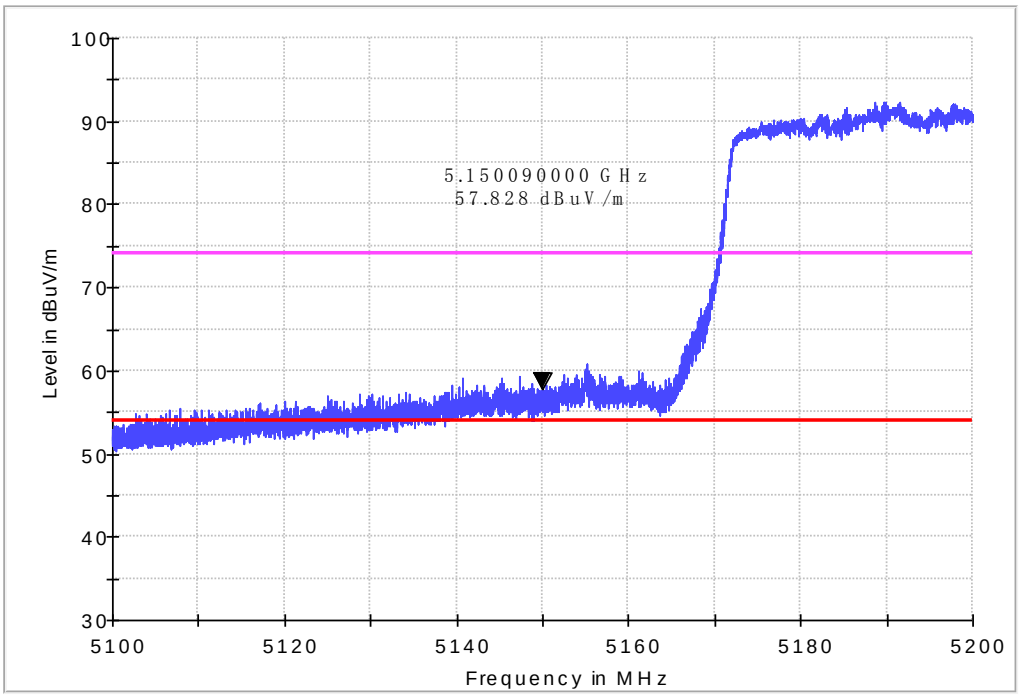
11ac VHT80 IN THE 5.2GHz BAND
CH42

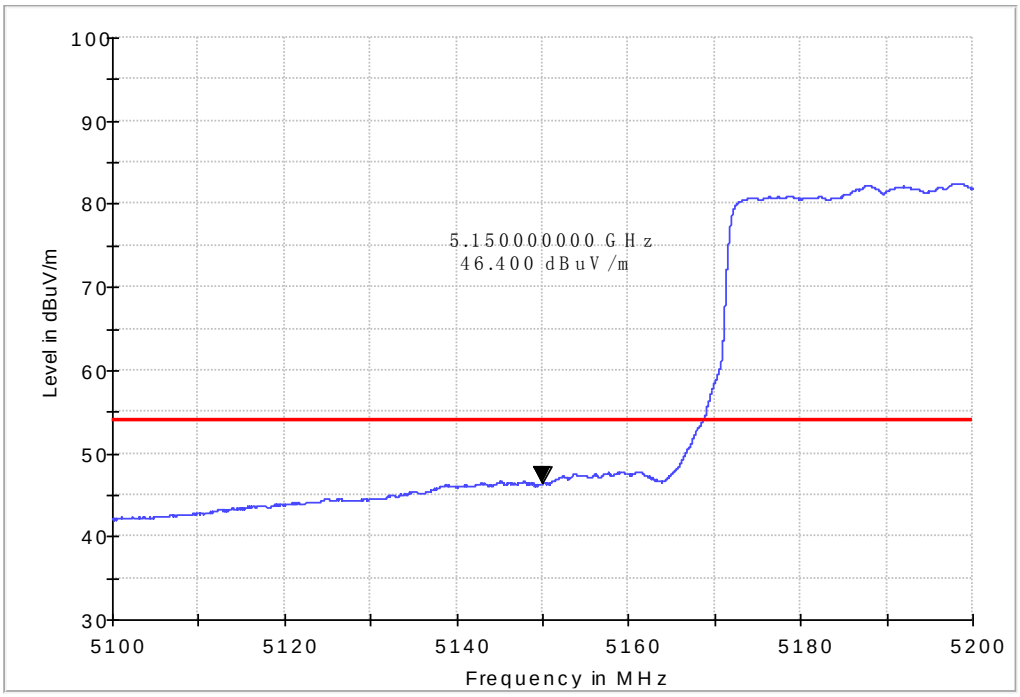
Horizontal





Vertical

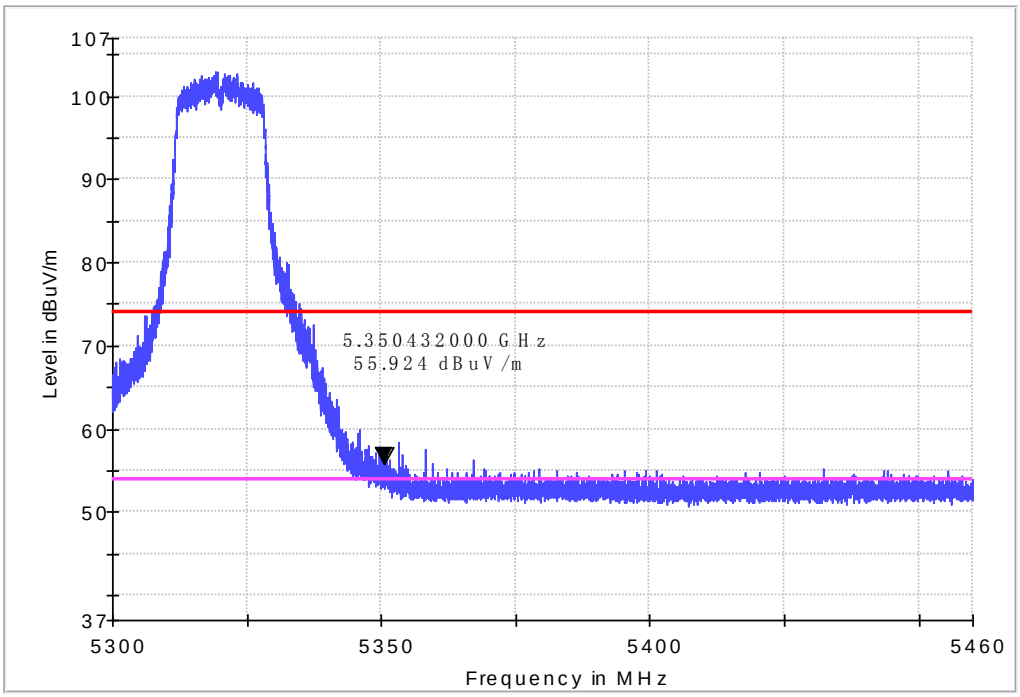

5.150090000 GHz
57.828 dBuV/m
Level in dBuV/m
Frequency in MHz
100
90
80
70
60
50
40
30
5100
5120
5140
5160
5180
5200

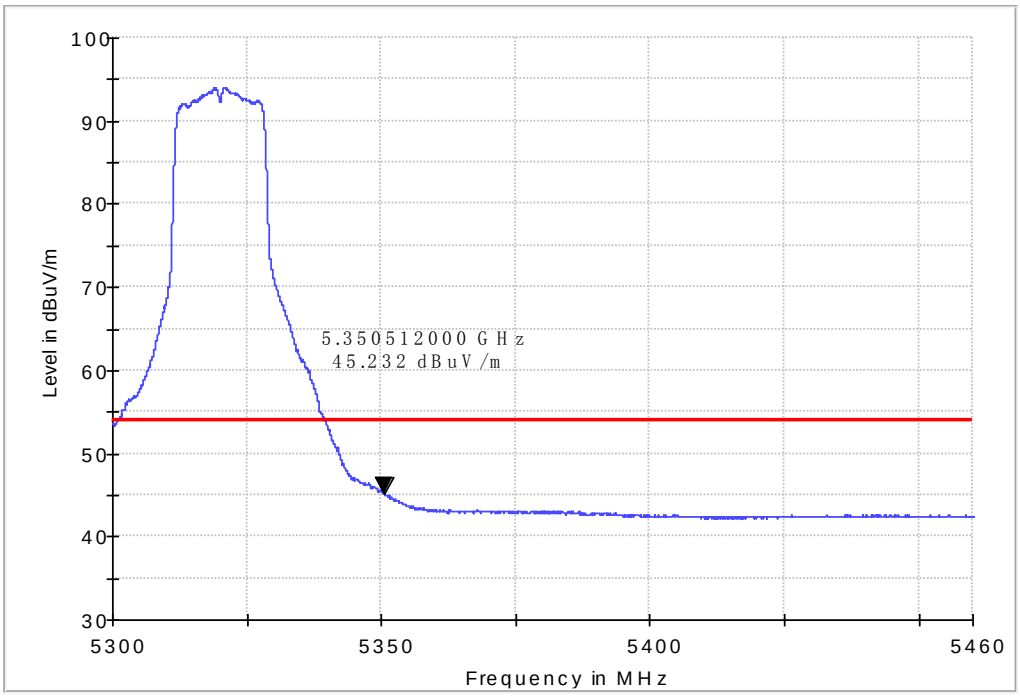

5.150000000 GHz
46.400 dBuV/m
Level in dBuV/m
Frequency in MHz
100
90
80
70
60
50
40
30
5100
5120
5140
5160
5180
5200

Band edge

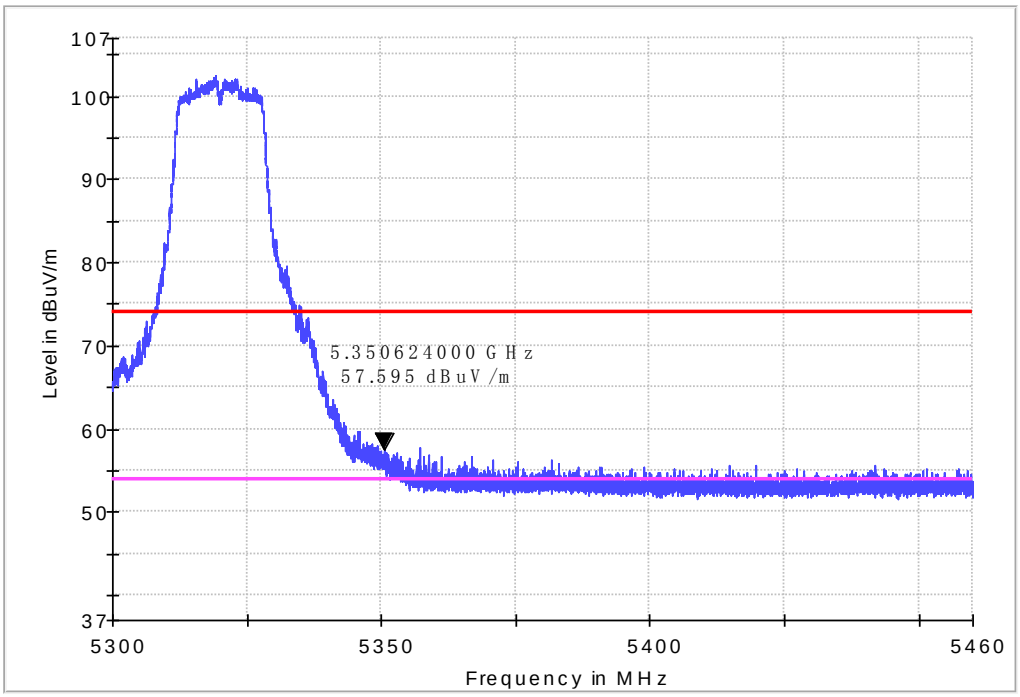
11a IN THE 5.3GHz BAND
CH64

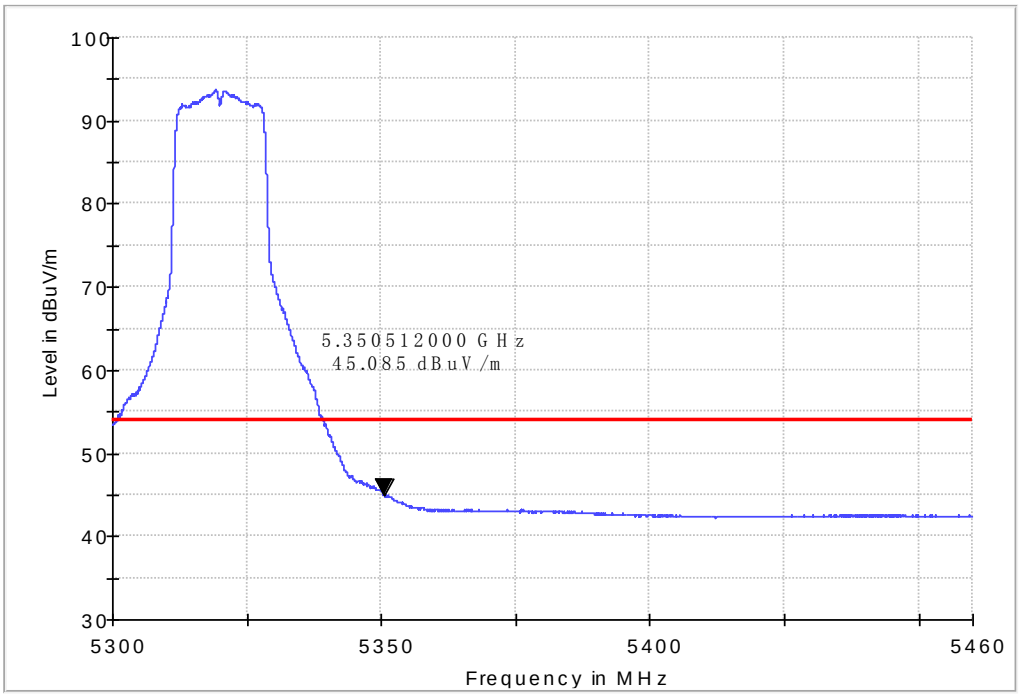
Horizontal





Vertical

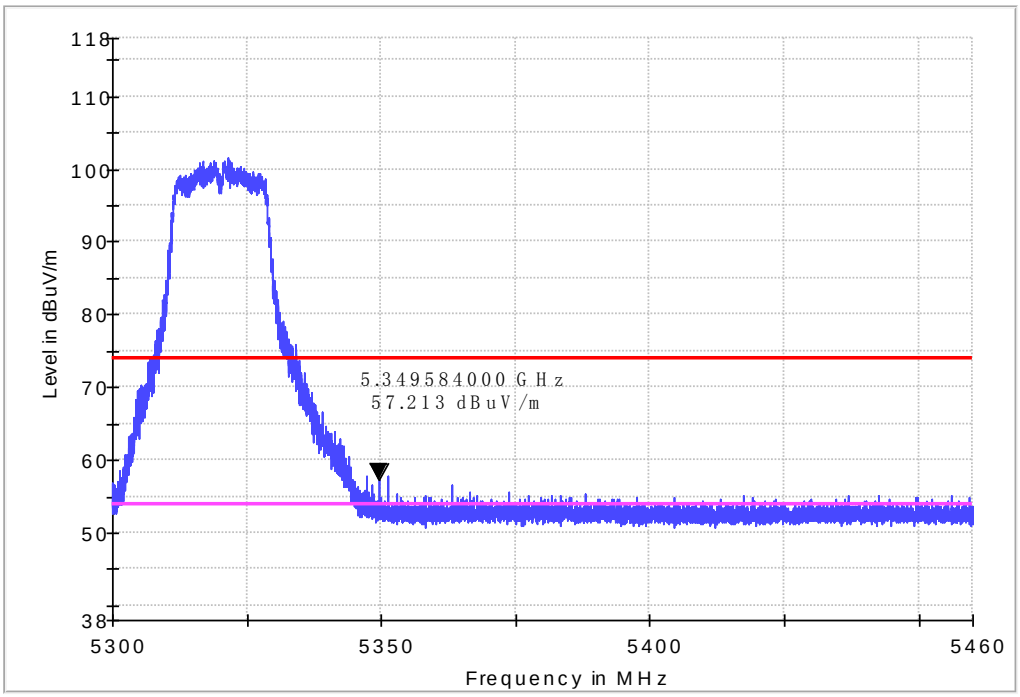

107
100
90
80
70
60
50
37
Level in dBuV/m
5.350624000 GHz
57.595 dBuV/m
5300
5350
5400
5460
Frequency in MHz

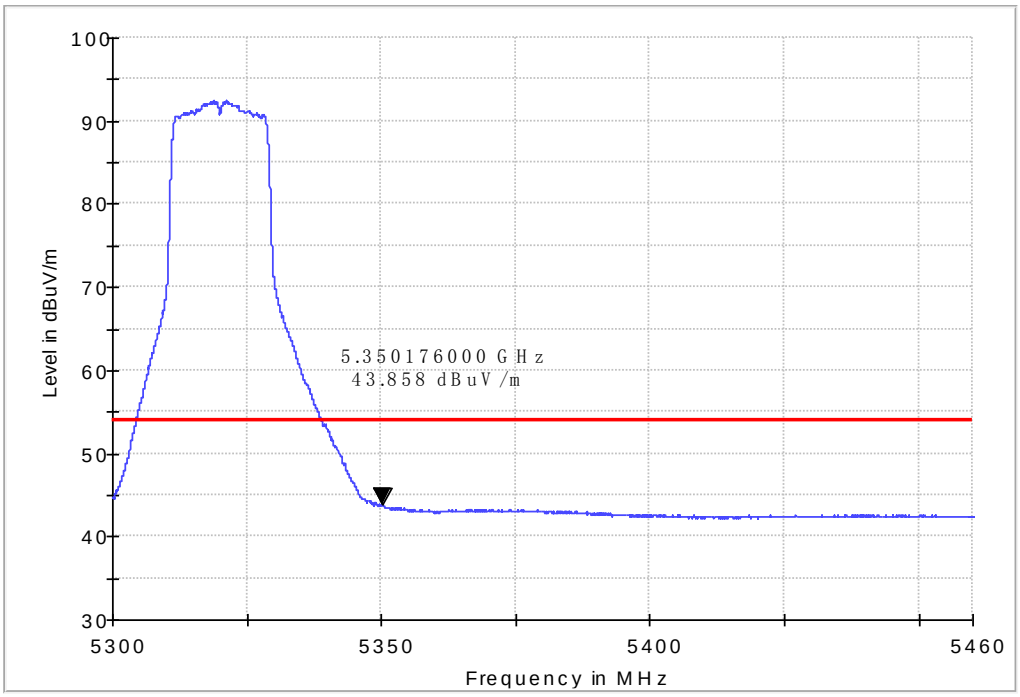

100
90
80
70
60
50
40
30
Level in dBuV/m
5.350512000 GHz
45.085 dBuV/m
5300
5350
5400
5460
Frequency in MHz

