

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

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	---

Directional gain

Band	Chain0 Ant Gain (dBi)	Chain1 Ant Gain (dBi)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/MHz)
5GHz	-1.8	-4.6	0.1	30.0	17.0

Duty cycle

Test Mode	Duty Cycle (%)	Correction Factor(dB)
802.11a	98.1	0.08
802.11n HT20	98.0	0.09
802.11n HT40	96.0	0.18
802.11ac VHT20	98.0	0.09
802.11ac VHT40	96.0	0.18
802.11ac VHT80	92.7	0.33

Output Power UNII-1

Mode	Freq. (MHz)	Average power output(dBm)		
		Chain0	Chain1	MIMO
802.11a	5180	19.49	18.83	22.18
	5220	19.60	19.26	22.44
	5240	19.65	19.67	22.67
802.11n HT20	5180	17.43	17.11	20.28
	5220	17.52	17.43	20.49
	5240	17.69	17.78	20.75
802.11n HT40	5190	17.72	17.55	20.65
	5230	17.91	17.92	20.93
802.11ac VHT20	5180	17.37	17.01	20.20
	5220	17.51	17.42	20.48
	5240	17.69	17.71	20.71
802.11ac VHT40	5190	17.74	17.55	20.66
	5230	17.88	17.92	20.91
802.11ac VHT80	5210	18.18	18.01	21.11

UNII-2A

Mode	Freq. (MHz)	Average power output(dBm)		
		Chain0	Chain1	MIMO
802.11a	5260	17.75	17.94	20.86
	5280	17.92	17.95	20.95
	5320	18.04	17.93	21.00
802.11n HT20	5260	15.71	15.89	18.81
	5280	15.75	15.92	18.85
	5320	15.93	15.90	18.93
802.11n HT40	5270	15.66	15.96	18.82
	5310	15.74	15.98	18.87
802.11ac VHT20	5260	15.61	15.82	18.73
	5280	15.72	15.96	18.85
	5320	15.89	15.92	18.92
802.11ac VHT40	5270	15.61	15.78	18.71
	5310	15.79	15.93	18.87
802.11ac VHT80	5290	15.95	15.78	18.88

UNII-2C

Mode	Freq. (MHz)	Average power output(dBm)		
		Chain0	Chain1	MIMO
802.11a	5500	20.38	19.78	23.10
	5580	20.05	19.72	22.90
	5700	20.02	19.61	22.83
802.11n HT20	5500	19.80	19.23	22.53
	5580	19.45	19.28	22.38
	5700	19.32	19.01	22.18
802.11n HT40	5510	19.13	18.72	21.94
	5590	18.98	18.77	21.89
	5670	18.68	18.45	21.58
802.11ac VHT20	5500	19.76	19.18	22.49
	5580	19.51	19.29	22.41
	5700	19.36	19.03	22.21
802.11ac VHT40	5510	19.35	18.71	22.05
	5590	18.88	18.77	21.84
	5670	18.75	18.41	21.59
802.11ac VHT80	5530	18.98	18.58	21.79
	5610	18.54	18.29	21.43

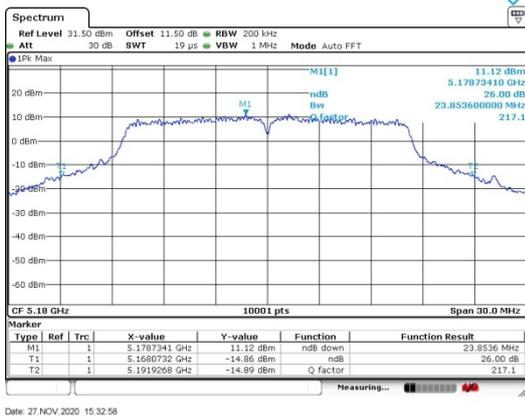
Occupied Bandwidth

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.2dB+ Cable loss 1.3dB

Test Mode: 802.11a

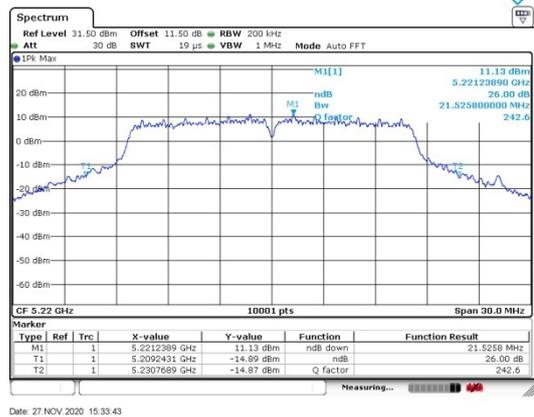
Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5180	36	23.8536	21.5168
5220	44	21.5258	23.0677
5240	48	22.7107	22.0958
5260	52	21.6368	23.0257
5280	56	22.4348	21.2859
5320	64	23.3167	21.1389
5500	100	21.8618	20.9739
5580	116	21.3399	21.3009
5700	140	22.6657	21.2409

