

## **APPENDIX A – TEST DATA OF CONDUCTED EMISSION**

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Test Mode	Data Rate
802.11a	6Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0

We chose the Worst-modes are shown as following table:

Test Mode	Chain	Note
802.11a	Chian0/Chain1	---
802.11n HT20	Chian0/Chain1	Cover 802.11ac VHT20
802.11n HT40	Chian0/Chain1	Cover 802.11ac VHT40
802.11ac VHT80	Chian0/Chain1	---
802.11ax HE20	Chian0/Chain1	---
802.11ax HE40	Chian0/Chain1	---
802.11ax HE80	Chian0/Chain1	---

### **Directional gain**

Band	Chain0 Ant Gain (dBi)	Chain1 Ant Gain (dBi)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/MHz)
5.2GHz	2.50	2.60	5.56	30.0	17.0

### **Duty cycle**

Test Mode	Duty Cycle (%)	Correction Factor(dB)
802.11a	99.00	0.04
802.11n HT20	99.60	0.02
802.11n HT40	99.60	0.02
802.11ac VHT20	99.60	0.02
802.11ac VHT40	99.60	0.02
802.11ac VHT80	99.60	0.02
802.11ax HE20	99.60	0.02
802.11ax HE40	97.80	0.10
802.11ax HE80	98.00	0.09

**Output Power  
UNII-1**

Mode	Tones/ RU Index	Freq. (MHz)	Average power output(dBm)		
			Chain0	Chain1	MIMO
802.11a	NA	5180	12.24	15.28	NA
		5220	12.67	14.59	NA
		5240	12.46	14.34	NA
802.11n HT20	NA	5180	10.78	14.08	15.75
		5220	11.08	13.49	15.46
		5240	10.96	13.10	15.17
802.11n HT40	NA	5190	10.07	12.91	14.73
		5230	10.48	12.73	14.76
802.11ac VHT20	NA	5180	10.68	14.05	15.69
		5220	11.05	13.37	15.37
		5240	10.89	13.06	15.12
802.11ac VHT40	NA	5190	10.03	12.87	14.69
		5230	10.42	12.65	14.69
802.11ac VHT80	NA	5210	9.85	12.54	14.41

Mode	Tones/ RU Index	Freq. (MHz)	Average power output(dBm)		
			Chain0	Chain1	MIMO
802.11ax HE20	26T/0	5180	10.89	14.07	15.78
		5220	11.03	13.40	15.39
		5240	11.02	13.12	15.21
	26T/4	5180	10.91	14.13	15.82
		5220	11.04	13.37	15.37
		5240	11.04	13.06	15.18
	26T/8	5180	10.86	14.12	15.80
		5220	11.07	13.37	15.38
		5240	10.99	13.13	15.20
	52T/37	5180	10.84	14.09	15.77
		5220	11.03	13.45	15.42
		5240	11.05	13.06	15.18
	52T/39	5180	10.85	14.13	15.80
		5220	11.07	13.41	15.41
		5240	11.00	13.11	15.19
	52T/40	5180	10.87	14.12	15.80
		5220	11.08	13.39	15.40
		5240	11.04	13.05	15.17
	106T/53	5180	10.86	14.13	15.81
		5220	11.05	13.43	15.41
		5240	11.02	13.05	15.16
	106T/54	5180	10.88	14.07	15.77
		5220	11.10	13.37	15.39
		5240	10.98	13.12	15.19
242T/61	5180	10.93	14.16	15.85	
	5220	11.12	13.46	15.46	
	5240	11.08	13.14	15.24	

Mode	Tones/ RU Index	Freq. (MHz)	Average power output(dBm)		
			Chain0	Chain1	MIMO
802.11ax HE40	26T/0	5190	9.42	12.31	14.11
		5230	9.69	12.22	14.15
	26T/10	5190	9.39	12.27	14.07
		5230	9.72	12.21	14.15
	26T/17	5190	9.43	12.29	14.10
		5230	9.72	12.19	14.14
	52T/37	5190	9.43	12.31	14.11
		5230	9.70	12.15	14.11
	52T/41	5190	9.04	11.34	13.35
		5230	9.00	11.38	13.36
	52T/44	5190	8.98	11.41	13.37
		5230	9.04	11.33	13.34
	106T/53	5190	9.04	11.37	13.37
		5230	9.03	11.40	13.39
	106T/55	5190	8.98	11.37	13.35
		5230	9.06	11.35	13.36
	106T/56	5190	9.00	11.39	13.37
		5230	9.03	11.39	13.38
	242T/61	5190	9.03	11.41	13.39
		5230	9.04	11.37	13.37
	242T/62	5190	9.03	11.40	13.39
		5230	8.97	11.38	13.35
	484T/65	5190	9.46	12.36	14.16
		5230	9.78	12.24	14.19

Mode	Tones/ RU Index	Freq. (MHz)	Average power output(dBm)		
			Chain0	Chain1	MIMO
802.11ax HE80	26T/0	5210	9.02	11.37	13.36
	26T/18	5210	8.97	11.37	13.34
	26T/36	5210	9.02	11.41	13.39
	52T/37	5210	8.99	11.36	13.35
	52T/45	5210	9.03	11.36	13.36
	52T/52	5210	9.03	11.36	13.36
	106T/53	5210	9.01	11.35	13.35
	106T/57	5210	9.02	11.35	13.35
	106T/60	5210	9.03	11.40	13.39
	242T/61	5210	9.01	11.35	13.35
	242T/63	5210	9.00	11.36	13.35
	242T/64	5210	9.00	11.33	13.33
	484T/65	5210	8.99	11.35	13.34
	484T/66	5210	9.01	11.37	13.36
	996T/67	5210	9.07	11.43	13.42

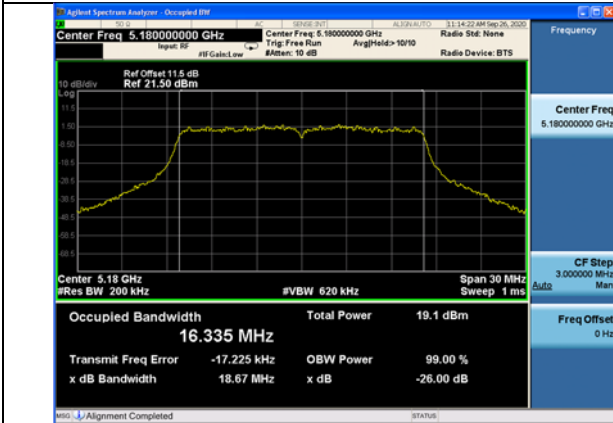
### Occupied Bandwidth

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.5dB+ Cable loss 1dB

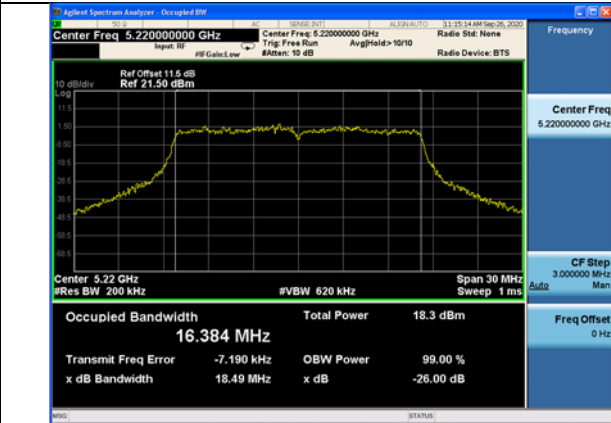
Test Mode: 802.11a

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5180	36	18.67	18.39
5220	44	18.49	18.39
5240	48	18.66	18.68

