FCC TEST REPORT

Application No:	ZR/2020/60037
Applicant:	Xiaomi Communications Co., Ltd.
Address of Applicant	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer:	Xiaomi Communications Co., Ltd.
Address of Manufacturer:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
EUT Description:	Mobile Phone
Model No.:	M2007J17G
Trade Mark:	MI
FCC ID:	2AFZZJ17G
Standards:	47 CFR FCC Part 2, Subpart J 47 CFR FCC Part 15, Subpart C 47 CFR FCC Part 15, Subpart E
Test Method	KDB 789033 D02 General UNII Test Procedures New Rules v02 FCC KDB 558074 D01 DTS Meas Guidance v0502 KDB 662911 D01 Multiple Transmitter Output v02r01 KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 KDB 905462 D03 Client Without DFS New Rules v01r02 ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices
Date of Receipt:	2020/8/3
Date of Test:	2020/8/17 to 2020/8/24
Date of Issue:	2020/8/25
Test Result:	**PASS ***

. * In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Derek Yang
Wireless Laboratory Manager

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1 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2020/8/25		Original

Authorized for issue by:				
Tested By		Mike Hu **(Mike Hu) /Project Engineer**		
Checked By		David Chen **(David Chen) /Reviewer**		

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2 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 4.4 Clause 4.5	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.		Pass
Maximum Conducted Output Power	5150-5250	15.407(a)(1) 15.407(a)(4)	FCC < 250mW (avg during transmission)	Clause 4.3	
	5250-5350	15.407(a)(2) 15.407(a)(4)	<MIN{250mW,11dBm+10*lg(EBW)} (avg during transmission)		
	5470-5725	15.407(a)(2) 15.407(a)(4)	<MIN{250mW,11dBm+10*lg(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 4.6	
	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	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 4.7	Pass
	5250-5350	15.407(b)(2) 15.407(b)(6) 15.407(b)(7) 15.209	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	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	F<1GHz: §15.209/§7.2.5 limit (QP) F≥1GHz &out-restricted:(QP) 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		Clause 4.8	Pass
AC Power Line Conducted Emissions	5150-5250 5250-5350 5470-5725 5725-5850	15.207		Clause 4.2	Pass
Frequency Stability	5150-5250 5250-5350 5470-5600 5650-5725 5725-5850	15.209		Clause 4.9	Pass
Dynamic Frequency Selection	5250-5350 5470-5725	47 CFR Part 15, Subpart E 15.407	Channel Move Time:10 Seconds Transmission Time: milliseconds + an aggregate of 60 milliseconds over remaining 10 second period.	Clause 4.10	Pass

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Test Item	Band	FCC Rule	Requirements	Test Result	Verdict
			Non-occupancy period: Minimum 30 minutes		

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3 General Information

3.1 Client Information

Applicant:	Xiaomi Communications Co., Ltd.
Address of Applicant:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer:	Xiaomi Communications Co., Ltd.
Address of Manufacturer:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

3.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
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Telephone:	+86 (0) 755 2601 2053
Fax:	+86 (0) 755 2671 0594
E-mail:	ee.shenzhen@sgs.com

3.3 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 17025:2017 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.

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3.4 General Description of EUT

EUT Description:	Mobile Phone
Model No.:	M2007J17G
Trade Mark:	MI
Hardware Version:	P2
Software Version:	MIUI 12
IEEE 802.11 WLAN Mode Supported	☒ 802.11a (20 MHz channel bandwidth) ; ☒ 802.11n (20 MHz channel bandwidth); ☒ 802.11n (40 MHz channel bandwidth); ☒ 802.11ac (20 MHz channel bandwidth); ☒ 802.11ac (40 MHz channel bandwidth); ☒ 802.11ac (80 MHz channel bandwidth); ☐ 802.11ac (160 MHz channel bandwidth),
Operation Frequency:	IEEE 802.11n(HT20/40)/ ac(HT20/40/80/): 5150MHz to 5250MHz IEEE 802.11n(HT20/40)/ ac(HT20/40/80/160): 5250MHz to 5350MHz IEEE 802.11n(HT20/40)/ ac(HT20/40/80/160): 5470MHz to 5725MHz IEEE 802.11n(HT20/40)/ ac(HT20/40/80): 5725MHz to 5825MHz
Type of Modulation:	OFDM
DFS mode:	☐Master ☐ Slave with radar detection ☒Slave without radar detection
Sample Type:	☒ Portable Device, ☐Module
Antenna Type:	Fixed Internal Antenna
Antenna Ports	☒ Ant 1, ☒ Ant 2, ☐ Ant 3
Smart System	☐ SISO (for 802.11a/n/ac), ☒ MIMO (for 802.11n/ac), ☐ Diversity (for 802.11a) : Tx & Rx
Antenna Gain:	0.5dBi(ANT1); -2.5dBi(ANT2);
Power Supply	☒ AC/DC Adapter; ☐ PoE:; ☐ Other:

Remark:

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

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	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

For UNII Band II-C:

Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac 20MHz	The Lowest channel	5500
	The Middle channel	5580
	The Highest channel	5700
IEEE 802.11n/ac 40MHz	The Lowest channel	5510
	The Middle channel	5500
	The Highest channel	5670
IEEE 802.11ac 80MHz	The Lowest channel	5500
	The Highest channel	5580

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	5805
IEEE 802.11n/ac 40MHz	The Lowest channel	5755
	The Highest channel	5795
IEEE 802.11ac 80MHz	The Middle channel	5775

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3.5 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.

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4 Test results and Measurement Data

4.1 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 0.5dBi.	

4.2 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:	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.		

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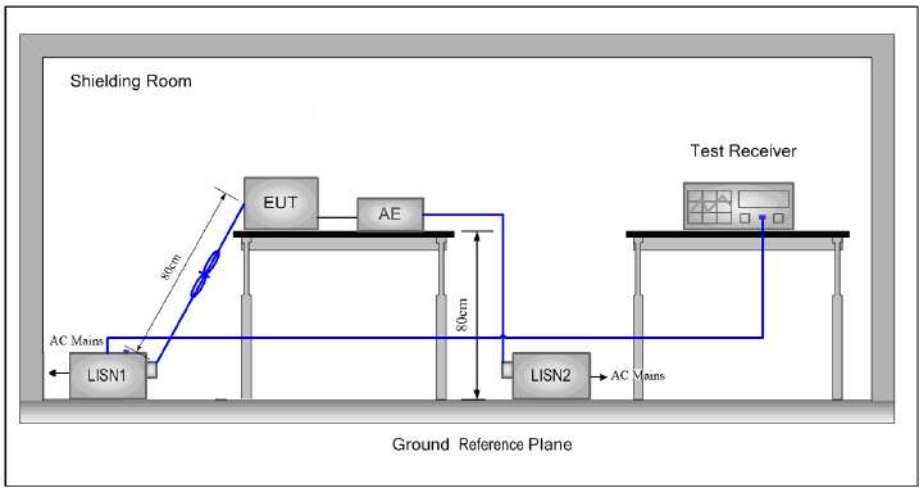
Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate of 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer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

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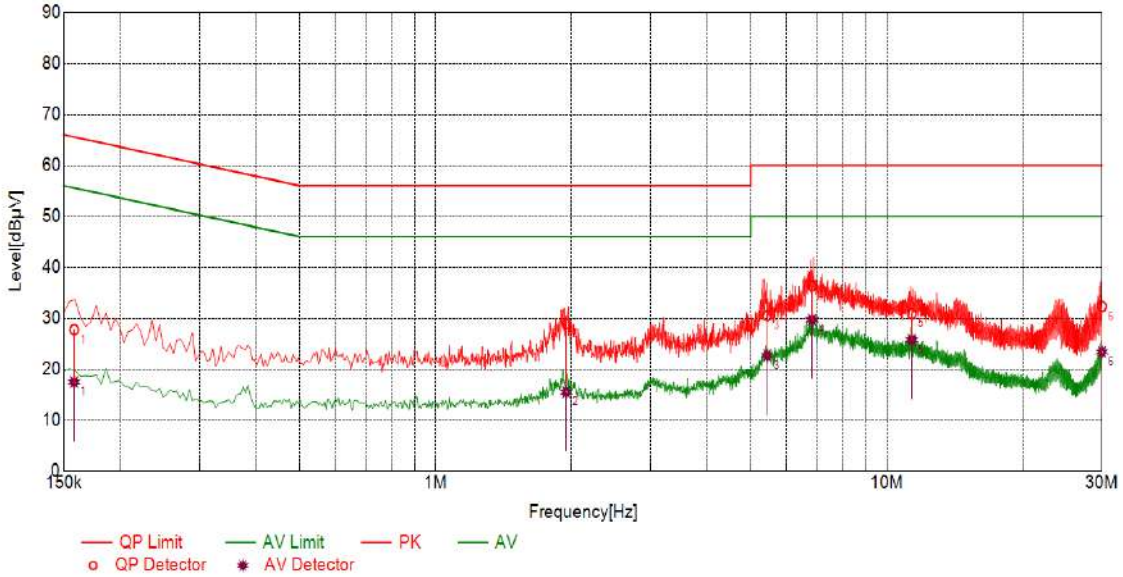
Live Line:



Test Graph

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type
1	0.1583	10.10	27.75	65.55	37.80	17.46	55.55	38.09	L
2	1.9508	10.10	28.96	56.00	27.04	15.50	46.00	30.50	L
3	5.4295	10.10	30.49	60.00	29.51	22.69	50.00	27.31	L
4	6.8354	10.10	36.34	60.00	23.66	29.69	50.00	20.31	L
5	11.3636	10.10	30.87	60.00	29.13	25.74	50.00	24.26	L
6	29.9989	10.11	32.31	60.00	27.69	23.36	50.00	26.64	L

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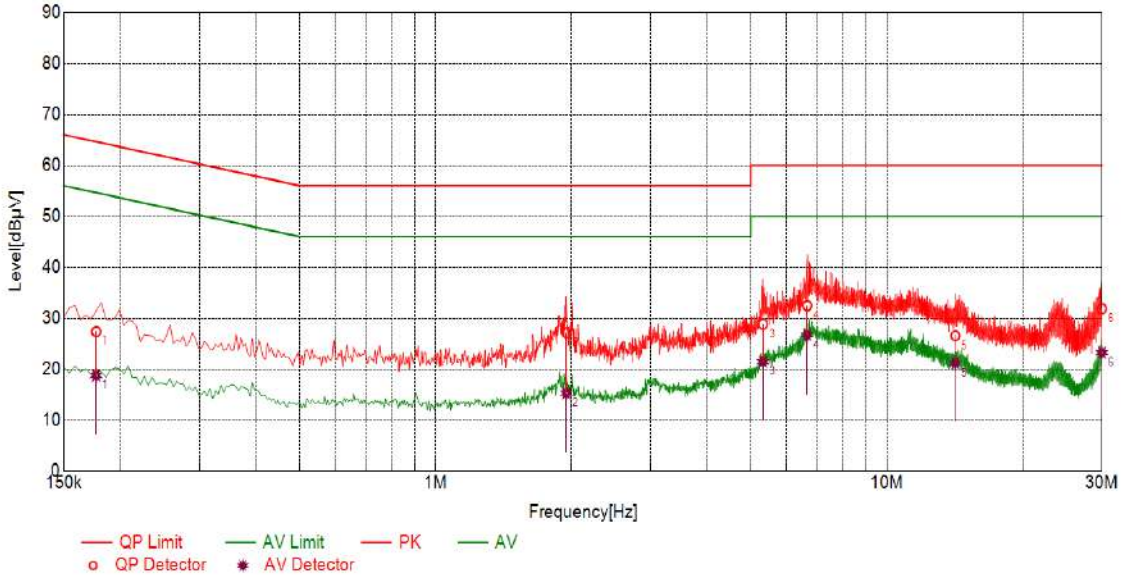
Neutral Line:



Test Graph

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type
1	0.1770	10.10	27.38	64.63	37.25	18.76	54.63	35.87	N
2	1.9509	10.10	27.13	56.00	28.87	15.28	46.00	30.72	N
3	5.3124	10.10	28.82	60.00	31.18	21.46	50.00	28.54	N
4	6.6684	10.10	32.47	60.00	27.53	26.71	50.00	23.29	N
5	14.1808	10.11	26.56	60.00	33.44	21.19	50.00	28.81	N
6	29.9816	10.11	31.86	60.00	28.14	23.23	50.00	26.77	N

Remarks:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

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4.3 Duty Cycle

4.3.1 Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
11A_CDD	Ant 1: CH149, CH157, CH161	97.33
11N20_MIMO	Ant 1: CH149, CH157, CH161	98.02
11N40_MIMO	Ant 1: CH151, CH159	95.59
11AC20_MIMO	Ant 1: CH149, CH157, CH161	96.22
11AC40_MIMO	Ant 1: CH151, CH159	93.12
11AC80_MIMO	Ant 1: CH155	87.10
11A_CDD	Ant 2: CH149, CH157, CH161	97.33
11N20_MIMO	Ant 2: CH149, CH157, CH161	98.44
11N40_MIMO	Ant 2: CH151, CH159	95.13
11AC20_MIMO	Ant 2: CH149, CH157, CH161	96.20
11AC40_MIMO	Ant 2: CH151, CH159	92.71
11AC80_MIMO	Ant 2: CH155	86.10

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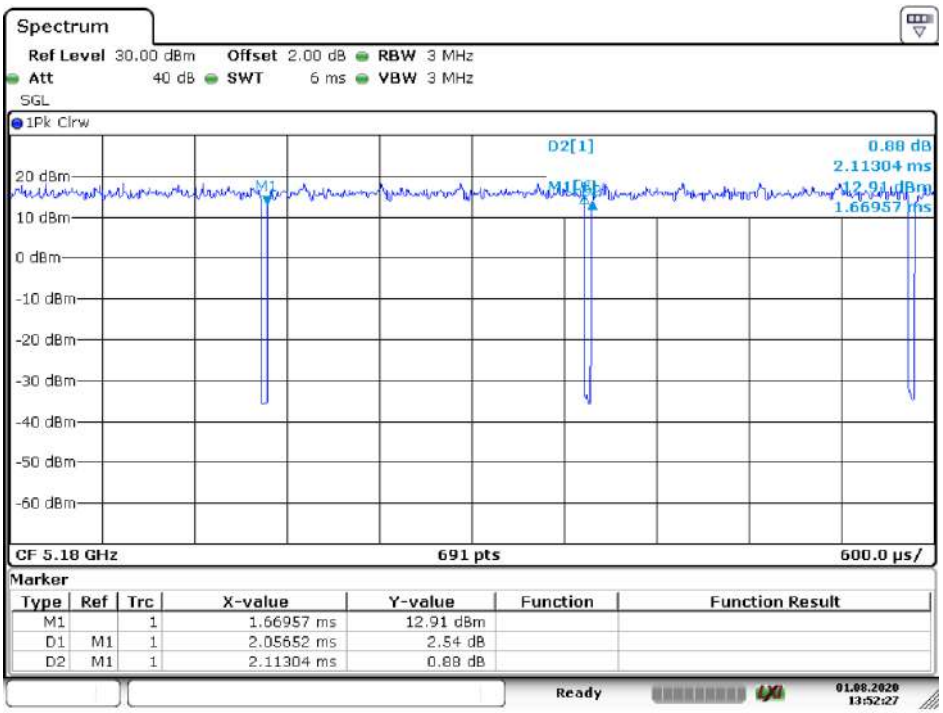
4.3.1 Test Plots

4.3.1.1 ANT1

4.3.1.1.1 11A_CDD



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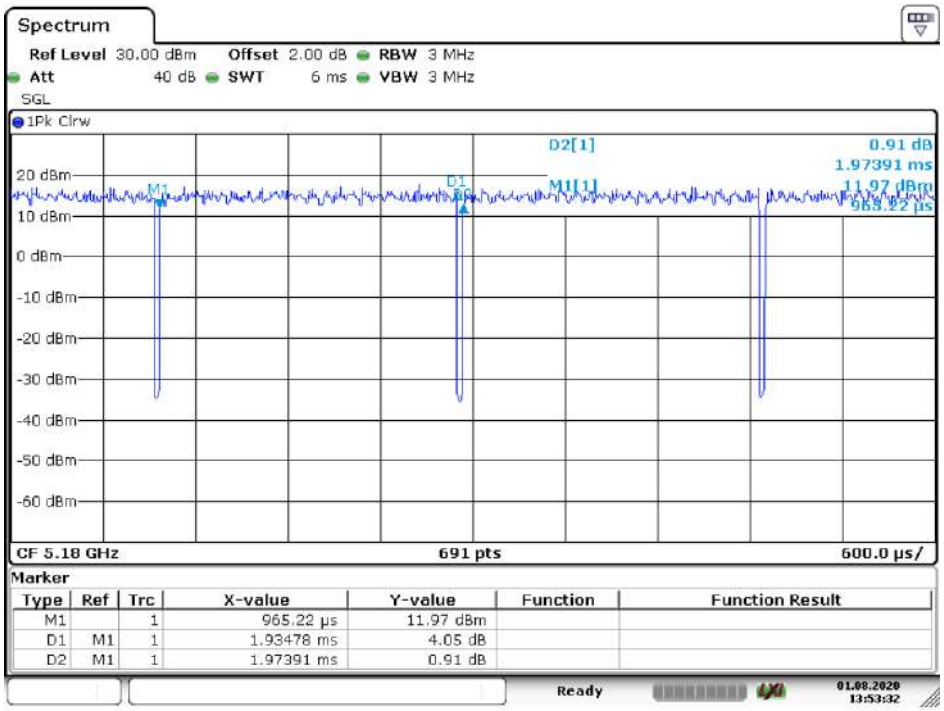
4.3.1.1.2 11N20_MIMO



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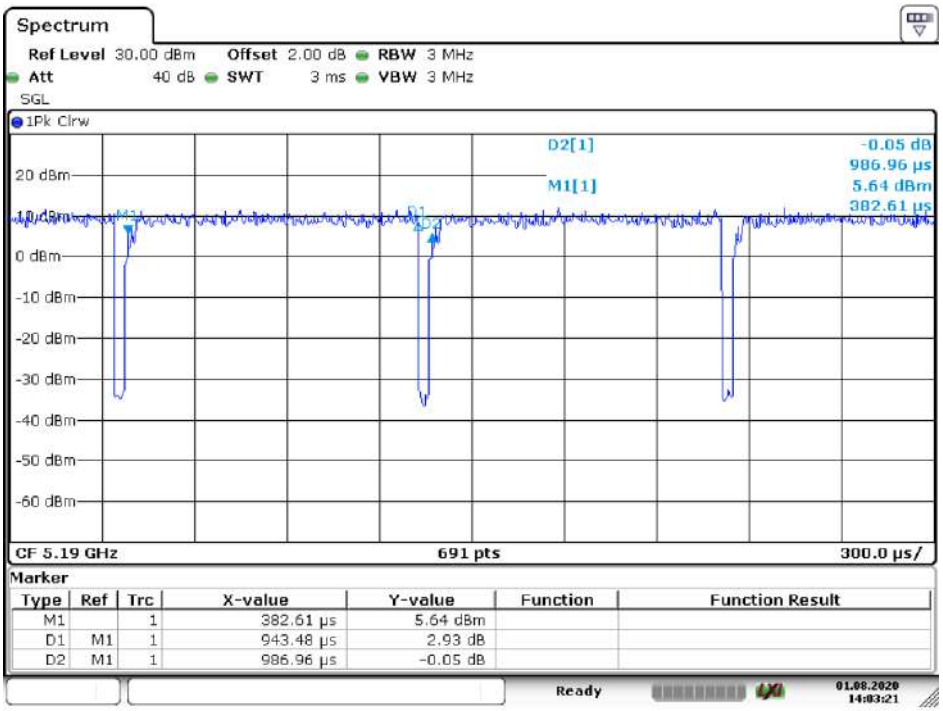
4.3.1.1.3 11N40_MIMO



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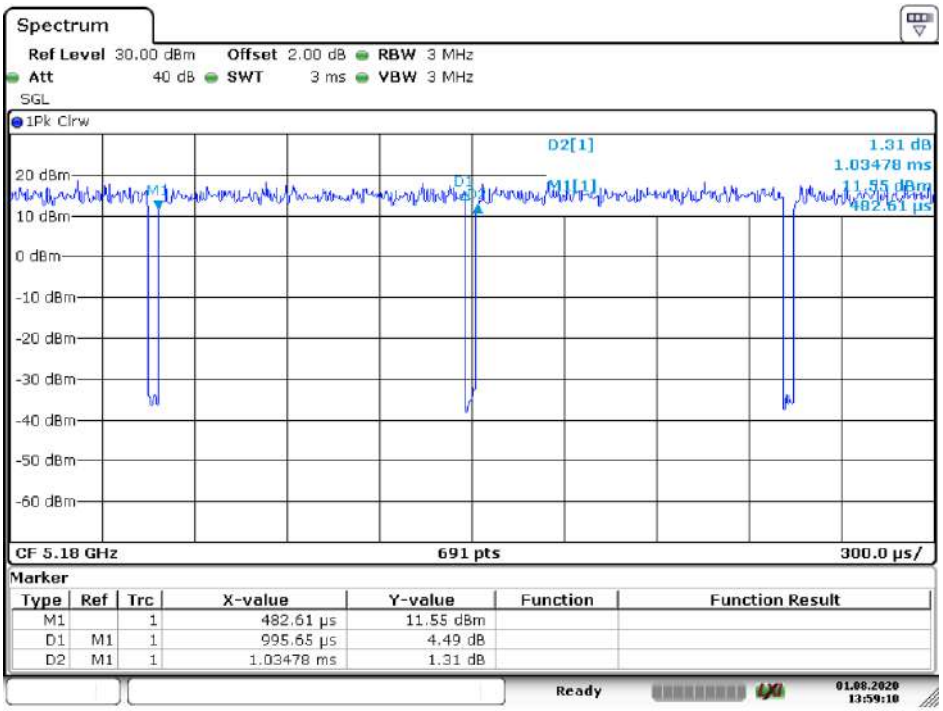
4.3.1.1.4 11AC20_MIMO



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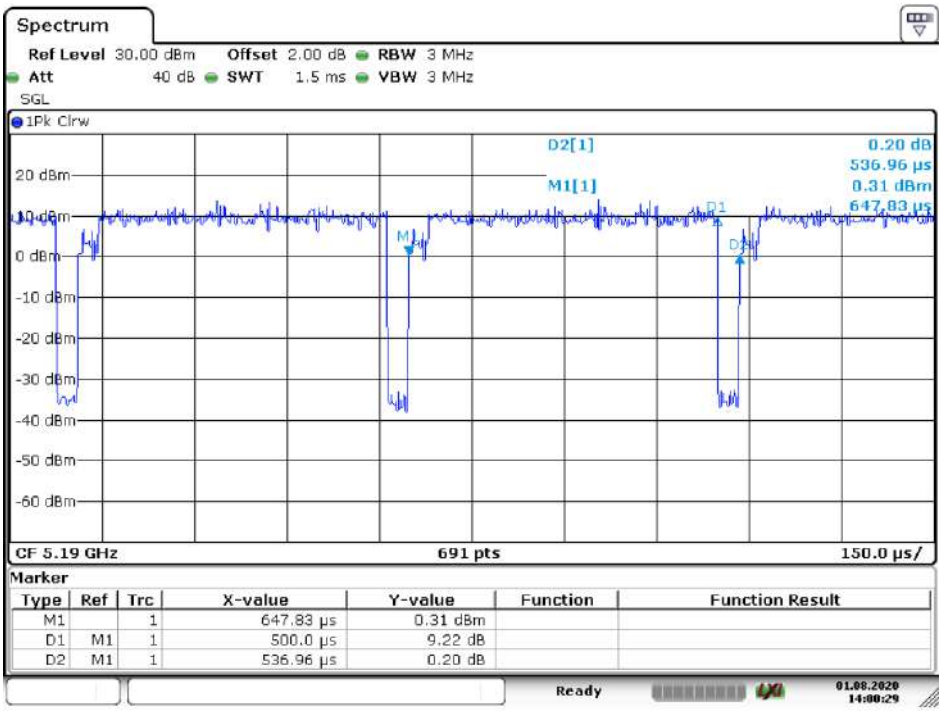
4.3.1.1.5 11AC40_MIMO



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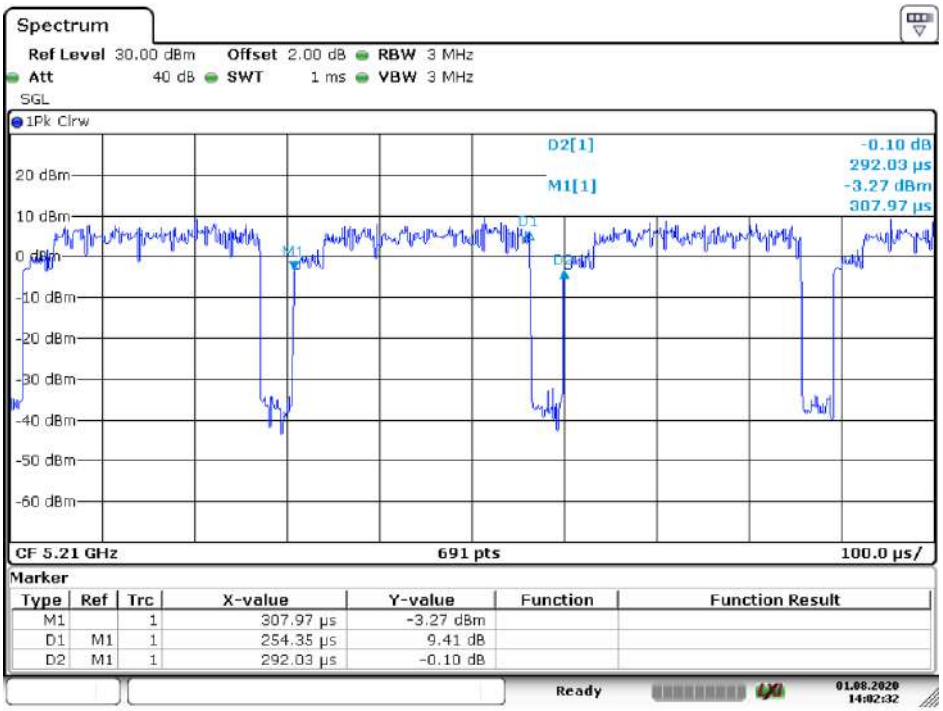
4.3.1.1.6 11AC80_MIMO



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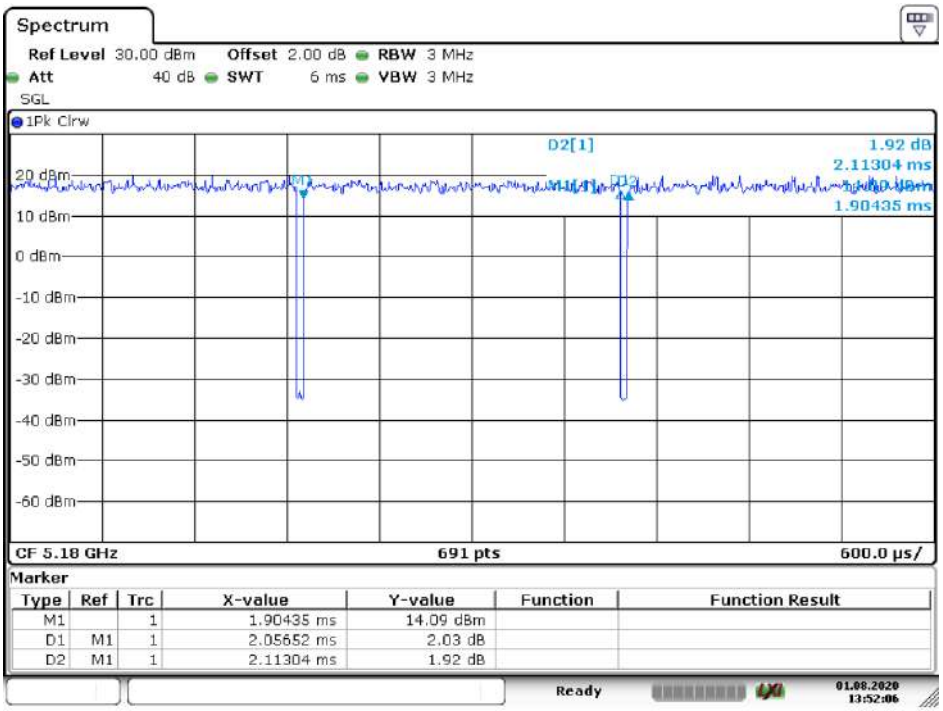
4.3.1.2 ANT2

4.3.1.2.1 11A_MIMO



Date: 1.AUG.2020 13:52:06

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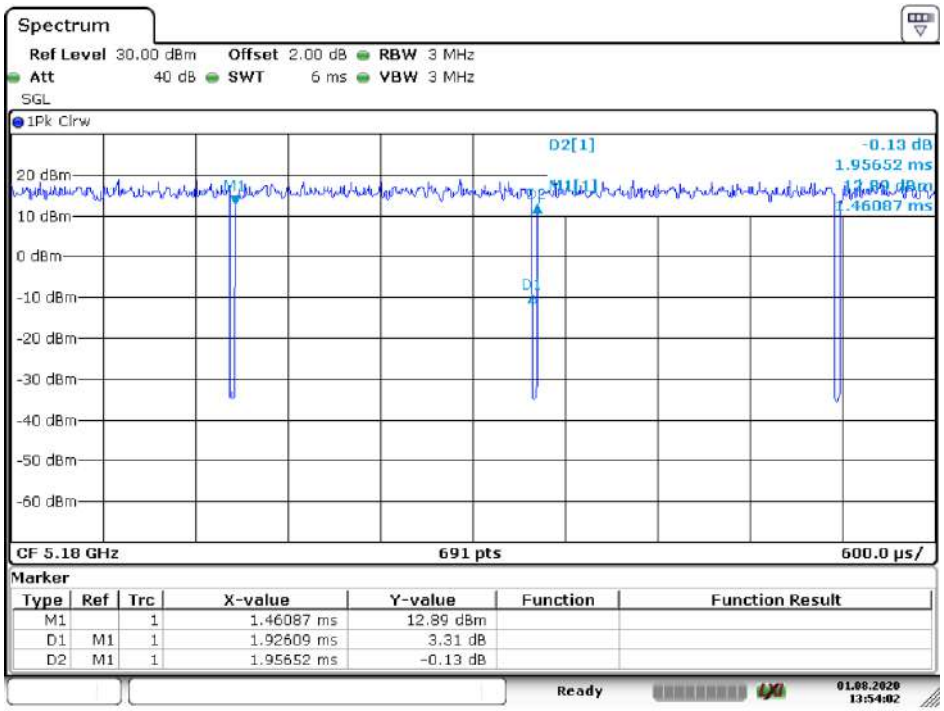
4.3.1.2.2 11N20_MIMO



Date: 1.AUG.2020 13:54:02

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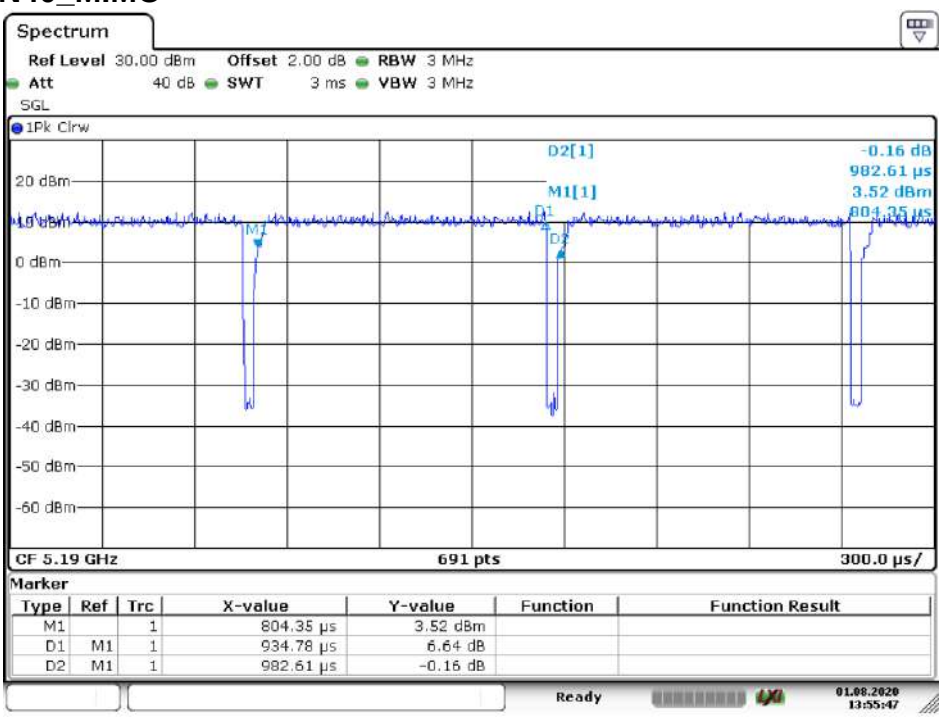
4.3.1.2.3 11N40_MIMO



Date: 1.AUG.2020 13:55:47

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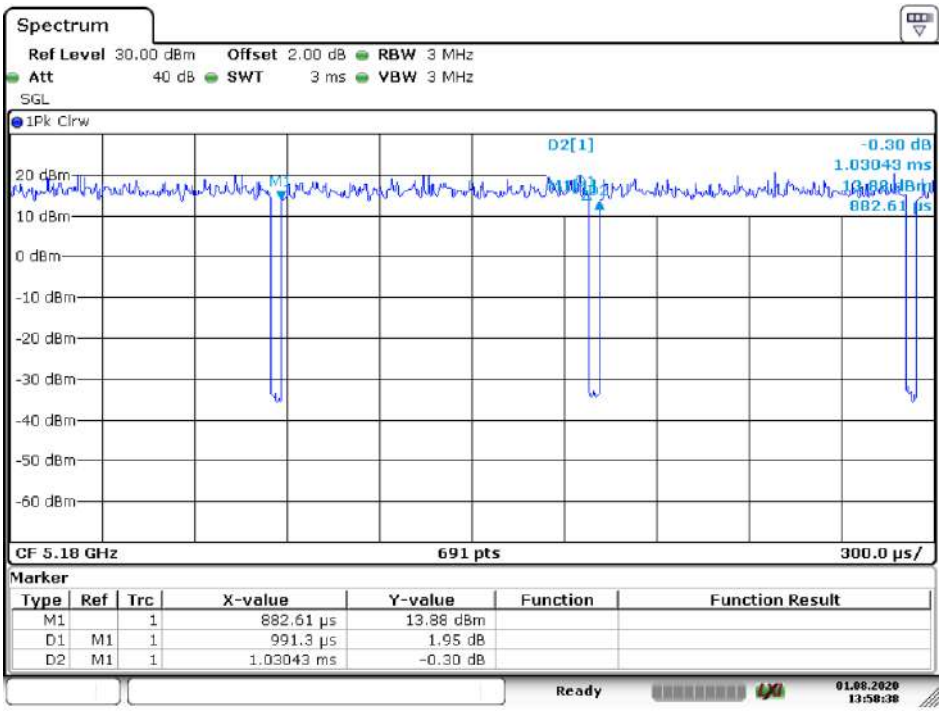
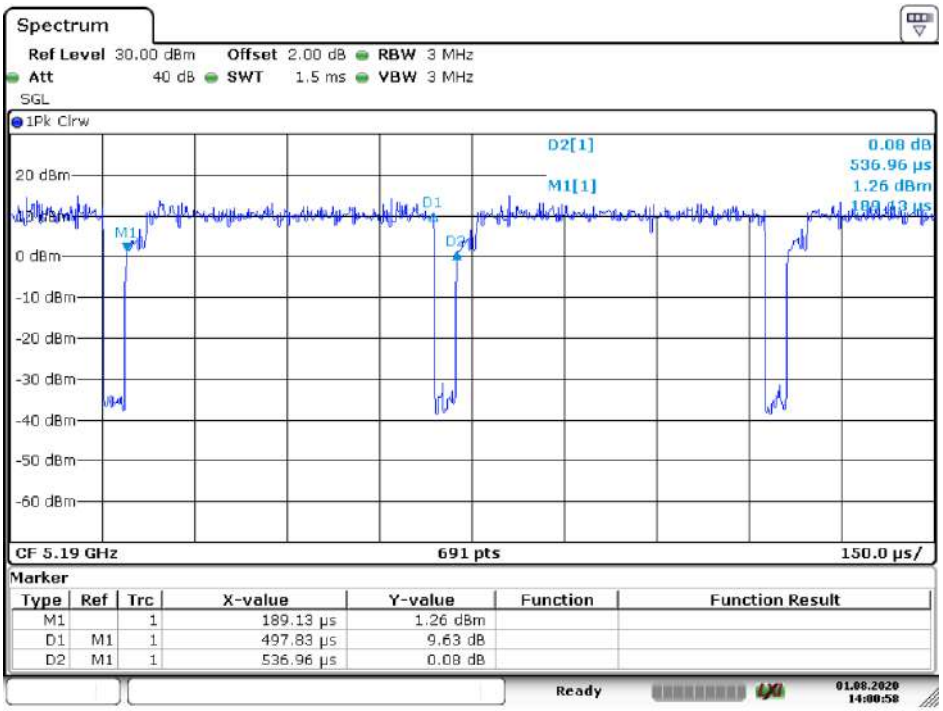
4.3.1.2.4 11AC20_MIMO



Date: 1.AUG.2020 13:58:38

4.3.1.2.5 11AC40_MIMO



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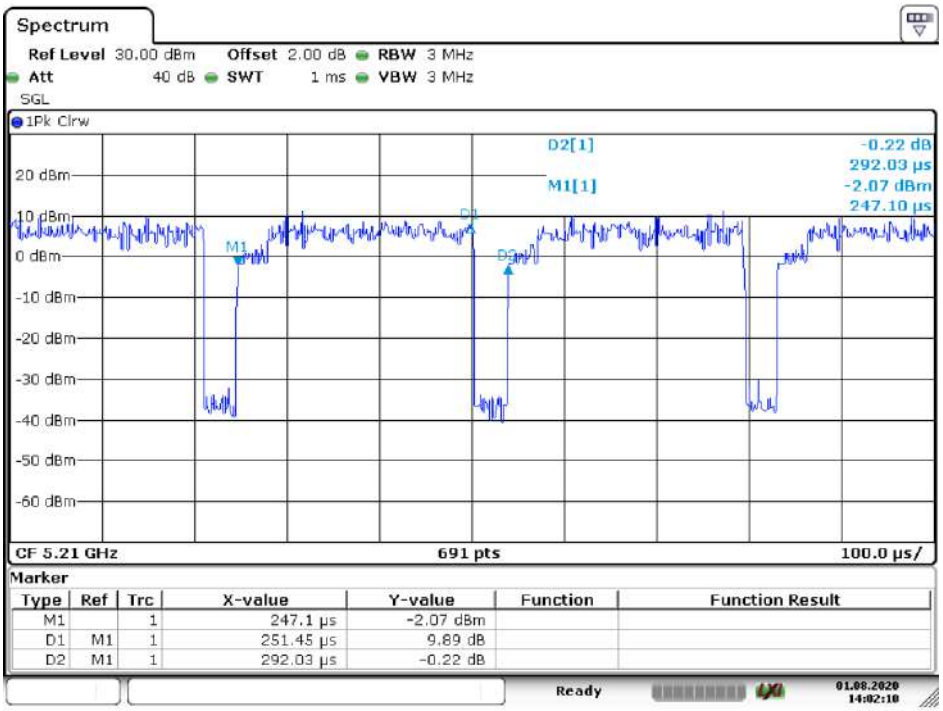
4.3.1.2.6 11AC80_MIMO



Date: 1.AUG.2020 14:02:10

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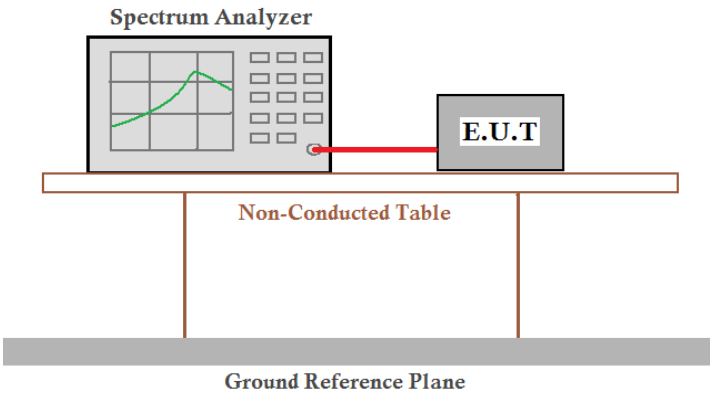
4.4 Conducted Output Power

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 that 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) 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+ 10logB
	5470-5725MHz	The lesser of 250mW(24dBm) or 11+ 10logB
	5725-5850MHz	Not exceed 1W(30dBm)
	*Where B is the 26dB emission bandwidth in MHz	
Test Results:	Pass	

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Test Mode	Test Channel	Frequency [MHz]	Meas. Level (Cond.) [dBm]			Verdict
			ANT 1	ANT 2	SUM	
11A20 CDD	36	5180	16.89	18.02	20.50	PASS
	44	5220	17.57	18.09	20.85	PASS
	48	5240	17.76	17.97	20.88	PASS
	52	5260	17.63	17.75	20.70	PASS
	60	5300	17.47	17.54	20.52	PASS
	64	5320	17.34	18.09	20.74	PASS
	100	5500	16.82	17.7	20.29	PASS
	116	5580	16.95	17.35	20.16	PASS
	140	5700	16.95	17.17	20.07	PASS
	149	5745	17.18	17.46	20.33	PASS
	157	5785	17.41	17.5	20.47	PASS
	161	5805	17.59	17.31	20.46	PASS
11N20 MIMO	36	5180	16.57	17.75	20.21	PASS
	44	5220	17.28	17.85	20.58	PASS
	48	5240	17.49	17.73	20.62	PASS
	52	5260	17.33	17.56	20.46	PASS
	60	5300	17.23	17.37	20.31	PASS
	64	5320	17.13	17.83	20.50	PASS
	100	5500	16.58	17.46	20.05	PASS
	116	5580	16.7	17.07	19.90	PASS
	140	5700	16.82	17.01	19.93	PASS
	149	5745	17	17.26	20.14	PASS
	157	5785	17.26	17.34	20.31	PASS
	161	5805	17.4	17.15	20.29	PASS
11N40 MIMO	38	5190	14.06	15.25	17.71	PASS
	46	5230	14.74	15.34	18.06	PASS
	54	5270	14.63	15.06	17.86	PASS
	62	5310	14.66	14.89	17.79	PASS
	102	5510	16.45	17.38	19.95	PASS
	134	5670	16.82	16.88	19.86	PASS
	151	5755	16.92	17.04	19.99	PASS
	159	5795	17.01	17.03	20.03	PASS
11AC20 MIMO	36	5180	16.62	17.86	20.29	PASS
	44	5220	17.33	17.99	20.68	PASS
	48	5240	17.55	17.85	20.71	PASS
	52	5260	17.4	17.74	20.58	PASS
	60	5300	17.31	17.53	20.43	PASS

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	64	5320	17.18	17.98	20.61	PASS
	100	5500	16.73	17.6	20.20	PASS
	116	5580	16.85	17.23	20.05	PASS
	140	5700	16.89	17.13	20.02	PASS
	149	5745	17.07	17.41	20.25	PASS
	157	5785	17.38	17.49	20.45	PASS
	161	5805	17.53	17.26	20.41	PASS
11AC40 MIMO	38	5190	14.11	15.34	17.78	PASS
	46	5230	14.81	15.46	18.16	PASS
	54	5270	14.62	15.15	17.90	PASS
	62	5310	14.7	15.02	17.87	PASS
	102	5510	16.69	17.5	20.12	PASS
	110	5550	16.86	17.3	20.10	PASS
	134	5670	16.62	17.01	19.83	PASS
	151	5755	17.06	17.17	20.13	PASS
	159	5795	17.13	17.21	20.18	PASS
11AC80 MIMO	42	5210	13.09	13.95	16.55	PASS
	58	5290	13.26	13.45	16.37	PASS
	106	5530	14.52	15.17	17.87	PASS
	122	5610	14.39	14.88	17.65	PASS
	155	5775	15.31	16.09	18.73	PASS

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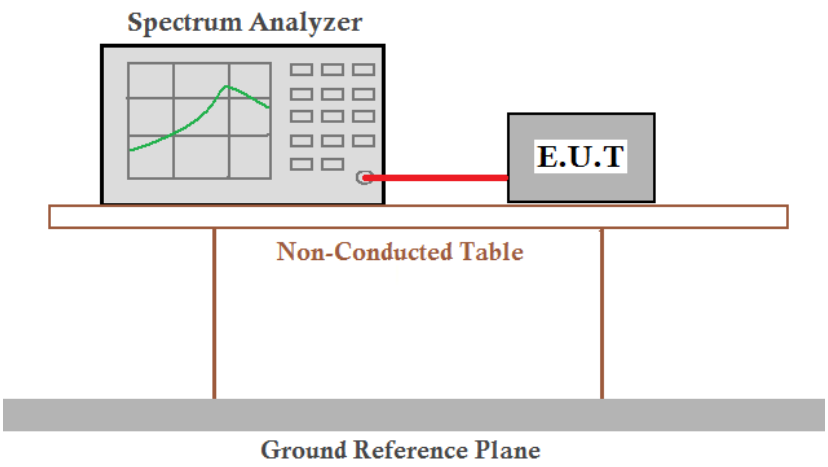
4.5 26dB Emission Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(a)
Test Method:	ANSI C63.10: 2013
Test Setup:	
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). Only the worst case is recorded in the report.
Limit:	No restriction limits
Test Results:	Pass

Test Mode	Test Channel	Frequency [MHz]	26dB Emission Bandwidth [MHz]		Verdict
			ANT 1	ANT 2	
11A20 CDD	36	5180	23.58	22.44	PASS
	44	5220	22.41	23.19	PASS
	48	5240	22.11	22.08	PASS
	52	5260	22.77	23.49	PASS
	60	5300	22.26	22.08	PASS
	64	5320	22.11	22.05	PASS

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	100	5500	22.29	22.29	PASS
	116	5580	22.2	23.46	PASS
	140	5700	21.99	21.81	PASS
11N20 MIMO	36	5180	23.67	23.61	PASS
	44	5220	23.82	23.79	PASS
	48	5240	23.61	23.58	PASS
	52	5260	23.4	23.52	PASS
	60	5300	25.14	23.94	PASS
	64	5320	23.88	23.79	PASS
	100	5500	23.61	23.4	PASS
	116	5580	23.34	23.4	PASS
	140	5700	23.88	23.22	PASS
11N40 MIMO	38	5190	42.48	41.88	PASS
	46	5230	41.82	41.94	PASS
	54	5270	42.06	41.82	PASS
	62	5310	42.12	42.24	PASS
	102	5510	42.18	42.54	PASS
	110	5550	42.84	44.64	PASS
	134	5670	41.64	42.48	PASS
11AC20 MIMO	36	5180	24.87	24.03	PASS
	44	5220	24.42	23.76	PASS
	48	5240	24.81	23.91	PASS
	52	5260	24.63	23.82	PASS
	60	5300	24.36	23.94	PASS
	64	5320	24	23.64	PASS
	100	5500	24	22.92	PASS
	116	5580	24.39	23.58	PASS
	140	5700	23.34	24.06	PASS
11AC40 MIMO	38	5190	41.88	50.28	PASS
	46	5230	41.82	42	PASS
	54	5270	41.82	41.52	PASS
	62	5310	41.76	41.28	PASS
	102	5510	41.64	42.06	PASS
	110	5550	41.82	42.48	PASS
	134	5670	41.64	41.64	PASS
11AC80 MIMO	42	5210	84.16	83.84	PASS
	58	5290	84	83.52	PASS
	106	5530	83.84	83.68	PASS
	122	5610	83.84	83.68	PASS

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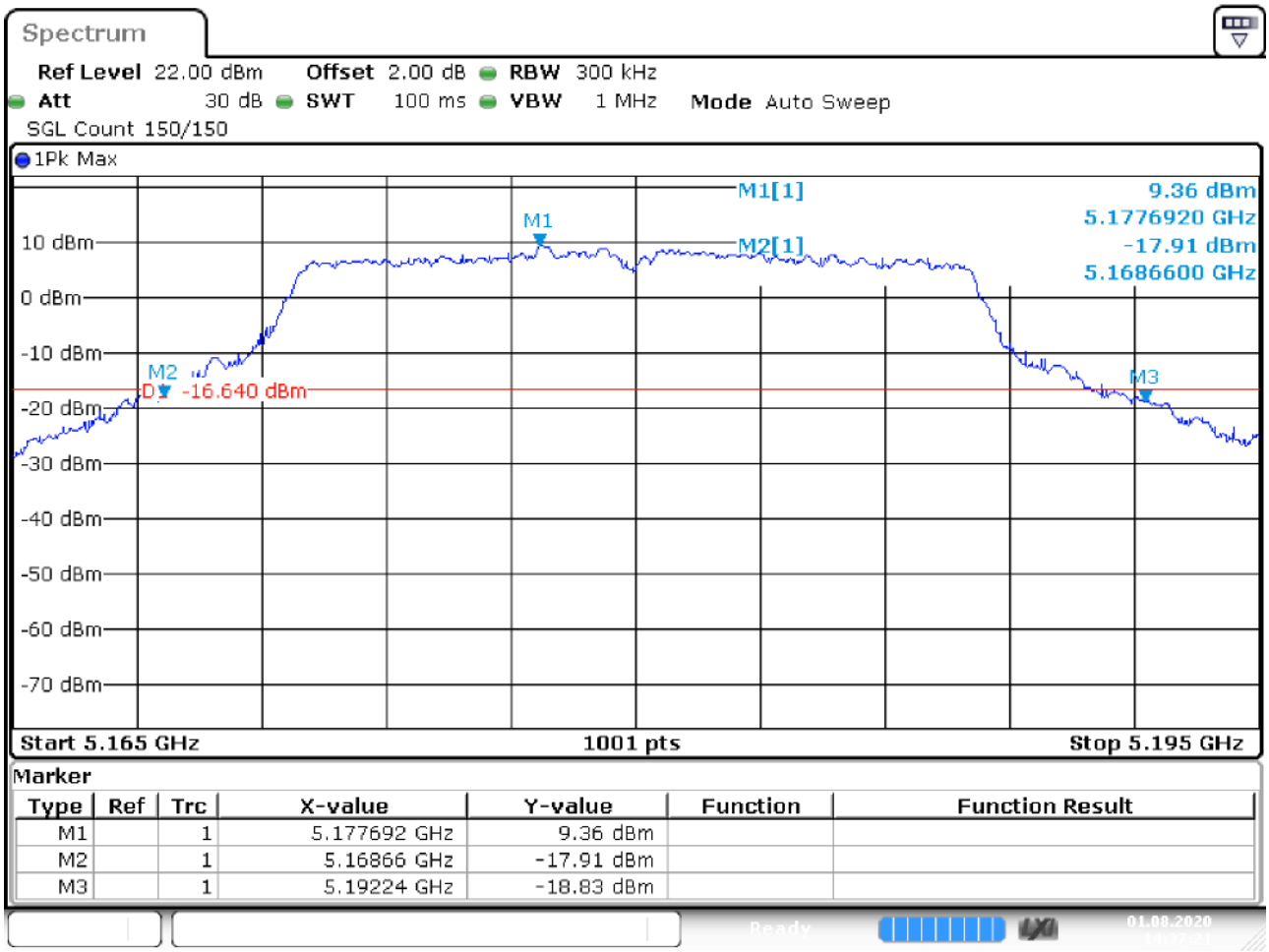
4.5.1 Plots for 26dB Emission Bandwidth

4.5.1.1 11A20_CDD_36 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.177692 GHz	9.36 dBm		
M2		1	5.16866 GHz	-17.91 dBm		
M3		1	5.19224 GHz	-18.83 dBm		

Date: 1.AUG.2020 14:37:21

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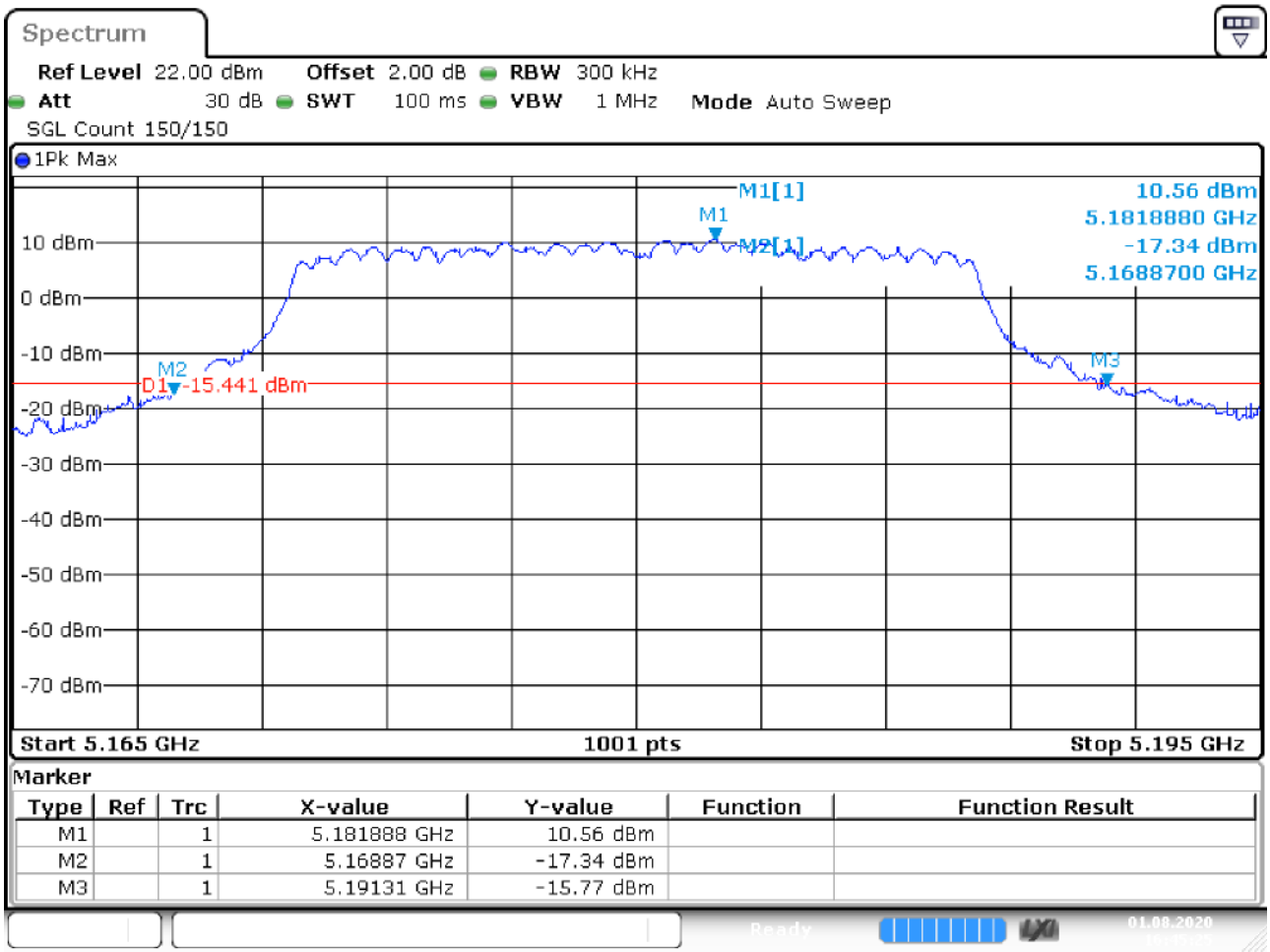
4.5.1.2 11A20_CDD_36 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.181888 GHz	10.56 dBm		
M2		1	5.16887 GHz	-17.34 dBm		
M3		1	5.19131 GHz	-15.77 dBm		

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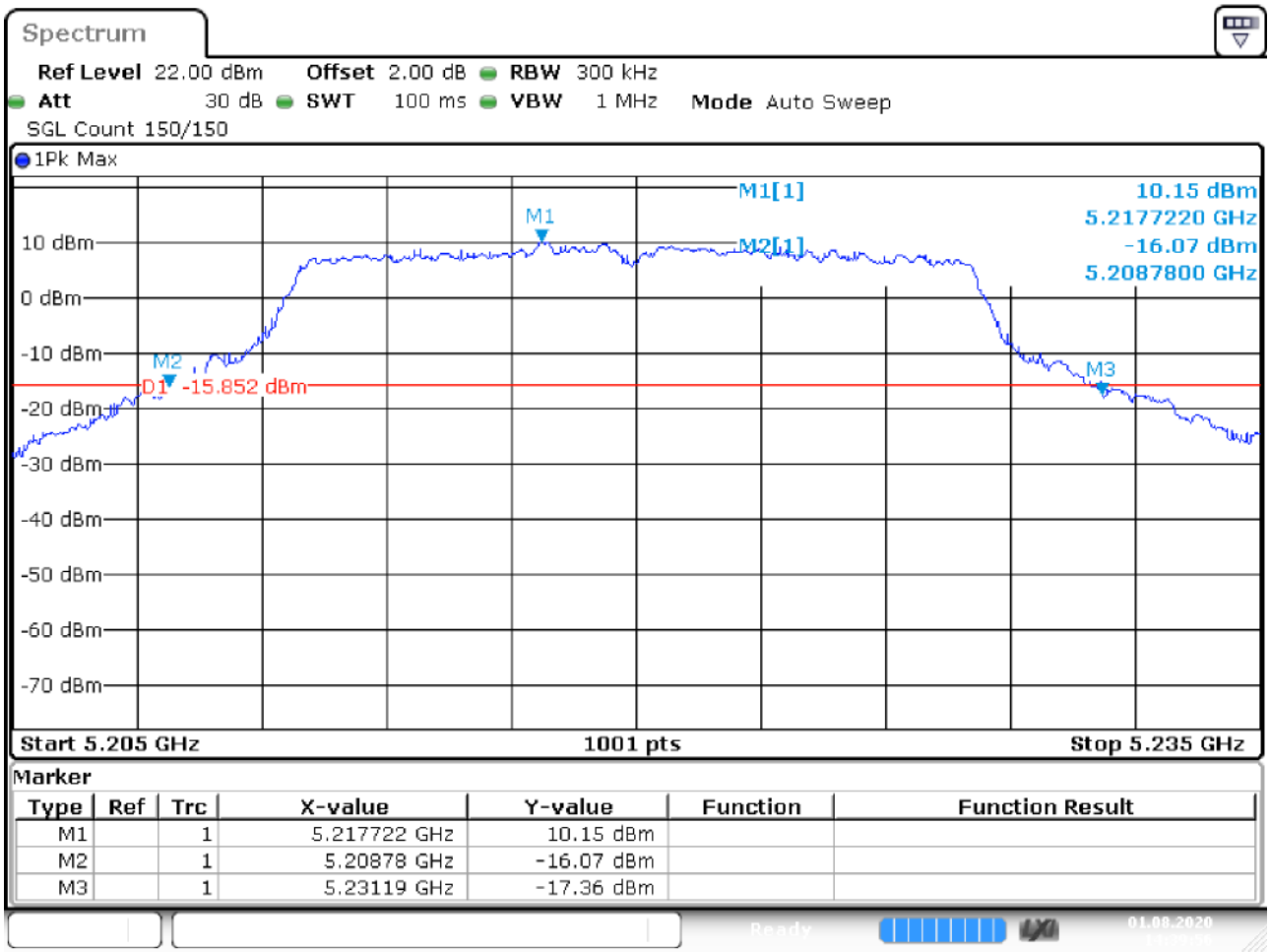
4.5.1.3 11A20_CDD_44 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.217722 GHz	10.15 dBm		
M2		1	5.20878 GHz	-16.07 dBm		
M3		1	5.23119 GHz	-17.36 dBm		

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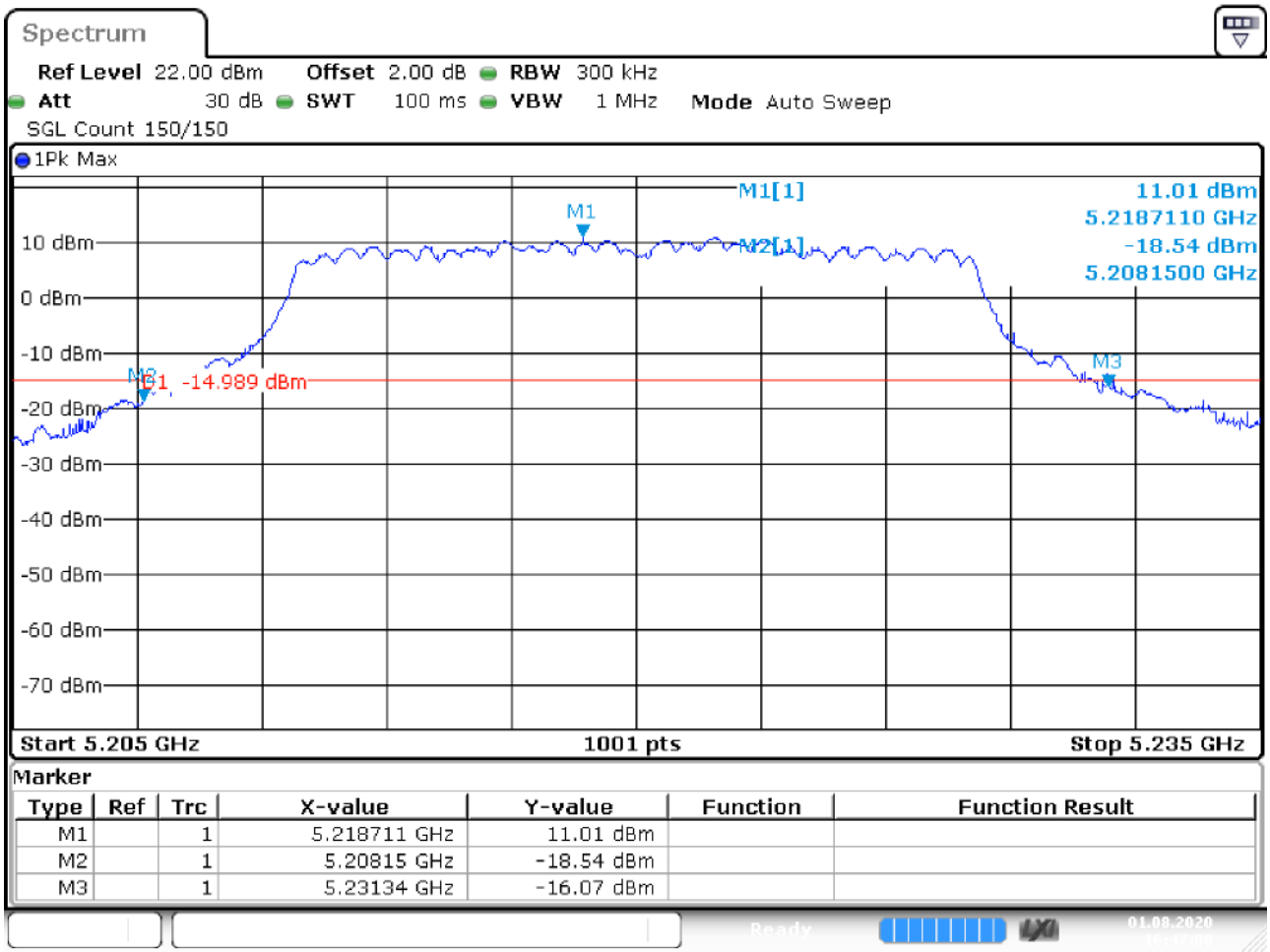
4.5.1.4 11A20_CDD_44 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.218711 GHz	11.01 dBm		
M2		1	5.20815 GHz	-18.54 dBm		
M3		1	5.23134 GHz	-16.07 dBm		

