SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park,
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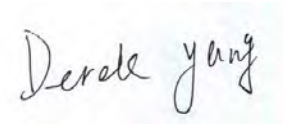
FCC REPORT

Application No:	SZEM1705005331RG
Applicant:	Kyocera Corporation
Manufacturer:	Kyocera Corporation
Factory:	Kyocera Corporation
Product Name:	Tablet
Model No.(EUT):	FA85
Trade Mark::	Kyocera
FCC ID:	JOYFA85
Standards:	47 CFR Part 15, Subpart E (2017)
Test Method	KDB 789033 D02 v02r01
Date of Receipt:	2017-12-28
Date of Test:	2017-12-29 to 2018-01-07
Date of Issue:	2018-01-08
Test Result:	**PASS ***

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

Authorized Signature:

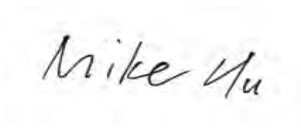


Derek Yang
Wireless Laboratory Manager

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.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2018-01-08		Original

Authorized for issue by:				
Tested By		 **(Mike Hu) /Project Engineer**		2018-01-08 **Date**
Checked By		 **(Jim Huang) /Reviewer**		2018-01-08 **Date**

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Section 15.203	ANSI C63.10: 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Conducted Output Power	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
26 dB Emission Bandwidth & 99% Occupied Bandwidth	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Section 15.407(e)	ANSI C63.10: 2013	PASS
Power Spectral Density	47 CFR Part 15 Section 15.407(a)	ANSI C63.10: 2013	PASS
Radiated Spurious Emissions	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Section 15.407(b)	ANSI C63.10: 2013	PASS

4 Contents

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5 General Information

5.1 Client Information

Applicant:	Kyocera Corporation
Address of Applicant:	2-1-1 Kagahara, Tsuzuki-ku, Yokohama-shi, Kanagawa, Japan
Manufacturer:	Kyocera Corporation
Address of Manufacturer:	2-1-1 Kagahara, Tsuzuki-ku, Yokohama-shi, Kanagawa, Japan
Factory:	Kyocera Corporation
Address of Factory:	2-1-1 Kagahara, Tsuzuki-ku, Yokohama-shi, Kanagawa, Japan

5.2 General Description of EUT

Product Name:	Tablet
Model No.:	FA85
Trade Mark:	Kyocera
Operation Frequency:	IEEE 802.11a/ n(HT20/40)/ ac(HT20/40/80): 5150MHz to 5250MHz IEEE 802.11a/ n(HT20/40)/ ac(HT20/40/80): 5250MHz to 5350MHz IEEE 802.11a/ n(HT20/40)/ ac(HT20/40/80): 5470MHz to 5725MHz
	* 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)
Sample Type:	Portable Device
Antenna Type:	PIFA
Antenna Gain:	2.94dBi,
EUT Power Supply:	DC3.8V (1 x 3.8V Rechargeable battery)7000mAh Battery: Charge by DC 5V

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	5220
	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	5300
	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	5550
	The Highest channel	5670
IEEE 802.11ac 80MHz	The Lowest channel	5530
	The Highest channel	5610

5.3 Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	55 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

5.4 Description of Support Units

The EUT has been tested independent unit.

5.5 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.

5.6 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 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 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.

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None

5.10 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	0.75dB
2	RF power density, conducted	2.84dB
3	Spurious emissions, conducted	0.75dB
4	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-25GHz)
5	Conduct emission test	3.12 dB(9KHz- 30MHz)
6	Temperature test	1°C
7	Humidity test	3%
8	DC and low frequency voltages	0.5%

5.11 Equipment List

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2017-05-10	2018-05-10
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2017-10-09	2018-10-09
3	LISN	ETS-LINDGREN	3816/2	SEM007-02	2017-04-14	2018-04-14
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2017-09-28	2018-09-28
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2017-09-28	2018-09-28
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2017-09-28	2018-09-28
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2017-04-14	2018-04-14
8	DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2017-10-09	2018-10-09

RF connected test						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
1	DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-10-09	2018-10-09
2	Signal Analyzer	Rohde &Schwarz	FSV	W005-02	2017-03-06	2018-03-06
3	Signal Generator	Rohde &Schwarz	SML03	SEM006-02	2017-04-14	2018-04-14
4	Power Meter	Rohde &Schwarz	NRVS	SEM014-02	2017-10-09	2018-10-09
5	Power Sensor	Agilent Technologies	U2021XA	SEM009-01	2017-10-09	2018-10-09

RE in Chamber						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-05-10	2018-05-10
2	EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2017-10-09	2018-10-09
3	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-11-01	2020-11-01
4	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEM003-11	2015-10-17	2018-10-17
5	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEM003-12	2017-11-24	2020-11-24
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-14
7	Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A
8	DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2017-10-09	2018-10-09
9	Loop Antenna	Beijing Daze	ZN30401	SEM003-09	2015-05-13	2018-05-13

RE in Chamber						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
1	10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2017-05-10	2018-05-10
2	EMI Test Receiver (9k-7GHz)	Rohde & Schwarz	ESR	SEM004-03	2017-04-14	2018-04-14
3	Trilog-Broadband Antenna(30M-1GHz)	Schwarzbeck	VULB9168	SEM003-18	2016-06-29	2019-06-29
4	Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2017-07-06	2018-07-06
5	.Loop Antenna	ETS-Lindgren	6502	SEM003-08	2015-08-14	2018-08-14

RE in Chamber						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (yyyy-mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2017-05-10	2018-05-10
2	EXA Spectrum Analyzer	Agilent Technologies Inc	N9010A	SEM004-09	2017-07-19	2018-07-19
3	BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-02	2017-11-15	2020-11-15
4	Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2017-10-09	2018-10-09
5	Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2015-06-14	2018-06-14
6	Horn Antenna (18-26GHz)	ETS-Lindgren	3160	SEM003-12	2017-11-24	2020-11-24
7	HornAntenna (26GHz-40GHz)	A.H.Systems, inc.	SAS-573	SEM003-13	2015-02-12	2018-02-12
8	Low Noise Amplifier	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2017-10-09	2018-10-09
9	Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A

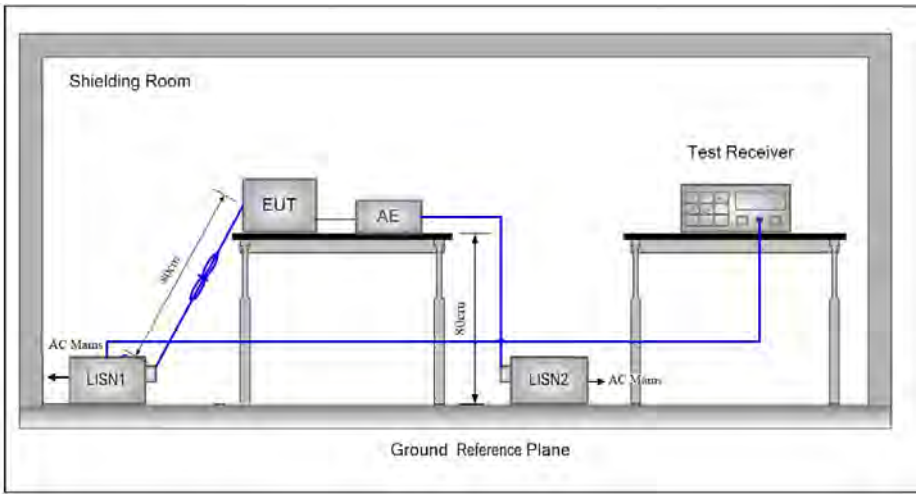
6 Test results and Measurement Data

6.1 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 2.94dBi.	

6.2 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.

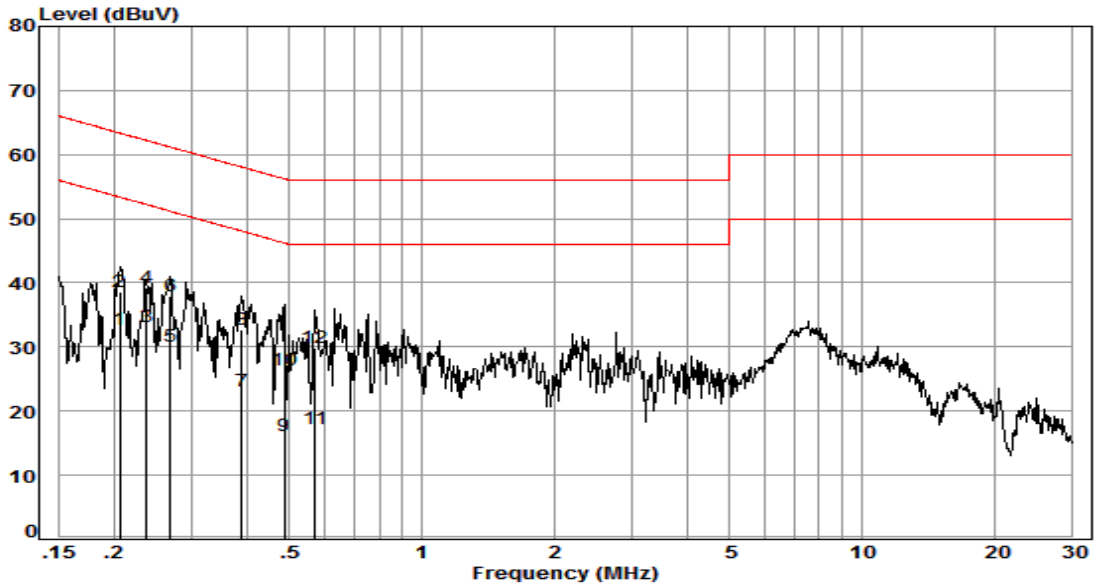
Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate of 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer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

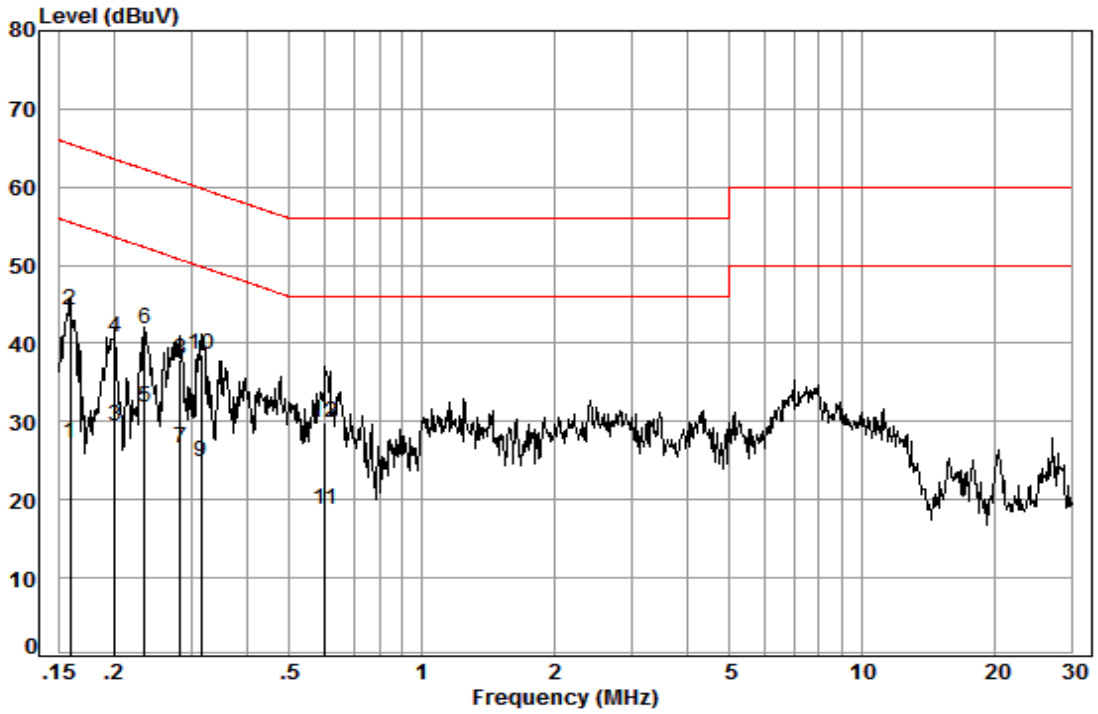
Live Line:



Site : Shielding Room
Condition: Line
Job No. : 05331RG
Test mode: i

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.21	0.02	9.50	23.18	32.70	53.36	-20.66	Average
2	0.21	0.02	9.50	28.96	38.48	63.36	-24.88	QP
3	0.24	0.01	9.51	23.55	33.07	52.22	-19.15	Average
4	0.24	0.01	9.51	29.69	39.21	62.22	-23.01	QP
5	0.27	0.01	9.51	20.63	30.15	51.16	-21.01	Average
6	0.27	0.01	9.51	28.50	38.02	61.16	-23.14	QP
7	0.39	0.01	9.49	13.53	23.03	48.08	-25.05	Average
8	0.39	0.01	9.49	23.25	32.75	58.08	-25.33	QP
9	0.49	0.01	9.49	6.53	16.03	46.23	-30.20	Average
10	0.49	0.01	9.49	16.88	26.38	56.23	-29.85	QP
11	0.57	0.01	9.52	7.68	17.21	46.00	-28.79	Average
12	0.57	0.01	9.52	20.40	29.93	56.00	-26.07	QP

Neutral Line:



Site : Shielding Room
Condition: Neutral
Job No. : 05331RG
Test mode: i

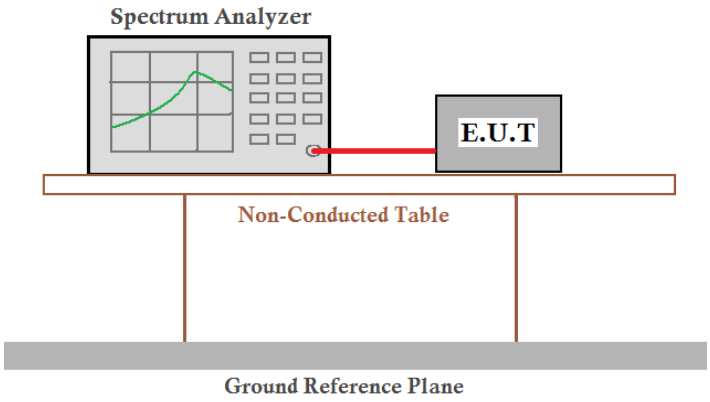
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.16	0.02	9.58	17.75	27.35	55.52	-28.17	Average
2	0.16	0.02	9.58	34.63	44.23	65.52	-21.29	QP
3	0.20	0.02	9.57	19.90	29.49	53.58	-24.09	Average
4	0.20	0.02	9.57	31.20	40.79	63.58	-22.79	QP
5	0.23	0.01	9.58	22.24	31.83	52.30	-20.47	Average
6	0.23	0.01	9.58	32.17	41.76	62.30	-20.54	QP
7	0.28	0.01	9.58	16.95	26.54	50.72	-24.18	Average
8	0.28	0.01	9.58	28.35	37.94	60.72	-22.78	QP
9	0.31	0.01	9.58	15.33	24.92	49.84	-24.92	Average
10	0.31	0.01	9.58	28.96	38.55	59.84	-21.29	QP
11	0.60	0.02	9.62	9.13	18.77	46.00	-27.23	Average
12	0.60	0.02	9.62	20.22	29.86	56.00	-26.14	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.

6.3 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).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
	*Where B is the 26dB emission bandwidth in MHz	
Test Results:	Pass	

Measurement Data:

802.11a mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5180	12.64	24.00	Pass
5220	12.51	24.00	Pass
5240	12.57	24.00	Pass
5260	12.67	24.00	Pass
5300	12.77	24.00	Pass
5320	12.81	24.00	Pass
5500	12.38	24.00	Pass
5580	12.44	24.00	Pass
5700	12.89	24.00	Pass

802.11n(HT20) mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5180	12.75	24.00	Pass
5220	12.62	24.00	Pass
5240	12.54	24.00	Pass
5260	12.64	24.00	Pass
5300	12.77	24.00	Pass
5320	12.81	24.00	Pass
5500	12.41	24.00	Pass
5580	12.44	24.00	Pass
5700	12.93	24.00	Pass

802.11ac(HT20) mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5180	12.55	24.00	Pass
5220	12.41	24.00	Pass
5240	12.27	24.00	Pass

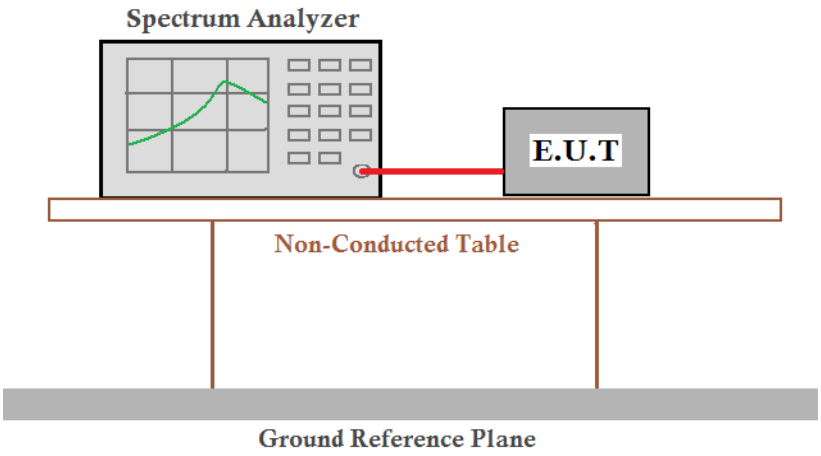
5260	12.46	24.00	Pass
5300	12.56	24.00	Pass
5320	12.52	24.00	Pass
5500	12.25	24.00	Pass
5580	12.21	24.00	Pass
5700	12.75	24.00	Pass

802.11n(HT40) mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5190	11.43	24.00	Pass
5230	11.37	24.00	Pass
5270	11.47	24.00	Pass
5310	11.64	24.00	Pass
5510	11.19	24.00	Pass
5550	11.06	24.00	Pass
5670	11.75	24.00	Pass

802.11ac(HT40) mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5190	11.11	24.00	Pass
5230	10.91	24.00	Pass
5270	11.05	24.00	Pass
5310	11.15	24.00	Pass
5510	10.73	24.00	Pass
5550	10.67	24.00	Pass
5670	11.3	24.00	Pass

802.11ac(HT80) mode			
Frequency (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Result
5210	11.13	24.00	Pass
5290	11.29	24.00	Pass
5530	10.87	24.00	Pass
5610	11.11	24.00	Pass

6.4 26dB Emission Bandwidth and 99% Occupied 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); MCSO 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

Measurement Data:

802.11a mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	22.15	17.17
5220	22.12	17.17
5240	22.18	17.20
5260	22.12	17.17
5300	22.12	17.20
5320	22.06	17.20
5500	22.12	17.20
5520	22.15	17.20
5580	22.09	17.14
5700	22.21	17.20

802.11n(HT20) mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	22.69	18.13
5220	22.48	18.16
5240	22.48	18.16
5260	22.57	18.16
5300	22.60	18.13
5320	22.53	18.16
5500	22.57	18.13
5580	22.63	18.16
5700	22.57	18.13

802.11ac(HT20) mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	22.27	18.10
5220	22.30	18.10
5240	22.30	18.10
5260	22.27	18.10
5300	22.33	18.10
5320	22.24	18.07
5500	22.24	18.10
5580	22.24	18.10
5700	22.24	18.10

802.11n(HT40) mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5190	43.58	36.32
5230	43.51	36.38
5270	43.34	36.38
5310	44.64	36.38
5510	43.10	36.32
5550	43.40	36.38
5670	43.40	36.38

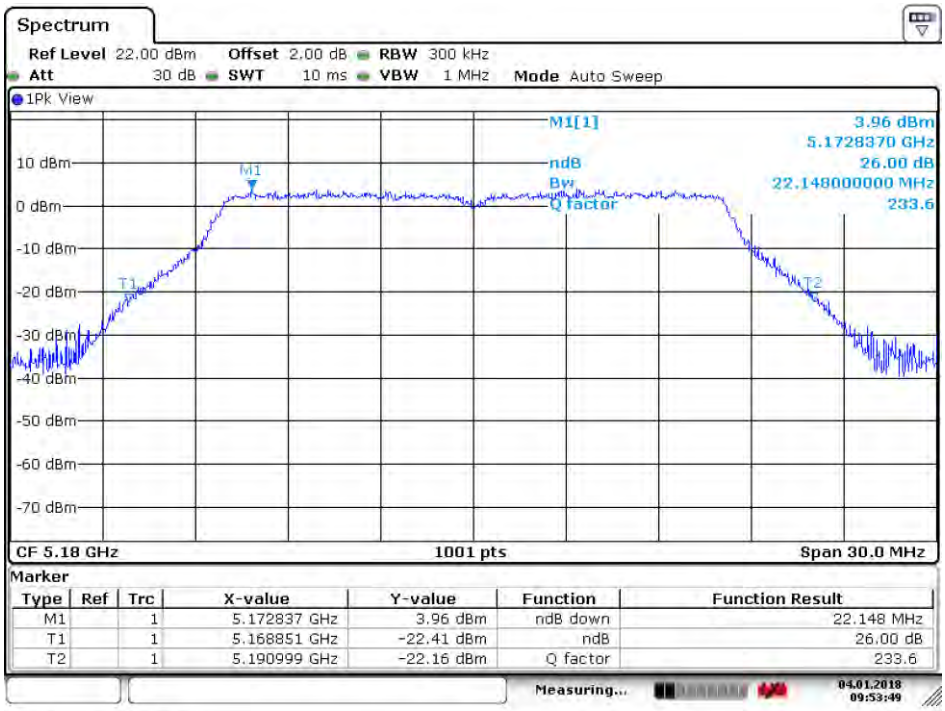
802.11ac(HT40) mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5190	43.04	36.38
5230	43.22	36.32
5270	43.16	36.38
5310	42.92	36.38
5510	43.04	36.38
5550	43.04	36.38
5670	43.28	36.38

802.11ac(HT80) mode		
Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5210	84.88	74.80
5290	84.52	74.69
5530	84.52	74.69
5610	85.00	74.80

26dB Emission Bandwidth

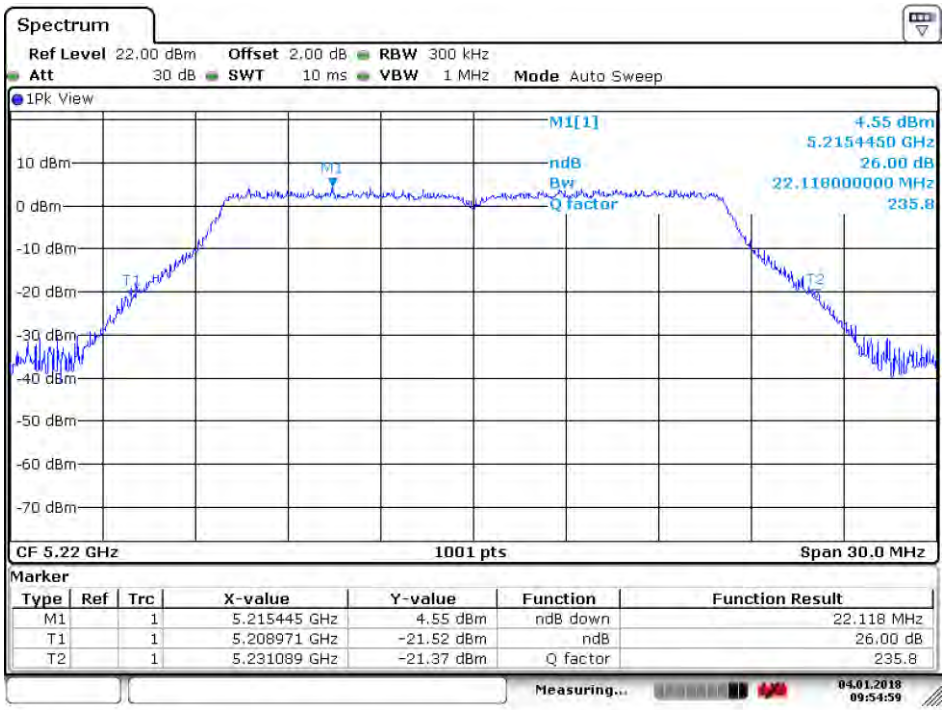
Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180