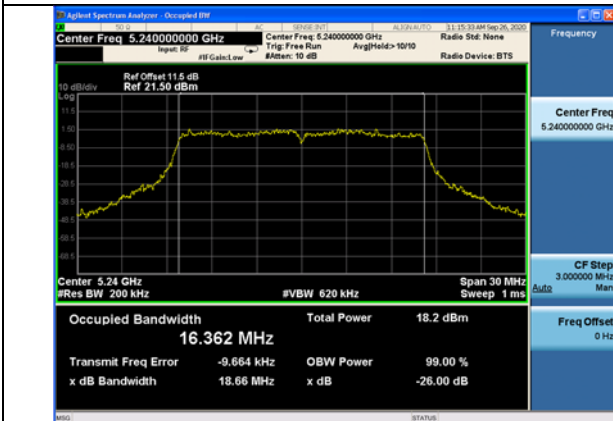
Test Mode: 802.11a Chain0



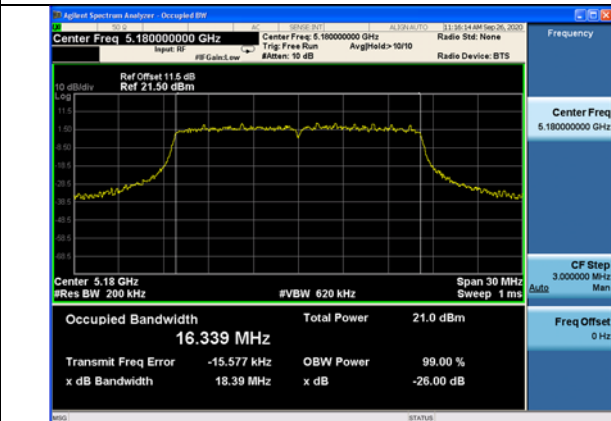
Test Mode: 802.11a Chain0



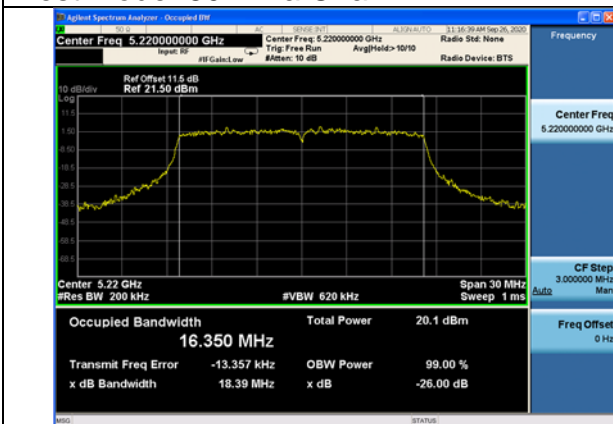
Test Mode: 802.11a Chain0



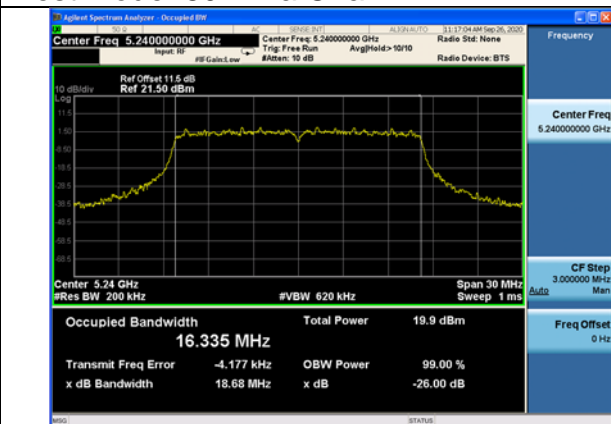
Test Mode: 802.11a Chain1



Test Mode: 802.11a Chain1



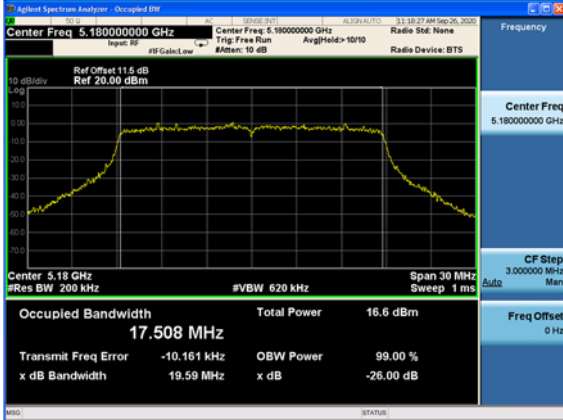
Test Mode: 802.11a Chain1



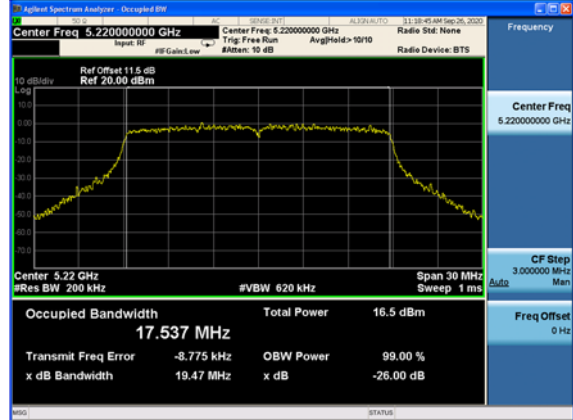
Test Mode: 802.11n HT20

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5180	36	19.59	19.61
5220	44	19.47	19.33
5240	48	19.26	19.83

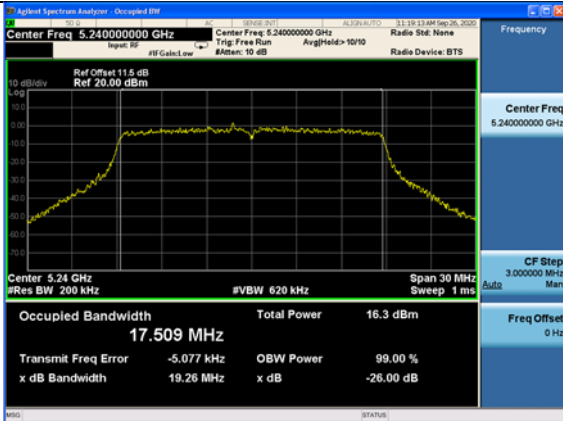
Test Mode: 802.11n HT20 Chain0



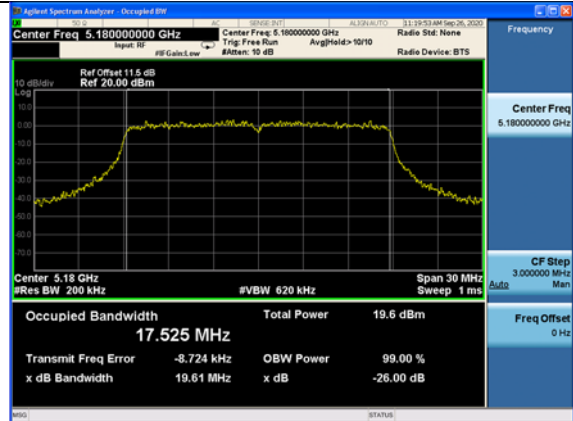
Test Mode: 802.11n HT20 Chain0



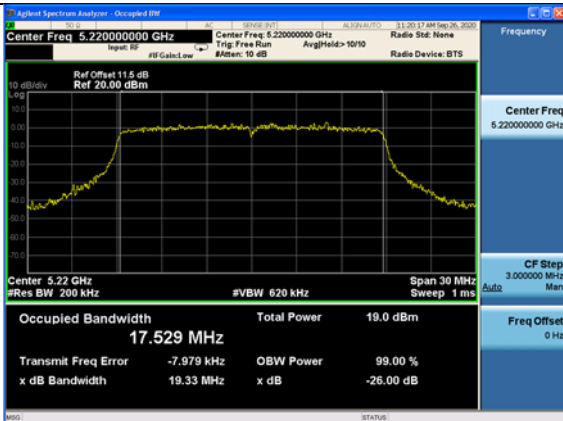
Test Mode: 802.11n HT20 Chain0



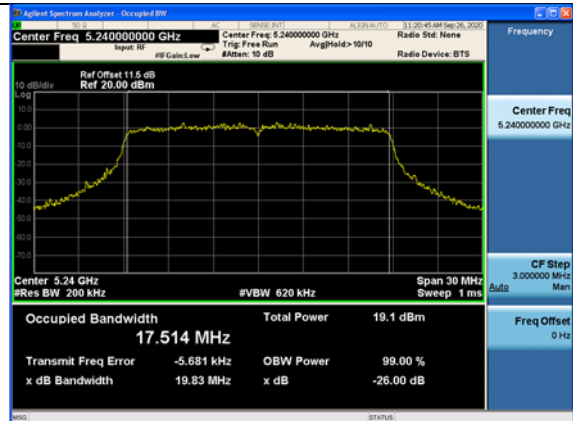
Test Mode: 802.11n HT20 Chain1



Test Mode: 802.11n HT20 Chain1



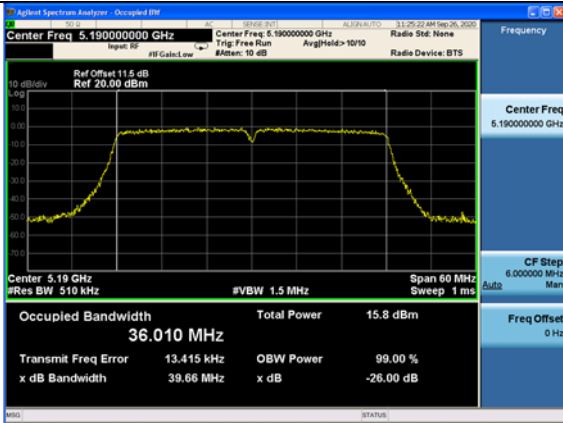
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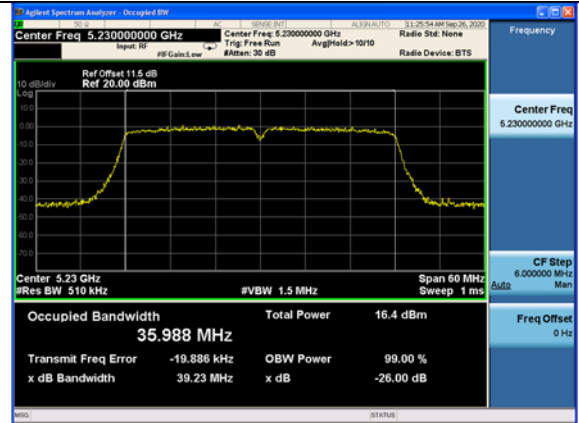
Test Mode: 802.11n HT40

