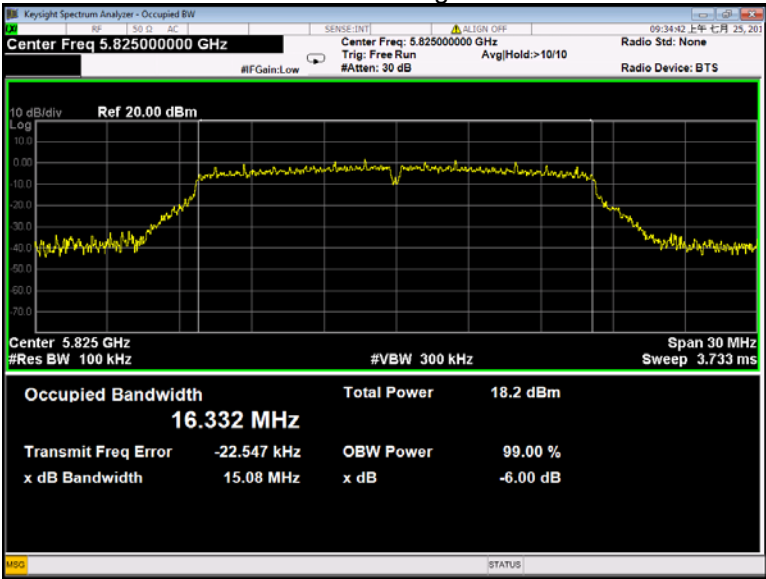
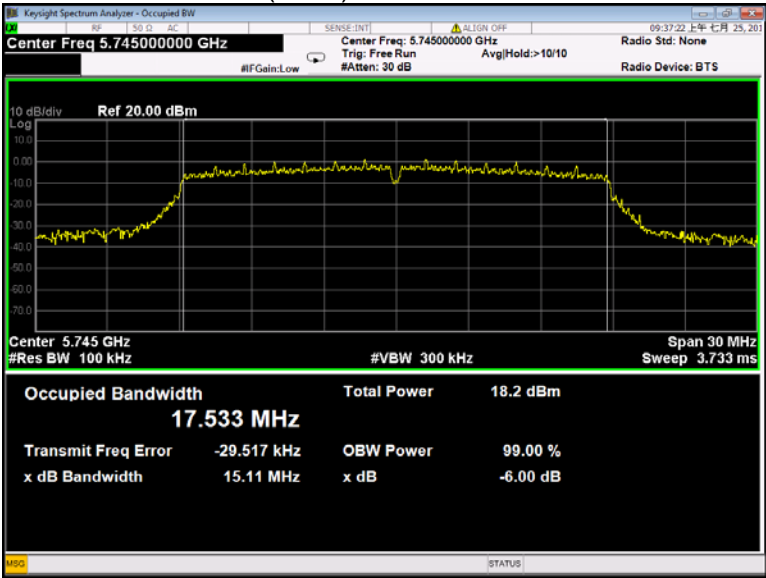


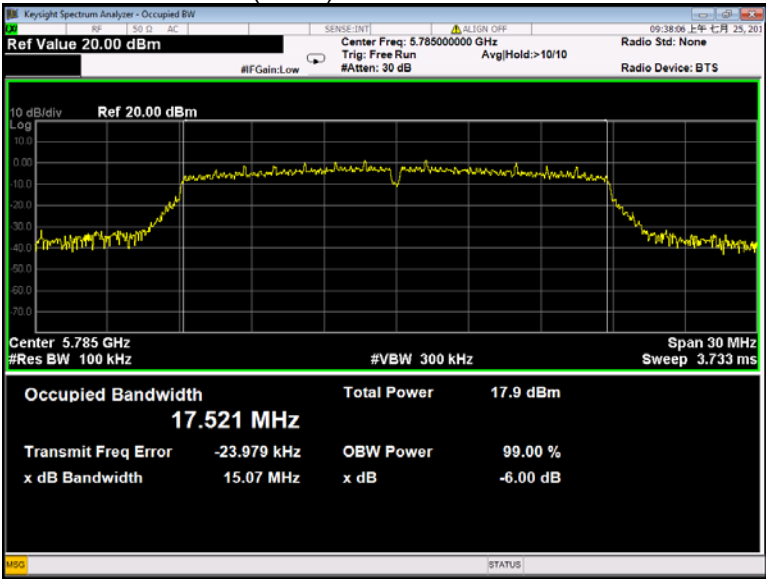
802.11a U-NII-3 High channel



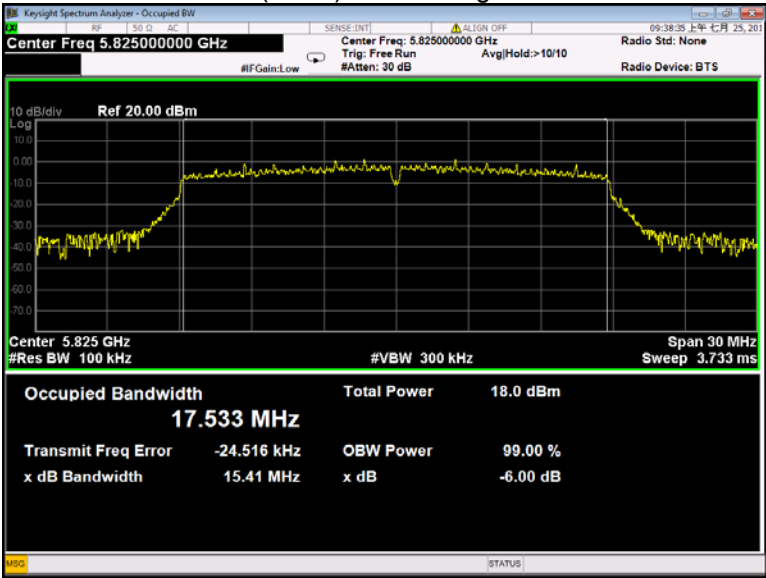
802.11n(HT20) U-NII-3 Low channel



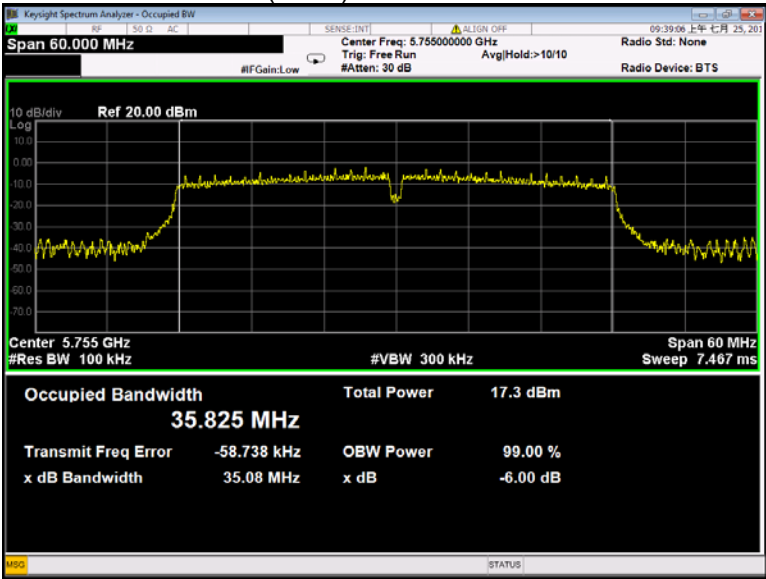
802.11n(HT20) U-NII-3 Middle channel



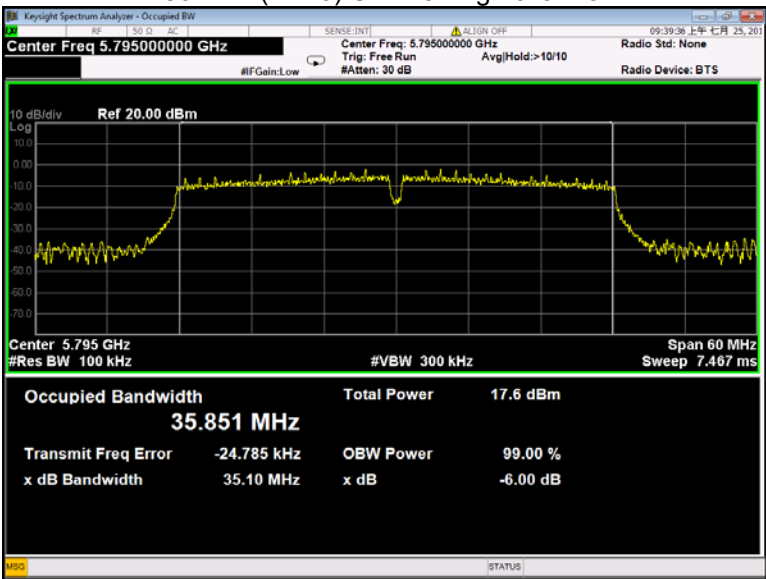
802.11n(HT20) U-NII-3 High channel



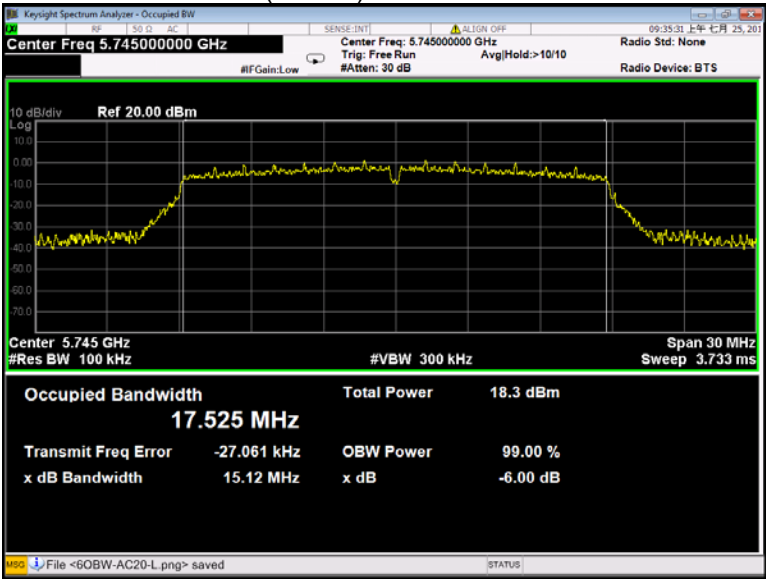
802.11n(HT40) U-NII-3 Low channel



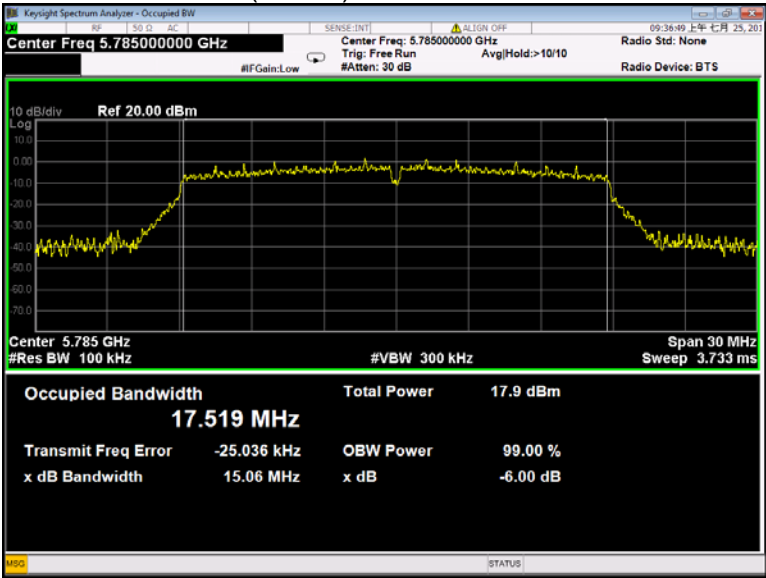
802.11n(HT40) U-NII-3 High channel



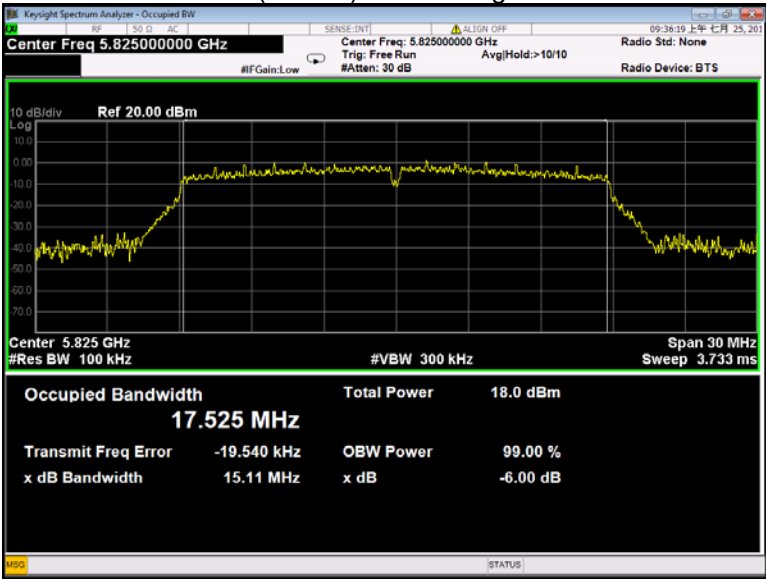
802.11ac(VHT20) U-NII-3 Low channel



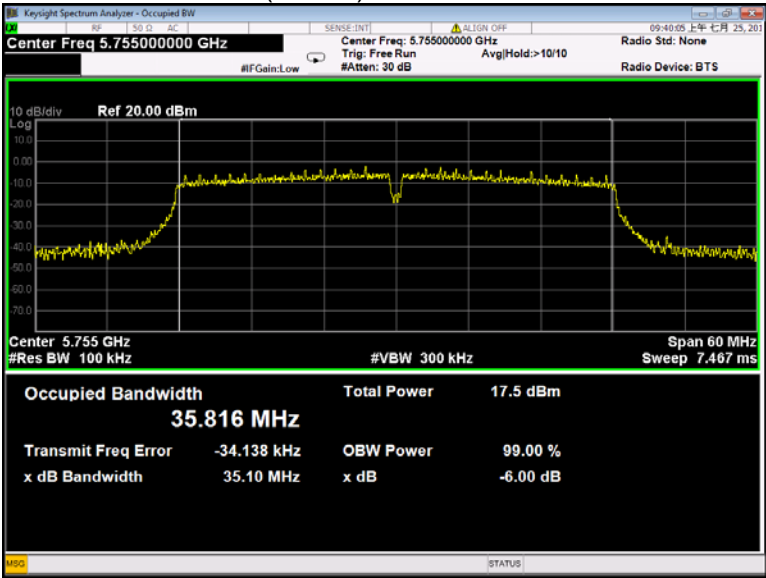
802.11ac(VHT20) U-NII-3 Middle channel



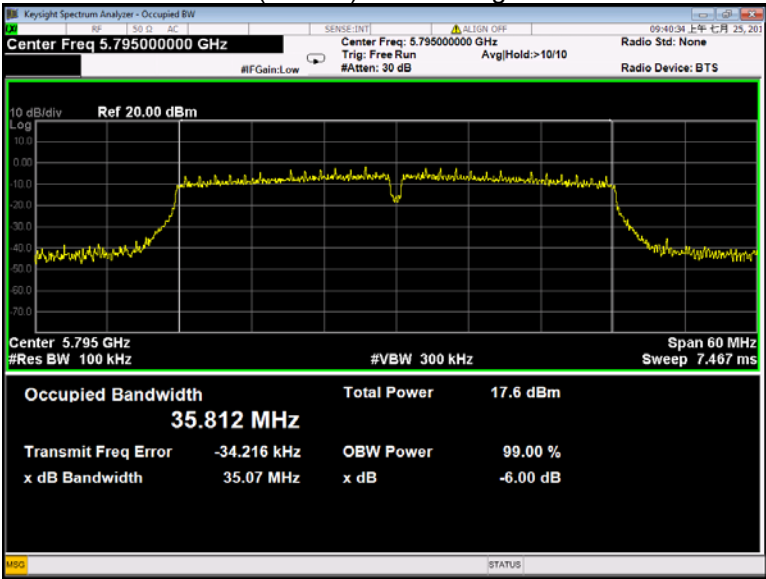
802.11ac(VHT20) U-NII-3 High channel



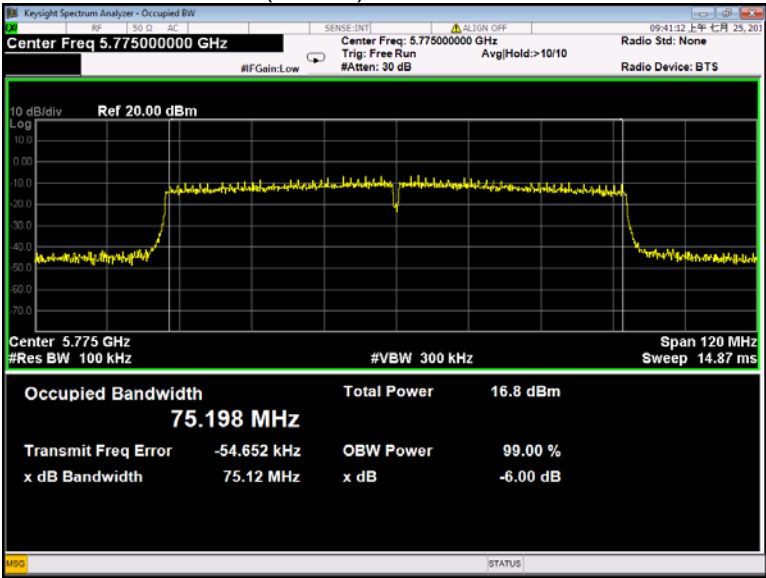
802.11ac(VHT40) U-NII-3 Low channel



802.11ac(VHT40) U-NII-3 High channel



802.11ac(VHT80) U-NII-3 Low channel



## 12 26 dB Bandwidth and 99% Occupied Bandwidth

|                   |                                                                                          |
|-------------------|------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407 (a)<br>KDB662911 D01 Multiple Transmitter Output v02r01 |
| Test Method:      | KDB789033 D02 General U-NII Test Procedures New Rules v02r01<br>Section D                |
| Test Limit:       | No restriction limits                                                                    |
| Test Result:      | PASS                                                                                     |

### 12.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 1% to 5% of the OBW, VBW = 3x RBW

## 12.2 Test Result

| Band    | Operation mode  | 26 dB Bandwidth (MHz) |        |        | 99% Bandwidth (MHz) |        |        |
|---------|-----------------|-----------------------|--------|--------|---------------------|--------|--------|
|         |                 | Low                   | Middle | High   | Low                 | Middle | High   |
| U-NII-1 | 802.11a         | 19.620                | 19.740 | 19.740 | 16.440              | 16.500 | 16.440 |
|         | 802.11n(HT20)   | 19.920                | 20.040 | 19.980 | 17.580              | 17.640 | 17.700 |
|         | 802.11n(HT40)   | 40.200                | /      | 40.200 | 36.120              | /      | 36.240 |
|         | 802.11ac(VHT20) | 19.800                | 20.040 | 19.920 | 17.580              | 17.640 | 17.640 |
|         | 802.11ac(VHT40) | 39.960                | /      | 40.440 | 36.120              | /      | 36.240 |
|         | 802.11ac(VHT80) | /                     | 79.920 | /      | /                   | 75.120 | /      |

| Band     | Operation mode  | 26 dB Bandwidth (MHz) |        |        | 99% Bandwidth (MHz) |        |        |
|----------|-----------------|-----------------------|--------|--------|---------------------|--------|--------|
|          |                 | Low                   | Middle | High   | Low                 | Middle | High   |
| U-NII-2A | 802.11a         | 19.680                | 19.860 | 19.740 | 16.440              | 16.440 | 16.500 |
|          | 802.11n(HT20)   | 20.100                | 20.040 | 20.100 | 17.640              | 17.640 | 17.640 |
|          | 802.11n(HT40)   | 40.320                | /      | 40.200 | 36.240              | /      | 36.240 |
|          | 802.11ac(VHT20) | 20.100                | 20.100 | 19.920 | 17.640              | 17.640 | 17.640 |
|          | 802.11ac(VHT40) | 40.200                | /      | 40.320 | 36.240              | /      | 36.240 |
|          | 802.11ac(VHT80) | /                     | 80.160 | /      | /                   | 75.600 | /      |

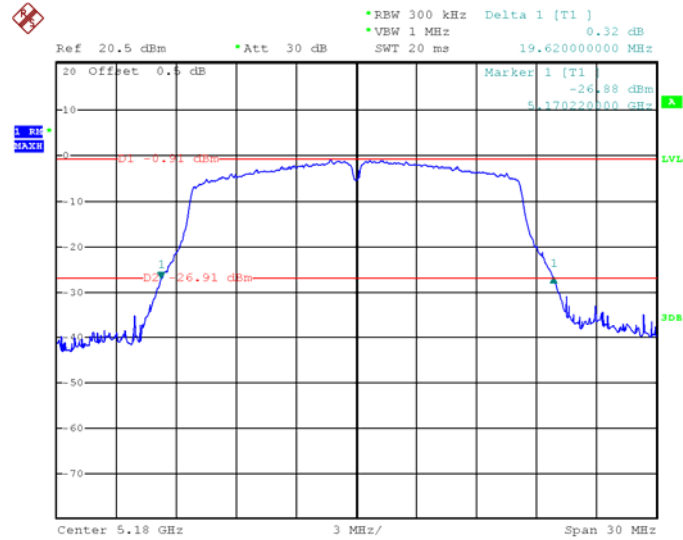
| Band     | Operation mode  | 26 dB Bandwidth (MHz) |        |        | 99% Bandwidth (MHz) |        |        |
|----------|-----------------|-----------------------|--------|--------|---------------------|--------|--------|
|          |                 | Low                   | Middle | High   | Low                 | Middle | High   |
| U-NII-2C | 802.11a         | 19.740                | 19.620 | 19.680 | 16.440              | 16.500 | 16.500 |
|          | 802.11n(HT20)   | 19.980                | 20.040 | 20.040 | 17.640              | 17.640 | 17.700 |
|          | 802.11n(HT40)   | 40.200                | 40.560 | 40.200 | 36.240              | 36.240 | 36.240 |
|          | 802.11ac(VHT20) | 20.040                | 19.860 | 19.980 | 17.640              | 17.640 | 17.640 |
|          | 802.11ac(VHT40) | 40.200                | 40.560 | 40.320 | 36.240              | 36.240 | 36.240 |
|          | 802.11ac(VHT80) | 80.160                | /      | 80.160 | 75.360              | 75.360 | /      |

| Band    | Operation mode  | 99% Bandwidth (MHz) |        |        |
|---------|-----------------|---------------------|--------|--------|
|         |                 | Low                 | Middle | High   |
| U-NII-3 | 802.11a         | 16.500              | 16.500 | 16.500 |
|         | 802.11n(HT20)   | 17.640              | 17.700 | 17.640 |
|         | 802.11n(HT40)   | 36.240              | /      | 36.480 |
|         | 802.11ac(VHT20) | 17.700              | 17.700 | 17.640 |
|         | 802.11ac(VHT40) | 36.240              | /      | 36.360 |
|         | 802.11ac(VHT80) | 75.600              | /      | /      |

Test result plots shown as follows:

