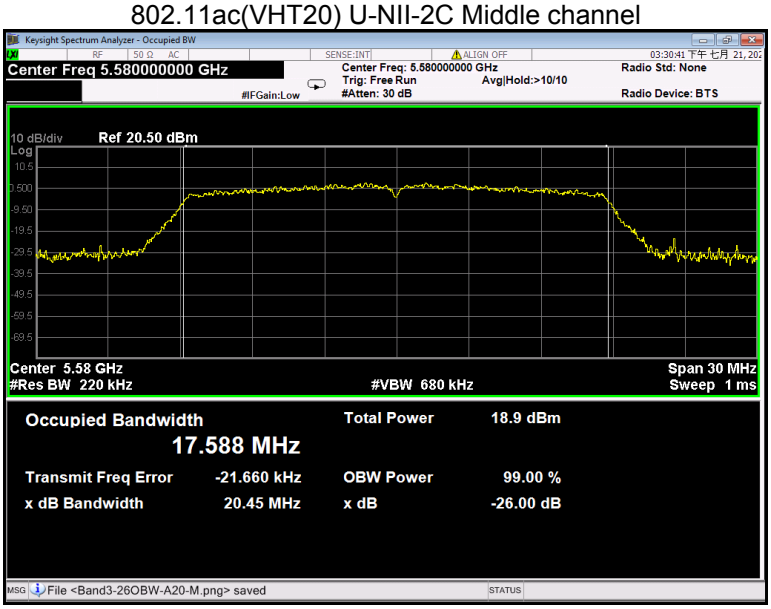
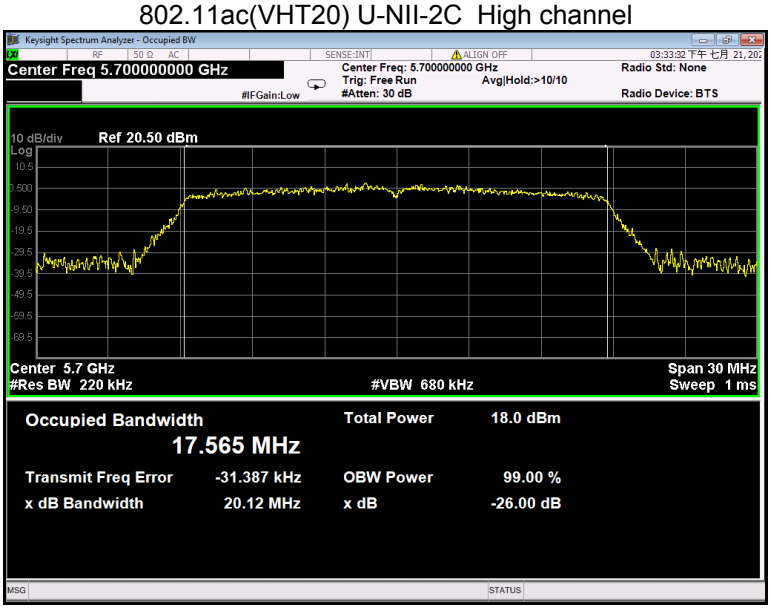
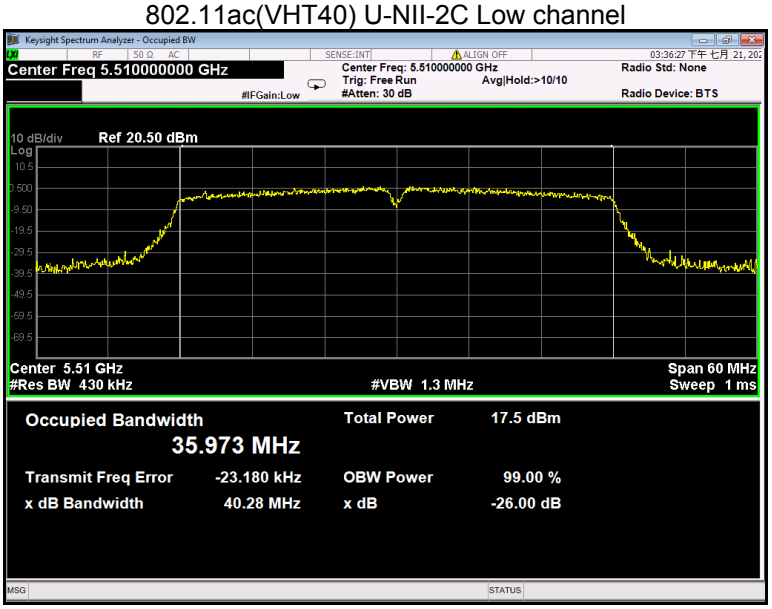
802.11ac(VHT20) U-NII-2C Middle channel



