FCC §15.407(a)& RSS-247 CLAUSE 6.2- POWER SPECTRAL DENSITY

Applicable Standard

According to FCC §15.407(a)

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output

power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

According to RSS-247 Clause 6.2:

Frequency band 5150-5250 MHz

6.2.1.1   Power limits

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dBm, whichever is less stringent. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10}B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Frequency band 5250-5350 MHz

6.2.2.1   Power limits

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dBm, whichever is less. Devices shall implement TPC in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

Devices, other than devices installed in vehicles, shall comply with the following:

a)   The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band;

b)   The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Frequency bands 5470-5600 MHz and 5650-5725 MHz
6.2.3.1　Power limits

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10}B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10}B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Frequency band 5725-5850 MHz
6.2.4.1　Power limits

For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200256	2020-07-07	2021-07-07
R&S	Spectrum Analyzer	FSP 38	100478	2020-07-07	2021-07-07
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41010013	Each Time	/
E-Microwave	Blocking Control	EMDCB-00036	0E01201048	Each Time	/

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	21.7~28.1°C
Relative Humidity:	30~49 %
ATM Pressure:	100.6~102.5kPa
Tester:	Chris Mo
Test Date:	2020-10-21~2020-10-24

Test Mode: Transmitting
Test Result:Compliance.Please refer to the following table and plot.

13 dBi Antenna:
5150-5250 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	**Chain 1**	**Chain 2**	**Chain 3**	**Total**	**FCC Limit**
802.11 a	5180	3.55	3.76	3.43	3.36	/	10
	5200	2.80	3.86	3.09	3.76	/	10
	5240	3.03	3.21	3.59	2.97	/	10
802.11n ht20	5180	-2.44	-2.53	-3.85	-3.08	3.08	4
	5200	-2.74	-2.72	-3.91	-2.51	3.08	4
	5240	-2.69	-2.36	-3.41	-2.24	3.37	4
802.11n ht40	5190	-2.97	-3.38	-3.97	-3.44	2.60	4
	5230	-2.73	-2.42	-2.83	-2.35	3.44	4
802.11ac vht80	5210	-3.26	-3.84	-4.86	-3.73	2.14	4

Note: This is an Outdoor AP, and this band is Only for FCC Use.

5250-5350MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	**Chain 1**	**Chain 2**	**Chain 3**	**Total**	**FCC/ISED Limit**
802.11 a	5260	-2.83	-2.64	-2.79	-2.64	/	4
	5280	-3.17	-3.10	-3.39	-2.49	/	4
	5320	-2.89	-3.48	-3.88	-3.58	/	4
802.11n ht20	5260	-10.07	-10.49	-11.60	-10.52	-4.61	-2
	5280	-9.34	-9.72	-11.22	-10.33	-4.08	-2
	5320	-9.01	-10.29	-12.13	-11.17	-4.48	-2
802.11n ht40	5270	-9.44	-9.81	-11.25	-9.72	-3.98	-2
	5310	-9.23	-10.67	-11.83	-10.92	-4.54	-2
802.11ac vht80	5290	-9.72	-10.26	-12.15	-11.25	-4.73	-2

5470-5725MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/ISED Limit
802.11 a	5500	-2.15	-3.18	-3.72	-2.51	/	4
	5580	-3.01	-3.45	-3.17	-2.68	/	4
	5700	-2.57	-2.78	-3.77	-2.88	/	4
	5720	-2.15	-3.17	-3.21	-3.60	/	4
802.11n ht20	5500	-8.48	-9.27	-10.86	-9.29	-3.37	-2
	5580	-8.31	-9.46	-11.06	-9.21	-3.38	-2
	5700	-8.66	-10.16	-12.17	-9.28	-3.86	-2
	5720	-9.45	-11.35	-12.99	-10.89	-4.97	-2
802.11n ht40	5510	-9.38	-9.87	-11.95	-10.23	-4.24	-2
	5550	-9.47	-10.50	-12.42	-9.99	-4.44	-2
	5670	-9.03	-9.81	-11.81	-9.22	-3.82	-2
	5710	-8.56	-10.26	-11.78	-9.47	-3.84	-2
802.11ac vht80	5530	-10.13	-10.72	-12.43	-11.01	-4.97	-2
	5610	-9.34	-10.92	-12.44	-10.93	-4.75	-2
	5690	-9.11	-8.92	-10.99	-9.10	-3.43	-2

5725-5850 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/500kHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/RSS Limit
802.11 a	5745	11.49	11.41	11.05	12.45	/	23
	5785	10.73	11.18	10.18	12.25	/	23
	5825	10.61	11.17	10.56	11.45	/	23
802.11n ht20	5745	9.74	6.92	5.64	7.79	13.80	17
	5785	9.39	6.59	6.00	7.67	13.63	17
	5825	9.01	6.48	5.60	7.32	13.31	17
802.11n ht40	5755	6.06	3.77	2.01	3.95	10.21	17
	5795	5.44	2.77	1.71	3.69	9.64	17
802.11ac vht80	5775	3.58	1.01	-0.09	0.86	7.59	17

Note:
The maximum antenna gain is 13dBi in 5GHz band.The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:

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

So:

$$\text{Directional gain} = G_{ANT} + \text{Array Gain} = 13dBi+10*\log(4/1)=19 \text{ dBi}$$

For 5.8GHz band, If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500kHz/RBW)$ to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
Method SA-3 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01was used for PSD test.

13dBi:
5150-5250 MHz, Chain 0:

802.11a Low Channel


```
 R                                        *RBW 1 MHz      Marker 1 [T1 ]
 S                                        *VBW 3 MHz                3.55 dBm
              Ref  25 dBm      *Att 30 dB  SWT 20 ms      5.177360000 GHz
```

Date: 21.OCT.2020 10:50:10

802.11a Middle Channel


```
 R                                        *RBW 1 MHz      Marker 1 [T1 ]
 S                                        *VBW 3 MHz                2.80 dBm
              Ref  25 dBm      *Att 30 dB  SWT 20 ms      5.196480000 GHz
```

Date: 21.OCT.2020 10:51:03

802.11a High Channel


```
                                        *RBW  1 MHz      Marker 1 [T1 ]
                                        *VBW  3 MHz                      3.03 dBm
        Ref   25 dBm          *Att  30 dB    SWT  20 ms      5.237680000 GHz
           Offset   1.5 dB
      -20
                                                                           A
   1 RM *
   MAXH                                                                   LVL

                                                                          3DB

      Center  5.24 GHz              4 MHz/               Span  40 MHz
```

Date: 21.OCT.2020 10:51:57

802.11n ht20 Low Channel


```
                                        *RBW  1 MHz      Marker 1 [T1 ]
                                        *VBW  3 MHz                     -2.44 dBm
        Ref   25 dBm          *Att  30 dB    SWT  20 ms      5.175440000 GHz
           Offset   1.5 dB
      -20
                                                                           A
   1 RM *
   MAXH                                                                   LVL

                                                                          3DB

      Center  5.18 GHz              4 MHz/               Span  40 MHz
```

Date: 21.OCT.2020 10:58:17

802.11n ht20 Middle Channel

		*RBW 1 MHz		Marker 1 [T1]	
		*VBW 3 MHz			-2.74 dBm
Ref 25 dBm		*Att 30 dB	SWT 20 ms		5.205200000 GHz

Date: 21.OCT.2020 10:57:17

802.11n ht20 High Channel

		*RBW 1 MHz		Marker 1 [T1]	
		*VBW 3 MHz			-2.69 dBm
Ref 25 dBm		*Att 30 dB	SWT 20 ms		5.235360000 GHz

Date: 21.OCT.2020 10:56:22

802.11n ht40 Low Channel

Date: 21.OCT.2020 11:01:18

802.11n ht40 High Channel

Date: 21.OCT.2020 11:02:23

802.11ac vht80 Middle Channel

Date: 21.OCT.2020 11:03:52

Chain 1:

802.11a Low Channel

Date: 21.OCT.2020 11:27:45

802.11a Middle Channel

Date: 21.OCT.2020 11:27:24

802.11a High Channel

Date: 21.OCT.2020 11:26:38
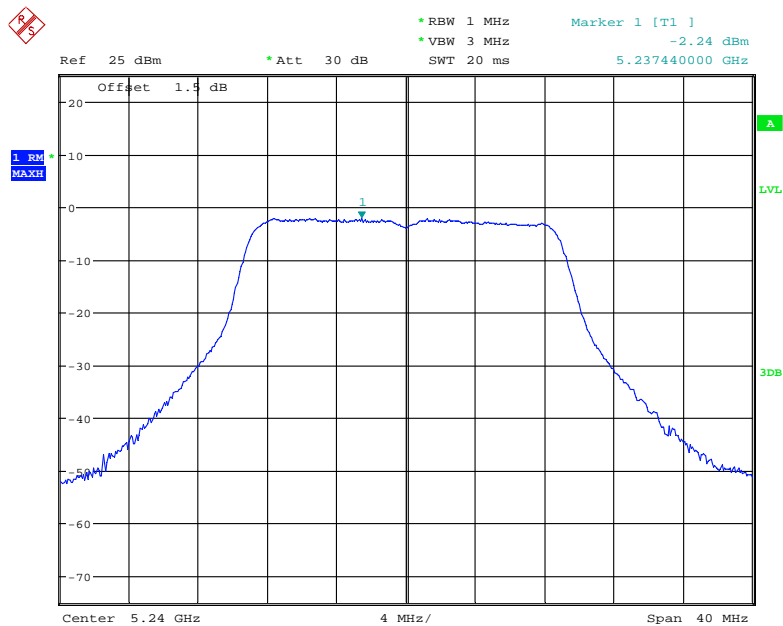
802.11n ht20 Low Channel

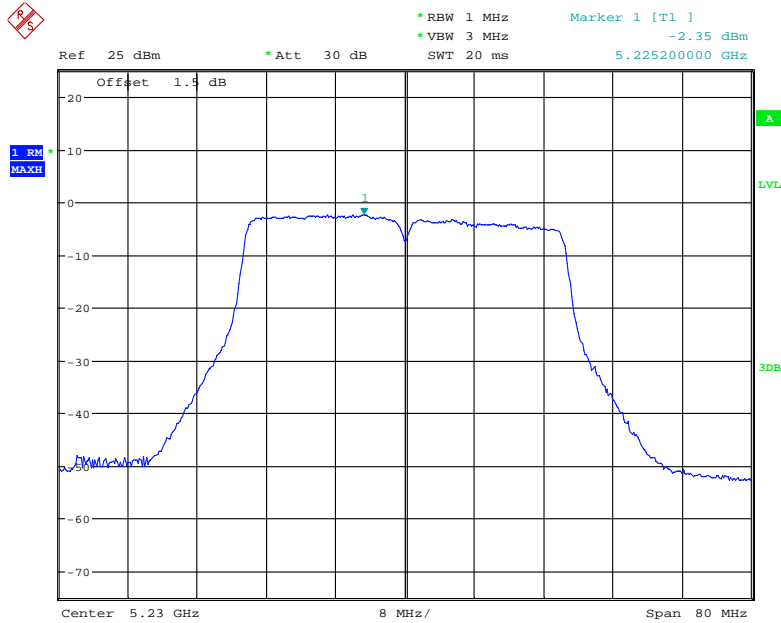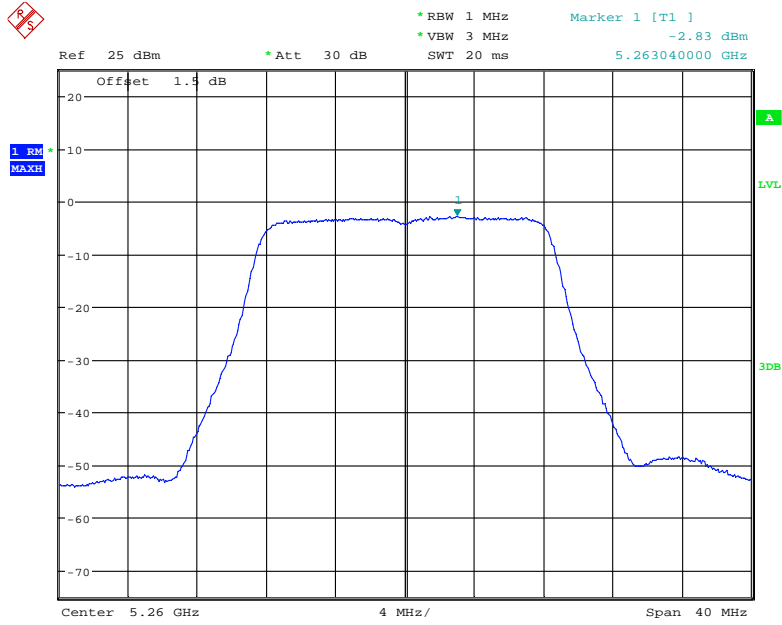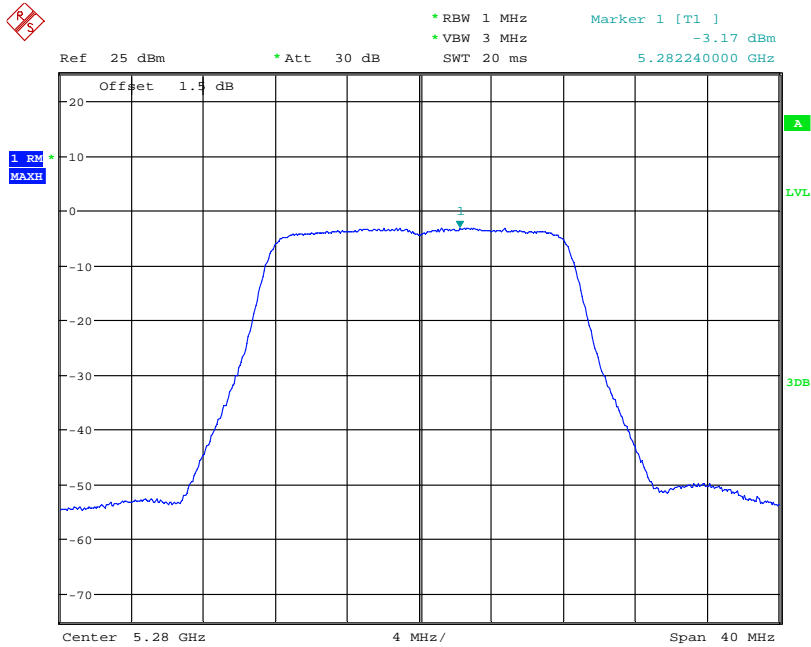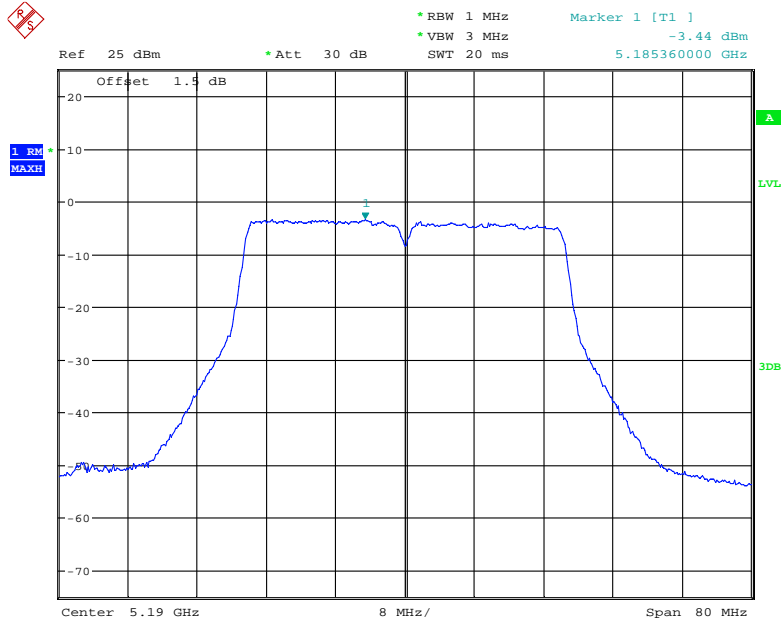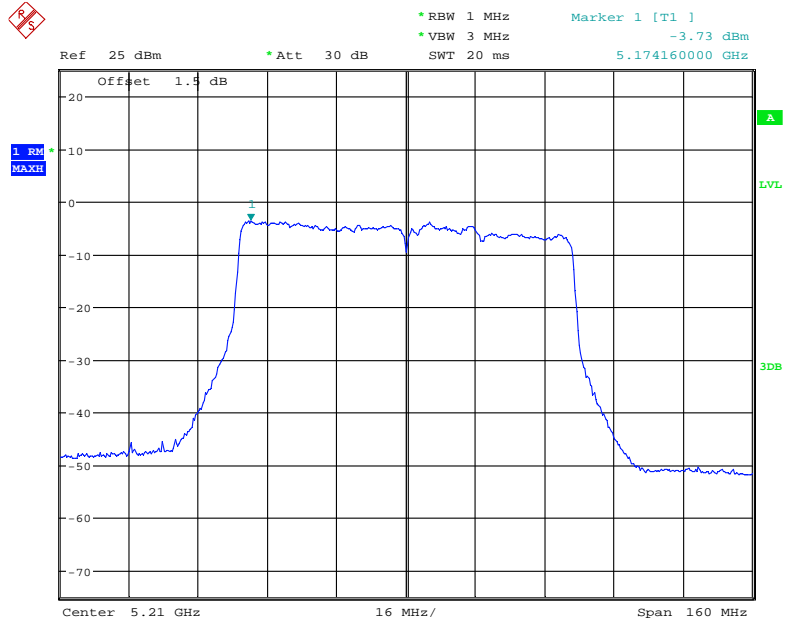Date: 21.OCT.2020 11:24:53

802.11n ht20 Middle Channel


```
                                                    *RBW 1 MHz      Marker 1 [T1 ]
                                                    *VBW 3 MHz              -2.72 dBm
        Ref   25 dBm          *Att  30 dB    SWT 20 ms         5.197680000 GHz
          Offset   1.5 dB
```

Date: 21.OCT.2020 11:25:15

802.11n ht20 High Channel


```
                                                    *RBW 1 MHz      Marker 1 [T1 ]
                                                    *VBW 3 MHz              -2.36 dBm
        Ref   25 dBm          *Att  30 dB    SWT 20 ms         5.237520000 GHz
          Offset   1.5 dB
```

Date: 21.OCT.2020 11:25:36

802.11n ht40 Low Channel

Date: 21.OCT.2020 11:23:31

802.11n ht40 High Channel

Date: 21.OCT.2020 11:23:50

802.11ac vht80 Middle Channel

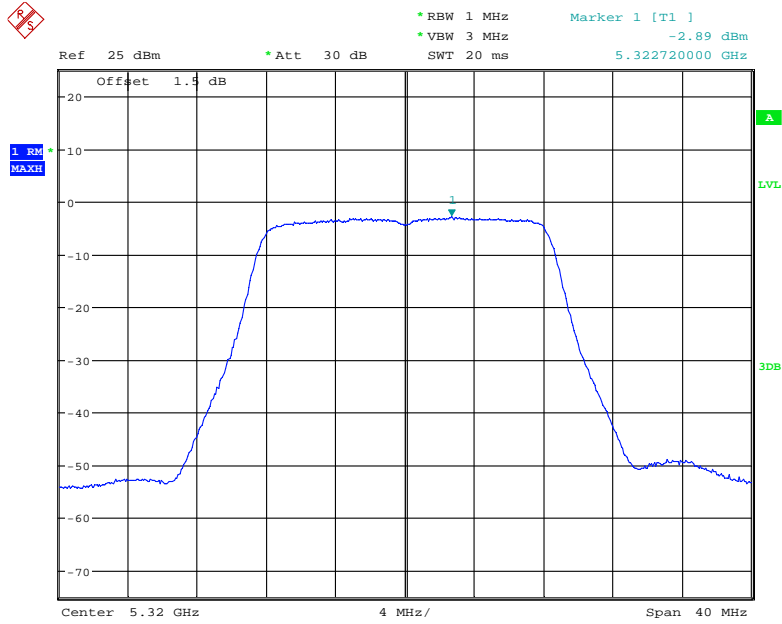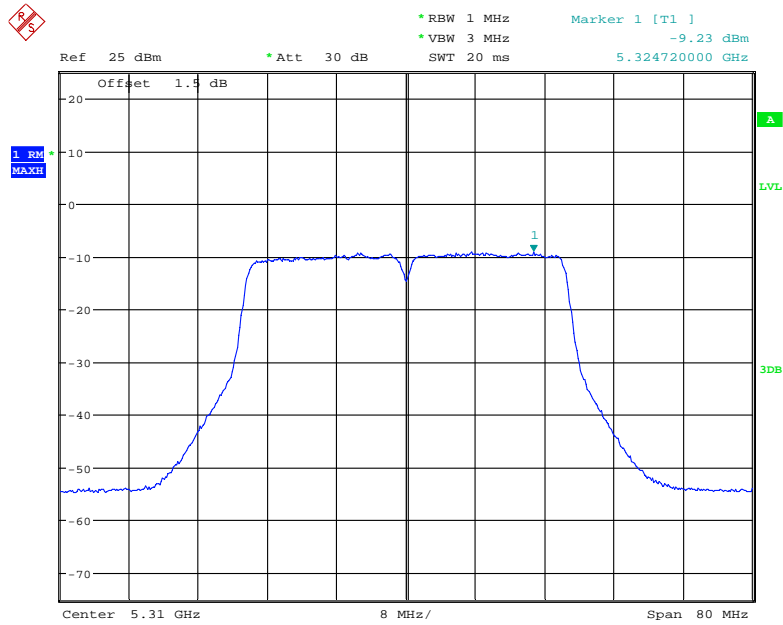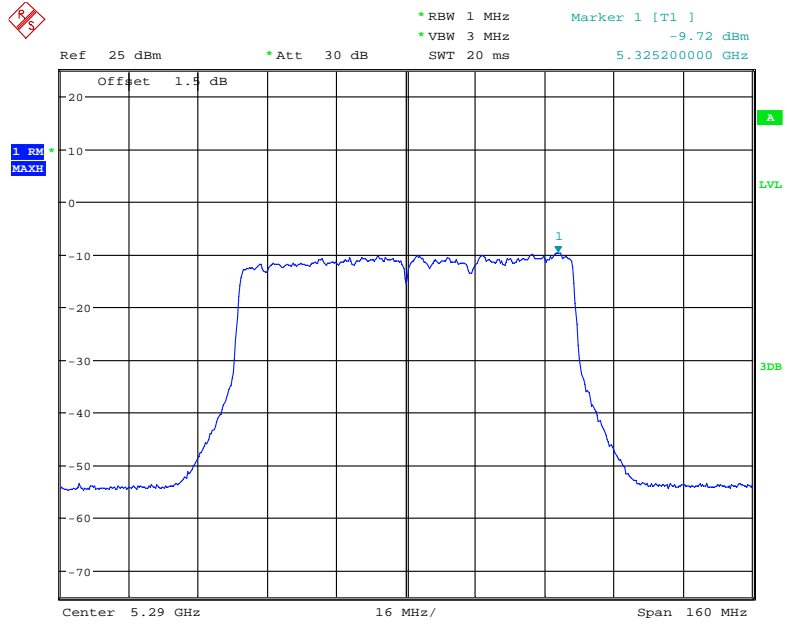Date: 21.OCT.2020 11:21:35

Chain 2:

802.11a Low Channel


```
                                        * RBW  1 MHz      Marker 1 [T1 ]
                                        * VBW  3 MHz                3.43 dBm
        Ref   25 dBm        * Att  30 dB  SWT 20 ms        5.176960000 GHz
```

Date: 21.OCT.2020 11:13:10

802.11a Middle Channel


```
                                        * RBW  1 MHz      Marker 1 [T1 ]
                                        * VBW  3 MHz                3.09 dBm
        Ref   25 dBm        * Att  30 dB  SWT 20 ms        5.196880000 GHz
```

Date: 21.OCT.2020 11:12:49

802.11a High Channel

*RBW 1 MHz	Marker 1 [T1]
*VBW 3 MHz	3.59 dBm
Ref 25 dBm *Att 30 dB SWT 20 ms	5.233680000 GHz

Offset 1.5 dB

A

1 RM
MAXH

LVL

3DB

Center 5.24 GHz   4 MHz/   Span 40 MHz

Date: 21.OCT.2020 11:12:23

802.11n ht20 Low Channel

*RBW 1 MHz	Marker 1 [T1]
*VBW 3 MHz	-3.85 dBm
Ref 25 dBm *Att 30 dB SWT 20 ms	5.177520000 GHz

Offset 1.5 dB

A

1 RM
MAXH

LVL

3DB

Center 5.18 GHz   4 MHz/   Span 40 MHz

Date: 21.OCT.2020 11:09:53

802.11n ht20 Middle Channel

Date: 21.OCT.2020 11:09:18

802.11n ht20 High Channel

Date: 21.OCT.2020 11:08:51
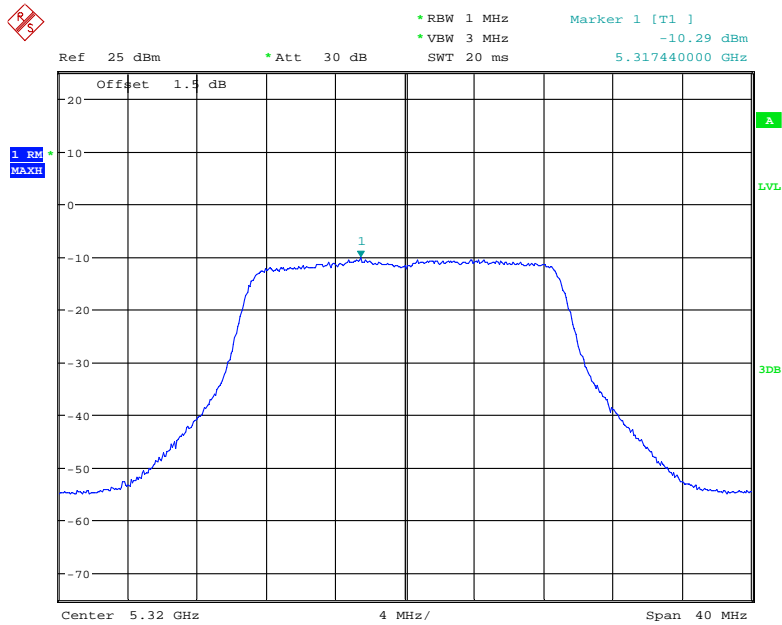
802.11n ht40 Low Channel
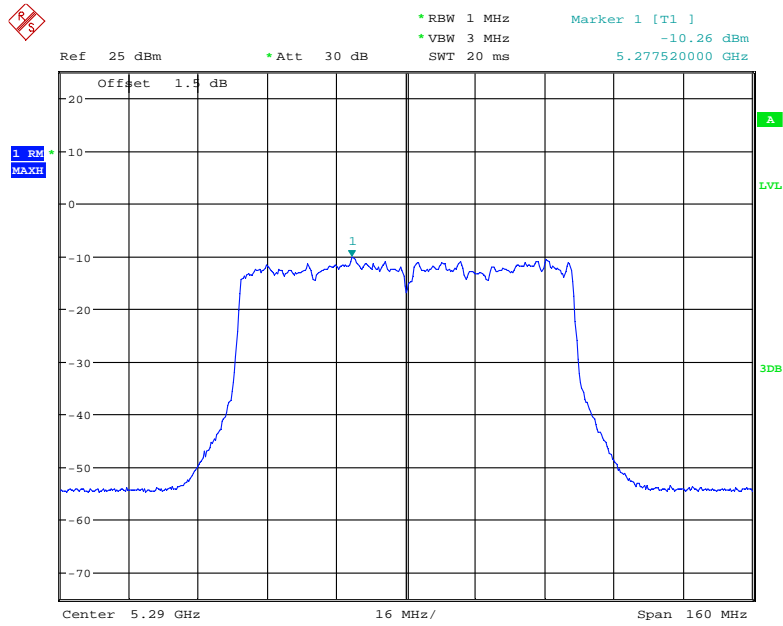


```
                                              *RBW  1 MHz     Marker 1 [T1 ]
                                              *VBW  3 MHz                -3.97 dBm
          Ref   25 dBm         *Att  30 dB    SWT  20 ms         5.184880000 GHz
            Offset   1.5 dB
   -20
   -10
     0
   -10
   -20
   -30
   -40
   -50
   -60
   -70
          Center  5.19 GHz              8 MHz/              Span  80 MHz
```

Date: 21.OCT.2020 11:07:01

802.11n ht40 High Channel


```
                                              *RBW  1 MHz     Marker 1 [T1 ]
                                              *VBW  3 MHz                -2.83 dBm
          Ref   25 dBm         *Att  30 dB    SWT  20 ms         5.225040000 GHz
            Offset   1.5 dB
   -20
   -10
     0
   -10
   -20
   -30
   -40
   -50
   -60
   -70
          Center  5.23 GHz              8 MHz/              Span  80 MHz
```

Date: 21.OCT.2020 11:07:32

802.11ac vht80 Middle Channel

Date: 21.OCT.2020 11:06:10

Chain 3:

802.11a Low Channel


```
                                            * RBW  1 MHz      Marker 1 [T1 ]
                                            * VBW  3 MHz                3.36 dBm
            Ref   25 dBm          * Att  30 dB   SWT  20 ms       5.176960000 GHz
               Offset   1.5 dB
```

Center 5.18 GHz　　　　　　　4 MHz/　　　　　　　Span 40 MHz

Date: 21.OCT.2020 11:15:16

802.11a Middle Channel


```
                                            * RBW  1 MHz      Marker 1 [T1 ]
                                            * VBW  3 MHz                3.76 dBm
            Ref   25 dBm          * Att  30 dB   SWT  20 ms       5.205040000 GHz
               Offset   1.5 dB
```

Center 5.2 GHz　　　　　　　　4 MHz/　　　　　　　Span 40 MHz

Date: 21.OCT.2020 11:15:54

802.11a High Channel

Date: 21.OCT.2020 11:16:58

802.11n ht20 Low Channel

Date: 21.OCT.2020 11:18:58

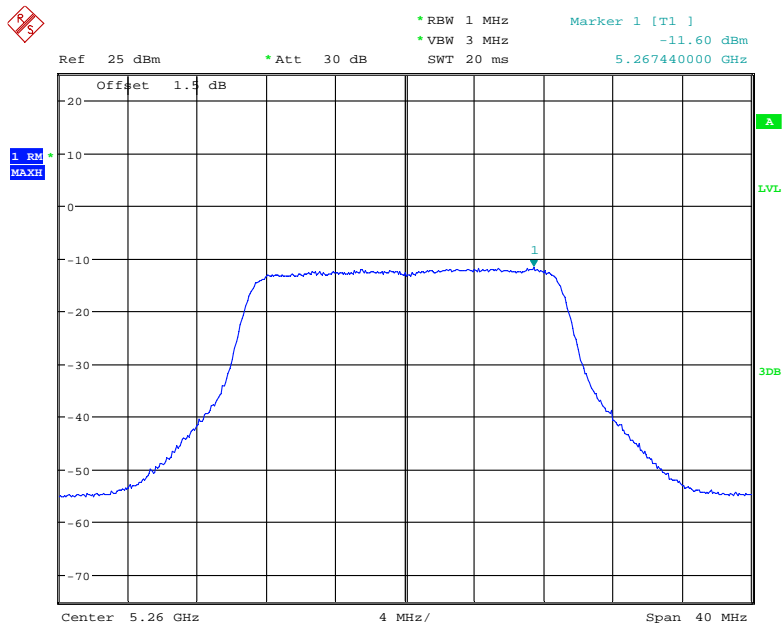## 802.11n ht20 Middle Channel



```
                                              *RBW  1 MHz      Marker 1 [T1 ]
                                              *VBW  3 MHz                -2.51 dBm
        Ref  25 dBm            *Att  30 dB     SWT 20 ms         5.201520000 GHz
```

Date: 21.OCT.2020 11:18:31

802.11n ht20 High Channel


```
                                              *RBW  1 MHz      Marker 1 [T1 ]
                                              *VBW  3 MHz                -2.24 dBm
        Ref  25 dBm            *Att  30 dB     SWT 20 ms         5.237440000 GHz
```

Date: 21.OCT.2020 11:18:03

802.11n ht40 Low Channel

```
                                    *RBW  1 MHz      Marker 1 [T1 ]
                                    *VBW  3 MHz                      -3.44 dBm
        Ref   25 dBm      *Att  30 dB    SWT  20 ms       5.185360000 GHz
          Offset  1.5 dB
```

Date: 21.OCT.2020 11:19:40

802.11n ht40 High Channel

```
                                    *RBW  1 MHz      Marker 1 [T1 ]
                                    *VBW  3 MHz                      -2.35 dBm
        Ref   25 dBm      *Att  30 dB    SWT  20 ms       5.225200000 GHz
          Offset  1.5 dB
```

Date: 21.OCT.2020 11:20:09

802.11ac vht80 Middle Channel

Date: 21.OCT.2020 11:20:54

5250-5350MHz, Chain 0:

802.11a Low Channel


```
                                           * RBW  1 MHz        Marker 1 [T1 ]
                                           * VBW  3 MHz                    -2.83 dBm
         Ref   25 dBm          * Att  30 dB   SWT 20 ms          5.263040000 GHz
```

Date: 22.OCT.2020 15:46:38

802.11a Middle Channel


```
                                           * RBW  1 MHz        Marker 1 [T1 ]
                                           * VBW  3 MHz                    -3.17 dBm
         Ref   25 dBm          * Att  30 dB   SWT 20 ms          5.282240000 GHz
```

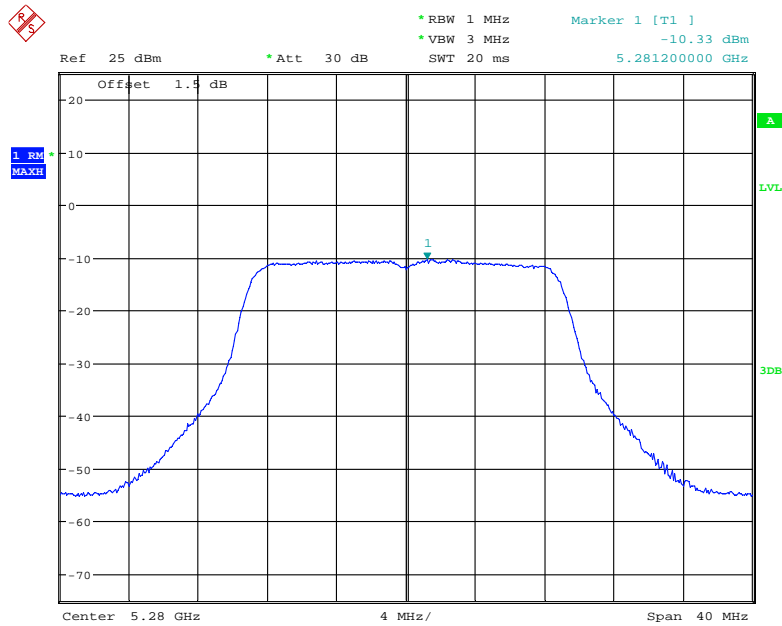Date: 22.OCT.2020 15:48:40

802.11a High Channel

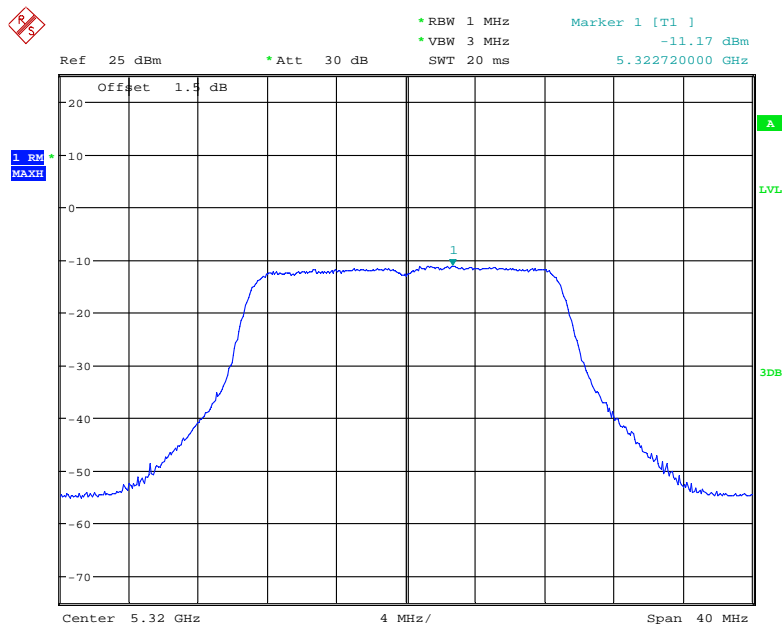Date: 22.OCT.2020 15:49:44

802.11n ht20 Low Channel
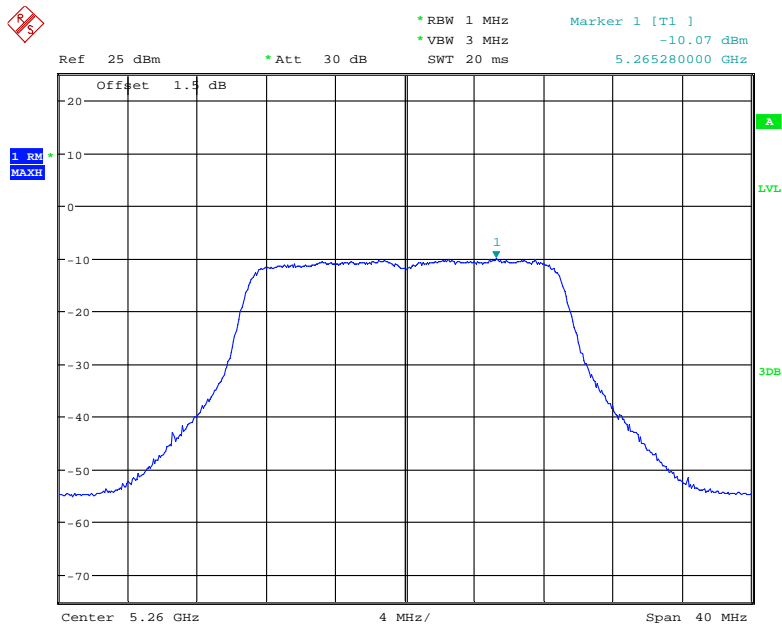
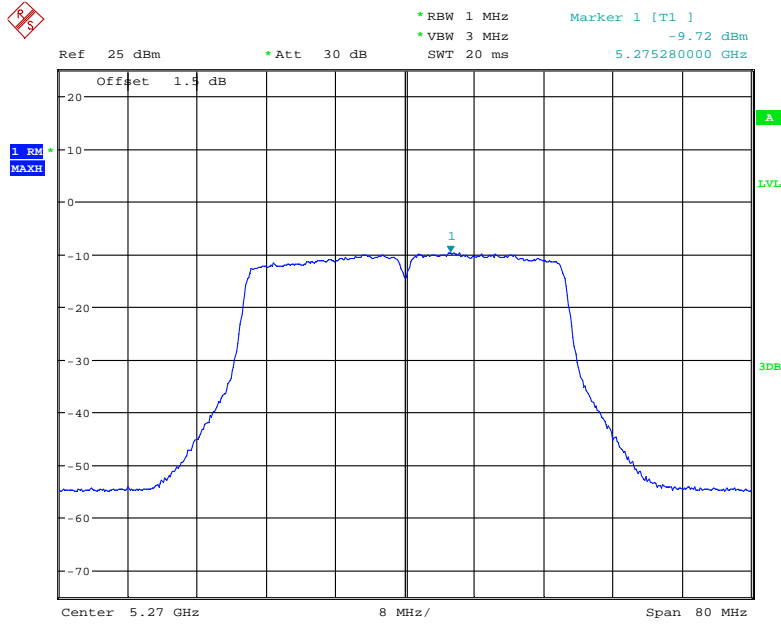Date: 22.OCT.2020 15:53:17

802.11n ht20 Middle Channel
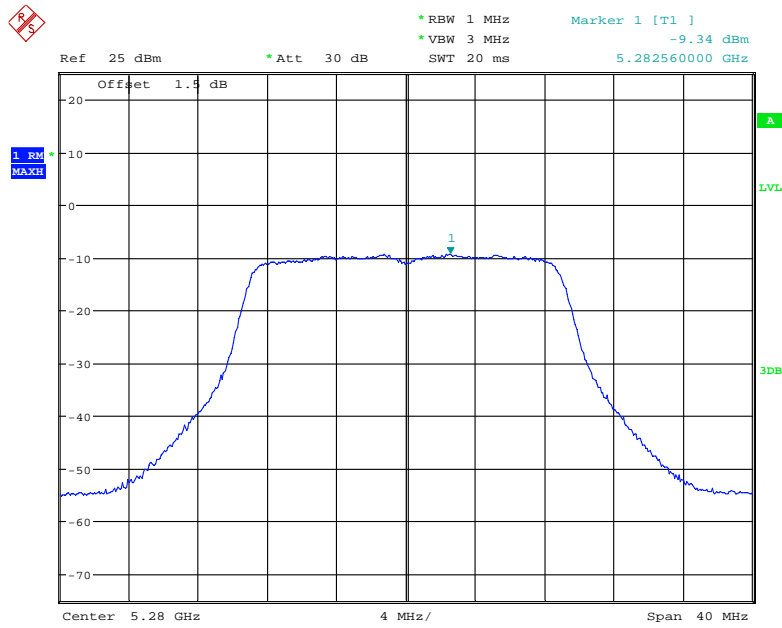
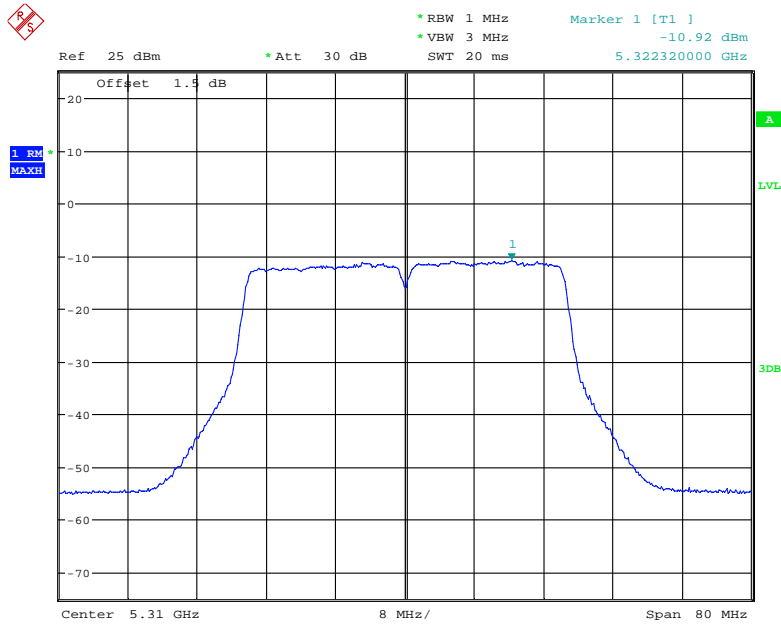

Date: 22.OCT.2020 15:52:17

802.11n ht20 High Channel
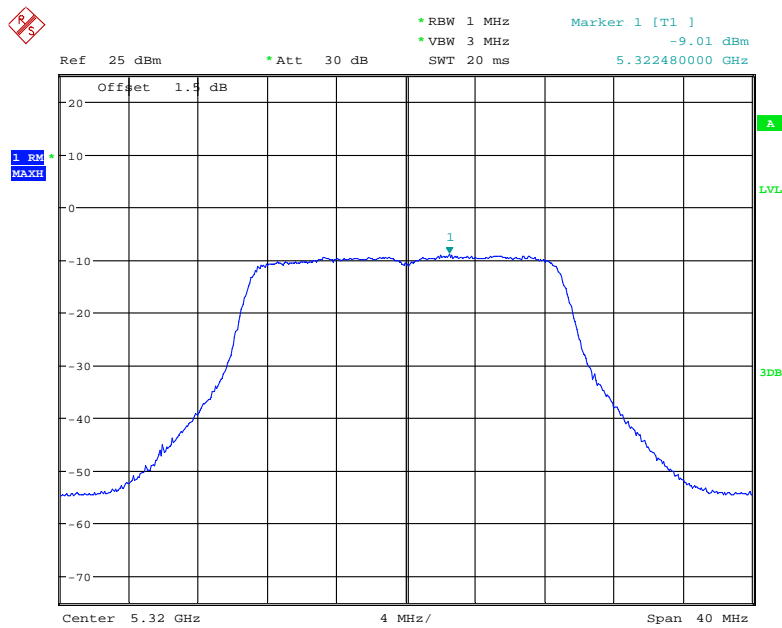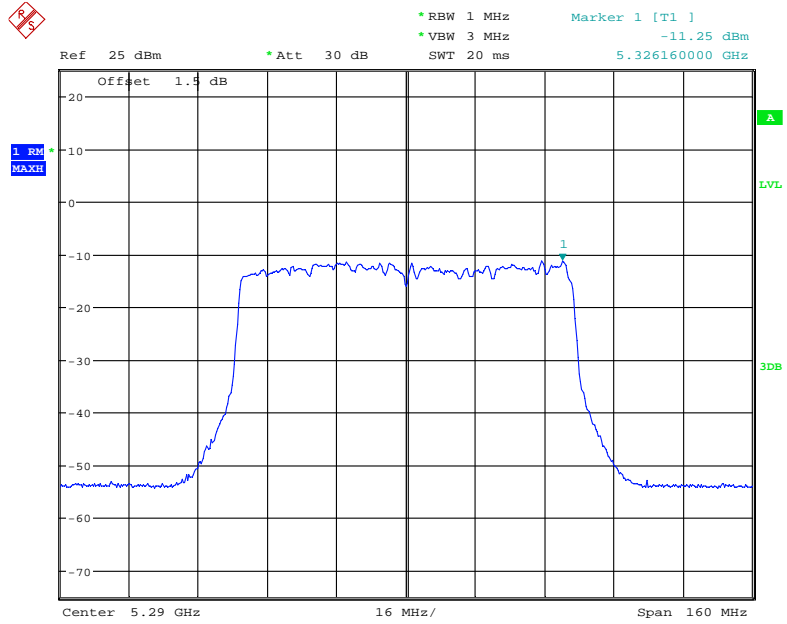

Date: 22.OCT.2020 15:51:16

802.11n ht40 Low Channel


```
                                            *RBW 1 MHz        Marker 1 [T1 ]
                                            *VBW 3 MHz                -9.44 dBm
          Ref  25 dBm          *Att  30 dB   SWT 20 ms         5.277680000 GHz
             Offset  1.5 dB
```
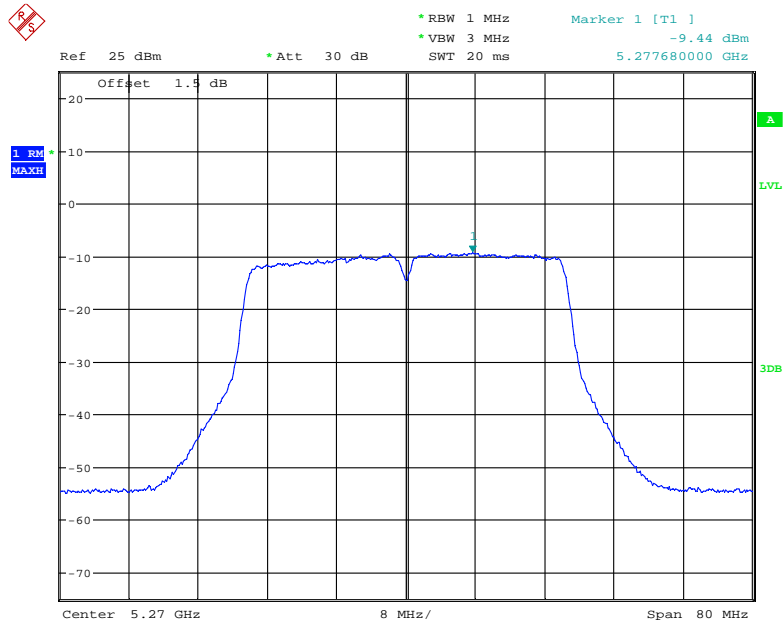
Date: 22.OCT.2020 15:58:18

802.11n ht40 High Channel


```
                                            *RBW 1 MHz        Marker 1 [T1 ]
                                            *VBW 3 MHz                -9.23 dBm
          Ref  25 dBm          *Att  30 dB   SWT 20 ms         5.324720000 GHz
             Offset  1.5 dB
```

Date: 22.OCT.2020 15:59:13

802.11ac vht80 Middle Channel


```
                                          *RBW  1 MHz        Marker 1 [T1 ]
                                          *VBW  3 MHz                 -9.72 dBm
             Ref   25 dBm       *Att   30 dB     SWT  20 ms      5.325200000 GHz
```

Date: 22.OCT.2020 16:00:30

Chain 1:

802.11a Low Channel


```
                                              * RBW  1 MHz       Marker 1 [T1 ]
                                              * VBW  3 MHz                    -2.64 dBm
        Ref   25 dBm           * Att  30 dB     SWT  20 ms         5.264320000 GHz
```
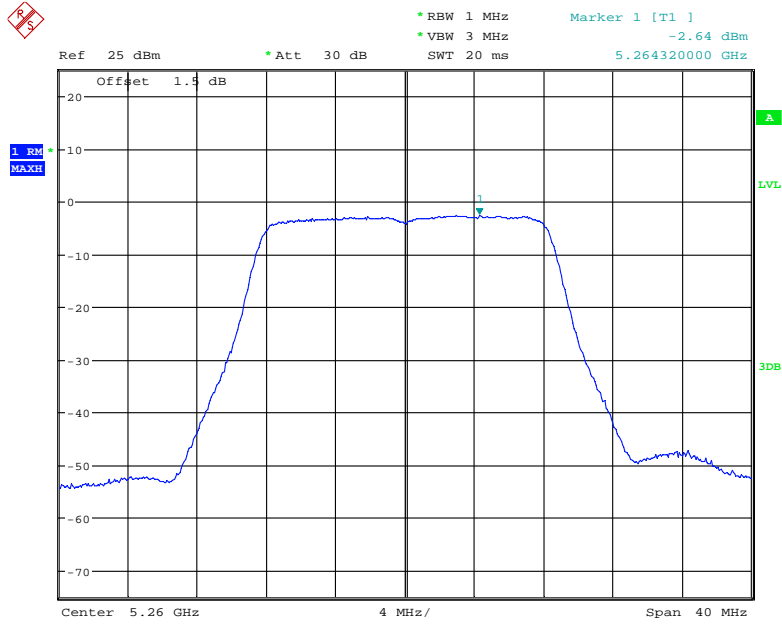
Date: 22.OCT.2020 16:09:25

802.11a Middle Channel


```
                                              * RBW  1 MHz       Marker 1 [T1 ]
                                              * VBW  3 MHz                    -3.10 dBm
        Ref   25 dBm           * Att  30 dB     SWT  20 ms         5.277040000 GHz
```
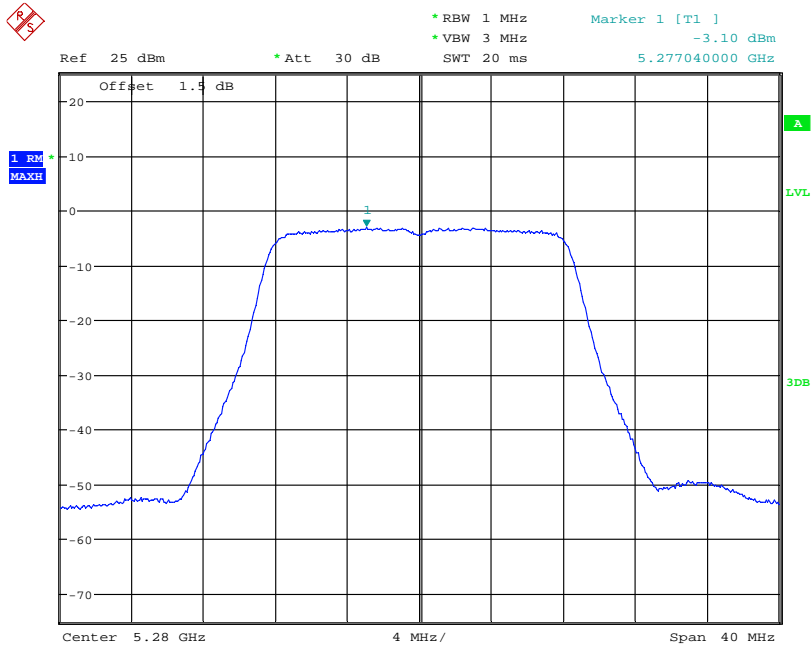
Date: 22.OCT.2020 16:10:10

802.11a High Channel
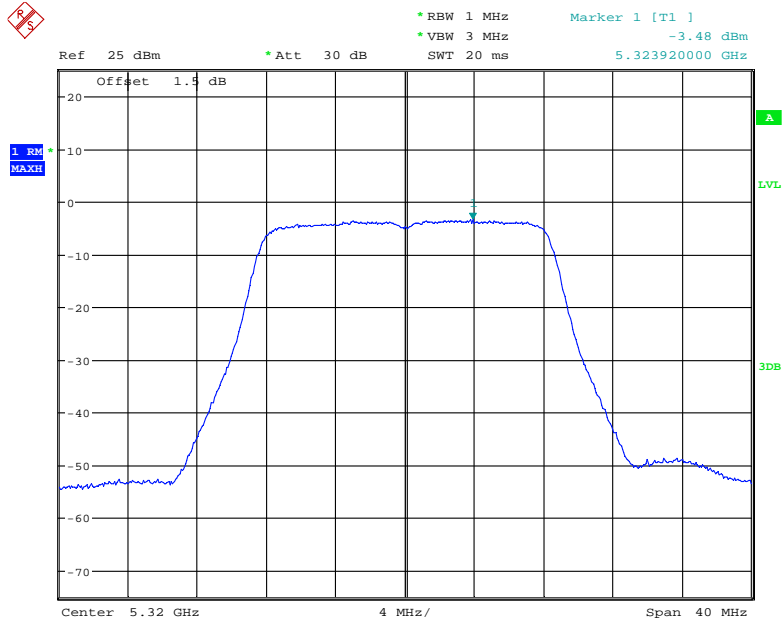
Date: 22.OCT.2020 16:10:34

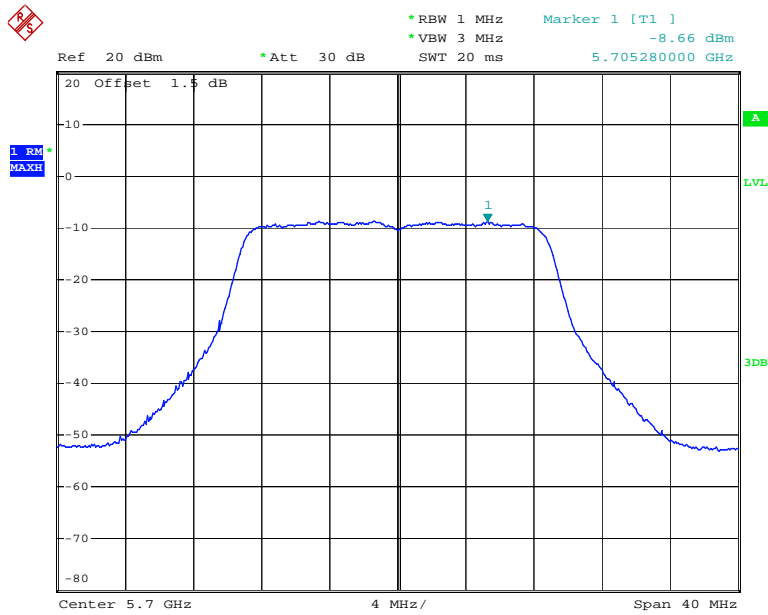## 802.11n ht20 Low Channel
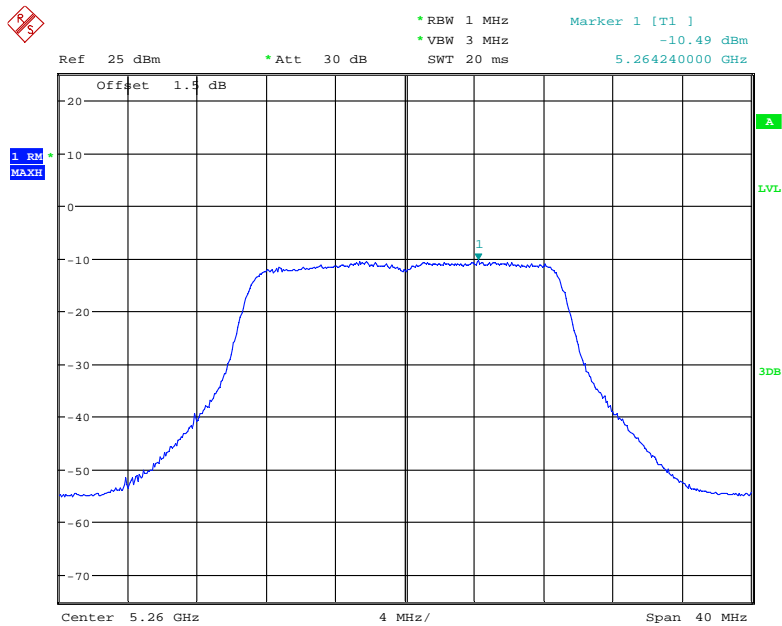
Date: 22.OCT.2020 16:12:37

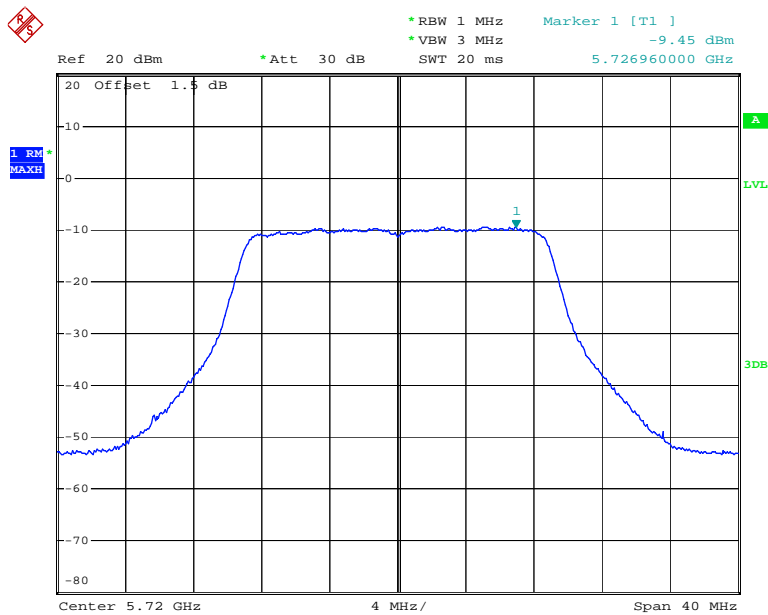## 802.11n ht20 Middle Channel
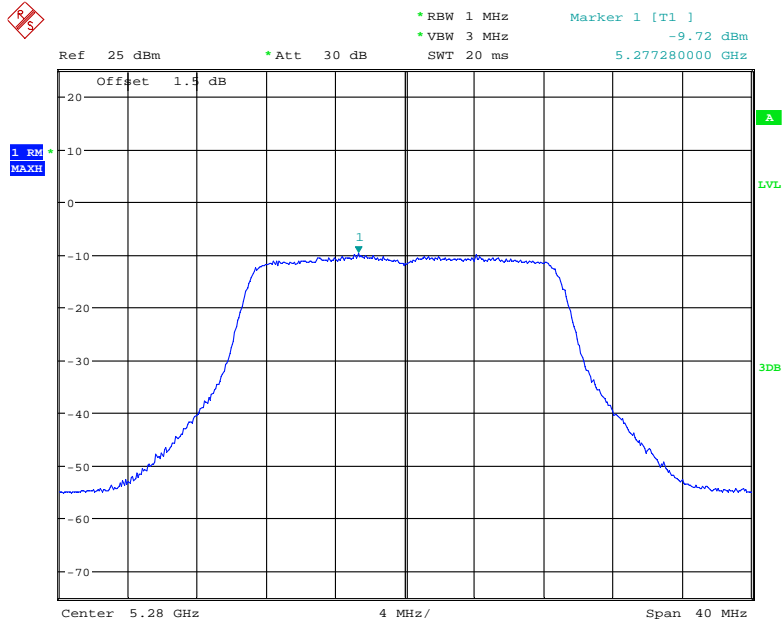
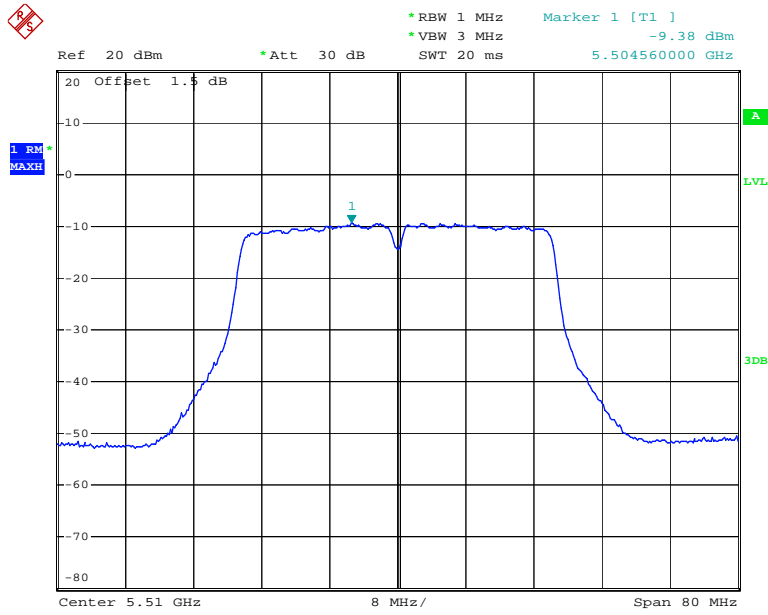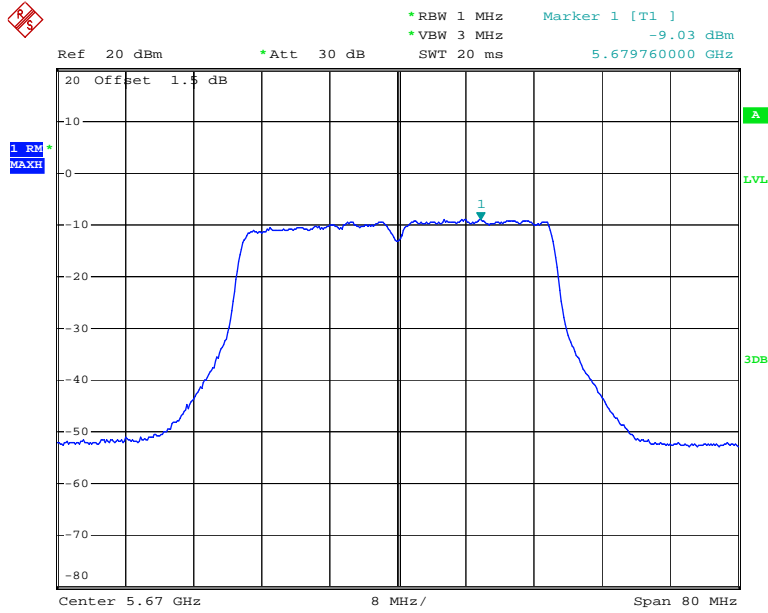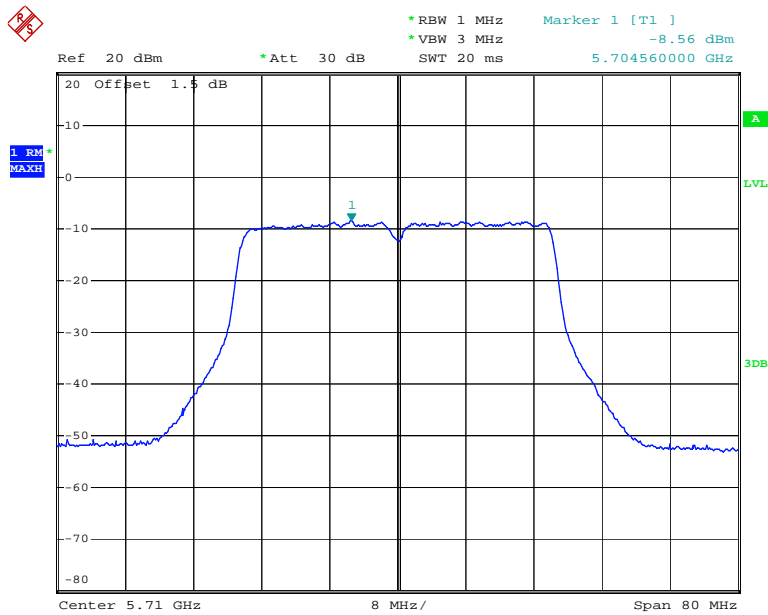

Date: 22.OCT.2020 16:12:02

802.11n ht20 High Channel
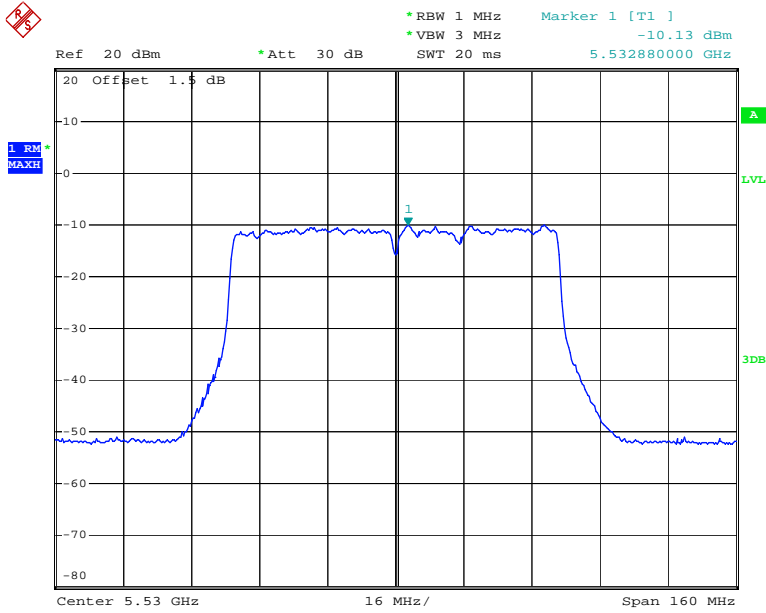

Date: 22.OCT.2020 16:11:20

802.11n ht40 Low Channel


```
                                    *RBW  1 MHz        Marker 1 [T1 ]
                                    *VBW  3 MHz                -9.81 dBm
        Ref   25 dBm      *Att  30 dB   SWT  20 ms      5.275120000 GHz
```
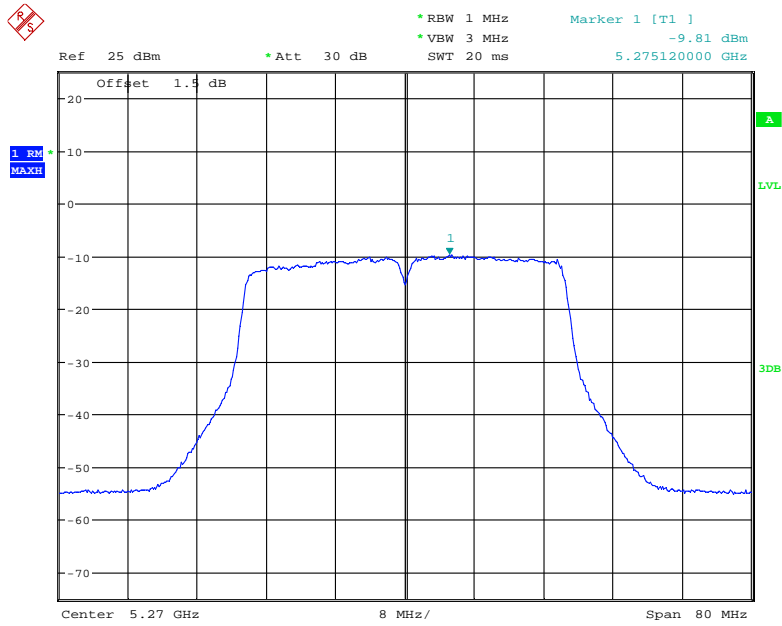
Date: 22.OCT.2020 16:13:25

802.11n ht40 High Channel


```
                                    *RBW  1 MHz        Marker 1 [T1 ]
                                    *VBW  3 MHz               -10.67 dBm
        Ref   25 dBm      *Att  30 dB   SWT  20 ms      5.327440000 GHz
```
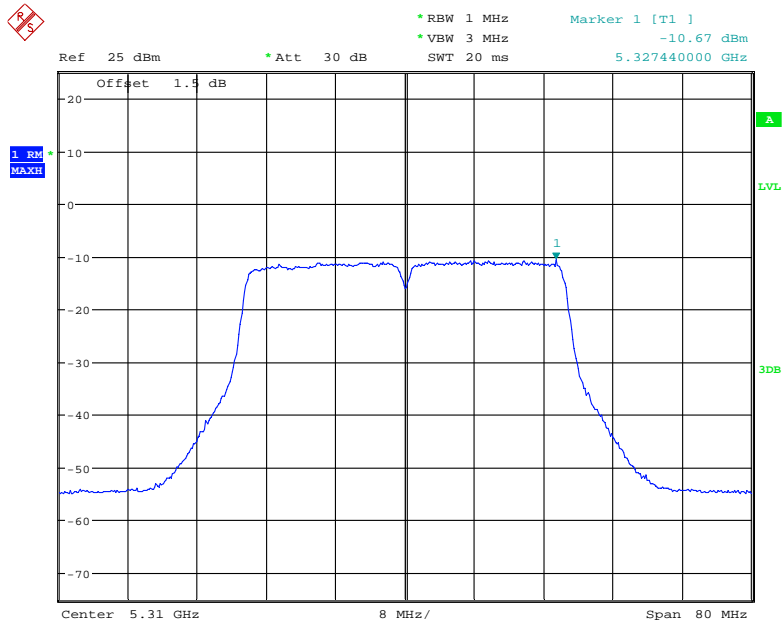
Date: 22.OCT.2020 16:13:55

802.11ac vht80 Middle Channel

```
                                        *RBW 1 MHz      Marker 1 [T1 ]
                                        *VBW 3 MHz               -10.26 dBm
        Ref  25 dBm         *Att  30 dB  SWT 20 ms       5.277520000 GHz
           Offset  1.5 dB
```



```
Center  5.29 GHz               16 MHz/              Span  160 MHz
```

Date: 22.OCT.2020 16:14:36

Chain 2:

802.11a Low Channel
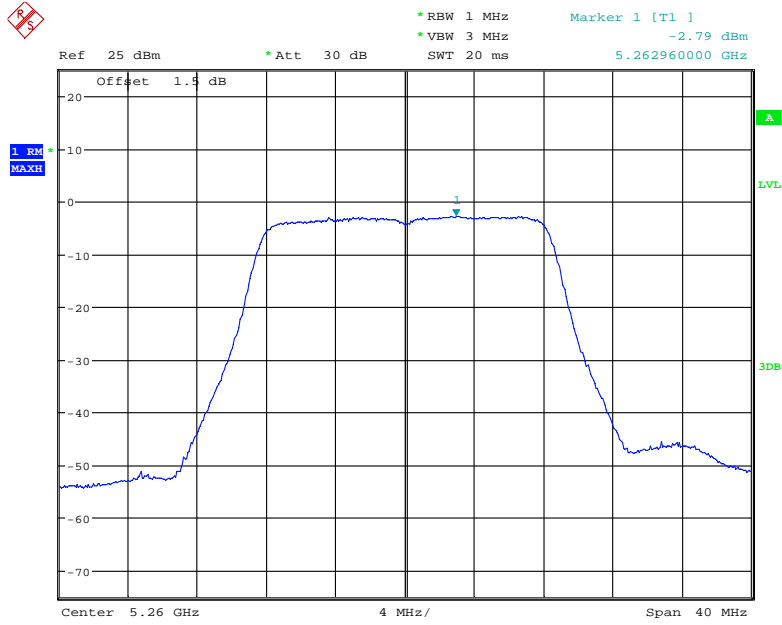
Date: 22.OCT.2020 16:06:34

802.11a Middle Channel
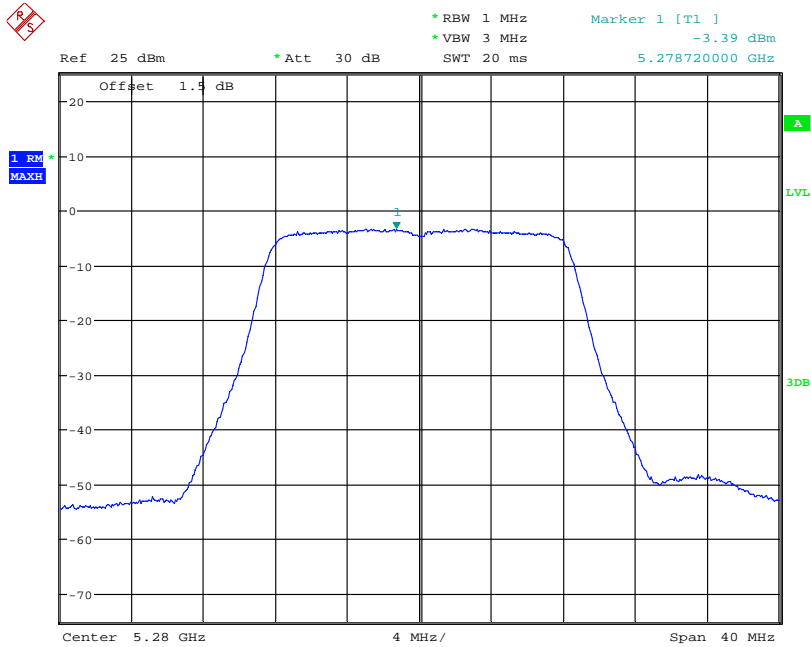
Date: 22.OCT.2020 16:07:27

802.11a High Channel
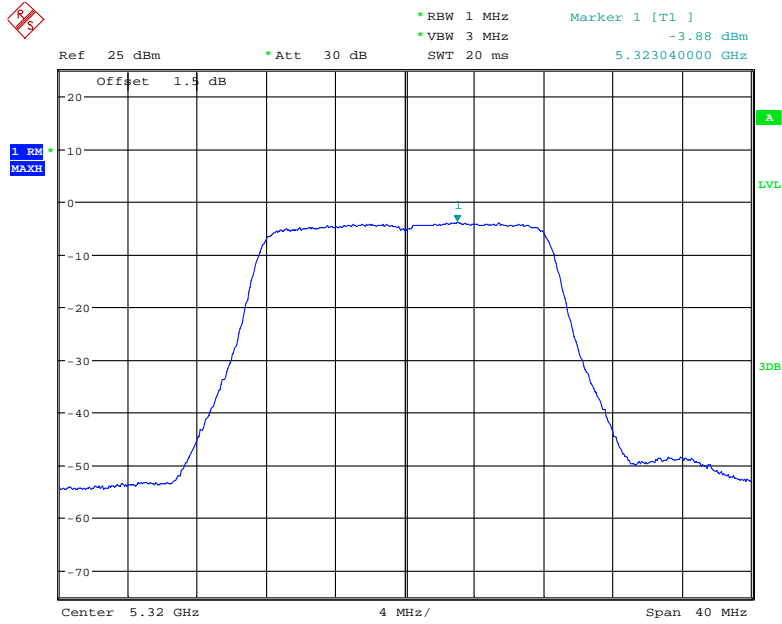
Date: 22.OCT.2020 16:07:51

802.11n ht20 Low Channel

Date: 22.OCT.2020 16:05:12

802.11n ht20 Middle Channel
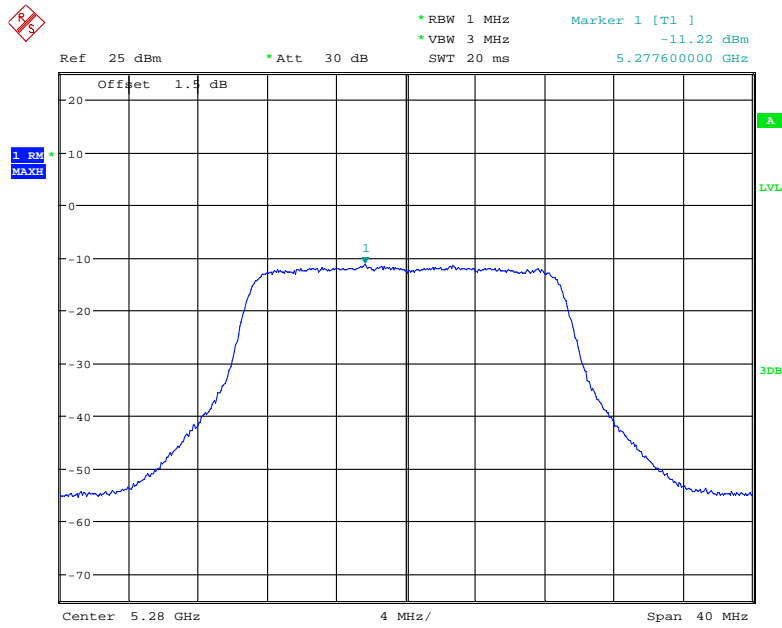
Date: 22.OCT.2020 16:04:47

802.11n ht20 High Channel
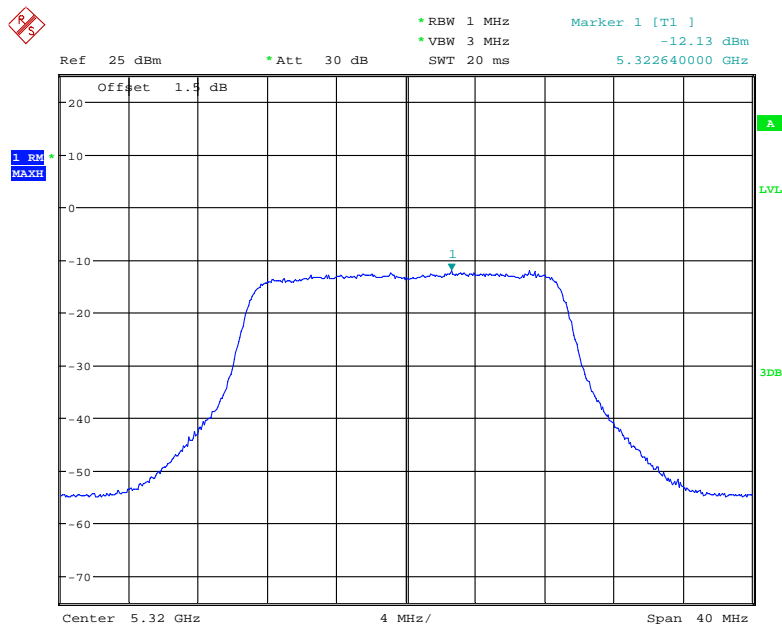
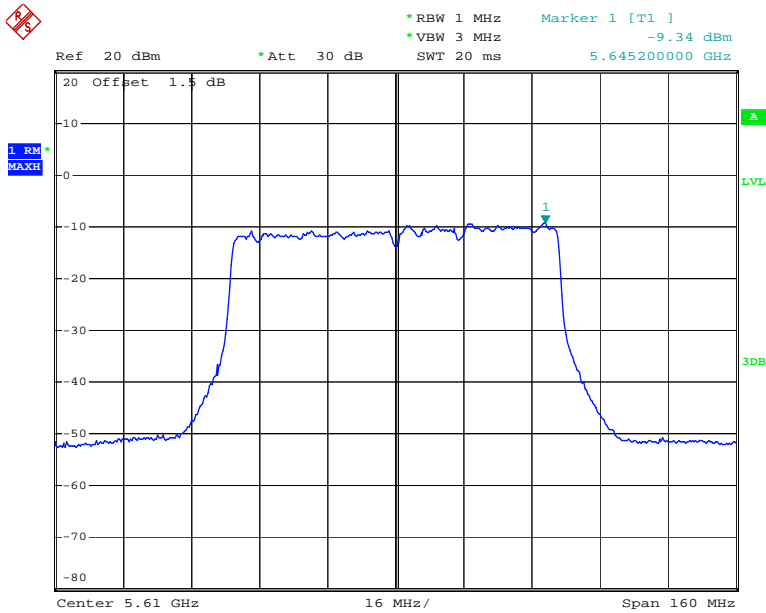Date: 22.OCT.2020 16:04:07

802.11n ht40 Low Channel
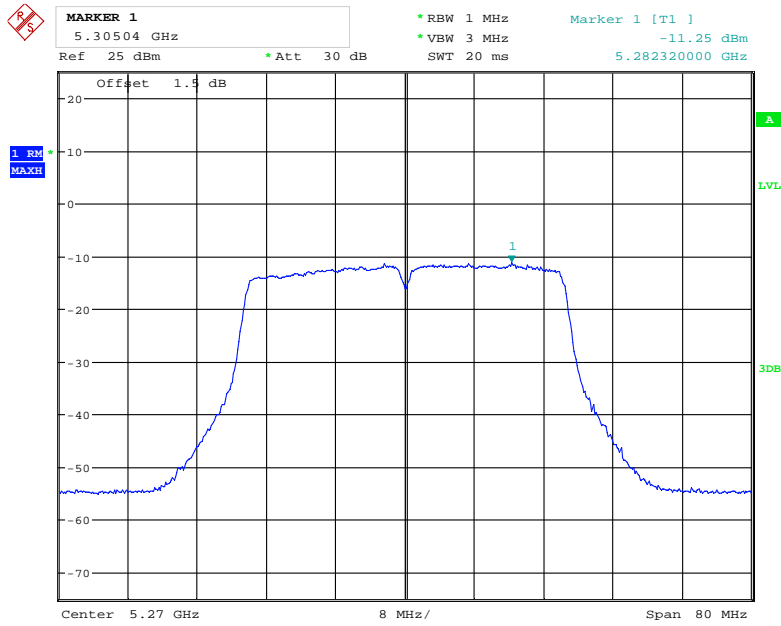
Date: 22.OCT.2020 16:02:54

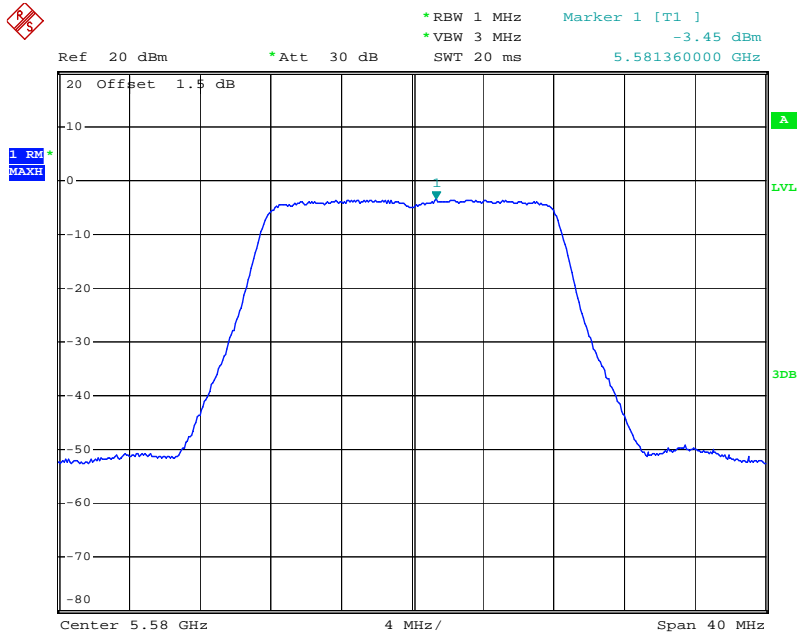## 802.11n ht40 High Channel
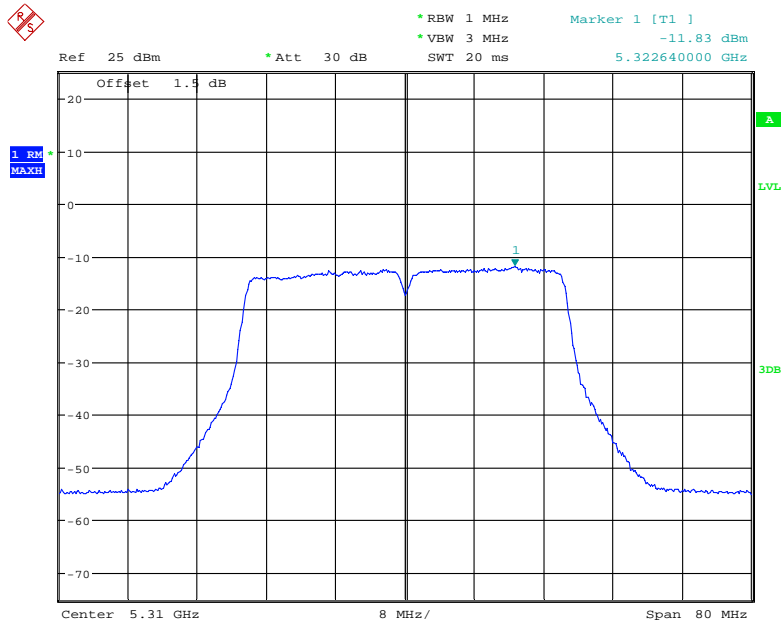
Date: 22.OCT.2020 16:03:25

802.11ac vht80 Middle Channel
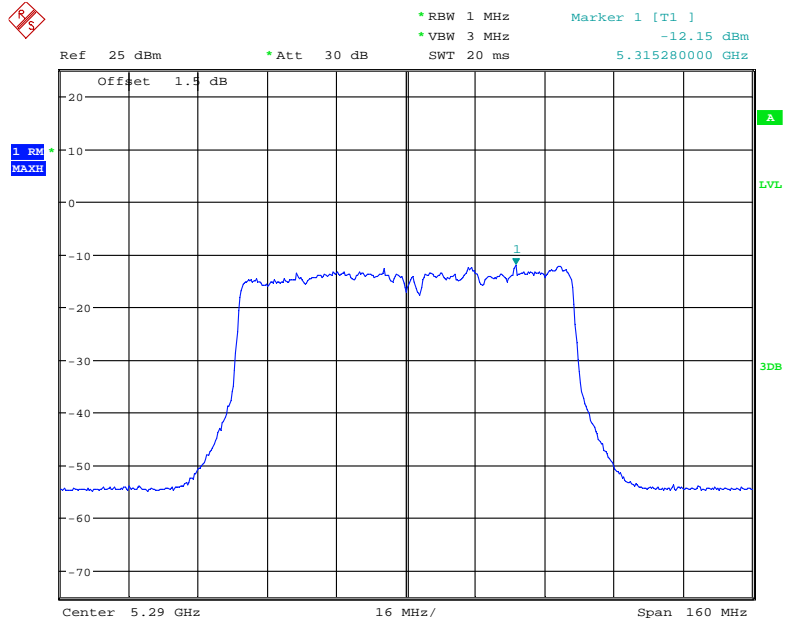
Date: 22.OCT.2020 16:01:16

Chain 3:

802.11a Low Channel
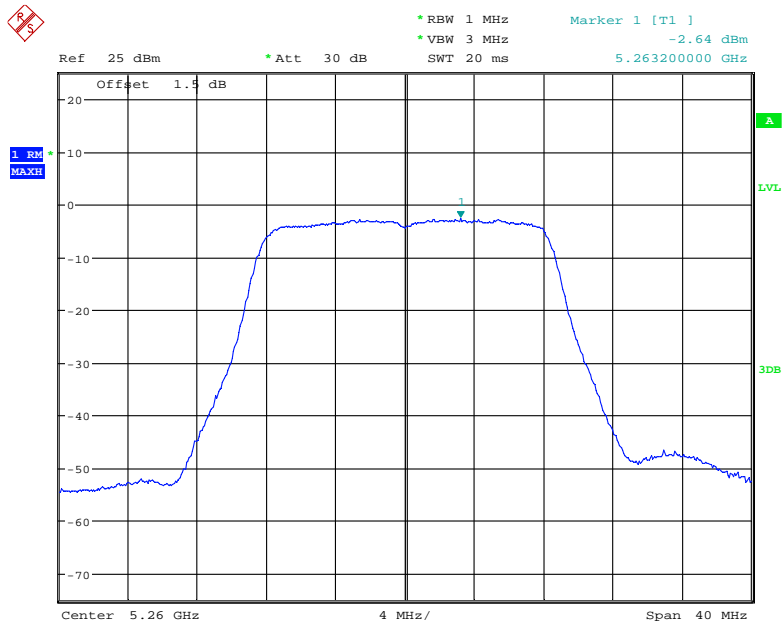
Date: 22.OCT.2020 16:20:53

802.11a Middle Channel
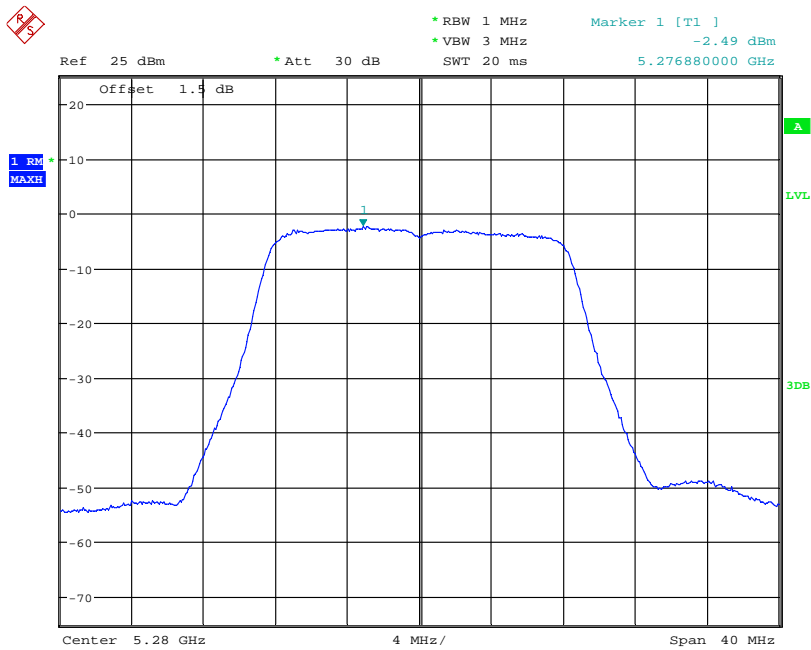
Date: 22.OCT.2020 16:21:24

802.11a High Channel
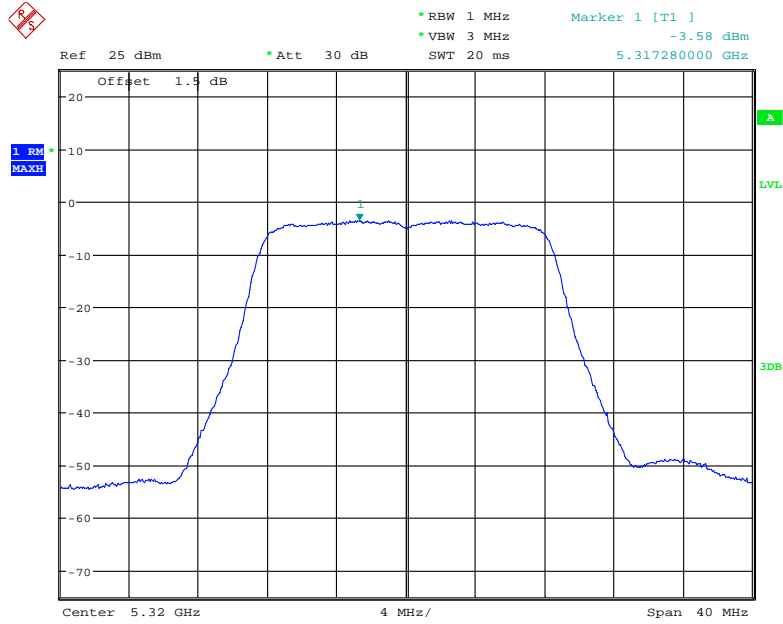
Date: 22.OCT.2020 16:21:56

802.11n ht20 Low Channel
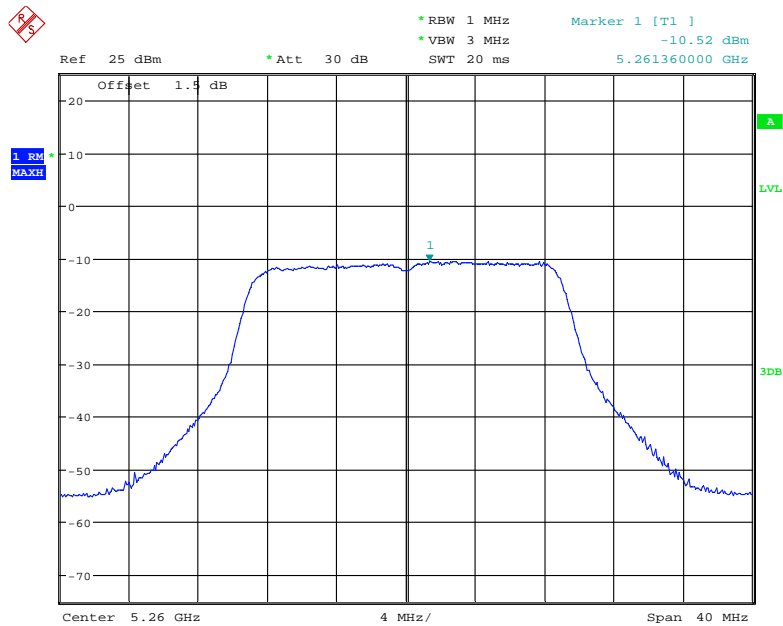
Date: 22.OCT.2020 16:17:48