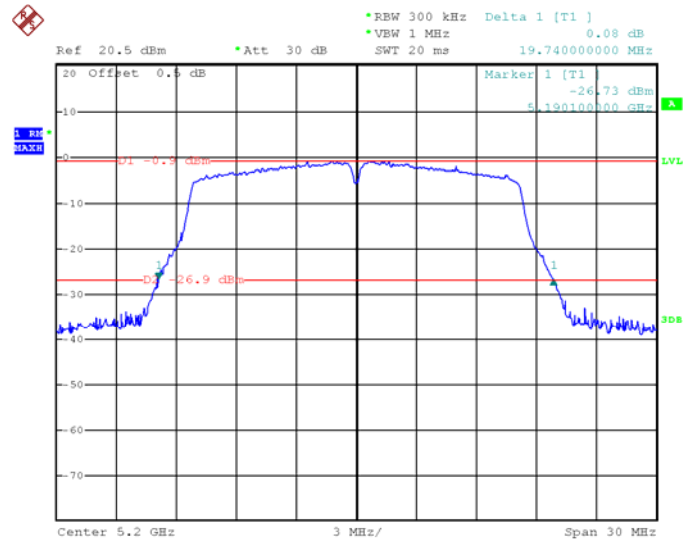
26 dB Bandwidth

802.11a U-NII-1 Low channel

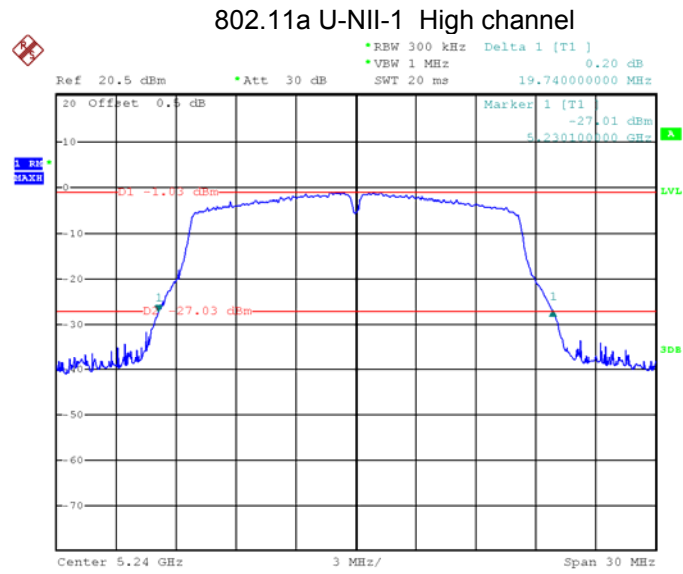


Date: 25.APR.2023 19:27:26

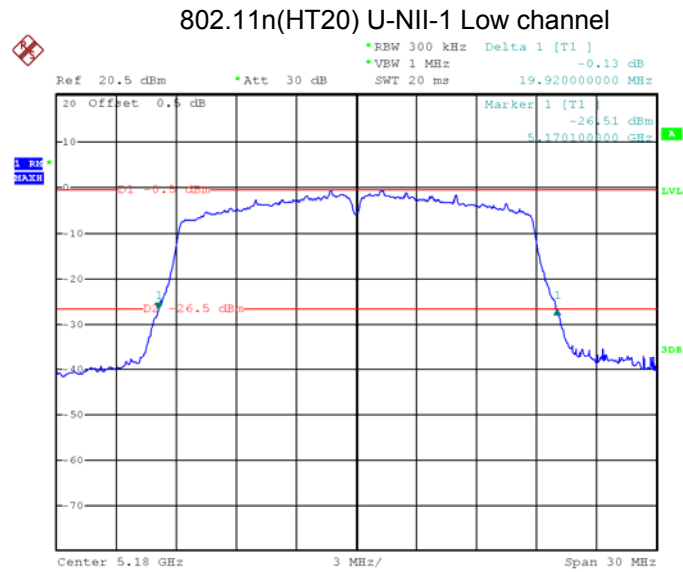
802.11a U-NII-1 Middle channel



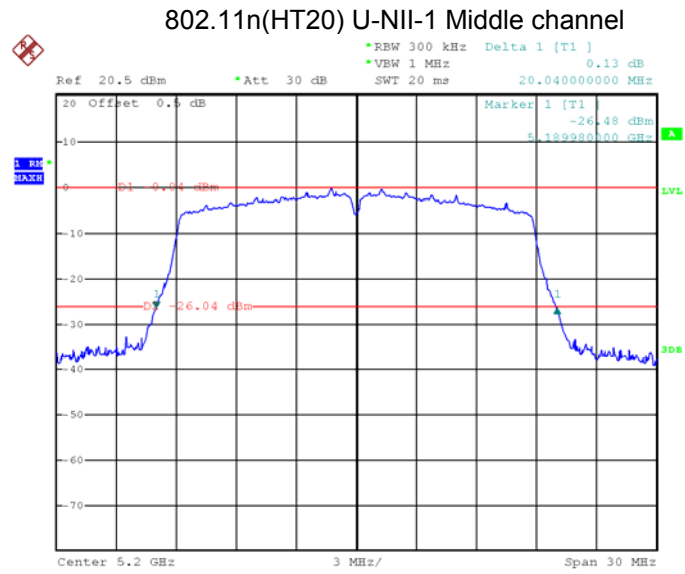
Date: 25.APR.2023 19:28:47



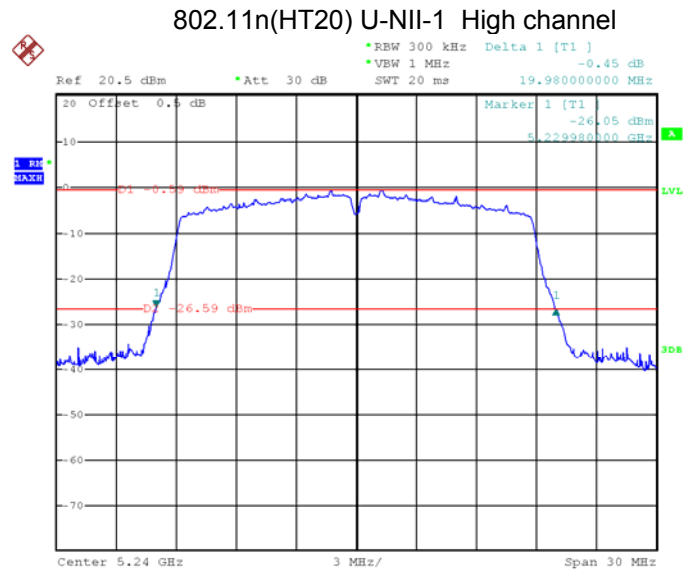
Date: 25.APR.2023 19:29:52



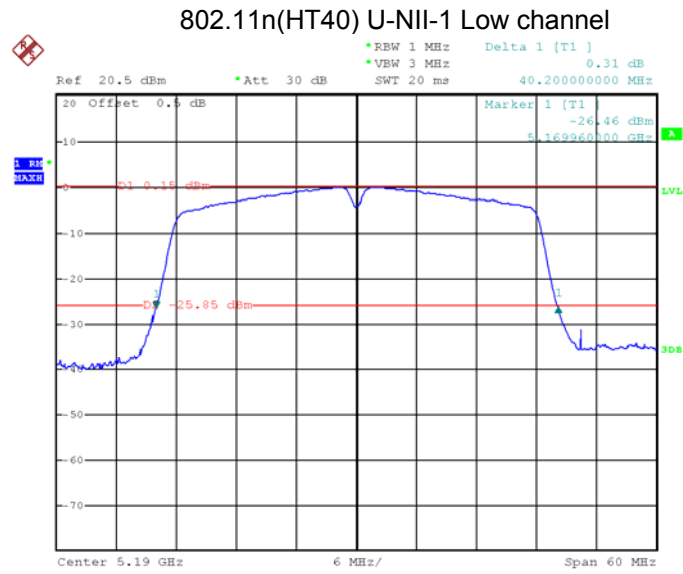
Date: 25.APR.2023 19:35:05



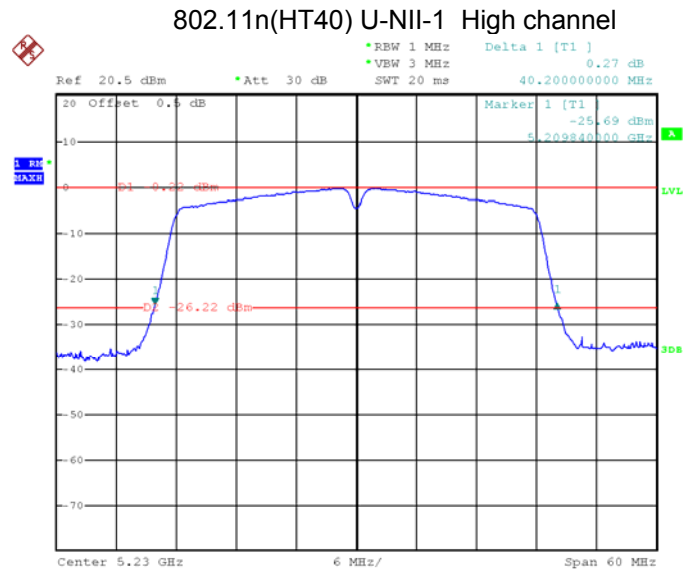
Date: 25.APR.2023 19:36:08



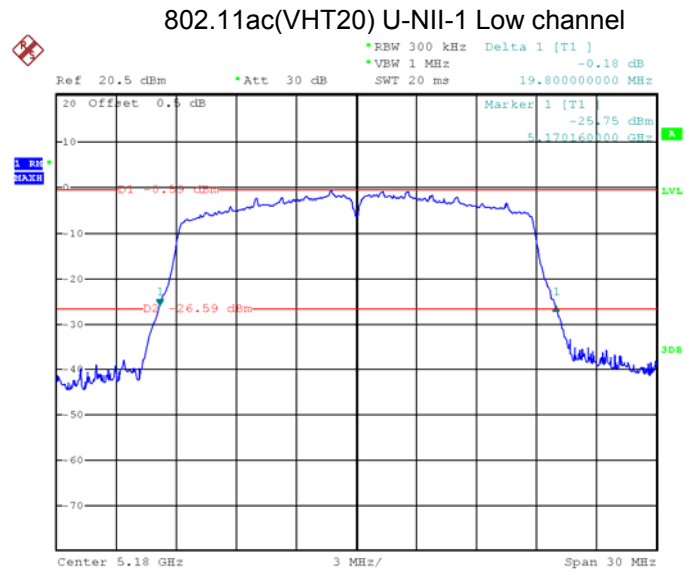
Date: 25.APR.2023 19:37:10



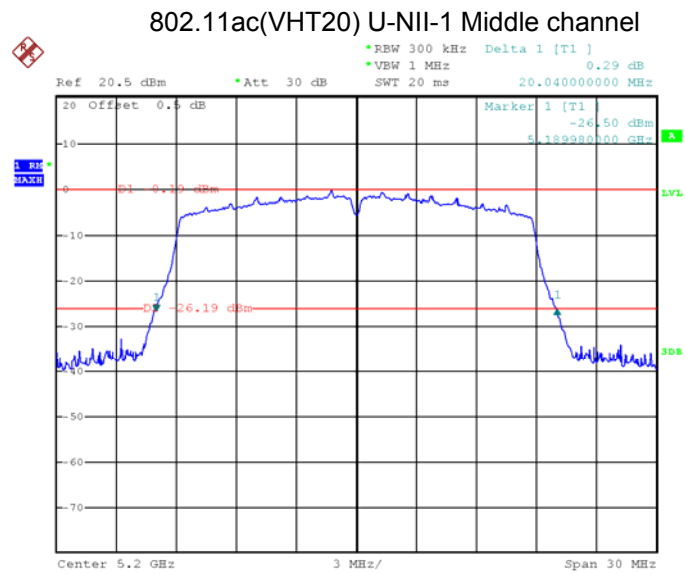
Date: 25.APR.2023 19:39:19



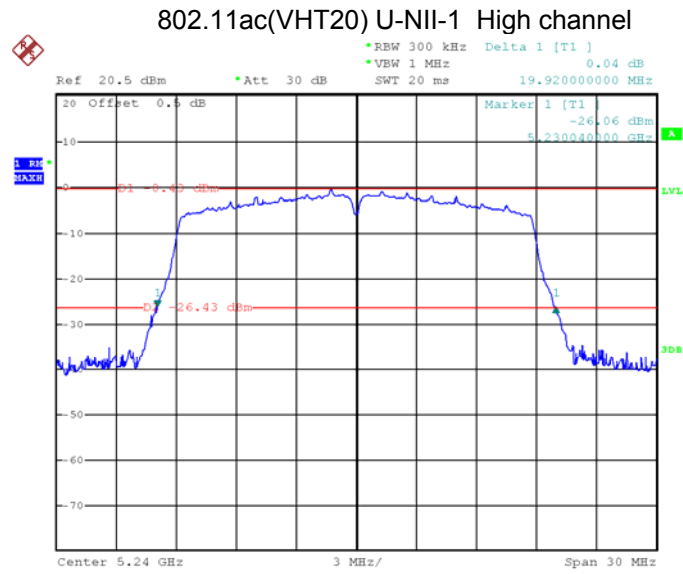
Date: 25.APR.2023 19:40:21



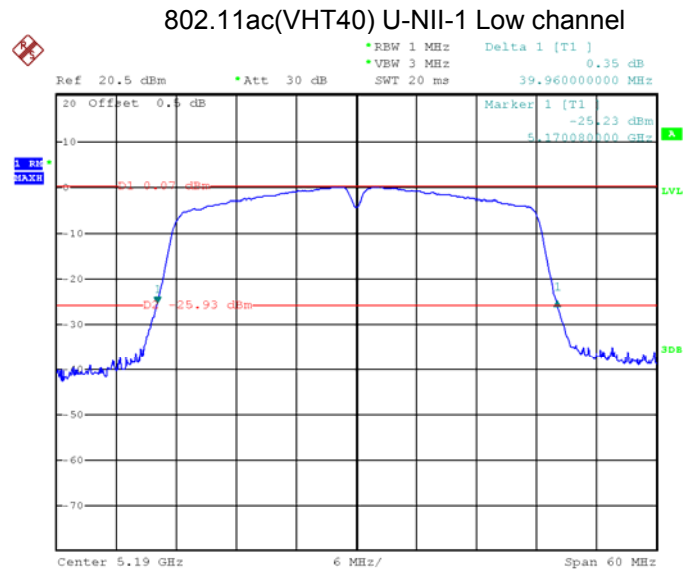
Date: 25.APR.2023 19:32:23



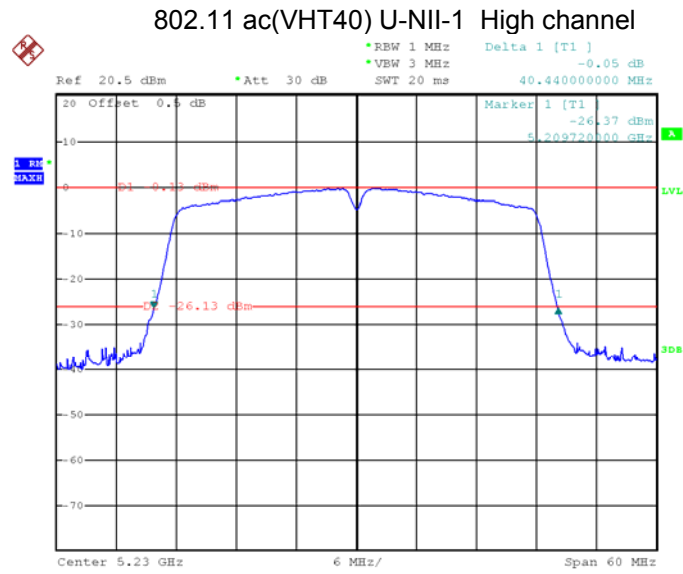
Date: 25.APR.2023 19:33:09



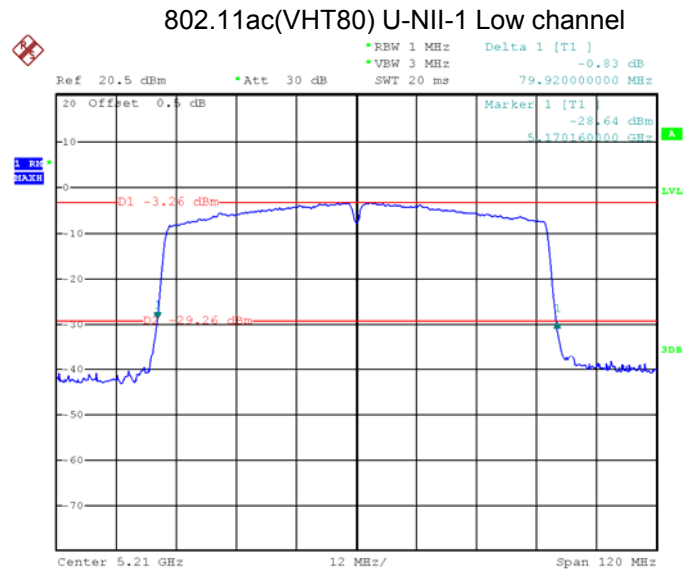
Date: 25.APR.2023 19:34:02



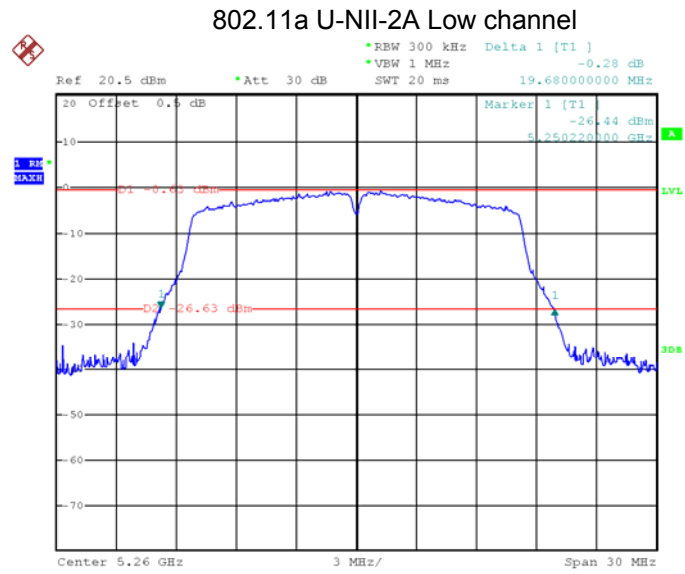
Date: 25.APR.2023 19:41:46



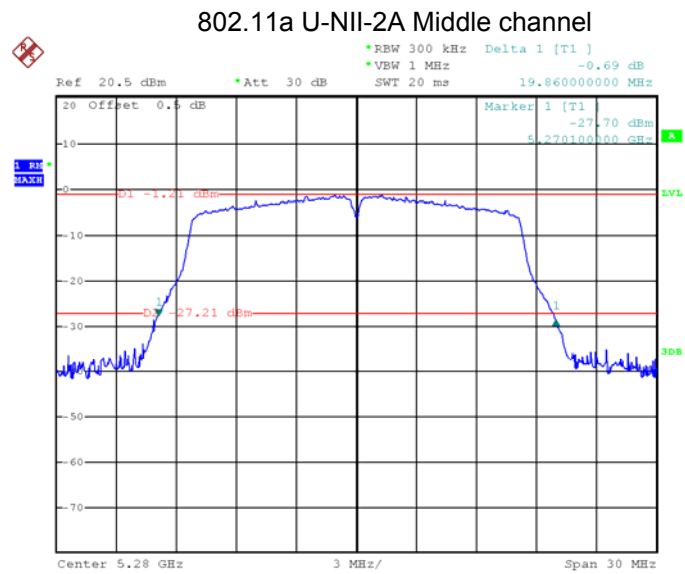
Date: 25.APR.2023 19:42:37



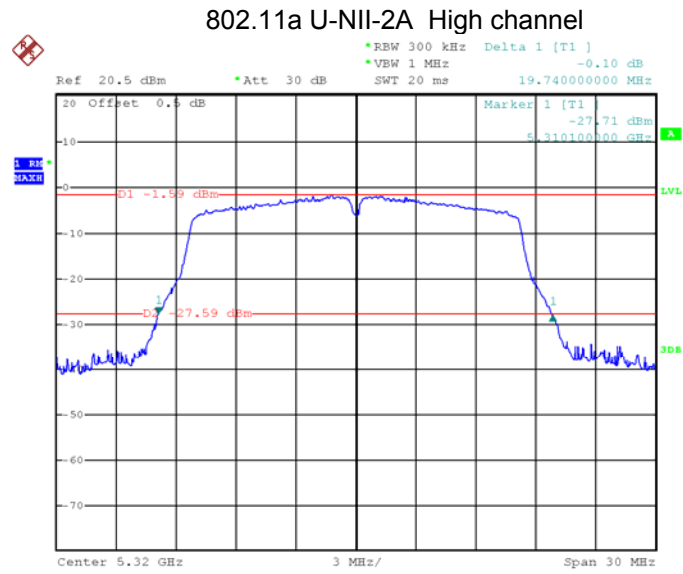
Date: 25.APR.2023 19:43:57



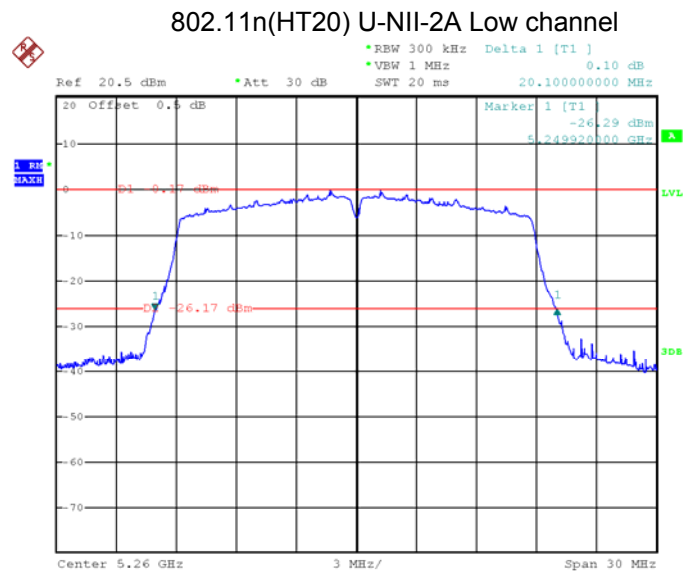
Date: 25.APR.2023 19:45:58



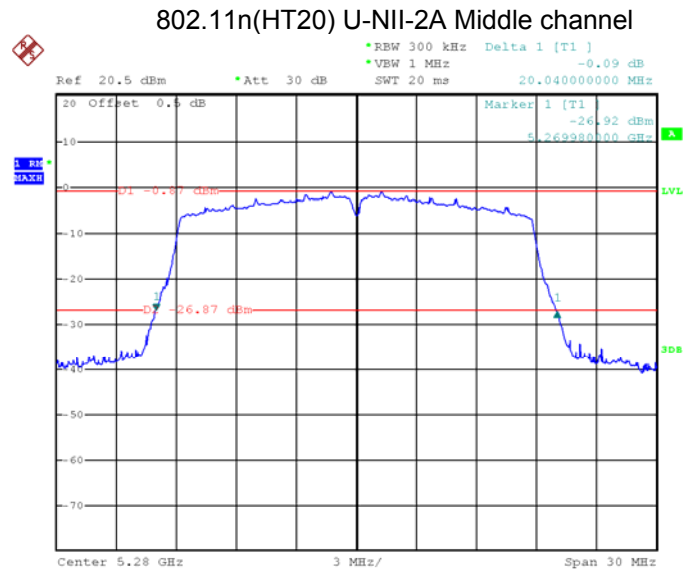
Date: 25.APR.2023 19:47:15



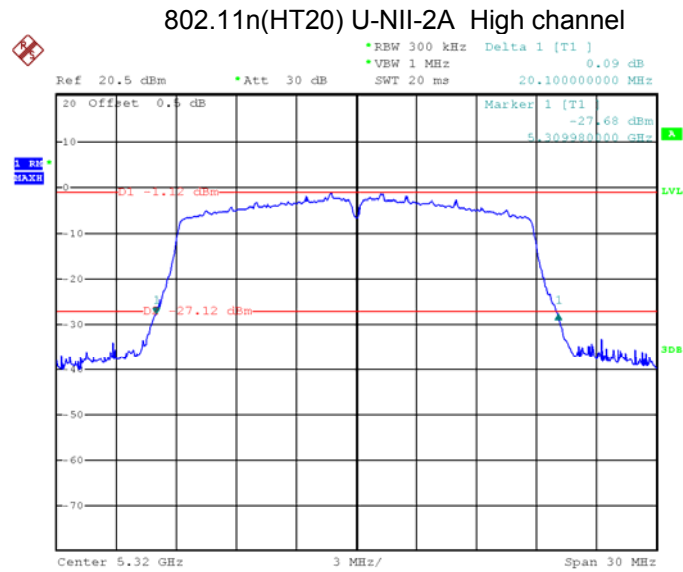
Date: 25.APR.2023 19:48:23



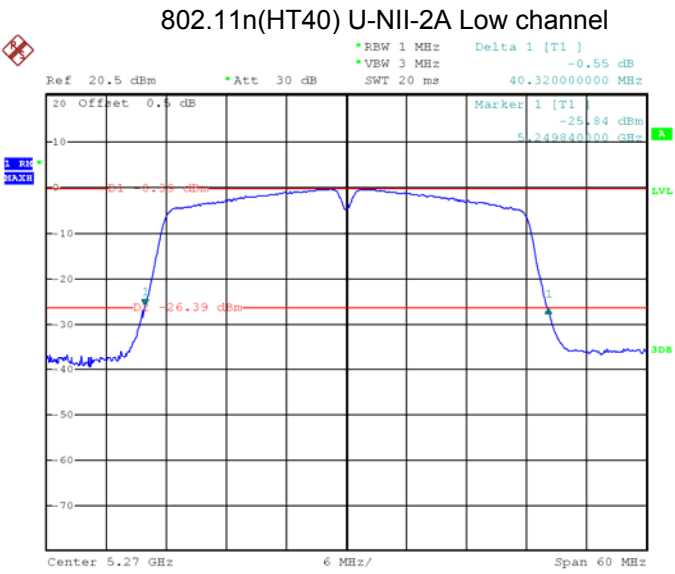
Date: 25.APR.2023 19:52:52



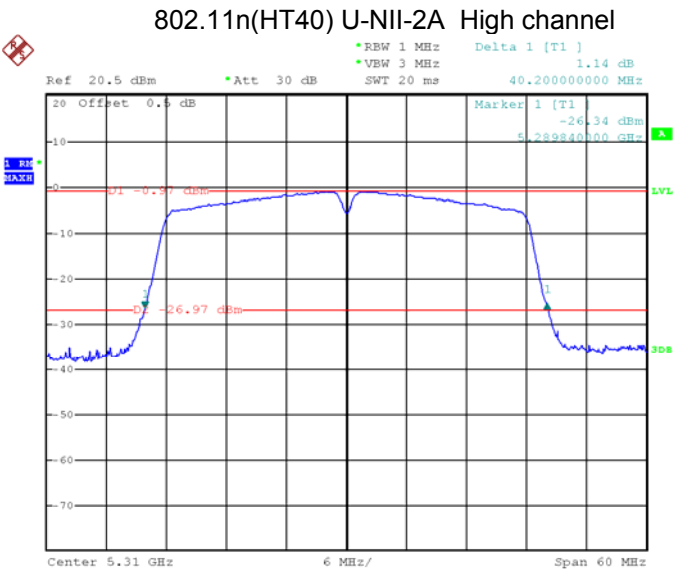
Date: 25.APR.2023 19:53:52



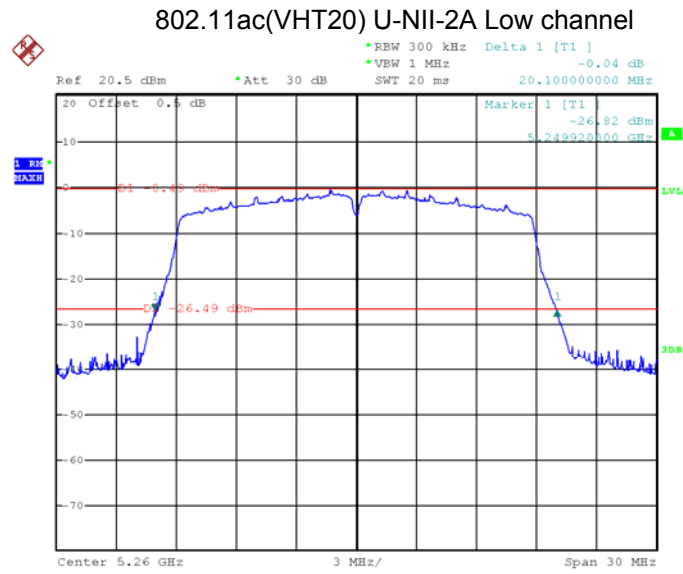
Date: 25.APR.2023 19:55:25



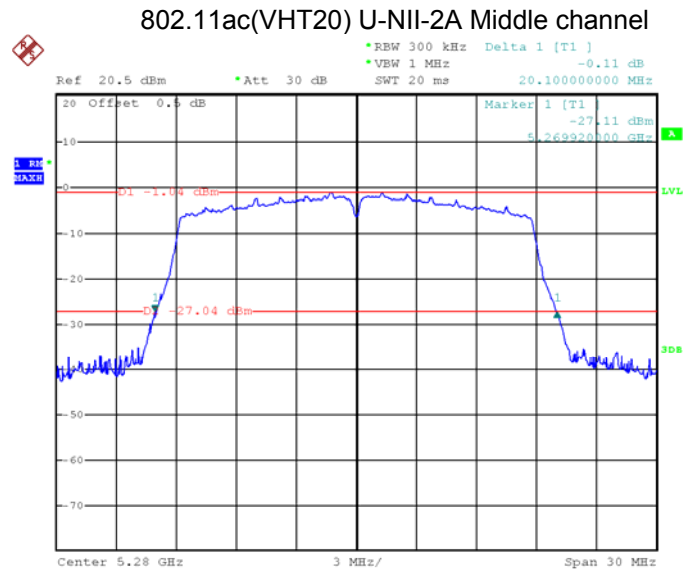
Date: 25.APR.2023 19:56:48



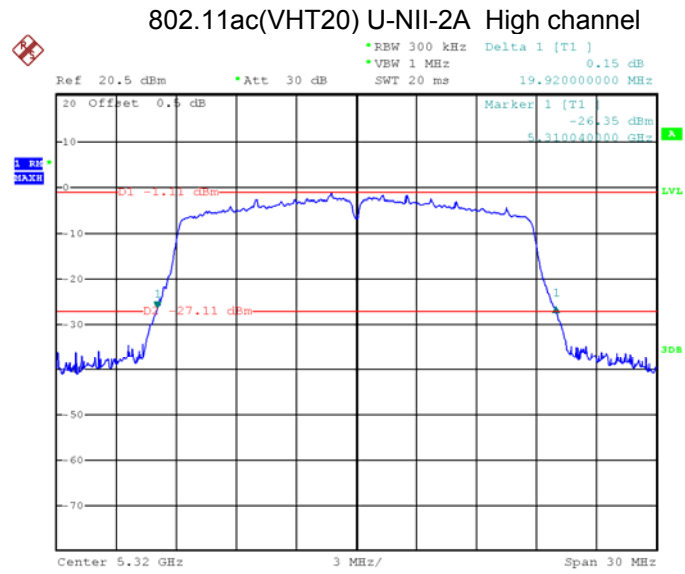
Date: 25.APR.2023 19:58:21



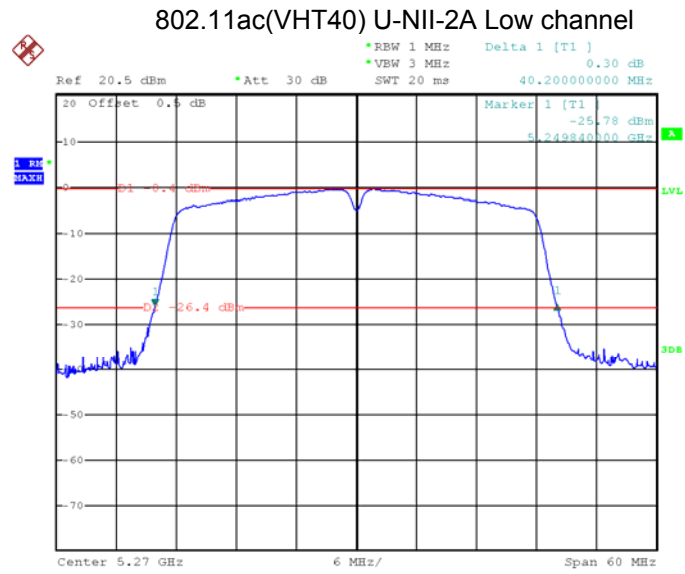
Date: 25.APR.2023 19:49:41



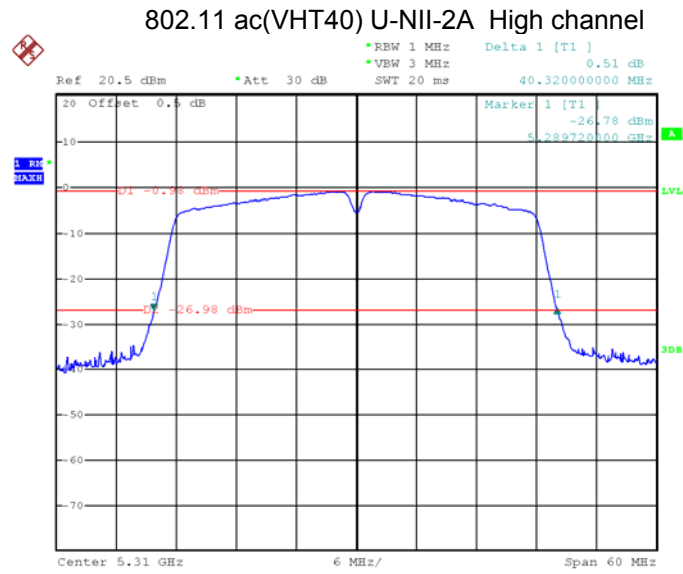
Date: 25.APR.2023 19:50:34



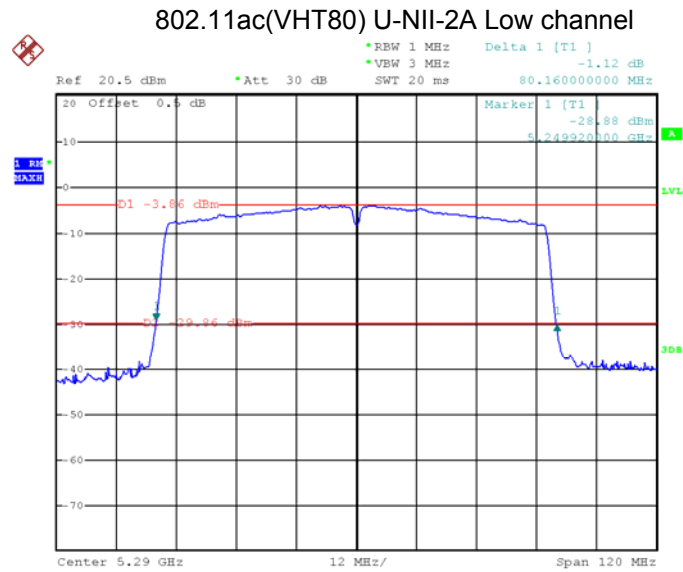
Date: 25.APR.2023 19:51:39



Date: 25.APR.2023 19:59:37

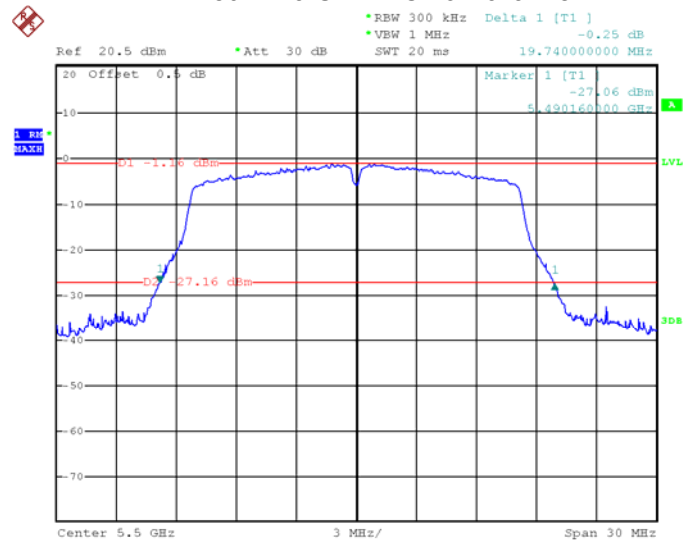


Date: 25.APR.2023 20:00:49



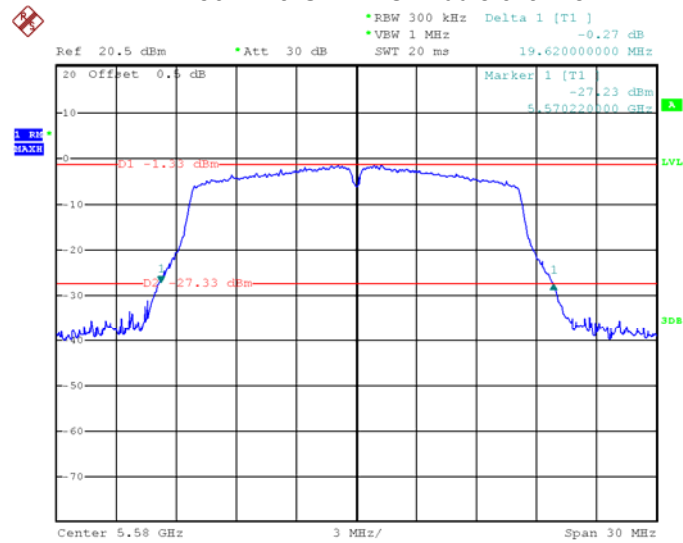
Date: 25.APR.2023 20:02:09

802.11a U-NII-2C Low channel

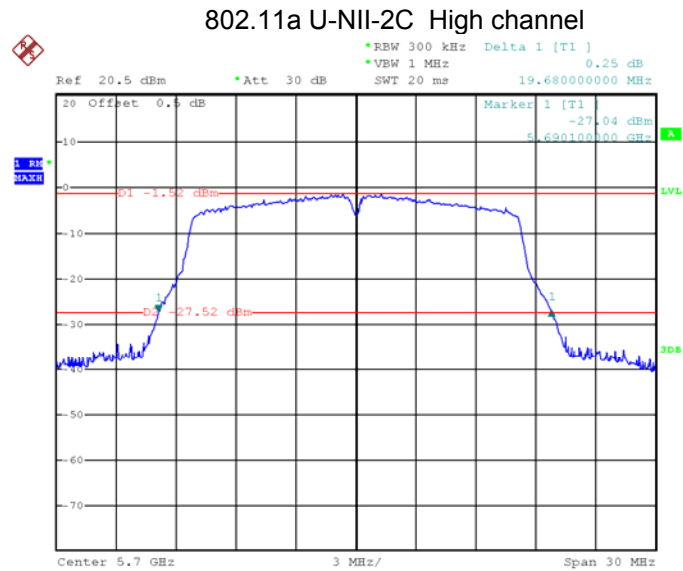


Date: 25.APR.2023 20:41:37

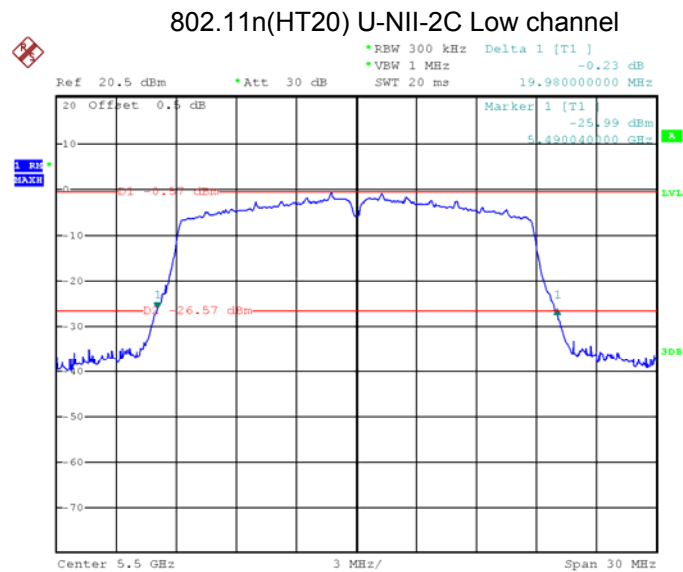
802.11a U-NII-2C Middle channel



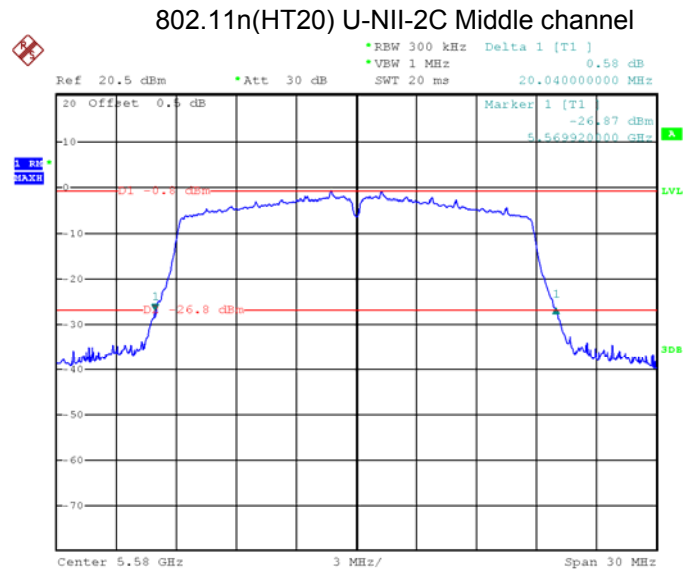
Date: 25.APR.2023 20:42:35



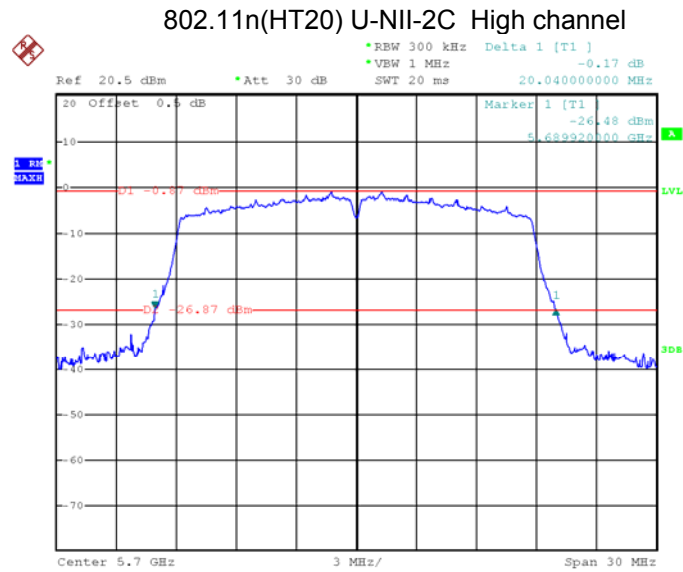