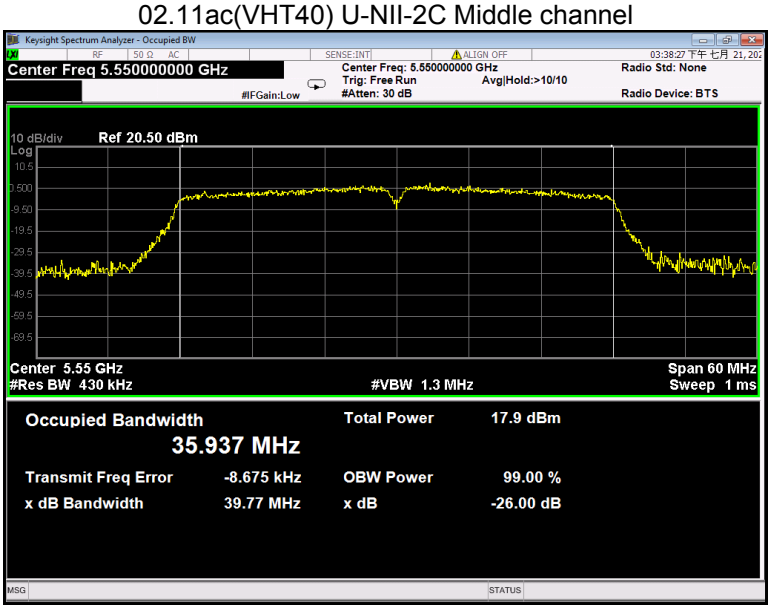
802.11ac(VHT20) U-NII-2C High channel



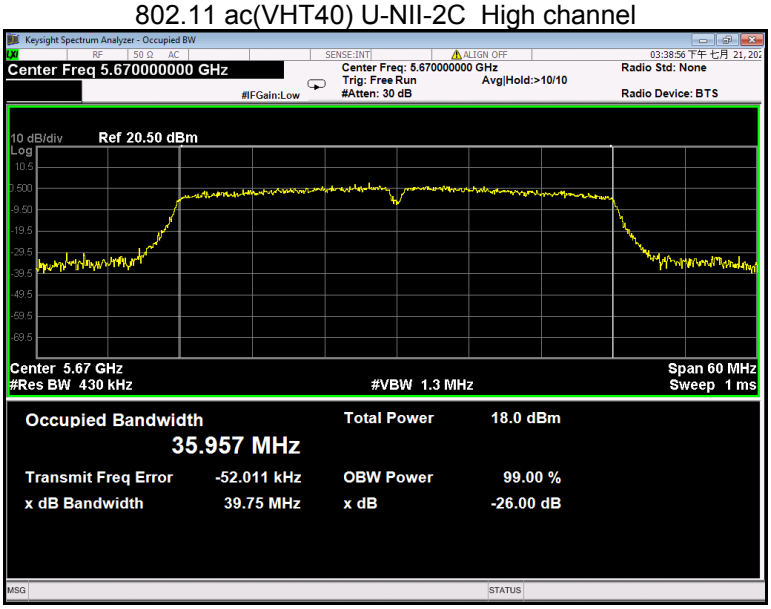
802.11ac(VHT40) U-NII-2C Low channel



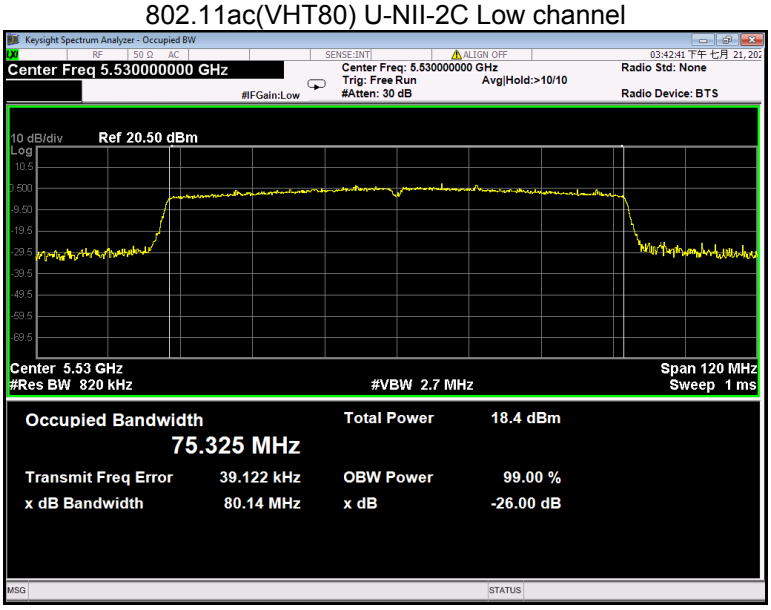
02.11ac(VHT40) U-NII-2C Middle channel



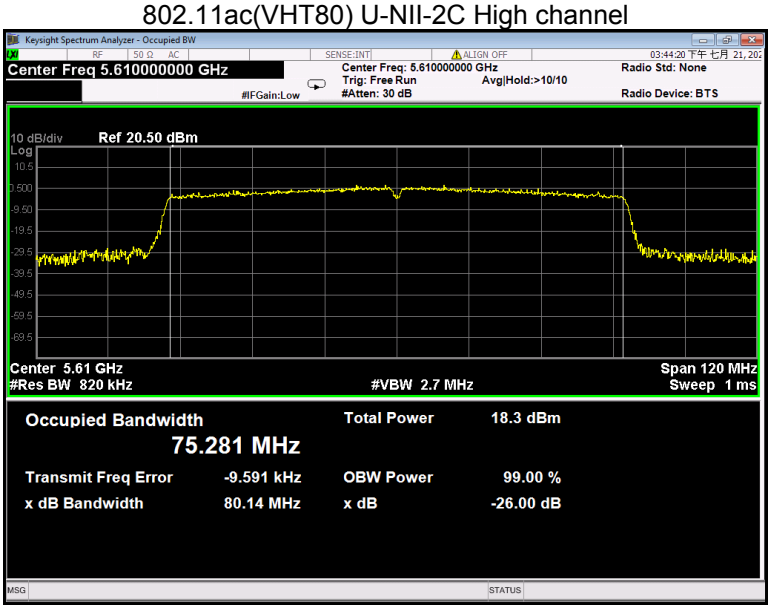
802.11 ac(VHT40) U-NII-2C High channel



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

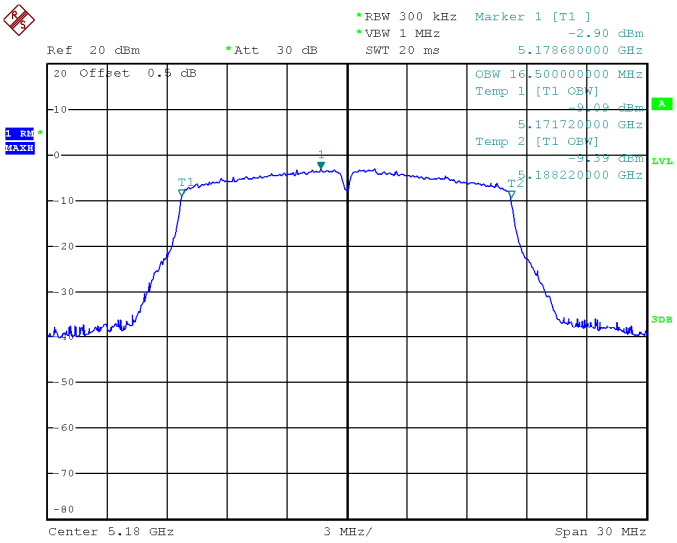


802.11ac(VHT80) U-NII-2C High channel



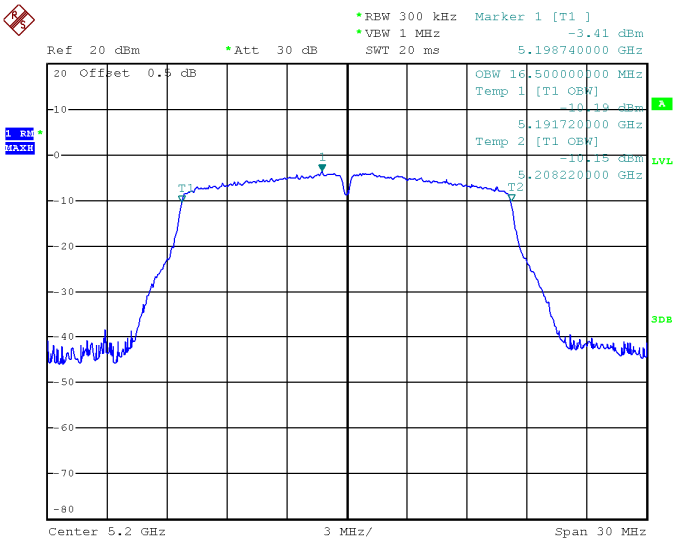
99% Occupied Bandwidth

802.11a U-NII-1 Low channel



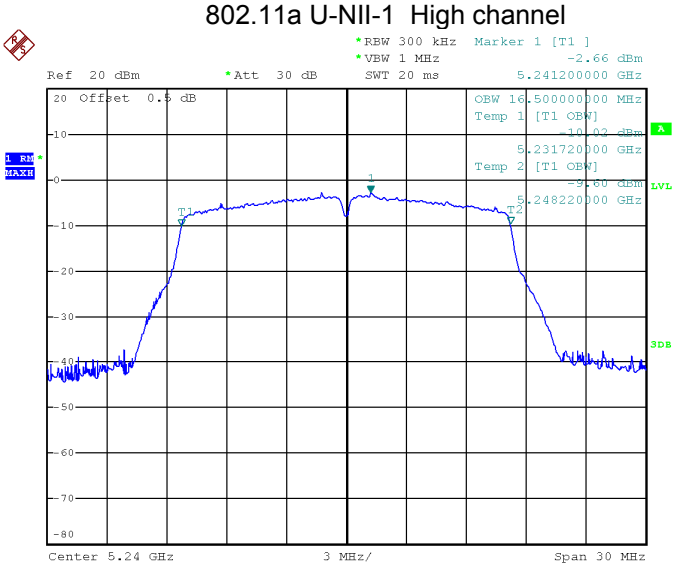
Date: 30.JUN.2025 09:59:29

802.11a U-NII-1 Middle channel



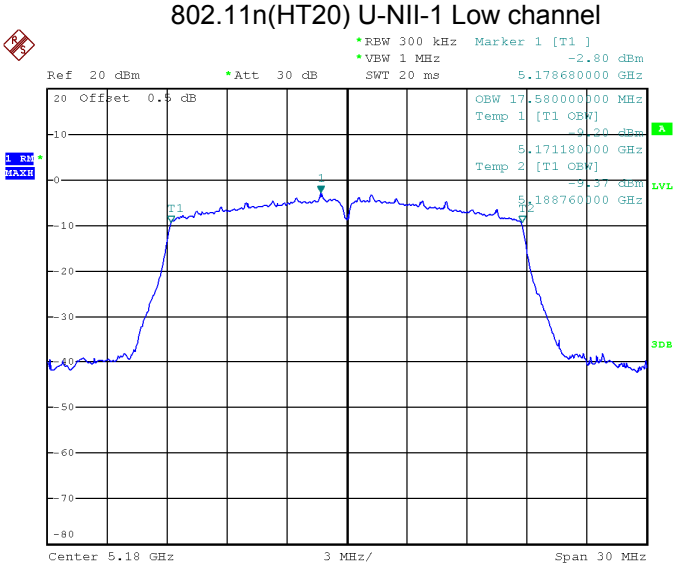
Date: 30.JUN.2025 10:01:00

802.11a U-NII-1 High channel



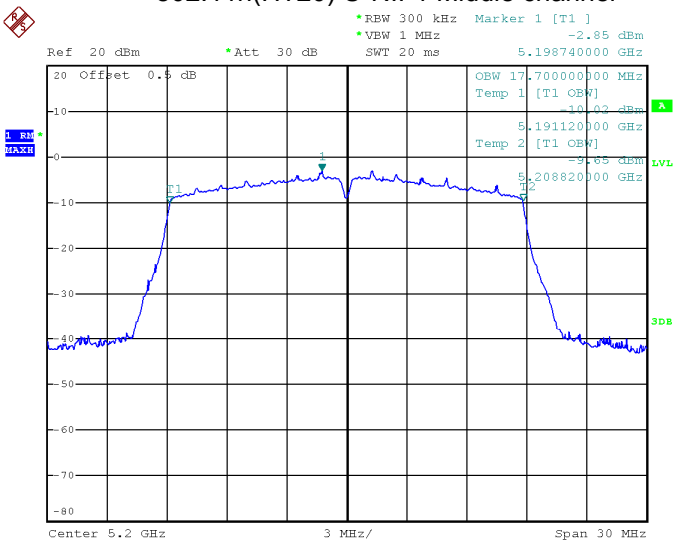
Date: 30.JUN.2025 10:02:06

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



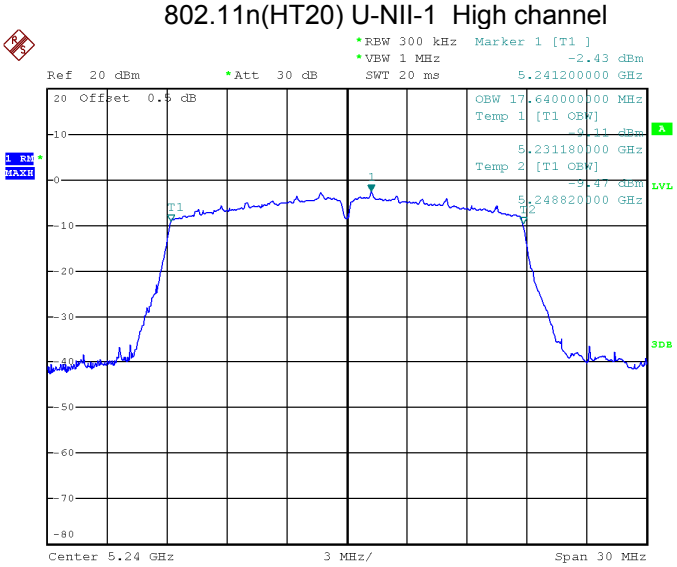
Date: 30.JUN.2025 10:05:18

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



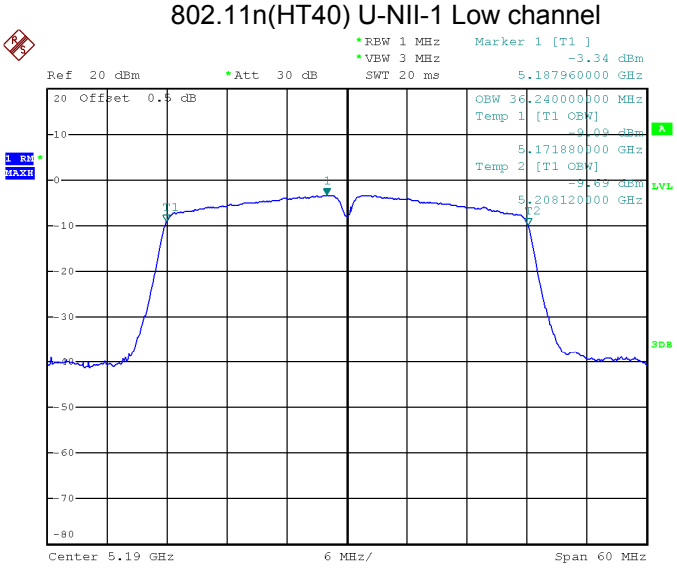
Date: 30.JUN.2025 10:06:39

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



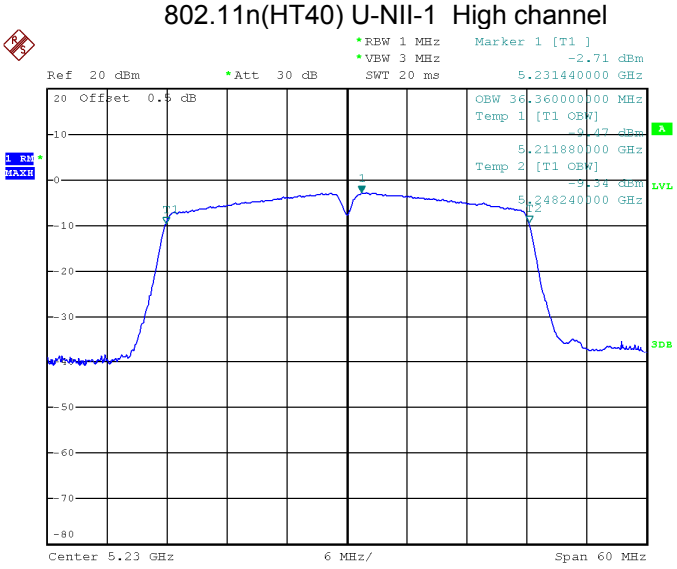
Date: 30.JUN.2025 10:07:54

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



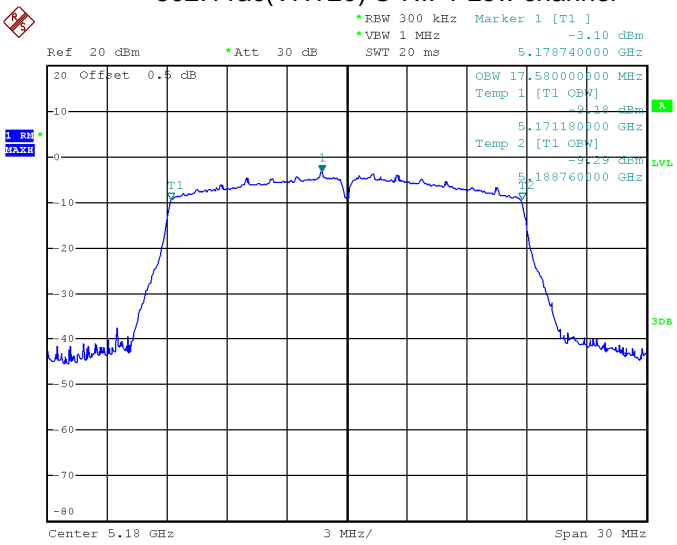
Date: 30.JUN.2025 10:33:00

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



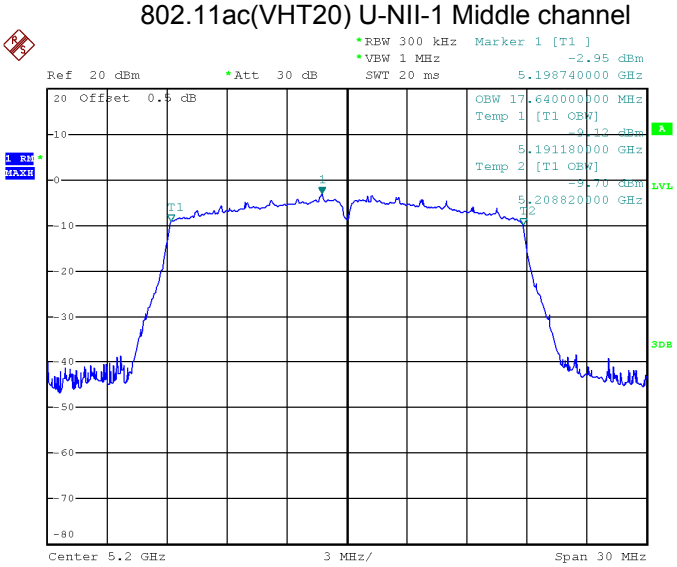
Date: 30.JUN.2025 10:33:50

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



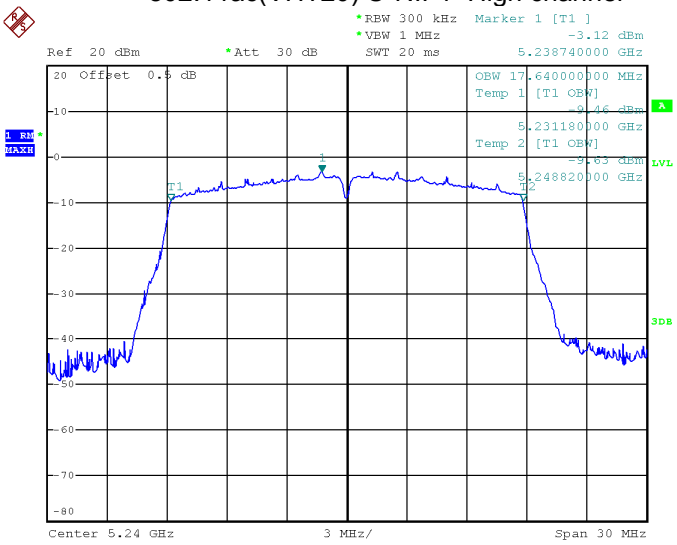
Date: 30.JUN.2025 10:10:49

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



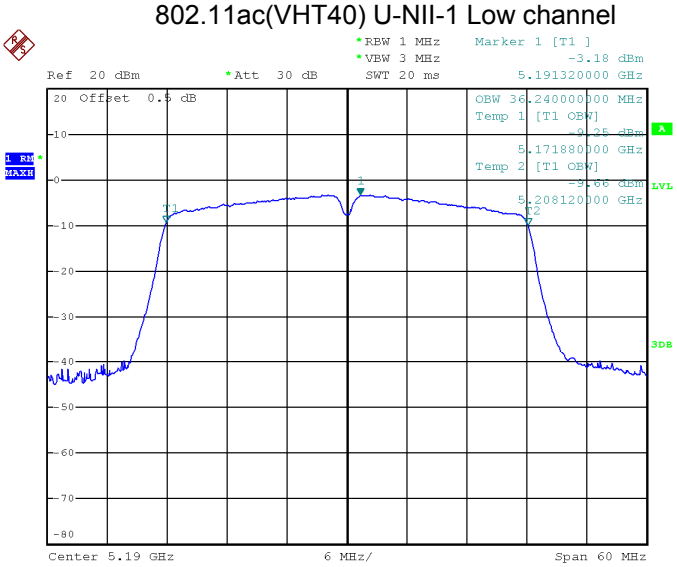
Date: 30.JUN.2025 10:11:45

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



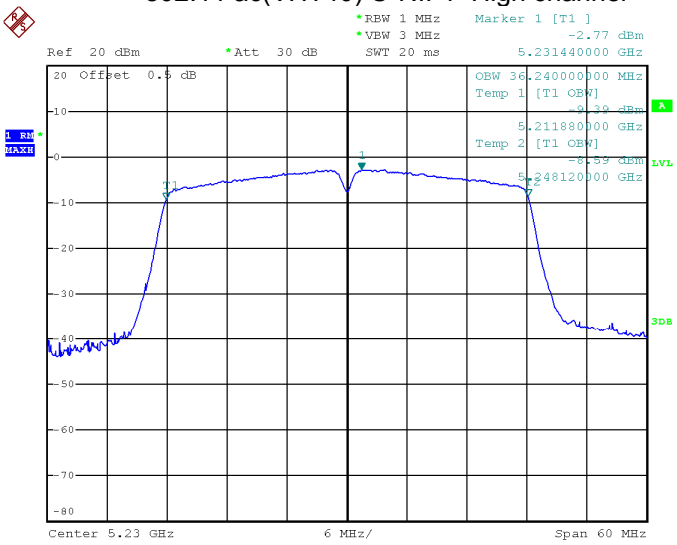
Date: 30.JUN.2025 10:12:56

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



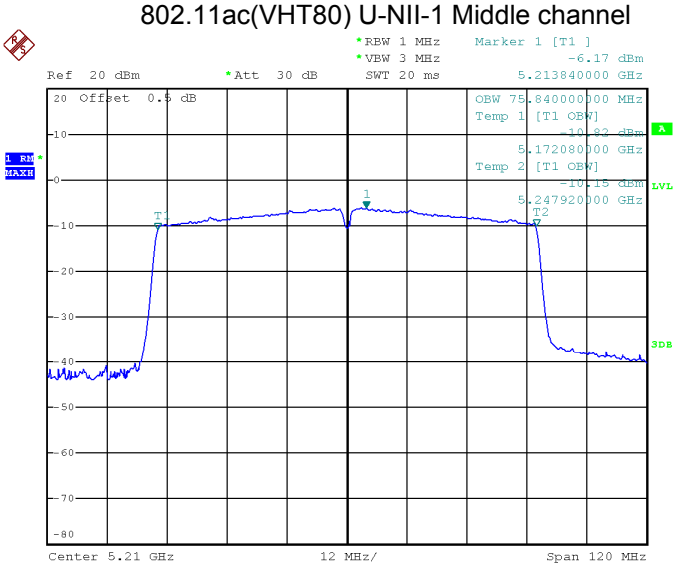
Date: 30.JUN.2025 10:29:03

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



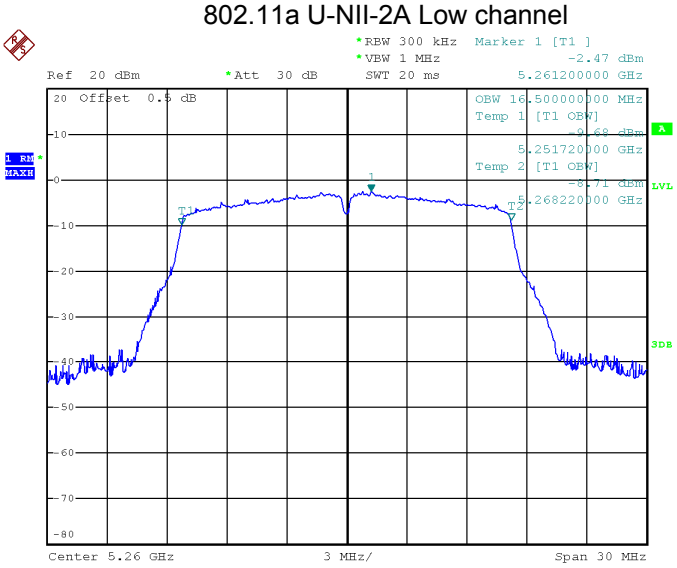
Date: 30.JUN.2025 10:30:16

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



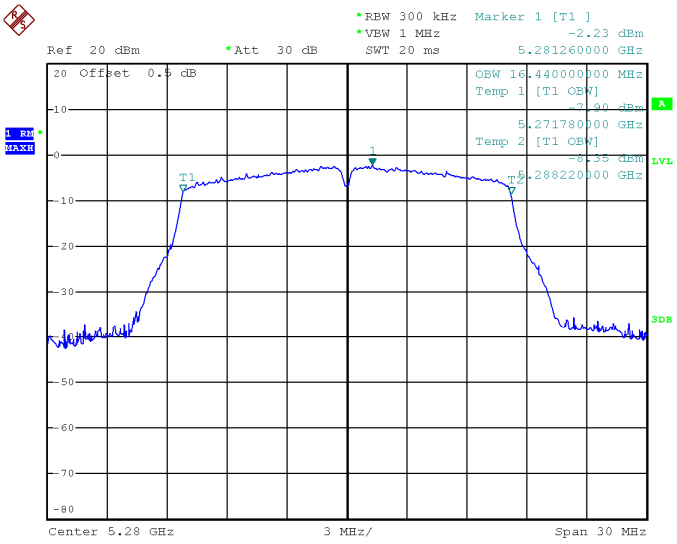
Date: 30.JUN.2025 10:37:22

802.11a U-NII-2A Low channel



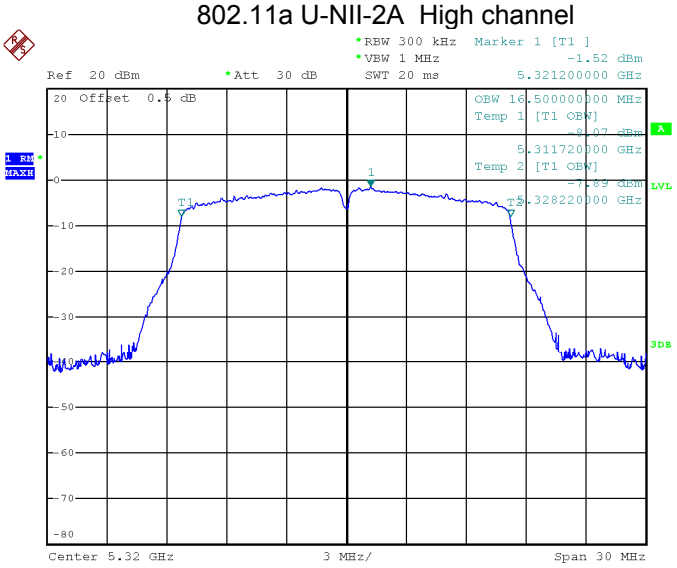
Date: 30.JUN.2025 13:15:07

802.11a U-NII-2A Middle channel



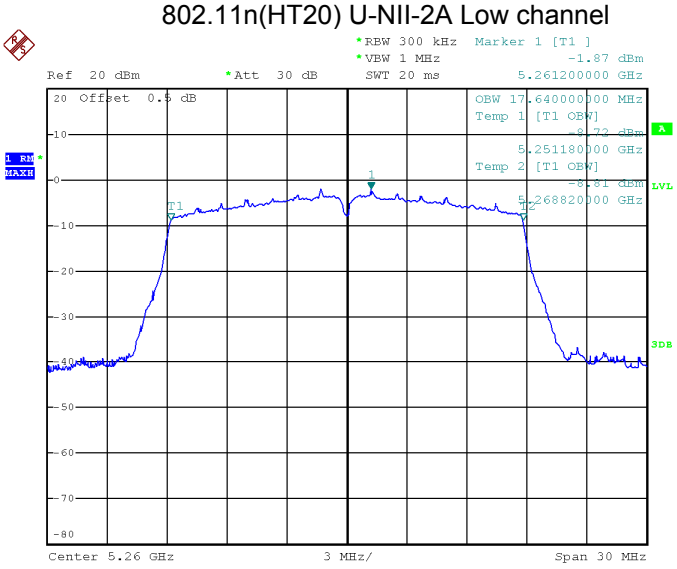
Date: 30.JUN.2025 13:18:00

802.11a U-NII-2A High channel



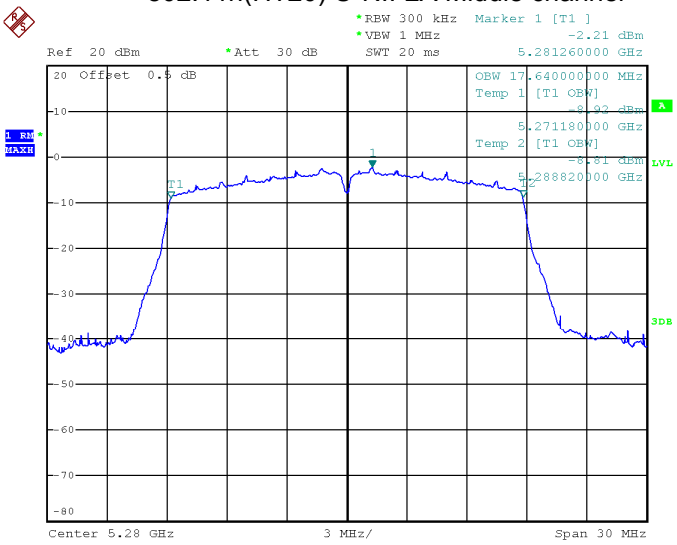
Date: 30.JUN.2025 13:20:05

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



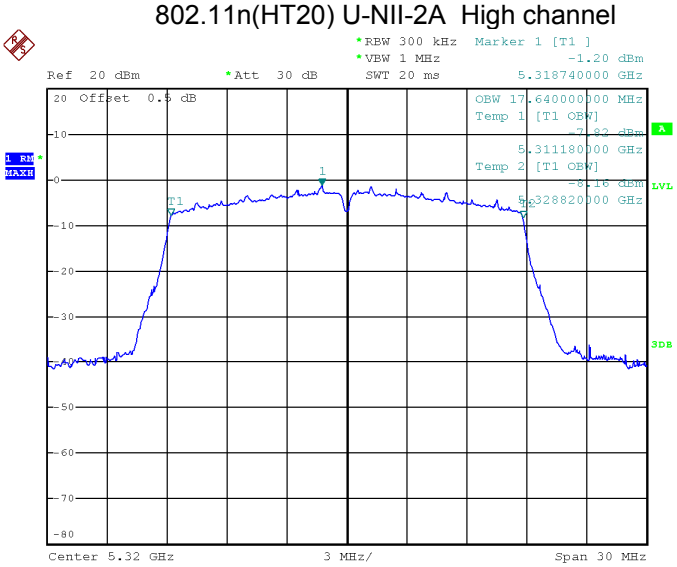
Date: 30.JUN.2025 13:23:37

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



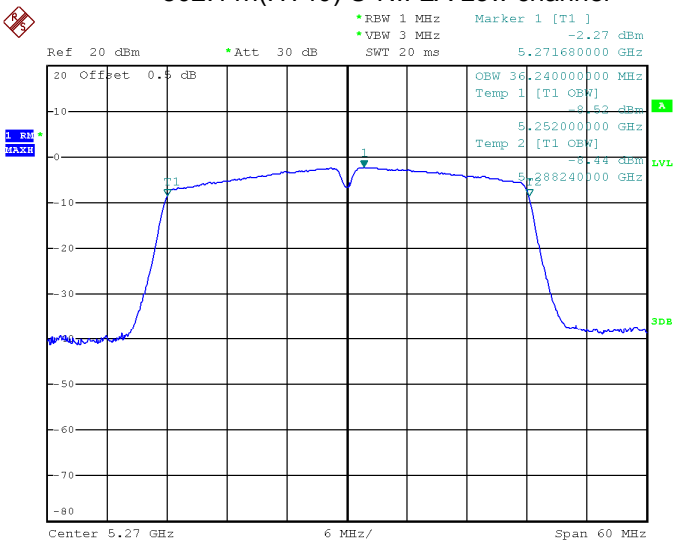
Date: 30.JUN.2025 13:24:25

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



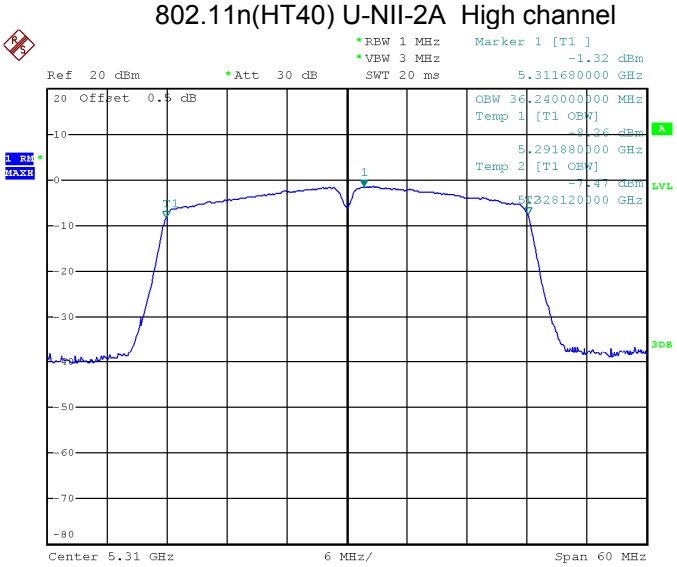
Date: 30.JUN.2025 13:25:17

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



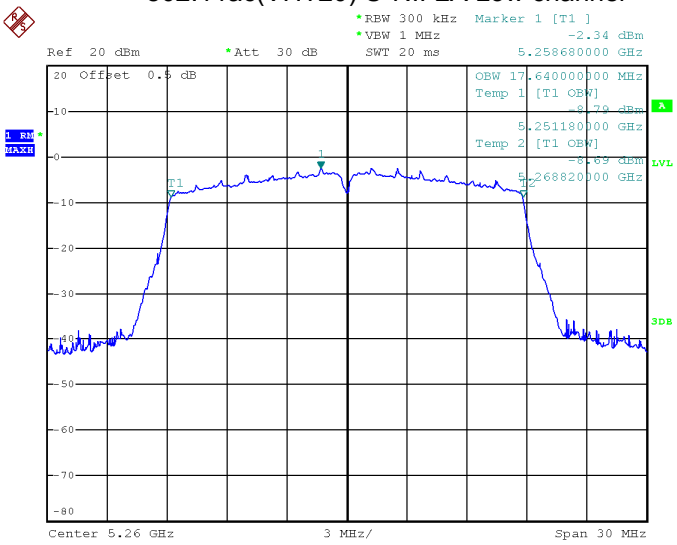
Date: 30.JUN.2025 13:39:59

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



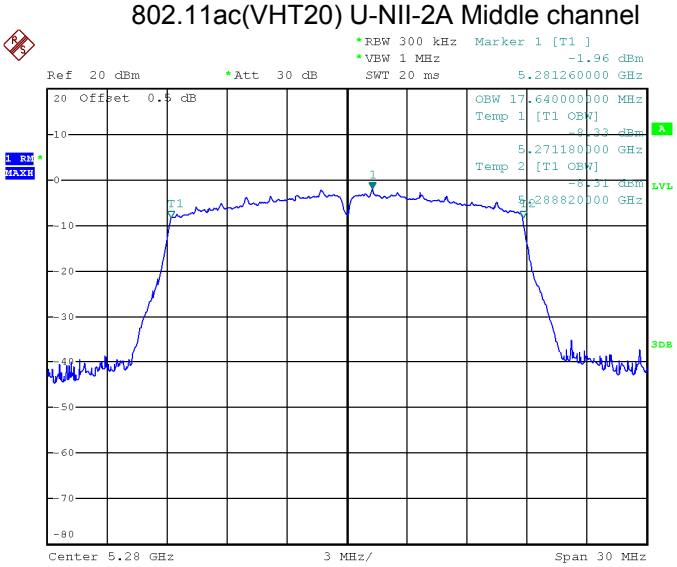
Date: 30.JUN.2025 13:41:59

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



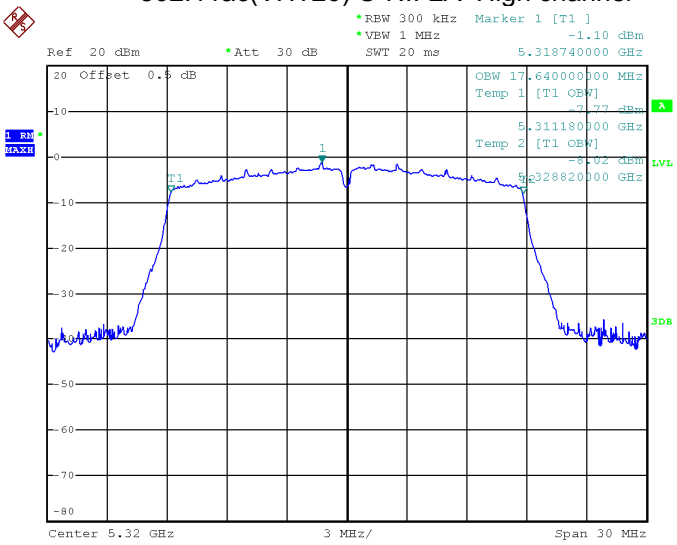
Date: 30.JUN.2025 13:27:14

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



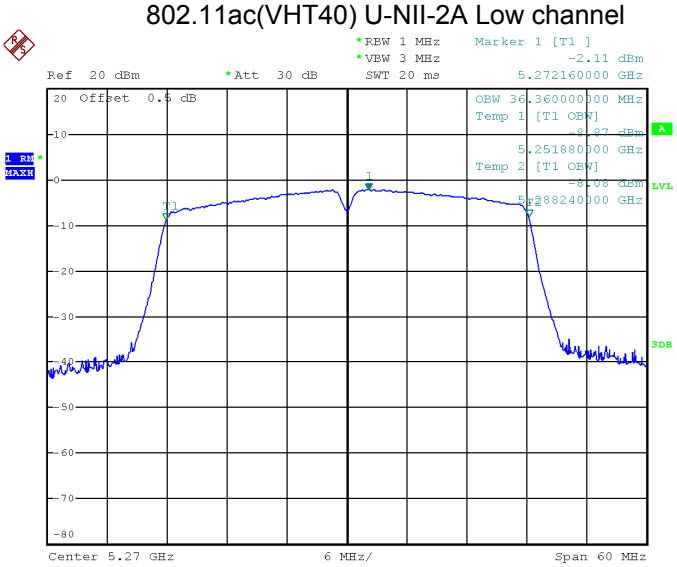
Date: 30.JUN.2025 13:28:23

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



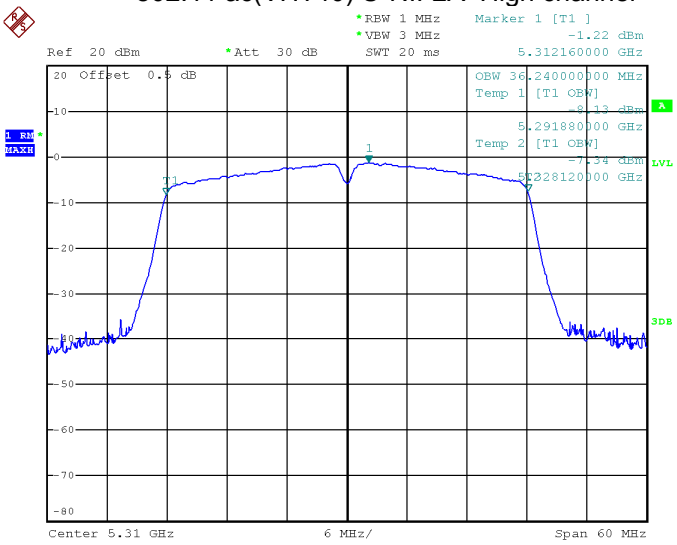
Date: 30.JUN.2025 13:30:05

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



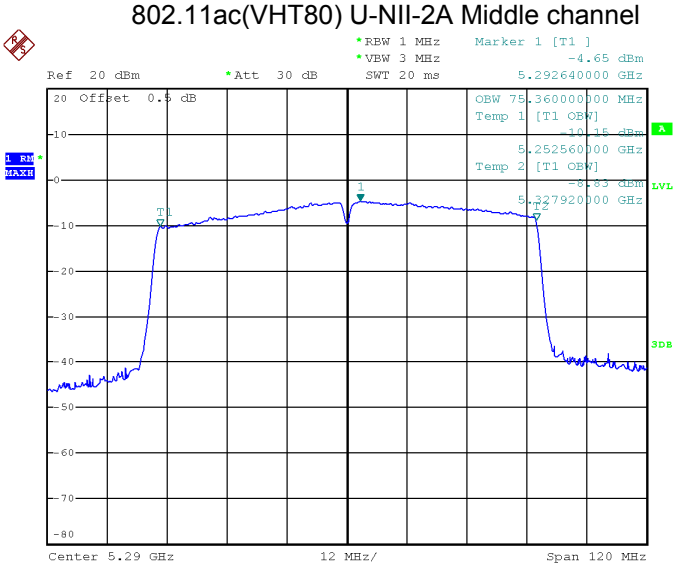
Date: 30.JUN.2025 13:35:02

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



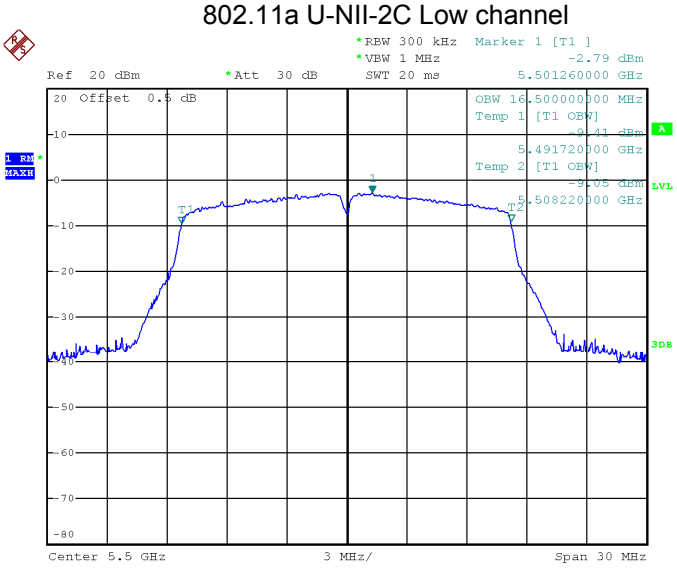
Date: 30.JUN.2025 13:37:28

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



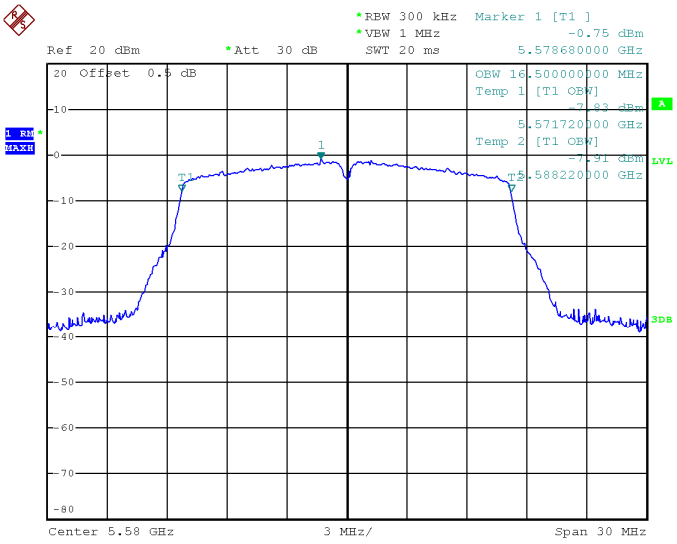
Date: 30.JUN.2025 13:45:44

802.11a U-NII-2C Low channel



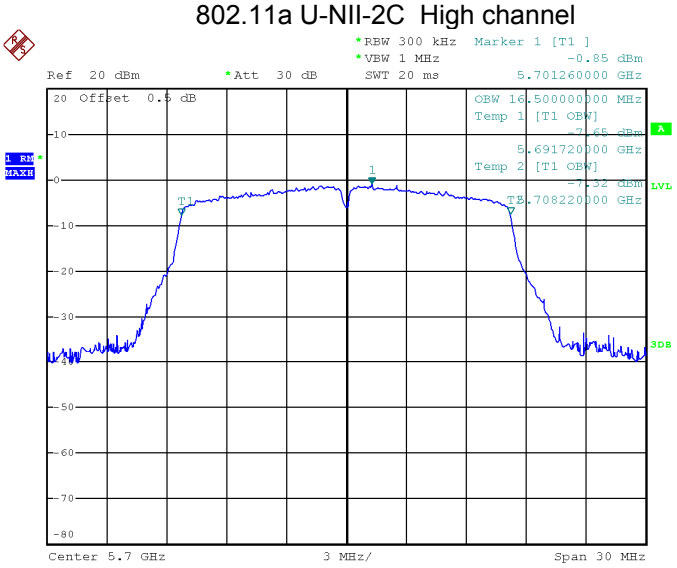
Date: 30.JUN.2025 14:22:17

802.11a U-NII-2C Middle channel



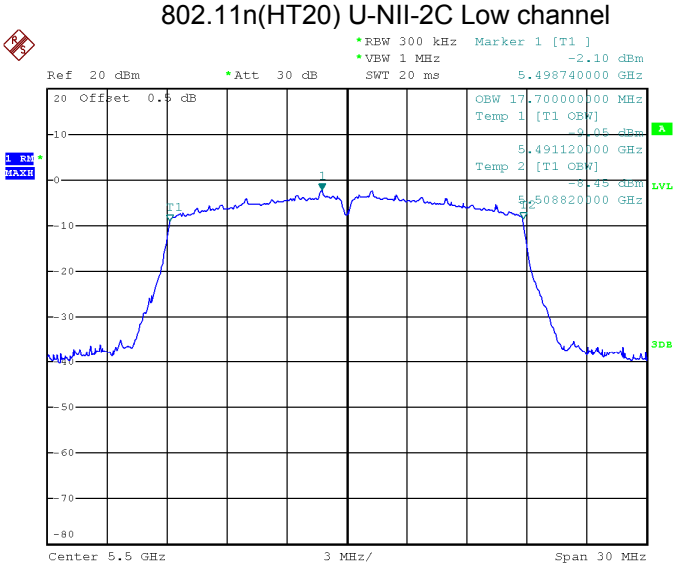
Date: 30.JUN.2025 14:25:26

802.11a U-NII-2C High channel



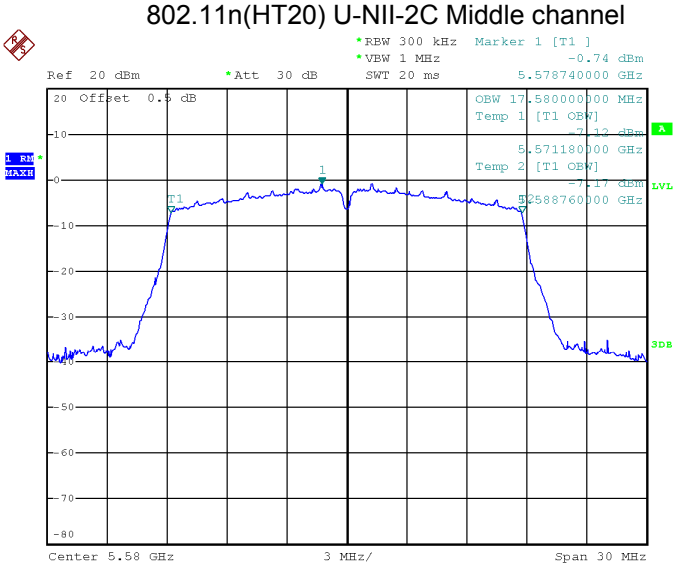
Date: 30.JUN.2025 14:26:04

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



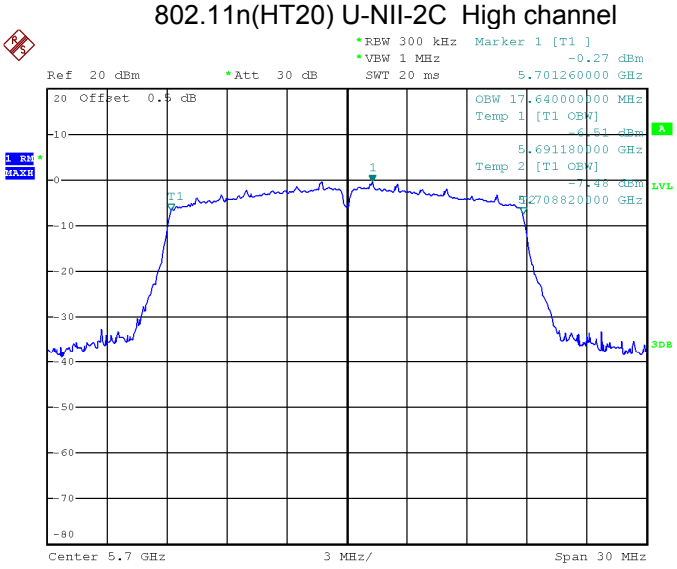
Date: 30.JUN.2025 14:27:47

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



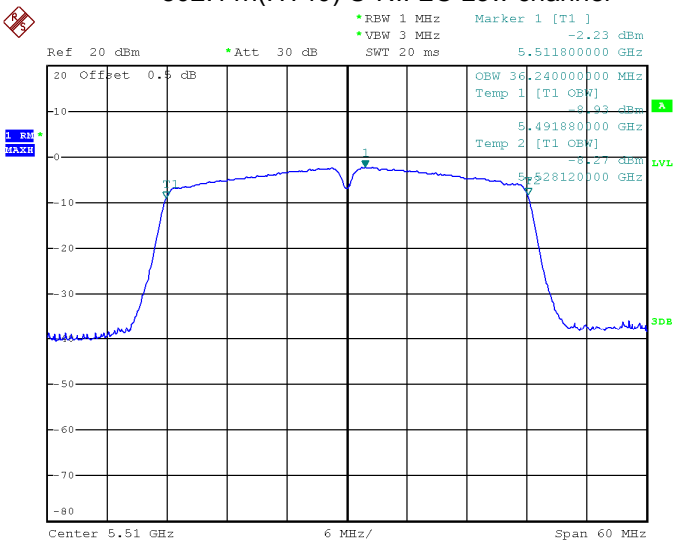