Test Mode: 802.11a Chain0



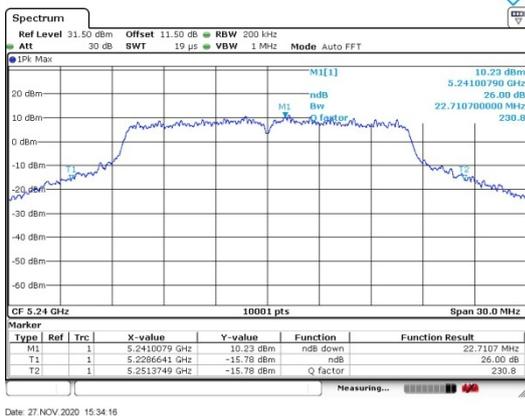
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Test Mode: 802.11a Chain0



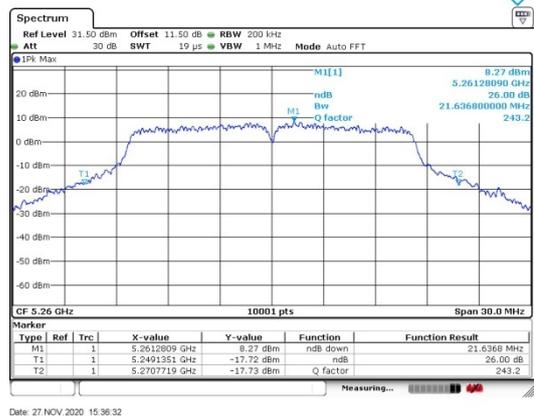
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Test Mode: 802.11a Chain0



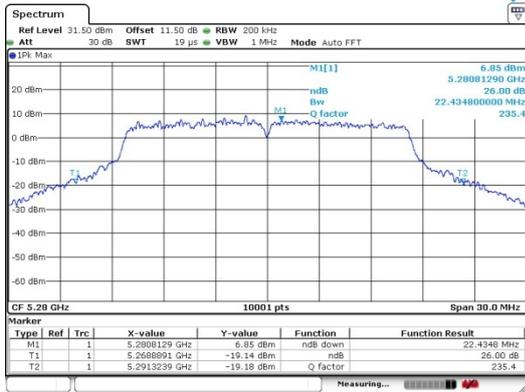
Date: 27 NOV 2020 15:34:16

Test Mode: 802.11a Chain0



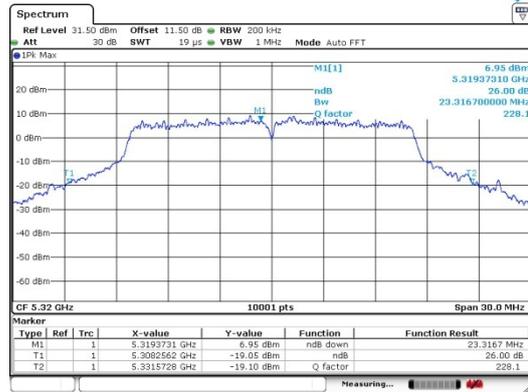
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Test Mode: 802.11a Chain0



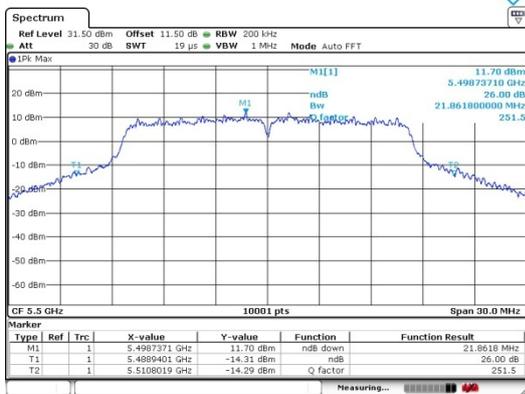
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Test Mode: 802.11a Chain0