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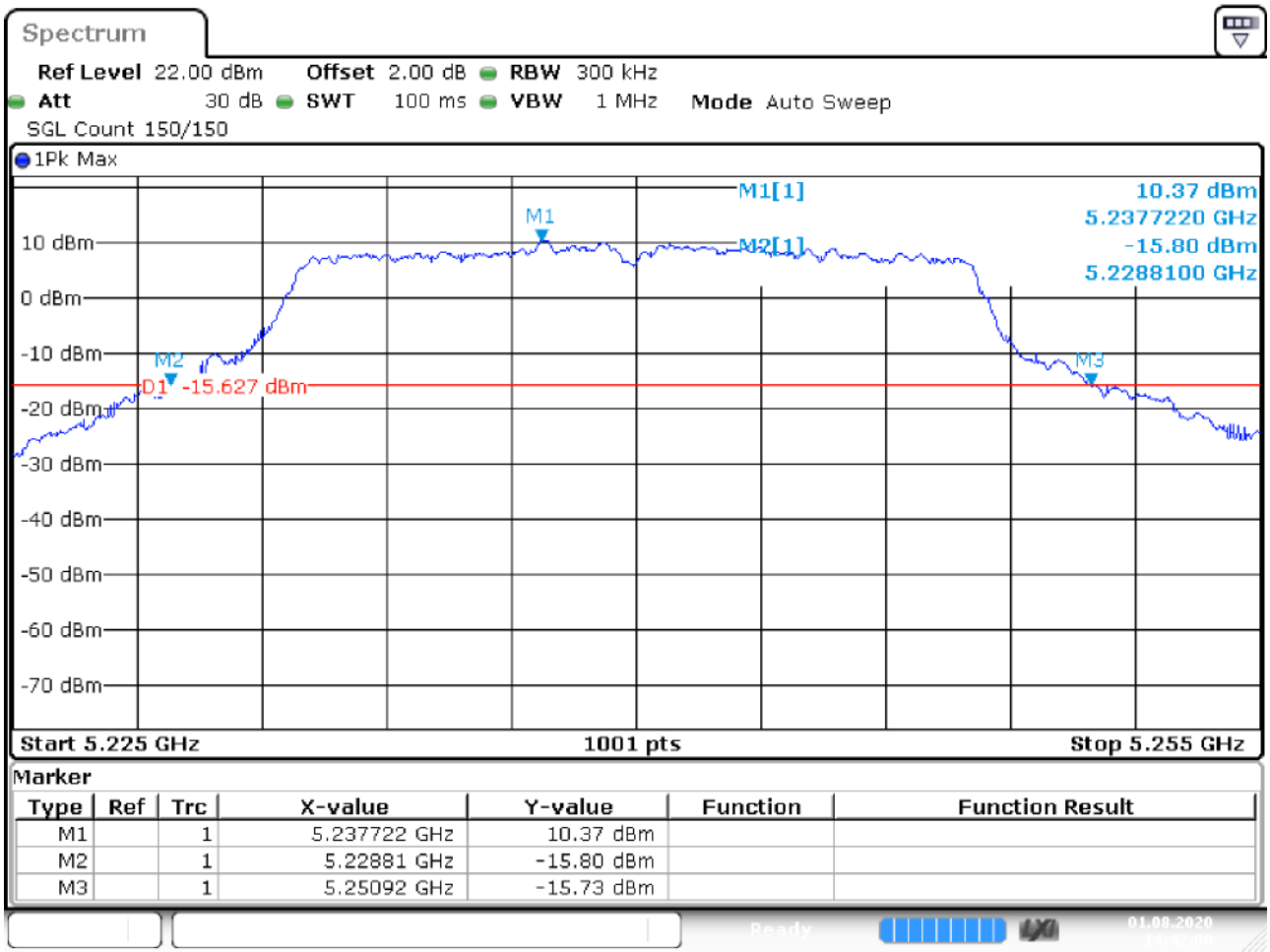
4.5.1.5 11A20_CDD_48 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.237722 GHz	10.37 dBm		
M2		1	5.22881 GHz	-15.80 dBm		
M3		1	5.25092 GHz	-15.73 dBm		

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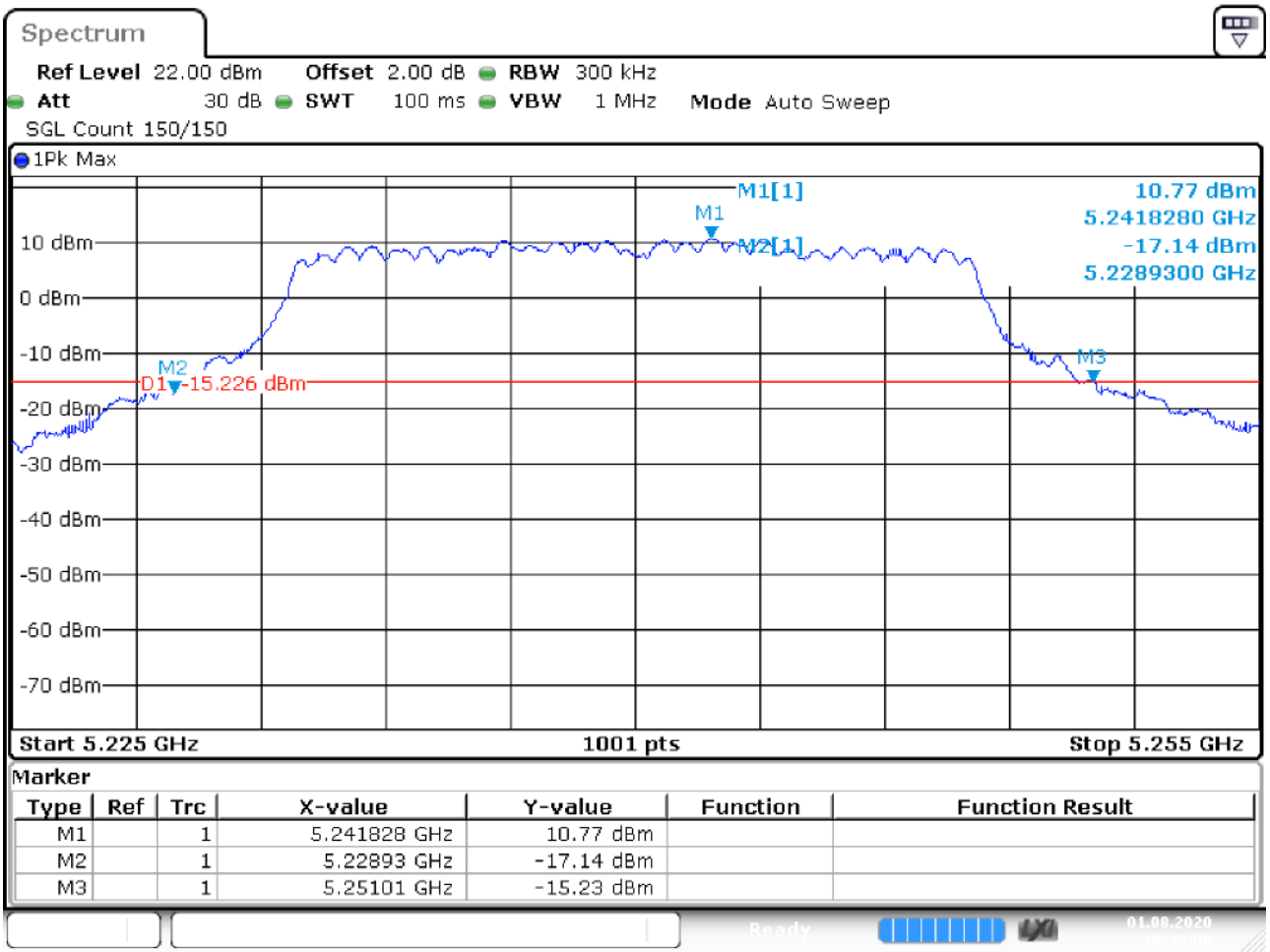
4.5.1.6 11A20_CDD_48 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.241828 GHz	10.77 dBm		
M2		1	5.22893 GHz	-17.14 dBm		
M3		1	5.25101 GHz	-15.23 dBm		

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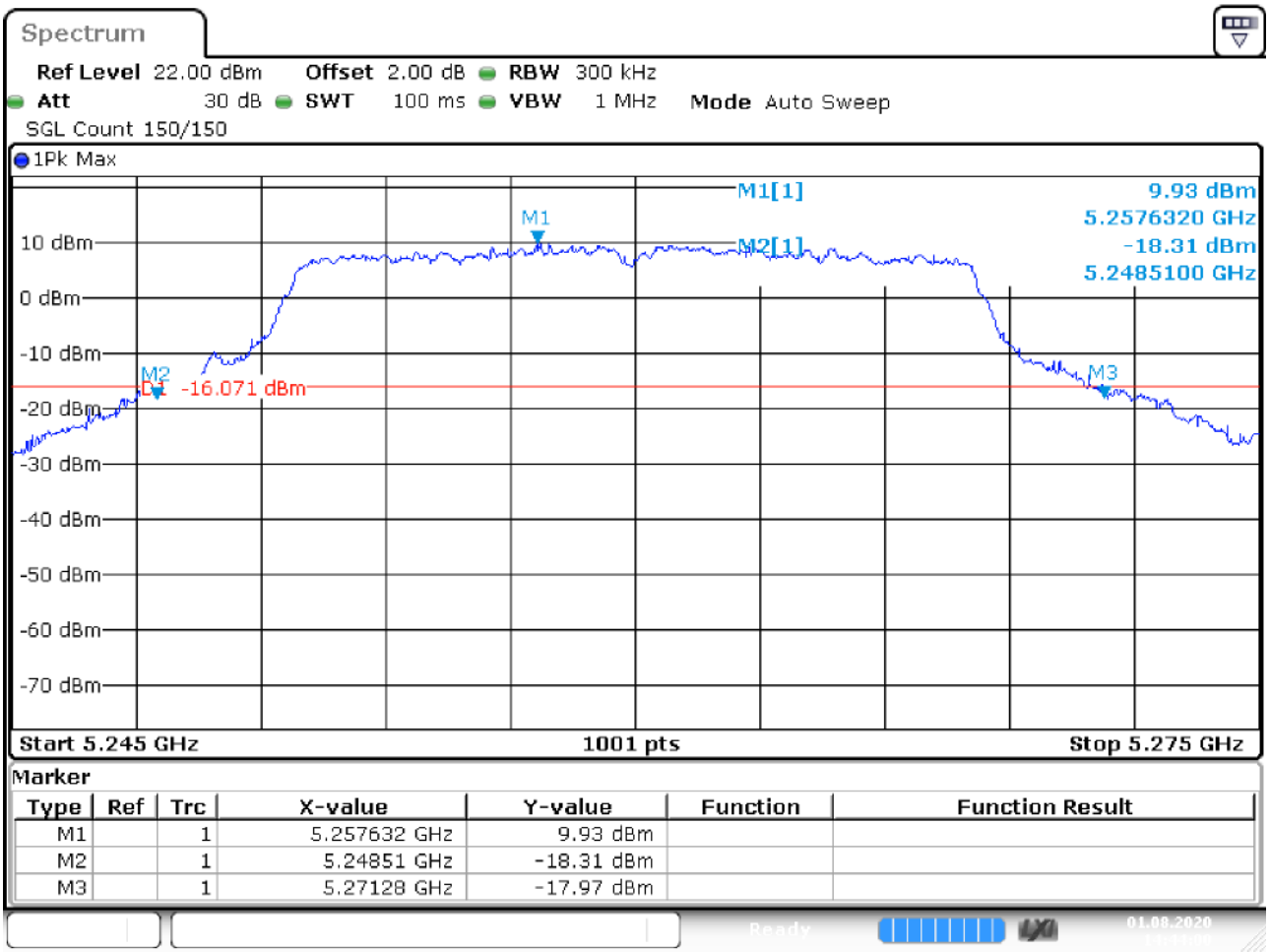
4.5.1.7 11A20_CDD_52 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.257632 GHz	9.93 dBm		
M2		1	5.24851 GHz	-18.31 dBm		
M3		1	5.27128 GHz	-17.97 dBm		

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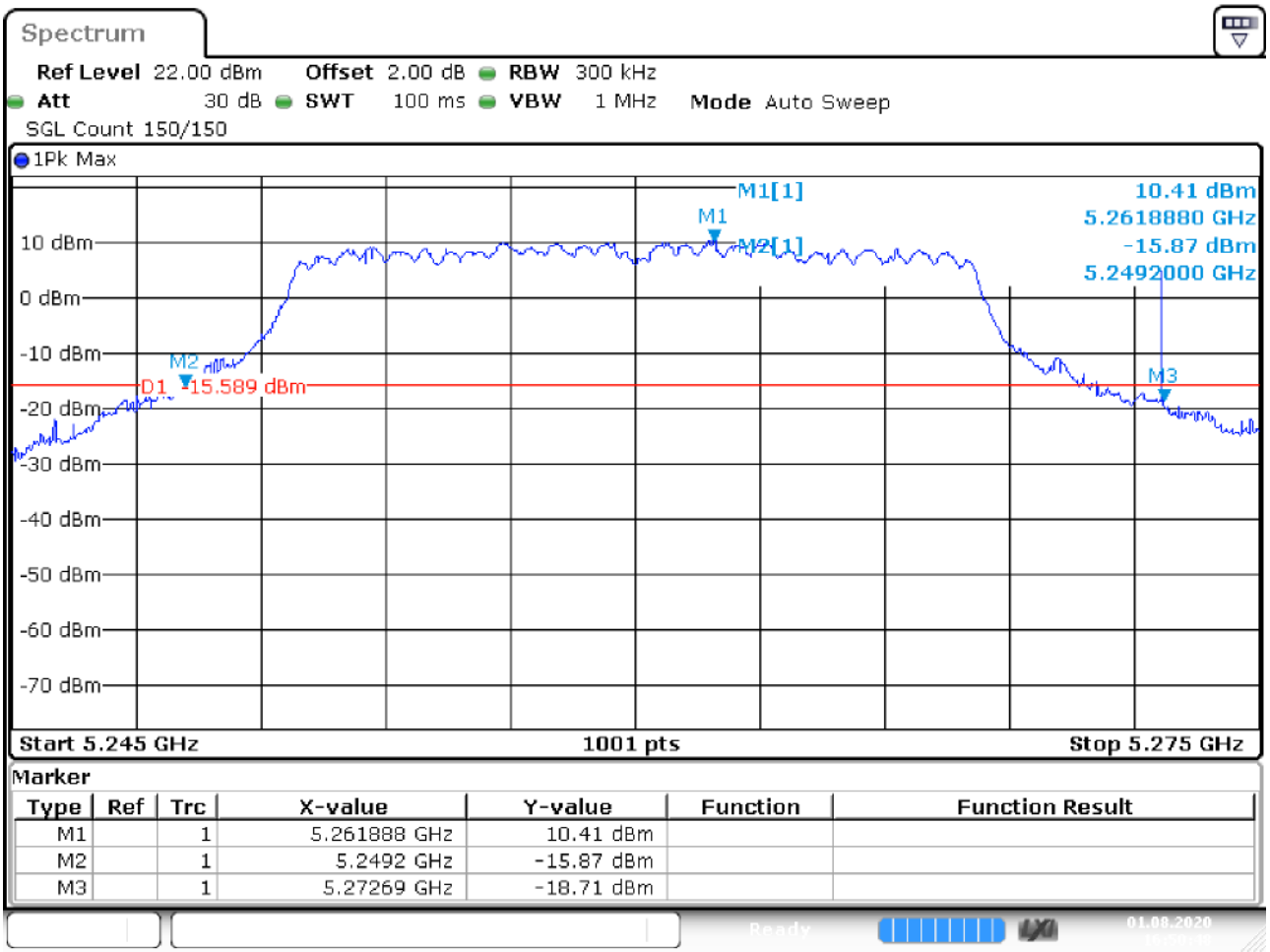
4.5.1.8 11A20_CDD_52 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.261888 GHz	10.41 dBm		
M2		1	5.2492 GHz	-15.87 dBm		
M3		1	5.27269 GHz	-18.71 dBm		

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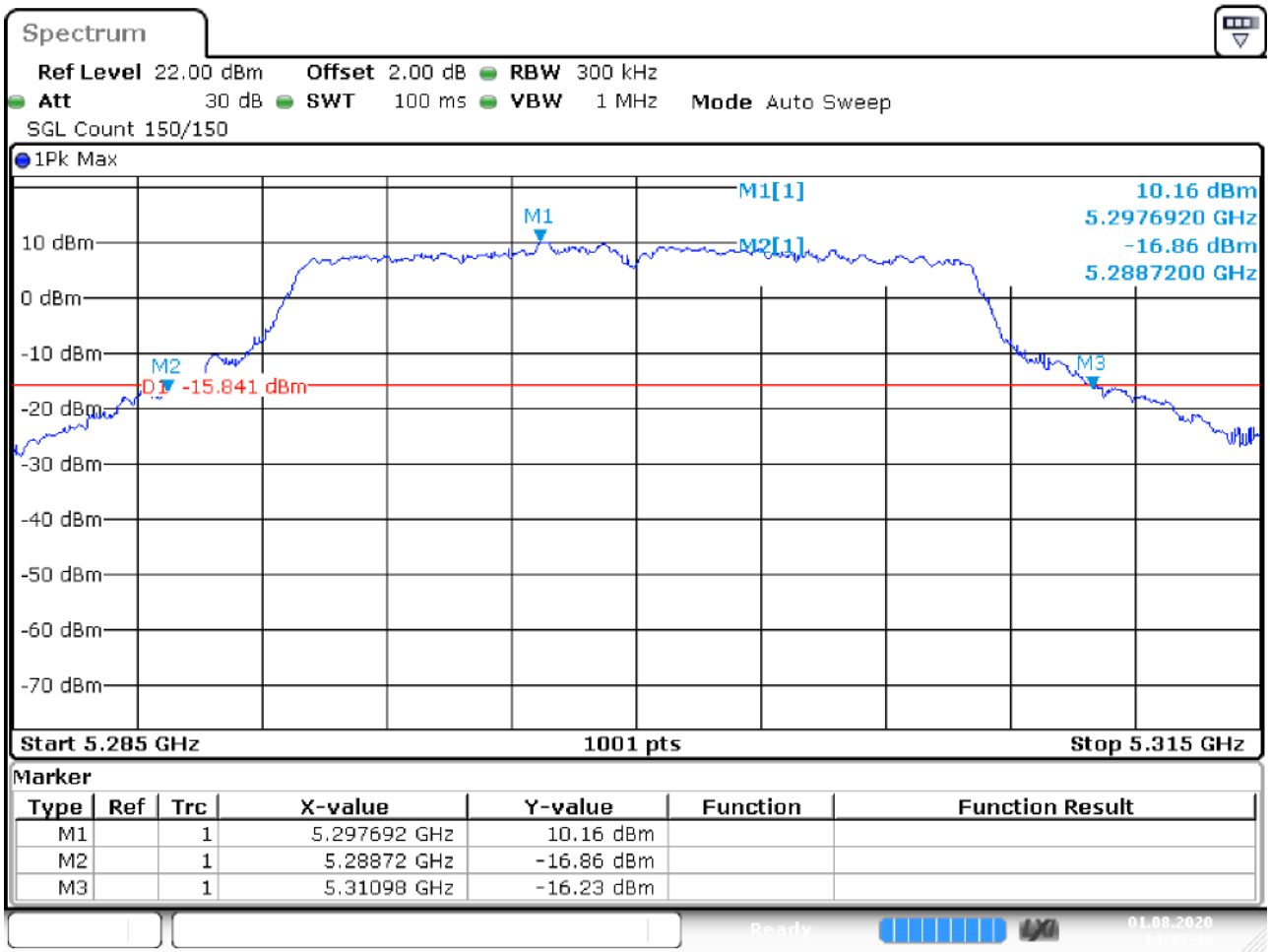
4.5.1.9 11A20_CDD_60 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.297692 GHz	10.16 dBm		
M2		1	5.28872 GHz	-16.86 dBm		
M3		1	5.31098 GHz	-16.23 dBm		

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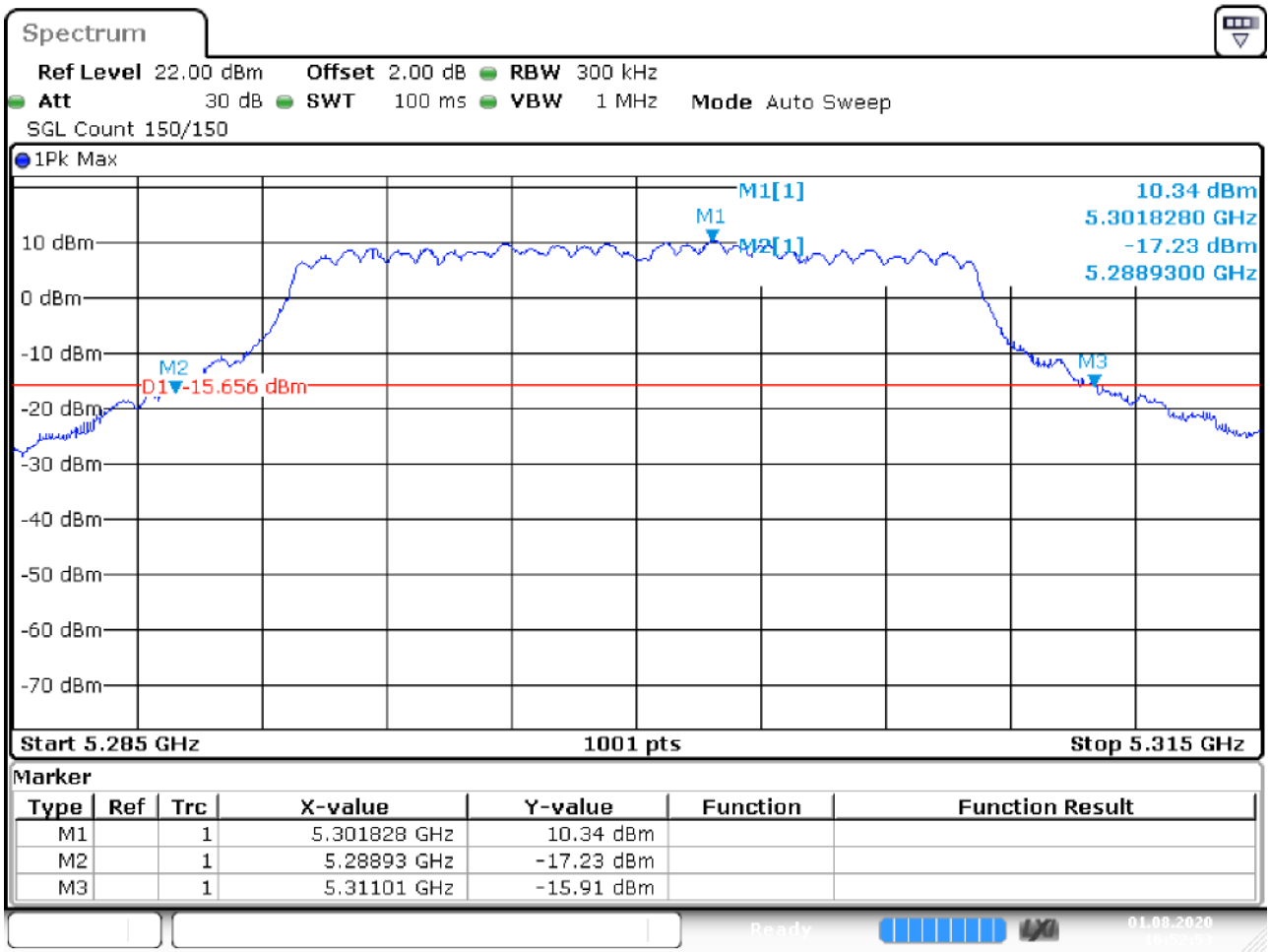
4.5.1.10 11A20_CDD_60 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.301828 GHz	10.34 dBm		
M2		1	5.28893 GHz	-17.23 dBm		
M3		1	5.31101 GHz	-15.91 dBm		

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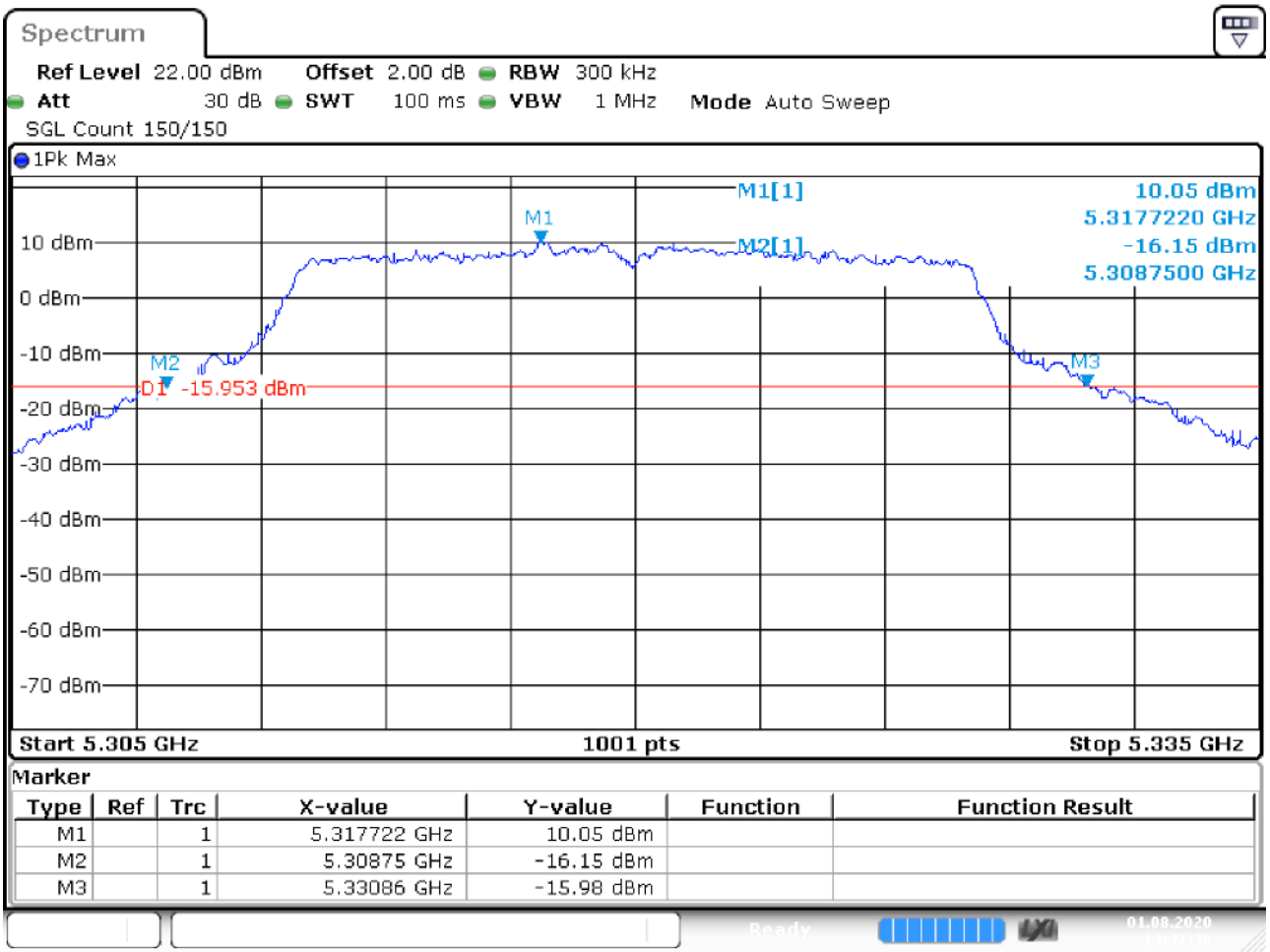
4.5.1.11 11A20_CDD_64 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.317722 GHz	10.05 dBm		
M2		1	5.30875 GHz	-16.15 dBm		
M3		1	5.33086 GHz	-15.98 dBm		

Date: 1.AUG.2020 14:47:39

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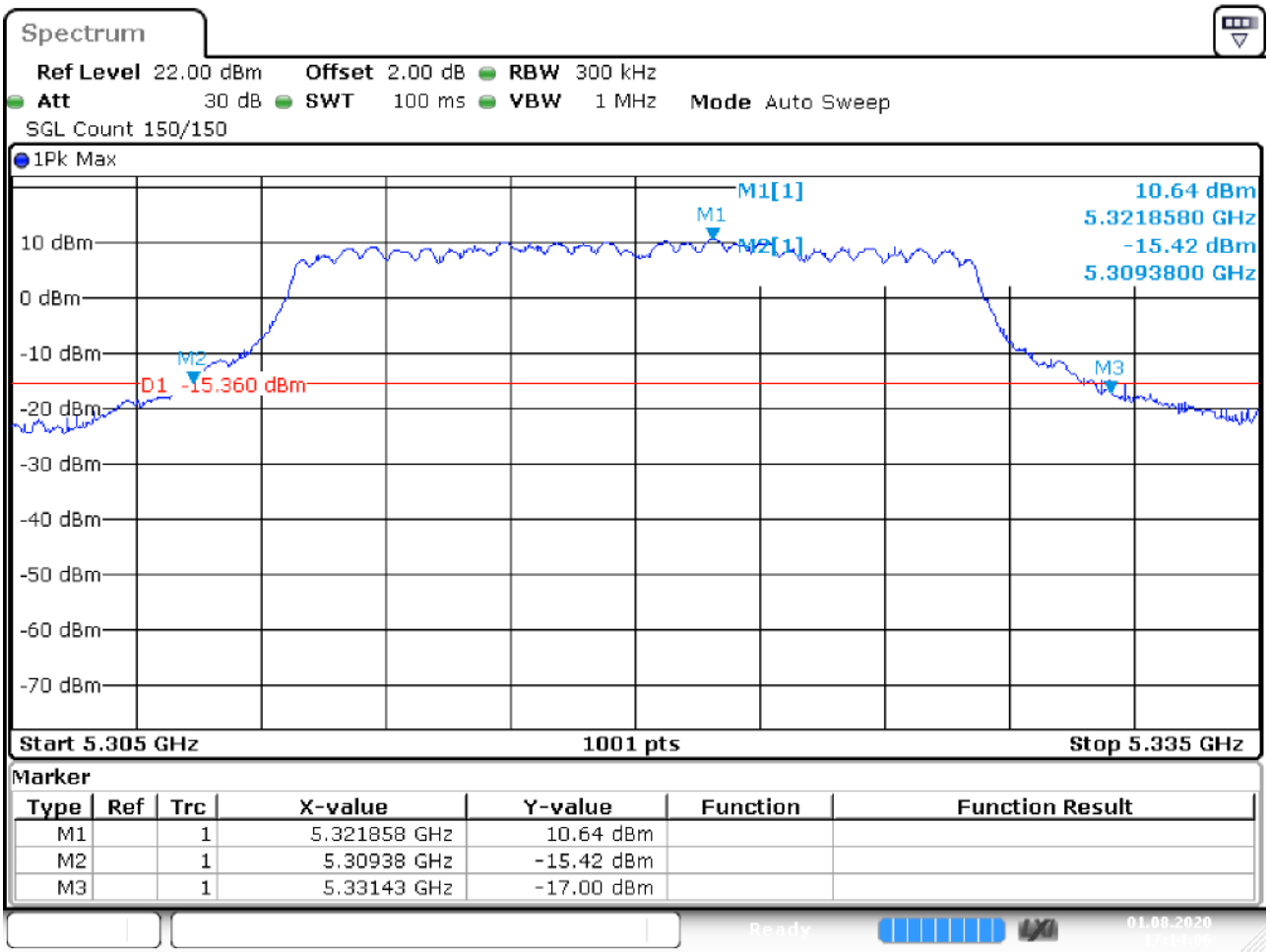
4.5.1.12 11A20_CDD_64 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.321858 GHz	10.64 dBm		
M2		1	5.30938 GHz	-15.42 dBm		
M3		1	5.33143 GHz	-17.00 dBm		

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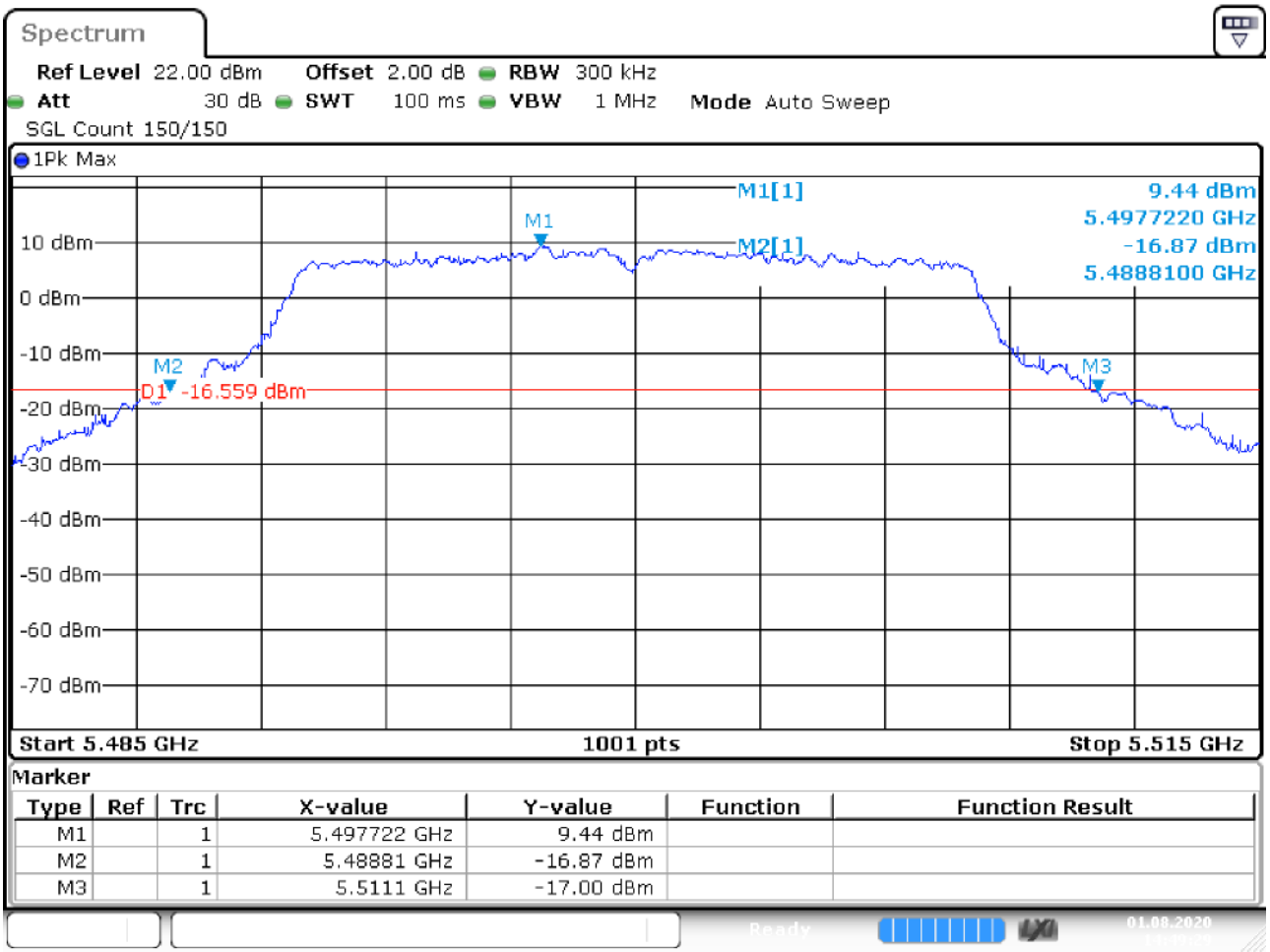
4.5.1.13 11A20_CDD_100 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.497722 GHz	9.44 dBm		
M2		1	5.48881 GHz	-16.87 dBm		
M3		1	5.5111 GHz	-17.00 dBm		

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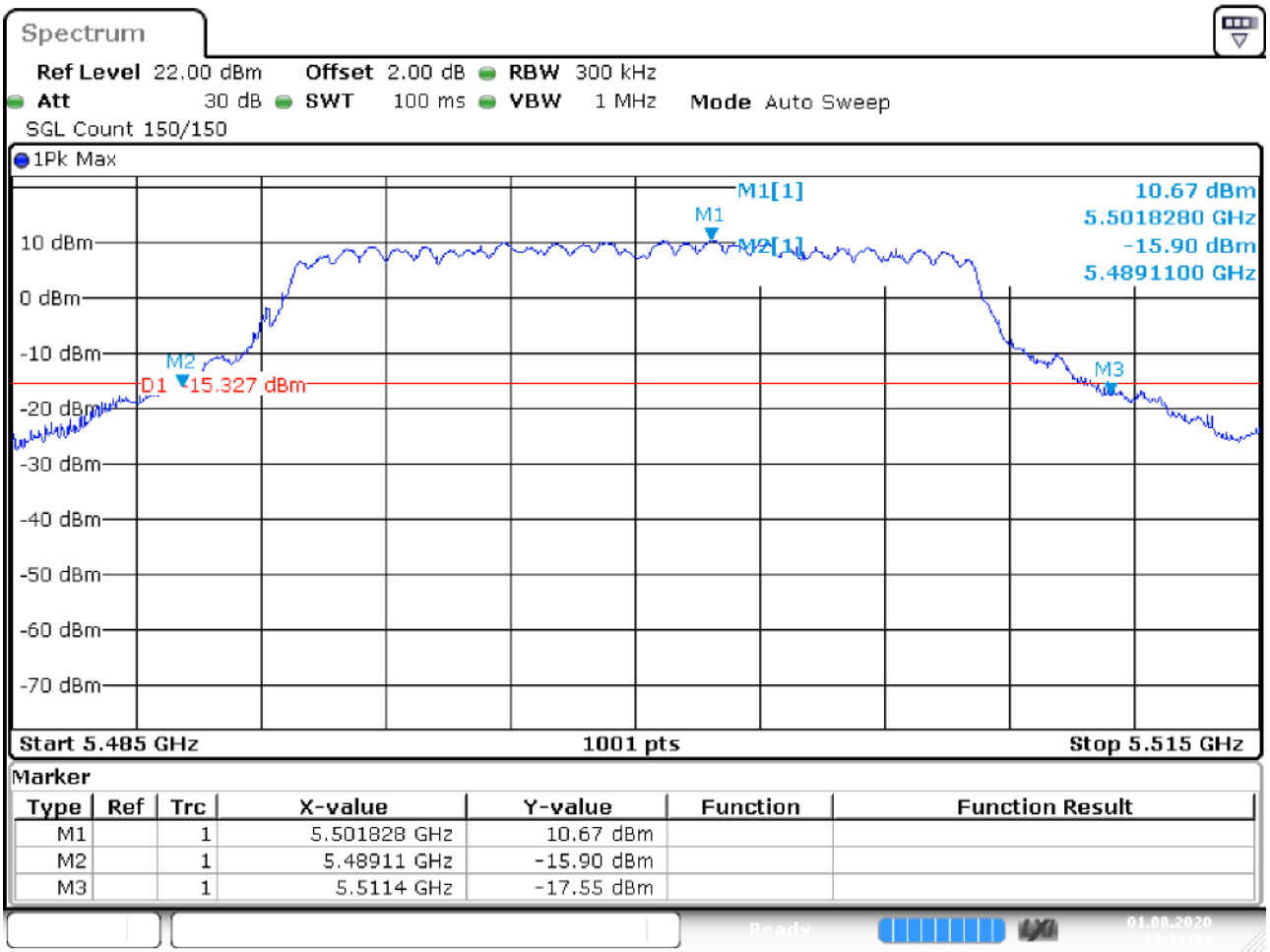
4.5.1.14 11A20_CDD_100 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.501828 GHz	10.67 dBm		
M2		1	5.48911 GHz	-15.90 dBm		
M3		1	5.5114 GHz	-17.55 dBm		

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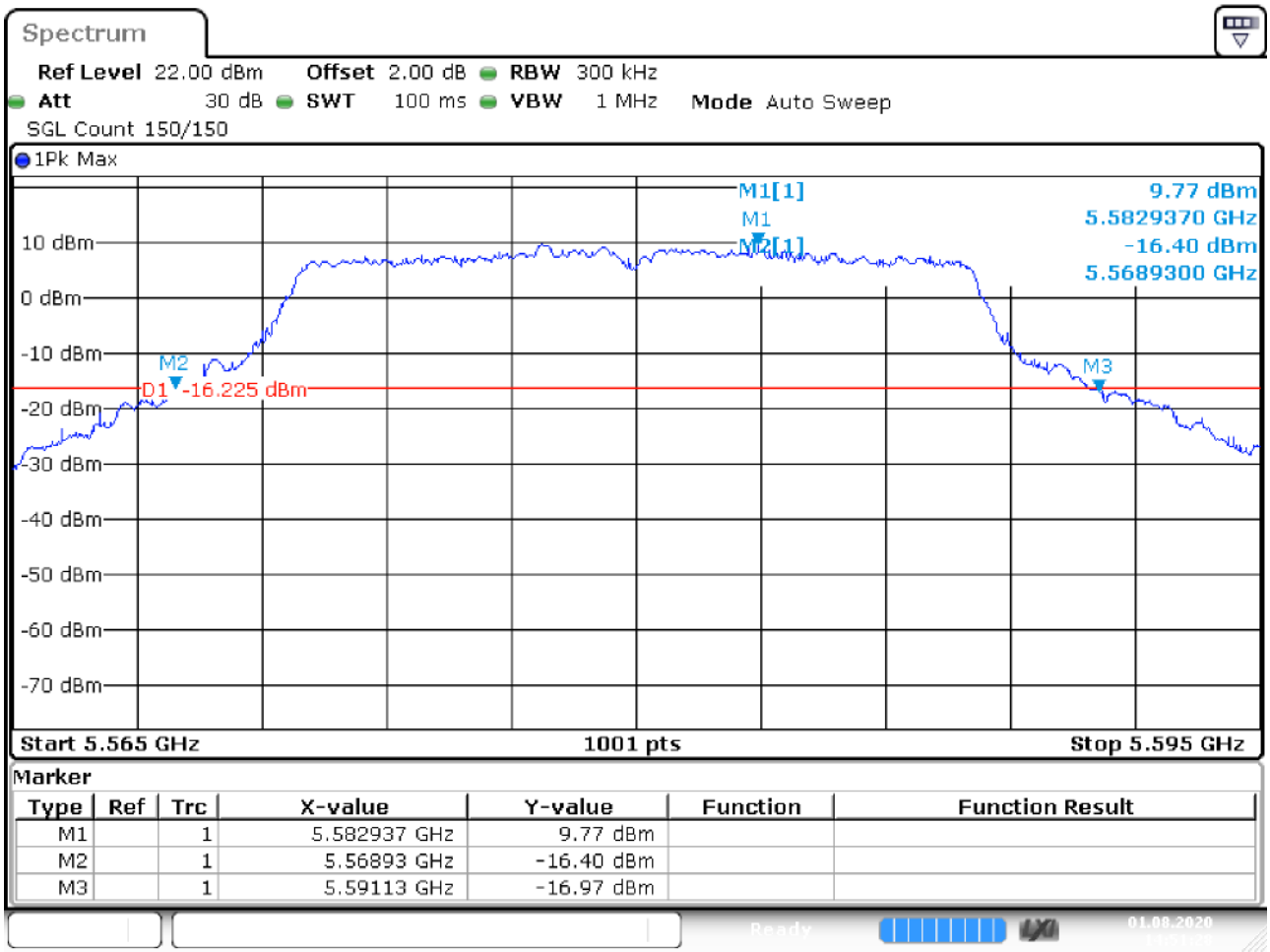
4.5.1.15 11A20_CDD_116 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.582937 GHz	9.77 dBm		
M2		1	5.56893 GHz	-16.40 dBm		
M3		1	5.59113 GHz	-16.97 dBm		

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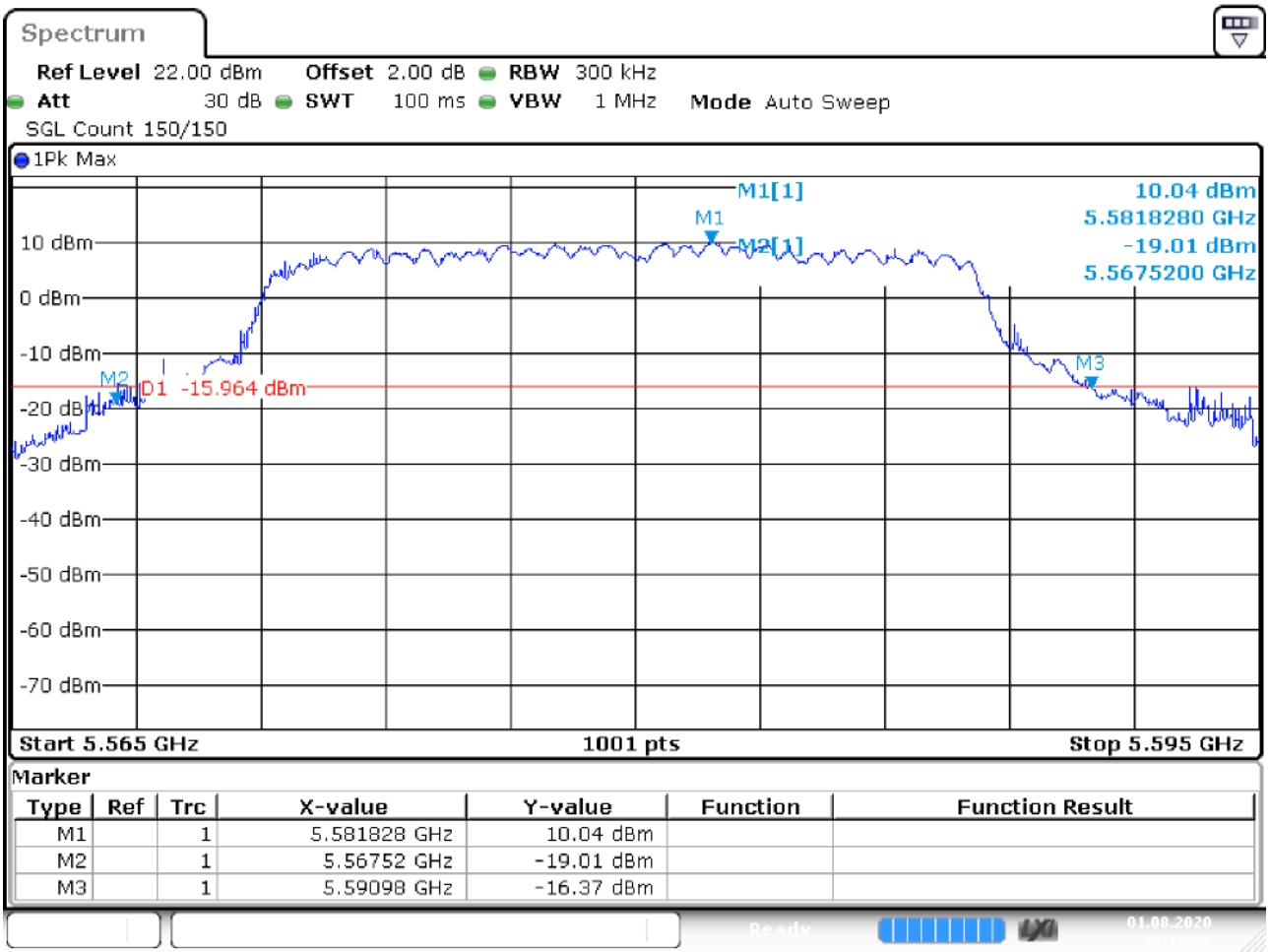
4.5.1.16 11A20_CDD_116 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.581828 GHz	10.04 dBm		
M2		1	5.56752 GHz	-19.01 dBm		
M3		1	5.59098 GHz	-16.37 dBm		

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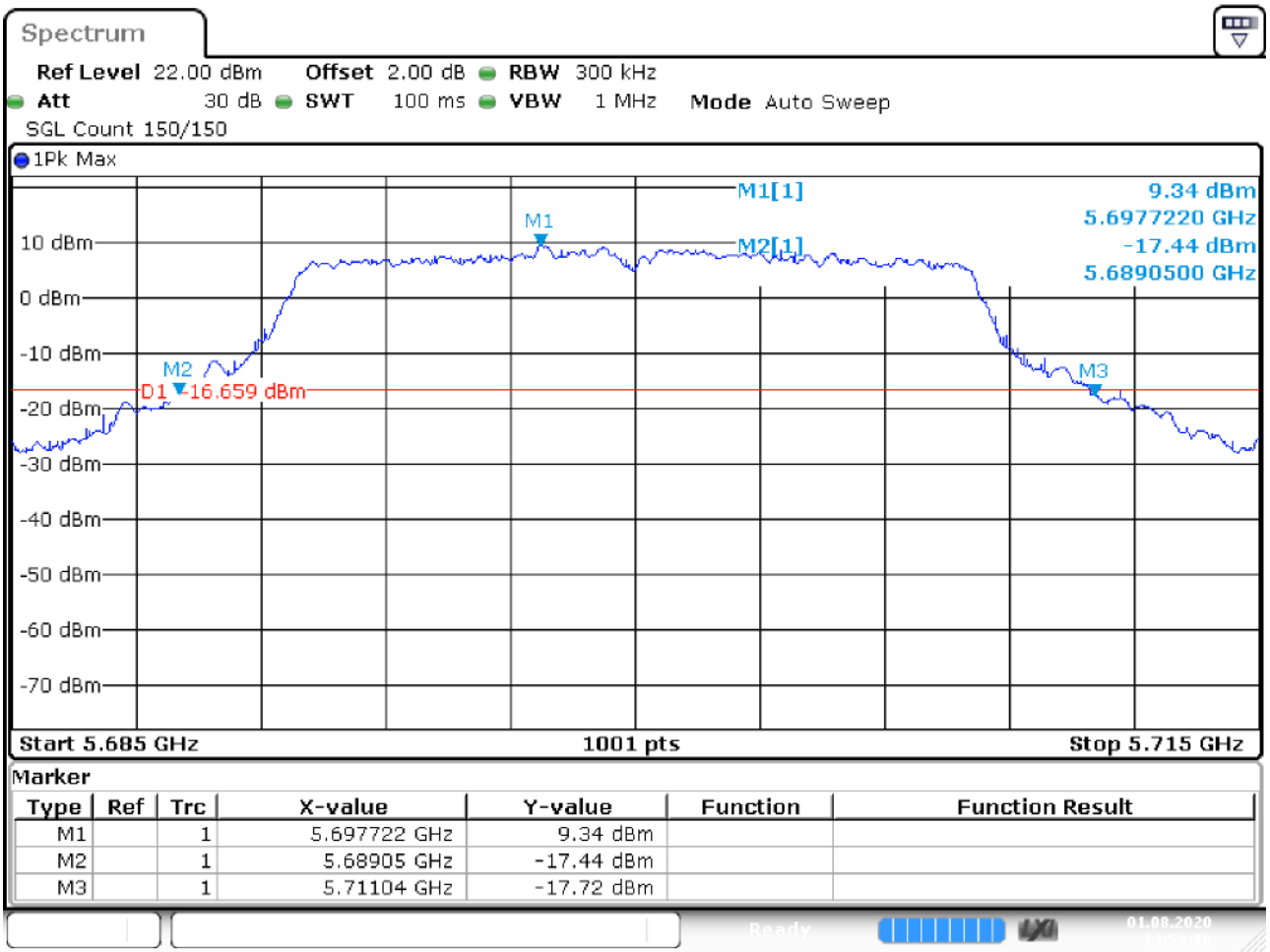
4.5.1.17 11A20_CDD_140 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.697722 GHz	9.34 dBm		
M2		1	5.68905 GHz	-17.44 dBm		
M3		1	5.71104 GHz	-17.72 dBm		

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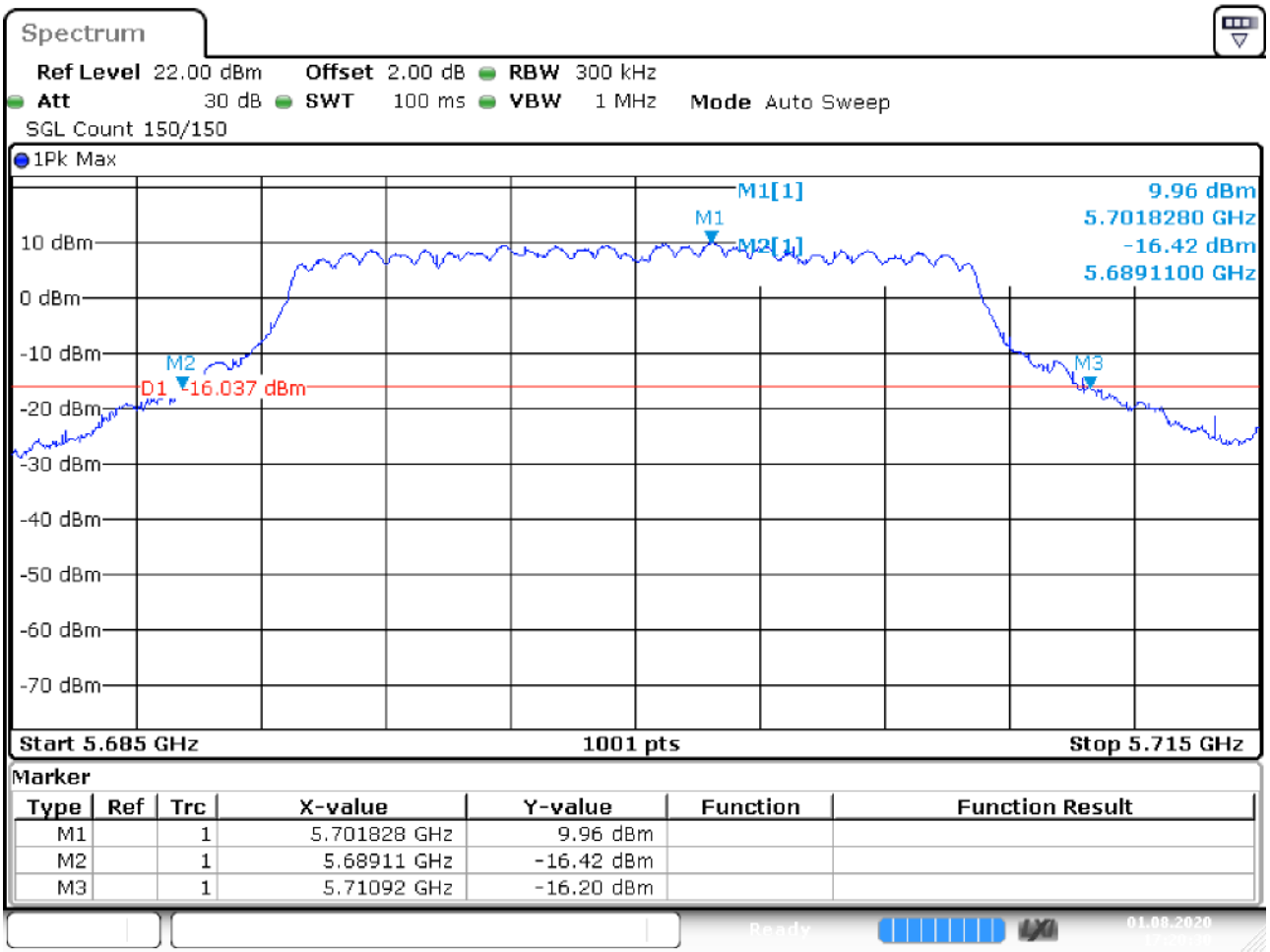
4.5.1.18 11A20_CDD_140 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.701828 GHz	9.96 dBm		
M2		1	5.68911 GHz	-16.42 dBm		
M3		1	5.71092 GHz	-16.20 dBm		

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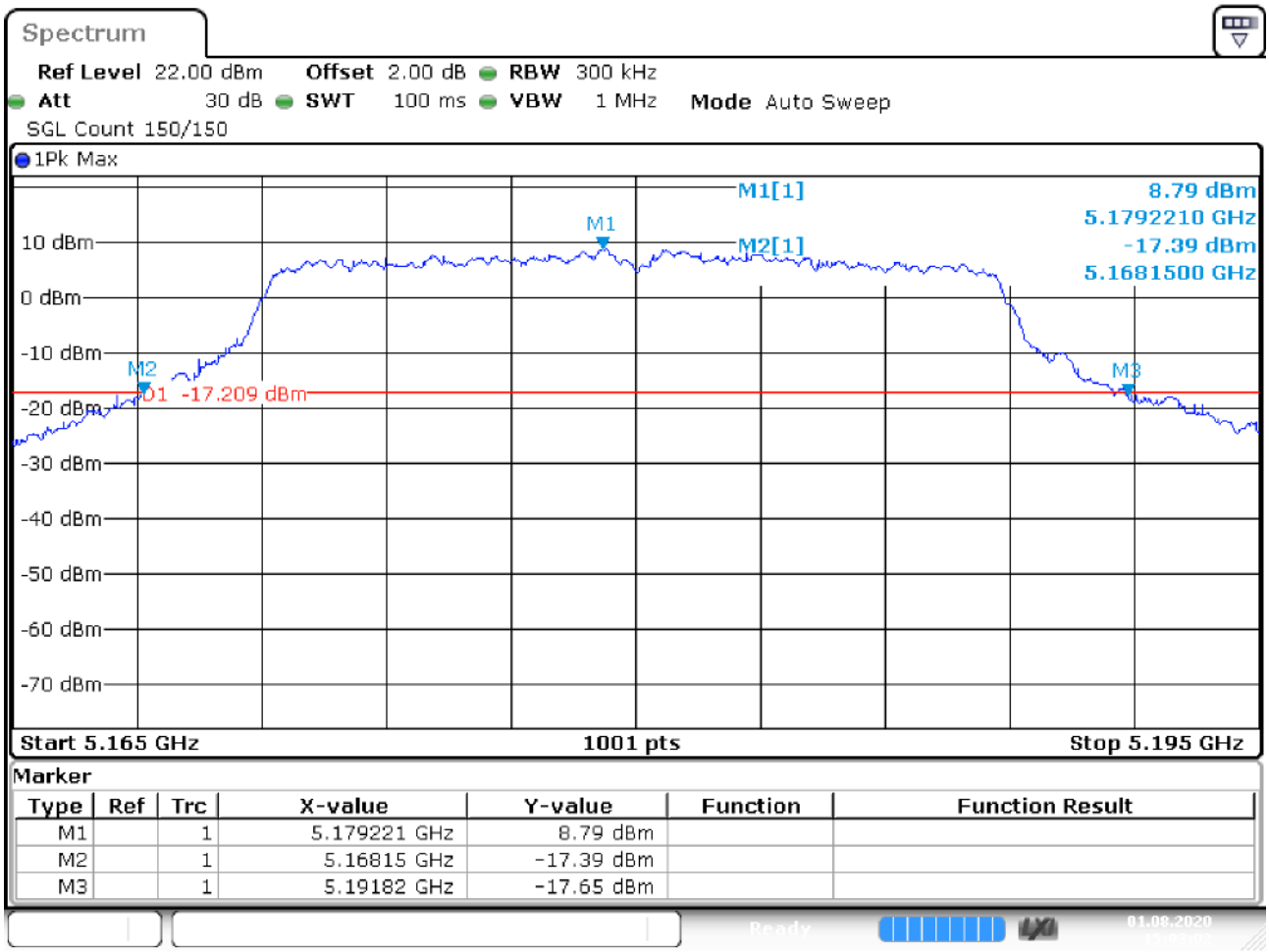
4.5.1.19 11N20MIMO_36 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.179221 GHz	8.79 dBm		
M2		1	5.16815 GHz	-17.39 dBm		
M3		1	5.19182 GHz	-17.65 dBm		

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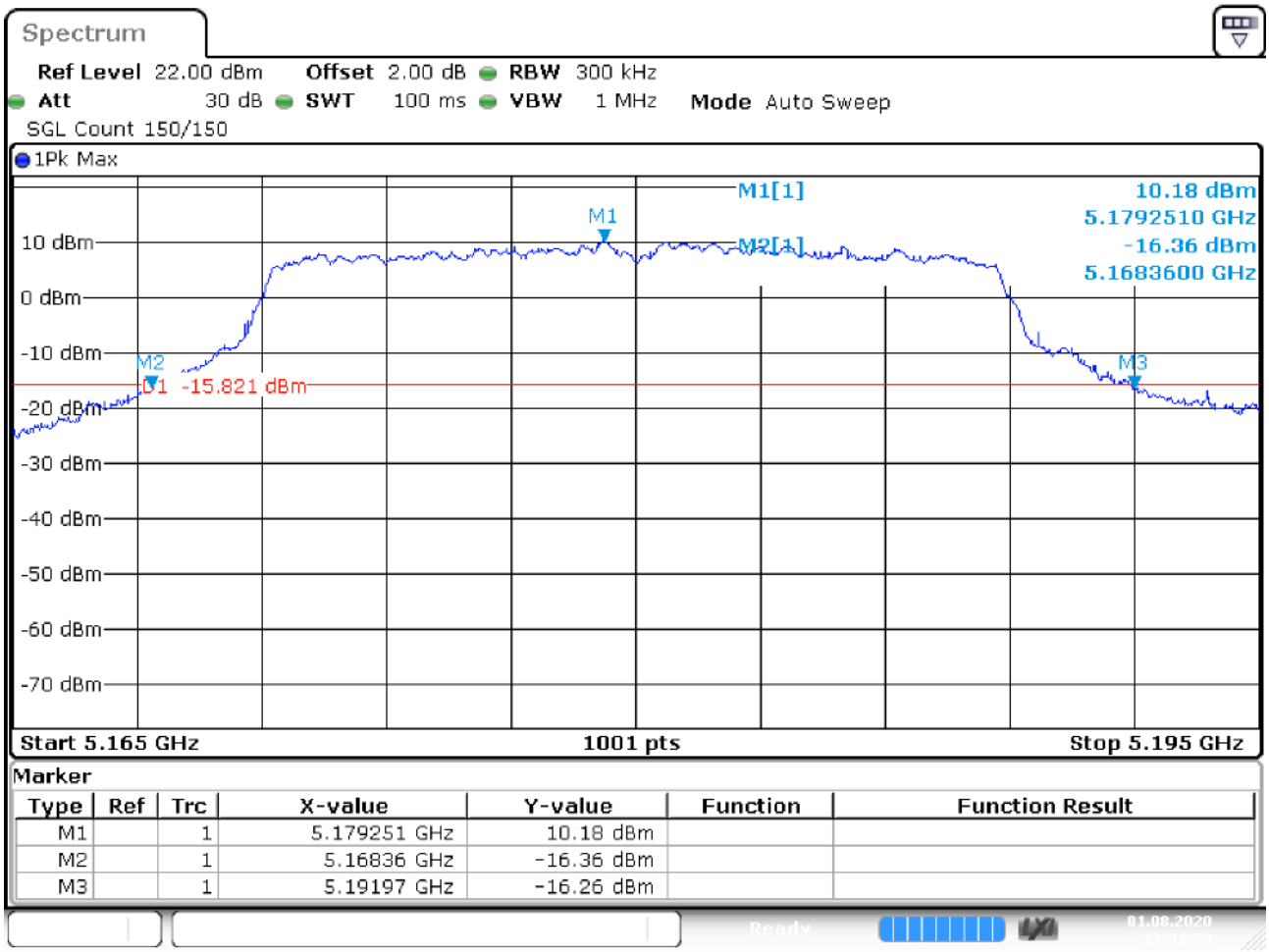
4.5.1.20 11N20MIMO_36 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.179251 GHz	10.18 dBm		
M2		1	5.16836 GHz	-16.36 dBm		
M3		1	5.19197 GHz	-16.26 dBm		

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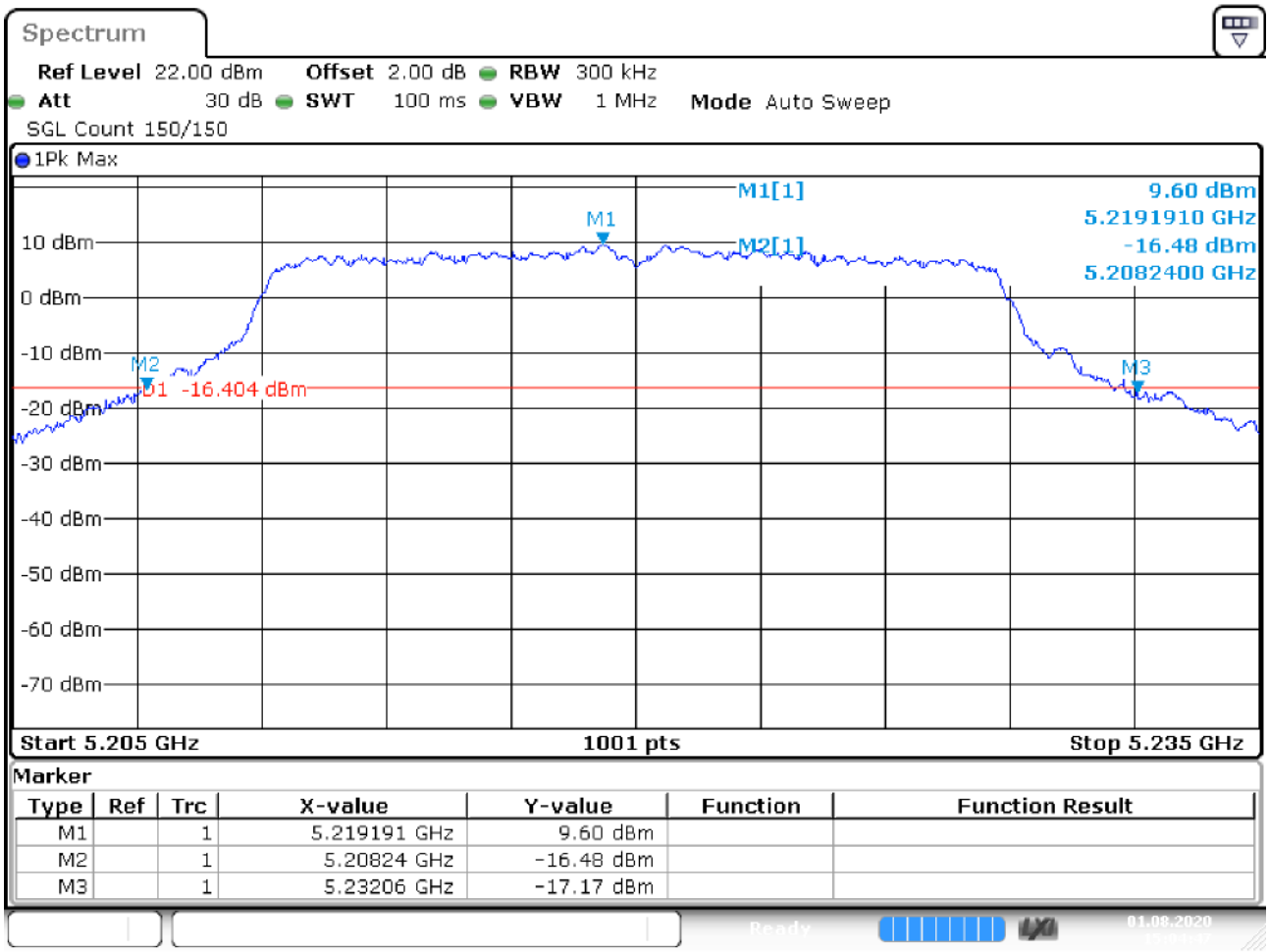
4.5.1.21 11N20MIMO_44 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.219191 GHz	9.60 dBm		
M2		1	5.20824 GHz	-16.48 dBm		
M3		1	5.23206 GHz	-17.17 dBm		