802.11n ht20 Middle Channel

Date: 22.OCT.2020 16:18:18

802.11n ht20 High Channel

Date: 22.OCT.2020 16:18:42

802.11n ht40 Low Channel

```
                                    *RBW  1 MHz      Marker 1 [T1 ]
                                    *VBW  3 MHz                    -9.72 dBm
        Ref   25 dBm        *Att  30 dB   SWT  20 ms      5.275280000 GHz
```

Date: 22.OCT.2020 16:16:24

802.11n ht40 High Channel

```
                                    *RBW  1 MHz      Marker 1 [T1 ]
                                    *VBW  3 MHz                   -10.92 dBm
        Ref   25 dBm        *Att  30 dB   SWT  20 ms      5.322320000 GHz
```

Date: 22.OCT.2020 16:16:51

802.11ac vht80 Middle Channel

Date: 22.OCT.2020 16:15:39

5470-5725MH, Chain 0:

802.11a Low Channel
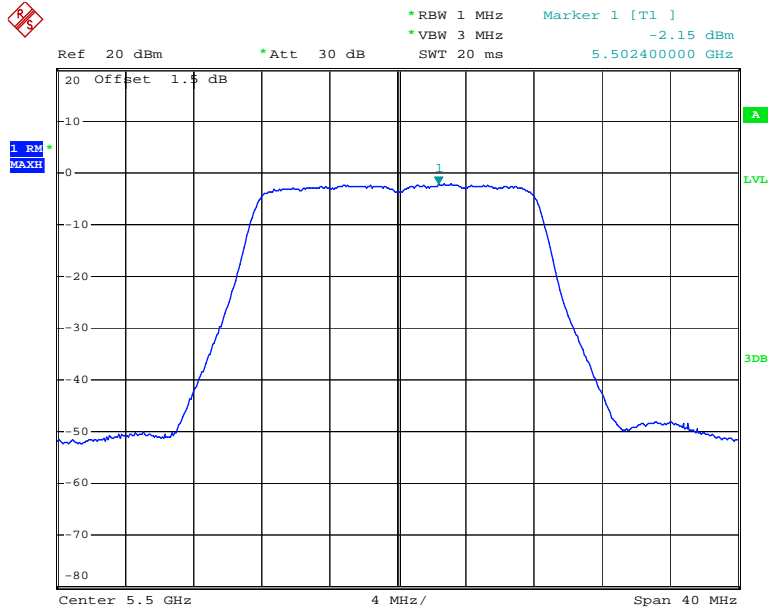
Date: 23.OCT.2020 15:55:50

802.11a Middle Channel
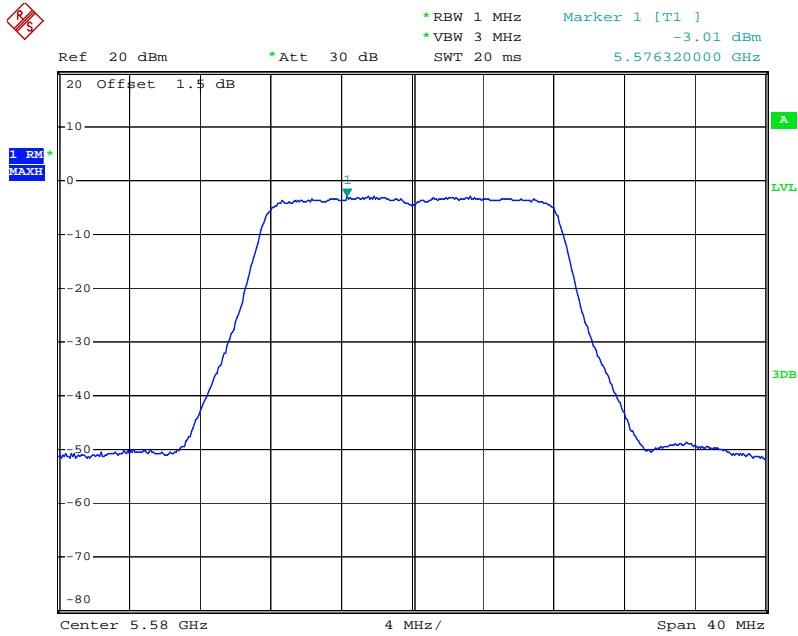
Date: 23.OCT.2020 15:57:35

802.11a High Channel
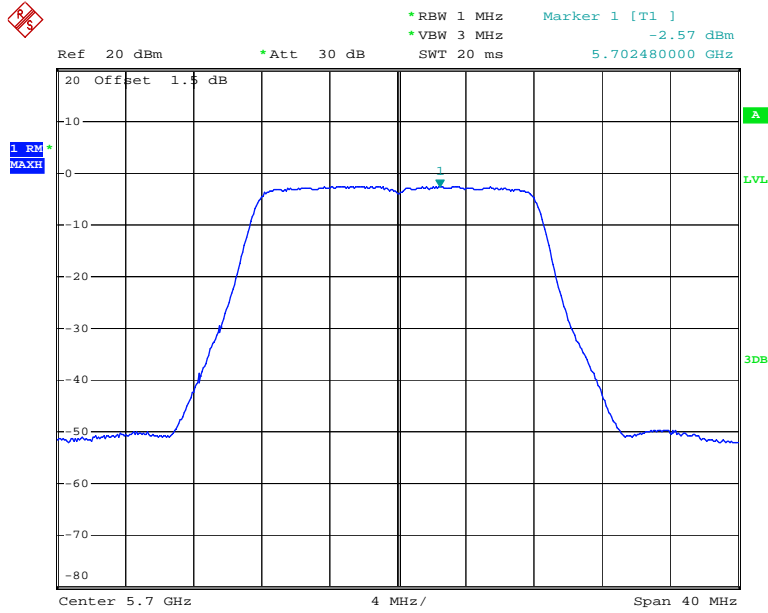
Date: 23.OCT.2020 15:59:39
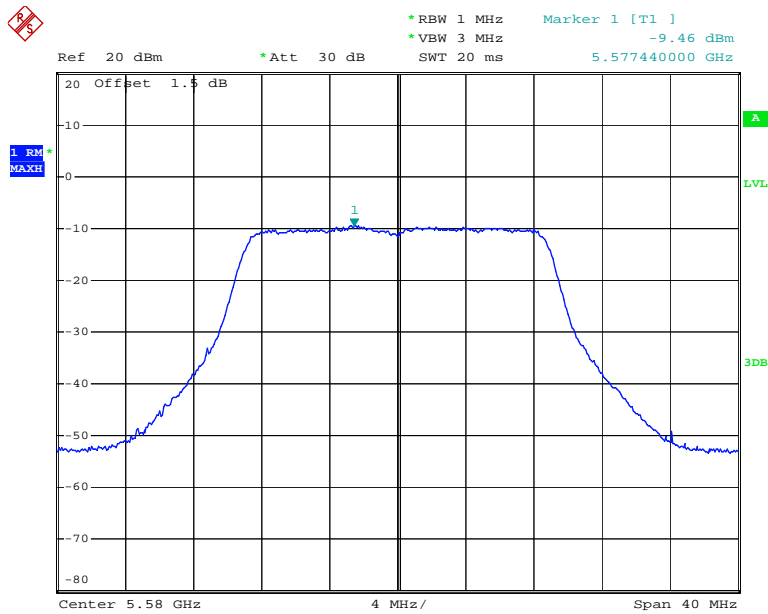
802.11 a High Channel 5720MHz
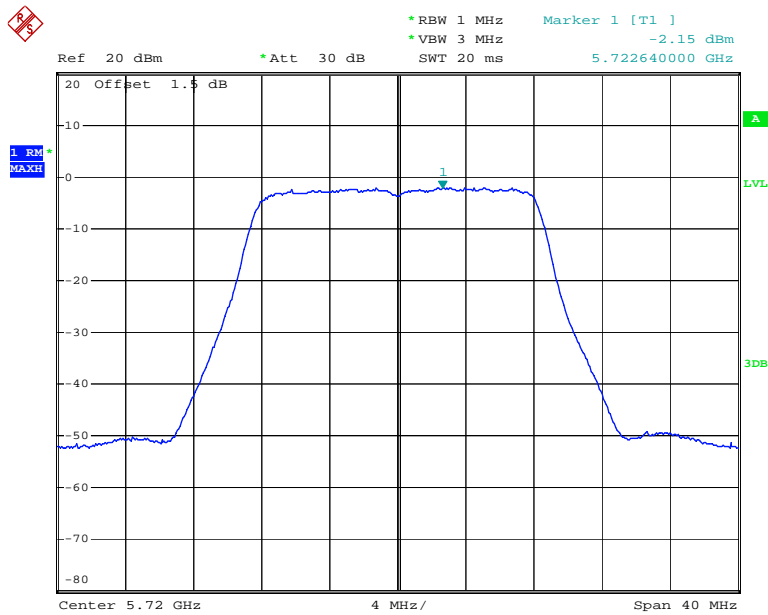
Date: 23.OCT.2020 16:49:27
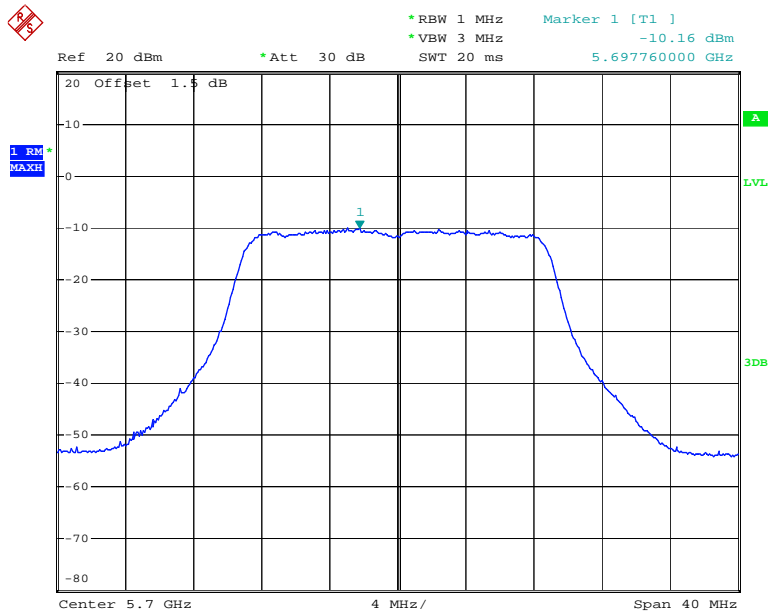
802.11n ht20 Low Channel
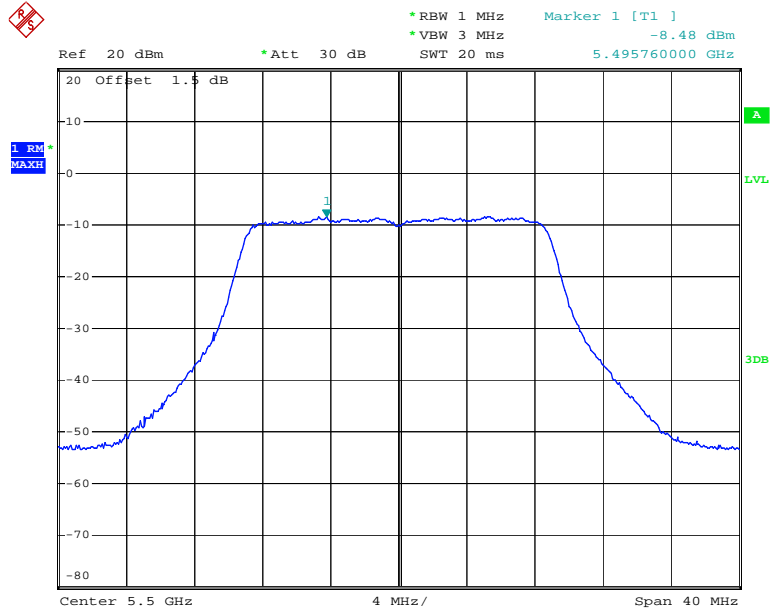
Date: 23.OCT.2020 16:13:07

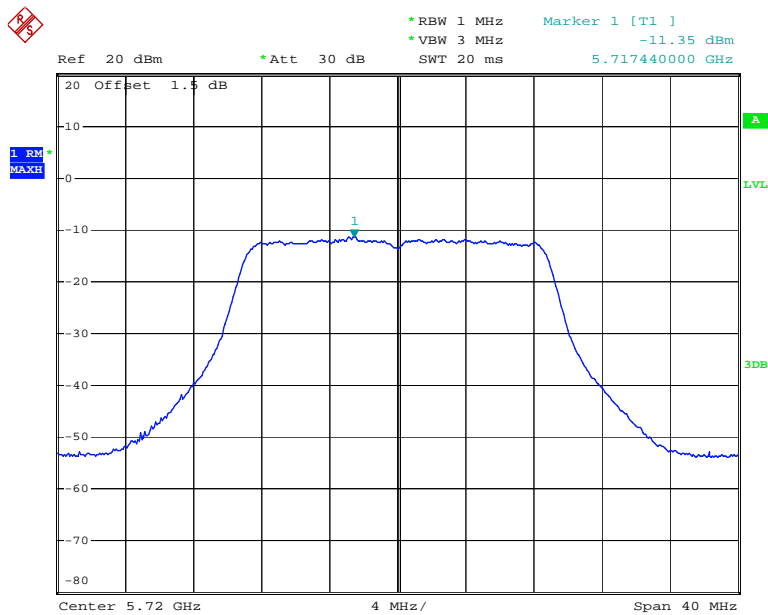## 802.11n ht20 Middle Channel
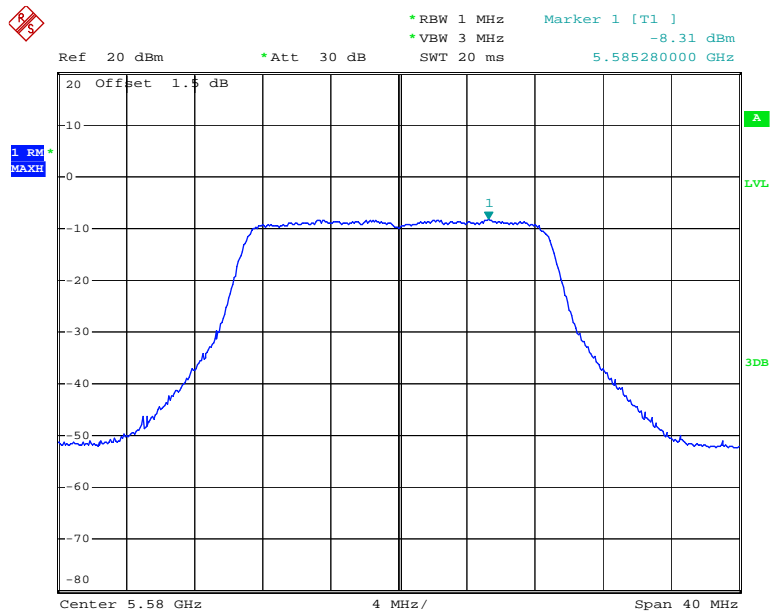


Date: 23.OCT.2020 16:13:59

802.11n ht20 High Channel

```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz              -8.66 dBm
         Ref  20 dBm      *Att  30 dB   SWT 20 ms     5.705280000 GHz
```

Center 5.7 GHz　　　　　　　　4 MHz/　　　　　　　　Span 40 MHz

Date: 23.OCT.2020 16:08:22

802.11n ht20 High Channel 5720 MHz

```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz              -9.45 dBm
         Ref  20 dBm      *Att  30 dB   SWT 20 ms     5.726960000 GHz
```

Center 5.72 GHz　　　　　　　　4 MHz/　　　　　　　　Span 40 MHz

Date: 23.OCT.2020 16:48:17

802.11n ht40 Low Channel

Date: 23.OCT.2020 16:16:30

802.11n ht40 Middle Channel
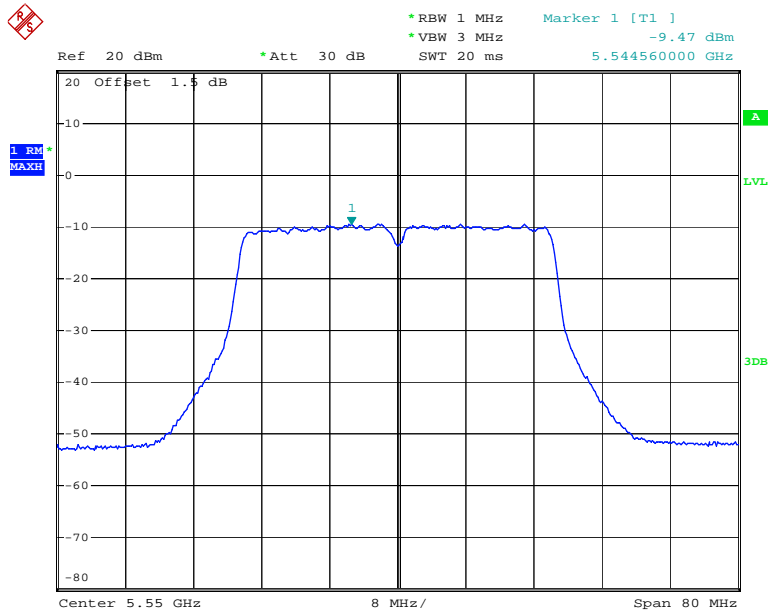
Date: 23.OCT.2020 16:18:31

802.11n ht40 High Channel

```
                                   *RBW 1 MHz      Marker 1 [T1 ]
                                   *VBW 3 MHz              -9.03 dBm
      Ref  20 dBm        *Att  30 dB    SWT 20 ms     5.679760000 GHz
      20 Offset  1.5 dB
                                                                      A
-10

1 RM*
MAXH  0
                                                                     LVL
-10                                              1

-20

-30

-40                                                                  3DB

-50

-60

-70

-80
      Center 5.67 GHz              8 MHz/               Span 80 MHz
```

Date: 23.OCT.2020 16:21:06

802.11n ht40 High Channel 5710MHz

```
                                   *RBW 1 MHz      Marker 1 [T1 ]
                                   *VBW 3 MHz              -8.56 dBm
      Ref  20 dBm        *Att  30 dB    SWT 20 ms     5.704560000 GHz
      20 Offset  1.5 dB
                                                                      A
-10

1 RM*
MAXH  0
                                                                     LVL
-10                              1

-20

-30

-40                                                                  3DB

-50

-60

-70

-80
      Center 5.71 GHz              8 MHz/               Span 80 MHz
```

Date: 23.OCT.2020 16:43:11

802.11ac vht80 Low Channel


```
                                    *RBW 1 MHz     Marker 1 [T1 ]
                                    *VBW 3 MHz              -10.13 dBm
          Ref  20 dBm      *Att 30 dB    SWT 20 ms        5.532880000 GHz
```

Date: 23.OCT.2020 16:24:26

802.11ac vht80 High Channel 5610MHz


```
                                    *RBW 1 MHz     Marker 1 [T1 ]
                                    *VBW 3 MHz              -9.34 dBm
          Ref  20 dBm      *Att 30 dB    SWT 20 ms        5.645200000 GHz
```

Date: 23.OCT.2020 16:39:57

802.11ac vht80 High Channel
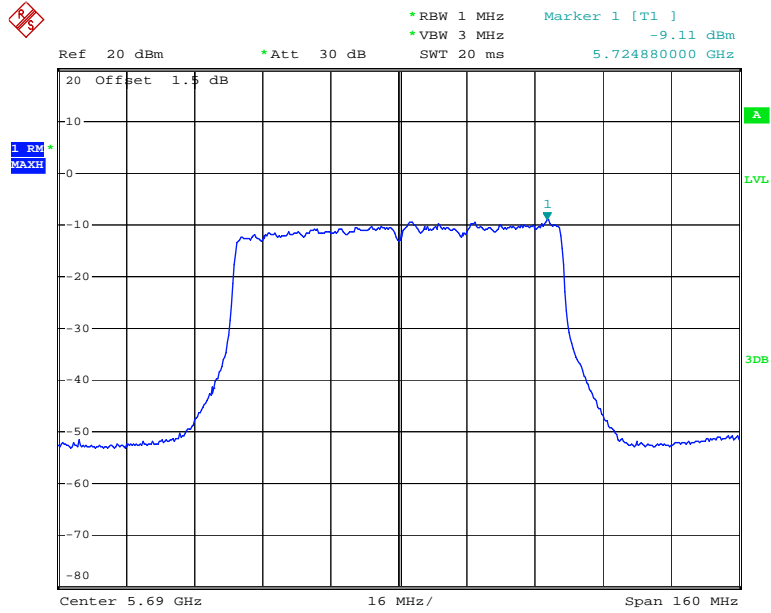
Date: 23.OCT.2020 16:25:42

Chain 1:

802.11a Low Channel
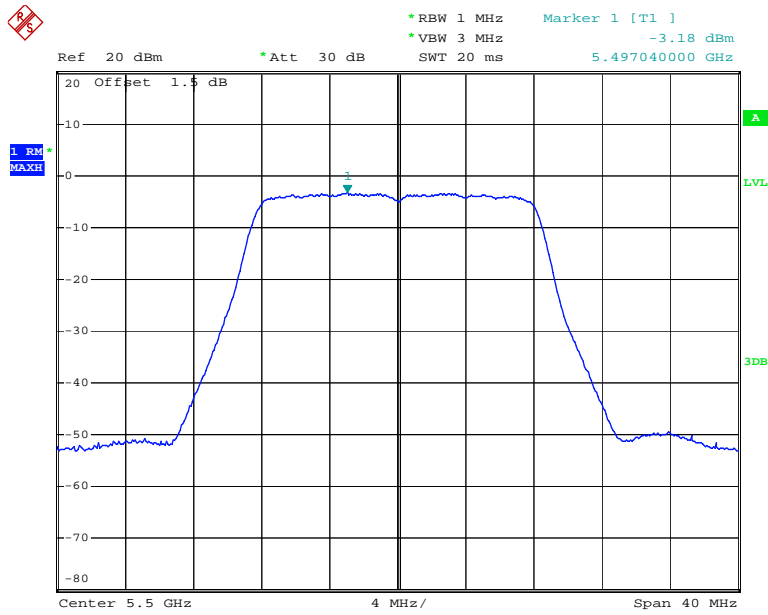

```
Date: 24.OCT.2020  11:51:26
```

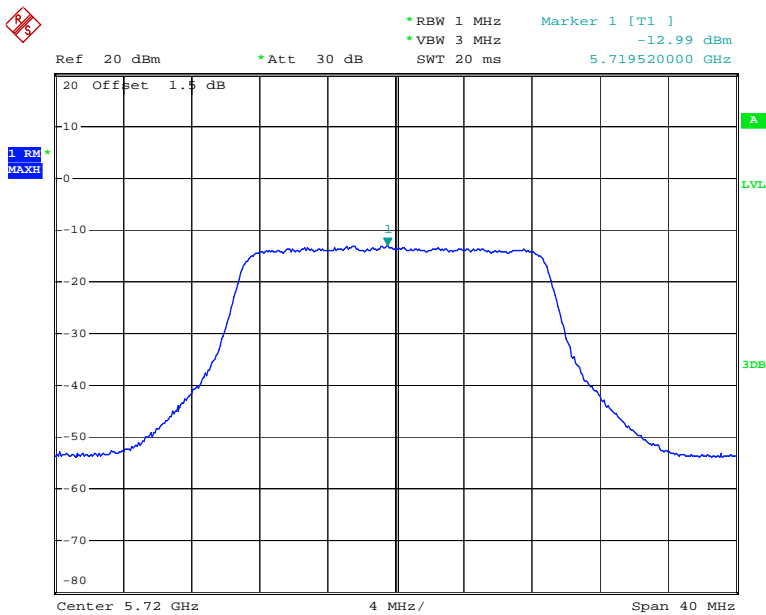## 802.11a Middle Channel


```
Date: 24.OCT.2020  11:51:00
```

802.11a High Channel
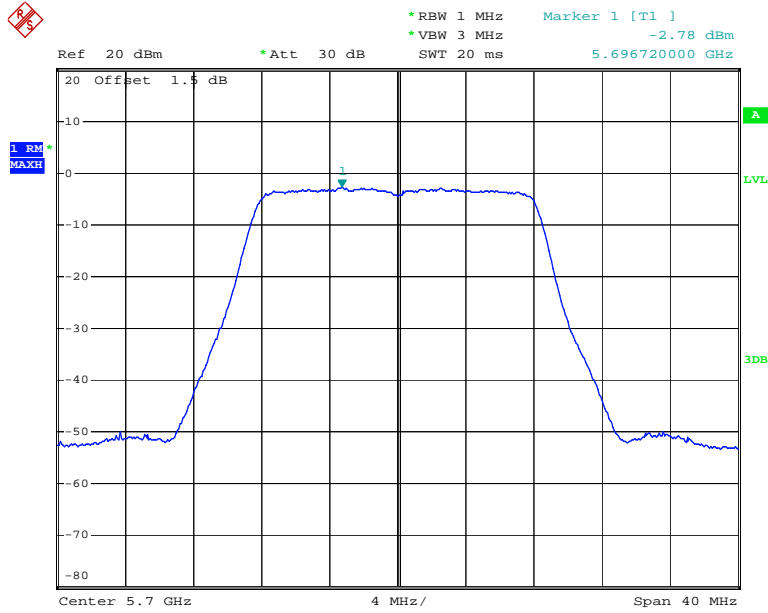
Date: 24.OCT.2020 11:50:34

802.11 a High Channel 5720MHz
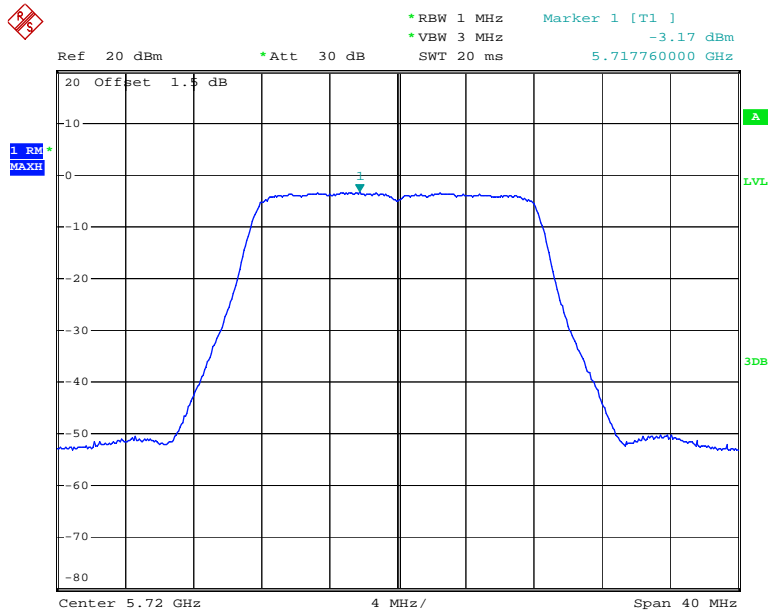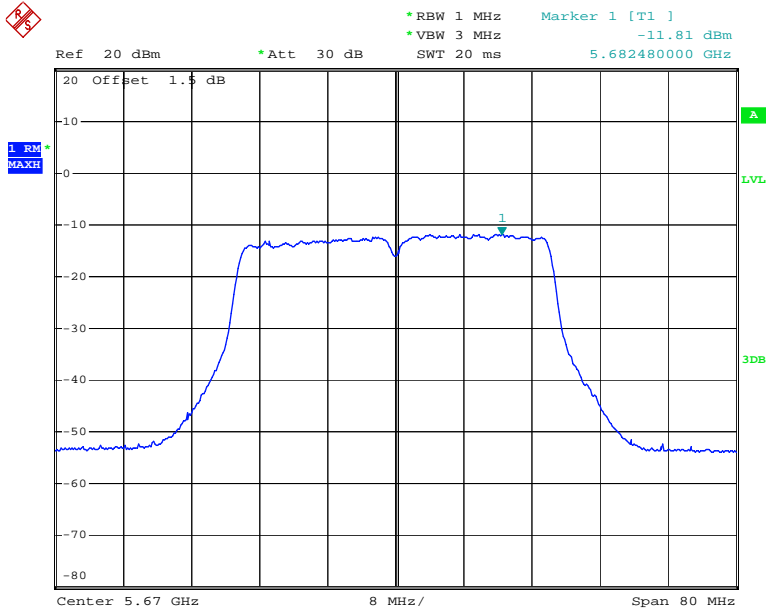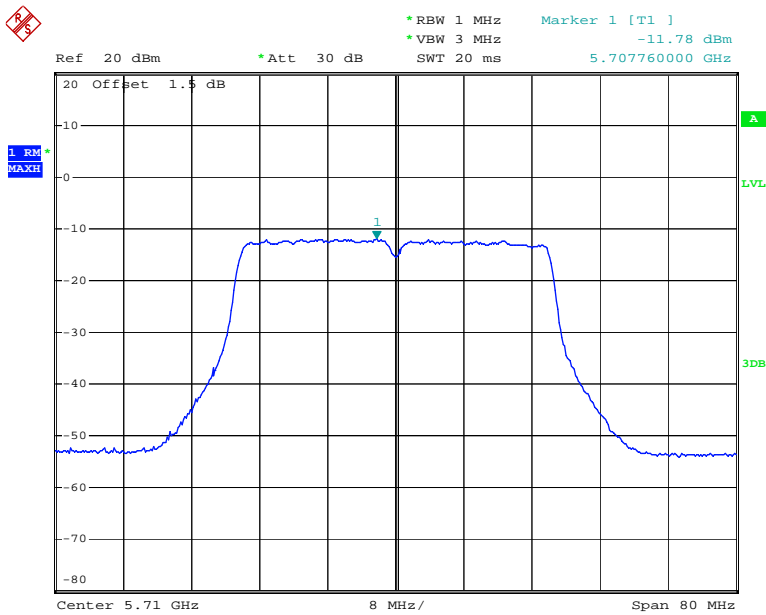

Date: 24.OCT.2020 11:49:47

802.11n ht20 Low Channel


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz              -9.27 dBm
        Ref  20 dBm      *Att  30 dB   SWT 20 ms      5.497600000 GHz
        20 Offset  1.5 dB                                              A
      -10
1 RM*  0                                                              LVL
MAXH
      -10        1
      -20
      -30
      -40                                                            3DB
      -50
      -60
      -70
      -80
        Center 5.5 GHz         4 MHz/              Span 40 MHz
```
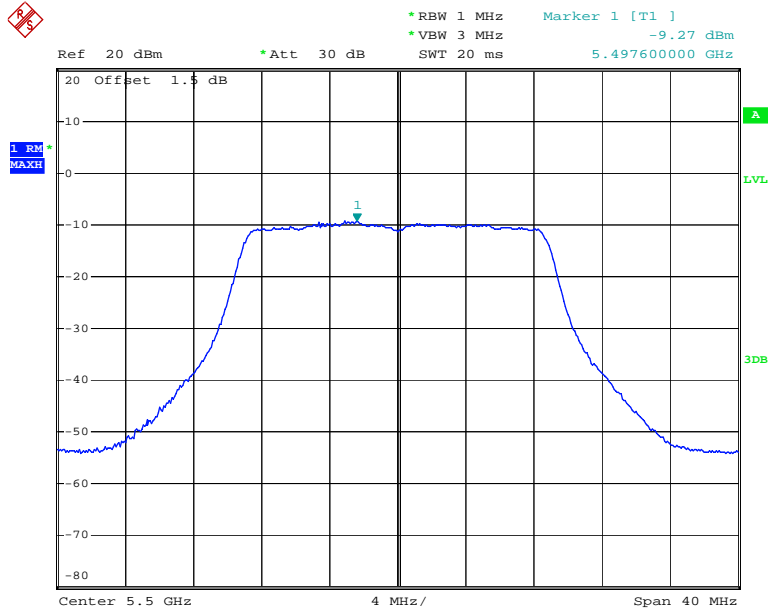
Date: 24.OCT.2020 11:44:51

802.11n ht20 Middle Channel


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz              -9.46 dBm
        Ref  20 dBm      *Att  30 dB   SWT 20 ms      5.577440000 GHz
        20 Offset  1.5 dB                                              A
      -10
1 RM*  0                                                              LVL
MAXH
      -10        1
      -20
      -30
      -40                                                            3DB
      -50
      -60
      -70
      -80
        Center 5.58 GHz        4 MHz/              Span 40 MHz
```

Date: 24.OCT.2020 11:45:28

802.11n ht20 High Channel

Date: 24.OCT.2020 11:45:54

802.11n ht20 High Channel 5720 MHz

Date: 24.OCT.2020 11:46:32

802.11n ht40 Low Channel
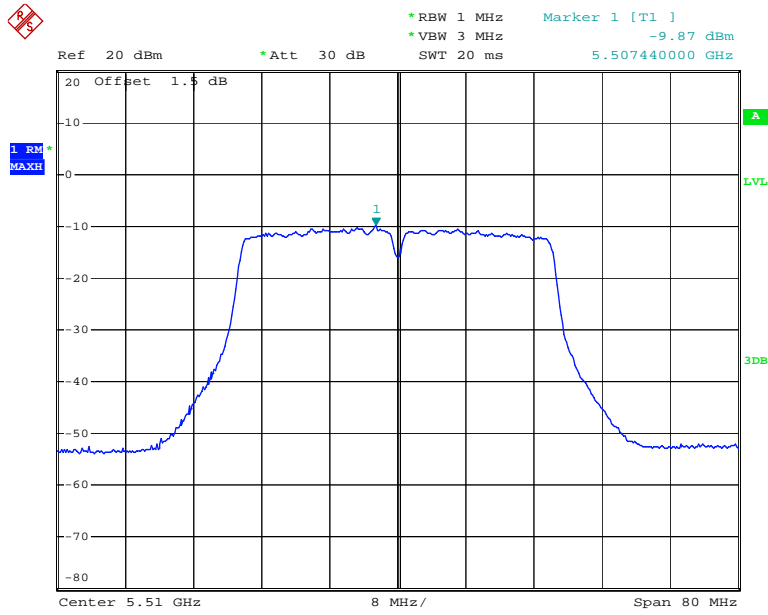
Date: 24.OCT.2020 11:41:41

802.11n ht40 Middle Channel
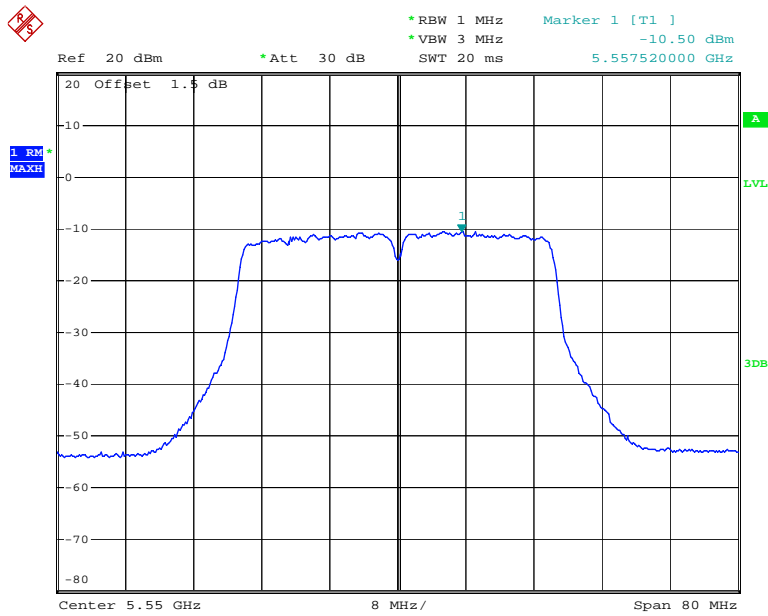
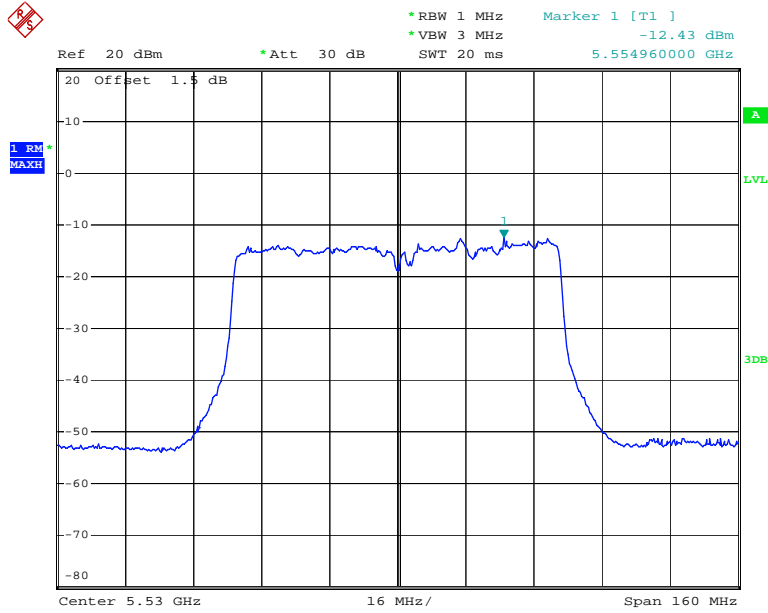

Date: 24.OCT.2020 11:42:04

802.11n ht40 High Channel
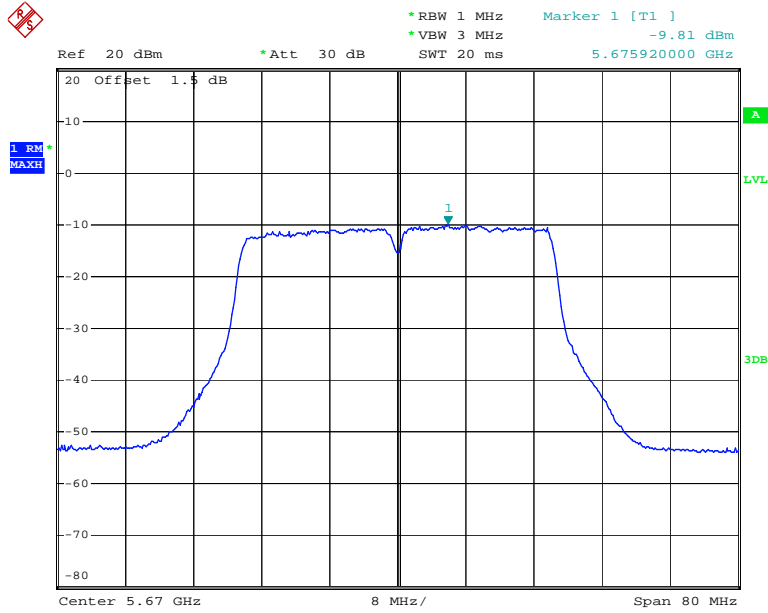
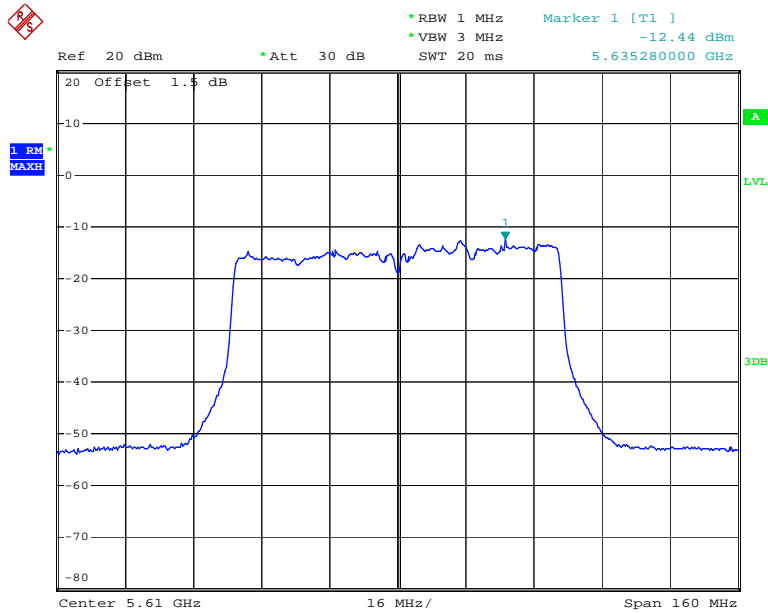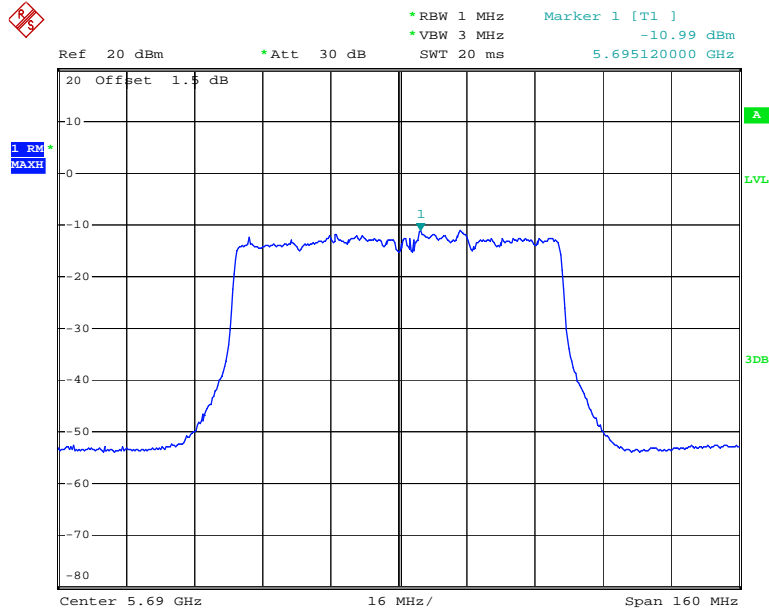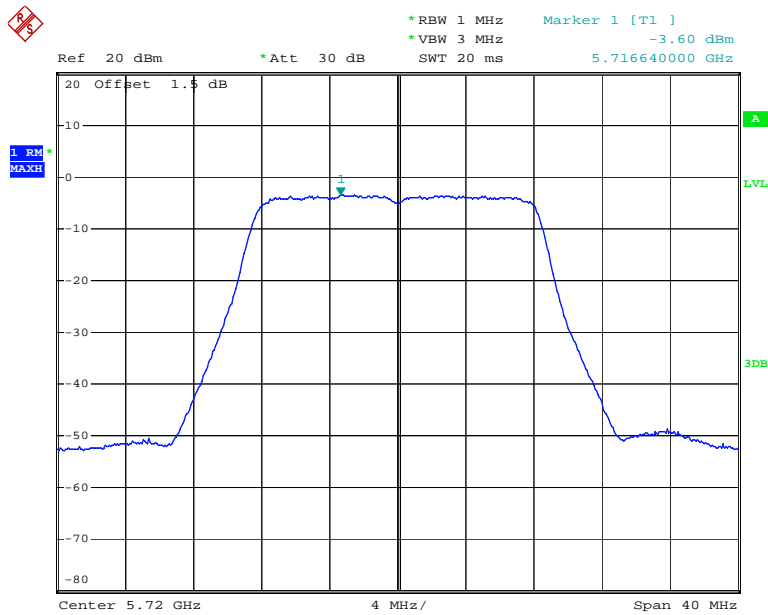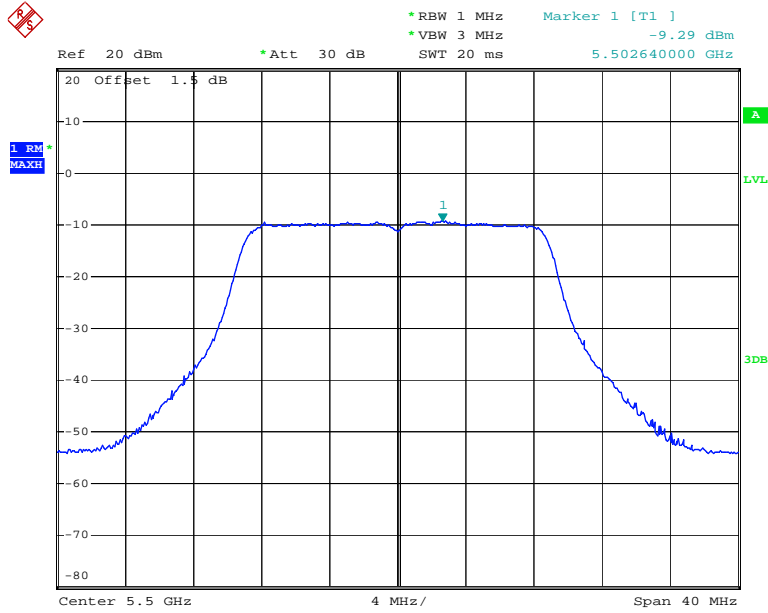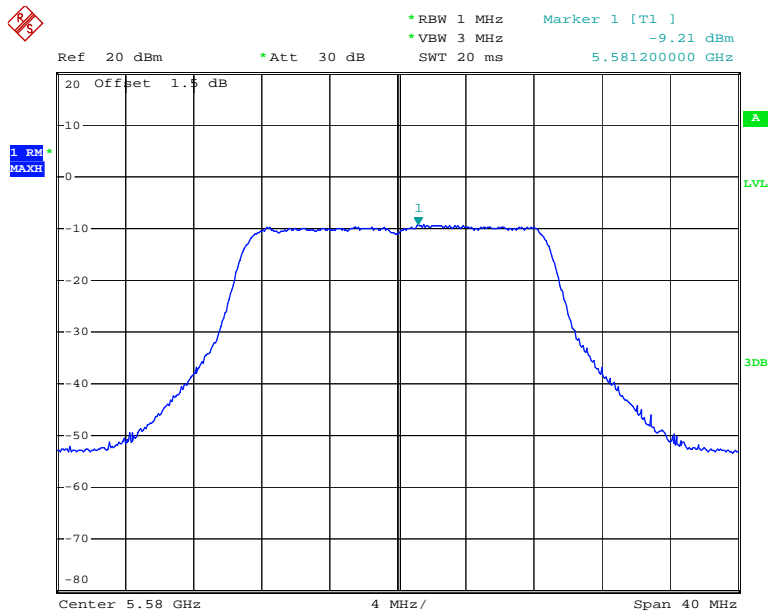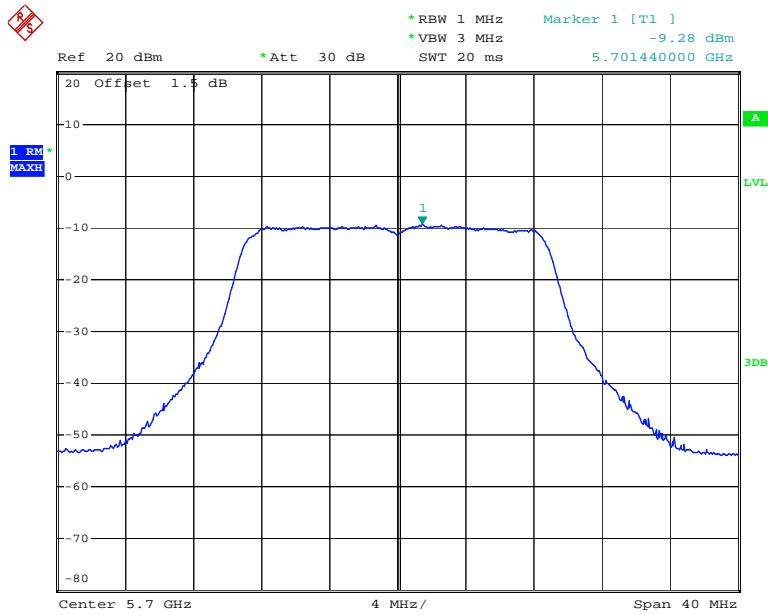Date: 24.OCT.2020 11:42:33

802.11n ht40 High Channel 5710MHz
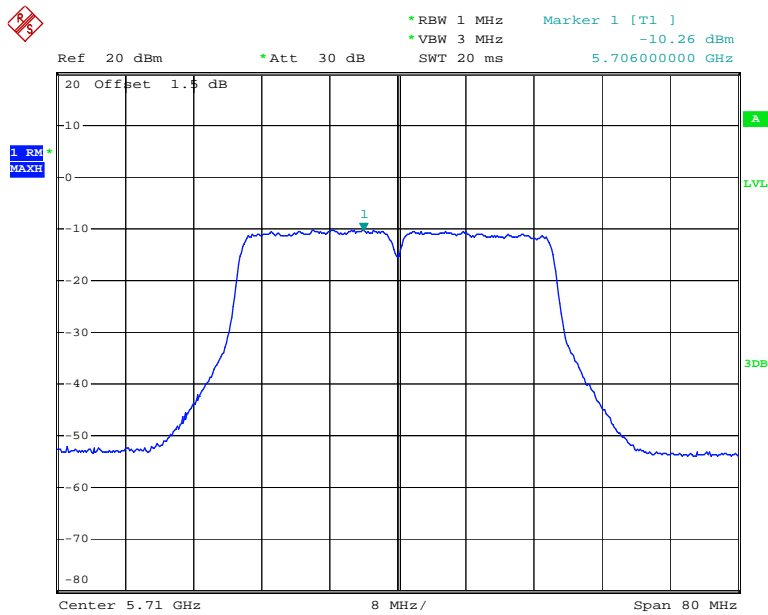
Date: 24.OCT.2020 11:43:10

802.11ac vht80 Low Channel
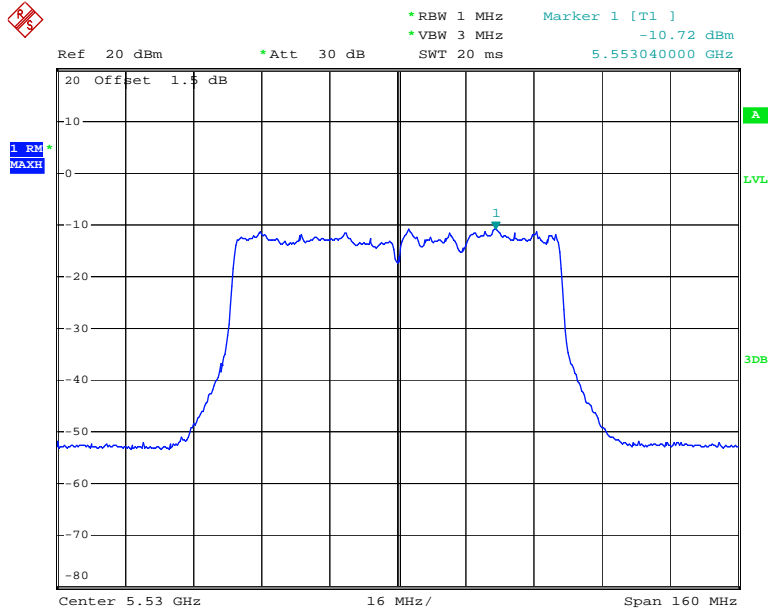
Date: 24.OCT.2020 11:40:49

802.11ac vht80 High Channel 5610MHz
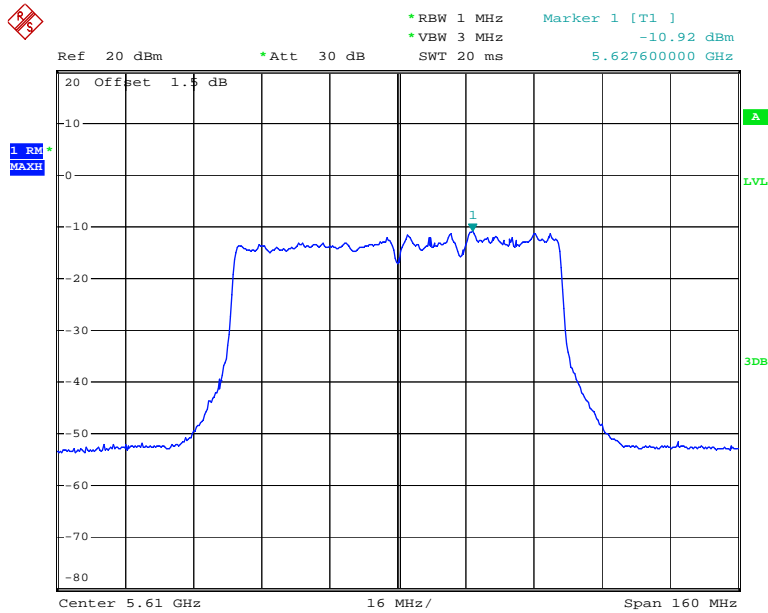
Date: 24.OCT.2020 11:39:32

802.11ac vht80 High Channel


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz                -8.92 dBm
        Ref  20 dBm      *Att  30 dB    SWT 20 ms       5.702480000 GHz
```
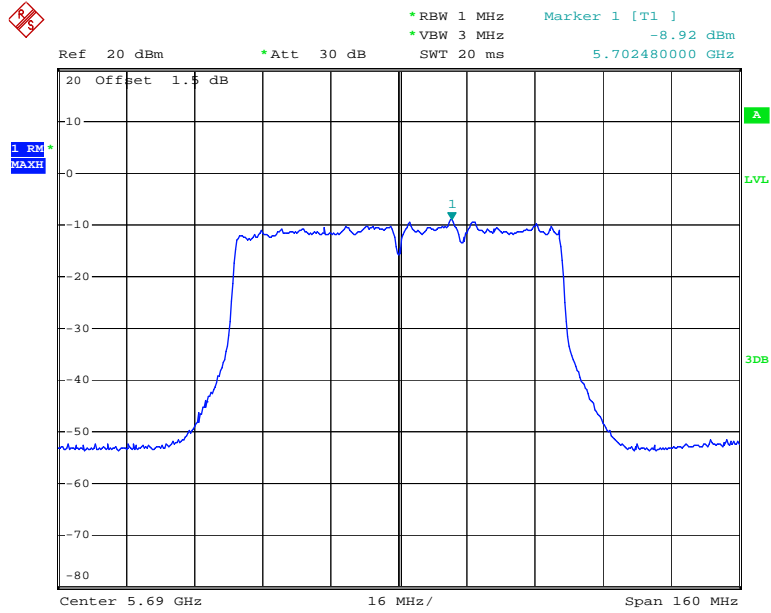
Date: 24.OCT.2020 11:40:04

Chain 2:

802.11a Low Channel
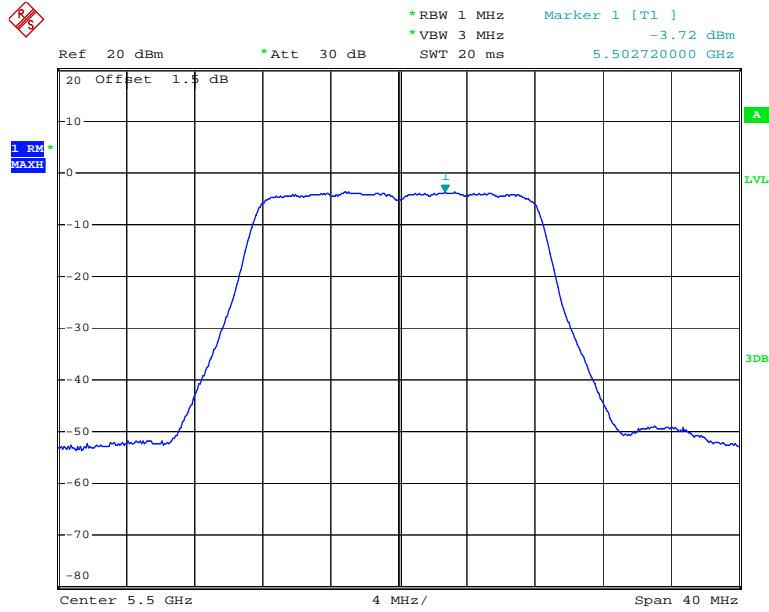
Date: 24.OCT.2020 11:53:37

802.11a Middle Channel
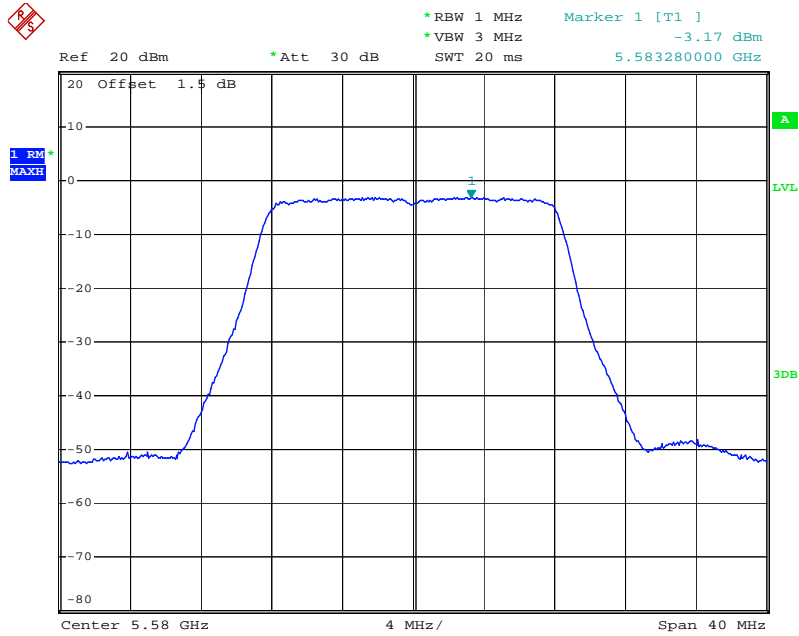
Date: 24.OCT.2020 11:54:28

802.11a High Channel
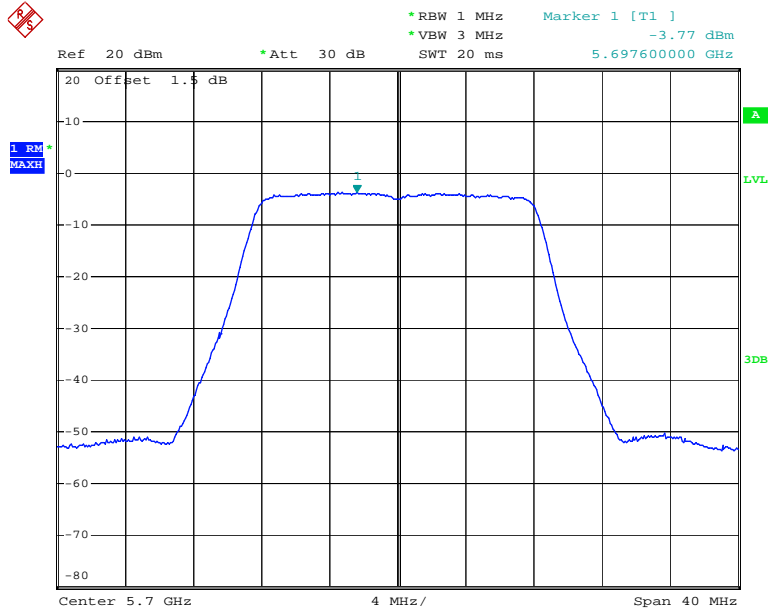
Date: 24.OCT.2020 11:54:55

802.11 a High Channel 5720MHz
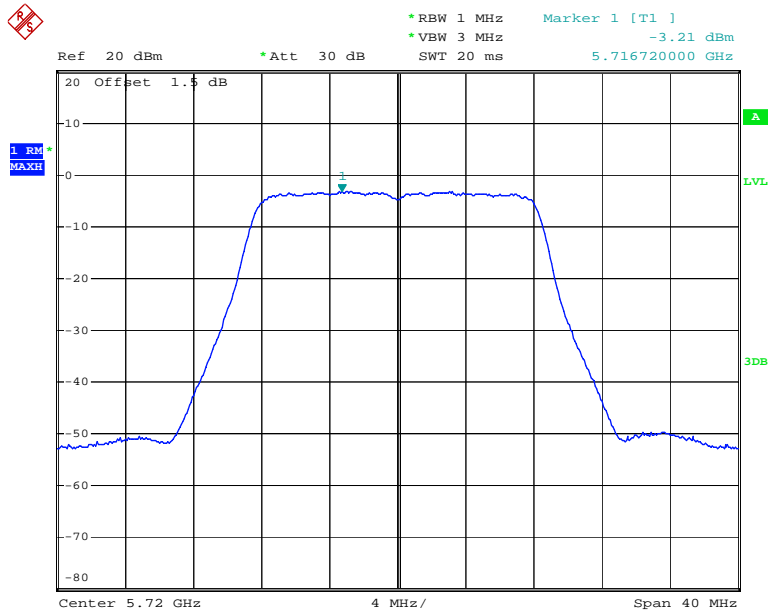
Date: 24.OCT.2020 11:56:15

802.11n ht20 Low Channel
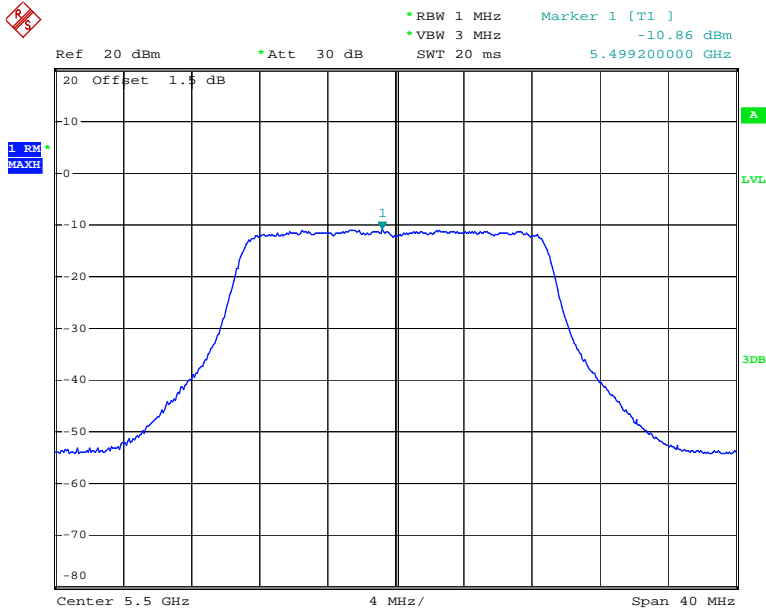
Date: 24.OCT.2020 13:13:42
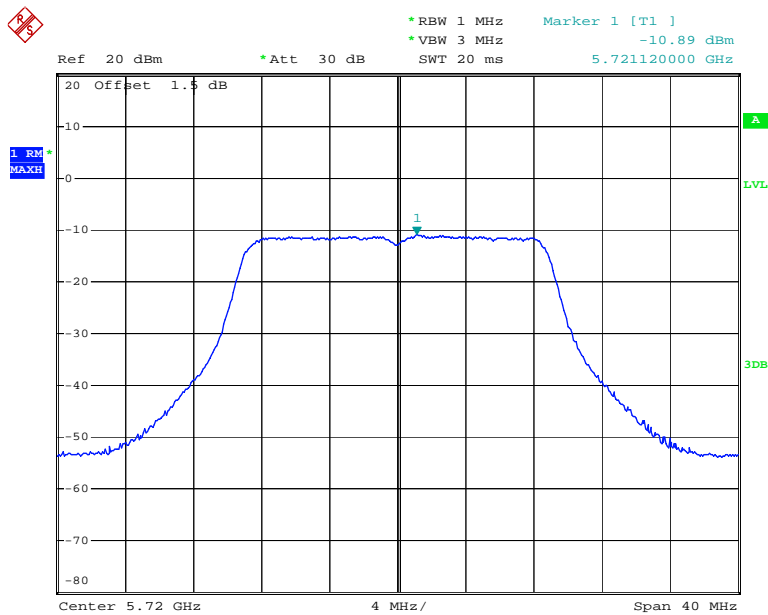
802.11n ht20 Middle Channel
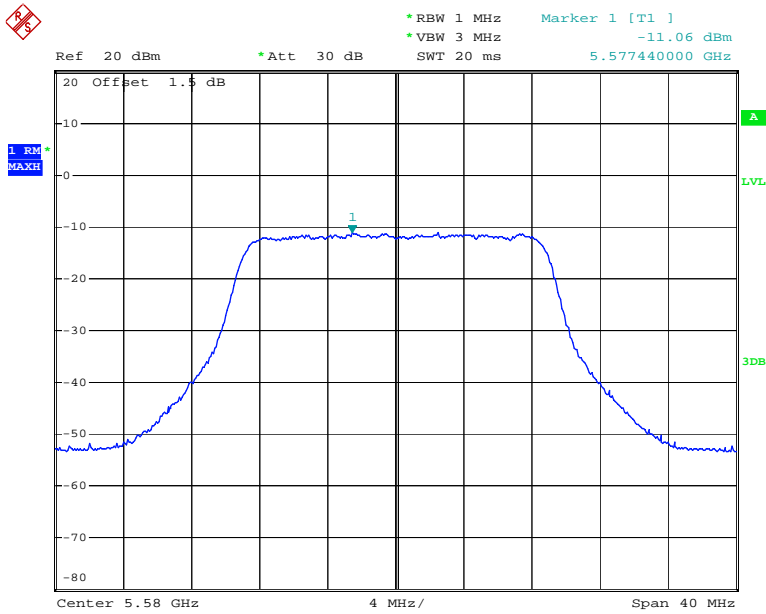
Date: 24.OCT.2020 13:13:13

802.11n ht20 High Channel
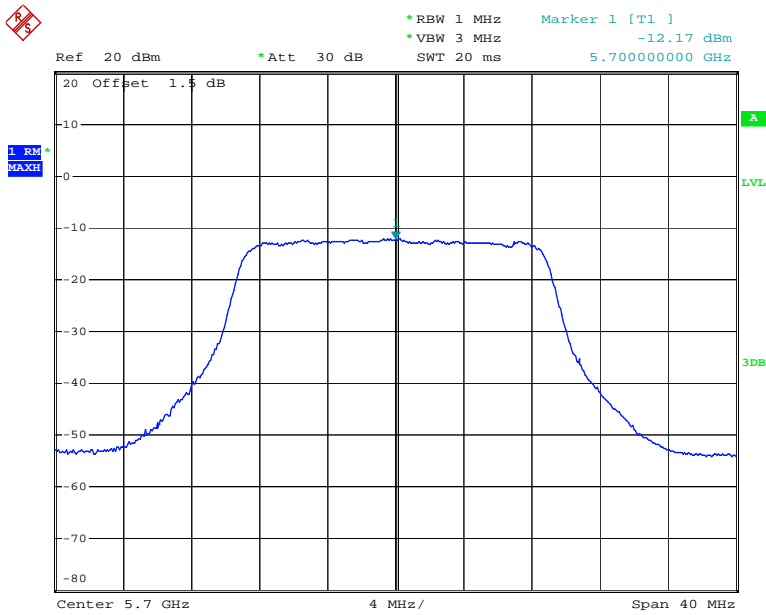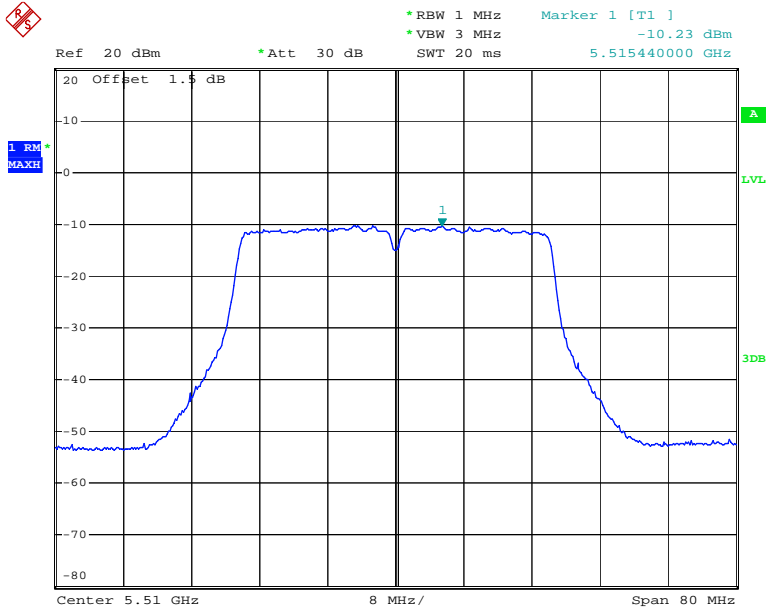

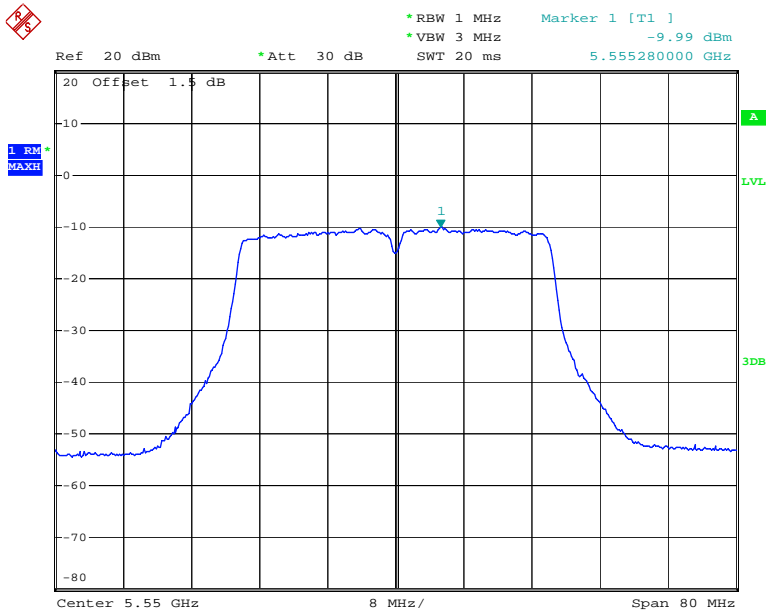Date: 24.OCT.2020 13:12:42

802.11n ht20 High Channel 5720 MHz
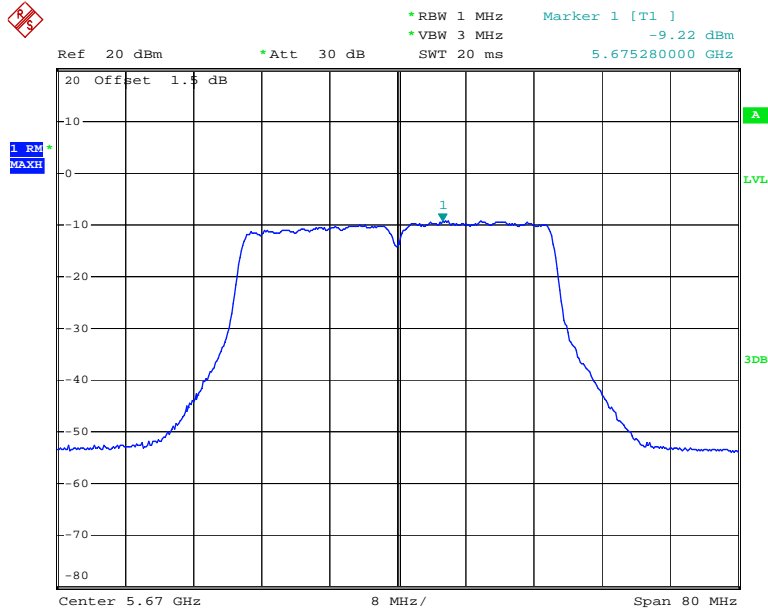

Date: 24.OCT.2020 13:12:16

802.11n ht40 Low Channel
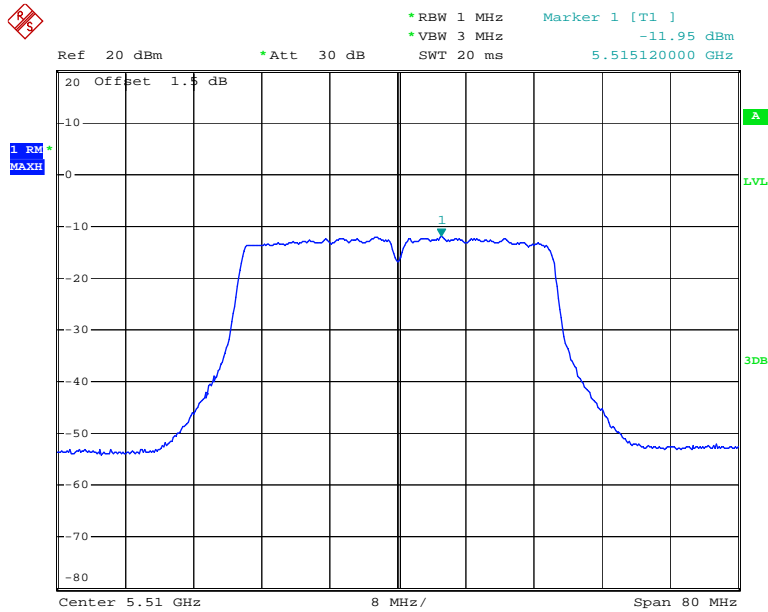
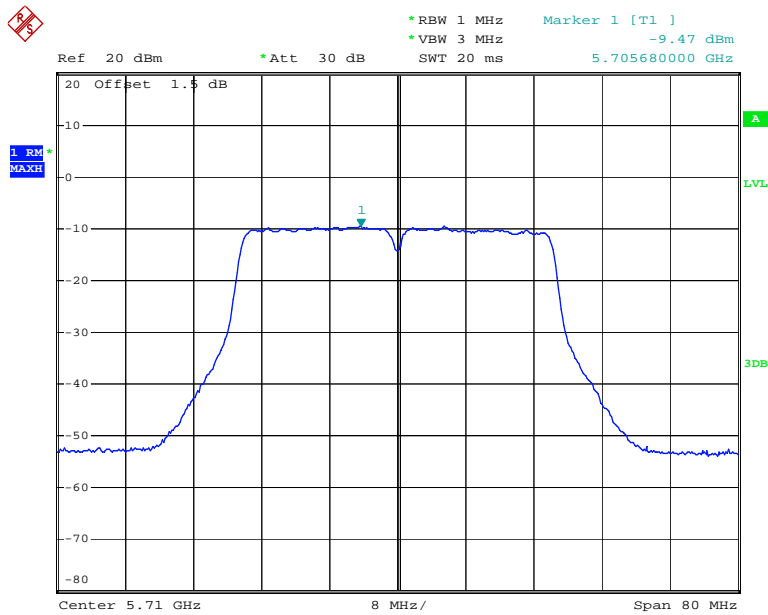Date: 24.OCT.2020 13:14:22

802.11n ht40 Middle Channel
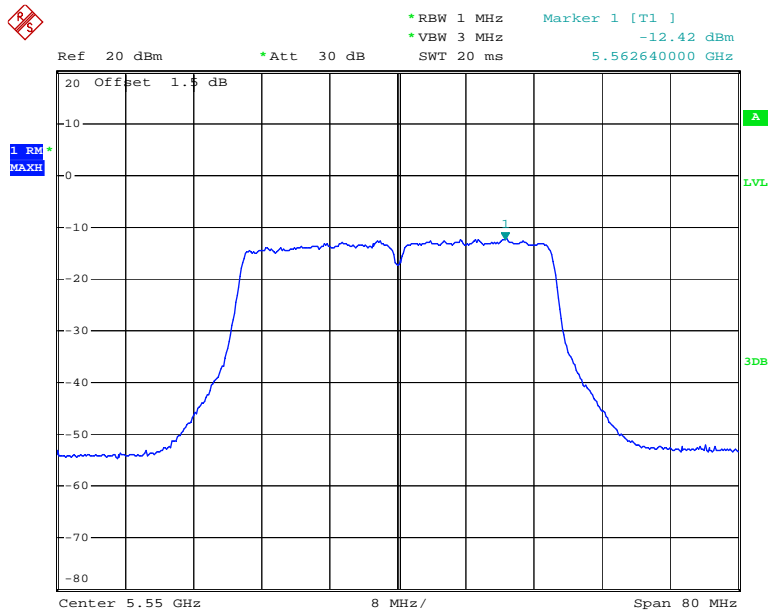
Date: 24.OCT.2020 13:14:48

802.11n ht40 High Channel
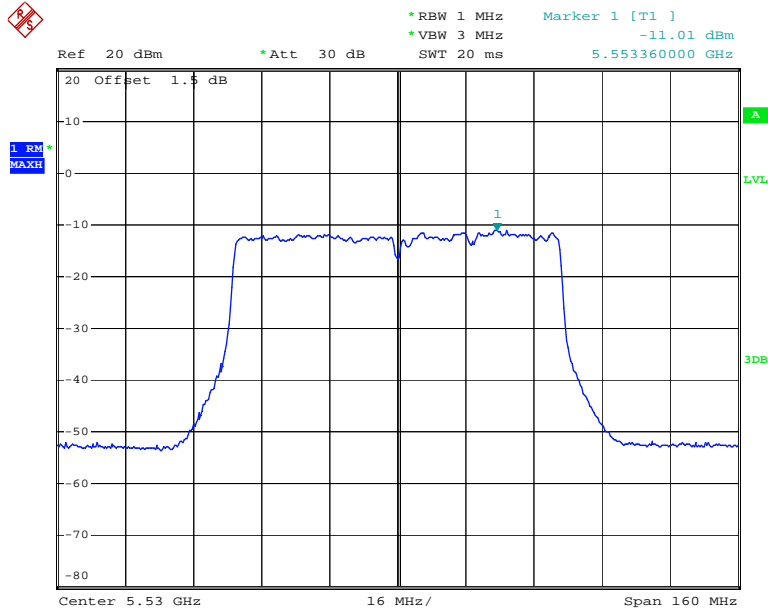
```
                                        *RBW 1 MHz      Marker 1 [T1 ]
                                        *VBW 3 MHz            -11.81 dBm
        Ref  20 dBm        *Att  30 dB   SWT 20 ms      5.682480000 GHz
```

Date: 24.OCT.2020 13:15:30

802.11n ht40 High Channel 5710MHz

```
                                        *RBW 1 MHz      Marker 1 [T1 ]
                                        *VBW 3 MHz            -11.78 dBm
        Ref  20 dBm        *Att  30 dB   SWT 20 ms      5.707760000 GHz
```
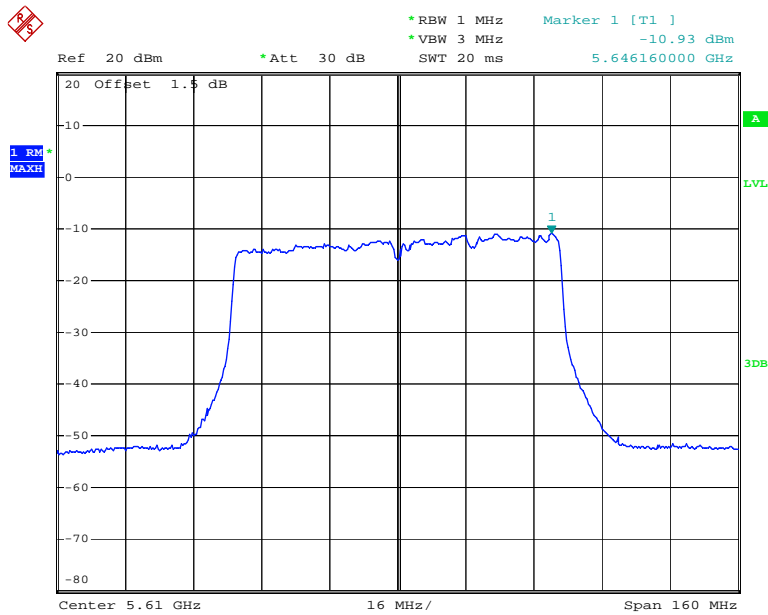
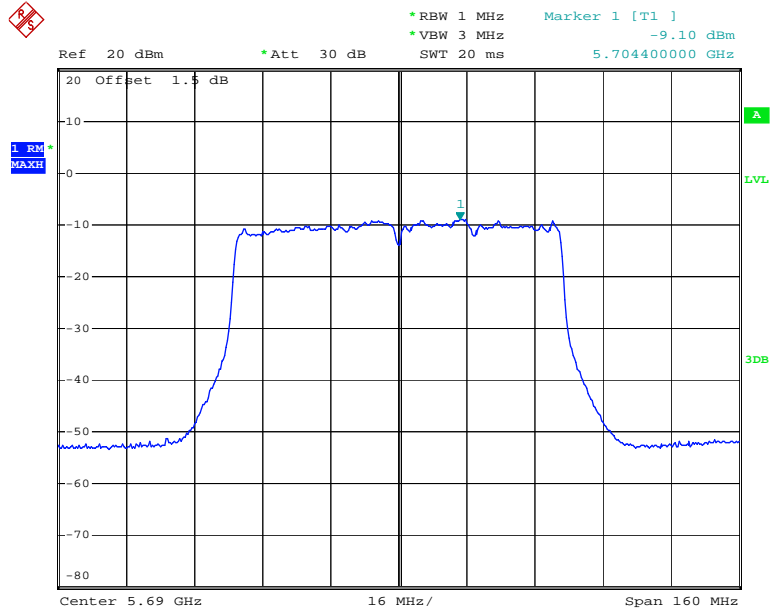Date: 24.OCT.2020 13:16:27

802.11ac vht80 Low Channel

Date: 24.OCT.2020 13:17:25

## 802.11ac vht80 High Channel 5610MHz

Date: 24.OCT.2020 13:19:22

802.11ac vht80 High Channel

Date: 24.OCT.2020 13:18:39

Chain 3:

802.11a Low Channel
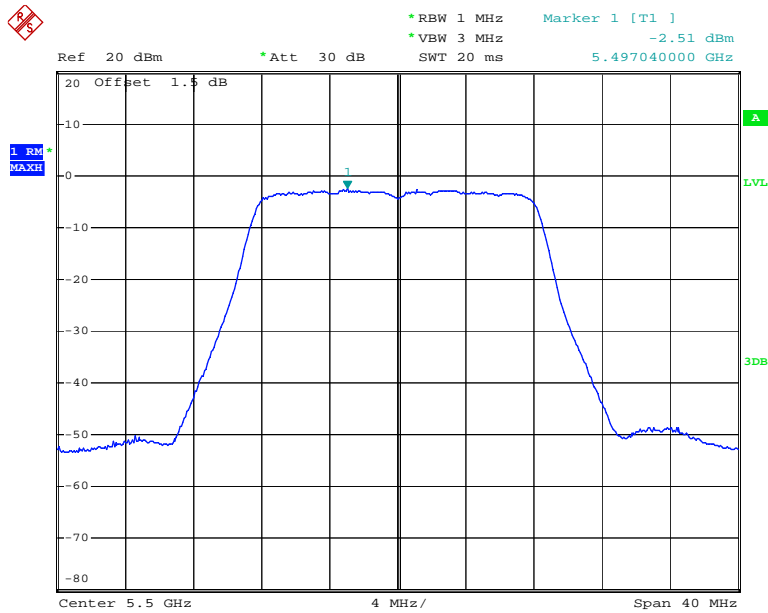

Date: 24.OCT.2020 11:28:35

802.11a Middle Channel
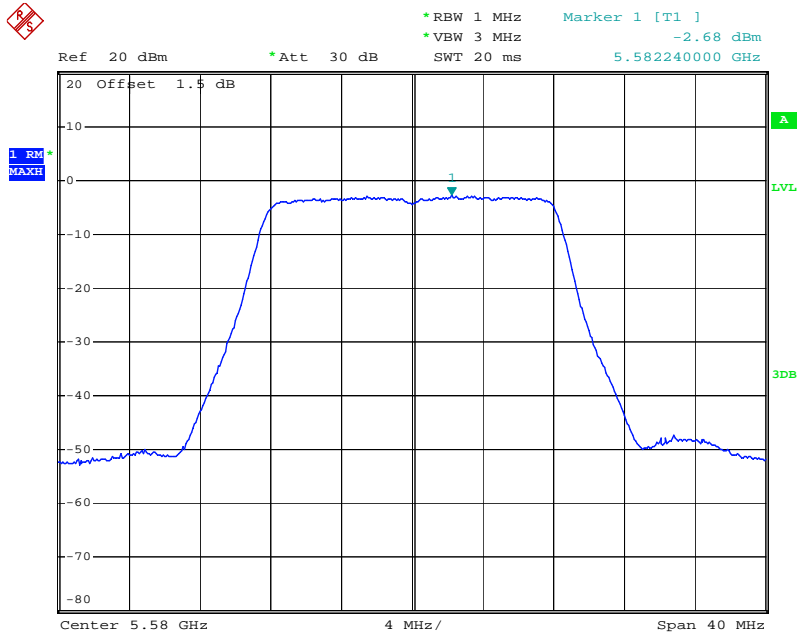
Date: 24.OCT.2020 11:29:07

802.11a High Channel
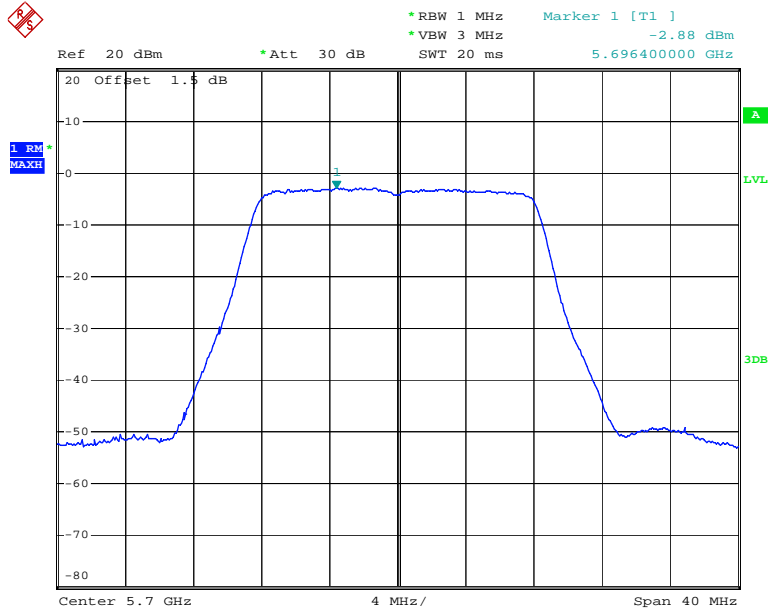
Date: 24.OCT.2020 11:29:54

802.11 a High Channel 5720MHz

Date: 24.OCT.2020 11:30:42

802.11n ht20 Low Channel


```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz              -9.29 dBm
         Ref  20 dBm         *Att  30 dB    SWT 20 ms      5.502640000 GHz
         20 Offset  1.5 dB
```

Date: 24.OCT.2020 11:33:55

802.11n ht20 Middle Channel


```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz              -9.21 dBm
         Ref  20 dBm         *Att  30 dB    SWT 20 ms      5.581200000 GHz
         20 Offset  1.5 dB
```

Date: 24.OCT.2020 11:33:31

802.11n ht20 High Channel

Date: 24.OCT.2020 11:32:30
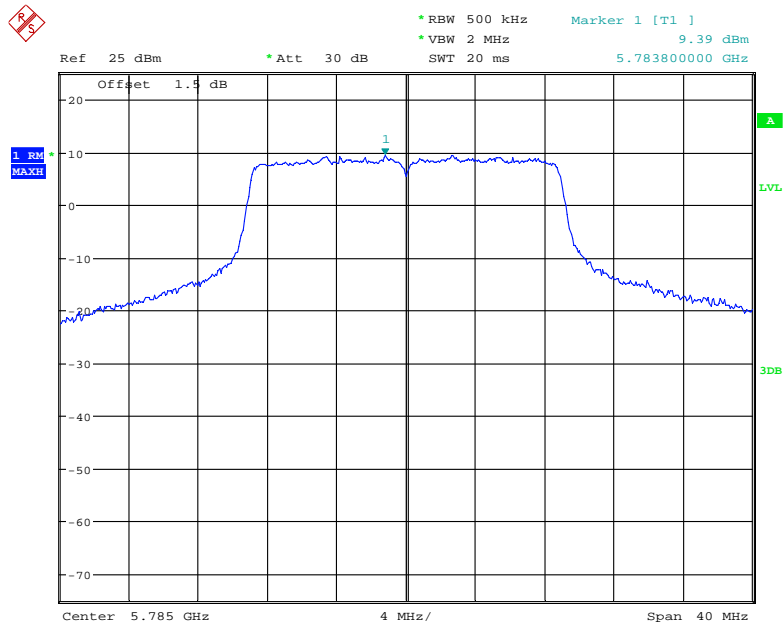
802.11n ht20 High Channel 5720 MHz

Date: 24.OCT.2020 11:31:51

802.11n ht40 Low Channel

Date: 24.OCT.2020 11:34:35

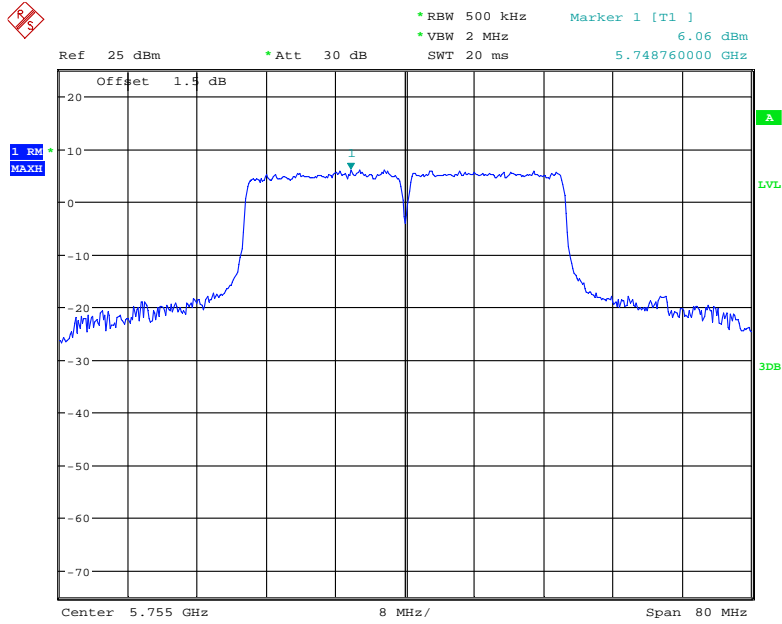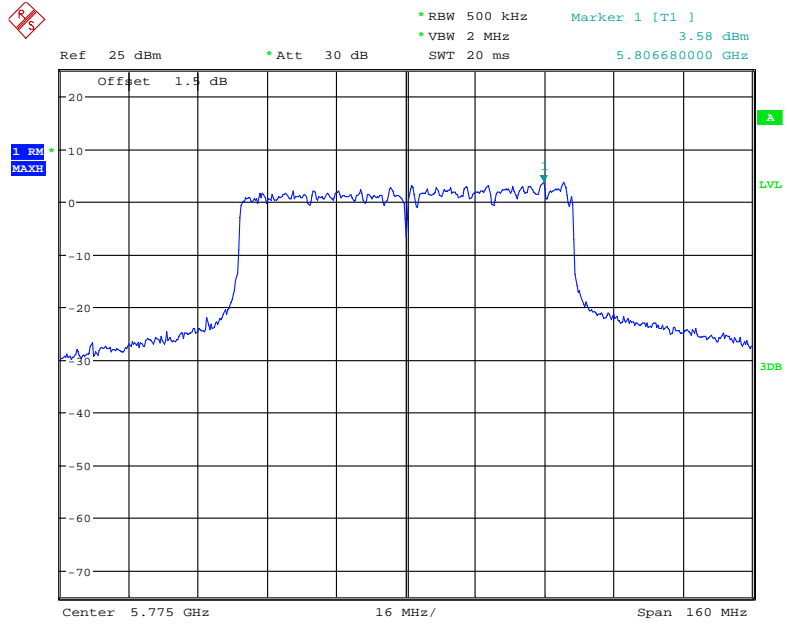## 802.11n ht40 Middle Channel

Date: 24.OCT.2020 11:35:04

802.11n ht40 High Channel

```
                                          *RBW 1 MHz     Marker 1 [T1 ]
                                          *VBW 3 MHz              -9.22 dBm
             Ref  20 dBm       *Att  30 dB   SWT 20 ms      5.675280000 GHz
```


Date: 24.OCT.2020 11:35:33

802.11n ht40 High Channel 5710MHz

```
                                          *RBW 1 MHz     Marker 1 [T1 ]
                                          *VBW 3 MHz              -9.47 dBm
             Ref  20 dBm       *Att  30 dB   SWT 20 ms      5.705680000 GHz
```


Date: 24.OCT.2020 11:36:15

802.11ac vht80 Low Channel

Date: 24.OCT.2020 11:37:01

802.11ac vht80 High Channel 5610MHz

Date: 24.OCT.2020 11:38:35

802.11ac vht80 High Channel


```
                                      *RBW 1 MHz      Marker 1 [T1 ]
                                      *VBW 3 MHz              -9.10 dBm
        Ref  20 dBm        *Att  30 dB    SWT 20 ms      5.704400000 GHz