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5190	38	39.66	39.29
5230	46	39.23	39.34

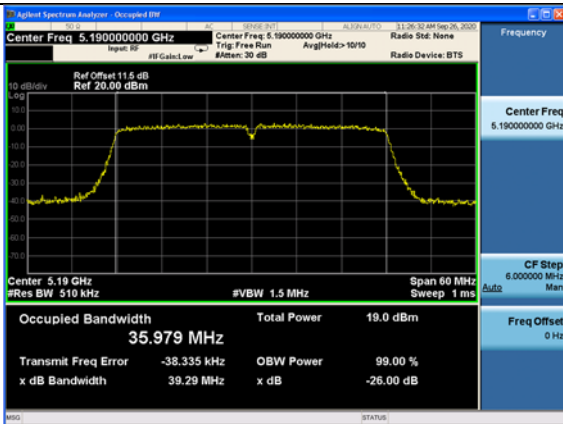
Test Mode: 802.11n HT40 Chain0



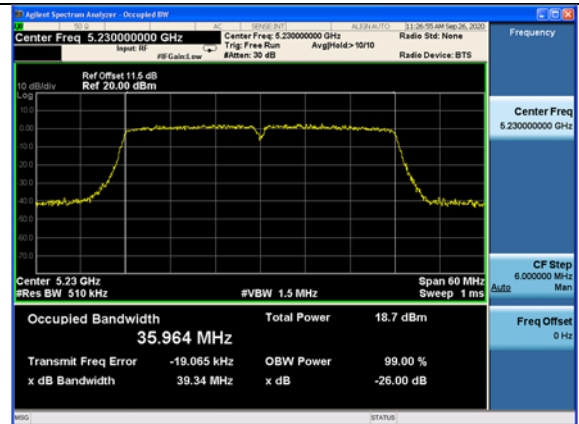
Test Mode: 802.11n HT40 Chain0



Test Mode: 802.11n HT40 Chain1



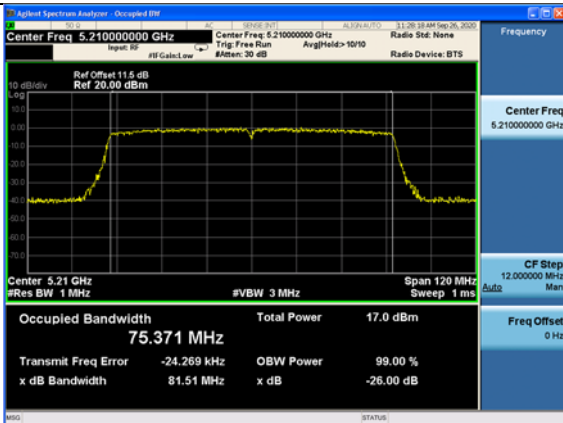
Test Mode: 802.11n HT40 Chain1



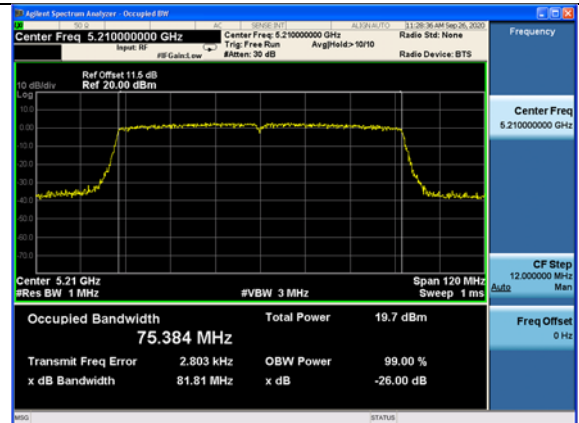
Test Mode: 802.11ac VHT80

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5190	42	81.51	81.81

Test Mode: 802.11ac VHT80 Chain0



Test Mode: 802.11ac VHT80 Chain1

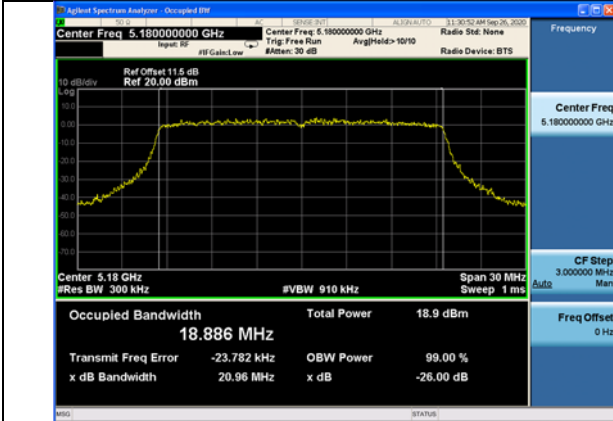




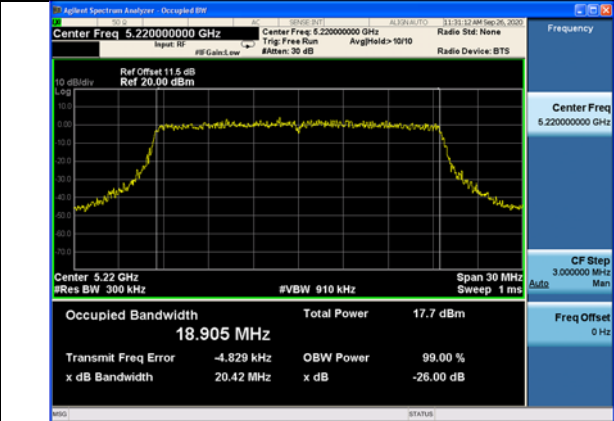
Test Mode: 802.11ax HE20(242T)

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5180	36	20.96	20.58
5220	44	20.42	20.51
5240	48	20.80	20.80

