FCC Test Report

Part 15 subpart E

Client Information:

Applicant:	Plastoform Industries Ltd.
Applicant add.:	Rm. 902-4 Seapower Center 73 Lei Muk Road, Kwai Chung

Product Information:

Product Name:	Big Blue Studio Chrome
Model No.:	AD105A4BK
Derivative model No.:	--
Brand Name:	BROOKSTONE
FCC Classification:	Unlicensed National Information Infrastructure (UNII)
Standards:	CFR 47 FCC PART 15 SUBPART E:2016 section 15.407

Prepared By:

Dongguan Yaxu (AiT) Technology Limited

Add. : No.22, Jinqianling Third Street, Jitigang, Huangjiang,Dongguan, Guangdong, China

Date of Receipt:	Aug. 05, 2016	Date of Test:	Aug. 05~ Sep. 20, 2016
Date of Issue:	Sep. 21, 2016	Test Result:	Pass

This device described above has been tested by Dongguan Yaxu (AiT) Technology Limited, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

*This test report must not be used by the client to claim product endorsement by any agency of the U.S. government.

Reviewed by: Seal-Chen Approved by:

1 Contents

2 Test Summary

2.1 Compliance with FCC Part 15 subpart E

FCC Part15 (15.407)		
Test Item	FCC standard	Judgment
AC Conducted Emission	15.207	PASS
26dB/6dB Bandwidth	§ 15.407 (2) (26 dB) / § 15.407 (e) (6 dB)	PASS
Maximum Conducted Output Power	15.407(a) (1).(2).(3).(4).(5)	PASS
Radiated Emission And (Unwanted Emissions) Measurement	15.407(b)& 15.209	PASS
Radiated Restricted Band Edge Measurement	15.407(b)7	PASS
Power Spectral Density	15.407(a) (1).(2).(3).(4).(5)	PASS
Frequency Stability	15.407(g)	PASS
Automatically Discontinue Transmission	15.407(c)	PASS
Antenna Requirement	15.203/15.204	PASS
Note: Reference to the ANSI C63.10-2013, KDB 789033 D02v01r01, KDB 662911 D01v02r01 and KDB 644545 D03v01. " N/A" denotes test is not applicable in this Test Report.		

2.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, The following measurements uncertainty Levels maximum value of the uncertainty as below

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	Radiated Emission Test	±3.57dB

3 Test Facility

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

.CNAS- Registration No: L6177

Dongguan Yaxu (AiT) technology Limited is accredited 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) on Apr. 18, 2013

.FCC- Registration No: 248337

The 3m Semi-Anechoic Chamber, 3m/10m Open Area Test Site and Shielding Room of Dongguan Yaxu (AiT) technology Limited have been registered by Federal Communications Commission (FCC) on Aug.29, 2014.

.Industry Canada(IC)-Registration No: IC 6819A-1

The 3m Semi-Anechoic Chamber and 3m/10m Open Area Test Site of A Dongguan Yaxu (AiT) technology Limited have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing on Oct. 01, 2014.

.VCCI- Registration No: 2705

The 3m/10m Open Area Test Site and Shielding Room of Dongguan Yaxu (AiT) technology Limited have been registered by Voluntary Control Council for Interference on Jan.24, 2010 and Oct. 30, 2010. The Telecommunication Ports Conducted Disturbance Measurement of Asia Institute Technology (Dongguan) Limited have been registered by Voluntary Control Council for Interference on Sep. 06, 2011.

3.1 Deviation from standard

None

3.2 Abnormalities from standard conditions

None

4 General Information

4.1 General Description of EUT

Manufacturer:	Brookstone Inc.
Manufacturer Address:	One Innovation Way, Merrimack, New HampShire, 03054 United States
EUT Name:	Big Blue Studio Chrome
Model No.:	AD105A4BK
Antenna Gain:	4.54 dBi
Operation frequency:	For 802.11a/n-HT20/ac-VHT20: 5180~5240MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40: 5190~5230MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5775MHz
Modulation Type and Antenna Type:	802.11a/n/ac: OFDM PCB antenna
Maximum Average Output Power with 5GHz	802.11a: 11.71dBm 802.11n-HT20: 11.37dBm 802.11n-HT40: 11.81dBm 802.11ac-VHT20: 11.57dBm 802.11ac-VHT40: 11.54dBm 802.11ac-VHT80: 6.89dBm
Brand Name:	BROOKSTONE
Power Supply Range:	Input: AC 100-240v 50/60Hz 1.0A, Output: DC18V 2A
Power Supply:	The same as above.
H/W No.:	E09-02160-01
S/W No.:	1.0

Channel List

Channel List for UNII-1&3 802.11a/n-HT20/ac-VHT20

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	44	5220	--	--
48	5240	149	5745	153	5765	--	--
157	5785	161	5805	165	5825	--	--

Channel List for UNII-1&3 802.11n-HT40/ac-VHT40

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	151	5755	159	5795

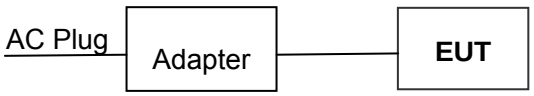
Channel List for UNII-1&3 802.11ac-VHT80

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	155	5775	-	--	--	--

4.2 Description of Test conditions

(1) EUT was tested in normal configuration (Please See following Block diagram)

1. Block diagram of EUT configuration(TX Mode)



(2) E.U.T. test conditions:

15.31(e): For intentional radiators, measurements of the variation of the input power or the adiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominalrated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

(3) Test frequencies:

According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and. If required reported 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:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

(4) Frequency range of radiated measurements:

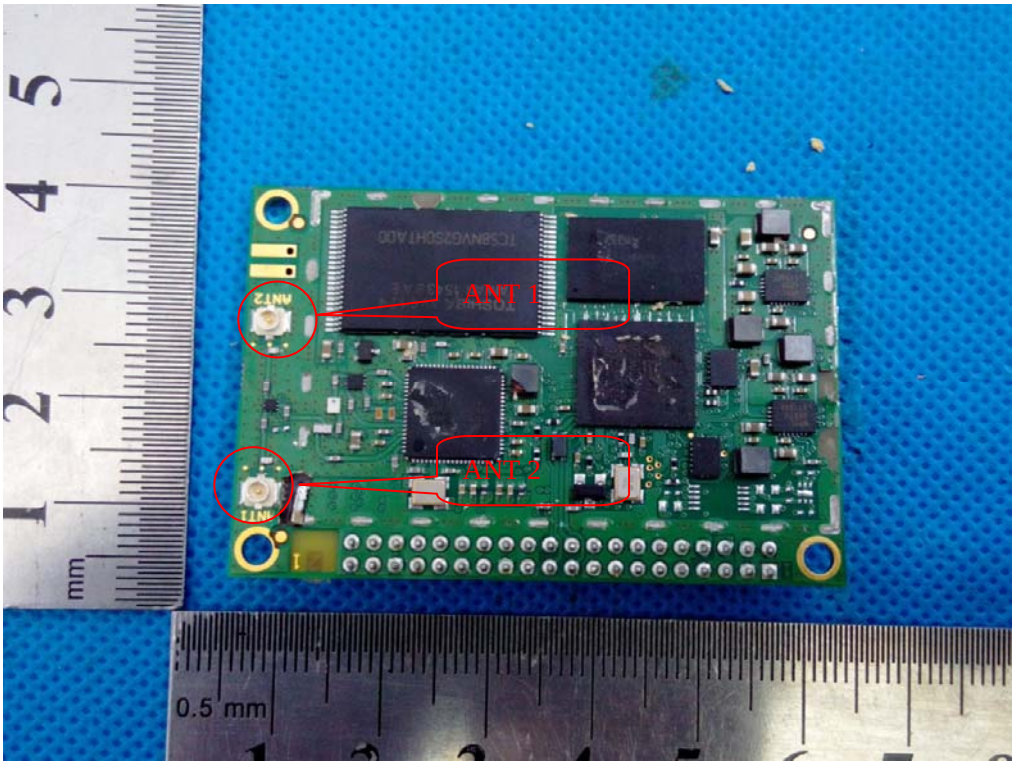
According to the 15.33, The test range will be up to the tenth harmonic of the highest fundamental frequency.

(5) The EUT ‘s duty cycle is set to 100%

(6) The measurements are performed at all Bit Rate of Transmitter, For all tests the worst-case was selected as the table below, the data of the worst-case is shown in the report.

Test Mode	Mode 1: Transmit by 802.11a with antenna #1
	Mode 2: Transmit by 802.11n-HT20 with antenna #1
	Mode 3: Transmit by 802.11n-HT40 with antenna #1
	Mode 4: Transmit by 802.11ac-VHT20 with antenna #1
	Mode 5: Transmit by 802.11ac-VHT40 with antenna #1
	Mode 6: Transmit by 802.11ac-VHT80 with antenna #1

(7) Description of Antenna RF Port

Antenna RF Port


Note:1. 1/2 Represent the value of antenna1/2,The worst data is Antenna 1,only shown Antenna 1Plot.
2. Antenna 1 and Antenna 2 can not transmit simultaneously.

4.3 EUT Peripheral List

No.	Equipment	Manufacturer	Model No.	Serial No.	Power cord	signal cable
1	Adapter	N/A	KSAS0361800200HU	N/A	1.2m/unshielded /detachable(DC)	N/A

4.4 Test Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	Notebook	Asus	FCC	N/A	N/A	N/A	N/A

5 Equipments List for All Test Items

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	SIGNAL ANALYZER	R&S	FSV40	101470	2016.06.29	2017.06.29
2	EMI Measuring Receiver	R&S	ESR	101660	2016.06.29	2017.06.29
3	Low Noise Pre Amplifier	Tsj	MLA-10K01-B01-27	1205323	2016.06.29	2017.06.29
4	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2016.06.29	2017.06.29
5	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2016.06.29	2017.06.29
6	Broadband Horn Antenna	SCHWARZBECK	BBHA9120D	452	2016.06.29	2017.06.29
7	SHF-EHF Horn	SCHWARZBECK	BBHA9170	BBHA9170367	2016.06.29	2017.06.29
8	Loop Antenna	ETS	6512	00165355	2016.06.29	2017.06.29
9	Radiated Cable 1#（30MHz-1GHz）	FUJIKURA	5D-2W	01	2016.06.29	2017.06.29
10	Radiated Cable 2# (1GHz -40GHz)	FUJIKURA	10D2W	02	2016.06.29	2017.06.29
11	Conducted Cable 1#(9KHz-30MHz)	FUJIKURA	1D-2W	01	2016.06.29	2017.06.29
12	Power Meter	Anritsu	ML2495A	N/A	2016.06.29	2017.06.29
13	Power sensor	Anritsu	MA2411B	N/A	2016.06.29	2017.06.29
Note: N/A						

6 Test Result

6.1 Conduction Emissions Measurement

6.1.1 Applied procedures / Limit

(Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Quasi-peak (dBuV)	Average (dBuV)	Standard
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	
5.0 -30.0	60.00	50.00	

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	
5.0 -30.0	60.00	50.00	

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

6.1.2 Test procedure

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

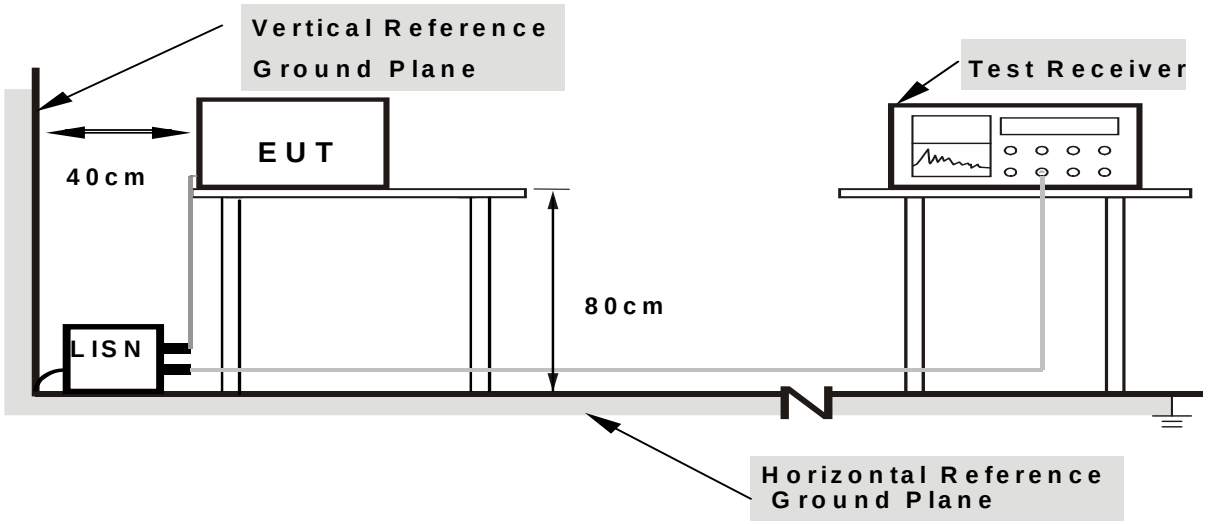
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos

6.1.3 DEVIATION FROM TEST STANDARD

No deviation

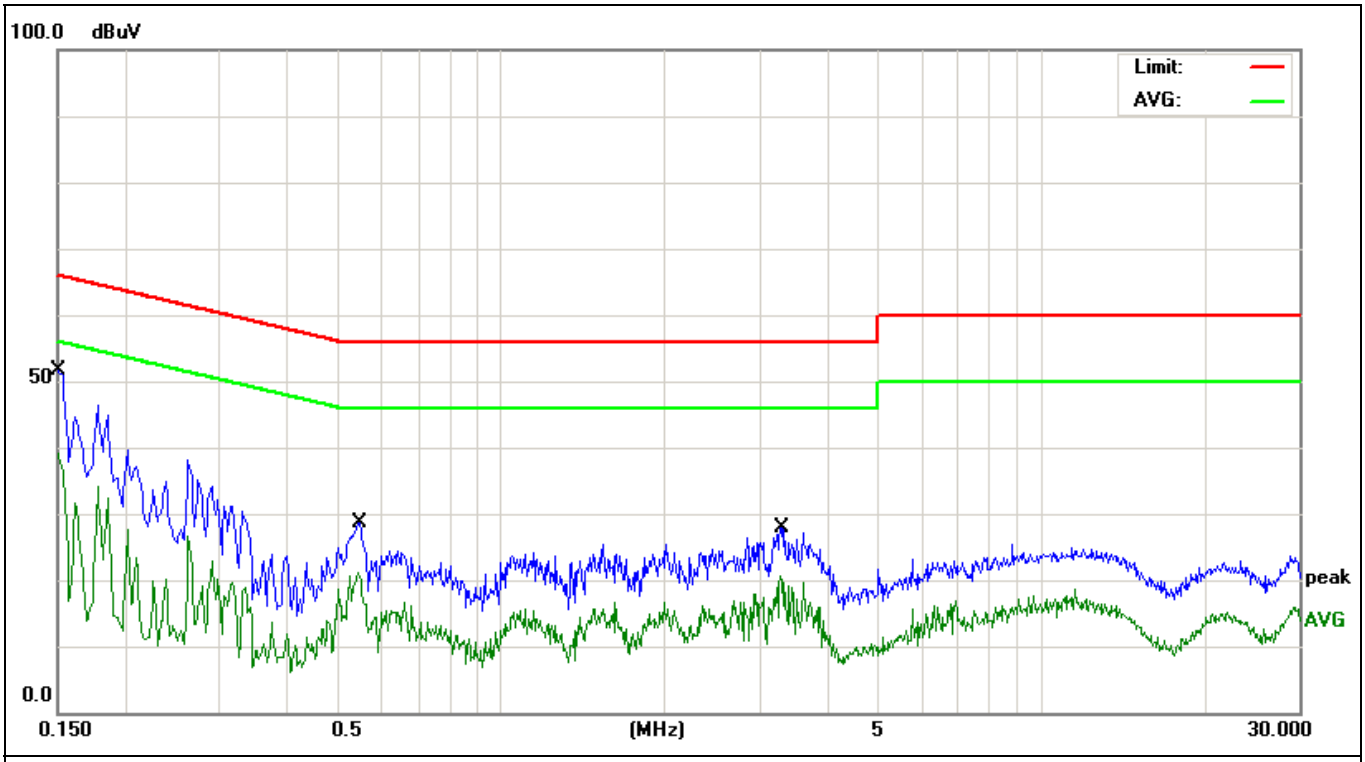
6.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

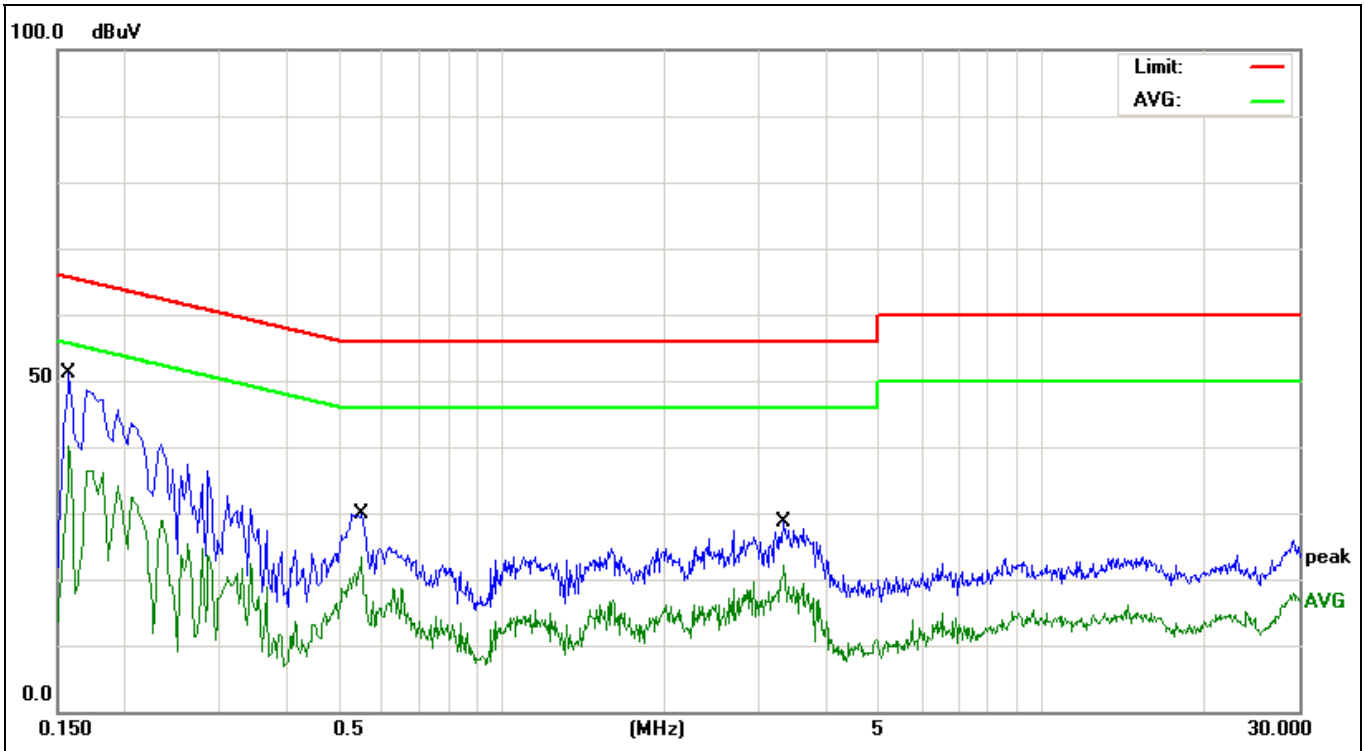
6.1.5 Test results

EUT：	Big Blue Studio Chrome	Model Name. ：	AD105A4BK
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date :	2016-09-16
Test Mode：	TX (worst case)	Phase :	L/N



Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1500	39.64	11.94	51.58	65.99	-14.41	QP
2		0.1500	27.22	11.94	39.16	55.99	-16.83	AVG
3		0.5420	11.09	10.00	21.09	46.00	-24.91	AVG
4		0.5460	18.59	10.00	28.59	56.00	-27.41	QP
5		3.2860	10.60	10.03	20.63	46.00	-25.37	AVG
6		3.3100	17.89	10.03	27.92	56.00	-28.08	QP



Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1580	39.34	11.75	51.09	65.56	-14.47	QP
2		0.1580	28.32	11.75	40.07	55.56	-15.49	AVG
3		0.5500	19.96	10.00	29.96	56.00	-26.04	QP
4		0.5500	13.45	10.00	23.45	46.00	-22.55	AVG
5		3.3140	18.62	10.04	28.66	56.00	-27.34	QP
6		3.3380	12.20	10.04	22.24	46.00	-23.76	AVG

6.2 Radiated Emissions Measurement

6.2.1 Applied procedures / Limit

Test Requirement: FCC Part15 section 15.407

Limits:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	PEAK (dBuV/m)	AVERAGE (dBuV/m)
Above 1000	74	54

Notes:

(1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Measurement Distance: 3m (Semi-Anechoic Chamber)

Frequency range: 9 kHz – 40 GHz for transmitting mode.

Test instrumentation resolution bandwidth
9 kHz (9 kHz - 30 MHz), 120 kHz (30 MHz - 1000 MHz), 1 MHz (1000 MHz – 40 GHz)

Detector: For PK and QP value:

RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz

VBW ≥ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For AV value:

RBW = 1 MHz for f ≥ 1 GHz,

VBW =10 Hz

Sweep = auto

Detector function = peak

Trace = max hold

Test Procedure:

1)9 kHz to 30 MHz emissions:

For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.10. The centre of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT, During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

2)30 MHz to 1 GHz emissions:

For testing performed with the bi-log type antenna, testing was performed in accordance to ANSI C63.10. The measurement is performed with the EUT rotated 360º, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

3)1 GHz to 40 GHz emissions:

Test site with RF absorbing material covering the ground plane that met the site validation criterion called out in CISPR 16-1-4:2007 was used to perform radiated emission test above 1 GHz.

For testing performed with the horn antenna, testing was performed in accordance to ANSI C63.10. The measurement is performed with the EUT rotated 360º, the antenna height scan between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for

receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

And according 15.35(a)

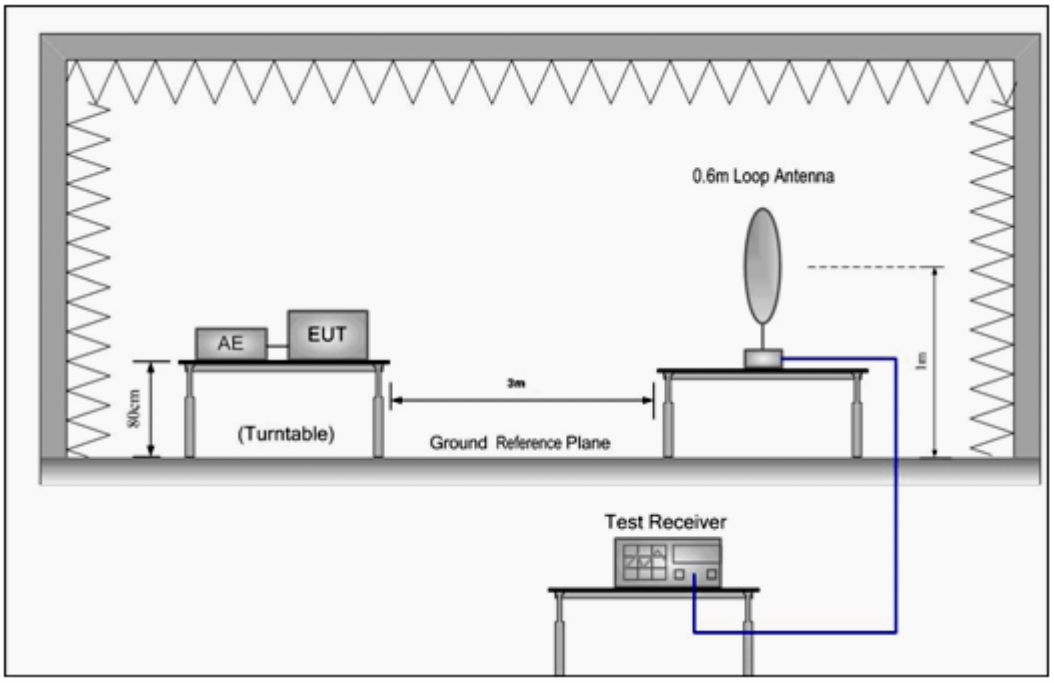
15.35(a) On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths, unless otherwise specified. The specifications for the measuring instrument using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Interference (CISPR) of the International Electro technical Commission. As an alternative to CISPR quasi-peak measurements, the responsible party, at its option, may demonstrate compliance with the emission limits using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, as long as the same bandwidths as indicated for CISPR quasi-peak measurements are employed.

Note: For pulse modulated devices with a pulse-repetition frequency of 20 Hz or less and for which CISPR quasi-peak measurements are specified, compliance with the regulations shall be demonstrated using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, using the same measurement bandwidths that are indicated for CISPR quasi-peak measurements.

