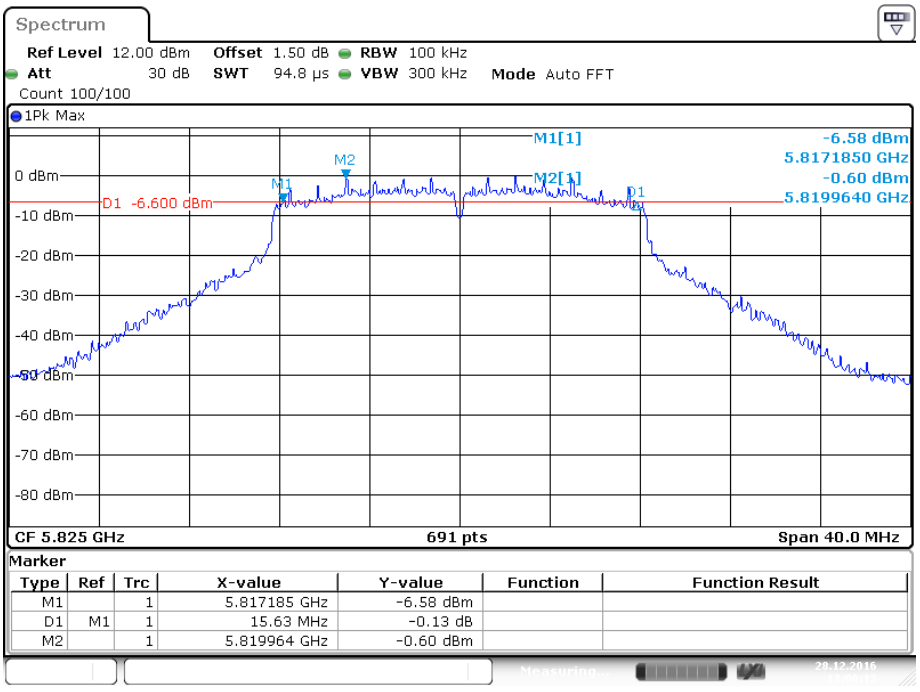
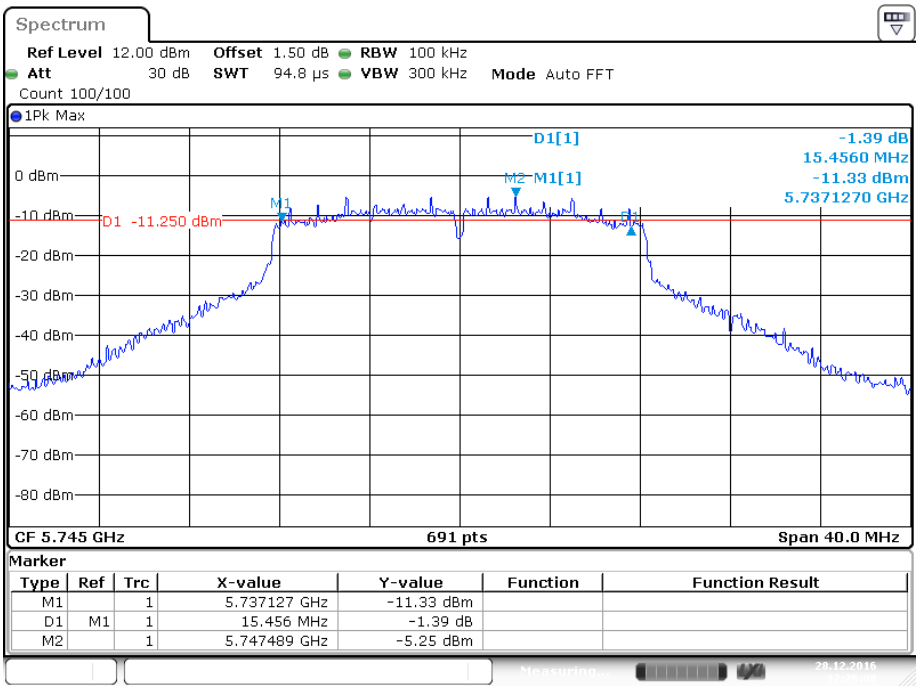
5825MHz



Date: 28.DEC.2016 13:00:13

IEEE 802.11a mode / 5745 ~ 5825MHz(chain 1)
5745MHz



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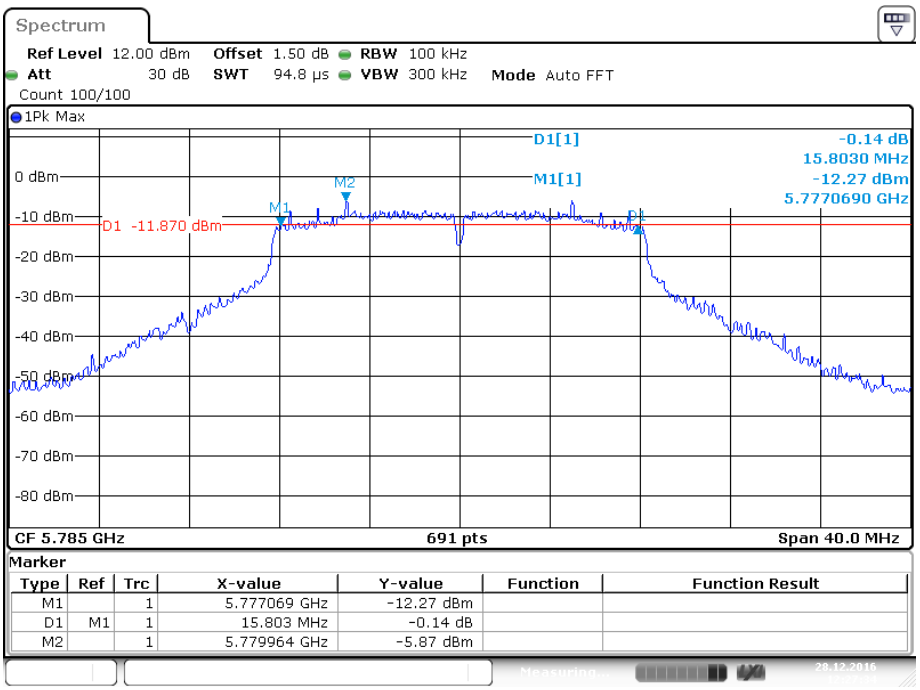
5785MHz



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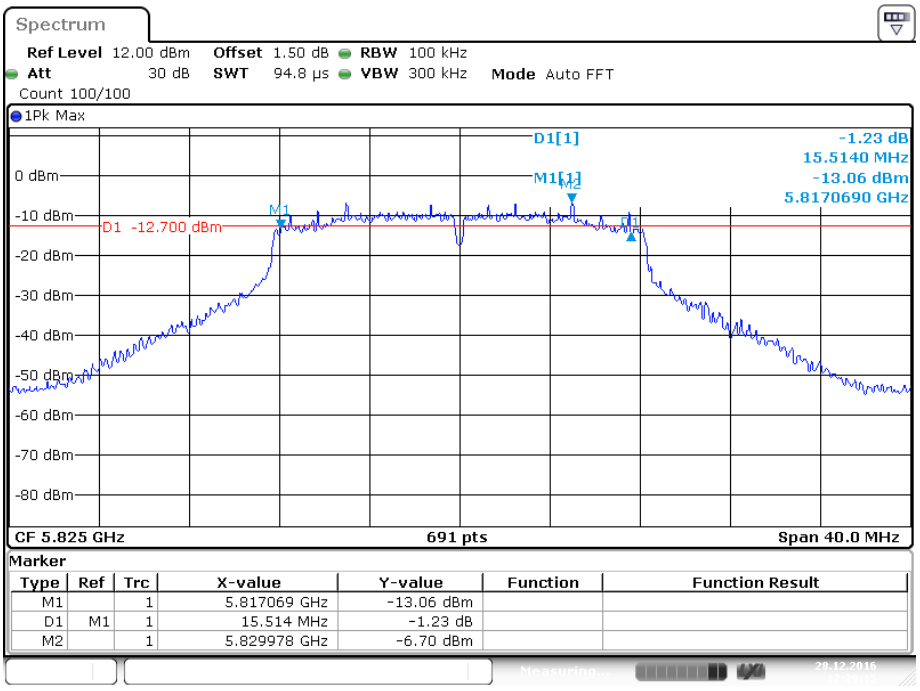
5825MHz



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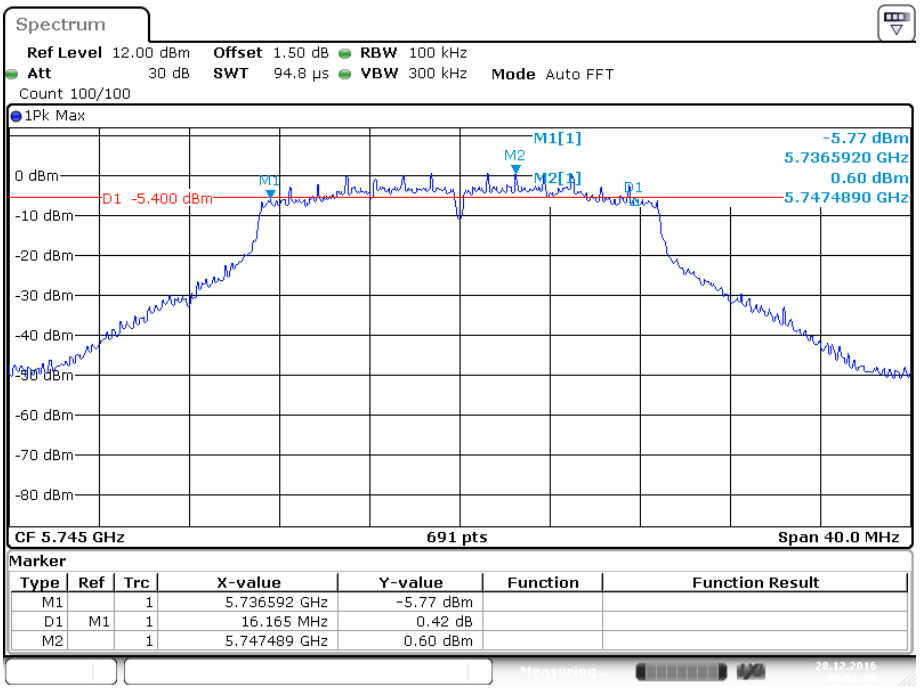
IEEE 802.11n HT20 Mode / 5745 ~ 5825MHz (chain0)
5745MHz



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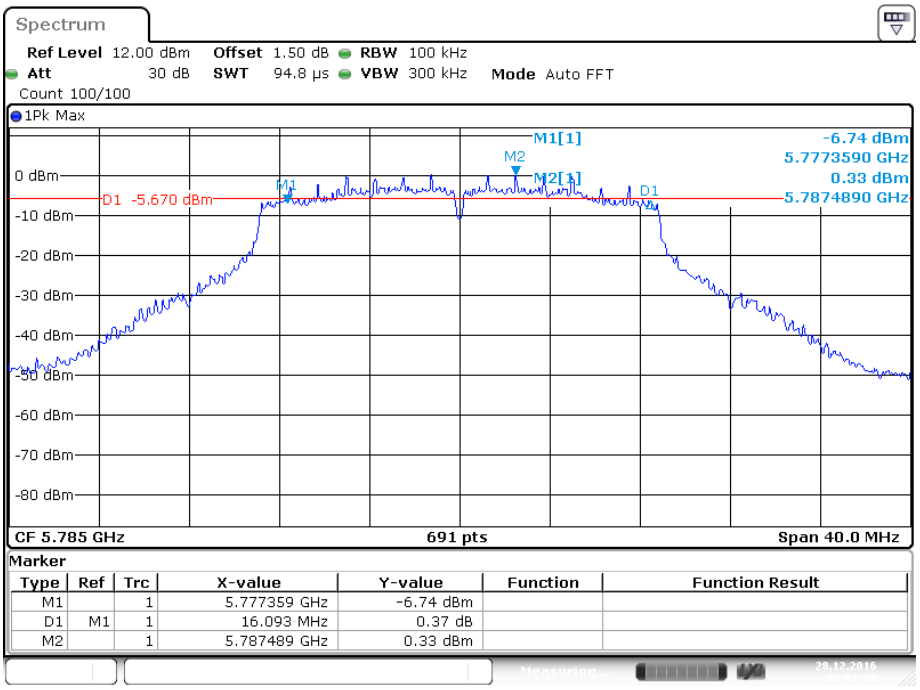
5785MHz



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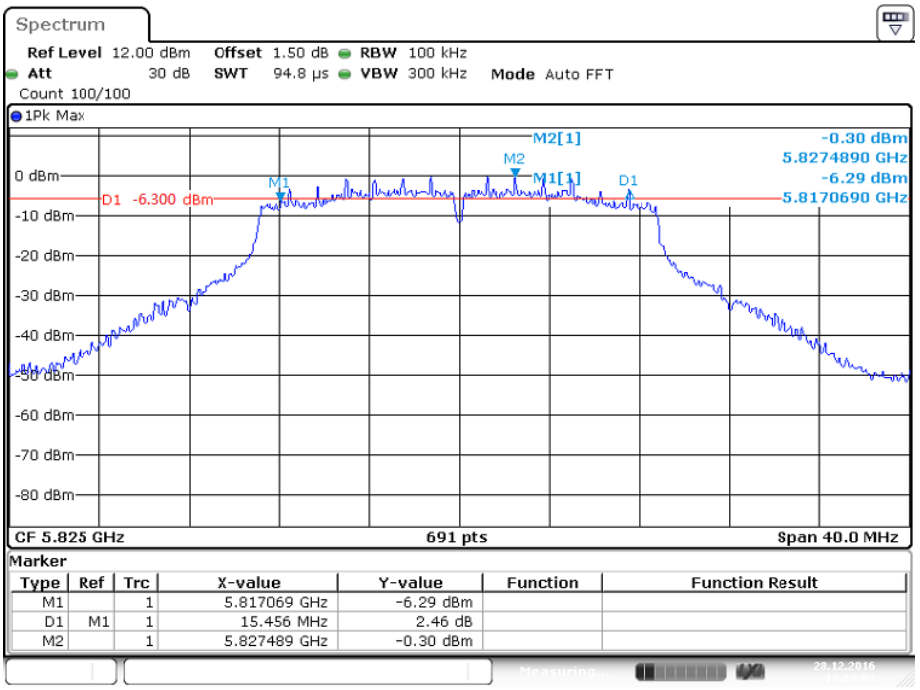
5825MHz



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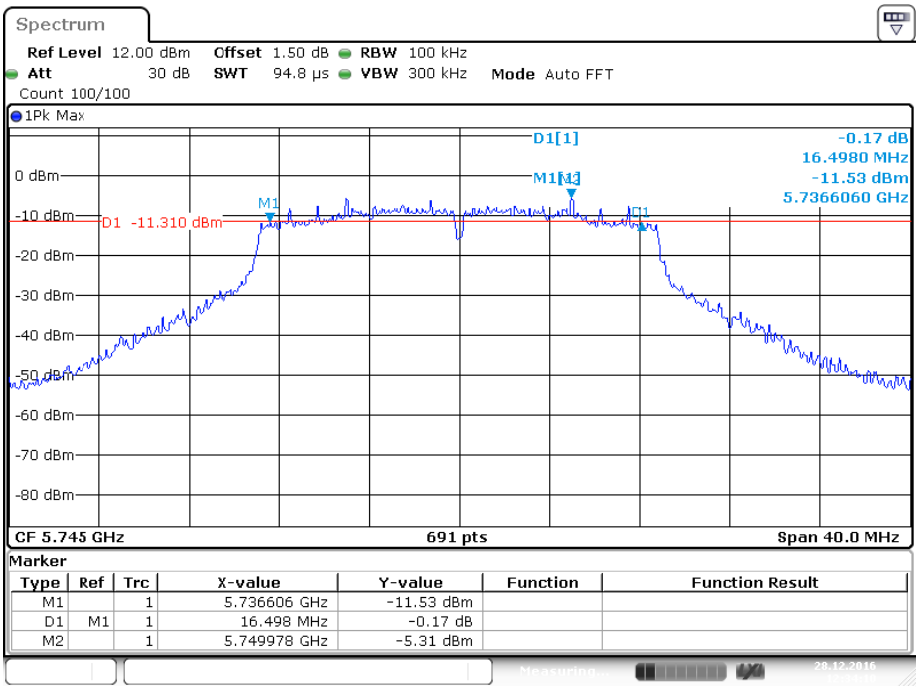
IEEE 802.11n HT20 Mode / 5745 ~ 5825MHz (chain 1)
5745MHz



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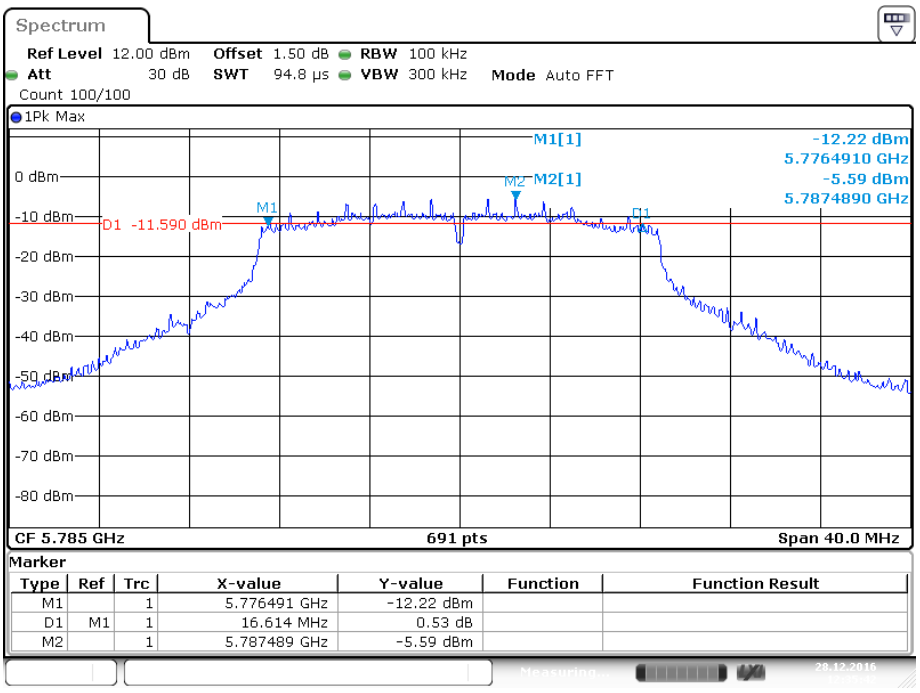
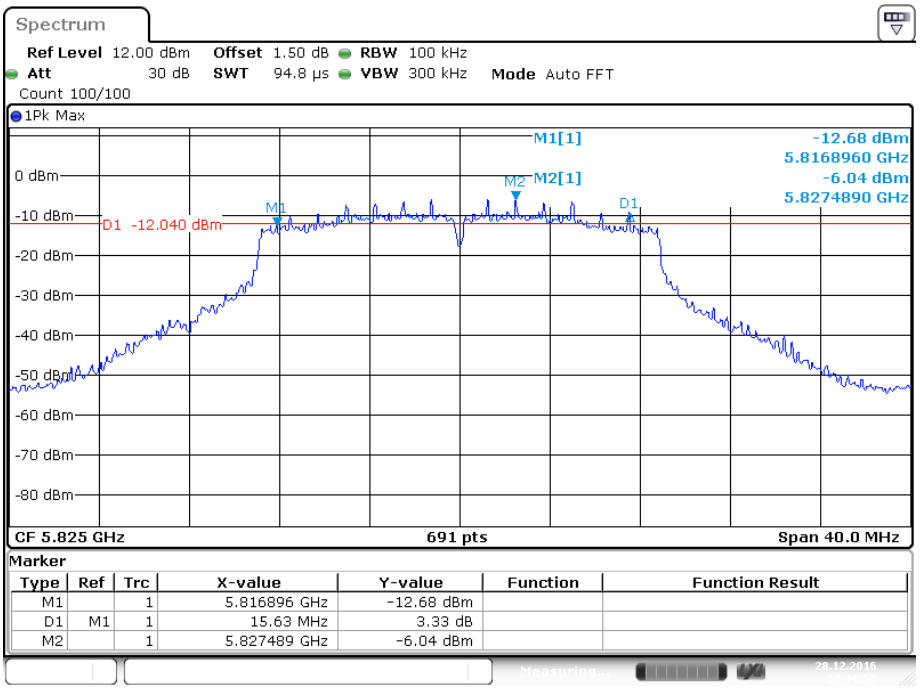
5785MHz



Date: 28.DEC.2016 12:35:42

5825MHz



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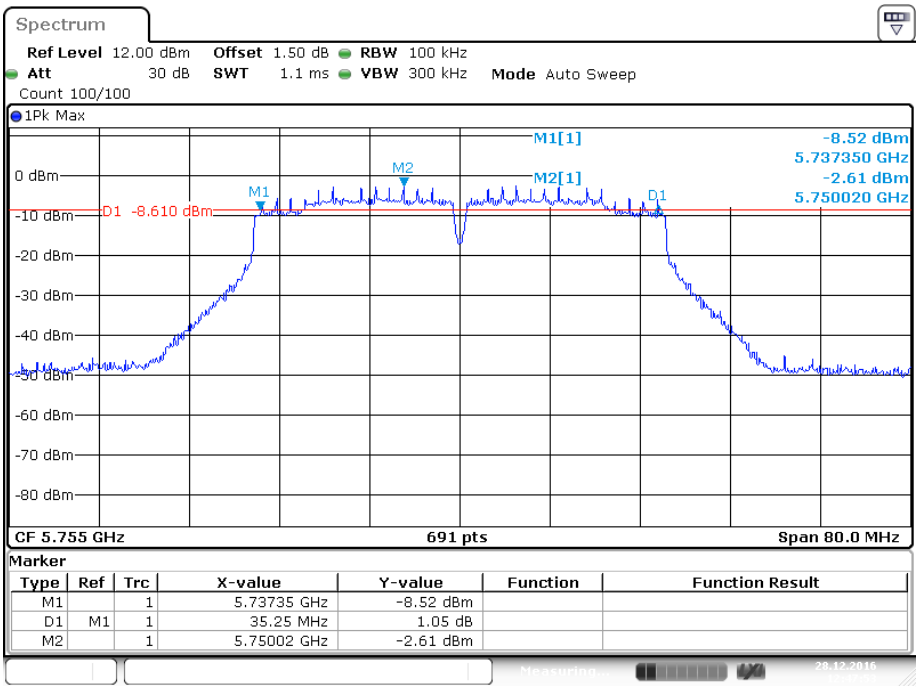
IEEE 802.11n HT40 Mode / 5755 ~ 5795MHz (chain0)
5755MHz



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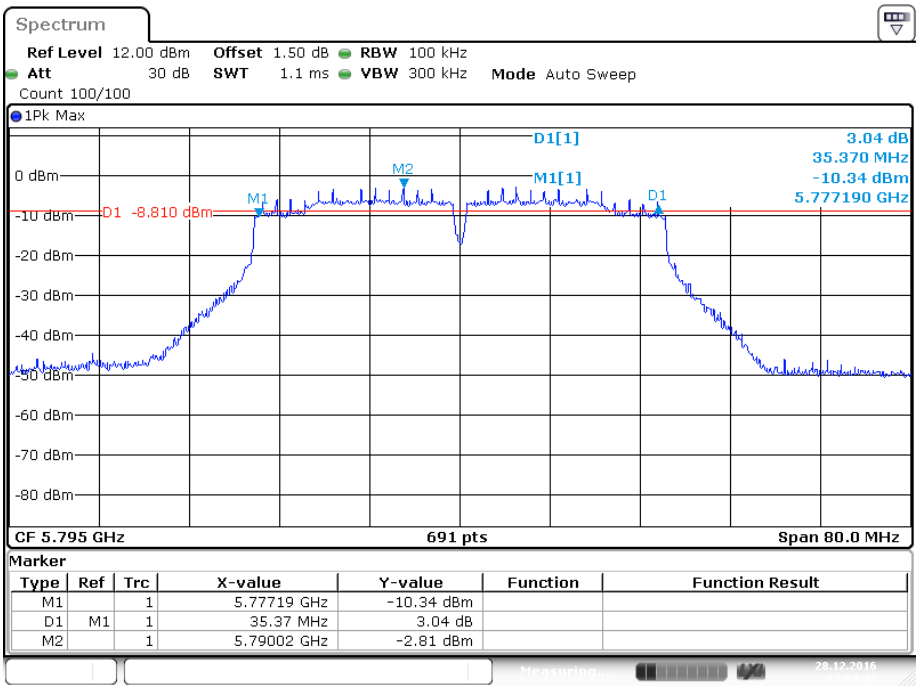
5795MHz



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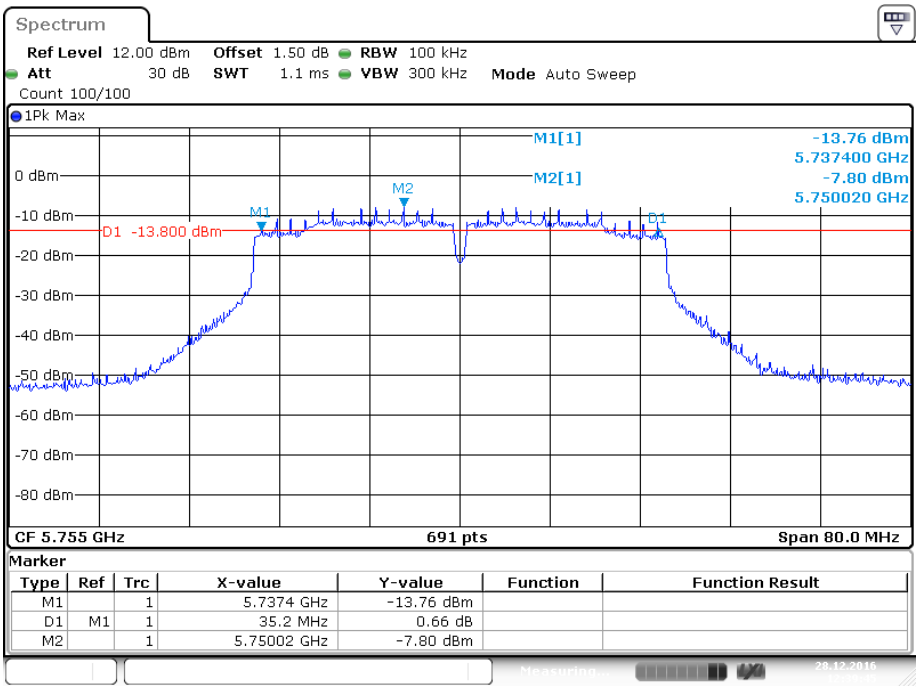
IEEE 802.11n HT40 Mode / 5755 ~ 5795MHz (chain 1)

5755MHz



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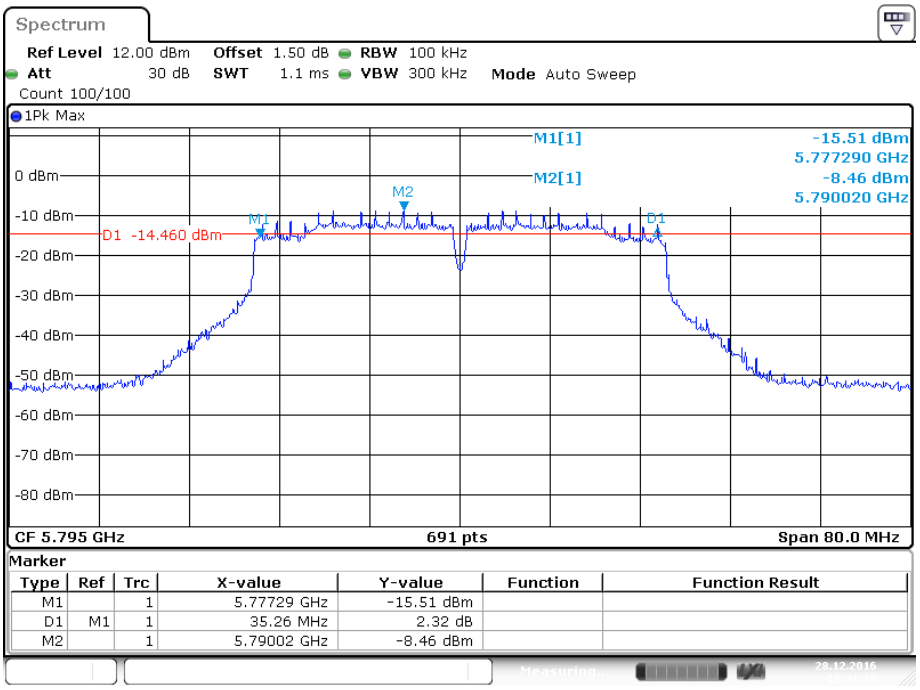
5795MHz



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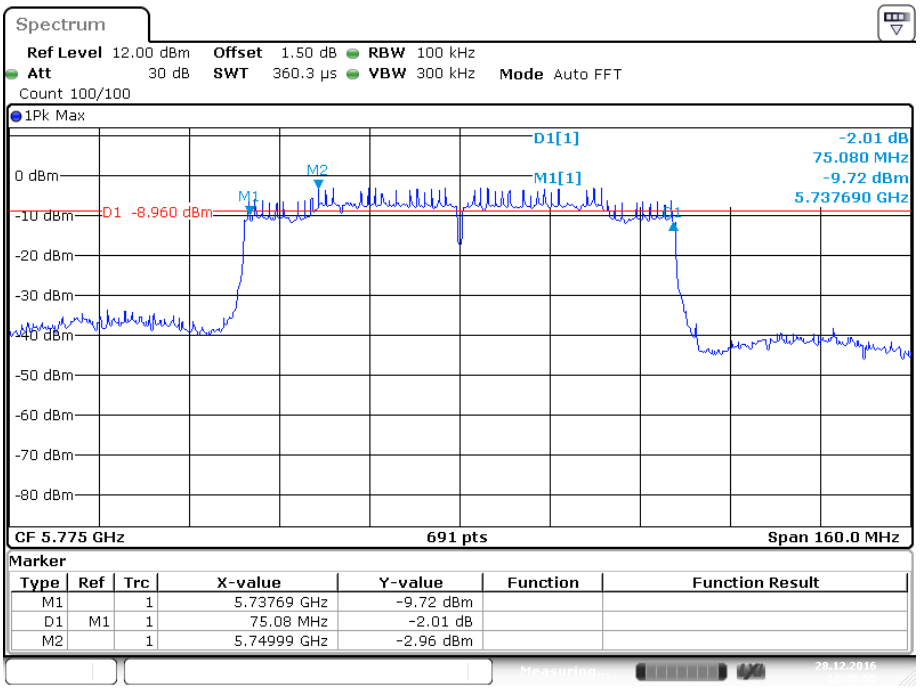
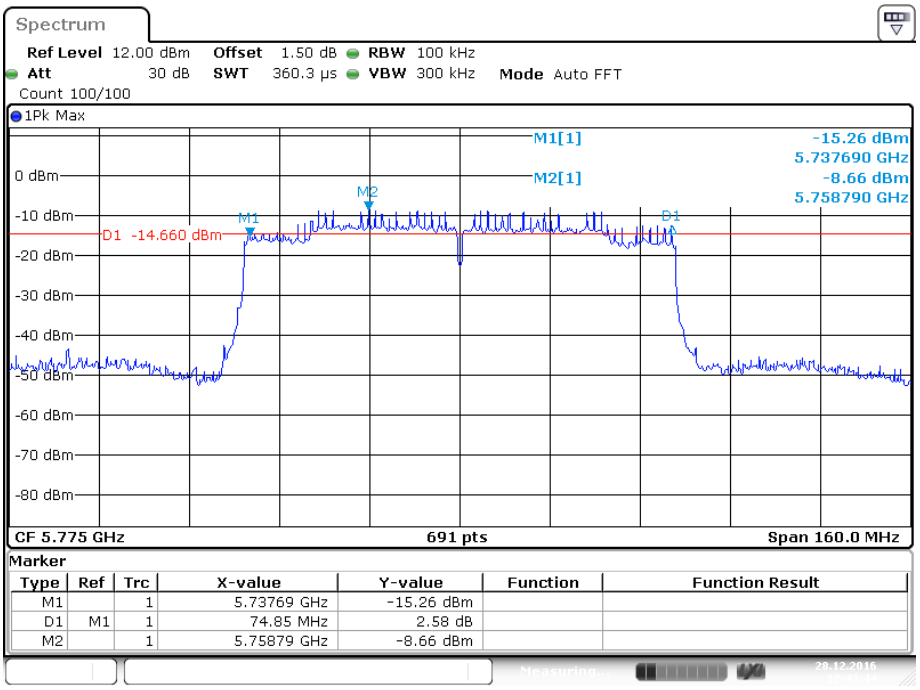
IEEE 802.11ac VHT80 Mode / 5775MHz (chain 0)
5775MHz



Date: 28.DEC.2016 12:45:58

IEEE 802.11ac VHT80 Mode / 5775MHz (chain 1)
5775MHz



Date: 28.DEC.2016 12:43:45

9 FCC §15.247(b)(3) – Maximum Output Power

9.1 Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

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

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz

band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

9.2 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r03

The bandwidth 80MHz and cross band use spectrum analyzer, other bandwidth use PM

9.3 Test Equipment List and Details

Descriptions	Manufacturer	Models	Serial Numbers	Calibration Date	Calibration Due Date
Cable	WOKEN	SFL402	00100A1F6A192S	N.C.R	N.C.R
Spectrum Analyzer	Rohde & Schwarz	FSV40	101203	2016/7/14	2017/7/13
Power Meter	HP	E4418B	US39402167	2016/5/30	2017/5/29
Power Sensor	Agilent	E9300A	US39210953	2016/5/30	2017/5/29

***Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Taiwan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

9.4 Test Environmental Conditions

Temperature:	24℃
Relative Humidity:	57 %
ATM Pressure:	1020 hPa

The testing was performed by David Hsu on 2016-12-28~2016-12-29.

9.5 Test Results

SISO

UNII Band	Mode	Channel	Frequency (MHz)	Maximum Conducted Average Output Power (dBm)		DUTY FACTOR (dB)	Maximum Conducted Average Output Power with factor (dBm)		Limit (dBm)
				Chain 0	Chain 1		Chain 0	Chain 1	
5150-5250MHz	802.11 a	Low	5180	12.19	12.97	0	12.19	12.97	24
		Middle	5200	12.13	13.70	0	12.13	13.70	24
		High	5240	12.89	13.09	0	12.89	13.09	24
	5G 802.11 n20	Low	5180	11.79	12.18	0	11.79	12.18	24
		Middle	5200	12.71	13.08	0	12.71	13.08	24
		High	5240	12.7	12.94	0	12.7	12.94	24
	5G 802.11 n40	Low	5190	10.73	12.29	0.13	10.86	12.42	24
		High	5230	12.8	13.51	0.13	12.93	13.64	24
	802.11 ac80	Middle	5210	11.96	11.29	0.41	12.37	11.7	24
5250-5350MHz	802.11 a	Low	5260	13.72	13.53	0	13.72	13.53	24
		Middle	5280	13.47	12.92	0	13.47	12.92	24
		High	5320	12.18	10.04	0	12.18	10.04	24
	5G 802.11 n20	Low	5260	13.97	13.54	0	13.97	13.54	24
		Middle	5280	13.43	13.28	0	13.43	13.28	24
		High	5320	12.97	12.83	0	12.97	12.83	24
	5G 802.11 n40	Low	5270	14.16	14.04	0.13	14.29	14.17	24
		High	5310	12.11	12.06	0.13	12.24	12.19	24
	802.11 ac80	Middle	5290	11.99	10.72	0.41	12.4	11.13	24
5470-5725MHz	802.11 a	Low	5500	12.67	13.14	0	12.67	13.14	24
		Middle	5580	14.21	14.12	0	14.21	14.12	24
		High	5700	11.18	10.96	0	11.18	10.96	24
	5G 802.11 n20	Low	5500	11.98	11.06	0	11.98	11.06	24
		Middle	5580	13.91	14.41	0	13.91	14.41	24
		High	5700	11.24	10.82	0	11.24	10.82	24
	5G 802.11 n40	Low	5510	12.47	11.42	0.13	12.6	11.55	24
		Middle	5590	12.46	12.75	0.13	12.59	12.88	24
		High	5670	14.35	14.60	0.13	14.48	14.73	24
	802.11 ac80	Low	5530	12.21	11.85	0.41	12.62	12.26	24

		High	5610	12.11	12.00	0.41	12.52	12.41	24
5470-5725MHz Cross Band	802.11ac20	High	5720	12.79	12.51	0	12.79	12.51	24
	802.11ac40	High	5710	13.33	13.31	0.13	13.46	13.44	24
	802.11ac80	High	5690	13.44	-2.34	0.41	13.85	-1.93	24
5725-5850MHz Cross Band	802.11ac20	High	5720	0.80	-0.30	0	0.8	-0.3	30
	802.11ac40	High	5710	0.98	0.89	0.13	1.11	1.02	30
	802.11ac80	High	5690	-2.34	-2.4	0.41	-1.93	-1.99	30
5725-5850MHz	802.11 a	Low	5745	14.39	14.16	0	14.39	14.16	30
		Middle	5785	14.11	13.89	0	14.11	13.89	30
		High	5825	14.36	14.53	0	14.36	14.53	30
	5G 802.11 n20	Low	5745	14.31	14.38	0	14.31	14.38	30
		Middle	5785	14.08	14.13	0	14.08	14.13	30
		High	5825	14.32	14.22	0	14.32	14.22	30
	5G 802.11 n40	Low	5755	15.53	15.69	0.13	15.66	15.82	30
		High	5795	14.56	14.78	0.13	14.69	14.91	30
	802.11 ac80	Middle	5775	14.95	14.89	0.41	15.36	15.3	30

The 5250-5350MHz and 5470-5725MHz power limit 11dBm+10*log(min BW) over 24dBm,
So Limit is 24dBm.

MIMO

UNII Band	Mode	Channel	Frequency (MHz)	Maximum Conducted Average Output Power (dBm)			DUTY FACTOR (dB)	Maximum Conducted Average Output Power with factor (dBm)	Limit (dBm)
				Chain 0	Chain 1	Total		Total	
5150-5250MHz	5G 802.11 n20	Low	5180	10.02	10.01	13.03	0	13.03	24
		Middle	5200	9.23	9.75	12.51	0	12.51	24
		High	5240	9.53	9.74	12.65	0	12.65	24
	5G 802.11 n40	Low	5190	8.13	8.43	11.29	0.13	11.42	24
		High	5230	10.37	10.25	13.32	0.13	13.45	24
	802.11 ac80	Middle	5210	9.20	9.68	12.46	0.41	12.87	24
5250-5350MHz	5G 802.11 n20	Low	5260	9.80	9.90	12.86	0	12.86	24
		Middle	5280	10.05	10.21	13.14	0	13.14	24
		High	5320	9.27	10.11	12.72	0	12.72	24
	5G 802.11 n40	Low	5270	10.21	9.87	13.05	0.13	13.18	24
		High	5310	10.11	10.03	13.08	0.13	13.21	24

	802.11 ac80	Middle	5290	8.22	9.22	11.76	0.41	12.17	24
5470-5725MHz	5G 802.11 n20	Low	5500	9.3	8.59	11.97	0	11.97	24
		Middle	5580	9.98	9.64	12.82	0	12.82	24
		High	5700	9.39	9.67	12.54	0	12.54	24
	5G 802.11 n40	Low	5510	9.43	9.23	12.34	0.13	12.47	24
		Middle	5590	9.73	8.87	12.33	0.13	12.46	24
		High	5670	10.36	11.16	13.79	0.13	13.92	24
	802.11 ac80	Low	5530	10.70	10.06	13.4	0.41	13.81	24
		High	5610	11.01	10.81	13.92	0.41	14.33	24
5470-5725MHz Cross Band	802.11ac20	High	5720	9.65	9.55	12.61	0	12.61	24
	802.11ac40	High	5710	11.72	10.82	14.3	0.13	14.43	24
	802.11ac80	High	5690	11.42	11.04	14.24	0.41	14.65	24
5725-5850MHz Cross Band	802.11ac20	High	5720	2.23	2.31	5.28	0	5.28	30
	802.11ac40	High	5710	-0.99	-1.48	1.78	0.13	1.91	30
	802.11ac80	High	5690	-4.35	-4.5	-1.41	0.41	-1	30
5725-5850MHz	5G 802.11 n20	Low	5745	11.24	11	14.13	0	14.13	30
		Middle	5785	10.27	10.45	13.37	0	13.37	30
		High	5825	10.64	10.38	13.52	0	13.52	30
	5G 802.11 n40	Low	5755	10.33	10.23	13.29	0.13	13.42	30
		High	5795	10.2	10.15	13.19	0.13	13.32	30
	802.11 ac80	Middle	5775	11.19	10.23	13.75	0.41	14.16	30

The 5250-5350MHz and 5470-5725MHz power limit 11dBm+10*log(min BW) over 24 dBm,
So Limit is 24 dBm.