Date: 25.APR.2023 20:43:29



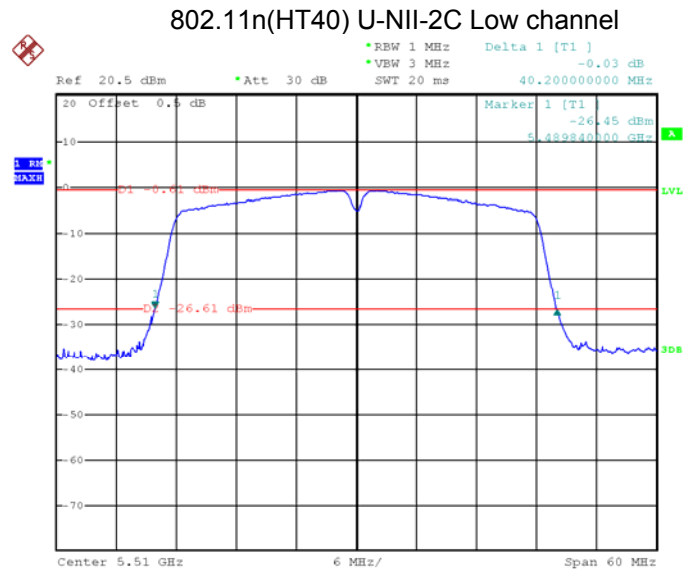
Date: 25.APR.2023 20:47:39



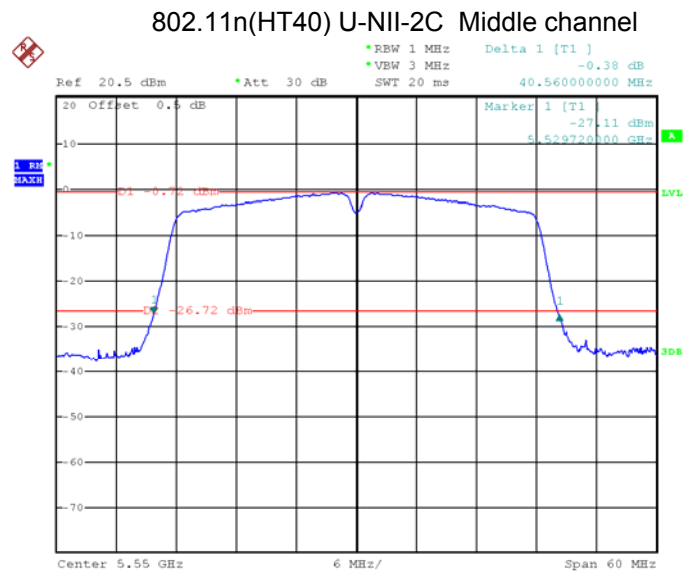
Date: 25.APR.2023 20:48:53



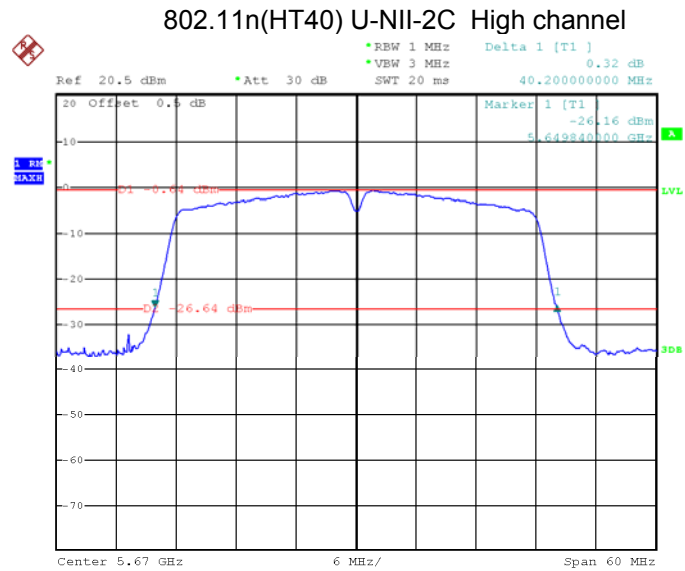
Date: 25.APR.2023 20:50:13



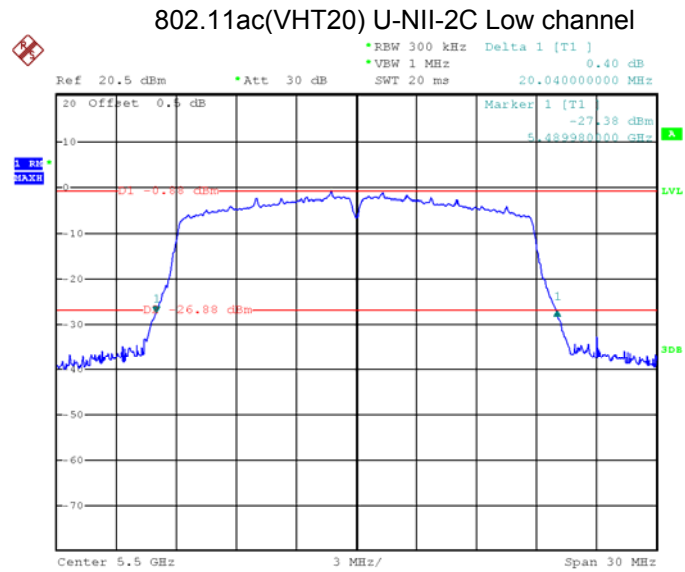
Date: 25.APR.2023 20:51:28



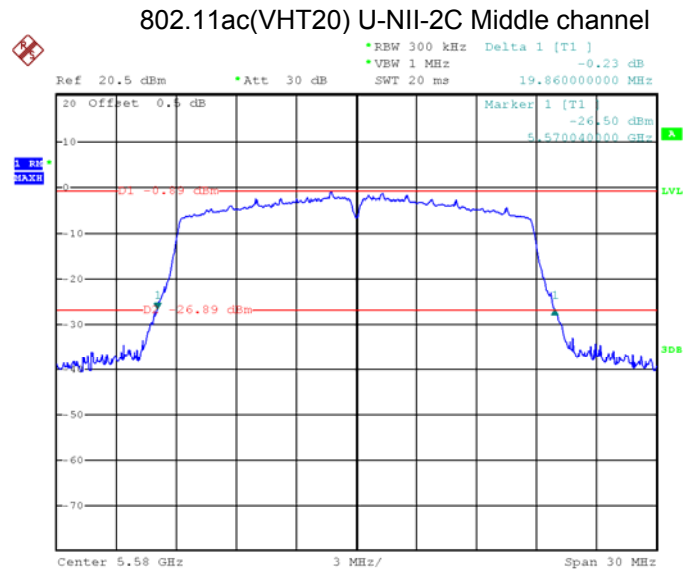
Date: 25.APR.2023 20:52:37



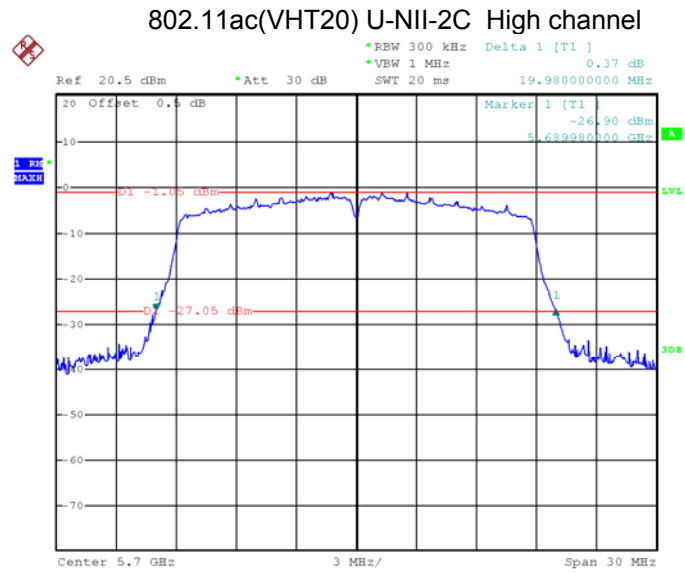
Date: 25.APR.2023 20:53:26



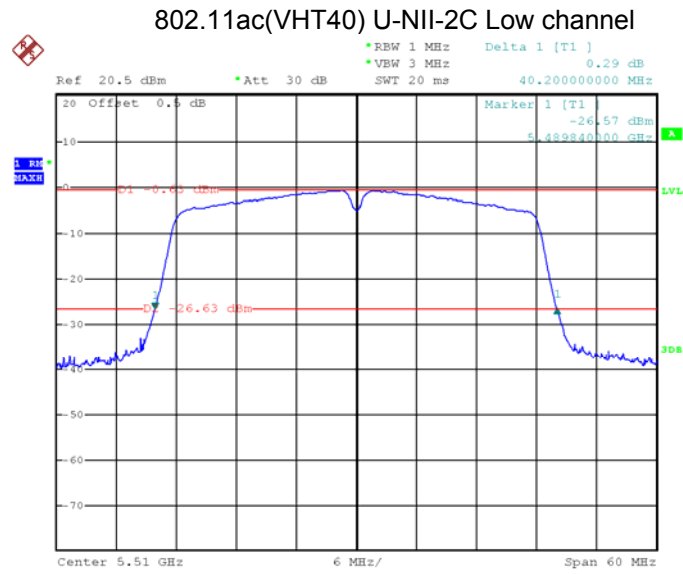
Date: 25.APR.2023 20:44:38



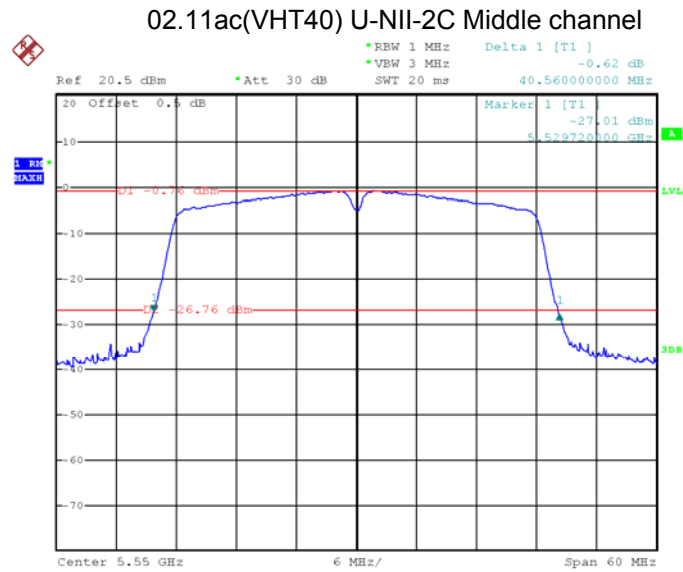
Date: 25.APR.2023 20:45:29



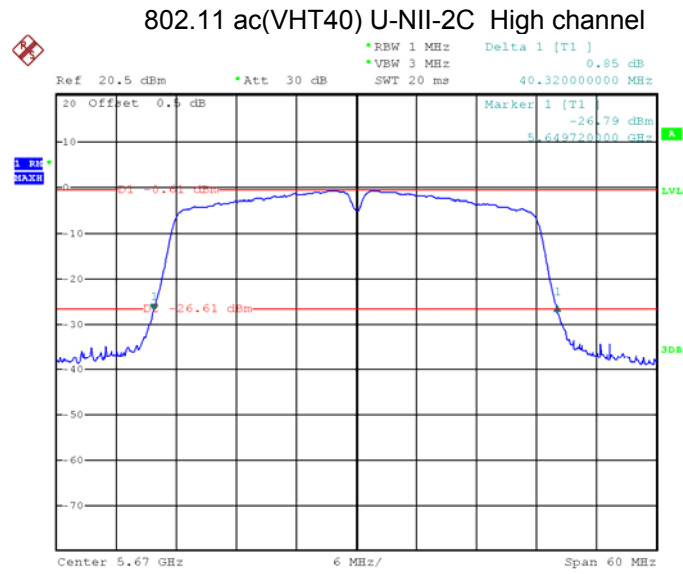
Date: 25.APR.2023 20:46:38



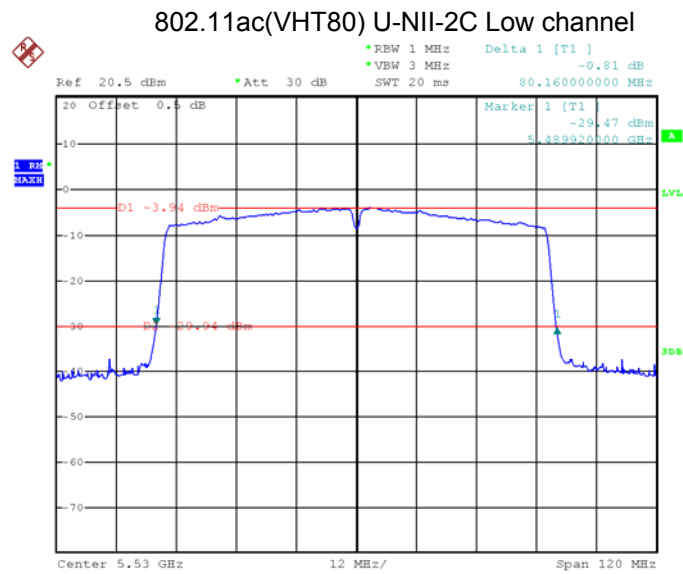
Date: 25.APR.2023 20:54:26



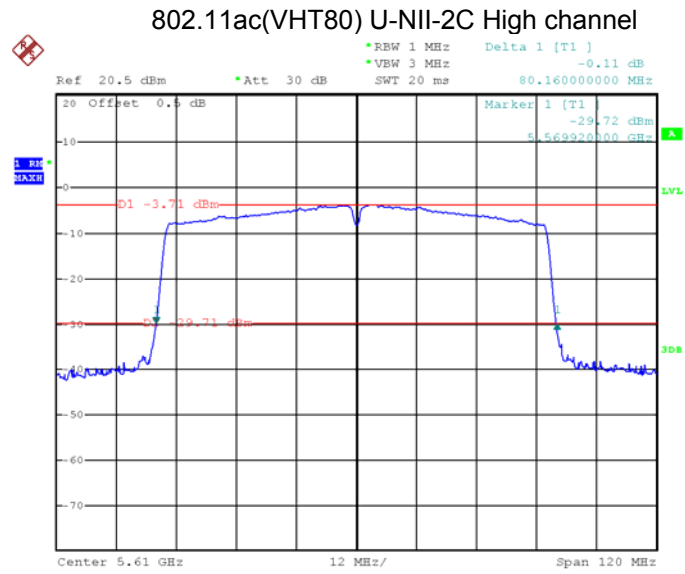
Date: 25.APR.2023 20:55:31



Date: 25.APR.2023 20:56:50



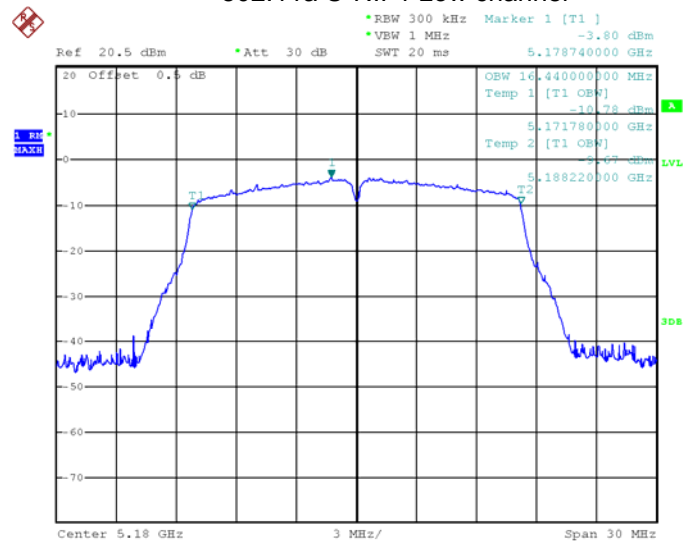
Date: 25.APR.2023 20:58:17



Date: 25.APR.2023 20:59:23

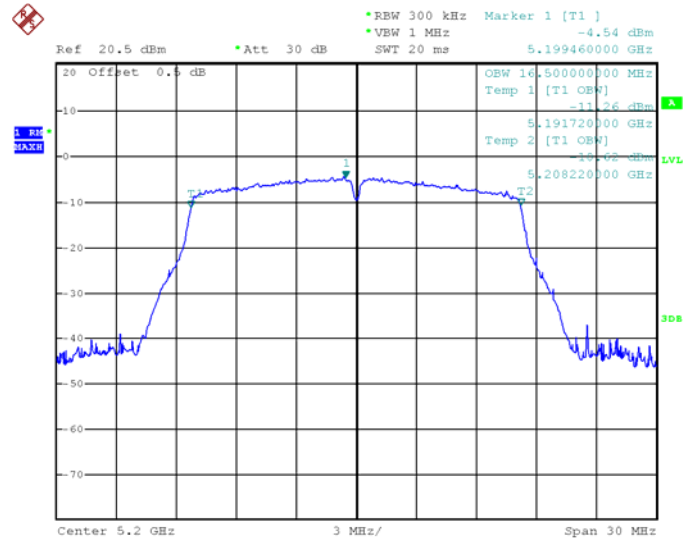
99% Occupied Bandwidth

802.11a U-NII-1 Low channel



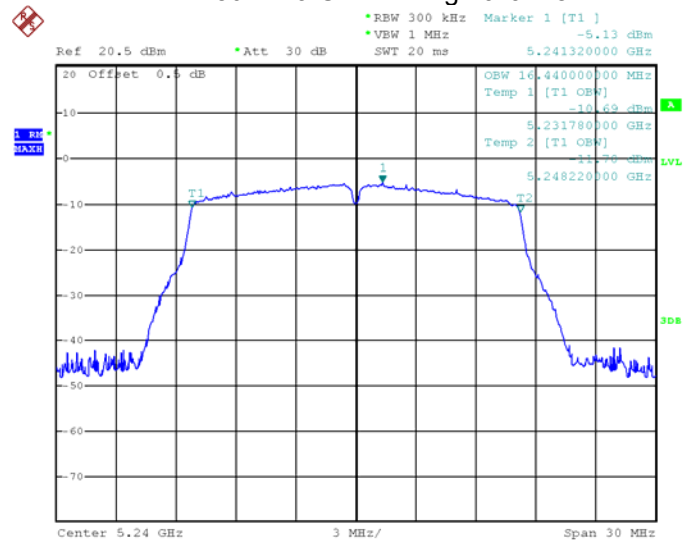
Date: 6.APR.2023 11:26:42

802.11a U-NII-1 Middle channel



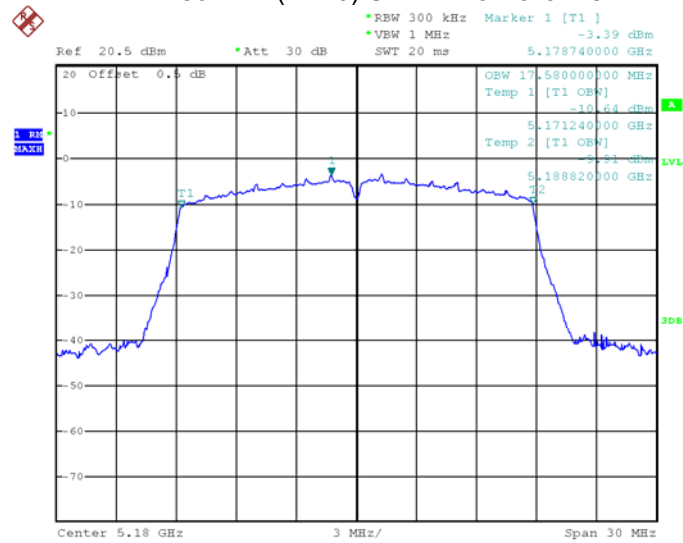
Date: 6.APR.2023 11:27:09

802.11a U-NII-1 High channel

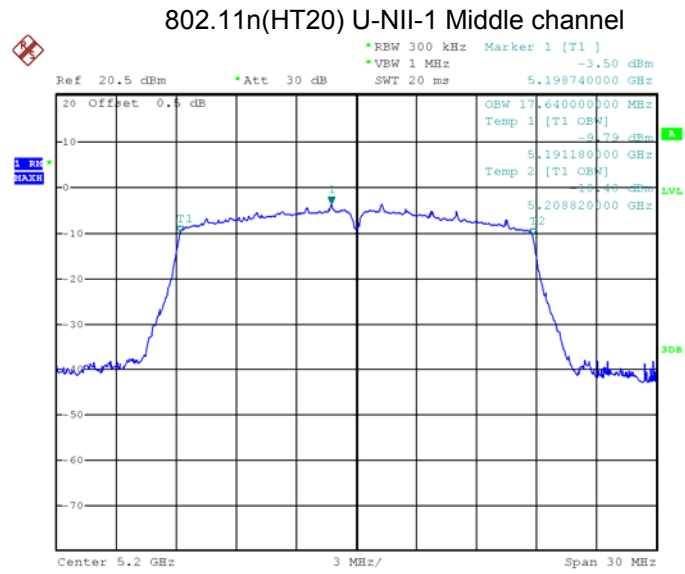


Date: 6.APR.2023 11:27:39

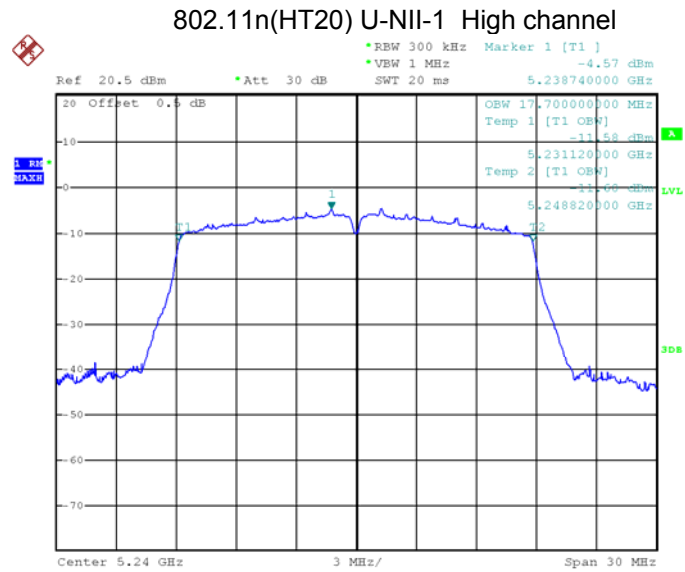
802.11n(HT20) U-NII-1 Low channel



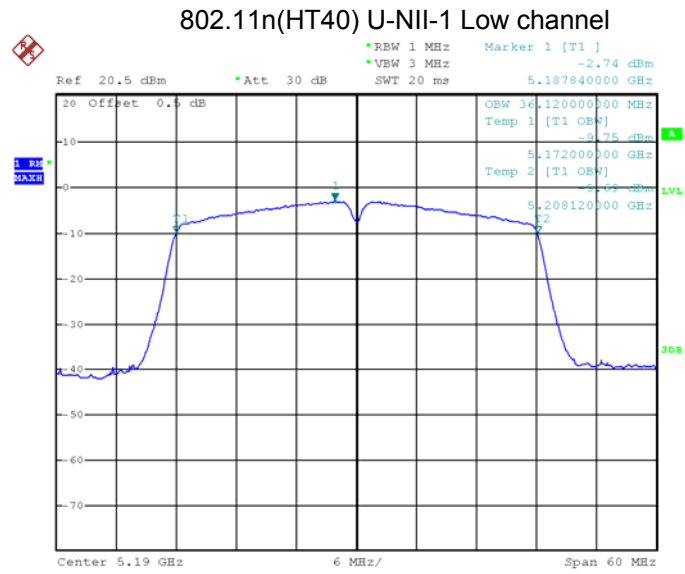
Date: 6.APR.2023 11:28:31



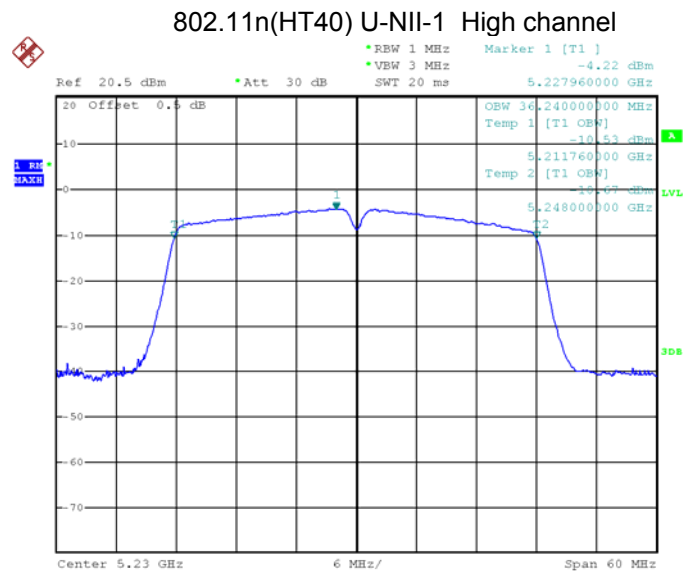
Date: 6.APR.2023 11:29:11



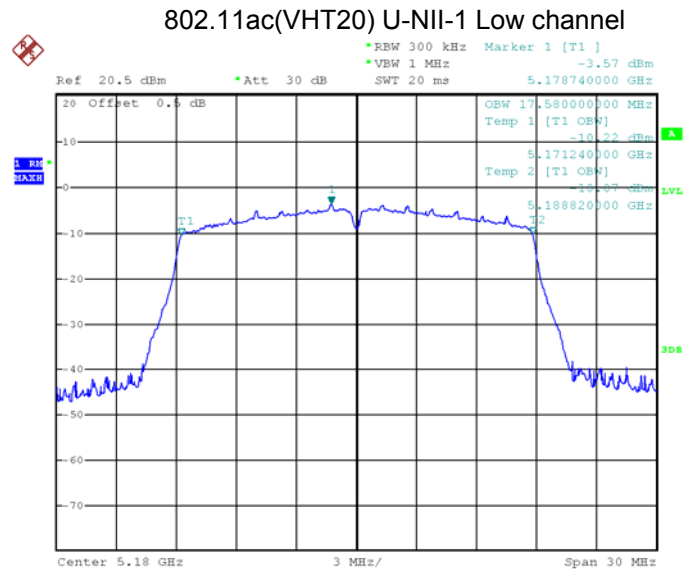
Date: 6.APR.2023 11:29:35



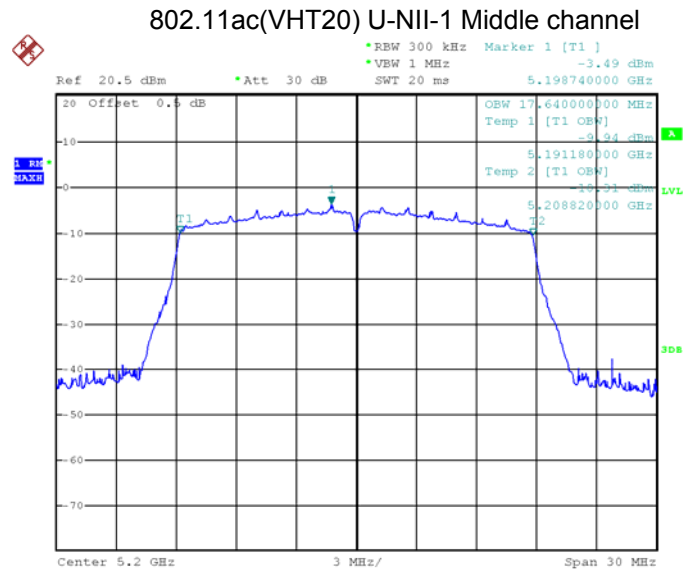
Date: 6.APR.2023 11:33:16



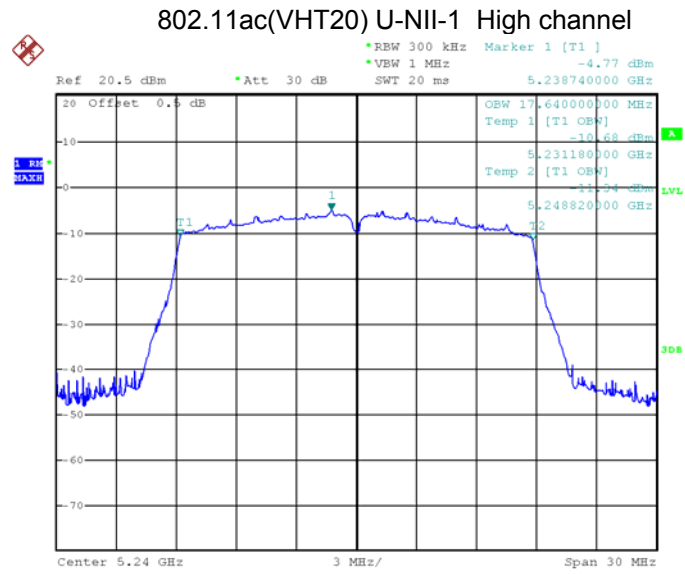
Date: 6.APR.2023 11:33:50



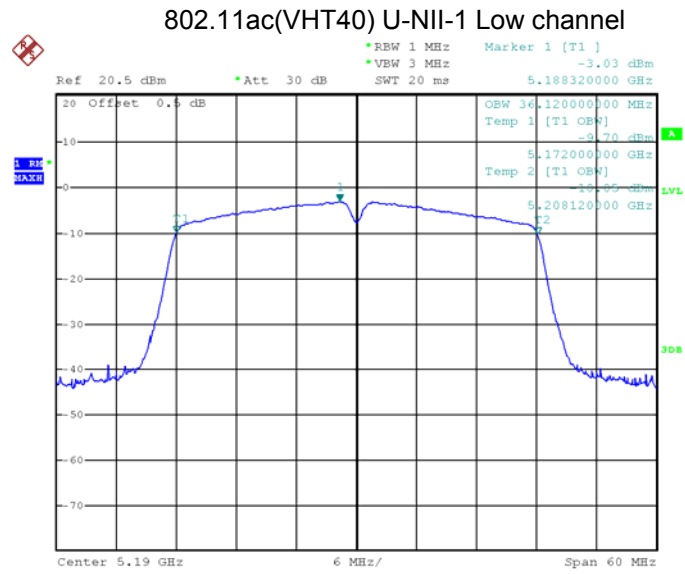
Date: 6.APR.2023 11:30:15



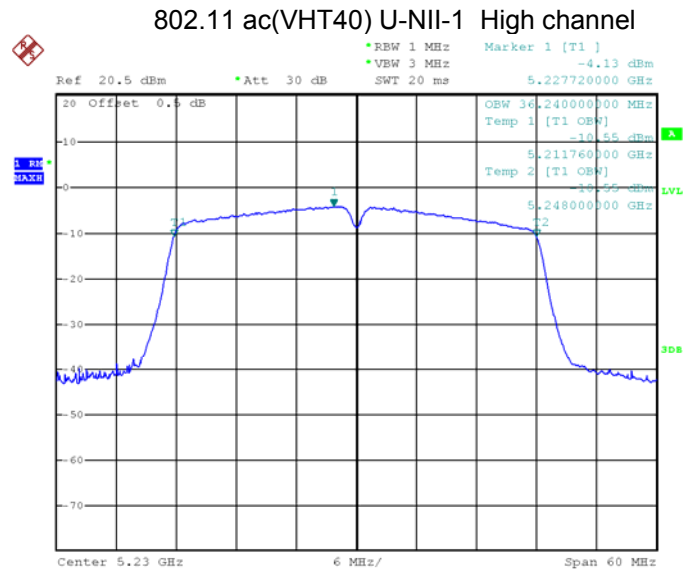
Date: 6.APR.2023 11:30:40



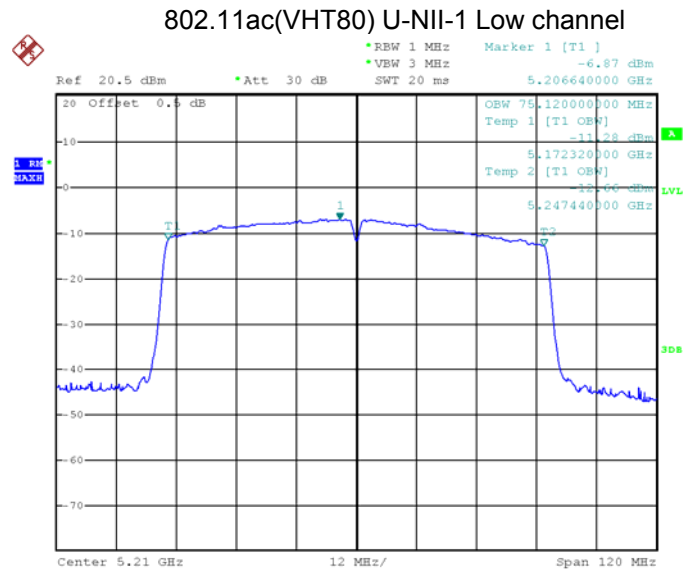
Date: 6.APR.2023 11:31:10



Date: 6.APR.2023 11:34:32

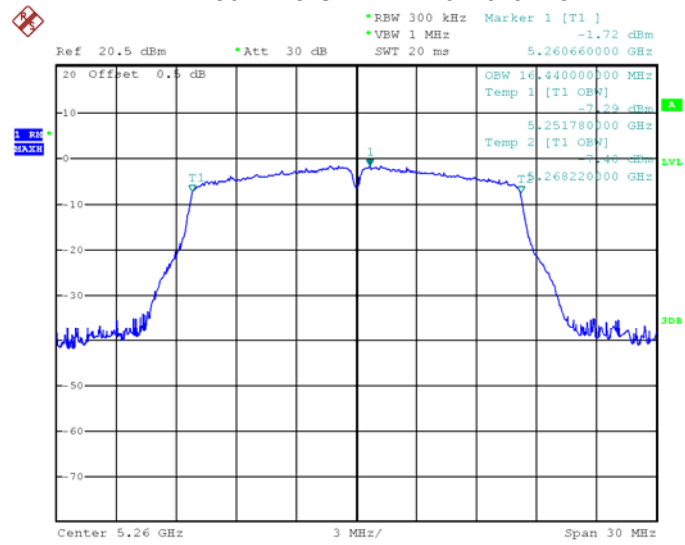


Date: 6.APR.2023 11:34:56



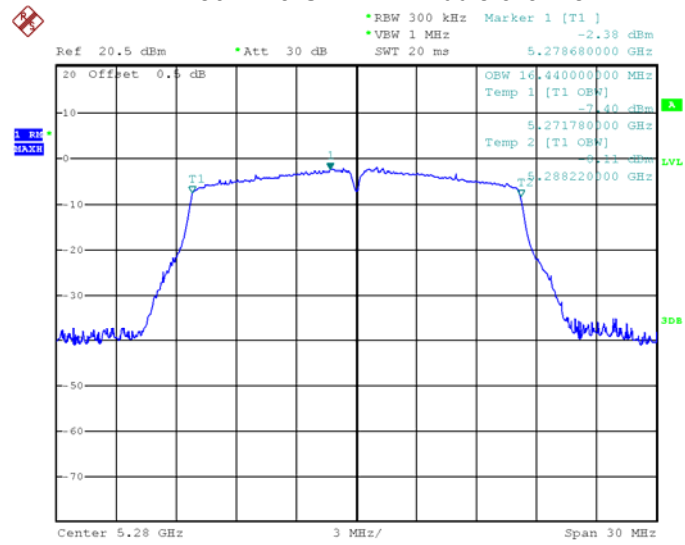
Date: 6.APR.2023 11:35:36

802.11a U-NII-2A Low channel

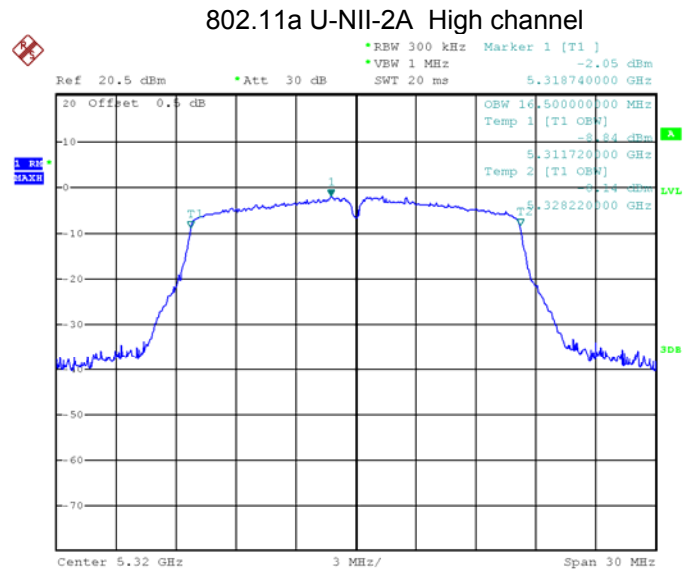


Date: 6.APR.2023 12:19:28

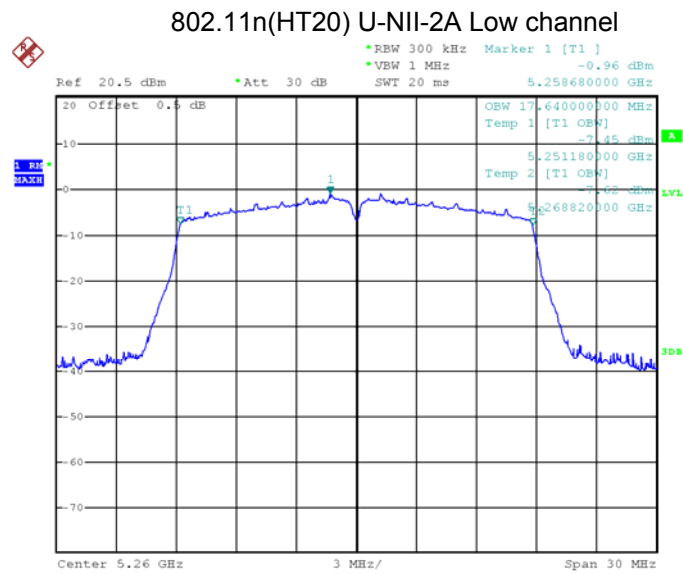
802.11a U-NII-2A Middle channel



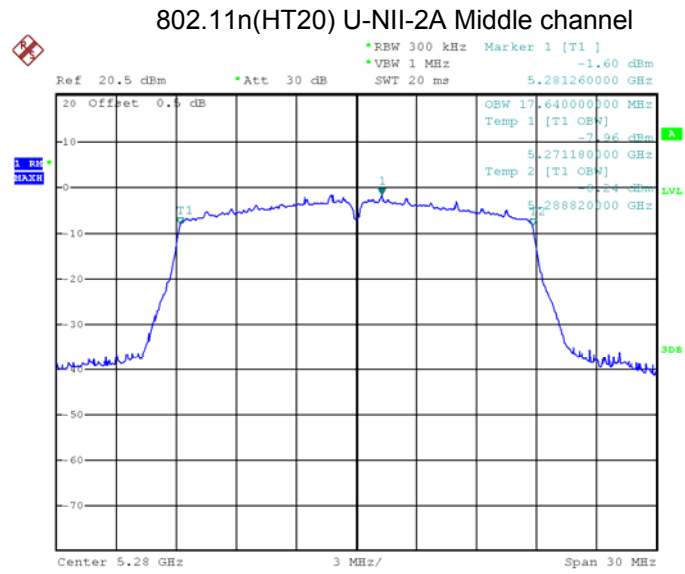
Date: 6.APR.2023 12:19:54



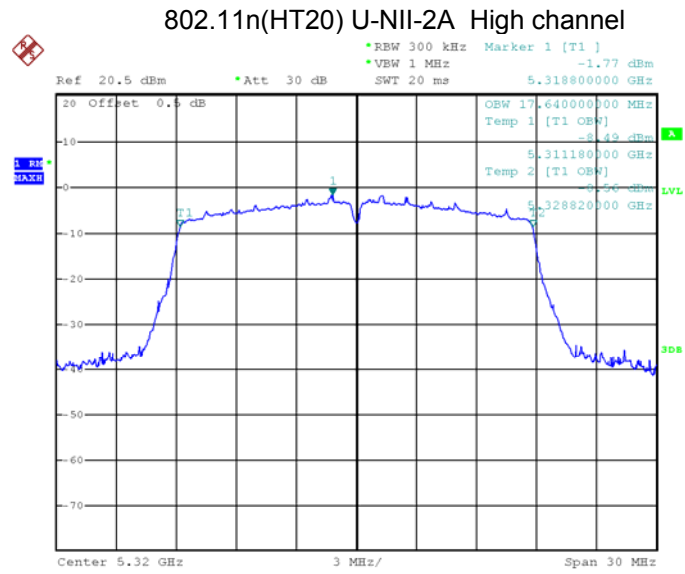
