

Prüfbericht-Nr.: <i>Test report no.:</i>	50349169 001	Auftrags-Nr.: <i>Order no.:</i>	238106182	Seite 1 von 158 <i>Page 1 of 158</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	10-Jun-2019	
Auftraggeber: <i>Client:</i>	AMPAK Technology Inc. 3F, No. 1, Jen AI Road, Hsinchu Industrial Park, Hsinchu 30352			
Prüfgegenstand: <i>Test item:</i>	Wi-Fi and Bluetooth module			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	AP6398XU			
Auftrags-Inhalt: <i>Order content:</i>	FCC Part 15E Test report (Wi-Fi 5GHz)			
Prüfgrundlage: <i>Test specification:</i>	FCC 47CFR Part 15: Subpart E Section 15.407(U-NII)			
Wareneingangsdatum: <i>Date of sample receipt:</i>	17-Oct-2019			
Prüfmuster-Nr.: <i>Test sample no.:</i>	A001008650-001			
Prüfzeitraum: <i>Testing period:</i>	18-Jan-2020~11-Jun-2020			
Ort der Prüfung: <i>Place of testing:</i>	EMC/RF Laboratory Taipei			
Prüflaboratorium: <i>Testing laboratory:</i>	Taipei Testing laboratories			
Prüfergebnis*: <i>Test result*:</i>	Pass			
überprüft von: <i>reviewed by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: 24-Jun-2020 <i>Date:</i>	Datum: 24-Jun-2020 <i>Date:</i>			
Stellung / Position: Mars Y.J. Lin Project Engineer	Stellung / Position: Ryan W.T. Chen Project Manager			
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT*RESULT: Passed***5.1.2 DUTY CYCLE***RESULT: Passed***5.1.3 MAXIMUM CONDUCTED AVERAGE OUTPUT POWER***RESULT: Passed***5.1.4 26dB & 99% BANDWIDTH***RESULT: Passed***5.1.5 6dB BANDWIDTH***RESULT: Passed***5.1.6 POWER DENSITY***RESULT: Passed***5.1.7 FREQUENCY STABILITY MEASUREMENT***RESULT: Passed***5.1.8 SPURIOUS EMISSION***RESULT: Passed***5.1.9 DYNAMIC FREQUENCY SELECTION***RESULT: Passed***5.2.1 MAINS CONDUCTED EMISSIONS***RESULT: Passed***6.1.1 ELECTROMAGNETIC FIELDS***RESULT: Passed*

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1. General Remarks

1.1 Complementary Materials

These attachments are integral parts of this test report:

Appendix P: Photo Documentation internal view
(File Name: 50349168 001, 50349169 001, 50349170 001, 50349171 001
Appendix P)

Appendix D: Test Result of Radiated Emissions
(File Name: 50349169 001 Appendix D)

Test Specifications

Table 1: Applied Standard and Test Levels

Radio
FCC CFR47 Part 15: Subpart E Section 15.407 FCC 47CFR Part 2: Subpart J Section 2.1091 ANSI C63.10:2013 KDB789033 D02 General UNII Test Procedures New Rules v02r01 KDB662911 D01 Multiple Transmitter Output v02r01 KDB662911 D02 MIMO with Cross Polarized Antenna v01 KDB447498 D01 General RF Exposure Guidance v06 KDB905462 D02 UNII DFS Compliance Procedures New Rules v02 KDB905462 D03 UNII Clients Without Radar Detection New Rules v01r02

1.2 Decision rule of conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing laboratories

No. 458-18, Sec 2, Fenliao., Linkou Dist.
New Taipei City 244
Taiwan (R.O.C.)
FCC Registration No.: 226631
IC Canada Registration No.: 25563

TAF Accredited NCC Test Lab. No.:3567

TAF ISO17025 Certification effective period: 6th-May-2019 to 05th-May-2022



Testing Laboratory
3567

2.3 List of Test and Measurement Instruments

Table 2: List of Test and Measurement Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESR7	102109	2020/3/30	2021/3/29
Spectrum Analyzer	R&S	FSV40	101508	2020/3/16	2021/3/15
Pre-Amplifier	Agilent	8447D	2727A05146	2020/2/17	2021/2/16
Pre-Amplifier	EMCI	EMC051845SE	980635	2020/2/11	2021/2/10
Pre-Amplifier	EMCI	EMC184045SE	980656	2020/2/11	2021/2/10
Bilog Antenna	SCHWARZBECK	VULB-9168	00950	2020/1/20	2021/1/19
Horn Antenna	ETS-Lindgren	3117	00218929	2019/11/27	2020/11/26
Horn Antenna	SCHWARZBECK	BBHA 9170	00896	2020/1/17	2021/1/16
Loop Antenna	EMCI	LPA600	287	2019/12/20	2020/12/19
Test Software	Audix	e3	Ver. 9	N/A	N/A
Test Cable	HUBER+SUHNER	SUCOFLEX 104EA	800057/4EA	2020/3/25	2021/3/24
Test Cable	HUBER+SUHNER	SUCOFLEX104	802244/4	2020/3/25	2021/3/24
Test Cable	HUBER+SUHNER	SUCOFLEX104	MY37203/4	2020/3/25	2021/3/24
Test Cable	HUBER+SUHNER	SUCOFLEX 102EA	800897/2EA	2020/3/25	2021/3/24
Test Cable	HUBER+SUHNER	SUCOFLEX 102EA	800902/2EA	2020/3/25	2021/3/24
Test Cable	HUBER+SUHNER	SUCOFLEX 102EA	801026/2EA	2020/3/25	2021/3/24
EMI Test Receiver	Rohde & Schwarz	ESCI7	100797	2020/03/13	2021/03/13
Two-Line V-Network	Rohde & Schwarz	ENV216	101262	2019/07/16	2020/07/16
Telecom ISN 4 Line	Fischer Custom Communications	FFCC-TLISN-T4-02-09	101168	2020/02/03	2021/02/03
Impedance Stabilization Network	TESEQ	ISN T800	51949	2020/02/25	2021/02/25
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	0357.8810.54-102102-HN	2019/07/25	2020/07/25
Spectrum Analyzer	Agilent	N9010A	MY53470241	2020/6/2	2021/6/1
MXG Vector Signal Generator	Agilent	N5182B	MY53050524	2020/4/7	2021/4/6

2.4 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.5 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular schedule using in house standards or comparisons.

2.6 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements .

Table 3: Emission Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 0.1 ppm
RF power, conducted	± 1.5 dB
RF power density, conducted	± 3 dB
spurious emissions, conducted	± 3 dB
all emissions, radiated	± 6 dB
Temperature	± 1 °C
Humidity	± 5 %
DC and low frequency voltages	±3 %

3. General Product Information

3.1 Product Function and Intended Use

The EUT is a Wi-Fi and Bluetooth module. It contains a WiFi 5G compatible module enabling the user to communicate data through a Wireless interface.
 For details refer to the User Guide, Data Sheet and Block Diagram.

3.2 System Details and Ratings

Table 4: Basic Information of EUT

Item	EUT information
Kind of Equipment	Wi-Fi and Bluetooth module
Type Designation	AP6398XU
FCC ID	ZQ6-AP6398XU

Table 5: Technical Specification of EUT

Technical Specification	Value
Operating Frequencies	Band 1: 5180~5240MHz Band 2: 5260~5320MHz Band 3: 5500~5700MHz Band 4: 5745~5825MHz
Channel Spacing	10 MHz
Channel number	24 for 20MHz bandwidth ; 11 for 40MHz bandwidth ; 5 for 80MHz bandwidth ;
Operation Voltage	3.3Vdc
Modulation	802.11a/n: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM) 802.11ac: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM / 256QAM,
Antenna gain	Ant 1: 3.62dBi Ant 2: 3.85dBi
Product Type	802.11a: WLAN (2TX, 2RX) 802.11n: WLAN (2TX, 2RX) 802.11ac: WLAN (2TX, 2RX)
Use Mode	Indoor/Outdoor
Operation Mode	Client device without DFS detection
Beamforming Mode	No support

Table 6: Channel Frequency Table

Band	Channel	Frequency (MHz)	802.11a 802.11n HT20	802.11n HT40	802.11ac VHT80
U-NII-1 (Band 1)	36	5180	V		
	38	5190		V	
	40	5200	V		
	42	5210			V
	44	5220	V		
	46	5230		V	
	48	5240	V		
U-NII-2A (Band 2)	52	5260	V		
	54	5270		V	
	56	5280	V		
	58	5290			V
	60	5300	V		
	62	5310		V	
	64	5320	V		
U-NII-2C (Band 3)	100	5500	V		
	102	5510		V	
	104	5520	V		
	106	5530			V
	108	5540	V		
	110	5550		V	
	112	5560	V		
	116	5580	V		
	118	5590		V	
	120	5600	V		
	122	5610			V
	124	5620	V		
	126	5630		V	
	128	5640	V		
	132	5660	V		
134	5670		V		
136	5680	V			
140	5700	V			
U-NII-3 (Band 4)	149	5745	V		
	151	5755		V	
	153	5765	V		
	155	5775			V
	157	5785	V		
	159	5795		V	
	161	5805	V		
165	5825	V			

3.3 Independent Operation Modes

Basic operation modes are:

- A. Transmitting
- B. Receiving
- C. Normal Link

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Block Diagram.

3.5 Submitted Documents

- Block Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The test modes were adapted accordingly in reference to the instructions for use.

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Table 7: Table for Parameters of Test Software Setting

UNII Band	NCB: 20MHz			NCB: 40MHz		NCB: 80MHz	
	Channel	Mode		Chan nel	Mode	Chan nel	Mode
		802.11a	802.11an		802.11an		802.11ac
		Setting	Setting		Setting		Setting
Band 1	36	64	64	38	56	42	46
	40	67	68	46	63	-	
	48	69	69			-	
Band 2	52	65	65	54	62	58	52
	60	64	64	62	58	-	
	64	65	65			-	
Band 3	100	57	57	102	53	106	50
	116	64	64	110	61	112	49
	140	55	58	134	62	-	
Band 4	149	70	70	151	70	155	55
	157	70	70	159	70	-	
	165	70	70	-	-	-	

Based on evaluation, 802.11an is in worst mode, 802.11ac20 and 802.11ac40 are cover by 802.11an20 and 802.11an40.

4.2 Test Operation and Test Software

Setup for testing: Test samples are provided with USB interface which makes it possible to control them through a test software installed on a notebook computer.

This software Putty.exe was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed in section 3.3 as appropriate.

The samples were used as follows:
A001008650-001

The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for 20MHz/40MHz, therefore investigated worst case to representative mode in test report.

Full test was applied on all test modes, but only worst case was shown.

IEEE 802.11a mode:

Band 1 Channel Low (5180MHz), Channel Mid (5200MHz) and Channel High (5240MHz) with 6Mbps data rate were chosen for full testing.

Band 2 Channel Low (5260MHz), Channel Mid (5300MHz) and Channel High (5320MHz) with 6Mbps data rate were chosen for full testing.

Band 3 Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

Band 4 Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11an HT20 mode:

Band 1 Channel Low (5180MHz), Channel Mid (5200MHz) and Channel High (5240MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 2 Channel Low (5260MHz), Channel Mid (5300MHz) and Channel High (5320MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 3 Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 4 Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with MCS0/NSS1 data rate were chosen for full testing.

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IEEE 802.11an HT40 mode:

Band 1 Channel Low (5190MHz) and Channel High (5230MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 2 Channel Low (5270MHz) and Channel High (5310MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 3 Channel Low (5510MHz), Channel Mid (5550MHz) and Channel High (5670MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 4 Channel Low (5755MHz) and Channel High (5795MHz) with MCS0/NSS1 data rate were chosen for full testing.

IEEE 802.11ac VHT80 mode:

Band 1 Channel Low (5210MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 2 Channel Low (5290MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 3 Channel Low (5530MHz) and Channel High (5610MHz) with MCS0/NSS1 data rate were chosen for full testing.

Band 4 Channel Low (5775MHz) with MCS0/NSS1 data rate were chosen for full testing.

4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Accessories of EUT:
 N/A

Support Unit:

Item No.	Kind of Equipment	Model Name	Serial Number	Brand Name
1	PC	N/A	N/A	DELL
2	Monitor	P2214Hb	CN-020C1Y-74261-5BL-0RL	Lenovo
3	USB Keyboard	KU-0225	762697	Lenovo
4	USB Mouse	SM-8823	8SS050L24506MT0047T3 812	N/A
-	AP	X4S R7800	4H75745800509	Netgeer

Item No.	Kind of Equipment	Spec
A	Signal Cable	0.45m
B	Mini USB Cable	1.8m
C	USB Mouse Cable	1.8m
D	USB Keyboard Cable	1.8m
E	D-Sub Cable	1.8m

4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

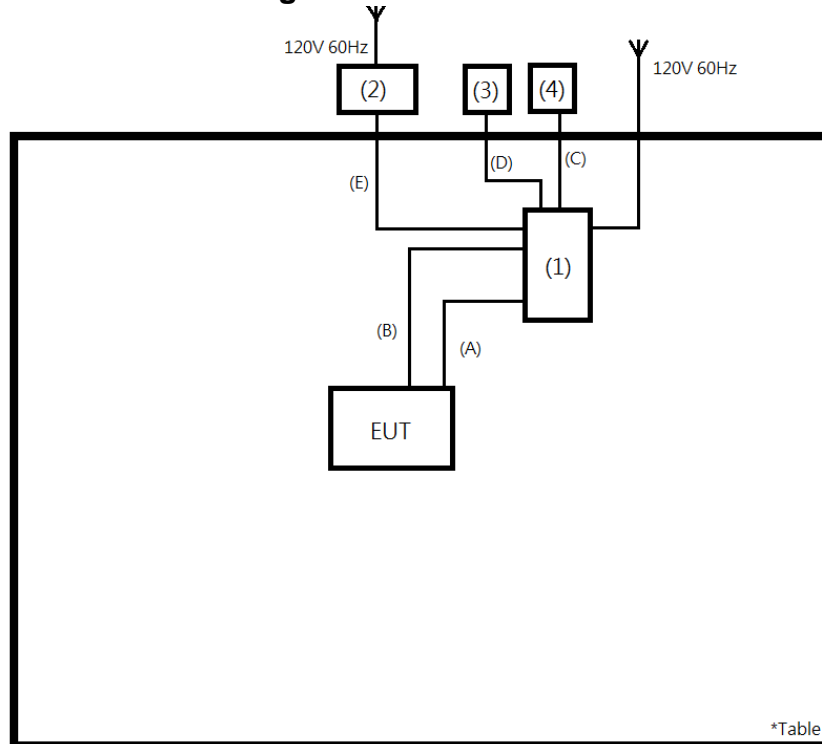


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)

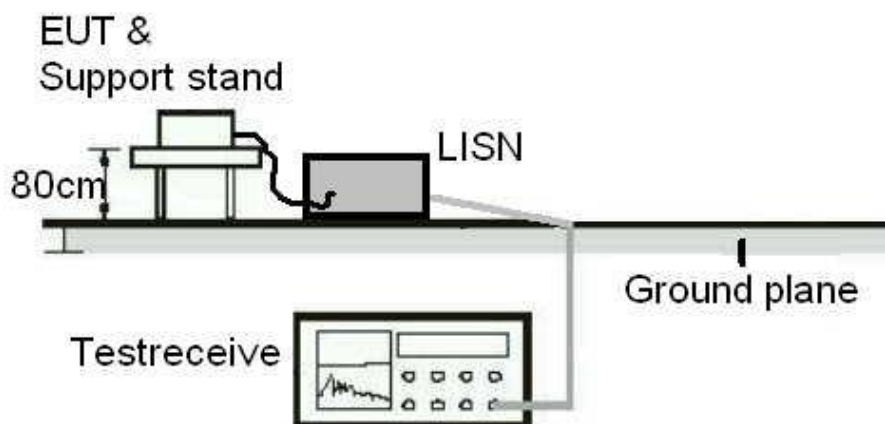


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement

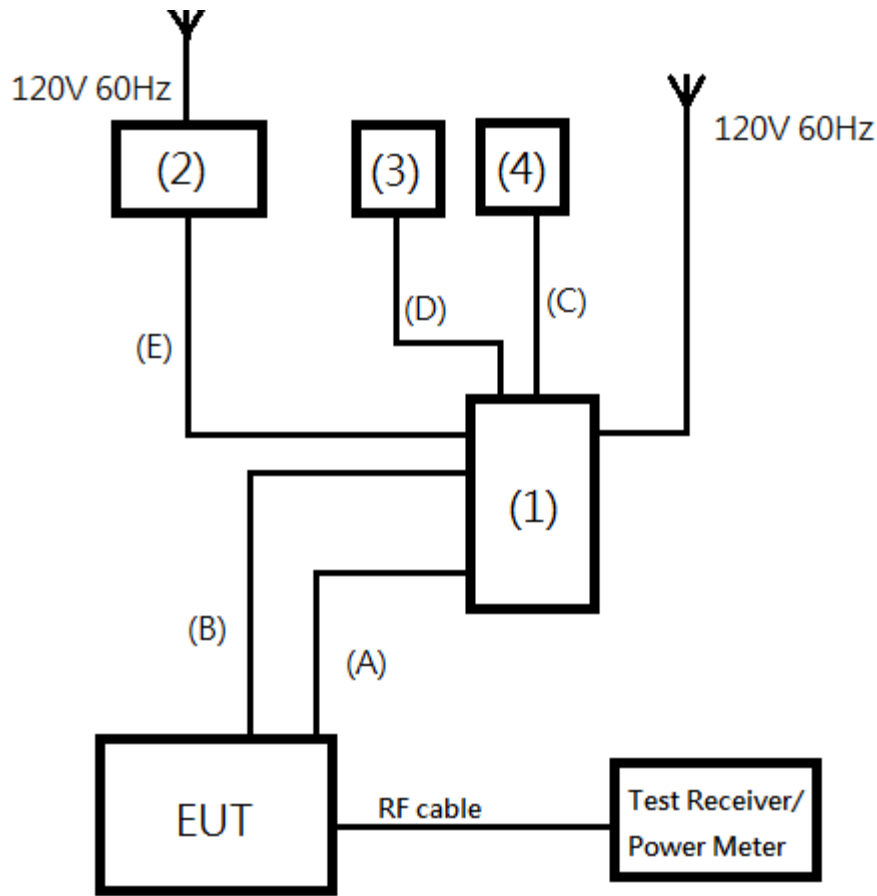
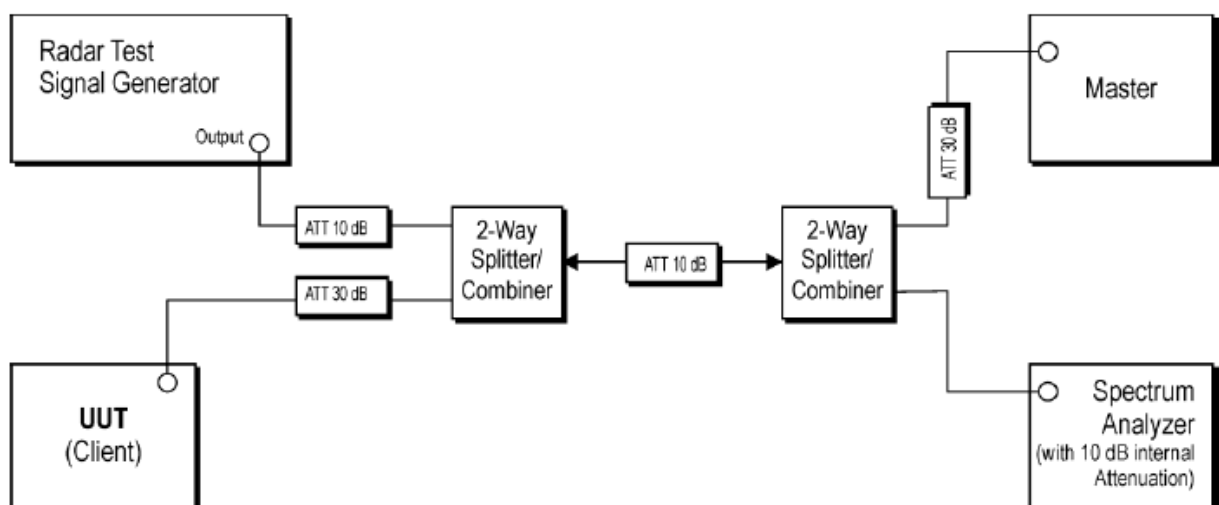


Diagram of Measurement Configuration for DFS Test



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Passed**

Test standard : FCC Part 15.407(a), Part 15.203

According to the manufacturer declaration, the EUT has an antenna with both directional gain of 3.85dBi for conducted power, gain of 6.75dBi for power density. The antenna is PCB with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

Refer to EUT photo for details.

5.1.2 Duty Cycle

RESULT:
Passed

Test standard : KDB 789033 Zero-Span Spectrum Analyzer Method,
 ISED RSS-Gen Zero-Span Spectrum Analyzer
 Method
 Limit : None; for reporting purposes only
 Kind of test site : Shielded room / Conducted room

Test setup

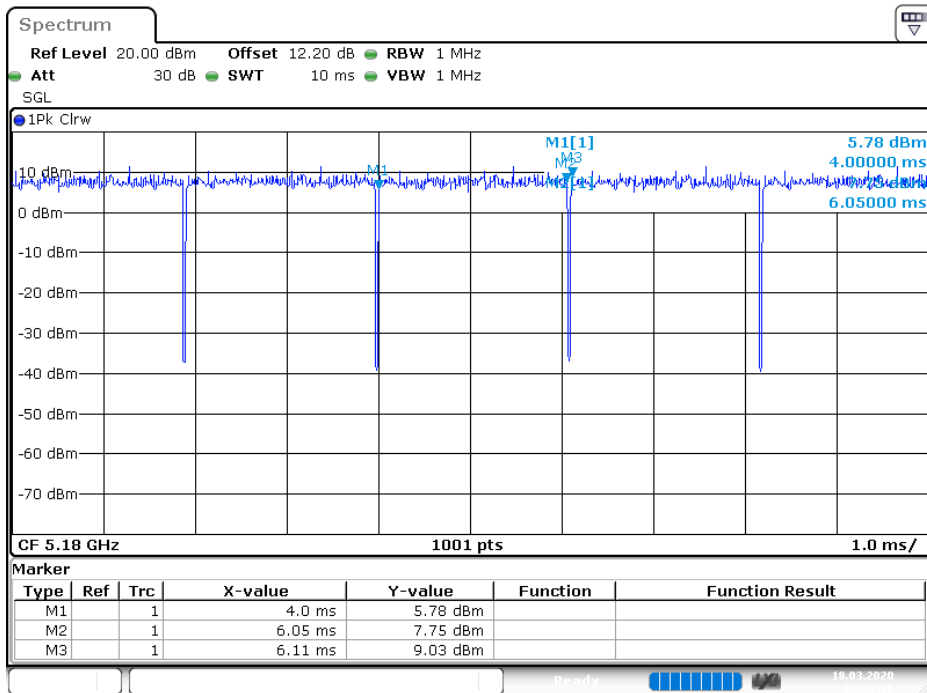
Operation Mode : A
 Test Channel : Each operation mode of band 1 of low channel

Table 8: Test result of Duty Cycle

Mode	On Time(ms)	On+Off Time(ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	6.05	6.11	99.02	0.04	0.01
802.11an HT20	6.62	6.67	99.25	0.03	0.01
802.11an HT40	5.21	5.30	98.30	0.07	0.01
802.11ac VHT80	5.23	5.28	99.05	0.04	0.01

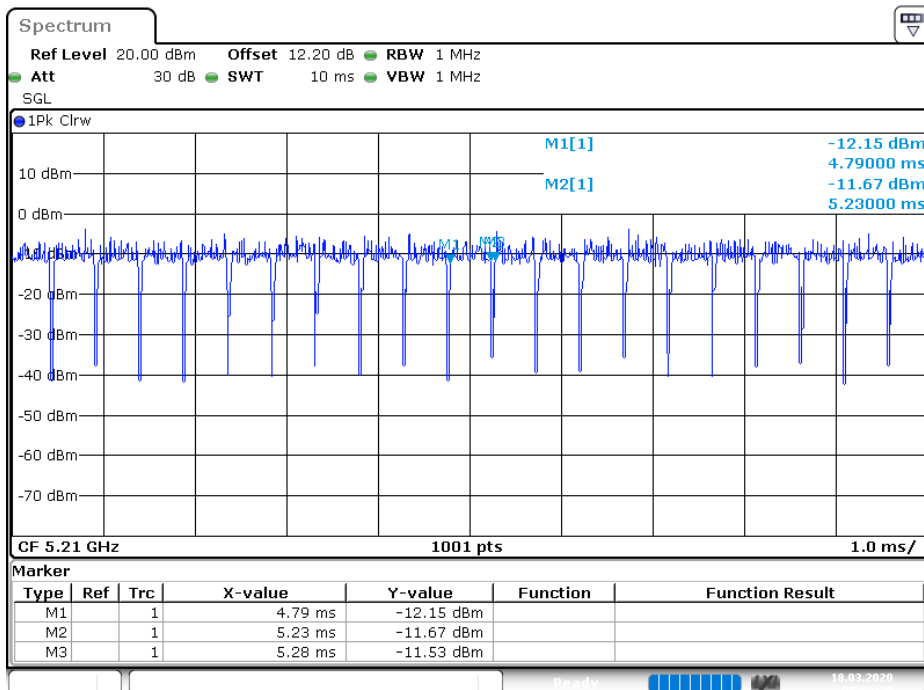
The duty factor is $10\log(1/(\text{Duty Cycle}(\%) / 100))$.
 Duty factor and 1/T minimum VBW used in radiated test items.
 Test results listed in section 5.1.3 (Output Power) and 5.1.6 (PSD) have been corrected by duty cycle.

Test Plot of Duty Cycle

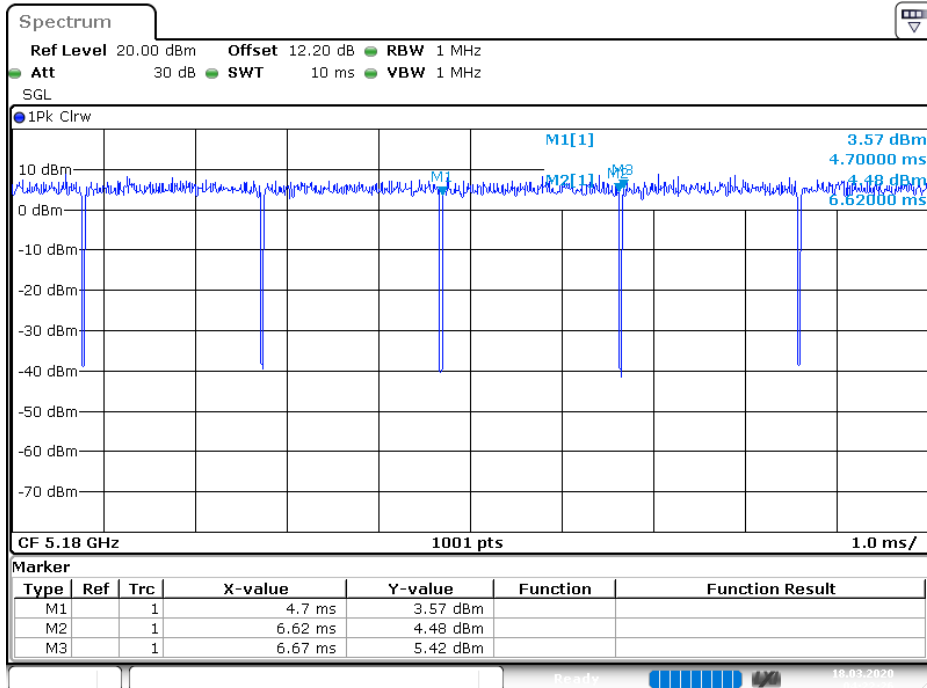
5180MHz, 802.11a


Date: 18.MAR.2020 02:58:36

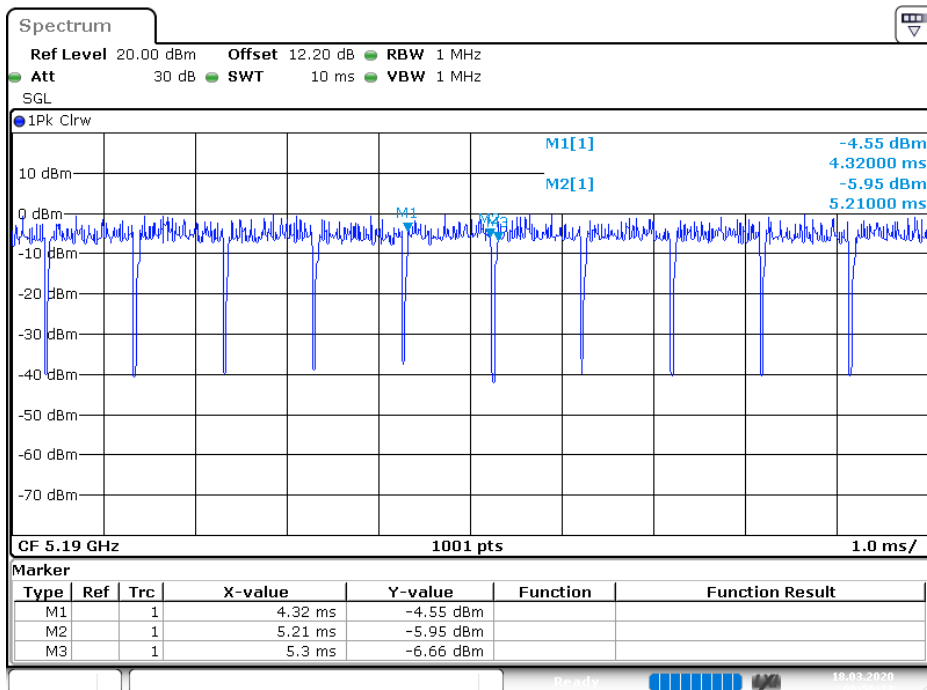
5210MHz, 802.11ac VHT80



Date: 18.MAR.2020 08:05:38

5180MHz, 802.11an HT20


Date: 18.MAR.2020 04:22:26

5190MHz, 802.11an HT40


Date: 18.MAR.2020 06:56:14

5.1.3 Maximum Conducted Average Output Power

RESULT:**Passed**

Test standard : FCC Part 15.407(a), ISED RSS-247 6.2
Basic standard : ANSI C63.10:2013
Kind of test site : Shielded room

Test setup

Test Channel : FCC refer to the Table 7
ISED refer to the Table 8
Operation Mode : A
Ambient temperature : 20-24 °C
Relative humidity : 50-65 %
Atmospheric pressure : 100-103 kPa

FCC Limit

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

Table 9: Test result of Average Output Power

Mode	Channel Frequency (MHz)	Average Output Power			Limit (dBm)
		Ant 1 (dBm)	Ant 2 (dBm)	Total (dBm)	
802.11a	5180	15.07	14.91	18.00	24.00
	5200	15.53	16.48	19.04	24.00
	5240	16.17	16.87	19.54	24.00
	5260	15.11	15.72	18.44	24.00
	5300	15.23	15.61	18.43	24.00
	5320	15.78	15.91	18.86	24.00
	5500	13.95	13.52	16.75	24.00
	5580	15.56	15.21	18.40	24.00
	5700	12.37	12.57	15.48	24.00
	5745	16.39	16.11	19.26	30.00
	5785	16.17	16.27	19.23	30.00
5825	16.09	16.10	19.11	30.00	
802.11an HT20	5180	14.78	15.09	17.95	24.00
	5200	16.92	15.85	19.43	24.00
	5240	16.01	16.72	19.39	24.00
	5260	15.31	15.37	18.35	24.00
	5300	15.24	14.90	18.08	24.00
	5320	15.87	15.74	18.82	24.00
	5500	13.40	13.17	16.30	24.00
	5580	14.87	14.85	17.87	24.00
	5700	13.28	13.52	16.41	24.00
	5745	16.19	16.02	19.12	30.00
	5785	15.91	16.21	19.07	30.00
5825	16.06	15.96	19.02	30.00	
802.11an HT40	5190	13.27	12.74	16.02	24.00
	5230	14.42	14.82	17.63	24.00
	5270	14.36	14.70	17.54	24.00
	5310	13.95	13.53	16.76	24.00
	5510	12.37	12.87	15.64	24.00
	5550	14.44	14.49	17.48	24.00
	5670	14.46	14.64	17.56	24.00
	5755	16.51	16.87	19.70	30.00
	5795	16.41	16.56	19.50	30.00
802.11ac VHT80	5210	11.47	10.55	14.04	24.00
	5290	12.06	12.34	15.21	24.00
	5530	11.61	11.87	14.75	24.00
	5610	11.45	11.58	14.53	24.00
	5775	12.64	12.68	15.67	30.00

Prüfbericht- Nr.: 50349169 001
Test Report No.**Seite 24 von 158**
Page 24 of 158**5.1.4 26dB & 99% Bandwidth****RESULT:****Passed**

Test standard : FCC Part 15.407(a)
Basic standard : ANSI C63.10:2013
Kind of test site : Conducted room

