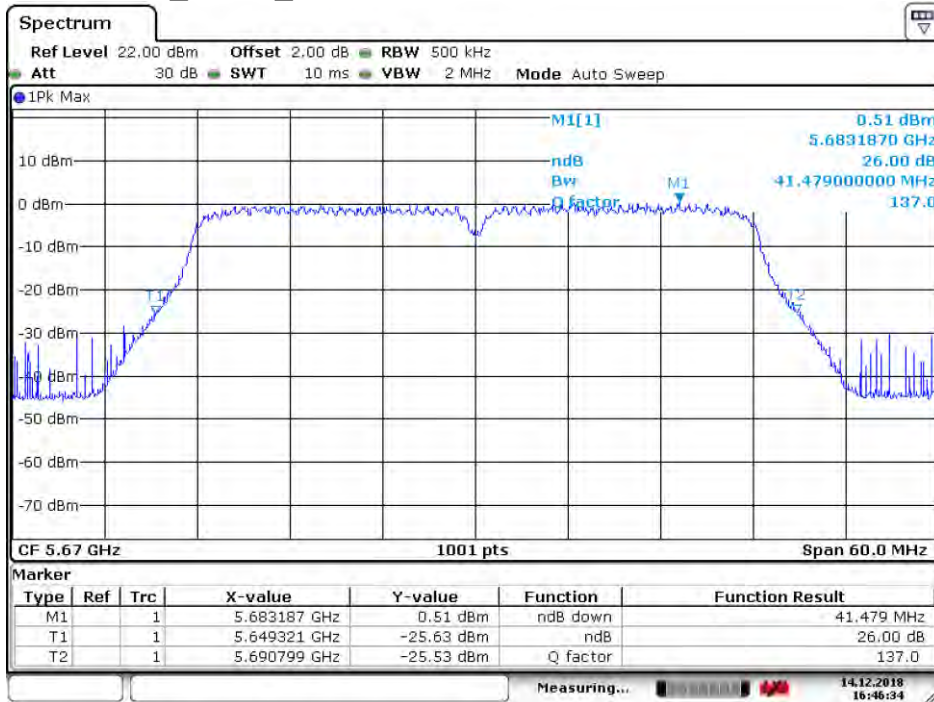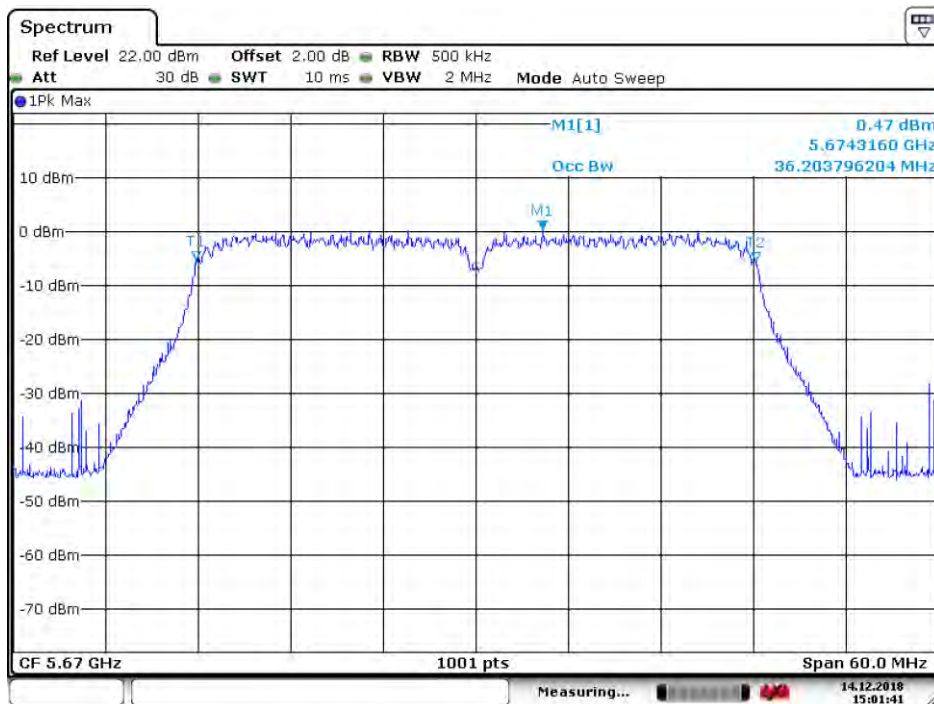### 4.5.2.182   11AC40_MIMO_134 ANT 2
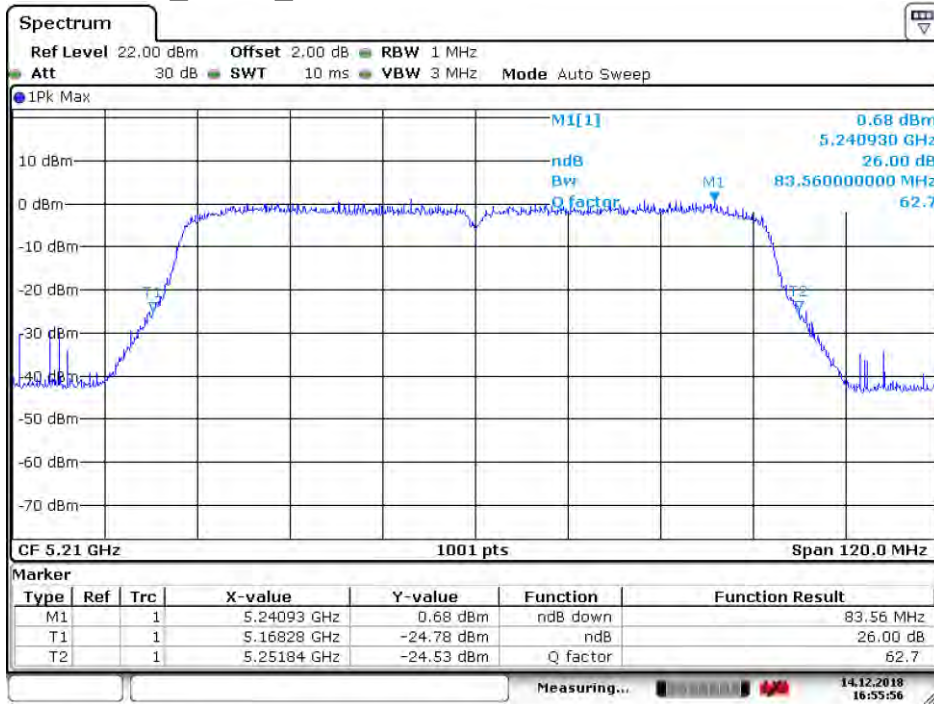

Date: 14.DEC.2018 16:46:35
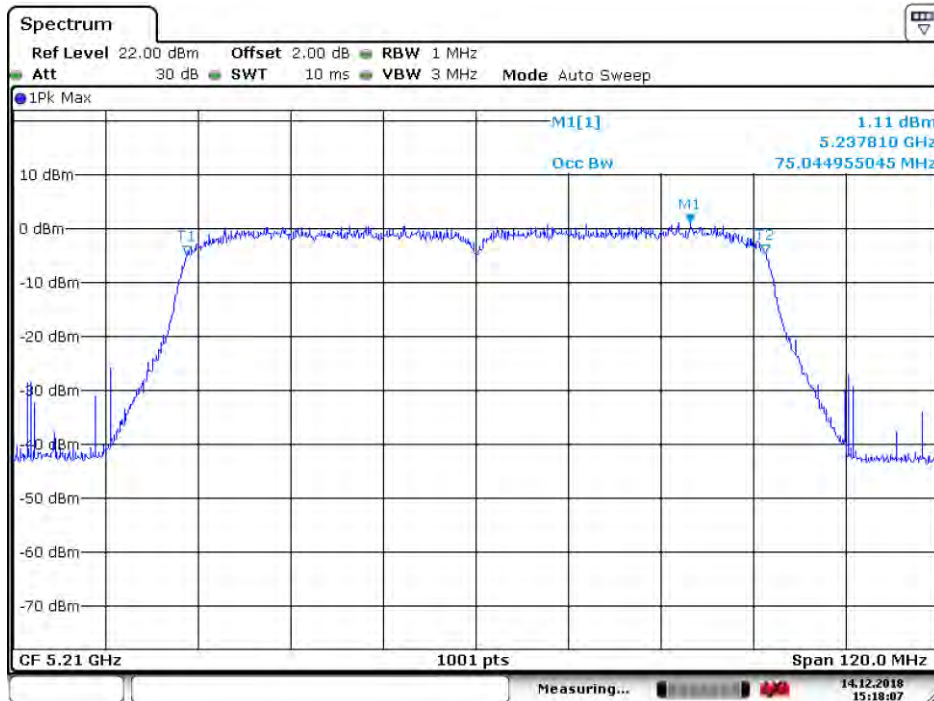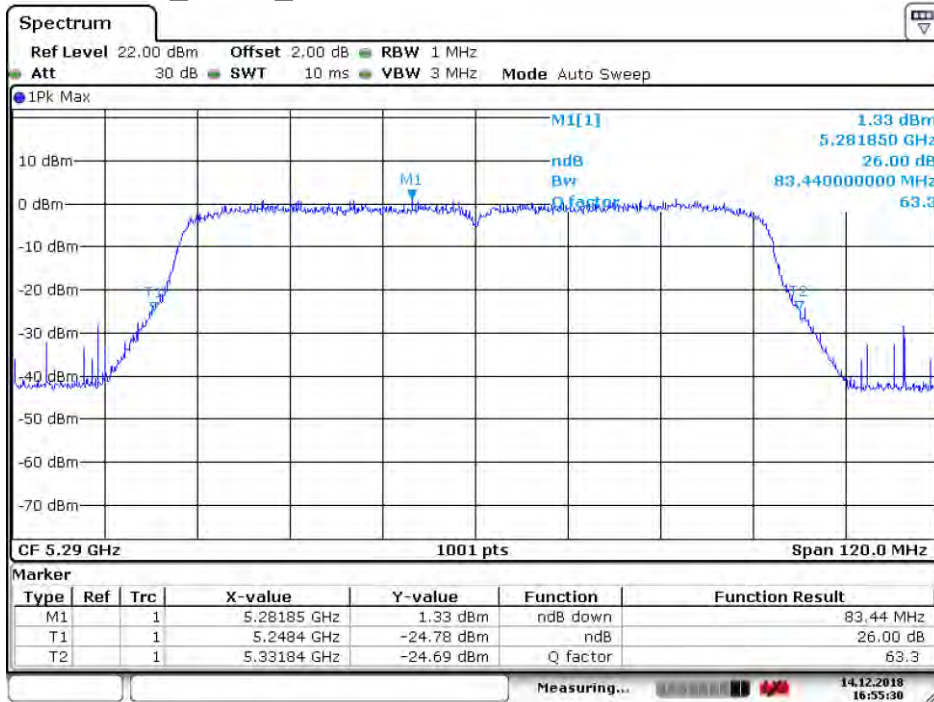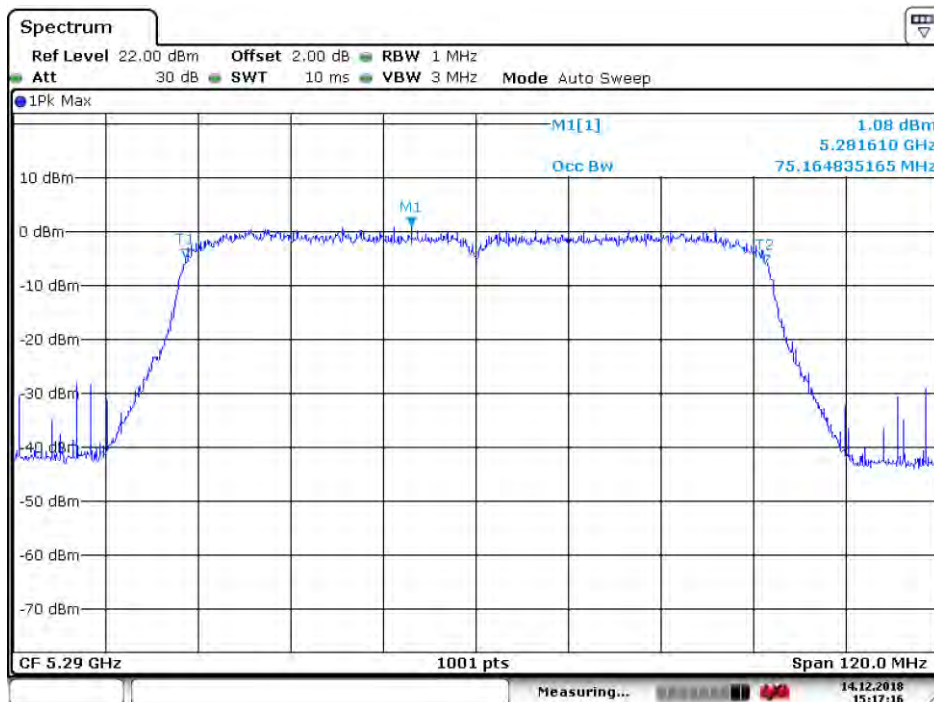

Date: 14.DEC.2018 15:01:41

4.5.2.183   11AC80_MIMO_42 ANT 2

Date: 14.DEC.2018 16:55:56

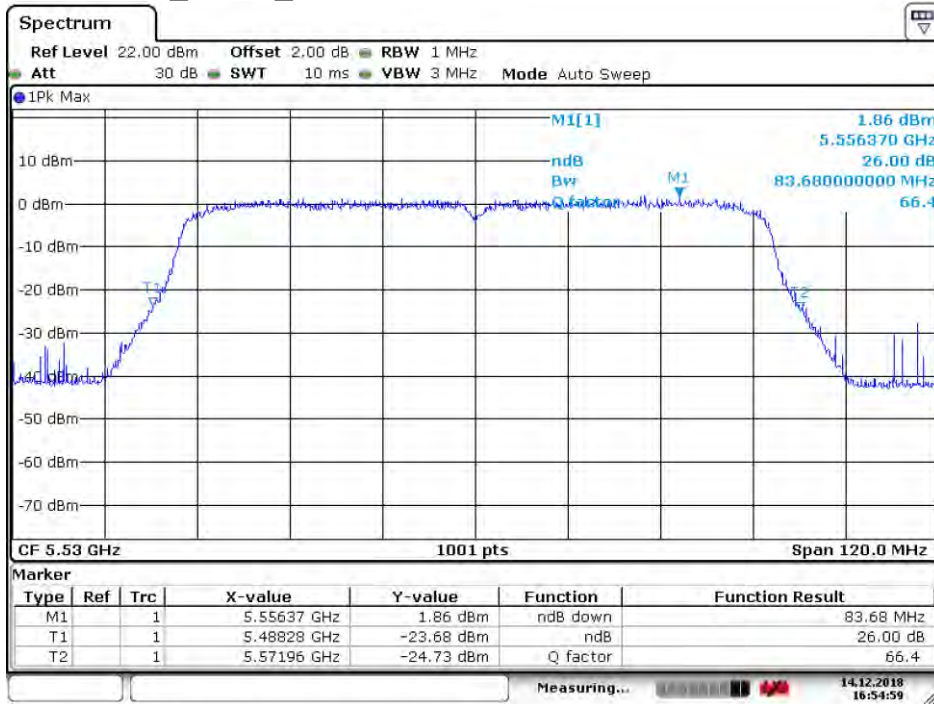Date: 14.DEC.2018 15:18:08

4.5.2.184   11AC80_MIMO_58 ANT 2

Marker						
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.28185 GHz	1.33 dBm	ndB down	83.44 MHz
T1		1	5.2484 GHz	-24.78 dBm	ndB	26.00 dB
T2		1	5.33184 GHz	-24.69 dBm	Q factor	63.3

Date: 14.DEC.2018 16:55:30

Date: 14.DEC.2018 15:17:16

4.5.2.185   11AC80_MIMO_106 ANT 2

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.55637 GHz	1.86 dBm	ndB down	83.68 MHz
T1		1	5.48828 GHz	-23.68 dBm	ndB	26.00 dB
T2		1	5.57196 GHz	-24.73 dBm	Q factor	66.4

Date: 14.DEC.2018 16:55:00
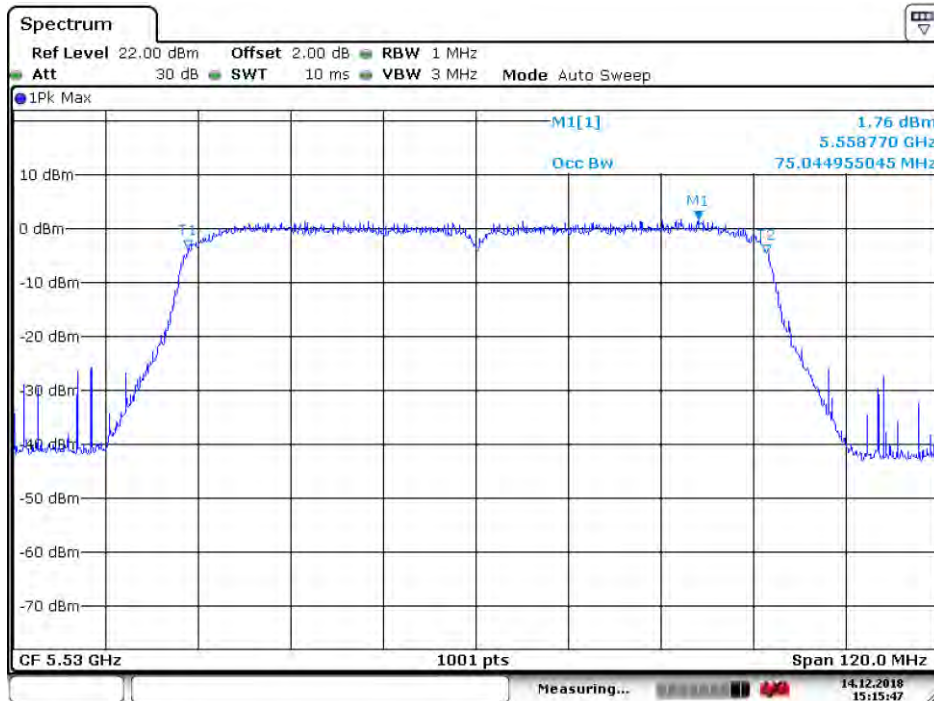
Date: 14.DEC.2018 15:15:47

4.5.2.186 11AC80_MIMO_122 ANT 2

Marker						
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.63529 GHz	1.87 dBm	ndB down	83.44 MHz
T1		1	5.56828 GHz	-24.19 dBm	ndB	26.00 dB
T2		1	5.65172 GHz	-24.38 dBm	Q factor	67.5
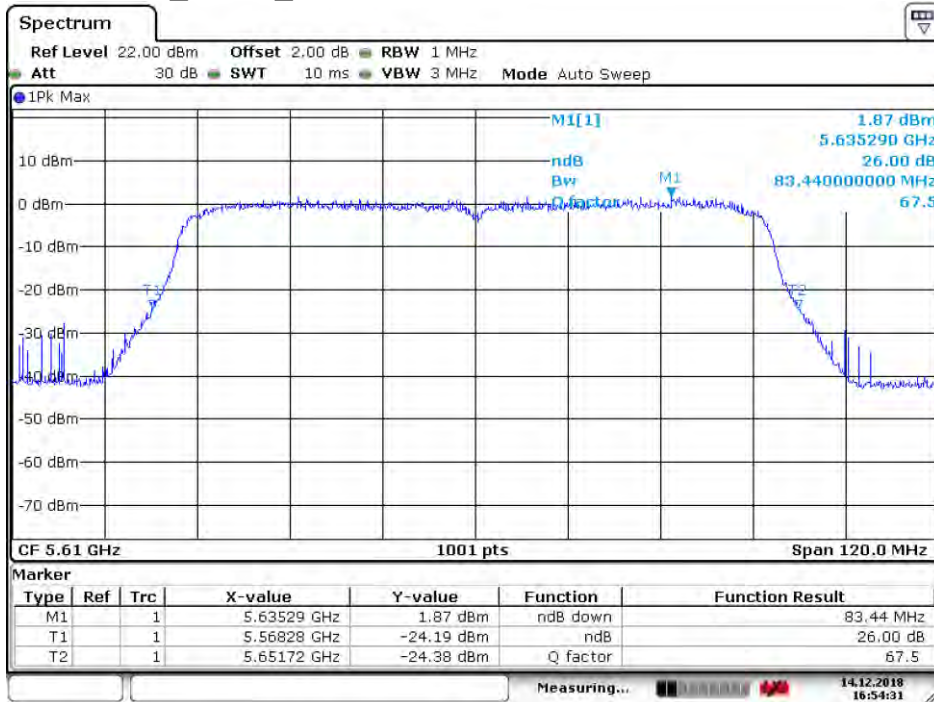
Date: 14.DEC.2018 16:54:31
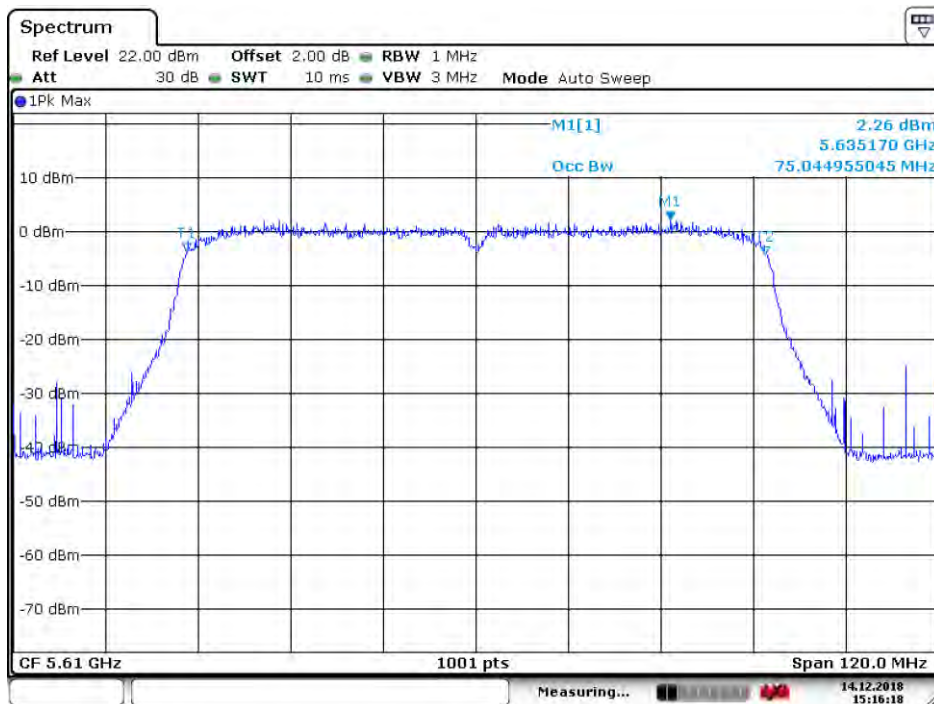
Date: 14.DEC.2018 15:16:19

4.5.2.187   11AC160_MIMO_50 ANT 2

Date: 14.DEC.2018 16:57:04

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.30514 GHz	3.12 dBm	ndB down	171.91 MHz
T1		1	5.16441 GHz	-22.76 dBm	ndB	26.00 dB
T2		1	5.33631 GHz	-23.11 dBm	Q factor	30.9
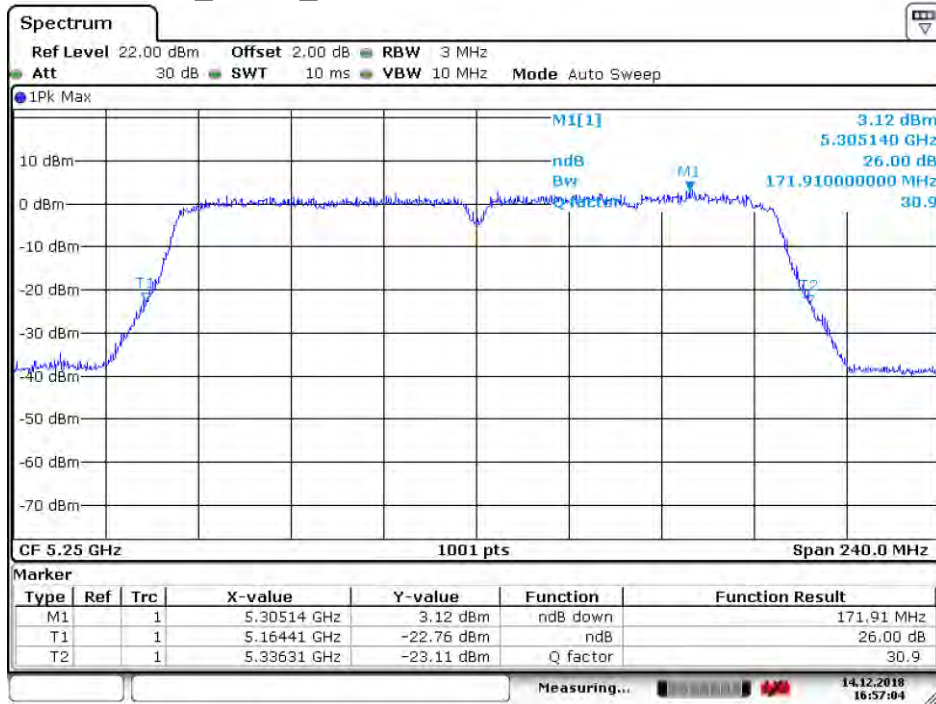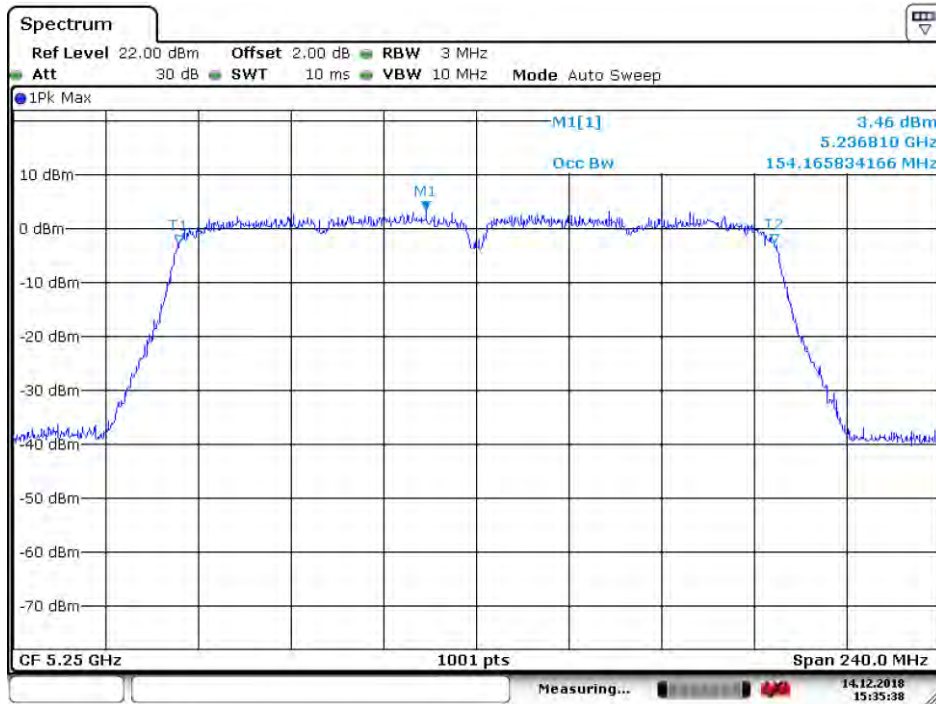
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4.5.2.188   11AC160_MIMO_114 ANT 2
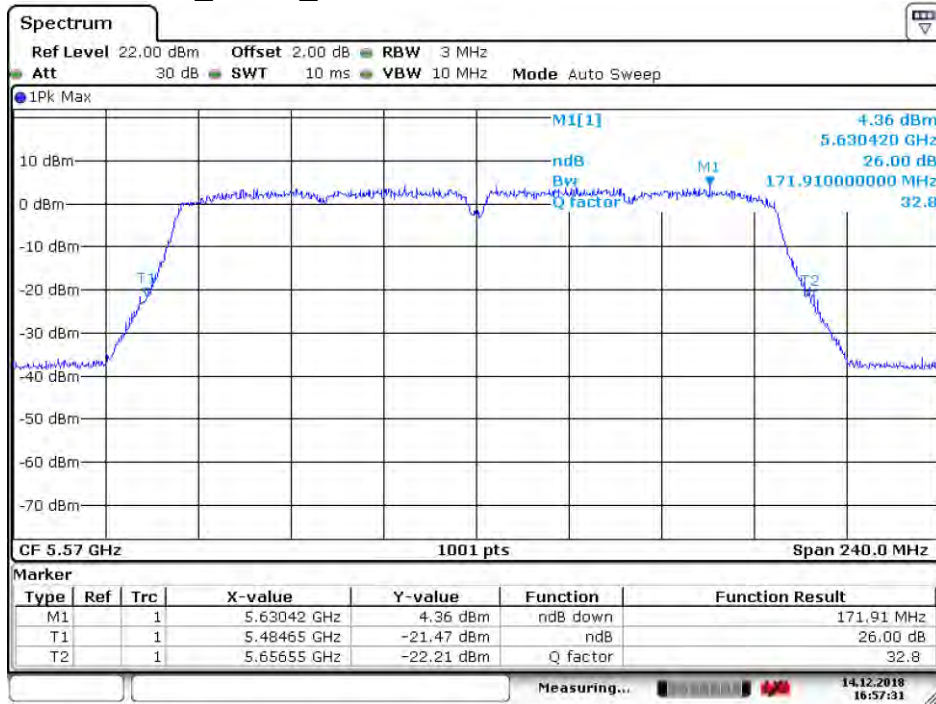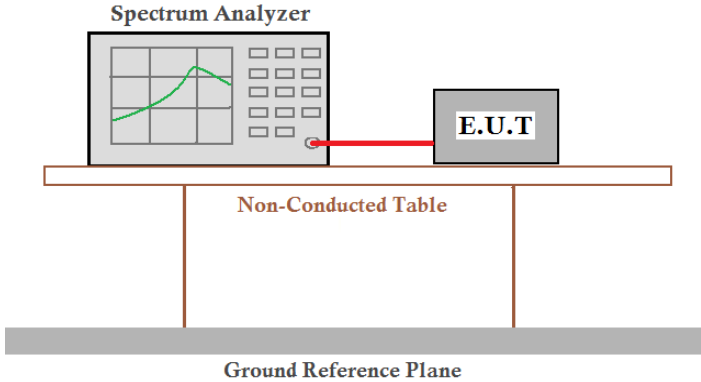
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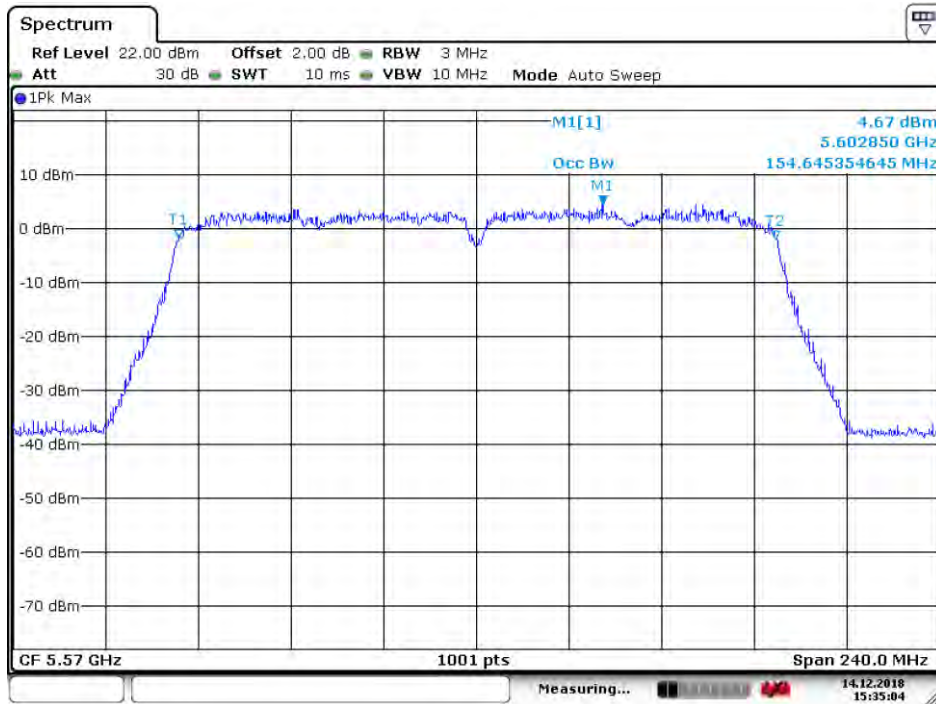
Date: 14 DEC.2018 15:35:04

4.6 6dB Emission Bandwidth & 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(e)	
Test Method:	ANSI C63.10: 2013	
Test Setup:		
Test Instruments:	Refer to section 5.10 for details	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates	
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); MCSAC0 of rate is the worst case of 802.11ac(HT20); MCSAC0 of rate is the worst case of 802.11ac(HT40); MCSAC0 of rate is the worst case of 802.11ac(HT80); MCSAC0 of rate is the worst case of 802.11ac(HT160). Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5725-5850MHz	At lease 500kHz
Test Results:	Pass	

Test Mode	Test Channel	Frequency [MHz]	ANT 1		ANT 2		Verdict
			6dB EBW [MHz]	OBW [MHz]	6dB EBW [MHz]	OBW [MHz]	
11A20	149	5745	16.18	16.81	16.36	16.81	PASS
	157	5785	16.39	16.81	16.39	16.84	PASS
	165	5825	16.33	16.78	16.36	16.81	PASS
11N20	149	5745	17.35	17.74	17.26	17.71	PASS
	157	5785	17.17	17.74	17.32	17.74	PASS
	165	5825	17.11	17.74	17.11	17.74	PASS
11N40	151	5755	35.54	36.32	36.02	36.32	PASS
	159	5795	35.96	36.32	35.96	36.32	PASS
11AC20	149	5745	17.35	17.74	17.14	17.74	PASS
	157	5785	17.17	17.77	17.14	17.74	PASS
	165	5825	17.23	17.74	17.17	17.74	PASS
11AC40	151	5755	35.72	36.32	35.84	36.32	PASS
	159	5795	35.90	36.32	35.84	36.32	PASS
11AC80	155	5775	75.10	75.28	75.16	75.40	PASS
11A20 CDD	149	5745	16.33	16.81	16.24	16.63	PASS
	157	5785	16.39	16.81	16.36	16.63	PASS
	165	5825	16.36	16.84	16.39	16.63	PASS
11N20 MIMO	149	5745	17.23	17.74	17.53	17.62	PASS
	157	5785	17.29	17.74	17.56	17.62	PASS
	165	5825	17.35	17.71	17.32	17.62	PASS
11N40 MIMO	151	5755	35.66	36.32	35.72	36.08	PASS
	159	5795	36.02	36.32	35.54	36.08	PASS
11AC20 MIMO	149	5745	17.32	17.77	17.59	17.65	PASS
	157	5785	17.32	17.74	17.32	17.65	PASS
	165	5825	17.32	17.77	17.35	17.65	PASS
11AC40 MIMO	151	5755	35.84	36.38	35.36	36.20	PASS
	159	5795	35.72	36.32	35.96	36.14	PASS
11AC80 MIMO	155	5775	75.16	75.28	74.09	75.04	PASS