Band edge

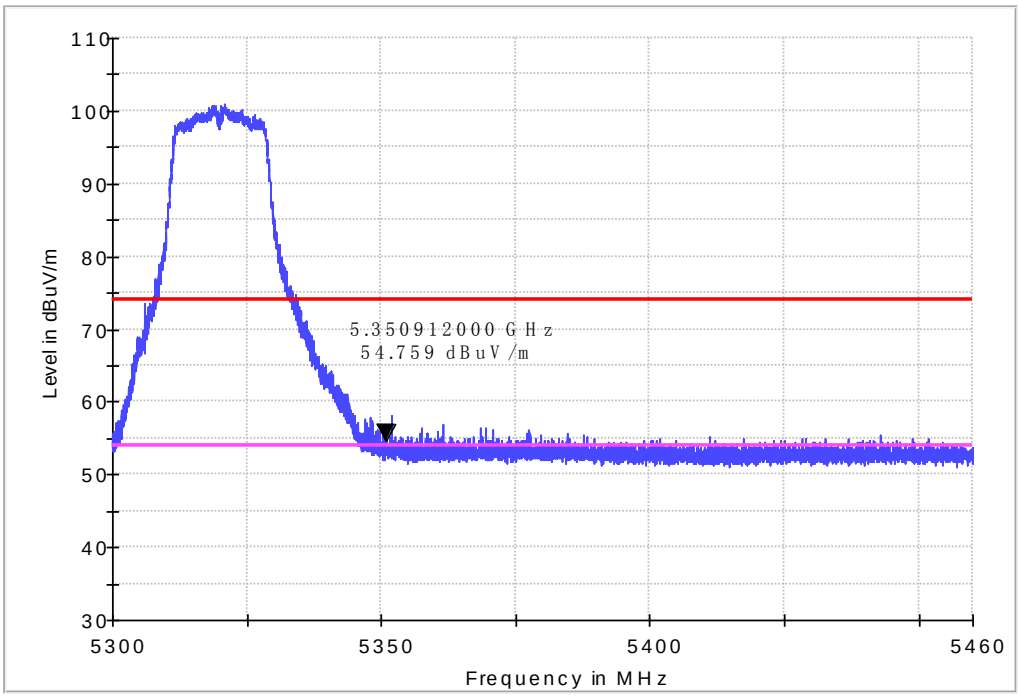
11n HT20 IN THE 5.3GHz BAND
CH64

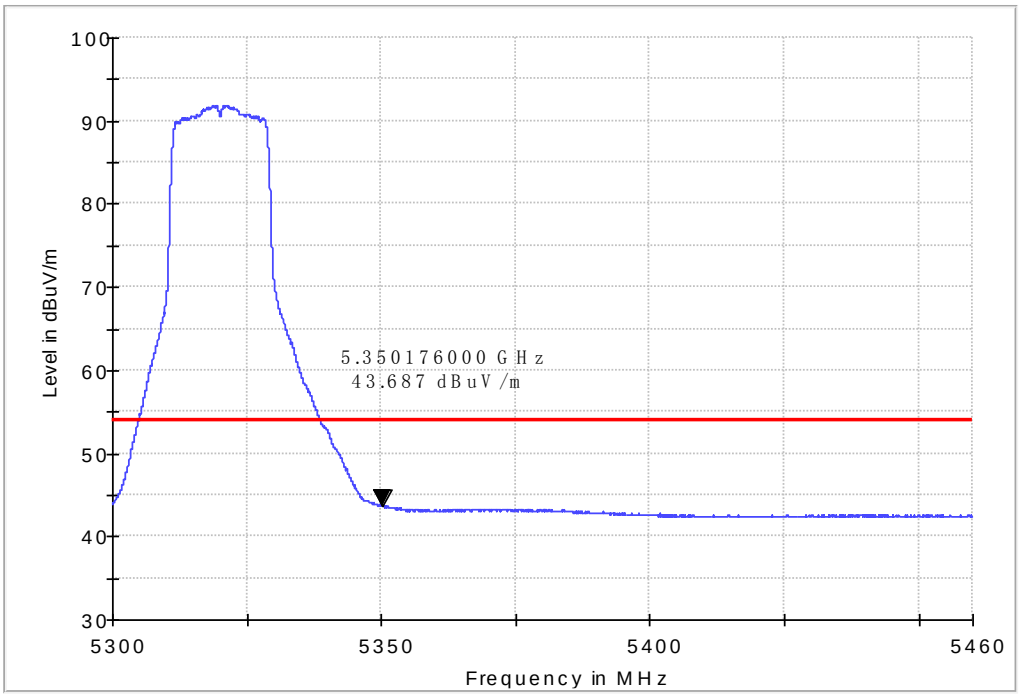
Horizontal





Vertical

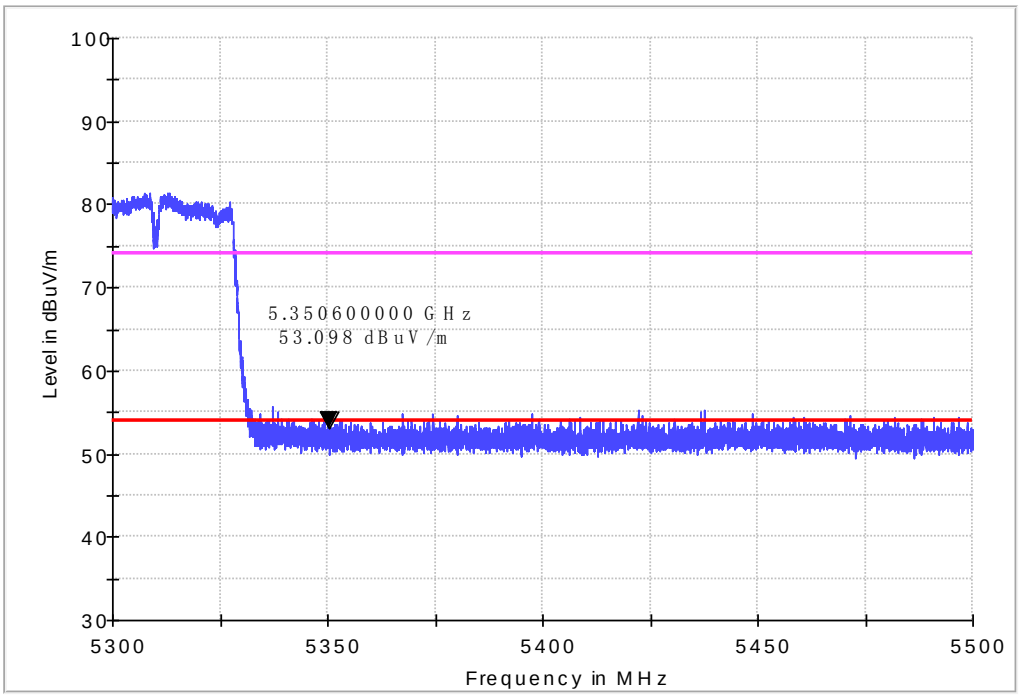

110
100
90
80
70
60
50
40
30
Level in dBuV/m
5.350912000 GHz
54.759 dBuV/m
5300
5350
5400
5460
Frequency in MHz

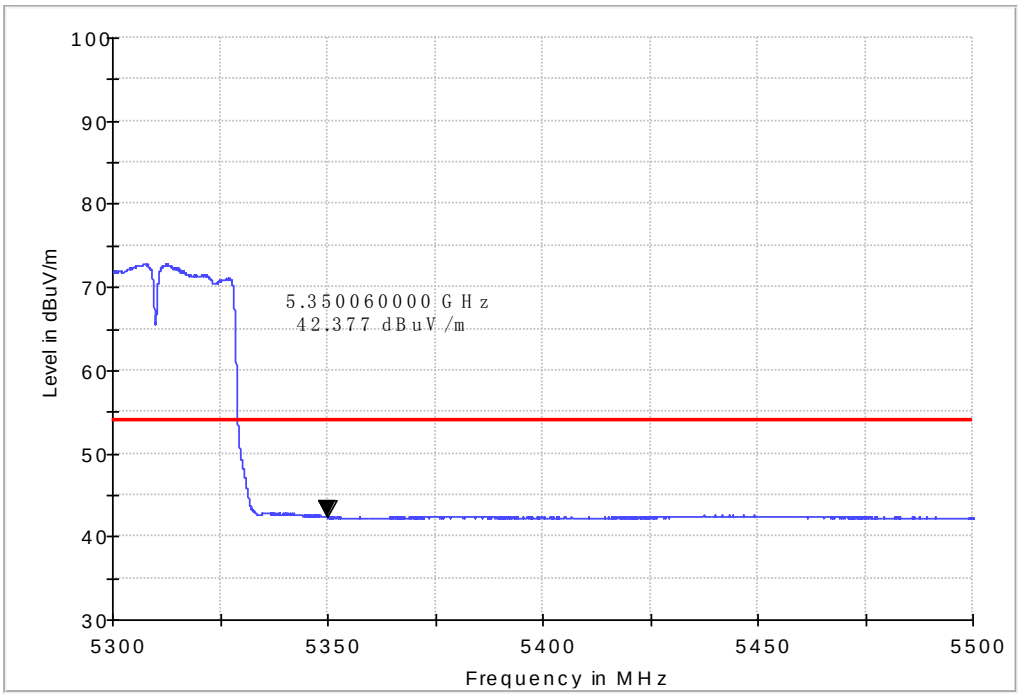

100
90
80
70
60
50
40
30
Level in dBuV/m
5.350176000 GHz
43.687 dBuV/m
5300
5350
5400
5460
Frequency in MHz