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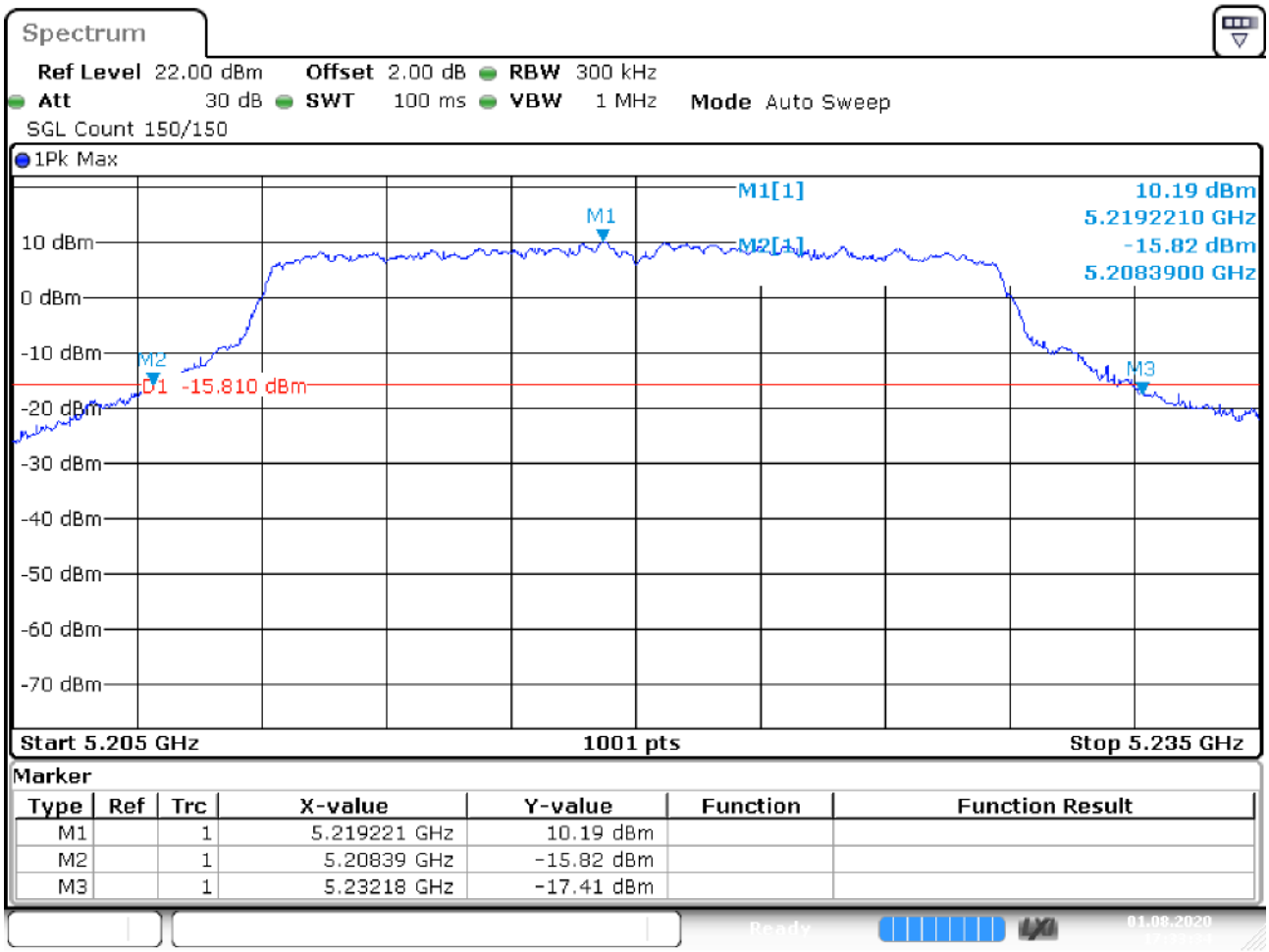
4.5.1.22 11N20MIMO_44 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.219221 GHz	10.19 dBm		
M2		1	5.20839 GHz	-15.82 dBm		
M3		1	5.23218 GHz	-17.41 dBm		

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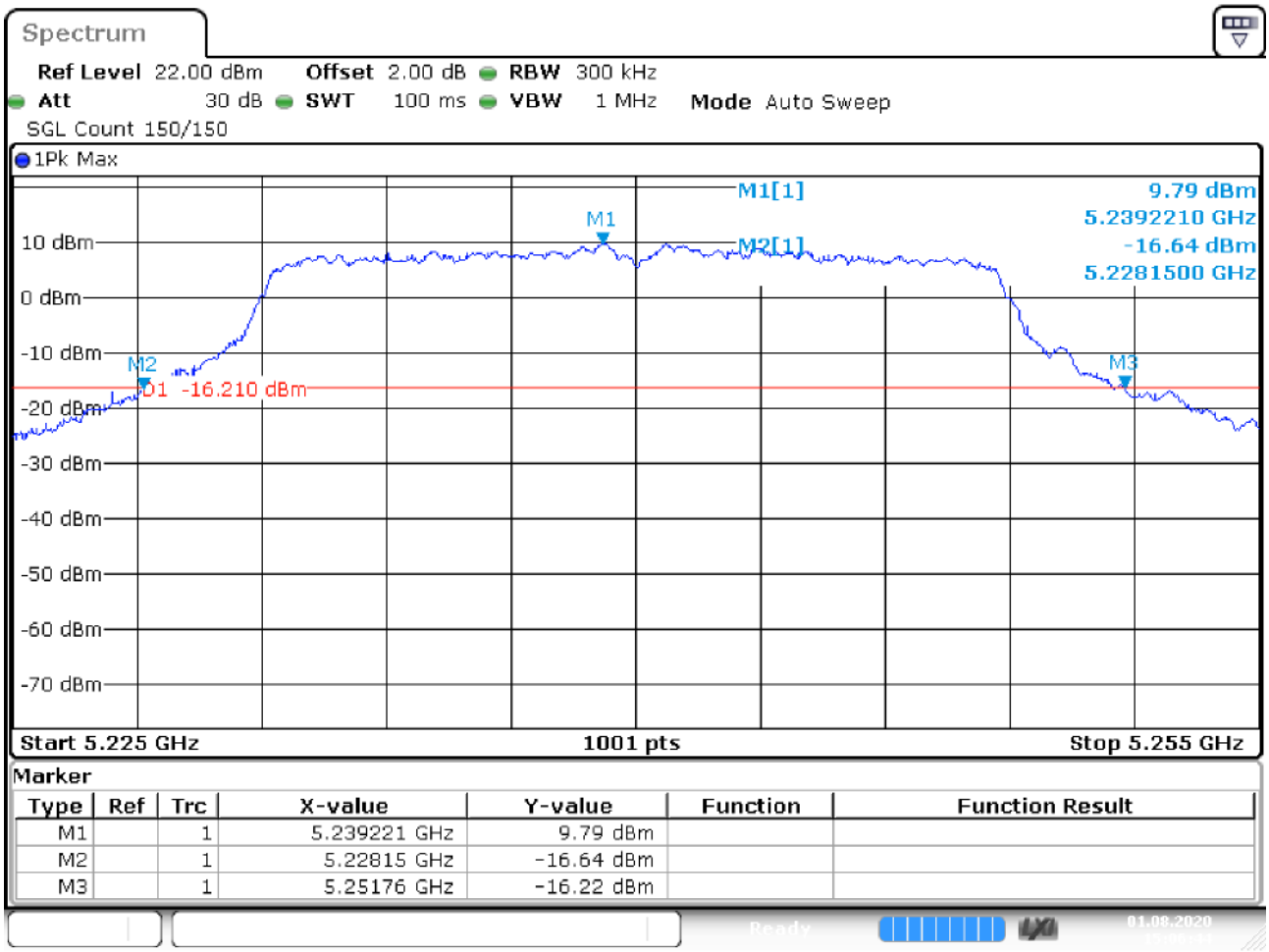
4.5.1.23 11N20MIMO_48 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.239221 GHz	9.79 dBm		
M2		1	5.22815 GHz	-16.64 dBm		
M3		1	5.25176 GHz	-16.22 dBm		

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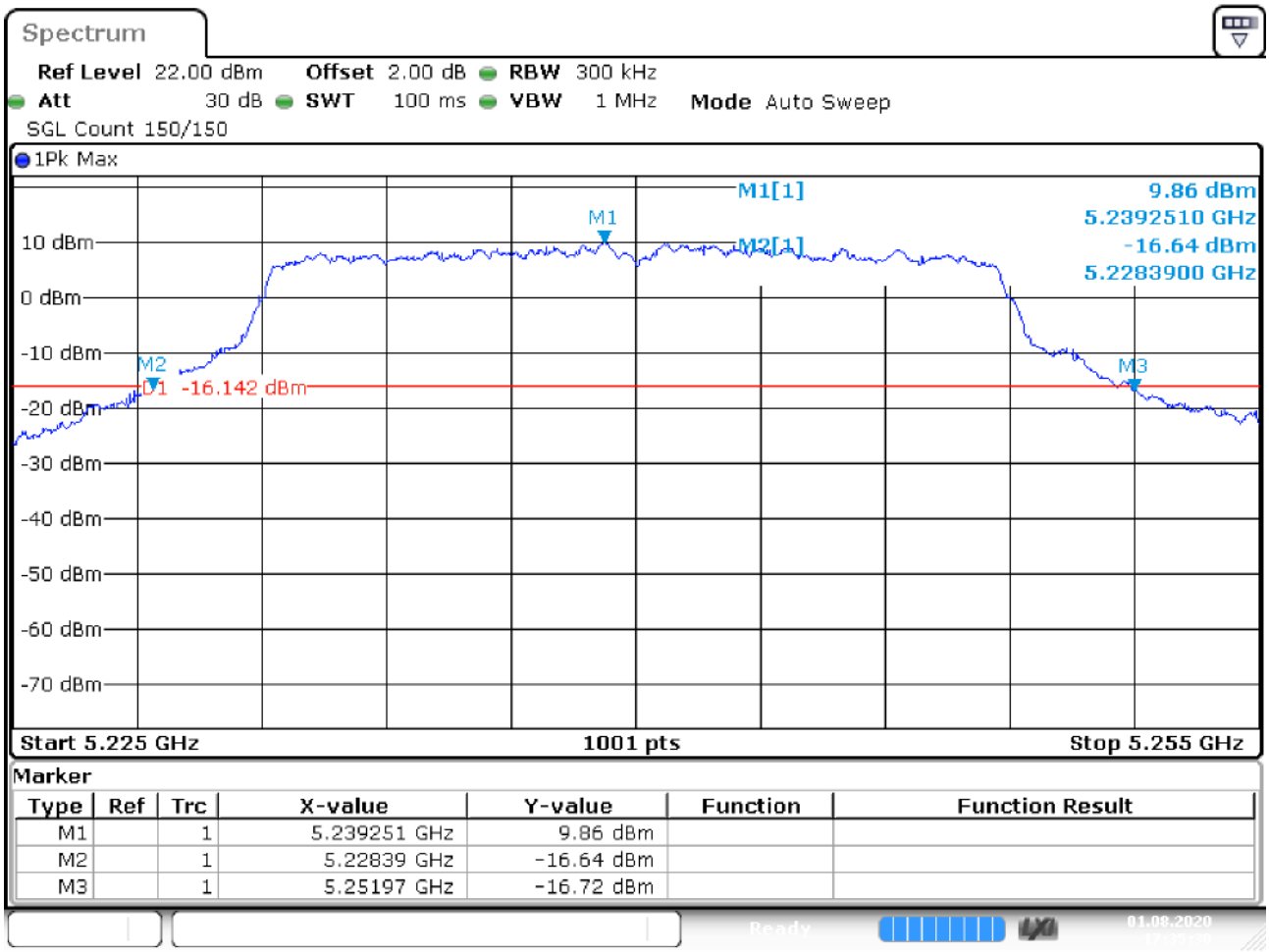
4.5.1.24 11N20MIMO_48 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.239251 GHz	9.86 dBm		
M2		1	5.22839 GHz	-16.64 dBm		
M3		1	5.25197 GHz	-16.72 dBm		

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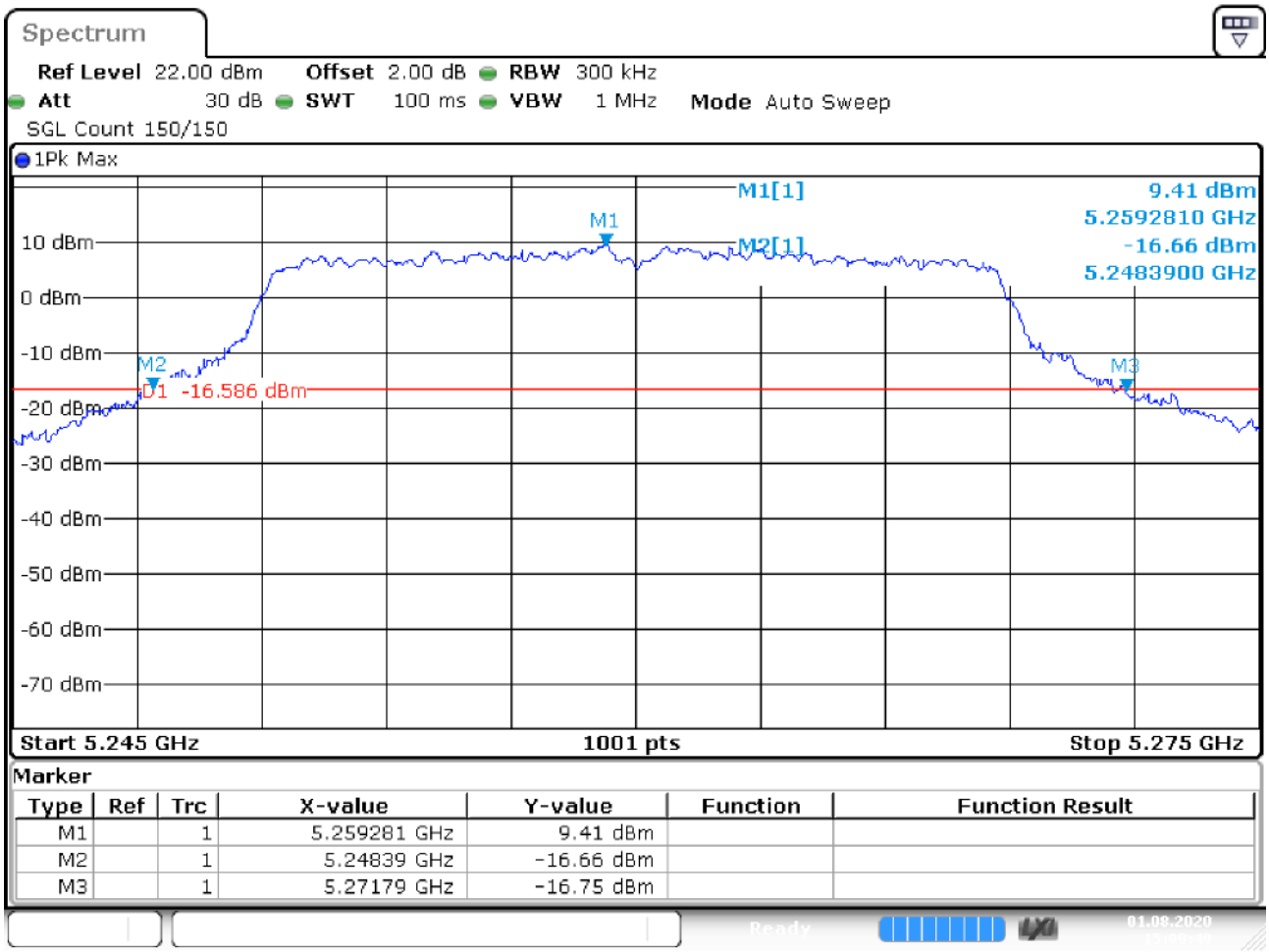
4.5.1.25 11N20MIMO_52 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.259281 GHz	9.41 dBm		
M2		1	5.24839 GHz	-16.66 dBm		
M3		1	5.27179 GHz	-16.75 dBm		

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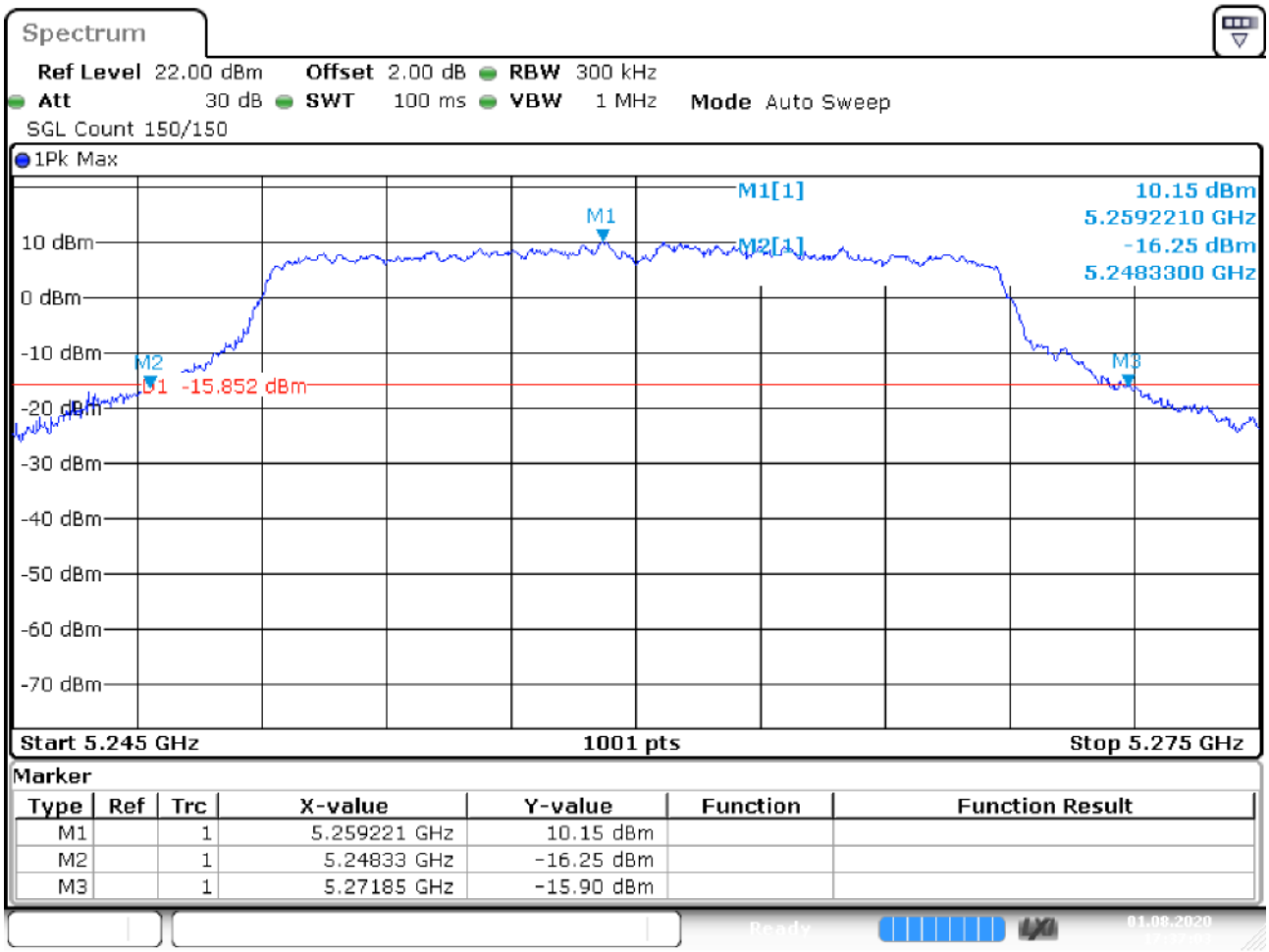
4.5.1.26 11N20MIMO_52 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.259221 GHz	10.15 dBm		
M2		1	5.24833 GHz	-16.25 dBm		
M3		1	5.27185 GHz	-15.90 dBm		

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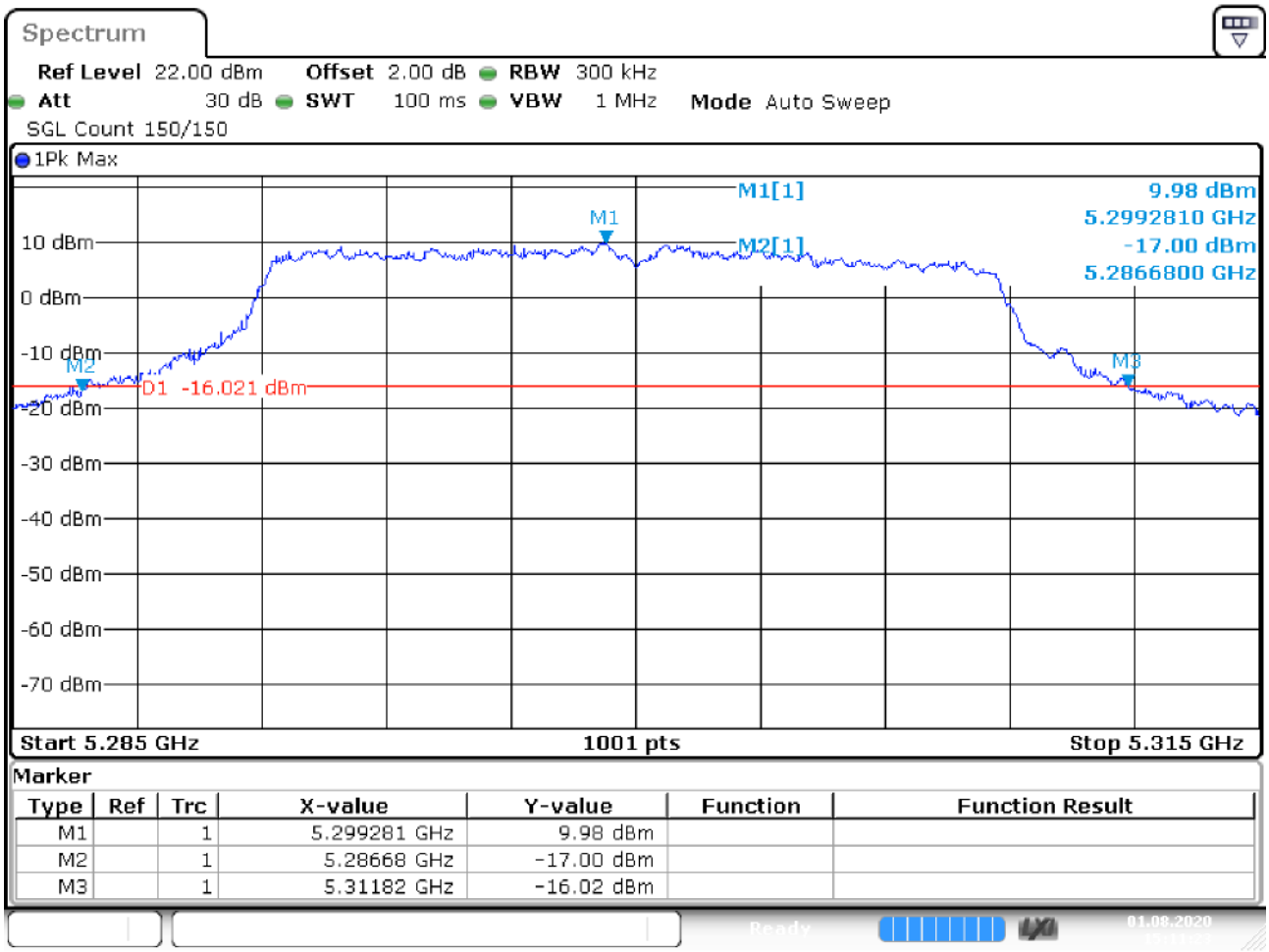
4.5.1.27 11N20MIMO_60 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.299281 GHz	9.98 dBm		
M2		1	5.28668 GHz	-17.00 dBm		
M3		1	5.31182 GHz	-16.02 dBm		

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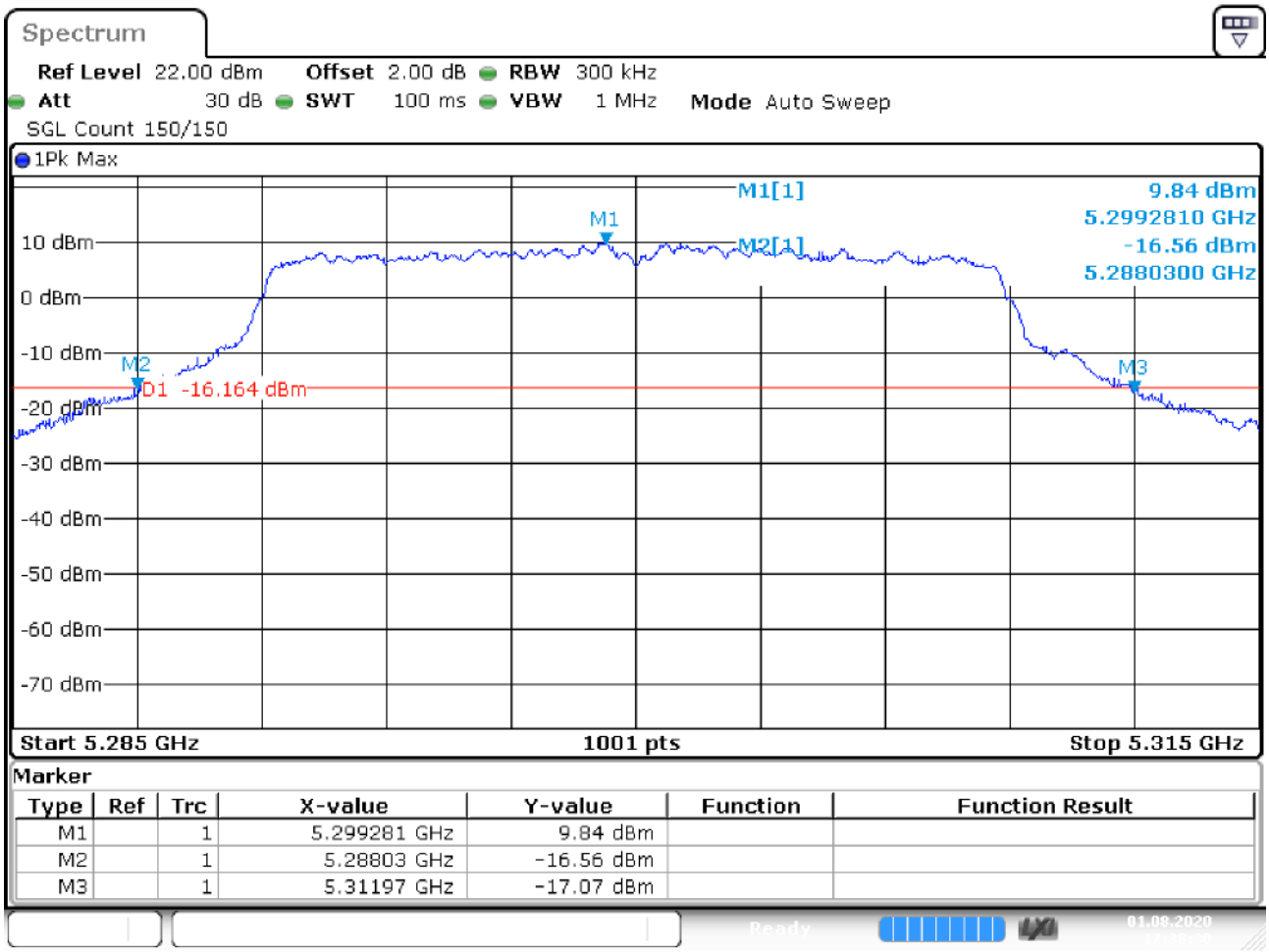
4.5.1.28 11N20MIMO_60 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.299281 GHz	9.84 dBm		
M2		1	5.28803 GHz	-16.56 dBm		
M3		1	5.31197 GHz	-17.07 dBm		

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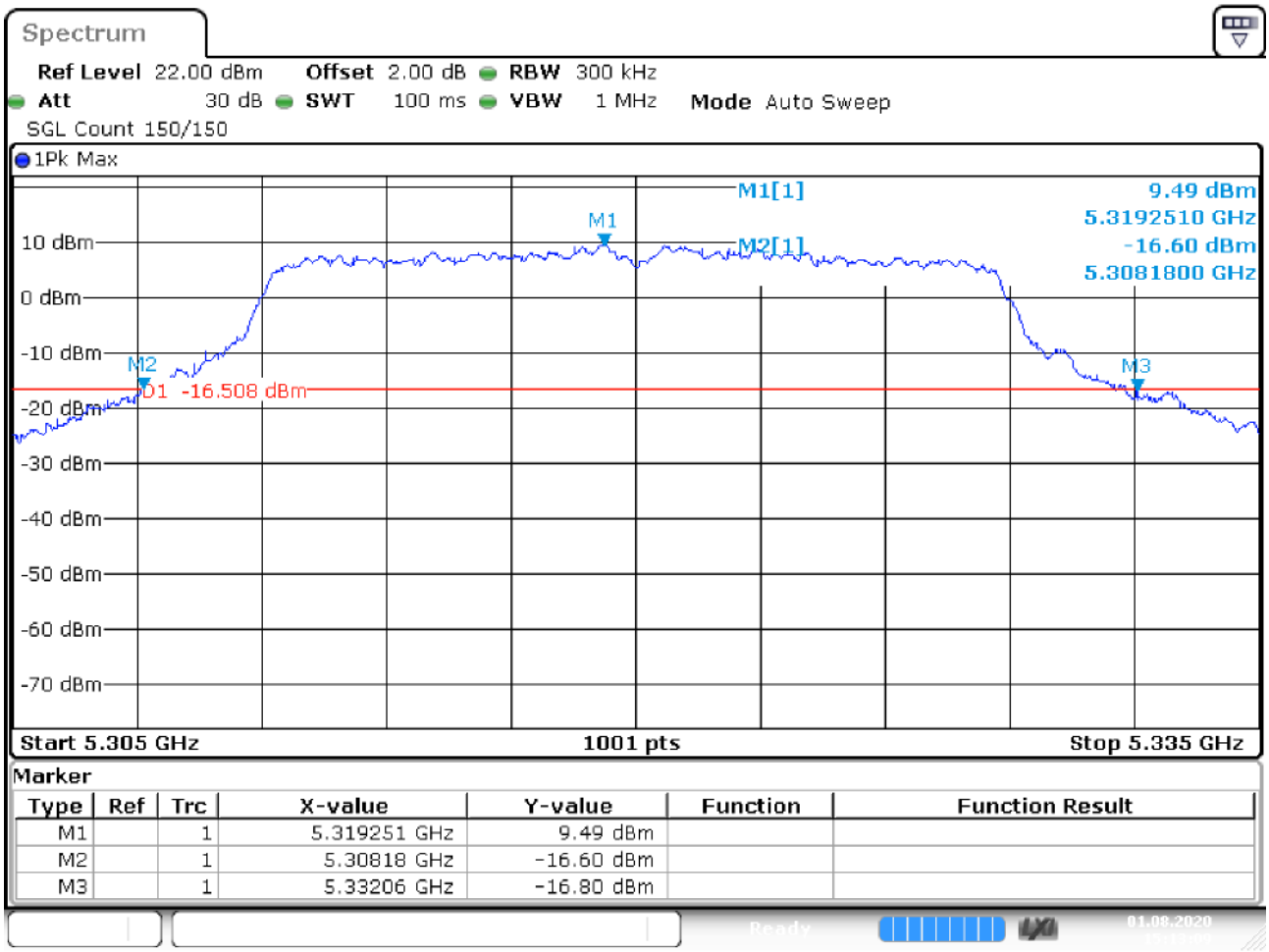
4.5.1.29 11N20MIMO_64 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.319251 GHz	9.49 dBm		
M2		1	5.30818 GHz	-16.60 dBm		
M3		1	5.33206 GHz	-16.80 dBm		

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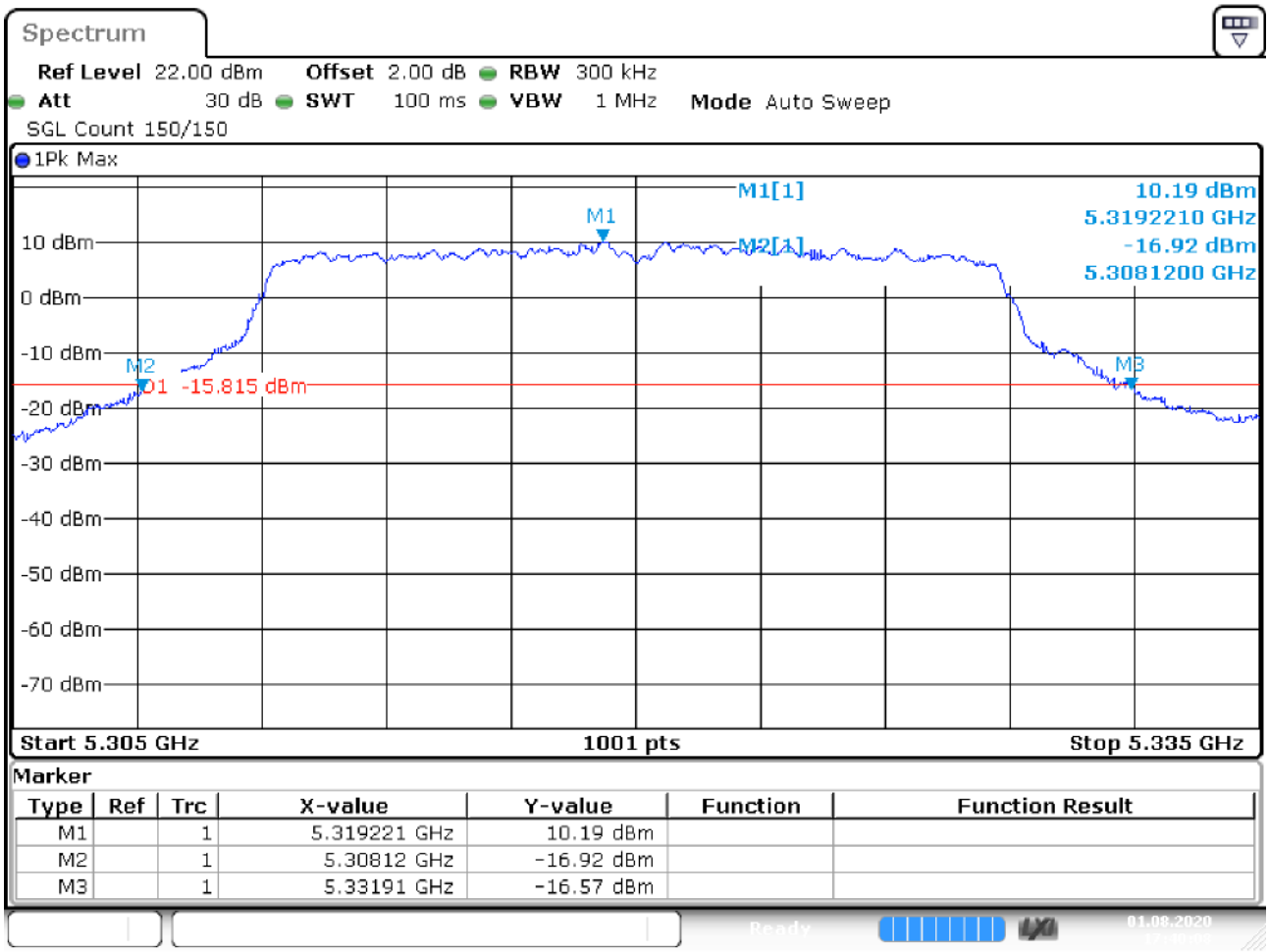
4.5.1.30 11N20MIMO_64 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.319221 GHz	10.19 dBm		
M2		1	5.30812 GHz	-16.92 dBm		
M3		1	5.33191 GHz	-16.57 dBm		

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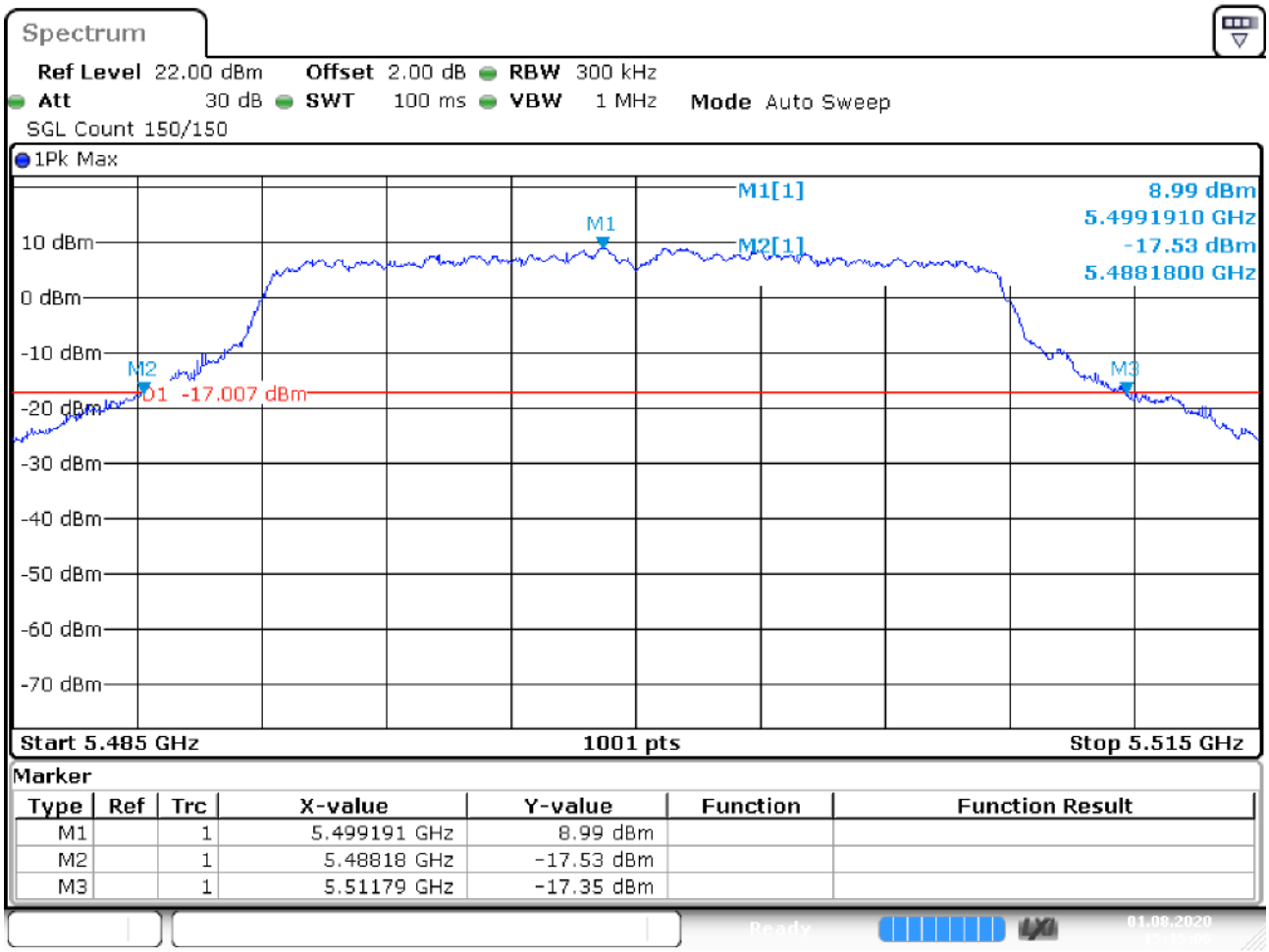
4.5.1.31 11N20MIMO_100 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.499191 GHz	8.99 dBm		
M2		1	5.48818 GHz	-17.53 dBm		
M3		1	5.51179 GHz	-17.35 dBm		

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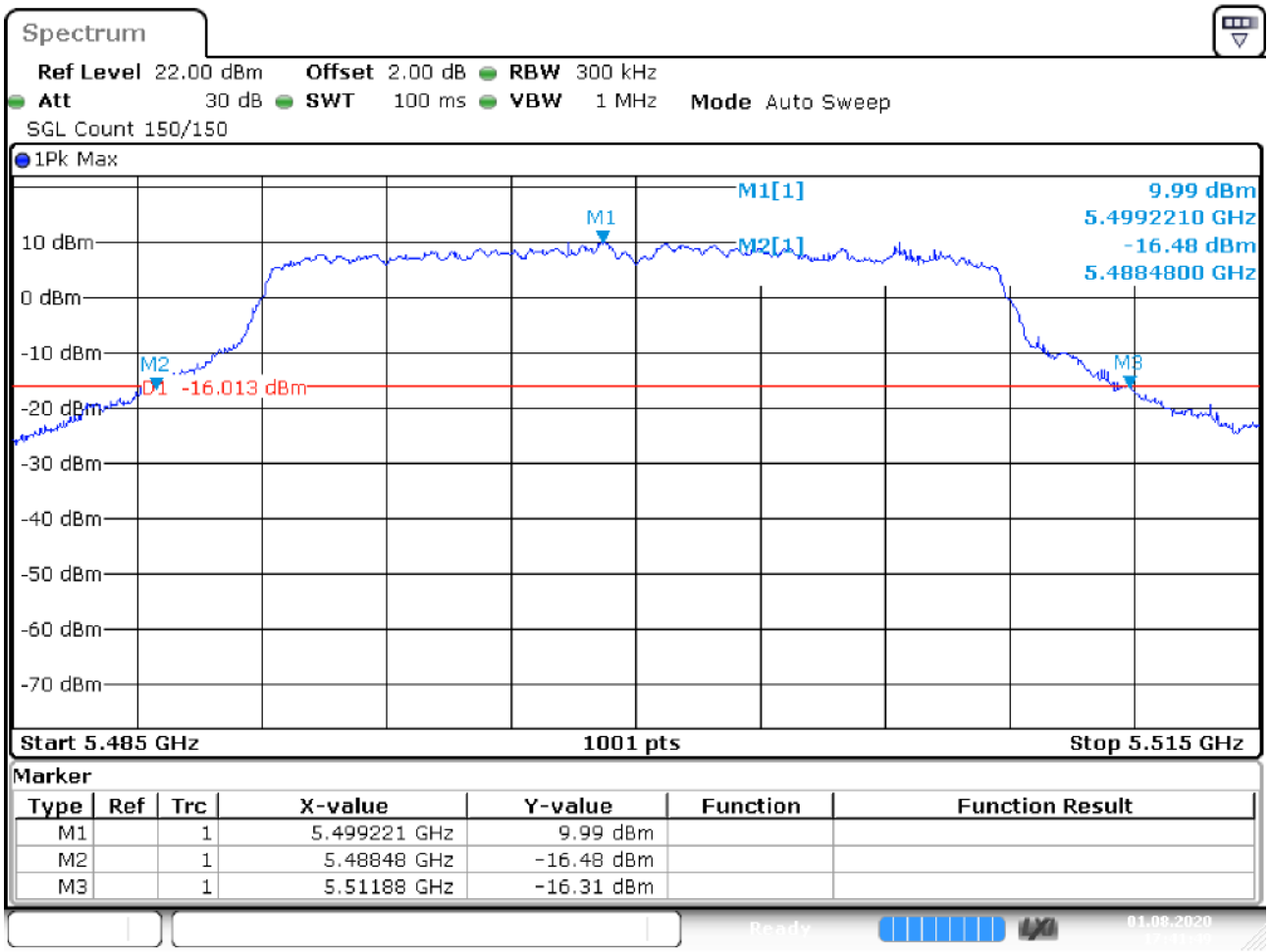
4.5.1.32 11N20MIMO_100 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.499221 GHz	9.99 dBm		
M2		1	5.48848 GHz	-16.48 dBm		
M3		1	5.51188 GHz	-16.31 dBm		

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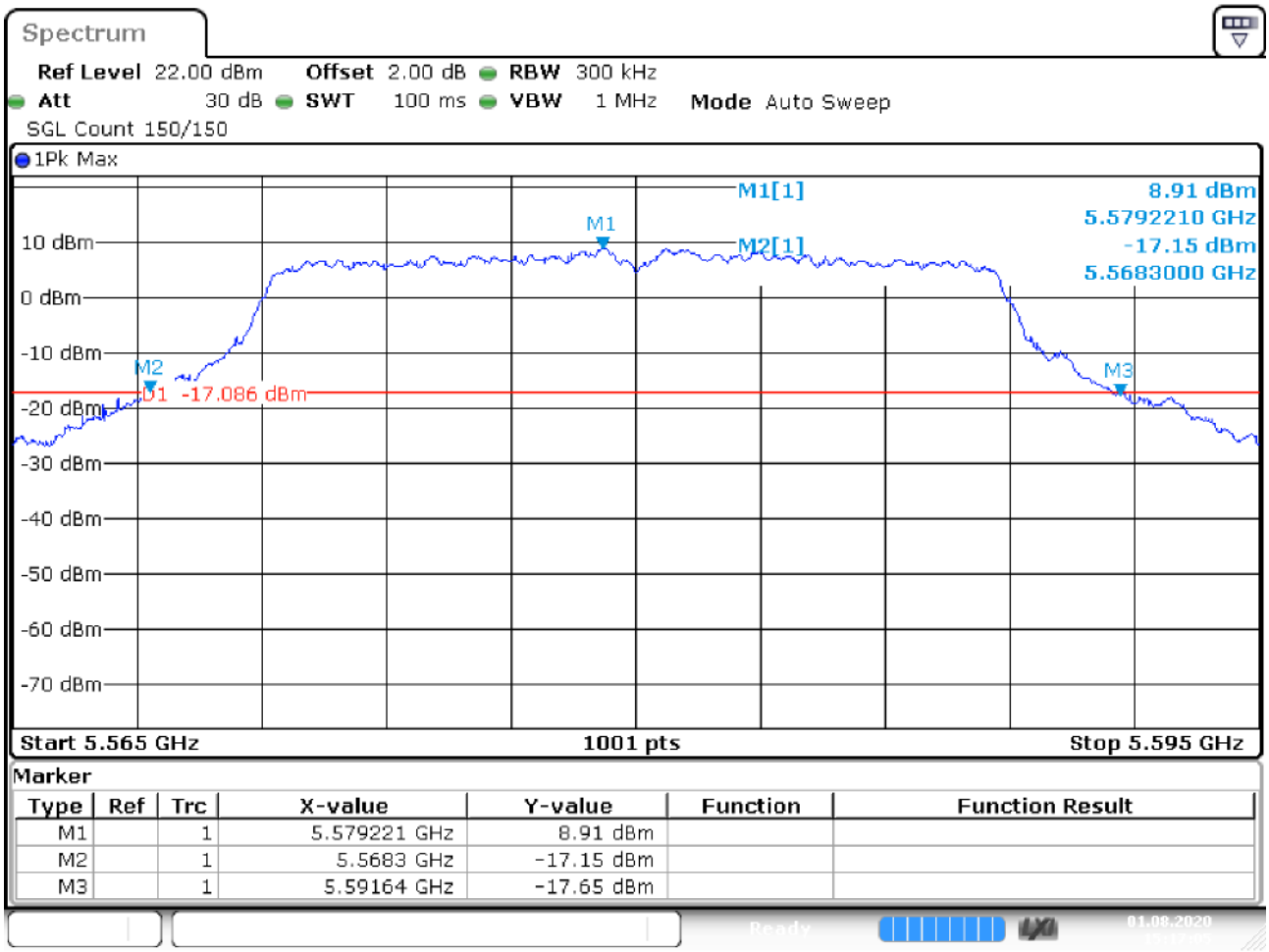
4.5.1.33 11N20MIMO_116 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.579221 GHz	8.91 dBm		
M2		1	5.5683 GHz	-17.15 dBm		
M3		1	5.59164 GHz	-17.65 dBm		

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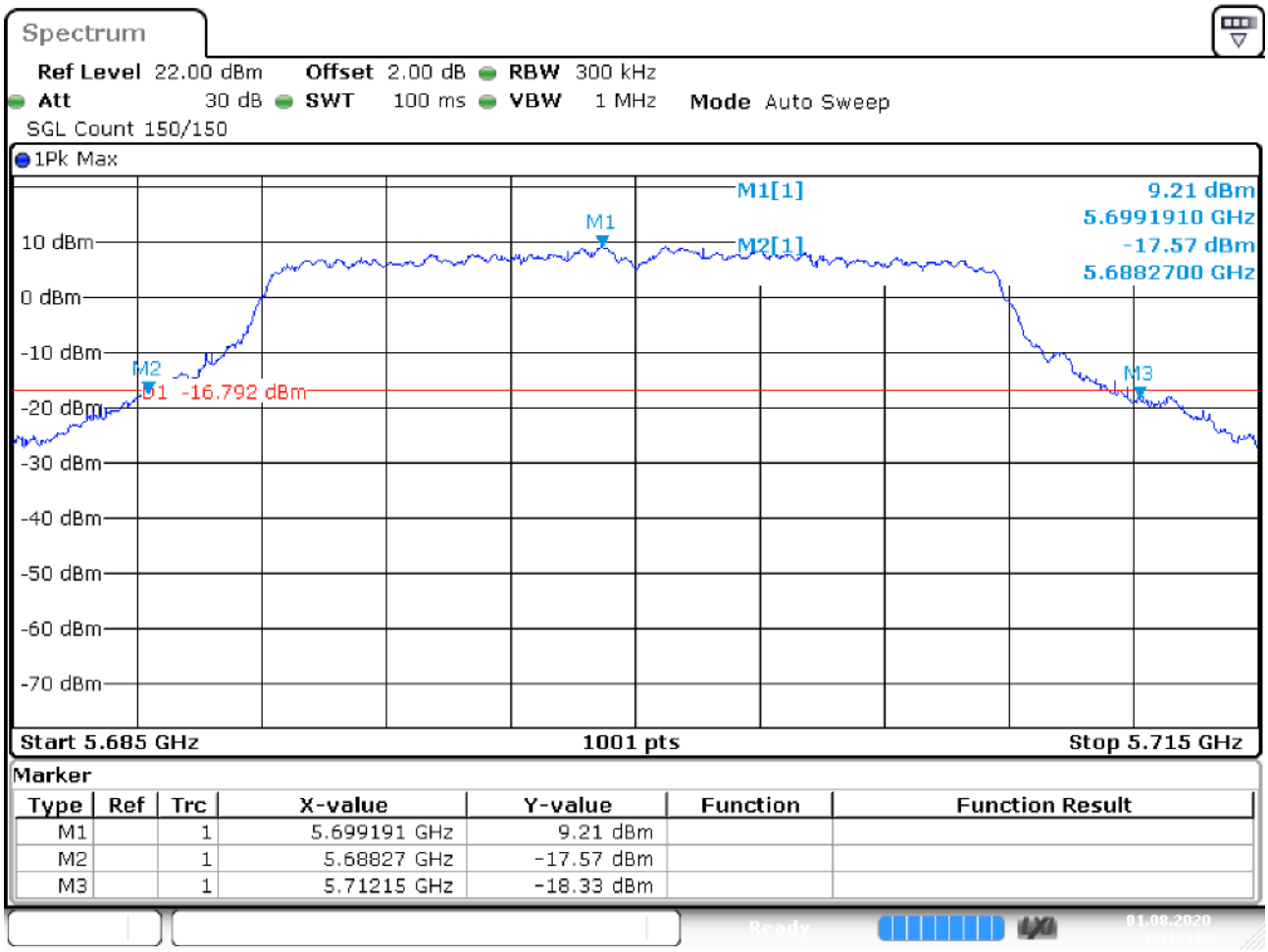
4.5.1.34 11N20MIMO_140 ANT 1



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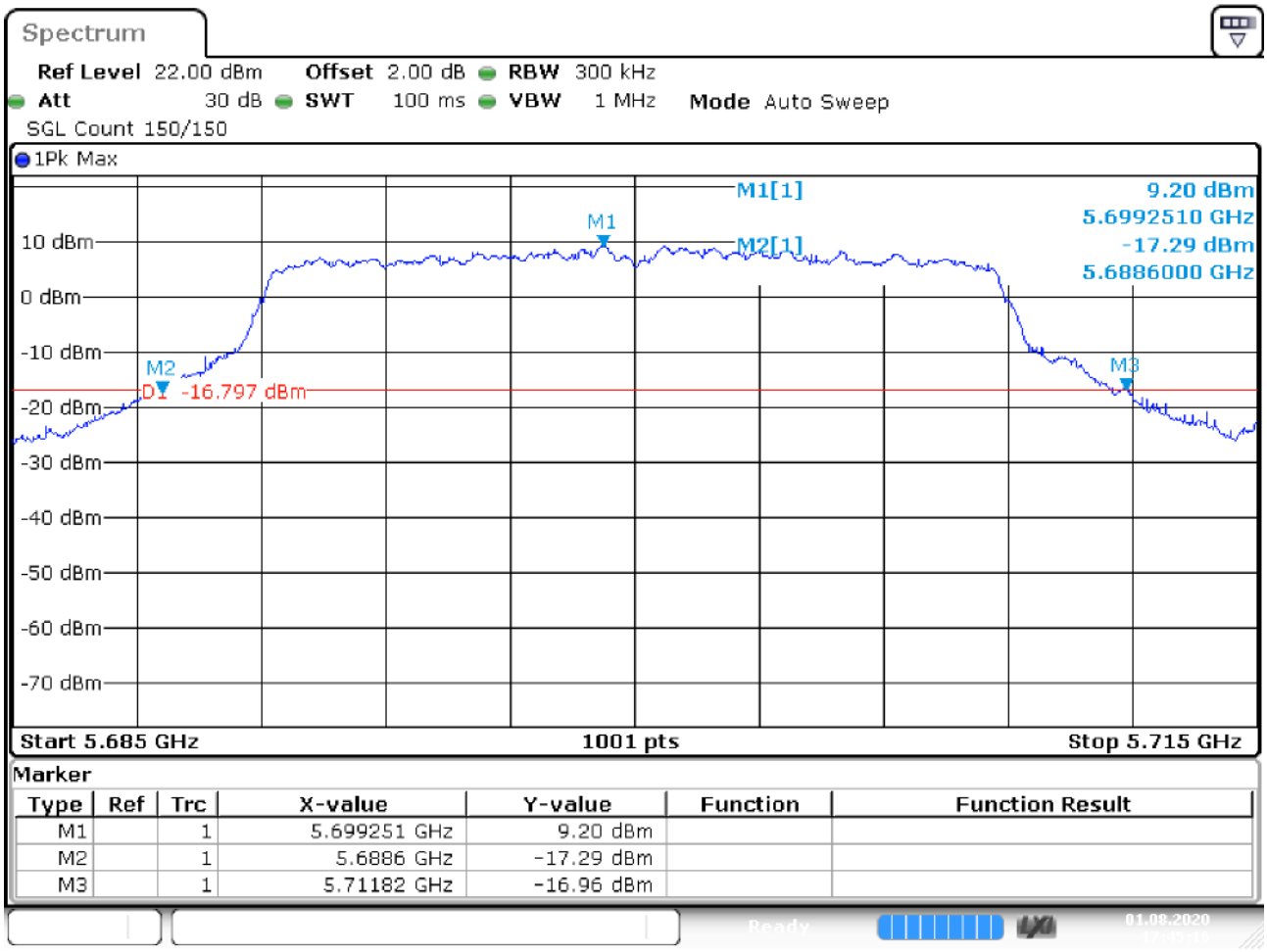
4.5.1.35 11N20MIMO_140 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.699251 GHz	9.20 dBm		
M2		1	5.6886 GHz	-17.29 dBm		
M3		1	5.71182 GHz	-16.96 dBm		

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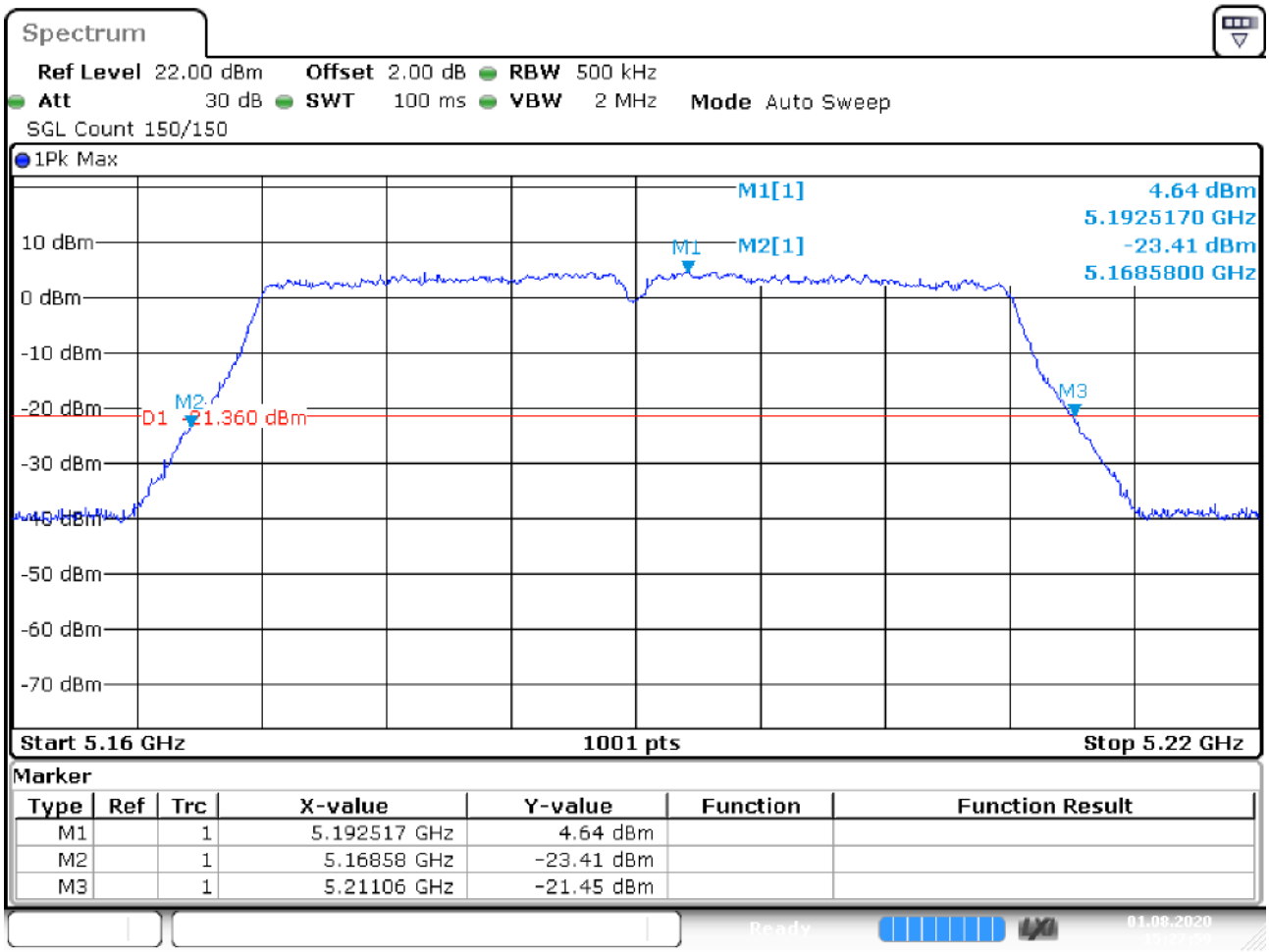
4.5.1.36 11N40MIMO_38 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.192517 GHz	4.64 dBm		
M2		1	5.16858 GHz	-23.41 dBm		
M3		1	5.21106 GHz	-21.45 dBm		

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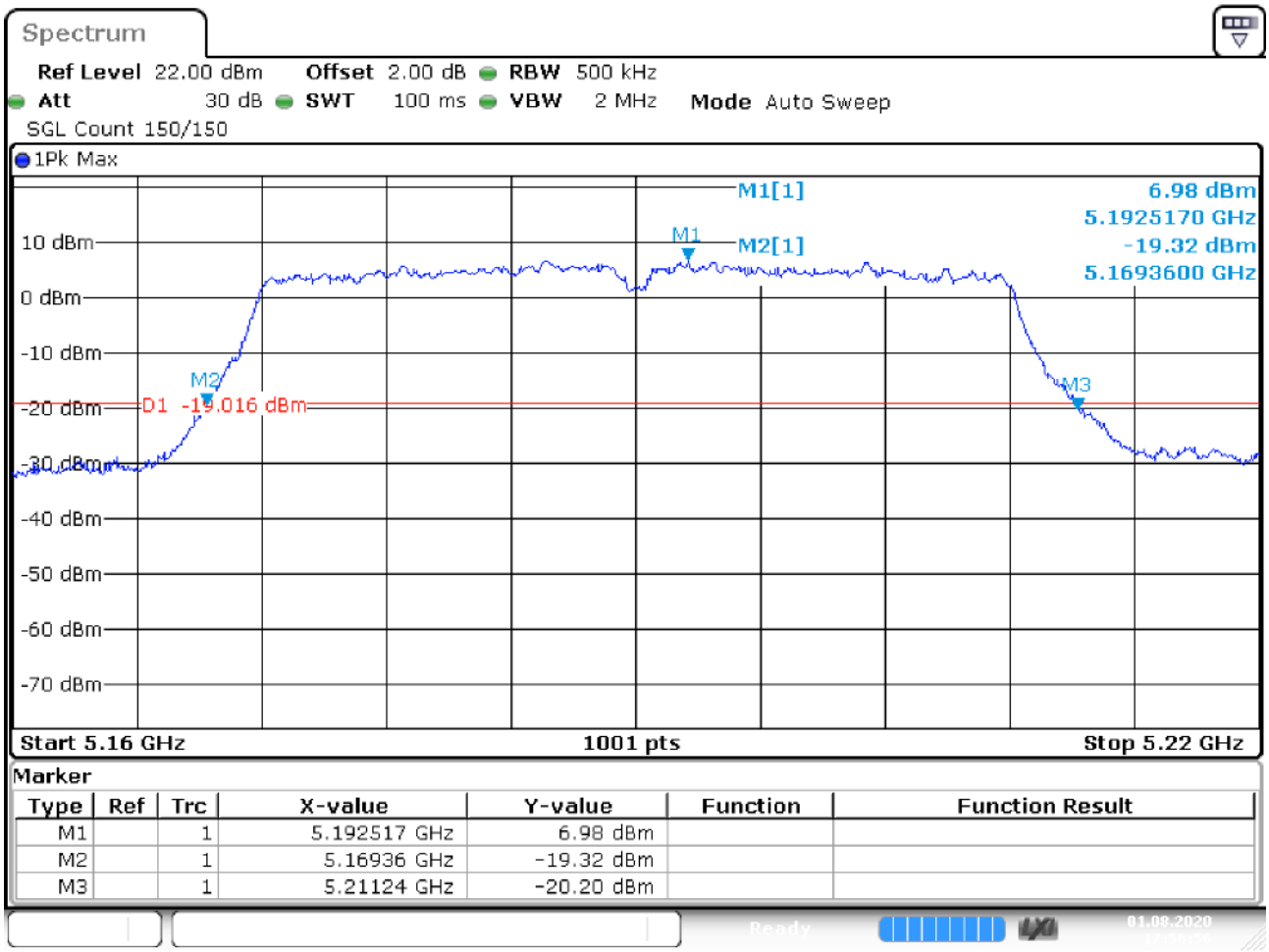
4.5.1.37 11N40MIMO_38 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.192517 GHz	6.98 dBm		
M2		1	5.16936 GHz	-19.32 dBm		
M3		1	5.21124 GHz	-20.20 dBm		