4.6.1 Plots for 6dB Emission Bandwidth & 99% Occupied Bandwidth
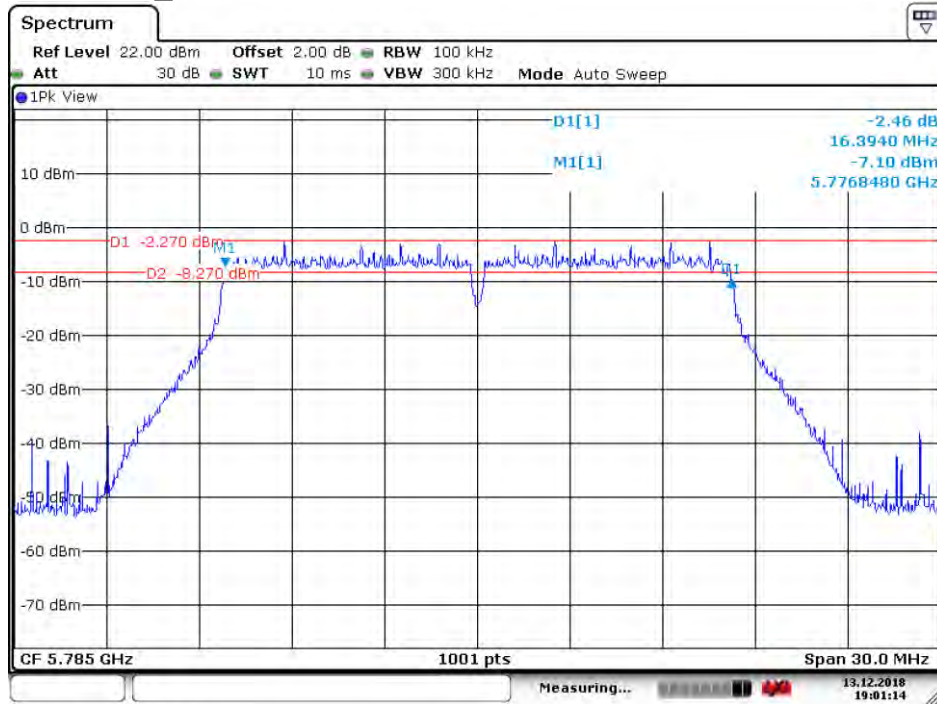### 4.6.1.1 11A20_149 ANT 1
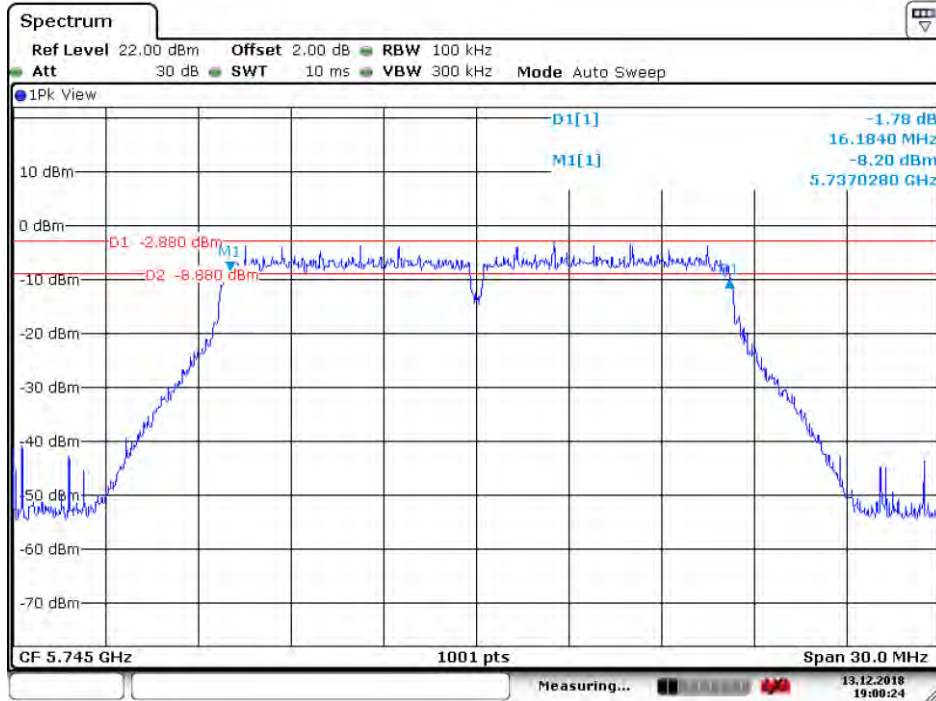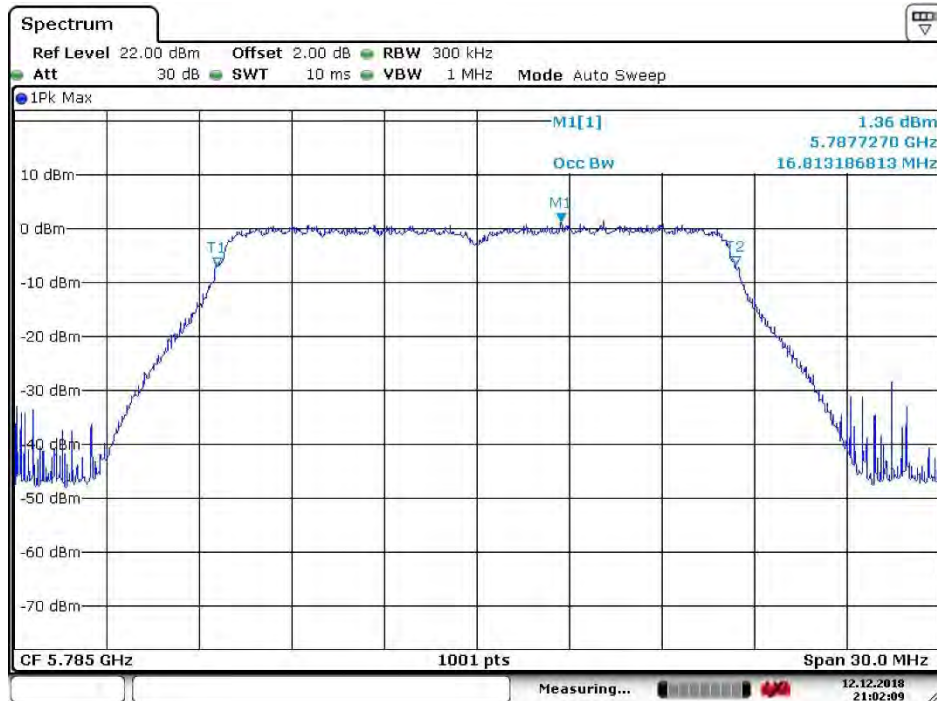

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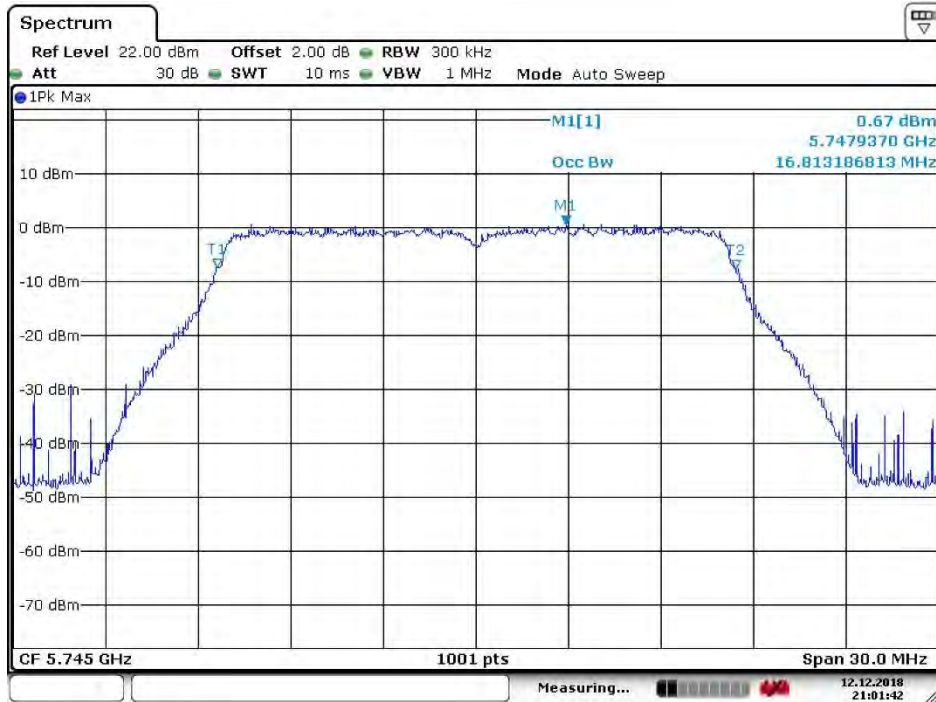
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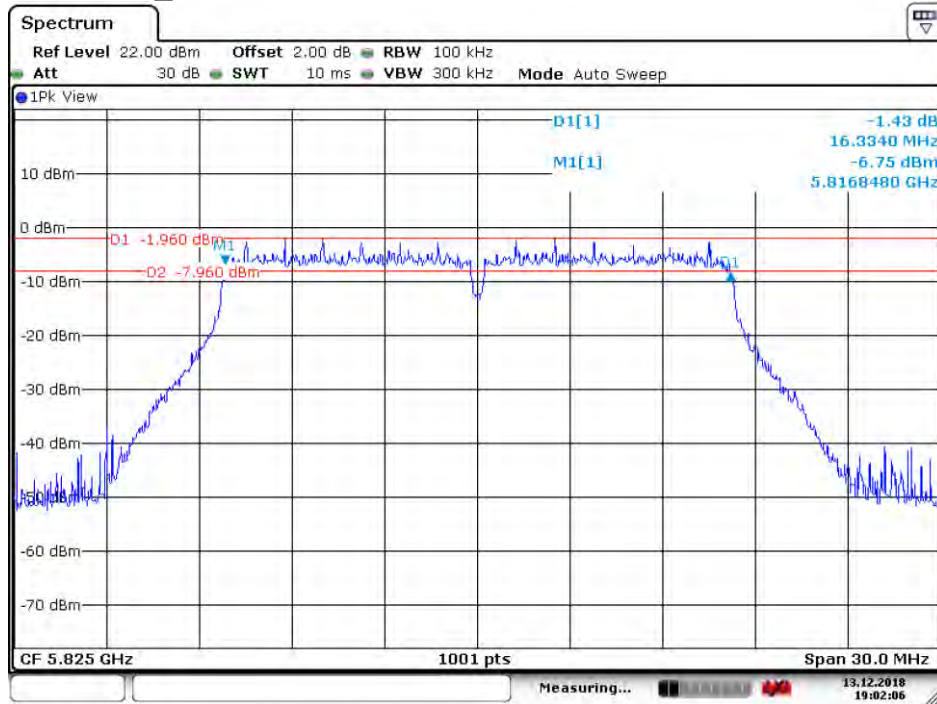
4.6.1.2　　　11A20_157 ANT 1
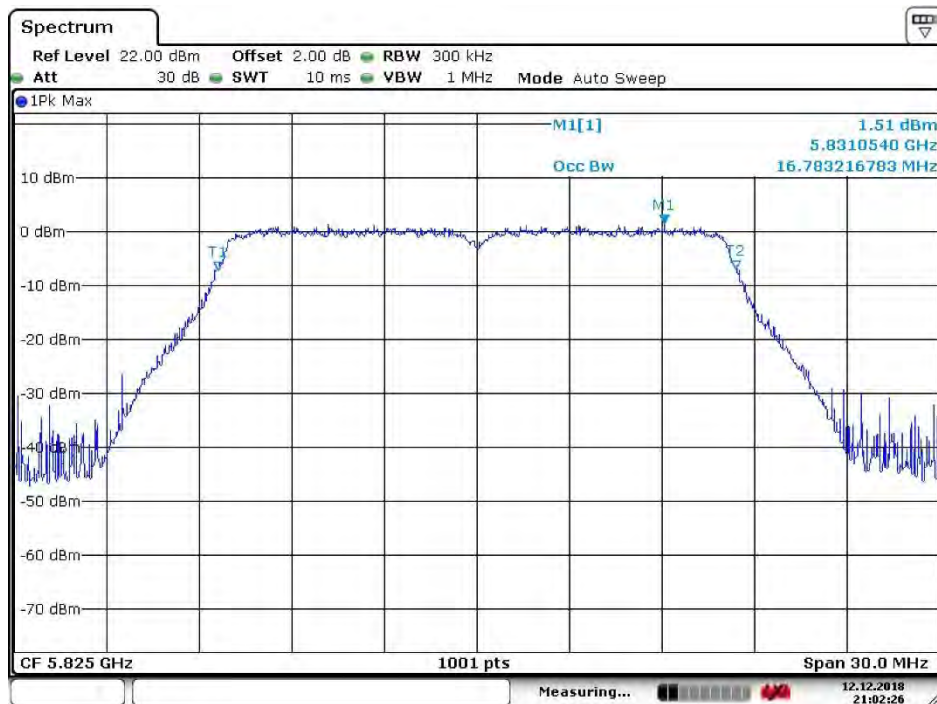

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Date: 12.DEC.2018 21:02:09
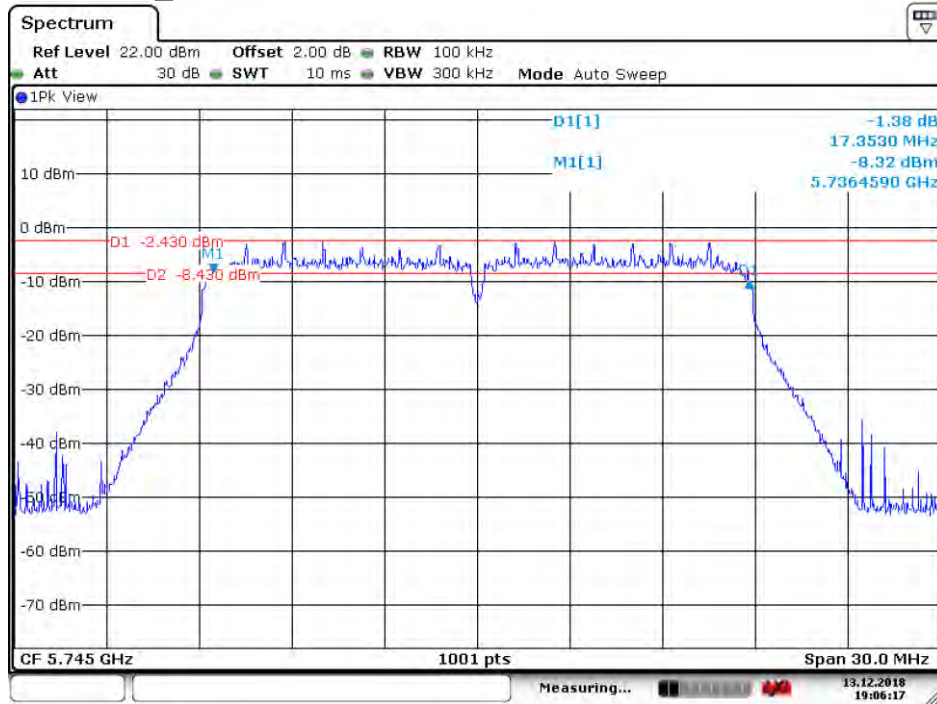
4.6.1.3 11A20_165 ANT 1
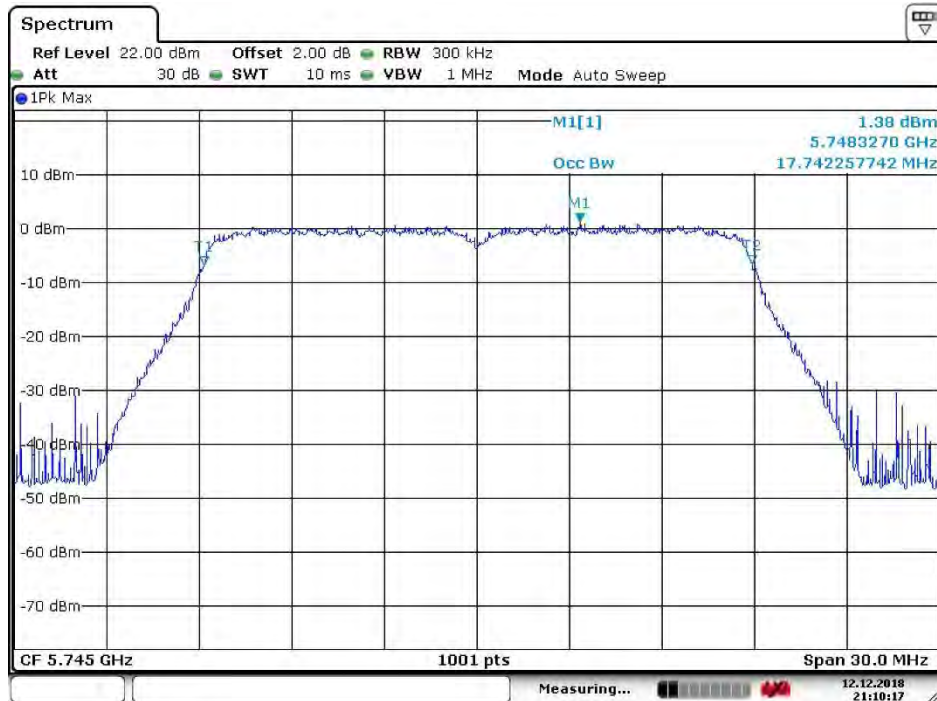

Date: 13.DEC.2018 19:02:06

Date: 12.DEC.2018 21:02:26

4.6.1.4 11N20_149 ANT 1

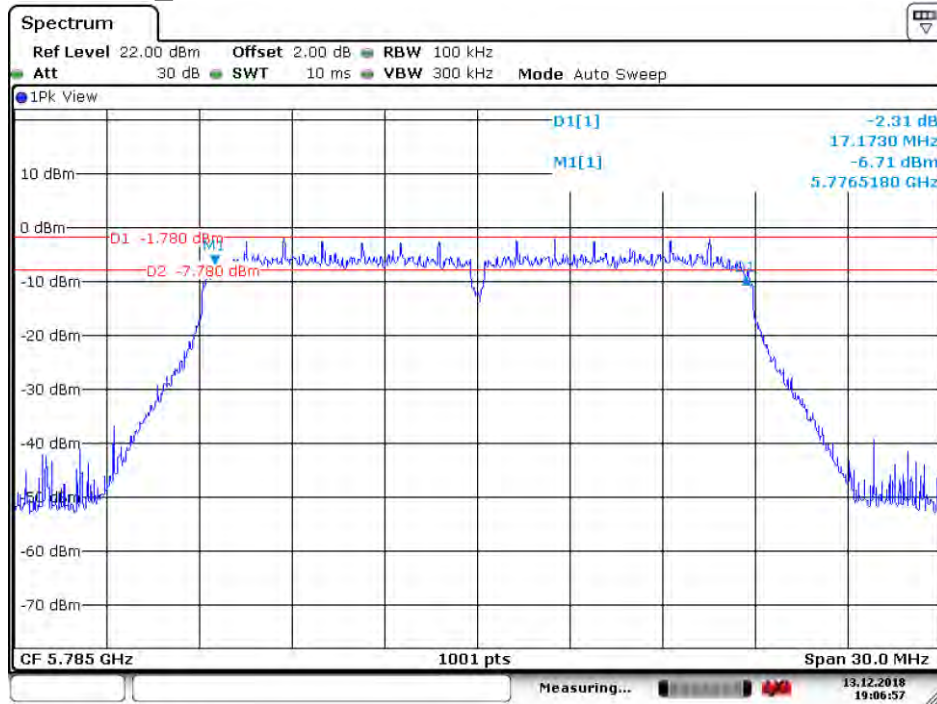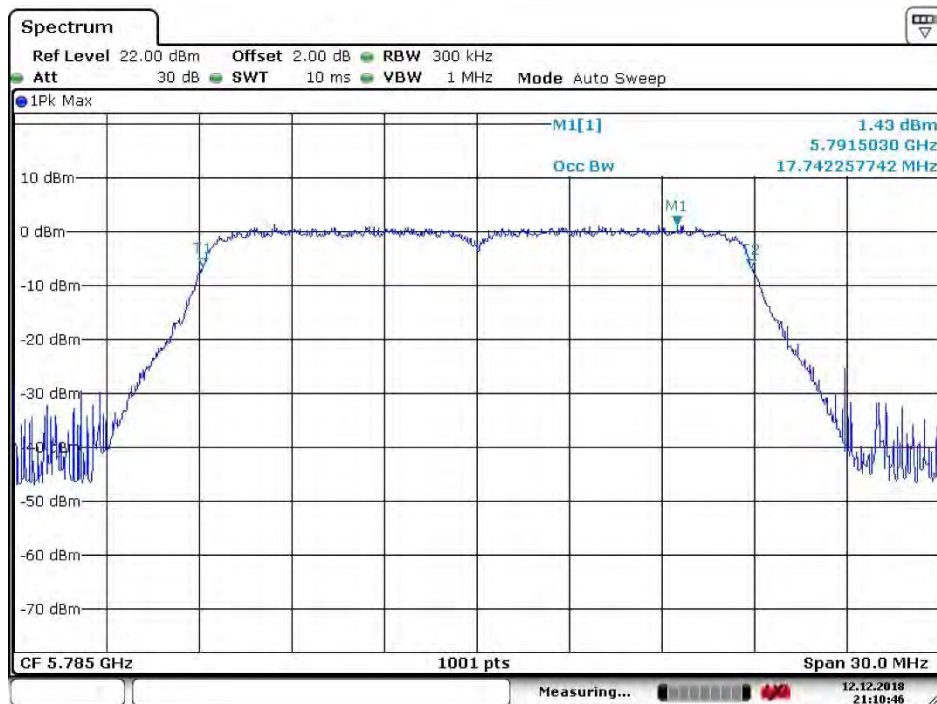
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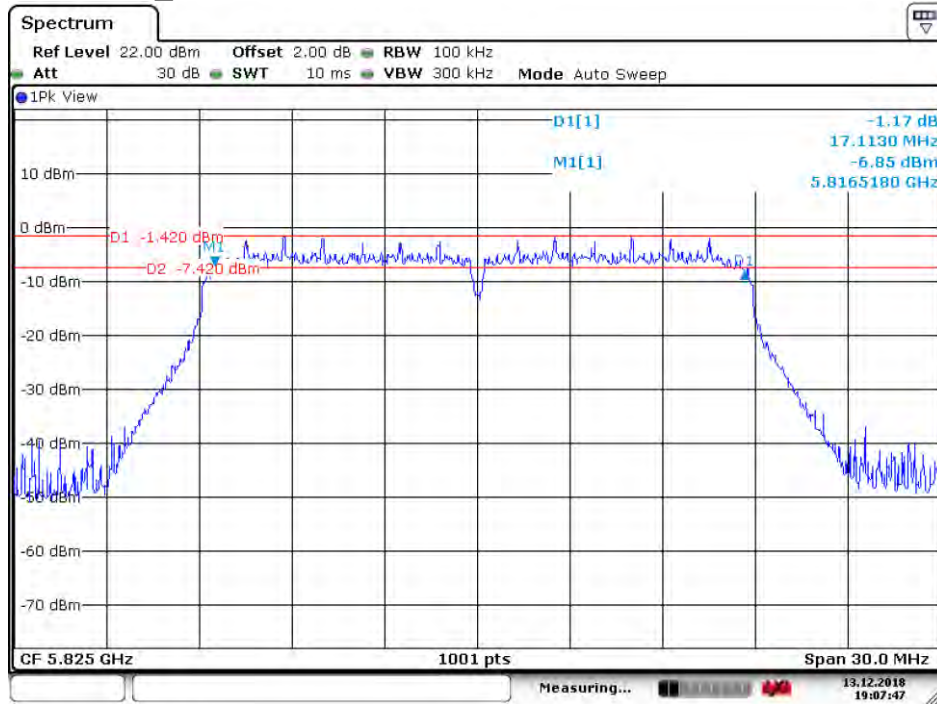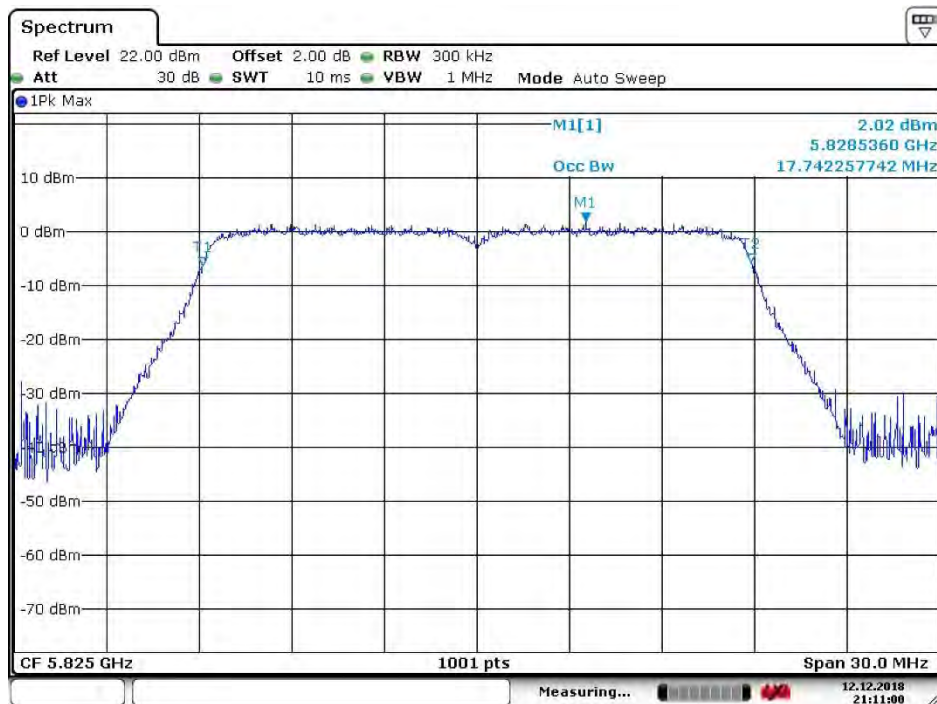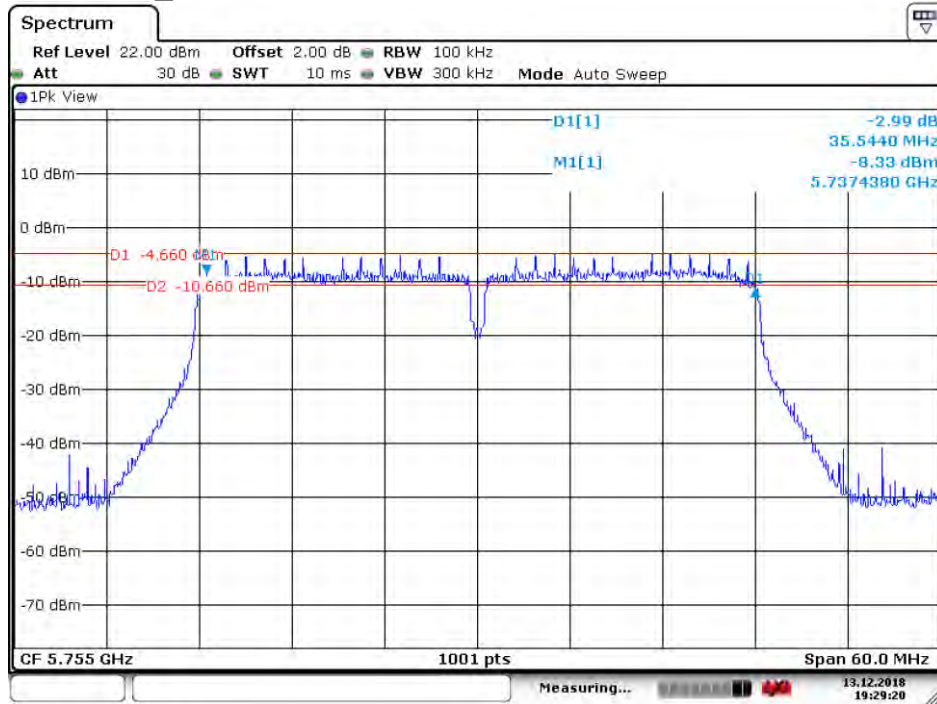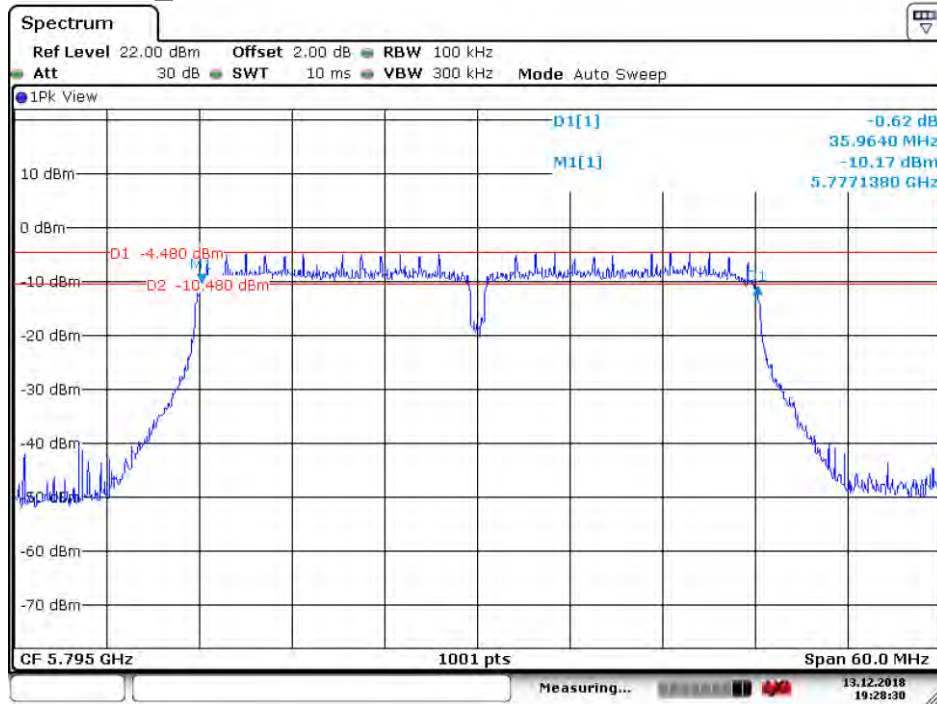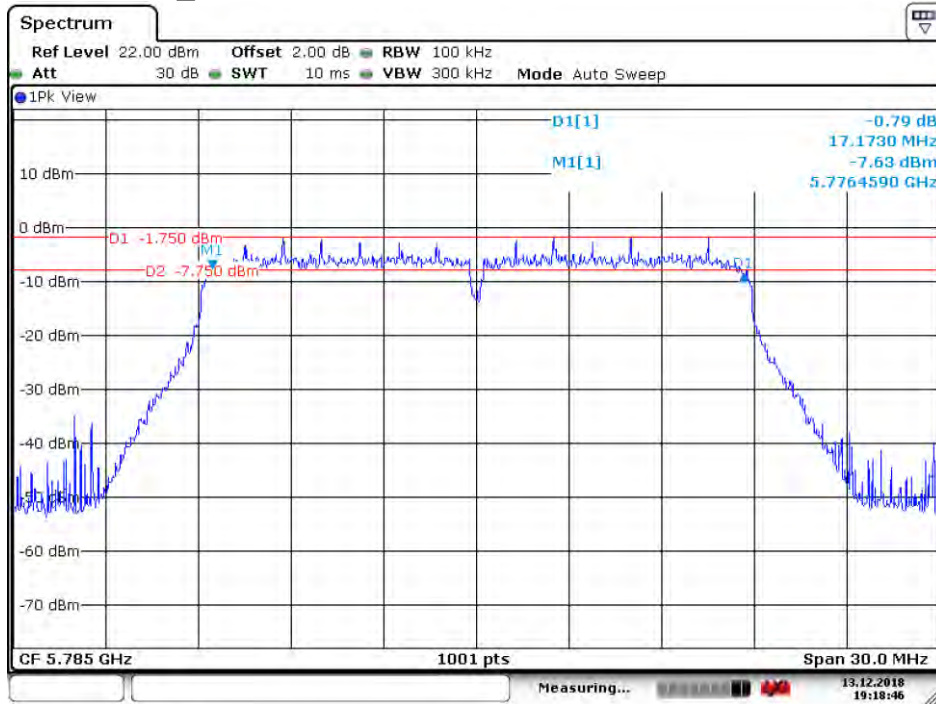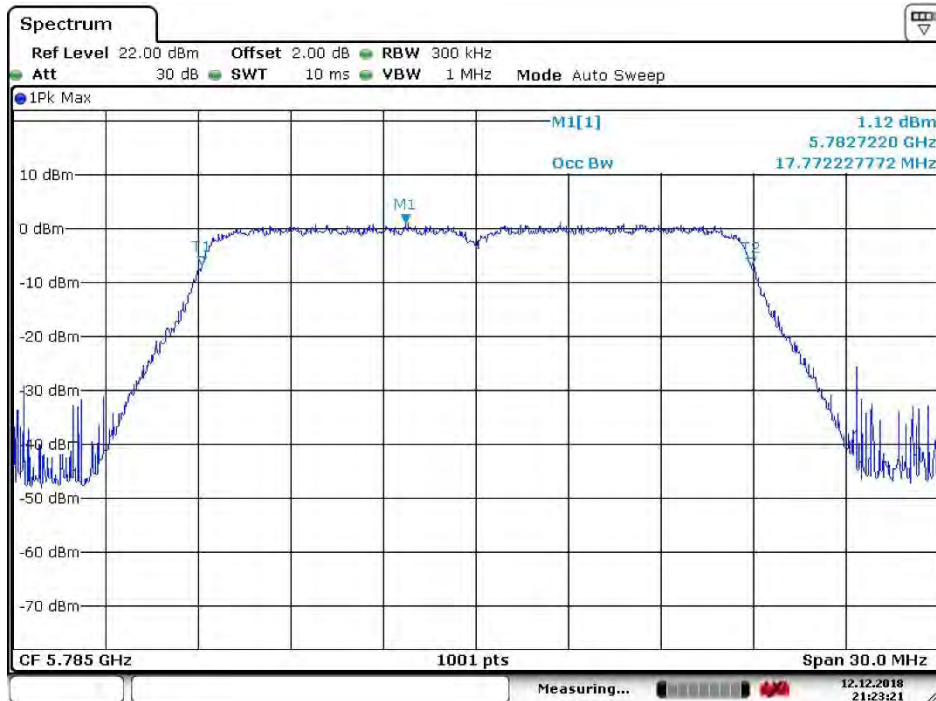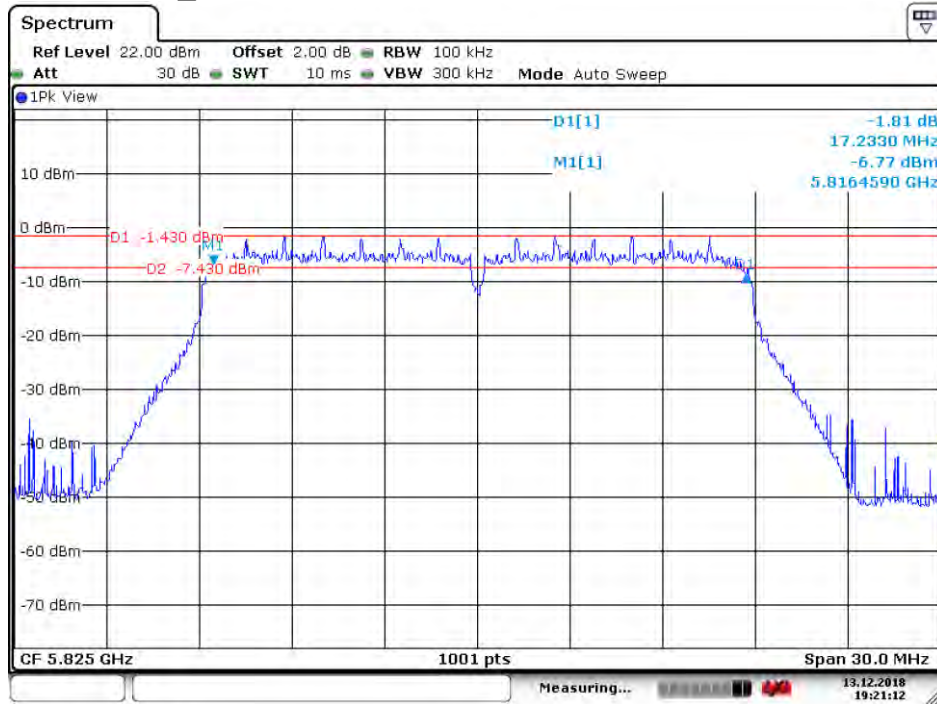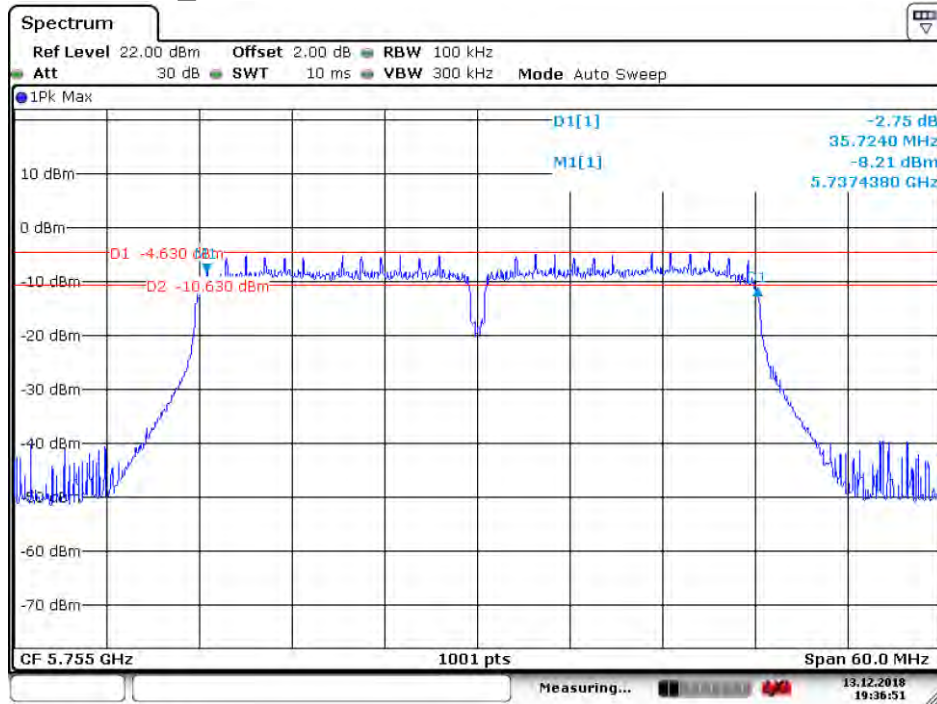