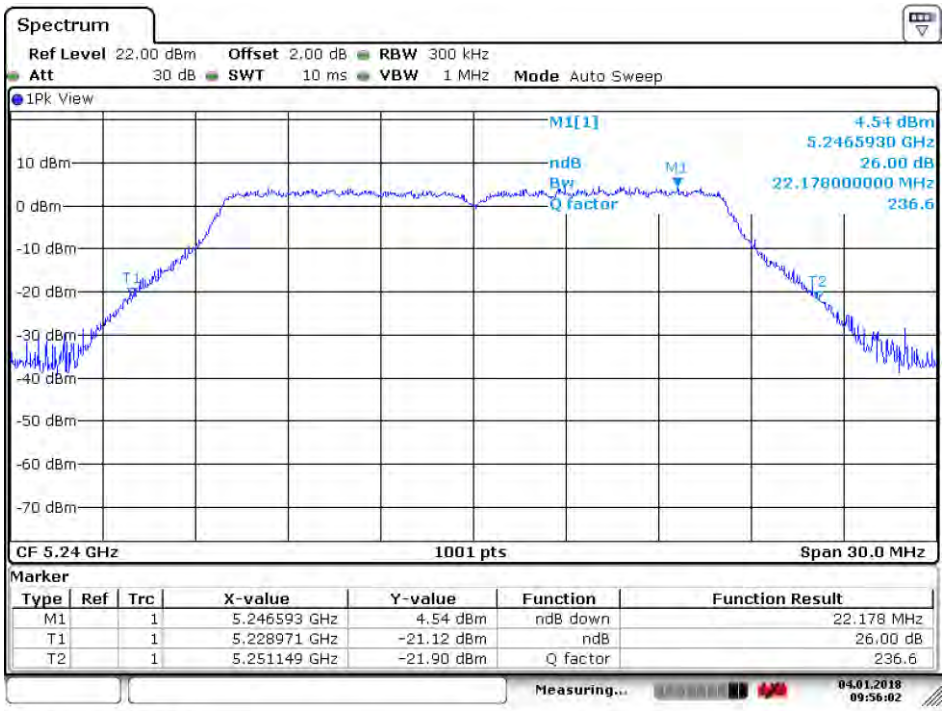
Date: 4.JAN.2018 09:53:49

Test mode:	802.11a	Frequency(MHz):	5220



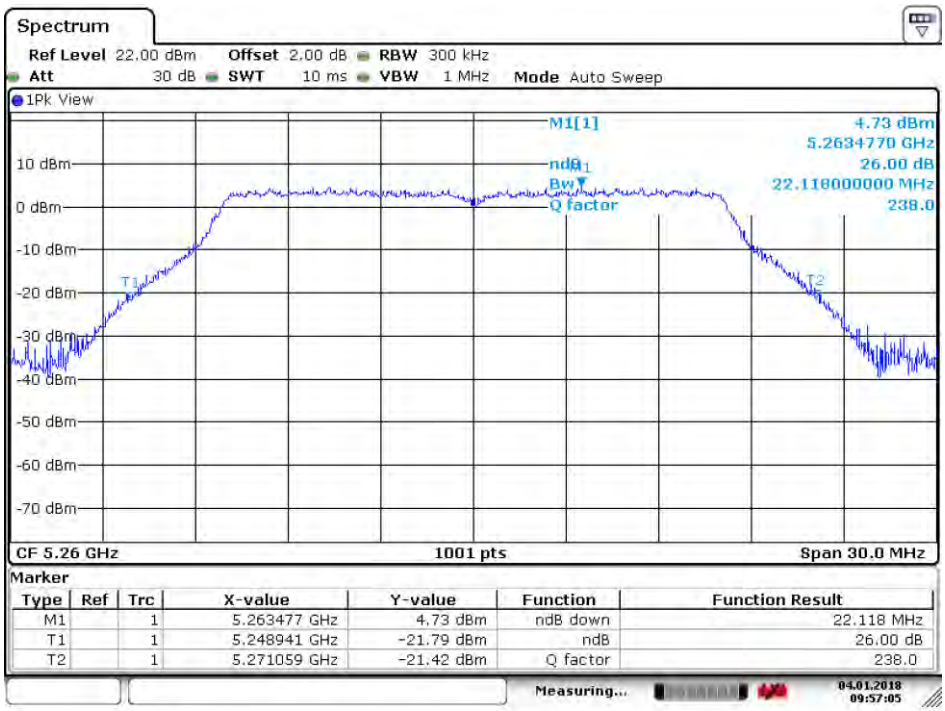
Date: 4.JAN.2018 09:54:58

Test mode:	802.11a	Frequency(MHz):	5240



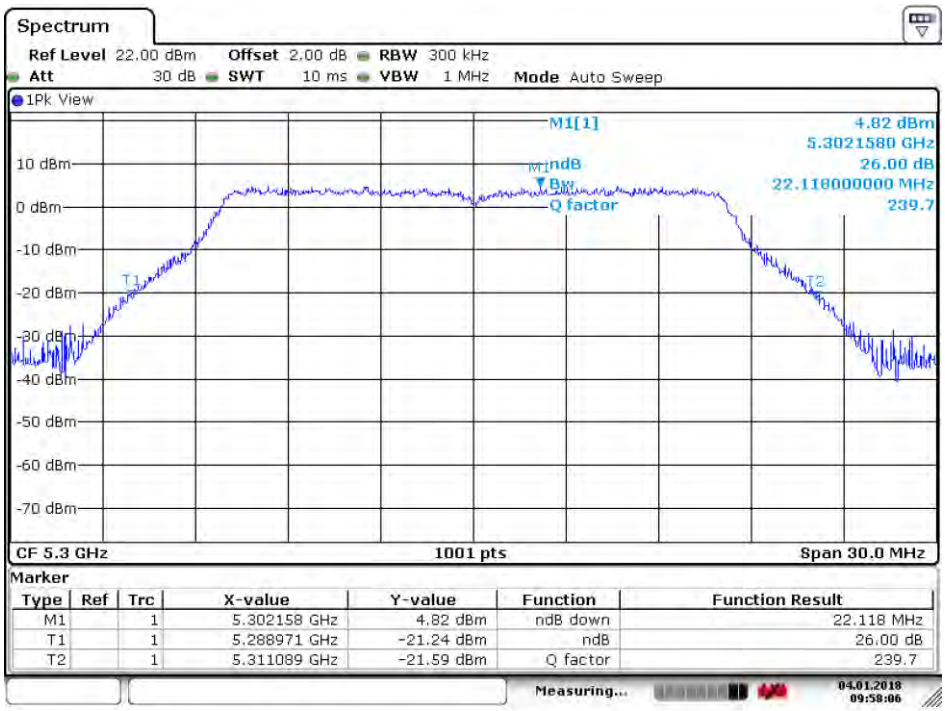
Date: 4.JAN.2018 09:56:03

Test mode:	802.11a	Frequency(MHz):	5260



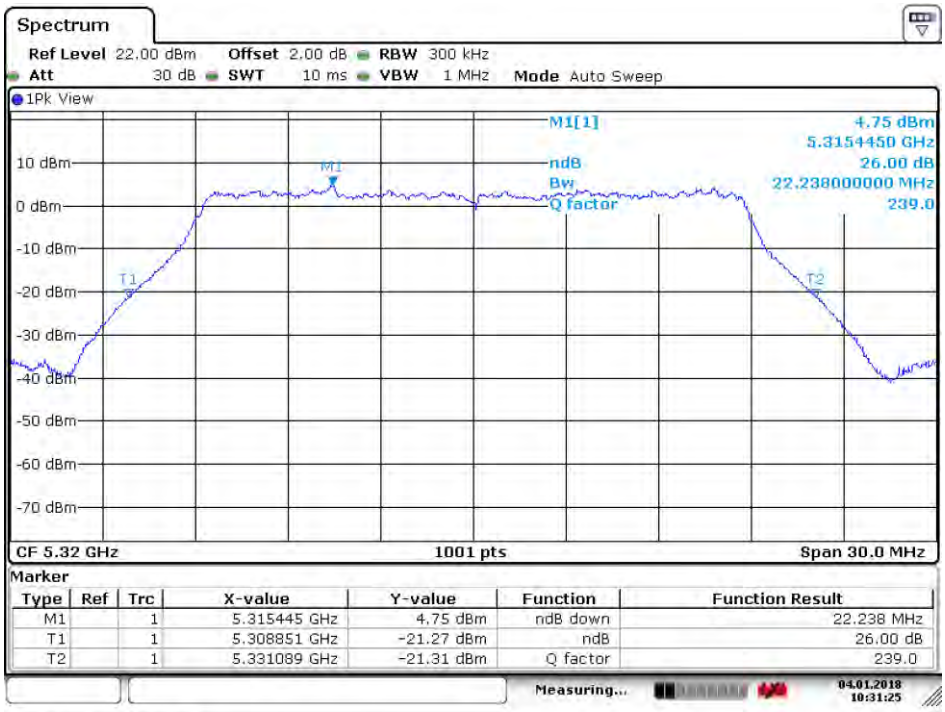
Date: 4.JAN.2018 09:57:06

Test mode:	802.11a	Frequency(MHz):	5300



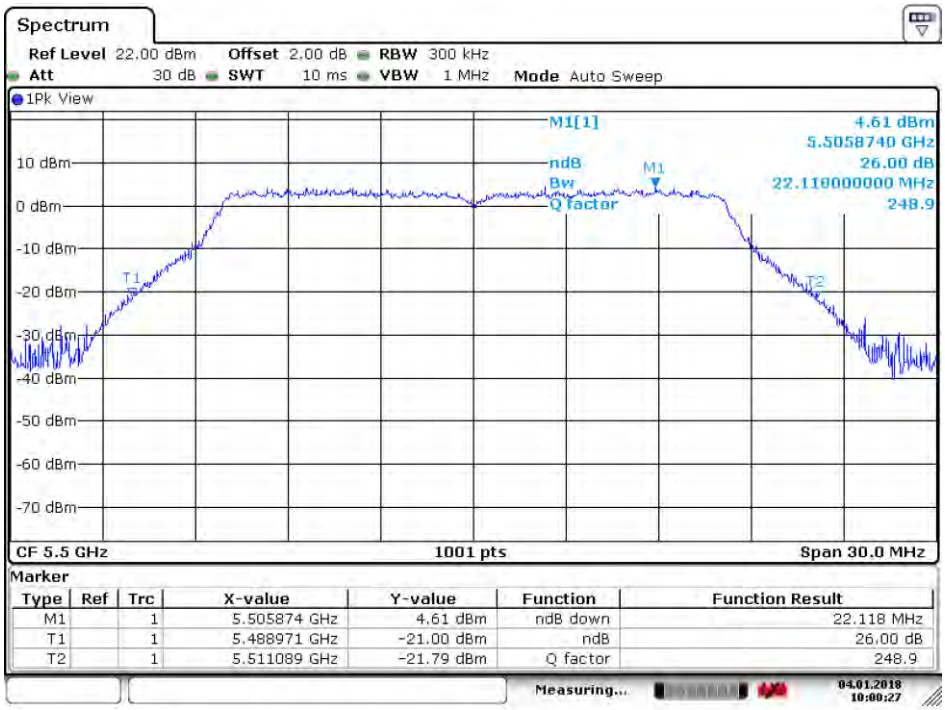
Date: 4.JAN.2018 09:58:07

Test mode:	802.11a	Frequency(MHz):	5320



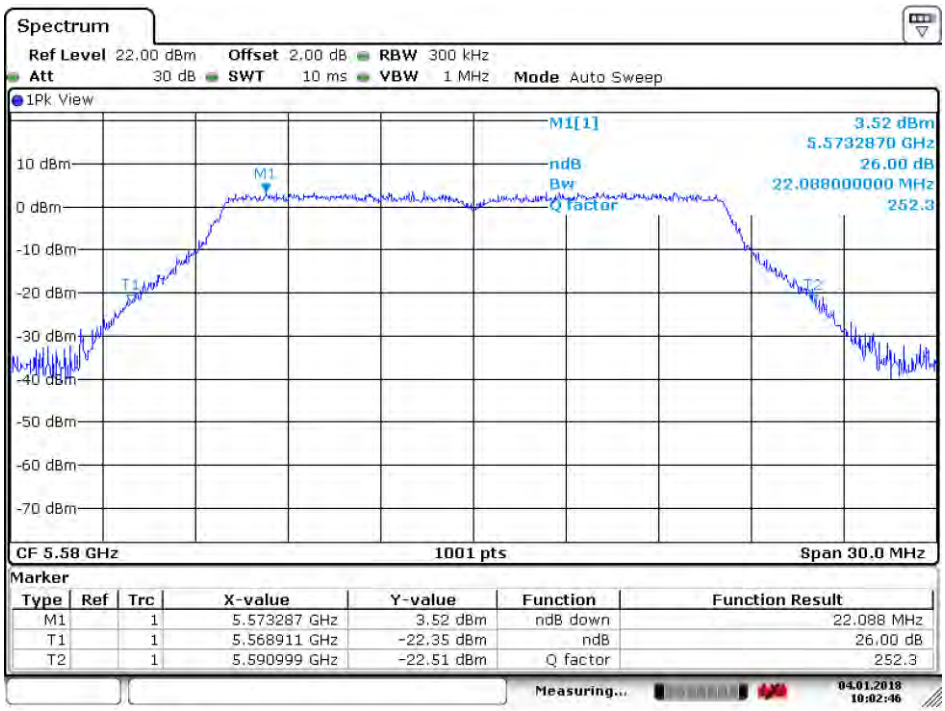
Date: 4.JAN.2018 10:31:25

Test mode:	802.11a	Frequency(MHz):	5500



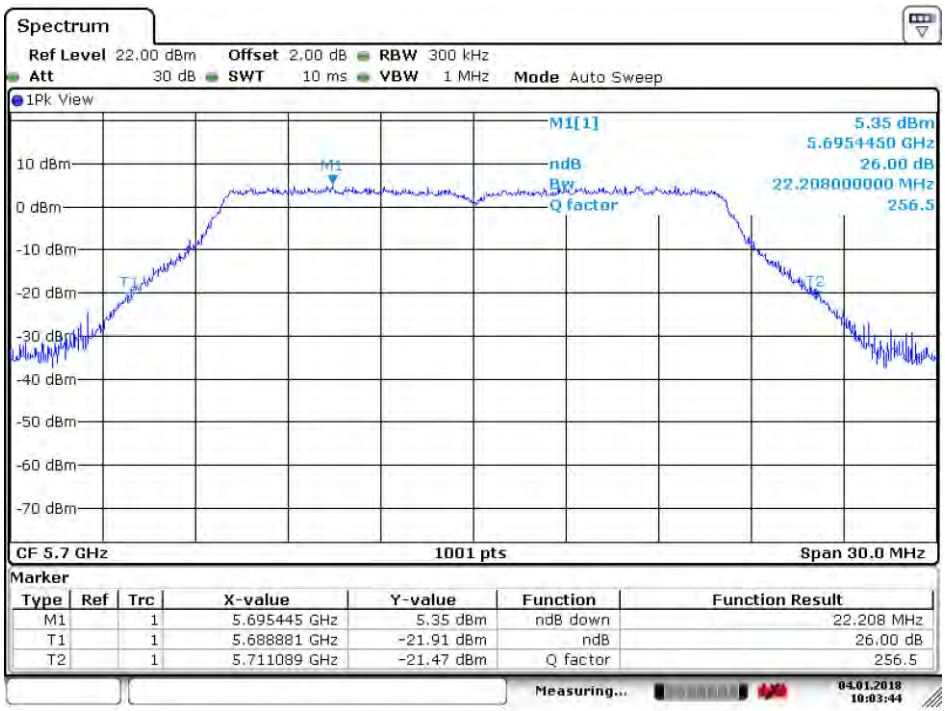
Date: 4.JAN.2018 10:00:27

Test mode:	802.11a	Frequency(MHz):	5580



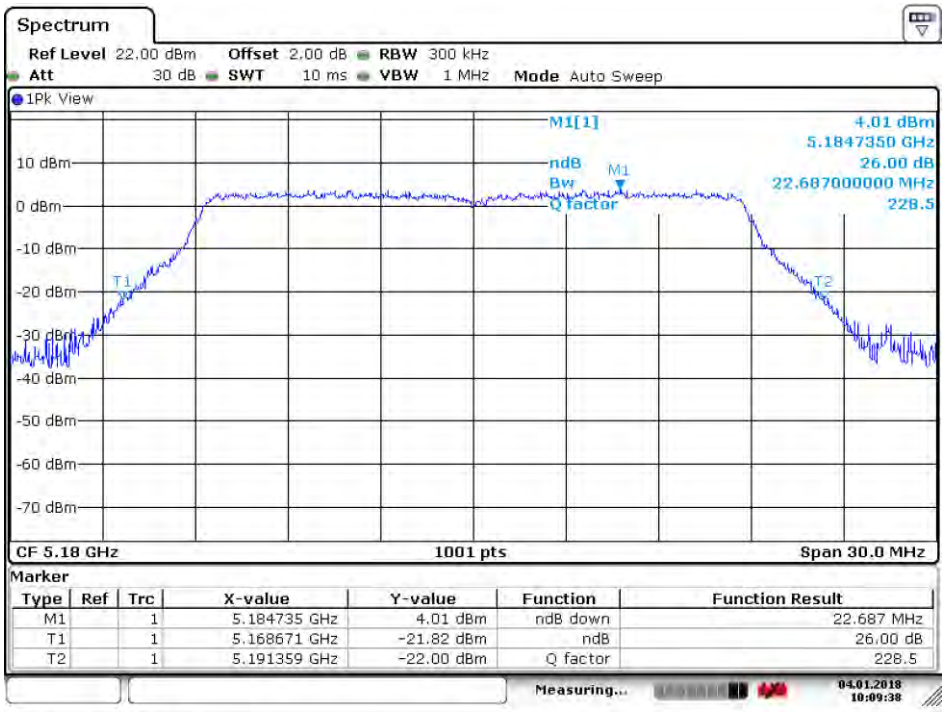
Date: 4.JAN.2018 10:02:47

Test mode:	802.11a	Frequency(MHz):	5700



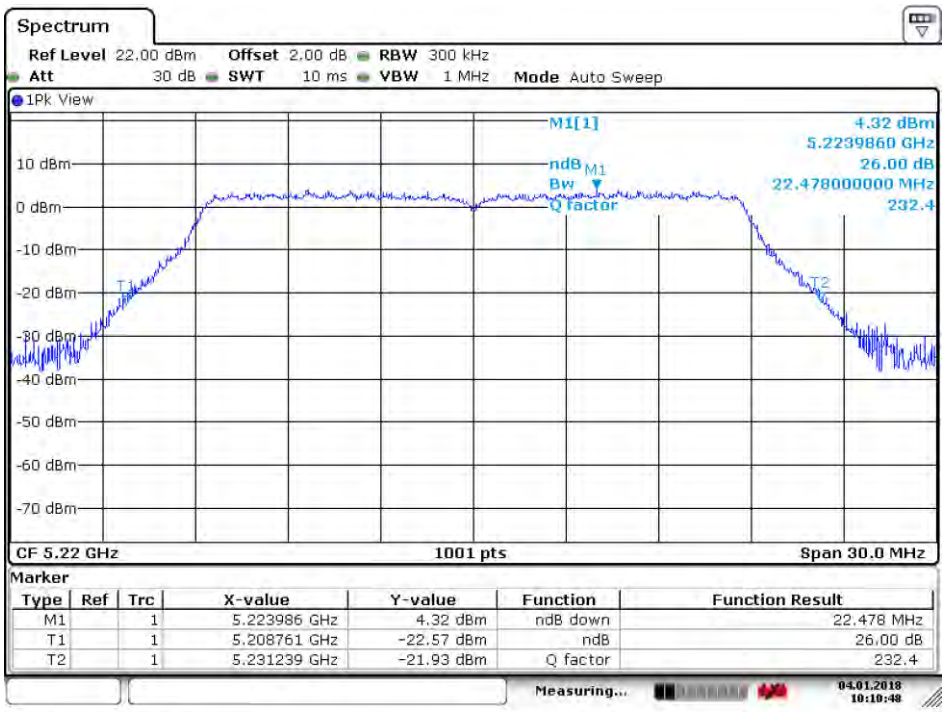
Date: 4.JAN.2018 10:03:44

Test mode:	802.11n(HT20)	Frequency(MHz):	5180



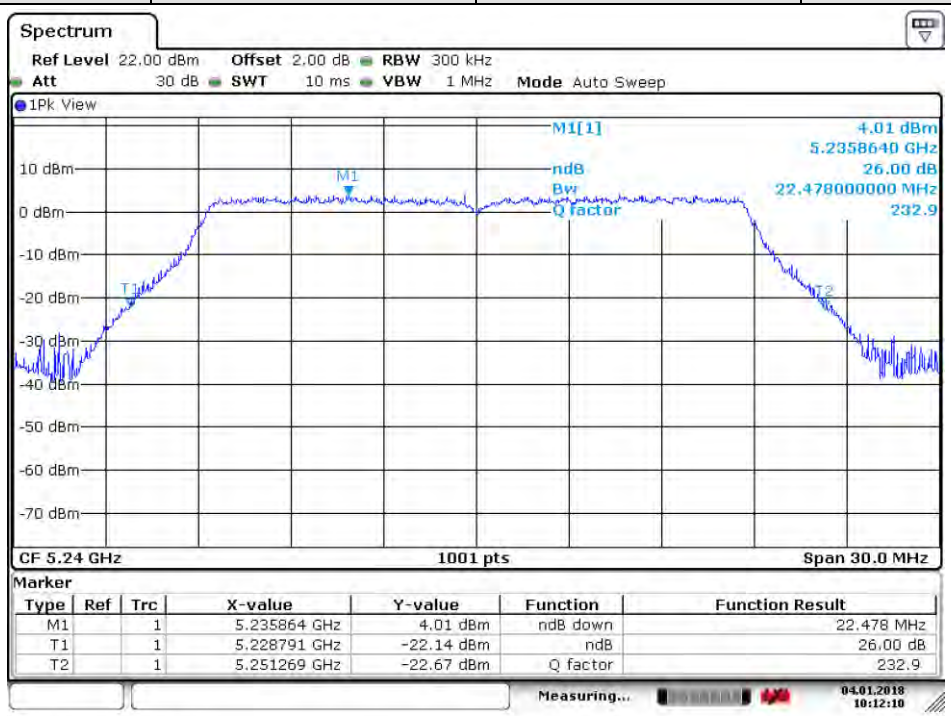
Date: 4.JAN.2018 10:09:38

Test mode:	802.11n(HT20)	Frequency(MHz):	5220



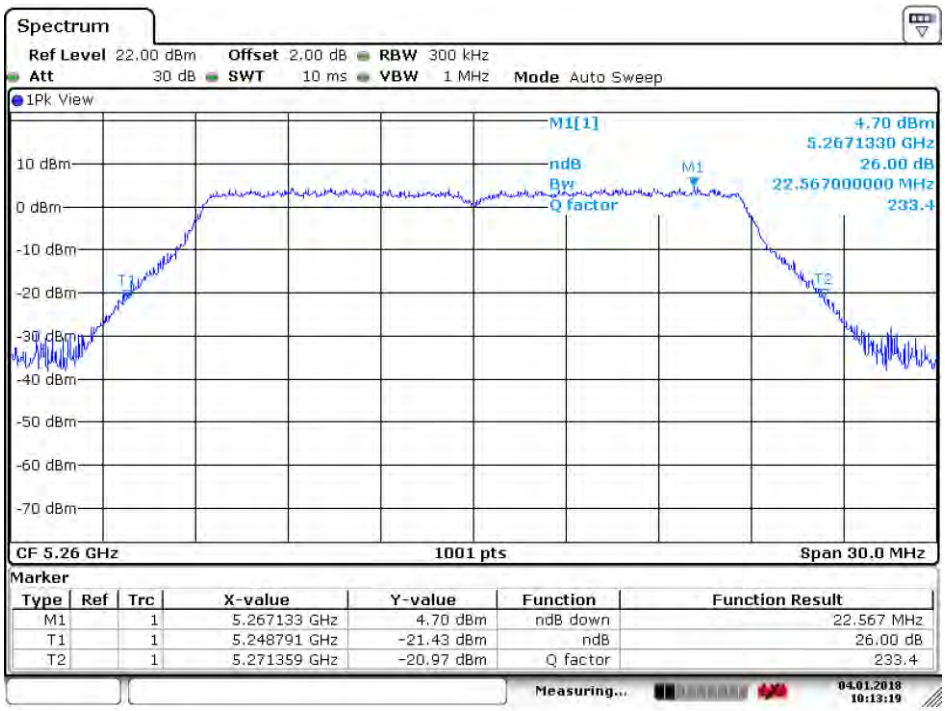
Date: 4.JAN.2018 10:10:48

Test mode:	802.11n(HT20)	Frequency(MHz):	5240



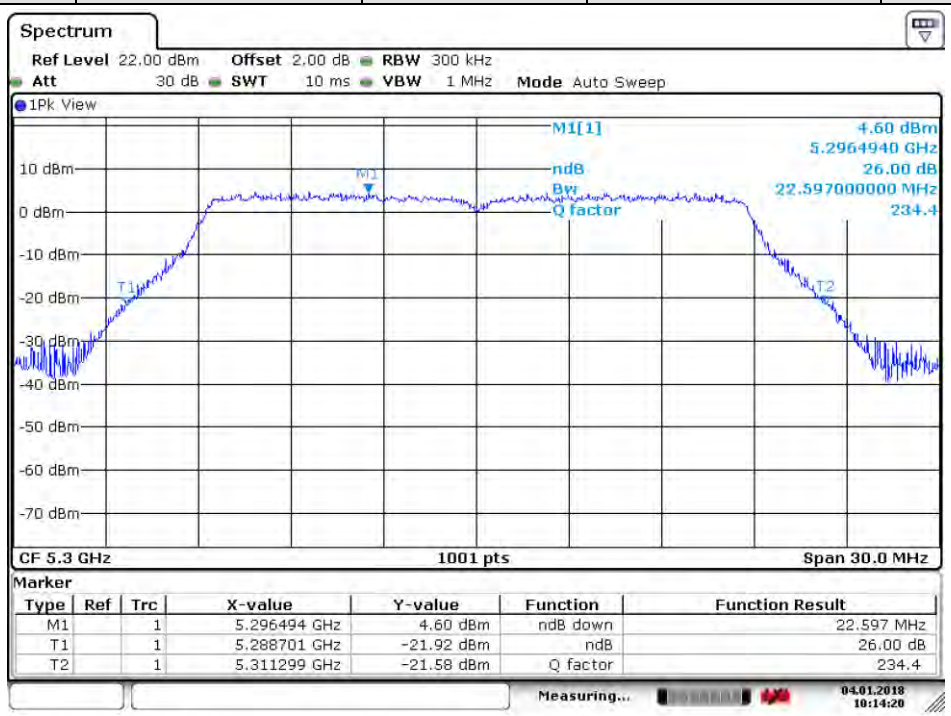
Date: 4.JAN.2018 10:12:10

Test mode:	802.11n(HT20)	Frequency(MHz):	5260



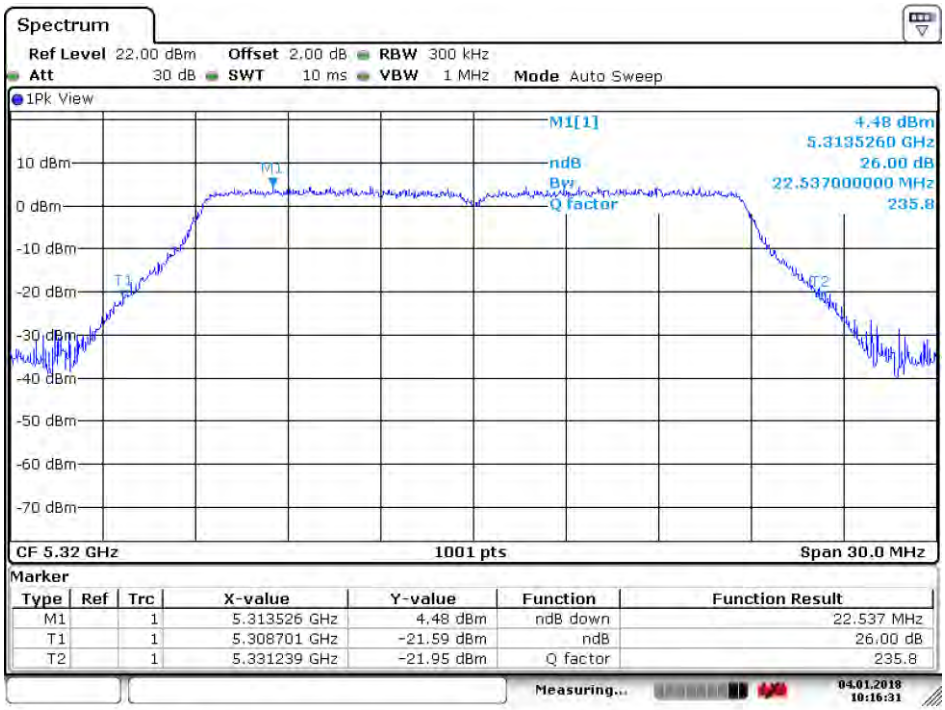
Date: 4.JAN.2018 10:13:19

Test mode:	802.11n(HT20)		Frequency(MHz):	5300



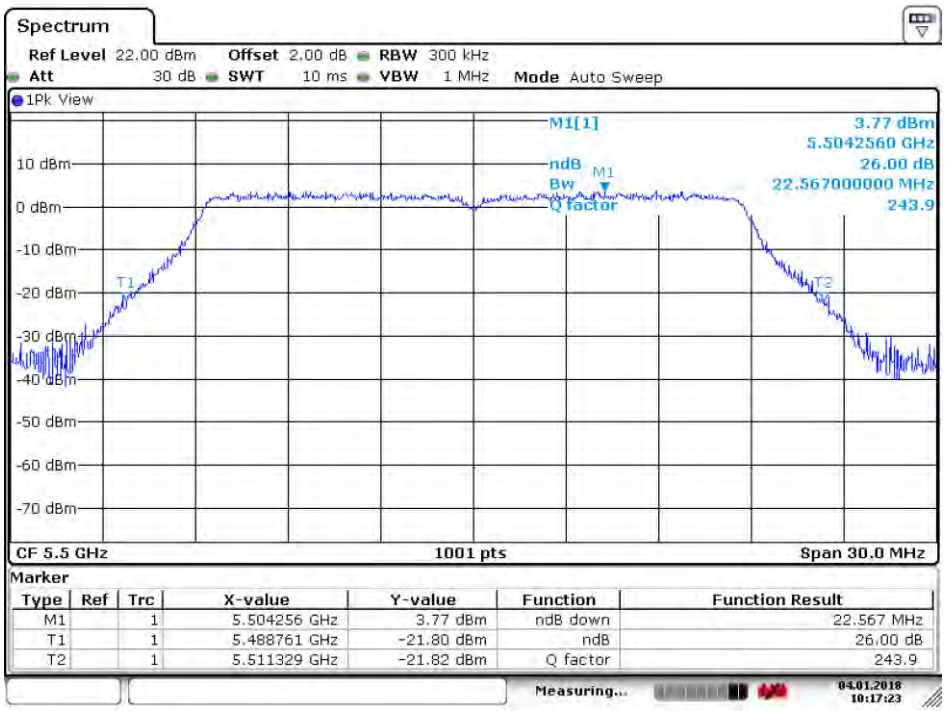
Date: 4.JAN.2018 10:14:20

Test mode:	802.11n(HT20)	Frequency(MHz):	5320



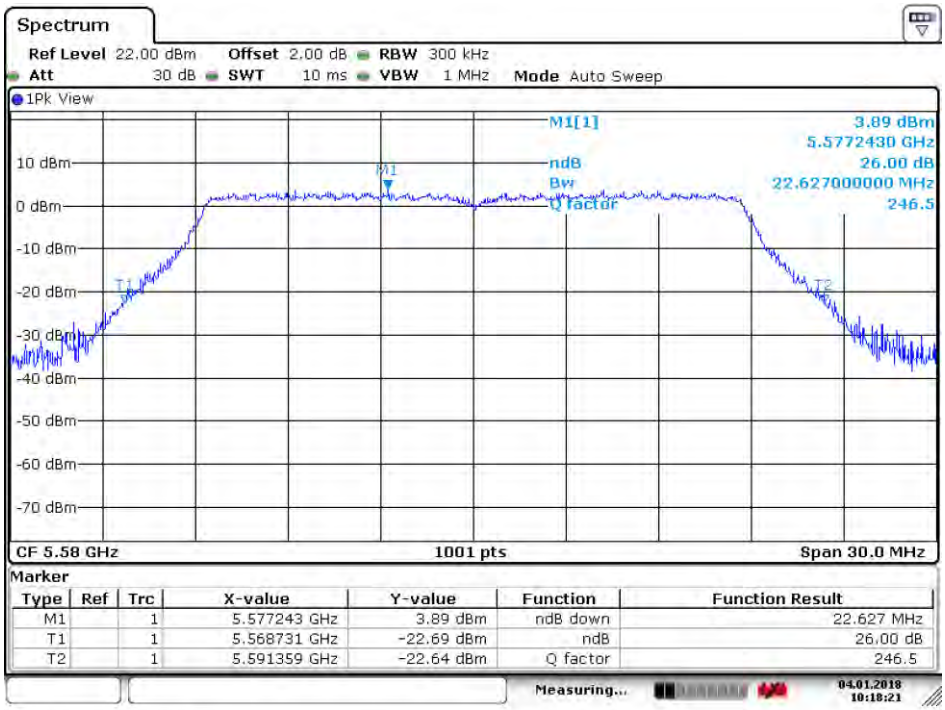
Date: 4.JAN.2018 10:16:32

Test mode:	802.11n(HT20)	Frequency(MHz):	5500



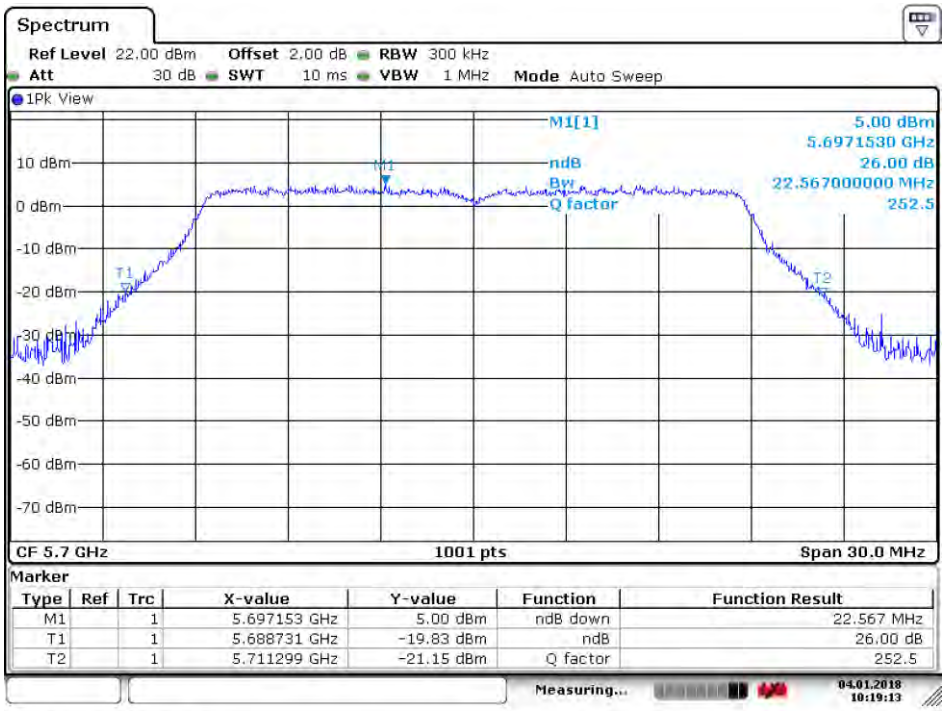