Test setup

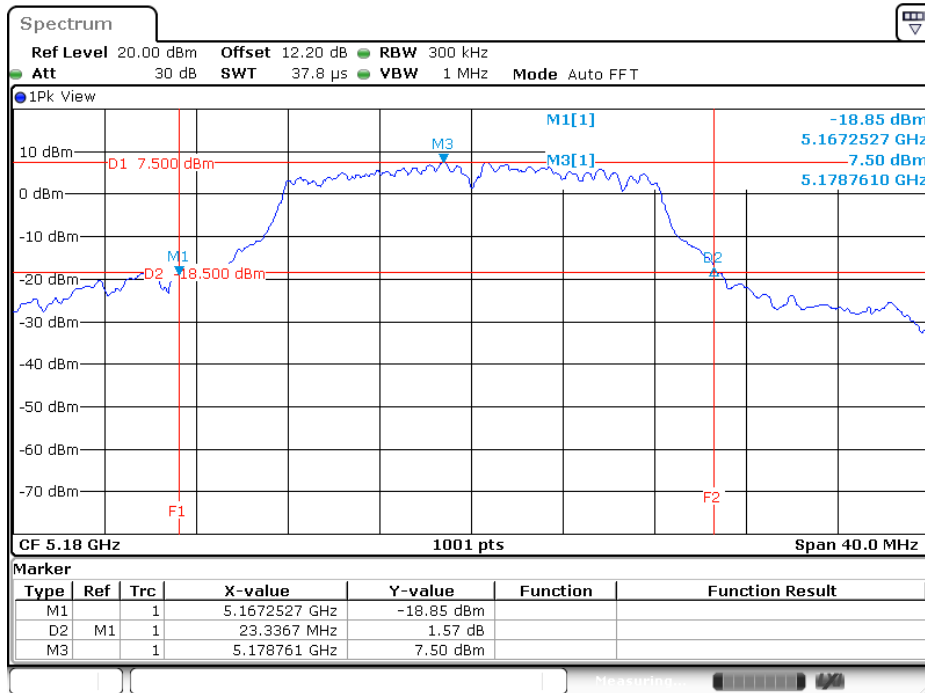
Test Channel : FCC refer to the Table 7
Operation Mode : A

Table 10: Test result of 26dB & 99% Bandwidth

Mode	Channel Frequency (MHz)	26dB Bandwidth (MHz)		99% Bandwidth (MHz)	
		TX 1	TX 2	TX 1	TX 2
802.11a	5180	23.34	21.18	17.02	16.86
	5200	25.97	21.74	17.34	16.74
	5240	21.46	21.74	17.06	17.10
	5260	21.34	21.42	16.98	16.82
	5300	21.58	21.58	17.06	17.02
	5320	21.54	21.50	16.94	16.82
	5500	21.34	21.42	17.02	17.74
	5580	21.50	21.26	17.06	16.70
	5700	21.38	21.22	17.02	16.94
	5745	-		16.50	16.94
	5785			16.50	16.94
	5825			16.50	17.78
802.11an HT20	5180	21.42	22.46	18.06	17.98
	5200	21.98	23.22	18.02	18.38
	5240	23.02	22.42	18.14	17.82
	5260	21.42	21.62	17.90	17.82
	5300	32.25	21.86	18.02	18.42
	5320	22.10	44.40	18.06	23.74
	5500	24.10	21.54	18.02	17.90
	5580	21.26	21.74	18.02	17.90
	5700	21.50	21.62	18.02	17.94
	5745	-		17.94	18.46
	5785			17.86	18.18
	5825			17.90	18.18
802.11an HT40	5190	40.68	41.08	36.60	36.84
	5230	49.55	49.87	36.76	36.92
	5270	55.31	60.02	36.92	36.84
	5310	77.01	41.32	39.64	36.84
	5510	40.36	41.08	36.76	36.60
	5550	40.68	40.76	36.84	36.68
	5670	47.15	49.39	36.84	36.76
	5755	-		37.32	37.32
	5795			37.24	37.24
802.11ac VHT80	5210	81.04	81.84	75.76	75.92
	5290	105.02	87.59	76.08	75.92
	5530	81.36	81.52	76.24	75.44
	5610	82.00	81.84	75.60	75.44
	5775	-		75.60	75.60

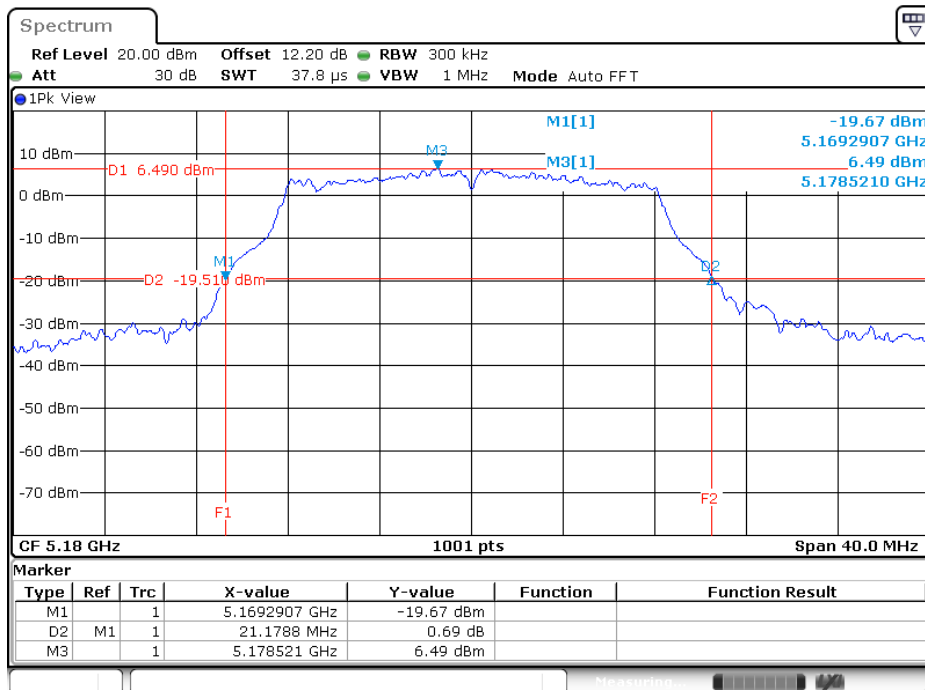
Test Plot of 26dB Bandwidth

802.11a 5180MHz, TX1

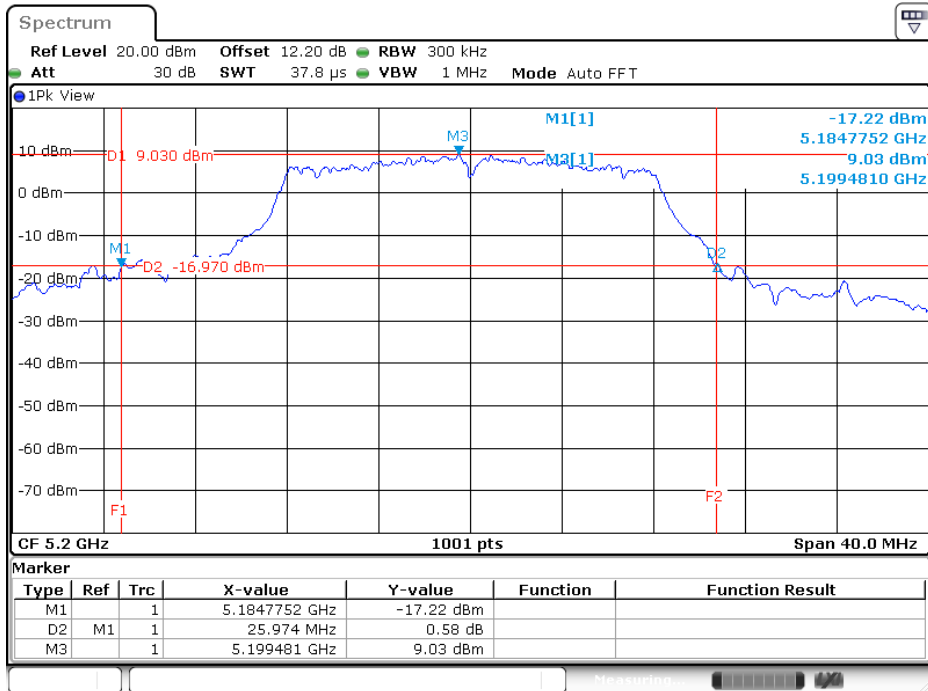


Date: 30.APR.2020 13:48:38

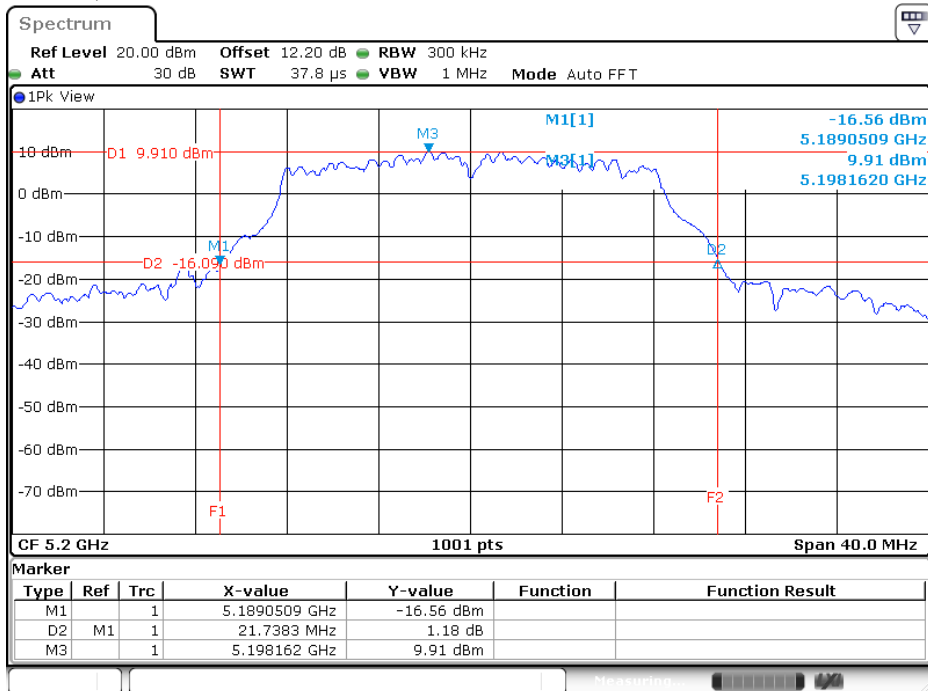
802.11a 5180MHz, TX2



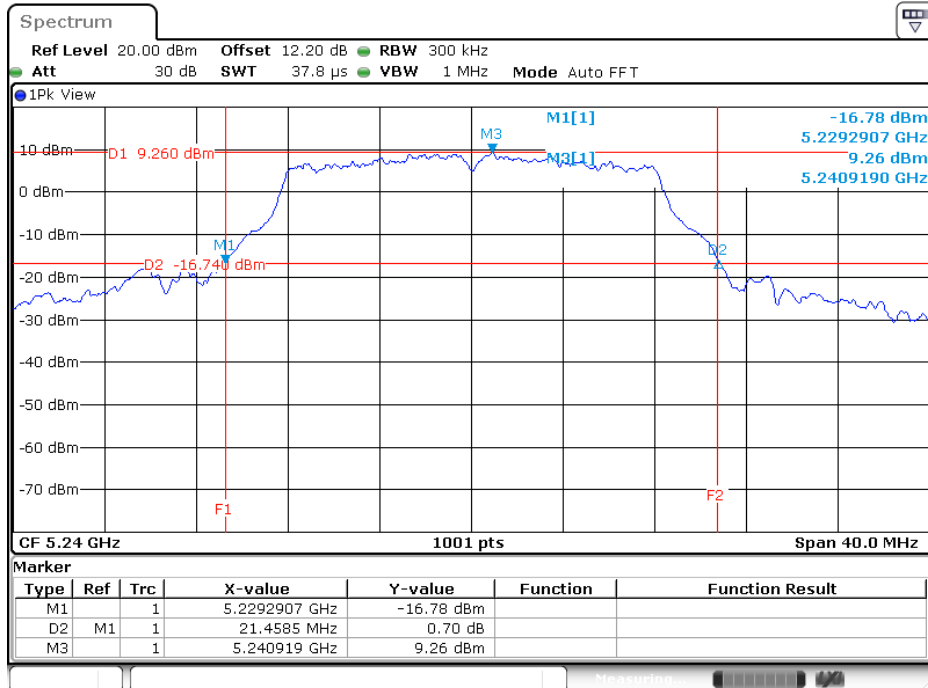
Date: 30.APR.2020 13:49:21

802.11a 5200MHz, TX1


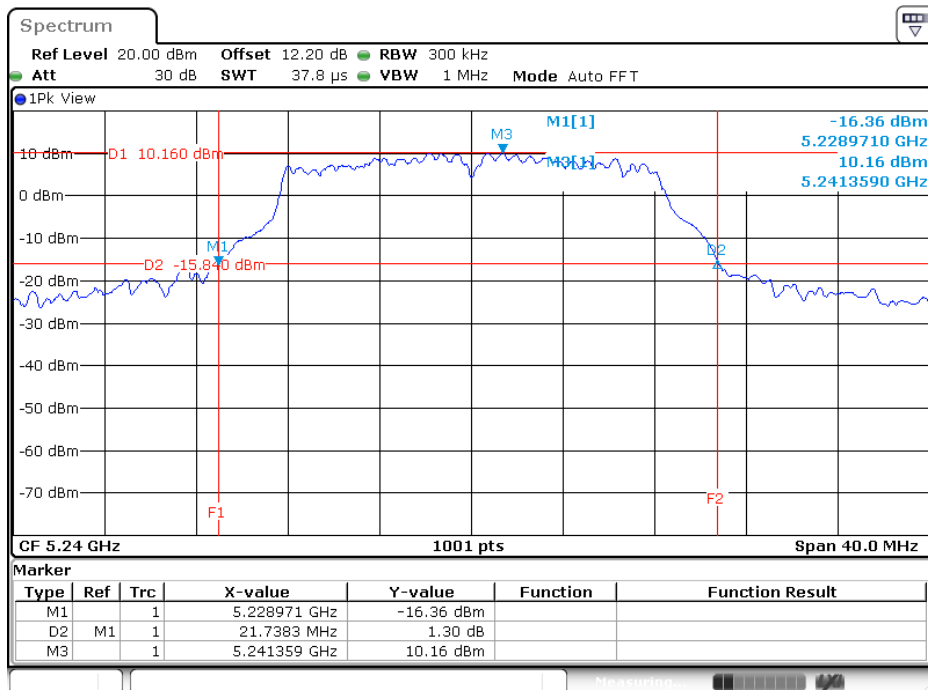
Date: 22.MAY.2020 23:49:19

802.11a 5200MHz, TX2


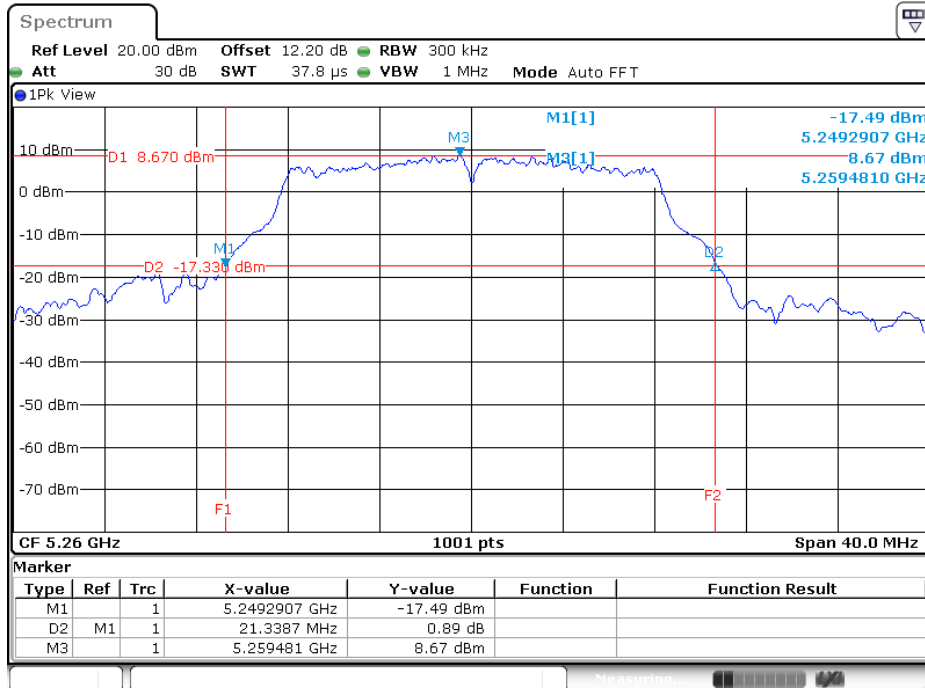
Date: 23.MAY.2020 00:09:50

802.11a 5240MHz, TX1


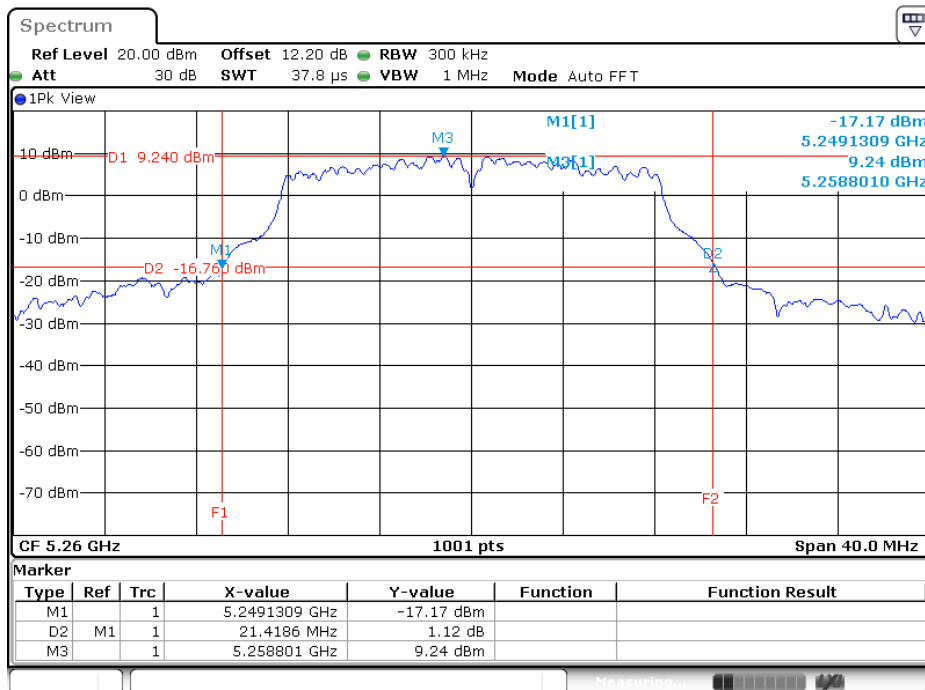
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802.11a 5240MHz, TX2


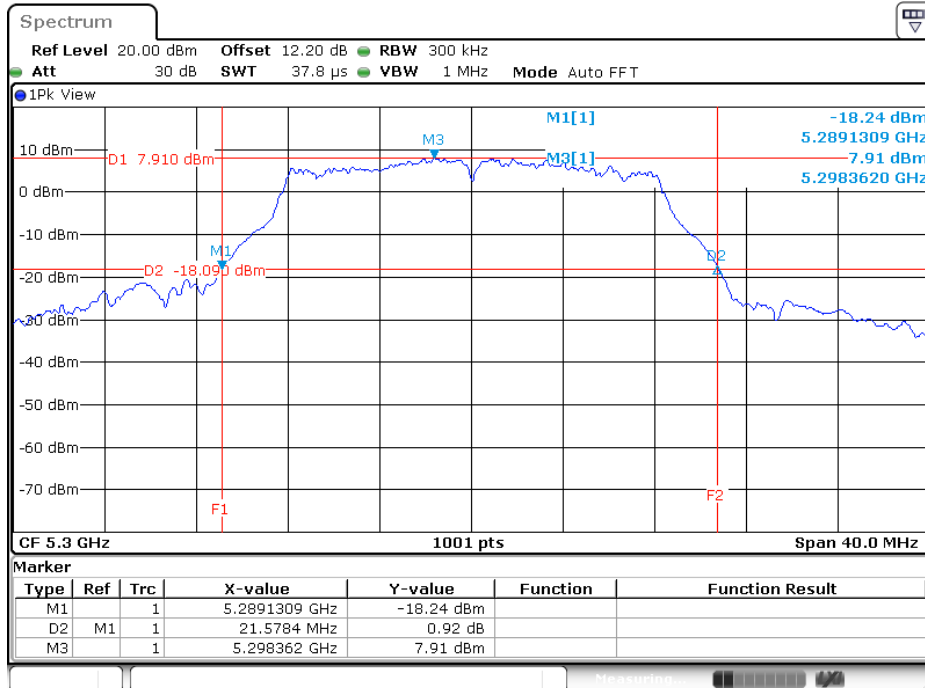
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802.11a 5260MHz, TX1


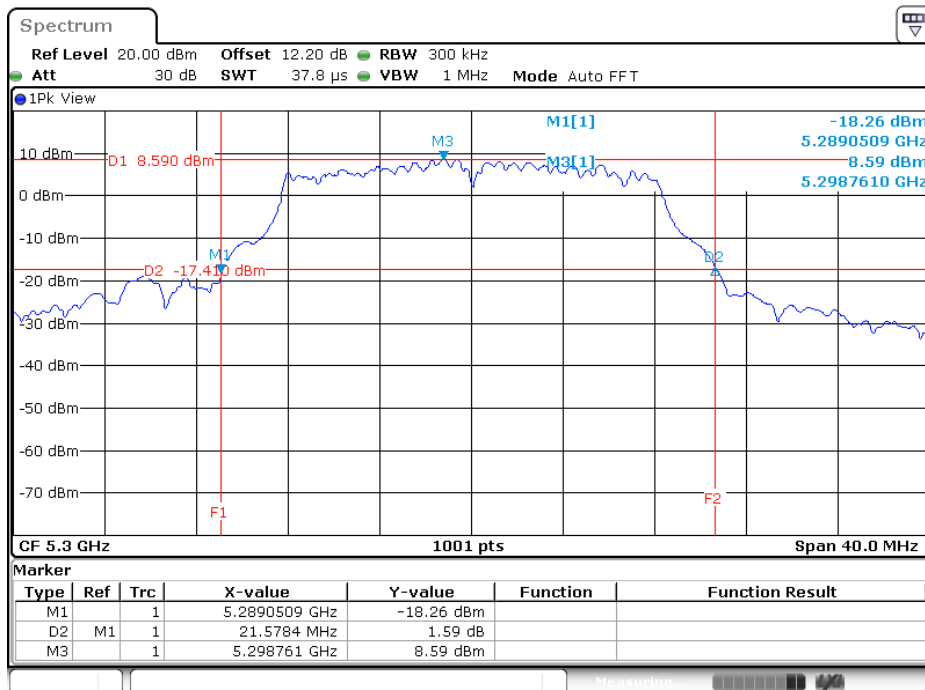
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802.11a 5260MHz, TX2


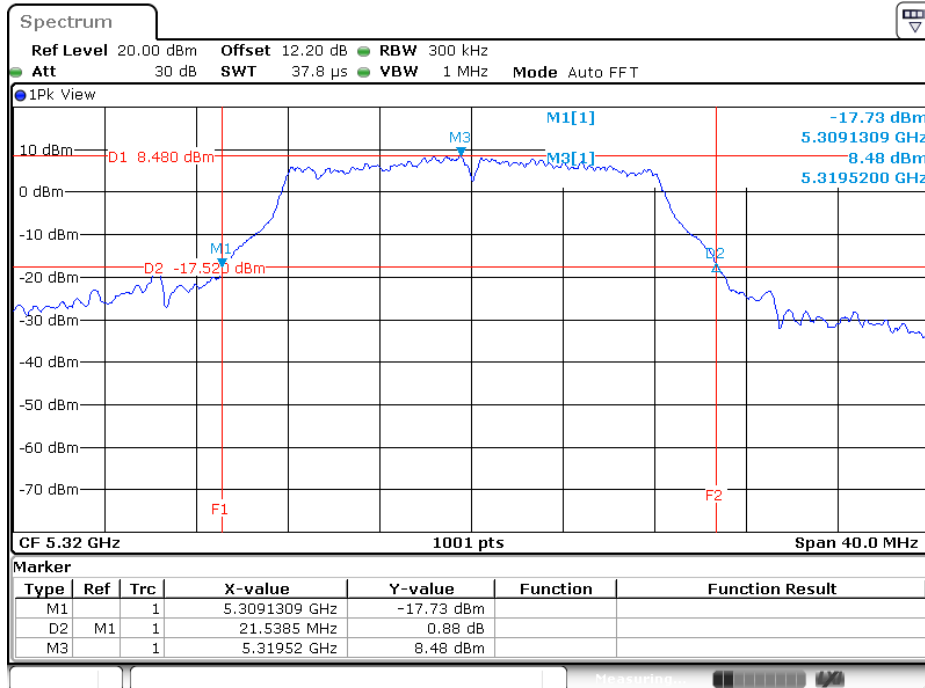
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802.11a 5300MHz, TX1


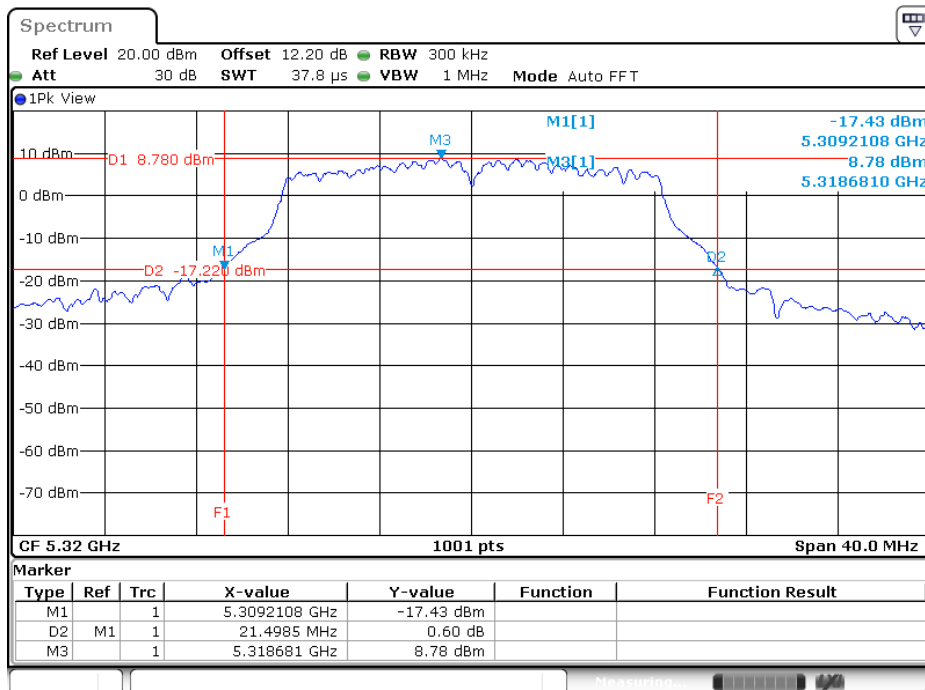
Date: 22.MAY.2020 23:59:27

802.11a 5300MHz, TX2


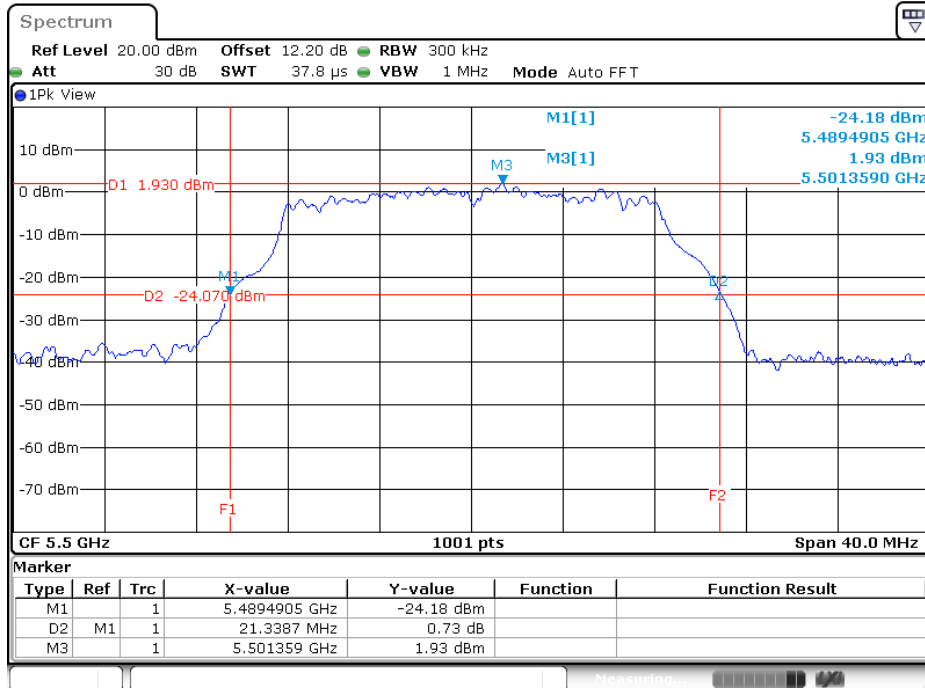
Date: 23.MAY.2020 00:06:19

802.11a 5320MHz, TX1


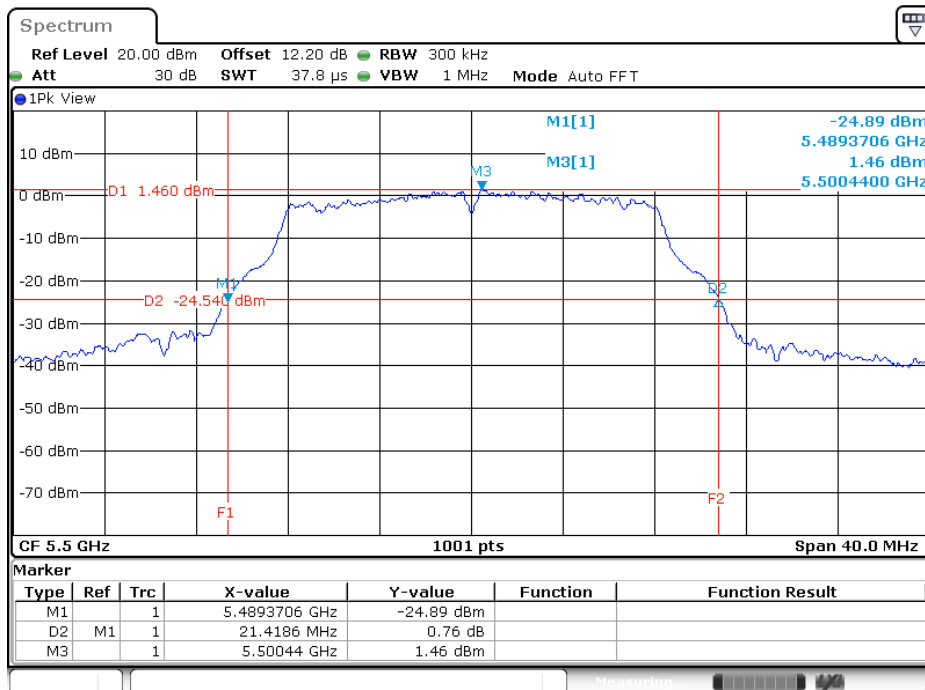
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802.11a 5320MHz, TX2


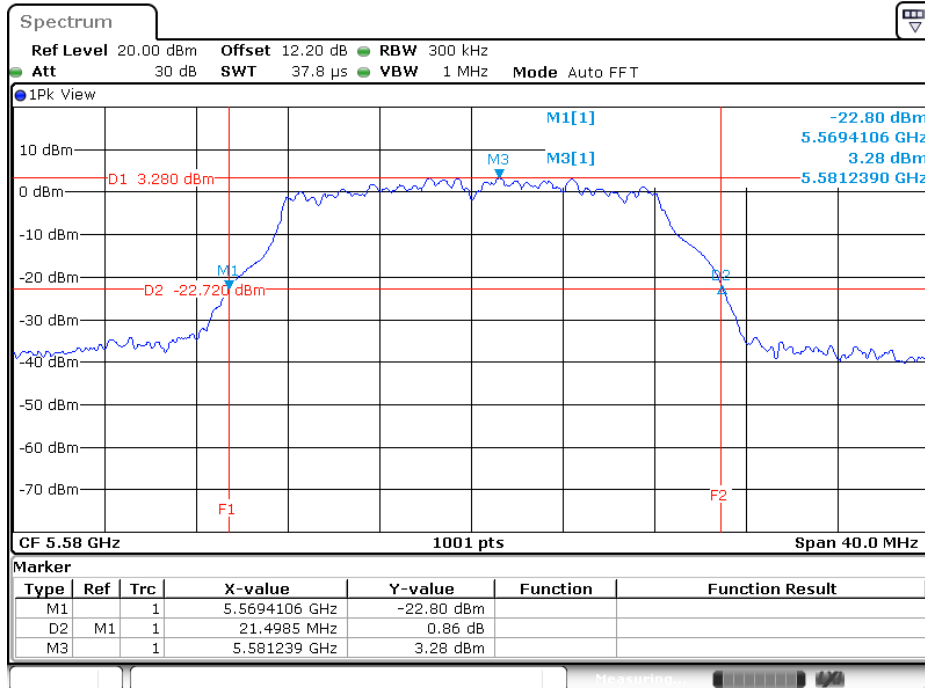
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802.11a 5500MHz, TX1