        20  Offset  1.5 dB                                              A
       -10
1 RM *
MAXH    0                                                              LVL
       -10
       -20
       -30
       -40                                                             3DB
       -50
       -60
       -70
       -80
        Center 5.69 GHz           16 MHz/            Span 160 MHz
```

Date: 24.OCT.2020 11:37:39

5725-5850 MHz, Chain 0:

802.11a Low Channel
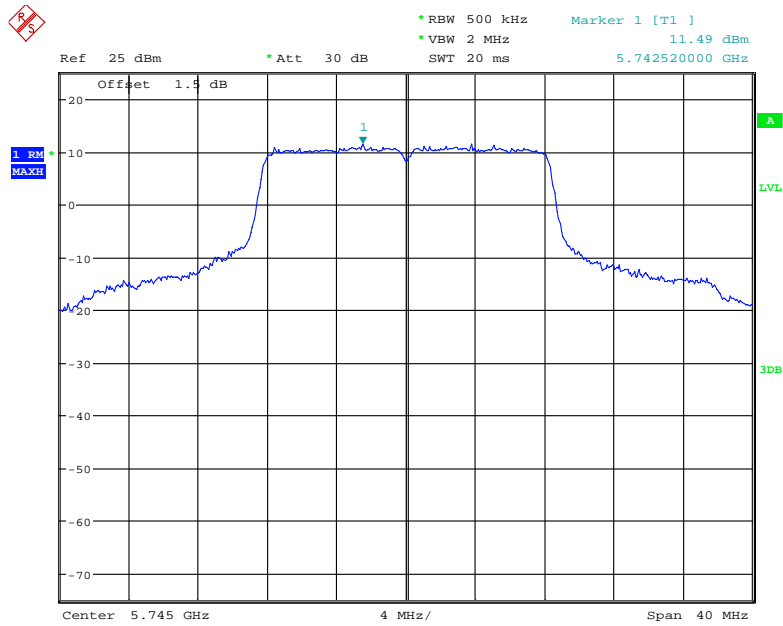
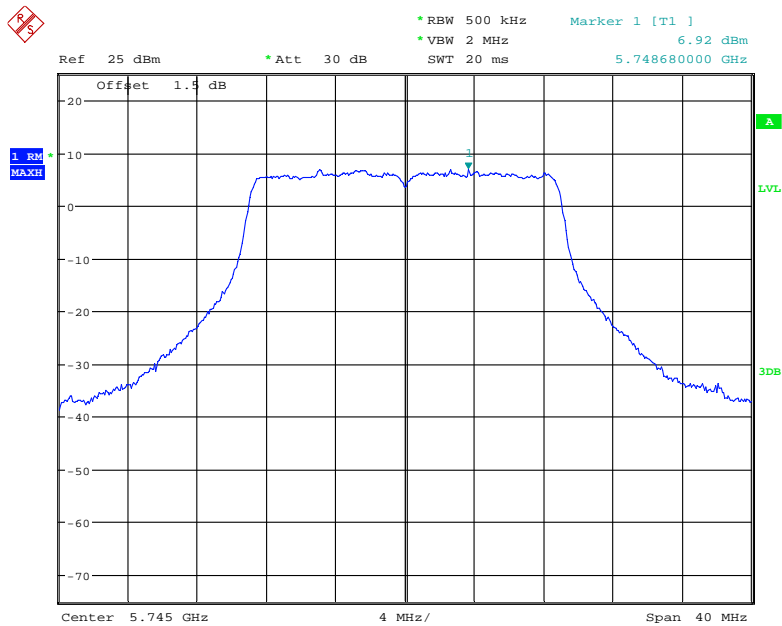Date: 21.OCT.2020 13:31:34

802.11a Middle Channel
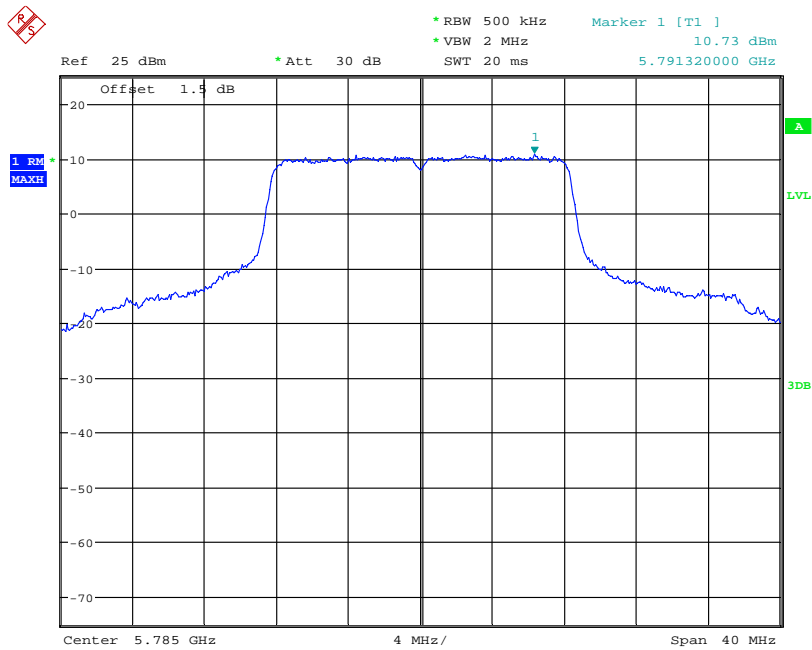
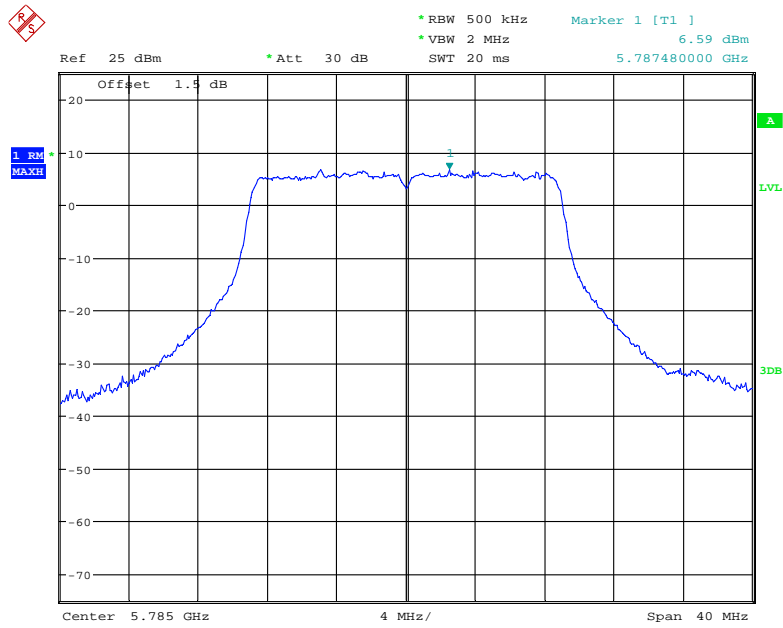Date: 21.OCT.2020 13:30:57

802.11a High Channel
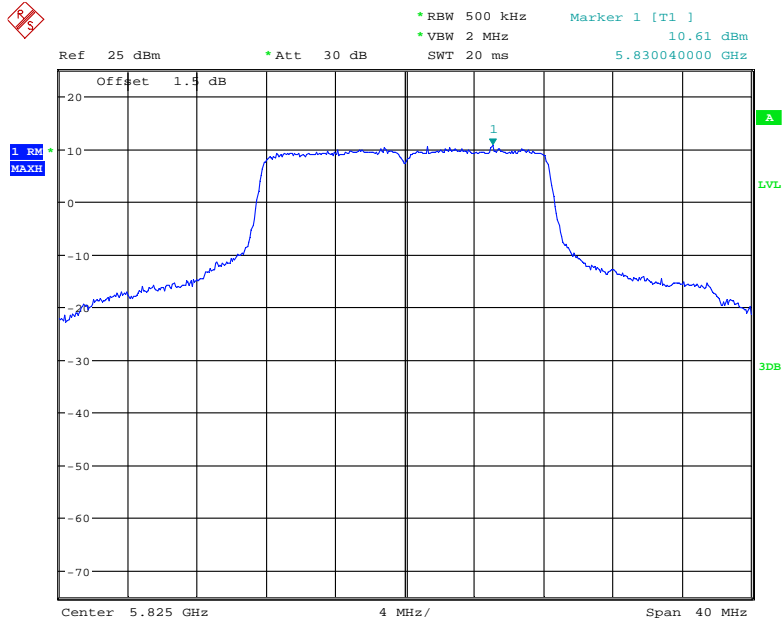
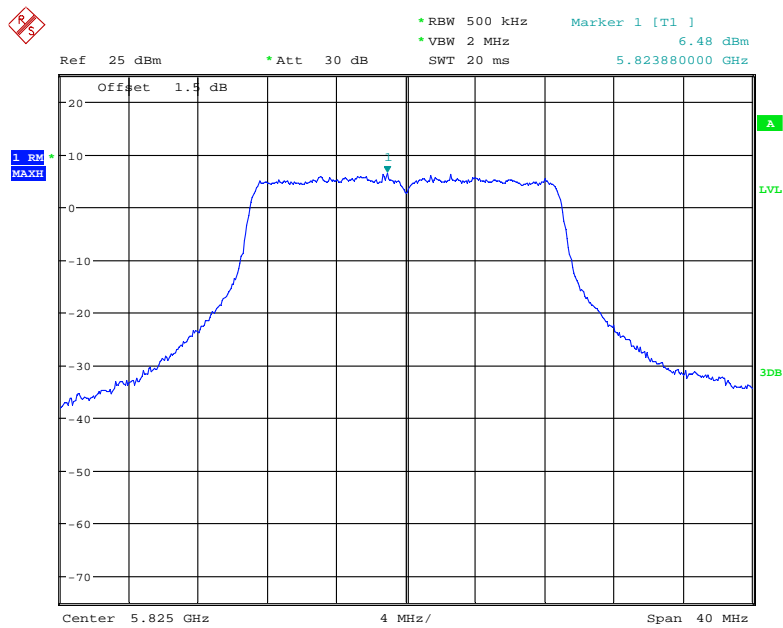Date: 21.OCT.2020 13:30:20

802.11n ht20 Low Channel
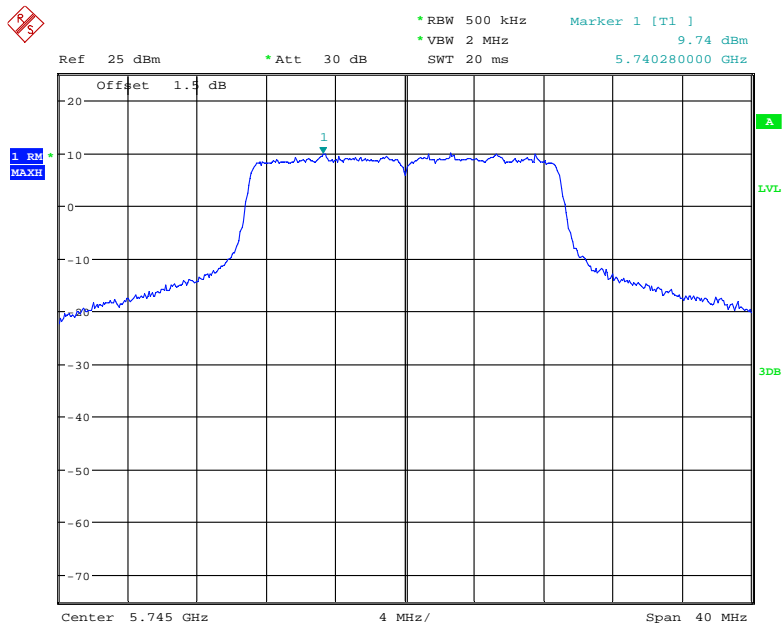
Date: 21.OCT.2020 13:35:52

802.11n ht20 Middle Channel
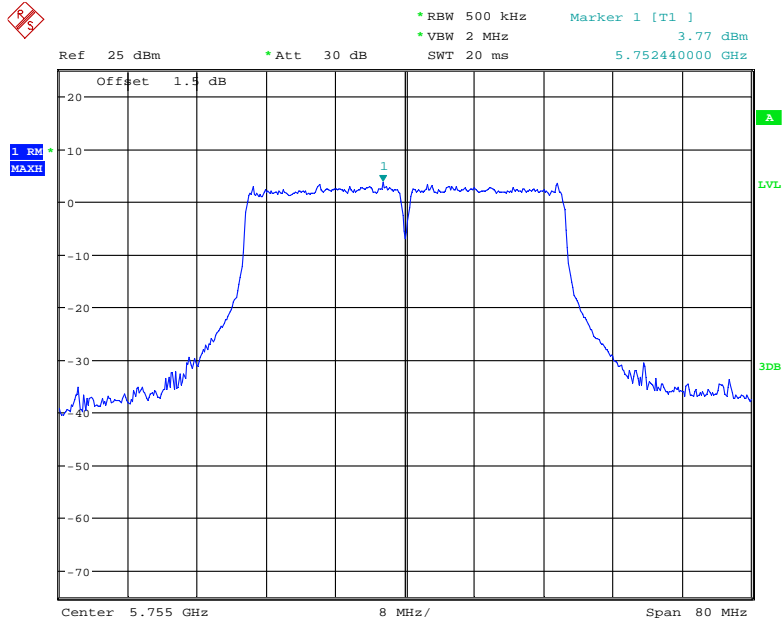

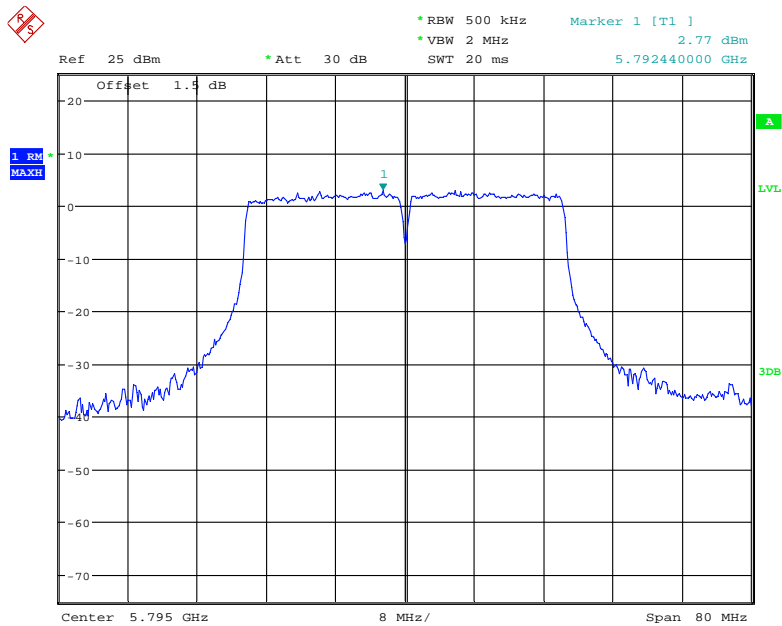Date: 21.OCT.2020 13:37:09

802.11n ht20 High Channel
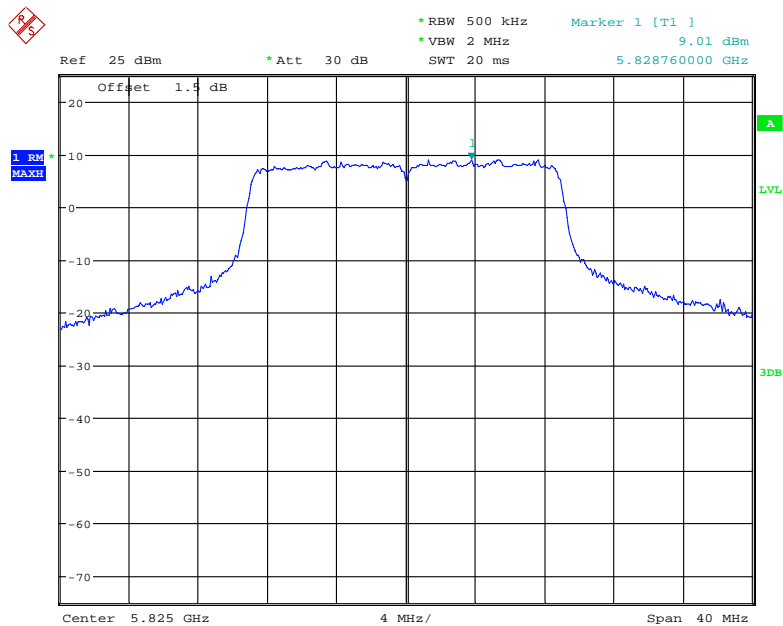
Date: 21.OCT.2020 13:38:20

802.11n ht40 Low Channel
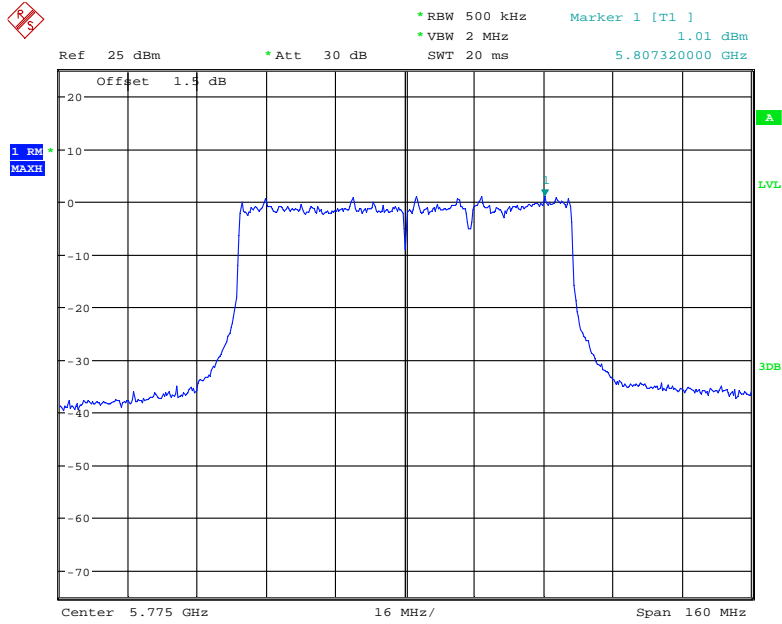

Date: 21.OCT.2020 13:47:41

802.11n ht40 High Channel
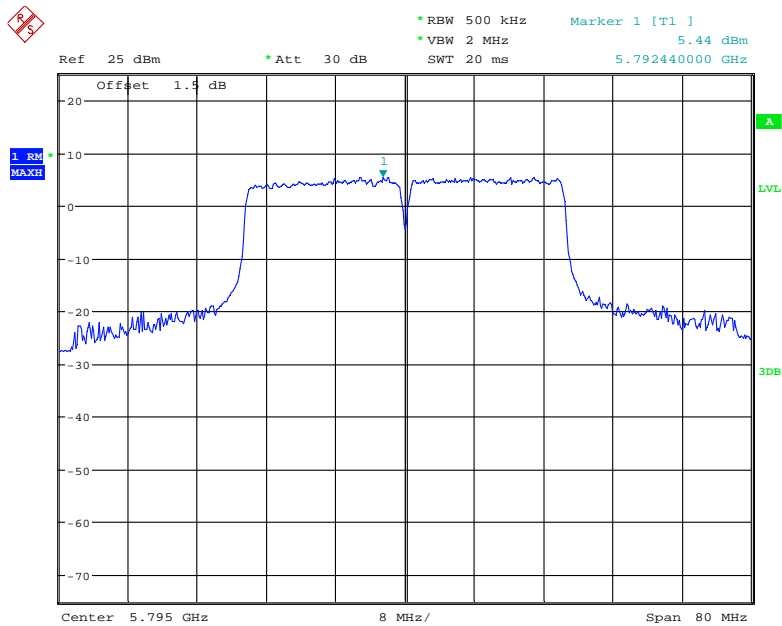
Date: 21.OCT.2020 13:49:00

802.11ac vht80 Middle Channel

Date: 21.OCT.2020 13:52:26

Chain 1:

802.11a Low Channel
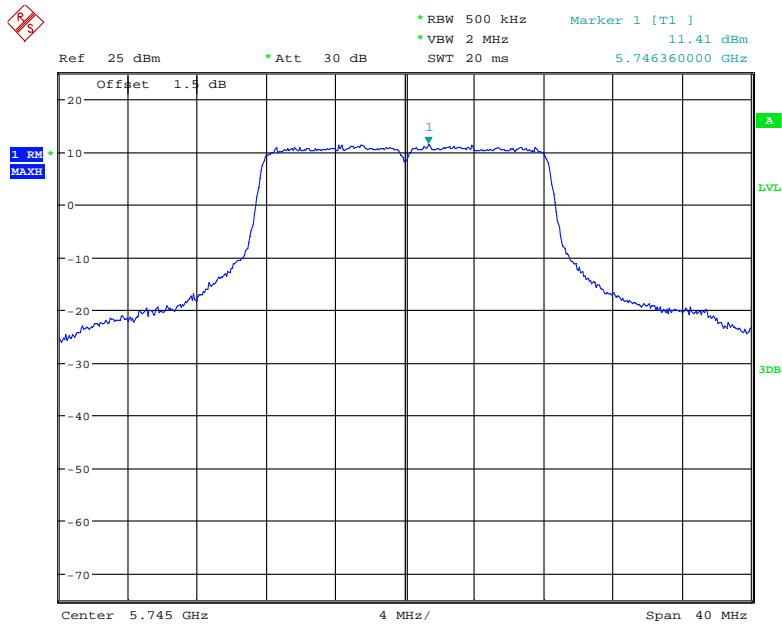
Date: 21.OCT.2020 15:48:06

802.11a Middle Channel
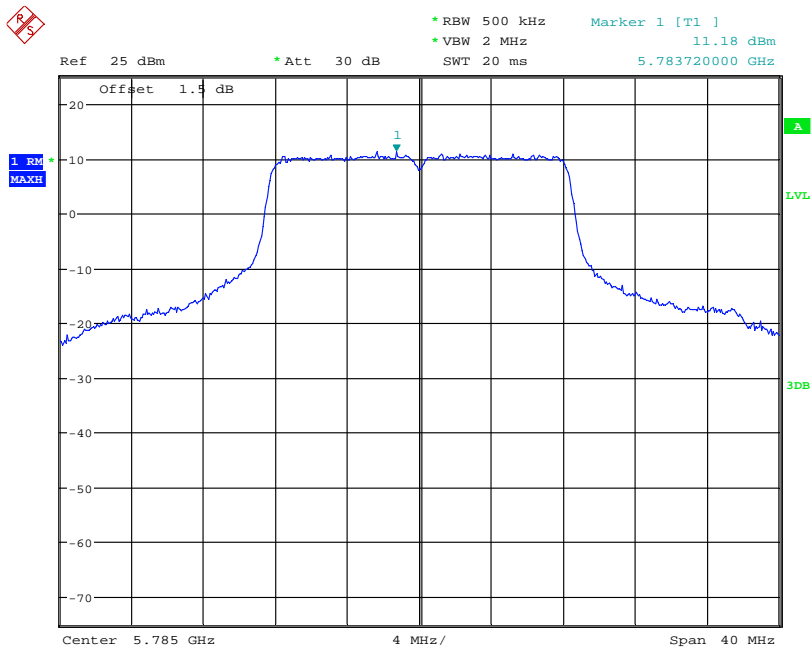
Date: 21.OCT.2020 15:47:02

802.11a High Channel
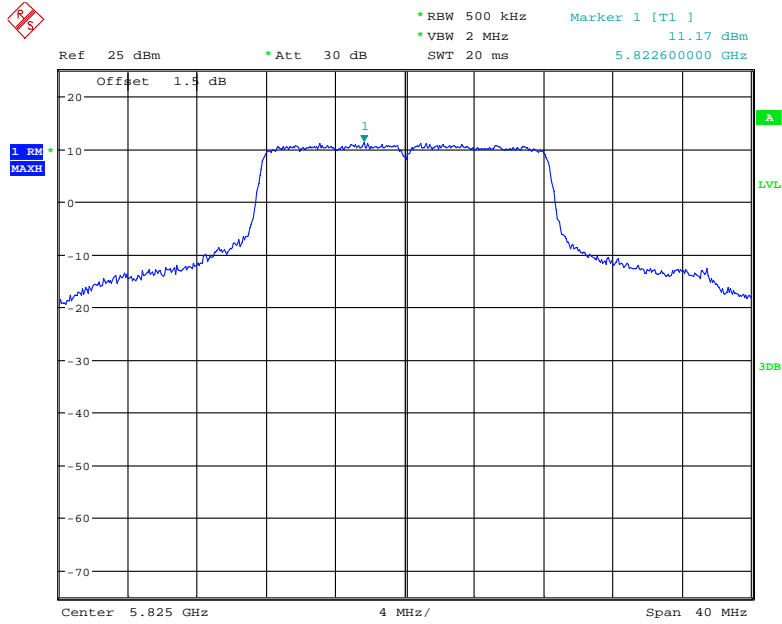
Date: 21.OCT.2020 15:45:36

802.11n ht20 Low Channel

Date: 21.OCT.2020 15:41:08

802.11n ht20 Middle Channel

Date: 21.OCT.2020 15:41:47

802.11n ht20 High Channel

Date: 21.OCT.2020 15:42:27

802.11n ht40 Low Channel

Date: 21.OCT.2020 15:39:13

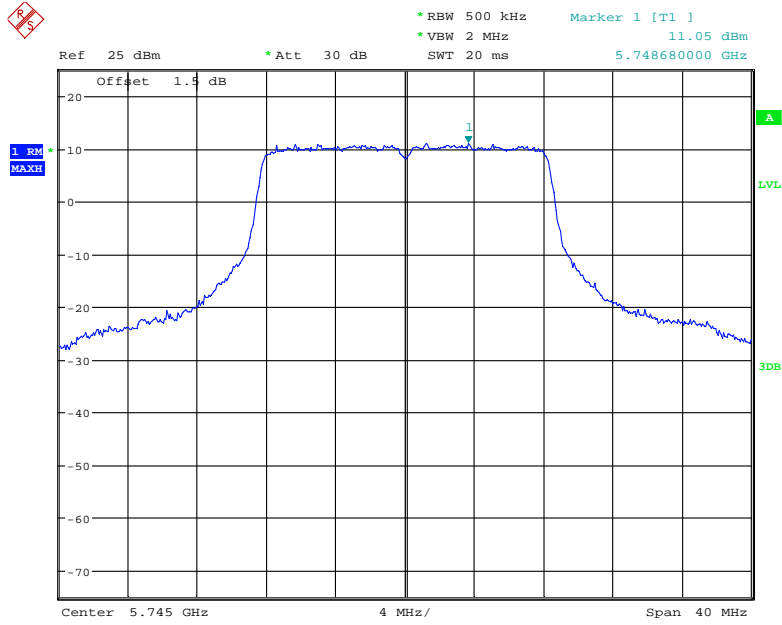## 802.11n ht40 High Channel

Date: 21.OCT.2020 15:39:55

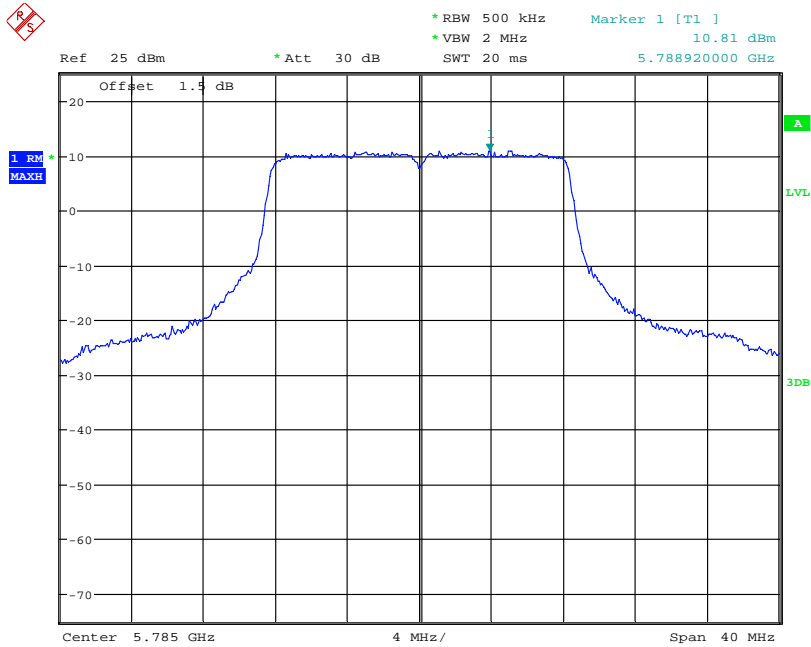## 802.11ac vht80 Middle Channel

Date: 21.OCT.2020 15:38:02

Chain 2:

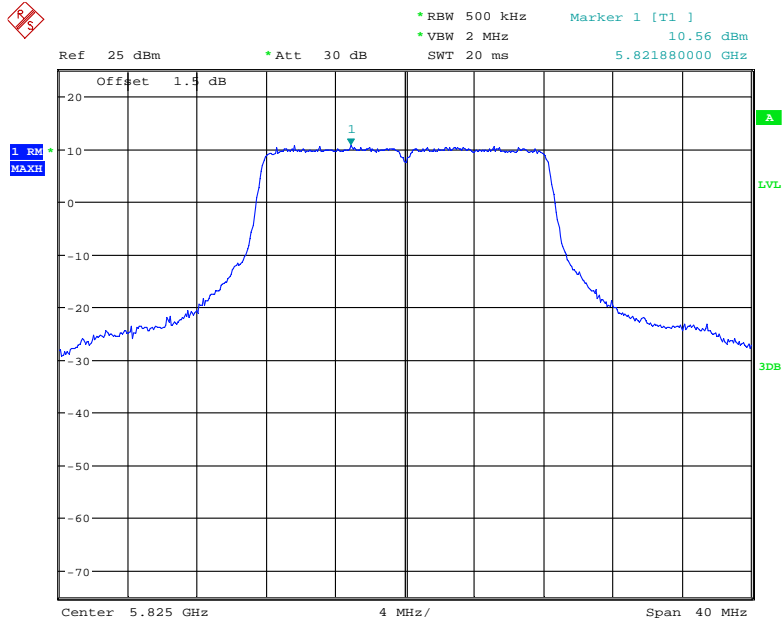## 802.11a Low Channel

Date: 21.OCT.2020 15:32:14

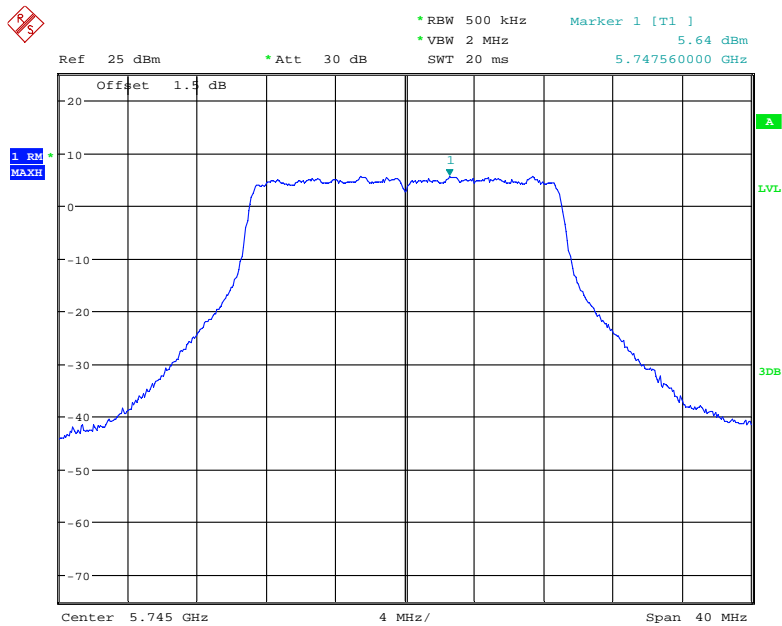## 802.11a Middle Channel
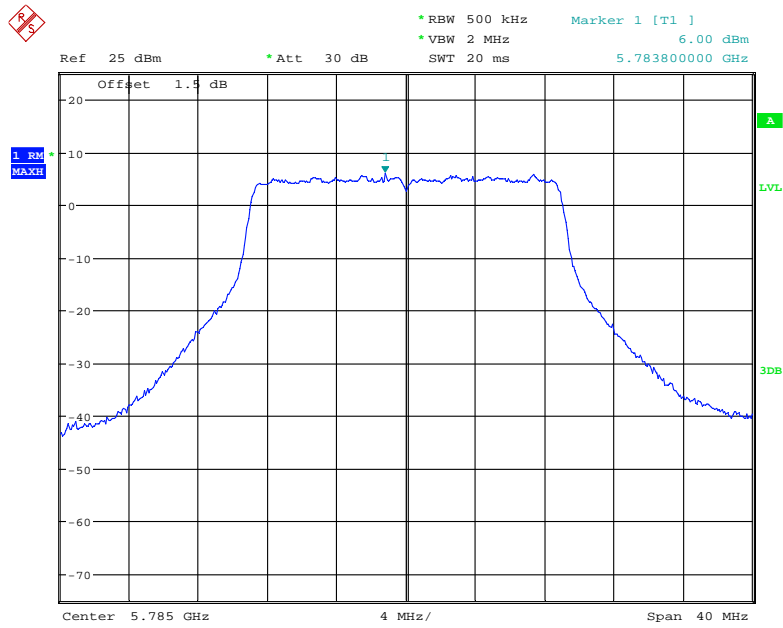

Date: 21.OCT.2020 15:31:35

802.11a High Channel

	*RBW 500 kHz	Marker 1 [T1]
	*VBW 2 MHz	10.56 dBm
Ref 25 dBm	*Att 30 dB SWT 20 ms	5.821880000 GHz

Offset 1.5 dB

Center 5.825 GHz   4 MHz/   Span 40 MHz

Date: 21.OCT.2020 15:30:47

802.11n ht20 Low Channel

	*RBW 500 kHz	Marker 1 [T1]
	*VBW 2 MHz	5.64 dBm
Ref 25 dBm	*Att 30 dB SWT 20 ms	5.747560000 GHz

Offset 1.5 dB
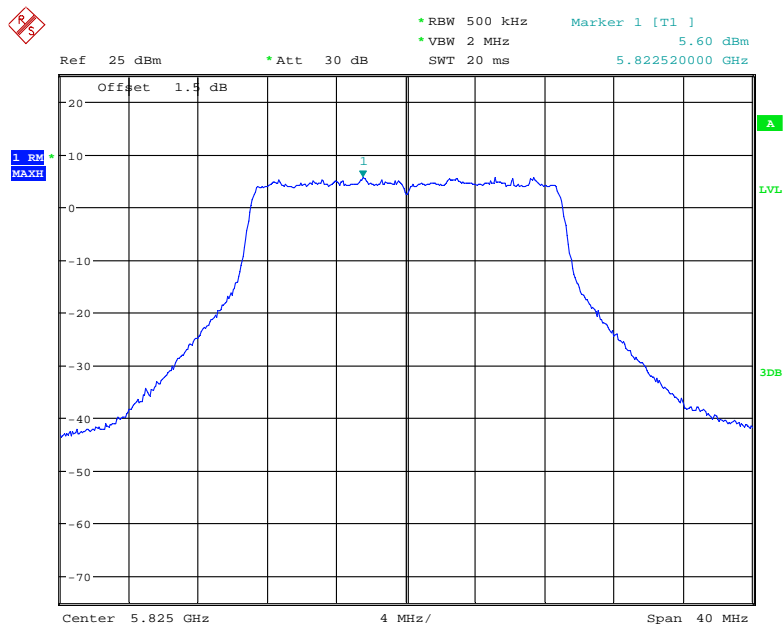
Center 5.745 GHz   4 MHz/   Span 40 MHz

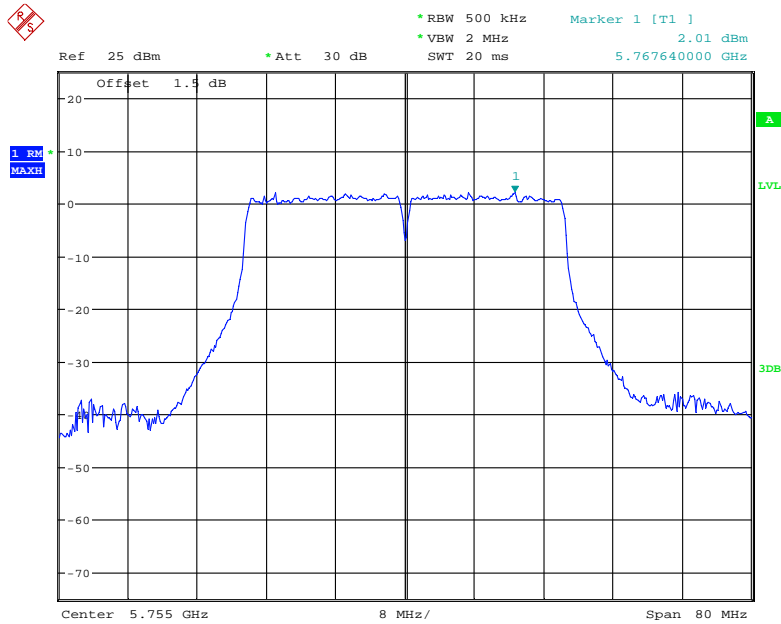Date: 21.OCT.2020 15:27:21

802.11n ht20 Middle Channel

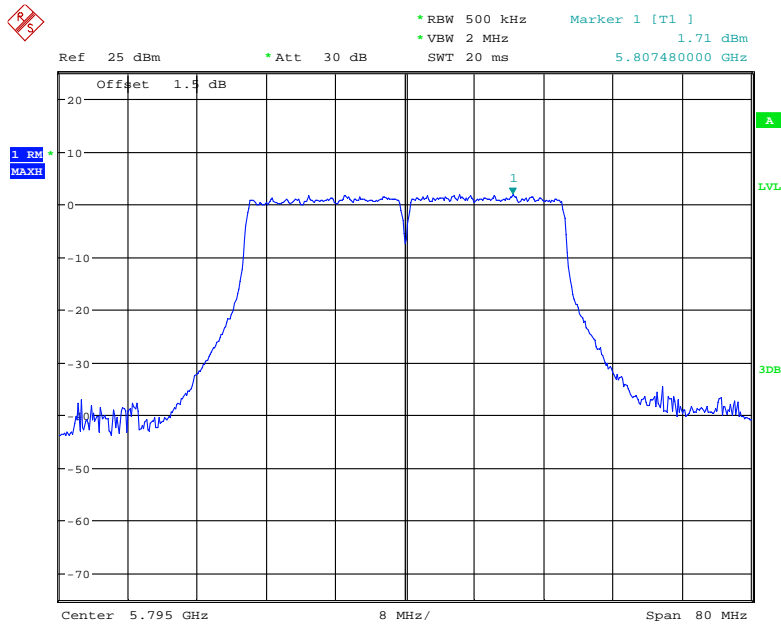Date: 21.OCT.2020 15:28:00

802.11n ht20 High Channel

Date: 21.OCT.2020 15:28:40

802.11n ht40 Low Channel
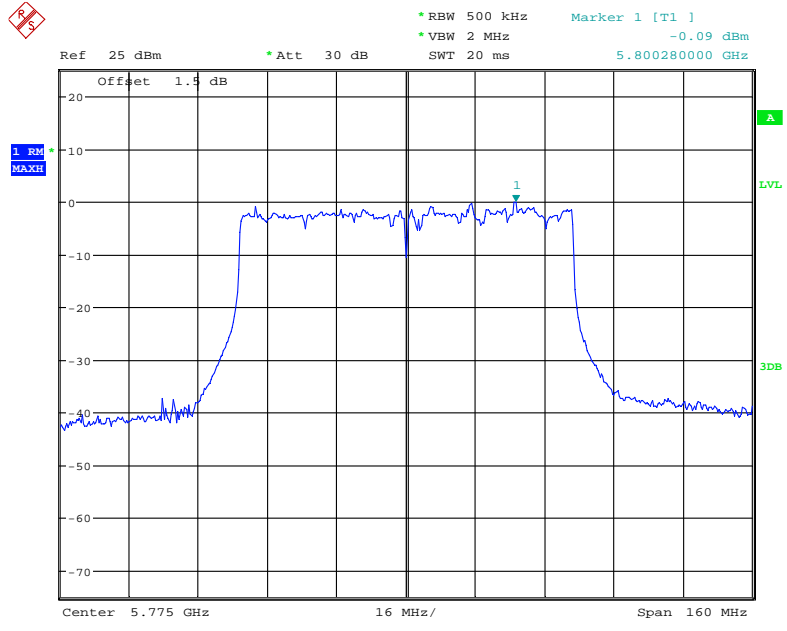

Date: 21.OCT.2020 15:34:07

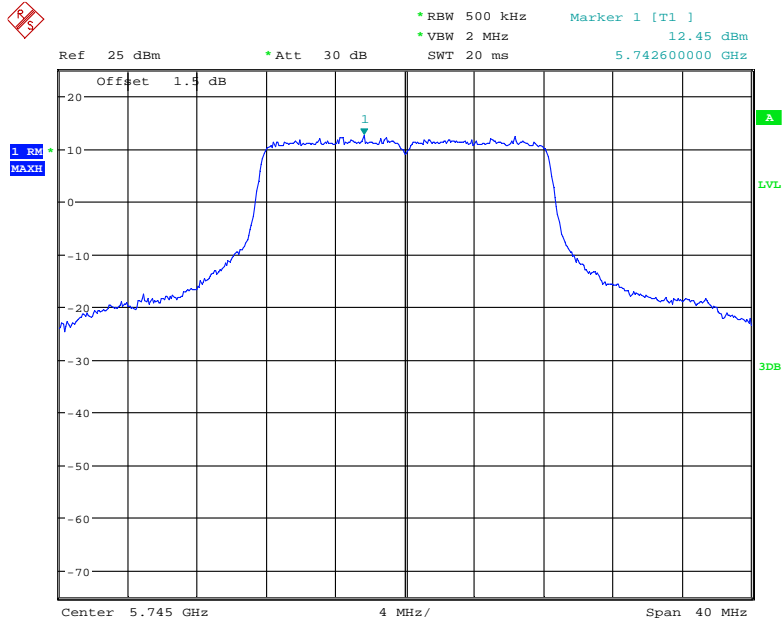## 802.11n ht40 High Channel

Date: 21.OCT.2020 15:35:02

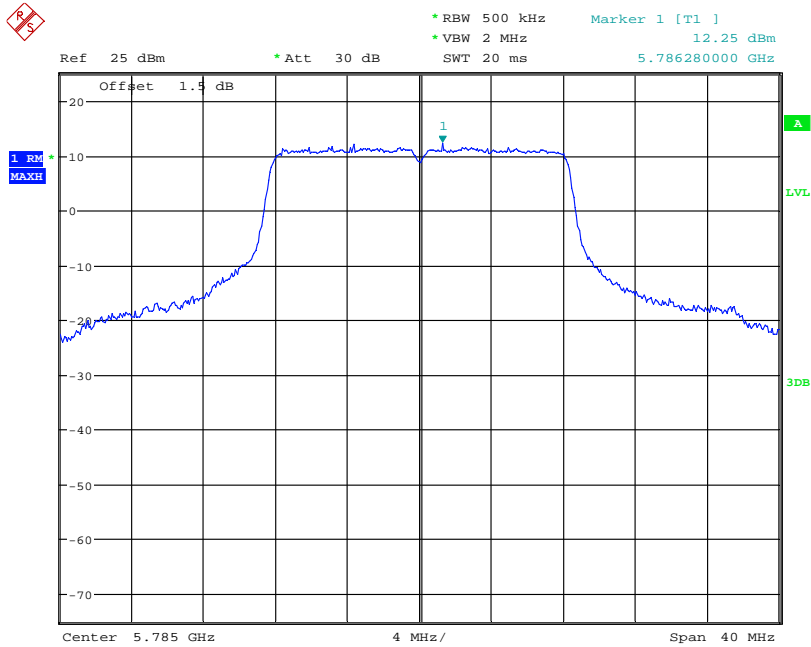## 802.11ac vht80 Middle Channel

Date: 21.OCT.2020 15:36:08
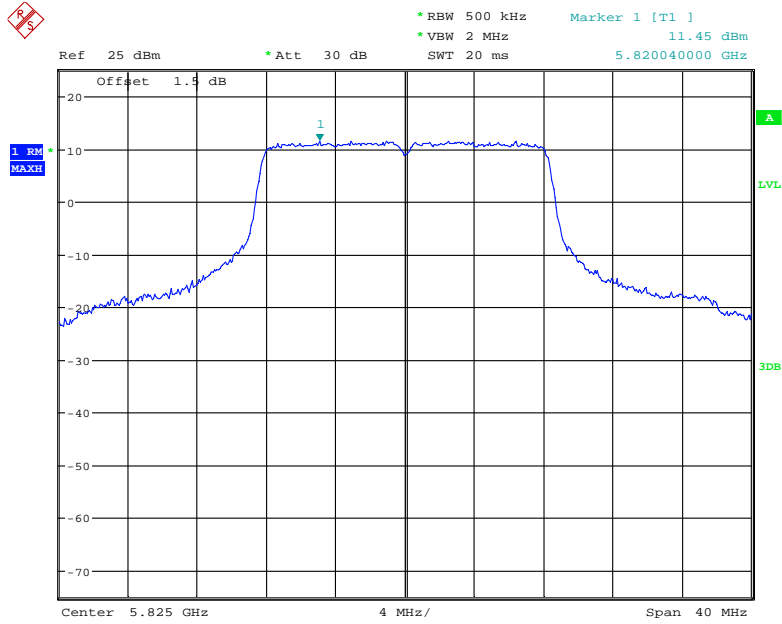
Chain 3:

802.11a Low Channel


```
                                              * RBW  500 kHz      Marker 1 [T1 ]
                                              * VBW  2 MHz                    12.45 dBm
         Ref   25 dBm          * Att  30 dB     SWT  20 ms           5.742600000 GHz
```

Date: 21.OCT.2020 15:49:33

802.11a Middle Channel


```
                                              * RBW  500 kHz      Marker 1 [T1 ]
                                              * VBW  2 MHz                    12.25 dBm
         Ref   25 dBm          * Att  30 dB     SWT  20 ms           5.786280000 GHz
```

Date: 21.OCT.2020 15:50:10

802.11a High Channel

```
                                    * RBW 500 kHz      Marker 1 [T1 ]
                                    * VBW 2 MHz                11.45 dBm
        Ref   25 dBm      * Att   30 dB    SWT  20 ms    5.820040000 GHz
```

Date: 21.OCT.2020 15:50:46

802.11n ht20 Low Channel

```
                                    * RBW 500 kHz      Marker 1 [T1 ]
                                    * VBW 2 MHz                 7.79 dBm
        Ref   25 dBm      * Att   30 dB    SWT  20 ms    5.743720000 GHz
```
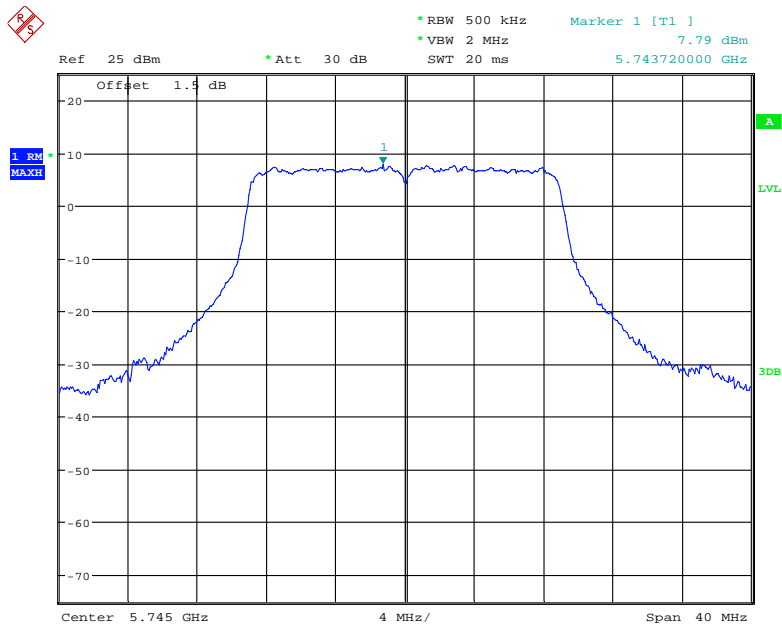
Date: 21.OCT.2020 15:53:12

802.11n ht20 Middle Channel

```
 R
 S

                              * RBW  500 kHz      Marker 1 [T1 ]
                              * VBW  2 MHz                      7.67 dBm
 Ref   25 dBm    * Att  30 dB   SWT  20 ms          5.786280000 GHz
     Offset  1.5 dB
 -20                                                                  A
          1 RM                                  1
          MAXH                                                      LVL
   10
    0
 -10
 -20
 -30                                                               3DB
 -40
 -50
 -60
 -70
 Center  5.785 GHz              4 MHz/                  Span  40 MHz
```
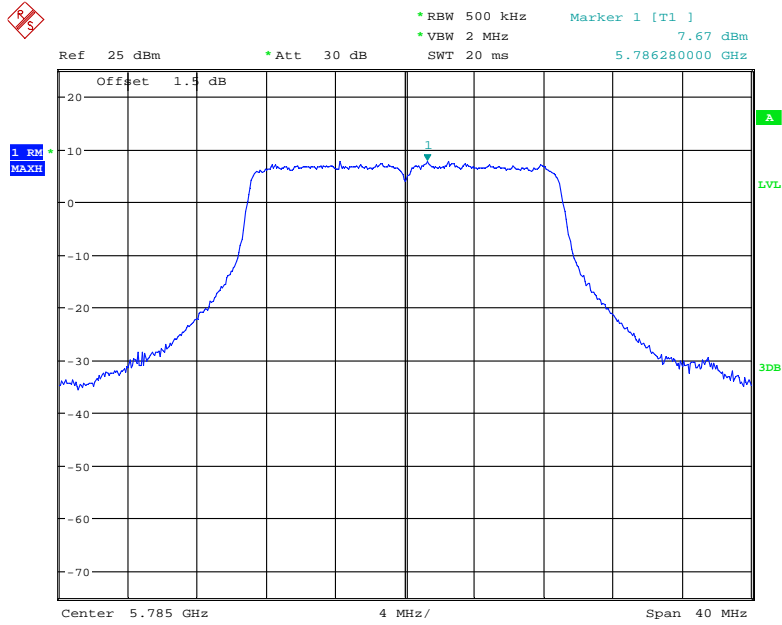
Date: 21.OCT.2020 15:52:38

802.11n ht20 High Channel

```
 R
 S

                              * RBW  500 kHz      Marker 1 [T1 ]
                              * VBW  2 MHz                      7.32 dBm
 Ref   25 dBm    * Att  30 dB   SWT  20 ms          5.826280000 GHz
     Offset  1.5 dB
 -20                                                                  A
          1 RM                                  1
          MAXH                                                      LVL
   10
    0
 -10
 -20
 -30                                                               3DB
 -40
 -50
 -60
 -70
 Center  5.825 GHz              4 MHz/                  Span  40 MHz
```
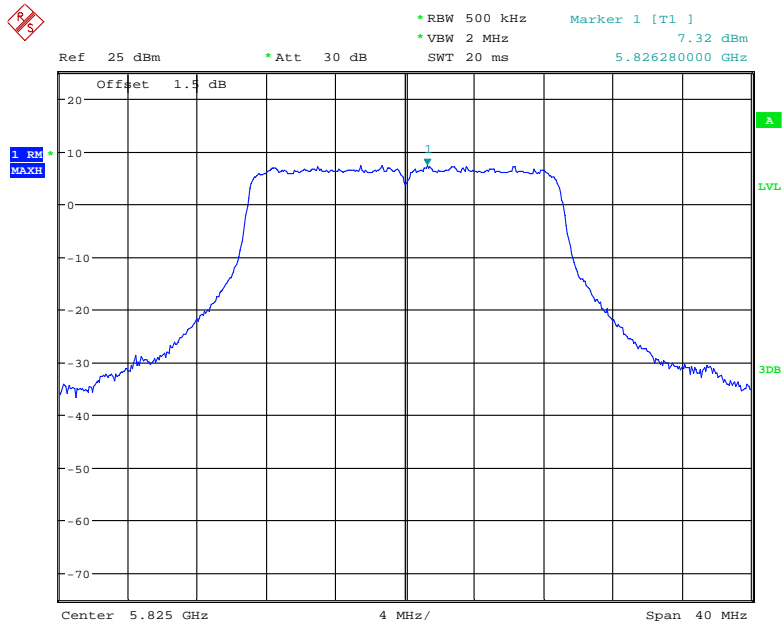
Date: 21.OCT.2020 15:51:55

802.11n ht40 Low Channel


```
                                      *RBW  500 kHz     Marker 1 [T1 ]
                                      *VBW  2 MHz                    3.95 dBm
     Ref   25 dBm         *Att  30 dB  SWT  20 ms          5.750520000 GHz
        Offset   1.5 dB
```
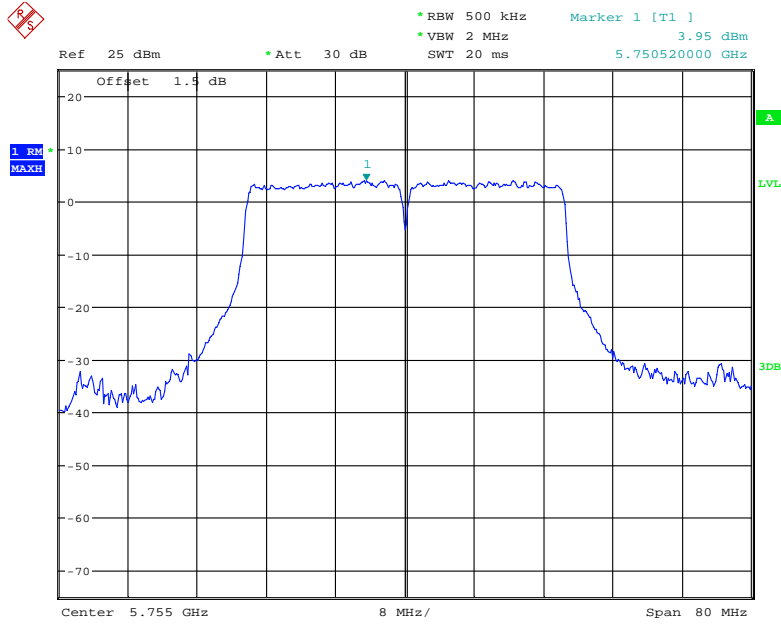
Date: 21.OCT.2020 15:54:09

802.11n ht40 High Channel


```
                                      *RBW  500 kHz     Marker 1 [T1 ]
                                      *VBW  2 MHz                    3.69 dBm
     Ref   25 dBm         *Att  30 dB  SWT  20 ms          5.792120000 GHz
        Offset   1.5 dB
```
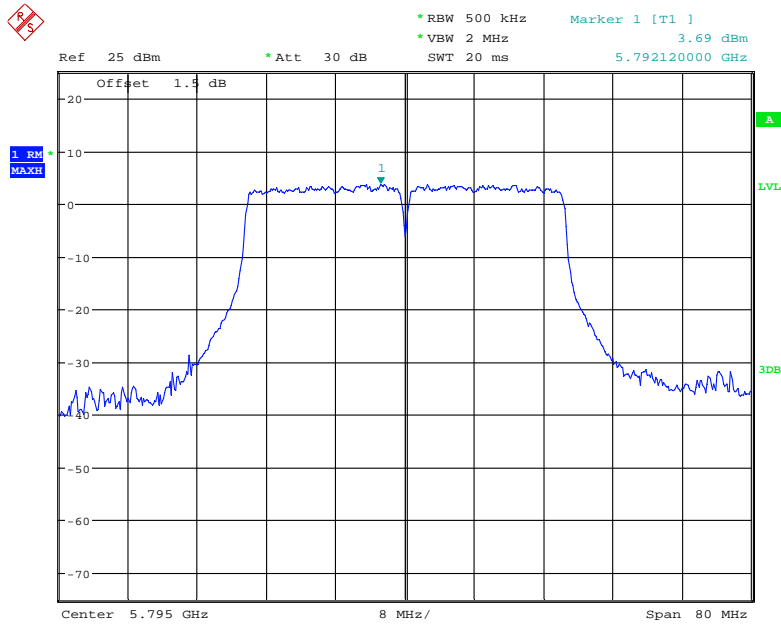
Date: 21.OCT.2020 15:54:49

802.11ac vht80 Middle Channel
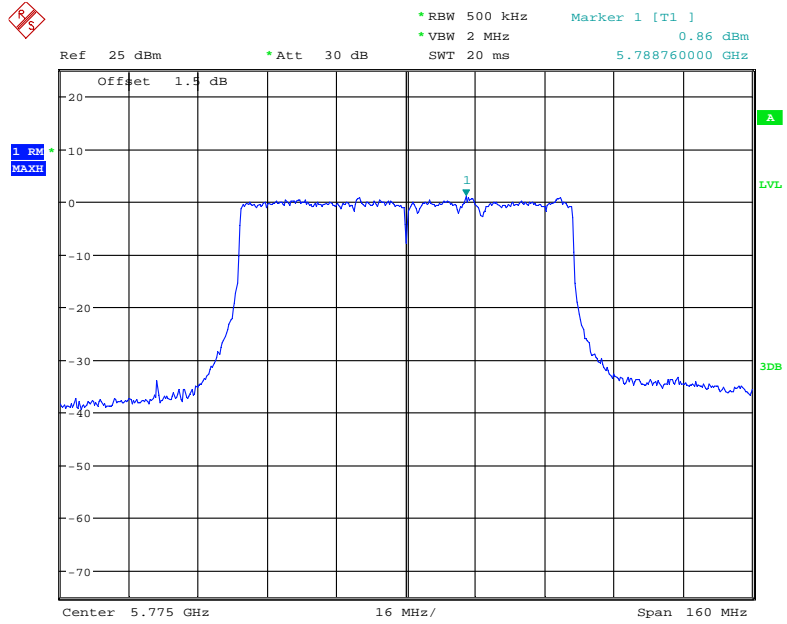
Date: 21.OCT.2020 15:55:49

21 dBi Antenna:
5150-5250 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC Limit
802.11 a	5180	10.41	10.27	8.50	8.54	/	17
	5200	12.74	12.74	11.58	11.66	/	17
	5240	12.85	12.94	11.77	12.22	/	17
802.11n ht20	5180	8.88	8.61	7.00	8.05	14.21	17
	5200	10.31	10.21	8.65	10.09	15.89	17
	5240	10.22	10.60	9.25	10.73	16.26	17
802.11n ht40	5190	1.53	0.52	-0.62	0.52	6.57	17
	5230	1.56	2.00	2.14	1.09	7.74	17
802.11ac vht80	5210	-4.95	-4.53	-5.66	-4.81	1.05	17

Note: This is a fixed point-to-point AP application, and this band is Only for FCC Use.

5250-5350MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/ISED Limit
802.11 a	5260	-8.20	-7.34	-8.40	-7.83	/	-4
	5280	-8.58	-7.96	-8.35	-8.90	/	-4
	5320	-7.94	-7.99	-8.44	-8.78	/	-4
802.11n ht20	5260	-10.64	-11.02	-11.38	-10.62	-4.88	-4
	5280	-10.88	-11.79	-12.64	-11.30	-5.58	-4
	5320	-10.22	-11.41	-12.54	-11.63	-5.35	-4
802.11n ht40	5270	-11.19	-11.23	-12.60	-11.44	-5.56	-4
	5310	-10.78	-11.69	-13.28	-11.56	-5.72	-4
802.11ac vht80	5290	-11.09	-11.20	-12.92	-11.82	-5.68	-4

5470-5725MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/ISED Limit
802.11 a	5500	-7.59	-7.88	-8.43	-8.10	/	-4
	5580	-7.58	-8.22	-8.21	-8.38	/	-4
	5700	-8.05	-7.85	-7.77	-7.25	/	-4
	5720	-7.60	-8.03	-8.31	-7.89	/	-4
802.11n ht20	5500	-10.84	-11.69	-13.64	-12.24	-5.97	-4
	5580	-10.76	-11.90	-14.31	-12.41	-6.14	-4
	5700	-10.01	-11.17	-13.22	-11.27	-5.25	-4
	5720	-10.05	-11.51	-13.82	-11.14	-5.41	-4
802.11n ht40	5510	-11.73	-12.49	-14.83	-13.33	-6.93	-4
	5550	-11.93	-13.24	-15.24	-13.15	-7.22	-4
	5670	-10.78	-12.30	-15.02	-12.47	-6.37	-4
	5710	-11.04	-13.09	-15.24	-12.47	-6.69	-4
802.11ac vht80	5530	-12.69	-13.27	-15.98	-14.28	-7.87	-4
	5610	-11.74	-12.72	-14.98	-12.95	-6.93	-4
	5690	-11.38	-12.65	-15.50	-13.15	-6.91	-4

5725-5850 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/500kHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/RSS Limit
802.11 a	5745	11.49	11.41	11.05	12.45	/	30
	5785	10.73	11.18	10.18	12.25	/	30
	5825	10.61	11.17	10.56	11.45	/	30
802.11n ht20	5745	9.74	6.92	5.64	7.79	13.80	30
	5785	9.39	6.59	6.00	7.67	13.63	30
	5825	9.01	6.48	5.60	7.32	13.31	30
802.11n ht40	5755	6.06	3.77	2.01	3.95	10.21	30
	5795	5.44	2.77	1.71	3.69	9.64	30
802.11ac vht80	5775	3.58	1.01	-0.09	0.86	7.59	30

Note: Note: This is a fixed point-to-point AP application.For 5.8G band, same power level setting for all antenna configurations, the test plots please refer to 13dBi antenna part.

Note:

The maximum antenna gain is 21dBi in 5GHz band. Two sets of identical Sector Antenna should be installed. Each Sector Antenna has two Cross-polarized antennas, per KDB 662911 D01 Multiple Transmitter Output v02r01, Clause F) 2):

b) *Sectorized antenna systems.* In sectorized antenna systems in which each antenna is used to transmit different data in a different direction from the other antennas, directional gain is equal to the gain of an individual sector antenna.

c) *Cross-polarized antennas.* For a system in which the antennas have fixed orientations relative to one another that ensure that the antennas are cross-polarized regardless of any user actions, the directional gain is computed as follows.

(i) *Cross-polarized antennas with $N_{ANT} = 2$.* In the case of a transmitter with only two outputs driving a pair of antennas that are cross-polarized (*e.g.*, vertical and horizontal or left-circular and right-circular), directional gain is the gain of an individual antenna. If the two antennas have different gains, the larger gain applies.

So:

Directional gain = G_{ANT} = 21dBi

For 5.8GHz band, If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
Method SA-3 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01was used for PSD test.

5150-5250MHz, Chain 0:
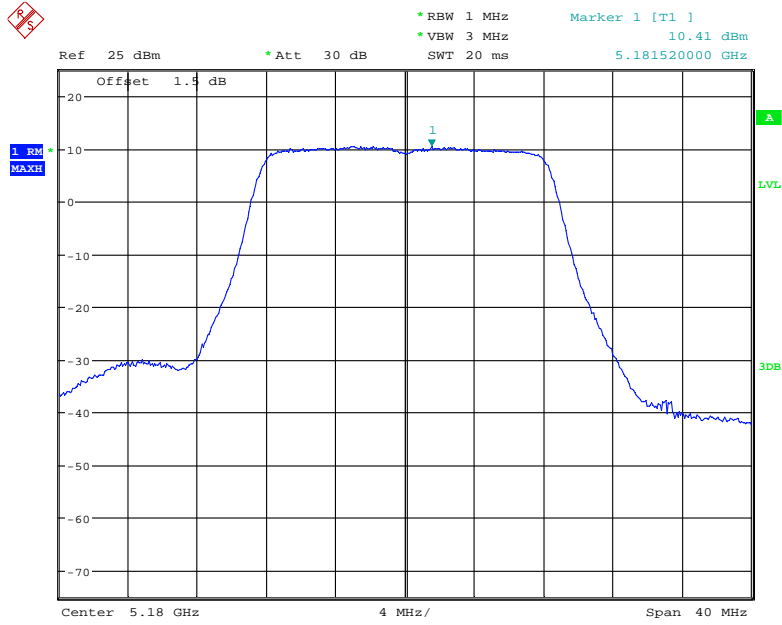
802.11a Low Channel

Date: 22.OCT.2020 11:14:50

802.11a Middle Channel
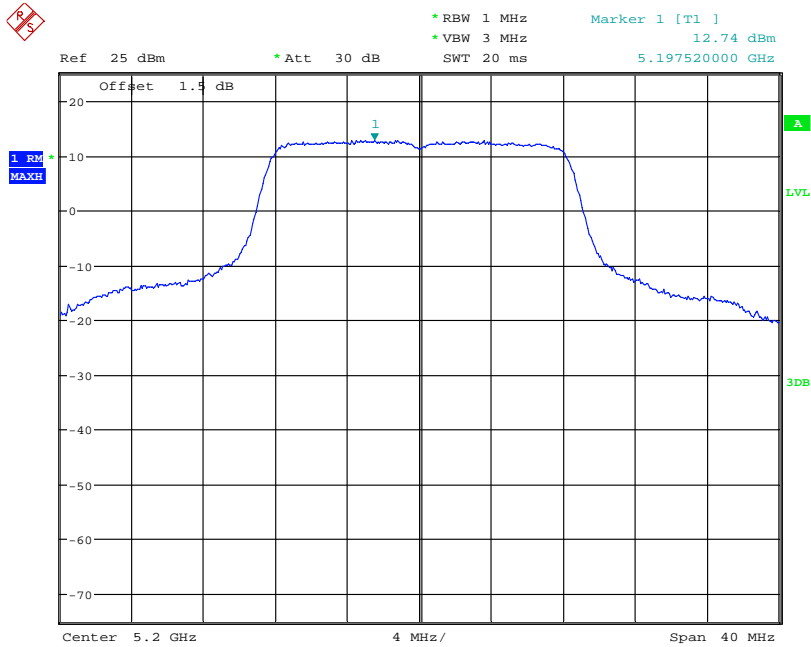
Date: 22.OCT.2020 09:10:04

802.11a High Channel

```
R
S

                                    *RBW 1 MHz        Marker 1 [T1 ]
                                    *VBW 3 MHz              12.85 dBm
      Ref  25 dBm        *Att 30 dB   SWT 20 ms      5.235840000 GHz
        Offset  1.5 dB
   -20                                                              A

 1 RM
 MAXH  -10                                                          LVL

    0

  -10

  -20

  -30                                                              3DB

  -40

  -50

  -60

  -70

      Center 5.24 GHz          4 MHz/              Span 40 MHz
```
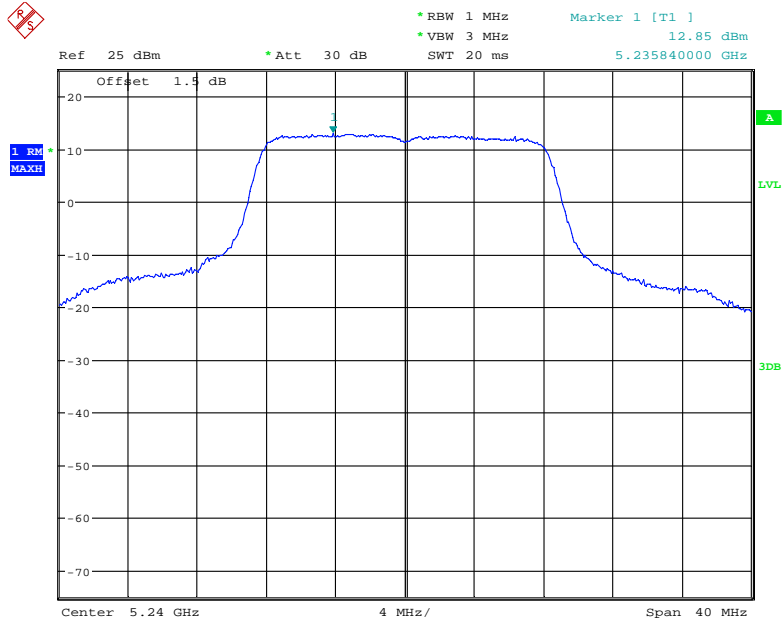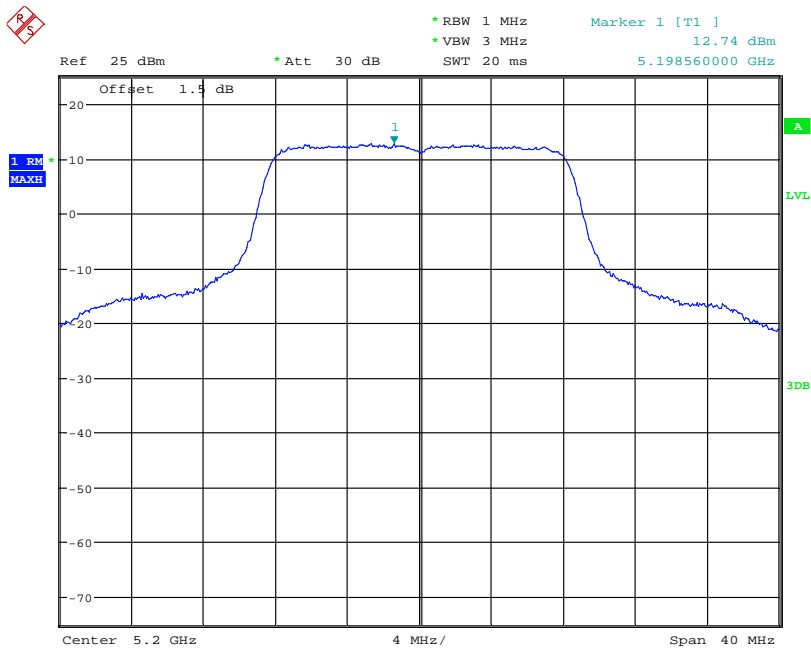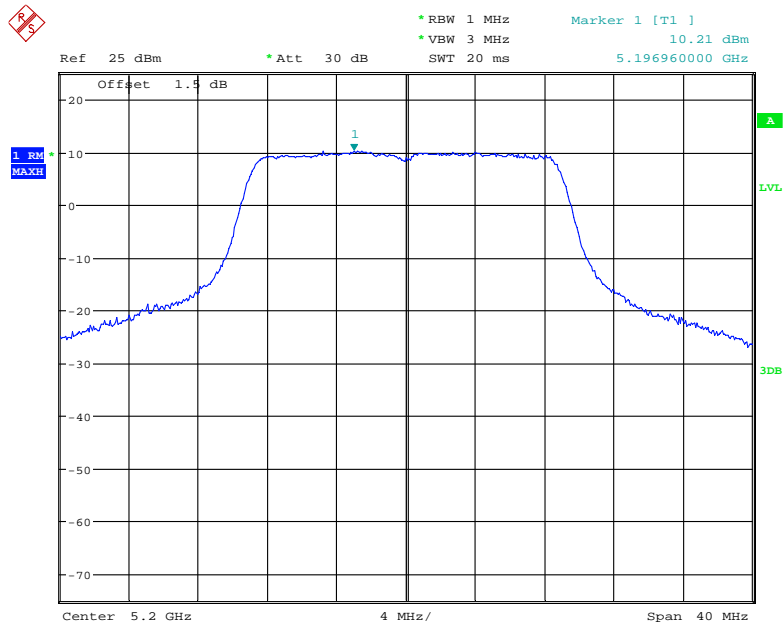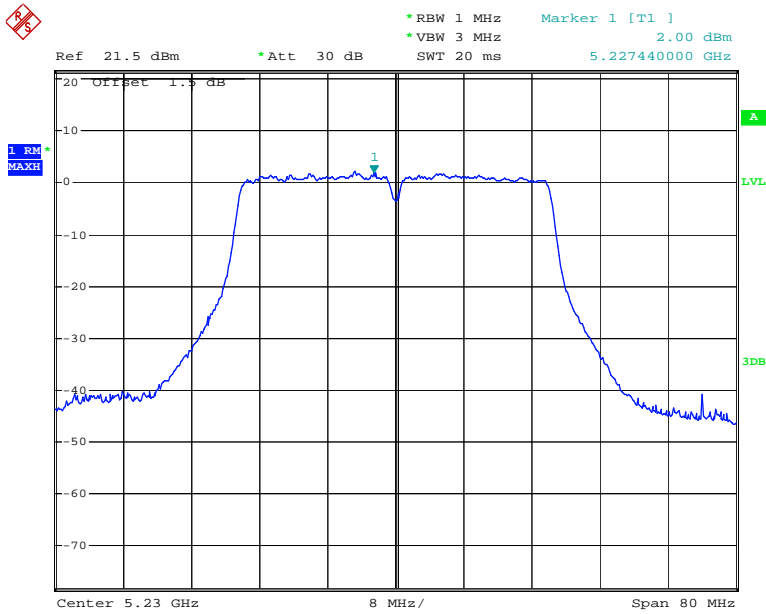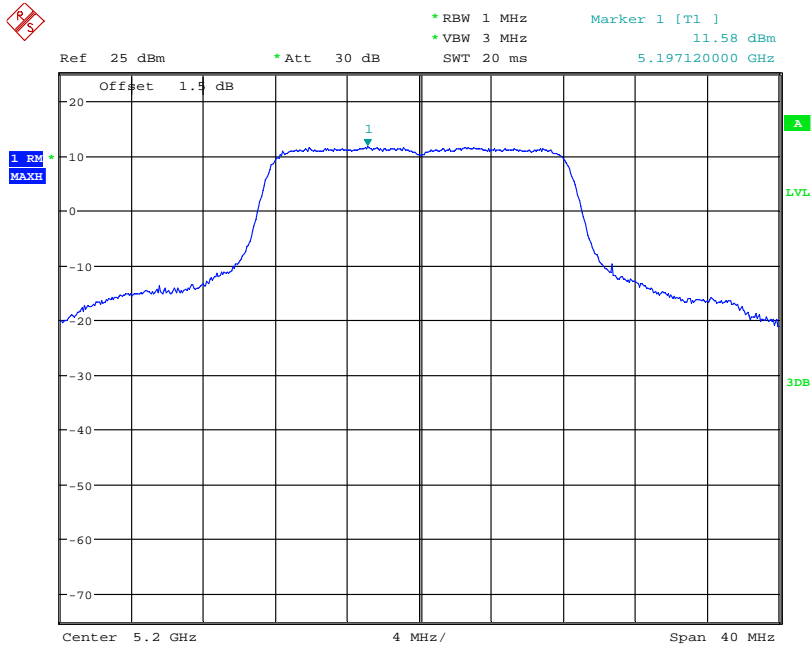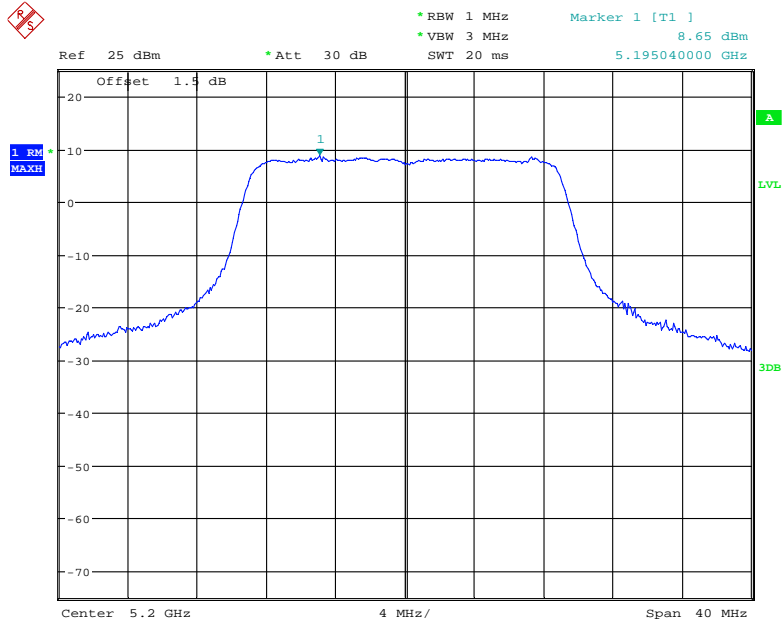
Date: 22.OCT.2020 09:12:43

802.11n ht20 Low Channel

```
R
S

                                    *RBW 1 MHz        Marker 1 [T1 ]
                                    *VBW 3 MHz               8.88 dBm
      Ref  25 dBm        *Att 30 dB   SWT 20 ms      5.178640000 GHz
        Offset  1.5 dB
   -20                                                              A

 1 RM
 MAXH   10                                                          LVL

    0

  -10

  -20

  -30                                                              3DB

  -40

  -50

  -60

  -70

      Center 5.18 GHz          4 MHz/              Span 40 MHz
```
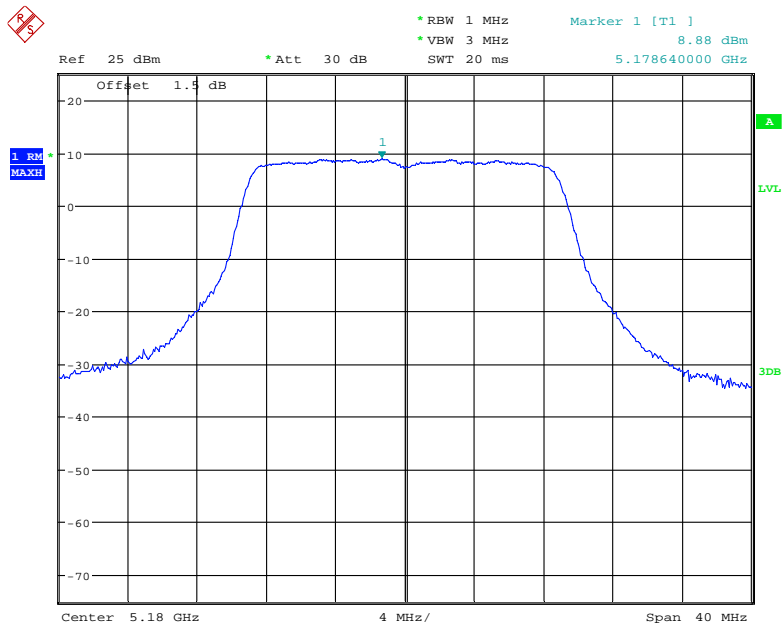
Date: 22.OCT.2020 11:07:16

802.11n ht20 Middle Channel

```
                                        *RBW  1 MHz        Marker 1 [T1 ]
                                        *VBW  3 MHz                10.31 dBm
        Ref   25 dBm        *Att  30 dB  SWT  20 ms         5.195280000 GHz
            Offset  1.5 dB
```
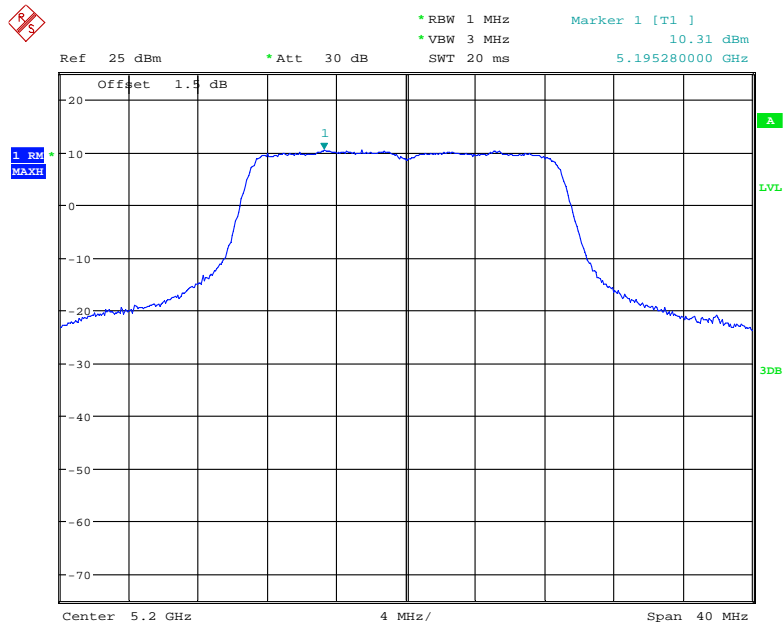
Date: 22.OCT.2020 09:22:15

802.11n ht20 High Channel

```
                                        *RBW  1 MHz        Marker 1 [T1 ]
                                        *VBW  3 MHz                10.22 dBm
        Ref   25 dBm        *Att  30 dB  SWT  20 ms         5.238800000 GHz
            Offset  1.5 dB
```
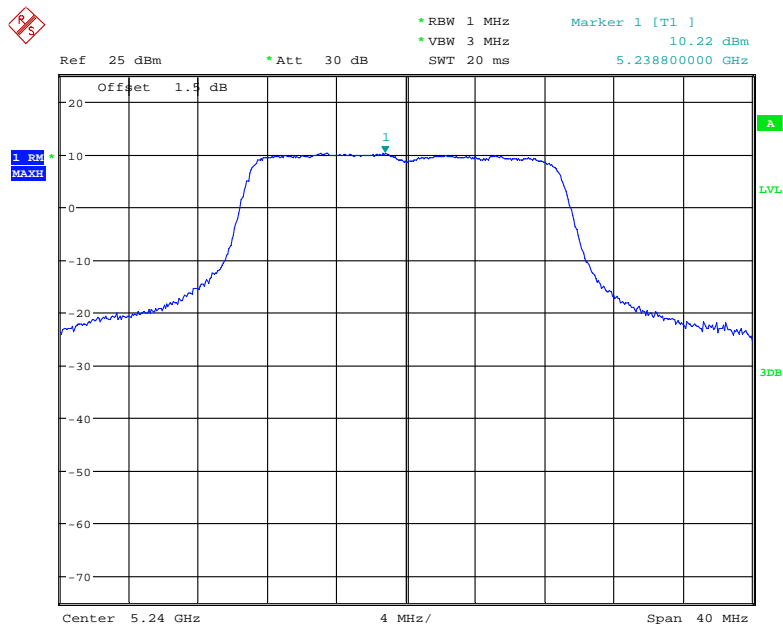
Date: 22.OCT.2020 09:18:23

802.11n ht40 Low Channel
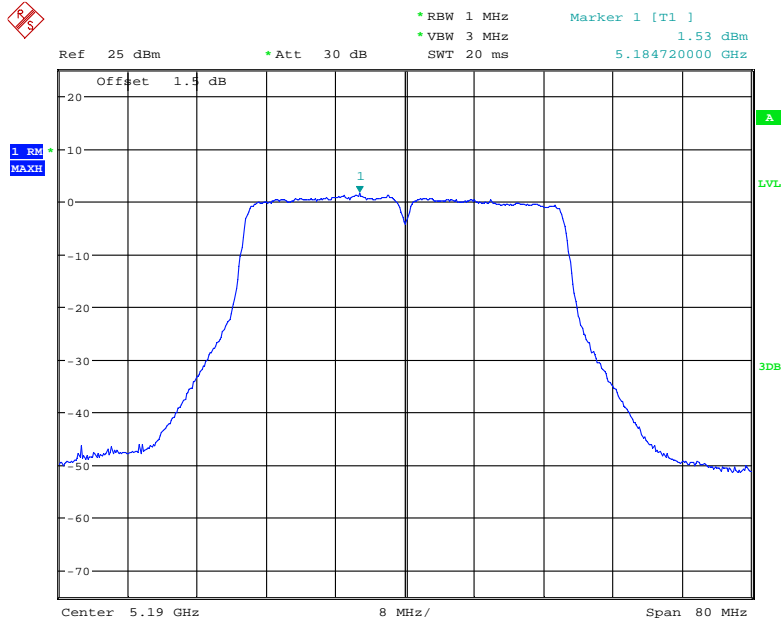
Date: 22.OCT.2020 11:05:17
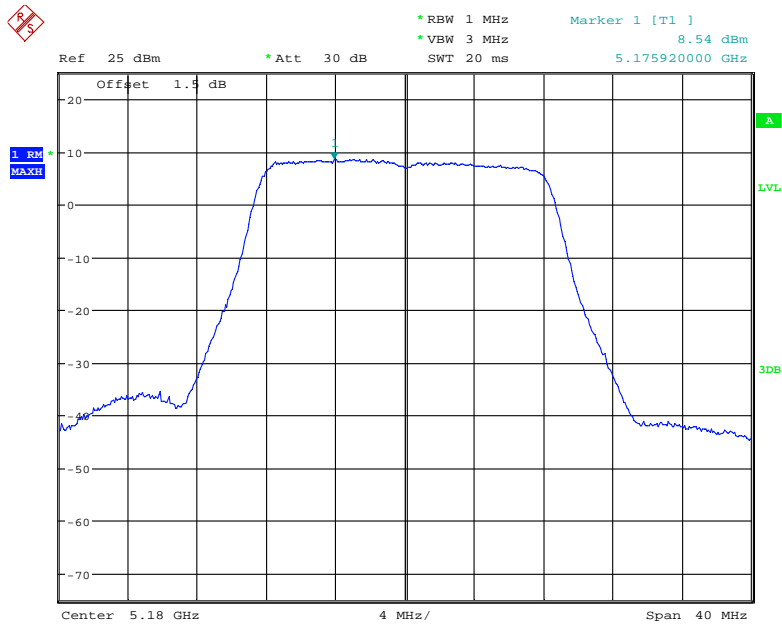
802.11n ht40 High Channel
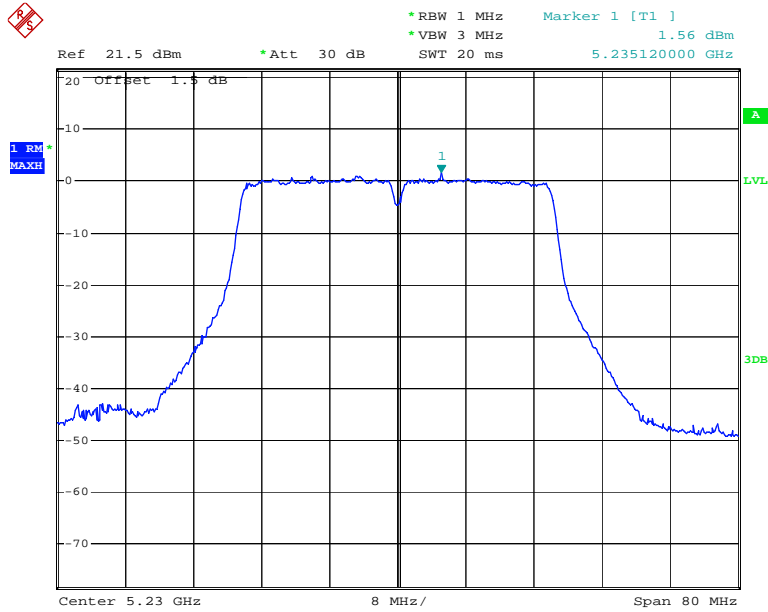
Date: 30.DEC.2020 20:31:27

802.11ac vht80 Middle Channel


```
                                    *RBW  1 MHz      Marker 1 [T1 ]
                                    *VBW  3 MHz                   -4.95 dBm
        Ref   25 dBm      *Att   30 dB    SWT  20 ms      5.212880000 GHz
```
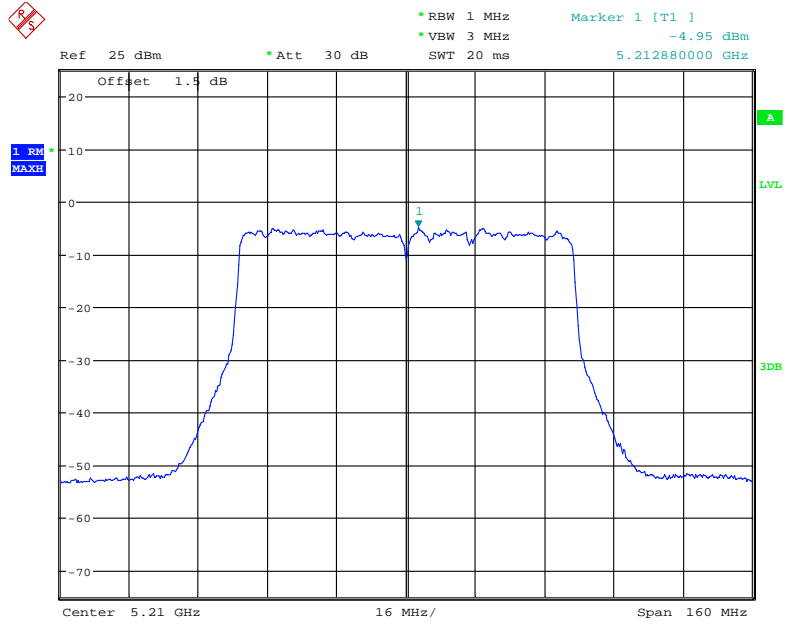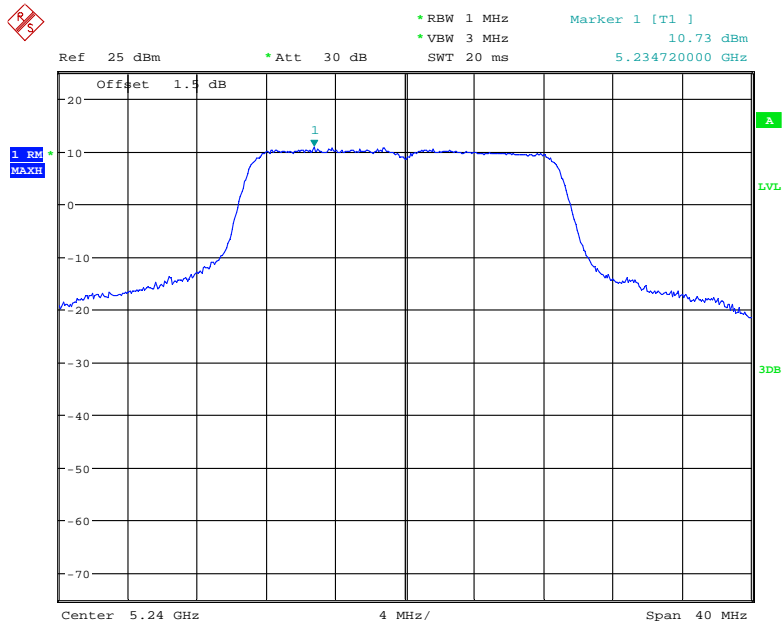
Date: 22.OCT.2020 11:00:51

Chain 1:

802.11a Low Channel

	* RBW 1 MHz	Marker 1 [T1]
	* VBW 3 MHz	10.27 dBm
Ref 25 dBm	* Att 30 dB SWT 20 ms	5.176160000 GHz

Offset 1.5 dB

```
  20
  10    A
   0    LVL
 -10
 -20
 -30    3DB
 -40
 -50
 -60
 -70
```

Center 5.18 GHz   4 MHz/   Span 40 MHz
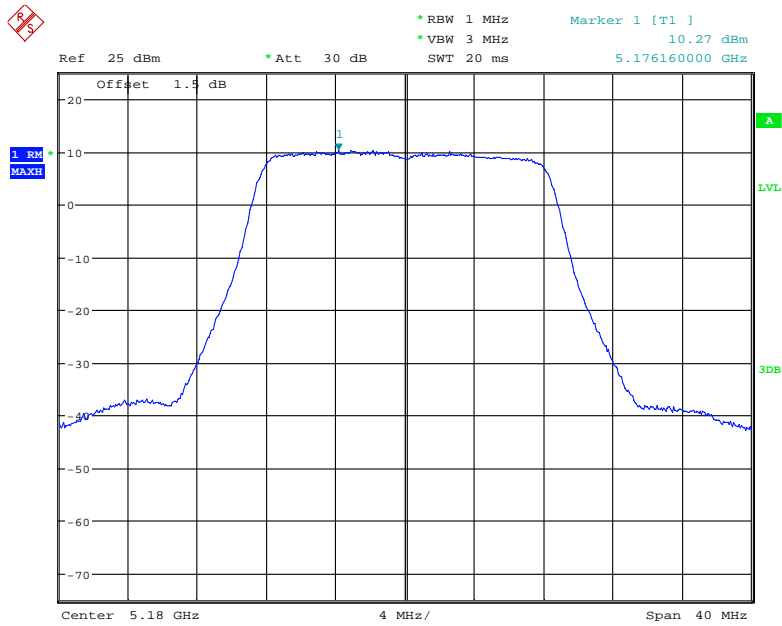
Date: 22.OCT.2020 11:21:49

802.11a Middle Channel

	* RBW 1 MHz	Marker 1 [T1]
	* VBW 3 MHz	12.74 dBm
Ref 25 dBm	* Att 30 dB SWT 20 ms	5.198560000 GHz

Offset 1.5 dB

