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Report No.: SZEM180700654903
Page: 1 of 783

FCC TEST REPORT

Application No: SZEM1807006549RG
Applicant: Huawei Technologies Co., Ltd.
Address of Applicant: Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District, Shenzhen, 518129, P.R.C
Manufacturer: Huawei Technologies Co., Ltd.
Address of Manufacturer: Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District, Shenzhen, 518129, P.R.C
Product Name: Smart Phone
Model No.(EUT): HMA-L29, HMA-L09
Trade Mark:: HUAWEI
FCC ID: QISHMA-LX9
Standards: 47 CFR FCC Part 2, Subpart J
47 CFR FCC Part 15, Subpart C
47 CFR FCC Part 15, Subpart E
KDB 789033 D02 General UNII Test Procedures New Rules v02
FCC KDB 558074 D01 DTS Meas Guidance v04
Test Method FCC KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013, American National Standard for Testing Unlicensed
Wireless Devices
Date of Receipt: 2018-07-10
Date of Test: 2018-07-11 to 2018-08-20
Date of Issue: 2018-09-03

Test Result:	PASS *
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. * In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Derek Yang
Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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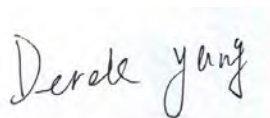
2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2018-09-03		Original

Authorized for issue by:				
Tested By		 _____ (Mike Hu) /Project Engineer		2018-09-03

Checked By		 _____ (David Chen) /Reviewer		2018-09-03

Authorized Signature:



Derek Yang
Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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3 Test Summary

Test Item	Band	FCC Rule	Requirements	Test Result	Verdict
Emission Bandwidth	5150-5250	15.403(i) 15.407(a)(1)	No limit.	Clause 5.4 Clause 5.5	Pass
	5250-5350	15.403(i) 15.407(a)(2)			
	5470-5725	15.403(i) 15.407(a)(2)			
	5725-5850	15.403(i) 15.407(e)	≥ 500 kHz.		
Occupied Bandwidth	5150-5250	KDB 789033 D02§ D	No limit.		Pass
	5250-5350				
	5470-5725				
	5725-5850				
Duty Cycle	5150-5850	--	No limit.		
Maximum Conducted Output Power	5150-5250	15.407(a)(1) 15.407(a)(4)	FCC < 250mW (avg during transmission)	Clause 5.3	Pass
	5250-5350	15.407(a)(2) 15.407(a)(4)	<MIN{250mW, 11dBm+10*Ig(EBW)} (avg during transmission)		
	5470-5725	15.407(a)(2) 15.407(a)(4)	<MIN{250mW, 11dBm+10*Ig(EBW)} (avg during transmission)		
	5725-5850	15.407(a)(3)	< 1W (avg during transmission)		
maximum Power Spectral Density	5150-5250	15.407(a)(1) 15.407(a)(4)	<11dBm/MHz (avg during transmission)	Clause 5.6	
	5250-5350	15.407(a)(2) 15.407(a)(4)	<11dBm/MHz (avg during transmission)		
	5470-5725	15.407(a)(2) 15.407(a)(4)	<11dBm/MHz (avg during transmission)		
	5725-5850	15.407(a)(3) 15.407(a)(4)	<30dBm/500KHz (avg during transmission)		
Unwanted Emissions that fall Outside of the Restricted Bands(Radiated)	5150-5250	15.407(b)(1) 15.407(b)(6) 15.407(b)(7) 15.209	<ul style="list-style-type: none"> F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.15-5.35 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK). 	Clause 5.7	Pass
	5250-5350	15.407(b)(2) 15.407(b)(6) 15.407(b)(7) 15.209	<ul style="list-style-type: none"> F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.25-5.35 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK). 		



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Test Item	Band	FCC Rule	Requirements	Test Result	Verdict
	5470-5750	15.407(b)(3) 15.407(b)(6) 15.407(b)(7) 15.209	<ul style="list-style-type: none"> F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.47-5.725 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK). 		
	5725-5850	15.407(b)(4) 15.407(b)(6) 15.407(b)(7) 15.209	<ul style="list-style-type: none"> F<1GHz: §15.209/§7.2.5 limit (QP) F≥1GHz & out-restricted:(QP) <ul style="list-style-type: none"> a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges; b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges; c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges. F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK). 		
Unwanted Emissions in the Restricted Bands (Radiated)	5150-5250 5250-5350 5470-5725 5725-5850	15.209	FCC: Part 15.209	Clause 5.8	Pass
AC Power Line Conducted Emissions	5150-5250 5250-5350 5470-5725 5725-5850	15.207	FCC:Part 15.207 conducted limit;	Clause 5.2	Pass
Frequency Stability	5150-5250 5250-5350 5470-5725 5725-5850	15.407(g)	FCC Part 15.407(g)	Clause 5.9	Pass
DFS: Non-occupancy period	5250-5350 5470-5725	47 CFR Part 15, Subpart E 15.407	Minimum 30 minutes	Clause 5.10	Pass

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Shenzhen Branch

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Test Item	Band	FCC Rule	Requirements	Test Result	Verdict
DFS: Channel Move Time		47 CFR Part 15, Subpart E 15.407	10 seconds		Pass
DFS: Channel Closing Transmission Time		47 CFR Part 15, Subpart E 15.407	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period.		Pass

Remark:

According to the declaration from the applicant, the differences between HMA-L29 and HMA-L09 are identical except for HMA-L09 support single SIM card which deleted by software. Therefore we only test HMA-L29 in this report



4 General Information

4.1 Client Information

Applicant:	Huawei Technologies Co., Ltd.
Address of Applicant:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Manufacturer:	Huawei Technologies Co., Ltd.
Address of Manufacturer:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

4.2 General Description of EUT

Product Name:	Smart Phone
Model No.:	HMA-L29, HMA-L09
Trade Mark:	HUAWEI
Hardware Version:	HL1HIMAM
Software Version:	9.0.0.46(C432E55R1P7log)
Operation Frequency:	IEEE 802.11a/ n(HT20/40)/ ac(HT20/40/80/160): 5150MHz to 5250MHz IEEE 802.11a/ n(HT20/40)/ ac(HT20/40/80/160): 5250MHz to 5350MHz IEEE 802.11a/ n(HT20/40)/ ac(HT20/40/80/160): 5470MHz to 5725MHz IEEE 802.11a/ n(HT20/40)/ ac(HT20/40/80): 5725MHz to 5850MHz * The 5580-5650MHz can not be used.
Type of Modulation:	IEEE 802.11a: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11n: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11ac: OFDM(BPSK/QPSK/16QAM/64QAM/256QAM)
DFS mode:	Slave without radar detection
Sample Type:	Portable Device
Antenna Type:	PIFA
Antenna Gain:	1dBi(ANT1);-4.5dBi(ANT2)
EUT Power Supply:	Battery Model: HB436486ECW Rated capacity: 3900mAh Nominal Voltage: +3.82V Charging Voltage: +4.40V
AC adaptor:	Model: HW-050450B00 Manufacturer: Huawei Technologies Co., Ltd. Input: 100V-240V~50/60Hz, 0.75A Output: 5V 2A OR 4.5V 5A OR 5V 4.5A Model: HW-050450E00 Manufacturer: Huawei Technologies Co., Ltd. Input: 100V-240V~50/60Hz, 0.75A Output: 5V 2A OR 4.5V 5A OR 5V 4.5A



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	Model: HW-050450U00 Manufacturer: Huawei Technologies Co., Ltd. Input: 100V-240V~50/60Hz, 0.75A Output: 5V === 2A OR 4.5V === 5A OR 5V === 4.5A Model: HW-050450A00 Manufacturer: Huawei Technologies Co., Ltd. Input: 100V-240V~50/60Hz, 0.75A Output: 5V === 2A OR 4.5V === 5A OR 5V === 4.5A Model: HW-050450E01 Manufacturer: Huawei Technologies Co., Ltd. Input: 100V-240V~50/60Hz, 0.75A Output: 5V === 2A OR 9V === 2A
--	---

Note:

In FCC 15.31, for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table, and the selected channel to perform the test as below:

Frequency Range of Operation Operating Frequency Range (in each Band)	Number of Measurement Frequencies Required	Location of Measurement Frequency in Band of Operation
1 MHz or less	1	centre
1 MHz to 10 MHz	2	1 near high end, 1 near low end
Greater than 10 MHz	3	1 near high end, 1 near centre

For UNII Band I:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5180
	The Middle channel	5200
	The Highest channel	5240
IEEE 802.11n/ac 40MHz	The Lowest channel	5190
	The Highest channel	5230
IEEE 802.11ac 80MHz	The Middle channel	5210

For UNII Band II-A:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5260
	The Middle channel	5280
	The Highest channel	5320
IEEE 802.11n/ac 40MHz	The Lowest channel	5270
	The Highest channel	5310
IEEE 802.11ac 80MHz	The Middle channel	5290
IEEE 802.11ac 160MHz	The Lowest channel	5250



For UNII Band II-C:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5500
	The Middle channel	5600
	The Highest channel	5720
IEEE 802.11n/ac 40MHz	The Lowest channel	5510
	The Middle channel	5670
	The Highest channel	5710
IEEE 802.11ac 80MHz	The Lowest channel	5530
	The Highest channel	5690
IEEE 802.11ac 160MHz	The Highest channel	5570

For UNII Band III:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5745
	The Middle channel	5785
	The Highest channel	5825
IEEE 802.11n/ac 40MHz	The Lowest channel	5755
	The Highest channel	5795
IEEE 802.11ac 80MHz	The Middle channel	5775

4.3 Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	55 % RH
Atmospheric Pressure:	101.32 KPa
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.



4.4 Description of Support Units

The EUT has been tested independent unit.

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch,
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None.

4.9 Other Information Requested by the Customer

None.



5 Test results and Measurement Data

5.1 Antenna Requirement

Test Requirement:	47 CFR Part 15 Section 15.203
The antenna is integrated antenna and no consideration of replacement. The best case gain of the antenna is 1dBi(ANT1);-4.5dBi(ANT2)	

5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test Procedure:	<ol style="list-style-type: none">1) The mains terminal disturbance voltage test was conducted in a shielded room.2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.		



Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate of 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

Measurement Data

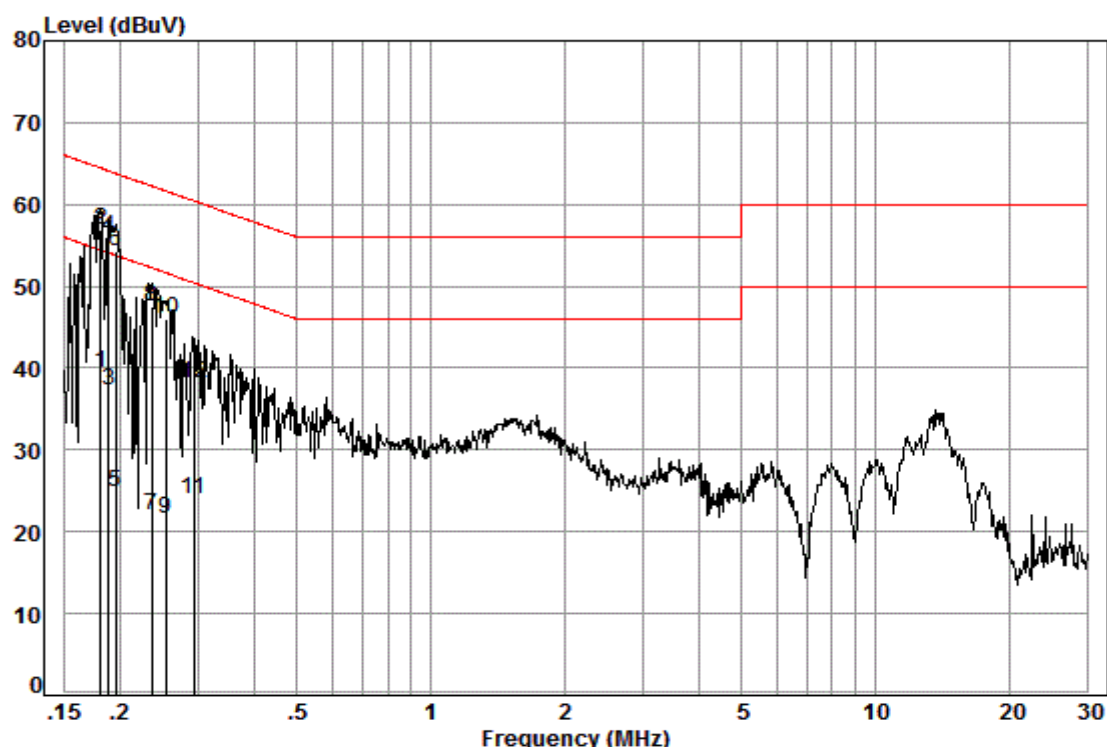
An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Mode e=5G WiFi Conducted Emission



Live Line:

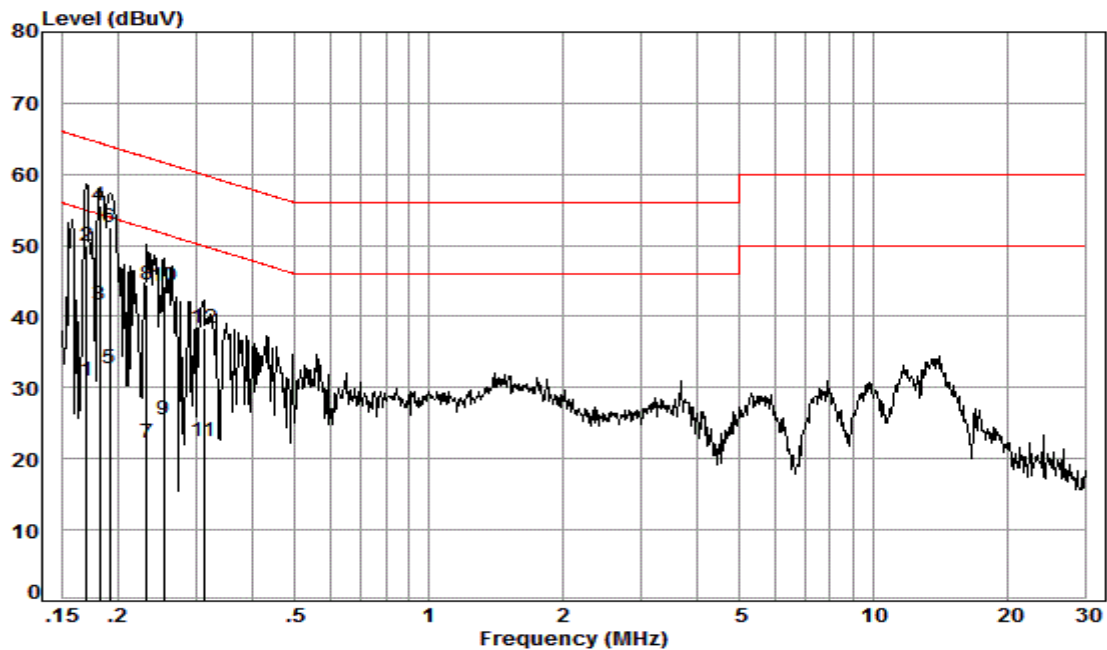


Site : Shielding Room
Condition: Line
Job No. : 06549RG
Test mode: e

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18	0.03	9.51	29.92	39.46	54.46	-15.00	Average
2	0.18	0.03	9.51	47.28	56.82	64.46	-7.64	QP
3	0.19	0.03	9.51	27.64	37.18	54.11	-16.93	Average
4	0.19	0.03	9.51	46.49	56.03	64.11	-8.08	QP
5	0.20	0.03	9.50	15.42	24.95	53.80	-28.85	Average
6	0.20	0.03	9.50	44.72	54.25	63.80	-9.55	QP
7	0.24	0.03	9.51	12.54	22.08	52.26	-30.18	Average
8	0.24	0.03	9.51	37.89	47.43	62.26	-14.83	QP
9	0.25	0.03	9.51	12.11	21.65	51.64	-29.99	Average
10	0.25	0.03	9.51	36.45	45.99	61.64	-15.65	QP
11	0.29	0.03	9.51	14.54	24.08	50.46	-26.38	Average
12	0.29	0.03	9.51	28.68	38.22	60.46	-22.24	QP



Neutral Line:



Site : Shielding Room
Condition: Neutral
Job No. : 06549RG
Test mode: e

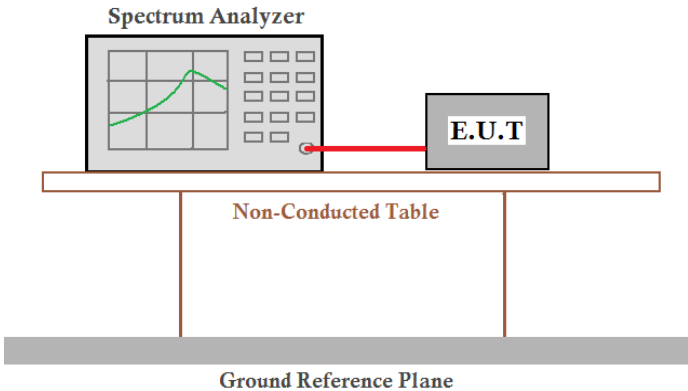
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.17	0.02	9.59	21.36	30.97	54.94	-23.97	Average
2	0.17	0.02	9.59	40.21	49.82	64.94	-15.12	QP
3	0.18	0.03	9.58	31.95	41.56	54.42	-12.86	Average
4	0.18	0.03	9.58	46.06	55.67	64.42	-8.75	QP
5	0.19	0.03	9.58	22.99	32.60	53.98	-21.38	Average
6	0.19	0.03	9.58	42.83	52.44	63.98	-11.54	QP
7	0.23	0.03	9.58	12.62	22.23	52.39	-30.16	Average
8	0.23	0.03	9.58	34.90	44.51	62.39	-17.88	QP
9	0.25	0.03	9.58	15.80	25.41	51.64	-26.23	Average
10	0.25	0.03	9.58	34.62	44.23	61.64	-17.41	QP
11	0.31	0.03	9.58	12.85	22.46	49.93	-27.47	Average
12	0.31	0.03	9.58	28.75	38.36	59.93	-21.57	QP

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.



5.3 Conducted Output Power

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); MCS0 of rate is the worst case of 802.11ac(HT20); MCS0 of rate is the worst case of 802.11ac(HT40); MCS0 of rate is the worst case of 802.11ac(HT80) , MCS0 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	Not exceed 250mW(24dBm)
	5250-5350MHz	The lesser of 250mW(24dBm) or $11 + 10\log B$
	5470-5725MHz	The lesser of 250mW(24dBm) or $11 + 10\log B$
	5725-5850MHz	Not exceed 1W(30dBm)
	*Where B is the 26dB emission bandwidth in MHz	
Test Results:	Pass	



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Measurement Data:

Test Mode	Test Channel	Frequency [MHz]	Antenna Port	Meas. Level (Cond.) [dBm]	Meas. Level (EIRP) [dBm]	Verdict
11A20_SISO	36	5180	ANT 1	9.93	10.93	PASS
	40	5200	ANT 1	17.02	18.02	PASS
	48	5240	ANT 1	16.98	17.98	PASS
	52	5260	ANT 1	16.96	17.96	PASS
	56	5280	ANT 1	16.85	17.85	PASS
	64	5320	ANT 1	9.61	10.61	PASS
	100	5500	ANT 1	9.86	10.86	PASS
	120	5600	ANT 1	17.43	18.43	PASS
	140	5700	ANT 1	10.21	11.21	PASS
	149	5745	ANT 1	11.69	12.69	PASS
	157	5785	ANT 1	11.97	12.97	PASS
	165	5825	ANT 1	12.27	13.27	PASS
11N20_SISO	36	5180	ANT 1	9.87	10.87	PASS
	40	5200	ANT 1	16.45	17.45	PASS
	48	5240	ANT 1	16.31	17.31	PASS
	52	5260	ANT 1	16.26	17.26	PASS
	56	5280	ANT 1	16.24	17.24	PASS
	64	5320	ANT 1	9.52	10.52	PASS
	100	5500	ANT 1	9.81	10.81	PASS
	120	5600	ANT 1	16.95	17.95	PASS
	140	5700	ANT 1	10.29	11.29	PASS
	149	5745	ANT 1	11.17	12.17	PASS
	157	5785	ANT 1	11.54	12.54	PASS
	165	5825	ANT 1	11.77	12.77	PASS
11N40_SISO	38	5190	ANT 1	8.29	9.29	PASS
	46	5230	ANT 1	15.24	16.24	PASS
	54	5270	ANT 1	15.09	16.09	PASS
	62	5310	ANT 1	7.83	8.83	PASS
	102	5510	ANT 1	8.08	9.08	PASS
	142	5710	ANT 1	14.89	15.89	PASS
	134	5670	ANT 1	14.62	15.62	PASS
	151	5755	ANT 1	10.27	11.27	PASS
	159	5795	ANT 1	10.57	11.57	PASS
11AC20_SISO	36	5180	ANT 1	9.87	10.87	PASS
	40	5200	ANT 1	16.42	17.42	PASS
	48	5240	ANT 1	16.28	17.28	PASS
	52	5260	ANT 1	16.31	17.31	PASS
	56	5280	ANT 1	16.21	17.21	PASS
	64	5320	ANT 1	9.56	10.56	PASS
	100	5500	ANT 1	9.77	10.77	PASS
	120	5600	ANT 1	16.99	17.99	PASS
	140	5700	ANT 1	10.26	11.26	PASS
	149	5745	ANT 1	11.23	12.23	PASS
	157	5785	ANT 1	11.85	12.85	PASS
11AC40_SISO	38	5190	ANT 1	8.29	9.29	PASS



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	46	5230	ANT 1	15.23	16.23	PASS
	54	5270	ANT 1	15.06	16.06	PASS
	62	5310	ANT 1	7.92	8.92	PASS
	102	5510	ANT 1	8.11	9.11	PASS
	142	5710	ANT 1	14.87	15.87	PASS
	134	5670	ANT 1	14.59	15.59	PASS
	151	5755	ANT 1	10.36	11.36	PASS
	159	5795	ANT 1	10.72	11.72	PASS
11AC80_SISO	42	5210	ANT 1	8.03	9.03	PASS
	58	5290	ANT 1	7.74	8.74	PASS
	106	5530	ANT 1	7.83	8.83	PASS
	138	5690	ANT 1	13.44	14.44	PASS
	155	5775	ANT 1	9.57	10.57	PASS
11AC160_SISO	50	5250	ANT 1	10.89	11.89	PASS
	114	5570	ANT 1	11.09	12.09	PASS

Test Mode	Test Channel	Frequency [MHz]	Antenna Port	Meas. Level (Cond.) [dBm]	Meas. Level (EIRP) [dBm]	Verdict
11A20_SISO	36	5180	ANT 2	10.87	6.37	PASS
	40	5200	ANT 2	15.56	11.06	PASS
	48	5240	ANT 2	15.75	11.25	PASS
	52	5260	ANT 2	15.80	11.30	PASS
	56	5280	ANT 2	15.85	11.35	PASS
	64	5320	ANT 2	11.43	6.93	PASS
	100	5500	ANT 2	11.48	6.98	PASS
	120	5600	ANT 2	15.77	11.27	PASS
	140	5700	ANT 2	11.49	6.99	PASS
	149	5745	ANT 2	12.03	7.53	PASS
	157	5785	ANT 2	12.06	7.56	PASS
	165	5825	ANT 2	12.03	7.53	PASS
11N20_SISO	36	5180	ANT 2	10.83	6.33	PASS
	40	5200	ANT 2	15.47	10.97	PASS
	48	5240	ANT 2	15.70	11.20	PASS
	52	5260	ANT 2	15.73	11.23	PASS
	56	5280	ANT 2	15.77	11.27	PASS
	64	5320	ANT 2	11.36	6.86	PASS
	100	5500	ANT 2	11.45	6.95	PASS
	120	5600	ANT 2	15.52	11.02	PASS
	140	5700	ANT 2	11.46	6.96	PASS
	149	5745	ANT 2	11.96	7.46	PASS
	157	5785	ANT 2	11.93	7.43	PASS
	165	5825	ANT 2	11.97	7.47	PASS
11N40_SISO	38	5190	ANT 2	8.82	4.32	PASS
	46	5230	ANT 2	13.86	9.36	PASS
	54	5270	ANT 2	14.04	9.54	PASS
	62	5310	ANT 2	9.23	4.73	PASS
	102	5510	ANT 2	9.47	4.97	PASS
	142	5710	ANT 2	15.09	10.59	PASS

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	134	5670	ANT 2	15.14	10.64	PASS
	151	5755	ANT 2	10.91	6.41	PASS
	159	5795	ANT 2	10.83	6.33	PASS
11AC20_SISO	36	5180	ANT 2	11.16	6.66	PASS
	40	5200	ANT 2	15.48	10.98	PASS
	48	5240	ANT 2	15.67	11.17	PASS
	52	5260	ANT 2	15.71	11.21	PASS
	56	5280	ANT 2	15.75	11.25	PASS
	64	5320	ANT 2	11.48	6.98	PASS
	100	5500	ANT 2	11.46	6.96	PASS
	120	5600	ANT 2	15.68	11.18	PASS
	140	5700	ANT 2	11.46	6.96	PASS
	149	5745	ANT 2	12.06	7.56	PASS
	157	5785	ANT 2	12.07	7.57	PASS
	165	5825	ANT 2	11.97	7.47	PASS
11AC40_SISO	38	5190	ANT 2	8.96	4.46	PASS
	46	5230	ANT 2	13.88	9.38	PASS
	54	5270	ANT 2	14.03	9.53	PASS
	62	5310	ANT 2	9.23	4.73	PASS
	102	5510	ANT 2	9.47	4.97	PASS
	142	5710	ANT 2	15.05	10.55	PASS
	134	5670	ANT 2	15.18	10.68	PASS
	151	5755	ANT 2	10.82	6.32	PASS
11AC80_SISO	159	5795	ANT 2	10.81	6.31	PASS
	42	5210	ANT 2	8.88	4.38	PASS
	58	5290	ANT 2	9.64	5.14	PASS
	106	5530	ANT 2	9.61	5.11	PASS
	138	5690	ANT 2	14.52	10.02	PASS
11AC160_SISO	155	5775	ANT 2	10.32	5.82	PASS
	50	5250	ANT 2	11.28	6.78	PASS
	114	5570	ANT 2	11.70	7.20	PASS