The device is a client device. the 2 antenna maximum antenna gain are 4.5dBi, and employed Cyclic Delay

Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, forpower measurements on the devices:

Array Gain = 0 dB for NANT ≤4;.

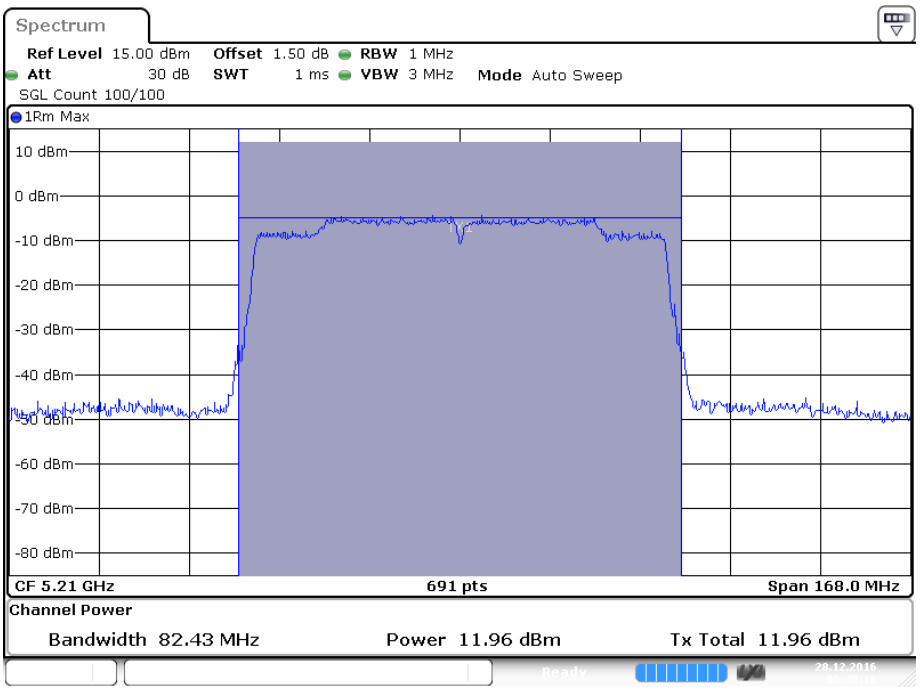
So:

Directional gain = GANT + Array Gain = 4.5+0 =4.5 dBi＜6 dBi

Note: 802.11ac80 and cross band were tested using spectrum, other 5 GHz bands and modes were tested using power meter.

Please refer to the following plots

SISO
IEEE 802.11ac VHT80 Mode / 5210~5775MHz (chain 0)
5210MHz



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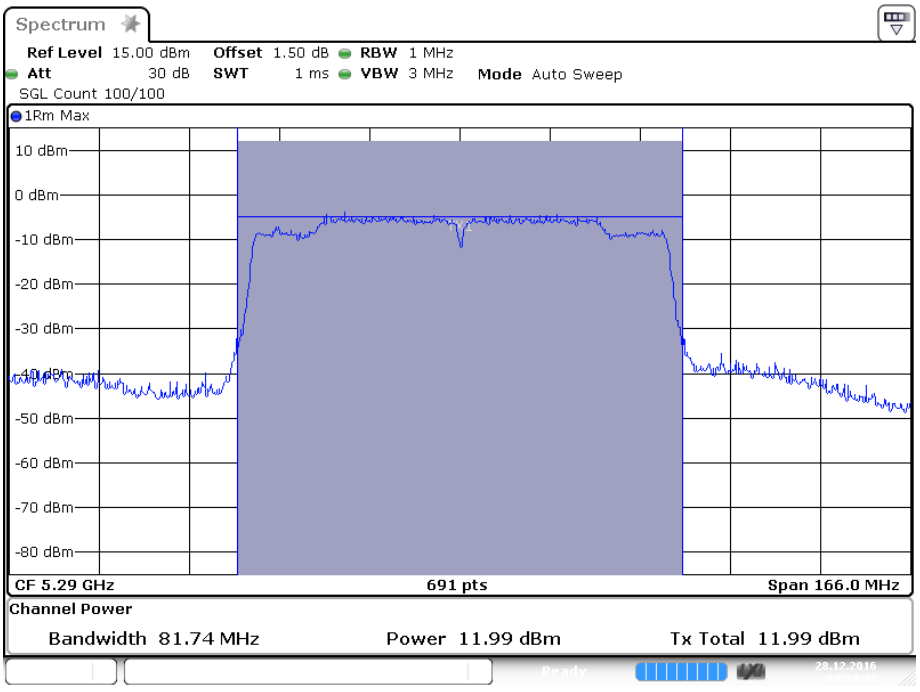
5290MHz



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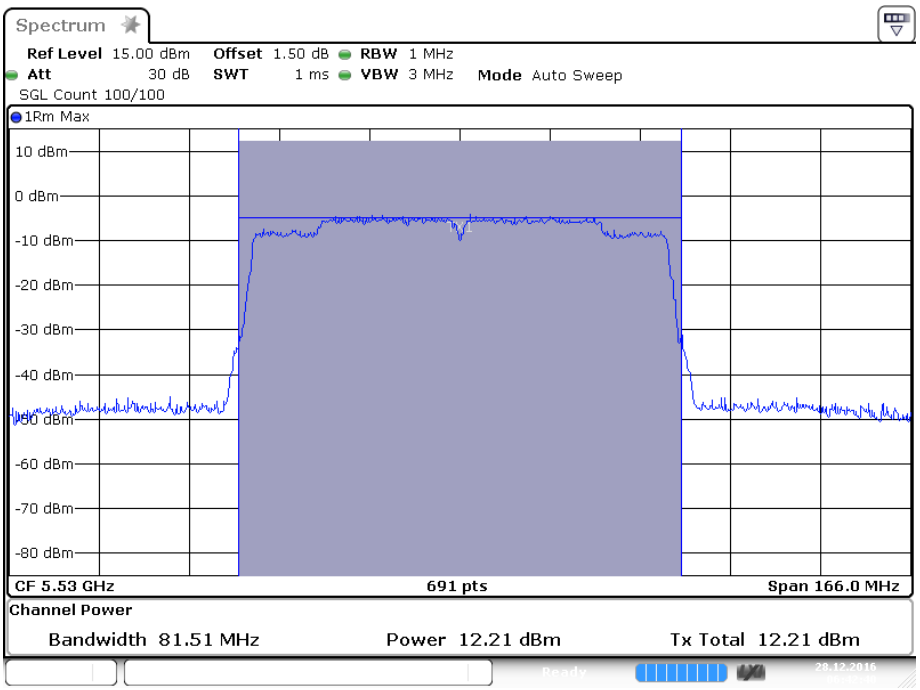
5530MHz



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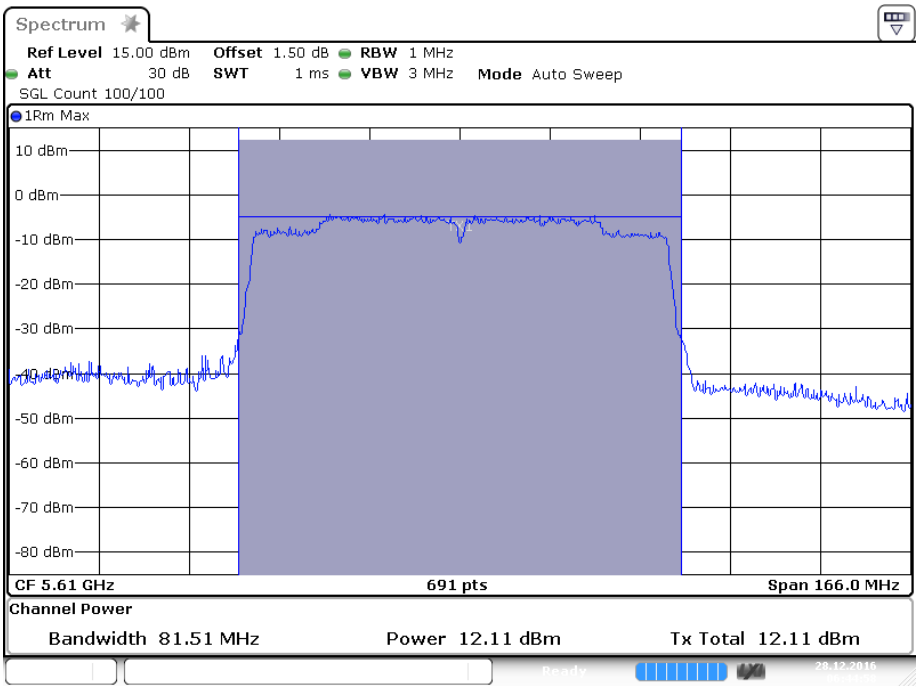
5610MHz



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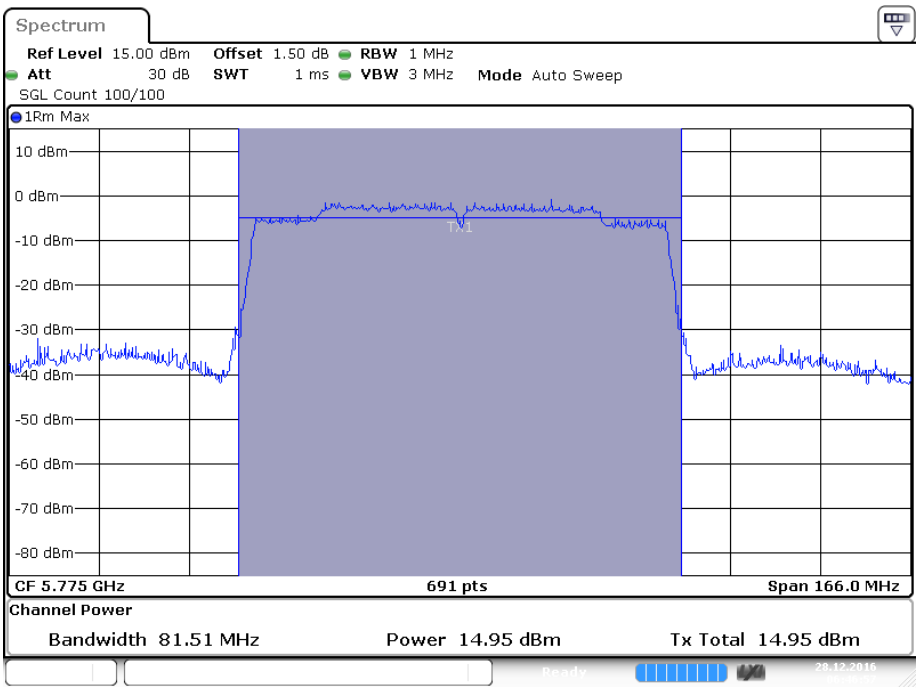
5775MHz



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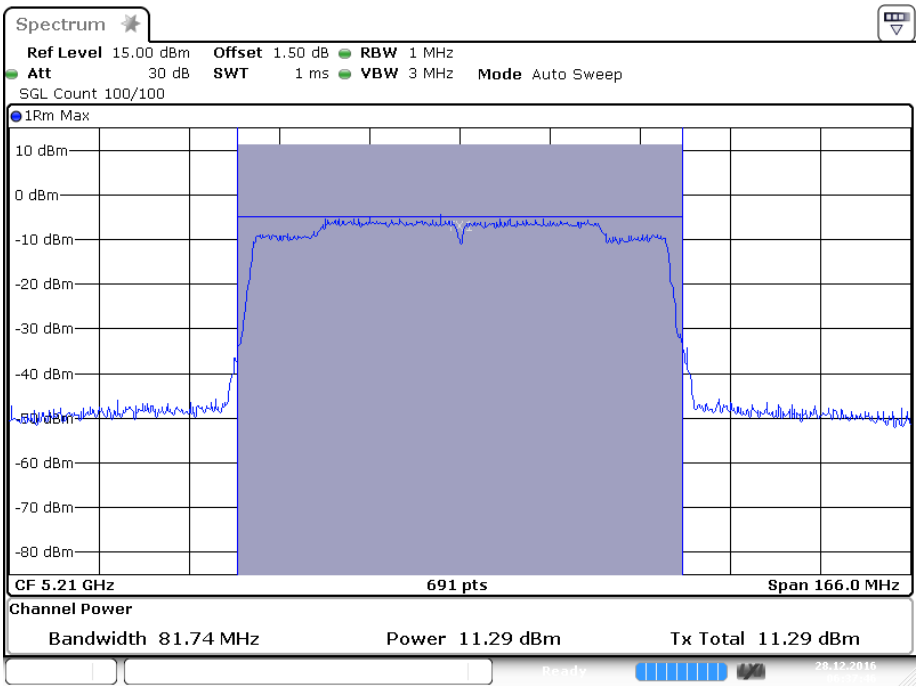
IEEE 802.11ac VHT80 Mode / 5210~5775MHz (chain 1)
5210MHz



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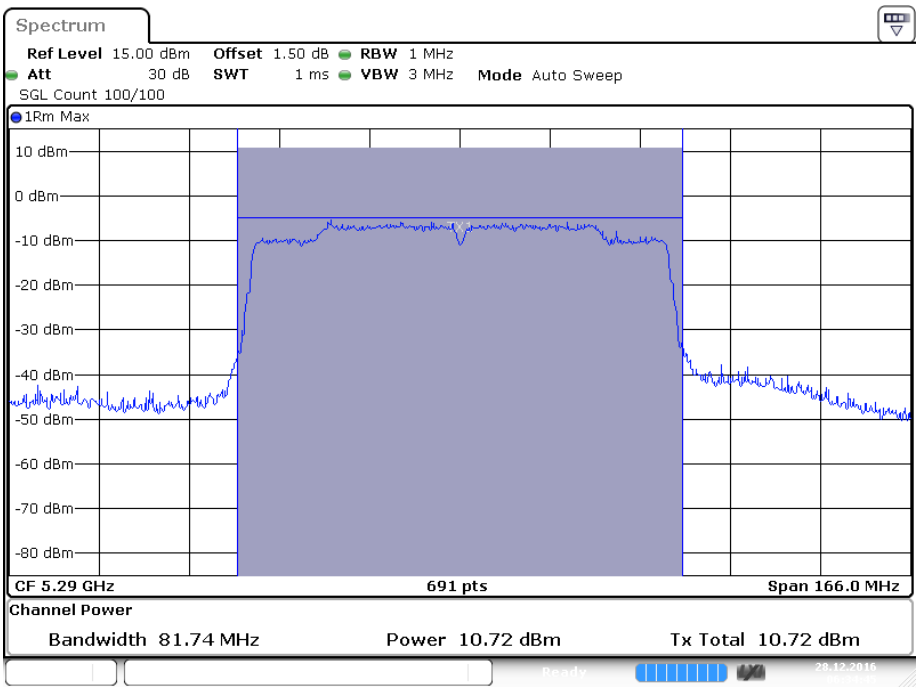
5290MHz



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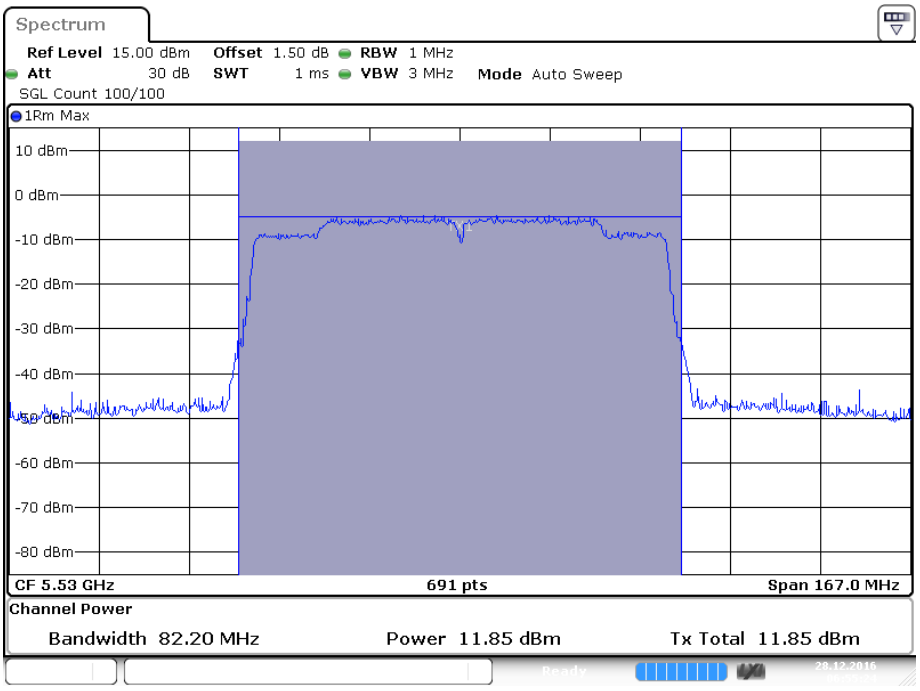
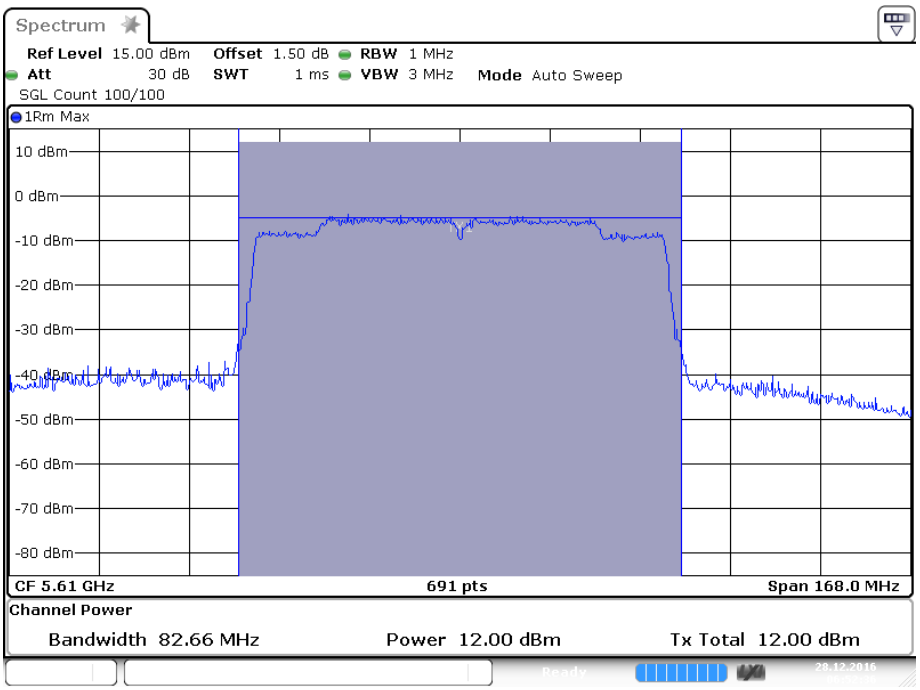
5530MHz



Date: 28.DEC.2016 06:55:24

5610MHz



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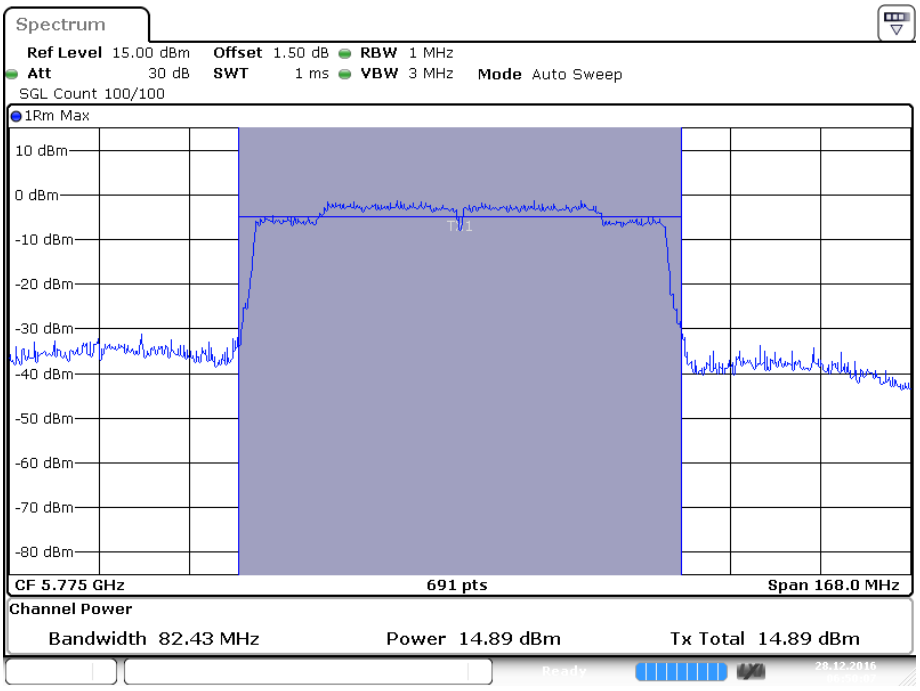
5775MHz



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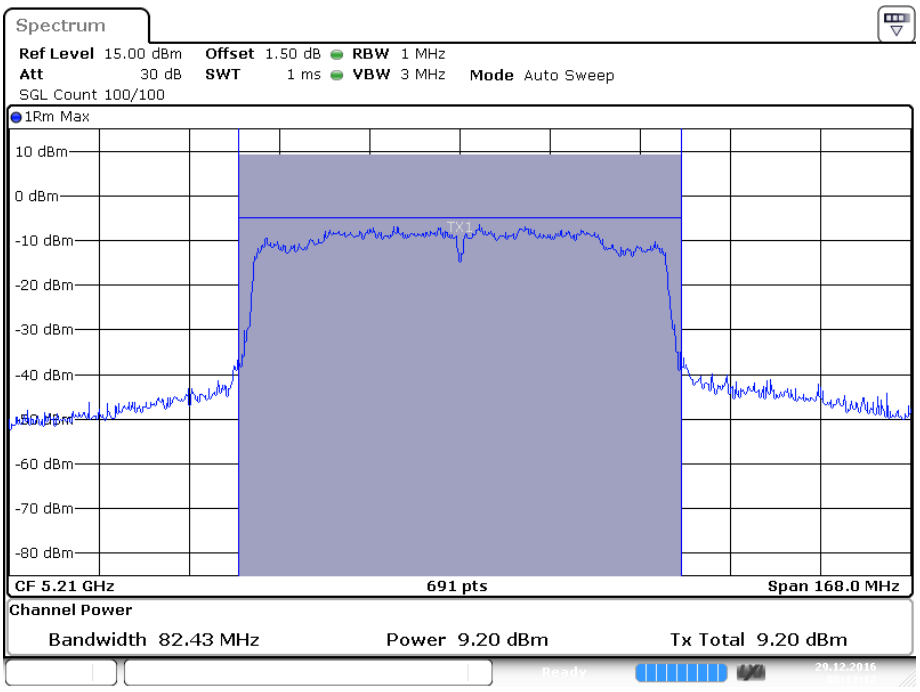
MIMO
IEEE 802.11ac VHT80 Mode / 5210~5775MHz (chain 0)
5210MHz



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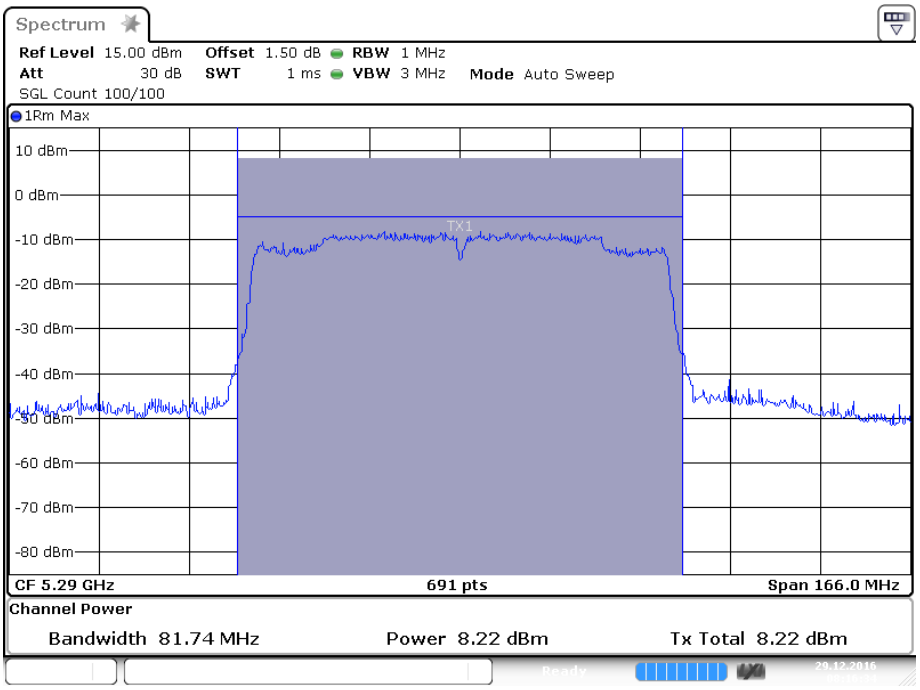
5290MHz



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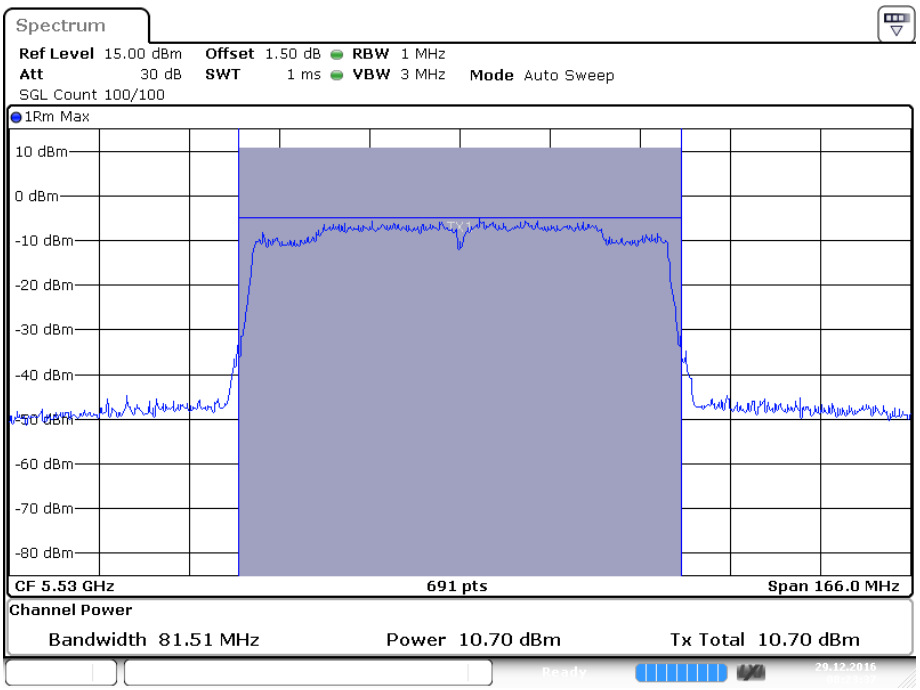
5530MHz



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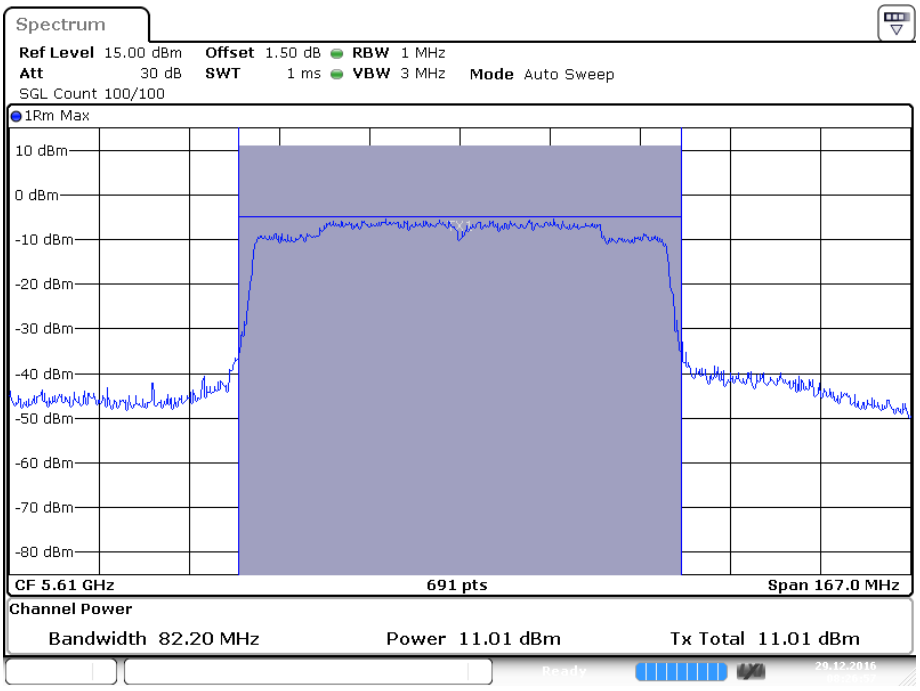
5610MHz



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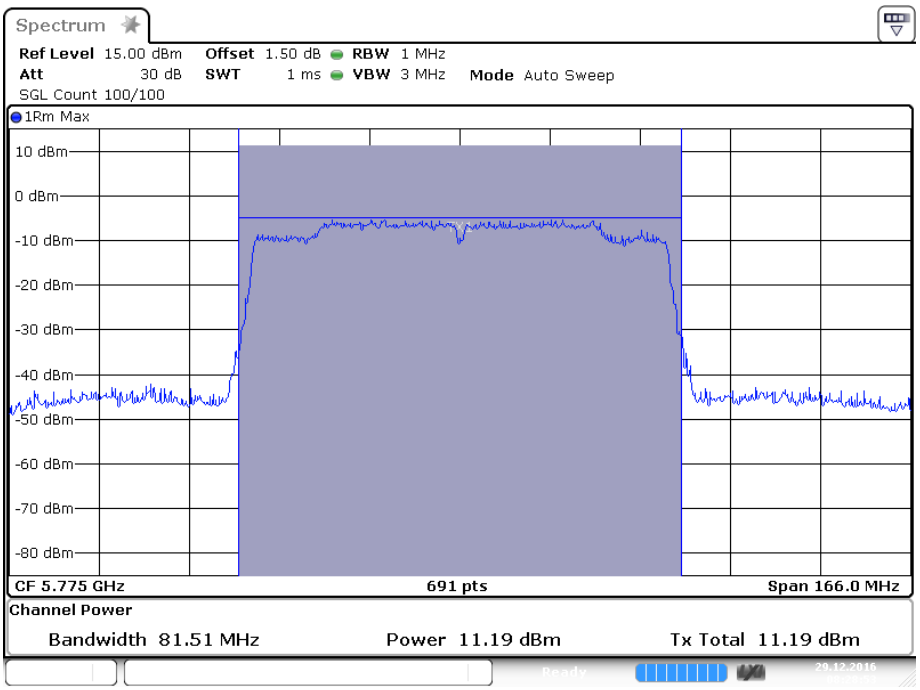
5775MHz



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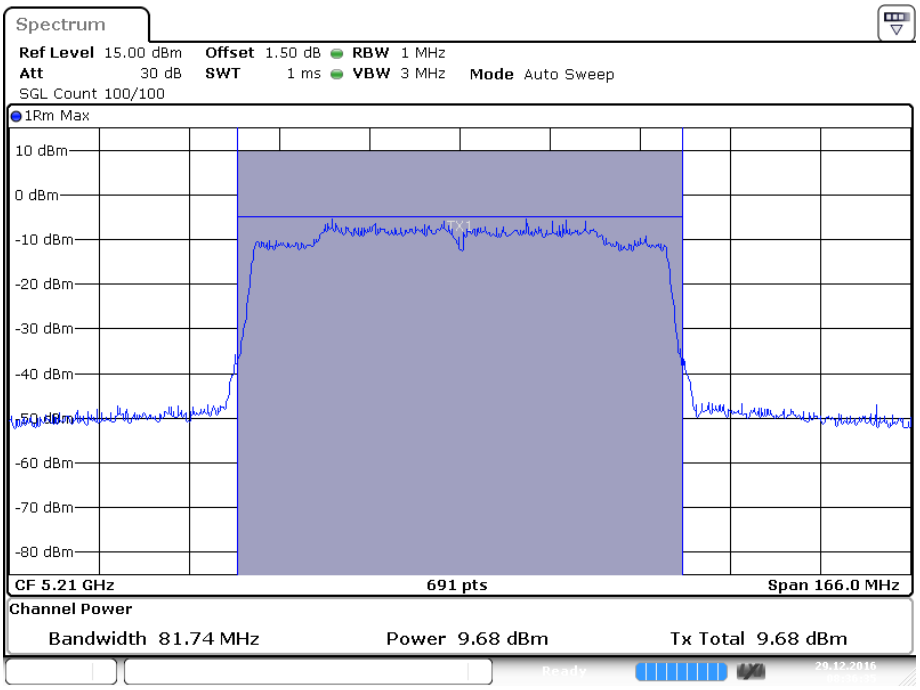
IEEE 802.11ac VHT80 Mode / 5210~5775MHz (chain 1)
5210MHz



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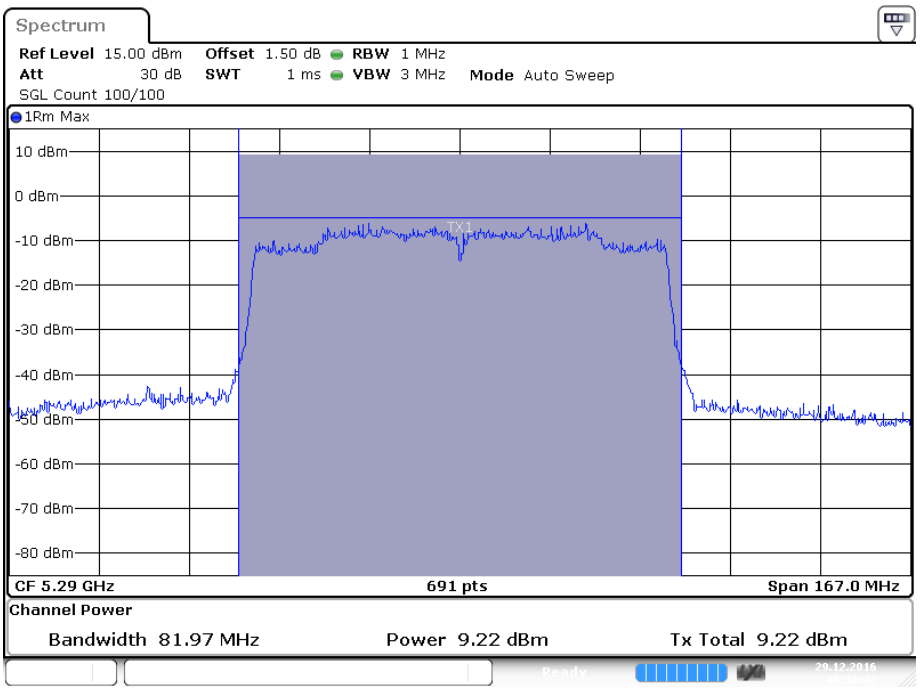
5290MHz



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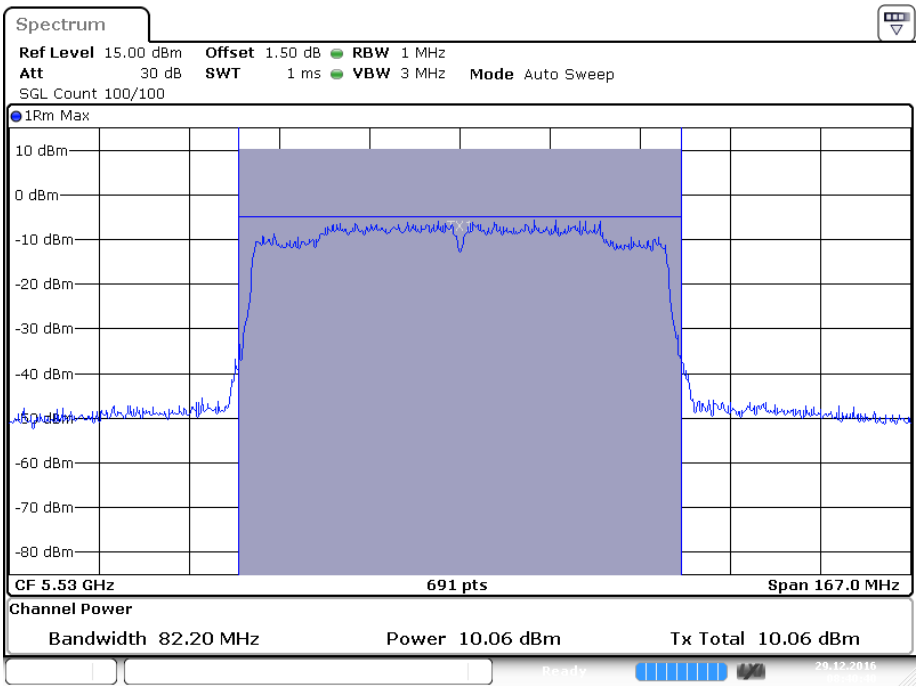
5530MHz



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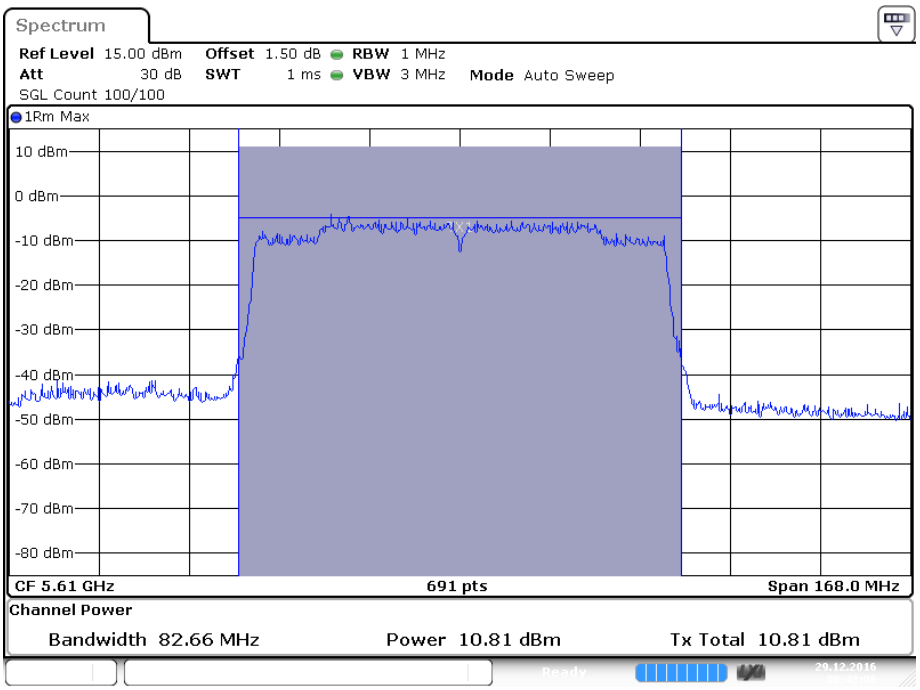
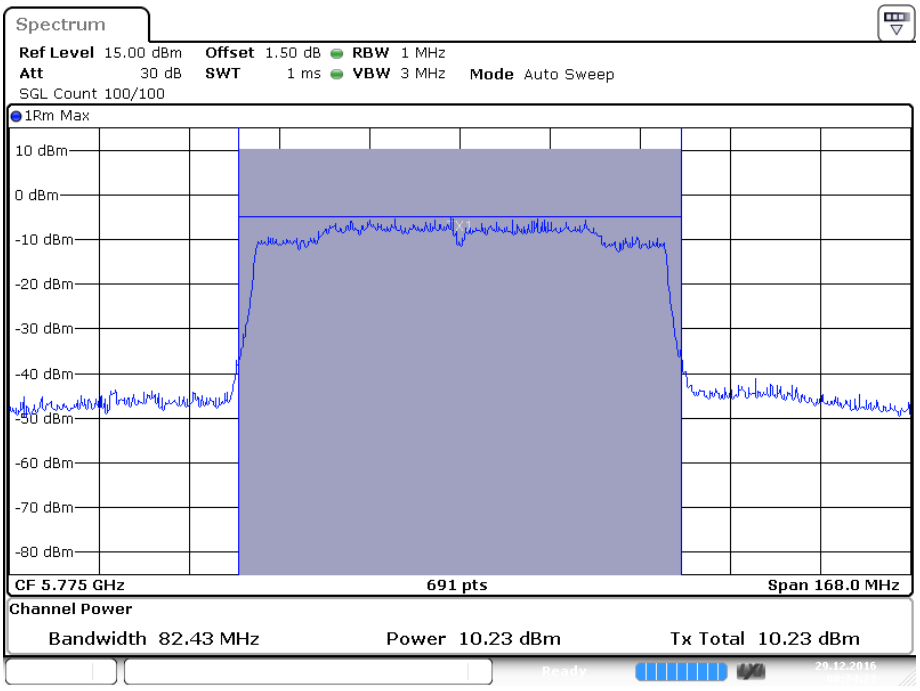
5610MHz



