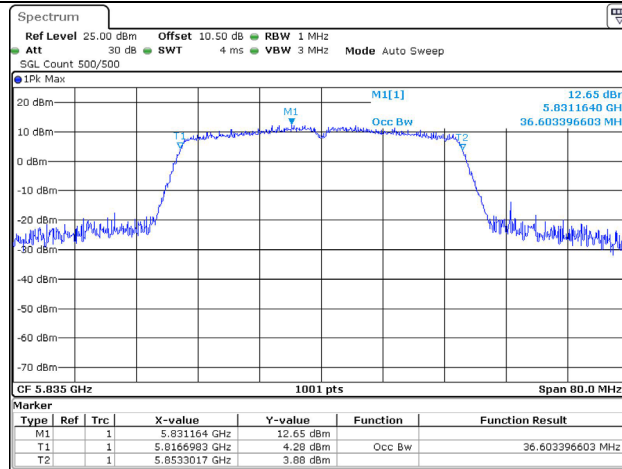
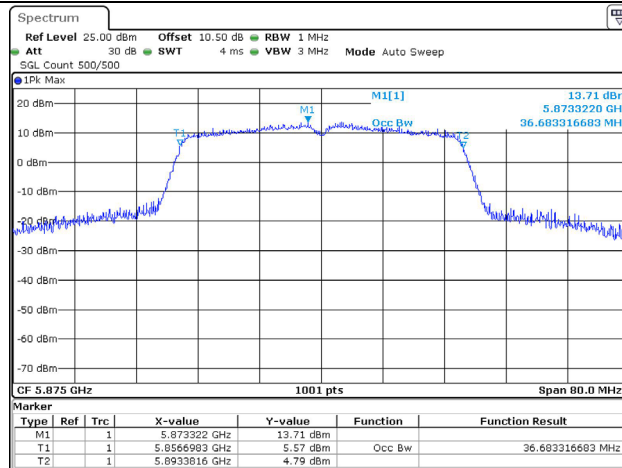
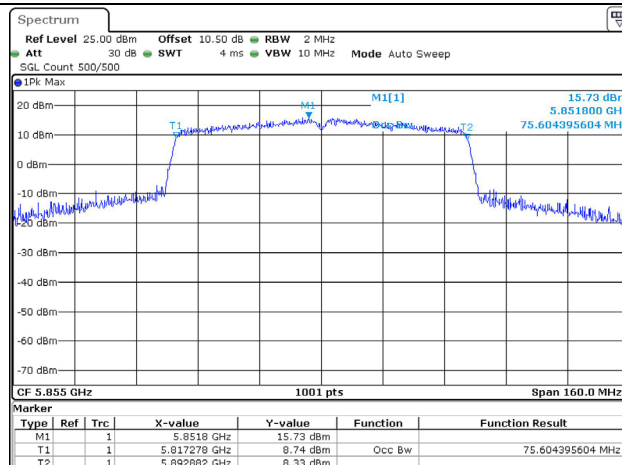
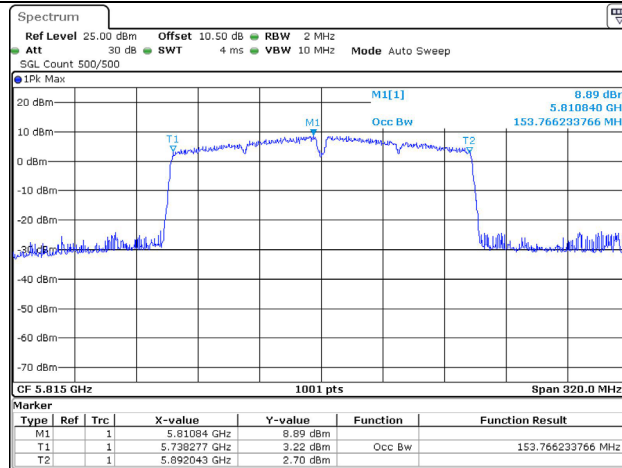
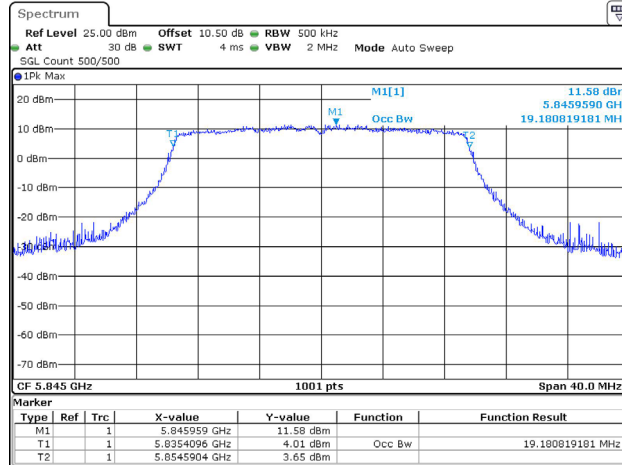
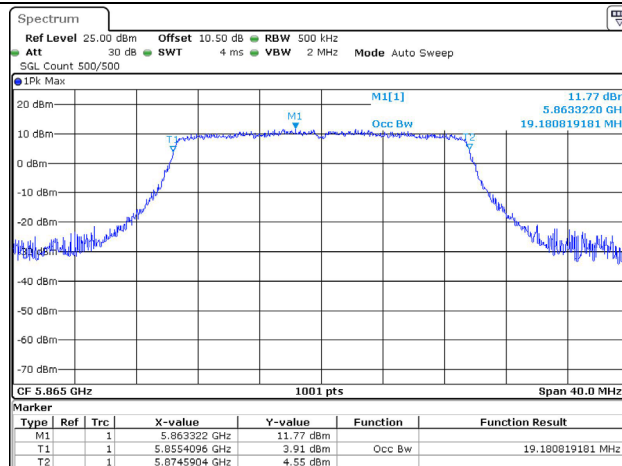