Test Mode	Test Channel	Frequency [MHz]	Antenna Port	Meas. Level (Cond.) [dBm]	Antenna Port	Meas. Level (Cond.) [dBm]	MIMO (Cond.) [dBm]	MIMO (EIRP) [dBm]	Verdict
11A20_CDD	36	5180	ANT 1	10.51	ANT 2	10.18	13.36	12.52	PASS
	48	5240	ANT 1	16.71	ANT 2	15.59	19.20	18.57	PASS
	52	5260	ANT 1	16.64	ANT 2	15.63	19.17	18.52	PASS
	64	5320	ANT 1	10.13	ANT 2	10.58	13.37	12.31	PASS
	100	5500	ANT 1	10.16	ANT 2	10.28	13.23	12.27	PASS
	140	5700	ANT 1	10.91	ANT 2	10.71	13.82	12.95	PASS
	149	5745	ANT 1	11.81	ANT 2	11.78	14.81	13.88	PASS
	157	5785	ANT 1	12.29	ANT 2	11.92	15.12	14.29	PASS
	165	5825	ANT 1	12.26	ANT 2	12.21	15.25	14.33	PASS
11N20_MIMO	36	5180	ANT 1	9.47	ANT 2	10.00	12.75	11.67	PASS
	48	5240	ANT 1	15.90	ANT 2	15.56	18.74	17.91	PASS
	52	5260	ANT 1	15.50	ANT 2	15.45	18.49	17.57	PASS
	64	5320	ANT 1	10.02	ANT 2	10.02	13.03	12.10	PASS

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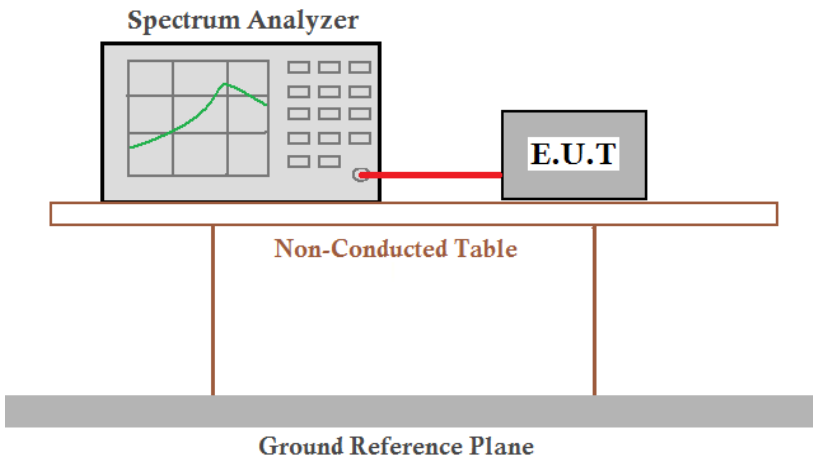
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	100	5500	ANT 1	11.37	ANT 2	9.44	13.52	13.09	PASS
	140	5700	ANT 1	10.71	ANT 2	9.33	13.08	12.52	PASS
	149	5745	ANT 1	11.69	ANT 2	11.22	14.47	13.67	PASS
	157	5785	ANT 1	11.72	ANT 2	11.42	14.58	13.73	PASS
	165	5825	ANT 1	11.65	ANT 2	11.47	14.57	13.69	PASS
11N40_ MIMO	38	5190	ANT 1	7.99	ANT 2	7.82	10.92	10.03	PASS
	46	5230	ANT 1	14.64	ANT 2	13.95	17.32	16.58	PASS
	54	5270	ANT 1	14.73	ANT 2	13.82	17.31	16.62	PASS
	62	5310	ANT 1	8.82	ANT 2	7.25	11.12	10.60	PASS
	102	5510	ANT 1	9.54	ANT 2	7.93	11.82	11.31	PASS
	134	5670	ANT 1	14.56	ANT 2	13.82	17.22	16.49	PASS
	151	5755	ANT 1	10.51	ANT 2	10.15	13.34	12.51	PASS
11AC20_ MIMO	159	5795	ANT 1	10.57	ANT 2	10.31	13.45	12.59	PASS
	36	5180	ANT 1	9.03	ANT 2	9.55	12.31	11.23	PASS
	48	5240	ANT 1	15.88	ANT 2	15.44	18.68	17.87	PASS
	52	5260	ANT 1	15.74	ANT 2	15.34	18.55	17.73	PASS
	64	5320	ANT 1	9.52	ANT 2	9.63	12.59	11.62	PASS
	100	5500	ANT 1	10.67	ANT 2	9.45	13.11	12.51	PASS
	140	5700	ANT 1	10.74	ANT 2	9.41	13.14	12.56	PASS
	149	5745	ANT 1	11.65	ANT 2	11.14	14.41	13.62	PASS
	157	5785	ANT 1	11.71	ANT 2	11.39	14.56	13.72	PASS
11AC40_ MIMO	165	5825	ANT 1	11.67	ANT 2	11.48	14.59	13.71	PASS
	38	5190	ANT 1	7.53	ANT 2	7.37	10.46	9.57	PASS
	46	5230	ANT 1	14.73	ANT 2	13.95	17.37	16.65	PASS
	54	5270	ANT 1	14.87	ANT 2	13.94	17.44	16.76	PASS
	62	5310	ANT 1	7.75	ANT 2	7.39	10.58	9.75	PASS
	102	5510	ANT 1	9.26	ANT 2	7.02	11.29	10.94	PASS
	134	5670	ANT 1	14.88	ANT 2	13.71	17.34	16.73	PASS
	151	5755	ANT 1	10.66	ANT 2	10.08	13.39	12.62	PASS
	159	5795	ANT 1	10.63	ANT 2	10.23	13.44	12.62	PASS
11AC80_ MIMO	42	5210	ANT 1	7.13	ANT 2	7.09	10.12	9.20	PASS
	58	5290	ANT 1	7.45	ANT 2	7.29	10.38	9.49	PASS
	106	5530	ANT 1	8.76	ANT 2	6.44	10.76	10.42	PASS
	138	5690	ANT 1	14.12	ANT 2	13.18	16.69	16.01	PASS
	155	5775	ANT 1	9.42	ANT 2	9.38	12.41	11.49	PASS
11AC160_ MIMO	50	5250	ANT 1	9.05	ANT 2	9.19	12.13	11.16	PASS
	114	5570	ANT 1	9.06	ANT 2	9.09	12.09	11.14	PASS



5.4 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(a)
Test Method:	ANSI C63.10: 2013
Test Setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two vertical legs. Below the table is a Ground Reference Plane.</p>
Instruments Used:	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); MCS0 of rate is the worst case of 802.11ac(HT20); MCS0 of rate is the worst case of 802.11ac(HT40); MCS0 of rate is the worst case of 802.11ac(HT80), MCS0 of rate is the worst case of 802.11ac(HT160). Only the worst case is recorded in the report.
Limit:	No restriction limits
Test Results:	Pass



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5.4.1 Measurement Data:

Test Mode	Test Channel	Frequency [MHz]	Antenna Port	26dB Emission Bandwidth [MHz]	Occupied Bandwidth [MHz]	Verdict
11A20_SISO	36	5180	ANT 1	20.90	17.02	PASS
	40	5200	ANT 1	21.34	16.98	PASS
	48	5240	ANT 1	21.06	16.82	PASS
	52	5260	ANT 1	20.58	16.90	PASS
	56	5280	ANT 1	20.86	16.94	PASS
	64	5320	ANT 1	20.90	16.90	PASS
	100	5500	ANT 1	20.78	16.82	PASS
	120	5600	ANT 1	20.74	16.98	PASS
	140	5700	ANT 1	20.30	16.78	PASS
11N20_SISO	36	5180	ANT 1	21.14	17.86	PASS
	40	5200	ANT 1	21.22	17.90	PASS
	48	5240	ANT 1	20.86	17.86	PASS
	52	5260	ANT 1	21.30	17.90	PASS
	56	5280	ANT 1	21.22	17.86	PASS
	64	5320	ANT 1	20.90	17.86	PASS
	100	5500	ANT 1	20.94	17.70	PASS
	120	5600	ANT 1	21.14	17.90	PASS
	140	5700	ANT 1	21.14	17.74	PASS
11N40_SISO	38	5190	ANT 1	42.12	36.44	PASS
	46	5230	ANT 1	42.28	36.44	PASS
	54	5270	ANT 1	42.28	36.36	PASS
	62	5310	ANT 1	42.04	36.36	PASS
	102	5510	ANT 1	41.80	36.28	PASS
	134	5670	ANT 1	42.04	36.44	PASS
11AC20_SISO	36	5180	ANT 1	21.70	17.94	PASS
	40	5200	ANT 1	21.46	17.90	PASS
	48	5240	ANT 1	21.22	17.86	PASS
	52	5260	ANT 1	21.10	17.86	PASS
	56	5280	ANT 1	21.18	17.86	PASS
	64	5320	ANT 1	21.30	17.82	PASS
	100	5500	ANT 1	21.22	17.74	PASS
	120	5600	ANT 1	21.50	17.94	PASS

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	140	5700	ANT 1	20.98	17.74	PASS
11AC40_SISO	38	5190	ANT 1	42.36	36.44	PASS
	46	5230	ANT 1	41.96	36.36	PASS
	54	5270	ANT 1	42.36	36.52	PASS
	62	5310	ANT 1	42.36	36.44	PASS
	102	5510	ANT 1	41.88	36.36	PASS
	134	5670	ANT 1	41.80	36.44	PASS
11AC80_SISO	42	5210	ANT 1	84.08	75.28	PASS
	58	5290	ANT 1	84.72	75.44	PASS
	106	5530	ANT 1	85.03	75.12	PASS
	138	5690	ANT 1	84.40	75.28	PASS
11AC160_SISO	50	5250	ANT 1	173.59	155.36	PASS
	114	5570	ANT 1	174.23	154.73	PASS

Test Mode	Test Channel	Frequency [MHz]	Antenna Port	26dB Emission Bandwidth [MHz]	Occupied Bandwidth [MHz]	Verdict
11A20_SISO	36	5180	ANT 2	20.78	16.86	PASS
	40	5200	ANT 2	20.50	16.82	PASS
	48	5240	ANT 2	20.74	16.82	PASS
	52	5260	ANT 2	20.54	16.86	PASS
	56	5280	ANT 2	20.78	16.86	PASS
	64	5320	ANT 2	20.74	16.86	PASS
	100	5500	ANT 2	20.58	16.82	PASS
	120	5600	ANT 2	20.66	16.86	PASS
	140	5700	ANT 2	20.42	16.82	PASS
11N20_SISO	36	5180	ANT 2	21.10	17.78	PASS
	40	5200	ANT 2	21.02	17.78	PASS
	48	5240	ANT 2	21.10	17.78	PASS
	52	5260	ANT 2	21.10	17.78	PASS
	56	5280	ANT 2	21.18	17.82	PASS
	64	5320	ANT 2	21.14	17.82	PASS
	100	5500	ANT 2	21.10	17.74	PASS
	120	5600	ANT 2	21.02	17.78	PASS
	140	5700	ANT 2	21.02	17.70	PASS
11N40_SISO	38	5190	ANT 2	42.28	36.28	PASS

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	46	5230	ANT 2	42.60	36.36	PASS
	54	5270	ANT 2	42.12	36.36	PASS
	62	5310	ANT 2	41.80	36.28	PASS
	102	5510	ANT 2	42.04	36.28	PASS
	134	5670	ANT 2	42.44	36.36	PASS
11AC20_SISO	36	5180	ANT 2	21.02	17.74	PASS
	40	5200	ANT 2	21.18	17.78	PASS
	48	5240	ANT 2	21.14	17.78	PASS
	52	5260	ANT 2	20.98	17.78	PASS
	56	5280	ANT 2	21.10	17.82	PASS
	64	5320	ANT 2	21.22	17.78	PASS
	100	5500	ANT 2	21.02	17.78	PASS
	120	5600	ANT 2	21.02	17.78	PASS
	140	5700	ANT 2	21.10	17.70	PASS
11AC40_SISO	38	5190	ANT 2	41.88	36.36	PASS
	46	5230	ANT 2	42.36	36.36	PASS
	54	5270	ANT 2	42.04	36.28	PASS
	62	5310	ANT 2	41.48	36.28	PASS
	102	5510	ANT 2	42.12	36.28	PASS
	134	5670	ANT 2	41.96	36.44	PASS
11AC80_SISO	42	5210	ANT 2	85.35	75.28	PASS
	58	5290	ANT 2	84.40	75.12	PASS
	106	5530	ANT 2	84.72	75.28	PASS
	138	5690	ANT 2	84.72	75.44	PASS
11AC160_SISO	50	5250	ANT 2	172.31	154.73	PASS
	114	5570	ANT 2	173.59	154.73	PASS

Test Mode	Test Channel	Frequency [MHz]	Antenna Port	26dB Emission Bandwidth [MHz]	Occupied Bandwidth [MHz]	Verdict
11A20_CDD	36	5180	ANT 1	20.82	16.78	PASS
	48	5240	ANT 1	21.38	17.02	PASS
	52	5260	ANT 1	21.18	16.94	PASS
	64	5320	ANT 1	20.70	16.78	PASS
	100	5500	ANT 1	20.62	16.82	PASS
	140	5700	ANT 1	20.78	16.78	PASS

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11N20_ MIMO	36	5180	ANT 1	21.10	17.74	PASS
	48	5240	ANT 1	21.02	17.90	PASS
	52	5260	ANT 1	21.46	17.90	PASS
	64	5320	ANT 1	21.06	17.74	PASS
	100	5500	ANT 1	21.14	17.70	PASS
	140	5700	ANT 1	21.18	17.74	PASS
11N40_ MIMO	38	5190	ANT 1	42.12	36.28	PASS
	46	5230	ANT 1	42.12	36.36	PASS
	54	5270	ANT 1	41.56	36.36	PASS
	62	5310	ANT 1	42.36	36.36	PASS
	102	5510	ANT 1	41.64	36.28	PASS
	134	5670	ANT 1	42.20	36.36	PASS
11AC20_ MIMO	36	5180	ANT 1	20.90	17.78	PASS
	48	5240	ANT 1	21.34	17.94	PASS
	52	5260	ANT 1	22.22	17.90	PASS
	64	5320	ANT 1	20.86	17.74	PASS
	100	5500	ANT 1	20.90	17.74	PASS
	140	5700	ANT 1	20.90	17.74	PASS
11AC40_ MIMO	38	5190	ANT 1	42.60	36.28	PASS
	46	5230	ANT 1	42.04	36.44	PASS
	54	5270	ANT 1	42.52	36.44	PASS
	62	5310	ANT 1	41.96	36.28	PASS
	102	5510	ANT 1	42.04	36.28	PASS
	134	5670	ANT 1	42.20	36.44	PASS
11AC80_ MIMO	42	5210	ANT 1	84.40	75.28	PASS
	58	5290	ANT 1	83.76	75.12	PASS
	106	5530	ANT 1	84.24	75.12	PASS
	138	5690	ANT 1	85.51	75.28	PASS
11AC160_ MIMO	50	5250	ANT 1	175.18	155.36	PASS
	114	5570	ANT 1	175.18	154.73	PASS



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Test Mode	Test Channel	Frequency [MHz]	Antenna Port	26dB Emission Bandwidth [MHz]	Occupied Bandwidth [MHz]	Verdict
11A20_ CDD	36	5180	ANT 2	20.26	16.66	PASS
	48	5240	ANT 2	20.46	16.74	PASS
	52	5260	ANT 2	20.30	16.74	PASS
	64	5320	ANT 2	20.46	16.62	PASS
	100	5500	ANT 2	20.26	16.62	PASS
	140	5700	ANT 2	20.26	16.66	PASS
11N20_ MIMO	36	5180	ANT 2	20.82	17.66	PASS
	48	5240	ANT 2	20.78	17.66	PASS
	52	5260	ANT 2	20.74	17.70	PASS
	64	5320	ANT 2	20.70	17.66	PASS
	100	5500	ANT 2	20.74	17.66	PASS
	140	5700	ANT 2	20.86	17.66	PASS
11N40_ MIMO	38	5190	ANT 2	40.92	36.12	PASS
	46	5230	ANT 2	40.92	36.12	PASS
	54	5270	ANT 2	40.84	36.12	PASS
	62	5310	ANT 2	41.08	36.12	PASS
	102	5510	ANT 2	41.00	36.12	PASS
	134	5670	ANT 2	41.24	36.12	PASS
11AC20_ MIMO	36	5180	ANT 2	20.78	17.66	PASS
	48	5240	ANT 2	21.18	17.70	PASS
	52	5260	ANT 2	21.02	17.74	PASS
	64	5320	ANT 2	20.58	17.66	PASS
	100	5500	ANT 2	20.80	17.66	PASS
	140	5700	ANT 2	20.74	17.66	PASS
11AC40_ MIMO	38	5190	ANT 2	40.92	36.20	PASS
	46	5230	ANT 2	41.24	36.20	PASS
	54	5270	ANT 2	41.16	36.20	PASS
	62	5310	ANT 2	41.16	36.12	PASS
	102	5510	ANT 2	41.16	36.12	PASS
	134	5670	ANT 2	41.48	36.28	PASS
11AC80_ MIMO	42	5210	ANT 2	83.12	75.12	PASS
	58	5290	ANT 2	82.96	75.12	PASS



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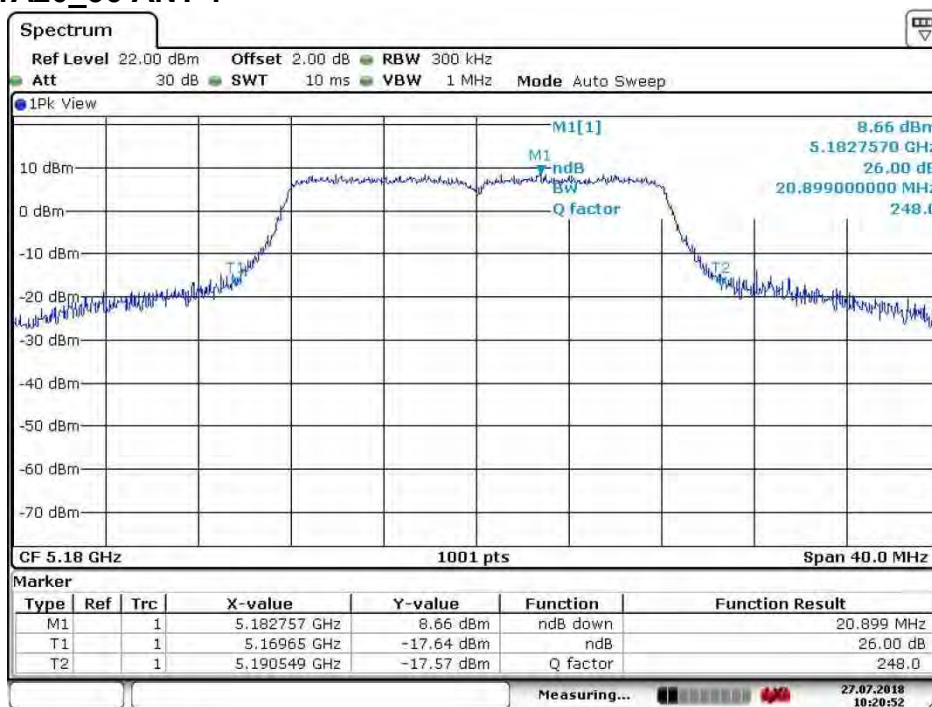
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	106	5530	ANT 2	83.60	75.28	PASS
	138	5690	ANT 2	83.60	75.28	PASS
11AC160_MIMO	50	5250	ANT 2	172.95	154.41	PASS
	114	5570	ANT 2	171.99	154.73	PASS

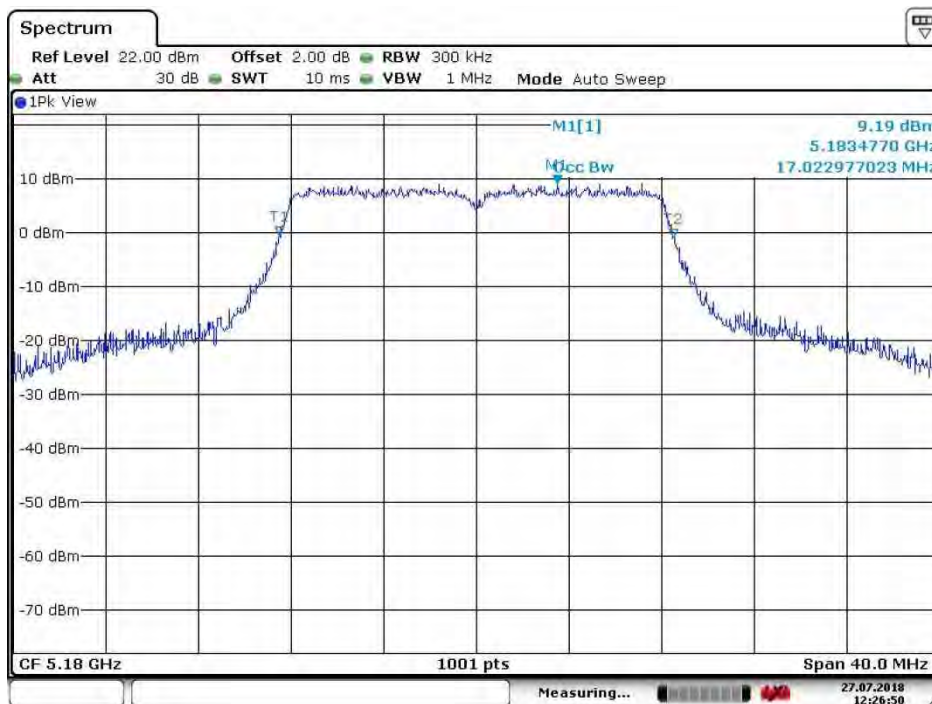
5.4.2 Plots for 26dB Emission Bandwidth & 99% Occupied Bandwidth

5.4.2.1 SISO ANT 1

5.4.2.1.1 11A20_36 ANT 1

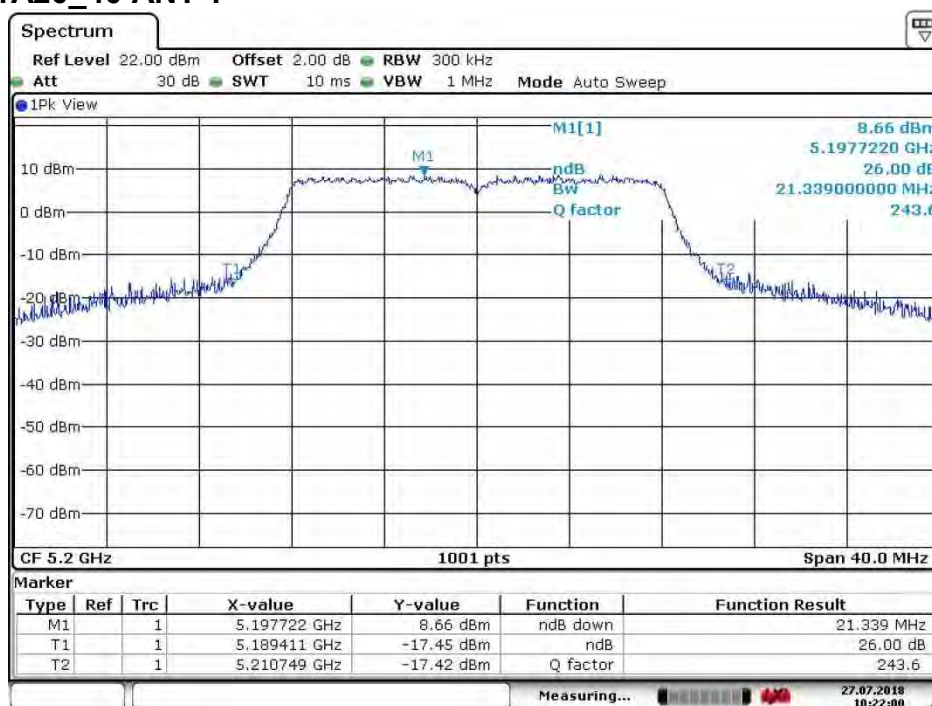


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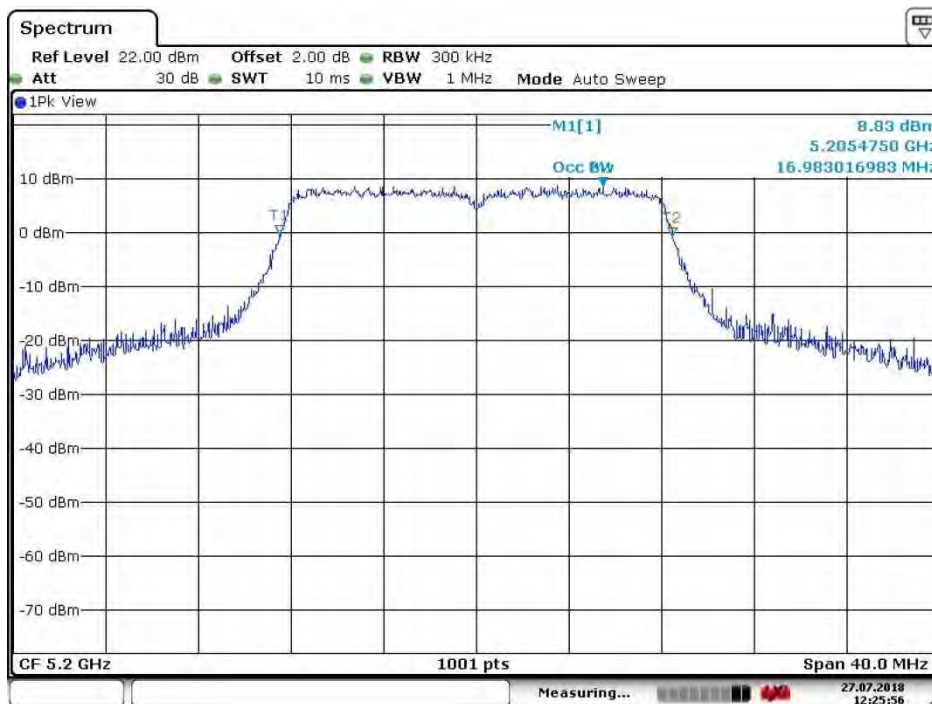