Date: 30.JUN.2025 14:28:55

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



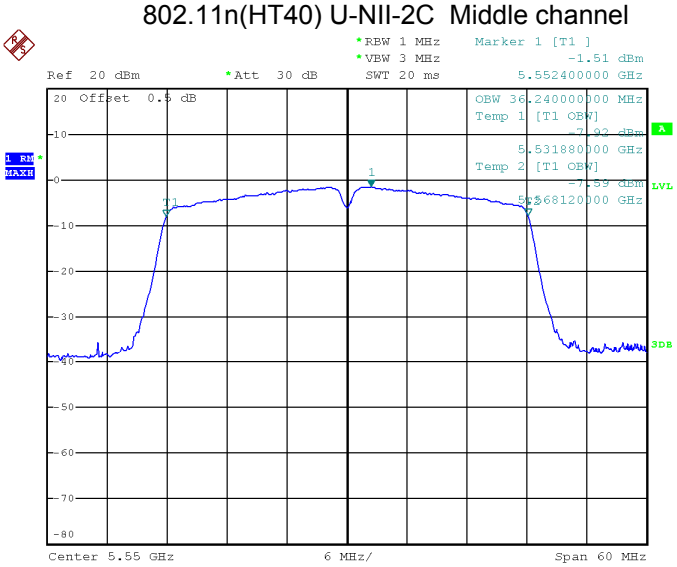
Date: 30.JUN.2025 14:30:01

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



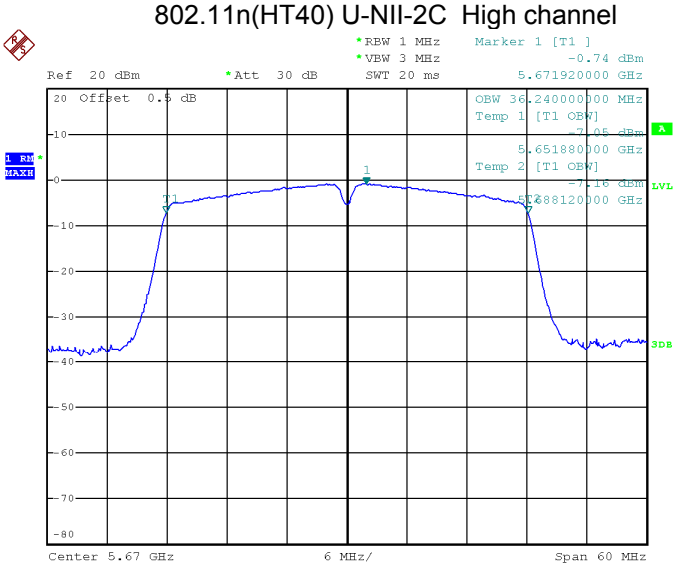
Date: 30.JUN.2025 14:41:04

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



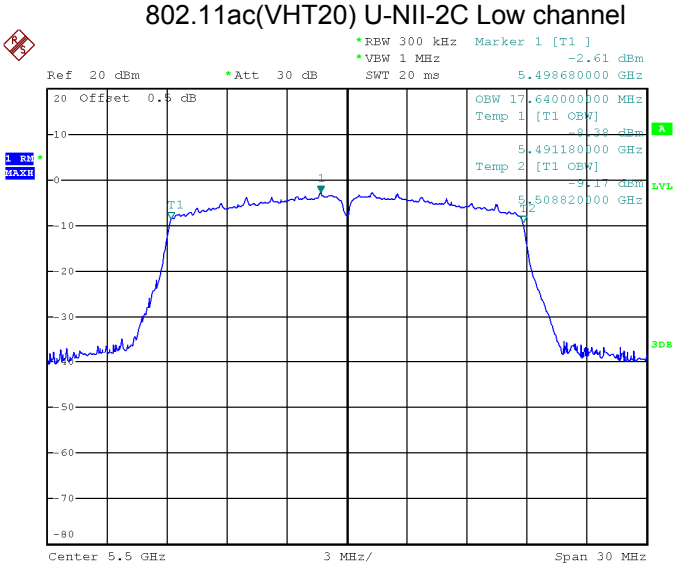
Date: 30.JUN.2025 14:41:55

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



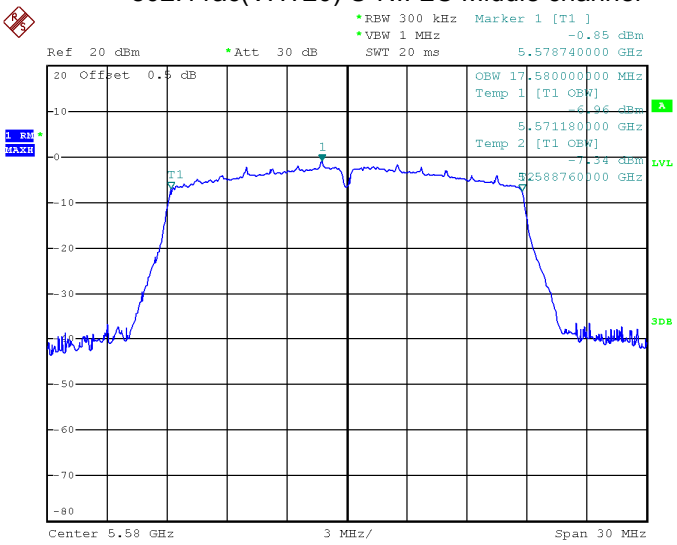
Date: 30.JUN.2025 14:42:36

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



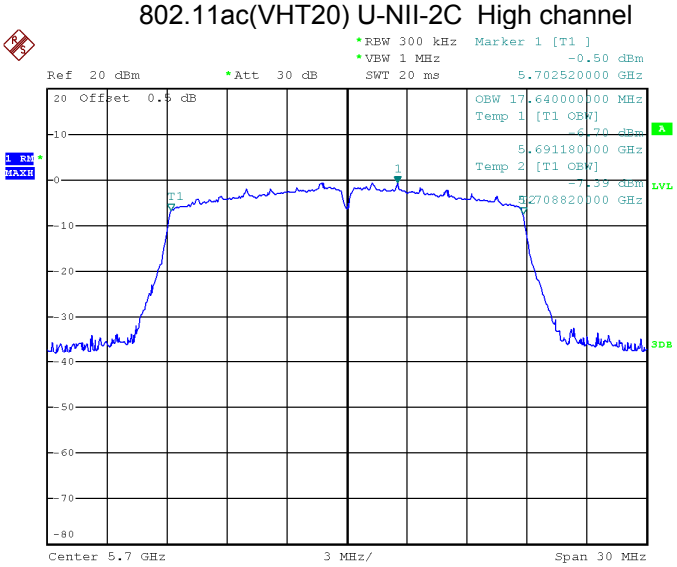
Date: 30.JUN.2025 14:31:51

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



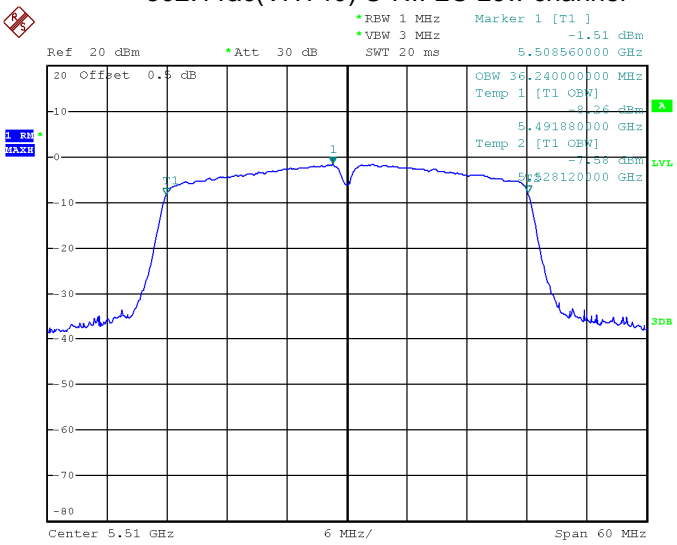
Date: 30.JUN.2025 14:32:40

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



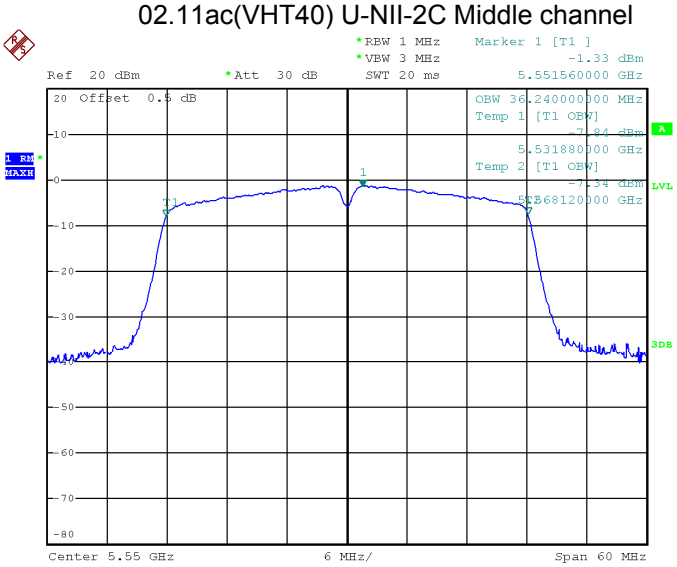
Date: 30.JUN.2025 14:33:41

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



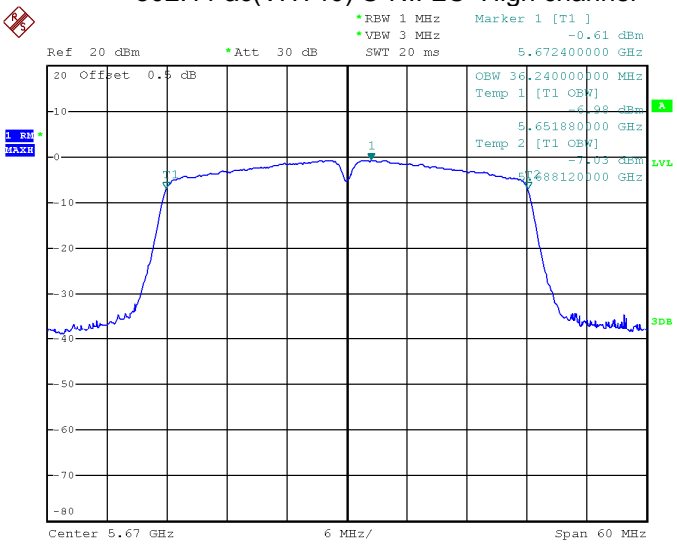
Date: 30.JUN.2025 14:35:52

02.11ac(VHT40) U-NII-2C Middle channel



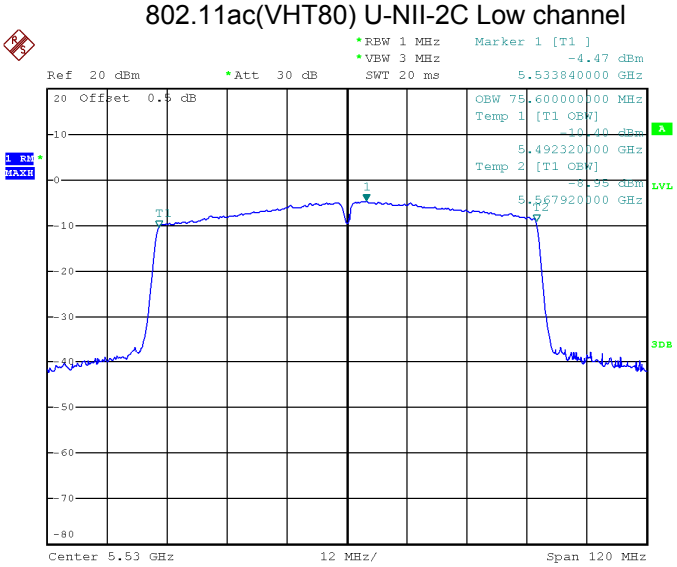
Date: 30.JUN.2025 14:38:43

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



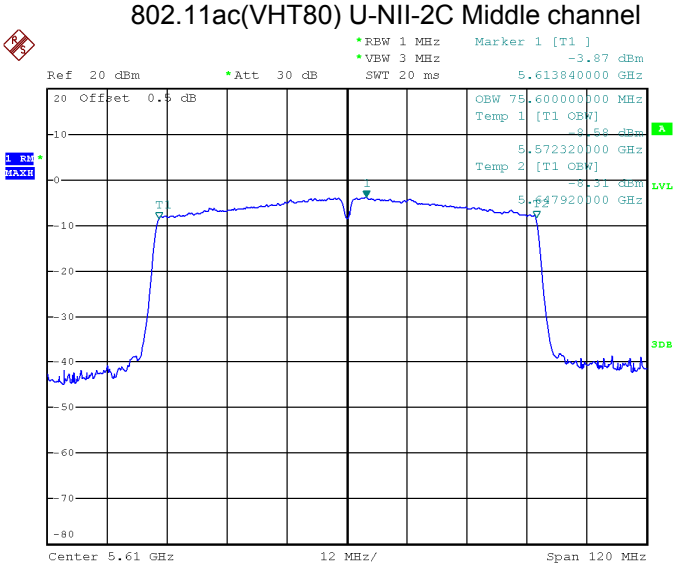
Date: 30.JUN.2025 14:39:34

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



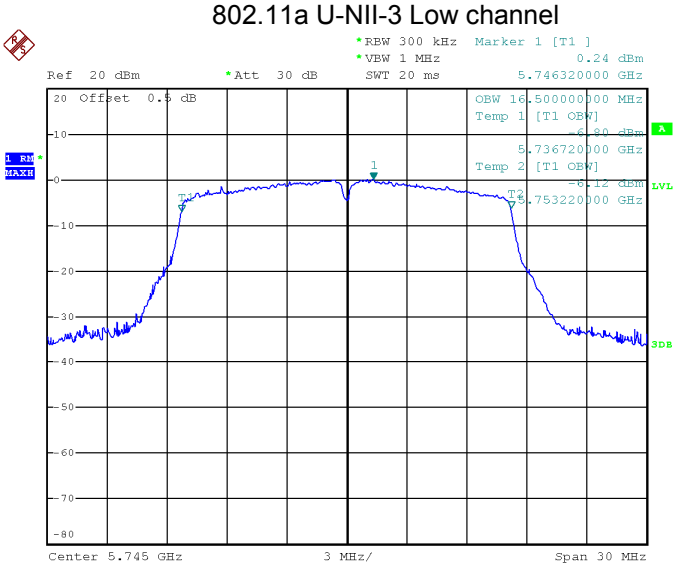
Date: 30.JUN.2025 14:44:39

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



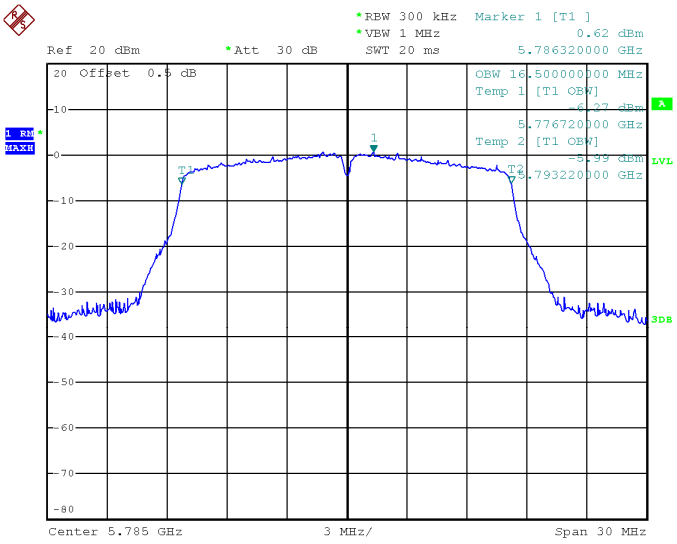
Date: 30.JUN.2025 14:45:29

802.11a U-NII-3 Low channel



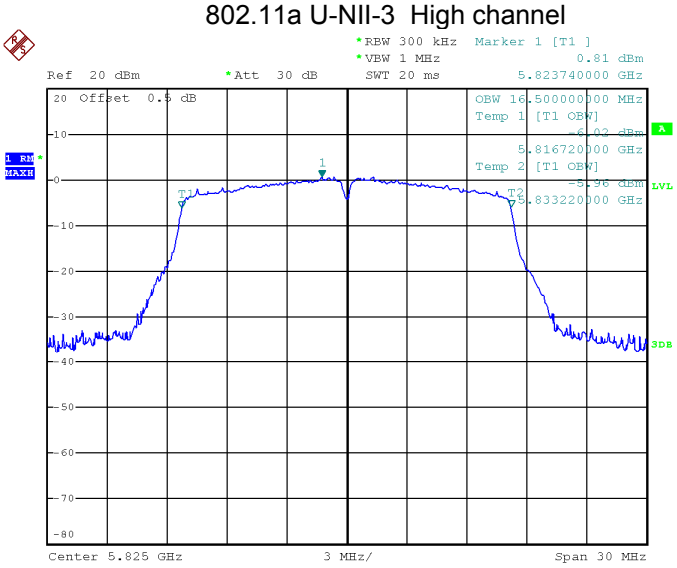
Date: 30.JUN.2025 15:30:34

802.11a U-NII-3 Middle channel



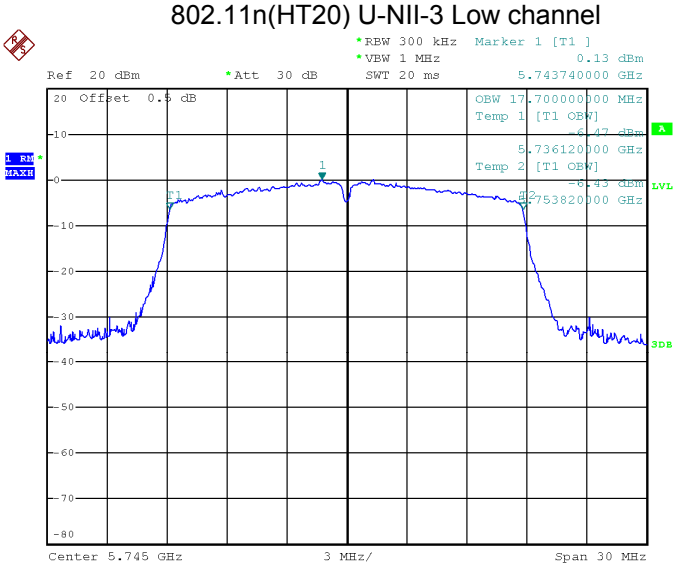
Date: 30.JUN.2025 15:31:21

802.11a U-NII-3 High channel



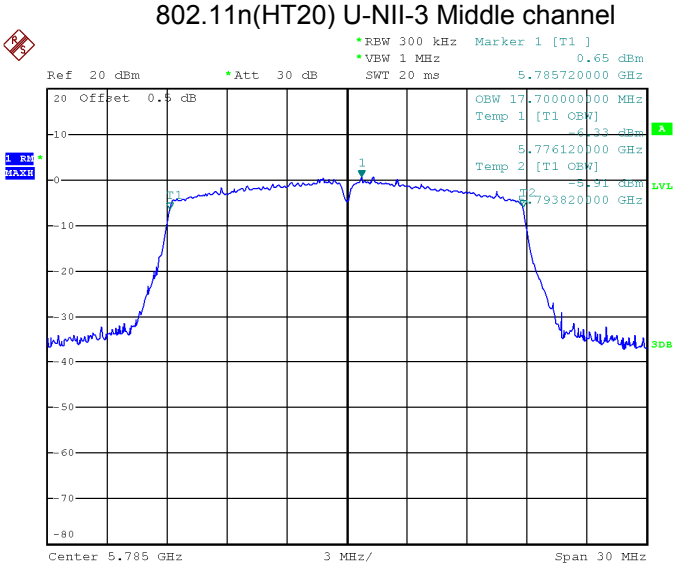
Date: 30.JUN.2025 15:32:15

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



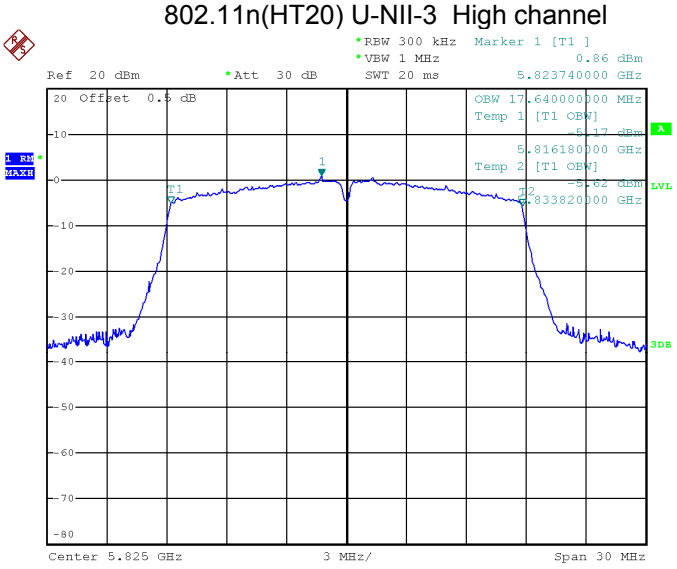
Date: 30.JUN.2025 15:33:20

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



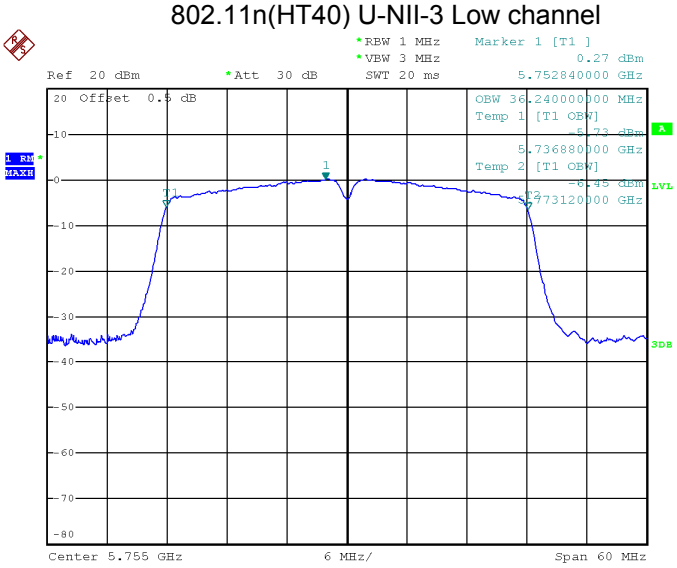
Date: 30.JUN.2025 15:35:21

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



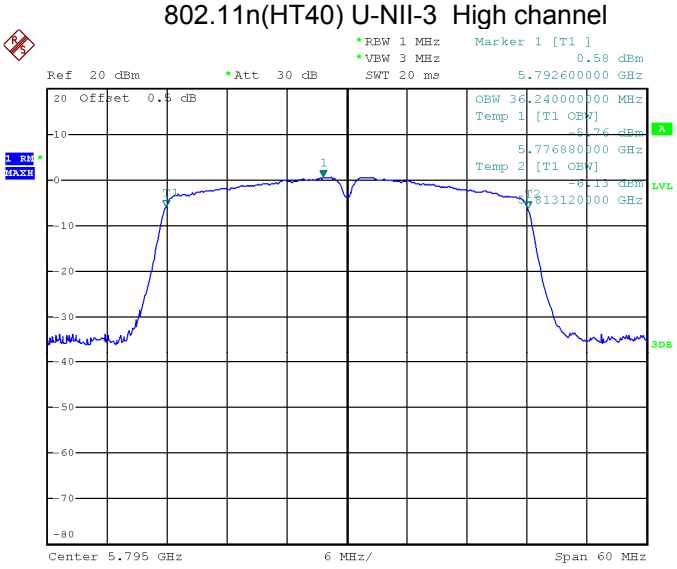
Date: 30.JUN.2025 15:36:11

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



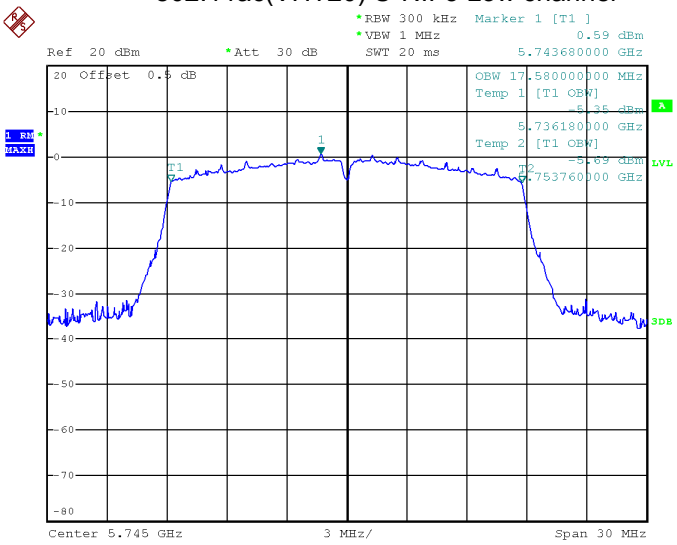
Date: 30.JUN.2025 15:42:54

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



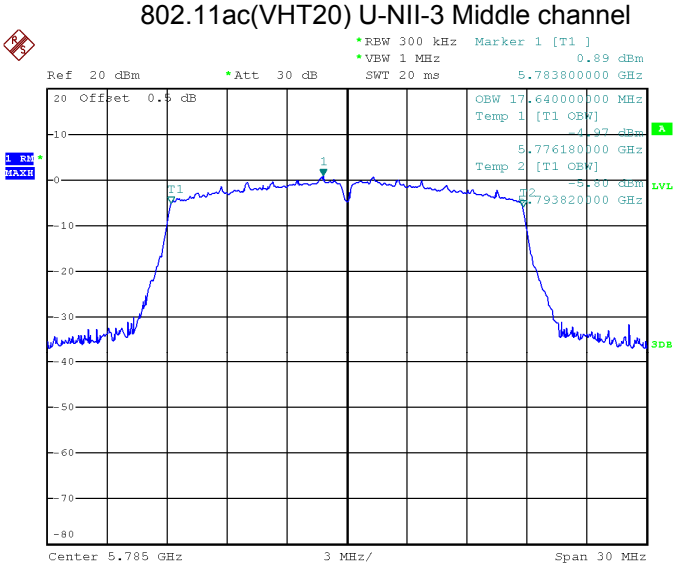
Date: 30.JUN.2025 15:43:58

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



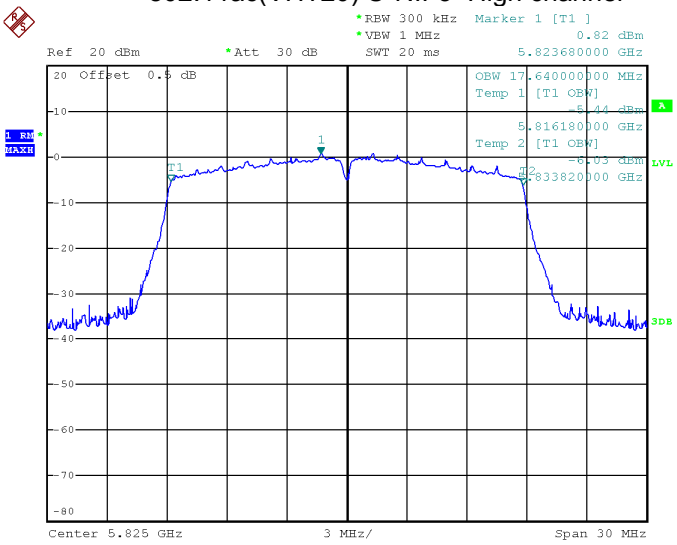
Date: 30.JUN.2025 15:37:26

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



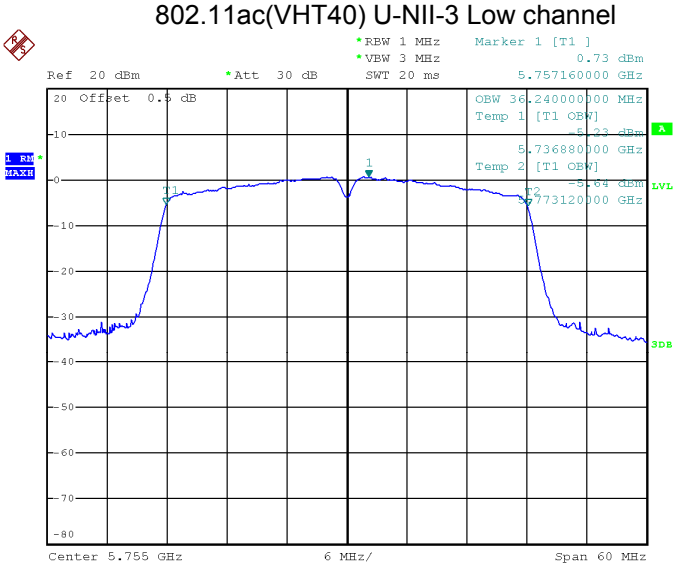
Date: 30.JUN.2025 15:38:08

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



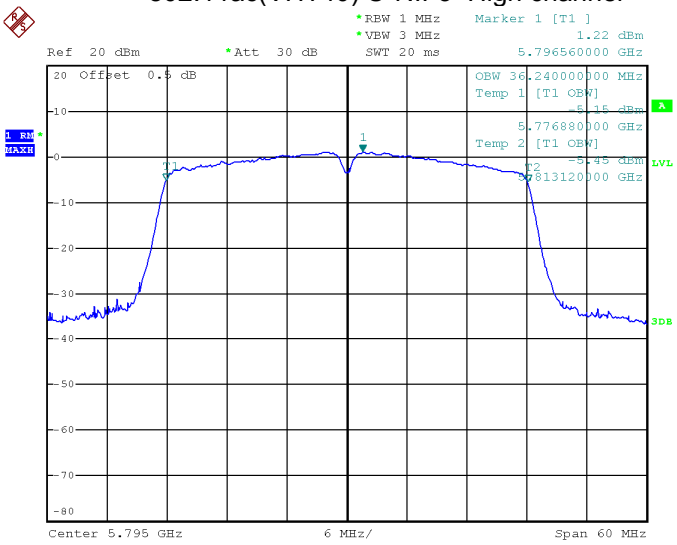
Date: 30.JUN.2025 15:38:56

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



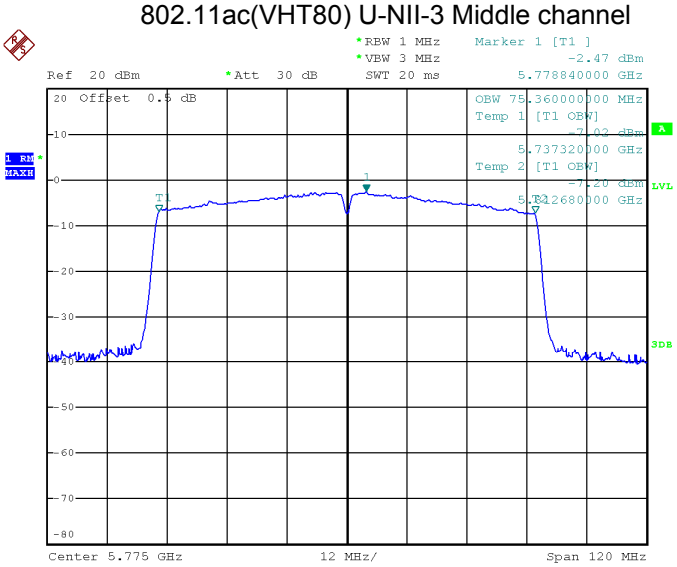
Date: 30.JUN.2025 15:40:57

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



Date: 30.JUN.2025 15:41:56

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



Date: 30.JUN.2025 15:45:35

13 Conducted Output Power

Test Requirement:	FCC 47CFR Part 15 Section 15.407(a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section E
Test Limit:	**For the band 5.15-5.25 GHz** 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. 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. 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. For 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. **For the 5.25-5.35 GHz and 5.47-5.725 GHz bands** 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. **For the band 5.725-5.850 GHz** For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.
Test Result:	PASS
Remark:	Conducted output power= measurement power+10log(1/x) X is duty cycle=1, so 10log(1/1)=0 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	Channel	Measurements (dBm)	Duty Cycle Factor (dB)	Conducted Output Power (dBm)
U-NII-1	802.11a	Low	9.96	0.15	10.11
		Middle	9.98		10.13
		High	10.46		10.61
	802.11n(HT20)	Low	9.77	0.16	9.93
		Middle	9.83		9.99
		High	10.49		10.65
	802.11n(HT40)	Low	9.90	0.30	10.20
		Middle	/		/
		High	10.43		**10.73**
	802.11ac(VHT20)	Low	9.71	0.16	9.87
		Middle	9.90		10.06
		High	10.45		10.61
	802.11ac(VHT40)	Low	9.95	0.28	10.23
		Middle	/		/
		High	10.38		10.66
	802.11ac(VHT80)	Low	/	0.57	/
		Middle	10.09		10.66
		High	/		/