99% Emission Bandwidth

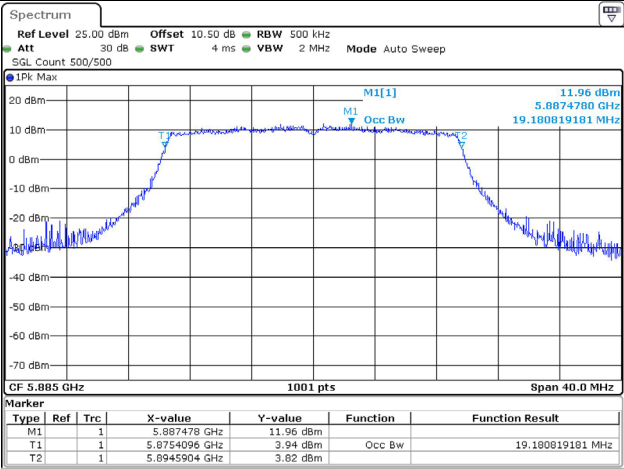
802.11ac-VHT40
Lowest ChannelProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:20:10802.11ac-VHT40
Highest ChannelProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:21:08802.11ac-VHT80
Middle ChannelProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:22:49

99% Emission Bandwidth

802.11ac-VHT160
Middle ChannelProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:24:20802.11ax-HE20
Lowest ChannelProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:25:45802.11ax-HE20
Middle ChannelProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:26:31

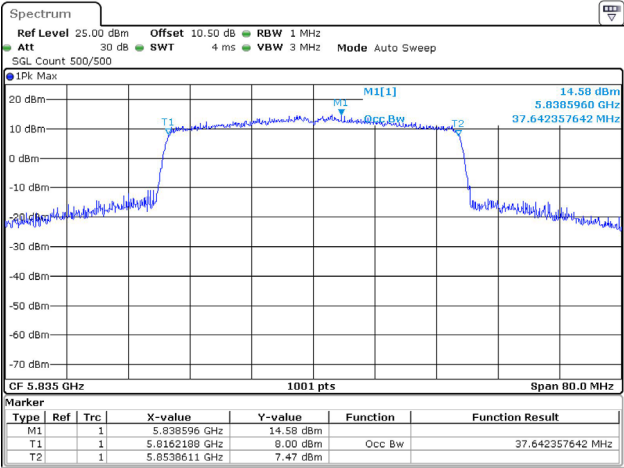
99% Emission Bandwidth

802.11ax-HE20
Highest Channel



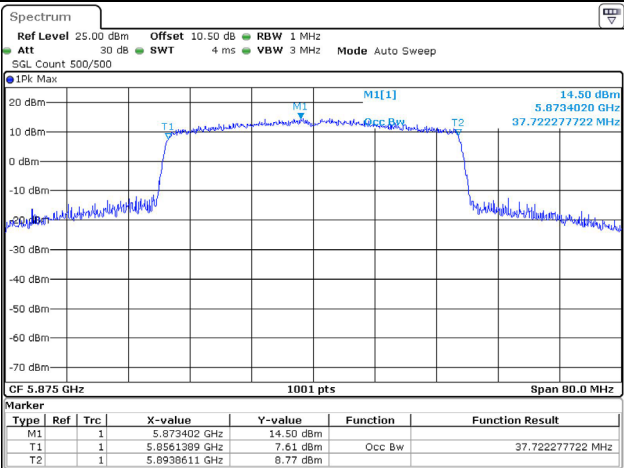
ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:27:29