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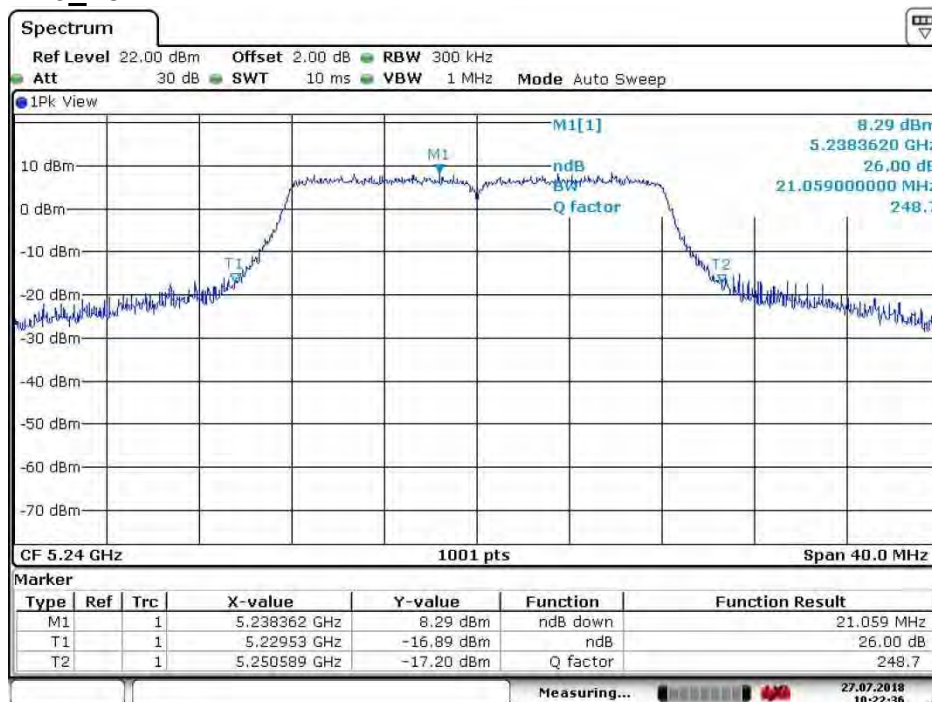


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5.4.2.1.3 11A20_48 ANT 1

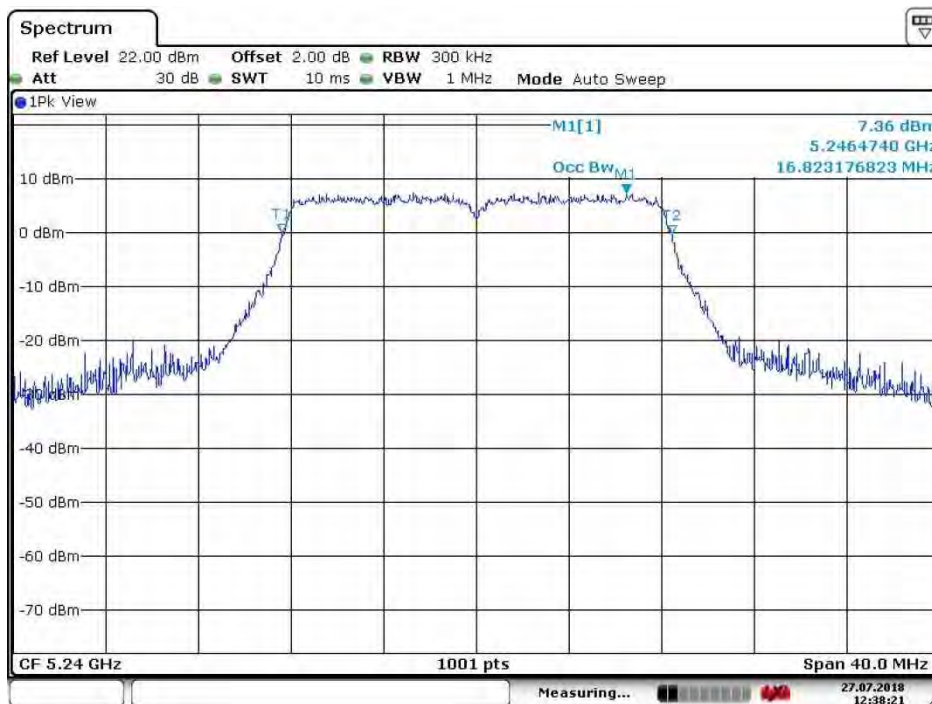


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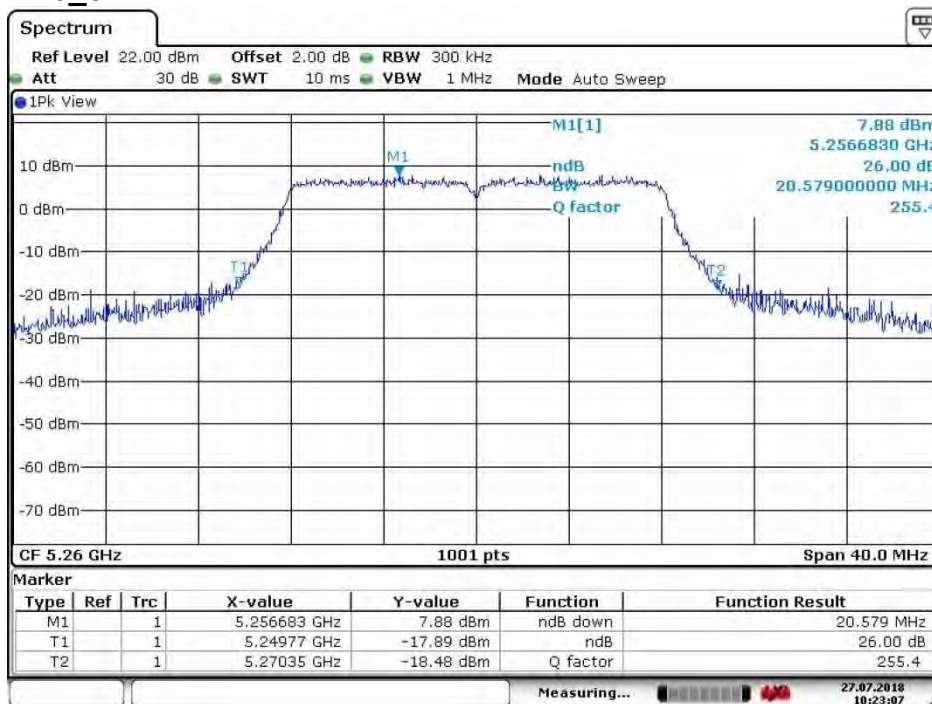
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Date: 27 JUL 2018 12:38:21

5.4.2.1.4 11A20_52 ANT 1

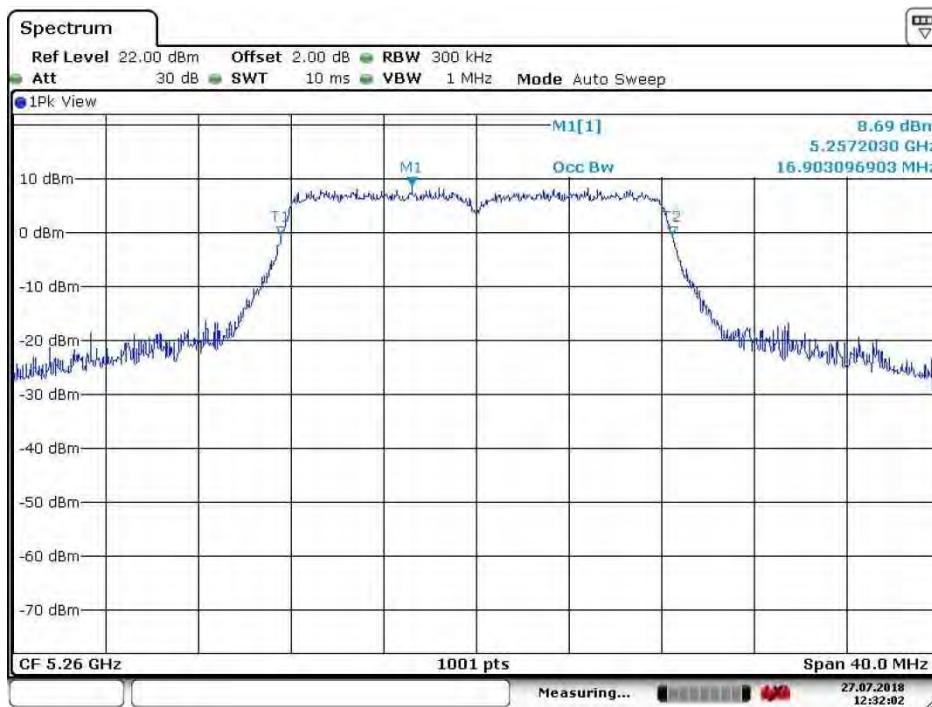


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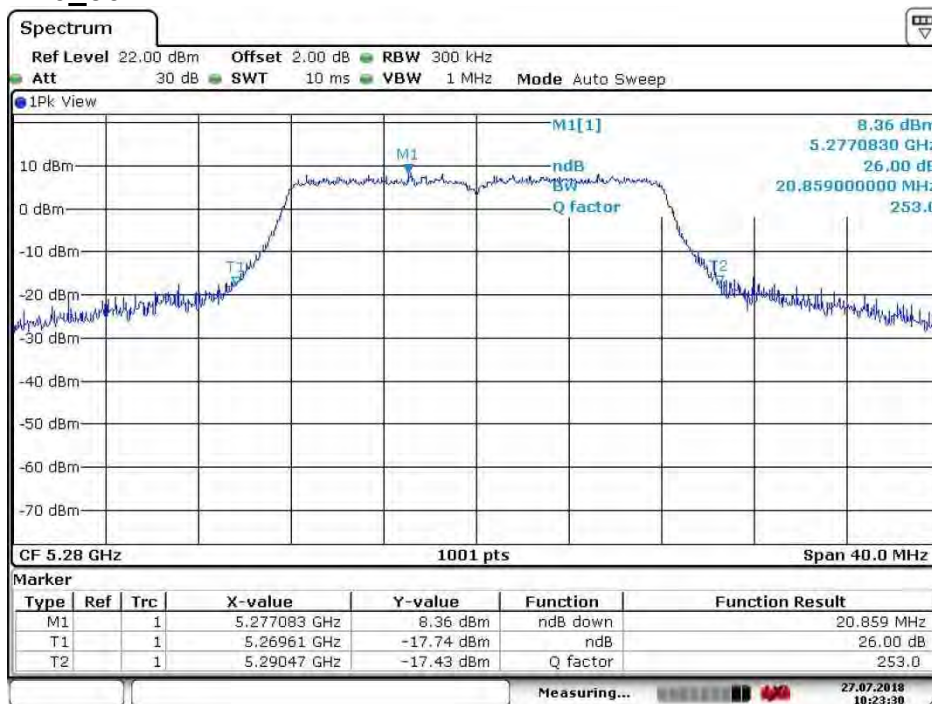
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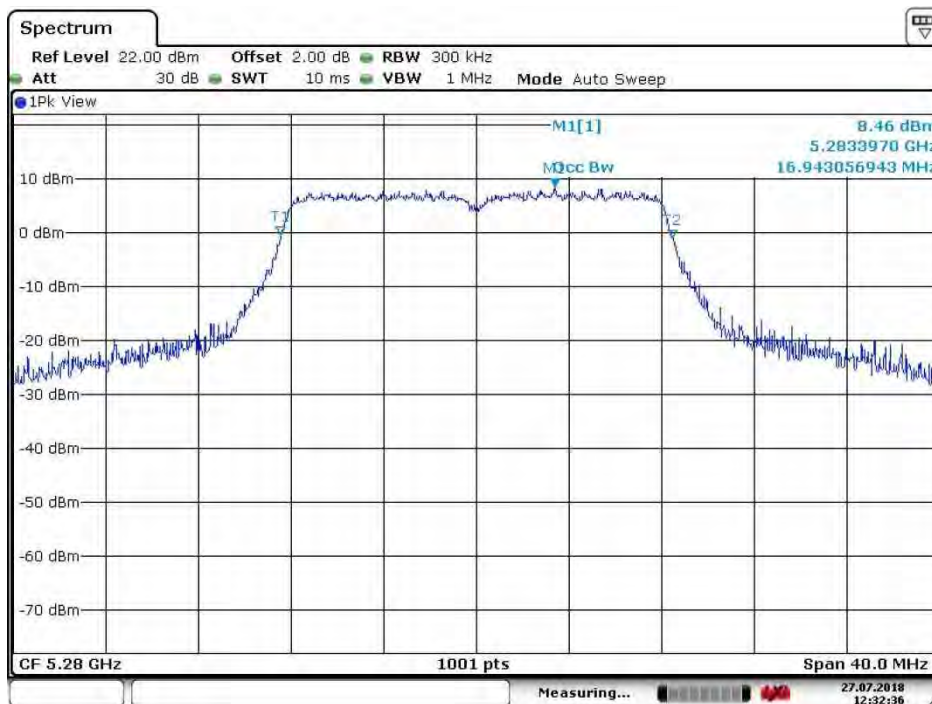


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5.4.2.1.5 11A20_56 ANT 1

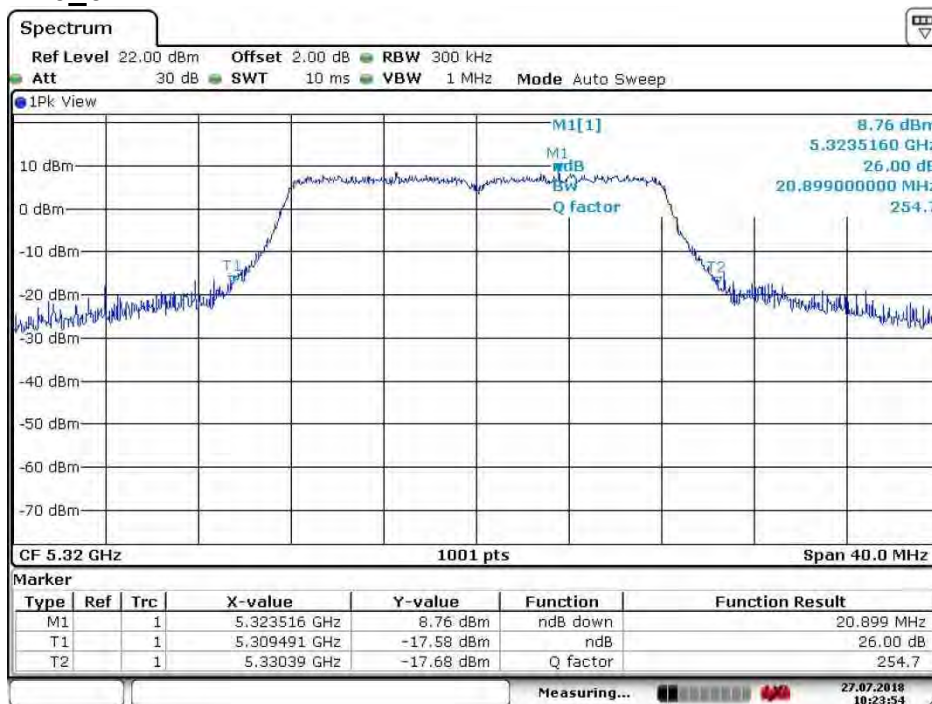


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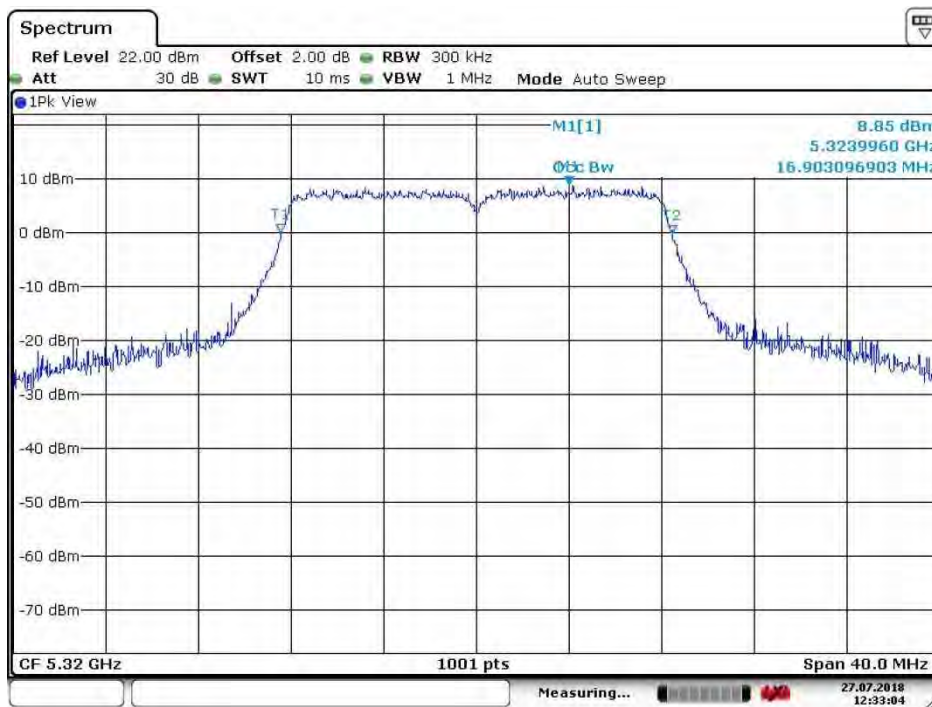


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5.4.2.1.6 11A20_64 ANT 1

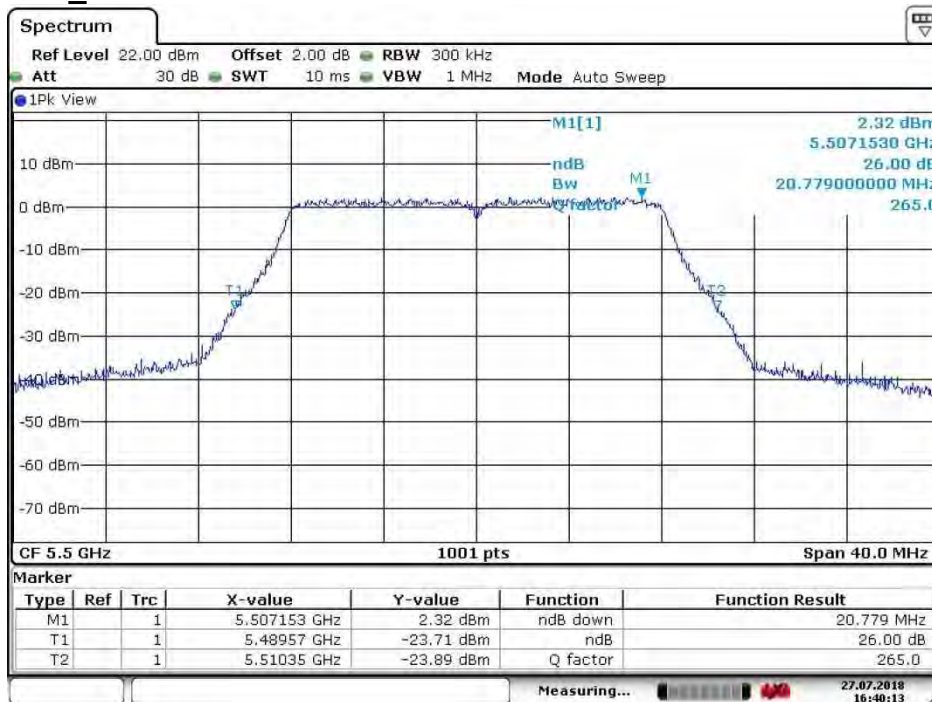


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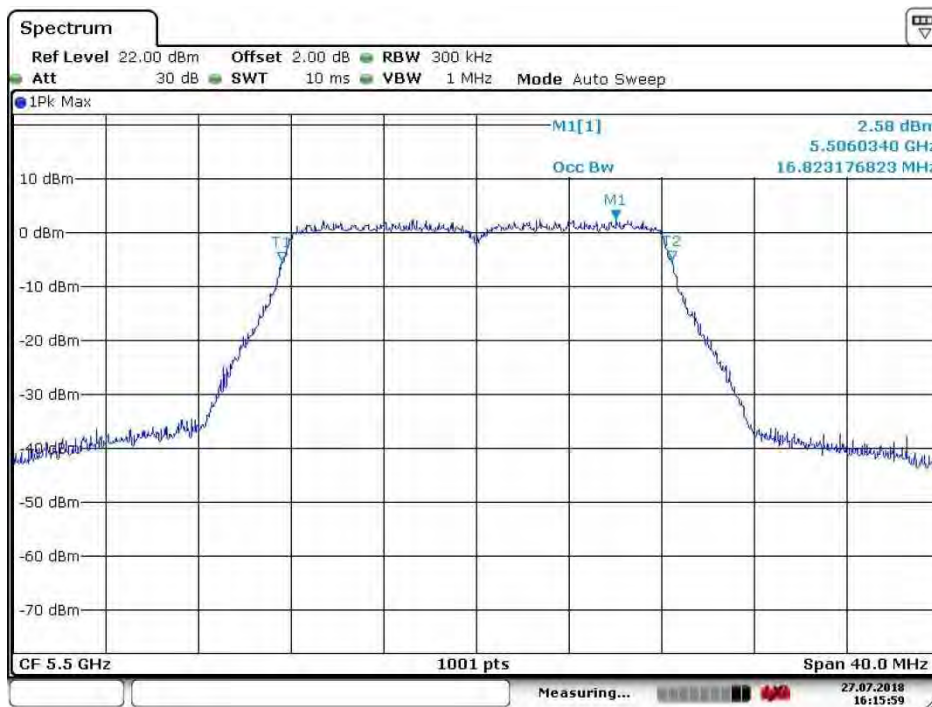


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5.4.2.1.7 11A20_100 ANT 1

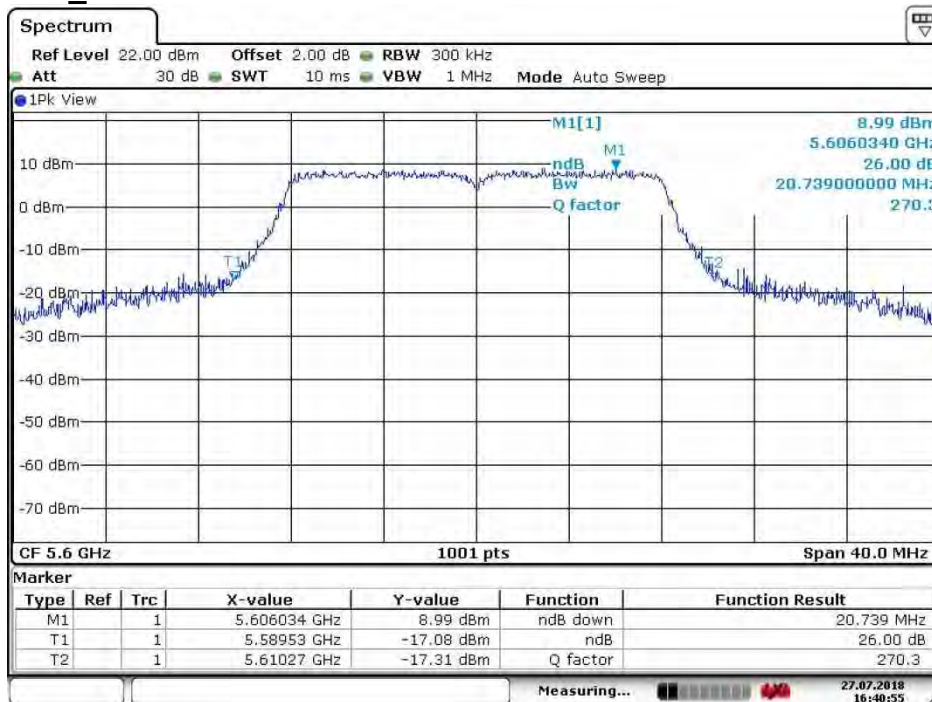


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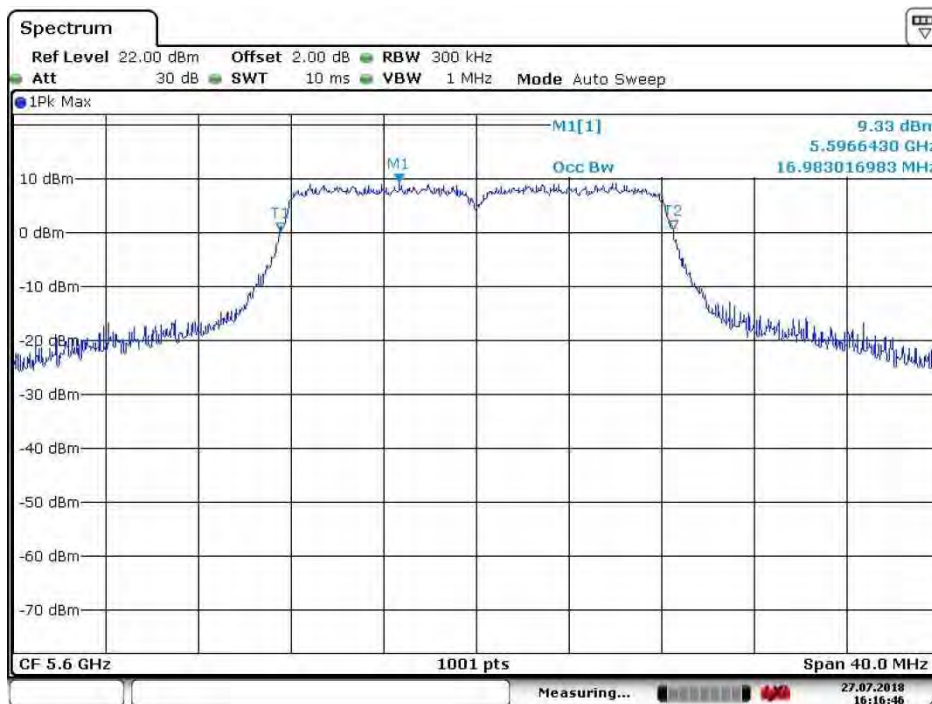