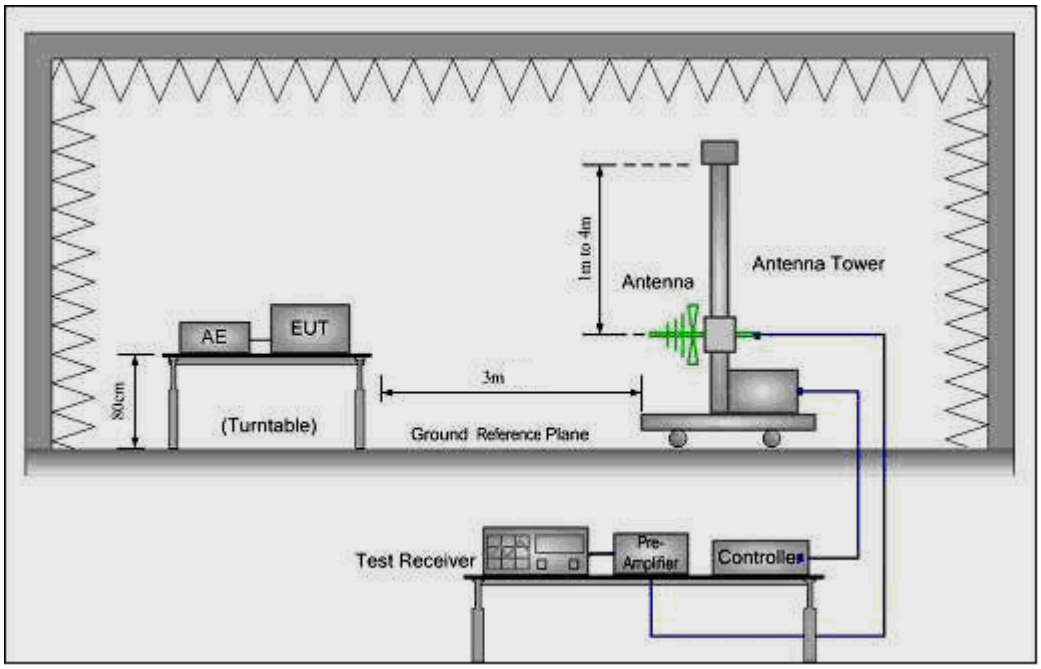
According to 15.35 (b) Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz. When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, e.g., see §§ 15.250, 15.252, 15.255, and 15.509-15.519 of this part, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device, e.g., the total peak power level. Note that the use of a pulse desensitization correction factor may be needed to determine the total peak emission level. The instruction manual or application note for the measurement instrument should be consulted for determining pulse desensitization factors, as necessary.

Test Configuration:

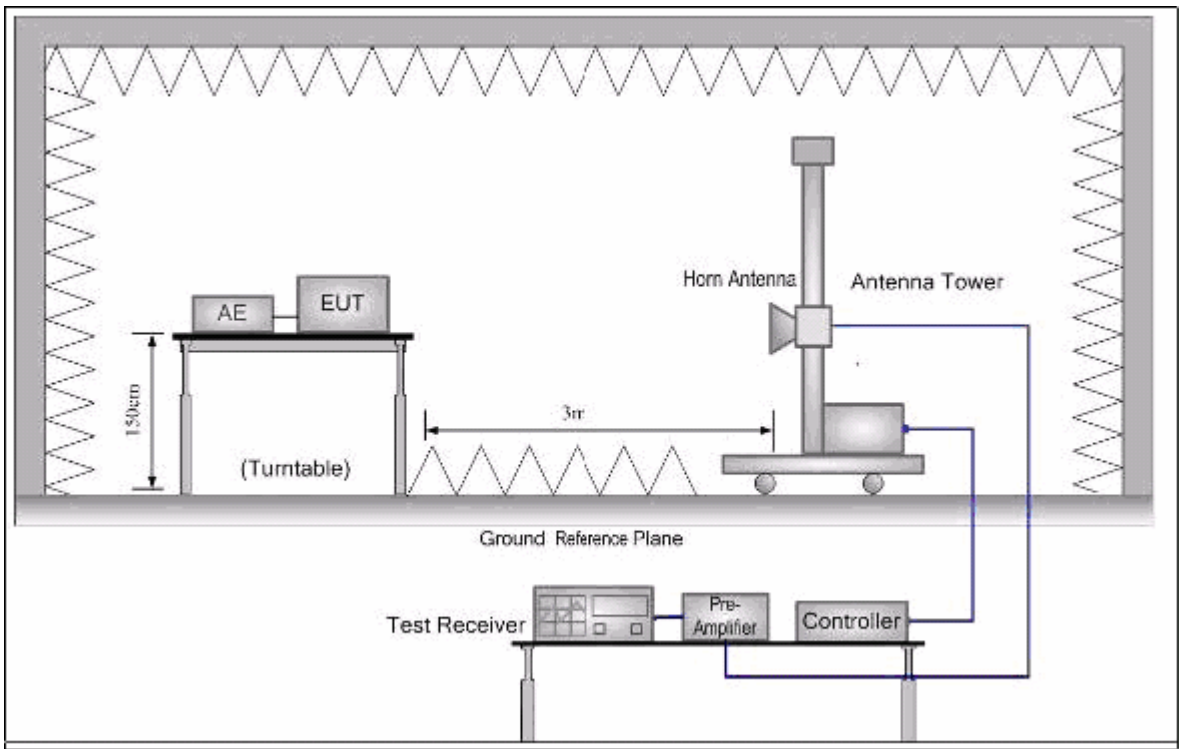
1) 9 kHz to 30 MHz emissions:



2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 40 GHz emissions:



The field strength is calculated by adding the Antenna Factor, Cable Loss & Per-amplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna, Factor + Cable Loss – Preamplifier Factor

6.2.2 Radiated Emissions Test Data

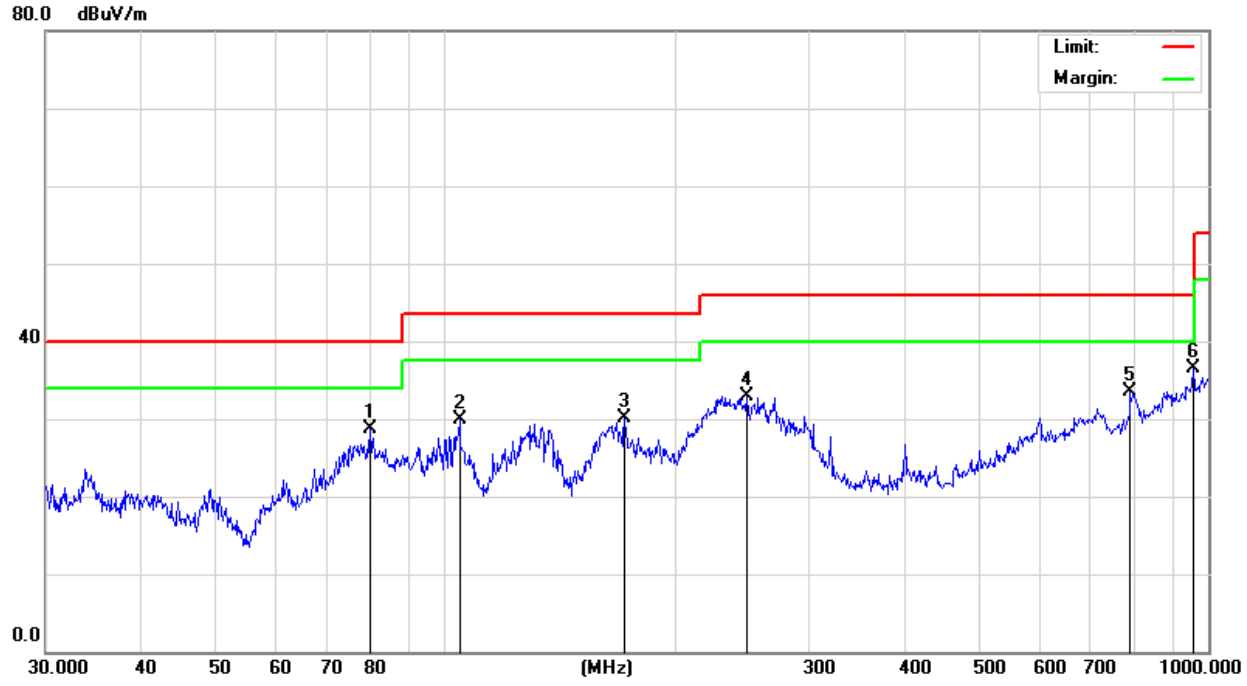
9 kHz~30 MHz Field Strength of Unwanted Emissions. Quasi-Peak Measurement

The measurements with active loop antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

30 MHz~1 GHz Field Strength of Unwanted Emissions. Quasi-Peak Measurement

EUT：	Big Blue Studio Chrome	Model Name ：	AD105A4BK
Pressure：	1010 hPa	Relative Humidity：	50%
Test Mode ：	TX mode(worse-case)	Test Voltage ：	DC 18V from adapter, AC 120V/60Hz for adapter
Measurement Distance	3 m	Frenqucy Range	30MHz to 1GHz
RBW/VBW	100KHz / 300KHz for spectrum, RBW=120KHz for receiver.		

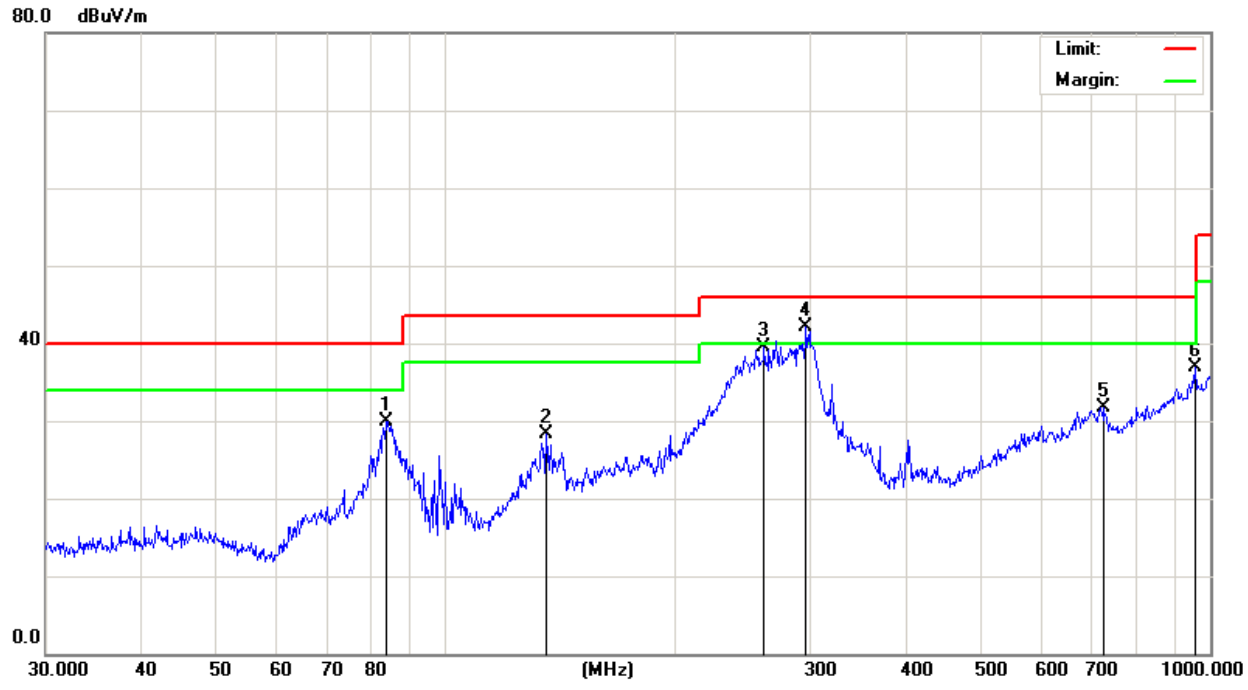
Vertical



Measurement Level = Reading Level + Factor, Factor=Ant Factor + Cable Loss– Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		79.8002	47.81	-19.11	28.70	40.00	-11.30	QP
2		104.5361	43.51	-13.59	29.92	43.50	-13.58	QP
3		171.9946	45.46	-15.41	30.05	43.50	-13.45	QP
4		248.5519	46.65	-13.71	32.94	46.00	-13.06	QP
5		790.6186	31.33	2.14	33.47	46.00	-12.53	QP
6	*	955.4380	32.56	3.88	36.44	46.00	-9.56	QP

Horizontal



Measurement Level = Reading Level + Factor, Factor=Ant Factor + Cable Loss– Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		83.5221	47.99	-18.10	29.89	40.00	-10.11	QP
2		135.5062	43.07	-14.73	28.34	43.50	-15.16	QP
3		261.0581	52.31	-12.83	39.48	46.00	-6.52	QP
4	*	296.1836	52.30	-10.13	42.17	46.00	-3.83	QP
5		724.2611	32.07	-0.46	31.61	46.00	-14.39	QP
6		955.4380	32.96	3.88	36.84	46.00	-9.16	QP

1~40 GHz Field Strength of Fundamental & Field Strength of Unwanted Emissions. Peak & Average Measurement.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11a-5180MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10360.000	38.96	12.56	51.52	74.00	-22.48	PEAK
15540.000	36.74	16.45	53.19	74.00	-20.81	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10360.000	37.31	12.56	49.87	74.00	-24.13	PEAK
15540.000	35.85	16.45	52.30	74.00	-21.70	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11a-5220 MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10440.000	37.39	12.64	50.03	74.00	-23.97	PEAK
15660.000	34.28	16.53	50.81	74.00	-23.19	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10440.000	36.33	12.64	48.97	74.00	-25.03	PEAK
15660.000	34.97	16.53	51.50	74.00	-22.50	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11a-5240 MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10480.000	37.25	12.68	49.93	74.00	-24.07	PEAK
15720.000	35.34	16.54	51.88	74.00	-22.12	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10480.000	36.75	12.68	49.43	74.00	-24.57	PEAK
15720.000	33.48	16.54	50.02	74.00	-23.98	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11a-5745 MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11490.000	35.28	16.82	52.10	74.00	-21.90	PEAK
17235.000	33.77	22.93	56.70	74.00	-17.30	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11490.000	34.15	16.82	50.97	74.00	-23.03	PEAK
17235.000	32.69	22.93	55.62	74.00	-18.38	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11a-5785 MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11570.000	35.36	16.71	52.07	74.00	-21.93	PEAK
17355.000	32.58	24.37	56.95	74.00	-17.05	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11570.000	34.76	16.71	51.47	74.00	-22.53	PEAK
17355.000	31.62	24.37	55.99	74.00	-18.01	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11a-5825 MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11650.000	35.77	16.61	52.38	74.00	-21.62	PEAK
17475.000	27.35	25.01	52.36	74.00	-21.64	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11650.000	33.52	16.61	50.13	74.00	-23.87	PEAK
17475.000	26.13	25.01	51.14	74.00	-22.86	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT20-5180MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10360.000	35.73	12.56	48.29	74.00	-25.71	PEAK
15540.000	33.51	16.45	49.96	74.00	-24.04	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10360.000	34.29	12.56	46.85	74.00	-27.15	PEAK
15540.000	32.63	16.45	49.08	74.00	-24.92	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT20-5220MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10440.000	35.61	12.64	48.25	74.00	-25.75	PEAK
15660.000	29.30	16.53	45.83	74.00	-28.17	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10440.000	36.57	12.64	49.21	74.00	-24.79	PEAK
15660.000	28.63	16.53	45.16	74.00	-28.84	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT20-5240MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10480.000	35.58	12.68	48.26	74.00	-25.74	PEAK
15720.000	28.24	16.54	44.78	74.00	-29.22	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10480.000	36.35	12.68	49.03	74.00	-24.97	PEAK
15720.000	27.75	16.54	44.29	74.00	-29.71	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT20-5745MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11490.000	35.51	16.82	52.33	74.00	-21.67	PEAK
17235.000	29.26	22.93	52.19	74.00	-21.81	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11570.000	33.42	16.71	50.13	74.00	-23.87	PEAK
17235.000	26.33	22.93	49.26	74.00	-24.74	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT20-5785MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11570.000	36.61	16.71	53.32	74.00	-20.68	PEAK
17355.000	29.74	24.37	54.11	74.00	-19.89	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11570.000	35.25	16.71	51.96	74.00	-22.04	PEAK
17355.000	26.83	24.37	51.20	74.00	-22.80	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT20-5825MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11650.000	35.88	16.61	52.49	74.00	-21.51	PEAK
17475.000	29.21	25.01	54.22	74.00	-19.78	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11650.000	36.46	16.61	53.07	74.00	-20.93	PEAK
17475.000	27.35	25.01	52.36	74.00	-21.64	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT40-5190MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10380.000	38.12	12.58	50.70	74.00	-23.30	PEAK
15570.000	29.50	16.48	45.98	74.00	-28.02	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10380.000	36.71	12.58	49.29	74.00	-24.71	PEAK
15570.000	28.63	16.48	45.11	74.00	-28.89	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT40-5230MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10460.000	36.64	12.66	49.30	74.00	-24.70	PEAK
15690.000	29.12	16.53	45.65	74.00	-28.35	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10460.000	35.95	12.66	48.61	74.00	-25.39	PEAK
15690.000	27.23	16.53	43.76	74.00	-30.24	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT40-5755MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11510.000	35.11	16.78	51.89	74.00	-22.11	PEAK
17265.000	29.68	23.29	52.97	74.00	-21.03	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11510.000	33.25	16.78	50.03	74.00	-23.97	PEAK
17265.000	24.34	23.29	47.63	74.00	-26.37	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11n HT40-5795MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11590.000	35.10	16.69	51.79	74.00	-22.21	PEAK
17385.000	32.66	24.73	57.39	74.00	-16.61	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11590.000	33.85	16.69	50.54	74.00	-23.46	PEAK
17385.000	29.17	24.73	53.90	74.00	-20.10	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT20-5180MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10360.000	35.24	12.56	47.80	74.00	-26.20	PEAK
15540.000	32.39	16.45	48.84	74.00	-25.16	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10360.000	34.98	12.56	47.54	74.00	-26.46	PEAK
15540.000	25.46	16.45	41.91	74.00	-32.09	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT20-5220MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10440.000	36.65	12.64	49.29	74.00	-24.71	PEAK
15660.000	35.31	16.53	51.84	74.00	-22.16	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10440.000	35.76	12.64	48.40	74.00	-25.60	PEAK
15660.000	34.39	16.53	50.92	74.00	-23.08	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT20-5240MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10480.000	35.20	12.68	47.88	74.00	-26.12	PEAK
15720.000	33.58	16.54	50.12	74.00	-23.88	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10480.000	35.71	12.68	48.39	74.00	-25.61	PEAK
15720.000	32.86	16.54	49.40	74.00	-24.60	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT20-5745MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11490.000	35.01	16.82	51.83	74.00	-22.17	PEAK
17235.000	31.74	22.93	54.67	74.00	-19.33	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11490.000	34.85	16.82	51.67	74.00	-22.33	PEAK
17235.000	29.96	22.93	52.89	74.00	-21.11	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT20-5785MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11570.000	34.12	16.71	50.83	74.00	-23.17	PEAK
17355.000	28.96	24.37	53.33	74.00	-20.67	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11570.000	33.51	16.71	50.22	74.00	-23.78	PEAK
17355.000	27.23	24.37	51.60	74.00	-22.40	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT20-5825MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11650.000	36.17	16.61	52.78	74.00	-21.22	PEAK
17475.000	29.26	25.01	54.27	74.00	-19.73	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11650.000	34.08	16.61	50.69	74.00	-23.31	PEAK
17475.000	26.97	25.01	51.98	74.00	-22.02	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT40-5190MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10380.000	35.51	12.58	48.09	74.00	-25.91	PEAK
15570.000	33.22	16.48	49.70	74.00	-24.30	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10380.000	34.19	12.58	46.77	74.00	-27.23	PEAK
15570.000	31.74	16.48	48.22	74.00	-25.78	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT40-5230MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10460.000	35.92	12.66	48.58	74.00	-25.42	PEAK
15690.000	34.68	16.53	51.21	74.00	-22.79	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10460.000	34.27	12.66	46.93	74.00	-27.07	PEAK
15690.000	33.19	16.53	49.72	74.00	-24.28	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT40-5755MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11510.000	35.26	16.78	52.04	74.00	-21.96	PEAK
17265.000	30.55	23.29	53.84	74.00	-20.16	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11510.000	33.71	16.78	50.49	74.00	-23.51	PEAK
17265.000	29.87	23.29	53.16	74.00	-20.84	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT40-5795MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11590.000	34.72	16.69	51.41	74.00	-22.59	PEAK
17385.000	32.93	24.73	57.66	74.00	-16.34	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11590.000	32.10	16.69	48.79	74.00	-25.21	PEAK
17385.000	29.68	24.73	54.41	74.00	-19.59	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT80-5210MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10420.000	34.61	12.62	47.23	74.00	-26.77	PEAK
15630.000	33.29	16.52	49.81	74.00	-24.19	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
10420.000	33.82	12.62	46.44	74.00	-27.56	PEAK
15630.000	32.70	16.52	49.22	74.00	-24.78	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

TX Mode:	Ant 1	Measurement Distance:	3 m
Test channel:	802.11ac HT80-5775MHz	Frequency Range:	1GHz to 40GHz
RBW/VBW:	Spurious emission: 1MHz/3MHz for Peak, 1MHz/10Hz for Average.		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-40GHz, there is not show in the report.		

Vertical						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11550.000	34.86	16.73	51.59	74.00	-22.41	PEAK
17325.000	30.62	24.01	54.63	74.00	-19.37	PEAK
Horizontal						
Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
11550.000	33.01	16.73	49.74	74.00	-24.26	PEAK
17325.000	29.54	24.01	53.55	74.00	-20.45	PEAK

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Average measurement was not performed if peak level lower than average limit.

No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

6.3 Radiated Restricted Band Edge Measurement

6.3.1 Applied procedures / Limit

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
(4) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
(5) The provisions of §15.205 apply to intentional radiators operating under this section. (6) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

6.3.2 Test procedure

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 5150 MHz Upper Band Edge: 5350 MHz
RB / VB (emission in restricted band)	1000 KHz/3000 KHz
Trace-Mode:	Max hold

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 5700 to 5725 MHz Upper Band Edge: 5850 to 5870 MHz
RB / VB (emission in restricted band)	1000 KHz/3000 KHz
Trace-Mode:	Max hold

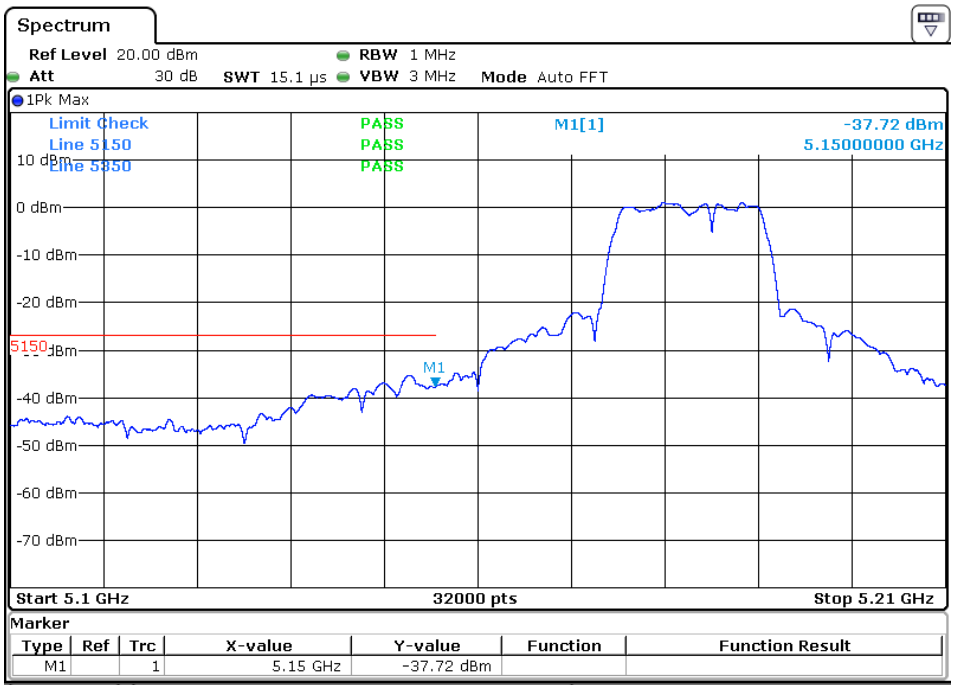
6.3.3 Deviation from standard

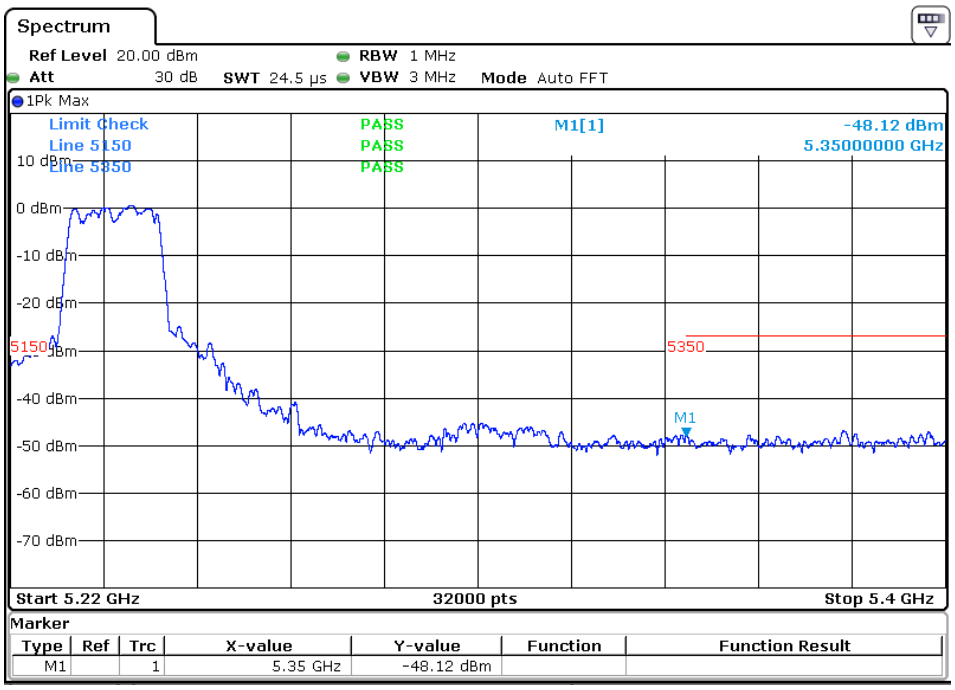
No deviation.