Date: 4.JAN.2018 10:17:24

Test mode:	802.11n(HT20)	Frequency(MHz):	5580



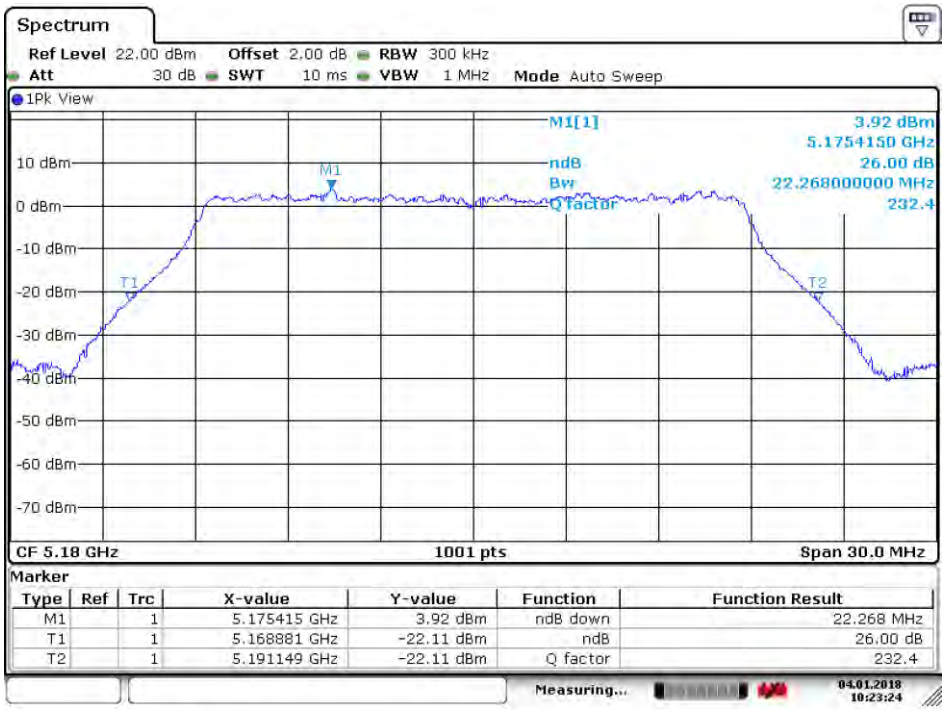
Date: 4.JAN.2018 10:18:21

Test mode:	802.11n(HT20)	Frequency(MHz):	5700



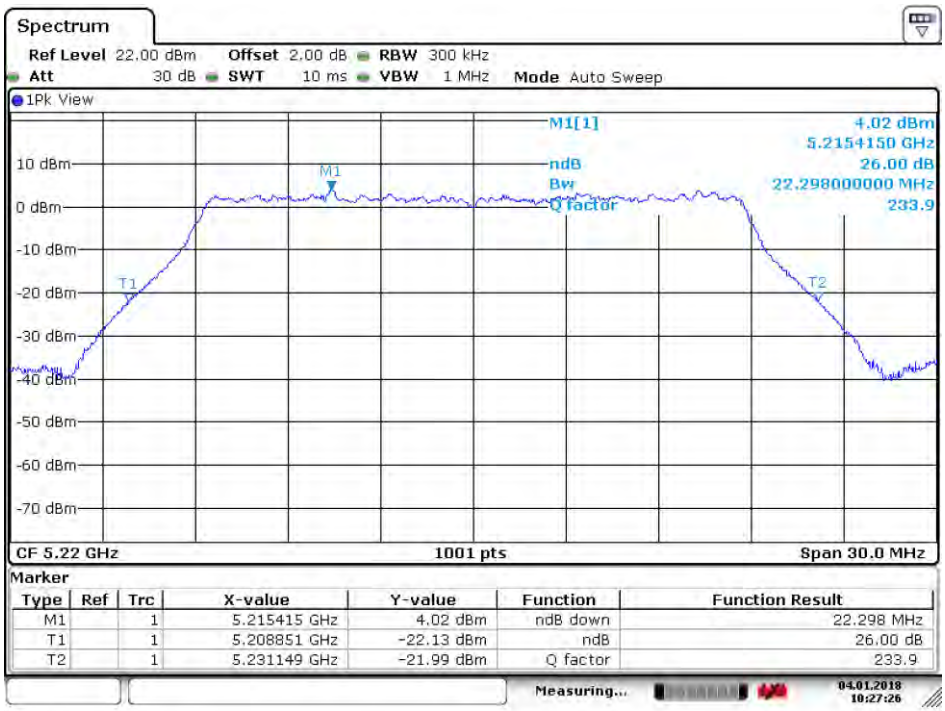
Date: 4.JAN.2018 10:19:13

Test mode:	802.11ac(HT20)	Frequency(MHz):	5180



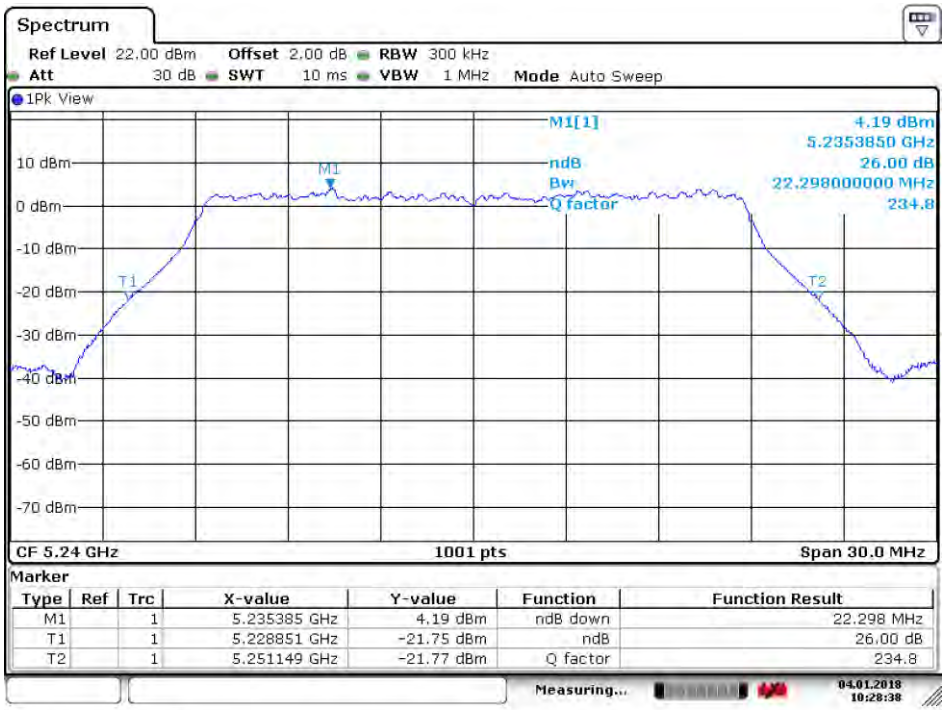
Date: 4.JAN.2018 10:23:25

Test mode:	802.11ac(HT20)	Frequency(MHz):	5220



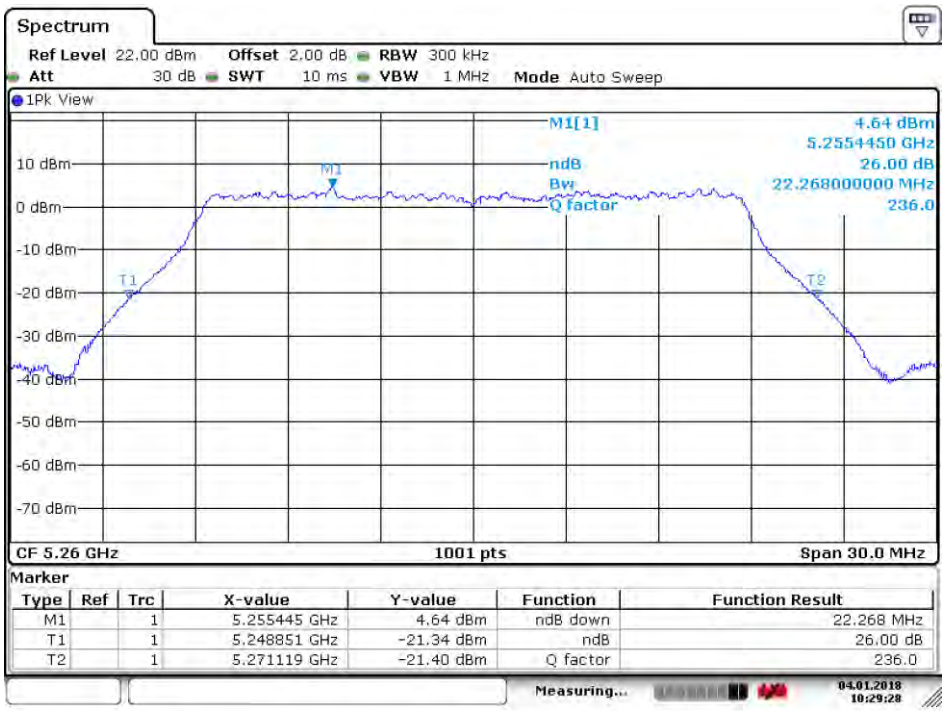
Date: 4.JAN.2018 10:27:27

Test mode:	802.11ac(HT20)	Frequency(MHz):	5240



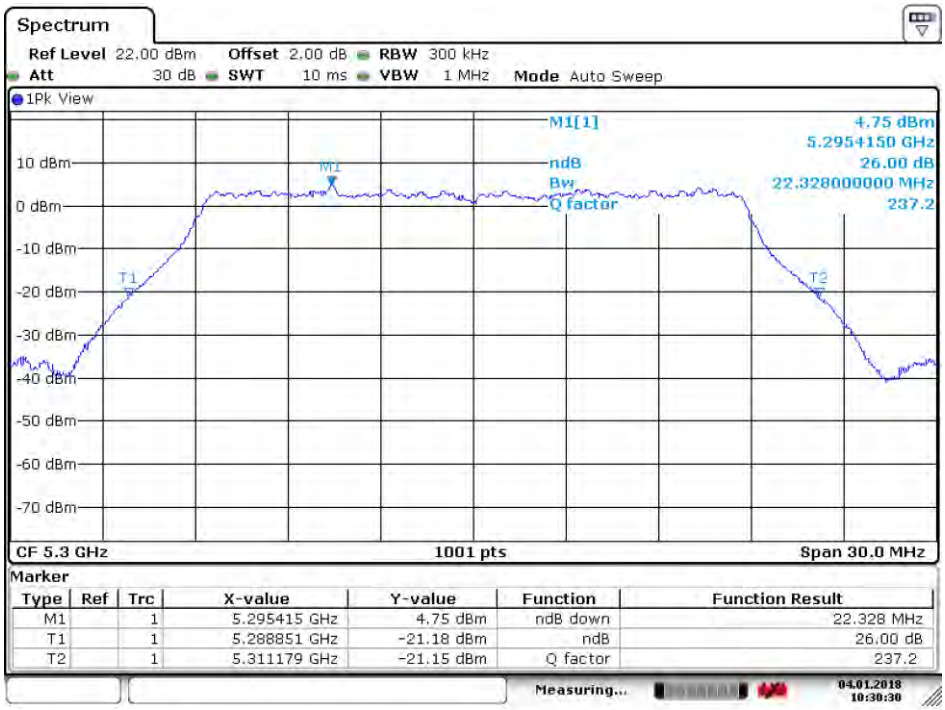
Date: 4.JAN.2018 10:28:39

Test mode:	802.11ac(HT20)	Frequency(MHz):	5260



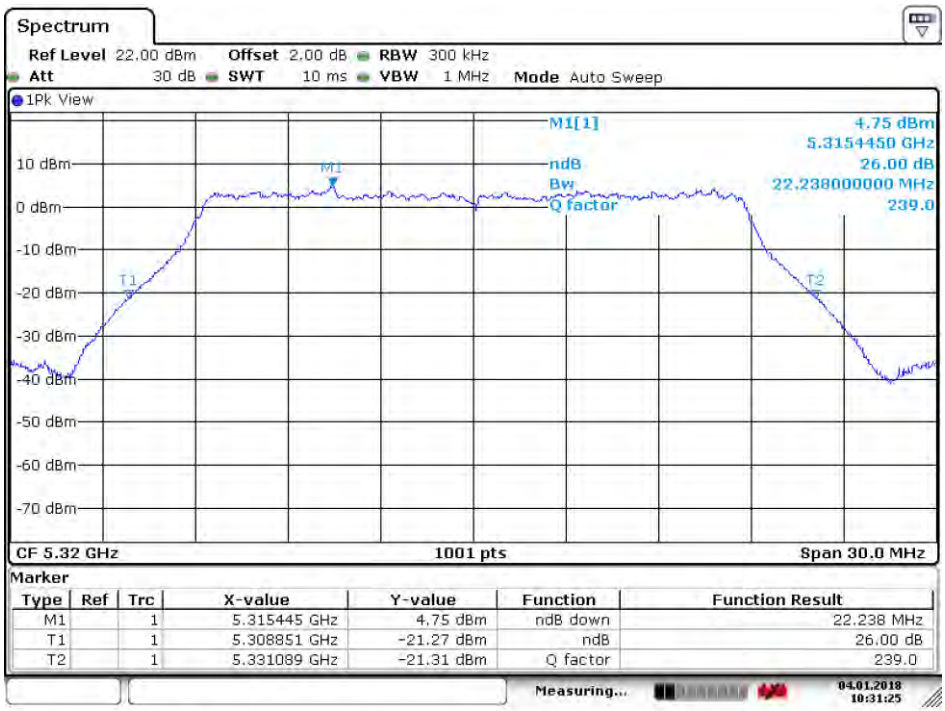
Date: 4.JAN.2018 10:29:28

Test mode:	802.11ac(HT20)	Frequency(MHz):	5300



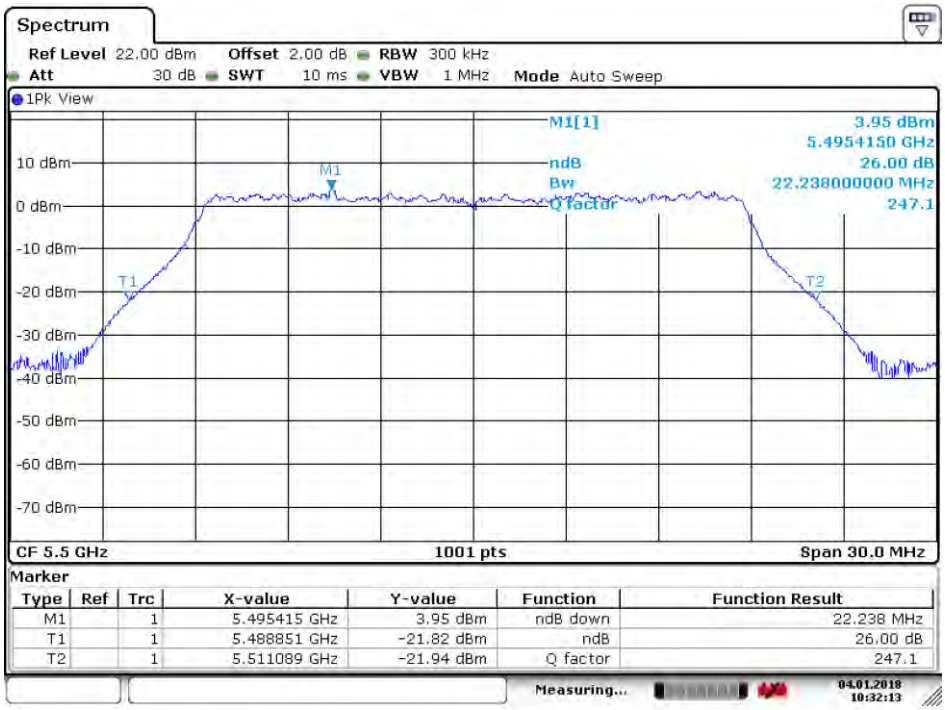
Date: 4.JAN.2018 10:30:30

Test mode:	802.11ac(HT20)	Frequency(MHz):	5320



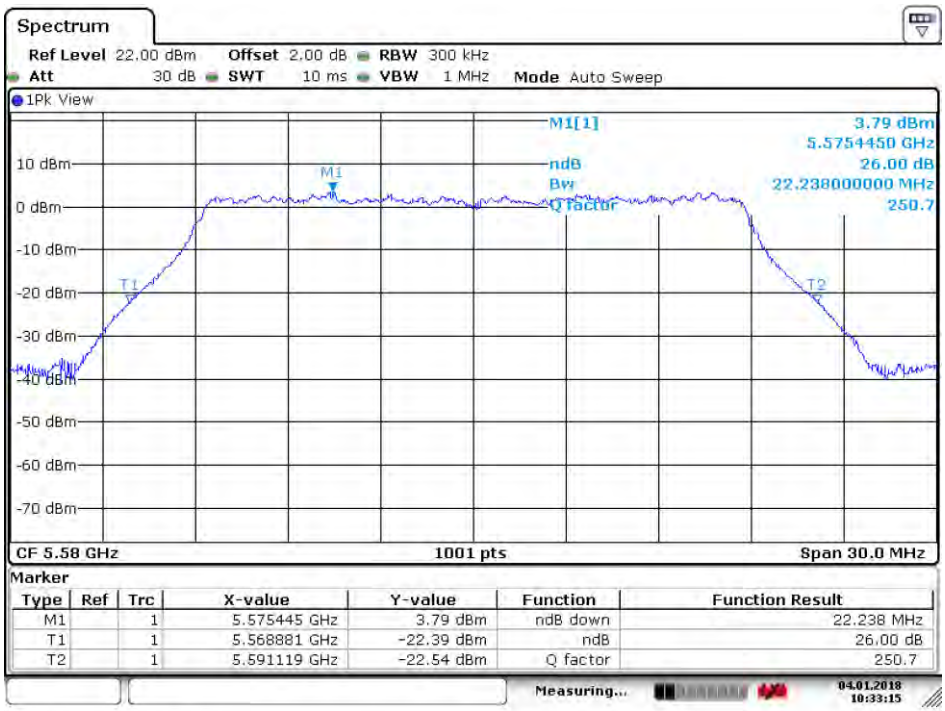
Date: 4.JAN.2018 10:31:25

Test mode:	802.11ac(HT20)	Frequency(MHz):	5500



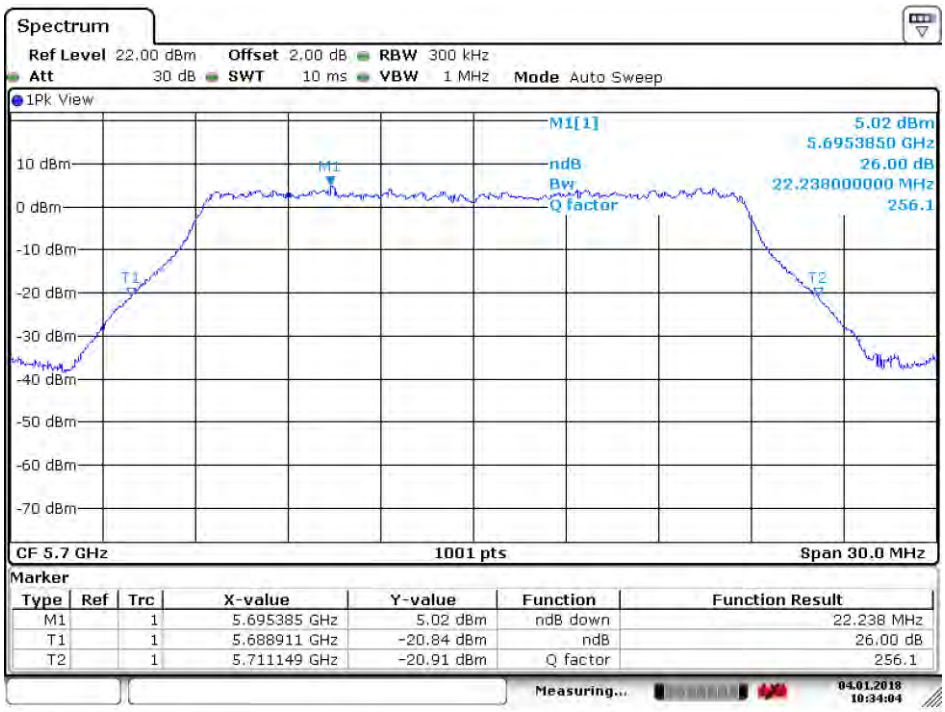
Date: 4.JAN.2018 10:32:14

Test mode:	802.11ac(HT20)	Frequency(MHz):	5580



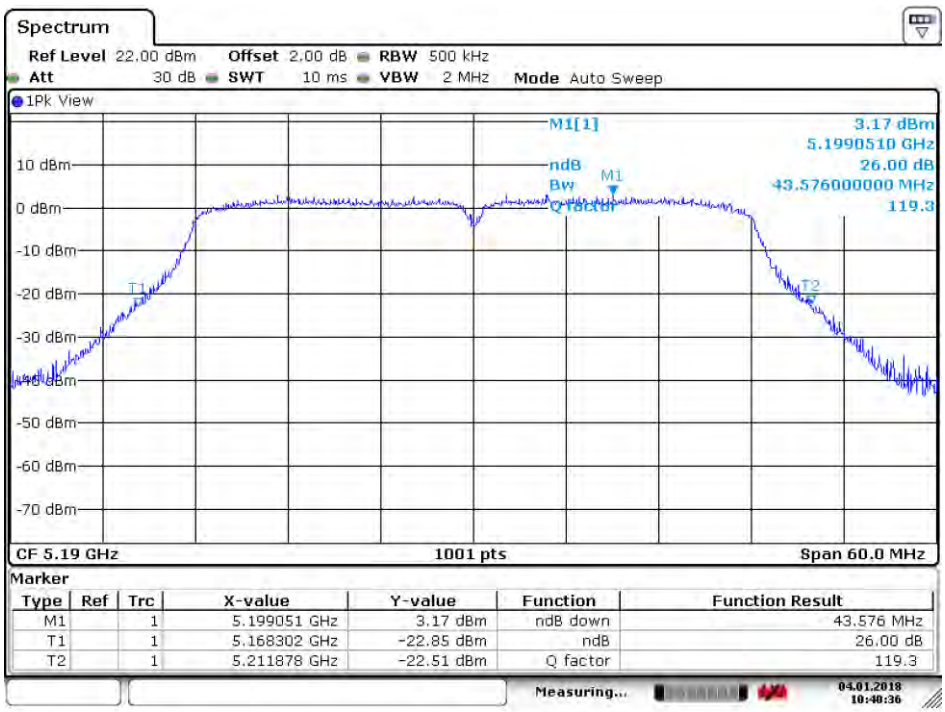
Date: 4.JAN.2018 10:33:16

Test mode:	802.11ac(HT20)	Frequency(MHz):	5700



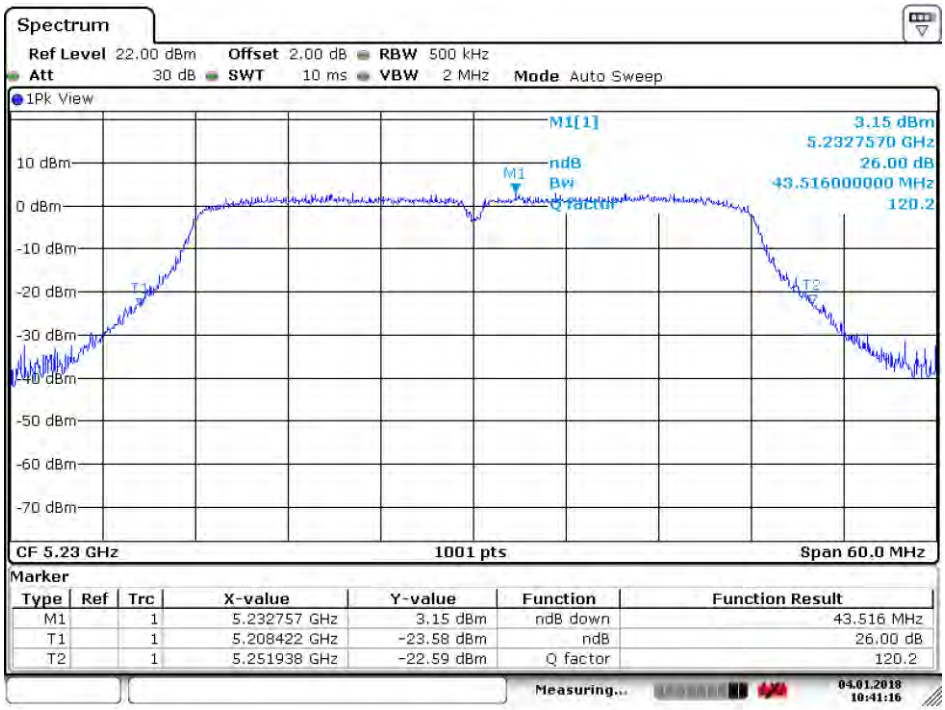
Date: 4.JAN.2018 10:34:04

Test mode:	802.11n(HT40)	Frequency(MHz):	5190



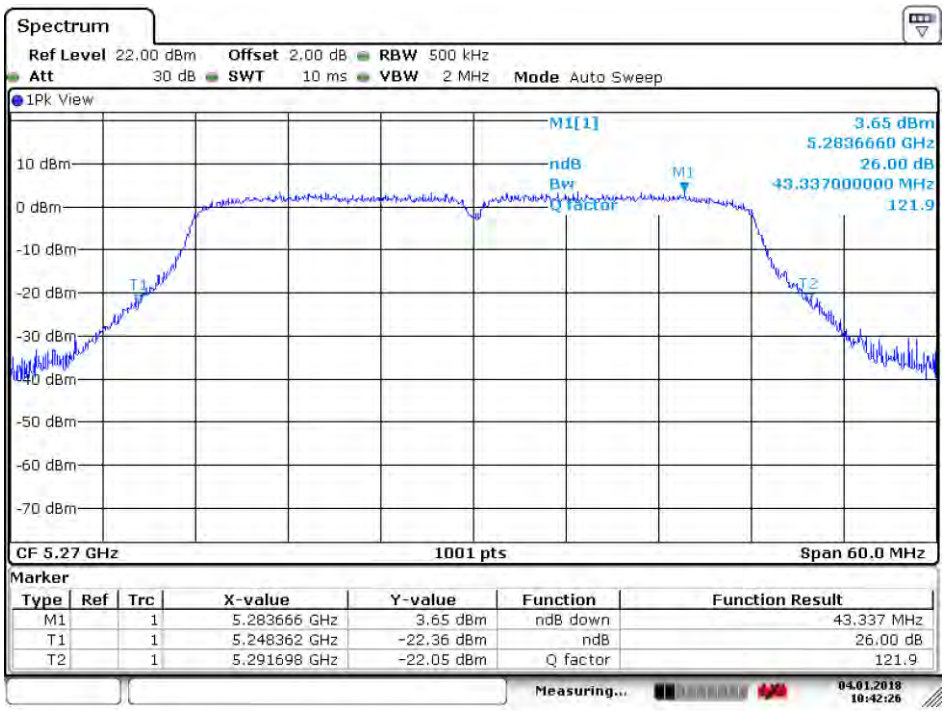
Date: 4.JAN.2018 10:40:37

Test mode:	802.11n(HT40)	Frequency(MHz):	5230



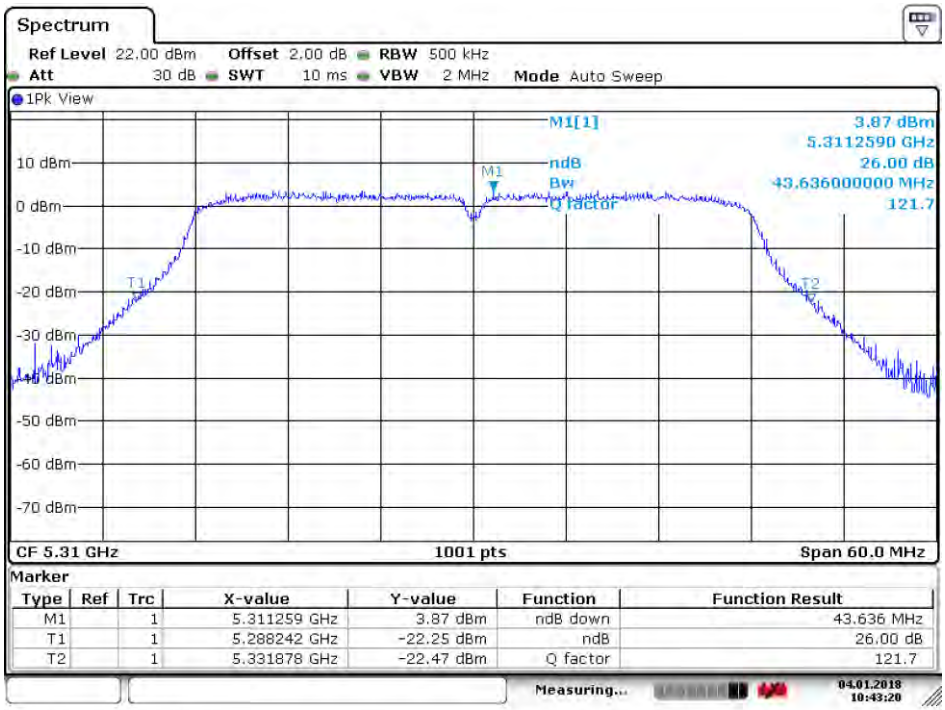
Date: 4.JAN.2018 10:41:16

Test mode:	802.11n(HT40)	Frequency(MHz):	5270



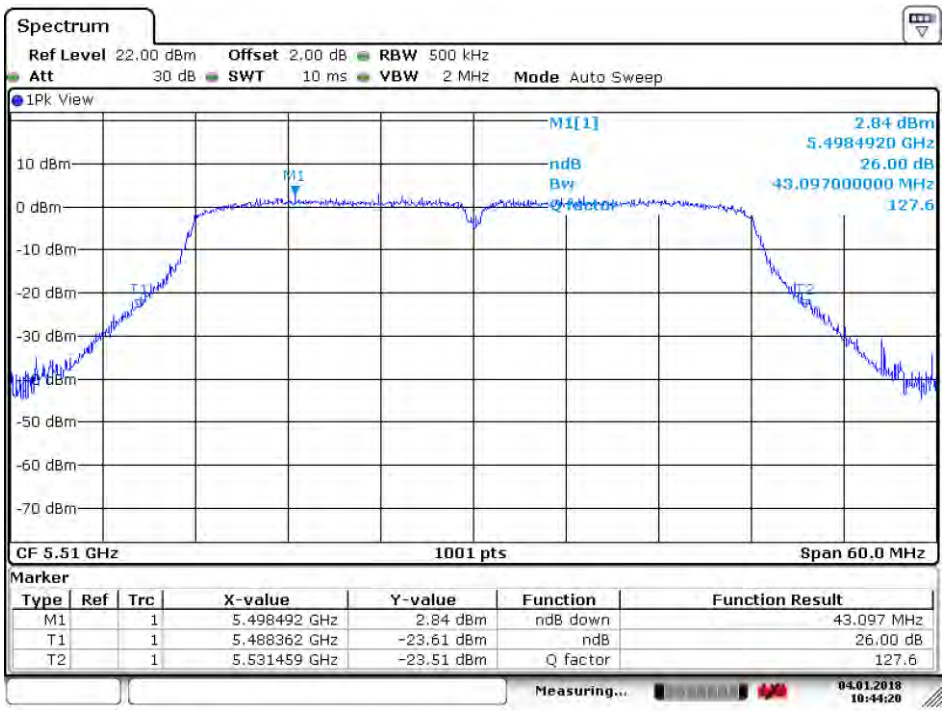
Date: 4.JAN.2018 10:42:26

Test mode:	802.11n(HT40)	Frequency(MHz):	5310



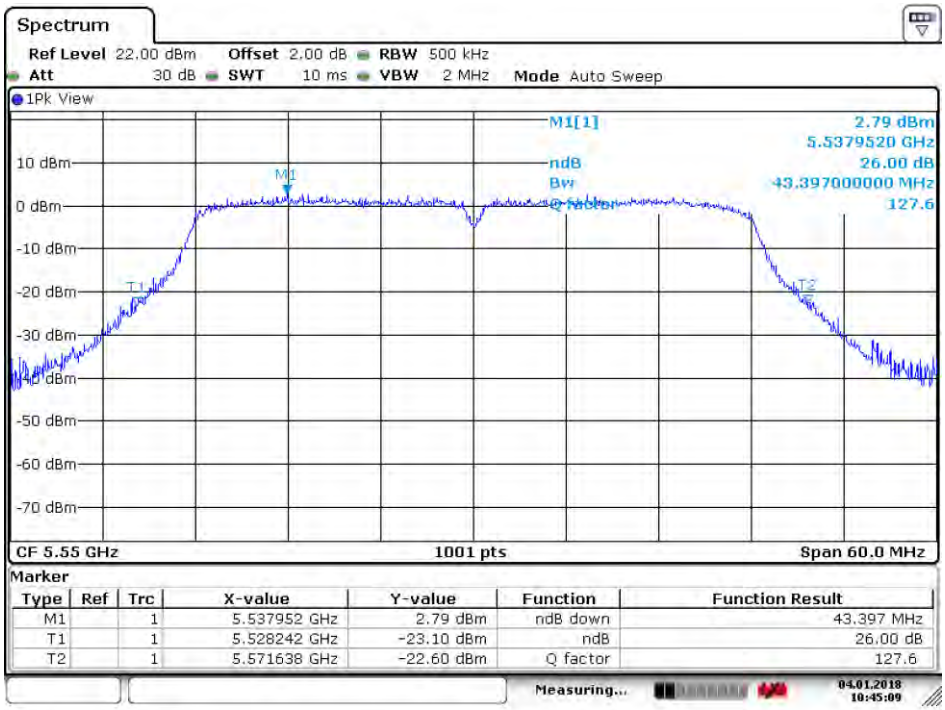