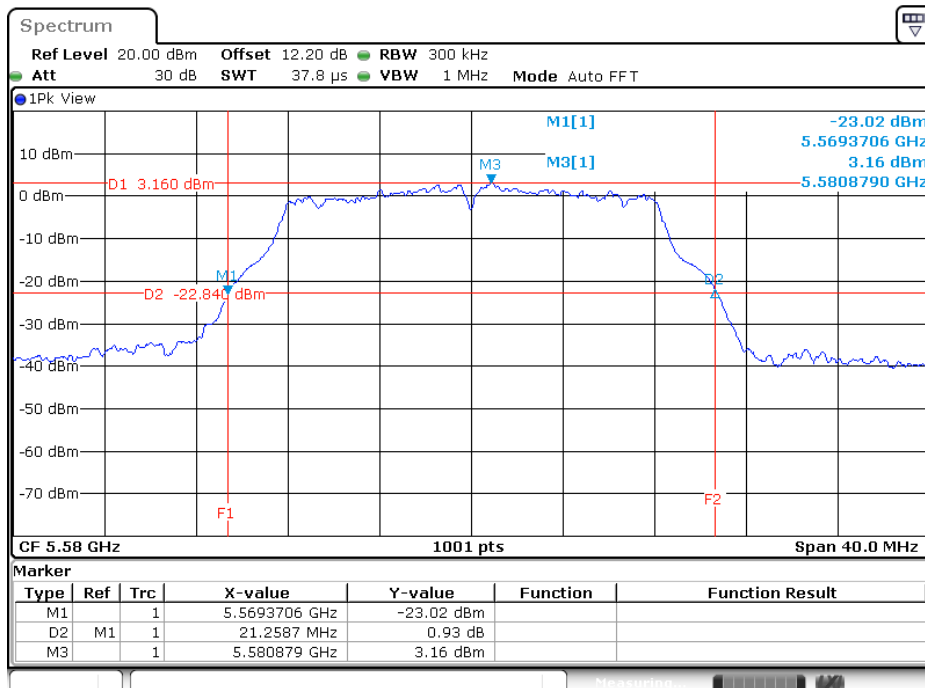
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802.11a 5500MHz, TX2


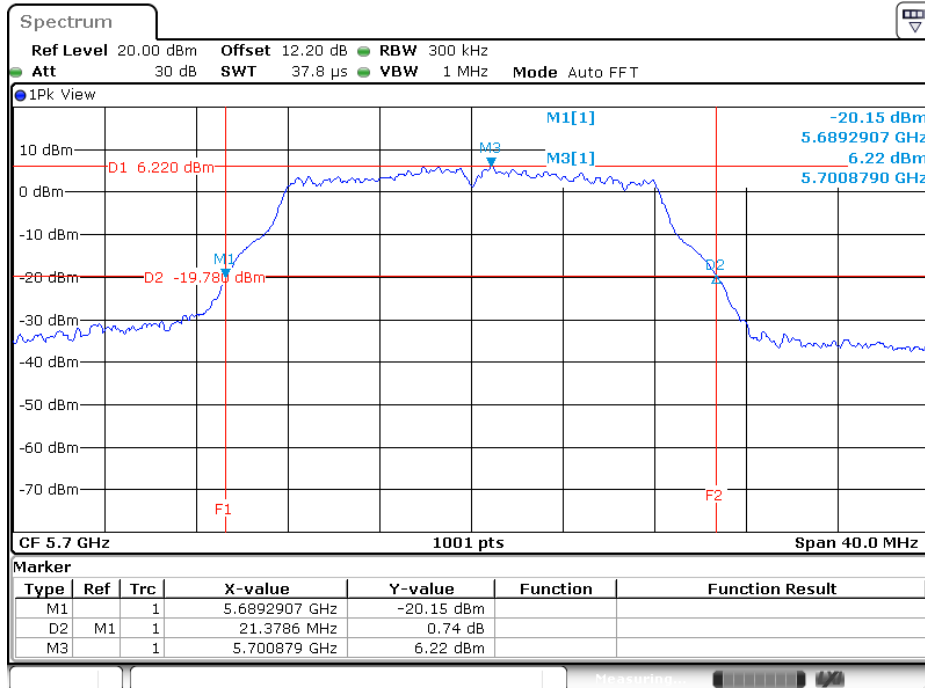
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802.11a 5580MHz, TX1


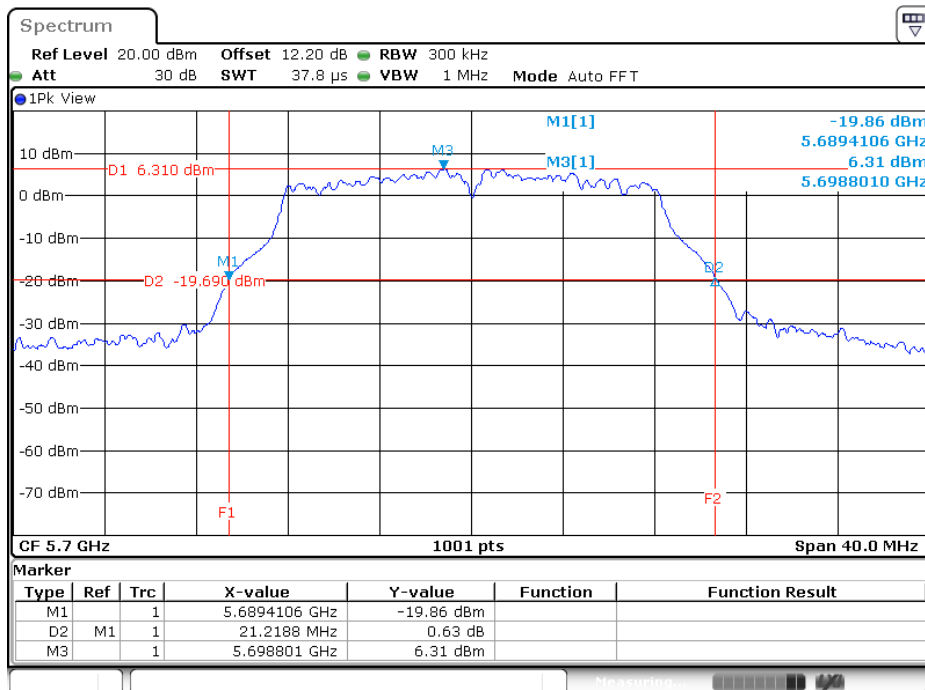
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802.11a 5580MHz, TX2


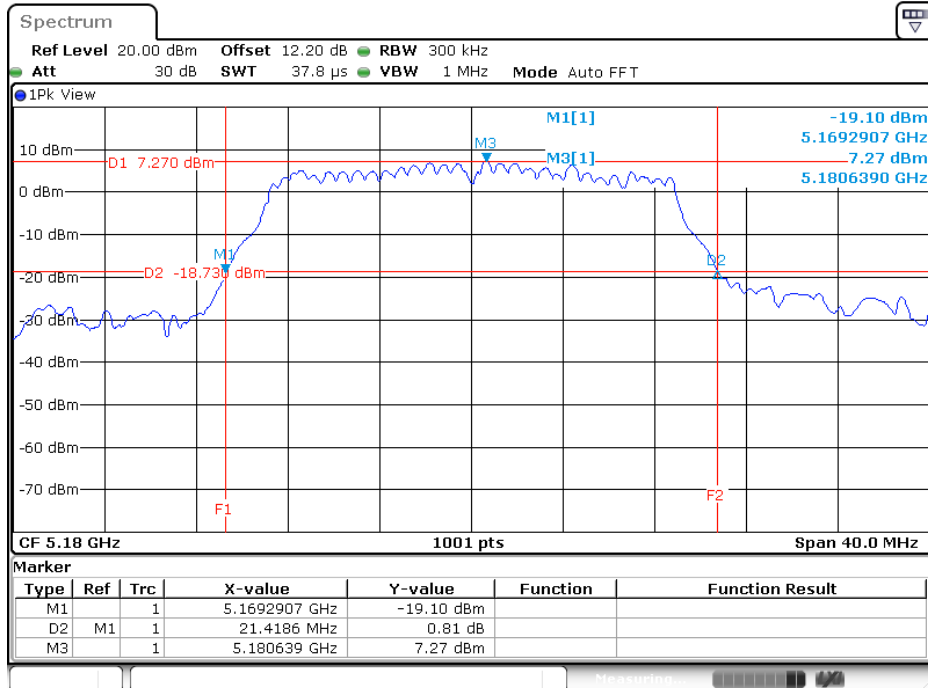
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802.11a 5700MHz, TX1


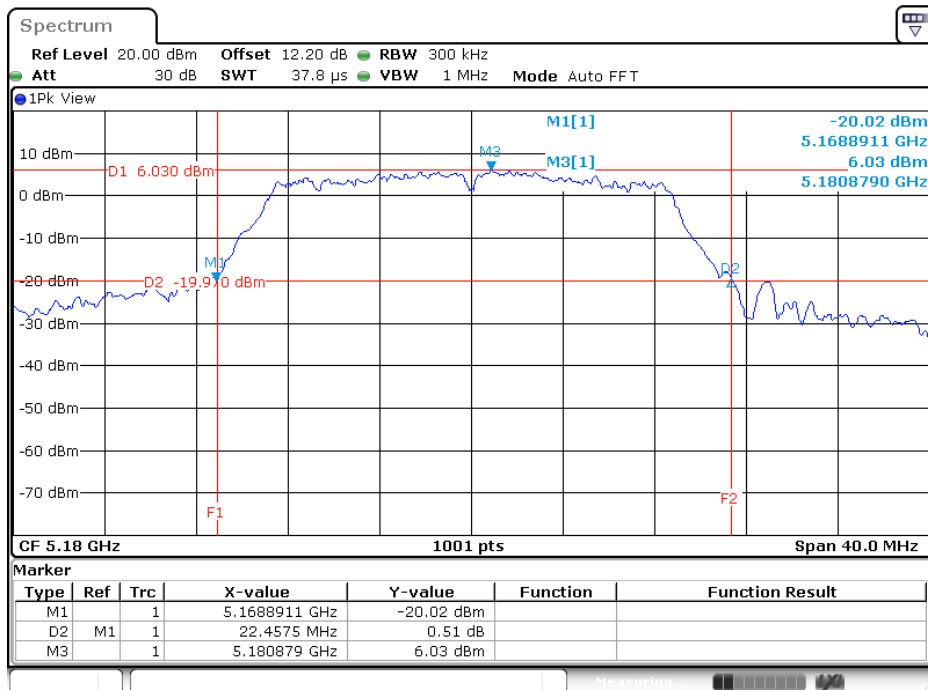
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802.11a 5700MHz, TX2


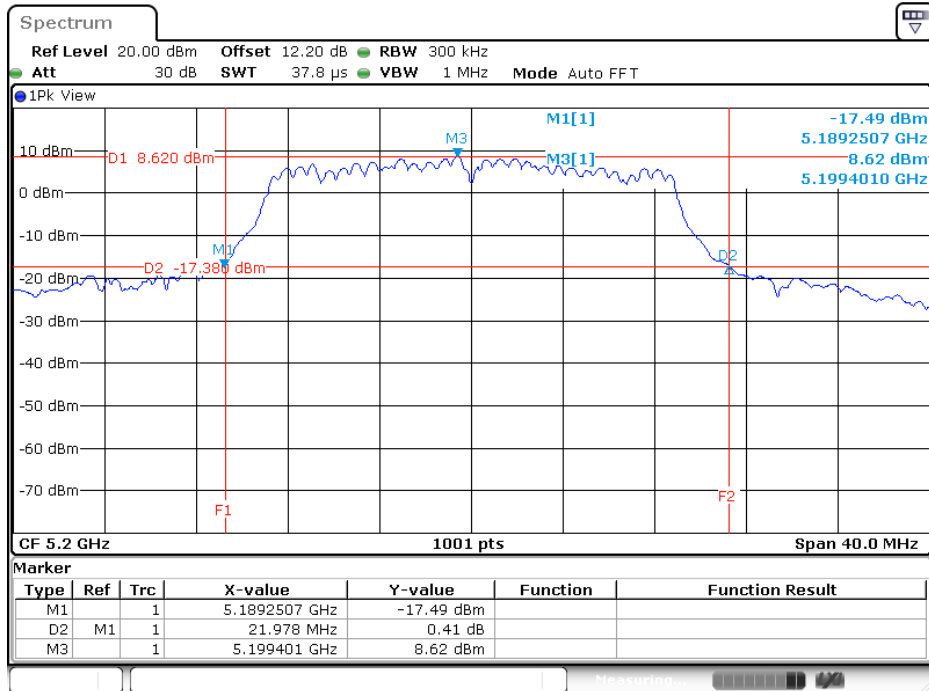
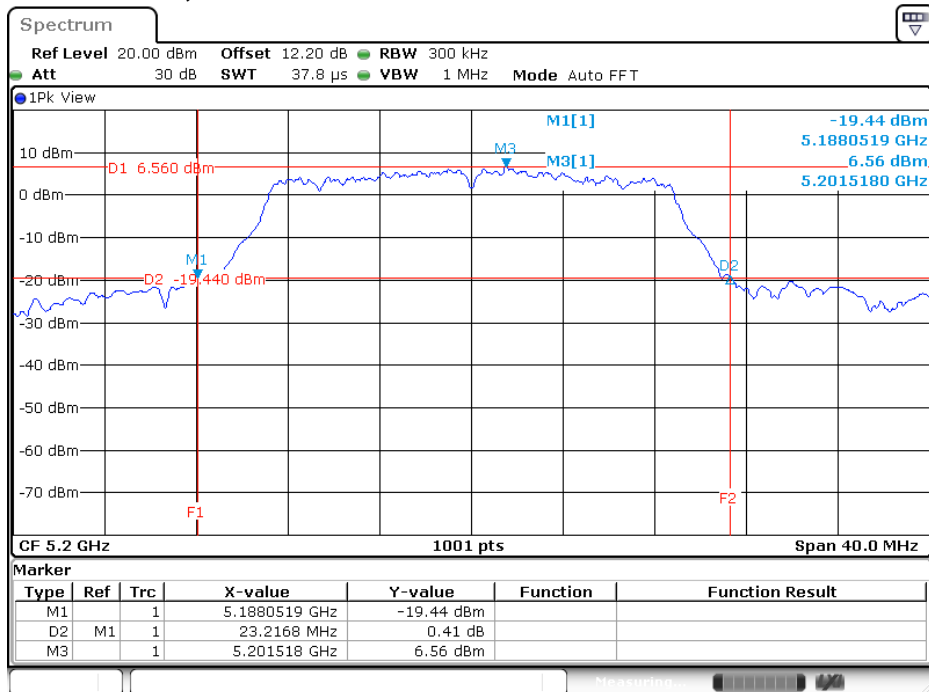
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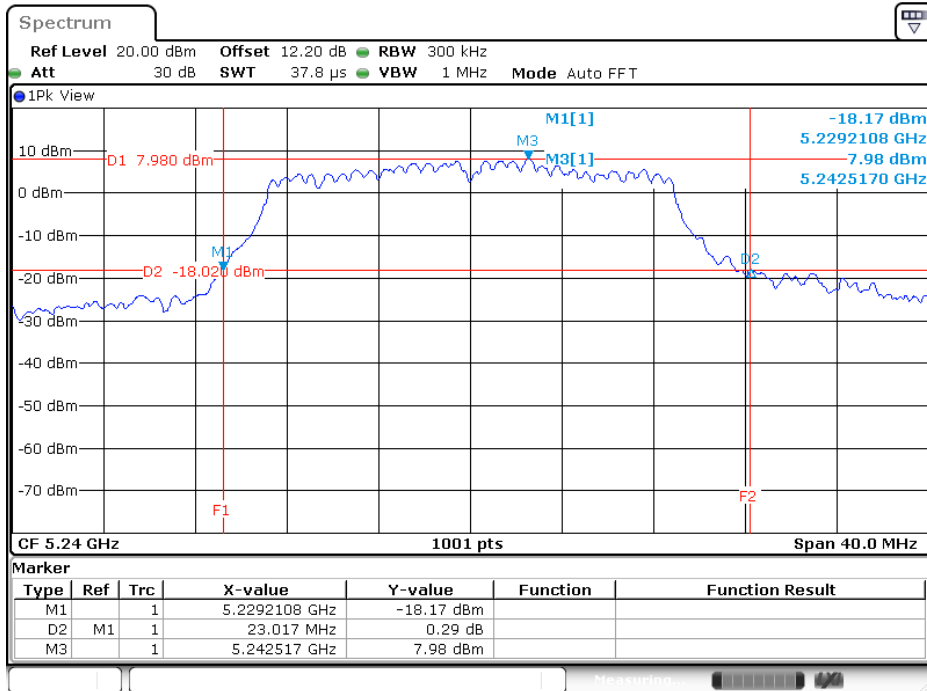
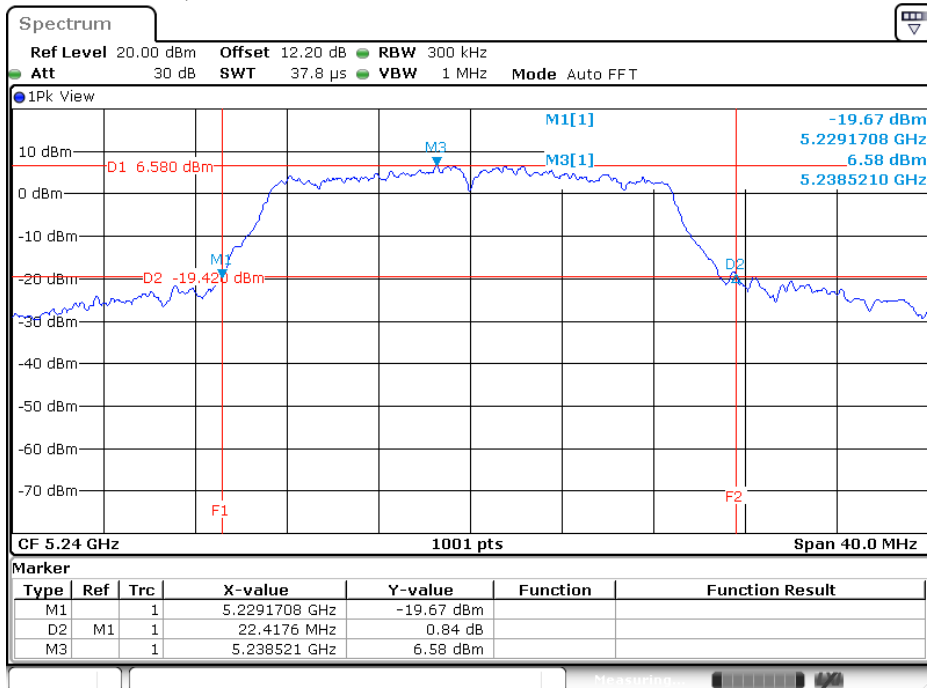
802.11an HT20 5180MHz, TX1


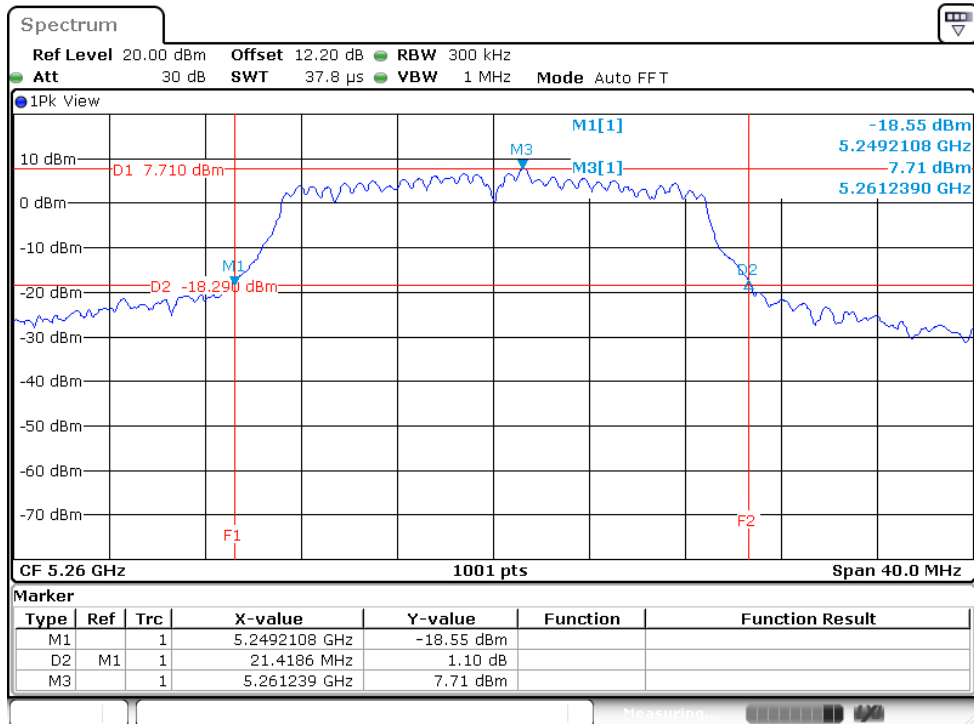
Date: 30.APR.2020 14:01:02

802.11an HT20 5180MHz, TX2


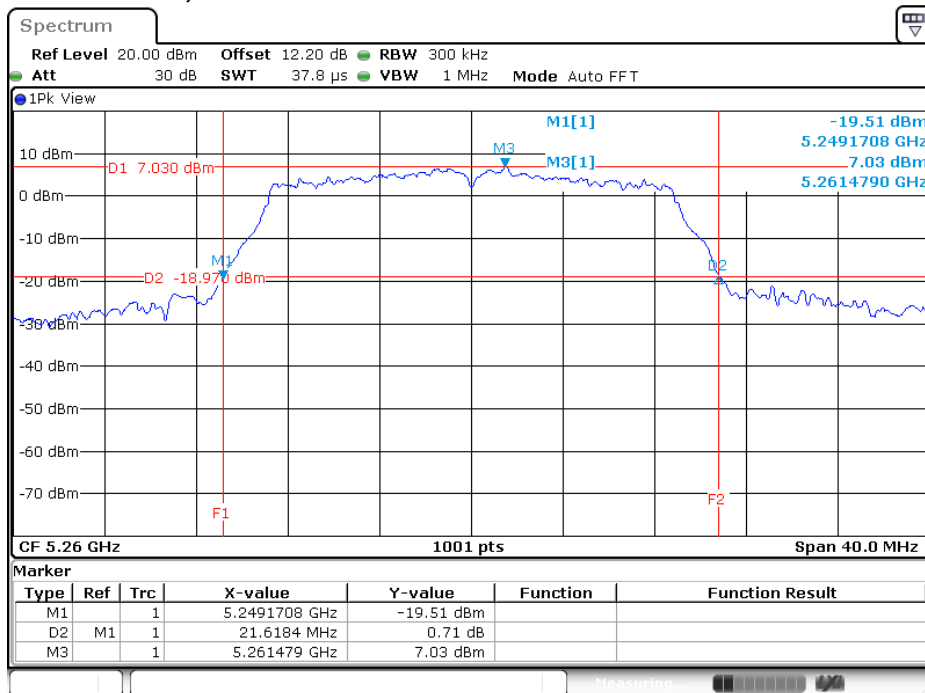
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802.11an HT20 5200MHz, TX1

802.11an HT20 5200MHz, TX2


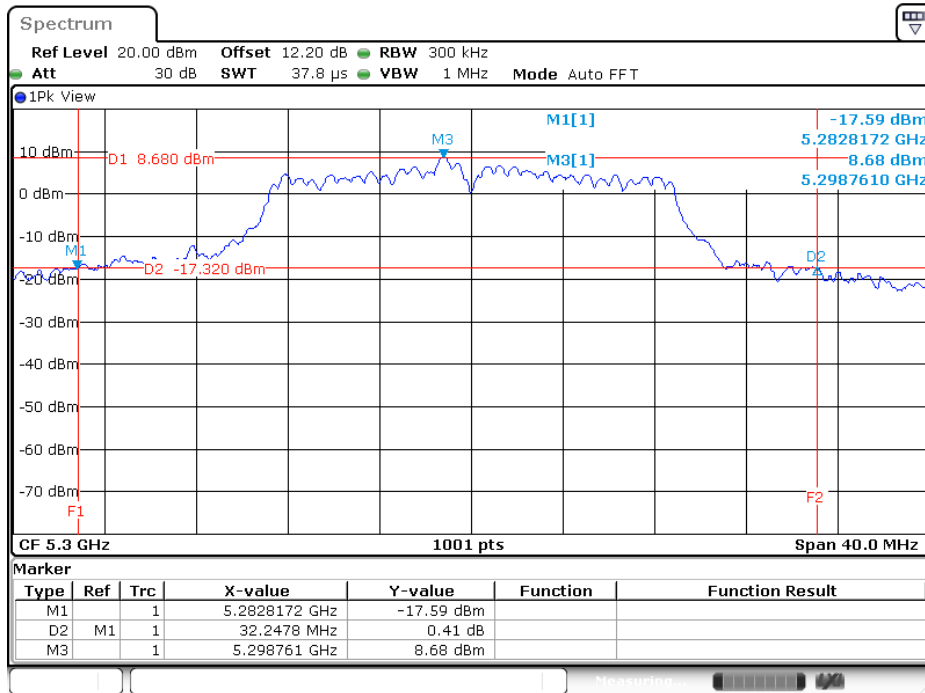
802.11an HT20 5240MHz, TX1

802.11an HT20 5240MHz, TX2


802.11an HT20 5260MHz, TX1


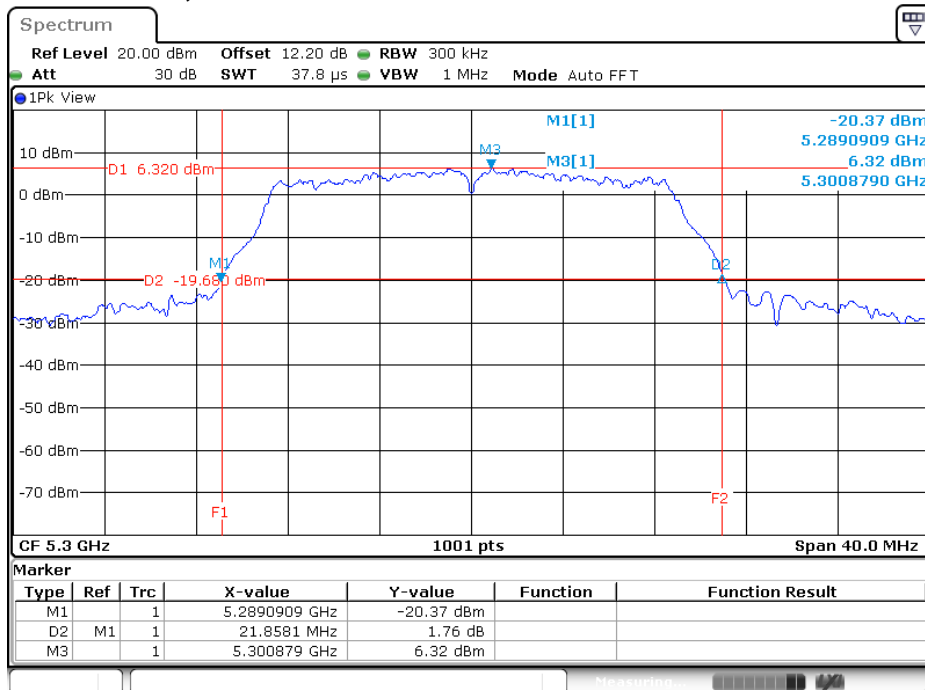
Date: 30.APR.2020 14:05:19

802.11an HT20 5260MHz, TX2


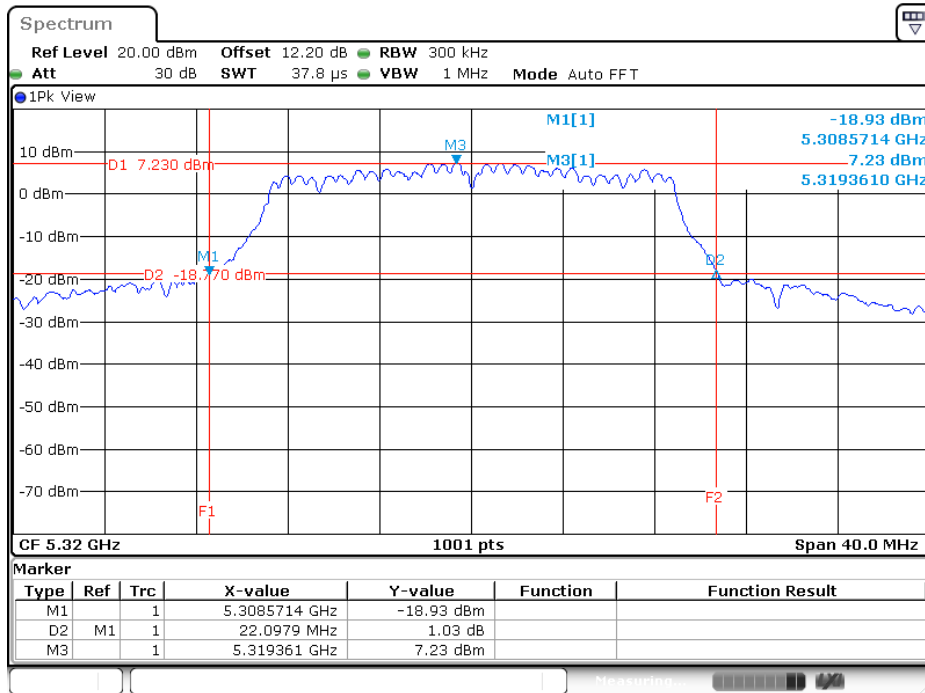
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802.11an HT20 5300MHz, TX1


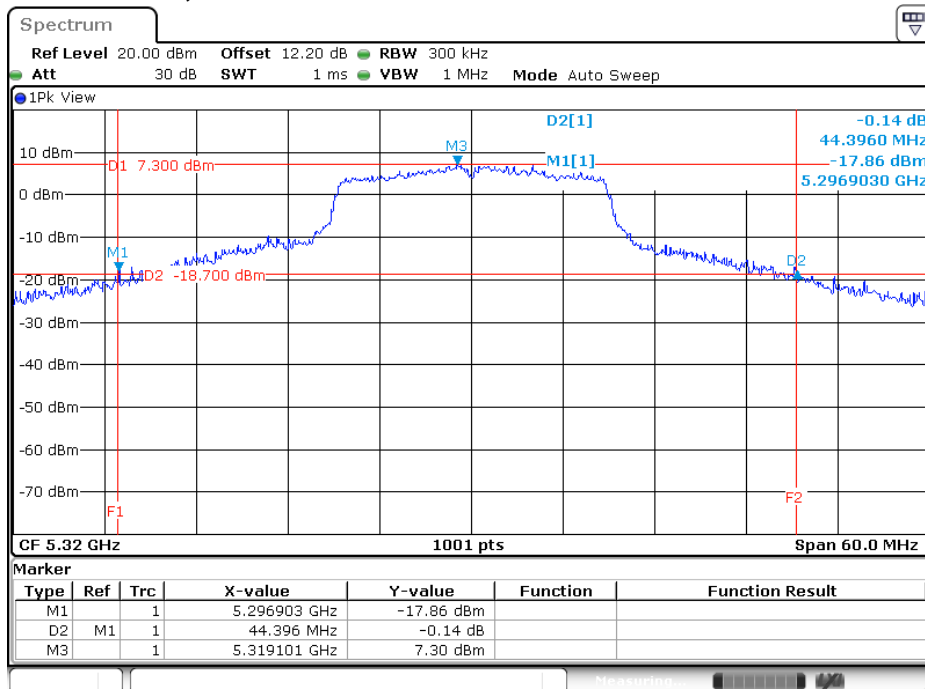
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802.11an HT20 5300MHz, TX2