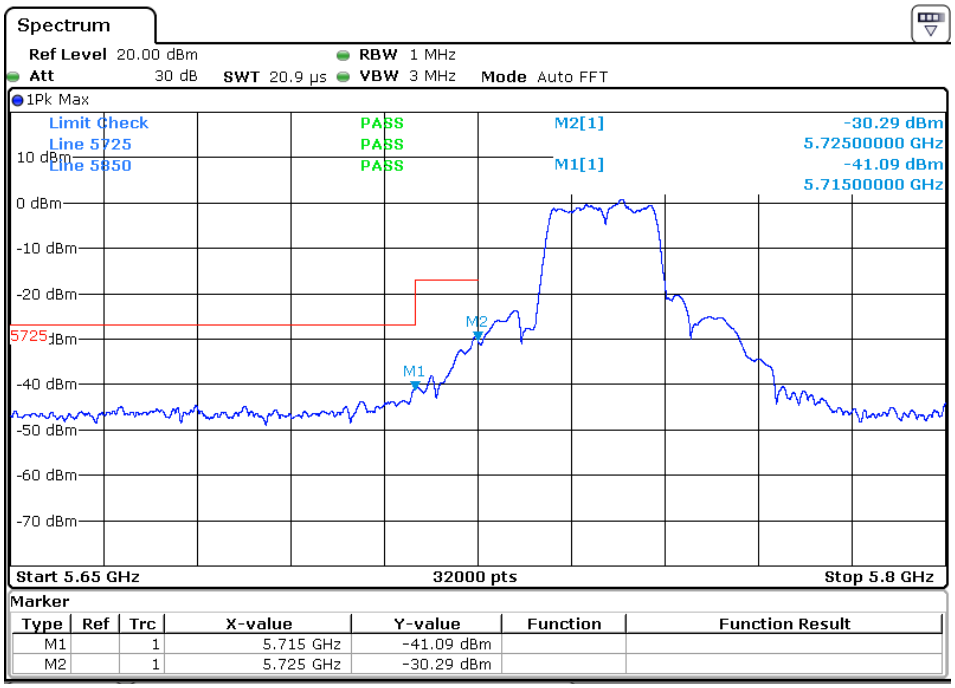
6.3.4 Test results

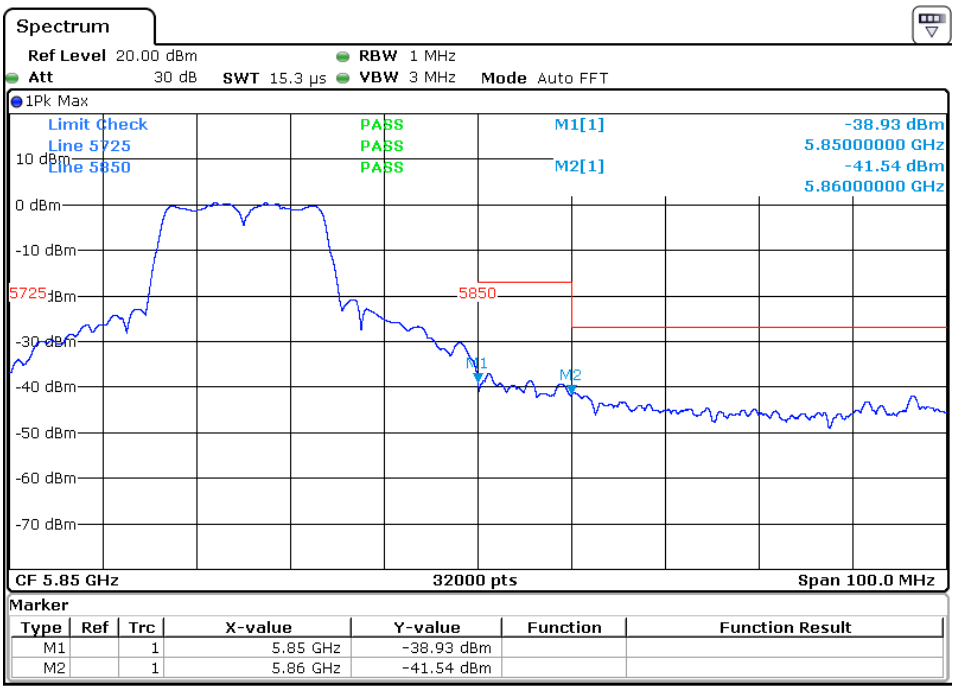
Note:1/2 Represent the value of antenna1/2,The worst data is Antenna 1,only shown Antenna 1Plot.

Ant 1 802.11 a

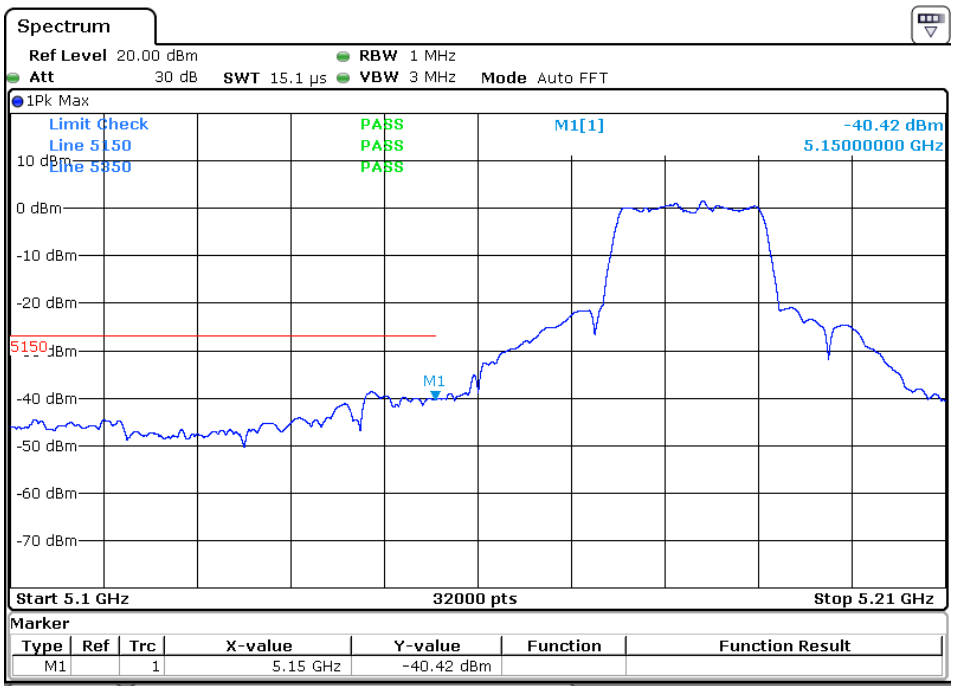


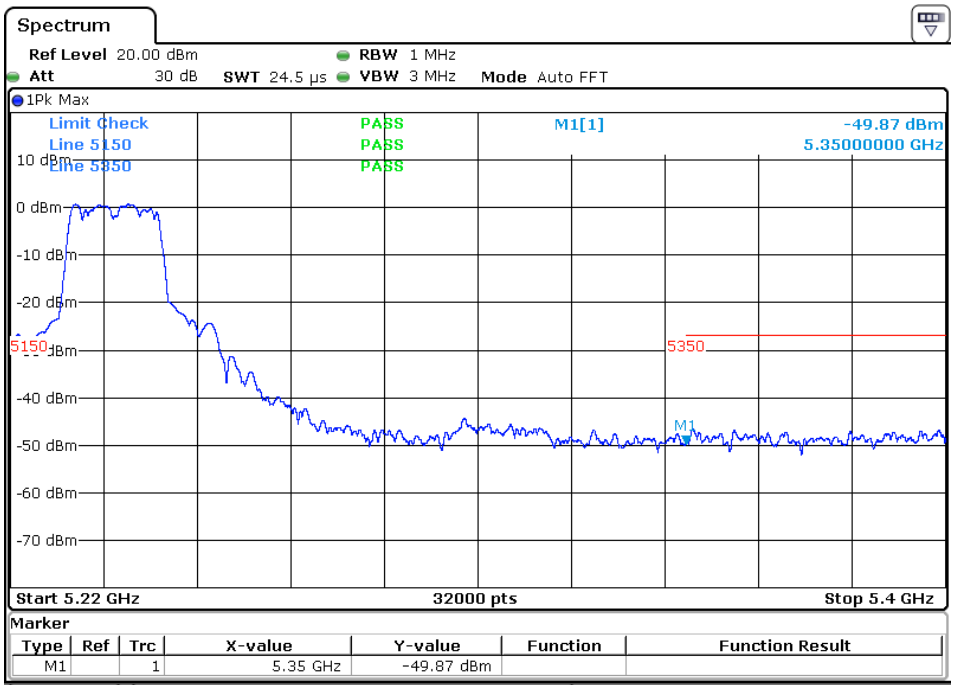


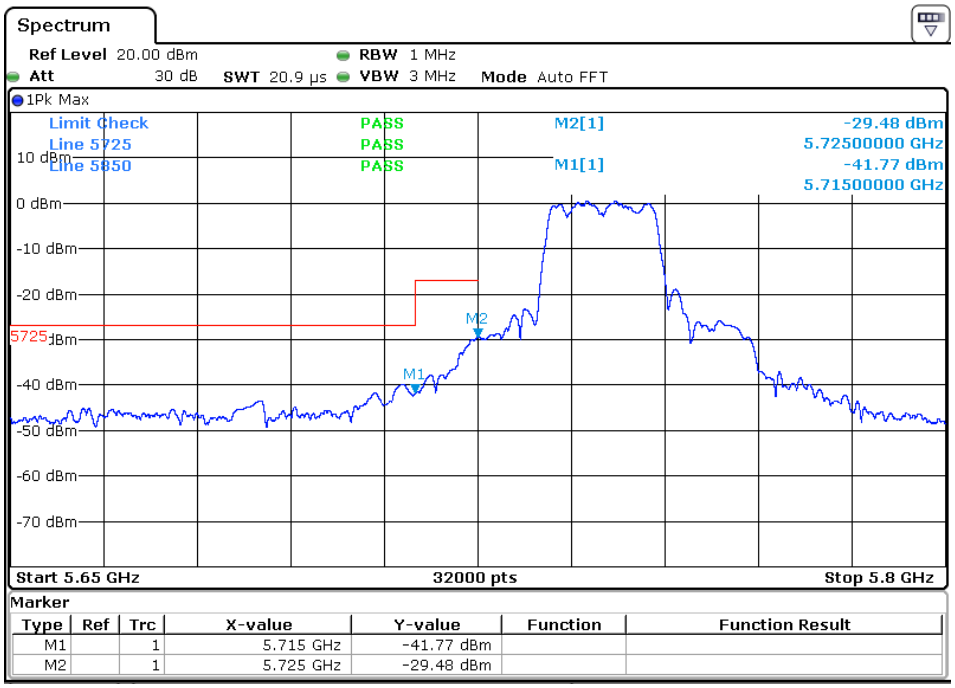

Spectrum
Ref Level 20.00 dBm
RBW 1 MHz
Att 30 dB
SWT 20.9 µs
VBW 3 MHz
Mode Auto FFT
1Pk Max
Limit Check PASS
Line 5725 PASS
Line 5850 PASS
M2[1] -30.29 dBm
5.72500000 GHz
M1[1] -41.09 dBm
5.71500000 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
5725 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
M2
Start 5.65 GHz
32000 pts
Stop 5.8 GHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.715 GHz -41.09 dBm
M2 1 5.725 GHz -30.29 dBm


Spectrum
Ref Level 20.00 dBm
RBW 1 MHz
Att 30 dB
SWT 15.3 µs
VBW 3 MHz
Mode Auto FFT
1Pk Max
Limit Check PASS
Line 5725 PASS
Line 5850 PASS
M1[1] -38.93 dBm
5.85000000 GHz
M2[1] -41.54 dBm
5.86000000 GHz
10 dBm
0 dBm
-10 dBm
5725 dBm
5850
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
M2
CF 5.85 GHz
32000 pts
Span 100.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.85 GHz -38.93 dBm
M2 1 5.86 GHz -41.54 dBm

Ant 1 802.11 n20

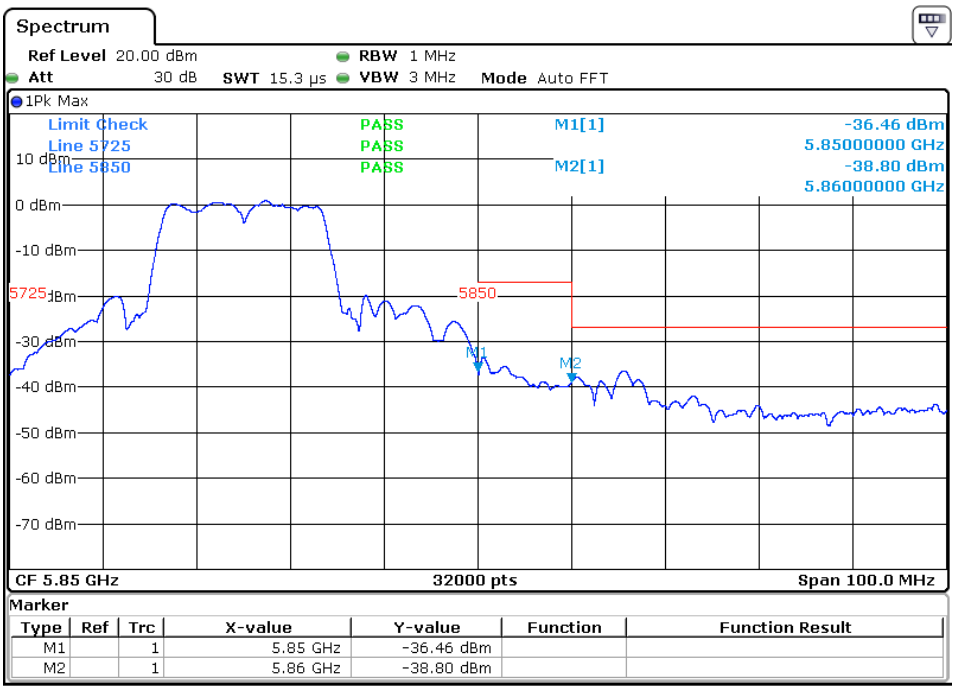






Marker

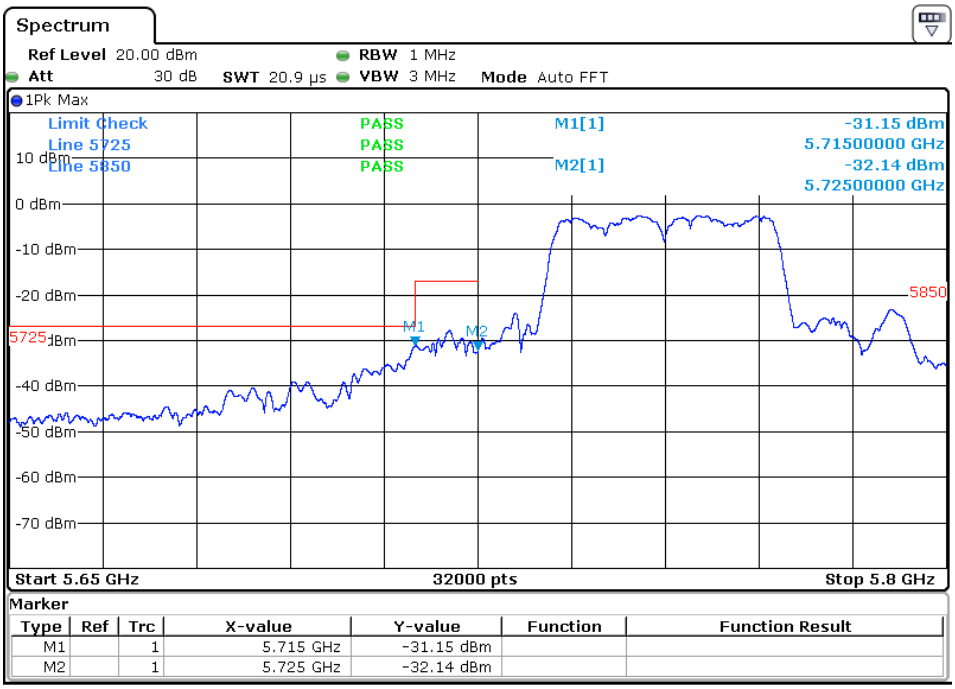
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.715 GHz	-41.77 dBm		
M2		1	5.725 GHz	-29.48 dBm		

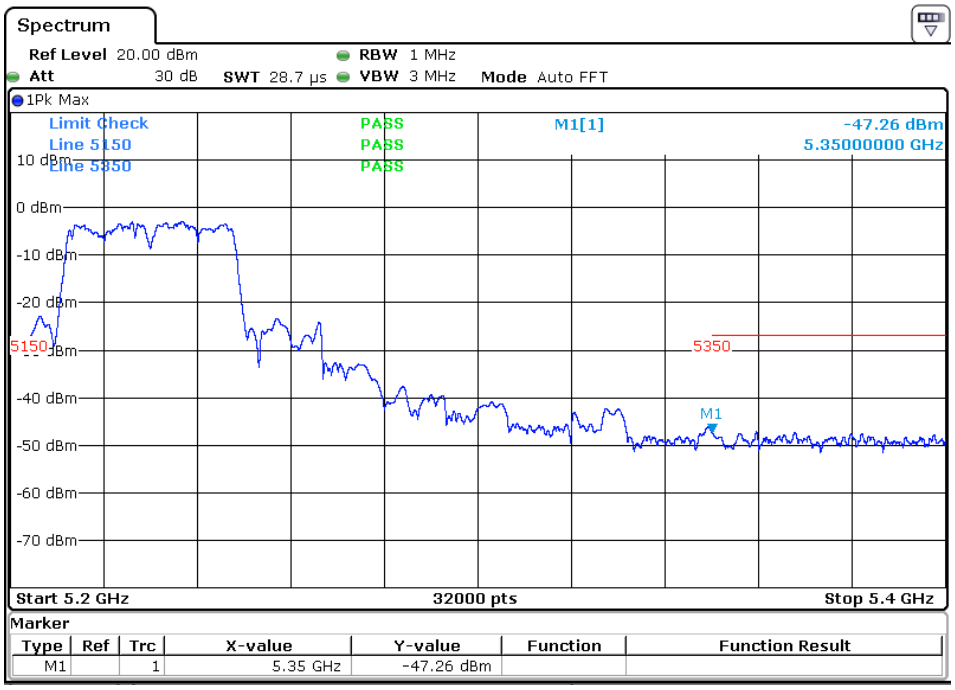


Marker

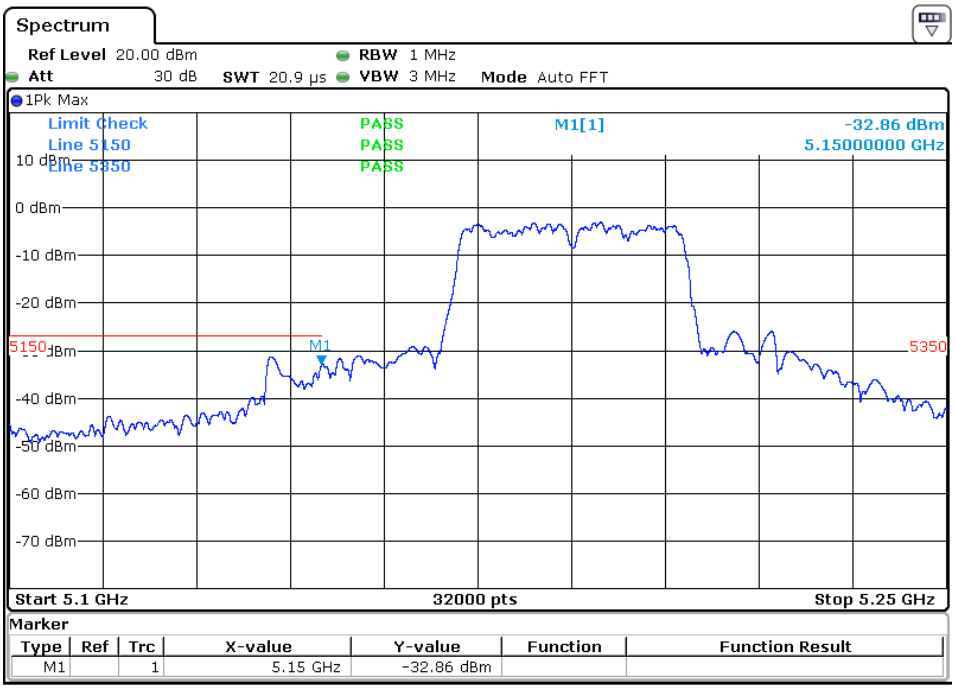
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.85 GHz	-36.46 dBm		
M2		1	5.86 GHz	-38.80 dBm		