Date: 29.DEC.2016 08:43:07

5775MHz

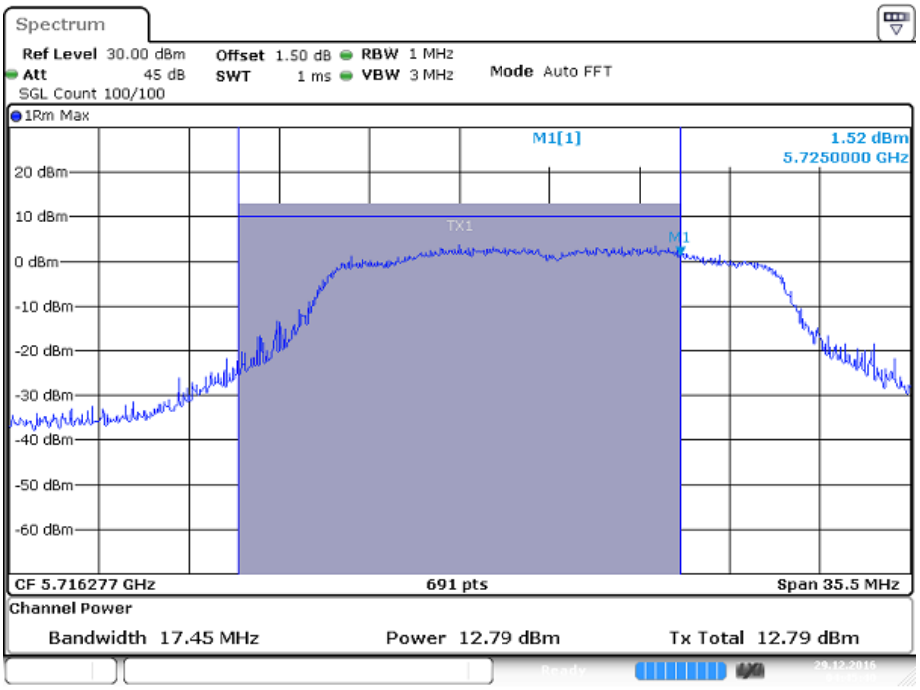


Date: 29.DEC.2016 08:34:23

SISO

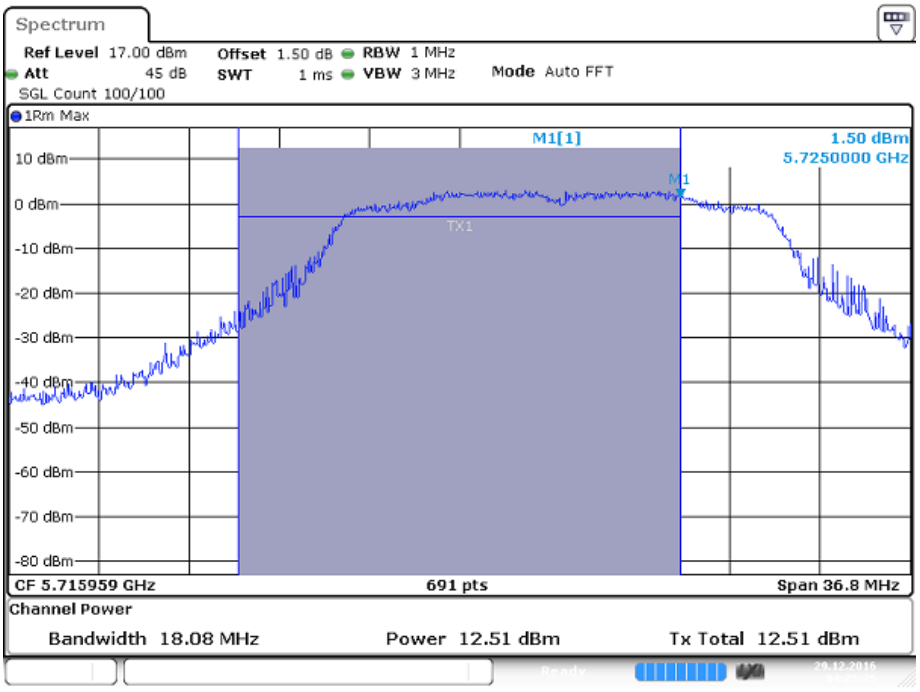
IEEE 802.11ac VHT20 mode Cross Band edge / 5470 ~ 5725MHz(chain 0)

5720MHz

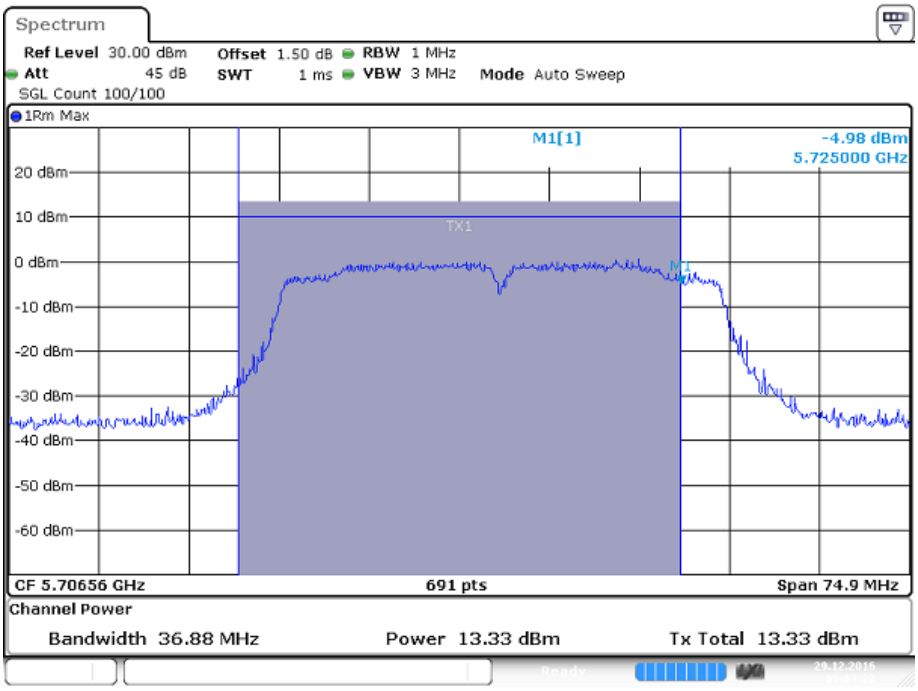


IEEE 802.11ac VHT20 mode Cross Band edge / 5470 ~ 5725MHz (chain 1)

5720MHz



IEEE 802.11ac VHT40 mode Cross Band edge / 5470 ~ 5725MHz(chain 0)
5710MHz



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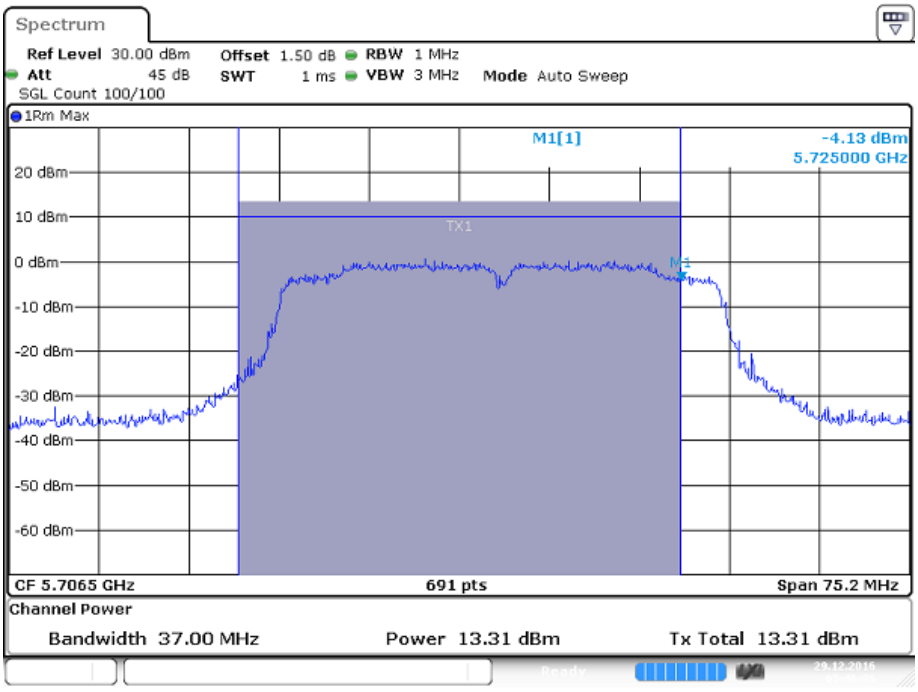
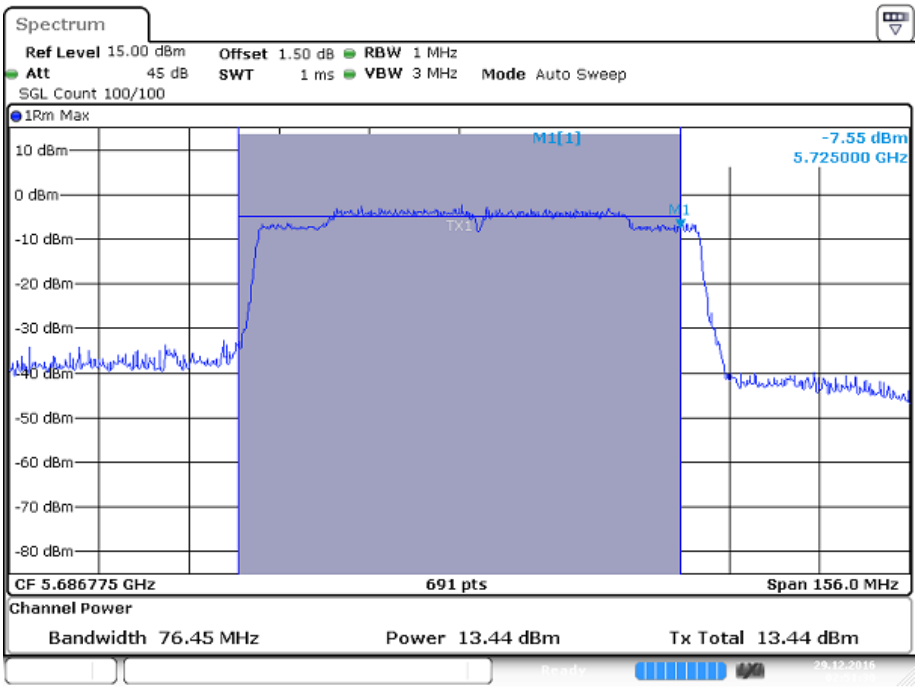
IEEE 802.11ac VHT40 mode Cross Band edge / 5470 ~ 5725MHz (chain 1)
5710MHz



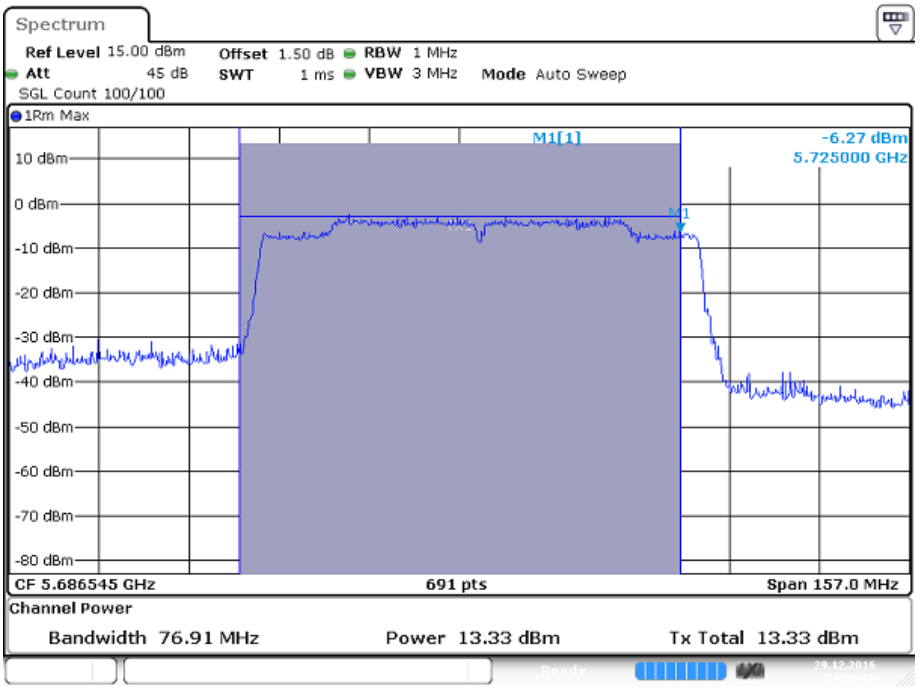
Date: 29.DEC.2016 05:46:36

IEEE 802.11ac VHT80 mode Cross Band edge / 5470 ~ 5725MHz(chain 0)
5690MHz



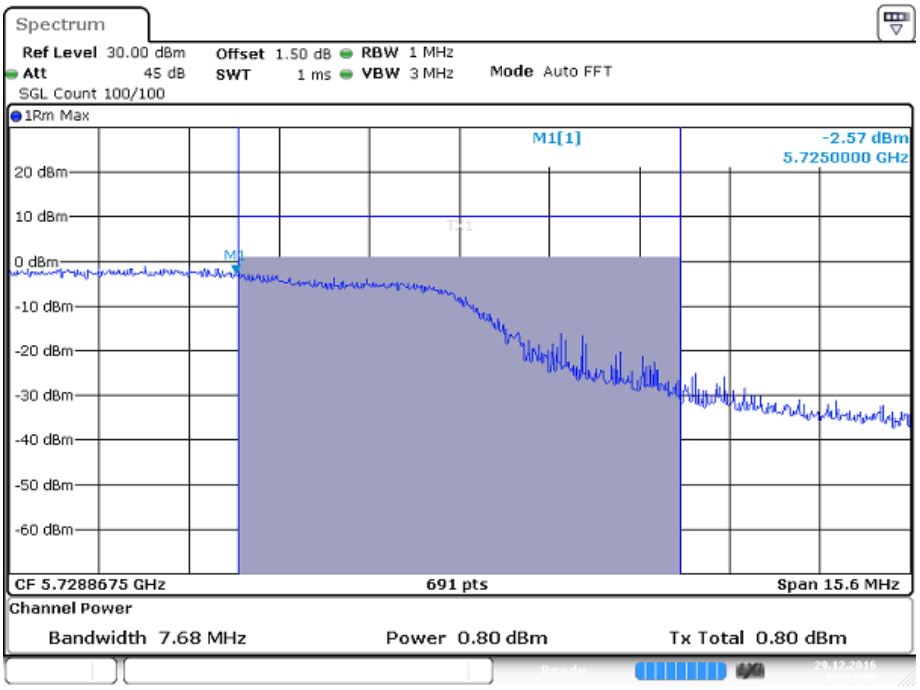
Date: 29.DEC.2016 02:51:30

IEEE 802.11ac VHT80 mode Cross Band edge / 5470 ~ 5725MHz (chain 1)
5690MHz



Date: 29.DEC.2016 04:06:07

IEEE 802.11ac VHT20 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5720MHz



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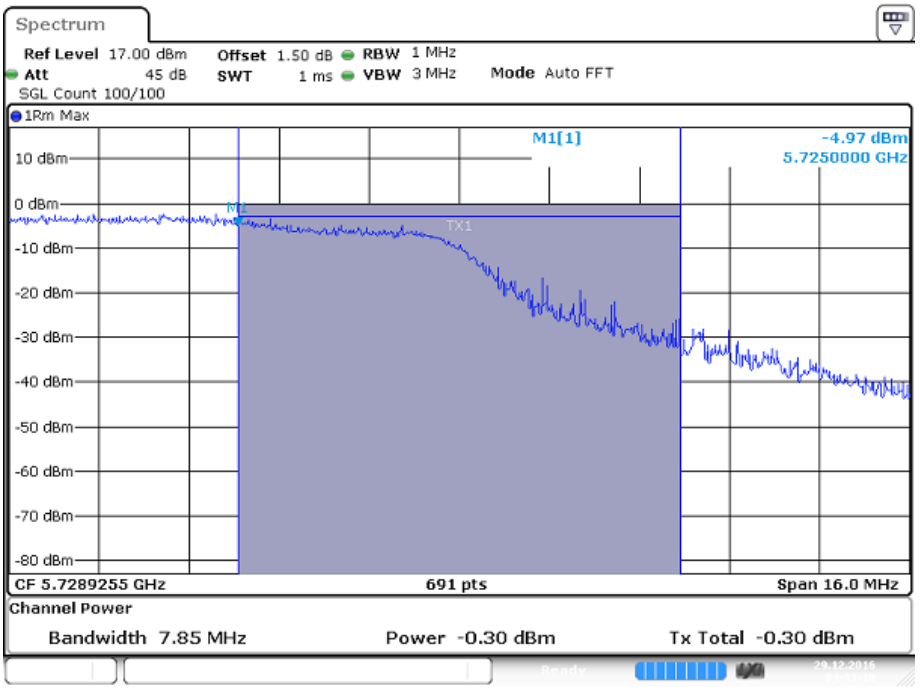
IEEE 802.11ac VHT20 mode Cross Band edge /5725 ~ 5850MHz (chain 1)
5720MHz



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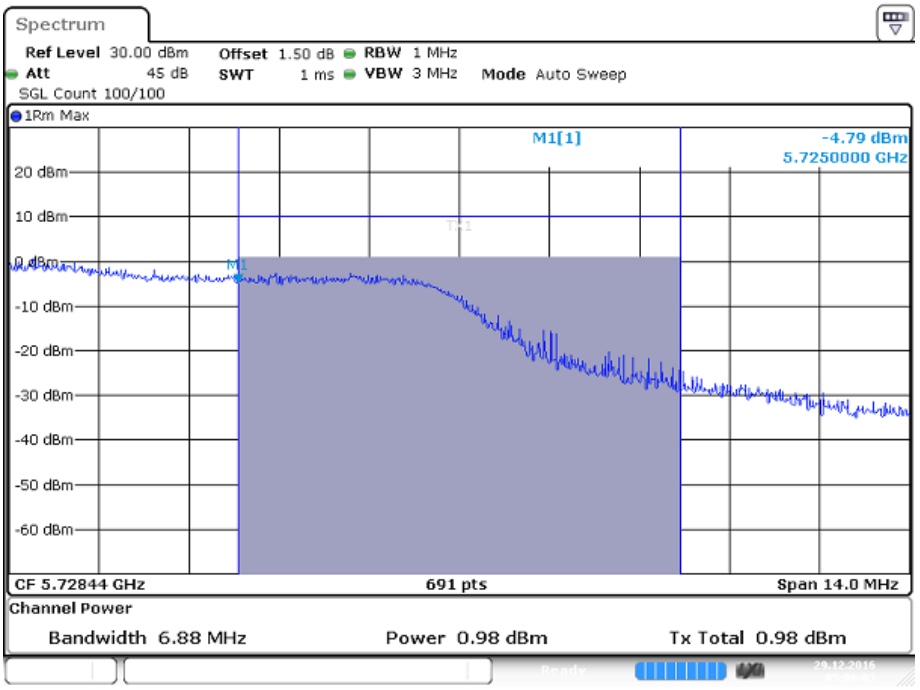
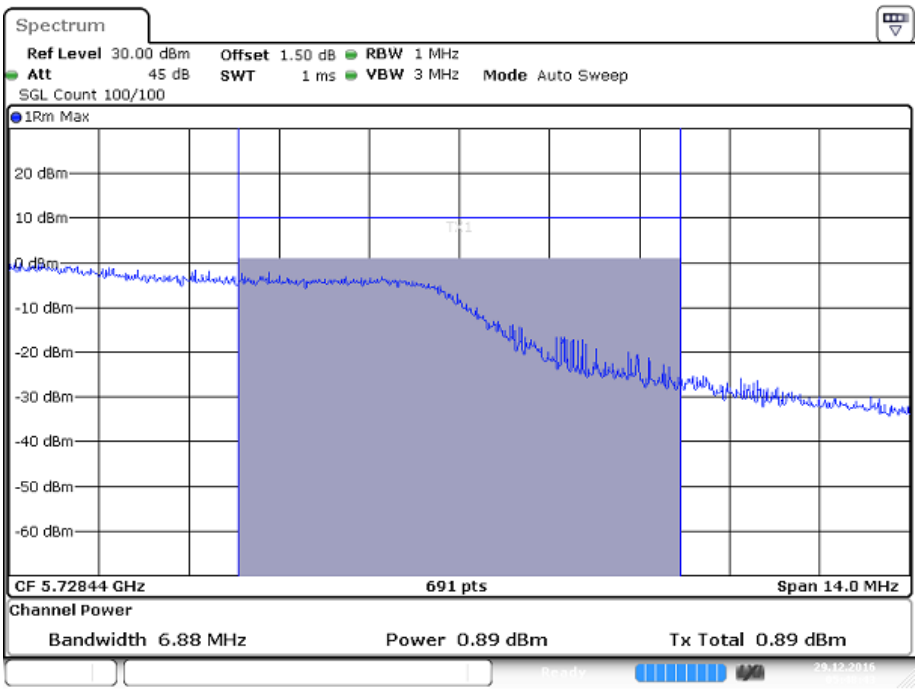
5710MHz



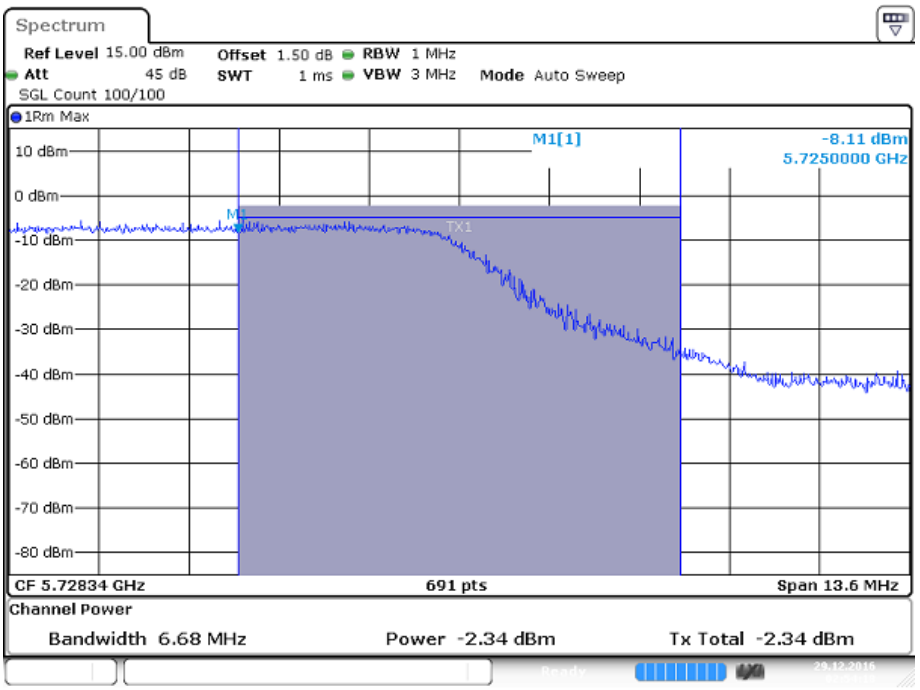
Date: 29.DEC.2016 05:06:03

IEEE 802.11ac VHT40 mode Cross Band edge / 5725 ~ 5850MHz (chain 1)
5710MHz

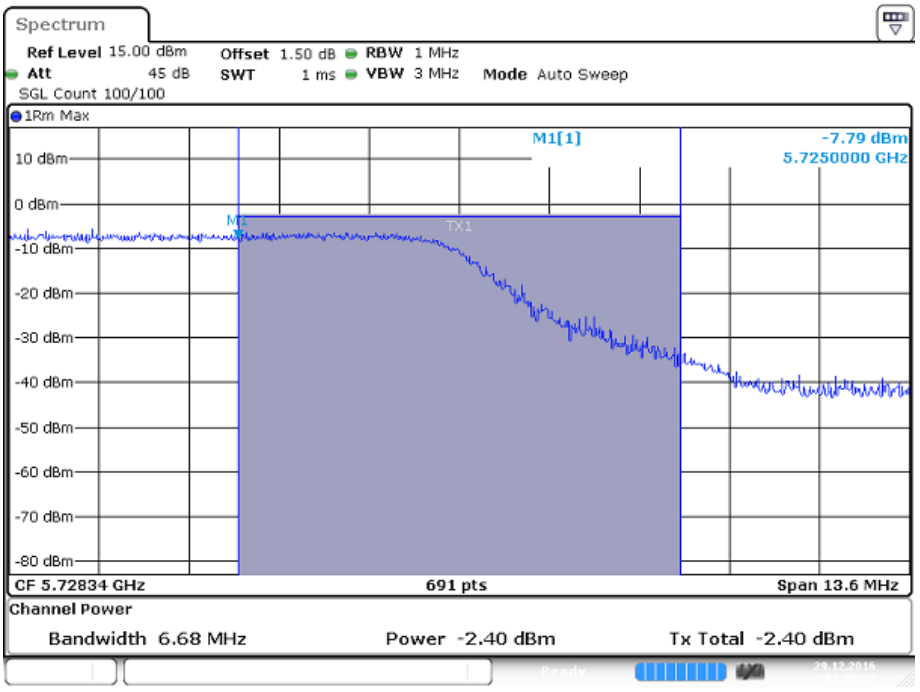


Date: 29.DEC.2016 05:48:43

IEEE 802.11ac VHT80 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5690MHz



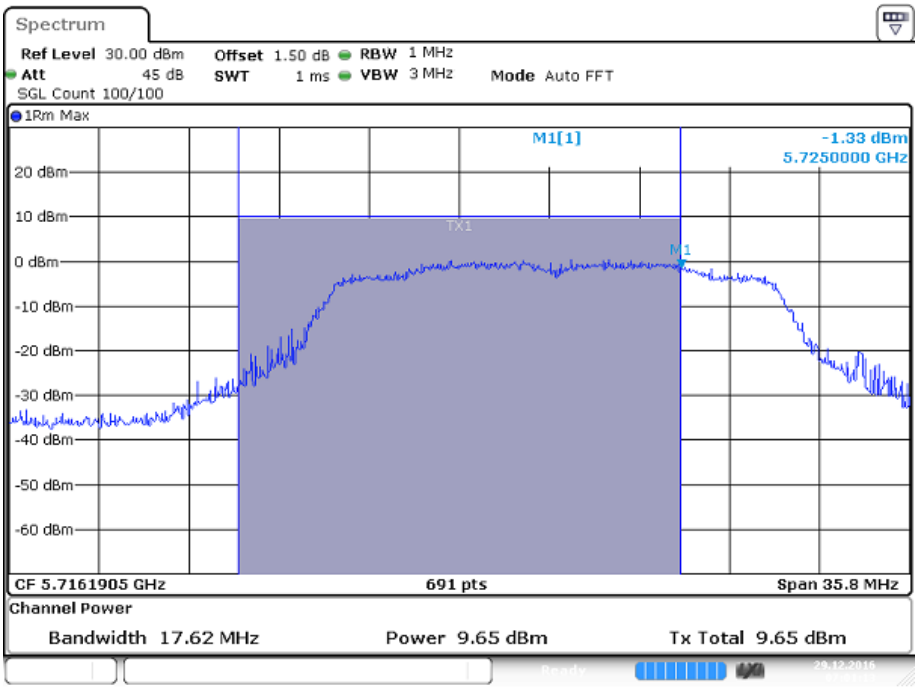
IEEE 802.11ac VHT80 mode Cross Band edge / 5725 ~ 5850MHz (chain 1)
5690MHz



MIMO

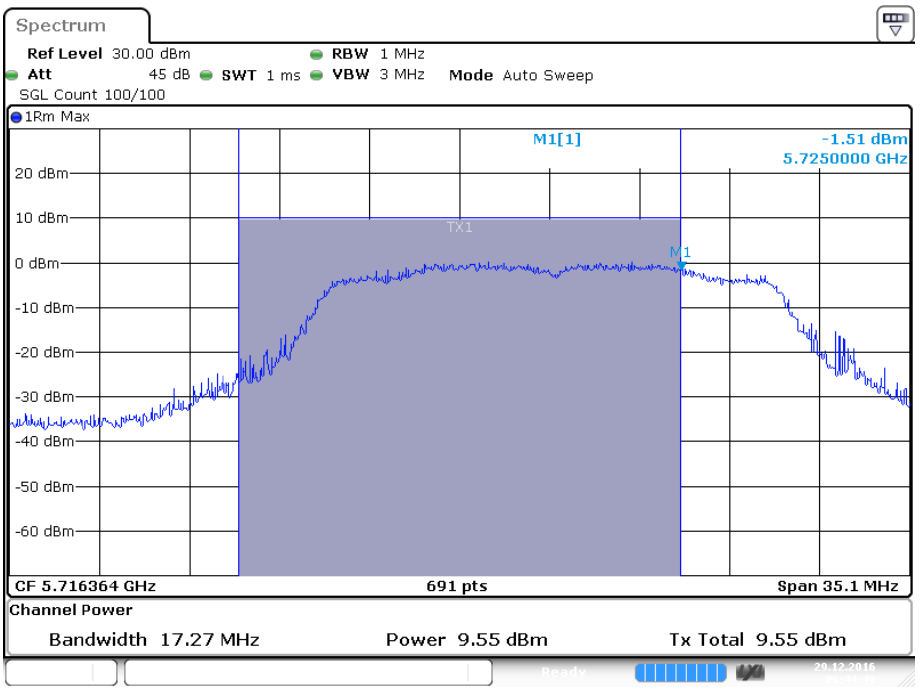
IEEE 802.11ac VHT20 mode Cross Band edge / 5470 ~ 5725MHz(chain 0)

5720MHz



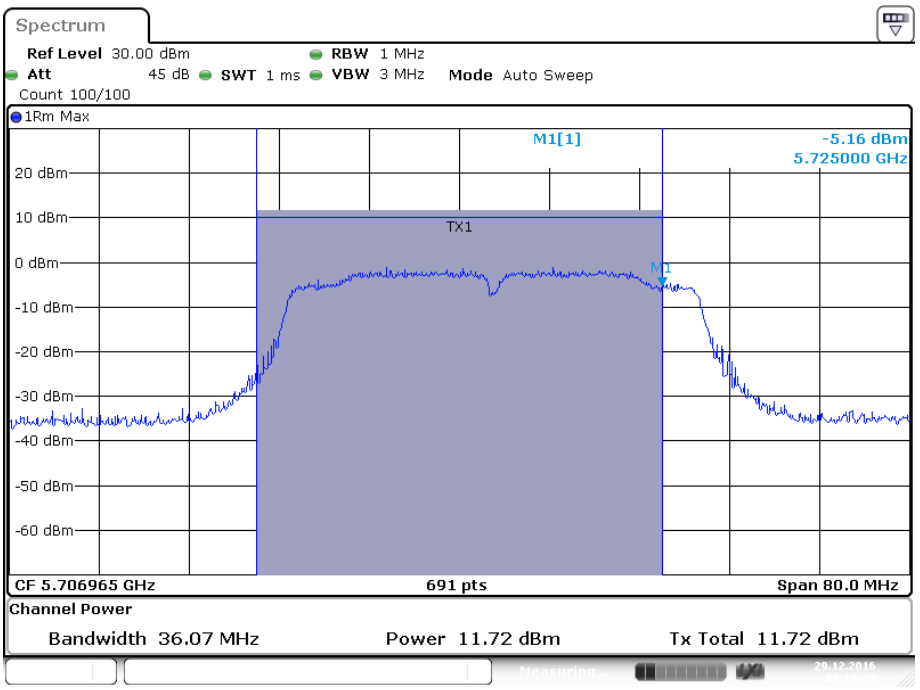
Date: 29.DEC.2016 07:01:13

IEEE 802.11ac VHT20 mode Cross Band edge / 5470 ~ 5725MHz(chain 1)



Date: 29.DEC.2016 06:44:50

IEEE 802.11ac VHT40 mode Cross Band edge / 5470 ~ 5725MHz(chain 0)
5710MHz



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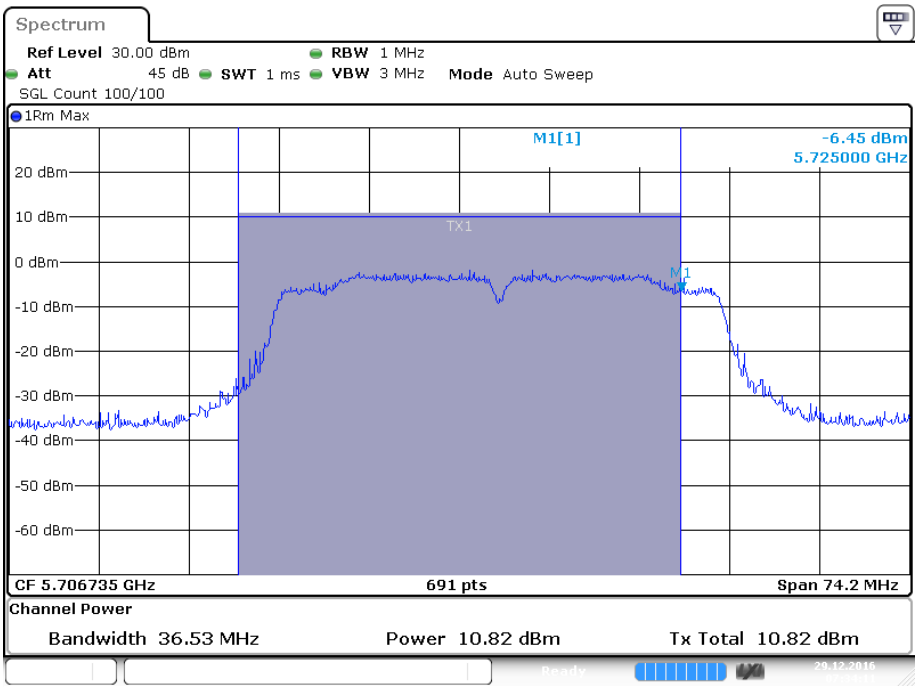
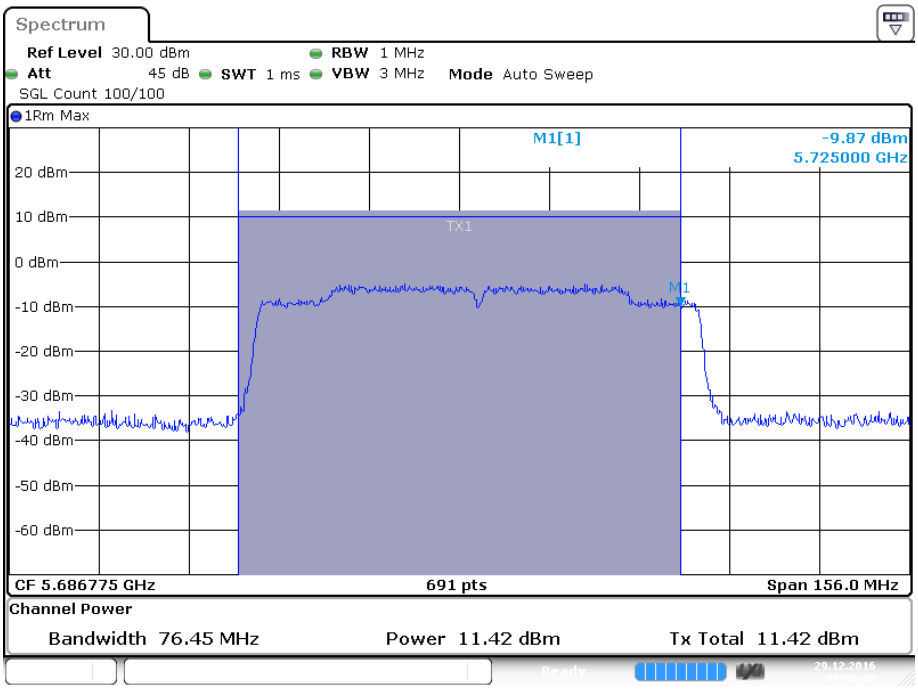
IEEE 802.11ac VHT40 mode Cross Band edge / 5470 ~ 5725MHz(chain 1)
5710MHz



Date: 29.DEC.2016 07:34:11

IEEE 802.11ac VHT80 mode Cross Band edge / 5470 ~ 5725MHz(chain 0)
5690MHz



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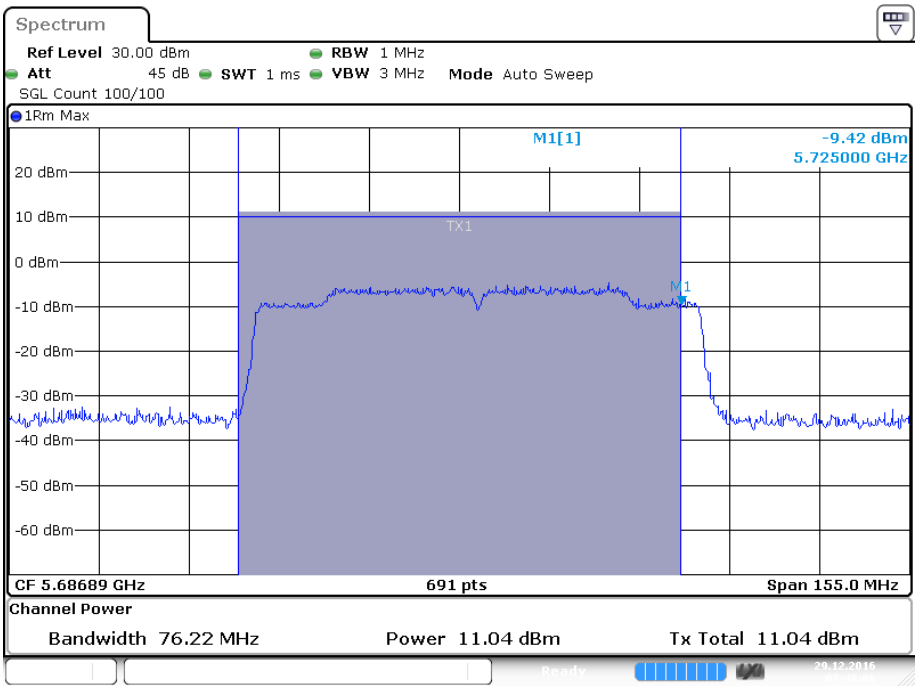
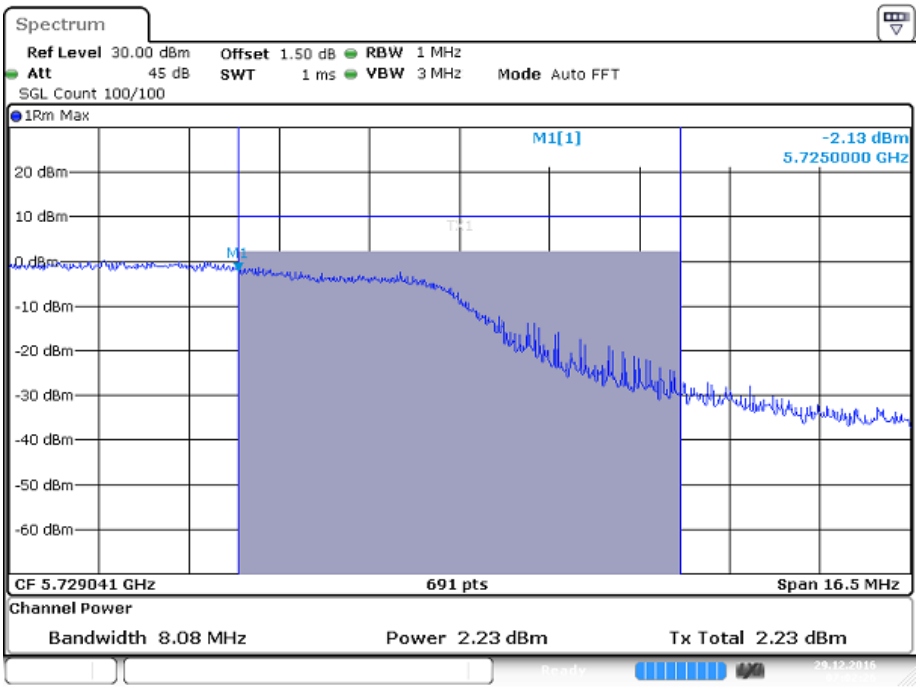
IEEE 802.11ac VHT80 mode Cross Band edge / 5470 ~ 5725MHz(chain 1)
5690MHz