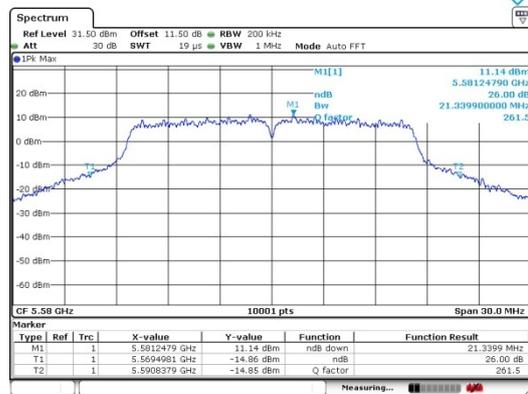
Date: 27 NOV 2020 15:37:17

Test Mode: 802.11a Chain0



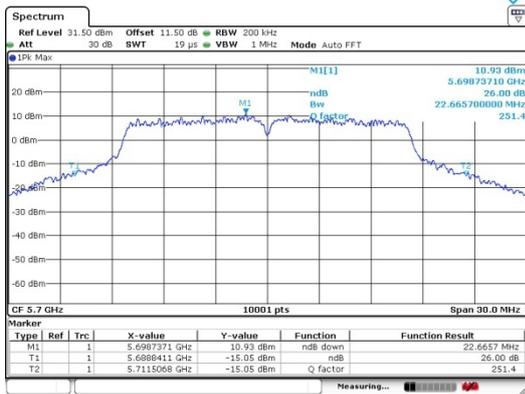
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Test Mode: 802.11a Chain0



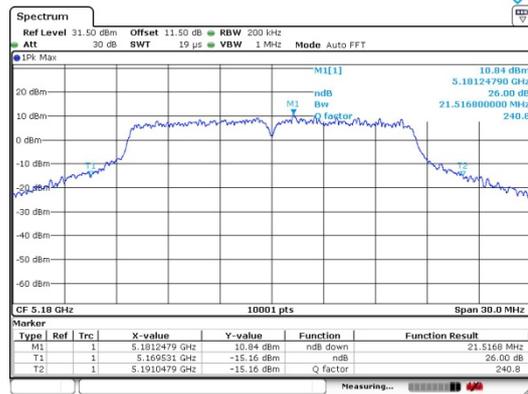
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Test Mode: 802.11a Chain0



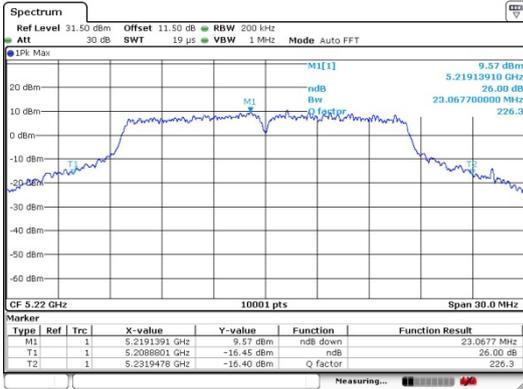
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Test Mode: 802.11a Chain1



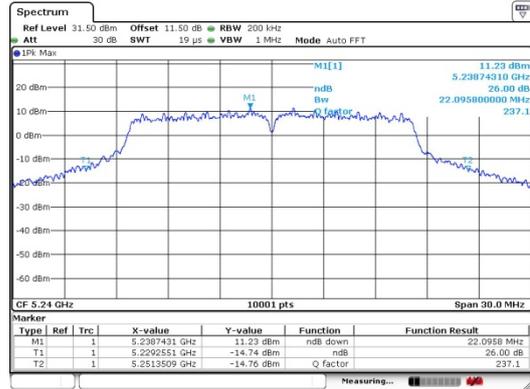
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Test Mode: 802.11a Chain1



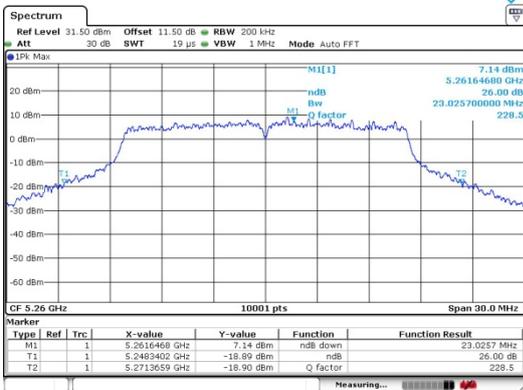
Date: 27 NOV 2020 16:03:16

Test Mode: 802.11a Chain1



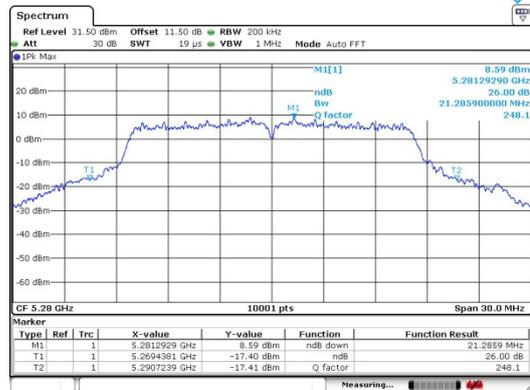
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Test Mode: 802.11a Chain1