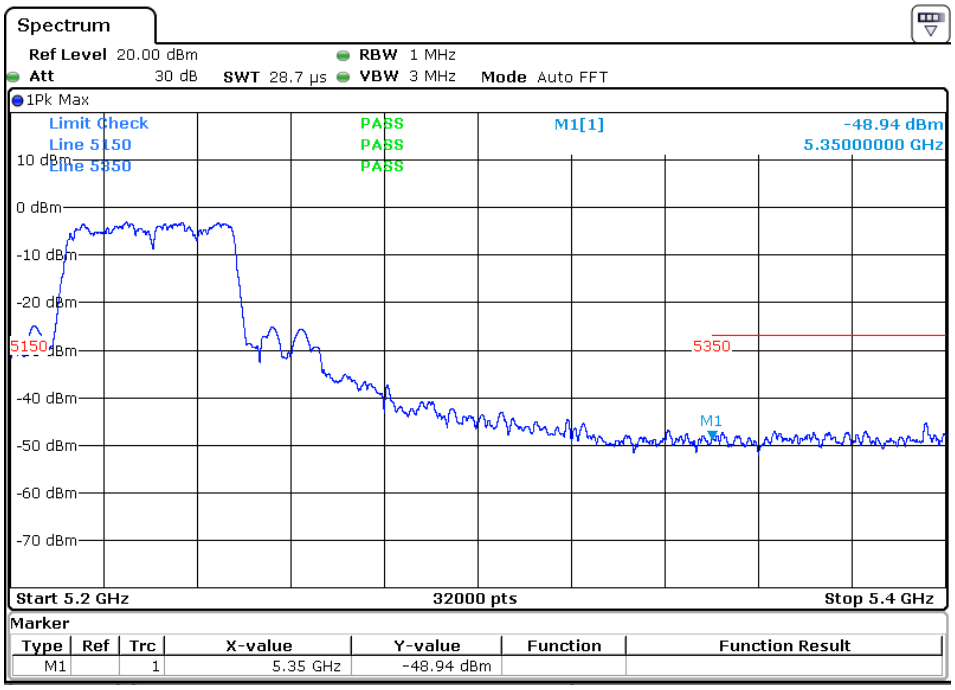
Ant 1 802.11 n40

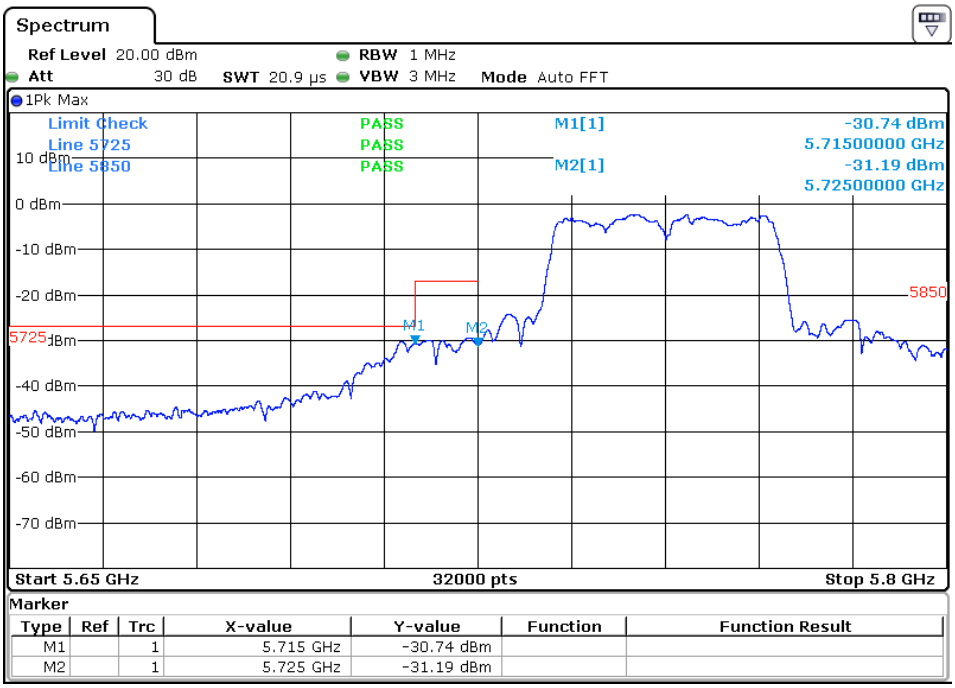




Ant 1 802.11 ac40

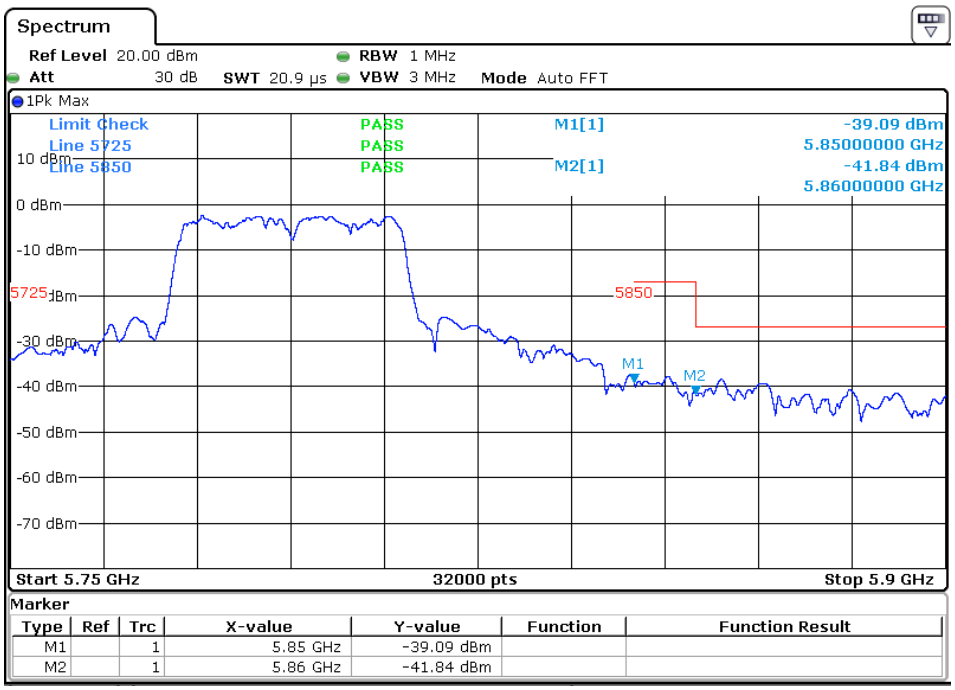






Marker

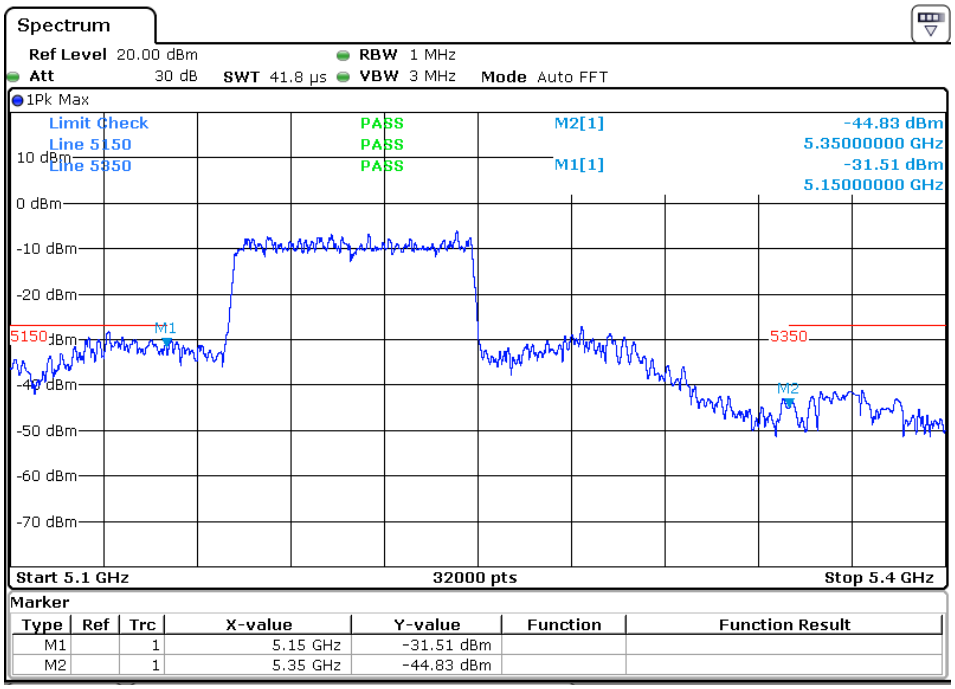
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.715 GHz	-30.74 dBm		
M2		1	5.725 GHz	-31.19 dBm		



Marker

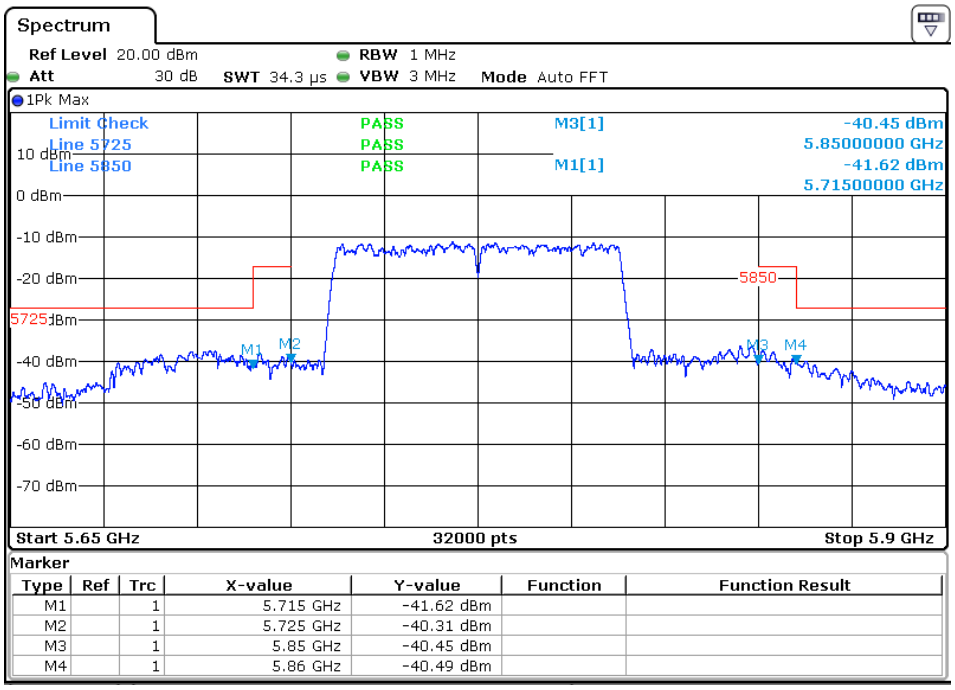
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.85 GHz	-39.09 dBm		
M2		1	5.86 GHz	-41.84 dBm		

Ant 1 802.11 ac80



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.15 GHz	-31.51 dBm		
M2		1	5.35 GHz	-44.83 dBm		



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.715 GHz	-41.62 dBm		
M2		1	5.725 GHz	-40.31 dBm		
M3		1	5.85 GHz	-40.45 dBm		
M4		1	5.86 GHz	-40.49 dBm		

6.4 BANDWIDTH TEST

6.4.1 Applied procedures / Limit

The bandwidth at 26 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum power control level, as defined in KDB 789033, at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26 dB bandwidth.
The 26 dB bandwidth is used to determine the conducted power limits.
There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.
The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

6.4.2 Test procedure

26 dB BANDWID PROCEDURES

a. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01

b. Set RBW = approximately 1% of the emission bandwidth.

c. Trace mode = max hold

d. Detector = Peak

e. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%

6 dB BANDWID PROCEDURES

a. Set resolution bandwidth (RBW) = 100 kHz

b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.

c. Trace mode = max hold.

d. Sweep = auto couple.

e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

99% BANDWID PROCEDURES

1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 5.0 times the OBW.

3. Set RBW = 1 % to 5 % of the OBW

4. Set VBW ⩾ 3 • RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

6. Use the 99 % power bandwidth function of the instrument (if available).

7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

6.4.3 Deviation from standard

No deviation.

6.4.4 Test setup

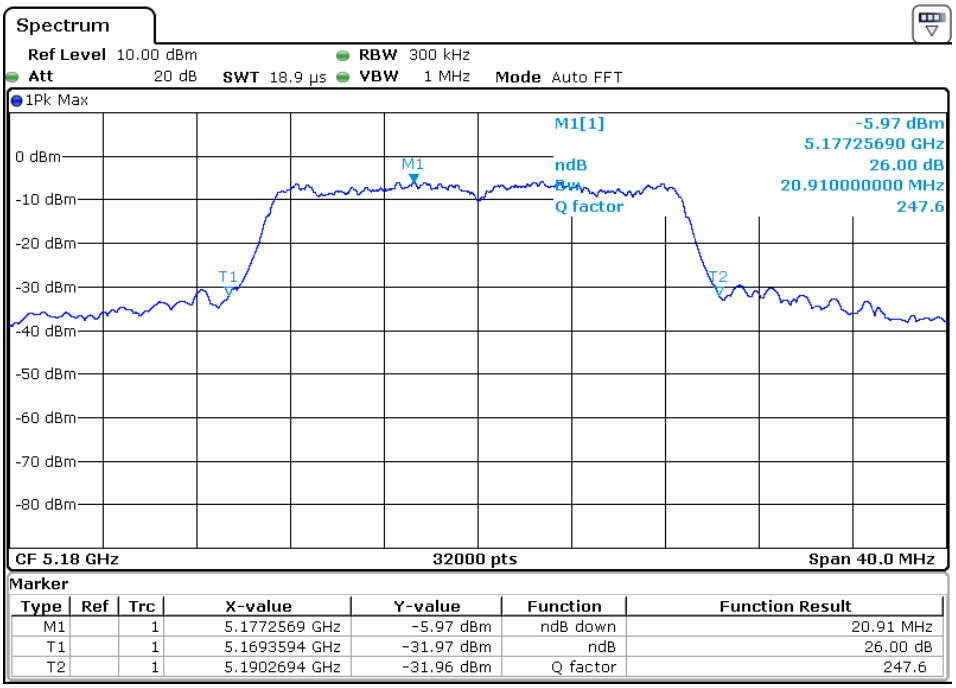
6.4.5 Test results

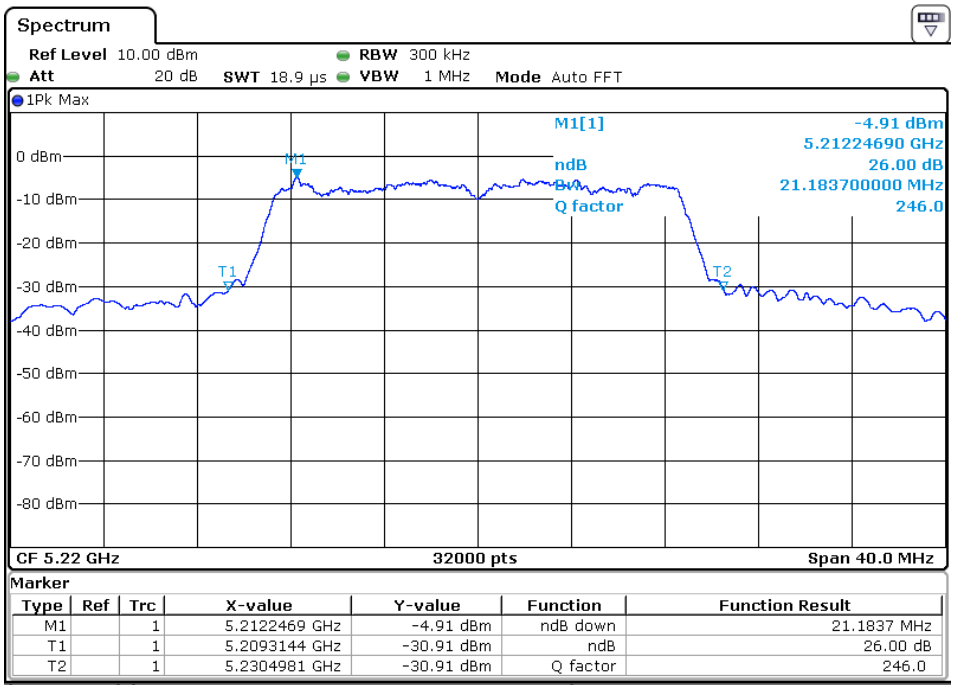
Note:1/2 Represent the value of antenna1/2,The worst data is Antenna 1,only shown Antenna 1Plot.

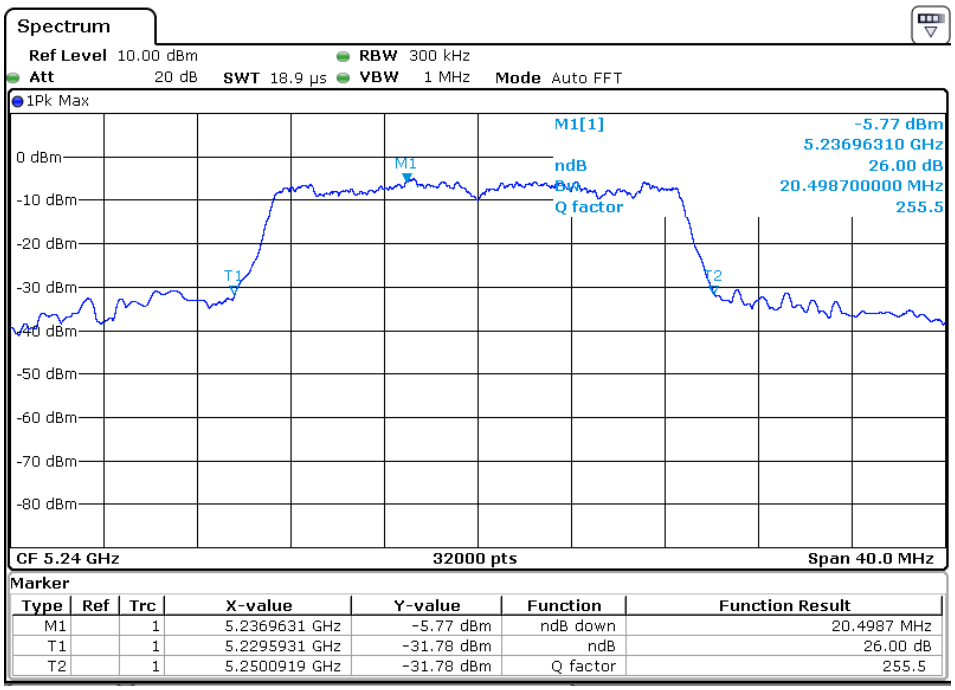
Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	6dB Bandwidth (MHz)	Result
Ant 1						
802.11a	6	36	5180	20.91	17.5391	Pass
802.11a	6	44	5220	21.1837	17.5125	Pass
802.11a	6	48	5240	20.4987	17.5	Pass
802.11a	6	149	5745	21.1675	17.5125	Pass
802.11a	6	157	5785	20.2737	17.4969	Pass
802.11a	6	165	5825	20.7237	17.5001	Pass
802.11n-HT20	7.2	36	5180	20.8437	17.5078	Pass
802.11n-HT20	7.2	44	5220	20.655	17.4937	Pass
802.11n-HT20	7.2	48	5240	20.4187	17.4969	Pass
802.11n-HT20	7.2	149	5745	20.4725	17.5313	Pass
802.11n-HT20	7.2	157	5785	20.3062	17.4828	Pass
802.11n-HT20	7.2	165	5825	20.92	17.5047	Pass
802.11n-HT40	15	38	5190	40.53	35.145	Pass
802.11n-HT40	15	46	5230	41.1425	35.335	Pass
802.11n-HT40	15	151	5755	41.98	35.305	Pass
802.11n-HT40	15	159	5795	41.3075	35.0925	Pass
802.11ac-VHT2	7.2	36	5180	21.0525	17.4969	Pass
802.11ac-VHT2	7.2	44	5220	20.4275	17.5187	Pass
802.11ac-VHT2	7.2	48	5240	20.1712	17.4812	Pass
802.11ac-VHT2	7.2	149	5745	23.5525	17.5016	Pass
802.11ac-VHT2	7.2	157	5785	21.38	1.5219	Pass
802.11ac-VHT2	7.2	165	5825	20.2625	17.5188	Pass
802.11ac-VHT4	15	38	5190	40.8025	35.2675	Pass
802.11ac-VHT4	15	46	5230	41.47	35.1638	Pass
802.11ac-VHT4	15	151	5755	40.8425	35.1575	Pass
802.11ac-VHT4	15	159	5795	41.0425	35.3075	Pass
802.11ac-VHT8	32.5	42	5210	79.985	75.96	Pass
802.11ac-VHT8	32.5	155	5775	81.795	75.92	Pass

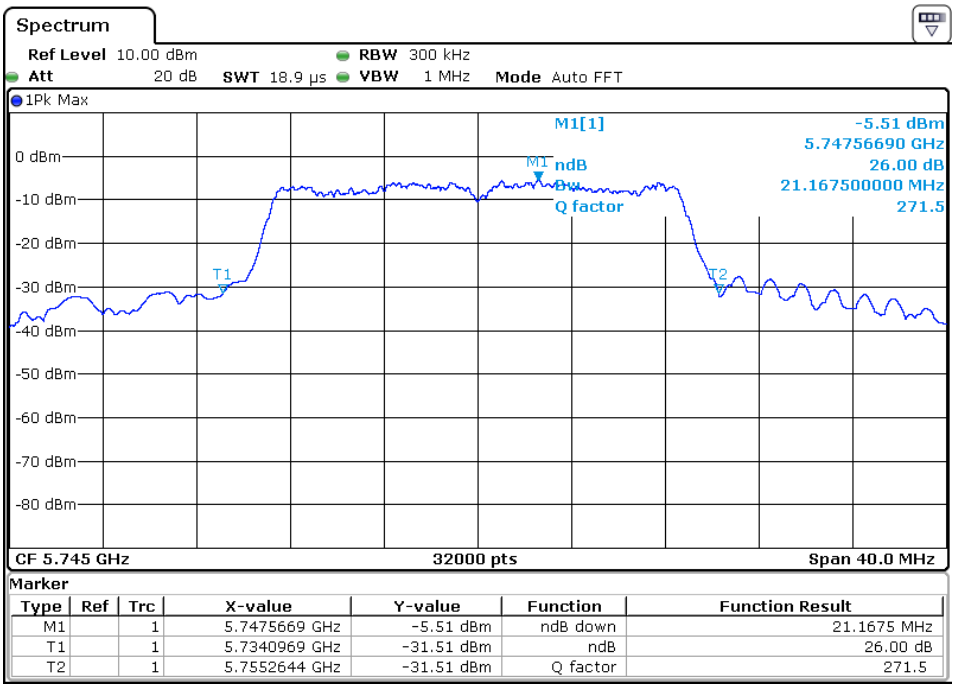
26 dBc Bandwidth plot as follows:

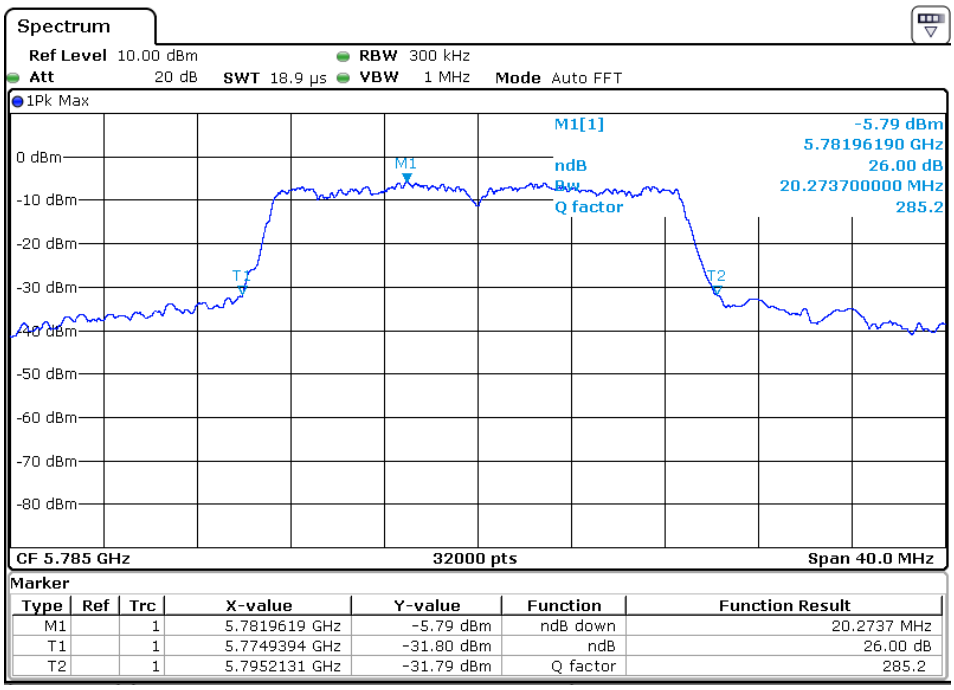
Ant 1 802.11 a





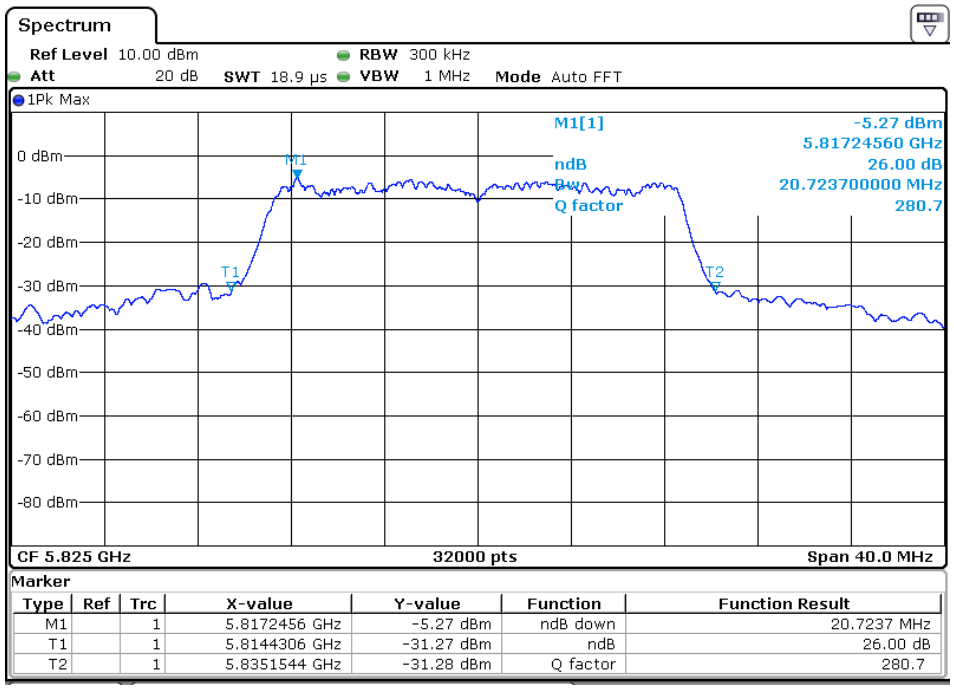

Spectrum
Ref Level 10.00 dBm
RBW 300 kHz
Att 20 dB
SWT 18.9 µs
VBW 1 MHz
Mode Auto FFT
1Pk Max
M1[1]
-5.77 dBm
5.23696310 GHz
ndB 26.00 dB
Bw 20.498700000 MHz
Q factor 255.5
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
T1
T2
CF 5.24 GHz
32000 pts
Span 40.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.2369631 GHz -5.77 dBm ndB down 20.4987 MHz
T1 1 5.2295931 GHz -31.78 dBm ndB 26.00 dB
T2 1 5.2500919 GHz -31.78 dBm Q factor 255.5


Spectrum
Ref Level 10.00 dBm
RBW 300 kHz
Att 20 dB
SWT 18.9 µs
VBW 1 MHz
Mode Auto FFT
1Pk Max
M1[1]
-5.51 dBm
5.74756690 GHz
ndB 26.00 dB
Bw 21.167500000 MHz
Q factor 271.5
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
T1
T2
CF 5.745 GHz
32000 pts
Span 40.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.7475669 GHz -5.51 dBm ndB down 21.1675 MHz
T1 1 5.7340969 GHz -31.51 dBm ndB 26.00 dB
T2 1 5.7552644 GHz -31.51 dBm Q factor 271.5



Marker

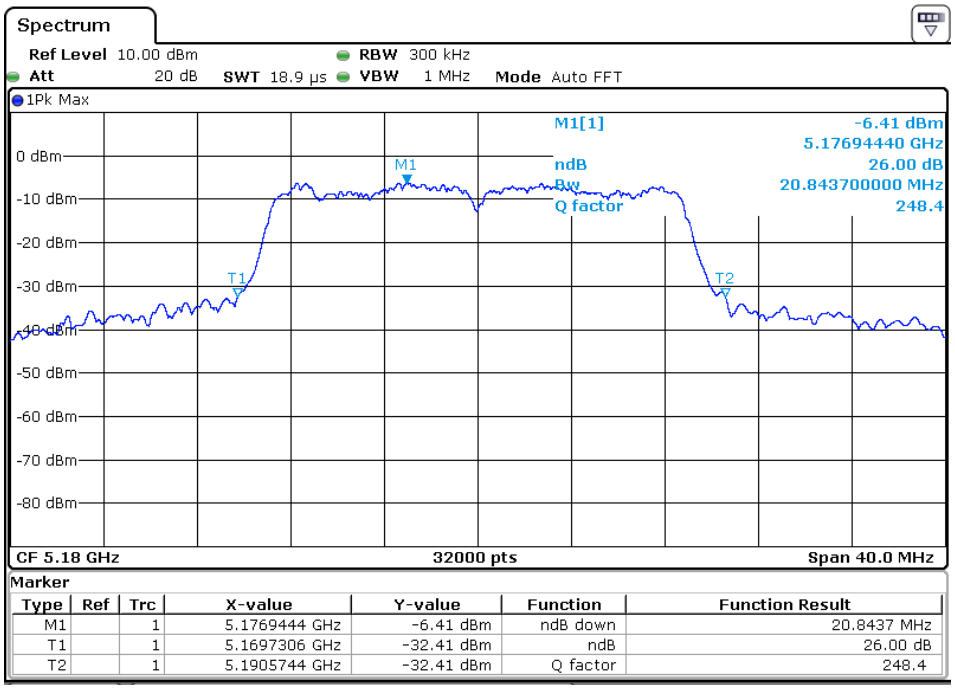
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7819619 GHz	-5.79 dBm	ndB down	20.2737 MHz
T1		1	5.7749394 GHz	-31.80 dBm	ndB	26.00 dB
T2		1	5.7952131 GHz	-31.79 dBm	Q factor	285.2