Date: 12.DEC.2018 21:10:18

4.6.1.5 11N20_157 ANT 1

Date: 13.DEC.2018 19:06:58

Date: 12.DEC.2018 21:10:46

4.6.1.6   11N20_165 ANT 1

Date: 13.DEC.2018 19:07:47

Date: 12.DEC.2018 21:11:01

4.6.1.7   11N40_151 ANT 1

Date: 13.DEC.2018 19:29:20

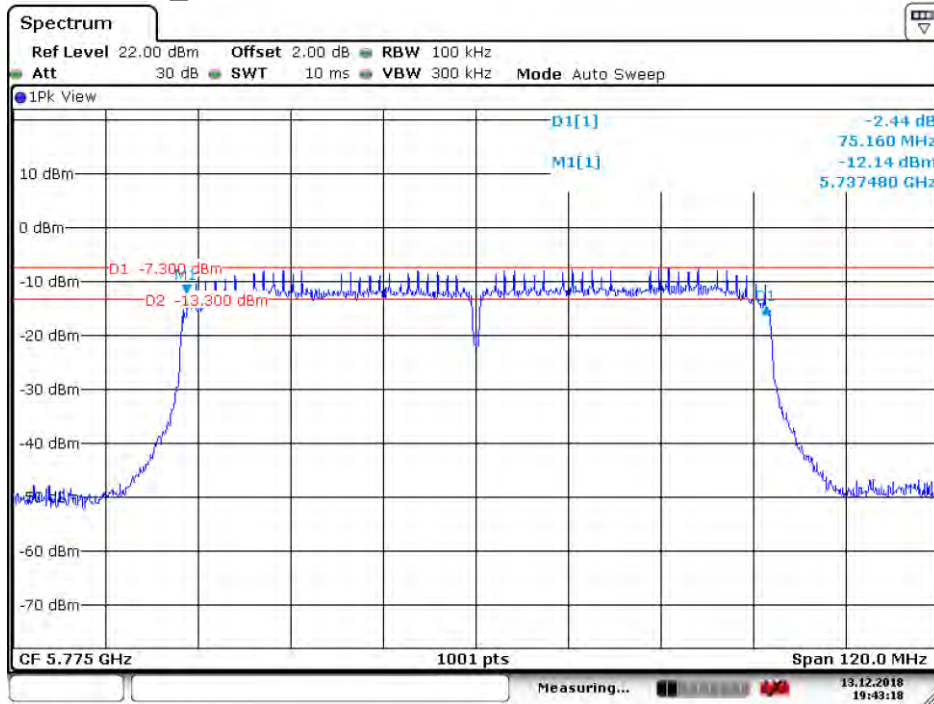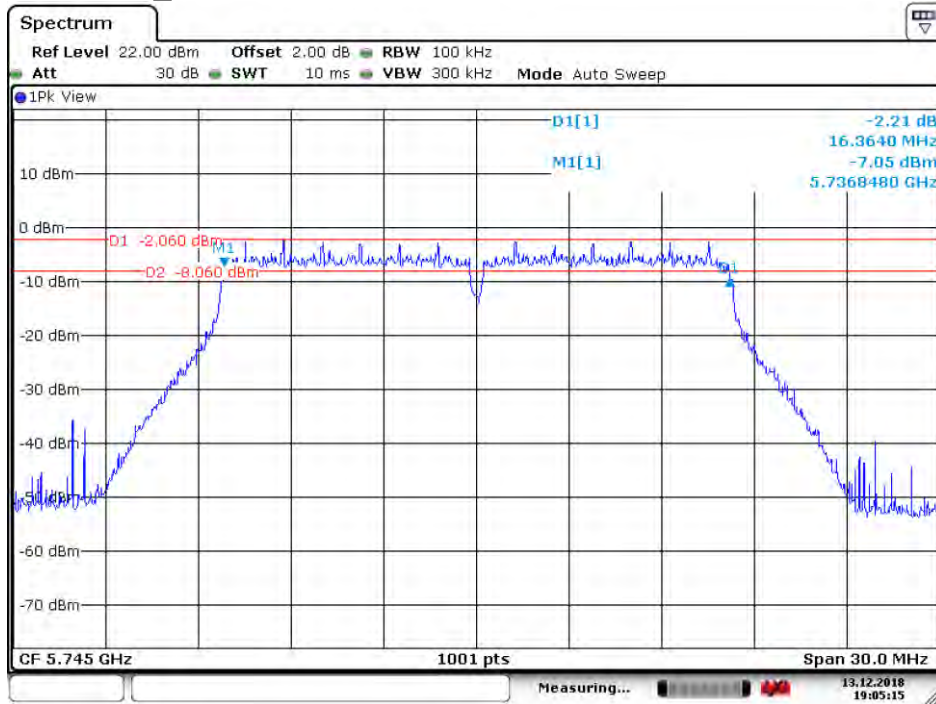Date: 13.DEC.2018 15:31:13
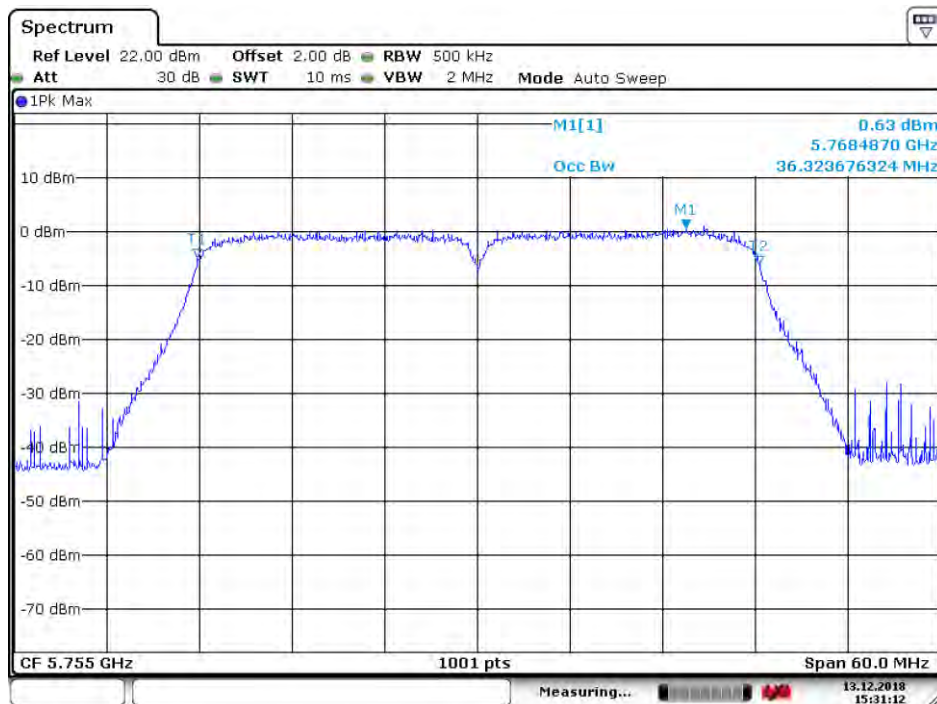
4.6.1.8　　　11N40_159 ANT 1

Date: 13.DEC.2018 19:28:31
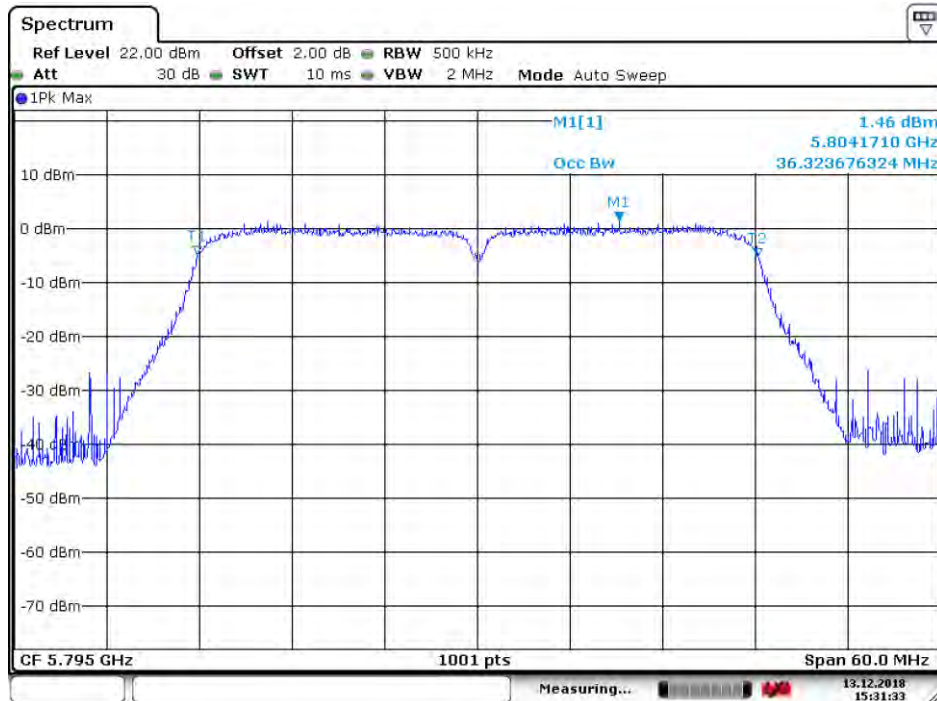
Date: 13.DEC.2018 15:31:33

4.6.1.9   11AC20_149 ANT 1
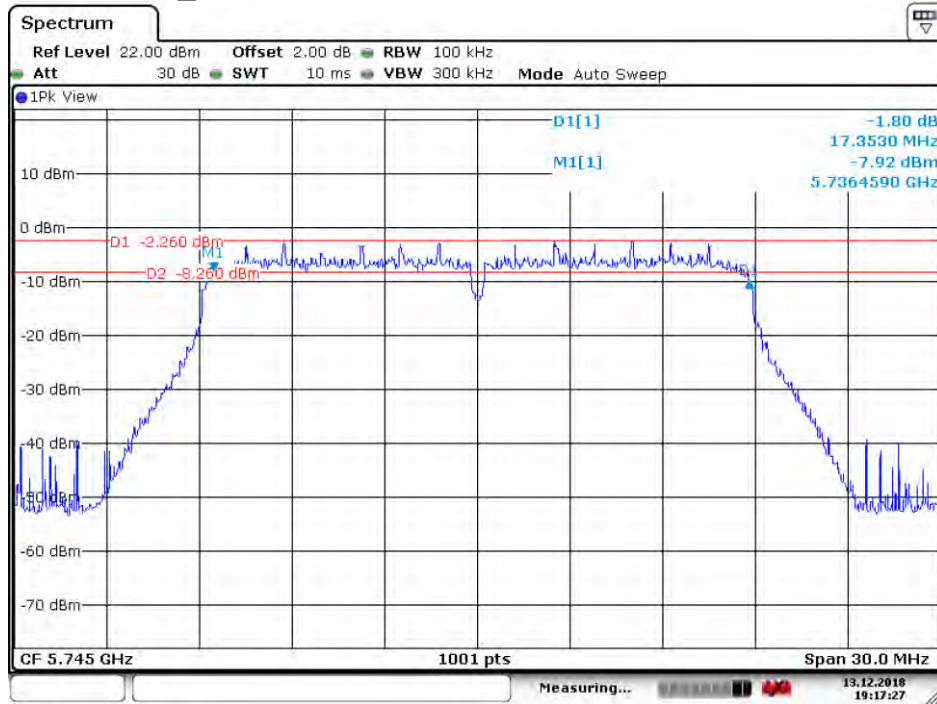
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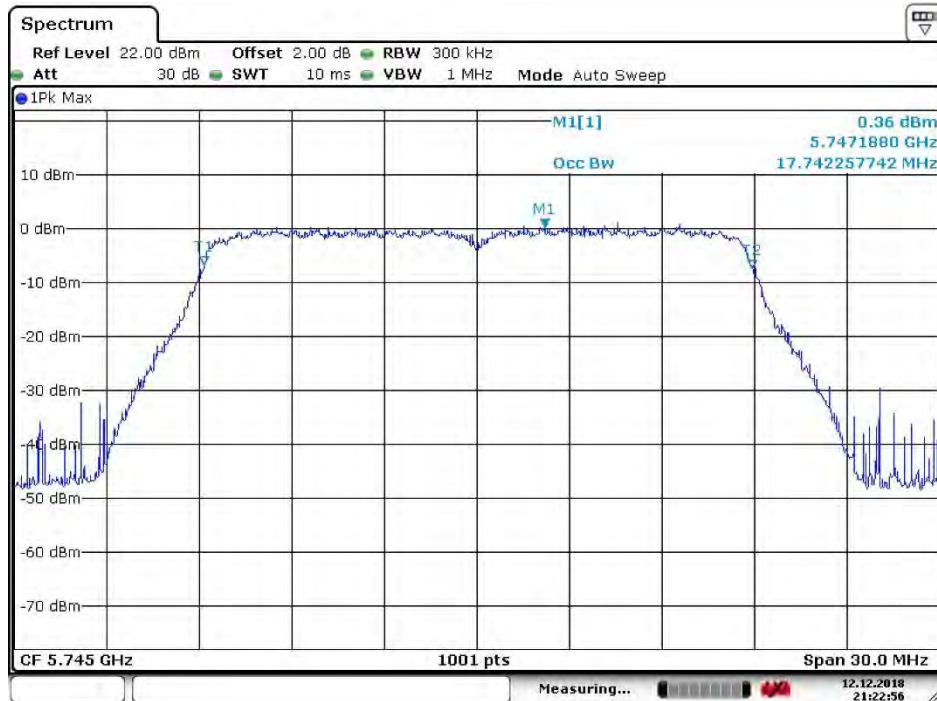
Date: 12.DEC.2018 21:22:56

4.6.1.10   11AC20_157 ANT 1
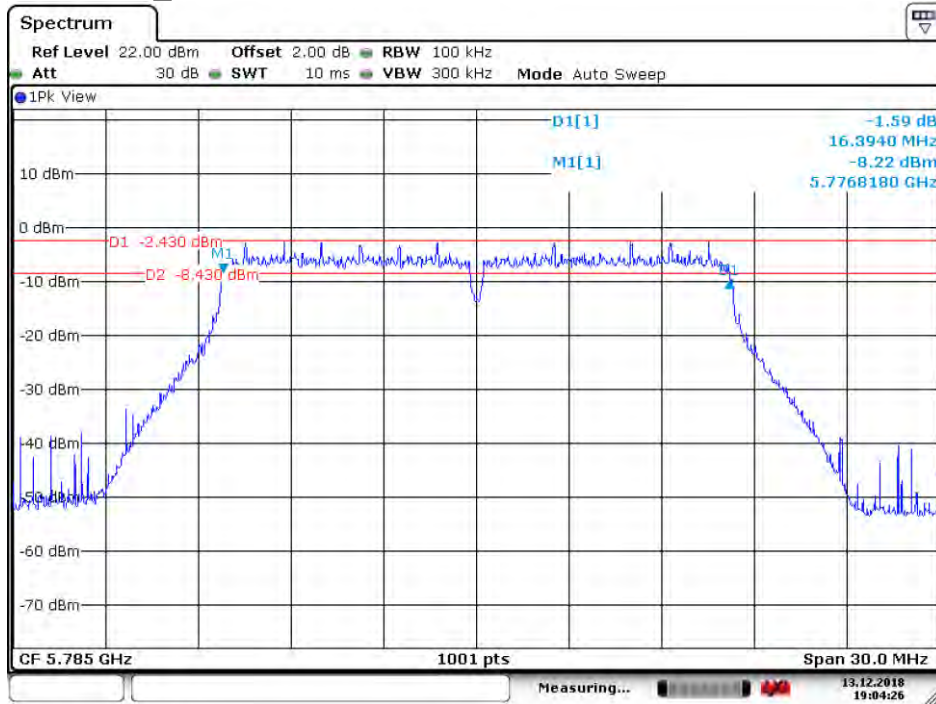

Date: 13.DEC.2018 19:18:46

Date: 12.DEC.2018 21:23:21

4.6.1.11   11AC20_165 ANT 1

Date: 13.DEC.2018 19:21:13
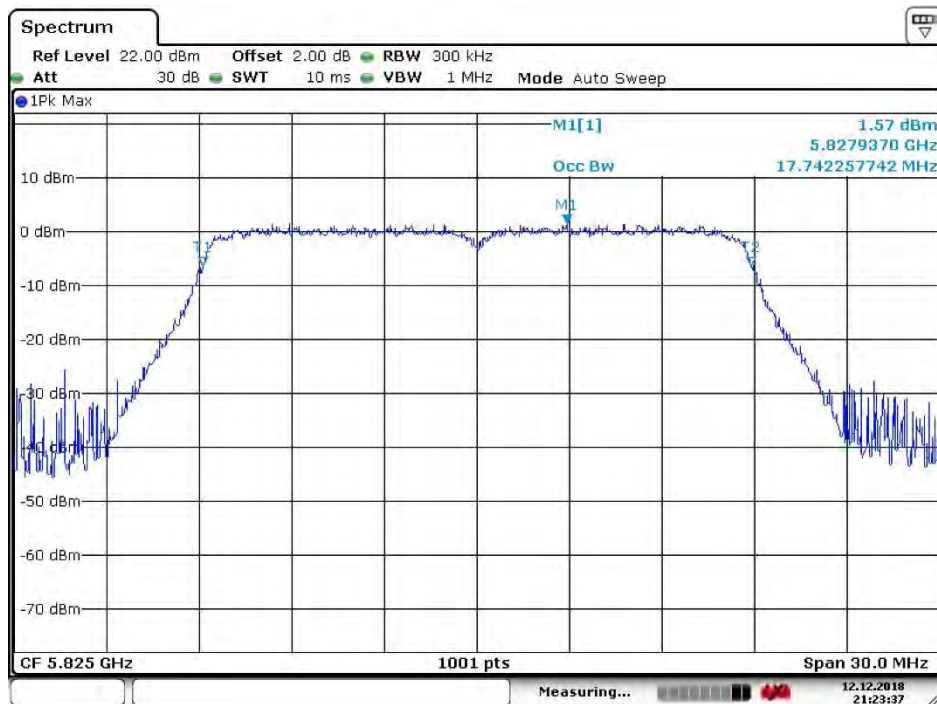
Date: 12.DEC.2018 21:23:38

4.6.1.12 11AC40_151 ANT 1

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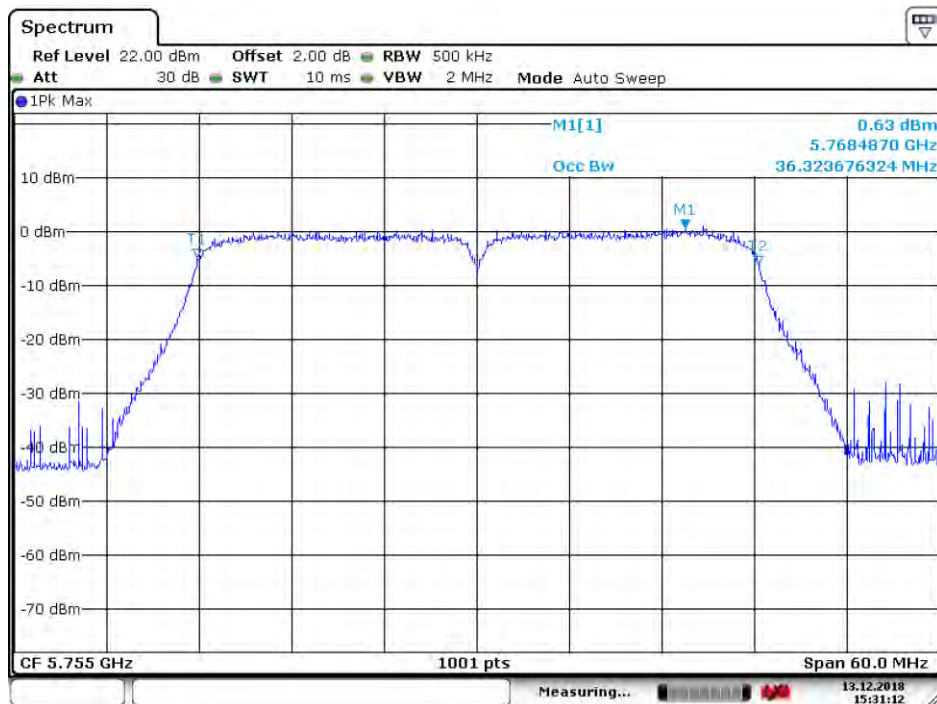
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4.6.1.13   11AC40_159 ANT 1
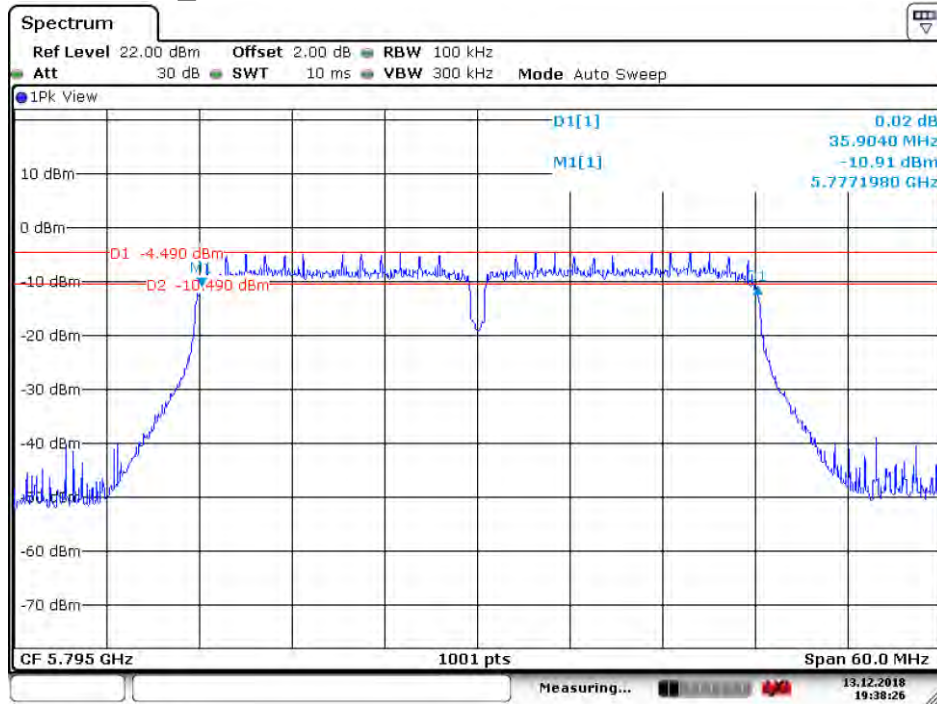
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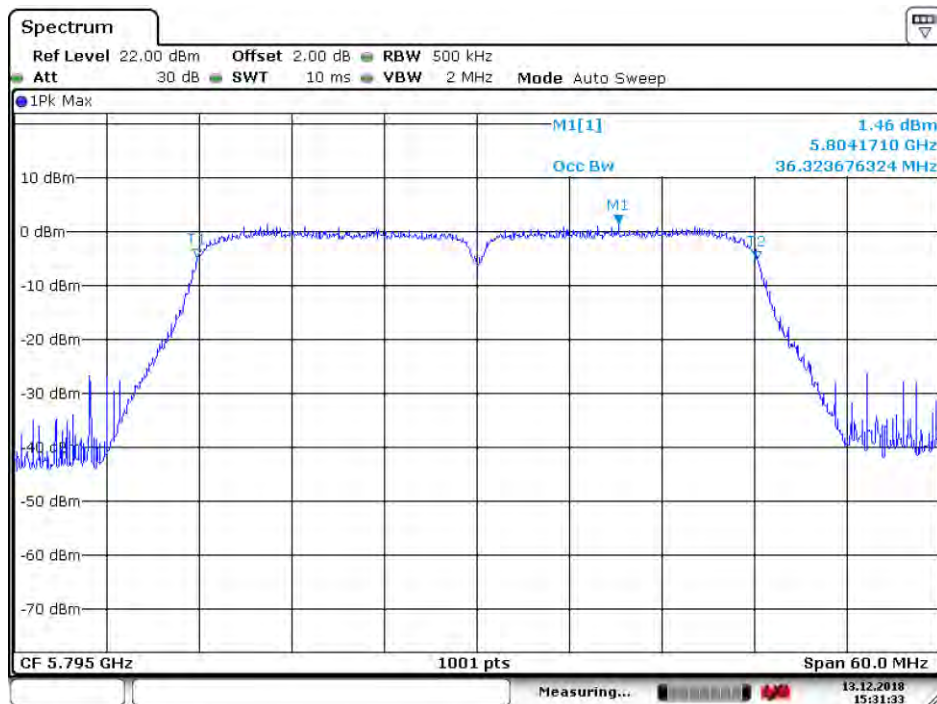
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4.6.1.14   11AC80_155 ANT 1

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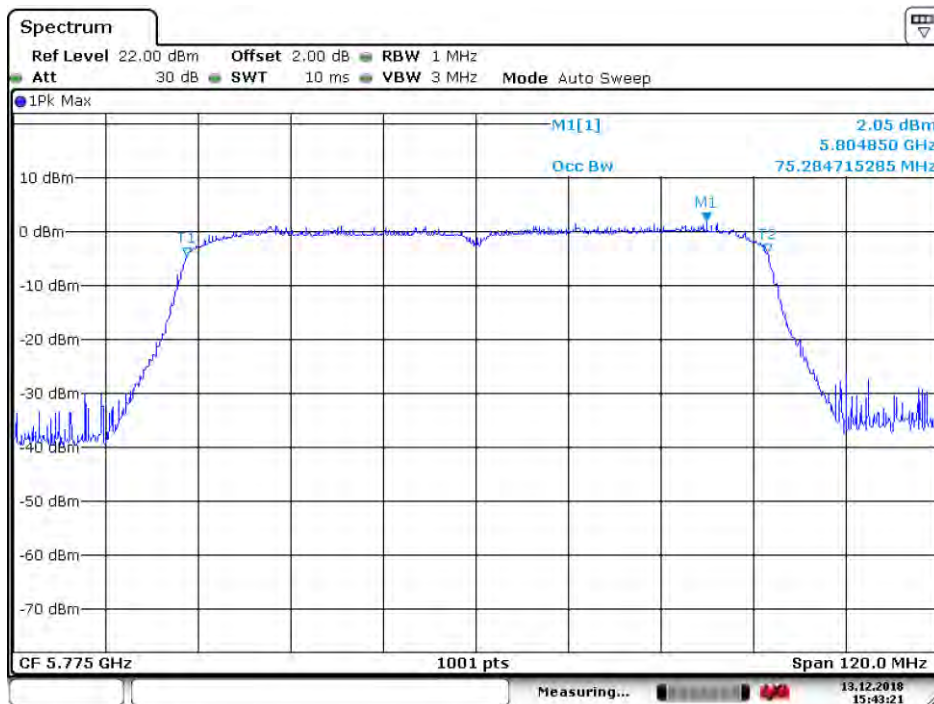
Date: 13.DEC.2018 15:43:21

4.6.1.15   11A20_149 ANT 2

Date: 13.DEC.2018 19:05:15
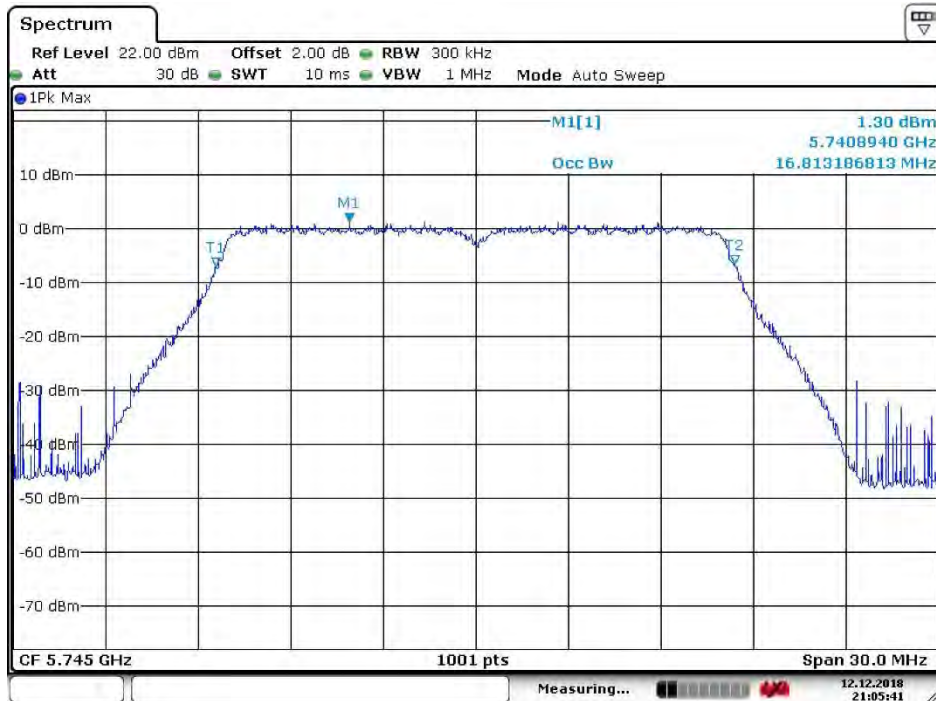
Date: 12.DEC.2018 21:05:41

4.6.1.16   11A20_157 ANT 2

Date: 13.DEC.2018 19:04:27
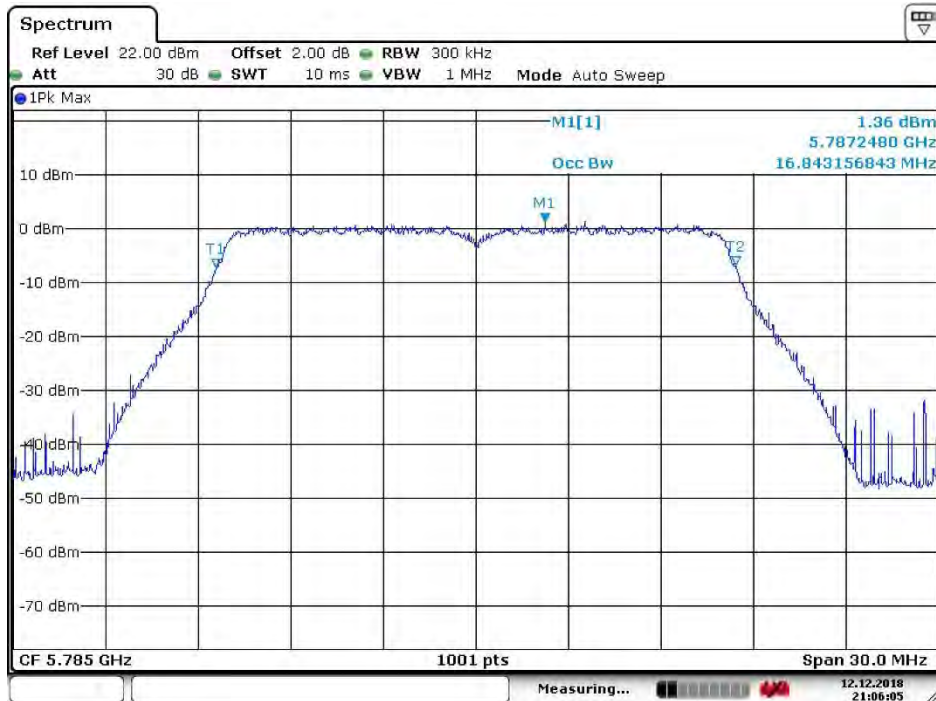
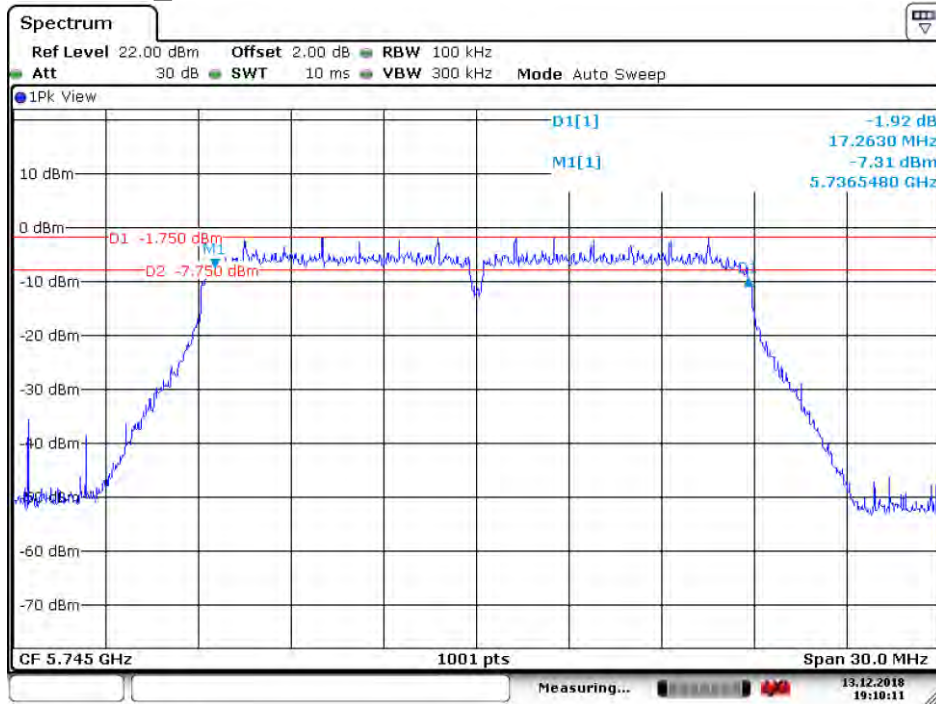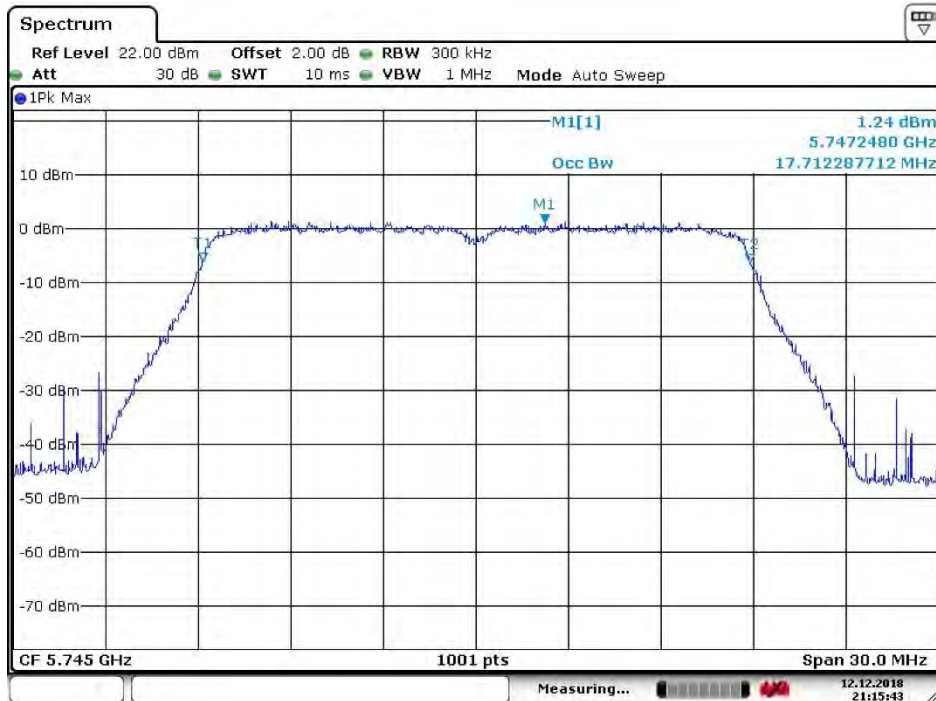Date: 12.DEC.2018 21:06:05

4.6.1.17   11A20_165 ANT 2
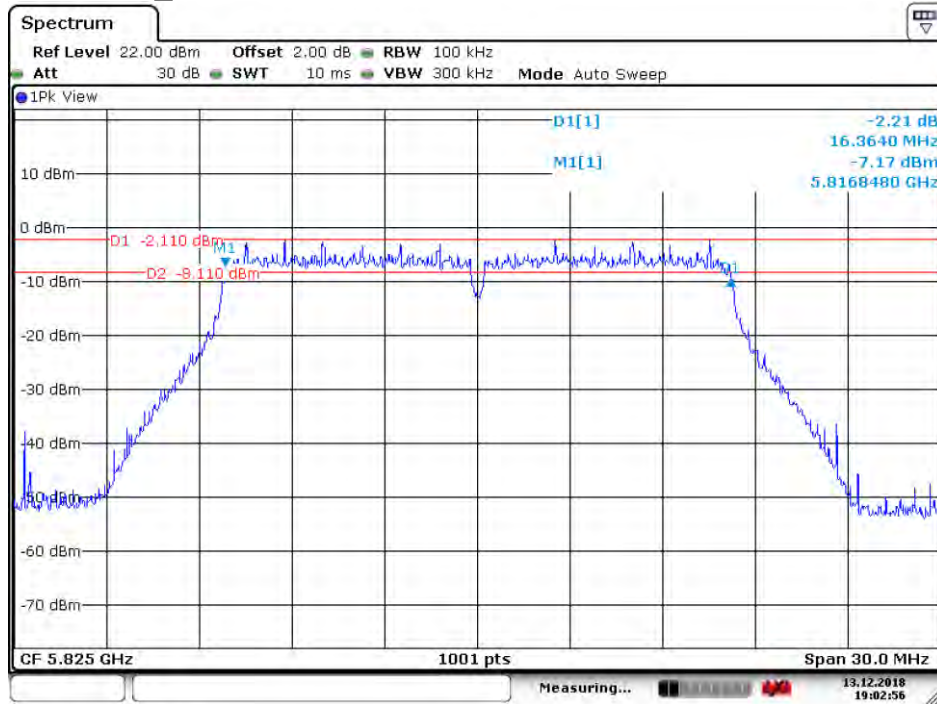
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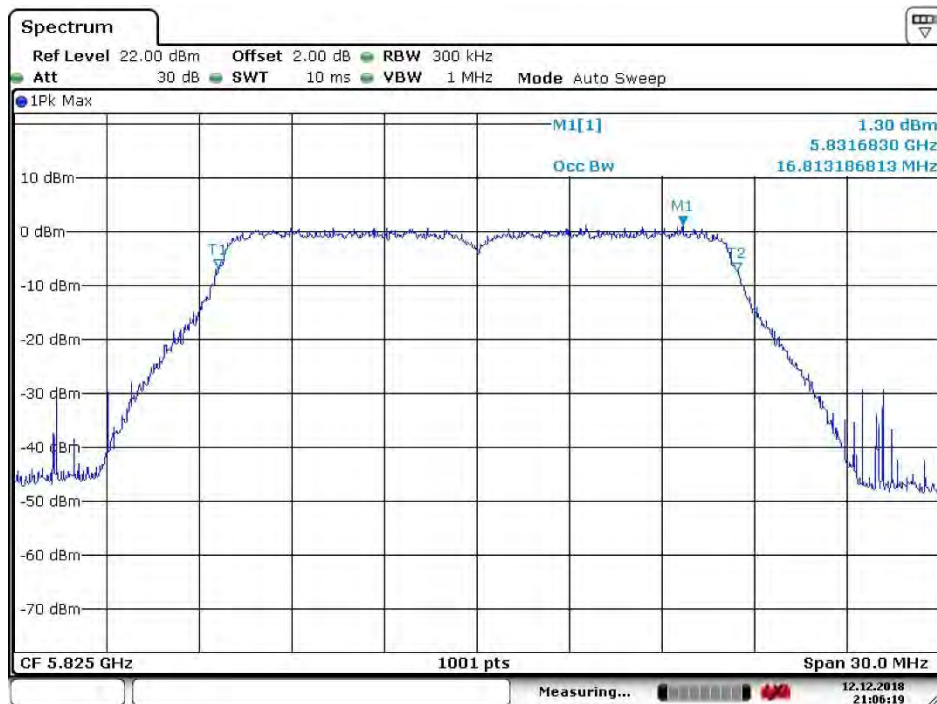
Date: 12.DEC.2018 21:06:20