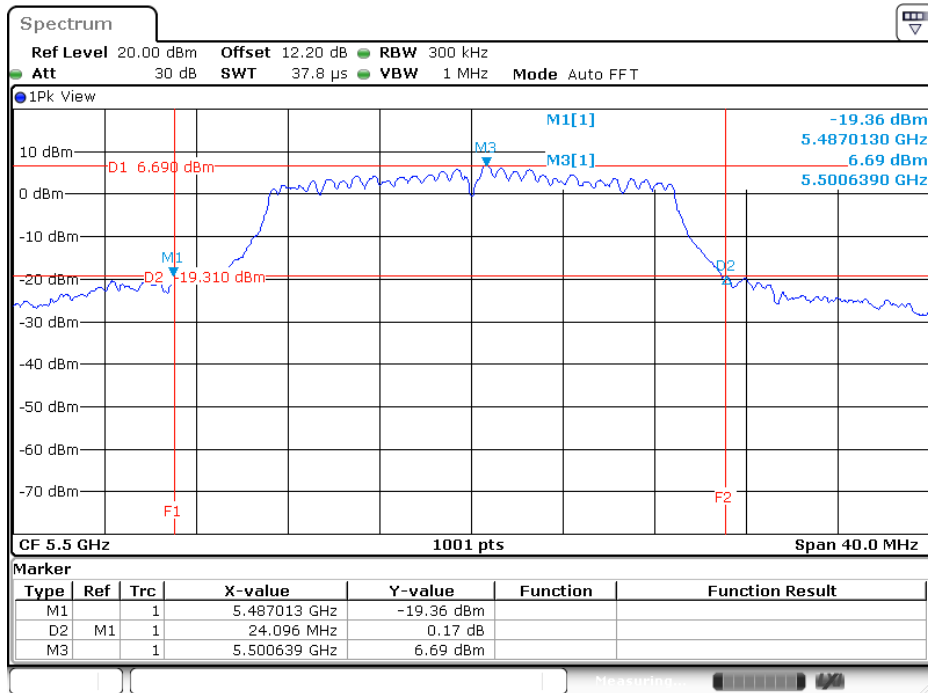
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802.11an HT20 5320MHz, TX1


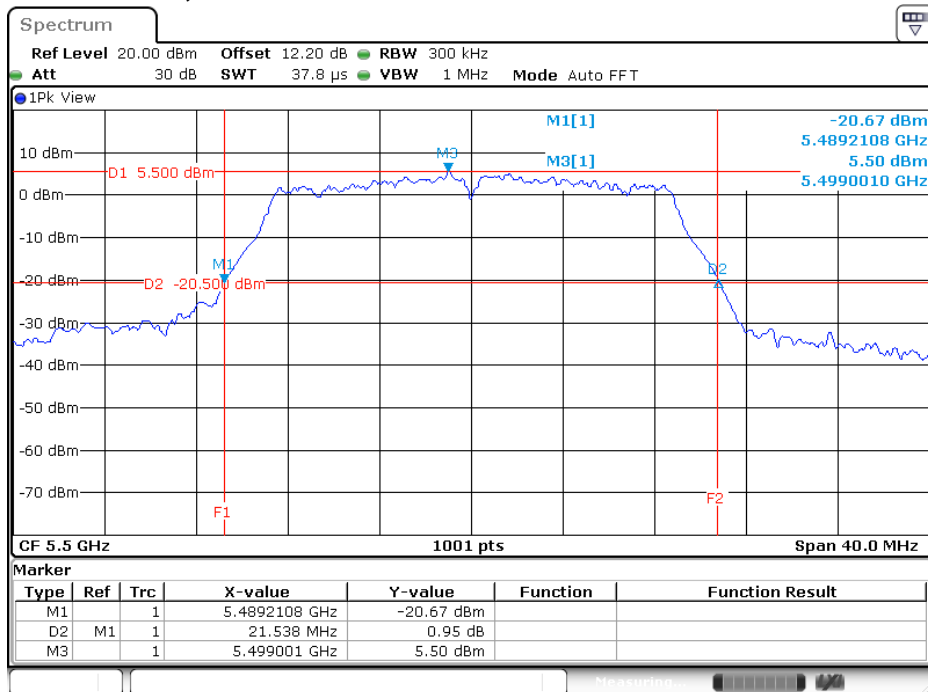
Date: 30.APR.2020 14:07:47

802.11an HT20 5320MHz, TX2


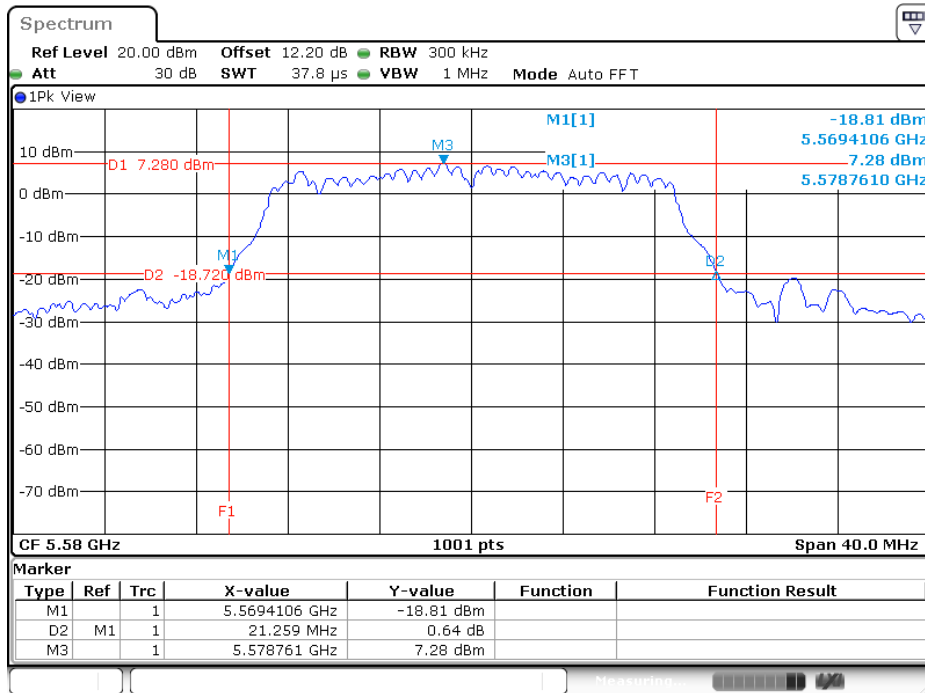
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802.11an HT20 5500MHz, TX1


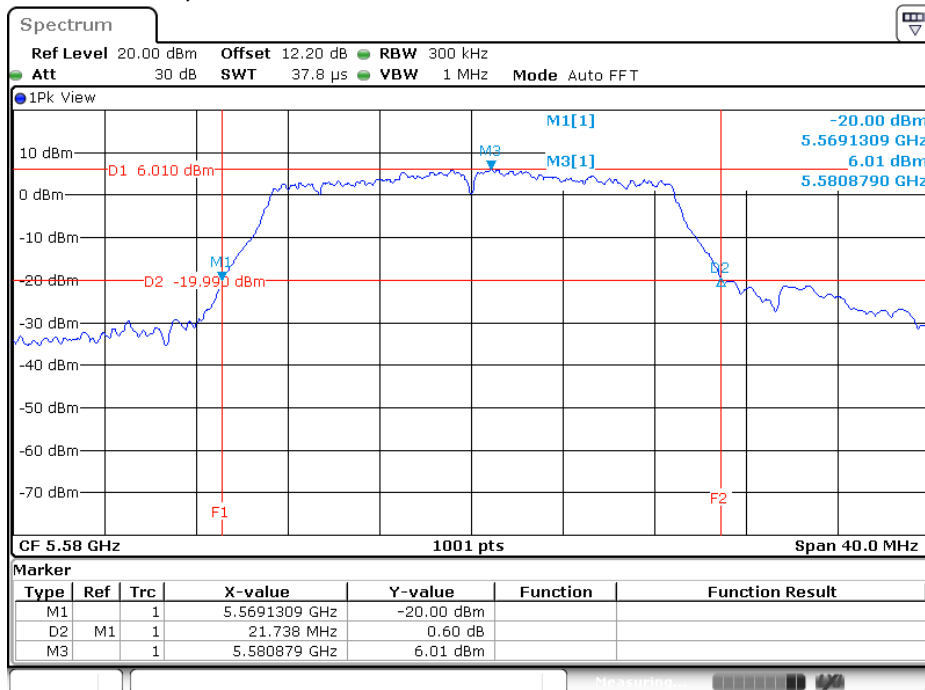
Date: 30.APR.2020 14:24:58

802.11an HT20 5500MHz, TX2


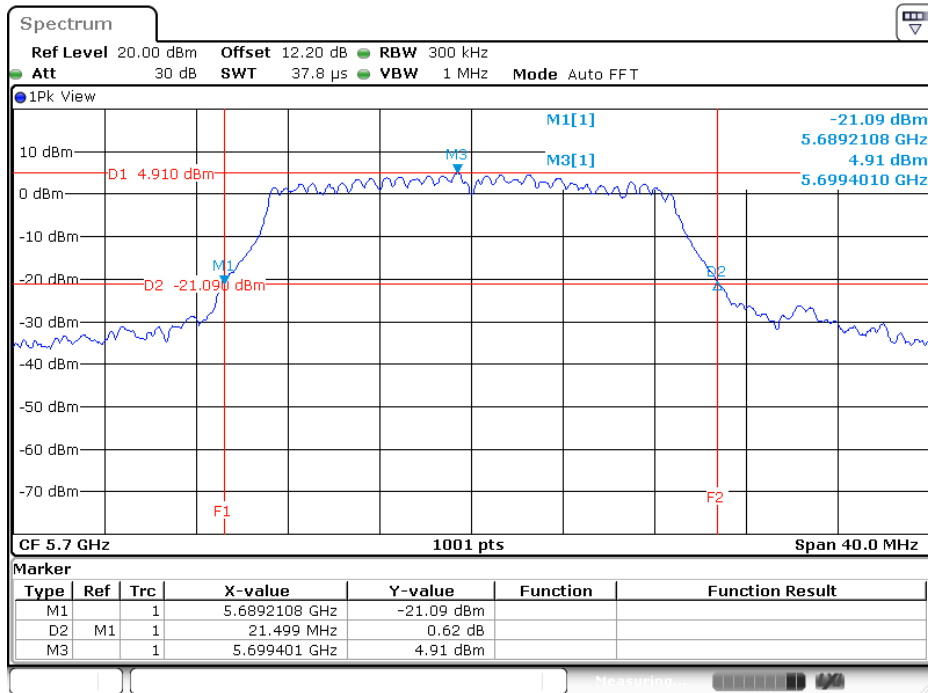
Date: 30.APR.2020 14:24:33

802.11an HT20 5580MHz, TX1


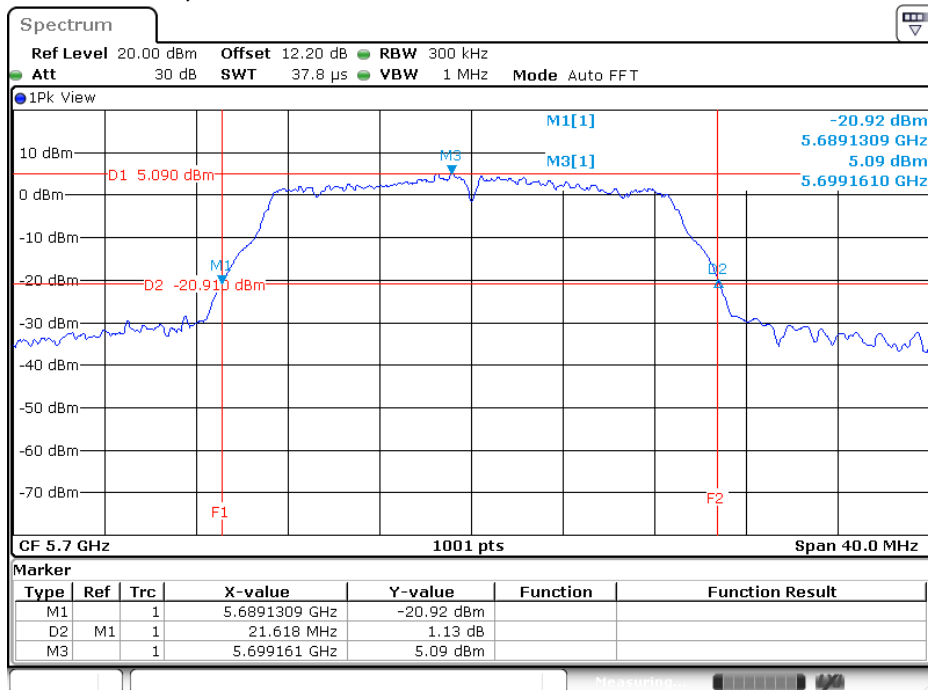
Date: 30.APR.2020 14:25:43

802.11an HT20 5580MHz, TX2


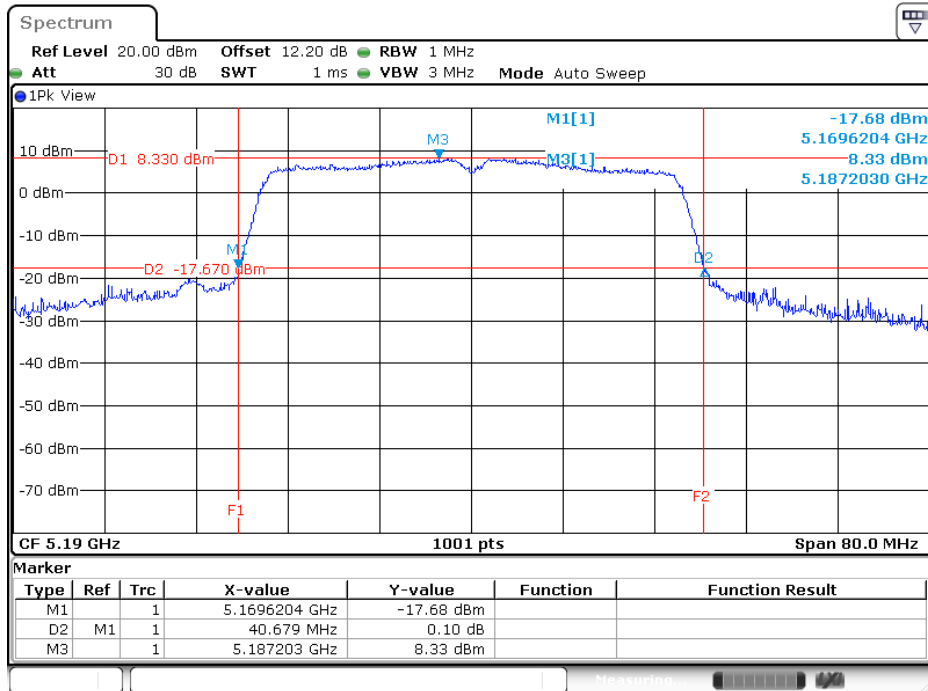
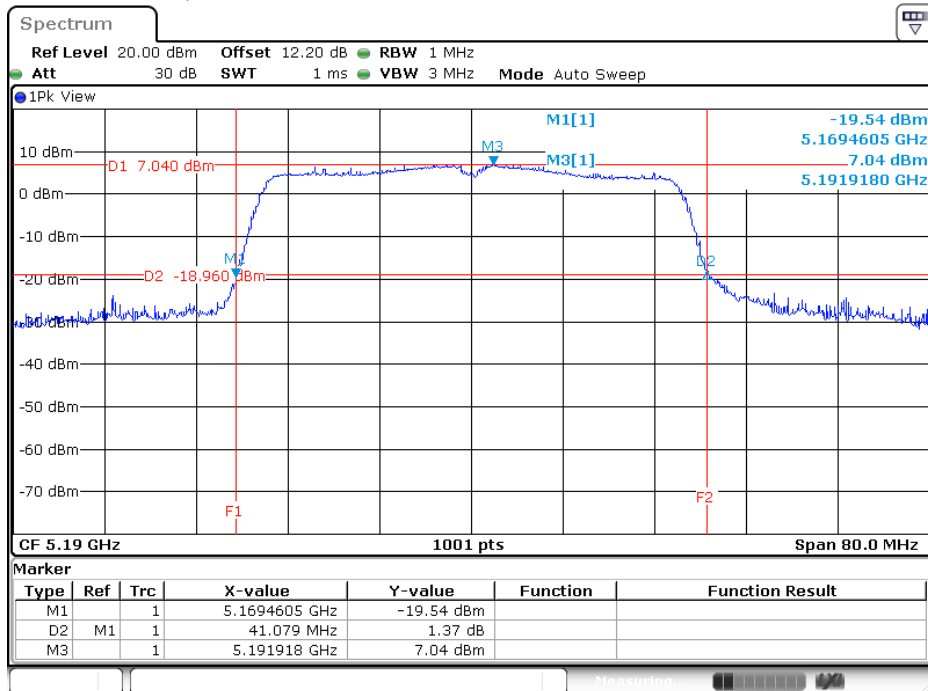
Date: 30.APR.2020 14:26:17

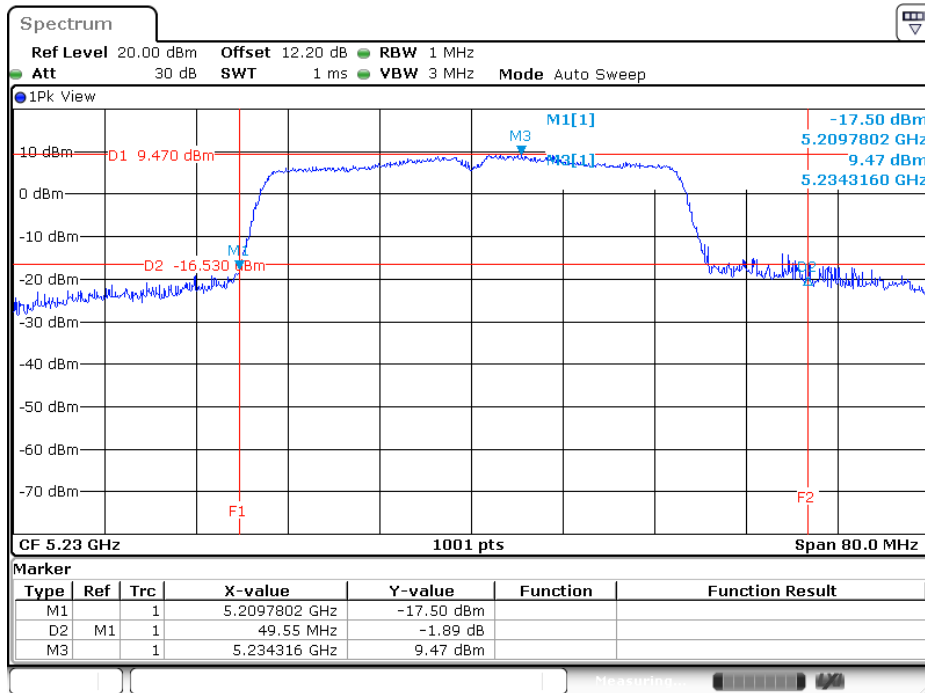
802.11an HT20 5700MHz, TX1


Date: 30.APR.2020 14:27:20

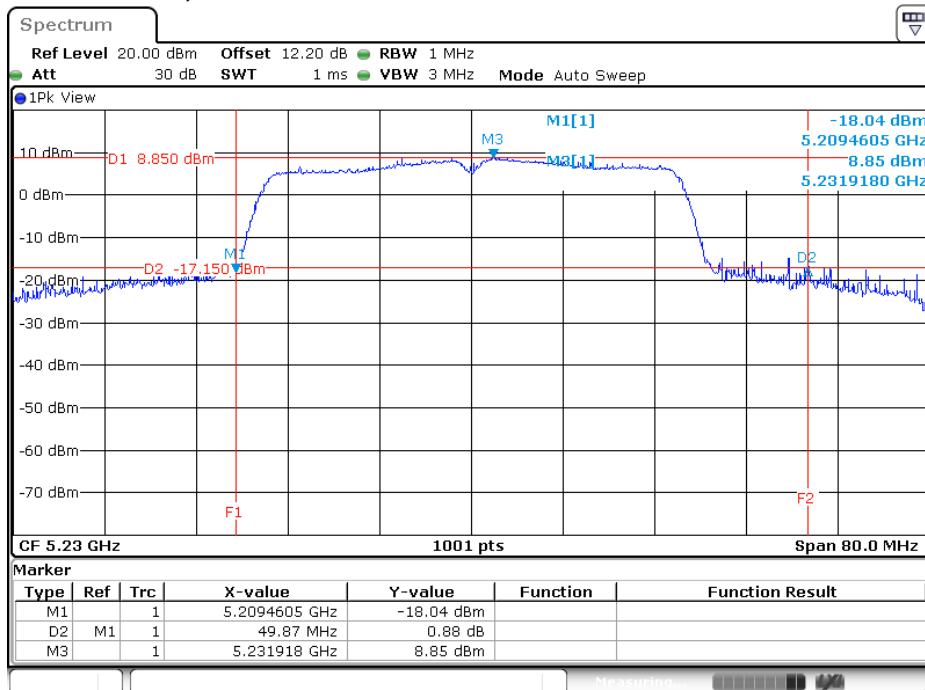
802.11an HT20 5700MHz, TX2


Date: 30.APR.2020 14:26:53

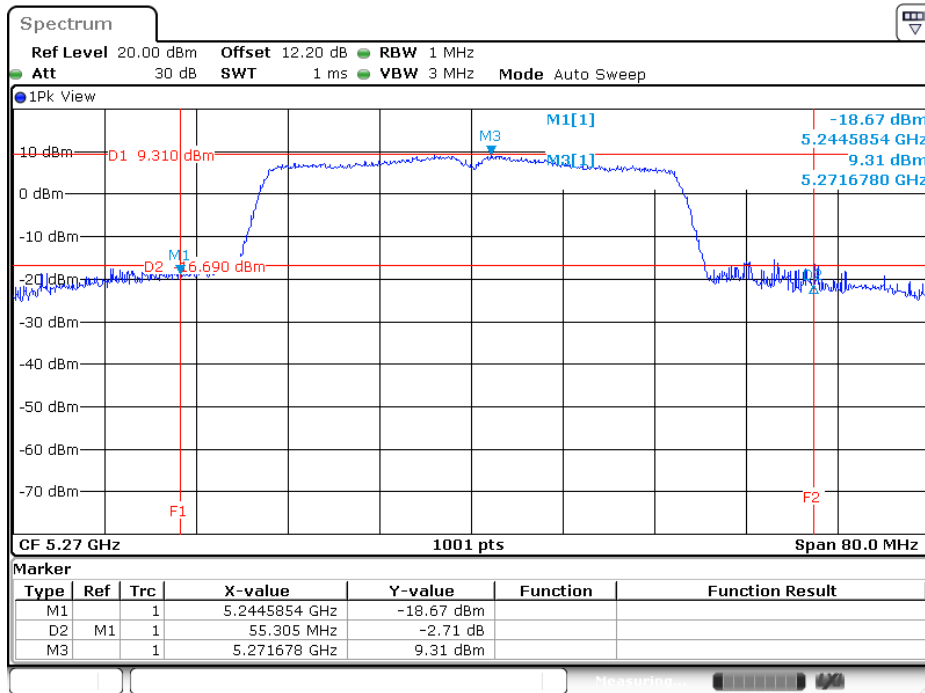
802.11an HT40 5190MHz, TX1

802.11an HT40 5190MHz, TX2


802.11an HT40 5230MHz, TX1


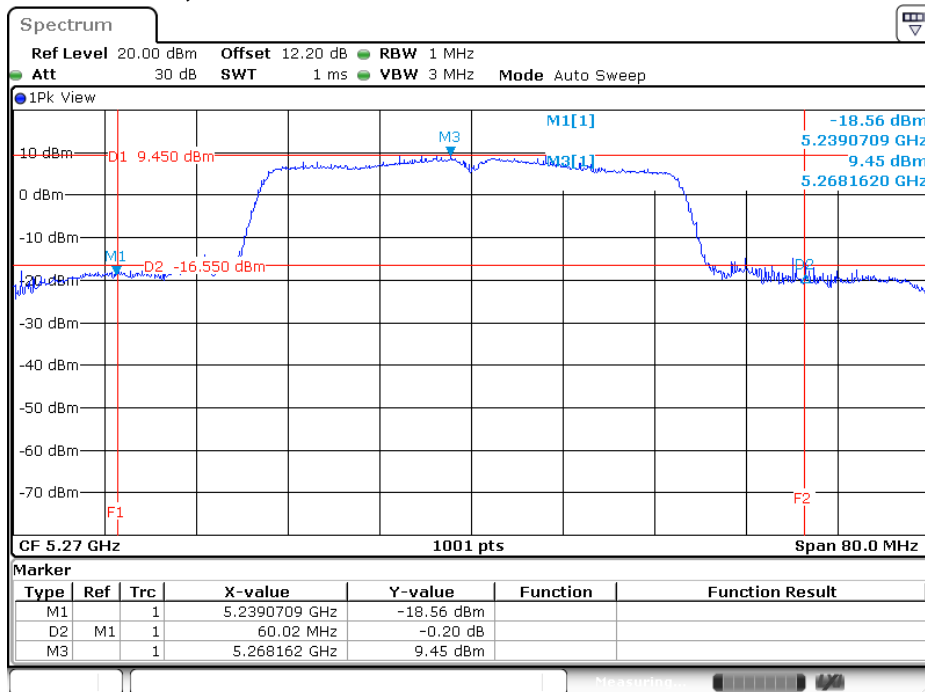
Date: 30.APR.2020 14:32:44

802.11an HT40 5230MHz, TX2


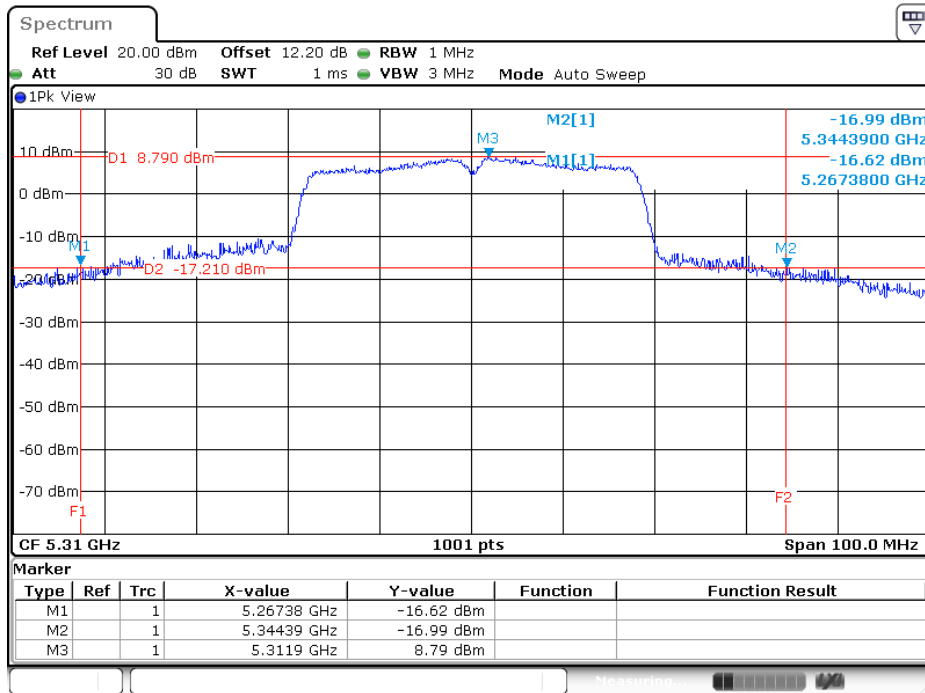
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802.11an HT40 5270MHz, TX1


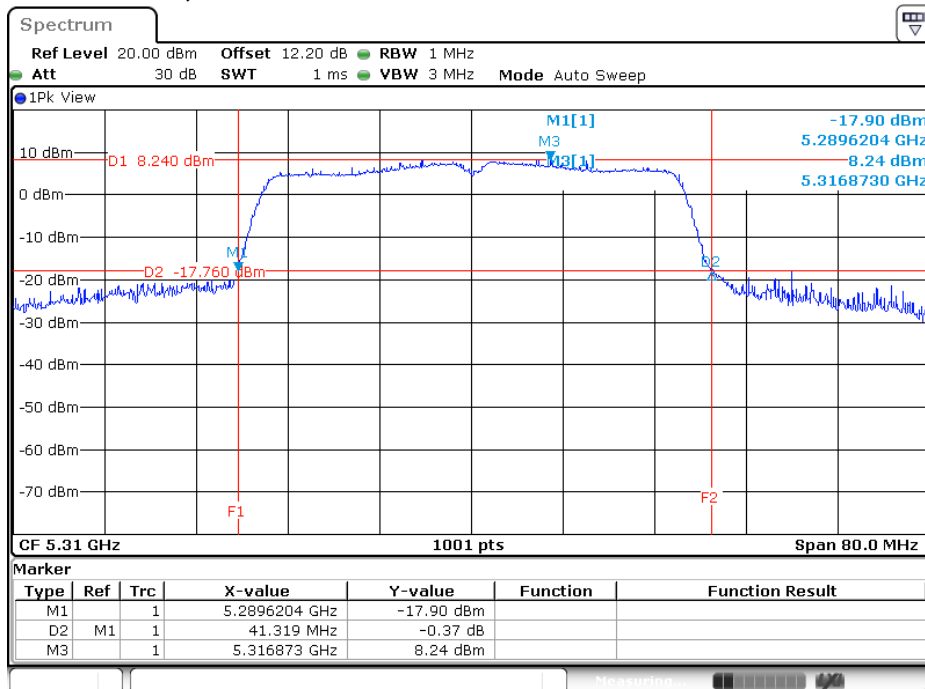
Date: 30.APR.2020 14:33:20

802.11an HT40 5270MHz, TX2


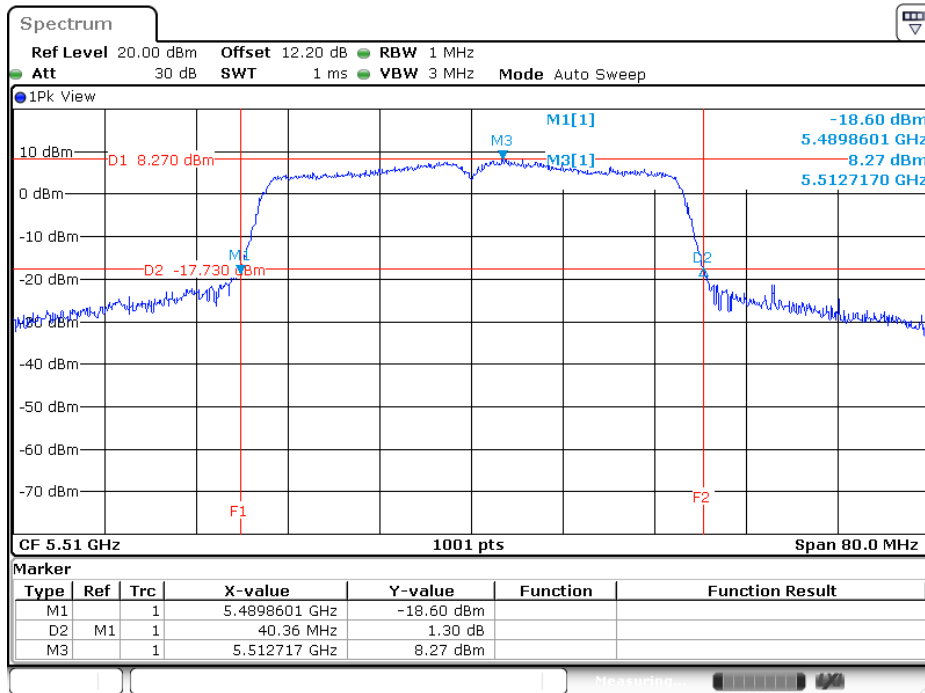
Date: 30.APR.2020 14:33:48

802.11an HT40 5310MHz, TX1


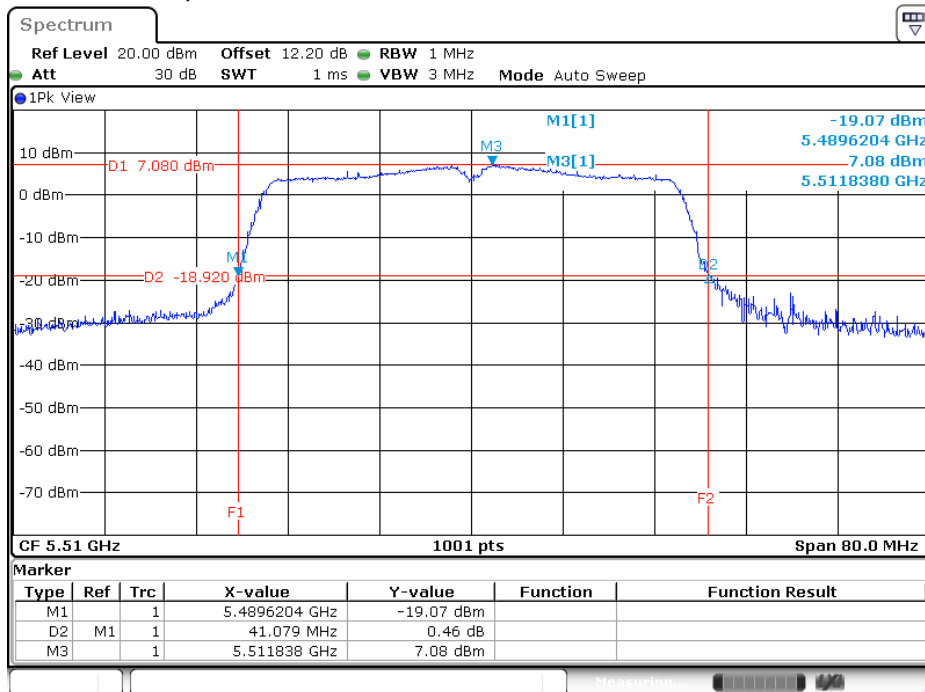
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802.11an HT40 5310MHz, TX2