Band	Operation mode	Channel	Measurements (dBm)	Duty Cycle Factor (dB)	Conducted Output Power (dBm)
U-NII-2A	802.11a	Low	10.97	0.16	11.13
		Middle	11.17		11.33
		High	11.92		12.08
	802.11n(HT20)	Low	10.68	0.15	10.83
		Middle	11.05		11.20
		High	11.62		11.77
	802.11n(HT40)	Low	11.06	0.29	11.35
		Middle	/		/
		High	11.77		12.06
	802.11ac(VHT20)	Low	10.74	0.17	10.91
		Middle	11.37		11.54
		High	12.04		**12.21**
	802.11ac(VHT40)	Low	11.23	0.29	11.52
		Middle	/		/
		High	11.81		12.10
	802.11ac(VHT80)	Low	/	0.55	/
		Middle	11.47		12.02
		High	/		/

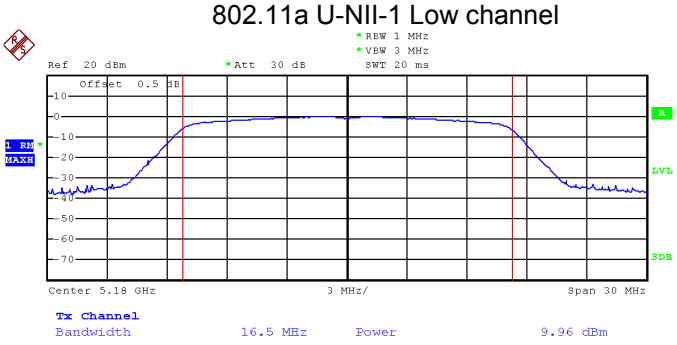
Band	Operation mode	Channel	Measurements (dBm)	Duty Cycle Factor (dB)	Conducted Output Power (dBm)
U-NII-2C	802.11a	Low	10.91	0.14	11.05
		Middle	12.31		12.45
		High	12.74		12.88
	802.11n(HT20)	Low	10.91	0.16	11.07
		Middle	12.37		12.53
		High	12.90		13.06
	802.11n(HT40)	Low	10.97	0.28	11.25
		Middle	11.91		12.19
		High	12.50		12.78
	802.11ac(VHT20)	Low	10.96	0.16	11.12
		Middle	12.47		12.63
		High	12.87		13.03
	802.11ac(VHT40)	Low	11.19	0.29	11.48
		Middle	11.90		12.19
		High	12.67		12.96
	802.11ac(VHT80)	Low	11.74	0.57	12.31
		Middle	12.65		**13.22**
		High	/		/

Band	Operation mode	Channel	Measurements (dBm)	Duty Cycle Factor (dB)	Conducted Output Power (dBm)
U-NII-3	802.11a	Low	13.87	0.14	14.01
		Middle	13.59		13.73
		High	13.74		13.88
	802.11n(HT20)	Low	13.19	0.15	13.34
		Middle	13.49		13.64
		High	13.53		13.68
	802.11n(HT40)	Low	13.10	0.28	13.38
		Middle	/		/
		High	13.40		13.68
	802.11ac(VHT20)	Low	13.75	0.16	13.91
		Middle	14.10		**14.26**
		High	13.52		13.68
	802.11ac(VHT40)	Low	13.18	0.28	13.46
		Middle	/		/
		High	13.52		13.80
	802.11ac(VHT80)	Low	/	0.55	/
		Middle	13.58		14.13
		High	/		/

* 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.

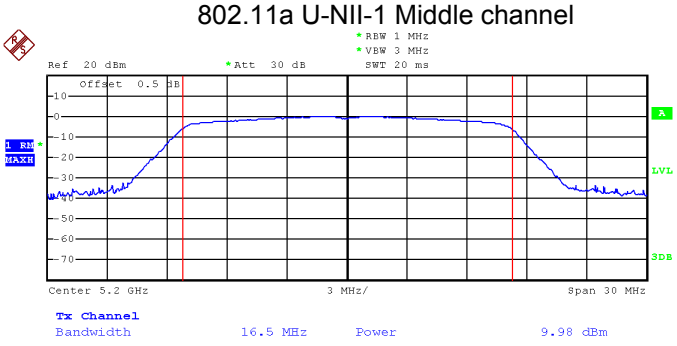
Test result plots shown as follows:

802.11a U-NII-1 Low channel



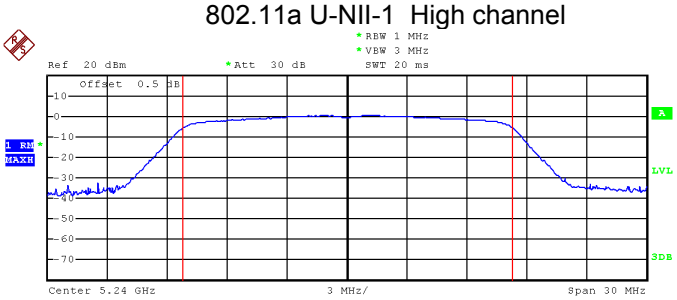
Date: 30.JUN.2025 10:43:24

802.11a U-NII-1 Middle channel



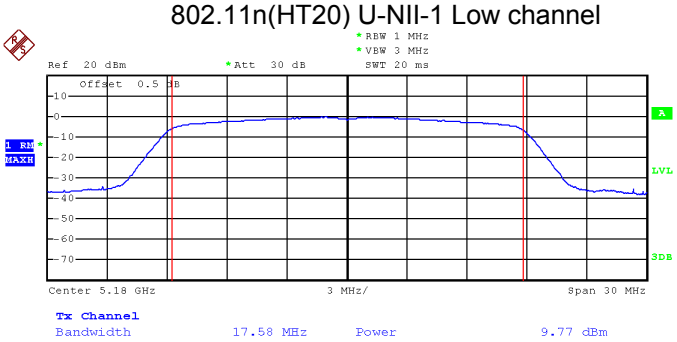
Date: 30.JUN.2025 10:44:46

802.11a U-NII-1 High channel



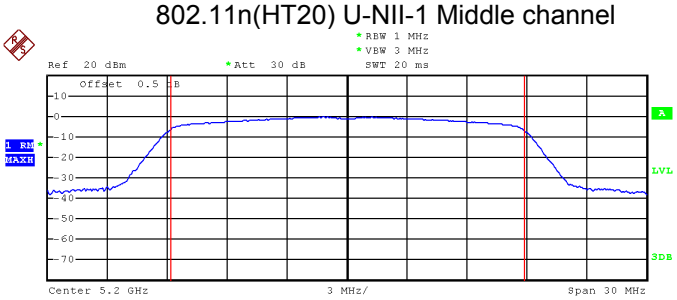
Date: 30.JUN.2025 10:48:03

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



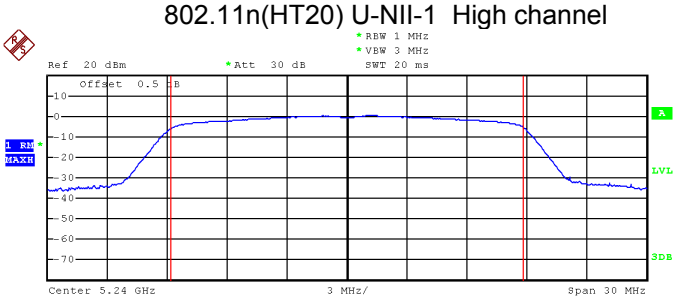
Date: 30.JUN.2025 10:49:39

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



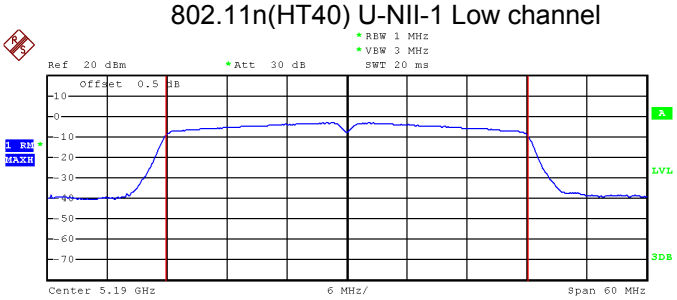
Date: 30.JUN.2025 10:51:06

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



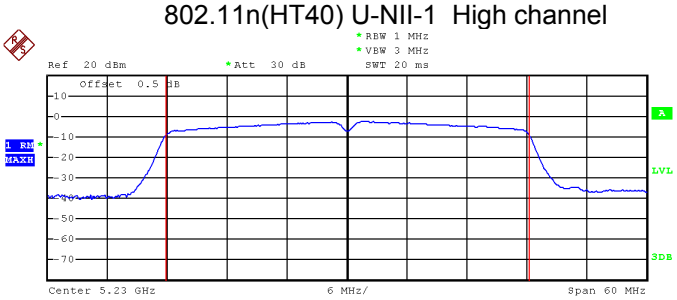
Date: 30.JUN.2025 10:53:11

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



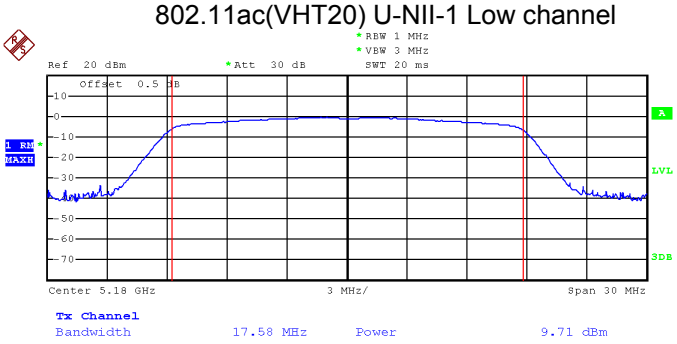
Date: 30.JUN.2025 11:02:47

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



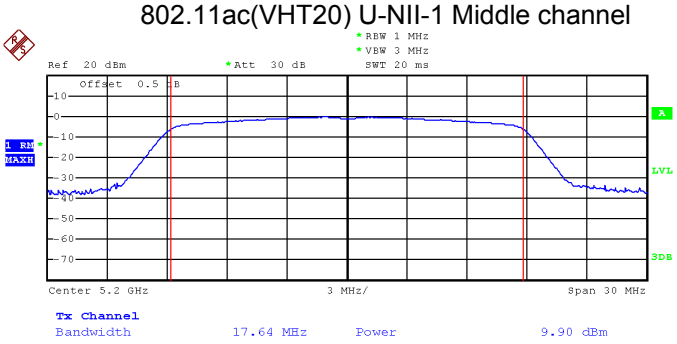
Date: 30.JUN.2025 11:05:06

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



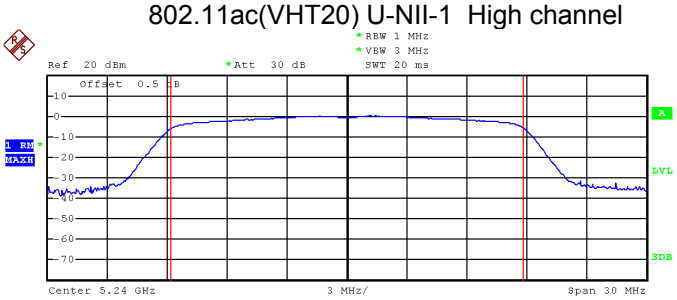
Date: 30.JUN.2025 10:55:05

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



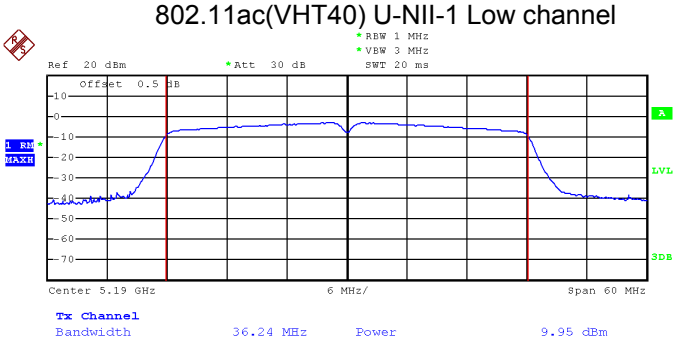
Date: 30.JUN.2025 10:56:43

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



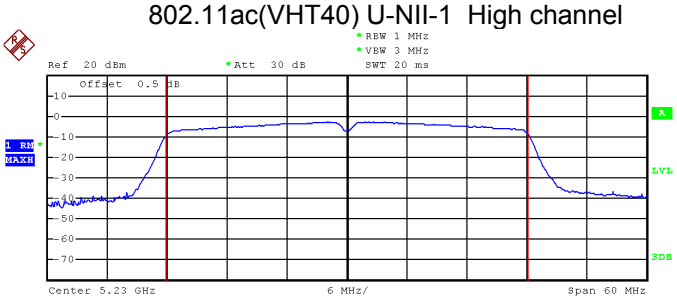
Date: 30.JUN.2025 10:57:49

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



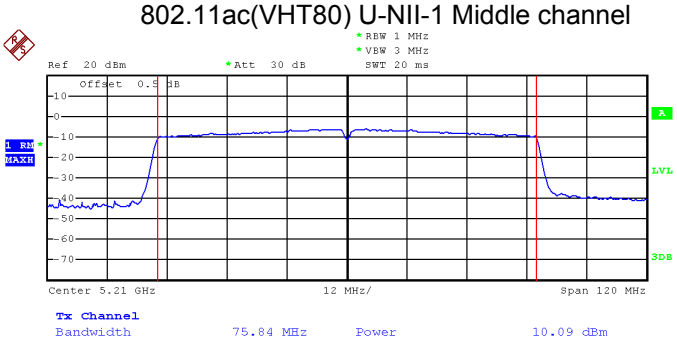
Date: 30.JUN.2025 11:00:05

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



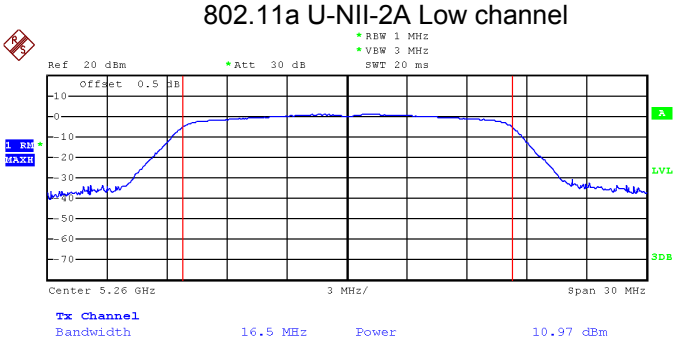
Date: 30.JUN.2025 11:01:16

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



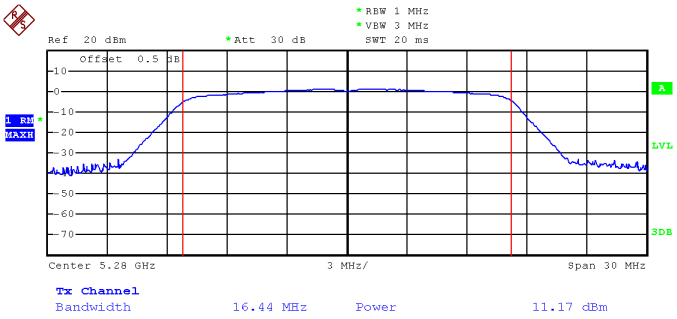
Date: 30.JUN.2025 11:06:53

802.11a U-NII-2A Low channel



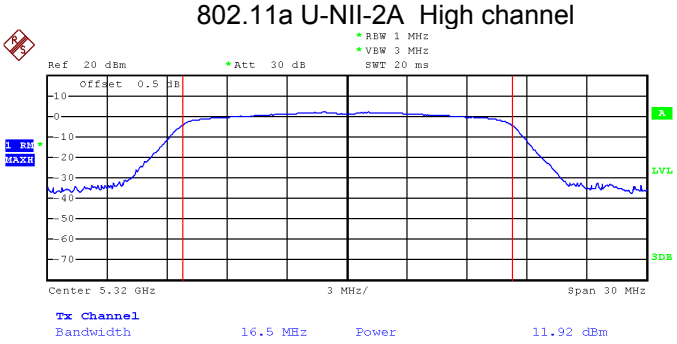
Date: 30.JUN.2025 13:55:23

802.11a U-NII-2A Middle channel



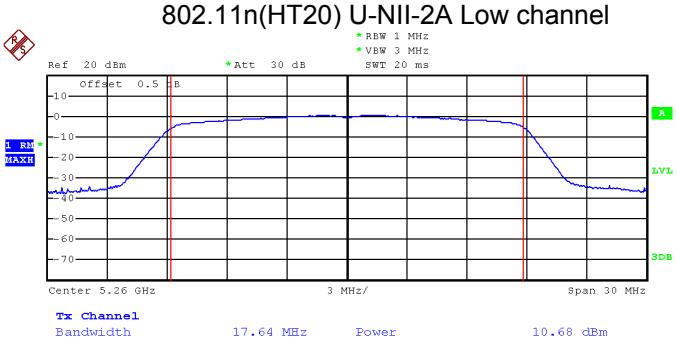
Date: 30.JUN.2025 13:56:52

802.11a U-NII-2A High channel



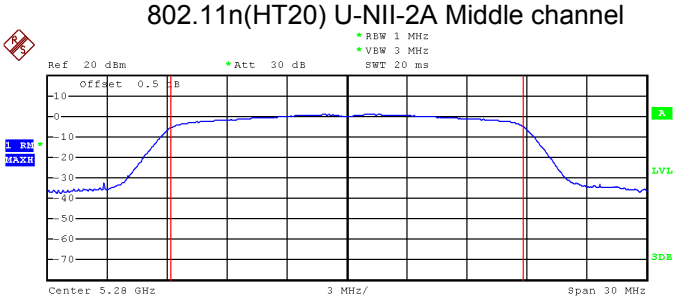
Date: 30.JUN.2025 13:58:42

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



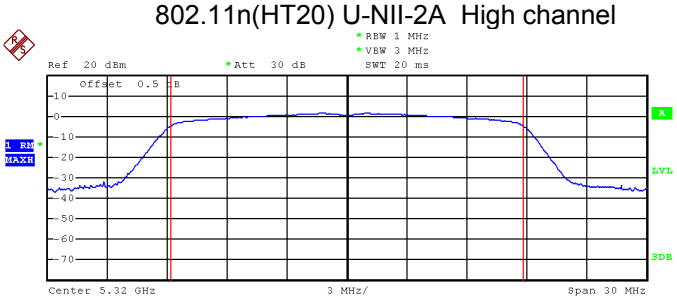
Date: 30.JUN.2025 14:00:45

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



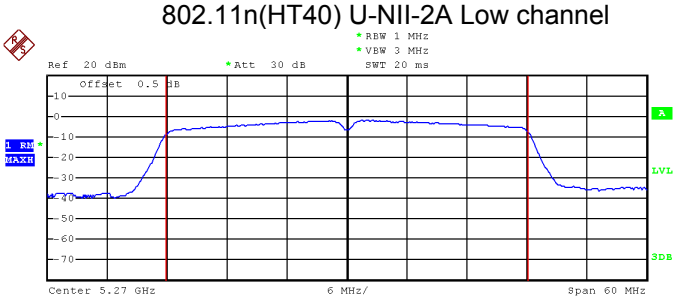
Date: 30.JUN.2025 14:02:09

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



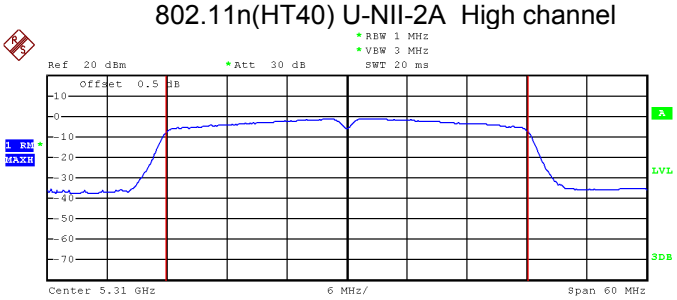
Date: 30.JUN.2025 14:03:12

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



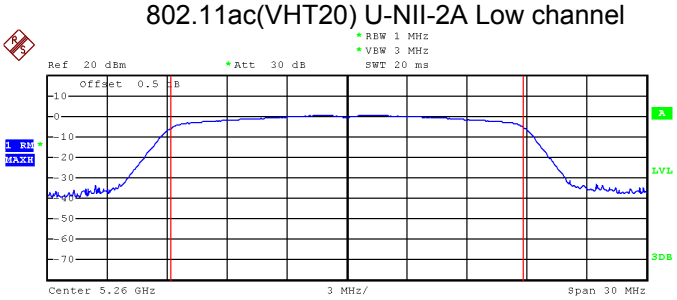
Date: 30.JUN.2025 14:15:56

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



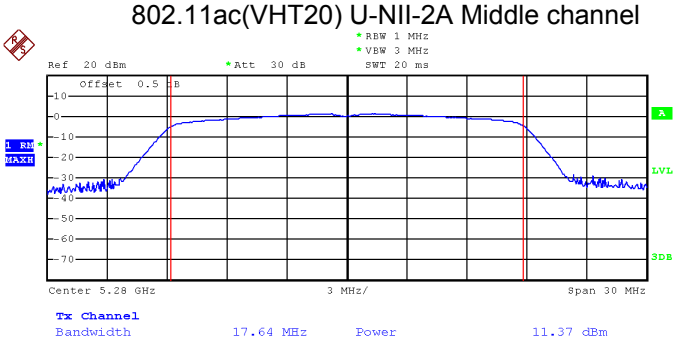
Date: 30.JUN.2025 14:16:53

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



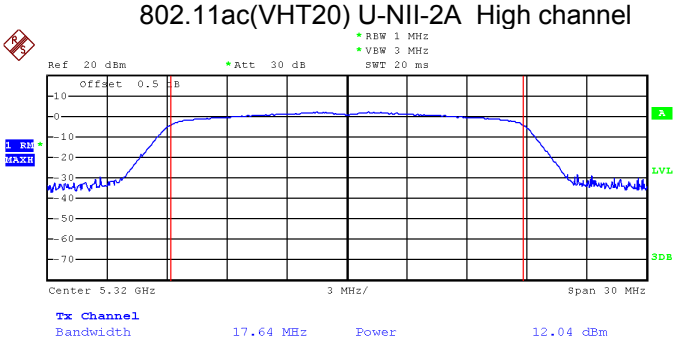
Date: 30.JUN.2025 14:05:06

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



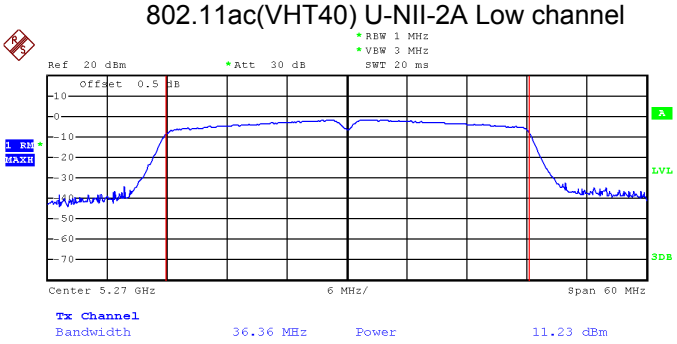
Date: 30.JUN.2025 14:07:39

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



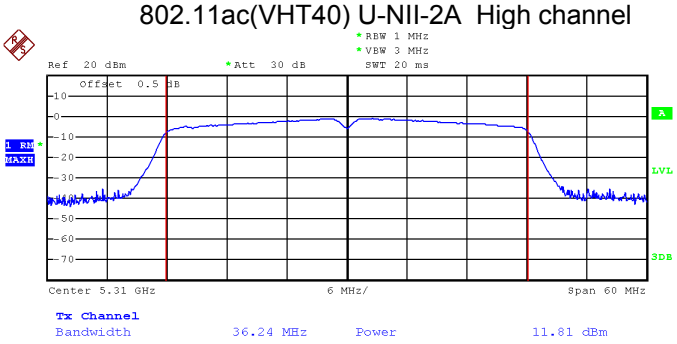
Date: 30.JUN.2025 14:08:23

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



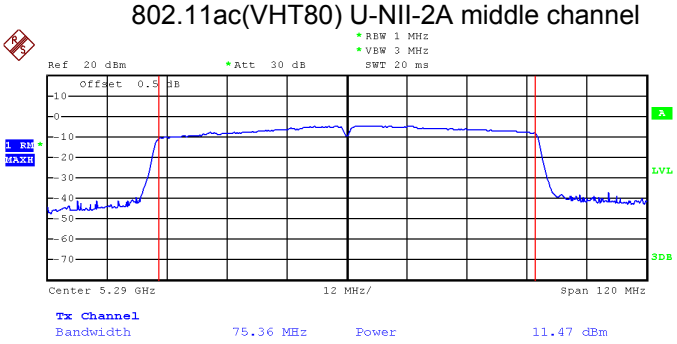
Date: 30.JUN.2025 14:11:33

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



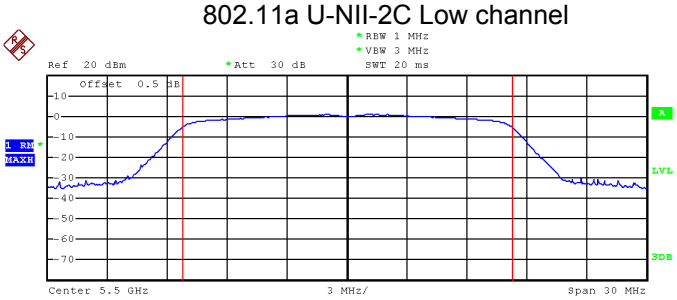
Date: 30.JUN.2025 14:13:17

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



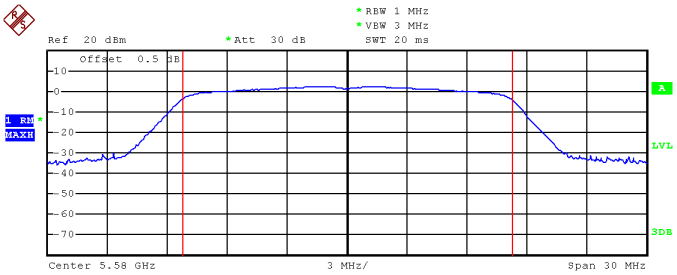
Date: 30.JUN.2025 14:18:40

802.11a U-NII-2C Low channel



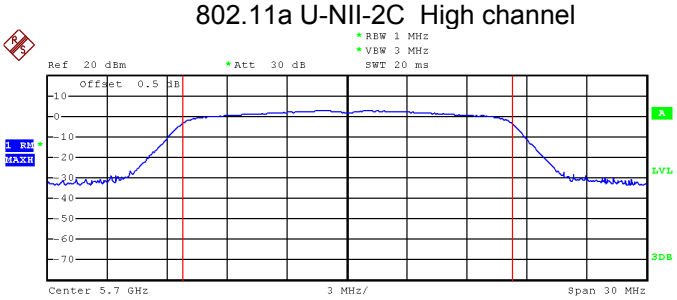
Date: 30.JUN.2025 14:48:36

802.11a U-NII-2C Middle channel



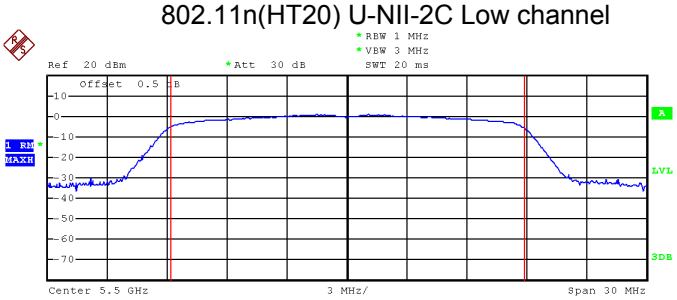
Date: 30.JUN.2025 14:49:19

802.11a U-NII-2C High channel



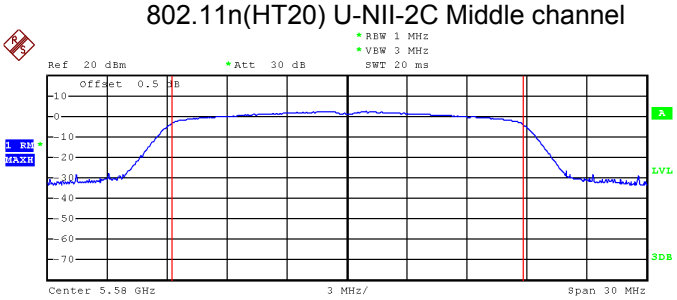
Date: 30.JUN.2025 14:49:56

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



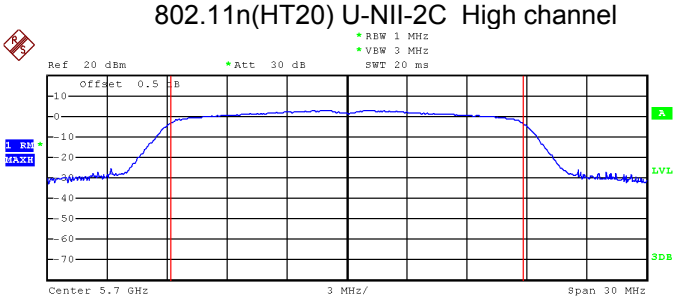
Date: 30.JUN.2025 14:51:18

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



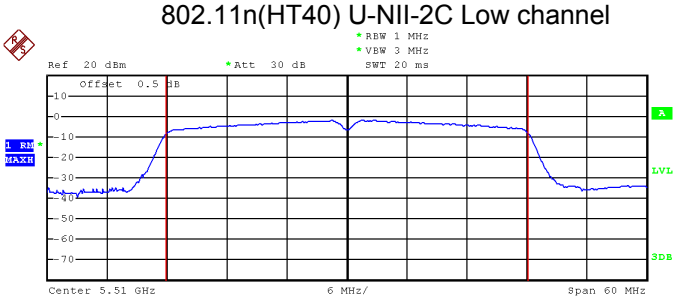
Date: 30.JUN.2025 14:52:20

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



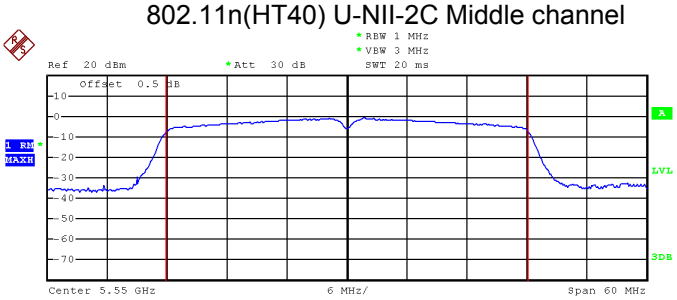
Date: 30.JUN.2025 14:53:21

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



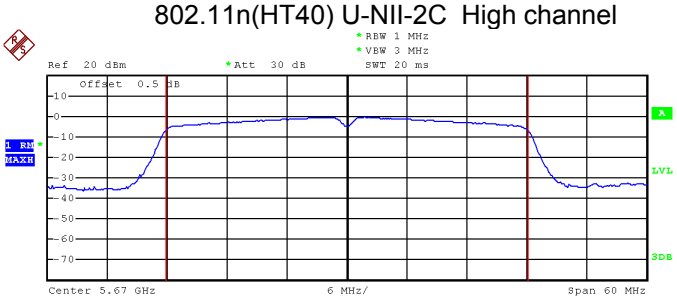
Date: 30.JUN.2025 15:00:49

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



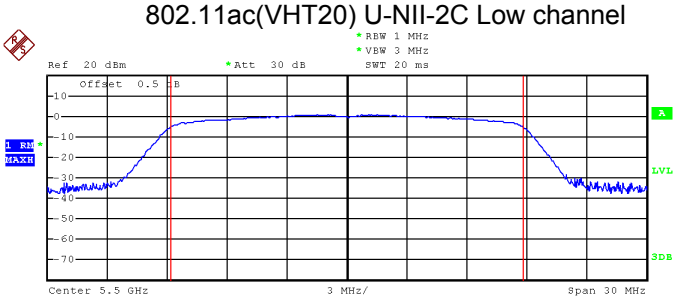
Date: 30.JUN.2025 15:01:39

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



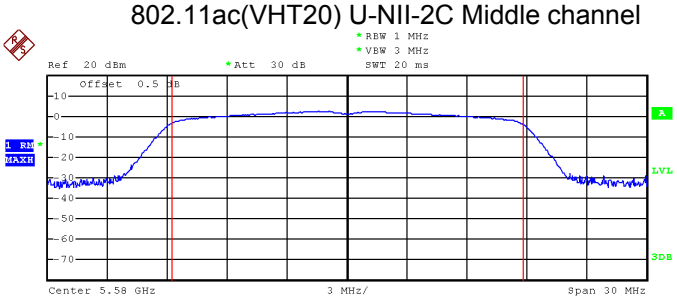
Date: 30.JUN.2025 15:02:21

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



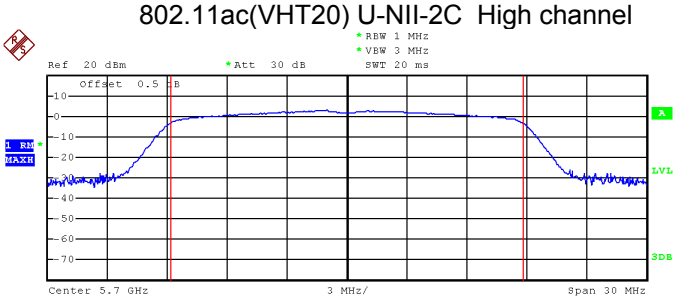
Date: 30.JUN.2025 14:54:53

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



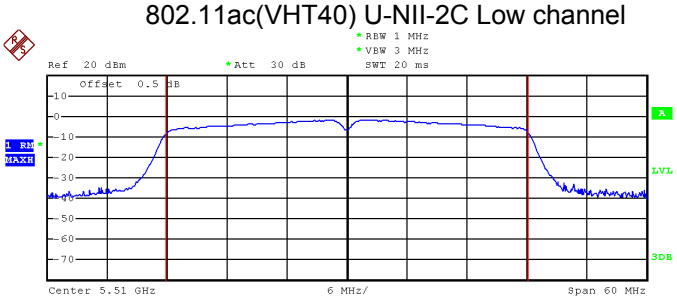
Date: 30.JUN.2025 14:56:14

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



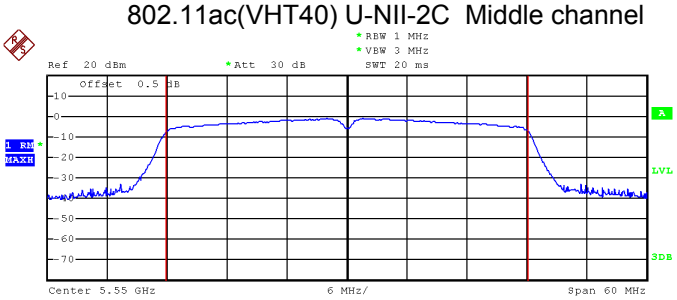
Date: 30.JUN.2025 14:57:02

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



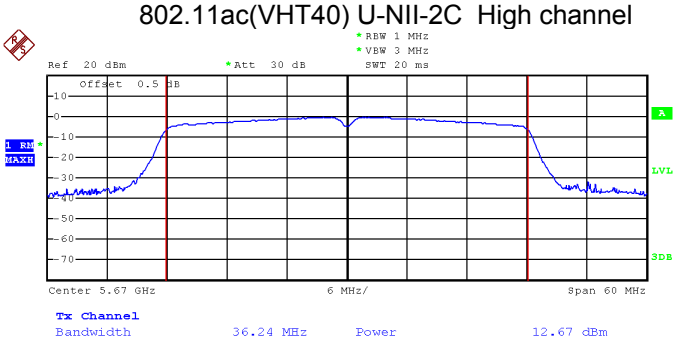
Date: 30.JUN.2025 14:58:31

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



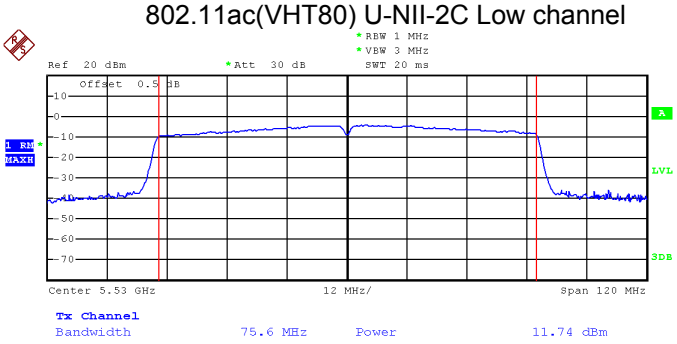
Date: 30.JUN.2025 14:59:11

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



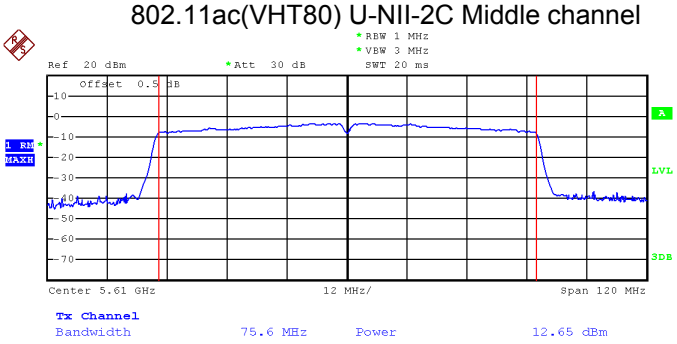
Date: 30.JUN.2025 15:00:00

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



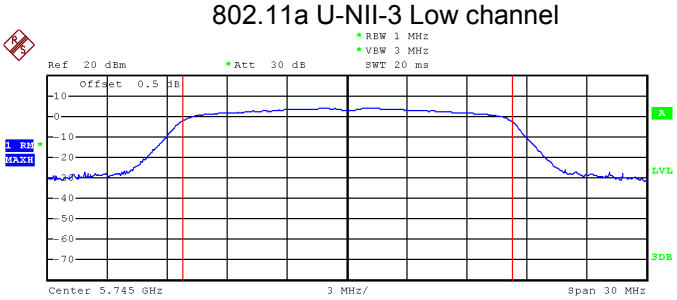
Date: 30.JUN.2025 15:03:36

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



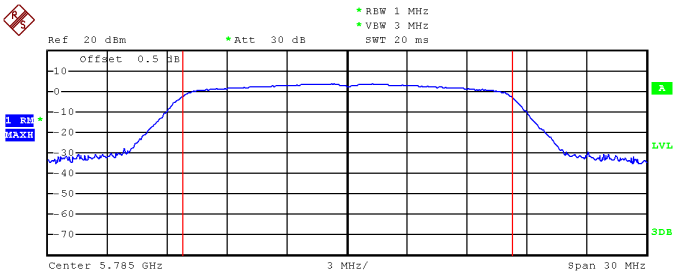
Date: 30.JUN.2025 15:04:28

802.11a U-NII-3 Low channel



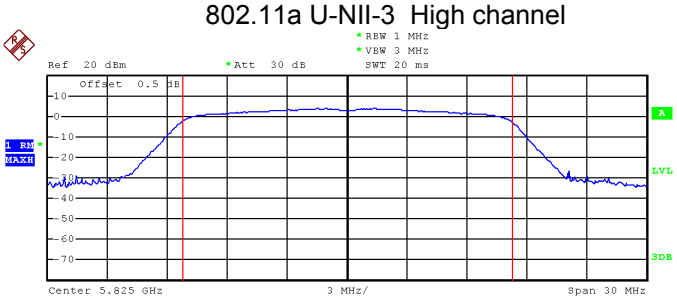
Date: 30.JUN.2025 16:01:22

802.11a U-NII-3 Middle channel



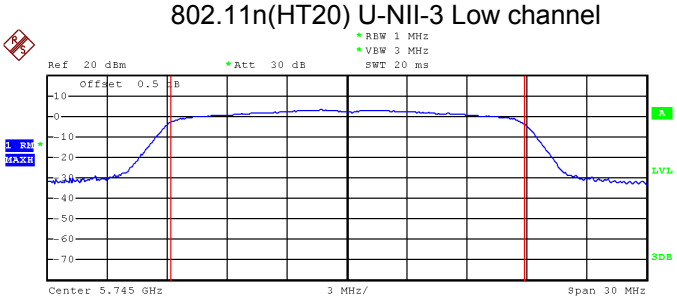
Date: 30.JUN.2025 16:01:57

802.11a U-NII-3 High channel



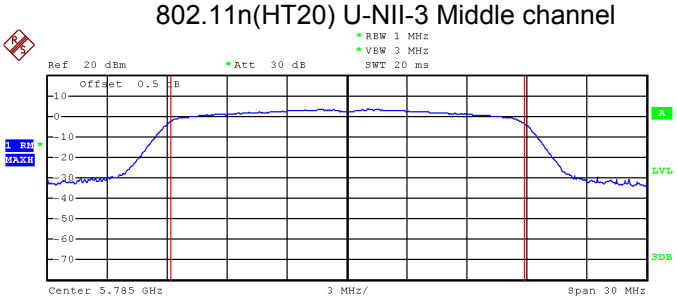
Date: 30.JUN.2025 16:03:19

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



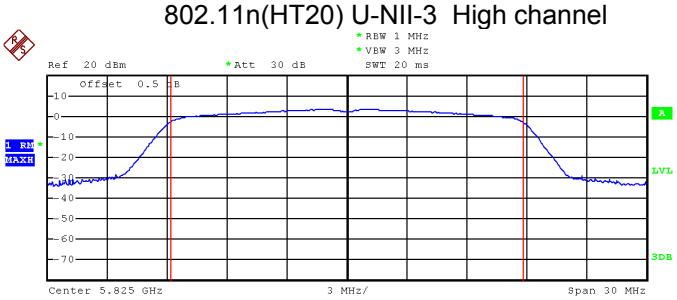
Date: 30.JUN.2025 16:04:59

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



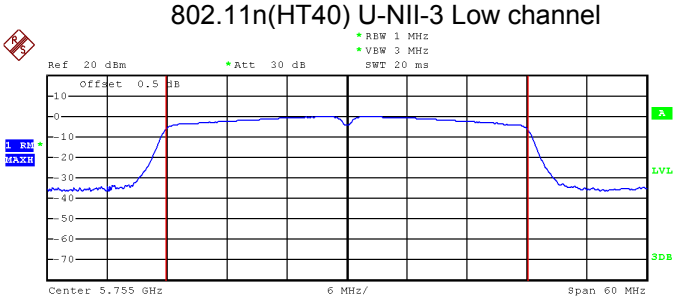
Date: 30.JUN.2025 16:05:45

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



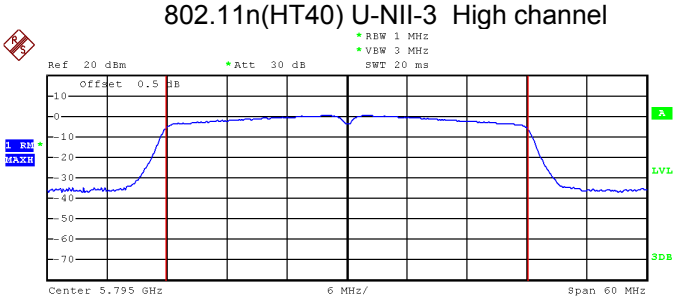
Date: 30.JUN.2025 16:06:45

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



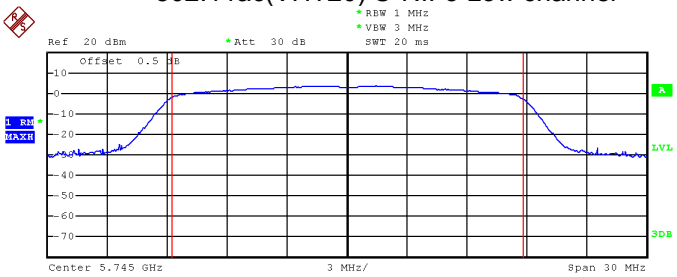
Date: 30.JUN.2025 16:14:32

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



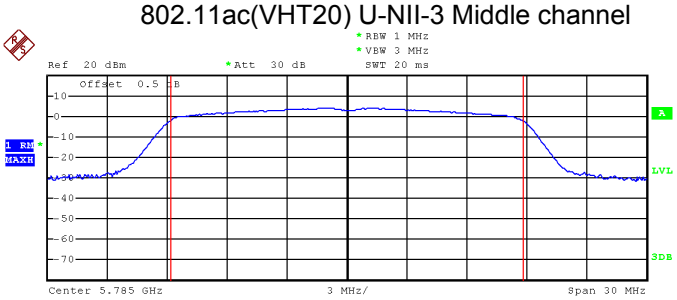
Date: 30.JUN.2025 16:15:13

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



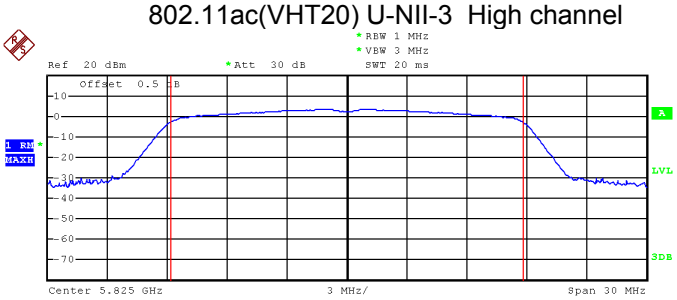
Date: 30.JUN.2025 16:08:18

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



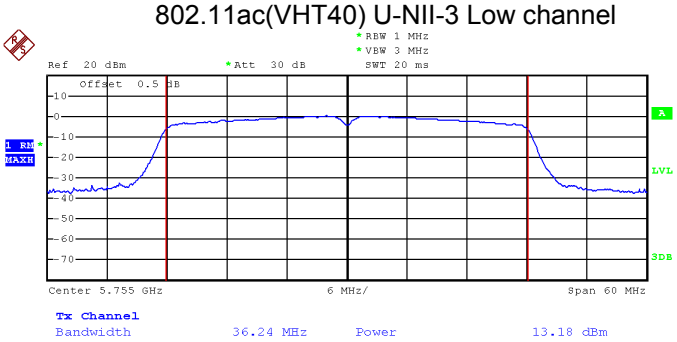
Date: 30.JUN.2025 16:09:16

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



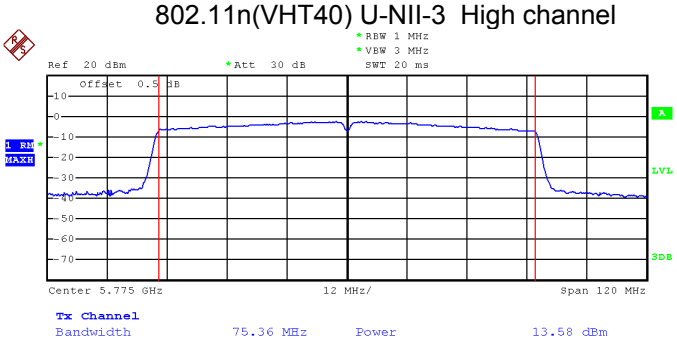
Date: 30.JUN.2025 16:10:12

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



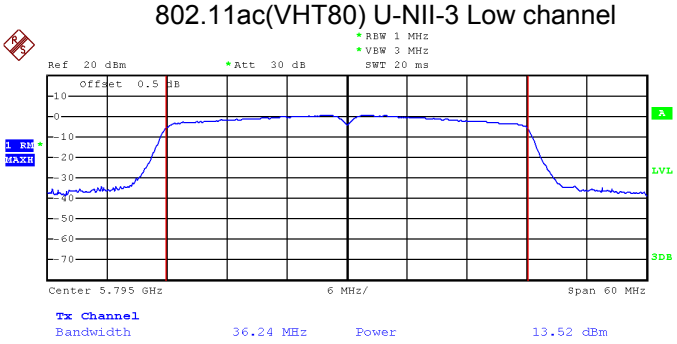
Date: 30.JUN.2025 16:13:04

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



Date: 30.JUN.2025 16:17:06

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



Date: 30.JUN.2025 16:13:44

14 Power Spectral density

Test Requirement:	FCC 47CFR Part 15 Section 15.407(a)
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Test Limit:	**For the band 5.15-5.25 GHz** For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. **For the 5.25-5.35 GHz and 5.47-5.725 GHz bands** The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. **For the band 5.725-5.850 GHz** The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.
Test Result:	PASS

14.1 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:

U-NII-1

RBW = 1MHz, VBW ≥3* RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.

U-NII-3

RBW = 510KHz, VBW ≥3* RBW Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

14.2 Test Result

Band	Operation mode	Channel	Measurements (dBm/MHz)	Duty Cycle Factor (dB)	Power Spectral Density (dBm/MHz)
U-NII-1	802.11a	Low	4.009	0.15	4.159
		Middle	2.925		3.075
		High	2.615		2.765
	802.11n(HT20)	Low	2.800	0.16	2.96
		Middle	1.894		2.054
		High	1.166		1.326
	802.11n(HT40)	Low	-0.458	0.30	-0.158
		Middle	/		/
		High	-1.028		-0.728
	802.11ac(VHT20)	Low	3.518	0.16	3.678
		Middle	2.495		2.655
		High	0.905		1.065
	802.11ac(VHT40)	Low	0.254	0.28	0.534
		Middle	/		/
		High	-0.329		-0.049
	802.11ac(VHT80)	Low	/	0.57	/
		Middle	-2.810		-2.240
		High	/		/

Band	Operation mode	Channel	Measurements (dBm/MHz)	Duty Cycle Factor (dB)	Power Spectral Density (dBm/MHz)
U-NII-2A	802.11a	Low	1.367	0.16	1.527
		Middle	1.317		1.477
		High	2.357		2.517
	802.11n(HT20)	Low	1.164	0.15	1.314
		Middle	1.701		1.851
		High	1.584		1.734
	802.11n(HT40)	Low	-1.748	0.29	-1.458
		Middle	/		/
		High	-1.298		-1.008
	802.11ac(VHT20)	Low	1.319	0.17	1.489
		Middle	1.380		1.55
		High	1.714		1.884
	802.11ac(VHT40)	Low	-1.511	0.29	-1.221
		Middle	/		/
		High	-1.034		-0.744
	802.11ac(VHT80)	Low	-4.448	0.55	-3.898
		Middle	/		/
		High	/		/

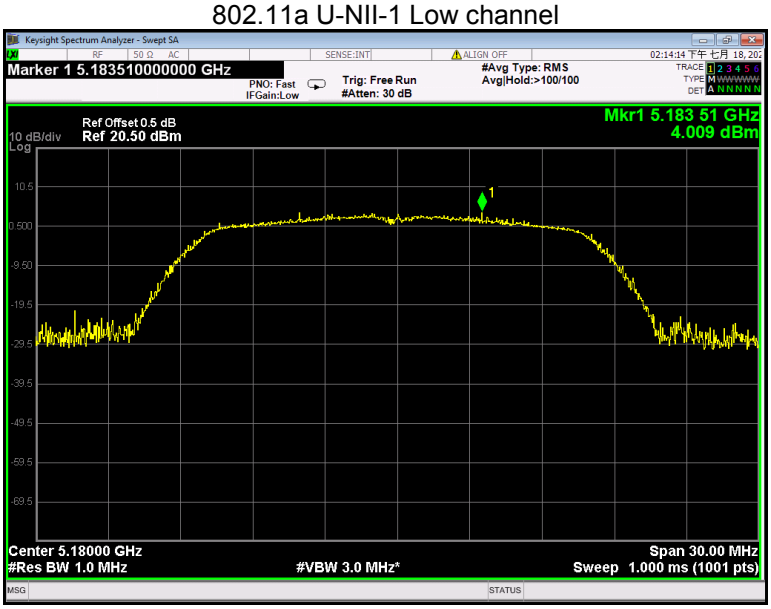
Band	Operation mode	Channel	Measurements (dBm/MHz)	Duty Cycle Factor (dB)	Power Spectral Density (dBm/MHz)
U-NII-2C	802.11a	Low	6.691	0.14	6.831
		Middle	6.650		6.79
		High	5.717		5.857
	802.11n(HT20)	Low	6.652	0.16	6.812
		Middle	6.643		6.803
		High	5.424		5.584
	802.11n(HT40)	Low	3.096	0.28	3.376
		Middle	3.316		3.596
		High	2.997		3.277
	802.11ac(VHT20)	Low	6.425	0.16	6.585
		Middle	5.847		6.007
		High	5.455		5.615
	802.11ac(VHT40)	Low	3.587	0.29	3.877
		Middle	3.421		3.711
		High	2.439		2.729
	802.11ac(VHT80)	Low	0.312	0.57	0.882
		Middle	/		/
		High	0.403		0.973

Band	Operation mode	Channel	Measurements (dBm/MHz)	Duty Cycle Factor (dB)	Power Spectral Density (dBm/MHz)
U-NII-3	802.11a	Low	4.284	0.14	4.424
		Middle	4.636		4.776
		High	5.212		5.352
	802.11n(HT20)	Low	4.218	0.15	4.368
		Middle	4.190		4.34
		High	4.668		4.818
	802.11n(HT40)	Low	1.681	0.28	1.961
		Middle	/		/
		High	1.481		1.761
	802.11ac(VHT20)	Low	4.176	0.16	4.336
		Middle	4.407		4.567
		High	4.530		4.69
	802.11ac(VHT40)	Low	1.671	0.28	1.951
		Middle	/		/
		High	1.579		1.859
	802.11ac(VHT80)	Low	-1.516	0.55	-0.966
		Middle	/		/
		High	/		/

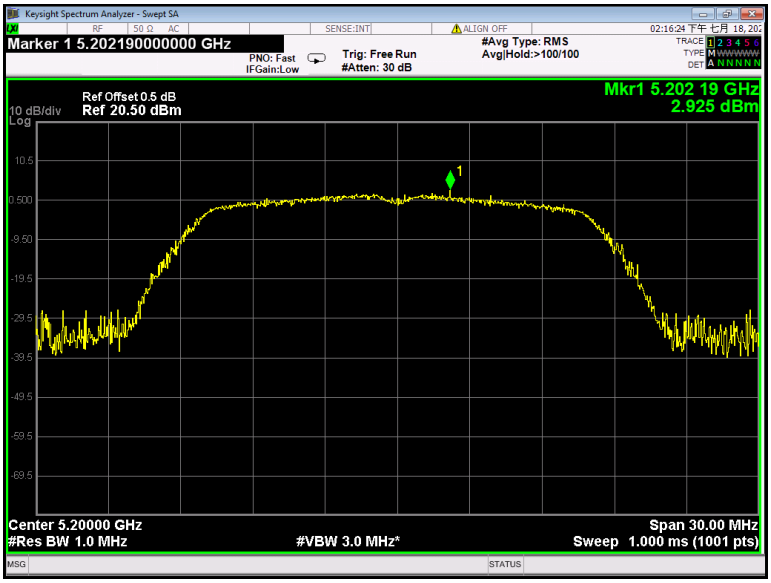
* All transmit signals are completely uncorrelated with each other, Directional gain = G_{ANT} which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