Date: 6.APR.2023 12:20:34



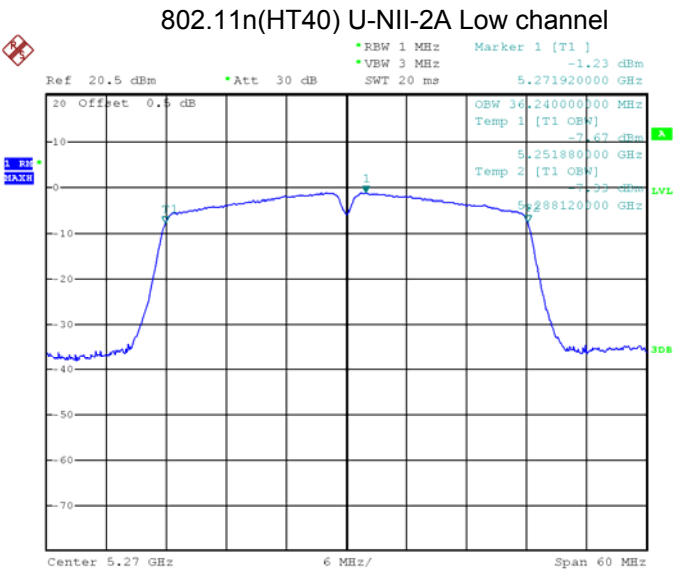
Date: 6.APR.2023 12:23:25



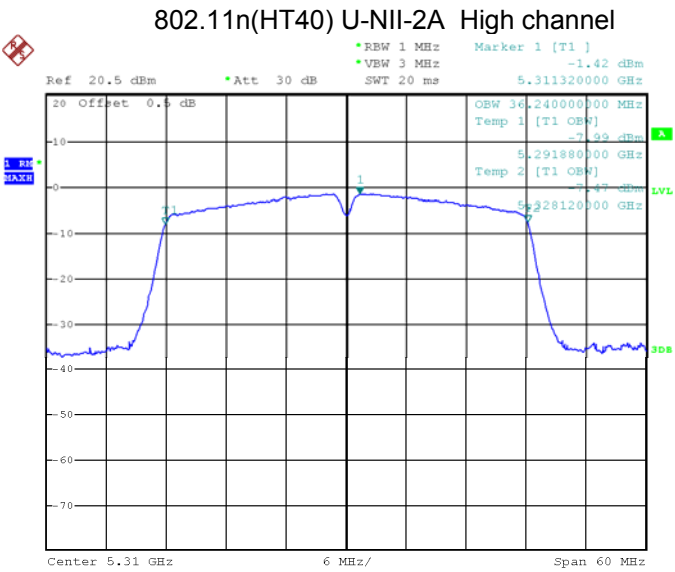
Date: 6.APR.2023 12:23:50



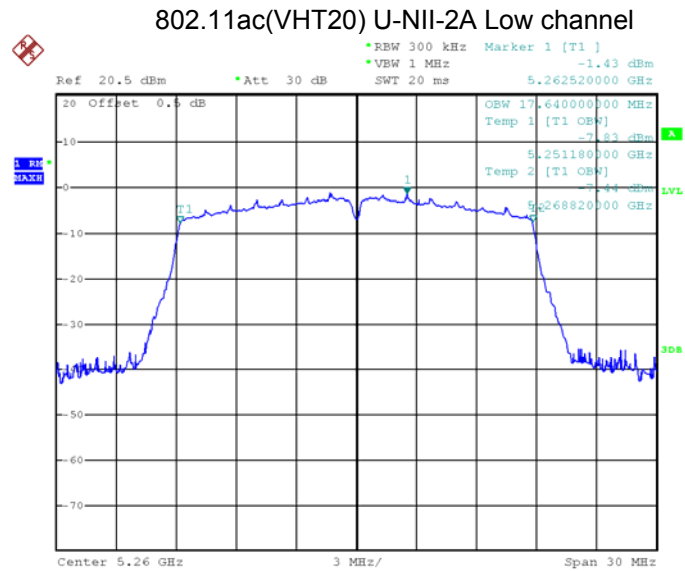
Date: 6.APR.2023 12:24:21



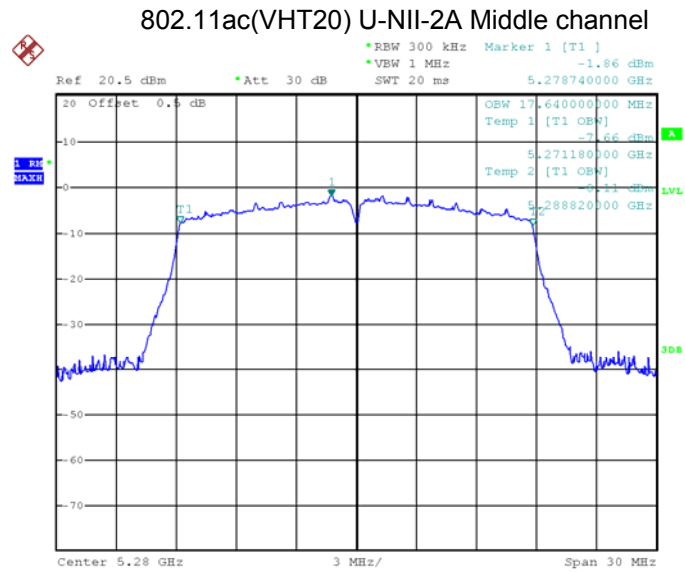
Date: 6.APR.2023 12:26:07



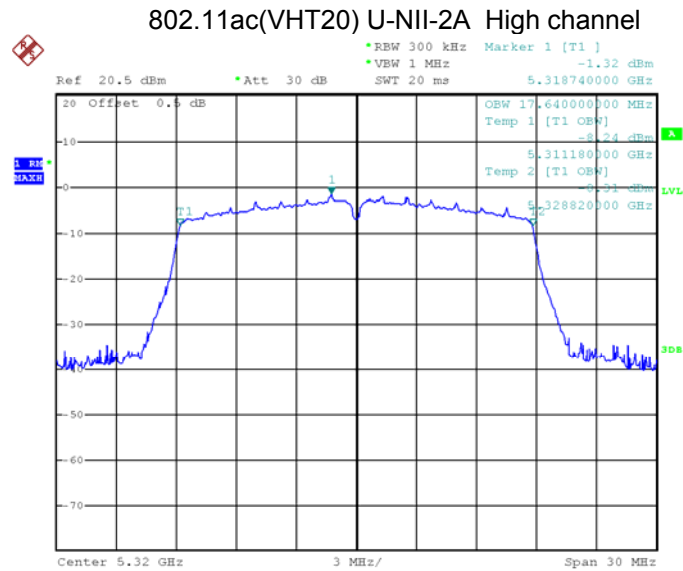
Date: 6.APR.2023 12:26:42



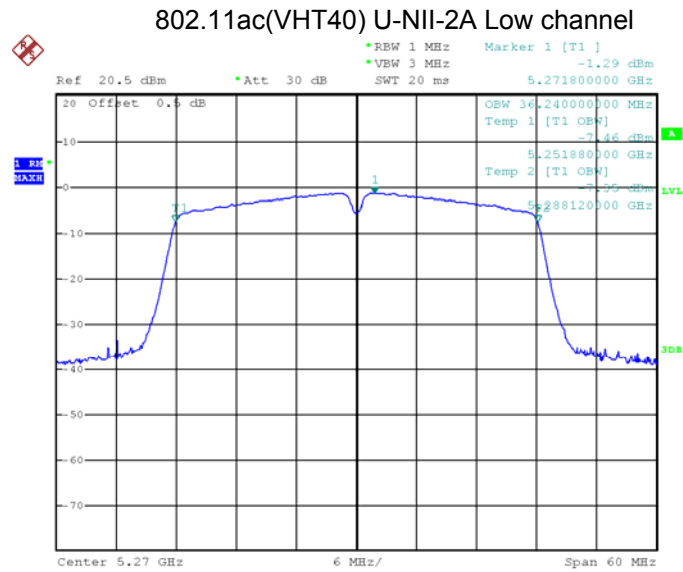
Date: 6.APR.2023 12:21:18



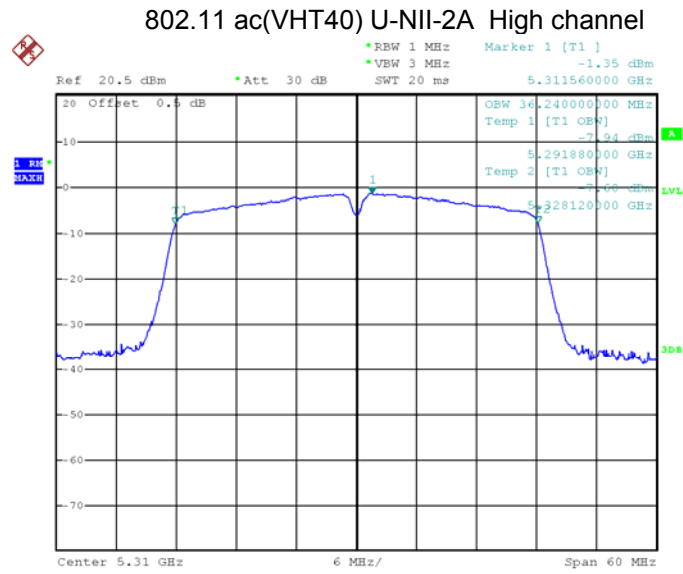
Date: 6.APR.2023 12:21:43



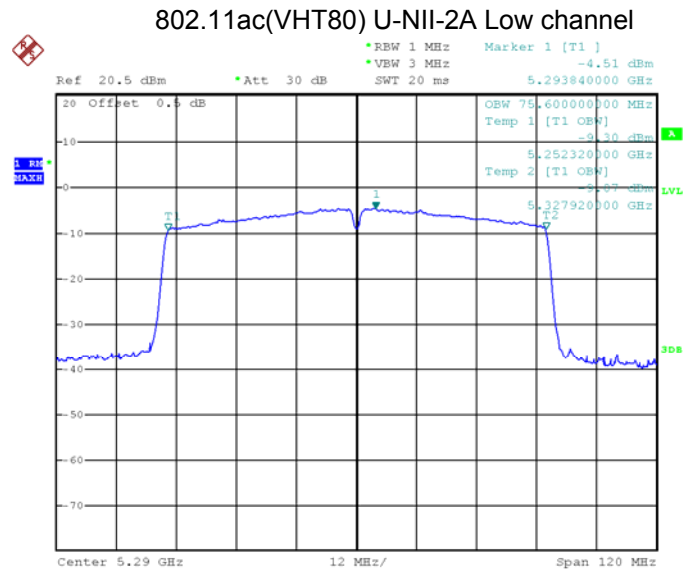
Date: 6.APR.2023 12:22:19



Date: 6.APR.2023 12:27:31

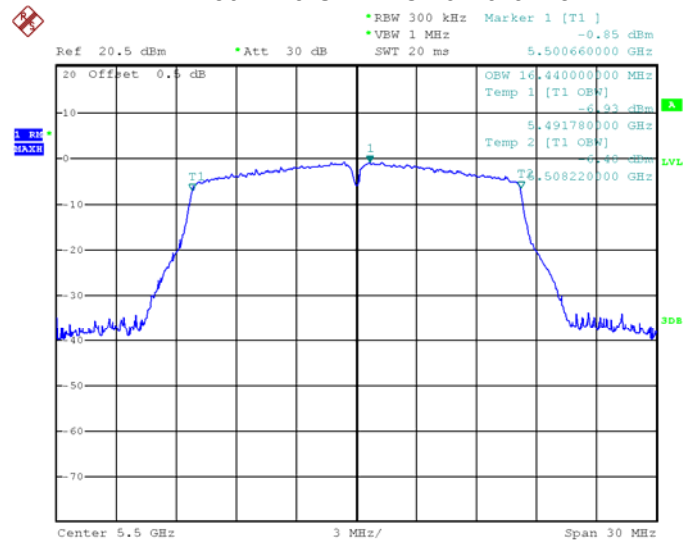


Date: 6.APR.2023 12:27:55



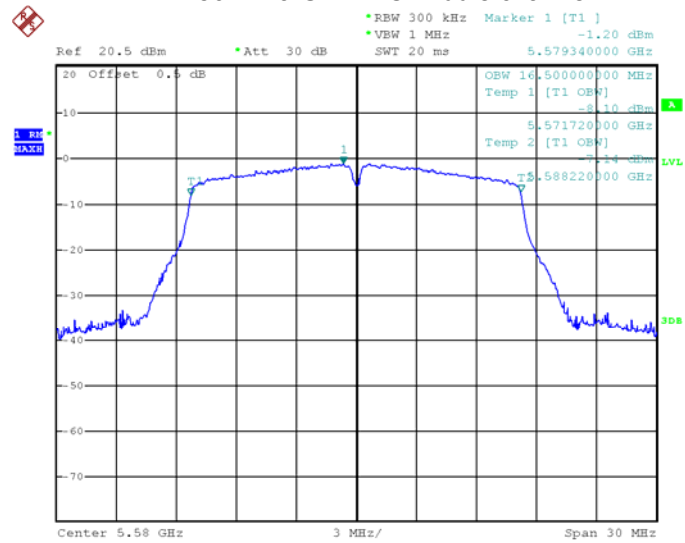
Date: 6.APR.2023 12:28:33

802.11a U-NII-2C Low channel

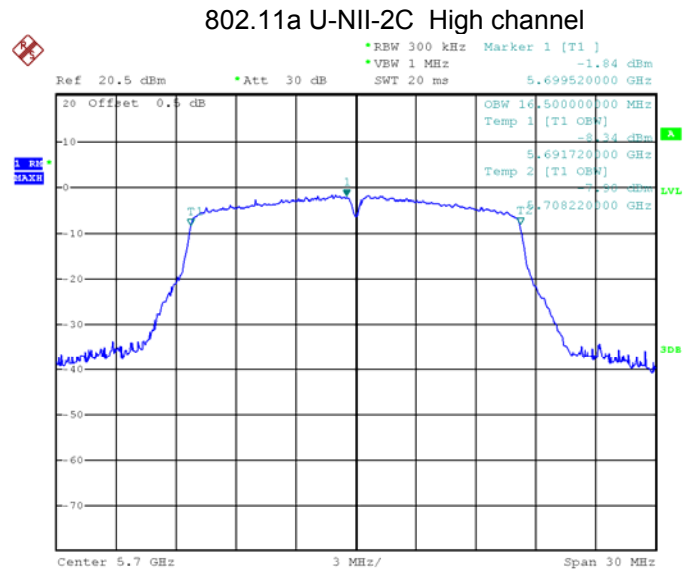


Date: 6.APR.2023 15:29:48

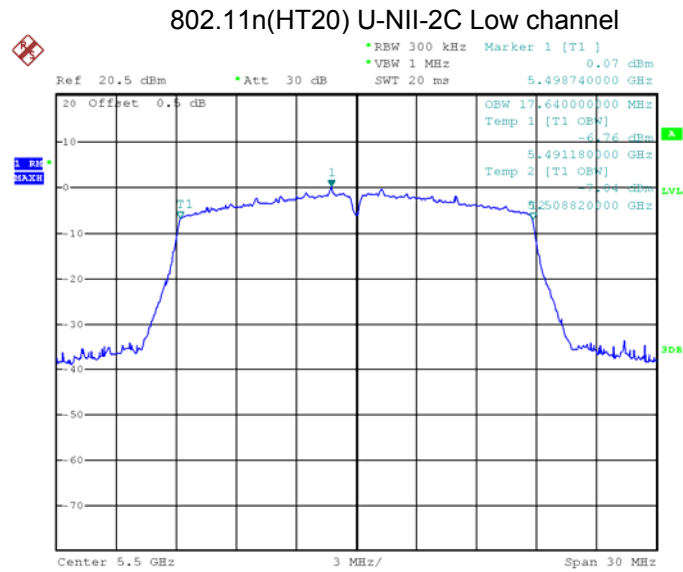
802.11a U-NII-2C Middle channel



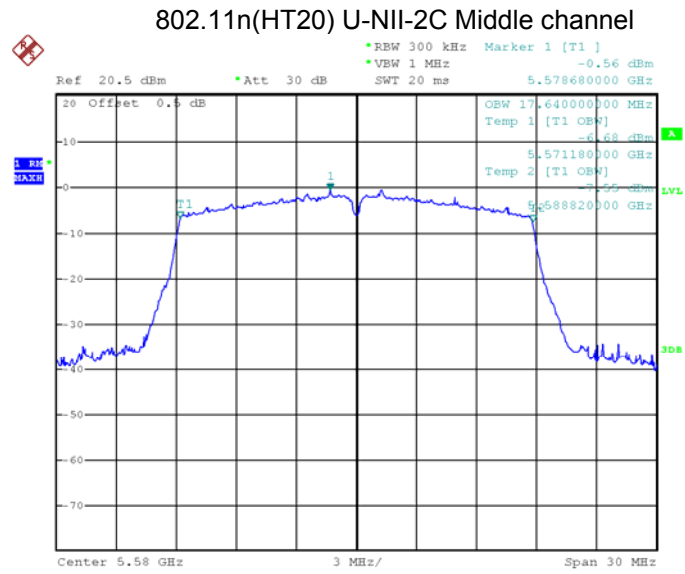
Date: 6.APR.2023 15:29:12



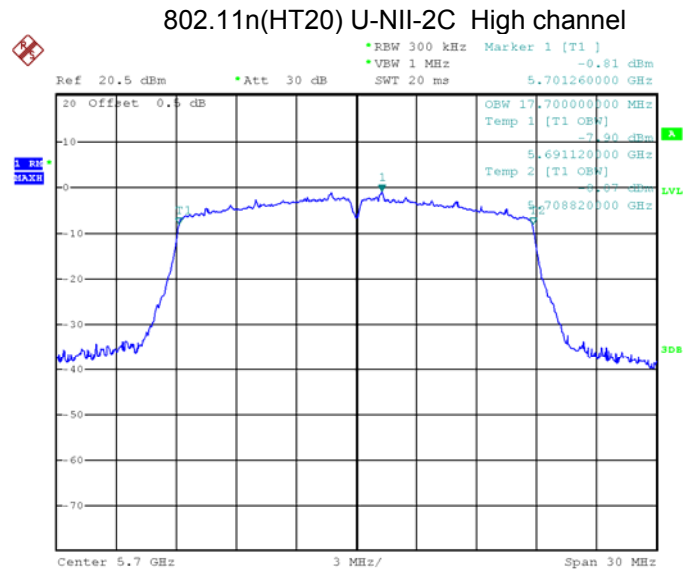
Date: 6.APR.2023 15:30:17



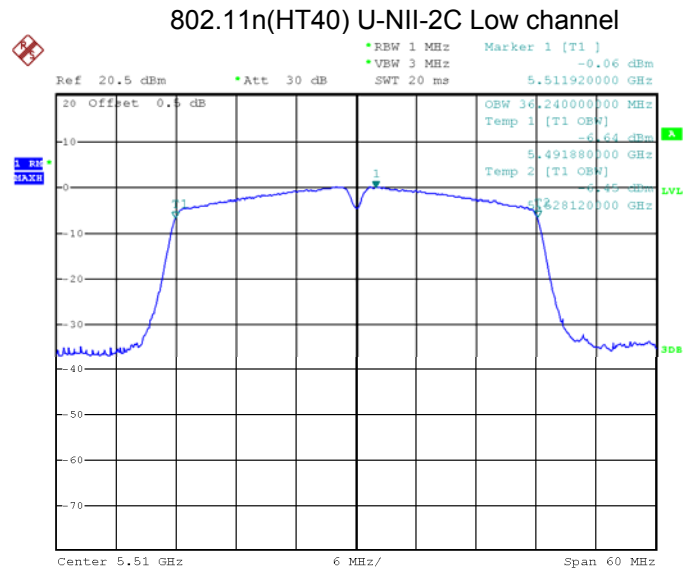
Date: 6.APR.2023 15:57:54



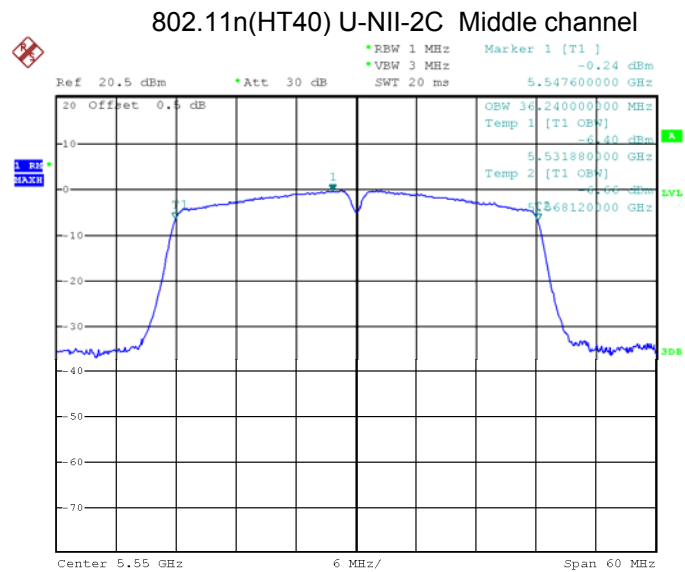
Date: 6.APR.2023 15:58:18



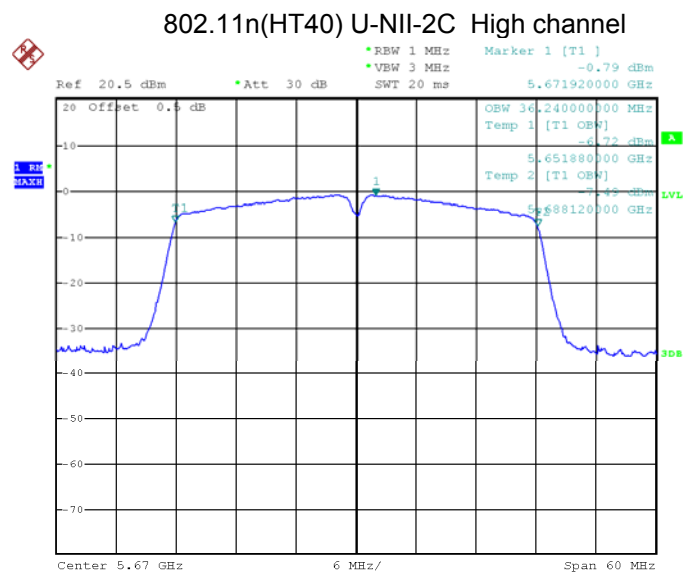
Date: 6.APR.2023 15:58:38



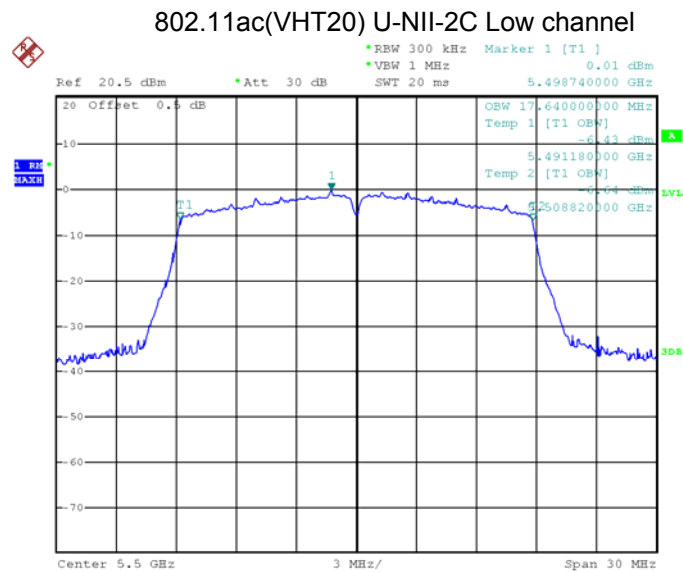
Date: 6.APR.2023 15:59:23



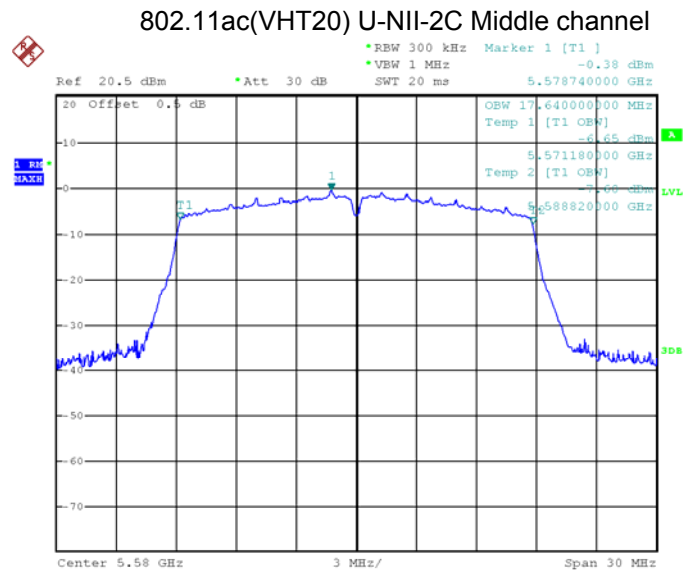
Date: 6.APR.2023 15:59:51



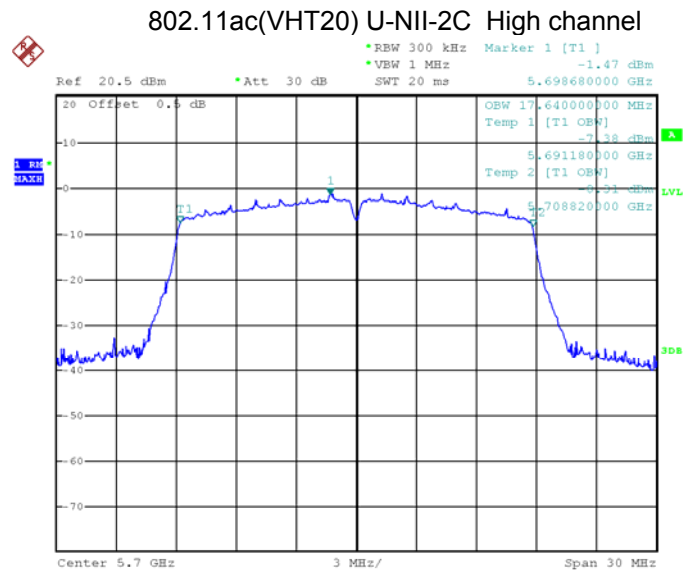
Date: 6.APR.2023 16:00:15



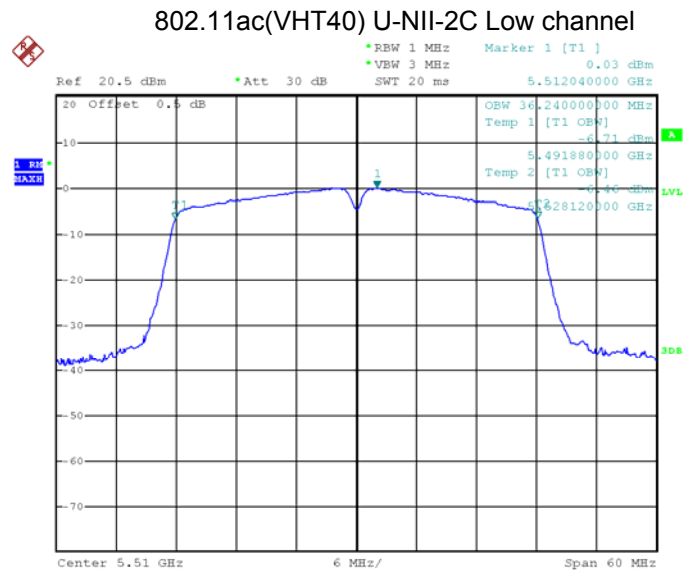
Date: 6.APR.2023 15:56:22



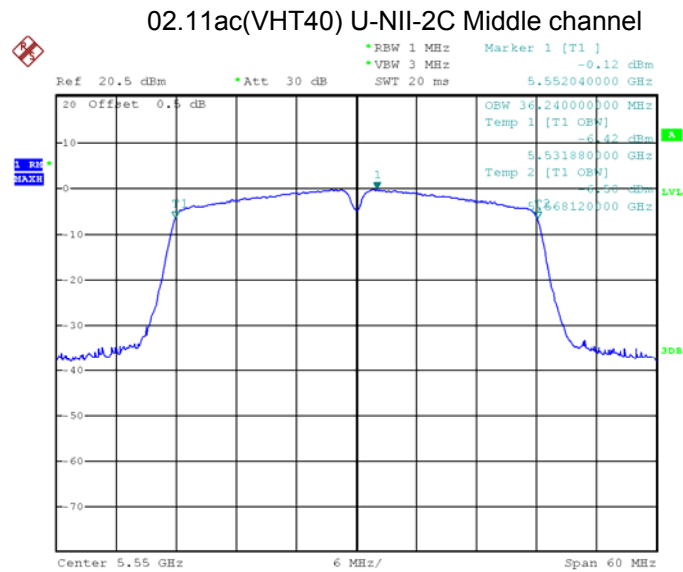
Date: 6.APR.2023 15:57:01



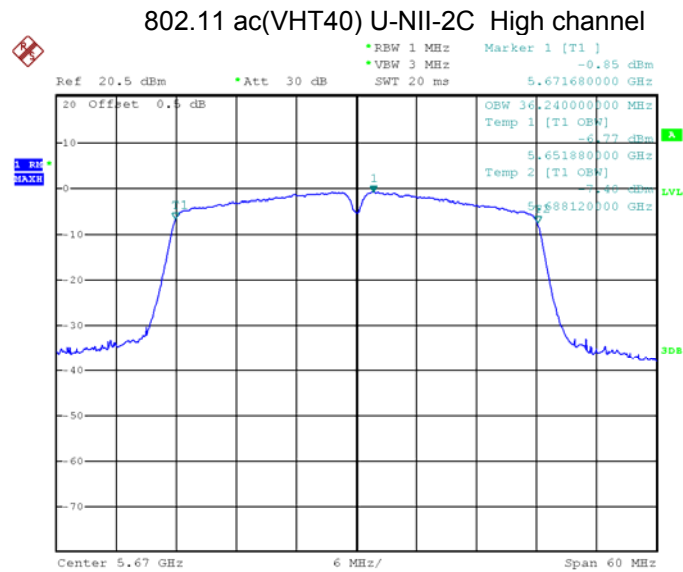
Date: 6.APR.2023 15:57:22



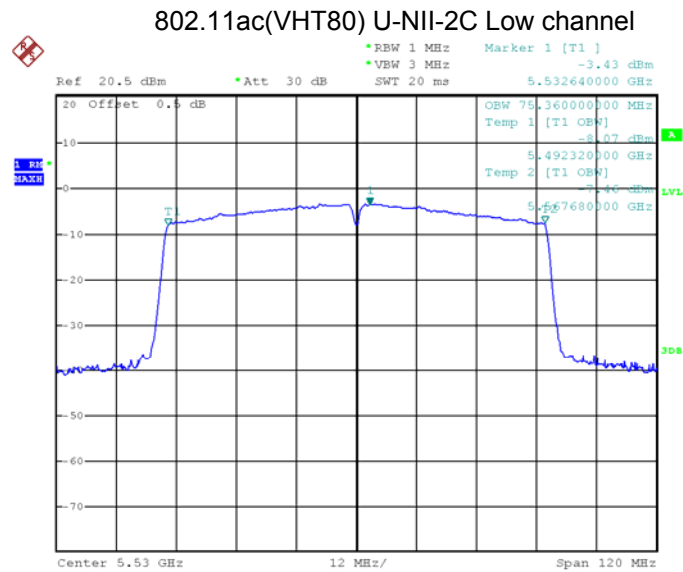
Date: 6.APR.2023 16:00:44



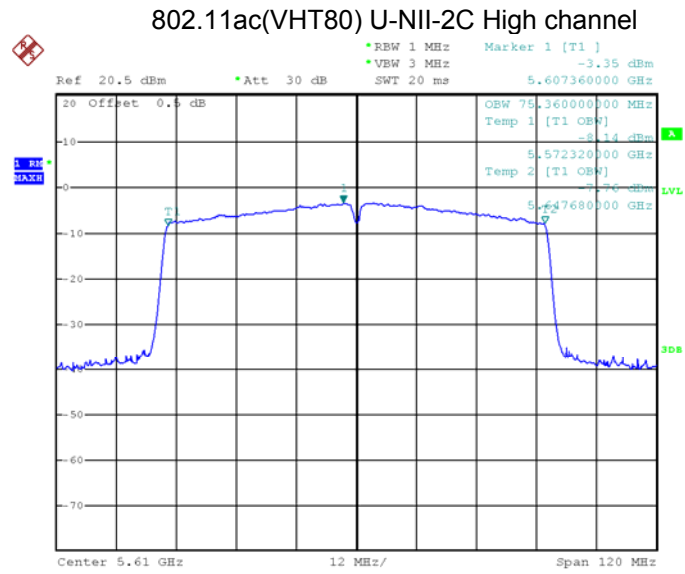
Date: 6.APR.2023 16:01:10



Date: 6.APR.2023 16:01:32

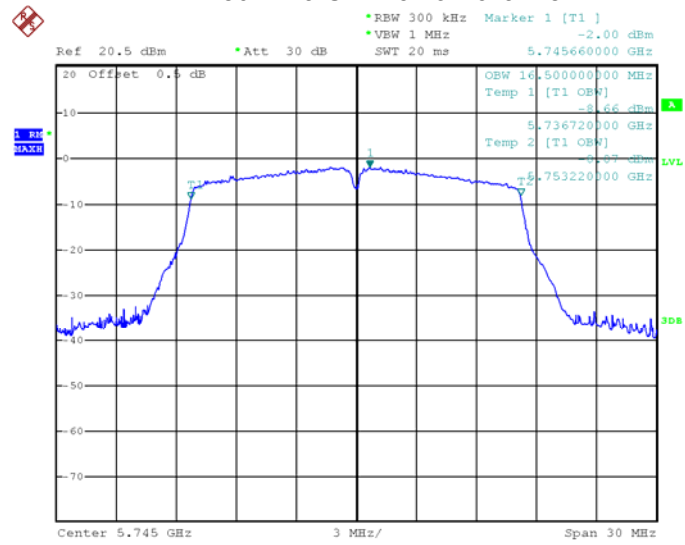


Date: 6.APR.2023 16:02:22



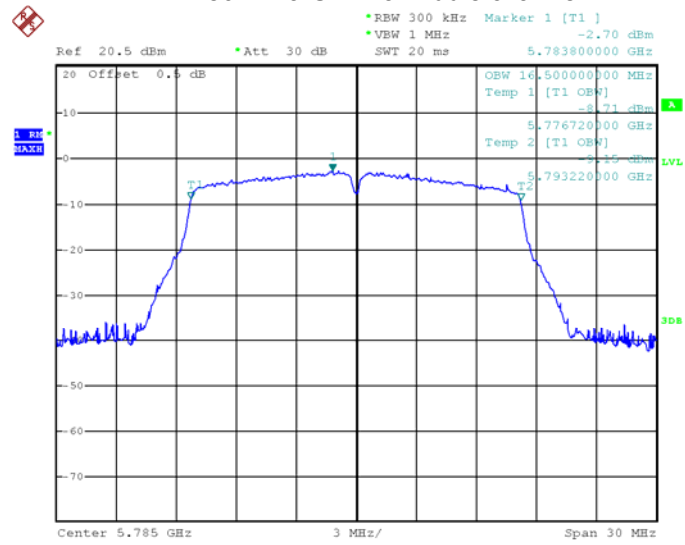
Date: 6.APR.2023 16:02:50

802.11a U-NII-3 Low channel



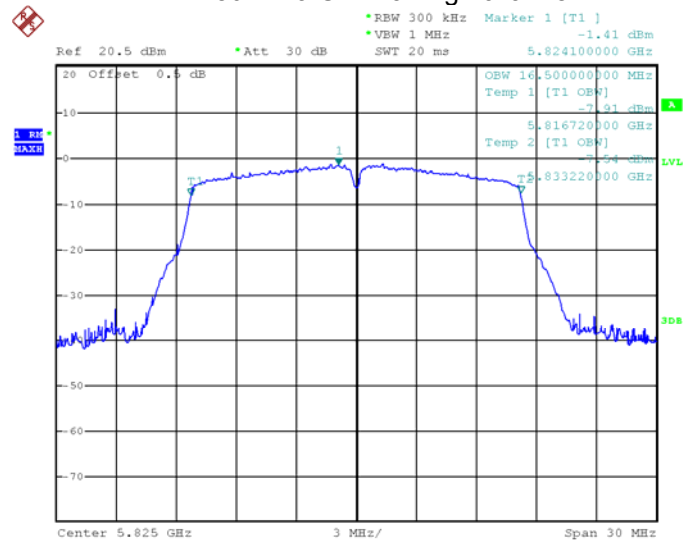
Date: 6.APR.2023 14:31:44

802.11a U-NII-3 Middle channel



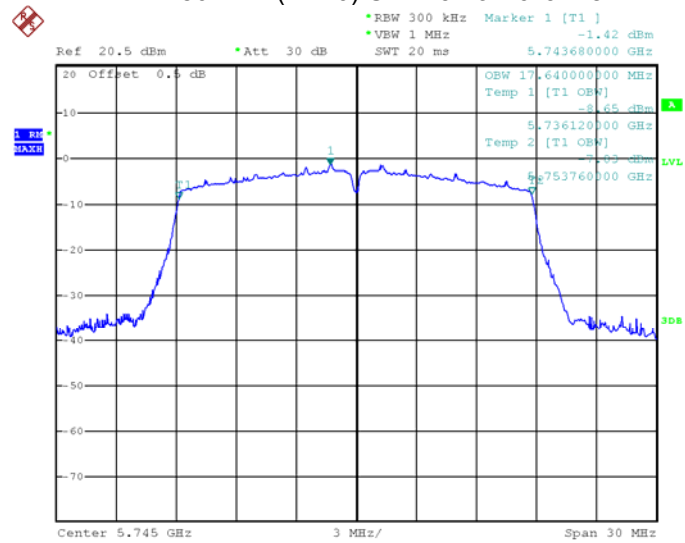
Date: 6.APR.2023 14:32:11

802.11a U-NII-3 High channel

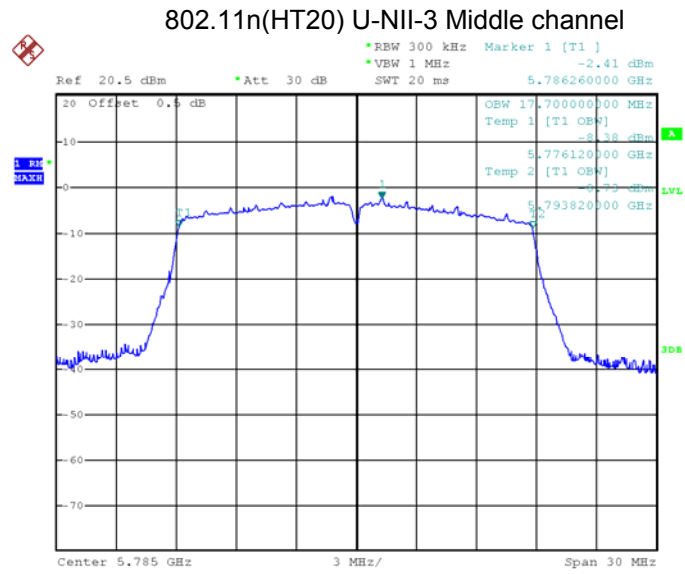


Date: 6.APR.2023 14:32:33

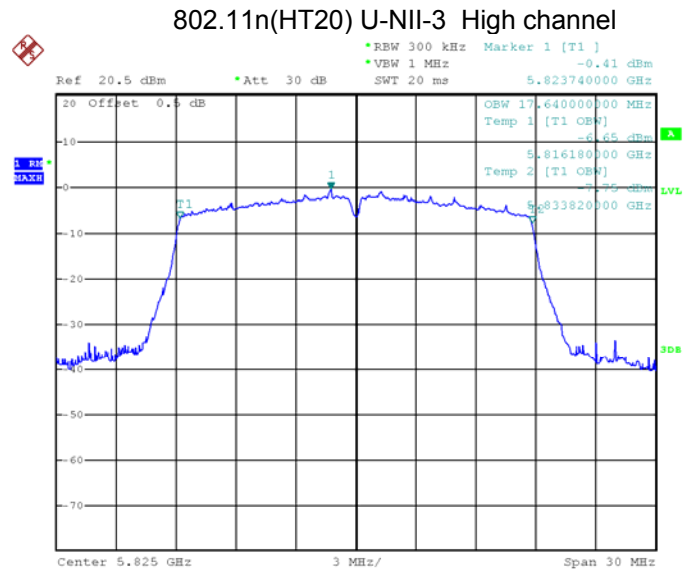
802.11n(HT20) U-NII-3 Low channel