```
  20
  10    A
   0    LVL
 -10
 -20
 -30    3DB
 -40
 -50
 -60
 -70
```

Center 5.2 GHz   4 MHz/   Span 40 MHz

Date: 22.OCT.2020 09:55:01

802.11a High Channel
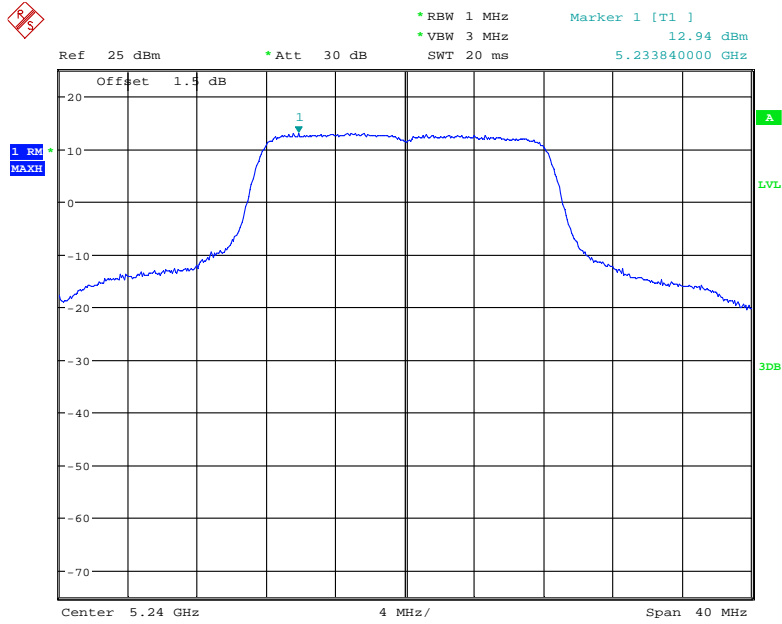
Date: 22.OCT.2020 09:55:26

802.11n ht20 Low Channel
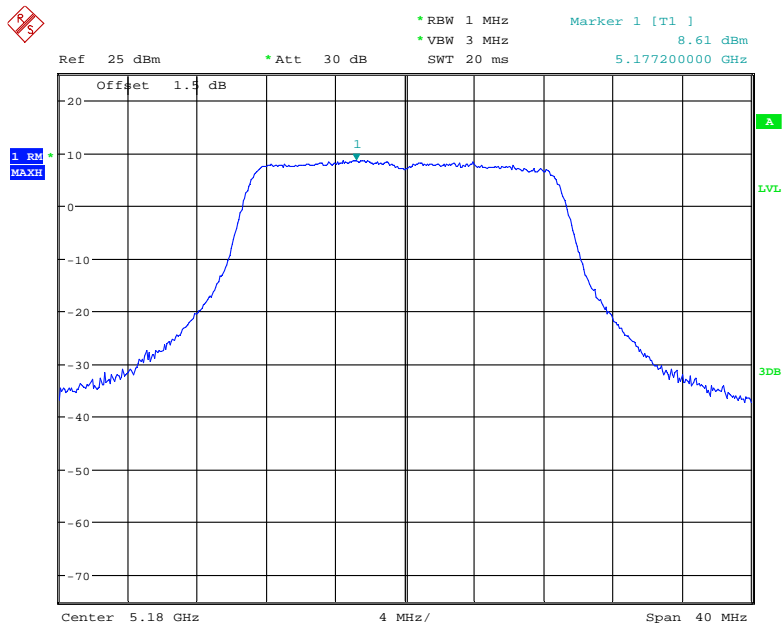
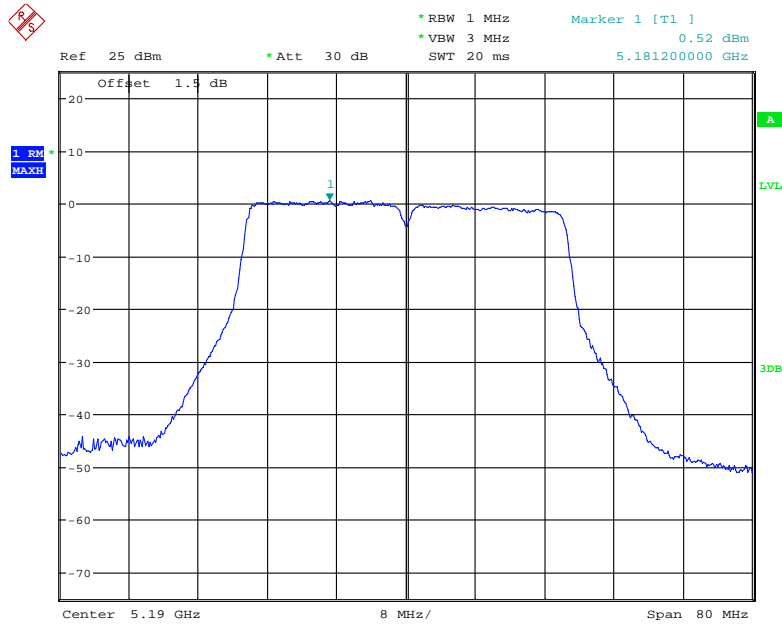Date: 22.OCT.2020 11:21:03

802.11n ht20 Middle Channel

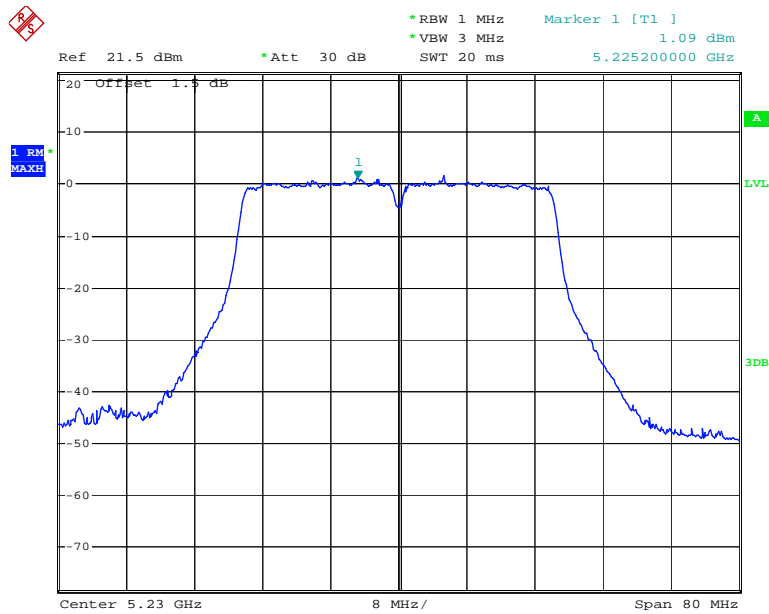

Date: 22.OCT.2020 09:56:50

802.11n ht20 High Channel
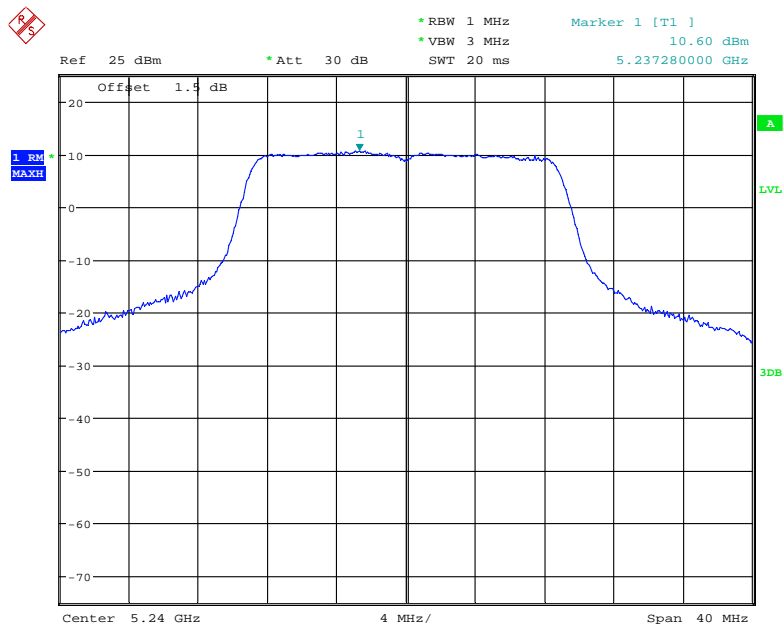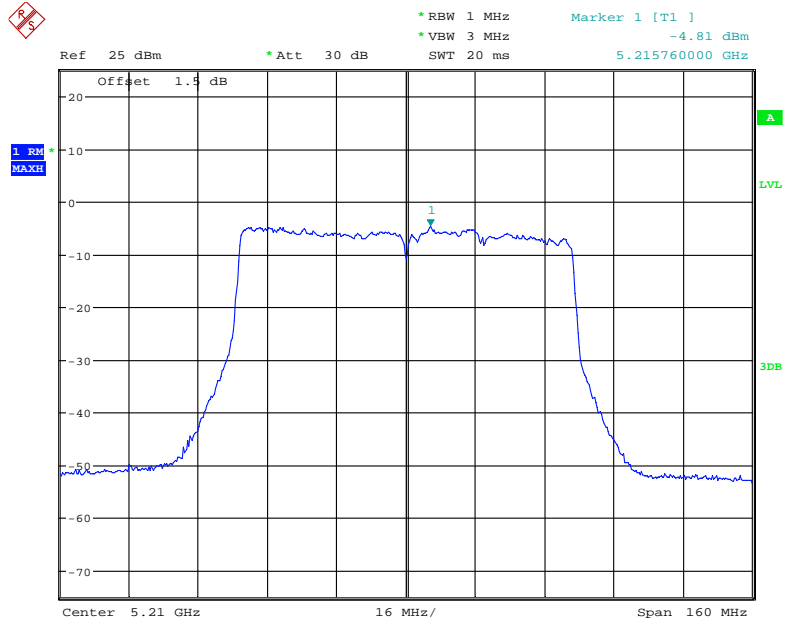

Date: 22.OCT.2020 09:56:22

802.11n ht40 Low Channel
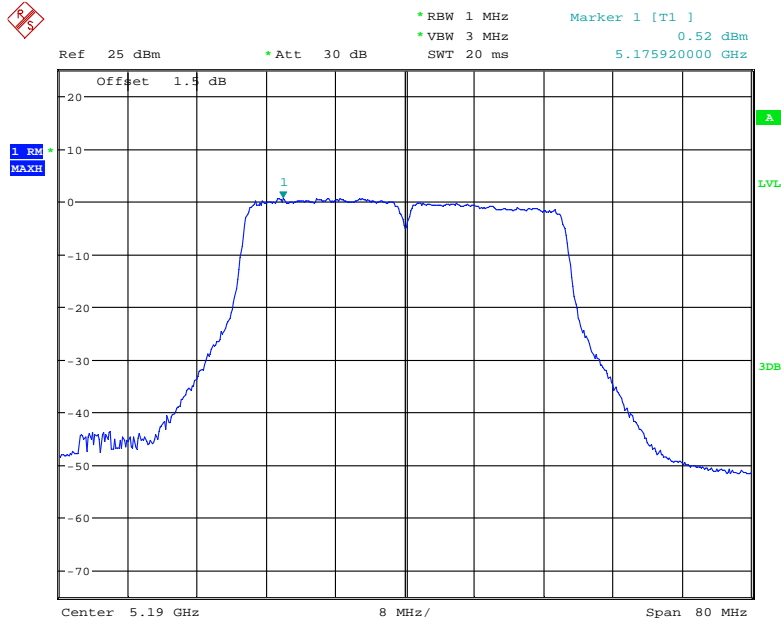
Date: 22.OCT.2020 11:20:27
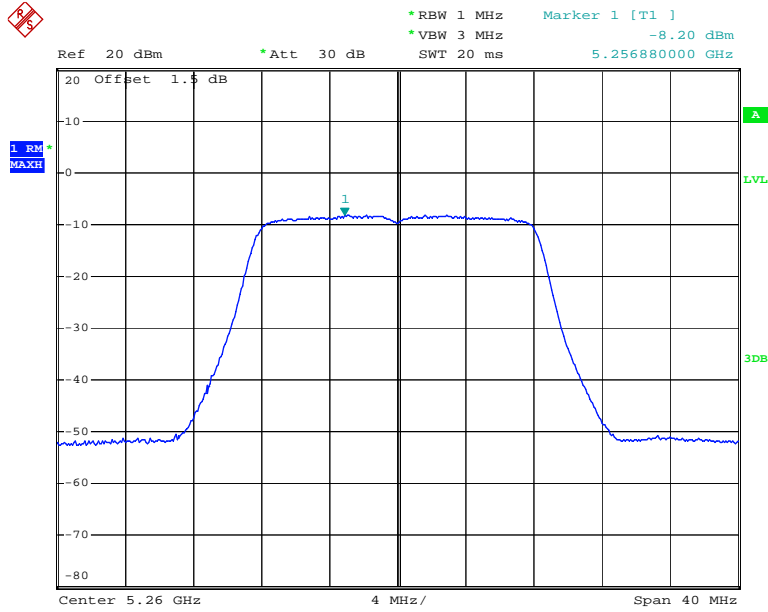
802.11n ht40 High Channel

Date: 30.DEC.2020 20:30:42

802.11ac vht80 Middle Channel


```
                                          *RBW  1 MHz        Marker 1 [T1 ]
                                          *VBW  3 MHz                 -4.53 dBm
          Ref   25 dBm        *Att  30 dB  SWT  20 ms        5.177360000 GHz

          Offset   1.5 dB                                                    A

  20

1 RM  10                                                                    LVL
MAXH
    0

  -10

  -20

  -30                                                                       3DB

  -40

  -50

  -60

  -70

        Center  5.21 GHz            16 MHz/            Span  160 MHz
```
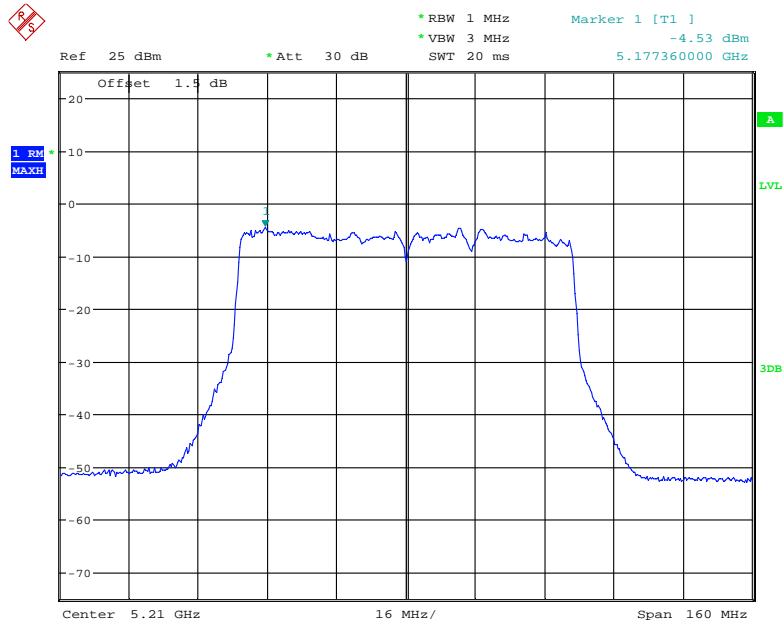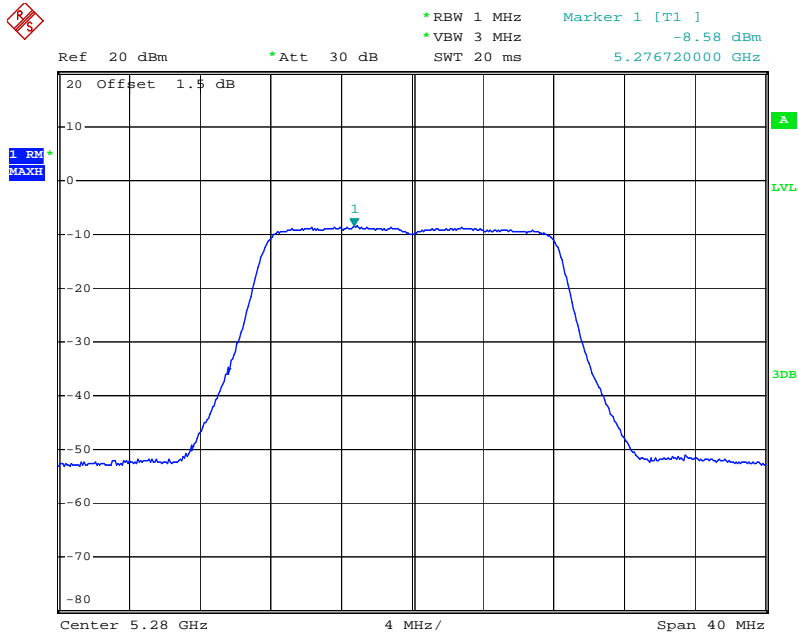
Date: 22.OCT.2020 11:19:46

Chain 2:

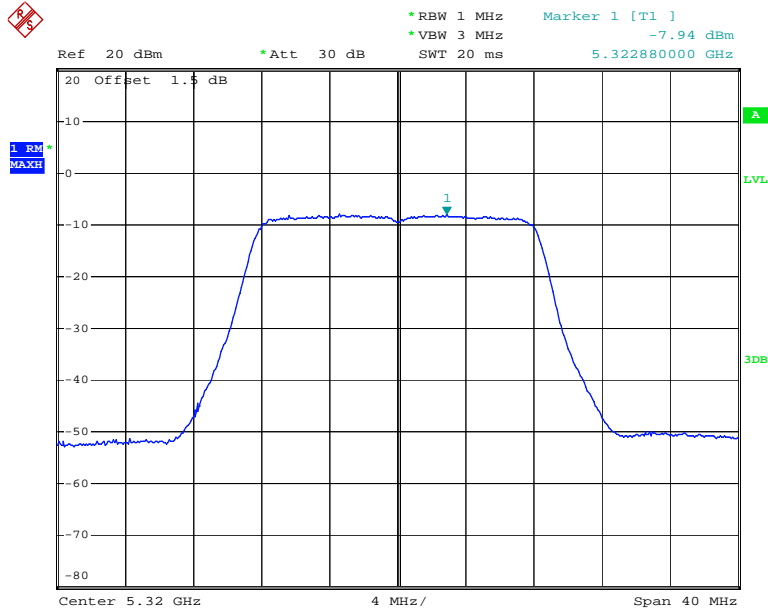## 802.11a Low Channel
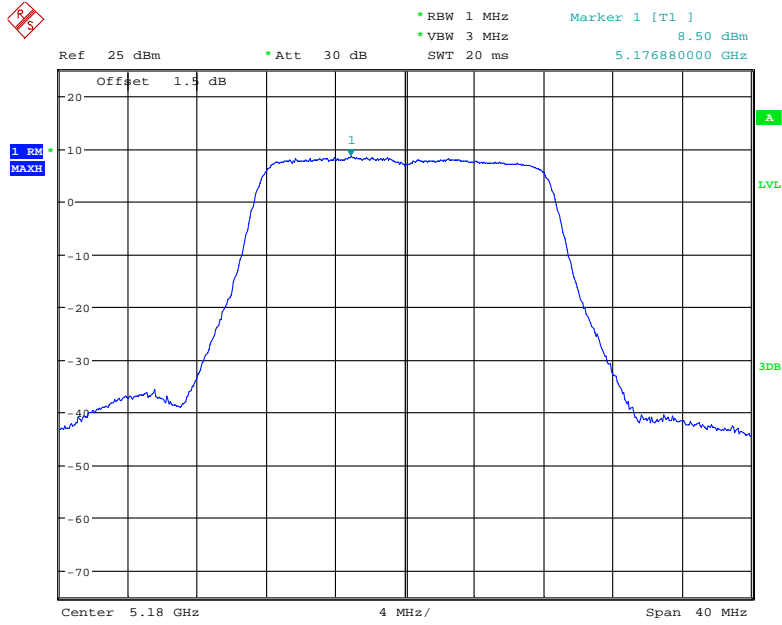
Date: 22.OCT.2020 11:13:19

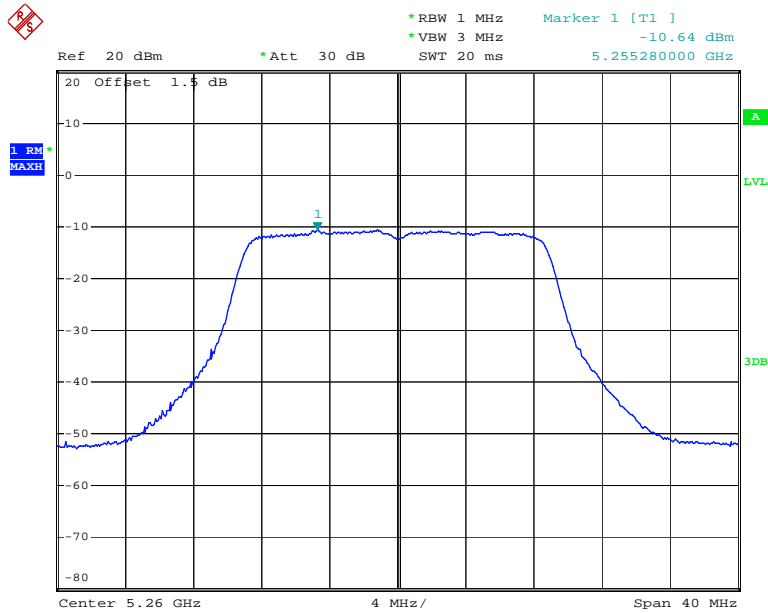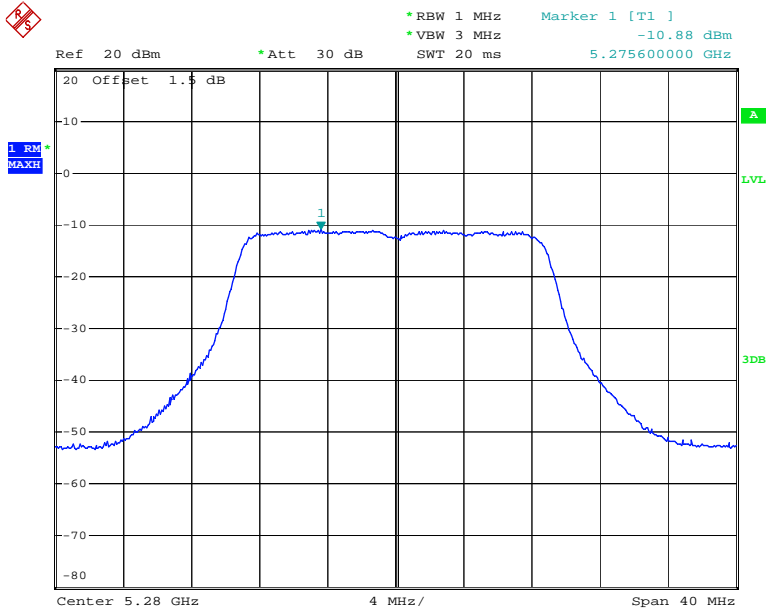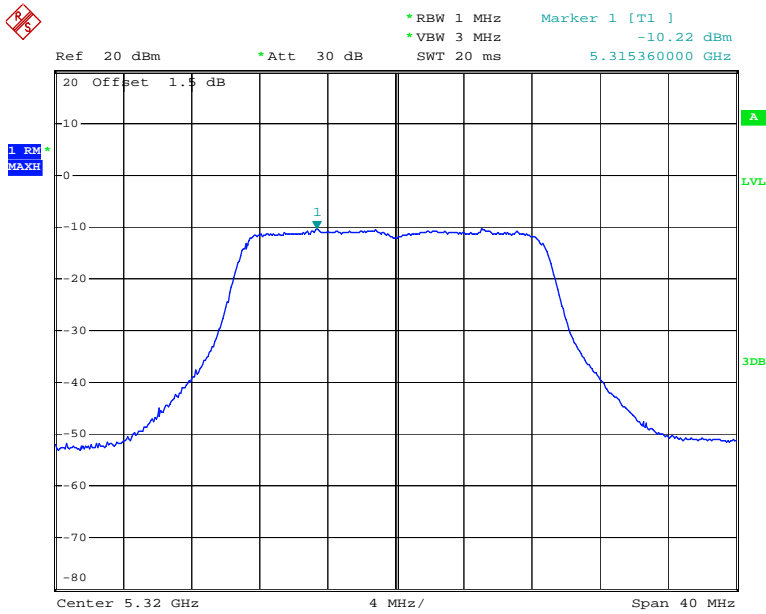## 802.11a Middle Channel

Date: 22.OCT.2020 10:10:50

802.11a High Channel
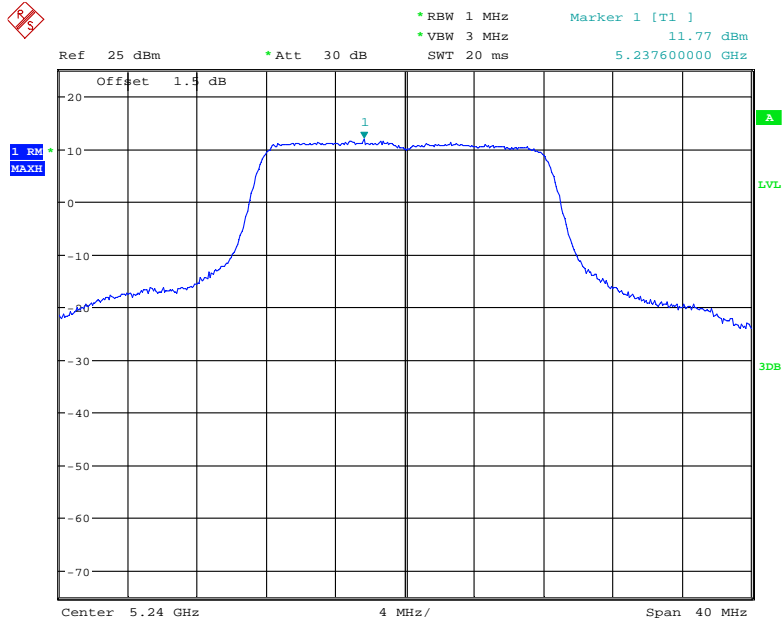
Date: 22.OCT.2020 10:11:19

802.11n ht20 Low Channel
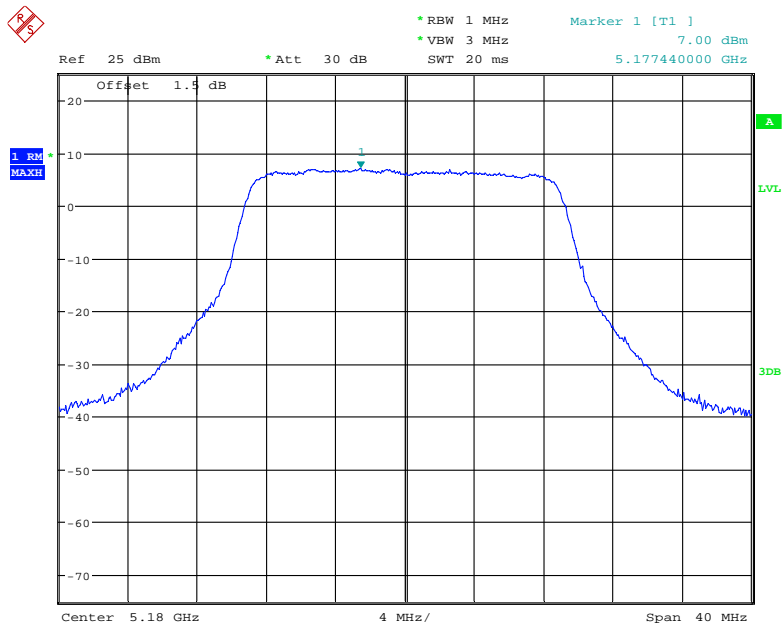
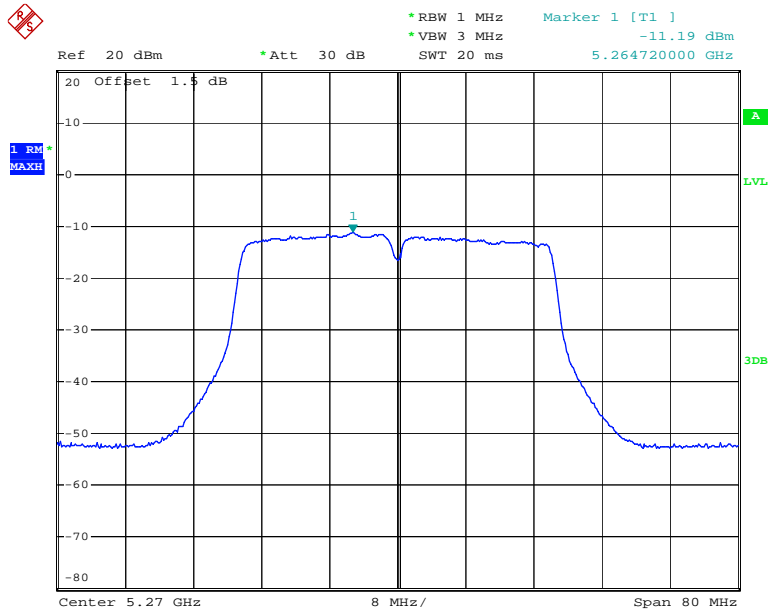Date: 22.OCT.2020 11:12:30

802.11n ht20 Middle Channel

```
                                    *RBW  1 MHz       Marker 1 [T1 ]
                                    *VBW  3 MHz                 8.65 dBm
    Ref   25 dBm        *Att  30 dB  SWT  20 ms        5.195040000 GHz
       Offset   1.5 dB
```



```
Center  5.2 GHz              4 MHz/                 Span  40 MHz
```

Date: 22.OCT.2020 10:13:05

802.11n ht20 High Channel

```
                                    *RBW  1 MHz       Marker 1 [T1 ]
                                    *VBW  3 MHz                 9.25 dBm
    Ref   25 dBm        *Att  30 dB  SWT  20 ms        5.235280000 GHz
       Offset   1.5 dB
```



```
Center  5.24 GHz             4 MHz/                 Span  40 MHz
```
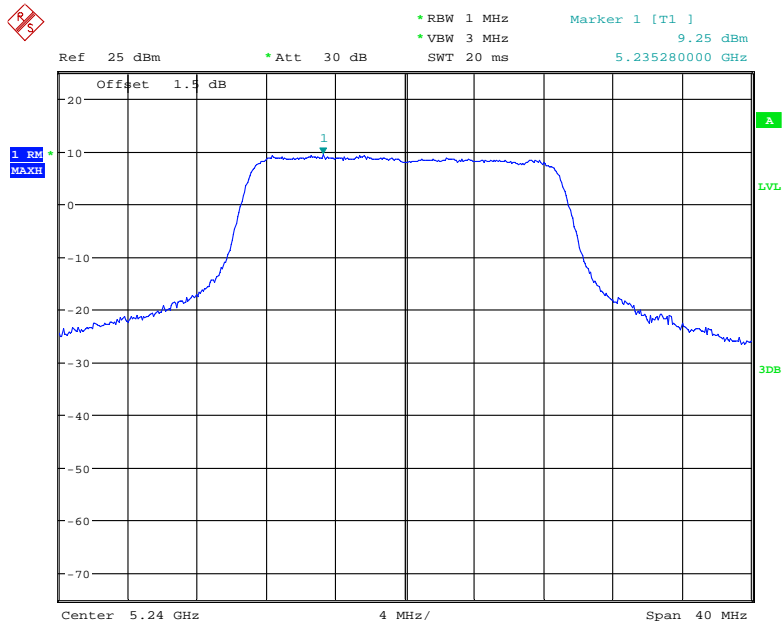
Date: 22.OCT.2020 10:12:37

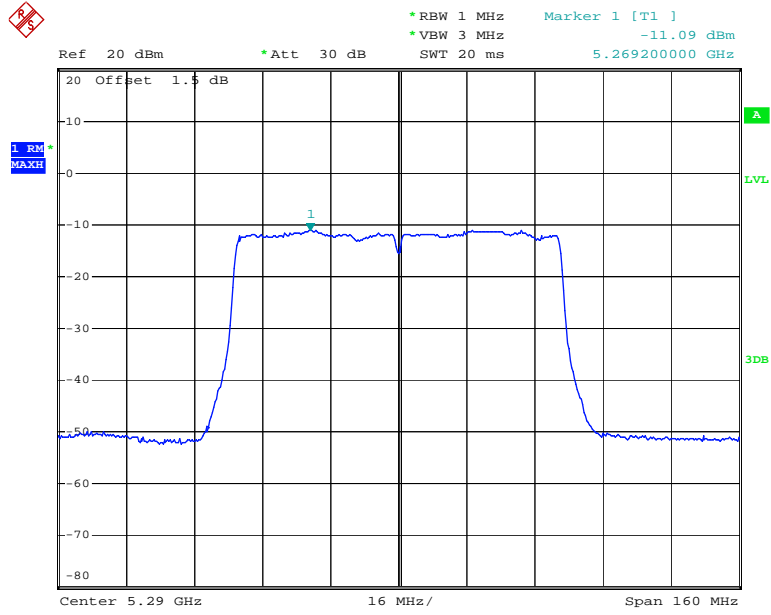## 802.11n ht40 Low Channel
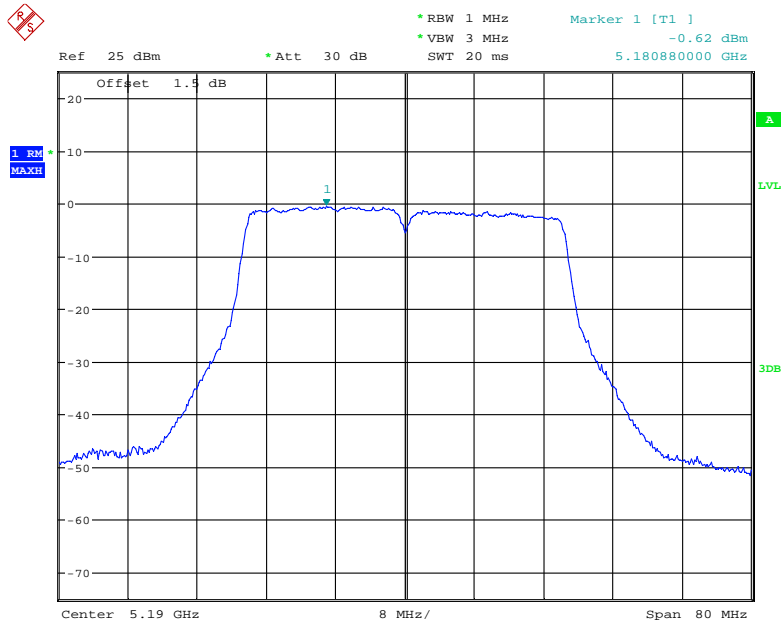
Date: 22.OCT.2020 11:11:32

802.11n ht40 High Channel
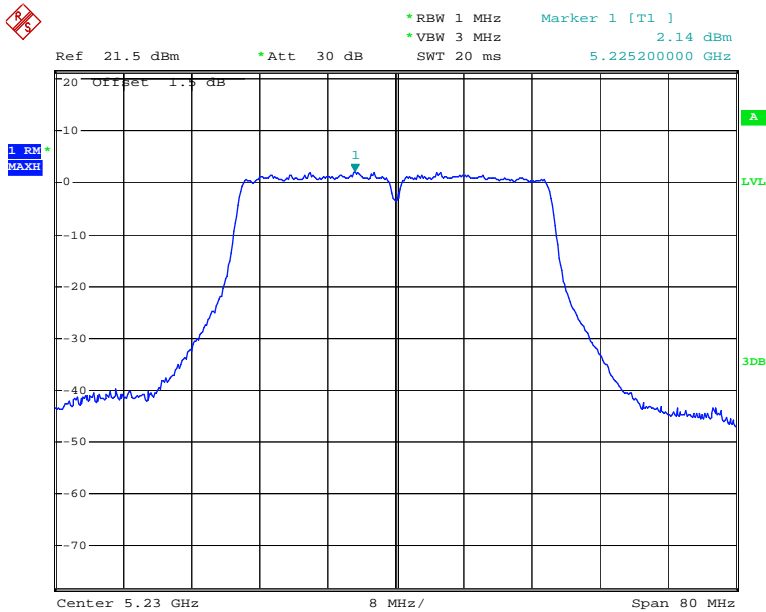
Date: 30.DEC.2020 20:31:05

802.11ac vht80 Middle Channel
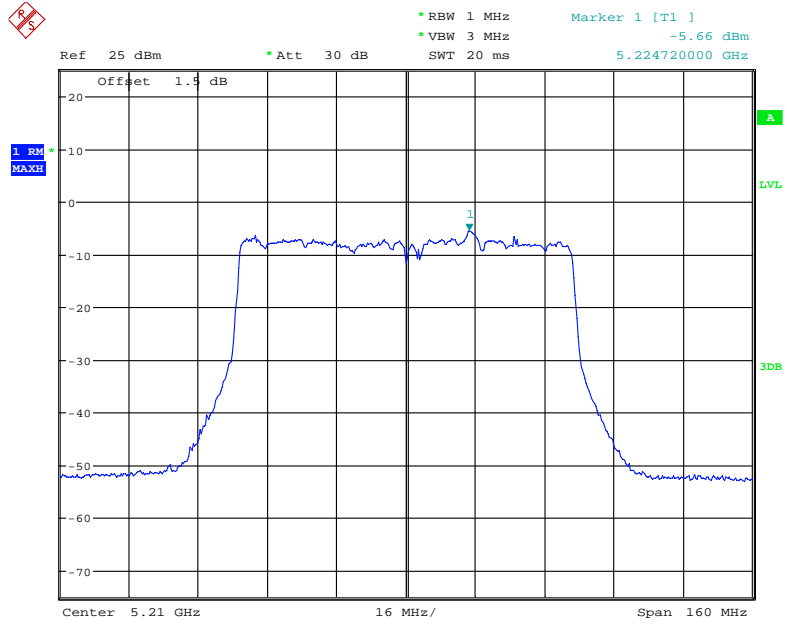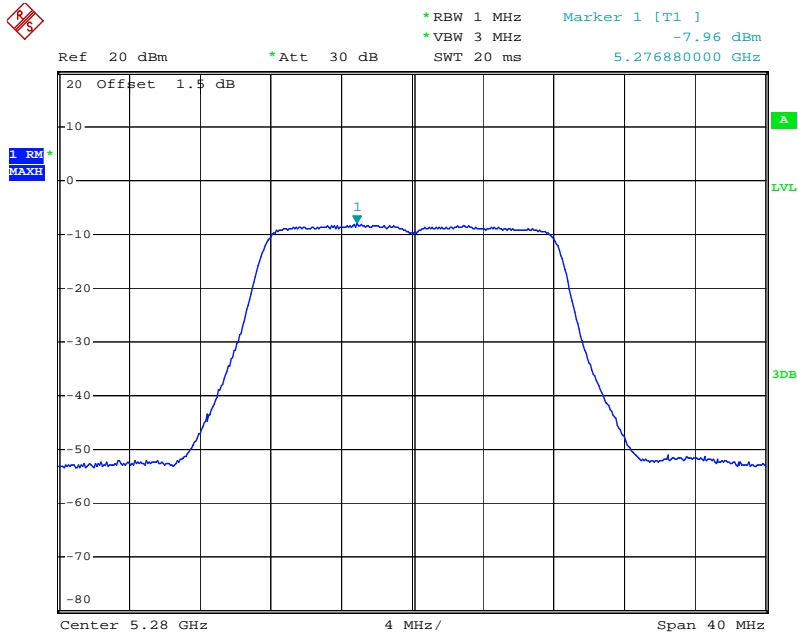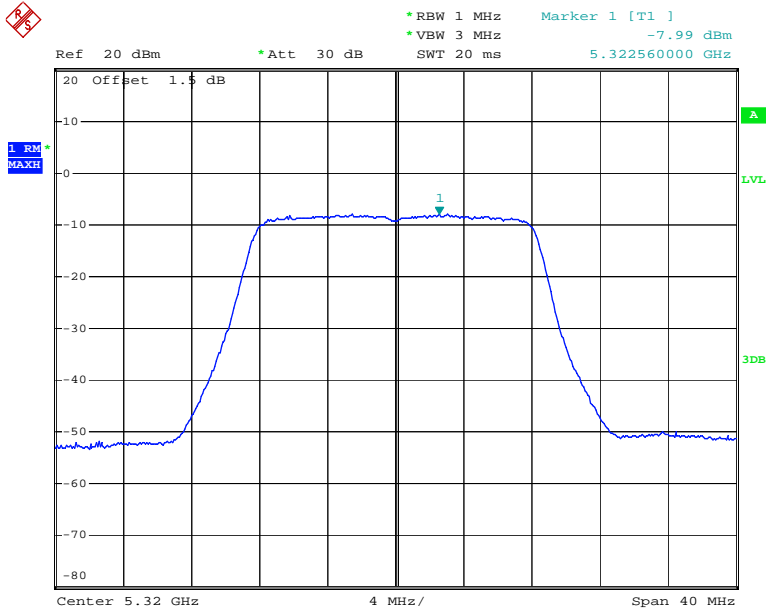

Date: 22.OCT.2020 11:10:44

Chain 3:

802.11a Low Channel

Date: 22.OCT.2020 11:16:22

802.11a Middle Channel
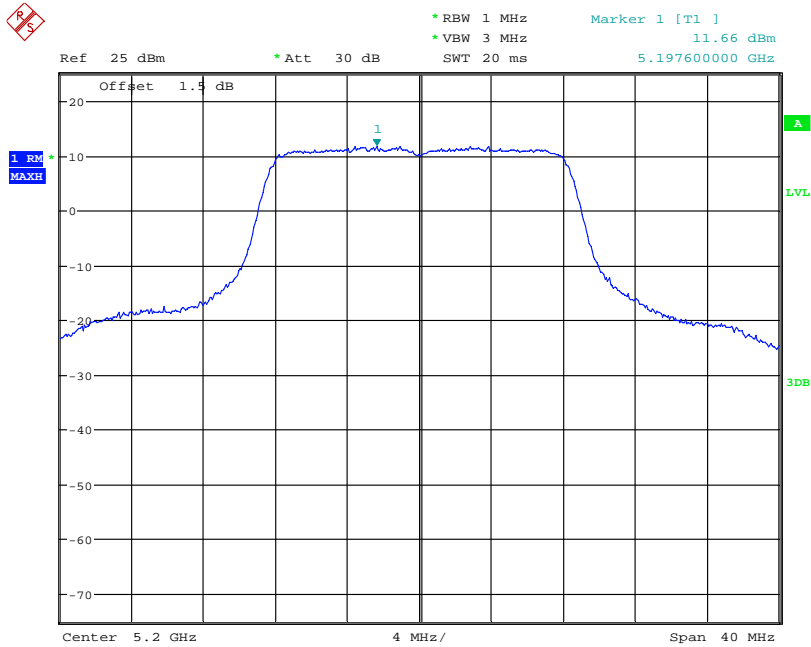
Date: 22.OCT.2020 10:08:18

802.11a High Channel

```
* RBW 1 MHz        Marker 1 [T1 ]
* VBW 3 MHz               12.22 dBm
Ref  25 dBm           * Att  30 dB    SWT 20 ms        5.237680000 GHz
   Offset  1.5 dB
```
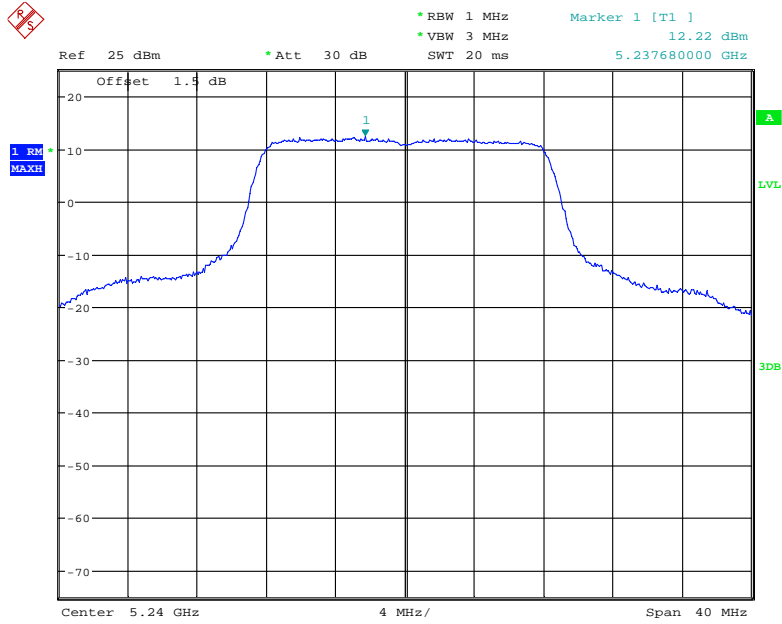
Date: 22.OCT.2020 10:07:38

802.11n ht20 Low Channel

```
* RBW 1 MHz        Marker 1 [T1 ]
* VBW 3 MHz                8.05 dBm
Ref  25 dBm           * Att  30 dB    SWT 20 ms        5.178720000 GHz
   Offset  1.5 dB
```
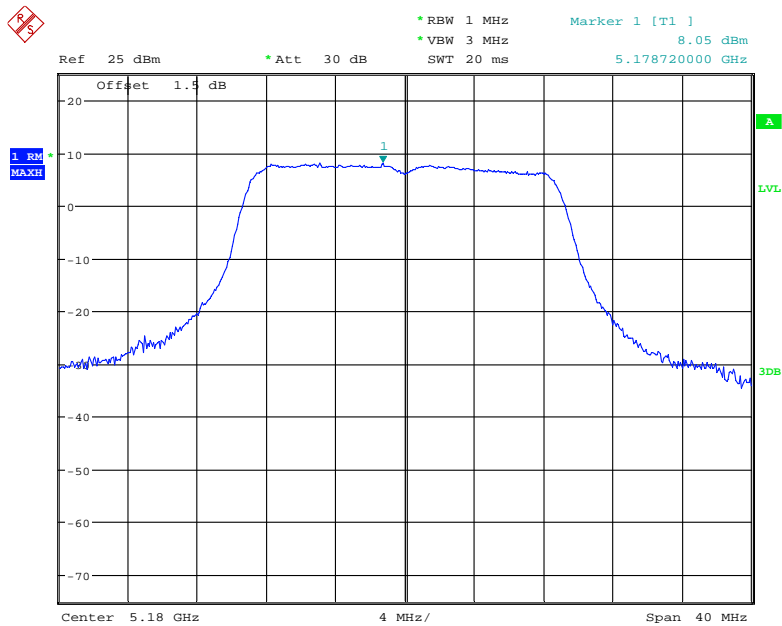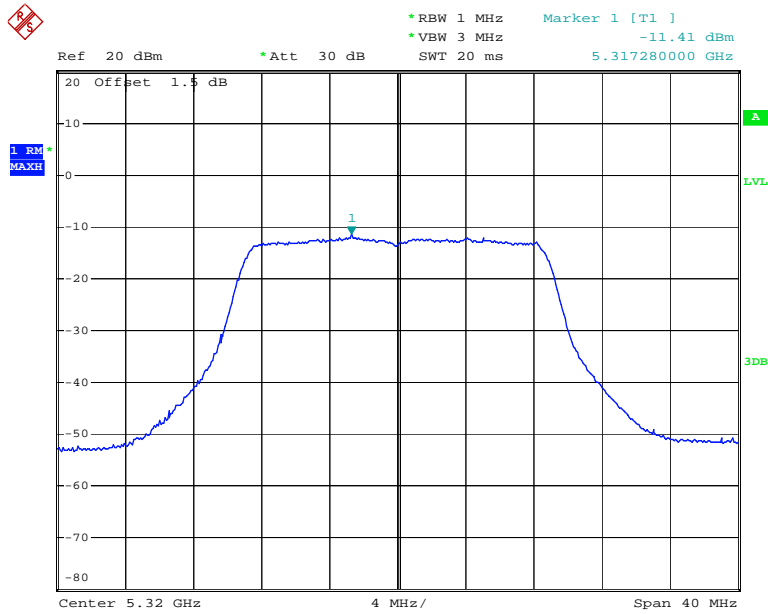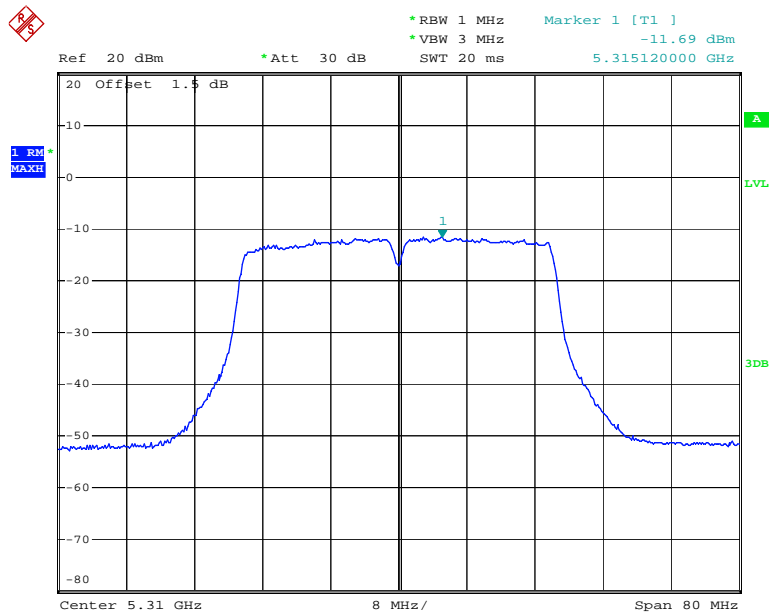
Date: 22.OCT.2020 11:17:13

802.11n ht20 Middle Channel
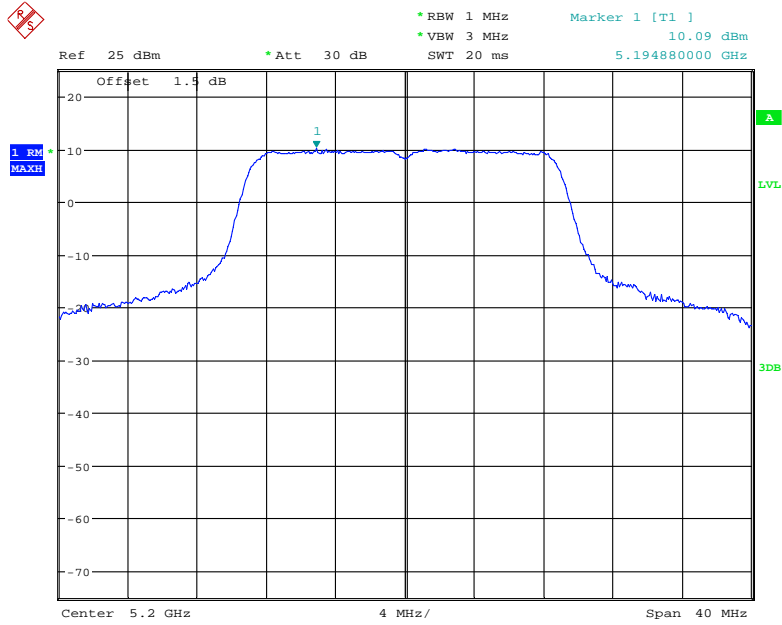
Date: 22.OCT.2020 10:05:37

802.11n ht20 High Channel

Date: 22.OCT.2020 10:06:11
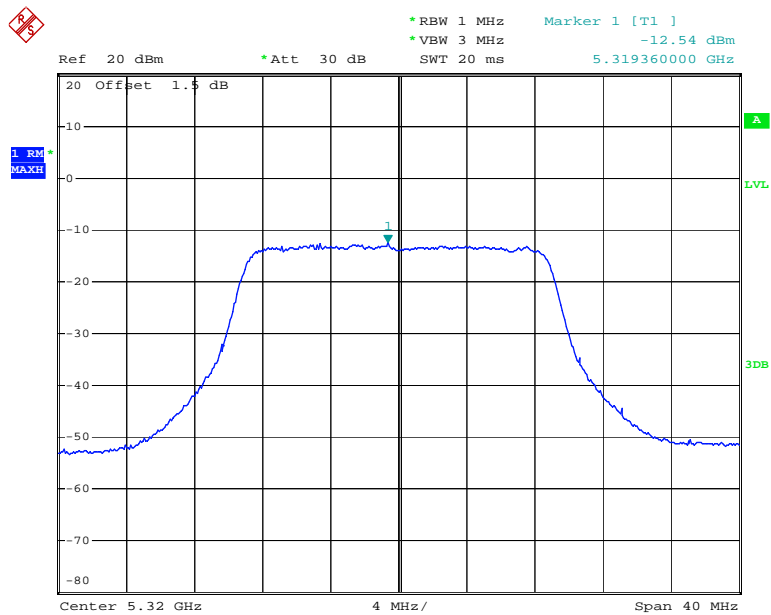
802.11n ht40 Low Channel


```
                                          *RBW 1 MHz      Marker 1 [T1 ]
                                          *VBW 3 MHz                0.52 dBm
        Ref   25 dBm          *Att  30 dB  SWT 20 ms       5.181200000 GHz
        Offset   1.5 dB
   -20                                                                        A
   -10
1 RM                                                                         LVL
MAXH                                                                          
    0
  -10
  -20
  -30                                                                        3DB
  -40
  -50
  -60
  -70
        Center  5.19 GHz              8 MHz/              Span  80 MHz
```

Date: 22.OCT.2020 11:17:59

802.11n ht40 High Channel


```
                                          *RBW 1 MHz      Marker 1 [T1 ]
                                          *VBW 3 MHz                1.09 dBm
        Ref   21.5 dBm         *Att  30 dB  SWT 20 ms      5.225000000 GHz
        Offset   1.5 dB
   -20                                                                        A
  -10
1 RM                                                                         LVL
MAXH                                                                          
    0
  -10
  -20
  -30                                                                        3DB
  -40
  -50
  -60
  -70
        Center 5.23 GHz               8 MHz/              Span  80 MHz
```

Date: 30.DEC.2020 20:31:41

802.11ac vht80 Middle Channel

Date: 22.OCT.2020 11:18:50

5250-5350MHz, Chain 0:

802.11a Low Channel


```
                                            *RBW 1 MHz     Marker 1 [T1 ]
                                            *VBW 3 MHz              -8.20 dBm
             Ref   20 dBm       *Att  30 dB  SWT 20 ms      5.256880000 GHz
```

Date: 23.OCT.2020 14:41:34

802.11a Middle Channel


```
                                            *RBW 1 MHz     Marker 1 [T1 ]
                                            *VBW 3 MHz              -8.58 dBm
             Ref   20 dBm       *Att  30 dB  SWT 20 ms      5.276720000 GHz
```

Date: 23.OCT.2020 14:42:30

802.11a High Channel

Date: 23.OCT.2020 14:43:02

802.11n ht20 Low Channel

Date: 23.OCT.2020 14:44:54
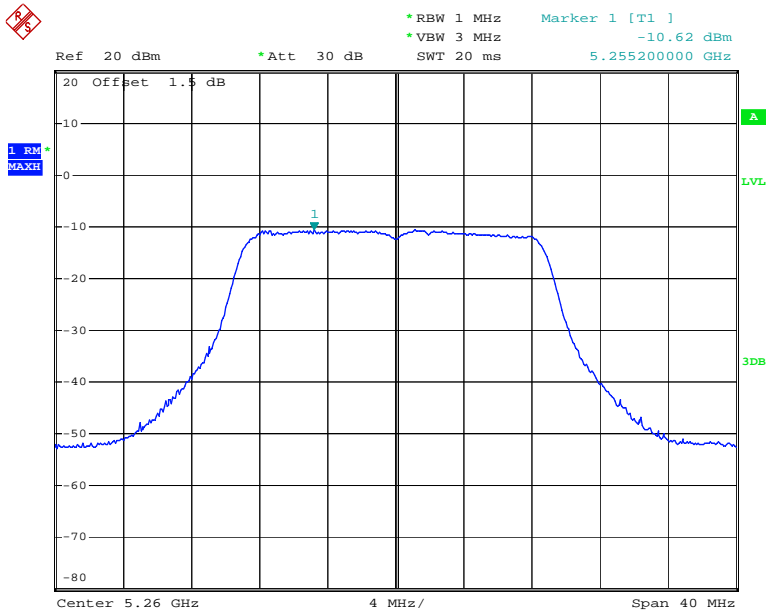
802.11n ht20 Middle Channel

```
 *RBW 1 MHz      Marker 1 [T1 ]
 *VBW 3 MHz              -10.88 dBm
Ref  20 dBm      *Att  30 dB    SWT 20 ms    5.275600000 GHz
```



```
Center 5.28 GHz              4 MHz/              Span 40 MHz
```

Date: 23.OCT.2020 14:44:27

802.11n ht20 High Channel

```
 *RBW 1 MHz      Marker 1 [T1 ]
 *VBW 3 MHz              -10.22 dBm
Ref  20 dBm      *Att  30 dB    SWT 20 ms    5.315360000 GHz
```



```
Center 5.32 GHz              4 MHz/              Span 40 MHz
```

Date: 23.OCT.2020 14:43:43

802.11n ht40 Low Channel

Date: 23.OCT.2020 14:48:30

802.11n ht40 High Channel

Date: 23.OCT.2020 14:49:00

Bay Area Compliance Laboratories Corp. (Dongguan)   Report No.: RDG200805002-00B
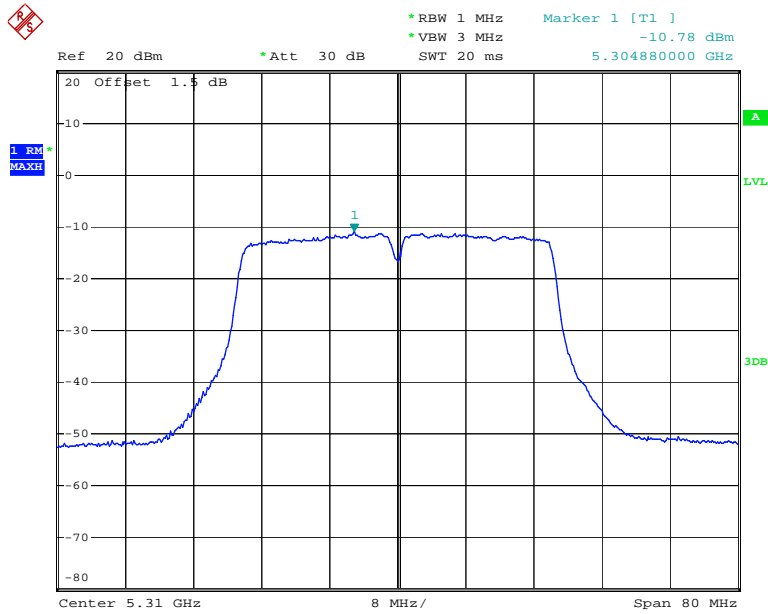
802.11ac vht80 Middle Channel

Date: 23.OCT.2020 15:05:16

Chain 1:

802.11a Low Channel


```
                                    *RBW 1 MHz     Marker 1 [T1 ]
                                    *VBW 3 MHz                -7.34 dBm
     Ref  20 dBm        *Att  30 dB  SWT 20 ms     5.257200000 GHz
```
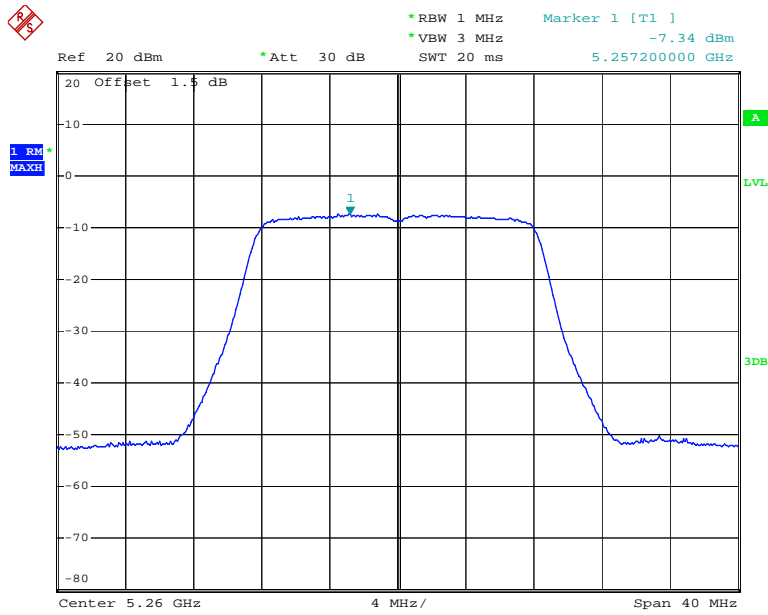
Date: 23.OCT.2020 15:18:39

802.11a Middle Channel


```
                                    *RBW 1 MHz     Marker 1 [T1 ]
                                    *VBW 3 MHz                -7.96 dBm
     Ref  20 dBm        *Att  30 dB  SWT 20 ms     5.276880000 GHz
```

Date: 23.OCT.2020 15:18:18

802.11a High Channel

Date: 23.OCT.2020 15:17:56

802.11n ht20 Low Channel
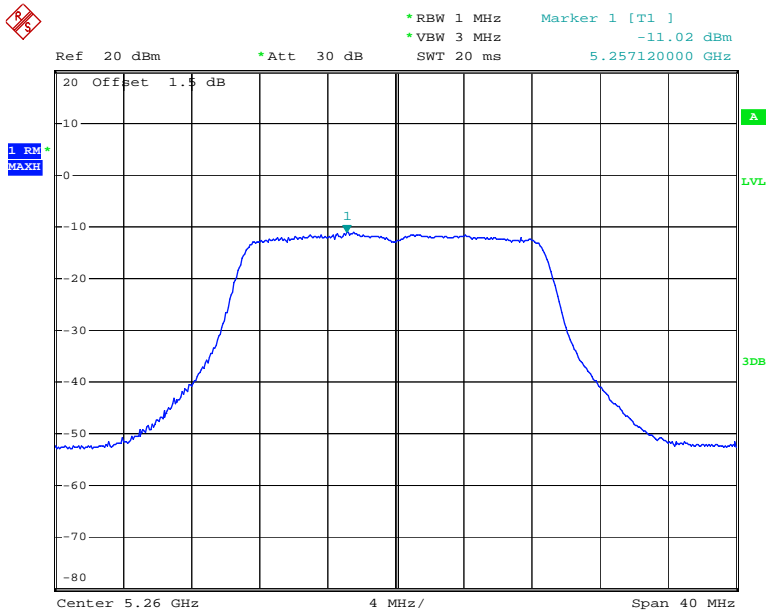
Date: 23.OCT.2020 15:21:10

802.11n ht20 Middle Channel
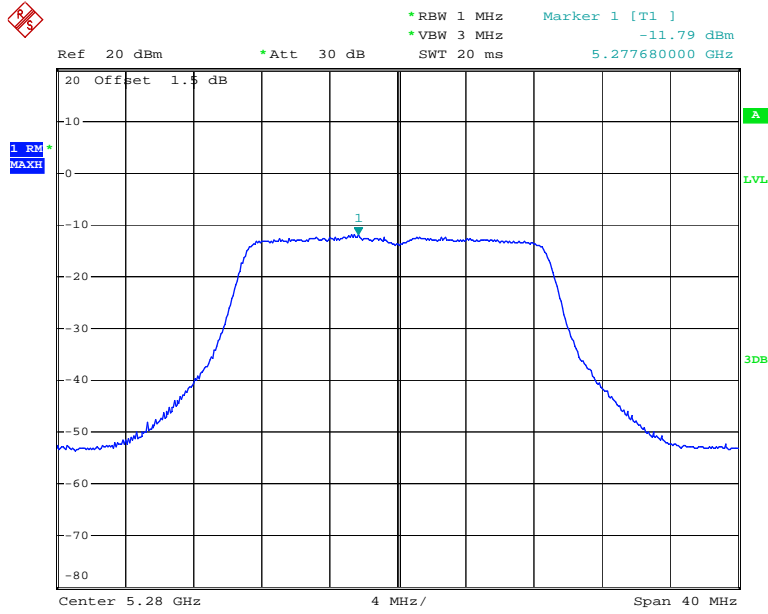
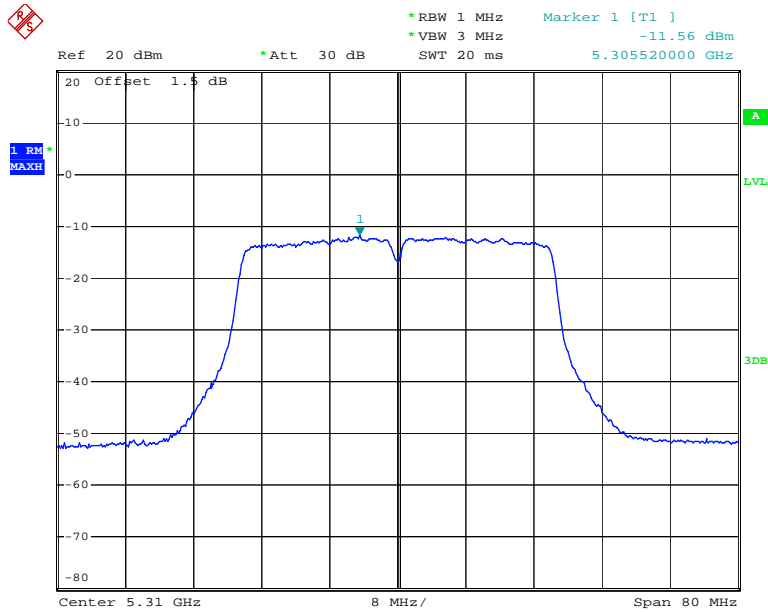

Date: 23.OCT.2020 15:21:31

802.11n ht20 High Channel
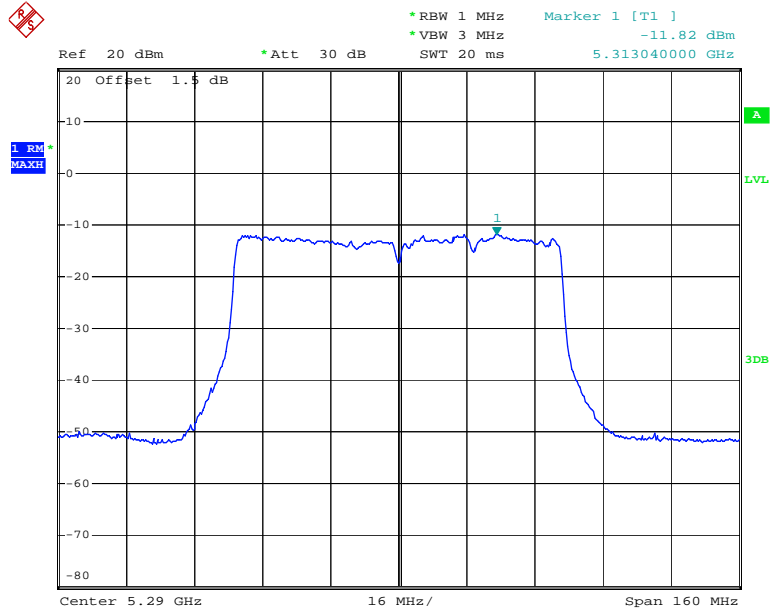

Date: 23.OCT.2020 15:21:53

802.11n ht40 Low Channel
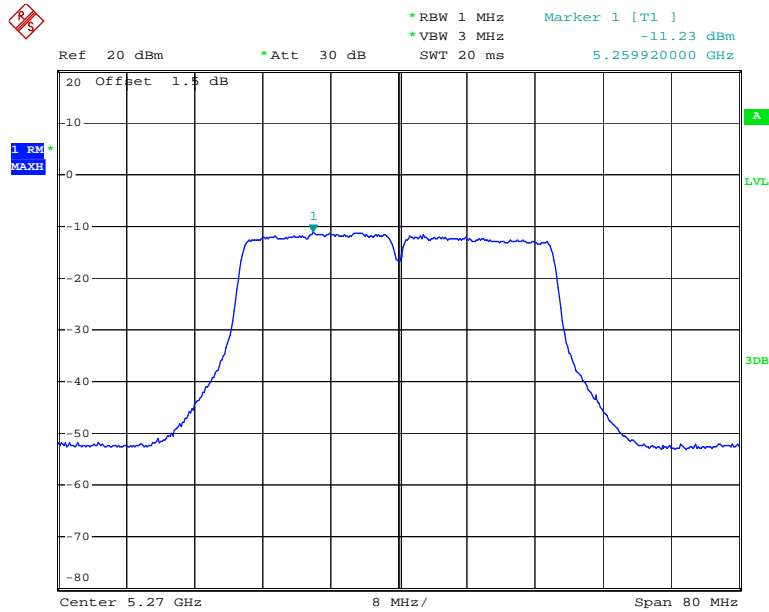
Date: 23.OCT.2020 15:23:06

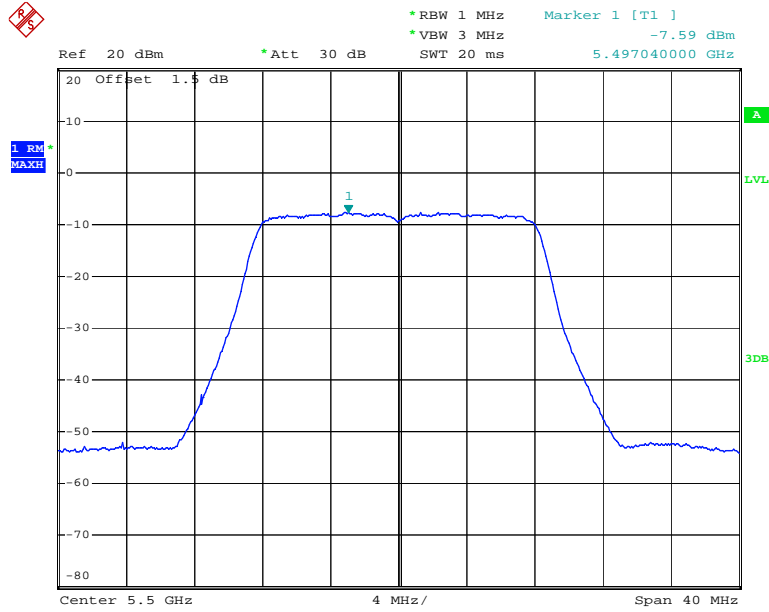**802.11n ht40 High Channel**

Date: 23.OCT.2020 15:22:35

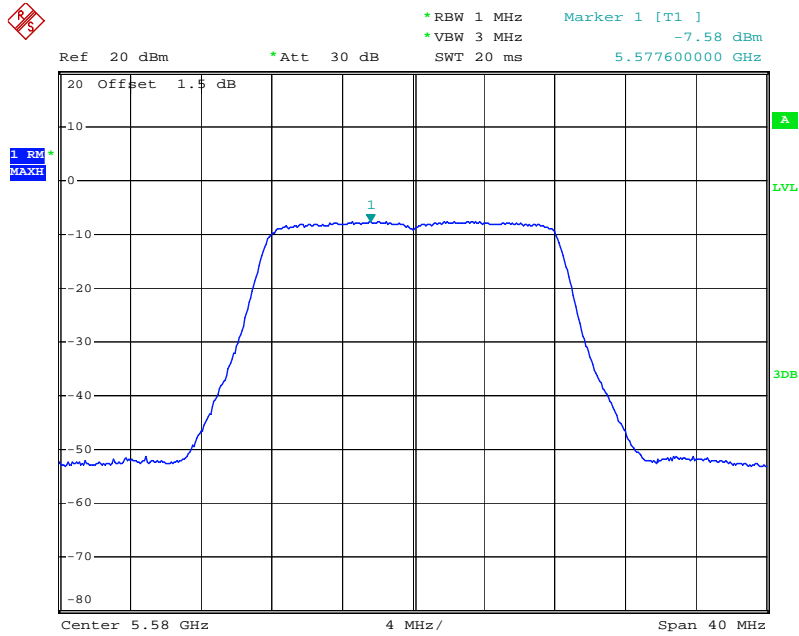## 802.11ac vht80 Middle Channel
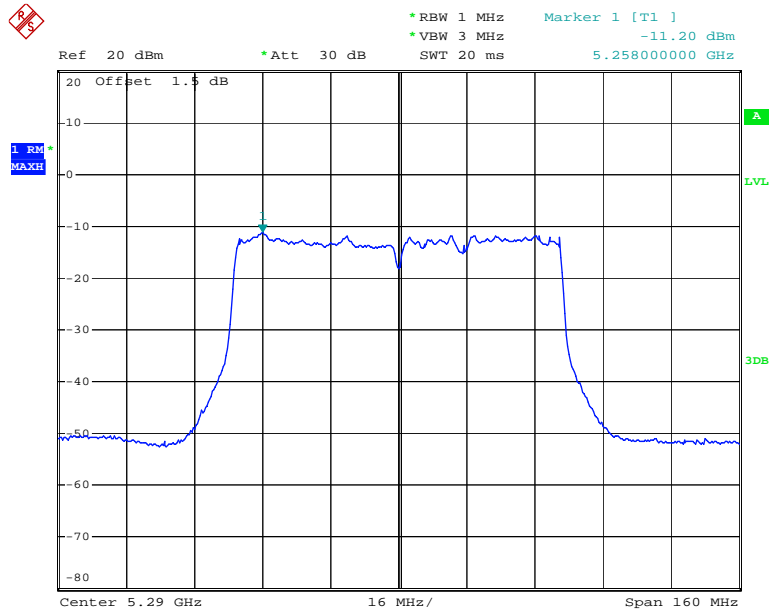
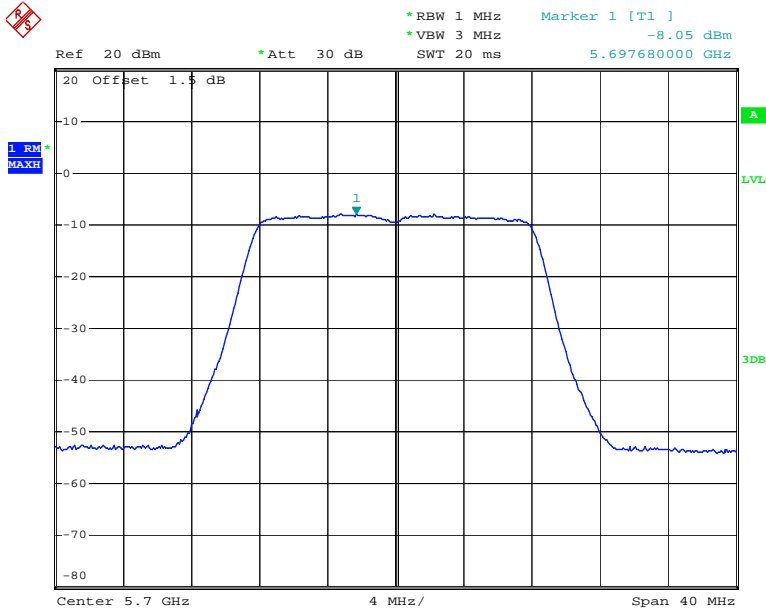Date: 23.OCT.2020 15:24:17

Chain 2:

802.11a Low Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz              -8.40 dBm
        Ref  20 dBm      *Att  30 dB   SWT 20 ms    5.256720000 GHz
```
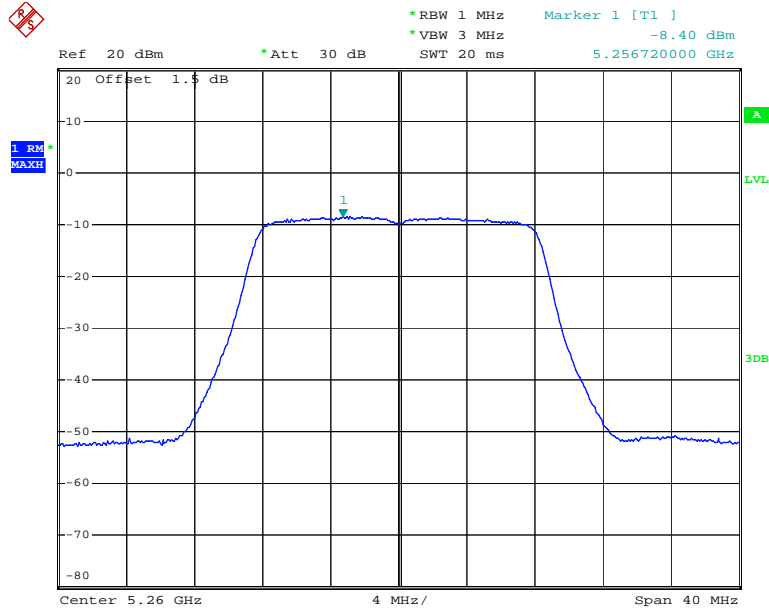
Date: 23.OCT.2020 15:12:04

802.11a Middle Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz              -8.35 dBm
        Ref  20 dBm      *Att  30 dB   SWT 20 ms    5.277120000 GHz
```
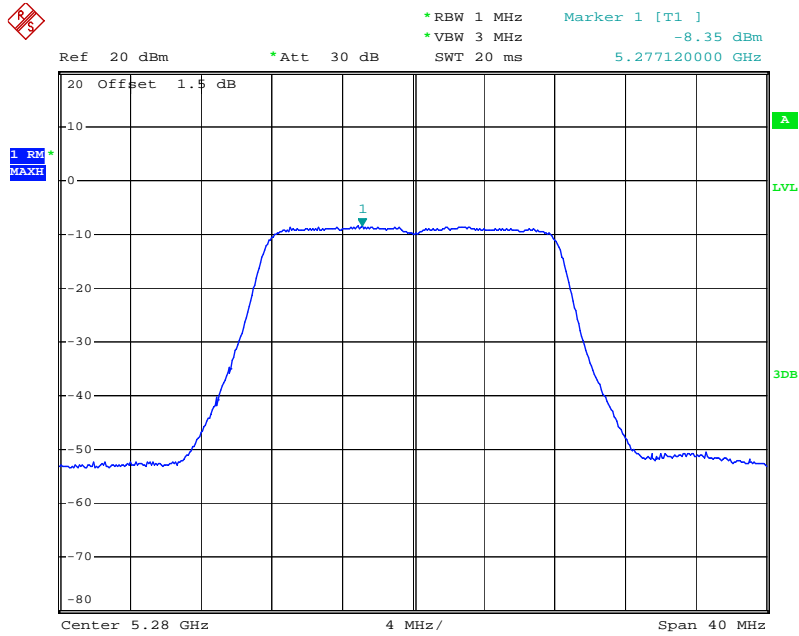
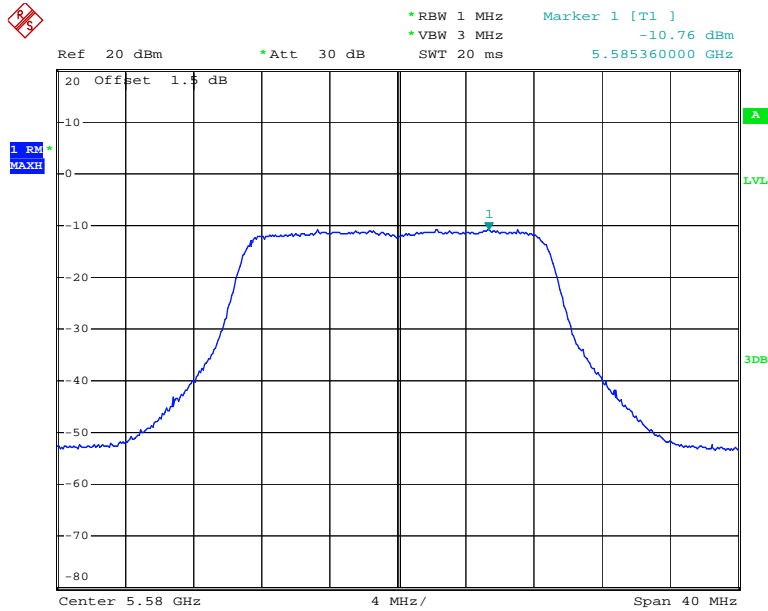Date: 23.OCT.2020 15:12:44

802.11a High Channel
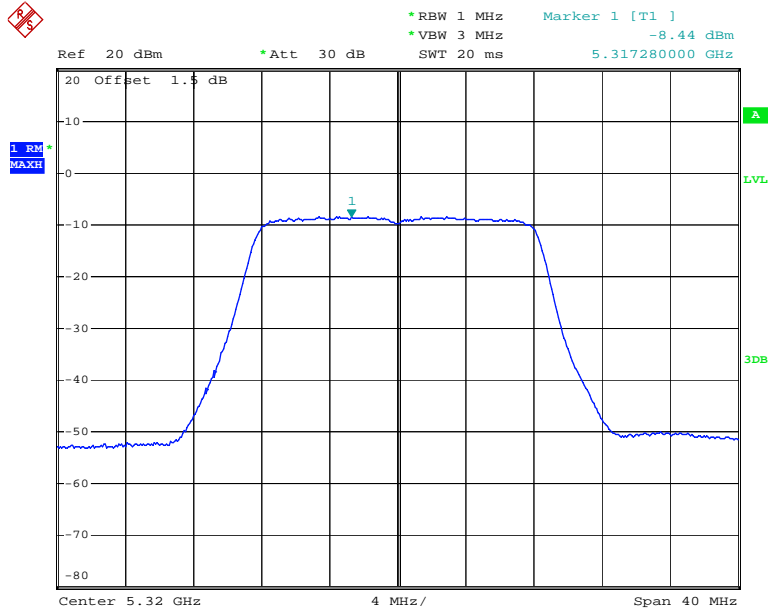
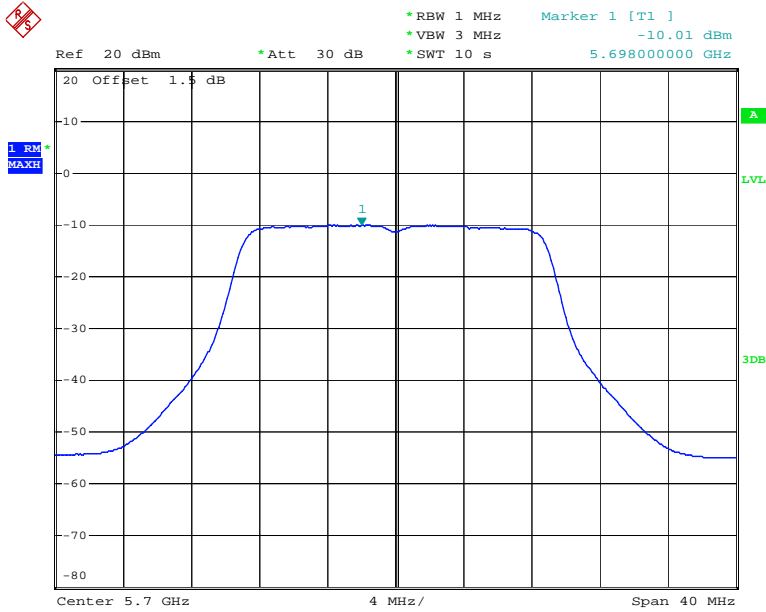Date: 23.OCT.2020 15:13:05

802.11n ht20 Low Channel
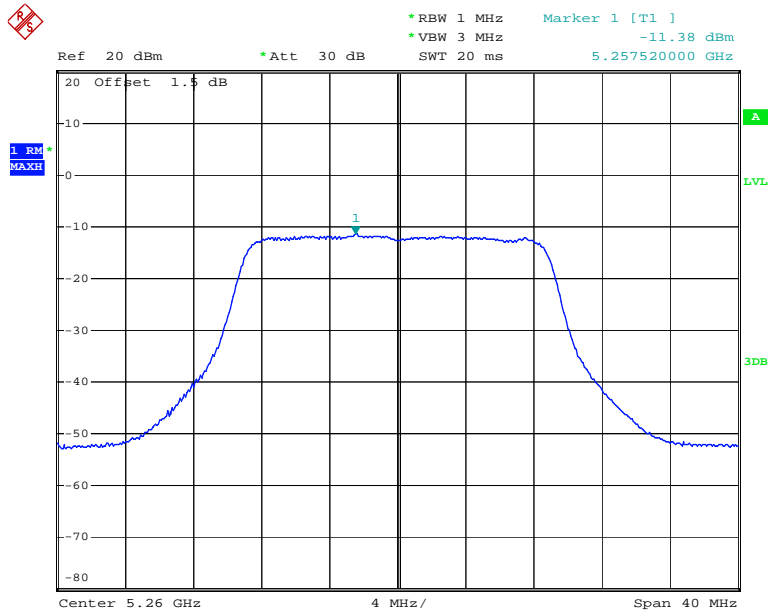
Date: 23.OCT.2020 15:10:07

802.11n ht20 Middle Channel
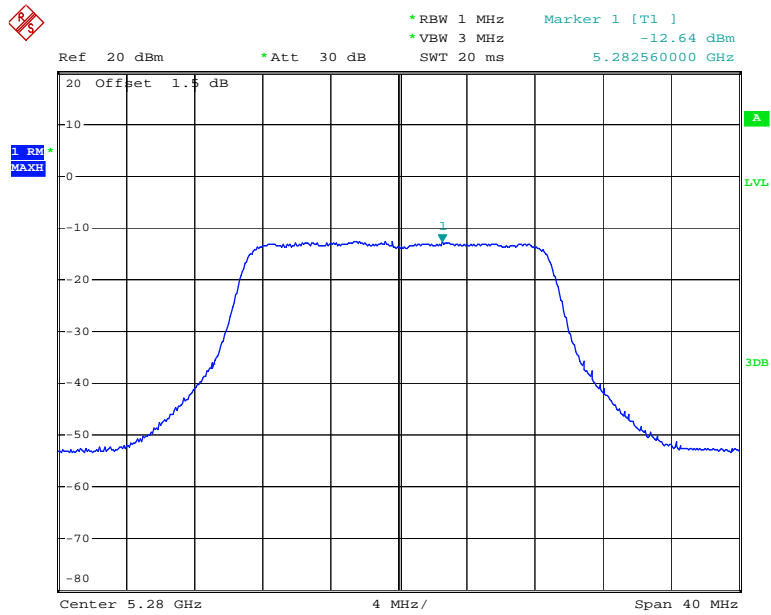
Date: 23.OCT.2020 15:09:38

802.11n ht20 High Channel


Date: 23.OCT.2020 15:09:06

802.11n ht40 Low Channel

```
                                        *RBW 1 MHz      Marker 1 [T1 ]
                                        *VBW 3 MHz            -12.60 dBm
        Ref  20 dBm         *Att  30 dB  SWT 20 ms     5.264720000 GHz
```
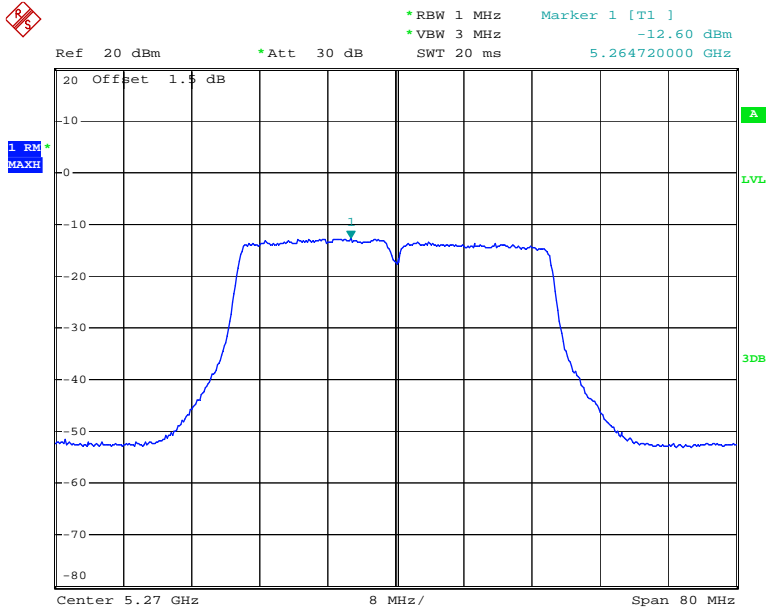
Date: 23.OCT.2020 15:07:37

802.11n ht40 High Channel

```
                                        *RBW 1 MHz      Marker 1 [T1 ]
                                        *VBW 3 MHz            -13.28 dBm
        Ref  20 dBm         *Att  30 dB  SWT 20 ms     5.302960000 GHz
```
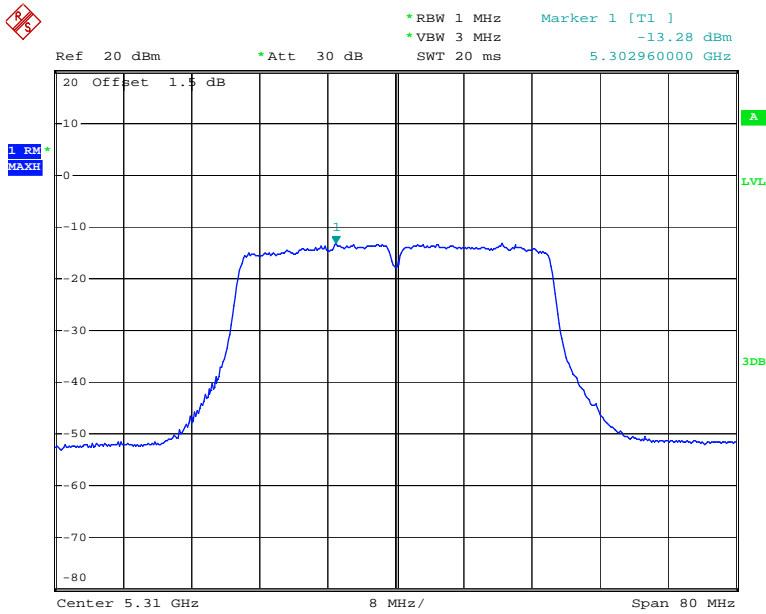
Date: 23.OCT.2020 15:08:02

802.11ac vht80 Middle Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz           -12.92 dBm
        Ref  20 dBm      *Att  30 dB   SWT 20 ms     5.305040000 GHz
```
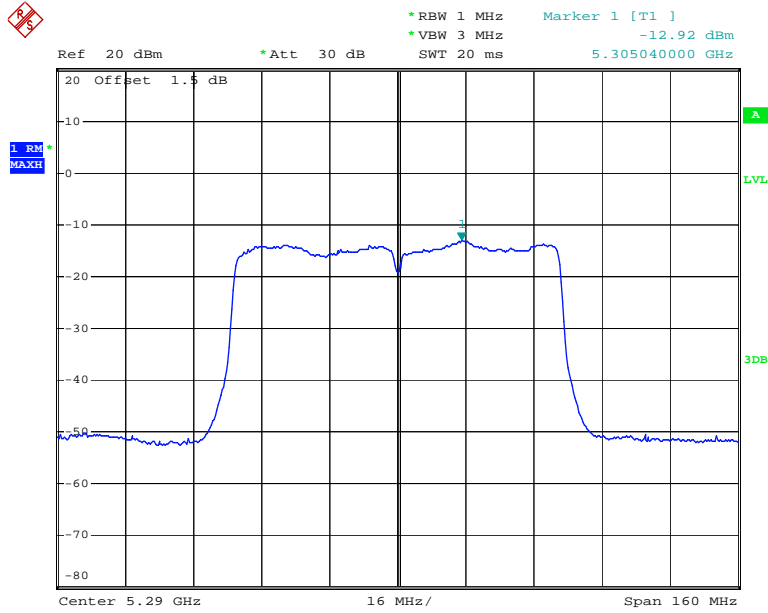
Date: 23.OCT.2020 15:06:18

Chain 3:

802.11a Low Channel


```
                                        *RBW 1 MHz      Marker 1 [T1 ]
                                        *VBW 3 MHz               -7.83 dBm
        Ref  20 dBm        *Att  30 dB   SWT 20 ms       5.256960000 GHz
```
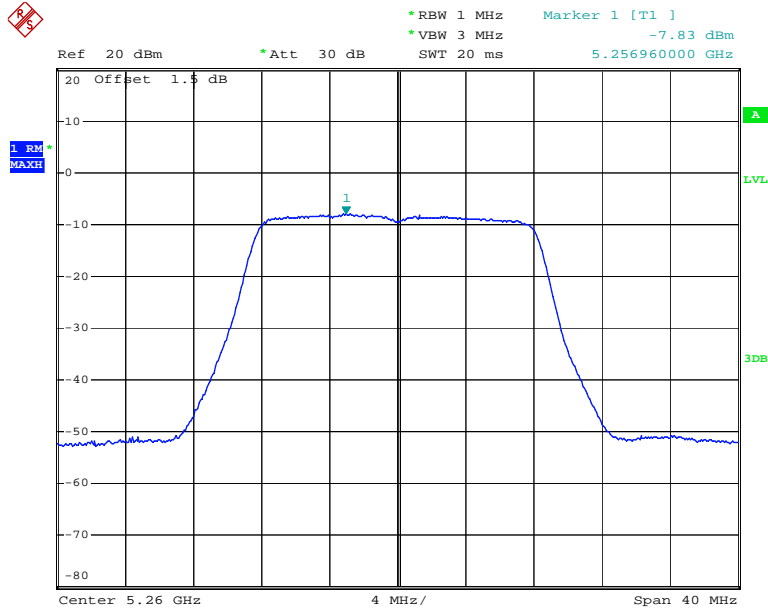
Date: 23.OCT.2020 15:33:35

802.11a Middle Channel


```
                                        *RBW 1 MHz      Marker 1 [T1 ]
                                        *VBW 3 MHz               -8.90 dBm
        Ref  20 dBm        *Att  30 dB   SWT 20 ms       5.276880000 GHz
```
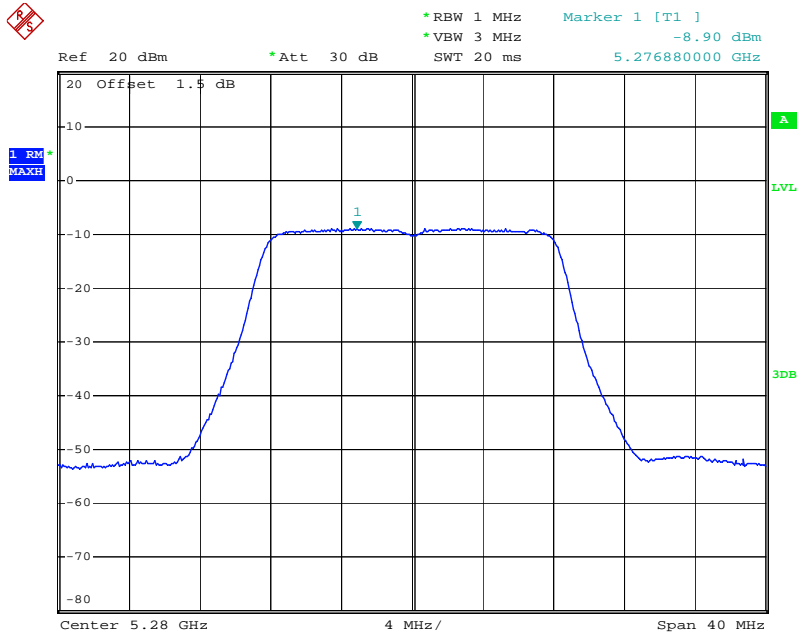
Date: 23.OCT.2020 15:34:14