Band edge

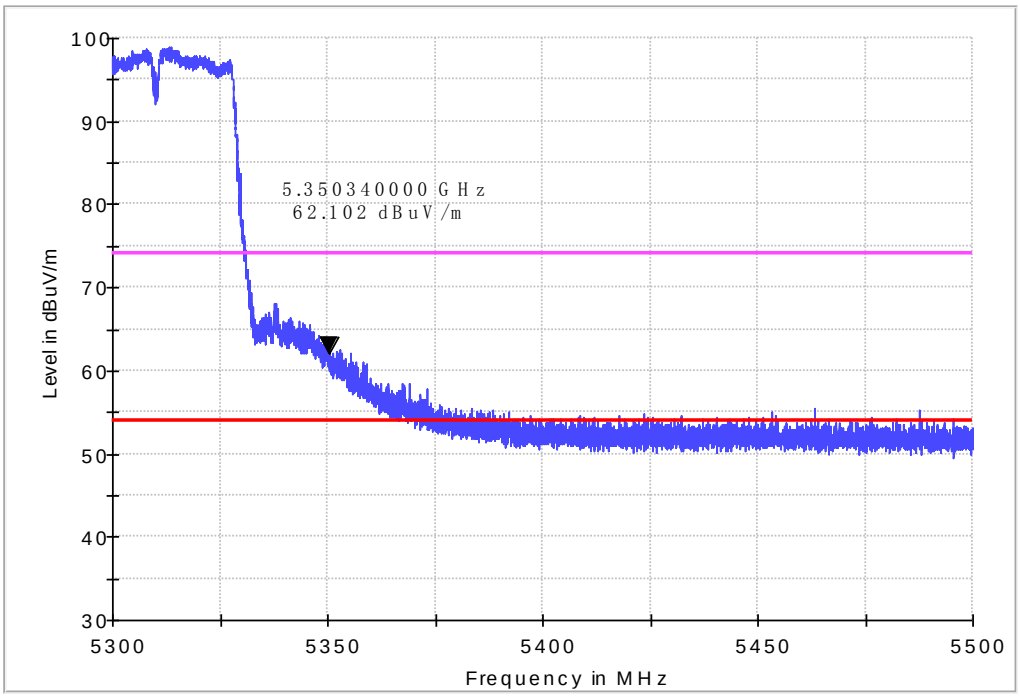
11n HT40 IN THE 5.3GHz BAND
CH62

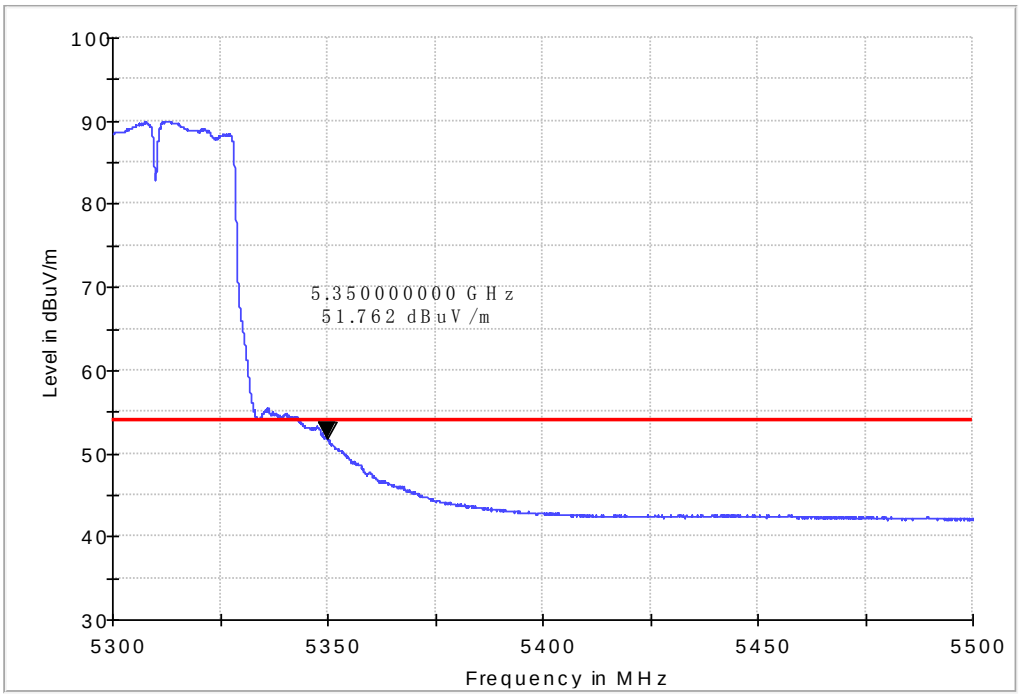
Horizontal





Vertical

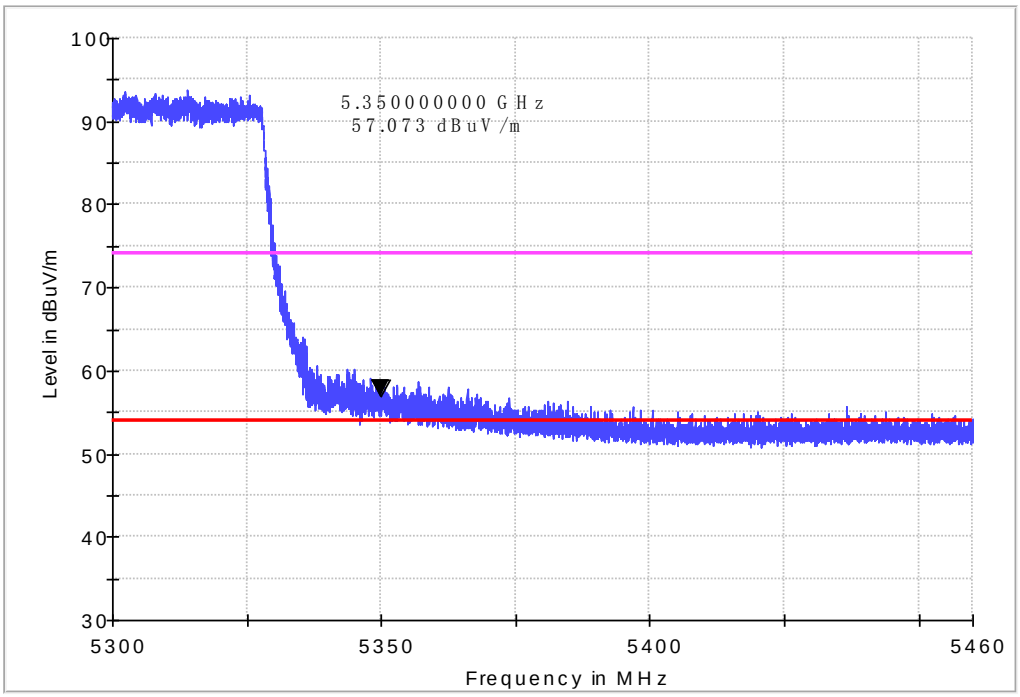

5.350340000 GHz
62.102 dBuV/m
Level in dBuV/m
Frequency in MHz
100
90
80
70
60
50
40
30
5300
5350
5400
5450
5500

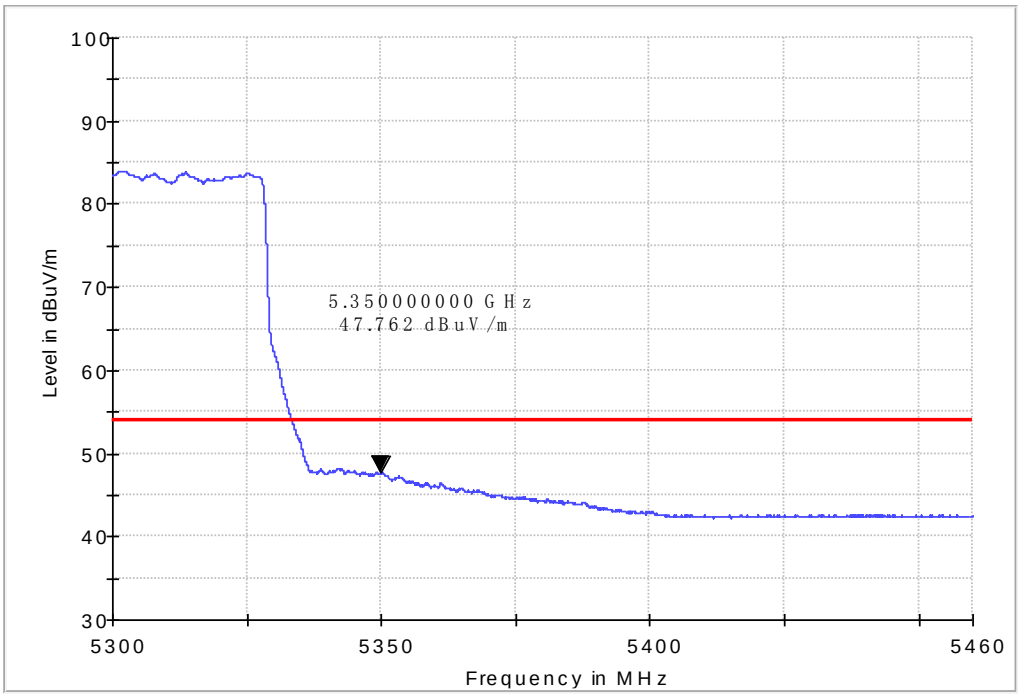

5.350000000 GHz
51.762 dBuV/m
Level in dBuV/m
Frequency in MHz
100
90
80
70
60
50
40
30
5300
5350
5400
5450
5500

Band edge

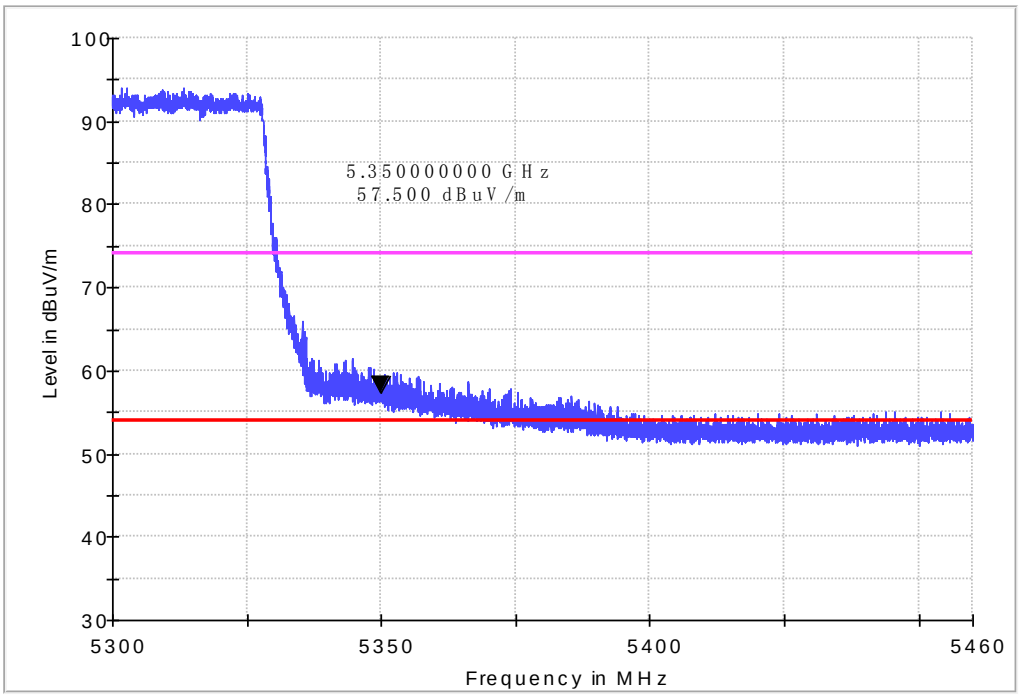
11ac VHT80 IN THE 5.3GHz BAND
CH58

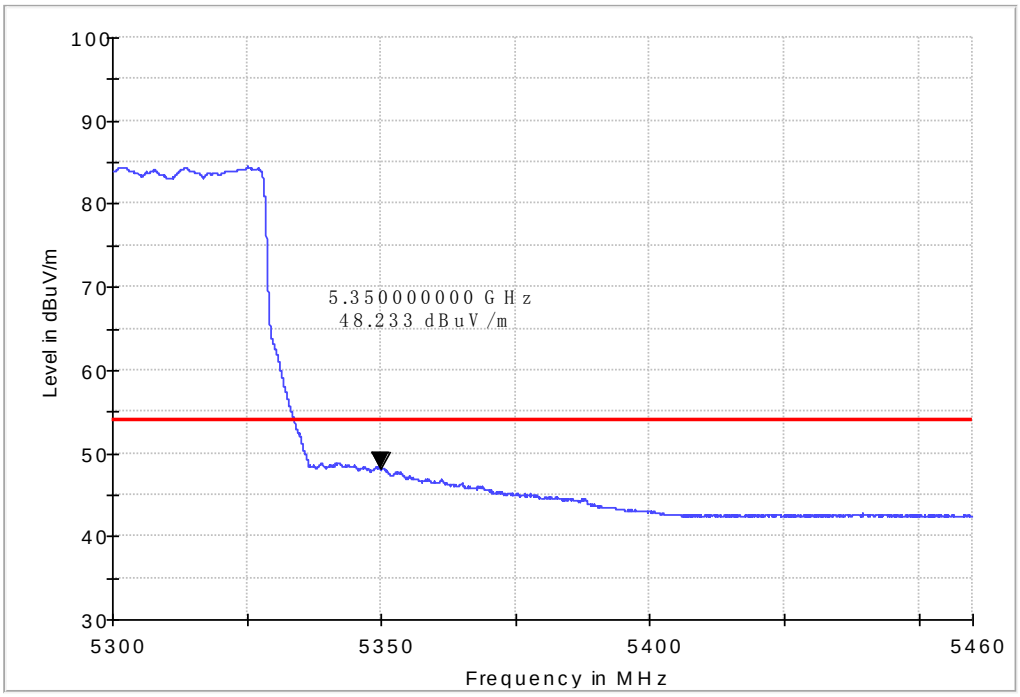
Horizontal





Vertical

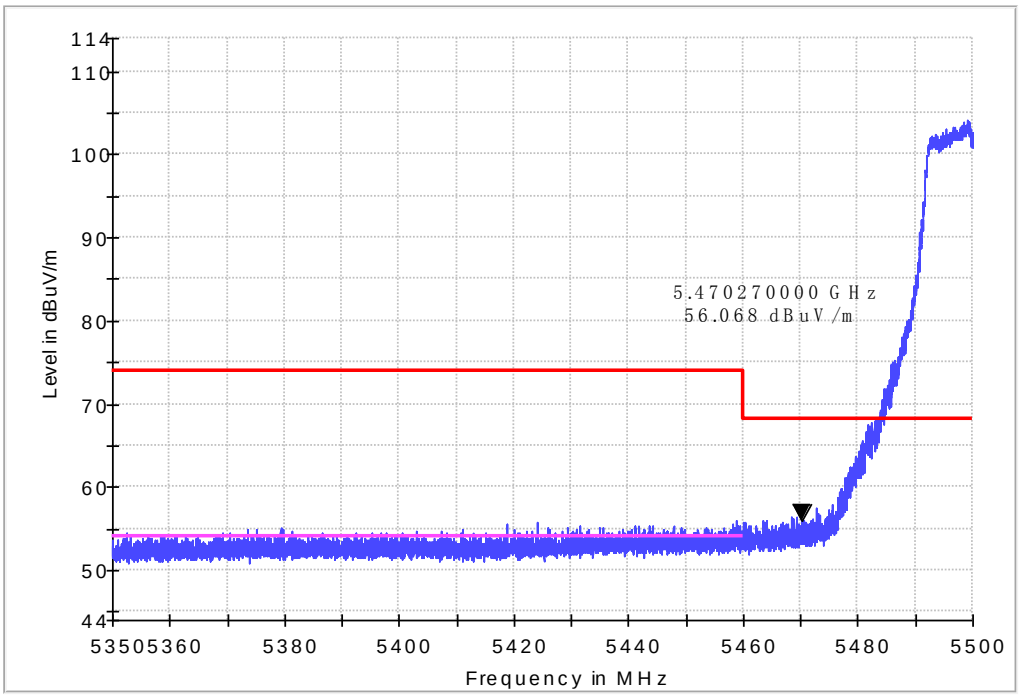

100
90
80
70
60
50
40
30
Level in dBuV/m
5.350000000 GHz
57.500 dBuV/m
5300
5350
5400
5460
Frequency in MHz

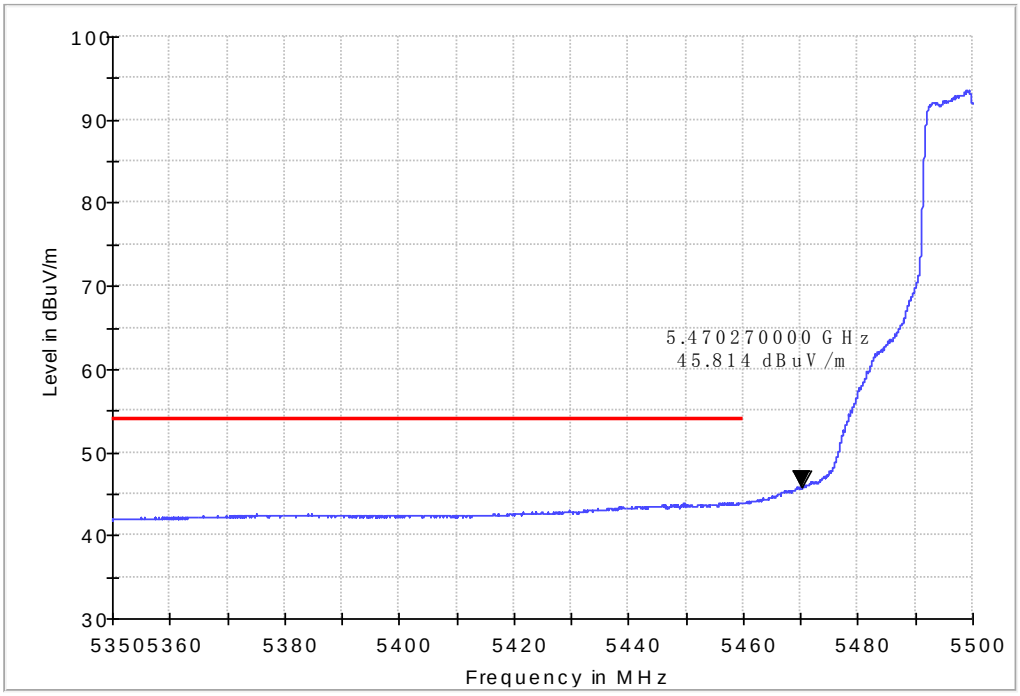

100
90
80
70
60
50
40
30
Level in dBuV/m
5.350000000 GHz
48.233 dBuV/m
5300
5350
5400
5460
Frequency in MHz

Band edge

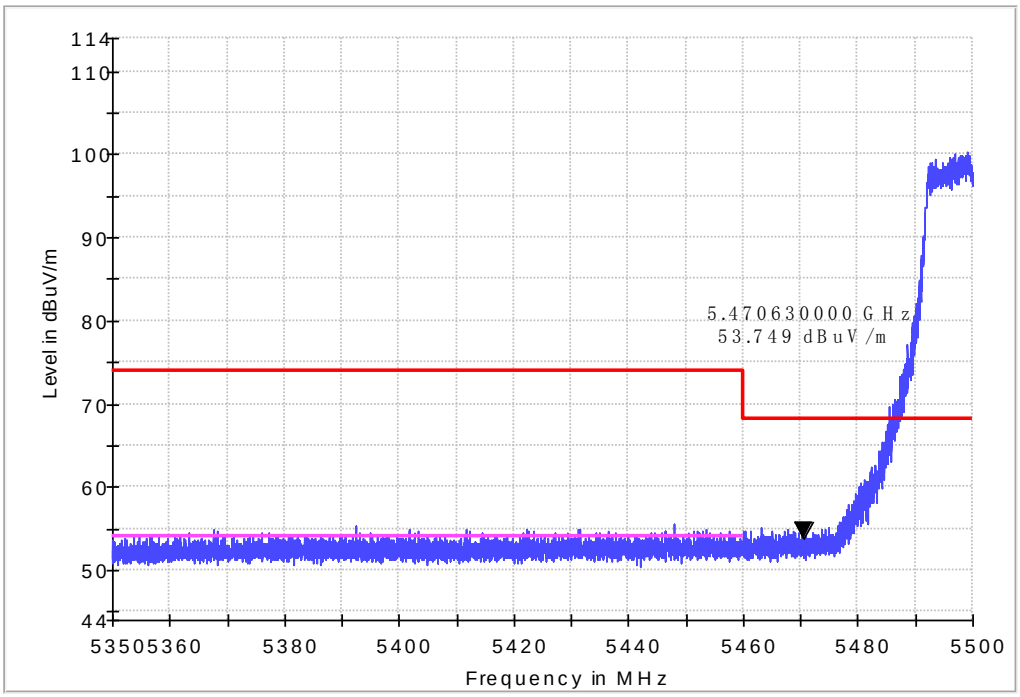
11a IN THE 5.6GHz BAND
CH100

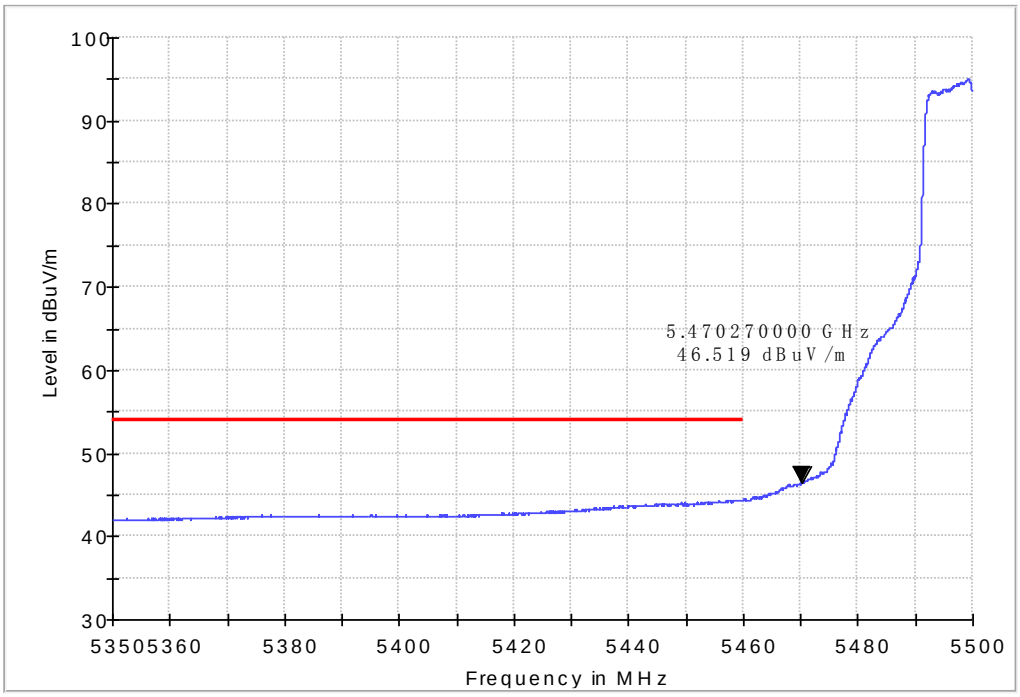
Horizontal





Vertical

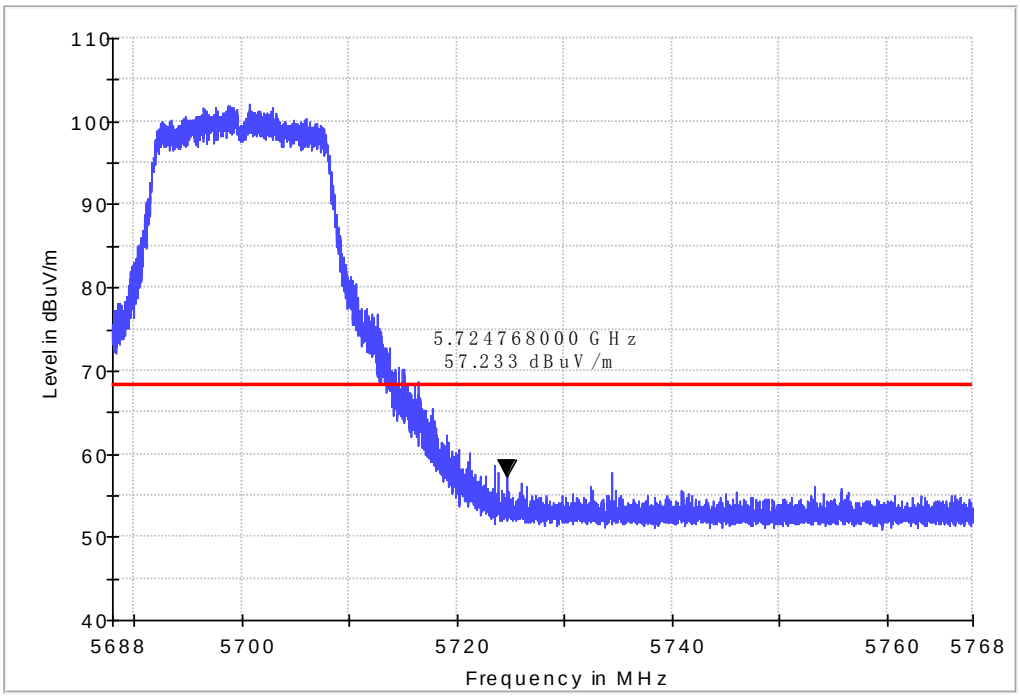

114
110
100
90
80
70
60
50
44
Level in dBuV/m
5.470630000 GHz
53.749 dBuV/m
53505360
5380
5400
5420
5440
5460
5480
5500
Frequency in MHz