Date: 29.DEC.2016 07:48:07

IEEE 802.11ac VHT20 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5720MHz



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IEEE 802.11ac VHT20 mode Cross Band edge / 5725 ~ 5850MHz(chain 1)
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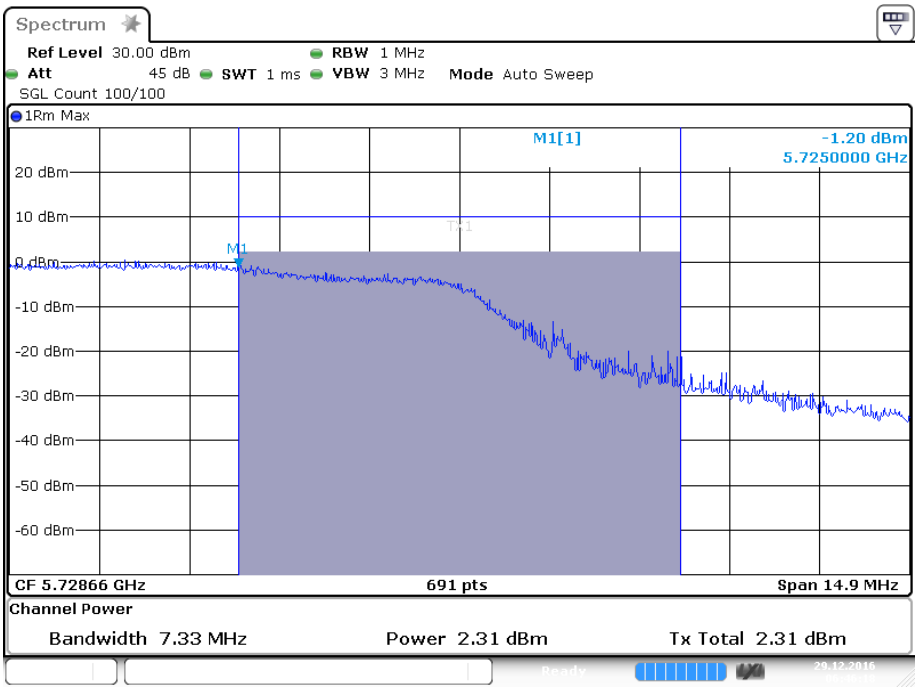
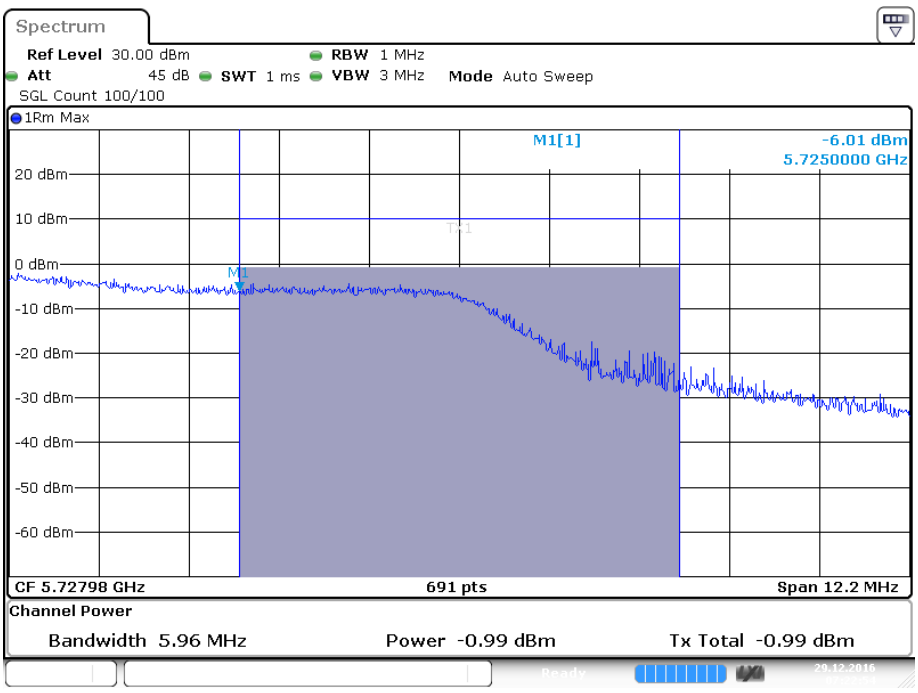


Date: 29.DEC.2016 06:46:18

IEEE 802.11ac VHT40 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5710MHz



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IEEE 802.11ac VHT40 mode Cross Band edge / 5725 ~ 5850MHz(chain 1)
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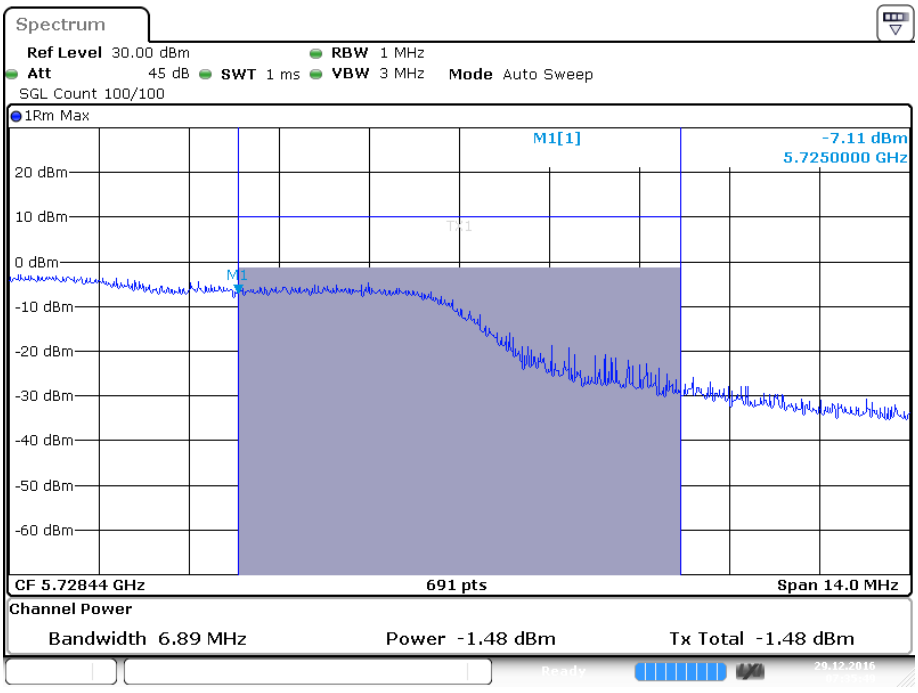
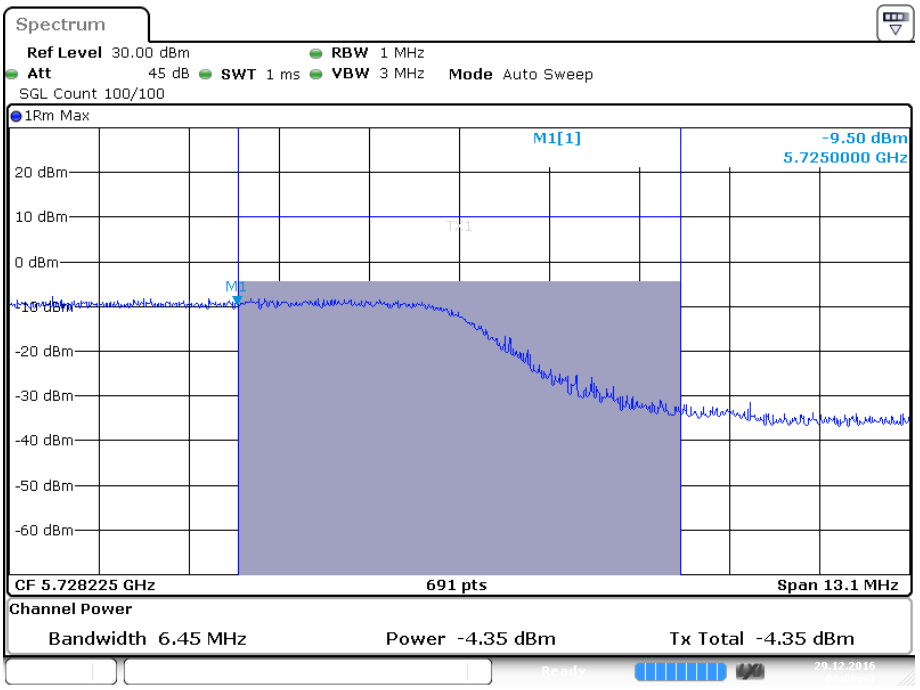


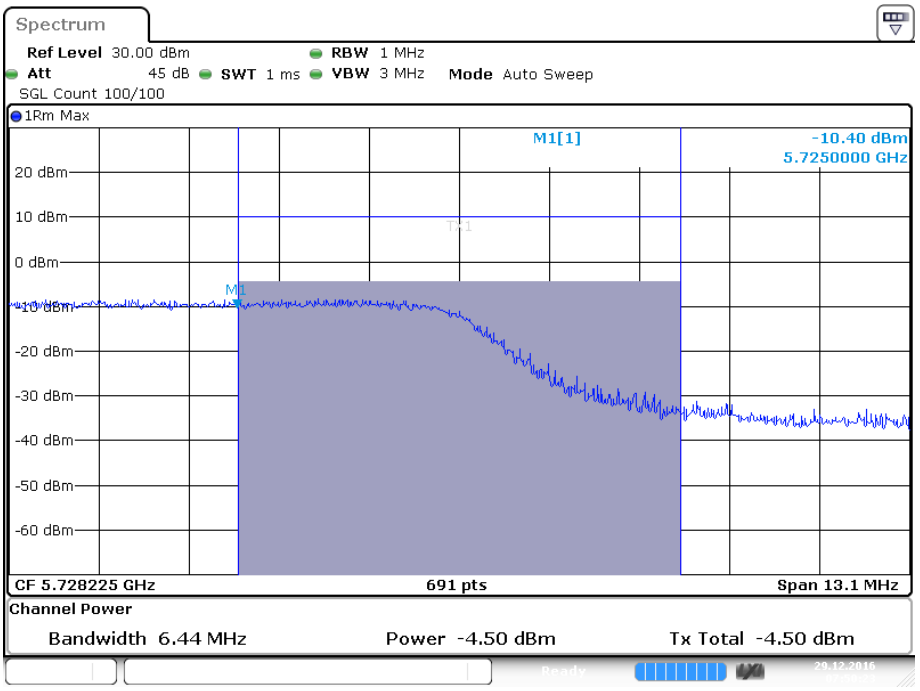
Date: 29.DEC.2016 07:35:50

IEEE 802.11ac VHT80 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5690MHz



Date: 29.DEC.2016 08:00:41

IEEE 802.11ac VHT80 mode Cross Band edge / 5725 ~ 5850MHz(chain 1)
5690MHz



Date: 29.DEC.2016 07:50:23

10 FCC §15.247(e) – Power Spectral Density

10.1 Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

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

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

10.2 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r03

10.3 Test Equipment List and Details

Descriptions	Manufacturer	Models	Serial Numbers	Calibration Date	Calibration Due Date
Cable	WOKEN	SFL402	00100A1F6A192S	N.C.R	N.C.R
Spectrum Analyzer	Rohde & Schwarz	FSV40	101203	2016/7/14	2017/7/13

***Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Taiwan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

10.4Test Environmental Conditions

Temperature:	25℃
Relative Humidity:	54 %
ATM Pressure:	1020 hPa

The testing was performed by David Hsu on 2016-12-30.

10.5Test Results

Test Mode: Transmitting

Note: per output power test, the SISO mode was the worst,so only SISO mode was test for this item,and used toevaluate MIMO mode compliance.

UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)		Total Power spectral Density without factor	Duty Factor	Total Power spectral Density with factor	Limit (dBm/MHz)
				Chain 0	Chain 1				
5150-5250MHz	802.11 a	Low	5180	2.73	2.86	5.8	0	5.8	9.49
		Middle	5200	3.25	3.59	6.43	0	6.43	9.49
		High	5240	3.88	3.33	6.62	0	6.62	9.49
	802.11 n20	Low	5180	1.54	2.28	4.93	0	4.93	9.49
		Middle	5200	3.36	2.75	6.07	0	6.07	9.49
		High	5240	3.22	2.59	5.92	0	5.92	9.49
	802.11 n40	Low	5190	-2.31	-2.22	0.75	0.13	0.88	9.49
		High	5230	-2.24	-0.44	1.72	0.13	1.85	9.49
	802.11 ac80	Middle	5210	-3.72	-4.54	-1.11	0.41	-0.7	9.49
5250-5350MHz	802.11 a	Low	5260	3.96	3.48	6.73	0	6.73	9.49
		Middle	5280	3.94	3.66	6.81	0	6.81	9.49
		High	5320	2.43	2.85	5.65	0	5.65	9.49
	802.11 n20	Low	5260	4.36	3.23	6.82	0	6.82	9.49
		Middle	5280	3	2.91	5.97	0	5.97	9.49
		High	5320	2.87	5.32	7.19	0	7.19	9.49
	802.11 n40	Low	5270	1.22	0.53	3.89	0.13	4.02	9.49
		High	5310	-0.85	0.98	3.12	0.13	3.25	9.49
	802.11 ac80	Middle	5290	-4.25	-4.68	-1.46	0.41	-1.05	9.49
5470-5725MHz	802.11 a	Low	5500	2.72	2.61	5.68	0	5.68	9.49
		Middle	5580	4.24	3.29	6.79	0	6.79	9.49
		High	5700	1.35	0.4	3.9	0	3.9	9.49
	802.11 n20	Low	5500	1.38	0.66	4.04	0	4.04	9.49
		Middle	5580	1.93	1.85	4.9	0	4.9	9.49

		High	5700	-0.58	0.1	2.78	0	2.78	9.49
	802.11 n40	Low	5510	-0.2	-0.09	2.87	0.13	3.00	9.49
		Middle	5590	-0.25	-0.85	2.47	0.13	2.60	9.49
		High	5670	1.08	1.09	4.1	0.13	4.23	9.49
	802.11 ac80	Low	5530	-2.39	-3.04	-0.13	0.41	0.28	9.49
		High	5610	-2.41	-3.94	-0.13	0.41	0.28	9.49
Cross Band edge	802.11ac20	High	5720	3.95	4.39	7.18	0.00	7.18	9.49
	802.11ac40	High	5710	2.78	1.04	4.96	0.13	5.09	9.49
	802.11ac80	High	5690	-5.31	-1.08	0.07	0.41	0.48	9.49

UNIIBand	Mode	Channel	Frequency (MHz)	Reading (dBm/500kHz)		Power Spectral Density (dBm/500kHz)	Duty Factor	Total Power spectral Density with factor(dBm/500kHz	Limit (dBm/500kHz)
				Chain 0	Chain 1				
5725-5850 MHz	802.11 a	Low	5745	4.84	2.88	6.93	0	6.93	28.49
		Middle	5785	4.57	2.4	6.56	0	6.56	28.49
		High	5825	4.09	1.87	6.06	0	6.06	28.49
	802.11 n20	Low	5745	3.69	2.05	5.92	0	5.92	28.49
		Middle	5785	3.44	2.03	5.77	0	5.77	28.49
		High	5825	3.63	3.03	6.35	0	6.35	28.49
	802.11 n40	Low	5755	2.32	3.19	5.78	0.13	5.91	28.49
		High	5795	2.65	2.52	5.6	0.13	5.73	28.49
	802.11 ac80	Middle	5775	0.43	-2.16	6.79	0.41	7.2	28.49
Cross Band edge	802.11ac20	High	5720	4.33	3.2	6.77	0	6.77	28.49
	802.11ac40	High	5710	-0.81	-3.56	0.93	0.13	1.06	28.49
	802.11ac80	High	5690	-6.75	-6.53	-3.63	0.41	-3.22	28.49

Note: the device is a client device. the 2 antenna maximum atenna gain are 4.5dBi, and employed Cyclic DelayDiversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, forpower spectral density (PSD) measurements on the devices:

Array Gain = 10 log(NANT/NSS) dB.

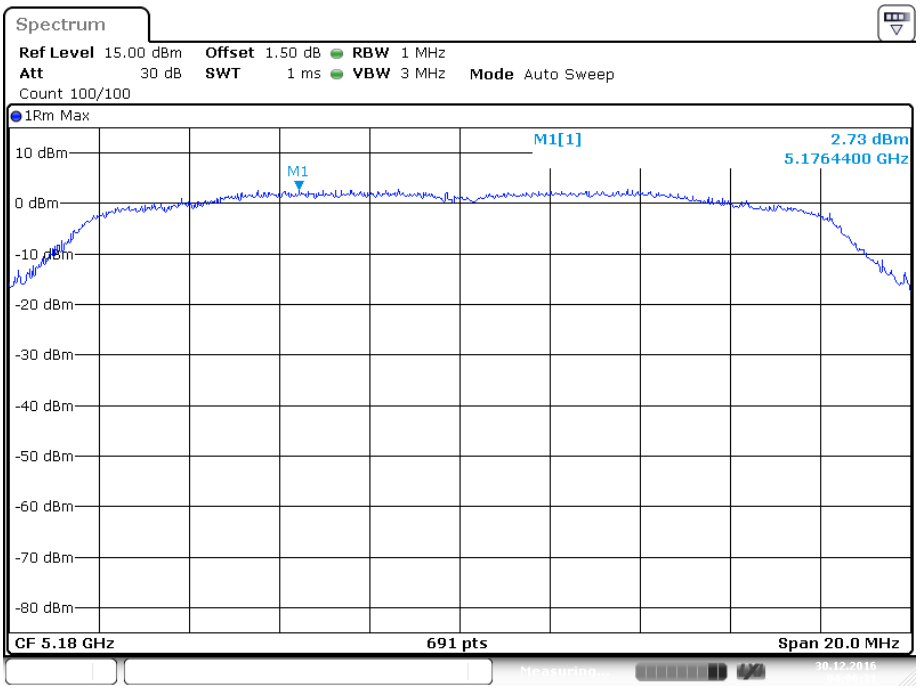
So:

Directional gain = GANT + Array Gain = 4.5+10*log(2) =7.51 dBi

The Power density Limits was reduce 1.51dB

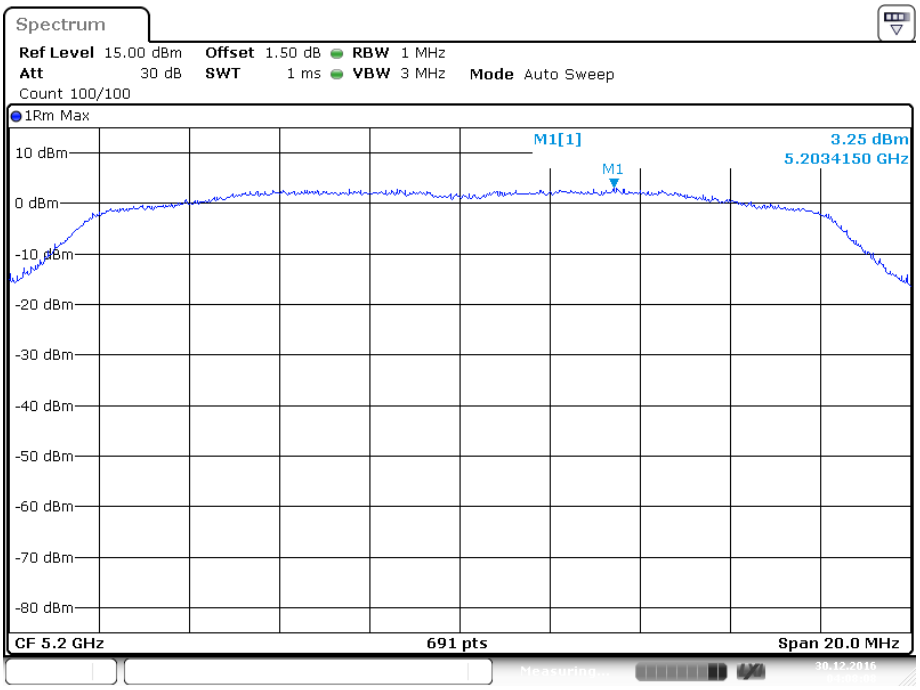
Please refer to the following plots

IEEE 802.11a mode / 5150 ~ 5250MHz(chain0)
5180MHz



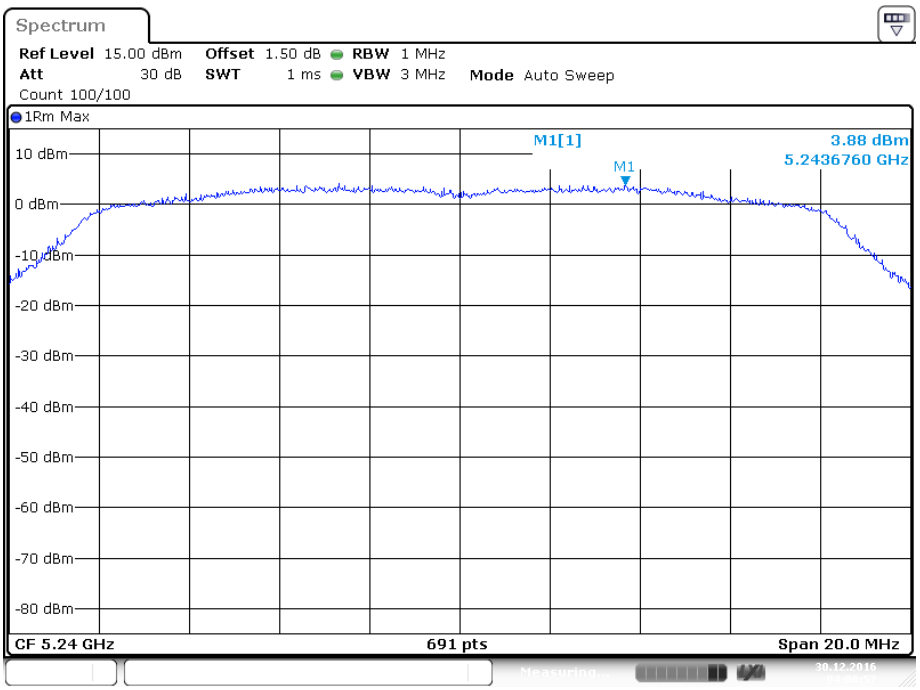
Date: 30.DEC.2016 04:06:31

5200MHz



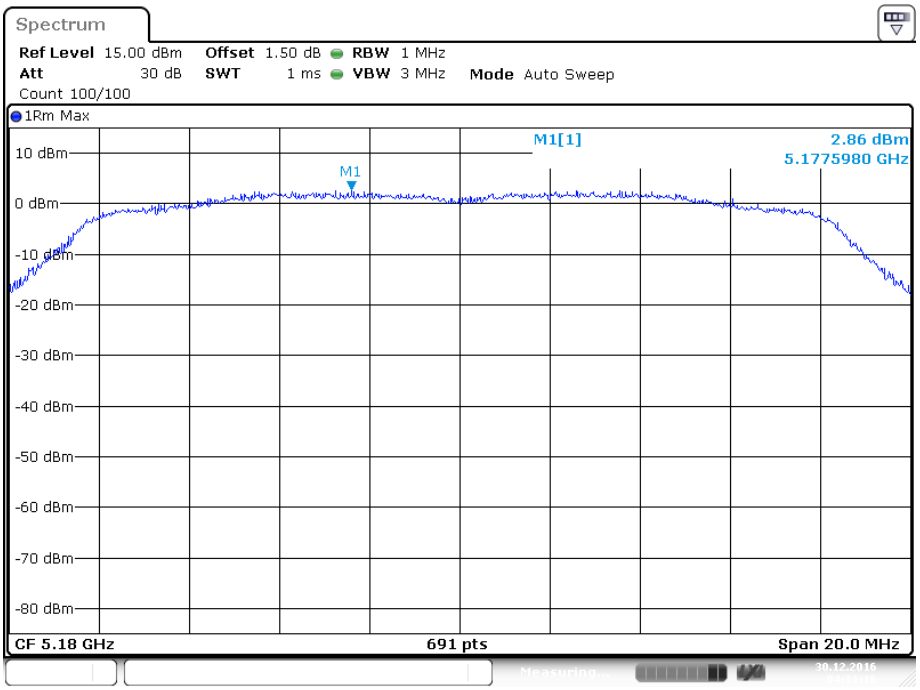
Date: 30.DEC.2016 04:08:09

5240MHz



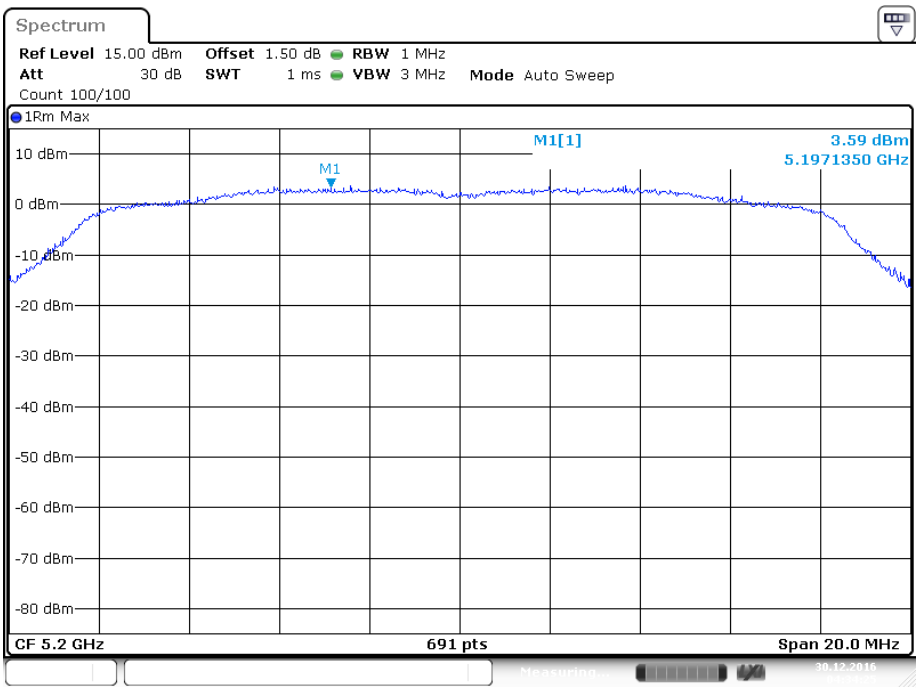
Date: 30.DEC.2016 04:08:57

IEEE 802.11a mode / 5150 ~ 5250MHz(chain 1)
5180MHz



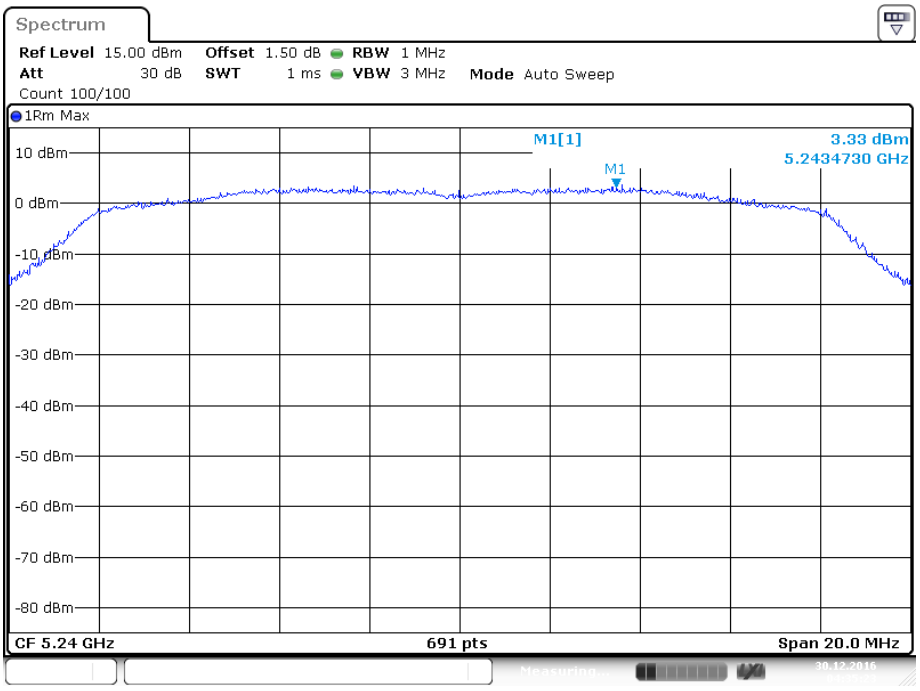
Date: 30.DEC.2016 04:31:16

5200MHz



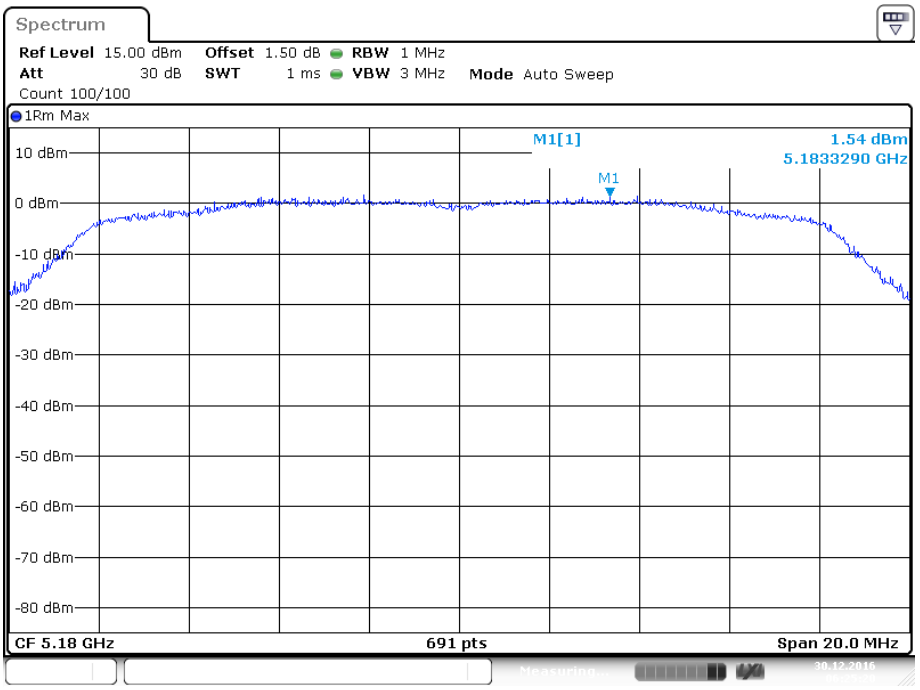
Date: 30.DEC.2016 04:34:26

5240MHz



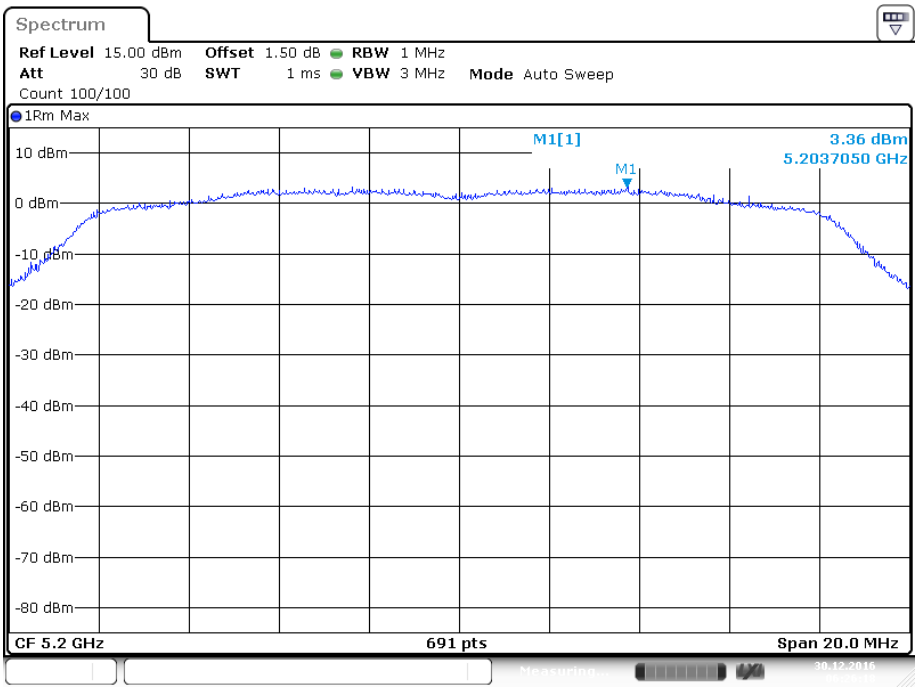
Date: 30.DEC.2016 04:35:23

IEEE 802.11n HT20 mode / 5150 ~ 5250MHz(chain0)
5180MHz



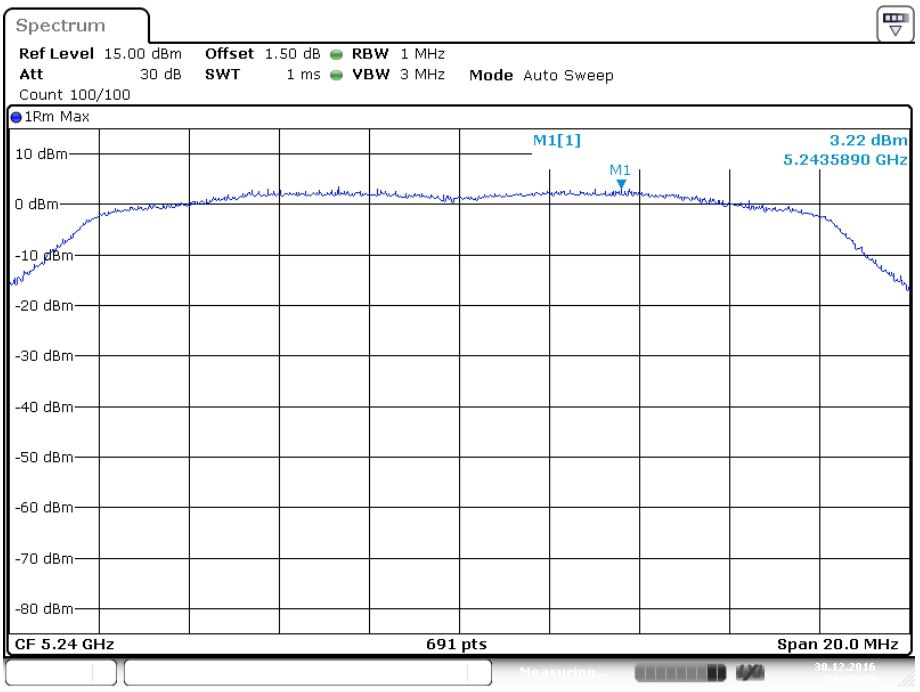
Date: 30.DEC.2016 06:25:20

5200MHz



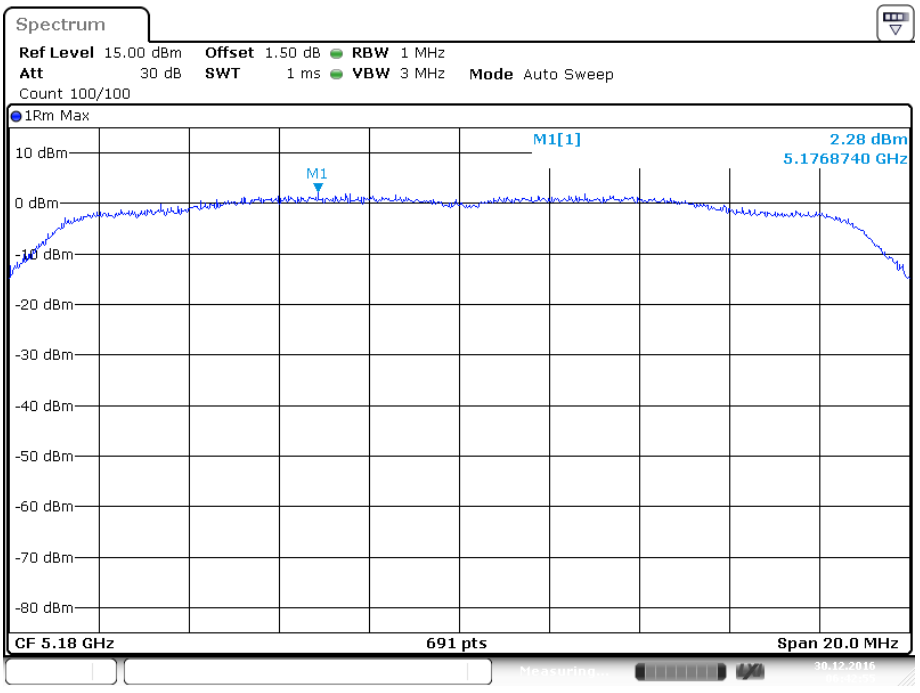
Date: 30.DEC.2016 06:26:18

5240MHz



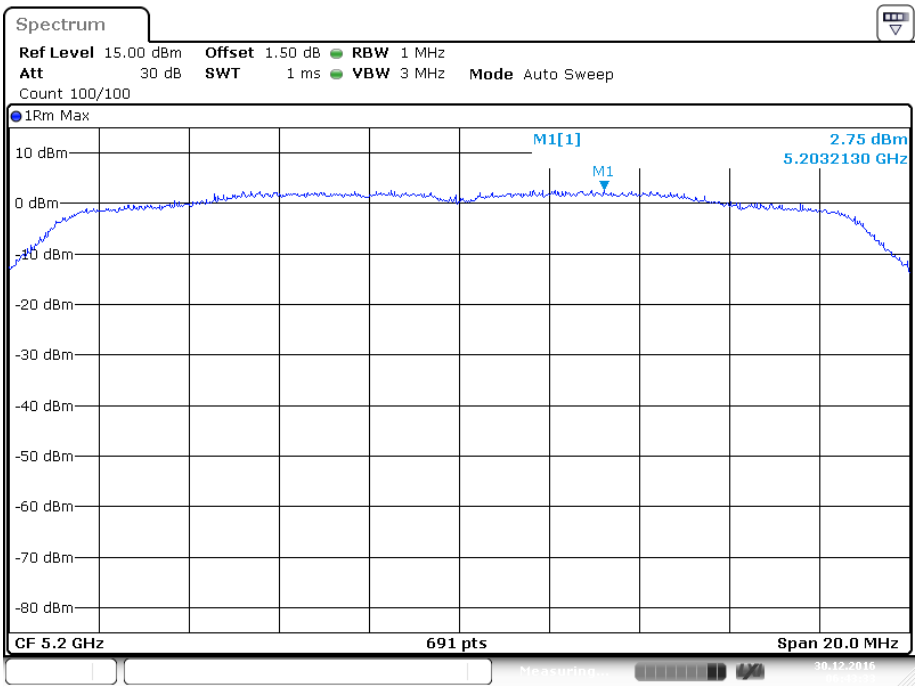
Date: 30.DEC.2016 06:30:09

IEEE 802.11n HT20 mode / 5150 ~ 5250MHz(chain 1)
5180MHz



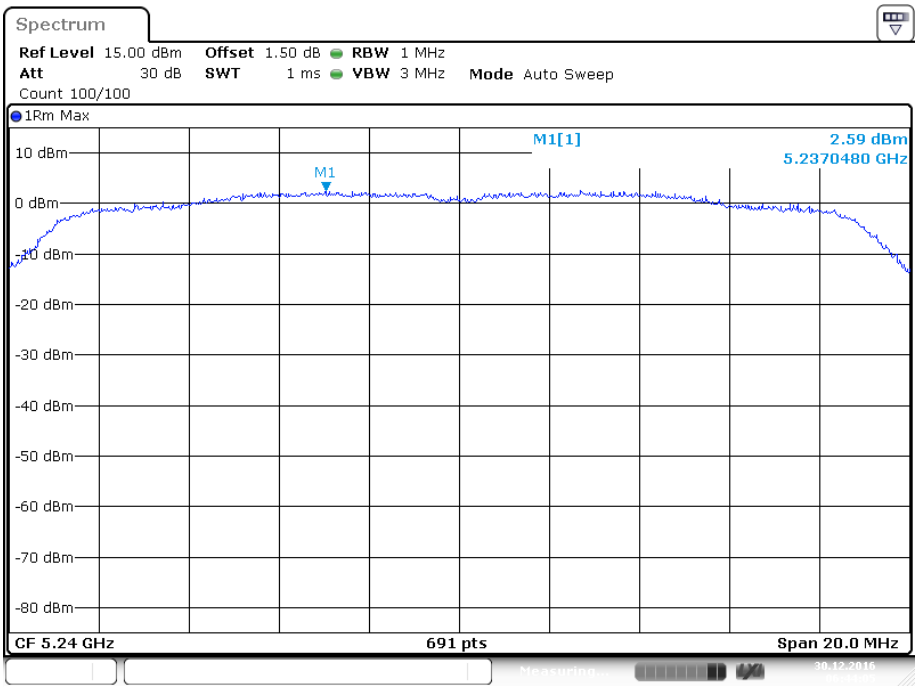
Date: 30.DEC.2016 06:42:55

5200MHz



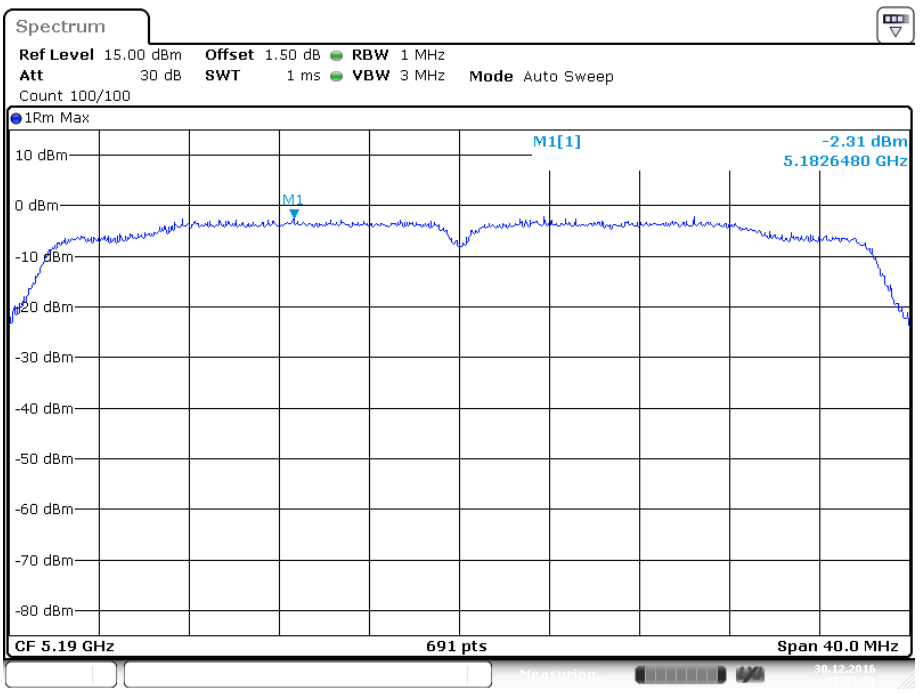
Date: 30.DEC.2016 06:43:34

5240MHz



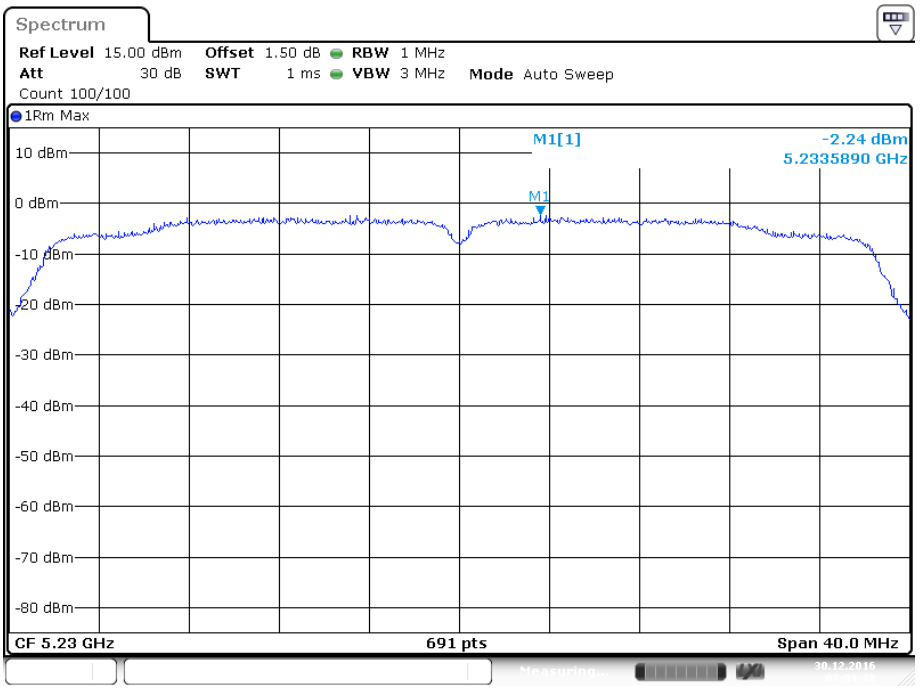
Date: 30.DEC.2016 06:44:05

IEEE 802.11n HT40 mode / 5150 ~ 5250MHz(chain0)
5190MHz



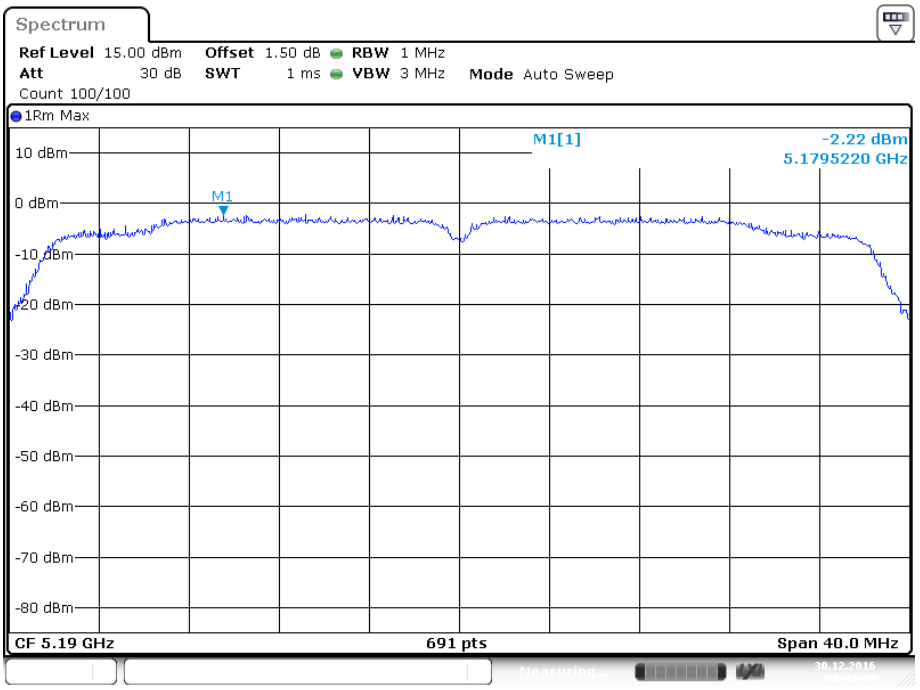
Date: 30.DEC.2016 07:01:01

5230MHz



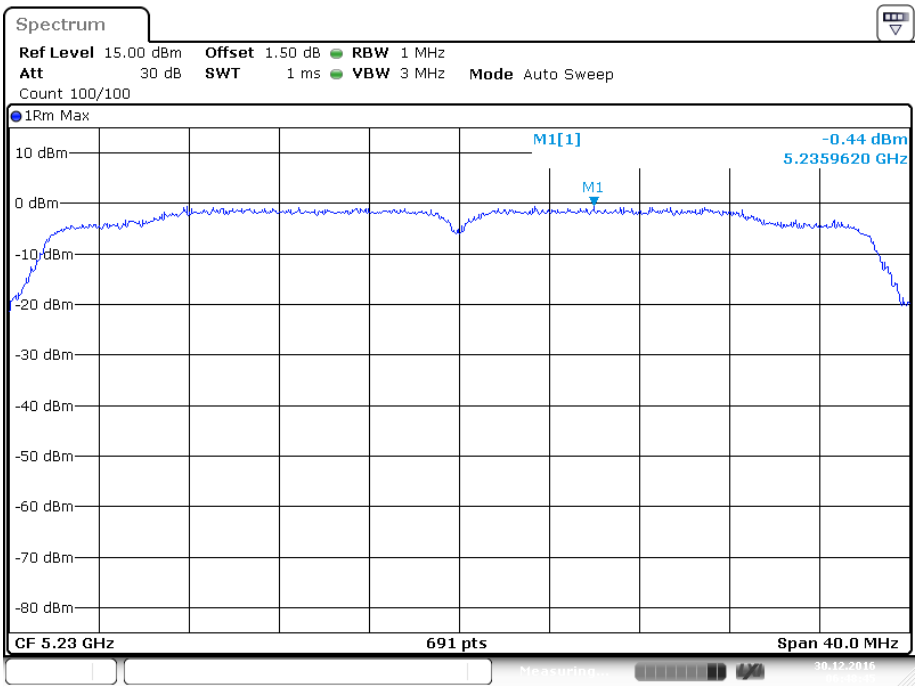
Date: 30.DEC.2016 07:01:39

IEEE 802.11n HT40 mode / 5150 ~ 5250MHz(chain 1)
5190MHz



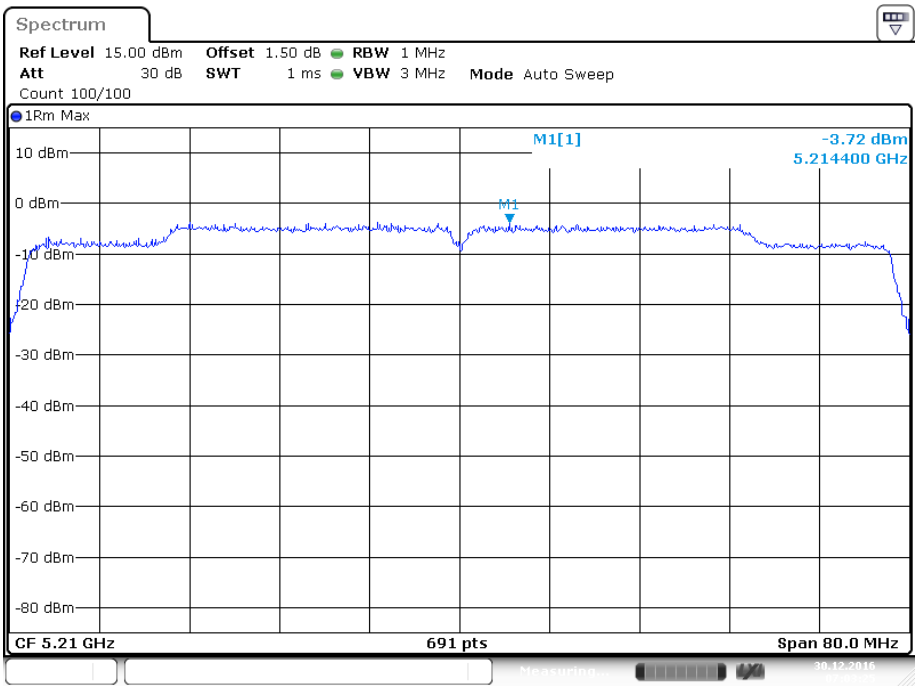
Date: 30.DEC.2016 06:47:49

5230MHz



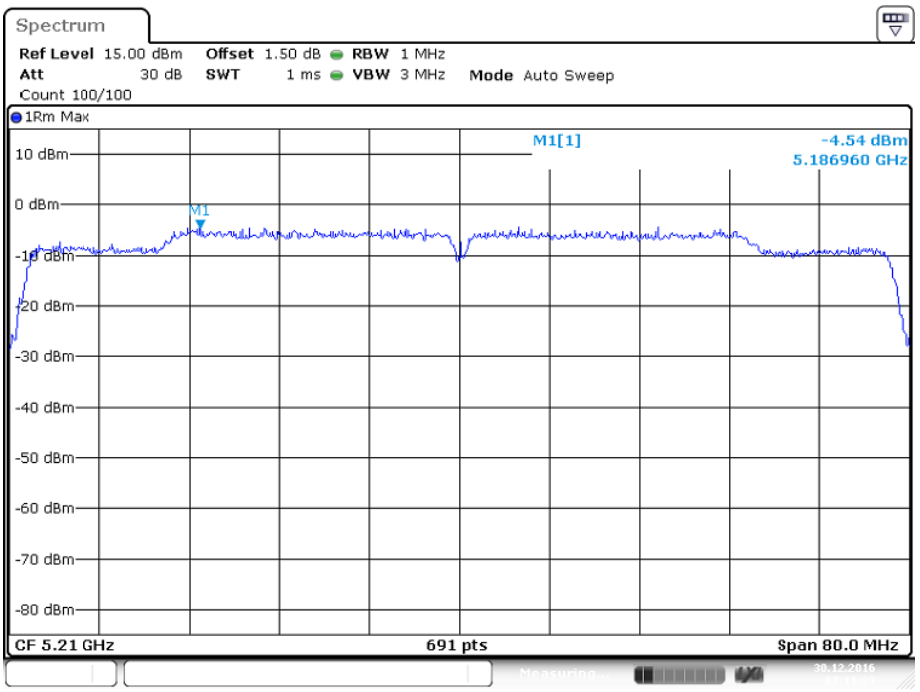
Date: 30.DEC.2016 06:48:46

IEEE 802.11ac VHT80 mode / 5150 ~ 5250MHz(chain0)
5210MHz



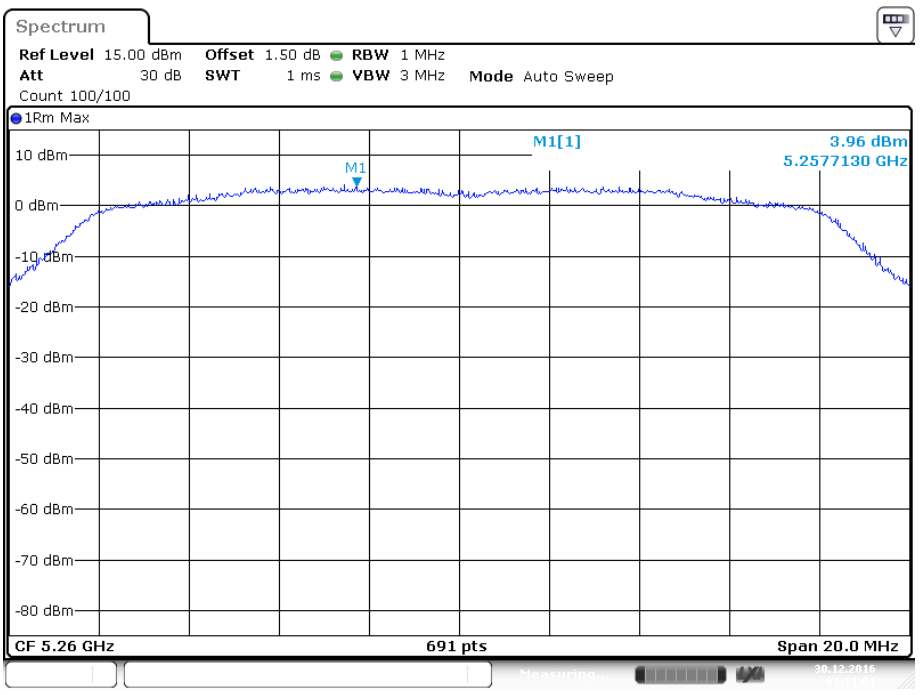
Date: 30.DEC.2016 07:03:25

IEEE 802.11ac VHT80 mode / 5150 ~ 5250MHz(chain 1)
5210MHz



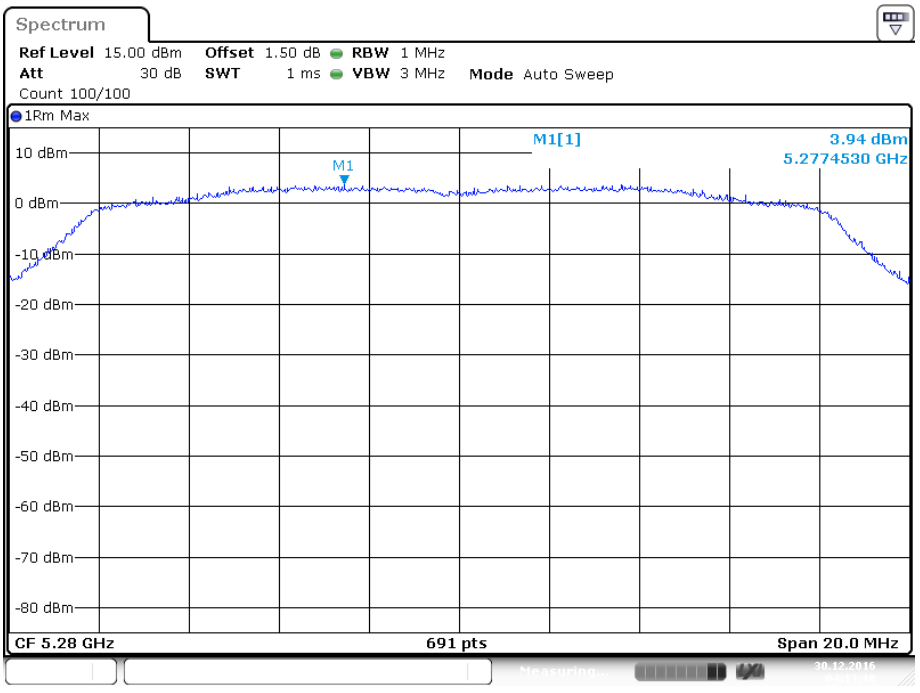
Date: 30.DEC.2016 07:11:24

IEEE 802.11a mode / 5250 ~ 5350MHz(chain 0)
5260MHz



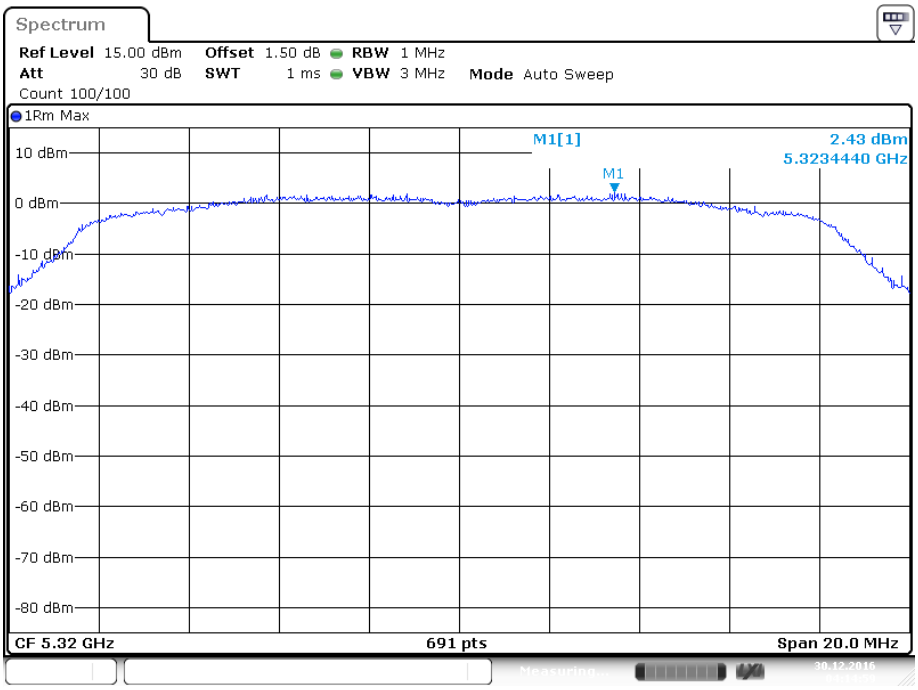
Date: 30.DEC.2016 04:11:01

5280MHz



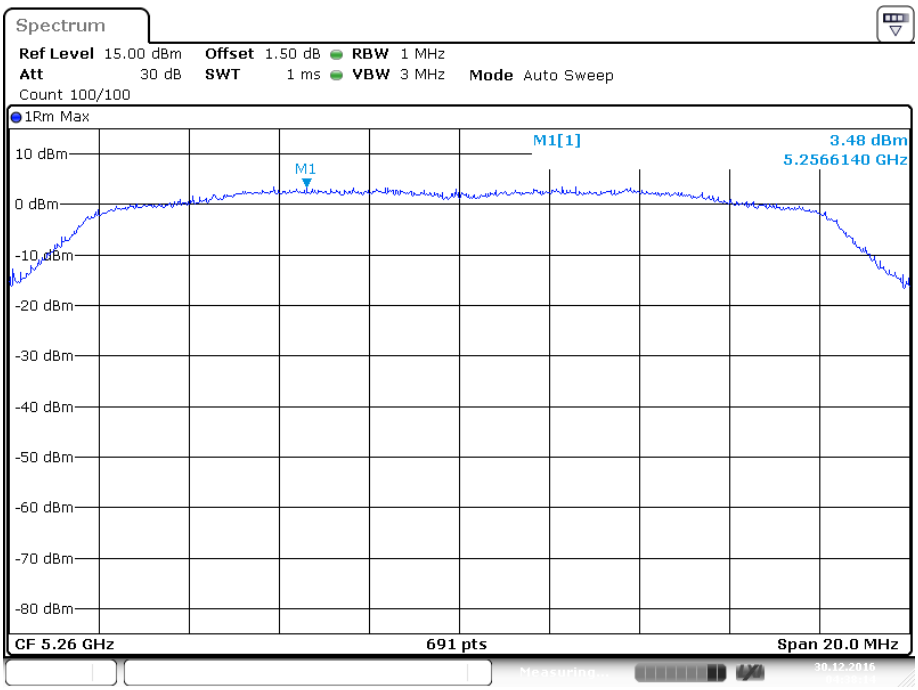
Date: 30.DEC.2016 04:13:18

5320MHz



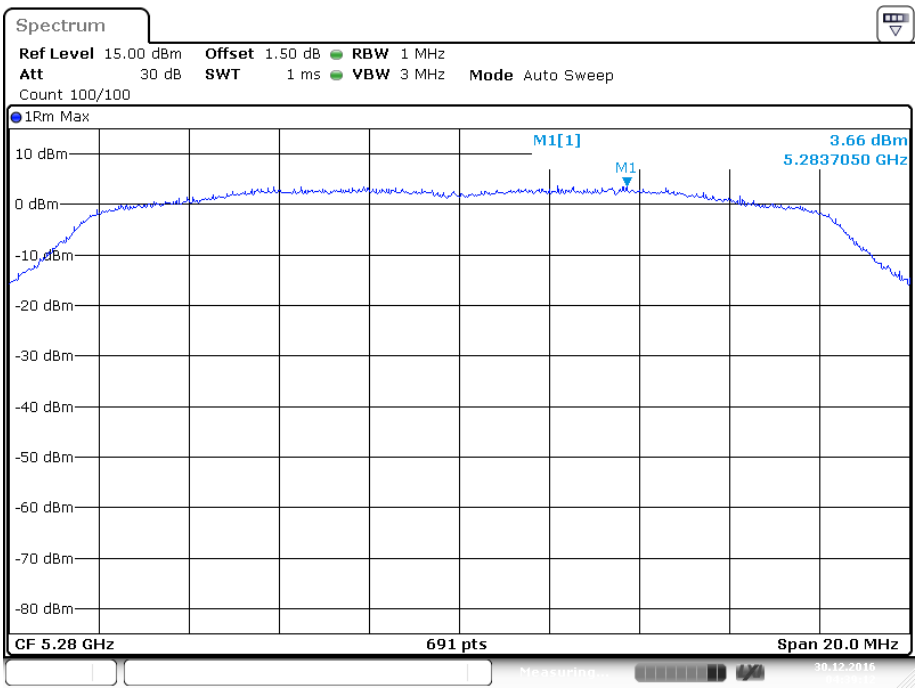
Date: 30.DEC.2016 04:14:59

IEEE 802.11a mode / 5250 ~ 5350MHz(chain 1)
5260MHz



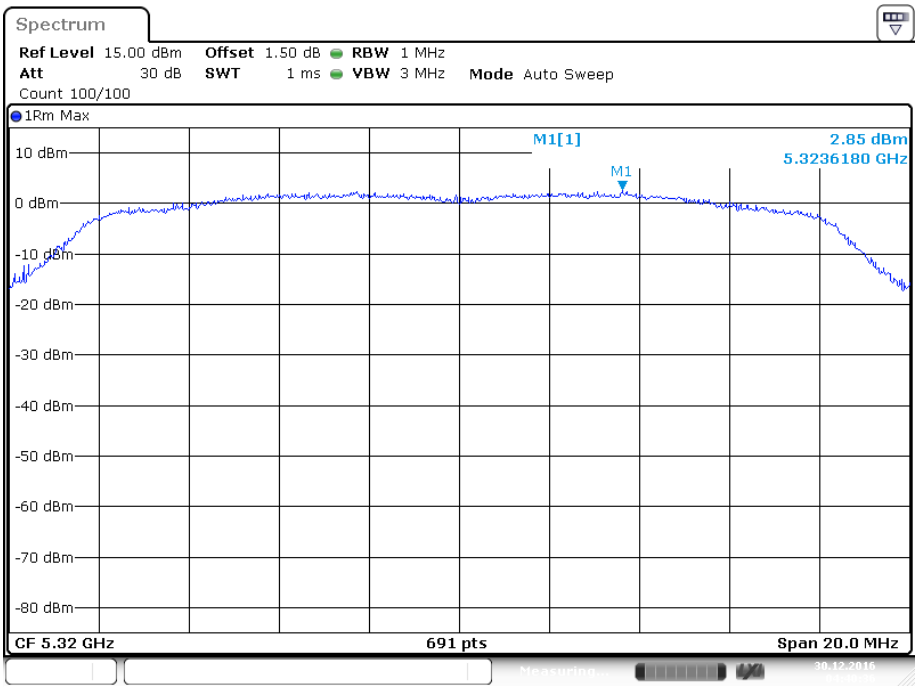
Date: 30.DEC.2016 04:38:15

5280MHz



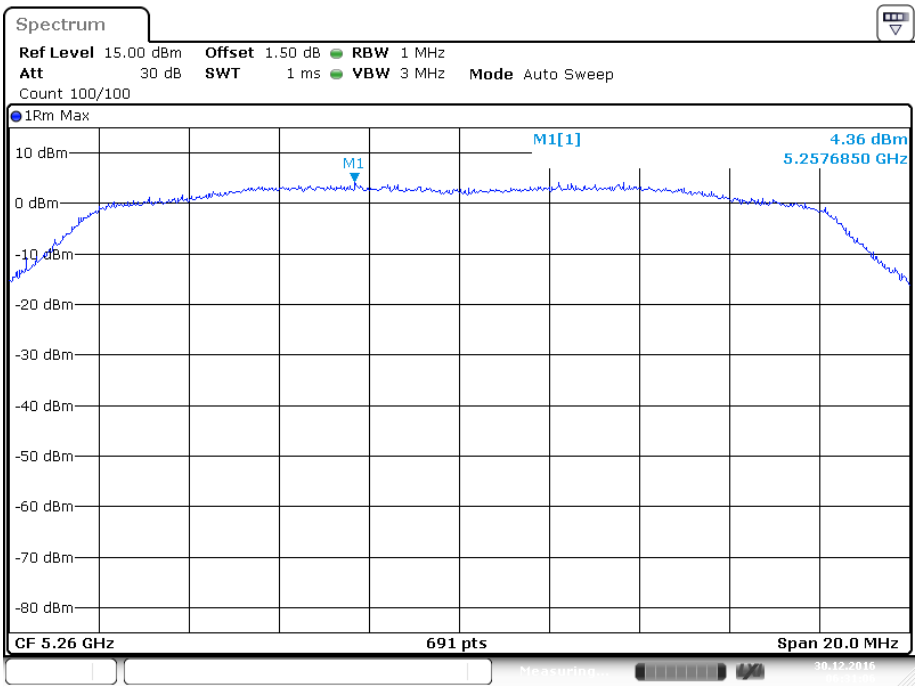
Date: 30.DEC.2016 04:39:13

5320MHz



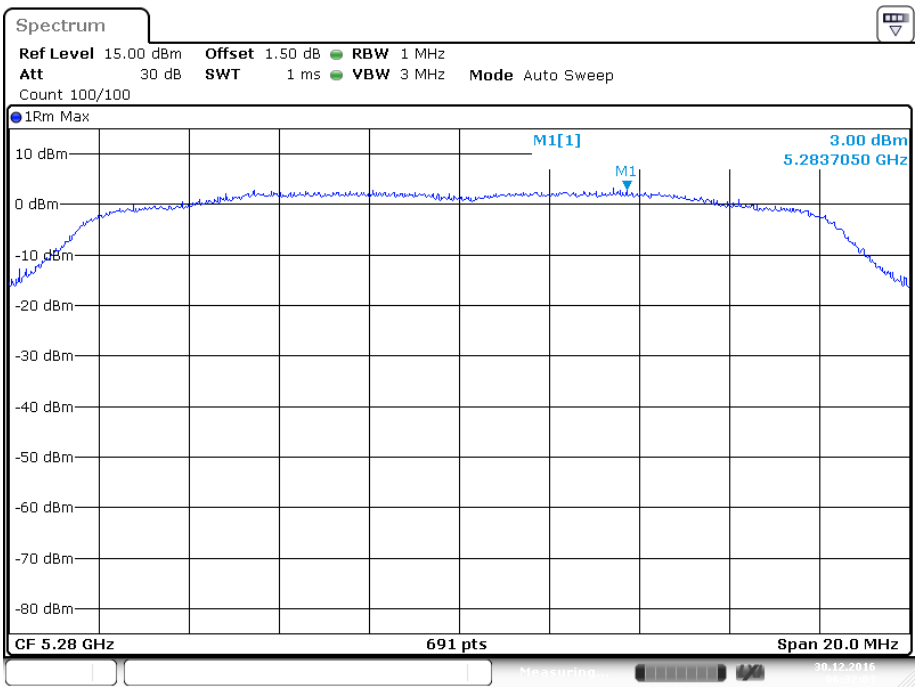
Date: 30.DEC.2016 04:40:36