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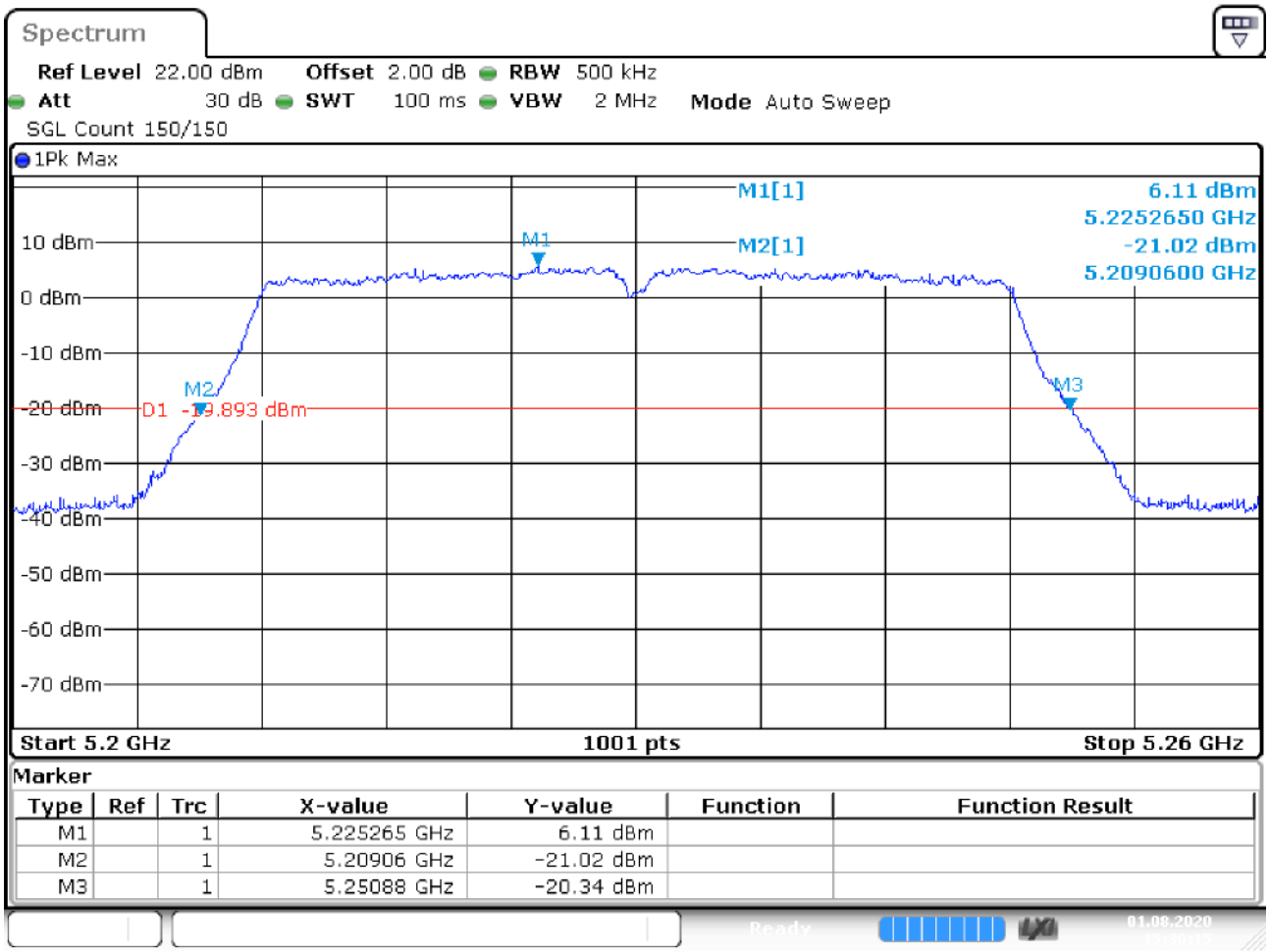
4.5.1.38 11N40MIMO_46 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.225265 GHz	6.11 dBm		
M2		1	5.20906 GHz	-21.02 dBm		
M3		1	5.25088 GHz	-20.34 dBm		

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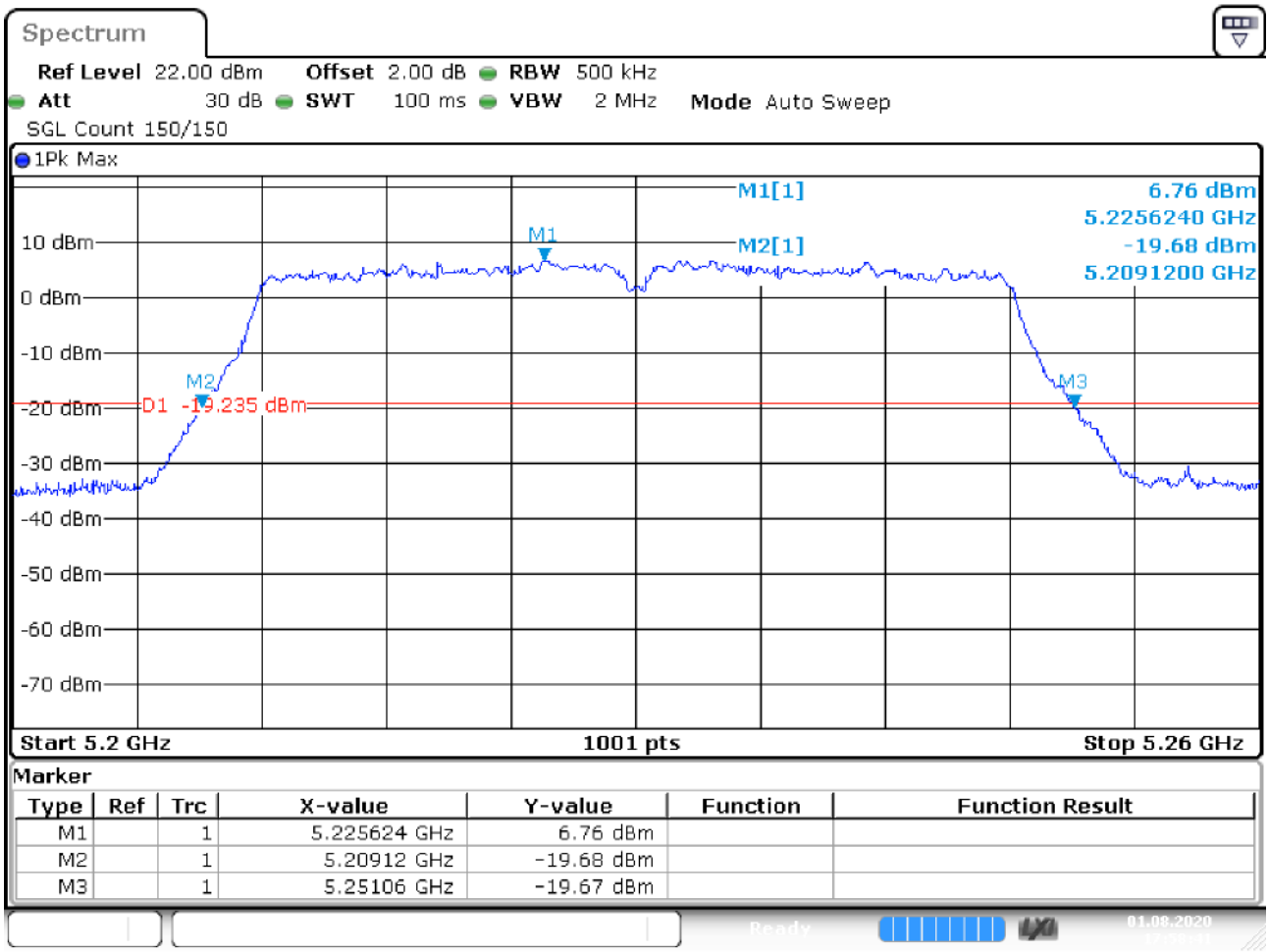
4.5.1.39 11N40MIMO_46 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.225624 GHz	6.76 dBm		
M2		1	5.20912 GHz	-19.68 dBm		
M3		1	5.25106 GHz	-19.67 dBm		

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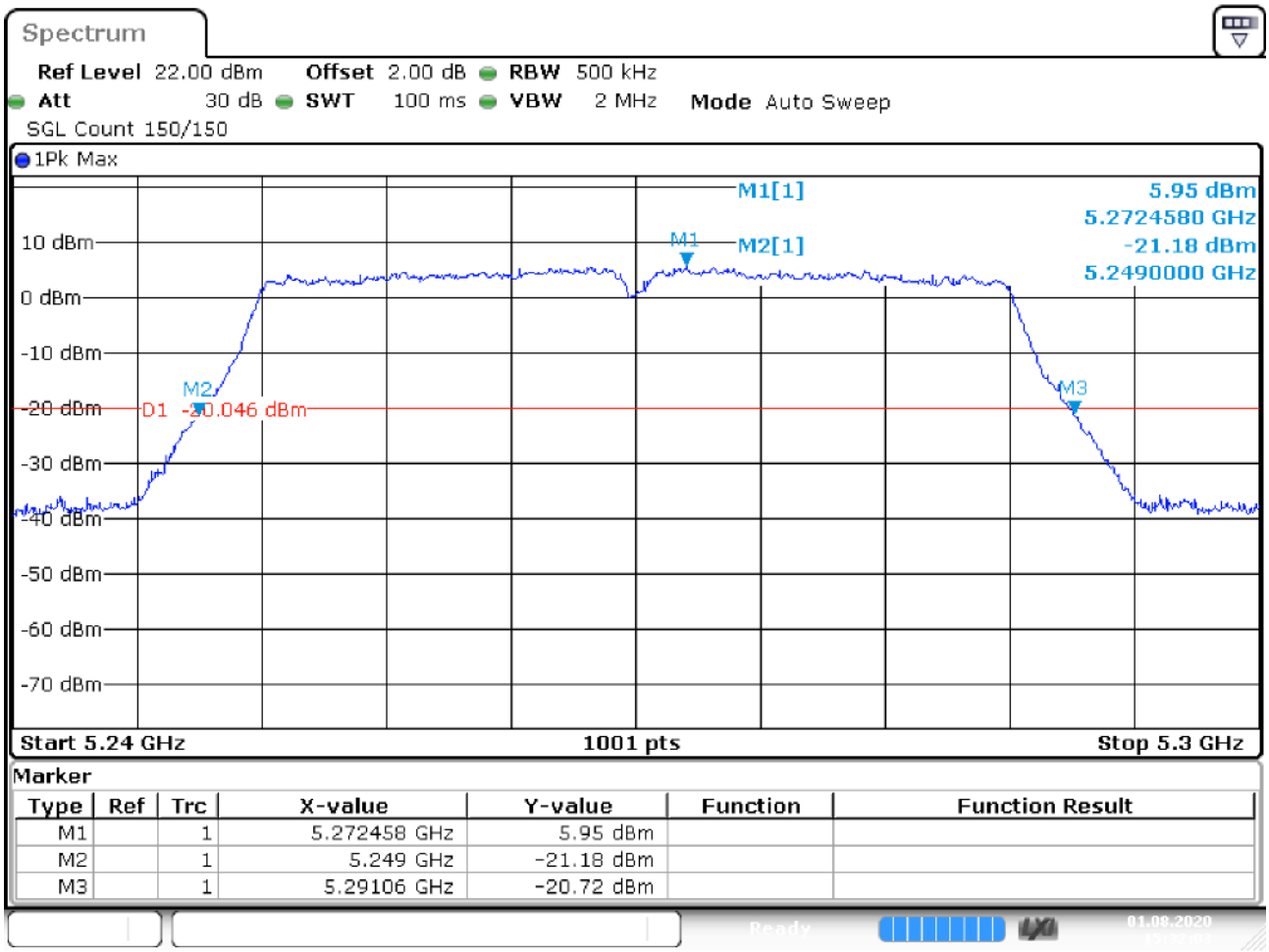
4.5.1.40 11N40MIMO_54 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.272458 GHz	5.95 dBm		
M2		1	5.249 GHz	-21.18 dBm		
M3		1	5.29106 GHz	-20.72 dBm		

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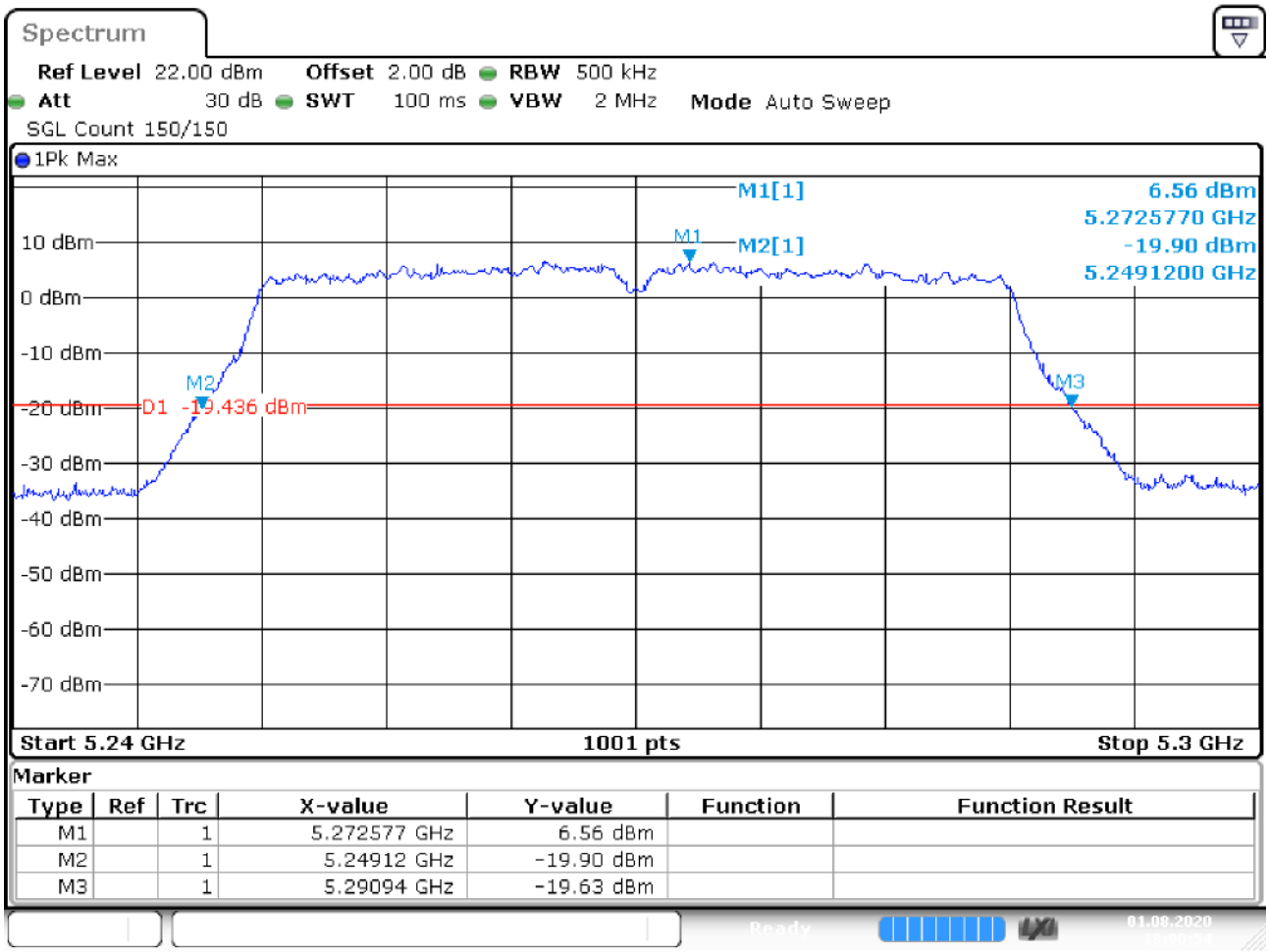
4.5.1.41 11N40MIMO_54 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.272577 GHz	6.56 dBm		
M2		1	5.24912 GHz	-19.90 dBm		
M3		1	5.29094 GHz	-19.63 dBm		

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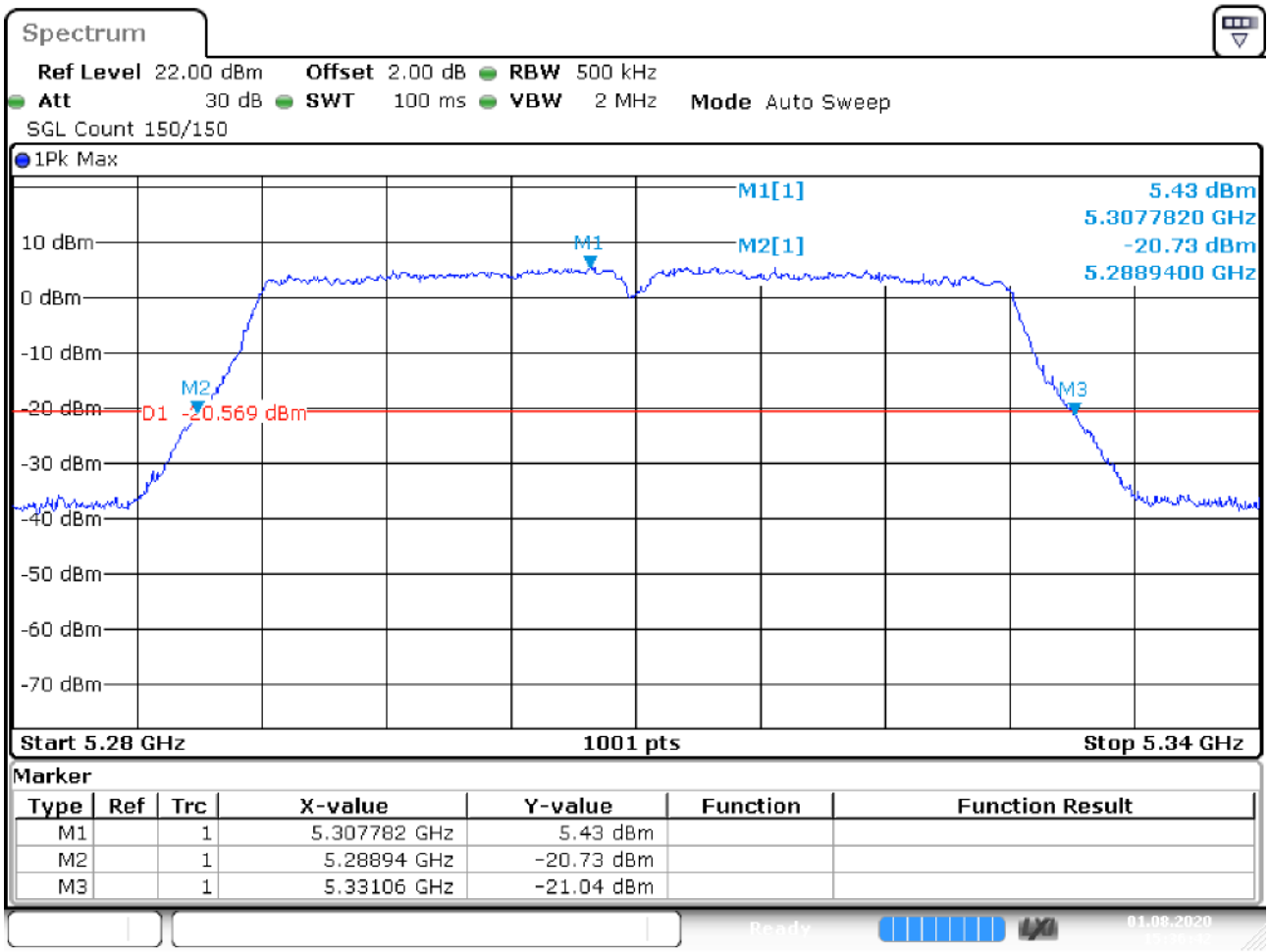
4.5.1.42 11N40MIMO_62 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.307782 GHz	5.43 dBm		
M2		1	5.28894 GHz	-20.73 dBm		
M3		1	5.33106 GHz	-21.04 dBm		

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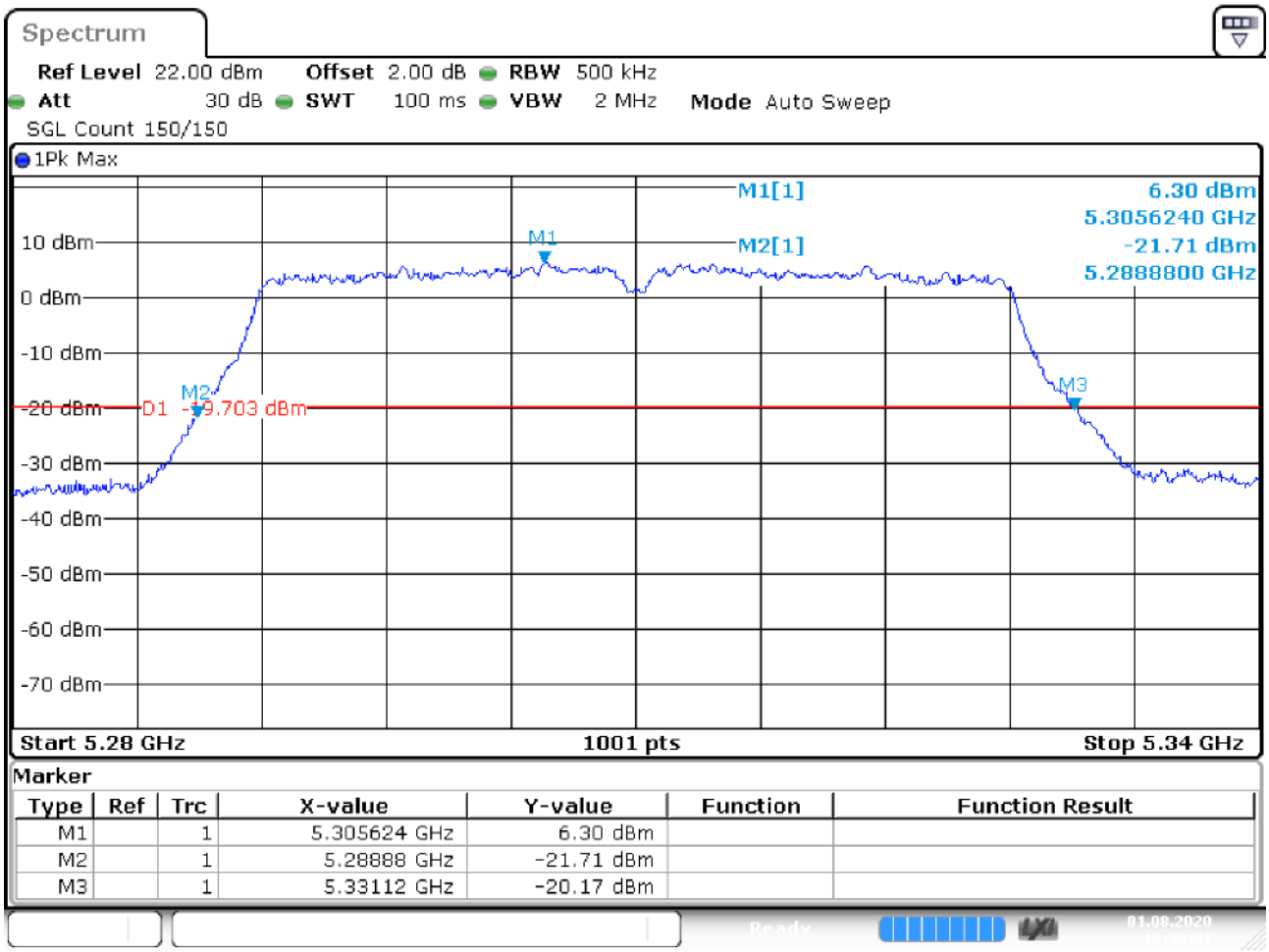
4.5.1.43 11N40MIMO_62 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.305624 GHz	6.30 dBm		
M2		1	5.28888 GHz	-21.71 dBm		
M3		1	5.33112 GHz	-20.17 dBm		

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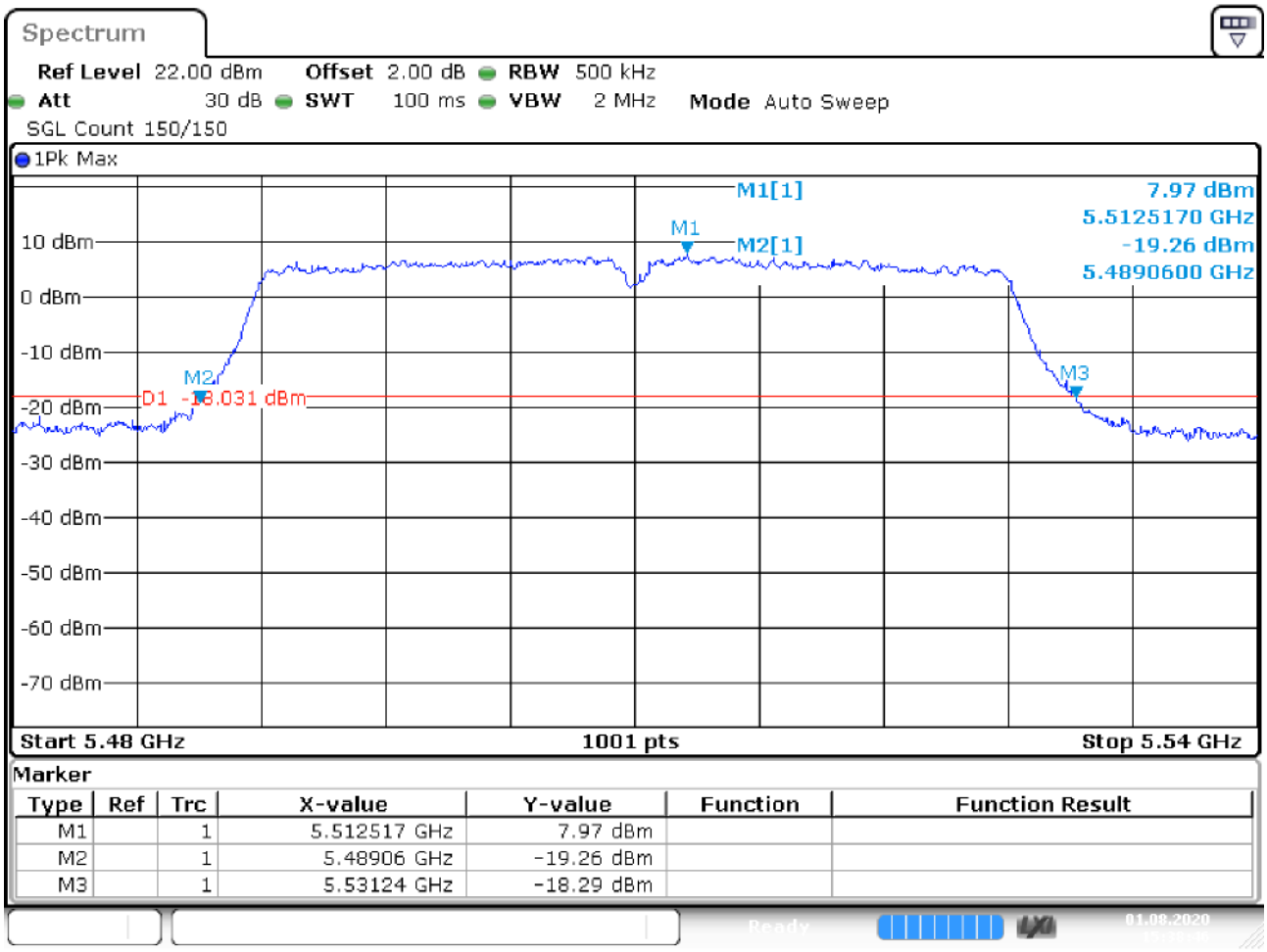
4.5.1.44 11N40MIMO_102 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.512517 GHz	7.97 dBm		
M2		1	5.48906 GHz	-19.26 dBm		
M3		1	5.53124 GHz	-18.29 dBm		

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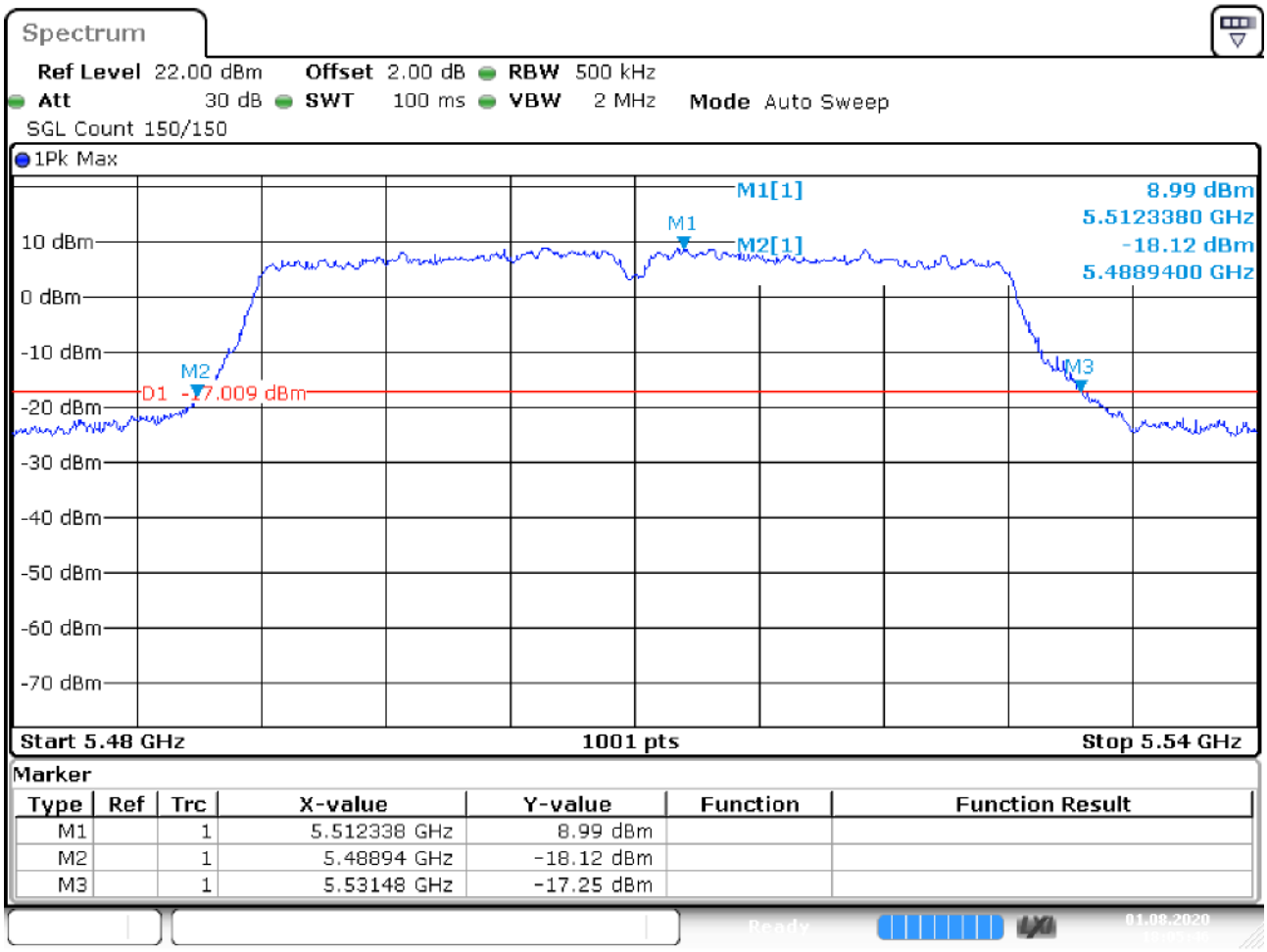
4.5.1.45 11N40MIMO_102 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.512338 GHz	8.99 dBm		
M2		1	5.48894 GHz	-18.12 dBm		
M3		1	5.53148 GHz	-17.25 dBm		

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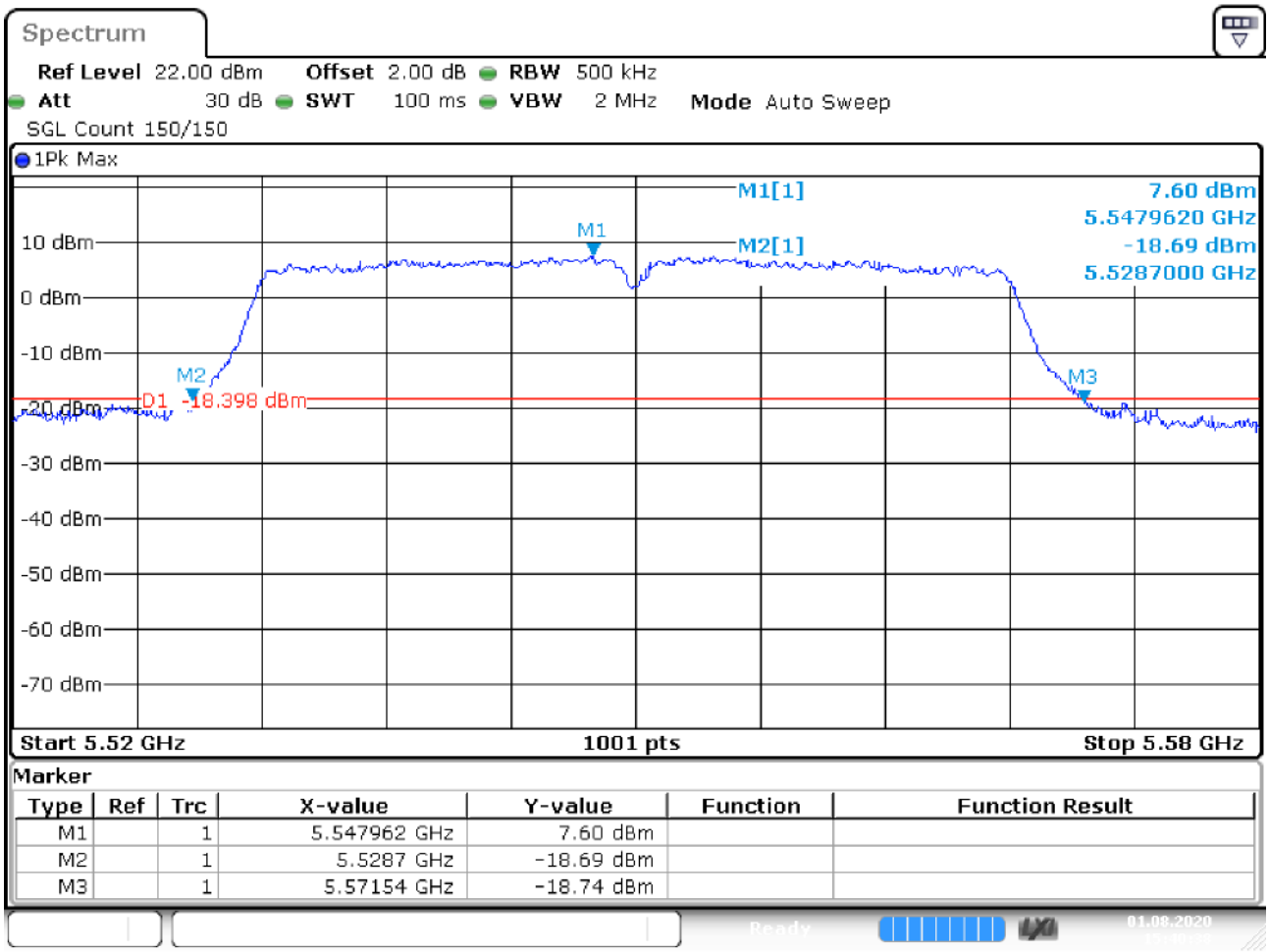
4.5.1.46 11N40MIMO_110 ANT 1



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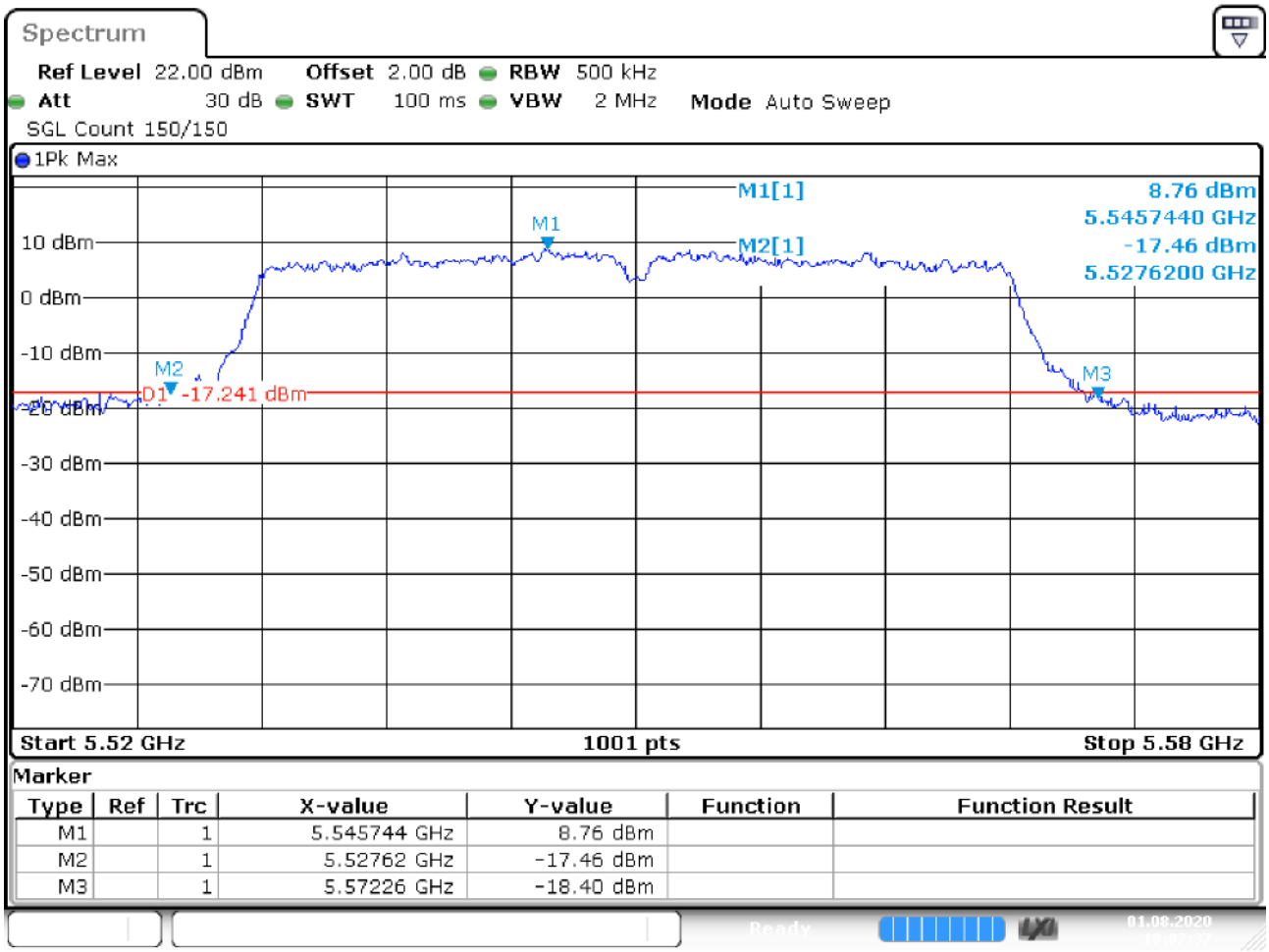
4.5.1.47 11N40MIMO_110 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.545744 GHz	8.76 dBm		
M2		1	5.52762 GHz	-17.46 dBm		
M3		1	5.57226 GHz	-18.40 dBm		

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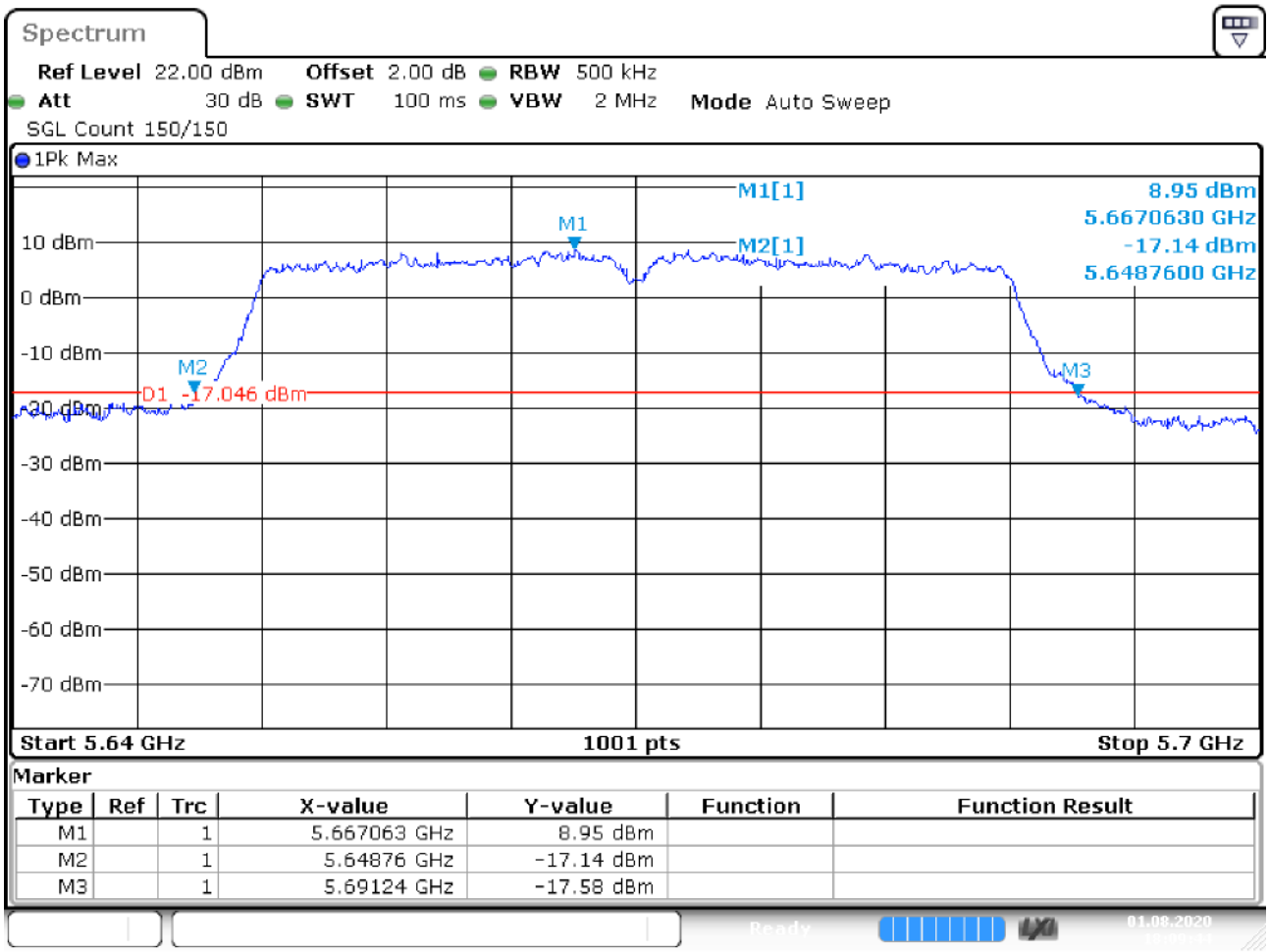
4.5.1.48 11N40MIMO_134 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.667063 GHz	8.95 dBm		
M2		1	5.64876 GHz	-17.14 dBm		
M3		1	5.69124 GHz	-17.58 dBm		

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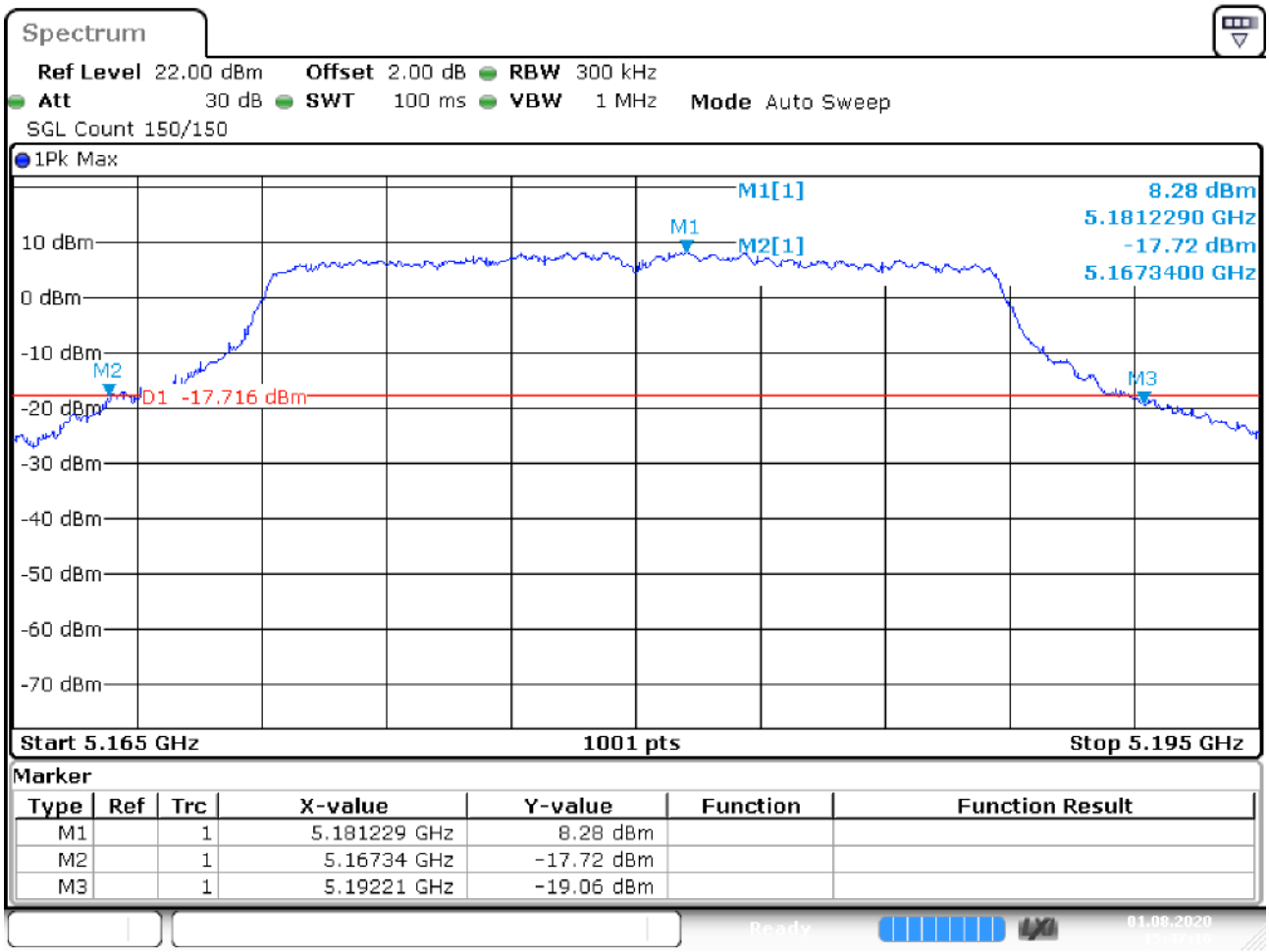
4.5.1.49 11AC20MIMO_36 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.181229 GHz	8.28 dBm		
M2		1	5.16734 GHz	-17.72 dBm		
M3		1	5.19221 GHz	-19.06 dBm		

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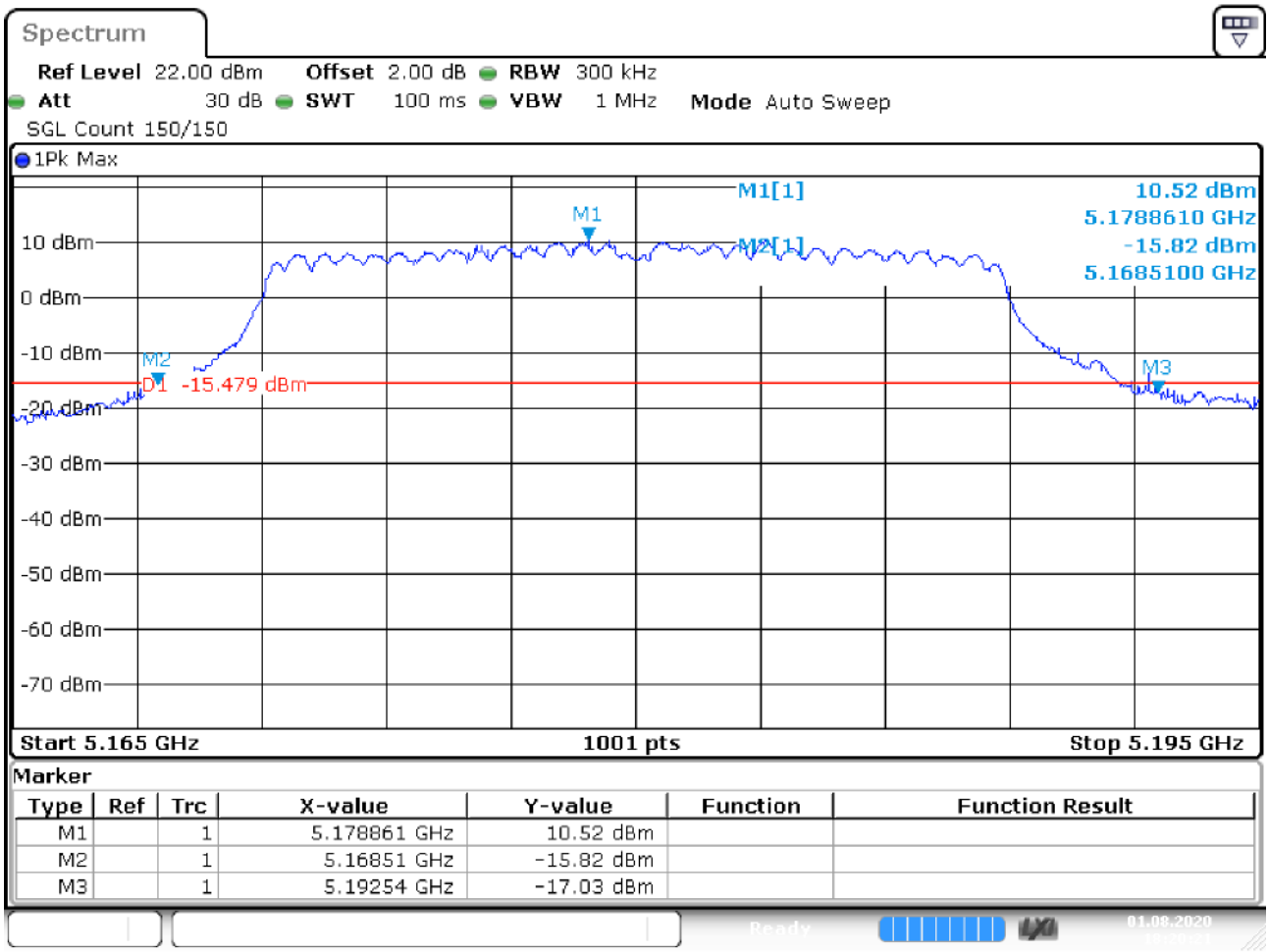
4.5.1.50 11AC20MIMO_36 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.178861 GHz	10.52 dBm		
M2		1	5.16851 GHz	-15.82 dBm		
M3		1	5.19254 GHz	-17.03 dBm		

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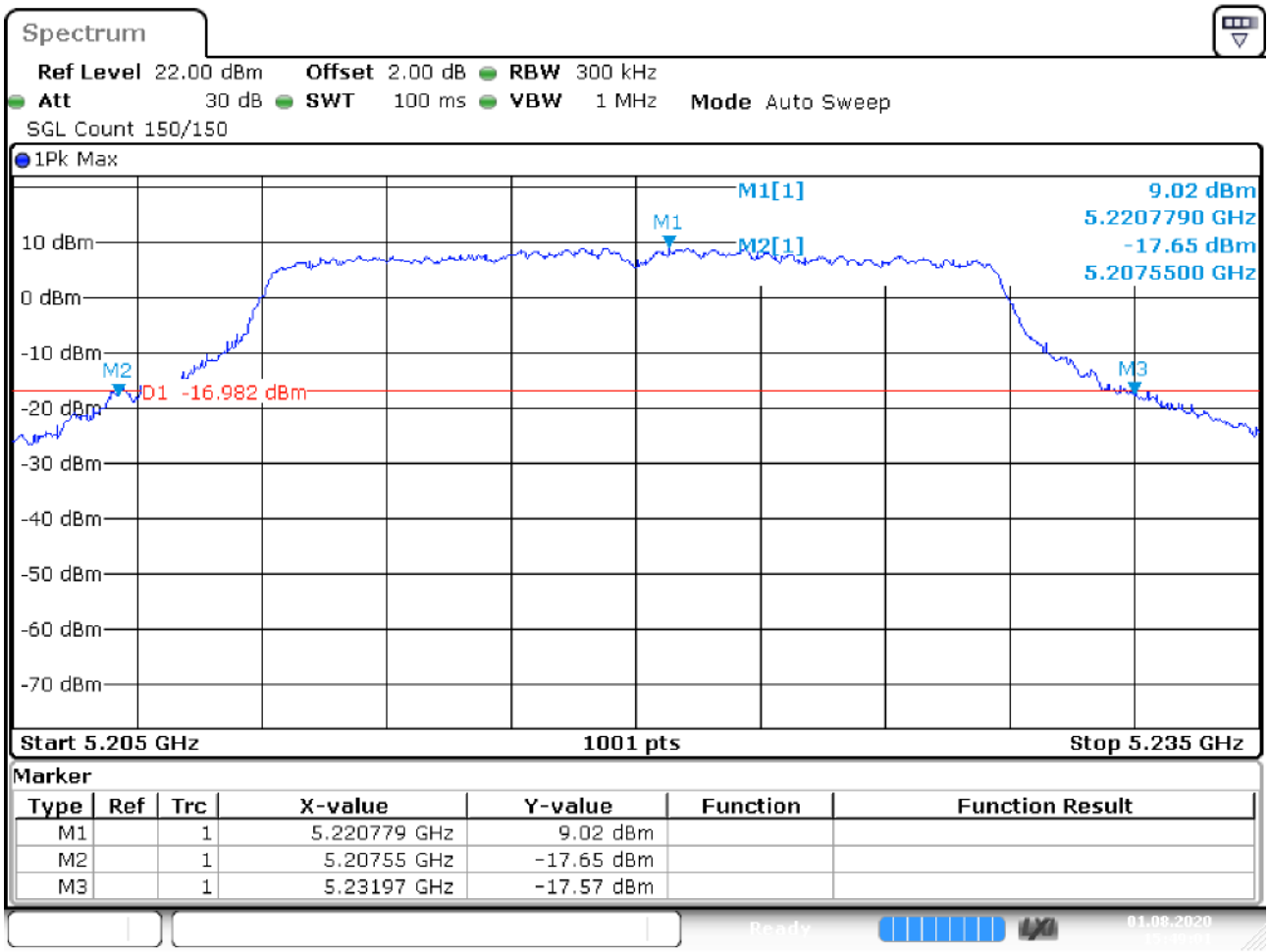
4.5.1.51 11AC20MIMO_44 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.220779 GHz	9.02 dBm		
M2		1	5.20755 GHz	-17.65 dBm		
M3		1	5.23197 GHz	-17.57 dBm		

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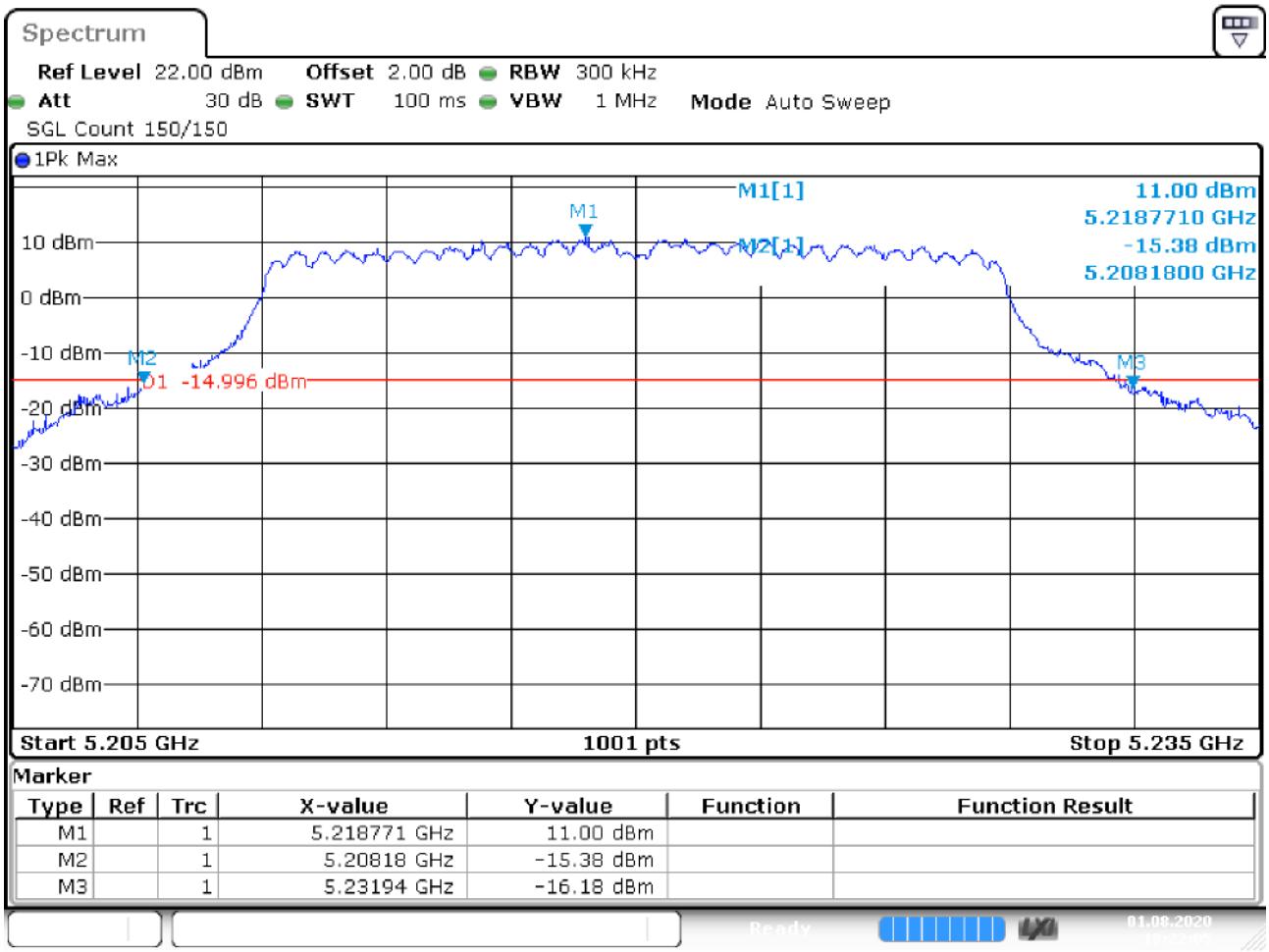
4.5.1.52 11AC20MIMO_44 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.218771 GHz	11.00 dBm		
M2		1	5.20818 GHz	-15.38 dBm		
M3		1	5.23194 GHz	-16.18 dBm		

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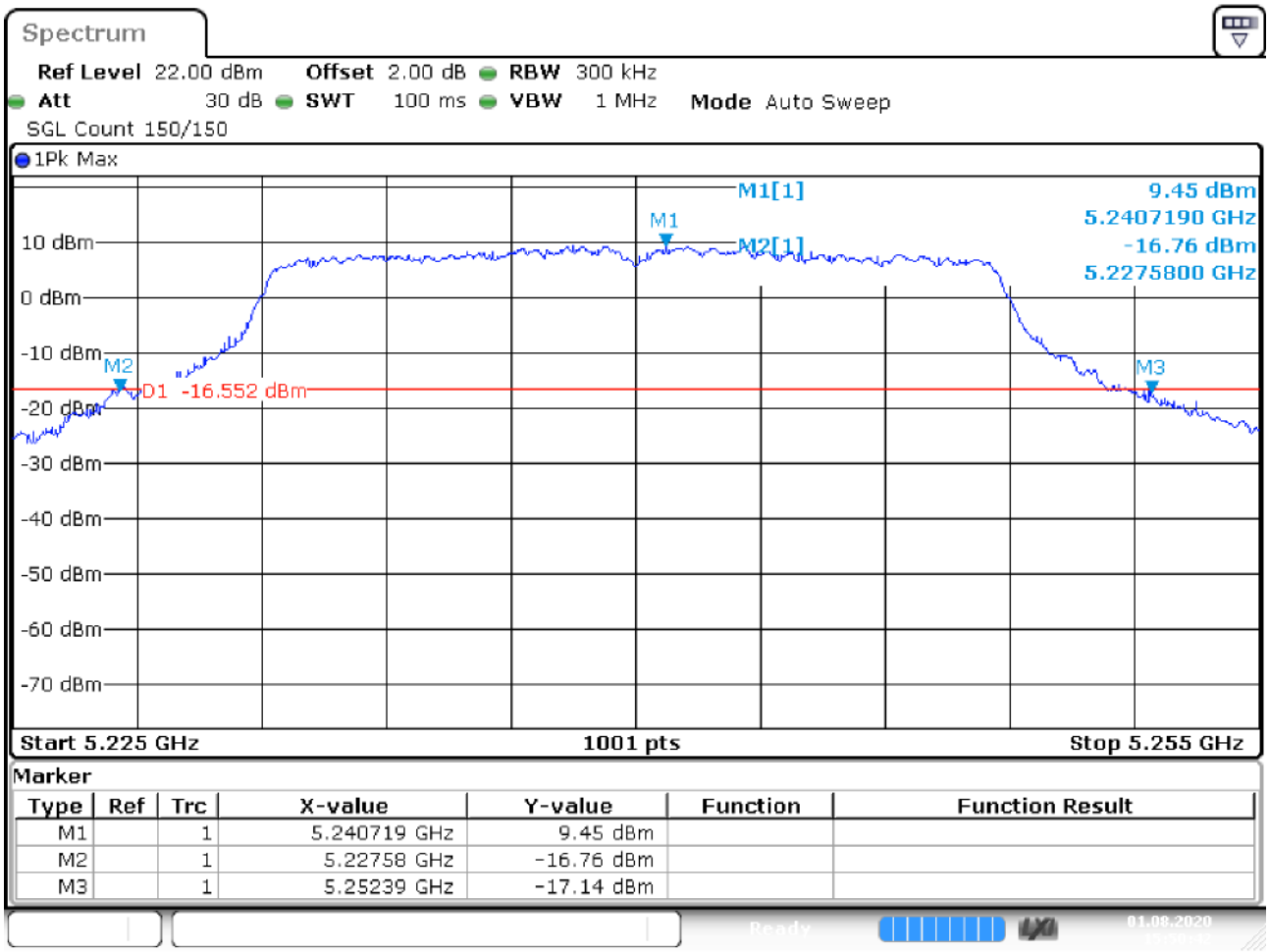
4.5.1.53 11AC20MIMO_48 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.240719 GHz	9.45 dBm		
M2		1	5.22758 GHz	-16.76 dBm		
M3		1	5.25239 GHz	-17.14 dBm		

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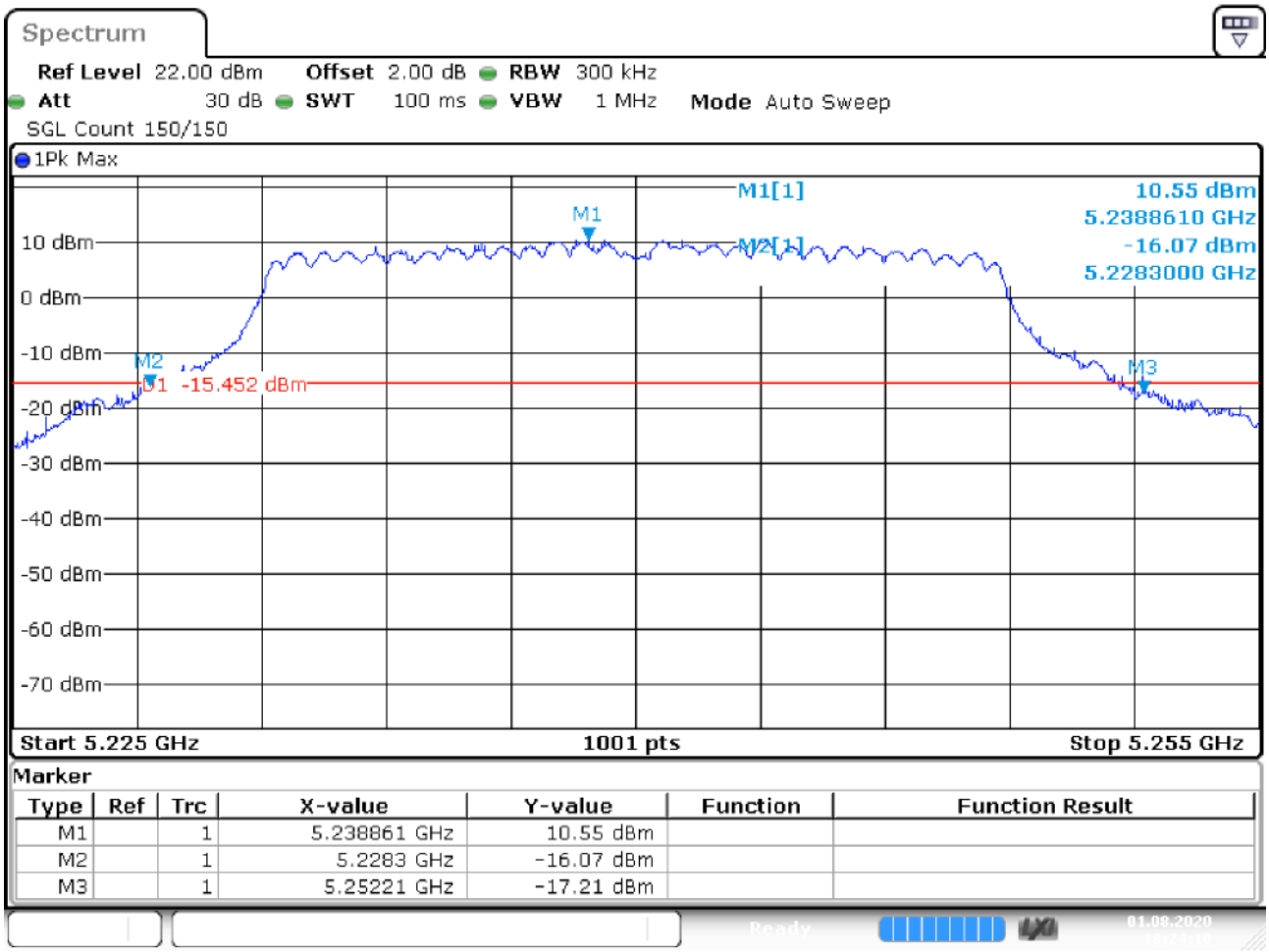
4.5.1.54 11AC20MIMO_48 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.238861 GHz	10.55 dBm		
M2		1	5.2283 GHz	-16.07 dBm		
M3		1	5.25221 GHz	-17.21 dBm		

