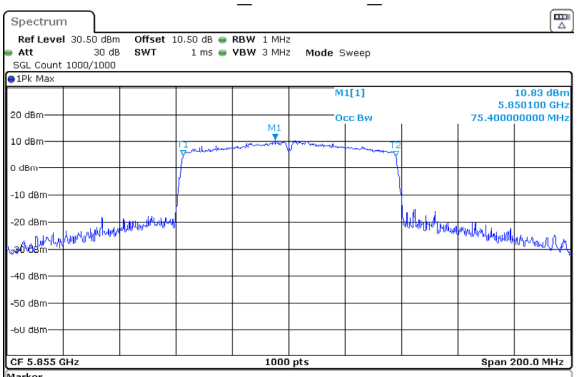
802.11ac80_5855MHz_Chain 0

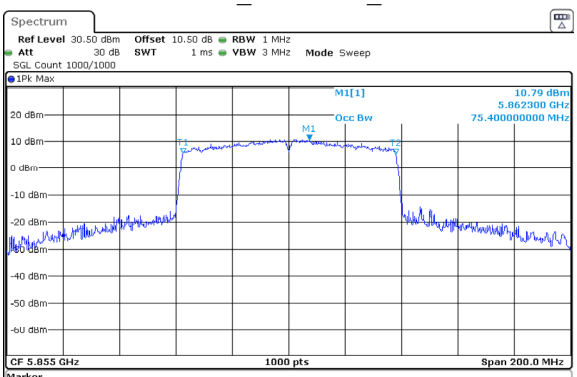


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8501 GHz	10.83 dBm		
T1		1	5.8175 GHz	4.96 dBm	Occ Bw	75.4 MHz
T2		1	5.8929 GHz	4.47 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 17:16:53

802.11ac80_5855MHz_Chain 1

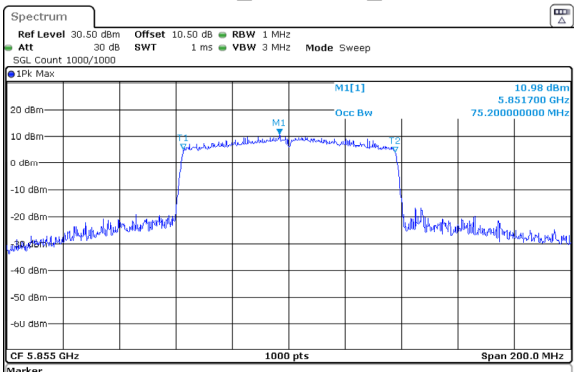


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8623 GHz	10.79 dBm		
T1		1	5.8175 GHz	5.62 dBm	Occ Bw	75.4 MHz
T2		1	5.8929 GHz	5.47 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 19:20:38

802.11ac80_5855MHz_Chain 2

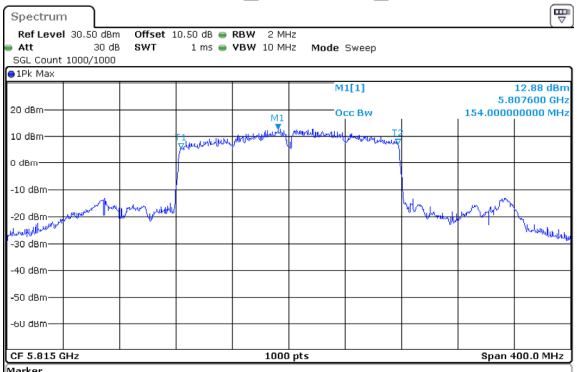


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8517 GHz	10.98 dBm		
T1		1	5.8175 GHz	5.28 dBm	Occ Bw	75.2 MHz
T2		1	5.8927 GHz	4.26 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 21:29:23

802.11ac160_5815MHz_Chain 0

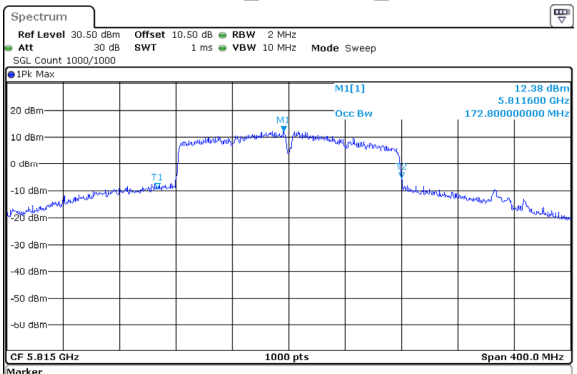


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8076 GHz	12.88 dBm		
T1		1	5.7384 GHz	5.62 dBm	Occ Bw	154.0 MHz
T2		1	5.8924 GHz	7.29 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:37:09

802.11ac160_5815MHz_Chain 1

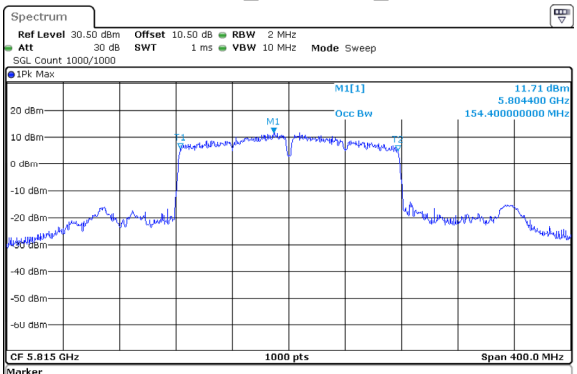


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8116 GHz	12.38 dBm		
T1		1	5.722 GHz	-9.28 dBm	Occ Bw	172.8 MHz
T2		1	5.8948 GHz	-5.12 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:39:08

802.11ac160_5815MHz_Chain 2

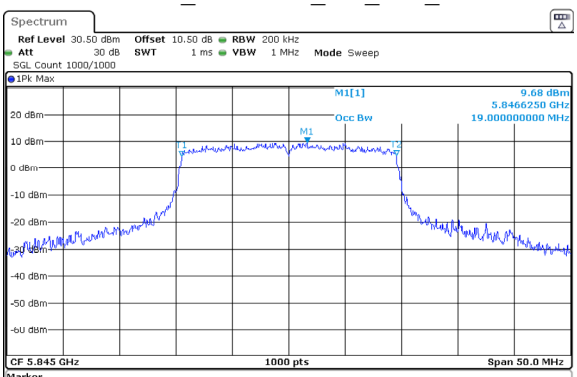


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8044 GHz	11.71 dBm		
T1		1	5.738 GHz	6.00 dBm	Occ Bw	154.4 MHz
T2		1	5.8924 GHz	5.21 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:41:04

802.11ax20_5845MHz_RU_Full_Chain 0

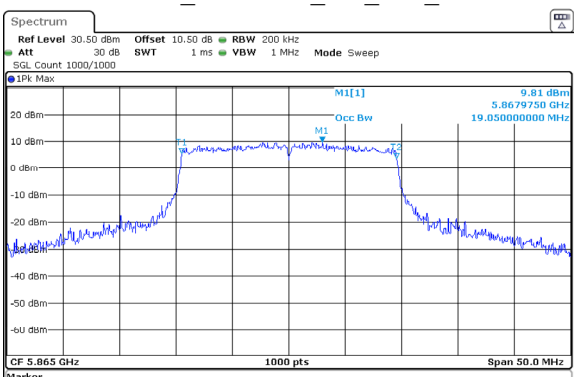


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.846625 GHz	9.68 dBm		
T1		1	5.835525 GHz	4.45 dBm	Occ Bw	19.0 MHz
T2		1	5.854525 GHz	4.83 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 17:29:40

802.11ax20_5865MHz_RU_Full_Chain 0

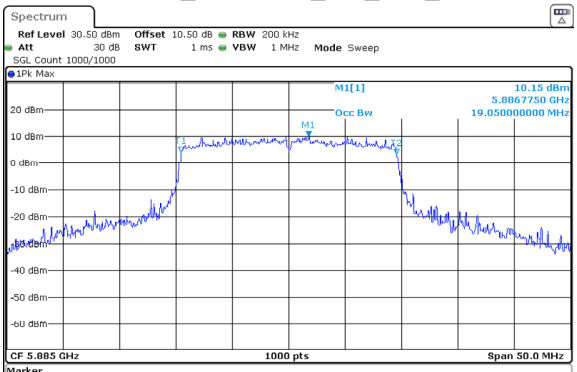


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.867975 GHz	9.81 dBm		
T1		1	5.855525 GHz	5.72 dBm	Occ Bw	19.05 MHz
T2		1	5.874575 GHz	3.70 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 17:30:49

802.11ax20_5885MHz_RU_Full_Chain 0

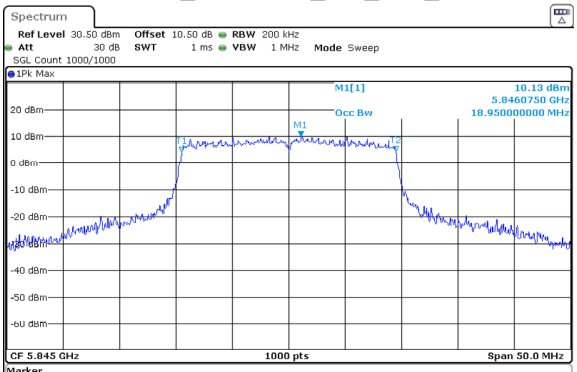


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.886775 GHz	10.15 dBm		
T1		1	5.875475 GHz	4.44 dBm	Occ Bw	19.05 MHz
T2		1	5.894525 GHz	3.45 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 17:31:56

802.11ax20_5845MHz_RU_Full_Chain 1

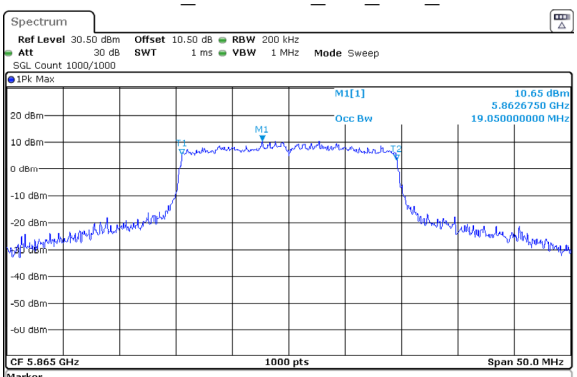


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.846075 GHz	10.13 dBm		
T1		1	5.835525 GHz	4.43 dBm	Occ Bw	18.95 MHz
T2		1	5.854475 GHz	4.68 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 19:32:57

802.11ax20_5865MHz_RU_Full_Chain 1

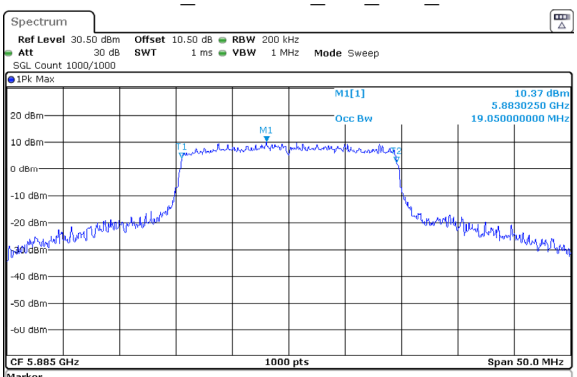


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.862675 GHz	10.65 dBm		
T1		1	5.855525 GHz	5.69 dBm	Occ Bw	19.05 MHz
T2		1	5.874575 GHz	3.55 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 19:34:22