IEEE 802.11n HT20 mode / 5250 ~ 5350MHz(chain 0)
5260MHz



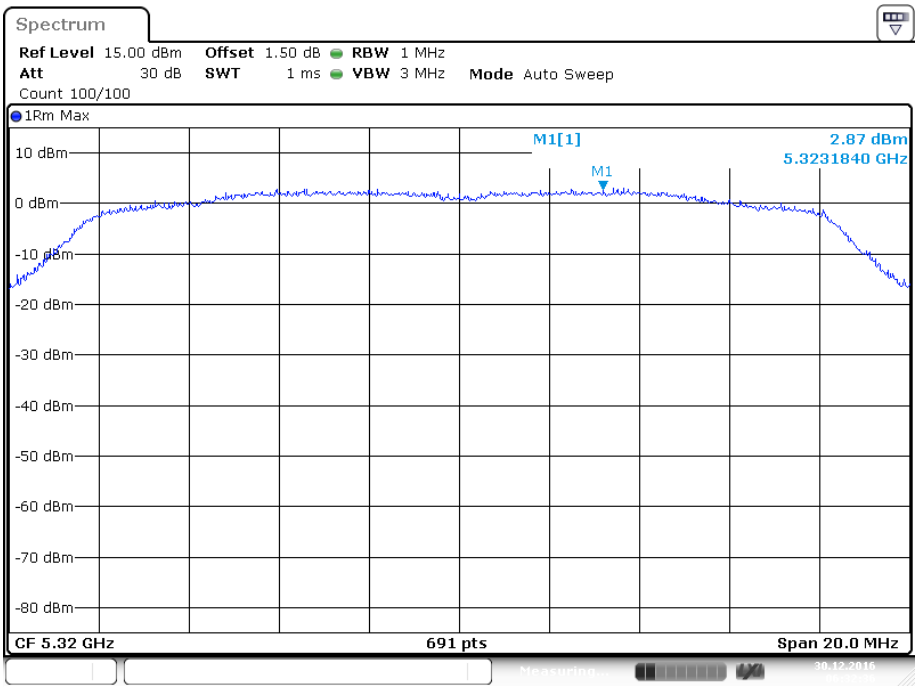
Date: 30.DEC.2016 06:31:06

5280MHz



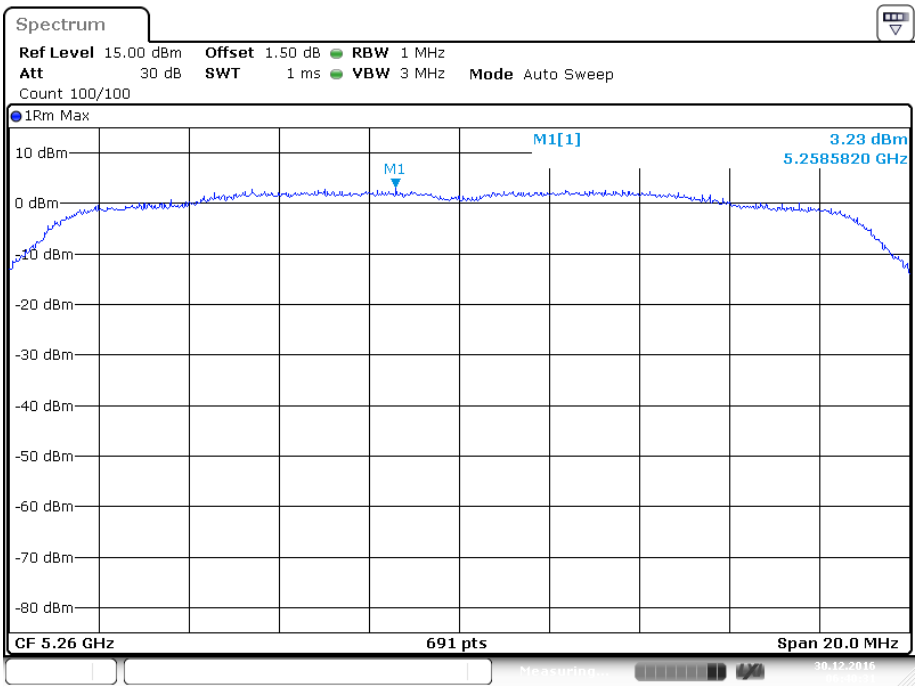
Date: 30.DEC.2016 06:32:03

5320MHz



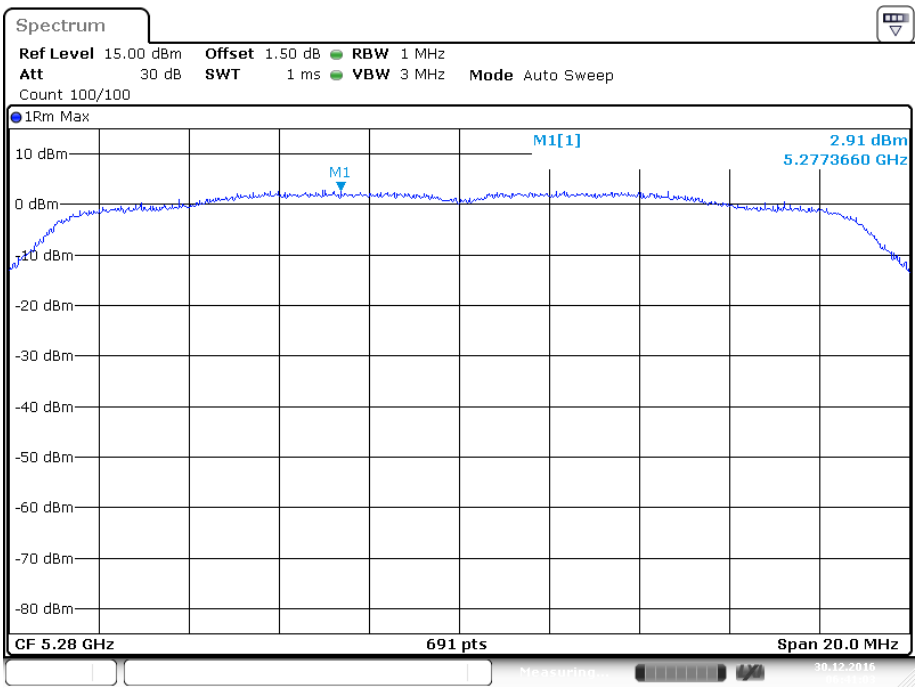
Date: 30.DEC.2016 06:32:36

IEEE 802.11nHT20 mode / 5250 ~ 5350MHz(chain 1)
5260MHz



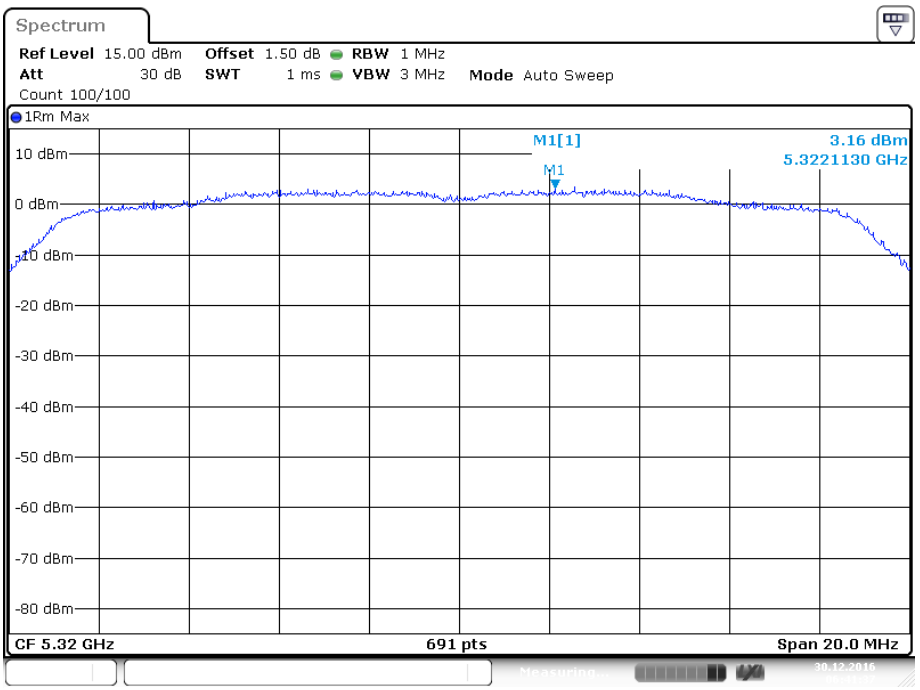
Date: 30.DEC.2016 06:40:31

5280MHz



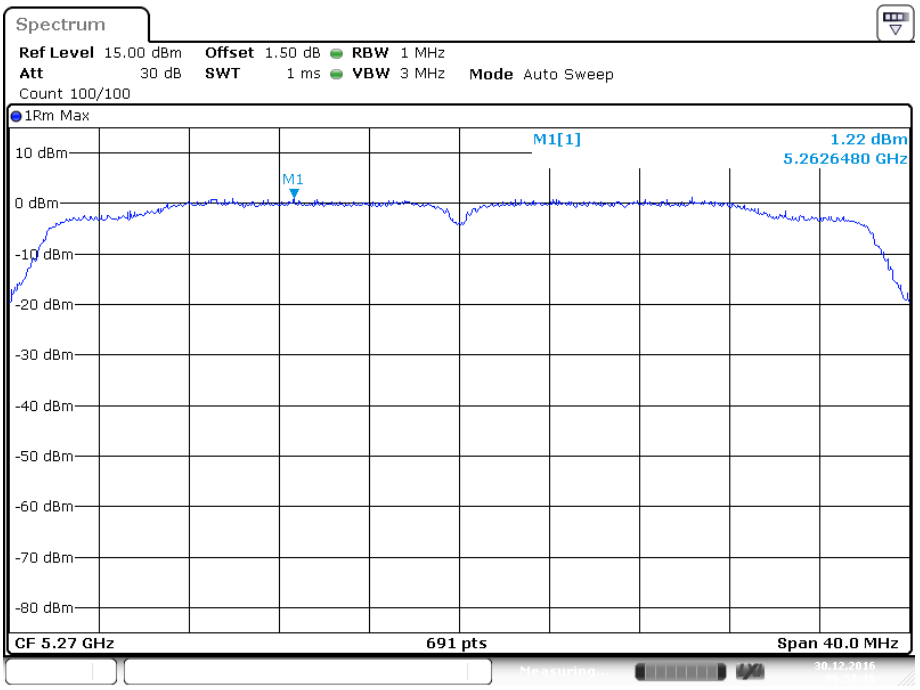
Date: 30.DEC.2016 06:41:03

5320MHz



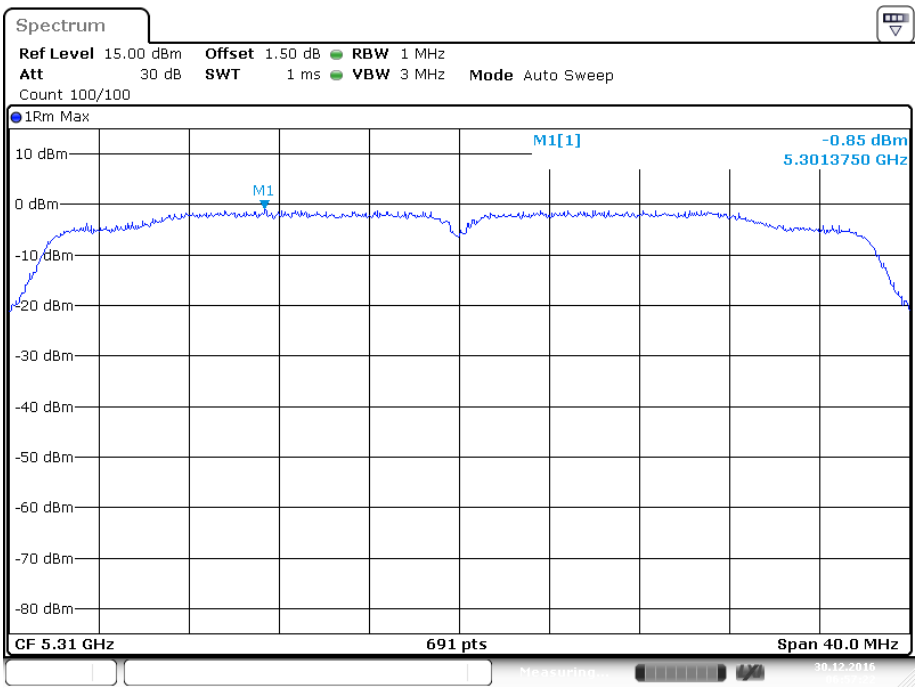
Date: 30.DEC.2016 06:41:37

IEEE 802.11n HT40 mode / 5250 ~ 5350MHz(chain0)
5270MHz



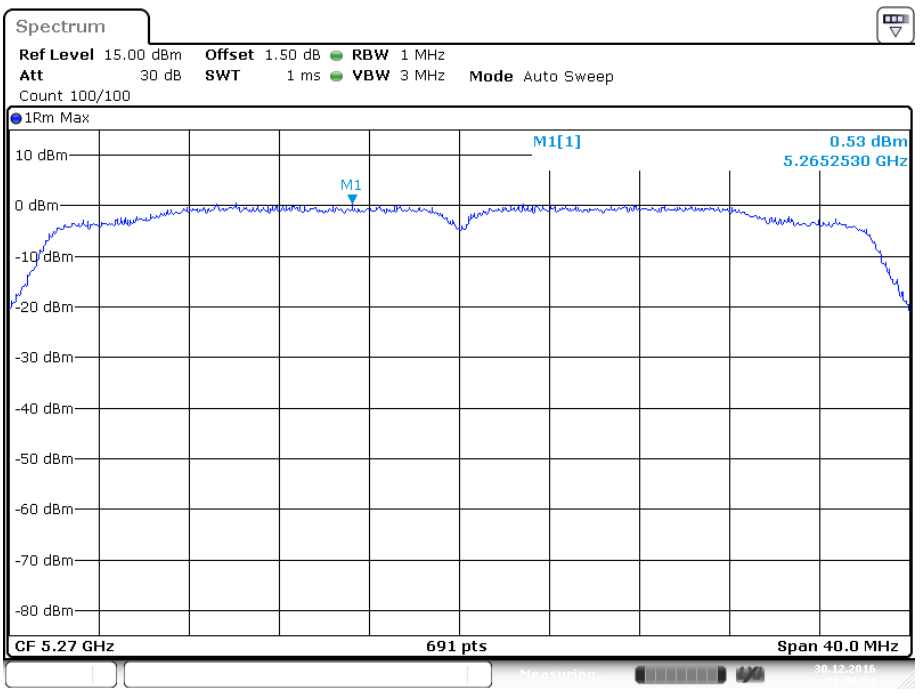
Date: 30.DEC.2016 06:58:16

5310MHz



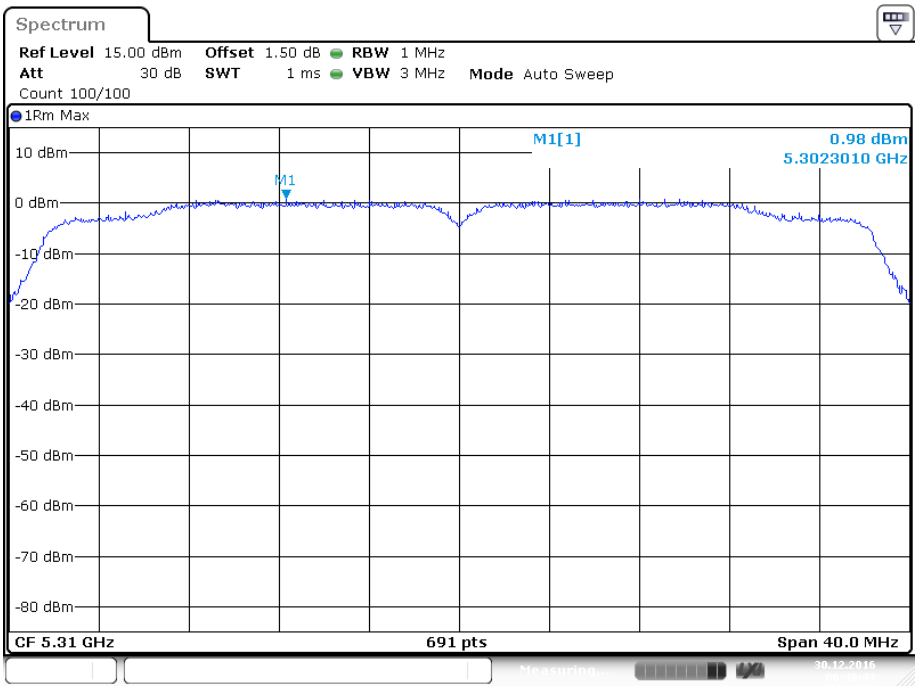
Date: 30.DEC.2016 06:57:22

IEEE 802.11n HT40 mode / 5250 ~ 5350MHz(chain 1)
5270MHz



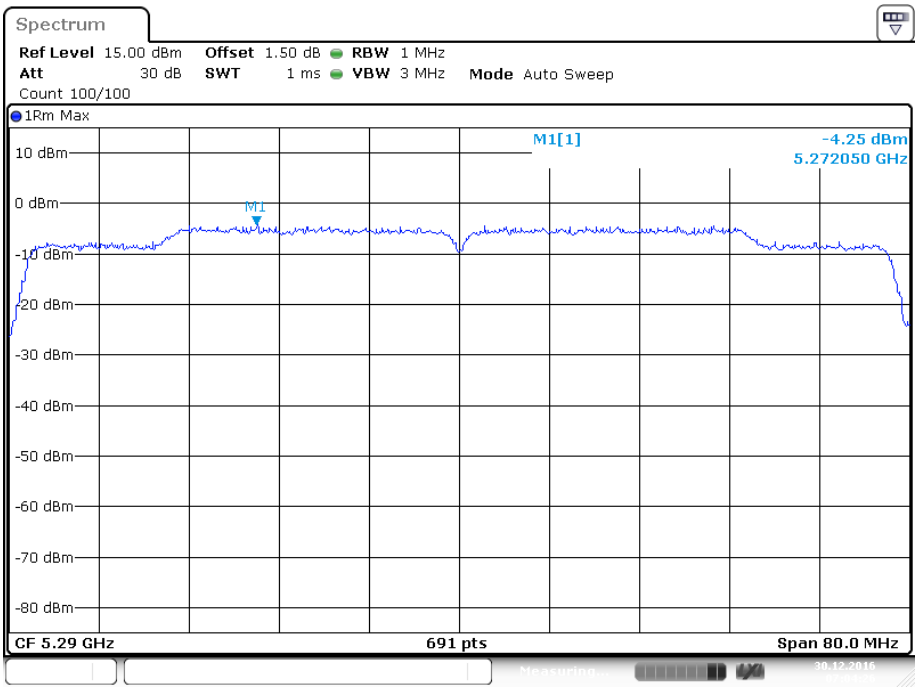
Date: 30.DEC.2016 06:50:35

5310MHz



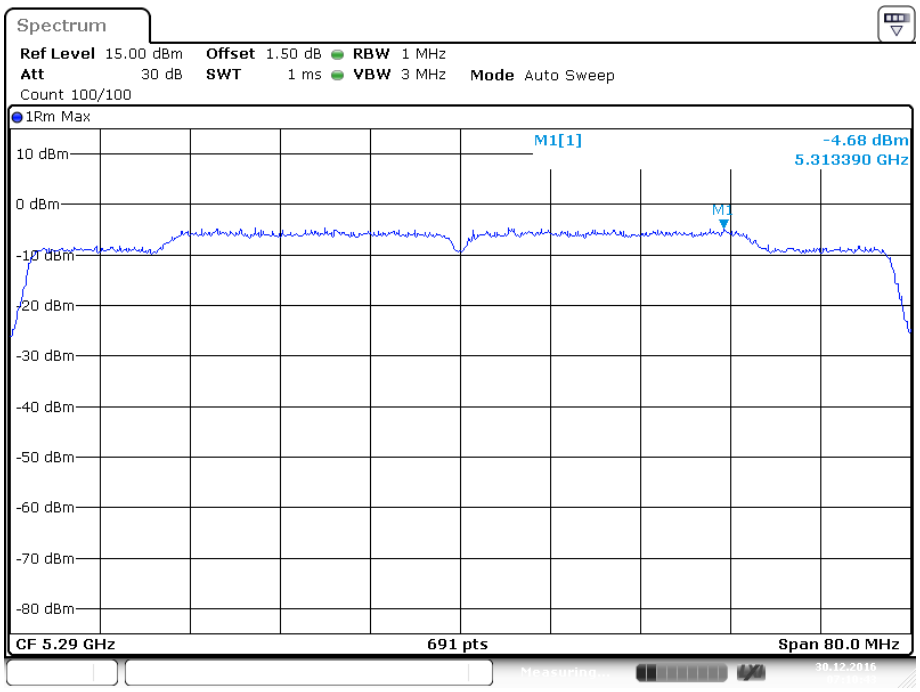
Date: 30.DEC.2016 06:49:43

IEEE 802.11ac VHT80 mode / 5250 ~ 5350MHz(chain0)
5290MHz



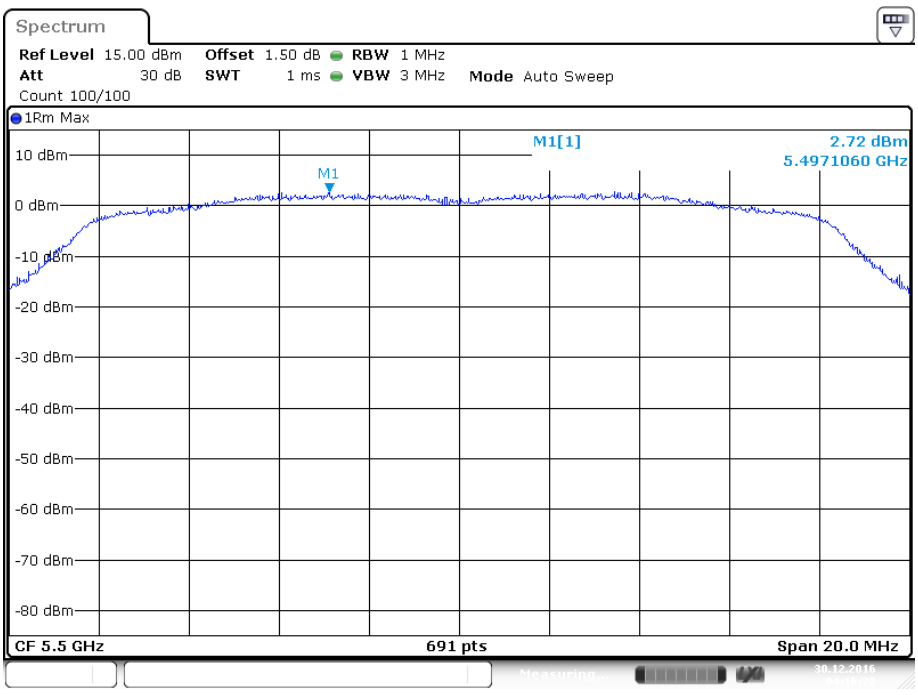
Date: 30.DEC.2016 07:04:27

IEEE 802.11ac VHT80 mode / 5250 ~ 5350MHz(chain 1)
5290MHz



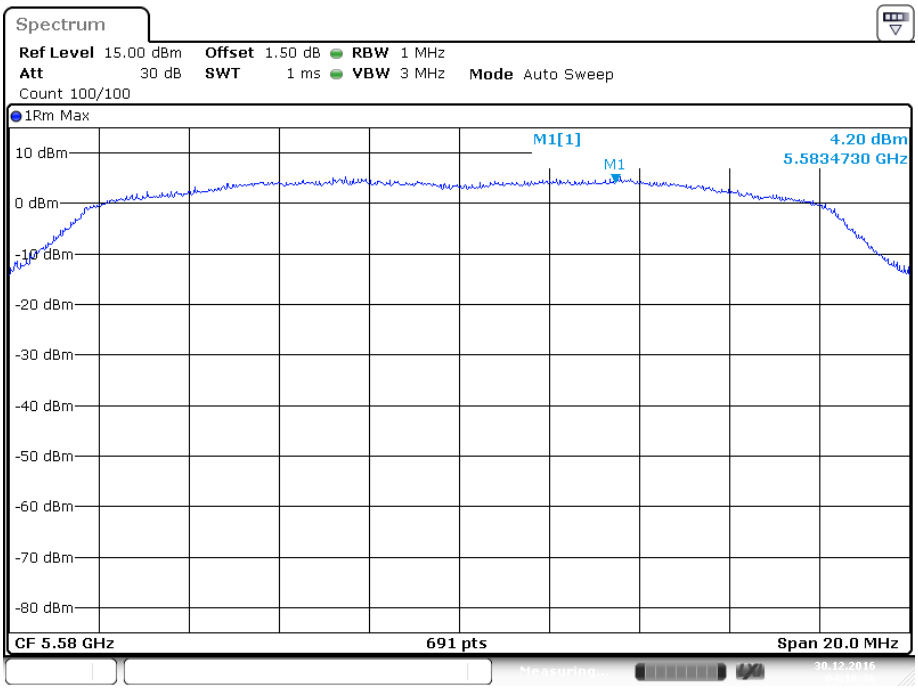
Date: 30.DEC.2016 07:10:44

IEEE 802.11a mode / 5470 ~ 5725MHz(chain0)
5500MHz



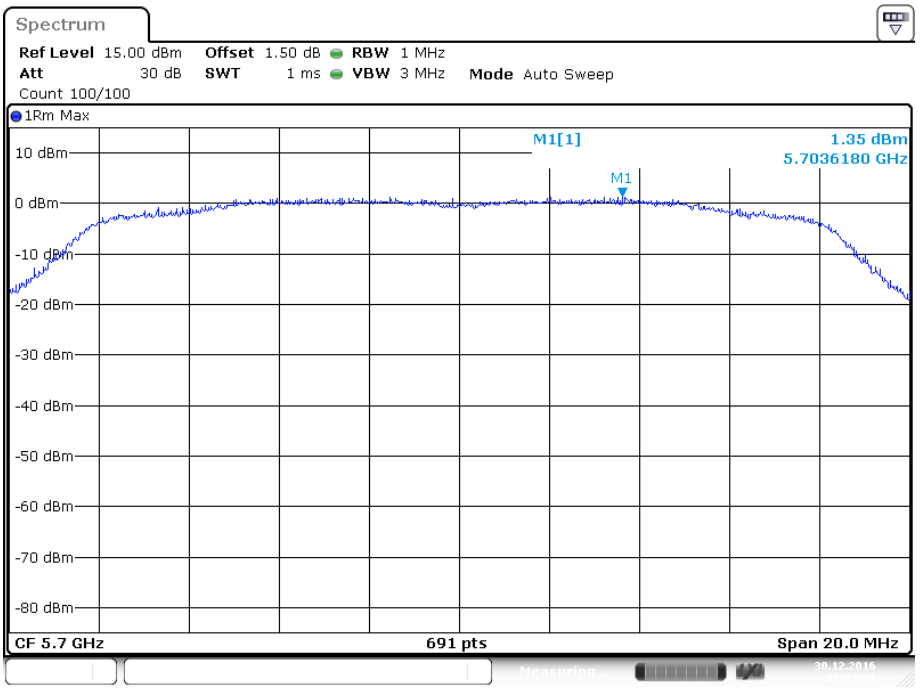
Date: 30.DEC.2016 04:16:23

5580MHz



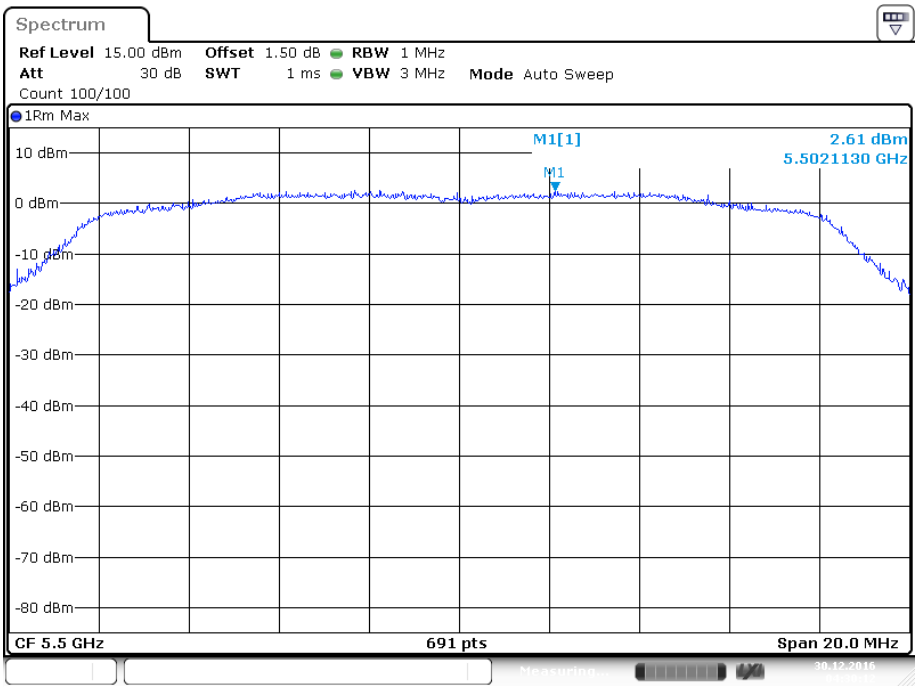
Date: 30.DEC.2016 04:18:37

5700MHz



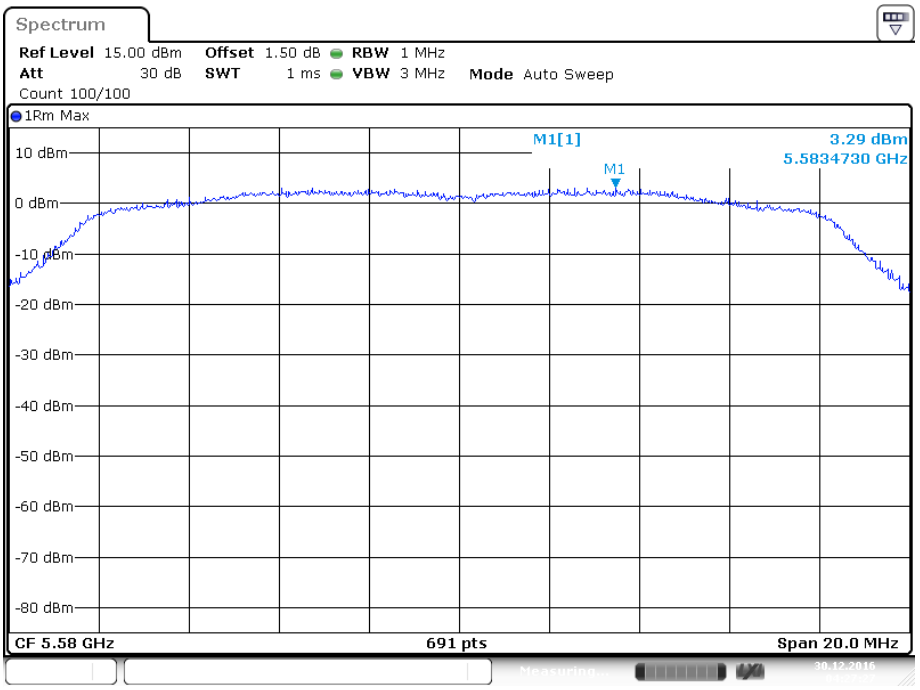
Date: 30.DEC.2016 04:24:52

IEEE 802.11a mode / 5470 ~ 5725MHz(chain 1)
5500MHz



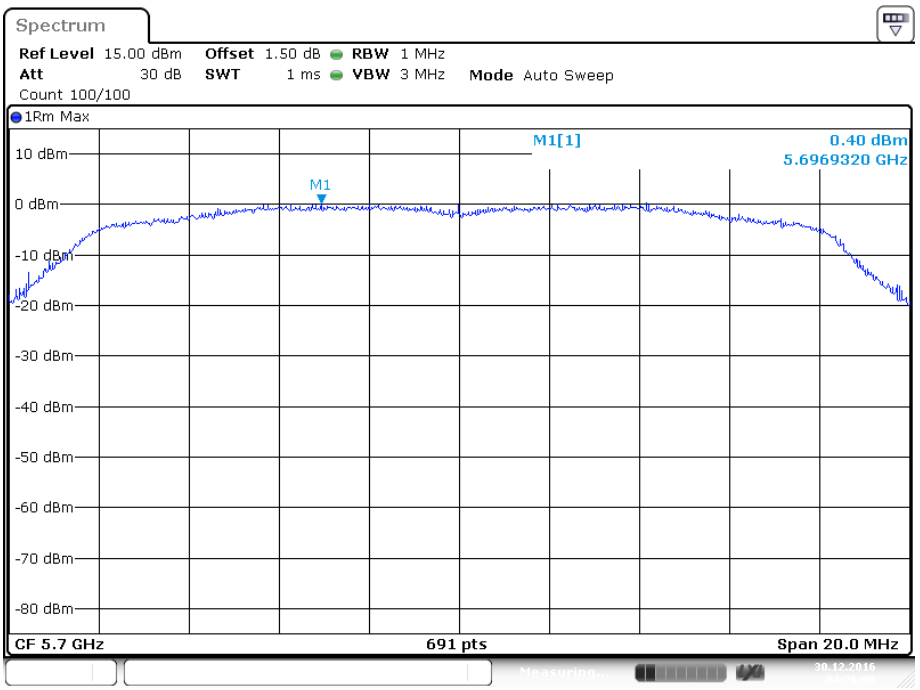
Date: 30.DEC.2016 04:30:12

5580MHz



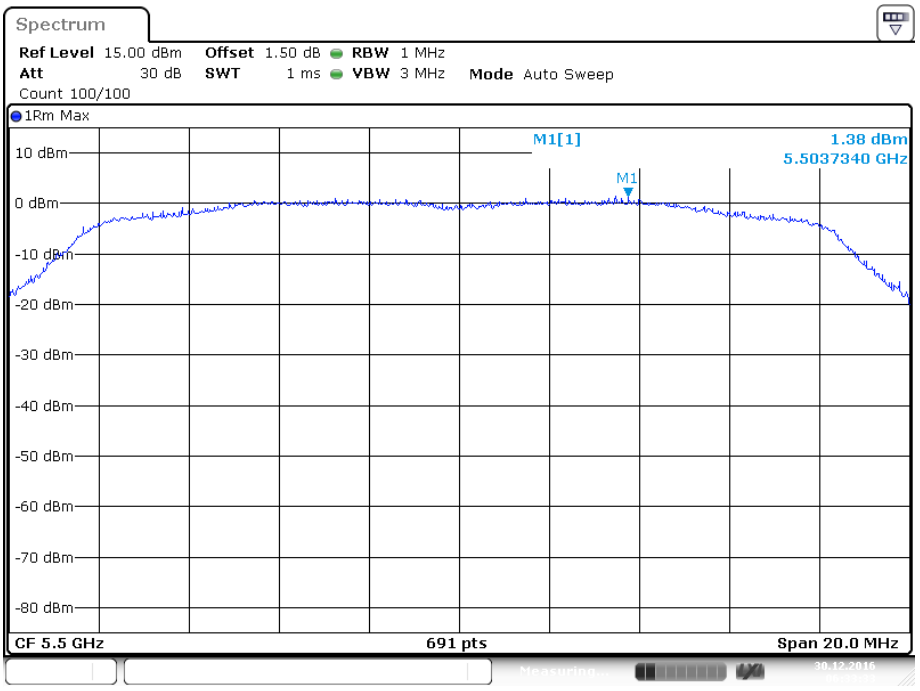
Date: 30.DEC.2016 04:27:28

5700MHz



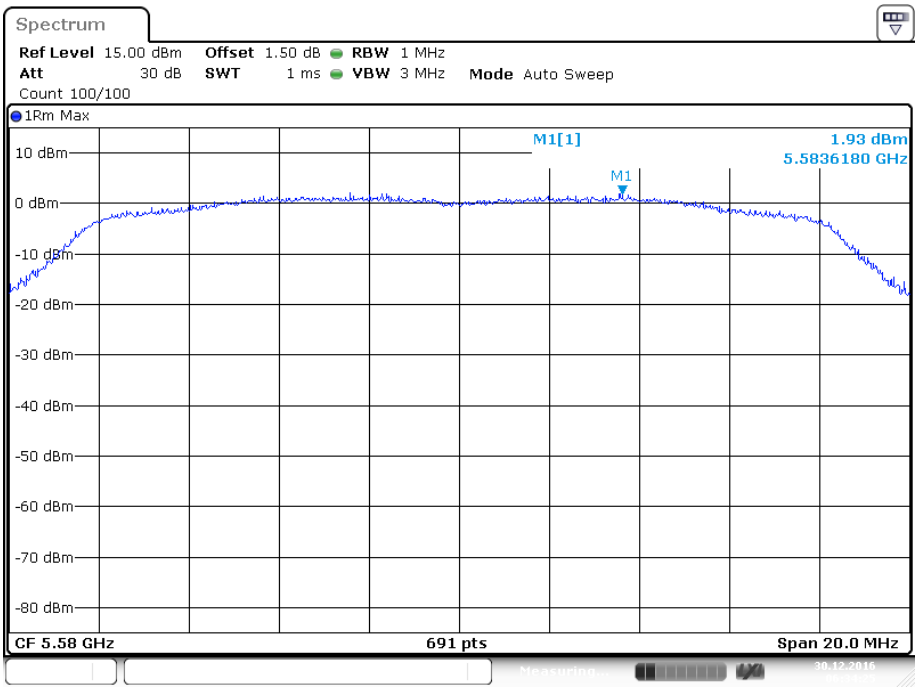
Date: 30.DEC.2016 04:26:08

IEEE 802.11n HT20 mode / 5470 ~ 5725MHz(chain0)
5500MHz



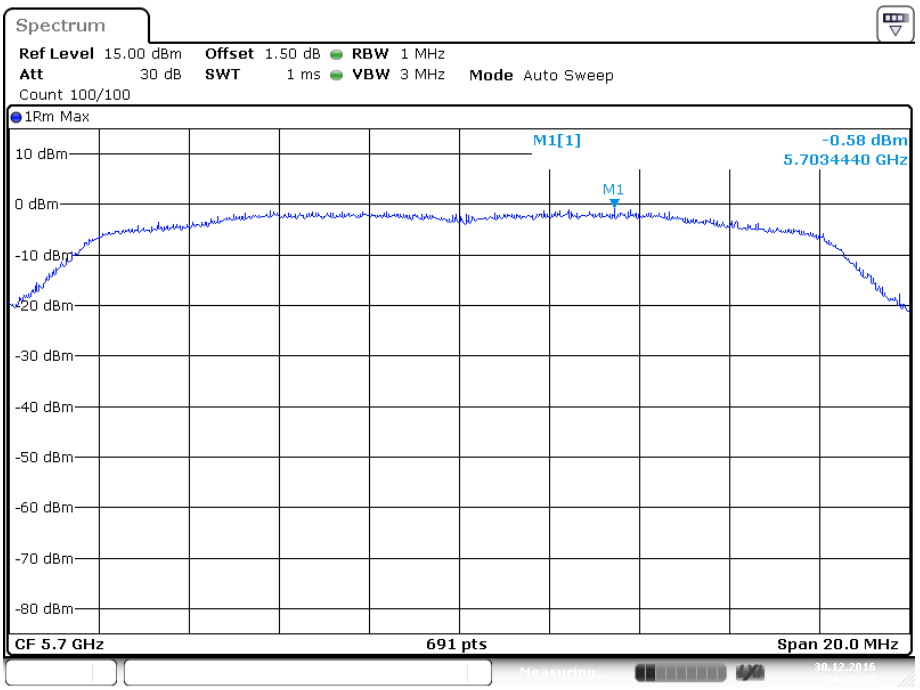
Date: 30.DEC.2016 06:33:34

5580MHz



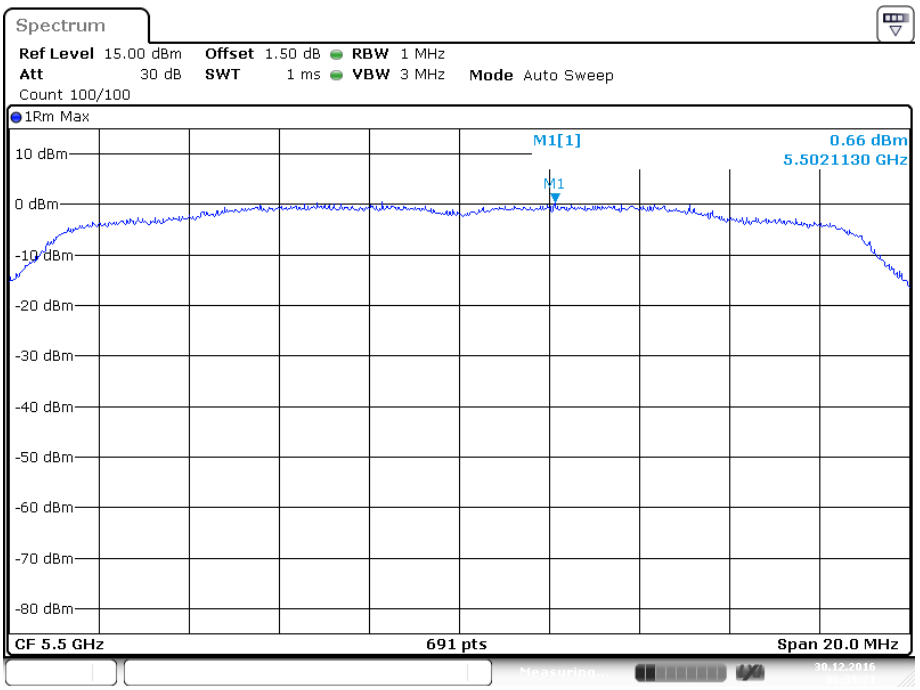
Date: 30.DEC.2016 06:34:25

5700MHz



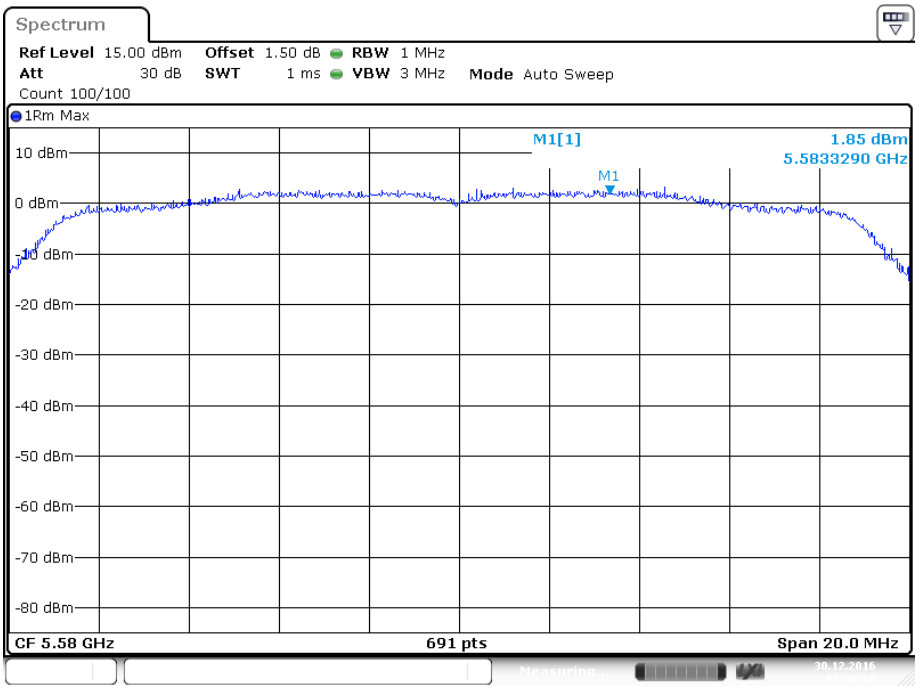
Date: 30.DEC.2016 06:35:33

IEEE 802.11n HT20 mode / 5470 ~ 5725MHz(chain 1)
5500MHz



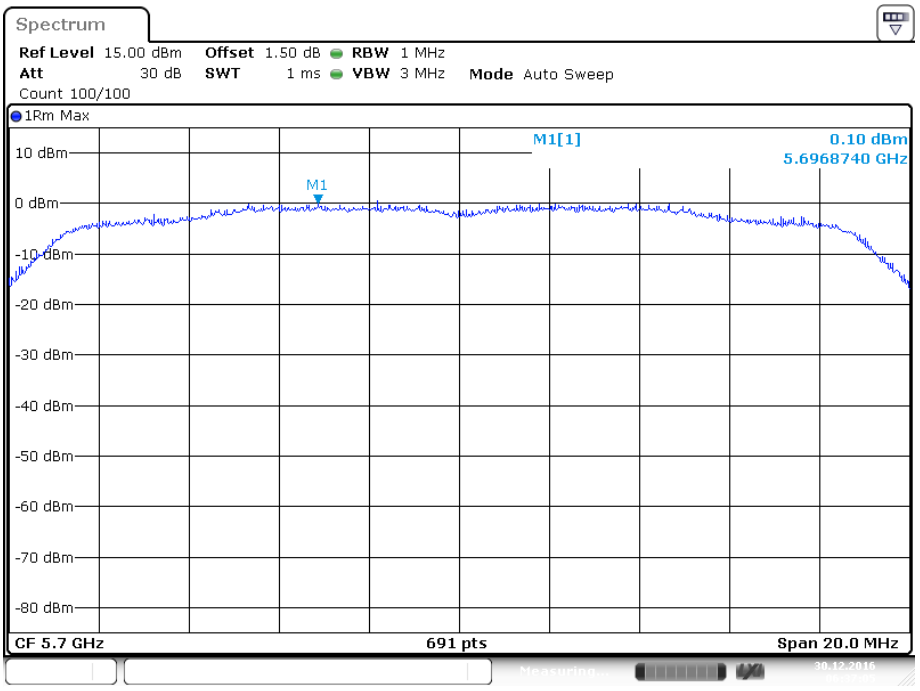
Date: 30.DEC.2016 06:39:21

5580MHz



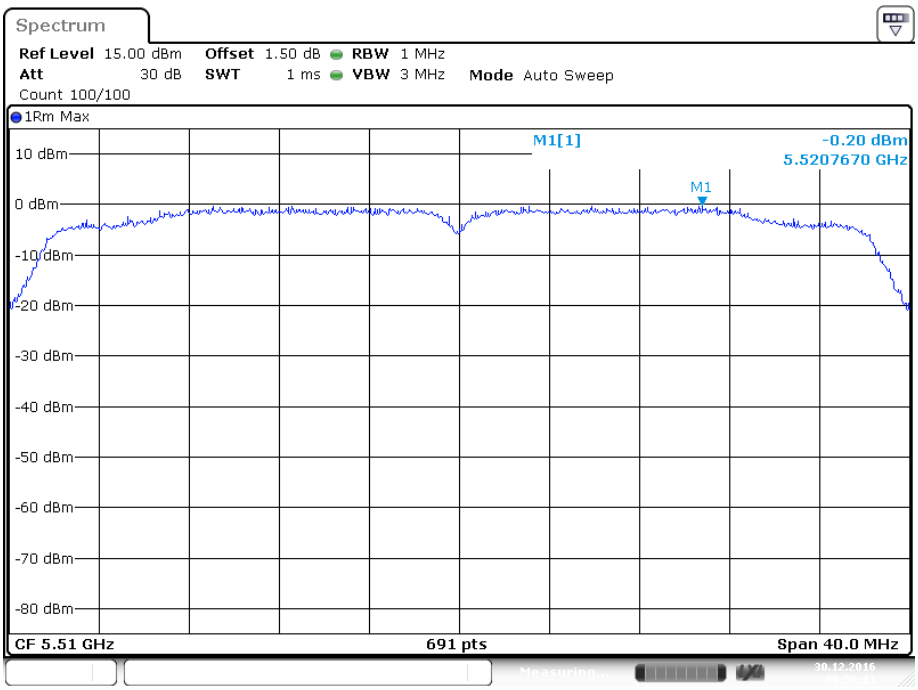
Date: 30.DEC.2016 06:38:10

5700MHz



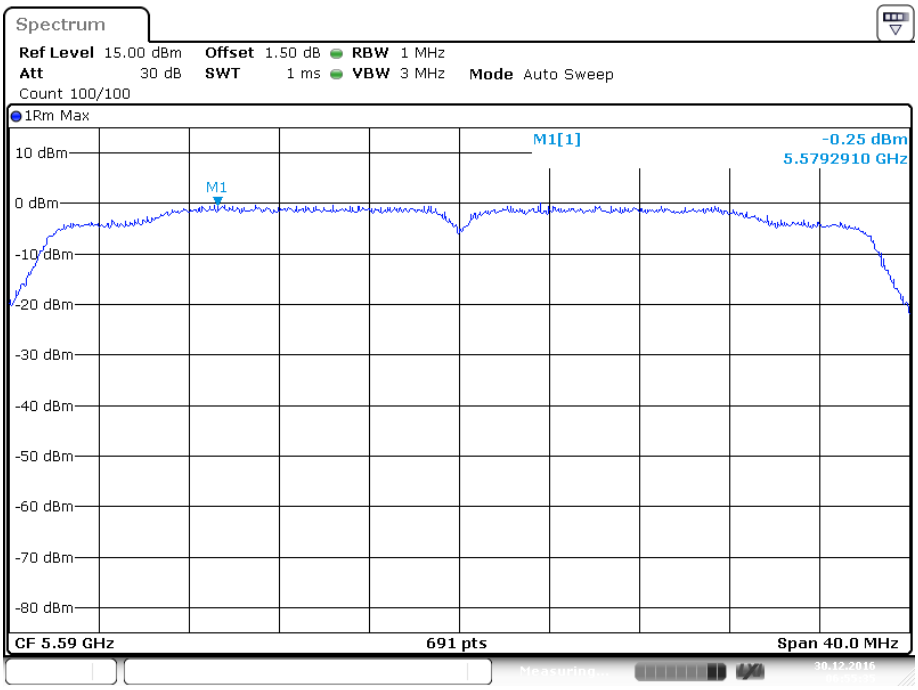
Date: 30.DEC.2016 06:37:05

IEEE 802.11n HT40 mode / 5470 ~ 5725MHz(chain0)
5510MHz



Date: 30.DEC.2016 06:56:11

5590MHz



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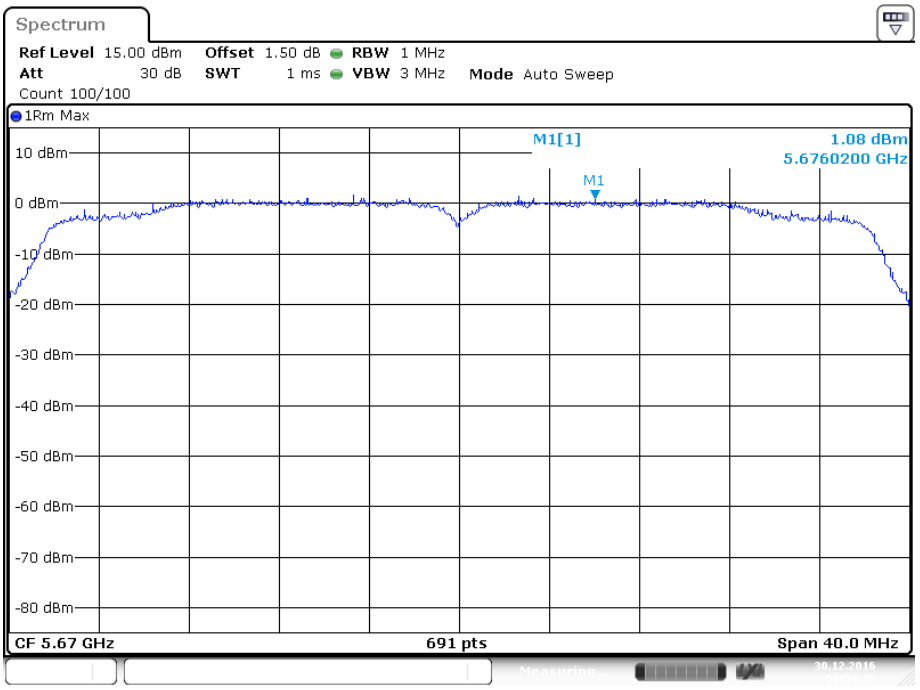
5670MHz