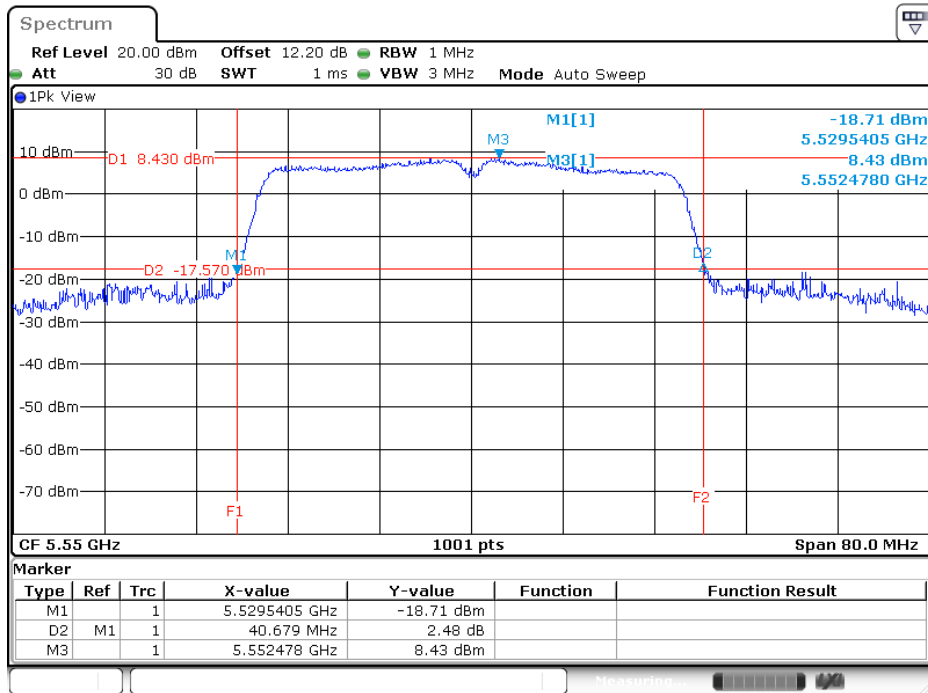
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802.11an HT40 5510MHz, TX1


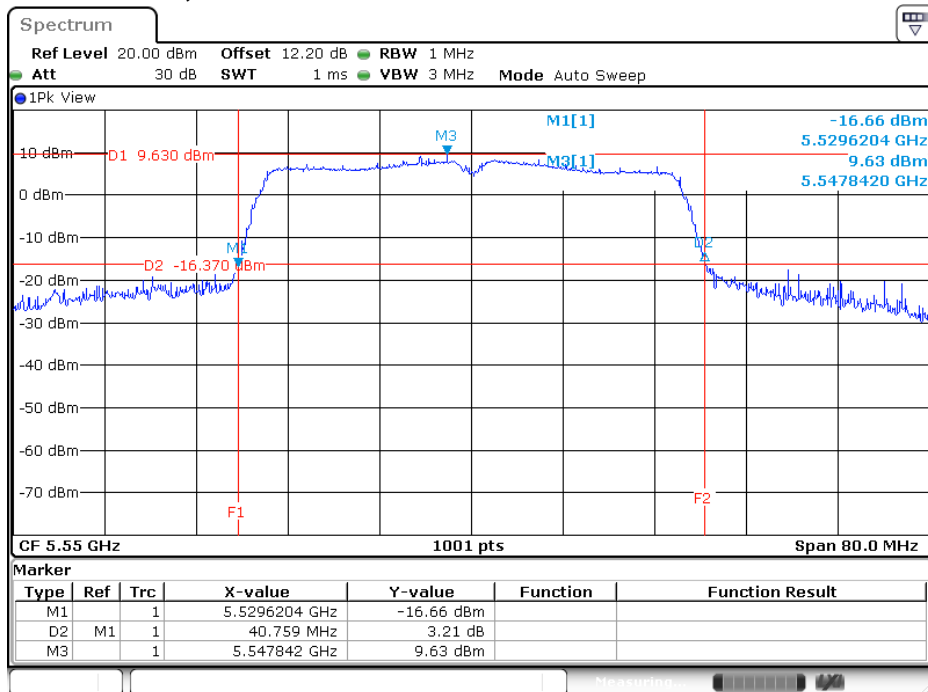
Date: 30.APR.2020 14:40:00

802.11an HT40 5510MHz, TX2


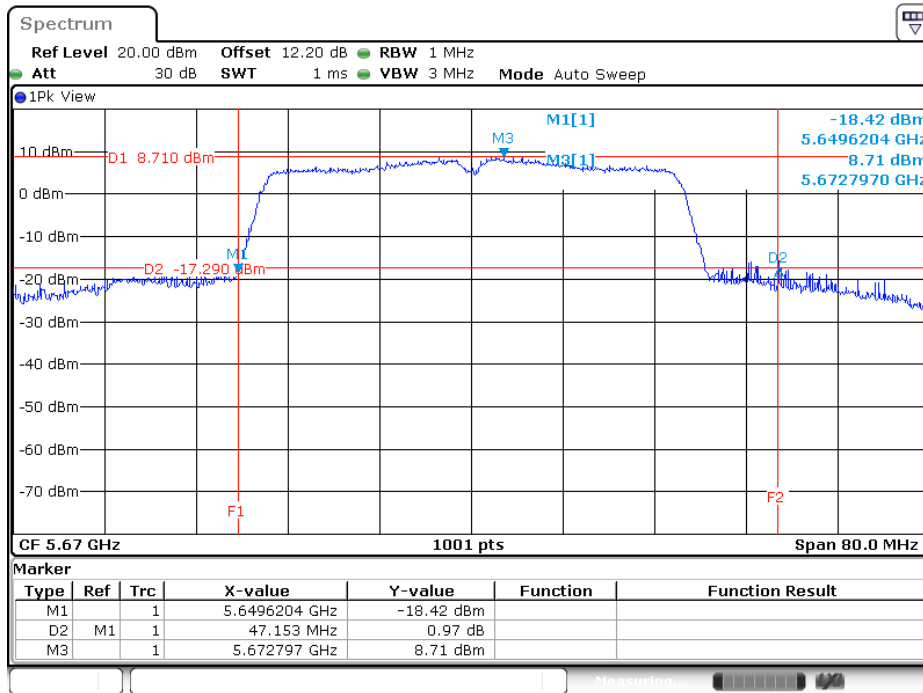
Date: 30.APR.2020 14:41:30

802.11an HT40 5550MHz, TX1


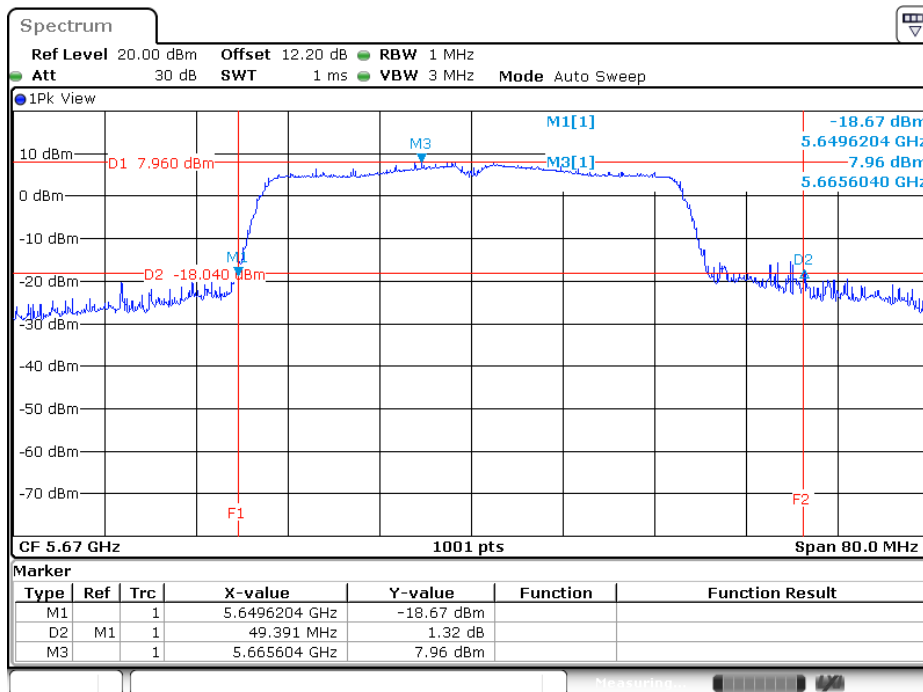
Date: 30.APR.2020 14:42:48

802.11an HT40 5550MHz, TX2


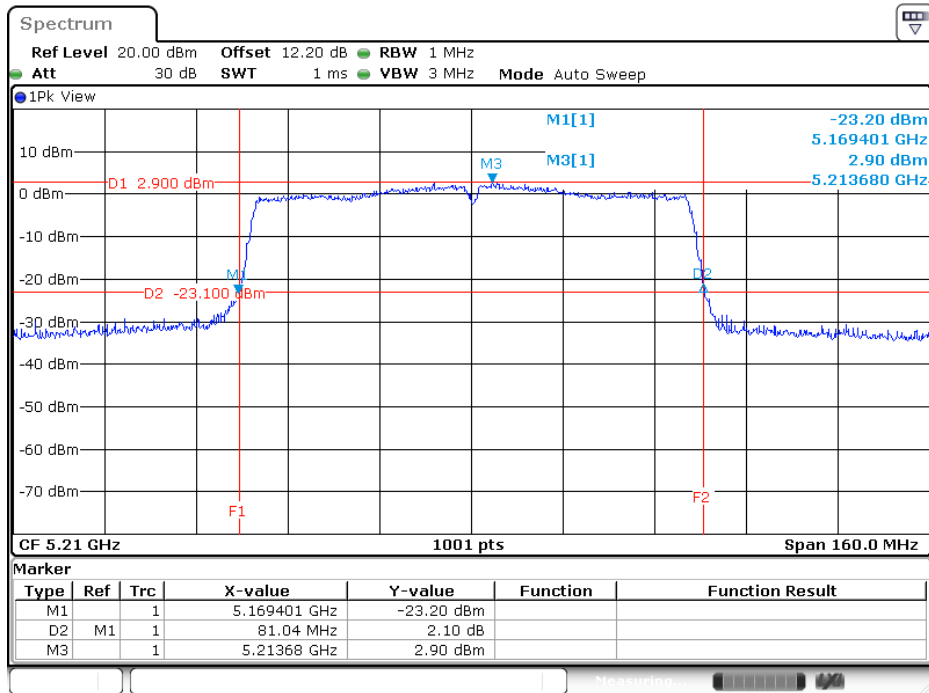
Date: 30.APR.2020 14:42:01

802.11an HT40 5670MHz, TX1


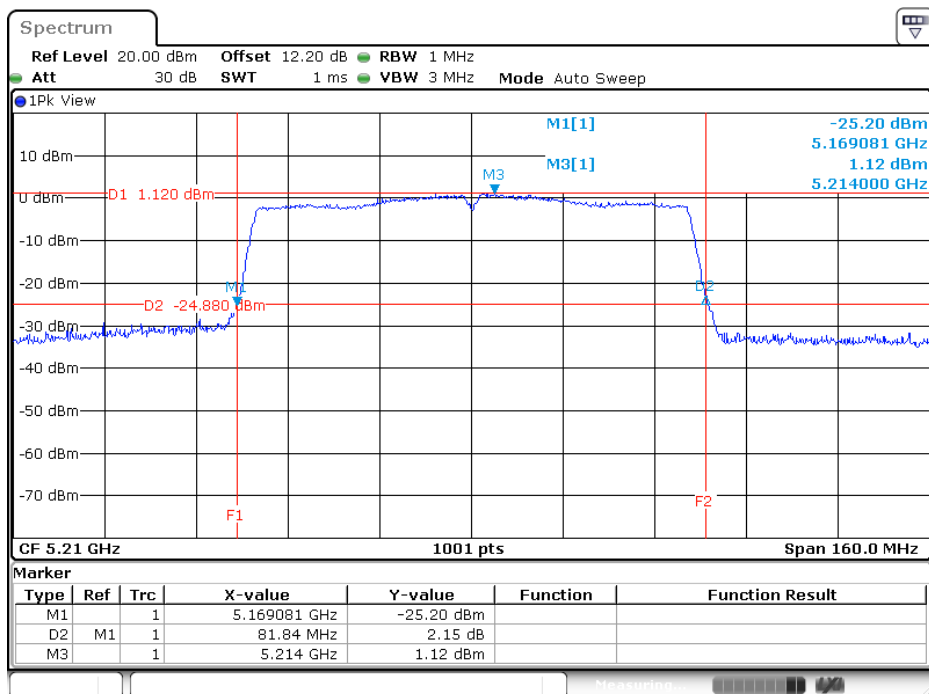
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802.11an HT40 5670MHz, TX2


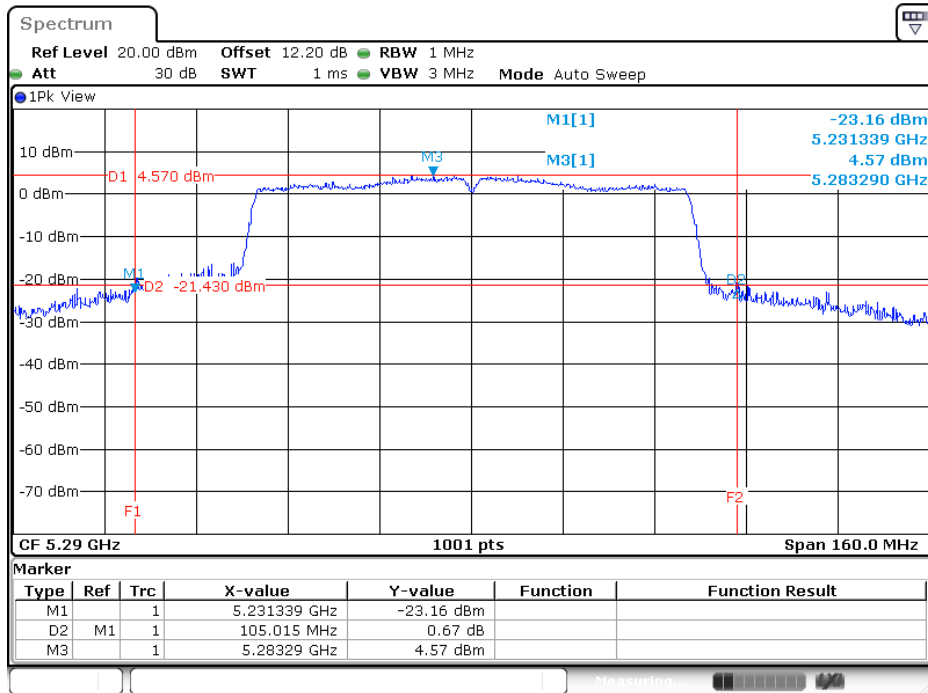
Date: 30.APR.2020 14:43:57

802.11ac VHT80 5210MHz, TX1


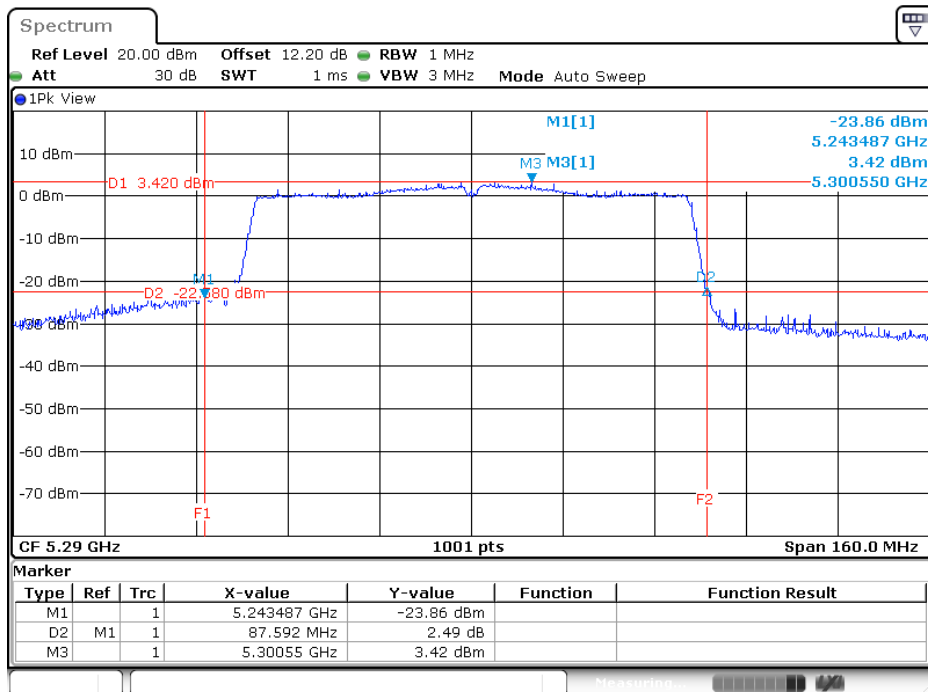
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802.11ac VHT80 5210MHz, TX2


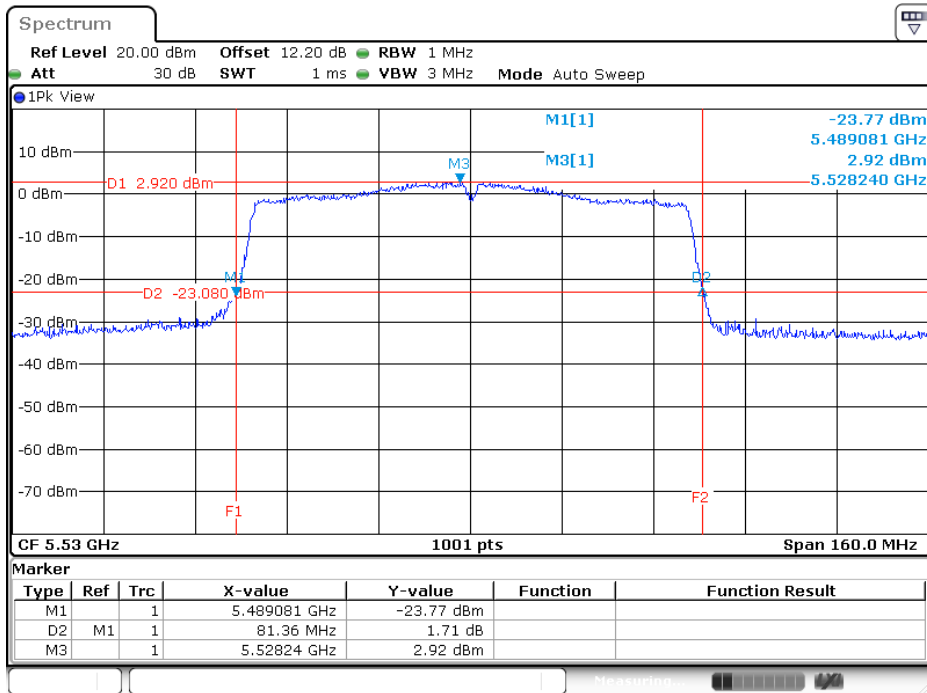
Date: 30.APR.2020 14:45:30

802.11ac VHT80 5290MHz, TX1


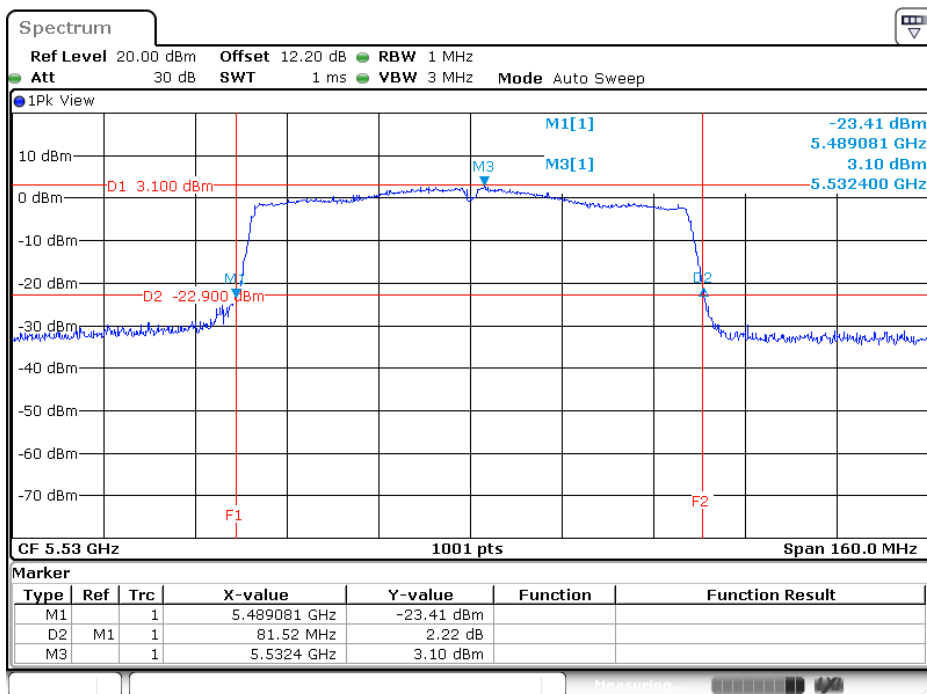
Date: 6.MAY.2020 14:33:48

802.11ac VHT80 5290MHz, TX2


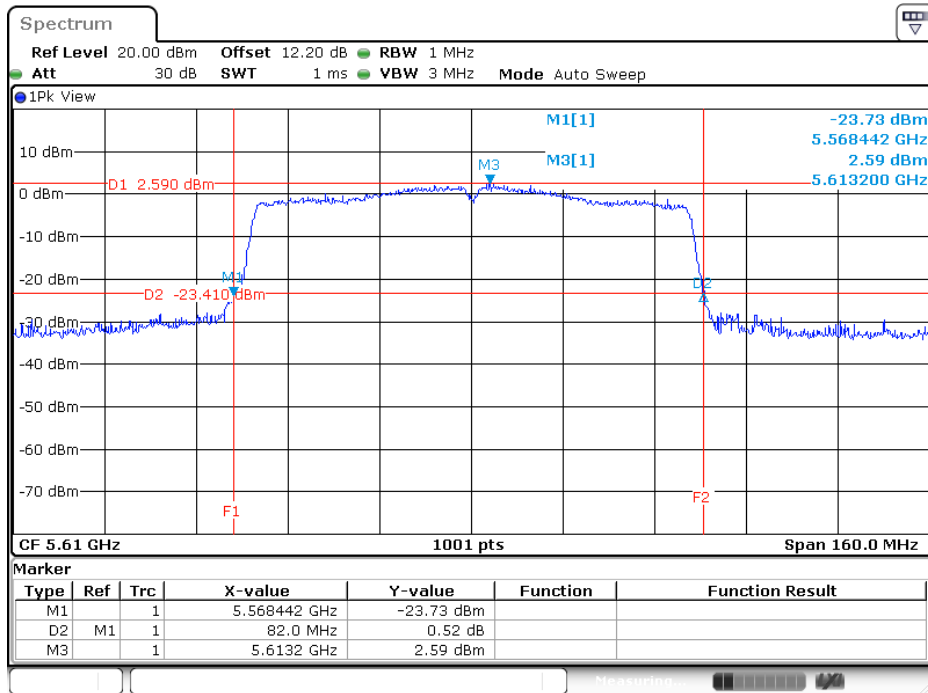
Date: 6.MAY.2020 14:36:21

802.11ac VHT80 5530MHz, TX1


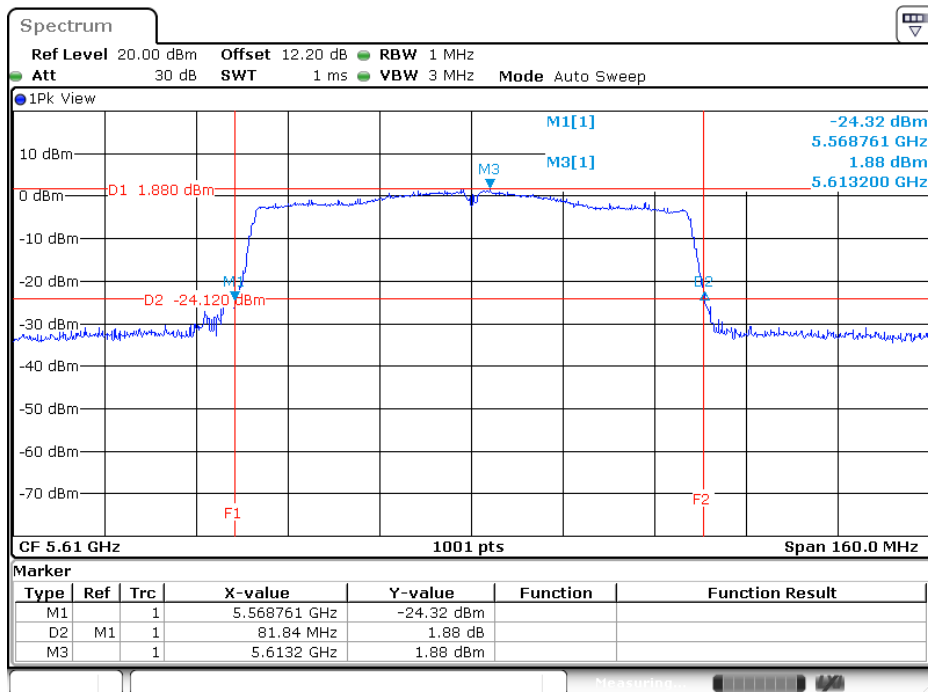
Date: 30.APR.2020 14:51:02

802.11ac VHT80 5530MHz, TX2


Date: 30.APR.2020 14:50:24

802.11ac VHT80 5610MHz, TX1


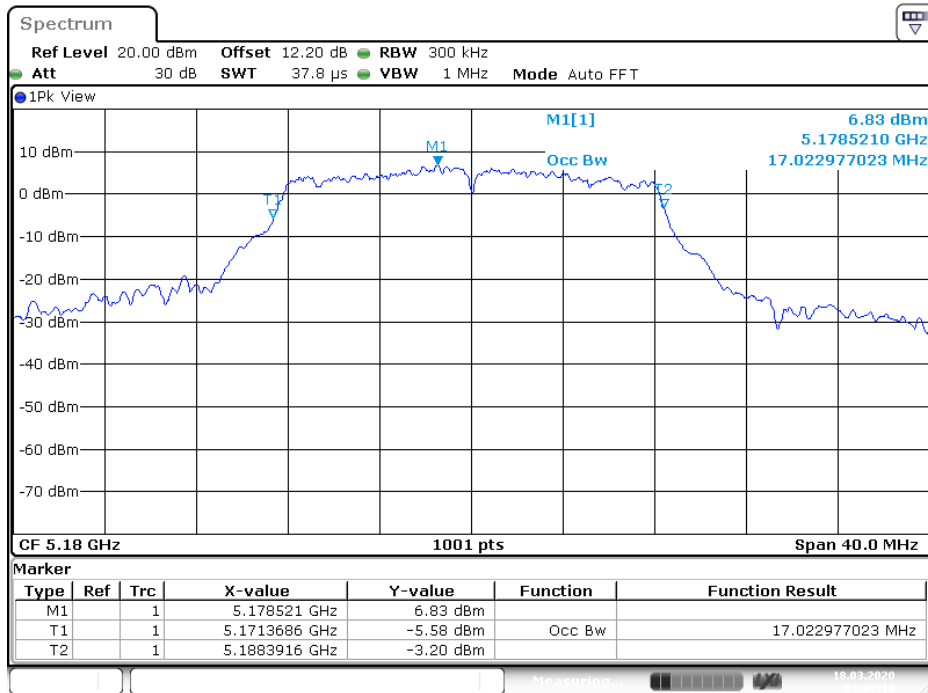
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802.11ac VHT80 5610MHz, TX2


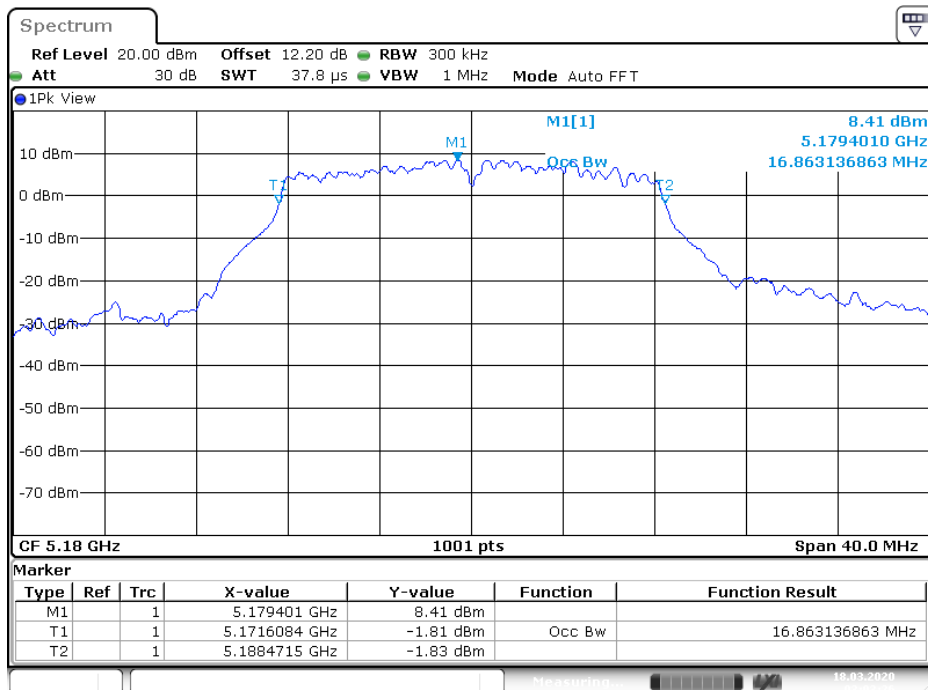
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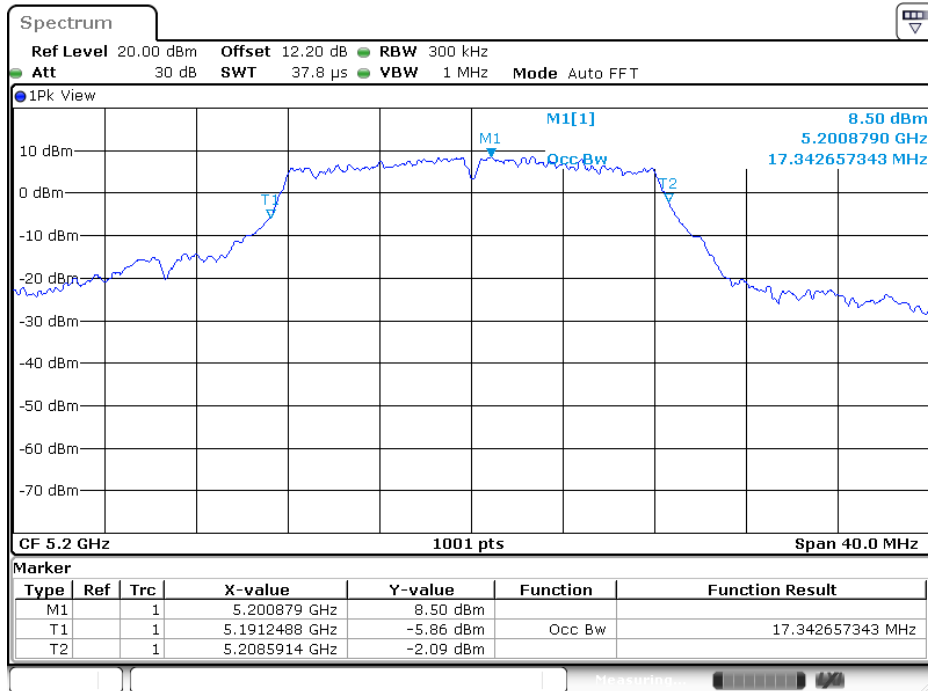
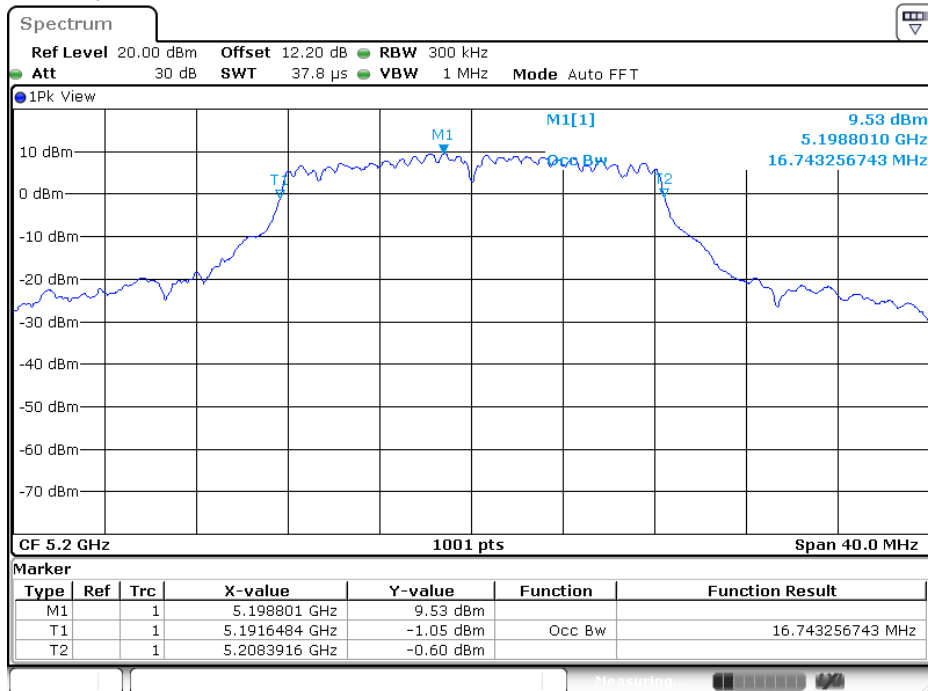
The Plot of 99% Bandwidth