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5.4.2.1.8 11A20_120 ANT 1

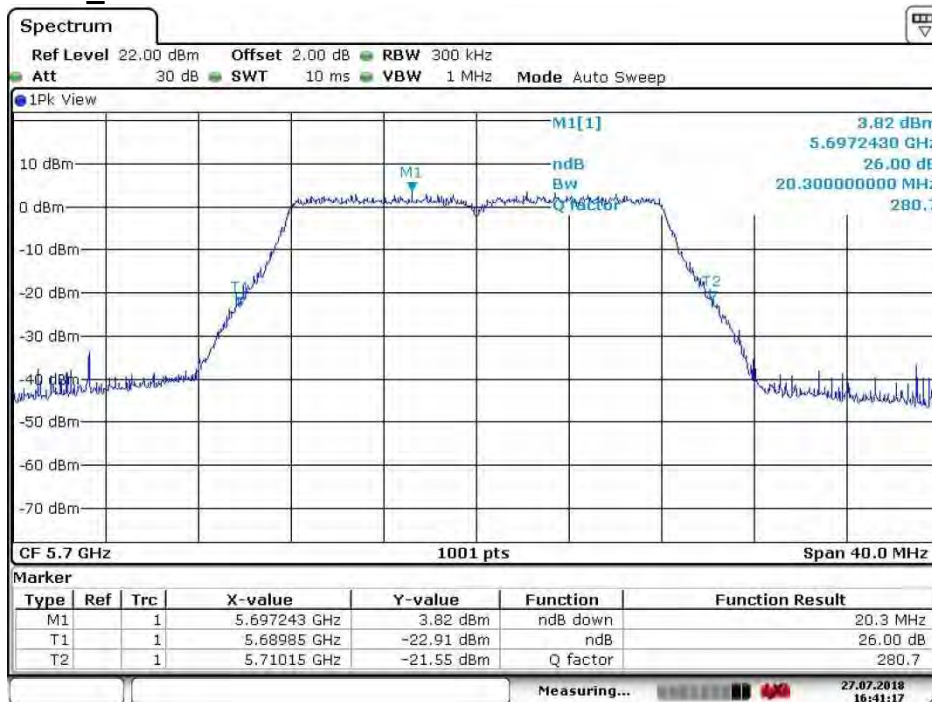


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5.4.2.1.9 11A20_140 ANT 1



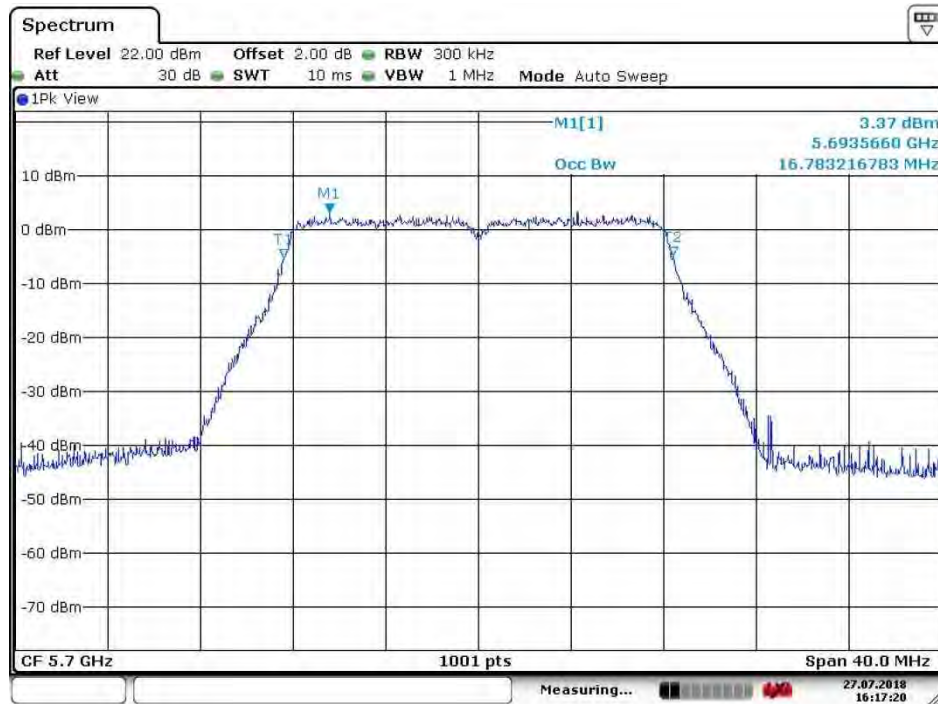
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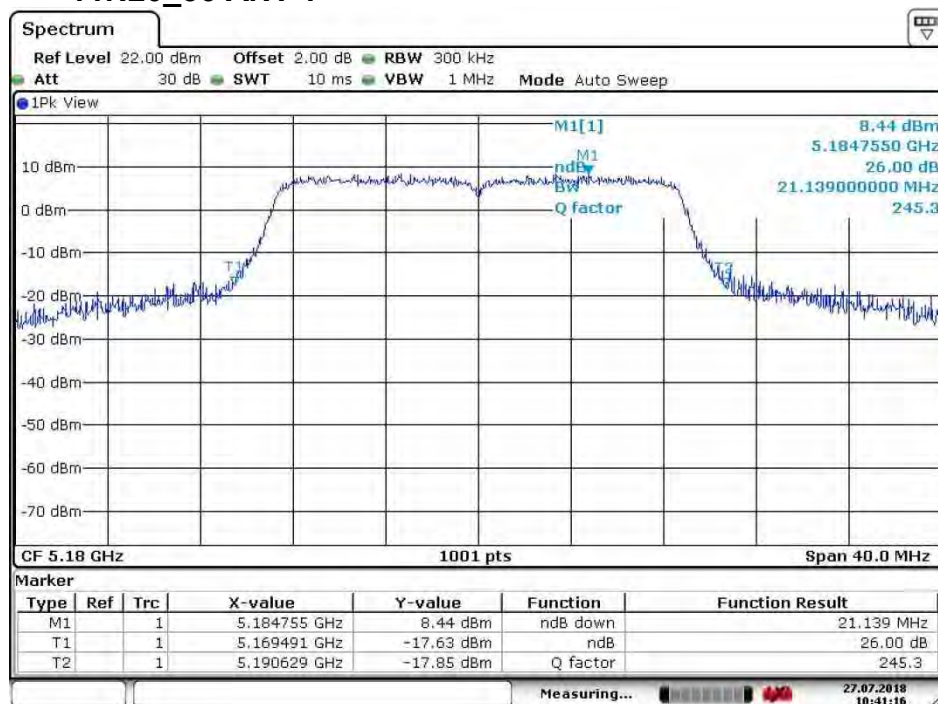
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5.4.2.1.10 11N20_36 ANT 1



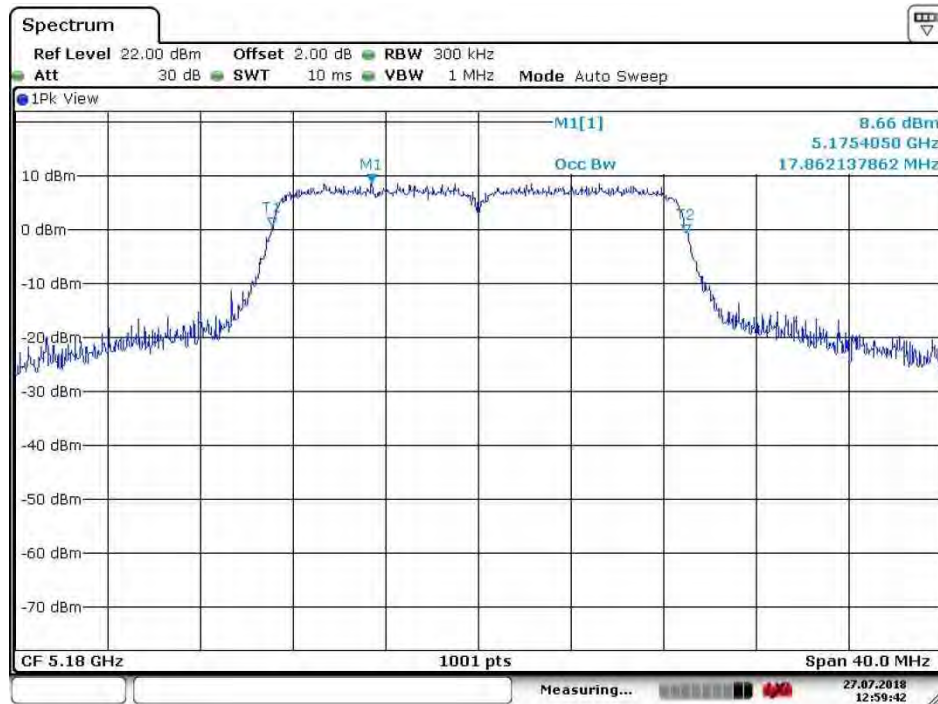
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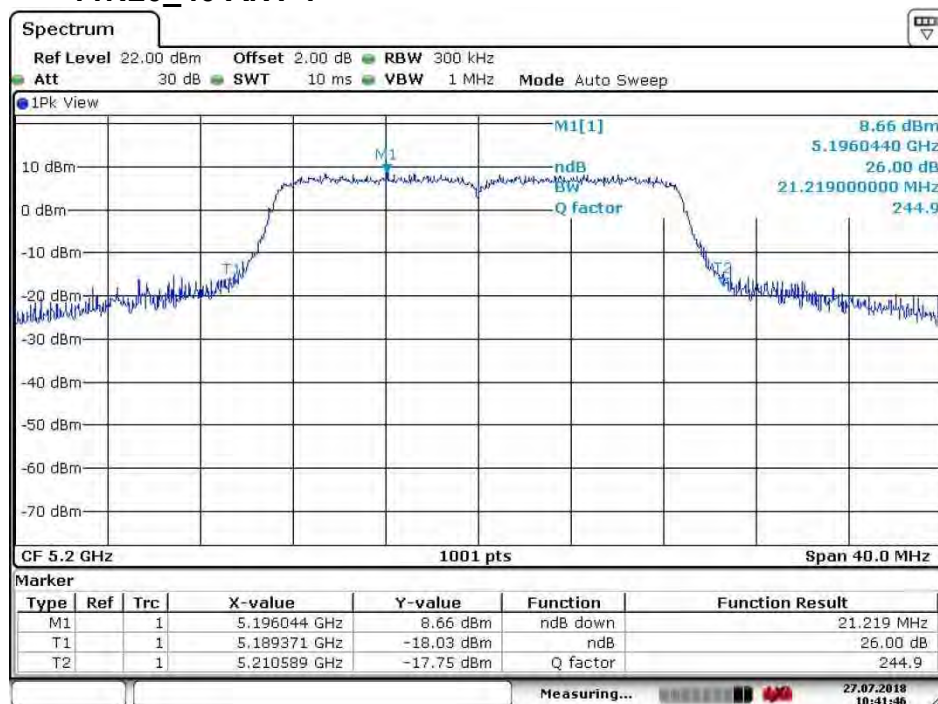
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5.4.2.1.11 11N20_40 ANT 1

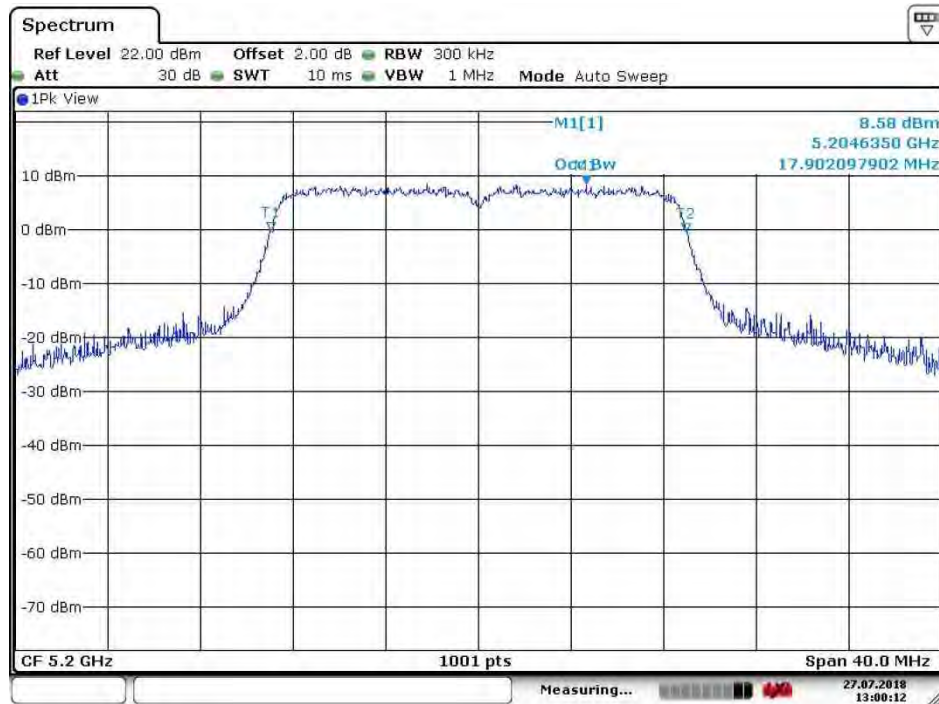


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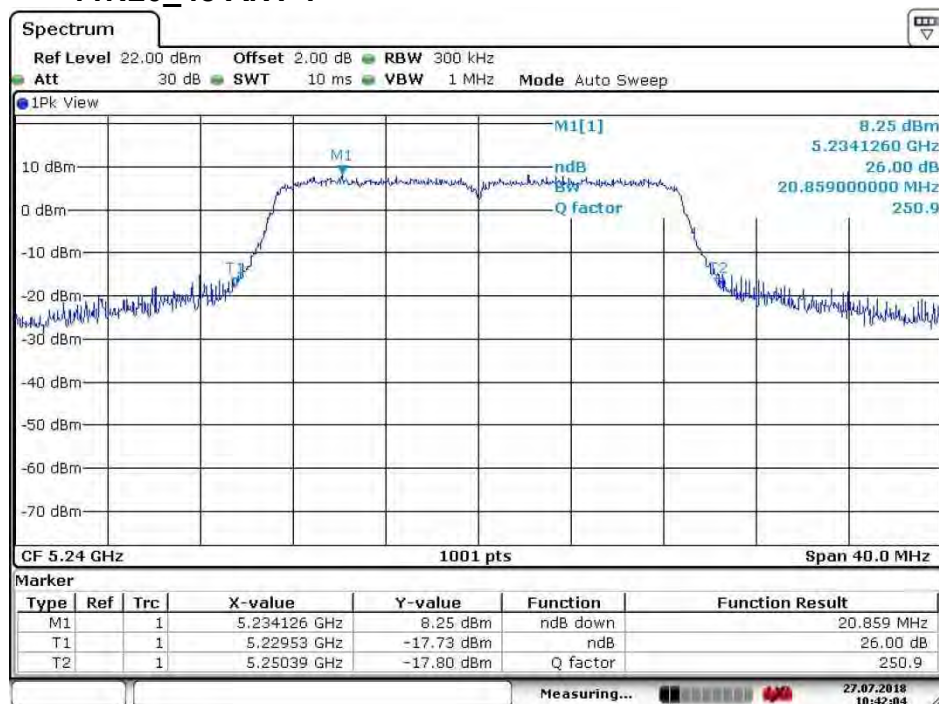
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Date: 27.JUL.2018 13:00:13

5.4.2.1.12 11N20_48 ANT 1

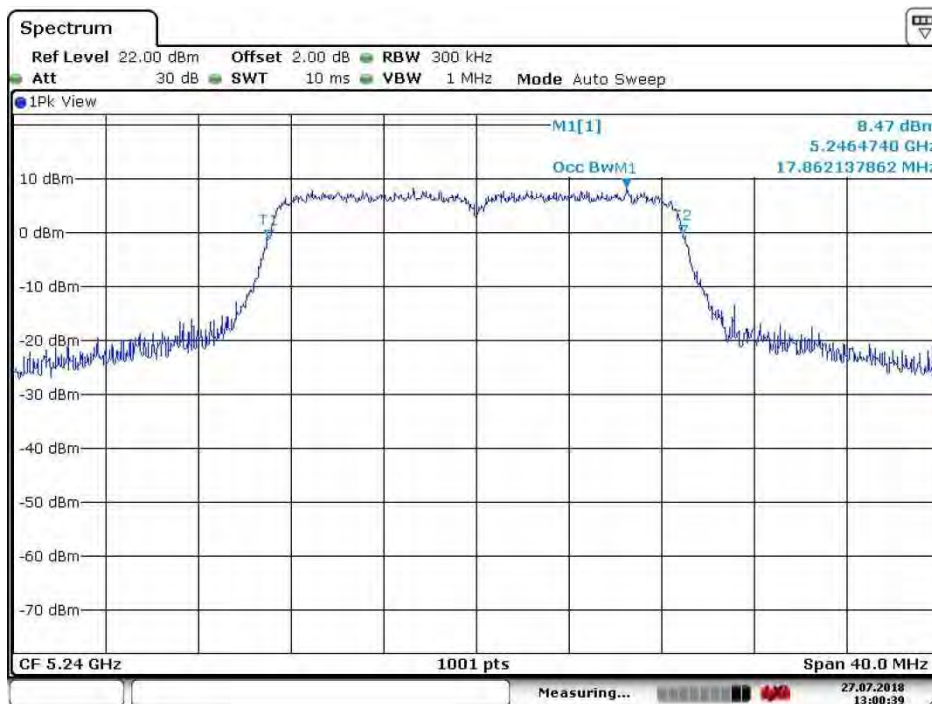


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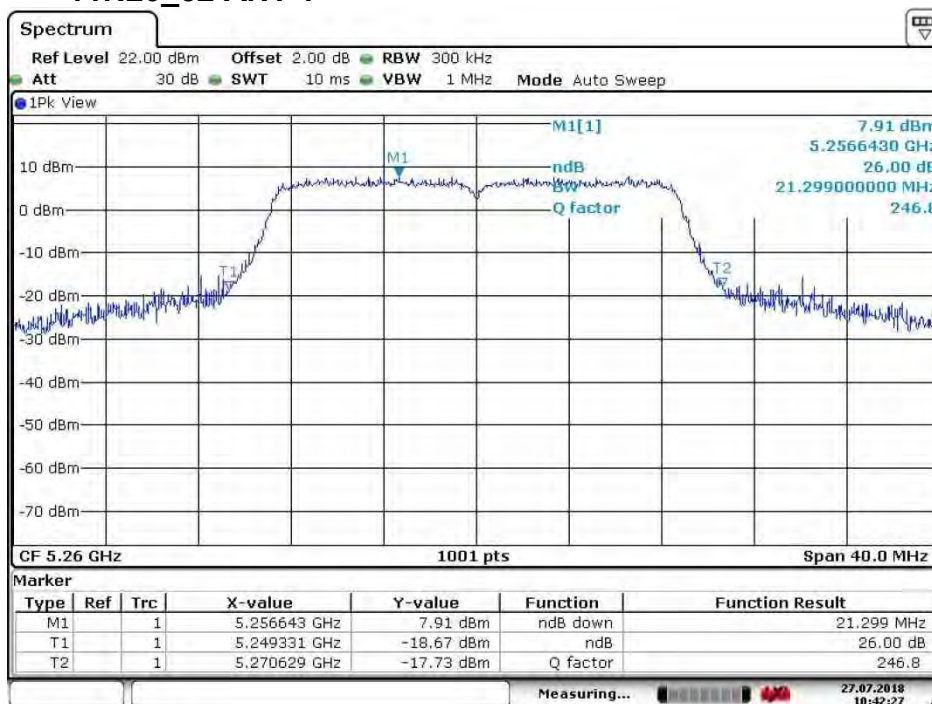
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5.4.2.1.13 11N20_52 ANT 1

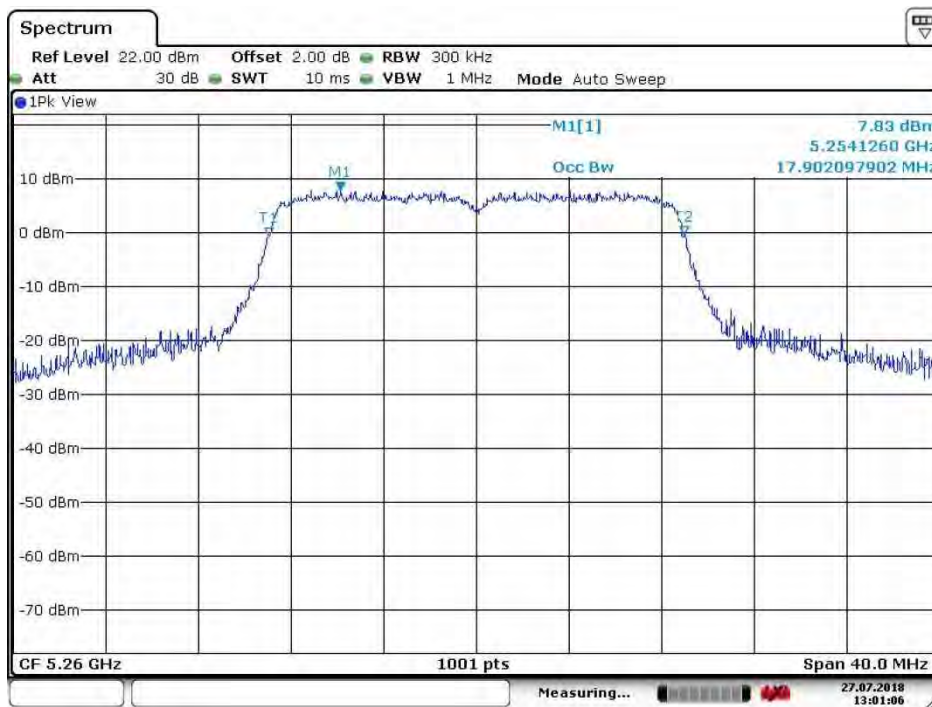


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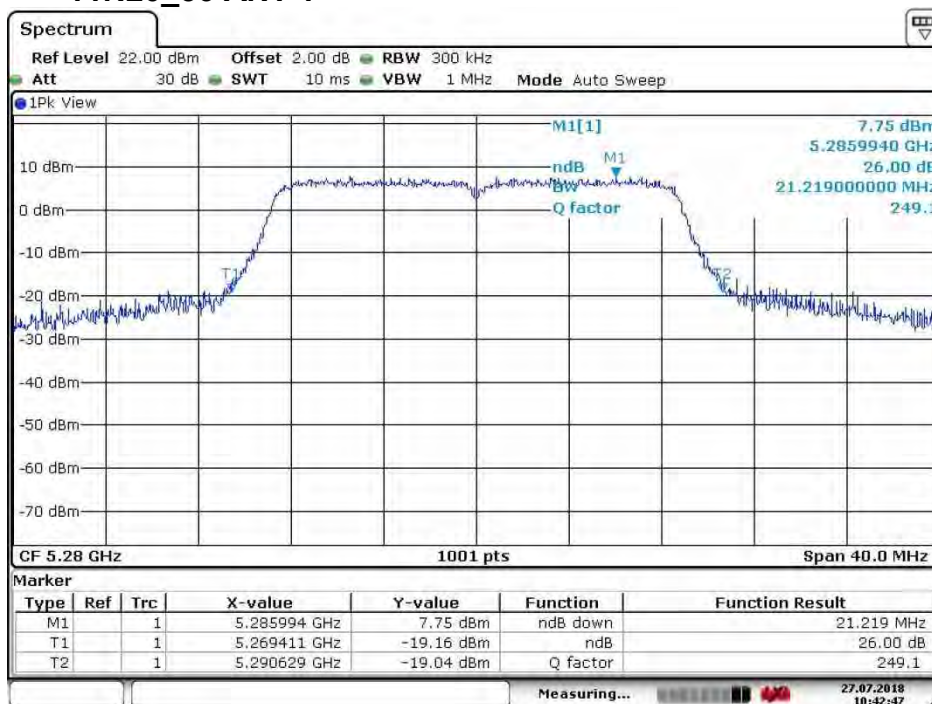
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5.4.2.1.14 11N20_56 ANT 1