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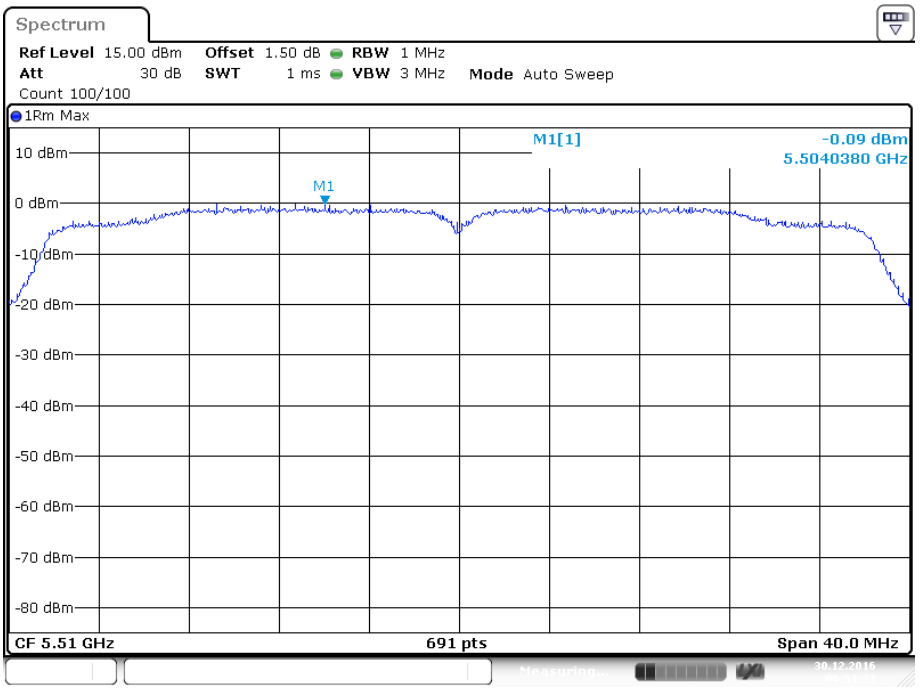
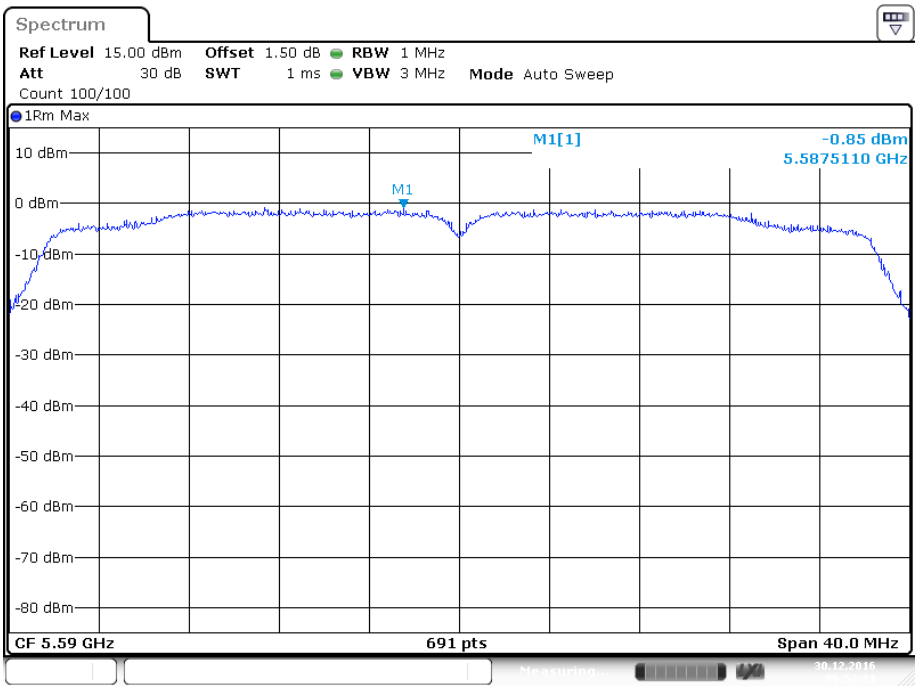
IEEE 802.11n HT40 mode / 5470 ~ 5725MHz(chain 1)
5510MHz



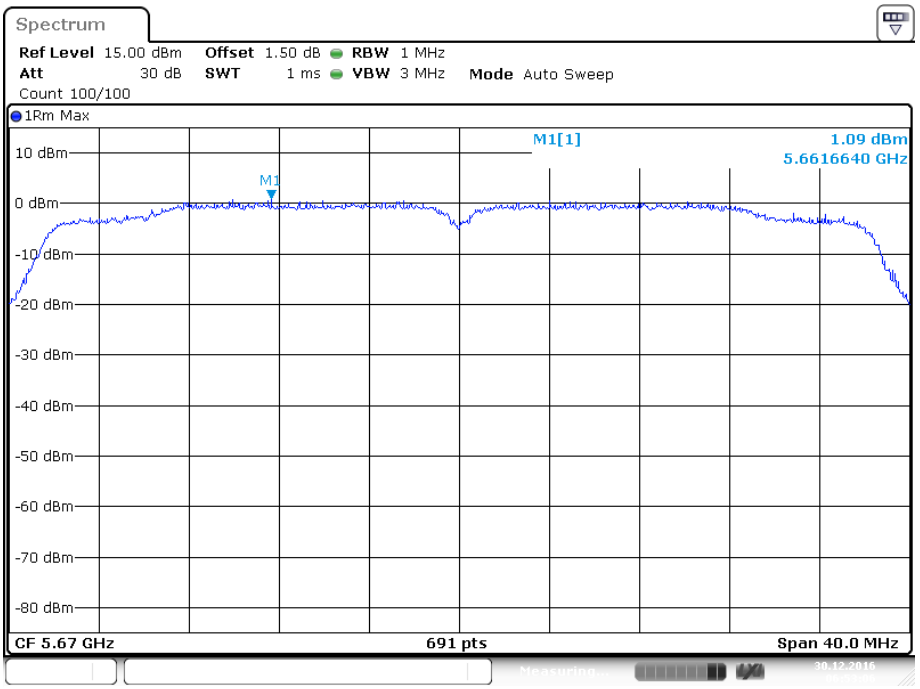
Date: 30.DEC.2016 06:51:34

5590MHz



Date: 30.DEC.2016 06:52:11

5670MHz



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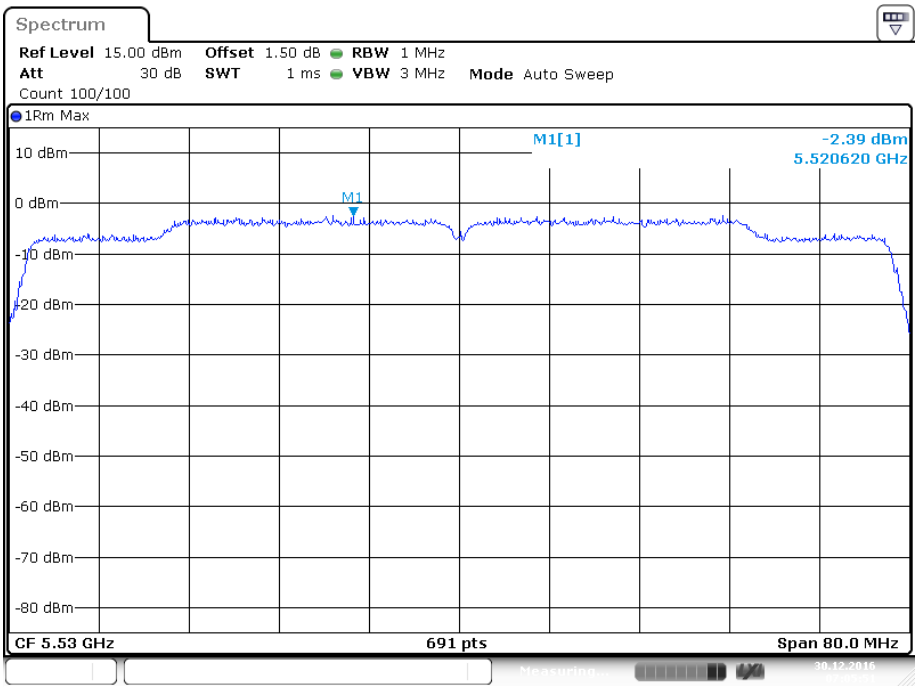
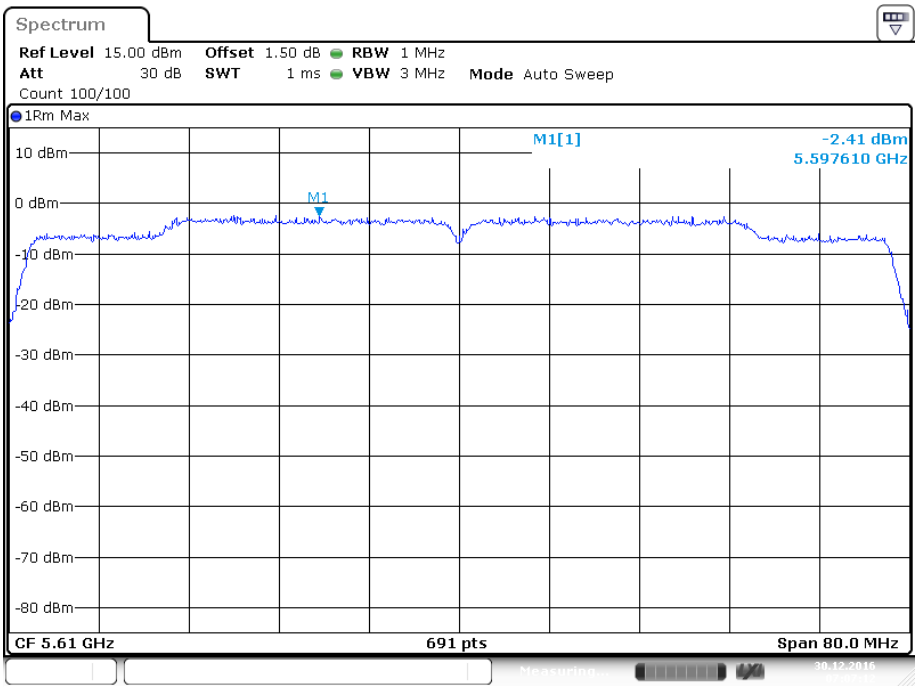
IEEE 802.11ac VHT80 mode / 5470 ~ 5725MHz(chain0)
5530MHz



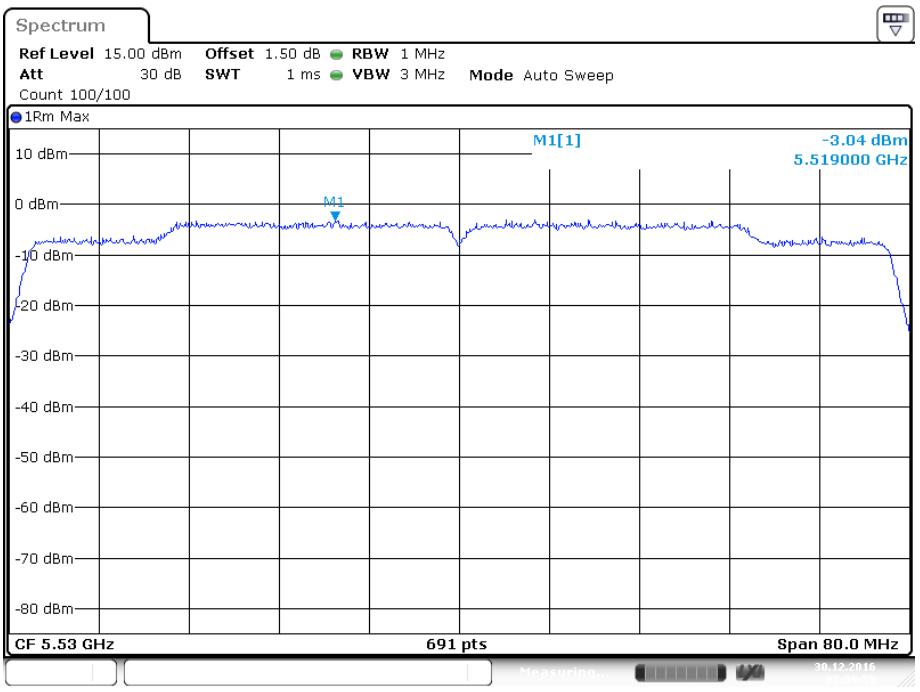
Date: 30.DEC.2016 07:05:51

5610MHz



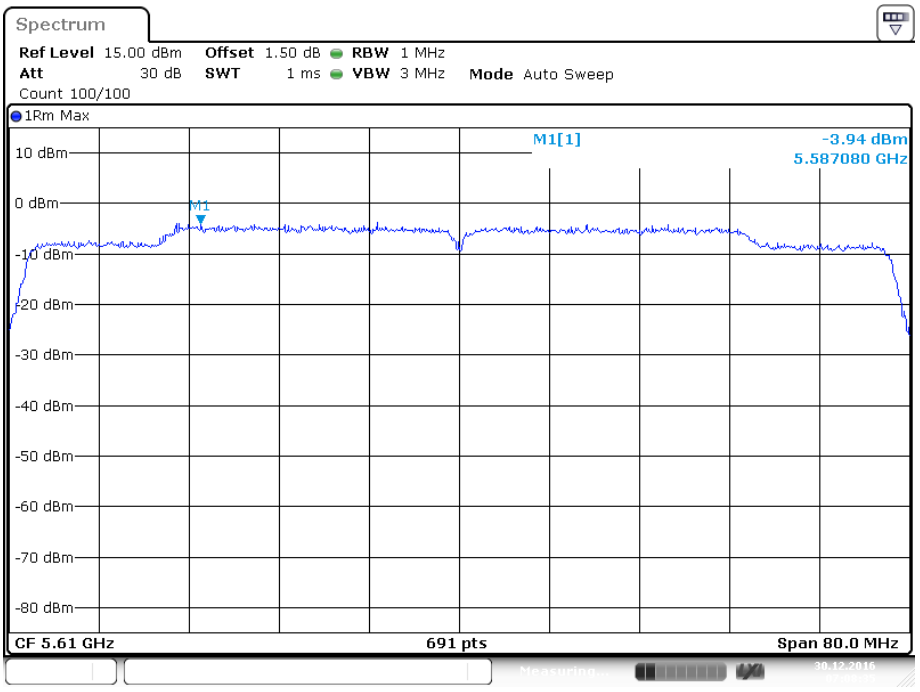
Date: 30.DEC.2016 07:07:12

IEEE 802.11ac VHT80 mode / 5470 ~ 5725MHz(chain 1)
5530MHz



Date: 30.DEC.2016 07:09:59

5610MHz



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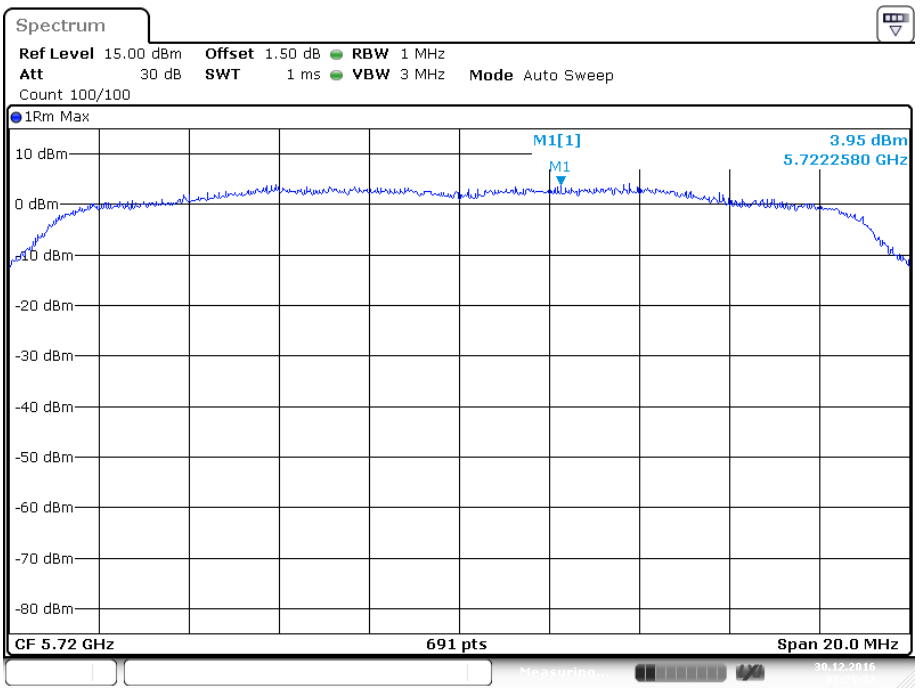
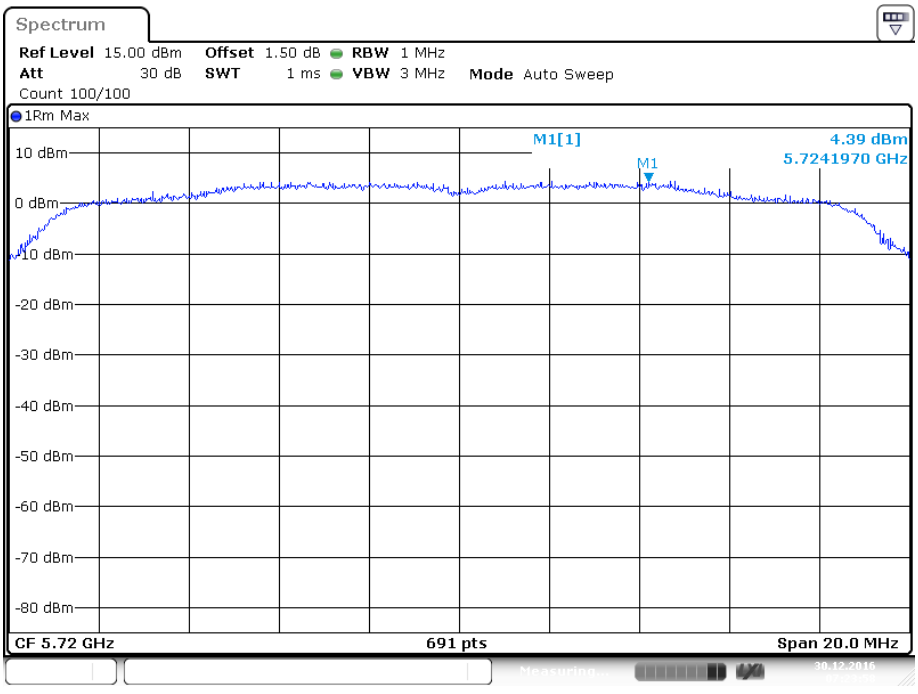
IEEE 802.11ac VHT20 mode Cross Band edge / 5470 ~ 5725MHz(chain 0) 5720MHz