802.11ax-HE40
Lowest Channel



ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:31:12

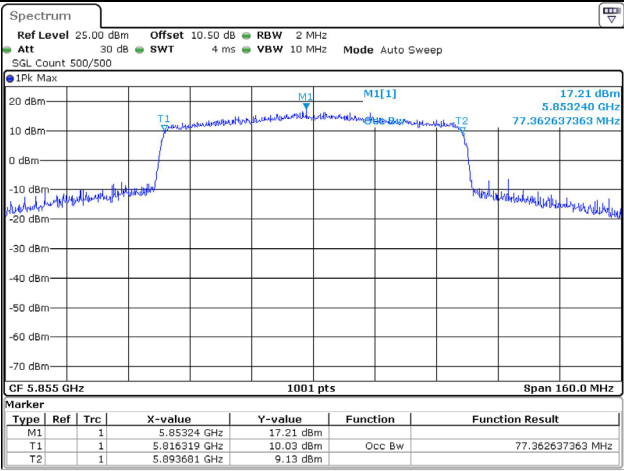
802.11ax-HE40
Highest Channel



ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:32:13

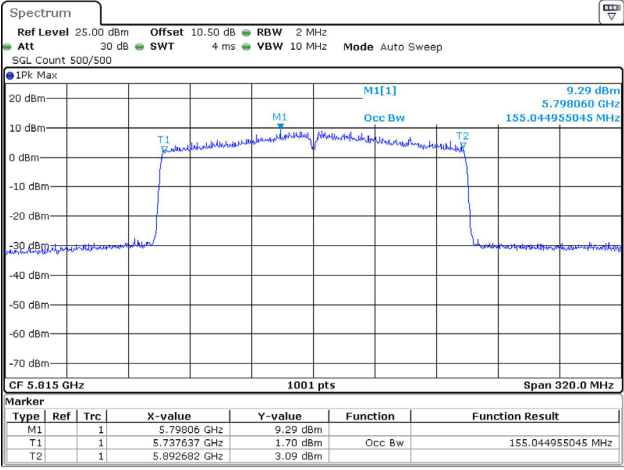
99% Emission Bandwidth

802.11ax-HE80
Middle Channel



ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:33:52

802.11ax-HE160
Middle Channel



ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang
Date: 3.AUG.2024 01:35:27

Note: The test data and plots of 5150-5250MHz, 5250-5350MHz, 5470-5725MHz and 5725-5850MHz band please refer to the Appendix.

FCC §15.407(a)&(h)(1) - CONDUCTED TRANSMITTER OUTPUT POWER & TRANSMIT POWER CONTROL (TPC)

Applicable Standard

FCC § 15.407 (a):

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

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. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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 $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

For an indoor access point operating in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 20 dBm e.i.r.p. in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. Indoor access points operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 36 dBm.

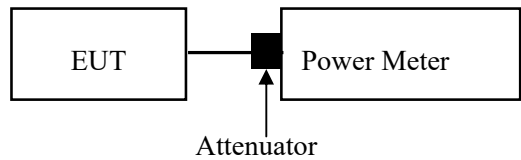
FCC § 15.407 (h) (1) Transmit power control (TPC):

U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method PM-G should be applied

- a. Place the EUT on a bench and set it in transmitting mode.
- b. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.



Test Data

Environmental Conditions

Temperature:	22~25.5 °C
Relative Humidity:	50~58 %
ATM Pressure:	101 kPa

The testing was performed by Kungfumaster Liang and Lee Li from 2024-07-16 to 2024-08-03.

EUT operation mode: Transmitting

Test Result: Compliant.

5850-5895 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power(dBm)					
		Chain 0	Chain 1	Chain 2	Total	EIRP	EIRP LIMIT
802.11a	5845	20.14	15.65	20.39	/	25.23	36
	5865	20.16	15.69	20.41	/	25.25	36
	5885	20.15	15.62	20.43	/	25.27	36
802.11ac vht20	5845	16.42	16.14	16.29	21.06	30.67	36
	5865	16.13	16.26	16.43	21.05	30.66	36
	5885	16.16	16.23	16.47	21.06	30.67	36
802.11ac vht40	5835	16.82	16.90	16.75	21.59	31.20	36
	5875	17.88	18.07	18.15	22.81	32.42	36
802.11ac vht80	5855	18.78	18.92	19.02	23.68	33.29	36
802.11ac vht160	5815	14.54	14.69	14.68	19.41	29.02	36
802.11ax he20	5845	16.41	16.36	16.41	21.16	30.77	36
	5865	16.48	16.32	16.58	21.23	30.84	36
	5885	16.45	16.57	16.63	21.32	30.93	36
802.11ax he40	5835	18.01	17.98	18.11	22.80	32.41	36
	5875	18.11	18.23	18.28	22.98	32.59	36
802.11ax he80	5855	19.02	19.05	19.24	23.88	33.49	36
802.11ax he160	5815	13.91	13.98	13.97	18.72	28.33	36
Note: The device is an indoor AP. The device employed Beam-forming for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 10 log(NANT/NSS) dB							
Antenna Gain:	4.84	dB	Directional gain:	9.61		dB	

Note: The test data and plots of 5150-5250MHz, 5250-5350MHz, 5470-5725MHz and 5725-5850MHz band, please refer to the Appendix.

FCC §15.407(a) - POWER SPECTRAL DENSITY

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

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 $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

For an indoor access point operating in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 20 dBm e.i.r.p. in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. Indoor access points operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 36 dBm.

Test Procedure

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

Duty cycle $\geq 98\%$

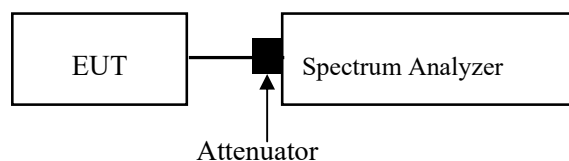
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-1 should be applied.

Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-2 should be applied.

Duty cycle $< 98\%$, duty cycle variations exceed $\pm 2\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-3 should be applied.