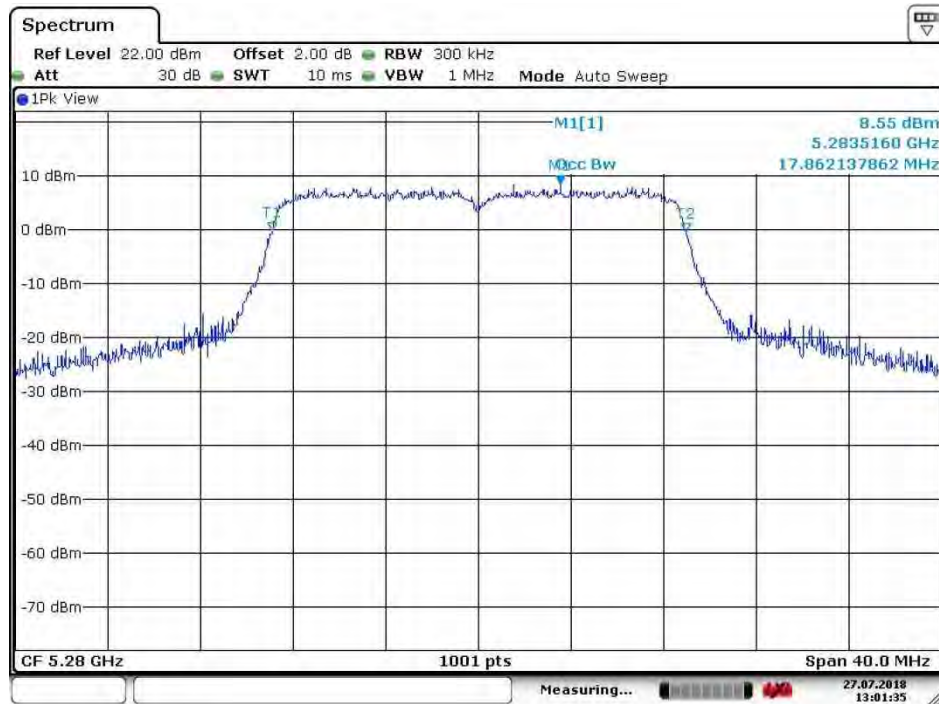
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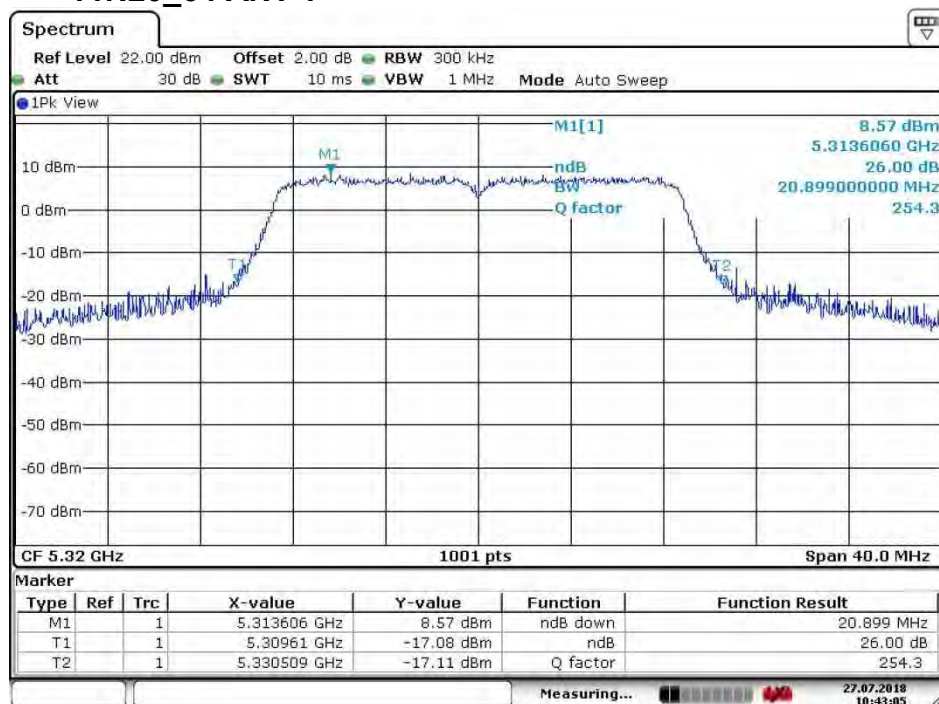
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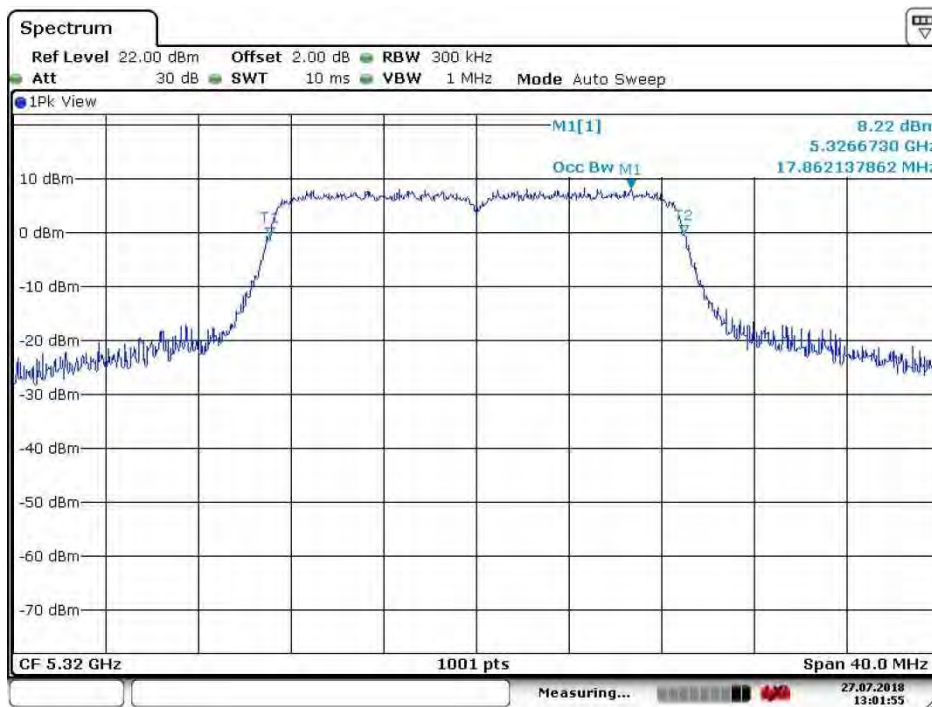


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5.4.2.1.15 11N20_64 ANT 1

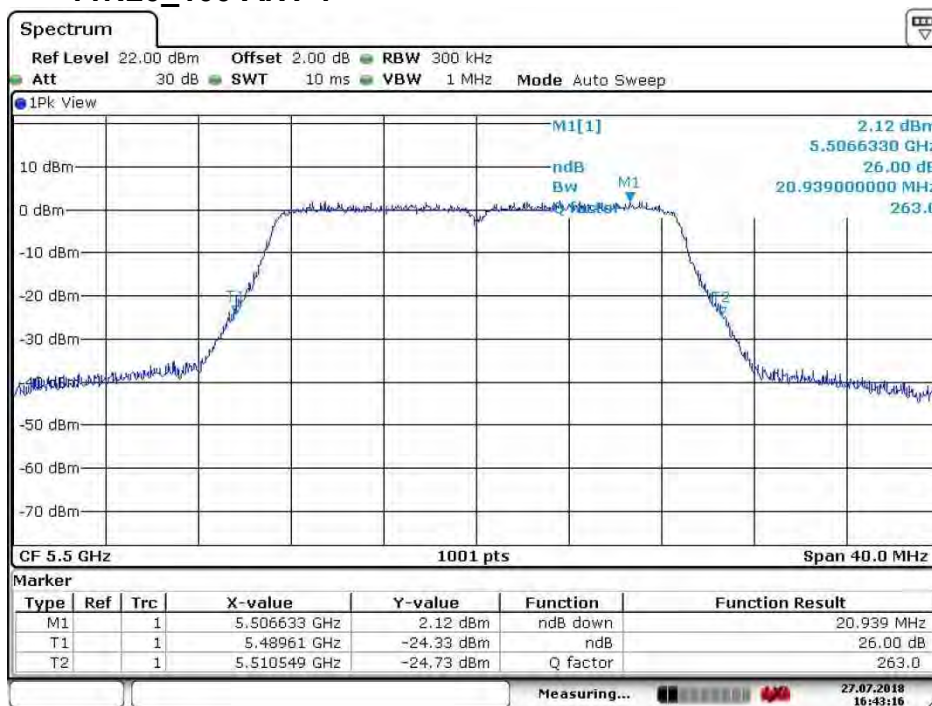


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5.4.2.1.16 11N20_100 ANT 1

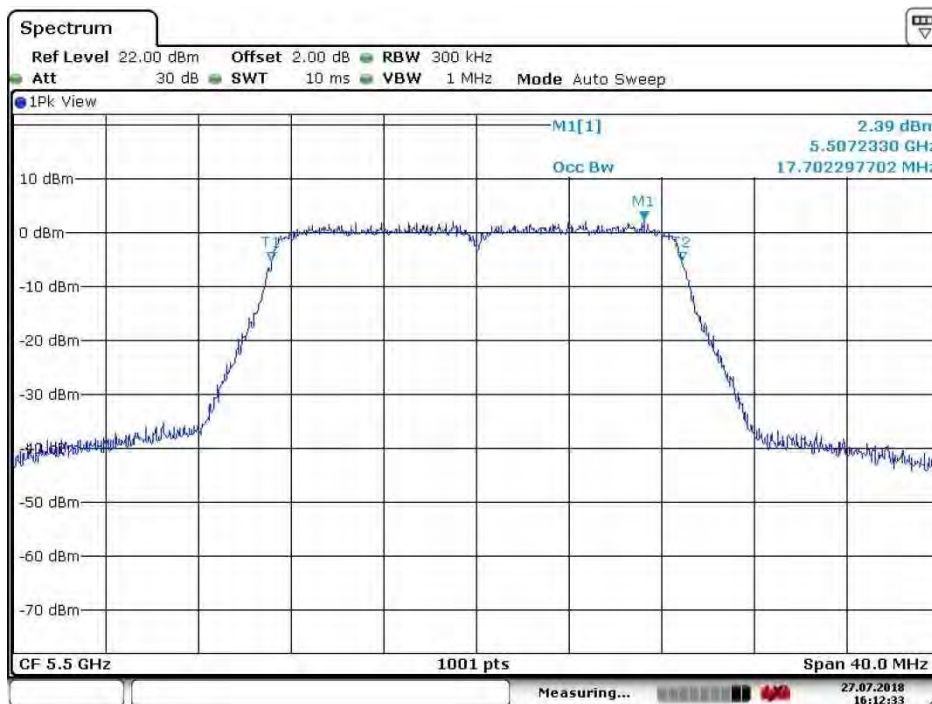


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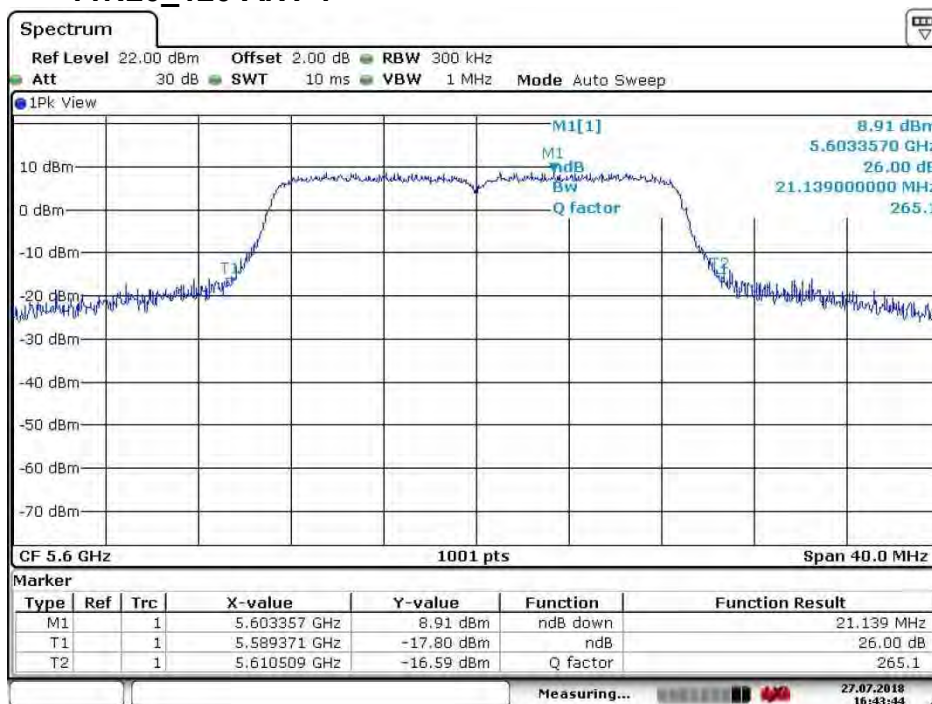
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5.4.2.1.17 11N20_120 ANT 1

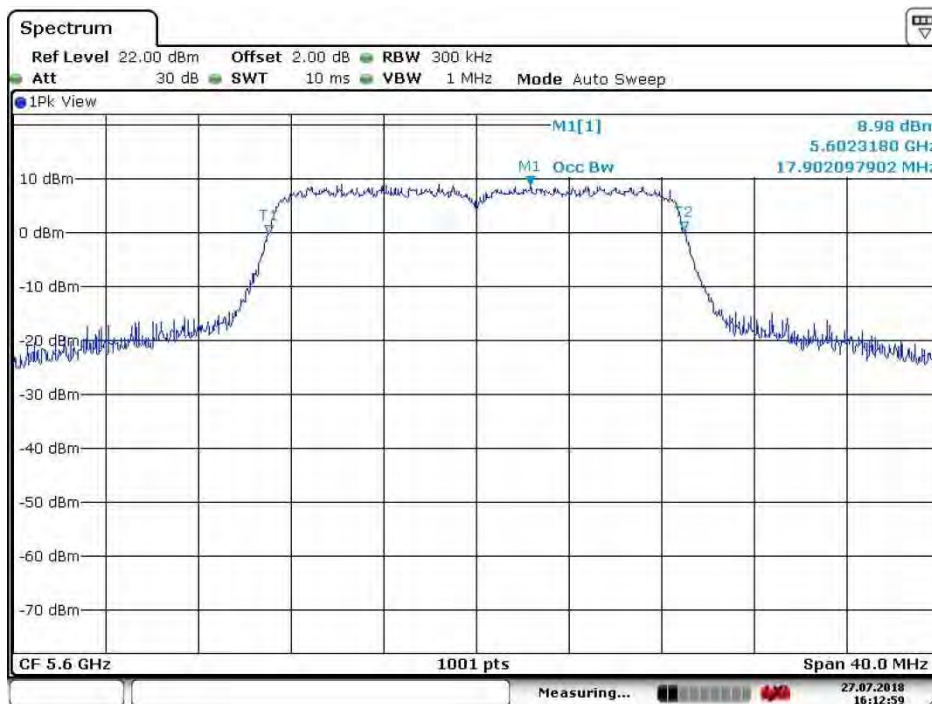


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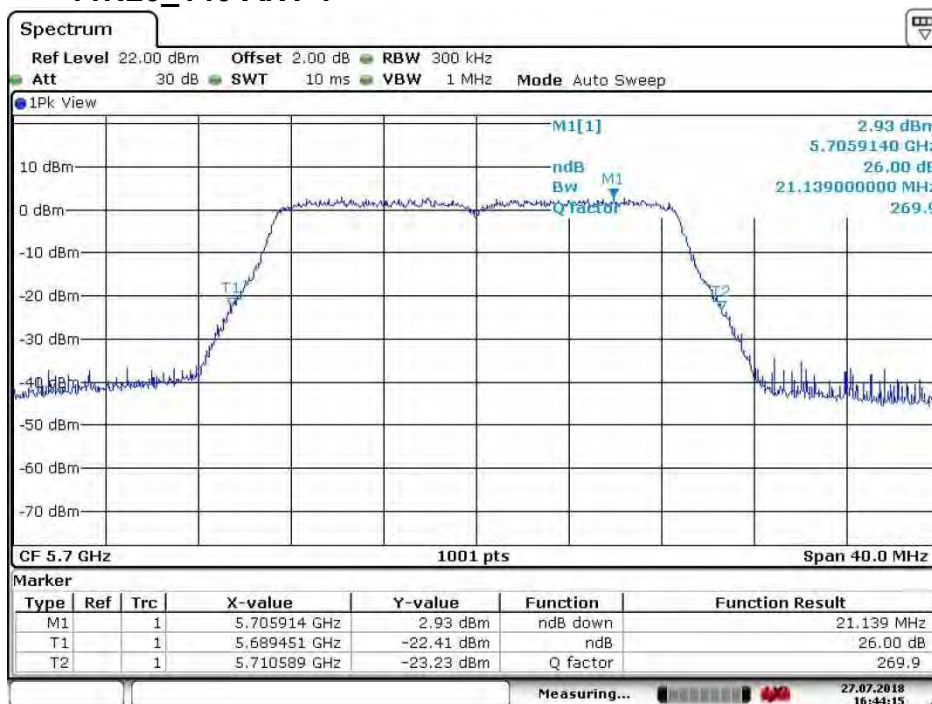
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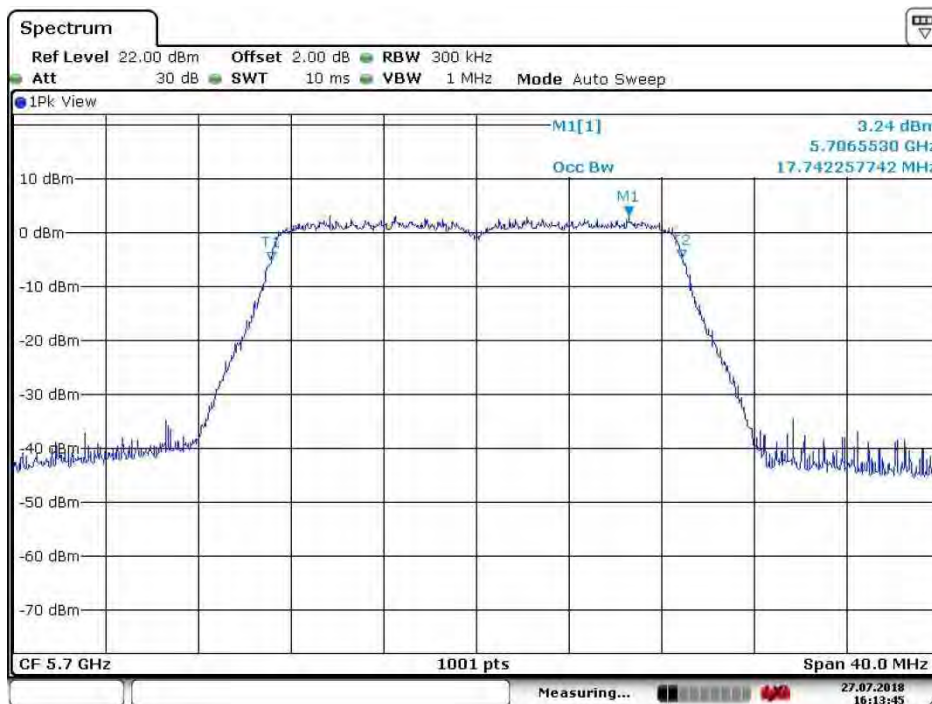


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5.4.2.1.18 11N20_140 ANT 1

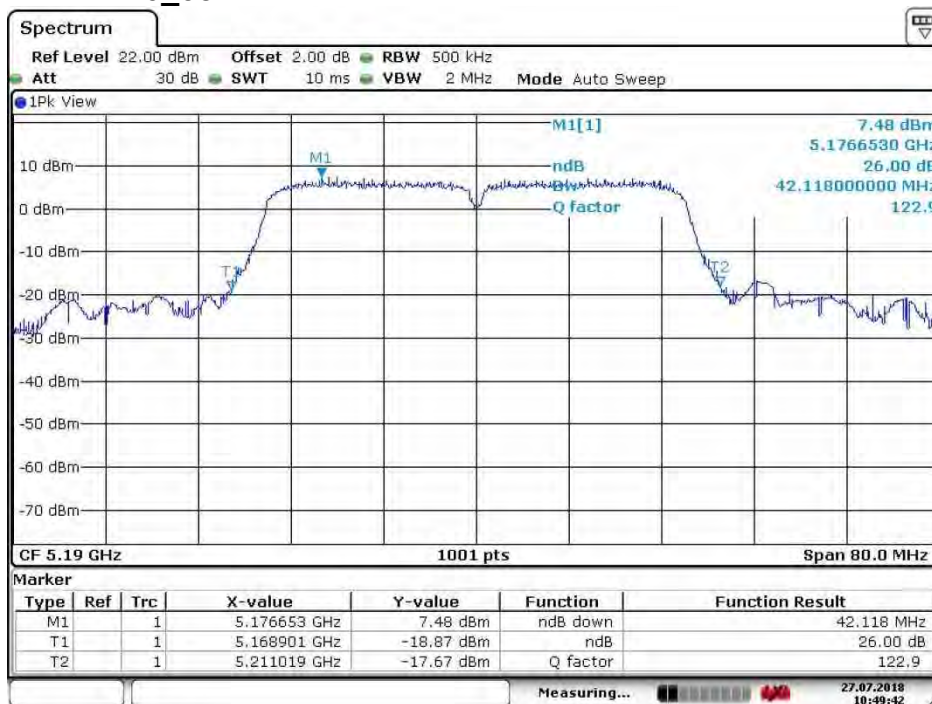


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5.4.2.1.19 11N40_38 ANT 1

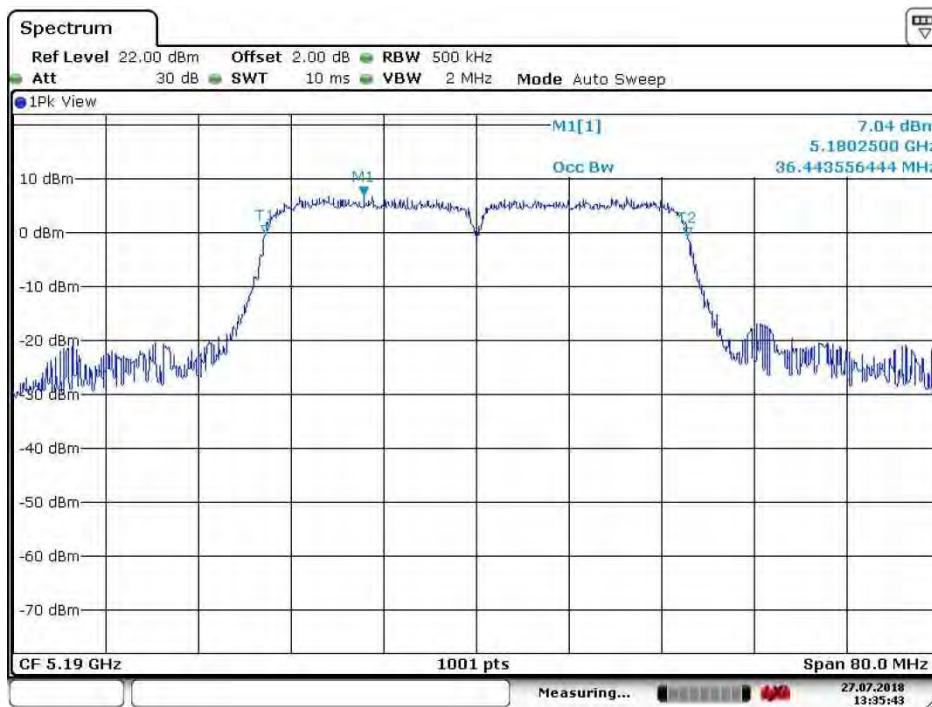


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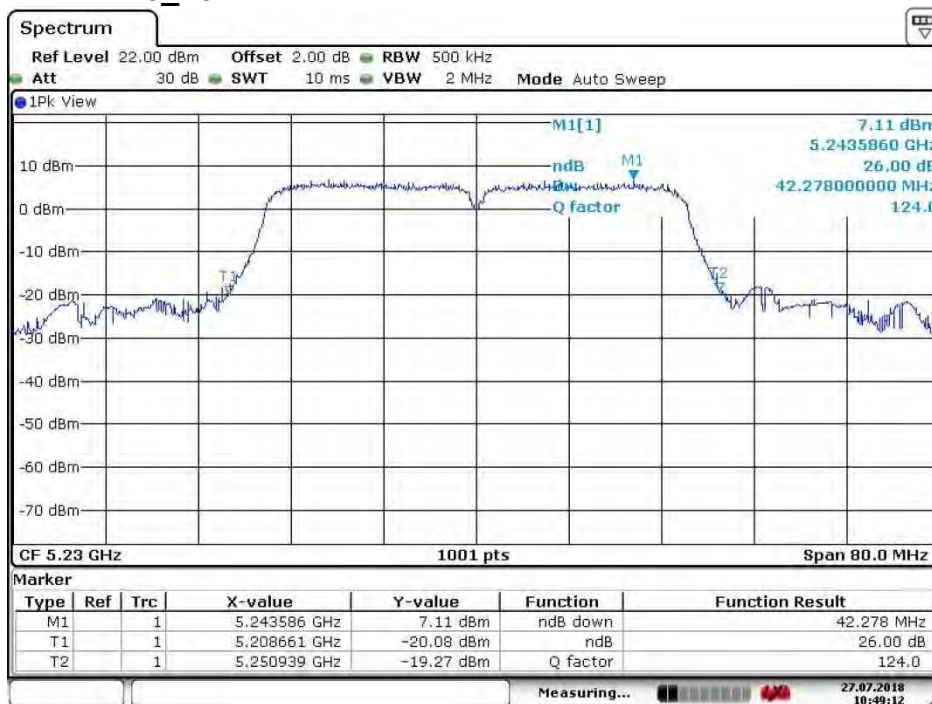
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Date: 27 JUL 2018 13:35:44