802.11a High Channel
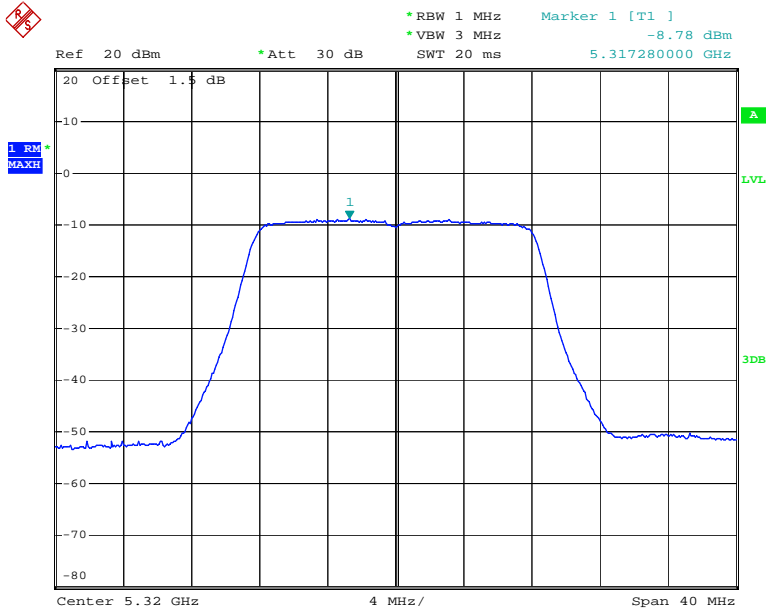
Date: 23.OCT.2020 15:34:36

802.11n ht20 Low Channel

Date: 23.OCT.2020 15:33:00

802.11n ht20 Middle Channel

```
                                            *RBW 1 MHz      Marker 1 [T1 ]
                                            *VBW 3 MHz            -11.30 dBm
          Ref  20 dBm          *Att  30 dB   SWT 20 ms     5.280960000 GHz
```
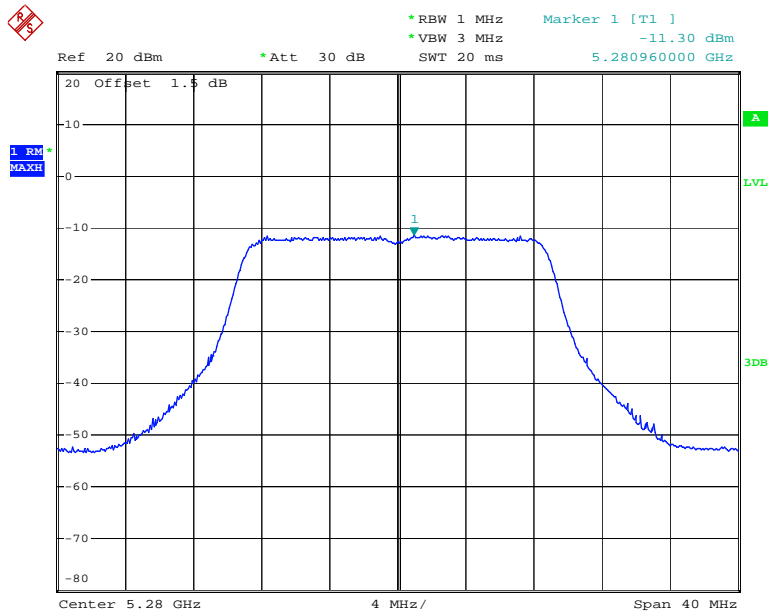


```
Date: 23.OCT.2020  15:32:21
```

802.11n ht20 High Channel

```
                                            *RBW 1 MHz      Marker 1 [T1 ]
                                            *VBW 3 MHz            -11.63 dBm
          Ref  20 dBm          *Att  30 dB   SWT 20 ms     5.320960000 GHz
```
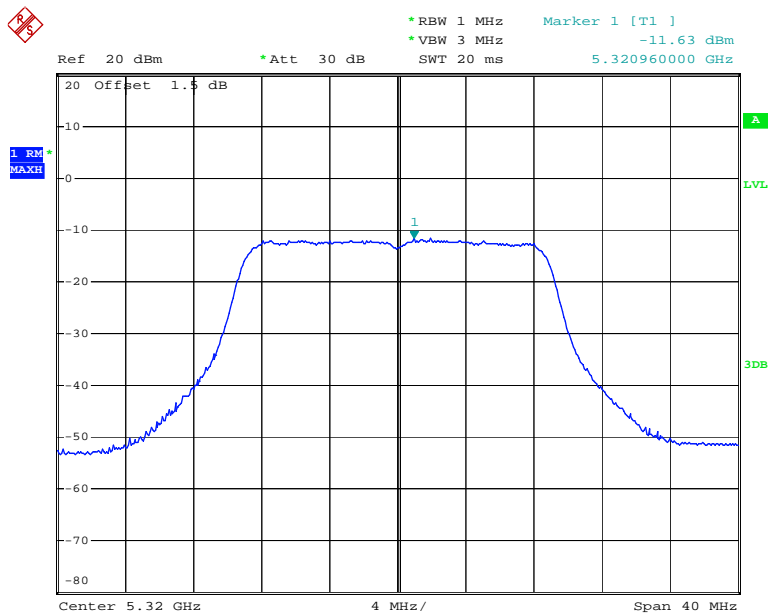


```
Date: 23.OCT.2020  15:27:35
```

802.11n ht40 Low Channel
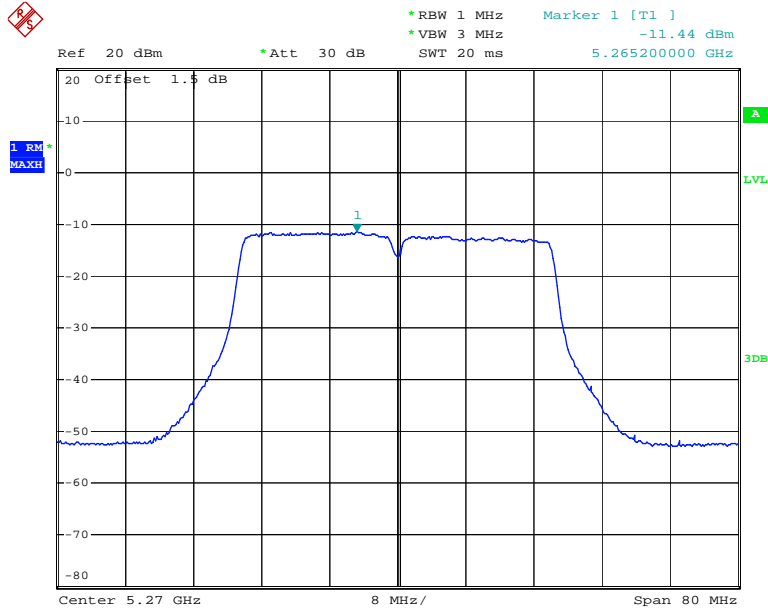
Date: 23.OCT.2020 15:26:06

802.11n ht40 High Channel

Date: 23.OCT.2020 15:26:55

802.11ac vht80 Middle Channel

Date: 23.OCT.2020 15:25:25

5470-5725MHz, Chain 0:

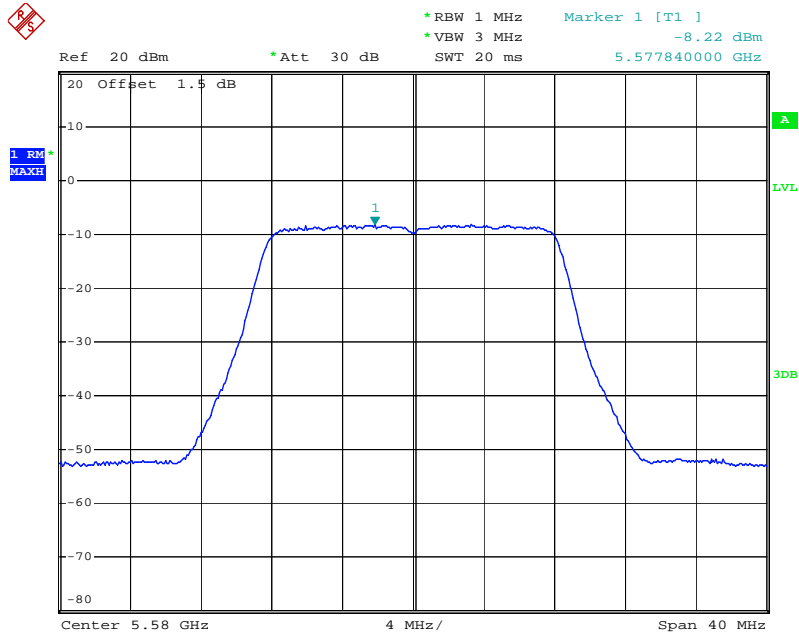## 802.11a Low Channel

Date: 24.OCT.2020 10:06:18

802.11a Middle Channel

Date: 24.OCT.2020 10:07:15

802.11a High Channel

```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz              -8.05 dBm
        Ref  20 dBm       *Att  30 dB    SWT 20 ms      5.697680000 GHz
```
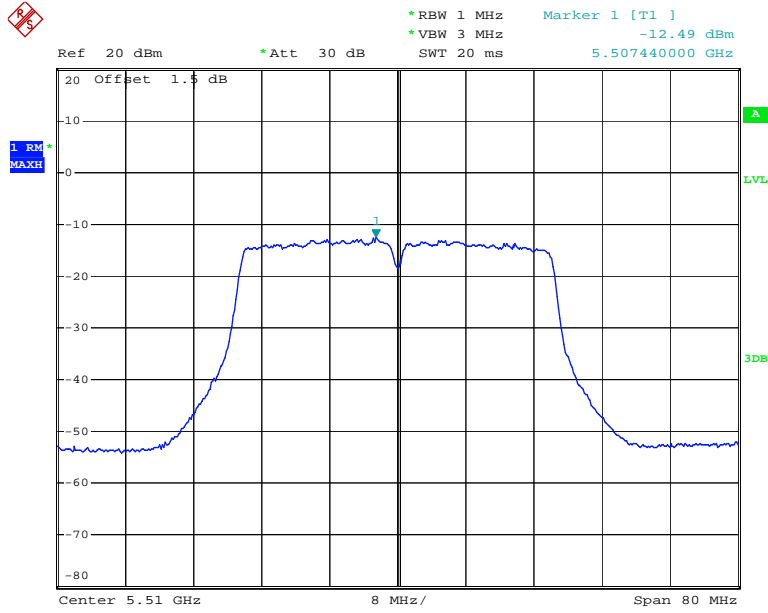
Date: 24.OCT.2020 10:08:42

802.11 a 5720MHz

```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz              -7.60 dBm
        Ref  20 dBm       *Att  30 dB    SWT 20 ms      5.716960000 GHz
```
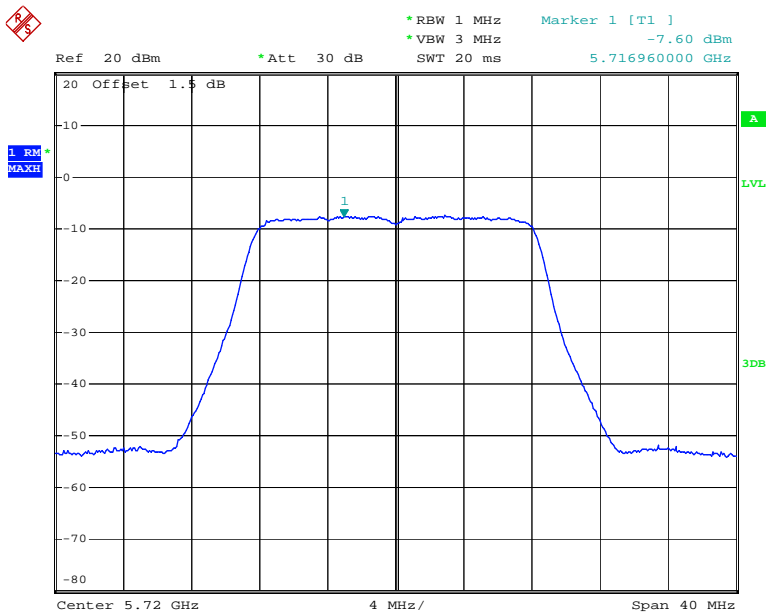
Date: 24.OCT.2020 10:12:49

802.11n ht20 Low Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz          -10.84 dBm
      Ref  20 dBm      *Att  30 dB   SWT 20 ms     5.495280000 GHz
```
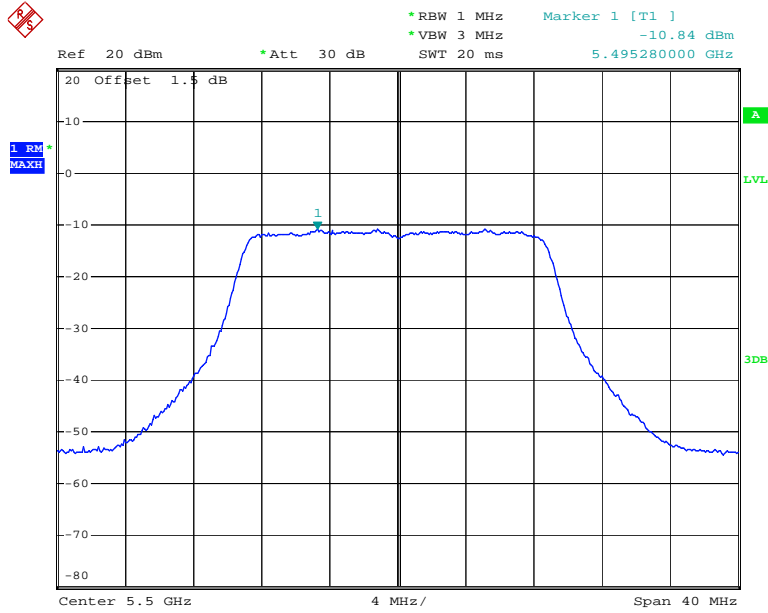
Date: 24.OCT.2020 10:22:55

802.11n ht20 Middle Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz          -10.76 dBm
      Ref  20 dBm      *Att  30 dB   SWT 20 ms     5.585360000 GHz
```

Date: 24.OCT.2020 10:23:16

802.11n ht20 High Channel

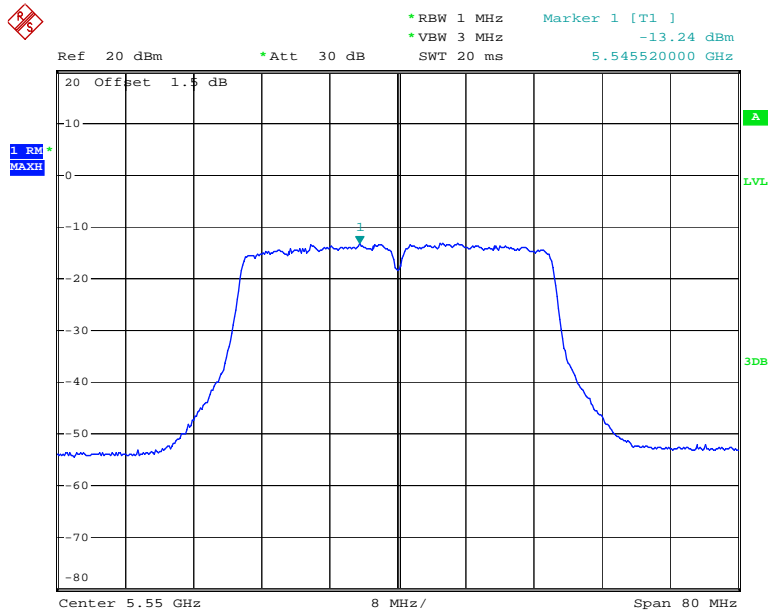Date: 24.OCT.2020 10:26:55

802.11n ht20 5720 MHz
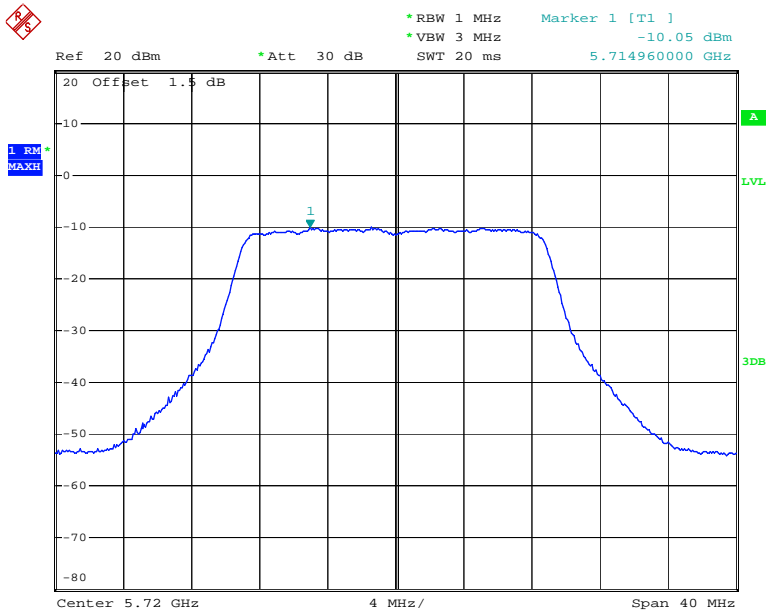
Date: 24.OCT.2020 10:21:56

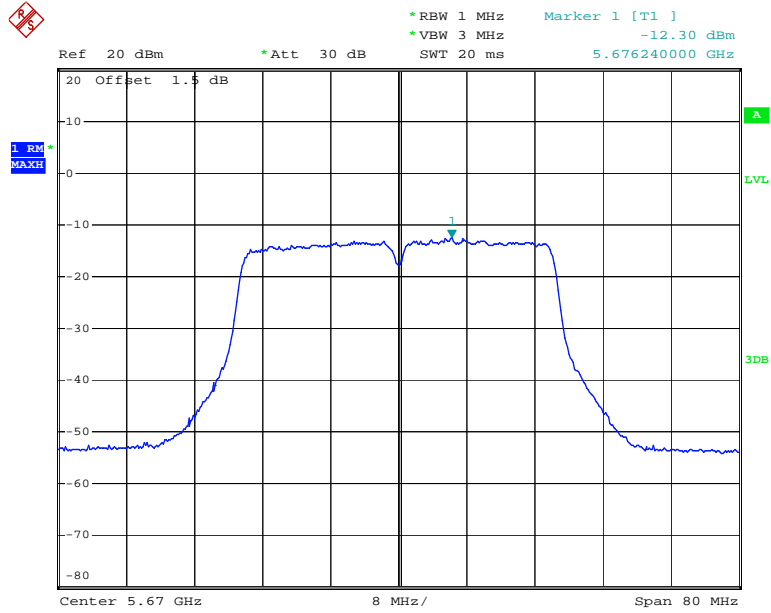## 802.11n ht40 Low Channel
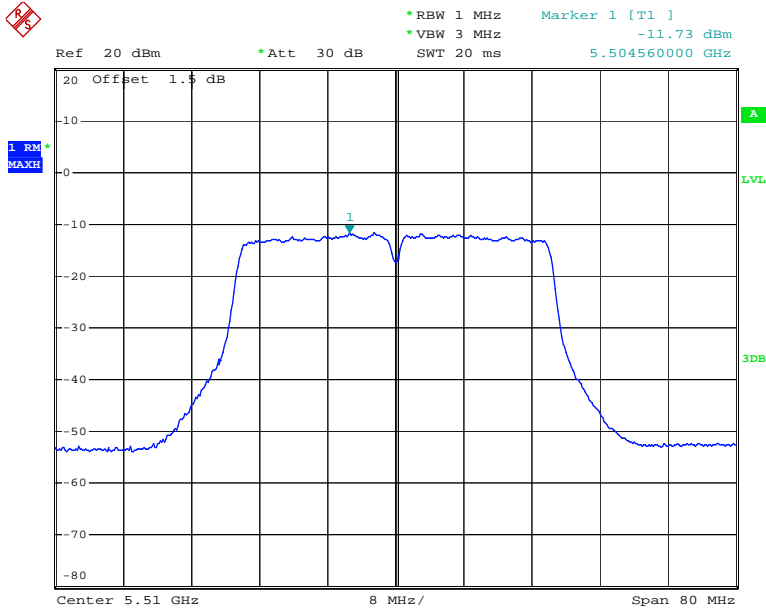
Date: 24.OCT.2020 10:29:35

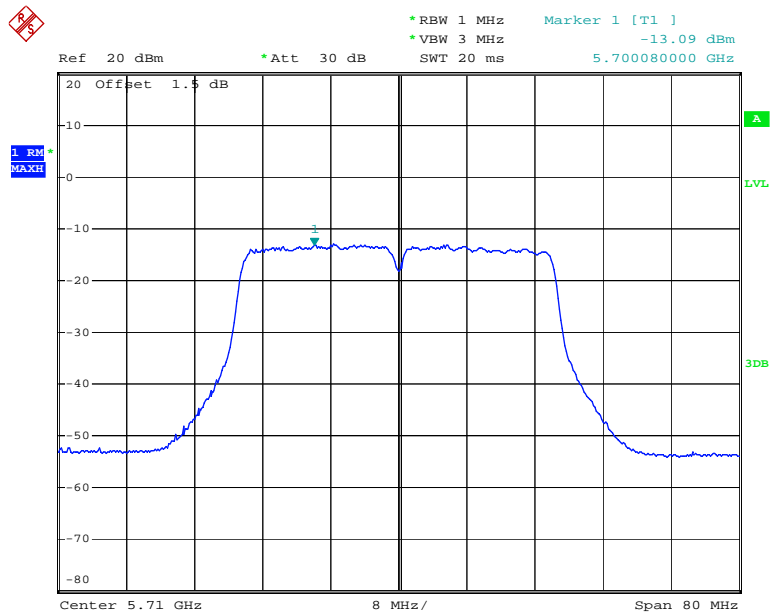## 802.11n ht40 Middle Channel
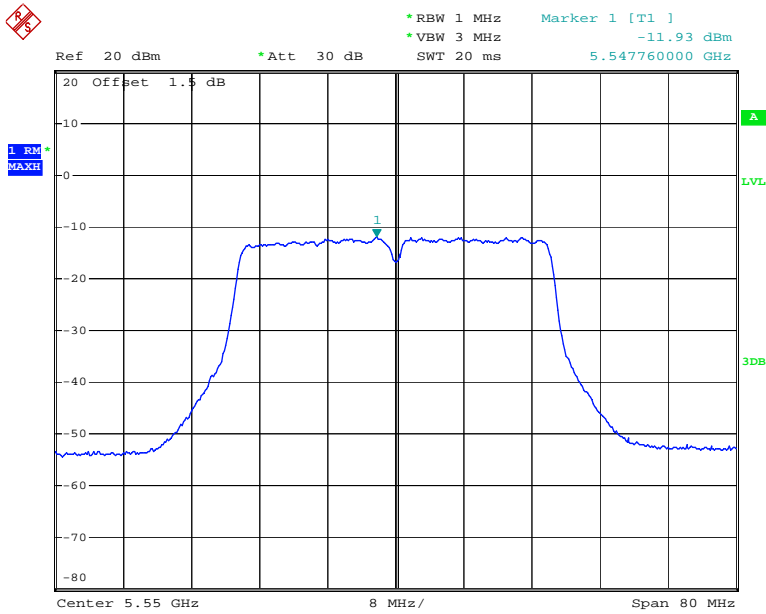
Date: 24.OCT.2020 10:30:26

802.11n ht40 High Channel
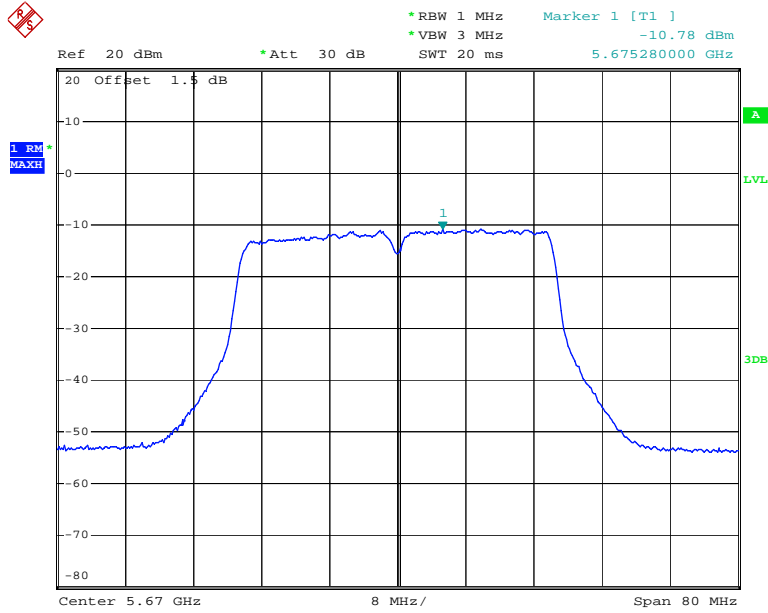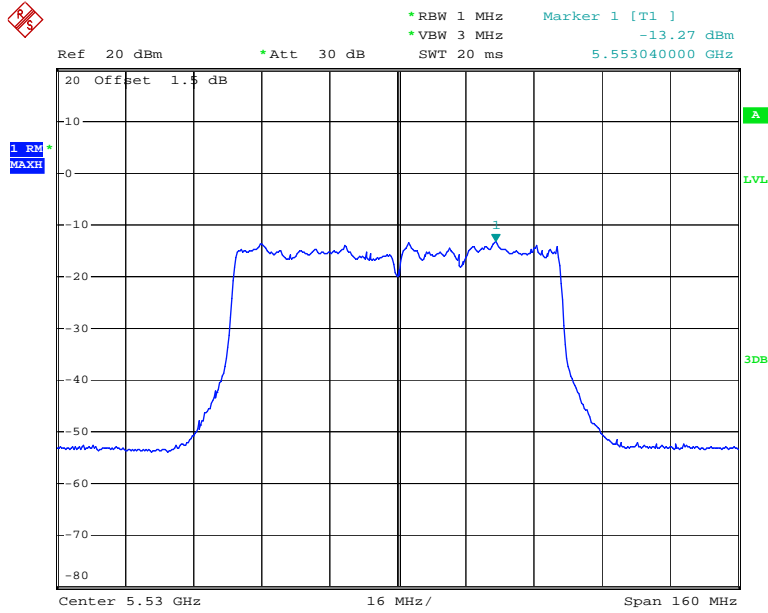

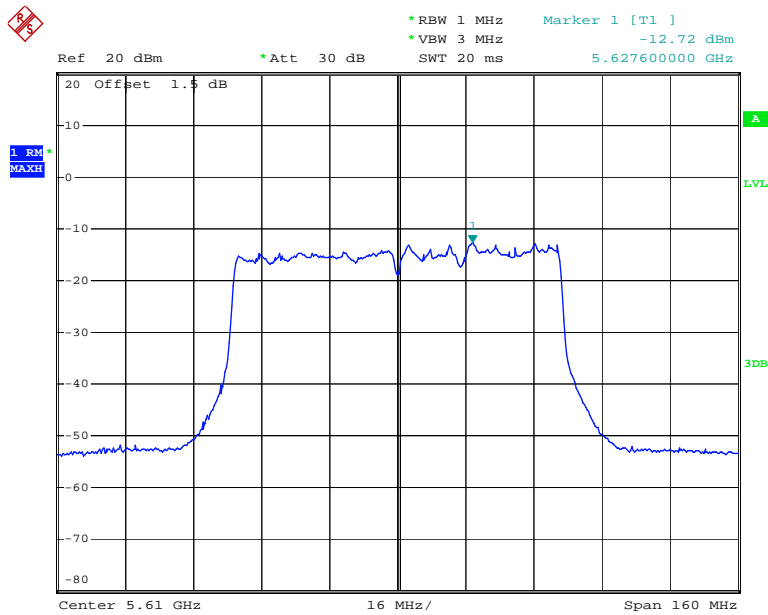Date: 24.OCT.2020 10:30:58

802.11n ht40 5710MHz
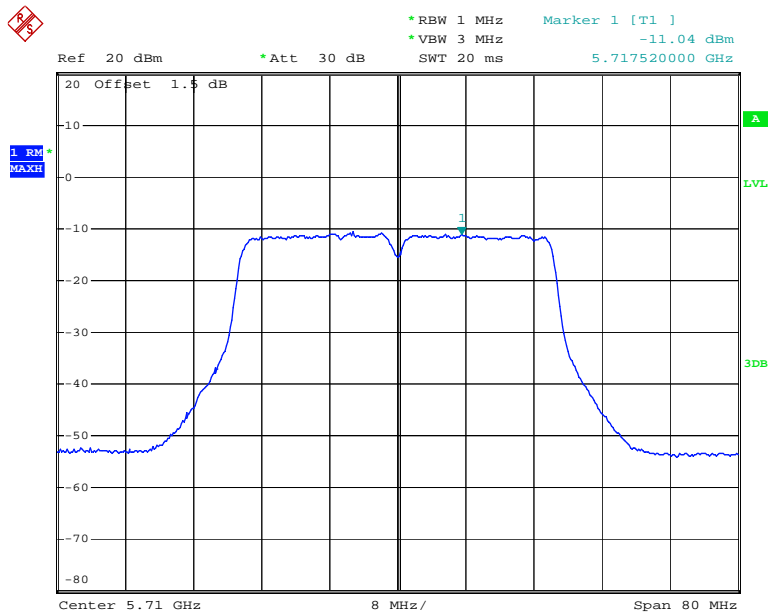
Date: 24.OCT.2020 10:31:52

802.11ac vht80 Low Channel
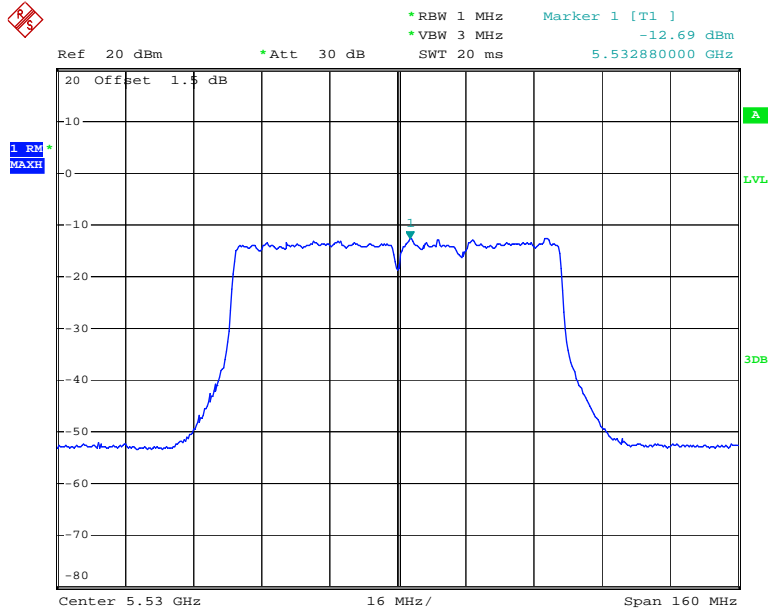
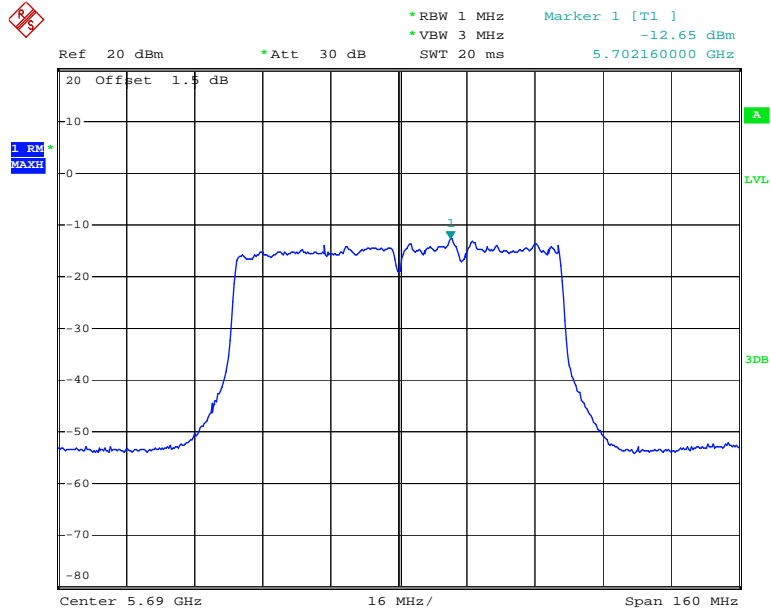

Date: 24.OCT.2020 10:33:23

802.11ac vht80 5610MHz
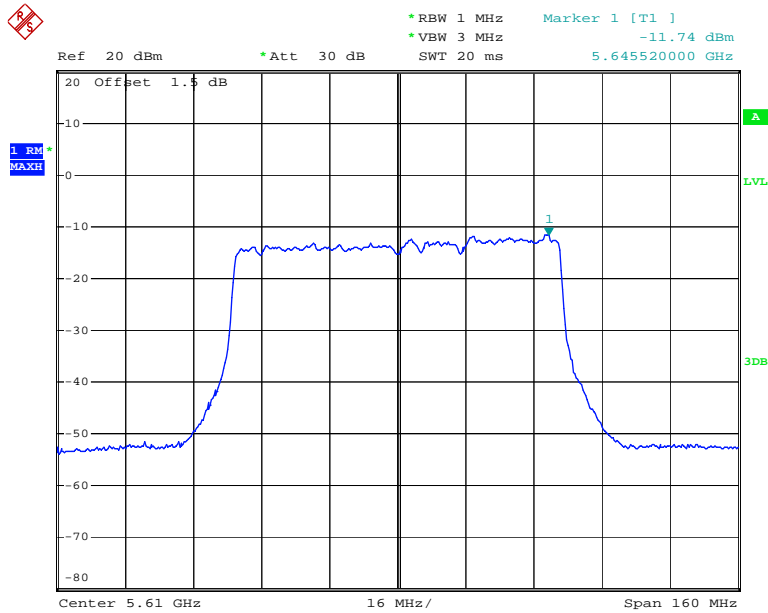
Date: 24.OCT.2020 10:35:14

802.11ac vht80 5690MHz


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz              -11.38 dBm
        Ref  20 dBm        *Att  30 dB    SWT 20 ms     5.692880000 GHz
```
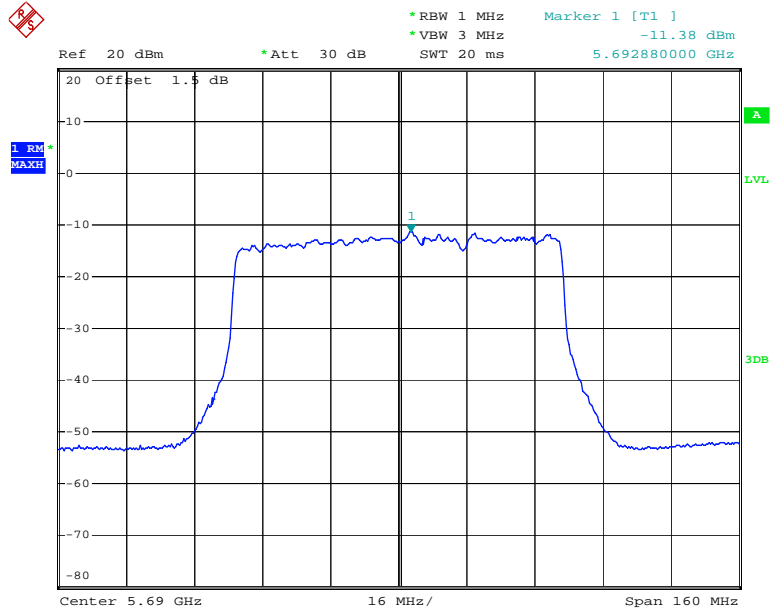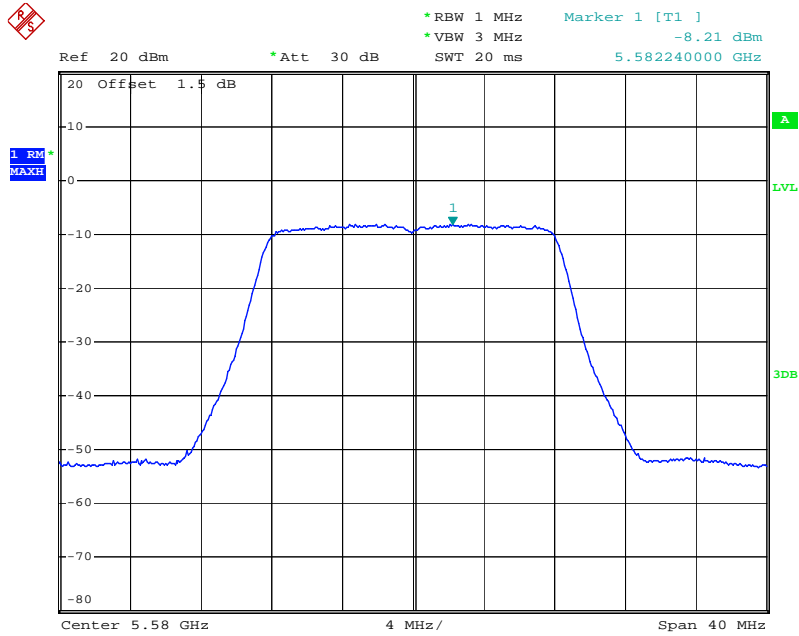
Date: 24.OCT.2020 10:34:14

Chain 1:

802.11a Low Channel
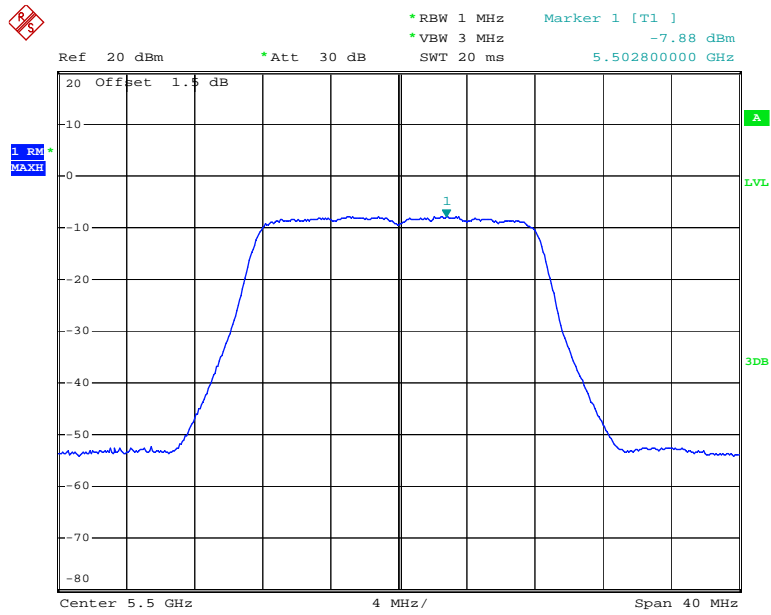
Date: 24.OCT.2020 10:52:24

802.11a Middle Channel

Date: 24.OCT.2020 10:52:45

802.11a High Channel

```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz                -7.85 dBm
        Ref  20 dBm      *Att  30 dB   SWT 20 ms      5.696560000 GHz
        20 Offset  1.5 dB
                                                                          A
   1 RM*
   MAXH                                                                  LVL

                                                                         3DB



        Center 5.7 GHz           4 MHz/              Span 40 MHz
```
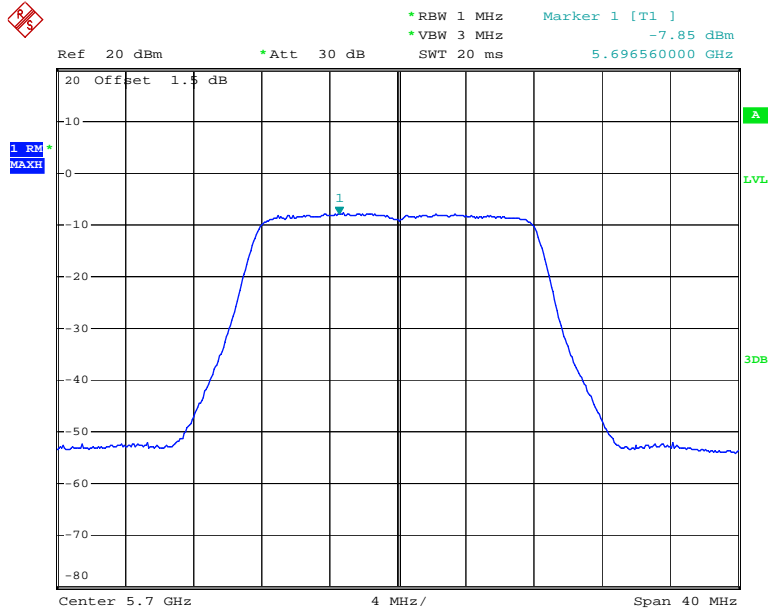
Date: 24.OCT.2020 10:53:16

802.11 a 5720MHz

```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz                -8.03 dBm
        Ref  20 dBm      *Att  30 dB   SWT 20 ms      5.717040000 GHz
        20 Offset  1.5 dB
                                                                          A
   1 RM*
   MAXH                                                                  LVL

                                                                         3DB



        Center 5.72 GHz          4 MHz/              Span 40 MHz
```
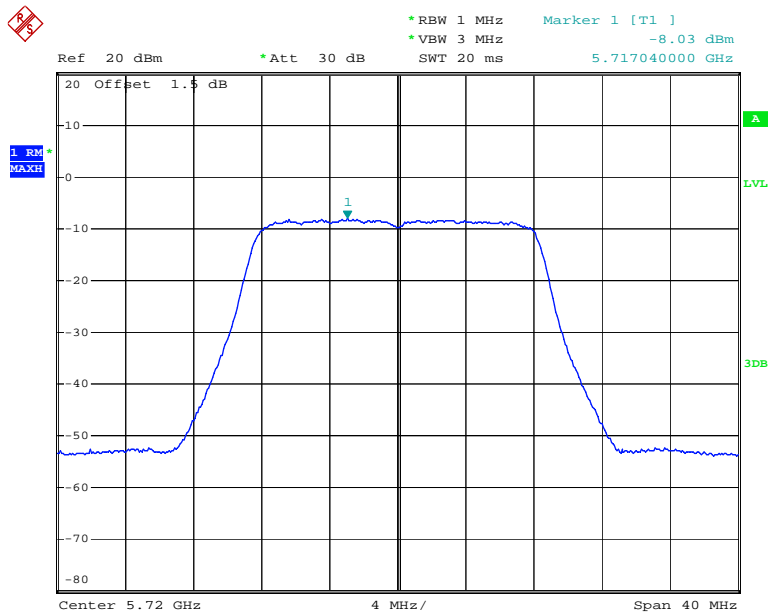
Date: 24.OCT.2020 10:54:00

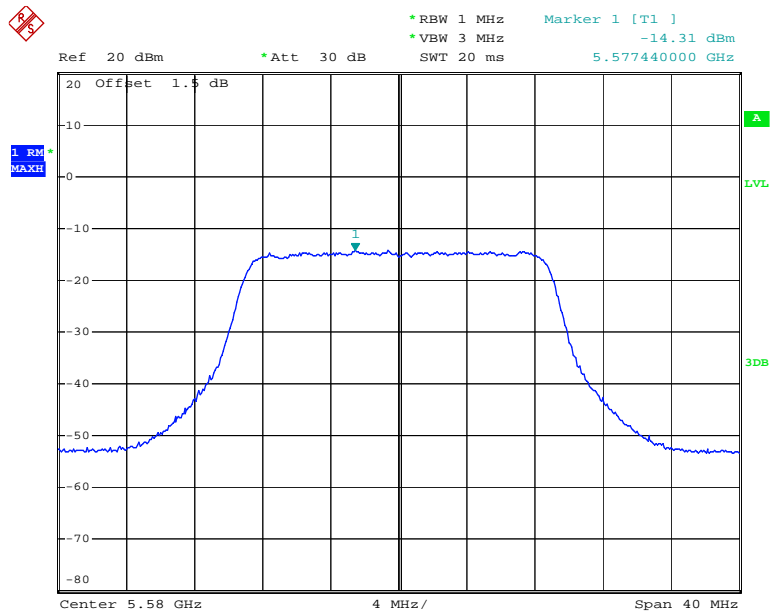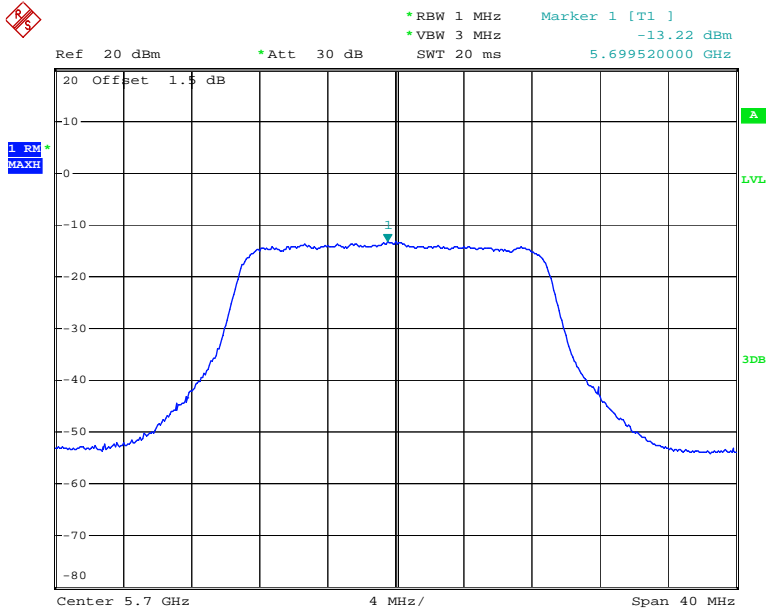## 802.11n ht20 Low Channel
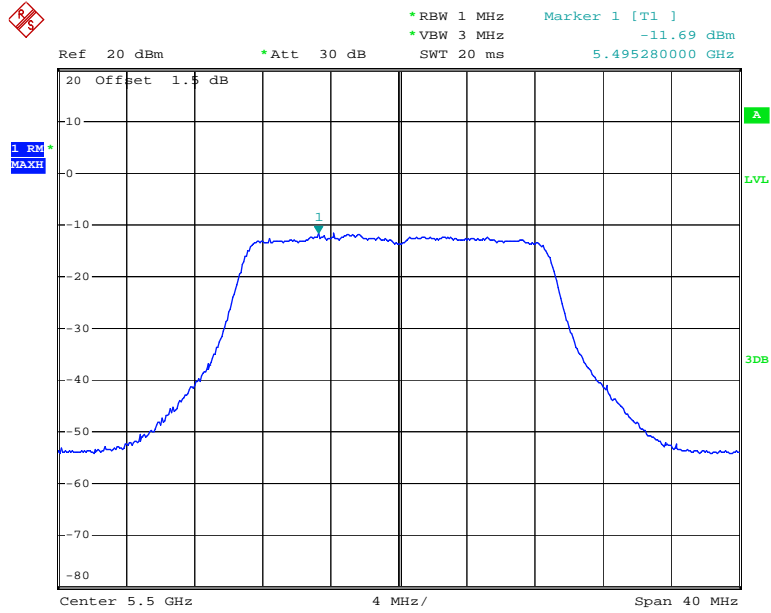
Date: 24.OCT.2020 10:55:31

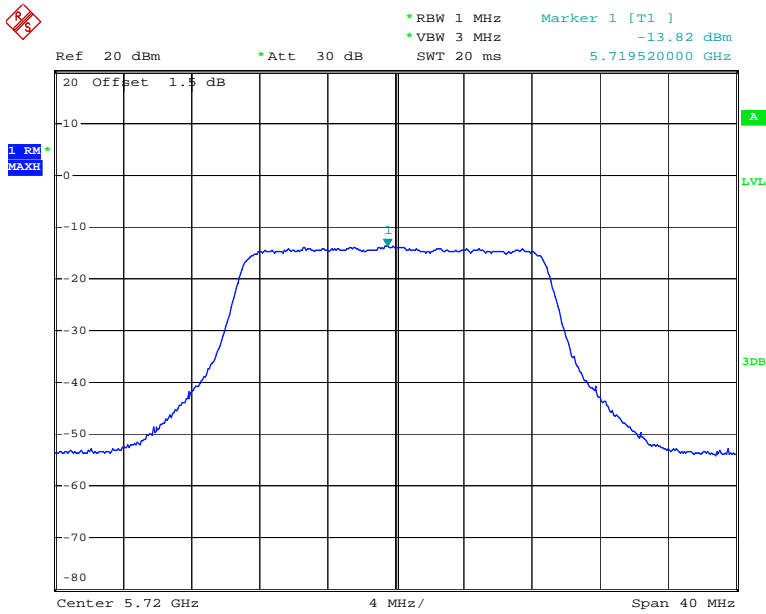## 802.11n ht20 Middle Channel
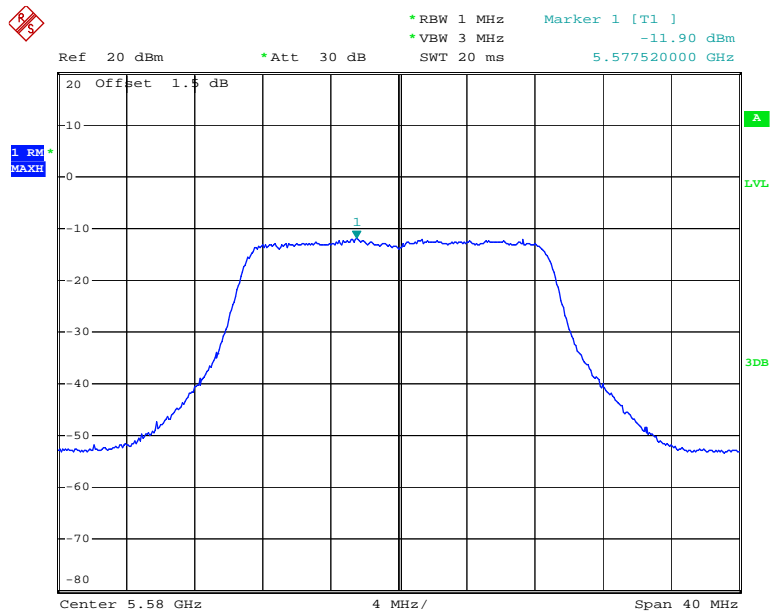
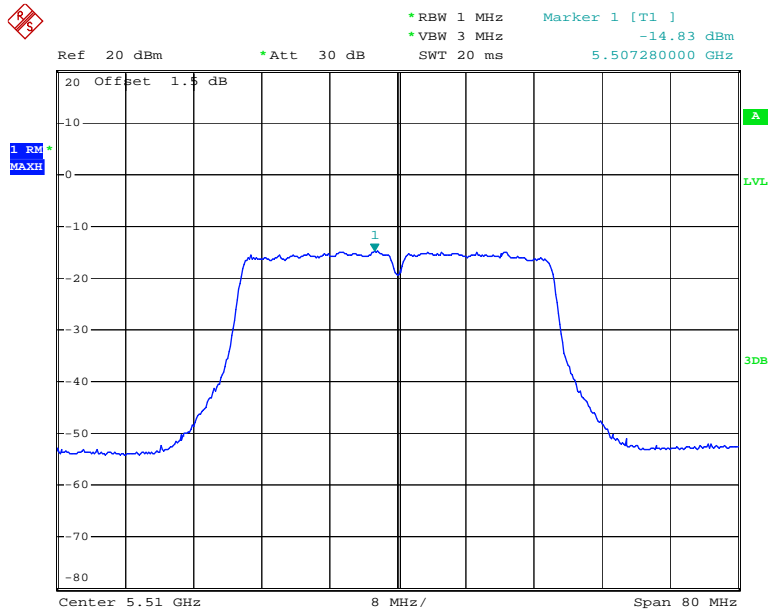

Date: 24.OCT.2020 10:55:54

802.11n ht20 High Channel
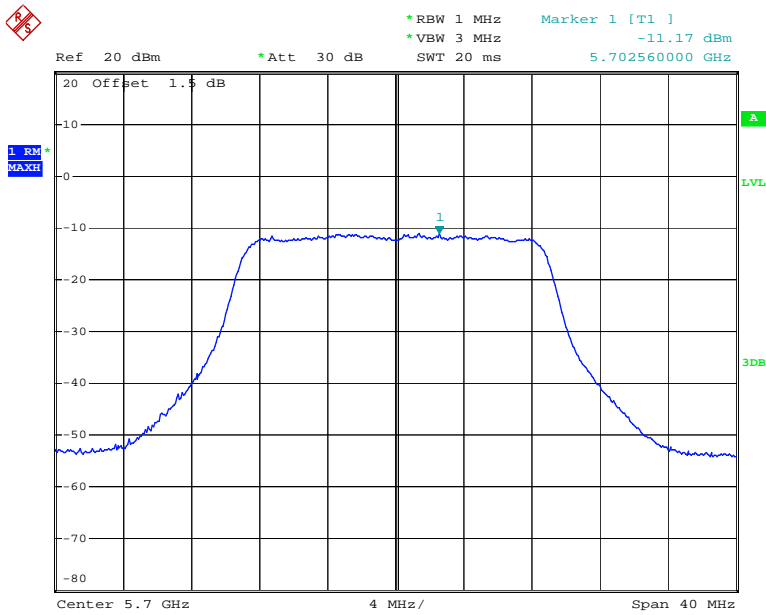
Date: 24.OCT.2020 10:56:18
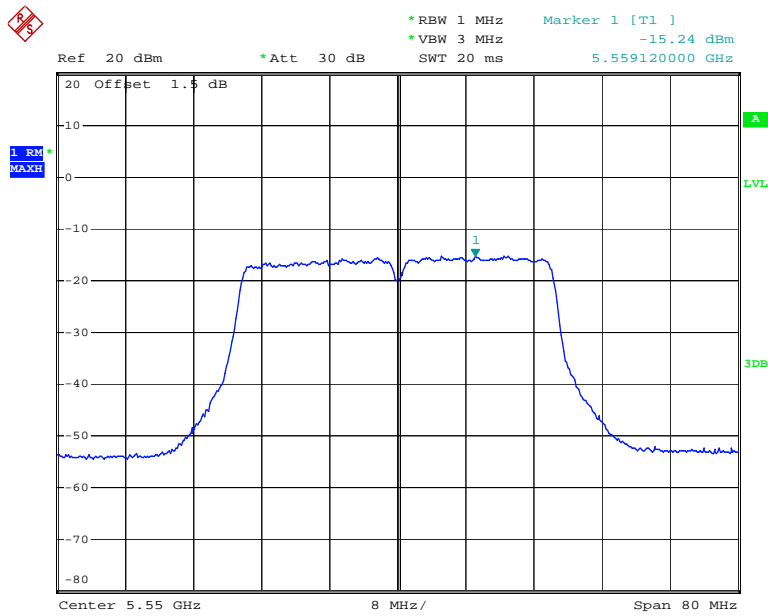
802.11n ht20 High Channel 5720 MHz
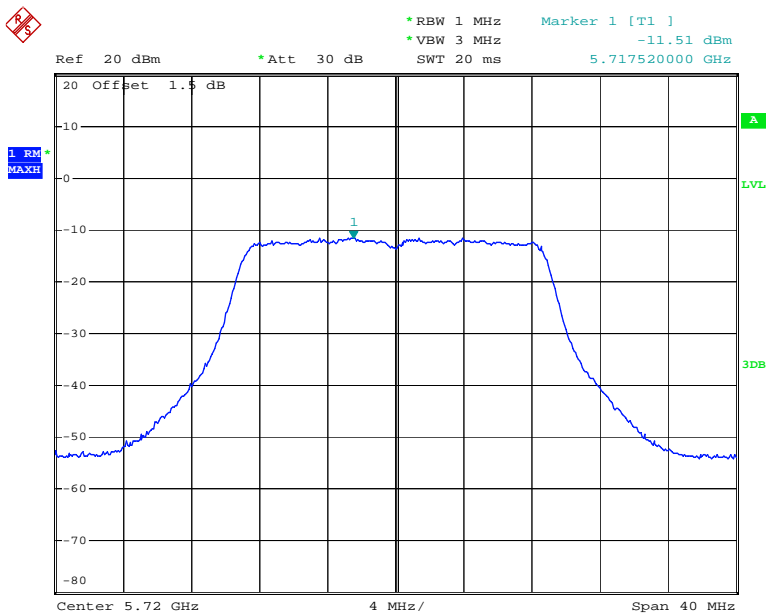
Date: 24.OCT.2020 10:56:58

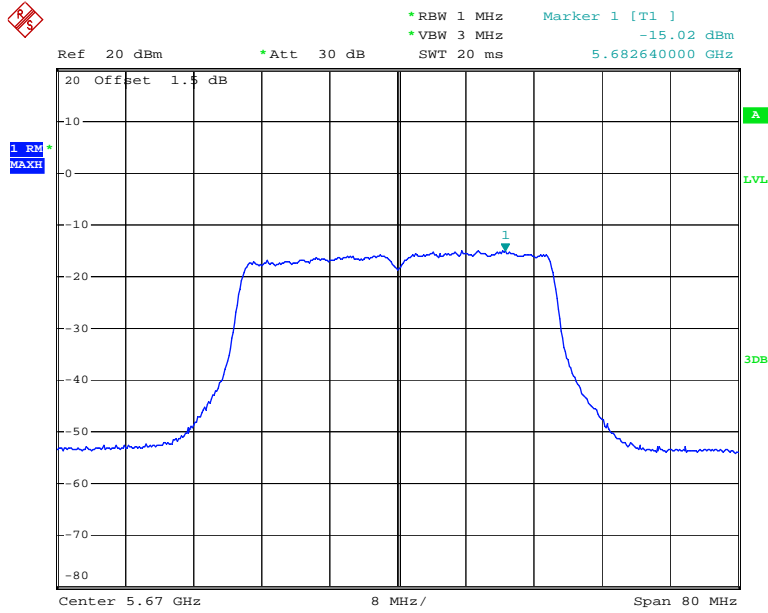## 802.11n ht40 Low Channel

Date: 24.OCT.2020 10:58:18

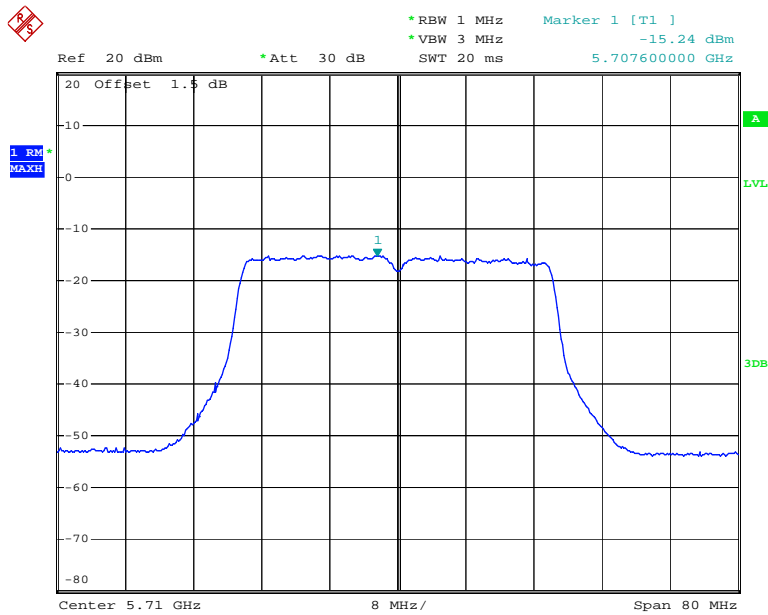## 802.11n ht40 Middle Channel

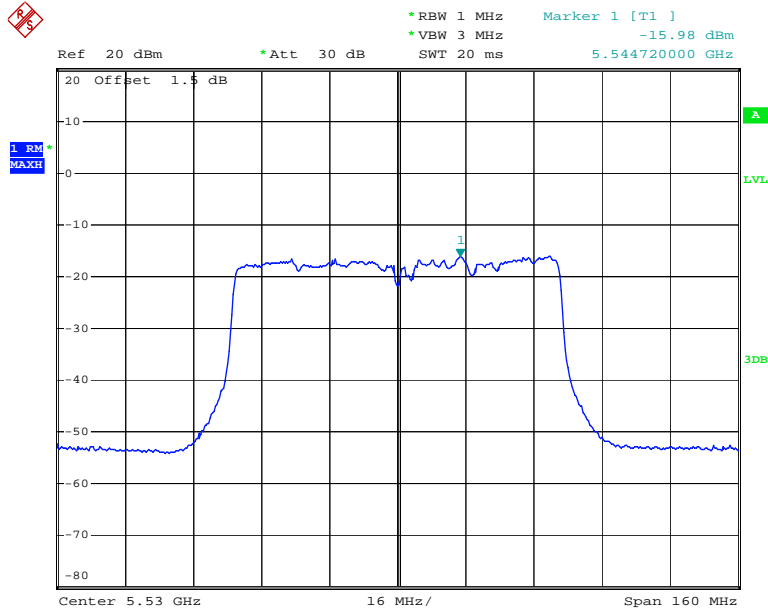Date: 24.OCT.2020 10:58:43

802.11n ht40 High Channel

Date: 24.OCT.2020 10:59:16

802.11n ht40 5710MHz
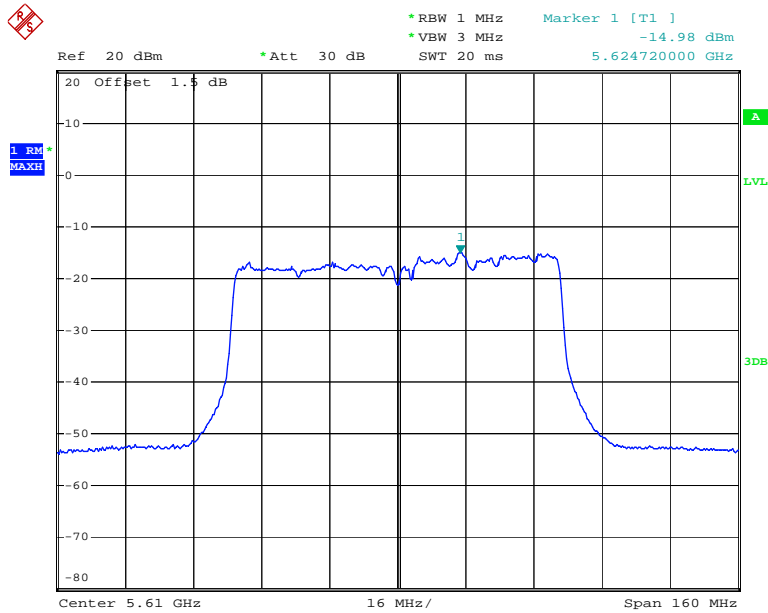

Date: 24.OCT.2020 10:59:56

802.11ac vht80 Low Channel

Date: 24.OCT.2020 11:00:38

802.11ac vht80 5610MHz

Date: 24.OCT.2020 11:01:52

802.11ac vht80 5690MHz

Date: 24.OCT.2020 11:01:08

Chain 2:

802.11a Low Channel
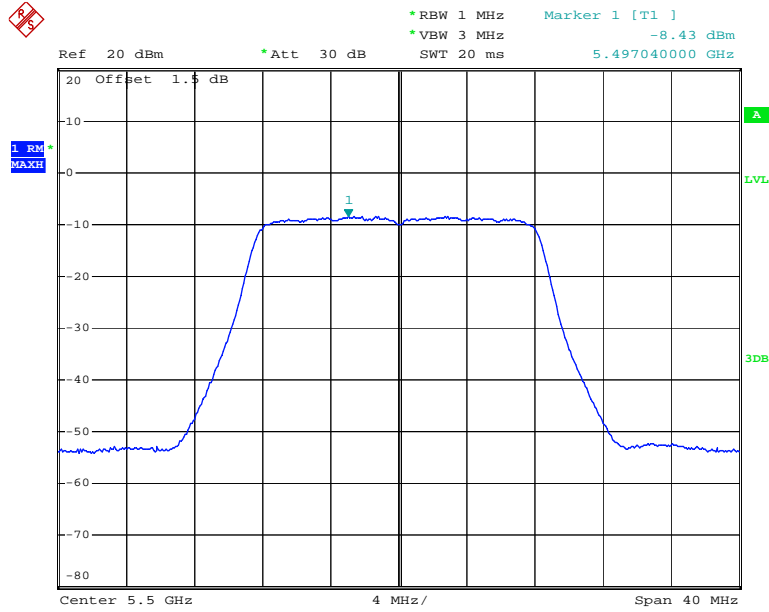
Date: 24.OCT.2020 10:47:15

802.11a Middle Channel

Date: 24.OCT.2020 10:48:17

802.11a High Channel

	*RBW 1 MHz	Marker 1 [T1]
	*VBW 3 MHz	-7.77 dBm
Ref 20 dBm	*Att 30 dB SWT 20 ms	5.697680000 GHz

20 Offset 1.5 dB

A

1 RM *
MAXH

LVL

3DB

Center 5.7 GHz   4 MHz/   Span 40 MHz
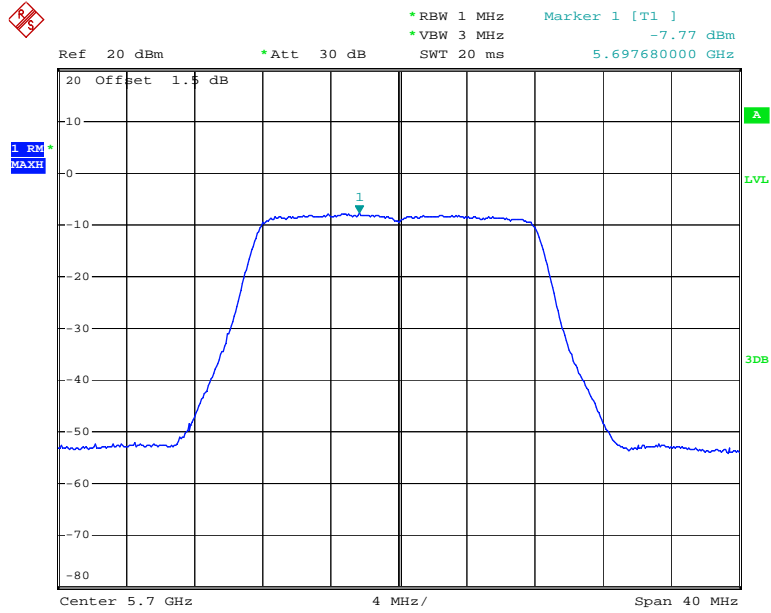
Date: 24.OCT.2020 10:48:56

802.11 a 5720MHz

	*RBW 1 MHz	Marker 1 [T1]
	*VBW 3 MHz	-8.31 dBm
Ref 20 dBm	*Att 30 dB SWT 20 ms	5.717360000 GHz

20 Offset 1.5 dB

A

1 RM *
MAXH

LVL

3DB

Center 5.72 GHz   4 MHz/   Span 40 MHz
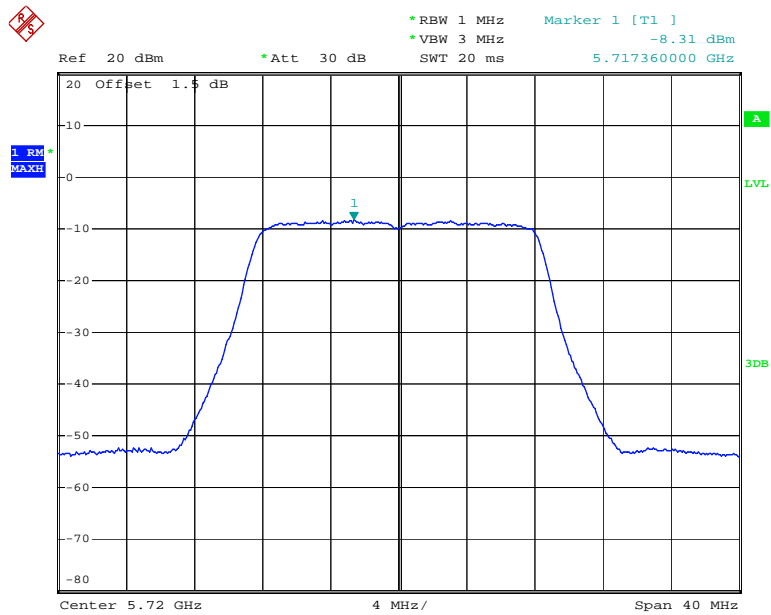
Date: 24.OCT.2020 10:49:35

802.11n ht20 Low Channel
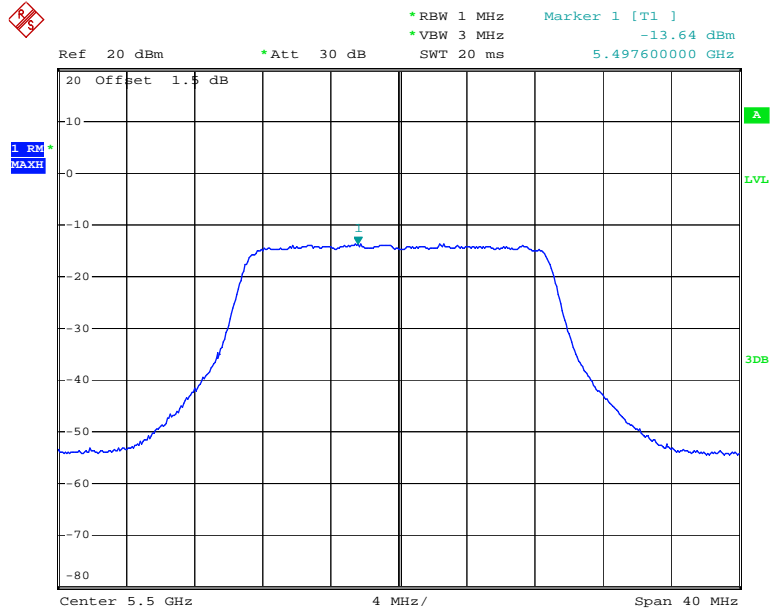
Date: 24.OCT.2020 10:44:34

802.11n ht20 Middle Channel

Date: 24.OCT.2020 10:44:56

802.11n ht20 High Channel

Date: 24.OCT.2020 10:45:18

802.11n ht20 5720 MHz
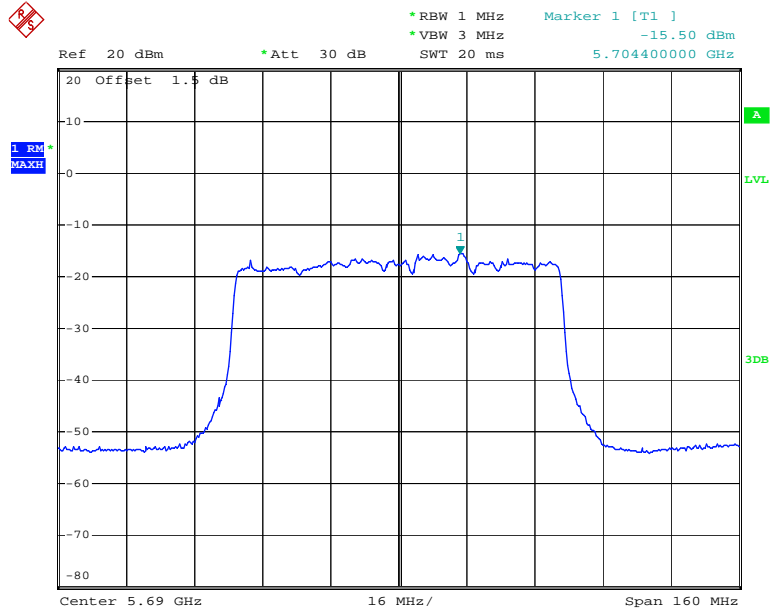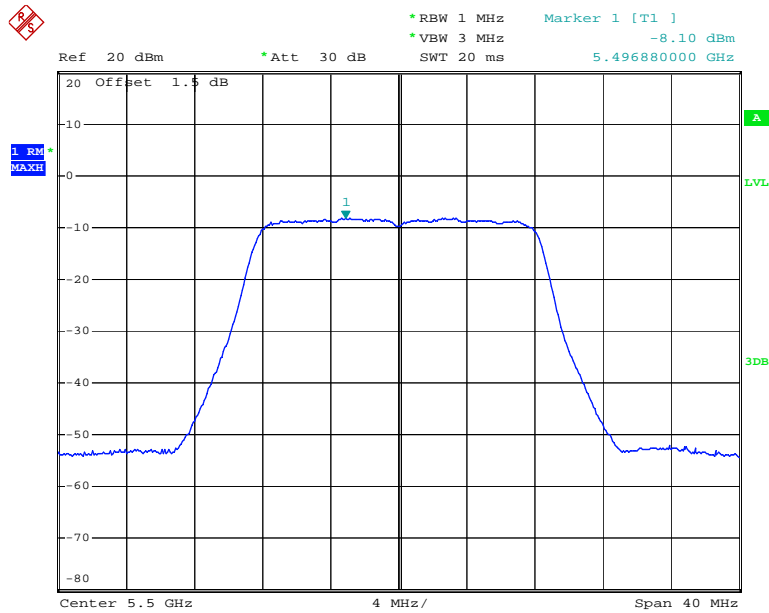

Date: 24.OCT.2020 10:46:00
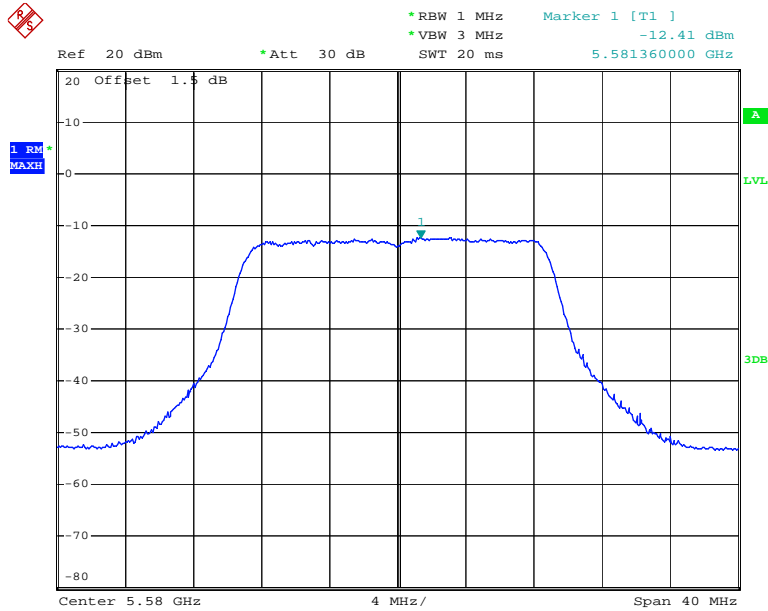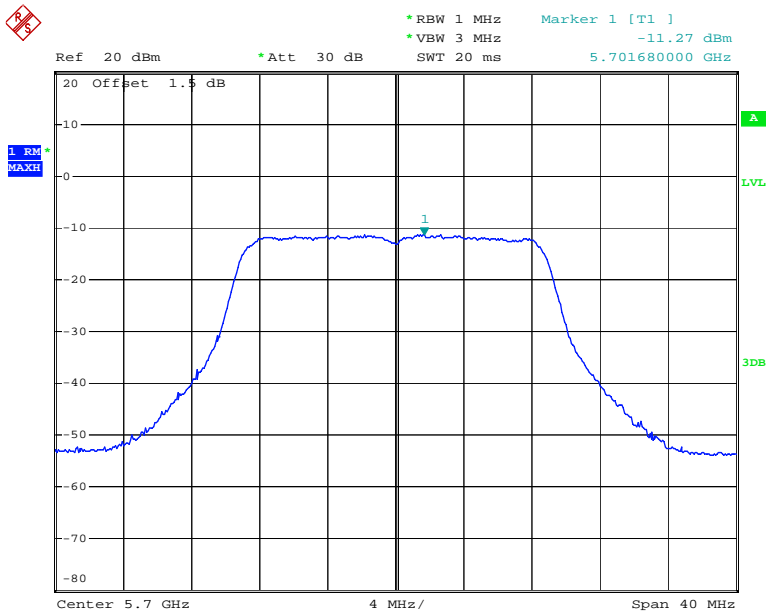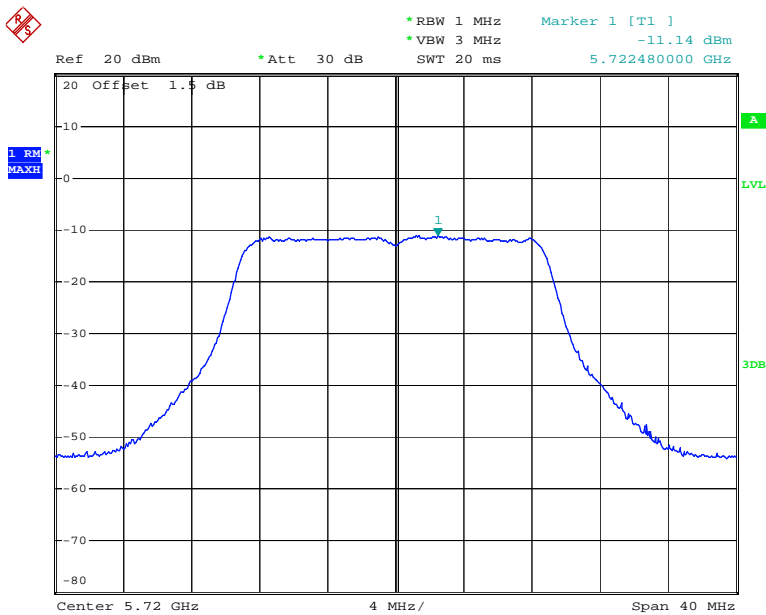
802.11n ht40 Low Channel

Date: 24.OCT.2020 10:40:02

802.11n ht40 Middle Channel

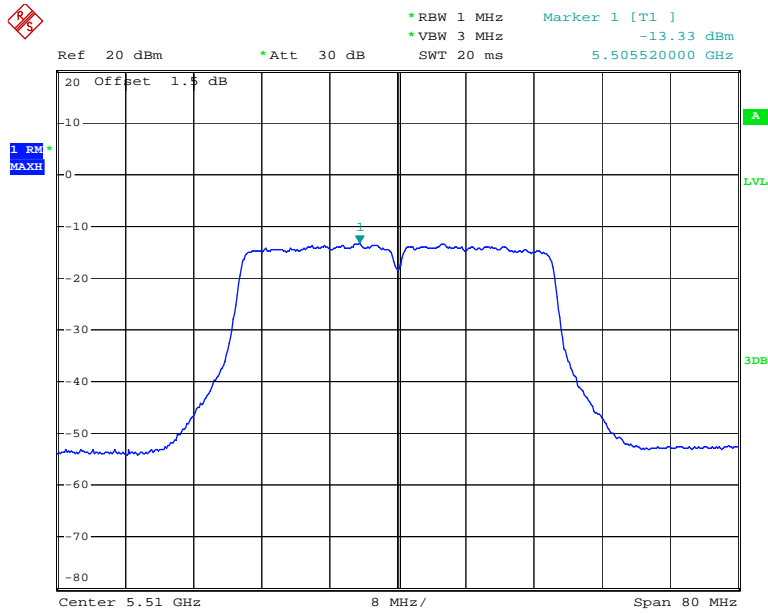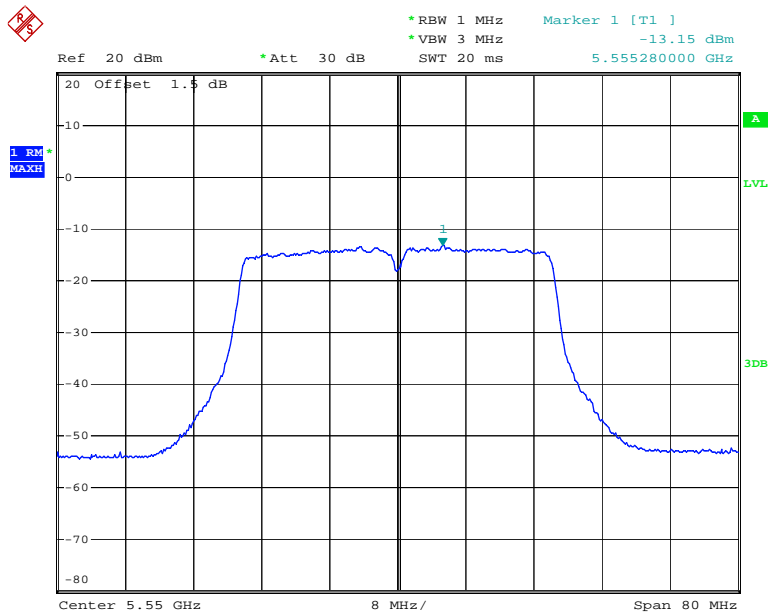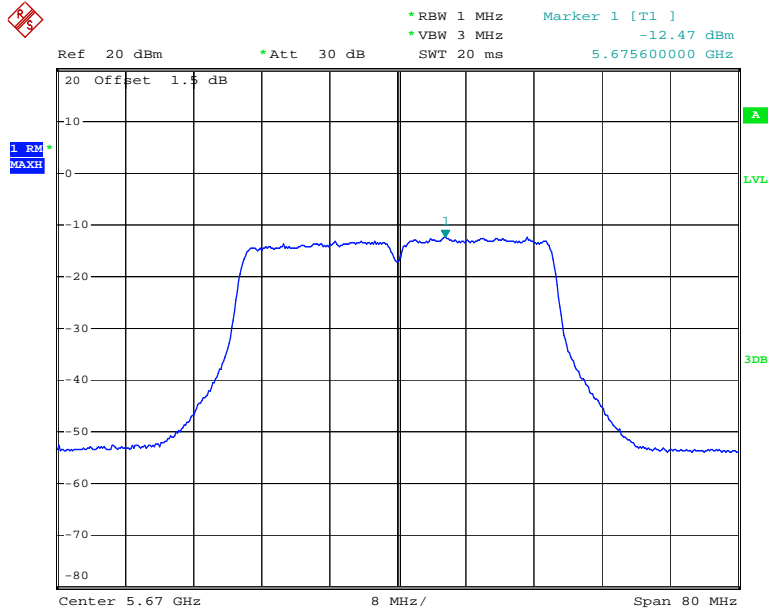

Date: 24.OCT.2020 10:40:23

802.11n ht40 High Channel

```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz              -15.02 dBm
          Ref  20 dBm     *Att  30 dB    SWT 20 ms     5.682640000 GHz
          20 Offset  1.5 dB
                                                                          A
     -10

1 RM*
MAXH     -0                                                              LVL

     -10                            1

     -20

     -30

     -40                                                                 3DB

     -50

     -60

     -70

     -80
          Center 5.67 GHz          8 MHz/              Span 80 MHz
```

Date: 24.OCT.2020 10:40:57

802.11n ht40 5710MHz

```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz              -15.24 dBm
          Ref  20 dBm     *Att  30 dB    SWT 20 ms     5.707600000 GHz
          20 Offset  1.5 dB
                                                                          A
     -10

1 RM*
MAXH     -0                                                              LVL

     -10                     1

     -20

     -30

     -40                                                                 3DB

     -50

     -60

     -70

     -80
          Center 5.71 GHz          8 MHz/              Span 80 MHz
```

Date: 24.OCT.2020 10:42:10

802.11ac vht80 Low Channel


```
                                      *RBW 1 MHz      Marker 1 [T1 ]
                                      *VBW 3 MHz               -15.98 dBm
          Ref  20 dBm      *Att  30 dB    SWT 20 ms        5.544720000 GHz
          20 Offset  1.5 dB
```

Center 5.53 GHz　　　　　　16 MHz/　　　　　　Span 160 MHz

Date: 24.OCT.2020 10:39:14

802.11ac vht80 5610MHz


```
                                      *RBW 1 MHz      Marker 1 [T1 ]
                                      *VBW 3 MHz               -14.98 dBm
          Ref  20 dBm      *Att  30 dB    SWT 20 ms        5.624720000 GHz
          20 Offset  1.5 dB
```

Center 5.61 GHz　　　　　　16 MHz/　　　　　　Span 160 MHz

Date: 24.OCT.2020 10:37:07

802.11ac vht80 5690MHz

Date: 24.OCT.2020 10:37:52

Chain 3:

802.11a Low Channel

Date: 24.OCT.2020 11:09:05

802.11a Middle Channel
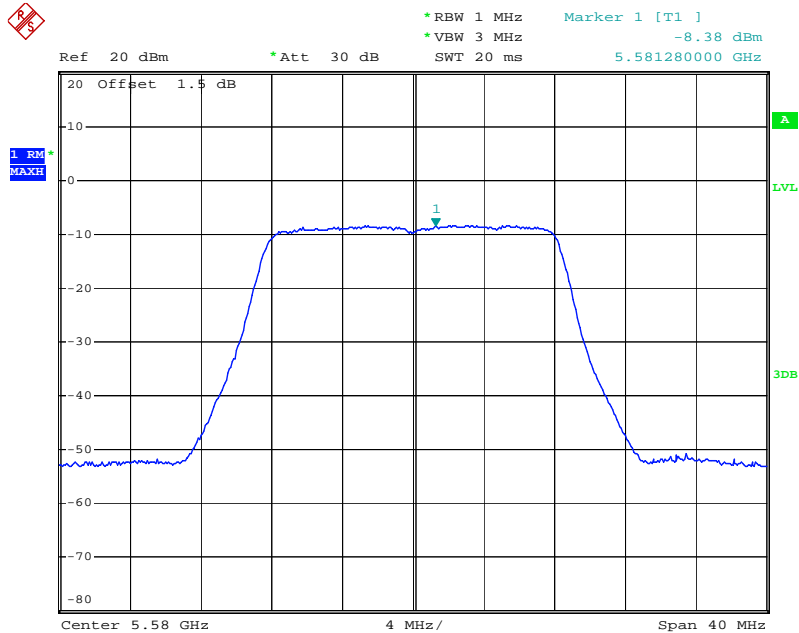
Date: 24.OCT.2020 11:09:29

802.11a High Channel
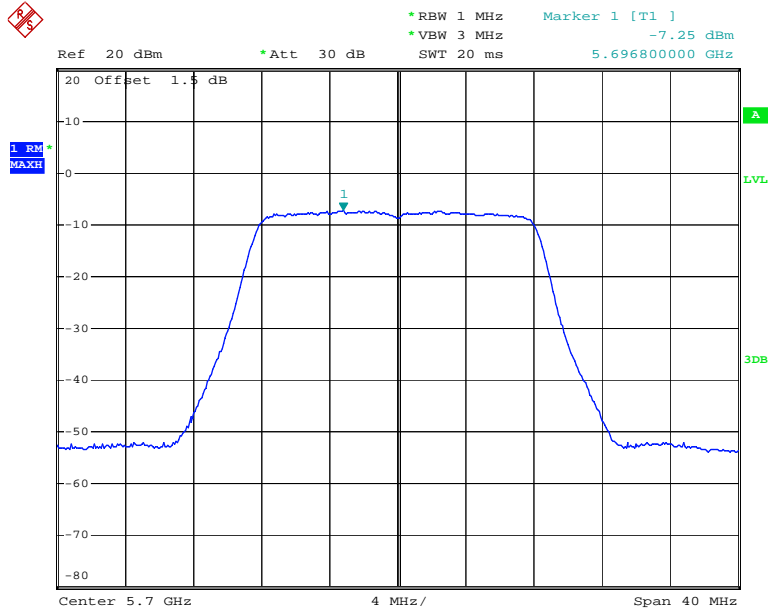
Date: 24.OCT.2020 11:09:53

802.11 a High Channel 5720MHz
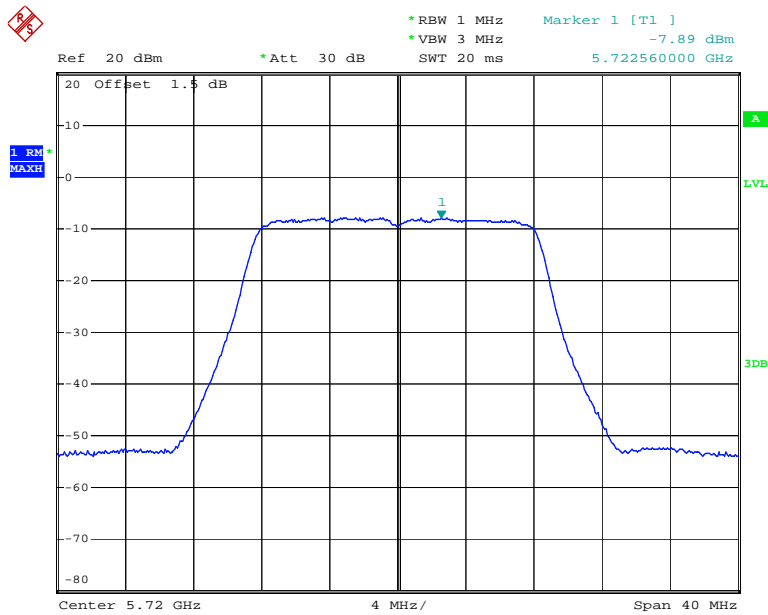
Date: 24.OCT.2020 11:10:23

802.11n ht20 Low Channel
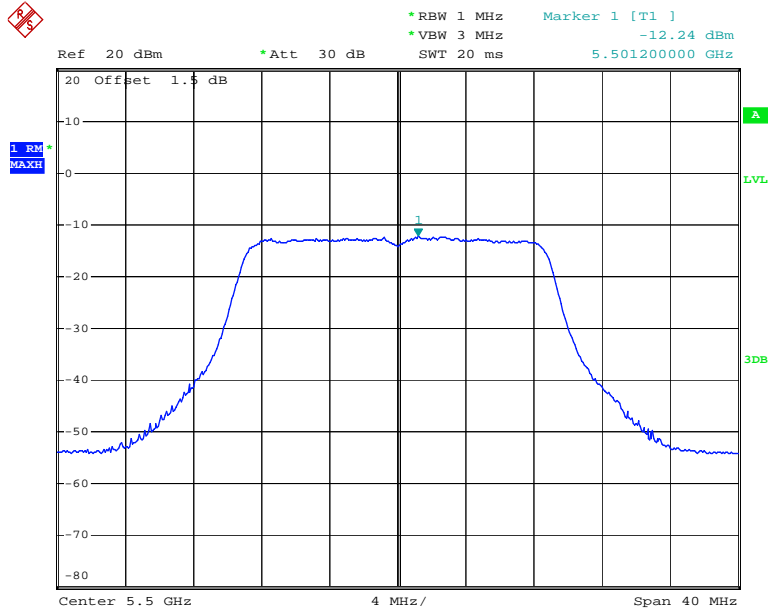
Date: 24.OCT.2020 11:06:52

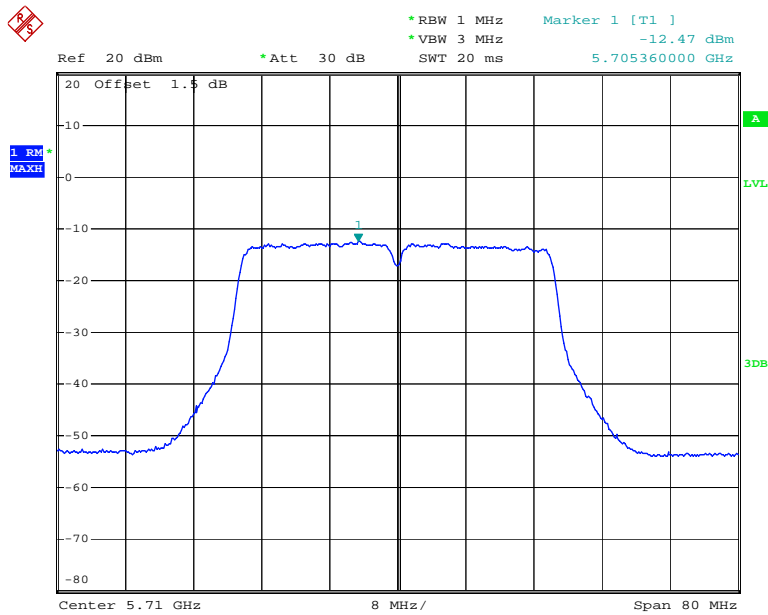## 802.11n ht20 Middle Channel

Date: 24.OCT.2020 11:07:17

802.11n ht20 High Channel

Date: 24.OCT.2020 11:13:15

802.11n ht20 High Channel 5720 MHz

Date: 24.OCT.2020 11:08:15

802.11n ht40 Low Channel

Date: 24.OCT.2020 11:04:32

802.11n ht40 Middle Channel

Date: 24.OCT.2020 11:04:55

802.11n ht40 High Channel