Date: 4.JAN.2018 10:43:20

Test mode:	802.11n(HT40)	Frequency(MHz):	5510



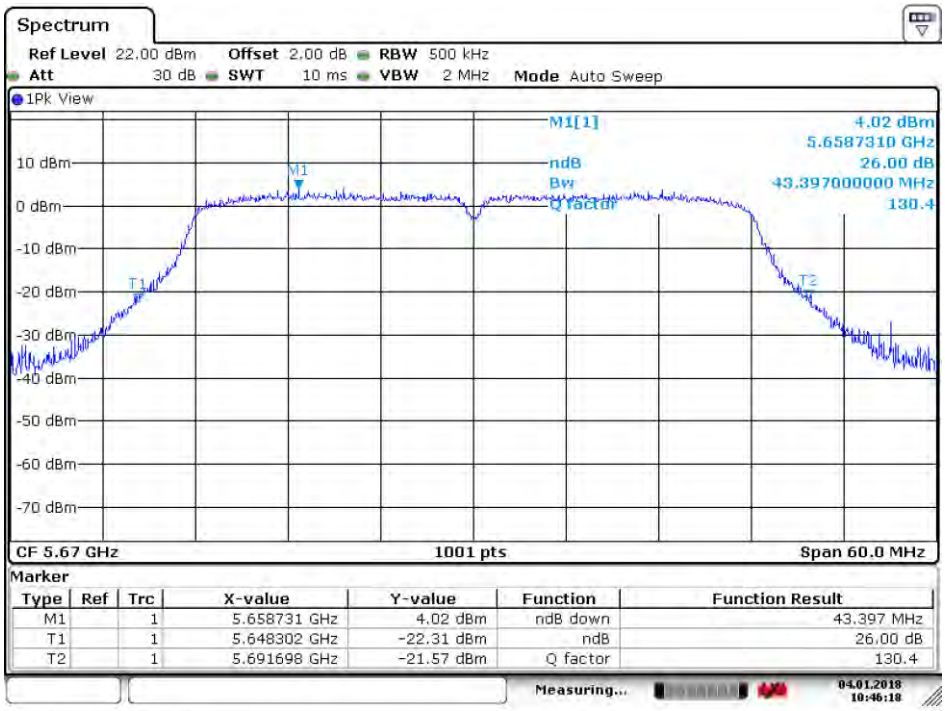
Date: 4.JAN.2018 10:44:21

Test mode:	802.11n(HT40)	Frequency(MHz):	5550



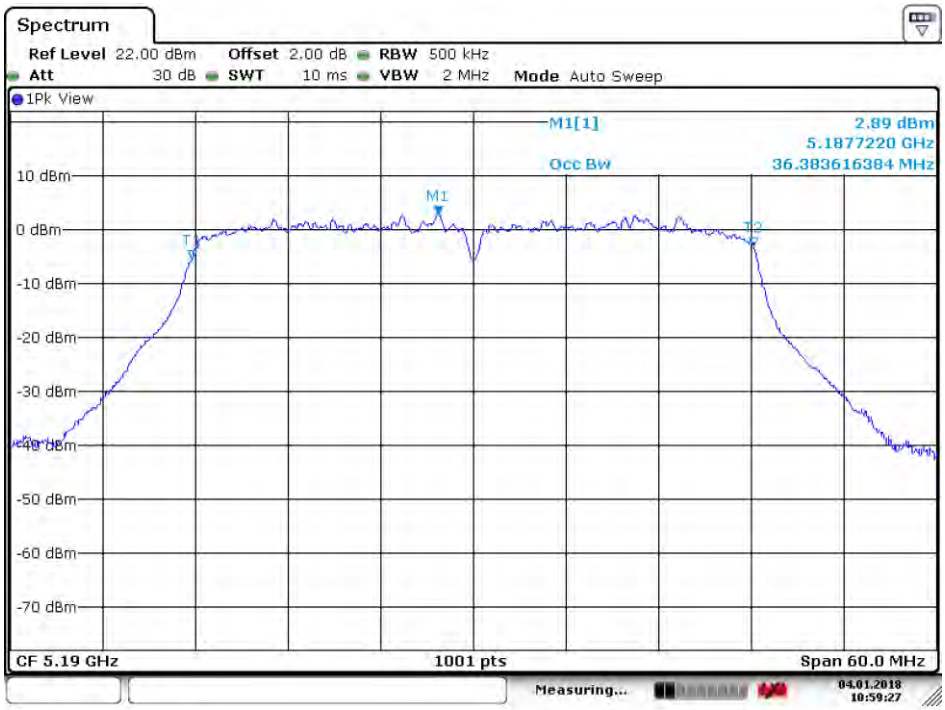
Date: 4.JAN.2018 10:45:10

Test mode:	802.11n(HT40)	Frequency(MHz):	5670



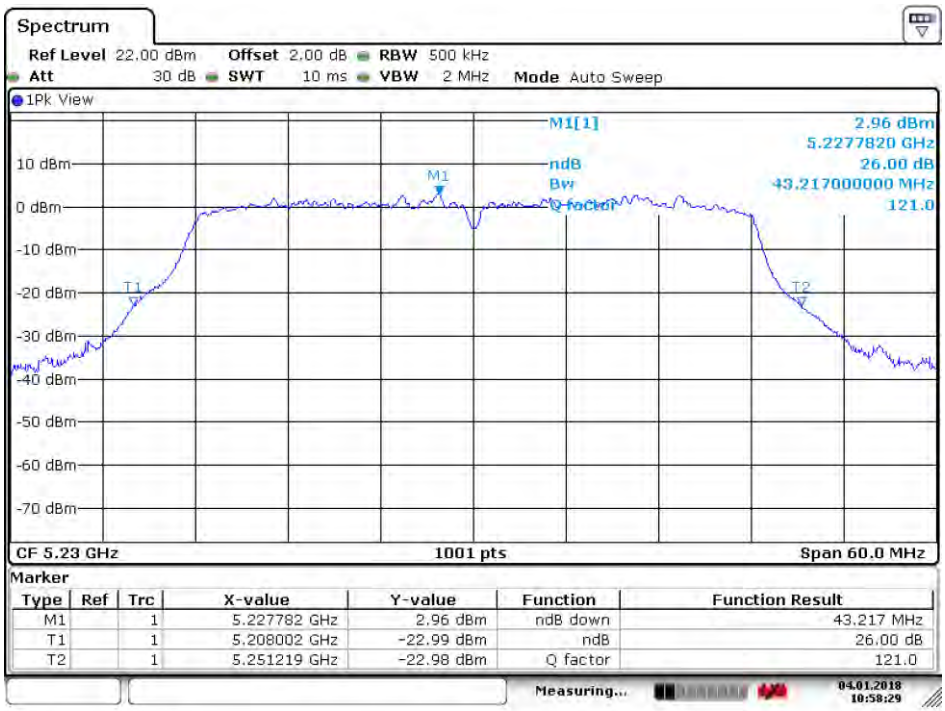
Date: 4.JAN.2018 10:46:18

Test mode:	802.11ac(HT40)	Frequency(MHz):	5190



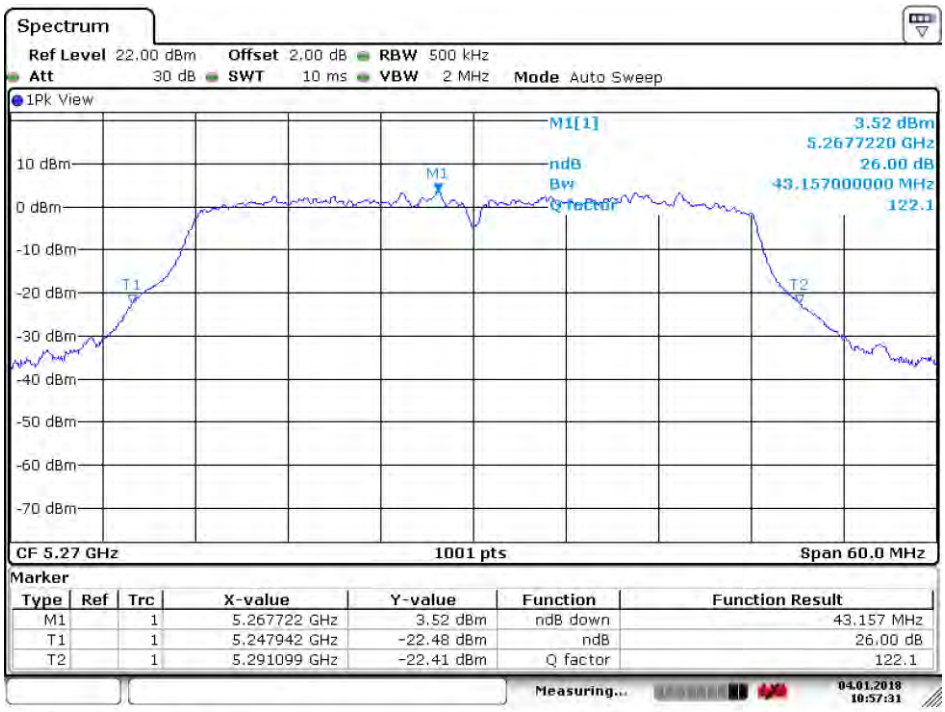
Date: 4.JAN.2018 10:59:27

Test mode:	802.11ac(HT40)	Frequency(MHz):	5230



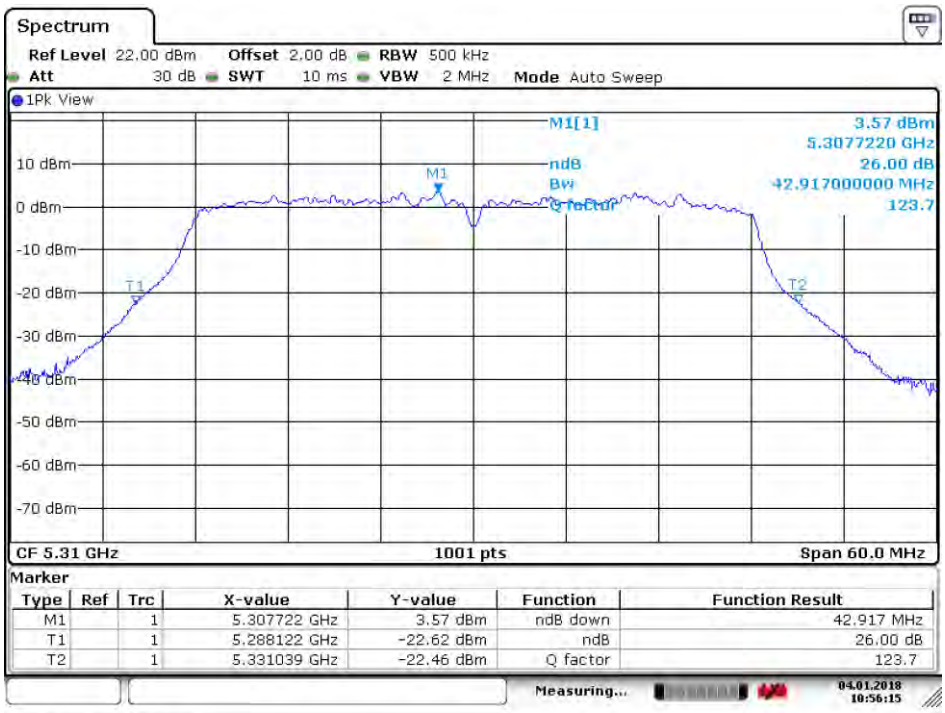
Date: 4.JAN.2018 10:58:30

Test mode:	802.11ac(HT40)	Frequency(MHz):	5270



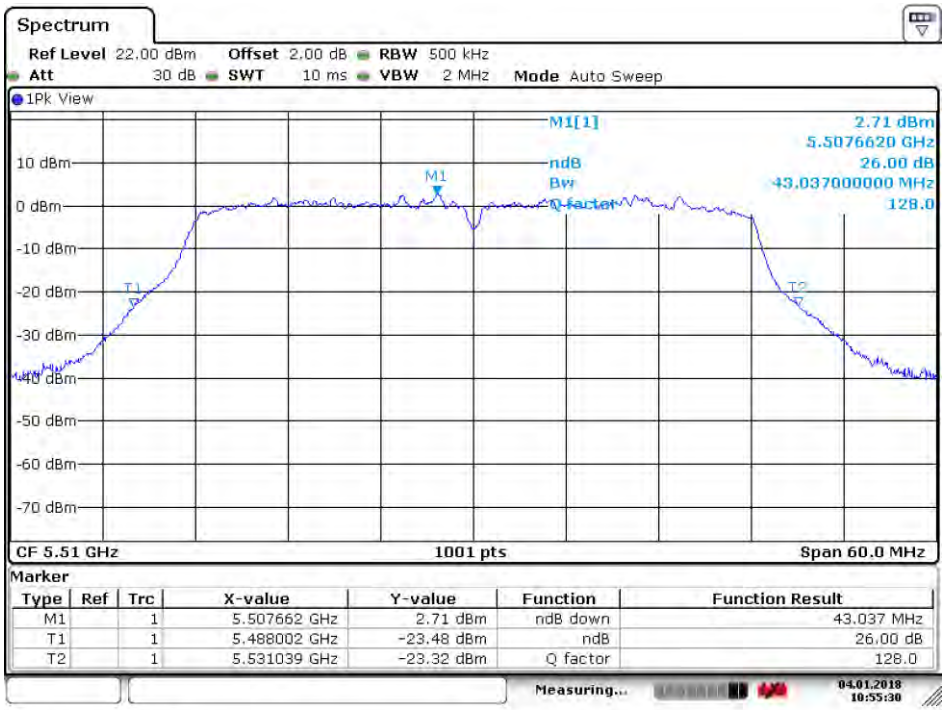
Date: 4.JAN.2018 10:57:32

Test mode:	802.11ac(HT40)	Frequency(MHz):	5310



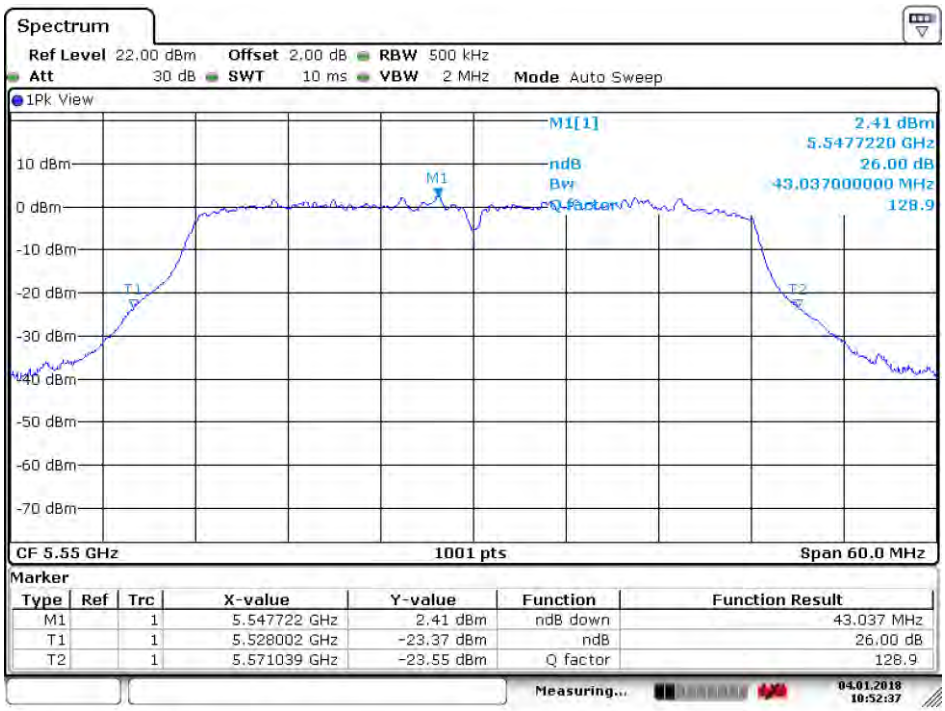
Date: 4.JAN.2018 10:56:15

Test mode:	802.11ac(HT40)	Frequency(MHz):	5510



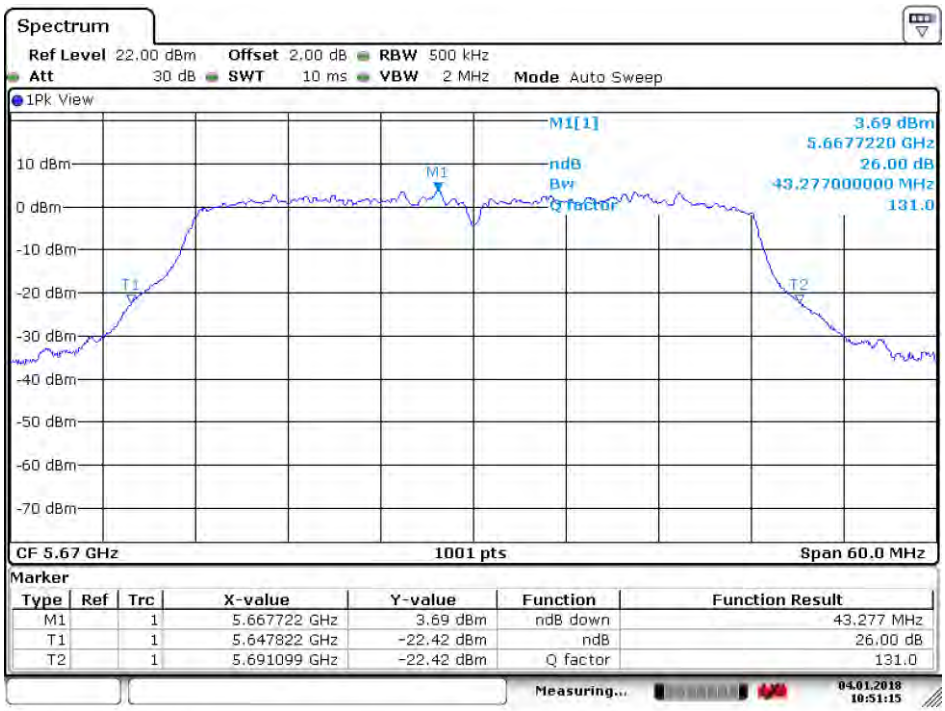
Date: 4.JAN.2018 10:55:30

Test mode:	802.11ac(HT40)	Frequency(MHz):	5550



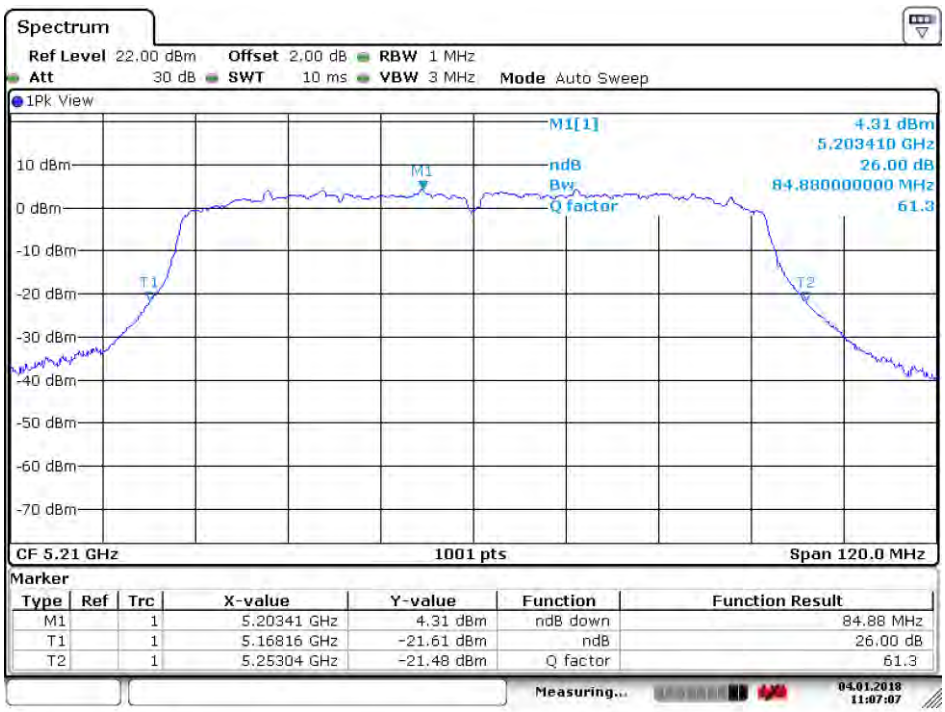
Date: 4.JAN.2018 10:52:37

Test mode:	802.11ac(HT40)	Frequency(MHz):	5670



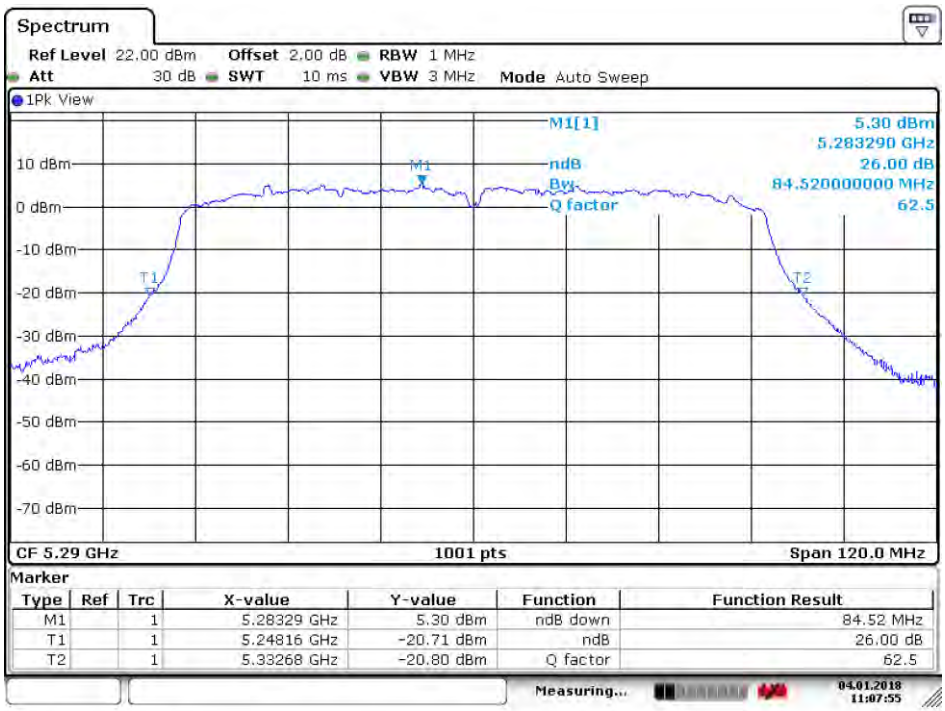
Date: 4.JAN.2018 10:51:15

Test mode:	802.11ac(HT80)	Frequency(MHz):	5210



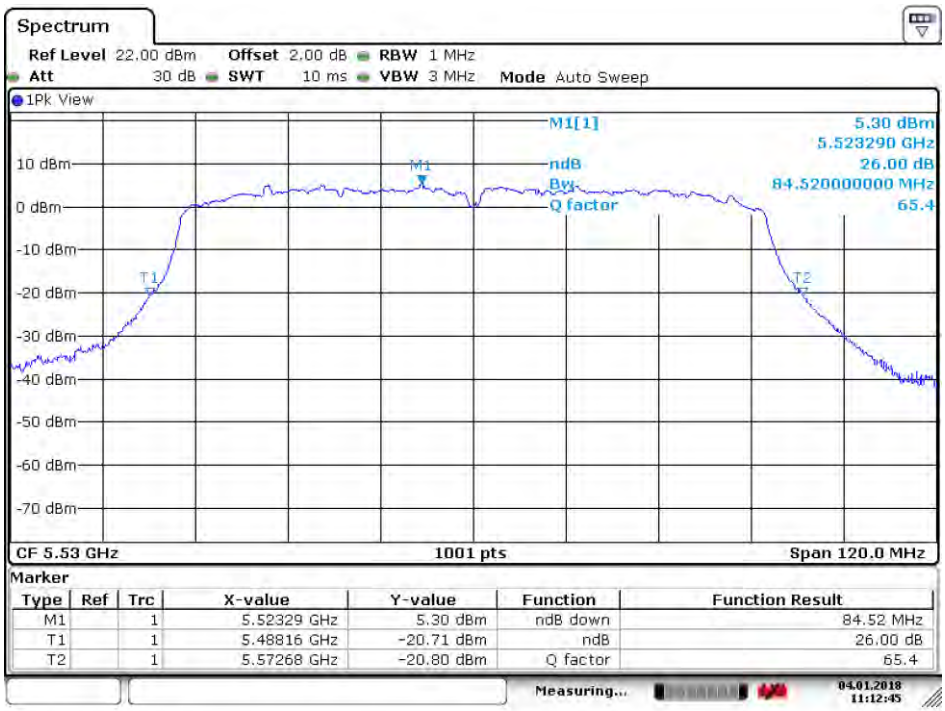
Date: 4.JAN.2018 11:07:08

Test mode:	802.11ac(HT80)	Frequency(MHz):	5290



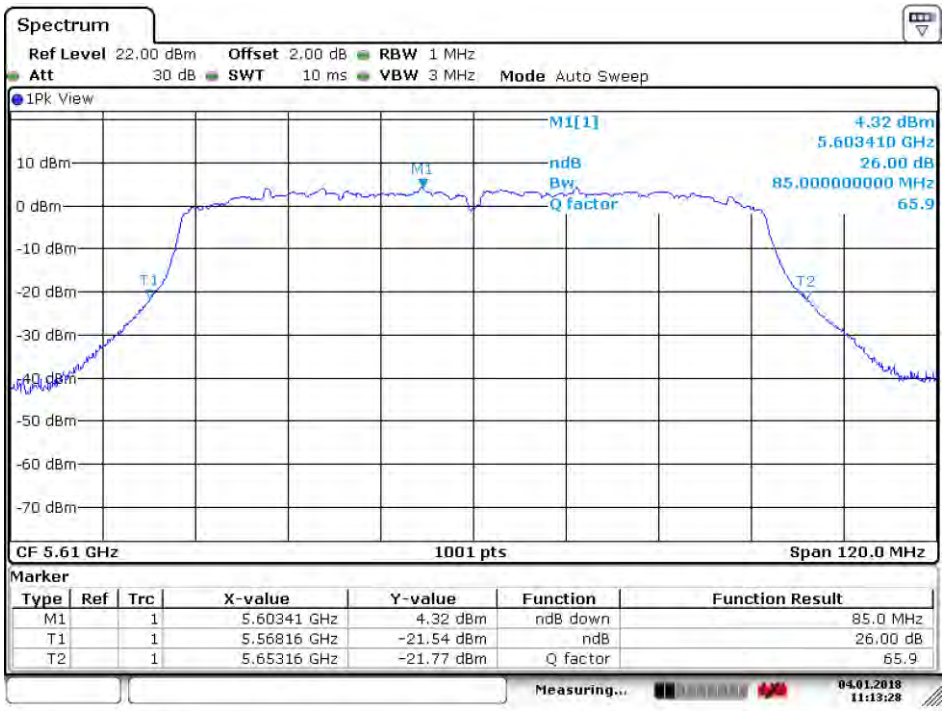
Date: 4.JAN.2018 11:07:56

Test mode:	802.11ac(HT80)	Frequency(MHz):	5530



Date: 4.JAN.2018 11:12:45

Test mode:	802.11ac(HT80)	Frequency(MHz):	5610

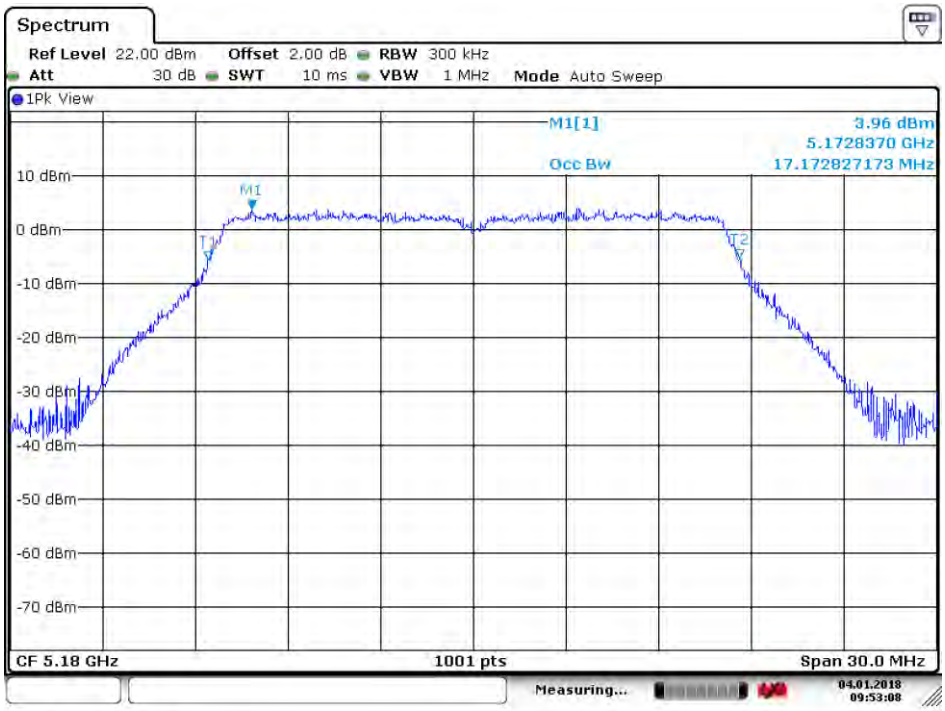


Date: 4.JAN.2018 11:13:28

99% occupied bandwidth

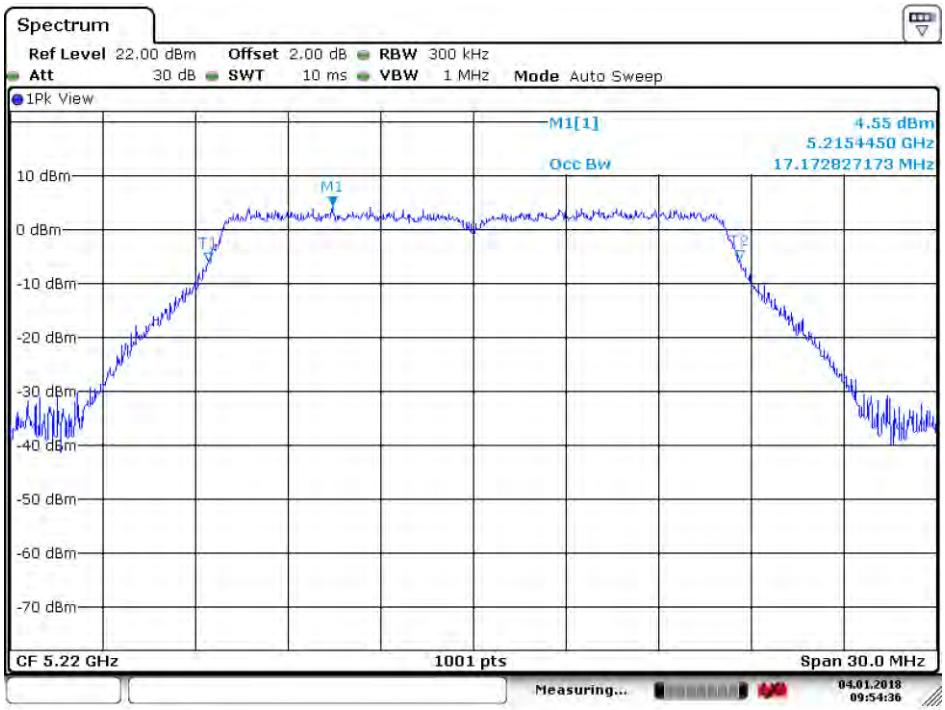
Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180