802.11ax20_5885MHz_RU_Full_Chain 1

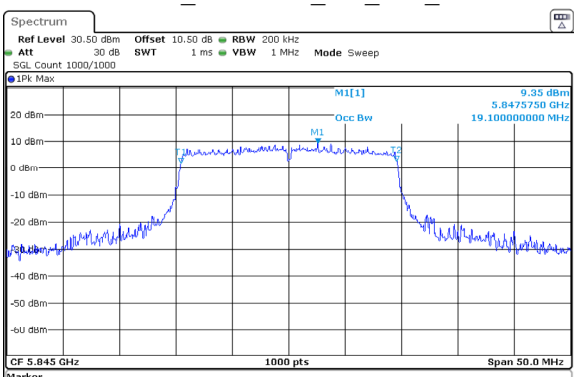


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.883025 GHz	10.37 dBm		
T1		1	5.875525 GHz	4.33 dBm	Occ Bw	19.05 MHz
T2		1	5.894575 GHz	2.66 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 19:35:32

802.11ax20_5845MHz_RU_Full_Chain 2

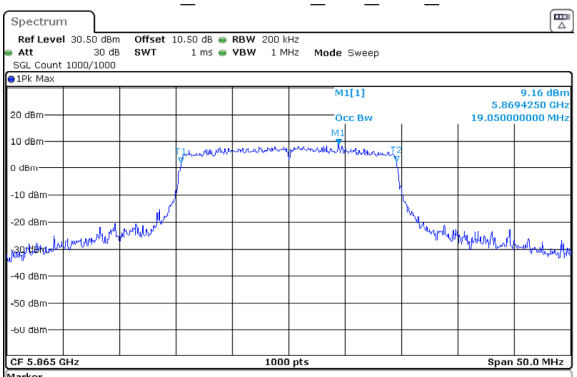


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.847575 GHz	9.35 dBm		
T1		1	5.835475 GHz	1.98 dBm	Occ Bw	19.1 MHz
T2		1	5.854575 GHz	2.82 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 21:41:18

802.11ax20_5865MHz_RU_Full_Chain 2

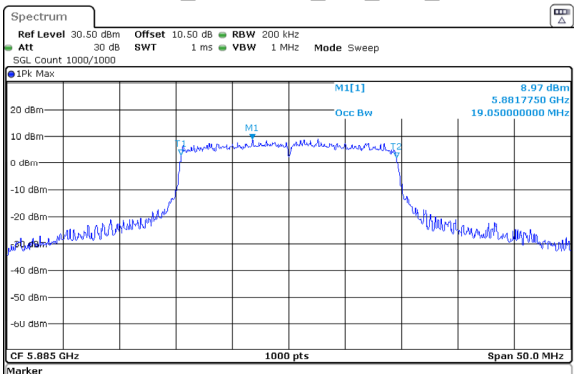


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.869425 GHz	9.16 dBm		
T1		1	5.855475 GHz	2.32 dBm	Occ Bw	19.05 MHz
T2		1	5.874525 GHz	2.74 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 21:42:26

802.11ax20_5885MHz_RU_Full_Chain 2

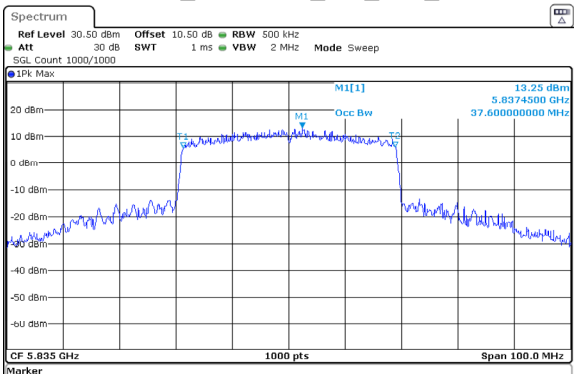


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.881775 GHz	8.97 dBm		
T1		1	5.875475 GHz	3.32 dBm	Occ Bw	19.05 MHz
T2		1	5.894525 GHz	2.32 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 21:43:31

802.11ax40_5835MHz_RU_Full_Chain 0

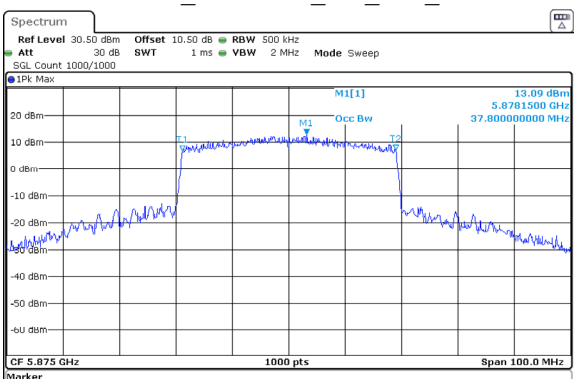


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.83745 GHz	13.25 dBm		
T1		1	5.81625 GHz	6.02 dBm	Occ Bw	37.6 MHz
T2		1	5.85385 GHz	6.13 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 17:38:01

802.11ax40_5875MHz_RU_Full_Chain 0

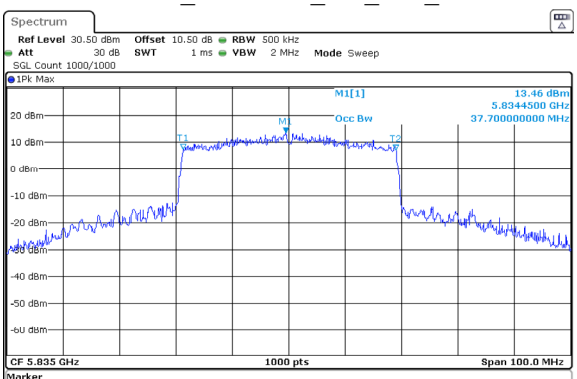


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.87815 GHz	13.09 dBm		
T1		1	5.85615 GHz	6.93 dBm	Occ Bw	37.8 MHz
T2		1	5.89395 GHz	7.14 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 17:38:40

802.11ax40_5835MHz_RU_Full_Chain 1

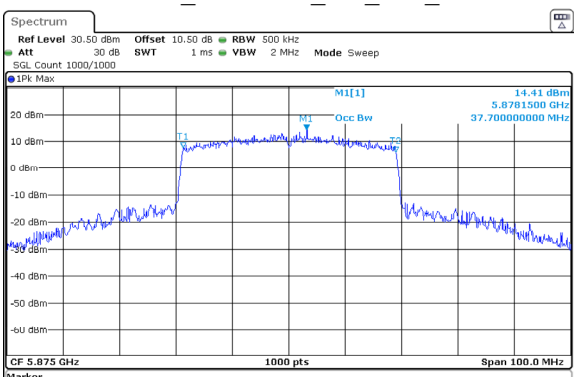


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.83445 GHz	13.46 dBm		
T1		1	5.81625 GHz	7.42 dBm	Occ Bw	37.7 MHz
T2		1	5.85395 GHz	7.35 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 19:42:05

802.11ax40_5875MHz_RU_Full_Chain 1

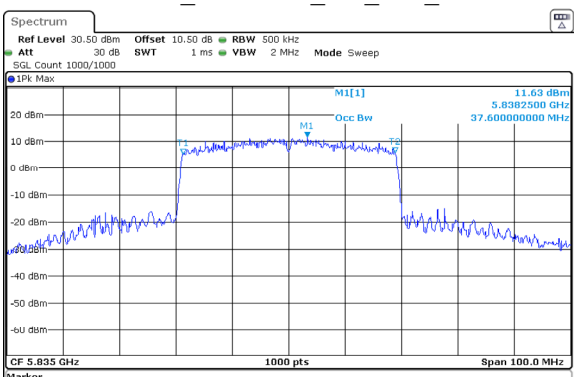


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.87815 GHz	14.41 dBm		
T1		1	5.85625 GHz	7.81 dBm	Occ Bw	37.7 MHz
T2		1	5.89395 GHz	6.08 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 19:42:48

802.11ax40_5835MHz_RU_Full_Chain 2

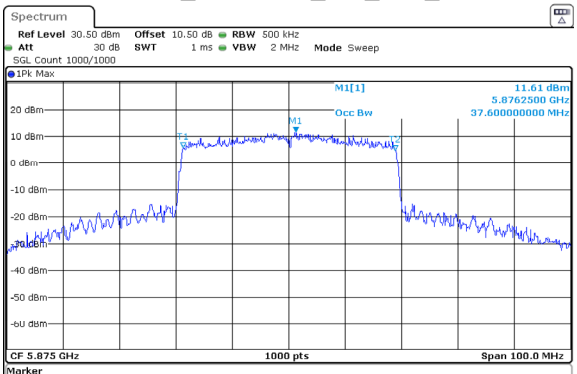


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.83825 GHz	11.63 dBm		
T1		1	5.81625 GHz	5.33 dBm	Occ Bw	37.6 MHz
T2		1	5.85385 GHz	5.77 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 21:48:49

802.11ax40_5875MHz_RU_Full_Chain 2

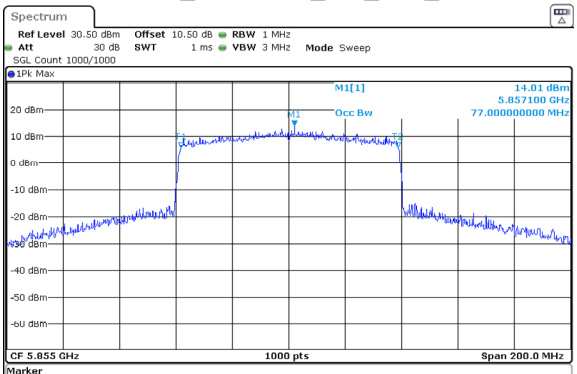


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.87625 GHz	11.61 dBm		
T1		1	5.85625 GHz	6.00 dBm	Occ Bw	37.6 MHz
T2		1	5.89385 GHz	4.96 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 21:49:33

802.11ax80_5855MHz_RU_Full_Chain 0

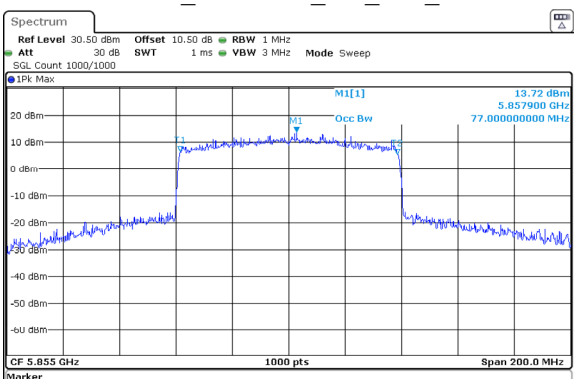


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8571 GHz	14.01 dBm		
T1		1	5.8167 GHz	6.02 dBm	Occ Bw	77.0 MHz
T2		1	5.8937 GHz	5.83 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 17:43:00

802.11ax80_5855MHz_RU_Full_Chain 1

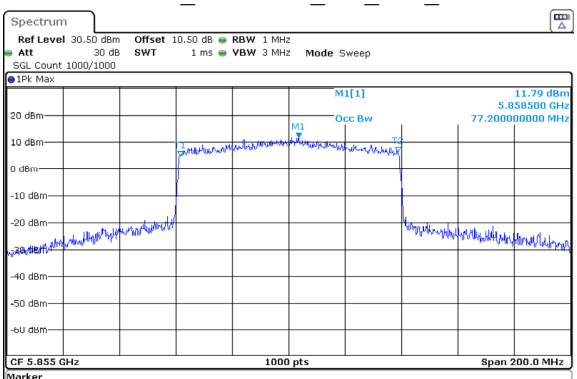


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8579 GHz	13.72 dBm		
T1		1	5.8165 GHz	6.77 dBm	Occ Bw	77.0 MHz
T2		1	5.8935 GHz	5.73 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 19:47:45