```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz           -12.47 dBm
  Ref  20 dBm           *Att  30 dB     SWT 20 ms     5.675600000 GHz
  20 Offset  1.5 dB                                              A
 -10
 -0                                                              LVL
 -10                                   1
 -20
 -30
 -40                                                             3DB
 -50
 -60
 -70
 -80
  Center 5.67 GHz          8 MHz/                  Span 80 MHz
```

Date: 24.OCT.2020 11:05:19

802.11n ht40 5710MHz


```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz           -12.47 dBm
  Ref  20 dBm           *Att  30 dB     SWT 20 ms     5.705360000 GHz
  20 Offset  1.5 dB                                              A
 -10
 -0                                                              LVL
 -10                        1
 -20
 -30
 -40
 -50                                                             3DB
 -60
 -70
 -80
  Center 5.71 GHz          8 MHz/                  Span 80 MHz
```

Date: 24.OCT.2020 11:06:09

802.11ac vht80 Low Channel
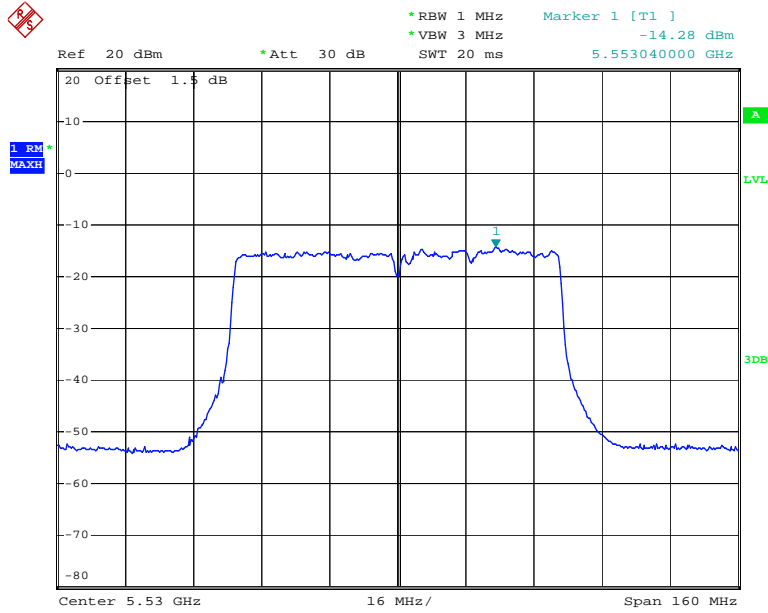
Date: 24.OCT.2020 11:03:41

802.11ac vht80 5610MHz
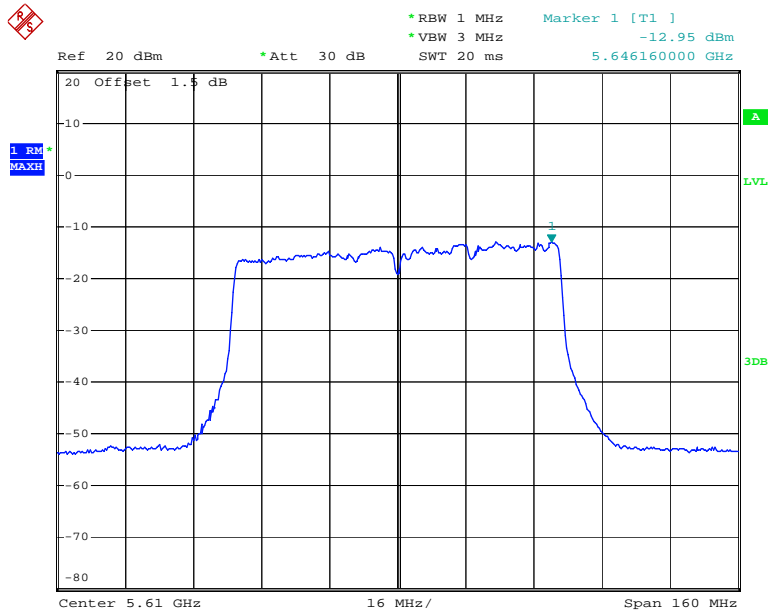
Date: 24.OCT.2020 11:02:43

802.11ac vht80 5690MHz
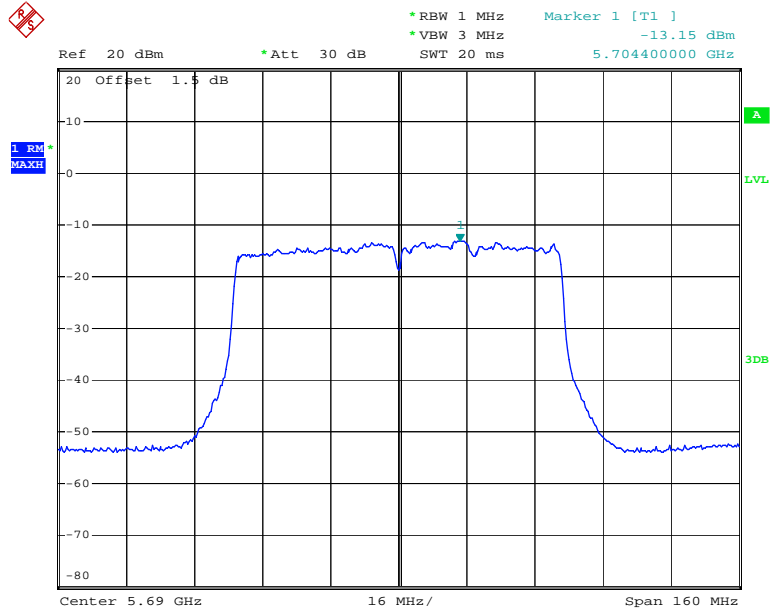
Date: 24.OCT.2020 11:03:14

29.5 dBi Antenna:
5150-5250 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC Limit
802.11 a	5180	3.55	3.76	3.43	3.36	/	10.5
	5200	2.80	3.86	3.09	3.76	/	10.5
	5240	3.03	3.21	3.59	2.97	/	10.5
802.11n ht20	5180	-2.44	-2.53	-3.85	-3.08	3.08	10.5
	5200	-2.74	-2.72	-3.91	-2.51	3.08	10.5
	5240	-2.69	-2.36	-3.41	-2.24	3.37	10.5
802.11n ht40	5190	-2.97	-3.38	-3.97	-3.44	2.60	10.5
	5230	-2.73	-2.42	-2.83	-2.35	3.44	10.5
802.11ac vht80	5210	-3.26	-3.84	-4.86	-3.73	2.14	10.5

Note: This is a fixed point-to-point AP application, and this band is Only for FCC Use.

5250-5350MHz(10dB attenuator was used in test):

Mode	Frequency (MHz)	Reading (dBm/MHz)				Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/ISED Limit
802.11 a	5260	-16.24	-15.94	-16.85	-16.61	-6.24	-5.94	-6.85	-6.61	/	-2.5
	5280	-16.53	-16.69	-17.34	-16.48	-6.53	-6.69	-7.34	-6.48	/	-2.5
	5320	-17.03	-16.32	-17.43	-16.58	-7.03	-6.32	-7.43	-6.58	/	-2.5
802.11n ht20	5260	-19.62	-19.75	-20.99	-19.93	-9.62	-9.75	-10.99	-9.93	-4.02	-2.5
	5280	-19.91	-20.21	-21.54	-20.34	-9.91	-10.21	-11.54	-10.34	-4.44	-2.5
	5320	-20.07	-20.95	-22.46	-21.72	-10.07	-10.95	-12.46	-11.72	-5.19	-2.5
802.11n ht40	5270	-21.44	-21.77	-22.96	-22.02	-11.44	-11.77	-12.96	-12.02	-5.99	-2.5
	5310	-21.63	-22.73	-23.97	-23.29	-11.63	-12.73	-13.97	-13.29	-6.80	-2.5
802.11ac vht80	5290	-21.82	-22.04	-23.40	-22.78	-11.82	-12.04	-13.4	-12.78	-6.45	-2.5

5470-5725MHz(10dB attenuator was used in test):

Mode	Frequency (MHz)	Reading (dBm/MHz)				Maximum Power Spectral Density (dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/ISED Limit
802.11 a	5500	-16.24	-15.90	-16.97	-15.99	-6.24	-5.9	-6.97	-5.99	/	-2.5
	5580	-16.29	-16.21	-16.90	-16.08	-6.29	-6.21	-6.9	-6.08	/	-2.5
	5700	-16.18	-15.97	-16.52	-16.81	-6.18	-5.97	-6.52	-6.81	/	-2.5
	5720	-16.20	-16.70	-16.70	-16.31	-6.2	-6.7	-6.7	-6.31	/	-2.5
802.11n ht20	5500	-19.14	-21.08	-21.51	-21.23	-9.14	-11.08	-11.51	-11.23	-4.61	-2.5
	5580	-19.81	-20.80	-22.18	-21.54	-9.81	-10.8	-12.18	-11.54	-4.97	-2.5
	5700	-19.87	-22.50	-22.81	-22.20	-9.87	-12.5	-12.81	-12.2	-5.66	-2.5
	5720	-19.79	-22.74	-22.95	-22.40	-9.79	-12.74	-12.95	-12.4	-5.74	-2.5
802.11n ht40	5510	-19.22	-20.33	-22.71	-21.38	-9.22	-10.33	-12.71	-11.38	-4.70	-2.5
	5550	-19.31	-20.87	-22.97	-21.22	-9.31	-10.87	-12.97	-11.22	-4.88	-2.5
	5670	-19.90	-21.59	-23.76	-21.85	-9.9	-11.59	-13.76	-11.85	-5.54	-2.5
	5710	-19.34	-21.63	-23.74	-22.39	-9.34	-11.63	-13.74	-12.39	-5.45	-2.5
802.11ac vht80	5530	-20.31	-20.80	-23.25	-22.18	-10.31	-10.8	-13.25	-12.18	-5.46	-2.5
	5610	-19.31	-20.35	-23.22	-21.31	-9.31	-10.35	-13.22	-11.31	-4.80	-2.5
	5690	-20.32	-21.52	-24.45	-22.97	-10.32	-11.52	-14.45	-12.97	-6.03	-2.5

5725-5850 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/500kHz)					
		Chain 0	Chain 1	Chain 2	Chain 3	Total	FCC/RSS Limit
802.11 a	5745	11.49	11.41	11.05	12.45	/	30
	5785	10.73	11.18	10.18	12.25	/	30
	5825	10.61	11.17	10.56	11.45	/	30
802.11n ht20	5745	9.74	6.92	5.64	7.79	13.80	30
	5785	9.39	6.59	6.00	7.67	13.63	30
	5825	9.01	6.48	5.60	7.32	13.31	30
802.11n ht40	5755	6.06	3.77	2.01	3.95	10.21	30
	5795	5.44	2.77	1.71	3.69	9.64	30
802.11ac vht80	5775	3.58	1.01	-0.09	0.86	7.59	30

Note: Note: This is a fixed point-to-point AP application.For 5.8G band, same power level setting for all antenna configurations, the test plots please refer to 13dBi antenna part.

Note:

The antenna gain is 29.5 dBi, 10 dB Attenuators should installed with this antenna for bands 5250-5350MHz and 5470-5725MHz, so the Actual antenna gain is 19.5 dBi for the two bands. Two sets of identical Antenna should be installed to transmit different data in a different direction from the other antennas. Each Antenna set has two Cross-polarized antennas, per KDB 662911 D01 Multiple Transmitter Output v02r01, Clause F) 2):

b) *Sectorized antenna systems.* In sectorized antenna systems in which each antenna is used to transmit different data in a different direction from the other antennas, directional gain is equal to the gain of an individual sector antenna.

c) *Cross-polarized antennas.* For a system in which the antennas have fixed orientations relative to one another that ensure that the antennas are cross-polarized regardless of any user actions, the directional gain is computed as follows.

(i) *Cross-polarized antennas with $N_{ANT} = 2$.* In the case of a transmitter with only two outputs driving a pair of antennas that are cross-polarized (*e.g.,* vertical and horizontal or left-circular and right-circular), directional gain is the gain of an individual antenna. If the two antennas have different gains, the larger gain applies.

So:

Directional gain = G_{ANT} = 19.5dBi for 5250-5350 MHz&5470-5725MHz
Directional gain = G_{ANT} = 29.5dBi for 5150-5250 MHz&5725-5850MHz

For 5.8GHz band, If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
Method SA-3 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01was used for PSD test.

5150-5250 MHz, Chain 0:
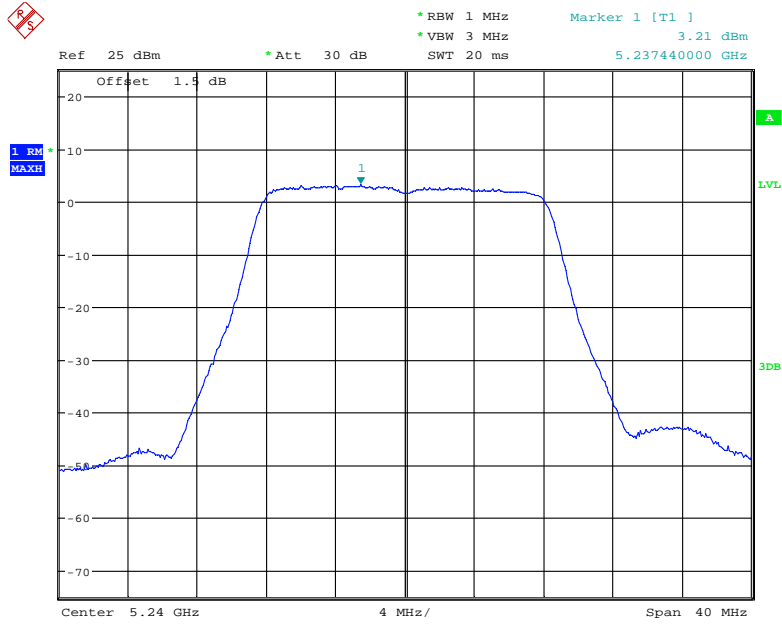
802.11a Low Channel

Date: 21.OCT.2020 10:50:10

802.11a Middle Channel

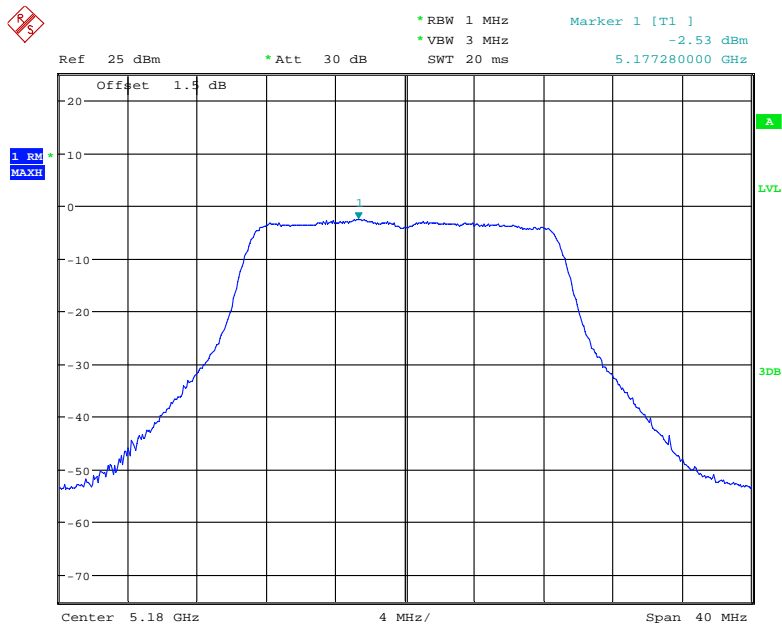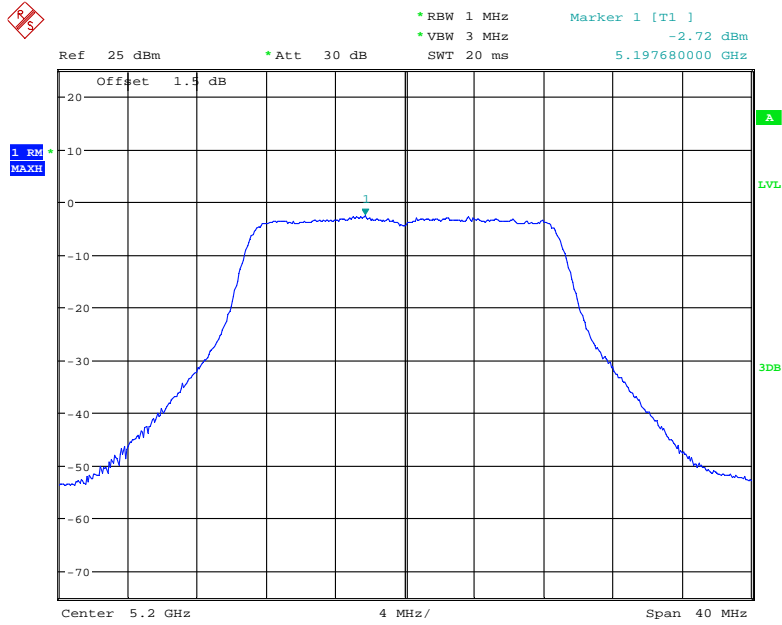Date: 21.OCT.2020 10:51:03

802.11a High Channel

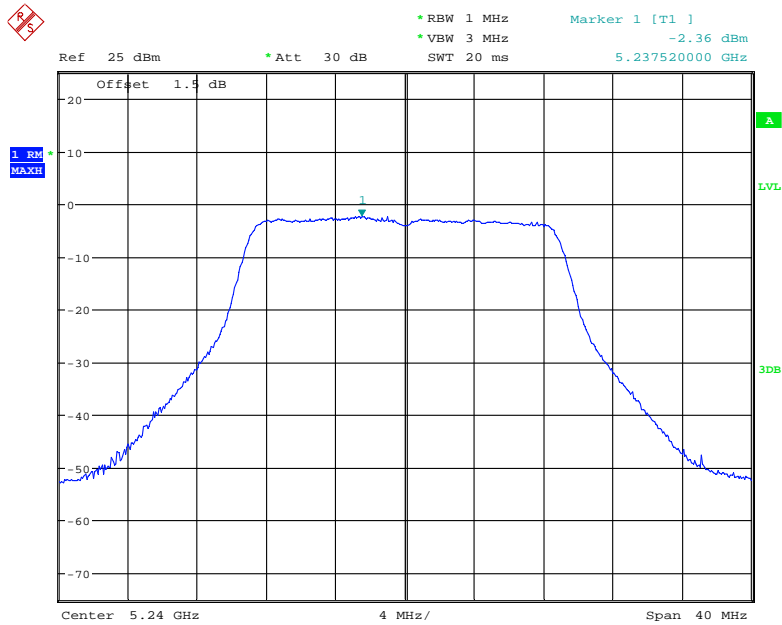Date: 21.OCT.2020 10:51:57

802.11n ht20 Low Channel

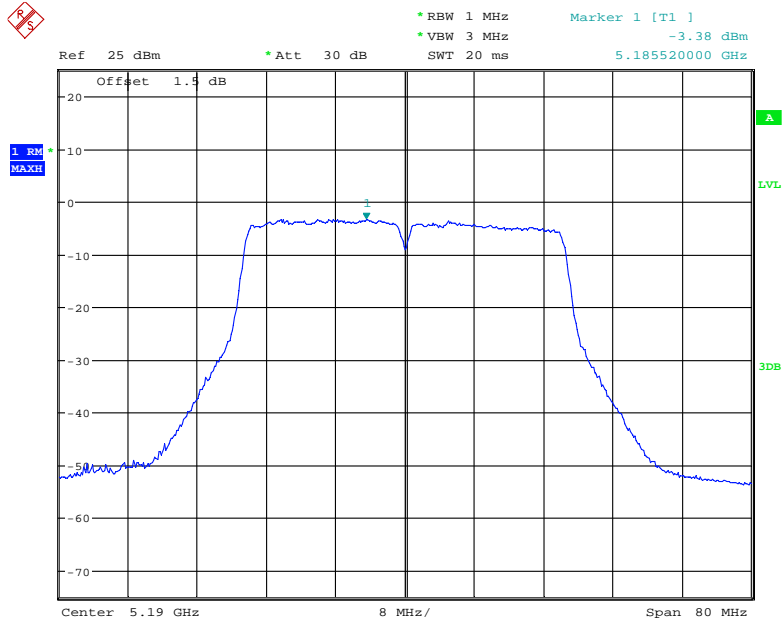Date: 21.OCT.2020 10:58:17

802.11n ht20 Middle Channel

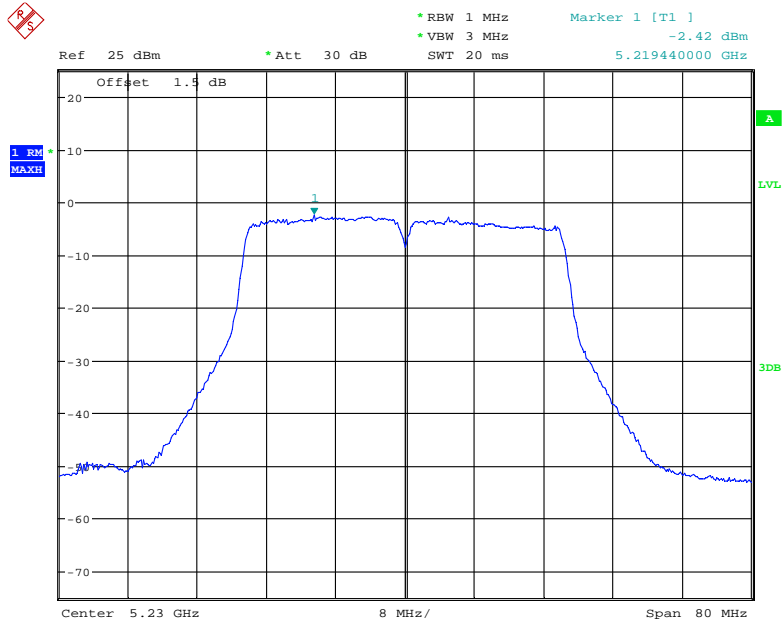Date: 21.OCT.2020 10:57:17

802.11n ht20 High Channel

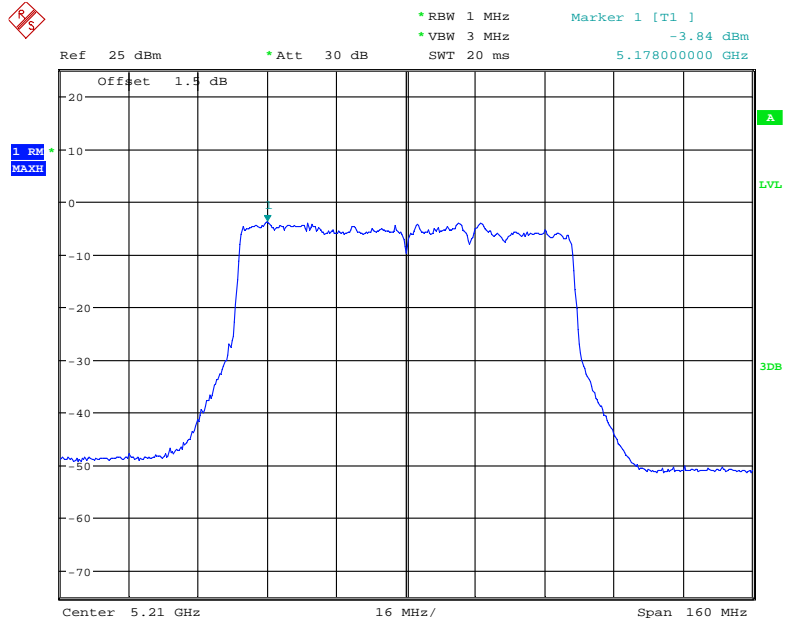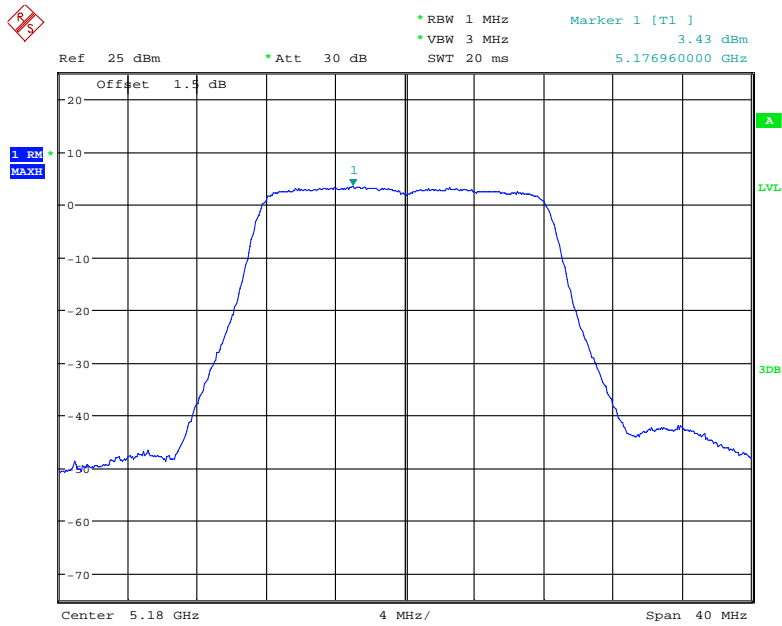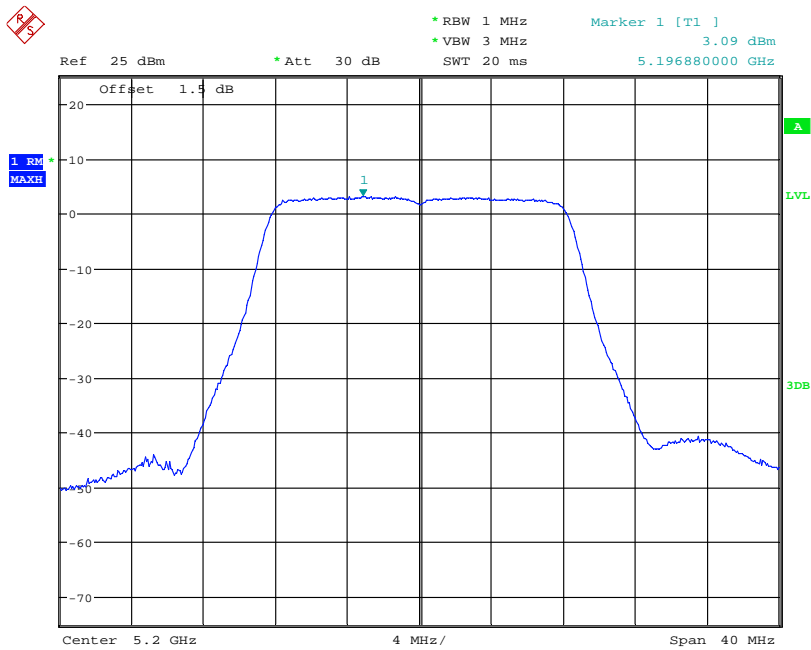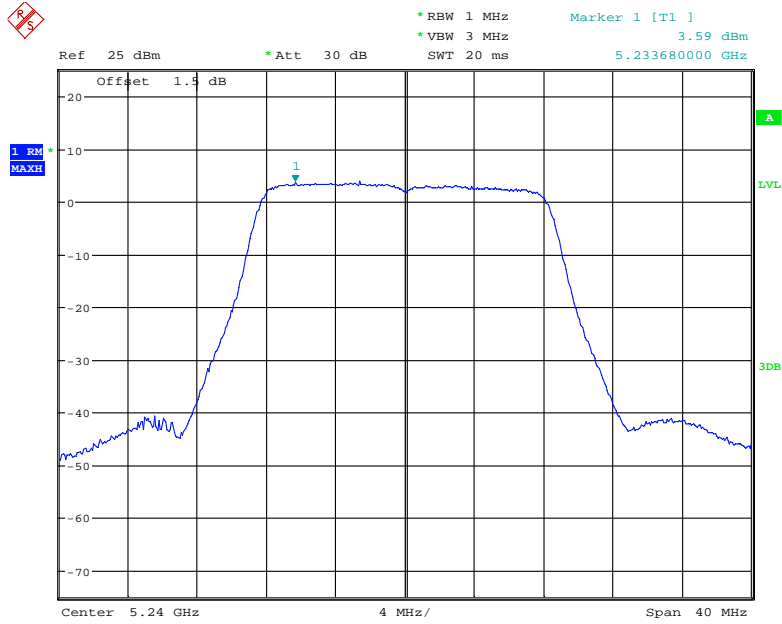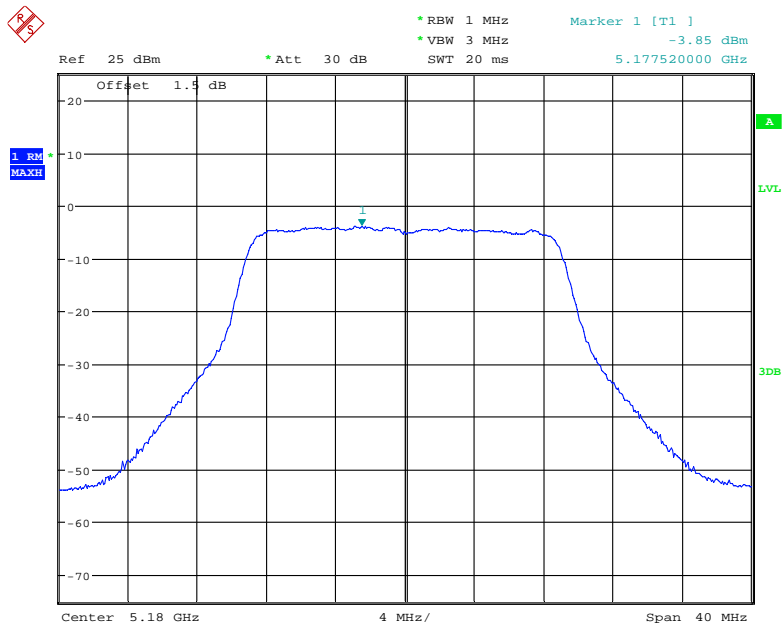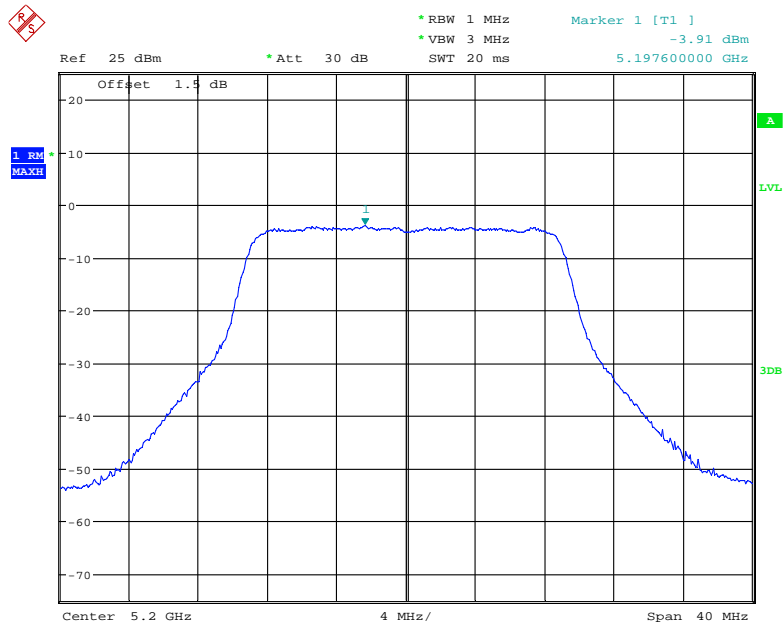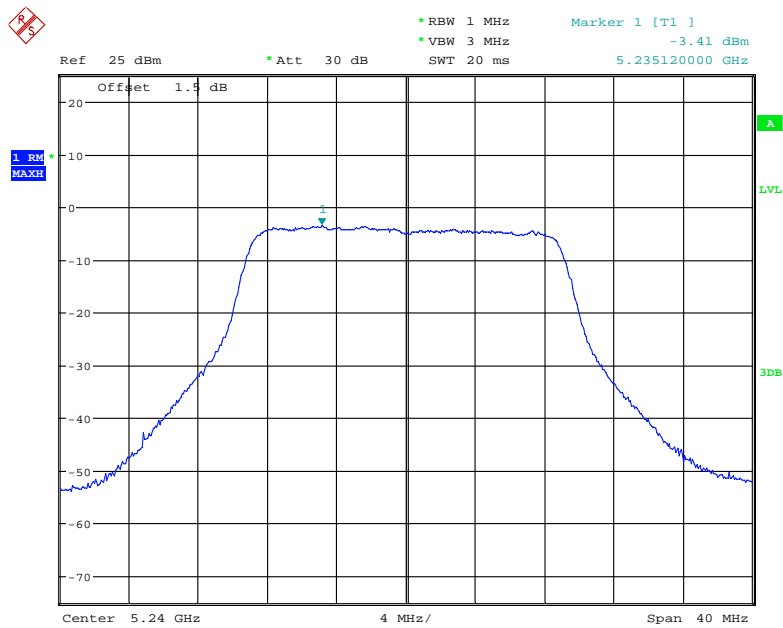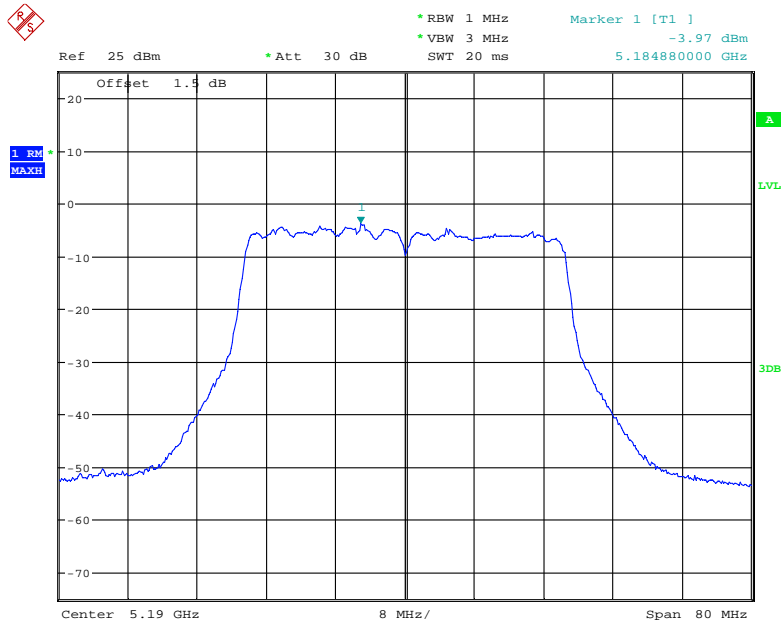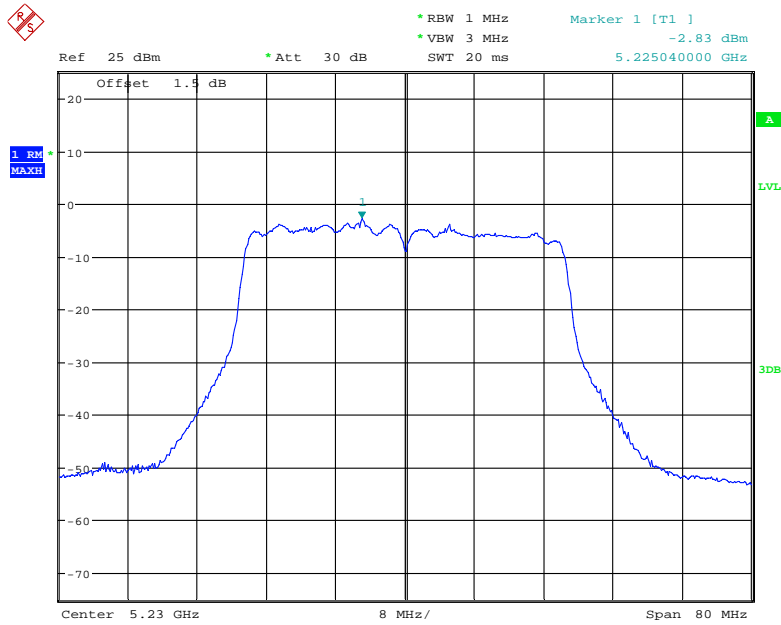Date: 21.OCT.2020 10:56:22
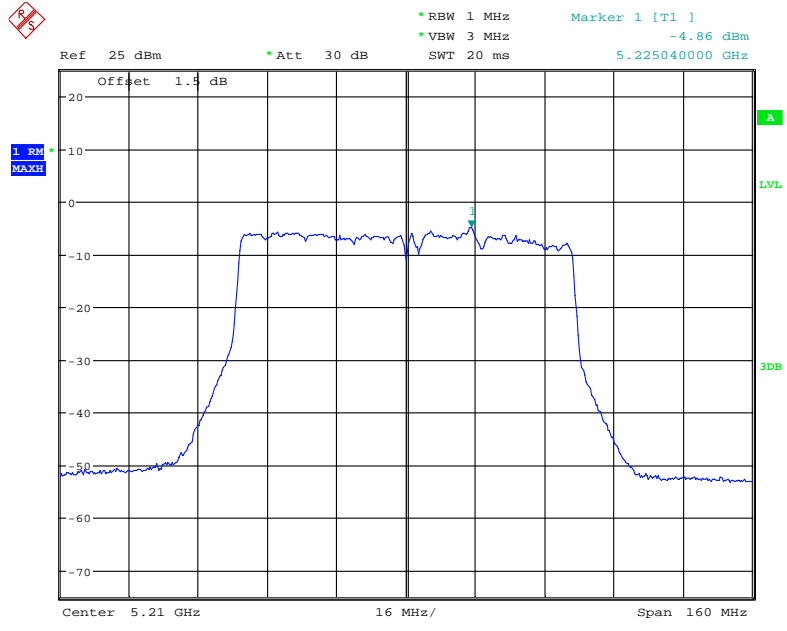
802.11n ht40 Low Channel

Date: 21.OCT.2020 11:01:18
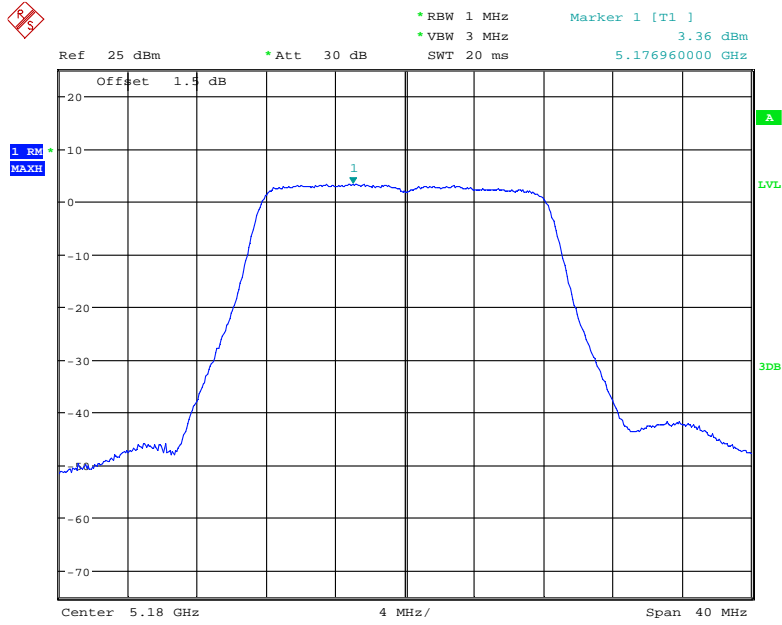
802.11n ht40 High Channel

Date: 21.OCT.2020 11:02:23

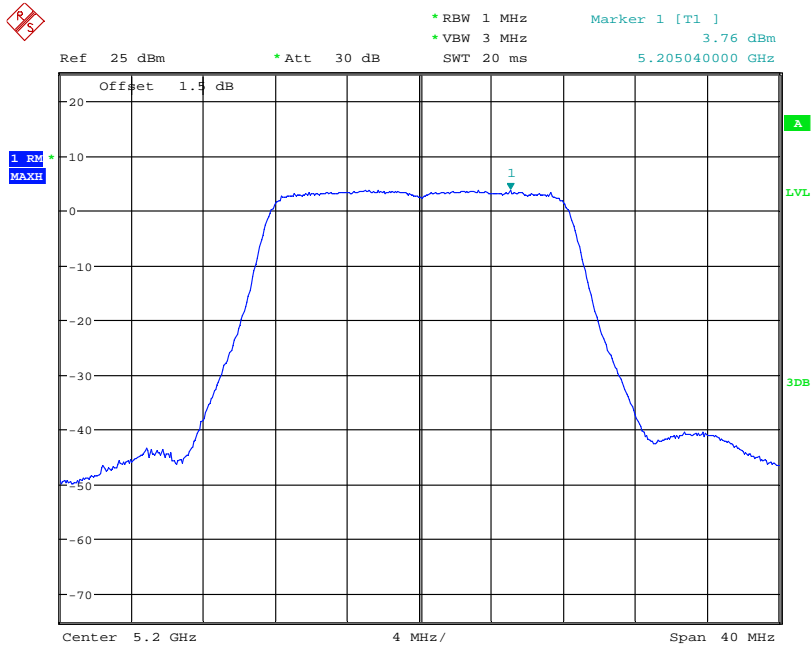## 802.11ac vht80 Middle Channel

Date: 21.OCT.2020 11:03:52
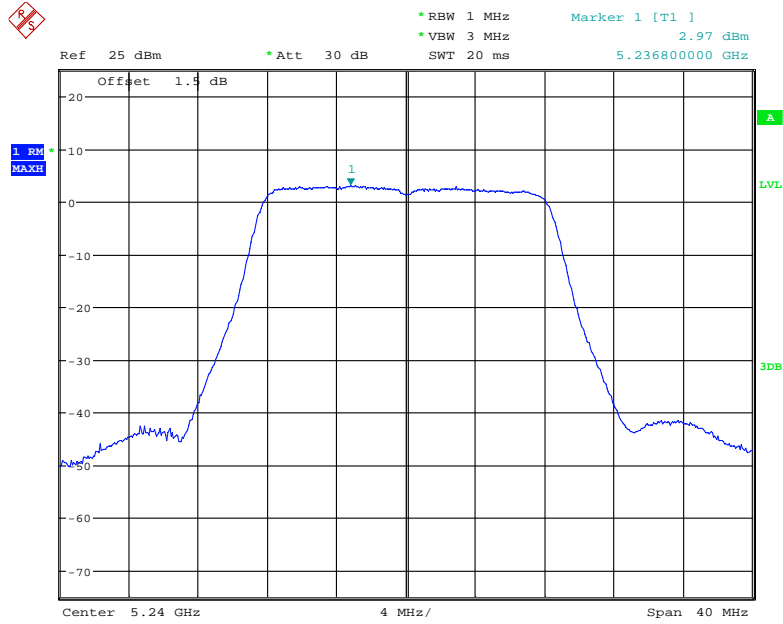
Chain 1:

802.11a Low Channel

Date: 21.OCT.2020 11:27:45

802.11a Middle Channel

Date: 21.OCT.2020 11:27:24

802.11a High Channel

```
                                        *RBW 1 MHz        Marker 1 [T1 ]
                                        *VBW 3 MHz                 3.21 dBm
        Ref   25 dBm        *Att  30 dB  SWT 20 ms        5.237440000 GHz
```

Date: 21.OCT.2020 11:26:38

802.11n ht20 Low Channel

```
                                        *RBW 1 MHz        Marker 1 [T1 ]
                                        *VBW 3 MHz                -2.53 dBm
        Ref   25 dBm        *Att  30 dB  SWT 20 ms        5.177280000 GHz
```

Date: 21.OCT.2020 11:24:53

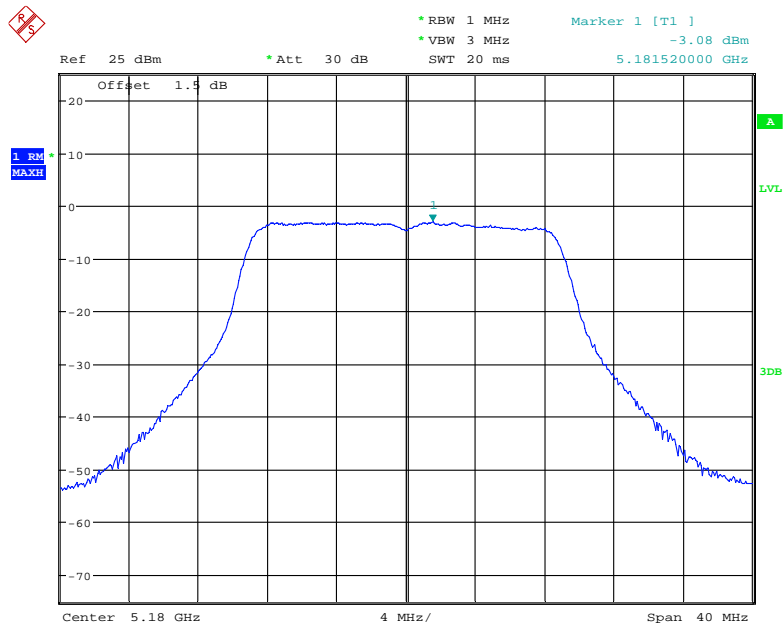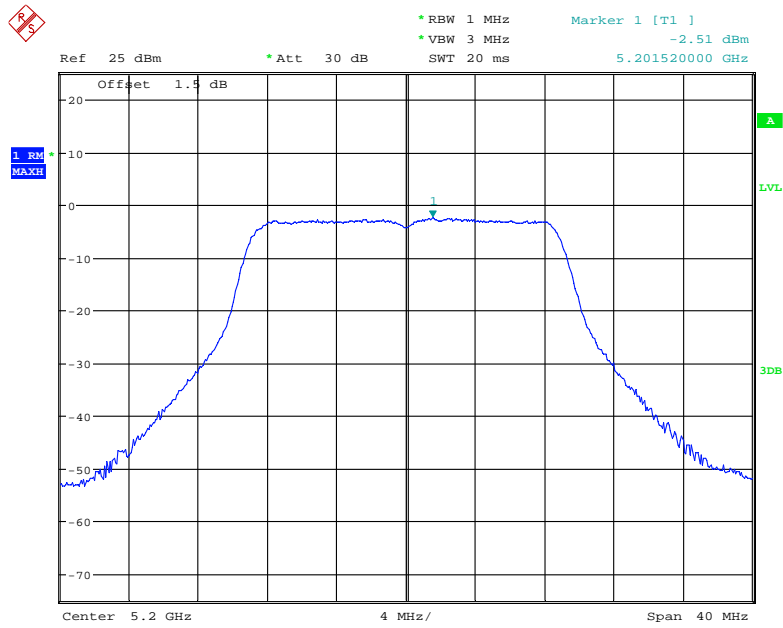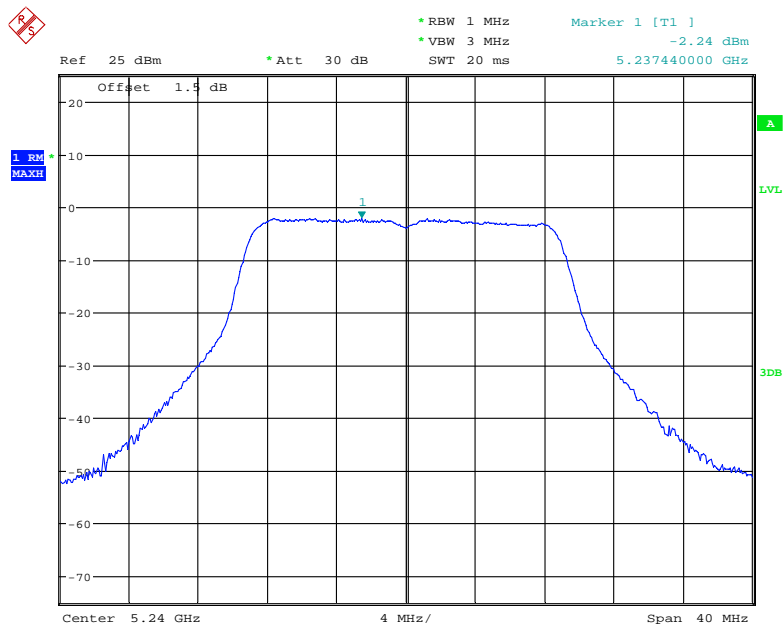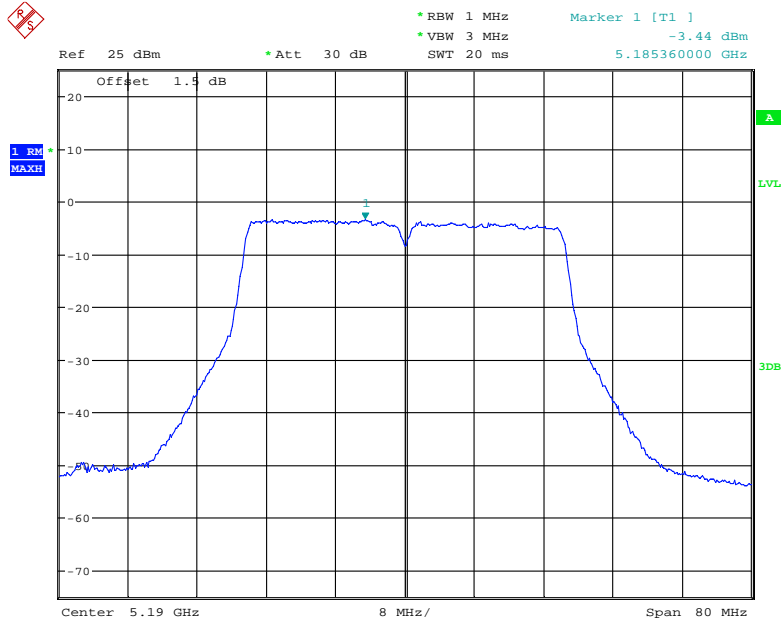## 802.11n ht20 Middle Channel

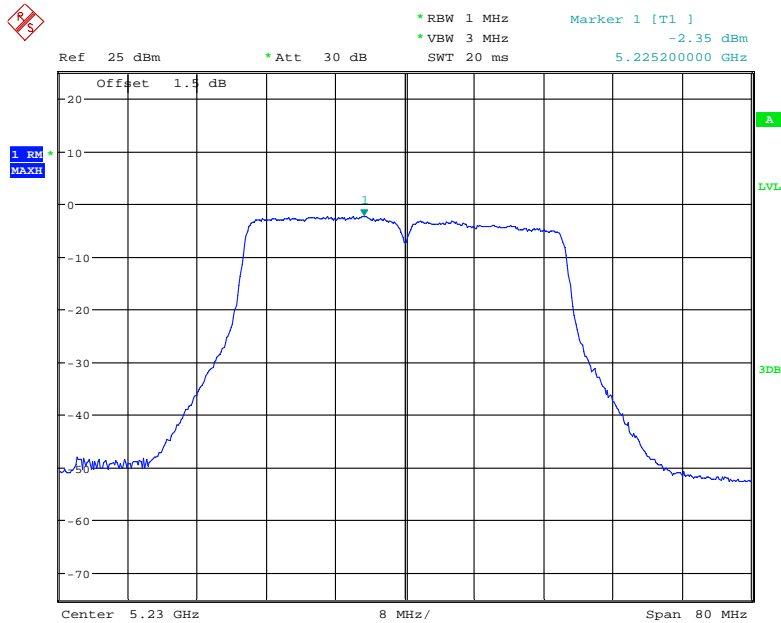Date: 21.OCT.2020 11:25:15

802.11n ht20 High Channel

Date: 21.OCT.2020 11:25:36

802.11n ht40 Low Channel

Date: 21.OCT.2020 11:23:31

802.11n ht40 High Channel

Date: 21.OCT.2020 11:23:50

802.11ac vht80 Middle Channel


```
                                    * RBW  1 MHz      Marker 1 [T1 ]
                                    * VBW  3 MHz                -3.84 dBm
     Ref   25 dBm        * Att  30 dB    SWT  20 ms         5.178000000 GHz
```

Date: 21.OCT.2020 11:21:35

Chain 2:

802.11a Low Channel

Date: 21.OCT.2020 11:13:10

802.11a Middle Channel

Date: 21.OCT.2020 11:12:49

802.11a High Channel

```
                                    *RBW 1 MHz        Marker 1 [T1 ]
                                    *VBW 3 MHz                    3.59 dBm
         Ref   25 dBm      *Att  30 dB    SWT 20 ms      5.233680000 GHz
            Offset  1.5 dB                                              A
   -20

1 RM -10                                                              LVL
MAXH
      0

   -10

   -20

   -30                                                               3DB

   -40

   -50

   -60

   -70

         Center 5.24 GHz              4 MHz/             Span  40 MHz
```

Date: 21.OCT.2020 11:12:23

802.11n ht20 Low Channel

```
                                    *RBW 1 MHz        Marker 1 [T1 ]
                                    *VBW 3 MHz                   -3.85 dBm
         Ref   25 dBm      *Att  30 dB    SWT 20 ms      5.177520000 GHz
            Offset  1.5 dB                                              A
   -20

1 RM -10                                                              LVL
MAXH
      0

   -10

   -20

   -30                                                               3DB

   -40

   -50

   -60

   -70

         Center 5.18 GHz              4 MHz/             Span  40 MHz
```

Date: 21.OCT.2020 11:09:53

802.11n ht20 Middle Channel


```
                                    *RBW  1 MHz        Marker 1 [T1 ]
                                    *VBW  3 MHz                     -3.91 dBm
      Ref   25 dBm      *Att  30 dB  SWT  20 ms         5.197600000 GHz
         Offset   1.5 dB
```

```
Center 5.2 GHz                       4 MHz/                    Span 40 MHz
```

Date: 21.OCT.2020 11:09:18

802.11n ht20 High Channel


```
                                    *RBW  1 MHz        Marker 1 [T1 ]
                                    *VBW  3 MHz                     -3.41 dBm
      Ref   25 dBm      *Att  30 dB  SWT  20 ms         5.235120000 GHz
         Offset   1.5 dB
```

```
Center 5.24 GHz                      4 MHz/                    Span 40 MHz
```

Date: 21.OCT.2020 11:08:51

802.11n ht40 Low Channel

```
                                         * RBW 1 MHz      Marker 1 [T1 ]
                                         * VBW 3 MHz                -3.97 dBm
        Ref   25 dBm          * Att 30 dB   SWT 20 ms        5.184880000 GHz
          Offset  1.5 dB
```

Date: 21.OCT.2020 11:07:01

802.11n ht40 High Channel

```
                                         * RBW 1 MHz      Marker 1 [T1 ]
                                         * VBW 3 MHz                -2.83 dBm
        Ref   25 dBm          * Att 30 dB   SWT 20 ms        5.225040000 GHz
          Offset  1.5 dB
```

Date: 21.OCT.2020 11:07:32

802.11ac vht80 Middle Channel

Date: 21.OCT.2020 11:06:10

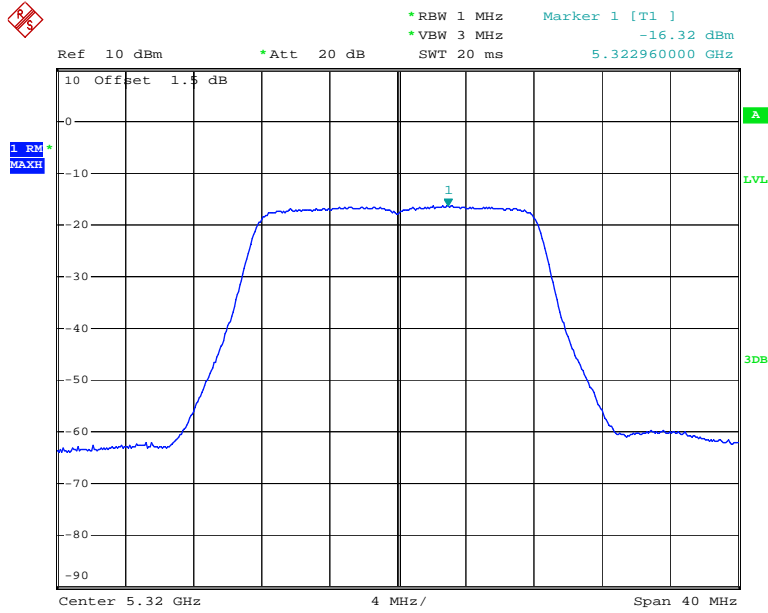**Chain 3:**

802.11a Low Channel

Date: 21.OCT.2020 11:15:16

802.11a Middle Channel

Date: 21.OCT.2020 11:15:54
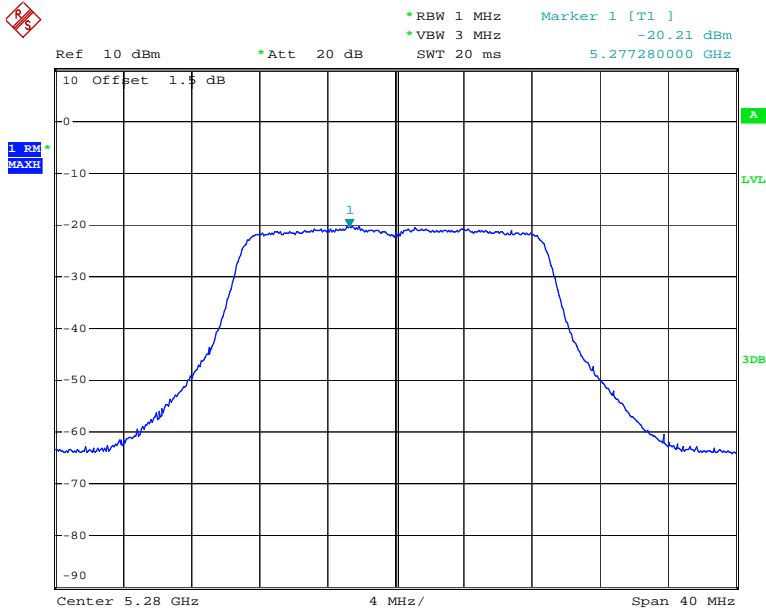
802.11a High Channel

Date: 21.OCT.2020 11:16:58
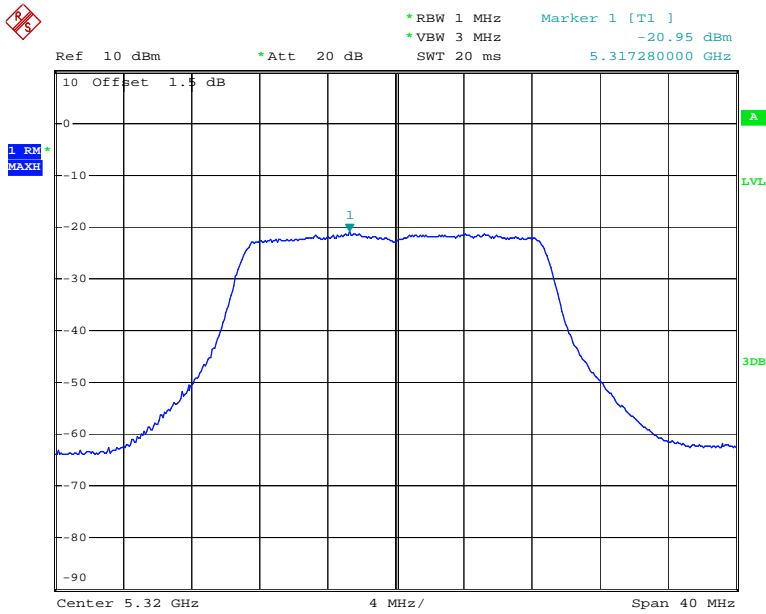
802.11n ht20 Low Channel

Date: 21.OCT.2020 11:18:58

802.11n ht20 Middle Channel

```
                                          * RBW 1 MHz        Marker 1 [T1 ]
                                          * VBW 3 MHz                  -2.51 dBm
        Ref   25 dBm        * Att  30 dB   SWT 20 ms          5.201520000 GHz
          Offset  1.5 dB
```



```
Center  5.2 GHz                    4 MHz/                     Span  40 MHz
```

Date: 21.OCT.2020 11:18:31

802.11n ht20 High Channel

```
                                          * RBW 1 MHz        Marker 1 [T1 ]
                                          * VBW 3 MHz                  -2.24 dBm
        Ref   25 dBm        * Att  30 dB   SWT 20 ms          5.237440000 GHz
          Offset  1.5 dB
```



```
Center  5.24 GHz                   4 MHz/                     Span  40 MHz
```

Date: 21.OCT.2020 11:18:03

802.11n ht40 Low Channel

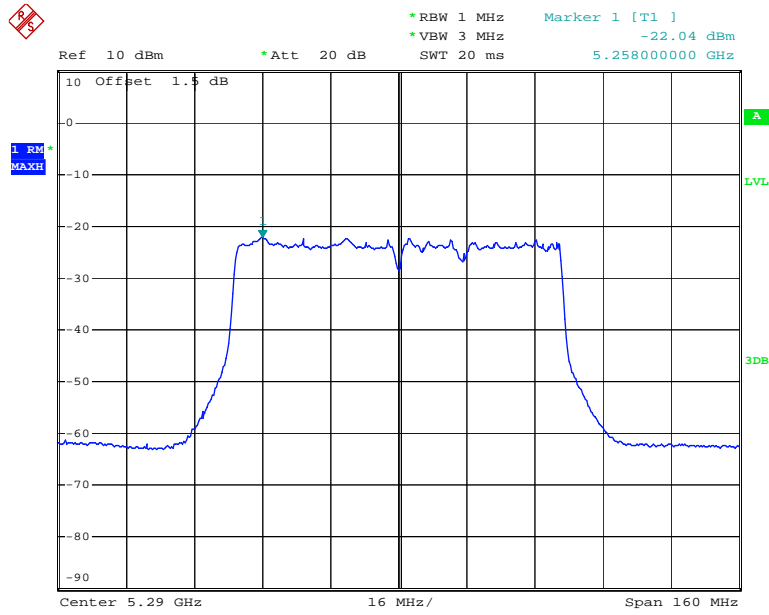Date: 21.OCT.2020 11:19:40
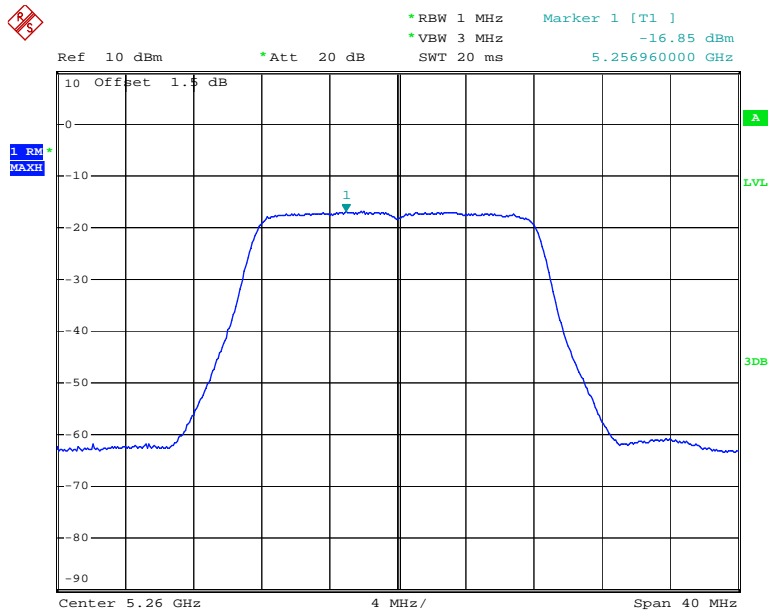
802.11n ht40 High Channel

Date: 21.OCT.2020 11:20:09

802.11ac vht80 Middle Channel

Date: 21.OCT.2020 11:20:54

5250-5350MHz, Chain 0:

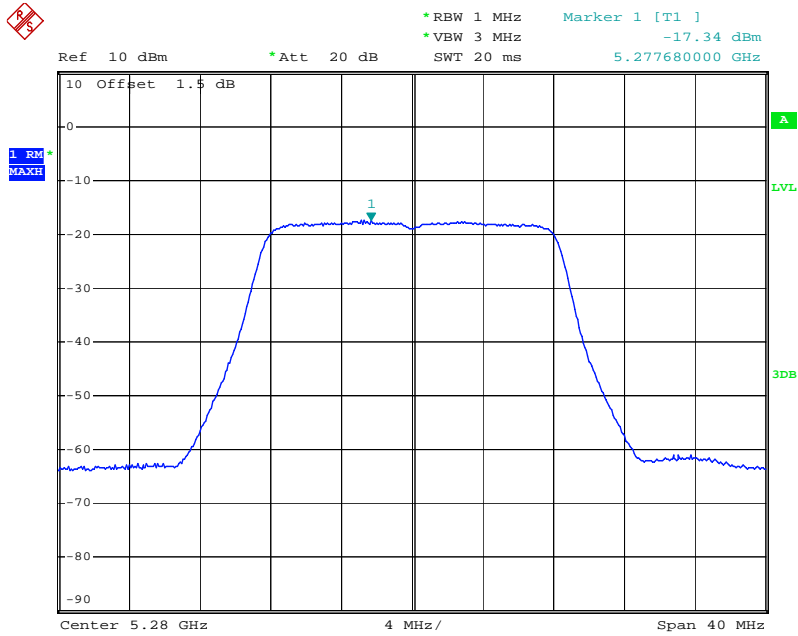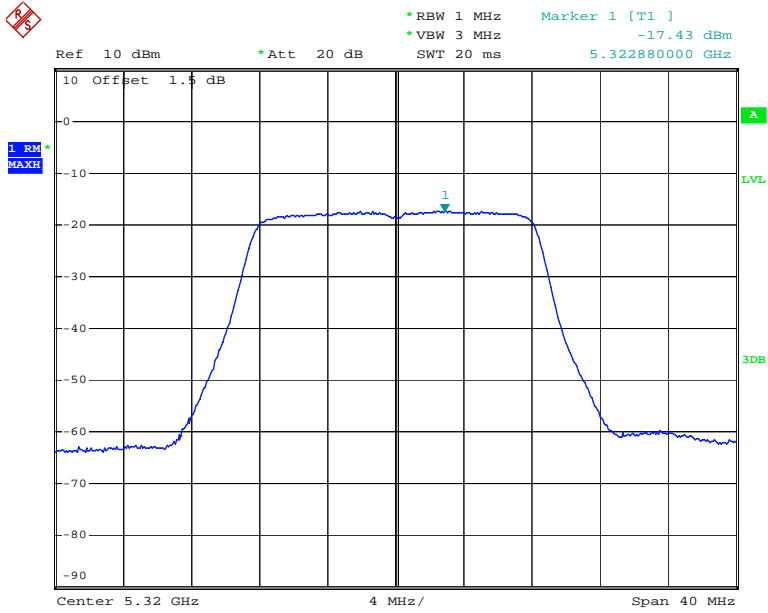## 802.11a Low Channel

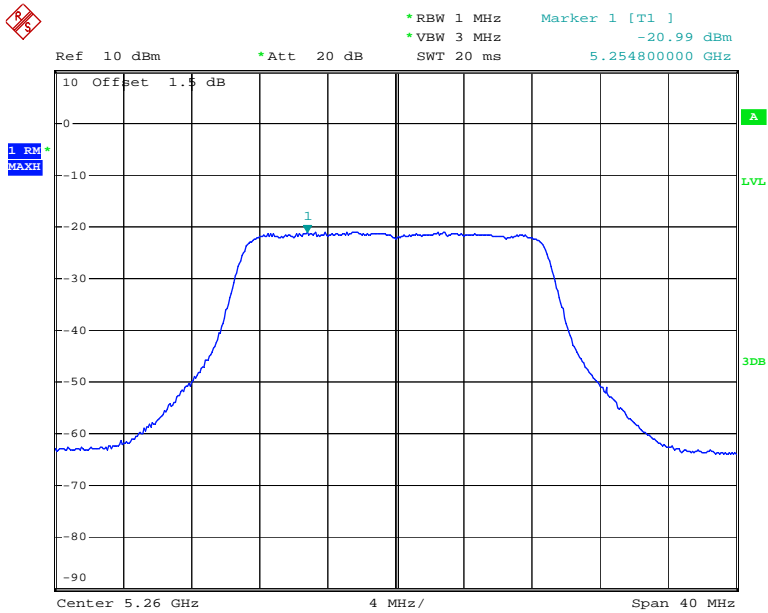Date: 24.OCT.2020 16:07:07

802.11a Middle Channel
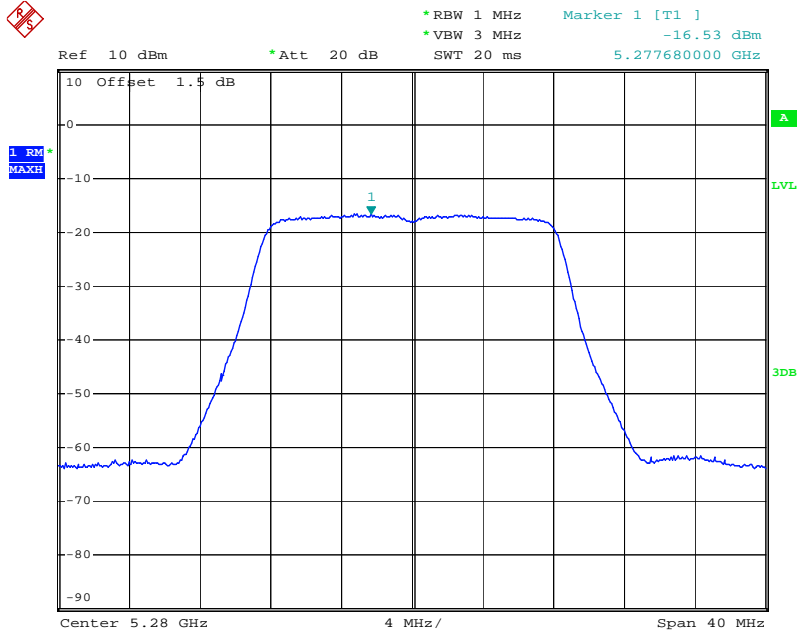
Date: 24.OCT.2020 16:07:34

802.11a High Channel
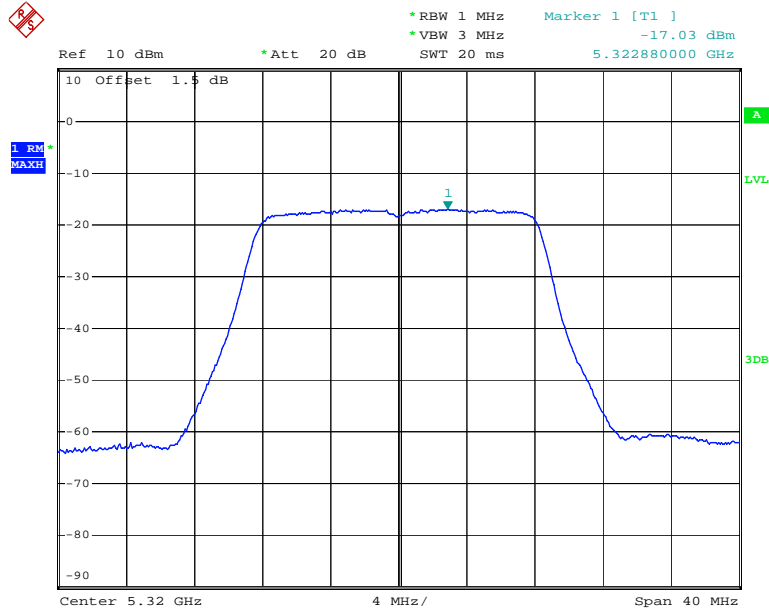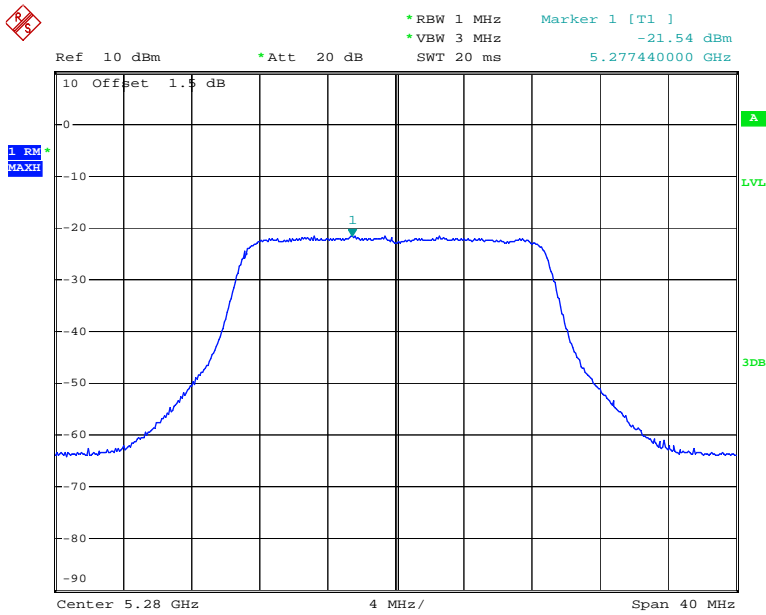

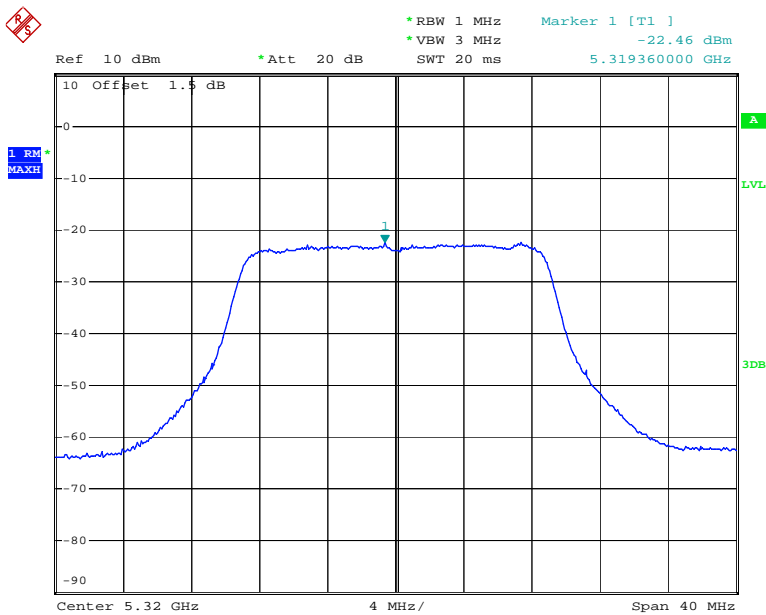Date: 24.OCT.2020 16:07:56

802.11n ht20 Low Channel
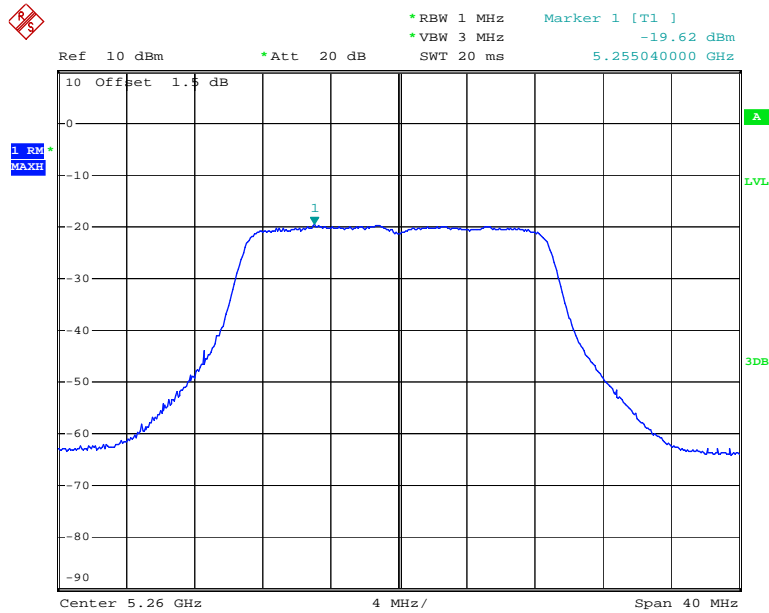
Date: 24.OCT.2020 16:10:03

802.11n ht20 Middle Channel
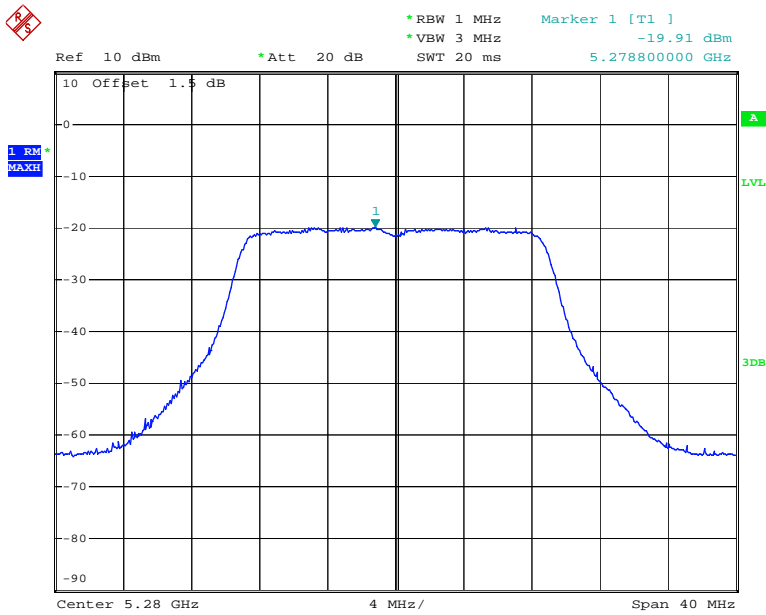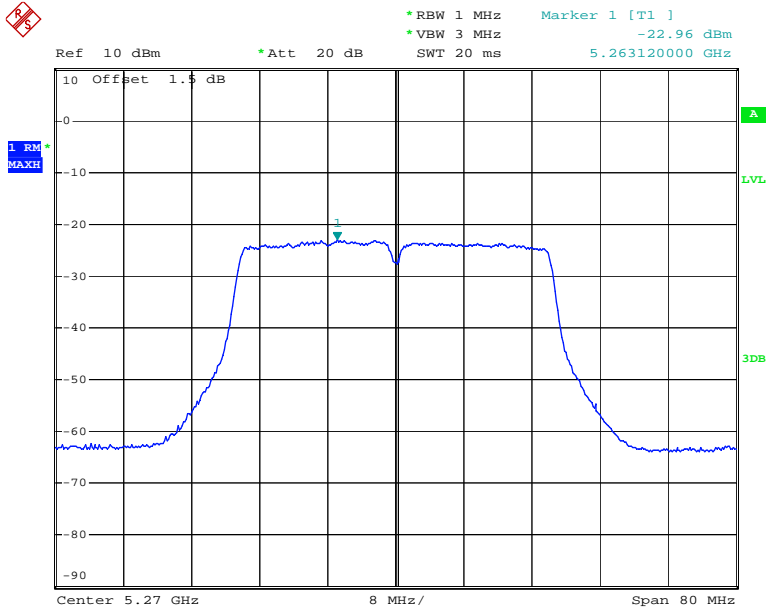

Date: 24.OCT.2020 16:09:41

802.11n ht20 High Channel
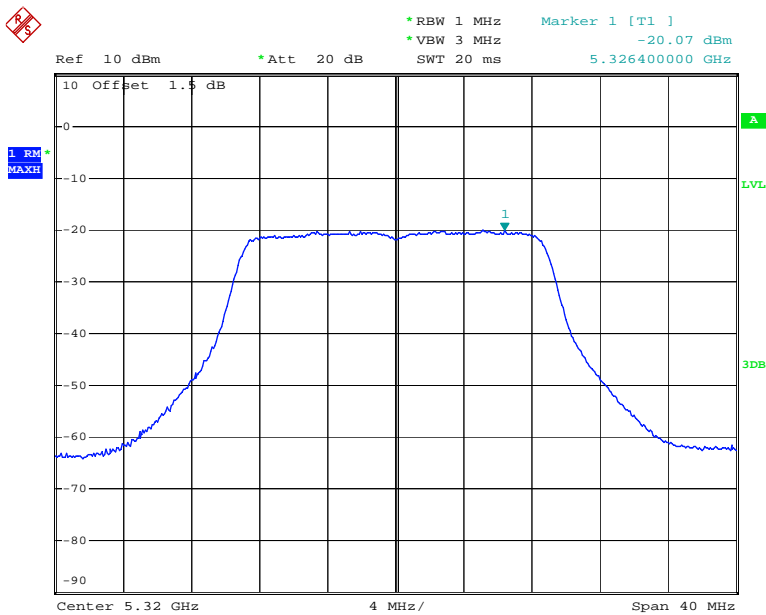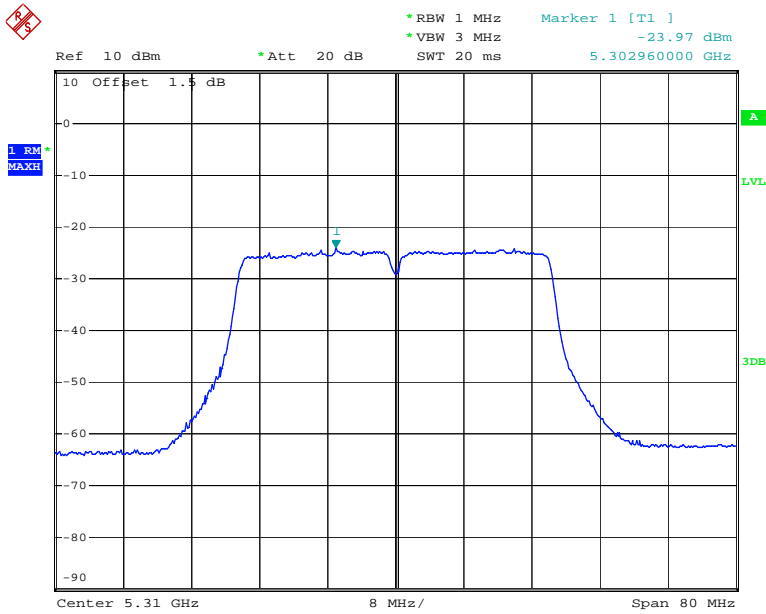

Date: 24.OCT.2020 16:08:53

802.11n ht40 Low Channel
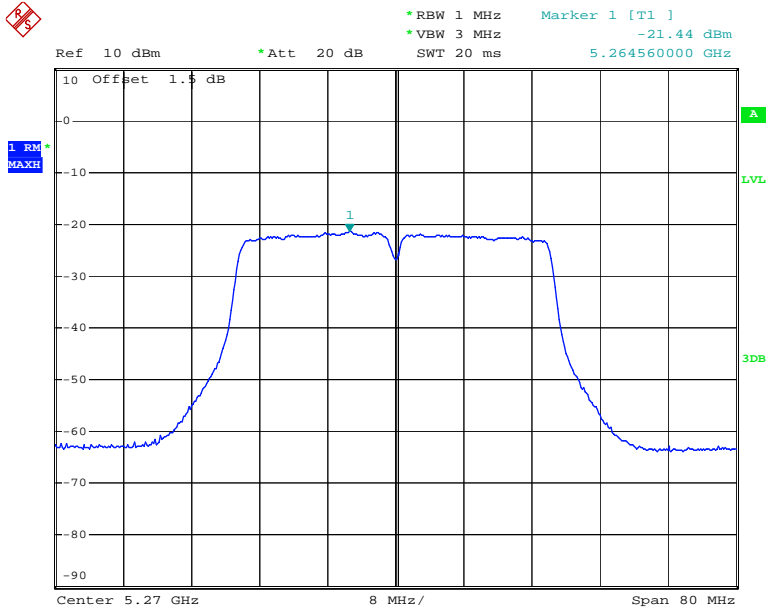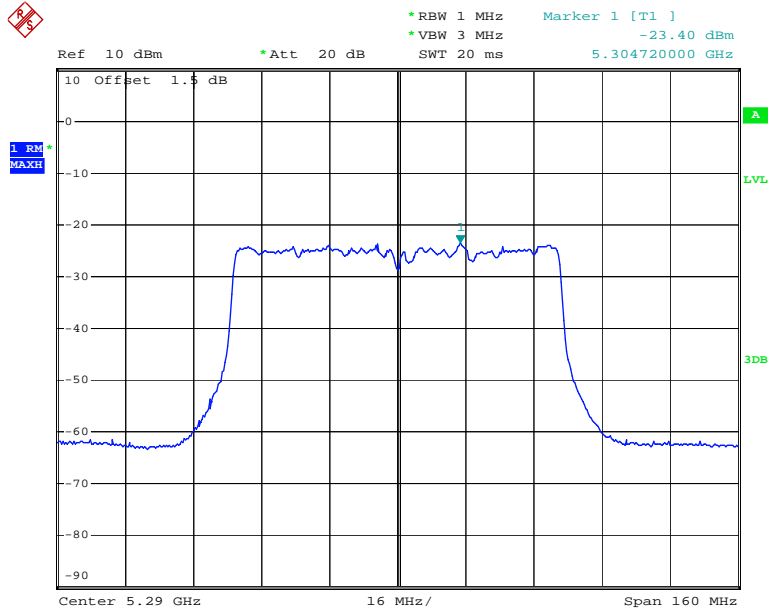

Date: 24.OCT.2020 16:10:56

802.11n ht40 High Channel
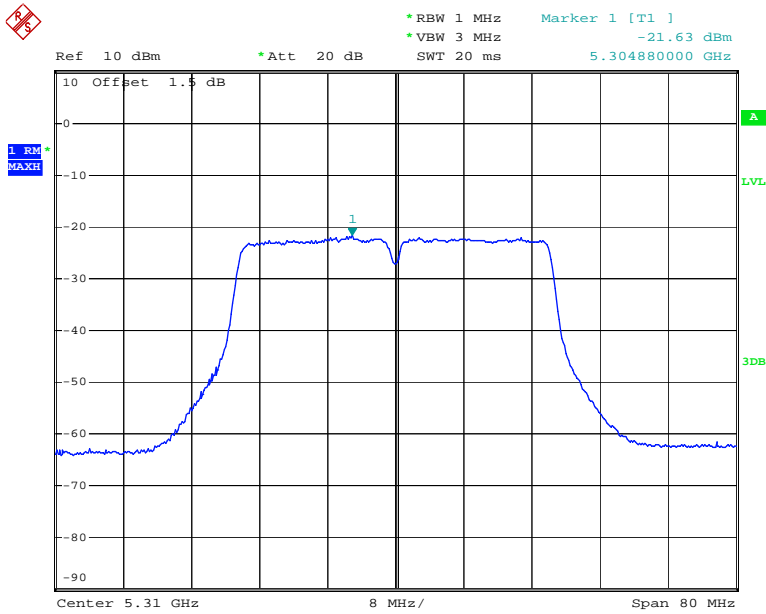
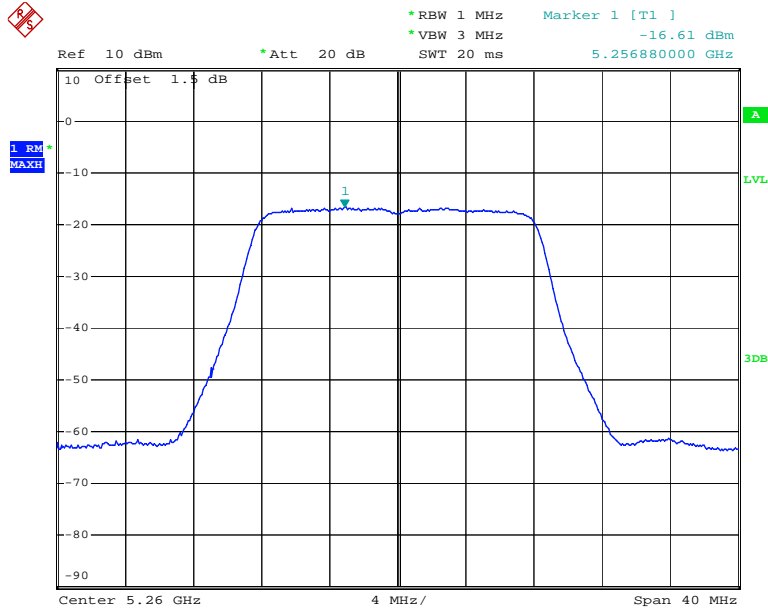Date: 24.OCT.2020 16:11:33

802.11ac vht80 Middle Channel

```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz           -21.82 dBm
        Ref  10 dBm     *Att  20 dB  SWT 20 ms     5.325200000 GHz