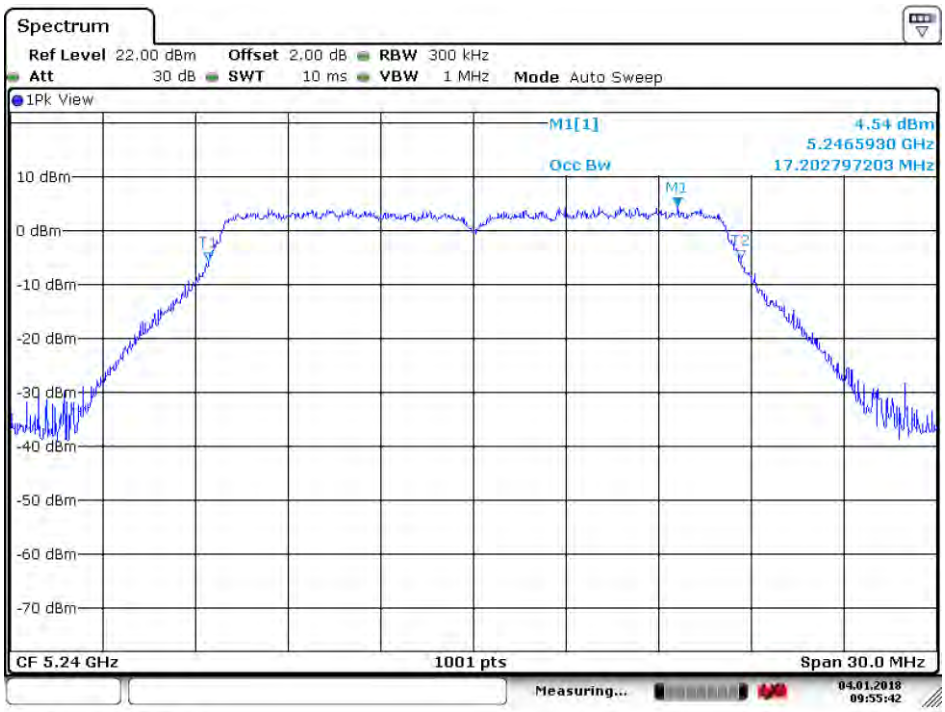
Date: 4.JAN.2018 09:53:08

Test mode:	802.11a	Frequency(MHz):	5220



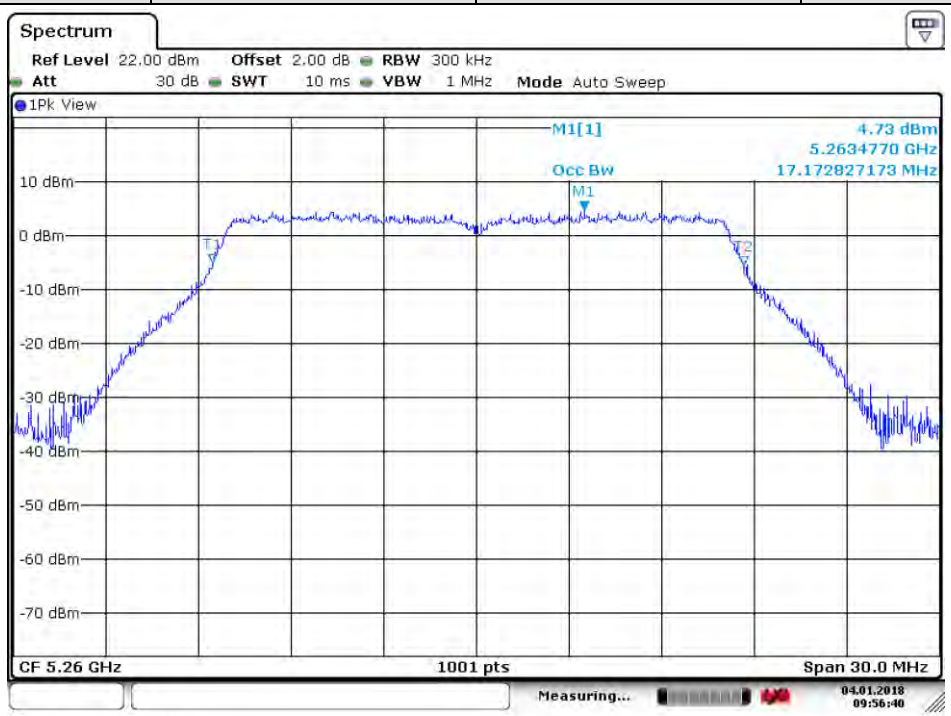
Date: 4.JAN.2018 09:54:37

Test mode:	802.11a	Frequency(MHz):	5240



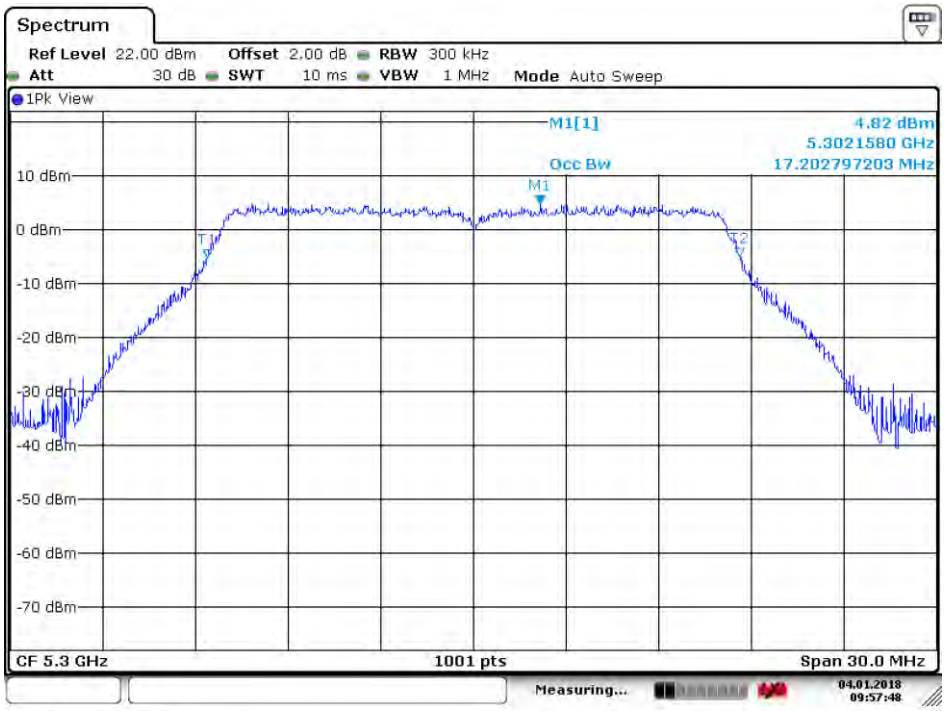
Date: 4.JAN.2018 09:55:42

Test mode:	802.11a	Frequency(MHz):	5260



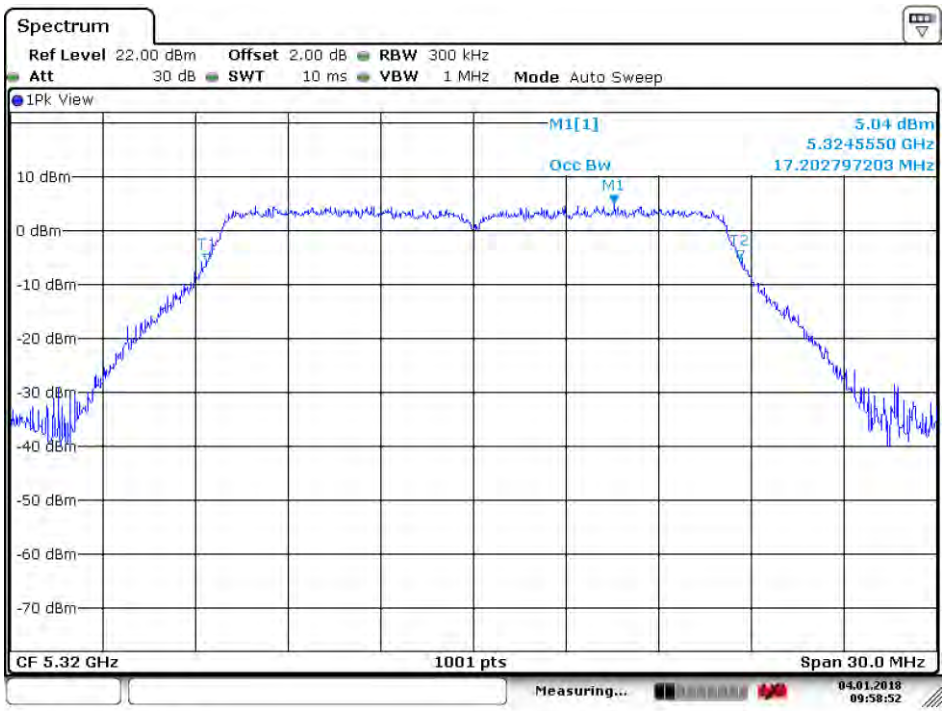
Date: 4.JAN.2018 09:56:40

Test mode:	802.11a	Frequency(MHz):	5300



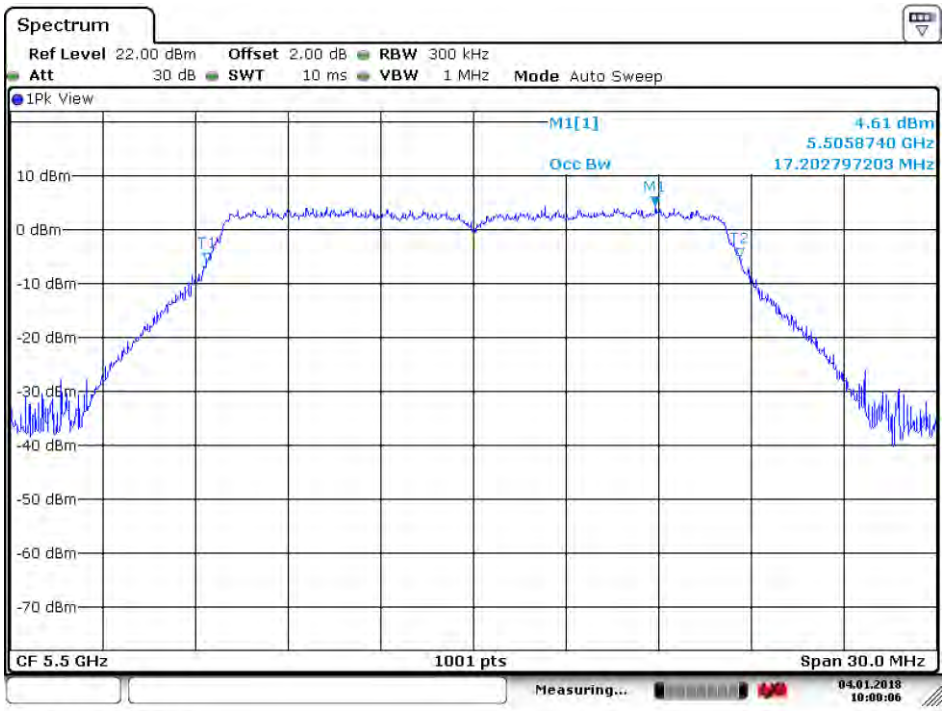
Date: 4.JAN.2018 09:57:48

Test mode:	802.11a	Frequency(MHz):	5320



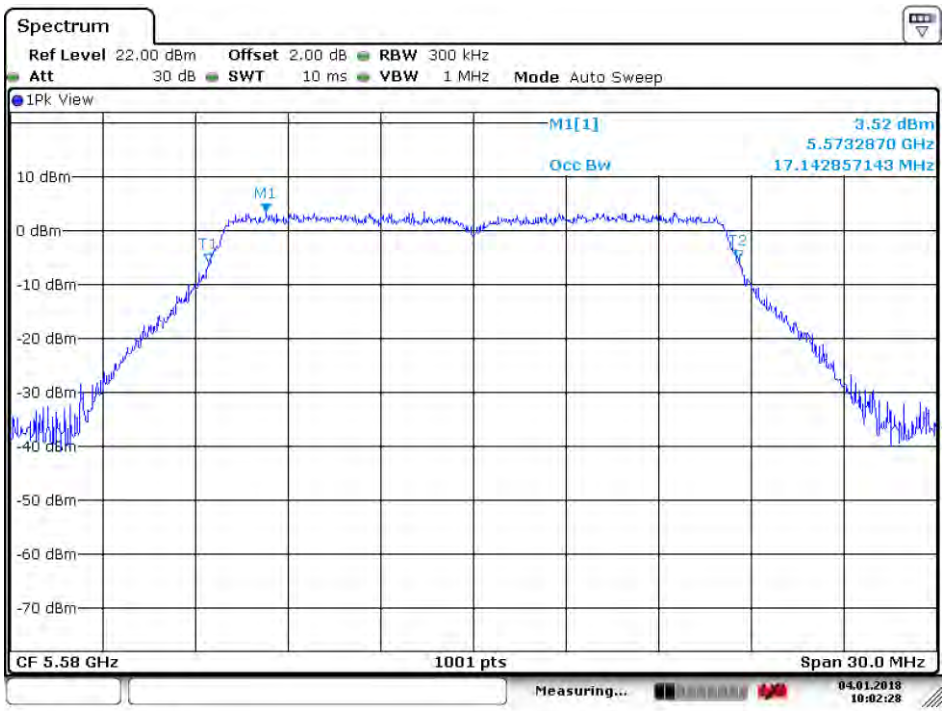
Date: 4.JAN.2018 09:58:52

Test mode:	802.11a	Frequency(MHz):	5500



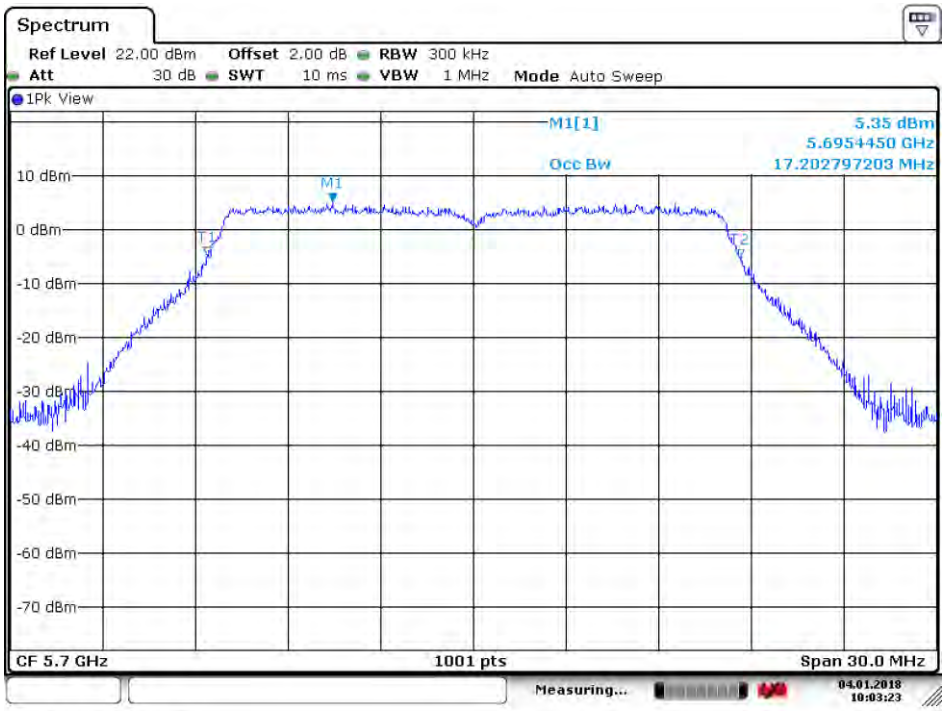
Date: 4.JAN.2018 10:00:07

Test mode:	802.11a	Frequency(MHz):	5580



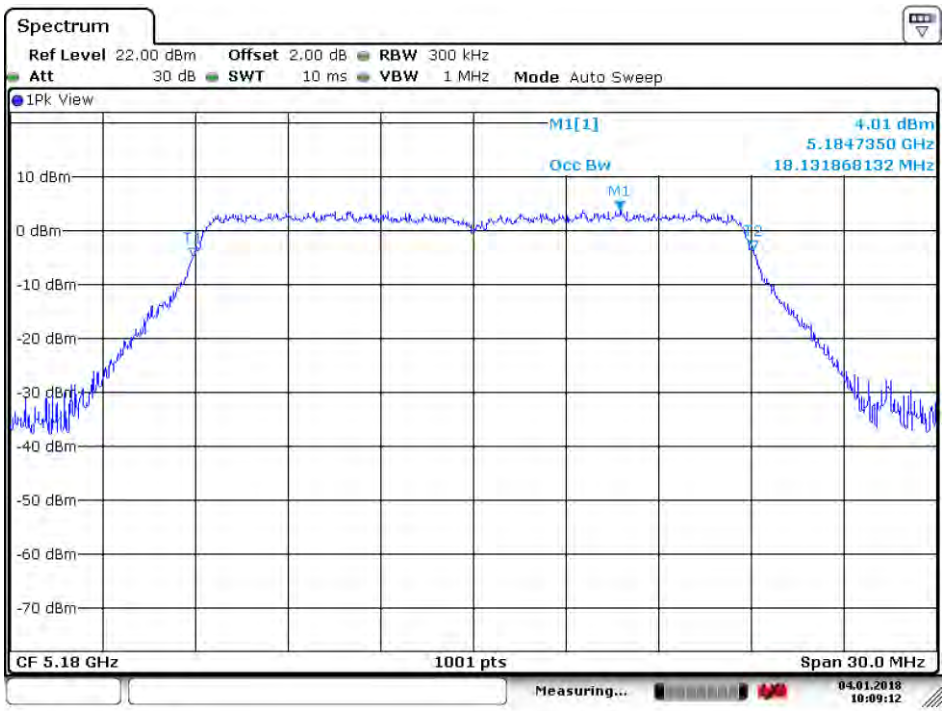
Date: 4.JAN.2018 10:02:28

Test mode:	802.11a	Frequency(MHz):	5700



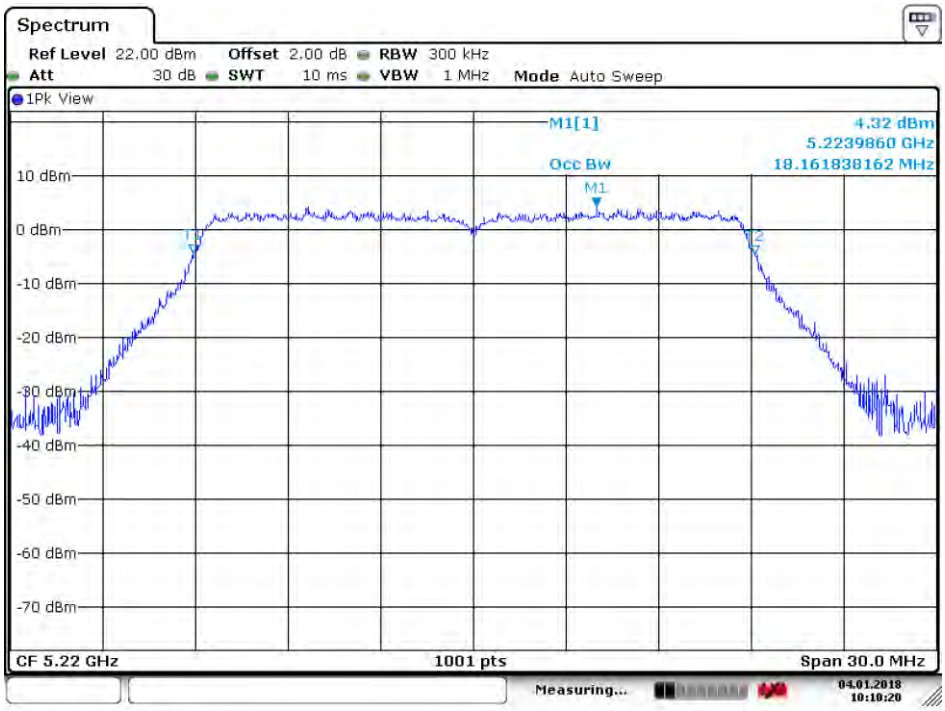
Date: 4.JAN.2018 10:03:23

Test mode:	802.11n(HT20)	Frequency(MHz):	5180



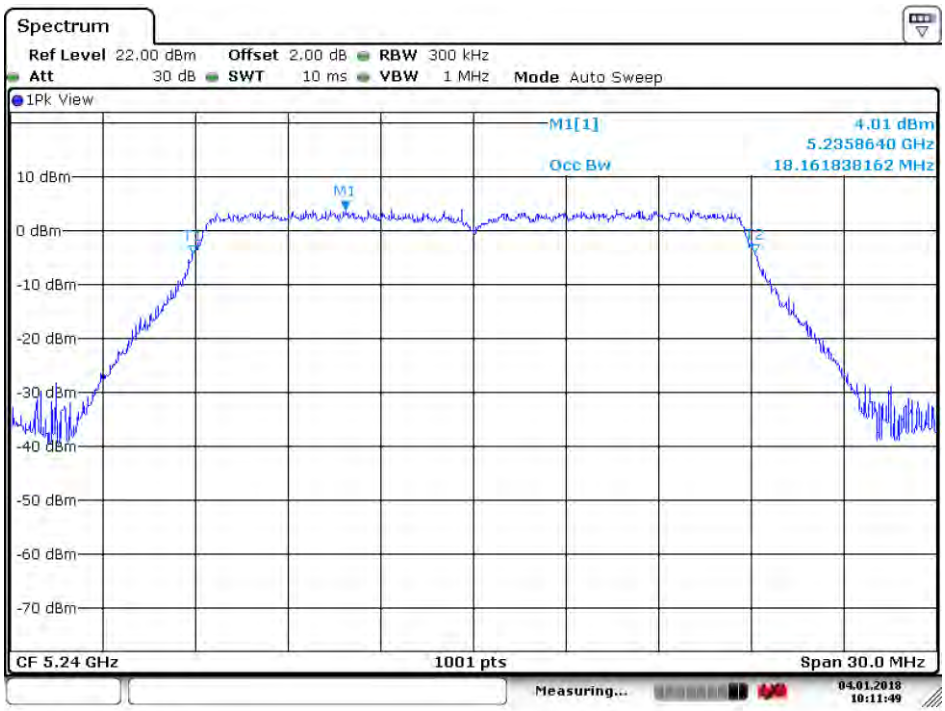
Date: 4.JAN.2018 10:09:13

Test mode:	802.11n(HT20)	Frequency(MHz):	5220



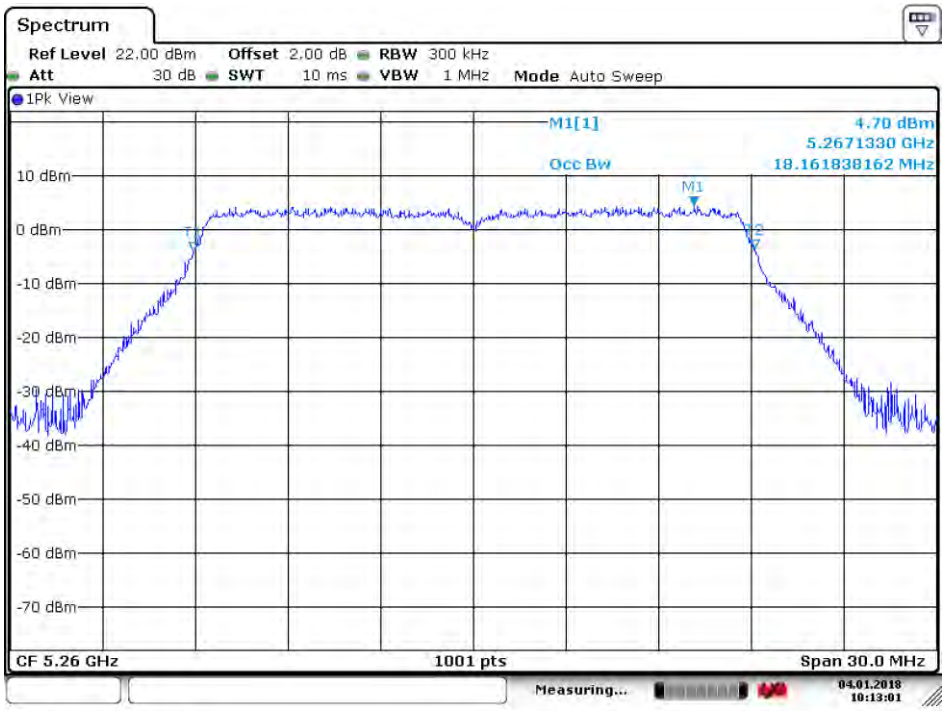
Date: 4.JAN.2018 10:10:20

Test mode:	802.11n(HT20)	Frequency(MHz):	5240



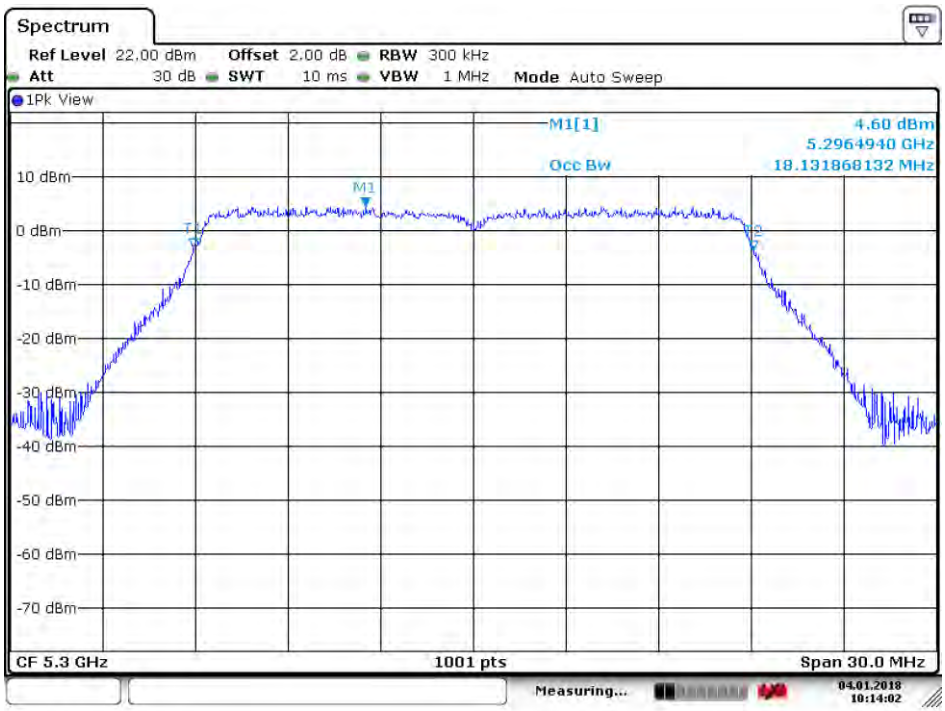
Date: 4.JAN.2018 10:11:49

Test mode:	802.11n(HT20)	Frequency(MHz):	5260



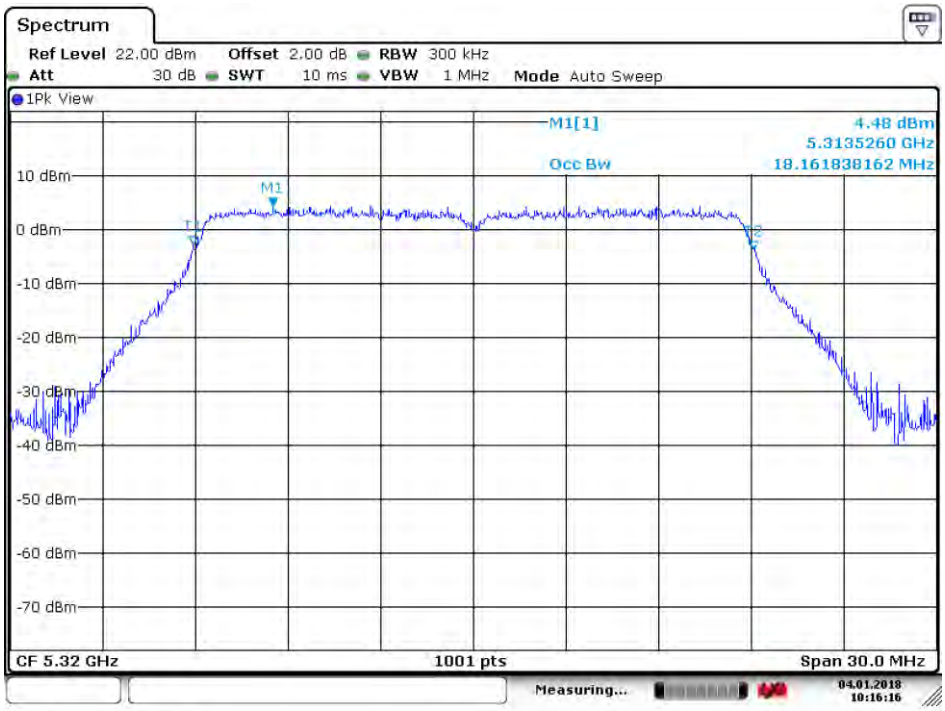
Date: 4.JAN.2018 10:13:01

Test mode:	802.11n(HT20)	Frequency(MHz):	5300



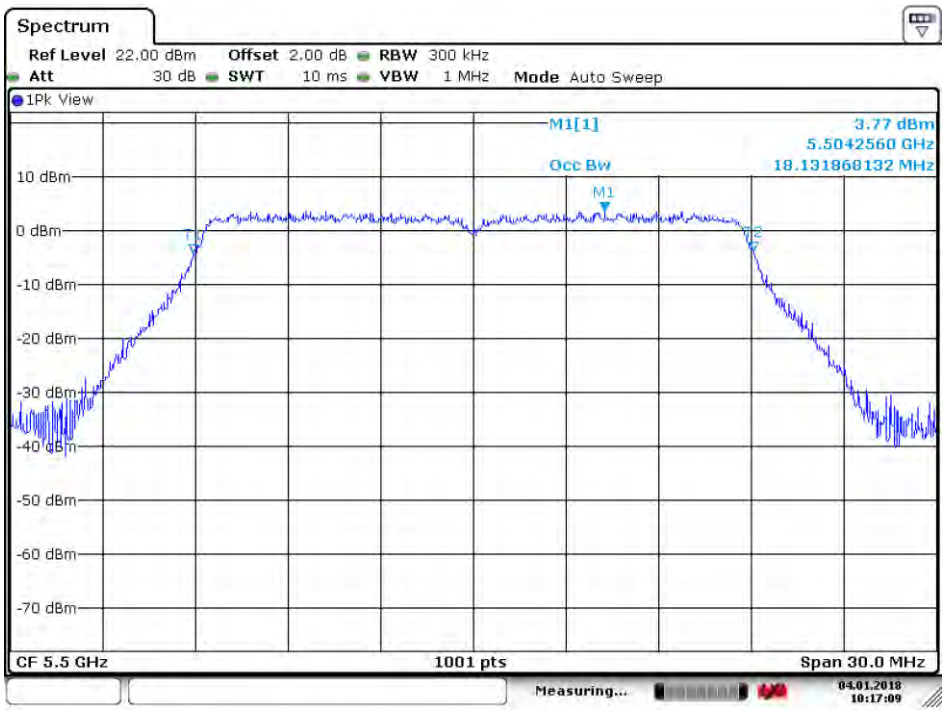
Date: 4.JAN.2018 10:14:03

Test mode:	802.11n(HT20)	Frequency(MHz):	5320



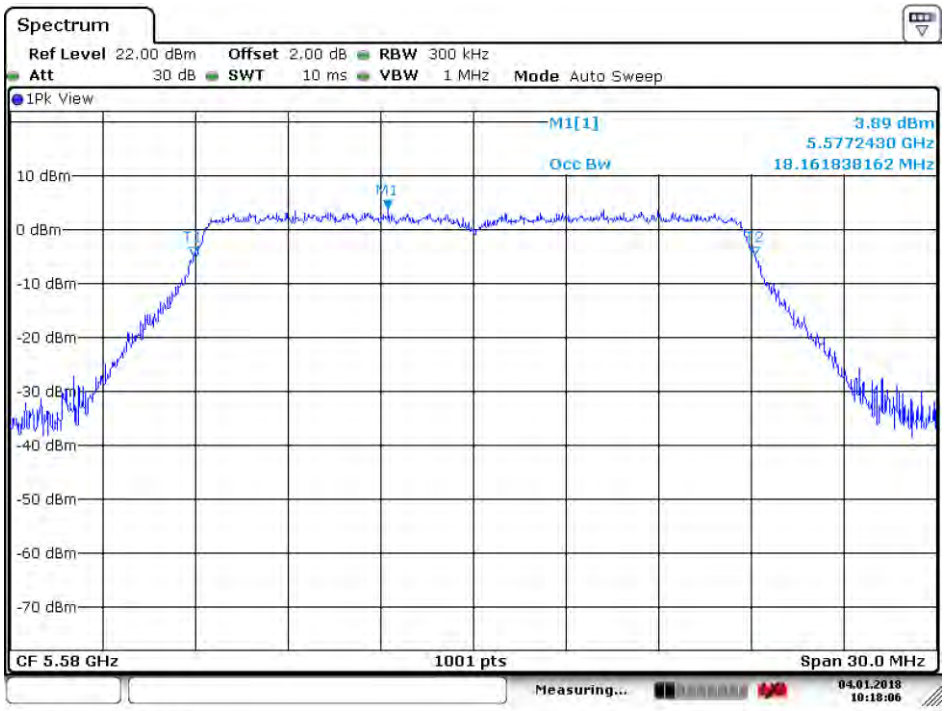
Date: 4.JAN.2018 10:16:17

Test mode:	802.11n(HT20)	Frequency(MHz):	5500



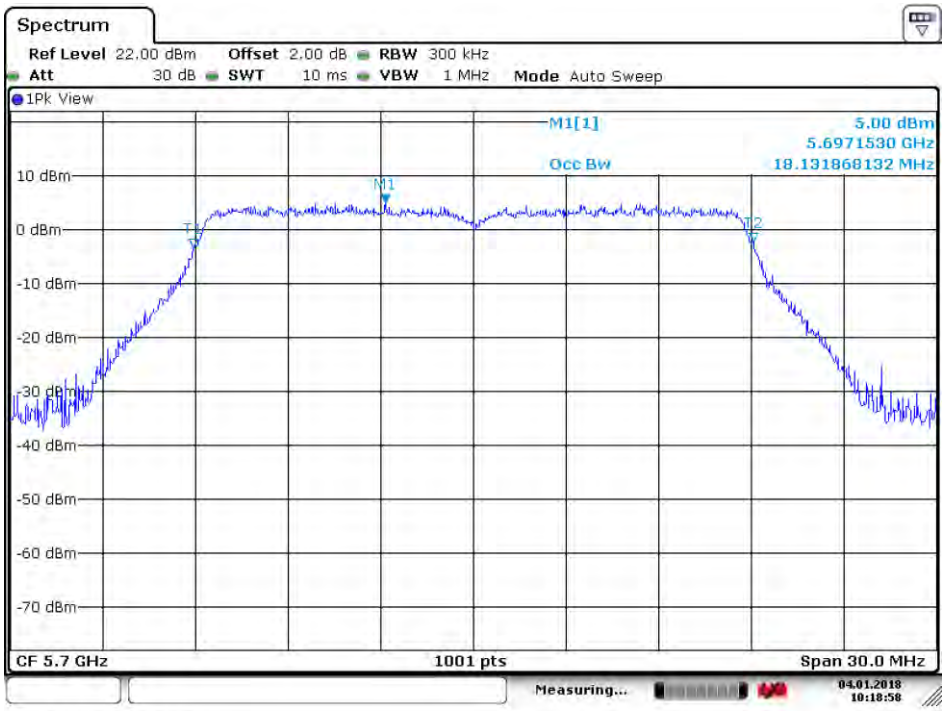
Date: 4.JAN.2018 10:17:10

Test mode:	802.11n(HT20)	Frequency(MHz):	5580



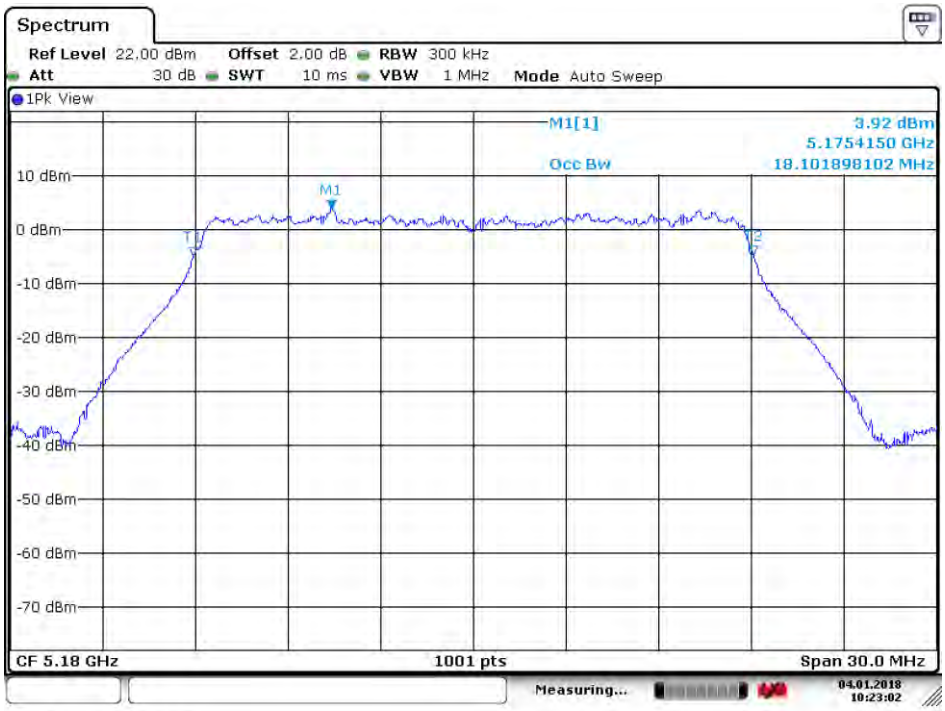
Date: 4.JAN.2018 10:18:06

Test mode:	802.11n(HT20)	Frequency(MHz):	5700



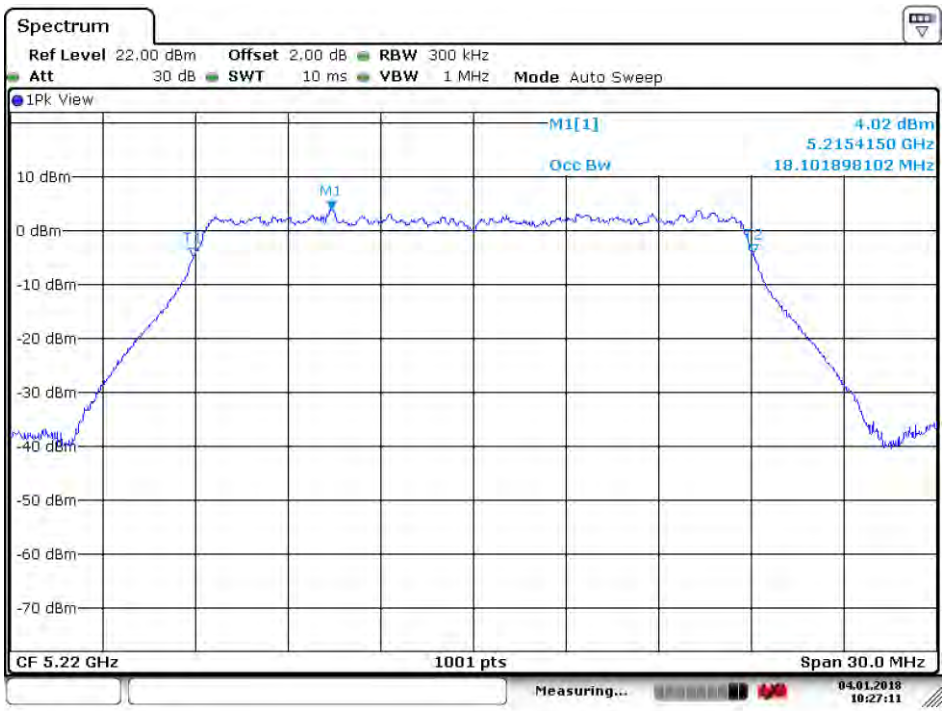
Date: 4.JAN.2018 10:18:58

Test mode:	802.11ac(HT20)	Frequency(MHz):	5180



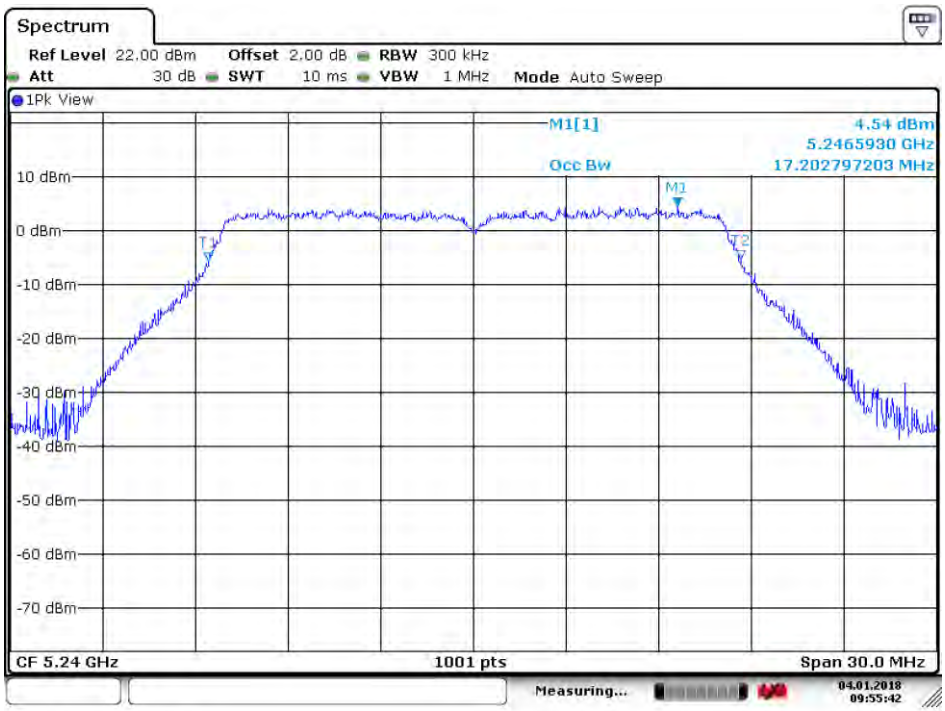
Date: 4.JAN.2018 10:23:02

Test mode:	802.11ac(HT20)	Frequency(MHz):	5220



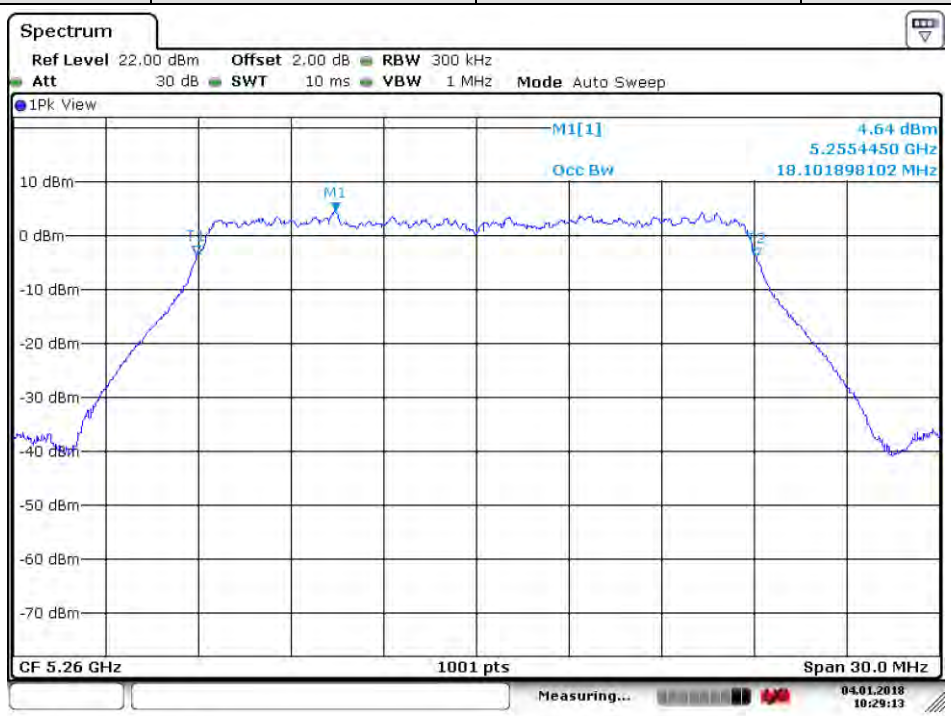
Date: 4.JAN.2018 10:27:12

Test mode:	802.11ac(HT20)	Frequency(MHz):	5240



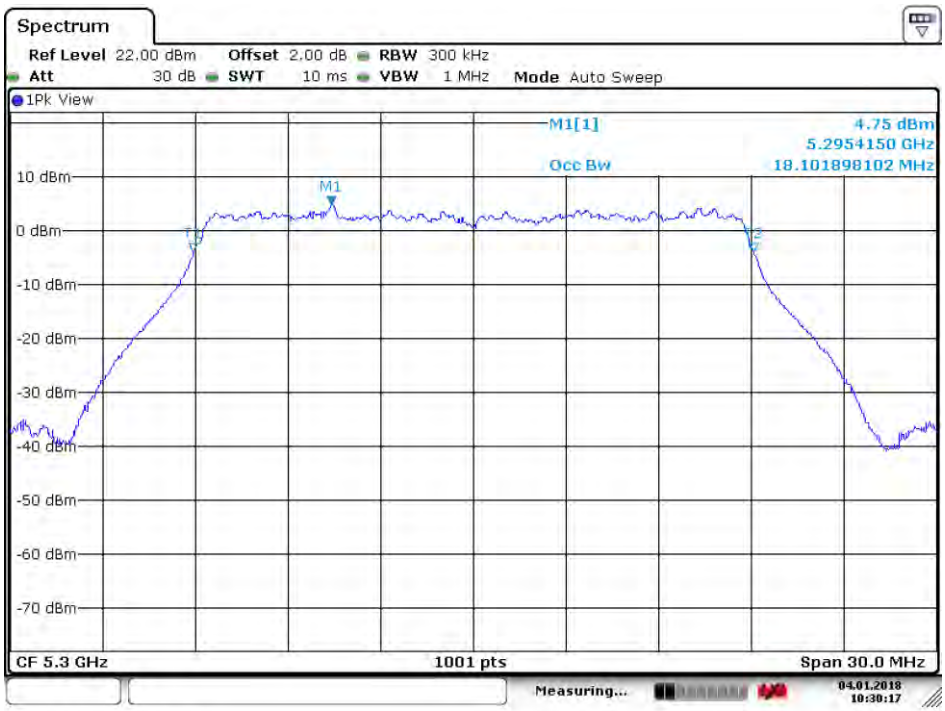
Date: 4.JAN.2018 09:55:42

Test mode:	802.11ac(HT20)	Frequency(MHz):	5260



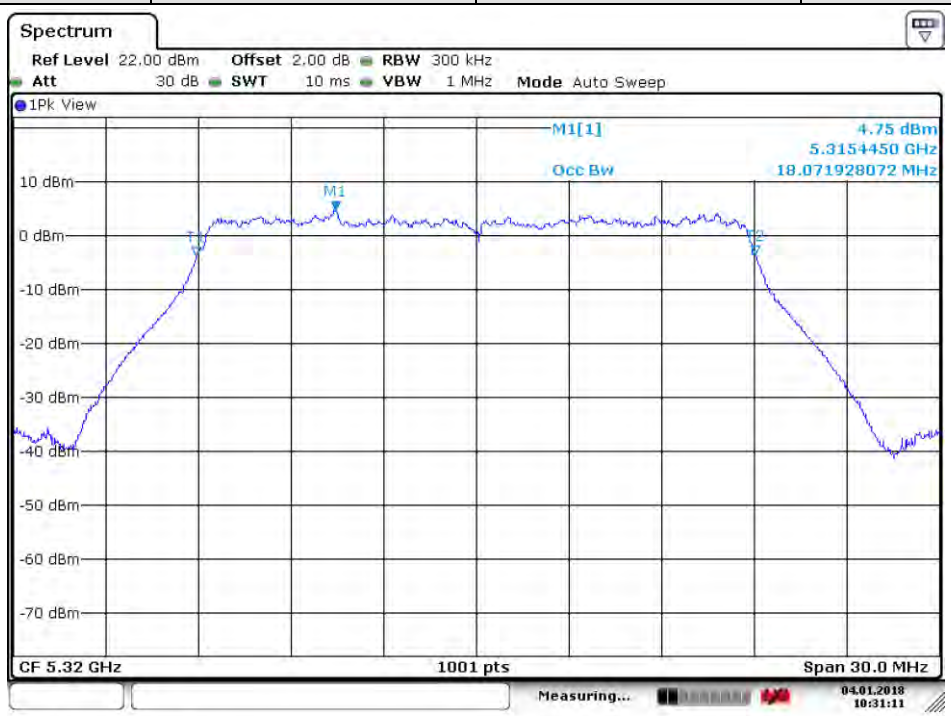
Date: 4.JAN.2018 10:29:13

Test mode:	802.11ac(HT20)	Frequency(MHz):	5300



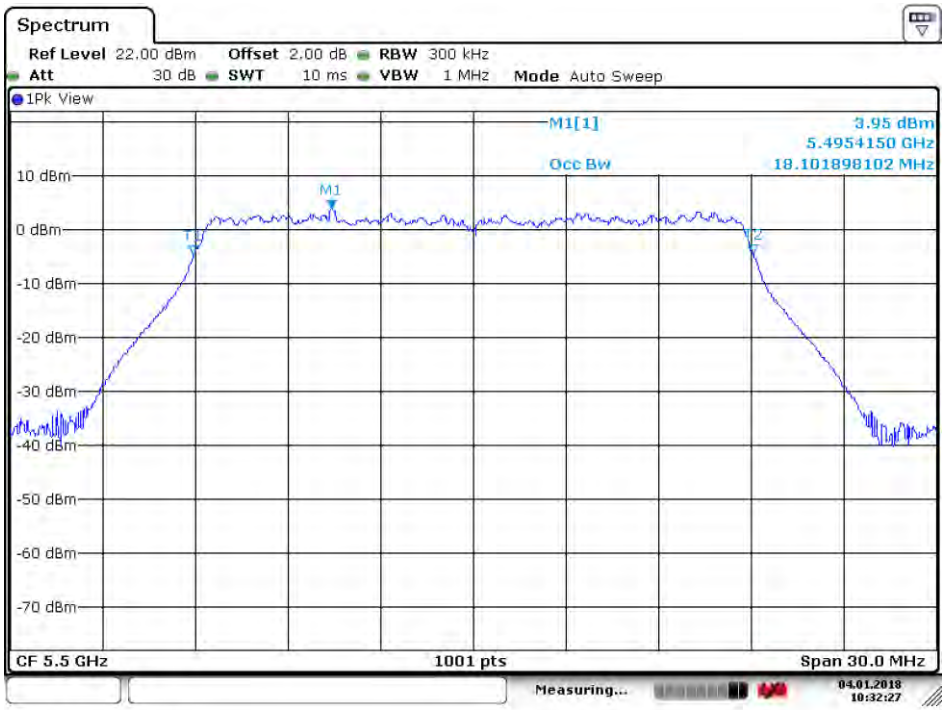
Date: 4.JAN.2018 10:30:17

Test mode:	802.11ac(HT20)	Frequency(MHz):	5320



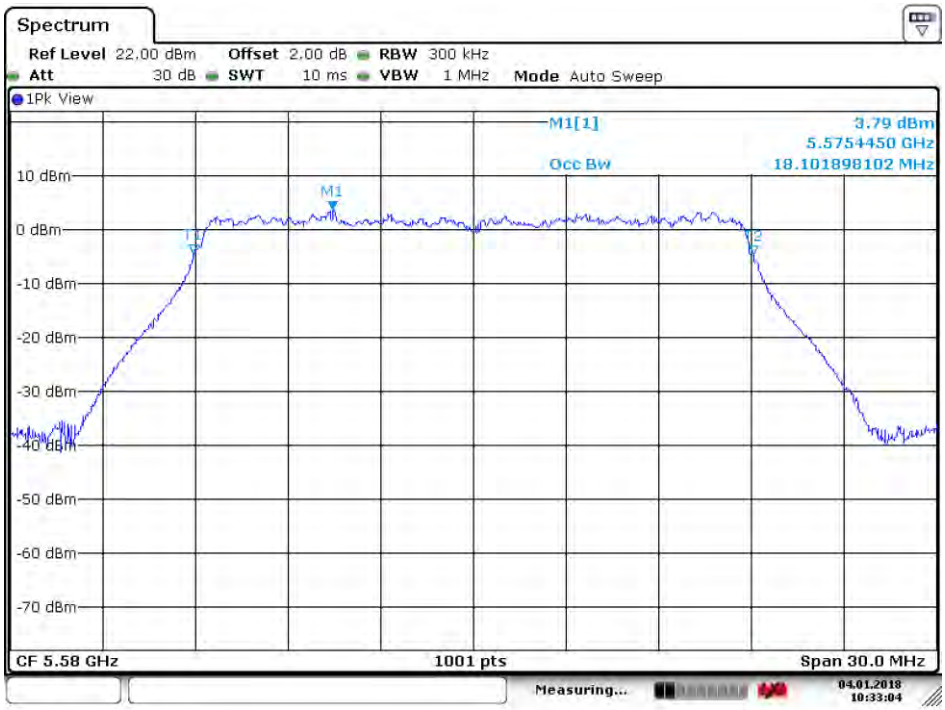
Date: 4.JAN.2018 10:31:11

Test mode:	802.11ac(HT20)	Frequency(MHz):	5500



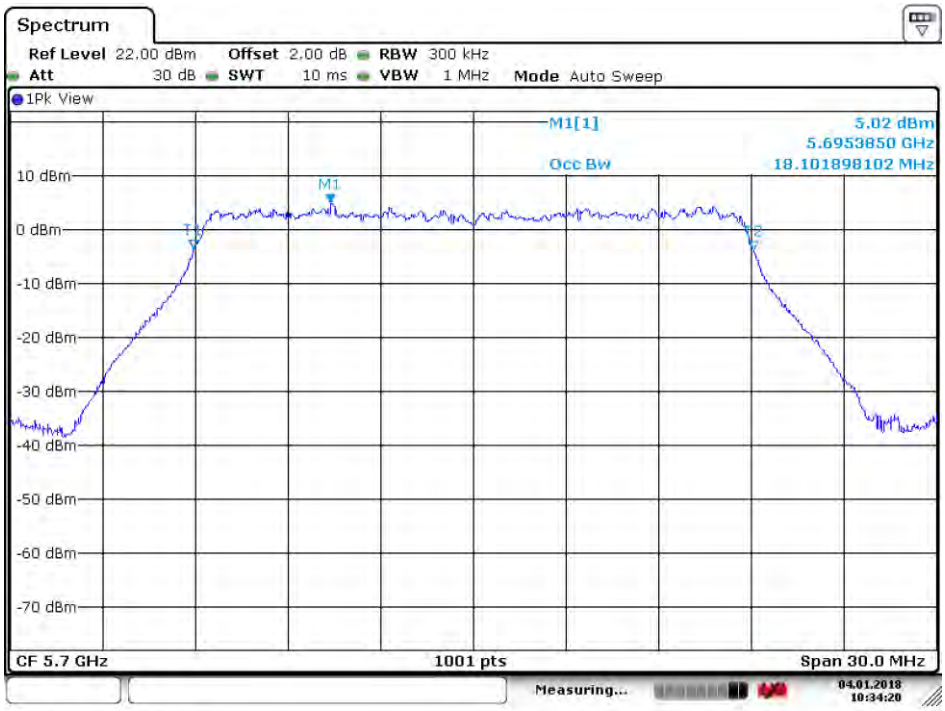