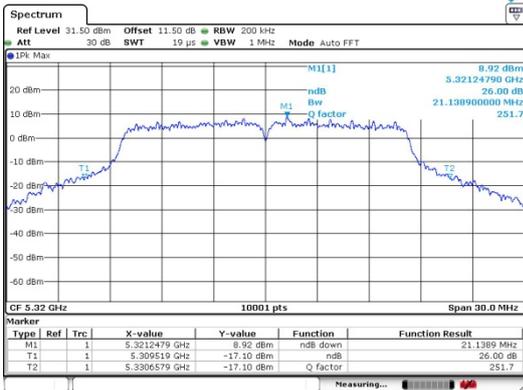
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Test Mode: 802.11a Chain1



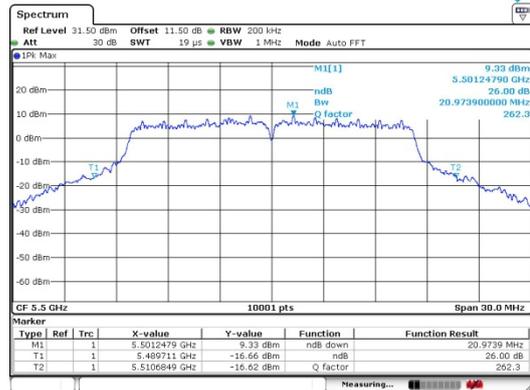
Date: 27 NOV 2020 16:05:07

Test Mode: 802.11a Chain1



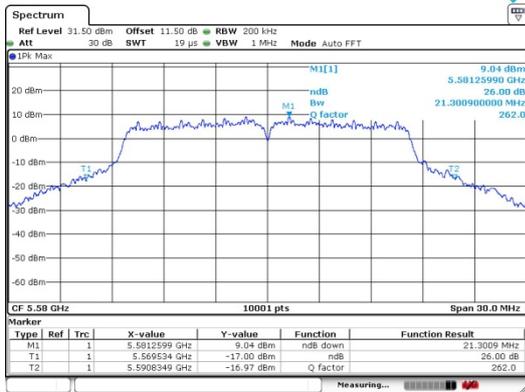
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Test Mode: 802.11a Chain1

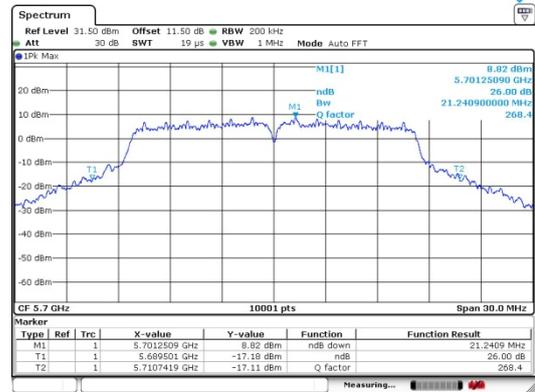


Date: 27 NOV 2020 16:05:59

Test Mode: 802.11a Chain1



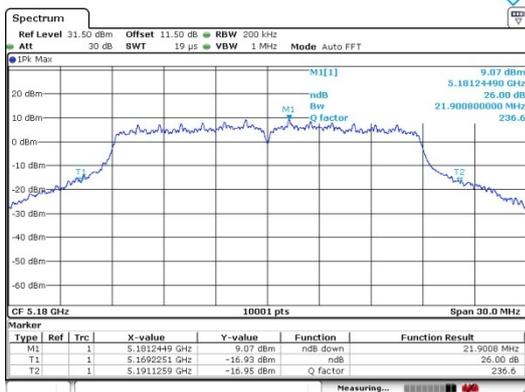
Test Mode: 802.11a Chain1



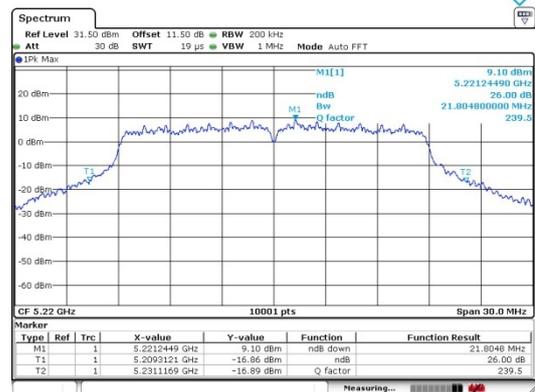
Test Mode: 802.11n HT20

Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5180	36	21.9008	21.9638
5220	44	21.8048	21.9458
5240	48	21.8438	21.7598
5260	52	23.8656	21.9458
5280	56	21.8168	21.8318
5320	64	22.0058	21.8768
5500	100	21.7478	21.8288
5580	116	22.5097	21.5348
5700	140	22.3058	22.4618