802.11ax80_5855MHz_RU_Full_Chain 2

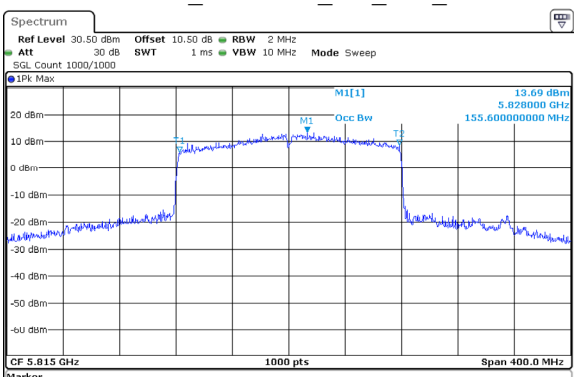


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8585 GHz	11.79 dBm		
T1		1	5.8165 GHz	4.75 dBm	Occ Bw	77.2 MHz
T2		1	5.8937 GHz	6.54 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.DEC.2024 21:53:56

802.11ax160_5815MHz_RU_Full_Chain 0

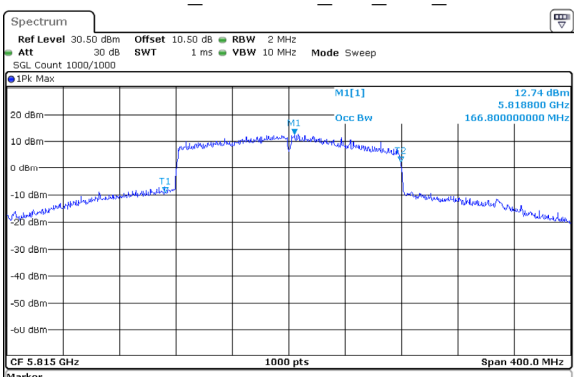


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.828 GHz	13.69 dBm		
T1		1	5.7376 GHz	6.28 dBm	Occ Bw	155.6 MHz
T2		1	5.8932 GHz	8.75 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:44:13

802.11ax160_5815MHz_RU_Full_Chain 1

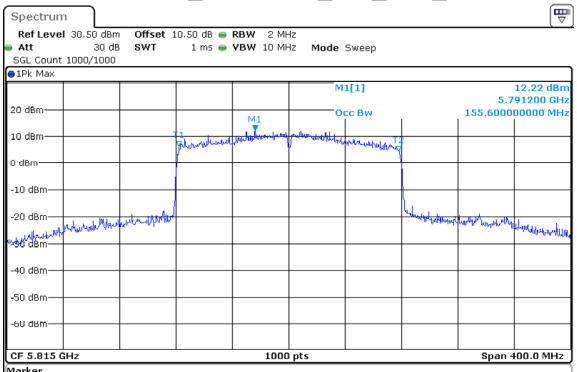


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8188 GHz	12.74 dBm		
T1		1	5.7276 GHz	-9.21 dBm	Occ Bw	166.8 MHz
T2		1	5.8944 GHz	2.46 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:46:05

802.11ax160_5815MHz_RU_Full_Chain 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7912 GHz	12.22 dBm		
T1		1	5.7372 GHz	6.31 dBm	Occ Bw	155.6 MHz
T2		1	5.8928 GHz	4.58 dBm		

ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:48:05

Maximum Conducted Output Power

Test Information:

Sample No.:	2TPH-12	**Test Date:**	2024/12/05~2025/01/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Allen Bai	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C):	24.1-26.7	**Relative Humidity: (%)**	45-59	**ATM Pressure: (kPa)**	101-101.5

Test Data:
5850-5895MHz

Mode	Antenna	Test Frequency (MHz)	Average Output Power(dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Verdict
802.11a	Chain 0	5845	20.50	3.98	24.48	36	Pass
		5865	20.45	3.98	24.43	36	Pass
		5885	20.30	3.98	24.28	36	Pass
	Chain 1	5845	19.99	4.26	24.25	36	Pass
		5865	19.95	4.26	24.21	36	Pass
		5885	19.78	4.26	24.04	36	Pass
	Chain 2	5845	19.39	3.43	22.82	36	Pass
		5865	19.23	3.43	22.66	36	Pass
		5885	19.01	3.43	22.44	36	Pass
802.11ac20	Chain 0	5845	17.30	3.98	21.28	36	Pass
		5865	16.95	3.98	20.93	36	Pass
		5885	16.84	3.98	20.82	36	Pass
	Chain 1	5845	17.59	4.26	21.85	36	Pass
		5865	16.87	4.26	21.13	36	Pass
		5885	16.66	4.26	20.92	36	Pass
	Chain 2	5845	16.02	3.43	19.45	36	Pass
		5865	15.87	3.43	19.30	36	Pass
		5885	15.69	3.43	19.12	36	Pass
	Total	5845	21.79	8.67	30.46	36	Pass
		5865	21.36	8.67	30.03	36	Pass
		5885	21.20	8.67	29.87	36	Pass
802.11ac40	Chain 0	5835	20.45	3.98	24.43	36	Pass
		5875	20.44	3.98	24.42	36	Pass
	Chain 1	5835	20.26	4.26	24.52	36	Pass
		5875	20.06	4.26	24.32	36	Pass
	Chain 2	5835	19.55	3.43	22.98	36	Pass
		5875	19.47	3.43	22.90	36	Pass
	Total	5835	24.87	8.67	33.54	36	Pass
		5875	24.78	8.67	33.45	36	Pass
802.11ac80	Chain 0	5855	20.01	3.98	23.99	36	Pass
	Chain 1	5855	19.96	4.26	24.22	36	Pass
	Chain 2	5855	19.10	3.43	22.53	36	Pass
	Total	5855	24.48	8.67	33.15	36	Pass
802.11ac160	Chain 0	5815	19.27	3.98	23.25	36	Pass
	Chain 1	5815	18.56	4.26	22.82	36	Pass
	Chain 2	5815	17.91	3.43	21.34	36	Pass
	Total	5815	23.39	8.67	32.06	36	Pass

Mode	Antenna	Test Frequency (MHz)	Average Output Power(dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Verdict
802.11ax20_ RU_Full	Chain 0	5845	17.03	3.98	21.01	36	Pass
		5865	16.63	3.98	20.61	36	Pass
		5885	16.50	3.98	20.48	36	Pass
	Chain 1	5845	17.13	4.26	21.39	36	Pass
		5865	17.00	4.26	21.26	36	Pass
		5885	16.93	4.26	21.19	36	Pass
	Chain 2	5845	16.20	3.43	19.63	36	Pass
		5865	16.08	3.43	19.51	36	Pass
		5885	15.90	3.43	19.33	36	Pass
	Total	5845	21.59	8.67	30.26	36	Pass
		5865	21.37	8.67	30.04	36	Pass
		5885	21.24	8.67	29.91	36	Pass
802.11ax40_ RU_Full	Chain 0	5835	21.12	3.98	25.10	36	Pass
		5875	21.06	3.98	25.04	36	Pass
	Chain 1	5835	20.94	4.26	25.20	36	Pass
		5875	20.71	4.26	24.97	36	Pass
	Chain 2	5835	20.24	3.43	23.67	36	Pass
		5875	20.14	3.43	23.57	36	Pass
	Total	5835	**25.55**	8.67	34.22	36	Pass
		5875	25.42	8.67	34.09	36	Pass
802.11ax80_ RU_Full	Chain 0	5855	21.08	3.98	25.06	36	Pass
	Chain 1	5855	20.97	4.26	25.23	36	Pass
	Chain 2	5855	20.08	3.43	23.51	36	Pass
	Total	5855	25.50	8.67	34.17	36	Pass
802.11ax160_ RU_Full	Chain 0	5815	19.00	3.98	22.98	36	Pass
	Chain 1	5815	18.61	4.26	22.87	36	Pass
	Chain 2	5815	17.73	3.43	21.16	36	Pass
	Total	5815	23.25	8.67	31.92	36	Pass

Note: For 802.11ac/ax modes, the device support beam-forming function, per KDB 662911 D01 Multiple Transmitter Output v02r01:

- $$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$$

where
Each antenna is driven by no more than one spatial stream;
N_{SS} = the number of independent spatial streams of data;
N_{ANT} = the total number of antennas
$g_{j,k} = 10^{G_k/20}$ if the k_{th} antenna is being fed by spatial stream j, or zero if it is not;
G_k is the gain in dBi of the k_{th} antenna.

Chain 0	Antenna Gain	3.98	dBi	Directional Gain:	8.67	dBi
Chain 1	Antenna Gain	4.26	dBi			
Chain 2	Antenna Gain	3.43	dBi			

Power Spectral Density

Test Information:

Sample No.:	2TPH-12	**Test Date:**	2024/12/30~2025/01/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Allen Bai	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C):	24.1-26.7	**Relative Humidity: (%)**	45-59	**ATM Pressure: (kPa)**	101-101.5

Test Data:
5850-5895MHz

Mode	Antenna	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor(dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Verdict
802.11a	Chain 0	5845	9.75	0.18	13.91	20	Pass
		5865	9.59	0.18	13.75	20	Pass
		5885	9.49	0.18	13.65	20	Pass
	Chain 1	5845	9.45	0.18	13.89	20	Pass
		5865	9.20	0.18	13.64	20	Pass
		5885	9.01	0.18	13.45	20	Pass
	Chain 2	5845	8.65	0.18	12.26	20	Pass
		5865	8.70	0.18	12.31	20	Pass
		5885	8.47	0.18	12.08	20	Pass
802.11ac20	Chain 0	5845	6.42	0.19	10.59	20	Pass
		5865	5.90	0.19	10.07	20	Pass
		5885	6.22	0.19	10.39	20	Pass
	Chain 1	5845	6.69	0.19	11.14	20	Pass
		5865	5.80	0.19	10.25	20	Pass
		5885	5.72	0.19	10.17	20	Pass
	Chain 2	5845	5.18	0.19	8.80	20	Pass
		5865	4.90	0.19	8.52	20	Pass
		5885	4.83	0.19	8.45	20	Pass
	Total	5845	10.92	0.19	19.78	20	Pass
		5865	10.33	0.19	19.19	20	Pass
		5885	10.40	0.19	19.26	20	Pass
802.11ac40	Chain 0	5835	4.73	0.37	9.08	20	Pass
		5875	5.18	0.37	9.53	20	Pass
	Chain 1	5835	4.35	0.37	8.98	20	Pass
		5875	4.62	0.37	9.25	20	Pass
	Chain 2	5835	3.13	0.37	6.93	20	Pass
		5875	3.12	0.37	6.92	20	Pass
	Total	5835	8.89	0.37	17.93	20	Pass
		5875	9.16	0.37	18.20	20	Pass
802.11ac80	Chain 0	5855	1.42	0.70	6.10	20	Pass
	Chain 1	5855	0.76	0.70	5.72	20	Pass
	Chain 2	5855	-0.51	0.70	3.62	20	Pass
	Total	5855	5.40	0.70	14.77	20	Pass
802.11ac160	Chain 0	5815	-1.30	1.17	3.85	20	Pass
	Chain 1	5815	-1.51	1.17	3.92	20	Pass
	Chain 2	5815	-2.21	1.17	2.39	20	Pass
	Total	5815	3.11	1.17	12.95	20	Pass