Date: 4.JAN.2018 10:32:27

Test mode:	802.11ac(HT20)	Frequency(MHz):	5580



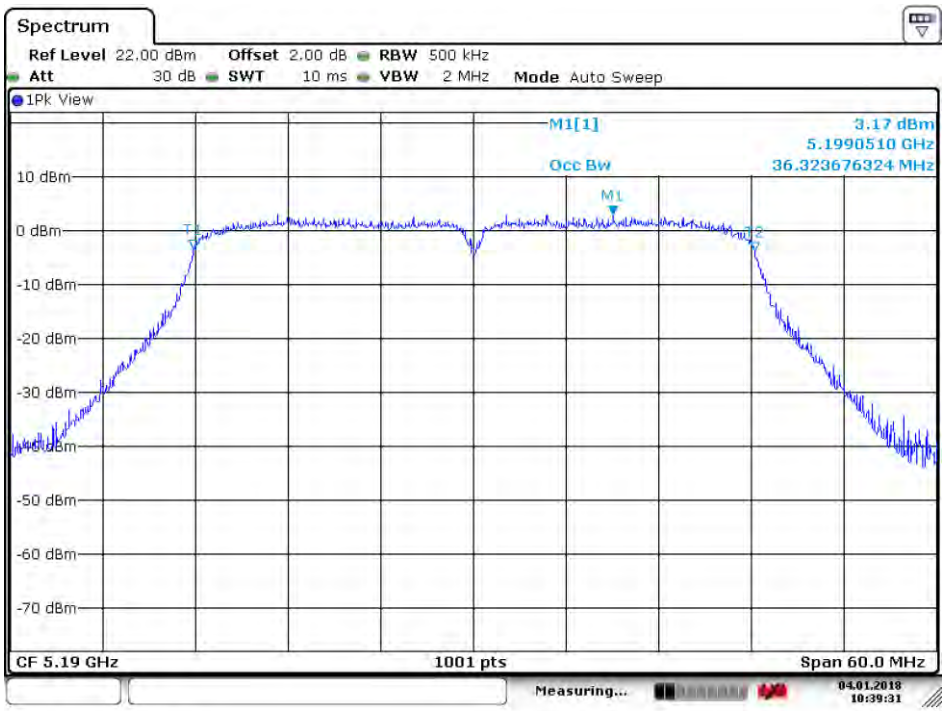
Date: 4.JAN.2018 10:33:05

Test mode:	802.11ac(HT20)	Frequency(MHz):	5700



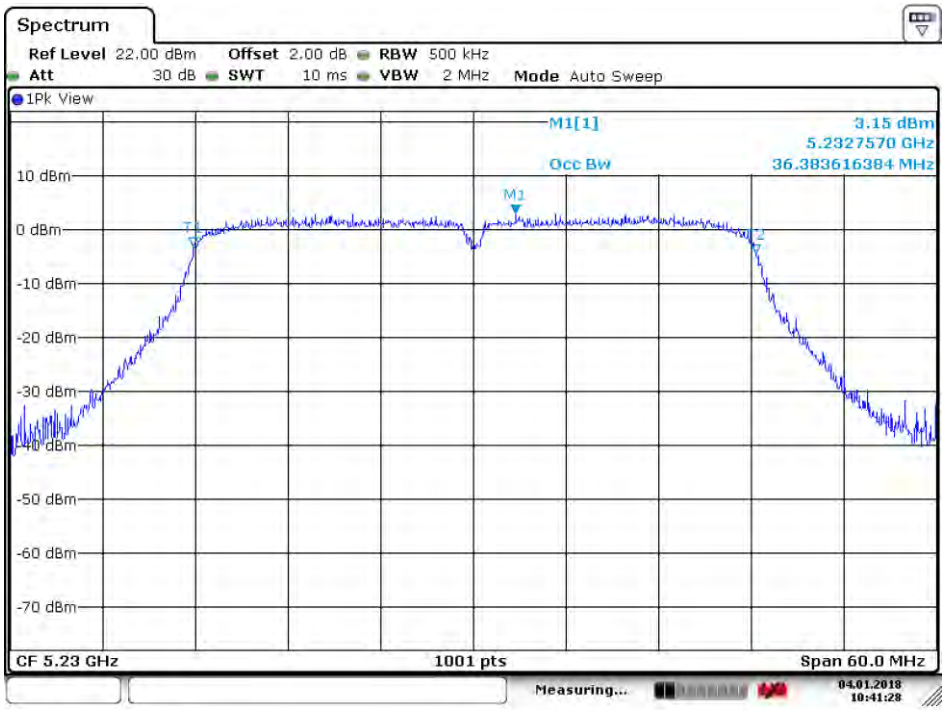
Date: 4.JAN.2018 10:34:21

Test mode:	802.11n(HT40)	Frequency(MHz):	5190



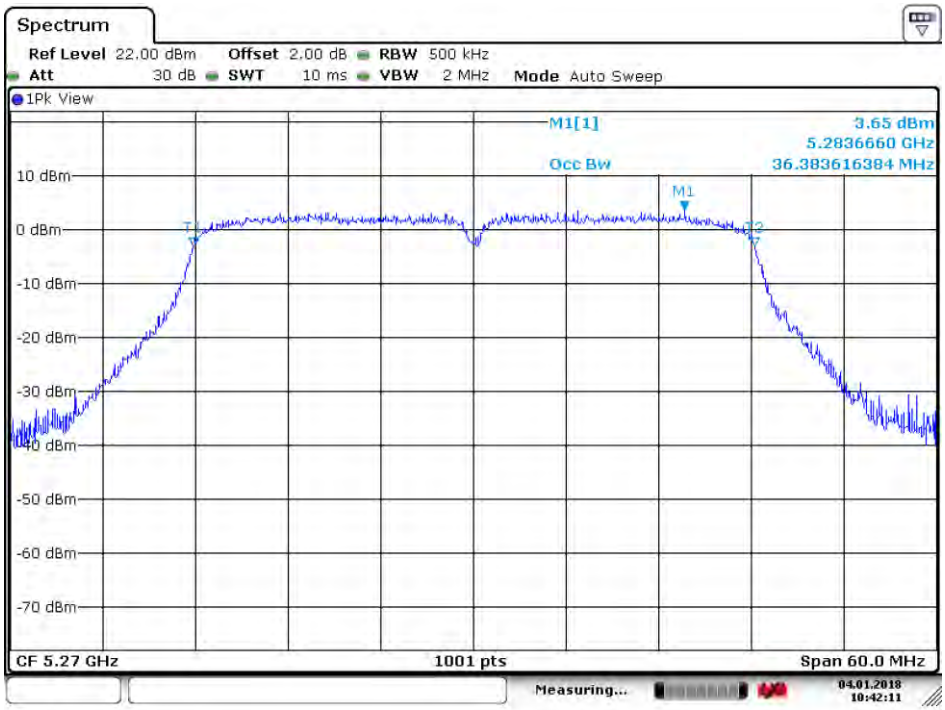
Date: 4.JAN.2018 10:39:32

Test mode:	802.11n(HT40)	Frequency(MHz):	5230



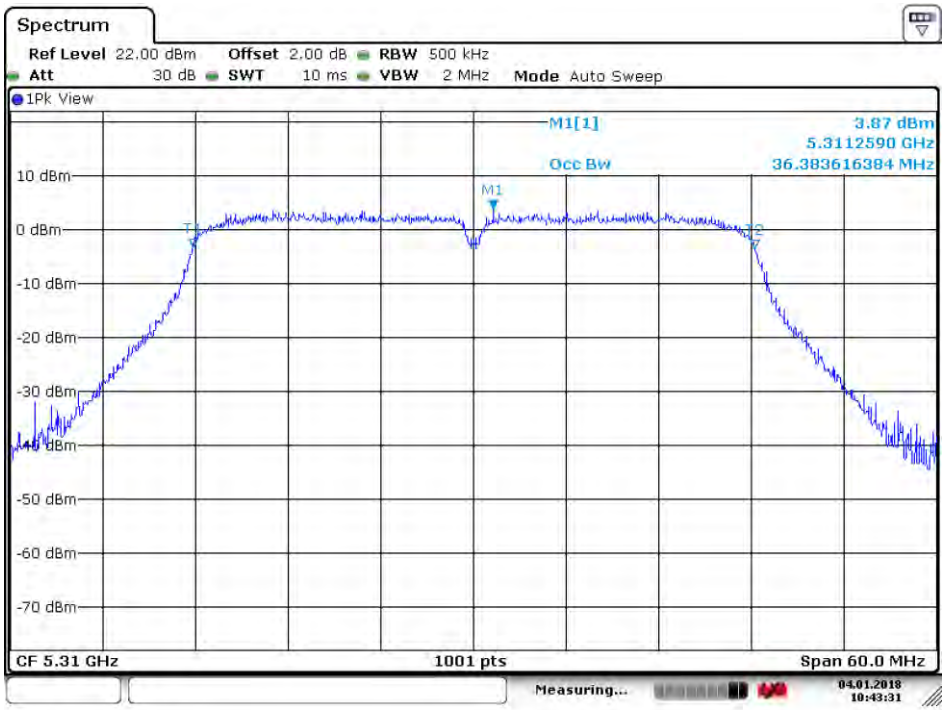
Date: 4.JAN.2018 10:41:29

Test mode:	802.11n(HT40)	Frequency(MHz):	5270



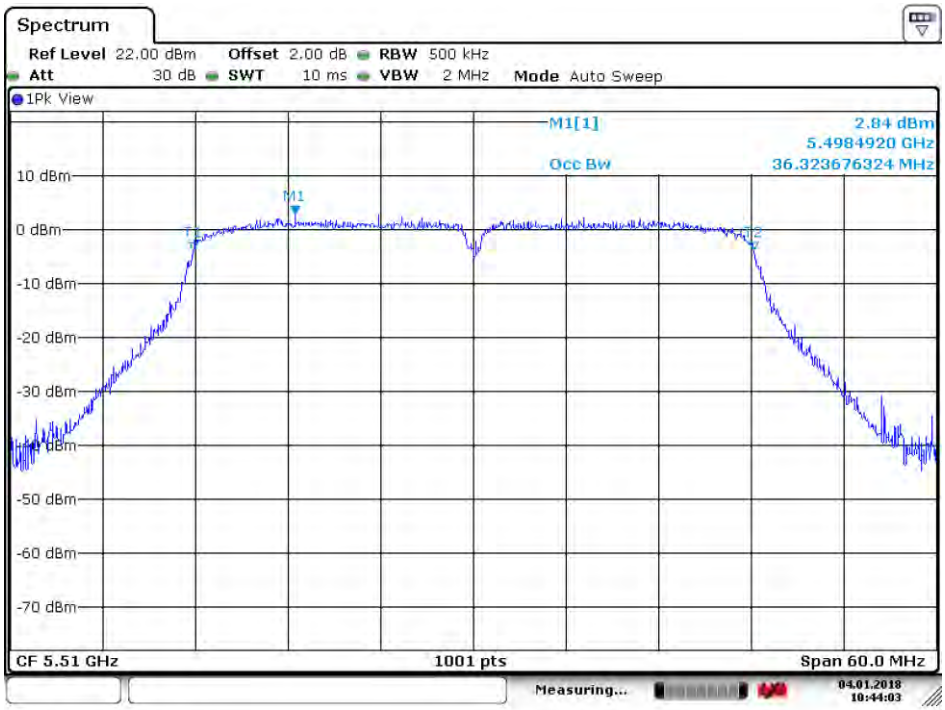
Date: 4.JAN.2018 10:42:12

Test mode:	802.11n(HT40)	Frequency(MHz):	5310



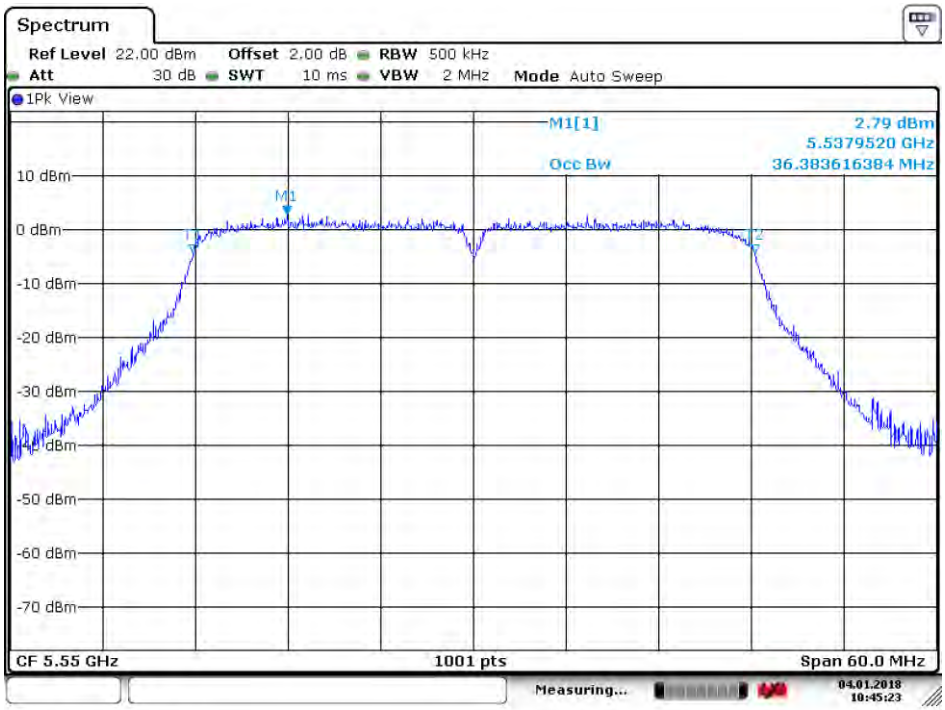
Date: 4.JAN.2018 10:43:32

Test mode:	802.11n(HT40)	Frequency(MHz):	5510



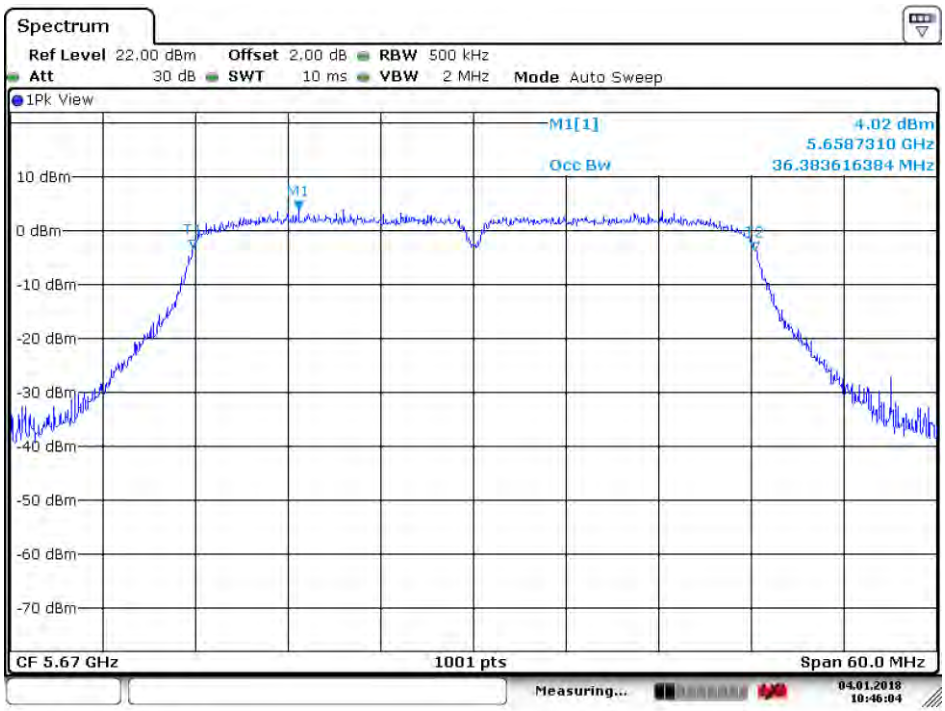
Date: 4.JAN.2018 10:44:04

Test mode:	802.11n(HT40)	Frequency(MHz):	5550



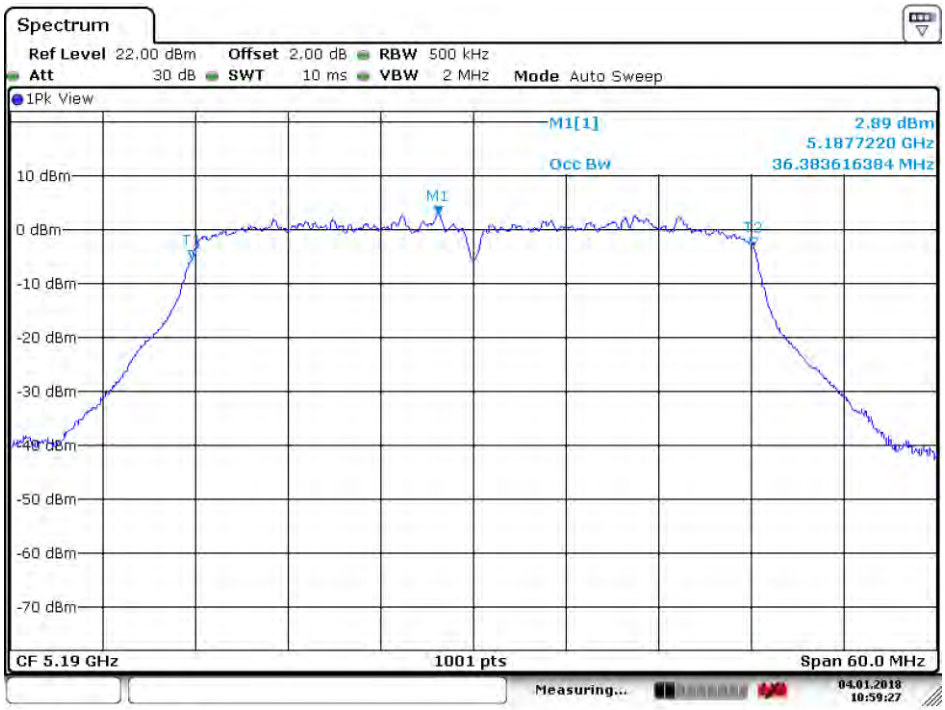
Date: 4.JAN.2018 10:45:24

Test mode:	802.11n(HT40)	Frequency(MHz):	5670



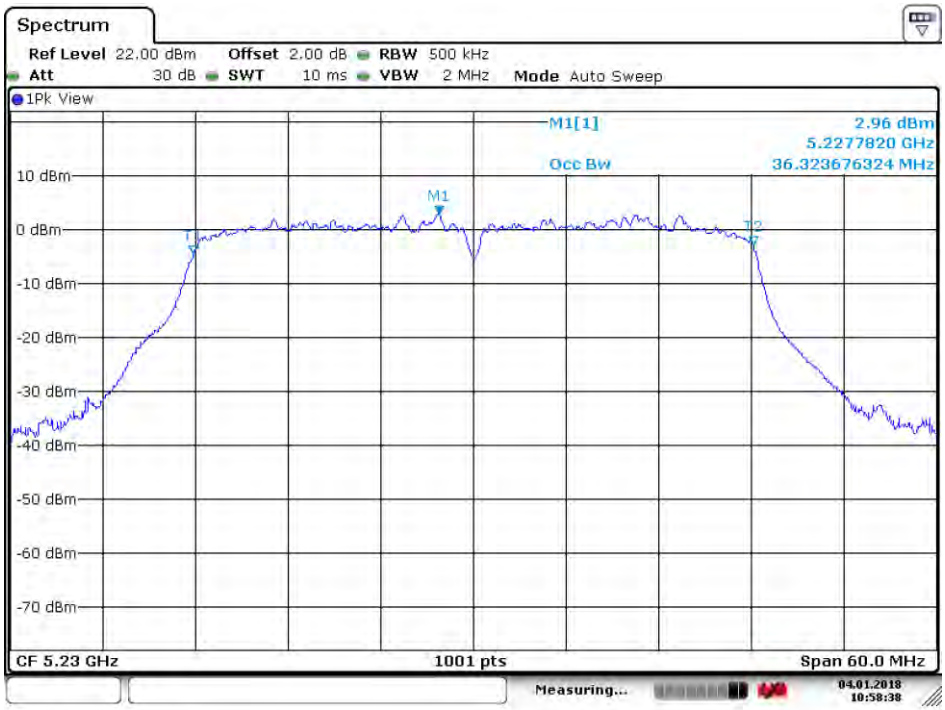
Date: 4.JAN.2018 10:46:04

Test mode:	802.11ac(HT40)	Frequency(MHz):	5190



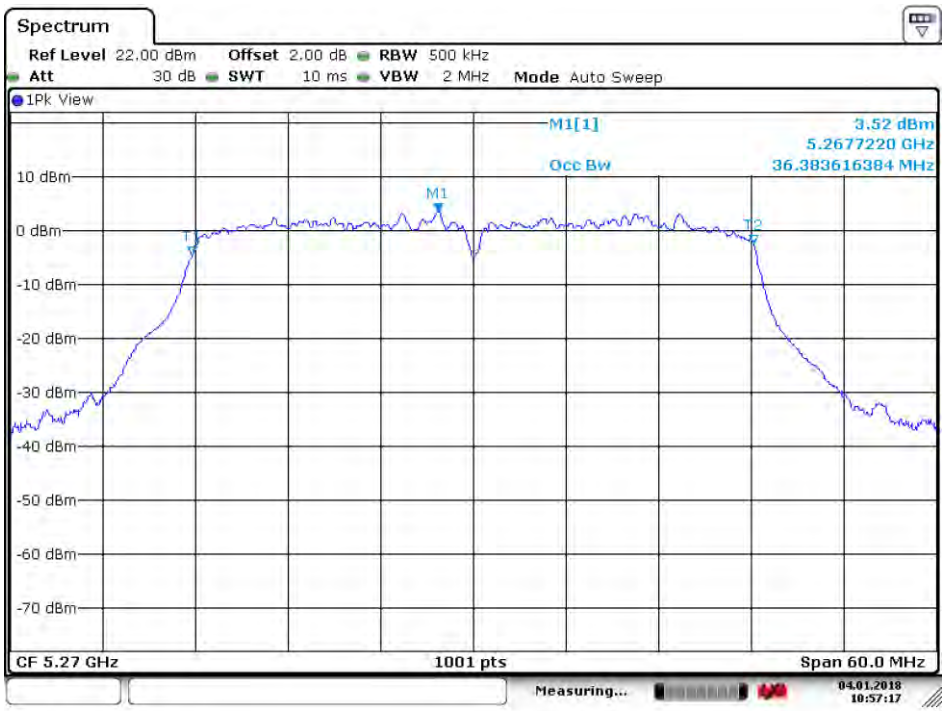
Date: 4.JAN.2018 10:59:27

Test mode:	802.11ac(HT40)	Frequency(MHz):	5230



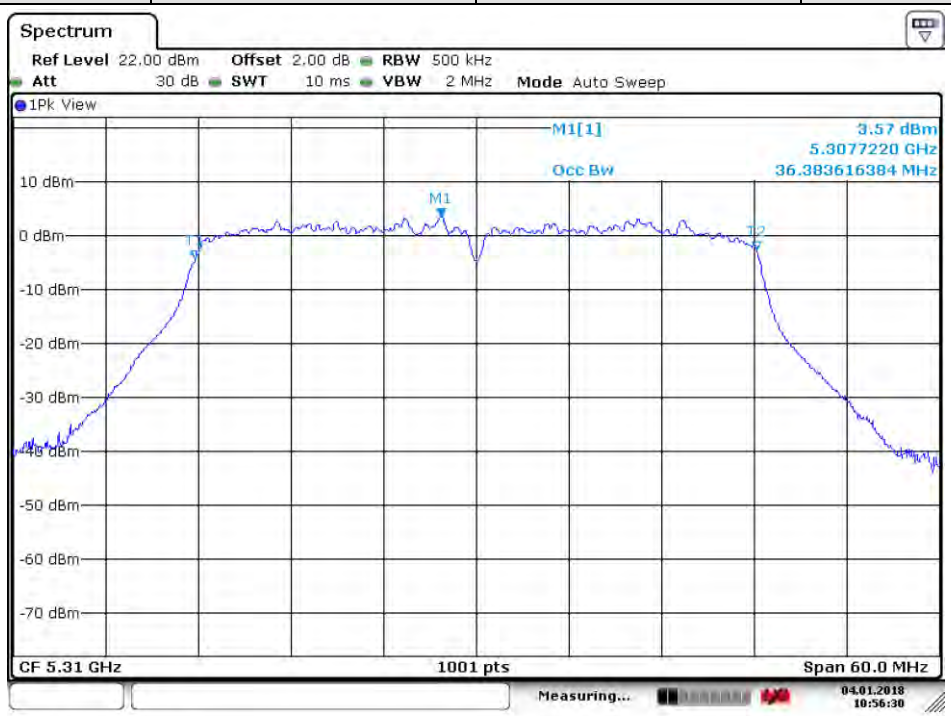
Date: 4.JAN.2018 10:58:39

Test mode:	802.11ac(HT40)	Frequency(MHz):	5270



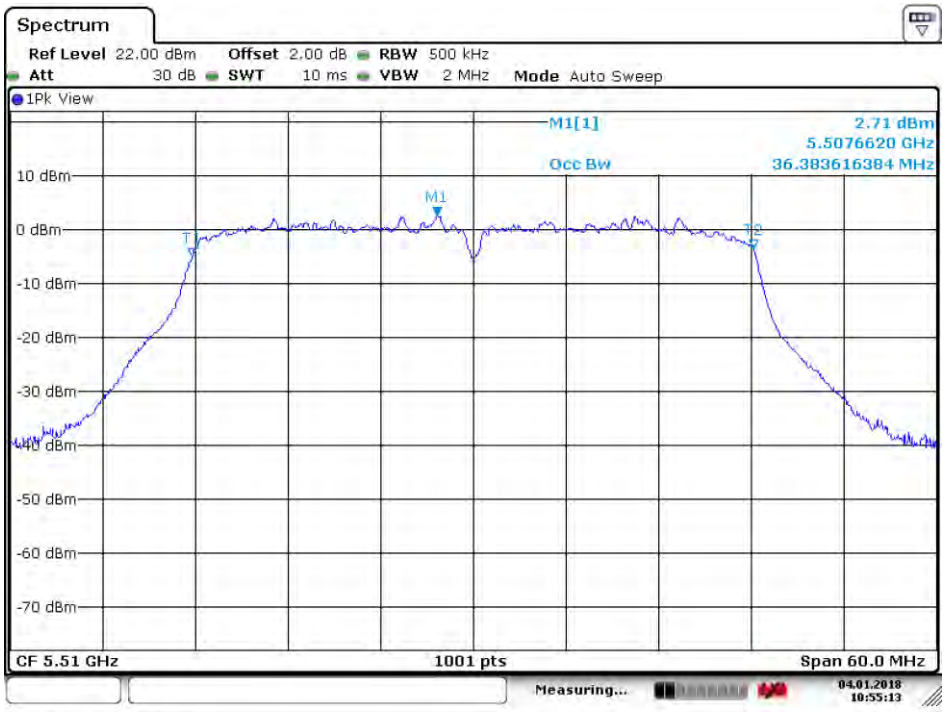
Date: 4.JAN.2018 10:57:18

Test mode:	802.11ac(HT40)	Frequency(MHz):	5310



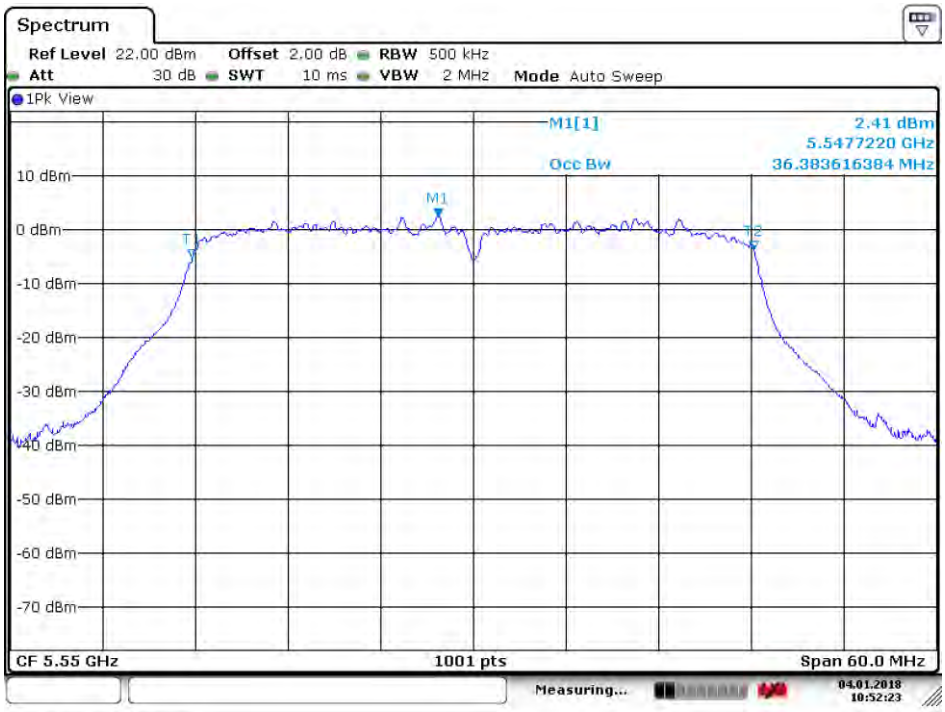
Date: 4.JAN.2018 10:56:29

Test mode:	802.11ac(HT40)	Frequency(MHz):	5510



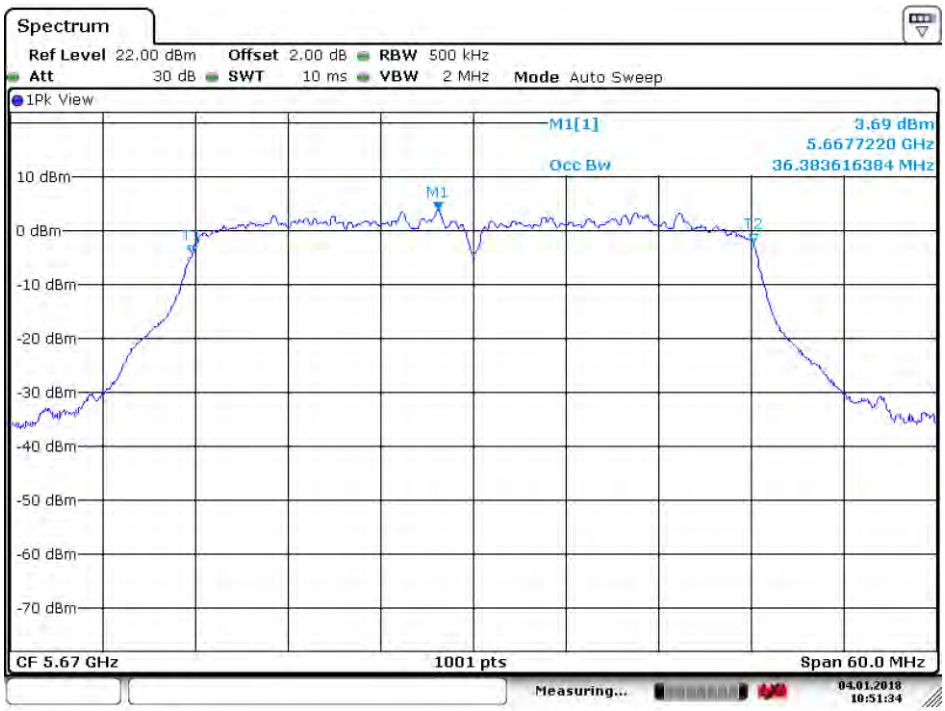
Date: 4.JAN.2018 10:55:14

Test mode:	802.11ac(HT40)	Frequency(MHz):	5550



Date: 4.JAN.2018 10:52:23

Test mode:	802.11ac(HT40)	Frequency(MHz):	5670

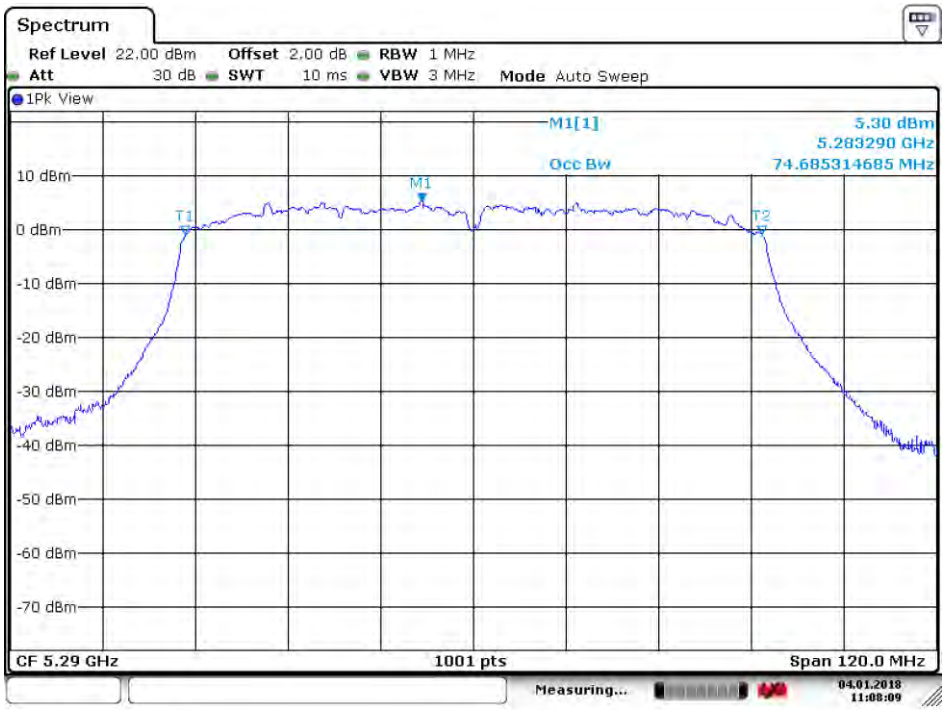


Date: 4.JAN.2018 10:51:34

Test mode:	802.11ac(HT80)	Frequency(MHz):	5210

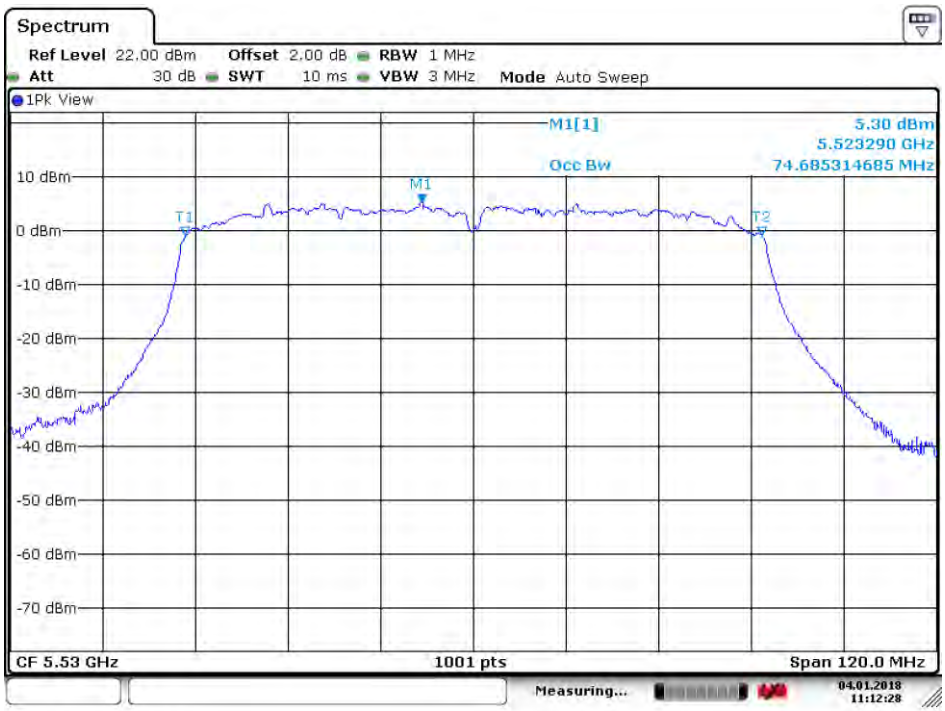
Date: 4.JAN.2018 11:06:42

Test mode:	802.11ac(HT80)	Frequency(MHz):	5290



Date: 4.JAN.2018 11:08:09

Test mode:	802.11ac(HT80)	Frequency(MHz):	5530

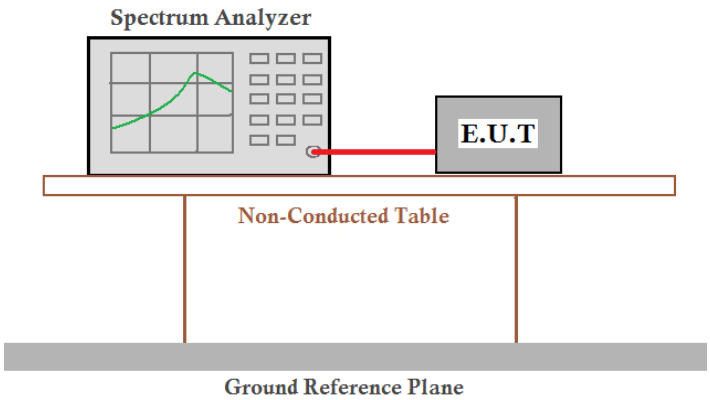


Date: 4.JAN.2018 11:12:28

Test mode:	802.11ac(HT80)	Frequency(MHz):	5610

Date: 4.JAN.2018 11:13:43

6.5 Power Spectral Density

Test Requirement:	47 CFR Part 15 Section 15.407(a)	
Test Method:	ANSI C63.10: 2013	
Test Setup:	 *Remark:*	
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); MCSO of rate is the worst case of 802.11n(HT40); MCSO of rate is the worst case of 802.11ac(HT20); MCSO of rate is the worst case of 802.11ac(HT40); MCSO 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	The power spectral density less than 11dBm/1MHz
	5250-5350MHz	The power spectral density less than 11dBm/1MHz
	5470-5725MHz	The power spectral density less than 11dBm/1MHz