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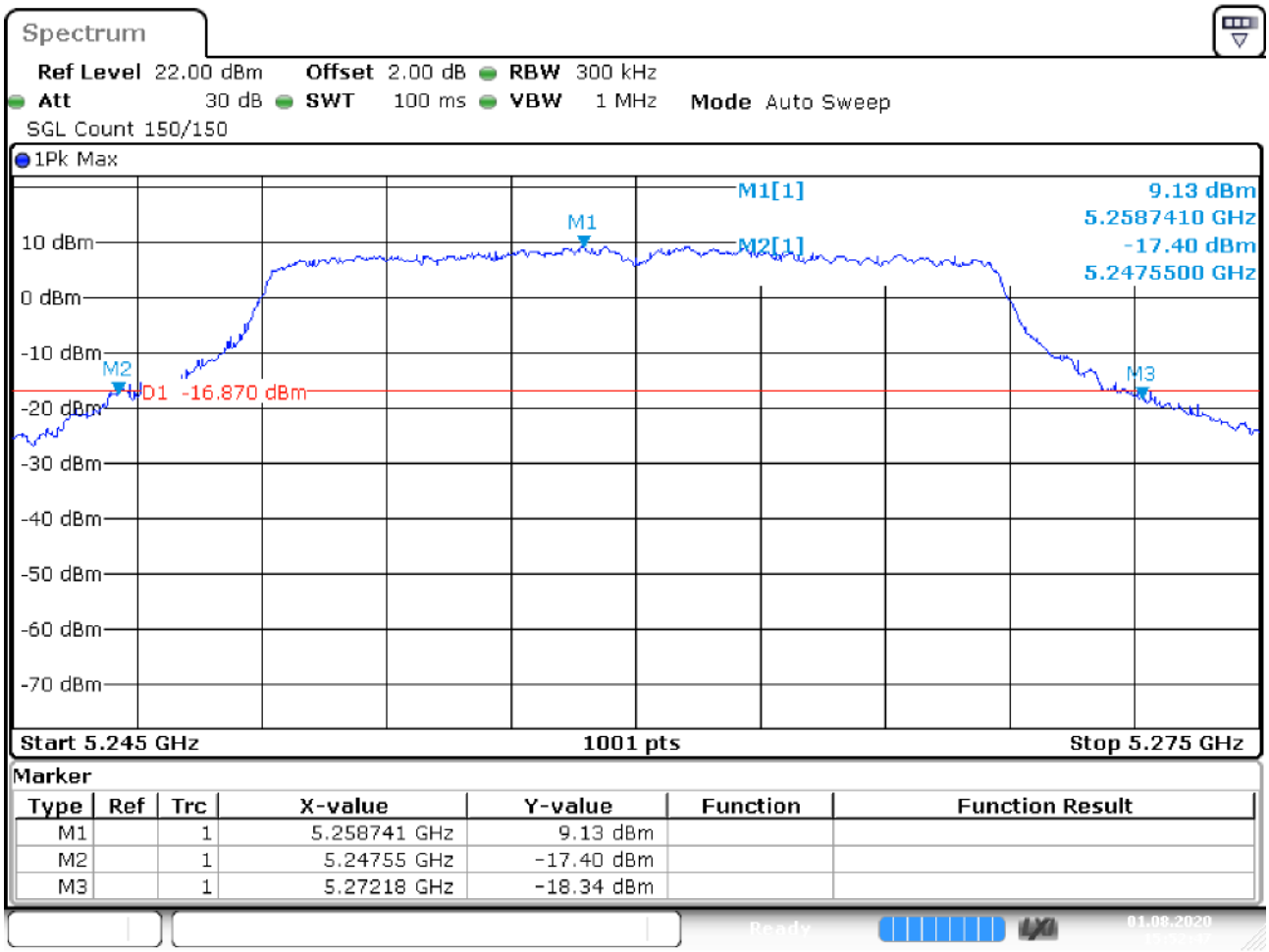
4.5.1.55 11AC20MIMO_52 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.258741 GHz	9.13 dBm		
M2		1	5.24755 GHz	-17.40 dBm		
M3		1	5.27218 GHz	-18.34 dBm		

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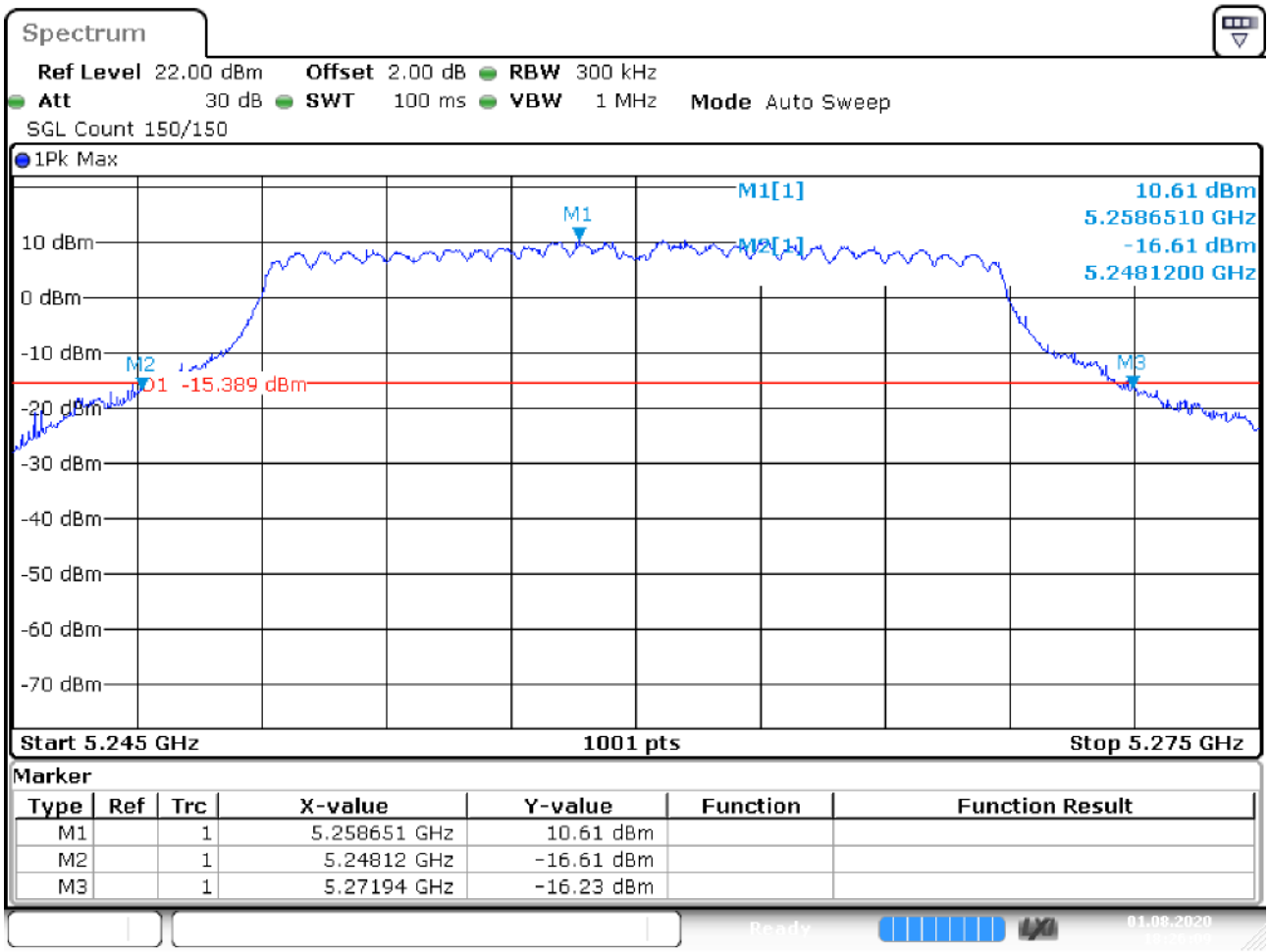
4.5.1.56 11AC20MIMO_52 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.258651 GHz	10.61 dBm		
M2		1	5.24812 GHz	-16.61 dBm		
M3		1	5.27194 GHz	-16.23 dBm		

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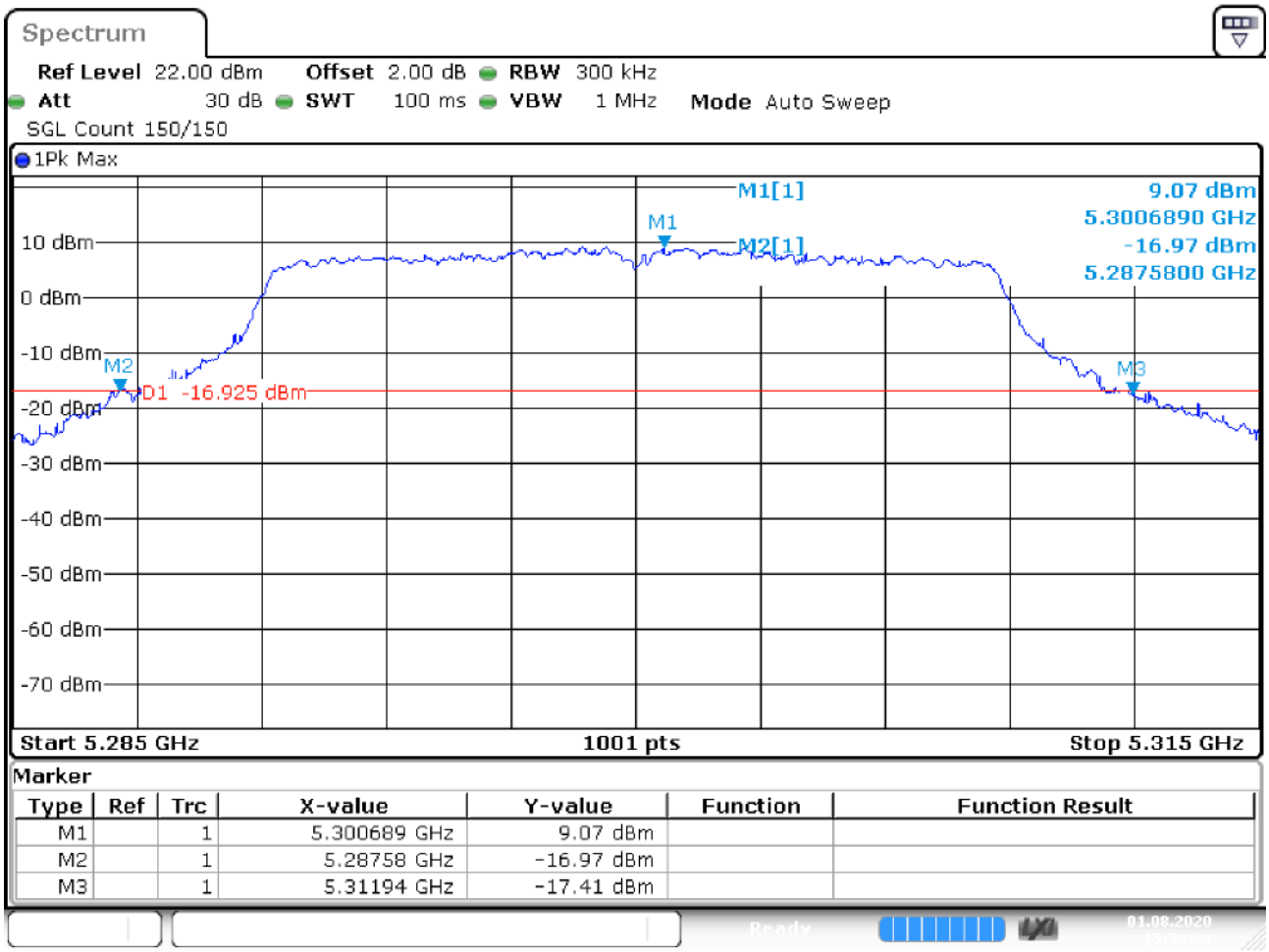
4.5.1.57 11AC20MIMO_60 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.300689 GHz	9.07 dBm		
M2		1	5.28758 GHz	-16.97 dBm		
M3		1	5.31194 GHz	-17.41 dBm		

Date: 1.AUG.2020 15:54:30

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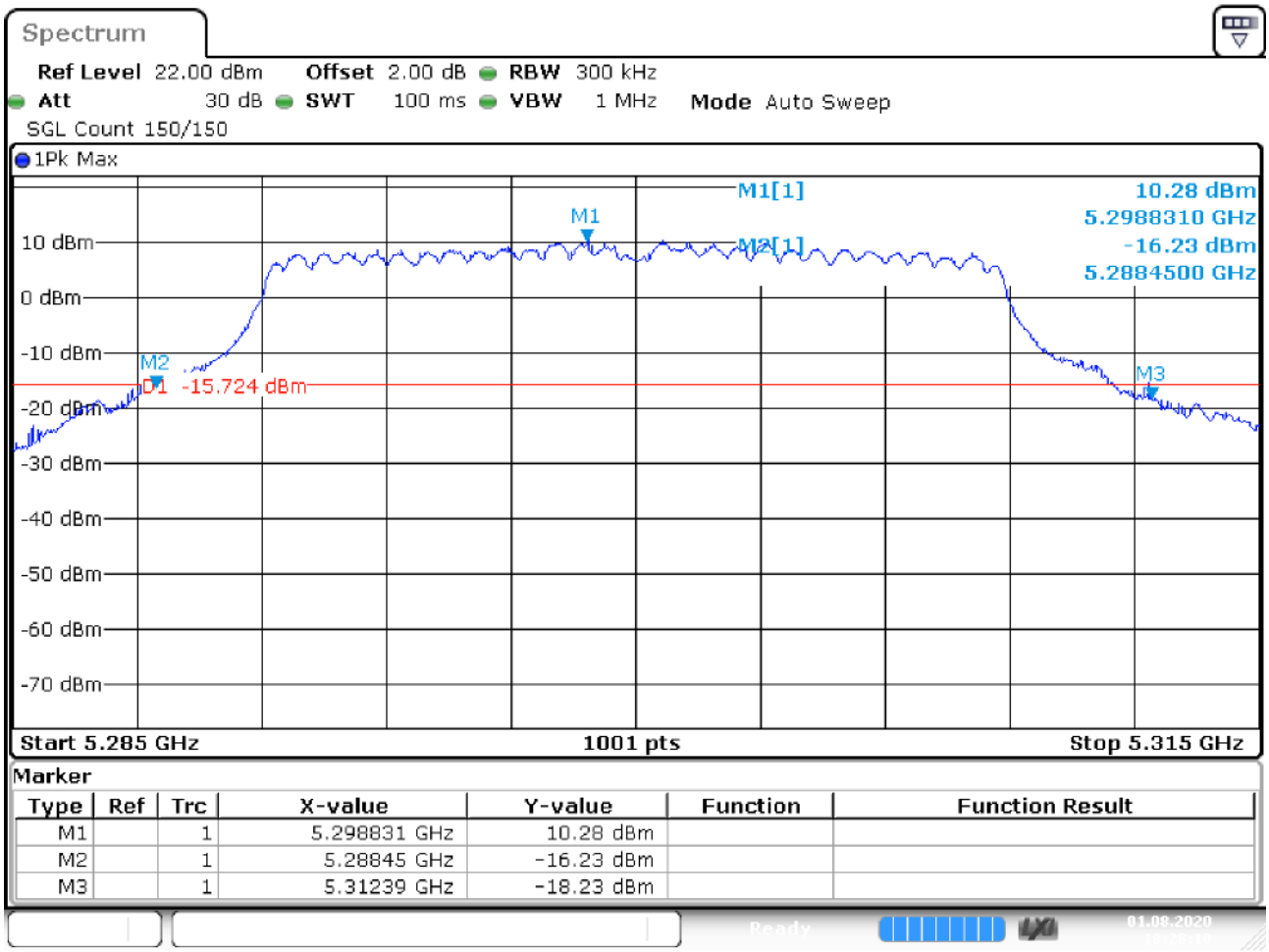
4.5.1.58 11AC20MIMO_60 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.298831 GHz	10.28 dBm		
M2		1	5.28845 GHz	-16.23 dBm		
M3		1	5.31239 GHz	-18.23 dBm		

Date: 1.AUG.2020 18:28:11

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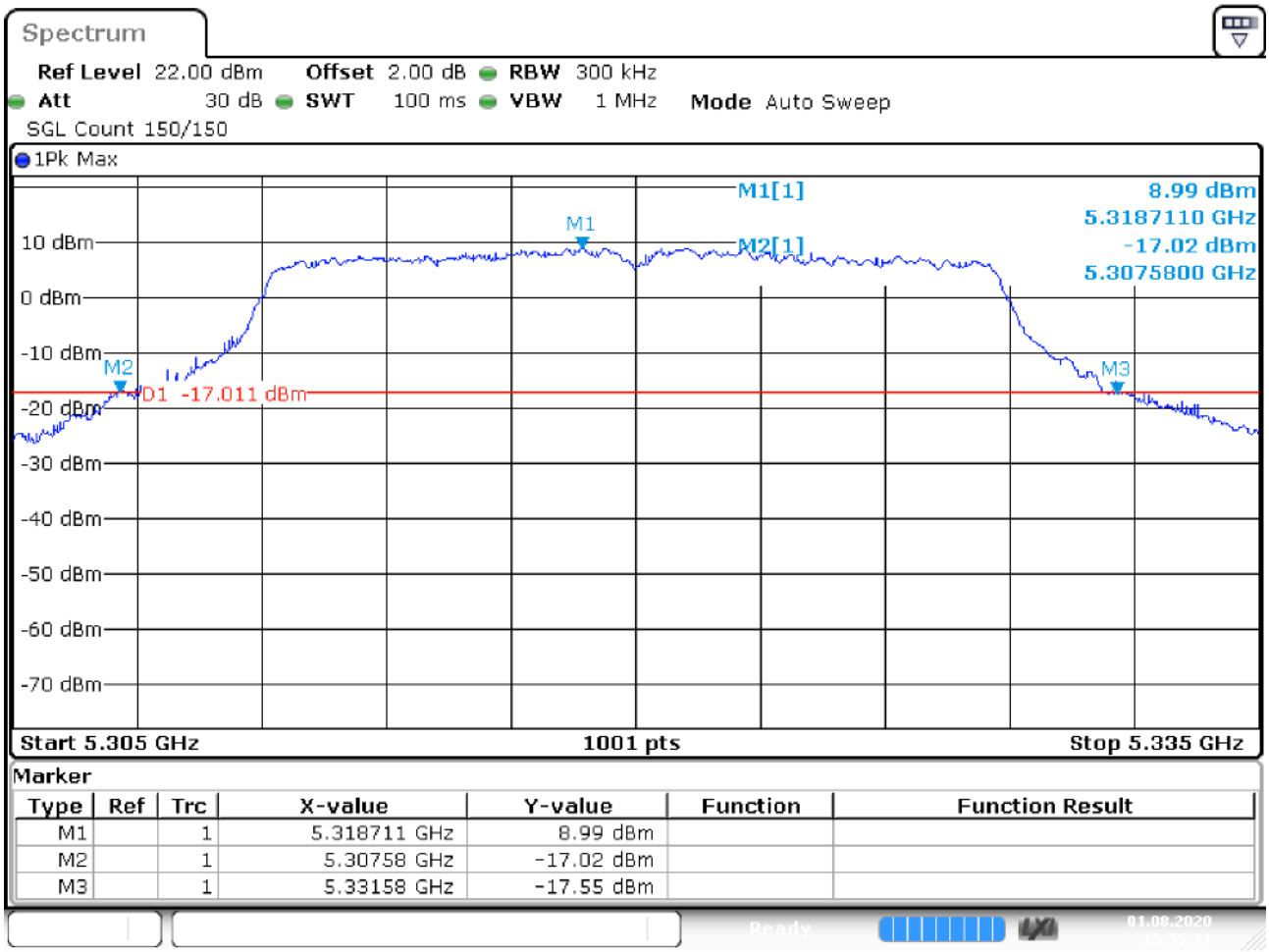
4.5.1.59 11AC20MIMO_64 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.318711 GHz	8.99 dBm		
M2		1	5.30758 GHz	-17.02 dBm		
M3		1	5.33158 GHz	-17.55 dBm		

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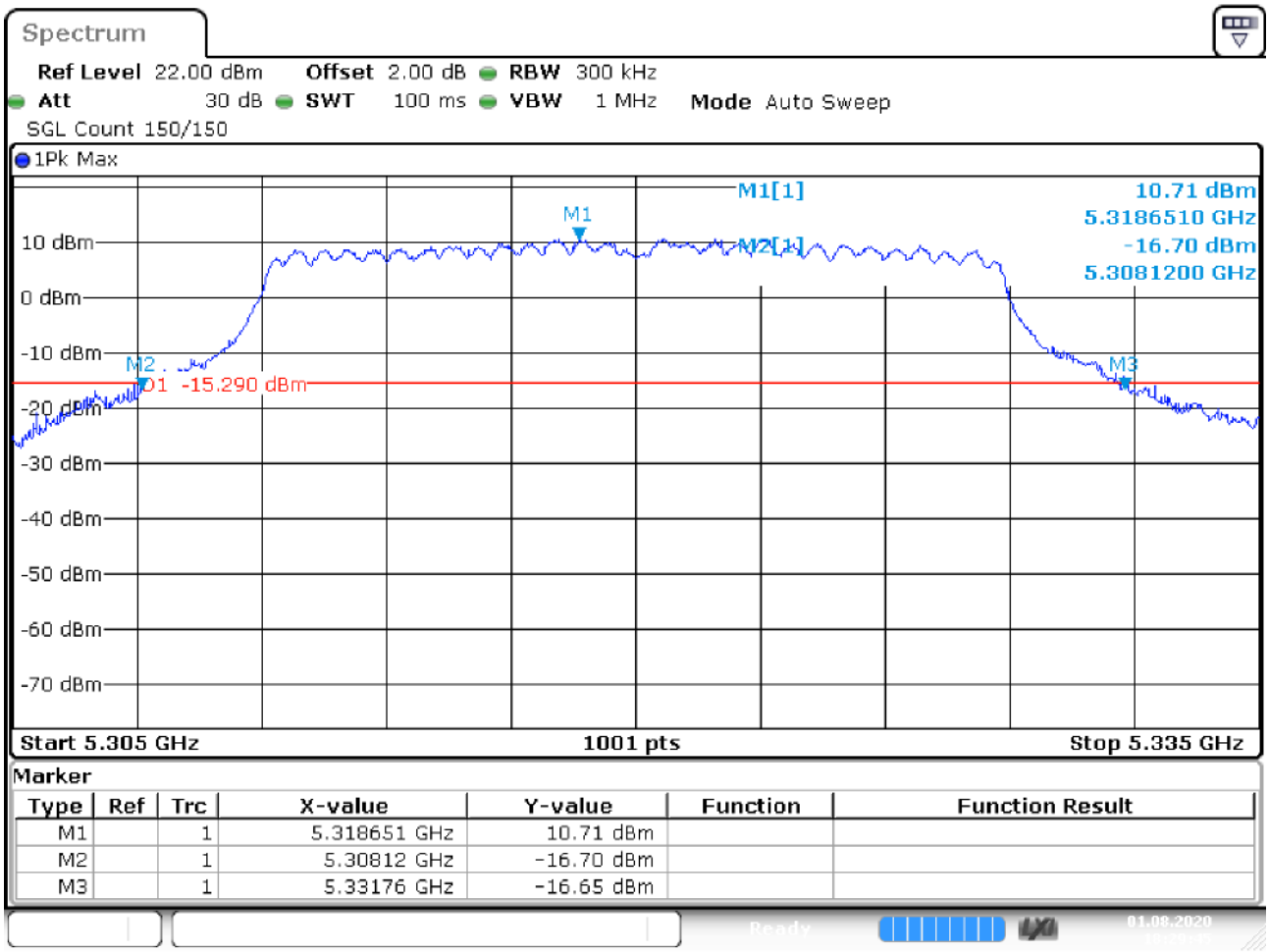
4.5.1.60 11AC20MIMO_64 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.318651 GHz	10.71 dBm		
M2		1	5.30812 GHz	-16.70 dBm		
M3		1	5.33176 GHz	-16.65 dBm		

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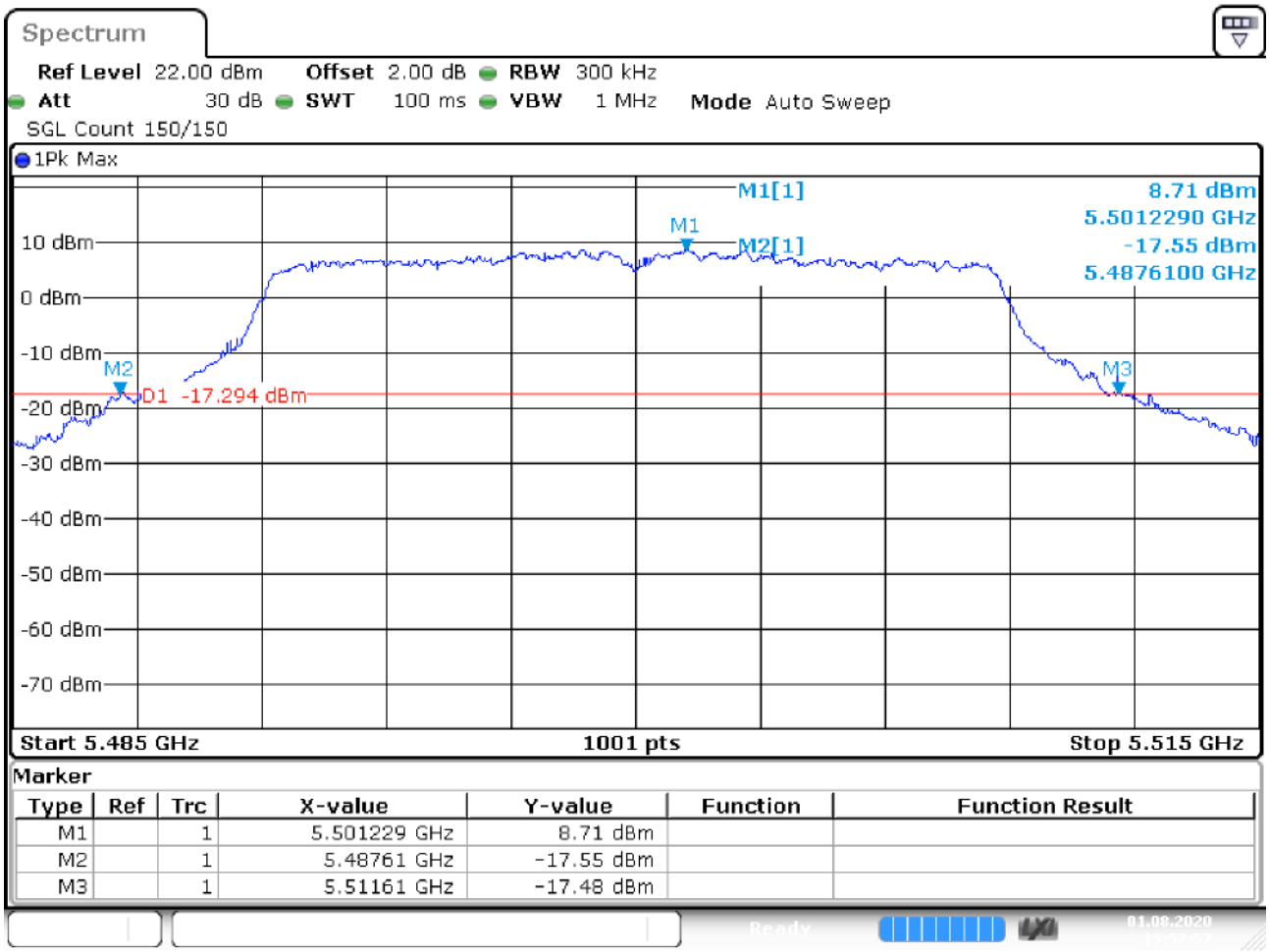
4.5.1.61 11AC20MIMO_100 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.501229 GHz	8.71 dBm		
M2		1	5.48761 GHz	-17.55 dBm		
M3		1	5.51161 GHz	-17.48 dBm		

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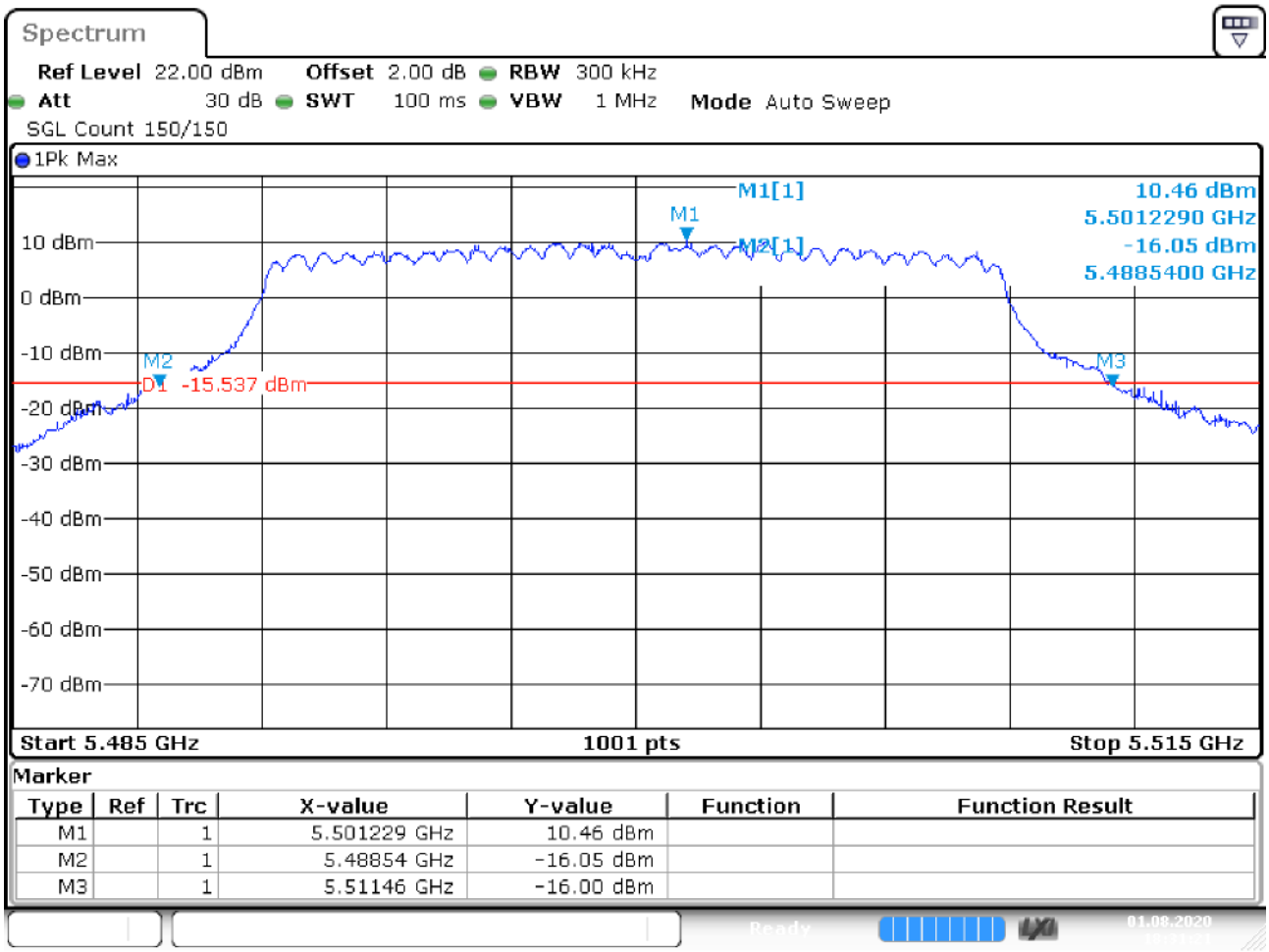
4.5.1.62 11AC20MIMO_100 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.501229 GHz	10.46 dBm		
M2		1	5.48854 GHz	-16.05 dBm		
M3		1	5.51146 GHz	-16.00 dBm		

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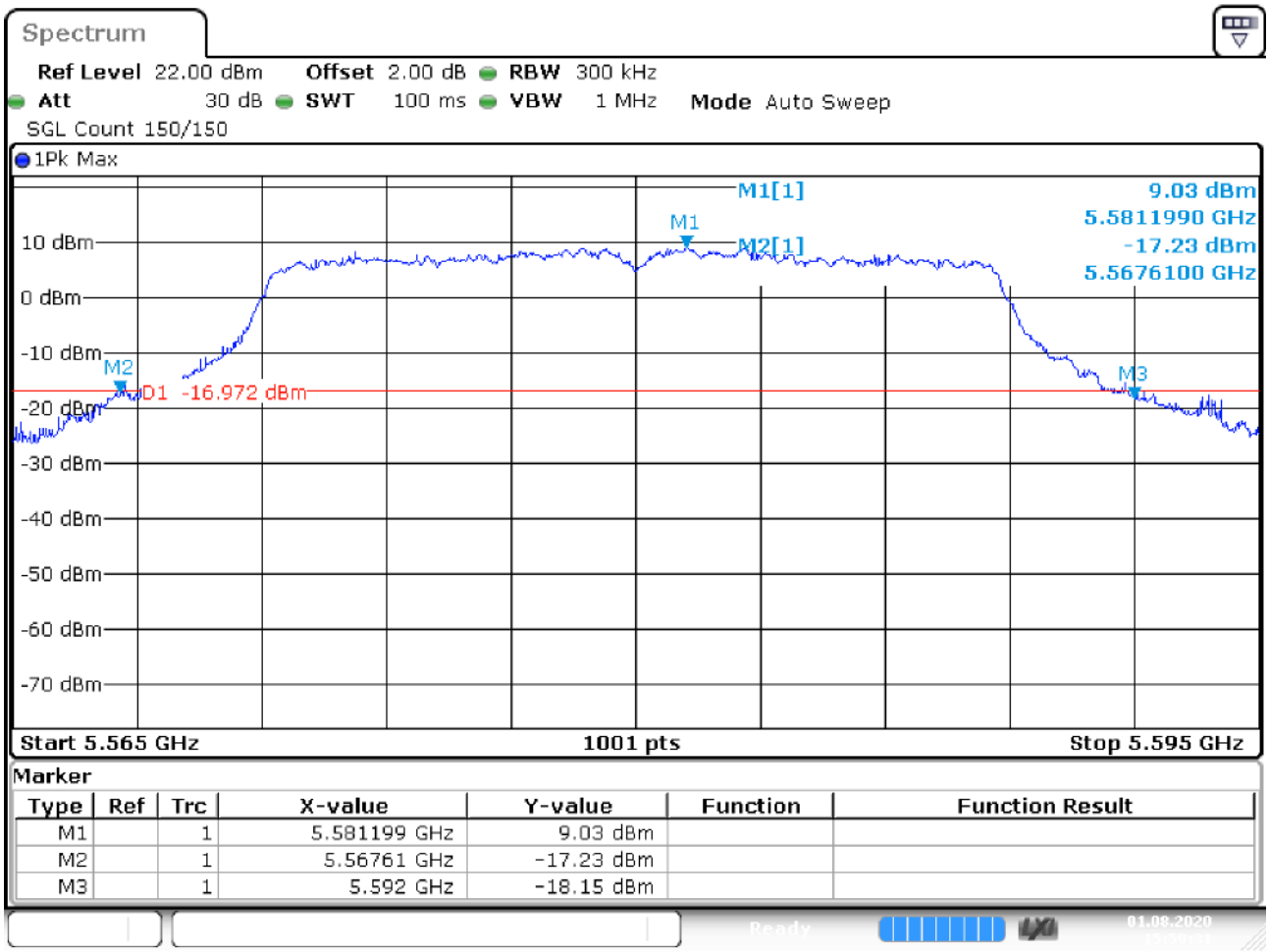
4.5.1.63 11AC20MIMO_116 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.581199 GHz	9.03 dBm		
M2		1	5.56761 GHz	-17.23 dBm		
M3		1	5.592 GHz	-18.15 dBm		

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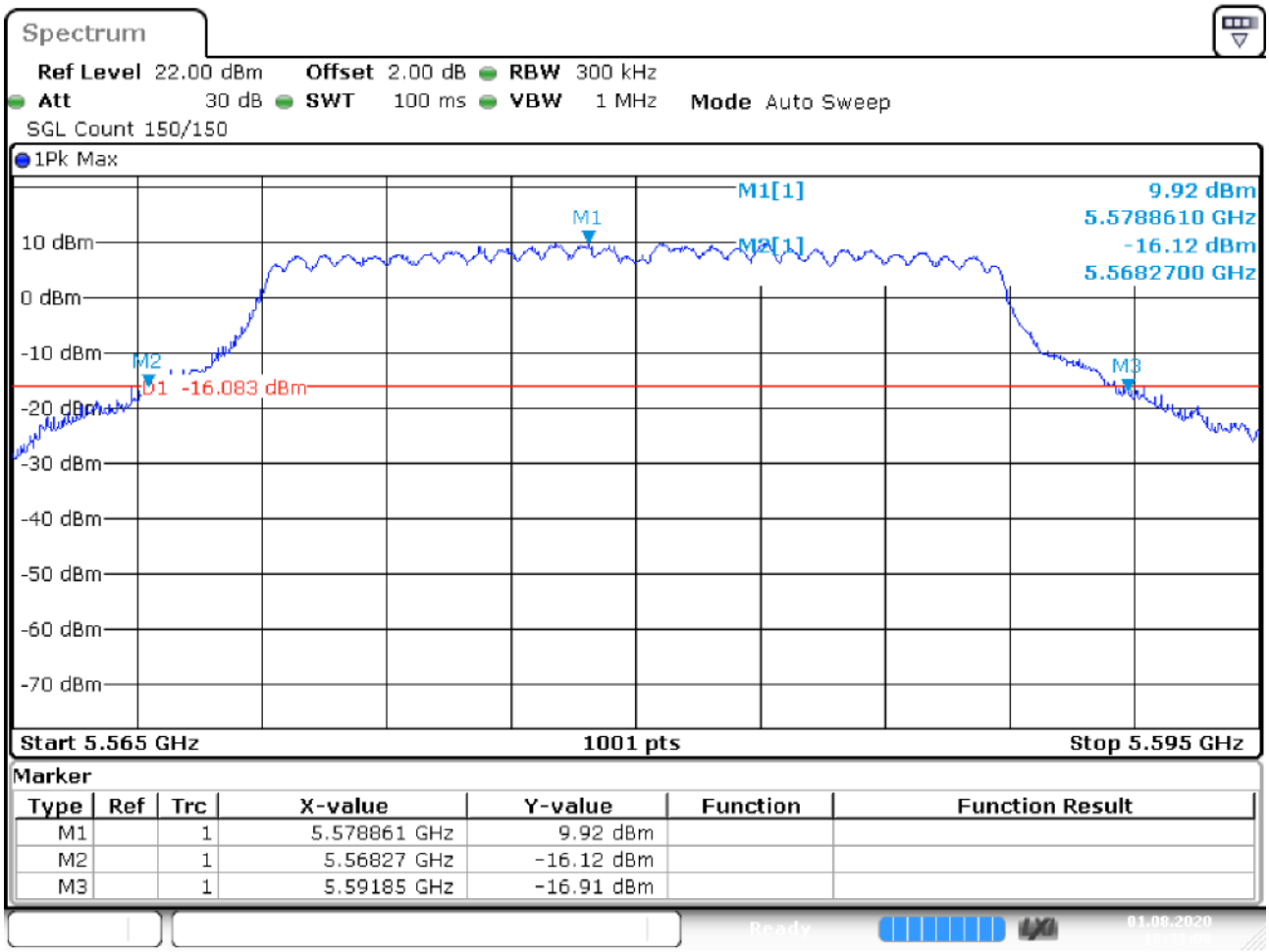
4.5.1.64 11AC20MIMO_116 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.578861 GHz	9.92 dBm		
M2		1	5.56827 GHz	-16.12 dBm		
M3		1	5.59185 GHz	-16.91 dBm		

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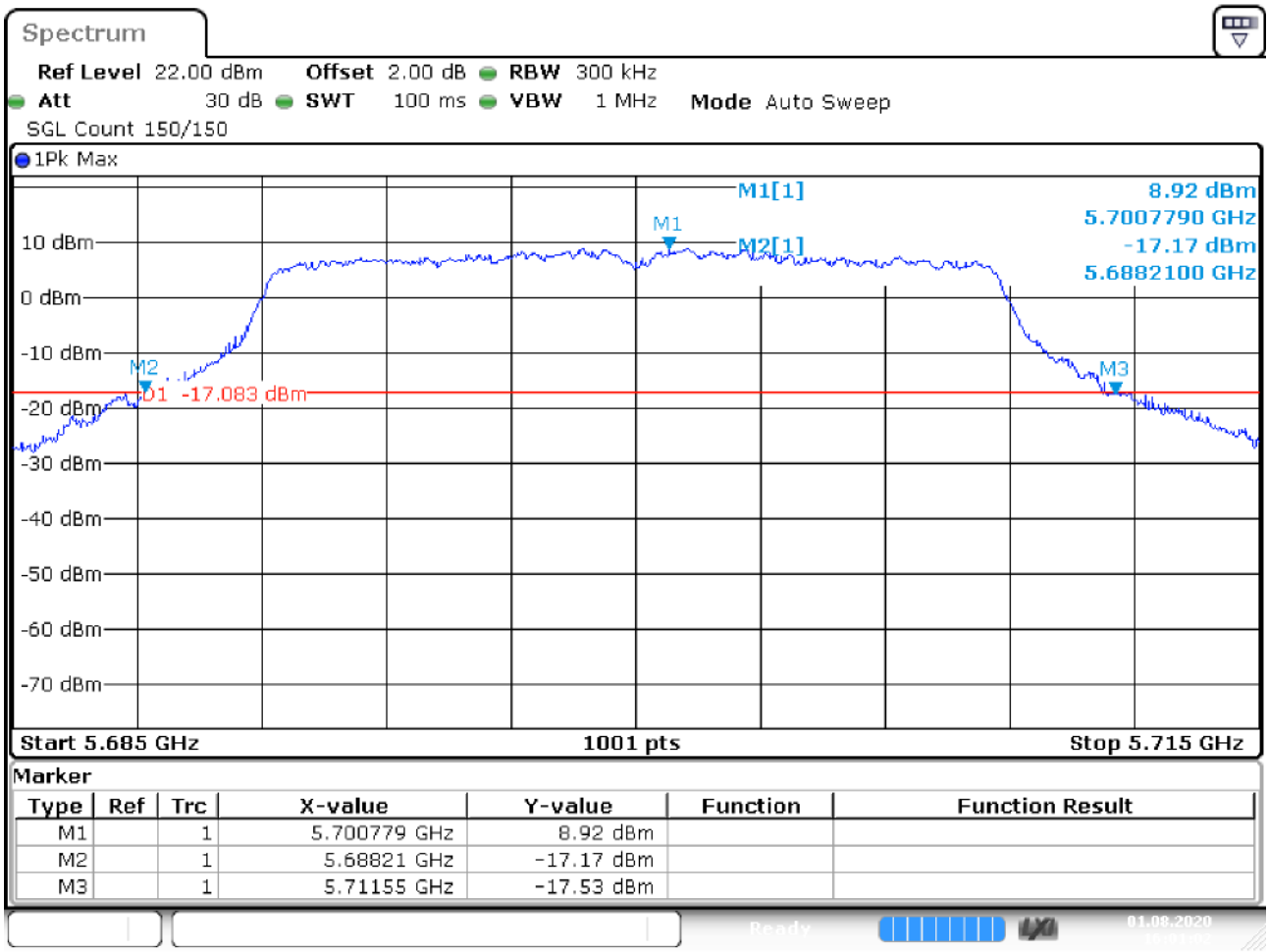
4.5.1.65 11AC20MIMO_140 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.700779 GHz	8.92 dBm		
M2		1	5.68821 GHz	-17.17 dBm		
M3		1	5.71155 GHz	-17.53 dBm		

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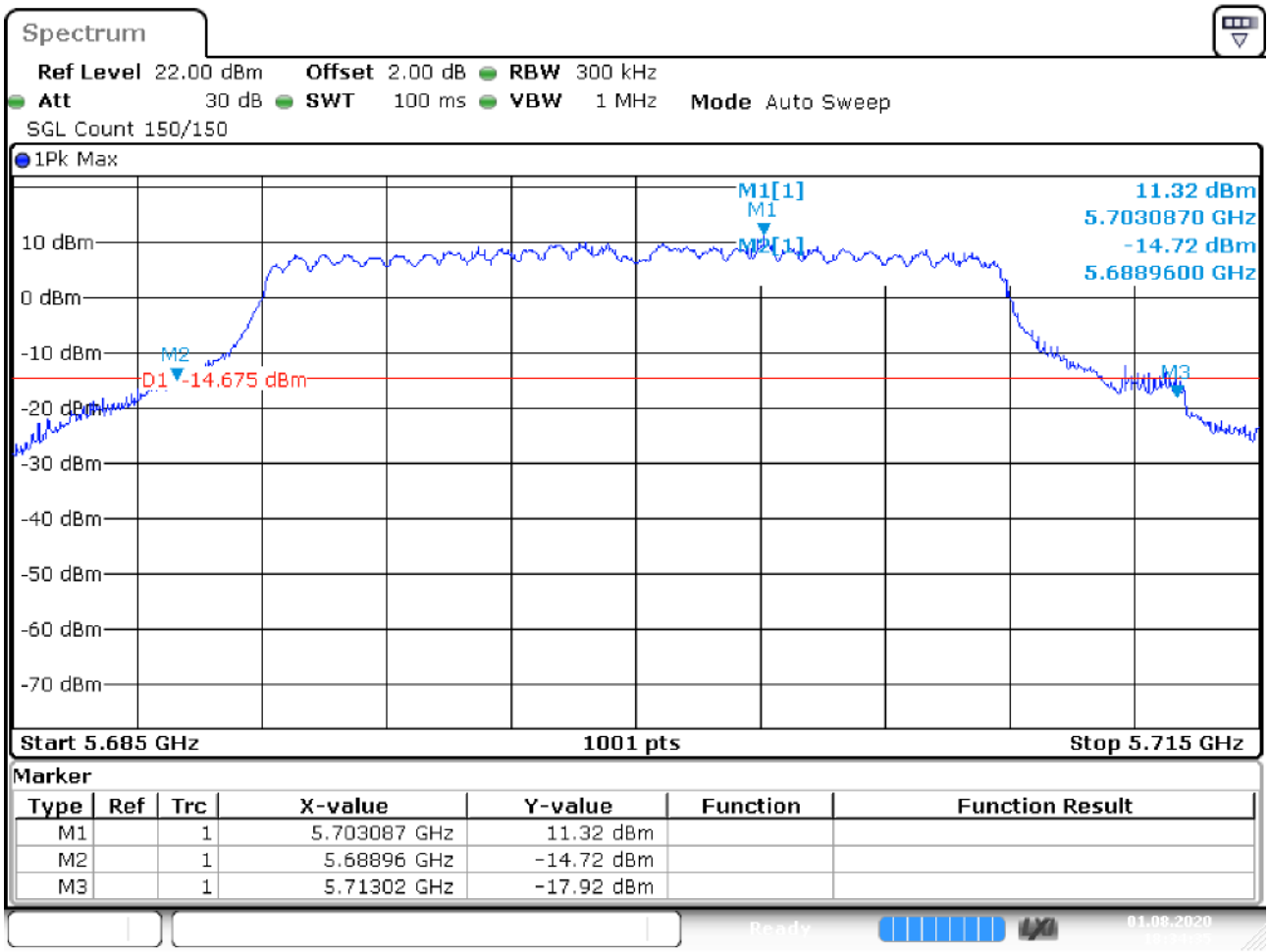
4.5.1.66 11AC20MIMO_140 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.703087 GHz	11.32 dBm		
M2		1	5.68896 GHz	-14.72 dBm		
M3		1	5.71302 GHz	-17.92 dBm		

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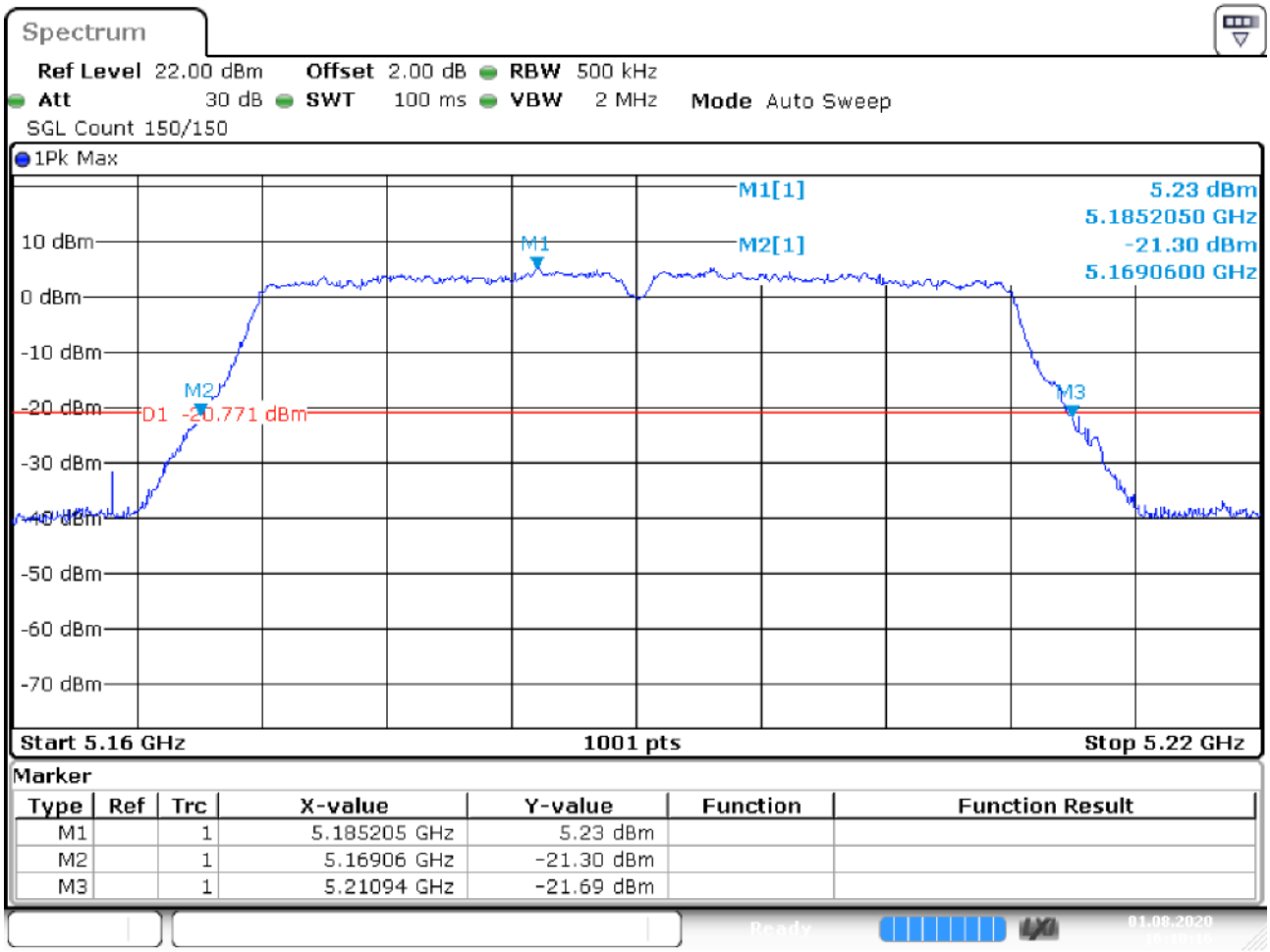
4.5.1.67 11AC40MIMO_38 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.185205 GHz	5.23 dBm		
M2		1	5.16906 GHz	-21.30 dBm		
M3		1	5.21094 GHz	-21.69 dBm		

Date: 1.AUG.2020 16:10:16

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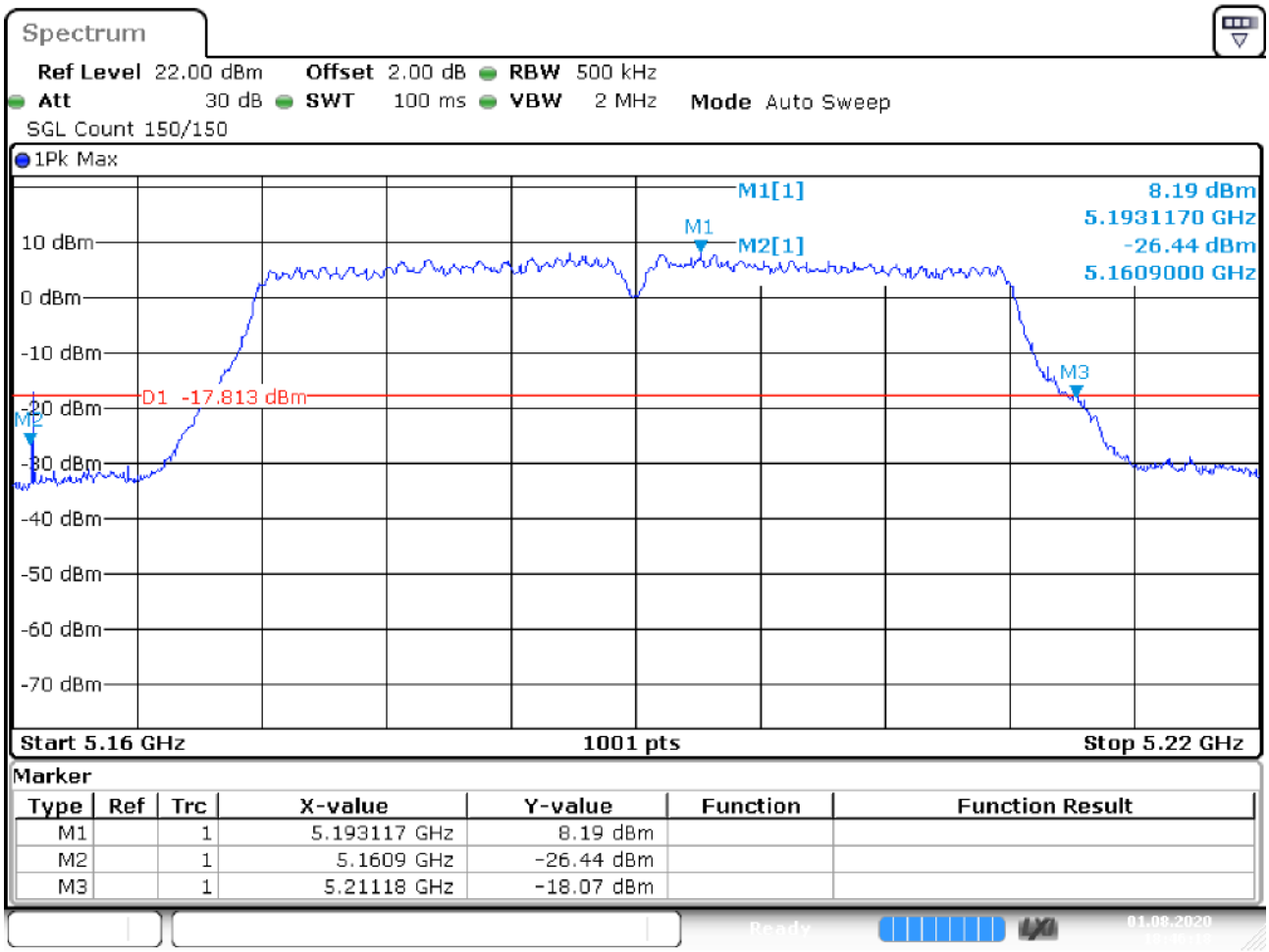
4.5.1.68 11AC40MIMO_38 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.193117 GHz	8.19 dBm		
M2		1	5.1609 GHz	-26.44 dBm		
M3		1	5.21118 GHz	-18.07 dBm		

Date: 1.AUG.2020 18:46:19

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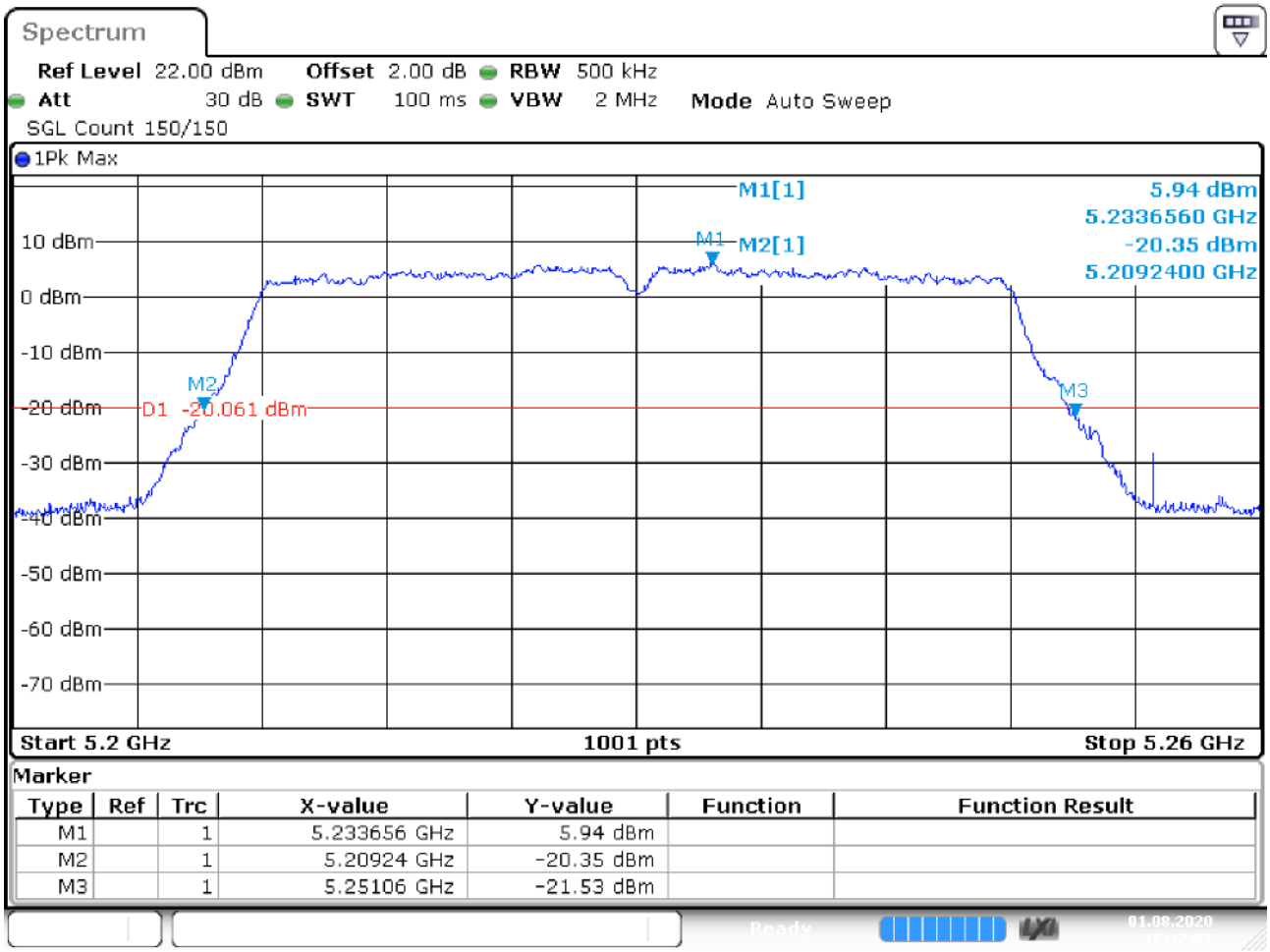
4.5.1.69 11AC40MIMO_46 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.233656 GHz	5.94 dBm		
M2		1	5.20924 GHz	-20.35 dBm		
M3		1	5.25106 GHz	-21.53 dBm		

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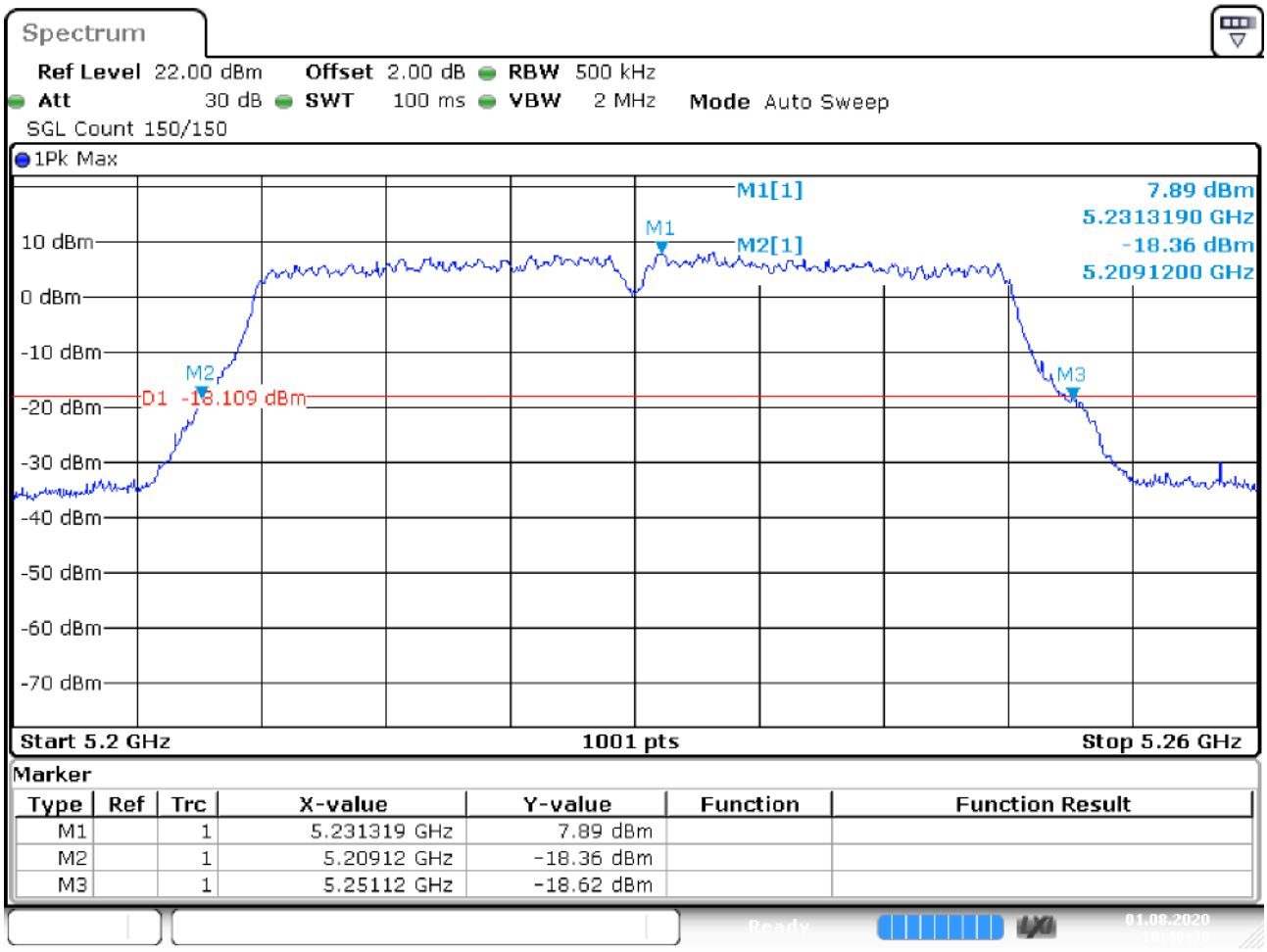
4.5.1.70 11AC40MIMO_46 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.231319 GHz	7.89 dBm		
M2		1	5.20912 GHz	-18.36 dBm		
M3		1	5.25112 GHz	-18.62 dBm		