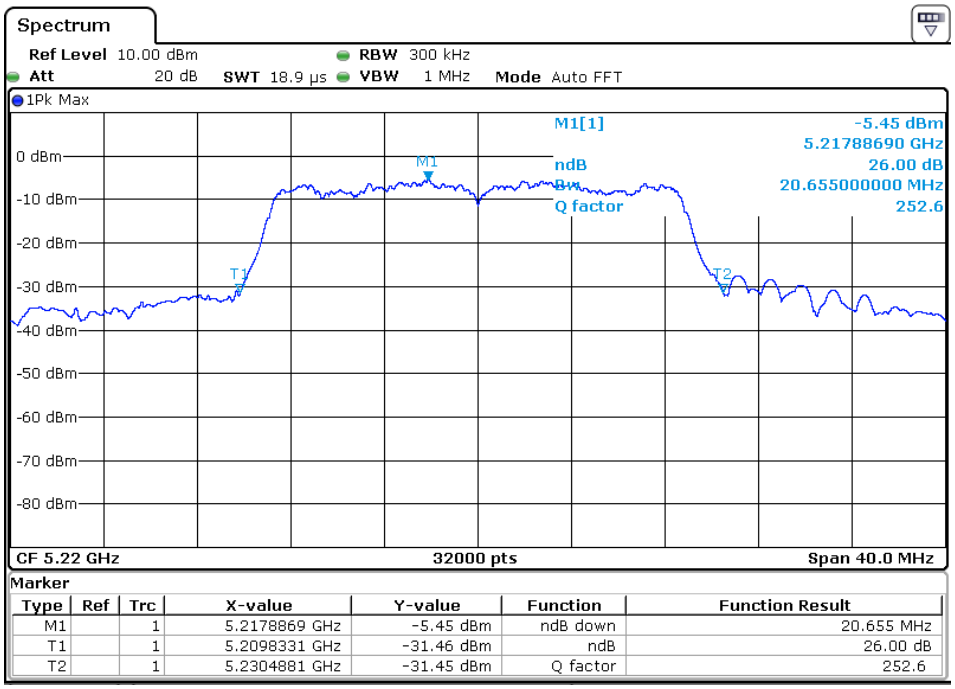


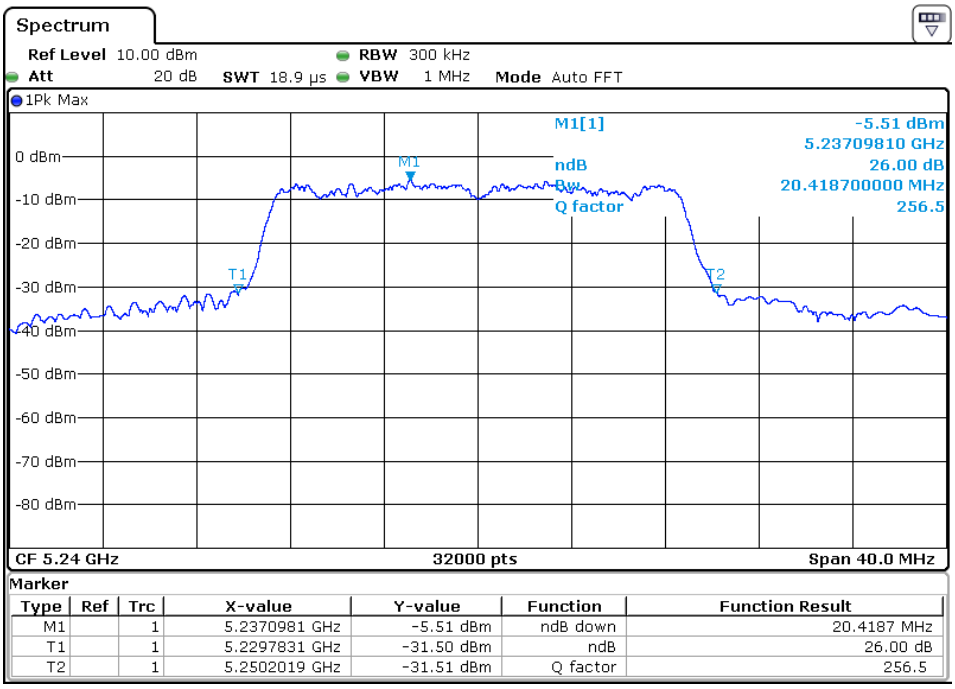
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8172456 GHz	-5.27 dBm	ndB down	20.7237 MHz
T1		1	5.8144306 GHz	-31.27 dBm	ndB	26.00 dB
T2		1	5.8351544 GHz	-31.28 dBm	Q factor	280.7

Ant 1 802.11 n20

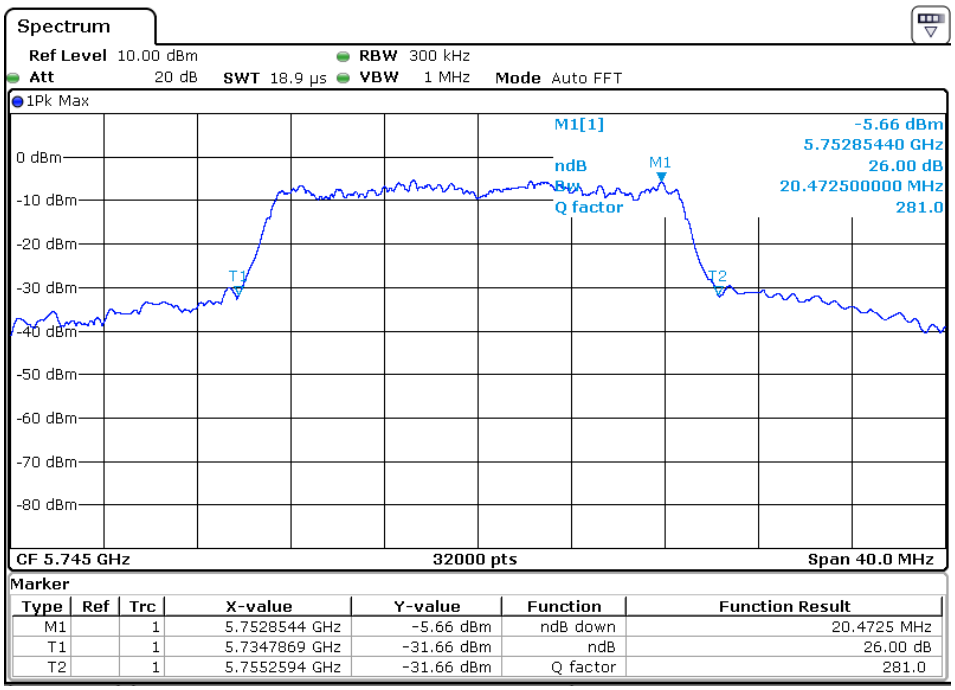






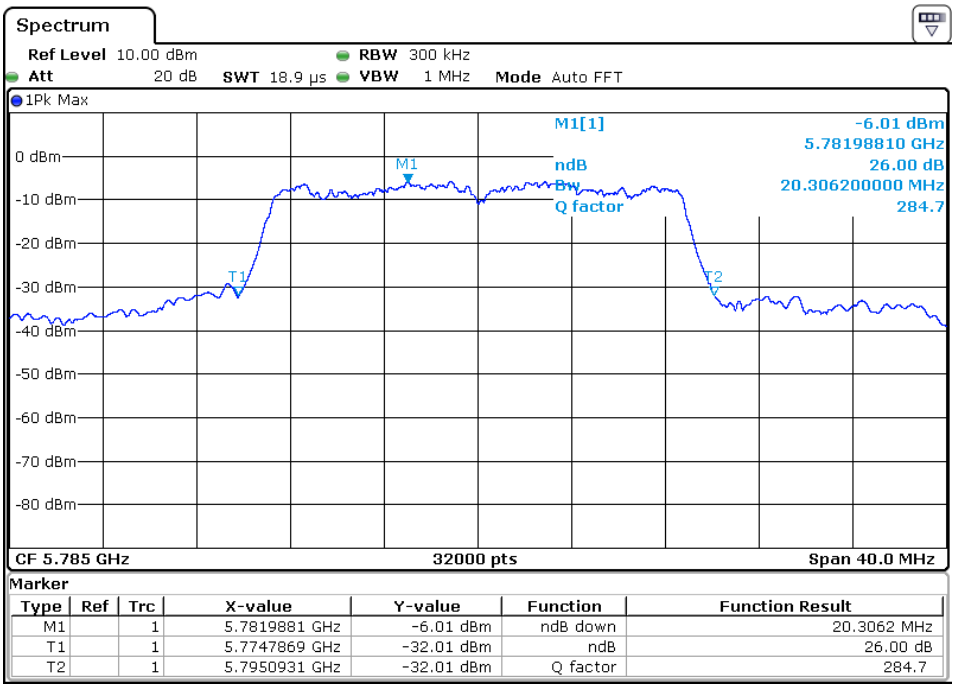
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2370981 GHz	-5.51 dBm	ndB down	20.4187 MHz
T1		1	5.2297831 GHz	-31.50 dBm	ndB	26.00 dB
T2		1	5.2502019 GHz	-31.51 dBm	Q factor	256.5



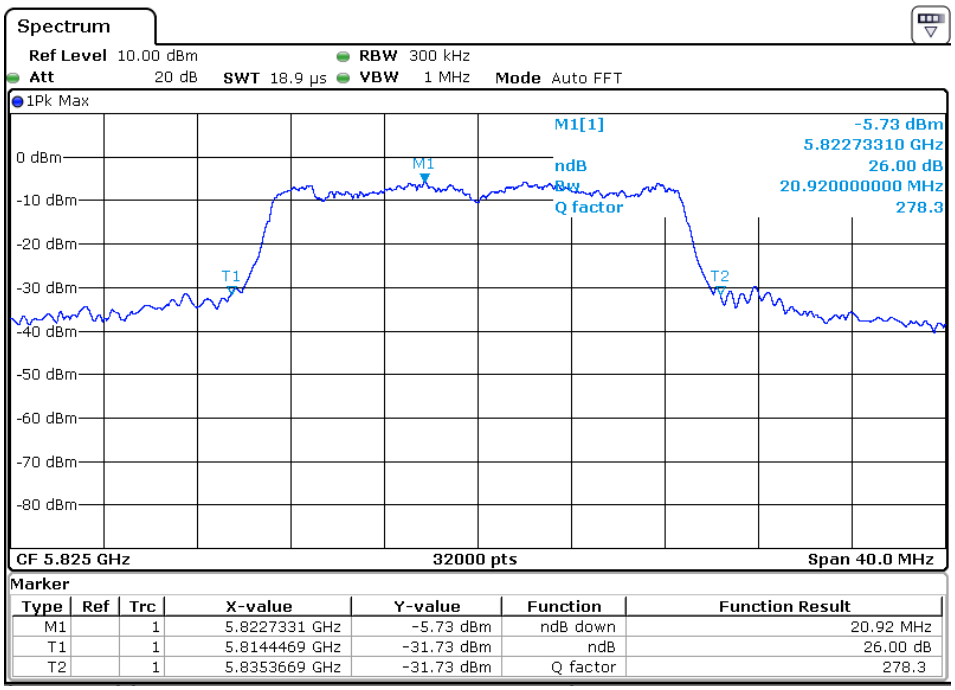
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7528544 GHz	-5.66 dBm	ndB down	20.4725 MHz
T1		1	5.7347869 GHz	-31.66 dBm	ndB	26.00 dB
T2		1	5.7552594 GHz	-31.66 dBm	Q factor	281.0



Marker

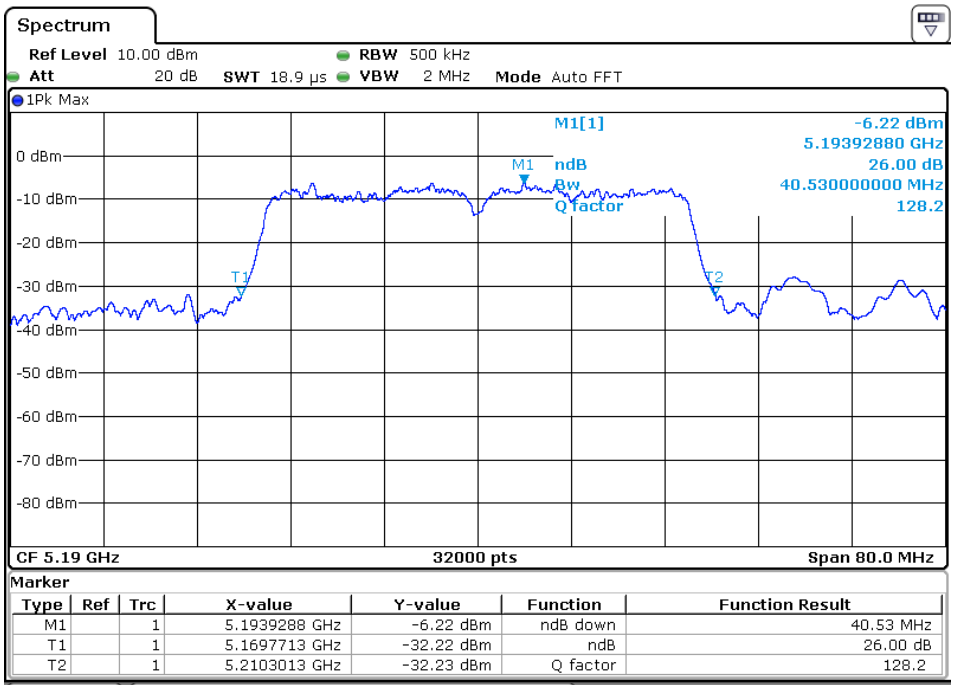
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7819881 GHz	-6.01 dBm	ndB down	20.3062 MHz
T1		1	5.7747869 GHz	-32.01 dBm	ndB	26.00 dB
T2		1	5.7950931 GHz	-32.01 dBm	Q factor	284.7



Marker

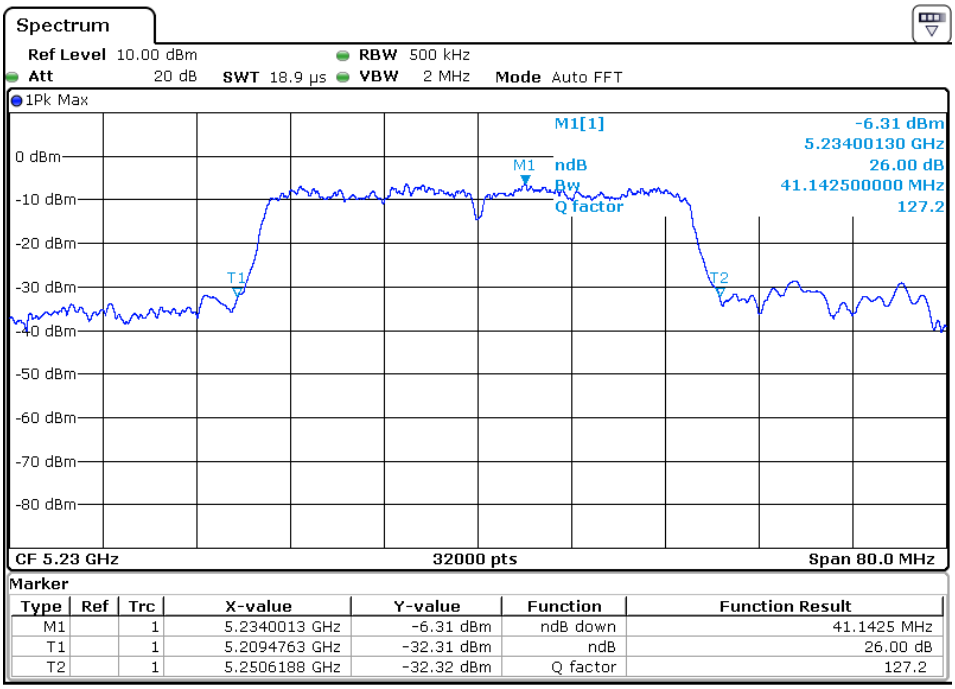
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8227331 GHz	-5.73 dBm	ndB down	20.92 MHz
T1		1	5.8144469 GHz	-31.73 dBm	ndB	26.00 dB
T2		1	5.8353669 GHz	-31.73 dBm	Q factor	278.3

Ant 1 802.11 n40



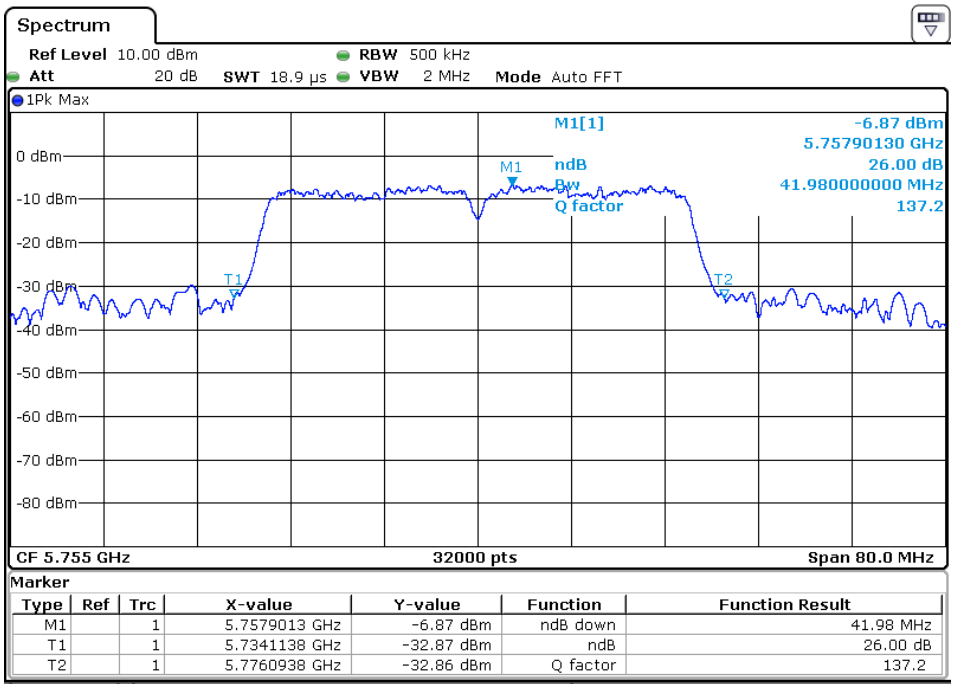
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.1939288 GHz	-6.22 dBm	ndB down	40.53 MHz
T1		1	5.1697713 GHz	-32.22 dBm	ndB	26.00 dB
T2		1	5.2103013 GHz	-32.23 dBm	Q factor	128.2



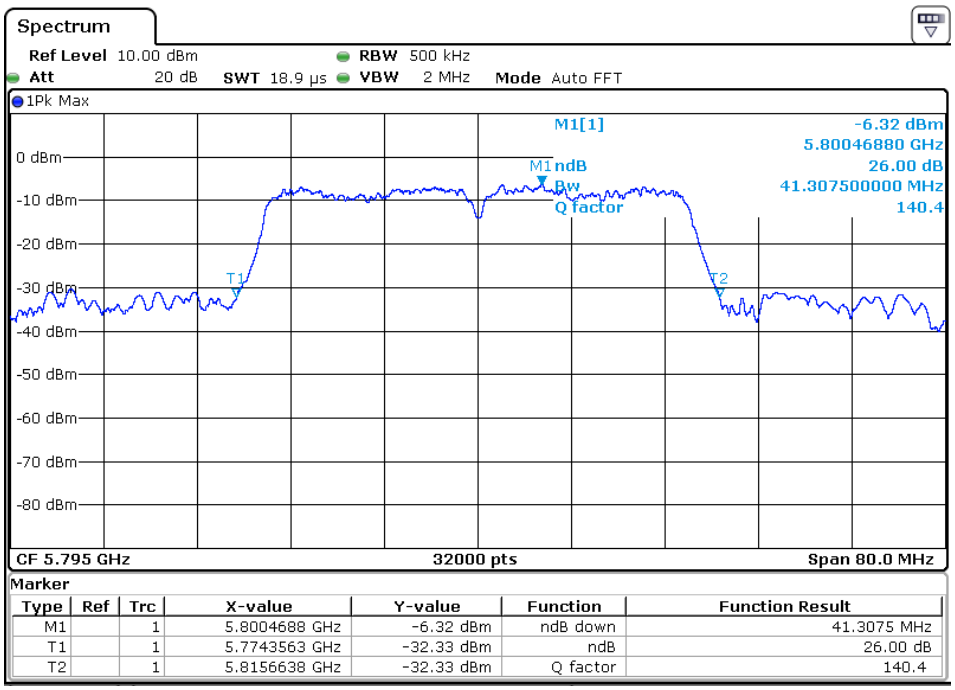
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2340013 GHz	-6.31 dBm	ndB down	41.1425 MHz
T1		1	5.2094763 GHz	-32.31 dBm	ndB	26.00 dB
T2		1	5.2506188 GHz	-32.32 dBm	Q factor	127.2



Marker

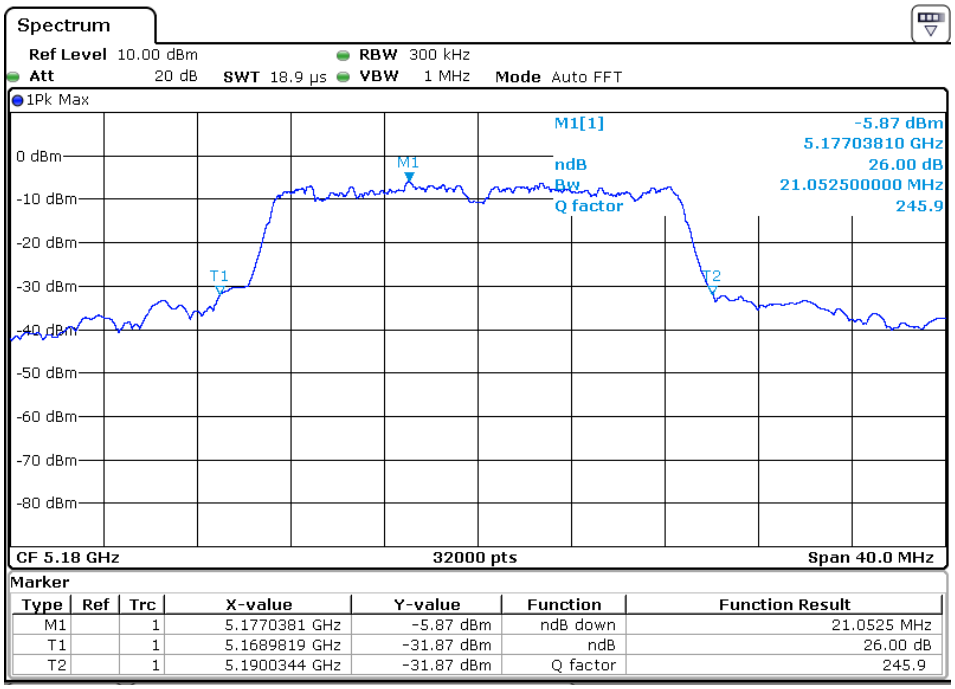
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7579013 GHz	-6.87 dBm	ndB down	41.98 MHz
T1		1	5.7341138 GHz	-32.87 dBm	ndB	26.00 dB
T2		1	5.7760938 GHz	-32.86 dBm	Q factor	137.2



Marker

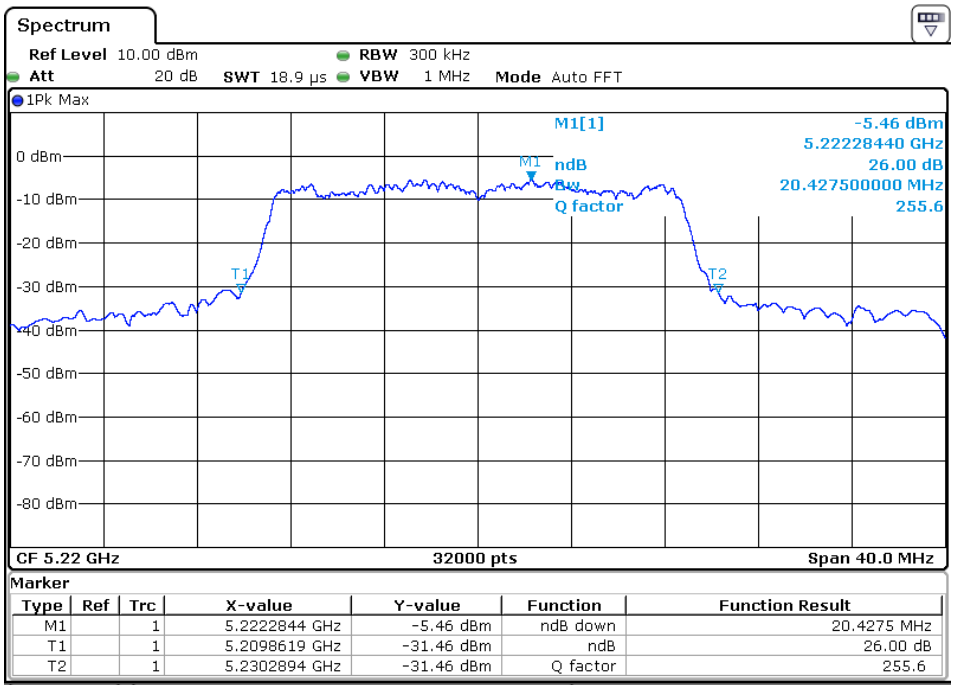
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8004688 GHz	-6.32 dBm	ndB down	41.3075 MHz
T1		1	5.7743563 GHz	-32.33 dBm	ndB	26.00 dB
T2		1	5.8156638 GHz	-32.33 dBm	Q factor	140.4