Test Results:	Pass	

Measurement Data:

802.11a mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5180	1.97	≤11dBm/1MHz	Pass
5220	2.49	≤11dBm/1MHz	Pass
5240	2.57	≤11dBm/1MHz	Pass
5260	2.64	≤11dBm/1MHz	Pass
5300	2.92	≤11dBm/1MHz	Pass
5320	2.83	≤11dBm/1MHz	Pass
5500	2.09	≤11dBm/1MHz	Pass
5580	2.03	≤11dBm/1MHz	Pass
5700	3.01	≤11dBm/1MHz	Pass

802.11n(HT20) mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5180	1.83	≤11dBm/1MHz	Pass
5220	2.09	≤11dBm/1MHz	Pass
5240	2.22	≤11dBm/1MHz	Pass
5260	2.61	≤11dBm/1MHz	Pass
5300	2.61	≤11dBm/1MHz	Pass
5320	2.49	≤11dBm/1MHz	Pass
5500	1.96	≤11dBm/1MHz	Pass
5580	1.84	≤11dBm/1MHz	Pass
5700	3.04	≤11dBm/1MHz	Pass

802.11ac(HT20) mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5180	1.95	≤11dBm/1MHz	Pass
5220	2.20	≤11dBm/1MHz	Pass
5240	2.26	≤11dBm/1MHz	Pass

5260	2.38	≤11dBm/1MHz	Pass
5300	2.61	≤11dBm/1MHz	Pass
5320	2.40	≤11dBm/1MHz	Pass
5500	1.96	≤11dBm/1MHz	Pass
5580	1.74	≤11dBm/1MHz	Pass
5700	2.87	≤11dBm/1MHz	Pass

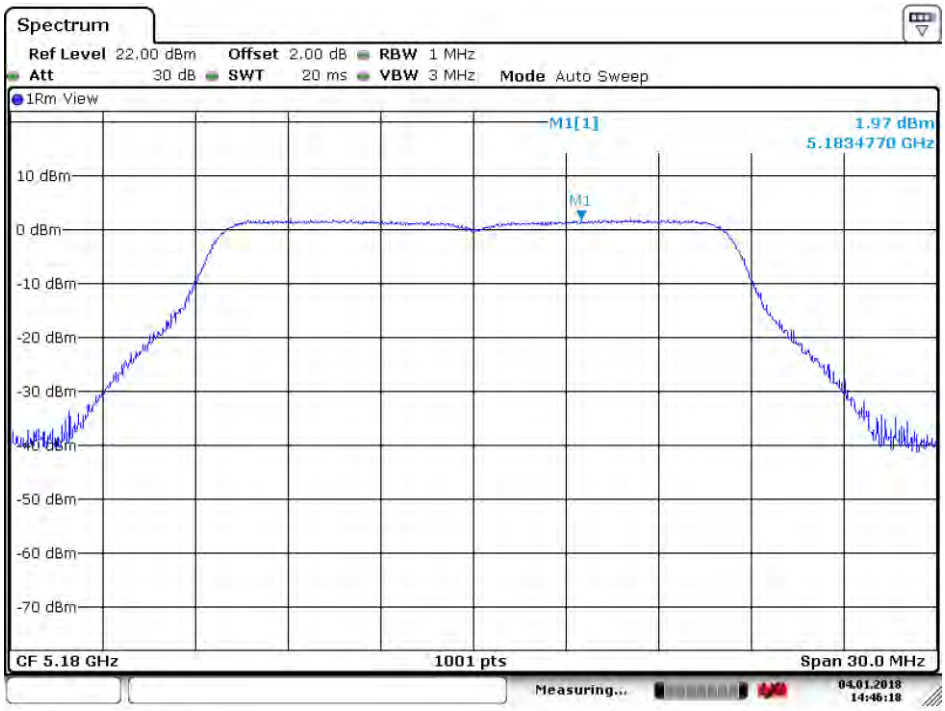
802.11n(HT40) mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5190	-1.98	≤11dBm/1MHz	Pass
5230	-1.52	≤11dBm/1MHz	Pass
5270	-1.22	≤11dBm/1MHz	Pass
5310	-.0.90	≤11dBm/1MHz	Pass
5510	-1.57	≤11dBm/1MHz	Pass
5550	-1.99	≤11dBm/1MHz	Pass
5670	-0.79	≤11dBm/1MHz	Pass

802.11ac(HT40) mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5190	-1.86	≤11dBm/1MHz	Pass
5230	-1.74	≤11dBm/1MHz	Pass
5270	-1.10	≤11dBm/1MHz	Pass
5310	-1.07	≤11dBm/1MHz	Pass
5510	-1.91	≤11dBm/1MHz	Pass
5550	-2.12	≤11dBm/1MHz	Pass
5670	-0.97	≤11dBm/1MHz	Pass

802.11ac(HT80) mode			
Frequency (MHz)	Power Spectral Density	Limit	Result
5210	-3.21	≤11dBm/1MHz	Pass
5290	-2.33	≤11dBm/1MHz	Pass
5530	-3.23	≤11dBm/1MHz	Pass
5610	-3.05	≤11dBm/1MHz	Pass

Test plot as follows:

Test mode:	802.11a	Frequency(MHz):	5180



Date: 4.JAN.2018 14:46:19

Test mode:	802.11a	Frequency(MHz):	5220

Date: 4.JAN.2018 14:49:06

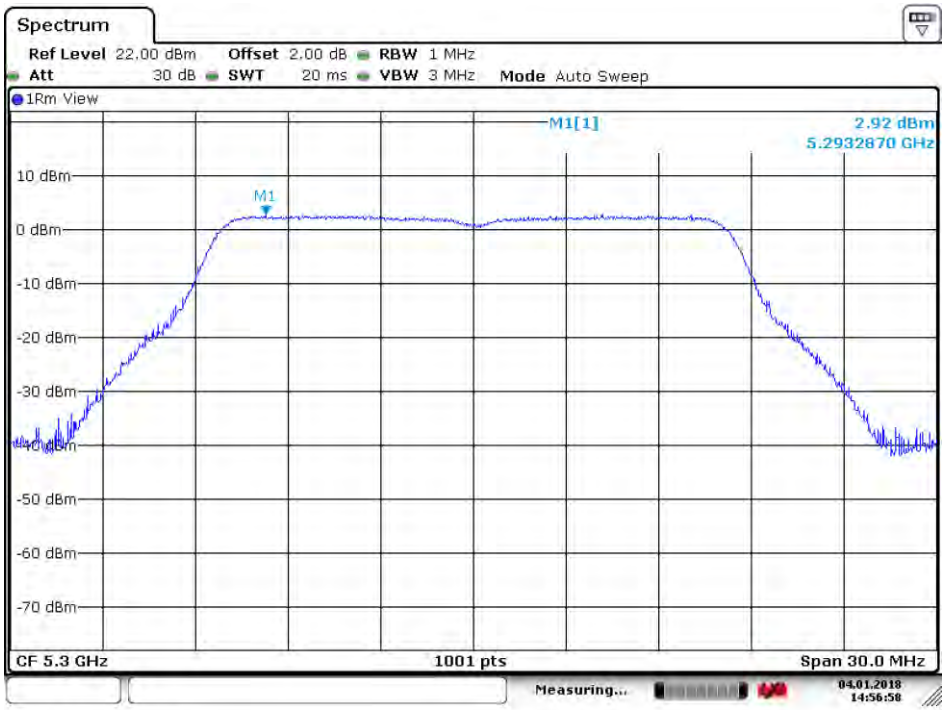
Test mode:	802.11a	Frequency(MHz):	5240

Date: 4.JAN.2018 14:51:16

Test mode:	802.11a	Frequency(MHz):	5260

Date: 4.JAN.2018 14:54:45

Test mode:	802.11a	Frequency(MHz):	5300



Date: 4.JAN.2018 14:56:58

Test mode:	802.11a	Frequency(MHz):	5320

Date: 4.JAN.2018 14:58:38

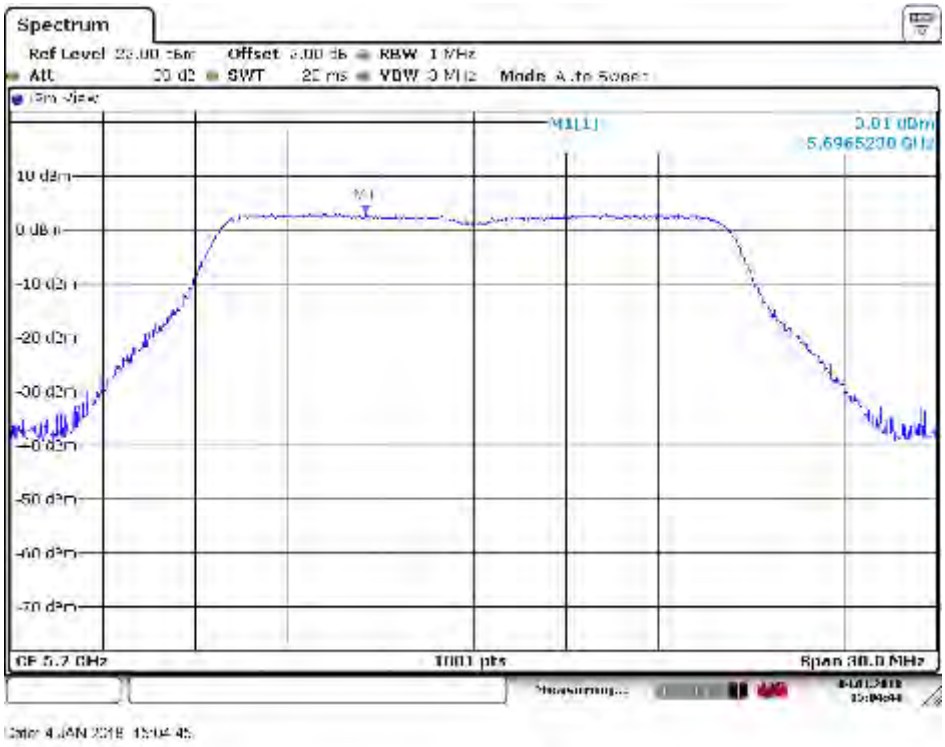
Test mode:	802.11a	Frequency(MHz):	5500

Date: 4.JAN.2018 15:00:49

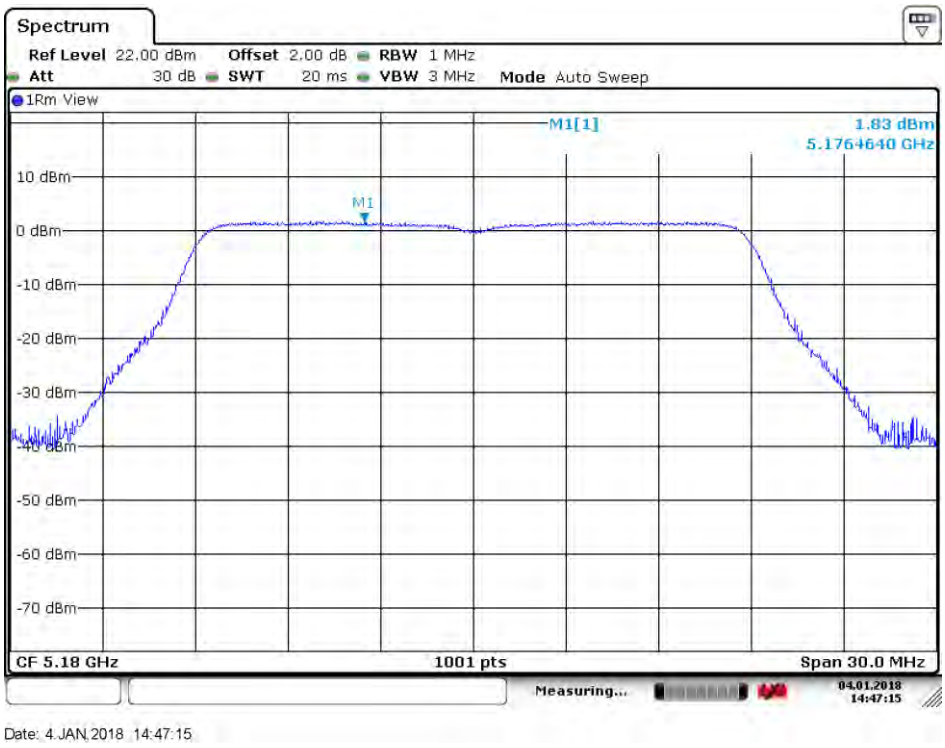
Test mode:	802.11a	Frequency(MHz):	5580

Date: 4.JAN.2018 15:02:32

Test mode:	802.11a	Frequency(MHz):	5700

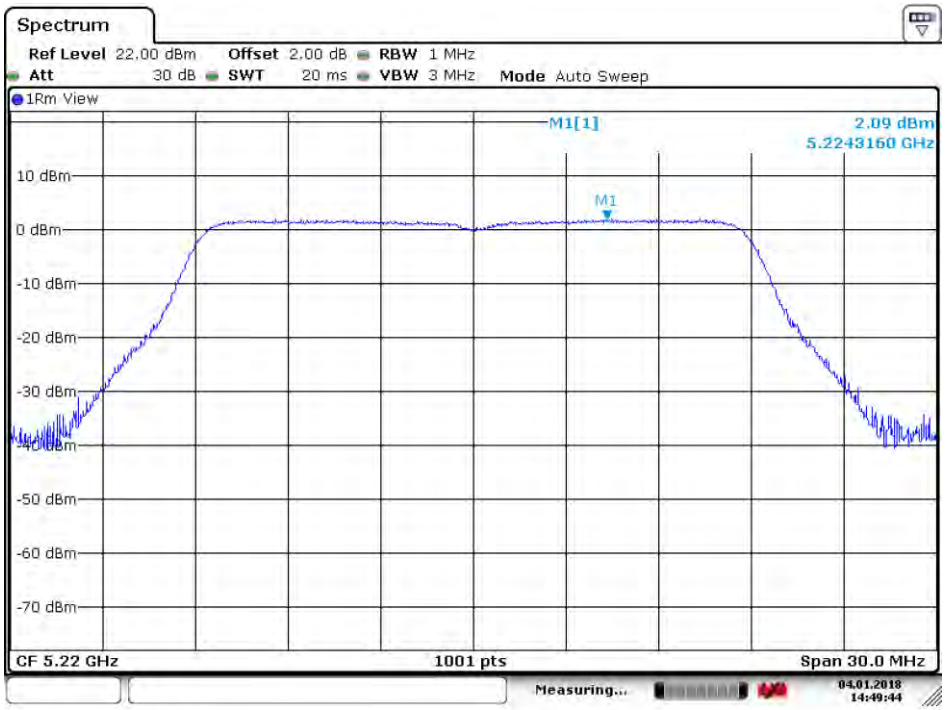


Test mode:	802.11n(HT20)	Frequency(MHz):	5180



Date: 4.JAN.2018 14:47:15

Test mode:	802.11n(HT20)	Frequency(MHz):	5220



Date: 4.JAN.2018 14:49:44

Test mode:	802.11n(HT20)	Frequency(MHz):	5240

Date: 4.JAN.2018 14:52:12

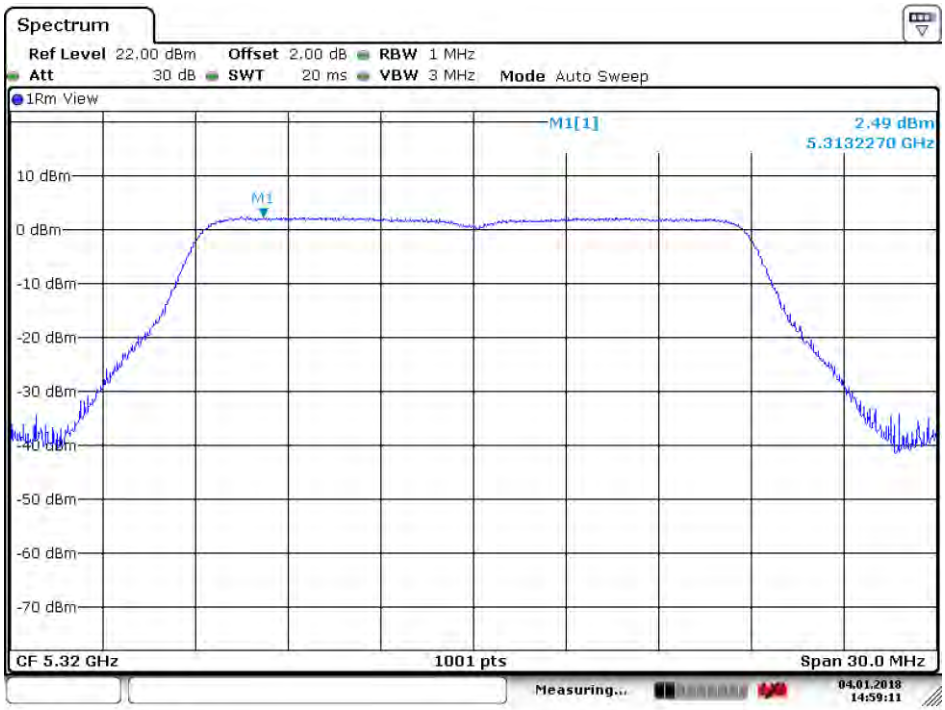
Test mode:	802.11n(HT20)	Frequency(MHz):	5260