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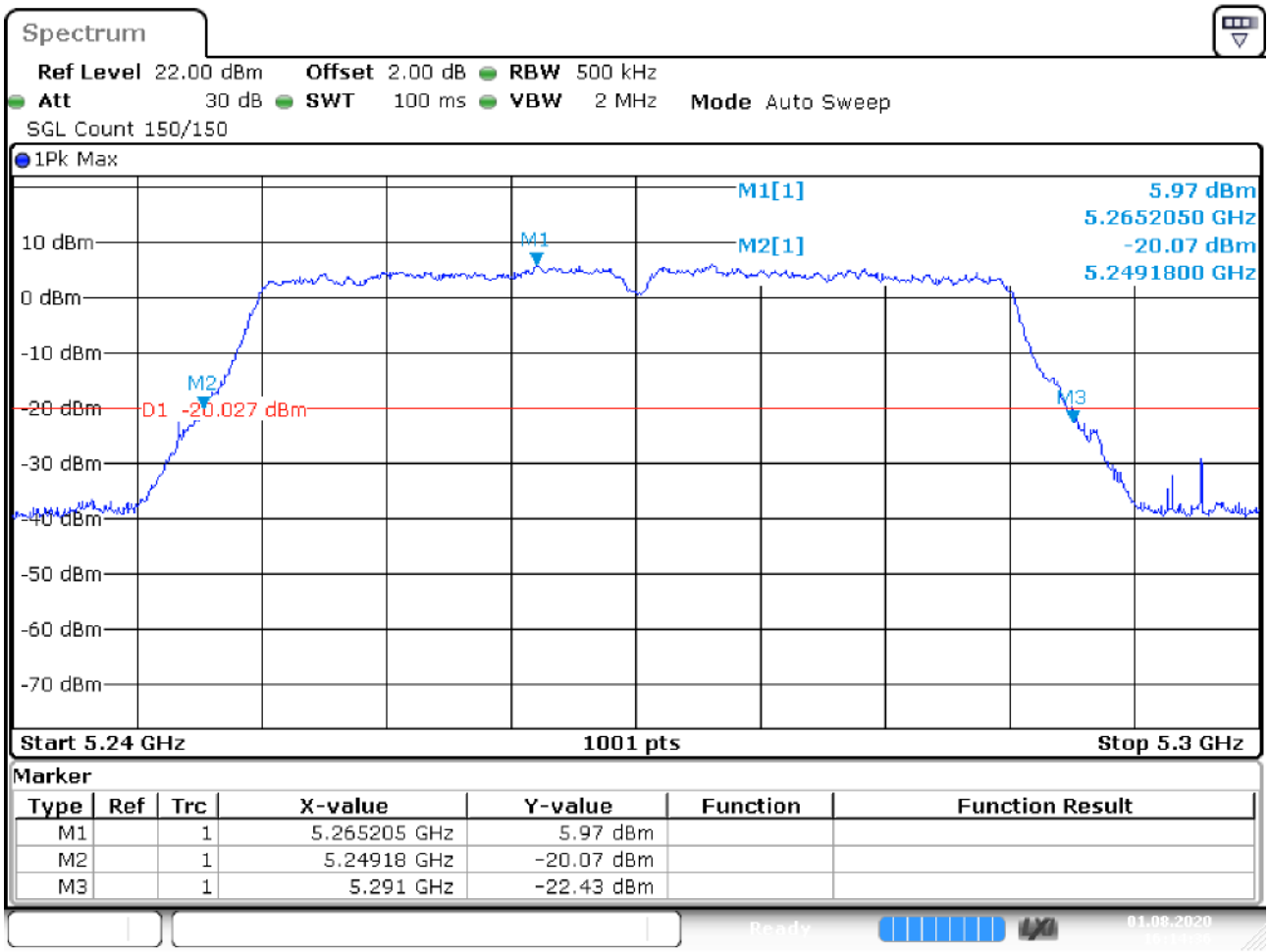
4.5.1.71 11AC40MIMO_54 ANT 1



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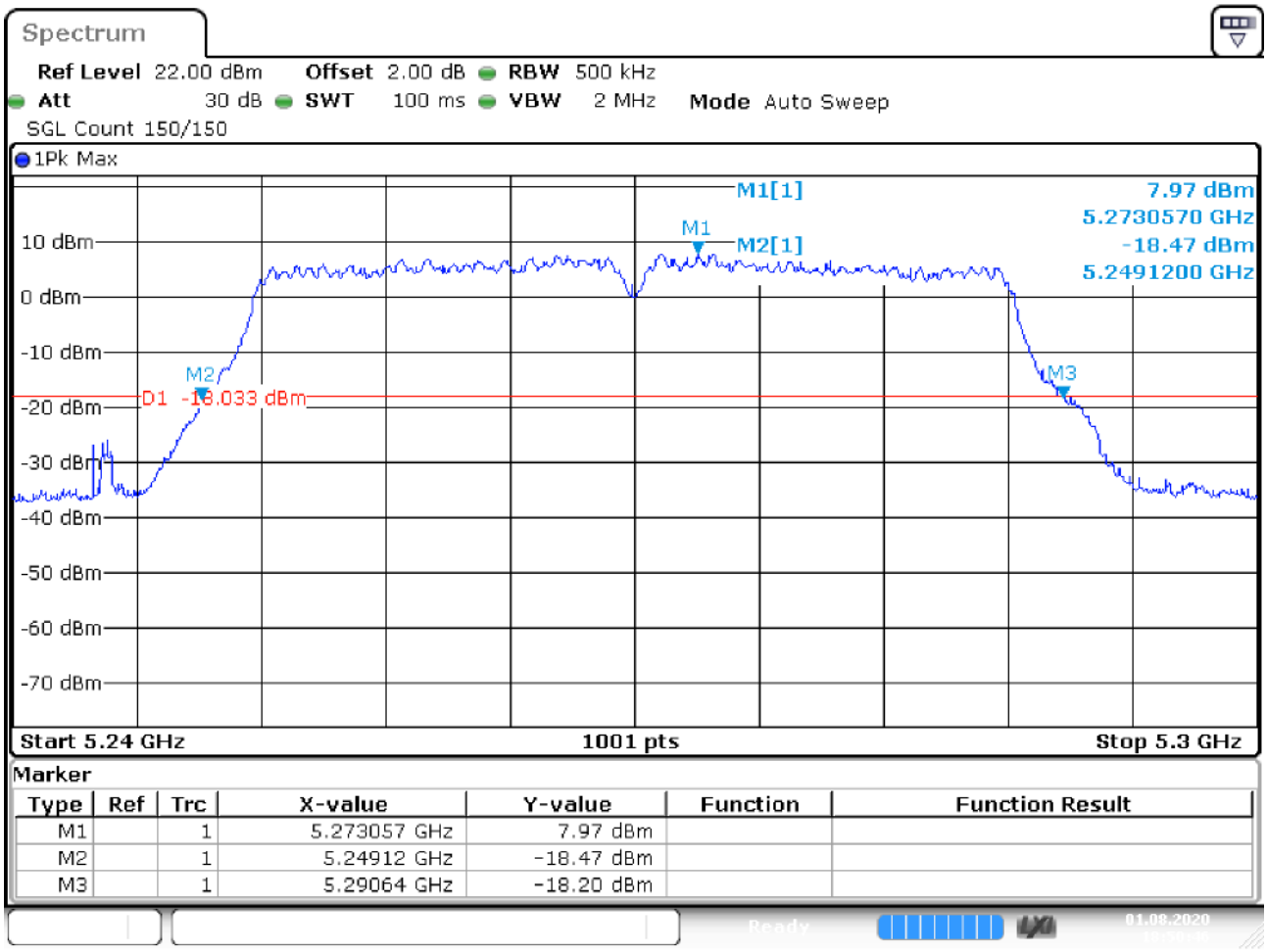
4.5.1.72 11AC40MIMO_54 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.273057 GHz	7.97 dBm		
M2		1	5.24912 GHz	-18.47 dBm		
M3		1	5.29064 GHz	-18.20 dBm		

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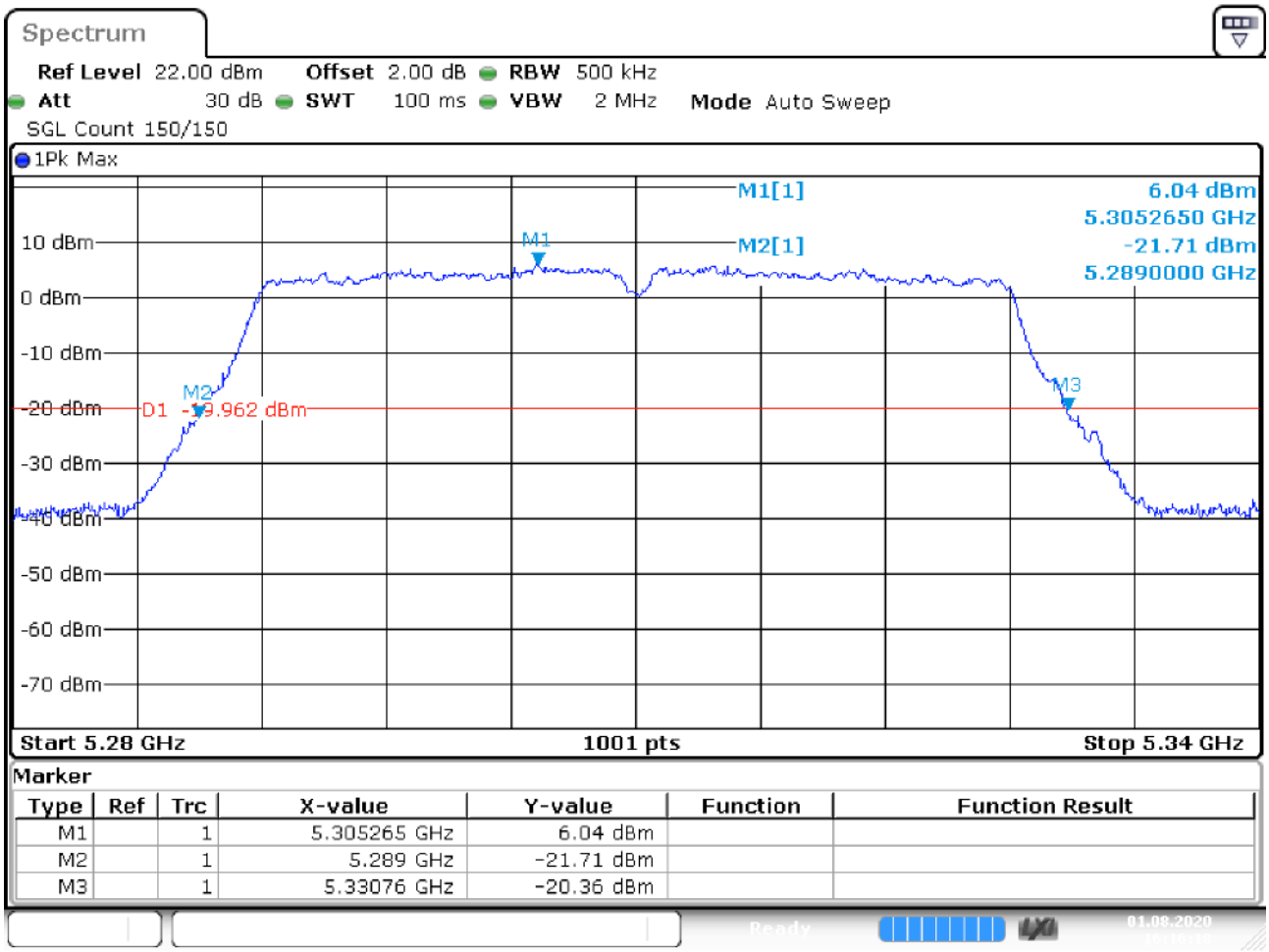
4.5.1.73 11AC40MIMO_62 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.305265 GHz	6.04 dBm		
M2		1	5.289 GHz	-21.71 dBm		
M3		1	5.33076 GHz	-20.36 dBm		

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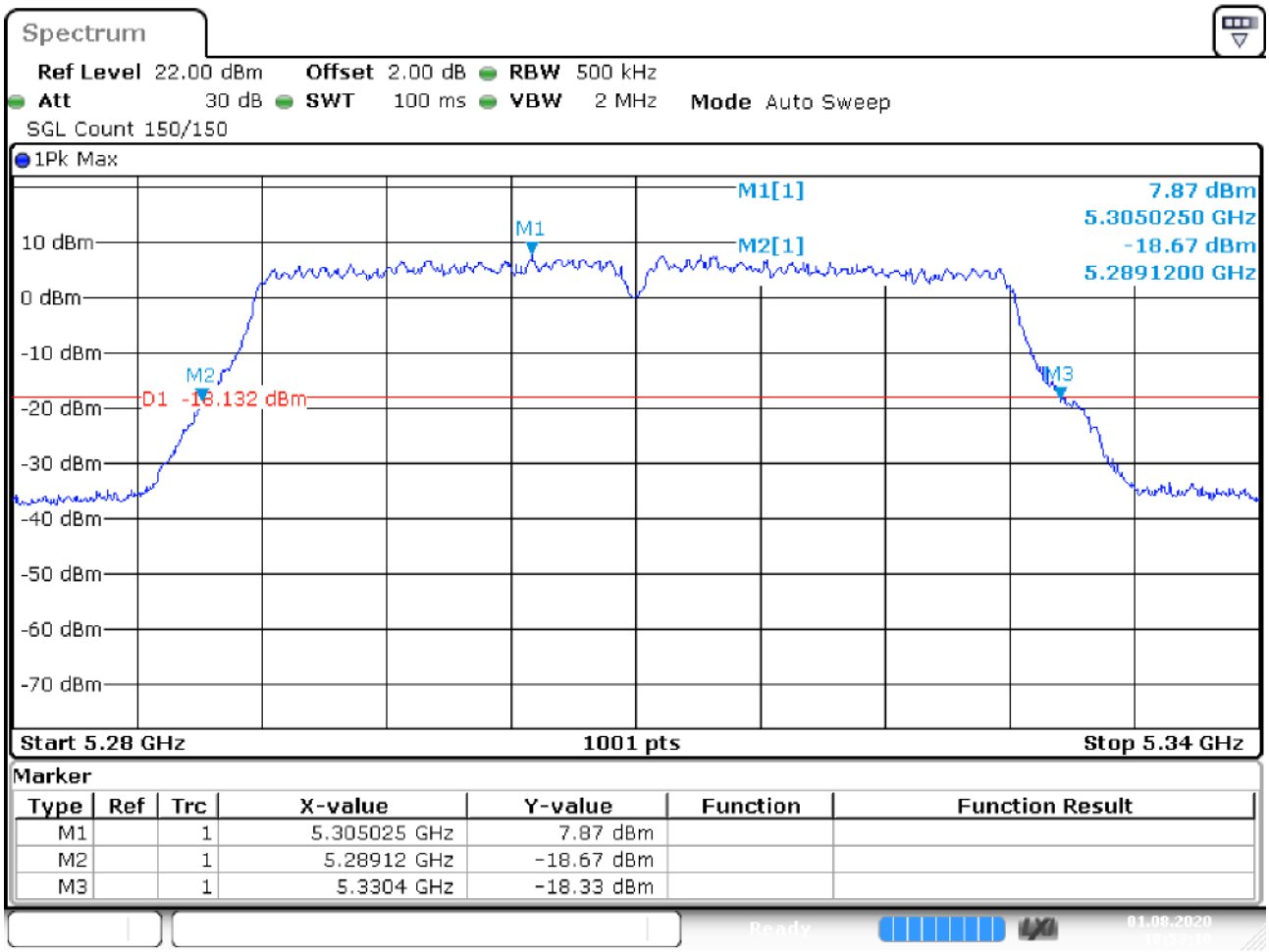
4.5.1.74 11AC40MIMO_62 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.305025 GHz	7.87 dBm		
M2		1	5.28912 GHz	-18.67 dBm		
M3		1	5.3304 GHz	-18.33 dBm		

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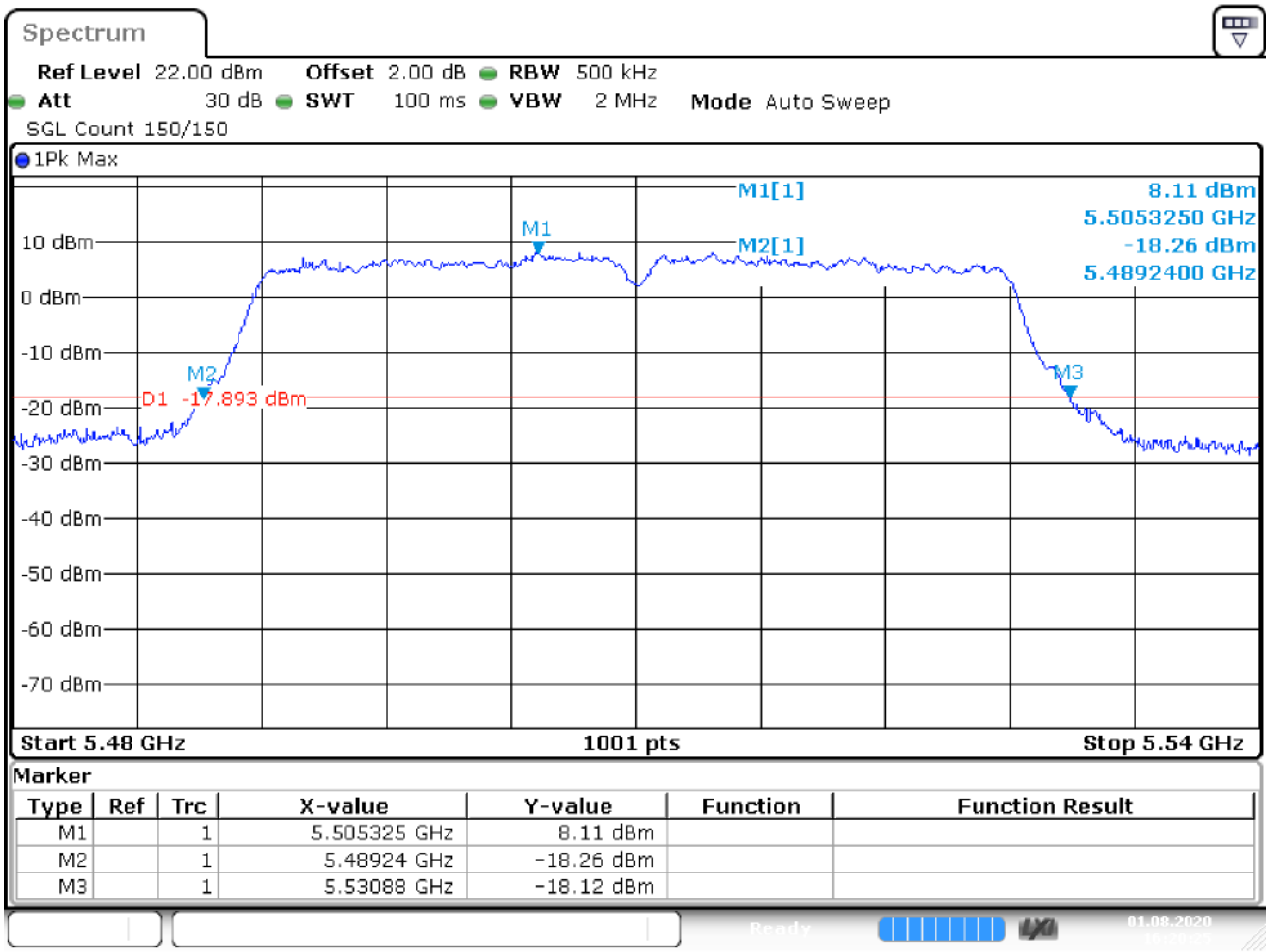
4.5.1.75 11AC40MIMO_102 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.505325 GHz	8.11 dBm		
M2		1	5.48924 GHz	-18.26 dBm		
M3		1	5.53088 GHz	-18.12 dBm		

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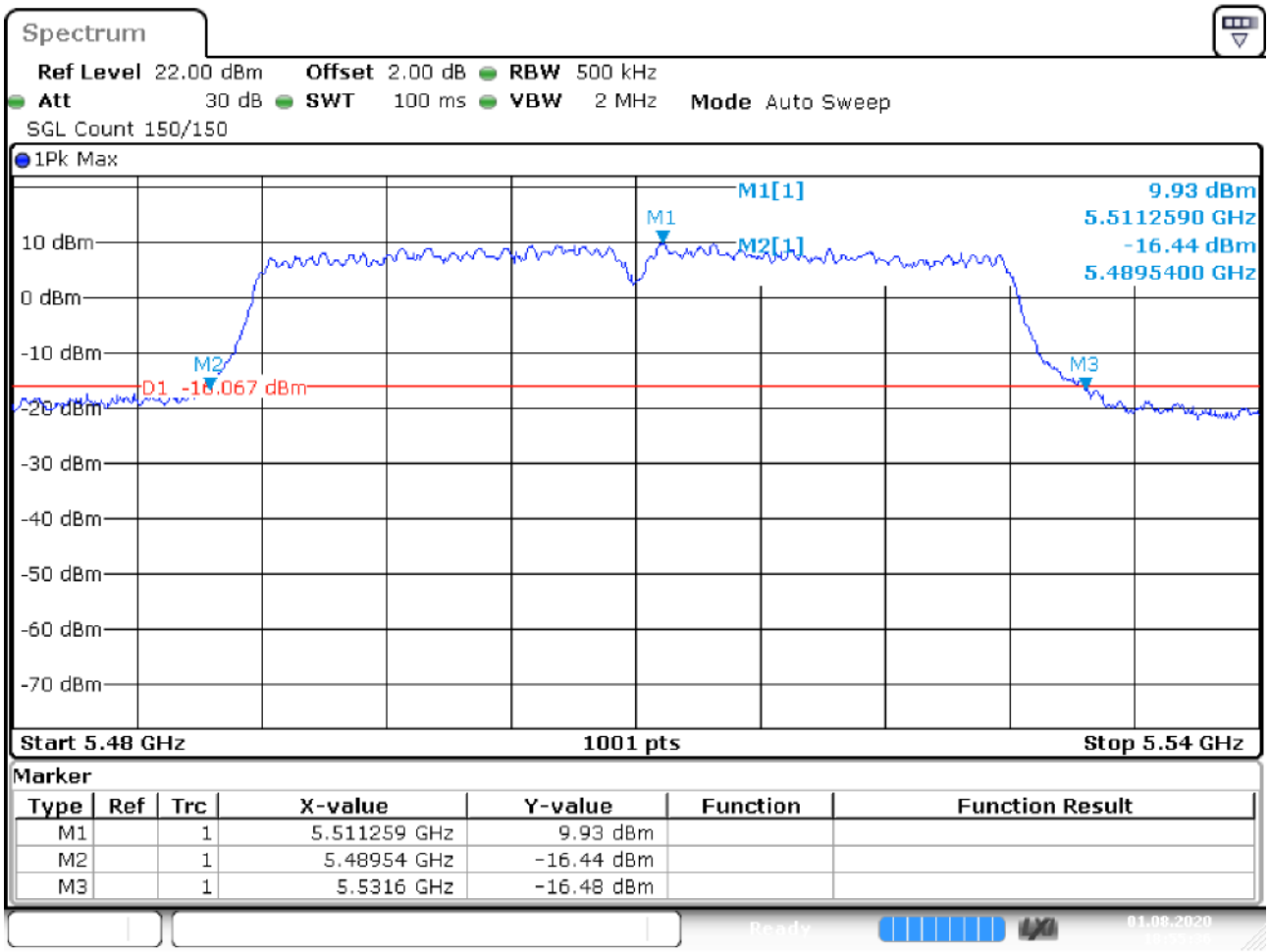
4.5.1.76 11AC40MIMO_102 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.511259 GHz	9.93 dBm		
M2		1	5.48954 GHz	-16.44 dBm		
M3		1	5.5316 GHz	-16.48 dBm		

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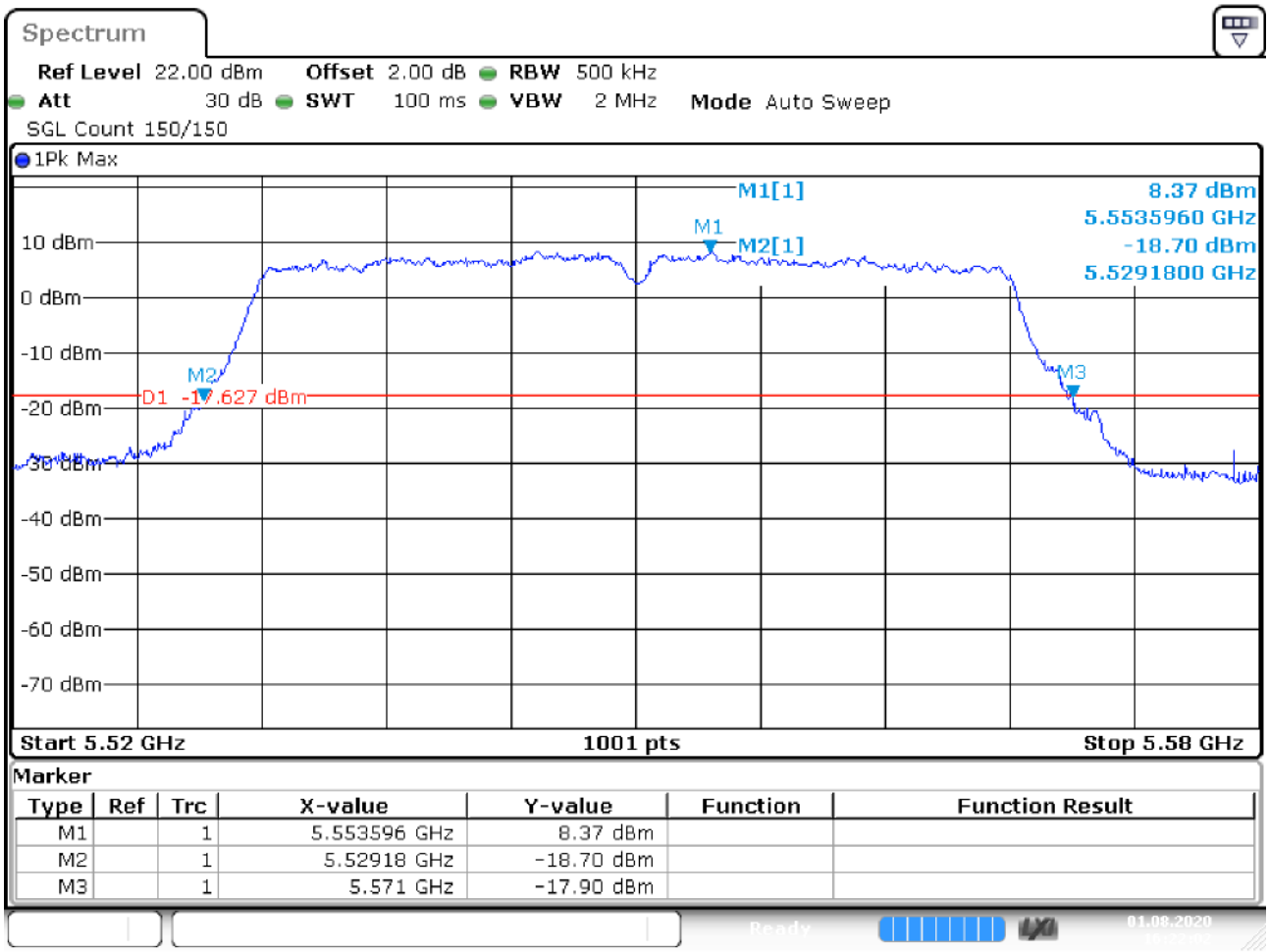
4.5.1.77 11AC40MIMO_110 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.553596 GHz	8.37 dBm		
M2		1	5.52918 GHz	-18.70 dBm		
M3		1	5.571 GHz	-17.90 dBm		

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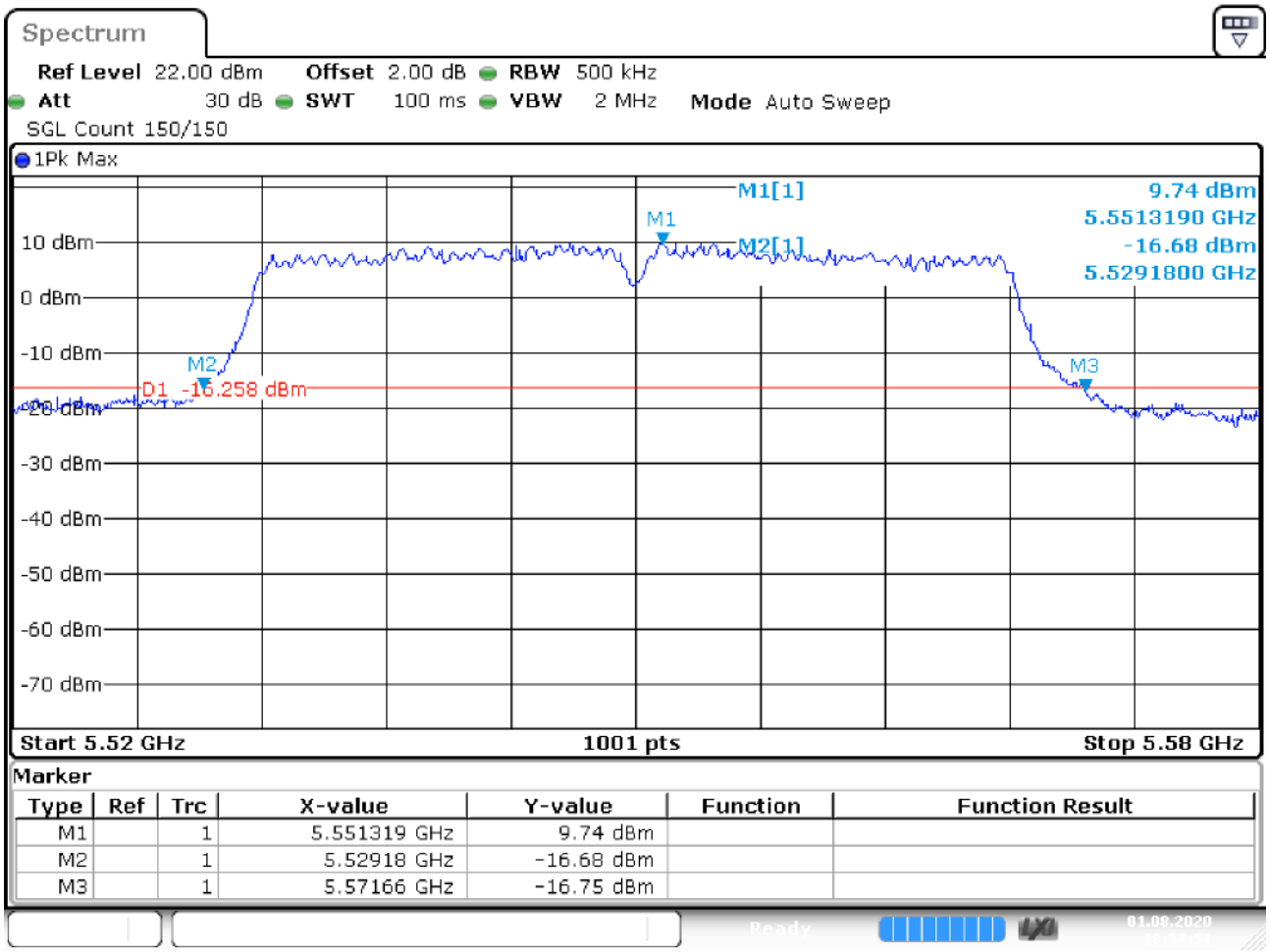
4.5.1.78 11AC40MIMO_110 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.551319 GHz	9.74 dBm		
M2		1	5.52918 GHz	-16.68 dBm		
M3		1	5.57166 GHz	-16.75 dBm		

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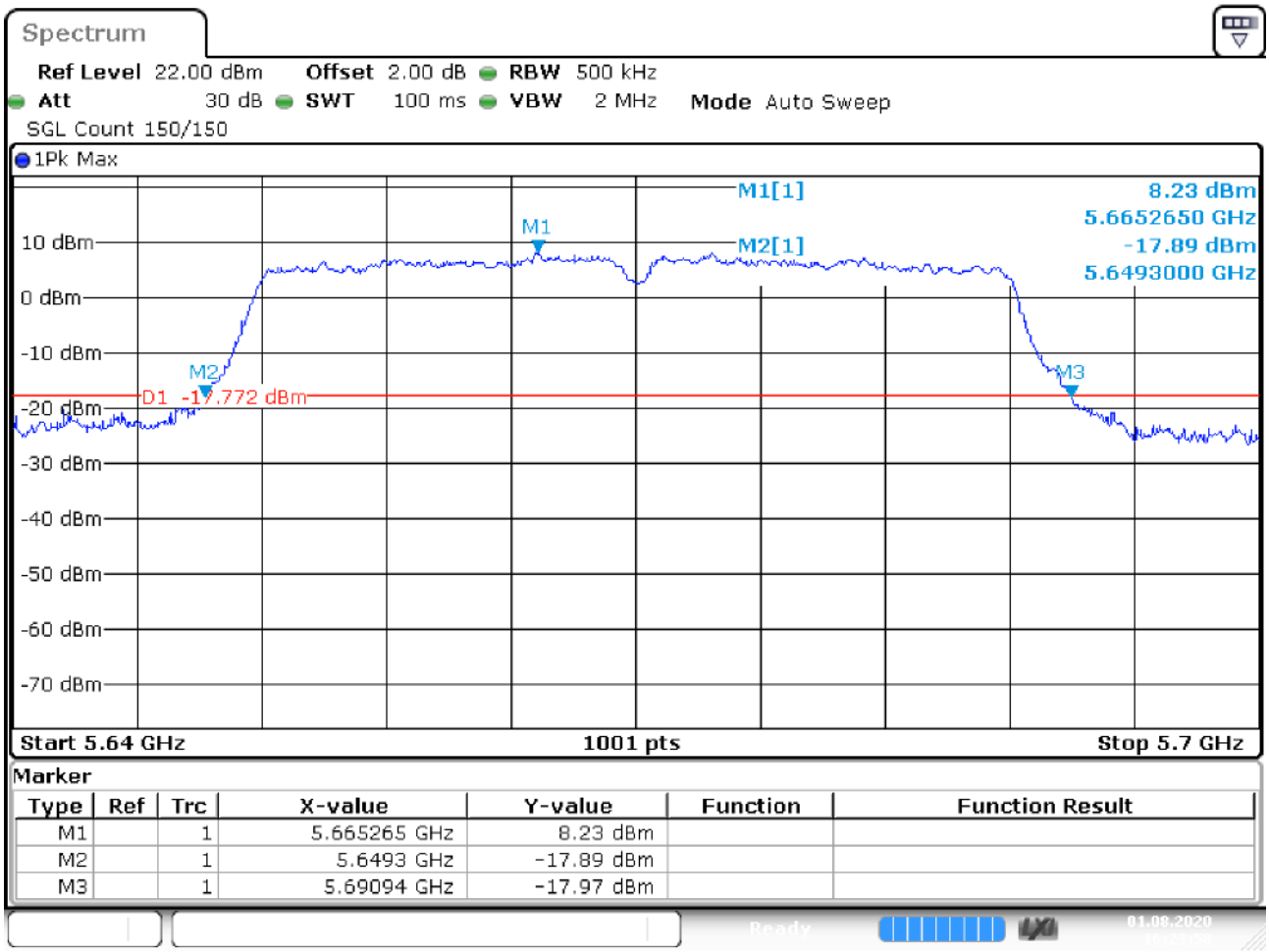
4.5.1.79 11AC40MIMO_134 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.665265 GHz	8.23 dBm		
M2		1	5.6493 GHz	-17.89 dBm		
M3		1	5.69094 GHz	-17.97 dBm		

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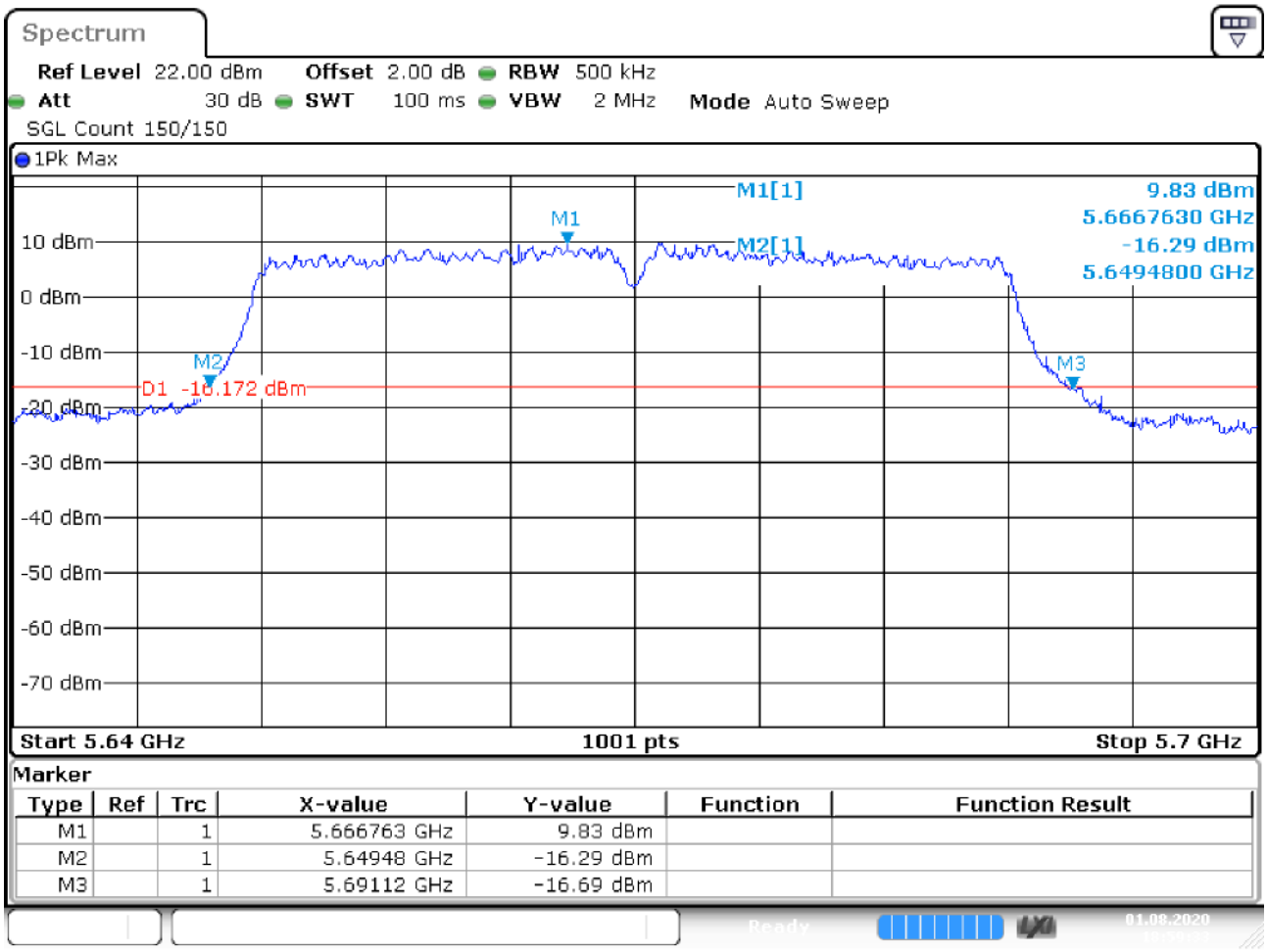
4.5.1.80 11AC40MIMO_134 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.666763 GHz	9.83 dBm		
M2		1	5.64948 GHz	-16.29 dBm		
M3		1	5.69112 GHz	-16.69 dBm		

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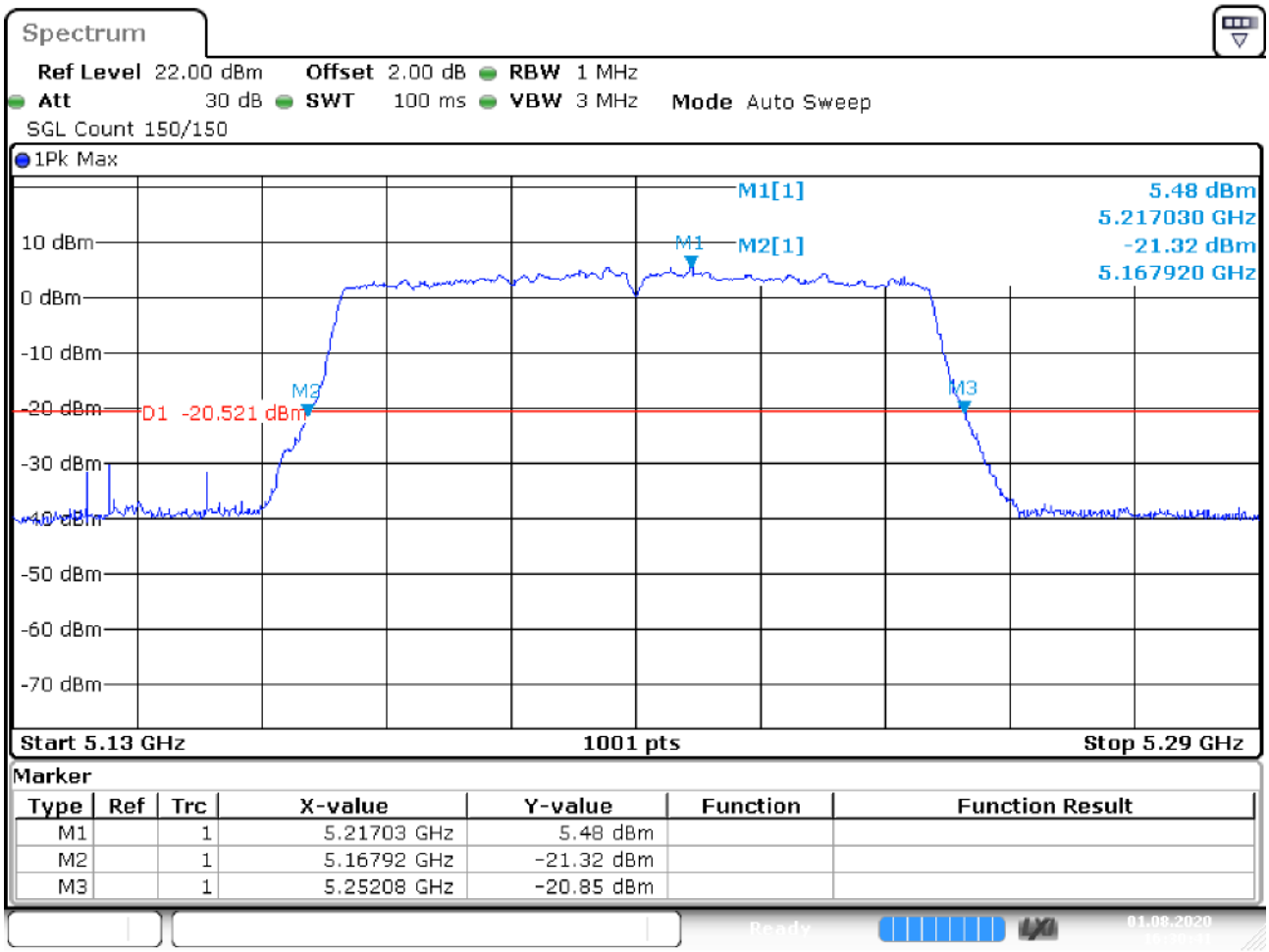
4.5.1.81 11AC80MIMO_42 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.21703 GHz	5.48 dBm		
M2		1	5.16792 GHz	-21.32 dBm		
M3		1	5.25208 GHz	-20.85 dBm		

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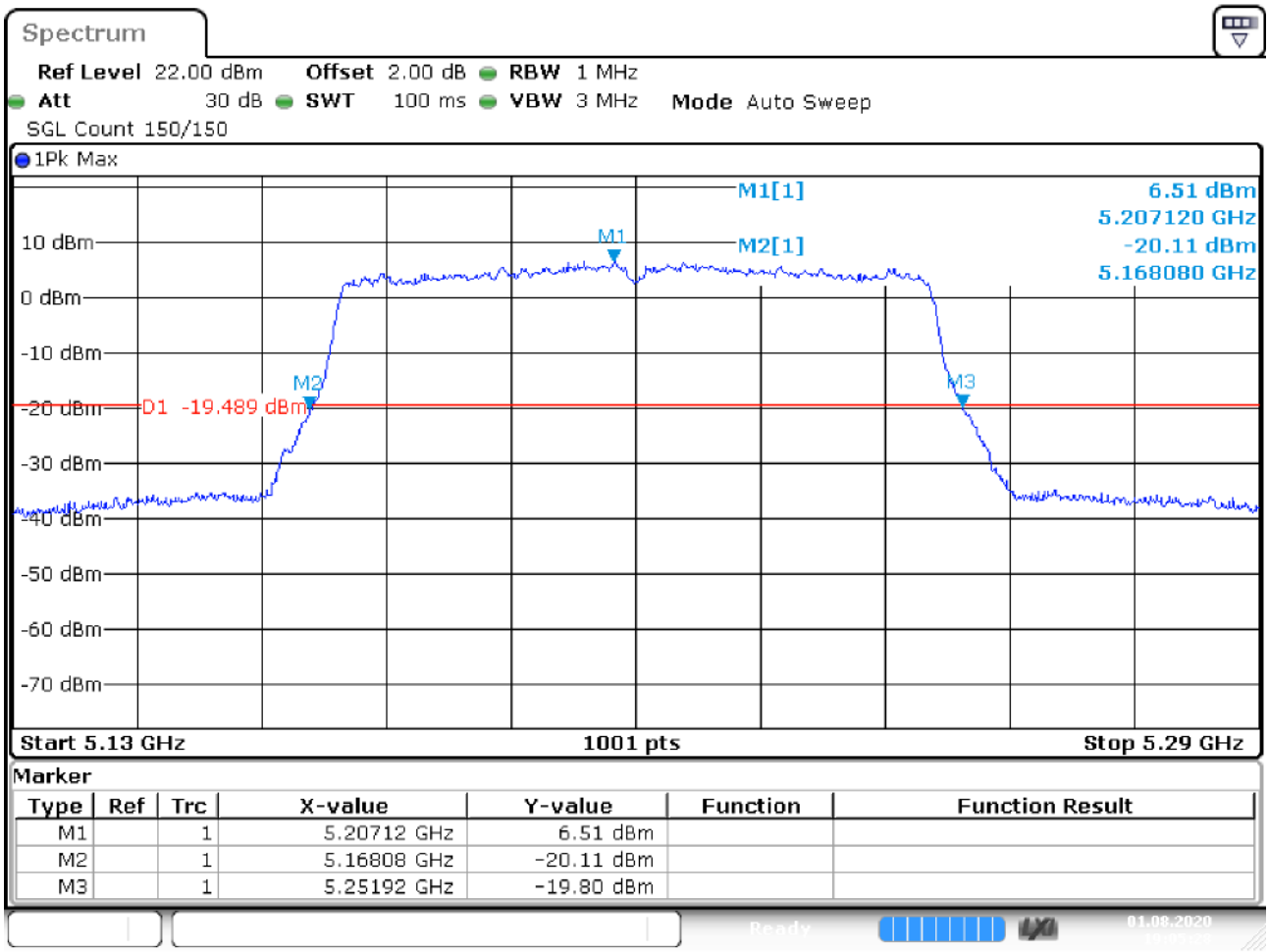
4.5.1.82 11AC80MIMO_42 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.20712 GHz	6.51 dBm		
M2		1	5.16808 GHz	-20.11 dBm		
M3		1	5.25192 GHz	-19.80 dBm		

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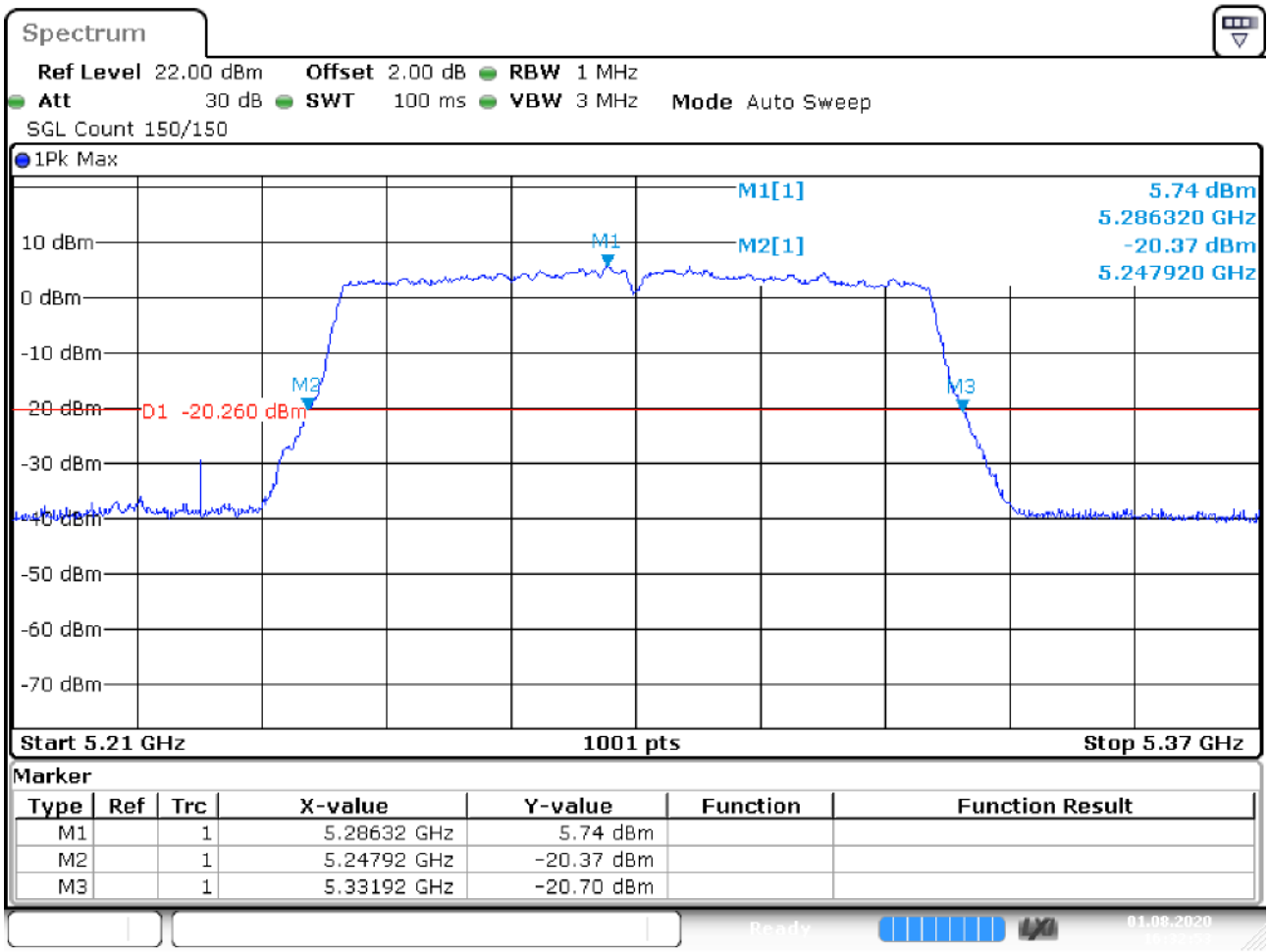
4.5.1.83 11AC80MIMO_58 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.28632 GHz	5.74 dBm		
M2		1	5.24792 GHz	-20.37 dBm		
M3		1	5.33192 GHz	-20.70 dBm		

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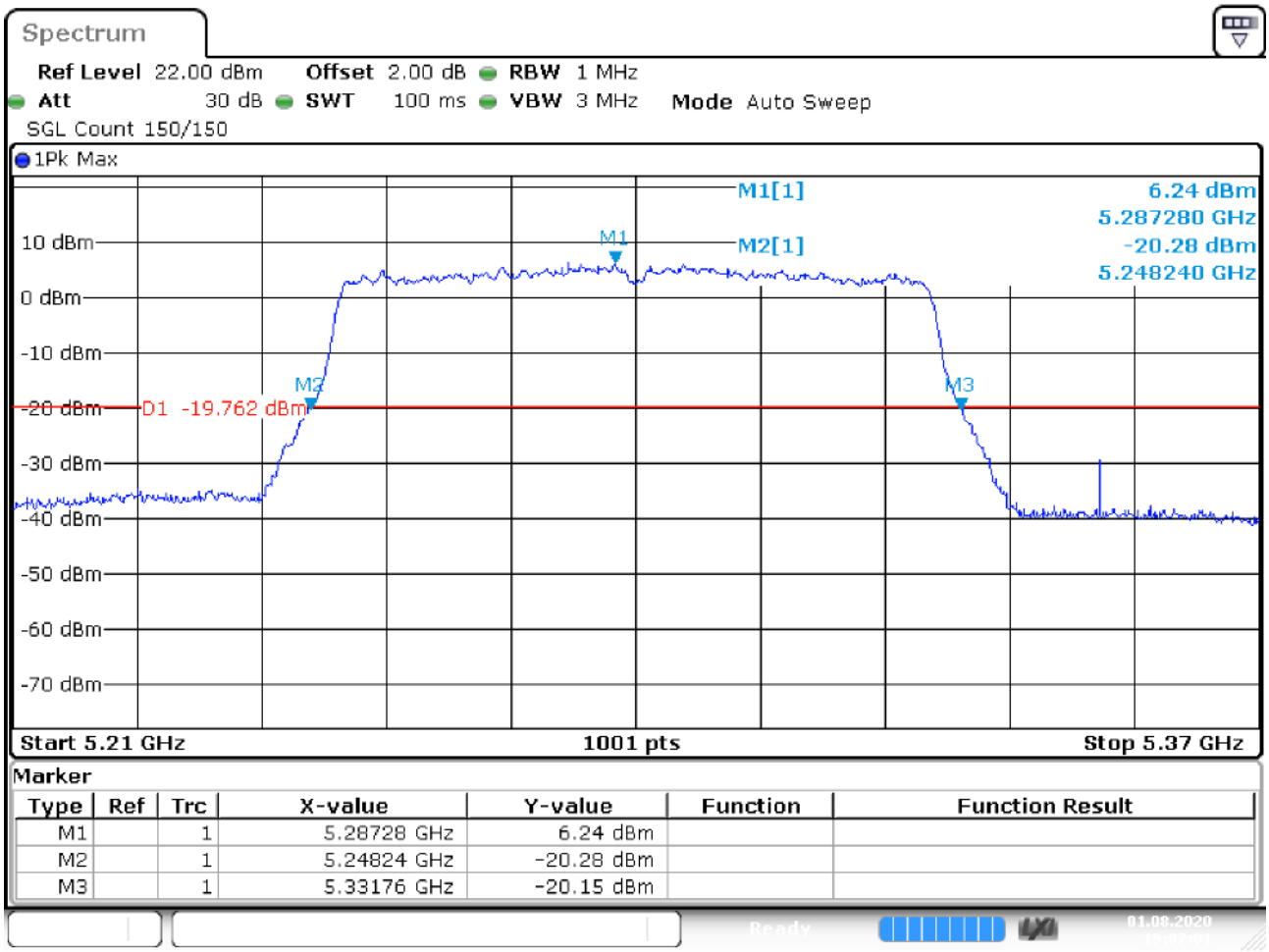
4.5.1.84 11AC80MIMO_58 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.28728 GHz	6.24 dBm		
M2		1	5.24824 GHz	-20.28 dBm		
M3		1	5.33176 GHz	-20.15 dBm		

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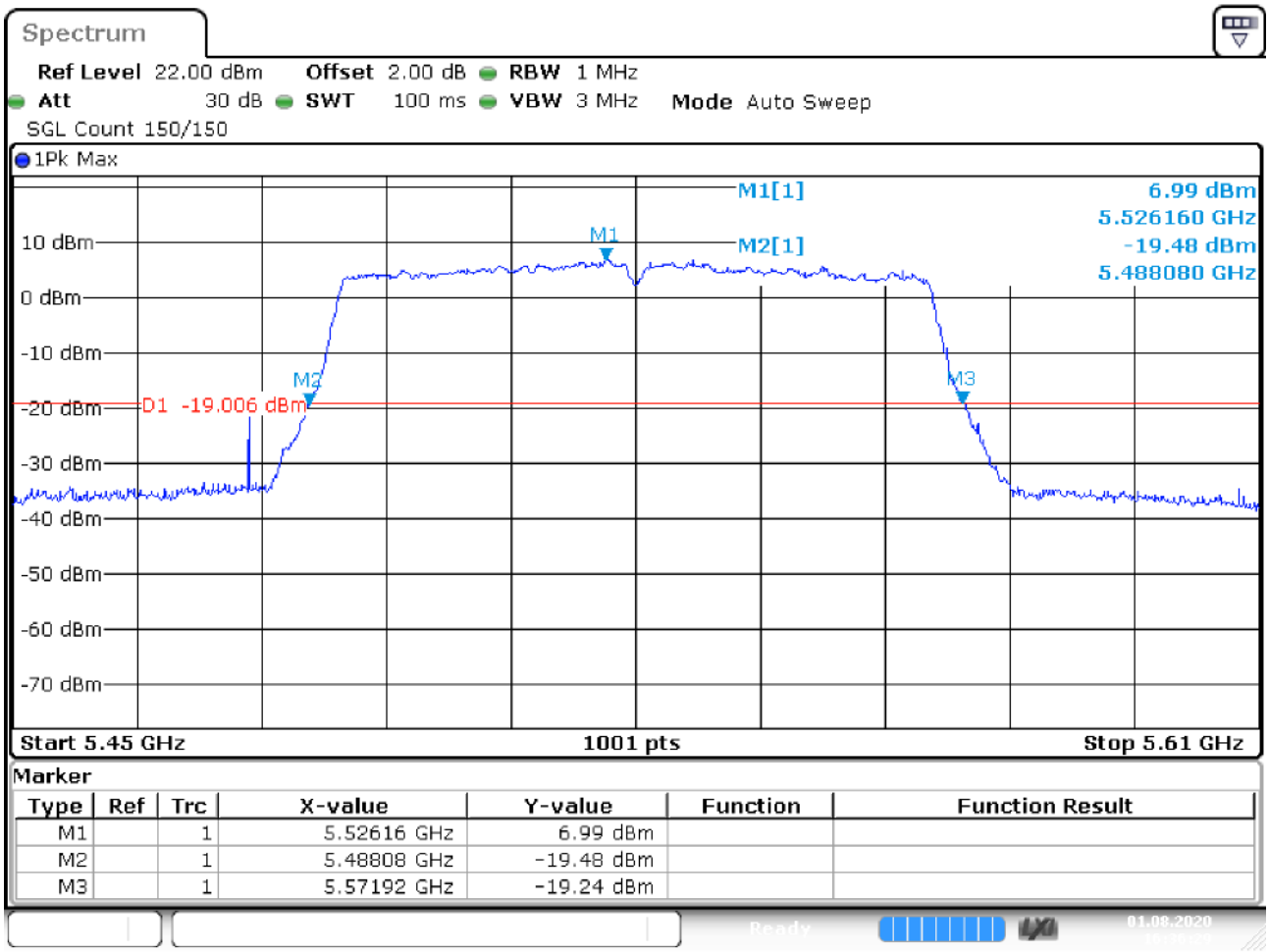
4.5.1.85 11AC80MIMO_106 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.52616 GHz	6.99 dBm		
M2		1	5.48808 GHz	-19.48 dBm		
M3		1	5.57192 GHz	-19.24 dBm		

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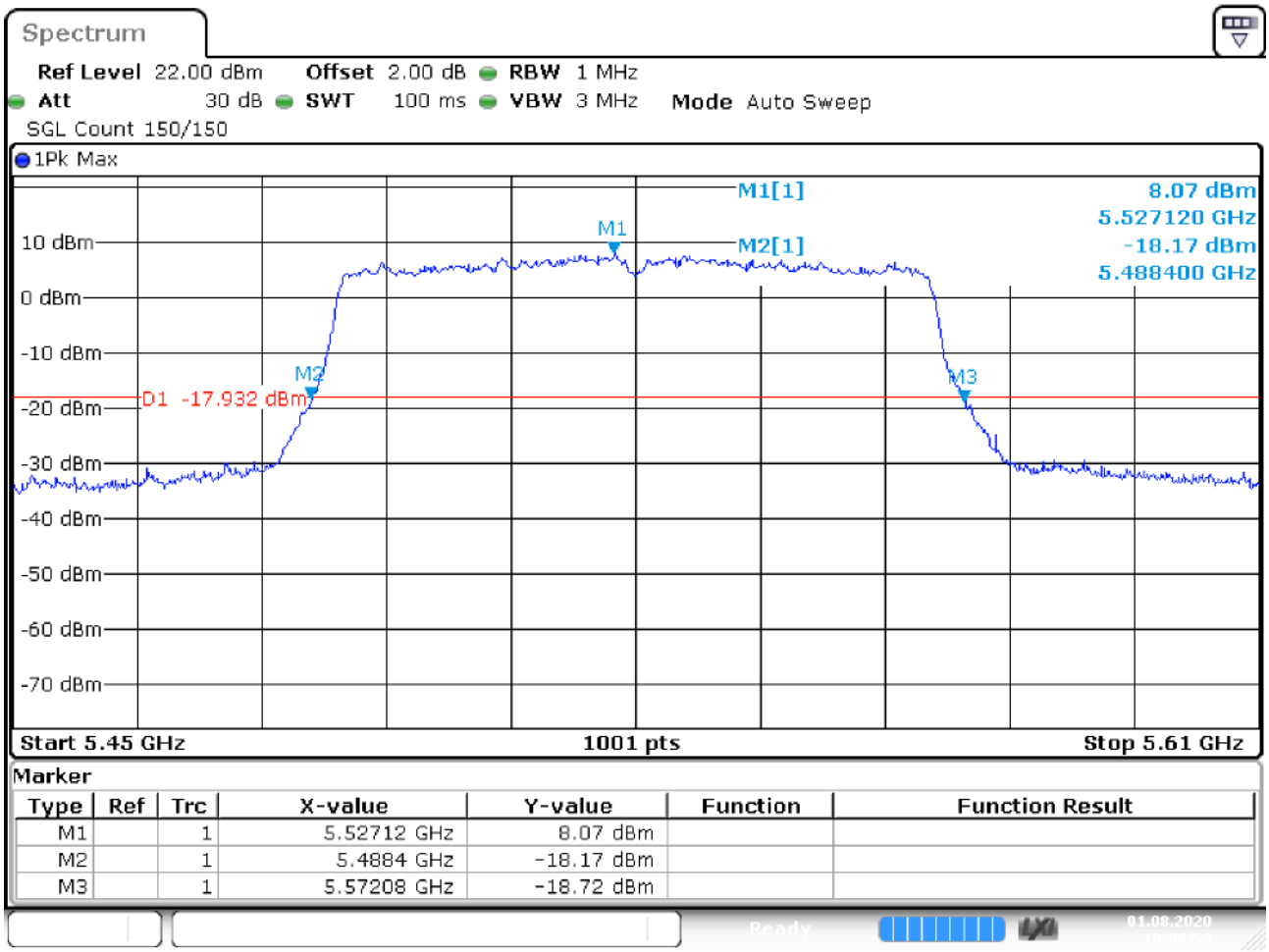
4.5.1.86 11AC80MIMO_106 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.52712 GHz	8.07 dBm		
M2		1	5.4884 GHz	-18.17 dBm		
M3		1	5.57208 GHz	-18.72 dBm		

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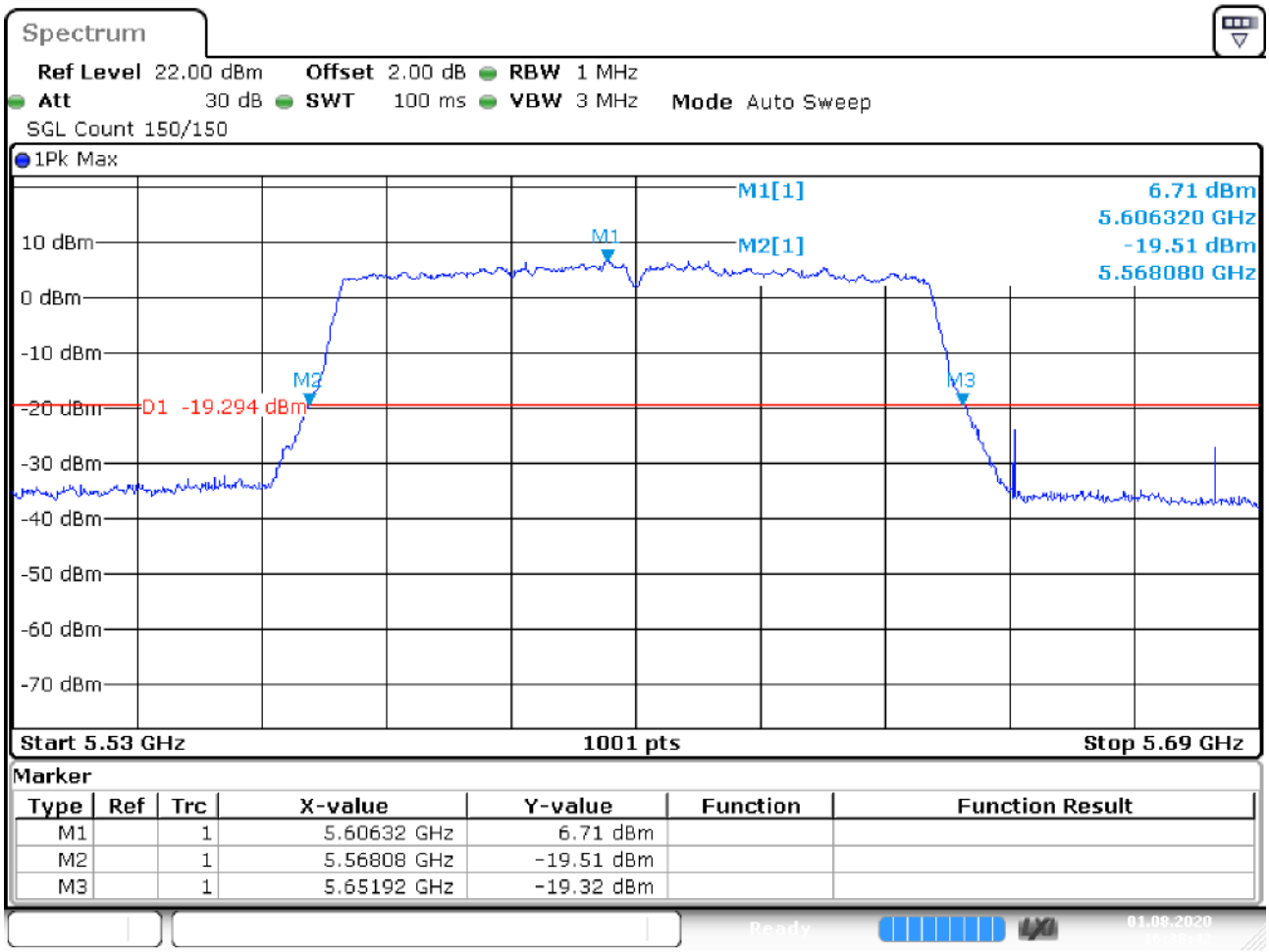
4.5.1.87 11AC80MIMO_122 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.60632 GHz	6.71 dBm		
M2		1	5.56808 GHz	-19.51 dBm		
M3		1	5.65192 GHz	-19.32 dBm		