Ant 1 802.11 ac20



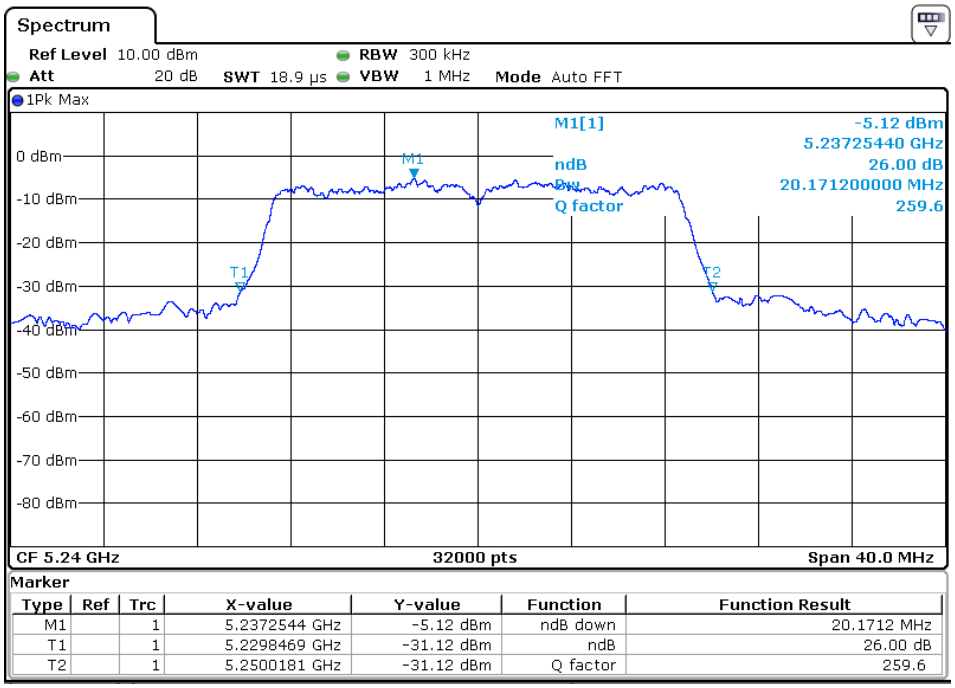
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.1770381 GHz	-5.87 dBm	ndB down	21.0525 MHz
T1		1	5.1689819 GHz	-31.87 dBm	ndB	26.00 dB
T2		1	5.1900344 GHz	-31.87 dBm	Q factor	245.9



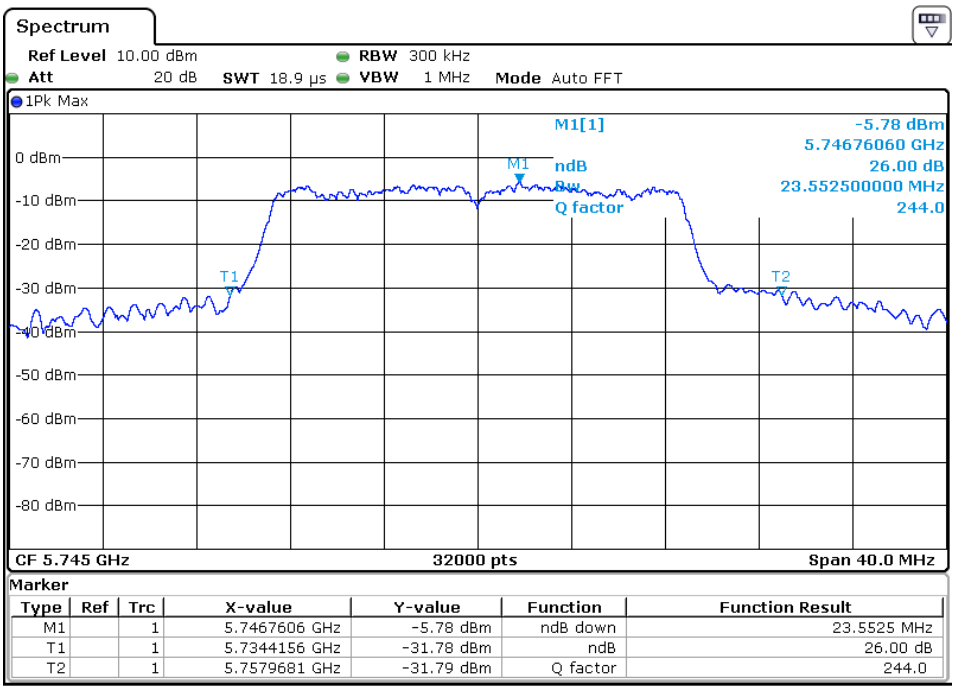
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2222844 GHz	-5.46 dBm	ndB down	20.4275 MHz
T1		1	5.2098619 GHz	-31.46 dBm	ndB	26.00 dB
T2		1	5.2302894 GHz	-31.46 dBm	Q factor	255.6



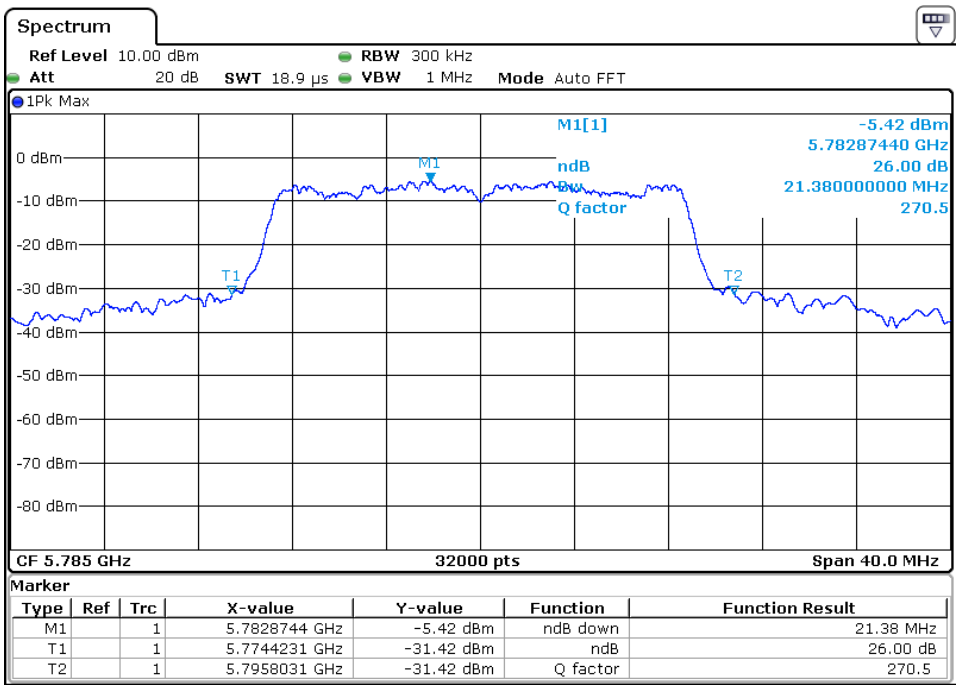
Marker

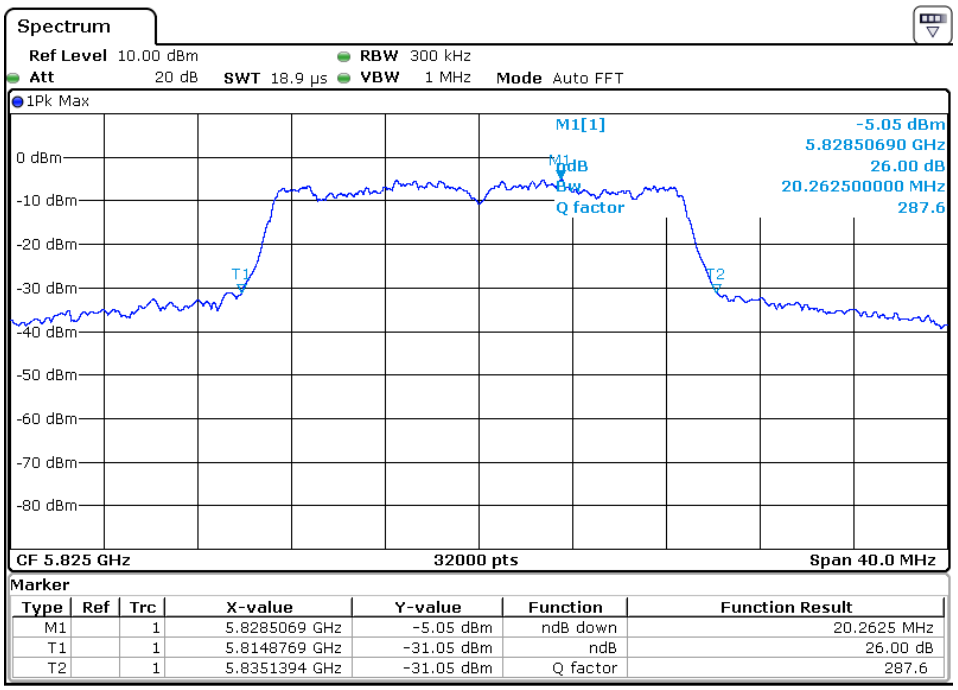
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2372544 GHz	-5.12 dBm	ndB down	20.1712 MHz
T1		1	5.2298469 GHz	-31.12 dBm	ndB	26.00 dB
T2		1	5.2500181 GHz	-31.12 dBm	Q factor	259.6



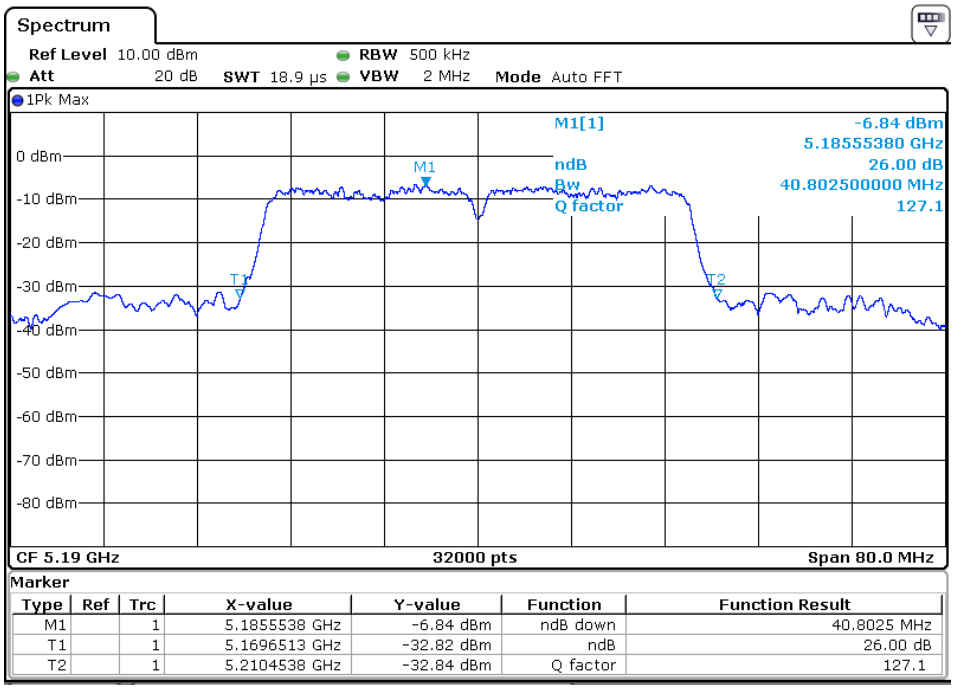
Marker

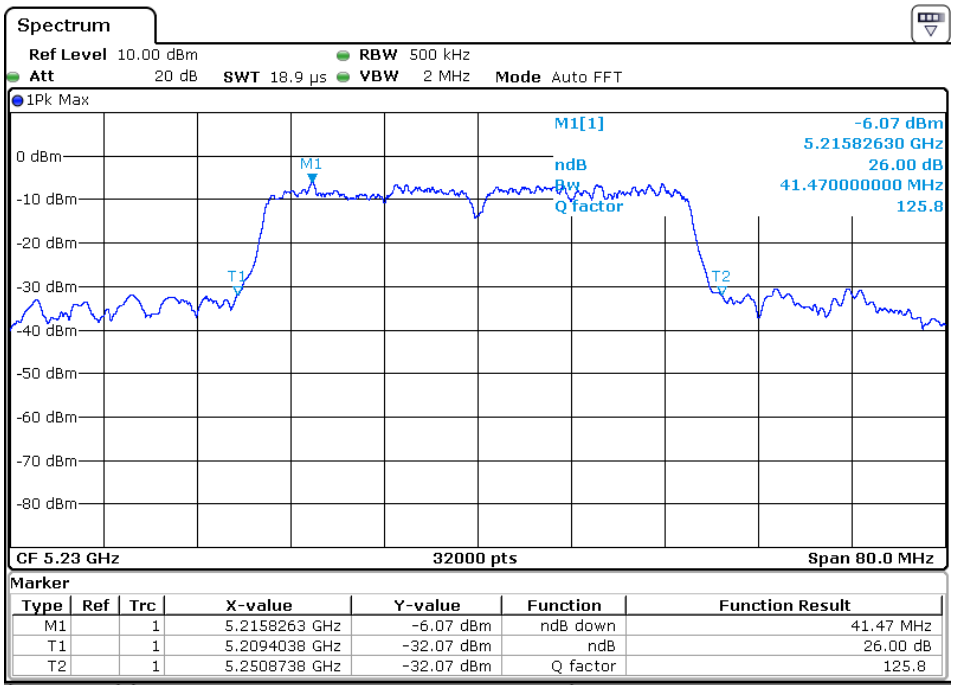
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7467606 GHz	-5.78 dBm	ndB down	23.5525 MHz
T1		1	5.7344156 GHz	-31.78 dBm	ndB	26.00 dB
T2		1	5.7579681 GHz	-31.79 dBm	Q factor	244.0

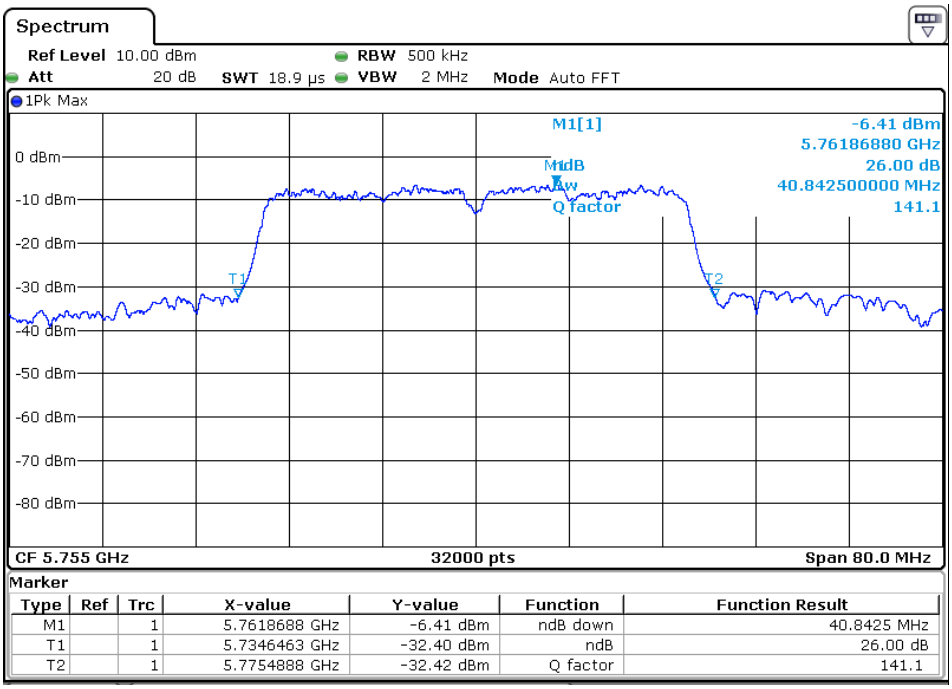

Spectrum
Ref Level 10.00 dBm
RBW 300 kHz
Att 20 dB
SWT 18.9 µs
VBW 1 MHz
Mode Auto FFT
1Pk Max
M1[1]
-5.42 dBm
5.78287440 GHz
ndB 26.00 dB
BW 21.380000000 MHz
Q factor 270.5
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
T1
T2
CF 5.785 GHz
32000 pts
Span 40.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.7828744 GHz -5.42 dBm ndB down 21.38 MHz
T1 1 5.7744231 GHz -31.42 dBm ndB 26.00 dB
T2 1 5.7958031 GHz -31.42 dBm Q factor 270.5


Spectrum
Ref Level 10.00 dBm
RBW 300 kHz
Att 20 dB
SWT 18.9 µs
VBW 1 MHz
Mode Auto FFT
1Pk Max
M1[1]
-5.05 dBm
5.82850690 GHz
ndB 26.00 dB
BW 20.262500000 MHz
Q factor 287.6
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
T1
T2
CF 5.825 GHz
32000 pts
Span 40.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.8285069 GHz -5.05 dBm ndB down 20.2625 MHz
T1 1 5.8148769 GHz -31.05 dBm ndB 26.00 dB
T2 1 5.8351394 GHz -31.05 dBm Q factor 287.6

Ant 1 802.11 ac40

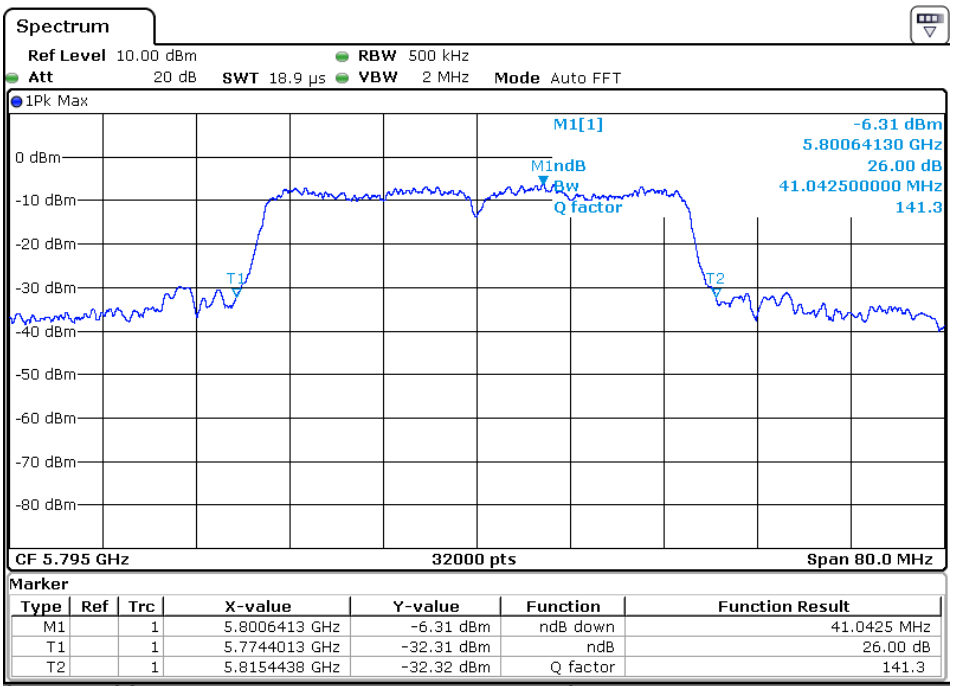






Marker

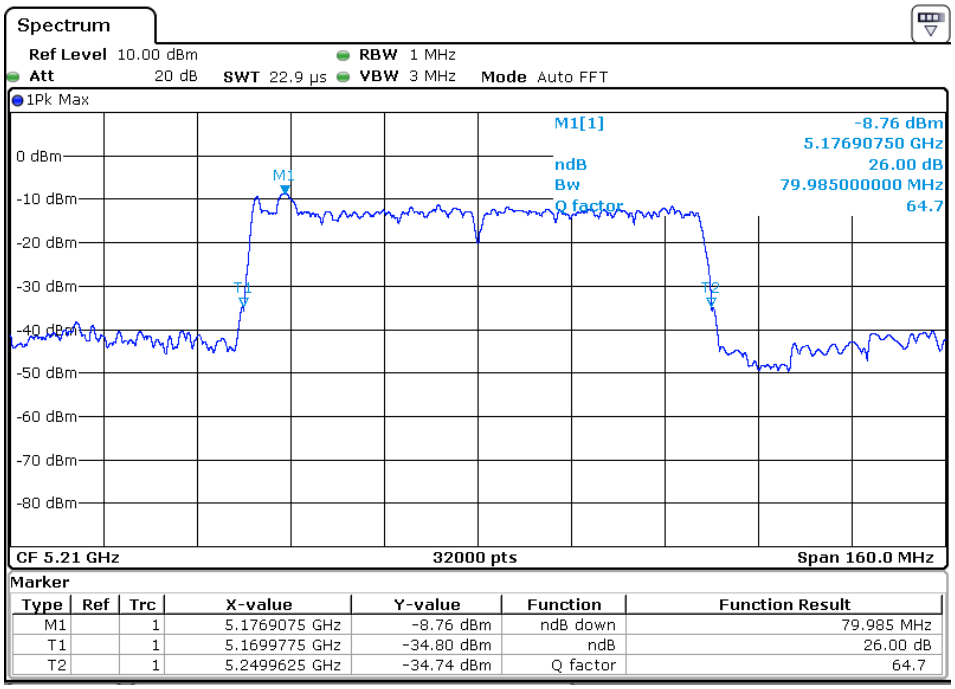
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7618688 GHz	-6.41 dBm	ndB down	40.8425 MHz
T1		1	5.7346463 GHz	-32.40 dBm	ndB	26.00 dB
T2		1	5.7754888 GHz	-32.42 dBm	Q factor	141.1

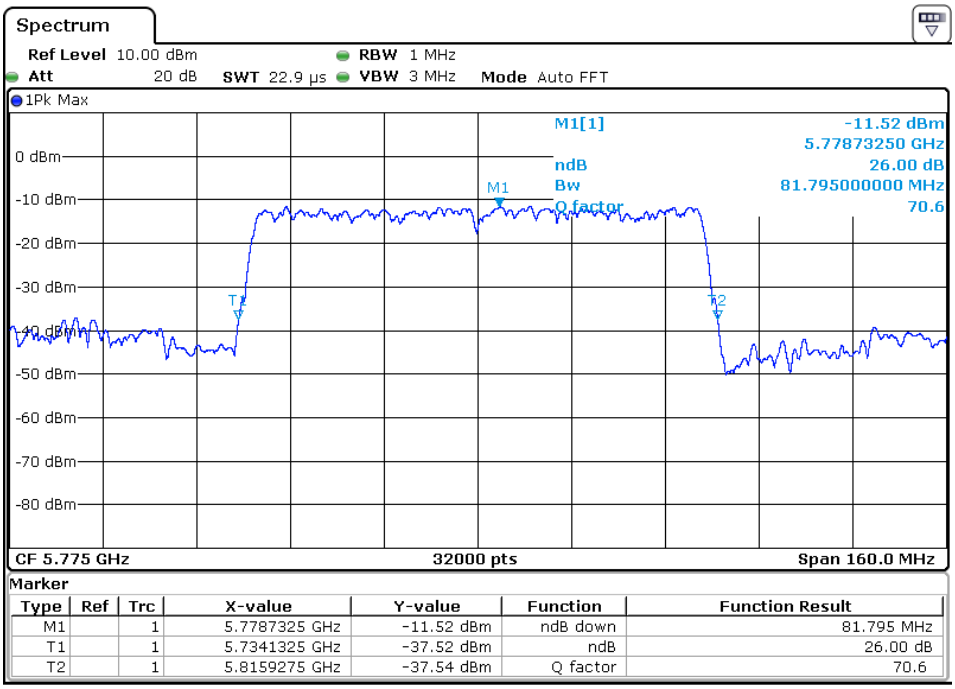


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8006413 GHz	-6.31 dBm	ndB down	41.0425 MHz
T1		1	5.7744013 GHz	-32.31 dBm	ndB	26.00 dB
T2		1	5.8154438 GHz	-32.32 dBm	Q factor	141.3