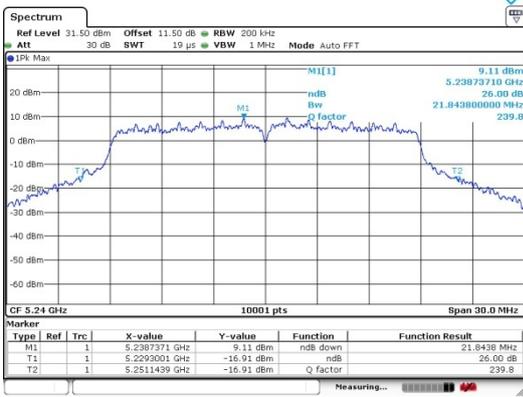
Test Mode: 802.11n HT20 Chain0



Test Mode: 802.11n HT20 Chain0

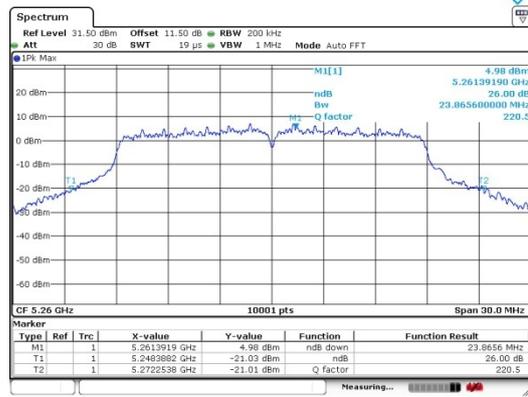


Test Mode: 802.11n HT20 Chain0



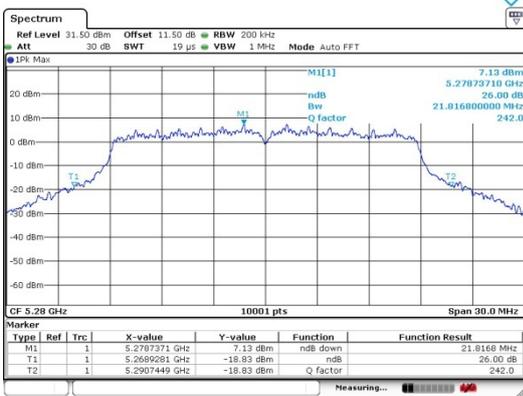
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Test Mode: 802.11n HT20 Chain0