        10  Offset  1.5 dB                                          A

          0

        -10                                                        LVL

        -20

        -30

        -40

        -50                                                        3DB

        -60

        -70

        -80

        -90

        Center 5.29 GHz          16 MHz/            Span 160 MHz
```
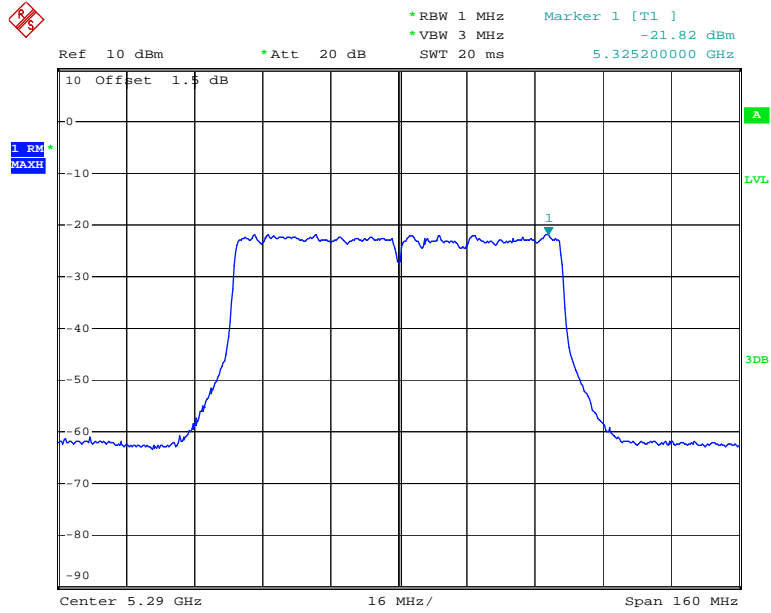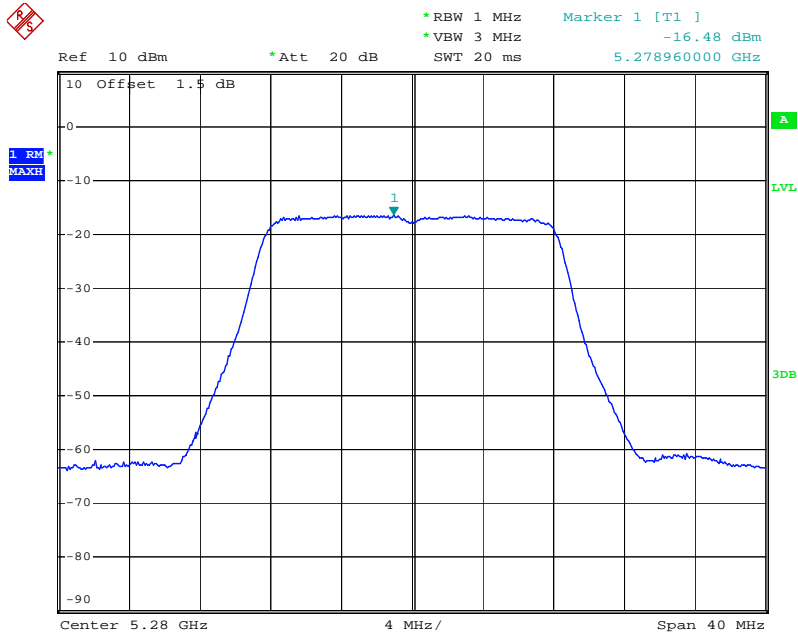
Date: 24.OCT.2020 16:13:02
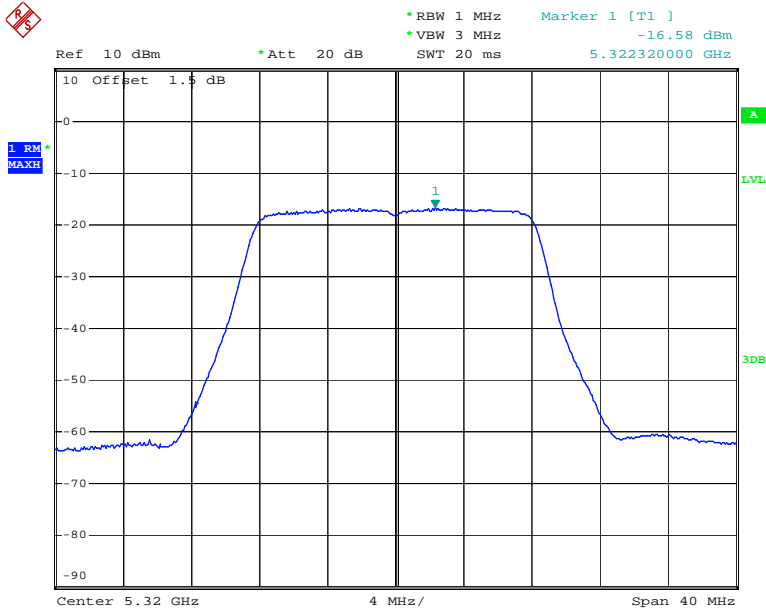
Chain 1:

802.11a Low Channel
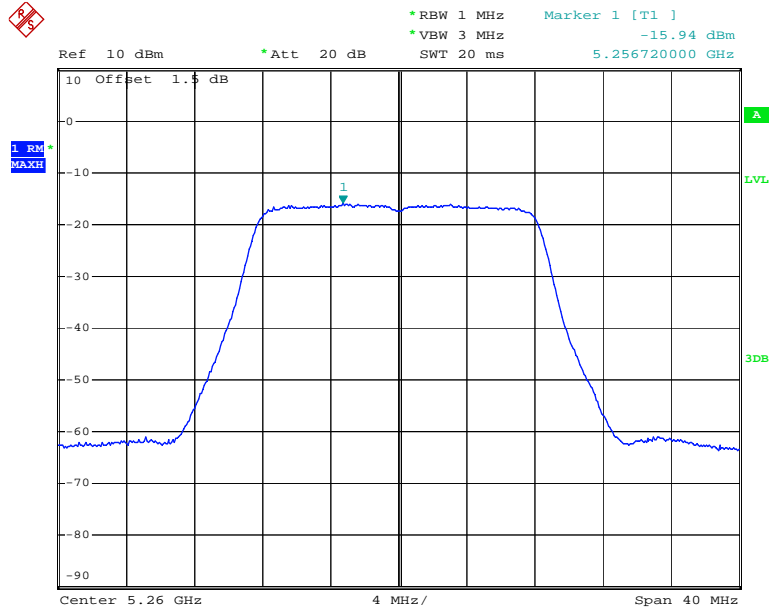
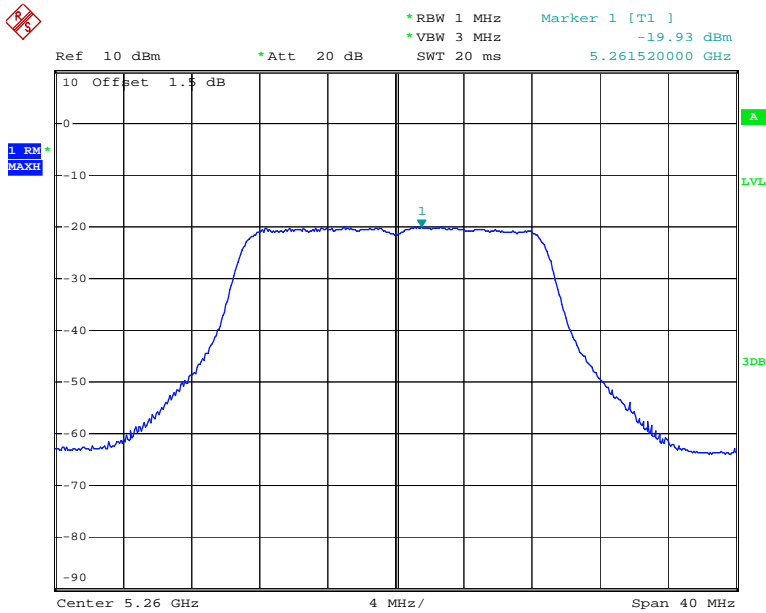Date: 24.OCT.2020 16:21:54

802.11a Middle Channel
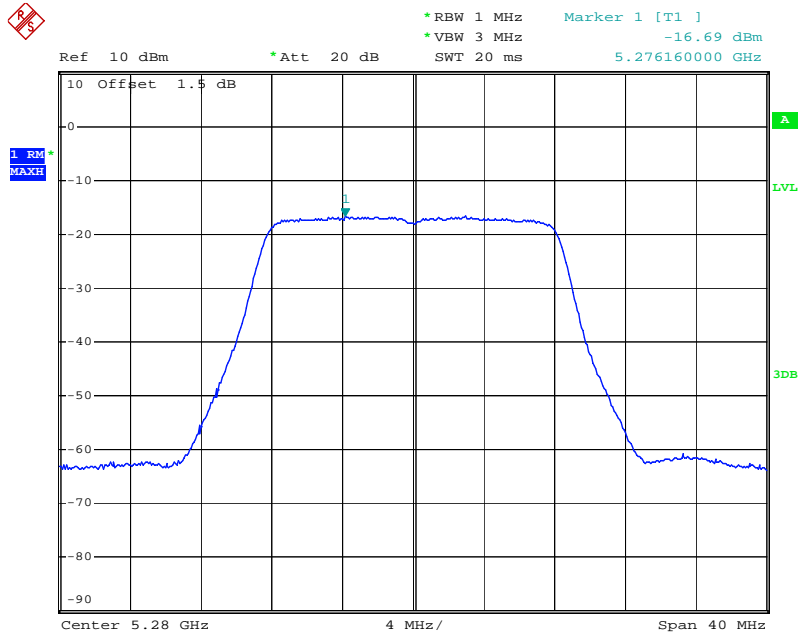
Date: 24.OCT.2020 16:21:17

802.11a High Channel
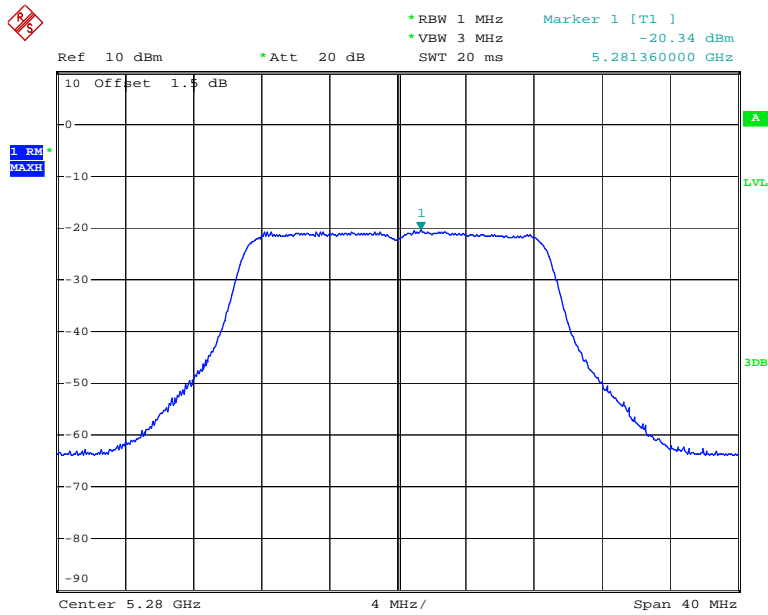

Date: 24.OCT.2020 16:20:43

802.11n ht20 Low Channel
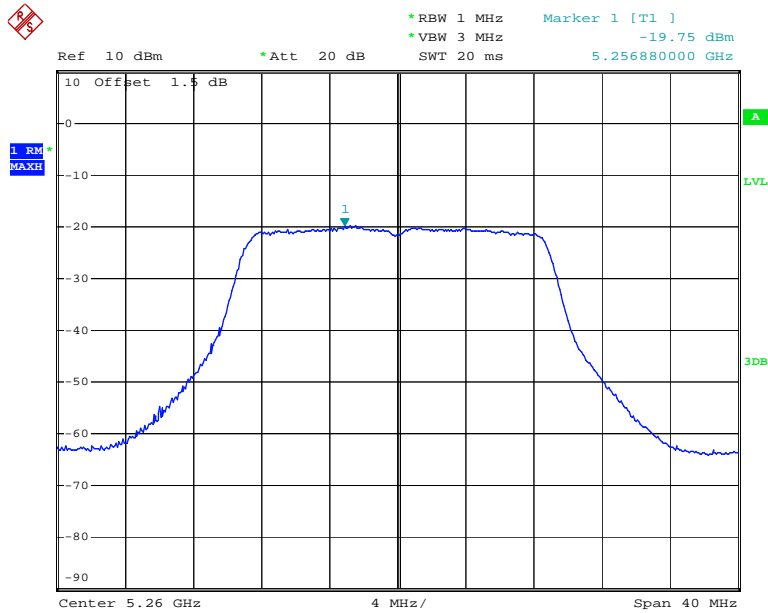
Date: 24.OCT.2020 16:23:06

802.11n ht20 Middle Channel

Date: 24.OCT.2020 16:25:43

802.11n ht20 High Channel

Date: 24.OCT.2020 16:26:06

802.11n ht40 Low Channel
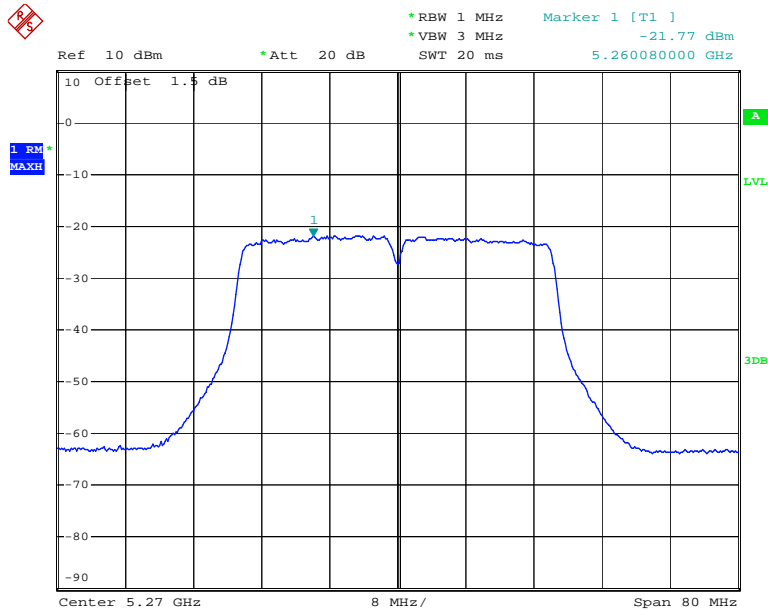
Date: 24.OCT.2020 16:26:44

802.11n ht40 High Channel
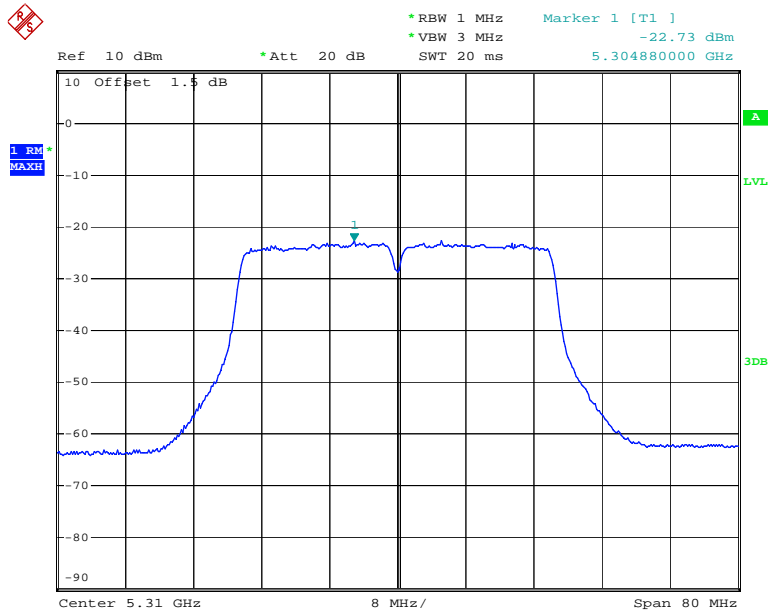
Date: 24.OCT.2020 16:27:05

802.11ac vht80 Middle Channel


```
                                      *RBW 1 MHz    Marker 1 [T1 ]
                                      *VBW 3 MHz              -22.04 dBm
        Ref  10 dBm        *Att  20 dB    SWT 20 ms       5.258000000 GHz
```

Date: 24.OCT.2020 16:28:27

Chain 2:

802.11a Low Channel

Date: 24.OCT.2020 16:17:15

802.11a Middle Channel

Date: 24.OCT.2020 16:17:33

802.11a High Channel

Date: 24.OCT.2020 16:18:06

802.11n ht20 Low Channel

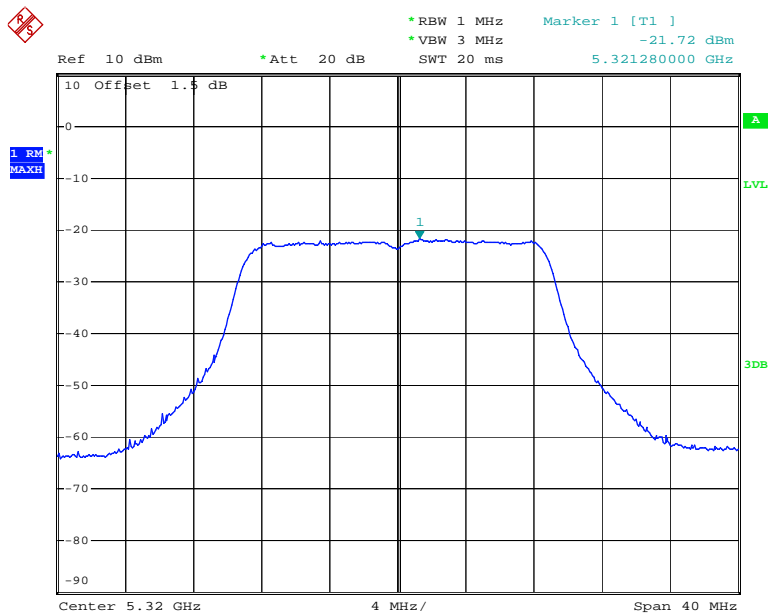

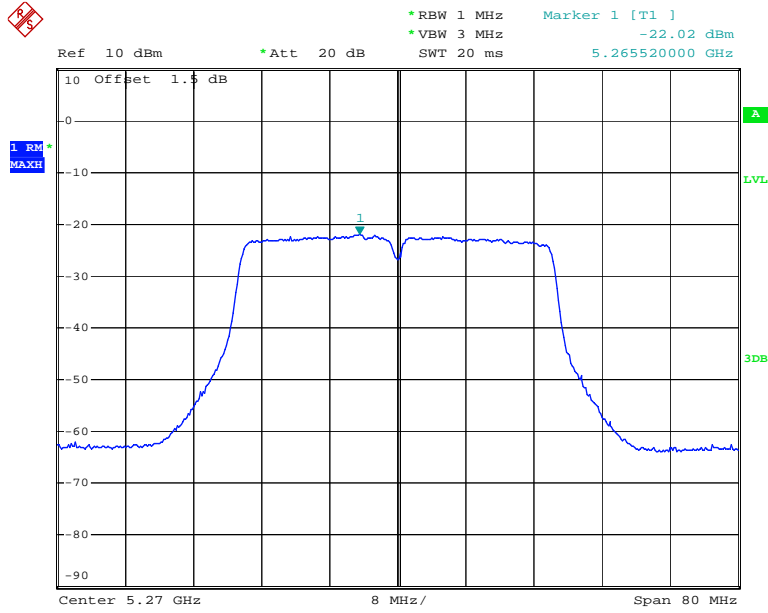Date: 24.OCT.2020 16:16:40

802.11n ht20 Middle Channel

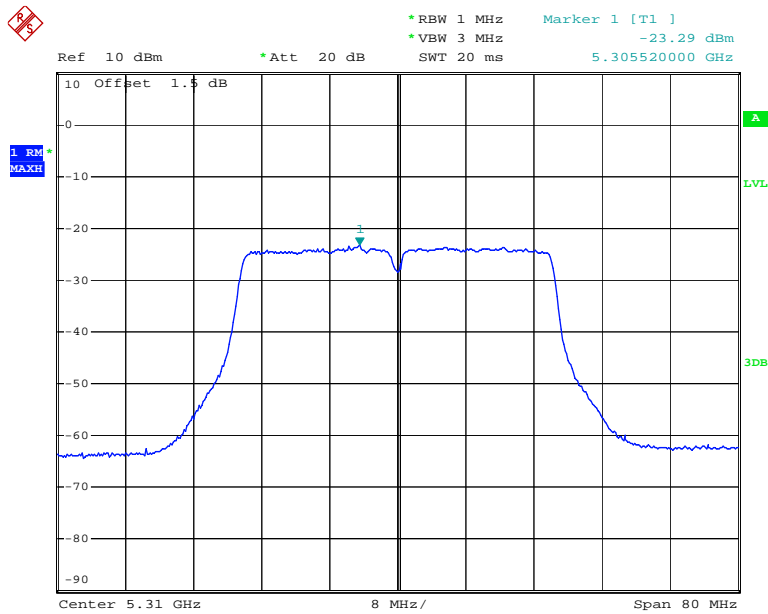

Date: 24.OCT.2020 16:16:16

802.11n ht20 High Channel

Date: 24.OCT.2020 16:15:53

802.11n ht40 Low Channel
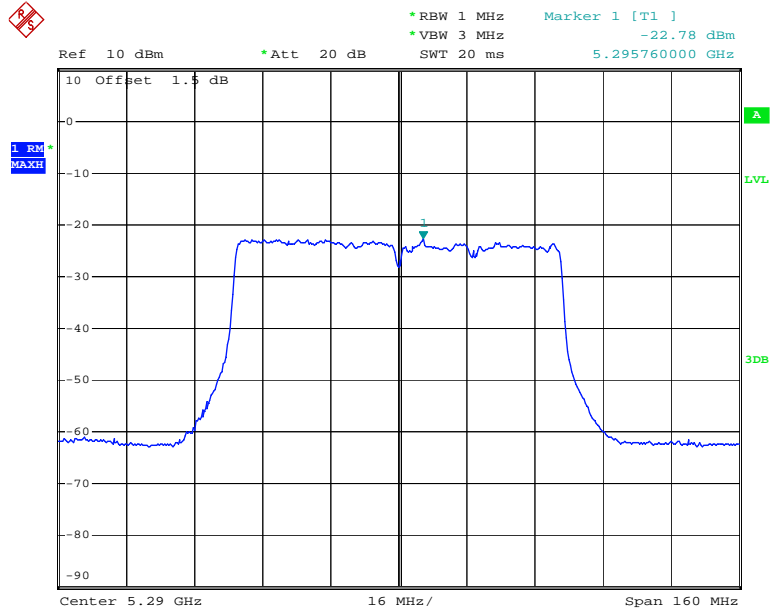

Date: 24.OCT.2020 16:14:23

802.11n ht40 High Channel

Date: 24.OCT.2020 16:14:44
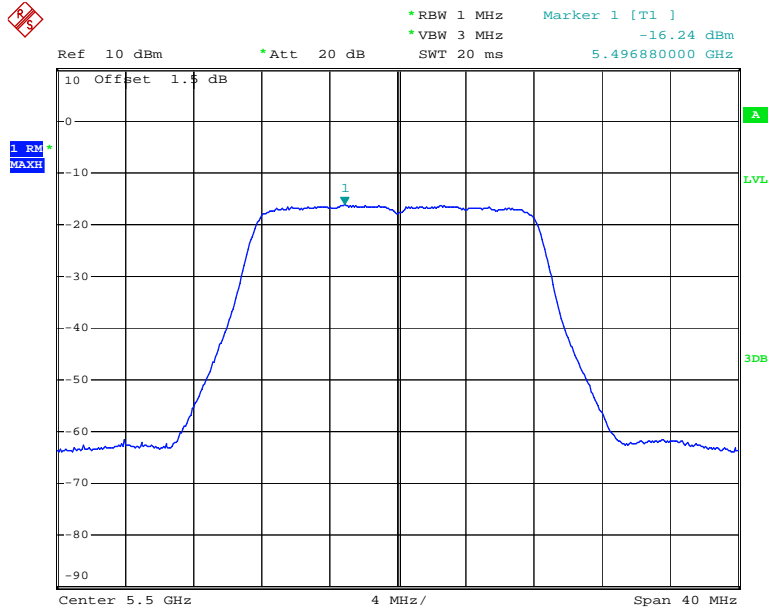
802.11ac vht80 Middle Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz              -23.40 dBm
        Ref  10 dBm      *Att  20 dB   SWT 20 ms      5.304720000 GHz
```
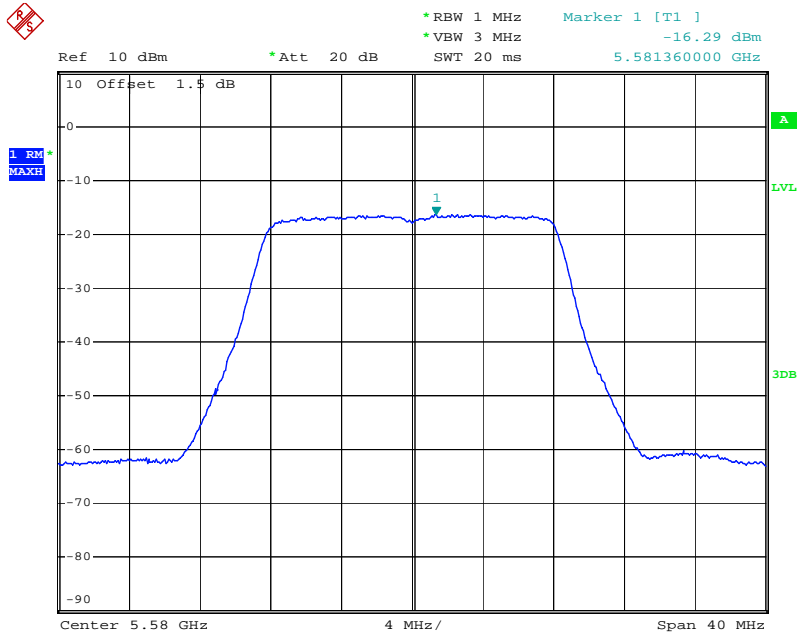
Date: 24.OCT.2020 16:13:45

Chain 3:

802.11a Low Channel

Date: 24.OCT.2020 16:34:00

802.11a Middle Channel

Date: 24.OCT.2020 16:33:19

802.11a High Channel


```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz            -16.58 dBm
  Ref  10 dBm          *Att  20 dB   SWT 20 ms        5.322320000 GHz
  10 Offset  1.5 dB
```

Date: 24.OCT.2020 16:32:37

802.11n ht20 Low Channel


```
                                        *RBW 1 MHz    Marker 1 [T1 ]
                                        *VBW 3 MHz            -19.93 dBm
  Ref  10 dBm          *Att  20 dB   SWT 20 ms        5.261520000 GHz
  10 Offset  1.5 dB
```

Date: 24.OCT.2020 16:30:57

802.11n ht20 Middle Channel


```
                                                  *RBW 1 MHz      Marker 1 [T1 ]
                                                  *VBW 3 MHz               -20.34 dBm
          Ref  10 dBm          *Att  20 dB         SWT 20 ms        5.281360000 GHz
```

Date: 24.OCT.2020 16:31:19

802.11n ht20 High Channel


```
                                                  *RBW 1 MHz      Marker 1 [T1 ]
                                                  *VBW 3 MHz               -21.72 dBm
          Ref  10 dBm          *Att  20 dB         SWT 20 ms        5.321280000 GHz
```
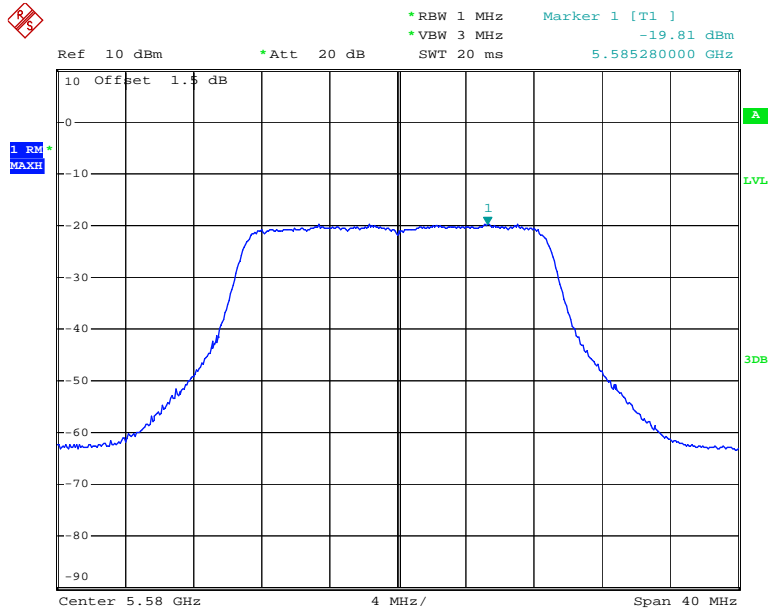
Date: 24.OCT.2020 16:31:52

802.11n ht40 Low Channel

Date: 24.OCT.2020 16:29:54
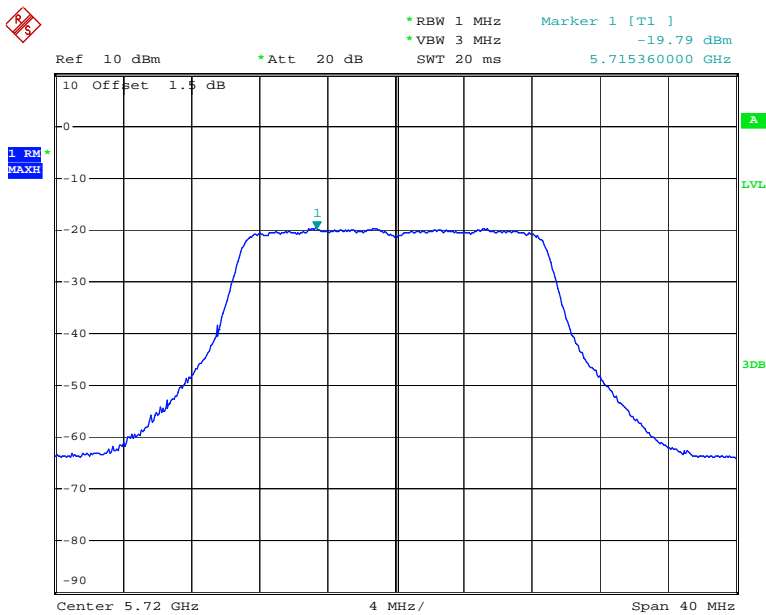
802.11n ht40 High Channel

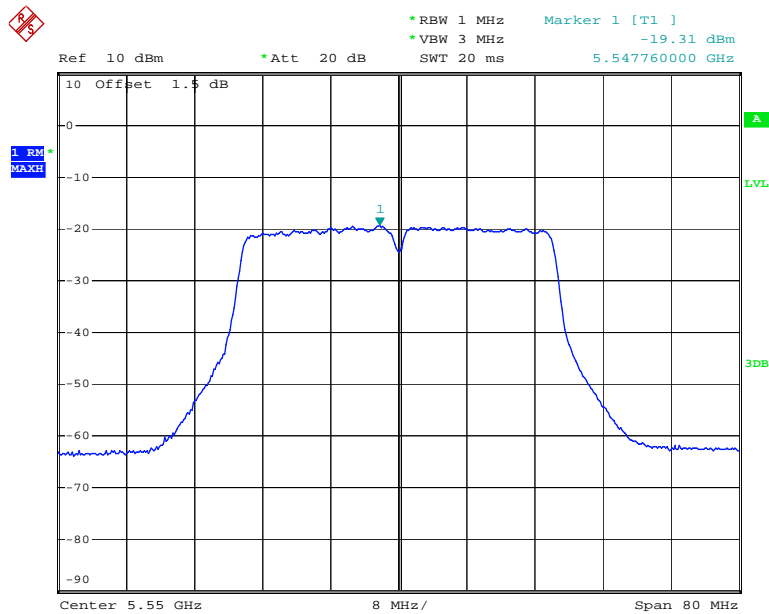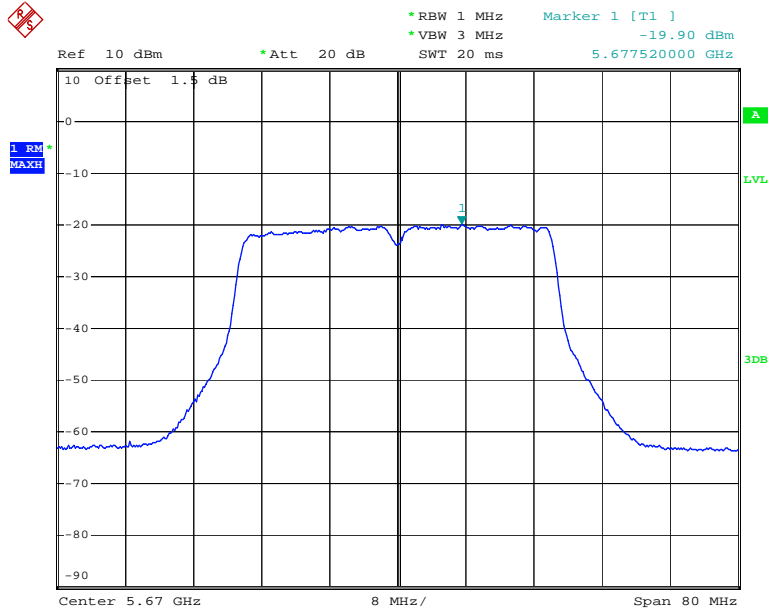Date: 24.OCT.2020 16:30:15

802.11ac vht80 Middle Channel


```
                                              *RBW 1 MHz    Marker 1 [T1 ]
                                              *VBW 3 MHz              -22.78 dBm
          Ref  10 dBm          *Att  20 dB    SWT 20 ms     5.295760000 GHz

          10  Offset  1.5 dB                                              A

                                                                         LVL

                                                                         3DB

          Center 5.29 GHz           16 MHz/              Span 160 MHz
```

Date: 24.OCT.2020 16:29:14

5470-5725MHz, Chain 0:

802.11a Low Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz            -16.24 dBm
        Ref  10 dBm        *Att  20 dB   SWT 20 ms    5.496880000 GHz
```

Date: 24.OCT.2020 15:24:27

802.11a Middle Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz            -16.29 dBm
        Ref  10 dBm        *Att  20 dB   SWT 20 ms    5.581360000 GHz
```

Date: 24.OCT.2020 15:24:07

802.11a High Channel
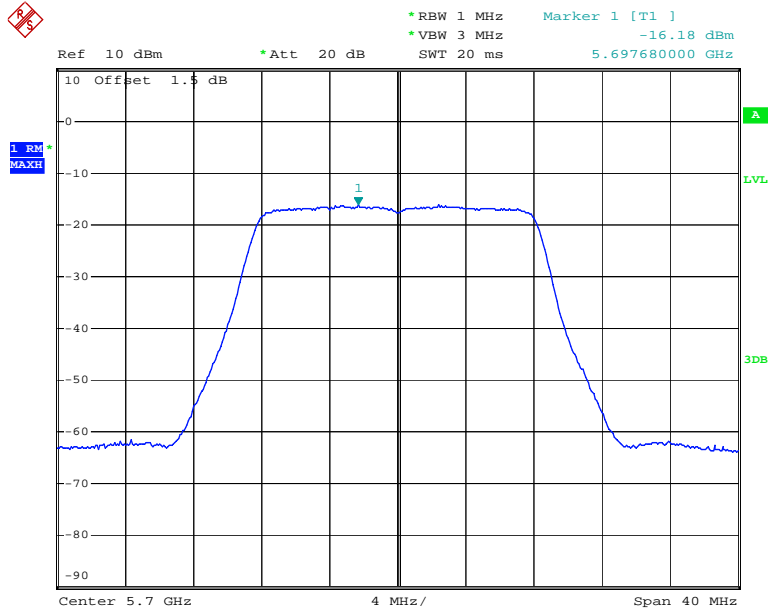
Date: 24.OCT.2020 15:23:42

802.11 a 5720MHz
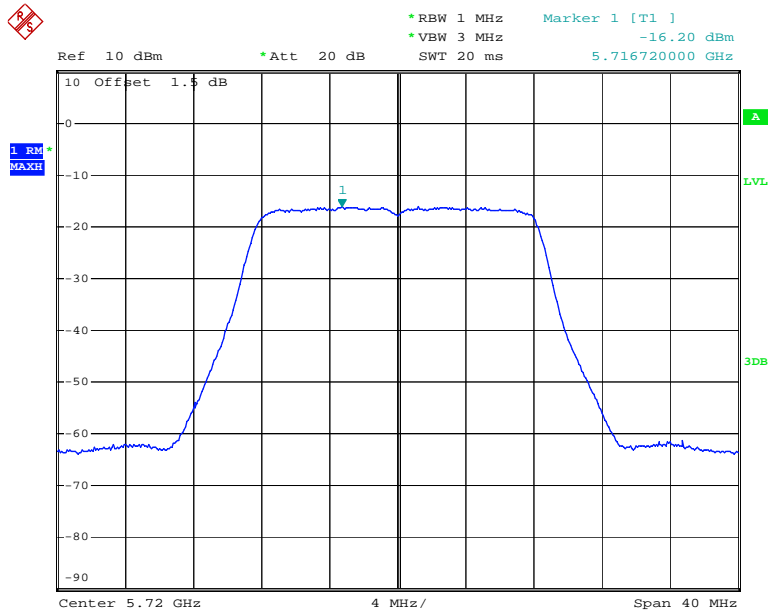
Date: 24.OCT.2020 15:14:50

802.11n ht20 Low Channel

```
                                              *RBW 1 MHz      Marker 1 [T1 ]
                                              *VBW 3 MHz              -19.14 dBm
              Ref  10 dBm          *Att  20 dB   SWT 20 ms     5.495280000 GHz
```
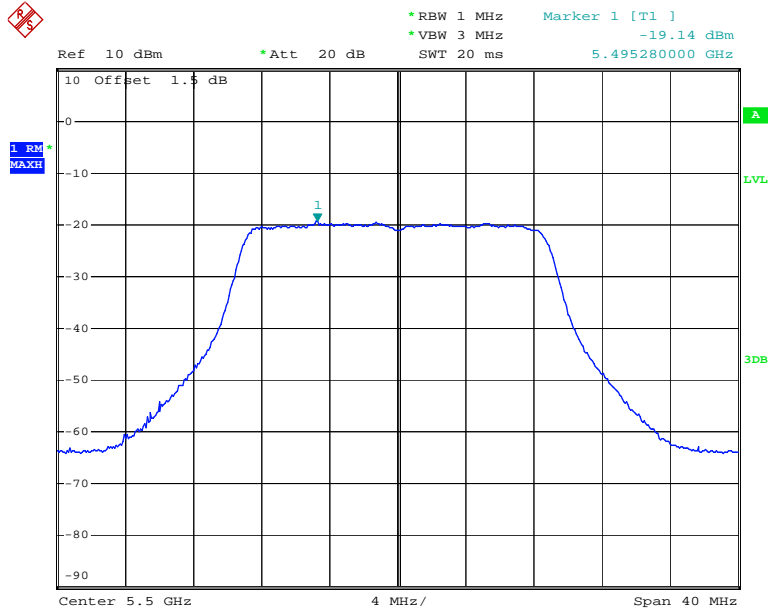
Date: 24.OCT.2020 15:12:29

802.11n ht20 Middle Channel

```
                                              *RBW 1 MHz      Marker 1 [T1 ]
                                              *VBW 3 MHz              -19.81 dBm
              Ref  10 dBm          *Att  20 dB   SWT 20 ms     5.585280000 GHz
```

Date: 24.OCT.2020 15:12:51

802.11n ht20 High Channel
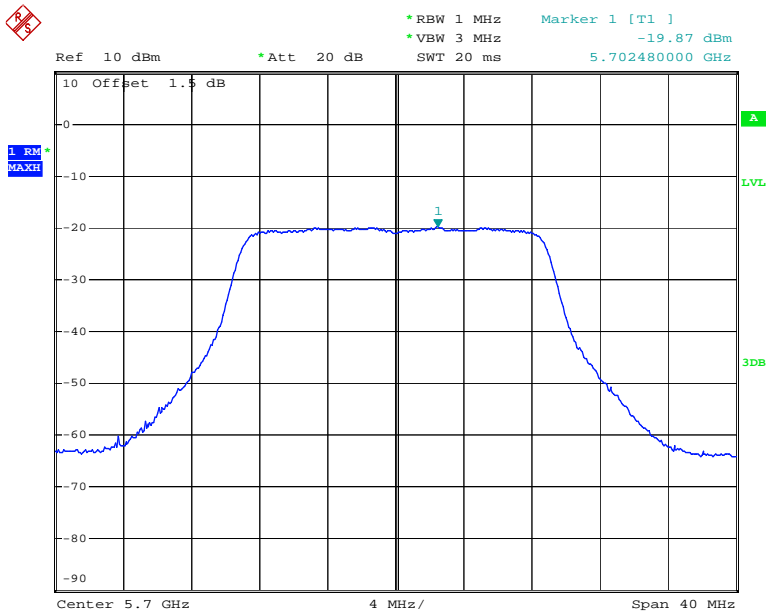
Date: 24.OCT.2020 15:13:32

802.11n ht20 5720 MHz

Date: 24.OCT.2020 15:14:16

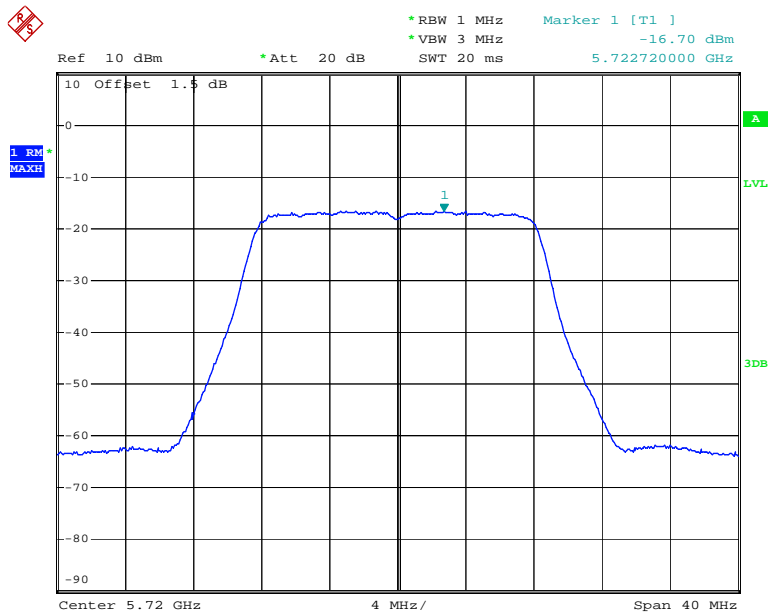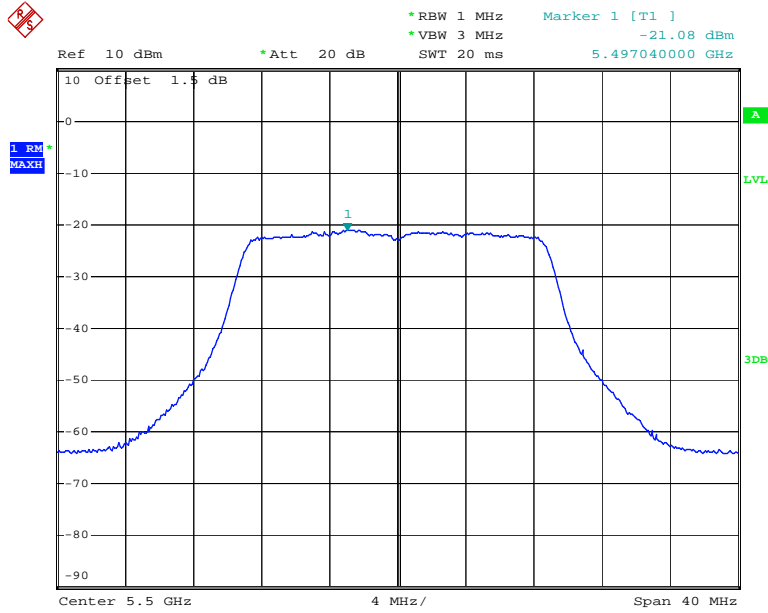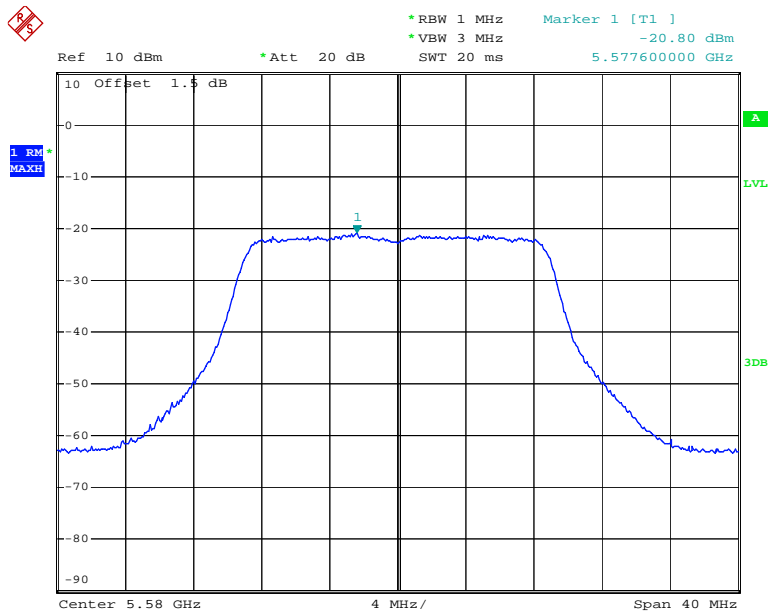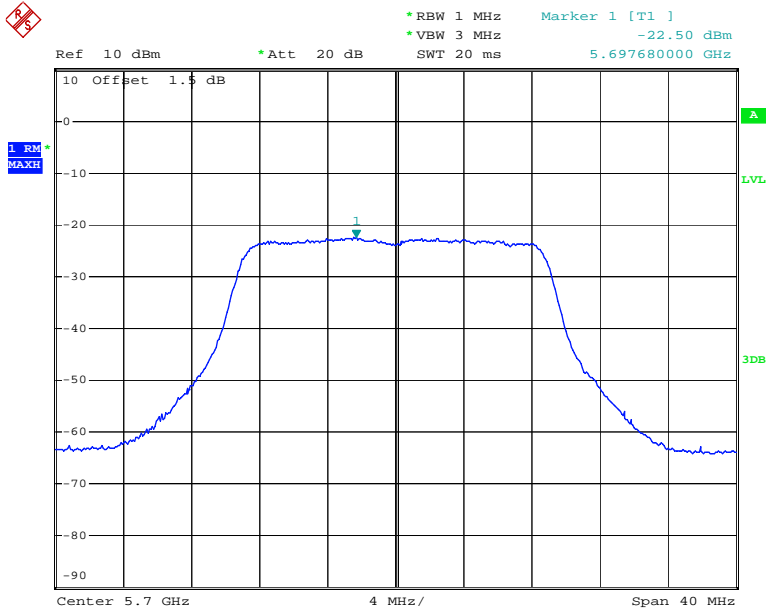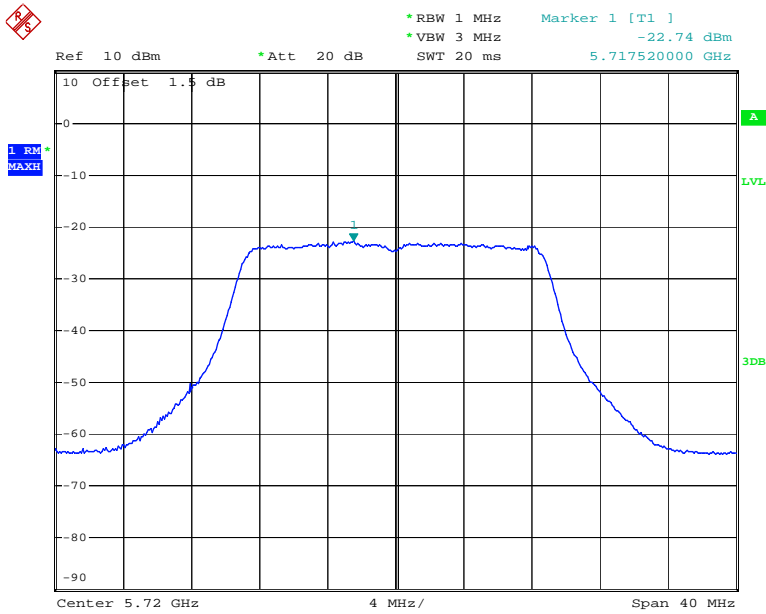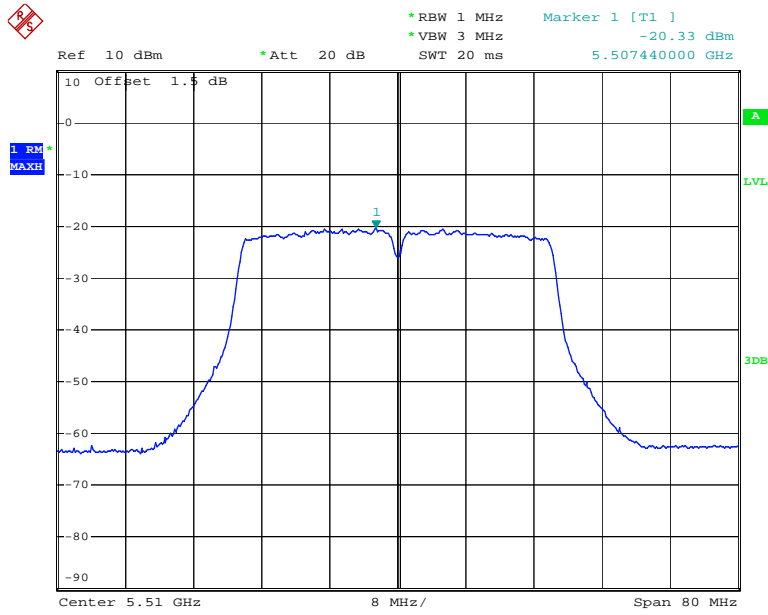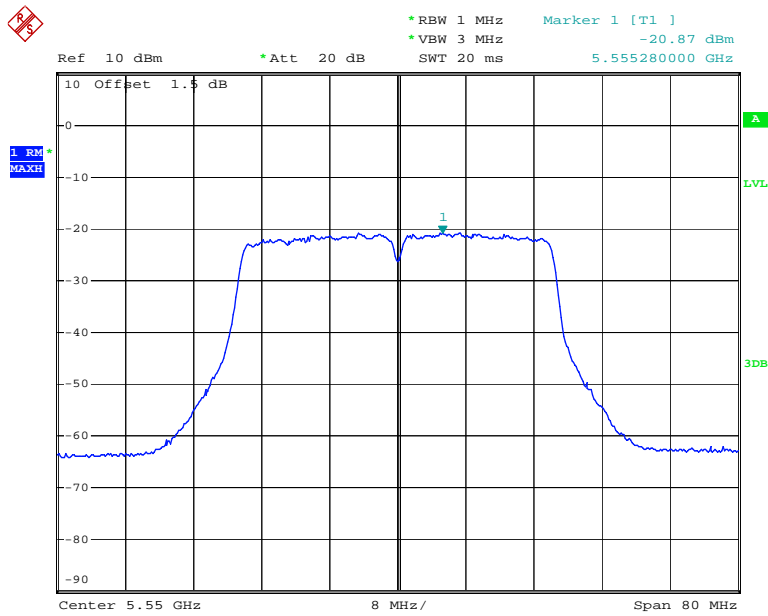## 802.11n ht40 Low Channel
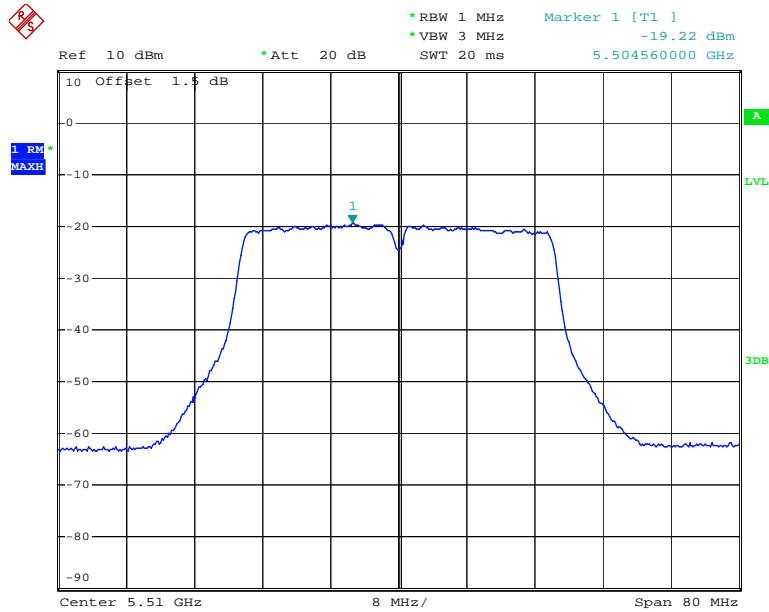
Date: 24.OCT.2020 15:10:19

802.11n ht40 Middle Channel

Date: 24.OCT.2020 15:10:39

802.11n ht40 High Channel

Date: 24.OCT.2020 15:11:11

802.11n ht40 5710MHz
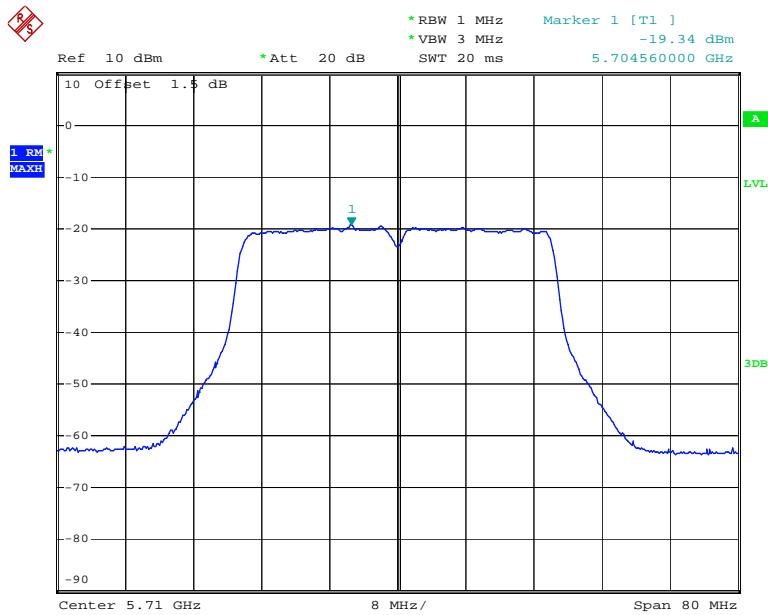
Date: 24.OCT.2020 15:11:49

802.11ac vht80 Low Channel

```
                                              *RBW 1 MHz      Marker 1 [T1 ]
                                              *VBW 3 MHz               -20.31 dBm
       Ref  10 dBm          *Att  20 dB    SWT 20 ms          5.547600000 GHz
    10 Offset  1.5 dB
```
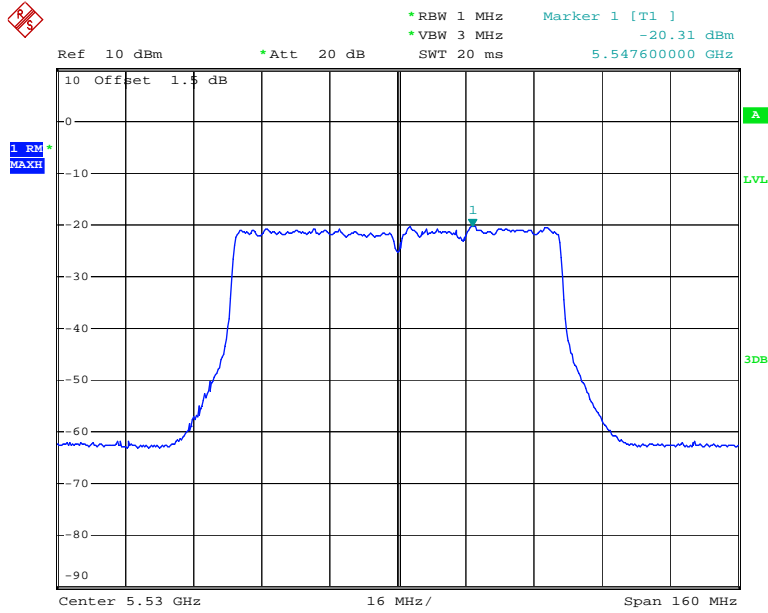
Date: 24.OCT.2020 15:08:22

802.11ac vht80 5610MHz

```
                                              *RBW 1 MHz      Marker 1 [T1 ]
                                              *VBW 3 MHz               -19.31 dBm
       Ref  10 dBm          *Att  20 dB    SWT 20 ms          5.645200000 GHz
    10 Offset  1.5 dB
```
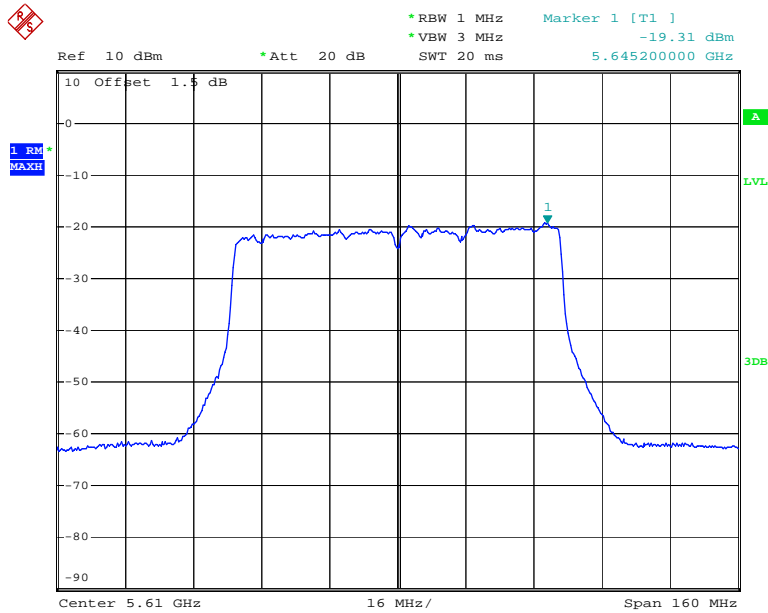
Date: 24.OCT.2020 15:09:39

802.11ac vht80 5690MHz
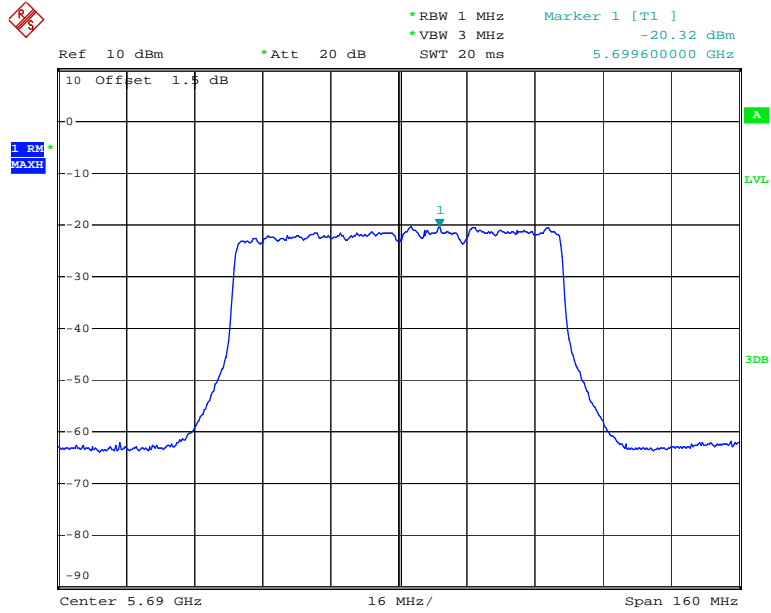
Date: 24.OCT.2020 15:08:49

Chain 1:

802.11a Low Channel


```
                                        *RBW 1 MHz     Marker 1 [T1 ]
                                        *VBW 3 MHz              -15.90 dBm
        Ref  10 dBm        *Att  20 dB   SWT 20 ms       5.497440000 GHz
```
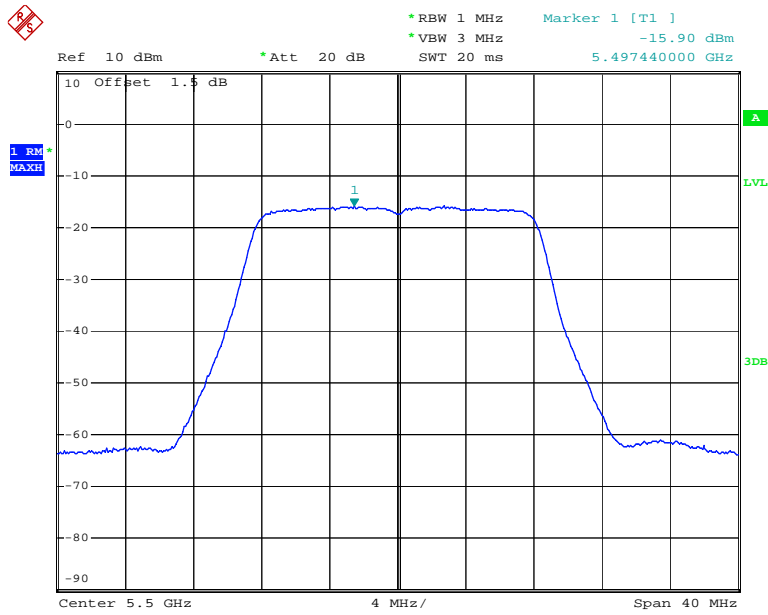
Date: 24.OCT.2020 15:51:06

802.11a Middle Channel


```
                                        *RBW 1 MHz     Marker 1 [T1 ]
                                        *VBW 3 MHz              -16.21 dBm
        Ref  10 dBm        *Att  20 dB   SWT 20 ms       5.578400000 GHz
```
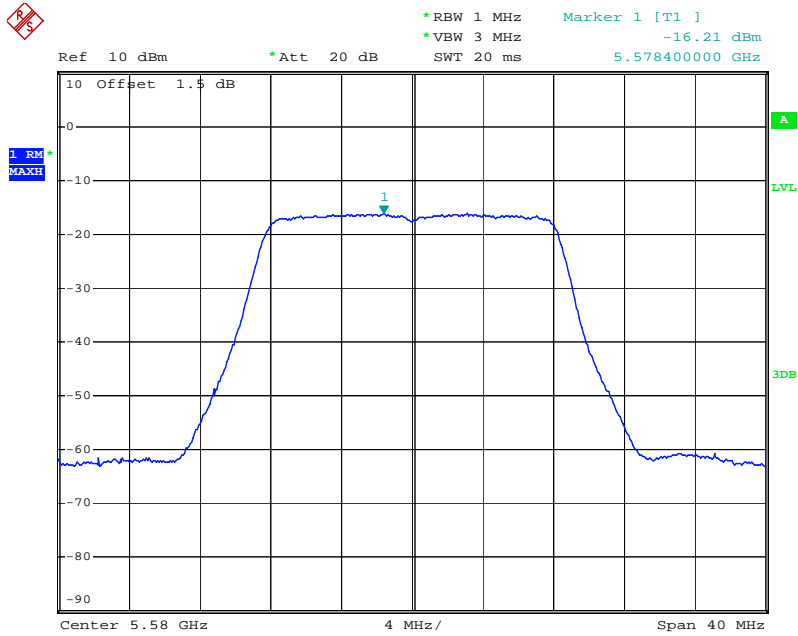
Date: 24.OCT.2020 15:50:20

802.11a High Channel


```
                                      *RBW 1 MHz    Marker 1 [T1 ]
                                      *VBW 3 MHz          -15.97 dBm
        Ref  10 dBm      *Att  20 dB   SWT 20 ms    5.702240000 GHz
```
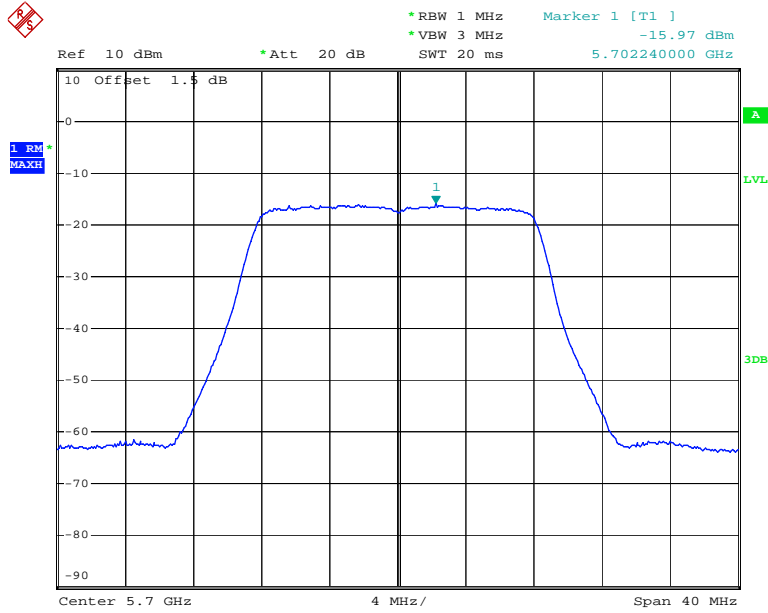
Date: 24.OCT.2020 15:49:37

802.11 a 5720MHz


```
                                      *RBW 1 MHz    Marker 1 [T1 ]
                                      *VBW 3 MHz          -16.70 dBm
        Ref  10 dBm      *Att  20 dB   SWT 20 ms    5.722720000 GHz
```

Date: 24.OCT.2020 15:48:17

802.11n ht20 Low Channel


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz            -21.08 dBm
        Ref  10 dBm      *Att  20 dB    SWT 20 ms     5.497040000 GHz
```

Date: 24.OCT.2020 15:45:07

802.11n ht20 Middle Channel


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz            -20.80 dBm
        Ref  10 dBm      *Att  20 dB    SWT 20 ms     5.577600000 GHz
```

Date: 24.OCT.2020 15:45:36

802.11n ht20 High Channel

Date: 24.OCT.2020 15:46:05

802.11n ht20 5720 MHz

Date: 24.OCT.2020 15:46:55

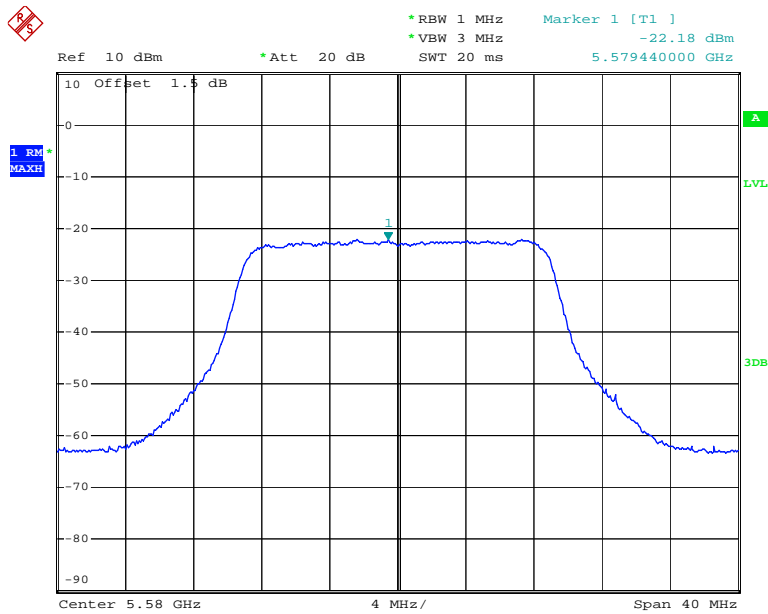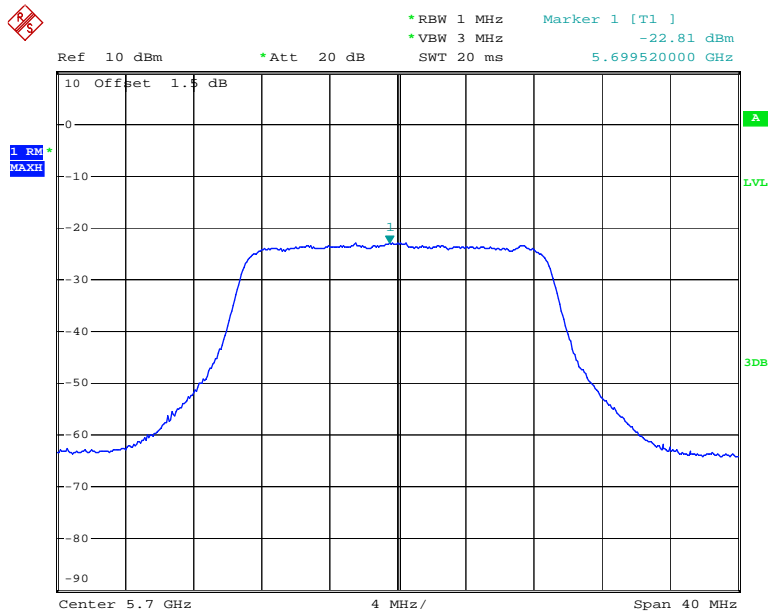**802.11n ht40 Low Channel**

Date: 24.OCT.2020 15:42:47

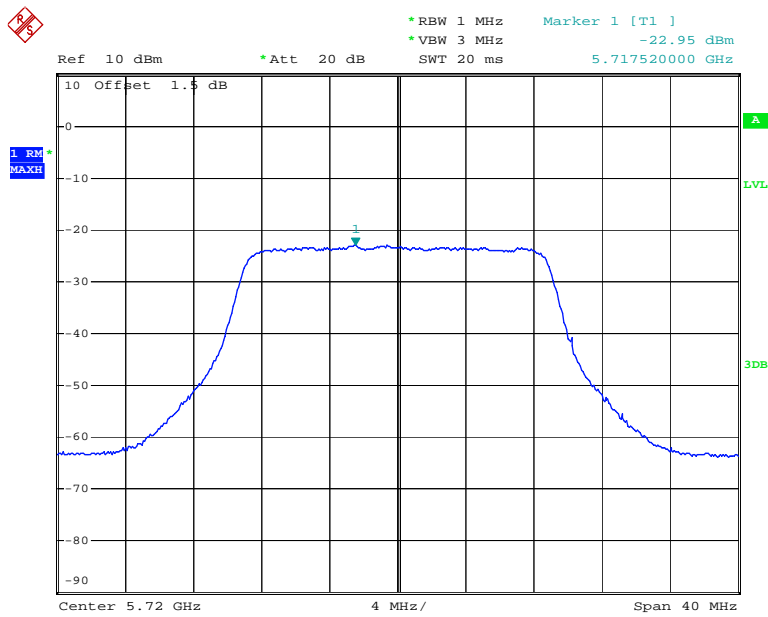**802.11n ht40 Middle Channel**

Date: 24.OCT.2020 15:43:07
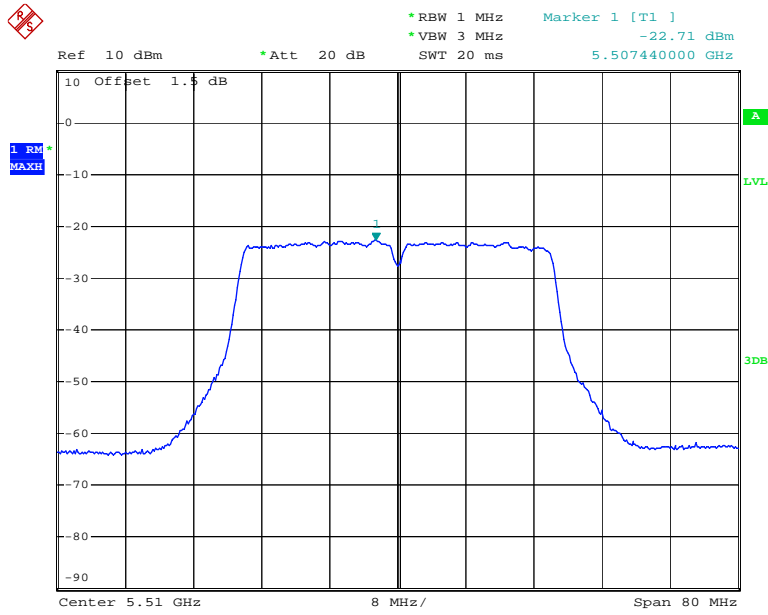
802.11n ht40 High Channel
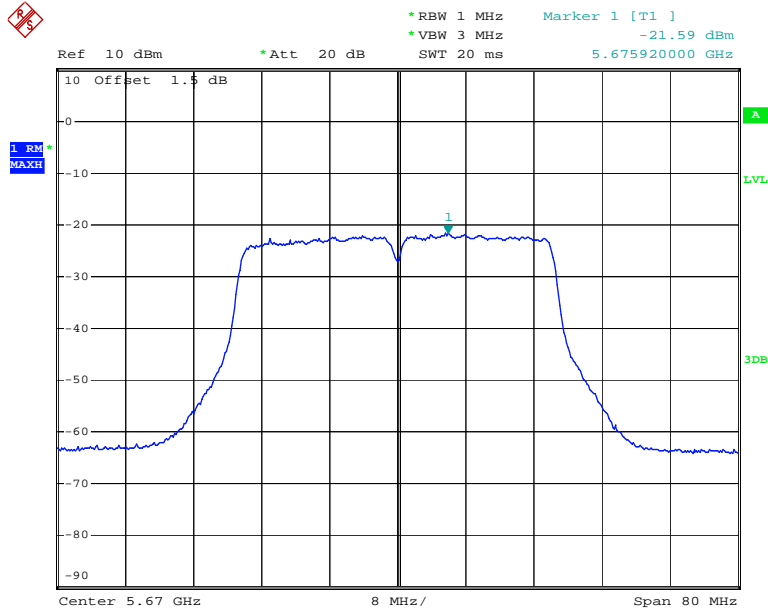
Date: 24.OCT.2020 15:43:30

802.11n ht40 5710MHz
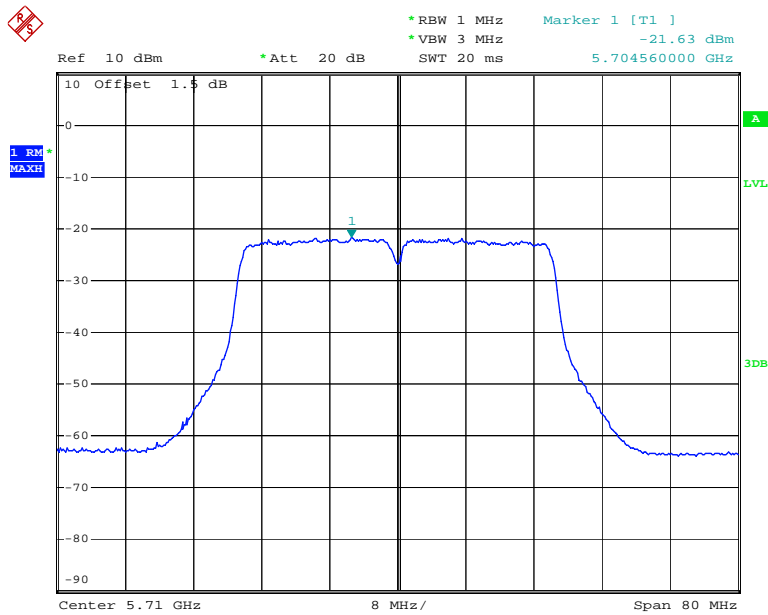
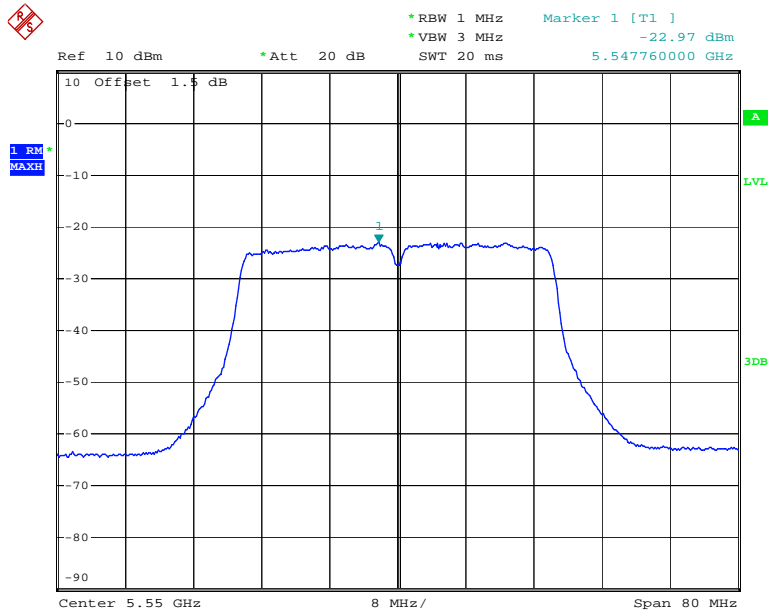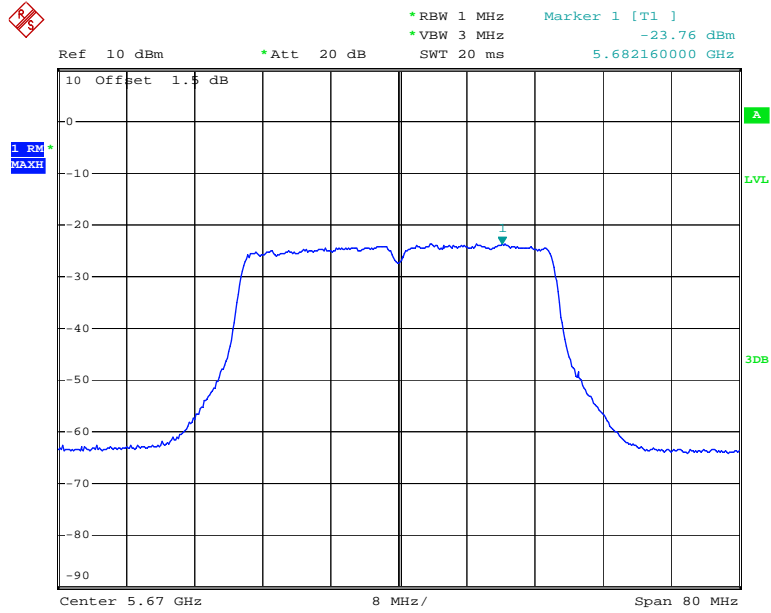Date: 24.OCT.2020 15:44:12

802.11ac vht80 Low Channel
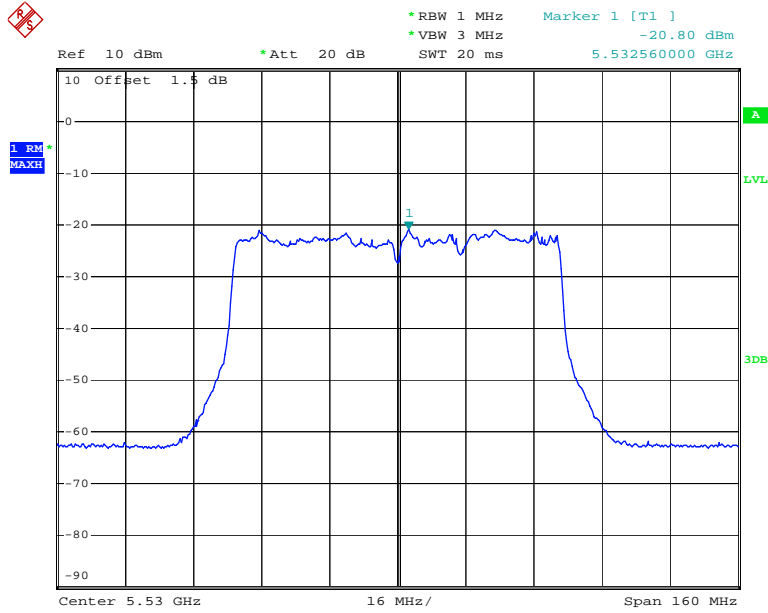
Date: 24.OCT.2020 15:42:01

802.11ac vht80 5610MHz
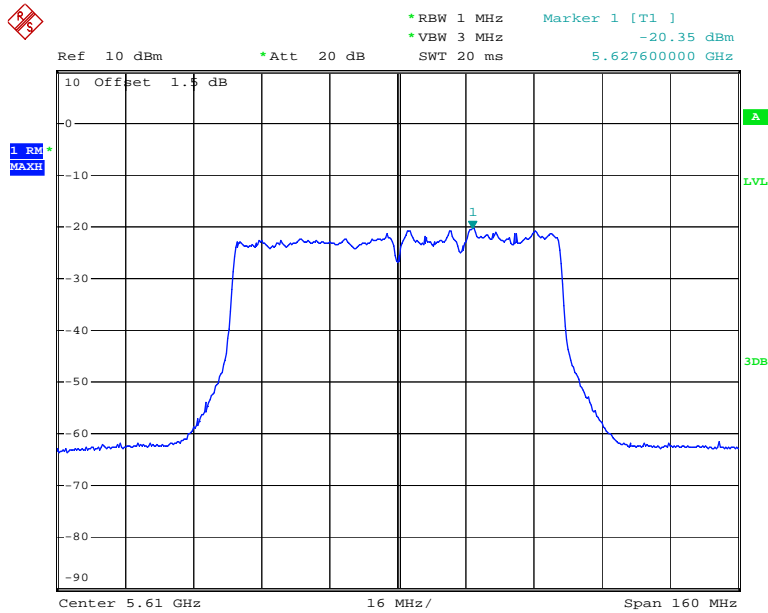
Date: 24.OCT.2020 15:40:28

802.11ac vht80 5690MHz
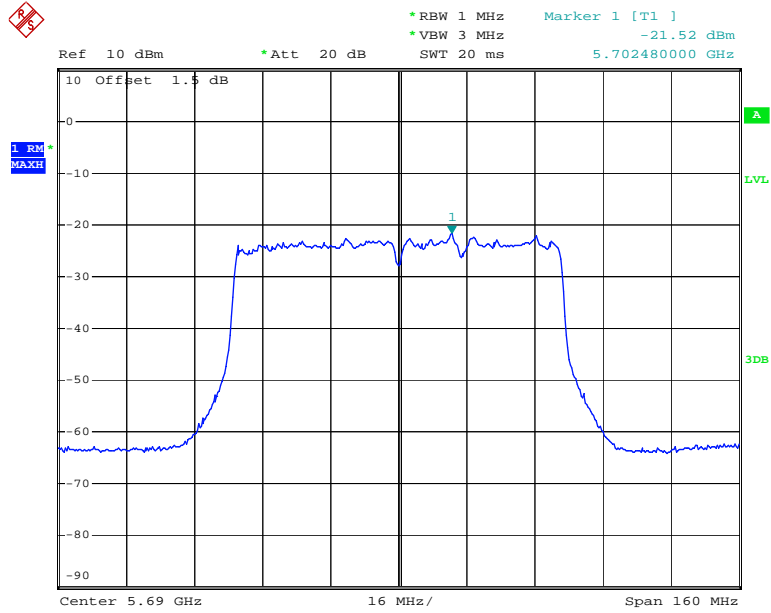
Date: 24.OCT.2020 15:41:32

Chain 2:

802.11a Low Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz              -16.97 dBm
          Ref  10 dBm     *Att  20 dB   SWT 20 ms     5.497040000 GHz
```
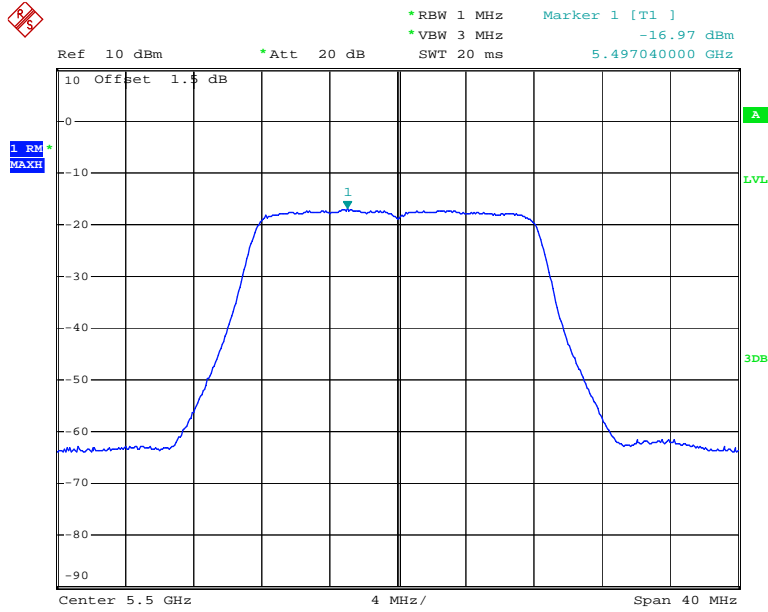
Date: 24.OCT.2020 15:26:32

802.11a Middle Channel


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz              -16.90 dBm
          Ref  10 dBm     *Att  20 dB   SWT 20 ms     5.583360000 GHz
```
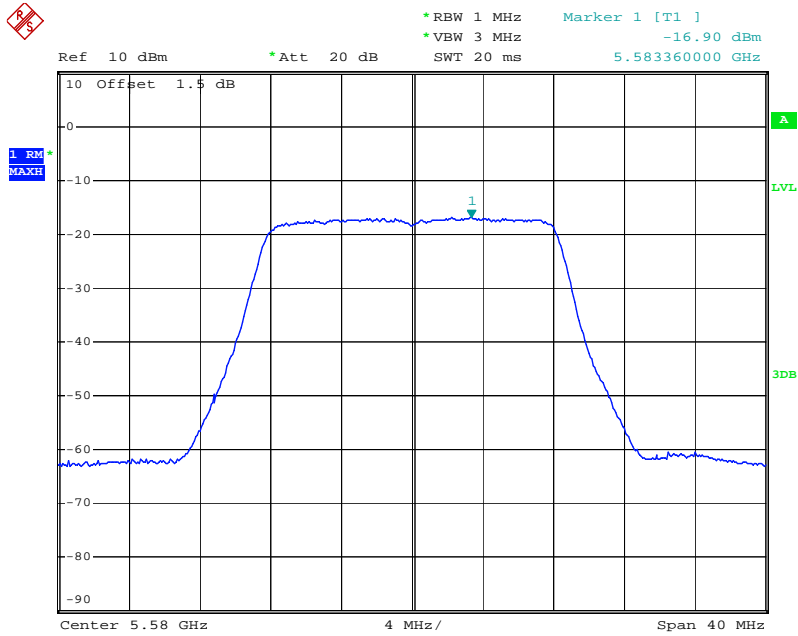
Date: 24.OCT.2020 15:27:18

802.11a High Channel
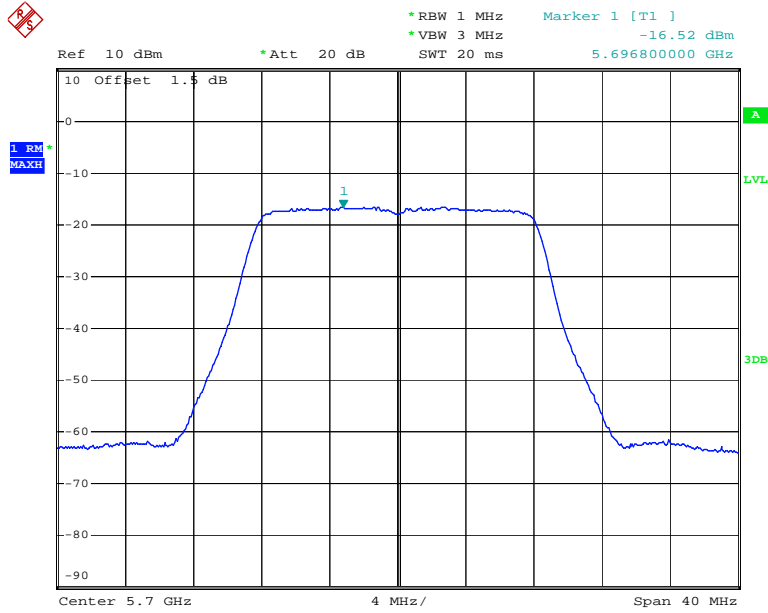
Date: 24.OCT.2020 15:27:42

802.11 a 5720MHz
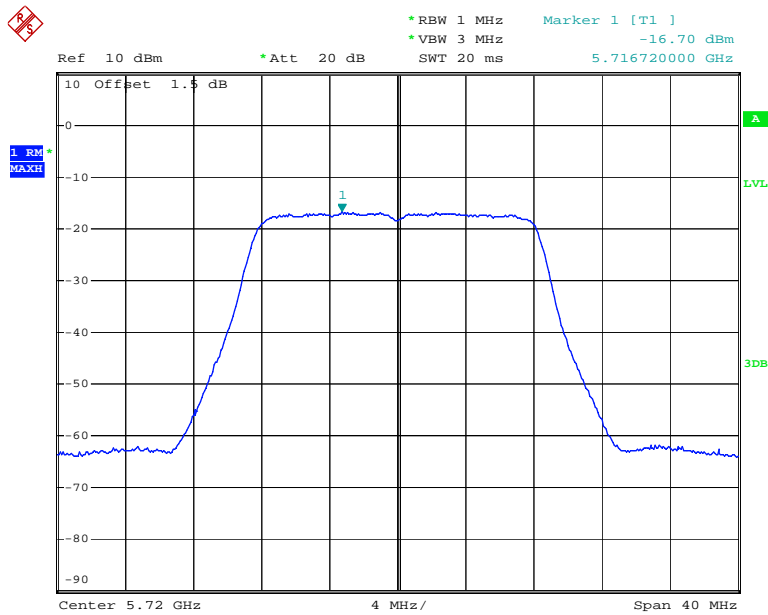
Date: 24.OCT.2020 15:19:31

802.11n ht20 Low Channel

```
                                              *RBW 1 MHz     Marker 1 [T1 ]
                                              *VBW 3 MHz            -21.51 dBm
          Ref  10 dBm            *Att  20 dB   SWT 20 ms      5.497440000 GHz
```



```
Center 5.5 GHz              4 MHz/                    Span 40 MHz
```
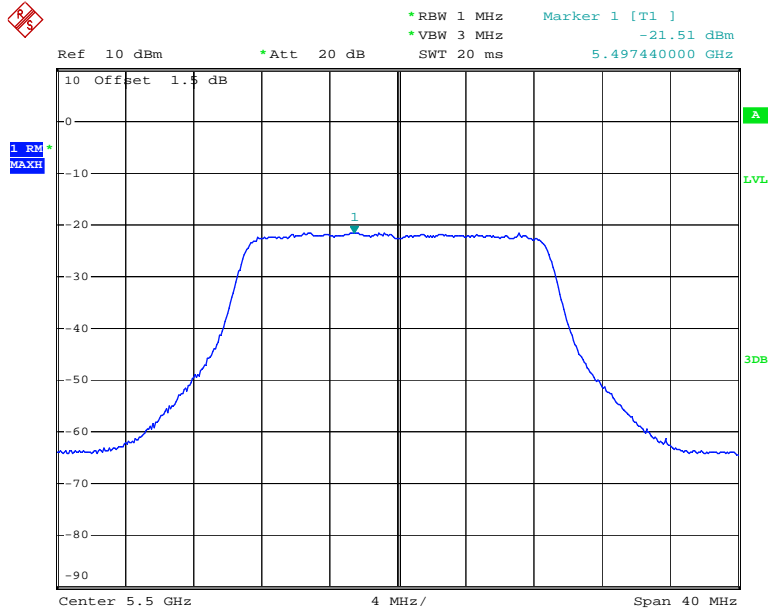
Date: 24.OCT.2020 15:33:35

802.11n ht20 Middle Channel

```
                                              *RBW 1 MHz     Marker 1 [T1 ]
                                              *VBW 3 MHz            -22.18 dBm
          Ref  10 dBm            *Att  20 dB   SWT 20 ms      5.579440000 GHz
```



```
Center 5.58 GHz             4 MHz/                    Span 40 MHz
```

Date: 24.OCT.2020 15:33:11

802.11n ht20 High Channel

Date: 24.OCT.2020 15:30:08

802.11n ht20 5720 MHz

Date: 24.OCT.2020 15:31:38

802.11n ht40 Low Channel

Date: 24.OCT.2020 15:34:41

802.11n ht40 Middle Channel

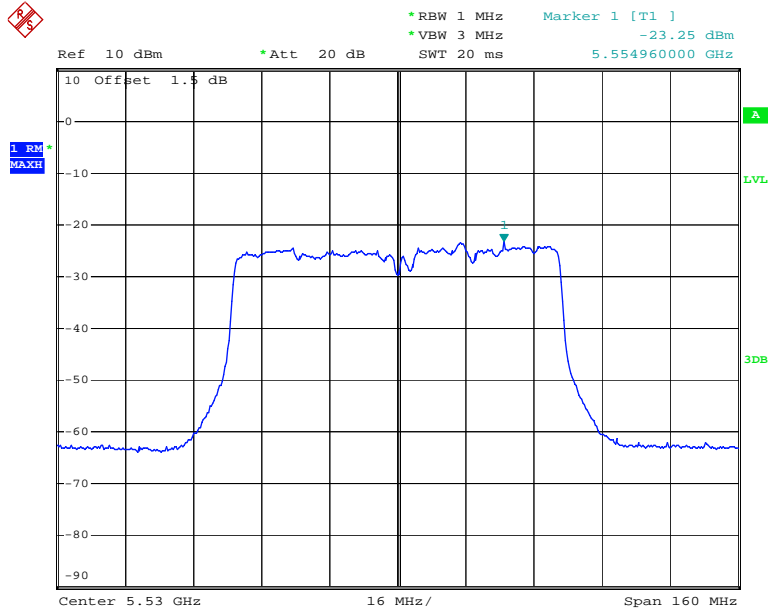

Date: 24.OCT.2020 15:35:14

802.11n ht40 High Channel
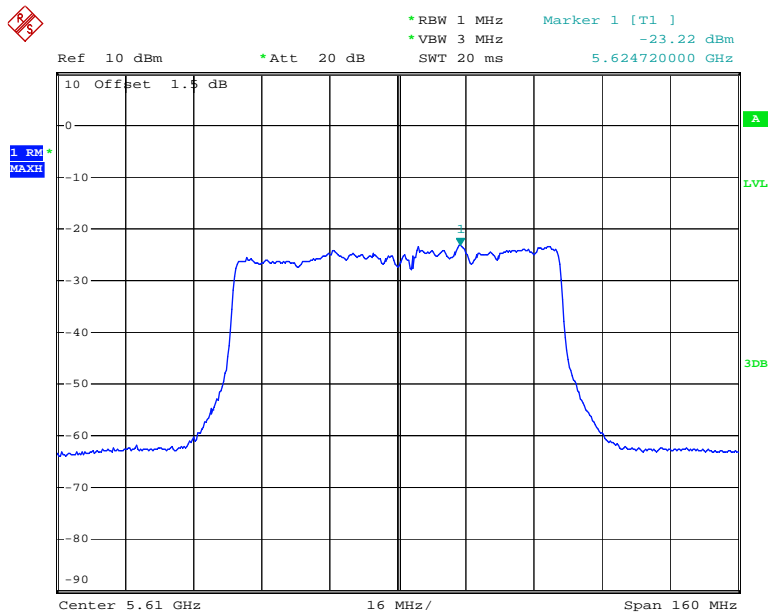

Date: 24.OCT.2020 15:35:38

802.11n ht40 5710MHz
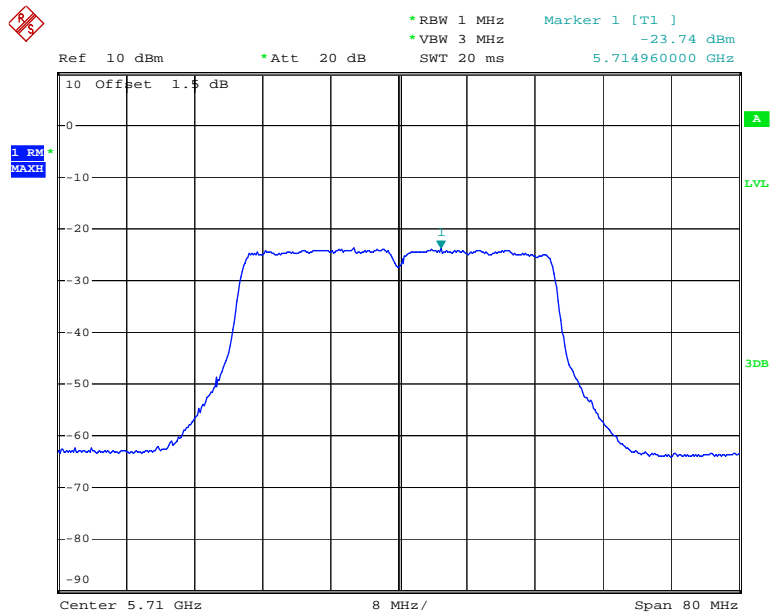
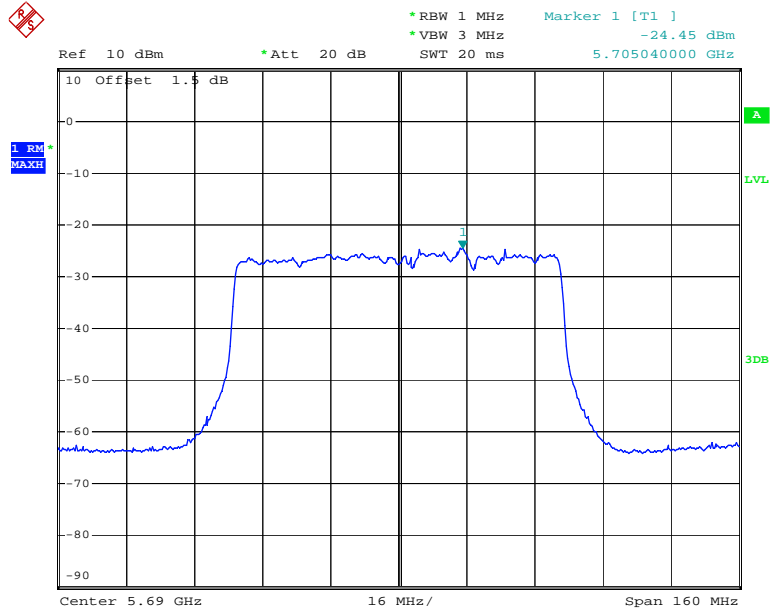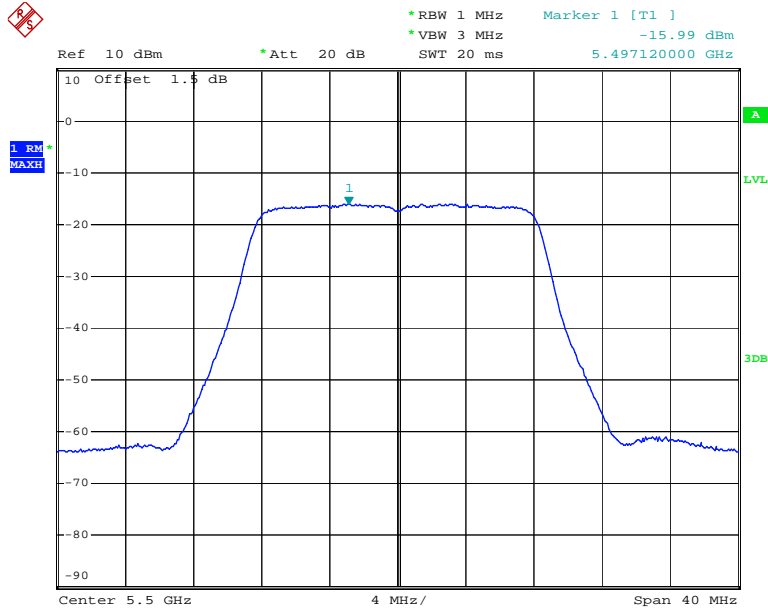
Date: 24.OCT.2020 15:36:47