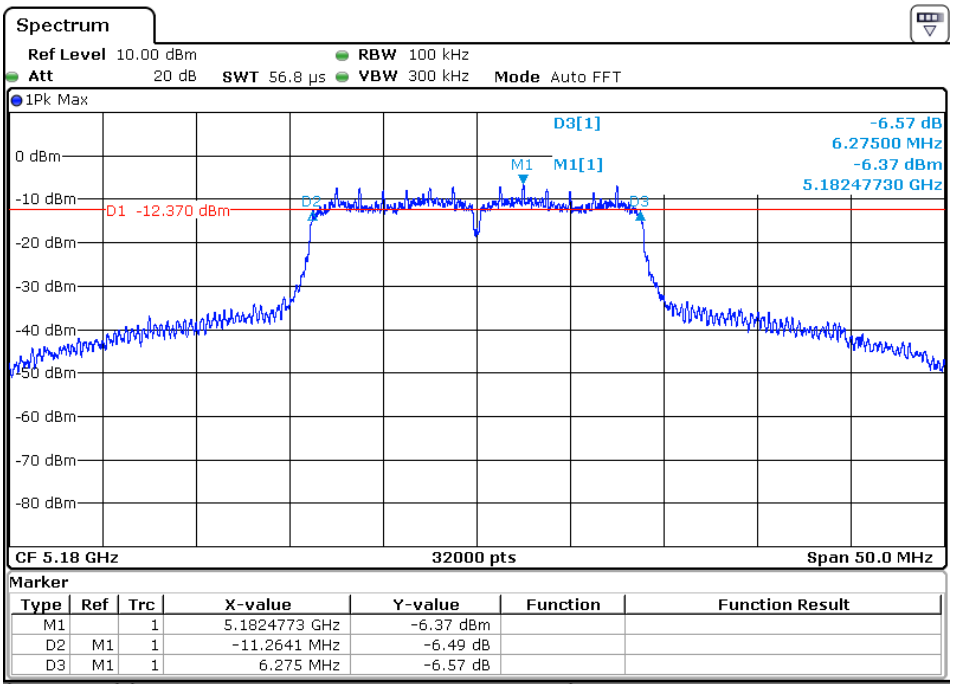
Ant 1 802.11 ac80

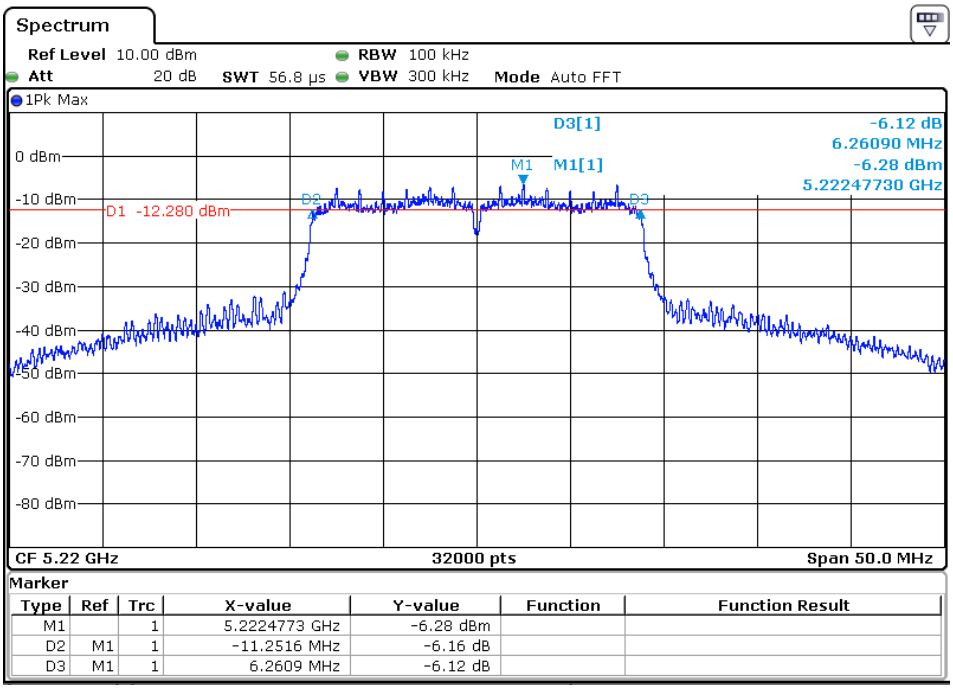


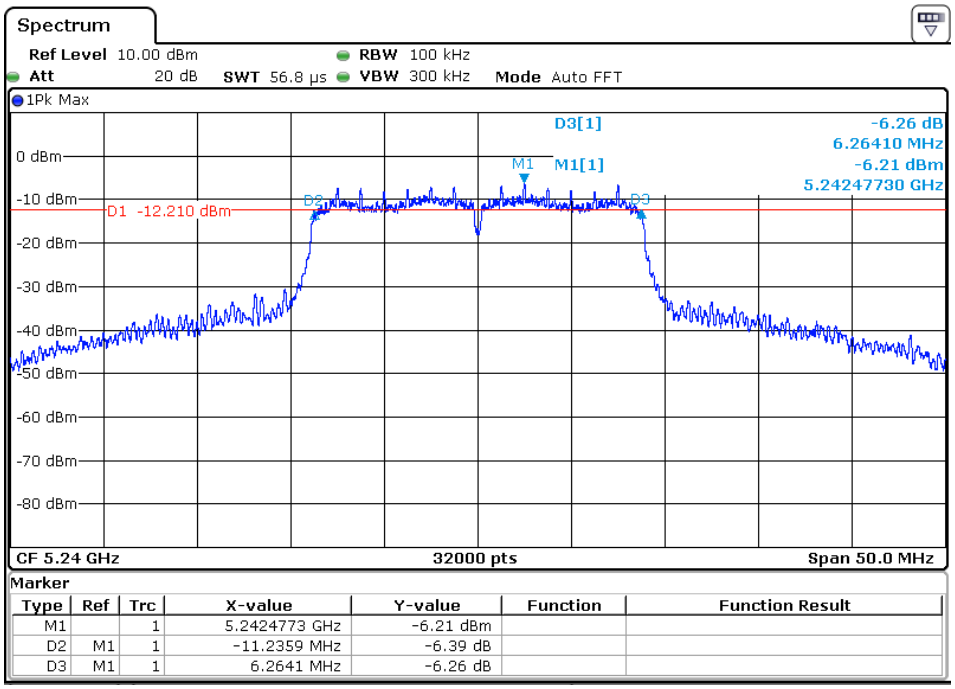


6 dBc Bandwidth plot as follows:

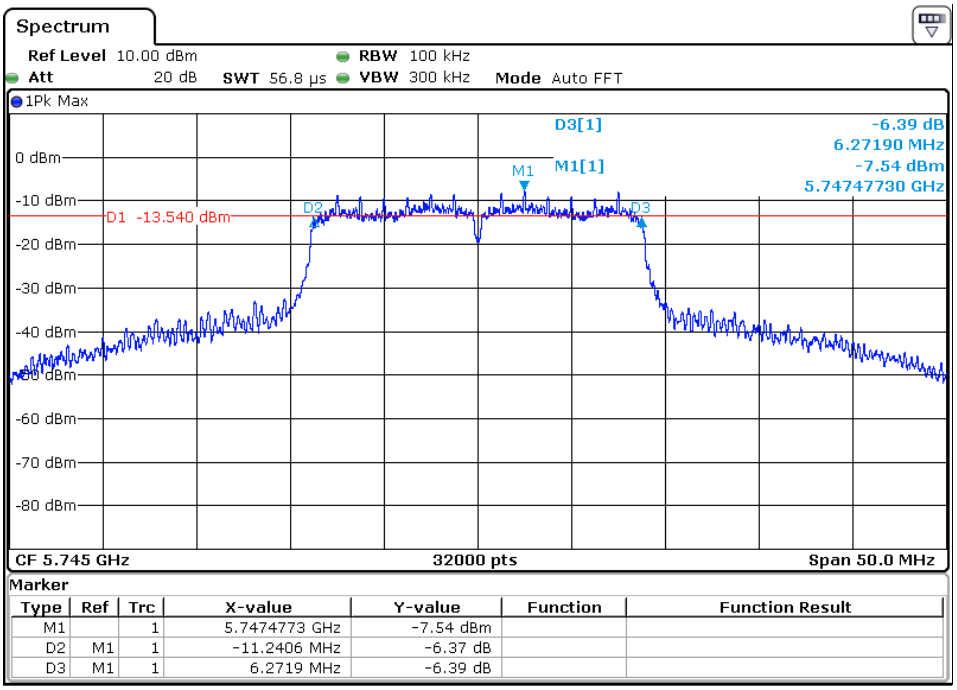
Ant 1 802.11 a



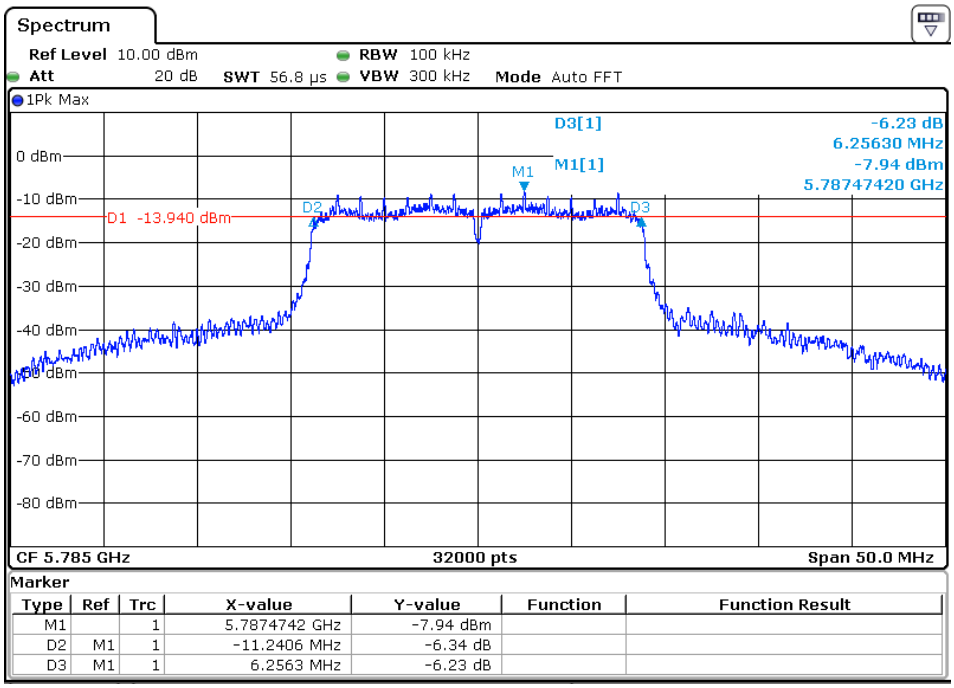




Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2424773 GHz	-6.21 dBm		
D2	M1	1	-11.2359 MHz	-6.39 dB		
D3	M1	1	6.2641 MHz	-6.26 dB		

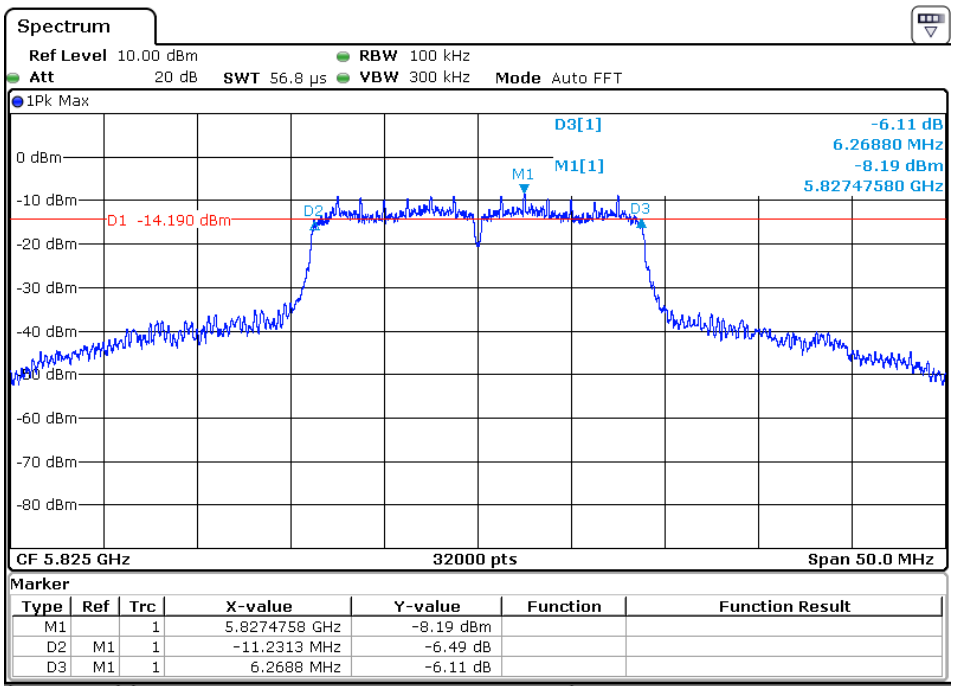


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7474773 GHz	-7.54 dBm		
D2	M1	1	-11.2406 MHz	-6.37 dB		
D3	M1	1	6.2719 MHz	-6.39 dB		



Marker

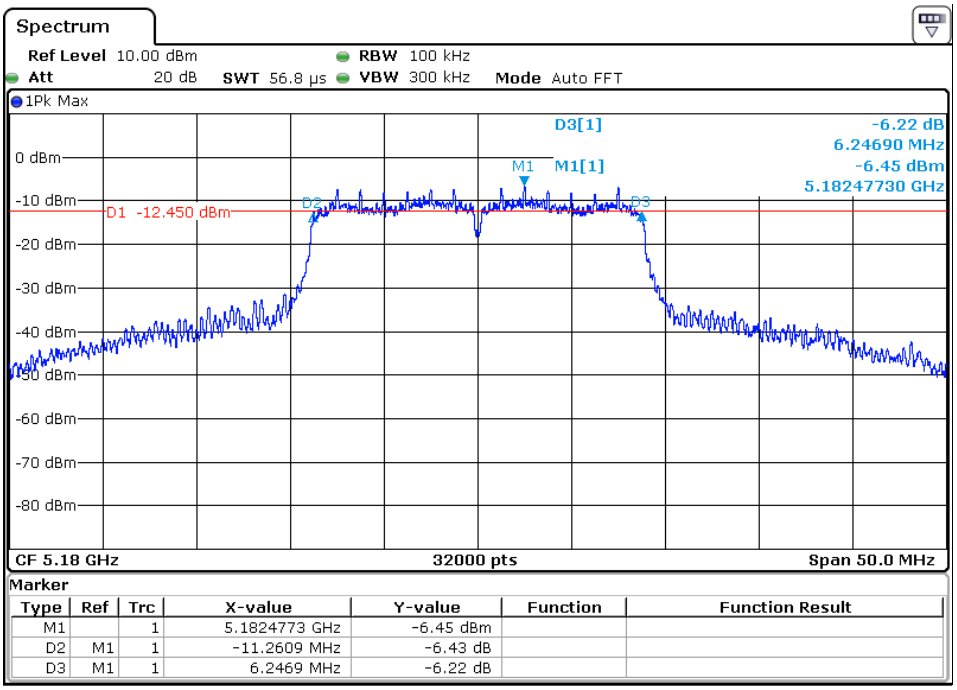
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7874742 GHz	-7.94 dBm		
D2	M1	1	-11.2406 MHz	-6.34 dB		
D3	M1	1	6.2563 MHz	-6.23 dB		



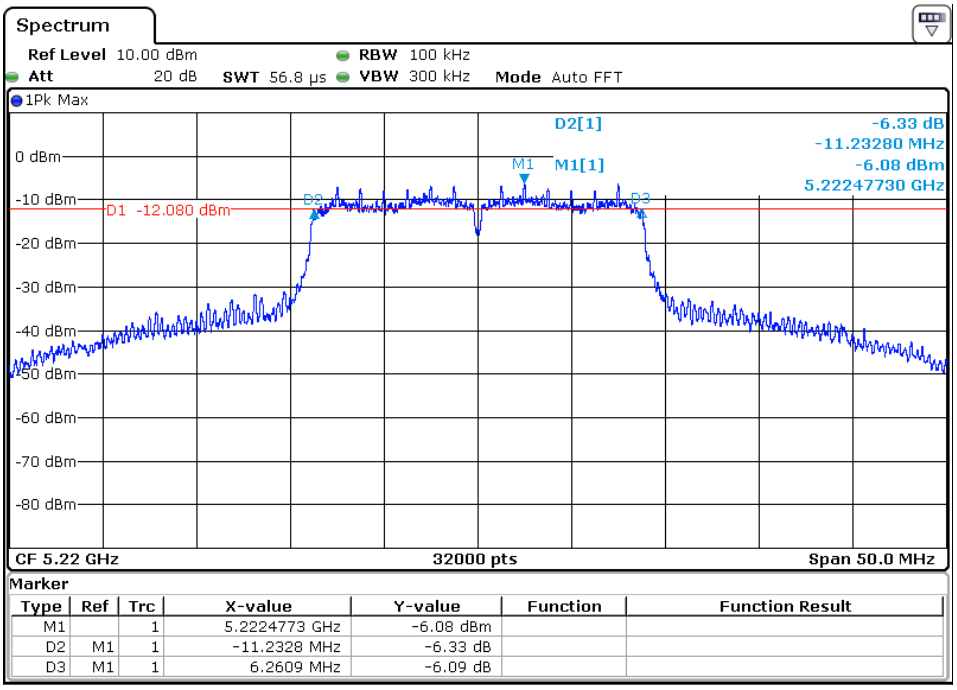
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8274758 GHz	-8.19 dBm		
D2	M1	1	-11.2313 MHz	-6.49 dB		
D3	M1	1	6.2688 MHz	-6.11 dB		

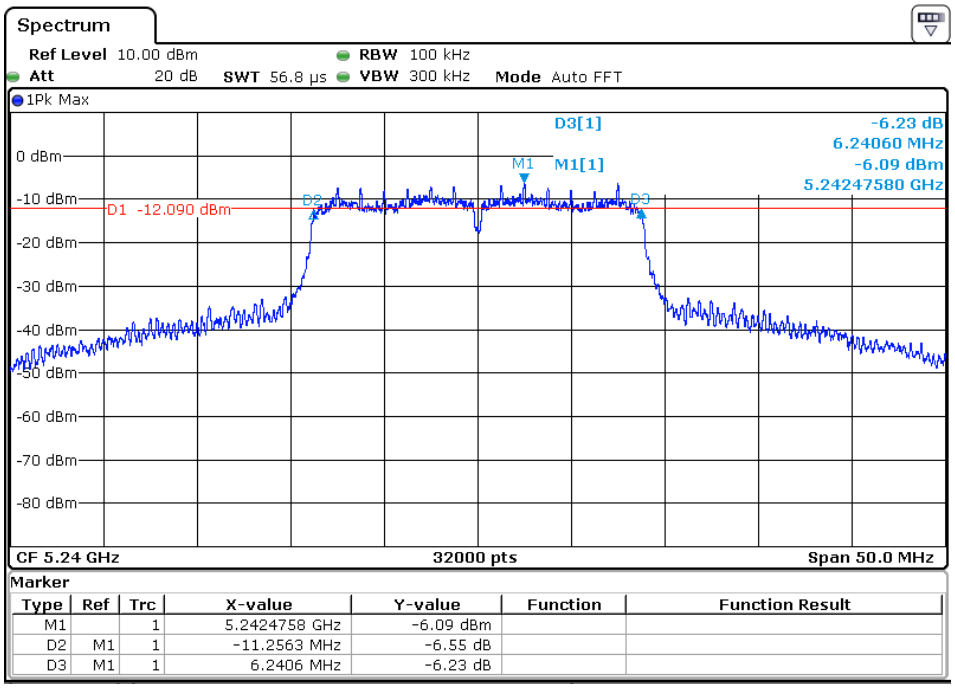
Ant 1 802.11 n20



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.1824773 GHz	-6.45 dBm		
D2	M1	1	-11.2609 MHz	-6.43 dB		
D3	M1	1	6.2469 MHz	-6.22 dB		

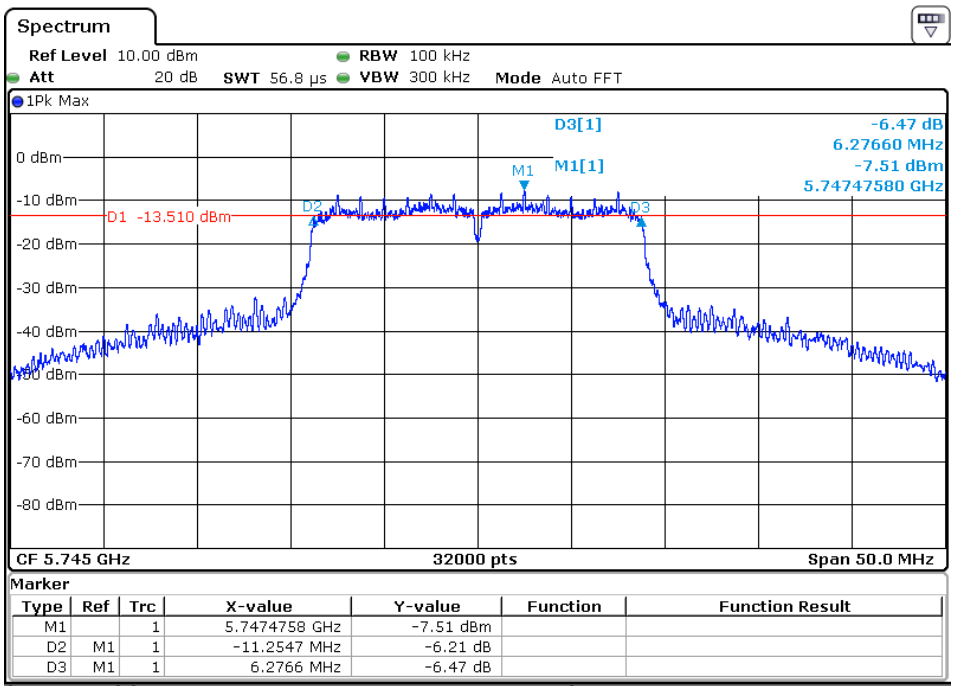


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2224773 GHz	-6.08 dBm		
D2	M1	1	-11.2328 MHz	-6.33 dB		
D3	M1	1	6.2609 MHz	-6.09 dB		



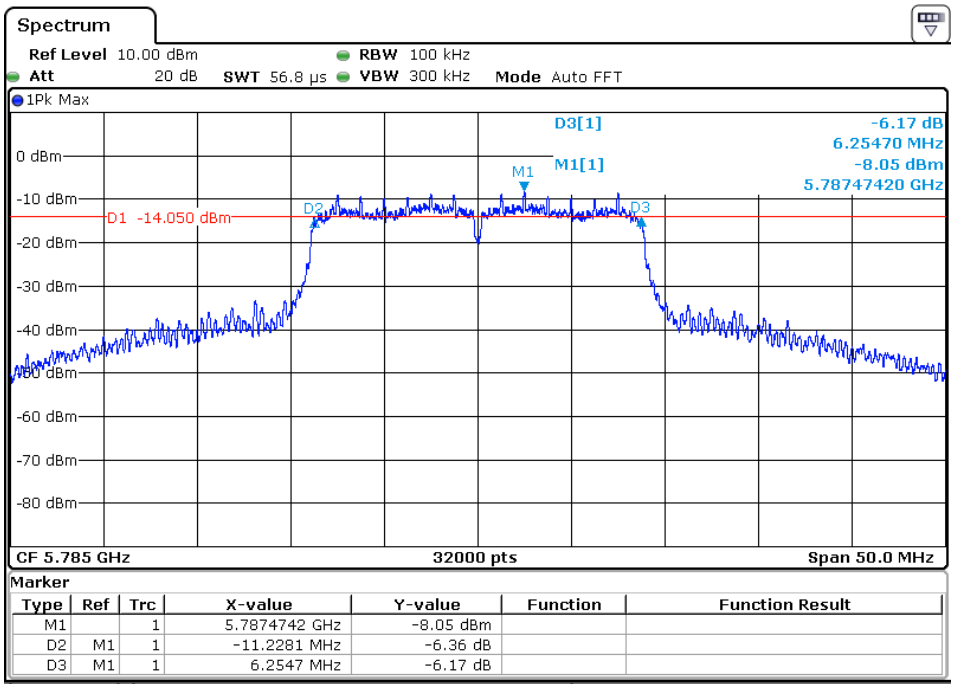
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2424758 GHz	-6.09 dBm		
D2	M1	1	-11.2563 MHz	-6.55 dB		
D3	M1	1	6.2406 MHz	-6.23 dB		



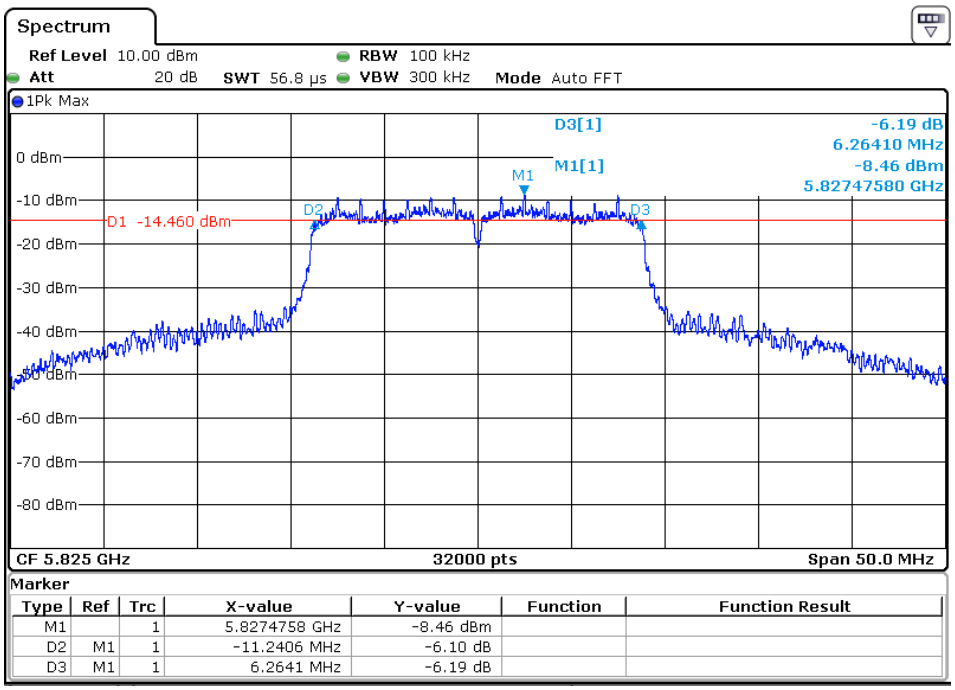
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7474758 GHz	-7.51 dBm		
D2	M1	1	-11.2547 MHz	-6.21 dB		
D3	M1	1	6.2766 MHz	-6.47 dB		