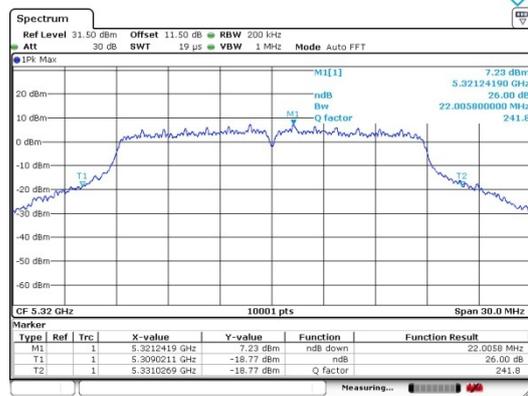
Date: 27 NOV 2020 15:41:15

Test Mode: 802.11n HT20 Chain0



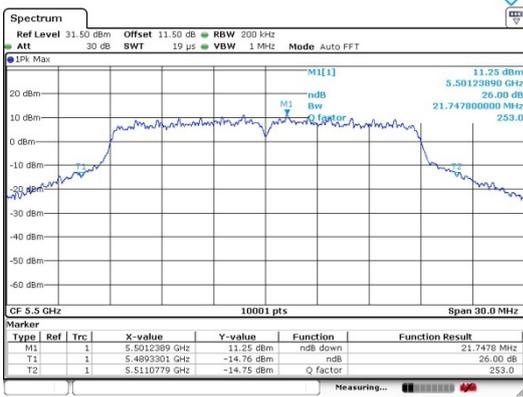
Date: 27 NOV 2020 15:45:35

Test Mode: 802.11n HT20 Chain0



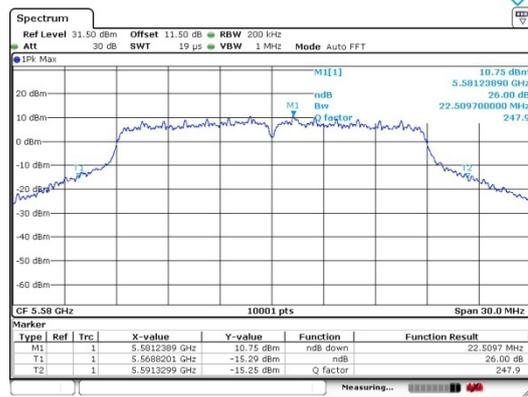
Date: 27 NOV 2020 15:46:17

Test Mode: 802.11n HT20 Chain0



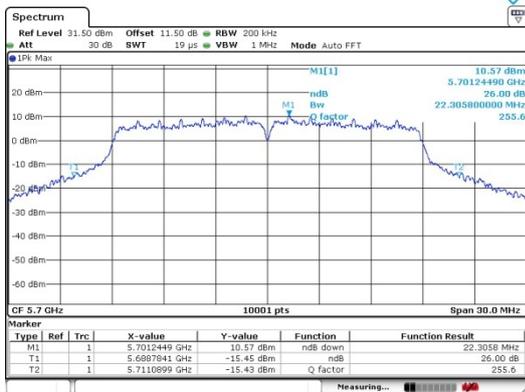
Date: 27 NOV 2020 15:47:19

Test Mode: 802.11n HT20 Chain0



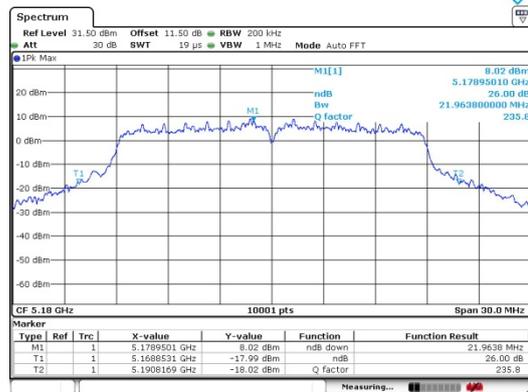
Date: 27 NOV 2020 15:47:55

Test Mode: 802.11n HT20 Chain0



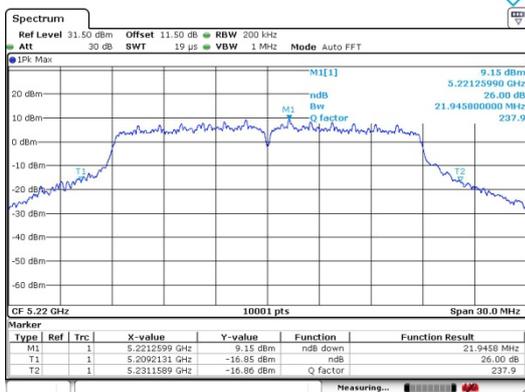
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Test Mode: 802.11n HT20 Chain1



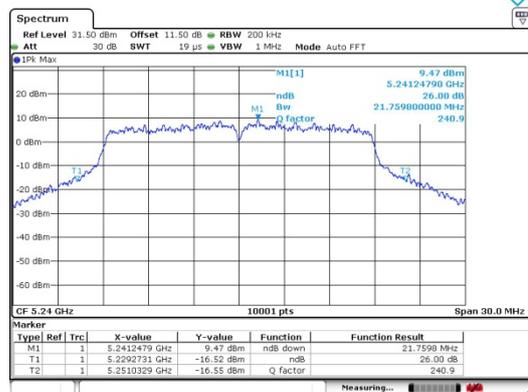
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Test Mode: 802.11n HT20 Chain1