Test Data

Environmental Conditions

Temperature:	22~25.5 °C
Relative Humidity:	50~58 %
ATM Pressure:	101 kPa

The testing was performed by Kungfumaster Liang and Lee Li from 2024-07-27 to 2024-08-02.

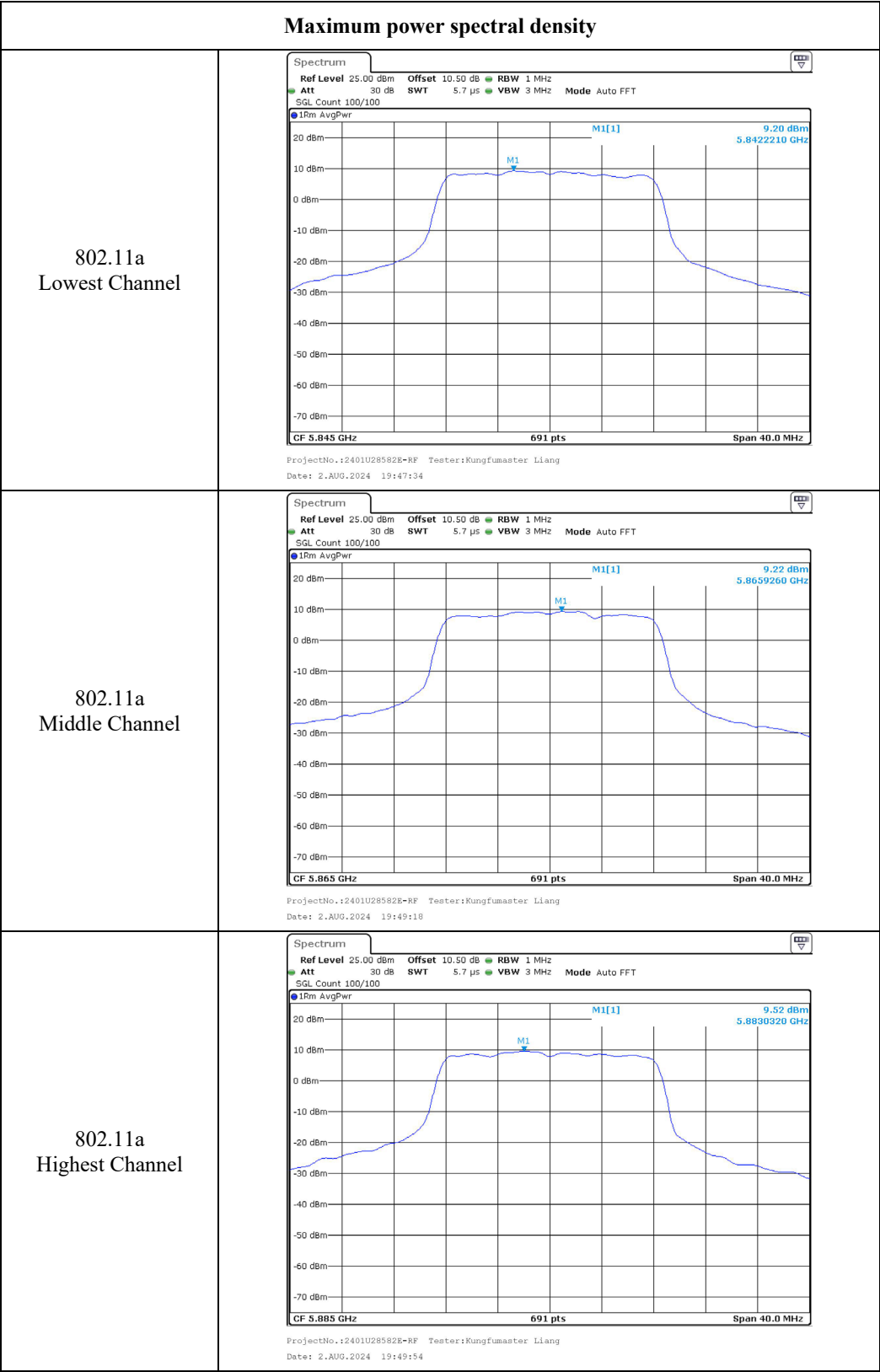