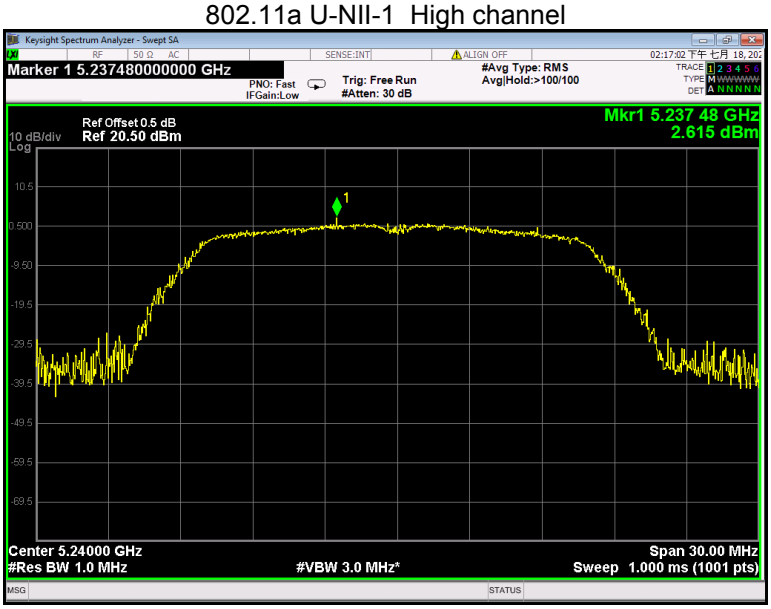
802.11a U-NII-1 Low channel



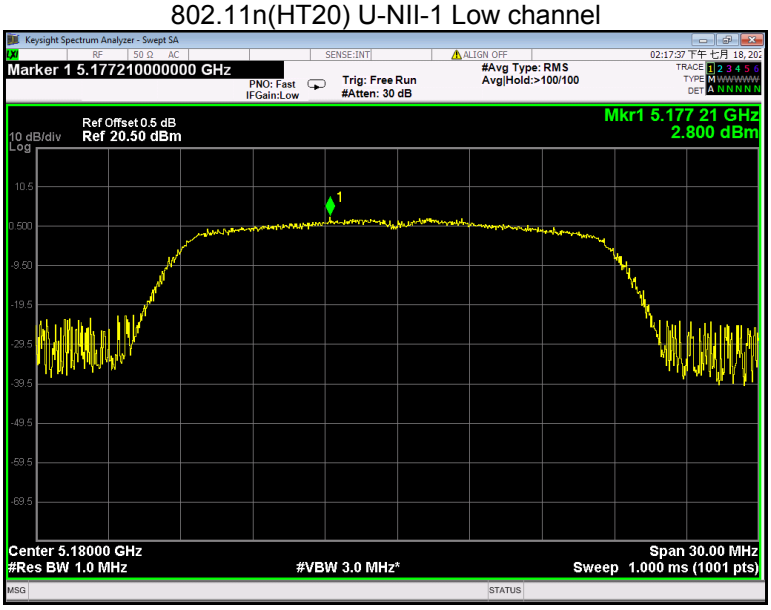
802.11a U-NII-1 Middle channel



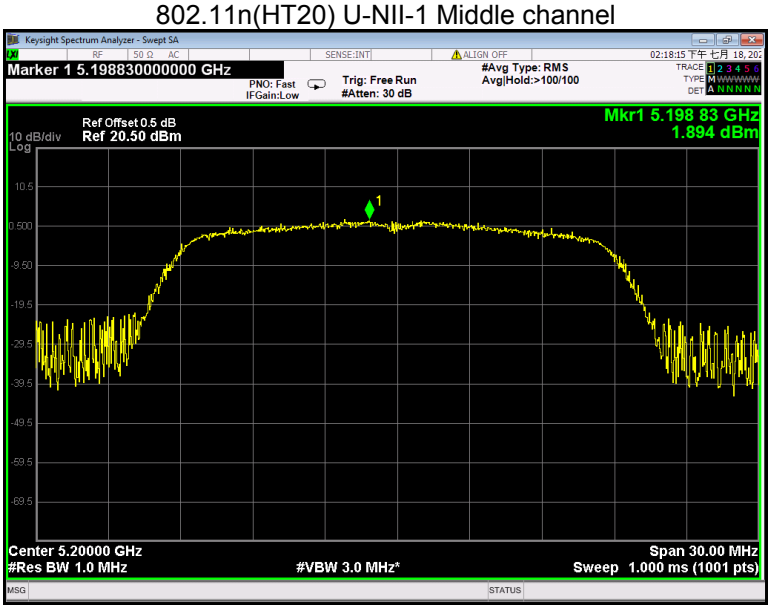
802.11a U-NII-1 High channel



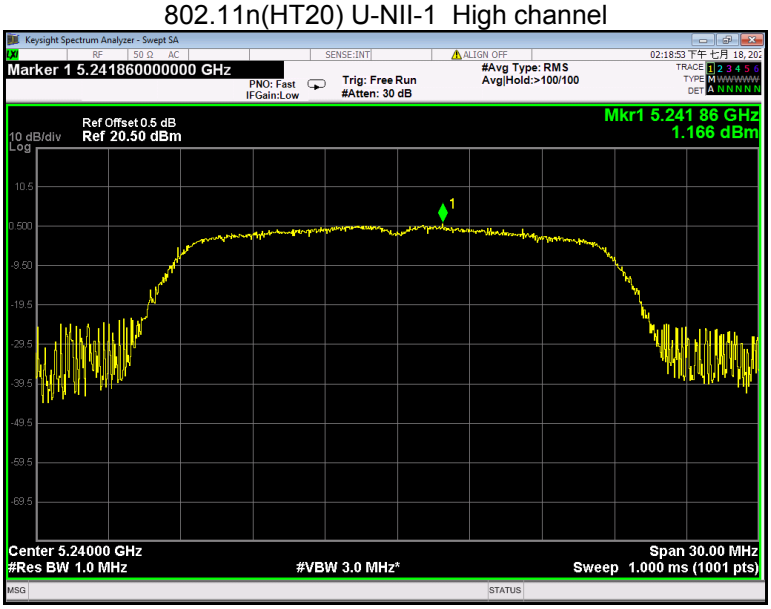
802.11n(HT20) U-NII-1 Low channel



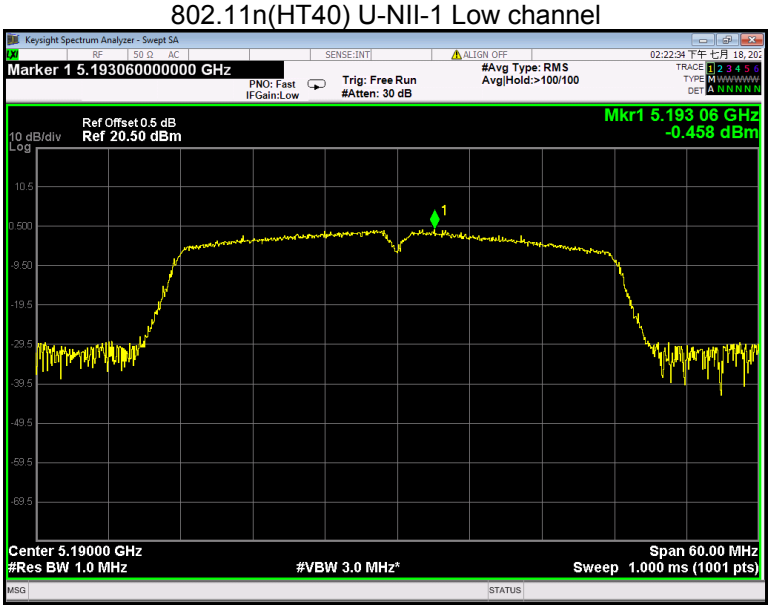
802.11n(HT20) U-NII-1 Middle channel



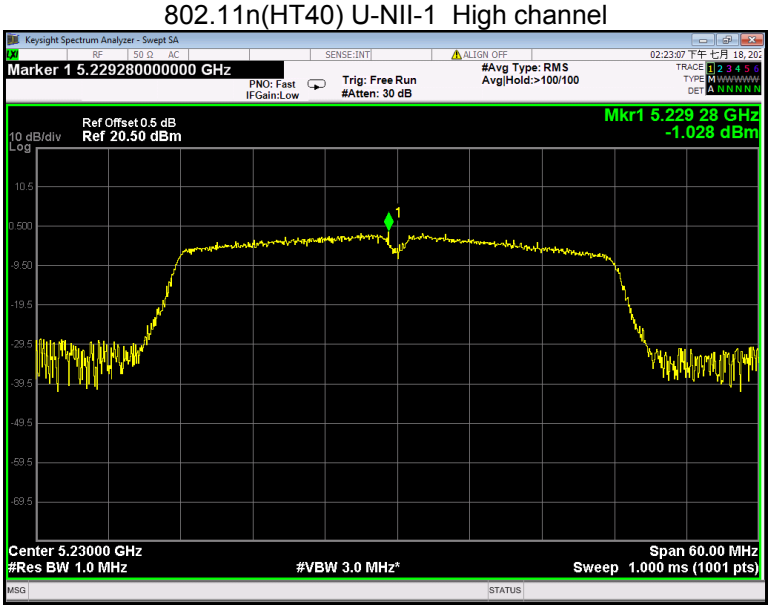
802.11n(HT20) U-NII-1 High channel



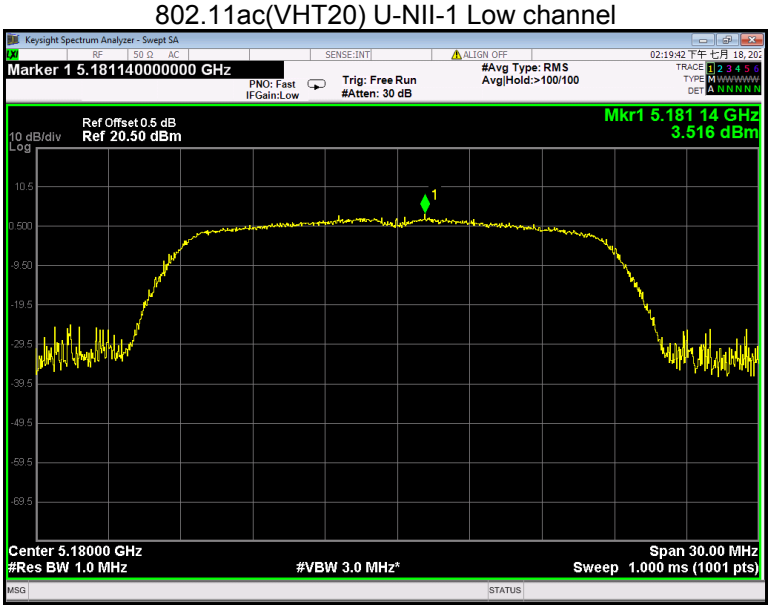
802.11n(HT40) U-NII-1 Low channel



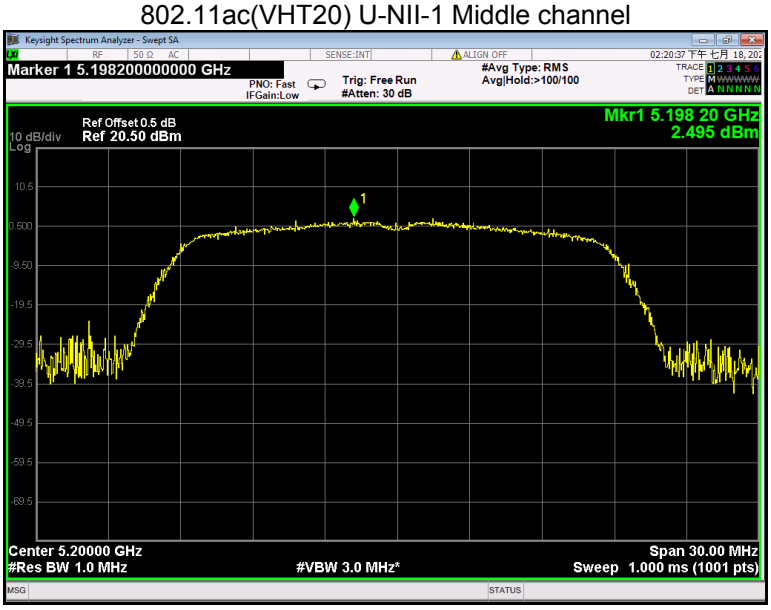
802.11n(HT40) U-NII-1 High channel



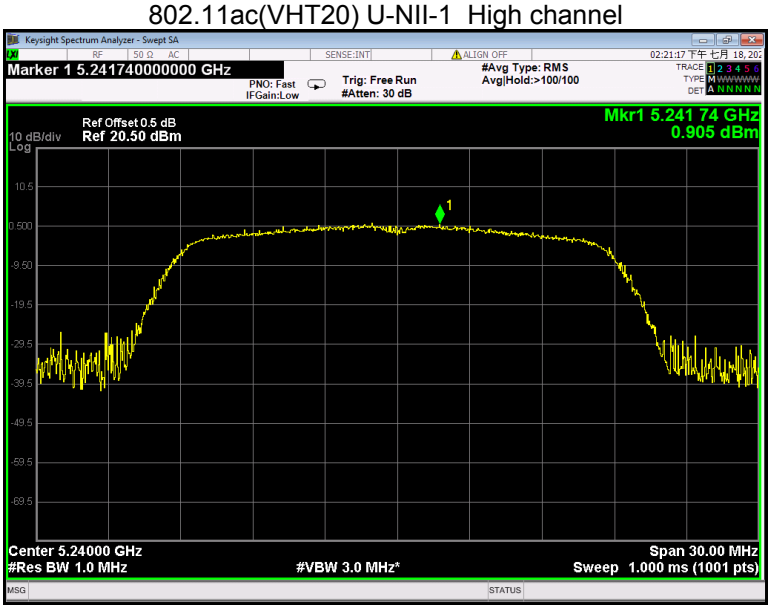
802.11ac(VHT20) U-NII-1 Low channel



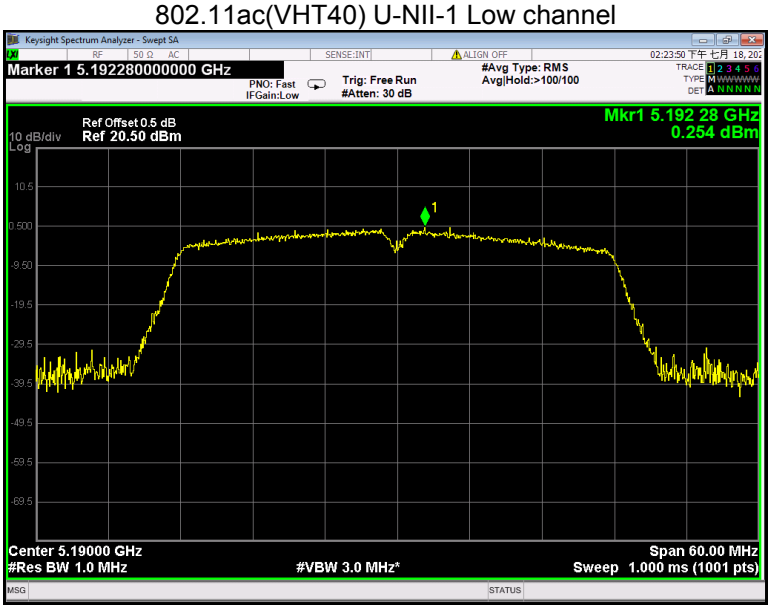
802.11ac(VHT20) U-NII-1 Middle channel



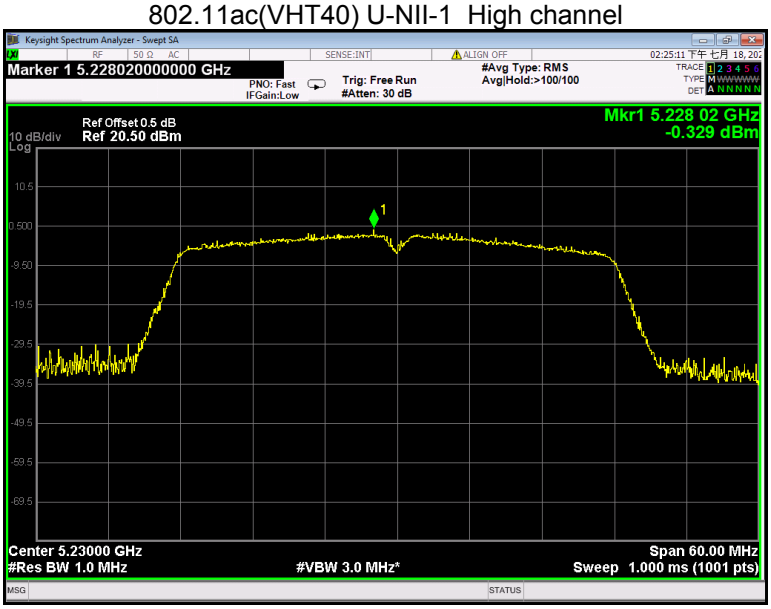
802.11ac(VHT20) U-NII-1 High channel



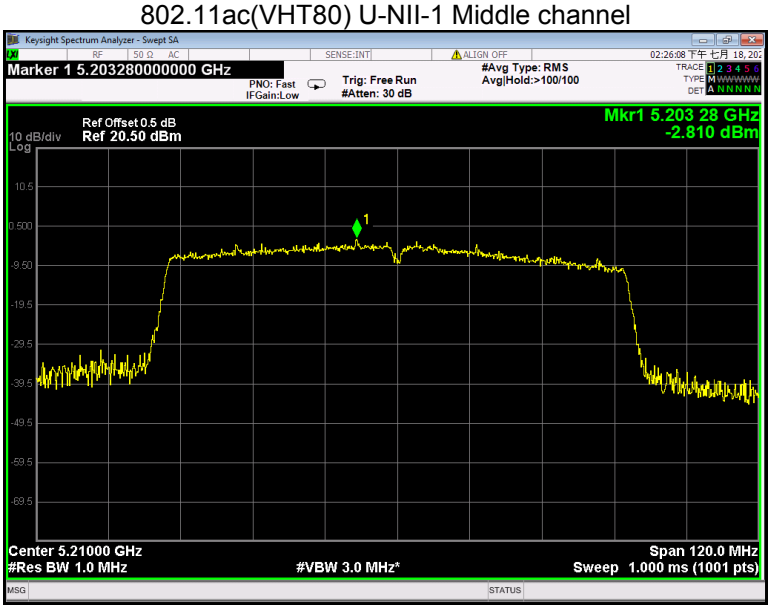
802.11ac(VHT40) U-NII-1 Low channel



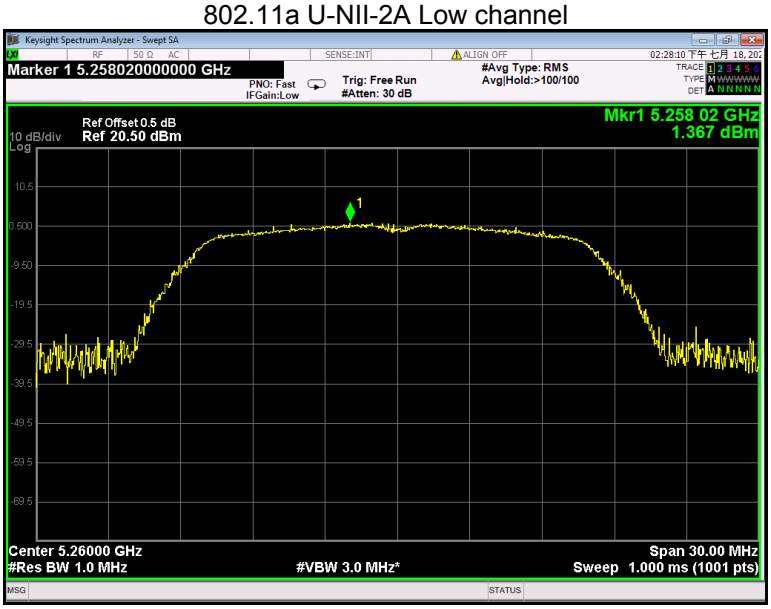
802.11ac(VHT40) U-NII-1 High channel



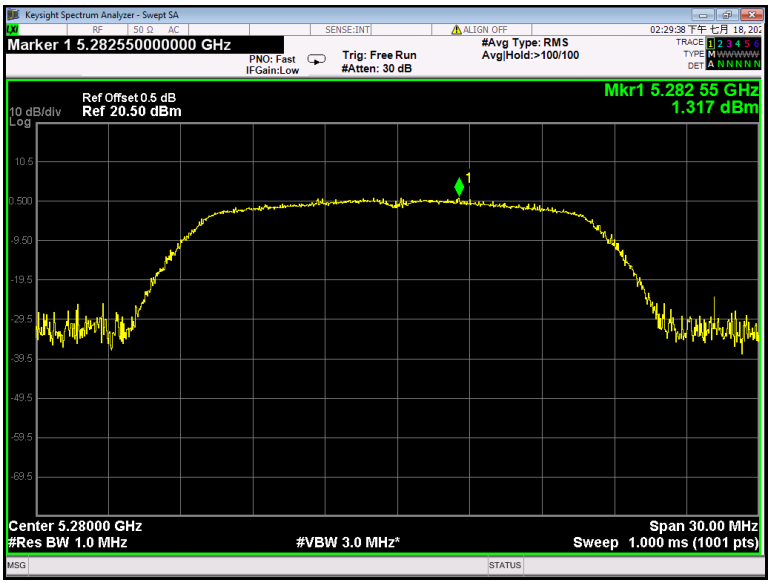
802.11ac(VHT80) U-NII-1 Middle channel



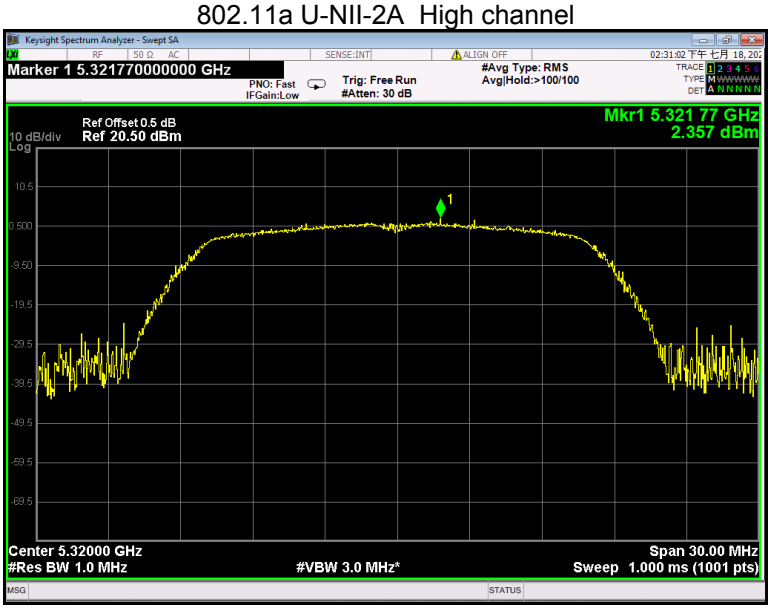
802.11a U-NII-2A Low channel



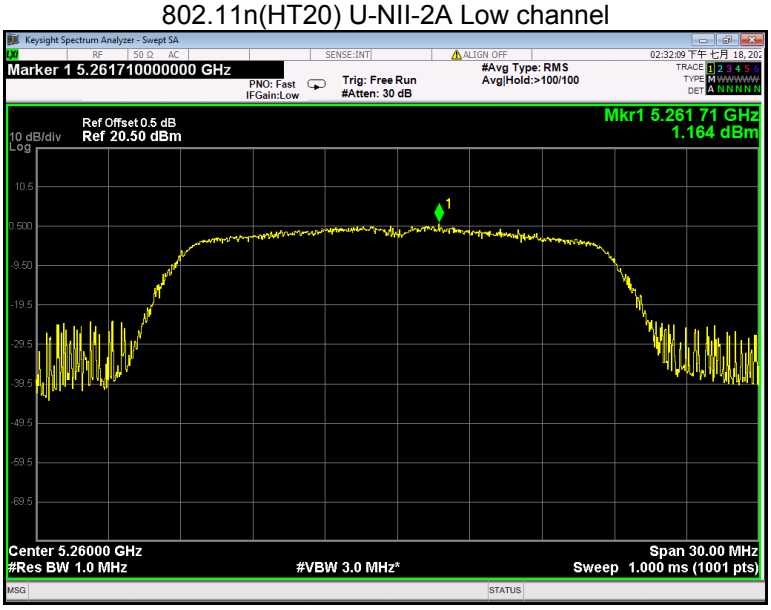
802.11a U-NII-2A Middle channel



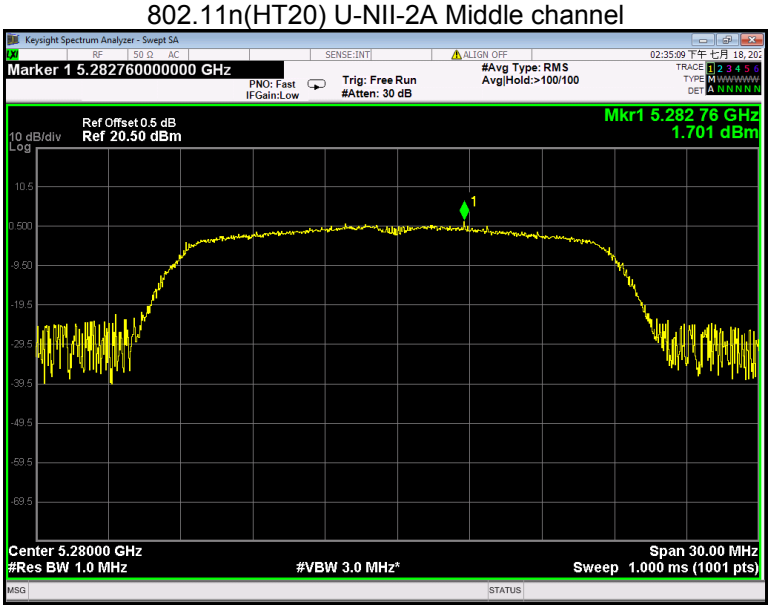
802.11a U-NII-2A High channel



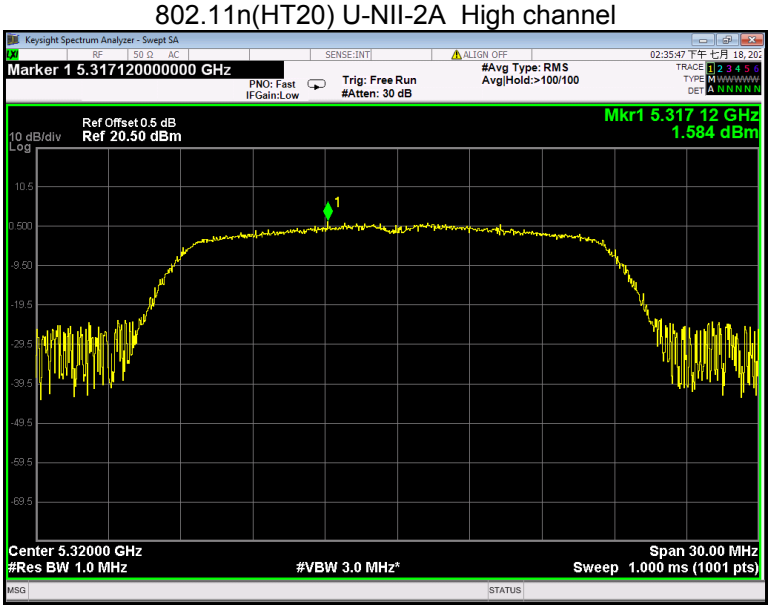
802.11n(HT20) U-NII-2A Low channel



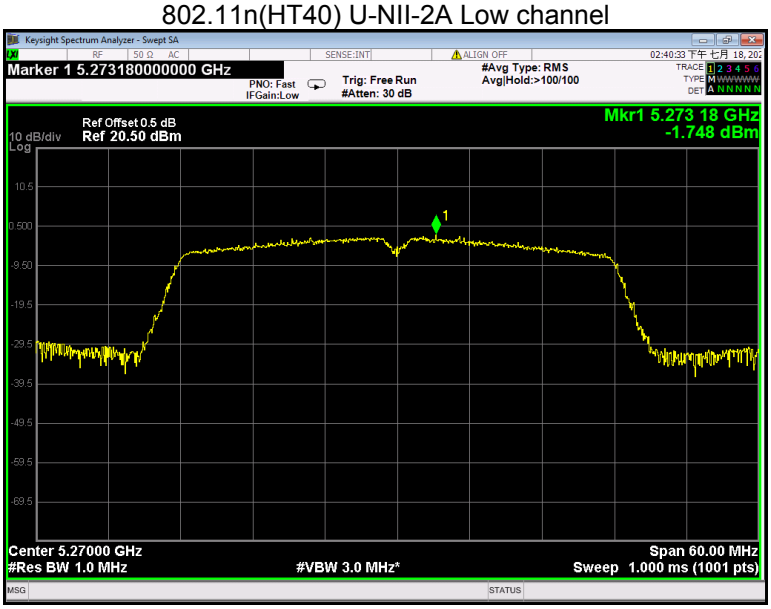
802.11n(HT20) U-NII-2A Middle channel



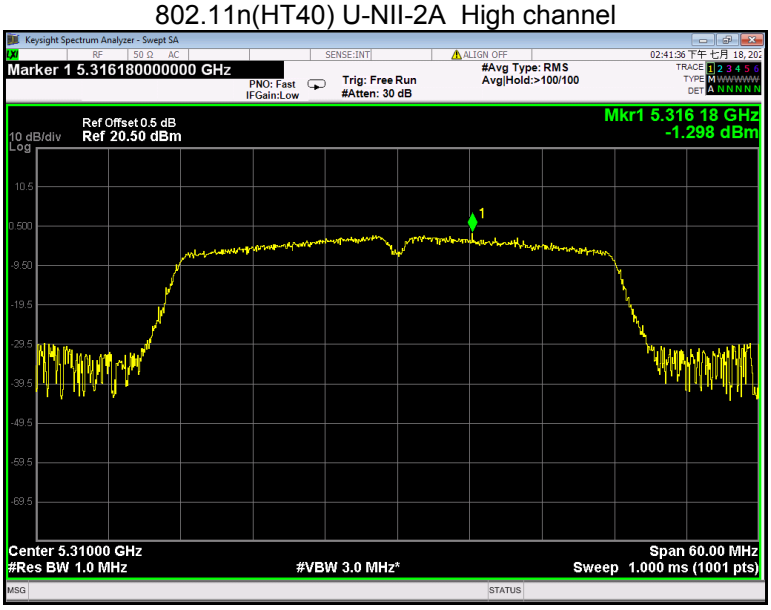
802.11n(HT20) U-NII-2A High channel



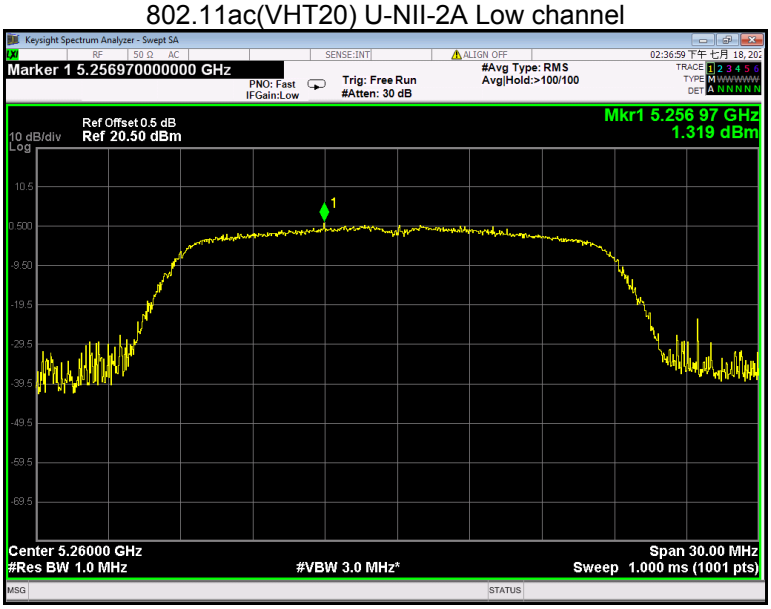
802.11n(HT40) U-NII-2A Low channel



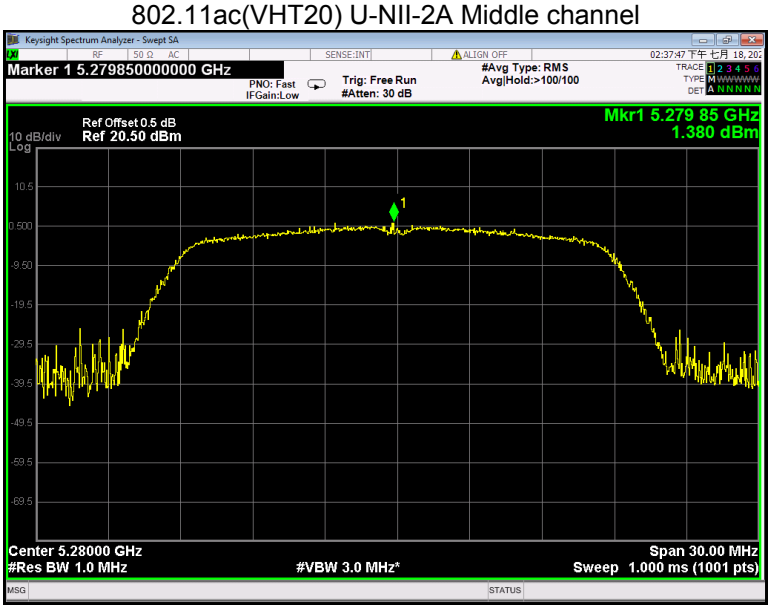
802.11n(HT40) U-NII-2A High channel



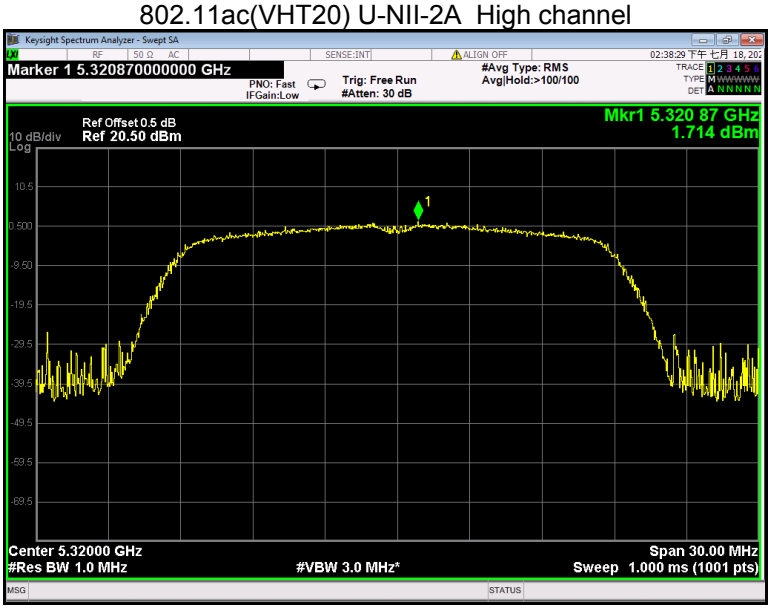
802.11ac(VHT20) U-NII-2A Low channel



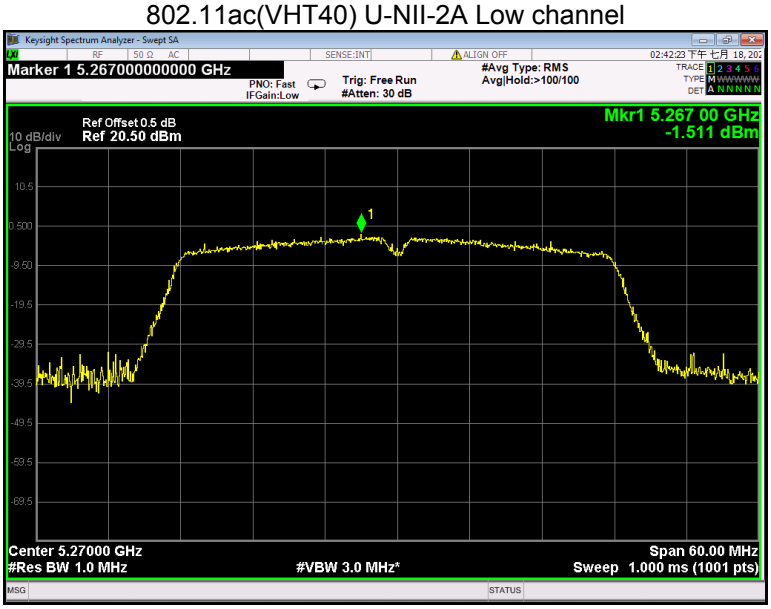
802.11ac(VHT20) U-NII-2A Middle channel



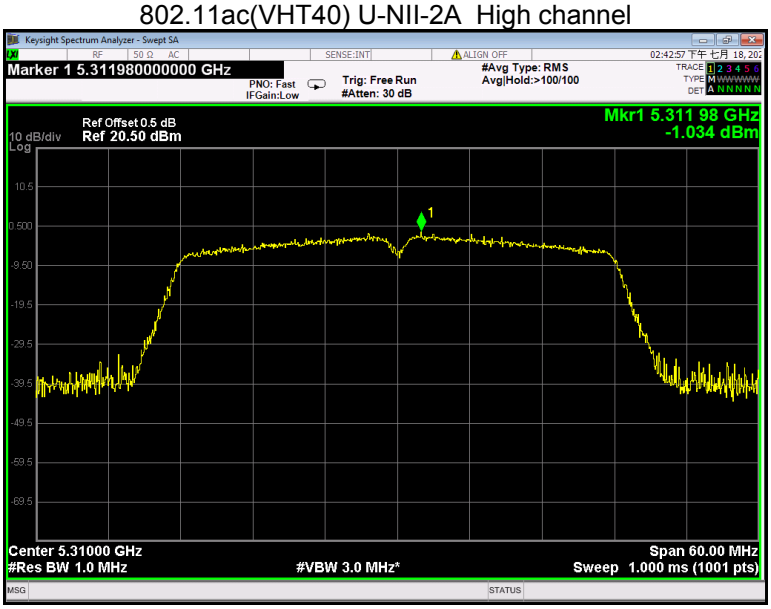
802.11ac(VHT20) U-NII-2A High channel



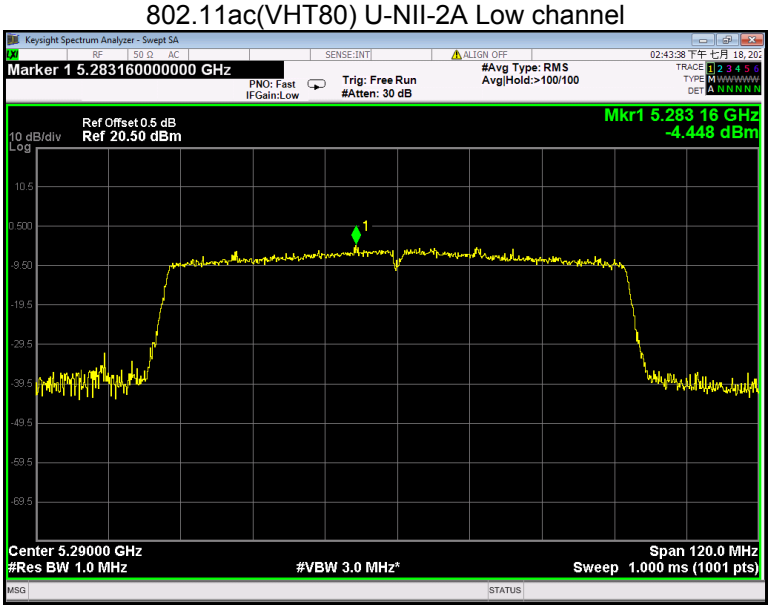
802.11ac(VHT40) U-NII-2A Low channel



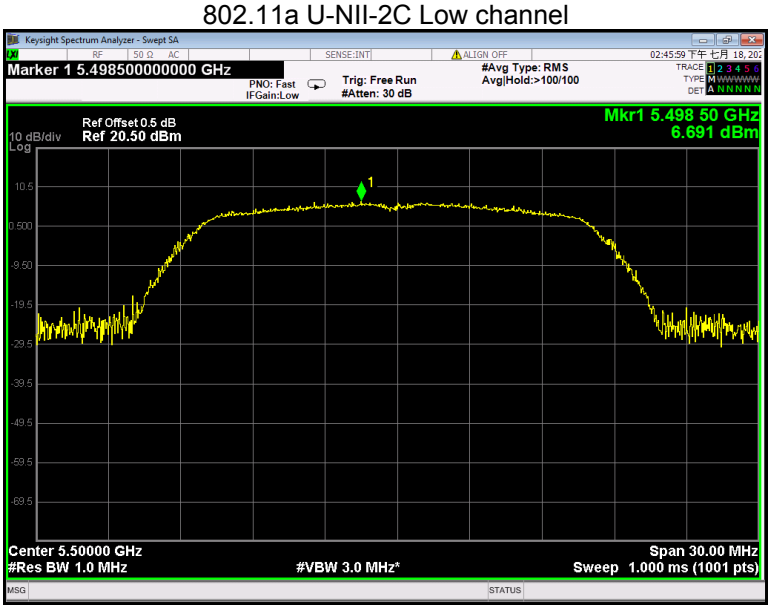
802.11ac(VHT40) U-NII-2A High channel



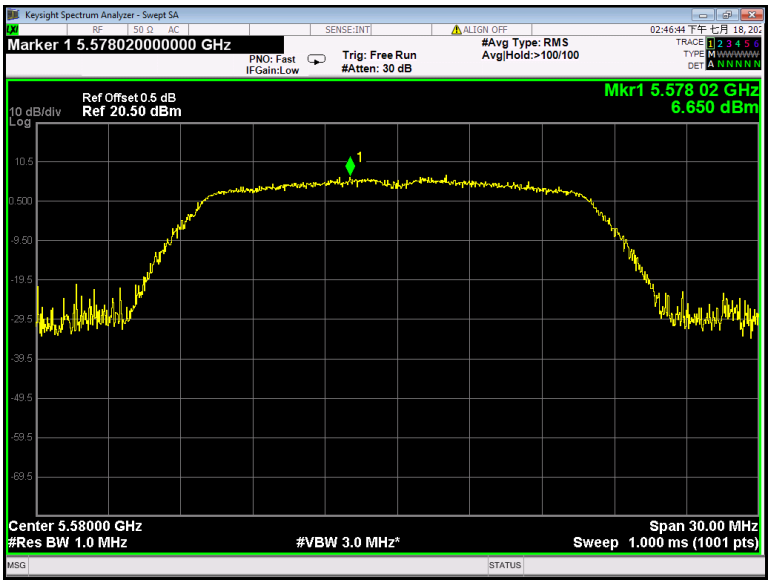
802.11ac(VHT80) U-NII-2A Low channel



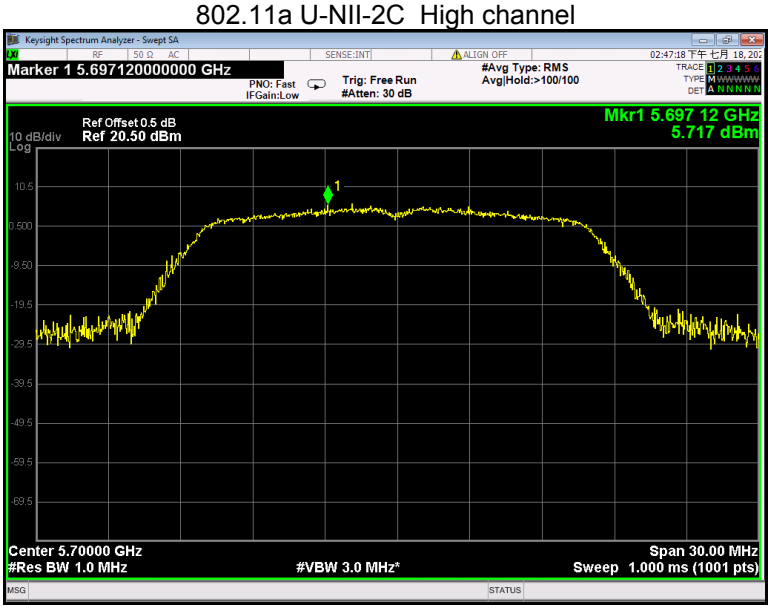
802.11a U-NII-2C Low channel