100
90
80
70
60
50
40
30
Level in dBuV/m
5.470270000 GHz
46.519 dBuV/m
53505360
5380
5400
5420
5440
5460
5480
5500
Frequency in MHz

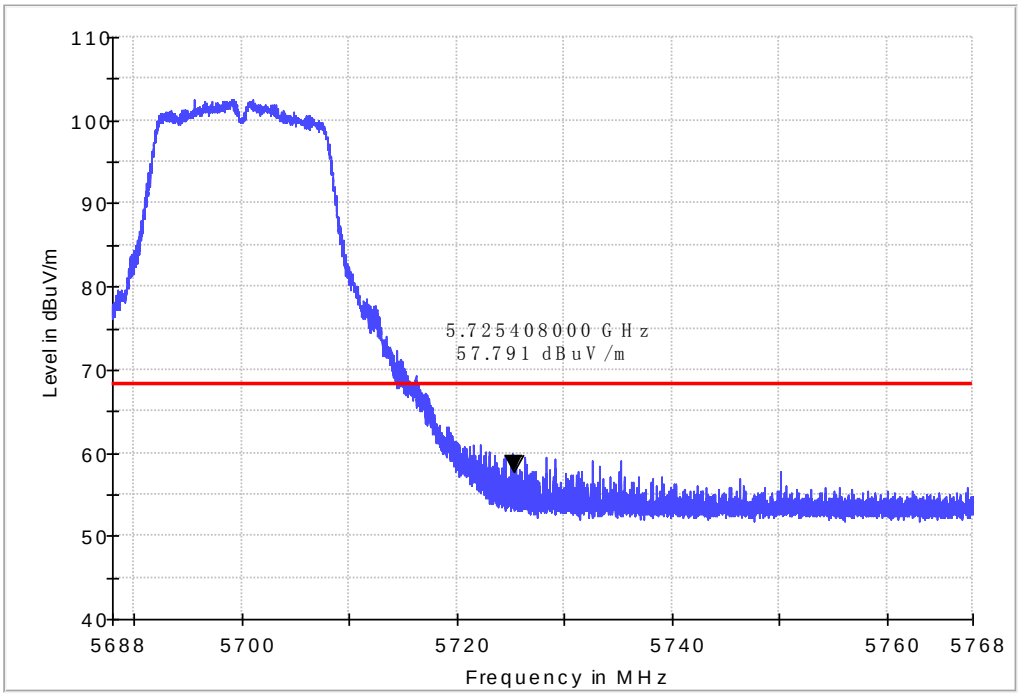
Band edge

11a IN THE 5.6GHz BAND
CH140

Horizontal



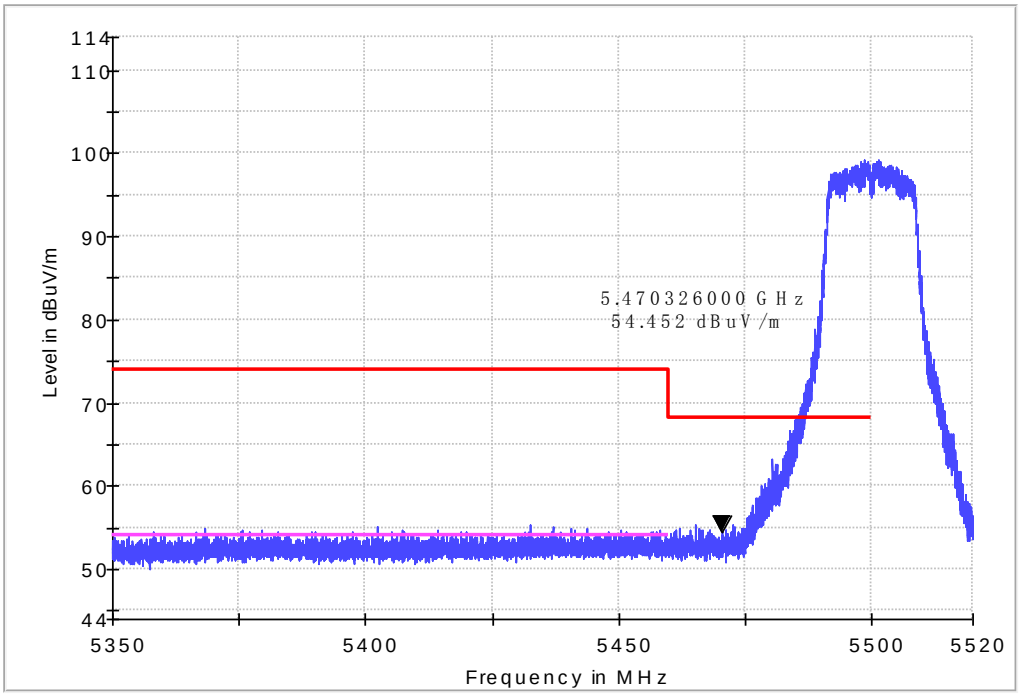
Vertical

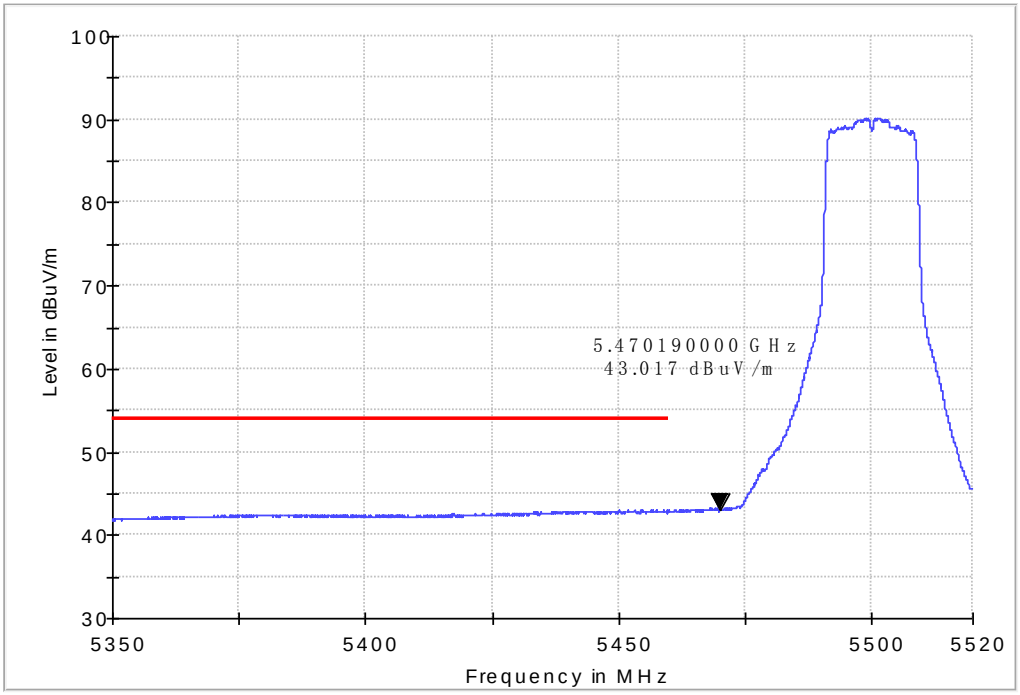


Band edge

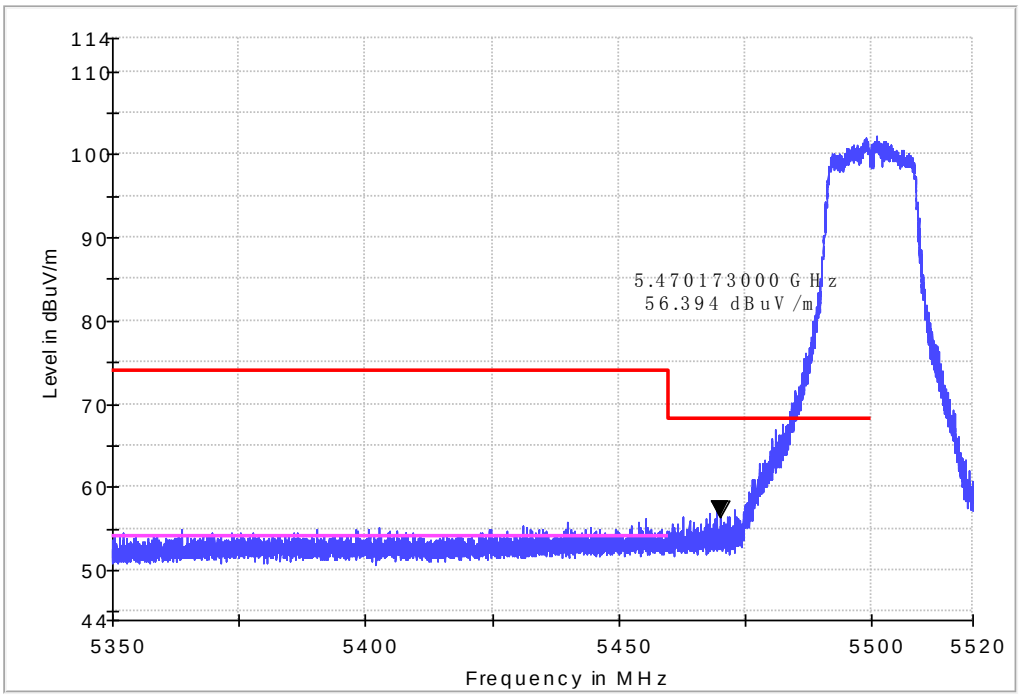
11n HT20 IN THE 5.6GHz BAND
CH100

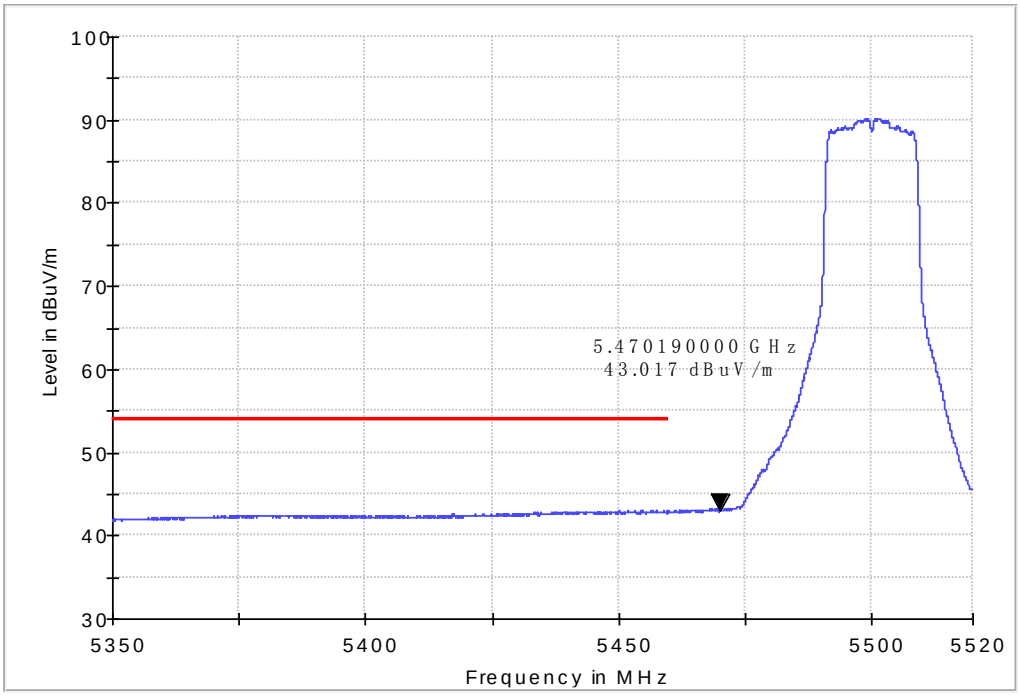
Horizontal





Vertical

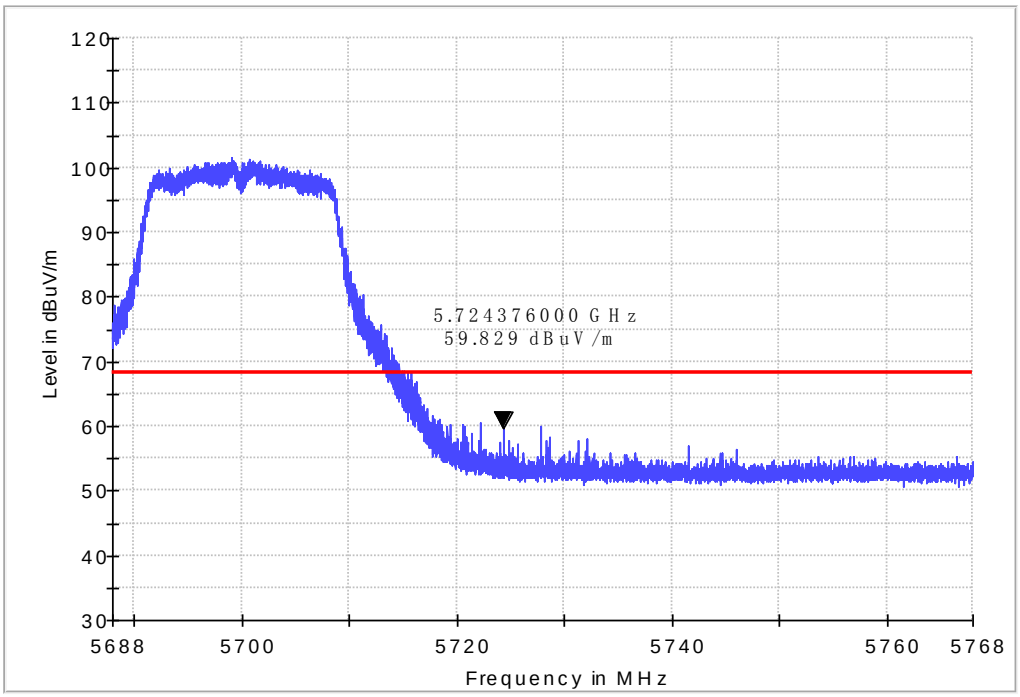

114
110
100
90
80
70
60
50
44
Level in dBuV/m
5.470173000 GHz
56.394 dBuV/m
5350
5400
5450
5500
5520
Frequency in MHz


100
90
80
70
60
50
40
30
Level in dBuV/m
5.470190000 GHz
43.017 dBuV/m
5350
5400
5450
5500
5520
Frequency in MHz