EUT operation mode: Transmitting

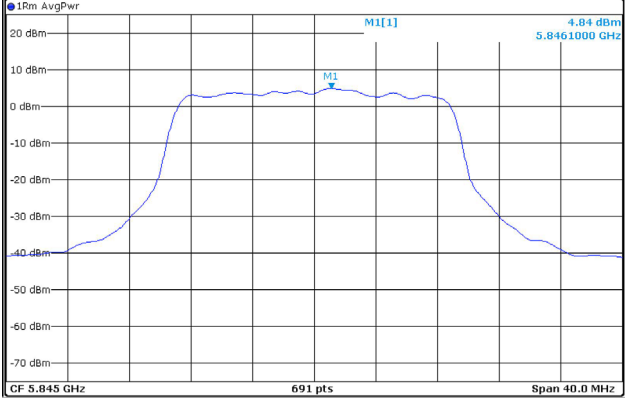
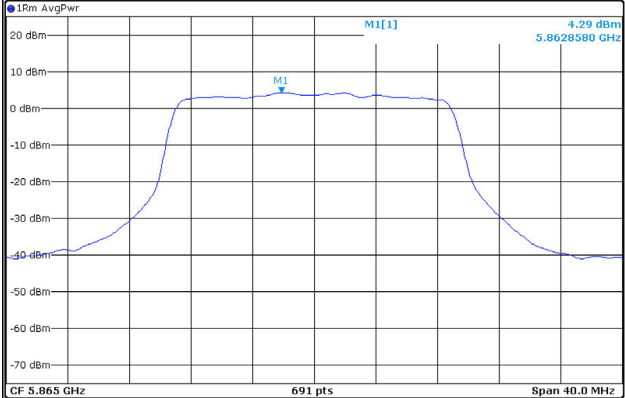
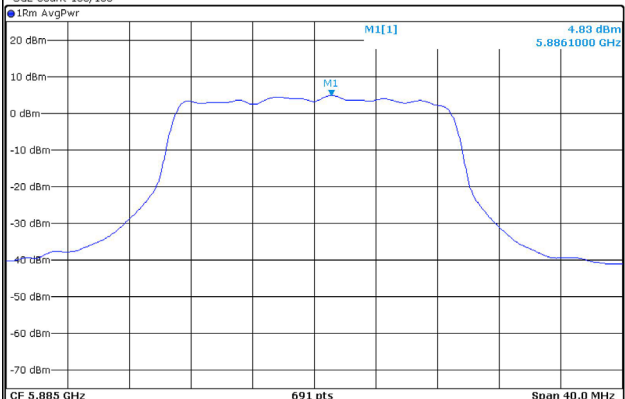
Test Result: Compliant.

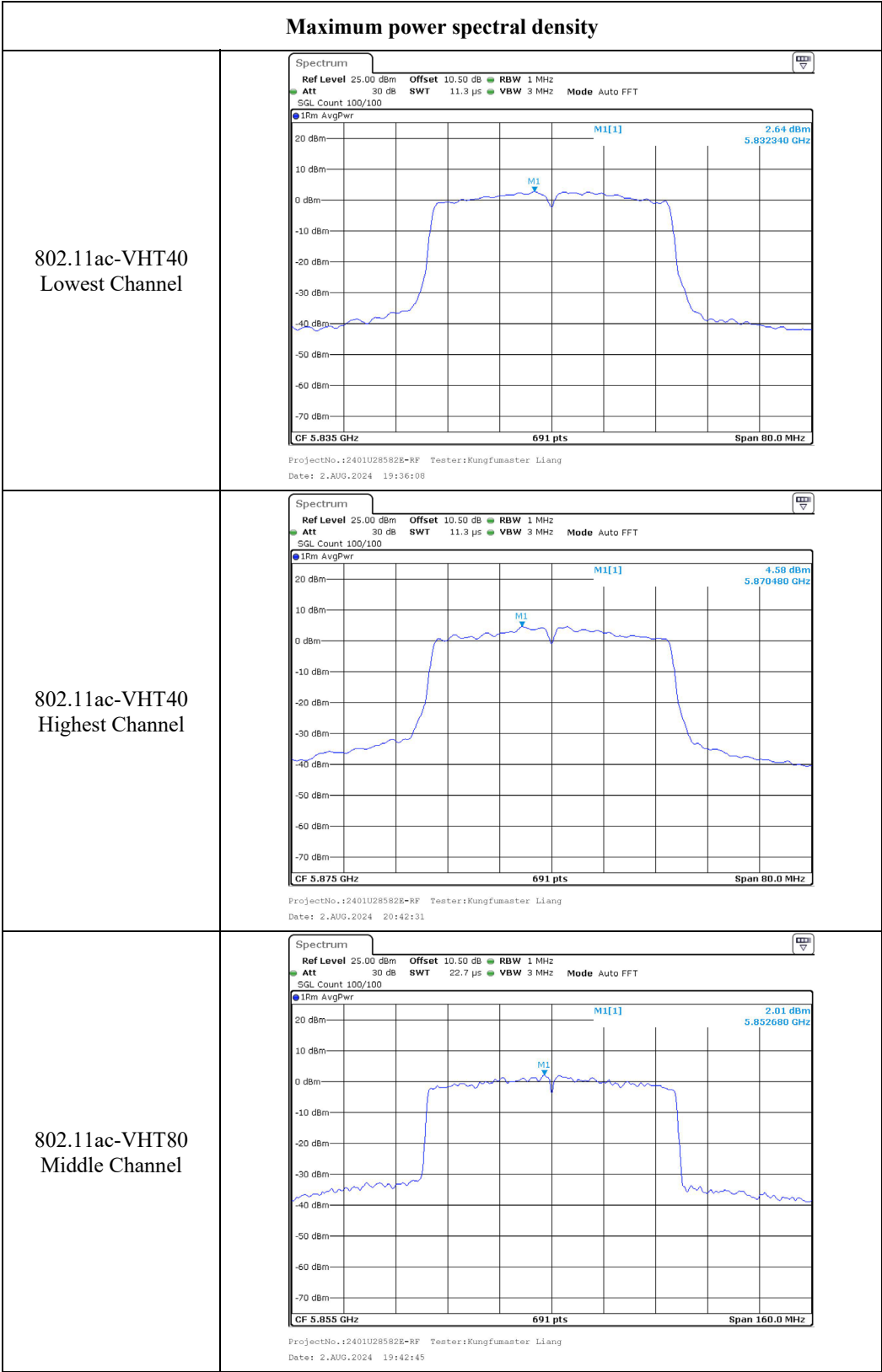
5850-5895 MHz:

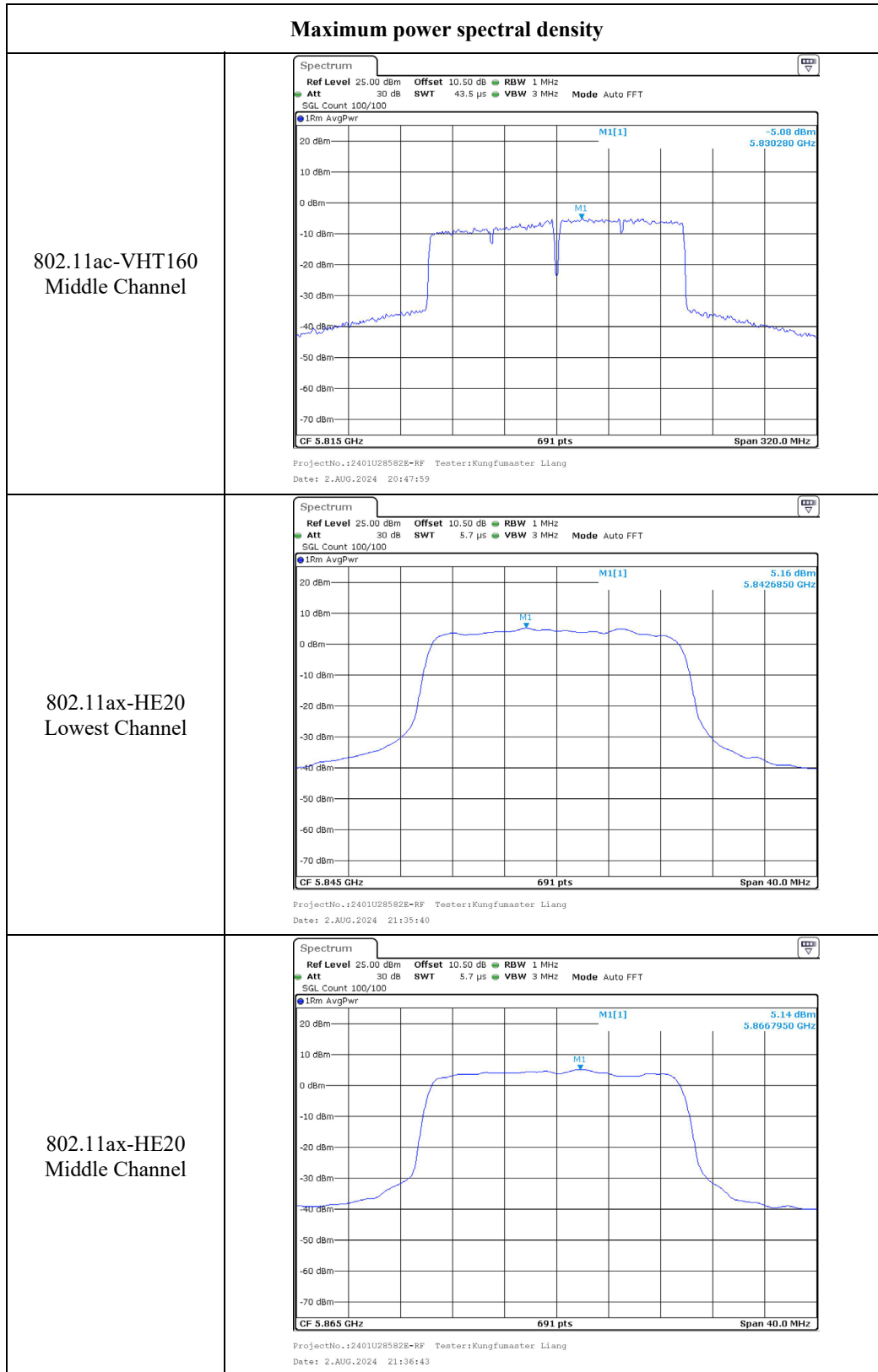
Test Modes	Test Frequency (MHz)	Maximum Power Spectral Density(dBm/MHz)					
		Chain 0	Chain 1	Chain 2	Total	EIRP	EIRP LIMIT
802.11a	5845	9.20	4.56	9.82	/	14.66	20
	5865	9.22	4.37	10.03	/	14.87	20
	5885	9.52	4.51	9.84	/	14.68	20
802.11ac vht20	5845	4.84	4.30	4.53	9.33	18.94	20
	5865	4.29	4.29	5.33	9.44	19.05	20
	5885	4.83	4.13	5.37	9.58	19.19	20
802.11ac vht40	5835	2.77	2.21	3.62	7.68	17.29	20
	5875	4.70	4.39	4.59	9.33	18.94	20
802.11ac vht80	5855	2.12	1.95	2.66	7.03	16.64	20
802.11ac vht160	5815	-5.08	-5.17	-4.27	-0.05	9.56	20
802.11ax he20	5845	5.25	4.87	4.76	9.74	19.35	20
	5865	5.24	4.90	4.92	9.79	19.40	20
	5885	5.31	4.88	5.06	9.86	19.47	20
802.11ax he40	5835	4.70	4.56	5.01	9.53	19.14	20
	5875	4.61	4.49	4.82	9.41	19.02	20
802.11ax he80	5855	2.75	2.39	2.66	7.37	16.98	20
802.11ax he160	5815	-5.40	-5.51	-5.06	-0.55	9.06	20
Note: The device is a Indoor AP The device employed Beam-forming for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 10 log(NANT/NSS) dB							
Antenna Gain:	4.84	dB	Directional gain:	9.61		dB	