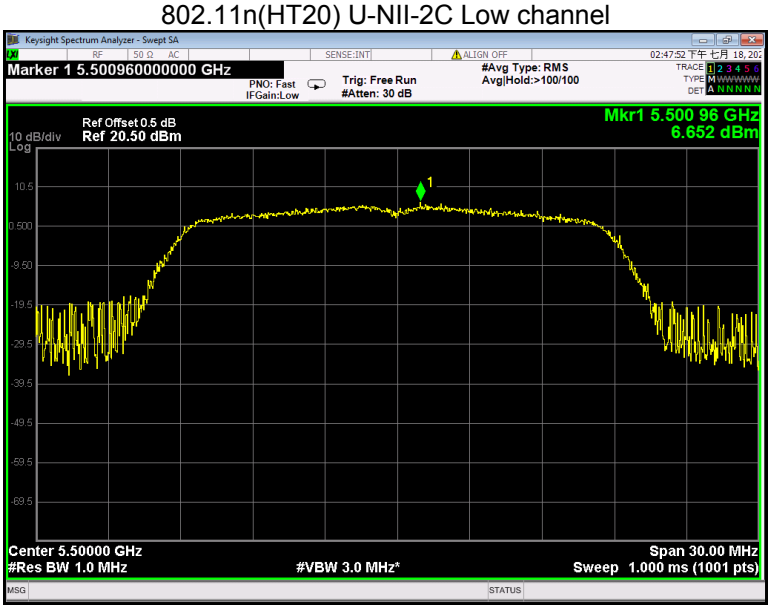
802.11a U-NII-2C Middle channel



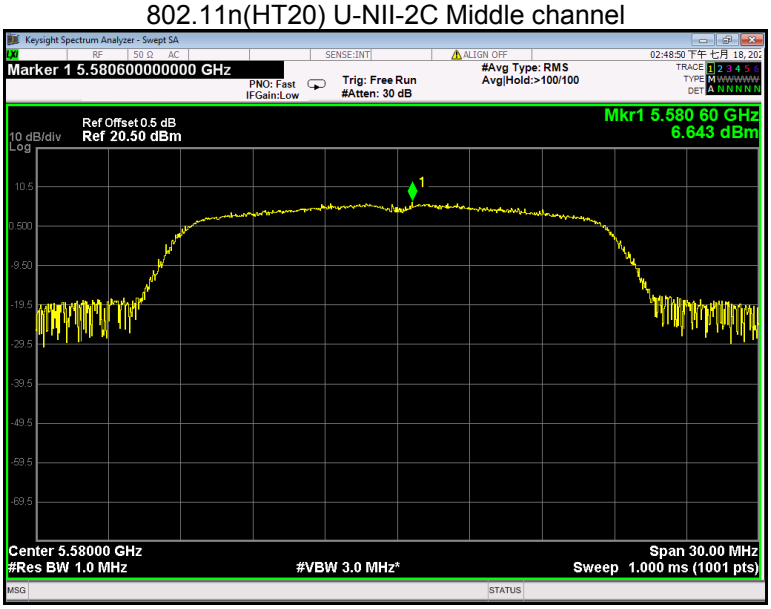
802.11a U-NII-2C High channel



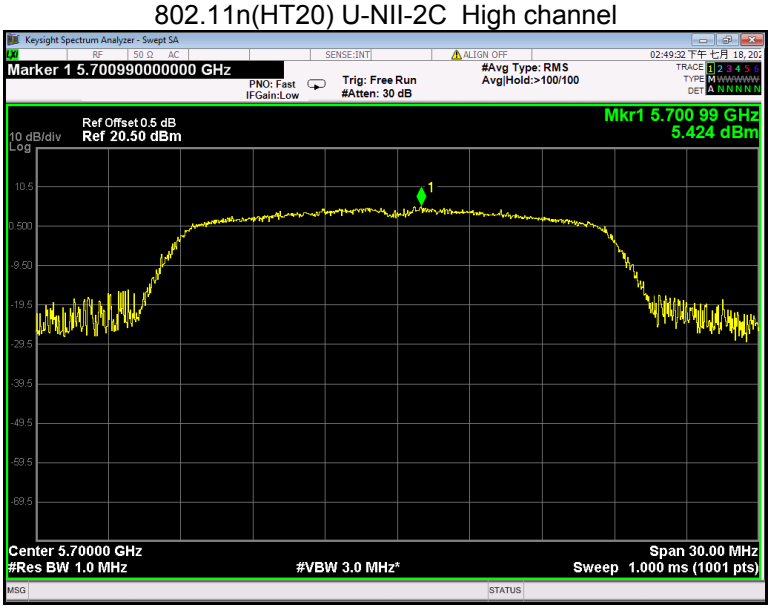
802.11n(HT20) U-NII-2C Low channel



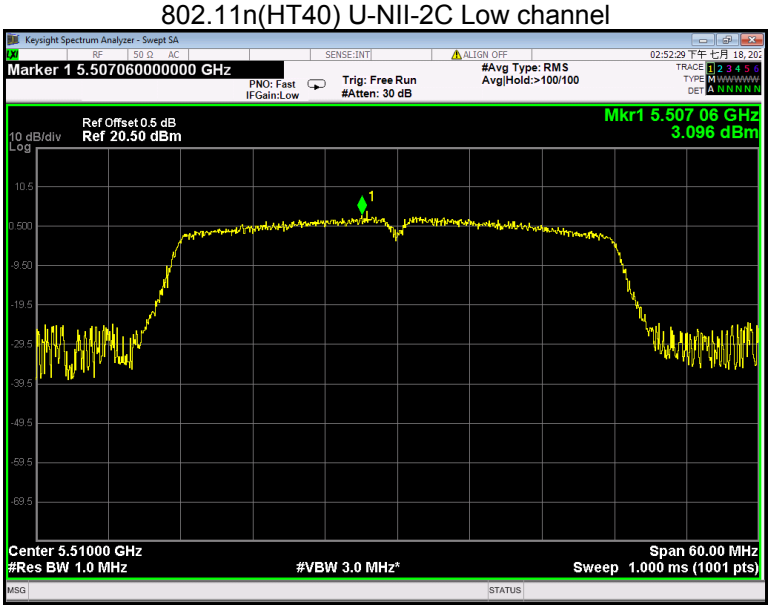
802.11n(HT20) U-NII-2C Middle channel



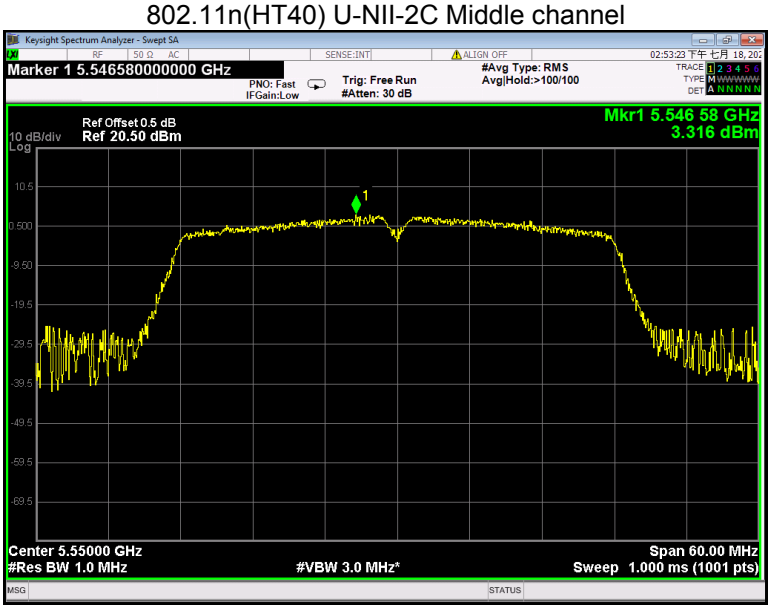
802.11n(HT20) U-NII-2C High channel



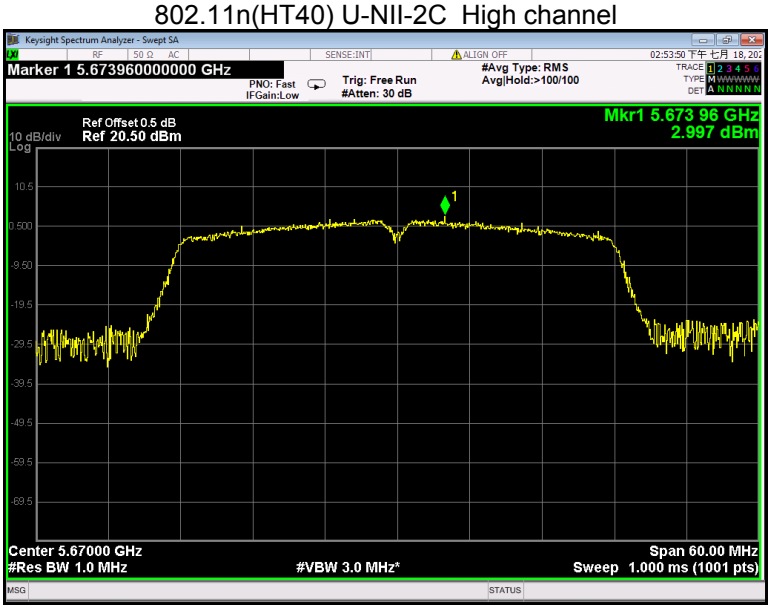
802.11n(HT40) U-NII-2C Low channel



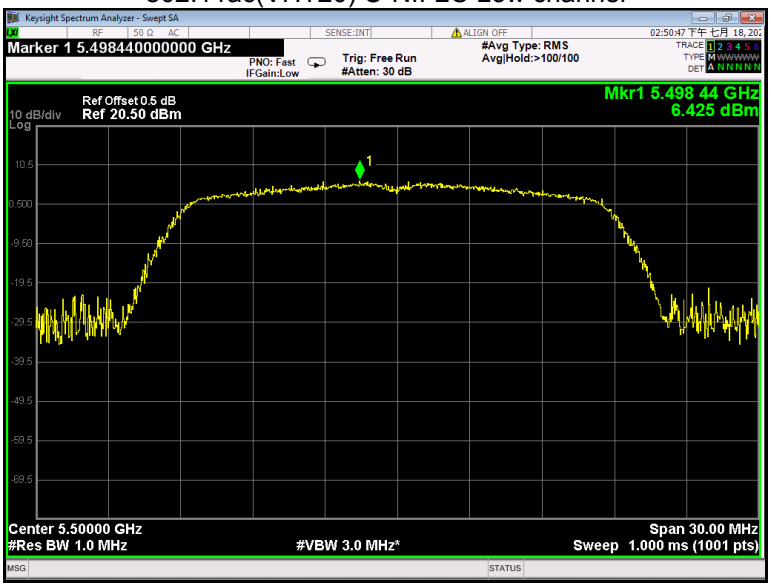
802.11n(HT40) U-NII-2C Middle channel



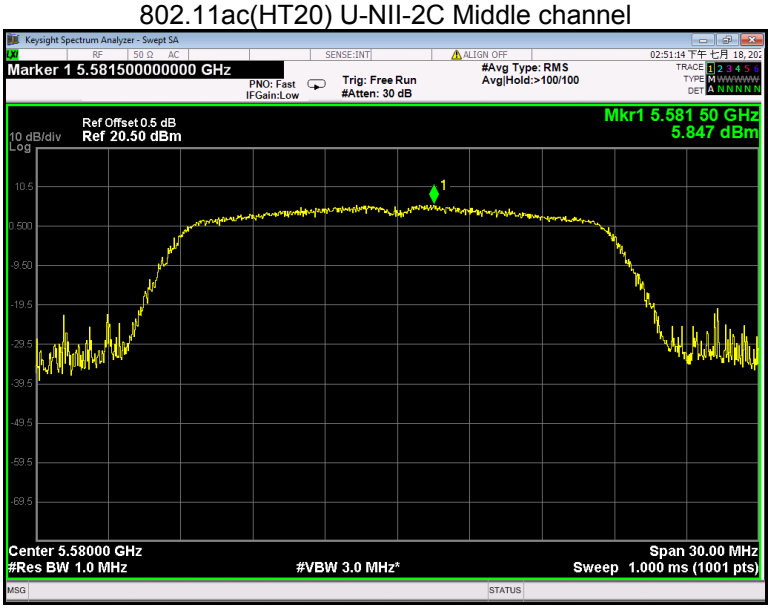
802.11n(HT40) U-NII-2C High channel



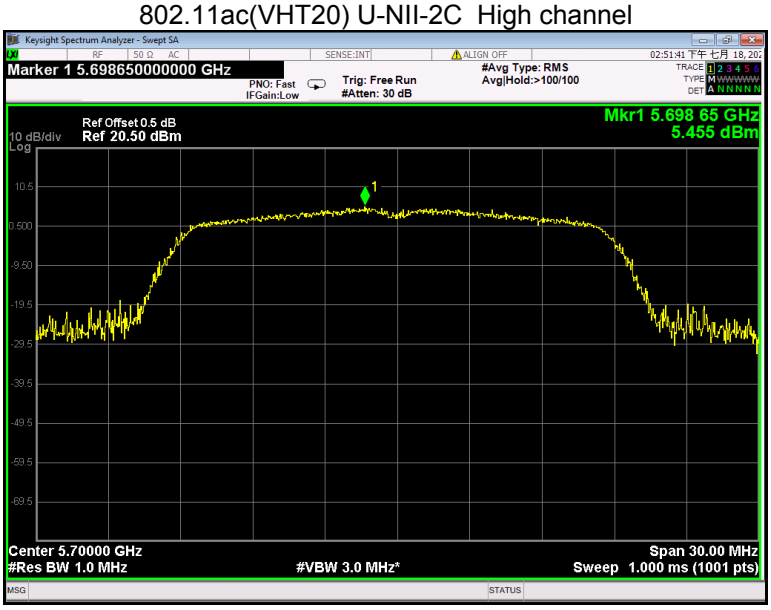
802.11ac(VHT20) U-NII-2C Low channel



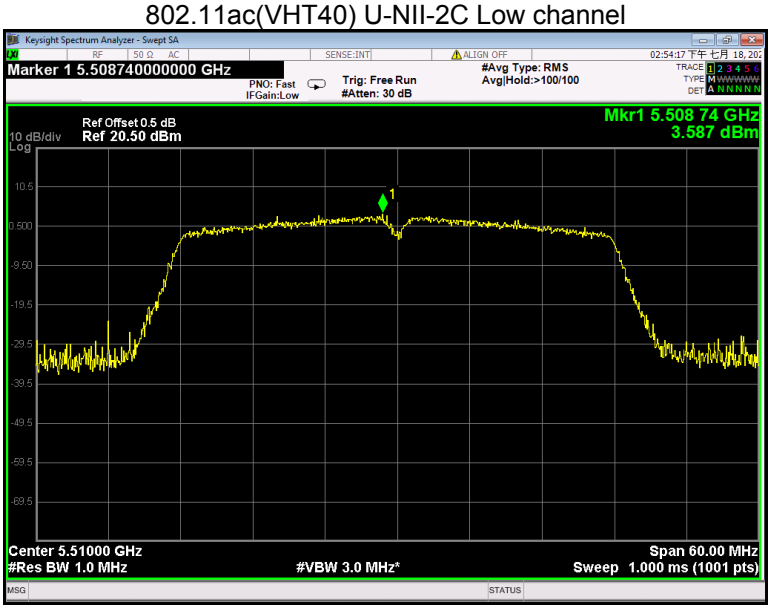
802.11ac(HT20) U-NII-2C Middle channel



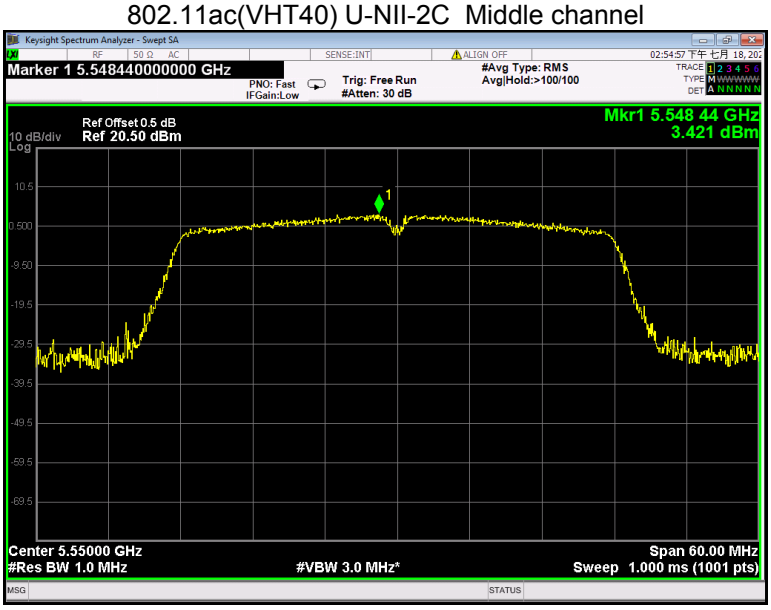
802.11ac(VHT20) U-NII-2C High channel



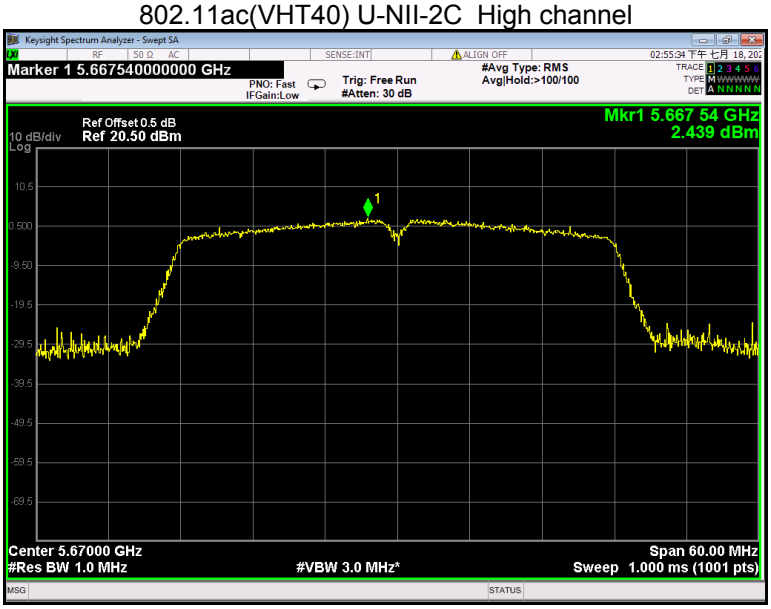
802.11ac(VHT40) U-NII-2C Low channel



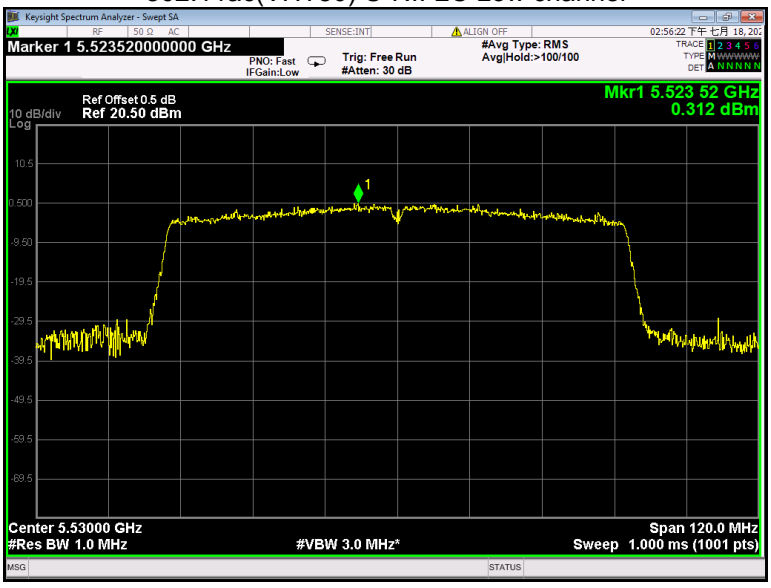
802.11ac(VHT40) U-NII-2C Middle channel



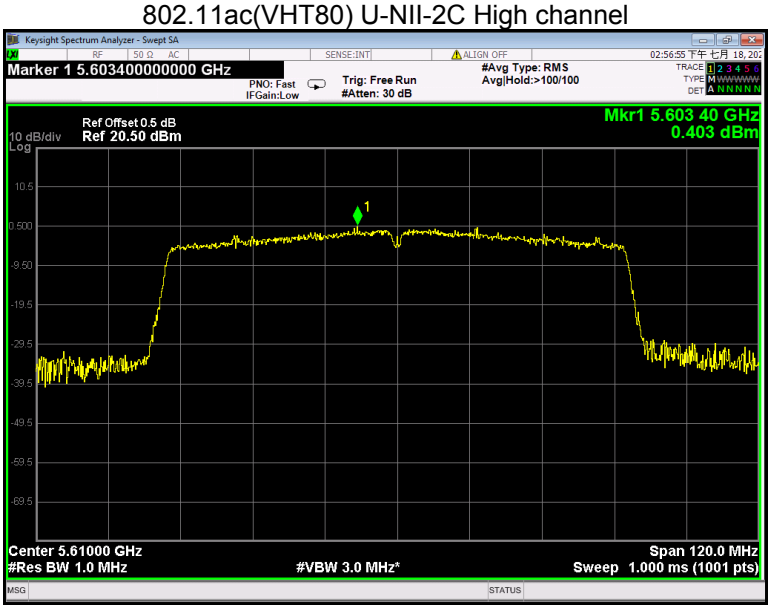
802.11ac(VHT40) U-NII-2C High channel



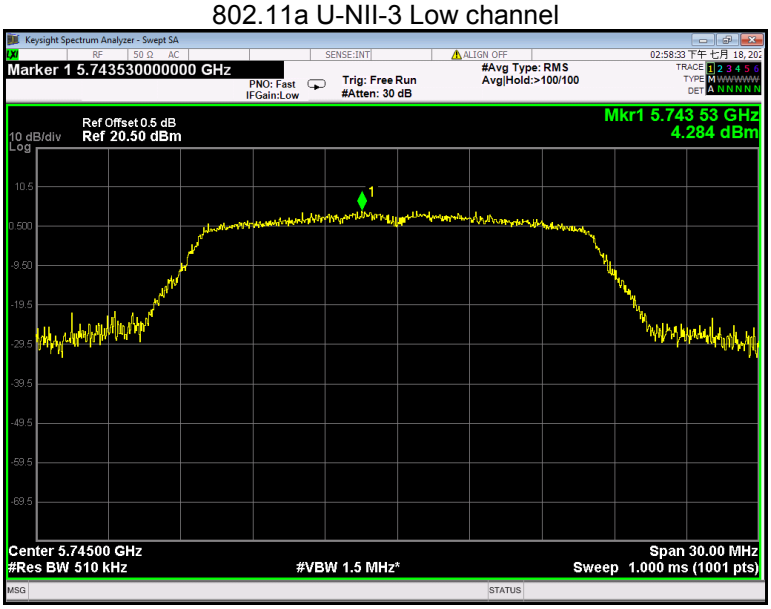
802.11ac(VHT80) U-NII-2C Low channel



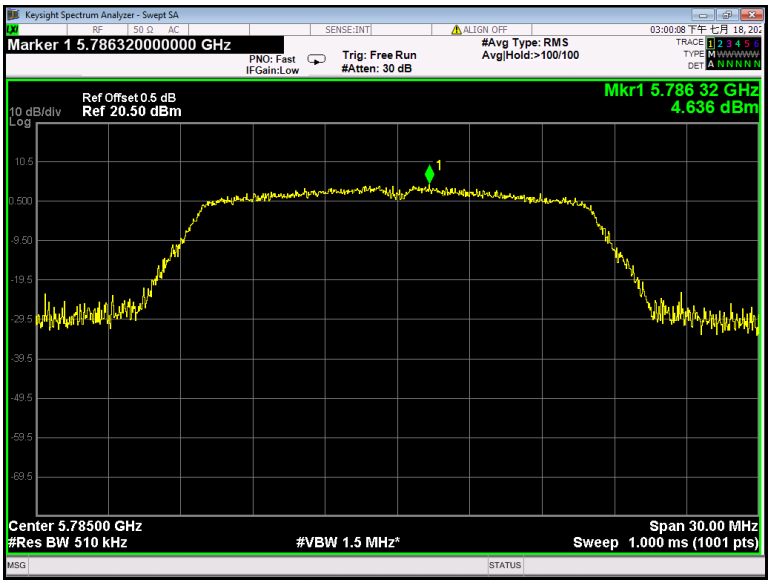
802.11ac(VHT80) U-NII-2C High channel



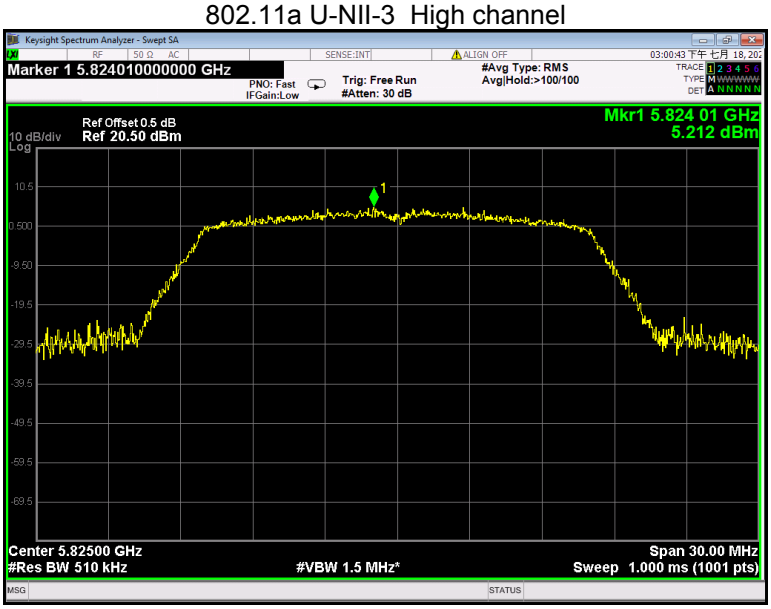
802.11a U-NII-3 Low channel



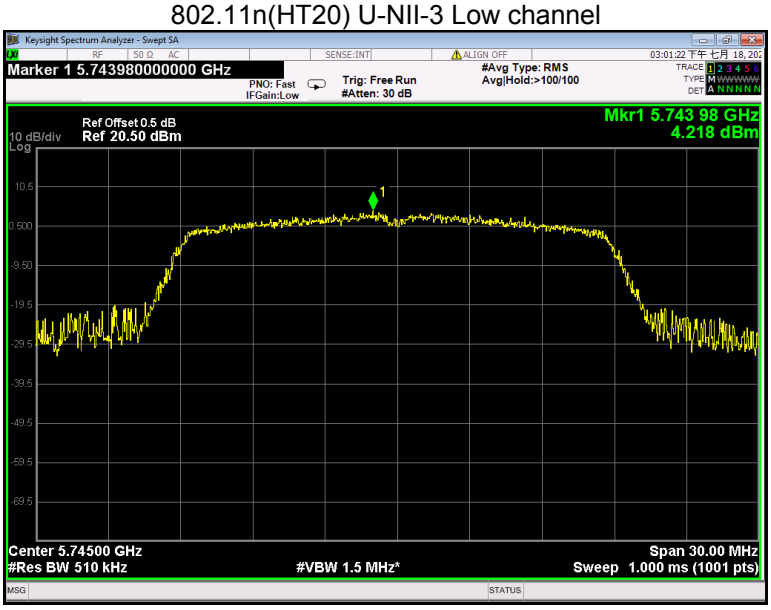
802.11a U-NII-3 Middle channel



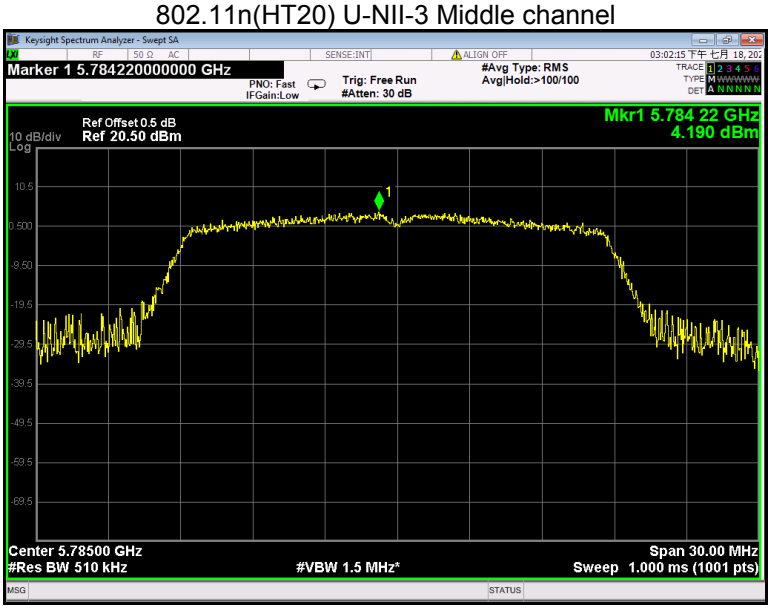
802.11a U-NII-3 High channel



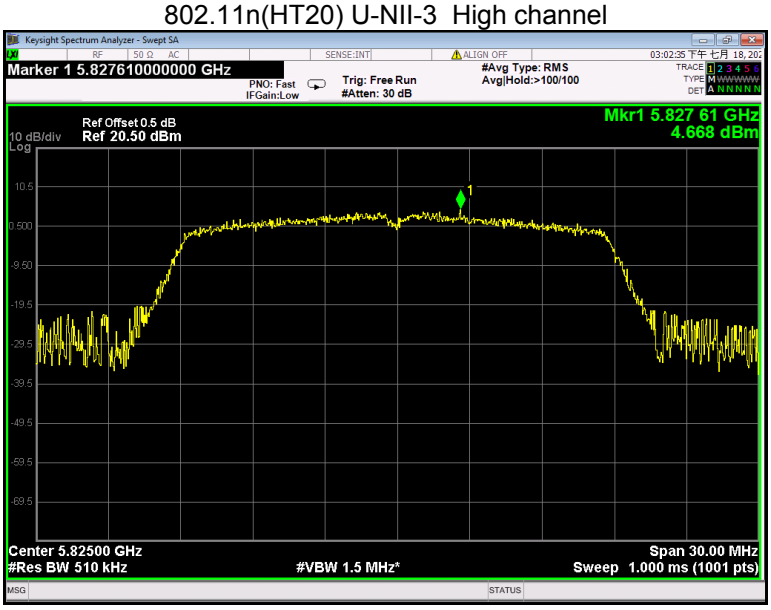
802.11n(HT20) U-NII-3 Low channel



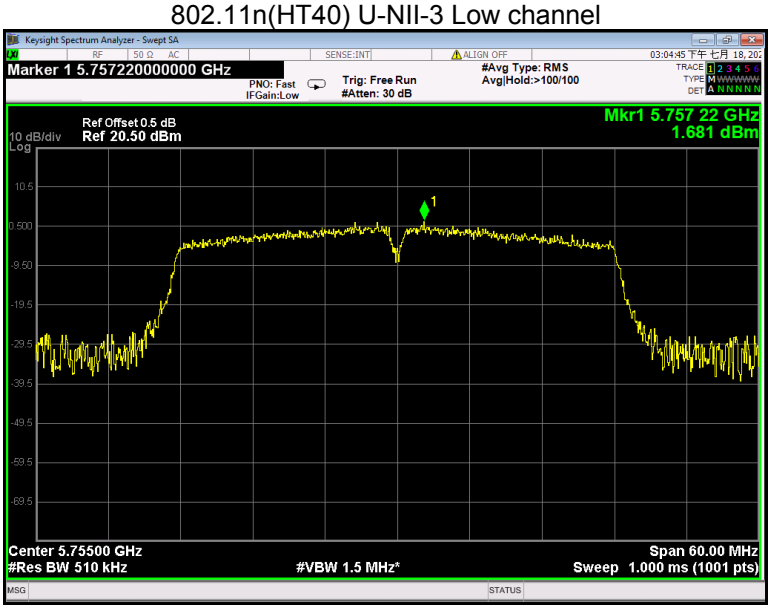
802.11n(HT20) U-NII-3 Middle channel



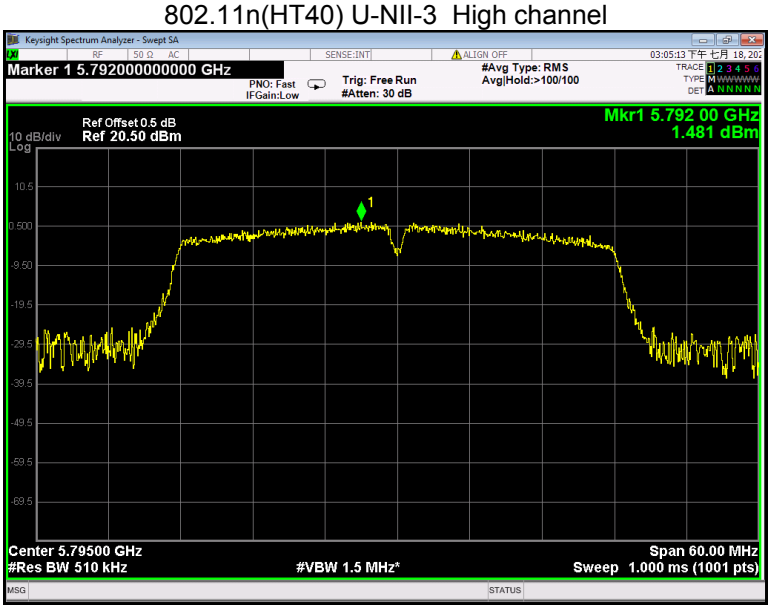
802.11n(HT20) U-NII-3 High channel



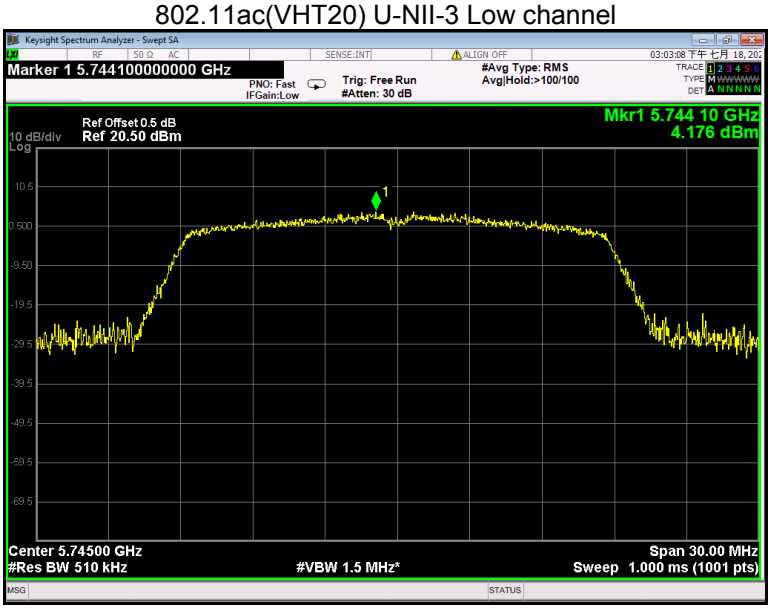
802.11n(HT40) U-NII-3 Low channel



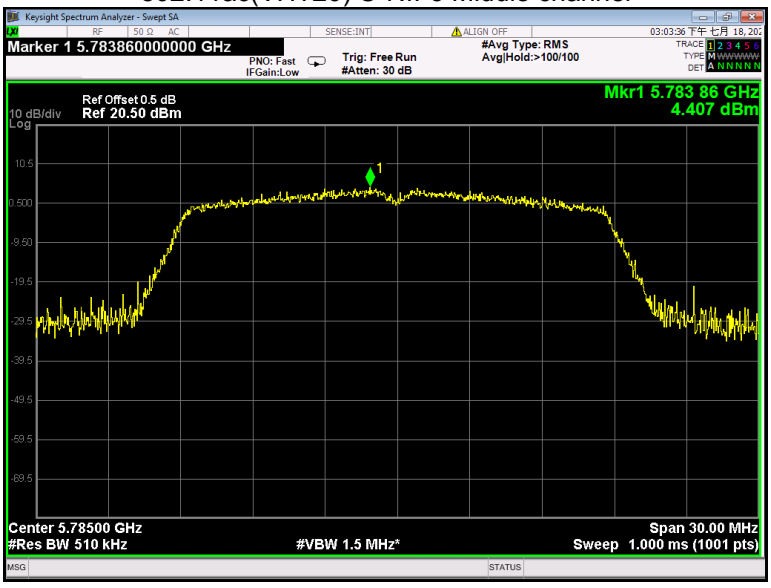
802.11n(HT40) U-NII-3 High channel



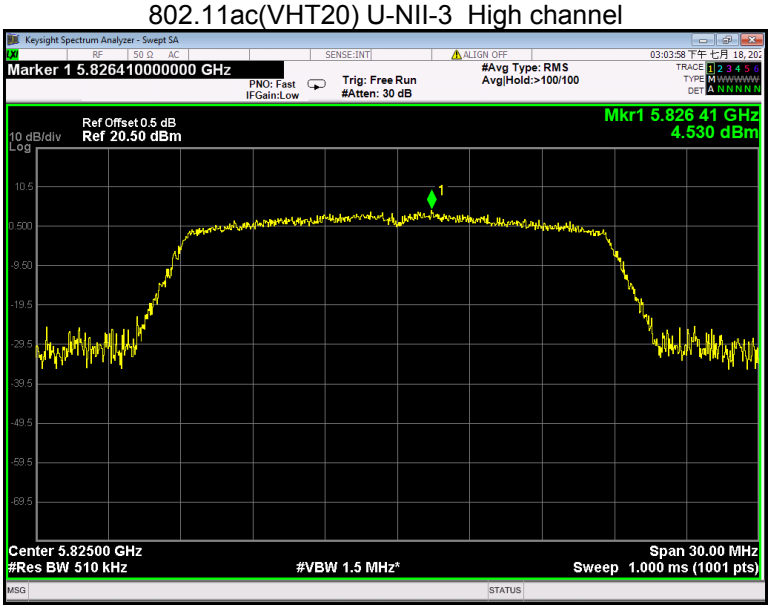
802.11ac(VHT20) U-NII-3 Low channel



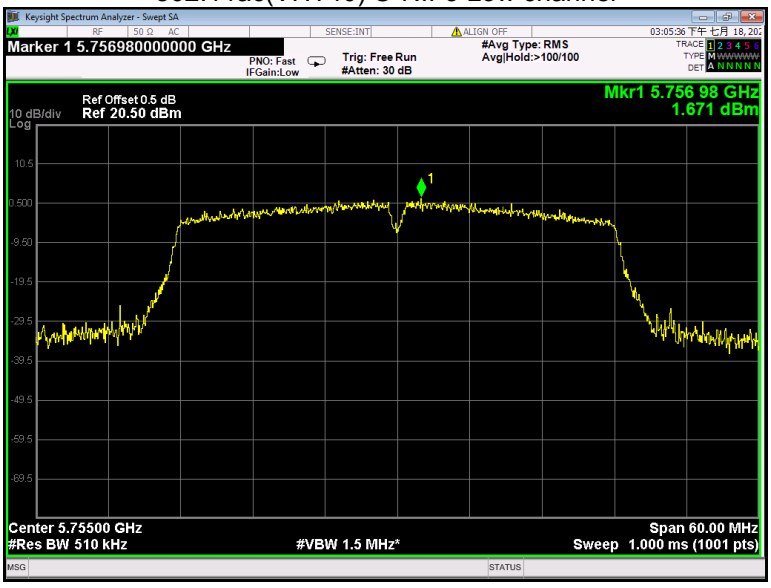
802.11ac(VHT20) U-NII-3 Middle channel



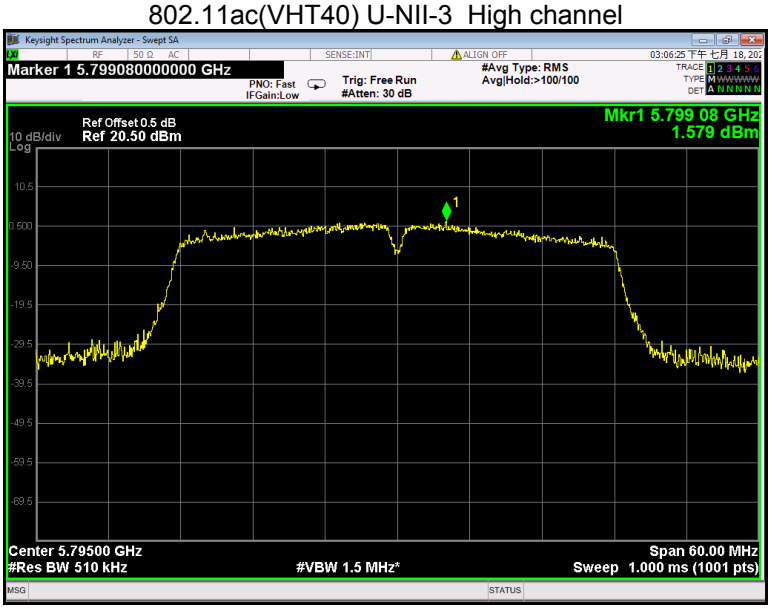
802.11ac(VHT20) U-NII-3 High channel



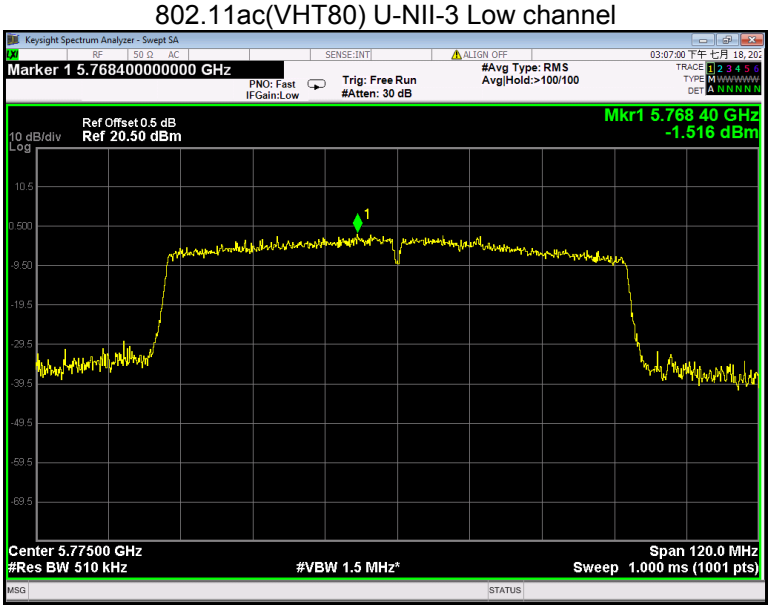
802.11ac(VHT40) U-NII-3 Low channel



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