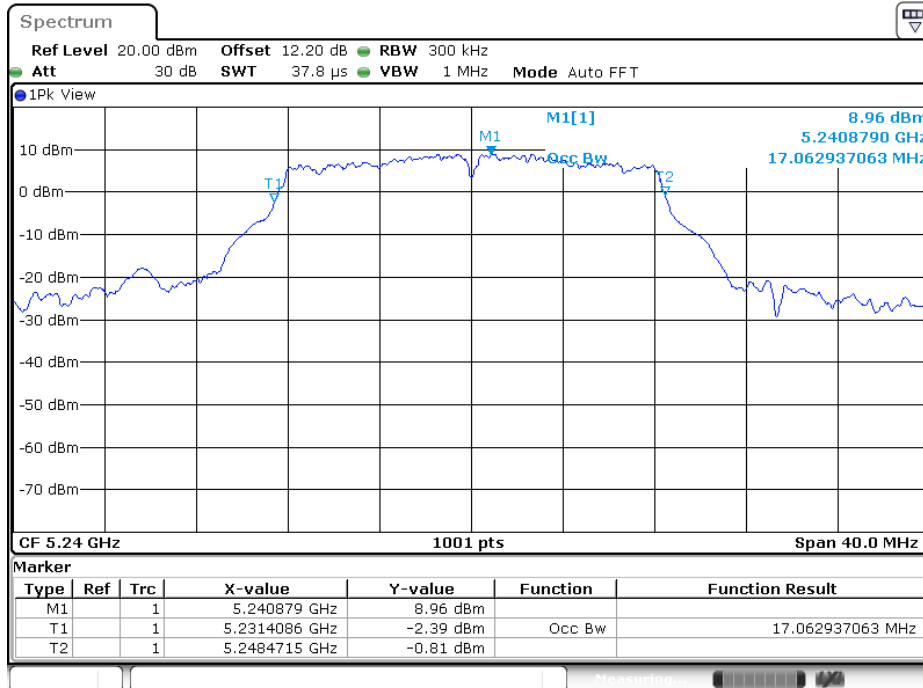
802.11a 5180MHz, TX1



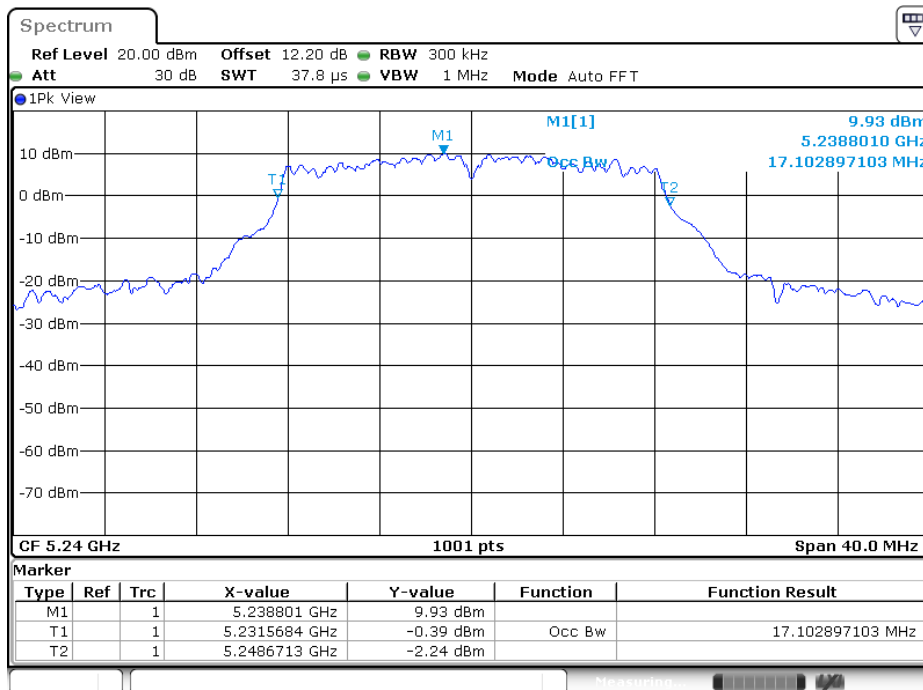
802.11a 5180MHz, TX2



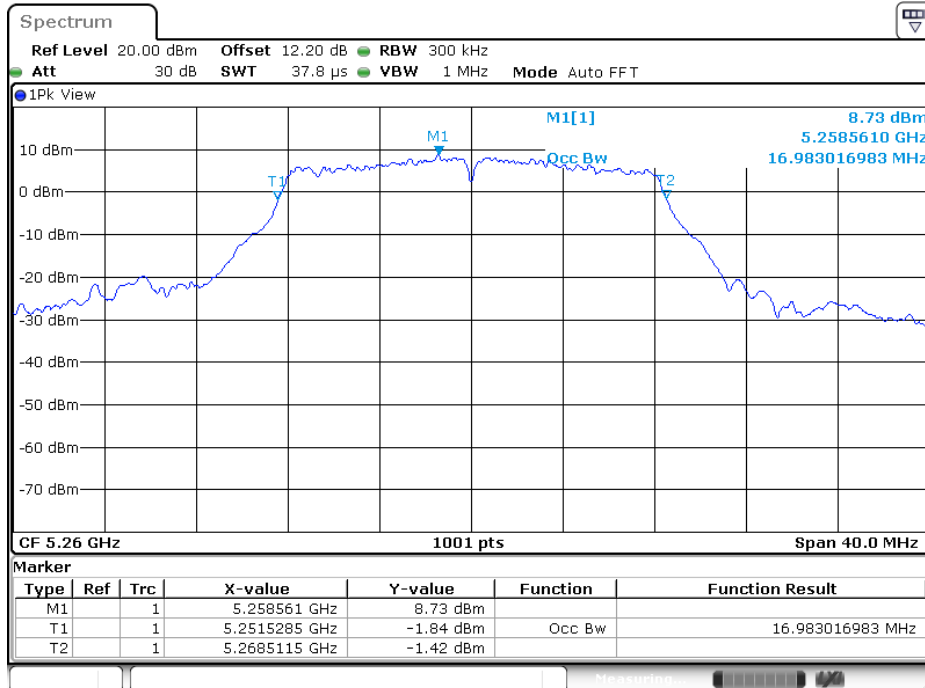
802.11a 5200MHz, TX1

802.11a 5200MHz, TX2


802.11a 5240MHz, TX1


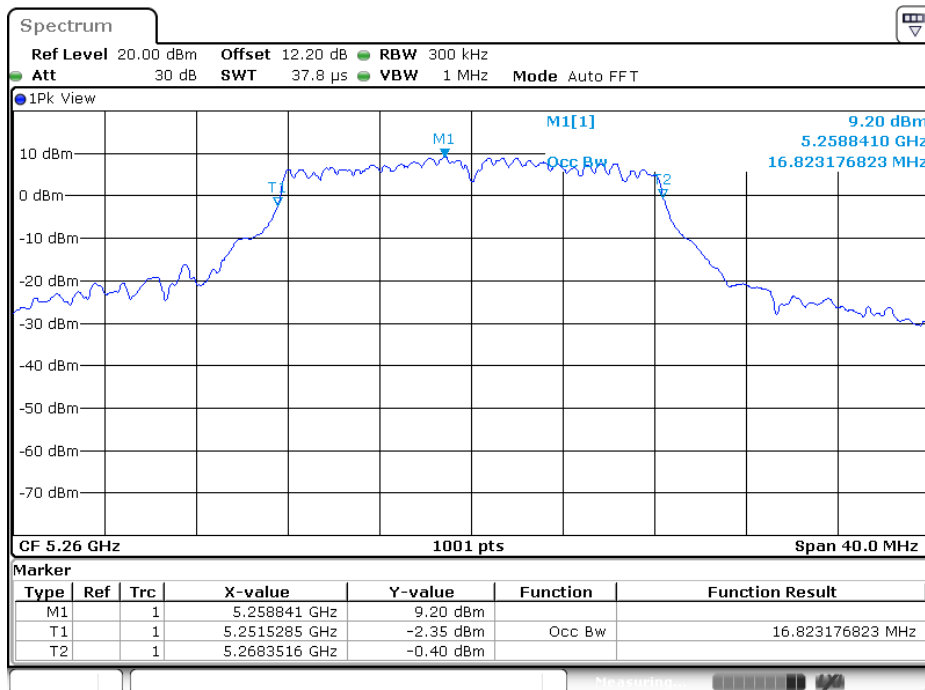
Date: 22.MAY.2020 23:51:49

802.11a 5240MHz, TX2


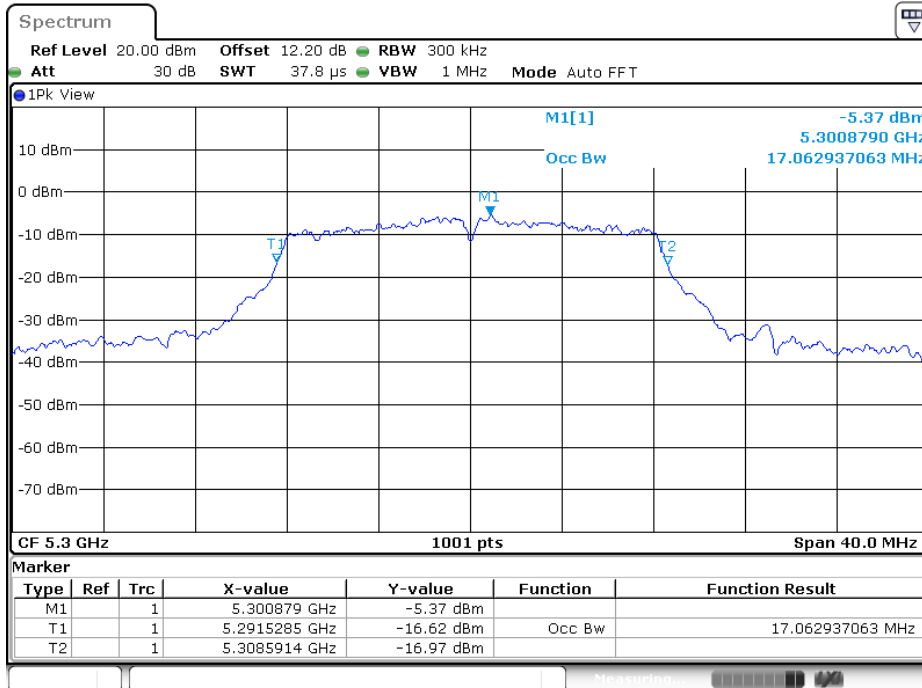
Date: 23.MAY.2020 00:08:57

802.11a 5260MHz, TX1


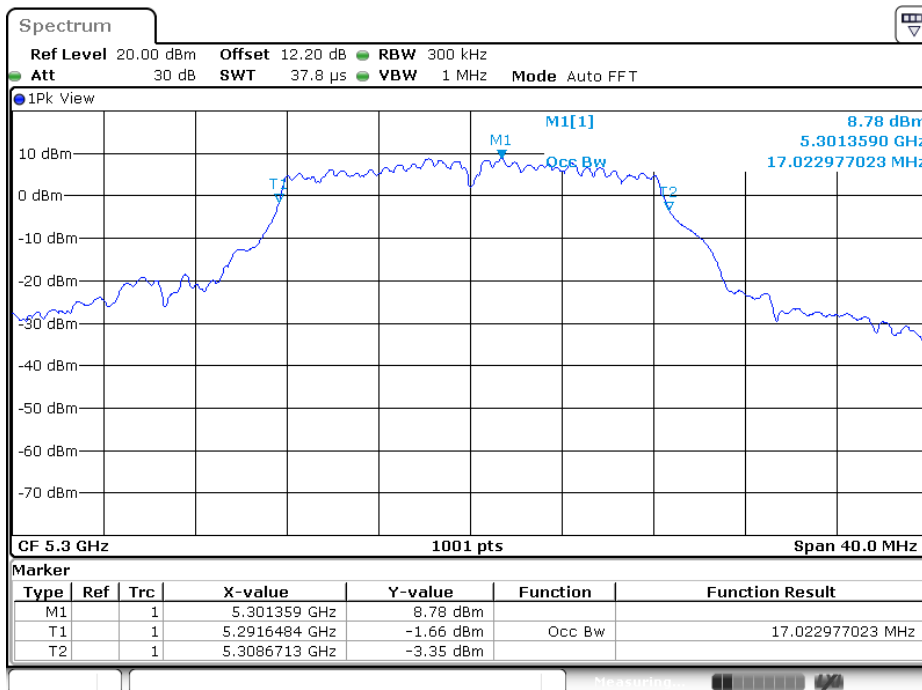
Date: 22.MAY.2020 23:58:17

802.11a 5260MHz, TX2


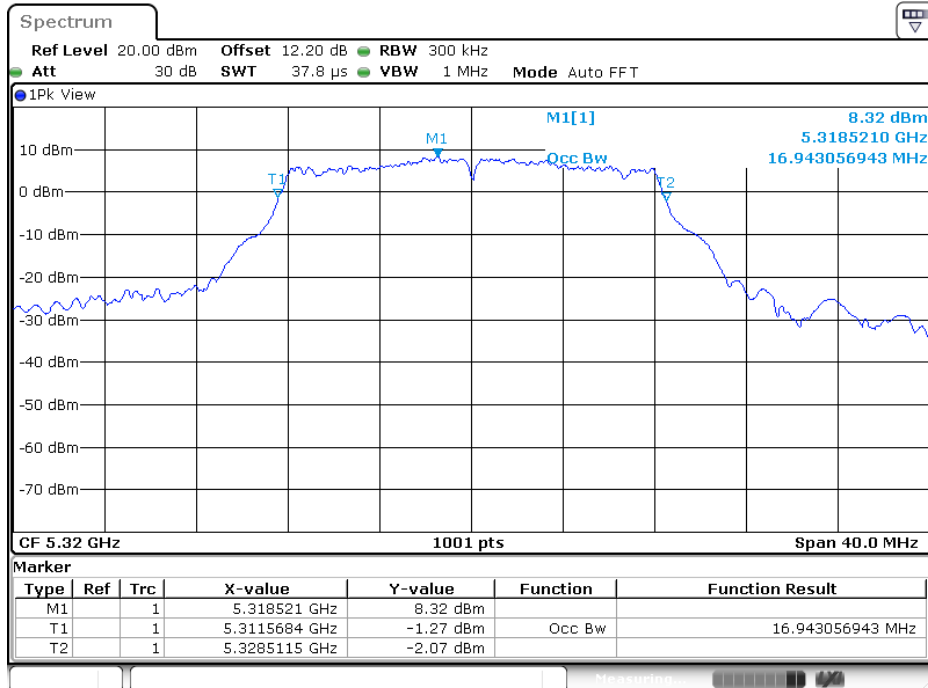
Date: 23.MAY.2020 00:07:46

802.11a 5300MHz, TX1


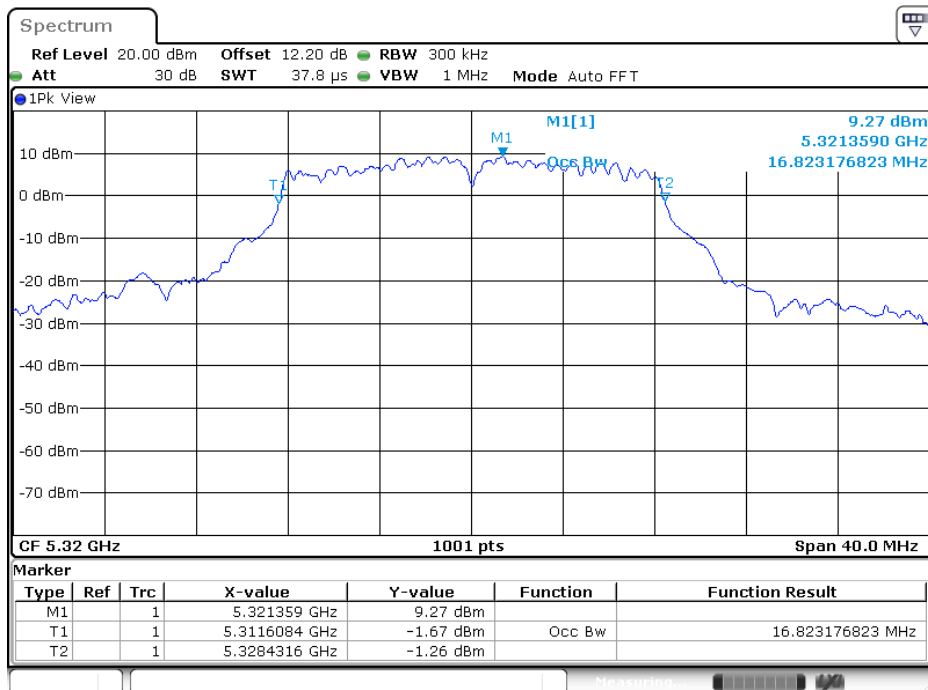
Date: 22.MAY.2020 19:40:04

802.11a 5300MHz, TX2


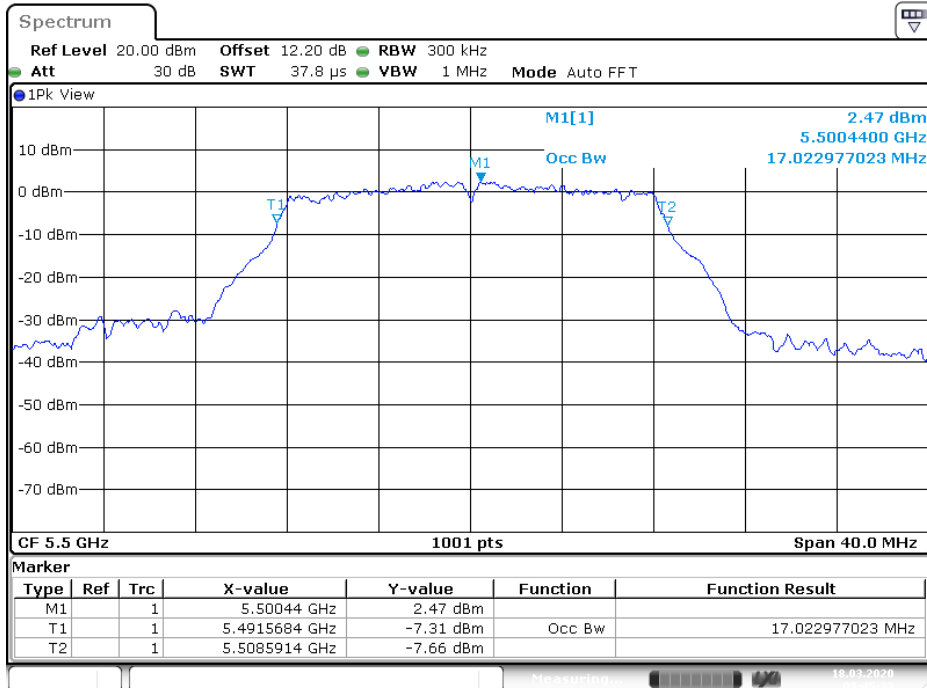
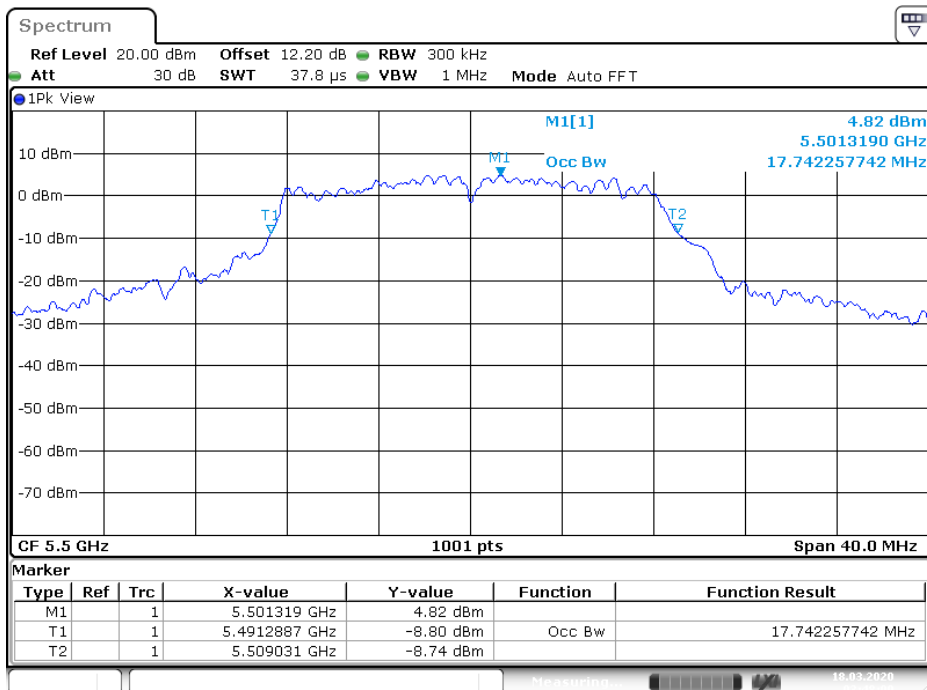
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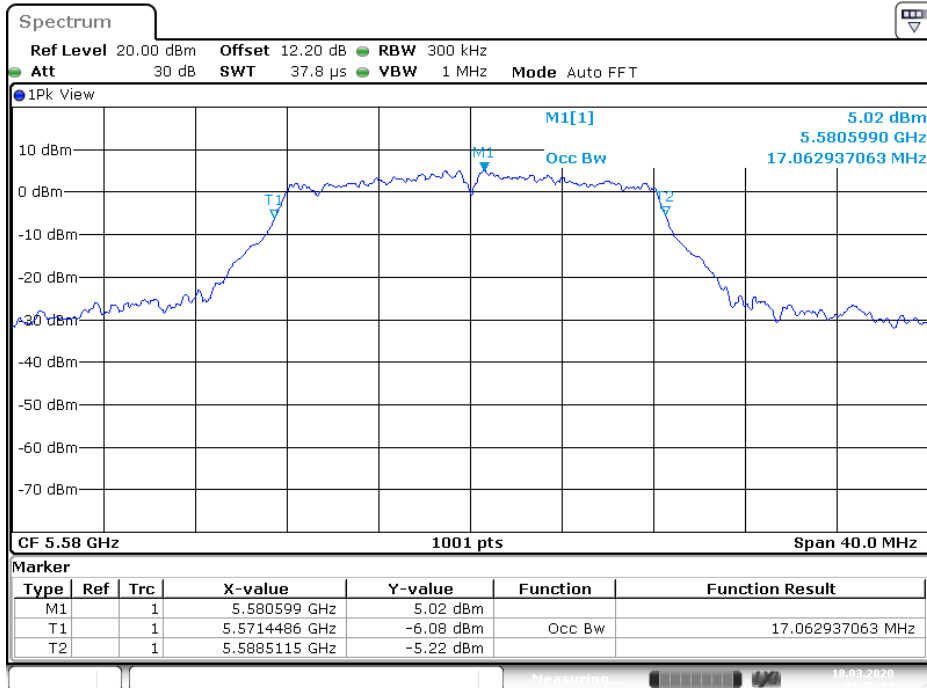
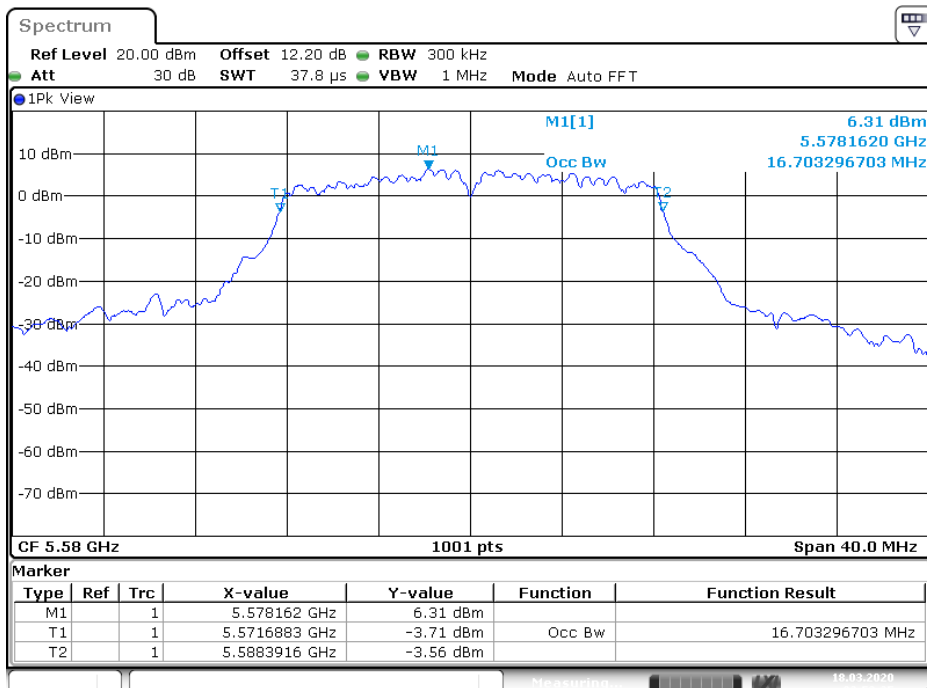
802.11a 5320MHz, TX1