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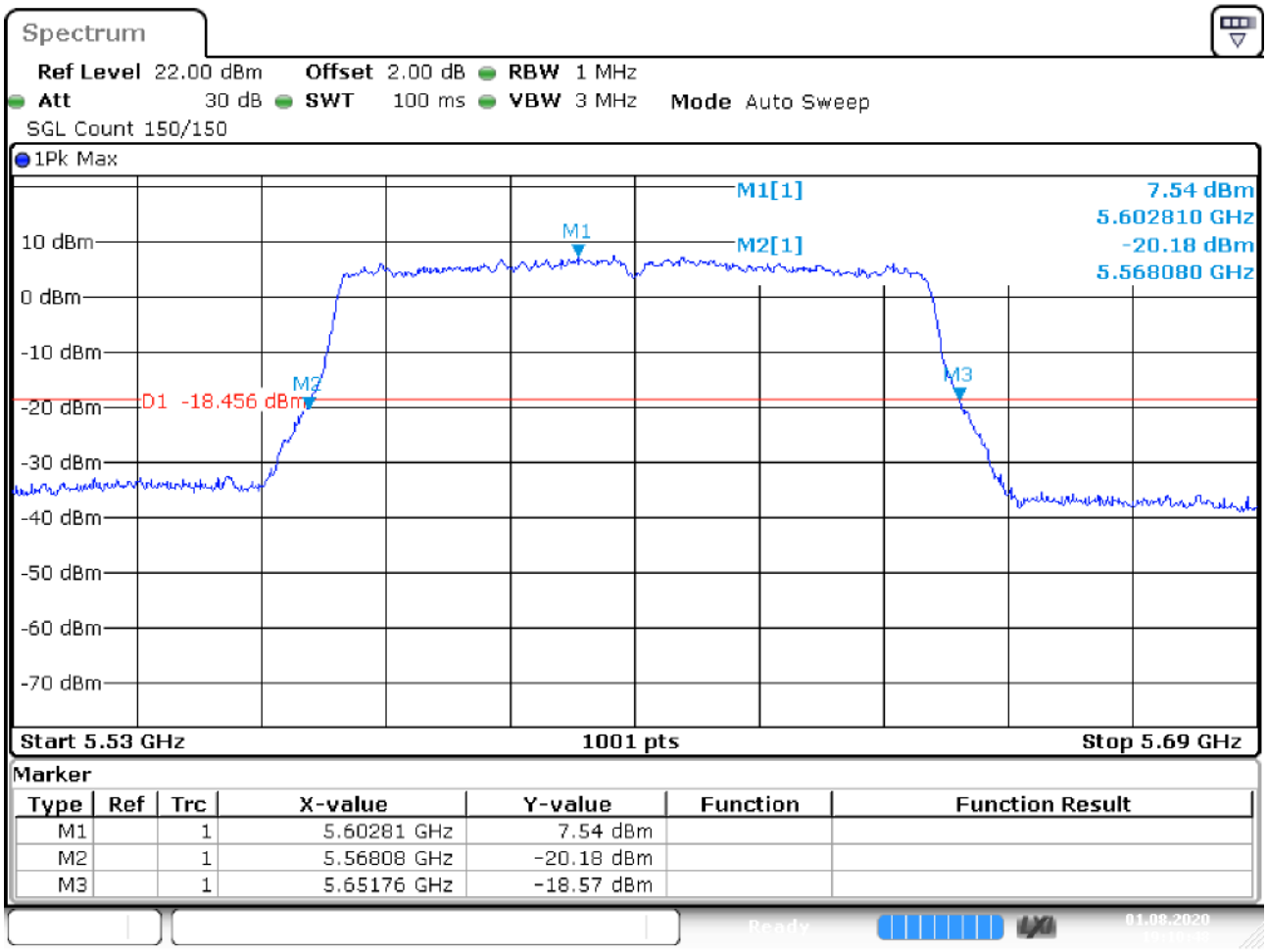
4.5.1.88 11AC80MIMO_122 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.60281 GHz	7.54 dBm		
M2		1	5.56808 GHz	-20.18 dBm		
M3		1	5.65176 GHz	-18.57 dBm		

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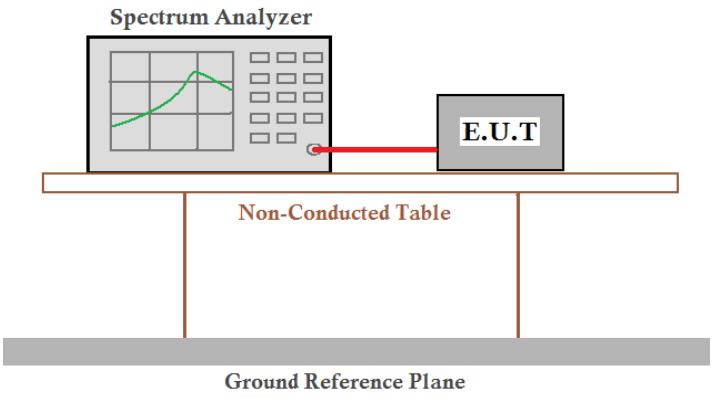
4.6 6dB Emission Bandwidth

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); 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). Only the worst case is recorded in the report.	
Limit:	Frequency Band	Limit
	5725-5850MHz	At lease 500kHz
Test Results:	Pass	

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4.6.1 Test Results For 6dB Emission Bandwidth

Test Mode	Test Channel	Frequency [MHz]	6dB Emission Bandwidth [MHz]		Verdict
			ANT 1	ANT 2	
11A20 CDD	149	5745	15.57	15.42	PASS
	157	5785	15.57	15.39	PASS
	161	5805	15.42	15.78	PASS
11N20 MIMO	149	5745	16.92	16.08	PASS
	157	5785	16.05	15.54	PASS
	161	5805	16.05	16.08	PASS
11N40 MIMO	151	5755	36.06	35.28	PASS
	159	5795	35.52	35.28	PASS
11AC20 MIMO	149	5745	15.78	16.38	PASS
	157	5785	15.21	16.62	PASS
	161	5805	15.39	16.59	PASS
11AC40 MIMO	151	5755	35.22	35.28	PASS
	159	5795	35.4	35.28	PASS
11AC80 MIMO	155	5775	75.52	75.52	PASS

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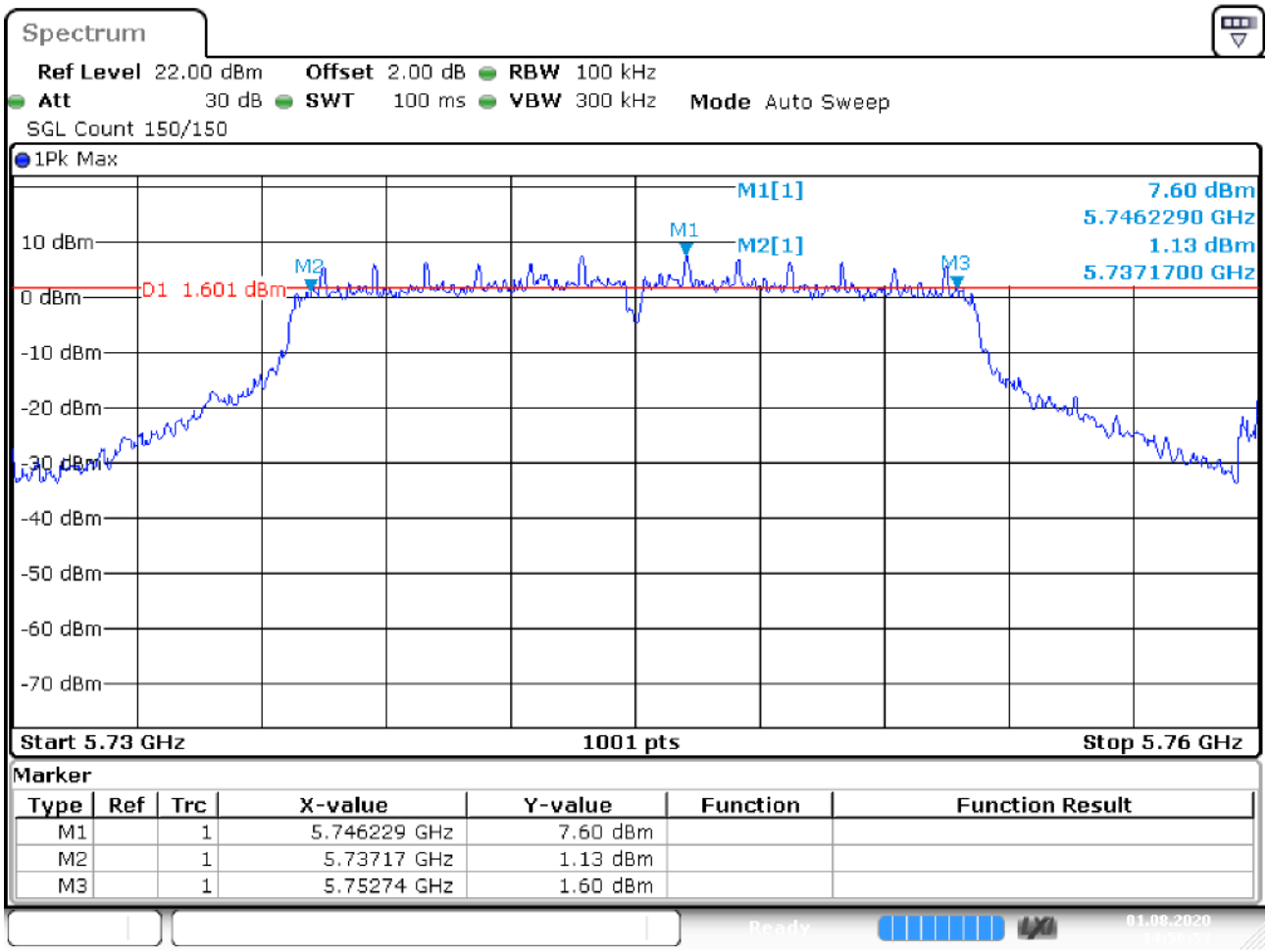
4.6.2 Test Plots For 6dB Emission Bandwidth

4.6.2.1 11A20_CDD_149 ANT 1



Date: 1.AUG.2020 14:56:54

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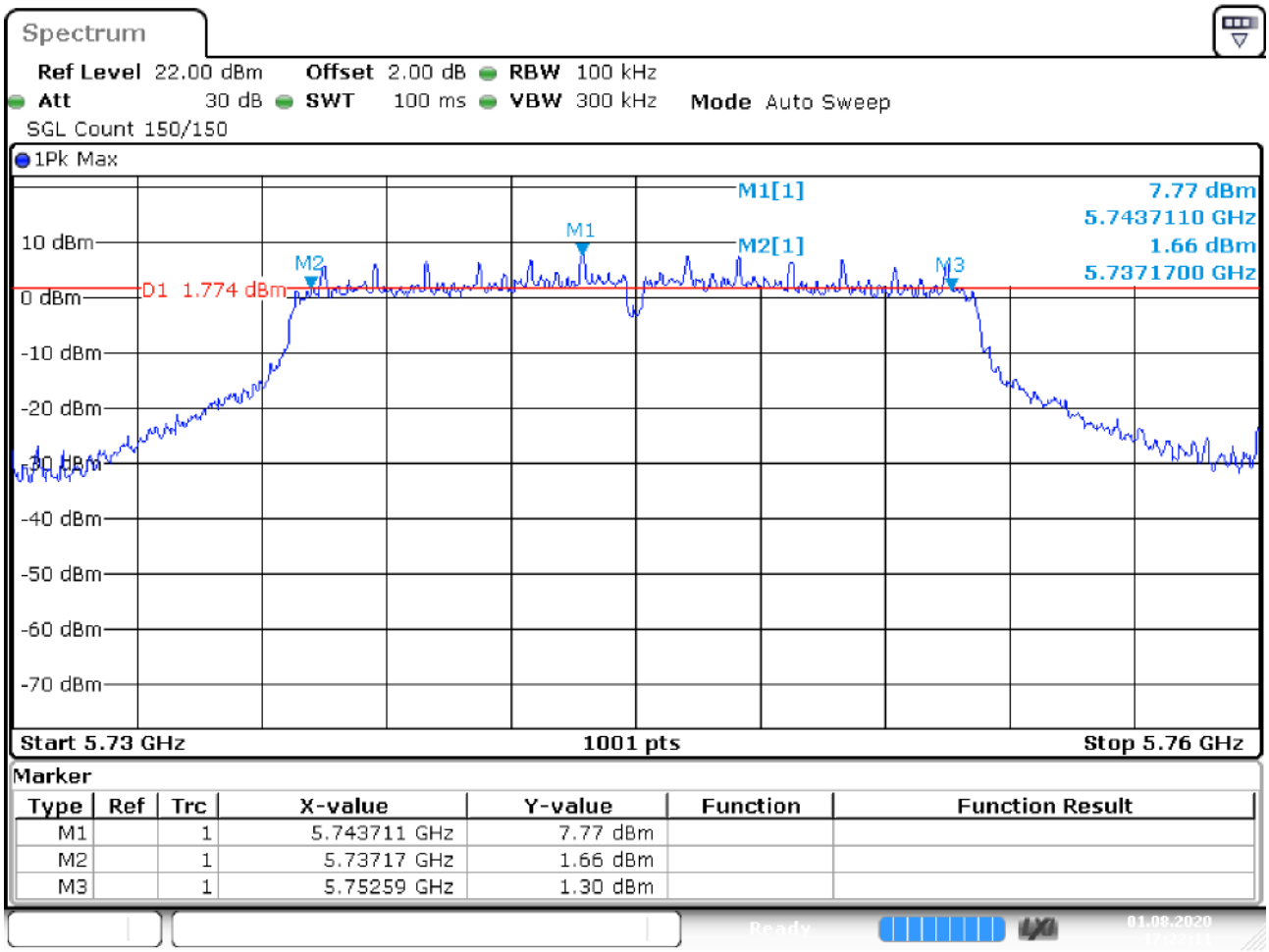
4.6.2.2 11A20_CDD_149 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.743711 GHz	7.77 dBm		
M2		1	5.73717 GHz	1.66 dBm		
M3		1	5.75259 GHz	1.30 dBm		

Date: 1.AUG.2020 17:22:11

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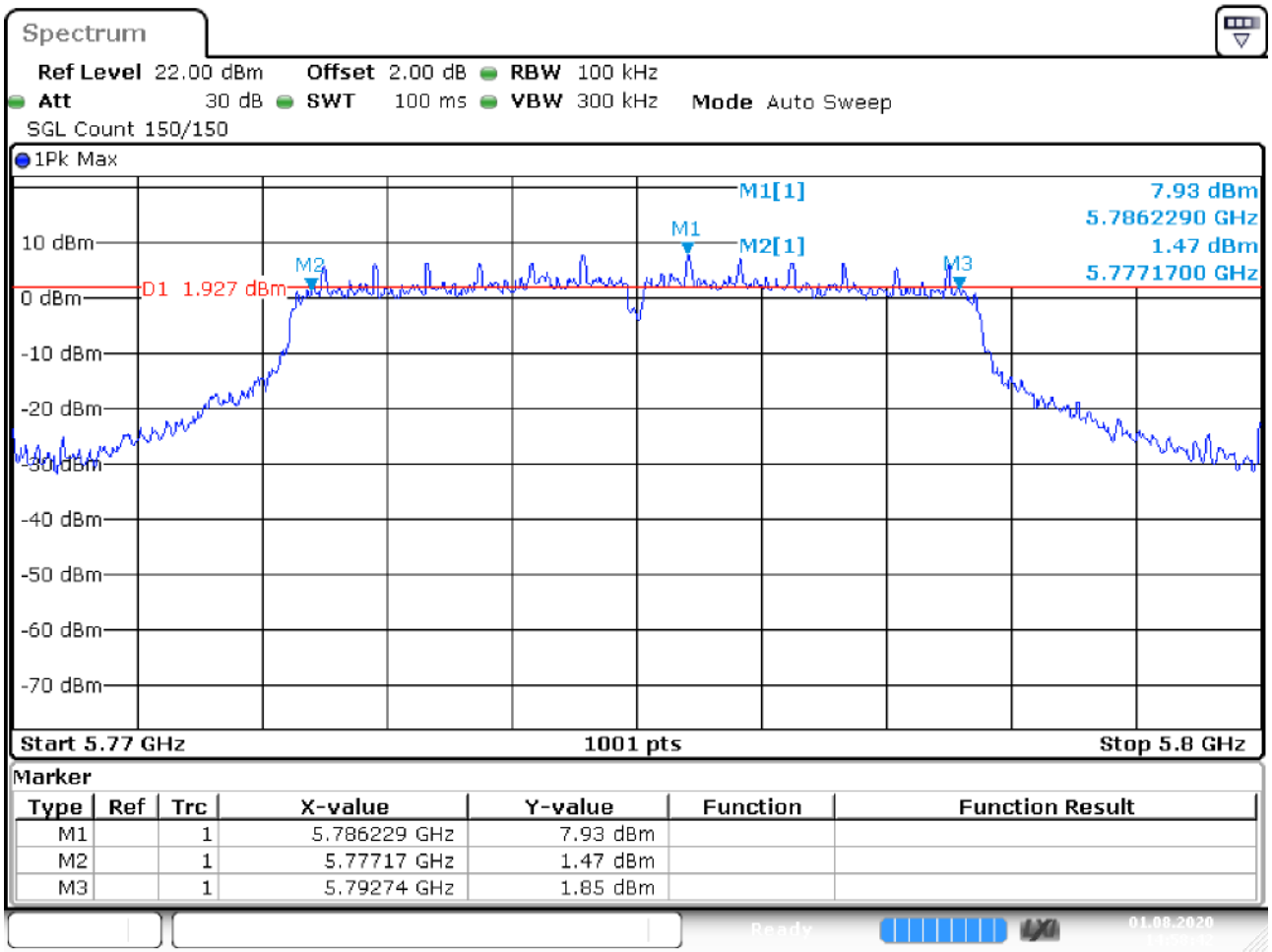
4.6.2.3 11A20_CDD_157 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.786229 GHz	7.93 dBm		
M2		1	5.77717 GHz	1.47 dBm		
M3		1	5.79274 GHz	1.85 dBm		

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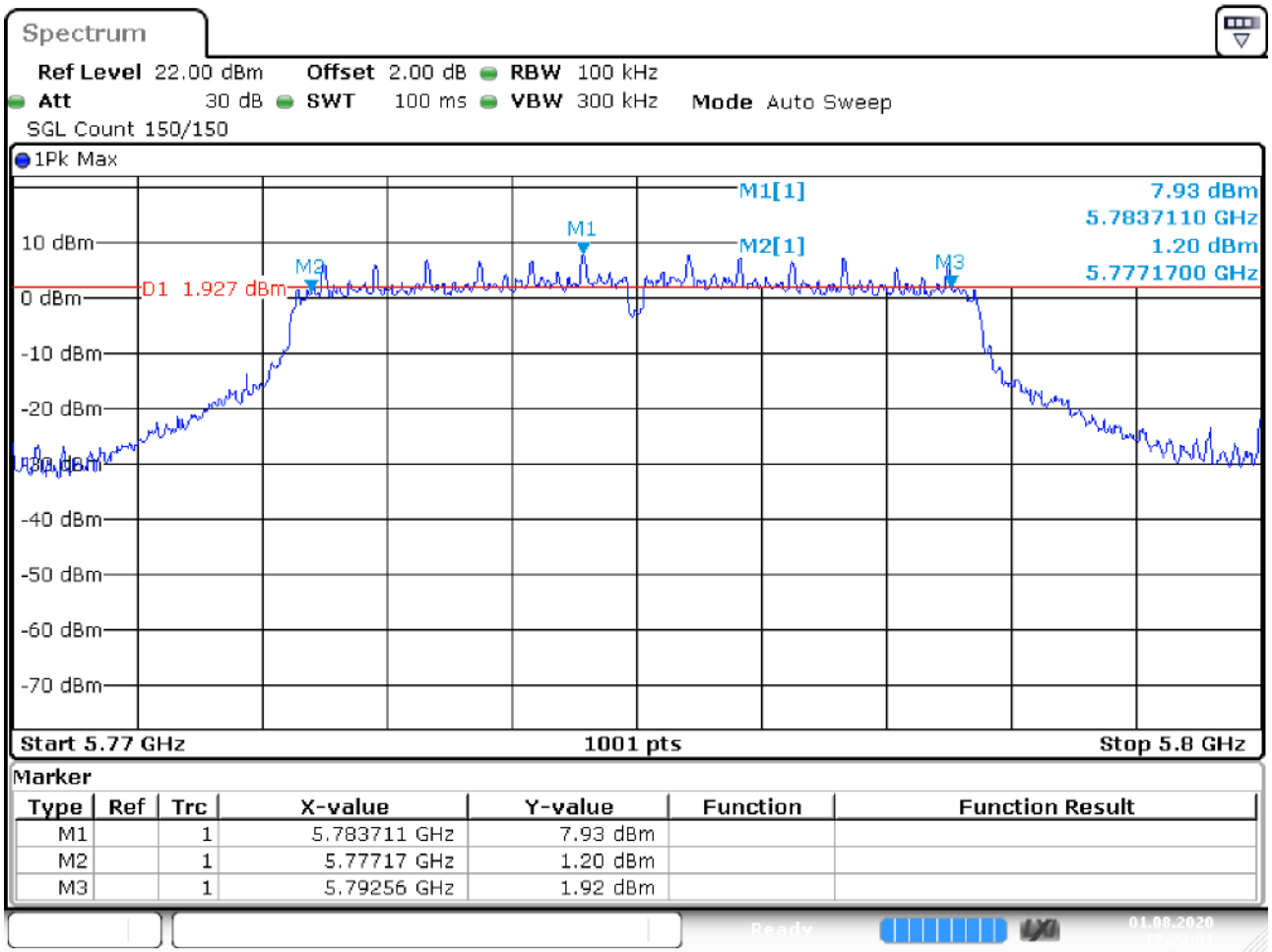
4.6.2.4 11A20_CDD_157 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.783711 GHz	7.93 dBm		
M2		1	5.77717 GHz	1.20 dBm		
M3		1	5.79256 GHz	1.92 dBm		

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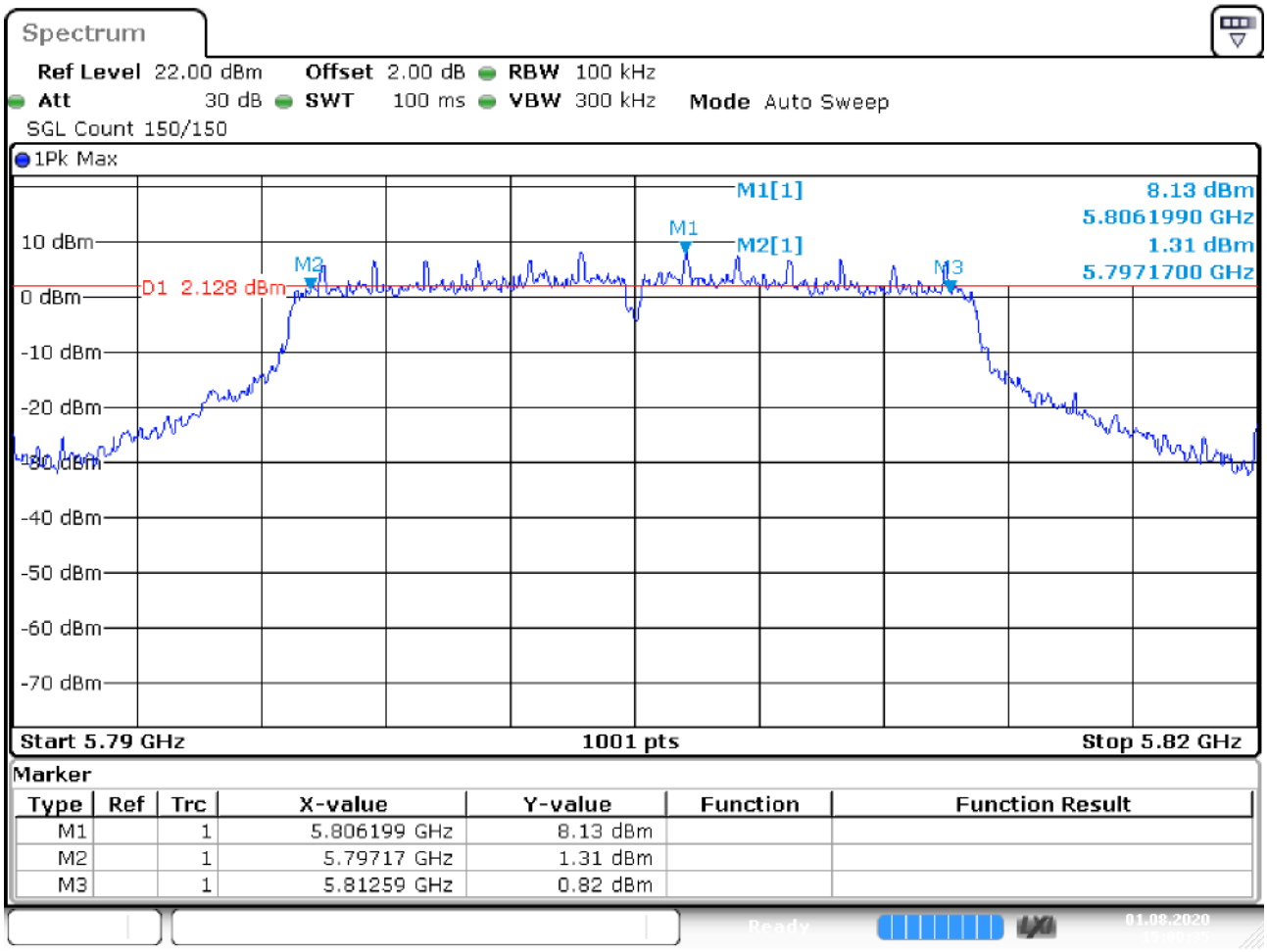
4.6.2.5 11A20_CDD_161 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.806199 GHz	8.13 dBm		
M2		1	5.79717 GHz	1.31 dBm		
M3		1	5.81259 GHz	0.82 dBm		

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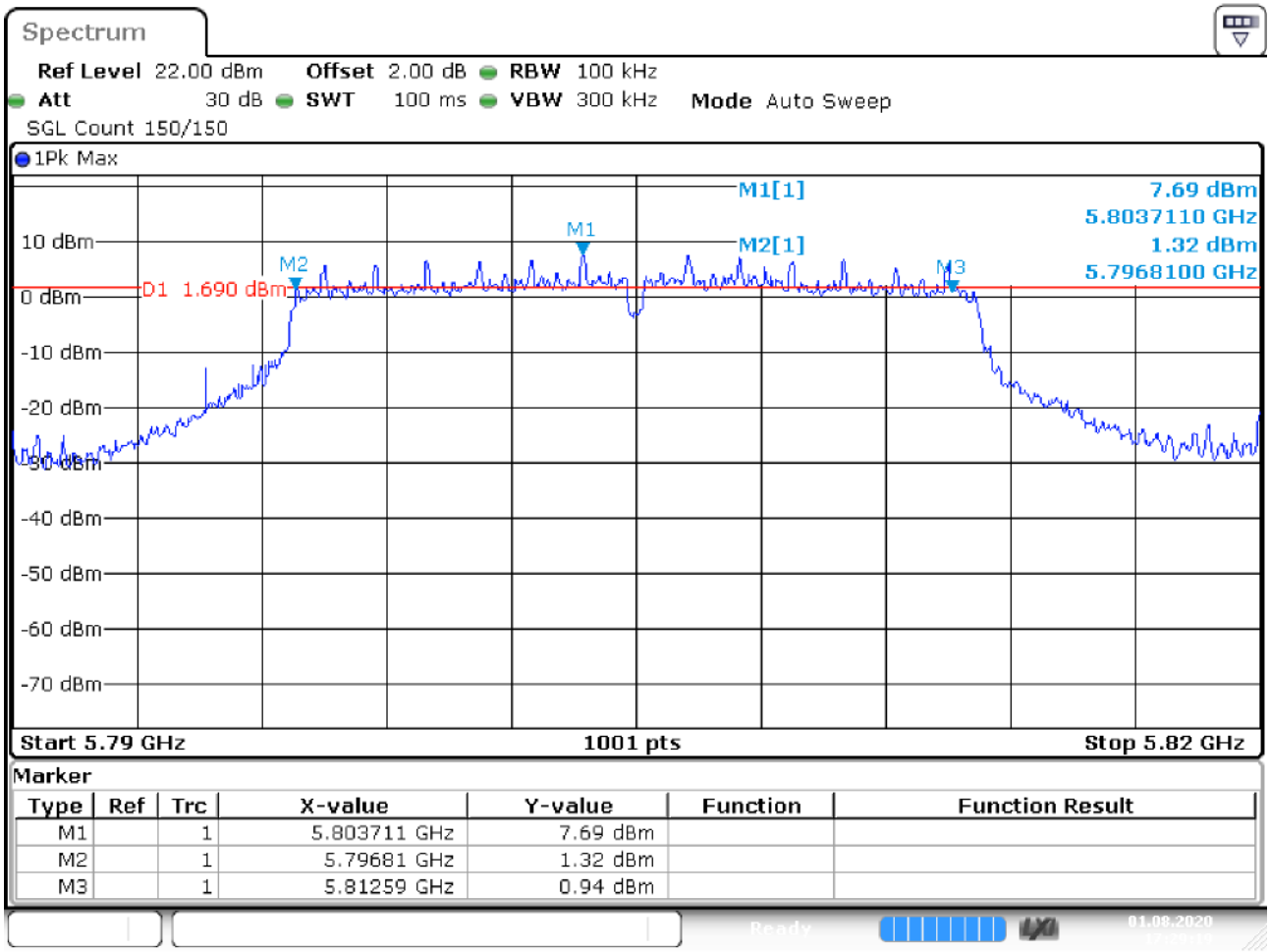
4.6.2.6 11A20_CDD_161 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.803711 GHz	7.69 dBm		
M2		1	5.79681 GHz	1.32 dBm		
M3		1	5.81259 GHz	0.94 dBm		

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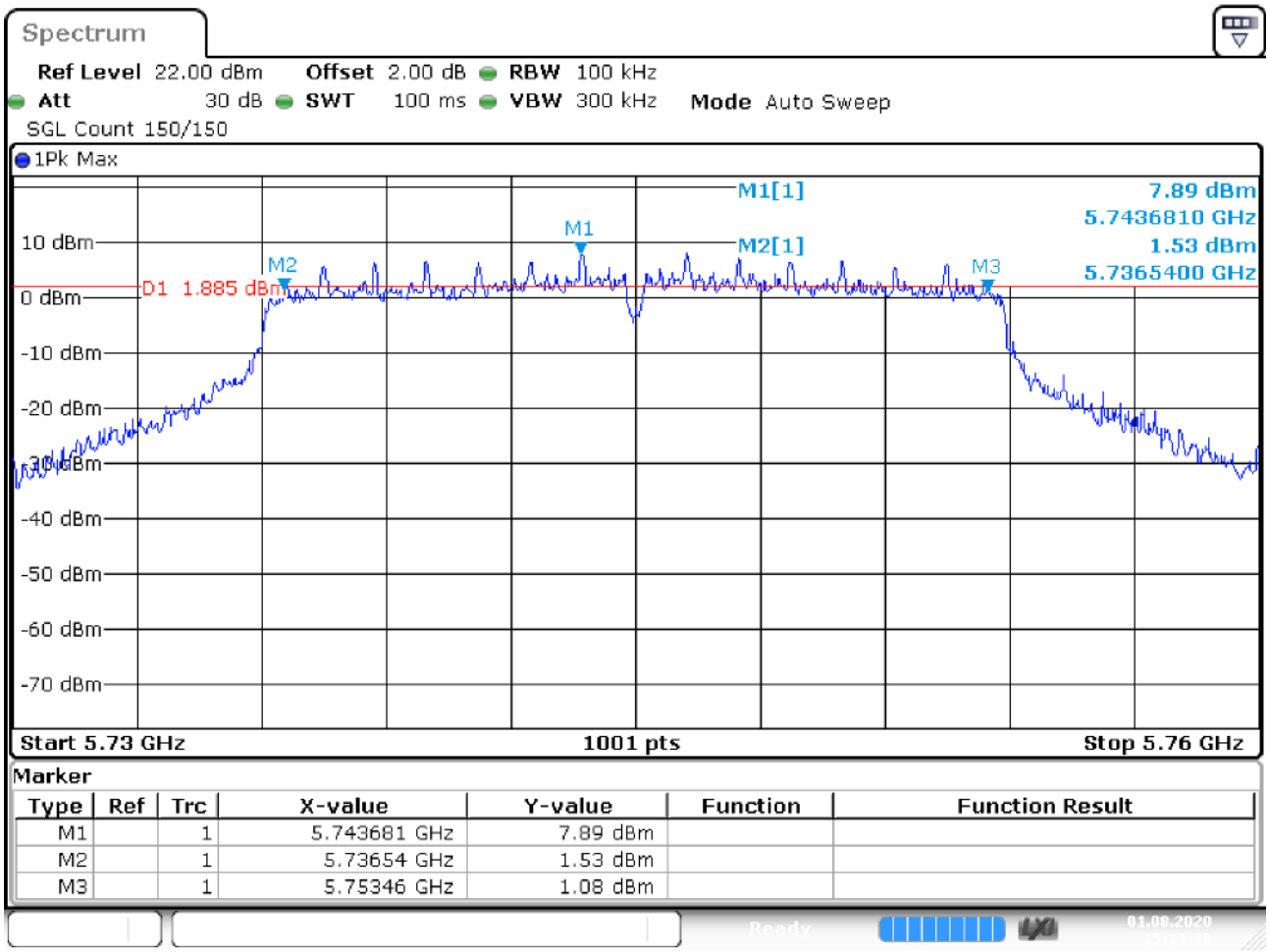
4.6.2.7 11N20MIMO_149 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.743681 GHz	7.89 dBm		
M2		1	5.73654 GHz	1.53 dBm		
M3		1	5.75346 GHz	1.08 dBm		

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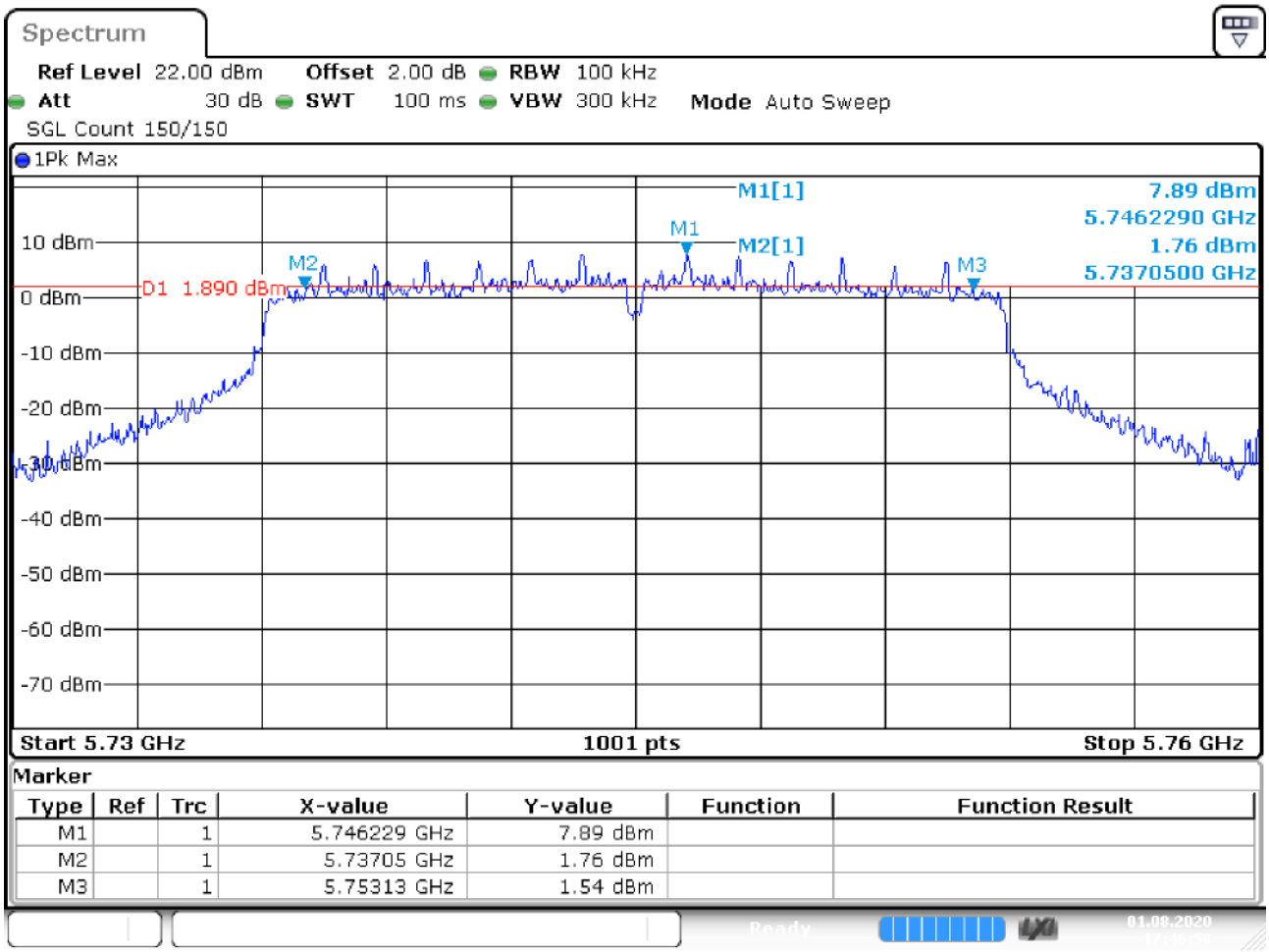
4.6.2.8 11N20MIMO_149 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.746229 GHz	7.89 dBm		
M2		1	5.73705 GHz	1.76 dBm		
M3		1	5.75313 GHz	1.54 dBm		

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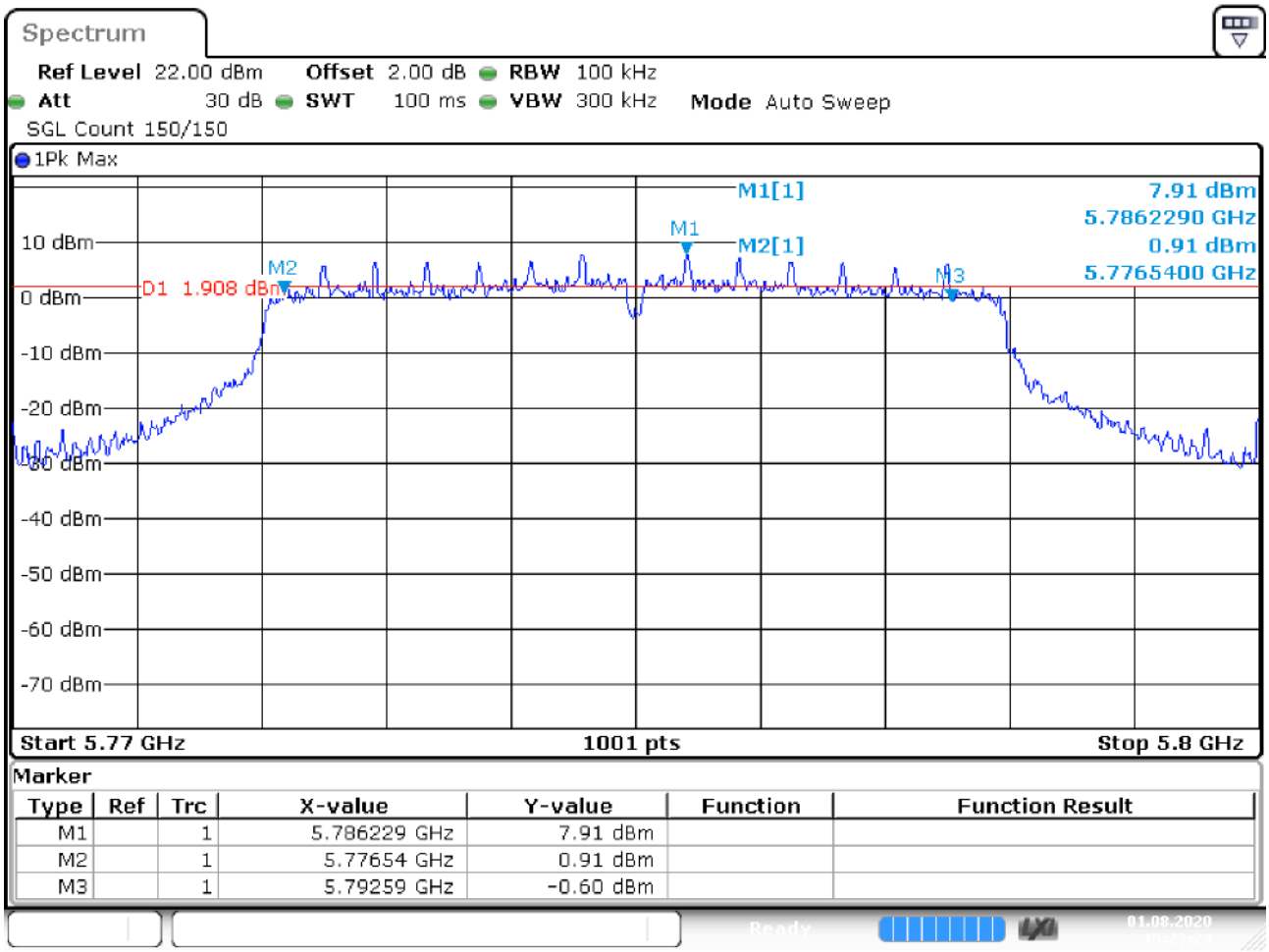
4.6.2.9 11N20MIMO_157 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.786229 GHz	7.91 dBm		
M2		1	5.77654 GHz	0.91 dBm		
M3		1	5.79259 GHz	-0.60 dBm		

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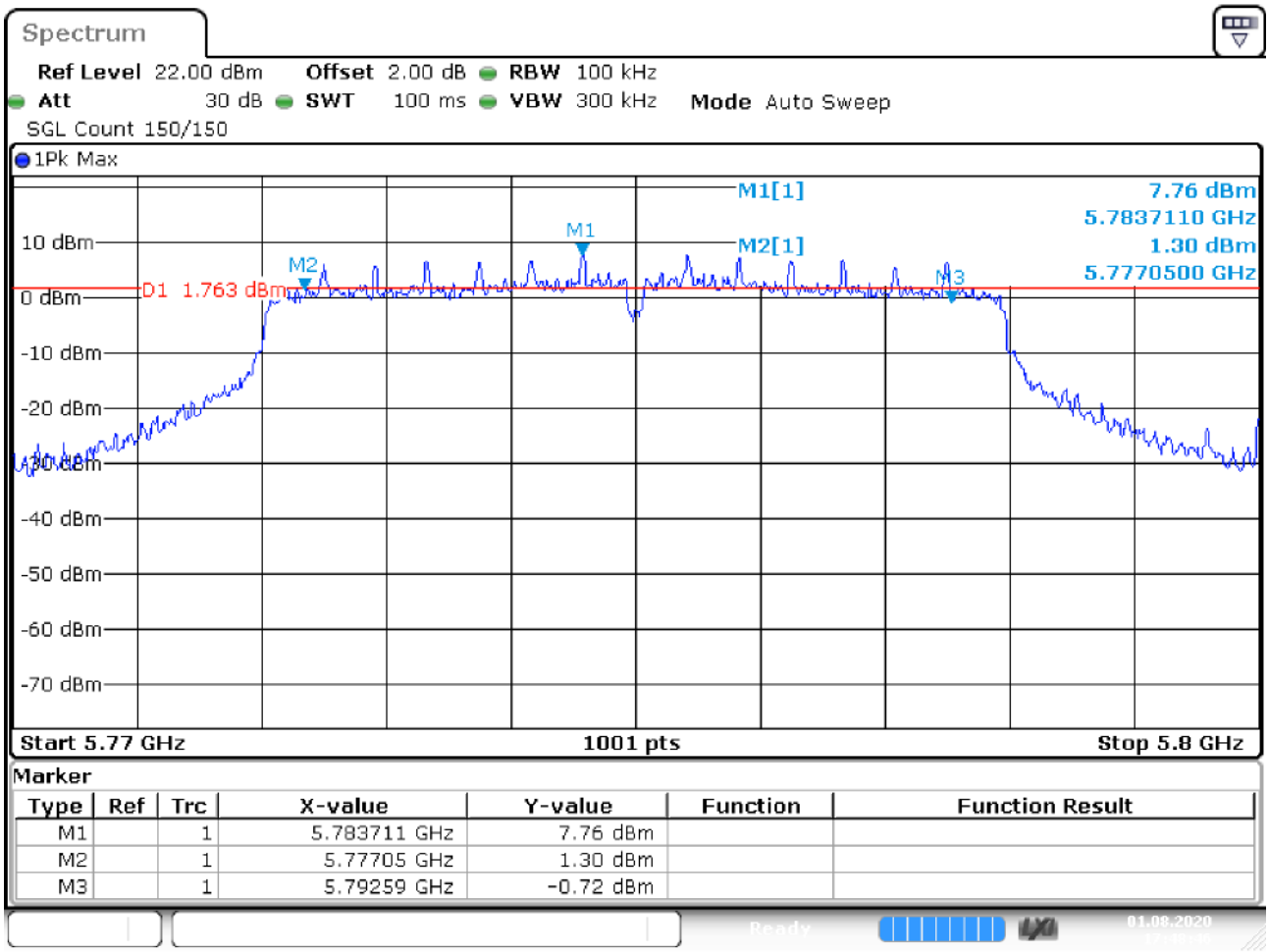
4.6.2.10 11N20MIMO_157 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.783711 GHz	7.76 dBm		
M2		1	5.77705 GHz	1.30 dBm		
M3		1	5.79259 GHz	-0.72 dBm		

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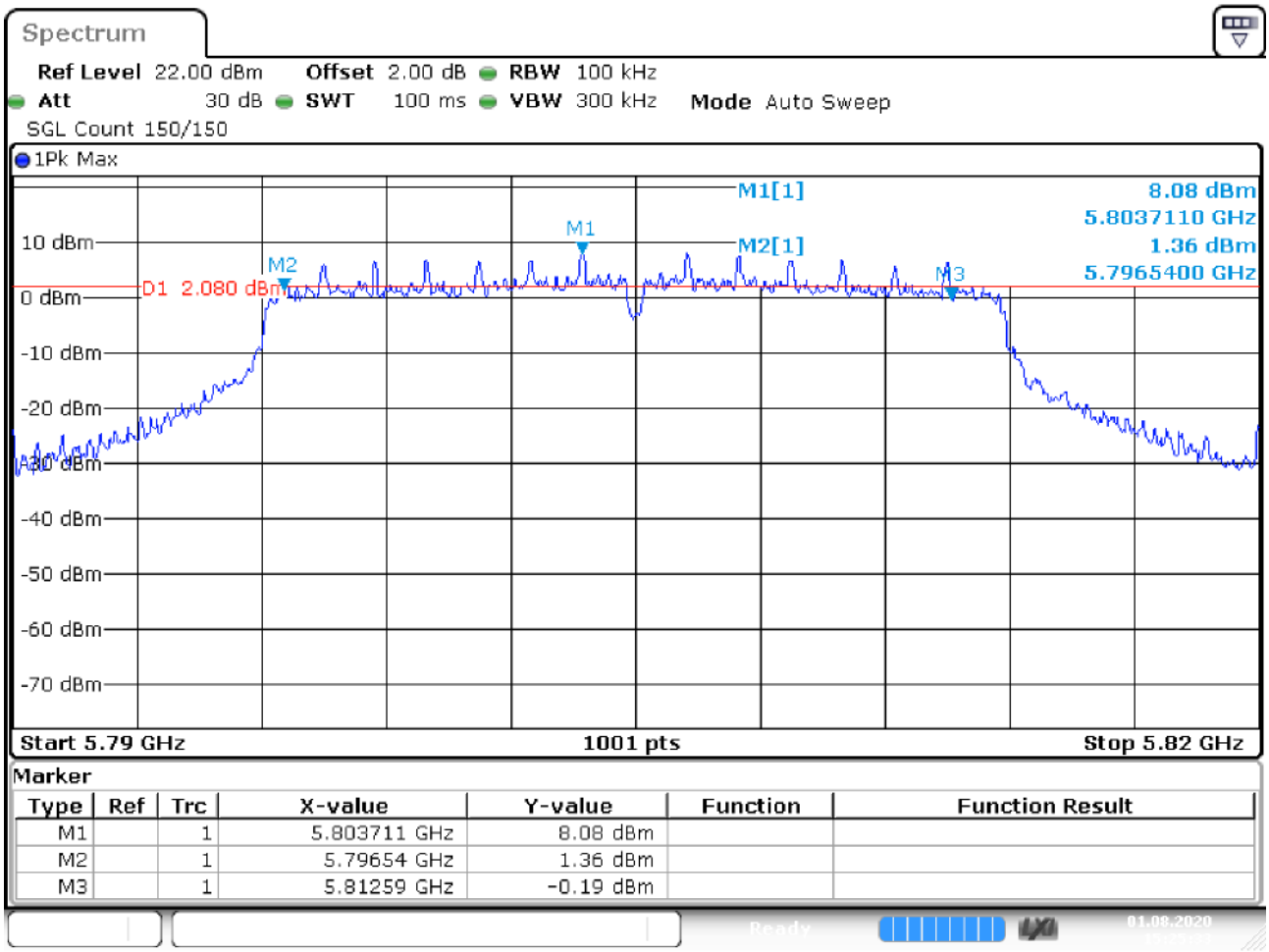
4.6.2.11 11N20MIMO_161 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.803711 GHz	8.08 dBm		
M2		1	5.79654 GHz	1.36 dBm		
M3		1	5.81259 GHz	-0.19 dBm		

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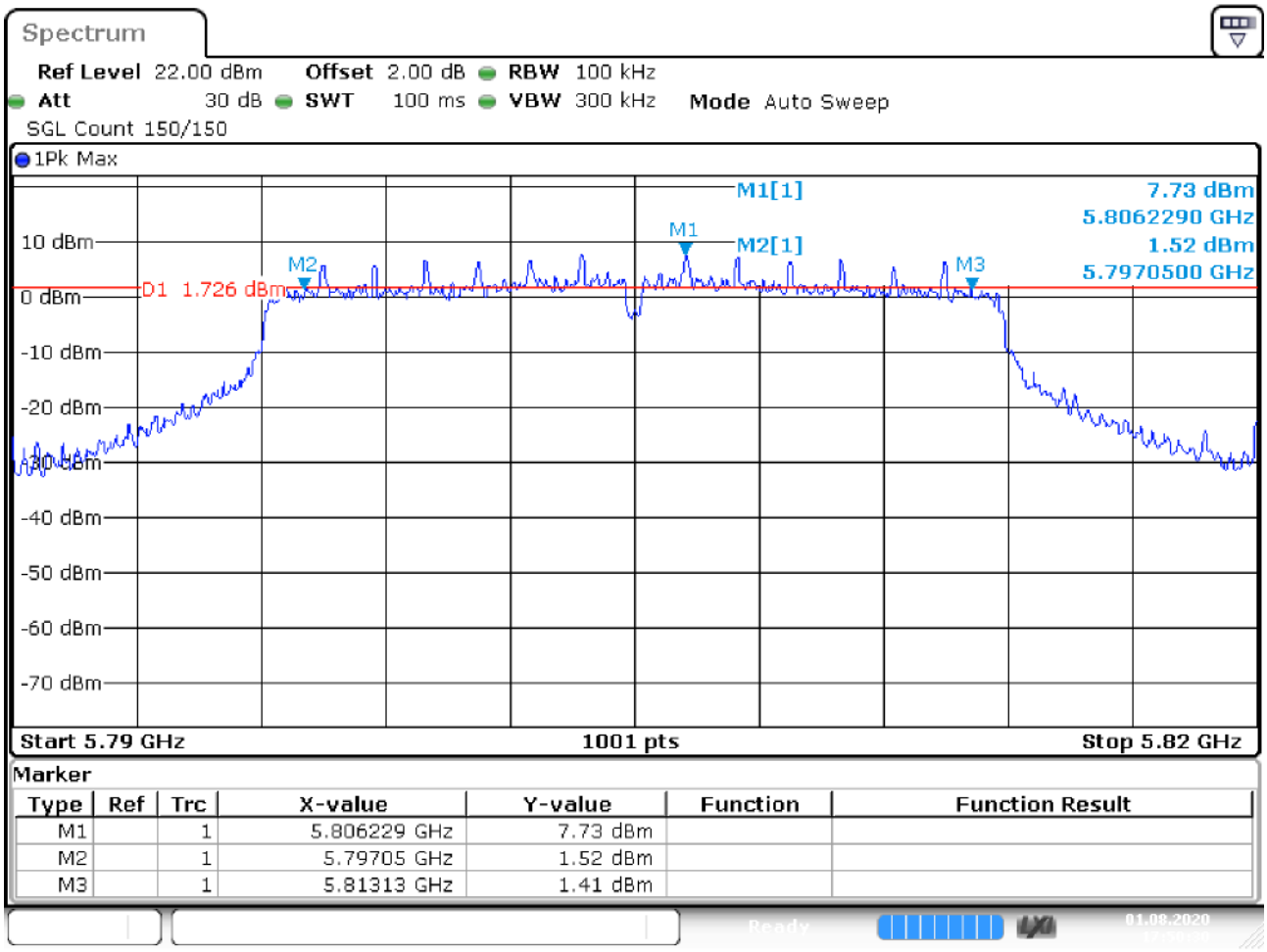
4.6.2.12 11N20MIMO_161 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.806229 GHz	7.73 dBm		
M2		1	5.79705 GHz	1.52 dBm		
M3		1	5.81313 GHz	1.41 dBm		

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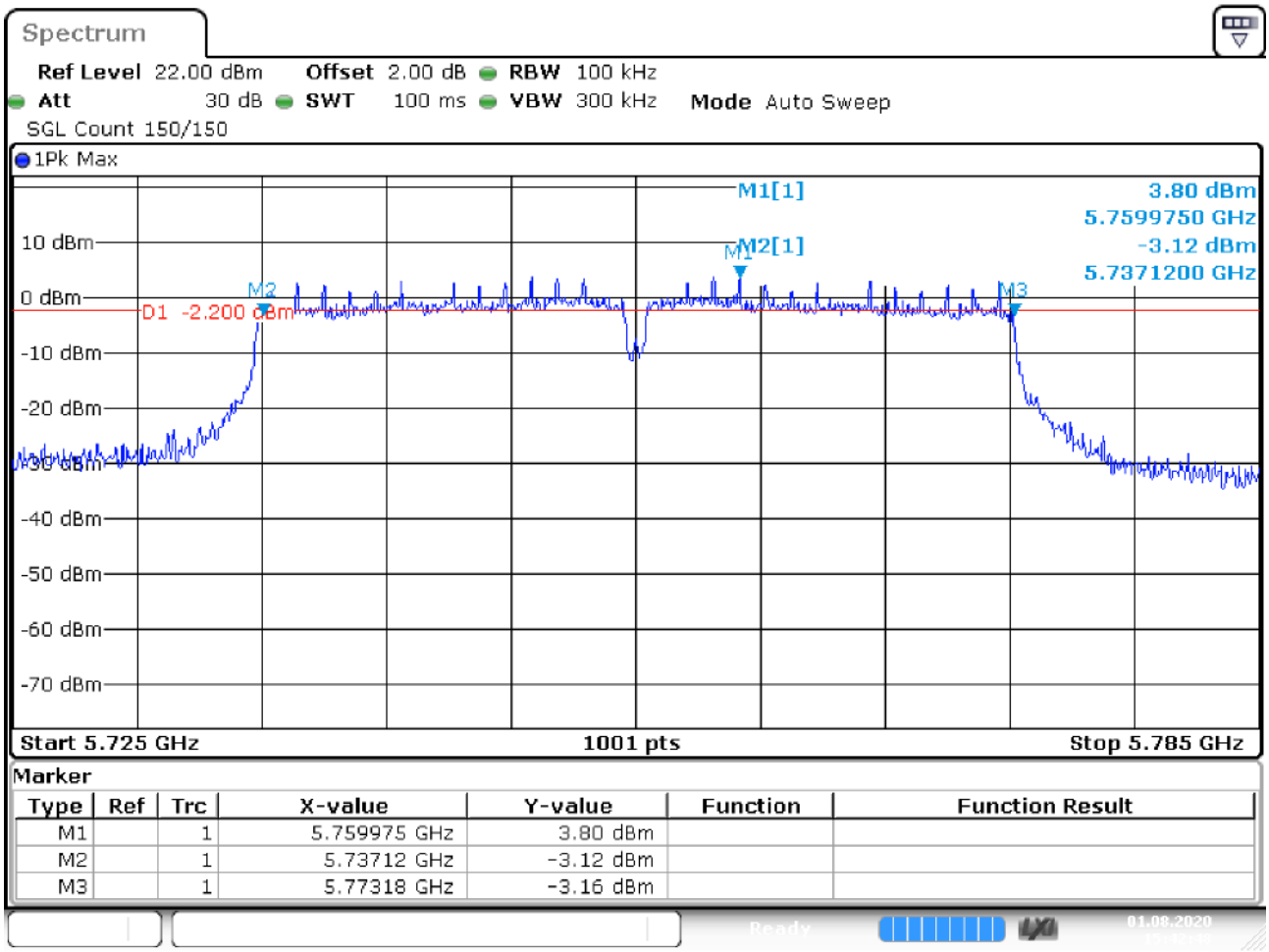
4.6.2.13 11N40MIMO_151 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.759975 GHz	3.80 dBm		
M2		1	5.73712 GHz	-3.12 dBm		
M3		1	5.77318 GHz	-3.16 dBm		

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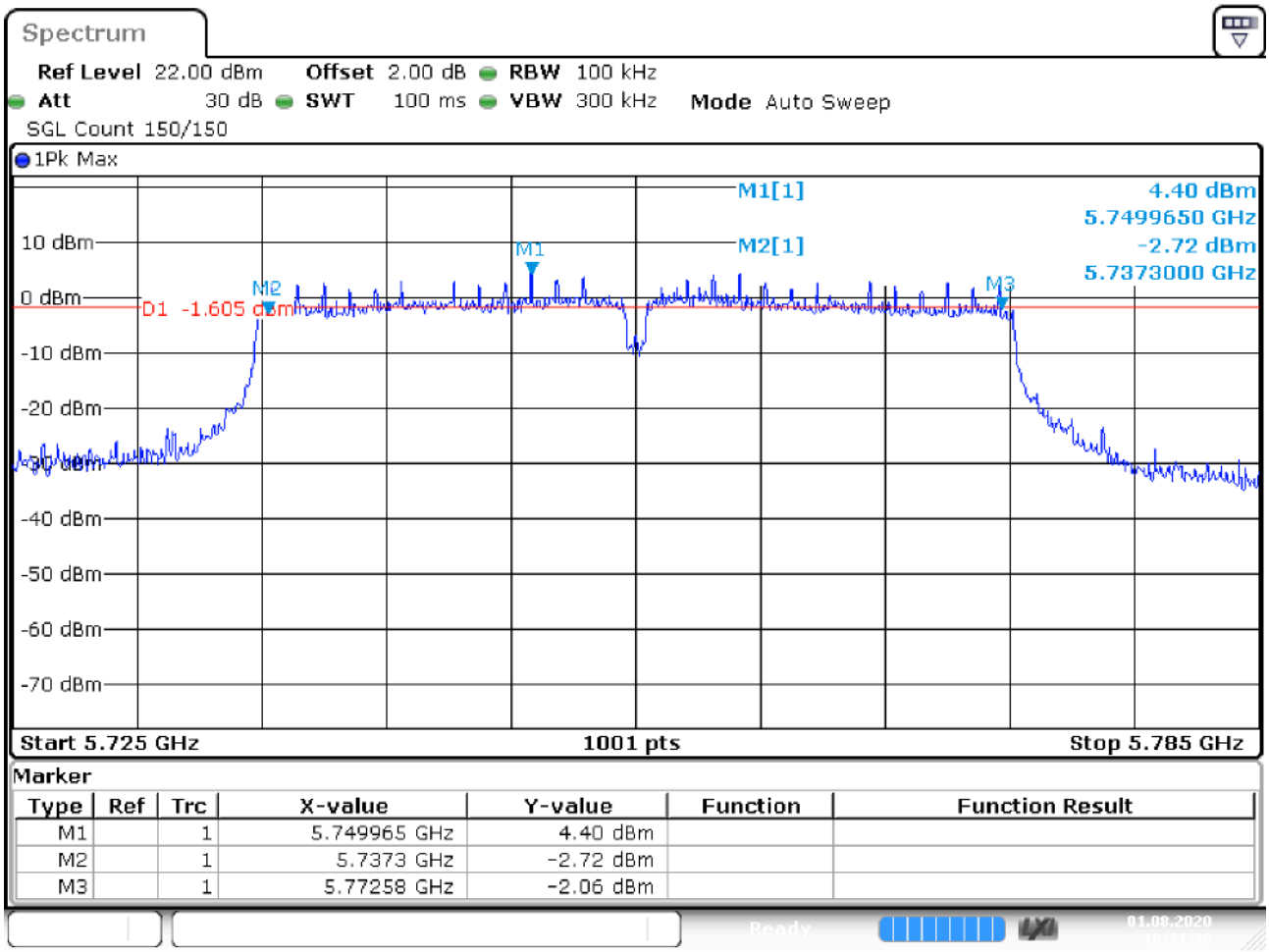
4.6.2.14 11N40MIMO_151 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.749965 GHz	4.40 dBm		
M2		1	5.7373 GHz	-2.72 dBm		
M3		1	5.77258 GHz	-2.06 dBm		

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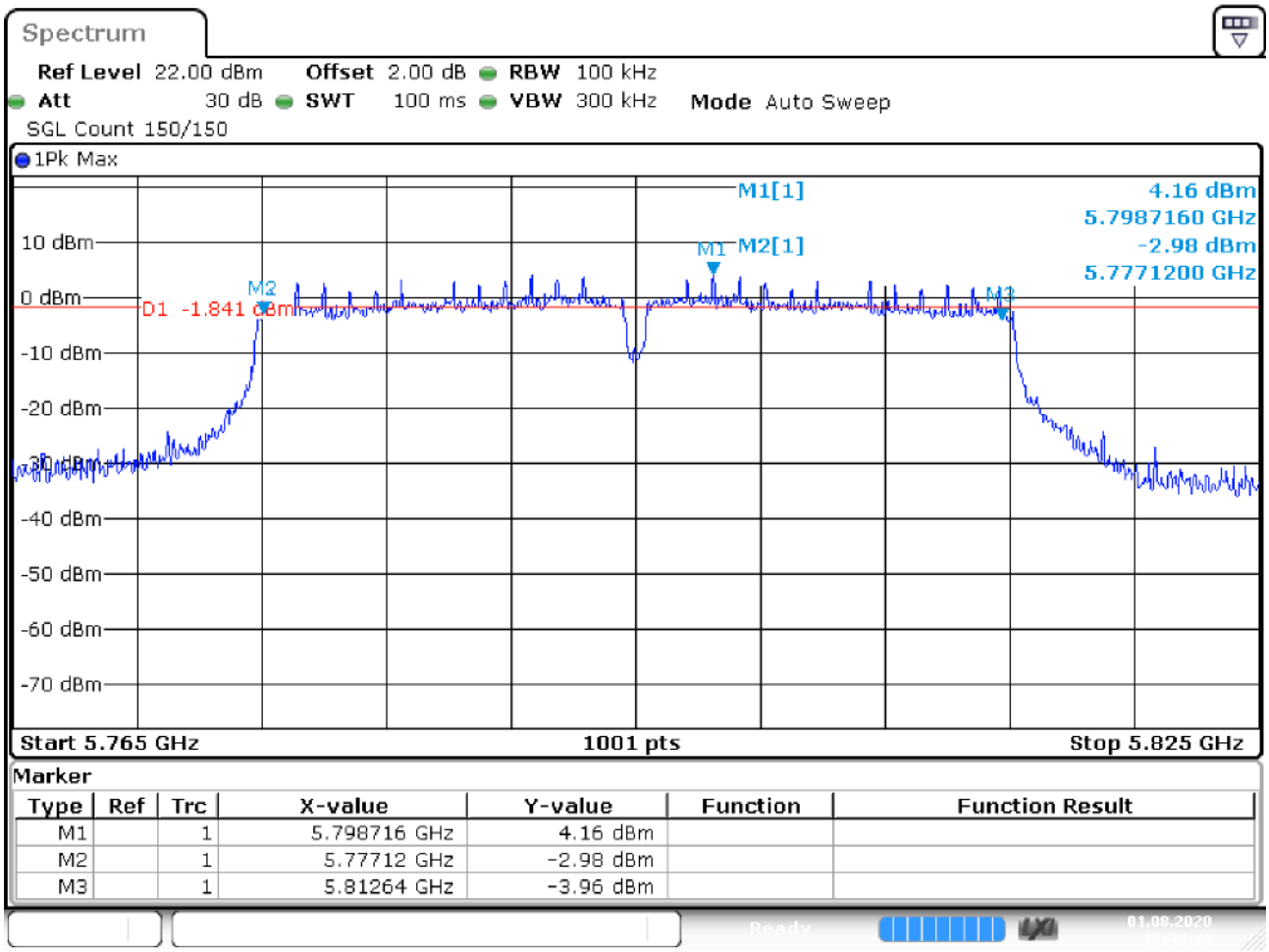
4.6.2.15 11N40MIMO_159 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.798716 GHz	4.16 dBm		
M2		1	5.77712 GHz	-2.98 dBm		
M3		1	5.81264 GHz	-3.96 dBm		