Mode	Antenna	Test Frequency (MHz)	Reading (dBm/MHz)	Duty Cycle Factor(dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Verdict
802.11ax20_RU_Full	Chain 0	5845	5.28	0.72	9.98	20	Pass
		5865	4.95	0.72	9.65	20	Pass
		5885	5.13	0.72	9.83	20	Pass
	Chain 1	5845	5.57	0.72	10.55	20	Pass
		5865	5.22	0.72	10.20	20	Pass
		5885	5.33	0.72	10.31	20	Pass
	Chain 2	5845	4.61	0.72	8.76	20	Pass
		5865	4.58	0.72	8.73	20	Pass
		5885	4.32	0.72	8.47	20	Pass
	Total	5845	9.94	0.72	19.33	20	Pass
		5865	9.70	0.72	19.09	20	Pass
		5885	9.72	0.72	19.11	20	Pass
802.11ax40_RU_Full	Chain 0	5835	4.81	1.13	9.92	20	Pass
		5875	4.98	1.13	10.09	20	Pass
	Chain 1	5835	4.57	1.13	9.96	20	Pass
		5875	4.97	1.13	10.36	20	Pass
	Chain 2	5835	3.17	1.13	7.73	20	Pass
		5875	3.50	1.13	8.06	20	Pass
	Total	5835	9.01	1.13	18.81	20	Pass
		5875	9.31	1.13	19.11	20	Pass
802.11ax80_RU_Full	Chain 0	5855	1.36	1.58	6.92	20	Pass
	Chain 1	5855	1.06	1.58	6.90	20	Pass
	Chain 2	5855	-0.75	1.58	4.26	20	Pass
	Total	5855	5.42	1.58	15.67	20	Pass
802.11ax160_RU_Full	Chain 0	5815	-0.73	0.76	4.01	20	Pass
	Chain 1	5815	-1.17	0.76	3.85	20	Pass
	Chain 2	5815	-1.88	0.76	2.31	20	Pass
	Total	5815	3.54	0.76	12.97	20	Pass

Note:
1. Result = Reading + Duty Cycle Factor
2. For 802.11a, EIRP PSD = Reading + Duty Cycle Factor+ Antenna Gain
3. For 802.11ac/ax, EIRP PSD = Reading + Duty Cycle Factor+ Directional Gain
4. For 802.11ac/ax modes, the device support beam-forming function, per KDB 662911 D01 Multiple Transmitter Output v02r01:

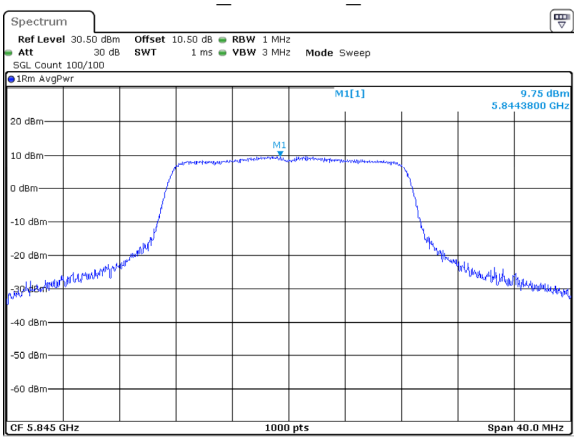
- $$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where
Each antenna is driven by no more than one spatial stream;
N_{SS} = the number of independent spatial streams of data;
N_{ANT} = the total number of antennas
$g_{j,k} = 10^{G_k/20}$ if the k_{th} antenna is being fed by spatial stream j, or zero if it is not;
G_k is the gain in dBi of the k_{th} antenna.

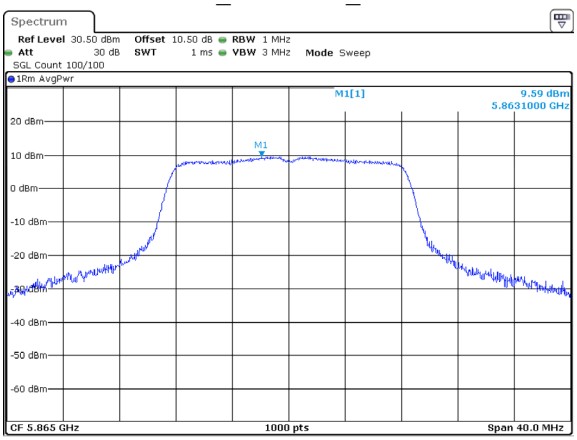
Chain 0	Antenna Gain	3.98	dBi	Directional Gain:	8.67	dBi
Chain 1	Antenna Gain	4.26	dBi			
Chain 2	Antenna Gain	3.43	dBi			