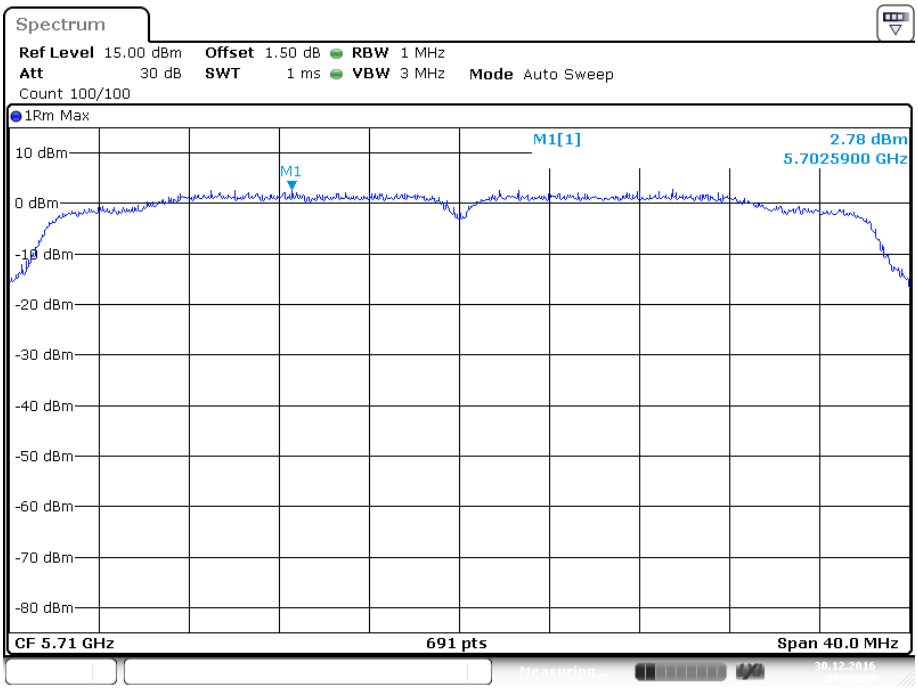
Date: 30.DEC.2016 07:25:33

IEEE 802.11ac VHT20 mode Cross Band edge / 5470 ~ 5725MHz(chain 1) 5720MHz



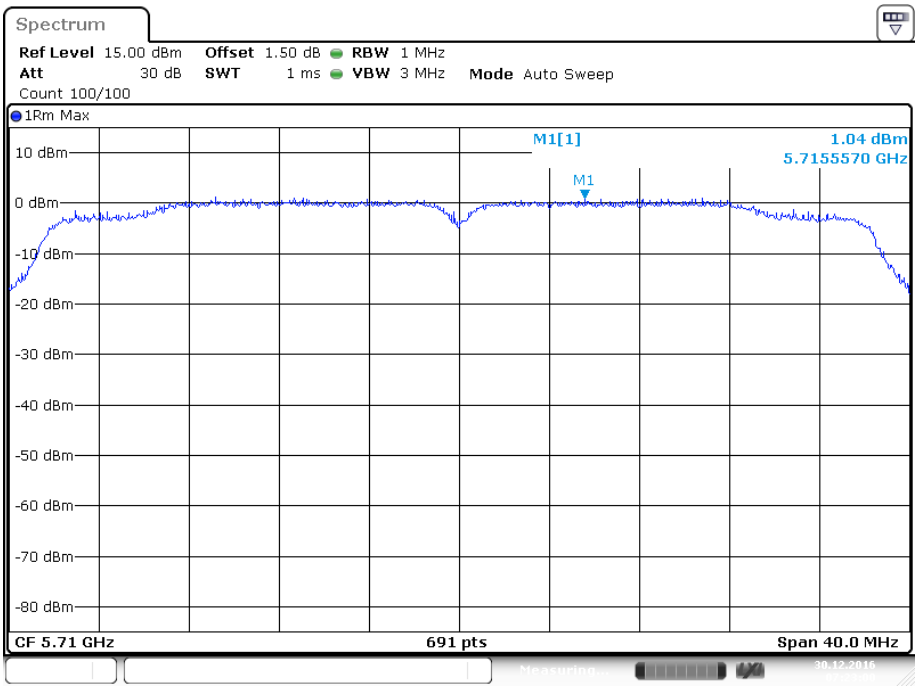
Date: 30.DEC.2016 07:23:58

IEEE 802.11ac VHT40 mode Cross Band edge / 5470 ~ 5725MHz(chain 0) 5710MHz



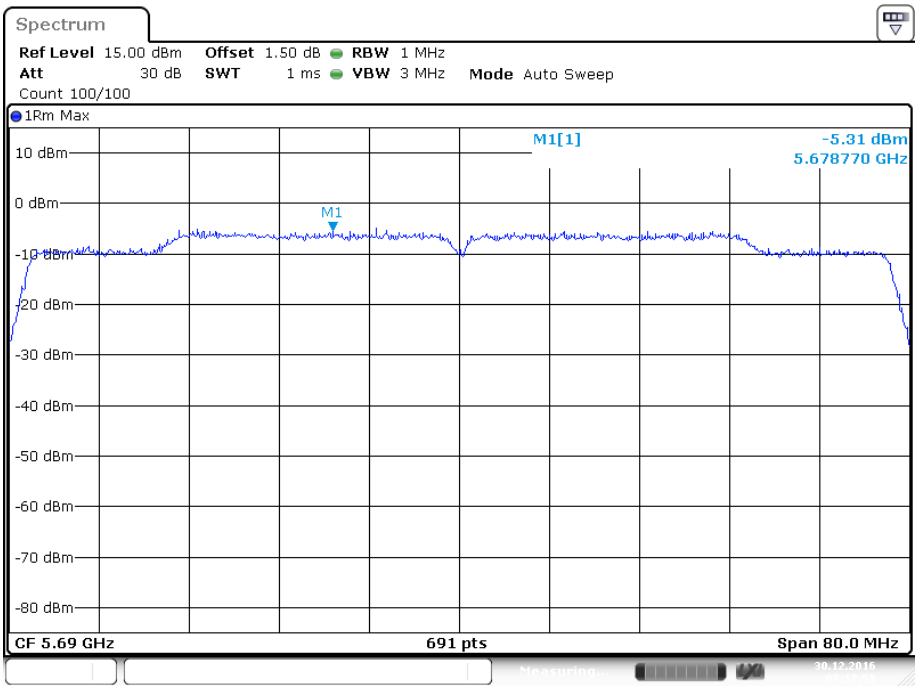
Date: 30.DEC.2016 07:20:03

IEEE 802.11ac VHT40 mode Cross Band edge / 5470 ~ 5725MHz(chain 1) 5710MHz



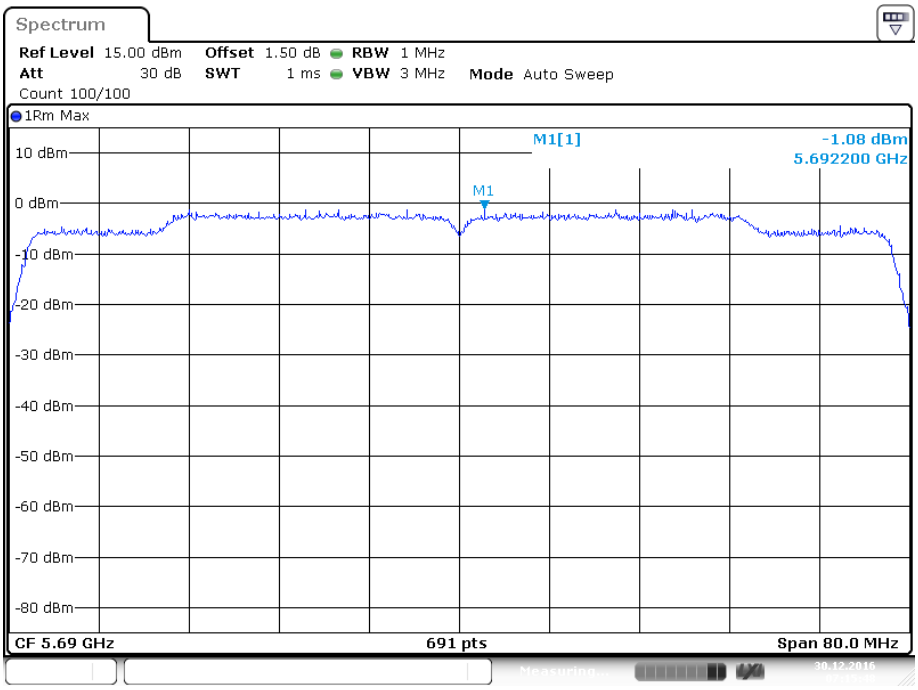
Date: 30.DEC.2016 07:23:00

IEEE 802.11ac VHT80 mode Cross Band edge / 5470 ~ 5725MHz(chain 0) 5690MHz



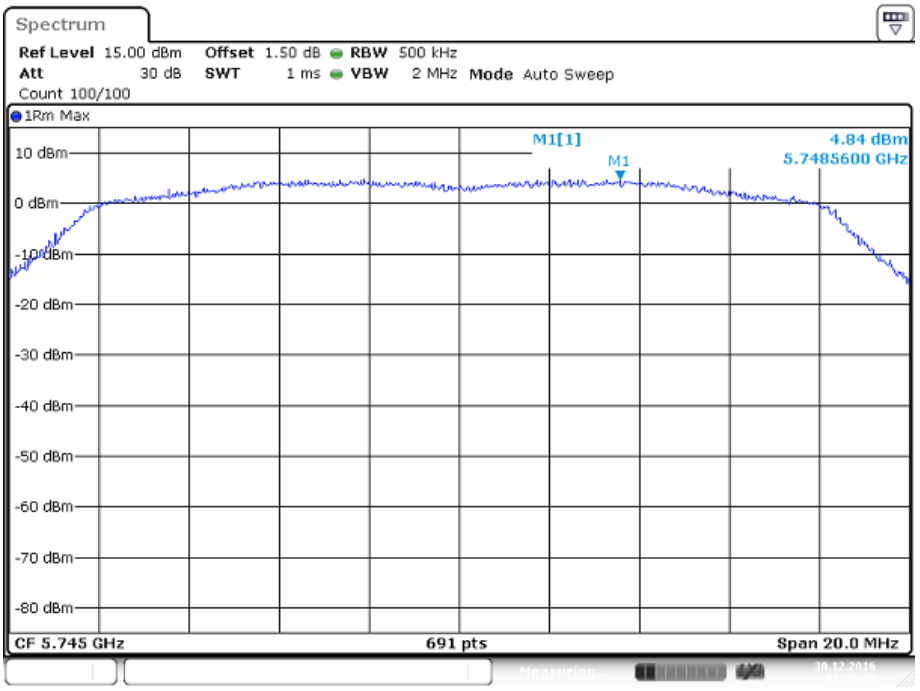
Date: 30.DEC.2016 07:17:59

IEEE 802.11ac VHT80 mode Cross Band edge / 5470 ~ 5725MHz(chain 1) 5690MHz



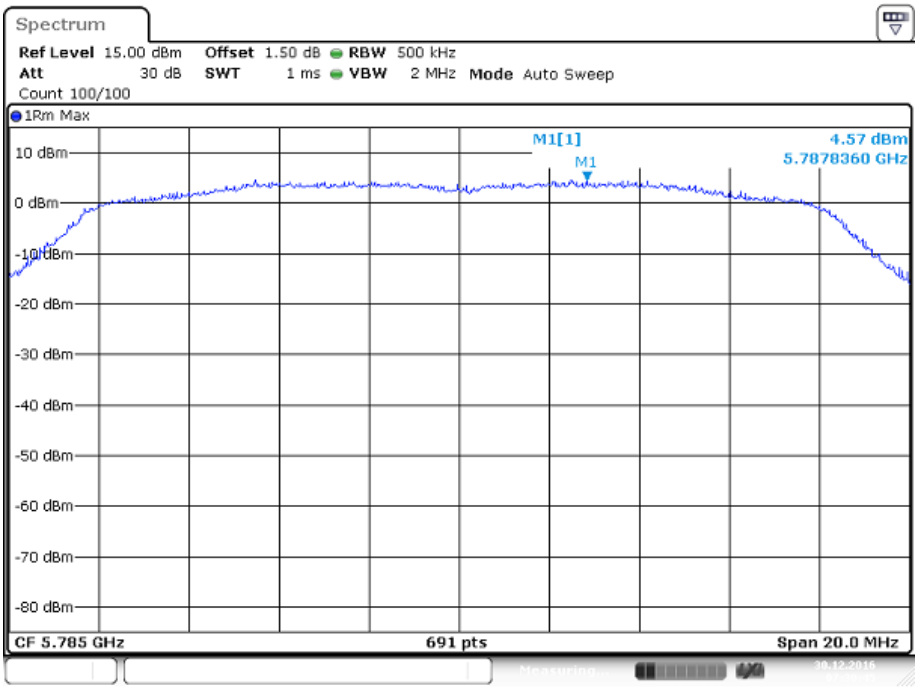
Date: 30.DEC.2016 07:15:48

IEEE 802.11a mode / 5725 ~ 5850MHz(chain0)
5745MHz



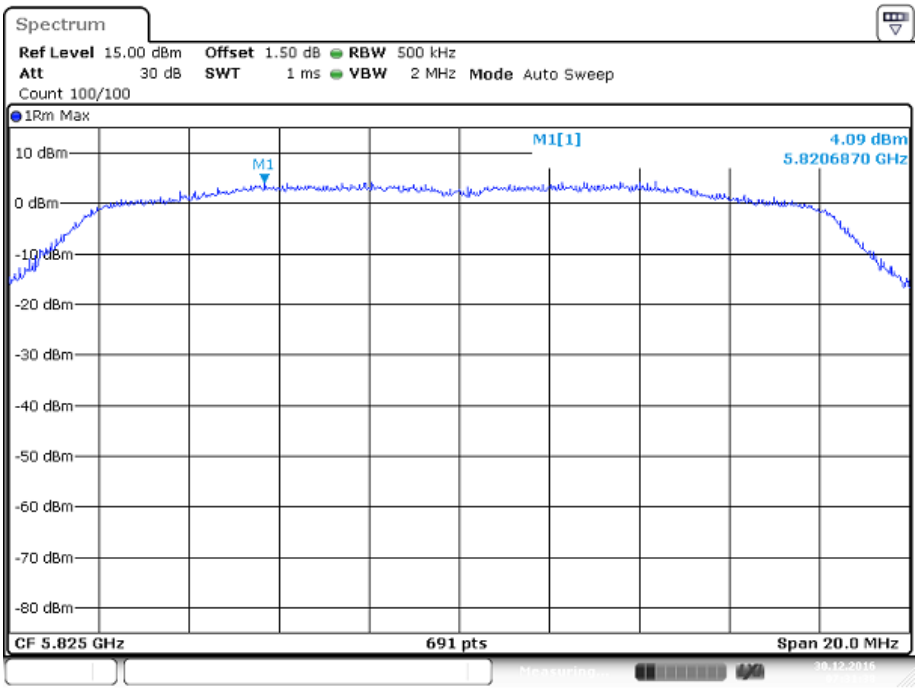
Date: 30.DEC.2016 07:29:45

5785MHz

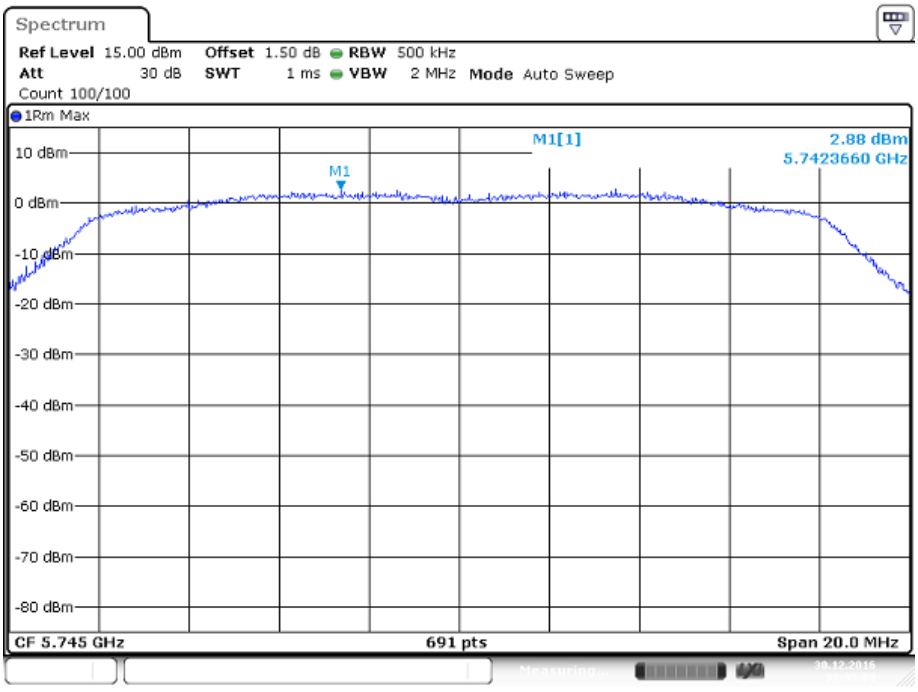


Date: 30.DEC.2016 07:30:46

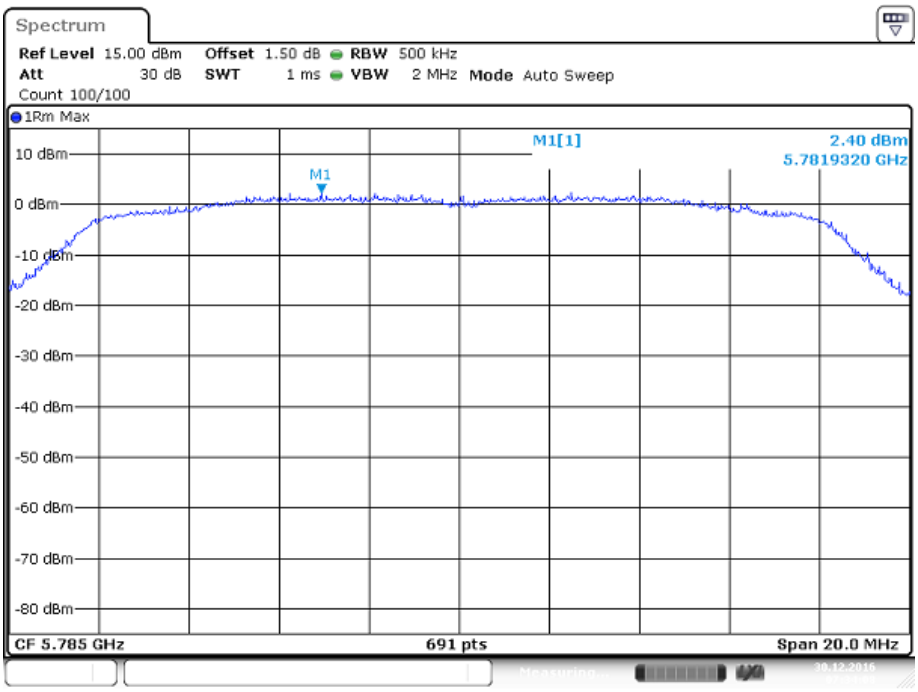
5825MHz



IEEE 802.11a mode / 5725 ~ 5850MHz(chain 1)
5745MHz

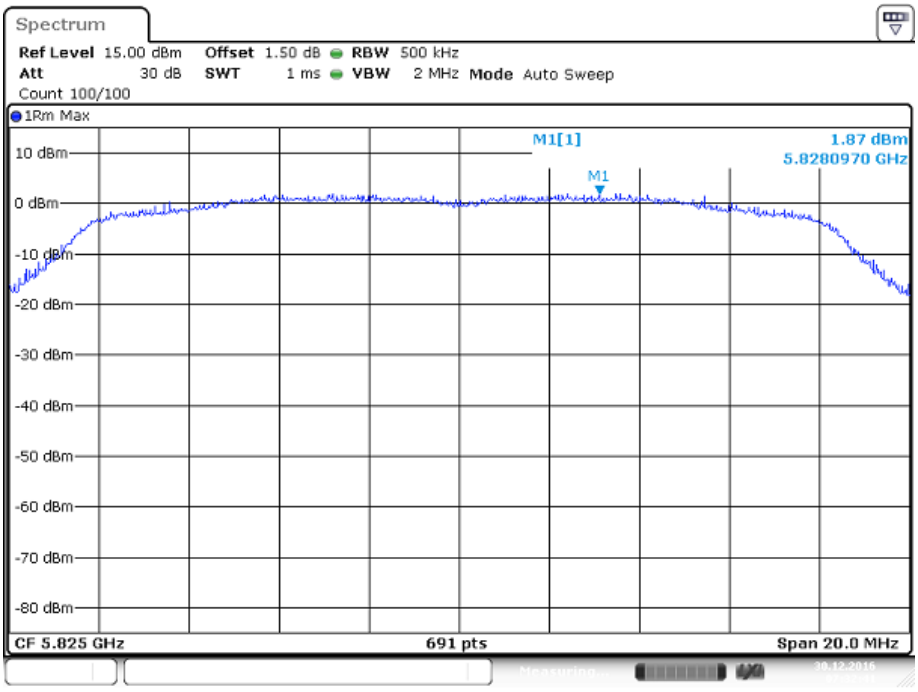


5785MHz



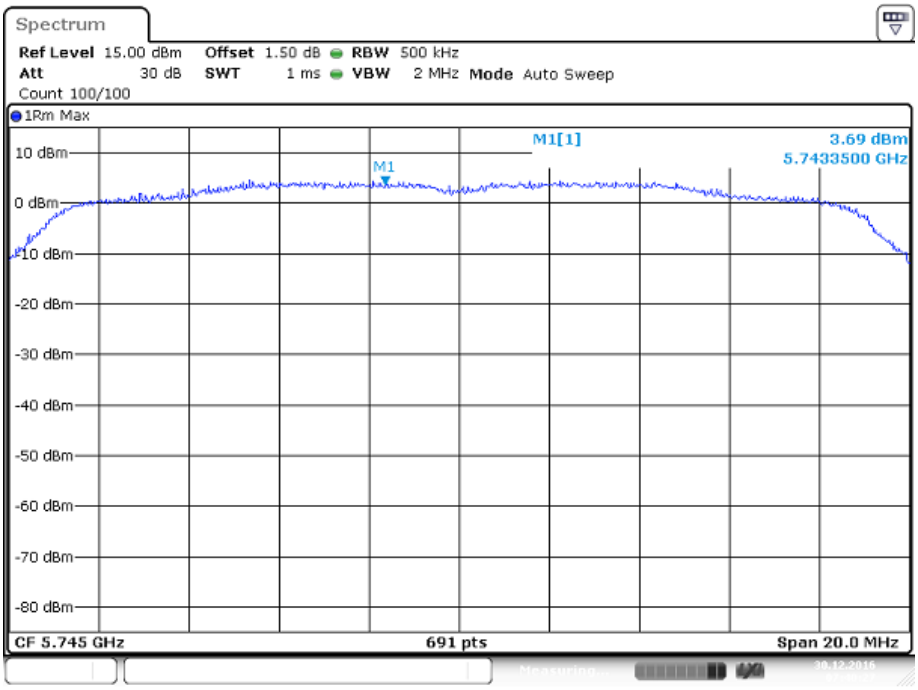
Date: 30.DEC.2016 07:34:09

5825MHz



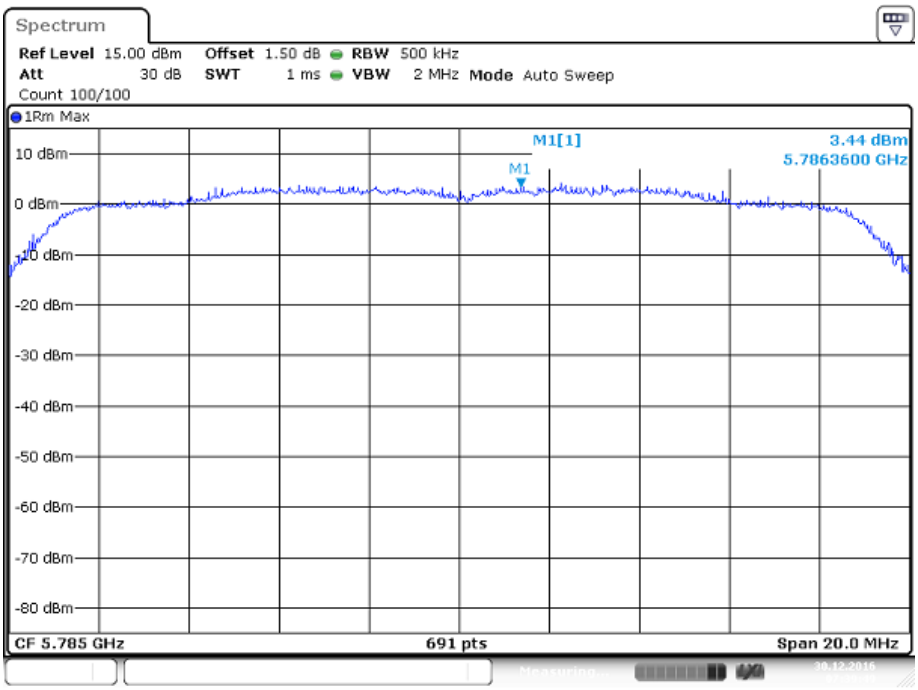
Date: 30.DEC.2016 07:32:42

IEEE 802.11n HT20 mode / 5725 ~ 5850MHz(chain0)
5745MHz



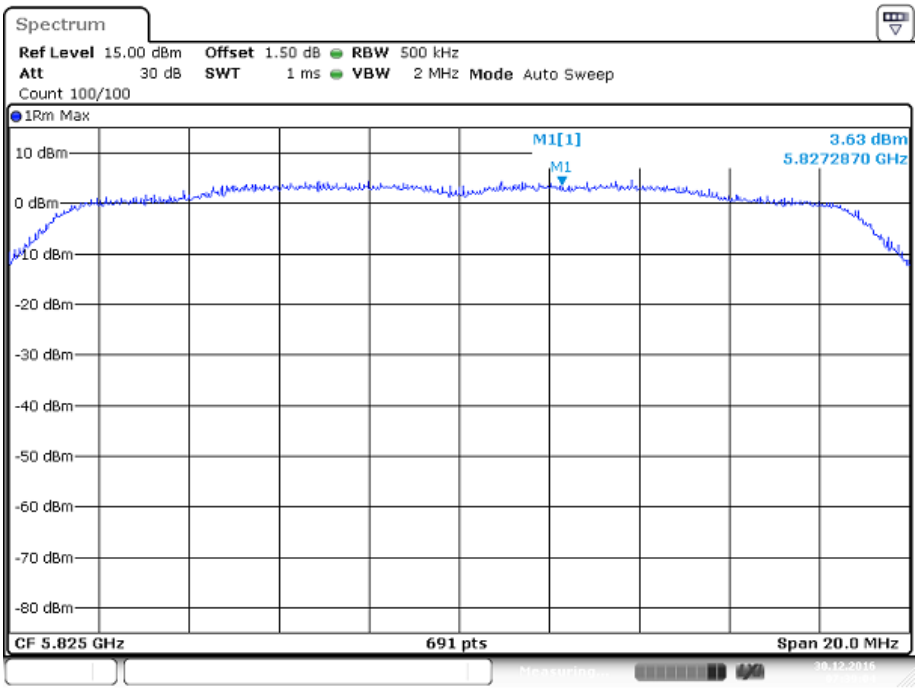
Date: 30.DEC.2016 07:40:28

5785MHz

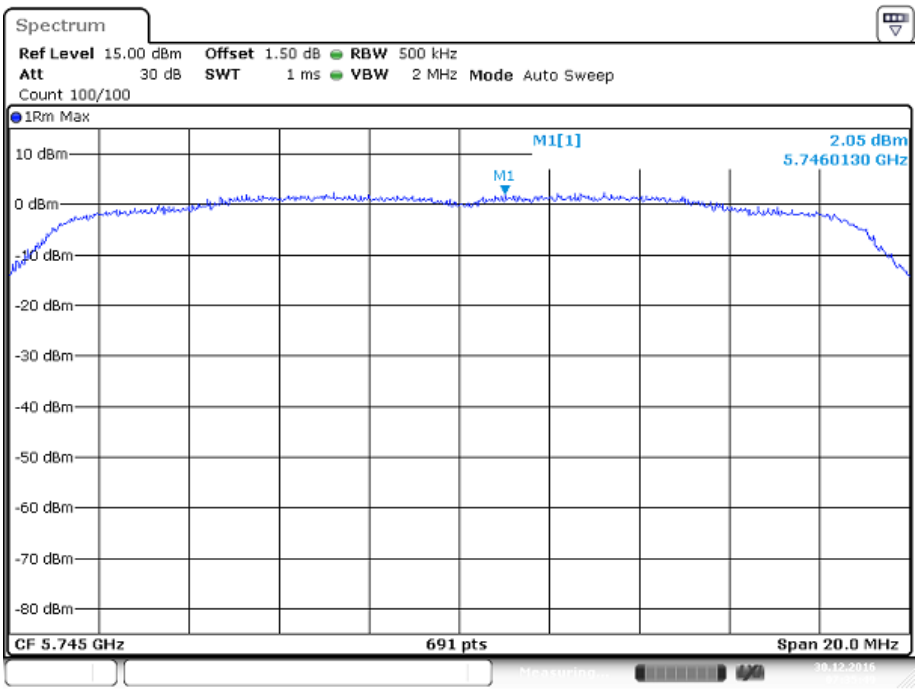


Date: 30.DEC.2016 07:39:49

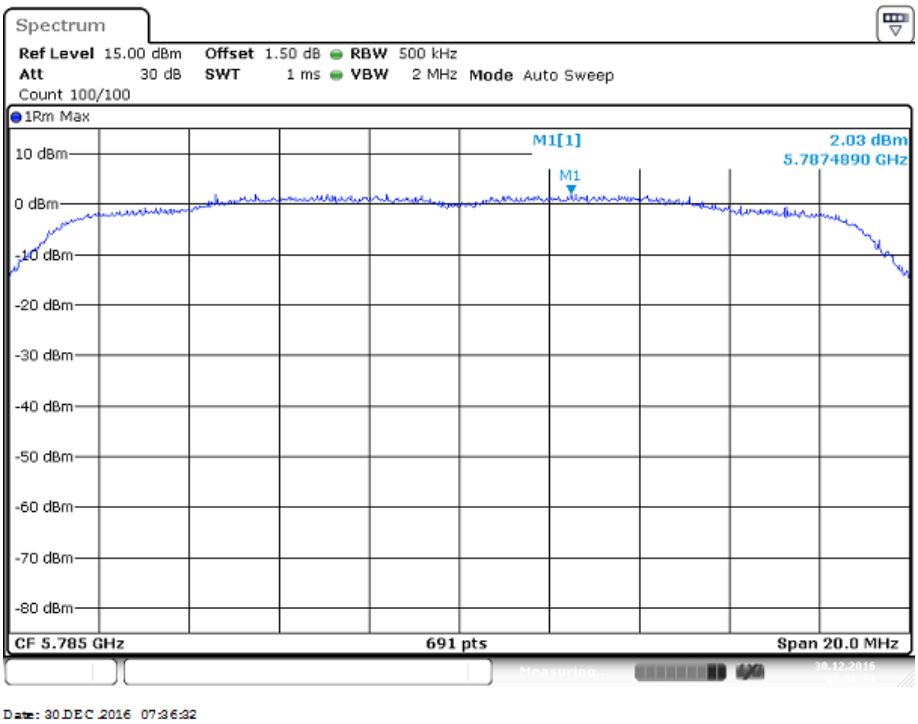
5825MHz



IEEE 802.11n HT20 mode / 5725 ~ 5850MHz(chain 1)
5745MHz

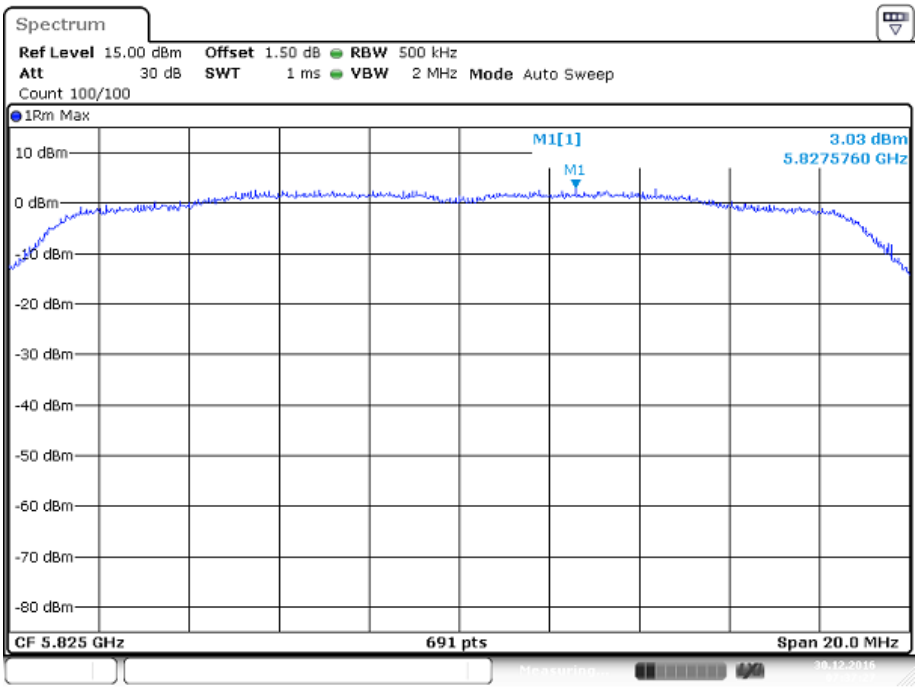


5785MHz



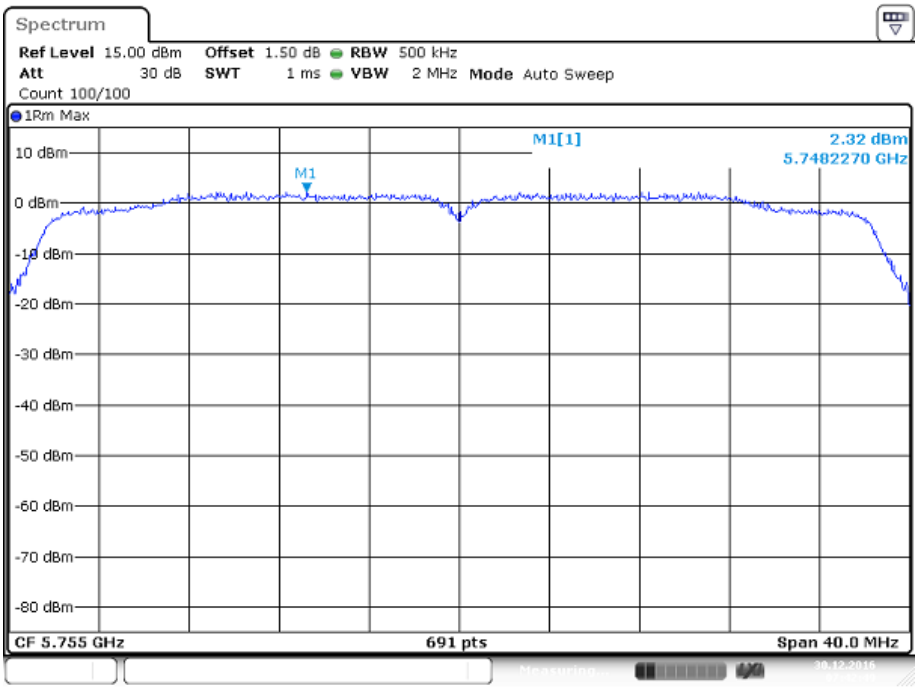
Date: 30.DEC.2016 07:36:32

5825MHz

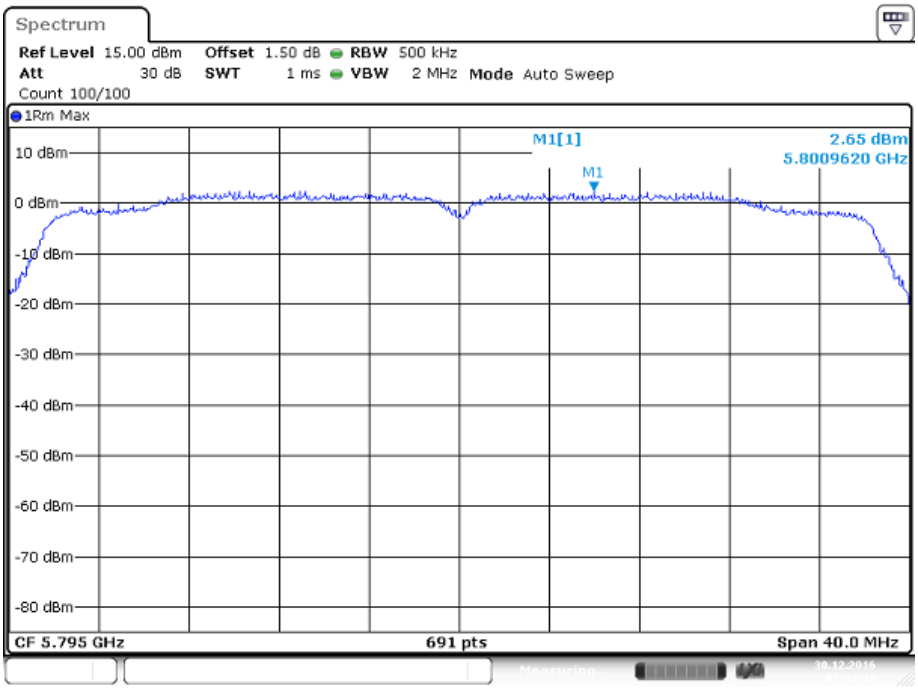


Date: 30.DEC.2016 07:37:28

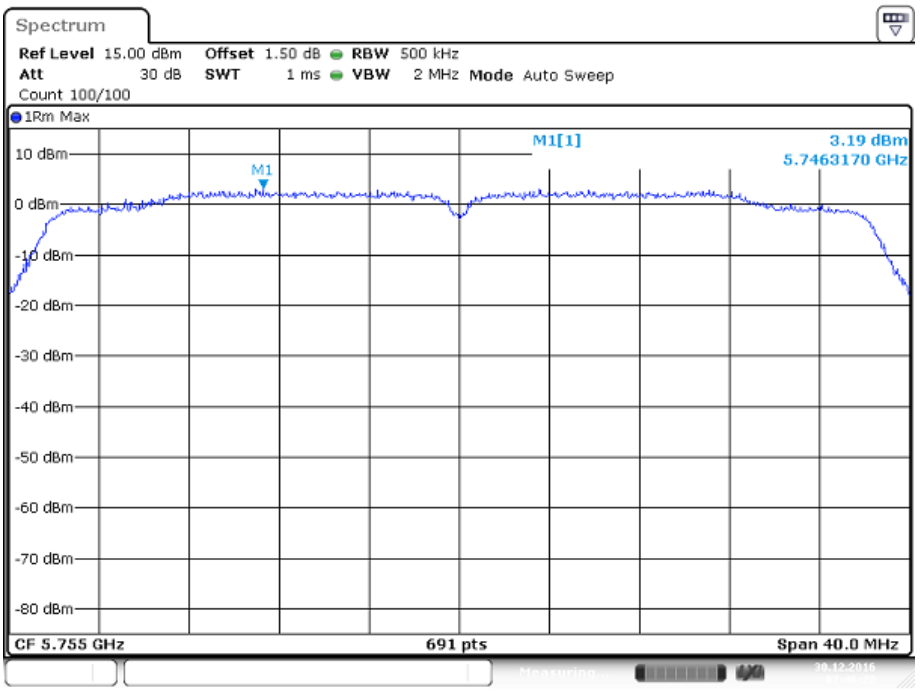
IEEE 802.11n HT40 mode / 5725 ~ 5850MHz(chain0)
5755MHz



5795MHz

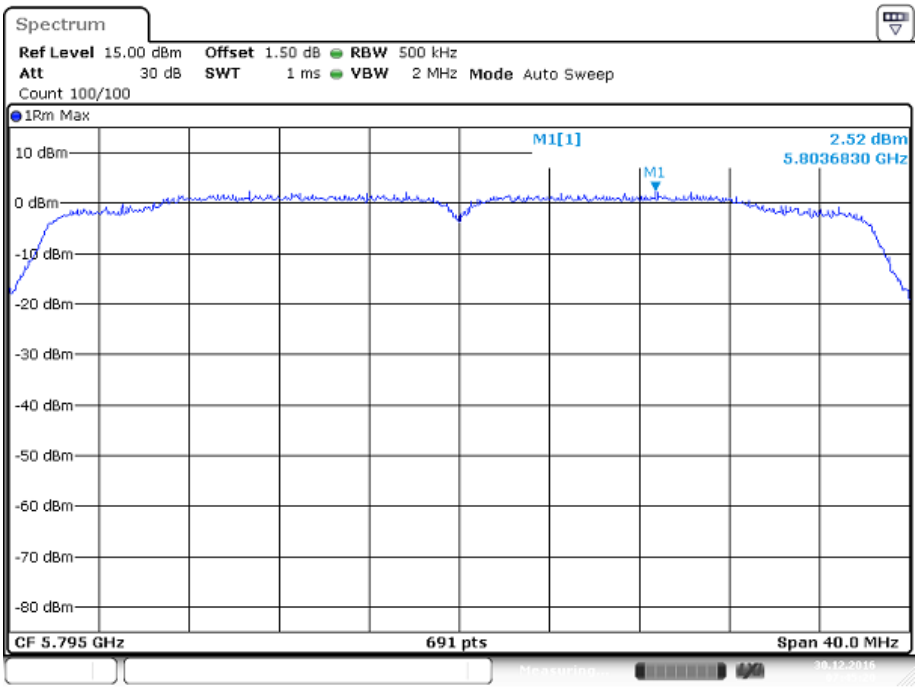


IEEE 802.11n HT40 mode / 5725 ~ 5850MHz(chain 1)
5755MHz



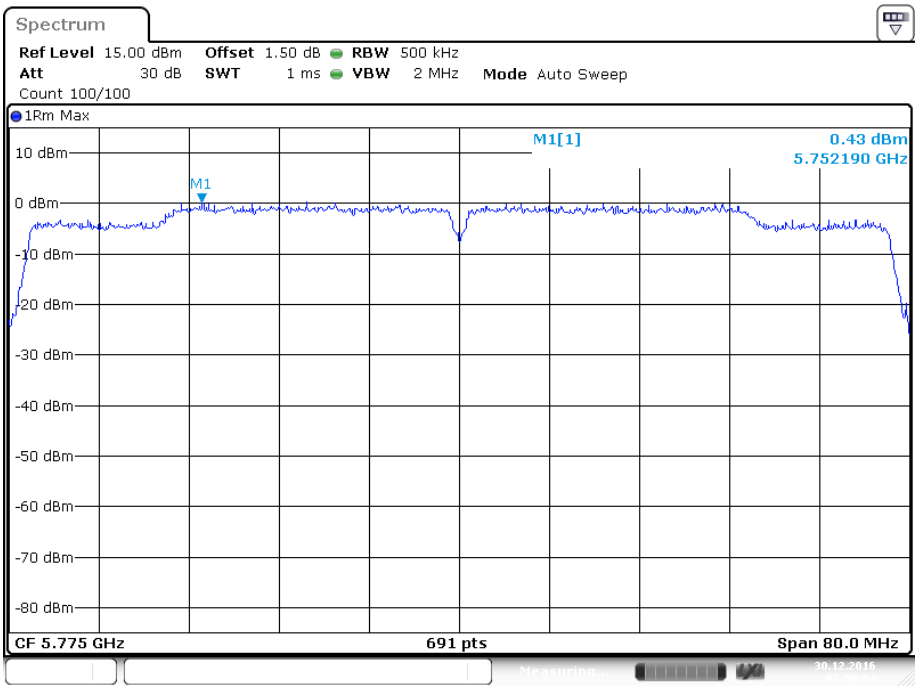
Date: 30.DEC.2016 07:46:21

5795MHz



Date: 30.DEC.2016 07:45:21

IEEE 802.11ac VHT80 mode / 5725 ~ 5850MHz(chain0)
5775MHz



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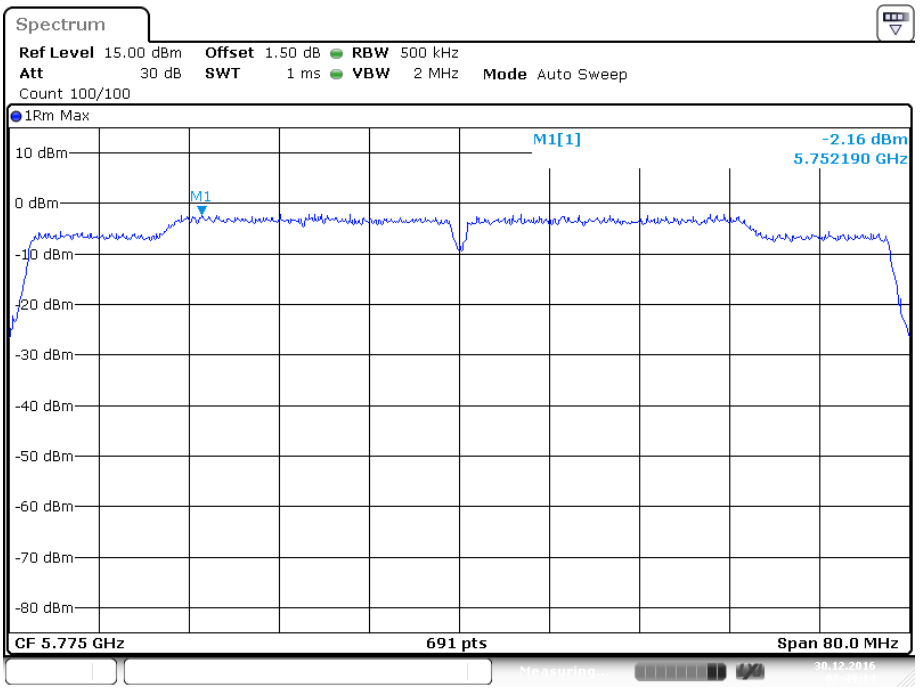
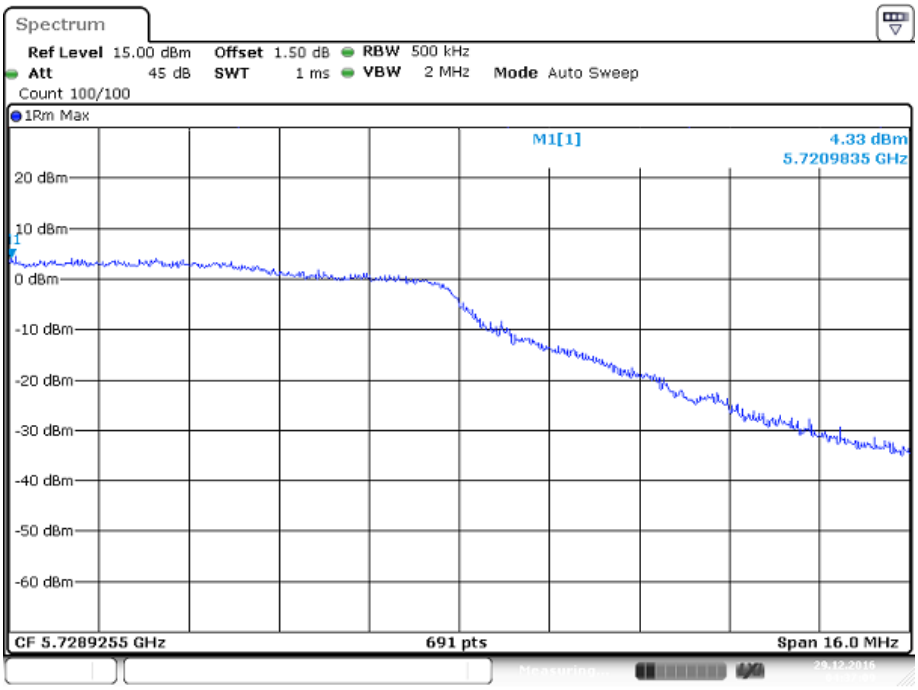
IEEE 802.11ac VHT80 mode / 5725 ~ 5850MHz(chain 1)
5775MHz



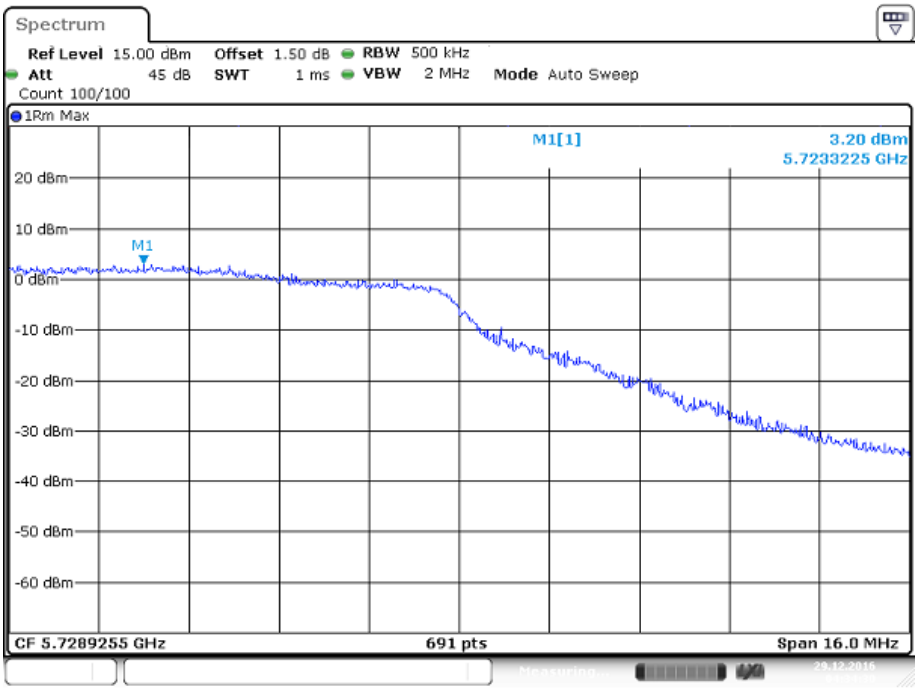
Date: 30.DEC.2016 07:49:14

IEEE 802.11ac VHT20 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5720MHz



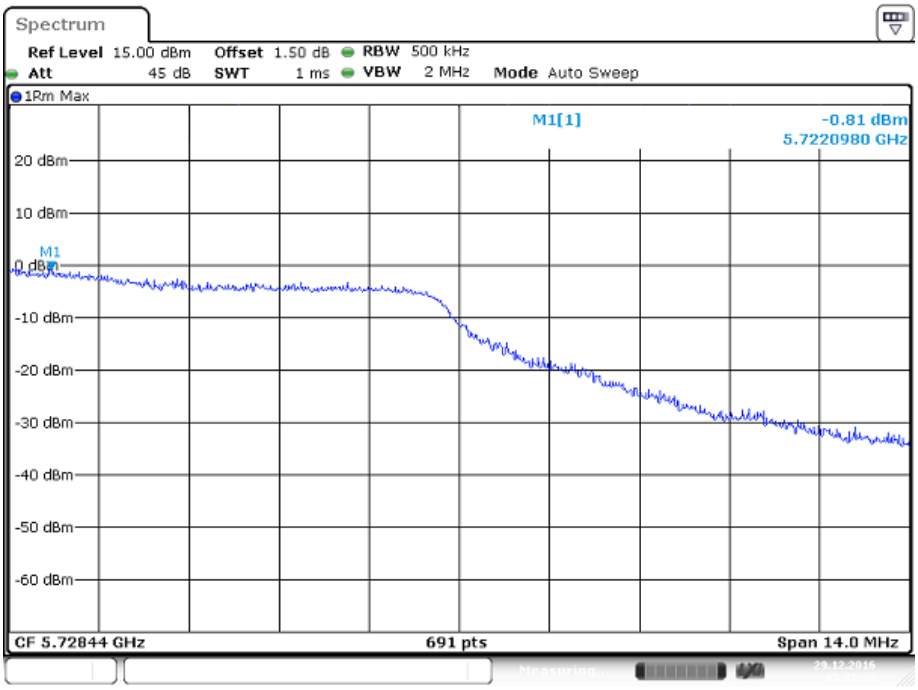
Date: 29.DEC.2016 04:37:10

IEEE 802.11ac VHT20 mode Cross Band edge / 5725 ~ 5850MHz(chain 1)
5720MHz



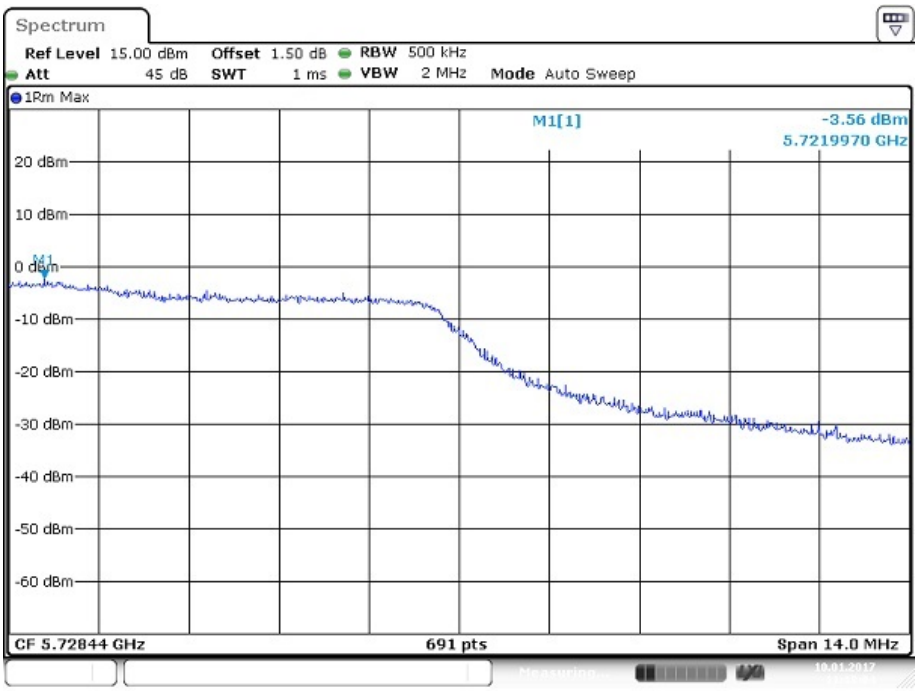
Date: 29.DEC.2016 04:34:30

IEEE 802.11ac VHT40 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5710MHz



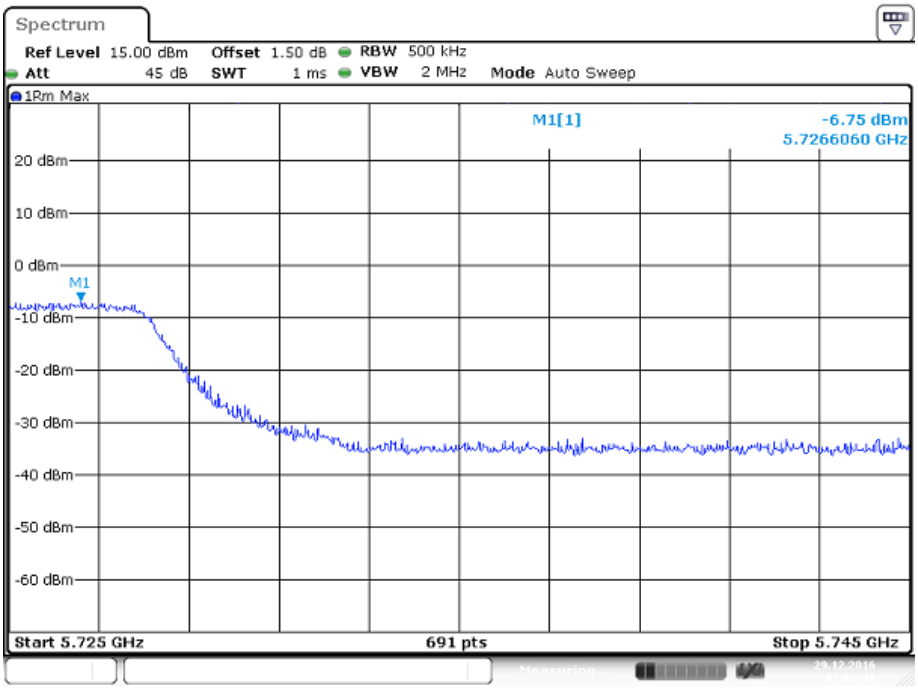
Date: 29.DEC.2016 05:07:31

IEEE 802.11ac VHT40 mode Cross Band edge / 5725 ~ 5850MHz(chain 1)
5710MHz



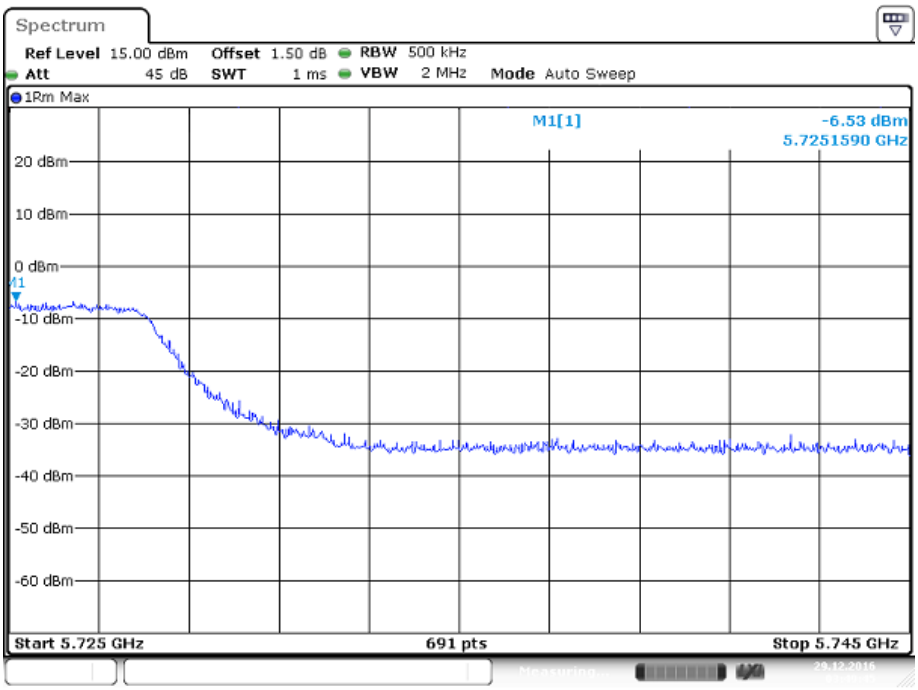
Date: 29.DEC.2016 05:51:33

IEEE 802.11ac VHT80 mode Cross Band edge / 5725 ~ 5850MHz(chain 0)
5690MHz



Date: 29.DEC.2016 03:02:42

IEEE 802.11ac VHT80 mode Cross Band edge / 5725 ~ 5850MHz(chain 1)
5690MHz



Date: 29.DEC.2016 03:49:45

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