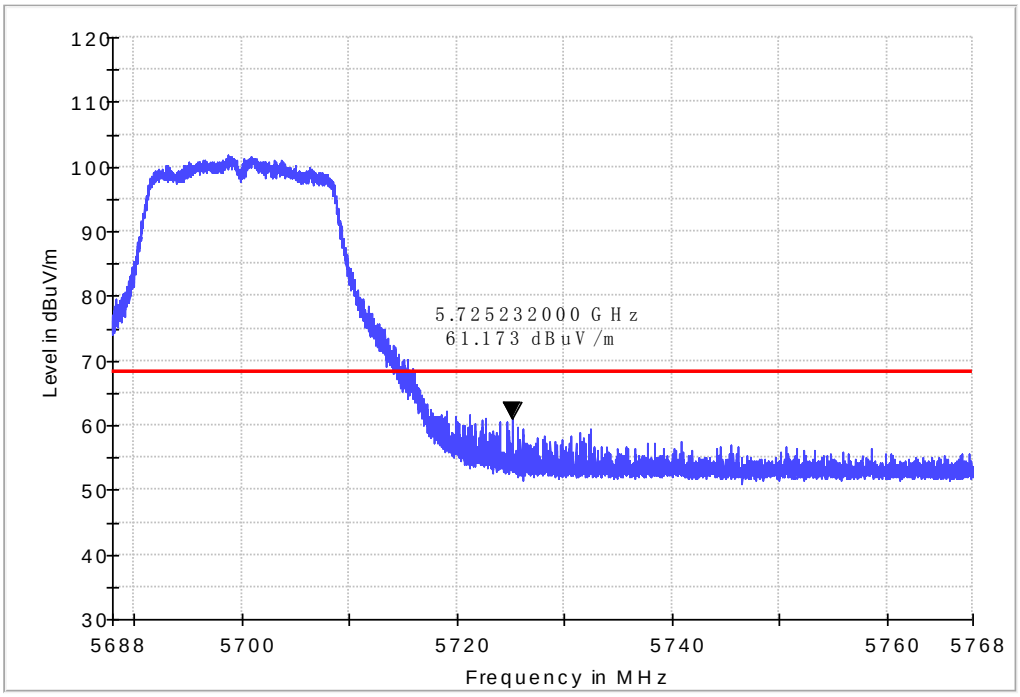
Band edge

11n HT20 IN THE 5.6GHz BAND
CH140

Horizontal



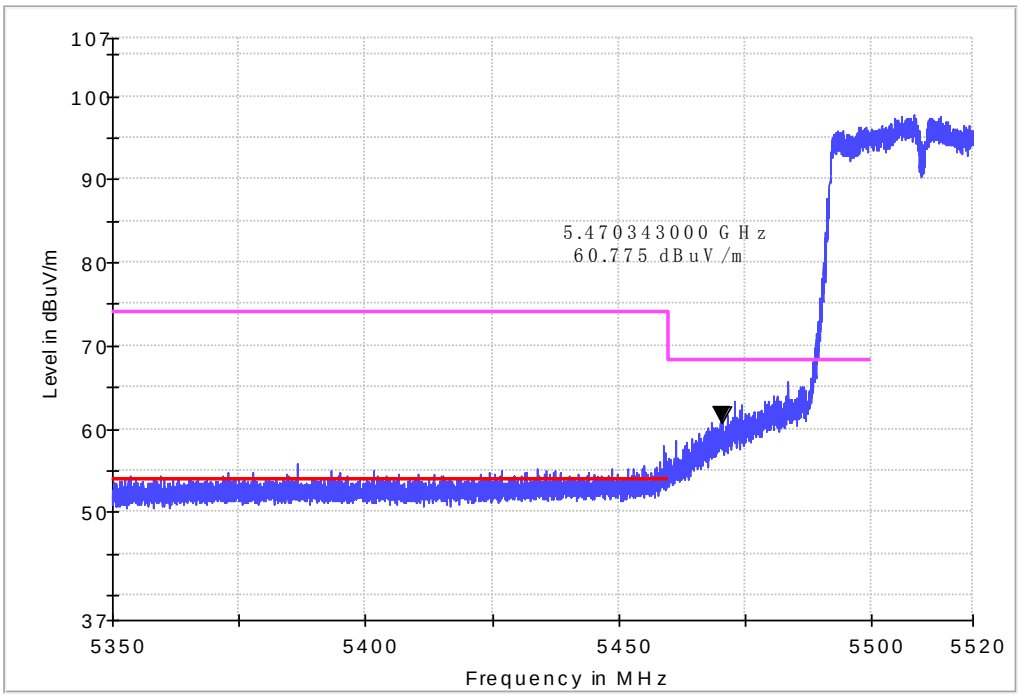
Vertical

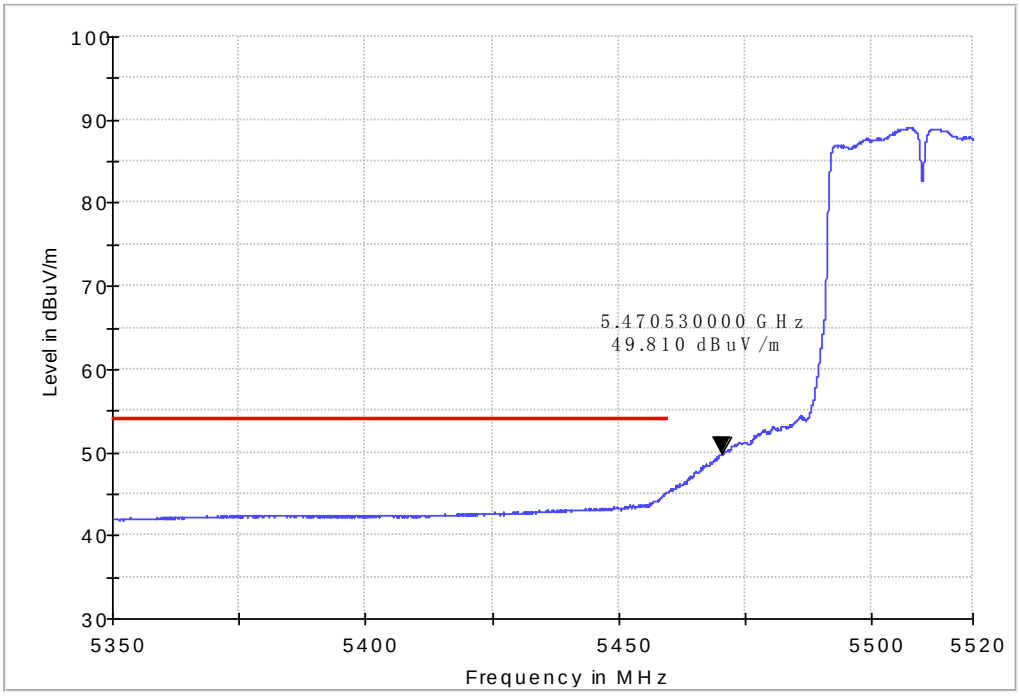


Band edge

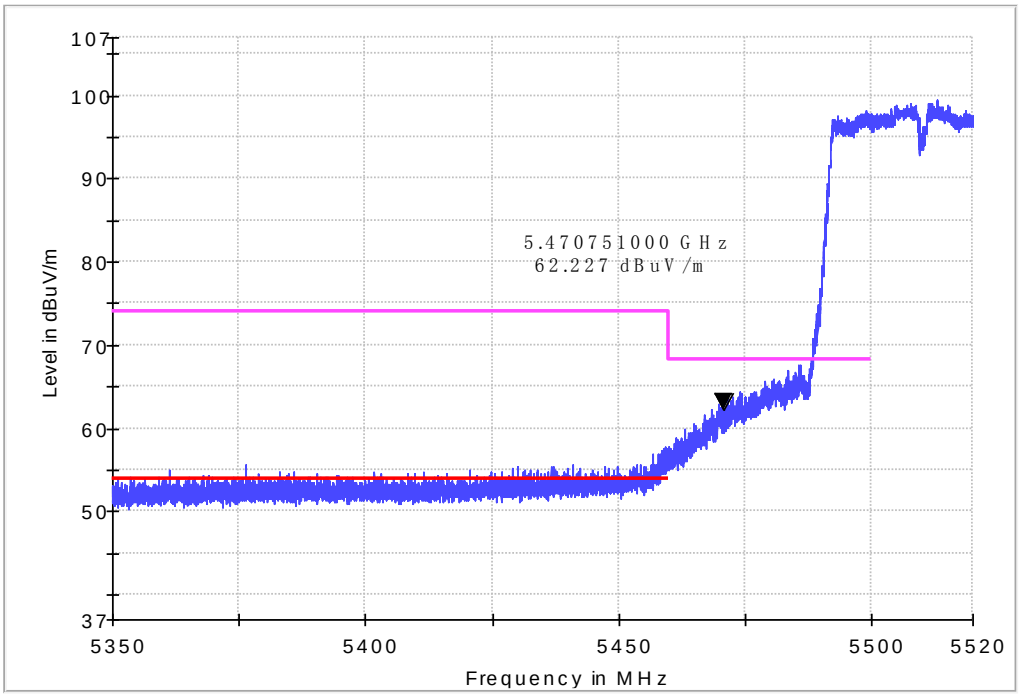
11n HT40 IN THE 5.6GHz BAND
CH102

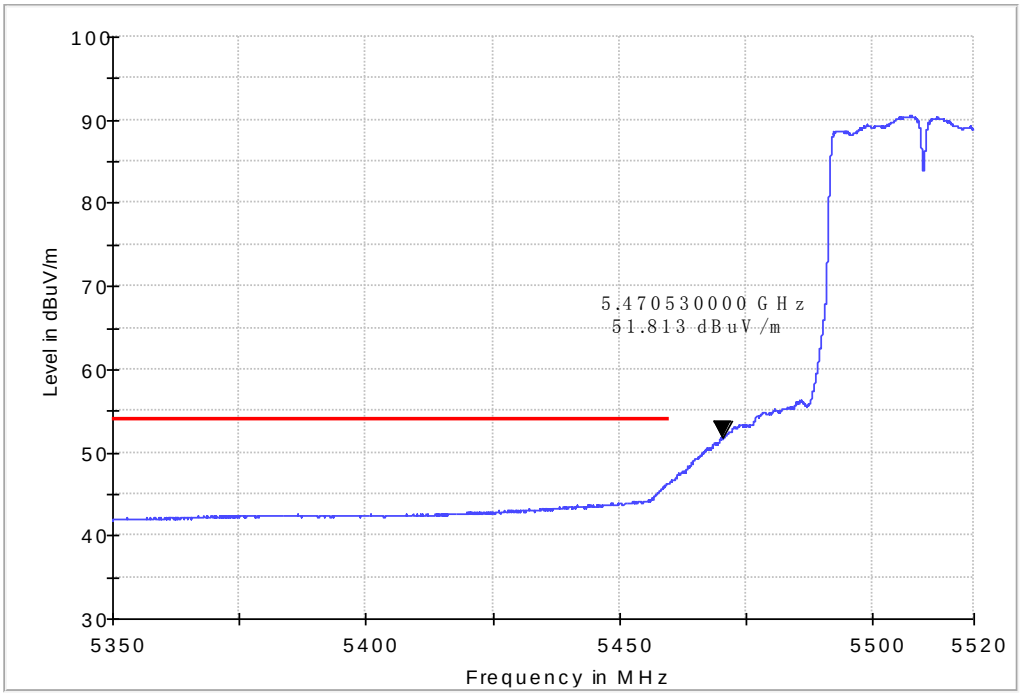
Horizontal





Vertical

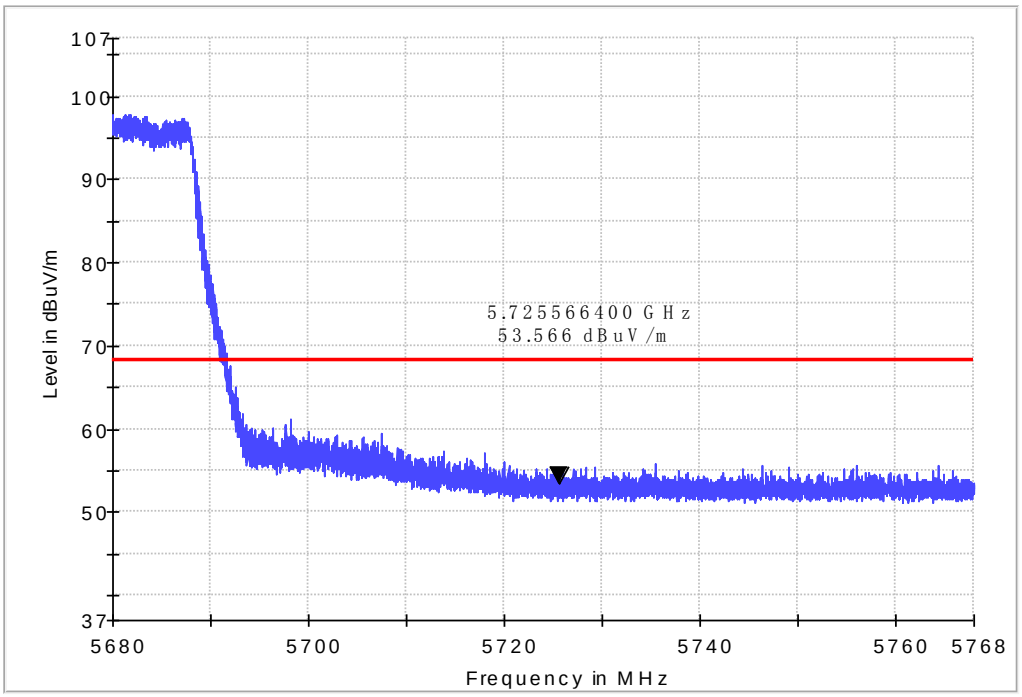

107
100
90
80
70
60
50
37
Level in dBuV/m
5.470751000 GHz
62.227 dBuV/m
5350
5400
5450
5500
5520
Frequency in MHz


100
90
80
70
60
50
40
30
Level in dBuV/m
5.470530000 GHz
51.813 dBuV/m
5350
5400
5450
5500
5520
Frequency in MHz