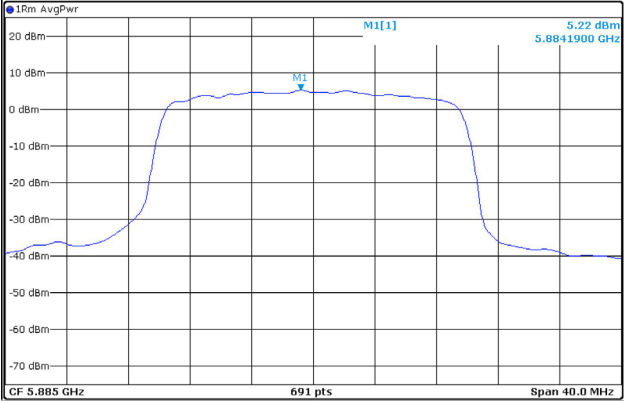
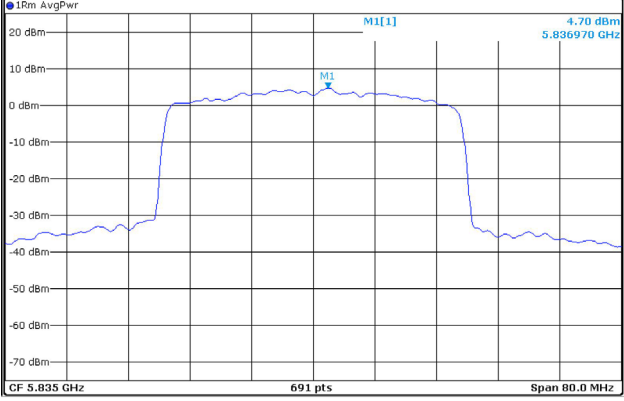
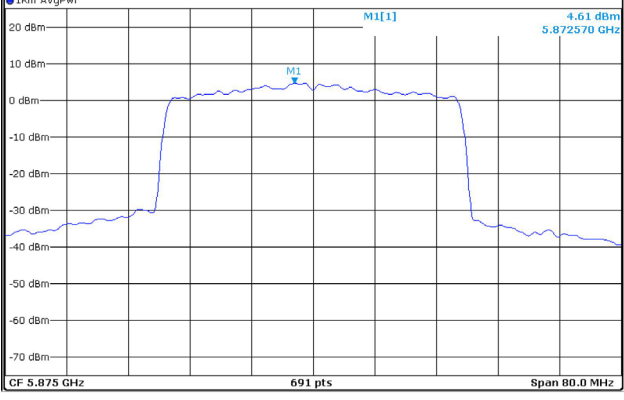
5850-5895 MHz:
ANT0

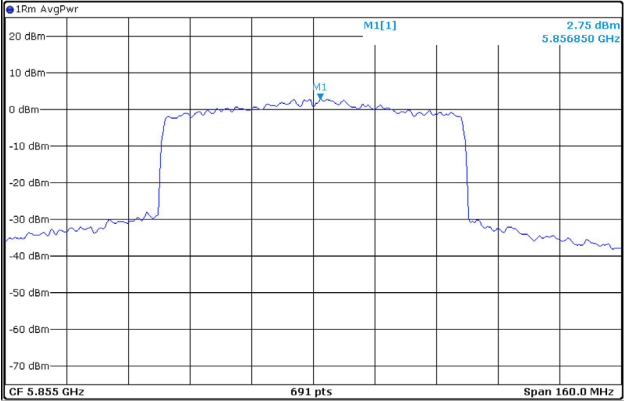
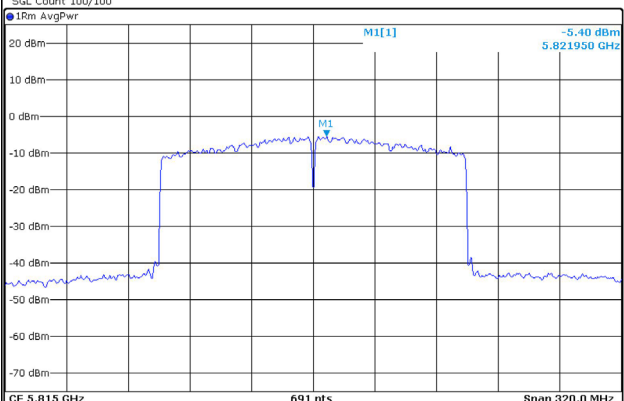