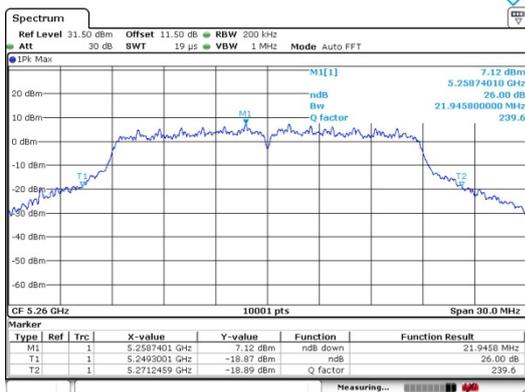
Date: 27 NOV 2020 16:08:31

Test Mode: 802.11n HT20 Chain1



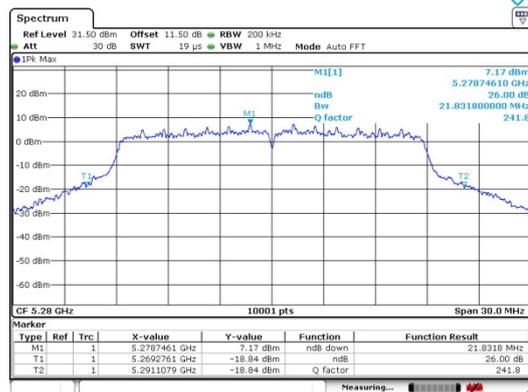
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Test Mode: 802.11n HT20 Chain1



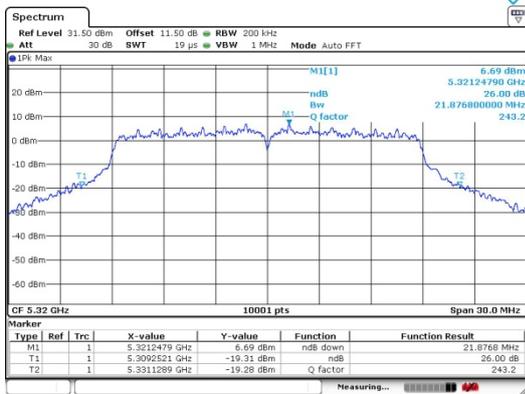
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Test Mode: 802.11n HT20 Chain1



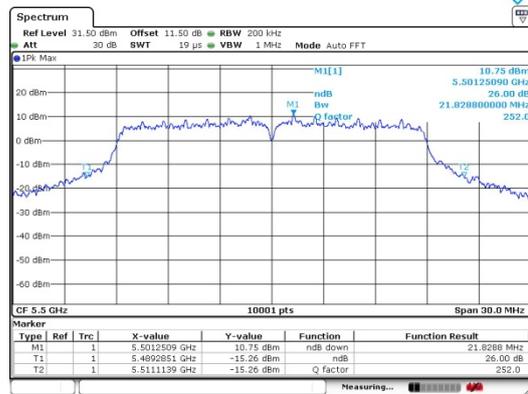
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Test Mode: 802.11n HT20 Chain1