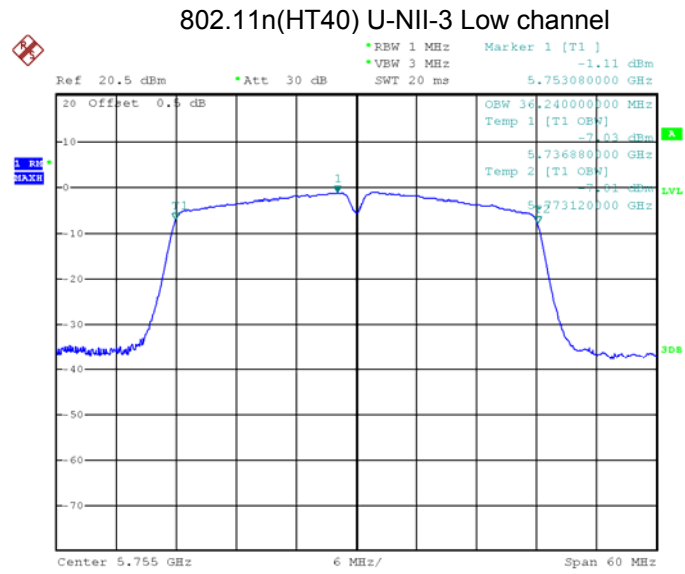
Date: 6.APR.2023 14:37:51



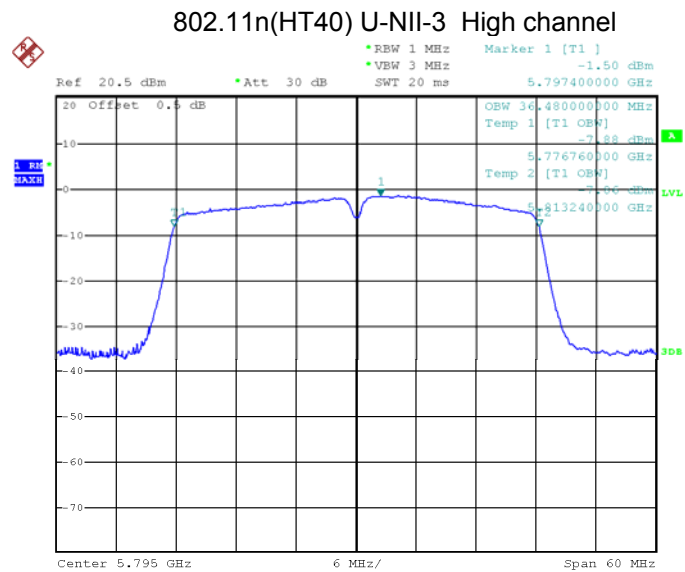
Date: 6.APR.2023 14:38:14



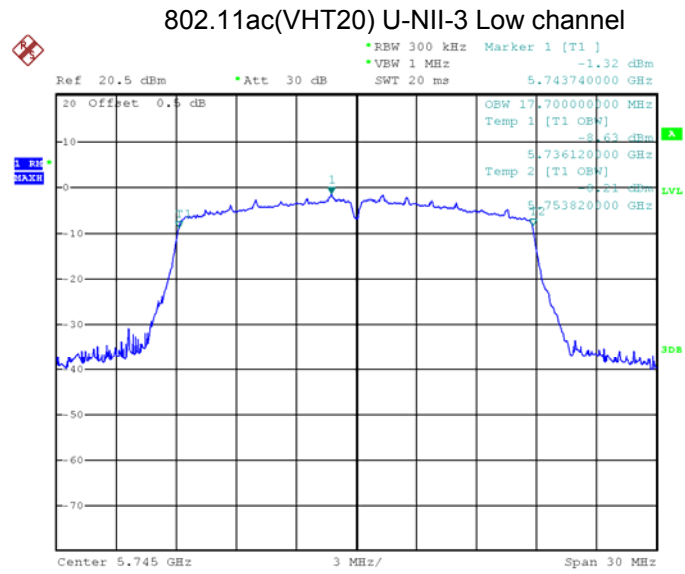
Date: 6.APR.2023 14:39:49



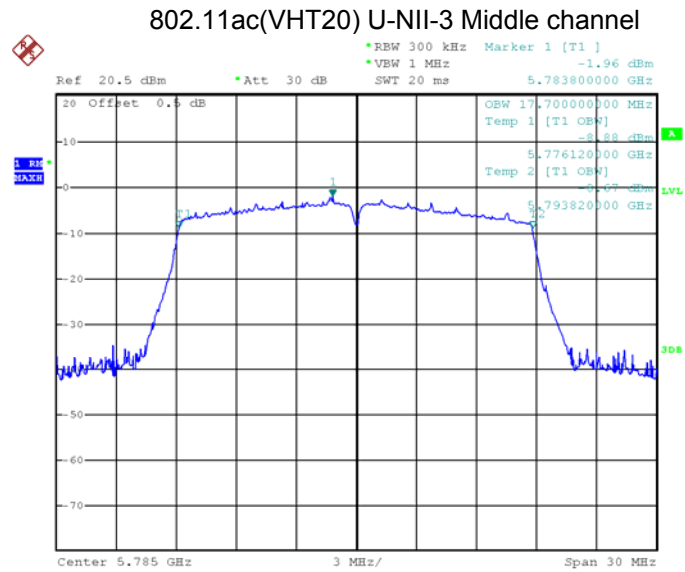
Date: 6.APR.2023 14:42:04



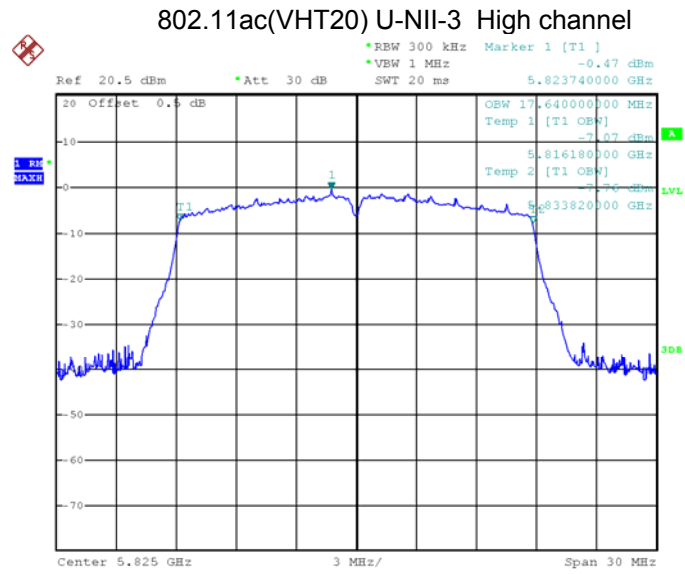
Date: 6.APR.2023 14:42:29



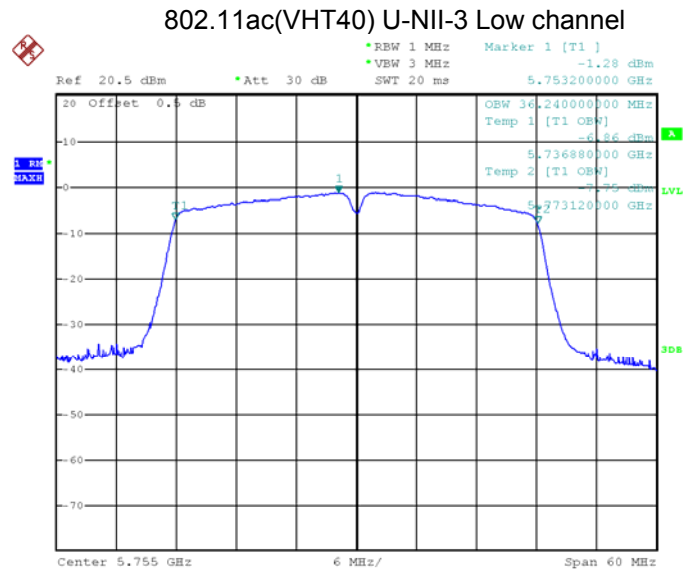
Date: 6.APR.2023 14:40:14



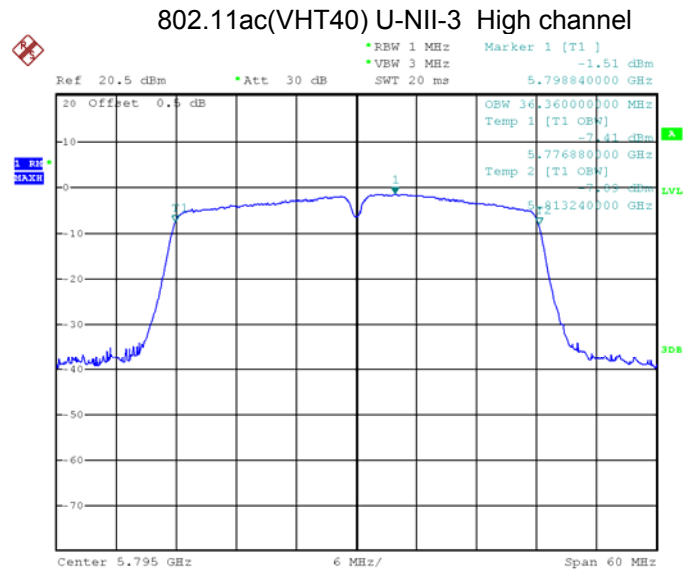
Date: 6.APR.2023 14:40:49



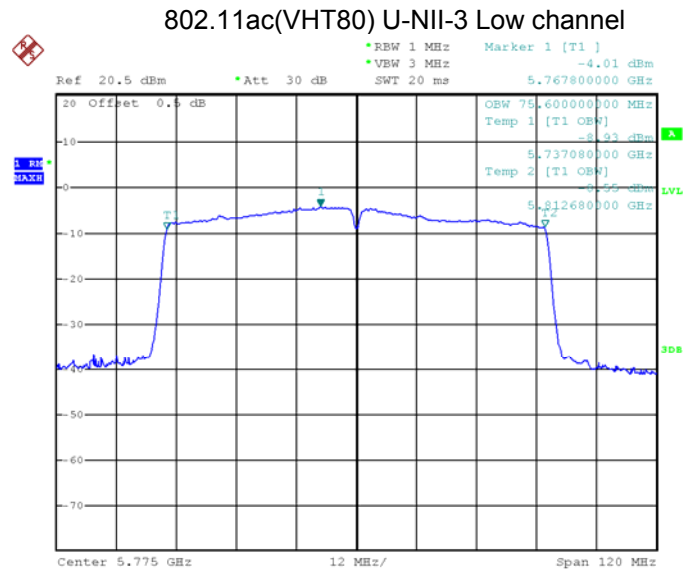
Date: 6.APR.2023 14:41:12



Date: 6.APR.2023 14:43:06



Date: 6.APR.2023 14:43:29



Date: 6.APR.2023 14:44:49

## 13 Conducted Output Power

|                   |                                                                                             |
|-------------------|---------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407(a)<br>KDB662911 D01 Multiple Transmitter Output v02r01     |
| Test Method:      | KDB789033 D02 General U-NII Test Procedures New Rules v02r01<br>Section E                   |
| Test Limit:       | U-NII-1 250mW(24dBm)<br>U-NII-2A 250mW(24dBm)<br>U-NII-2C 250mW(24dBm)<br>U-NII-3 1W(30dBm) |
| Test Result:      | PASS<br>Conducted output power= measurement power+10log(1/x)                                |
| Remark:           | X is duty cycle=1, so 10log(1/1)=0<br>Conducted output power= measurement power             |

### 13.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak, Set the span to fully encompass the DTS bandwidth.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

### 13.2 Test Result

| Band    | Operation mode  | Conducted Output Power (dBm) |        |       |
|---------|-----------------|------------------------------|--------|-------|
|         |                 | Low                          | Middle | High  |
| U-NII-1 | 802.11a         | <b>10.34</b>                 | 10.17  | 10.07 |
|         | 802.11n(HT20)   | 10.14                        | 10.03  | 9.99  |
|         | 802.11n(HT40)   | 10.08                        | /      | 10.01 |
|         | 802.11ac(VHT20) | 10.22                        | 10.07  | 9.99  |
|         | 802.11ac(VHT40) | 10.05                        | /      | 10.03 |
|         | 802.11ac(VHT80) | 10.00                        | /      | /     |

| Band     | Operation mode  | Conducted Output Power (dBm) |        |      |