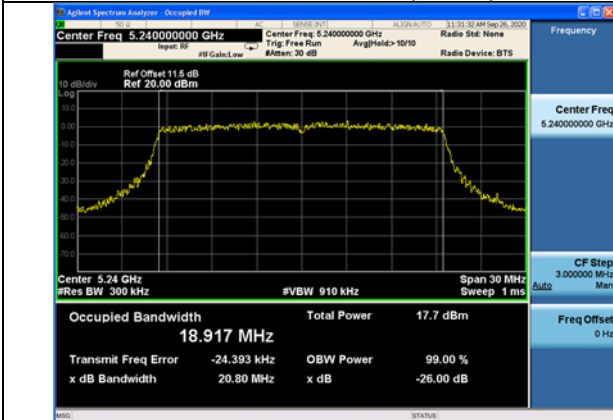
Test Mode: 802.11ax HE20(242T) Chain0



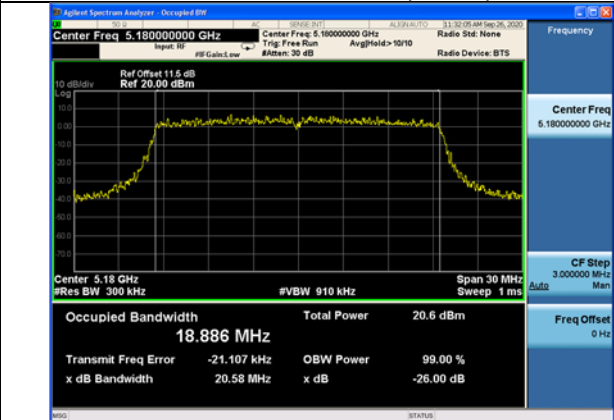
Test Mode: 802.11ax HE20(242T) Chain0



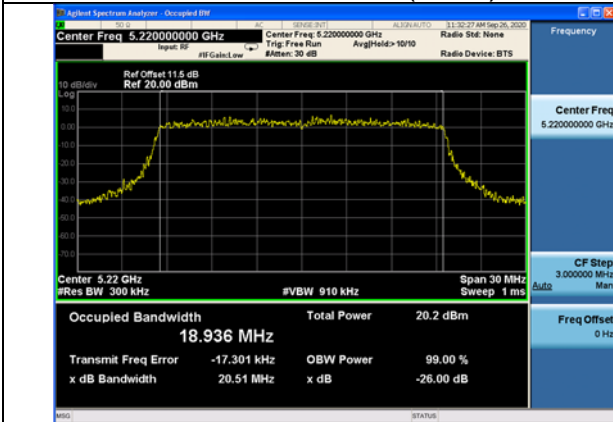
Test Mode: 802.11ax HE20(242T) Chain0



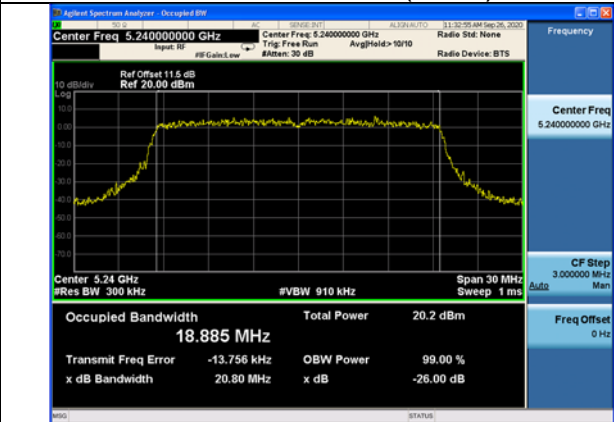
Test Mode: 802.11ax HE20(242T) Chain1



Test Mode: 802.11ax HE20(242T) Chain1



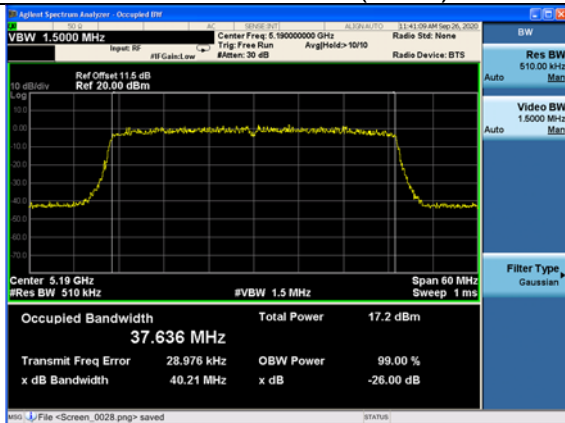
Test Mode: 802.11ax HE20(242T) Chain1



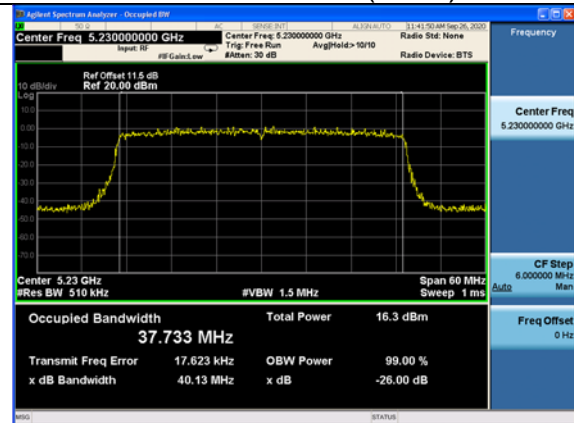
Test Mode: 802.11ax HE40(484T)

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5190	38	40.21	40.01
5230	46	40.13	40.15

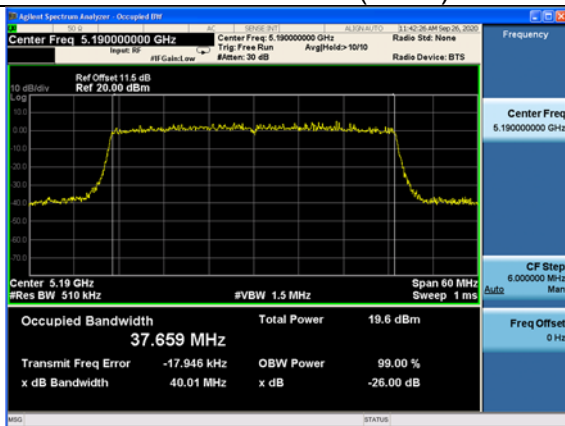
Test Mode: 802.11ax HE40(484T) Chain0



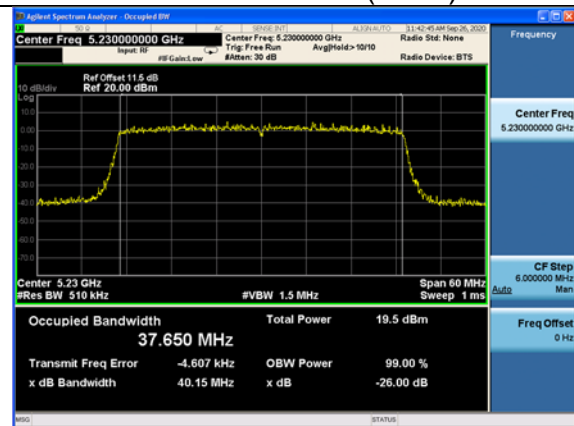
Test Mode: 802.11ax HE40(484T) Chain0



Test Mode: 802.11ax HE40(484T) Chain1



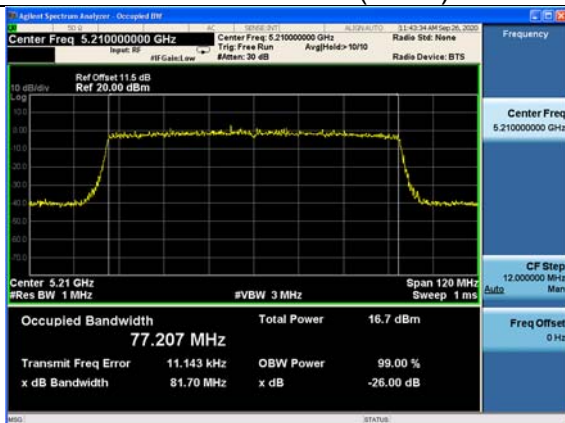
Test Mode: 802.11ax HE40(484T) Chain1



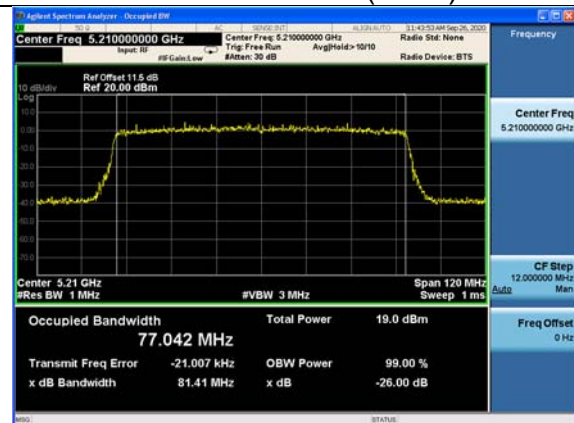
Test Mode: 802.11ax HE80(996T)

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5190	42	81.70	81.41

Test Mode: 802.11ax HE80(996T) Chain0



Test Mode: 802.11ax HE80(996T) Chain1

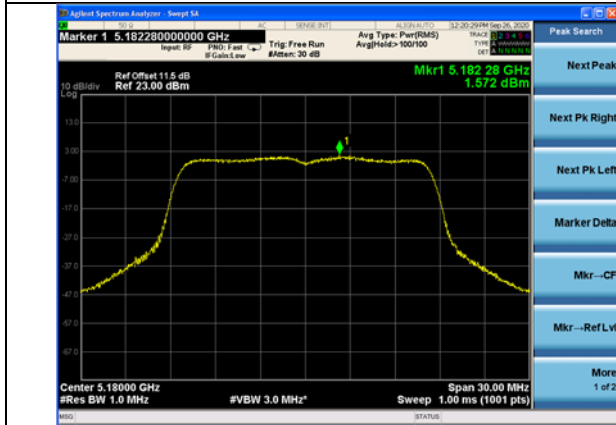


### Transmitter Power Spectral Density

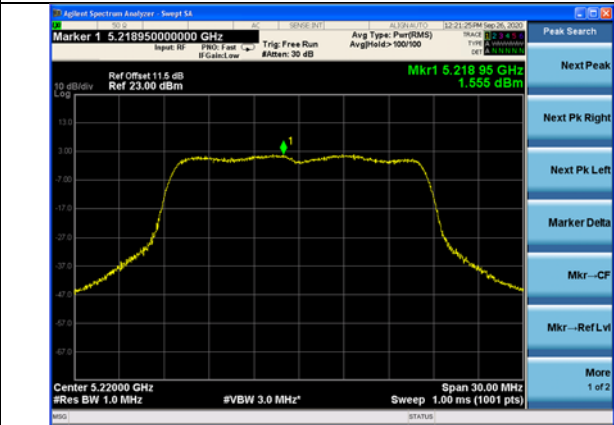
Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.5dB+ Cable loss 1dB  
Test Mode: 802.11a

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1
5180	0.04	1.612	4.058
5220	0.04	1.595	3.540
5240	0.04	2.210	2.766