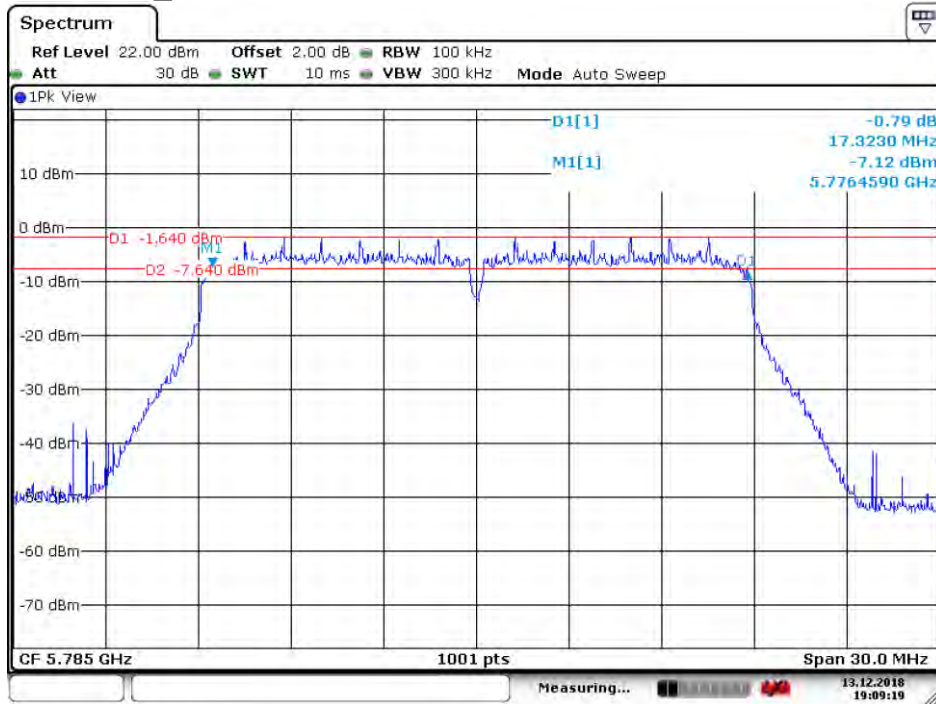### 4.6.1.18   11N20_149 ANT 2

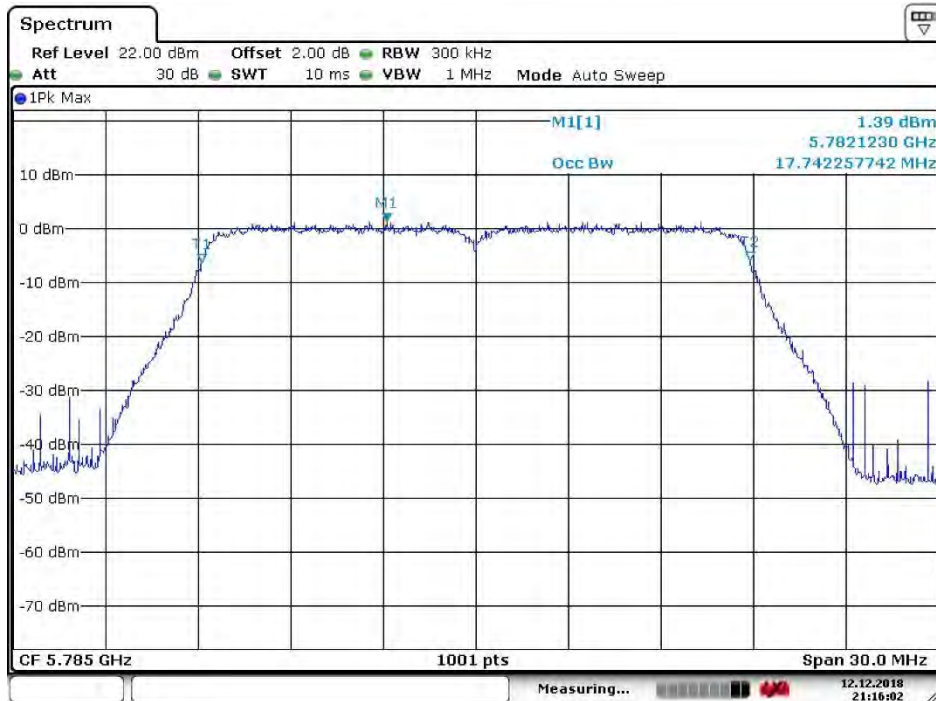Date: 13.DEC.2018 19:10:11

Date: 12.DEC.2018 21:15:44

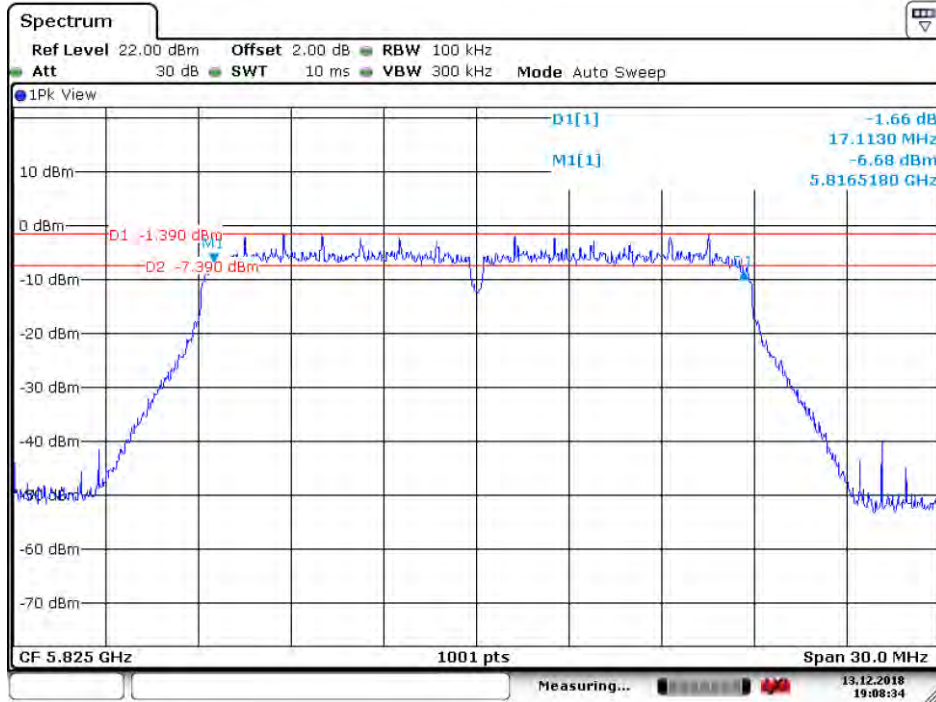### 4.6.1.19   11N20_157 ANT 2

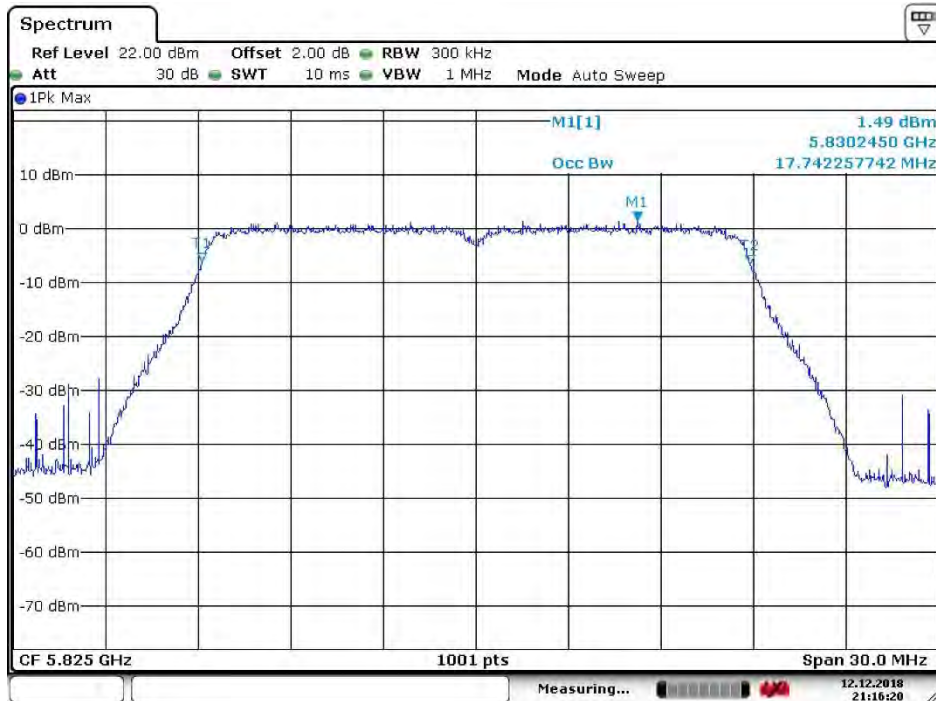Date: 13.DEC.2018 19:09:20

Date: 12.DEC.2018 21:16:03

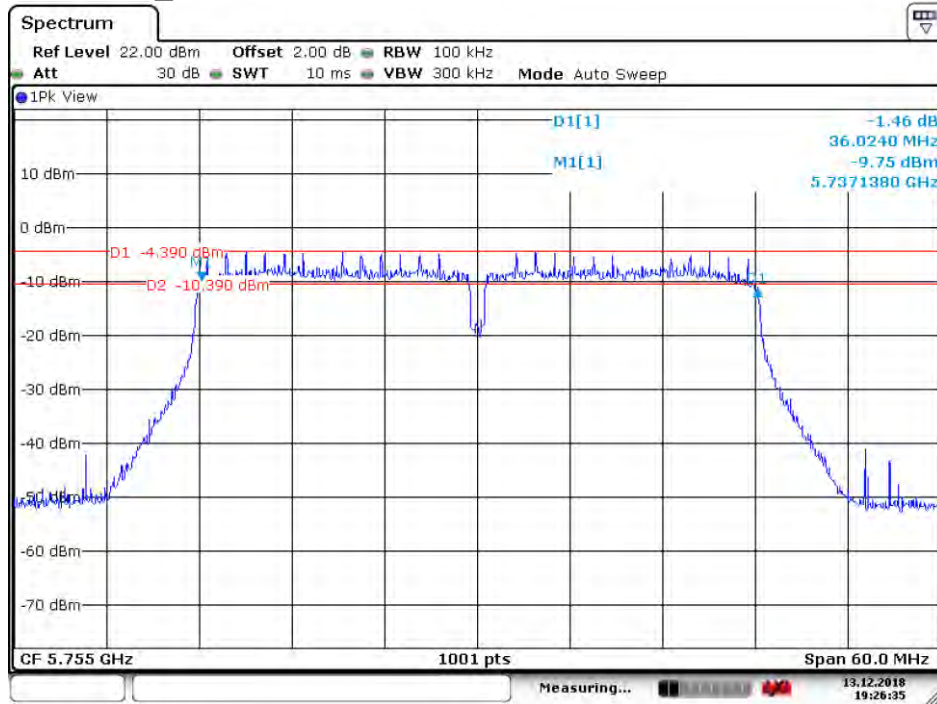## 4.6.1.20   11N20_165 ANT 2
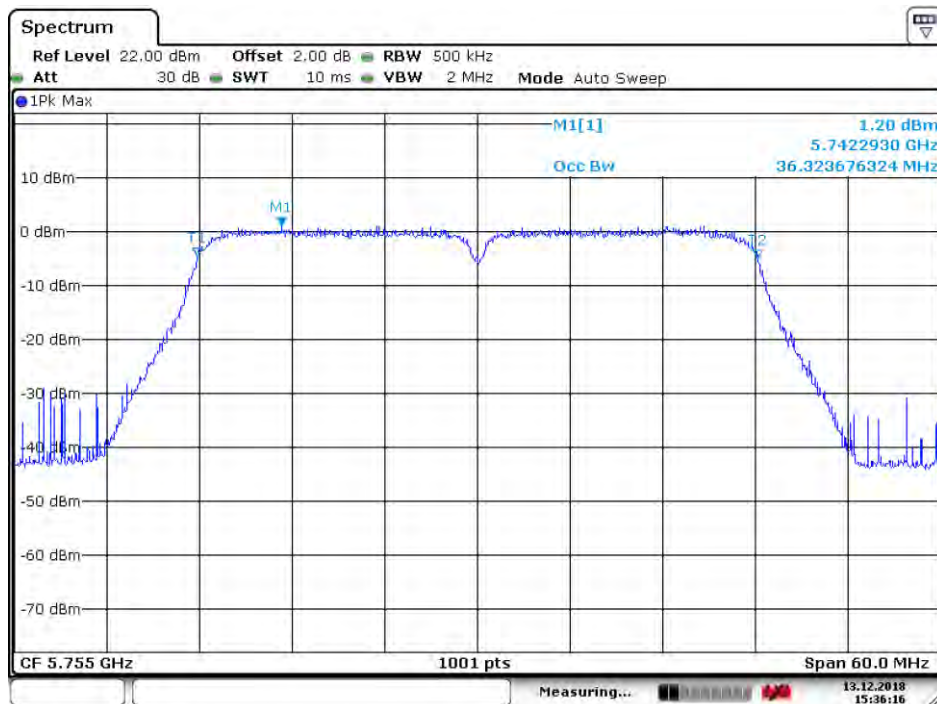

Date: 13.DEC.2018 19:08:34

Date: 12.DEC.2018 21:16:21
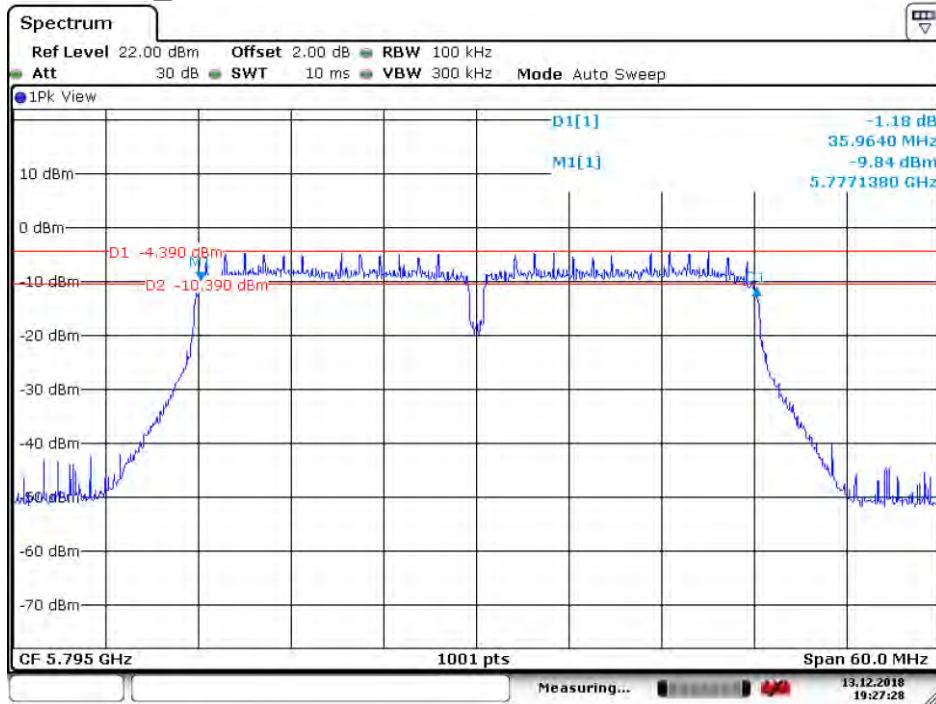
4.6.1.21 11N40_151 ANT 2
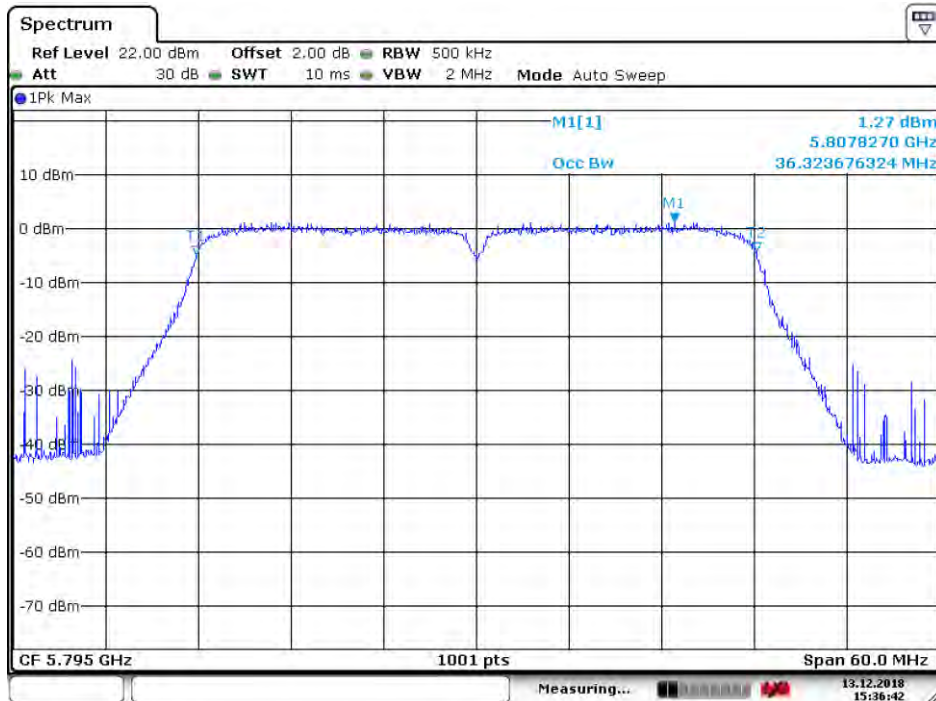

Date: 13.DEC.2018 19:26:36

Date: 13.DEC.2018 15:36:16
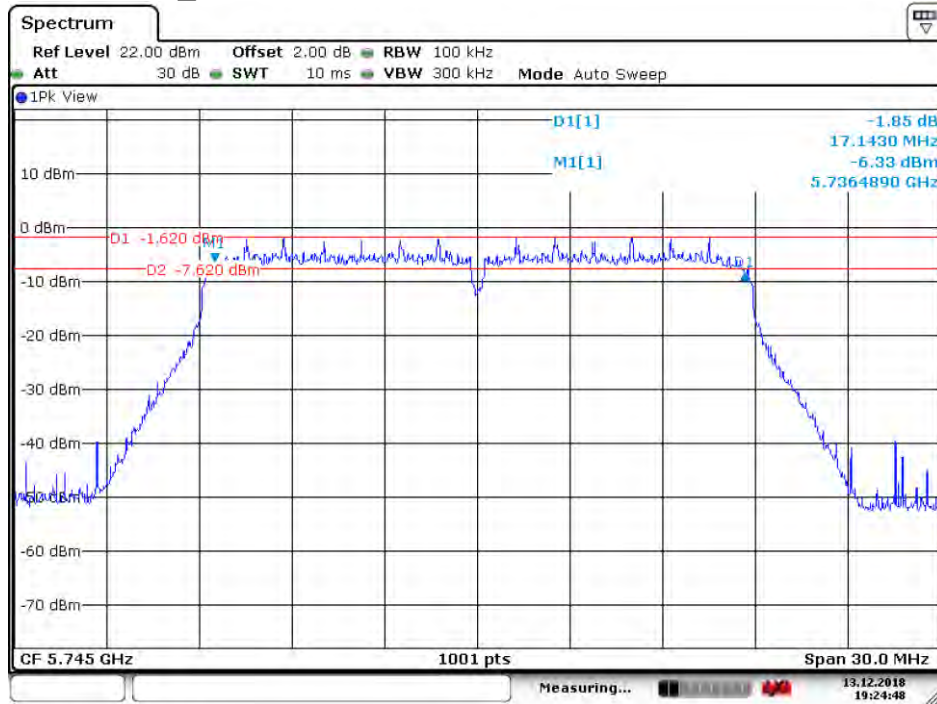
4.6.1.22 11N40_159 ANT 2
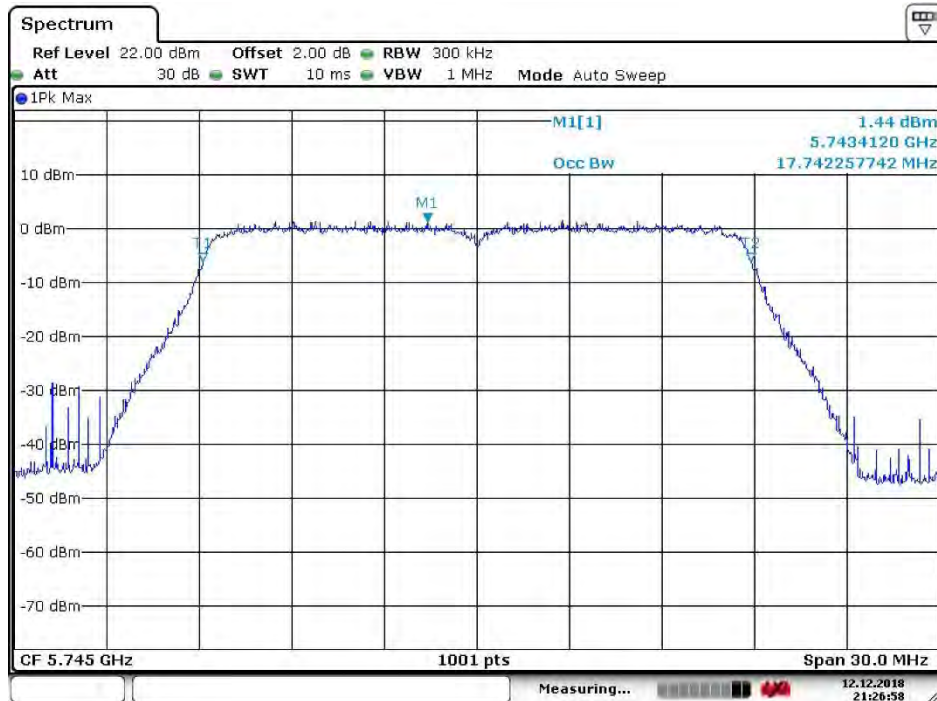

Date: 13.DEC.2018 19:27:29

Date: 13.DEC.2018 15:36:43
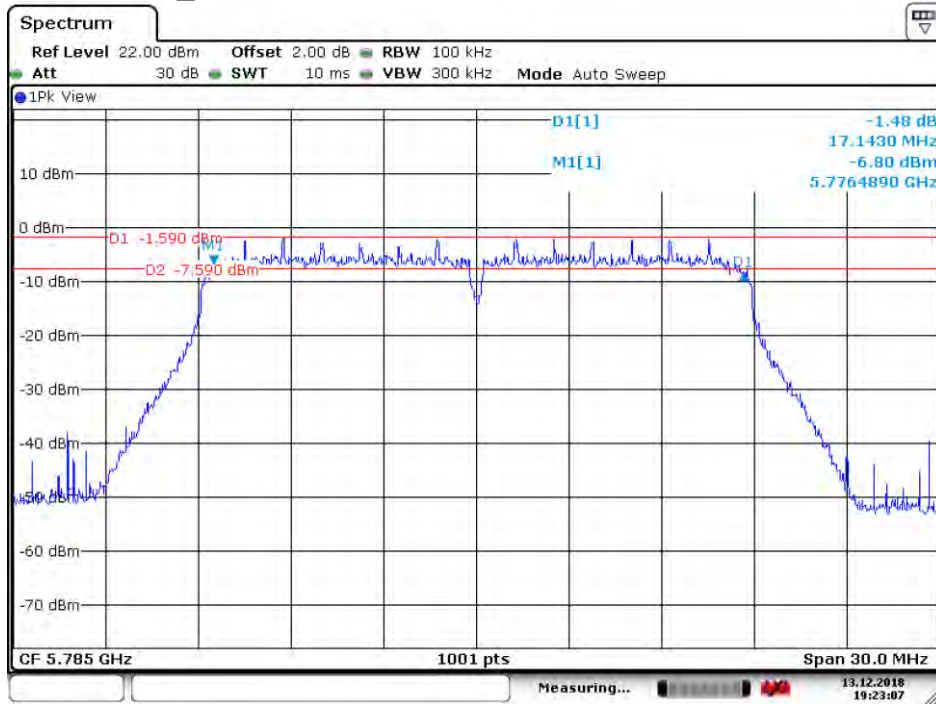
4.6.1.23   11AC20_149 ANT 2
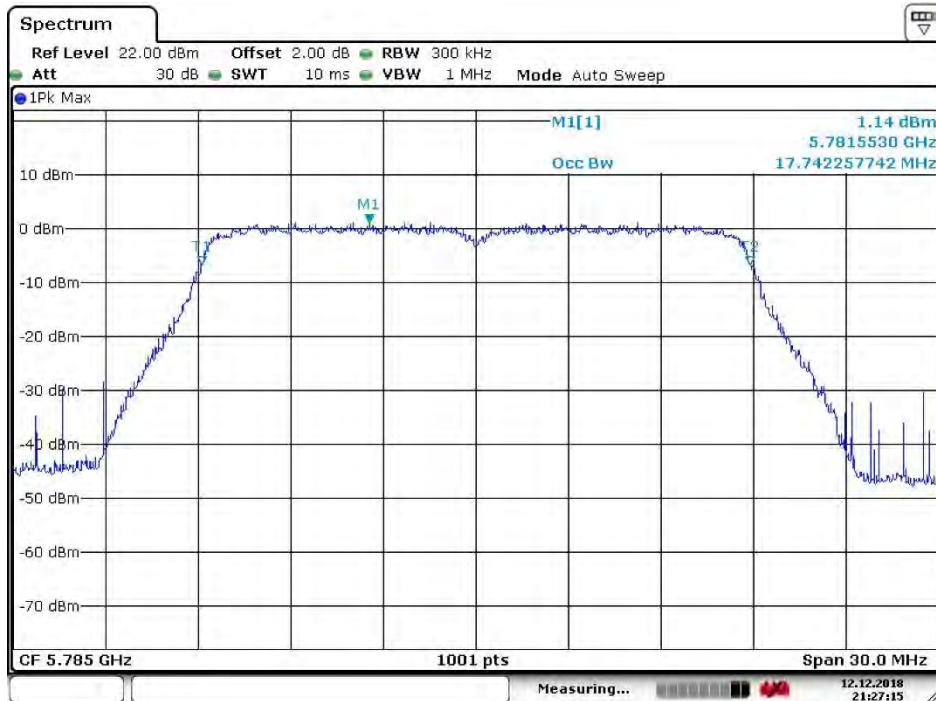

Date: 13.DEC.2018 19:24:48

Date: 12.DEC.2018 21:26:58
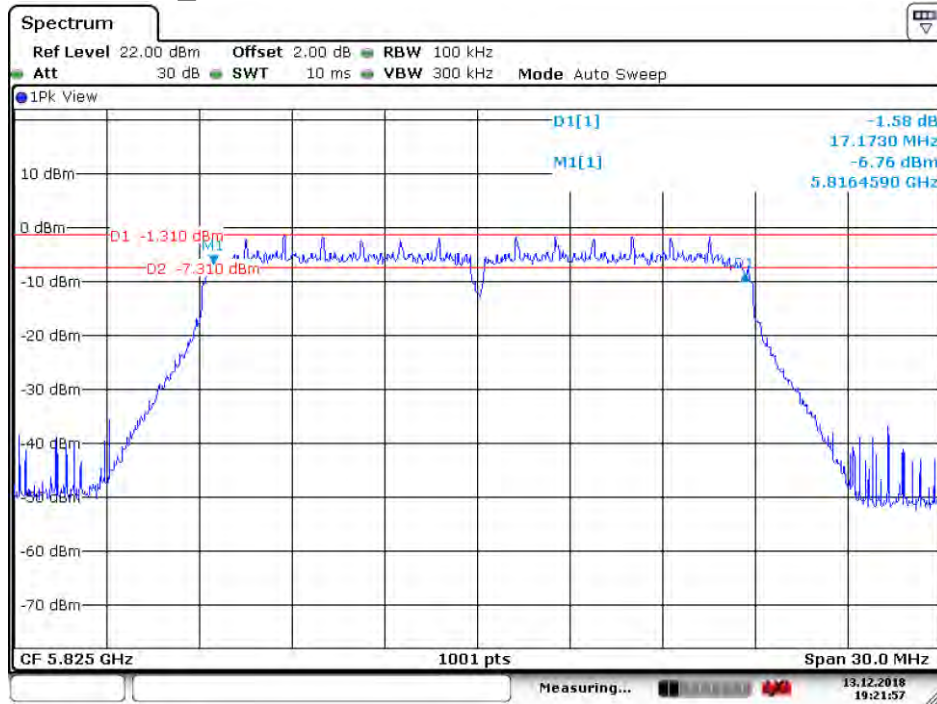
4.6.1.24 11AC20_157 ANT 2
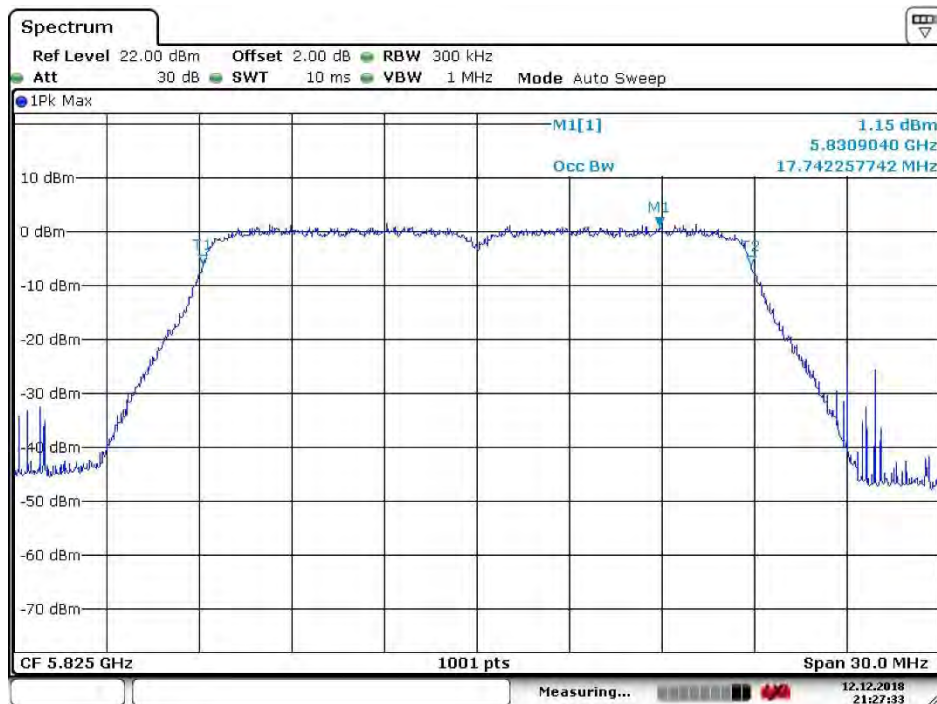

Date: 13.DEC.2018 19:23:07

Date: 12.DEC.2018 21:27:15
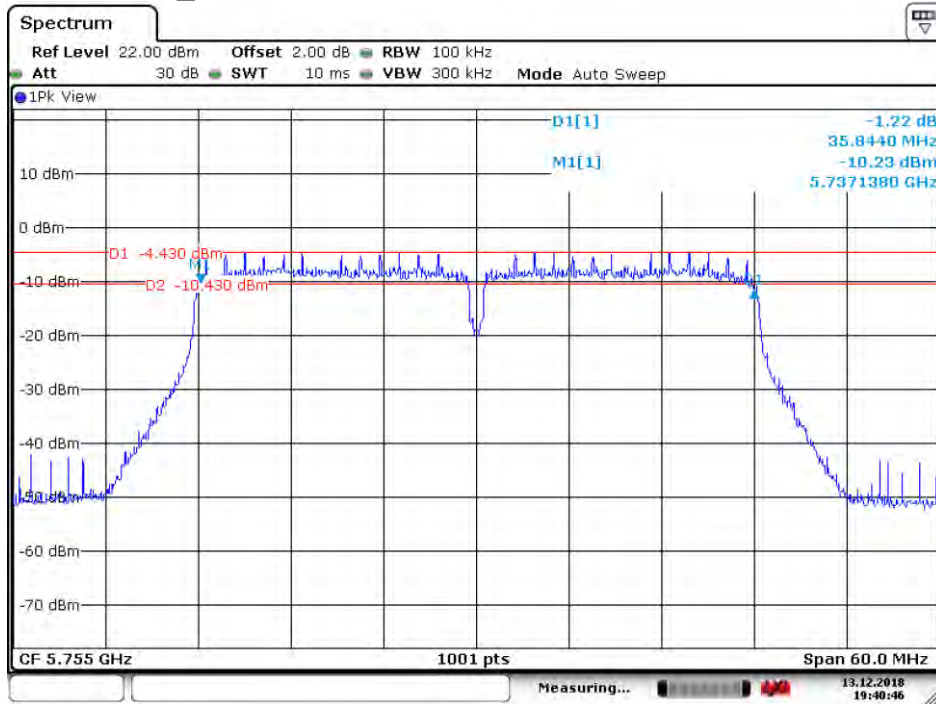
4.6.1.25   11AC20_165 ANT 2
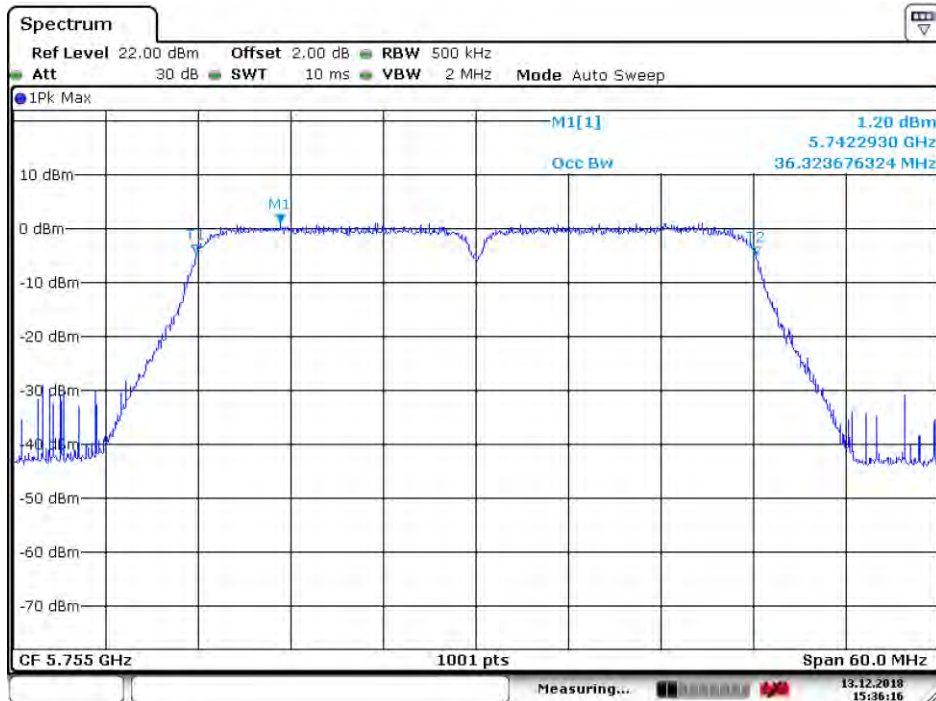

Date: 13.DEC.2018 19:21:57

Date: 12.DEC.2018 21:27:33

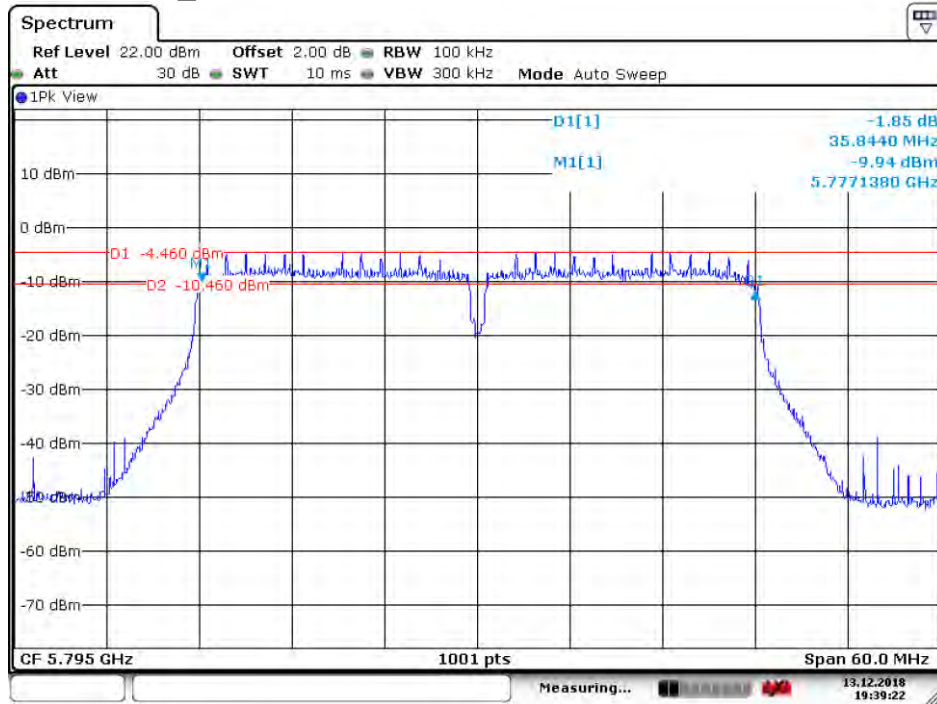### 4.6.1.26 11AC40_151 ANT 2

Date: 13.DEC.2018 19:40:46

Date: 13.DEC.2018 15:36:16
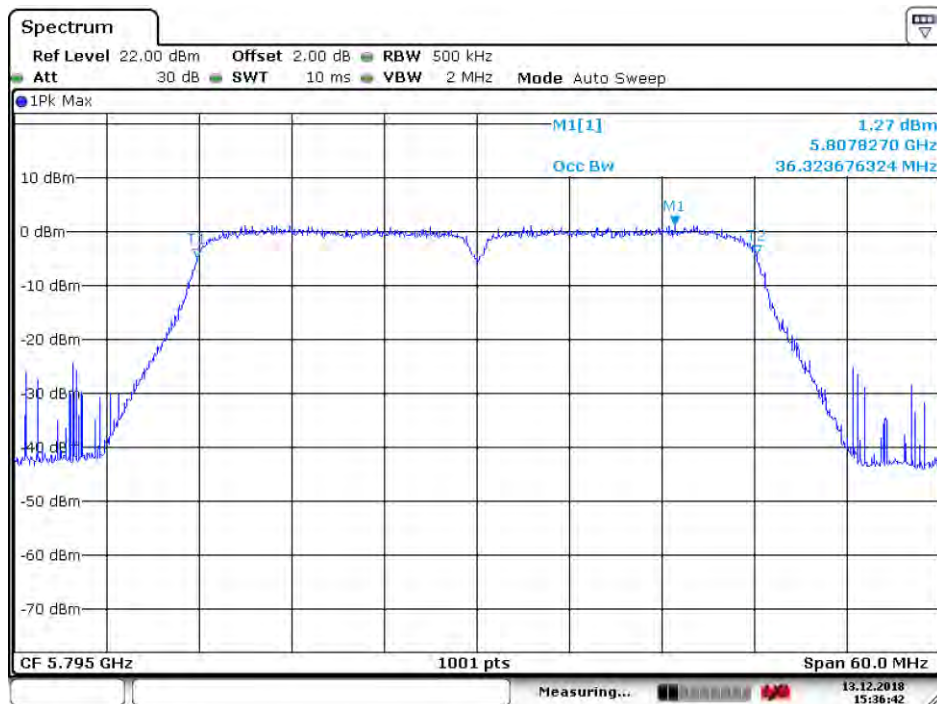
4.6.1.27 11AC40_159 ANT 2