|----------|-----------------|------------------------------|--------|------|
|          |                 | Low                          | Middle | High |
| U-NII-2A | 802.11a         | <b>10.03</b>                 | 10.00  | 9.98 |
|          | 802.11n(HT20)   | 9.93                         | 9.75   | 9.88 |
|          | 802.11n(HT40)   | 9.83                         | /      | 9.80 |
|          | 802.11ac(VHT20) | 9.97                         | 9.83   | 9.85 |
|          | 802.11ac(VHT40) | 9.91                         | /      | 9.83 |
|          | 802.11ac(VHT80) | 9.92                         | /      | /    |

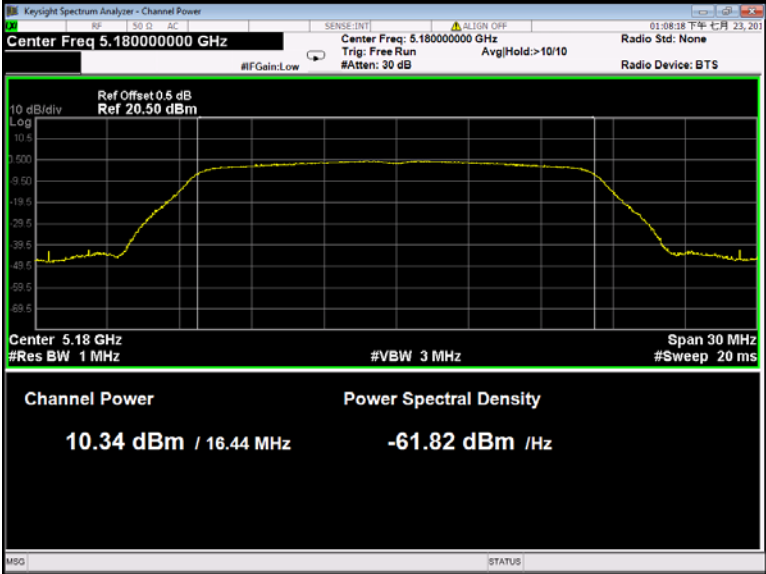
| Band     | Operation mode  | Conducted Output Power (dBm) |              |       |
|----------|-----------------|------------------------------|--------------|-------|
|          |                 | Low                          | Middle       | High  |
| U-NII-2C | 802.11a         | 10.13                        | 10.32        | 10.14 |
|          | 802.11n(HT20)   | 10.04                        | 10.23        | 10.14 |
|          | 802.11n(HT40)   | 10.11                        | <b>10.34</b> | 10.28 |
|          | 802.11ac(VHT20) | 10.09                        | 10.10        | 10.13 |
|          | 802.11ac(VHT40) | 10.08                        | 10.30        | 10.27 |
|          | 802.11ac(VHT80) | 10.29                        | 10.33        | /     |

| Band    | Operation mode  | Conducted Output Power (dBm) |              |       |
|---------|-----------------|------------------------------|--------------|-------|
|         |                 | Low                          | Middle       | High  |
| U-NII-3 | 802.11a         | 10.22                        | <b>10.39</b> | 10.31 |
|         | 802.11n(HT20)   | 10.07                        | 10.26        | 10.06 |
|         | 802.11n(HT40)   | 10.21                        | /            | 10.22 |
|         | 802.11ac(VHT20) | 10.10                        | 10.24        | 10.21 |
|         | 802.11ac(VHT40) | 10.20                        | /            | 10.14 |
|         | 802.11ac(VHT80) |                              | /            | /     |

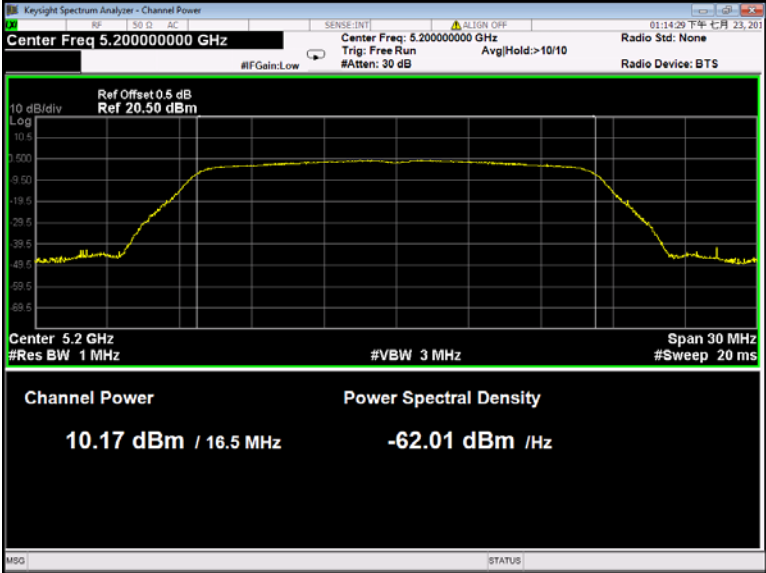
\* All transmit signals are completely uncorrelated with each other, Directional gain =  $G_{ANT}$  which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