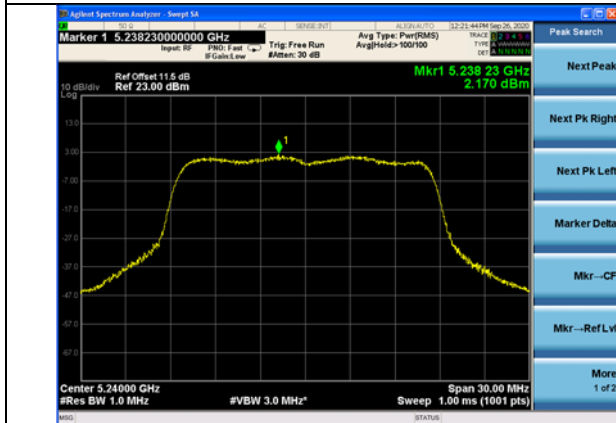
Test Mode: 802.11a Chain0



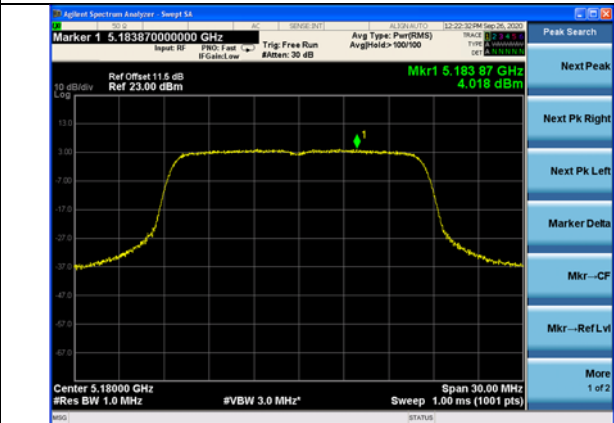
Test Mode: 802.11a Chain0



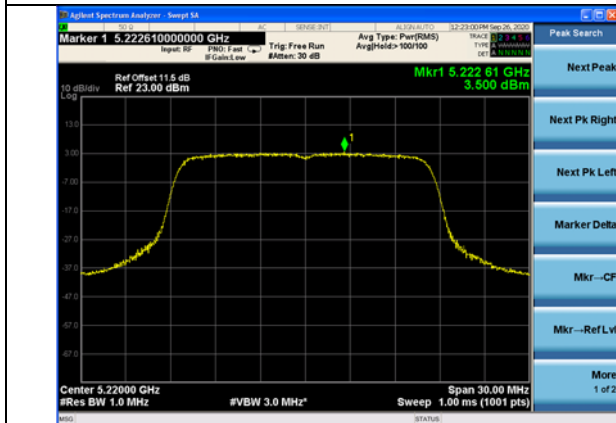
Test Mode: 802.11a Chain0



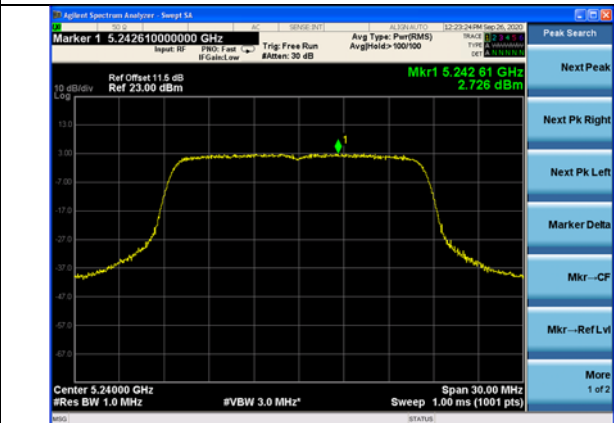
Test Mode: 802.11a Chain1



Test Mode: 802.11a Chain1



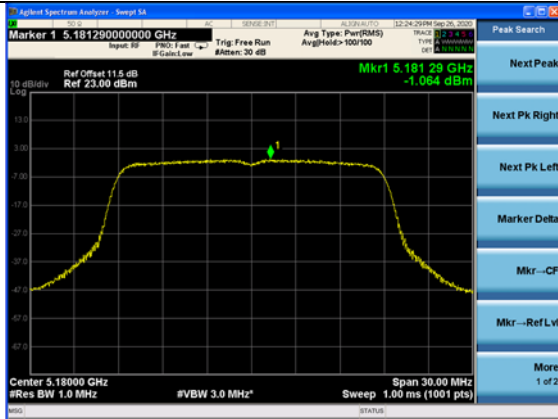
Test Mode: 802.11a Chain1



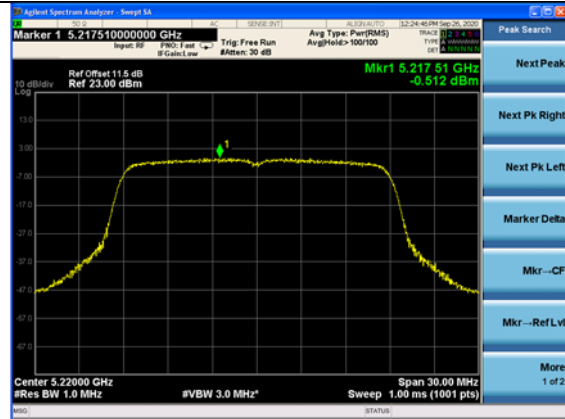
Test Mode: 802.11n HT20

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5180	0.02	-1.044	2.925	4.389
5220	0.02	-0.492	2.075	3.989
5240	0.02	-0.717	1.532	3.562

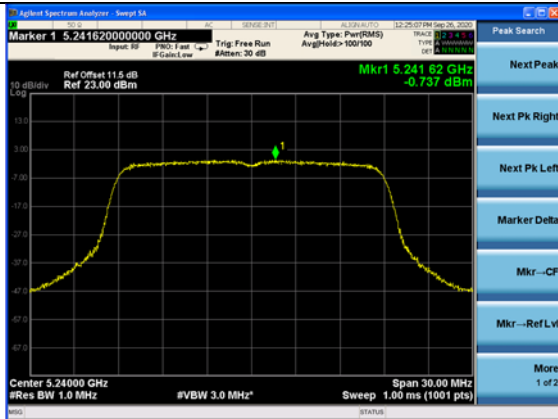
Test Mode: 802.11n HT20 Chain0



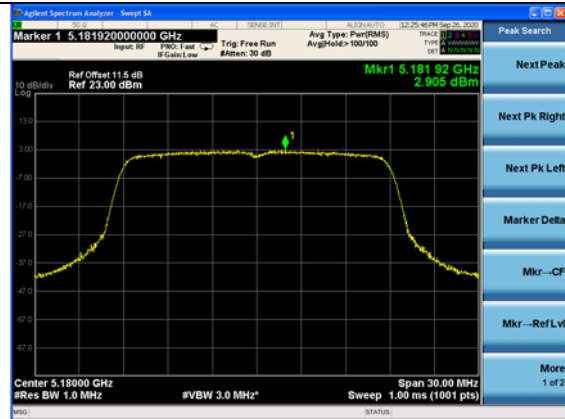
Test Mode: 802.11n HT20 Chain0



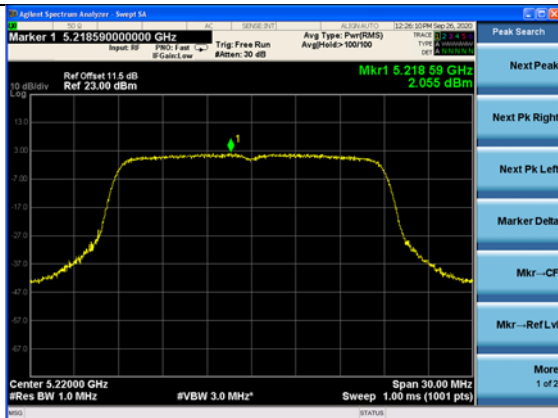
Test Mode: 802.11n HT20 Chain0



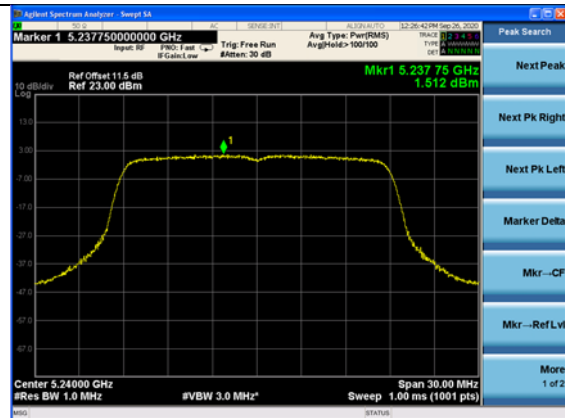
Test Mode: 802.11n HT20 Chain1



Test Mode: 802.11n HT20 Chain1



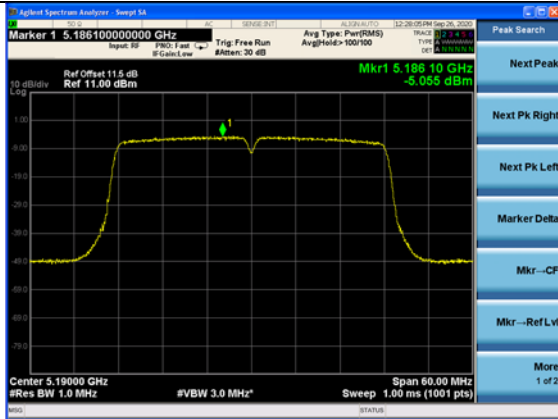
Test Mode: 802.11n HT20 Chain1



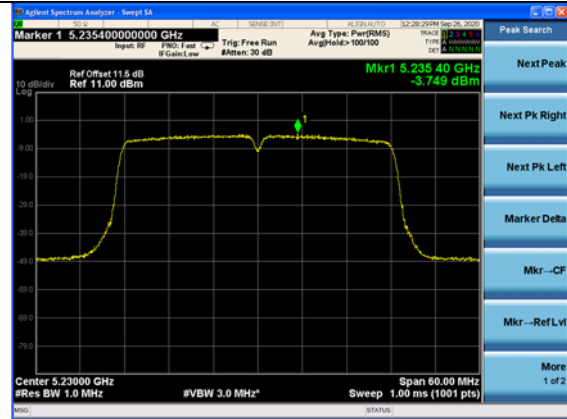
Test Mode: 802.11n HT40

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5190	0.02	-5.035	-1.386	0.172
5230	0.02	-3.729	-1.581	0.487