Date: 13.DEC.2018 19:39:23

Date: 13.DEC.2018 15:36:43

4.6.1.28   11AC80_155 ANT 2
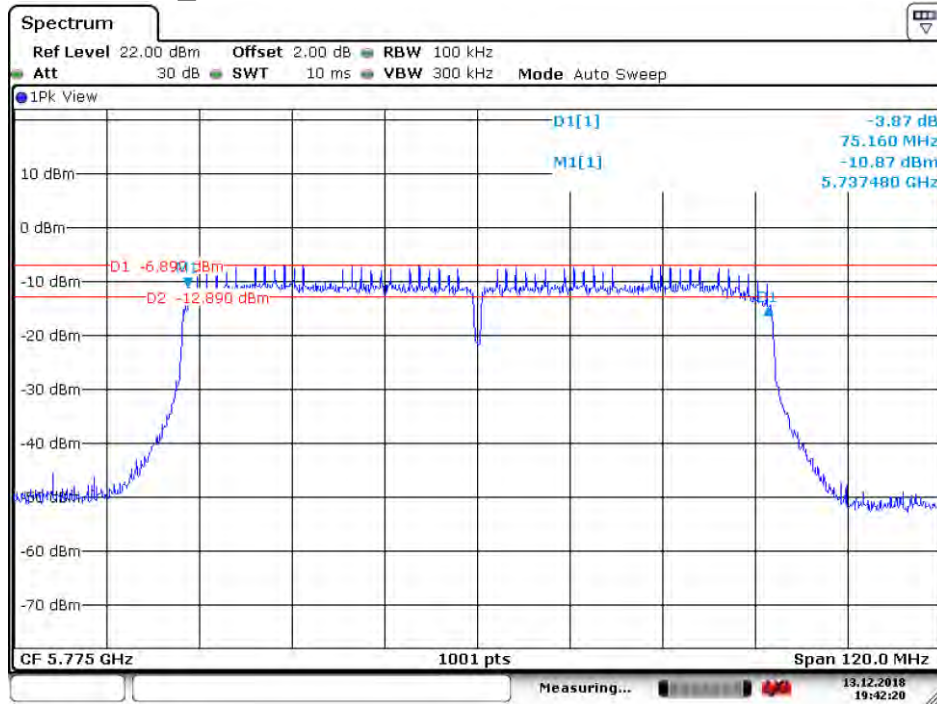
Date: 13.DEC.2018 19:42:20
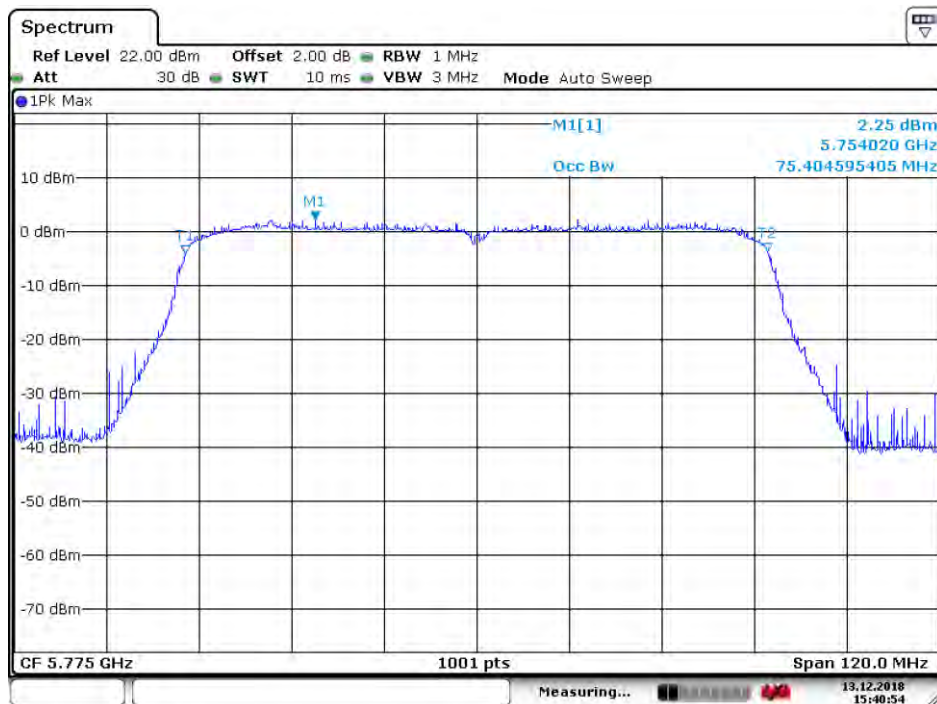
Date: 13.DEC.2018 15:40:55

4.6.1.29   11A20_CDD_149 ANT 1
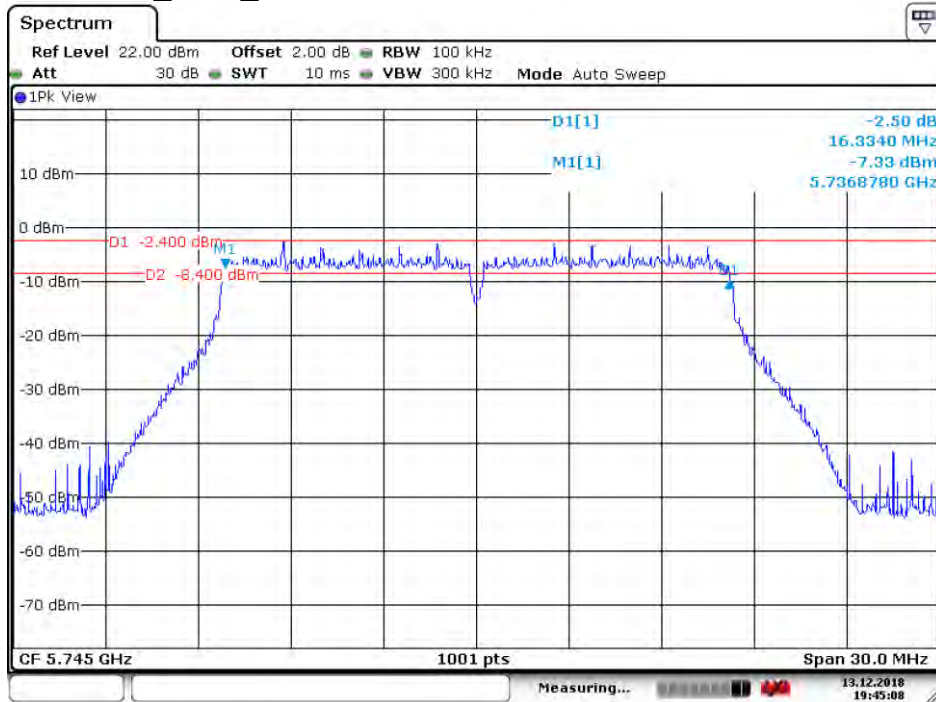
Date: 13.DEC.2018 19:45:09
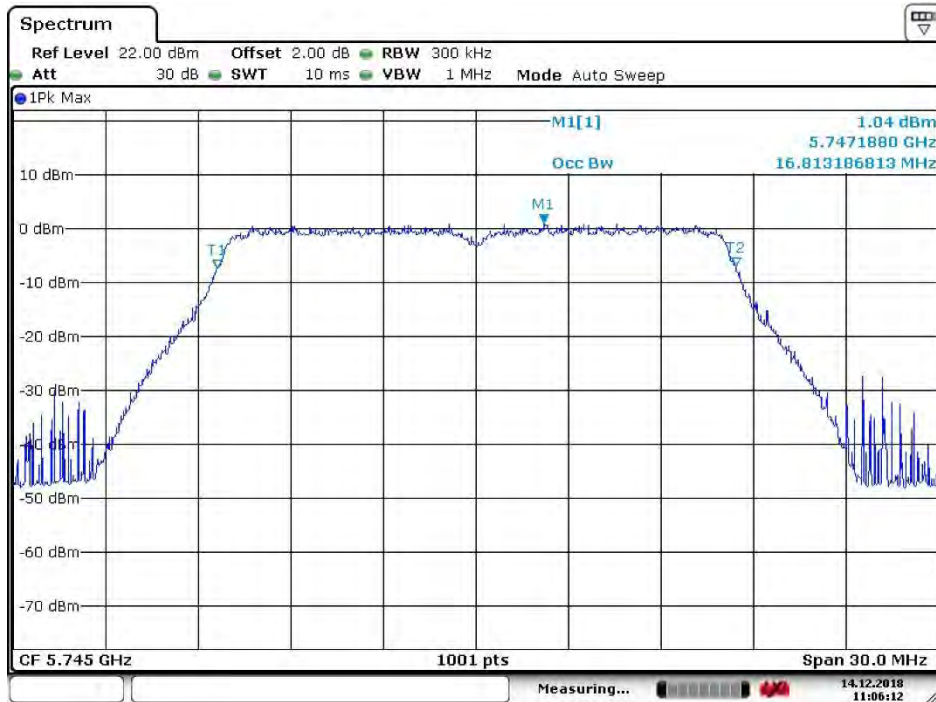
Date: 14.DEC.2018 11:06:13

4.6.1.30   11A20_CDD_157 ANT 1
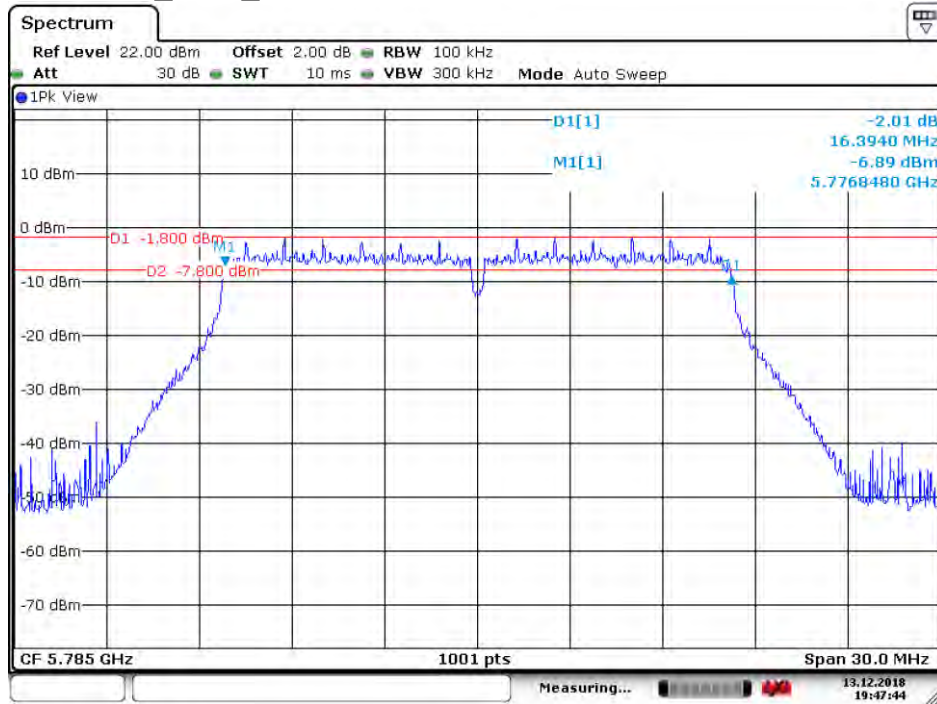
Date: 13.DEC.2018 19:47:44
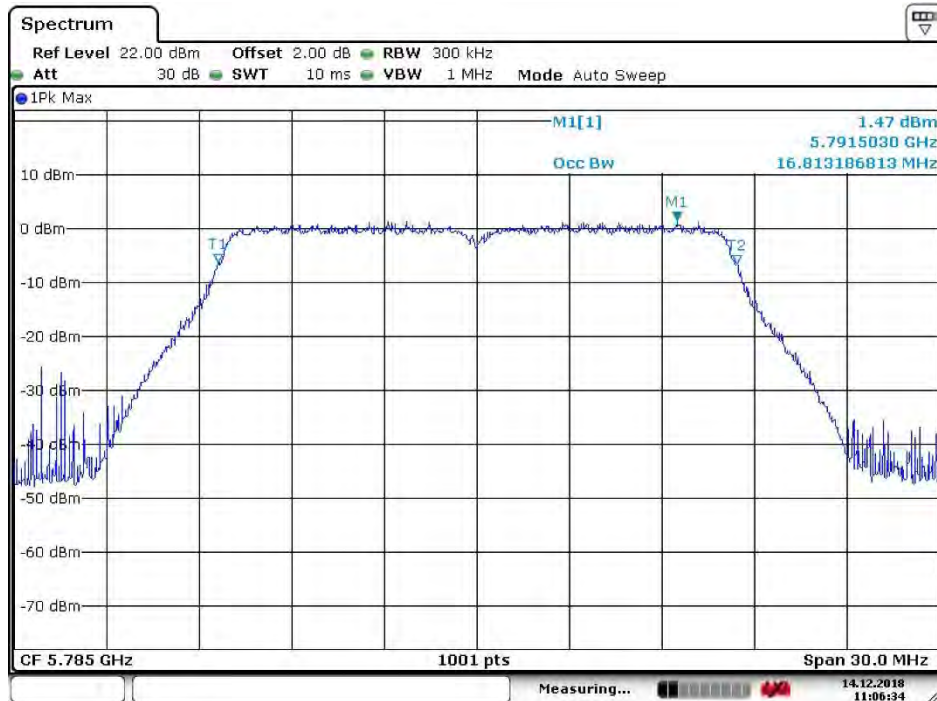
Date: 14.DEC.2018 11:06:34

4.6.1.31 11A20_CDD_165 ANT 1
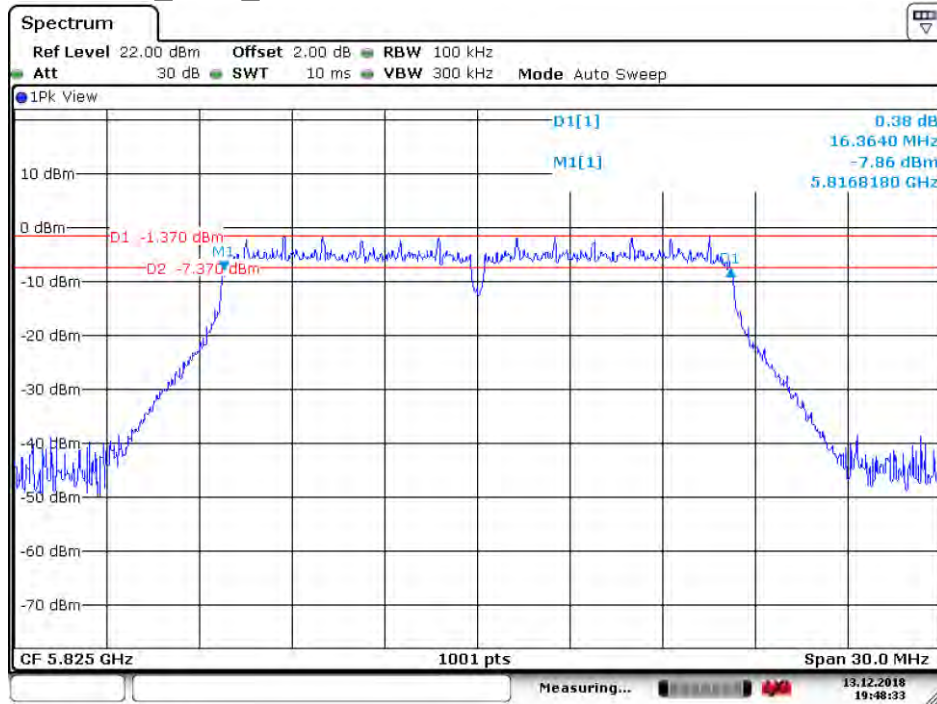
Date: 13.DEC.2018 19:48:33
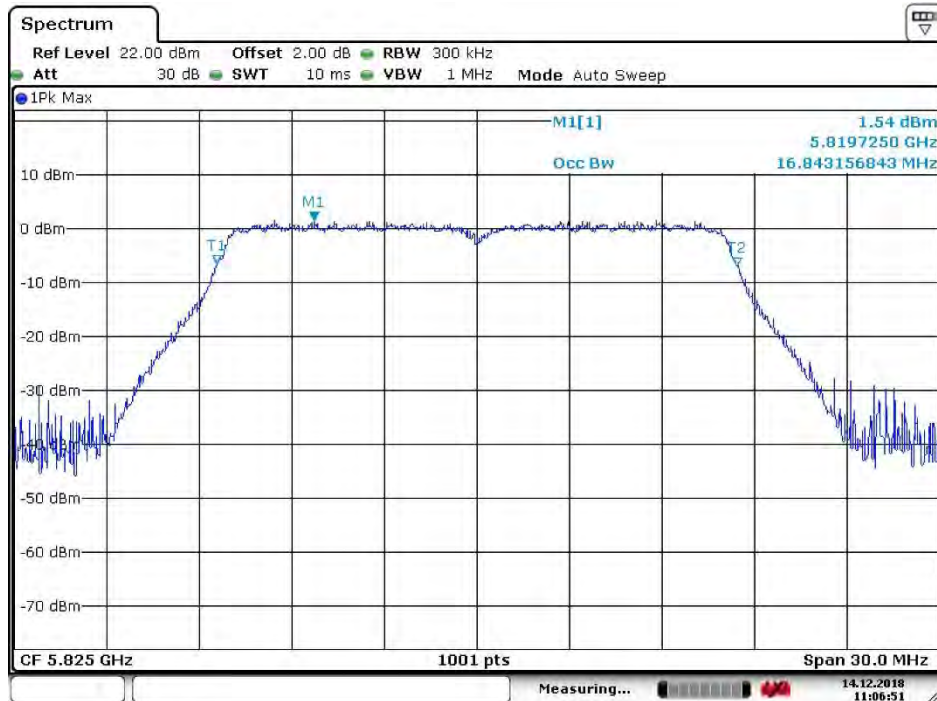
Date: 14.DEC.2018 11:06:51

4.6.1.32   11N20_MIMO_149 ANT 1
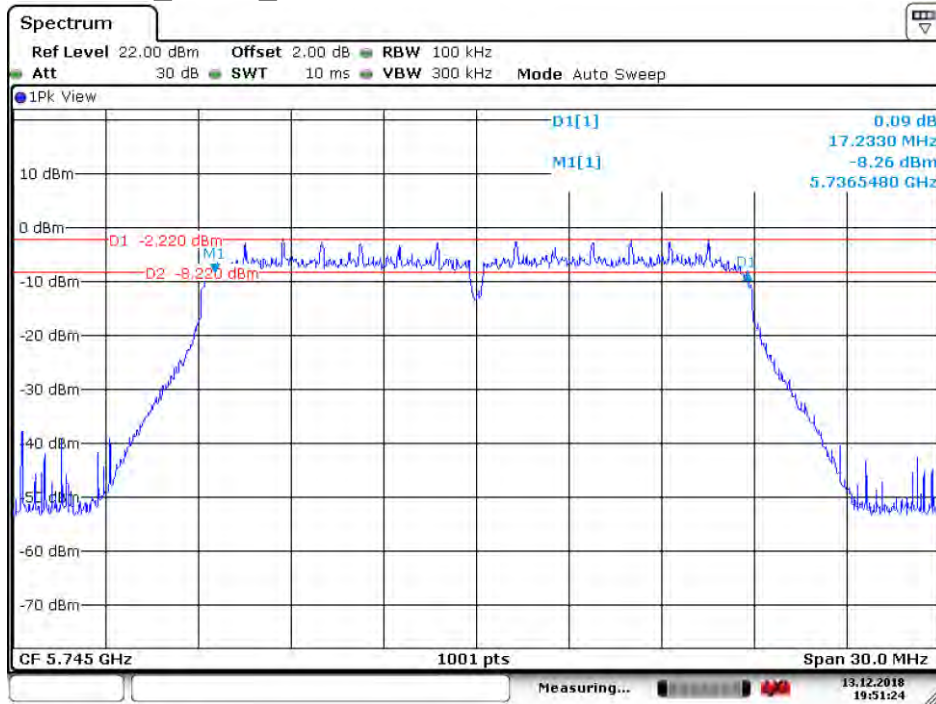
Date: 13.DEC.2018 19:51:25

Date: 14.DEC.2018 14:40:45

4.6.1.33   11N20_MIMO_157 ANT 1

Date: 13.DEC.2018 19:52:11

Date: 14.DEC.2018 14:41:20

4.6.1.34 11N20_MIMO_165 ANT 1

Date: 13.DEC.2018 19:54:24

Date: 14.DEC.2018 14:41:51
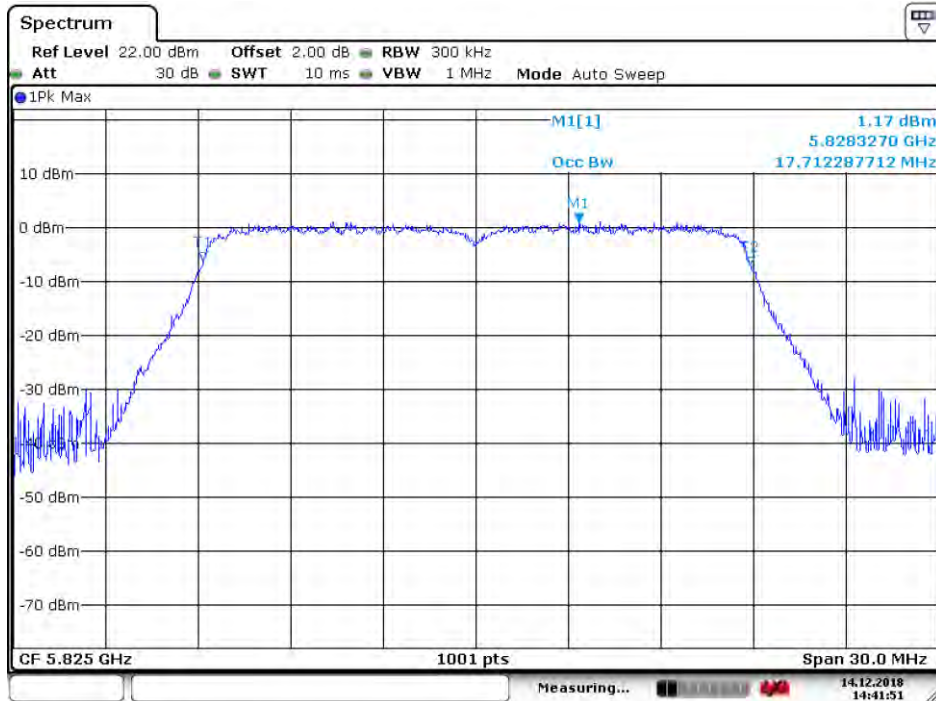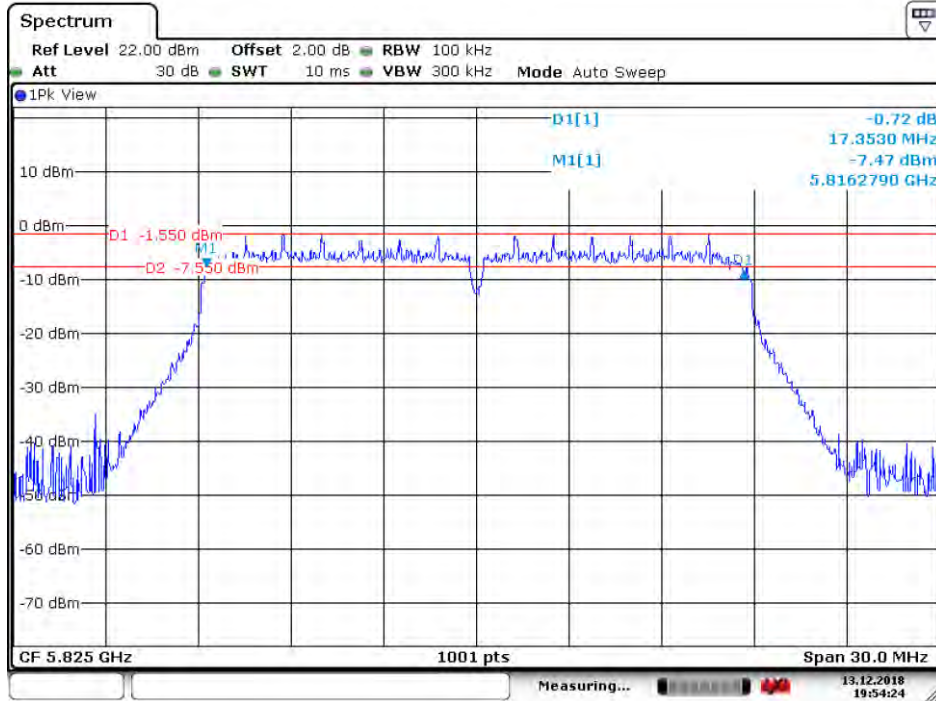
4.6.1.35   11N40_MIMO_151 ANT 1
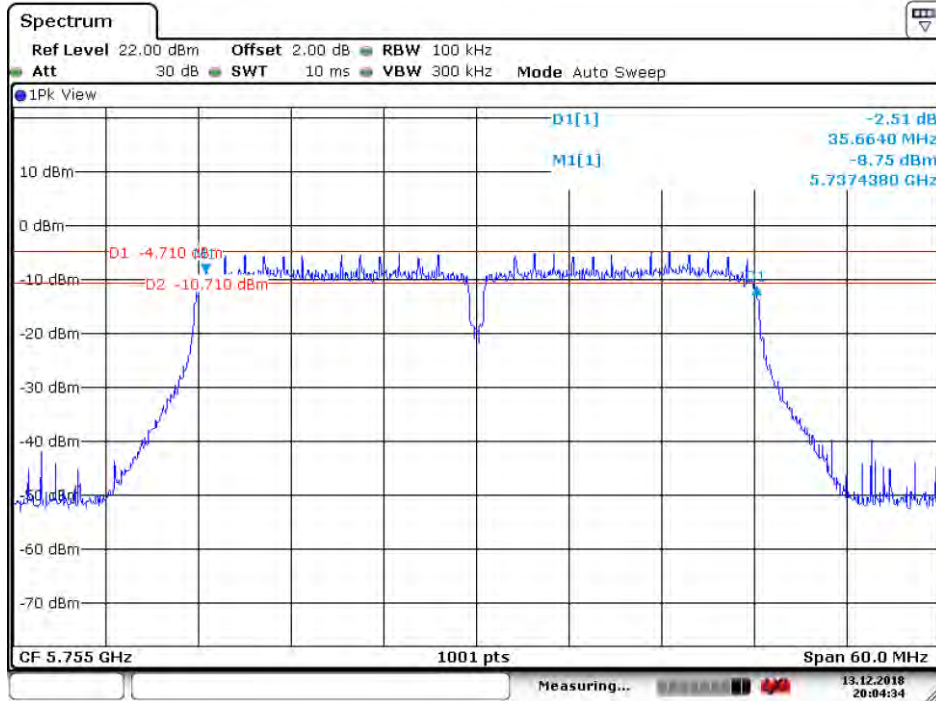
Date: 13.DEC.2018 20:04:34

Date: 14.DEC.2018 14:16:27

4.6.1.36   11N40_MIMO_159 ANT 1

Date: 13.DEC.2018 20:05:20

Date: 14.DEC.2018 14:16:50

4.6.1.37   11AC20_MIMO_149 ANT 1
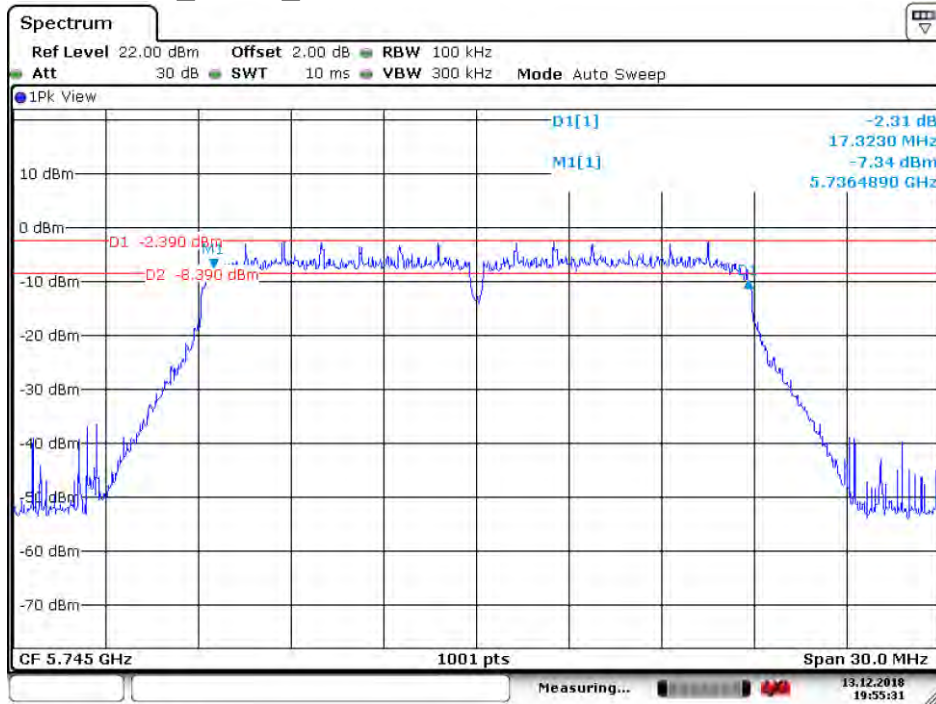
Date: 13.DEC.2018 19:55:32

Date: 14.DEC.2018 14:48:32

4.6.1.38   11AC20_MIMO_157 ANT 1
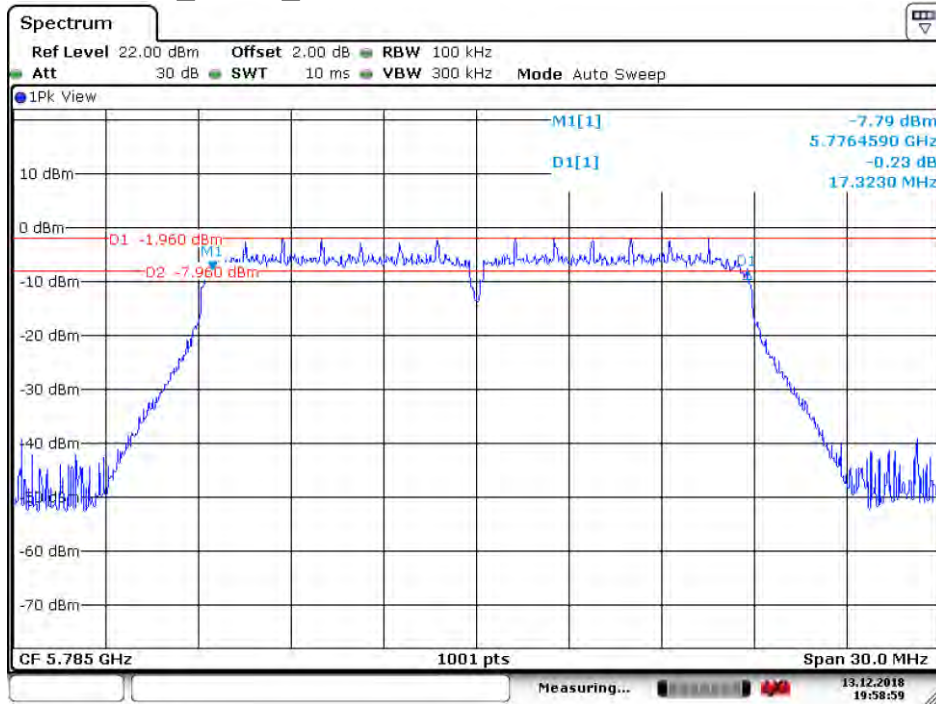
Date: 13.DEC.2018 19:59:00
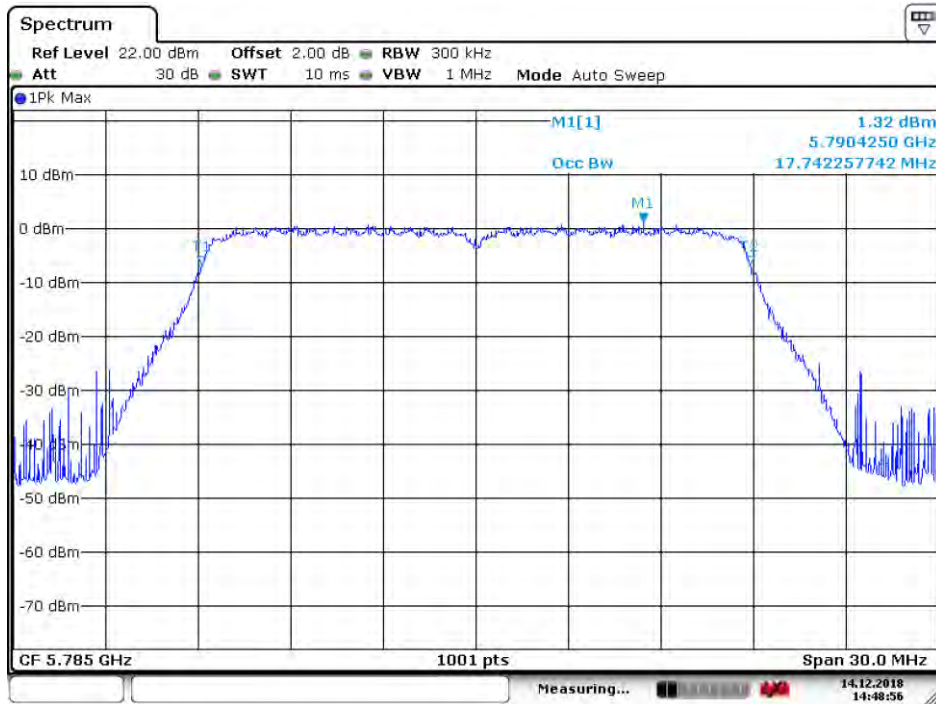
Date: 14.DEC.2018 14:48:56

4.6.1.39 11AC20_MIMO_165 ANT 1
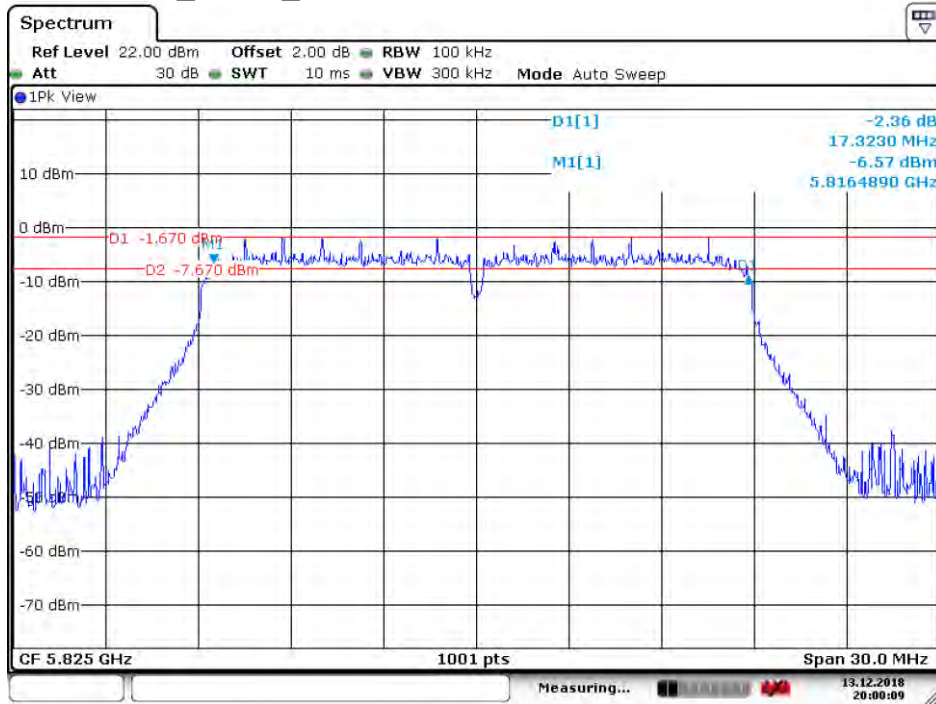
Date: 13.DEC.2018 20:00:10
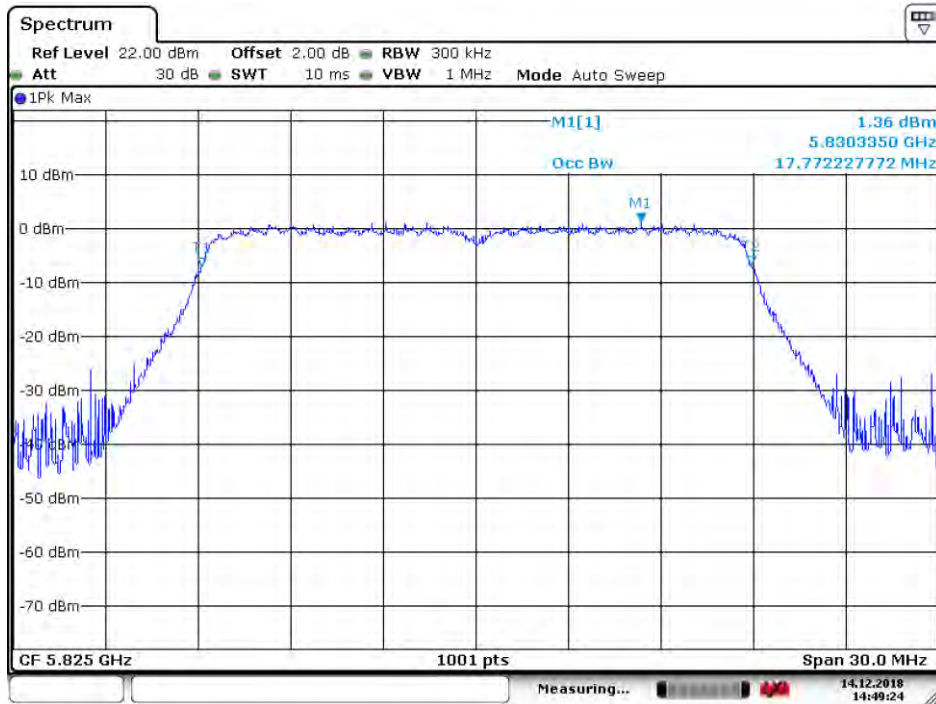
Date: 14.DEC.2018 14:49:24