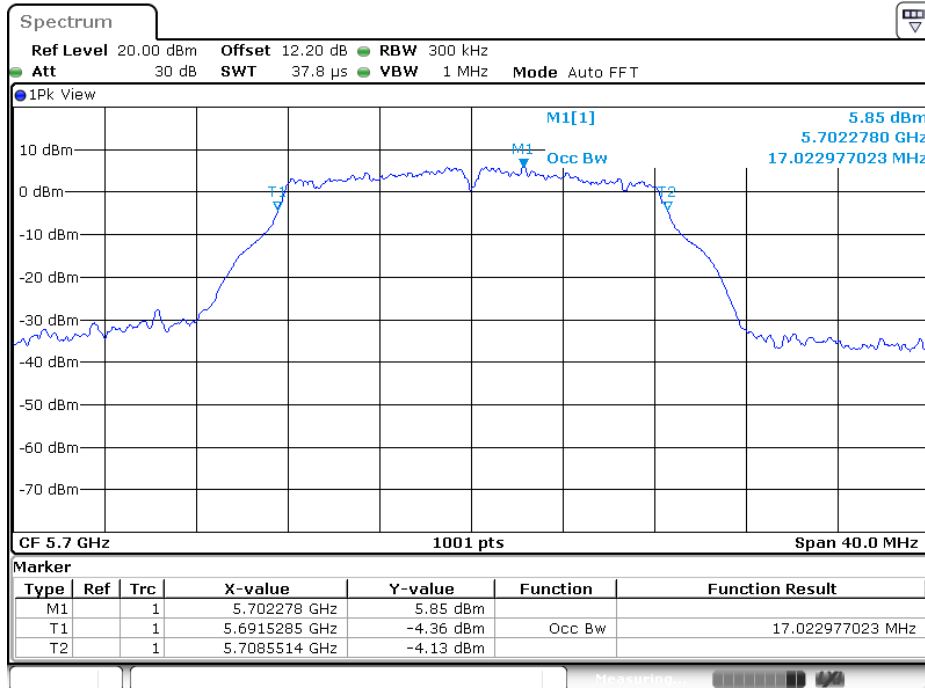
Date: 23.MAY.2020 00:01:09

802.11a 5320MHz, TX2


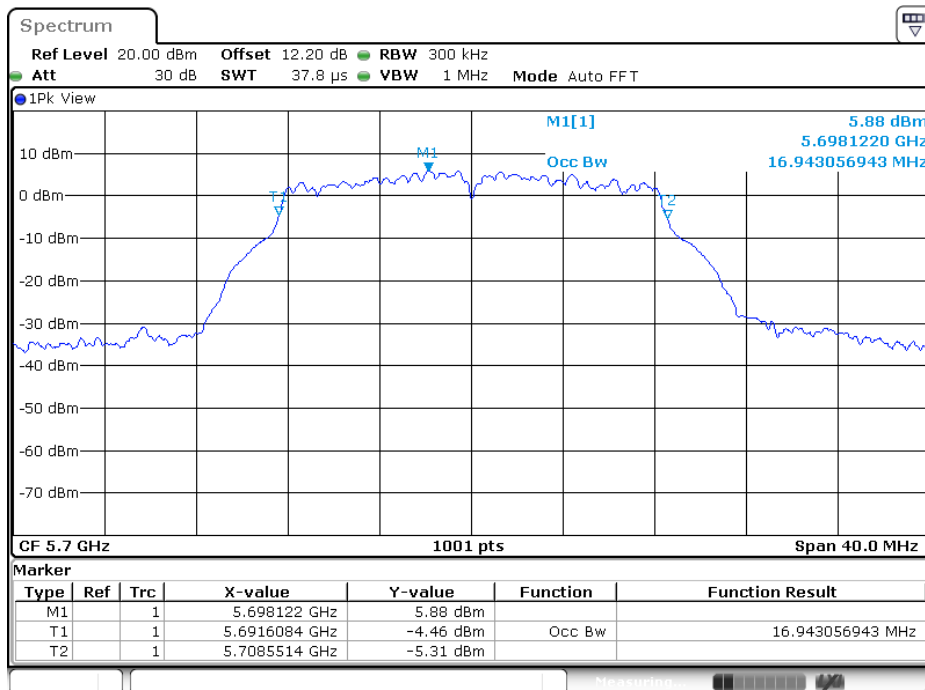
Date: 23.MAY.2020 00:05:16

802.11a 5500MHz, TX1

802.11a 5500MHz, TX2


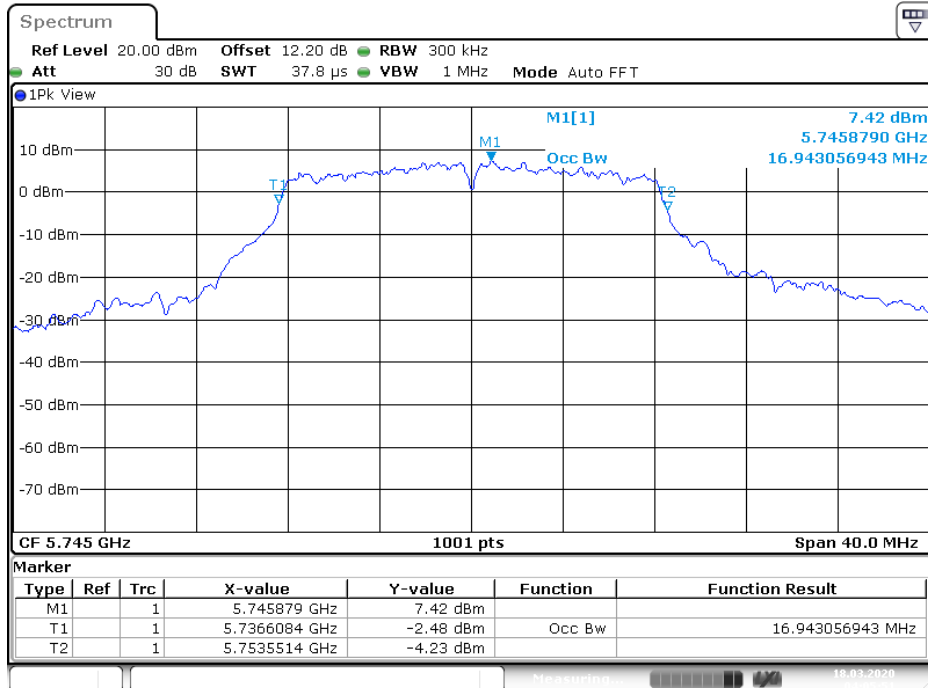
802.11a 5580MHz, TX1

802.11a 5580MHz, TX2


802.11a 5700MHz, TX1


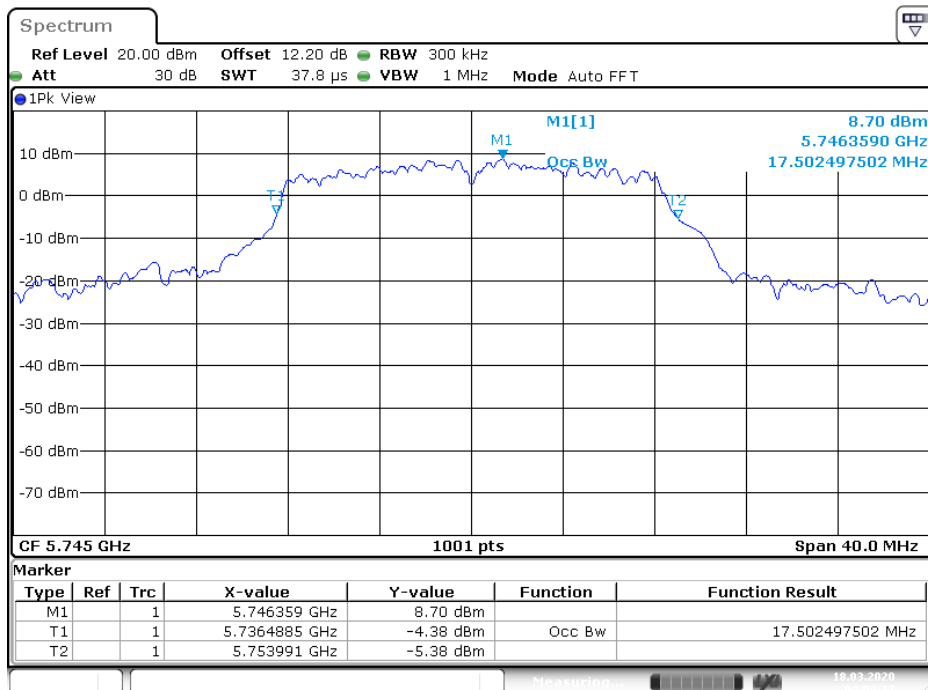
Date: 23.MAY.2020 00:02:28

802.11a 5700MHz, TX2


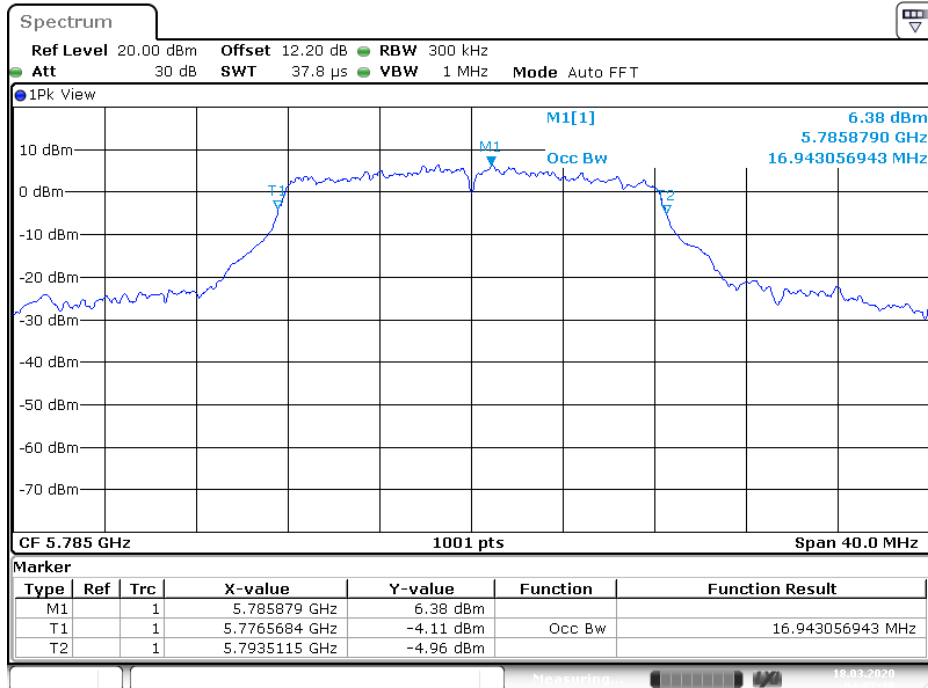
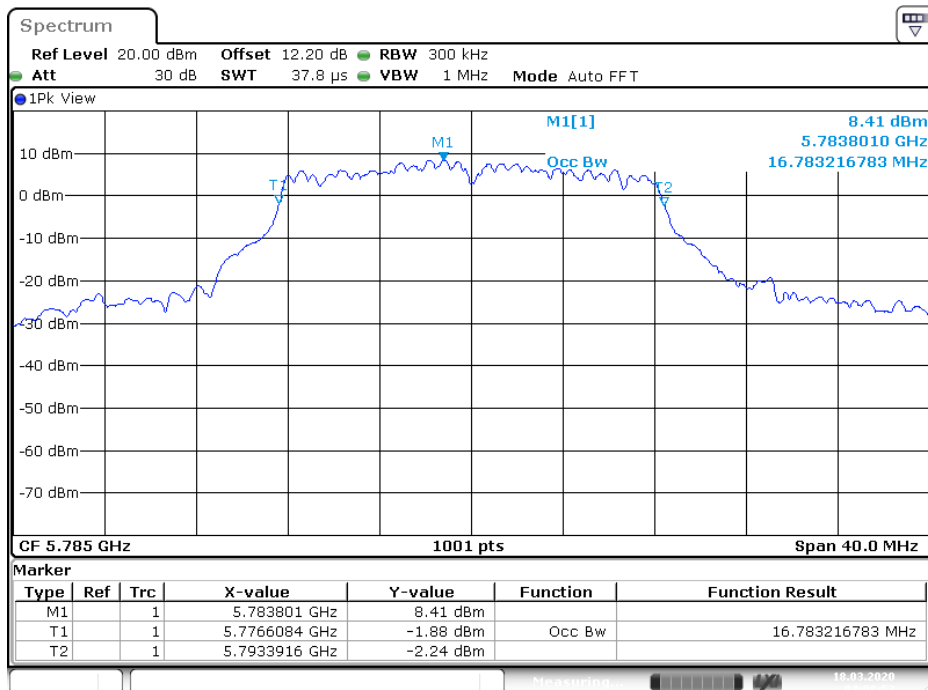
Date: 23.MAY.2020 00:03:56

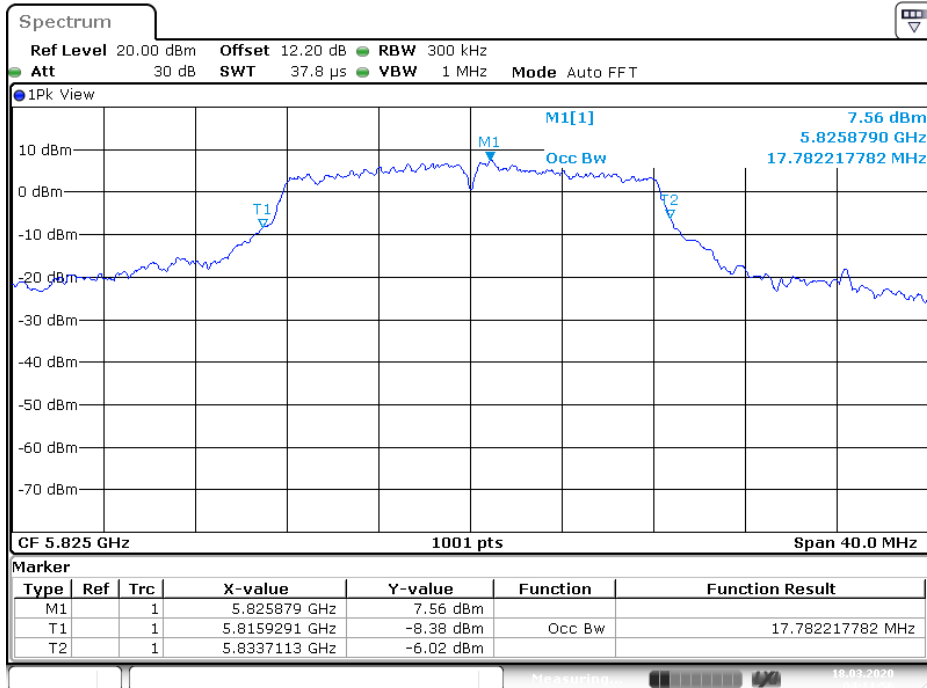
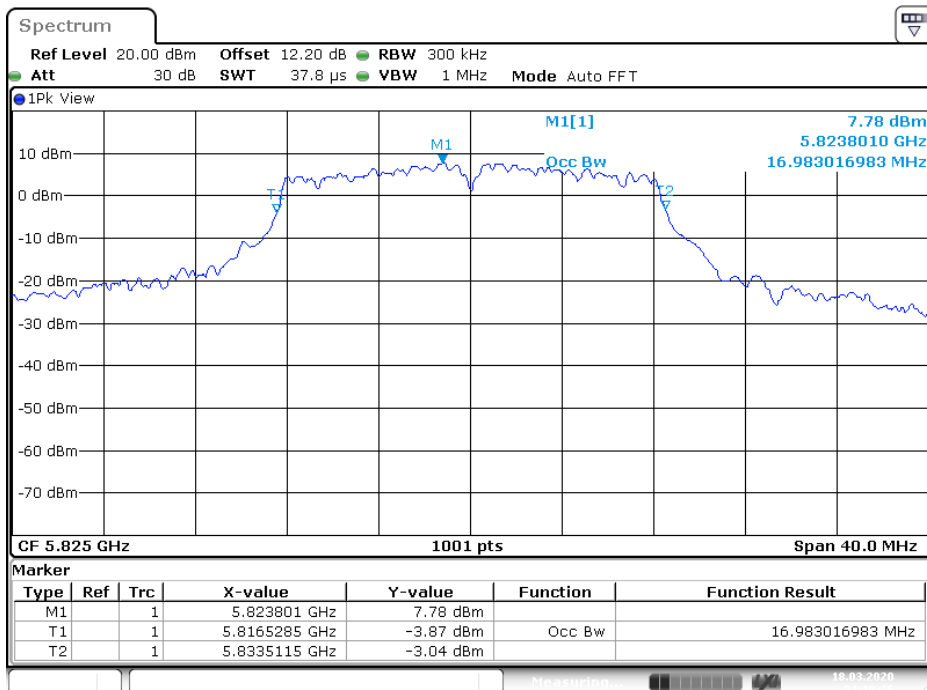
802.11a 5745MHz, TX1


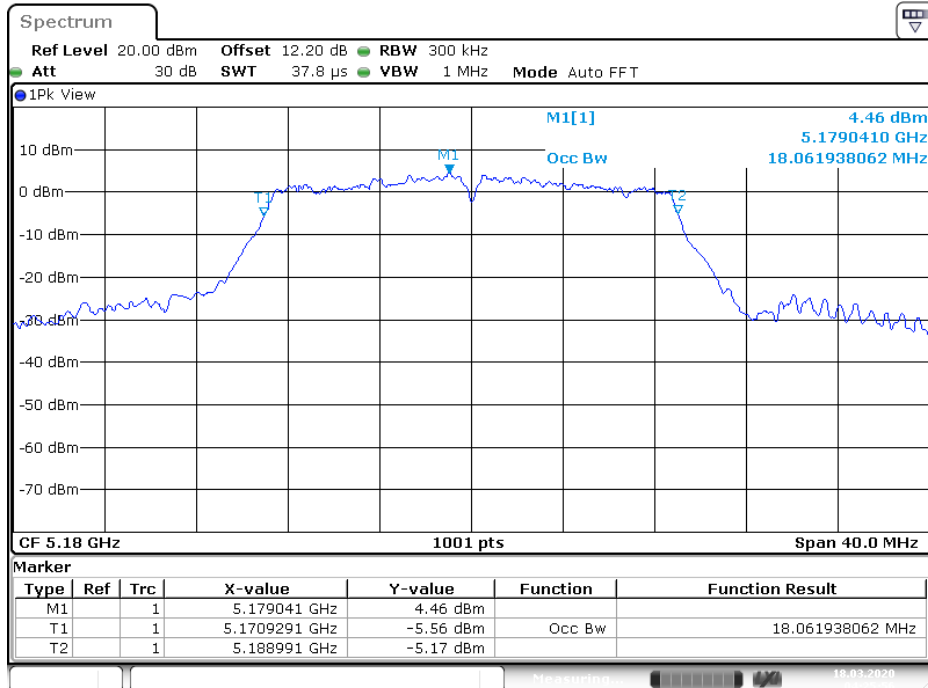
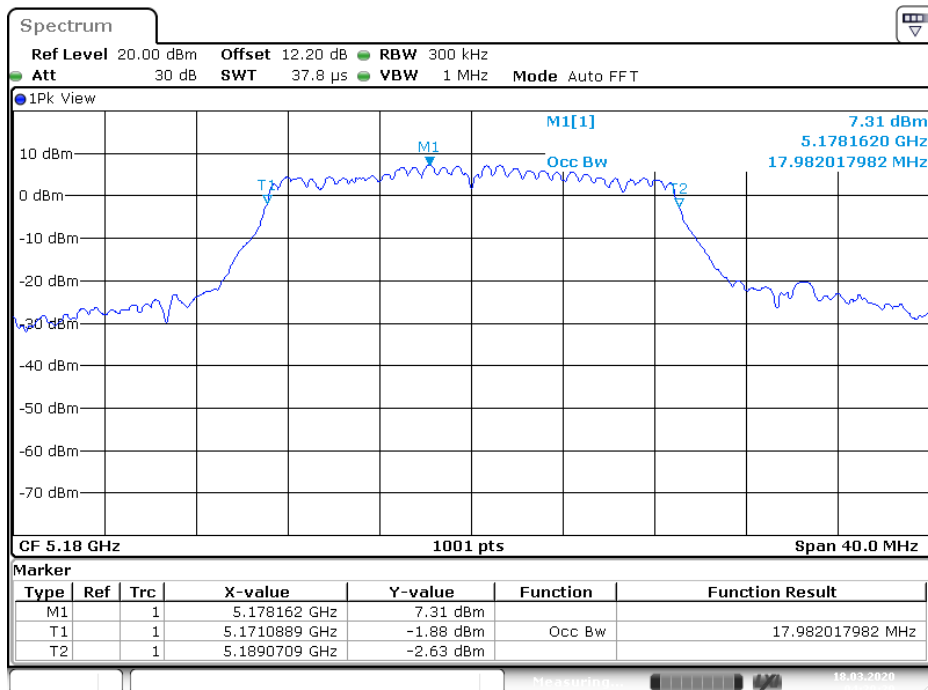
Date: 18.MAR.2020 04:05:51