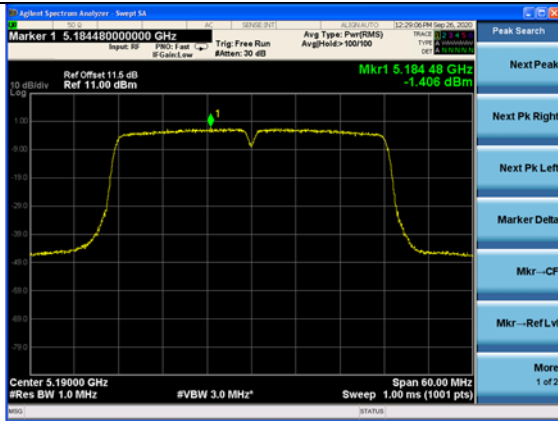
Test Mode: 802.11n HT40 Chain0



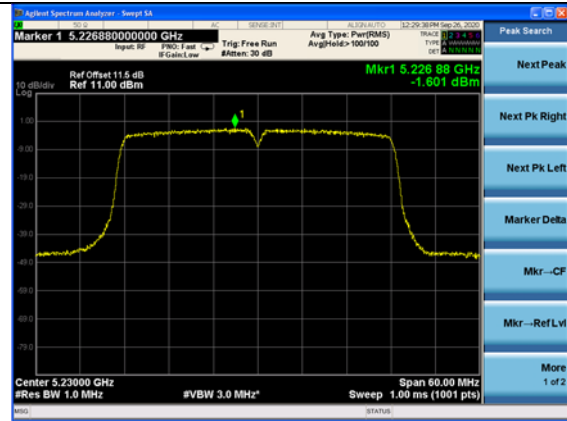
Test Mode: 802.11n HT40 Chain0



Test Mode: 802.11n HT40 Chain1



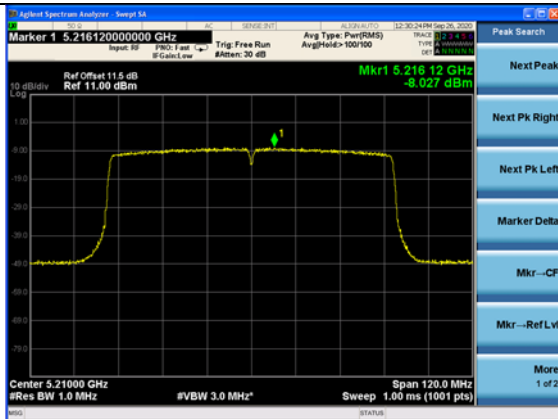
Test Mode: 802.11n HT40 Chain1



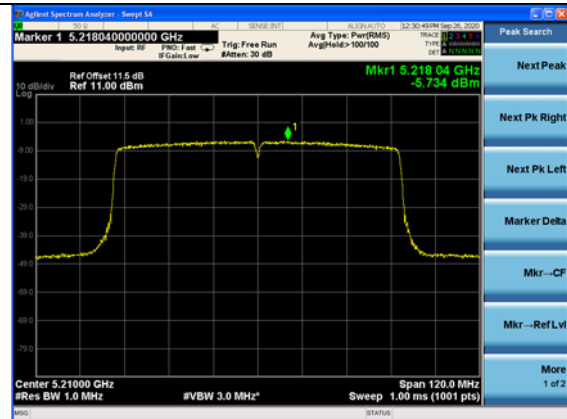
Test Mode: 802.11ac VHT80

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5210	0.02	-8.007	-5.714	-3.701

Test Mode: 802.11ac VHT80 Chain0



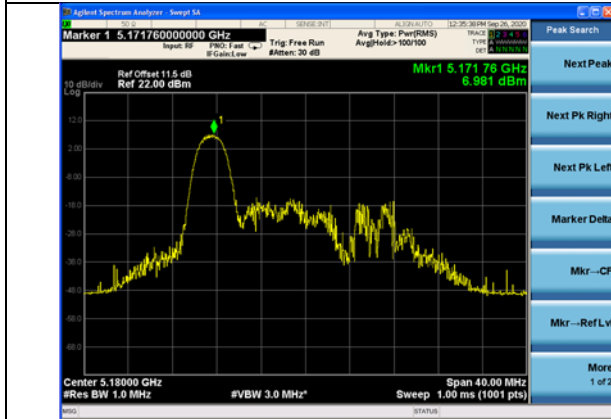
Test Mode: 802.11ac VHT80 Chain1



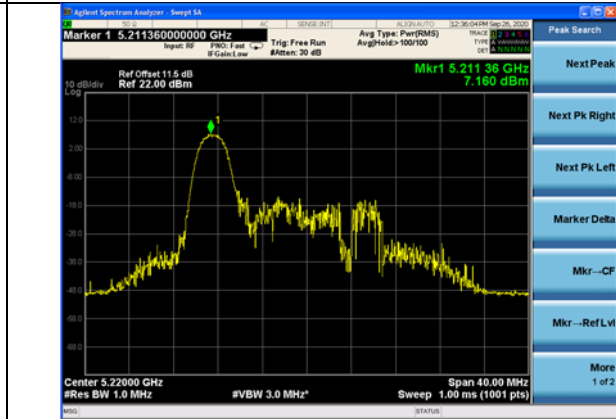
Test Mode: 802.11ax HE20(26T)

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5180	0.02	7.001	10.292	11.961
5220	0.02	7.180	10.708	12.303
5240	0.02	7.518	9.684	11.745