5850-5895MHz

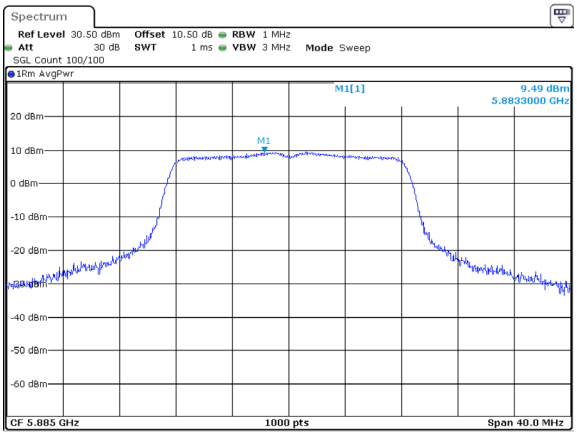
802.11a_5845MHz_Chain 0



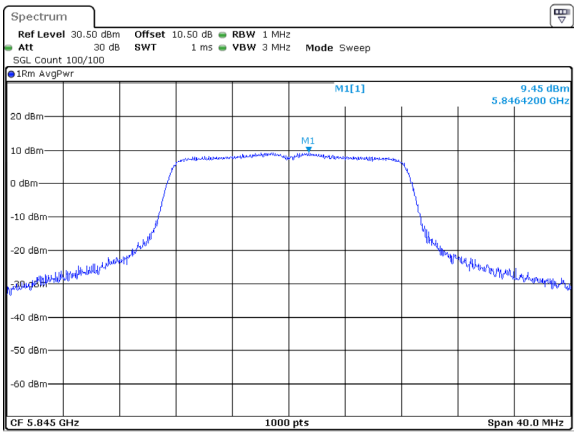
802.11a_5865MHz_Chain 0



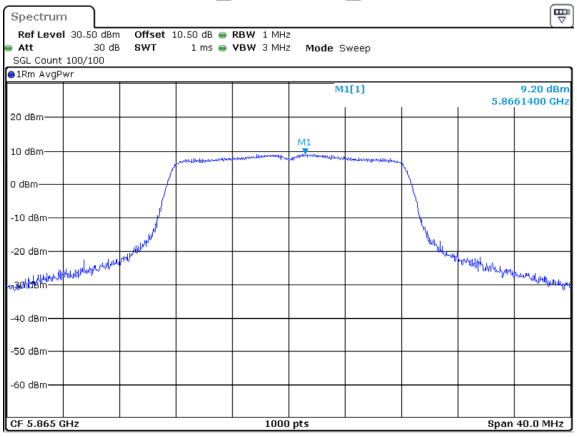
802.11a_5885MHz_Chain 0



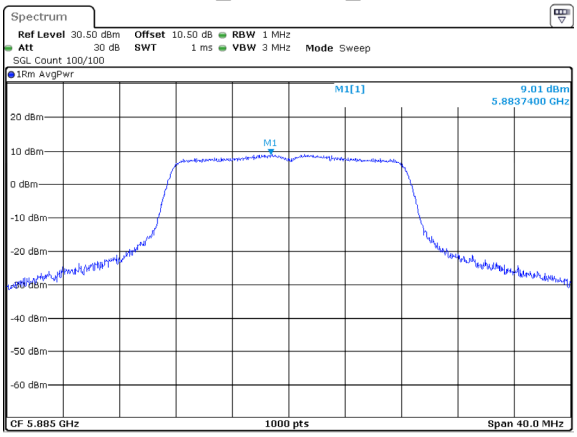
802.11a_5845MHz_Chain 1



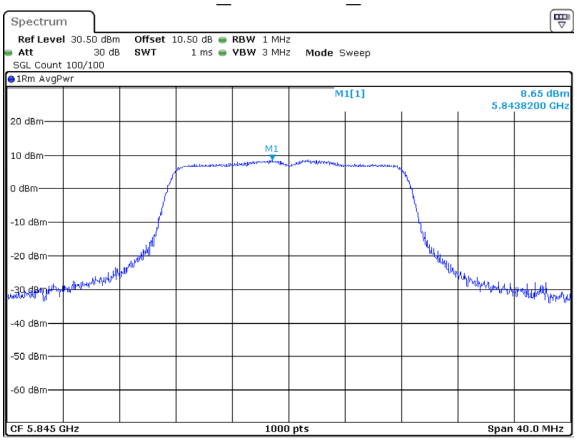
802.11a_5865MHz_Chain 1



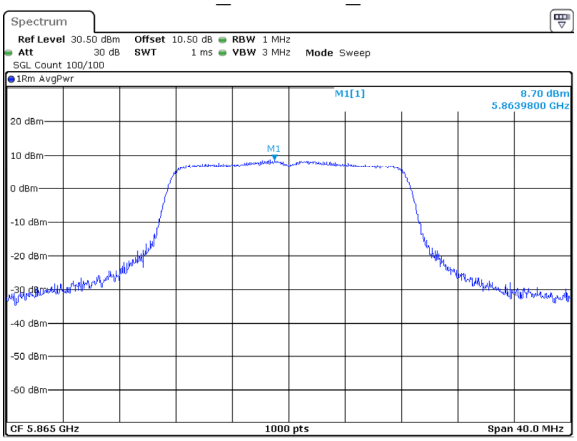
802.11a_5885MHz_Chain 1



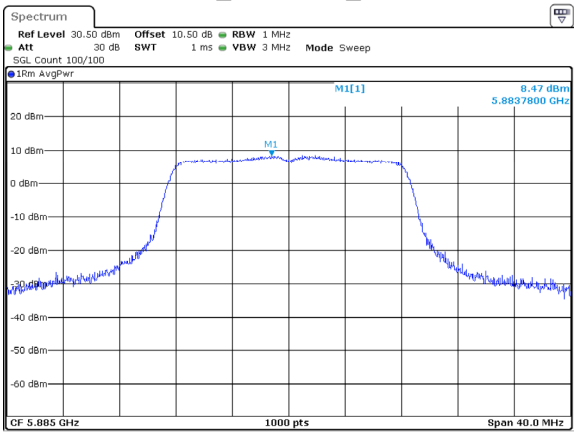
802.11a_5845MHz_Chain 2



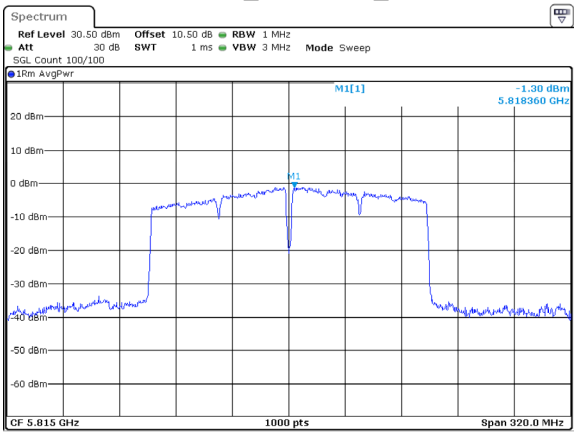
802.11a_5865MHz_Chain 2



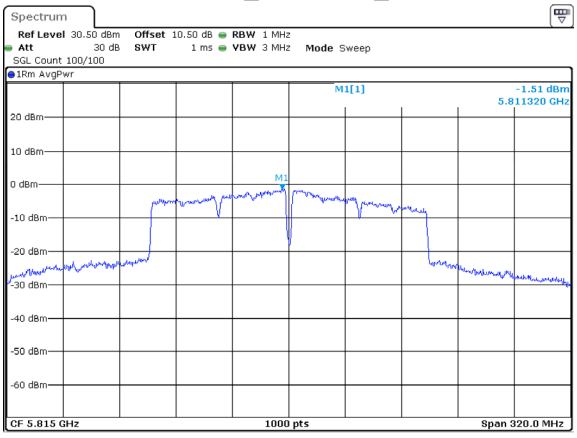
802.11a_5885MHz_Chain 2



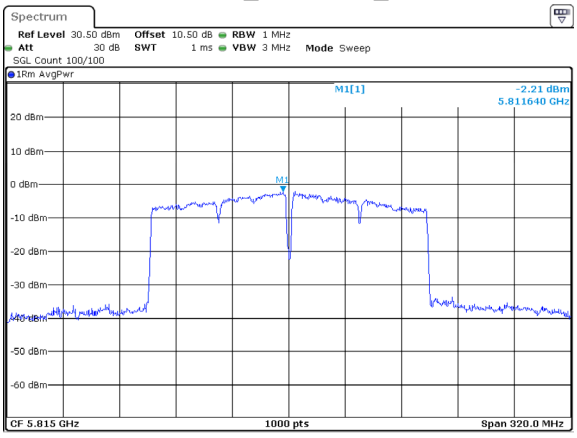
802.11ac160_5815MHz_Chain 0



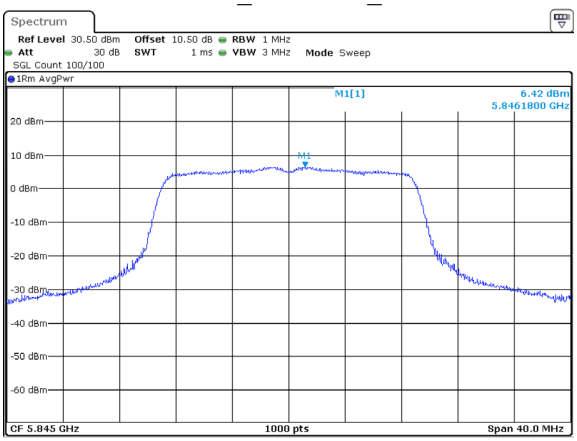
802.11ac160_5815MHz_Chain 1



802.11ac160_5815MHz_Chain 2

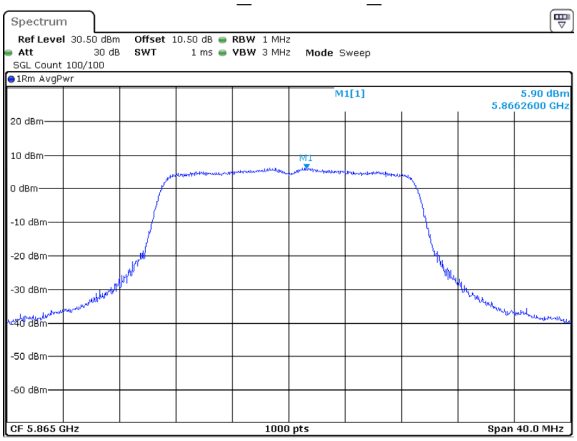


802.11ac20_5845MHz_Chain 0



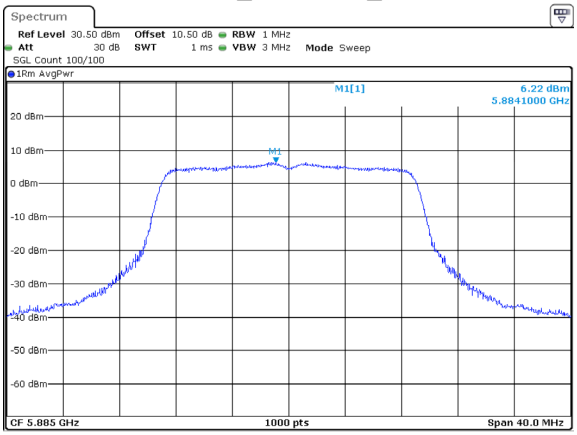
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:26:05

802.11ac20_5865MHz_Chain 0



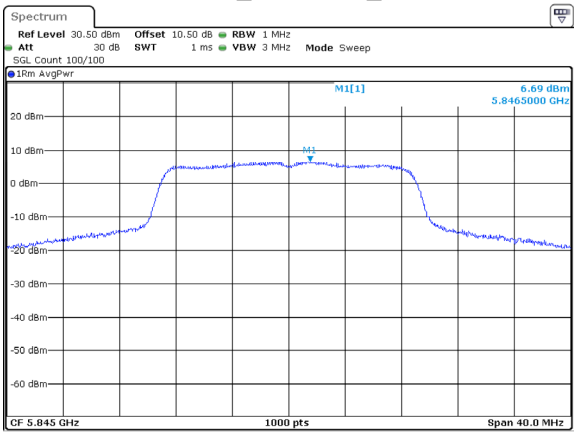
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:26:39

802.11ac20_5885MHz_Chain 0



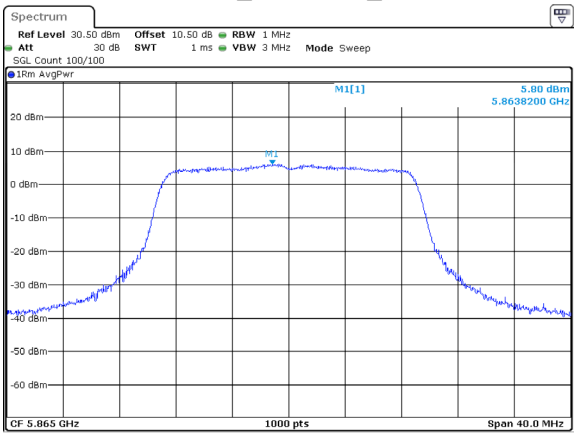
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:27:04

802.11ac20_5845MHz_Chain 1



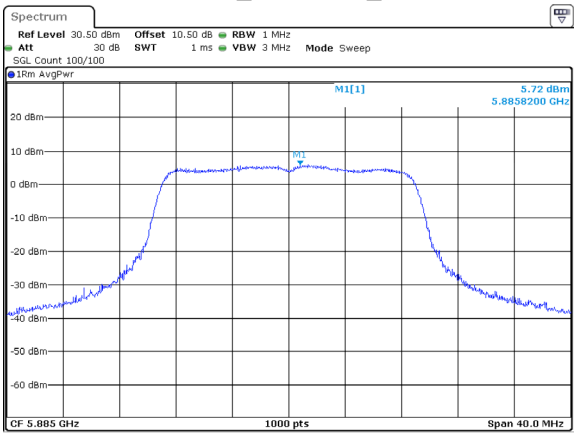
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:29:41

802.11ac20_5865MHz_Chain 1



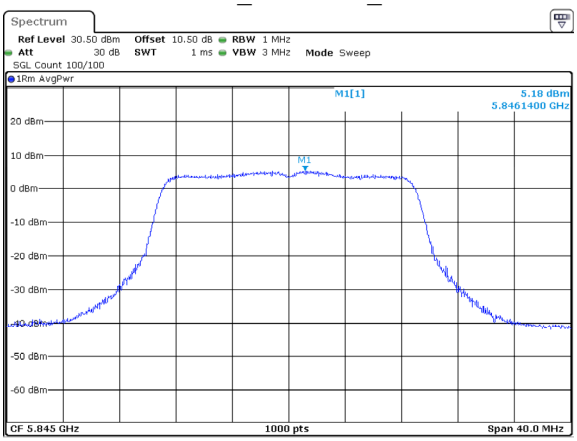
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:30:22

802.11ac20_5885MHz_Chain 1



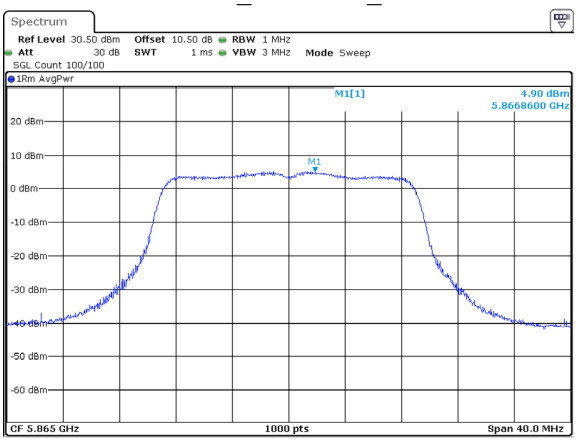
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:36:51

802.11ac20_5845MHz_Chain 2



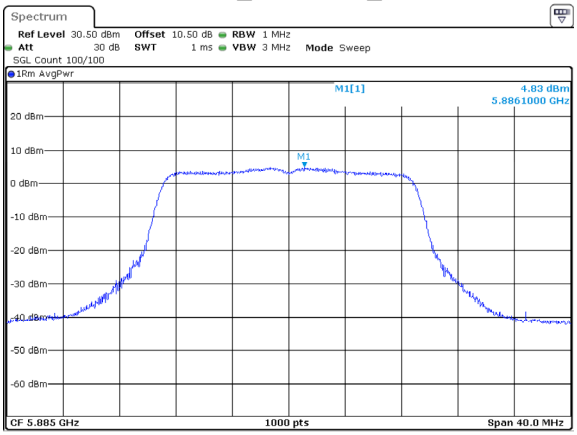
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:38:32

802.11ac20_5865MHz_Chain 2



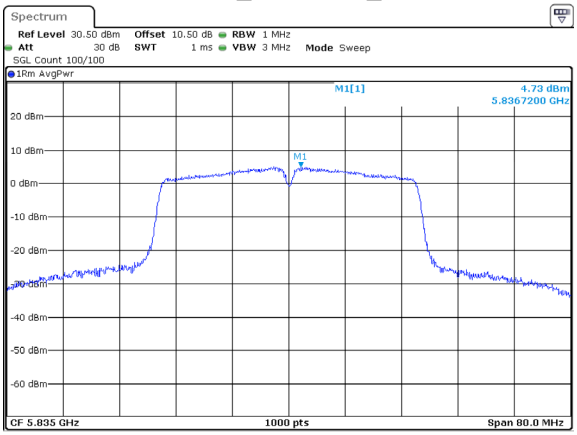
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:38:58

802.11ac20_5885MHz_Chain 2



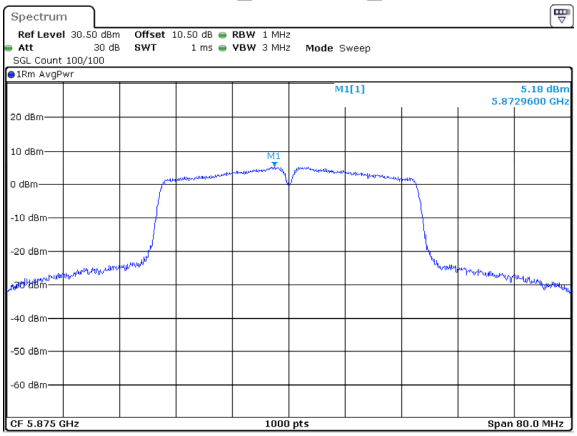
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:39:37

802.11ac40_5835MHz_Chain 0



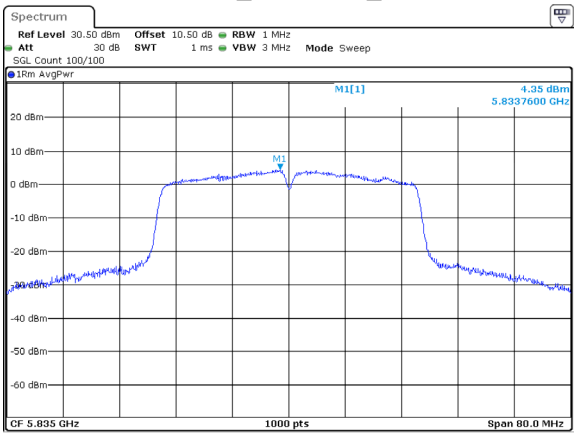
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:00:56