5.4.2.1.20 11N40_46 ANT 1

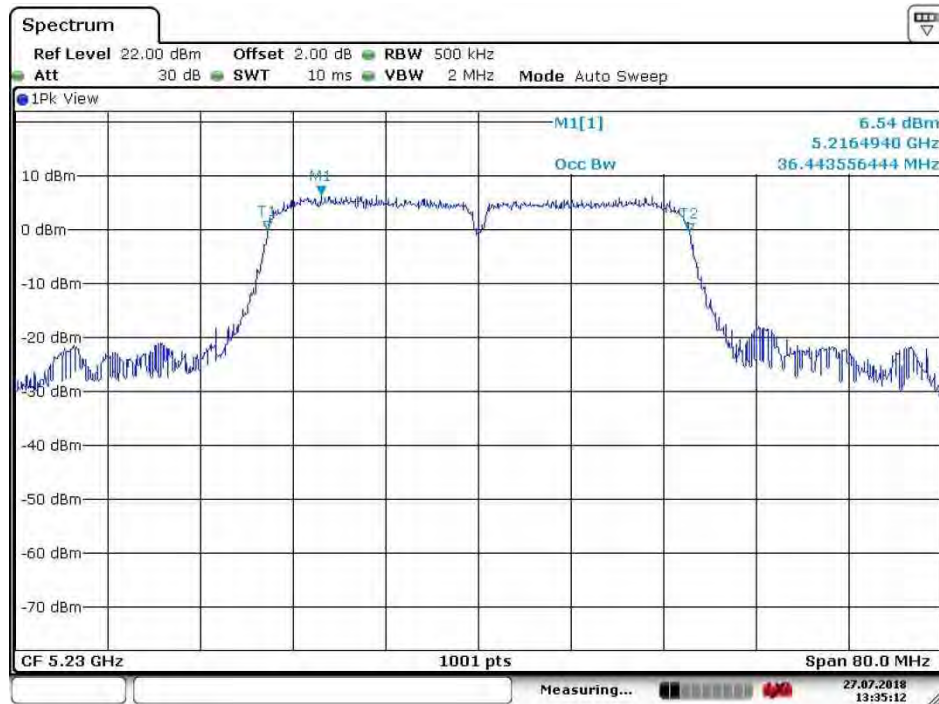


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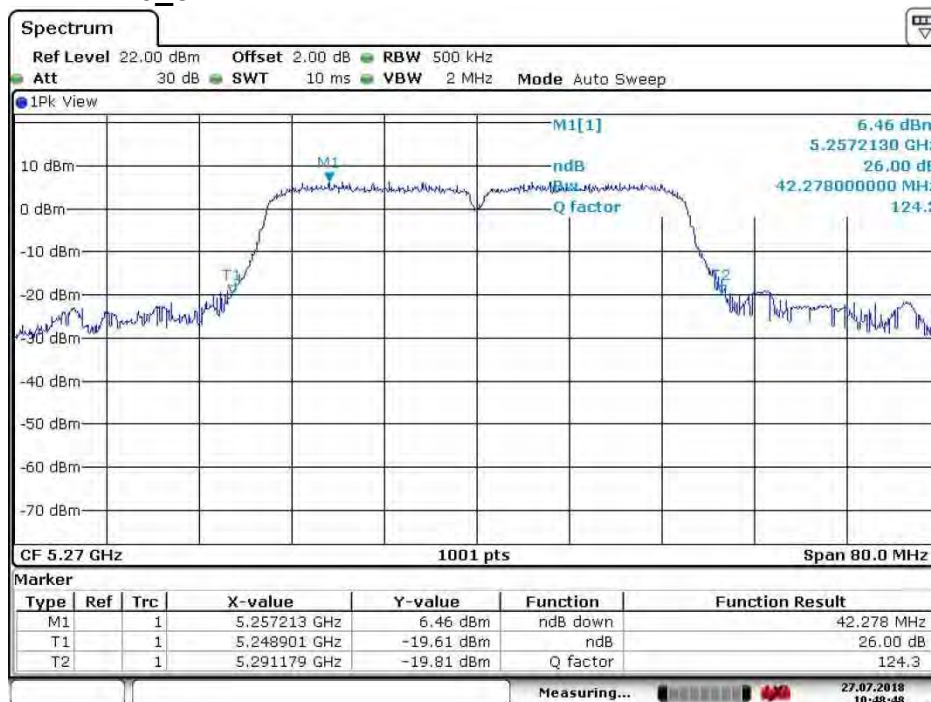
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Date: 27 JUL 2018 13:35:13

5.4.2.1.21 11N40_54 ANT 1

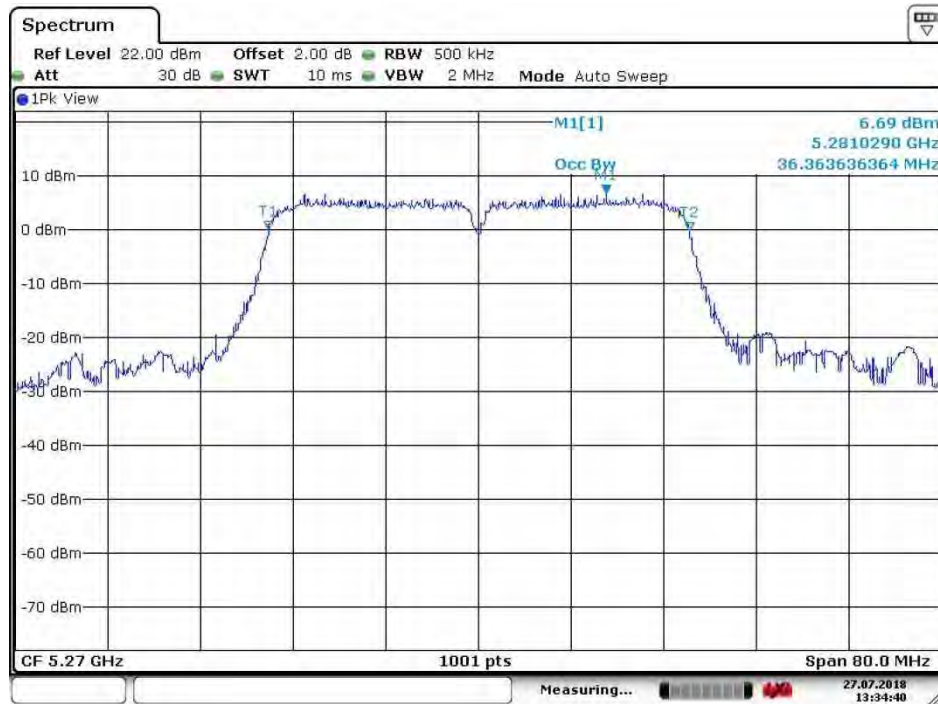


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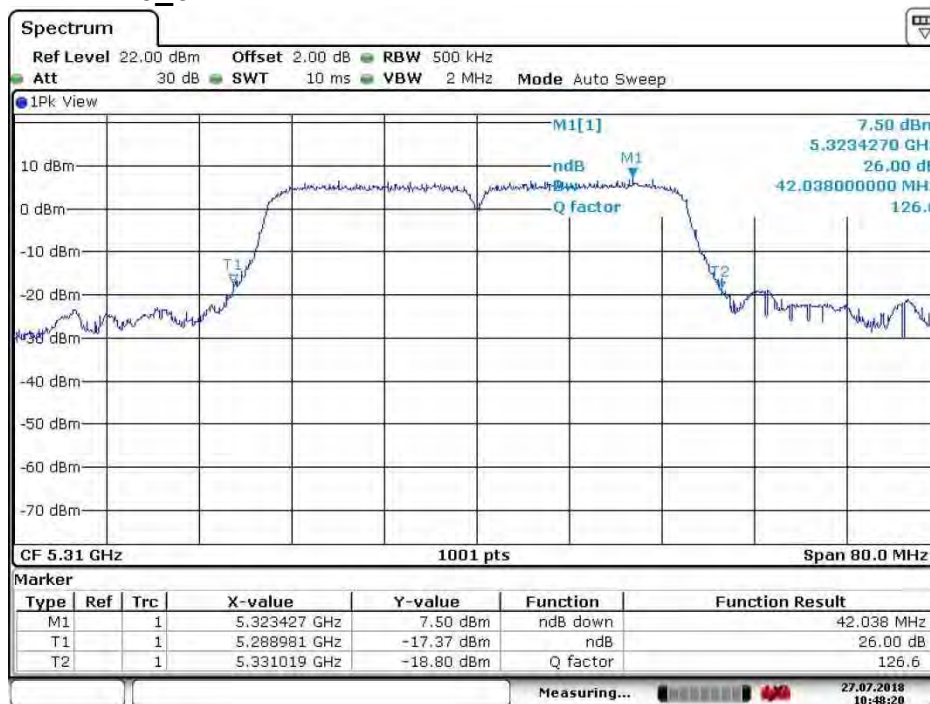
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Date: 27 JUL 2018 13:34:40

5.4.2.1.22 11N40_62 ANT 1

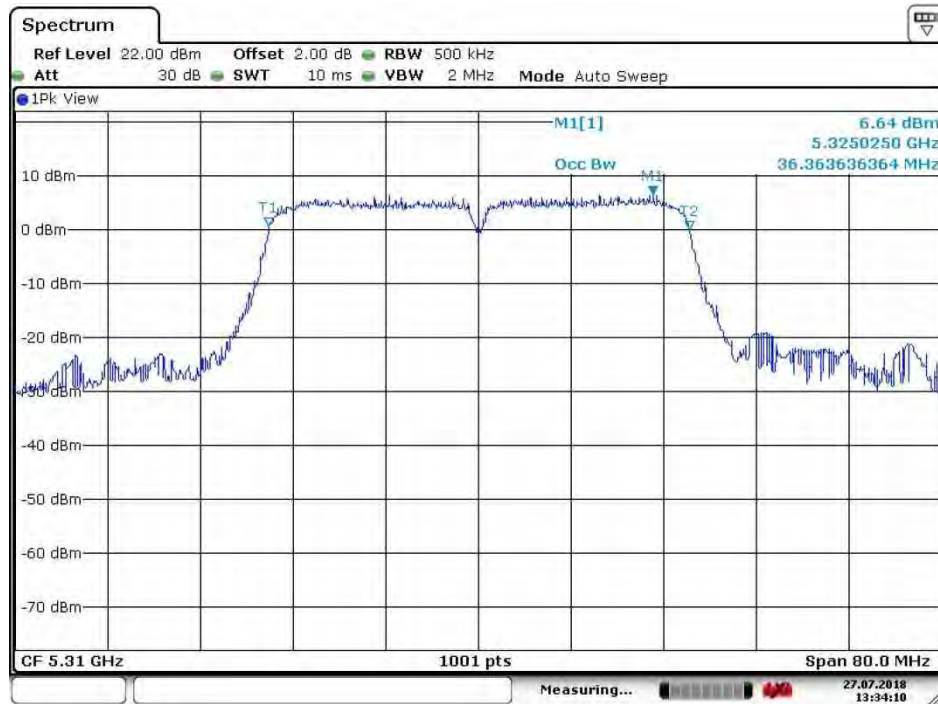


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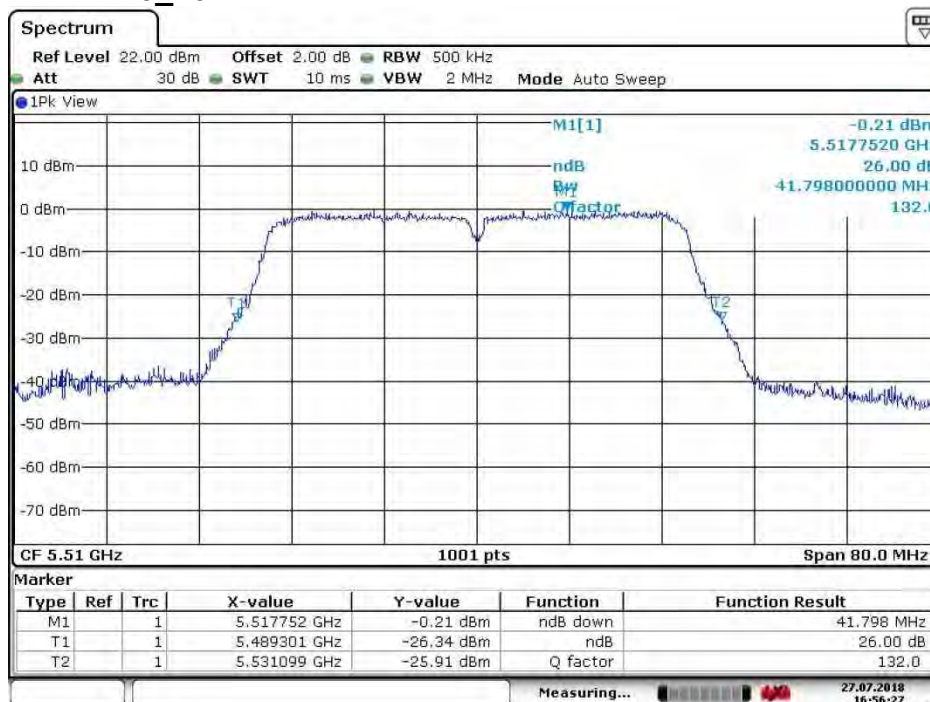
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Date: 27 JUL 2018 13:34:10

5.4.2.1.23 11N40_102 ANT 1

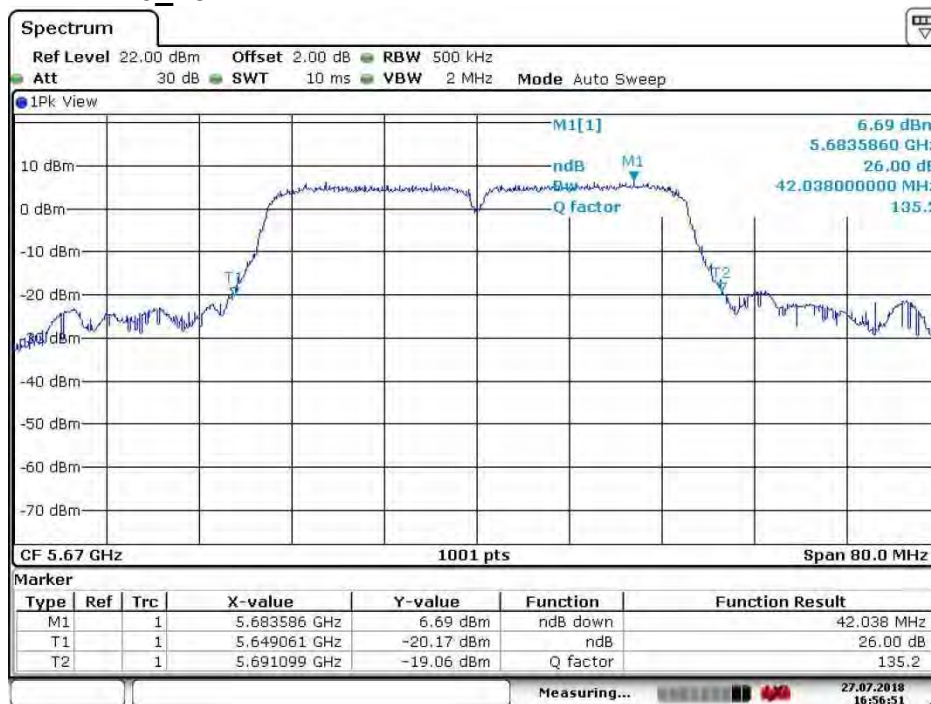


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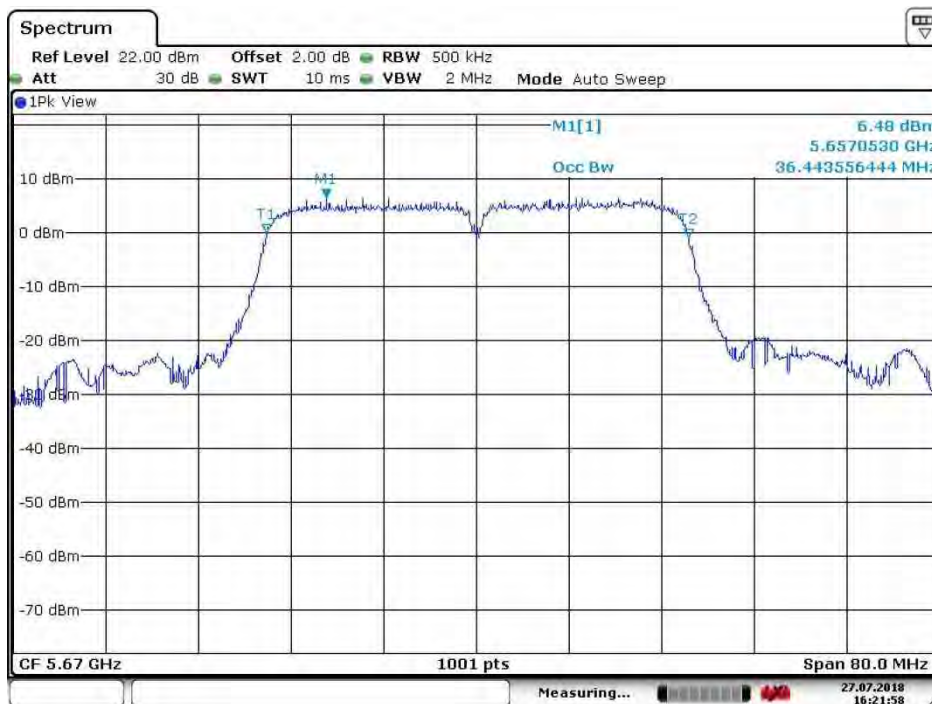


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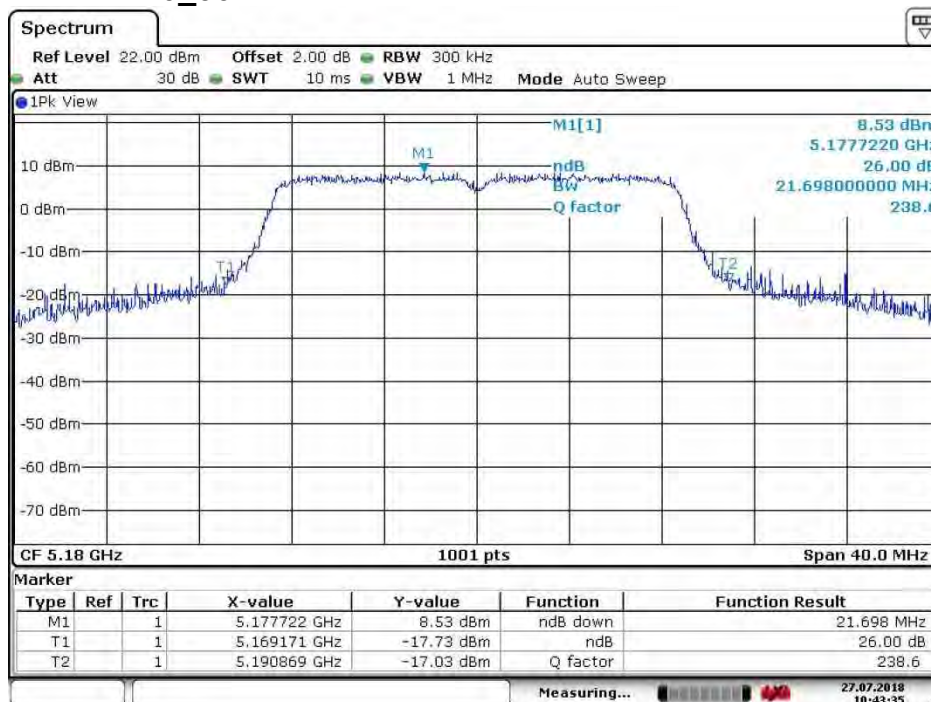
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5.4.2.1.25 11AC20_36 ANT 1

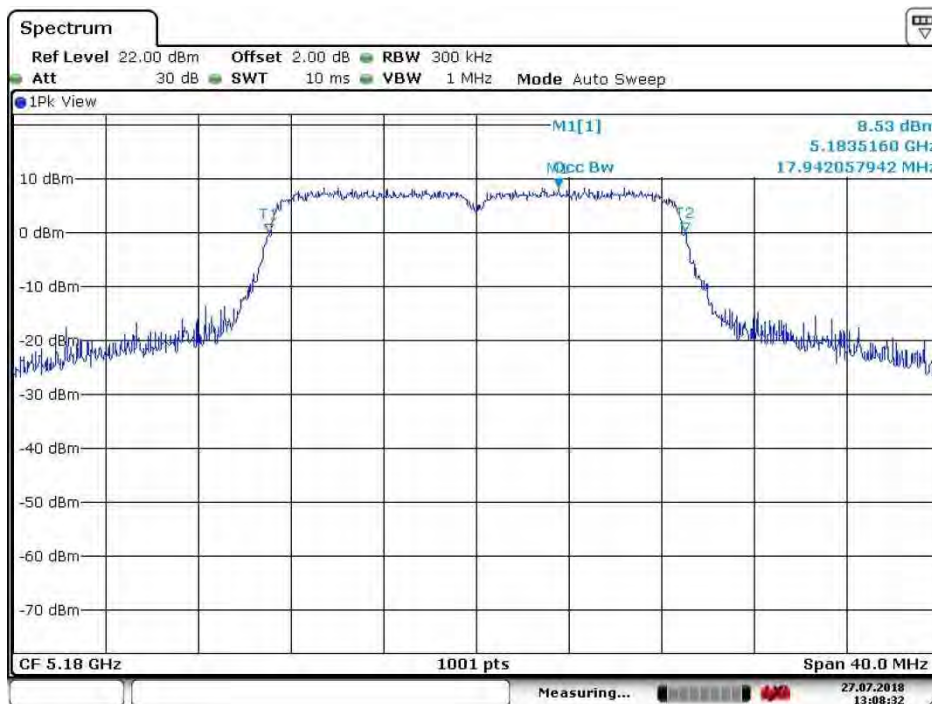


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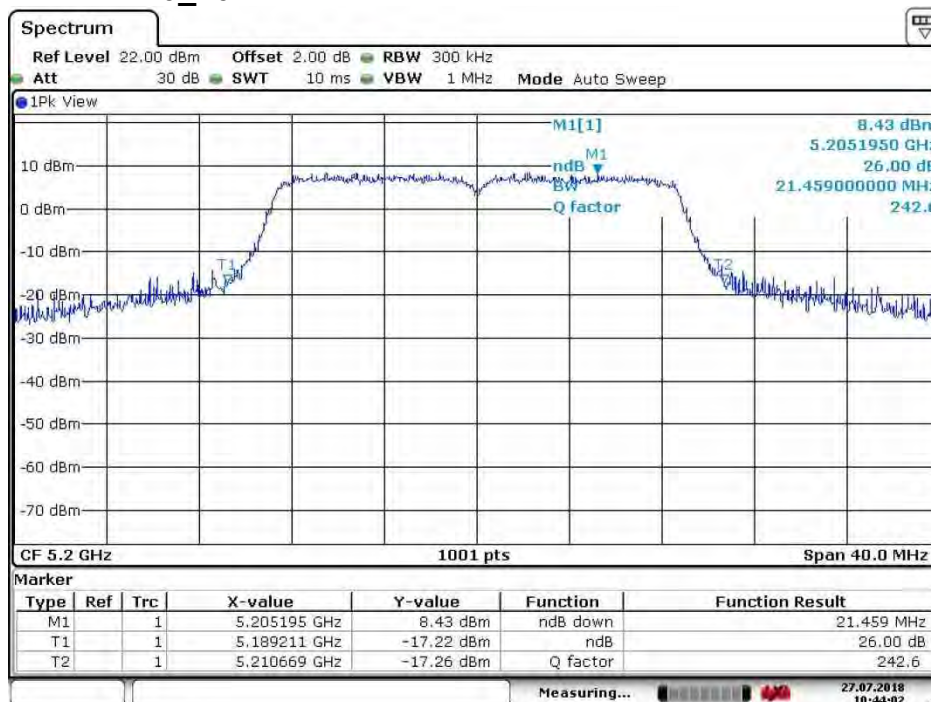
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5.4.2.1.26 11AC20_40 ANT 1

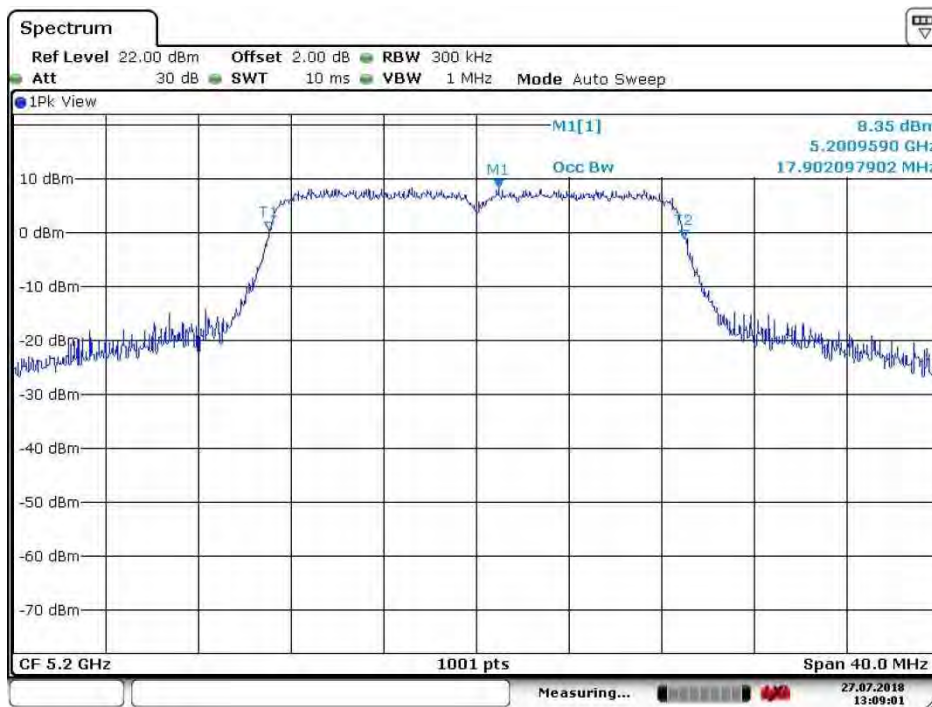


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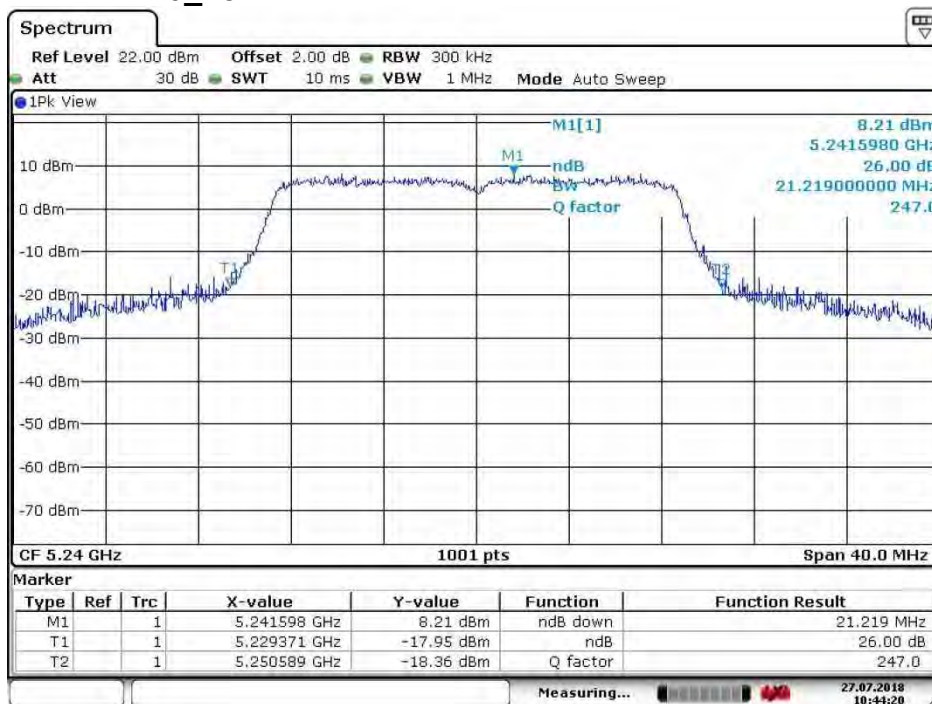
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5.4.2.1.27 11AC20_48 ANT 1