802.11ac-VHT20 Lowest Channel	Maximum power spectral density Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr  CF 5.845 GHz 691 pts Span 40.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 19:31:58
802.11ac-VHT20 Middle Channel	Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr  CF 5.865 GHz 691 pts Span 40.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 19:32:49
802.11ac-VHT20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr  CF 5.885 GHz 691 pts Span 40.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 19:34:11

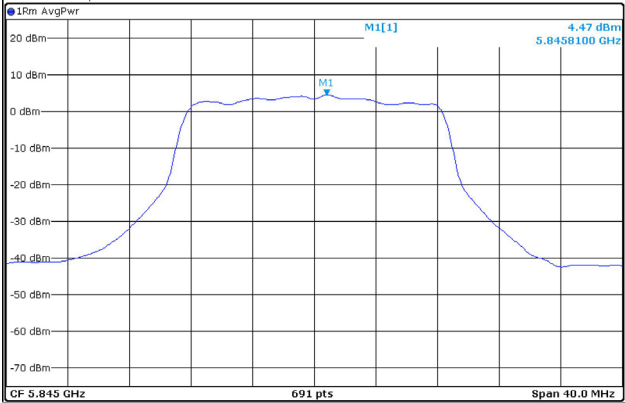
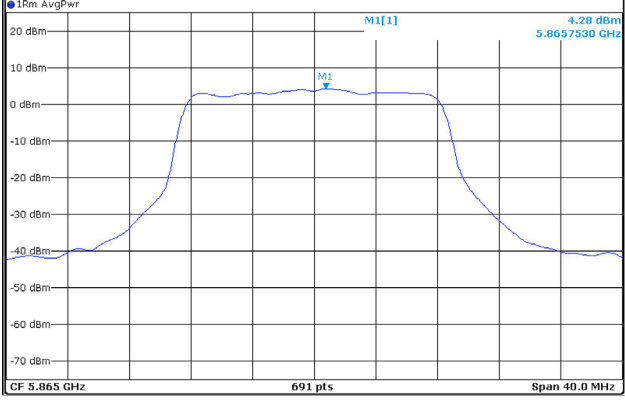
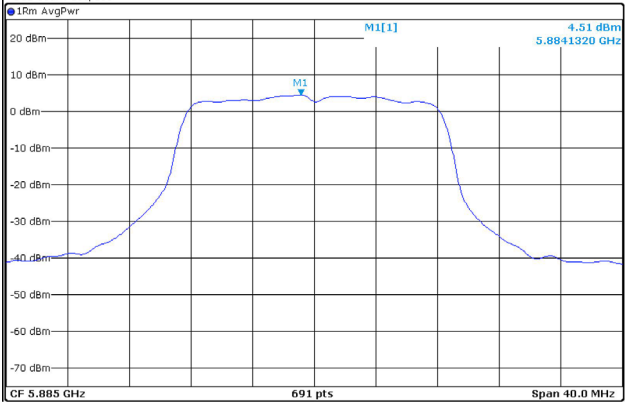




Maximum power spectral density	
802.11ax-HE20 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] 5.22 dBm 5.8841900 GHz  CF 5.885 GHz691 ptsSpan 40.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 21:37:32
802.11ax-HE40 Lowest Channel	Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 11.3 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] 4.70 dBm 5.886970 GHz  CF 5.835 GHz691 ptsSpan 80.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 21:33:08
802.11ax-HE40 Highest Channel	Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 11.3 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] 4.61 dBm 5.872570 GHz  CF 5.875 GHz691 ptsSpan 80.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 21:34:18

Maximum power spectral density	
802.11ax-HE80 Middle Channel	Spectrum Ref Level 25.00 dBm Att 30 dB Offset 10.50 dB SWT 22.7 μs RBW 1 MHz VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] 2.75 dBm 5.856850 GHz  CF 5.855 GHz691 ptsSpan 160.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 21:39:02
802.11ax-HE160 Middle Channel	Spectrum Ref Level 25.00 dBm Att 30 dB Offset 10.50 dB SWT 43.5 μs RBW 1 MHz VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr M1[1] -5.40 dBm 5.821950 GHz  CF 5.815 GHz691 ptsSpan 320.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 21:40:12

ANT1

802.11a Lowest Channel	Maximum power spectral density Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr  CF 5.845 GHz 691 pts Span 40.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 19:52:56
802.11a Middle Channel	Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr  CF 5.865 GHz 691 pts Span 40.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 19:53:40
802.11a Highest Channel	Spectrum Ref Level 25.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 5.7 μs VBW 3 MHz Mode Auto FFT SGL Count 100/100 1Rm AvgPwr  CF 5.885 GHz 691 pts Span 40.0 MHz ProjectNo.:2401U28582E-RF Tester:Kungfumaster Liang Date: 2.AUG.2024 19:54:34