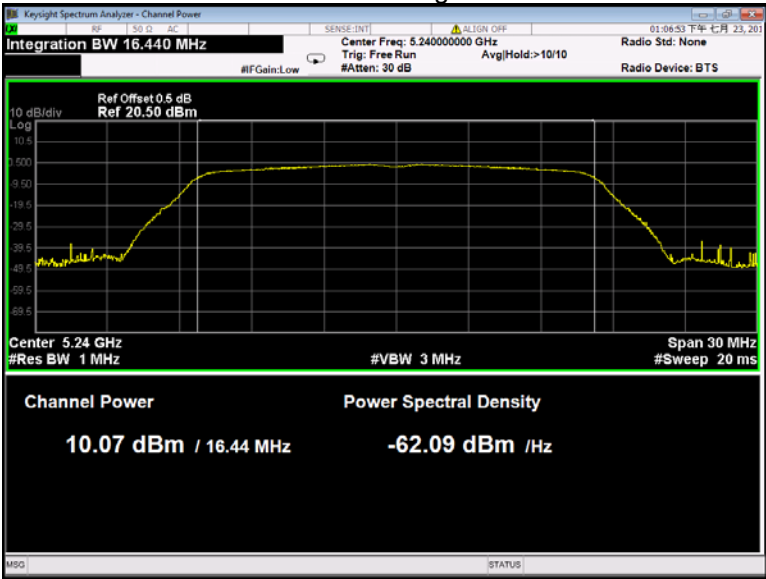
802.11a U-NII-1 Low channel



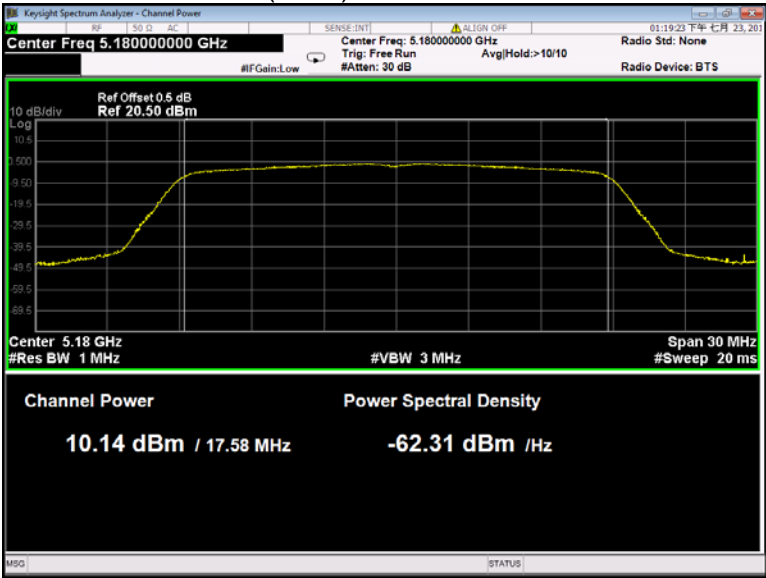
802.11a U-NII-1 Middle channel



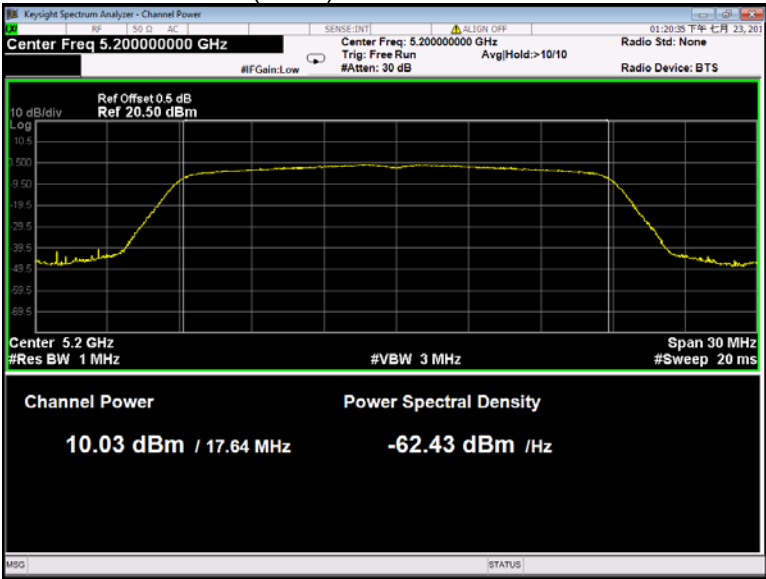
802.11a U-NII-1 High channel



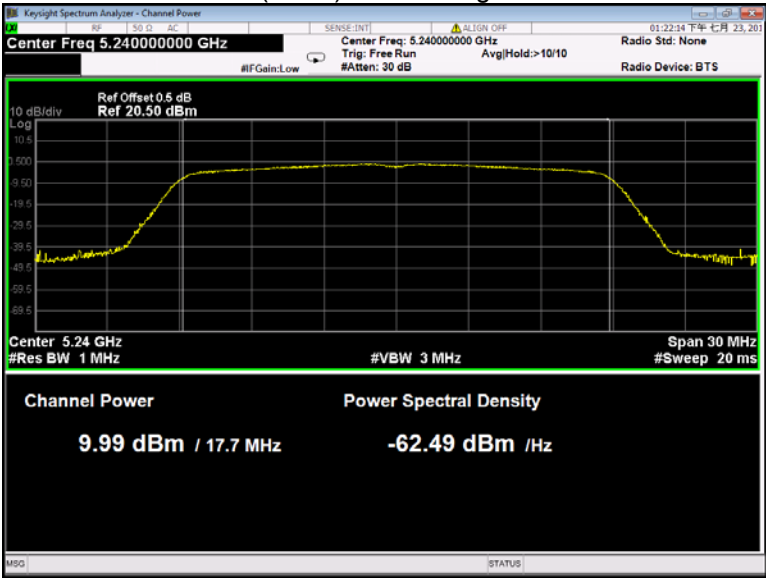
802.11n(HT20) U-NII-1 Low channel



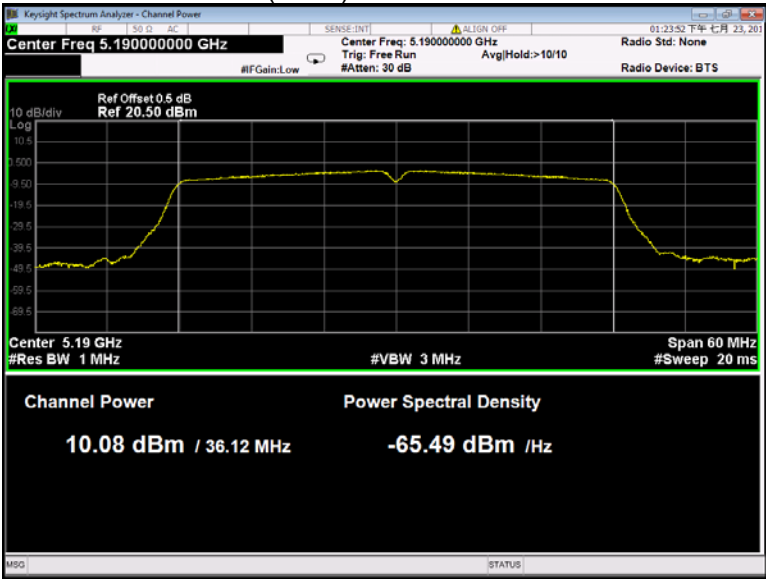
802.11n(HT20) U-NII-1 Middle channel



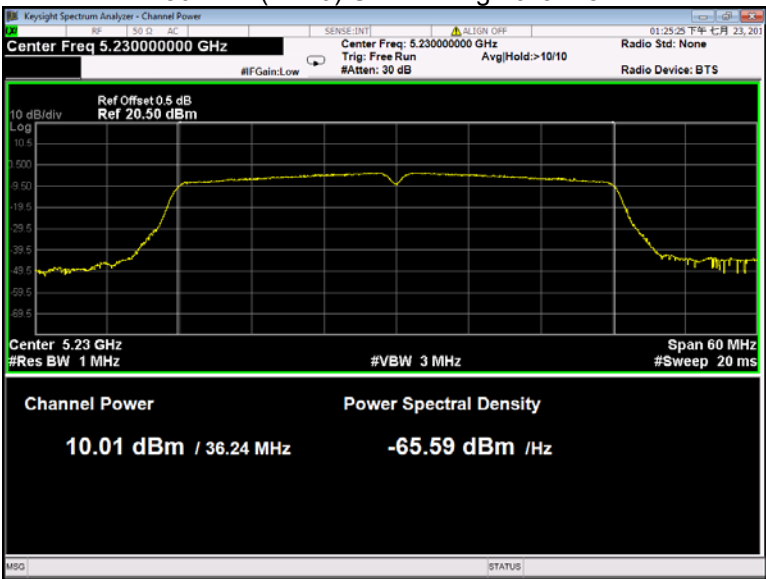
802.11n(HT20) U-NII-1 High channel



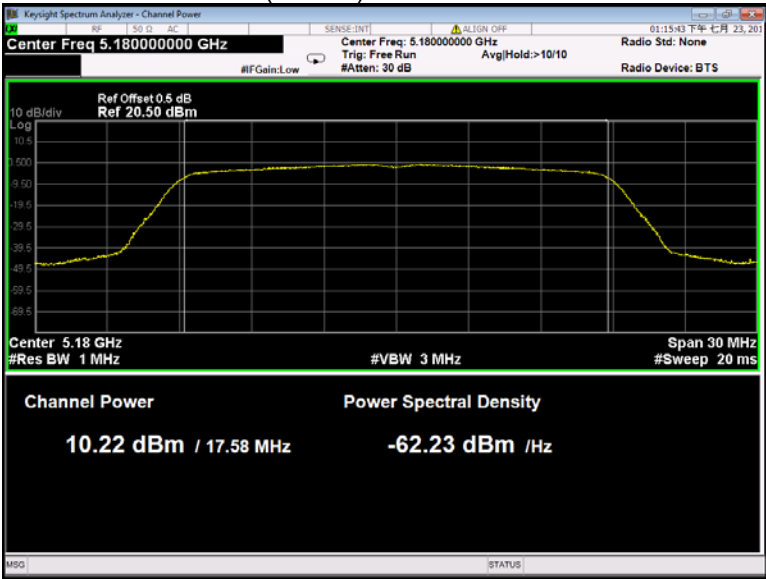
802.11n(HT40) U-NII-1 Low channel



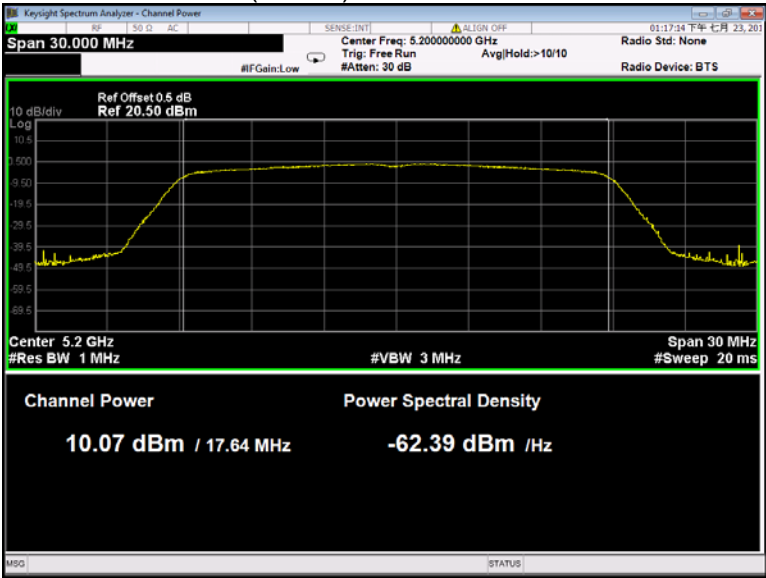
802.11n(HT40) U-NII-1 High channel



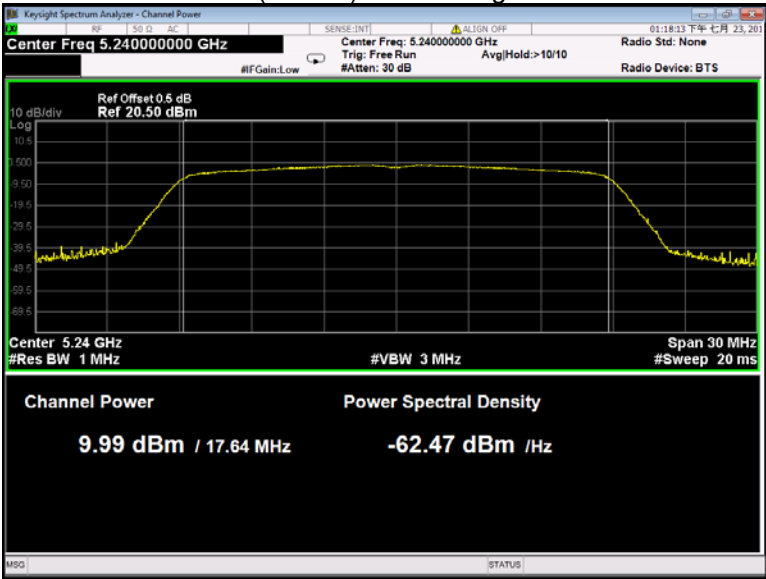
802.11ac(VHT20) U-NII-1 Low channel



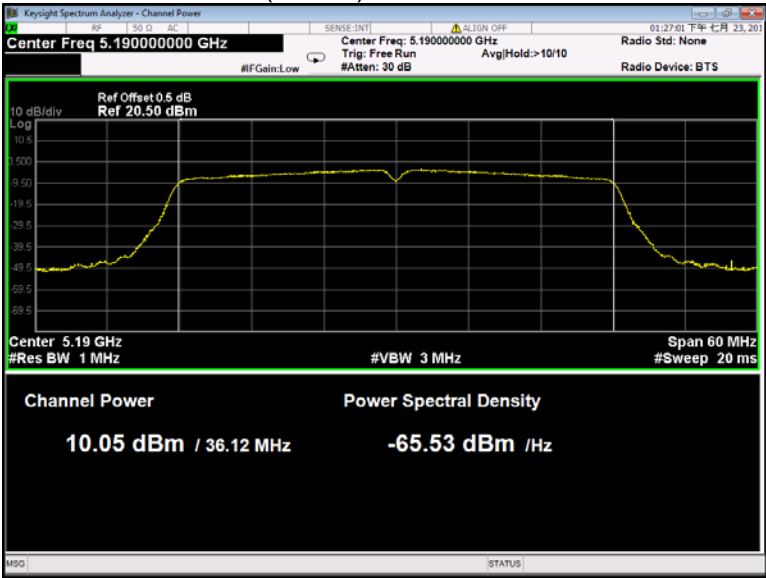
802.11ac(VHT20) U-NII-1 Middle channel



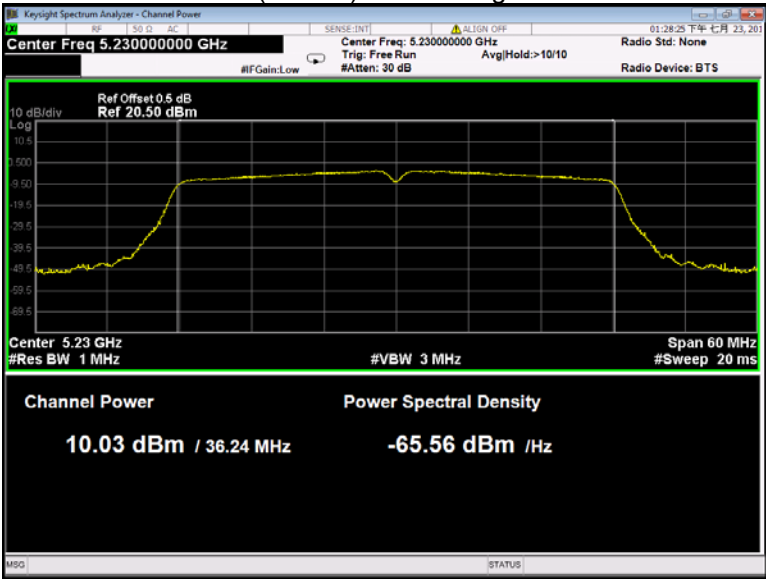
802.11ac(VHT20) U-NII-1 High channel



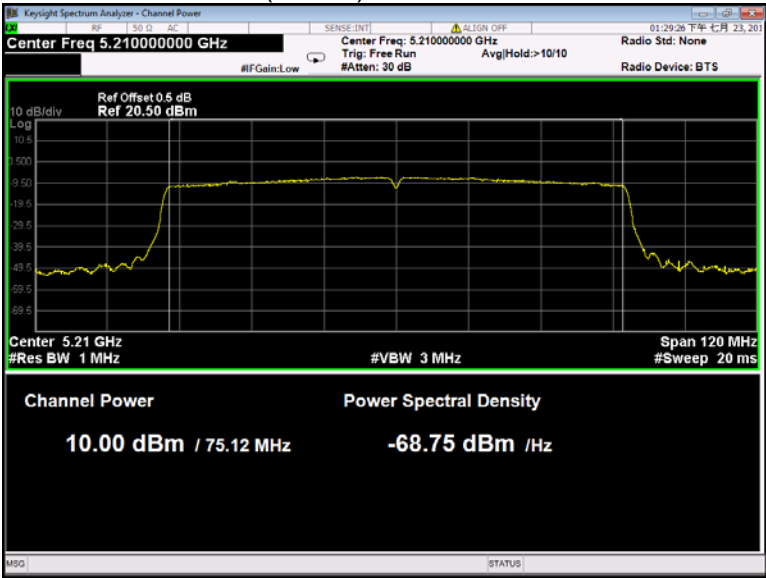
802.11ac(VHT40) U-NII-1 Low channel



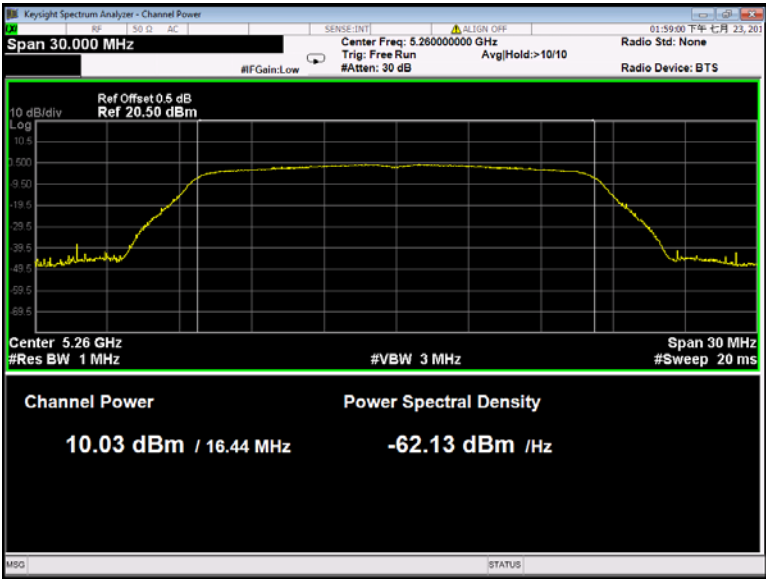
802.11ac(VHT40) U-NII-1 High channel



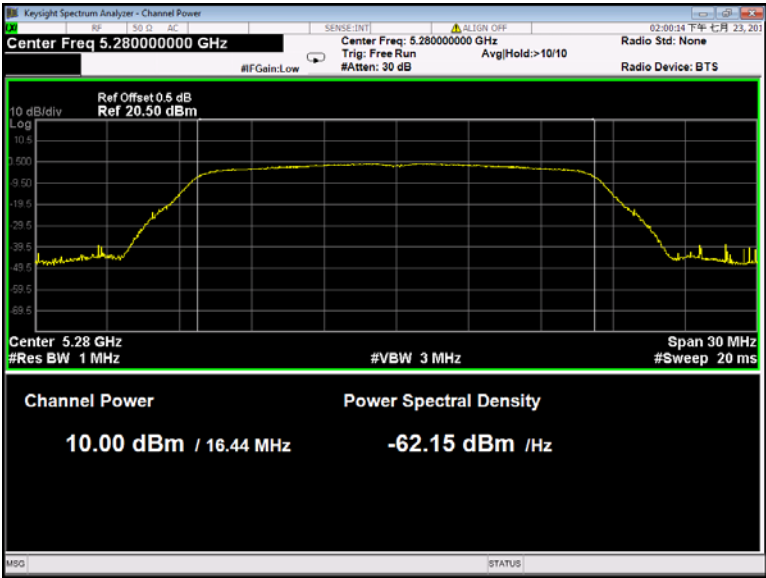
802.11ac(VHT80) U-NII-1 Low channel



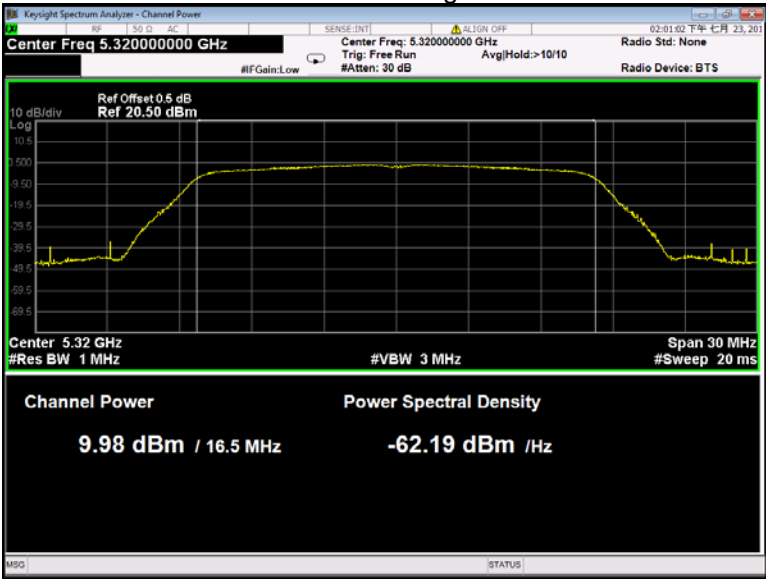
802.11a U-NII-2A Low channel



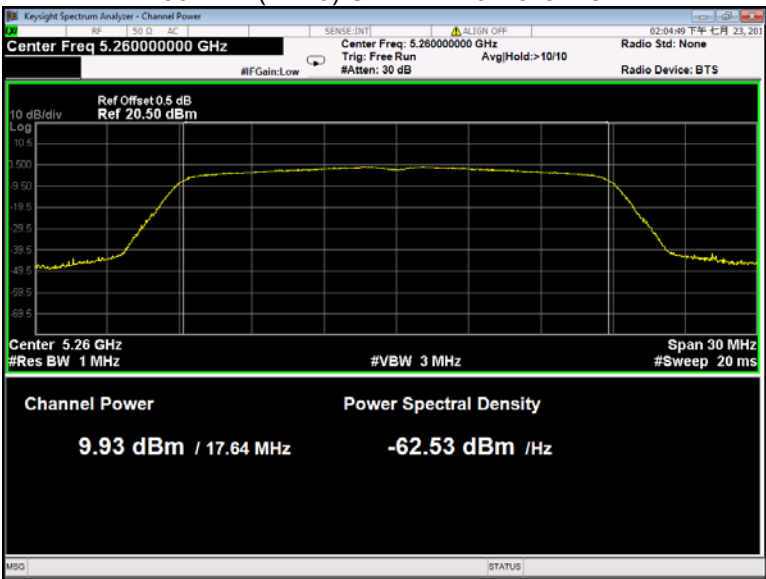
802.11a U-NII-2A Middle channel



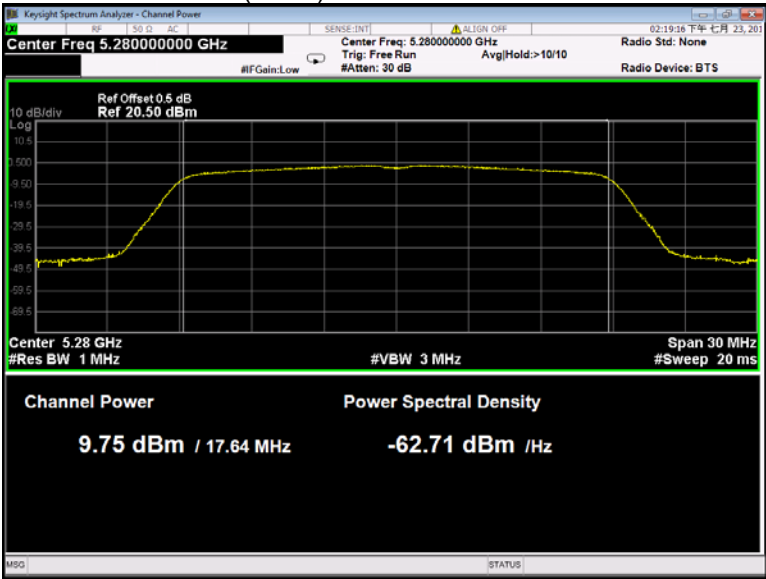
802.11a U-NII-2A High channel



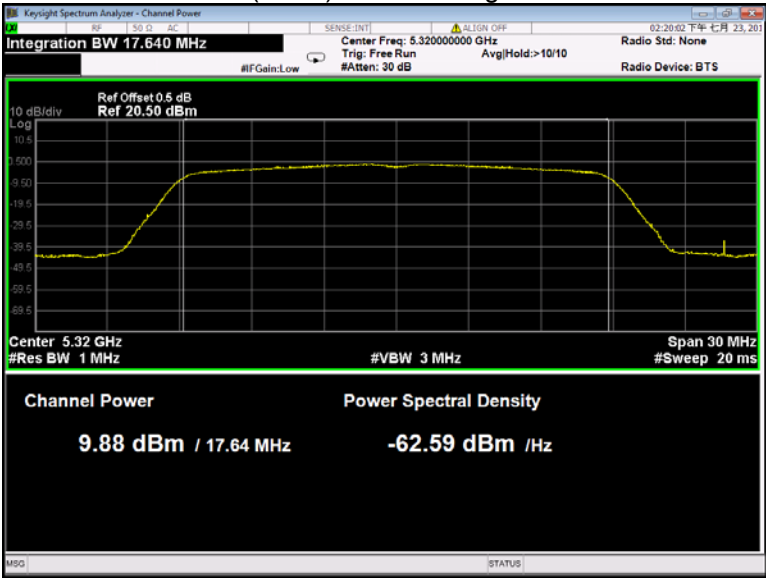
802.11n(HT20) U-NII-2A Low channel



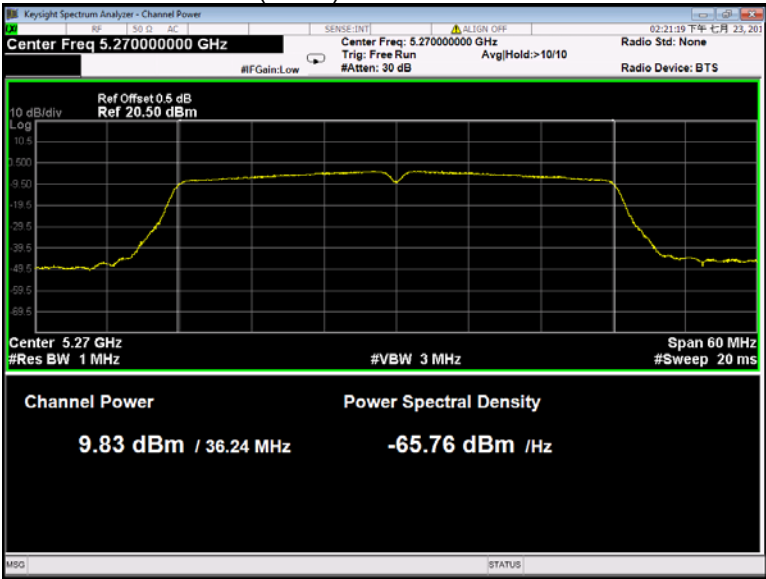
802.11n(HT20) U-NII-2A Middle channel



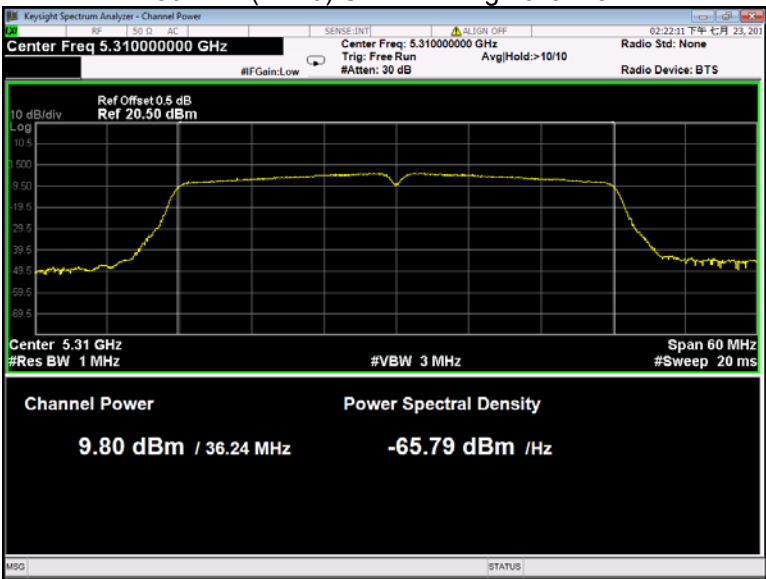
802.11n(HT20) U-NII-2A High channel



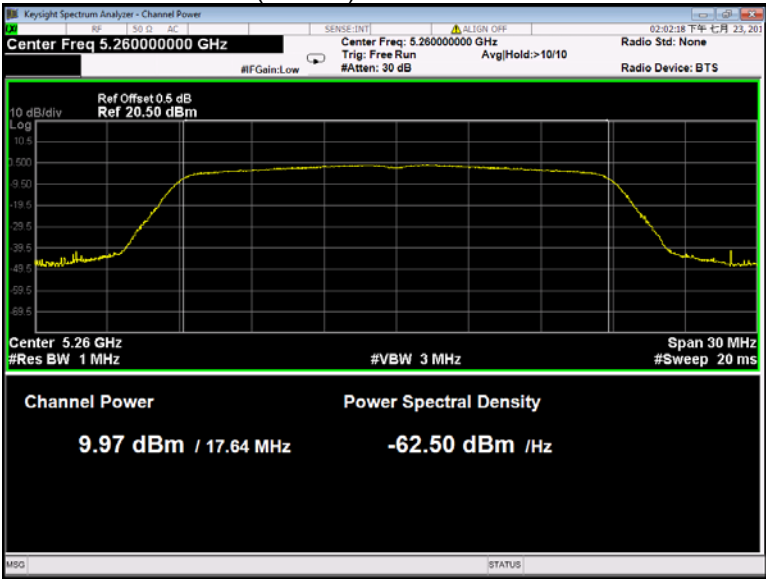
802.11n(HT40) U-NII-2A Low channel



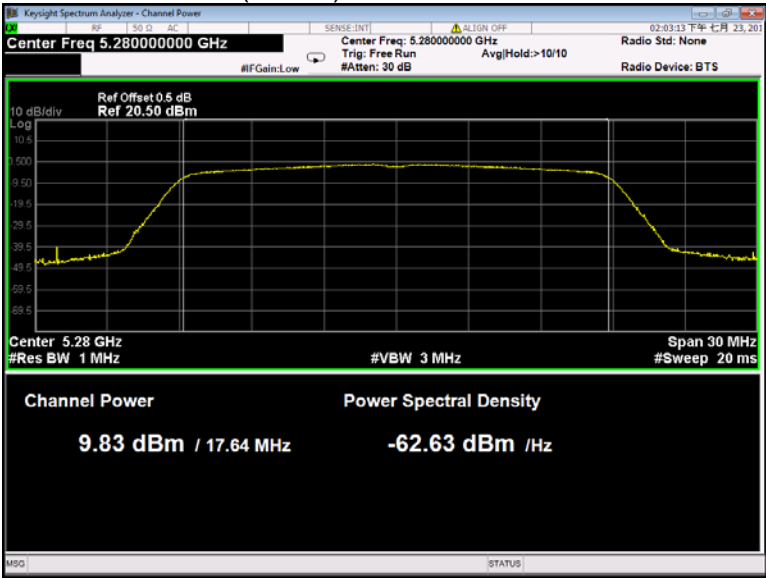
802.11n(HT40) U-NII-2A High channel



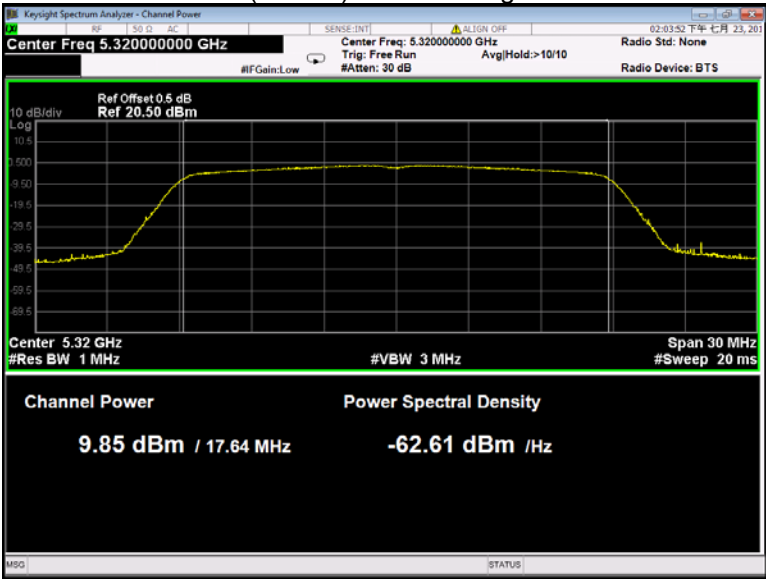
802.11ac(VHT20) U-NII-2A Low channel



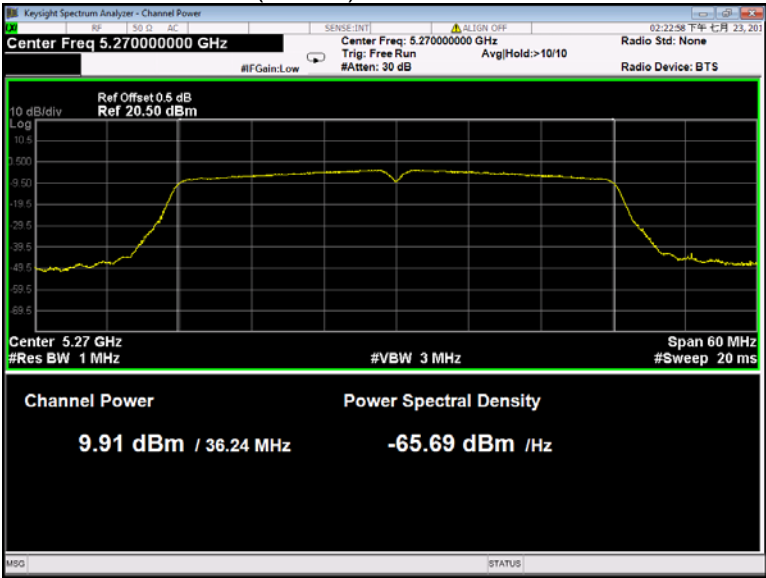