4.6.1.40   11AC40_MIMO_151 ANT 1

Date: 13.DEC.2018 20:16:39
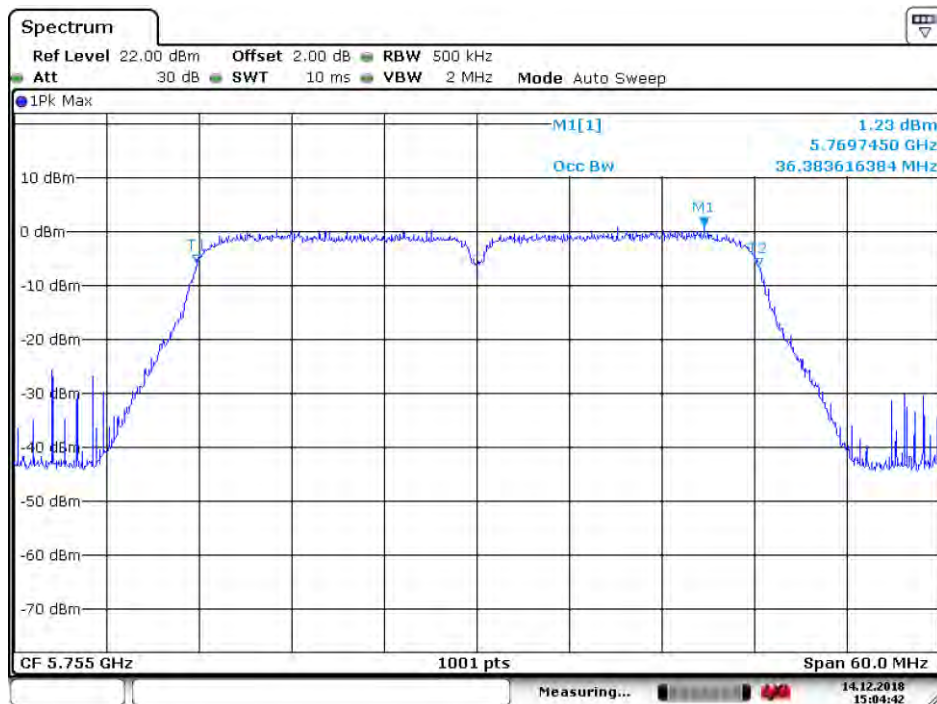
Date: 14.DEC.2018 15:04:43

4.6.1.41   11AC40_MIMO_159 ANT 1
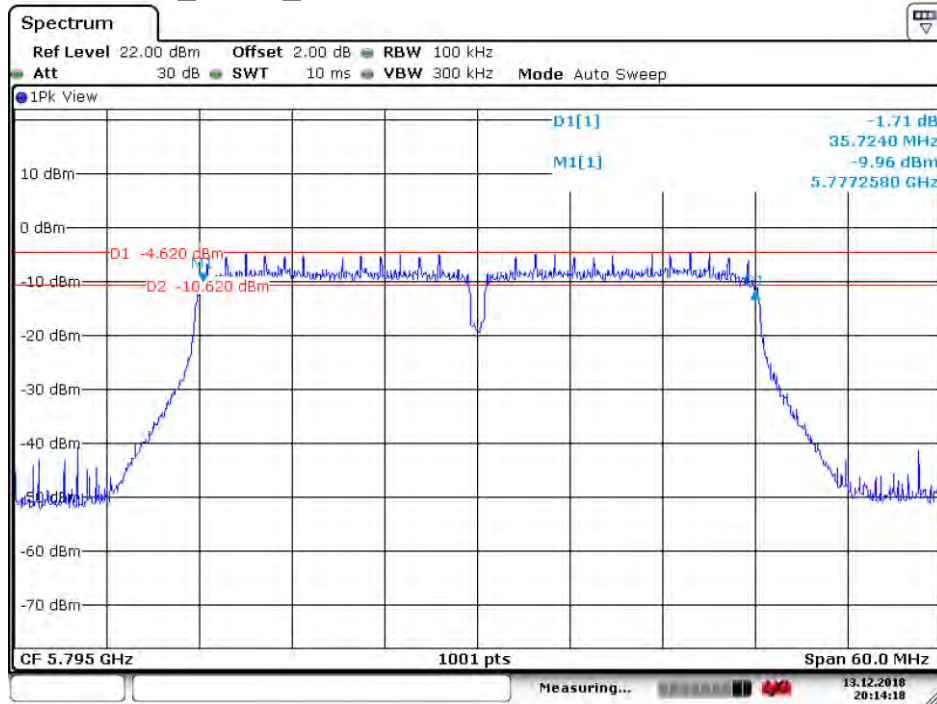
Date: 13.DEC.2018 20:14:19
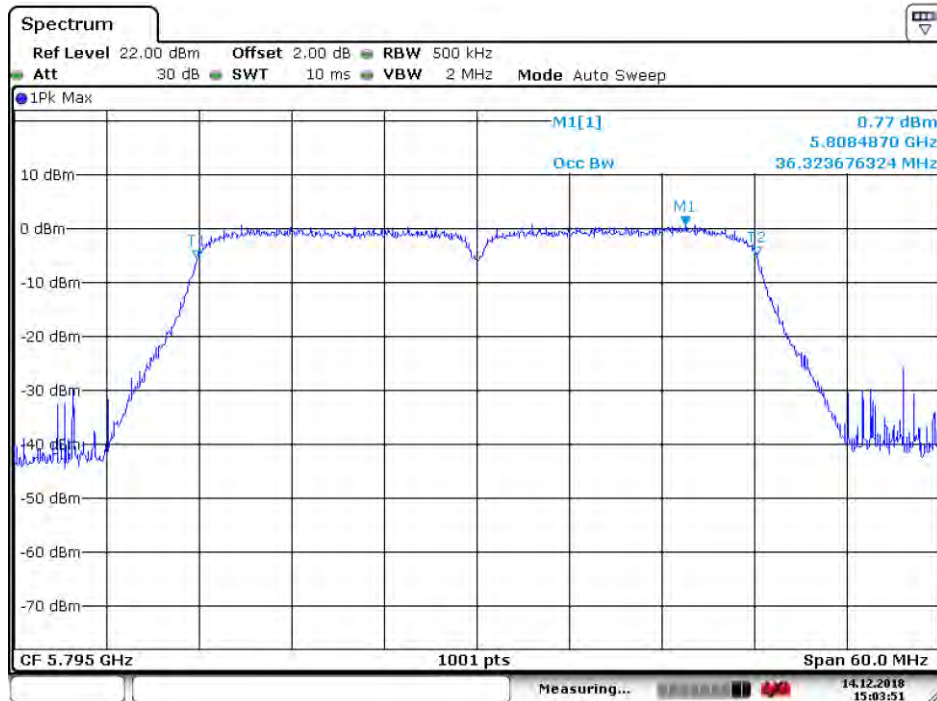
Date: 14.DEC.2018 15:03:51

4.6.1.42   11AC80_MIMO_155 ANT 1
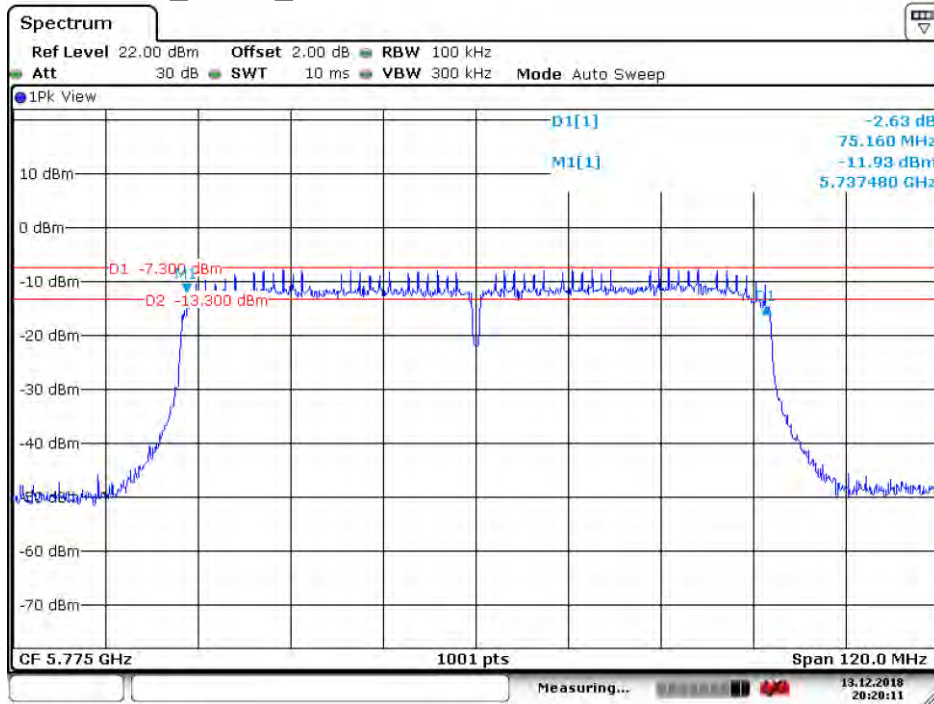
Date: 13.DEC.2018 20:20:11
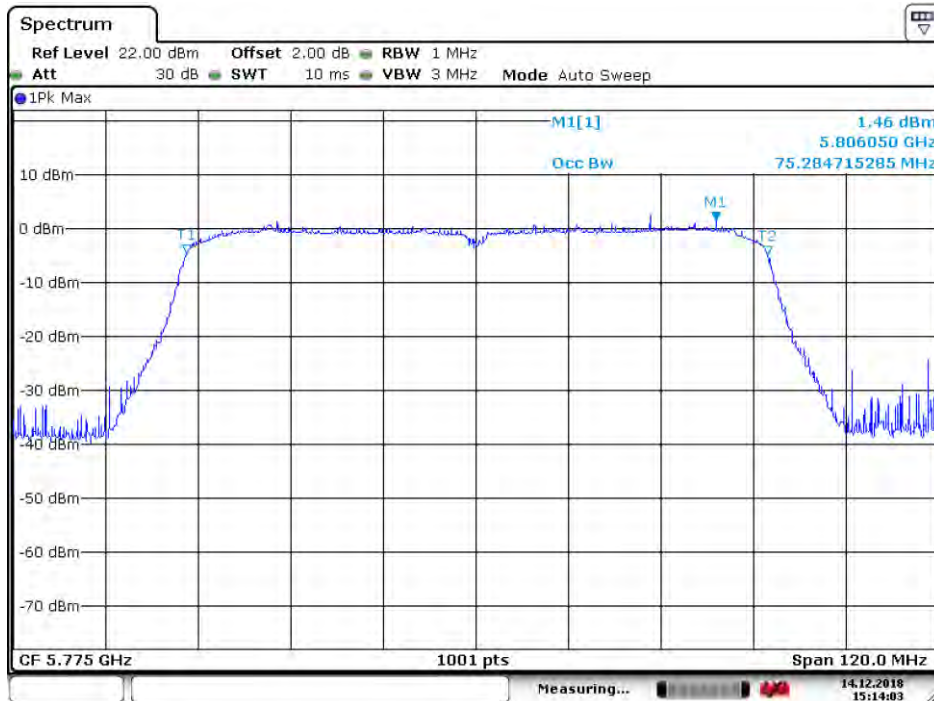
Date: 14.DEC.2018 15:14:04

4.6.1.43   11A20_CDD_149 ANT 2
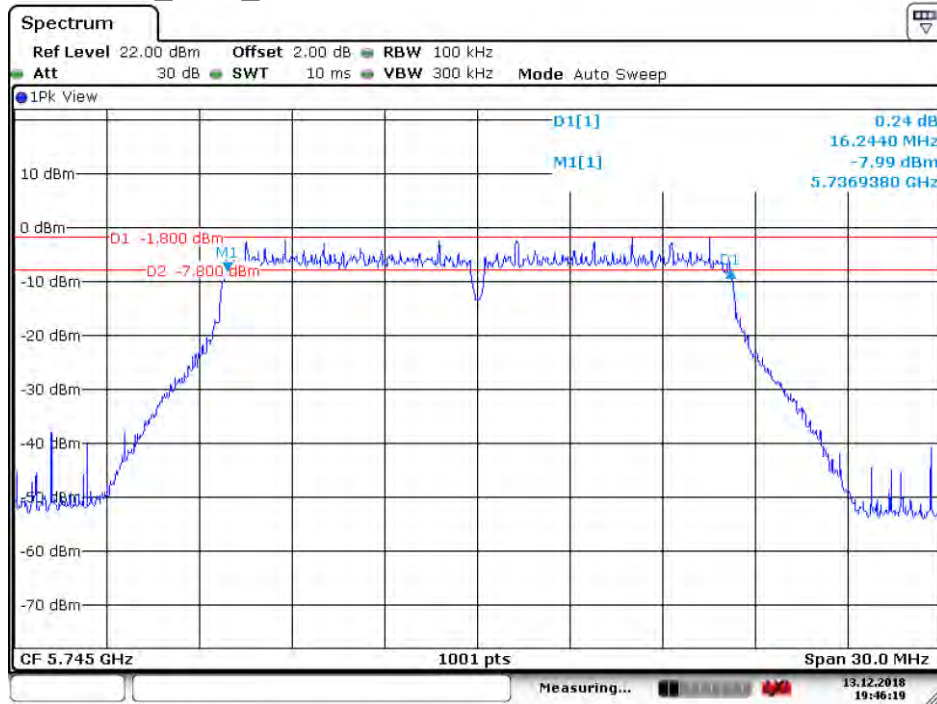
Date: 13.DEC.2018 19:46:19
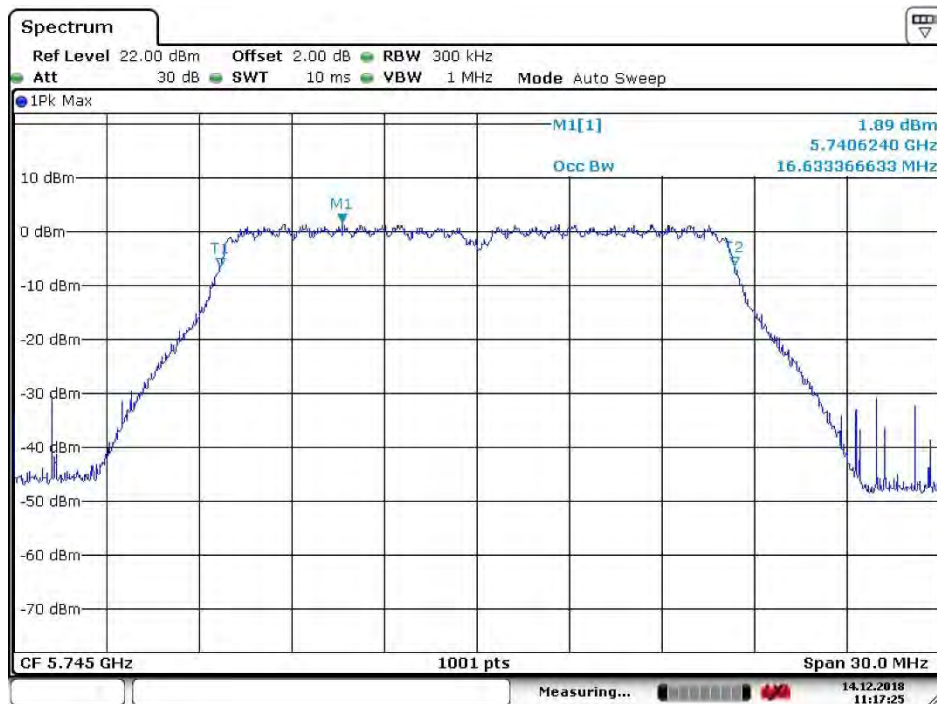
Date: 14.DEC.2018 11:17:26

4.6.1.44　　　11A20_CDD_157 ANT 2
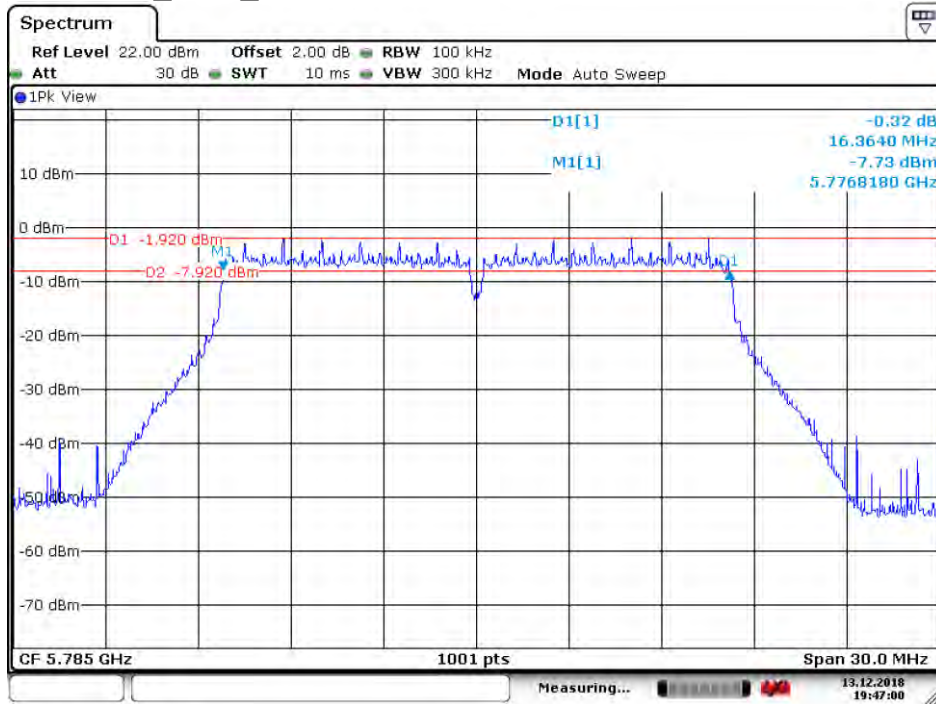
Date: 13.DEC.2018 19:47:01
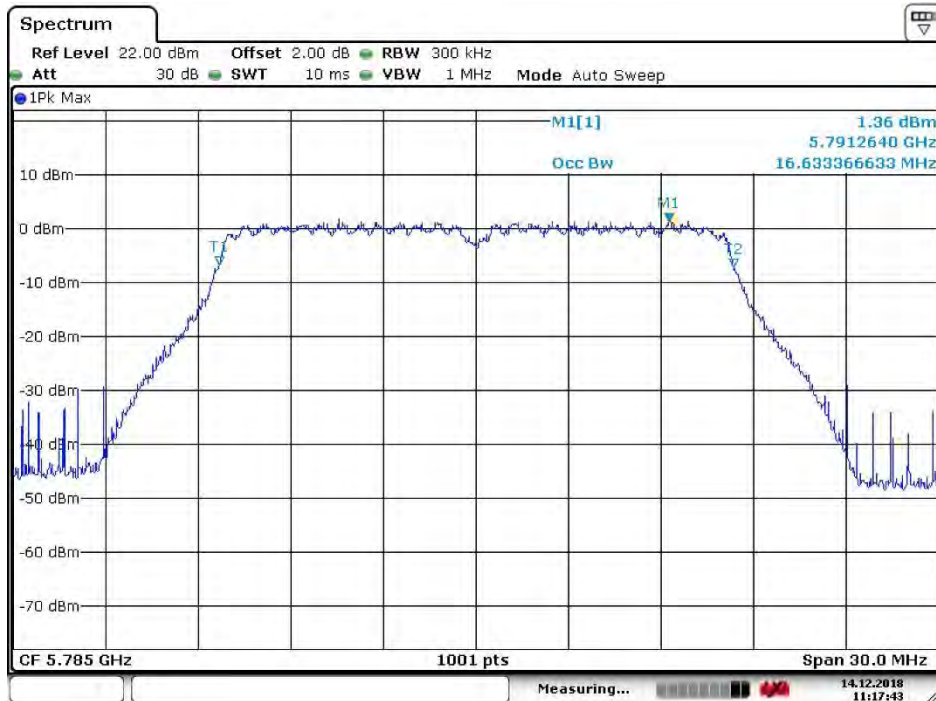
Date: 14.DEC.2018 11:17:43

4.6.1.45　　　11A20_CDD_165 ANT 2
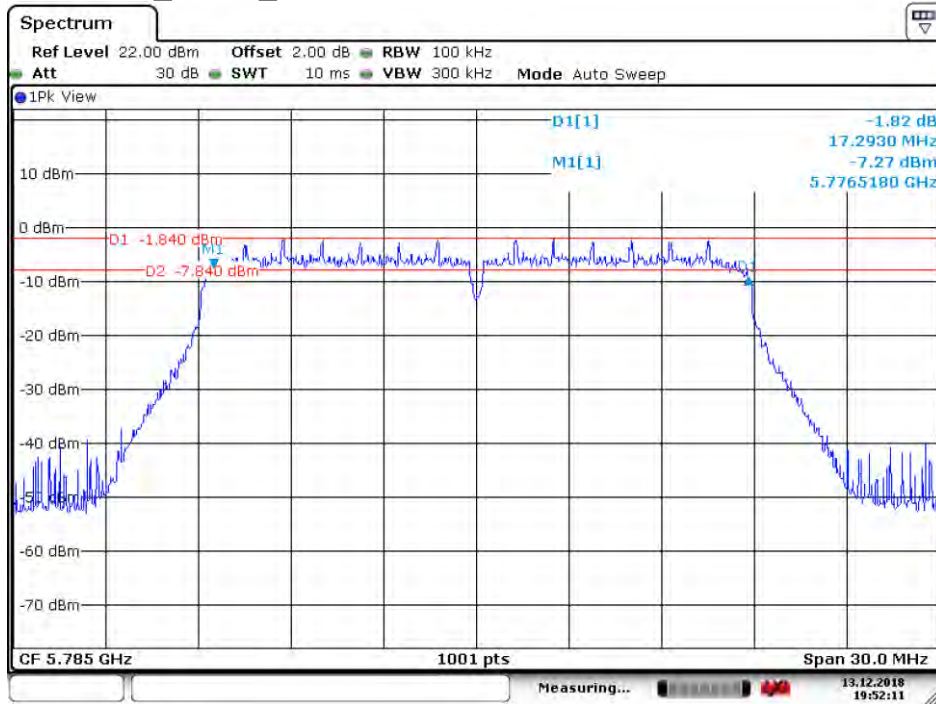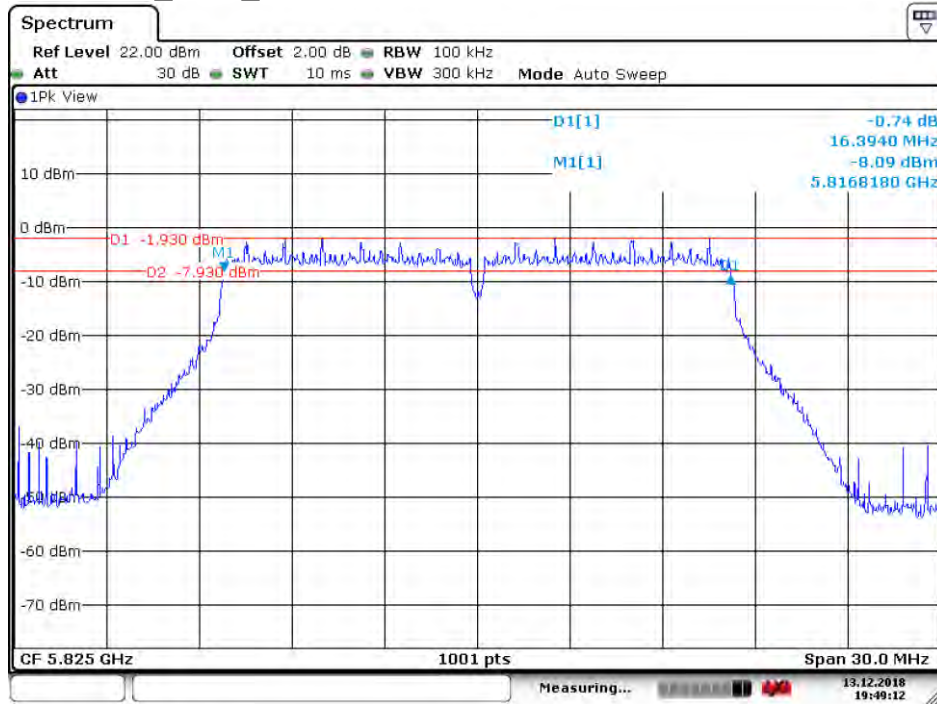

Date: 13.DEC.2018 19:49:13
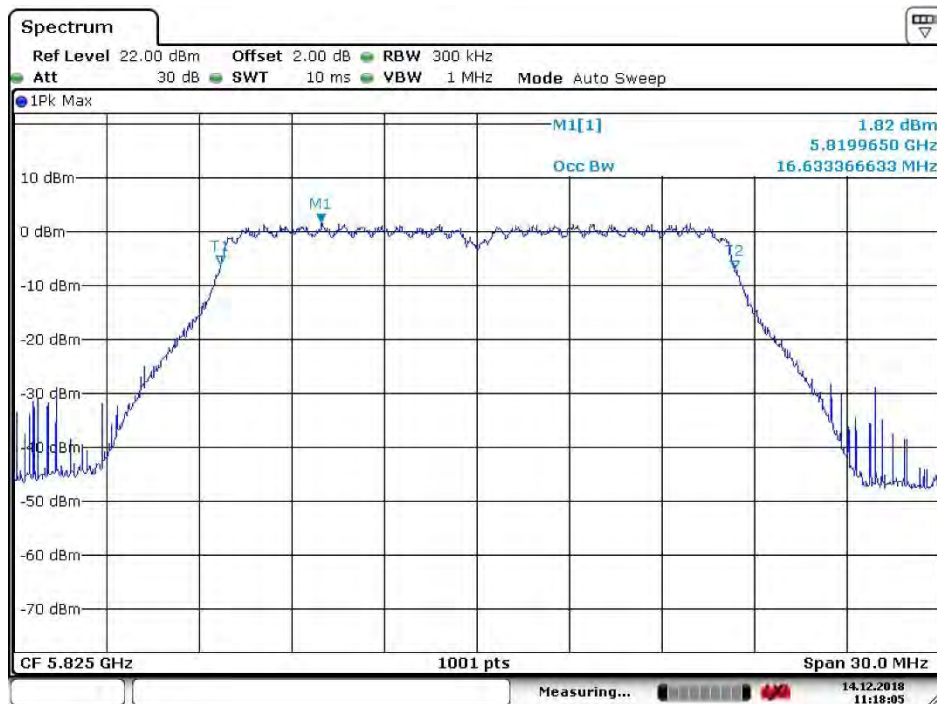
Date: 14.DEC.2018 11:18:05

### 4.6.1.46   11N20_MIMO_149 ANT 2
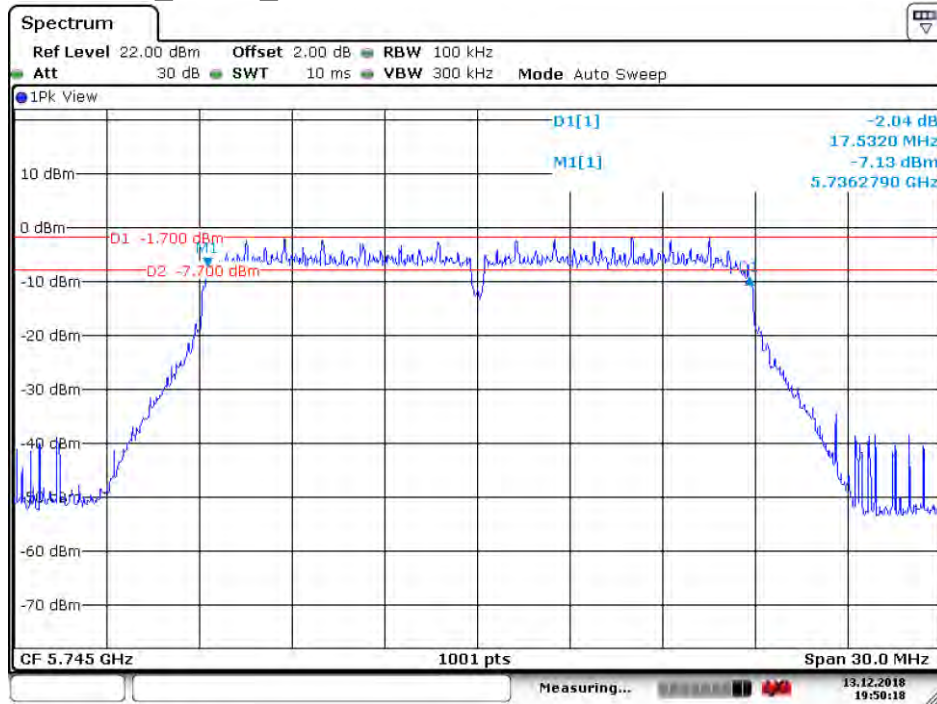
Date: 13.DEC.2018 19:50:18
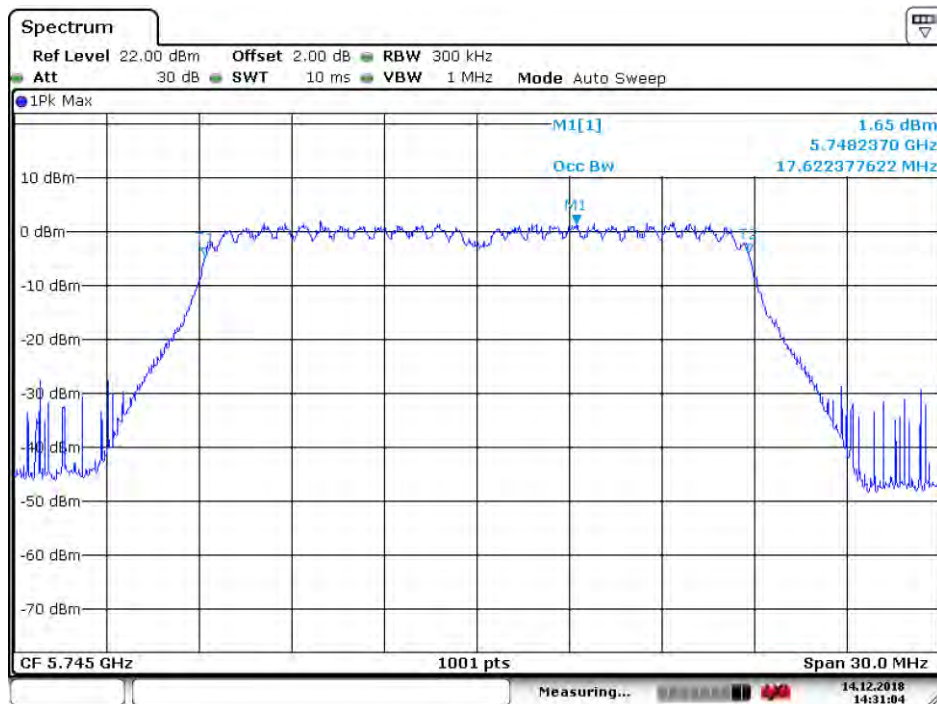
Date: 14.DEC.2018 14:31:04

4.6.1.47   11N20_MIMO_157 ANT 2
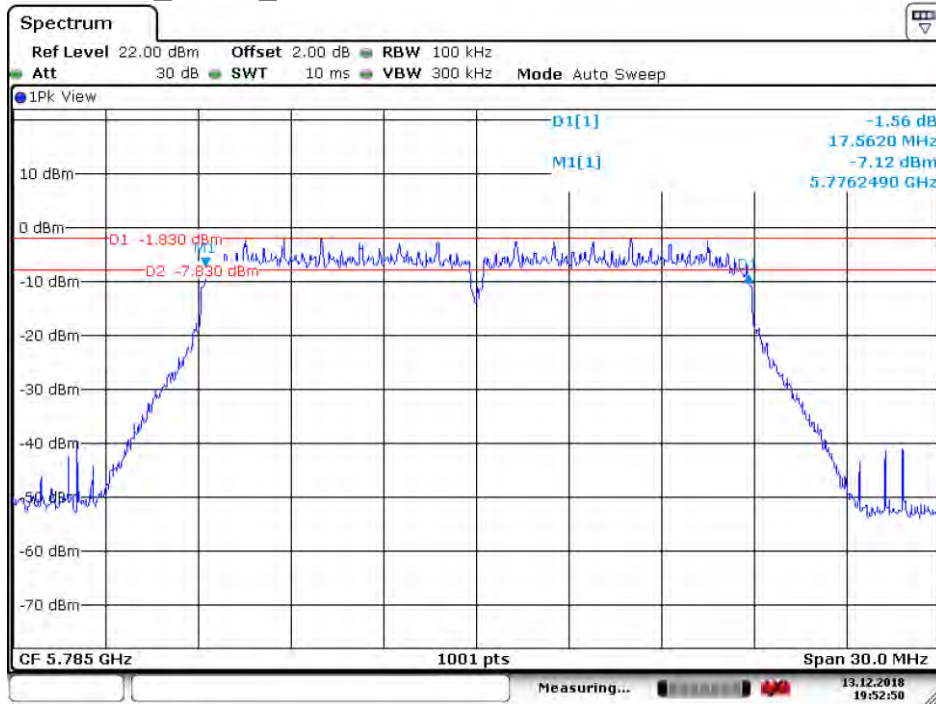
Date: 13.DEC.2018 19:52:51
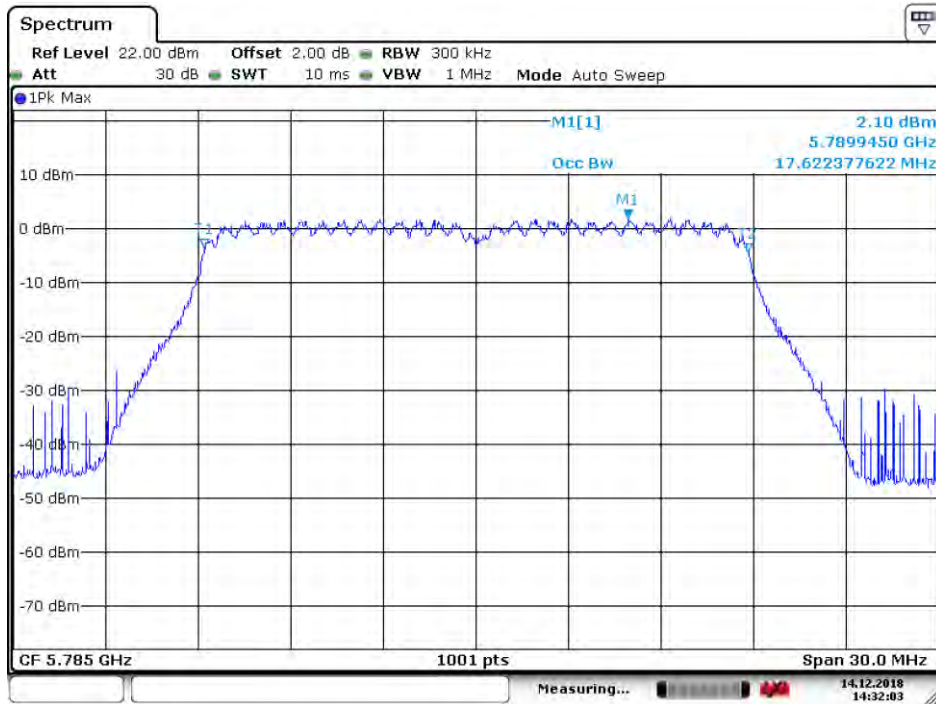
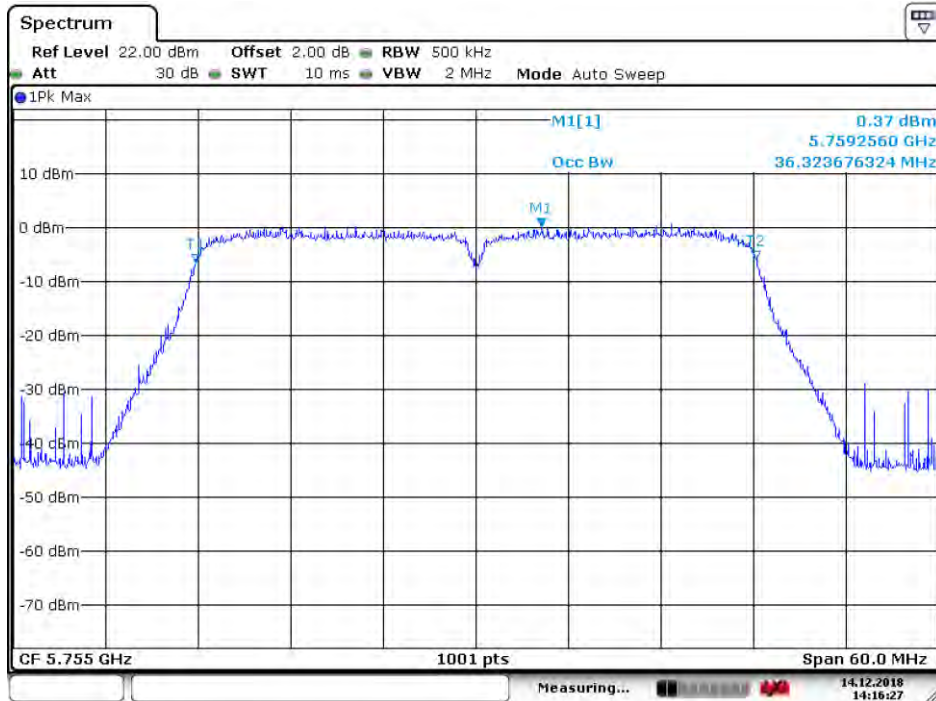Date: 14.DEC.2018 14:32:04