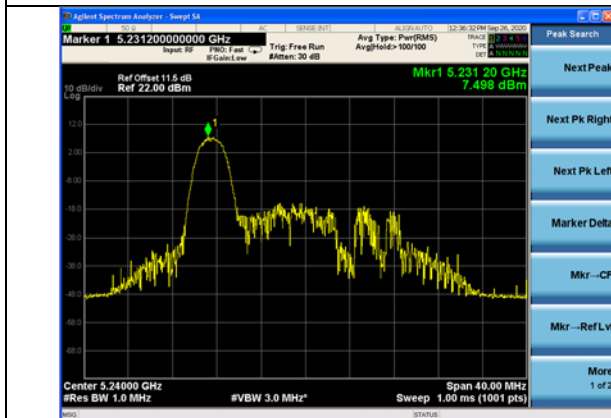
Test Mode: 802.11ax HE20 Chain0



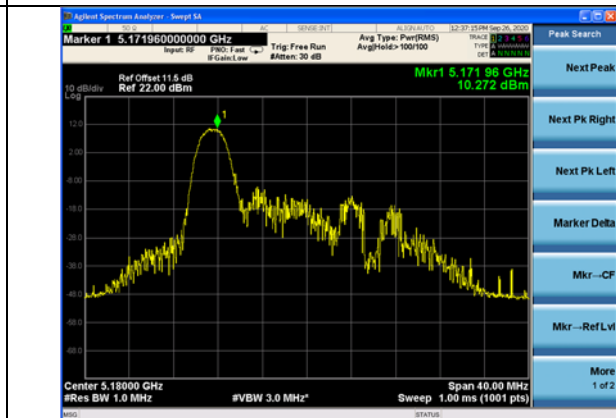
Test Mode: 802.11ax HE20 Chain0



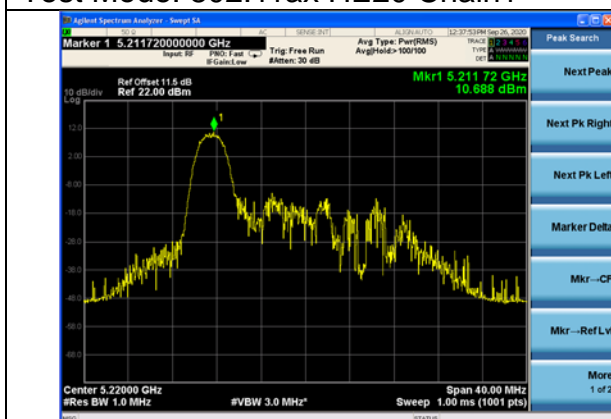
Test Mode: 802.11ax HE20 Chain0



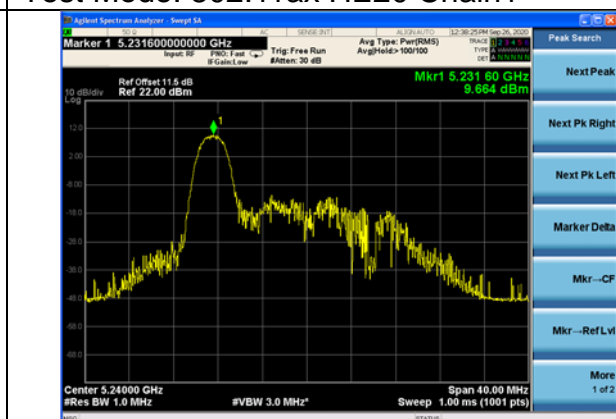
Test Mode: 802.11ax HE20 Chain1



Test Mode: 802.11ax HE20 Chain1



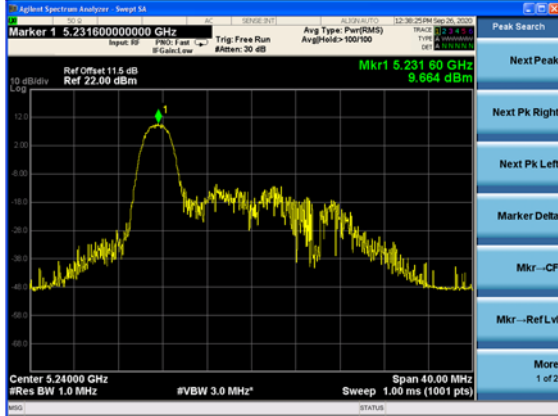
Test Mode: 802.11ax HE20 Chain1



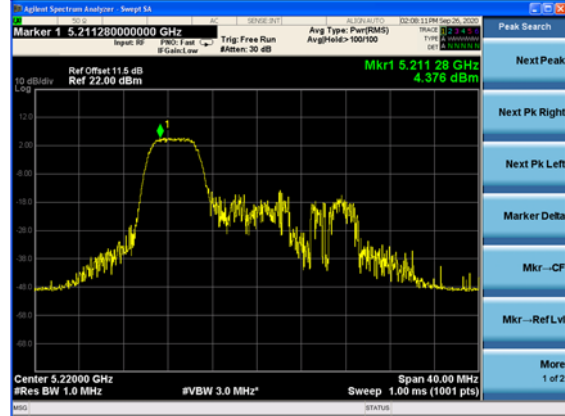
Test Mode: 802.11ax HE20(52T)

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5180	0.02	4.230	7.665	9.289
5220	0.02	4.396	7.595	9.294
5240	0.02	4.740	6.376	8.645

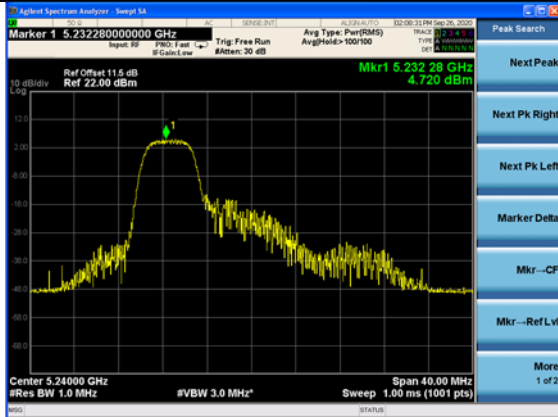
Test Mode: 802.11ax HE20 Chain0



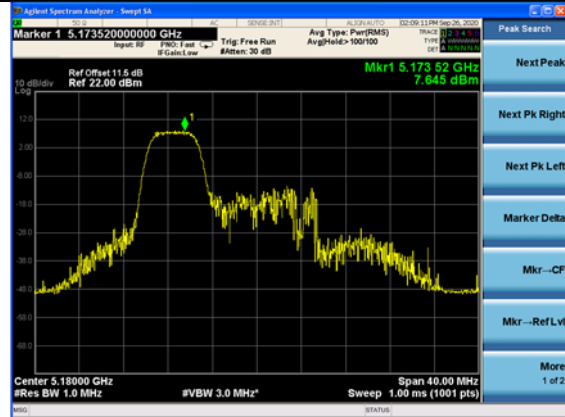
Test Mode: 802.11ax HE20 Chain0



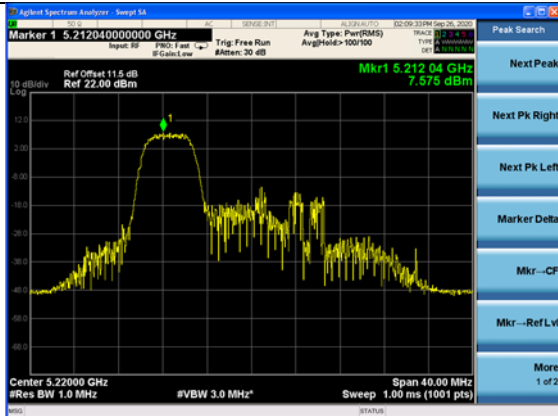
Test Mode: 802.11ax HE20 Chain0



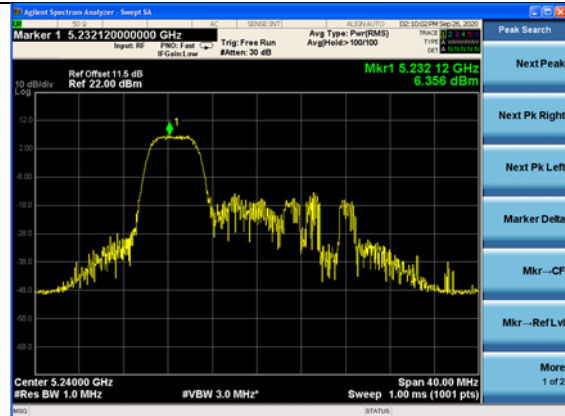
Test Mode: 802.11ax HE20 Chain1



Test Mode: 802.11ax HE20 Chain1



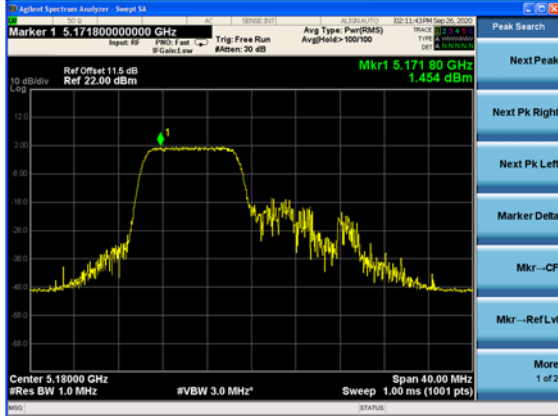
Test Mode: 802.11ax HE20 Chain1



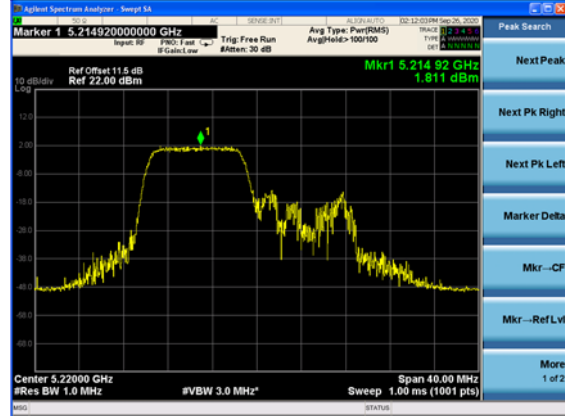
Test Mode: 802.11ax HE20(106T)

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5180	0.02	1.474	4.944	6.557
5220	0.02	1.831	4.221	6.199
5240	0.02	2.275	4.024	6.247