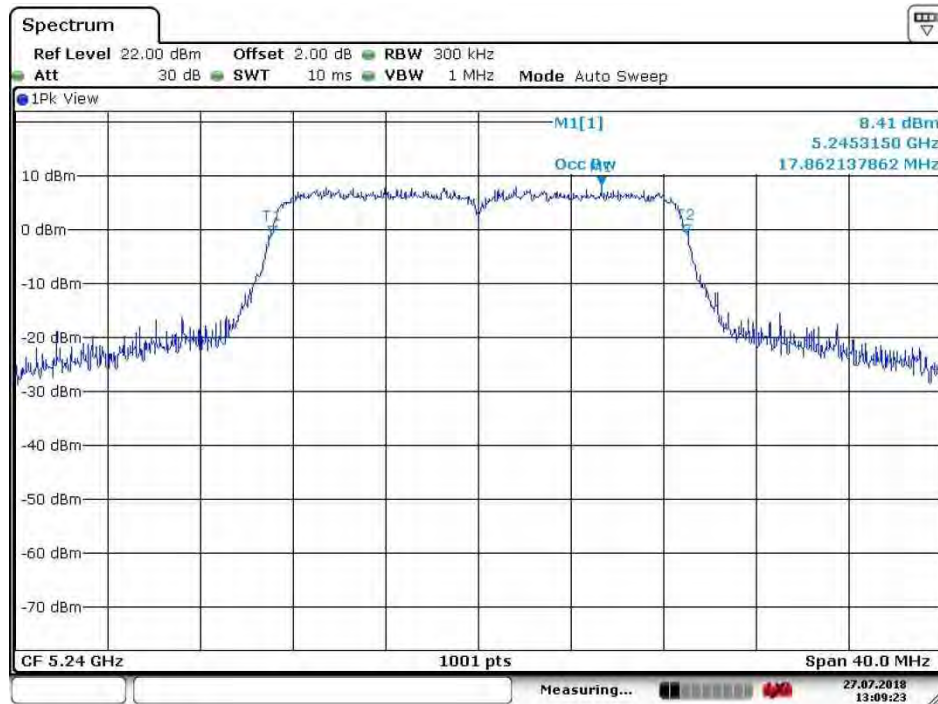


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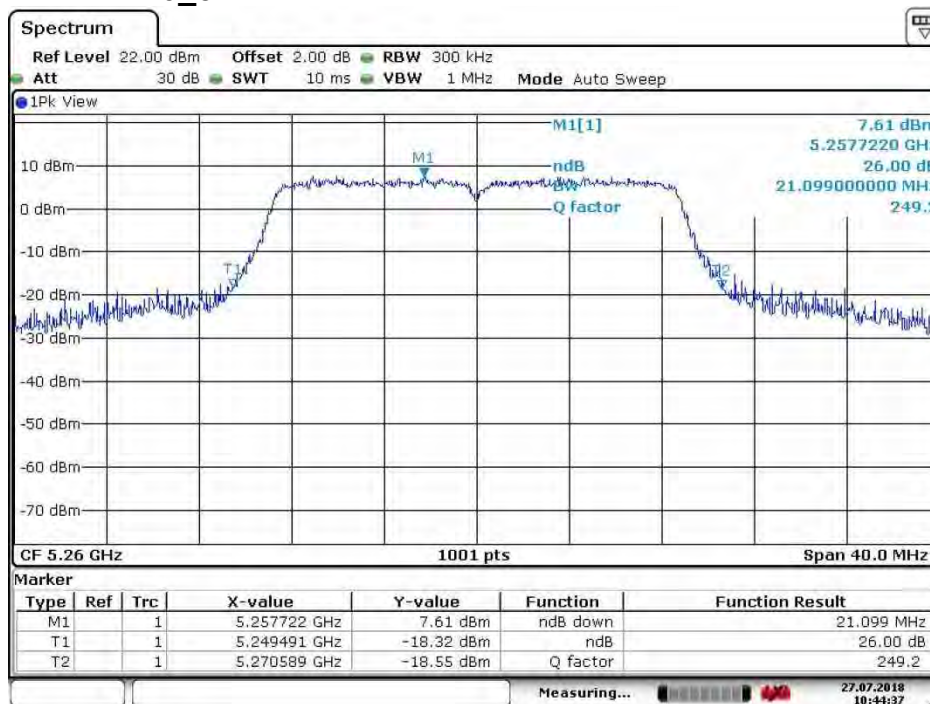
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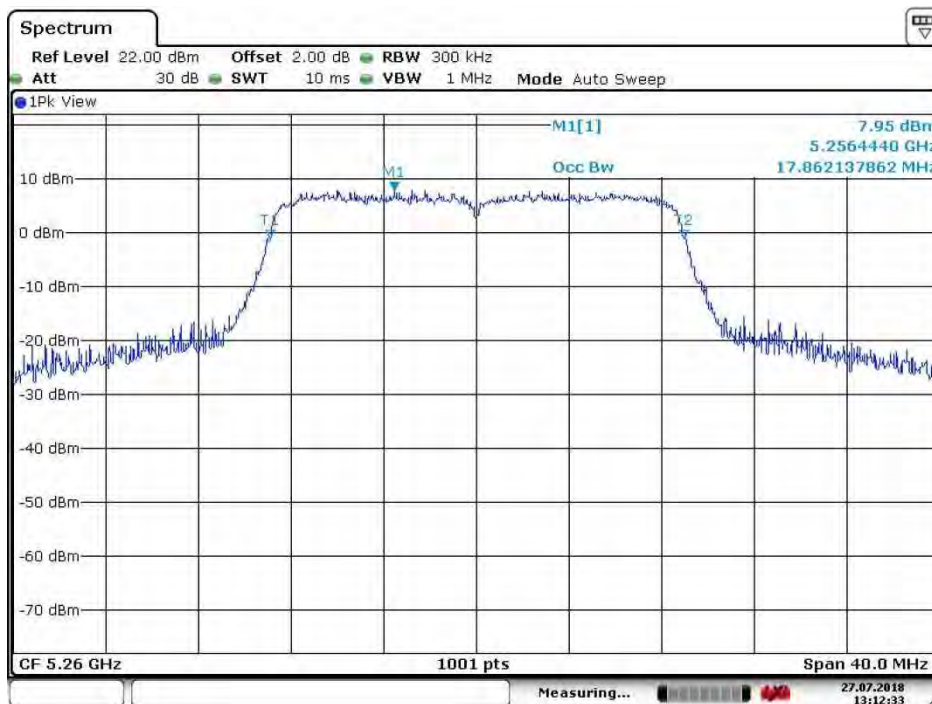


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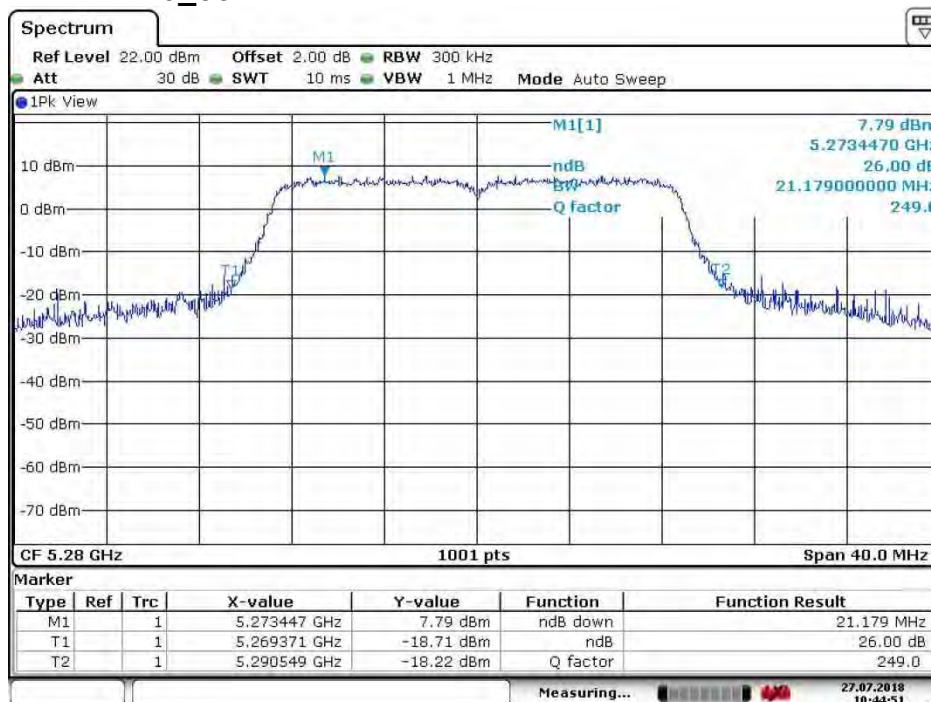


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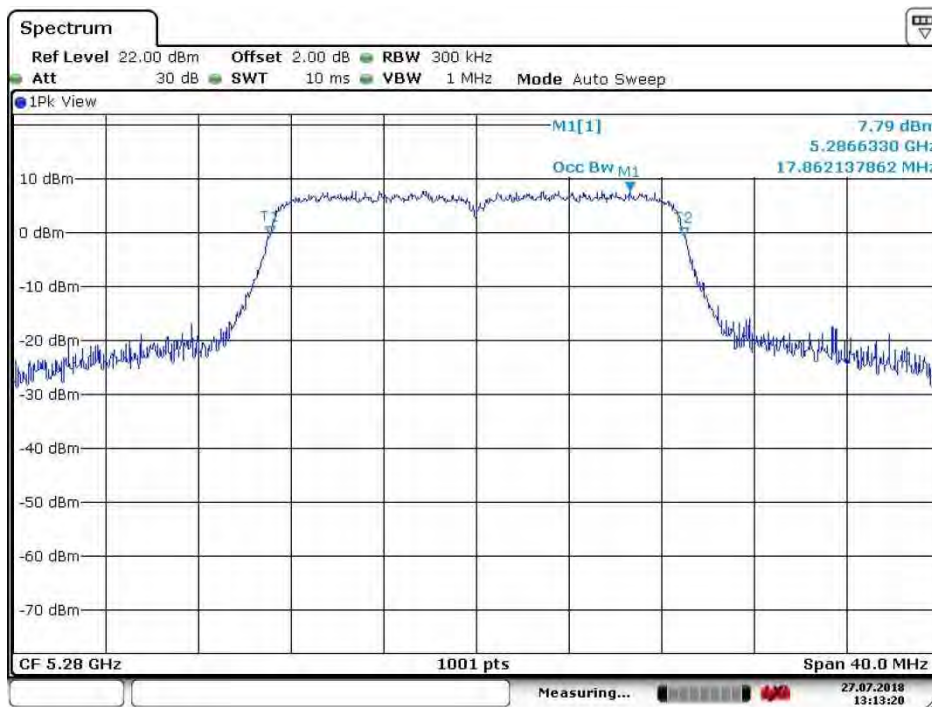


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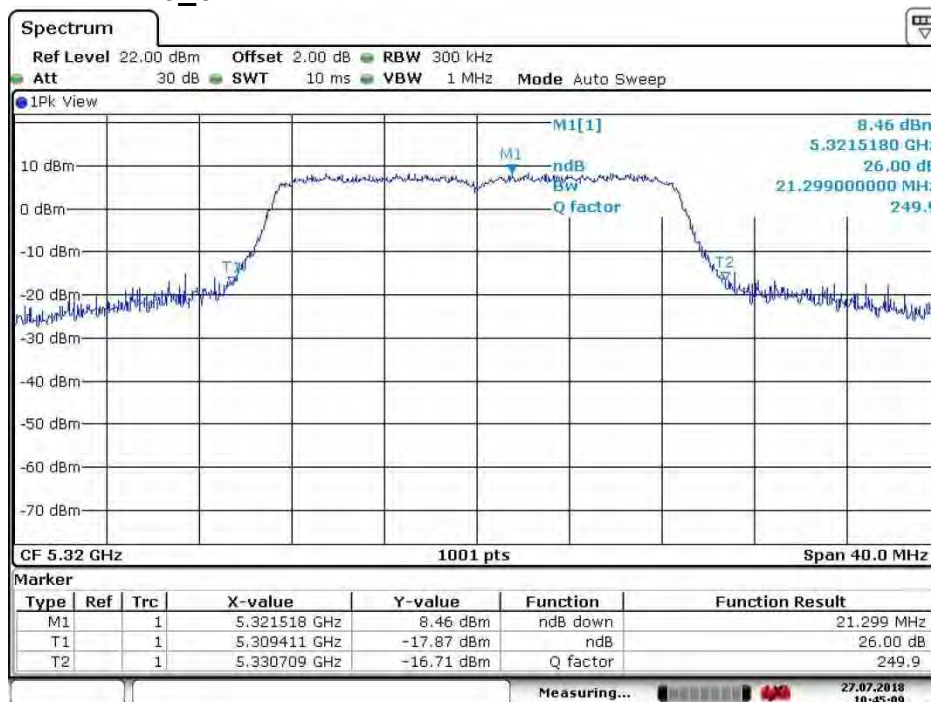


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5.4.2.1.30 11AC20_64 ANT 1

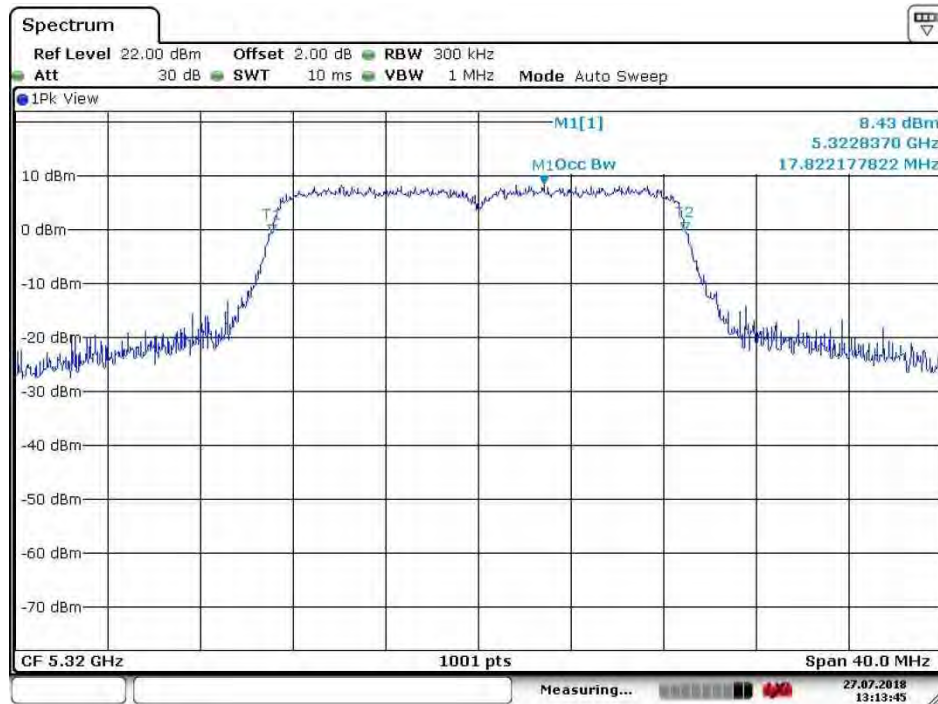


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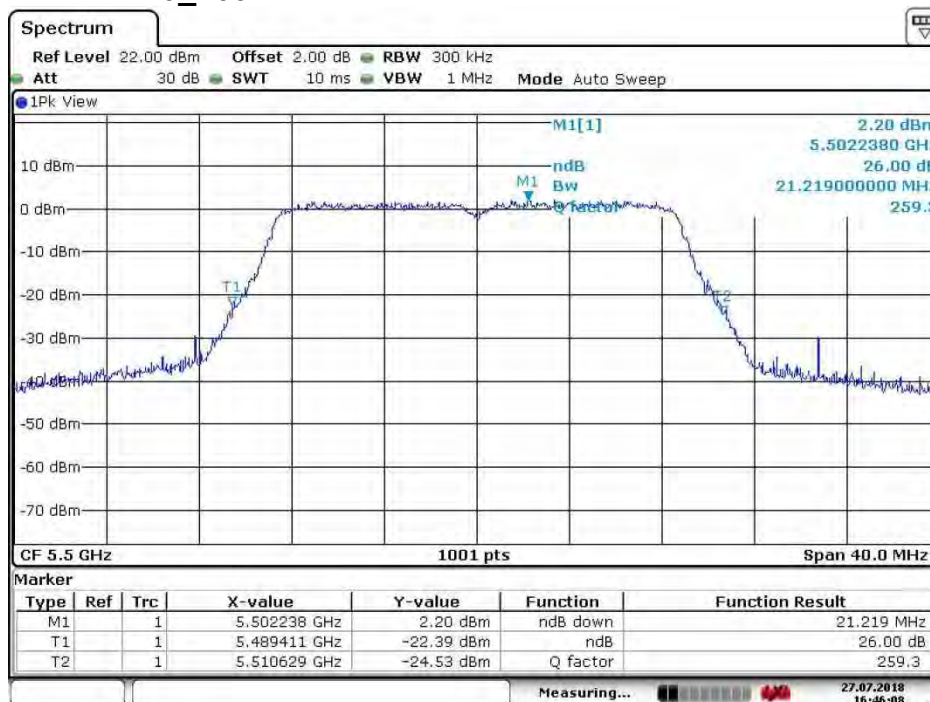
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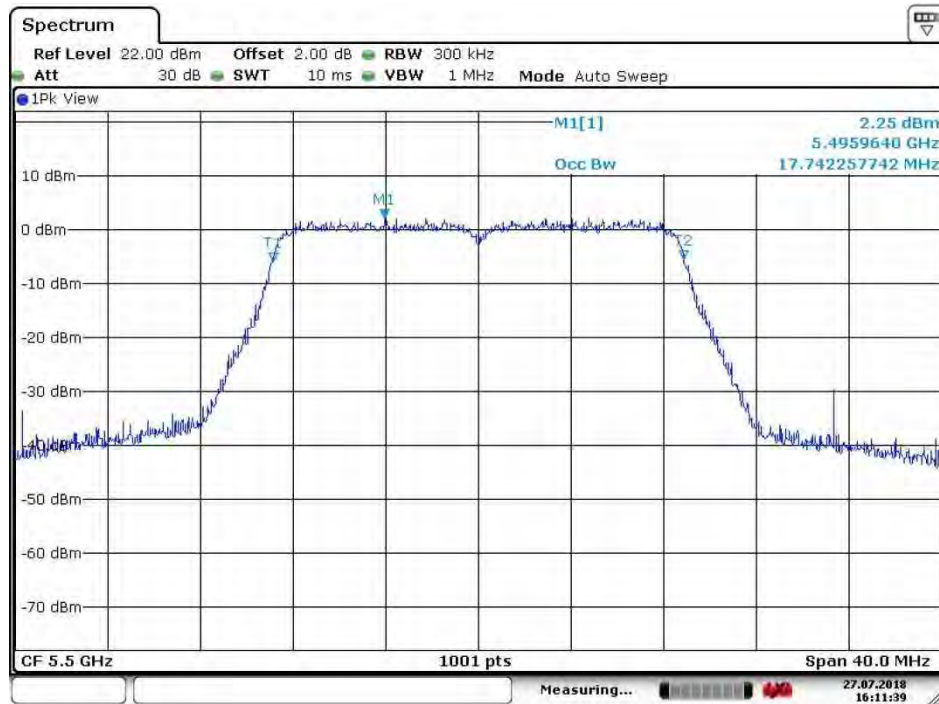


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5.4.2.1.31 11AC20_100 ANT 1

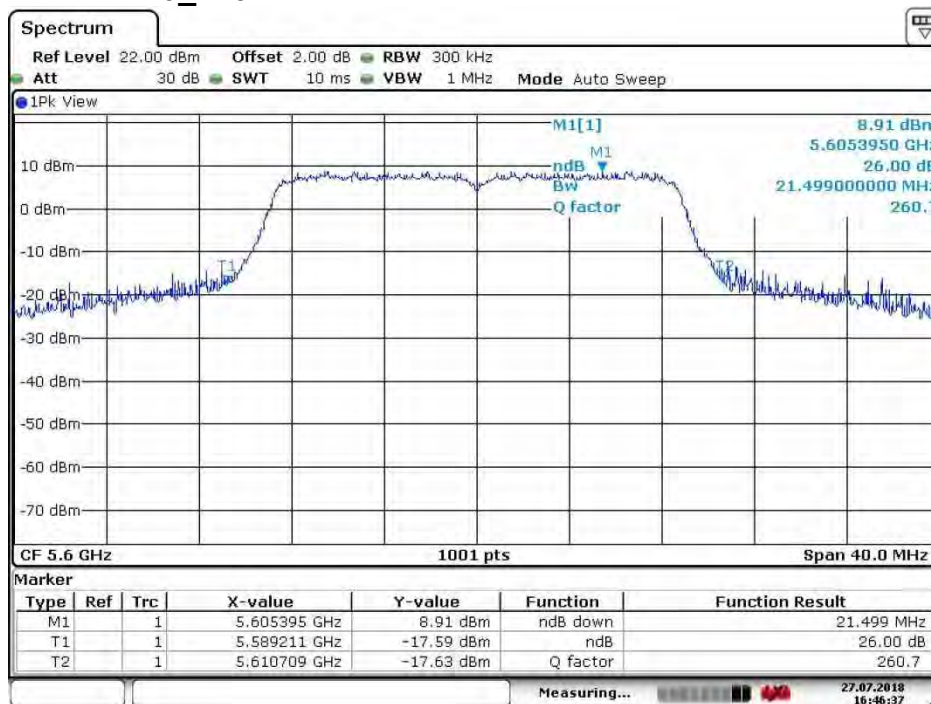


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Date: 27 JUL 2018 16:11:39

5.4.2.1.32 11AC20_120 ANT 1

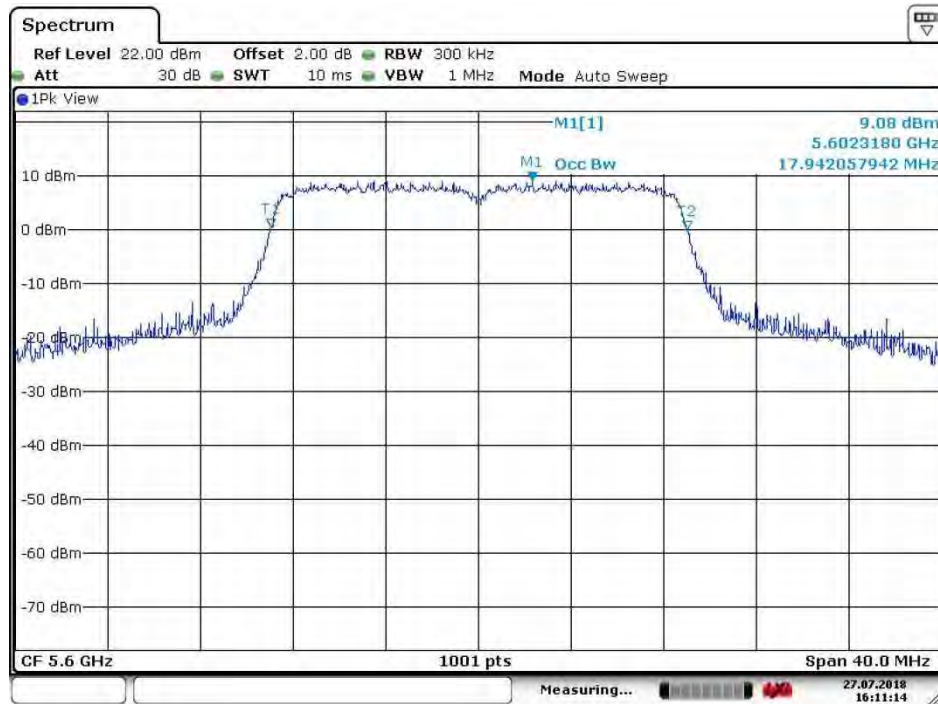


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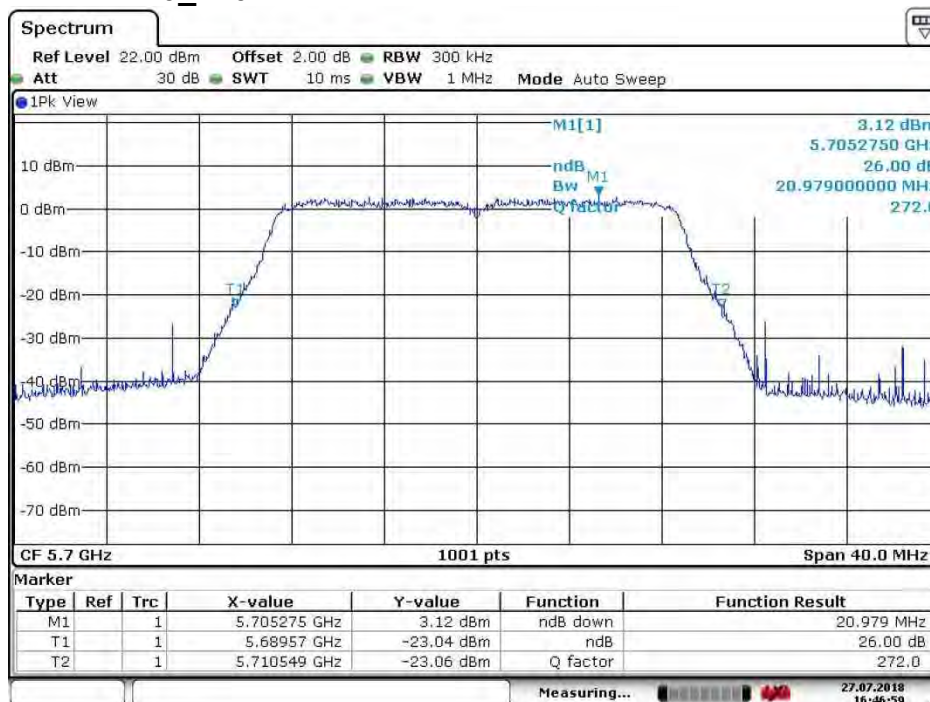
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5.4.2.1.33 11AC20_140 ANT 1