802.11ac40_5875MHz_Chain 0



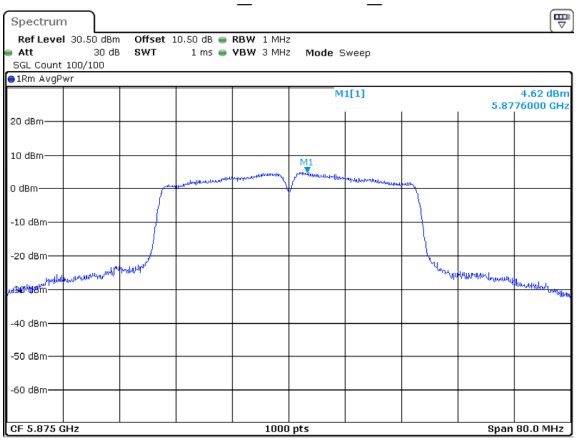
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:01:26

802.11ac40_5835MHz_Chain 1



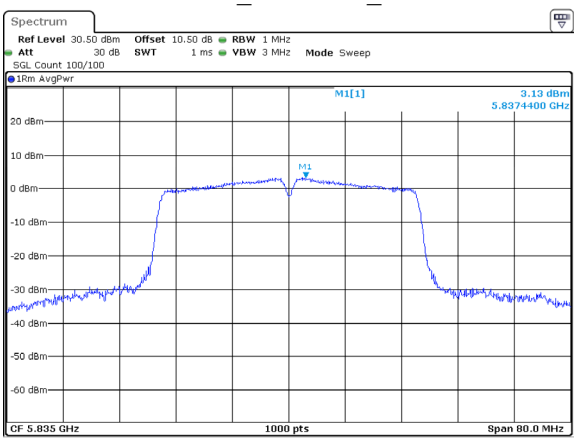
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:36:12

802.11ac40_5875MHz_Chain 1



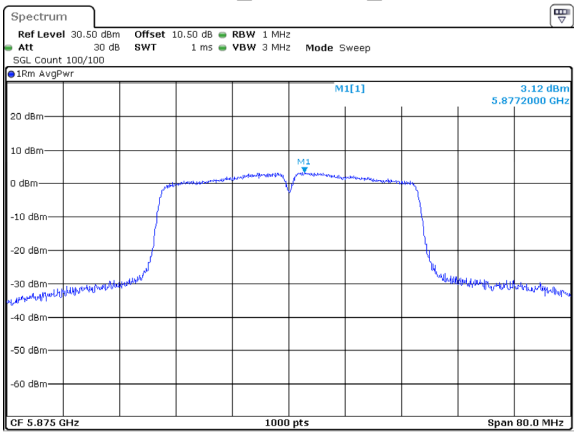
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:36:32

802.11ac40_5835MHz_Chain 2



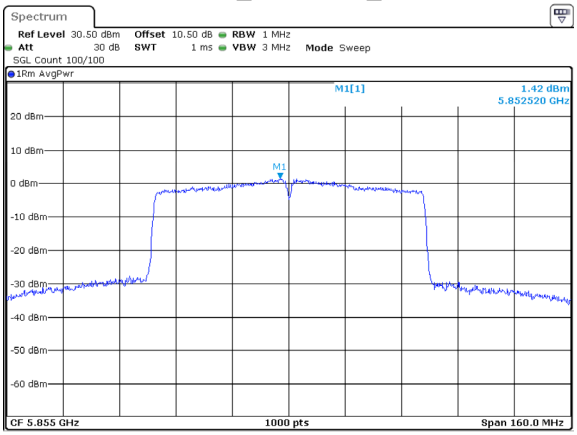
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:43:48

802.11ac40_5875MHz_Chain 2



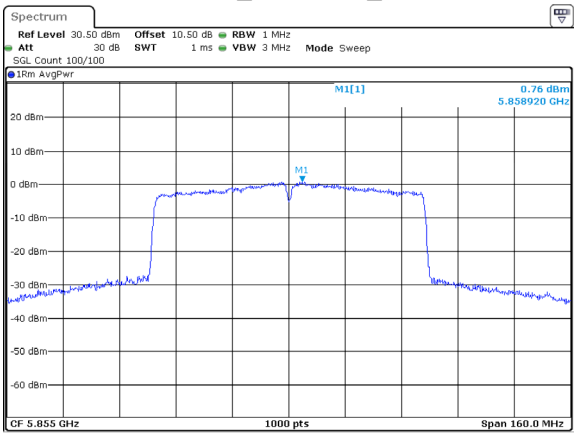
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:44:13

802.11ac80_5855MHz_Chain 0



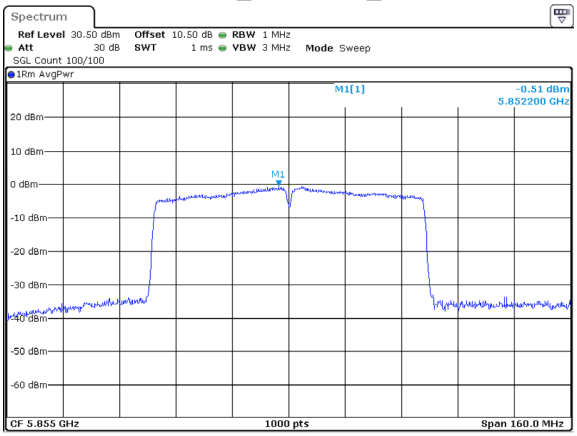
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:02:21

802.11ac80_5855MHz_Chain 1



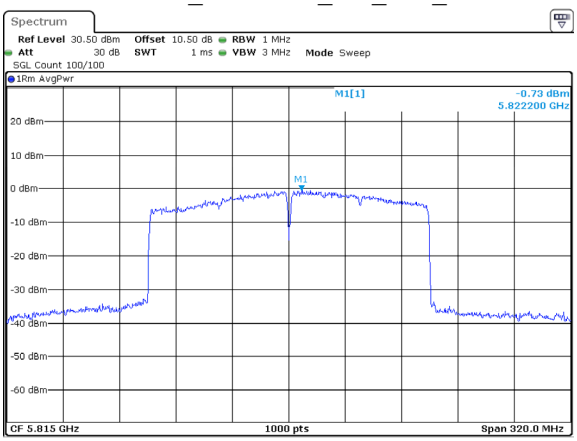
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:37:05

802.11ac80_5855MHz_Chain 2



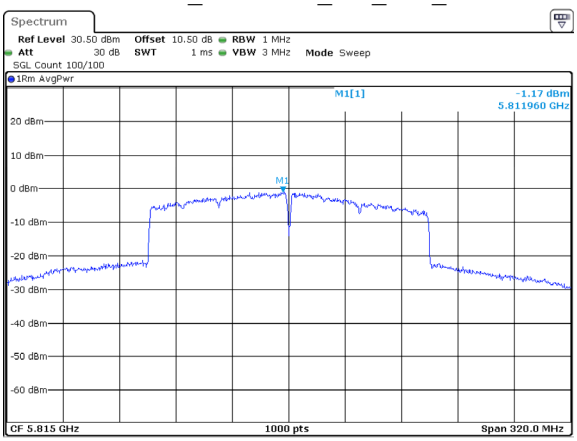
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:45:02

802.11ax160_5815MHz_RU_Full_Chain 0



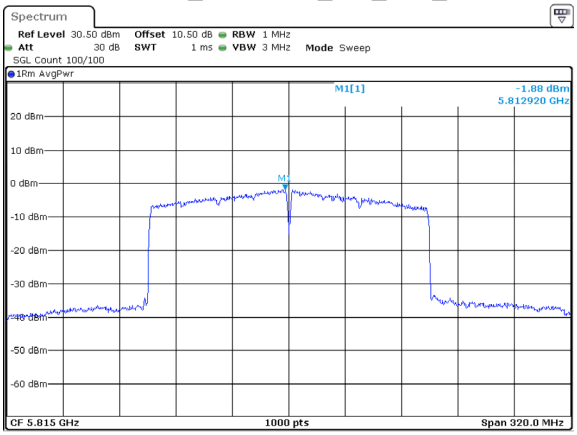
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:44:33

802.11ax160_5815MHz_RU_Full_Chain 1



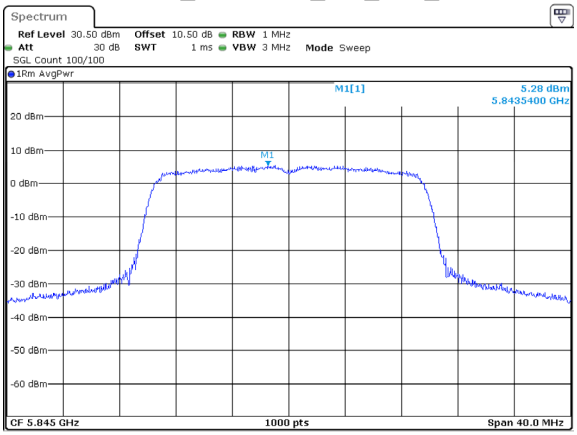
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:46:24

802.11ax160_5815MHz_RU_Full_Chain 2



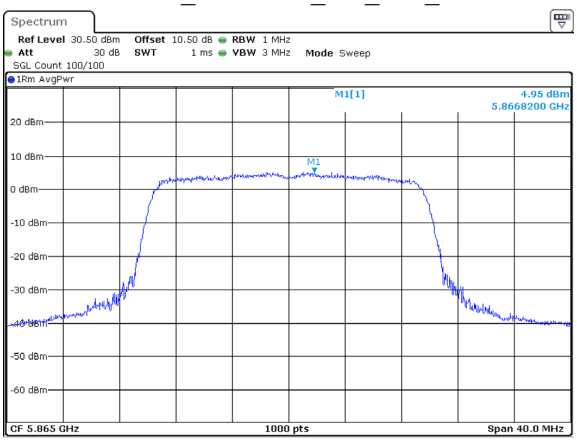
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 19:48:24

802.11ax20_5845MHz_RU_Full_Chain 0



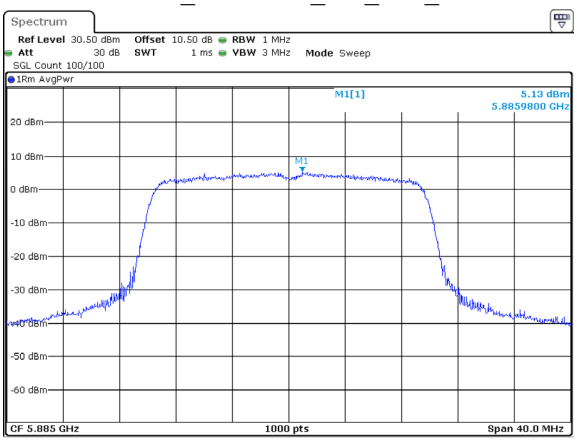
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:46:38

802.11ax20_5865MHz_RU_Full_Chain 0



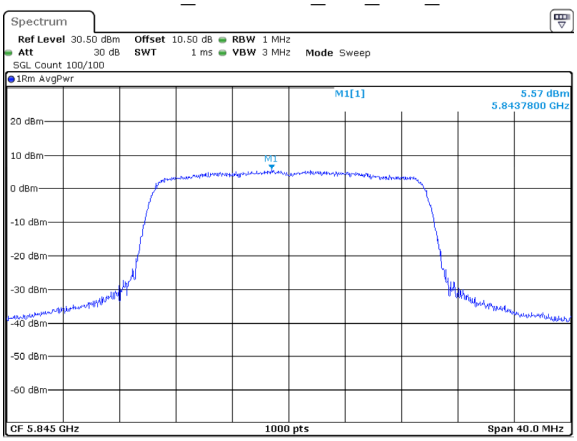
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:47:06