802.11ac(VHT20) U-NII-2A Middle channel



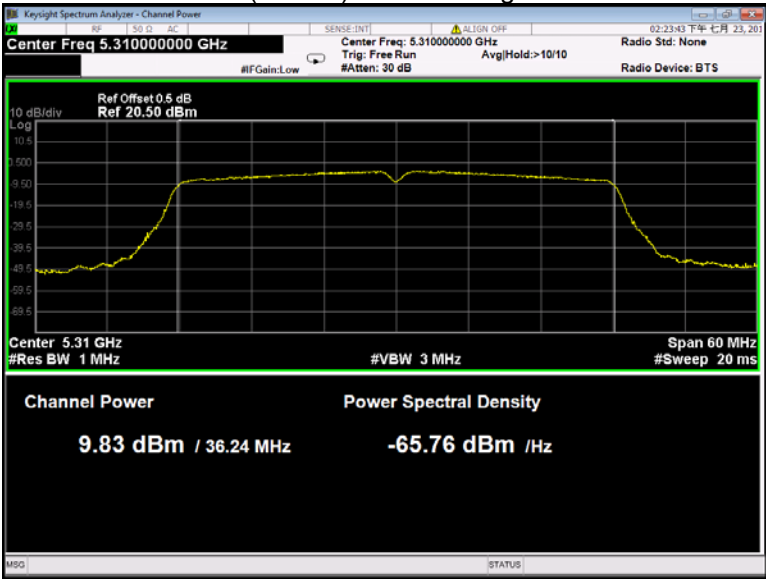
802.11ac(VHT20) U-NII-2A High channel



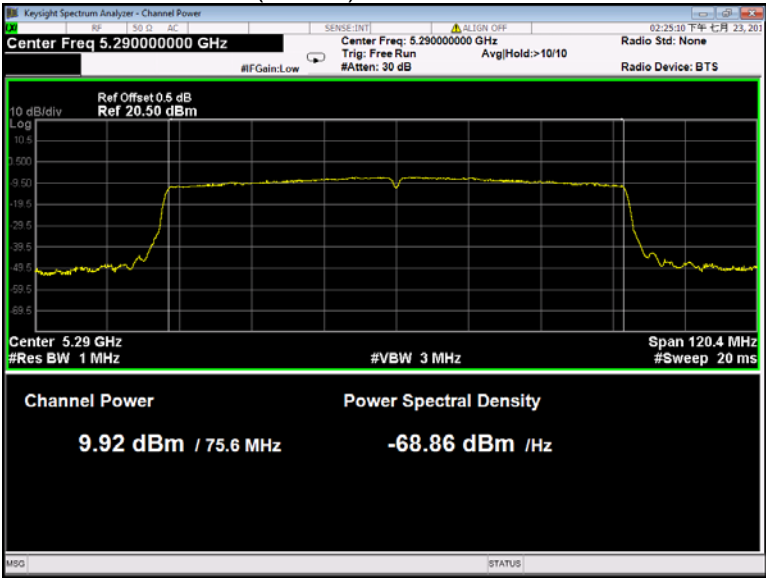
802.11ac(VHT40) U-NII-2A Low channel



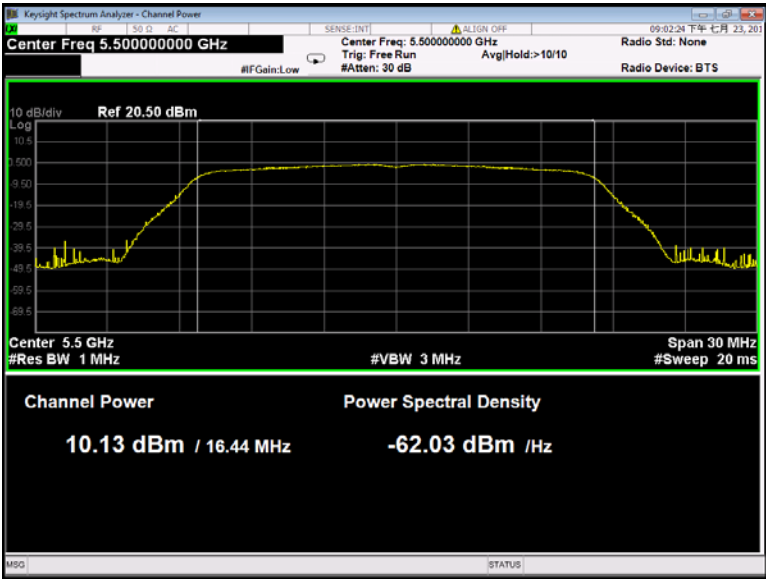
802.11ac(VHT40) U-NII-2A High channel



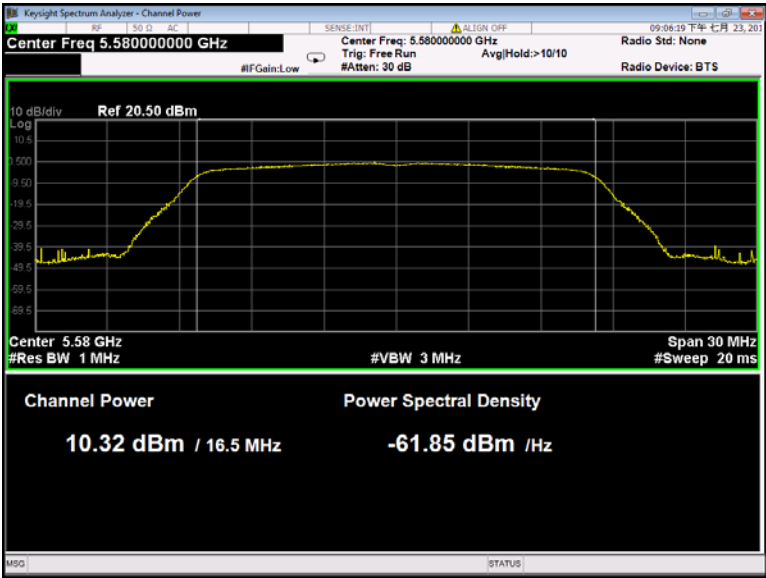
802.11ac(VHT80) U-NII-2A Low channel



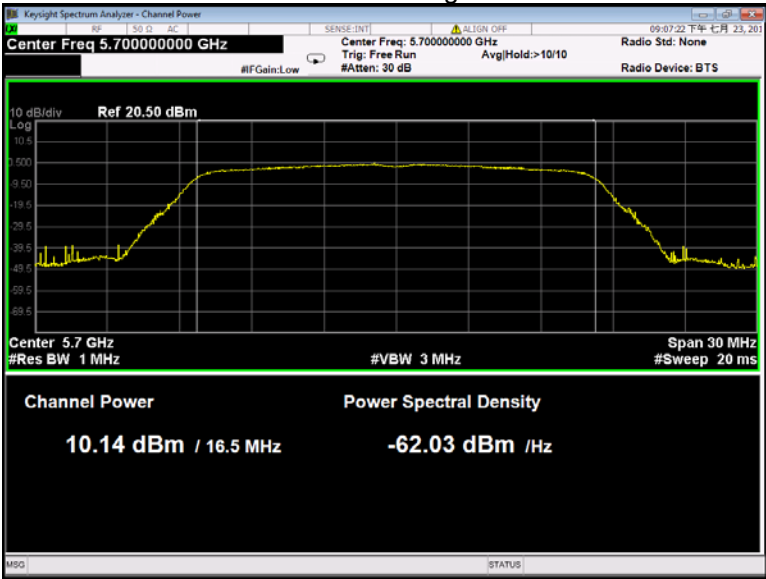
802.11a U-NII-2C Low channel



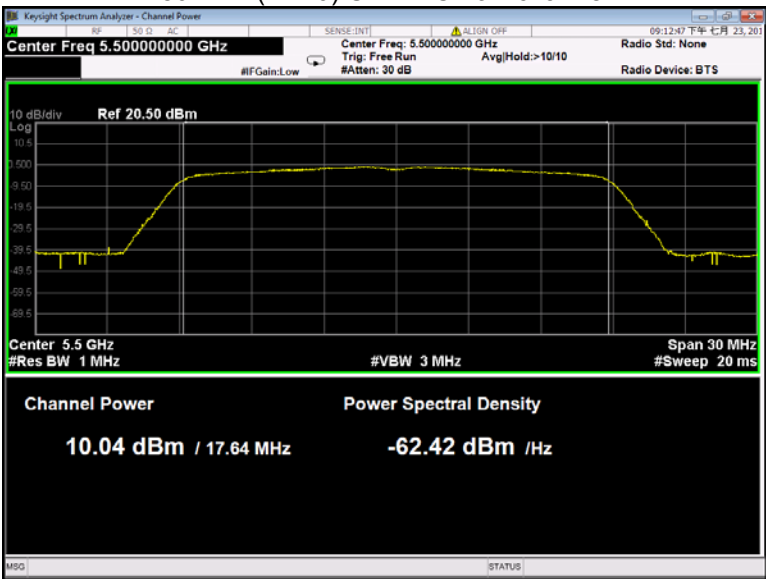
802.11a U-NII-2C Middle channel



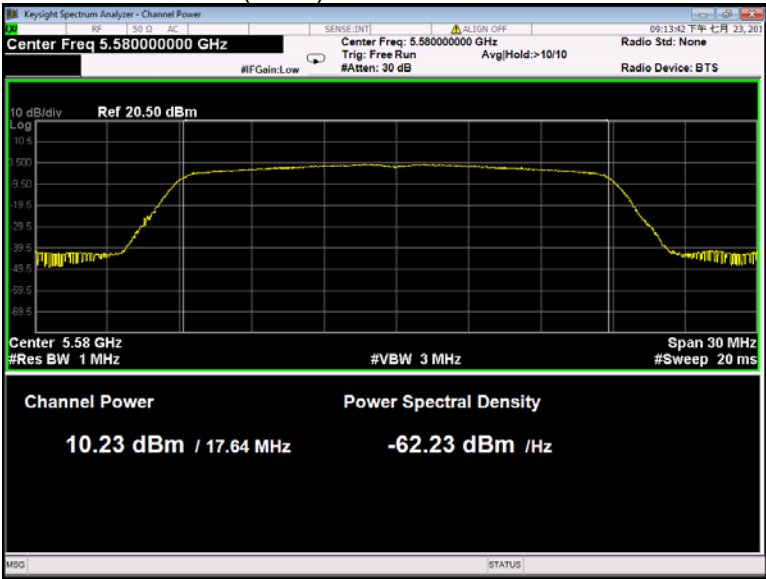
802.11a U-NII-2C High channel



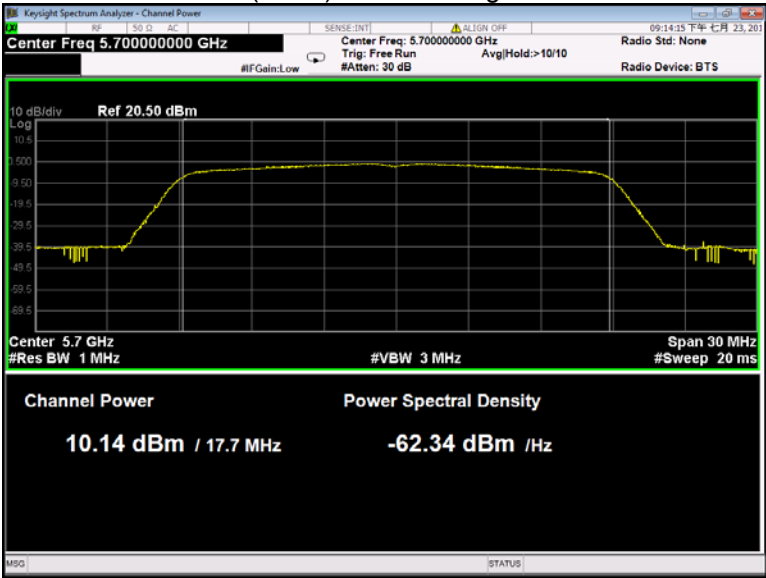
802.11n(HT20) U-NII-2C Low channel



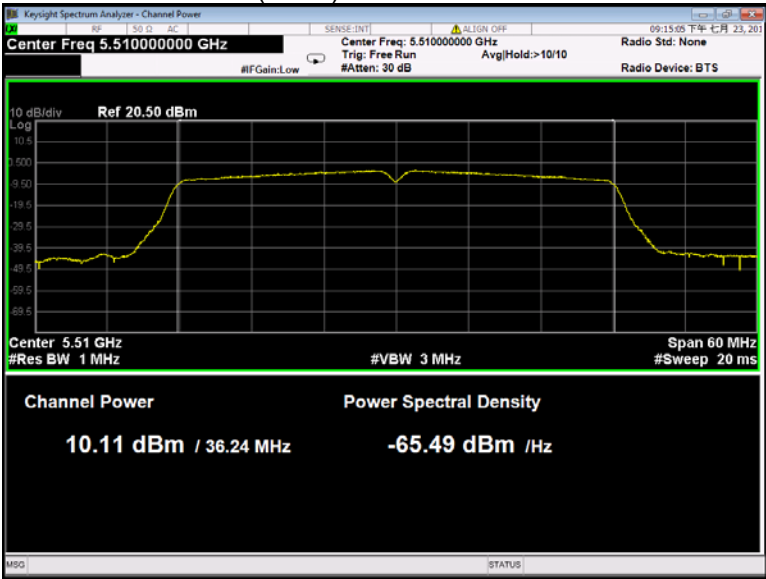
802.11n(HT20) U-NII-2C Middle channel



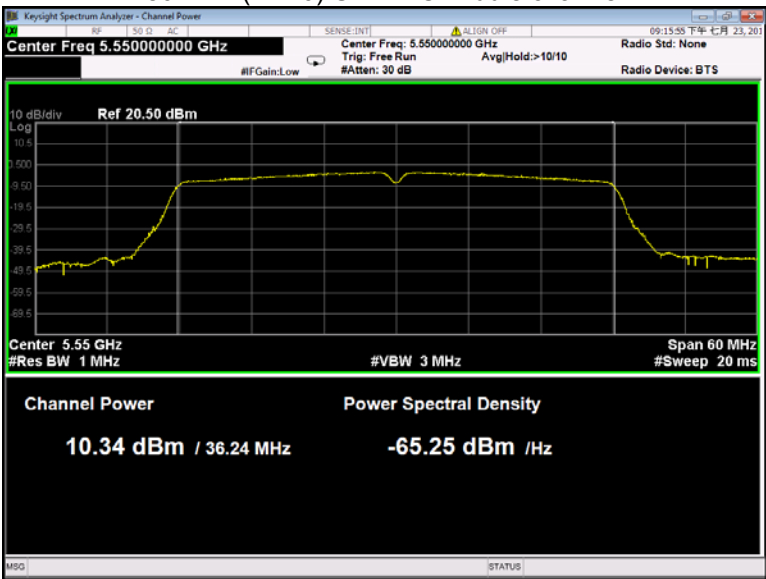
802.11n(HT20) U-NII-2C High channel

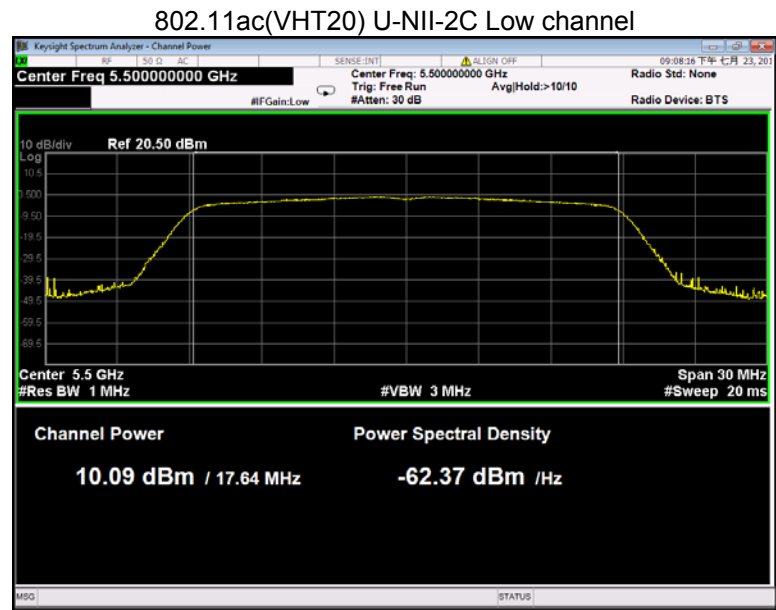
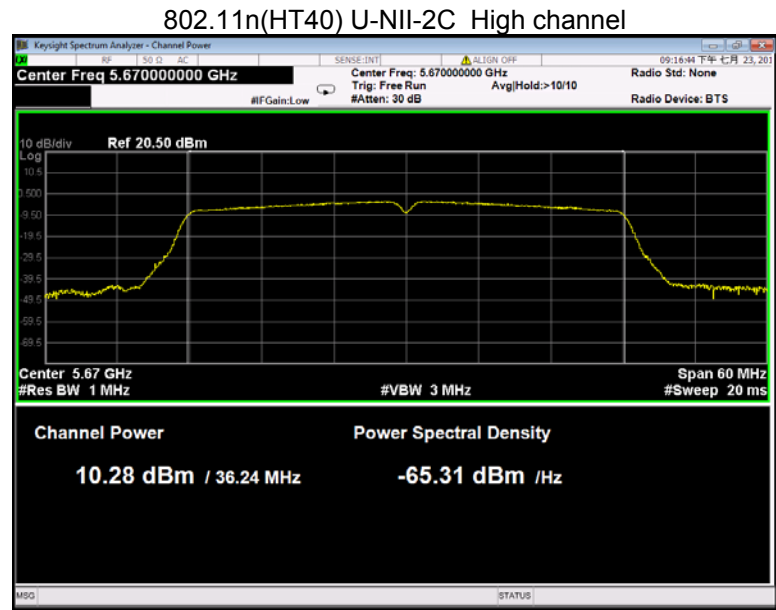


802.11n(HT40) U-NII-2C Low channel

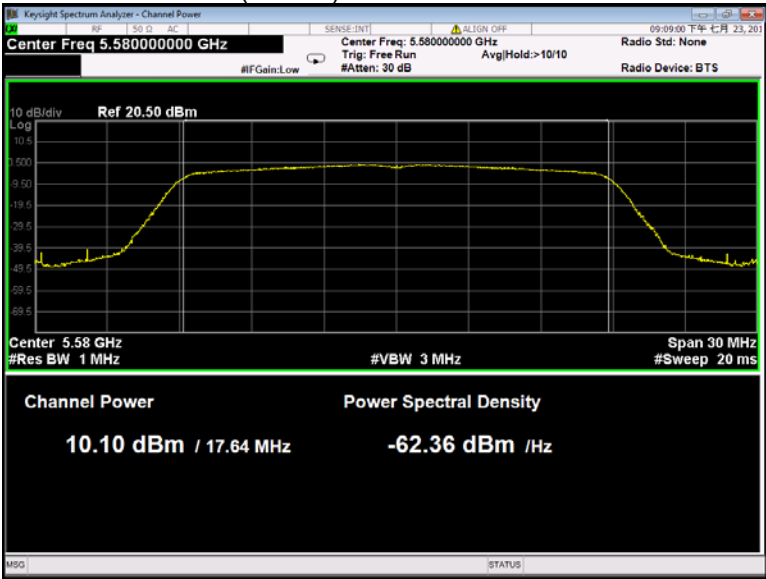


802.11n(HT40) U-NII-2C Middle channel

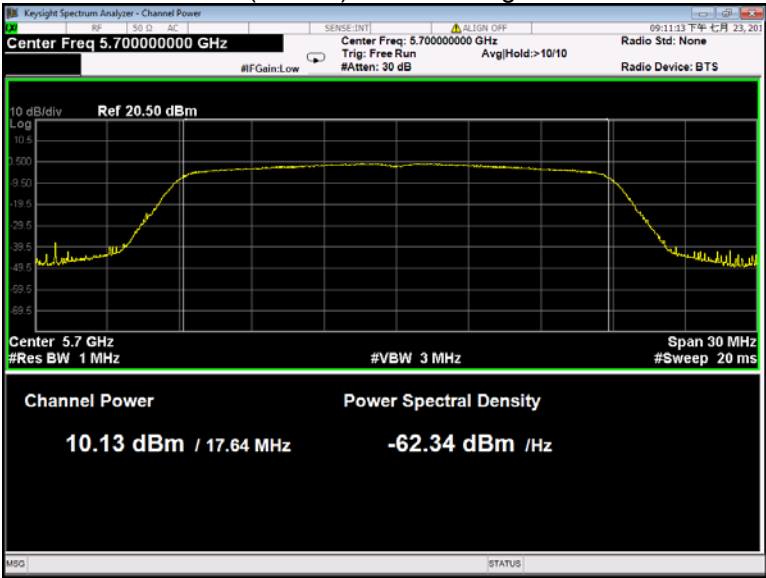




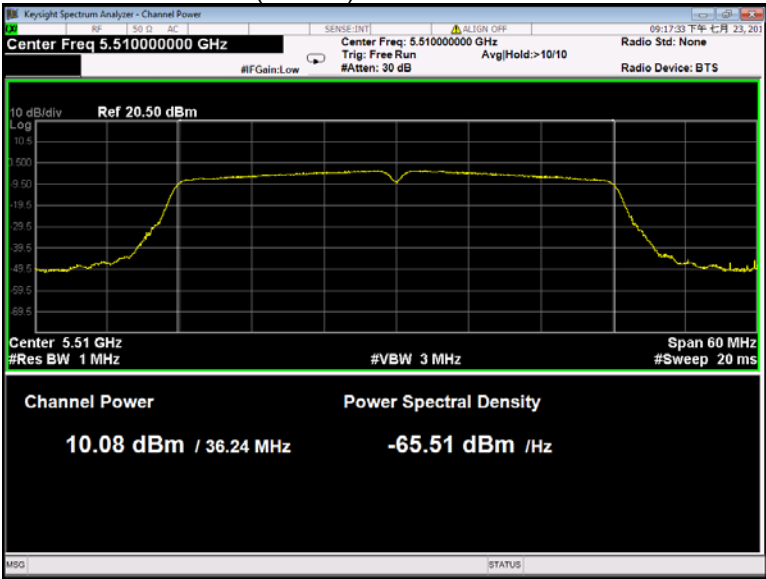
802.11ac(VHT20) U-NII-2C Middle channel



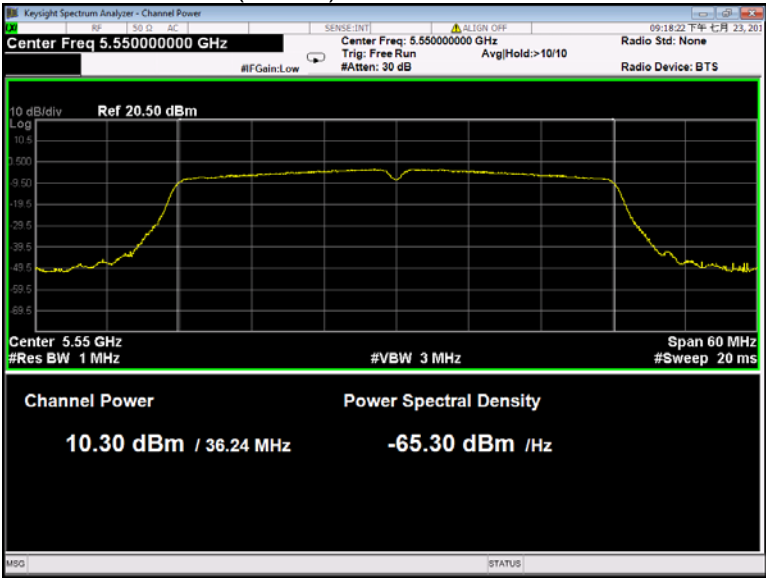
802.11ac(VHT20) U-NII-2C High channel



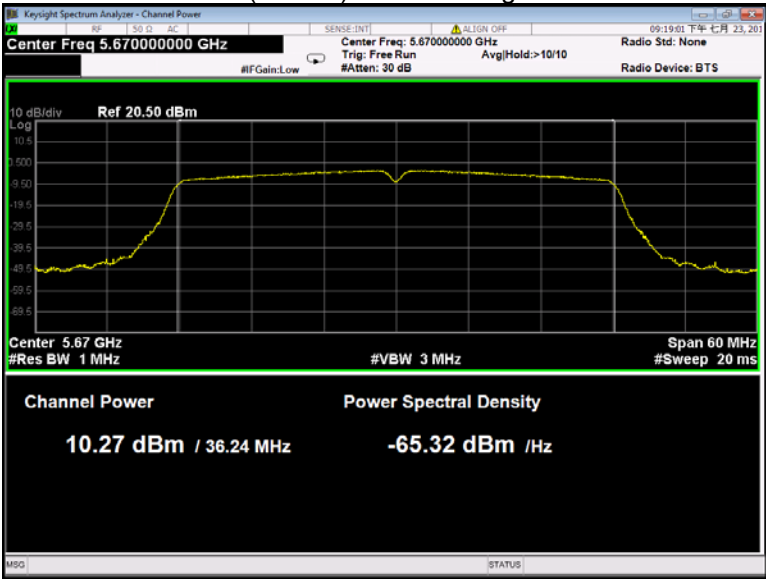
802.11ac(VHT40) U-NII-2C Low channel



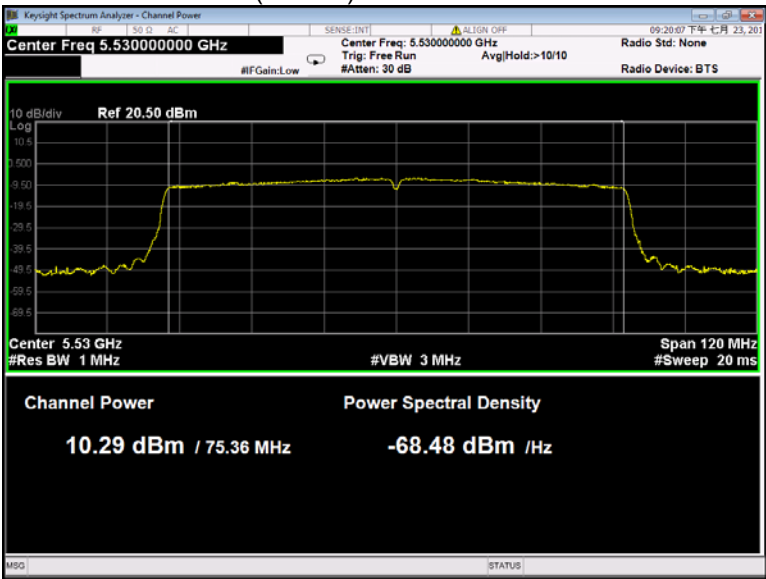
802.11ac(VHT40) U-NII-2C Middle channel



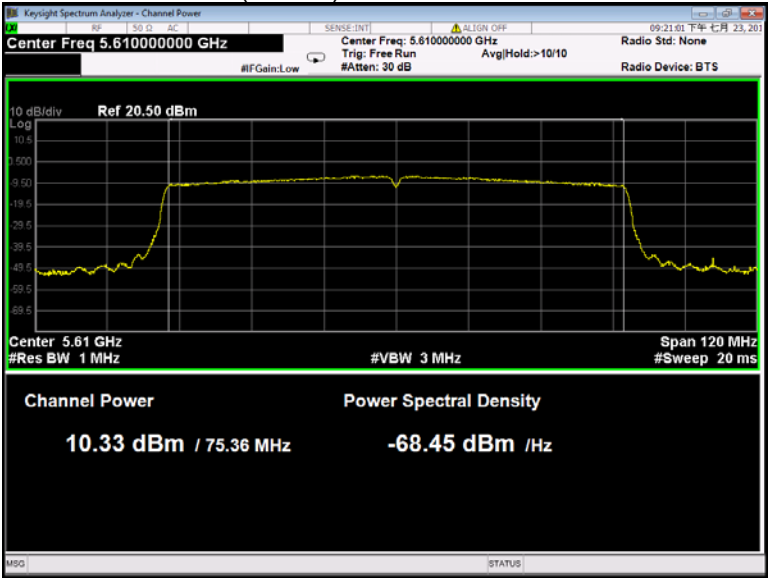
802.11ac(VHT40) U-NII-2C High channel



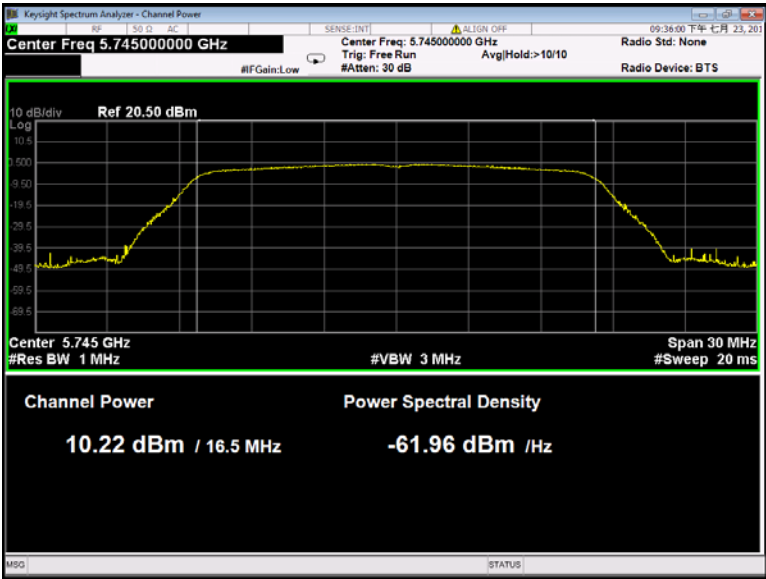
802.11ac(VHT80) U-NII-2C Low channel



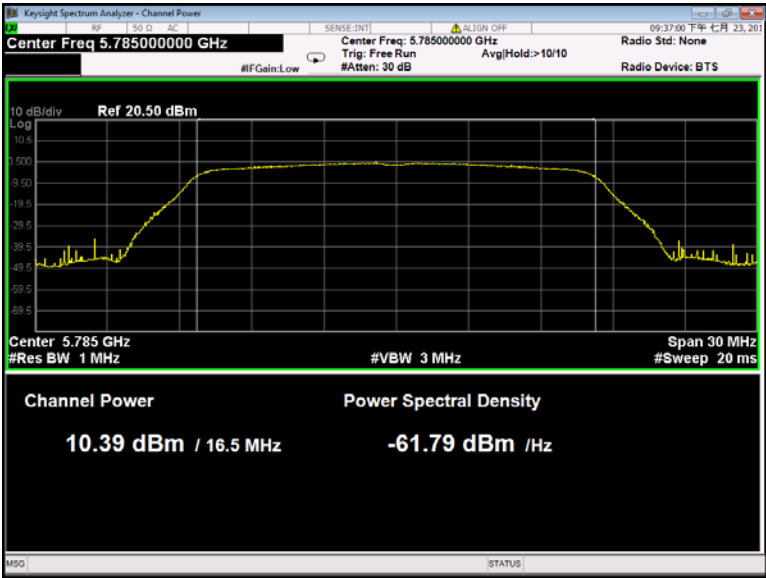
802.11ac(VHT80) U-NII-2C Middle channel



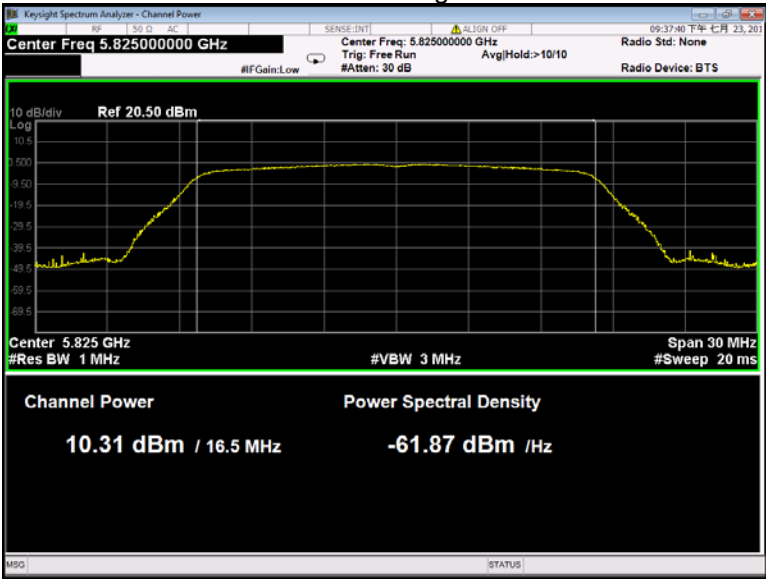
802.11a U-NII-3 Low channel



802.11a U-NII-3 Middle channel



802.11a U-NII-3 High channel



802.11n(HT20) U-NII-3 Low channel