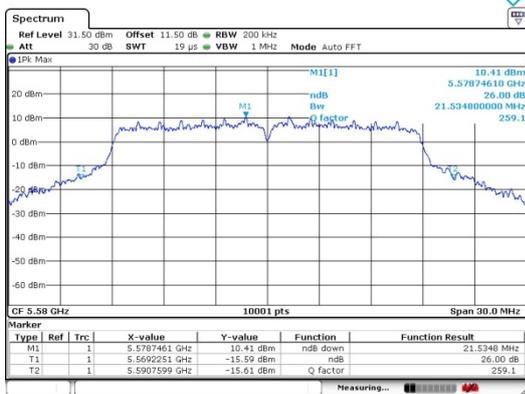
Date: 27 NOV 2020 16:10:10

Test Mode: 802.11n HT20 Chain1



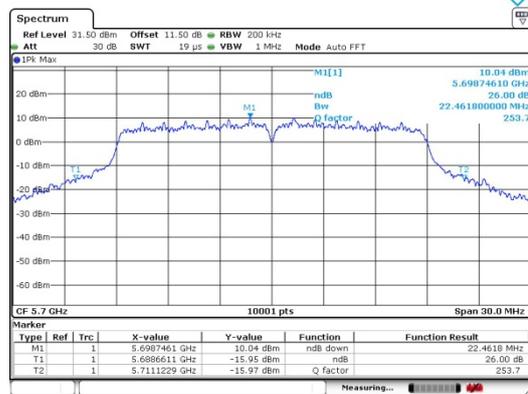
Date: 27 NOV 2020 16:10:43

Test Mode: 802.11n HT20 Chain1



Date: 27 NOV 2020 16:11:08

Test Mode: 802.11n HT20 Chain1

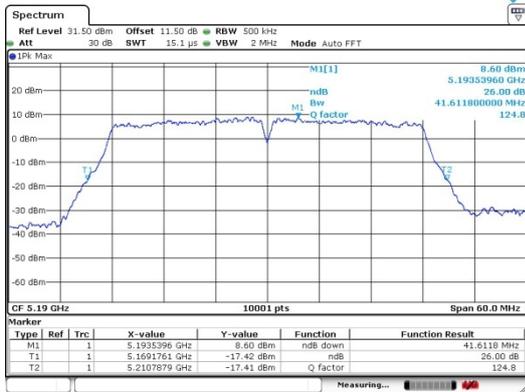


Date: 27 NOV 2020 16:11:33

Test Mode: 802.11n HT40

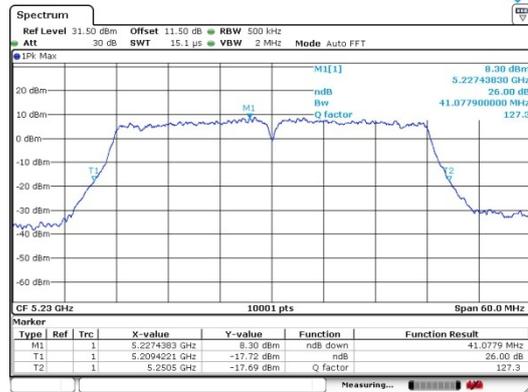
Carrier frequency (MHz)	Channel No.	26dB Bandwidth (MHz) Chain0	26dB Bandwidth (MHz) Chain1
5190	38	41.6118	41.3059
5230	46	41.0779	40.7959
5270	54	41.5398	41.1679
5310	62	41.2219	41.3839
5510	102	41.4379	41.0539
5590	118	41.2099	41.3179
5670	134	41.3959	41.0899

Test Mode: 802.11n HT40 Chain0



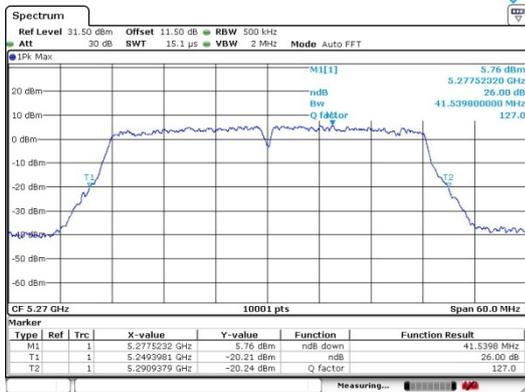
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Test Mode: 802.11n HT40 Chain0



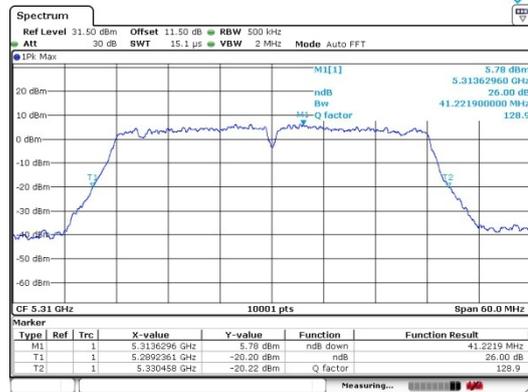
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Test Mode: 802.11n HT40 Chain0



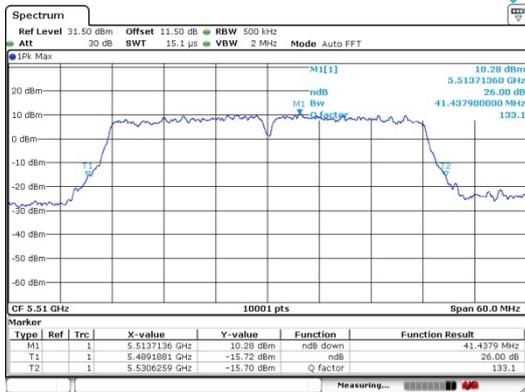
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Test Mode: 802.11n HT40 Chain0



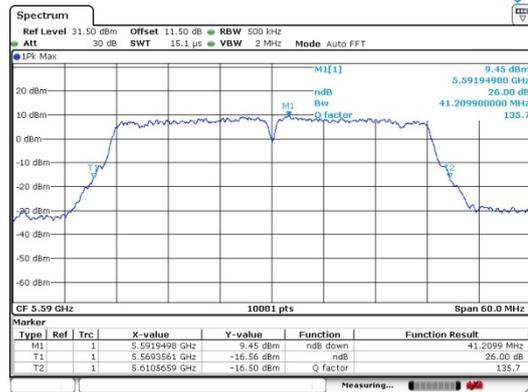
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Test Mode: 802.11n HT40 Chain0



Date: 27 NOV 2020 15:53:43

Test Mode: 802.11n HT40 Chain0



Date: 27 NOV 2020 15:54:11