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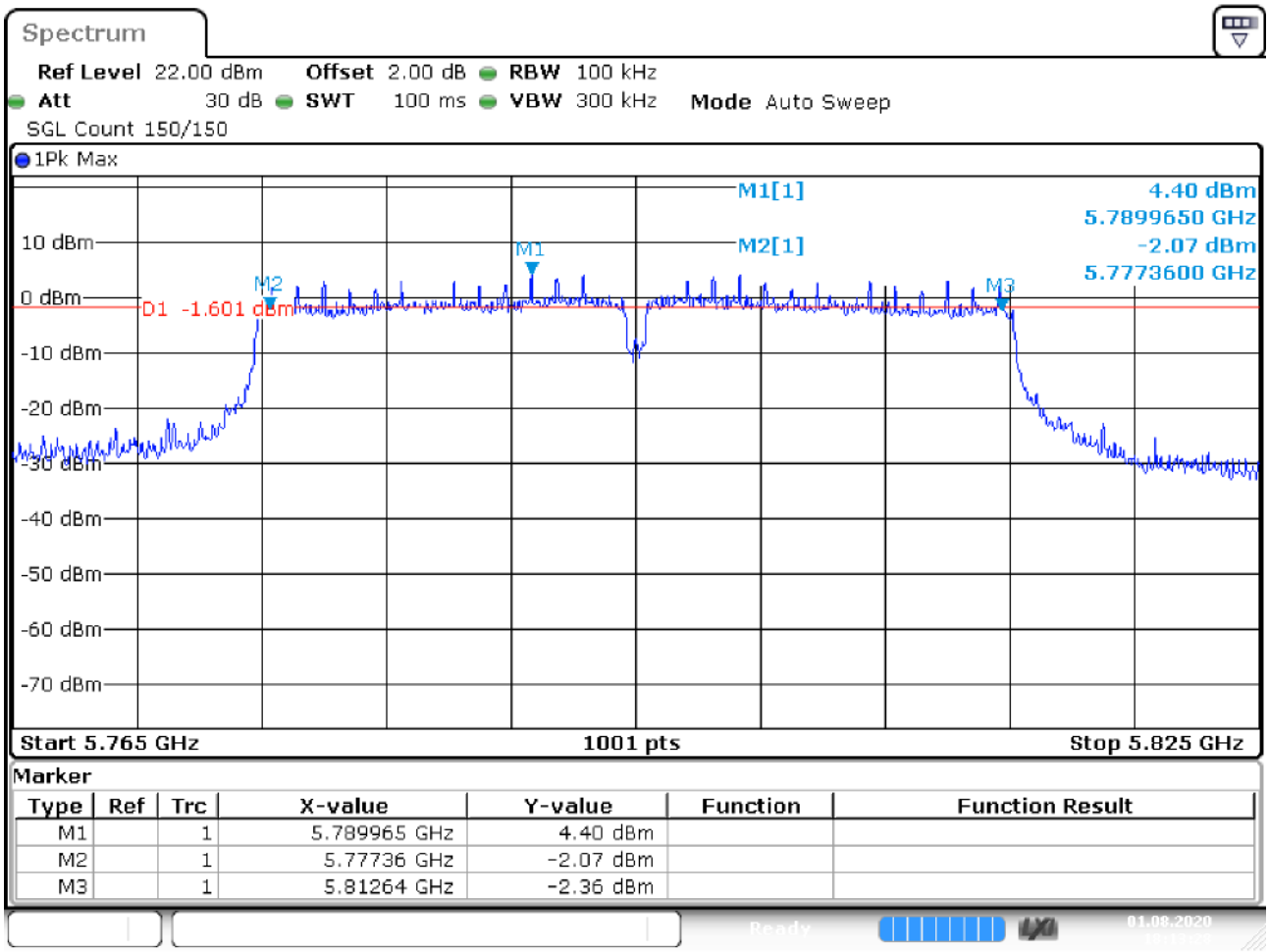
4.6.2.16 11N40MIMO_159 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.789965 GHz	4.40 dBm		
M2		1	5.77736 GHz	-2.07 dBm		
M3		1	5.81264 GHz	-2.36 dBm		

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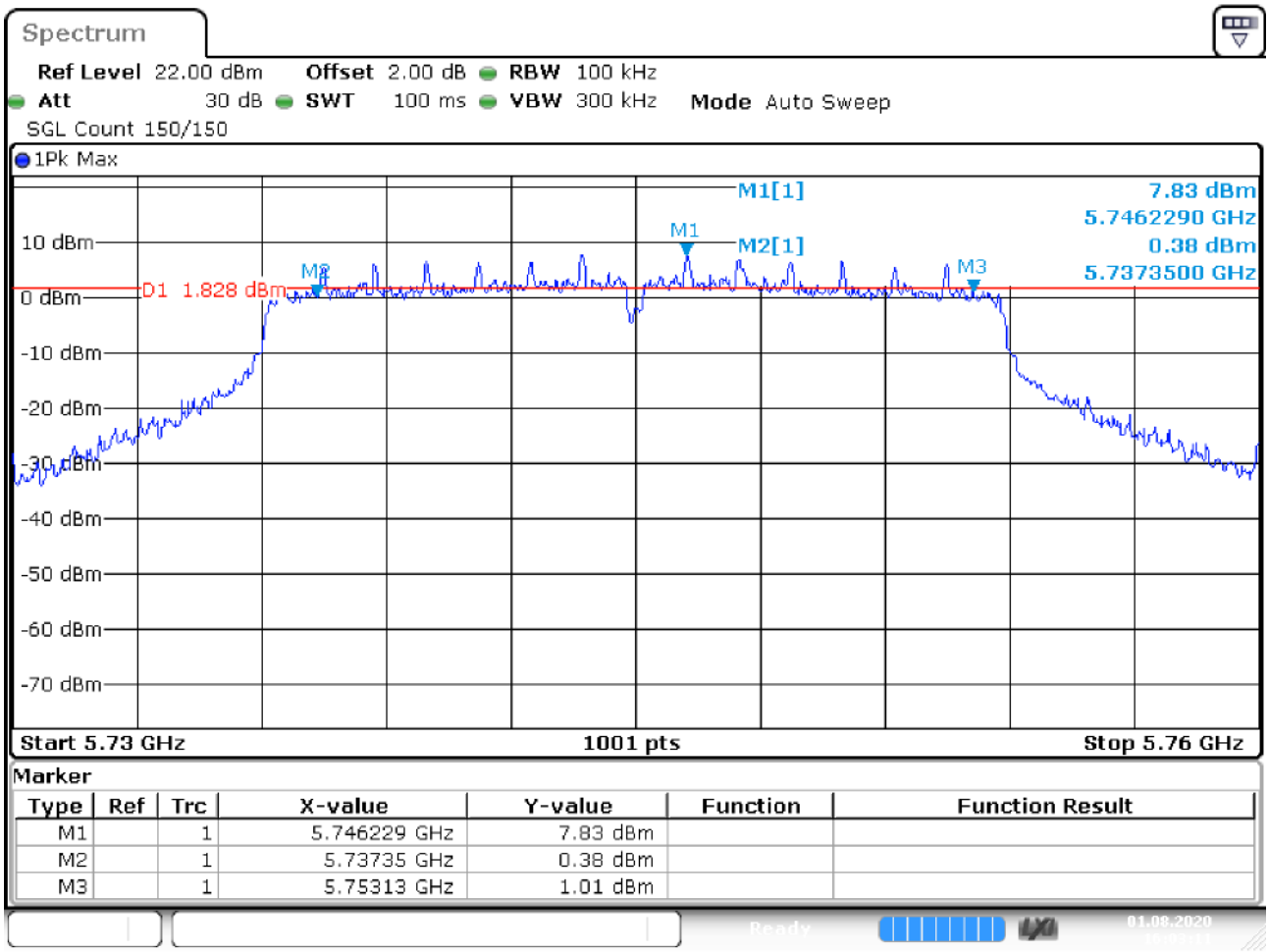
4.6.2.17 11AC20MIMO_149 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.746229 GHz	7.83 dBm		
M2		1	5.73735 GHz	0.38 dBm		
M3		1	5.75313 GHz	1.01 dBm		

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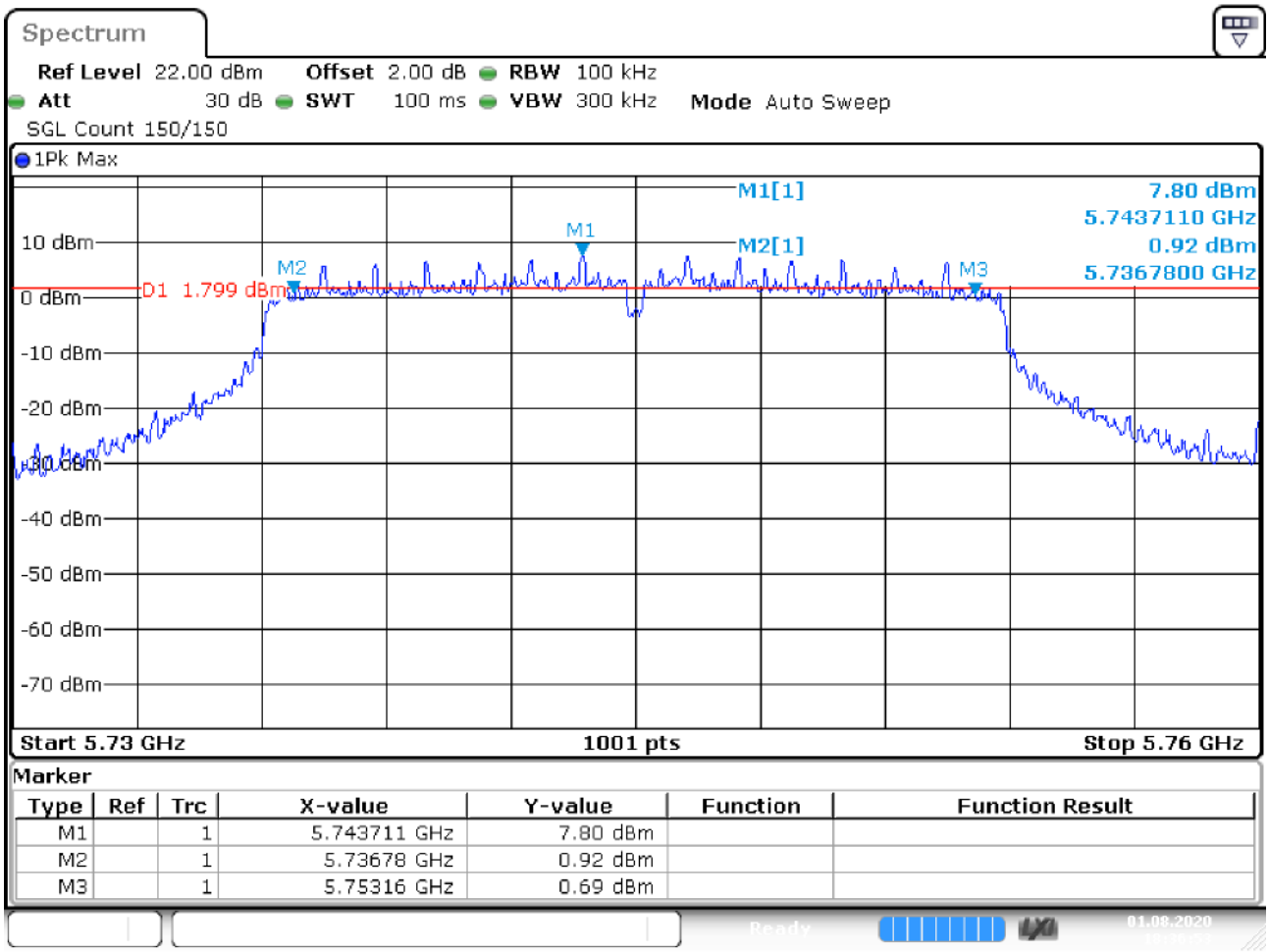
4.6.2.18 11AC20MIMO_149 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.743711 GHz	7.80 dBm		
M2		1	5.73678 GHz	0.92 dBm		
M3		1	5.75316 GHz	0.69 dBm		

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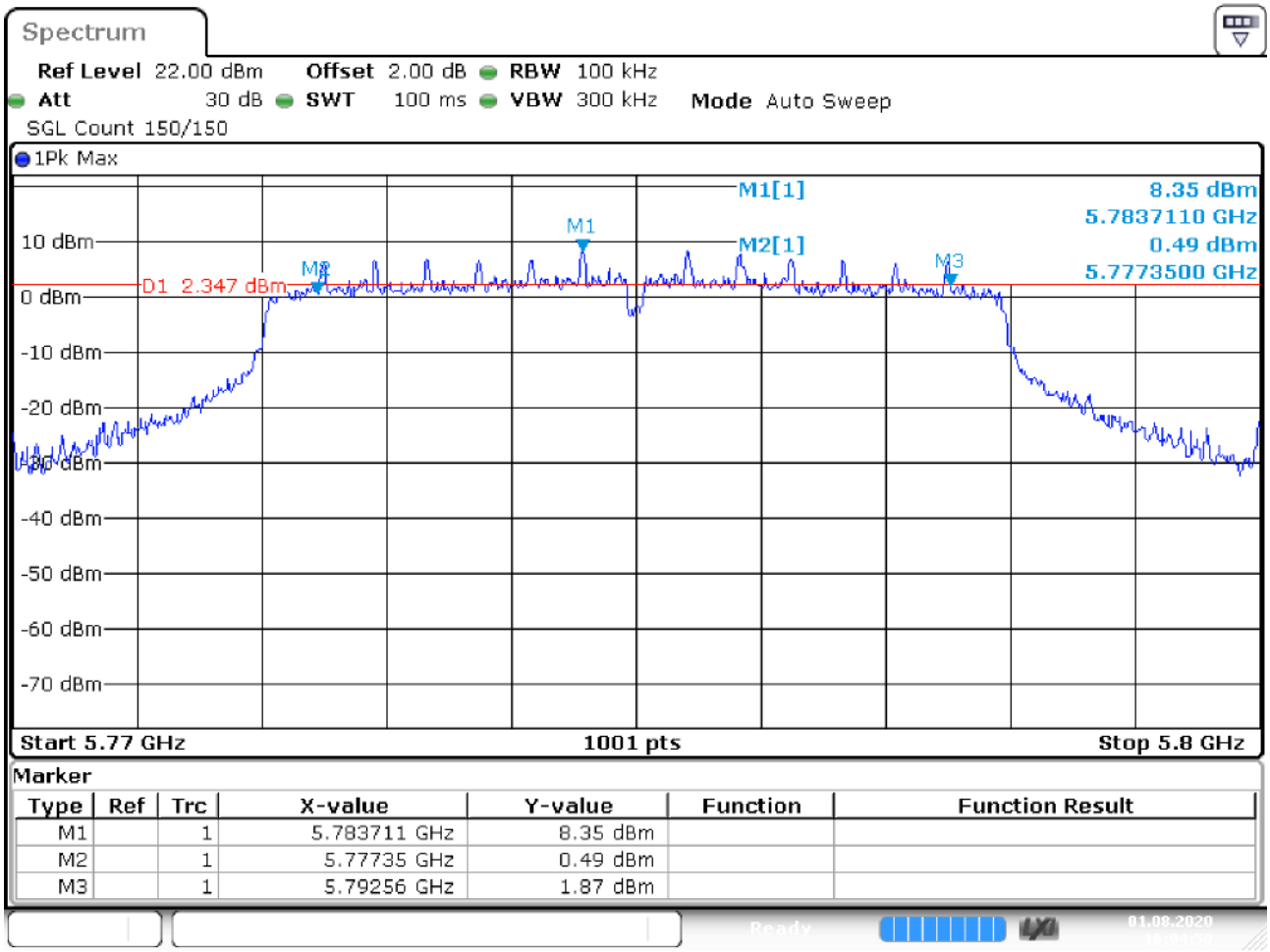
4.6.2.19 11AC20MIMO_157 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.783711 GHz	8.35 dBm		
M2		1	5.77735 GHz	0.49 dBm		
M3		1	5.79256 GHz	1.87 dBm		

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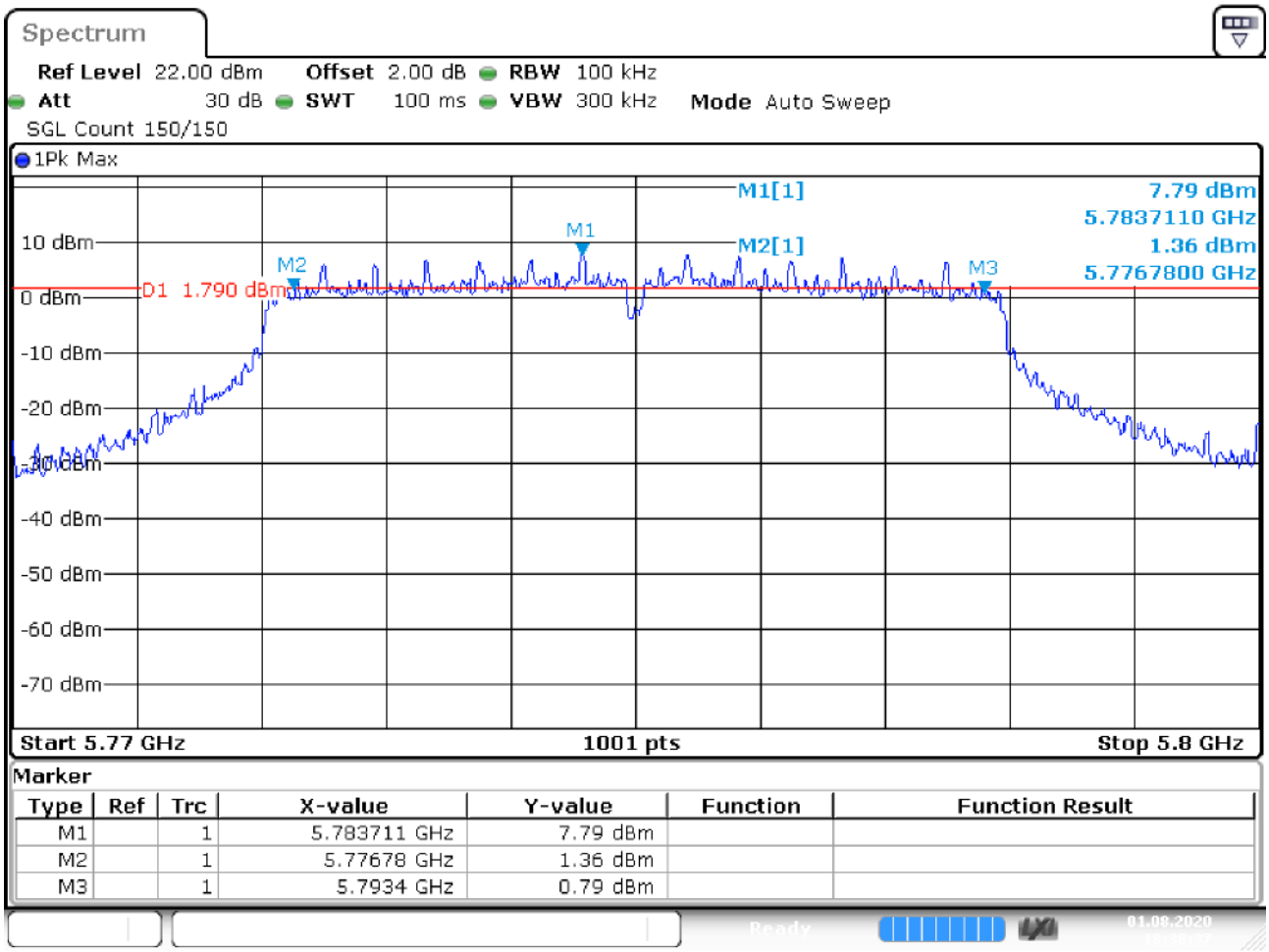
4.6.2.20 11AC20MIMO_157 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.783711 GHz	7.79 dBm		
M2		1	5.77678 GHz	1.36 dBm		
M3		1	5.7934 GHz	0.79 dBm		

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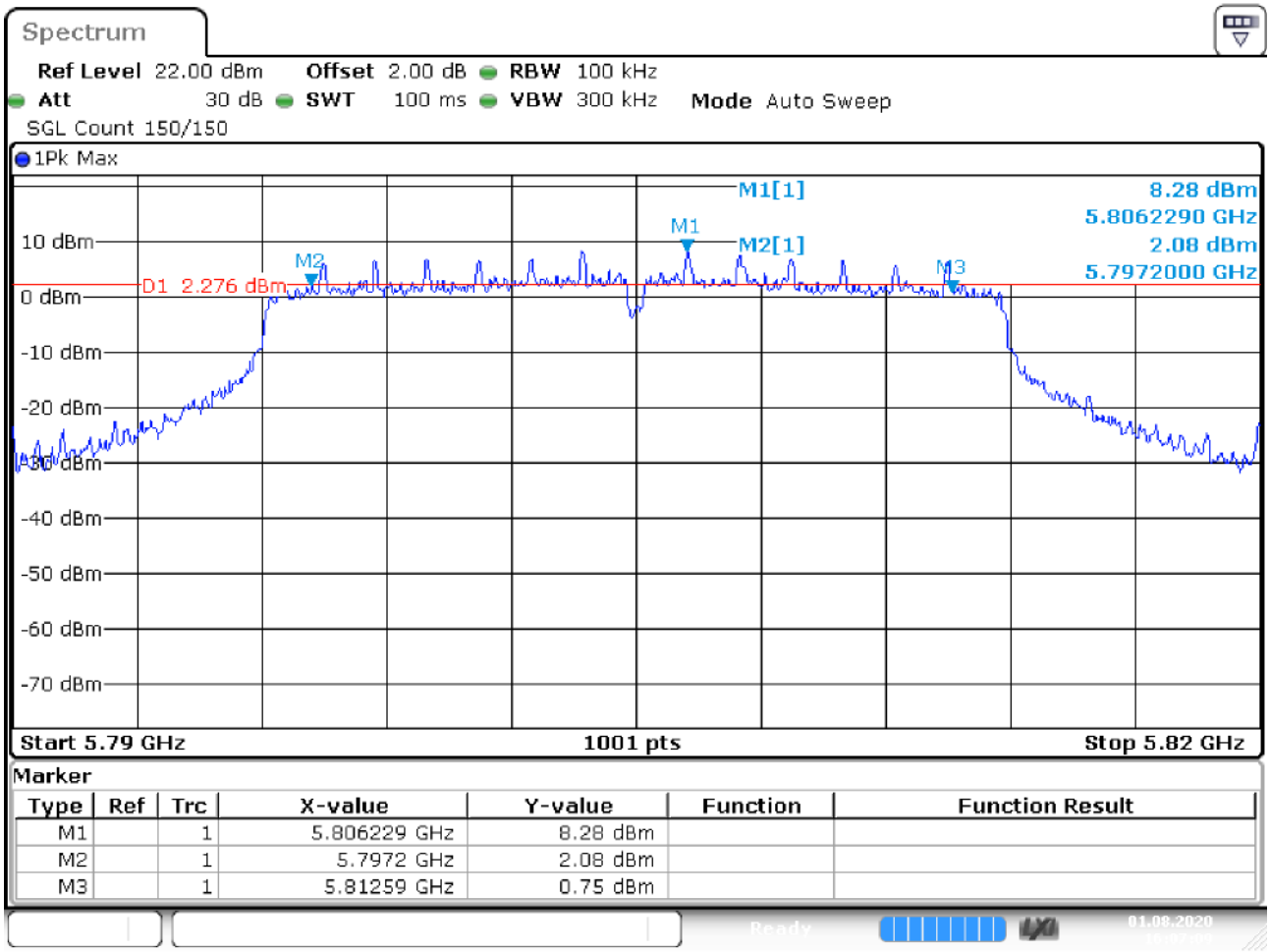
4.6.2.21 11AC20MIMO_161 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.806229 GHz	8.28 dBm		
M2		1	5.7972 GHz	2.08 dBm		
M3		1	5.81259 GHz	0.75 dBm		

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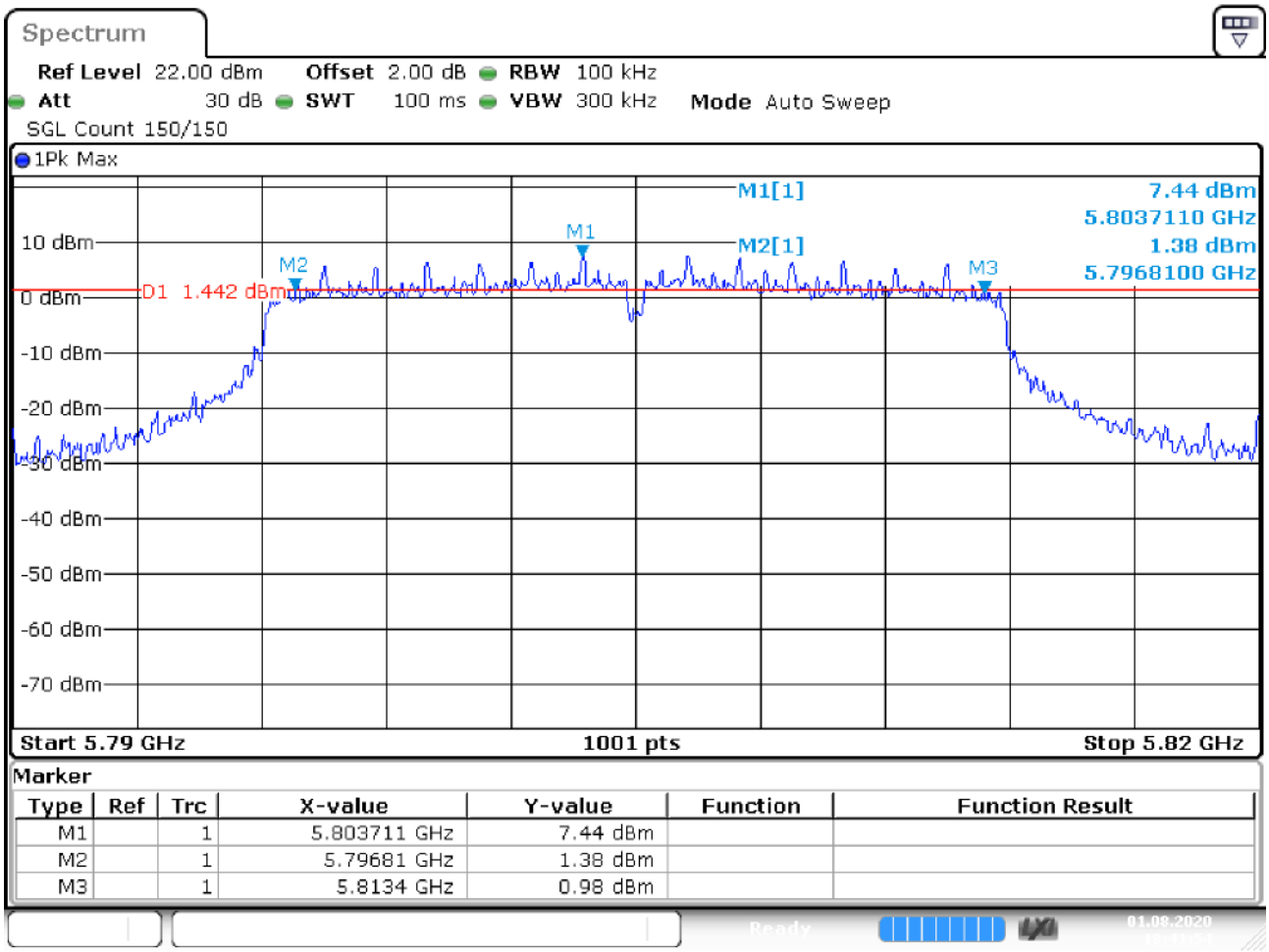
4.6.2.22 11AC20MIMO_161 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.803711 GHz	7.44 dBm		
M2		1	5.79681 GHz	1.38 dBm		
M3		1	5.8134 GHz	0.98 dBm		

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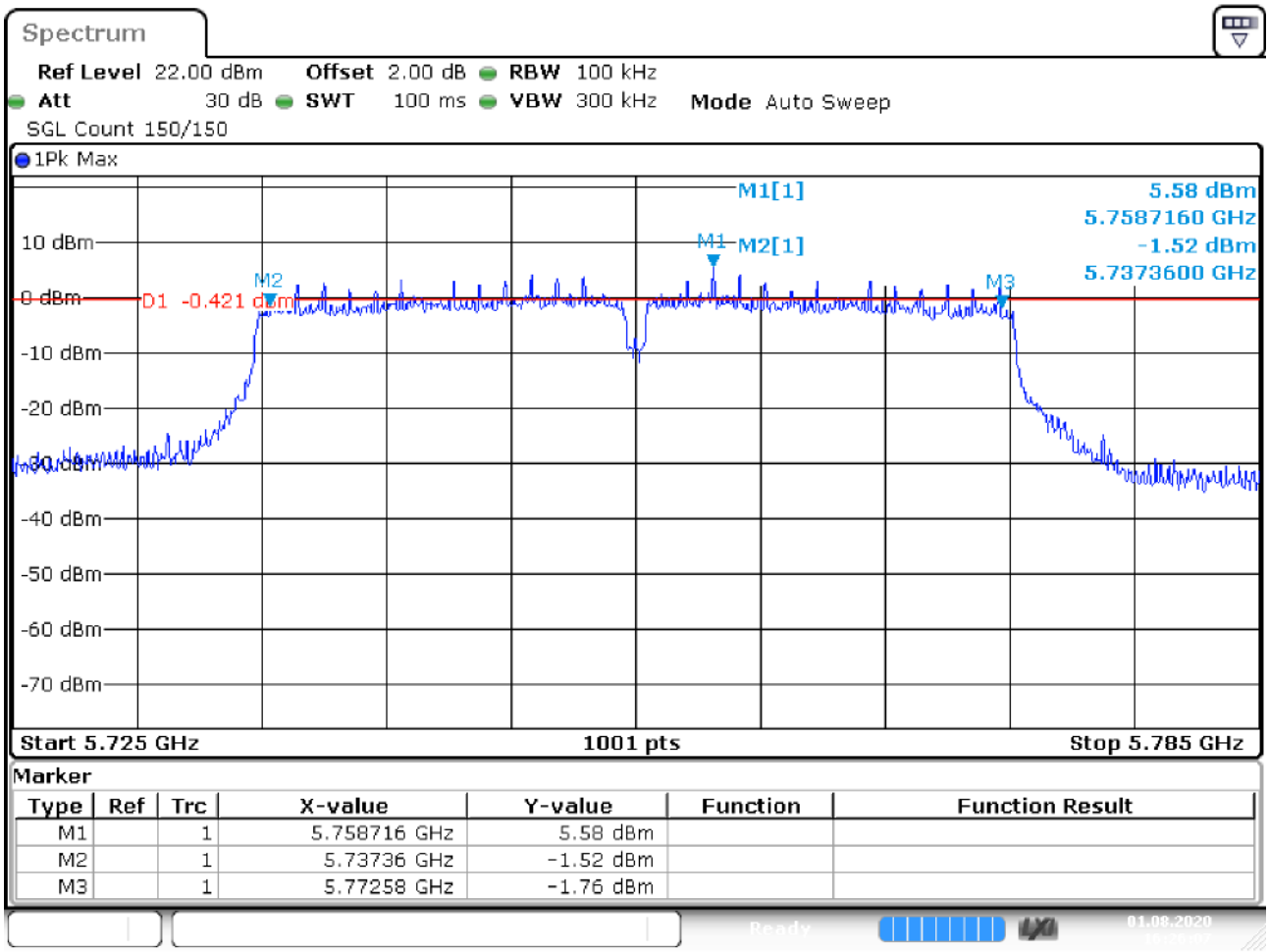
4.6.2.23 11AC40MIMO_151 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.758716 GHz	5.58 dBm		
M2		1	5.73736 GHz	-1.52 dBm		
M3		1	5.77258 GHz	-1.76 dBm		

Date: 1.AUG.2020 16:26:07

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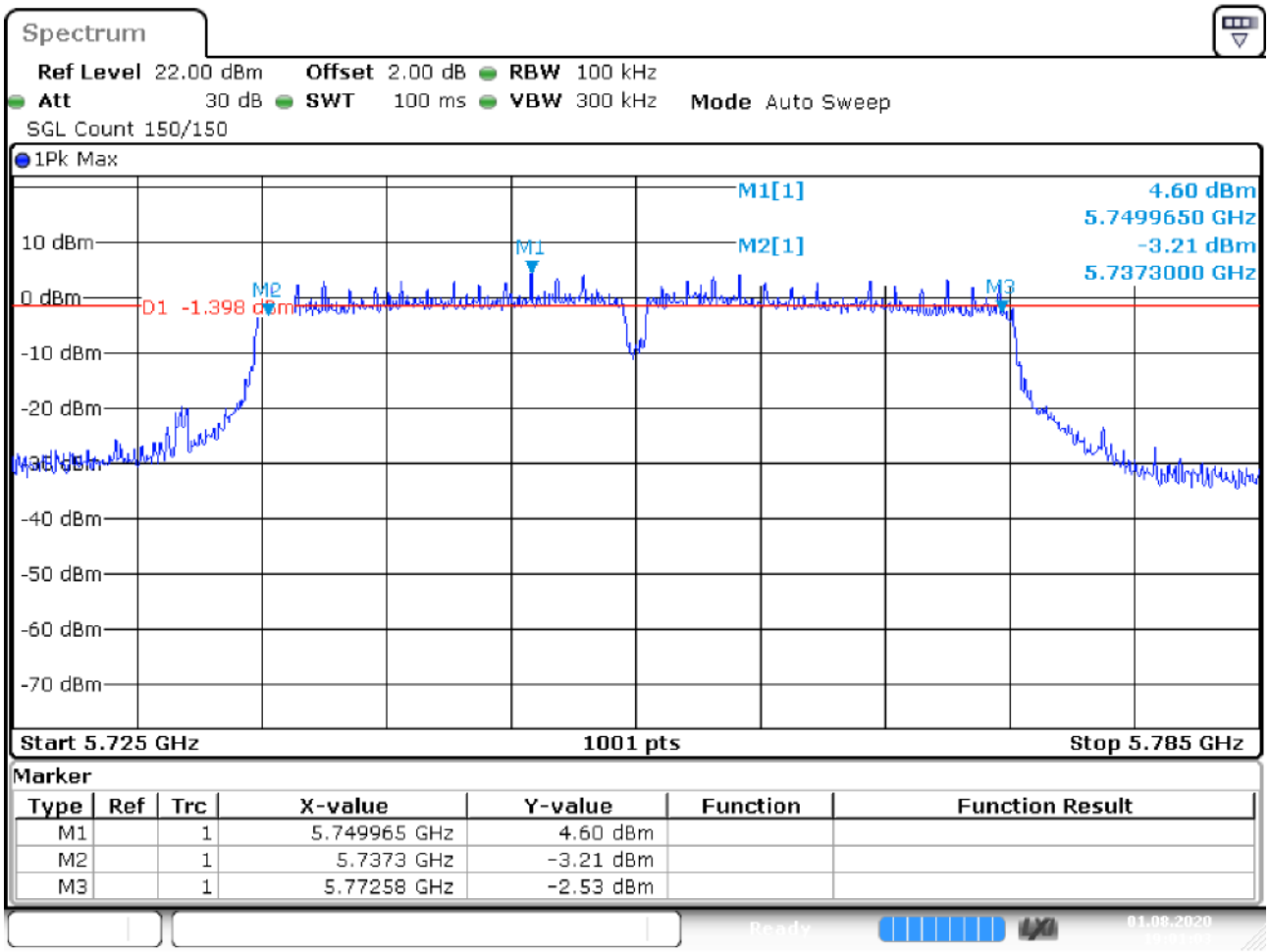
4.6.2.24 11AC40MIMO_151 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.749965 GHz	4.60 dBm		
M2		1	5.7373 GHz	-3.21 dBm		
M3		1	5.77258 GHz	-2.53 dBm		

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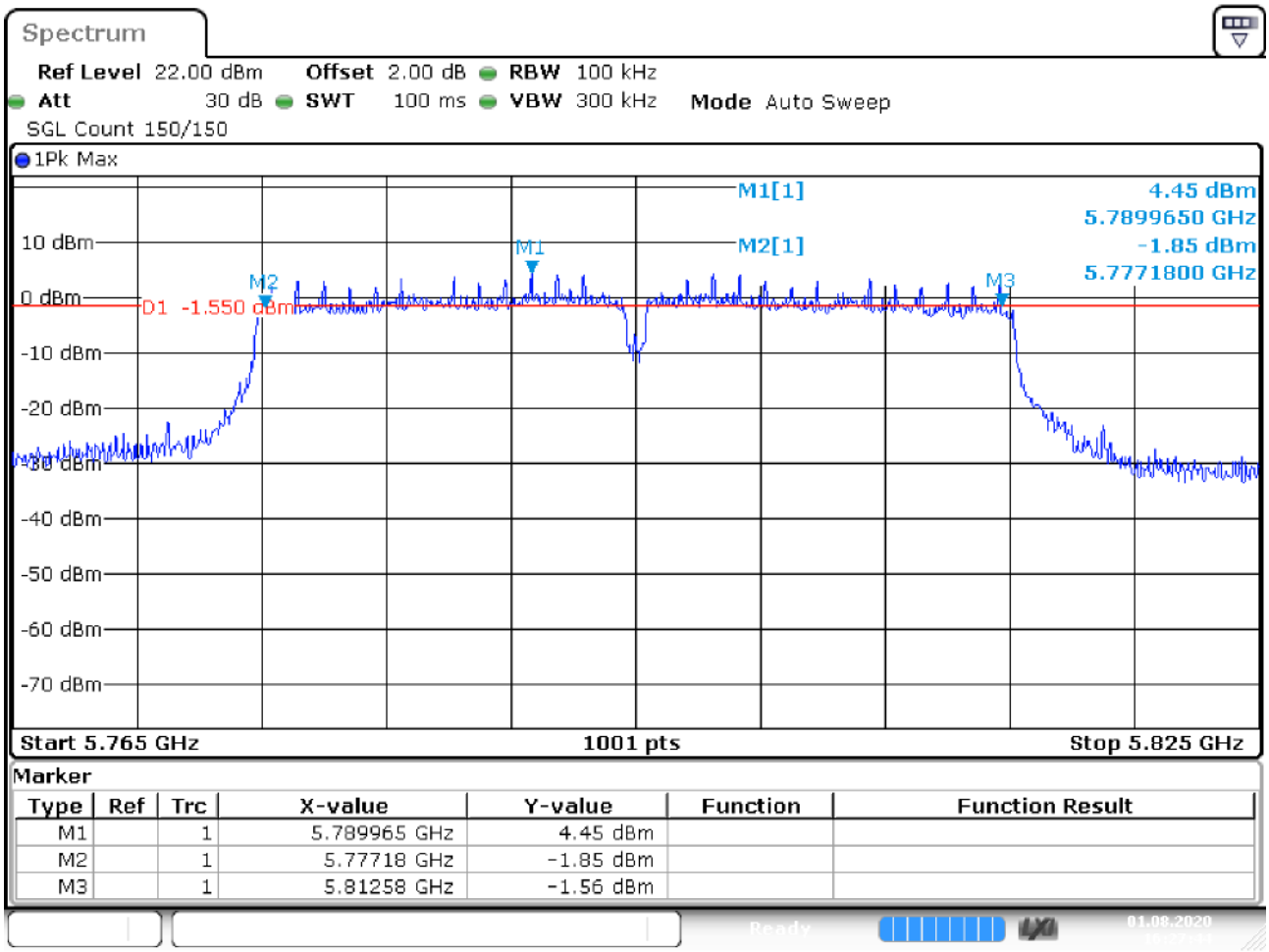
4.6.2.25 11AC40MIMO_159 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.789965 GHz	4.45 dBm		
M2		1	5.77718 GHz	-1.85 dBm		
M3		1	5.81258 GHz	-1.56 dBm		

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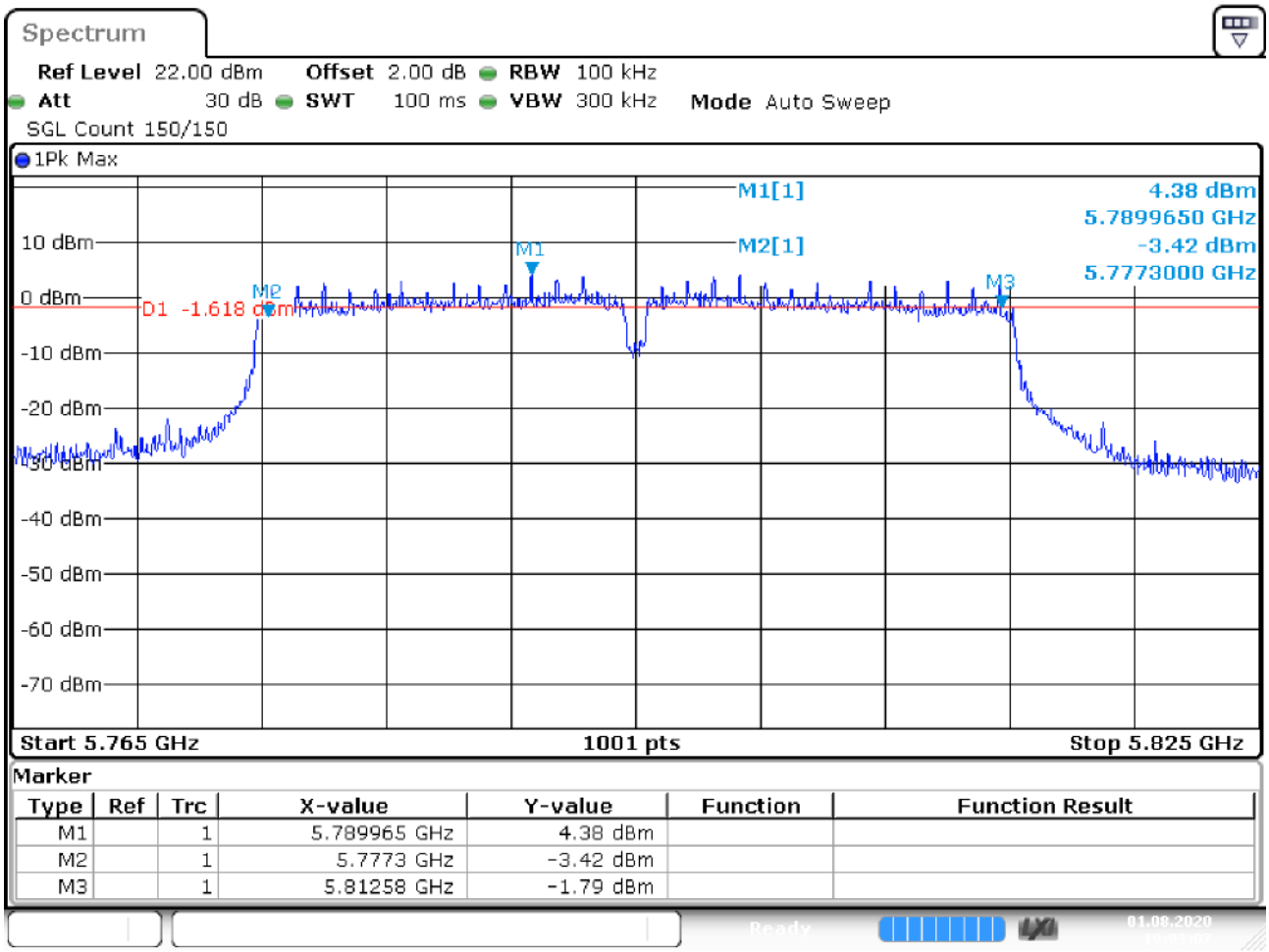
4.6.2.26 11AC40MIMO_159 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.789965 GHz	4.38 dBm		
M2		1	5.7773 GHz	-3.42 dBm		
M3		1	5.81258 GHz	-1.79 dBm		

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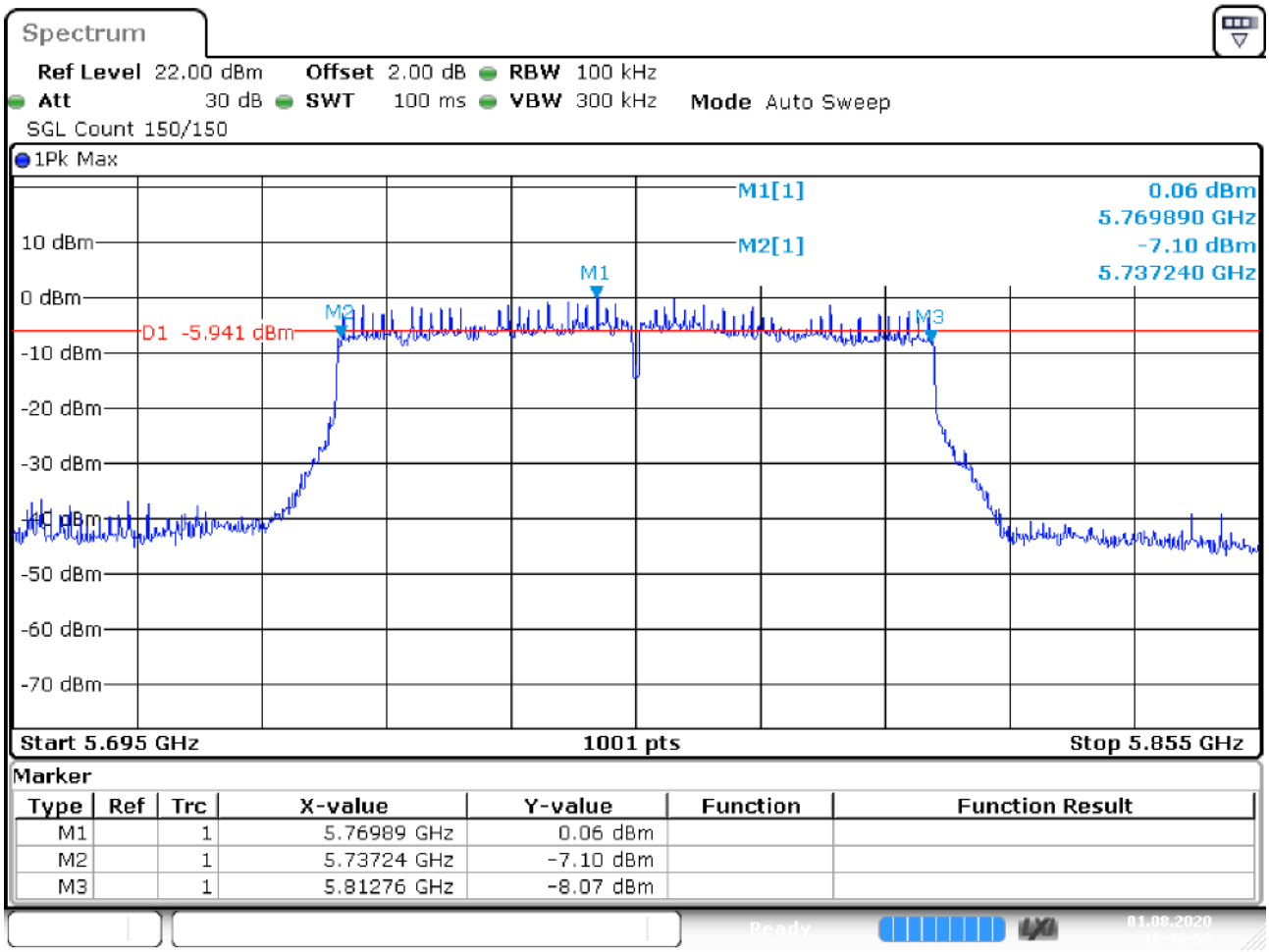
4.6.2.27 11AC80MIMO_155 ANT 1



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.76989 GHz	0.06 dBm		
M2		1	5.73724 GHz	-7.10 dBm		
M3		1	5.81276 GHz	-8.07 dBm		

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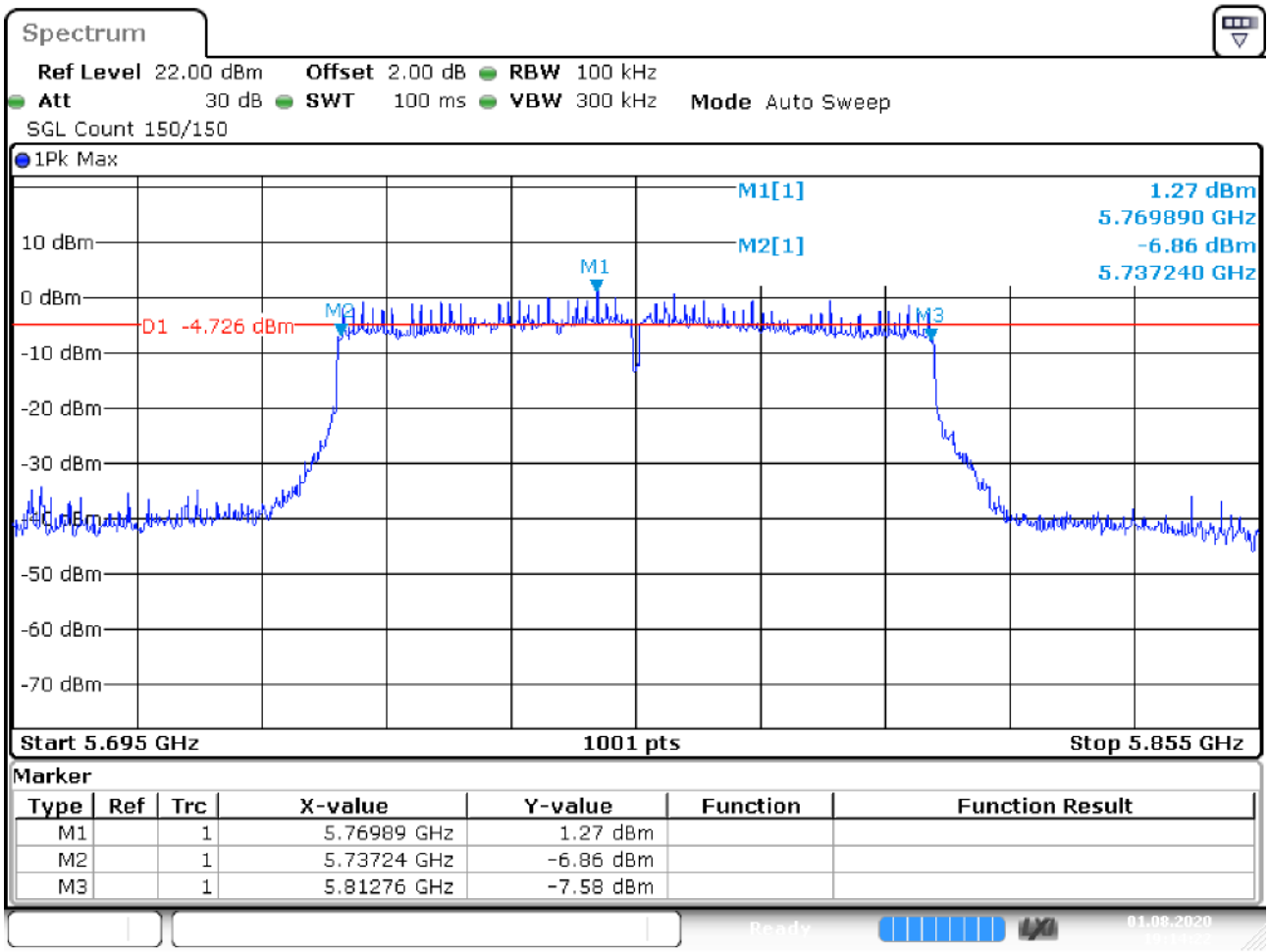
4.6.2.28 11AC80MIMO_155 ANT 2



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.76989 GHz	1.27 dBm		
M2		1	5.73724 GHz	-6.86 dBm		
M3		1	5.81276 GHz	-7.58 dBm		

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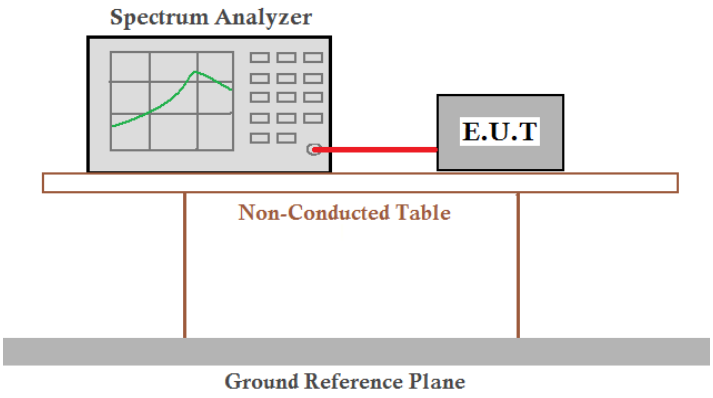
4.7 99% Occupied Bandwidth

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); 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). Only the worst case is recorded in the report.
Test Results:	Pass

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4.7.1 Test Results For 99% Occupied Bandwidth

Test Mode	Test Channel	Frequency [MHz]			Verdict
			ANT 1	ANT 2	
11A20 CDD	36	5180	16.7532	16.6034	PASS
	44	5220	16.7232	16.6034	PASS
	48	5240	16.7233	16.5734	PASS
	52	5260	16.7233	16.6034	PASS
	60	5300	16.6933	16.5734	PASS
	64	5320	16.6933	16.6034	PASS
	100	5500	16.7233	16.5734	PASS
	116	5580	16.7233	16.5734	PASS
	140	5700	16.6933	16.5734	PASS
	149	5745	16.6633	16.5734	PASS
	157	5785	16.6933	16.5734	PASS
	161	5805	16.6933	16.5734	PASS
11N20 MIMO	36	5180	17.9221	17.8921	PASS
	44	5220	17.9221	17.8621	PASS
	48	5240	17.9221	17.8621	PASS
	52	5260	17.9221	17.8322	PASS
	60	5300	18.012	17.8621	PASS
	64	5320	17.9221	17.8621	PASS
	100	5500	17.9221	17.8022	PASS
	116	5580	17.9221	17.8322	PASS
	140	5700	17.8621	17.7722	PASS
	149	5745	17.8621	17.8022	PASS
	157	5785	17.8921	17.8022	PASS
	161	5805	17.8921	17.8022	PASS
11N40 MIMO	38	5190	36.3836	36.2637	PASS
	46	5230	36.3237	36.2637	PASS
	54	5270	36.3237	36.3237	PASS
	62	5310	36.3836	36.3237	PASS
	102	5510	36.4436	36.3836	PASS
	110	5550	36.4436	36.4436	PASS
	134	5670	36.3836	36.3836	PASS
	151	5755	36.5035	36.4436	PASS
	159	5795	36.4436	36.4436	PASS
11AC20 MIMO	36	5180	17.9221	17.8322	PASS
	44	5220	17.8921	17.8022	PASS
	48	5240	17.8921	17.8022	PASS

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	52	5260	17.8921	17.7722	PASS
	60	5300	17.8921	17.8022	PASS
	64	5320	17.8621	17.7722	PASS
	100	5500	17.8921	17.7722	PASS
	116	5580	17.8621	17.7722	PASS
	140	5700	17.8322	17.7722	PASS
	149	5745	17.8621	17.7722	PASS
	157	5785	17.8621	17.7722	PASS
	161	5805	17.8621	17.7722	PASS
11AC40 MIMO	38	5190	36.3836	36.2637	PASS
	46	5230	36.3836	36.2637	PASS
	54	5270	36.3836	36.2637	PASS
	62	5310	36.3836	36.2038	PASS
	102	5510	36.3836	36.3237	PASS
	110	5550	36.3836	36.3237	PASS
	134	5670	36.3836	36.2637	PASS
	151	5755	36.4436	36.2637	PASS
	159	5795	36.4436	36.3237	PASS
11AC80 MIMO	42	5210	75.7642	75.5245	PASS
	58	5290	75.6444	75.5245	PASS
	106	5530	75.6444	75.5245	PASS
	122	5610	75.8841	75.5245	PASS
	155	5775	75.7642	75.6444	PASS

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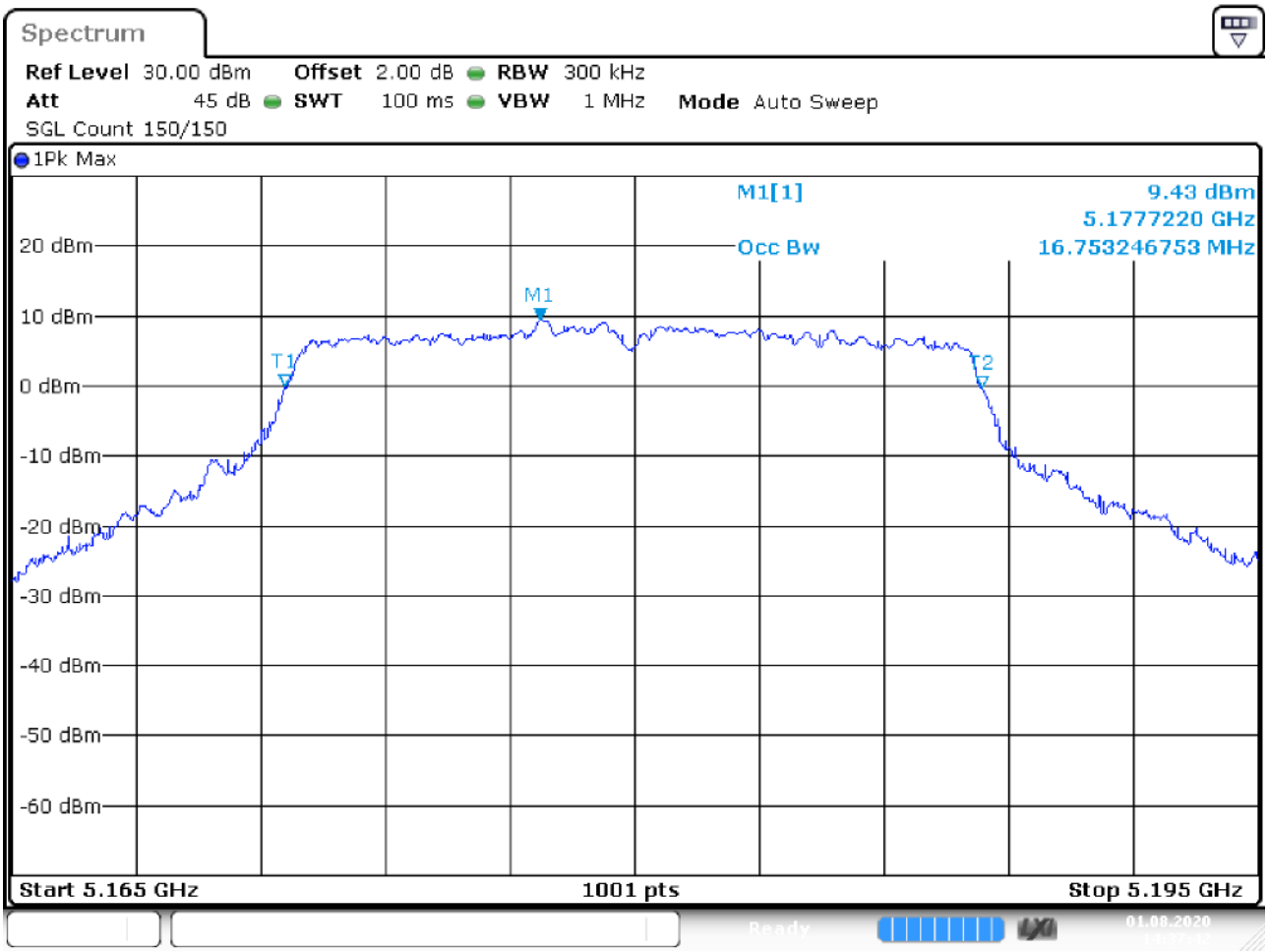
4.7.2 Test Plots For 99% Occupied Bandwidth

4.7.2.1 11A20_CDD_36 ANT 1



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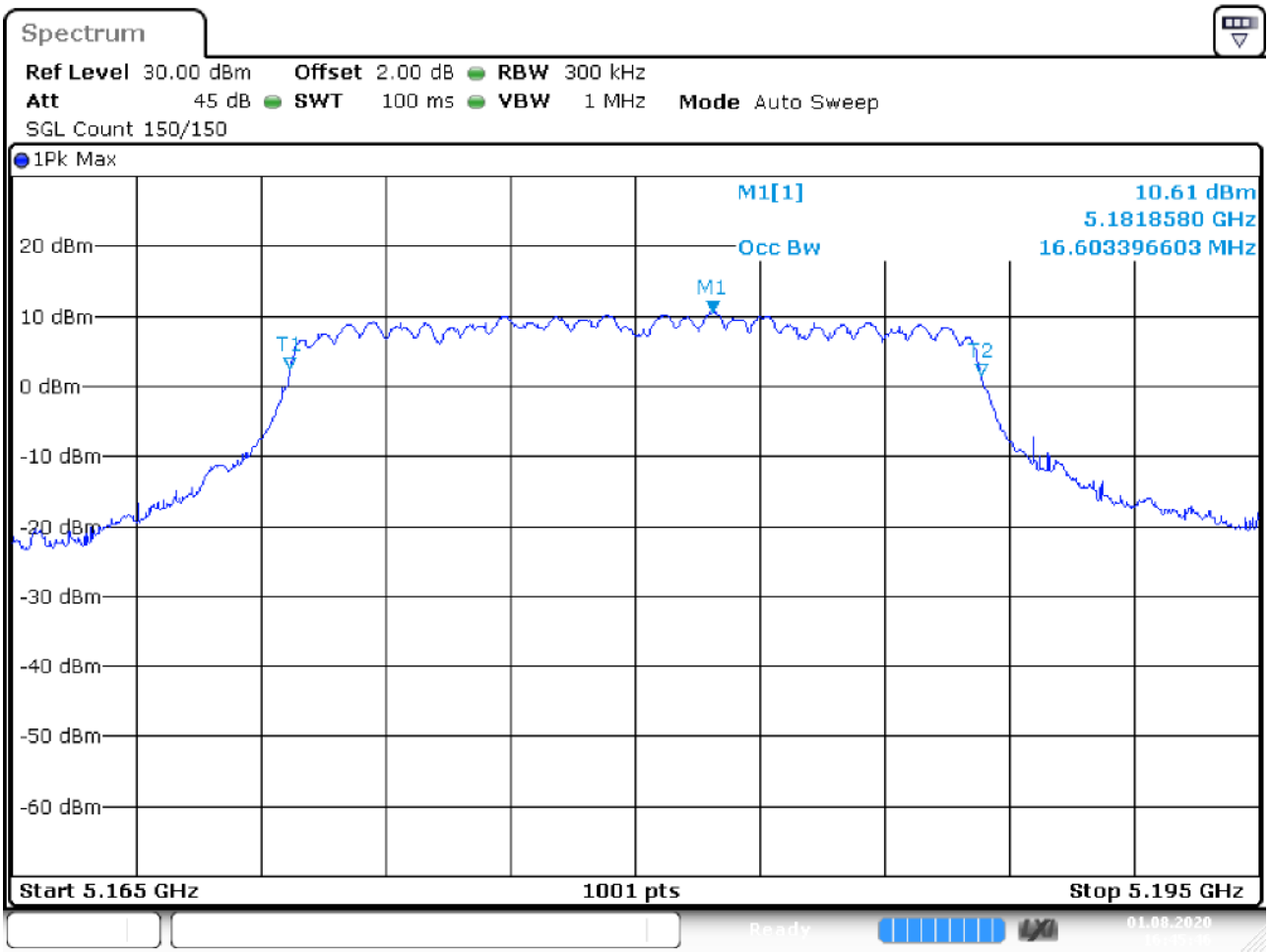
4.7.2.2 11A20_CDD_36 ANT 2



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