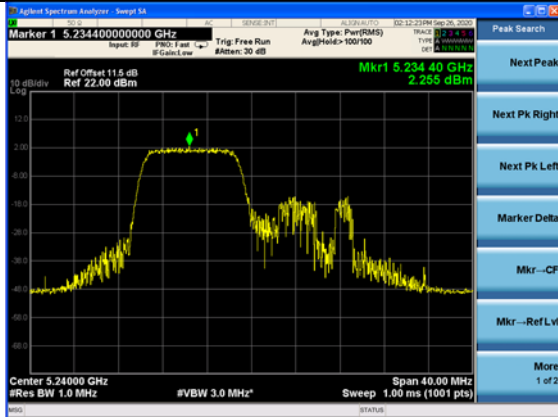
Test Mode: 802.11ax HE20 Chain0



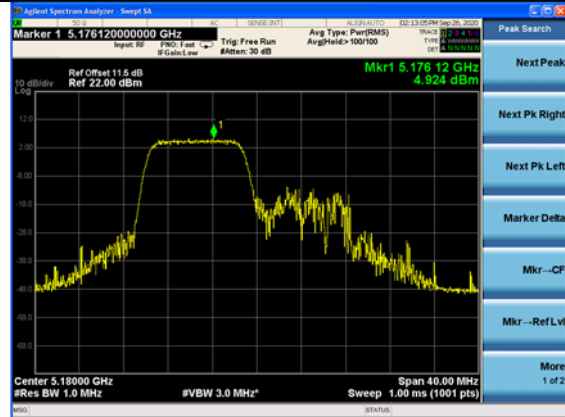
Test Mode: 802.11ax HE20 Chain0



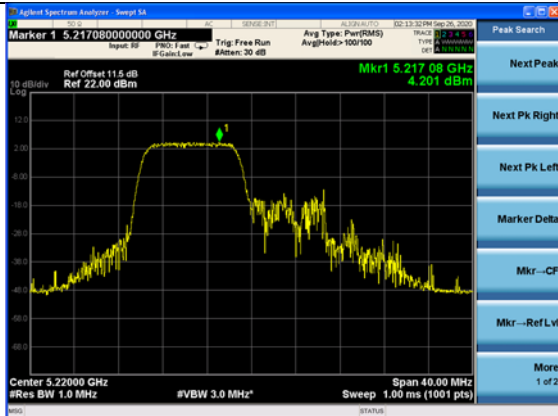
Test Mode: 802.11ax HE20 Chain0



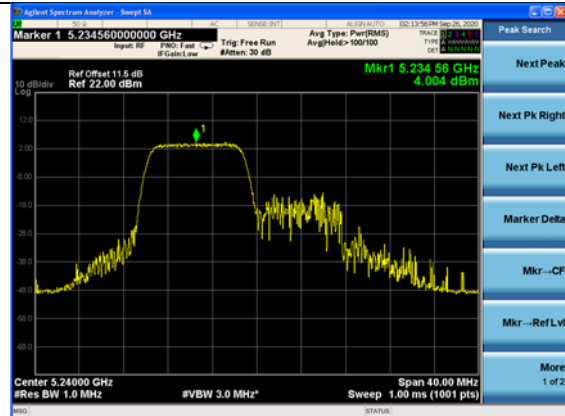
Test Mode: 802.11ax HE20 Chain1



Test Mode: 802.11ax HE20 Chain1



Test Mode: 802.11ax HE20 Chain1

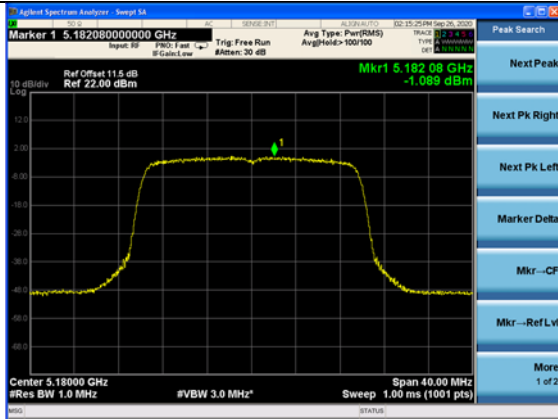




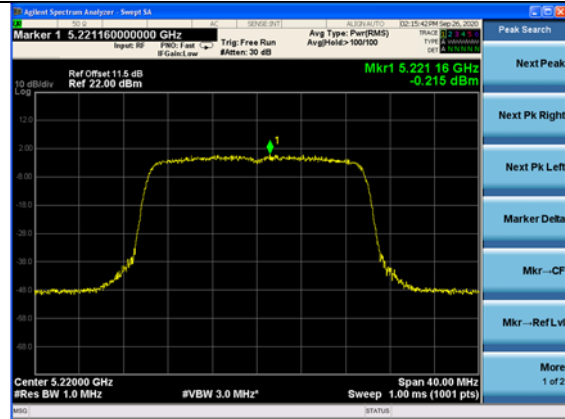
Test Mode: 802.11ax HE20(242T)

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5180	0.02	-1.069	2.792	4.287
5220	0.02	-0.195	1.347	3.654
5240	0.02	-0.549	2.240	4.076

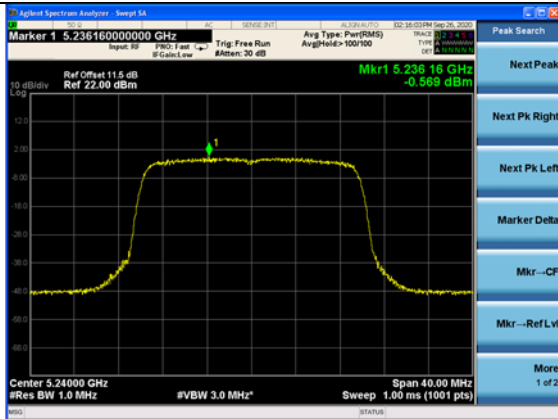
Test Mode: 802.11ax HE20 Chain0



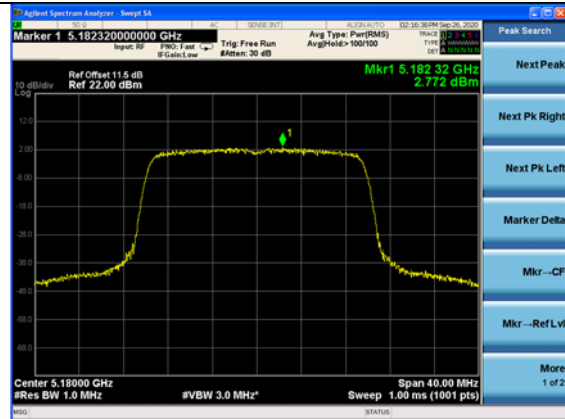
Test Mode: 802.11ax HE20 Chain0



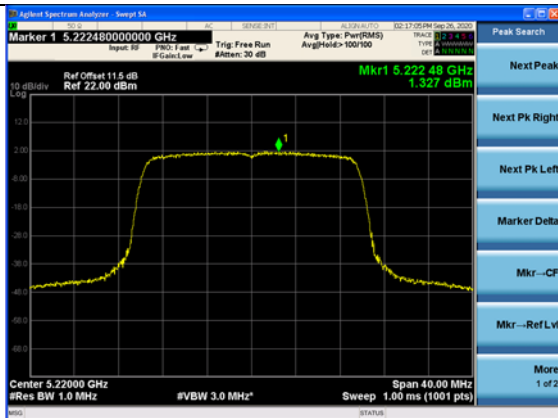
Test Mode: 802.11ax HE20 Chain0



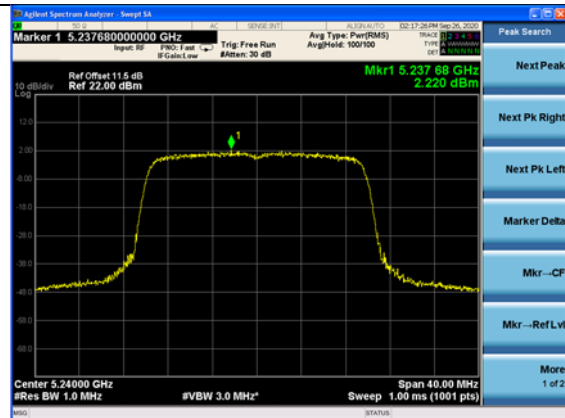
Test Mode: 802.11ax HE20 Chain1



Test Mode: 802.11ax HE20 Chain1



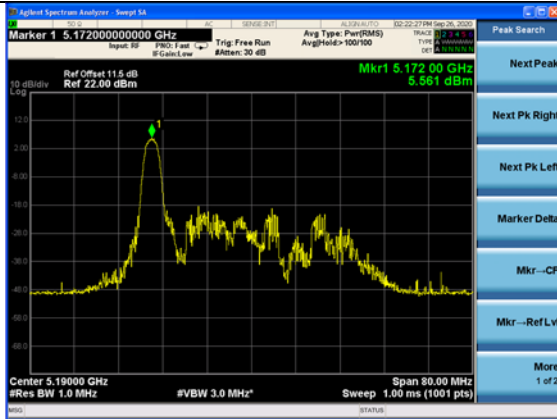
Test Mode: 802.11ax HE20 Chain1



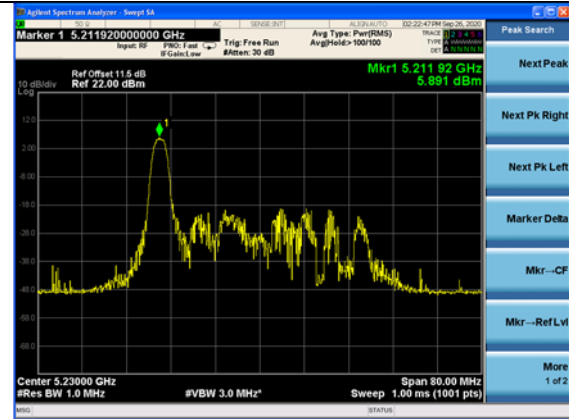
Test Mode: 802.11ax HE40(26T)

Carrier frequency (MHz)	Correction Factor(dB)	Power Density (dBm) Chain0	Power Density (dBm) Chain1	Power Density (dBm) MIMO
5190	0.10	5.661	8.467	10.297
5230	0.10	5.991	8.696	10.561

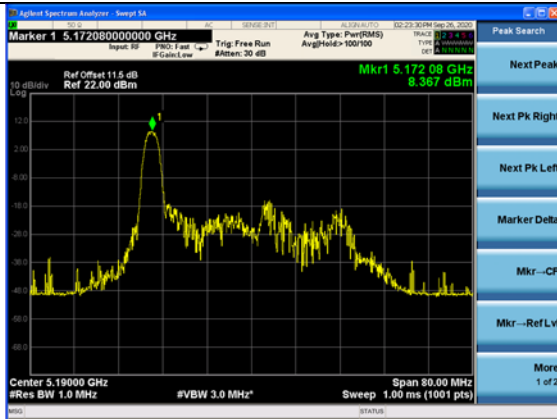
Test Mode: 802.11ax HE40 Chain0



Test Mode: 802.11ax HE40 Chain0



Test Mode: 802.11ax HE40 Chain1



Test Mode: 802.11ax HE40 Chain1