4.6.1.48   11N20_MIMO_165 ANT 2
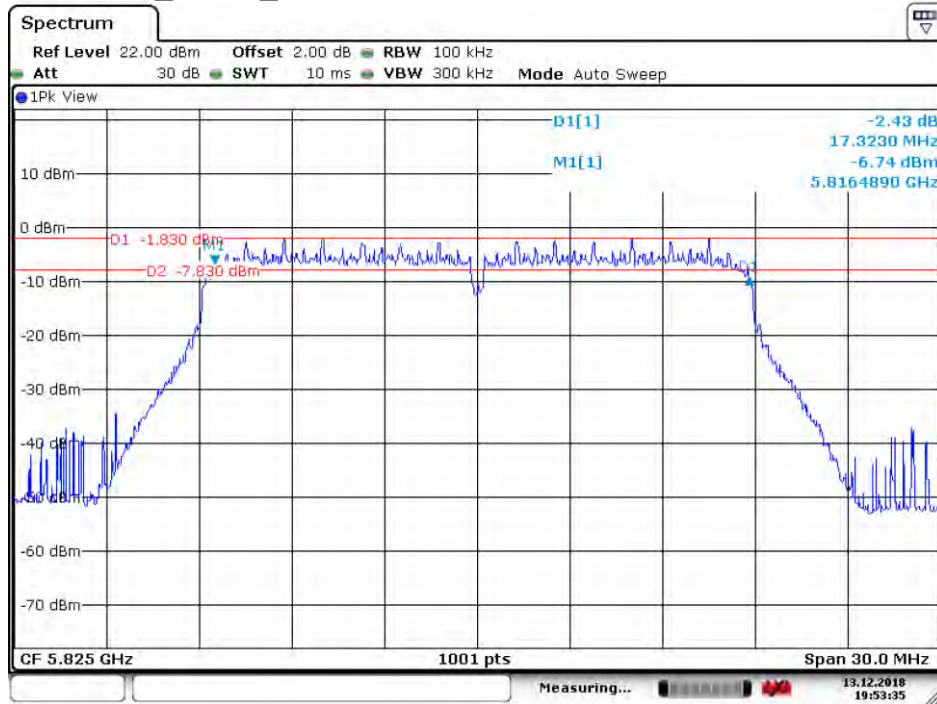
Date: 13.DEC.2018 19:53:35
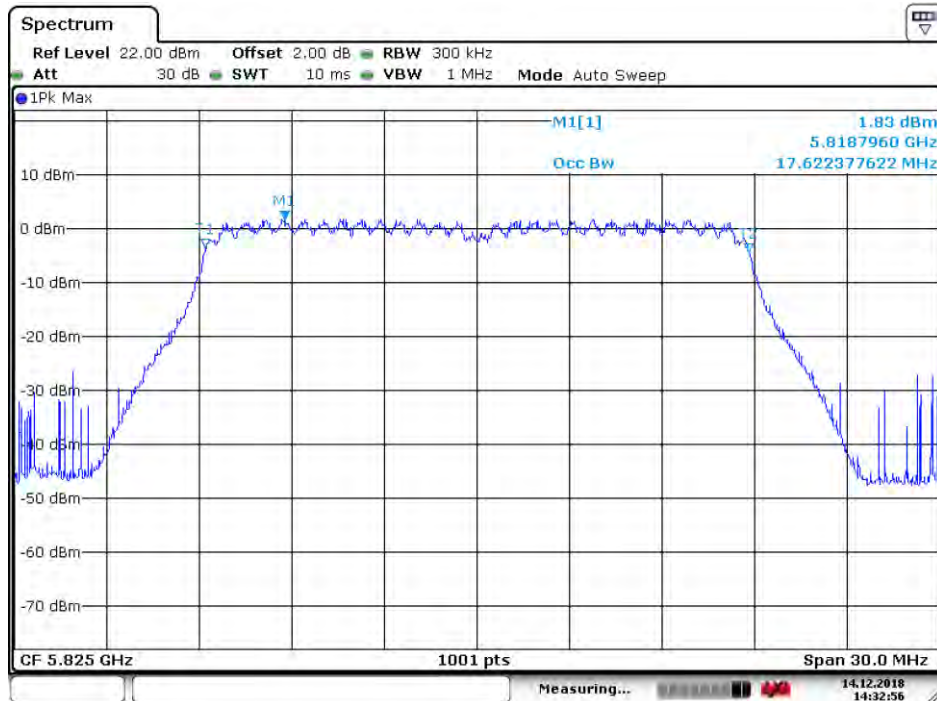
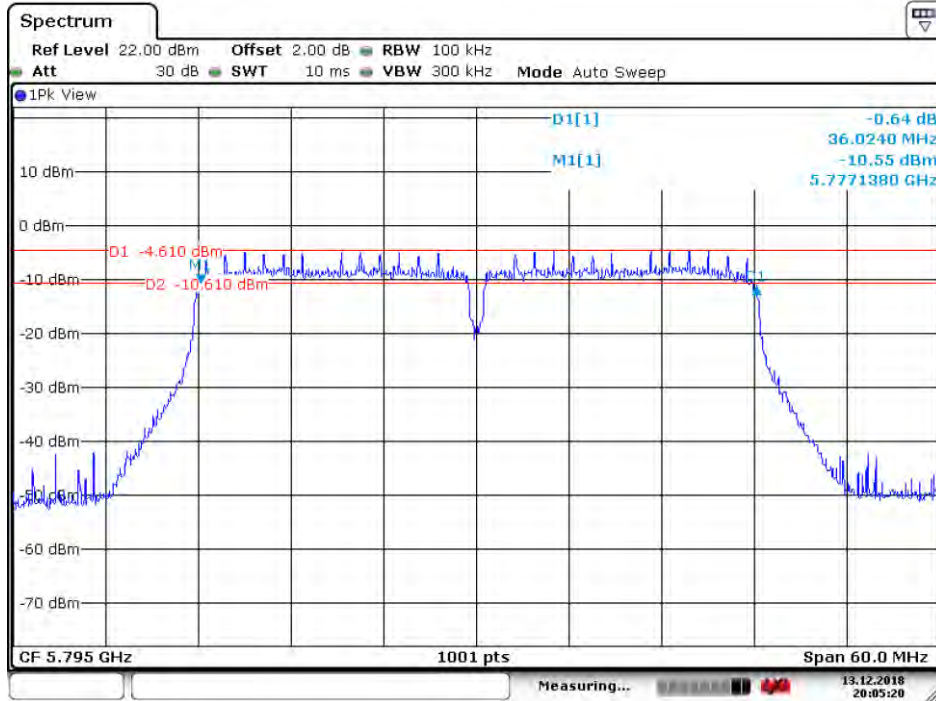Date: 14.DEC.2018 14:32:56

4.6.1.49   11N40_MIMO_151 ANT 2
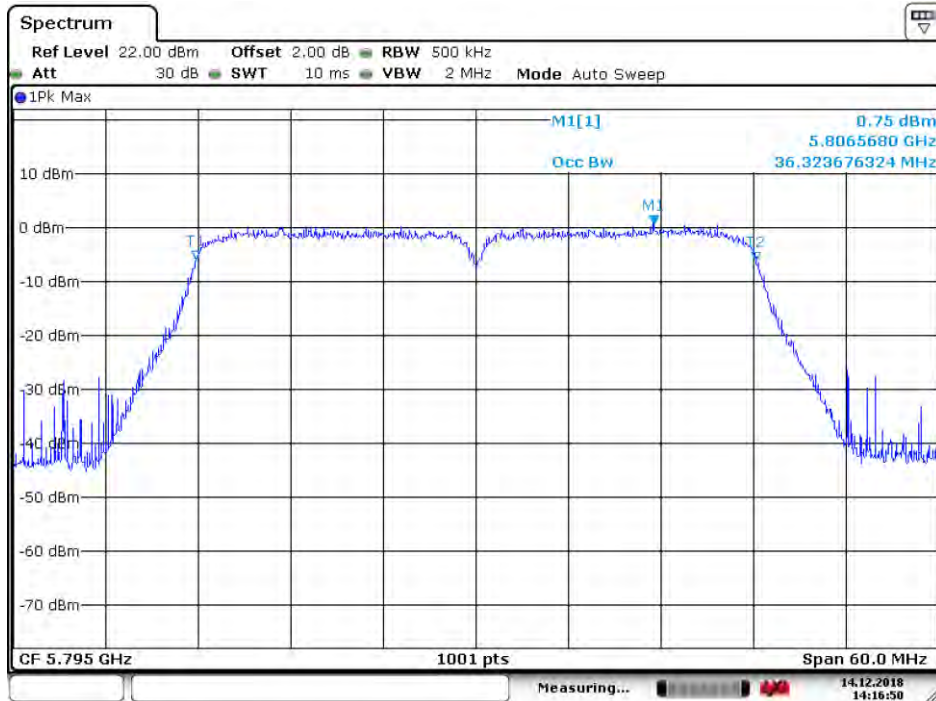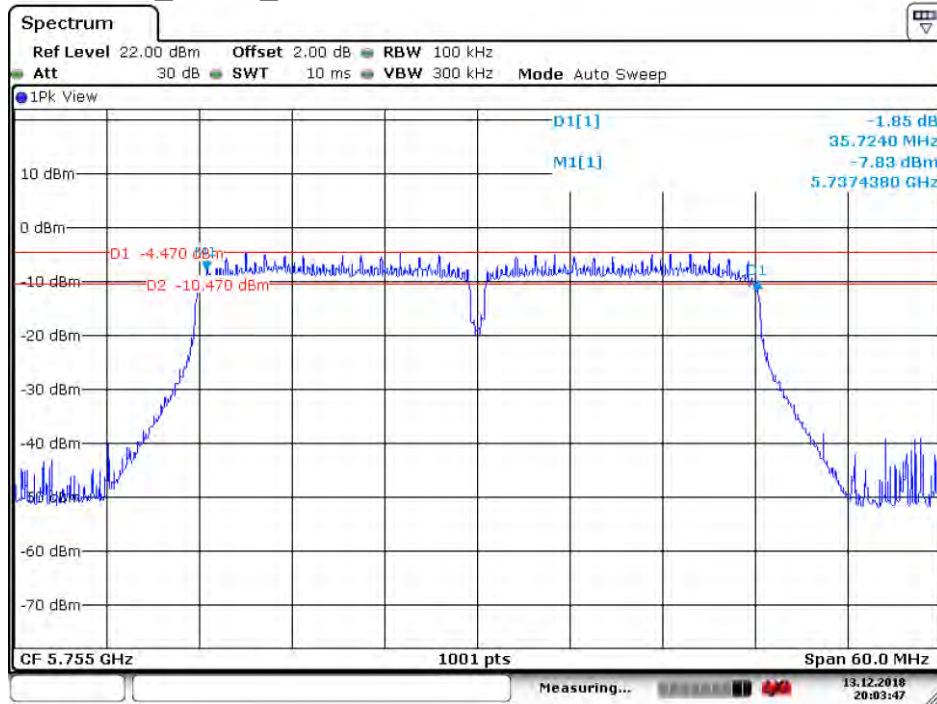

Date: 13.DEC.2018 20:03:47
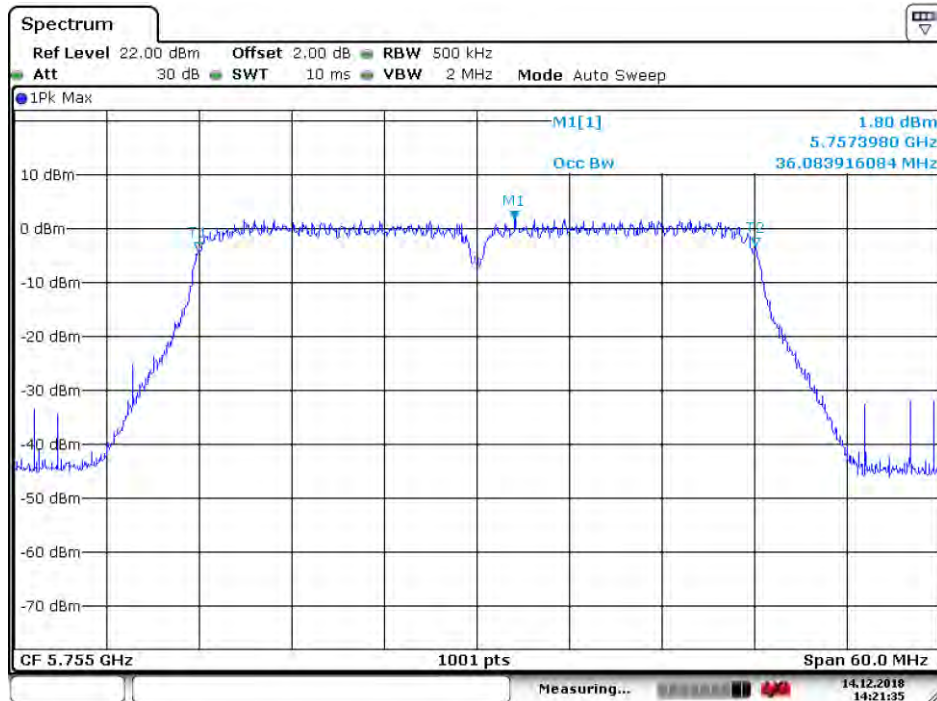
Date: 14.DEC.2018 14:21:36

4.6.1.50 11N40_MIMO_159 ANT 2
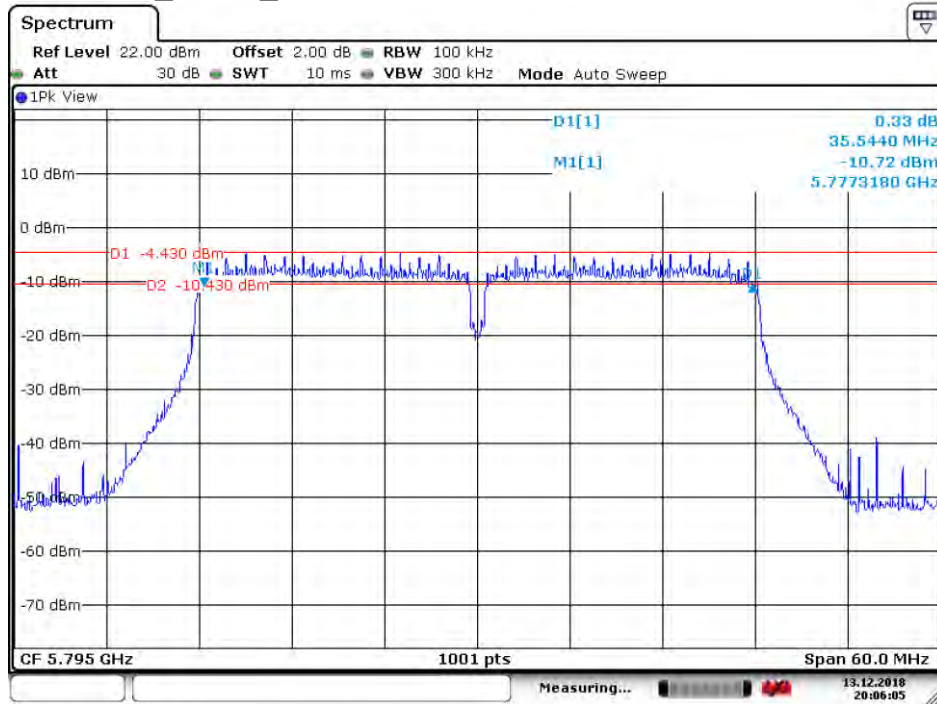
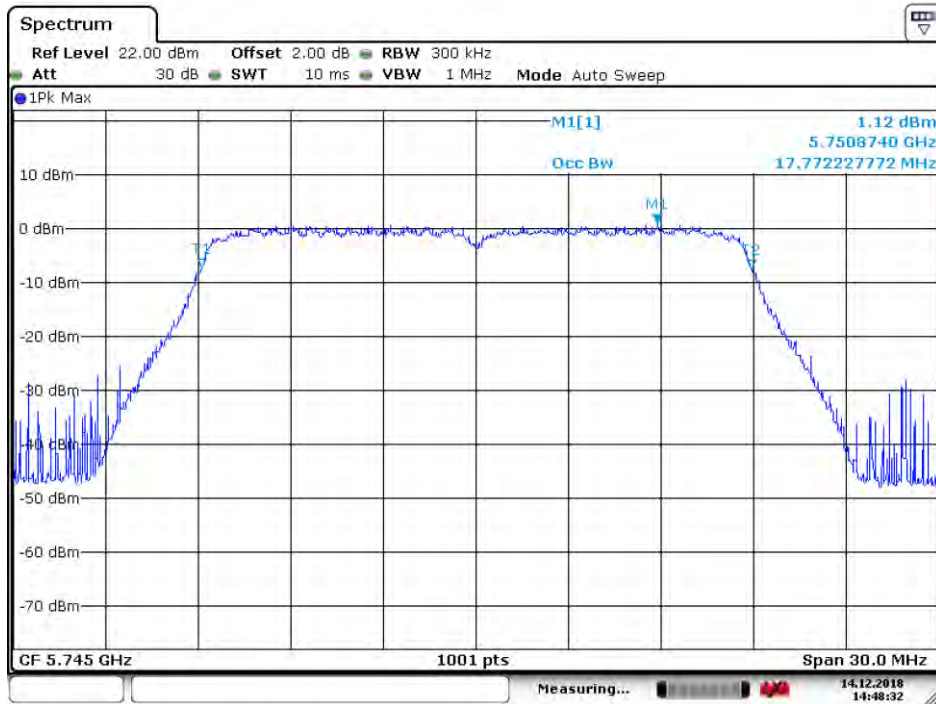Date: 13.DEC.2018 20:06:05
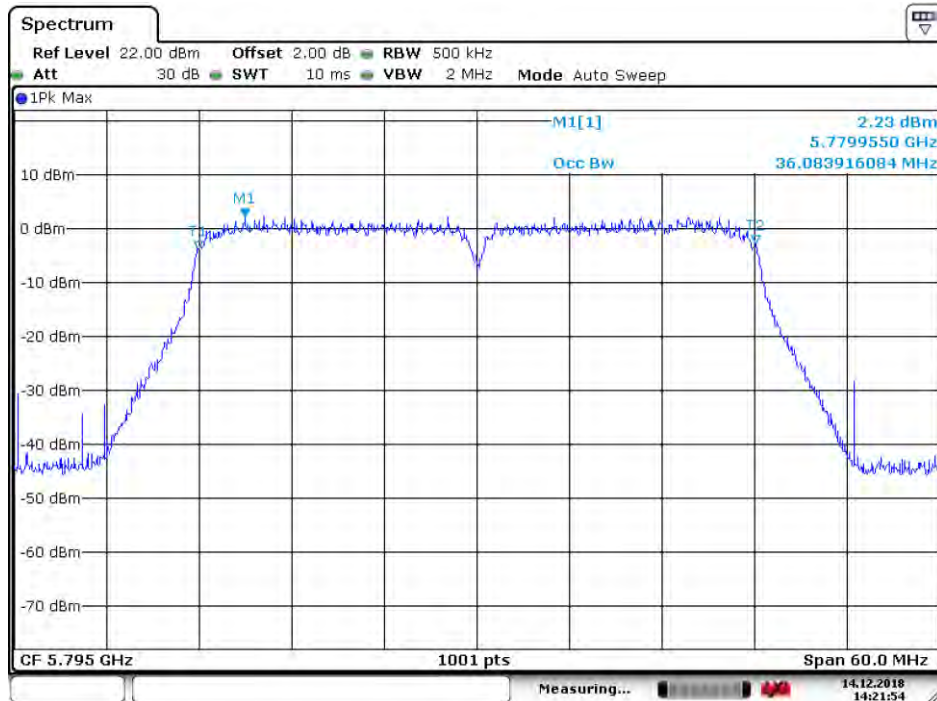
Date: 14.DEC.2018 14:21:54

### 4.6.1.51   11AC20_MIMO_149 ANT 2
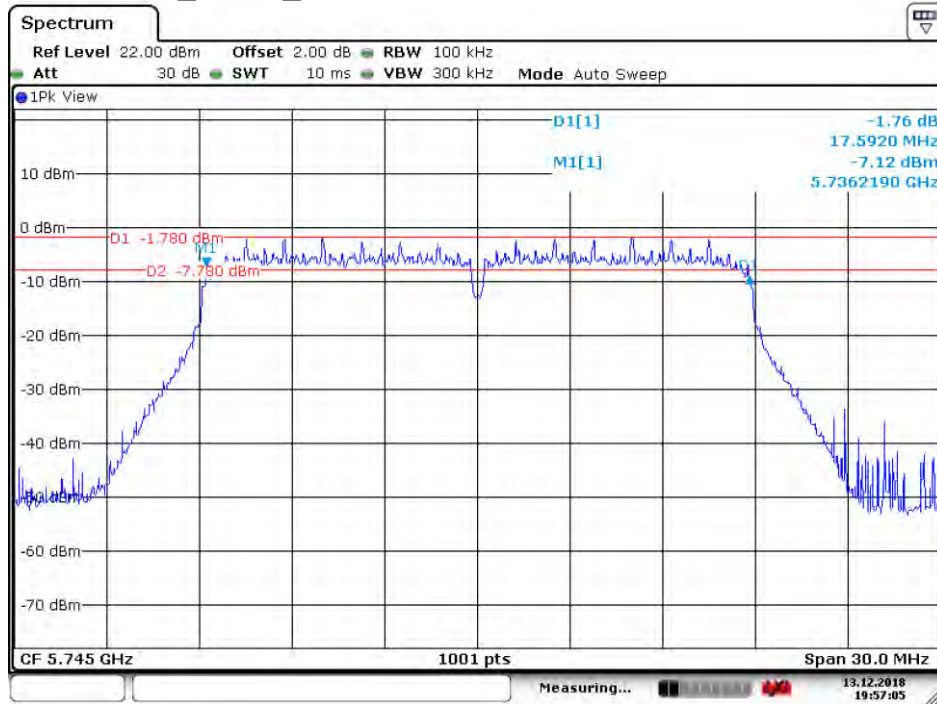
Date: 13.DEC.2018 19:57:05
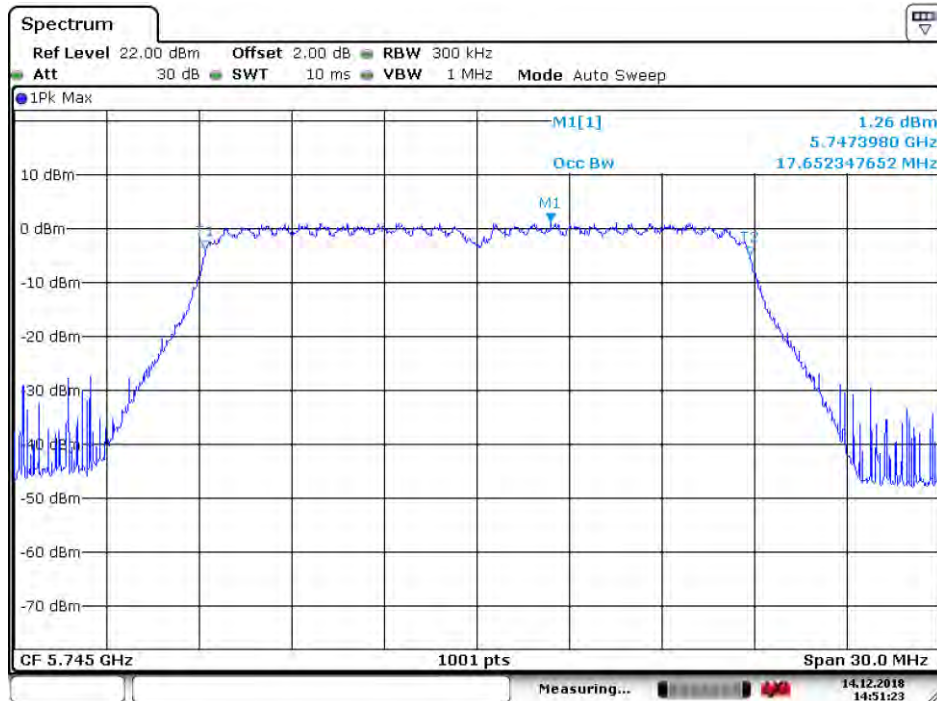
Date: 14.DEC.2018 14:51:23

4.6.1.52   11AC20_MIMO_157 ANT 2
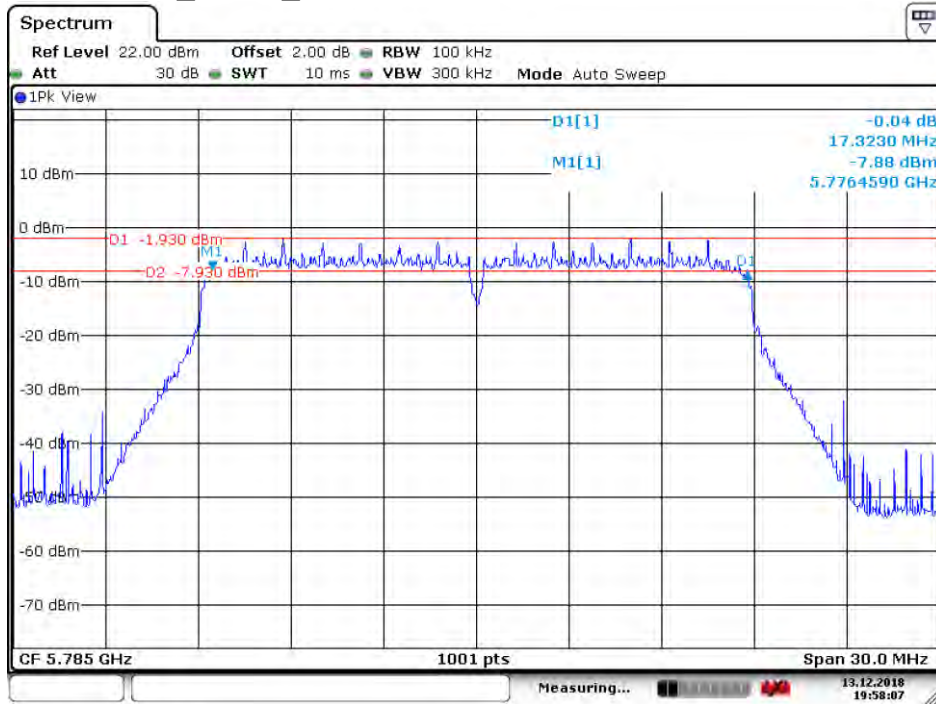
Date: 13.DEC.2018 19:58:07
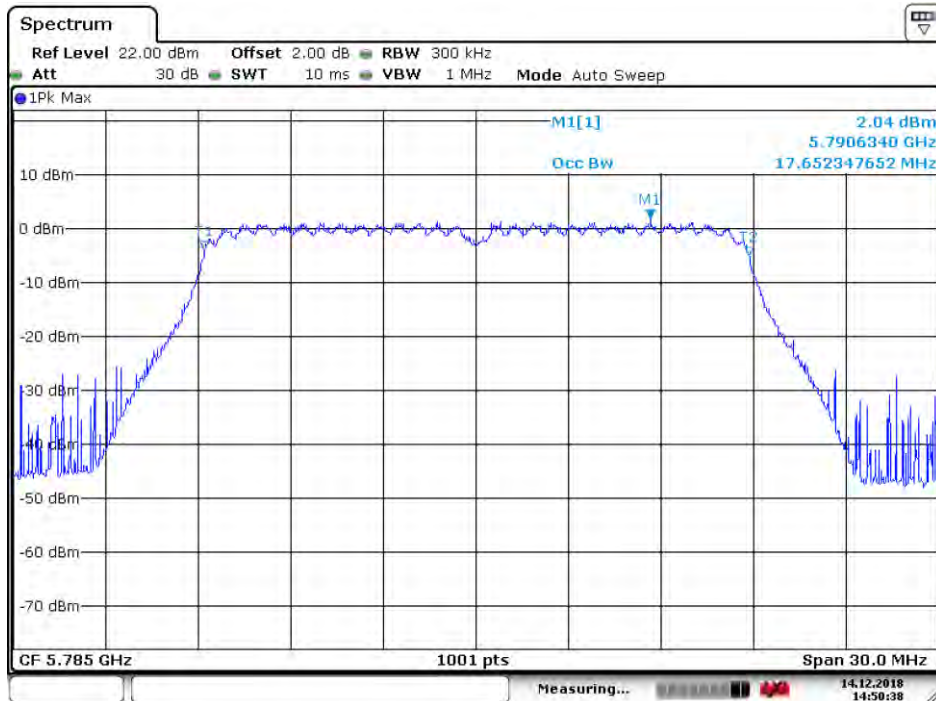
Date: 14.DEC.2018 14:50:38

4.6.1.53   11AC20_MIMO_165 ANT 2
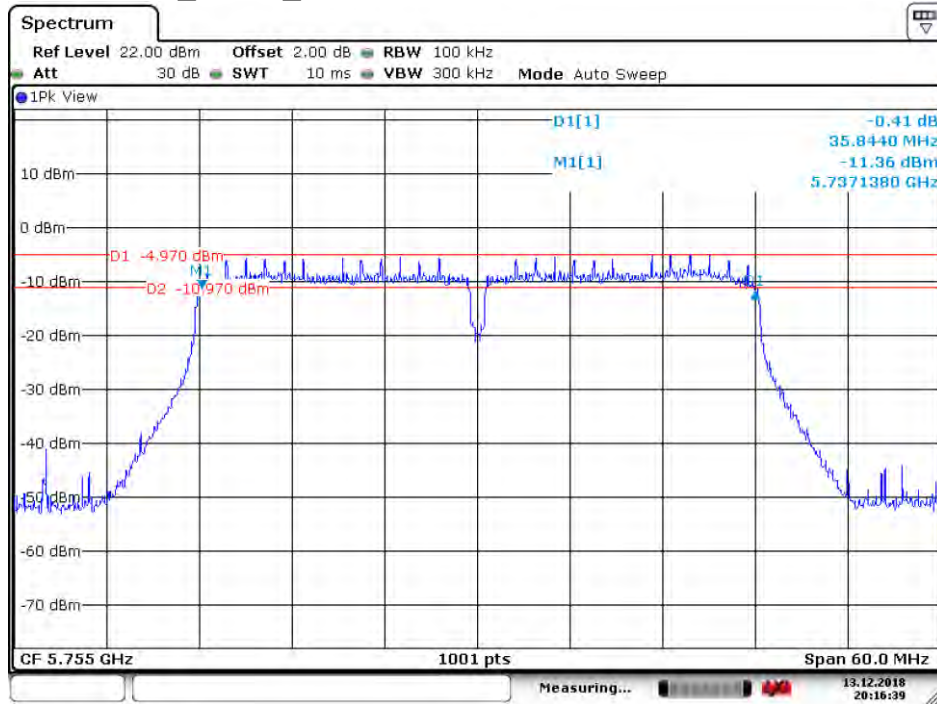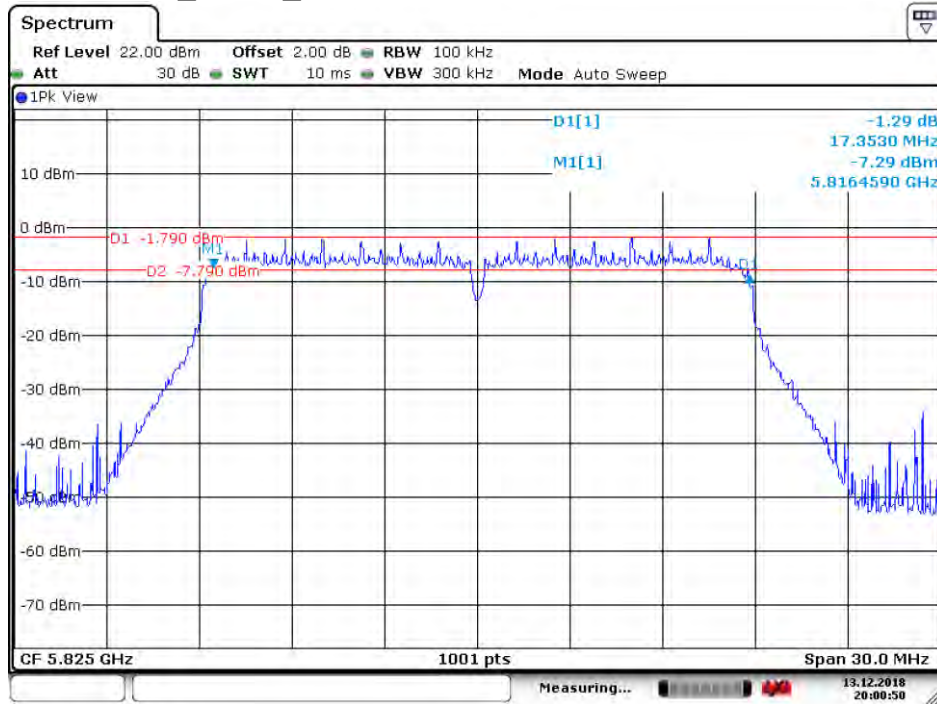

Date: 13.DEC.2018 20:00:50
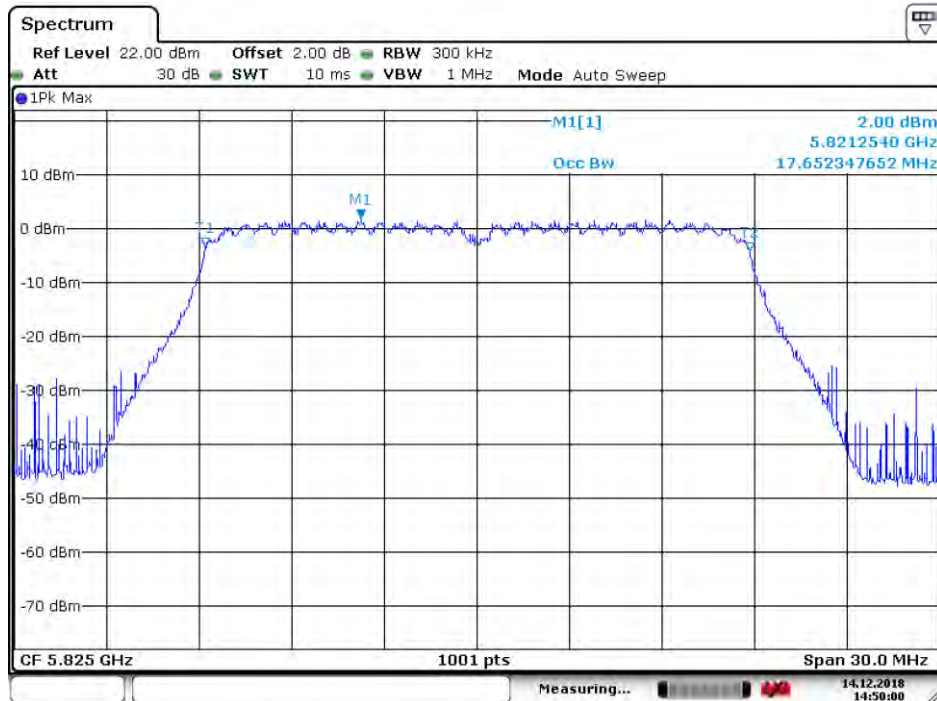
Date: 14.DEC.2018 14:50:00

4.6.1.54 11AC40_MIMO_151 ANT 2
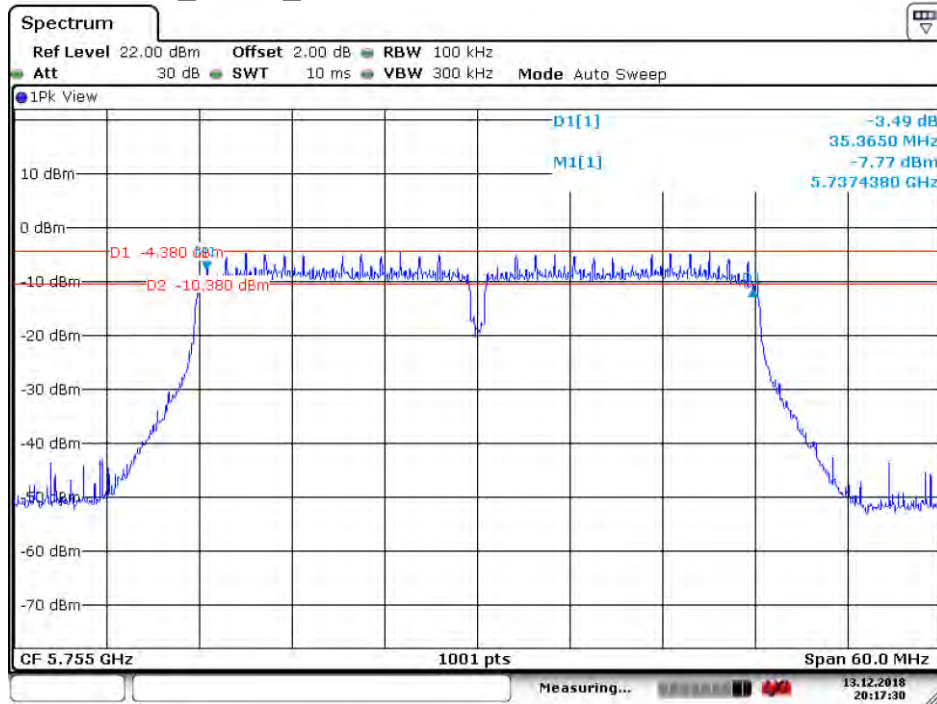
Date: 13.DEC.2018 20:17:30
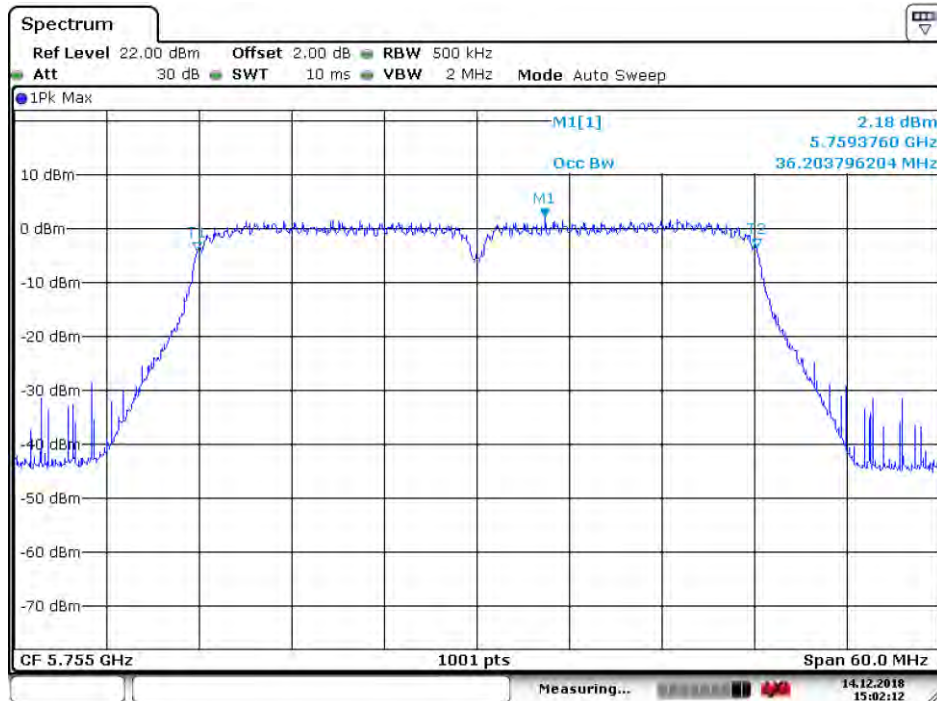
Date: 14.DEC.2018 15:02:12