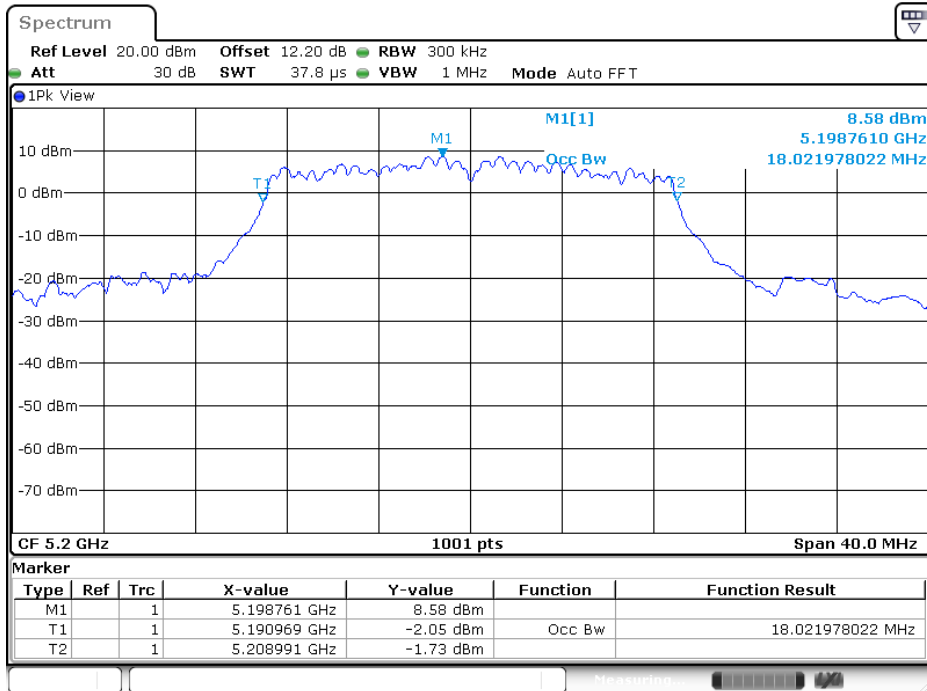
802.11a 5745MHz, TX2


Date: 18.MAR.2020 04:04:17

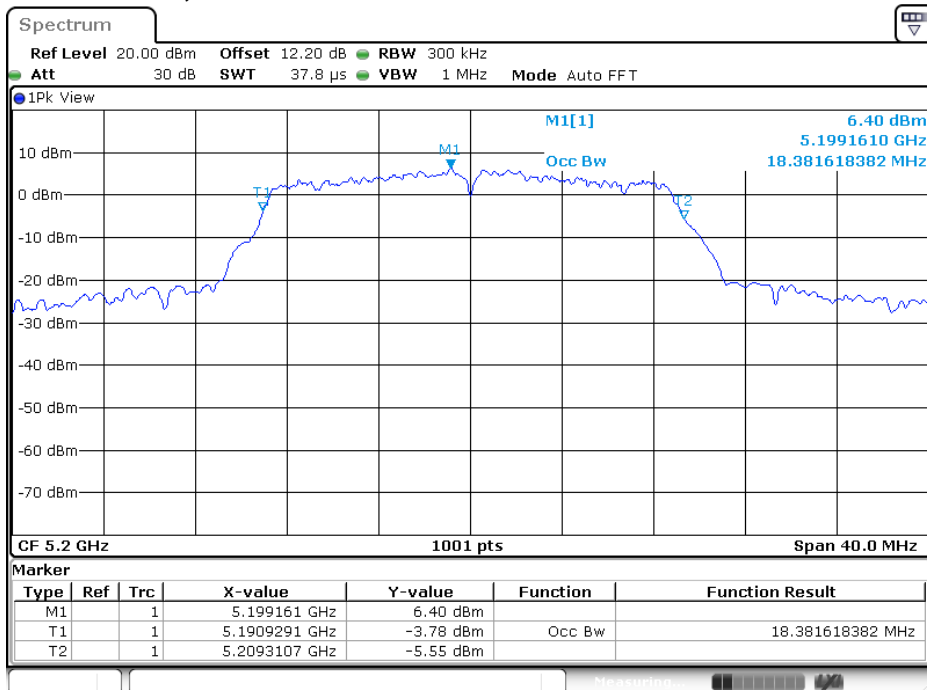
802.11a 5785MHz, TX1

802.11a 5785MHz, TX2


802.11a 5825MHz, TX1

802.11a 5825MHz, TX2


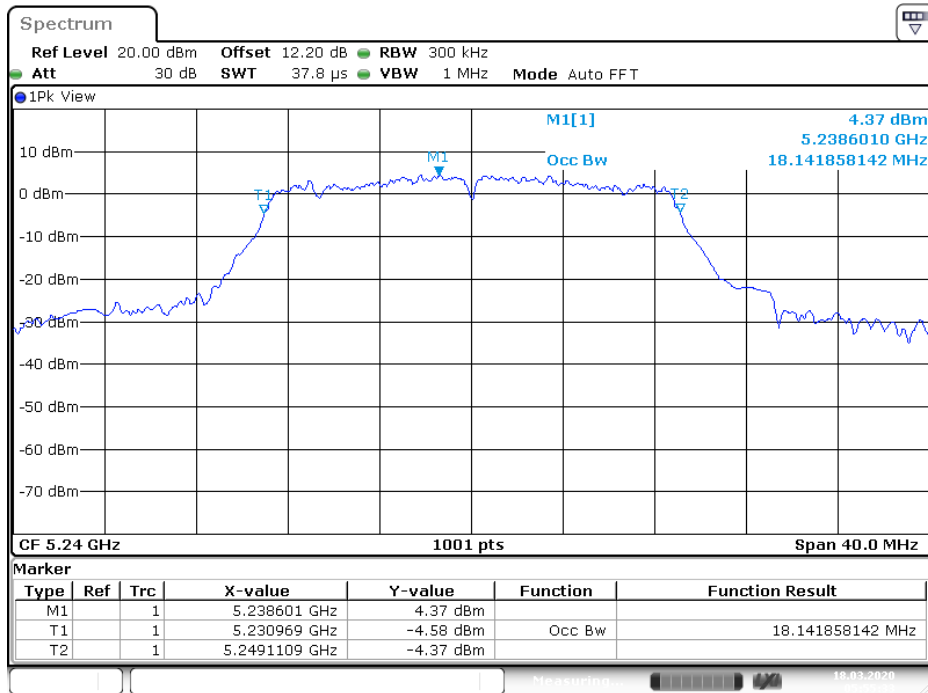
802.11an HT20 5180MHz, TX1

802.11an HT20 5180MHz, TX2


802.11an HT20 5200MHz, TX1


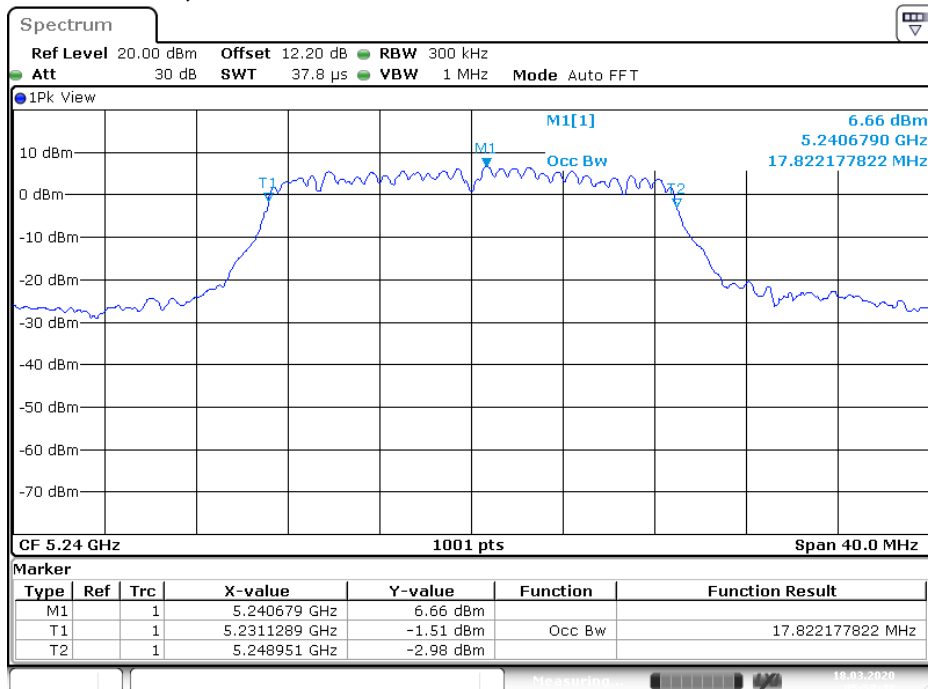
Date: 30.APR.2020 14:01:58

802.11an HT20 5200MHz, TX2


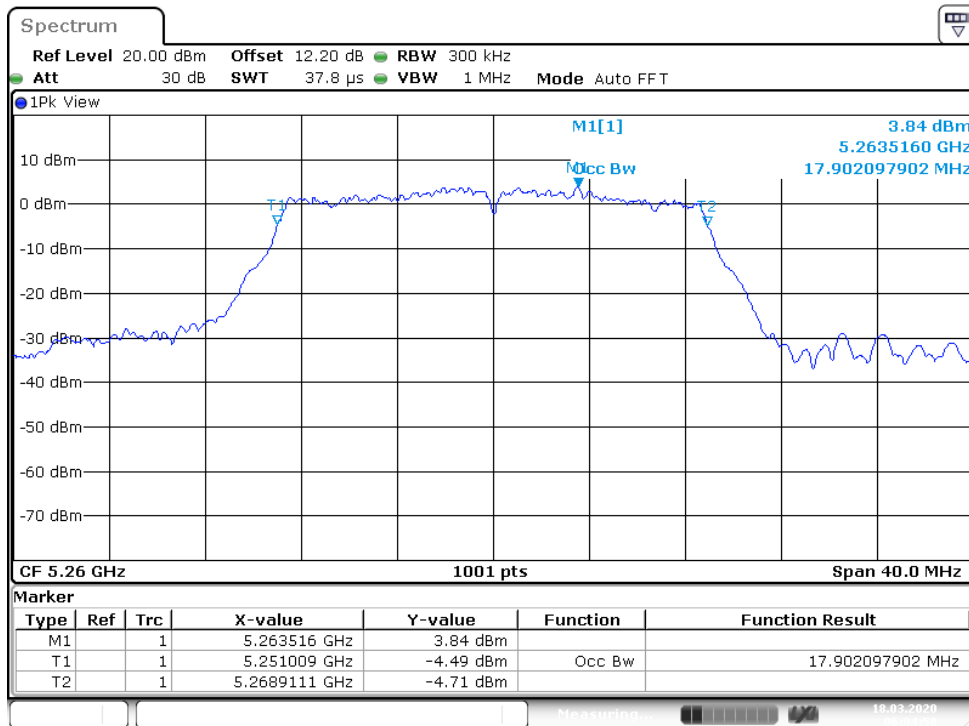
Date: 30.APR.2020 14:03:09

802.11an HT20 5240MHz, TX1


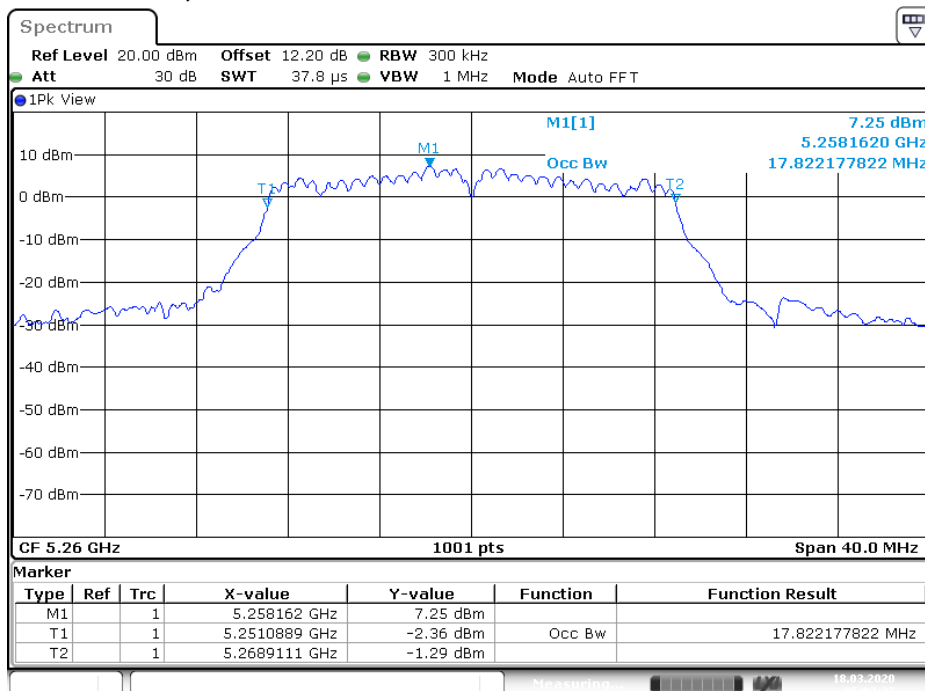
Date: 18.MAR.2020 05:55:32

802.11an HT20 5240MHz, TX2


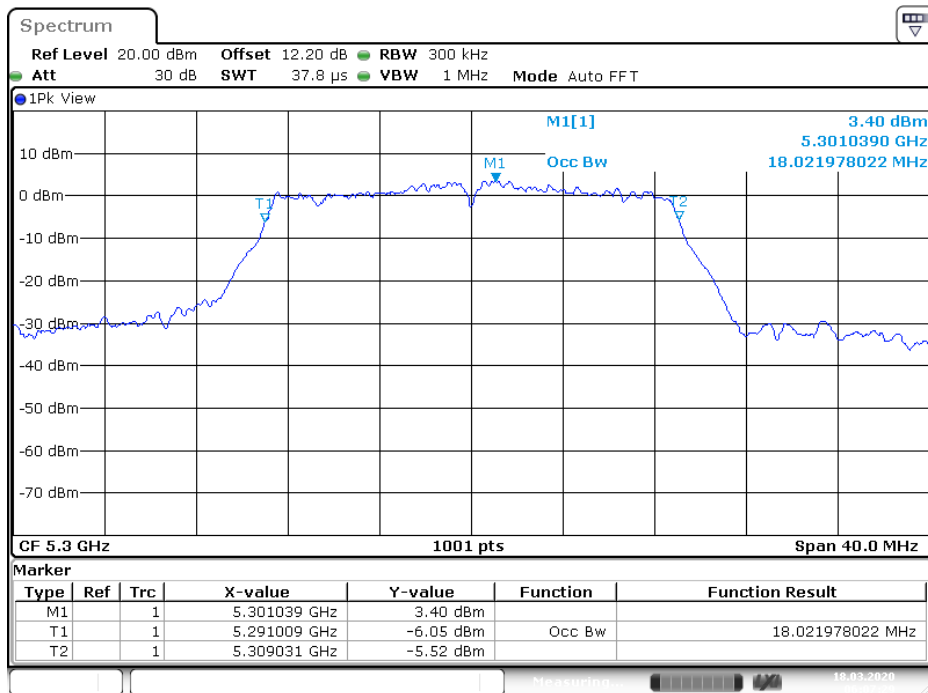
Date: 18.MAR.2020 05:58:44

802.11an HT20 5260MHz, TX1


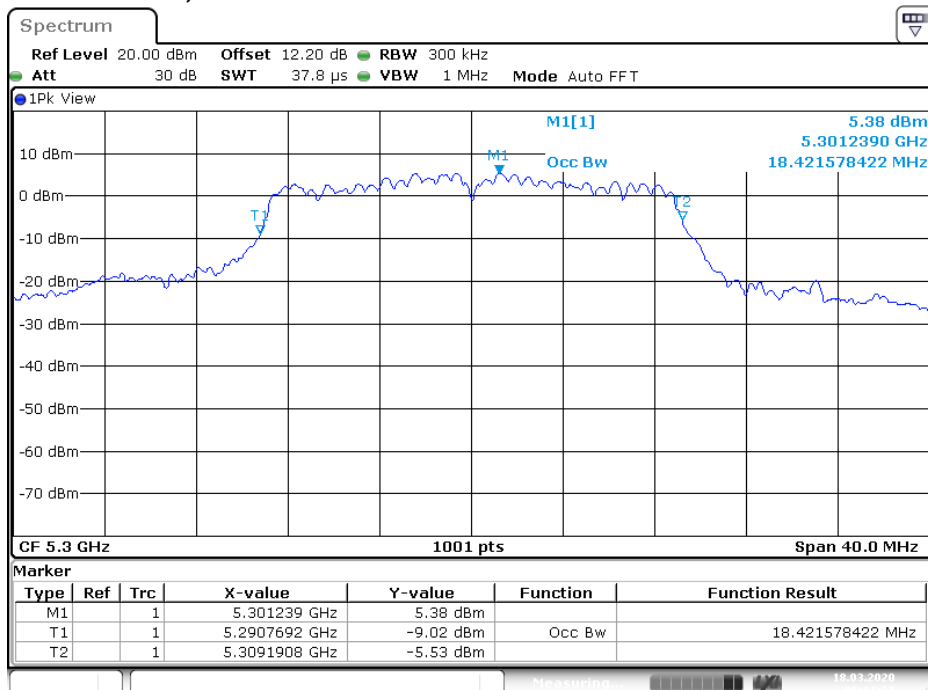
Date: 18.MAR.2020 06:04:59

802.11an HT20 5260MHz, TX2


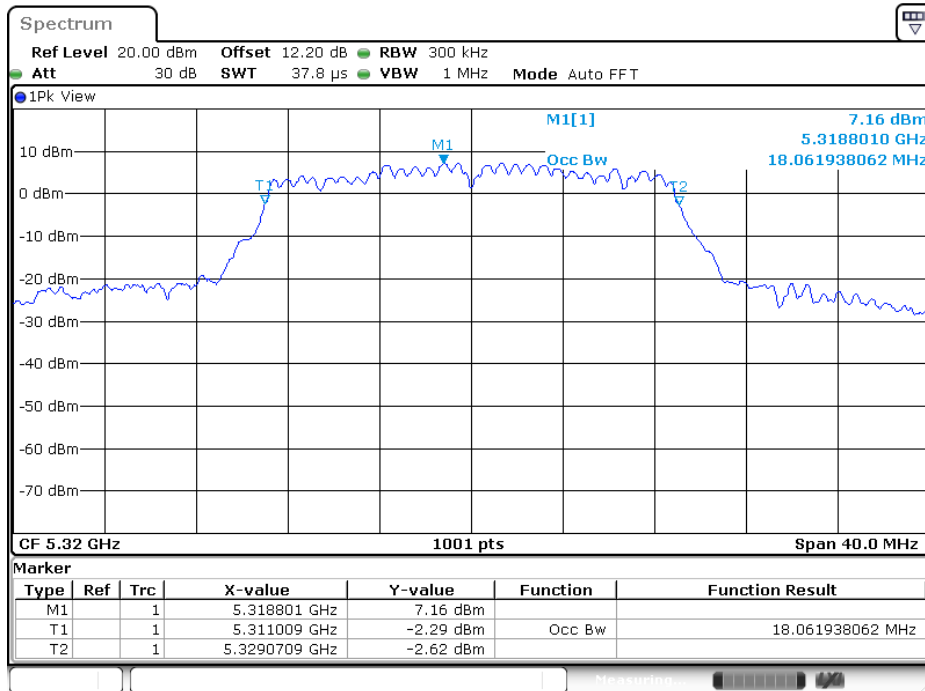
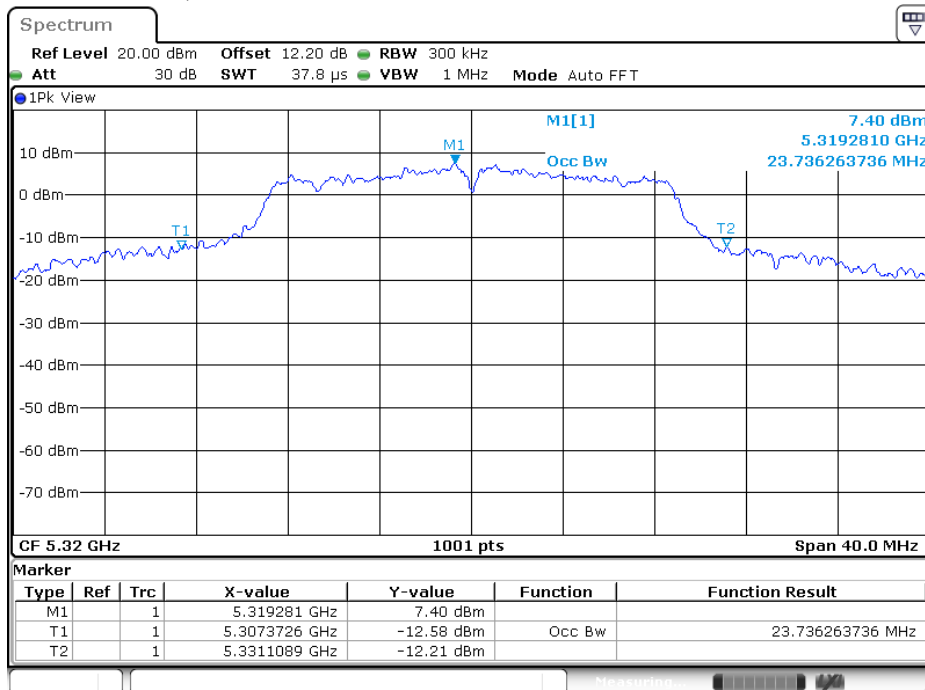
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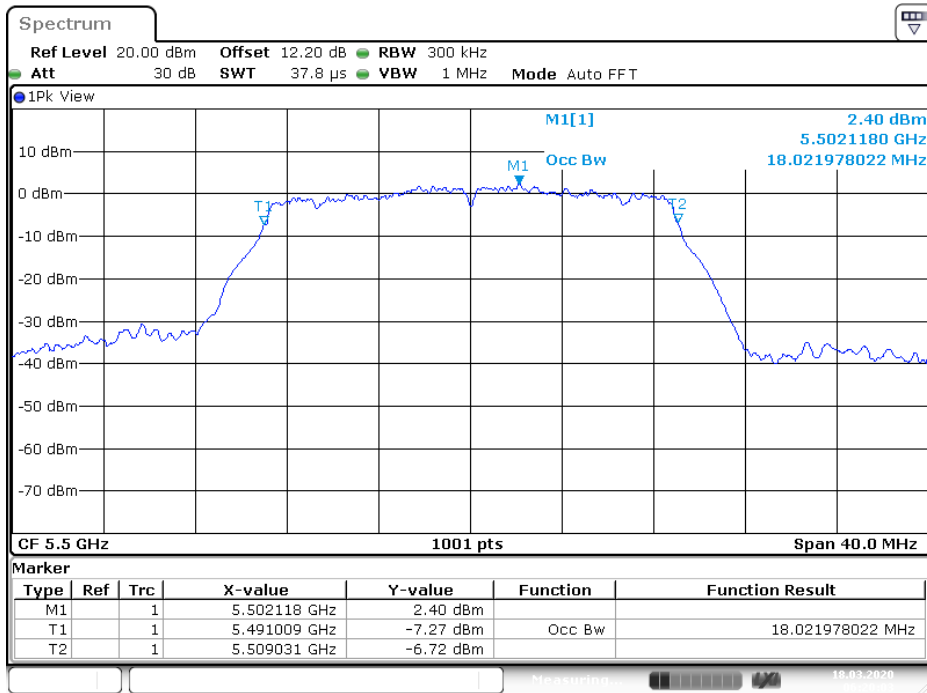
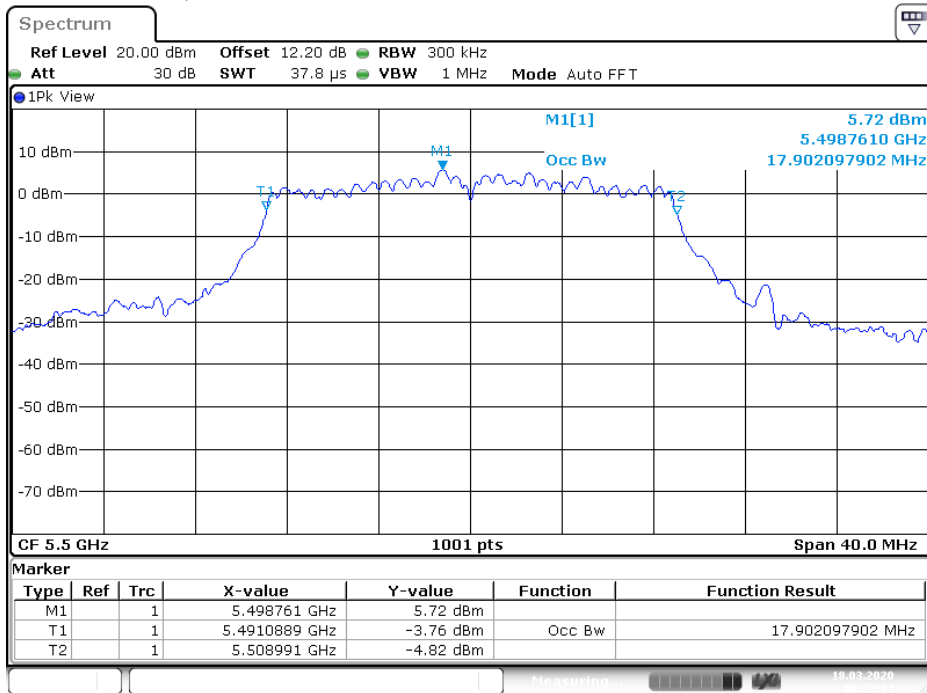
802.11an HT20 5300MHz, TX1


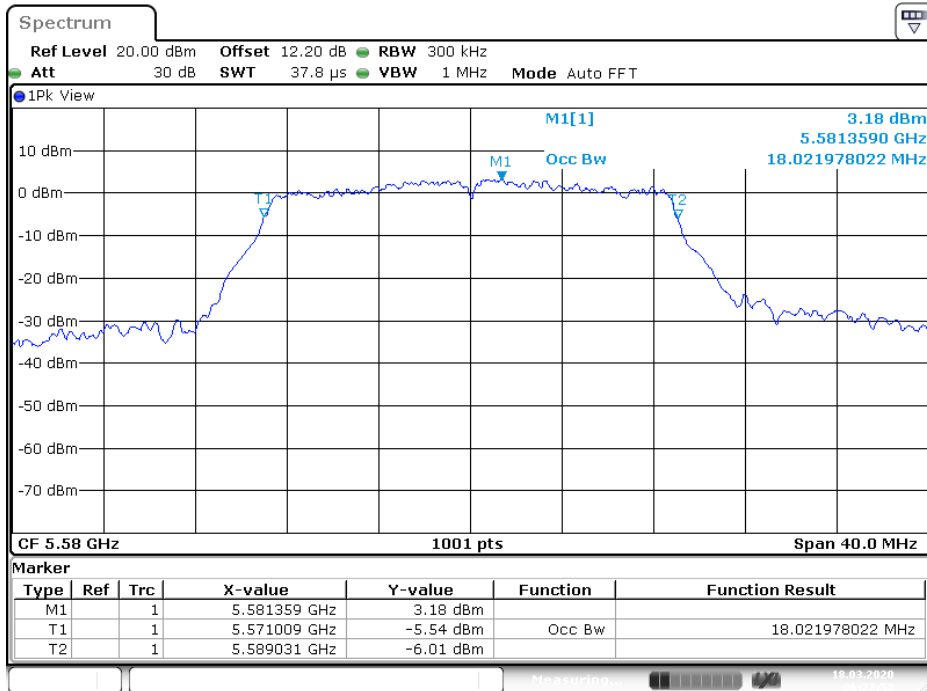
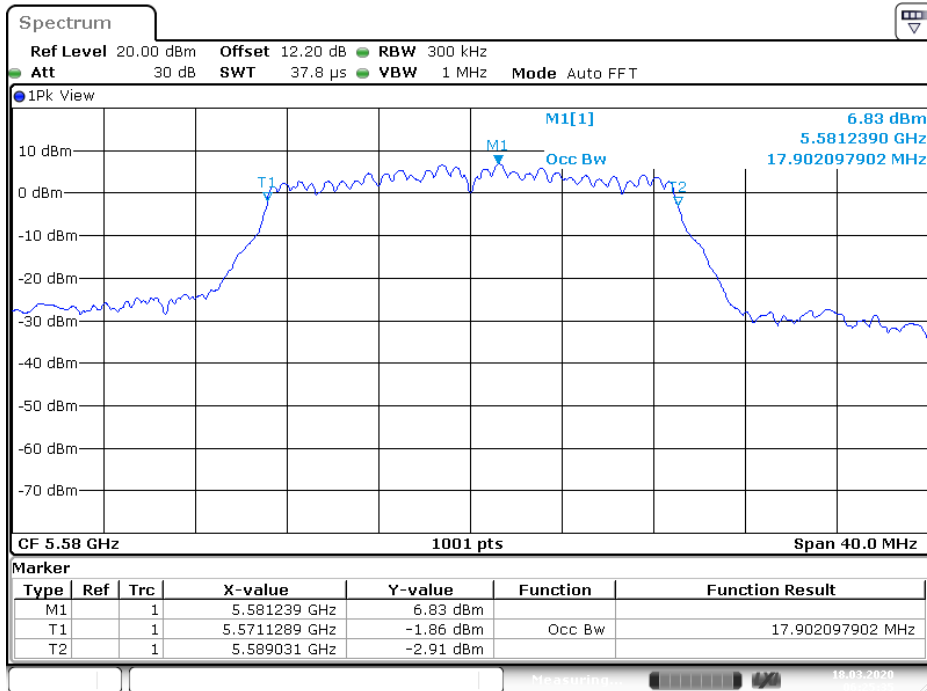
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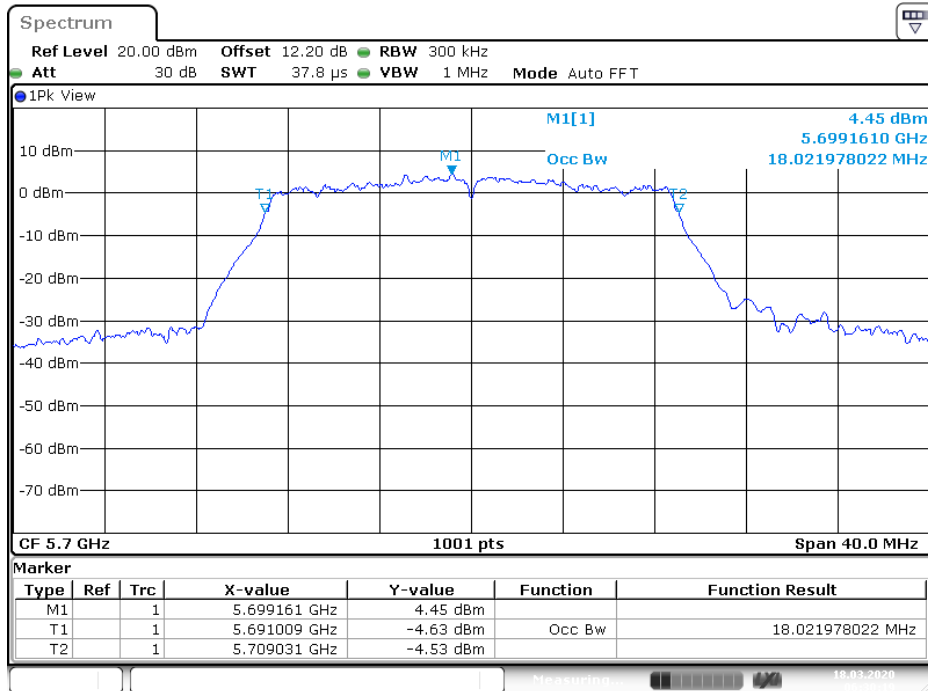
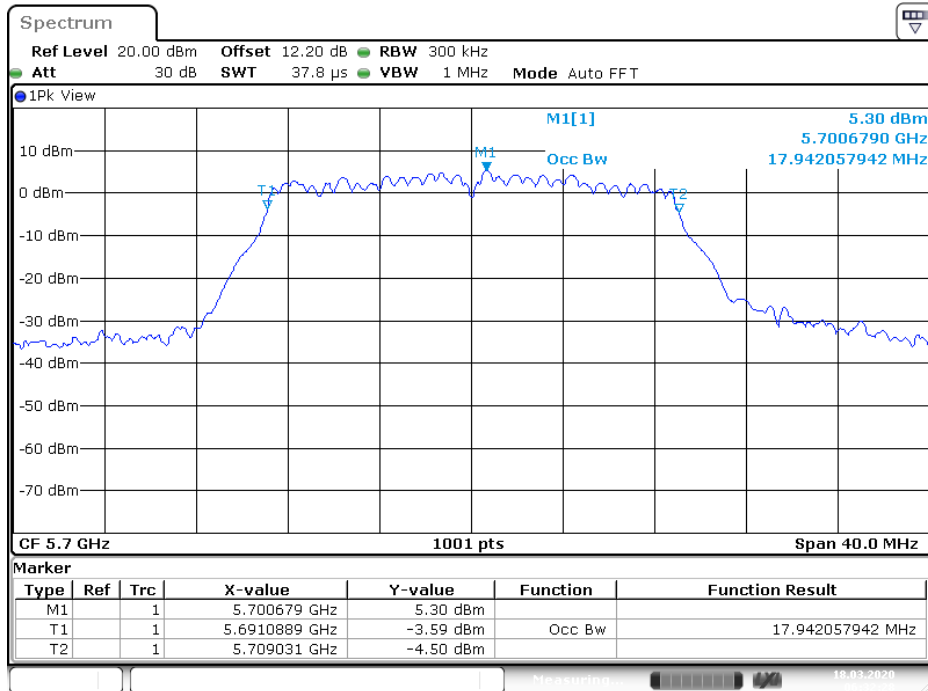
802.11an HT20 5300MHz, TX2


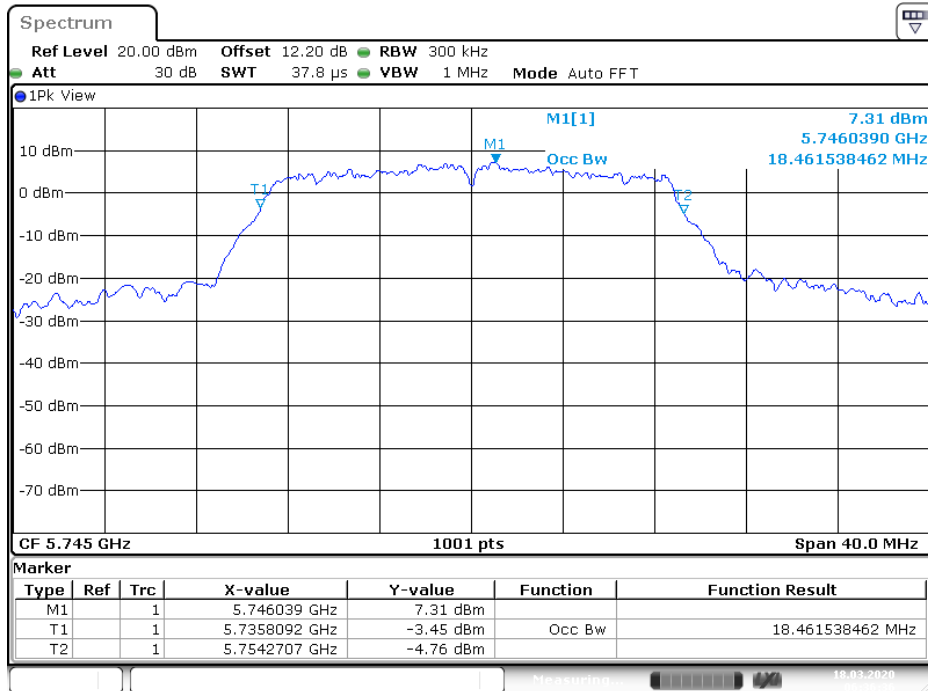
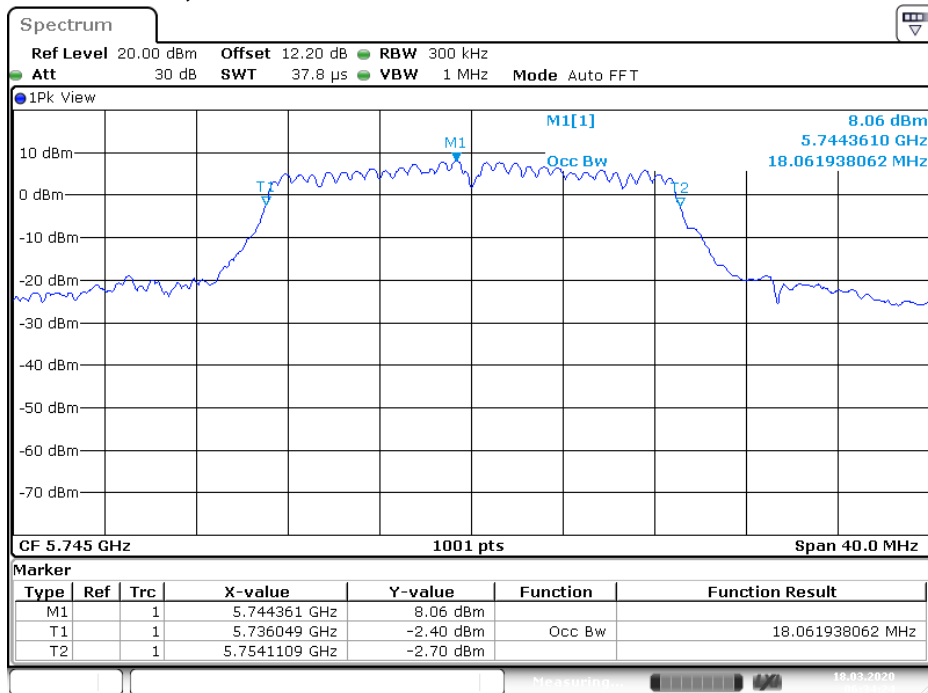
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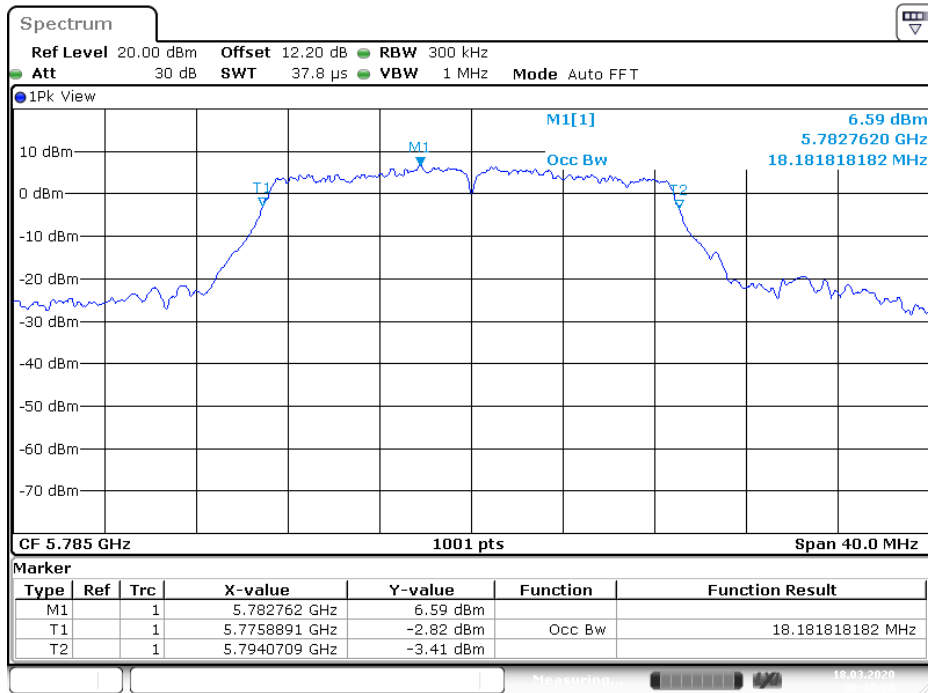
802.11an HT20 5320MHz, TX1

802.11an HT20 5320MHz, TX2


802.11ac HT20 5500MHz, TX1

802.11an HT20 5500MHz, TX2


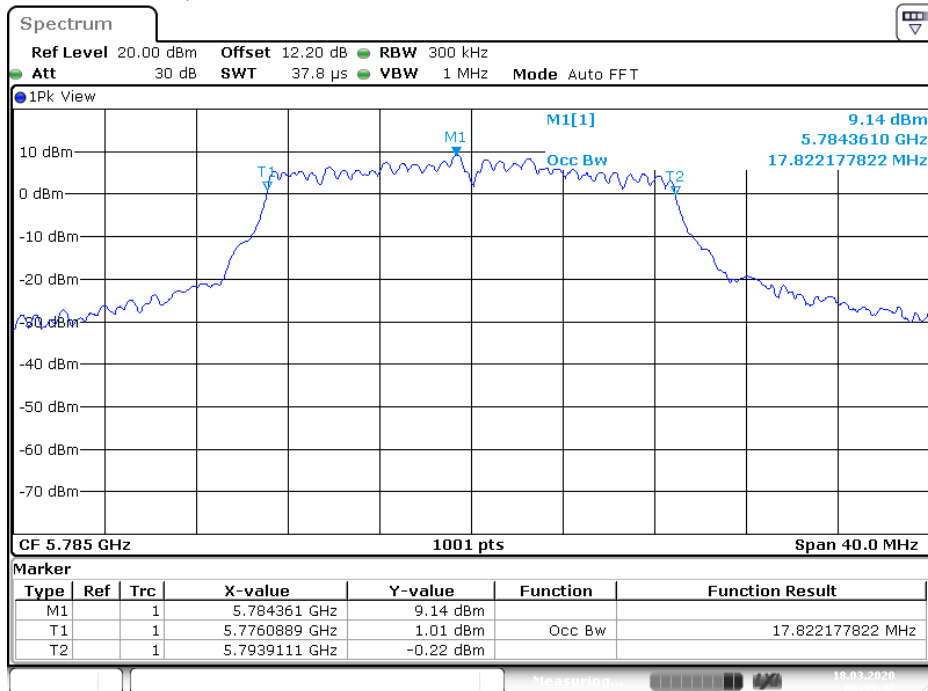
802.11an HT20 5580MHz, TX1

802.11an HT20 5580MHz, TX2


802.11an HT20 5700MHz, TX1

802.11an HT20 5700MHz, TX2


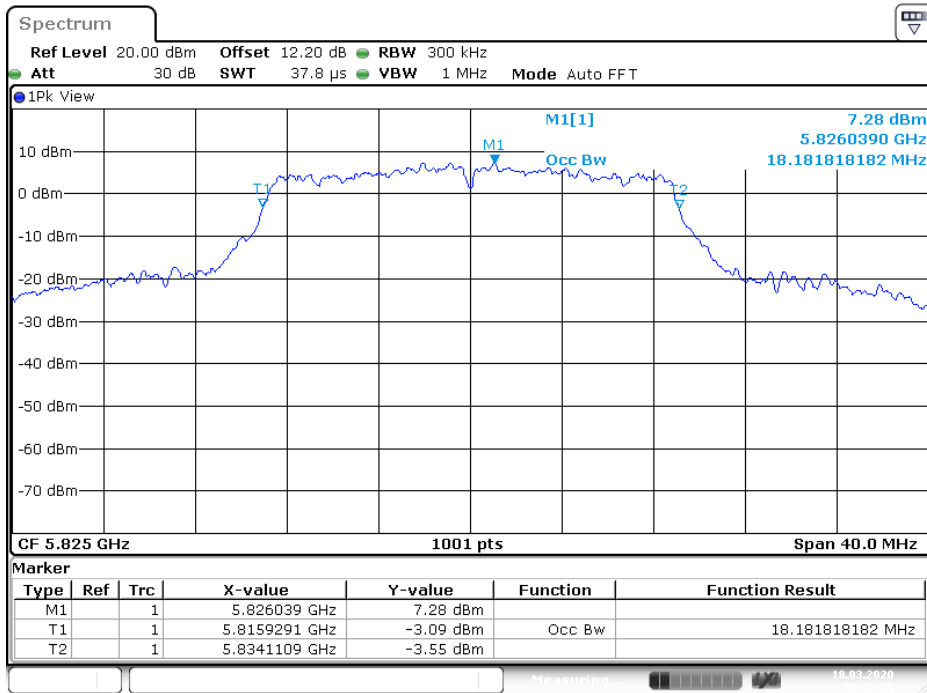
802.11an HT20 5745MHz, TX1

802.11an HT20 5745MHz, TX2


802.11an HT20 5785MHz, TX1


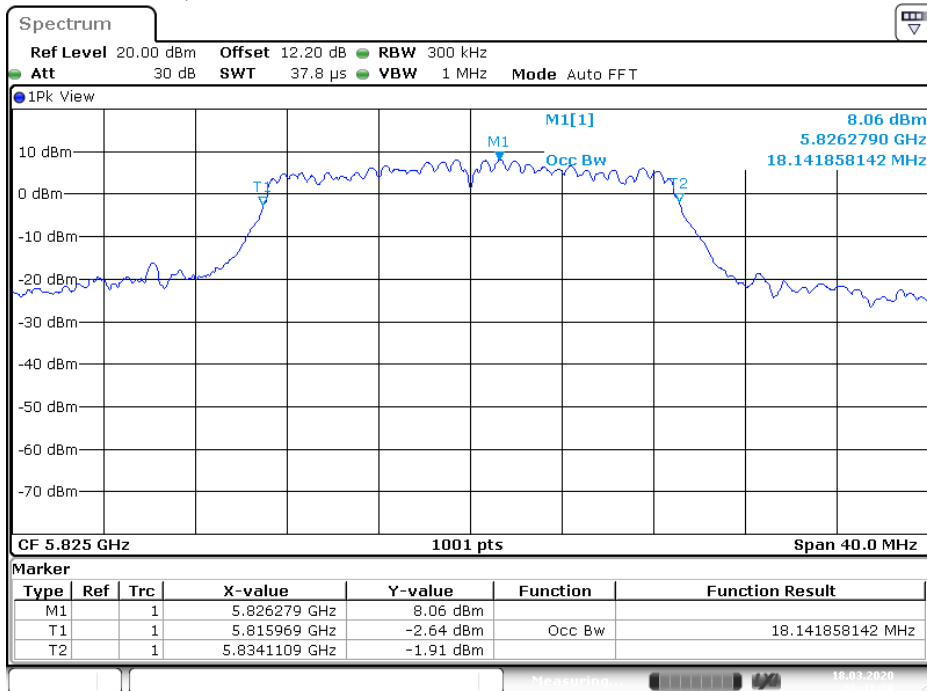
Date: 18.MAR.2020 06:38:28

802.11an HT20 5785MHz, TX2


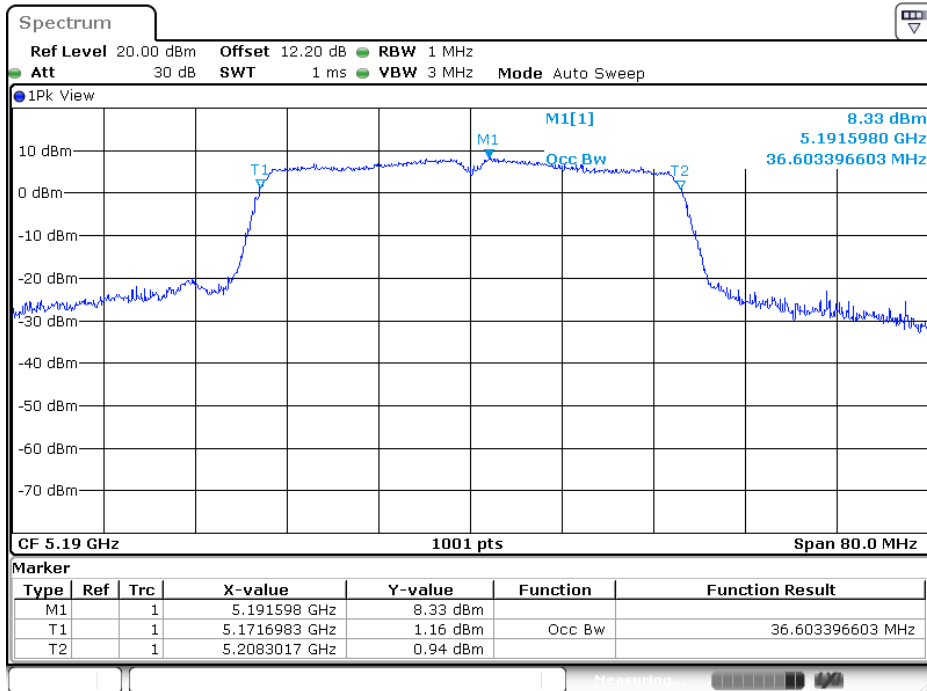
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802.11an HT20 5825MHz, TX1


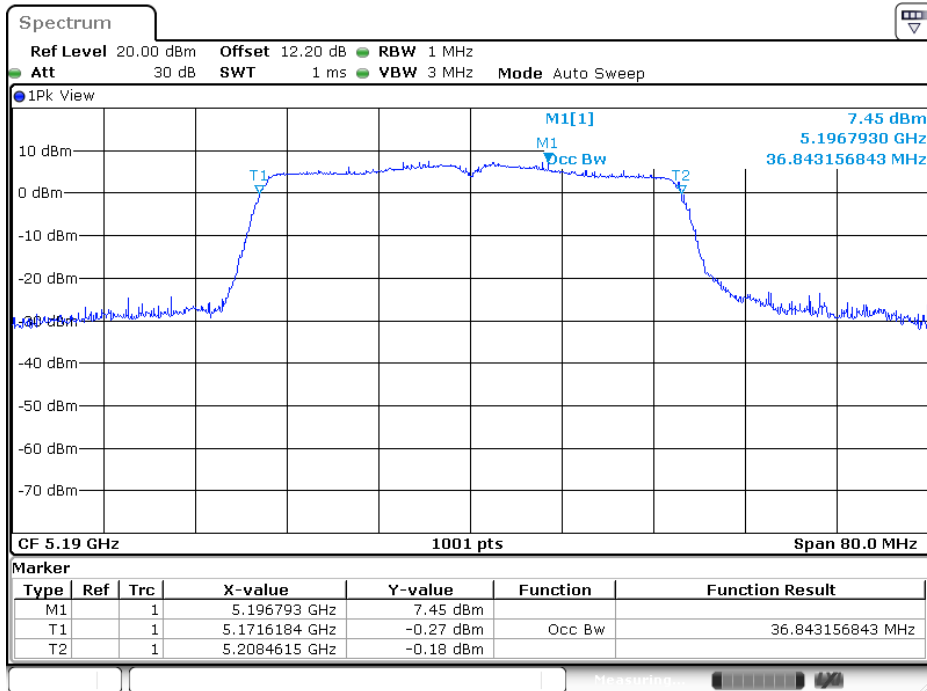
Date: 18.MAR.2020 06:42:49

802.11an HT20 5825MHz, TX2


Date: 18.MAR.2020 06:41:21

802.11an HT40 5190MHz, TX1


Date: 30.APR.2020 14:29:26

802.11an HT40 5190MHz, TX2


Date: 30.APR.2020 14:30:43