802.11ax20_5885MHz_RU_Full_Chain 0



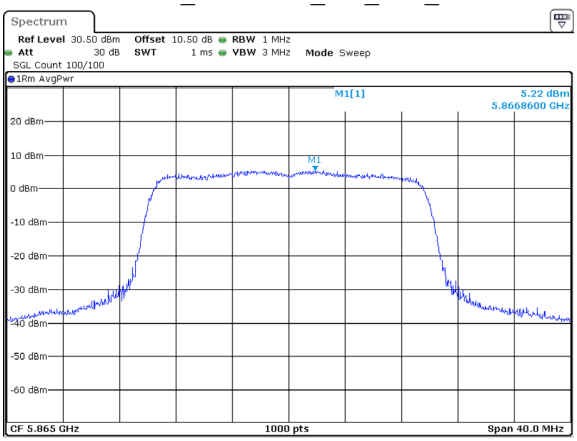
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 16:47:32

802.11ax20_5845MHz_RU_Full_Chain 1



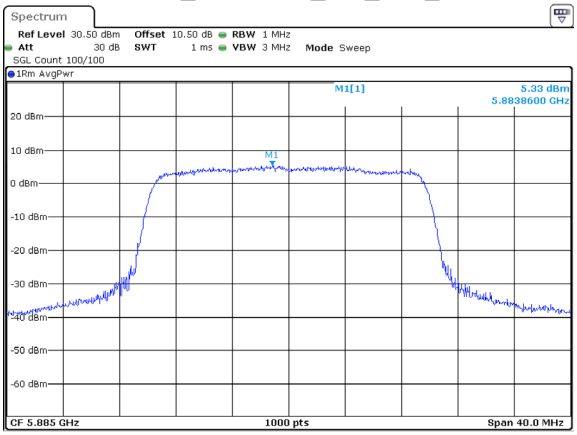
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 17:07:24

802.11ax20_5865MHz_RU_Full_Chain 1



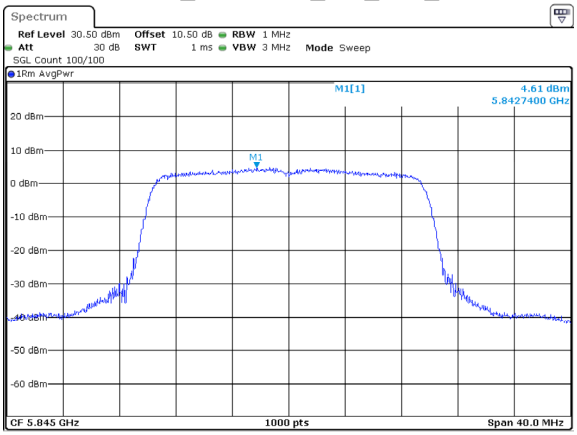
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 17:07:49

802.11ax20_5885MHz_RU_Full_Chain 1



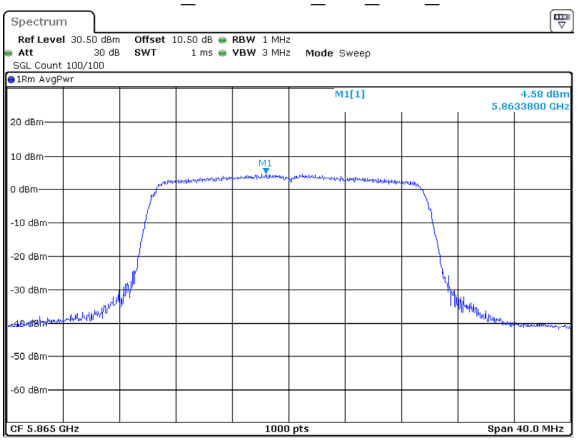
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 17:08:17

802.11ax20_5845MHz_RU_Full_Chain 2



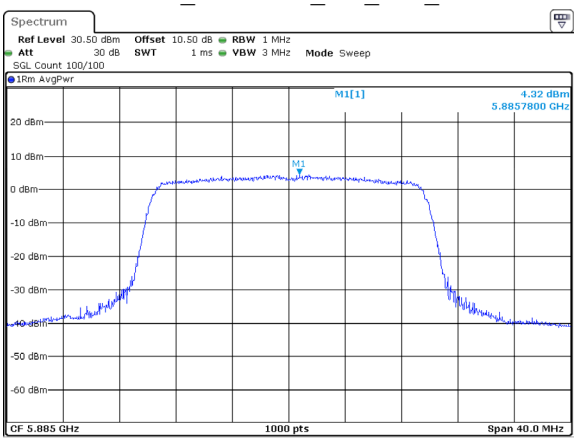
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 17:11:18

802.11ax20_5865MHz_RU_Full_Chain 2



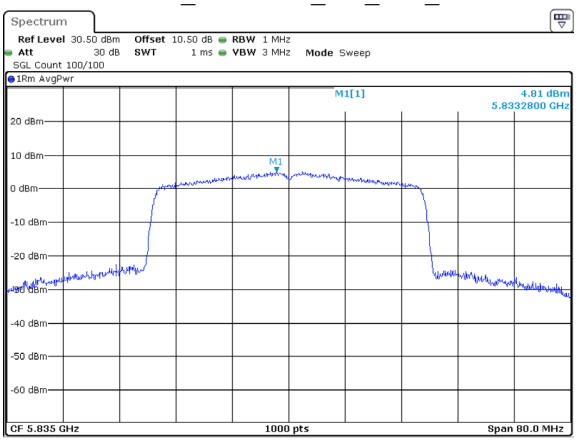
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 17:11:44

802.11ax20_5885MHz_RU_Full_Chain 2



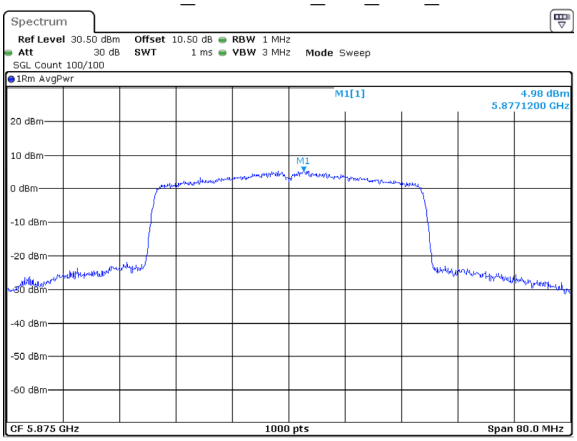
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 18.JAN.2025 17:12:11

802.11ax40_5835MHz_RU_Full_Chain 0



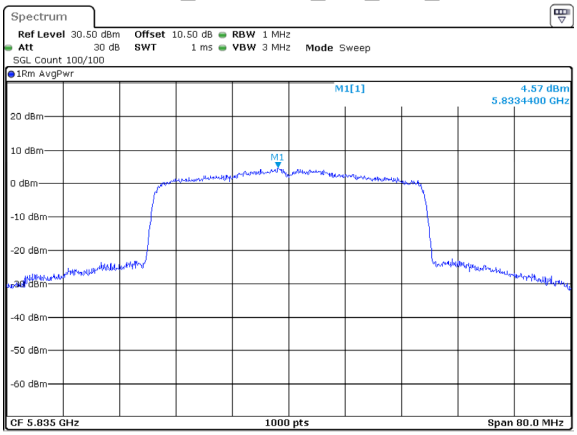
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:48:44

802.11ax40_5875MHz_RU_Full_Chain 0



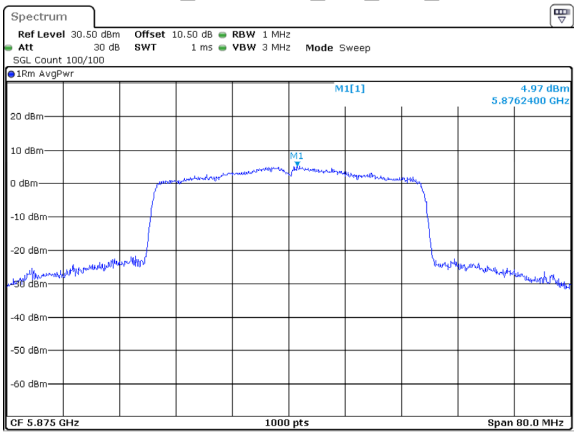
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:49:03

802.11ax40_5835MHz_RU_Full_Chain 1



ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:54:35

802.11ax40_5875MHz_RU_Full_Chain 1



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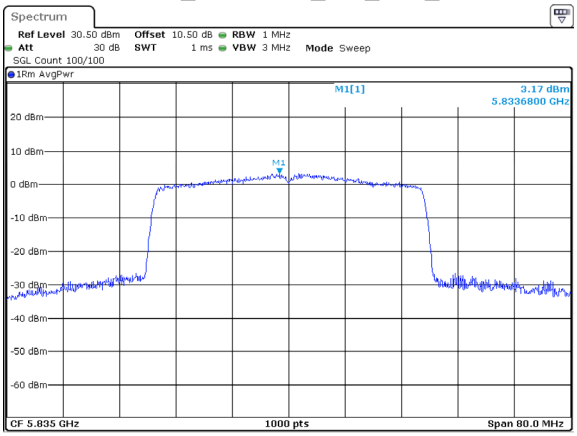
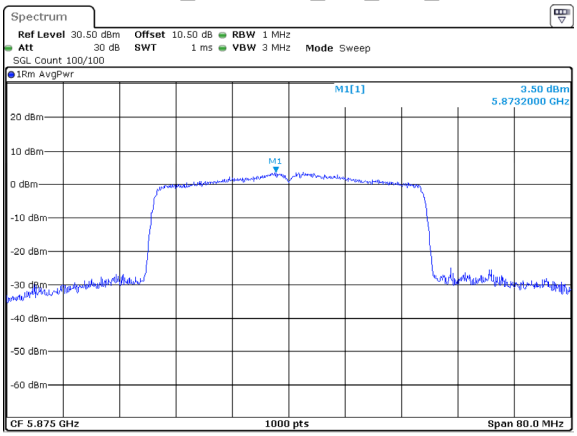
Date: 30.DEC.2024 20:54:54

802.11ax40_5835MHz_RU_Full_Chain 2



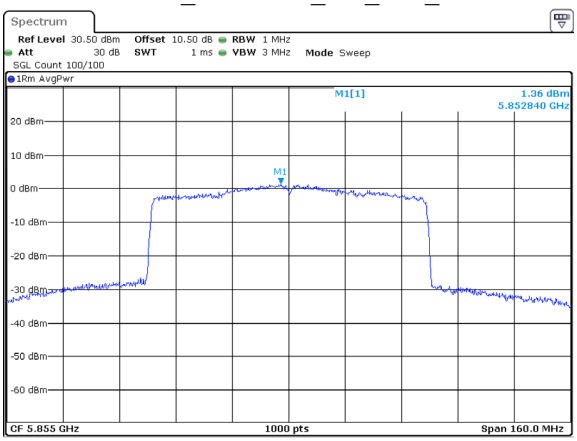
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:58:24

802.11ax40_5875MHz_RU_Full_Chain 2



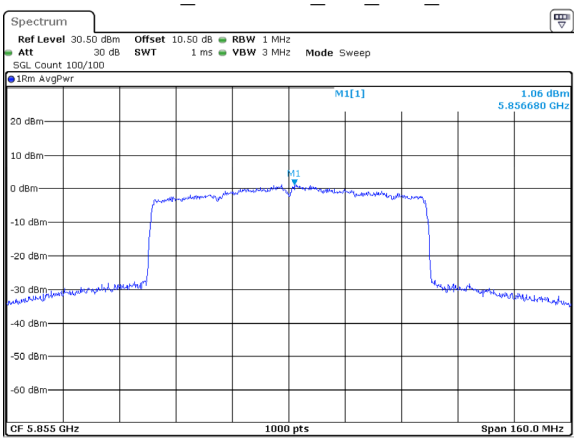
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:58:46