## 4.6.1.55   11AC40_MIMO_159 ANT 2
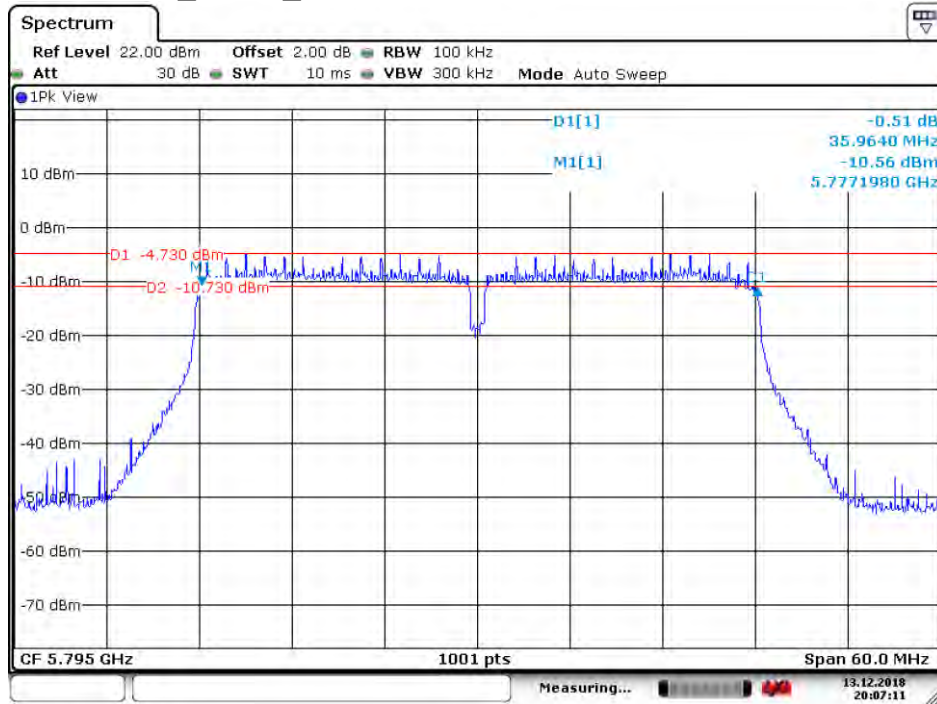
Date: 13.DEC.2018 20:07:12
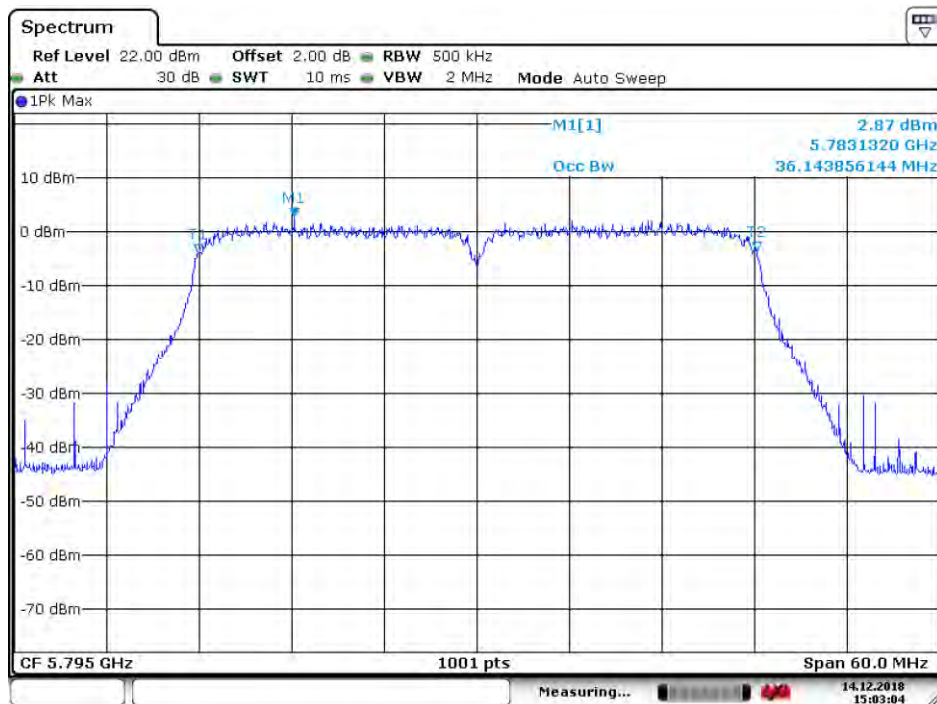
Date: 14.DEC.2018 15:03:05

4.6.1.56   11AC80_MIMO_155 ANT 2

Date: 13.DEC.2018 20:18:59

Date: 14.DEC.2018 15:15:07

4.7 Power Spectral Density

Test Requirement:	47 CFR Part 15 Section 15.407(a)
Test Method:	ANSI C63.10: 2013
Test Setup:	
Test Instruments:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); MCSAC0 of rate is the worst case of 802.11ac(HT20); MCSAC0 of rate is the worst case of 802.11ac(HT40); MCSAC0 of rate is the worst case of 802.11ac(HT80); MCSAC0 of rate is the worst case of 802.11ac(HT160). Only the worst case is recorded in the report.

Limit:	Frequency Band	Limit
	5150-5250MHz	The power spectral density less than 11dBm/1MHz
	5250-5350MHz	The power spectral density less than 11dBm/1MHz
	5470-5725MHz	The power spectral density less than 11dBm/1MHz
	5725-5850MHz	The power spectral density less than <30dBm/500KHz
Test Results:	Pass	

Measurement Data:

Test Mode	Test Channel	Frequency [MHz]	Meas. Level (Cond.) ANT 1	Meas. Level (Cond.) ANT 2	Verdict
11A20	36	5180	0.05	-0.95	PASS
	44	5200	5.90	5.44	PASS
	48	5240	5.85	5.48	PASS
	52	5260	5.63	5.56	PASS
	60	5280	6.16	5.94	PASS
	64	5320	-1.42	-0.46	PASS
	100	5500	-0.50	-1.80	PASS
	116	5600	6.60	5.52	PASS
	140	5720	-1.22	-1.07	PASS
	149	5745	-2.36	-2.02	PASS
	157	5785	-2.19	-2.48	PASS
	165	5825	-1.64	-2.10	PASS
11N20	36	5180	-0.07	-0.28	PASS
	44	5200	5.27	4.31	PASS
	48	5240	4.84	4.42	PASS
	52	5260	4.88	4.24	PASS
	60	5280	4.72	4.53	PASS
	64	5320	-0.68	0.44	PASS
	100	5500	-0.33	1.03	PASS
	116	5600	6.01	6.24	PASS
	140	5720	-1.06	-0.21	PASS
	149	5745	-2.69	-1.65	PASS
	157	5785	-2.03	-1.70	PASS
	165	5825	-1.72	-1.75	PASS
11N40	38	5190	-4.92	-4.78	PASS
	46	5230	1.30	1.25	PASS
	54	5270	1.71	1.71	PASS
	62	5310	-5.88	-4.15	PASS
	102	5510	-5.18	-3.72	PASS
	110	5550	2.04	2.33	PASS
	134	5670	-4.98	-4.35	PASS
	151	5755	-5.04	-4.07	PASS
	159	5795	-4.29	-4.12	PASS
11AC20	36	5180	-0.14	-0.30	PASS
	44	5200	5.13	4.11	PASS
	48	5240	5.02	4.32	PASS
	52	5260	4.70	4.29	PASS
	60	5280	4.82	4.70	PASS
	64	5320	-0.08	0.63	PASS
	100	5500	-0.09	1.24	PASS
	116	5600	6.17	6.26	PASS
	140	5720	-0.78	0.33	PASS
	149	5745	-2.26	-1.17	PASS
	157	5785	-1.67	-1.80	PASS
	165	5825	-1.47	-1.34	PASS
11AC40	38	5190	-5.08	-4.65	PASS
	46	5230	1.48	1.31	PASS
	54	5270	1.42	1.37	PASS
	62	5310	-5.35	-3.82	PASS
	102	5510	-4.84	-3.80	PASS
	110	5550	1.98	2.35	PASS

	134	5670	-5.21	-4.56	PASS
	151	5755	-5.14	-4.10	PASS
	159	5795	-4.32	-4.81	PASS
11AC80	42	5210	-8.32	-7.01	PASS
	58	5290	-8.55	-7.26	PASS
	106	5530	-7.92	-6.27	PASS
	122	5610	-8.03	-5.91	PASS
	155	5775	-7.17	-6.45	PASS
11AC160	50	5250	-12.33	-11.91	PASS
	114	5570	-11.03	-10.84	PASS
11A20 CDD	36	5180	0.44	0.01	PASS
	44	5200	5.36	5.05	PASS
	48	5240	5.36	5.12	PASS
	52	5260	4.92	5.27	PASS
	60	5280	5.10	5.46	PASS
	64	5320	-0.17	0.82	PASS
	100	5500	-0.18	1.42	PASS
	116	5600	6.19	6.96	PASS
	140	5720	-0.86	0.36	PASS
	149	5745	-2.33	-1.33	PASS
	157	5785	-1.96	-1.53	PASS
	165	5825	-1.30	-1.43	PASS
11N20 MIMO	36	5180	-0.30	0.53	PASS
	44	5200	4.97	5.24	PASS
	48	5240	5.04	5.35	PASS
	52	5260	4.66	5.67	PASS
	60	5280	4.92	5.63	PASS
	64	5320	-0.29	0.87	PASS
	100	5500	-0.01	1.87	PASS
	116	5600	5.73	7.22	PASS
	140	5720	-1.05	0.87	PASS
	149	5745	-2.21	-1.27	PASS
	157	5785	-1.72	-1.17	PASS
	165	5825	-1.41	-0.96	PASS
11N40 MIMO	38	5190	-6.01	-4.61	PASS
	46	5230	1.09	1.78	PASS
	54	5270	1.30	1.84	PASS
	62	5310	-5.93	-4.51	PASS
	102	5510	-5.75	-5.18	PASS
	110	5550	1.88	1.90	PASS
	134	5670	-5.64	-4.70	PASS
	151	5755	-4.56	-4.70	PASS
	159	5795	-4.29	-5.10	PASS
11AC20 MIMO	36	5180	0.00	-0.16	PASS
	44	5200	5.17	4.86	PASS
	48	5240	5.08	4.82	PASS
	52	5260	4.73	4.90	PASS
	60	5280	4.87	5.22	PASS
	64	5320	-0.58	0.67	PASS
	100	5500	-0.35	0.82	Shenzhen
	116	5600	6.35	6.75	PASS
	140	5720	-1.27	-0.08	PASS
	149	5745	-2.15	-1.44	PASS

	157	5785	-1.91	-1.51	PASS
	165	5825	-1.46	-1.42	PASS
11AC40 MIMO	38	5190	-5.10	-4.41	PASS
	46	5230	1.53	2.00	PASS
	54	5270	1.07	1.84	PASS
	62	5310	-5.77	-3.87	PASS
	102	5510	-5.07	-3.95	PASS
	110	5550	1.96	2.93	PASS
	134	5670	-5.47	-4.10	PASS
	151	5755	-4.76	-4.18	PASS
	159	5795	-4.58	-4.27	PASS
11AC80 MIMO	42	5210	-8.02	-8.00	PASS
	58	5290	-9.35	-7.38	PASS
	106	5530	-7.98	-6.72	PASS
	122	5610	-7.99	-6.05	PASS
	155	5775	-7.12	-7.01	PASS
11AC160 MIMO	50	5250	-12.33	-11.60	PASS
	114	5570	-11.44	-10.52	PASS

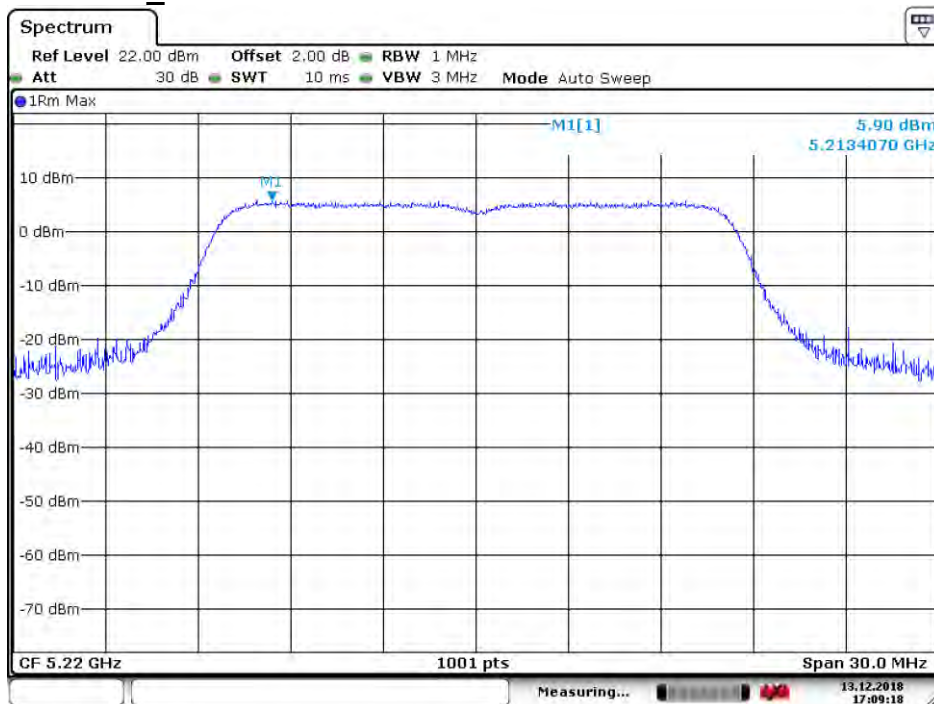Note ：CH50(5250MHz) of the full band (160MHz) both meet the requirements for 5150MHz-5250MHz and 5250MHz-5350MHz.

4.7.1   Test plots
4.7.1.1   11A20_36 ANT 1

Date: 13.DEC.2018 17:08:48

4.7.1.2   11A20_44 ANT 1

Date: 13.DEC.2018 17:09:19

4.7.1.3 11A20_48 ANT 1

Date: 13.DEC.2018 17:09:35

4.7.1.4 11A20_52 ANT 1
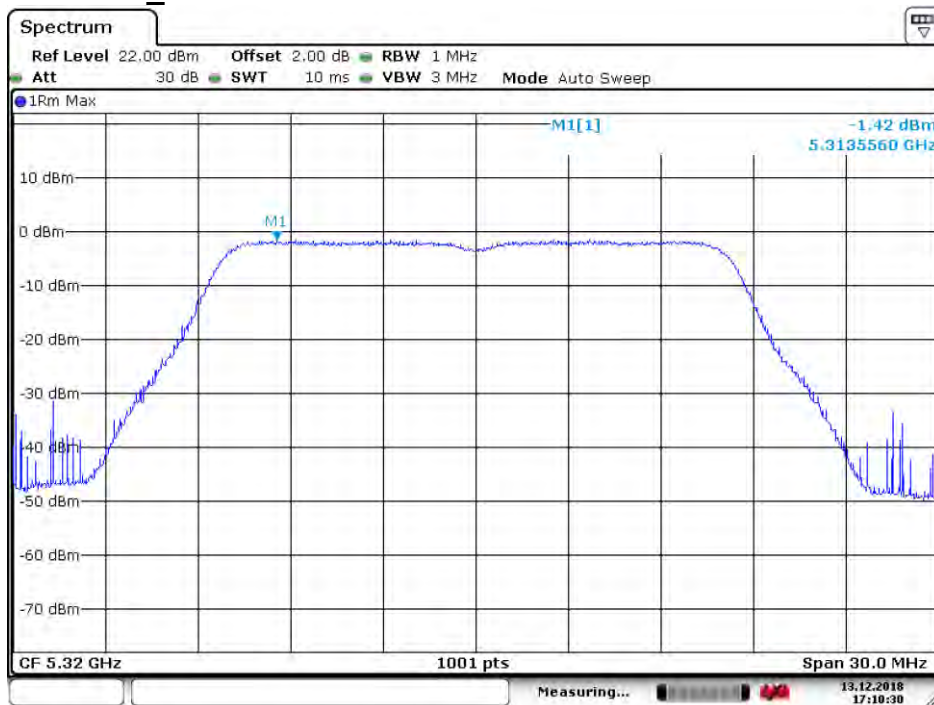

Date: 13.DEC.2018 17:09:53

4.7.1.5   11A20_60 ANT 1
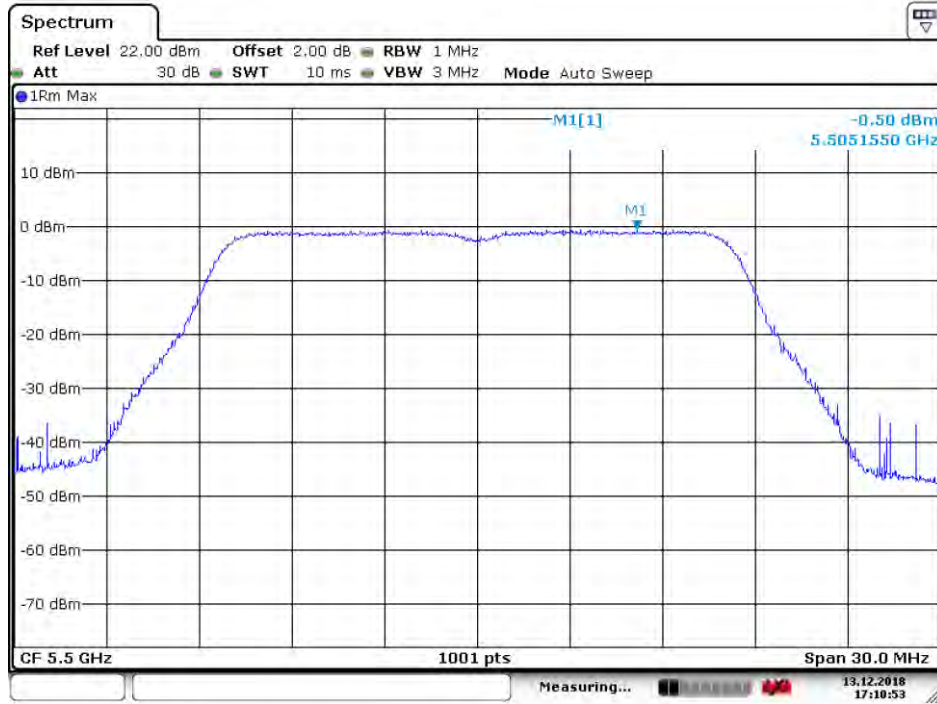

Date: 13.DEC.2018 17:10:07

4.7.1.6   11A20_64 ANT 1

Date: 13.DEC.2018 17:10:30

4.7.1.7　　　11A20_100 ANT 1
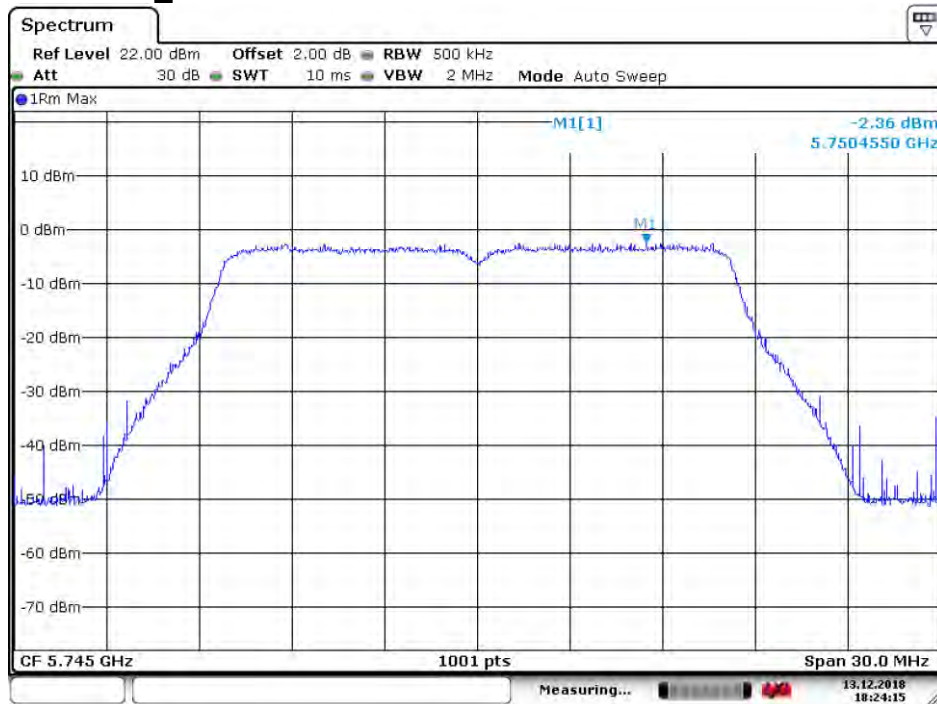

Date: 13.DEC.2018 17:10:53

4.7.1.8　　　11A20_116 ANT 1

Date: 13.DEC.2018 17:11:14
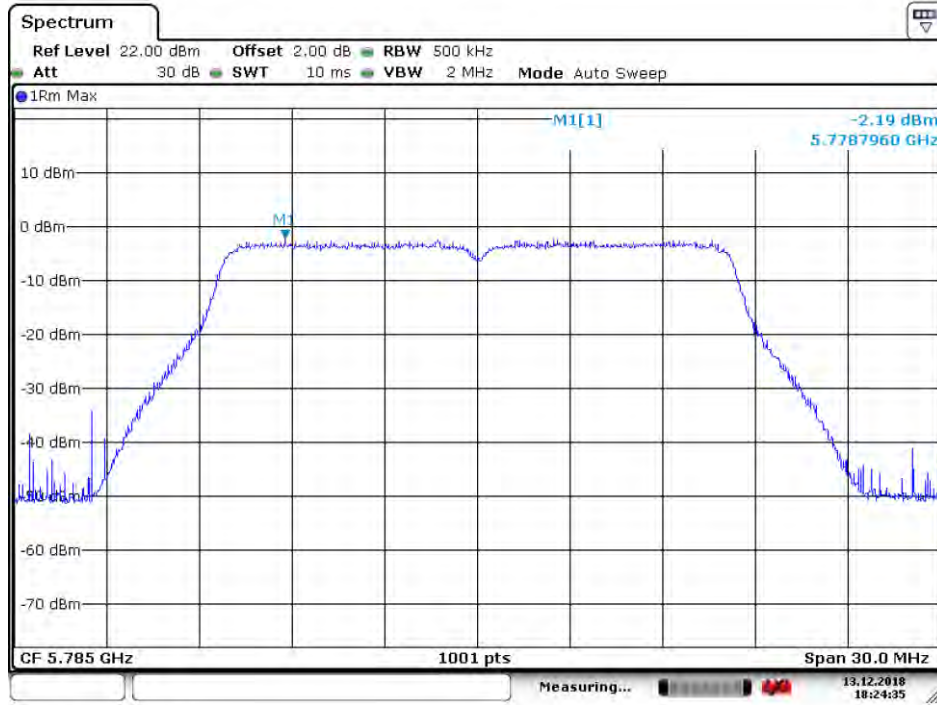
4.7.1.9 11A20_140 ANT 1

Date: 13.DEC.2018 17:11:46
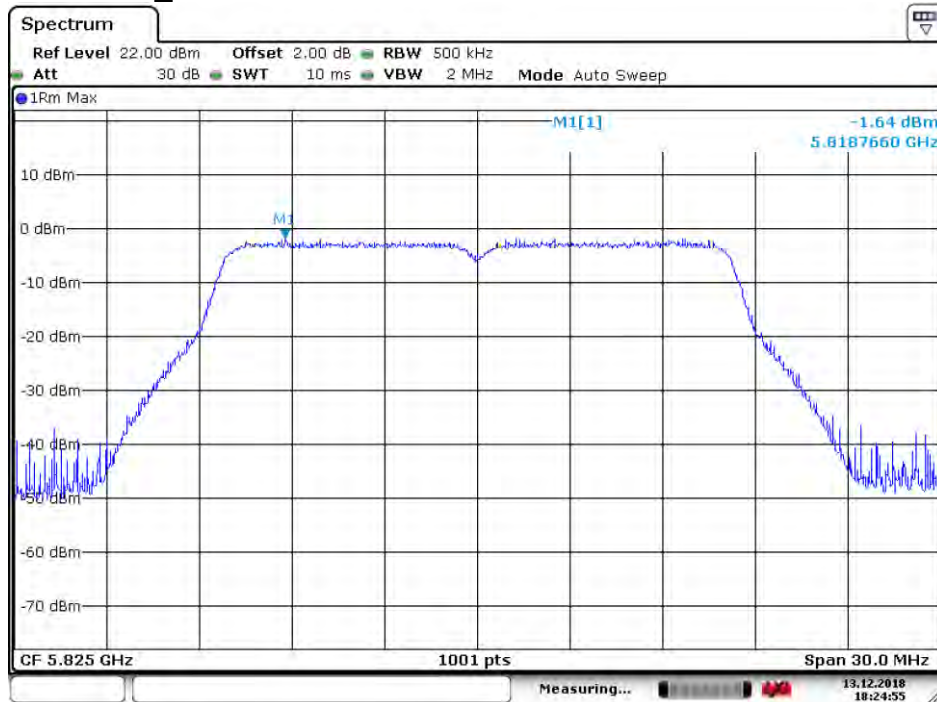
4.7.1.10 11A20_149 ANT 1

Date: 13.DEC.2018 18:24:15
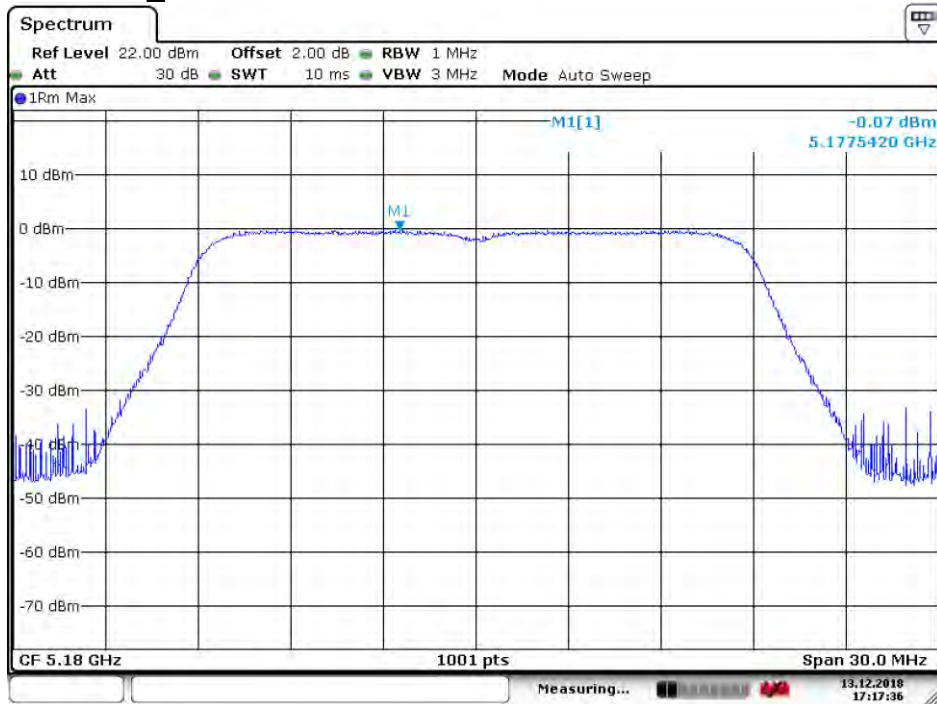
4.7.1.11 11A20_157 ANT 1

Date: 13.DEC.2018 18:24:35

4.7.1.12 11A20_165 ANT 1
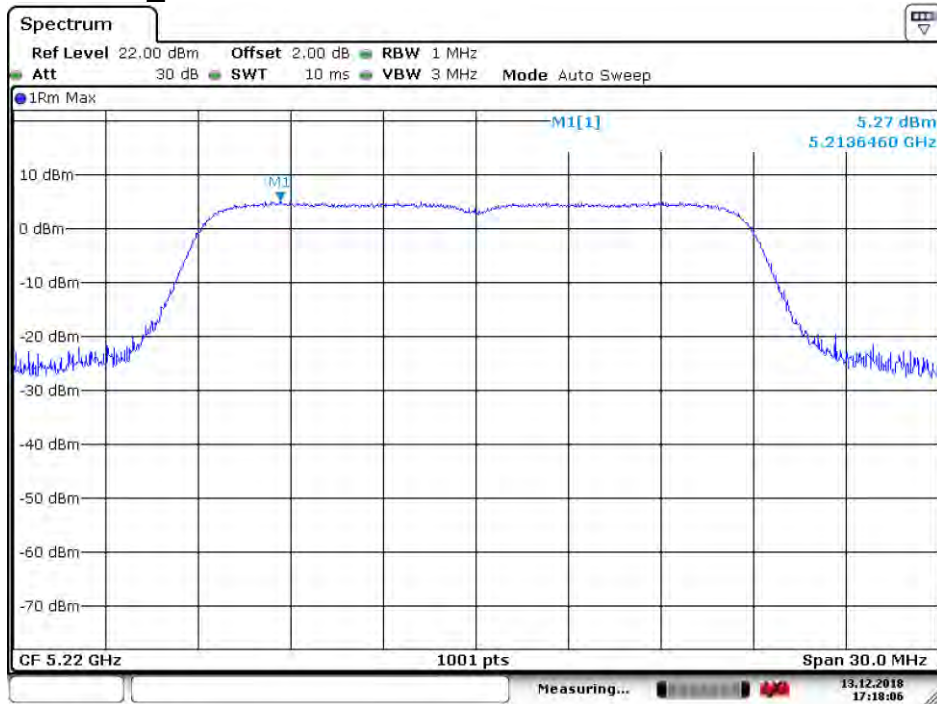

Date: 13.DEC.2018 18:24:56

4.7.1.13   11N20_36 ANT 1

Date: 13.DEC.2018 17:17:36

4.7.1.14   11N20_44 ANT 1

Date: 13.DEC.2018 17:18:07

4.7.1.15   11N20_48 ANT 1

Date: 13.DEC.2018 17:18:45

4.7.1.16   11N20_52 ANT 1
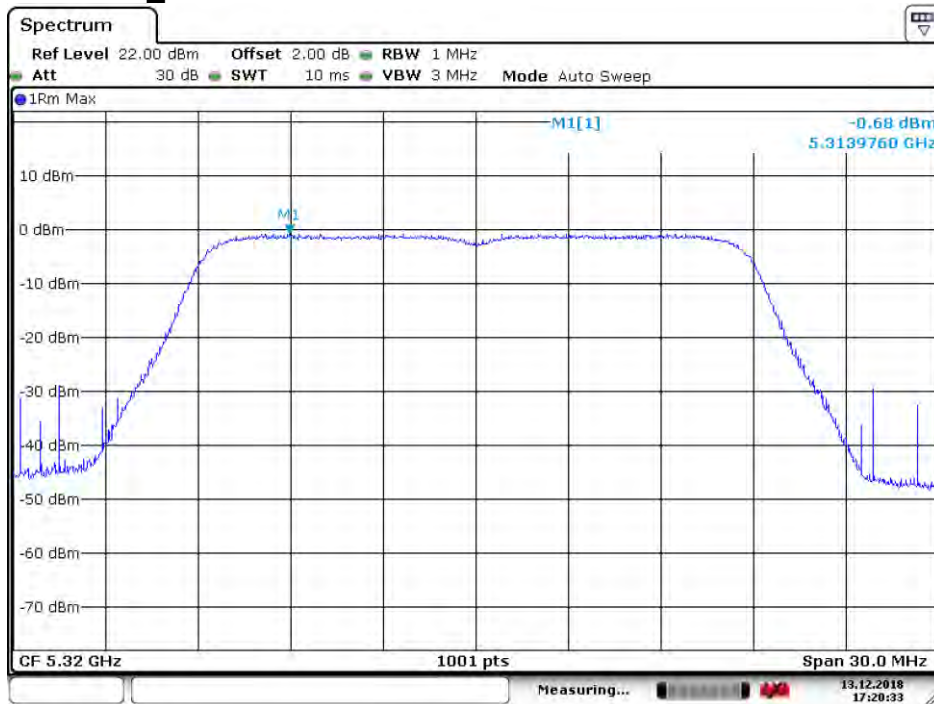

Date: 13.DEC.2018 17:19:39

4.7.1.17   11N20_60 ANT 1

Date: 13.DEC.2018 17:19:59

4.7.1.18   11N20_64 ANT 1

Date: 13.DEC.2018 17:20:34
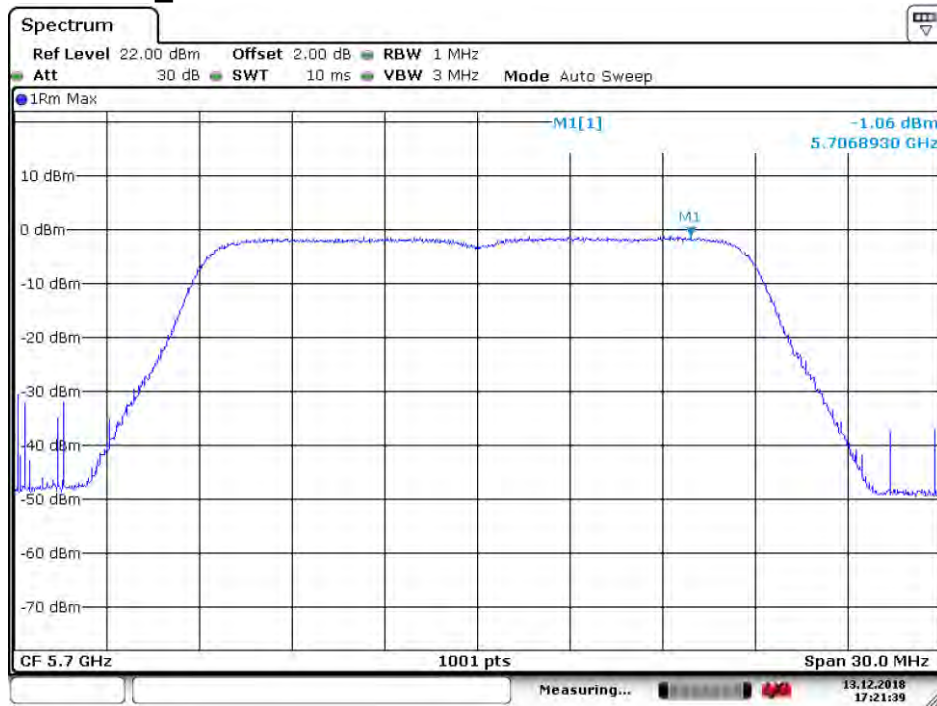
4.7.1.19   11N20_100 ANT 1

Date: 13.DEC.2018 17:20:52

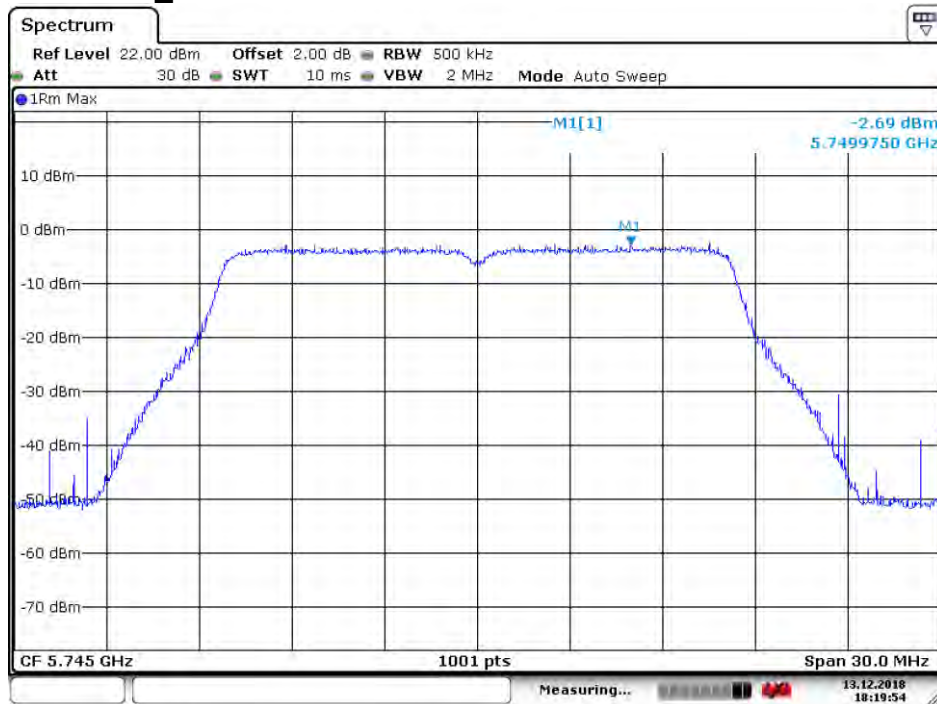### 4.7.1.20   11N20_116 ANT 1

Date: 13.DEC.2018 17:21:23

4.7.1.21   11N20_140 ANT 1

Date: 13.DEC.2018 17:21:39

4.7.1.22   11N20_149 ANT 1

Date: 13.DEC.2018 18:19:54