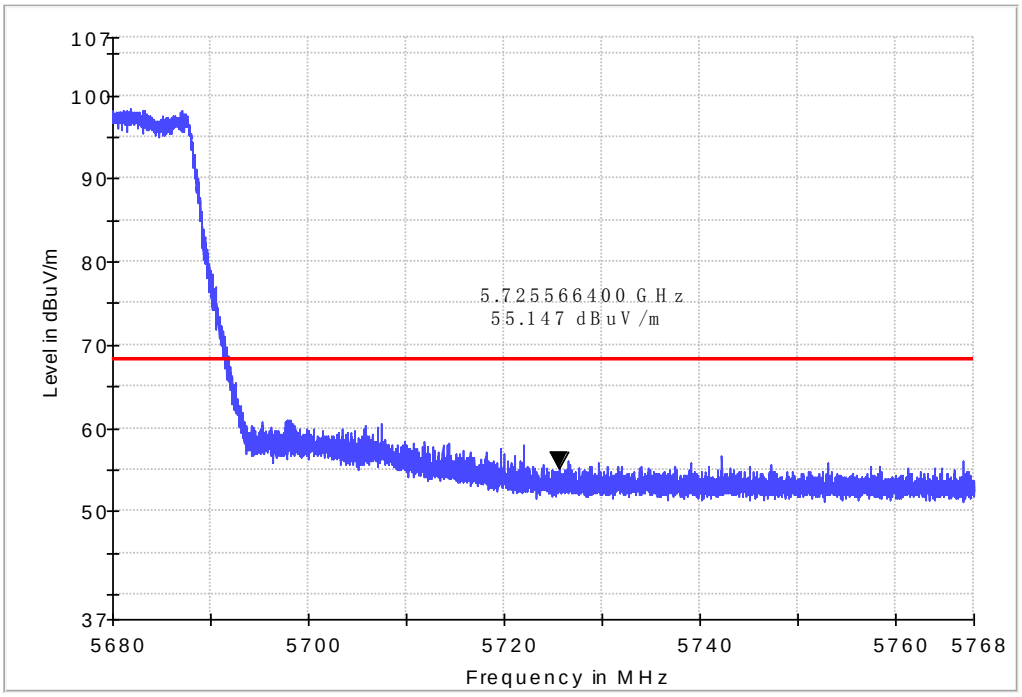
Band edge

11n HT40 IN THE 5.6GHz BAND
CH134

Horizontal



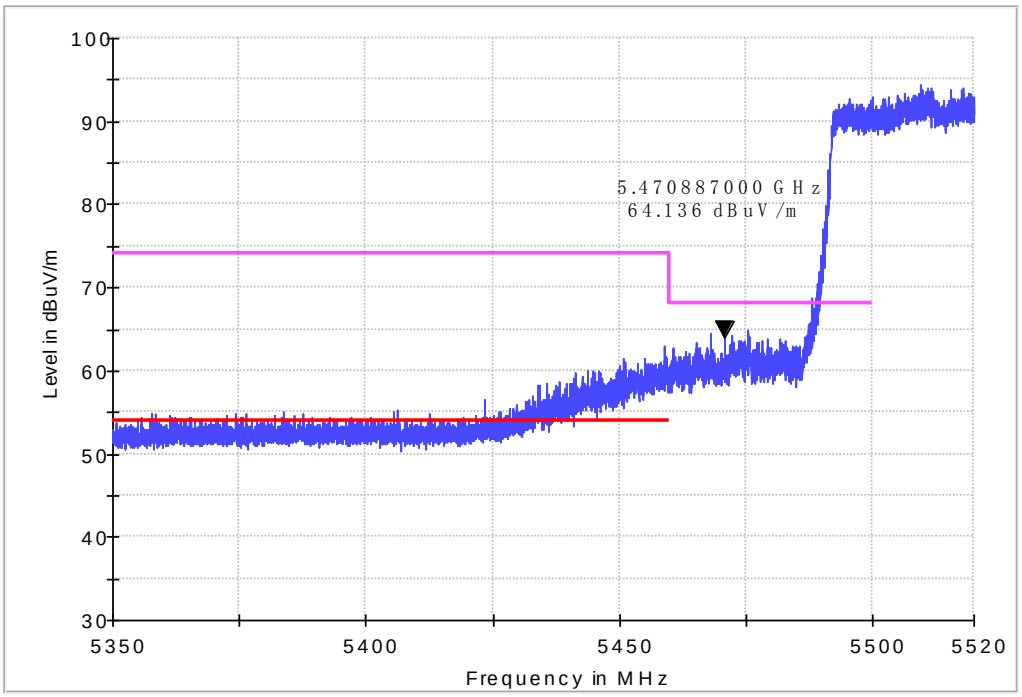
Vertical

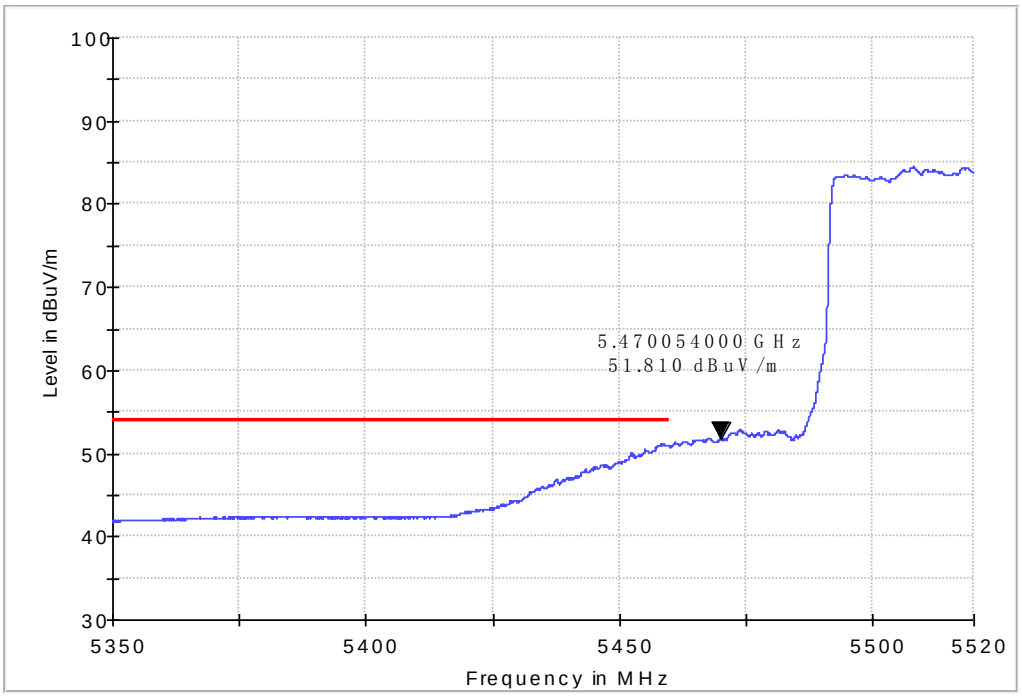


Band edge

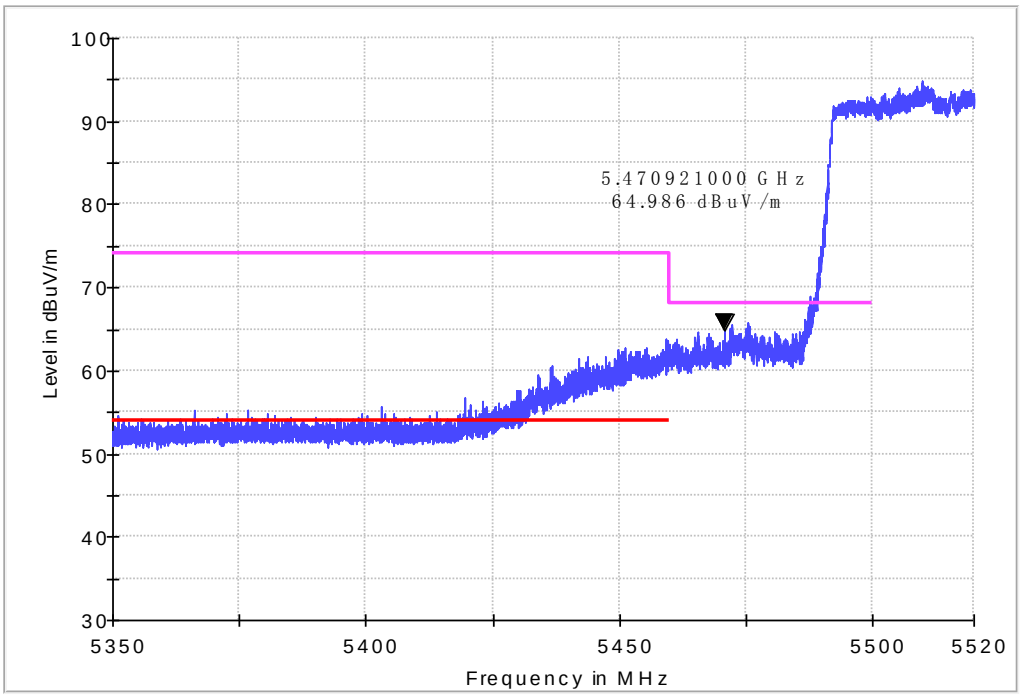
11ac VHT80 IN THE 5.6GHz BAND
CH106

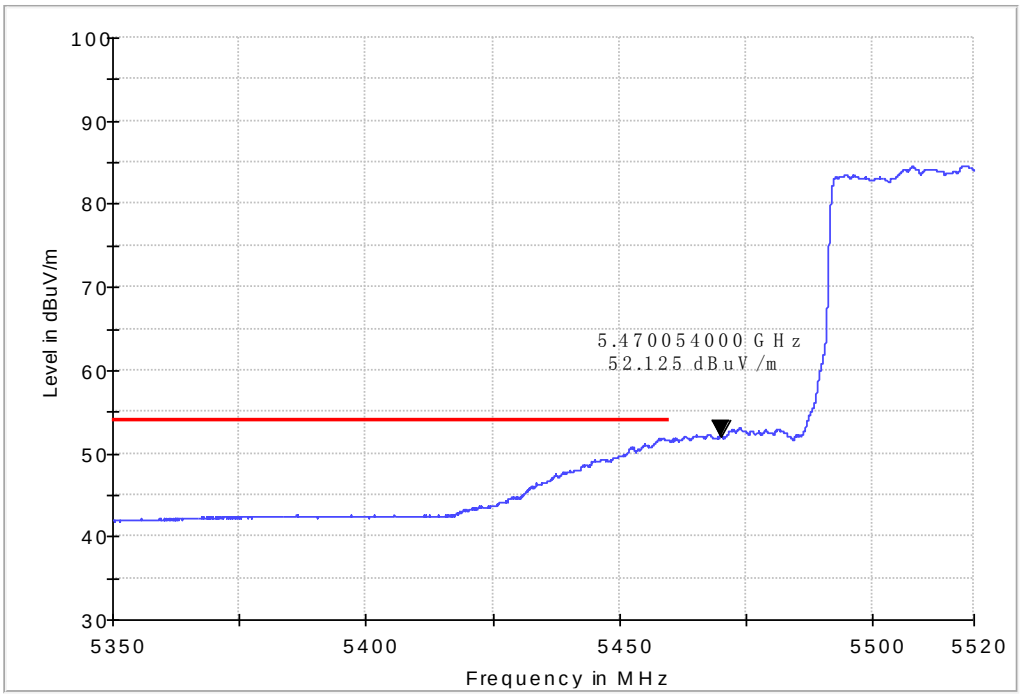
Horizontal





Vertical

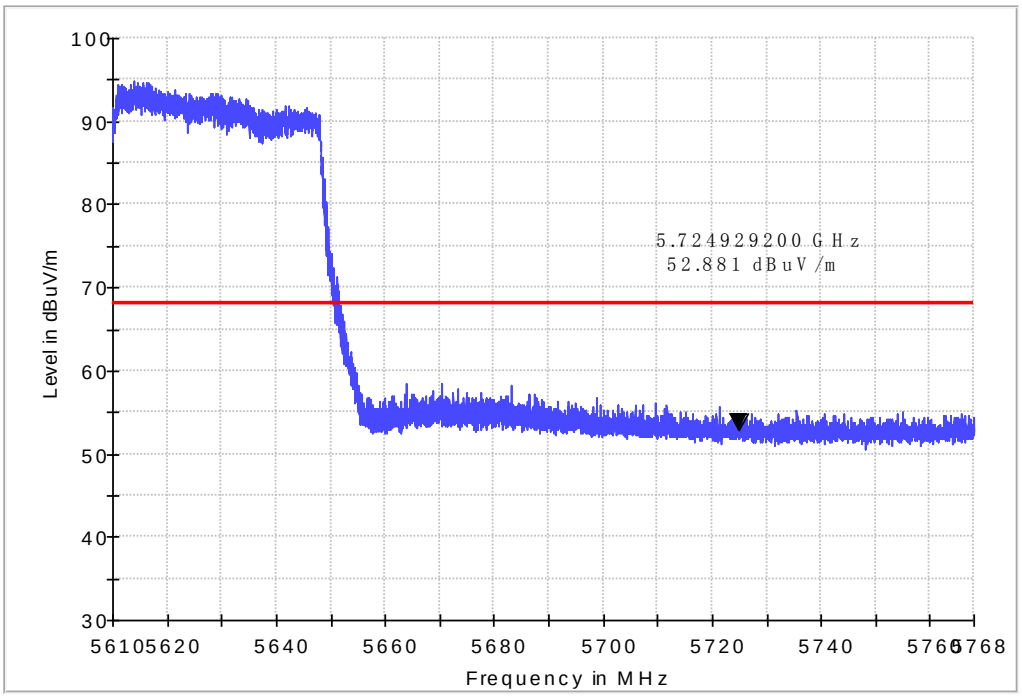

100
90
80
70
60
50
40
30
Level in dBuV/m
5.470921000 GHz
64.986 dBuV/m
5350
5400
5450
5500
5520
Frequency in MHz


100
90
80
70
60
50
40
30
Level in dBuV/m
5.470054000 GHz
52.125 dBuV/m
5350
5400
5450
5500
5520
Frequency in MHz