Date: 4.JAN.2018 14:55:28

Test mode:	802.11n(HT20)	Frequency(MHz):	5300

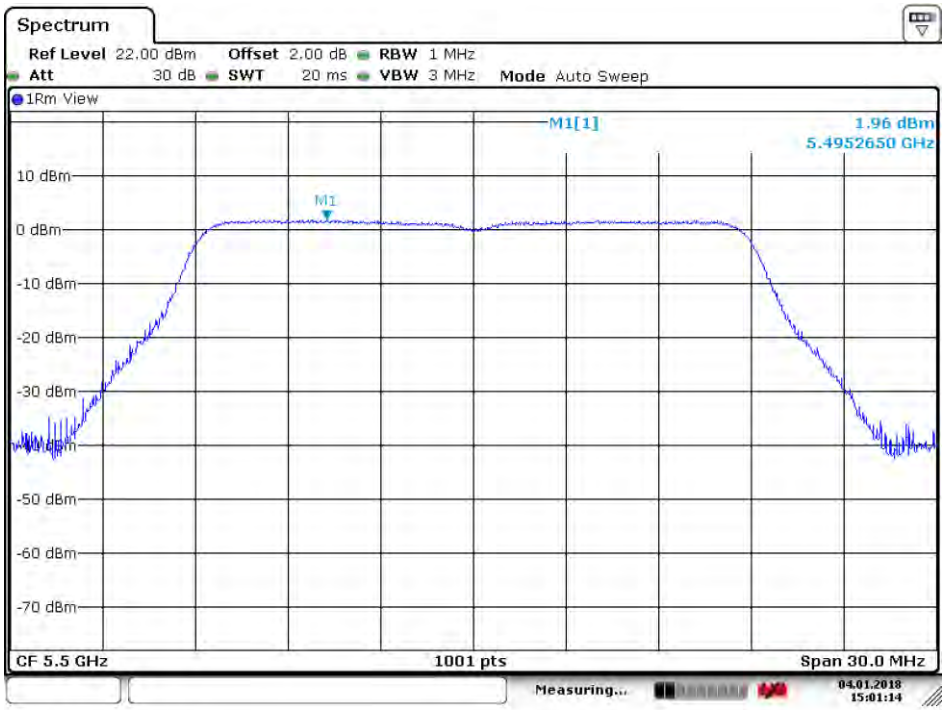
Date: 4.JAN.2018 14:57:27

Test mode:	802.11n(HT20)	Frequency(MHz):	5320



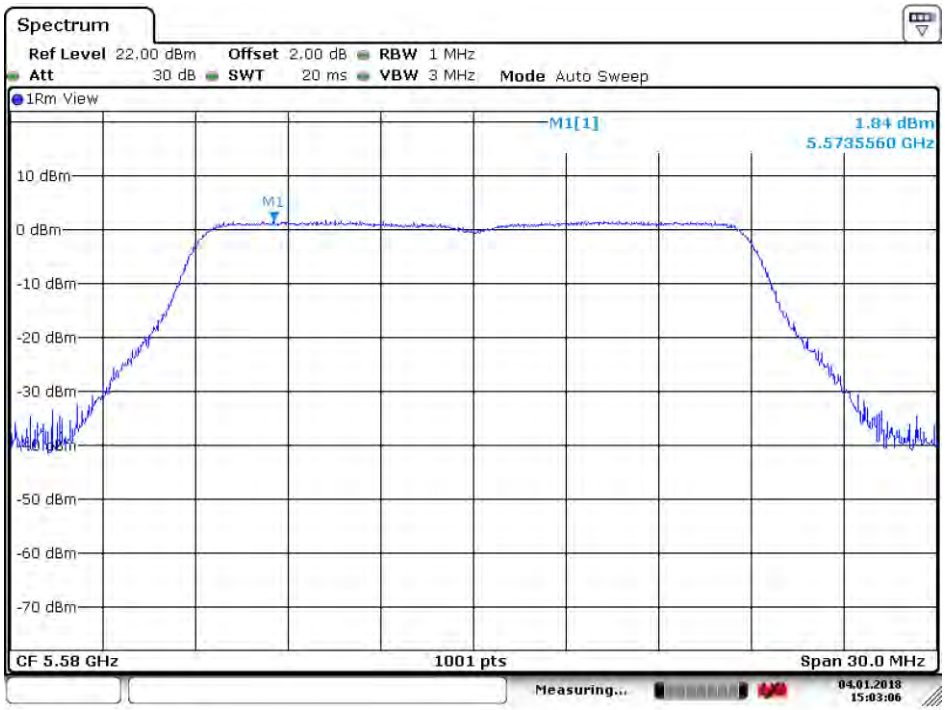
Date: 4.JAN.2018 14:59:11

Test mode:	802.11n(HT20)	Frequency(MHz):	5500



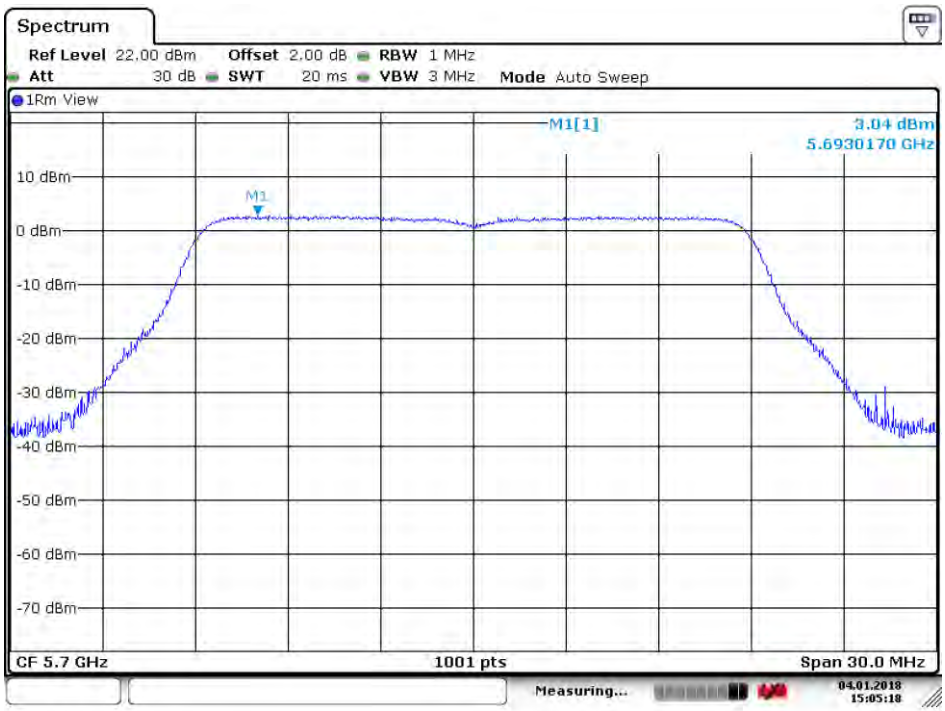
Date: 4.JAN.2018 15:01:15

Test mode:	802.11n(HT20)	Frequency(MHz):	5580



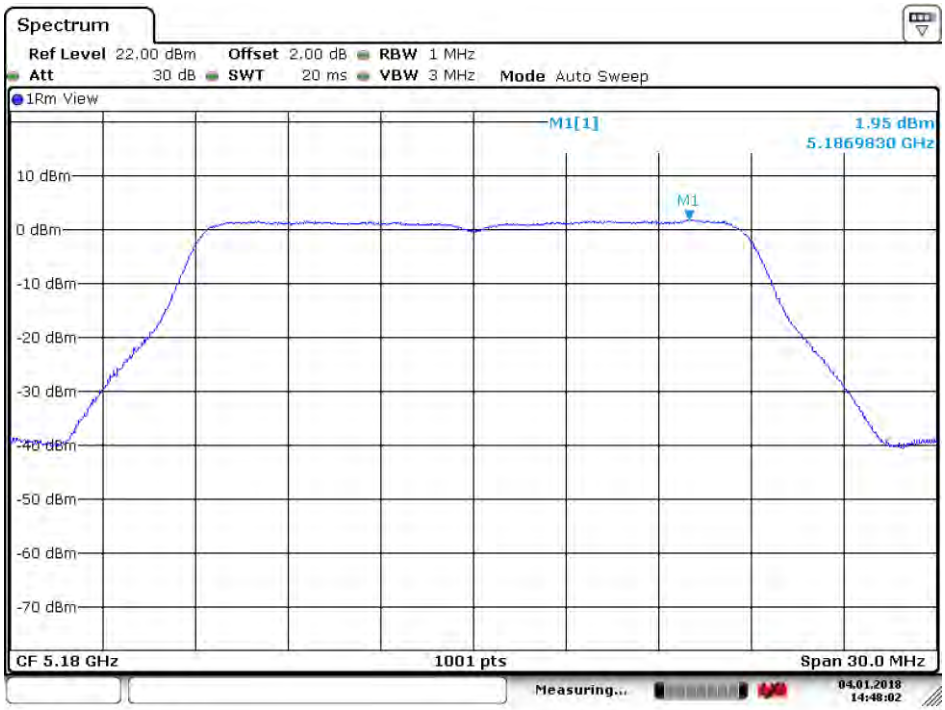
Date: 4.JAN.2018 15:03:07

Test mode:	802.11n(HT20)	Frequency(MHz):	5700



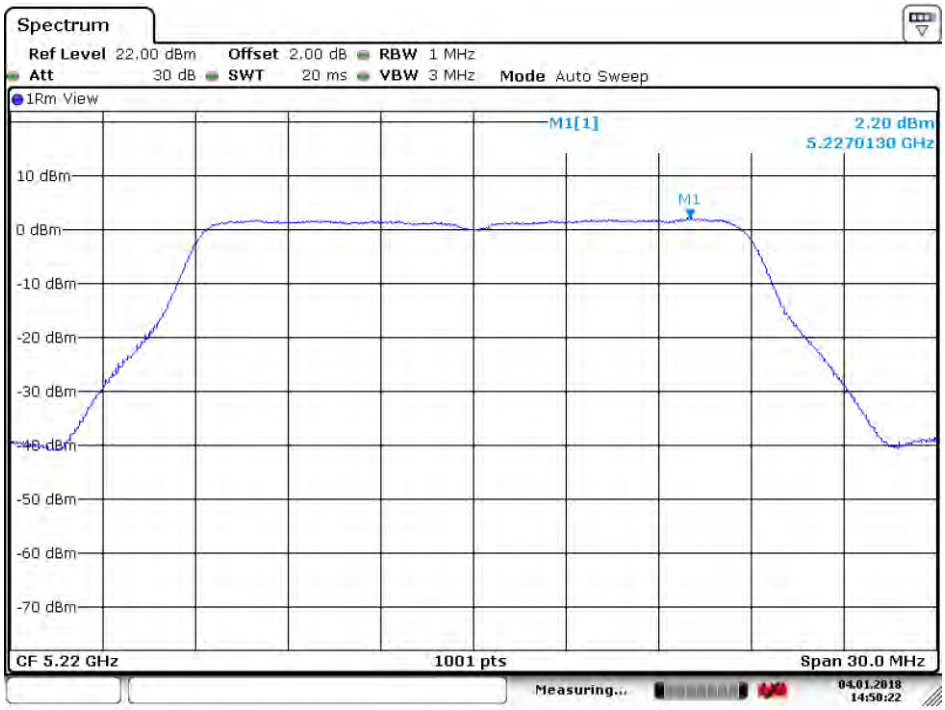
Date: 4.JAN.2018 15:05:19

Test mode:	802.11ac(HT20)	Frequency(MHz):	5180



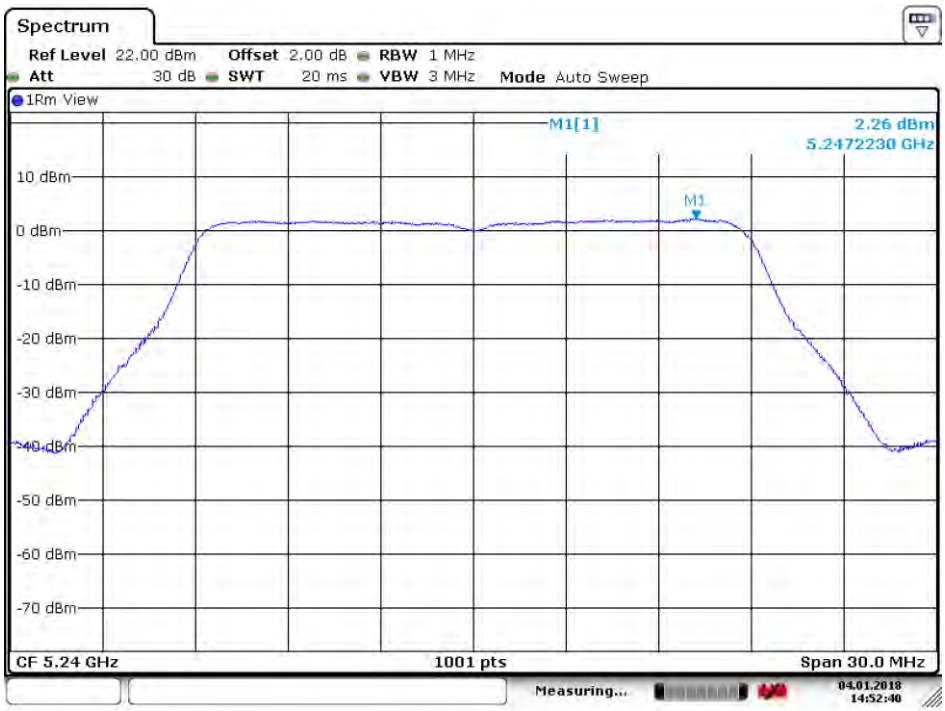
Date: 4.JAN.2018 14:48:03

Test mode:	802.11ac(HT20)	Frequency(MHz):	5220



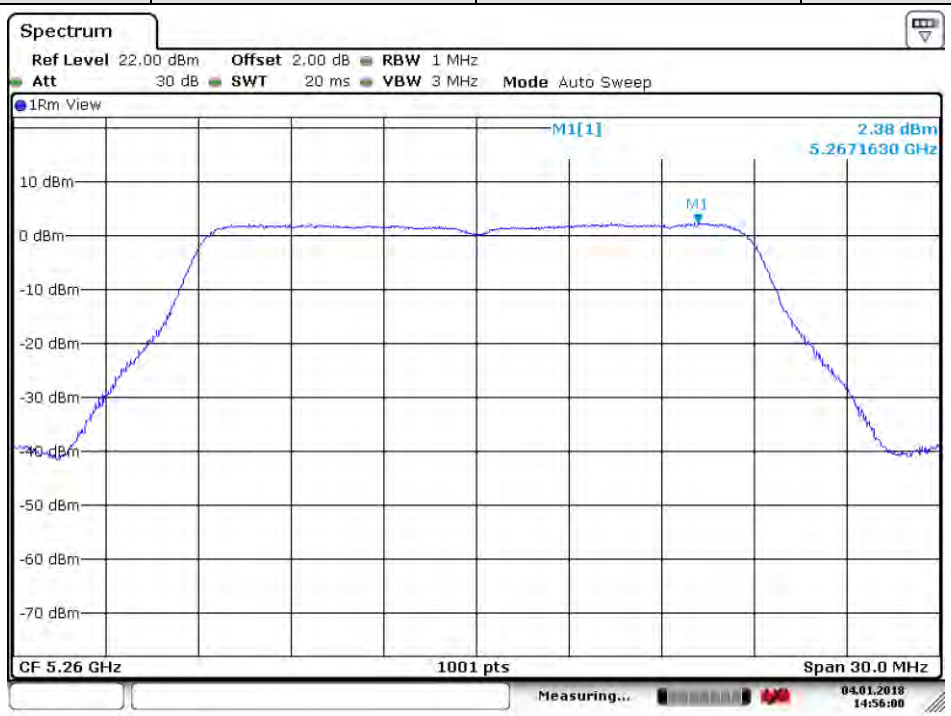
Date: 4.JAN.2018 14:50:23

Test mode:	802.11ac(HT20)	Frequency(MHz):	5240



Date: 4.JAN.2018 14:52:40

Test mode:	802.11ac(HT20)	Frequency(MHz):	5260

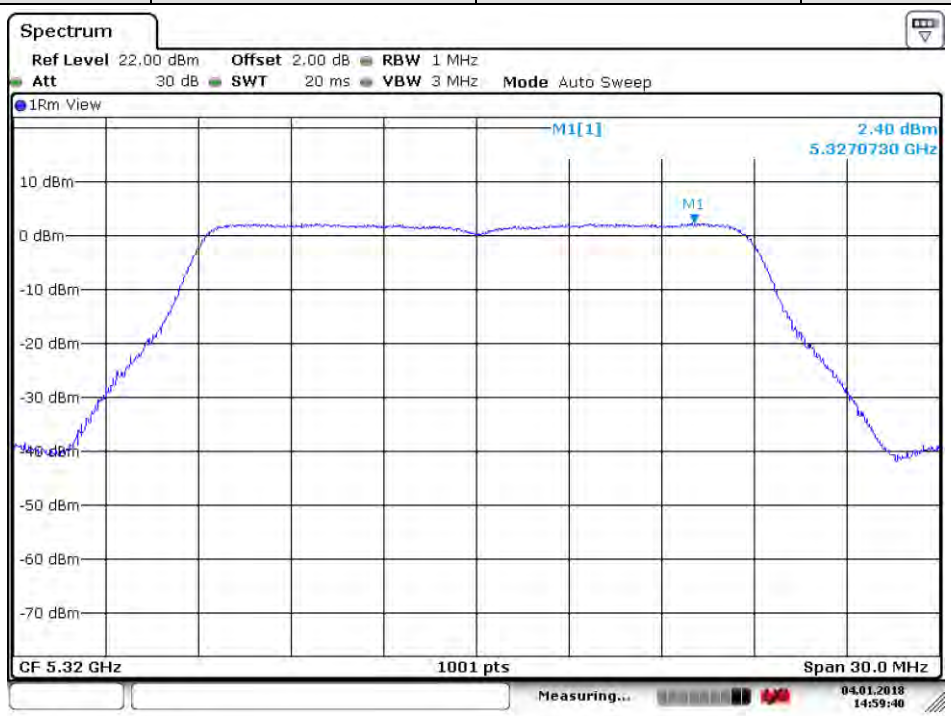


Date: 4.JAN.2018 14:56:01

Test mode:	802.11ac(HT20)	Frequency(MHz):	5300

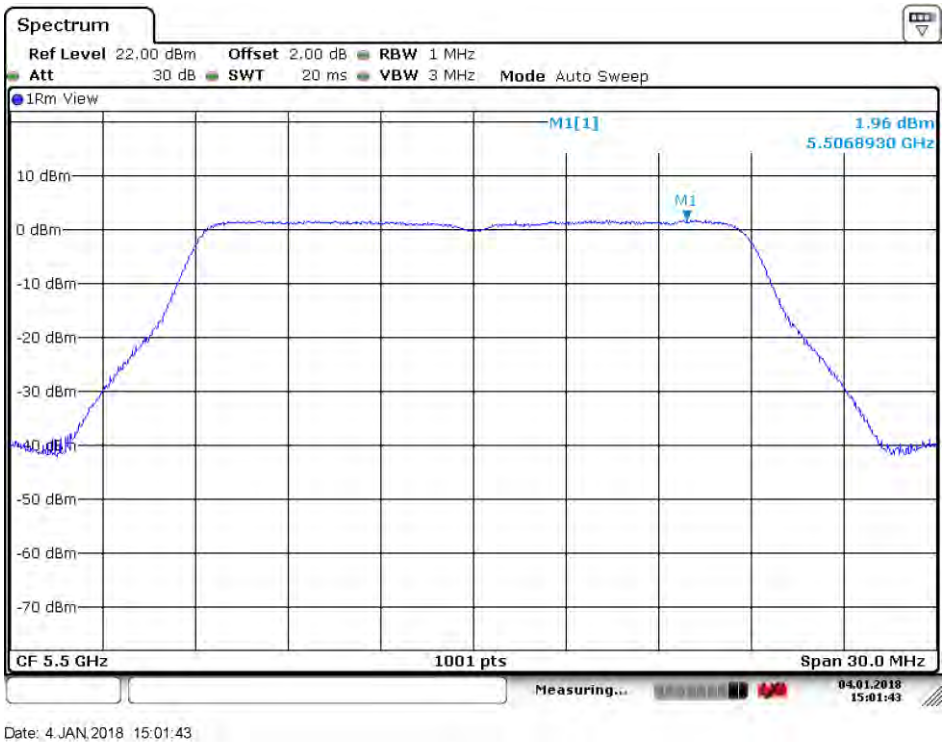
Date: 4.JAN.2018 14:57:52

Test mode:	802.11ac(HT20)	Frequency(MHz):	5320



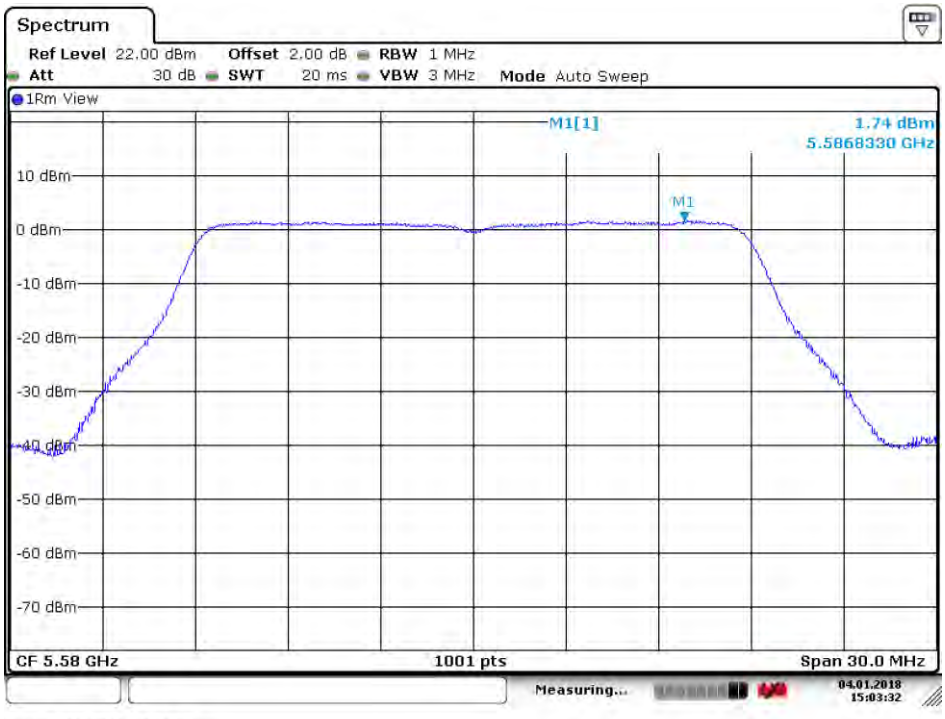
Date: 4.JAN.2018 14:59:40

Test mode:	802.11ac(HT20)	Frequency(MHz):	5500



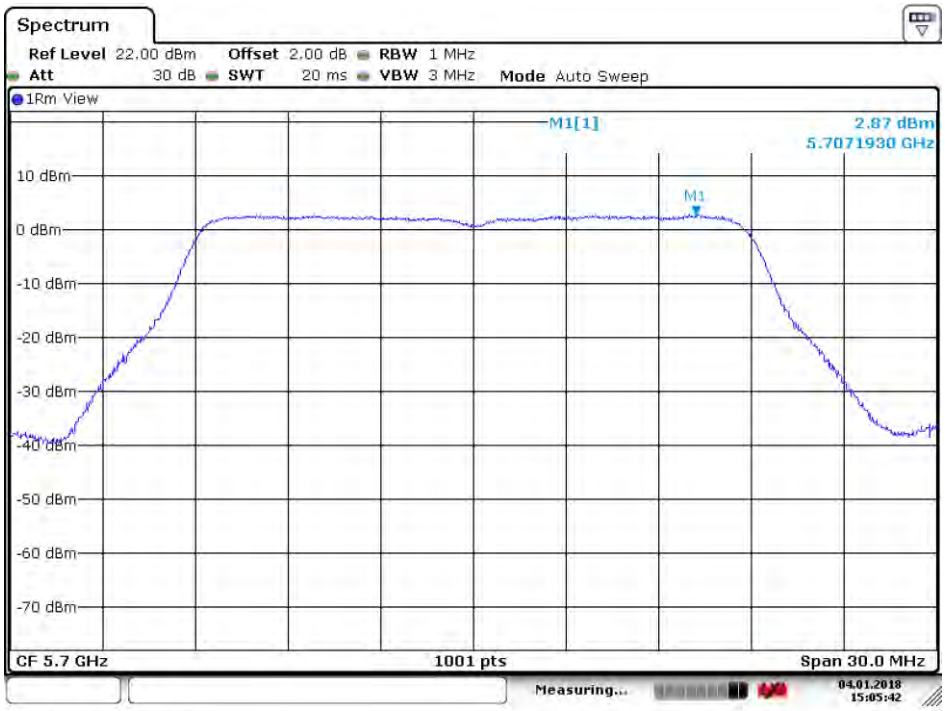
Date: 4.JAN.2018 15:01:43

Test mode:	802.11ac(HT20)	Frequency(MHz):	5580



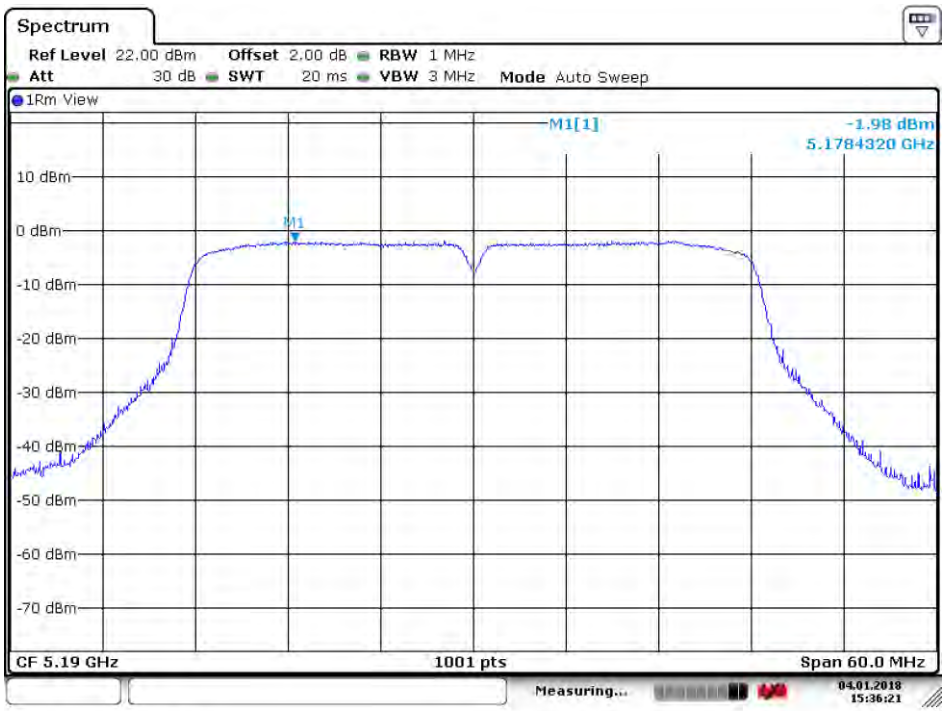
Date: 4.JAN.2018 15:03:32

Test mode:	802.11ac(HT20)	Frequency(MHz):	5700



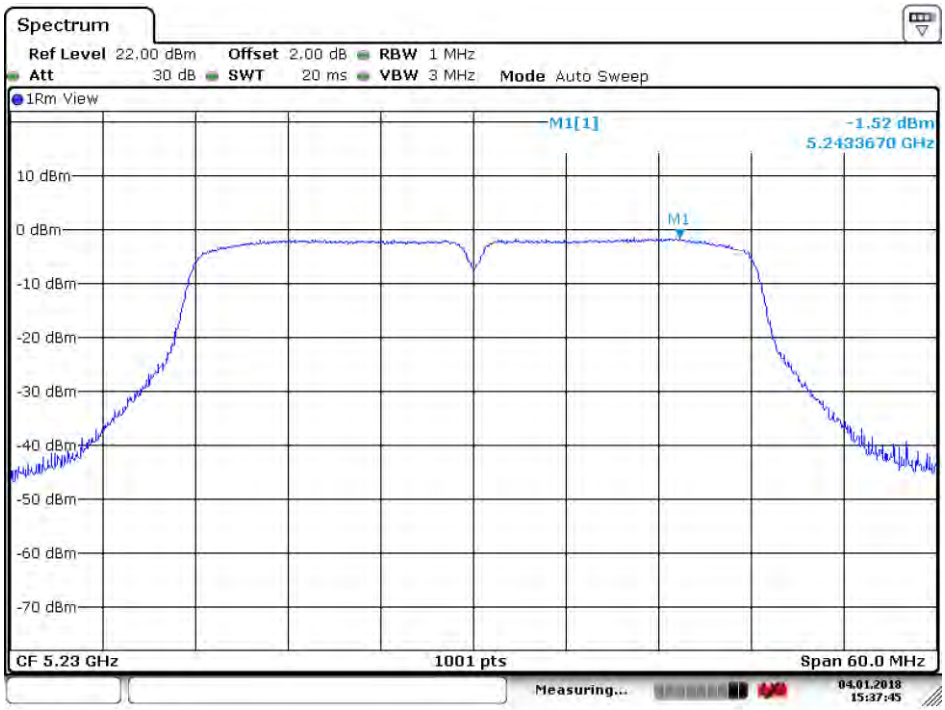
Date: 4.JAN.2018 15:05:42

Test mode:	802.11n(HT40)	Frequency(MHz):	5190



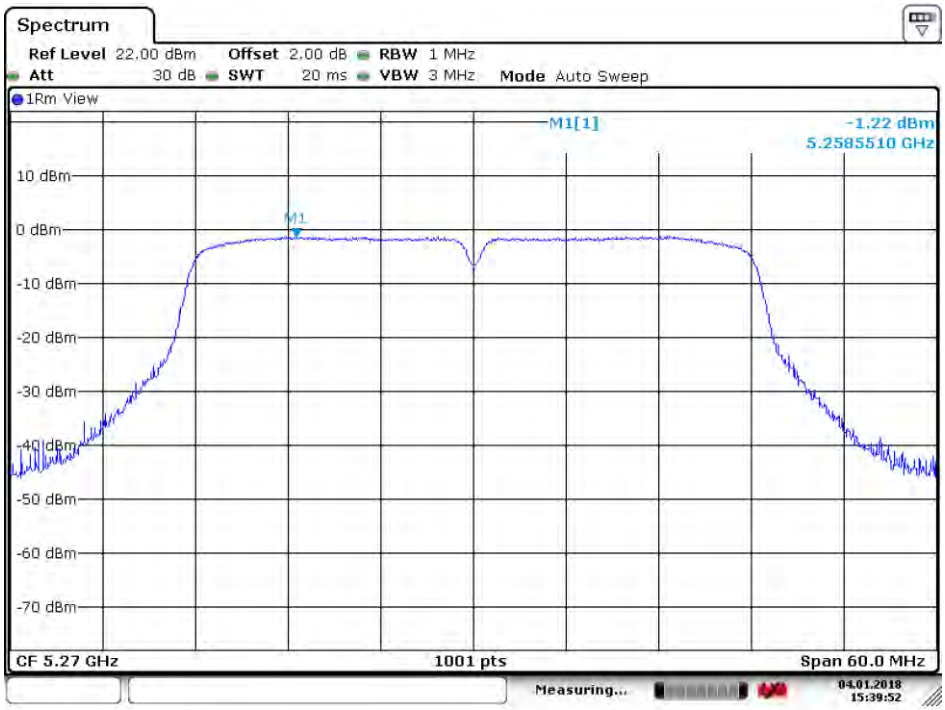
Date: 4.JAN.2018 15:36:22

Test mode:	802.11n(HT40)	Frequency(MHz):	5230



Date: 4.JAN.2018 15:37:45

Test mode:	802.11n(HT40)	Frequency(MHz):	5270



Date: 4.JAN.2018 15:39:53