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



15 Frequency Stability

Test Requirement:	FCC 47CFR Part 15 Section 15.407(g)
Test Method:	ANSI C63.10:2013
Test Limit:	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual or 20ppm.
Test Result:	PASS

15.1 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
   EUT have transmitted absence of unmodulation signal and fixed channelise. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

2. Extreme temperature rule is -30°C~ 50°C.

15.2 Test Result

U-NII-1 Test Frequency:5180MHz				
Temperature (℃)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
50	3.89	-0.0020	-3.28	20
45		-0.0020	-3.26	20
30		0.0022	3.54	20
20		0.0021	3.44	20
10		0.0044	7.14	20
0		0.0073	12.04	20
-10		0.0021	3.51	20
-15		0.0085	13.97	20
-30		0.0058	9.42	20
20	3.31	0.0087	14.20	20
20	4.47	0.0013	2.11	20

U-NII-2A Test Frequency:5260MHz				
Temperature (℃)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
50	3.89	-0.0007	-1.20	20
45		0.0019	3.09	20
30		-0.0036	-5.85	20
20		0.0004	0.66	20
10		-0.0016	-2.63	20
0		0.0039	6.34	20
-10		0.0023	3.85	20
-15		0.0014	2.32	20
-30		-0.0021	-3.41	20
20	3.31	0.0047	7.69	20
20	4.47	0.0052	8.57	20

U-NII-2C Test Frequency:5500MHz				
Temperature (℃)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
50	3.89	-0.0127	-20.77	20
45		-0.0094	-15.45	20
30		0.0024	3.99	20
20		-0.0064	-10.48	20
10		-0.0093	-15.27	20
0		-0.0076	-12.46	20
-10		-0.0088	-14.45	20
-15		-0.0056	-9.21	20
-30		-0.0025	-4.03	20
20	3.31	-0.0034	-5.60	20
20	4.47	0.0033	5.47	20

U-NII-3 Test Frequency:5785MHz				
Temperature (℃)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
50	3.89	-0.0032	-5.22	20
45		-0.0002	-0.39	20
30		-0.0021	-3.52	20
20		-0.0006	-0.98	20
10		0.0032	5.16	20
0		0.0027	4.35	20
-10		-0.0066	-10.75	20
-15		-0.0013	-2.21	20
-30		-0.0057	-9.36	20
20	3.31	-0.0084	-13.69	20
20	4.47	-0.0079	-12.89	20

16 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

This device uses of an Internal antenna that uses a specified coupling to the intentional radiator. Antenna connectors complied with the requirement.

17 RF Exposure

Remark: Please refer to SAR test report: WTX25X07180811W.

18 Photographs of test setup and EUT.

Note: Please refer to appendix: Appendix-Black Z2-Photos.

======End of Report======