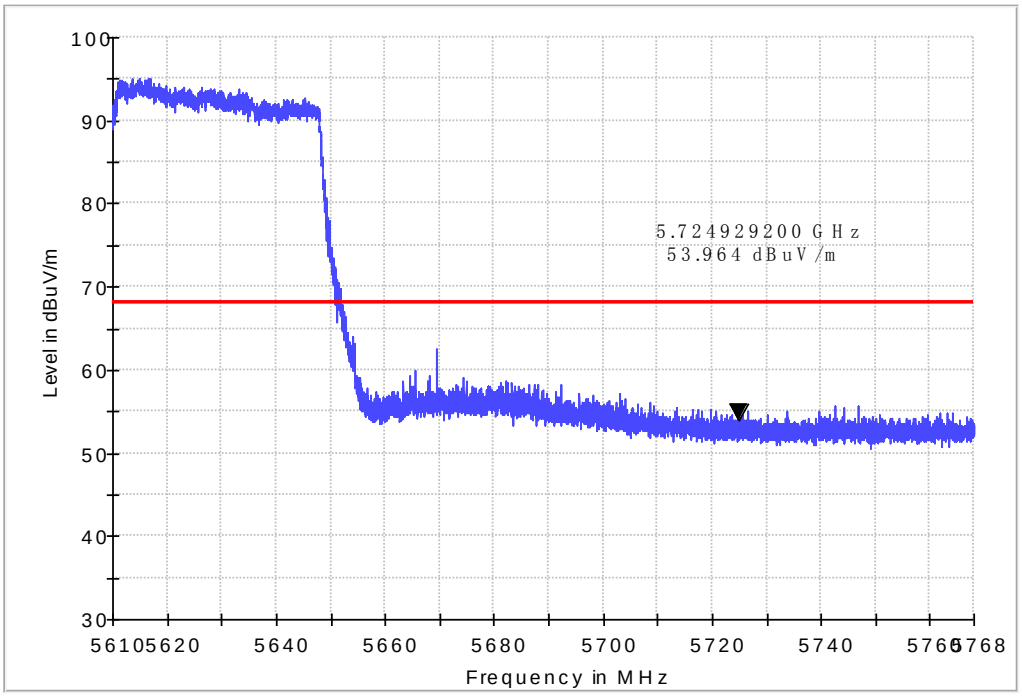
Band edge

11ac VHT80 IN THE 5.6GHz BAND
CH122

Horizontal



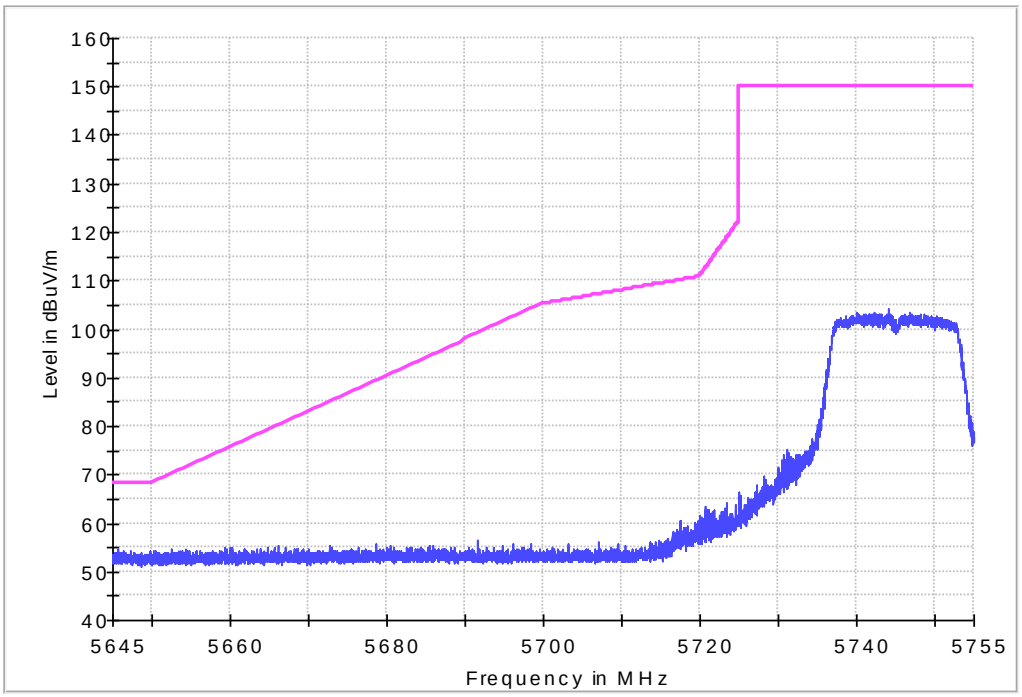
Vertical



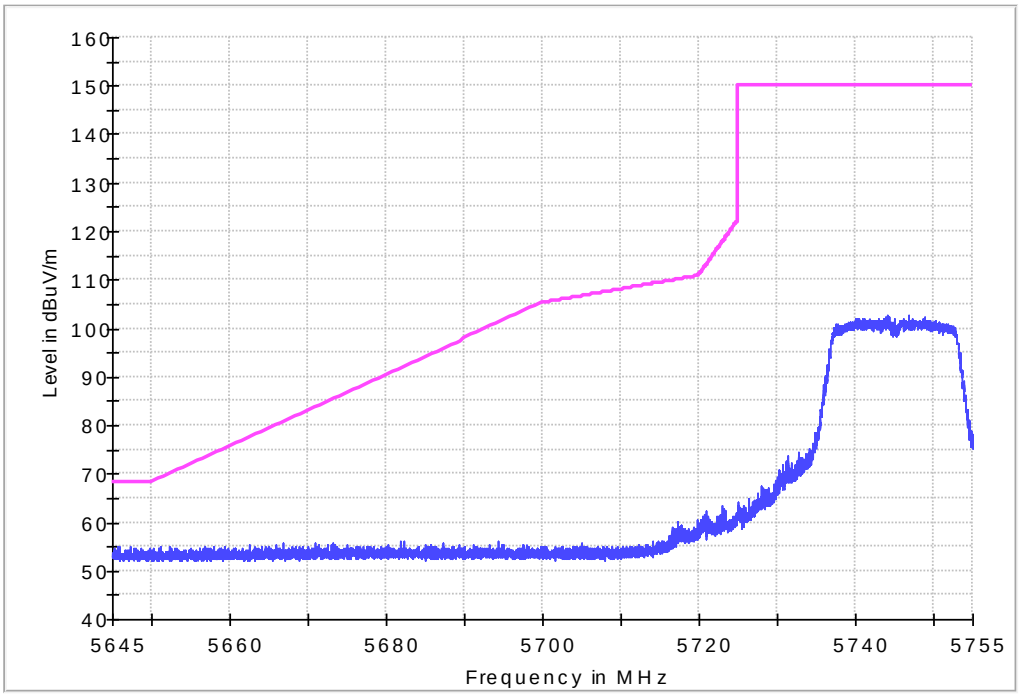
Band edge

11a IN THE 5.8GHz BAND
CH149

Horizontal



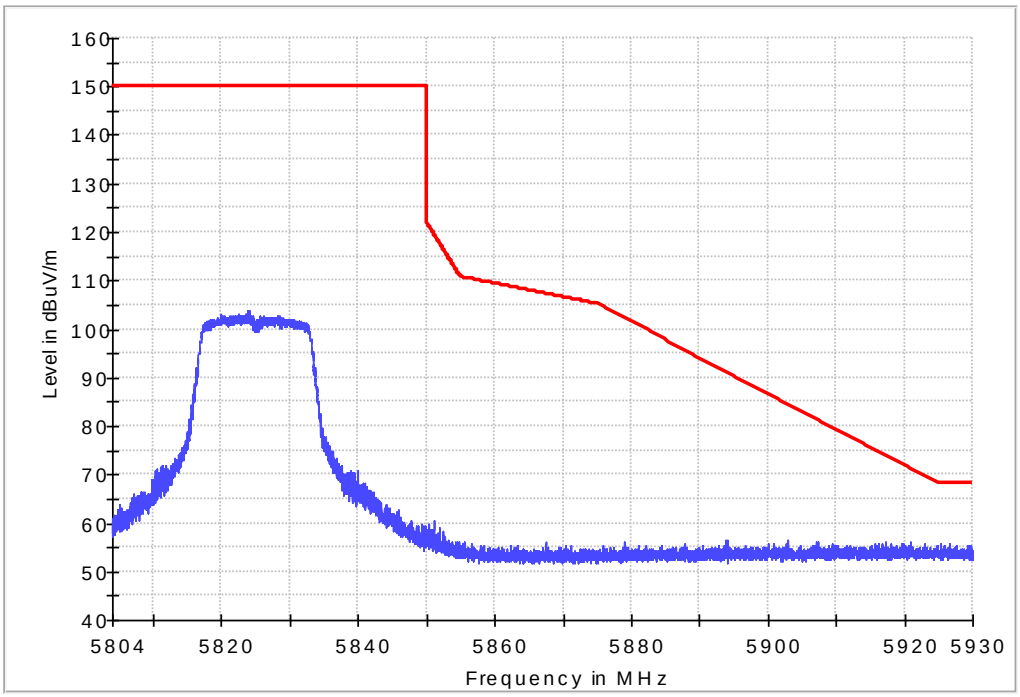
Vertical



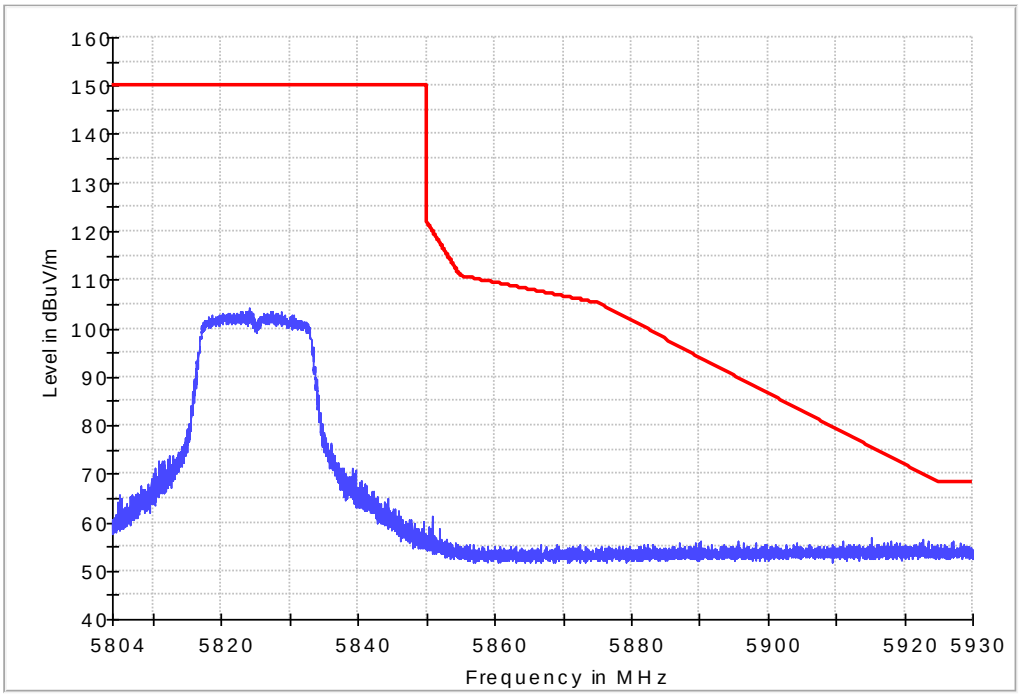
Band edge

11a IN THE 5.8GHz BAND
CH165

Horizontal



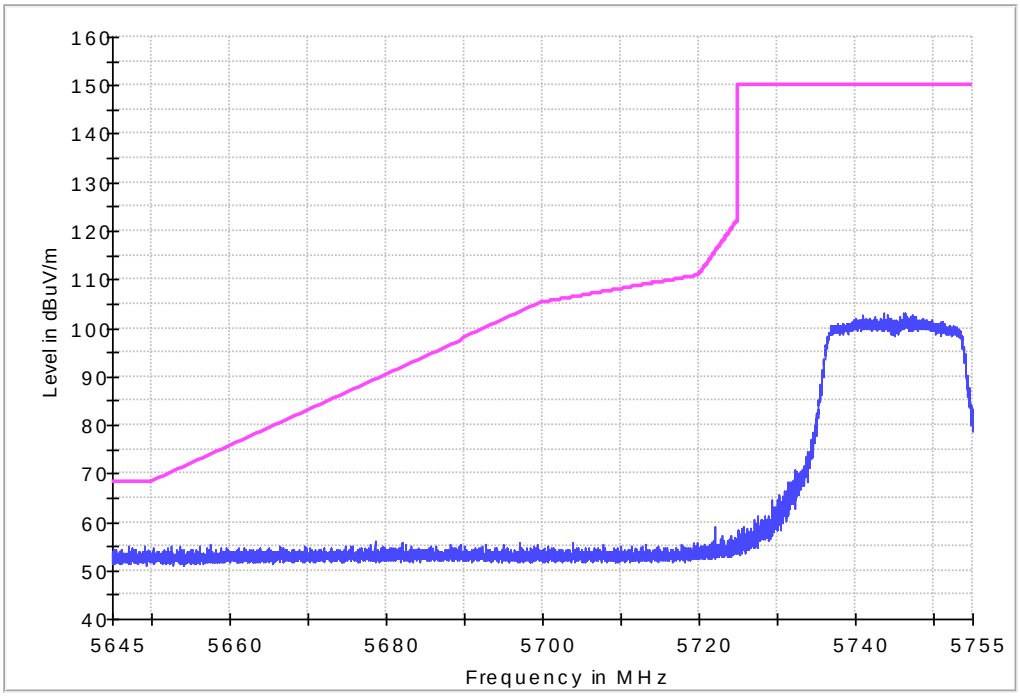
Vertical



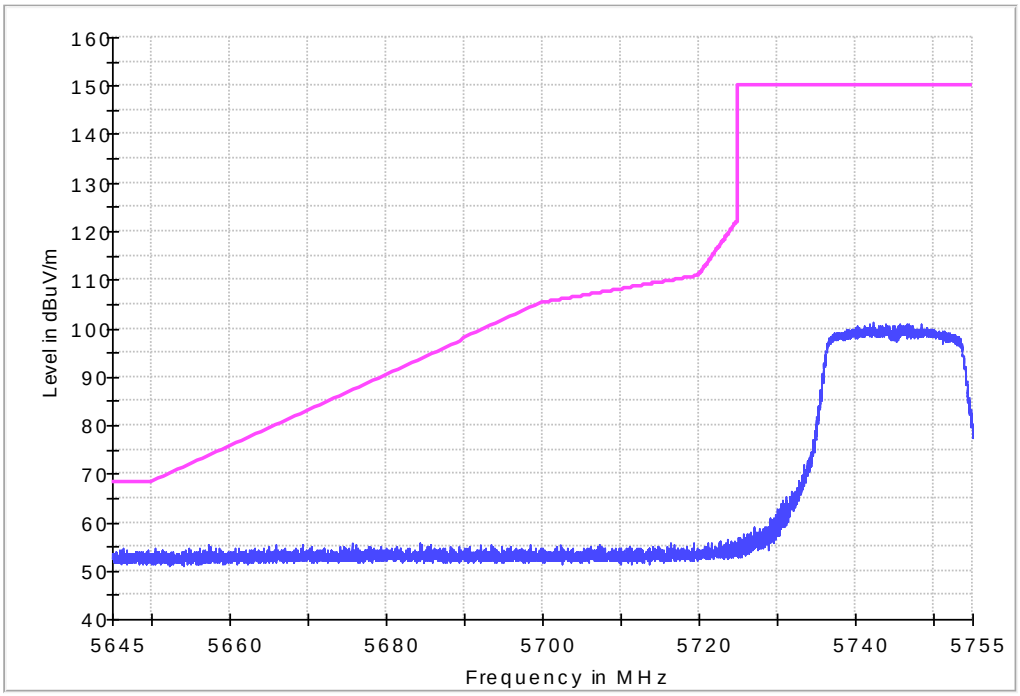
Band edge

11n HT20 IN THE 5.8GHz BAND
CH149

Horizontal



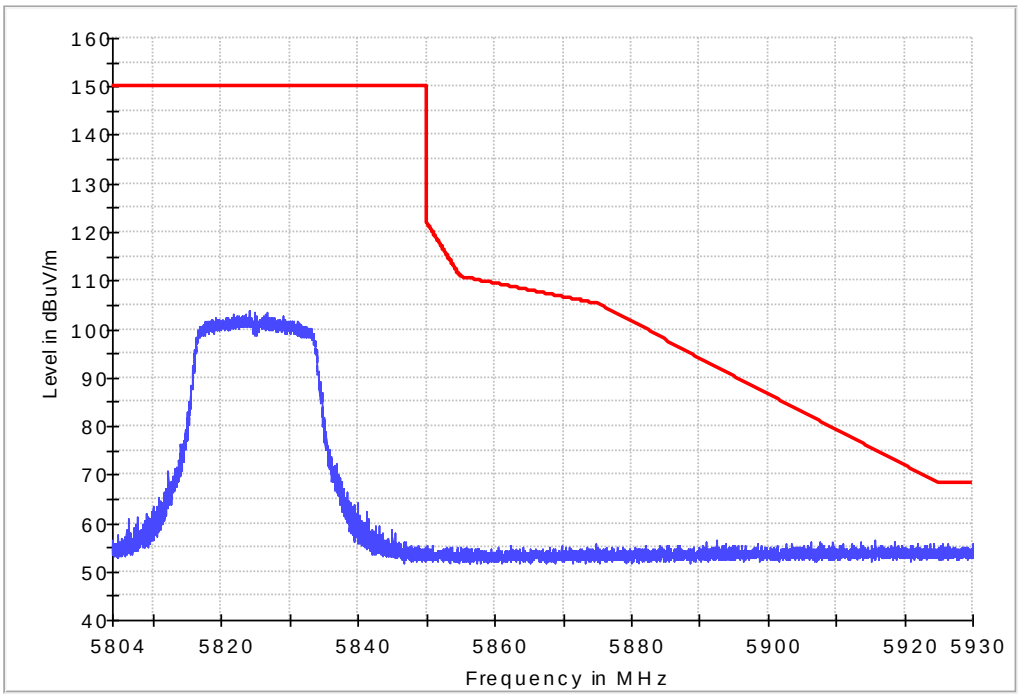
Vertical



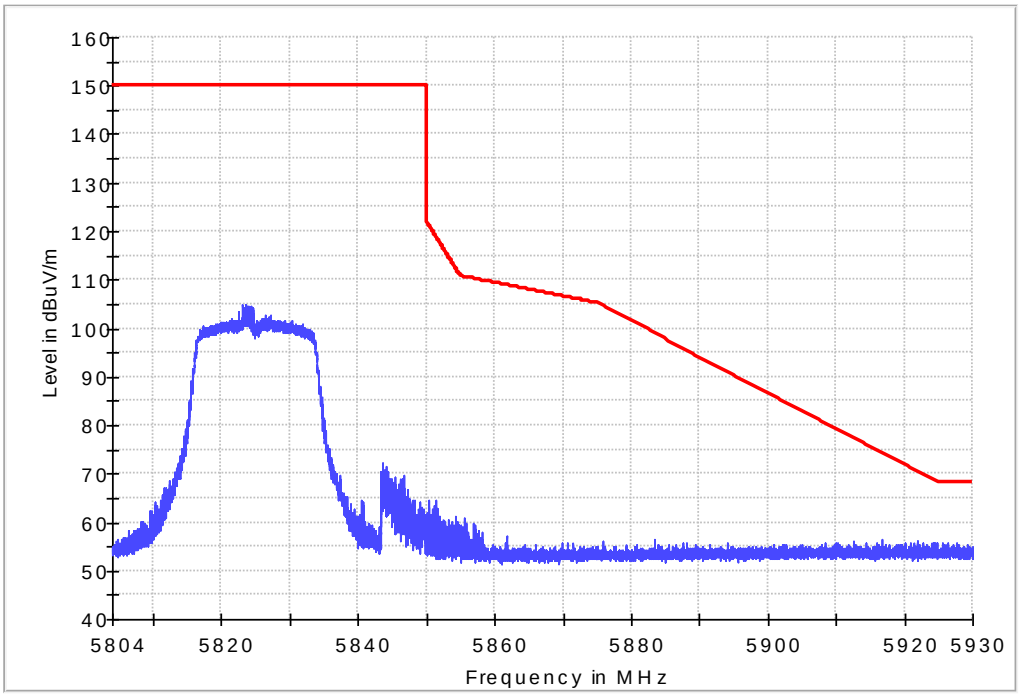
Band edge

11n HT20 IN THE 5.8GHz BAND
CH165

Horizontal



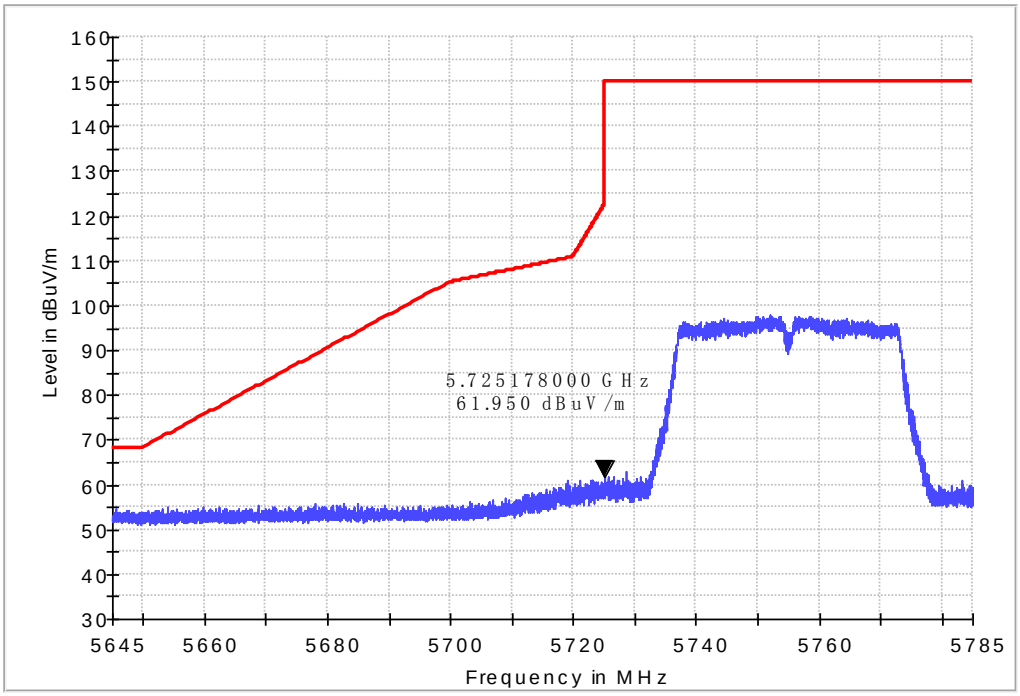
Vertical



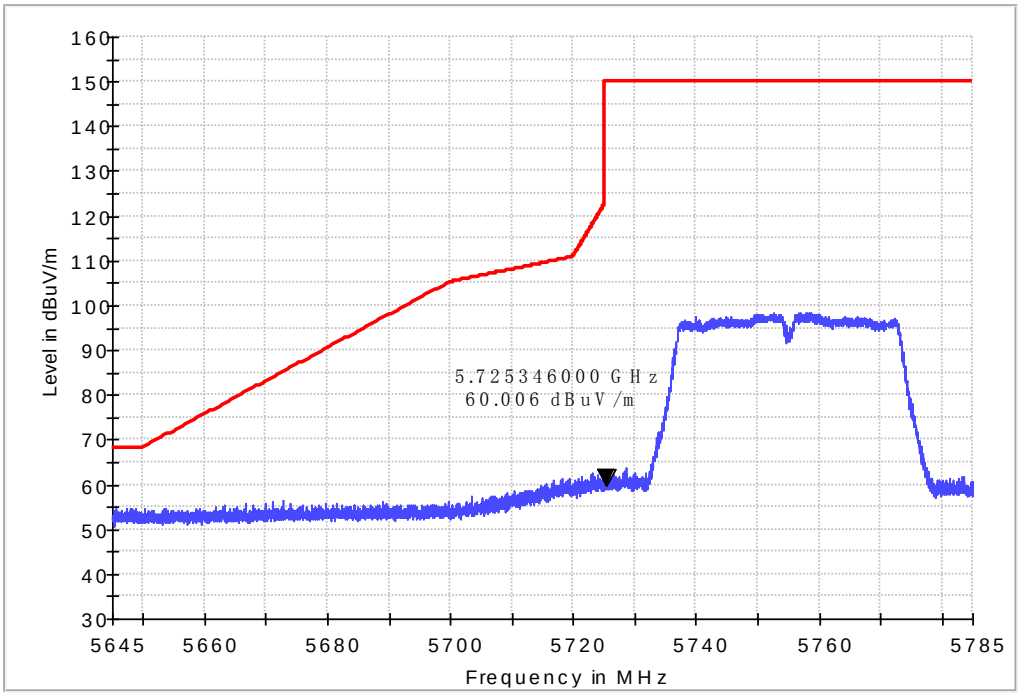
Band edge

11n HT40 IN THE 5.8GHz BAND
CH151

Horizontal



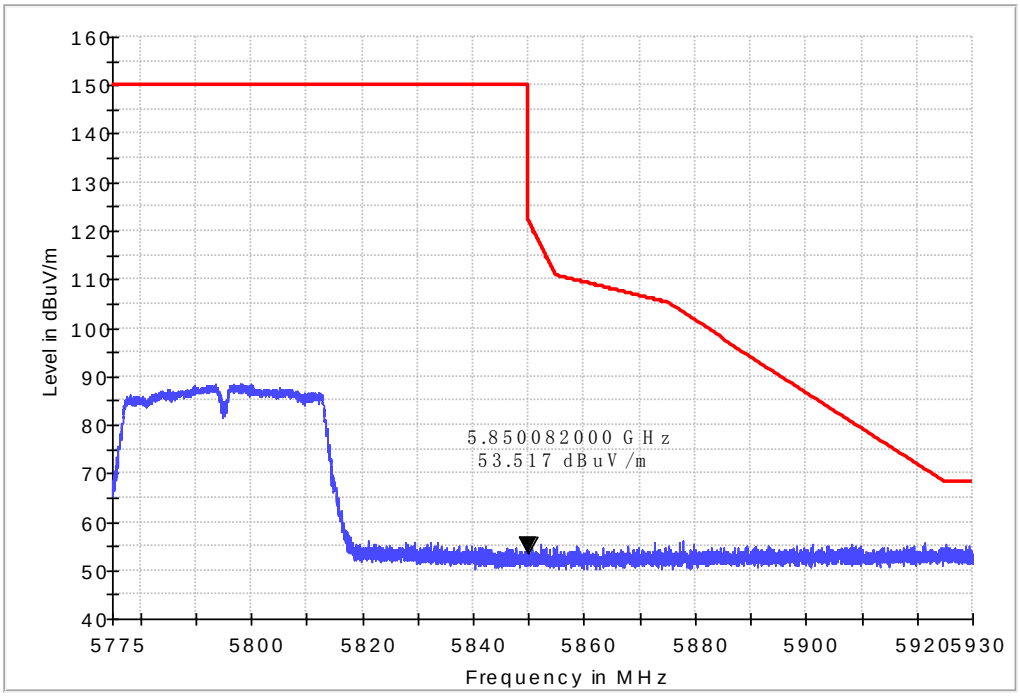
Vertical



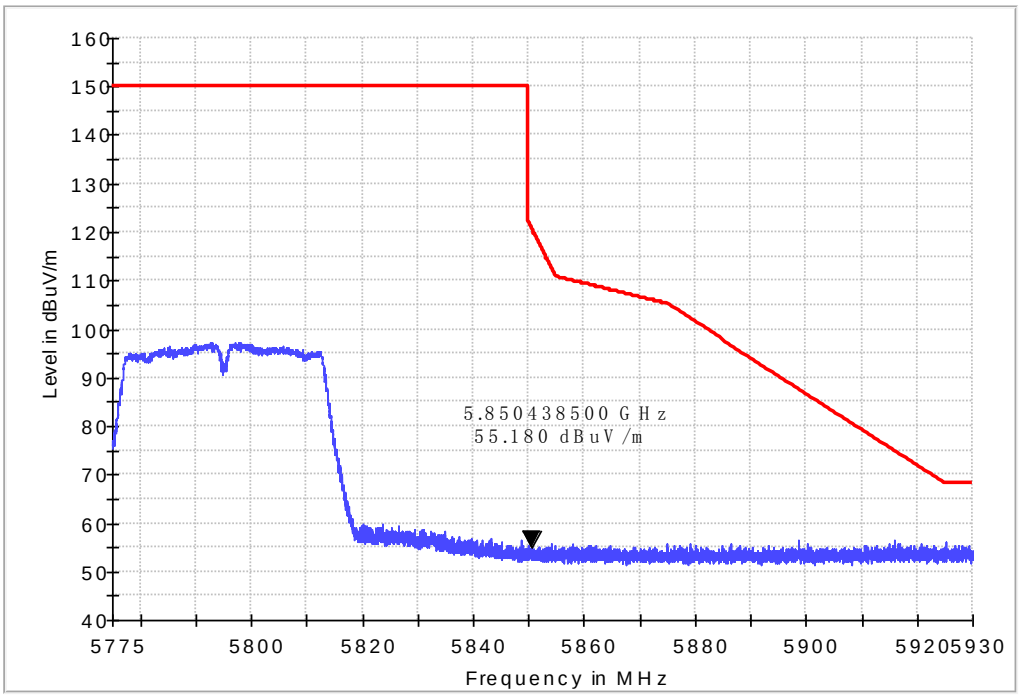
Band edge

11n HT40 IN THE 5.8GHz BAND
CH159

Horizontal



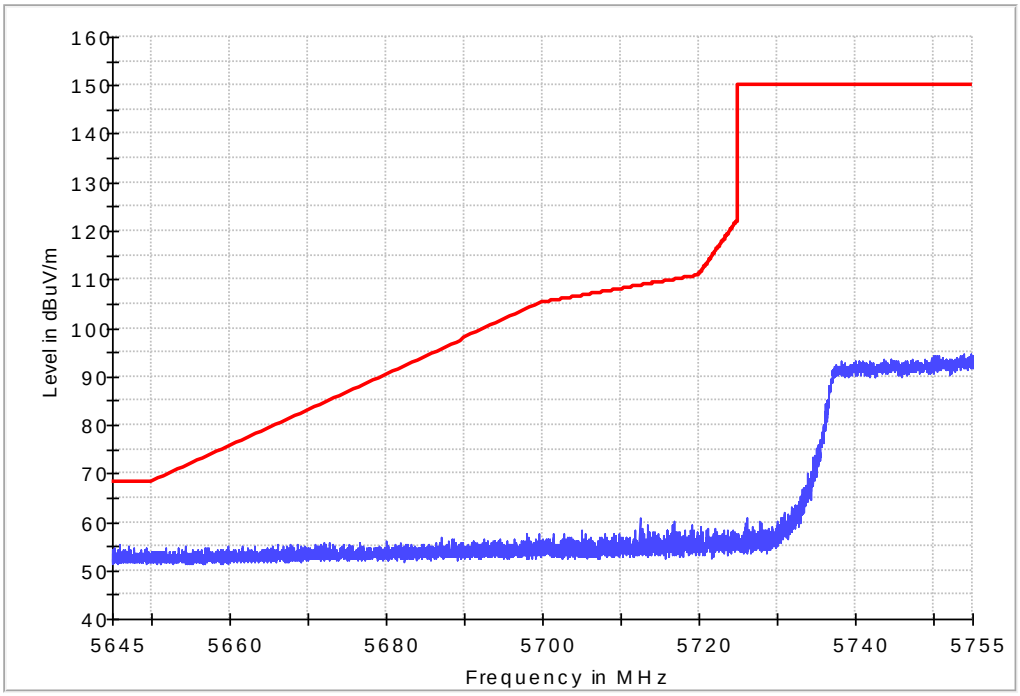
Vertical



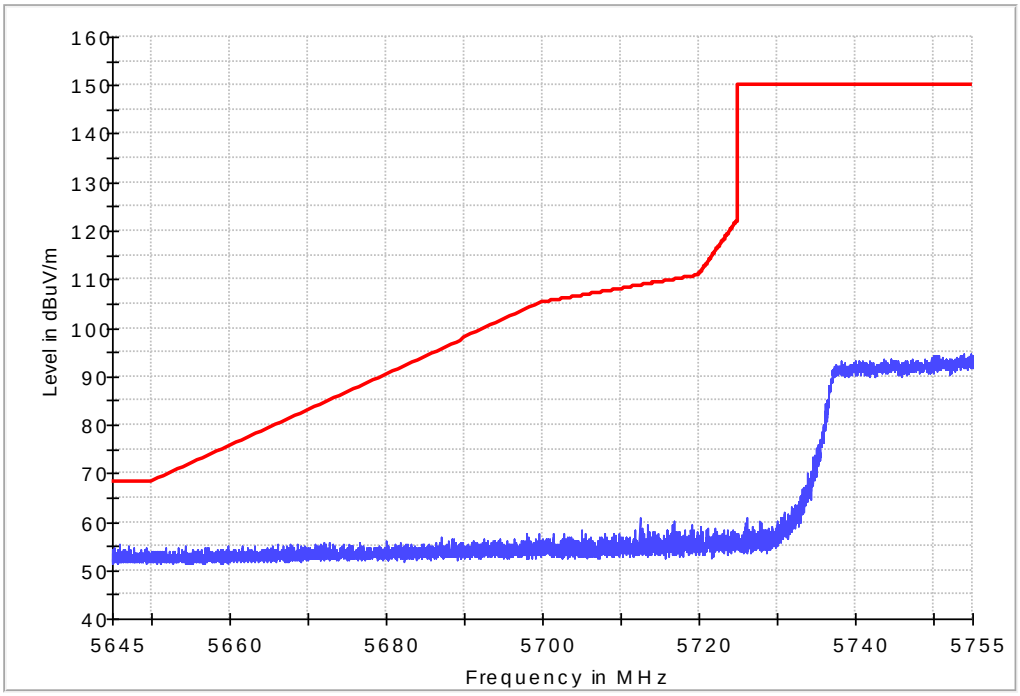
Band edge

11ac VHT80 IN THE 5.8GHz BAND
CH155

Horizontal



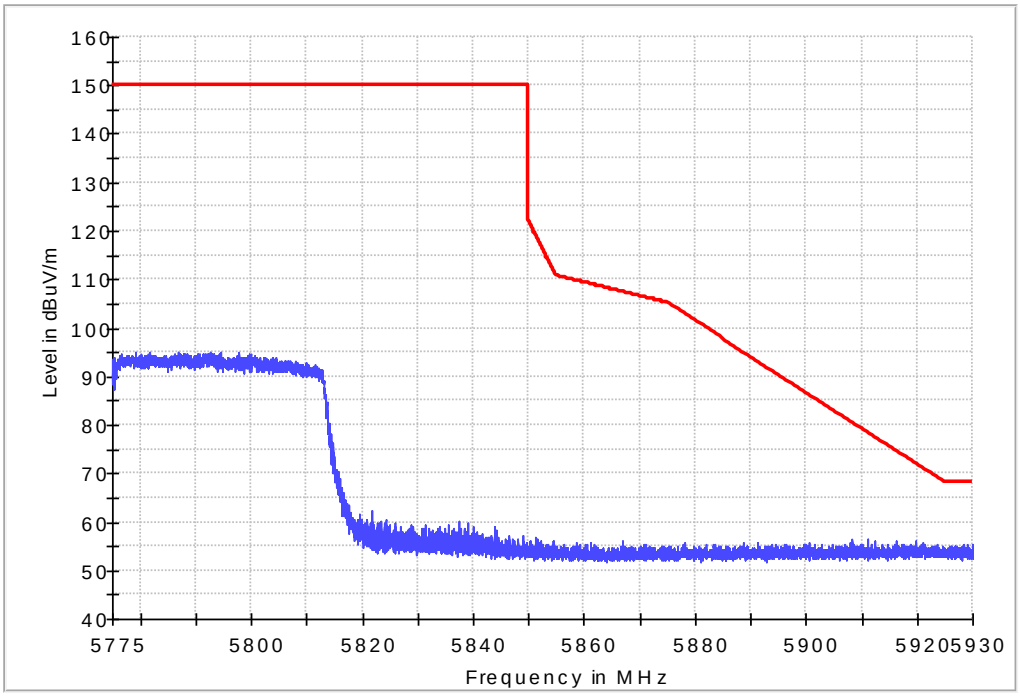
Vertical



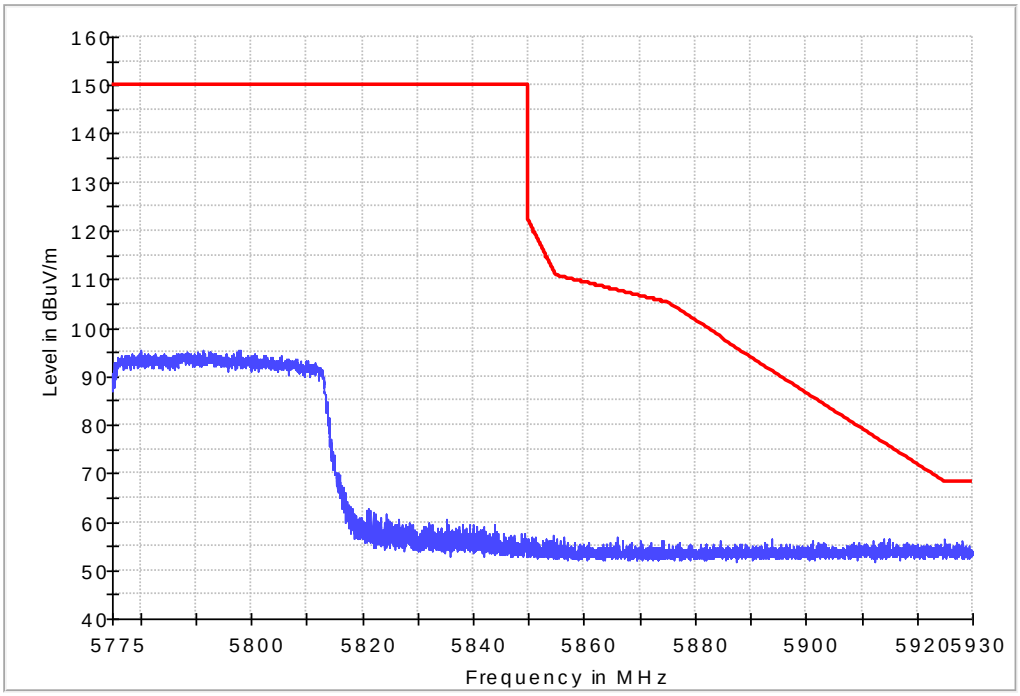
Band edge

11ac VHT80 IN THE 5.8GHz BAND
CH155

Horizontal



Vertical



11. CONDUCTED EMISSION TEST FOR AC POWER PORT MEASUREMENT

11.1. Test Standard and Limit

Test Standard
FCC Part 15 15.207
Test Limit

Table 11 Conducted Disturbance Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

* Decreasing linearly with logarithm of the frequency
* The lower limit shall apply at the transition frequency.