802.11ac vht80 Low Channel

Date: 24.OCT.2020 15:37:36

802.11ac vht80 High Channel 5610MHz

Date: 24.OCT.2020 15:39:21

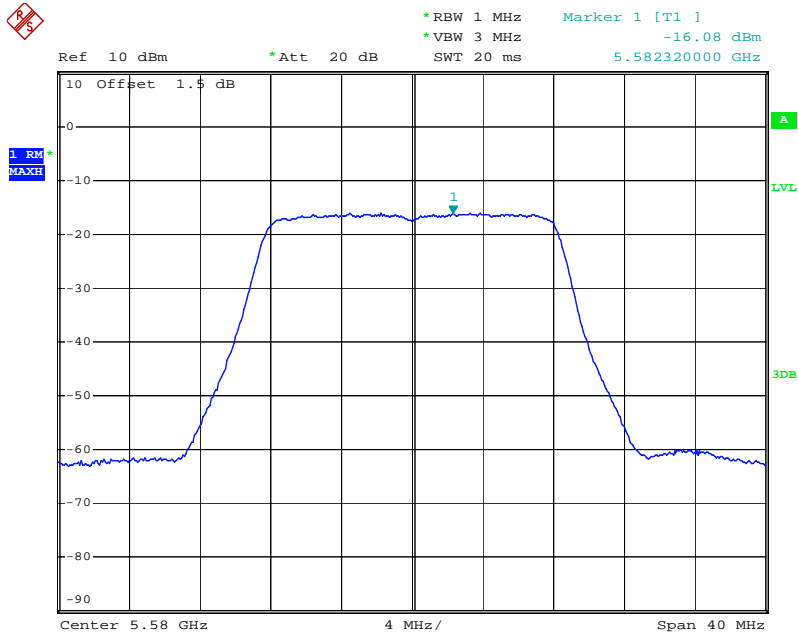## 802.11ac vht80 High Channel

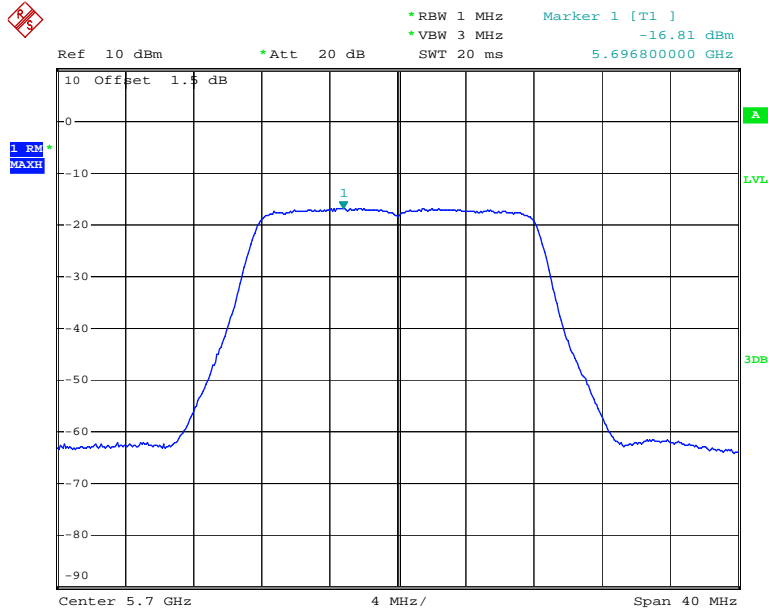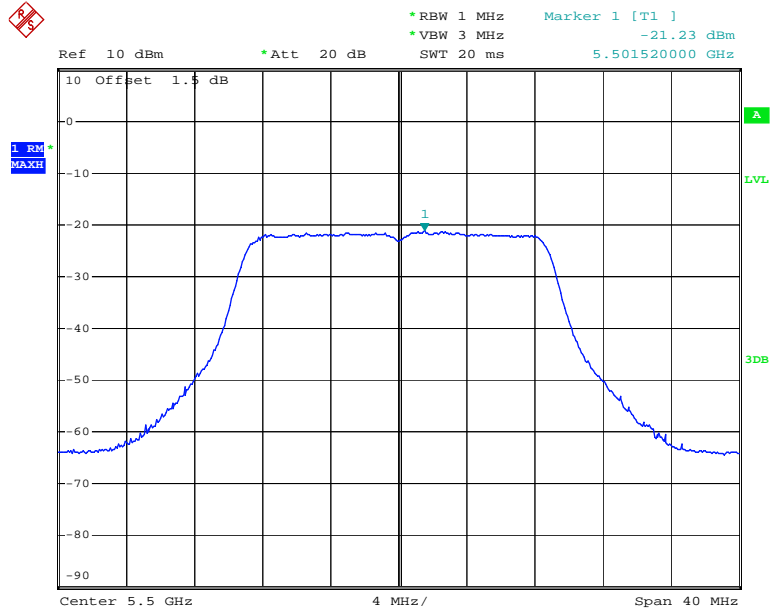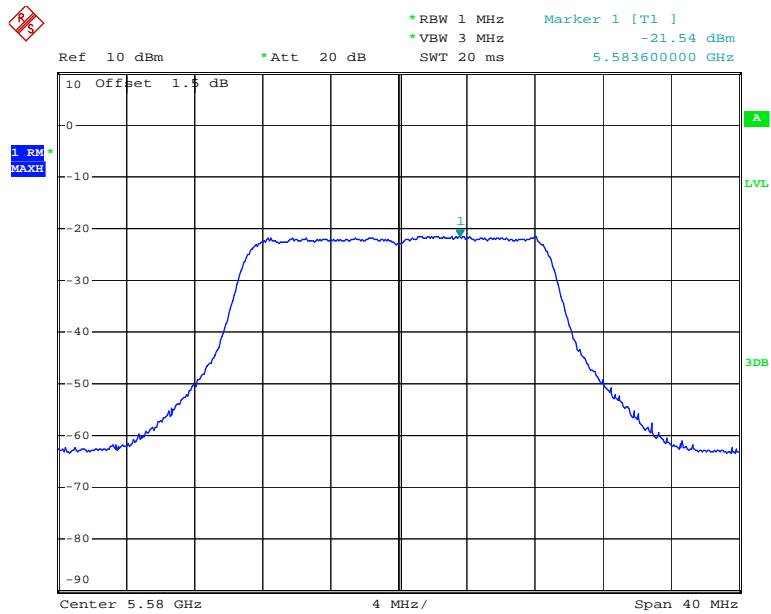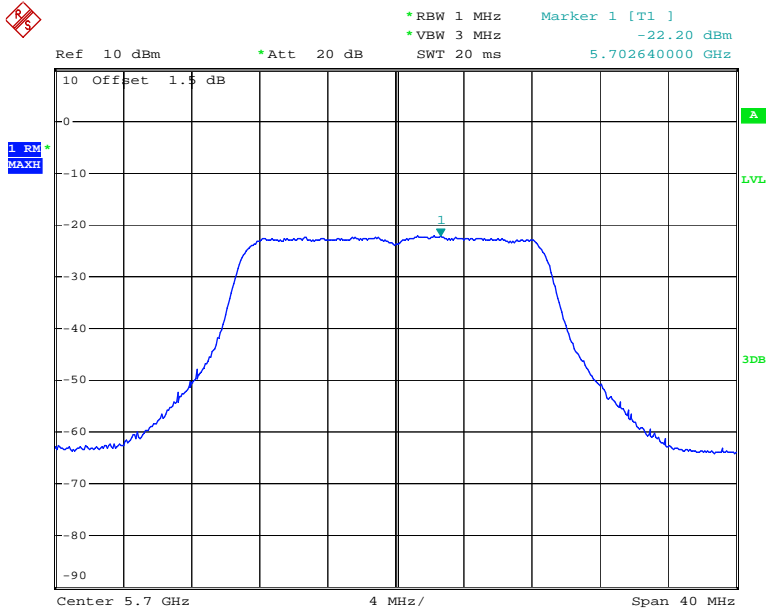Date: 24.OCT.2020 15:38:04

Chain 3:

802.11a Low Channel


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz              -15.99 dBm
      Ref  10 dBm        *Att  20 dB    SWT 20 ms       5.497120000 GHz
```

Date: 24.OCT.2020 15:52:15

802.11a Middle Channel


```
                                    *RBW 1 MHz      Marker 1 [T1 ]
                                    *VBW 3 MHz              -16.08 dBm
      Ref  10 dBm        *Att  20 dB    SWT 20 ms       5.582320000 GHz
```

Date: 24.OCT.2020 15:52:37

802.11a High Channel

```
                                      *RBW 1 MHz    Marker 1 [T1 ]
                                      *VBW 3 MHz            -16.81 dBm
        Ref  10 dBm       *Att  20 dB  SWT 20 ms      5.696800000 GHz
```



```
Date: 24.OCT.2020  15:53:03
```

802.11 a 5720MHz

```
                                      *RBW 1 MHz    Marker 1 [T1 ]
                                      *VBW 3 MHz            -16.31 dBm
        Ref  10 dBm       *Att  20 dB  SWT 20 ms      5.717120000 GHz
```
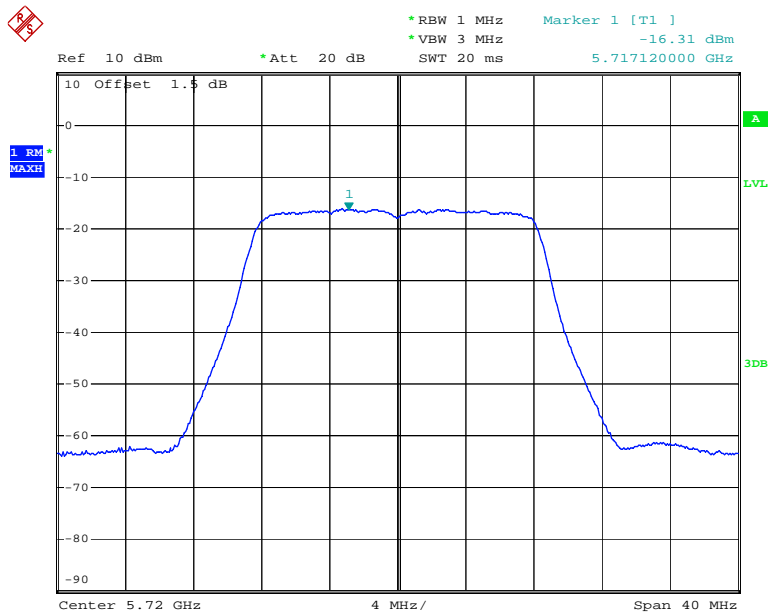


```
Date: 24.OCT.2020  15:53:42
```

802.11n ht20 Low Channel

Date: 24.OCT.2020 15:56:30

802.11n ht20 Middle Channel

Date: 24.OCT.2020 15:56:08

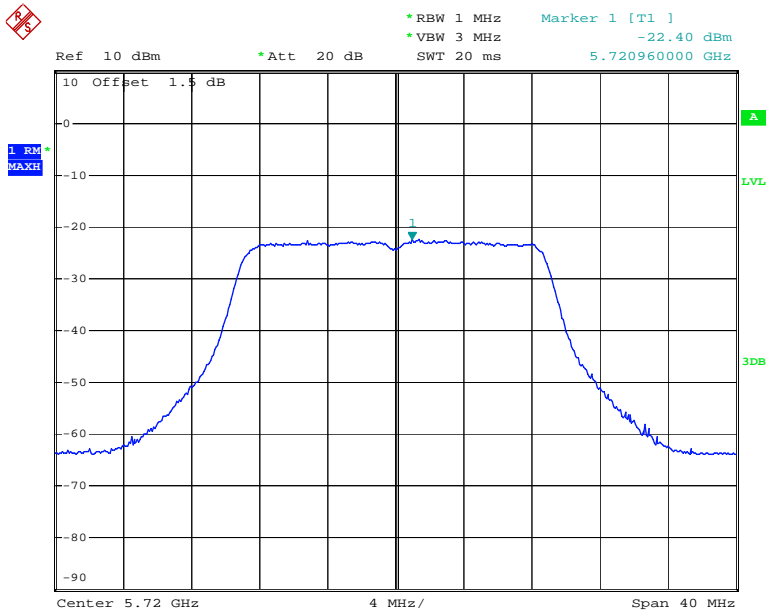## 802.11n ht20 High Channel

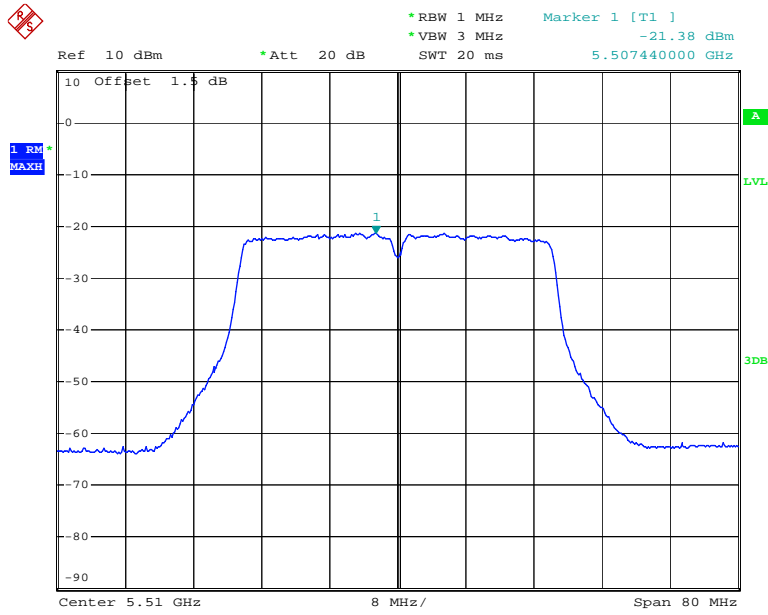

Date: 24.OCT.2020 15:55:18

802.11n ht20 High Channel 5720 MHz
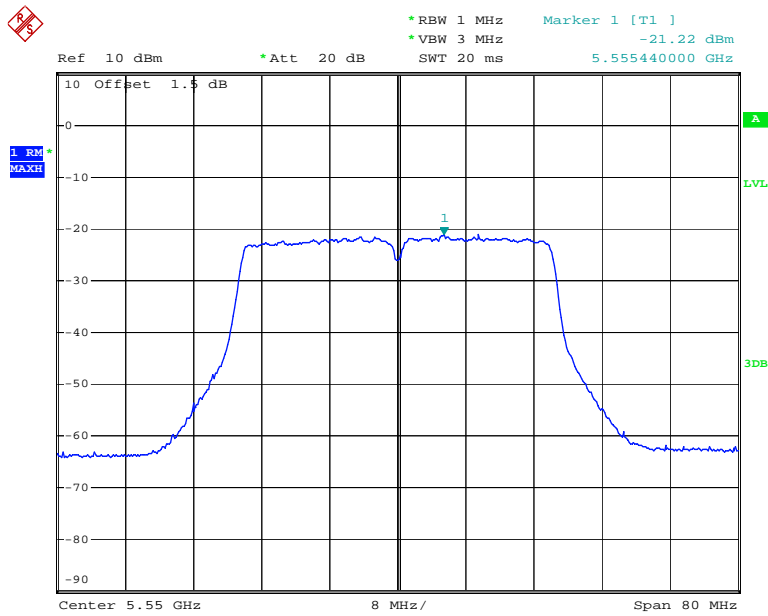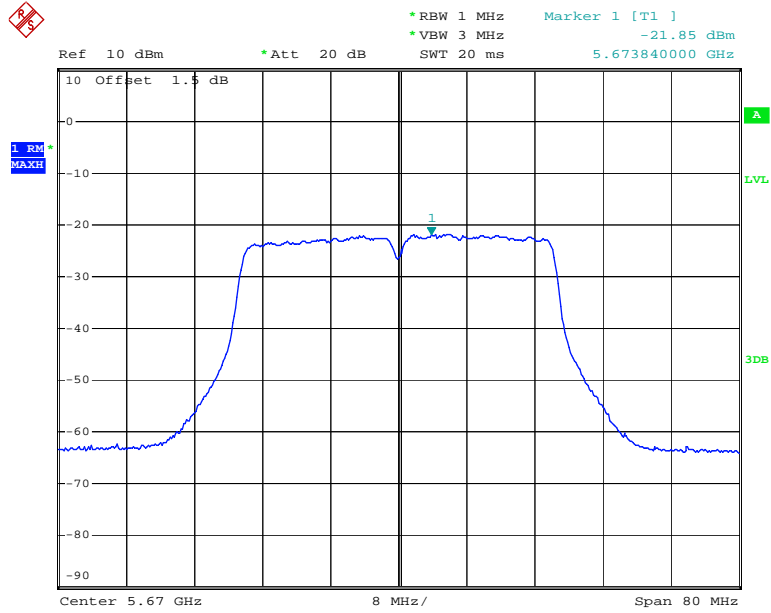

Date: 24.OCT.2020 15:54:39

802.11n ht40 Low Channel

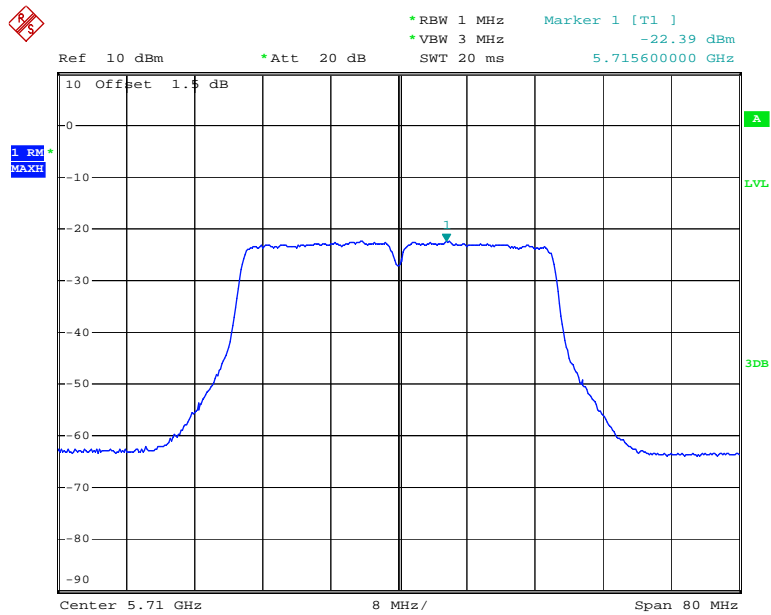Date: 24.OCT.2020 15:57:20

802.11n ht40 Middle Channel

Date: 24.OCT.2020 15:57:42

802.11n ht40 High Channel
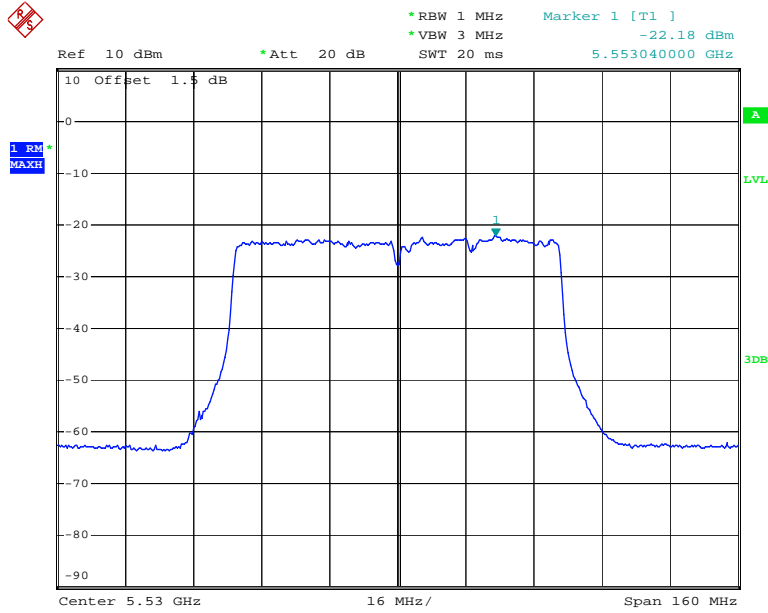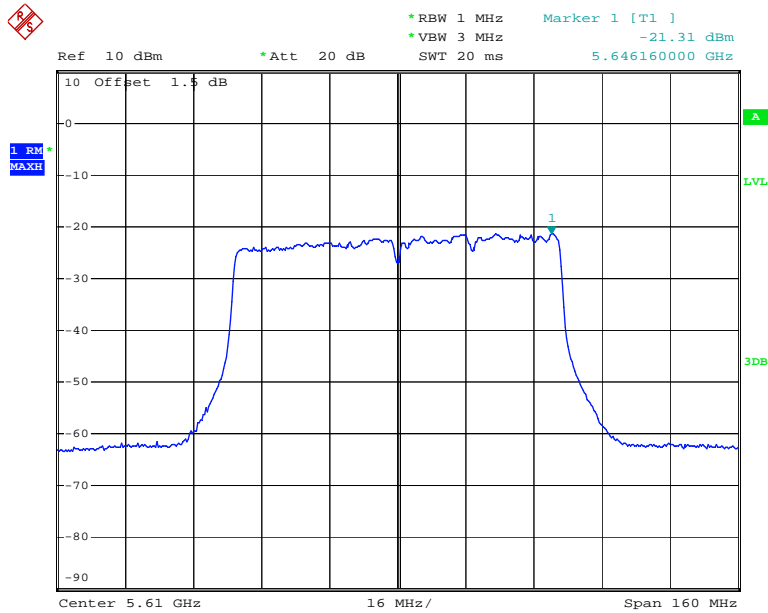


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz           -21.85 dBm
        Ref  10 dBm      *Att  20 dB  SWT 20 ms      5.673840000 GHz
```

Date: 24.OCT.2020 15:58:08

802.11n ht40 5710MHz


```
                                    *RBW 1 MHz    Marker 1 [T1 ]
                                    *VBW 3 MHz           -22.39 dBm
        Ref  10 dBm      *Att  20 dB  SWT 20 ms      5.715600000 GHz
```

Date: 24.OCT.2020 15:58:43

802.11ac vht80 Low Channel

```
                                          *RBW 1 MHz    Marker 1 [T1 ]
                                          *VBW 3 MHz            -22.18 dBm
          Ref  10 dBm       *Att  20 dB    SWT 20 ms     5.553040000 GHz
```

Date: 24.OCT.2020 16:00:03

802.11ac vht80 5610MHz

```
                                          *RBW 1 MHz    Marker 1 [T1 ]
                                          *VBW 3 MHz            -21.31 dBm
          Ref  10 dBm       *Att  20 dB    SWT 20 ms     5.646160000 GHz
```

Date: 24.OCT.2020 16:01:22

802.11ac vht80 5690MHz
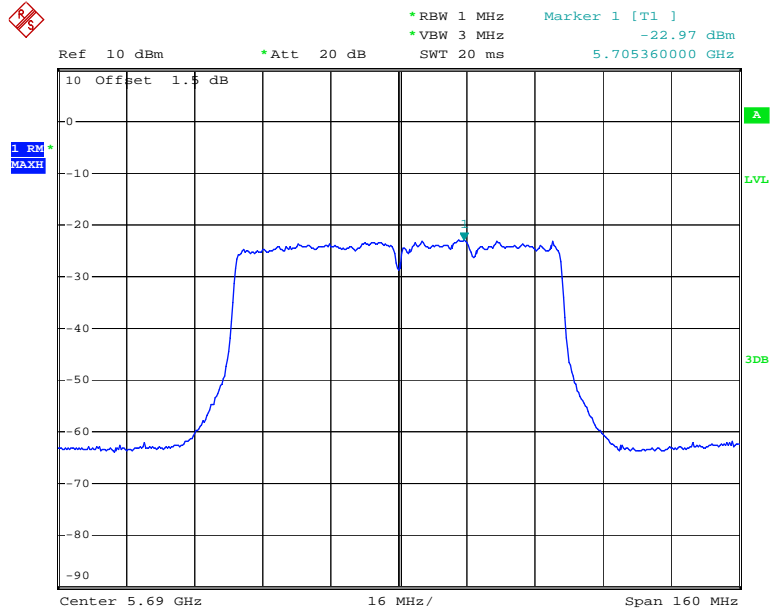
Date: 24.OCT.2020 16:00:32

34 dBi Antenna:
5150-5250 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)					FCC Limit
		Chain 0	Chain 1	Chain 2	Chain 3	Total	
802.11 a	5180	-0.91	-1.51	-1.36	-1.16	/	6
	5200	-1.32	-1.74	-2.10	-1.14	/	6
	5240	-0.93	-1.23	-1.91	-1.33	/	6
802.11n ht20	5180	-6.33	-6.70	-8.00	-7.00	-0.94	6
	5200	-6.67	-6.97	-8.20	-6.45	-1.00	6
	5240	-6.67	-6.33	-6.80	-6.01	-0.42	6
802.11n ht40	5190	-7.70	-8.49	-9.60	-8.25	-2.44	6
	5230	-7.71	-7.72	-8.31	-6.86	-1.60	6
802.11ac vht80	5210	-10.20	-10.21	-10.41	-9.73	-4.11	6

Note: This is a fixed point-to-point AP application, and this band is Only for FCC Use.

5725-5850 MHz:

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/500kHz)					FCC/RSS Limit
		Chain 0	Chain 1	Chain 2	Chain 3	Total	
802.11 a	5745	11.49	11.41	11.05	12.45	/	30
	5785	10.73	11.18	10.18	12.25	/	30
	5825	10.61	11.17	10.56	11.45	/	30
802.11n ht20	5745	9.74	6.92	5.64	7.79	13.80	30
	5785	9.39	6.59	6.00	7.67	13.63	30
	5825	9.01	6.48	5.60	7.32	13.31	30
802.11n ht40	5755	6.06	3.77	2.01	3.95	10.21	30
	5795	5.44	2.77	1.71	3.69	9.64	30
802.11ac vht80	5775	3.58	1.01	-0.09	0.86	7.59	30

Note: Note: This is a fixed point-to-point AP application.For 5.8G band, same power level setting for all antenna configurations, the test plots please refer to 13dBi antenna part.

Note:
The maximum antenna gain is 34dBi in 5GHz band. Two sets of identical Sector Antenna should be installed. Each Sector Antenna has two Cross-polarized antennas, per KDB 662911 D01 Multiple Transmitter Output v02r01, Clause F) 2):

b) *Sectorized antenna systems.* In sectorized antenna systems in which each antenna is used to transmit different data in a different direction from the other antennas, directional gain is equal to the gain of an individual sector antenna.

c) *Cross-polarized antennas.* For a system in which the antennas have fixed orientations relative to one another that ensure that the antennas are cross-polarized regardless of any user actions, the directional gain is computed as follows.

   (i) *Cross-polarized antennas with $N_{ANT} = 2$.* In the case of a transmitter with only two outputs driving a pair of antennas that are cross-polarized (*e.g.*, vertical and horizontal or left-circular and right-circular), directional gain is the gain of an individual antenna. If the two antennas have different gains, the larger gain applies.
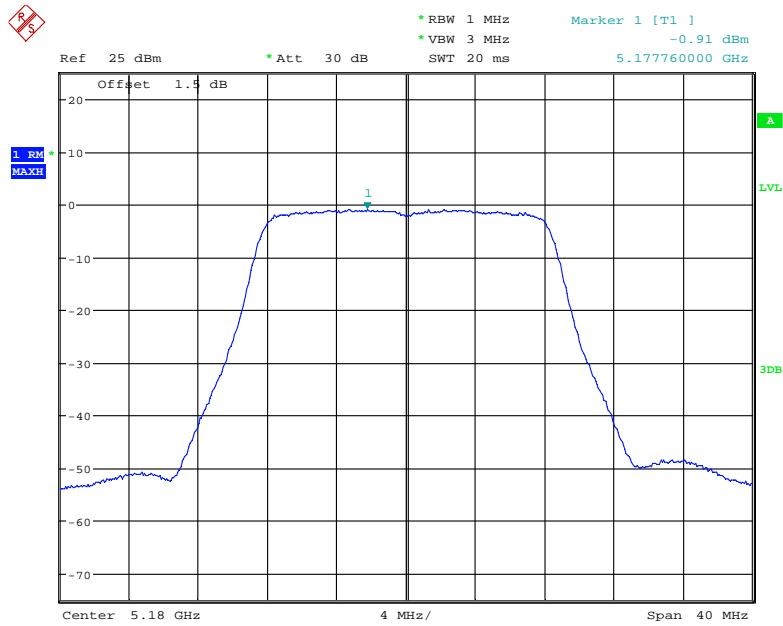
So:
Directional gain = G_{ANT} = 34dBi
Method SA-3 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01was used for PSD test.
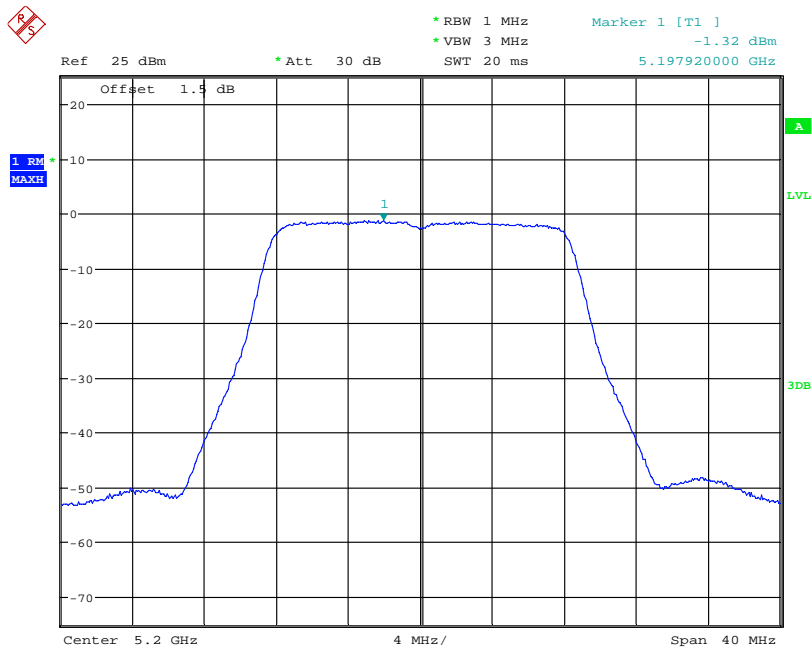
5150-5250 MHz, Chain 0:
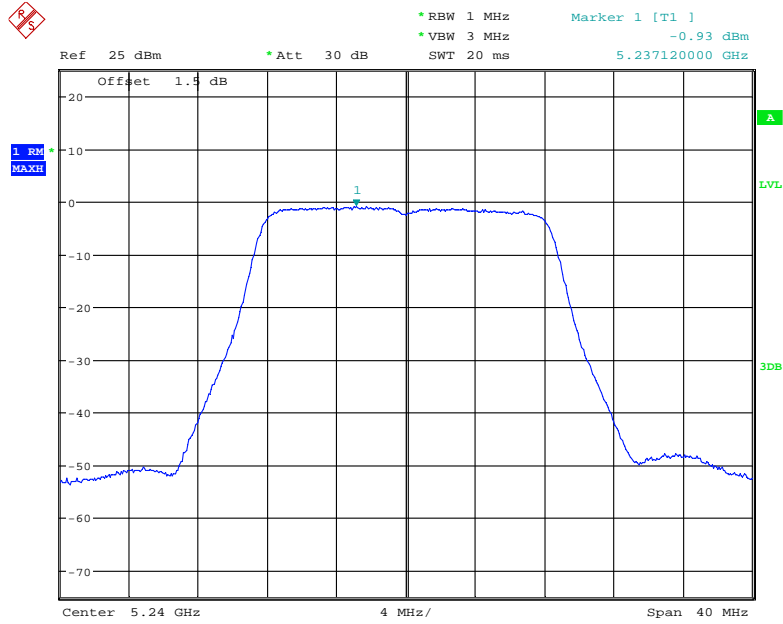
802.11a Low Channel

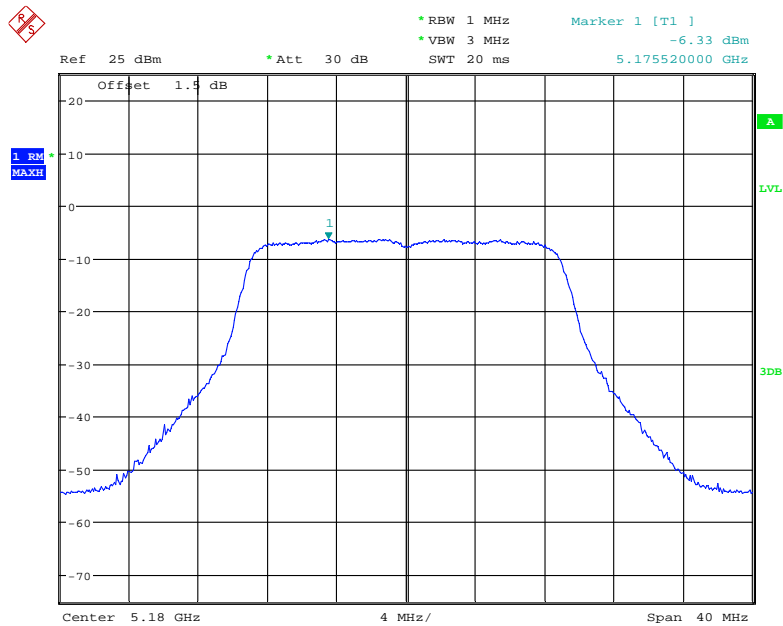Date: 22.OCT.2020 14:20:23

802.11a Middle Channel

Date: 22.OCT.2020 14:20:00

802.11a High Channel

Date: 22.OCT.2020 14:20:47

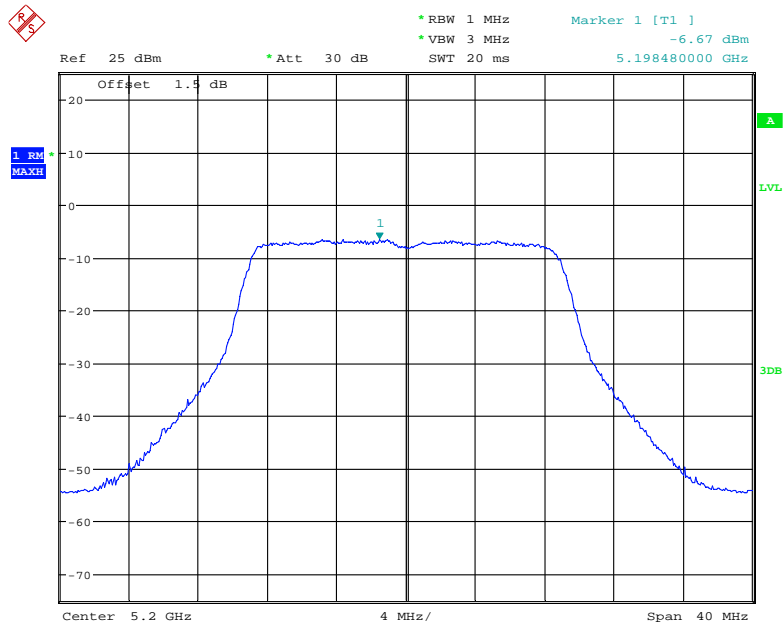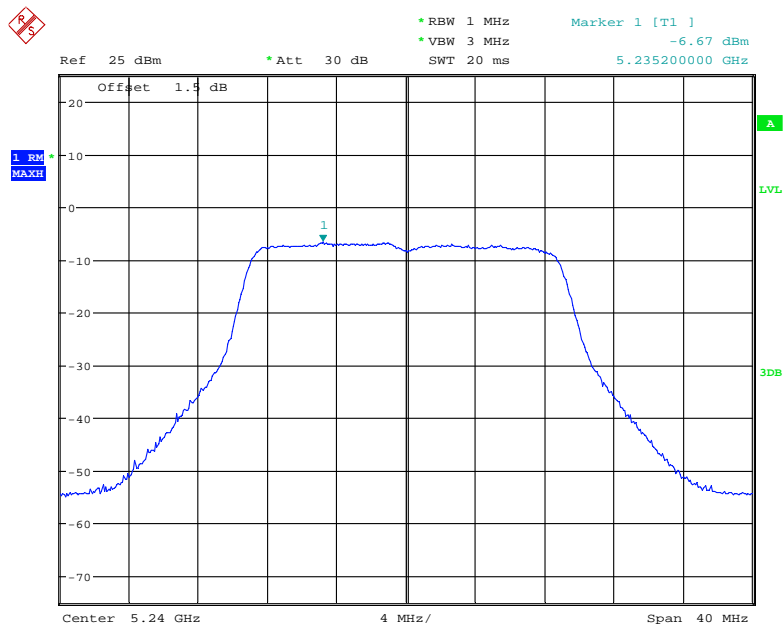## 802.11n ht20 Low Channel

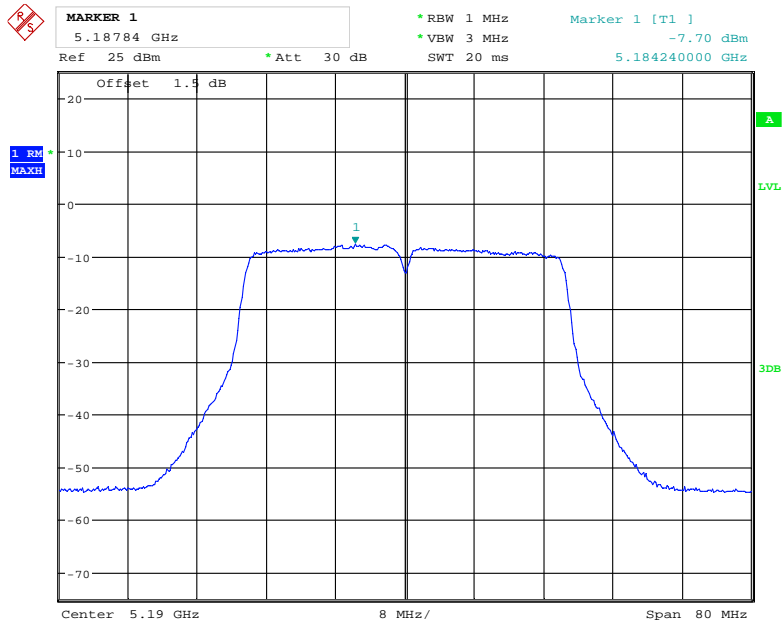Date: 22.OCT.2020 14:23:21

802.11n ht20 Middle Channel

Date: 22.OCT.2020 14:22:56

802.11n ht20 High Channel
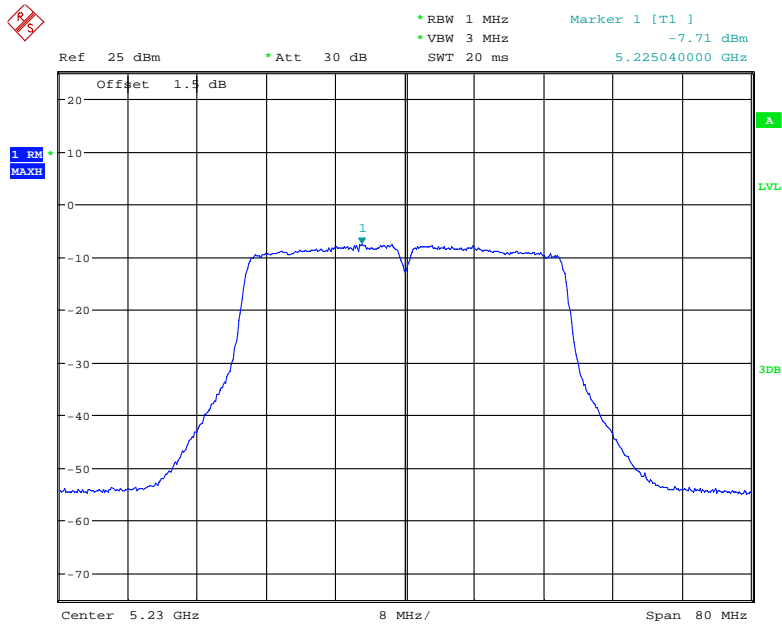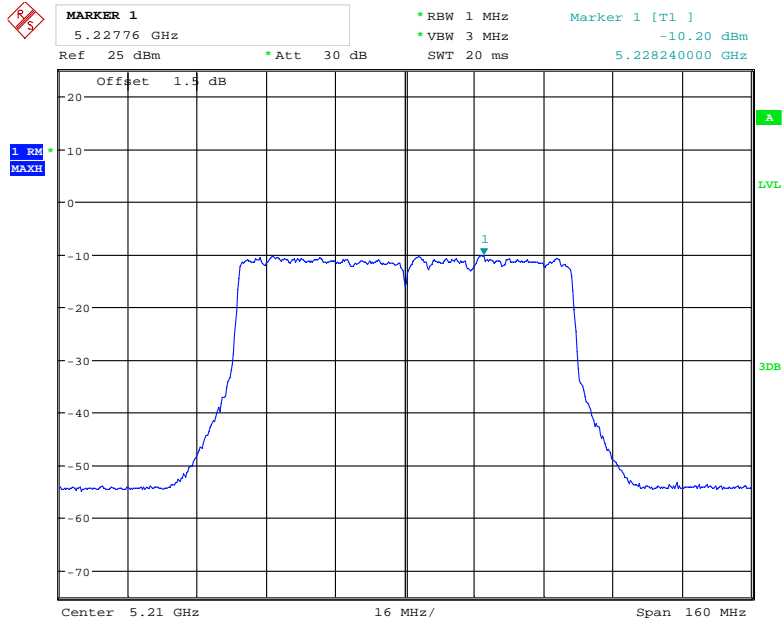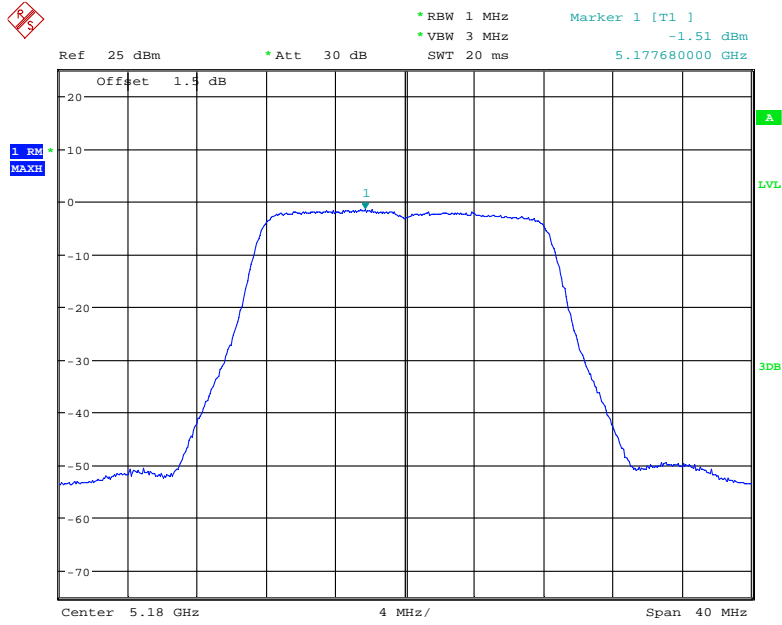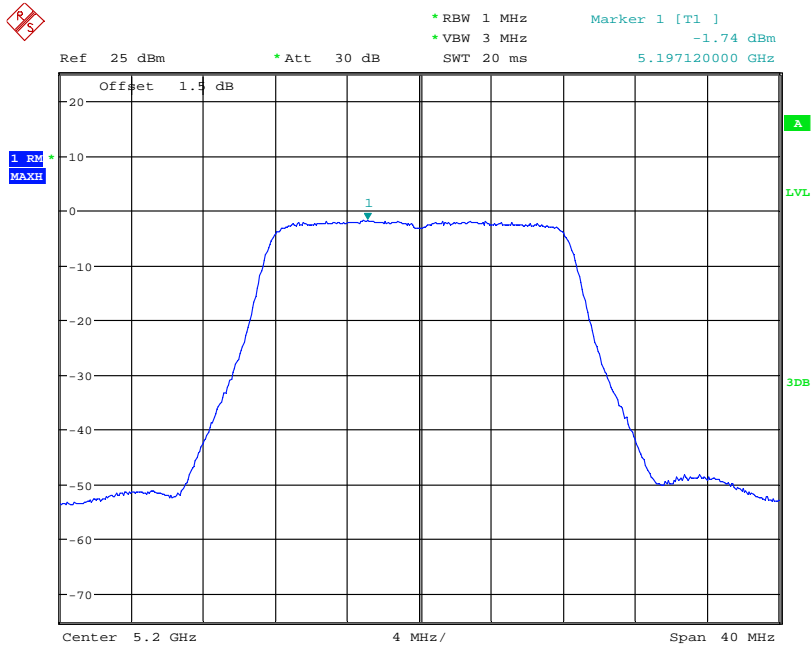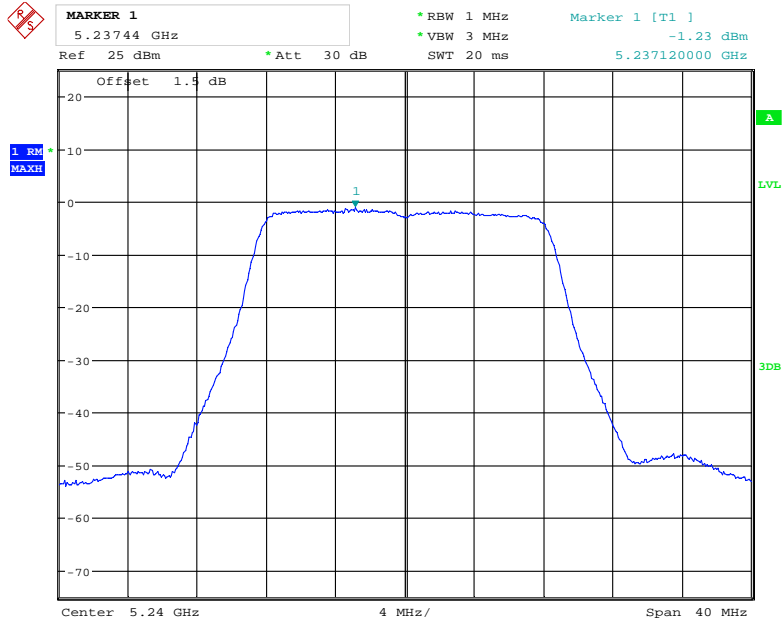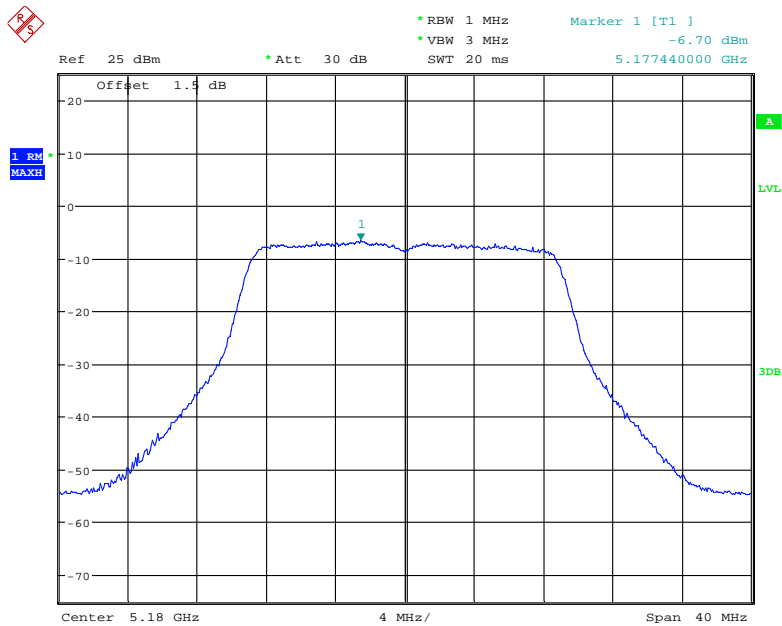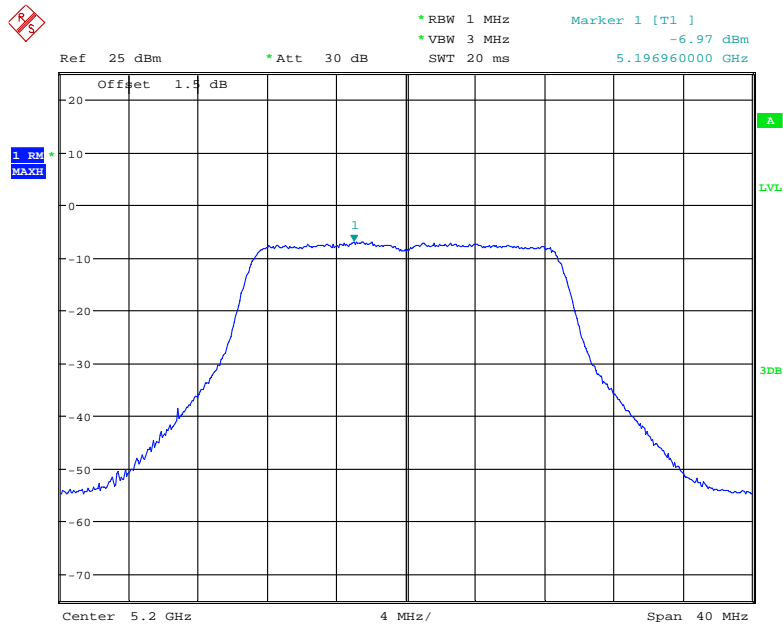

Date: 22.OCT.2020 14:22:34

802.11n ht40 Low Channel

MARKER 1				*RBW 1 MHz	Marker 1 [T1]
5.18784 GHz				*VBW 3 MHz	-7.70 dBm
Ref 25 dBm		*Att 30 dB	SWT 20 ms		5.184240000 GHz

Offset 1.5 dB

A

1 RM
MAXH

LVL

3DB

Center 5.19 GHz   8 MHz/   Span 80 MHz

Date: 22.OCT.2020 14:24:15

802.11n ht40 High Channel

				*RBW 1 MHz	Marker 1 [T1]
				*VBW 3 MHz	-7.71 dBm
Ref 25 dBm		*Att 30 dB	SWT 20 ms		5.225040000 GHz

Offset 1.5 dB

A

1 RM
MAXH

LVL

3DB

Center 5.23 GHz   8 MHz/   Span 80 MHz

Date: 22.OCT.2020 14:24:42

802.11ac vht80 Middle Channel


```
MARKER 1                        * RBW  1 MHz      Marker 1 [T1 ]
  5.22776 GHz                   * VBW  3 MHz              -10.20 dBm
Ref  25 dBm       * Att  30 dB    SWT  20 ms       5.228240000 GHz
```

Date: 22.OCT.2020 14:25:37

Chain 1:

802.11a Low Channel

Date: 22.OCT.2020 14:36:20

802.11a Middle Channel

Date: 22.OCT.2020 14:35:58

802.11a High Channel

| MARKER 1 | | * RBW 1 MHz | Marker 1 [T1] |
| 5.23744 GHz | | * VBW 3 MHz | -1.23 dBm |
| Ref 25 dBm | * Att 30 dB | SWT 20 ms | 5.237120000 GHz |

Offset 1.5 dB

1 RM*
MAXH

A

LVL

3DB

1

Center 5.24 GHz   4 MHz/   Span 40 MHz

Date: 22.OCT.2020 14:35:28

802.11n ht20 Low Channel

		* RBW 1 MHz	Marker 1 [T1]
		* VBW 3 MHz	-6.70 dBm
Ref 25 dBm	* Att 30 dB	SWT 20 ms	5.177440000 GHz

Offset 1.5 dB

1 RM*
MAXH

A

LVL

3DB

1

Center 5.18 GHz   4 MHz/   Span 40 MHz

Date: 22.OCT.2020 14:36:56

802.11n ht20 Middle Channel

Date: 22.OCT.2020 14:37:17

802.11n ht20 High Channel
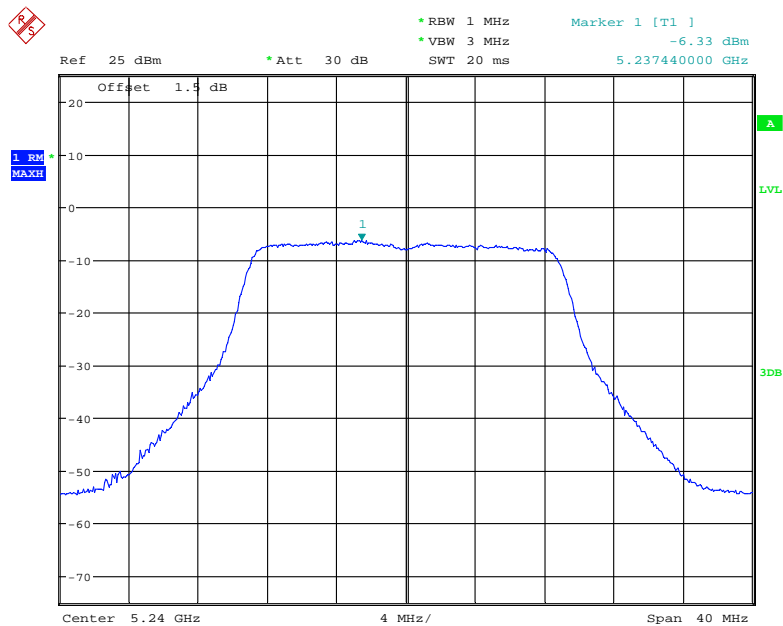
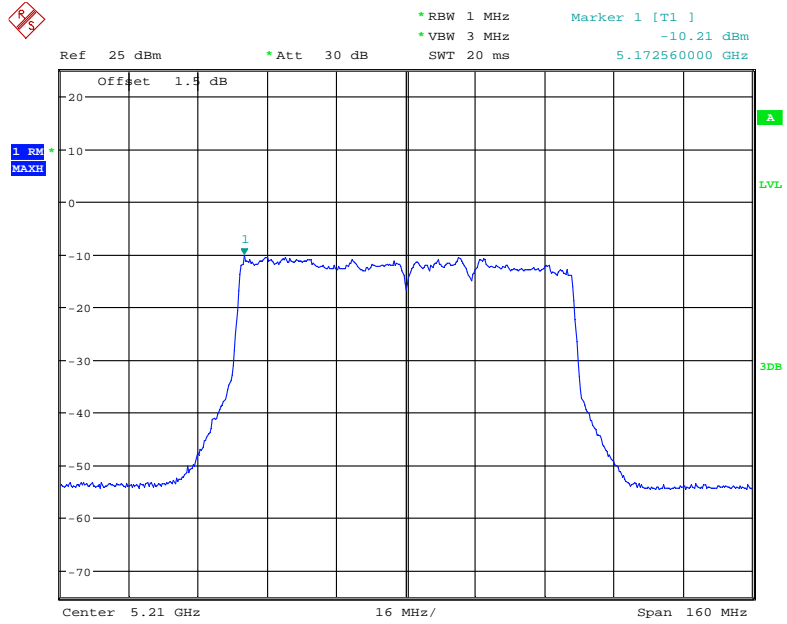Date: 22.OCT.2020 14:37:37

802.11n ht40 Low Channel
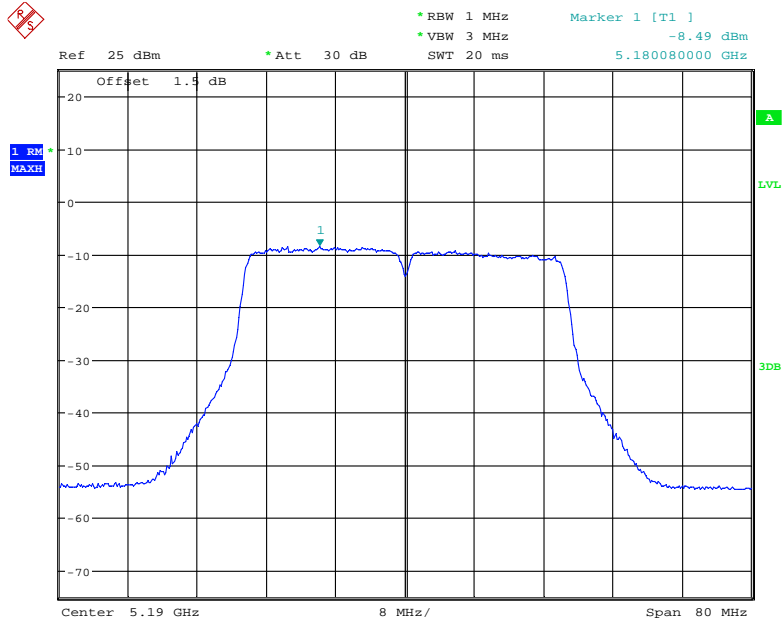
Date: 22.OCT.2020 14:38:18

802.11n ht40 High Channel
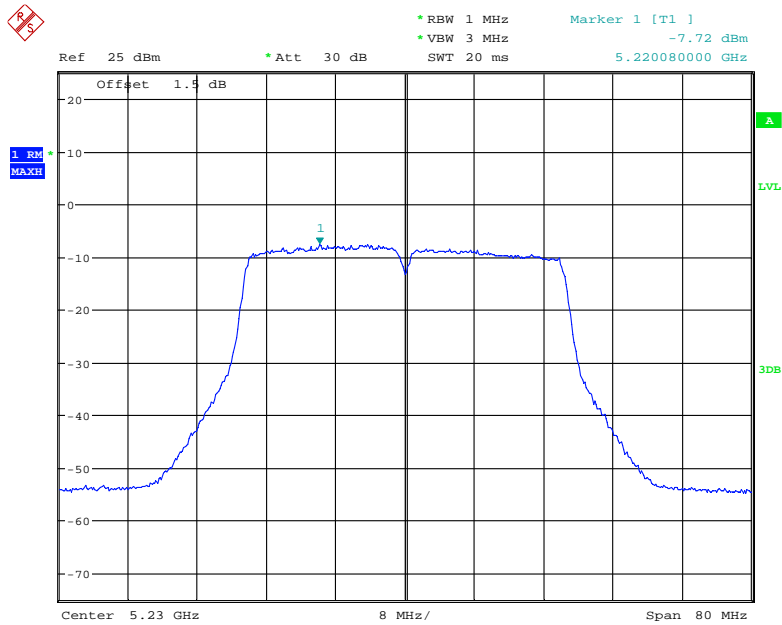
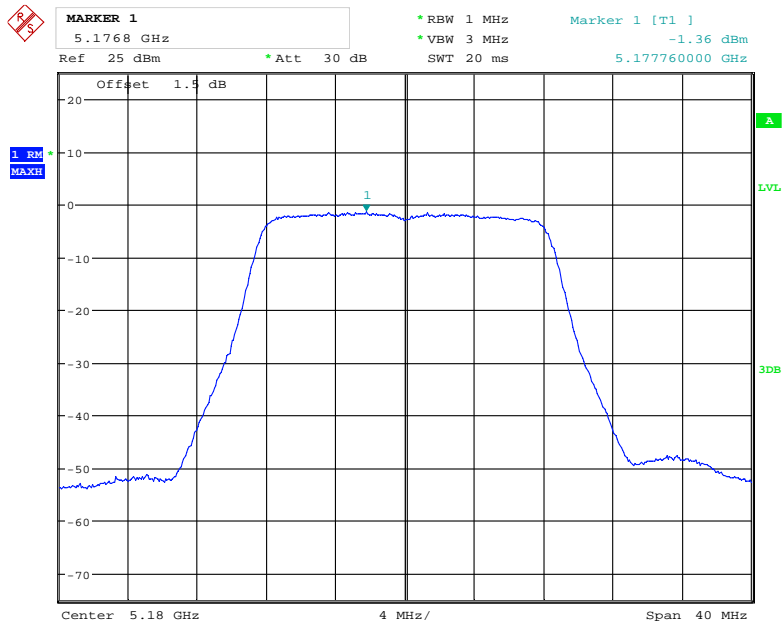Date: 22.OCT.2020 14:38:40

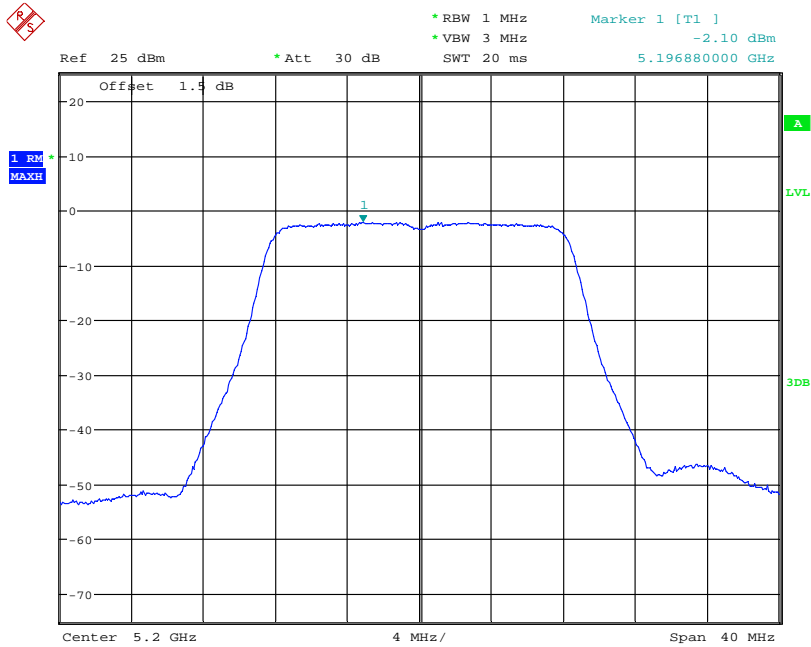## 802.11ac vht80 Middle Channel

Date: 22.OCT.2020 14:39:27
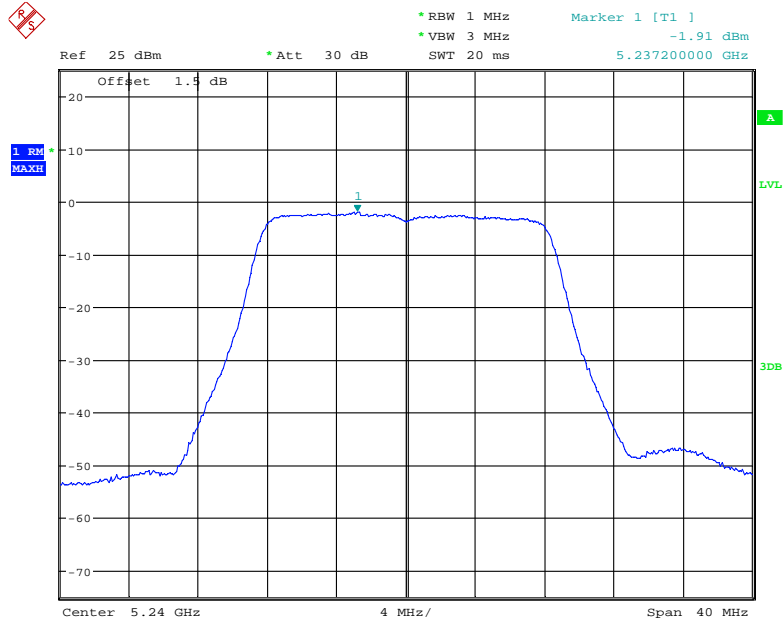
Chain 2:

802.11a Low Channel

MARKER 1		*RBW 1 MHz	Marker 1 [T1]
5.1768 GHz		*VBW 3 MHz	-1.36 dBm
Ref 25 dBm	*Att 30 dB	SWT 20 ms	5.177760000 GHz

Offset 1.5 dB

A

LVL

3DB

Center 5.18 GHz   4 MHz/   Span 40 MHz

Date: 22.OCT.2020 14:31:55

802.11a Middle Channel

		*RBW 1 MHz	Marker 1 [T1]
		*VBW 3 MHz	-2.10 dBm
Ref 25 dBm	*Att 30 dB	SWT 20 ms	5.196880000 GHz

Offset 1.5 dB

A

LVL

3DB

Center 5.2 GHz   4 MHz/   Span 40 MHz

Date: 22.OCT.2020 14:32:18

802.11a High Channel

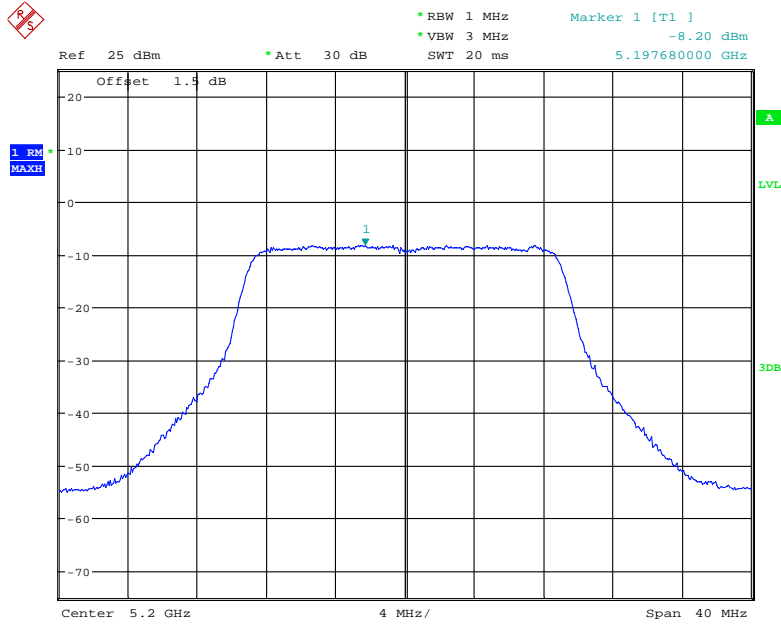
Date: 22.OCT.2020 14:34:06

802.11n ht20 Low Channel
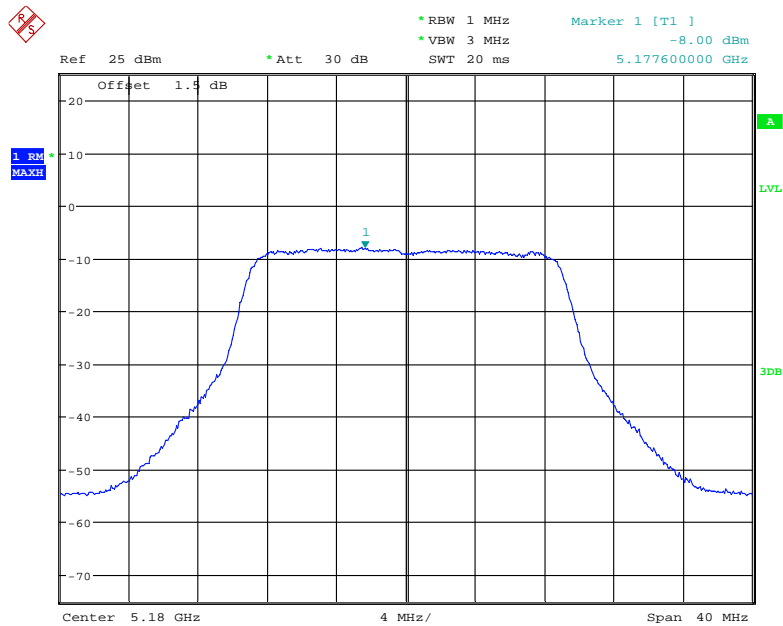
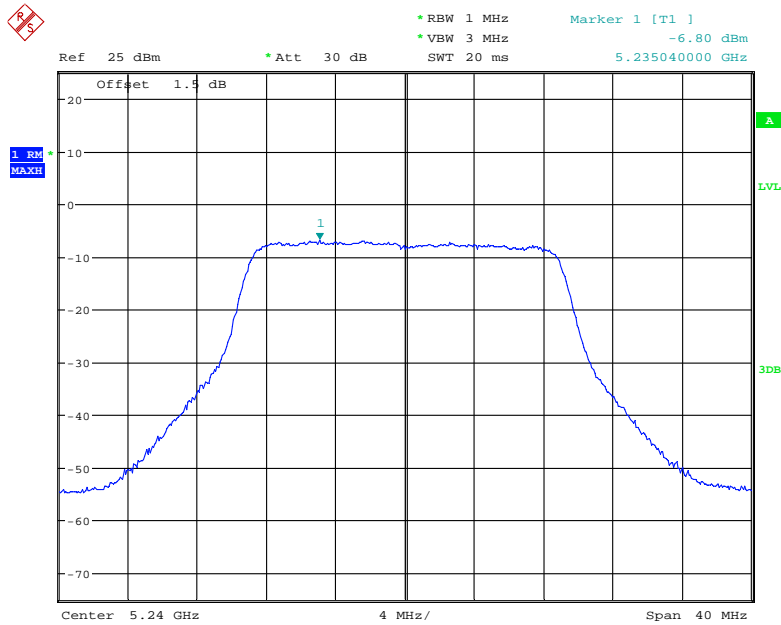
Date: 22.OCT.2020 14:28:30

802.11n ht20 Middle Channel
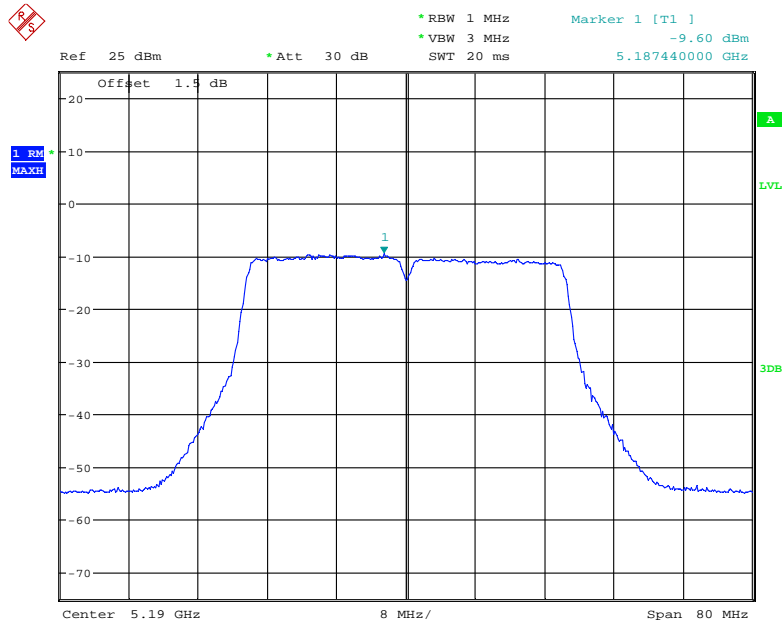

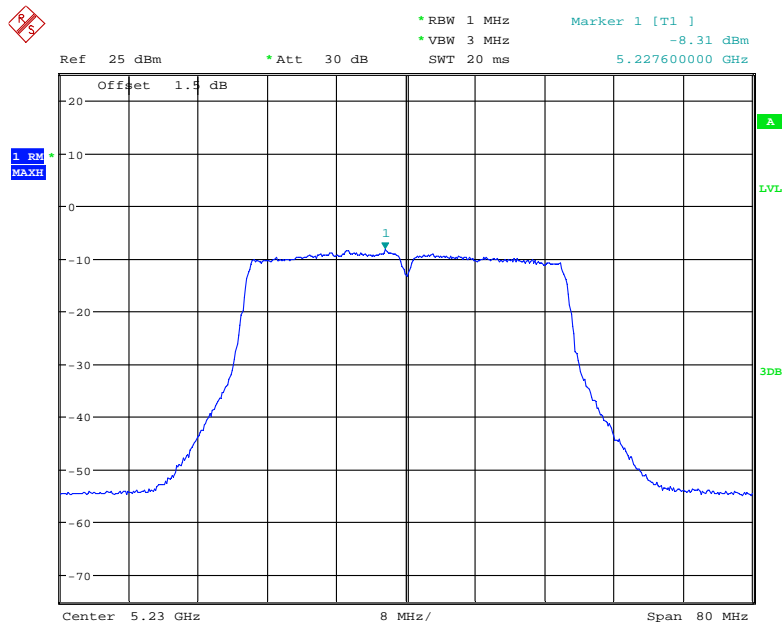Date: 22.OCT.2020 14:28:55

802.11n ht20 High Channel

Date: 22.OCT.2020 14:29:17

802.11n ht40 Low Channel
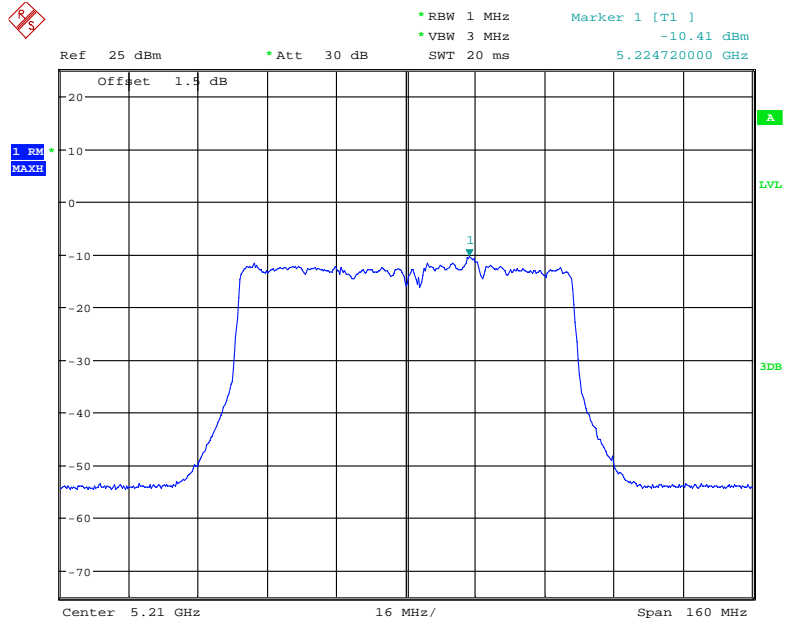

Date: 22.OCT.2020 14:27:22

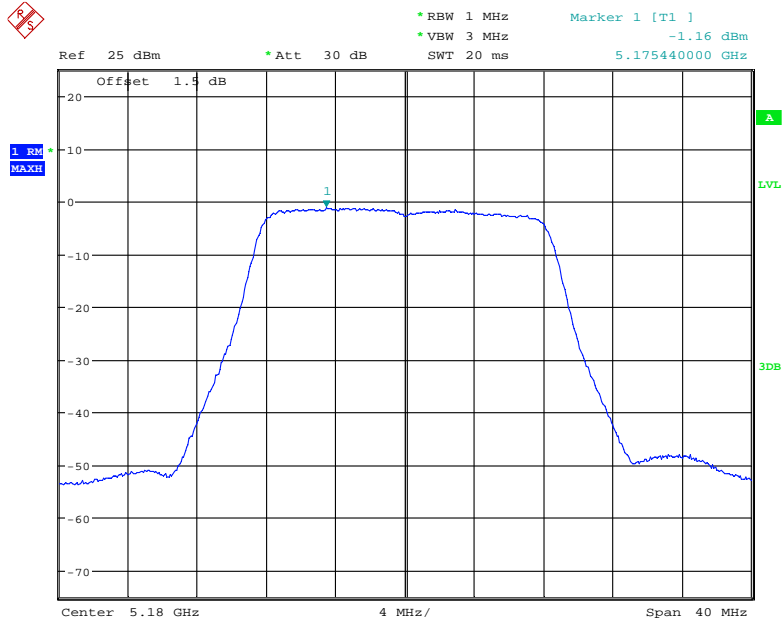## 802.11n ht40 High Channel

Date: 22.OCT.2020 14:27:51

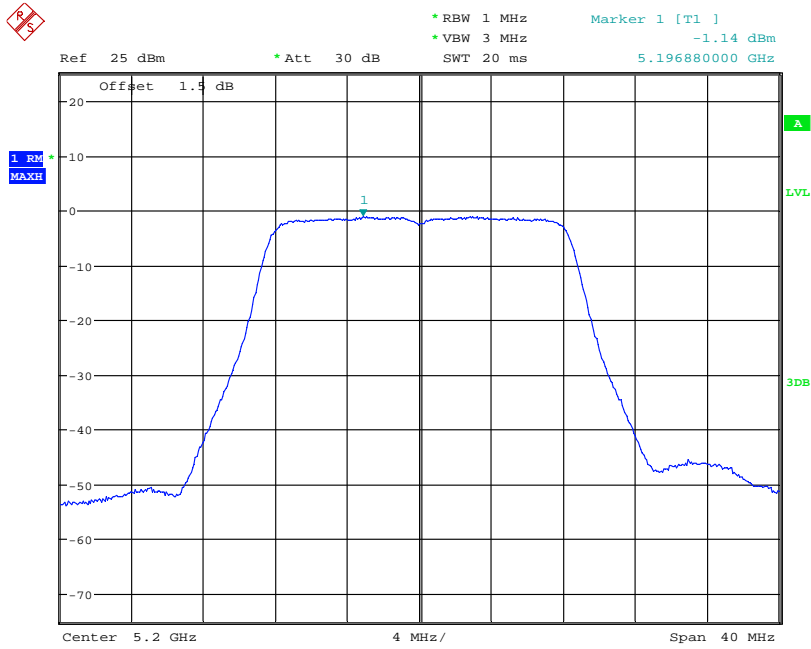## 802.11ac vht80 Middle Channel

Date: 22.OCT.2020 14:26:36
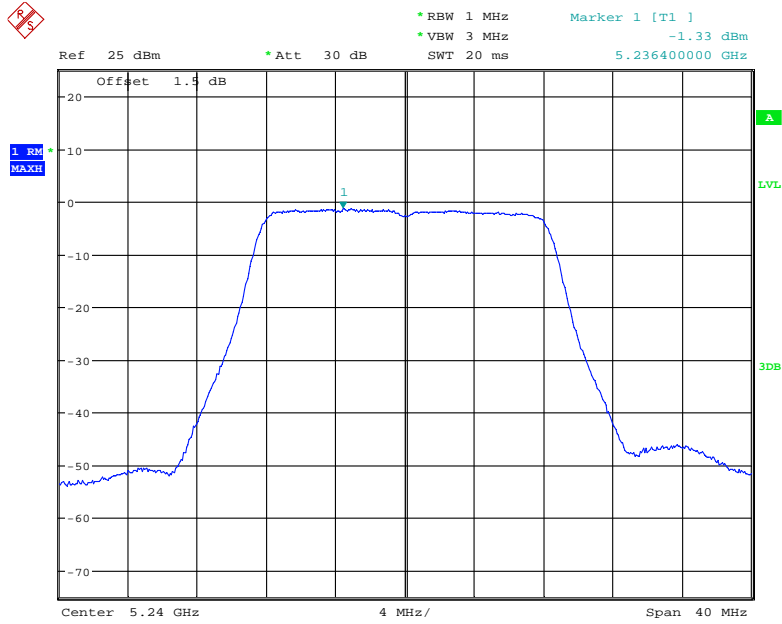
Chain 3:

802.11a Low Channel


```
                                    * RBW  1 MHz        Marker 1 [T1 ]
                                    * VBW  3 MHz                 -1.16 dBm
         Ref   25 dBm      * Att  30 dB    SWT  20 ms      5.175440000 GHz
```

Date: 22.OCT.2020 14:46:16

802.11a Middle Channel


```
                                    * RBW  1 MHz        Marker 1 [T1 ]
                                    * VBW  3 MHz                 -1.14 dBm
         Ref   25 dBm      * Att  30 dB    SWT  20 ms      5.196880000 GHz
```
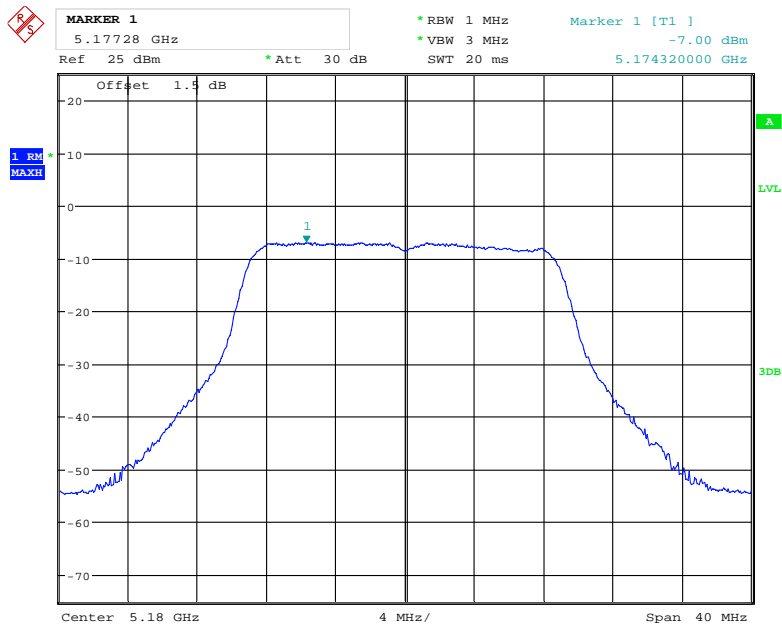
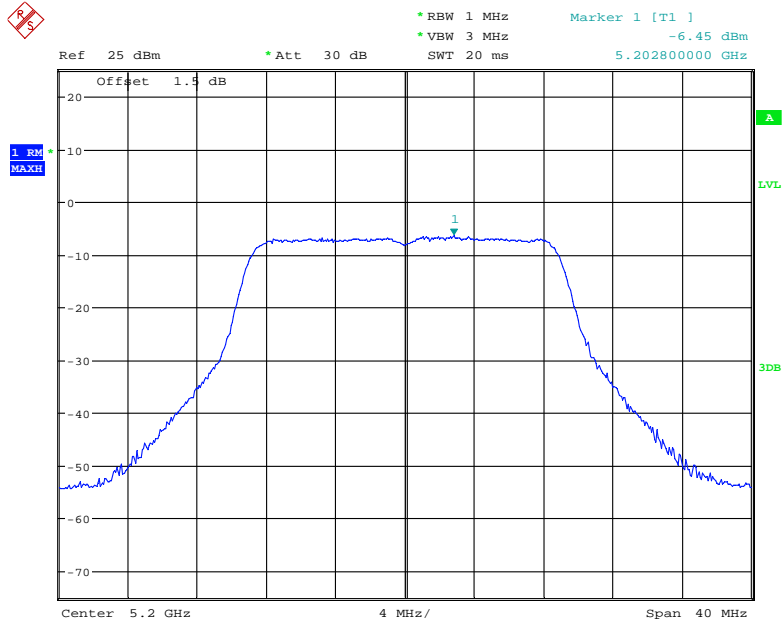Date: 22.OCT.2020 14:45:52

802.11a High Channel

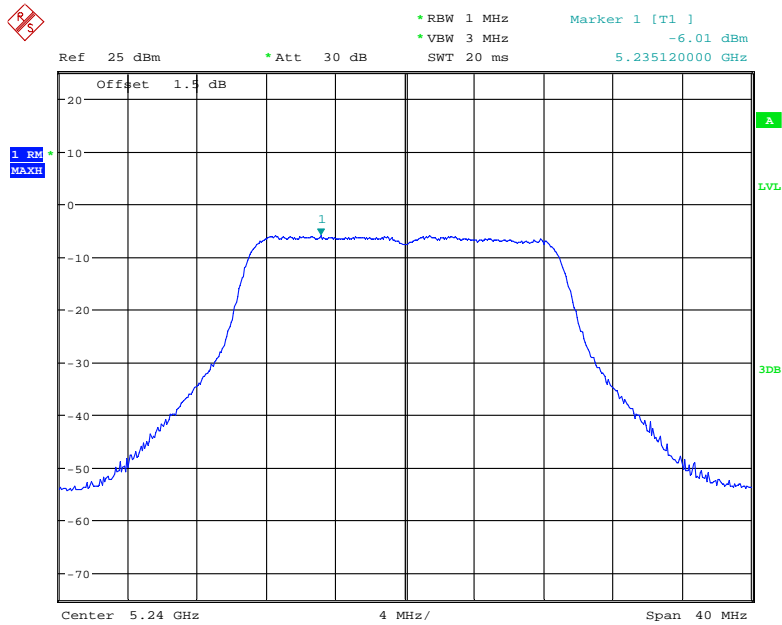Date: 22.OCT.2020 14:45:12

802.11n ht20 Low Channel

Date: 22.OCT.2020 14:43:15

802.11n ht20 Middle Channel

Date: 22.OCT.2020 14:43:38
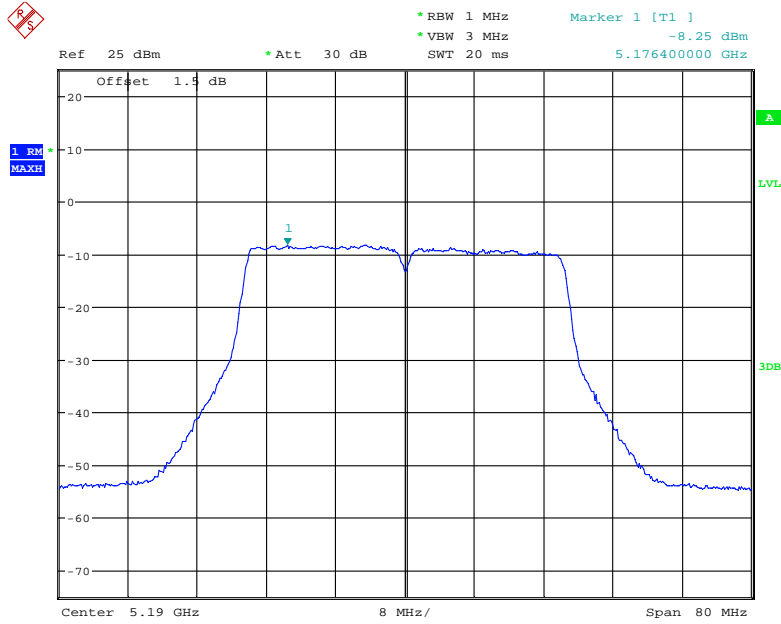
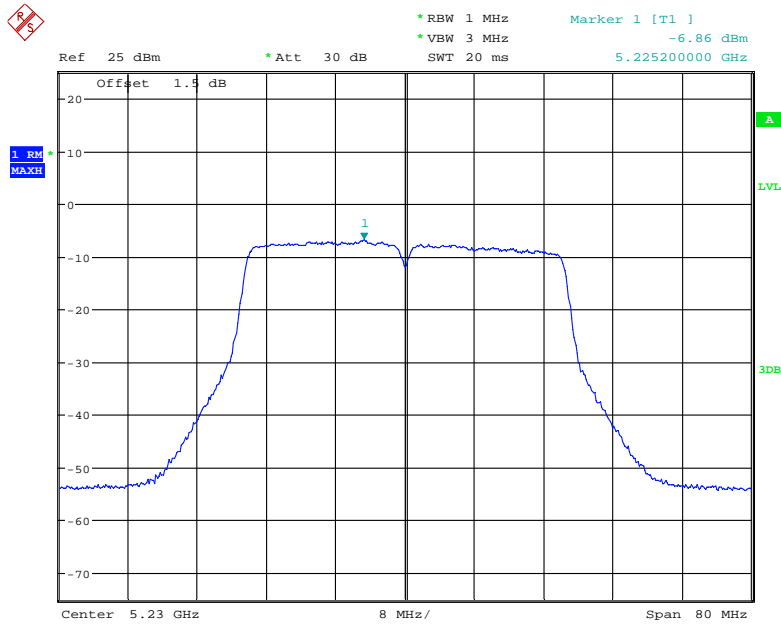## 802.11n ht20 High Channel
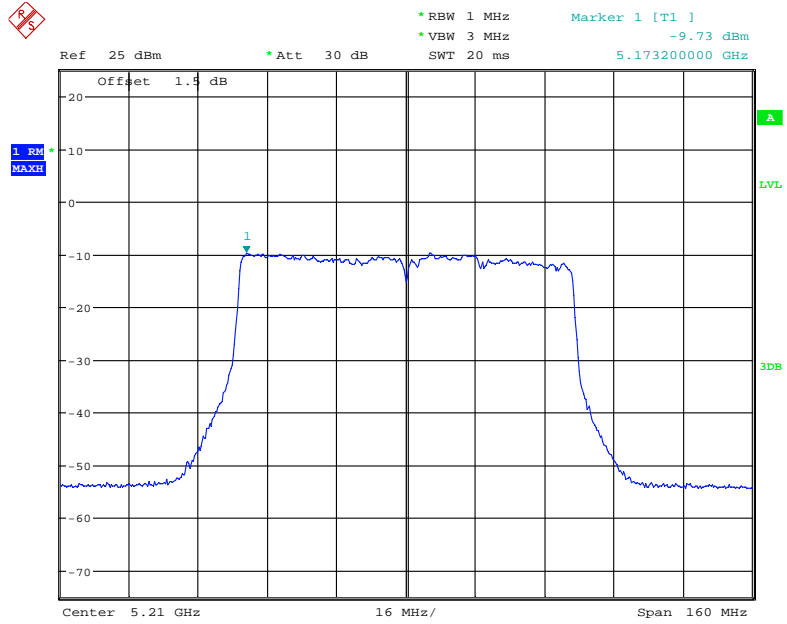

Date: 22.OCT.2020 14:44:00

802.11n ht40 Low Channel

Date: 22.OCT.2020 14:41:11

802.11n ht40 High Channel

Date: 22.OCT.2020 14:41:35

802.11ac vht80 Middle Channel

Date: 22.OCT.2020 14:40:29

RSS-247 CLAUSE 6.4- ADDITIONAL REQREMENT

Applicable Standard

According to RSS-247 Clause 6.4 Additional requirement

The following requirements shall apply:

a) The device shall automatically discontinue transmission in cases of absence of information to transmit, or operational failure. A description on how this is done shall accompany the application for equipment certification. Note that this is not intended to prohibit transmission of control or signalling information or the use of repetitive codes where required by the technology.

b) All LE-LAN devices must contain security features to protect against modification of software by unauthorized parties.

Manufacturers must implement security features in any digitally modulated devices capable of operating in any of the frequency ranges within the 5 GHz band, so that third parties are not able to reprogram the device to operate outside the parameters for which the device was certified. The software must prevent the user from operating the transmitter with operating frequencies, output power, modulation types or other radio frequency parameters outside those that were approved for the device. Manufacturers may use various means, including the use of a private network that allows only authenticated users to download software, electronic signatures in software or coding in hardware that is decoded by software to verify that new software can be legally loaded into a device to meet these requirements and must describe the methods in their application for equipment certification.

Manufacturers must take steps to ensure that DFS functionality cannot be disabled by the operator of the LE-LAN device.

c) The user manual for LE-LAN devices shall contain instructions related to the restrictions mentioned in the above sections, namely that:

    i. the device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;[4]

    ii. for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;

    iii. for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate; and

    iv. where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

Result

Compliance.

RSS-247 Clause 6.4 a):

The device shall automatically discontinue transmission in cases of absence of information to transmit, or operational failure.Please refer to the declaration

RSS-247 Clause 6.4 b):

The devices must contain security features to protect against modification of software by unauthorized parties. Please refer to the declaration

RSS-247 Clause 6.4 c):

The device operates on 5250-5350MHz,5470-5600MHz&5650-5725MHz and 5725-5850MHz, the antennas was professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit, all the EIPR compliance with RSS-247 requirement.

5150-5250 MHz was disabled by software for Canada Market

***** END OF REPORT *****