802.11ax80_5855MHz_RU_Full_Chain 0



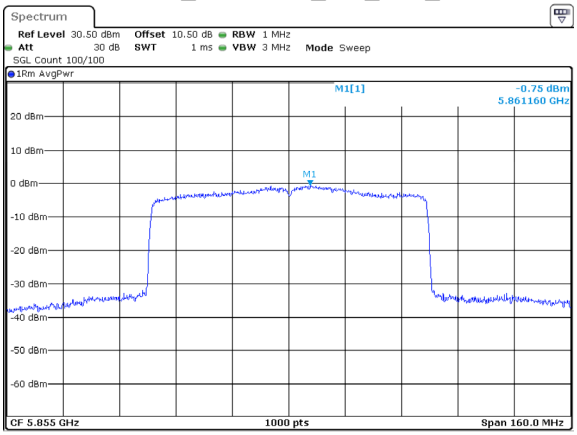
ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:50:08

802.11ax80_5855MHz_RU_Full_Chain 1



ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:55:29

802.11ax80_5855MHz_RU_Full_Chain 2



ProjectNo.:2401Y27848E-RF Tester:Allen Bai
Date: 30.DEC.2024 20:59:18

Duty Cycle

Test Information:

Sample No.:	2TPH-12	**Test Date:**	2025/01/14-2025/01/23
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Allen Bai	**Test Result:**	N/A

Environmental Conditions:

Temperature: (°C):	23.1-24.2	**Relative Humidity: (%)**	37-42	**ATM Pressure: (kPa)**	101.5-101.8

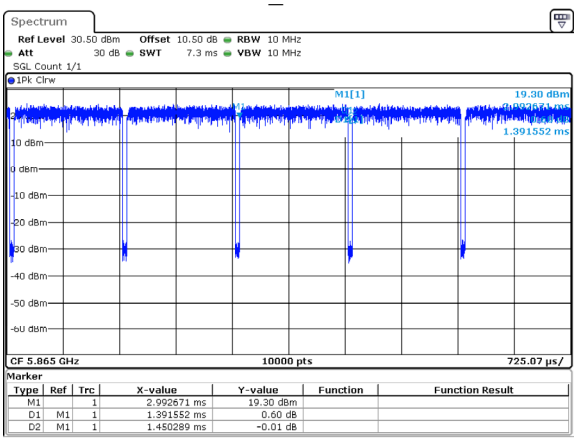
Test Data:

Mode	Antenna	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor(dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11a	Chain 0	5865	**1.392**	1.450	96.00	0.18	718	1
802.11ac20	Chain 0	5865	1.310	1.368	95.76	0.19	763	1
802.11ac40	Chain 0	5835	0.655	0.713	91.87	0.37	1527	2
802.11ac80	Chain 0	5855	0.324	0.381	85.04	0.70	3086	5
802.11ac160	Chain 0	5815	0.184	0.241	76.35	1.17	5435	10
802.11ax20_RU_Full	Chain 0	5865	0.316	0.373	84.72	0.72	3165	5
802.11ax40_RU_Full	Chain 0	5835	**0.312**	0.405	77.04	1.13	3205	10
802.11ax80_RU_Full	Chain 0	5855	0.189	0.272	69.49	1.58	5291	10
802.11ax160_RU_Full	Chain 0	5815	0.297	0.354	83.90	0.76	3367	5

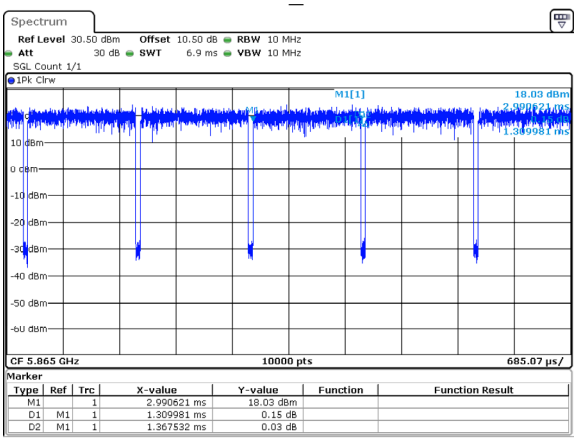
Duty Cycle = Ton/(Ton+Toff)*100%

5850-5895MHz

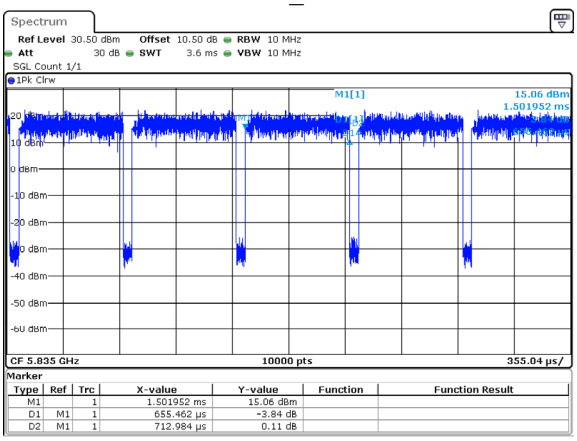
802.11a_5865MHz



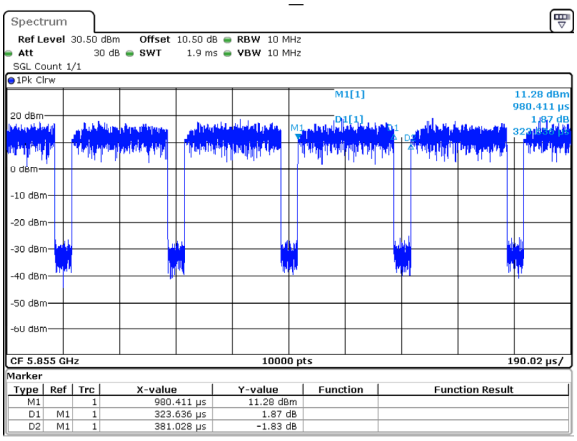
802.11ac20_5865MHz



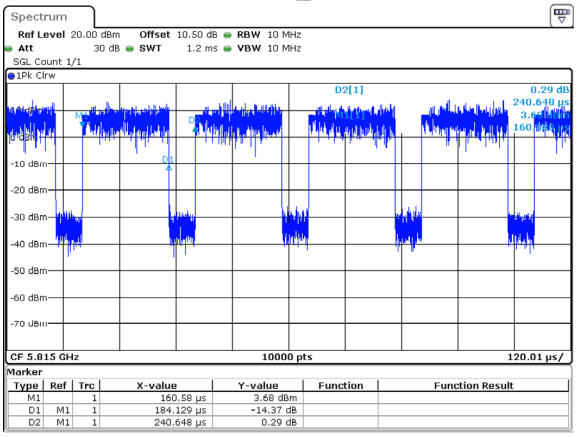
802.11ac40_5835MHz



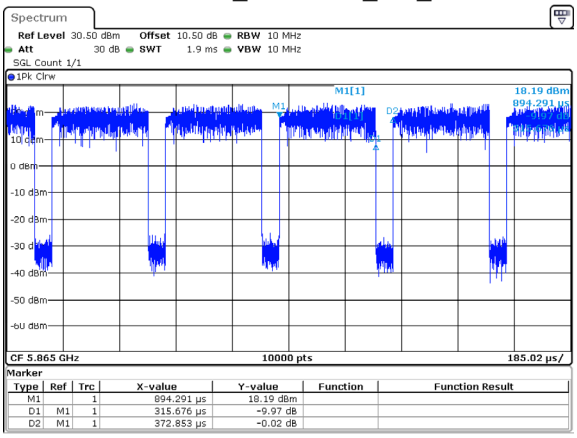
802.11ac80_5855MHz



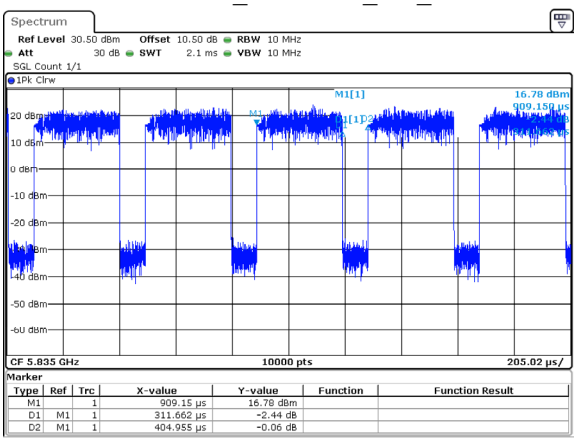
802.11ac160_5815MHz



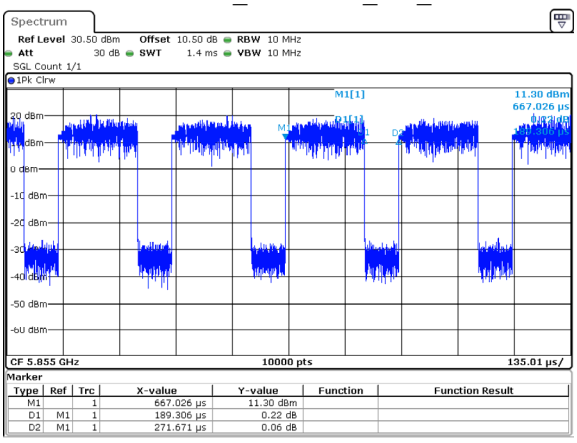
802.11ax20_5865MHz_RU_Full



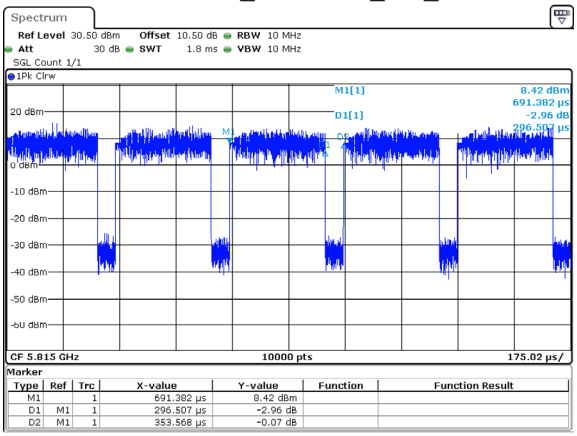
802.11ax40_5835MHz_RU_Full



802.11ax80_5855MHz_RU_Full



802.11ax160_5815MHz_RU_Full



RF EXPOSURE EVALUATION

MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*($180/f^2$)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Result

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

For worst case:

Mode	Frequency (MHz)	Antenna Gain#		Max Tune-up Power#		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
2.4G Wi-Fi	2412-2462	7.64	5.81	29.0	794.33	31	0.3822	1.0
5G Wi-Fi	5150-5250	8.67	7.36	25.0	316.23	31	0.1927	1.0
	5250-5350	8.67	7.36	21.5	141.25	31	0.0861	1.0
	5470-5725	8.67	7.36	21.0	125.89	31	0.0767	1.0
	5725-5850	8.67	7.36	26.5	446.68	31	0.2722	1.0
	5850-5895	8.67	7.36	26.0	398.11	31	0.2426	1.0

Note:
1) The tune up conducted power and antenna gain was declared by the applicant.
2) The antenna gain should be the directional gain.
3) The 2.4G Wi-Fi and 5G Wi-Fi can Simultaneous transmitting.

Simultaneous transmitting consideration (worst case):

The ratio=$MPE_{2.4G\ Wi\text{-}Fi}$/limit+$MPE_{5G\ Wi\text{-}Fi}$/limit = 0.3822/1.0+0.2722/1.0 =0.654<1.0,
so simultaneous exposure is compliant.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 31cm from nearby persons.

Result: Compliant.

EUT PHOTOGRAPHS

Please refer to the attachment 2401Y27848E-RF External photo and 2401Y27848E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401Y27848E-RFB Test Setup photo.

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