11.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions from both sides of AC line. According to the requirements of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.
The bandwidth of EMI test receiver is set at 9 kHz.

11.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

11.4. Test Data

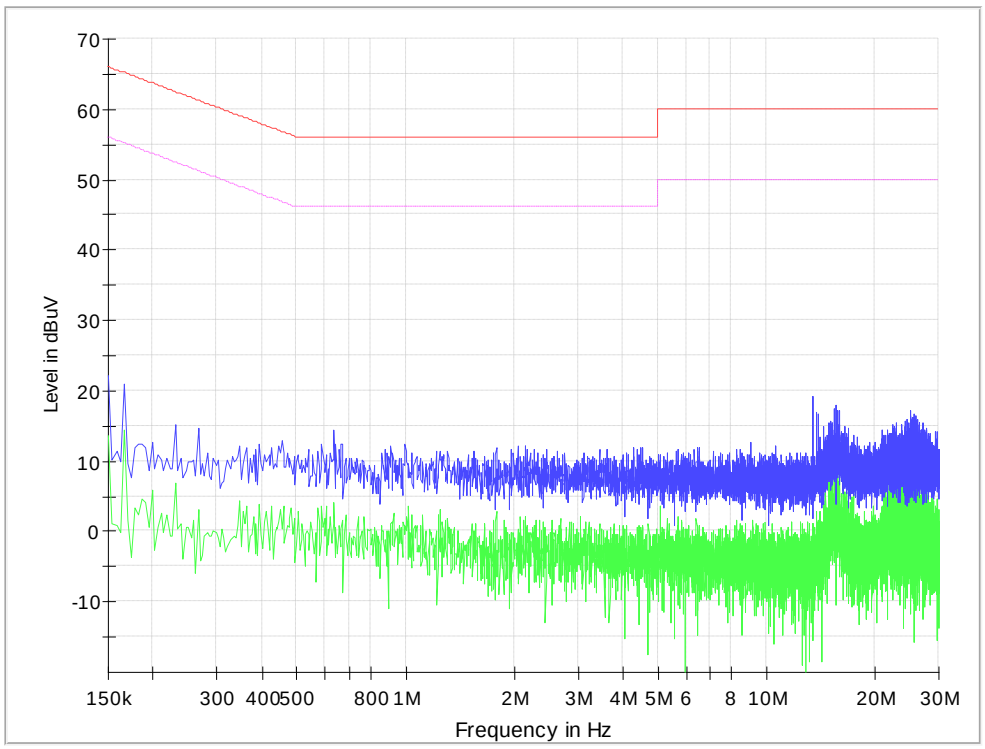
The emissions don’t show in below are too low against the limits. Refer to the test curves.

Table 12 Conducted Disturbance Test Data

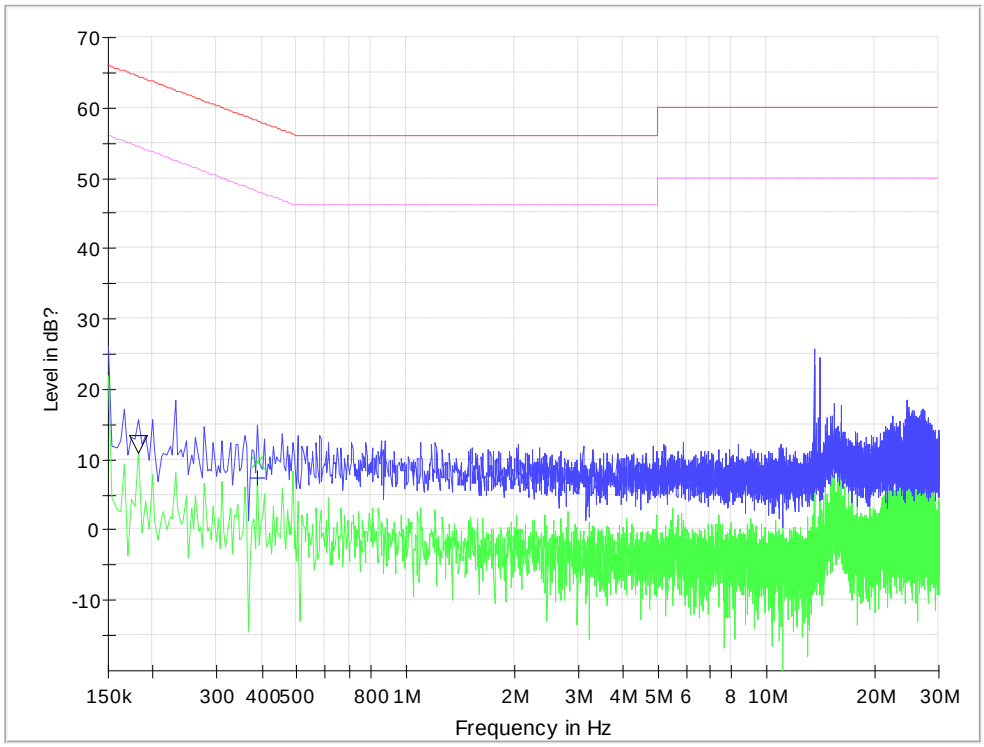
Test mode: Charging and Transmitting								
	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dBμV)	Emission Level (dBμV)	Limit (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limit (dBμV)
Line	0.15	9.7	12.3	22	66	11.7	21.4	56
	0.166	9.7	8.1	17.8	65.2	3.9	13.6	55.2
	0.23	9.7	3.0	12.7	62.4	-2.9	6.8	52.4
	0.634	9.8	0.1	9.9	56	-5.2	4.6	46
	0.998	9.8	-1.2	8.6	56	-5.9	3.9	46
	1.782	9.8	-1.6	8.2	56	-6.7	3.1	46
Neutral	0.15	9.7	16.9	26.6	66	13.7	23.4	56
	0.182	9.7	5.0	14.7	64.4	-0.6	9.1	54.4
	0.23	9.7	6.9	16.6	62.4	-4.8	4.9	52.4
	0.39	9.7	2.0	11.7	58.1	-2.4	7.3	48.1
	0.454	9.7	-0.1	9.6	56.8	-4.0	5.7	46.8
	2.69	9.9	-1.2	8.7	56	-5.1	4.8	46

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
3. The other emission levels were very low against the limit.

Line



Neutral



12. ANTENNA REQUIREMENTS

15.203 requirements:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
15.247(b) (4) requirements:
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

12.1. Antenna Connector

Antenna Connector is on the PCB within enclosure and not accessible to user.

12.2. Antenna Gain

The antenna gain of EUT is less than 6 dBi.

END OF REPORT