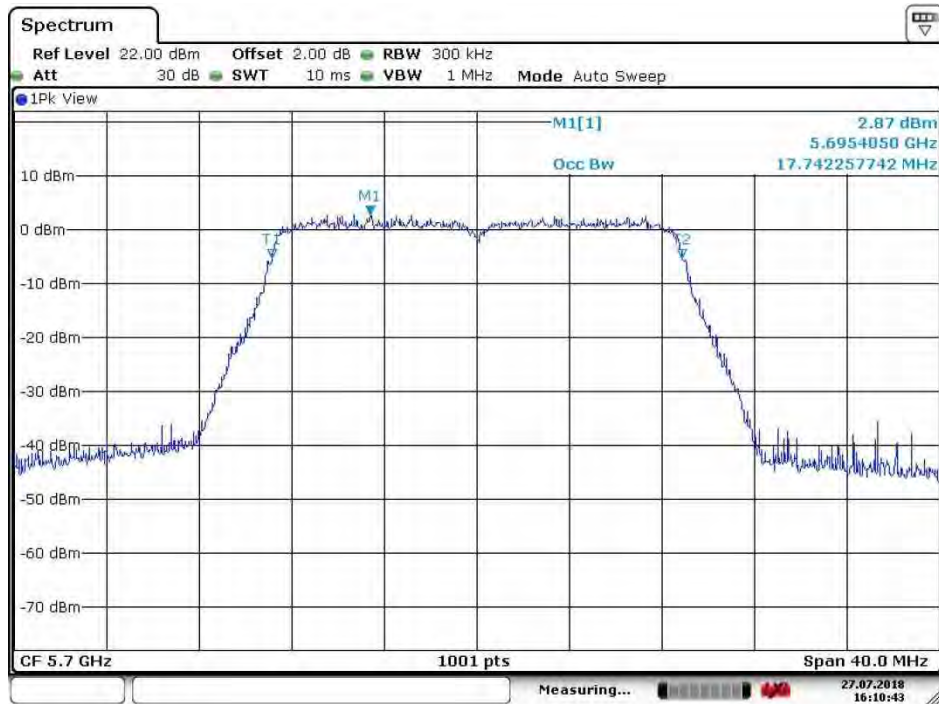


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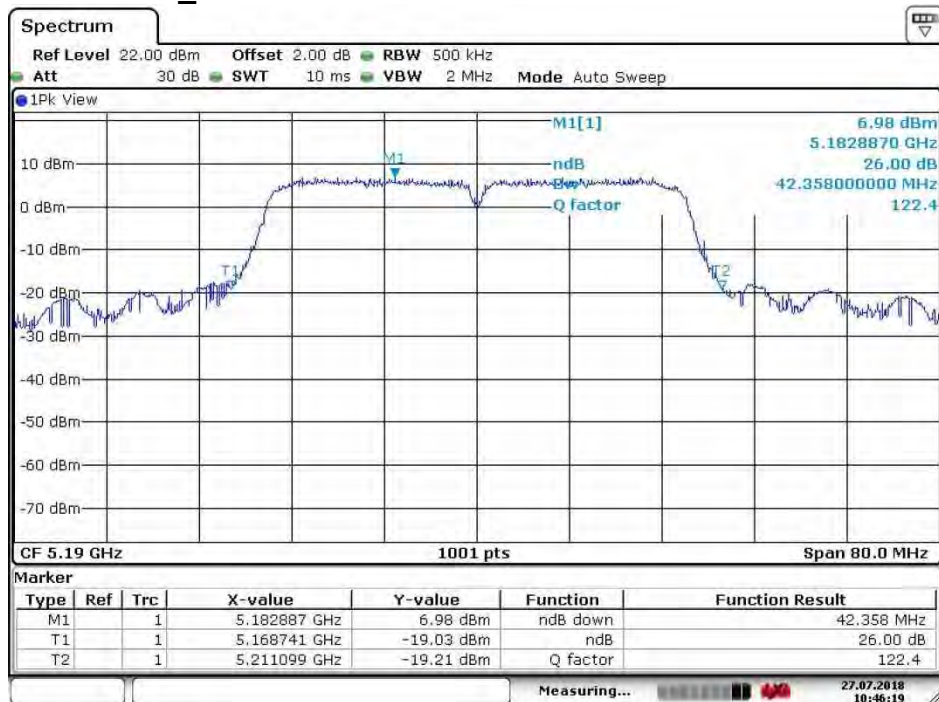
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5.4.2.1.34 11AC40_38 ANT 1

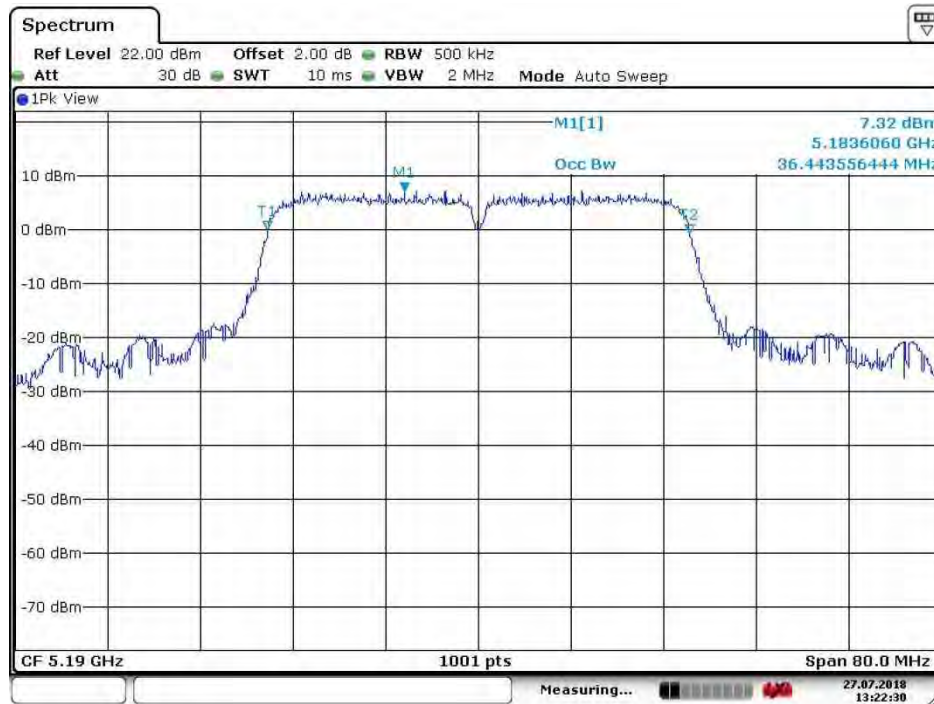


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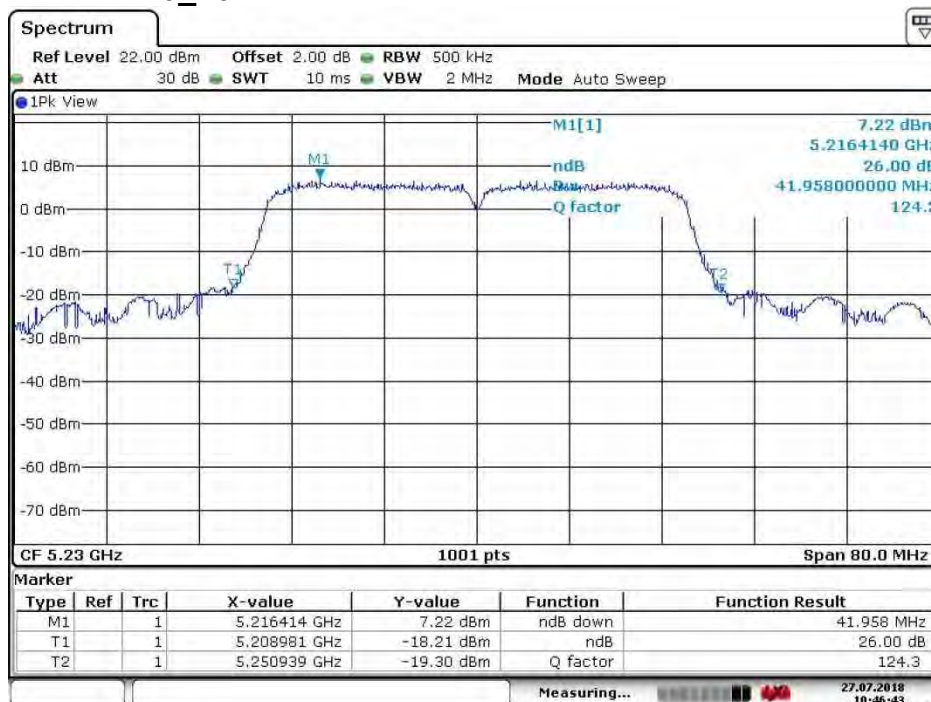
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5.4.2.1.35 11AC40_46 ANT 1



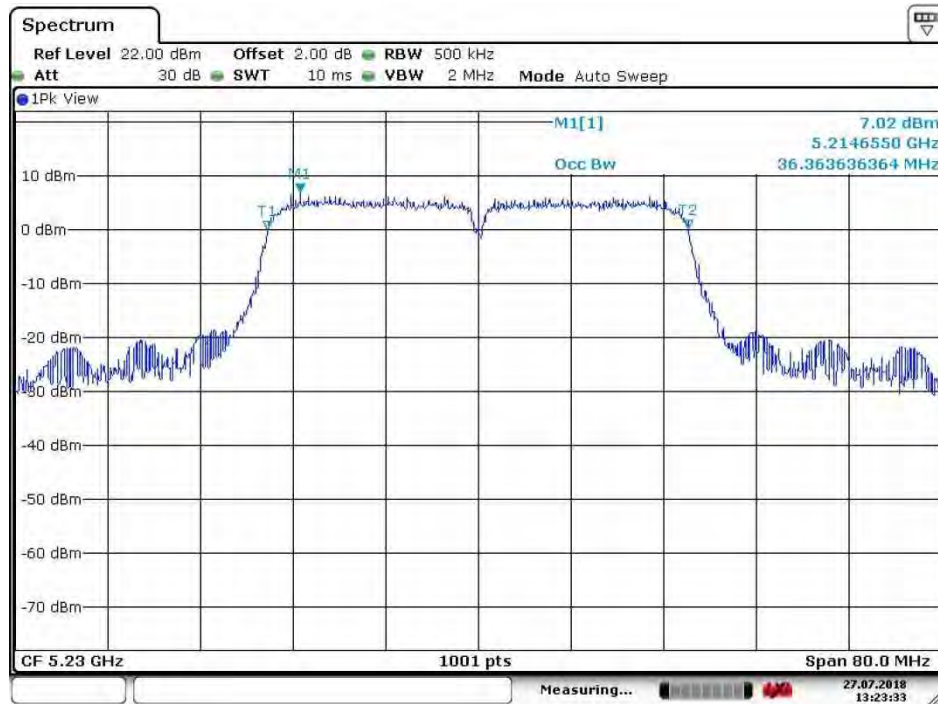
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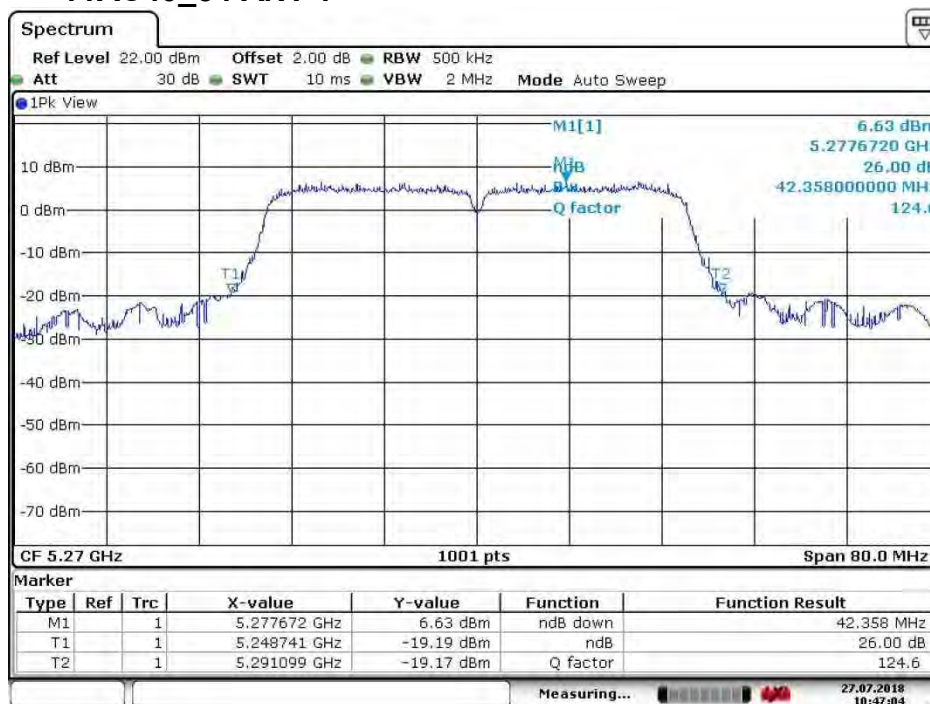
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5.4.2.1.36 11AC40_54 ANT 1

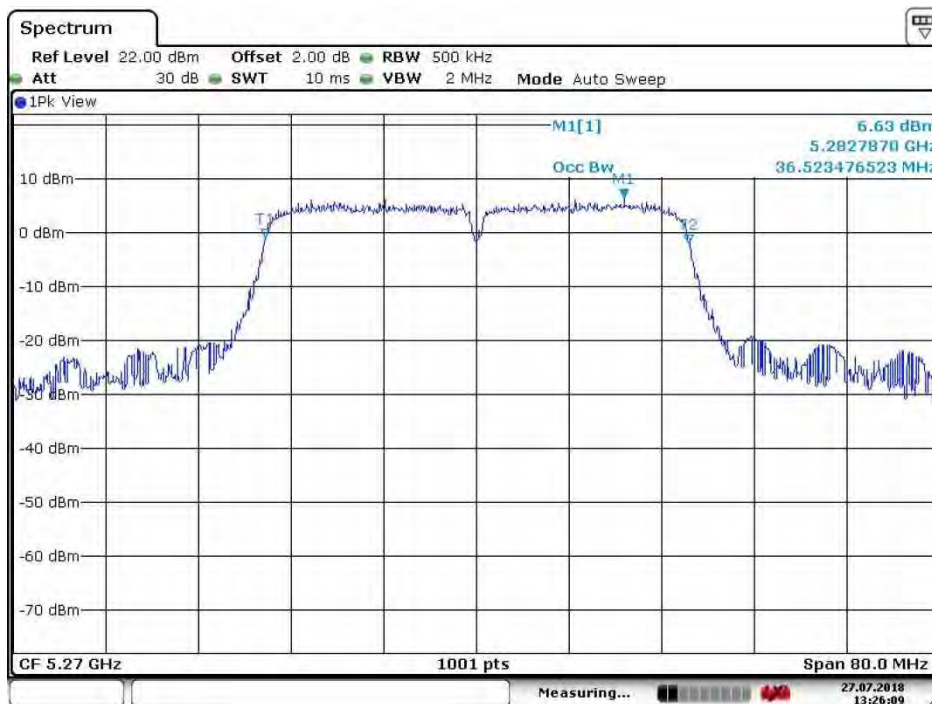


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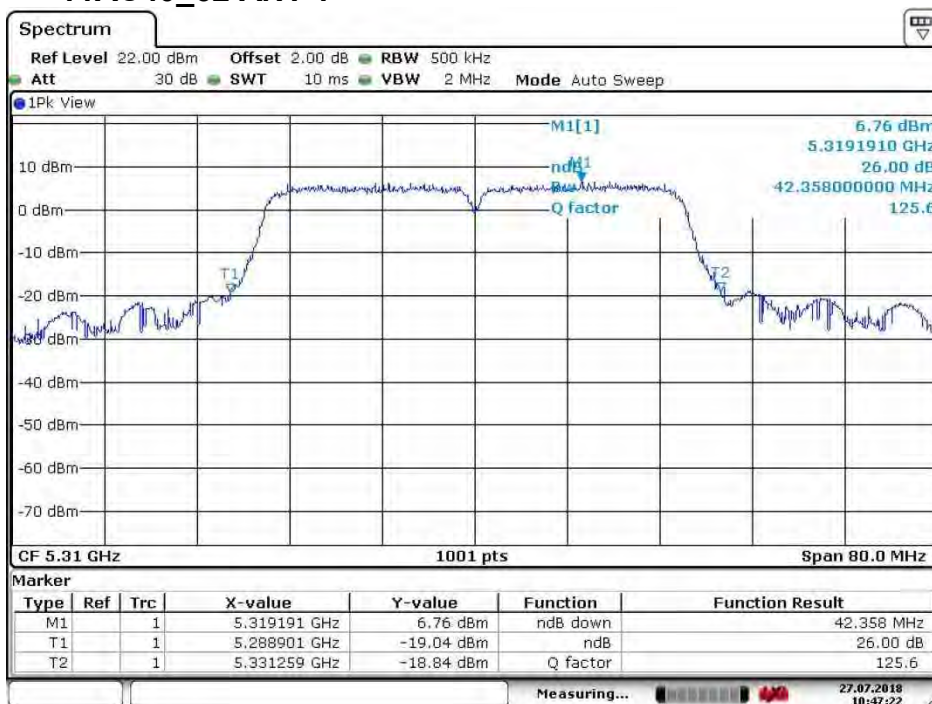
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Date: 27.JUL.2018 13:26:09

5.4.2.1.37 11AC40_62 ANT 1

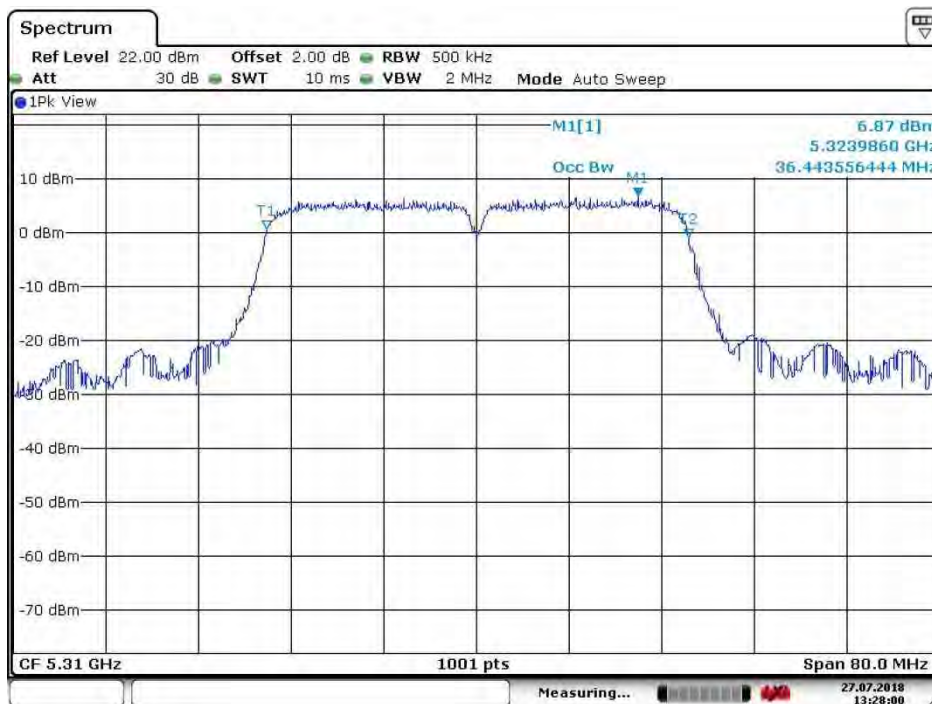


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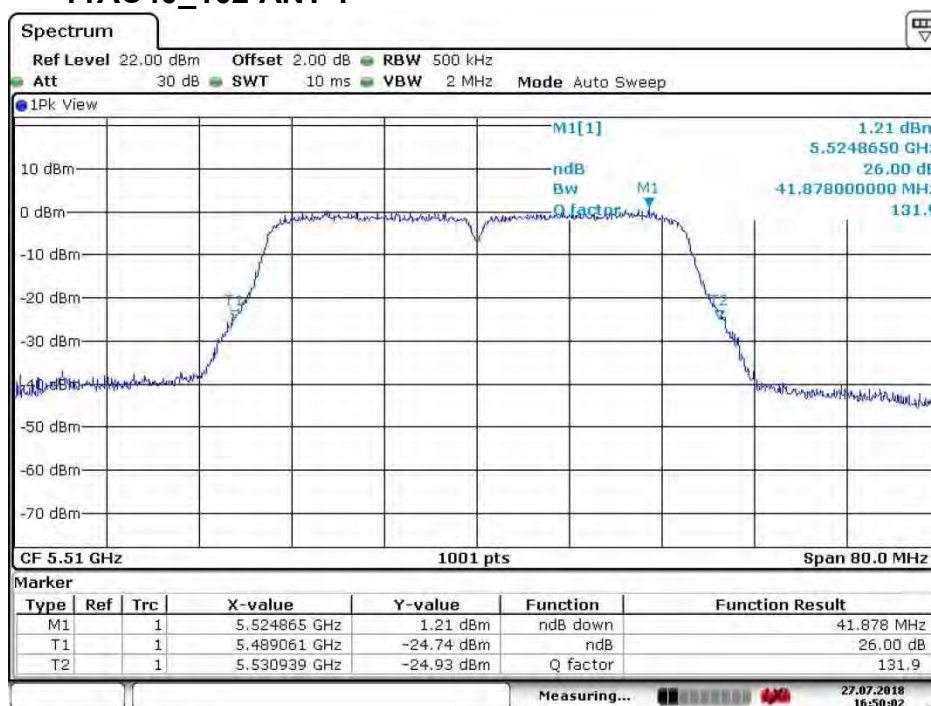
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5.4.2.1.38 11AC40_102 ANT 1



Date: 27 JUL 2018 16:50:02



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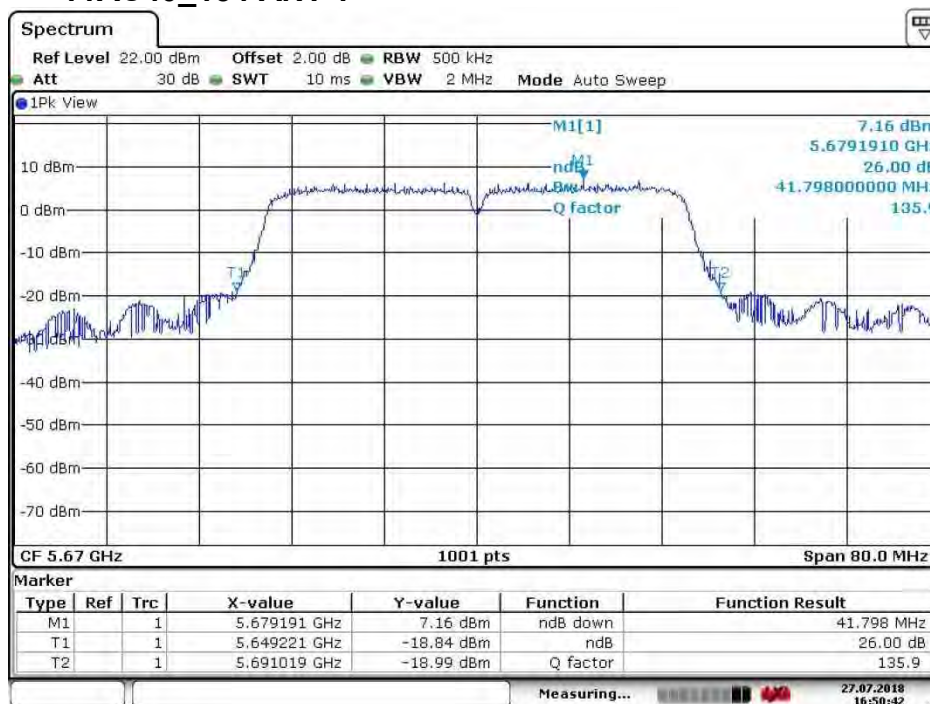
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5.4.2.1.39 11AC40_134 ANT 1



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