Marker

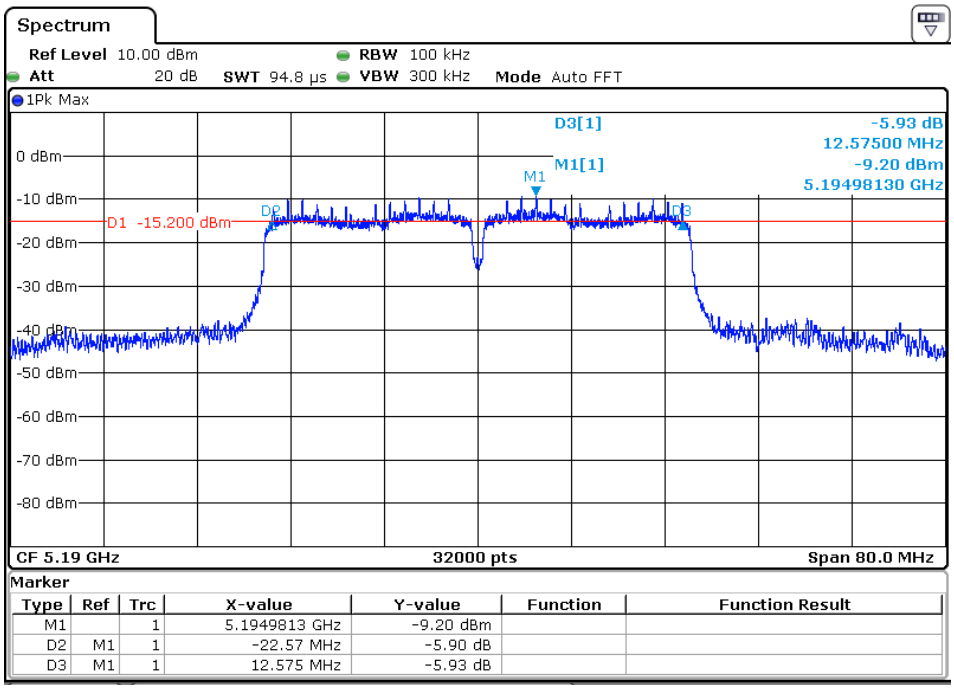
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7874742 GHz	-8.05 dBm		
D2	M1	1	-11.2281 MHz	-6.36 dB		
D3	M1	1	6.2547 MHz	-6.17 dB		

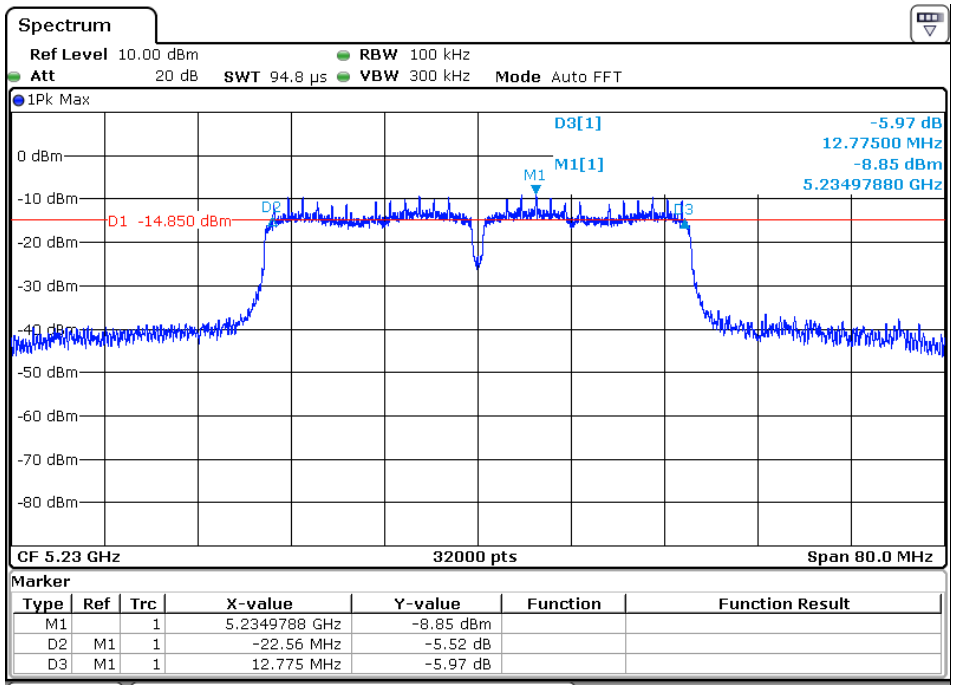


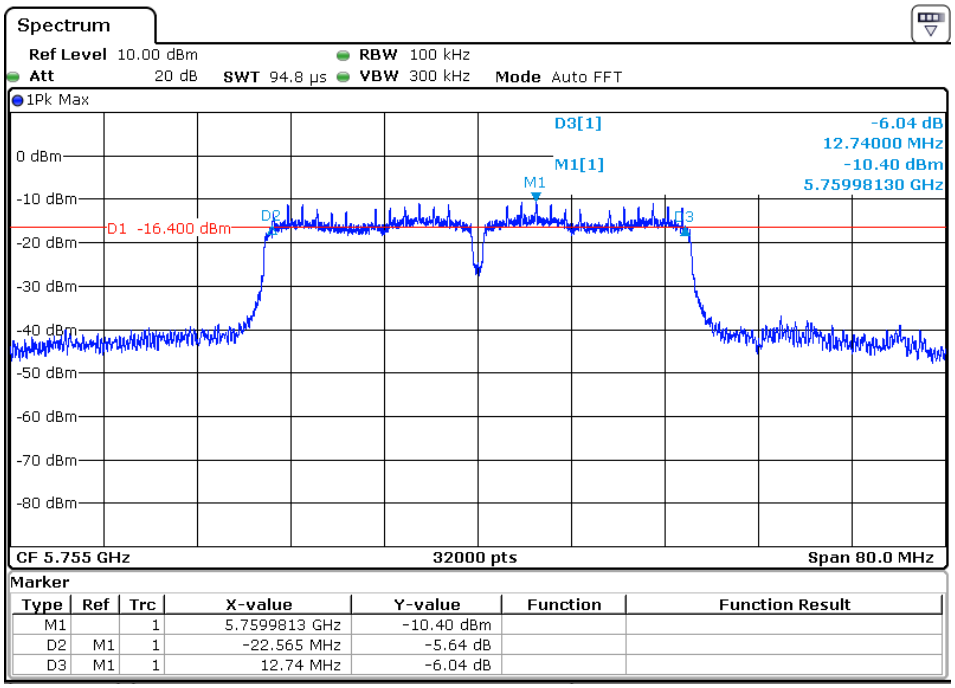
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8274758 GHz	-8.46 dBm		
D2	M1	1	-11.2406 MHz	-6.10 dB		
D3	M1	1	6.2641 MHz	-6.19 dB		

Ant 1 802.11 n40

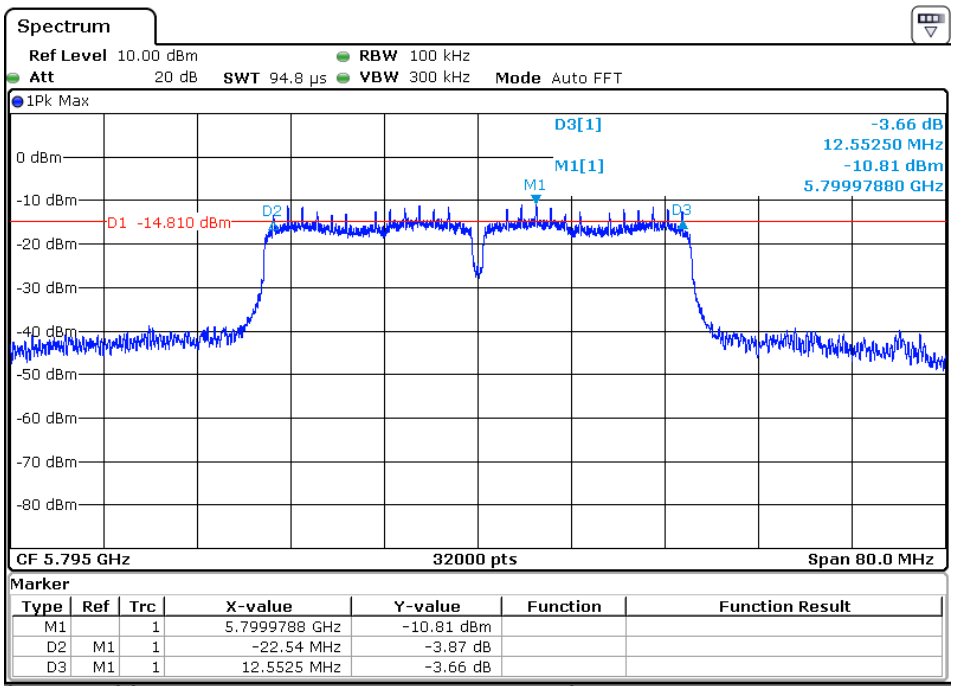






Marker

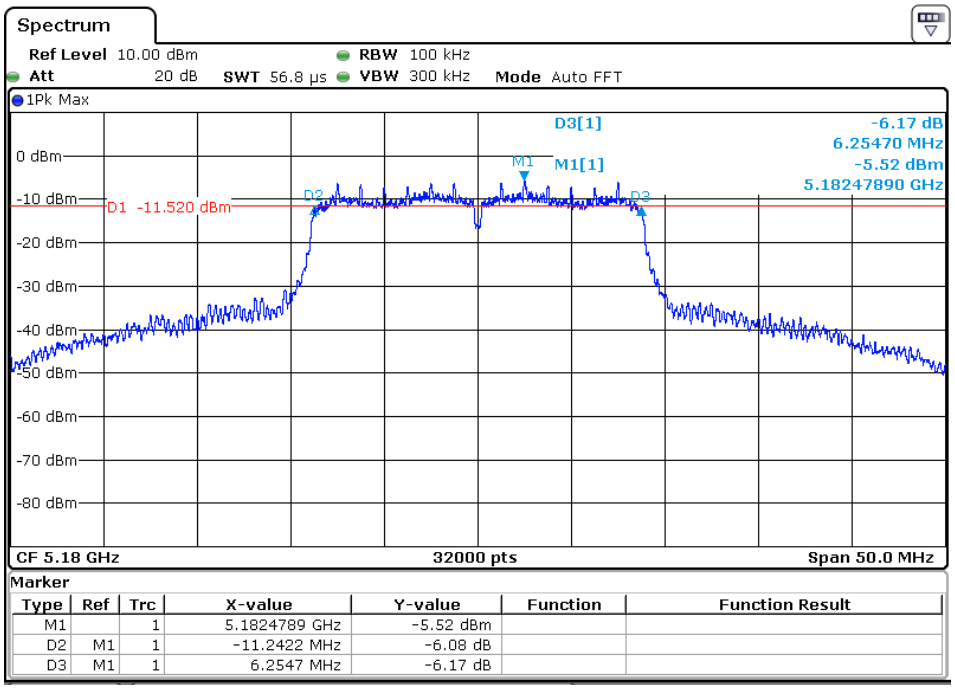
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7599813 GHz	-10.40 dBm		
D2	M1	1	-22.565 MHz	-5.64 dB		
D3	M1	1	12.74 MHz	-6.04 dB		

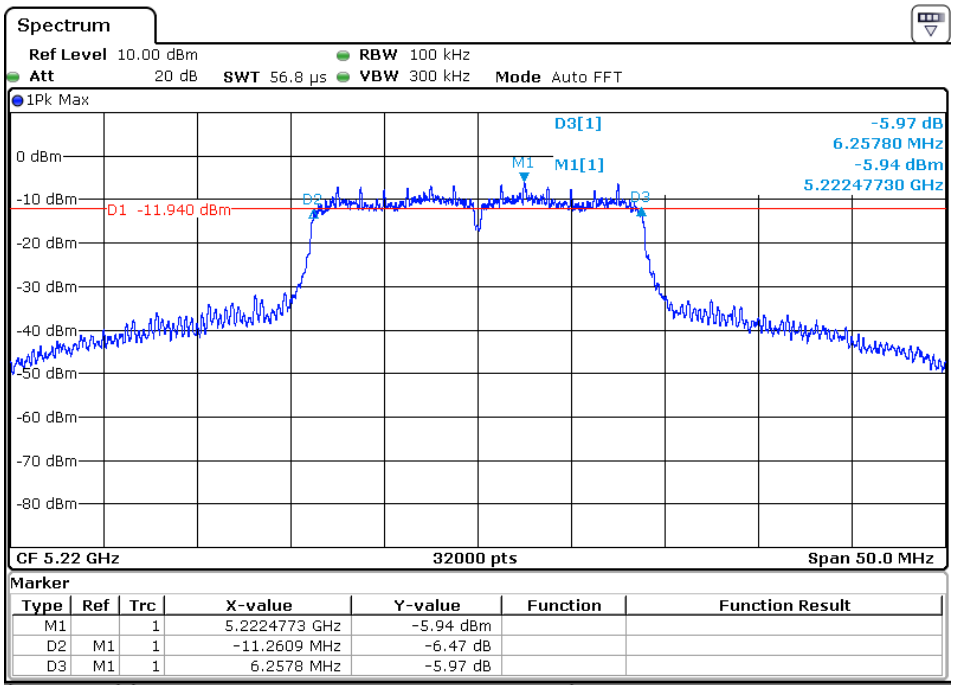


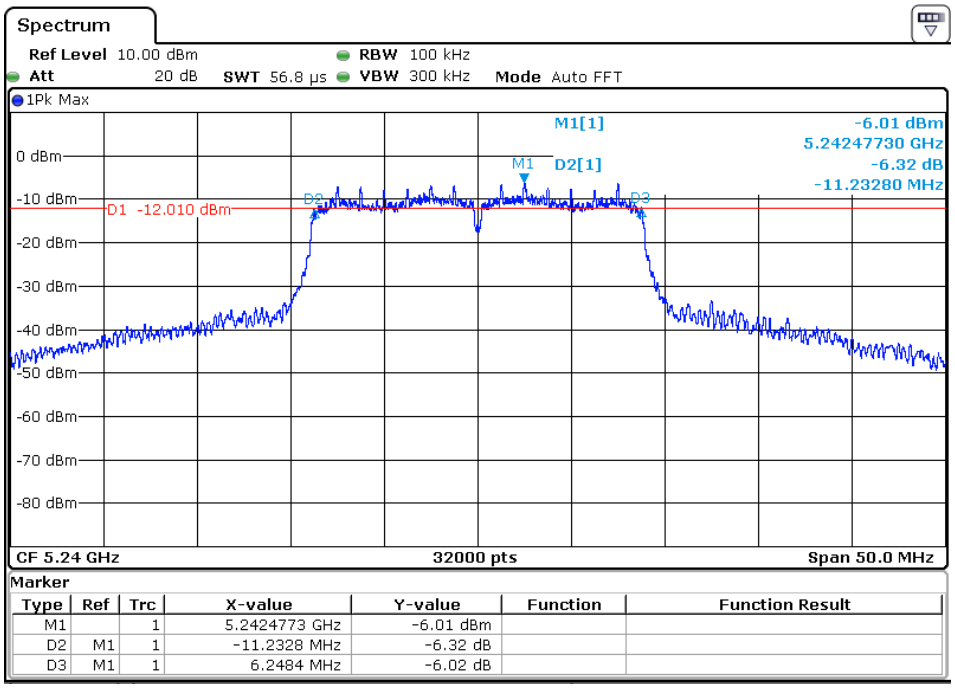
Marker

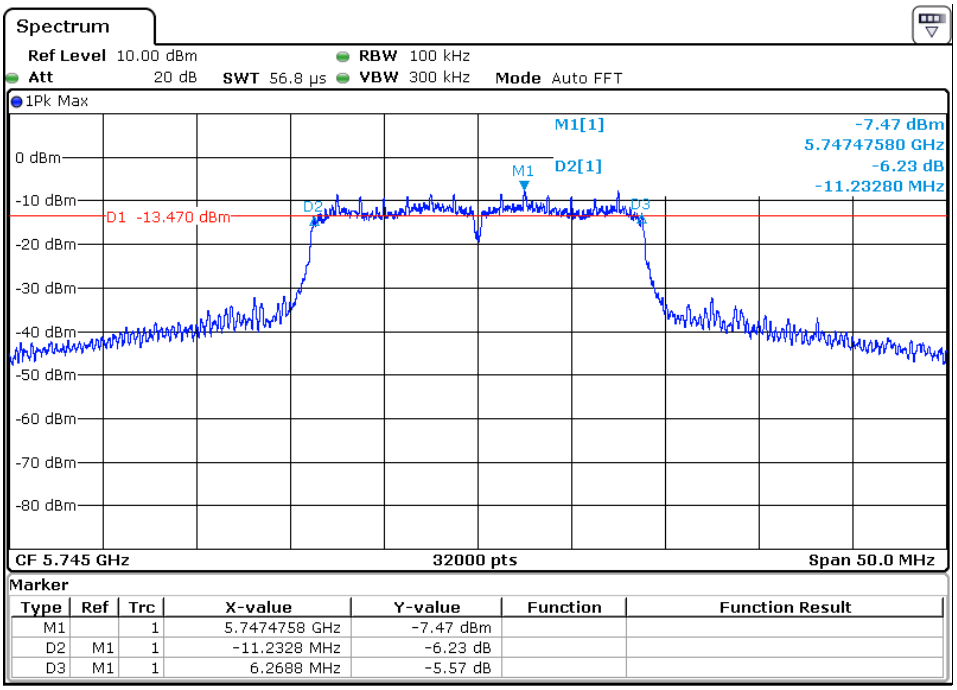
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7999788 GHz	-10.81 dBm		
D2	M1	1	-22.54 MHz	-3.87 dB		
D3	M1	1	12.5525 MHz	-3.66 dB		

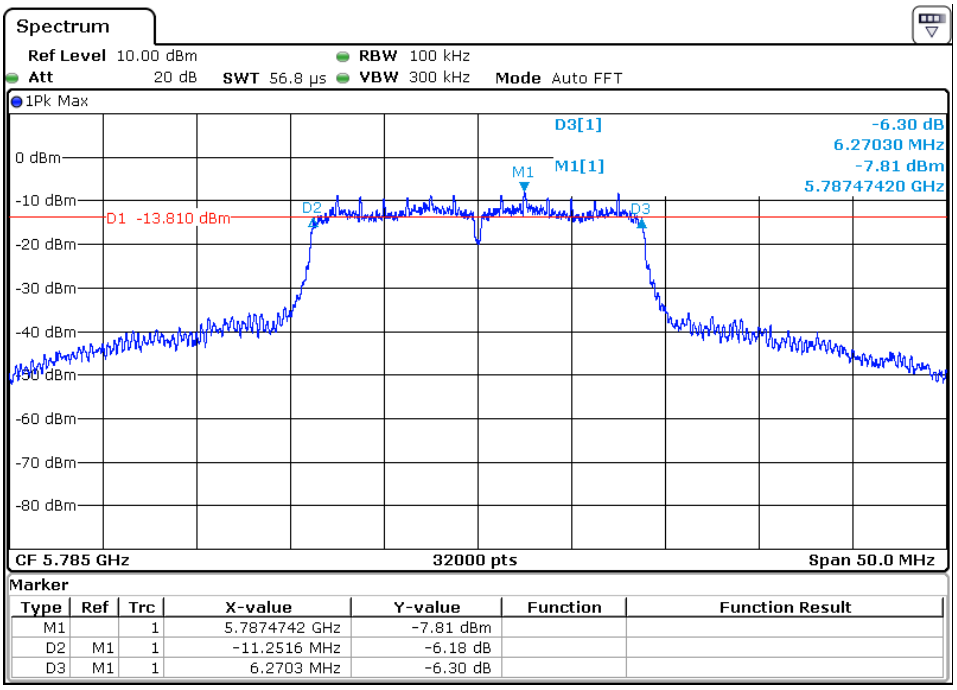
Ant 1 802.11 ac20





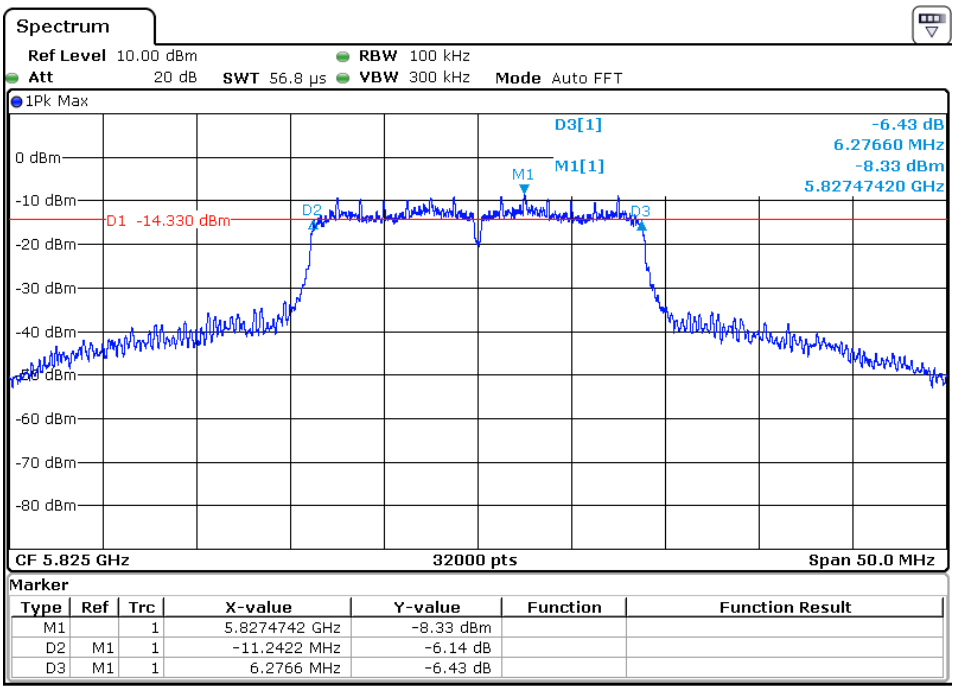

Spectrum
Ref Level 10.00 dBm
RBW 100 kHz
Att 20 dB
SWT 56.8 µs
VBW 300 kHz
Mode Auto FFT
1Pk Max
M1[1]
-6.01 dBm
5.24247730 GHz
D2[1]
-6.32 dB
-11.23280 MHz
D1 -12.010 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 5.24 GHz
32000 pts
Span 50.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.2424773 GHz -6.01 dBm
D2 M1 1 -11.2328 MHz -6.32 dB
D3 M1 1 6.2484 MHz -6.02 dB


Spectrum
Ref Level 10.00 dBm
RBW 100 kHz
Att 20 dB
SWT 56.8 µs
VBW 300 kHz
Mode Auto FFT
1Pk Max
M1[1]
-7.47 dBm
5.74747580 GHz
D2[1]
-6.23 dB
-11.23280 MHz
D1 -13.470 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 5.745 GHz
32000 pts
Span 50.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.7474758 GHz -7.47 dBm
D2 M1 1 -11.2328 MHz -6.23 dB
D3 M1 1 6.2688 MHz -5.57 dB



Marker

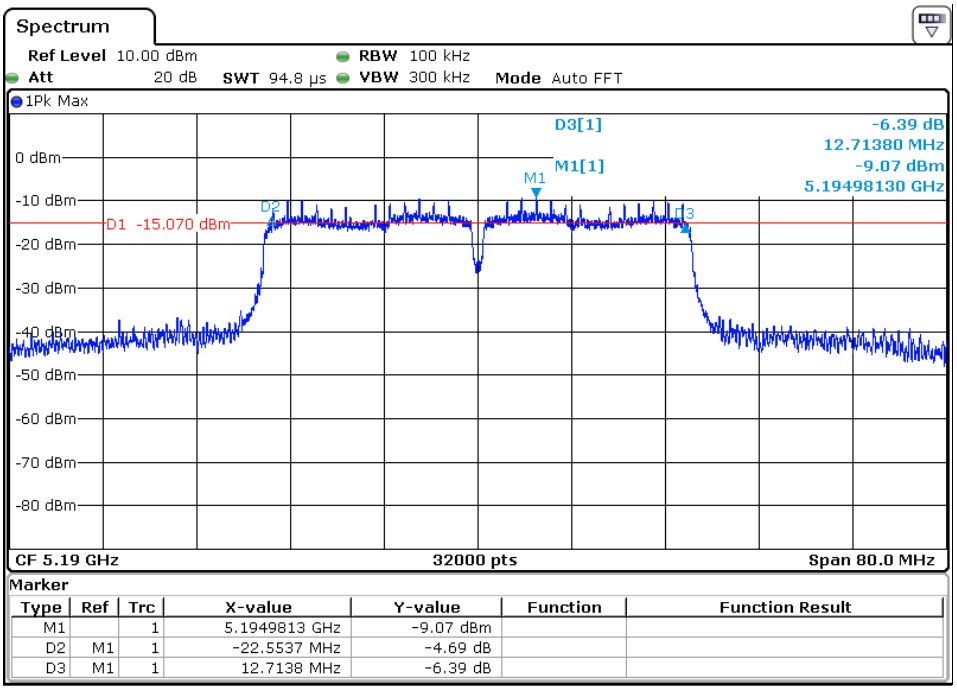
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7874742 GHz	-7.81 dBm		
D2	M1	1	-11.2516 MHz	-6.18 dB		
D3	M1	1	6.2703 MHz	-6.30 dB		

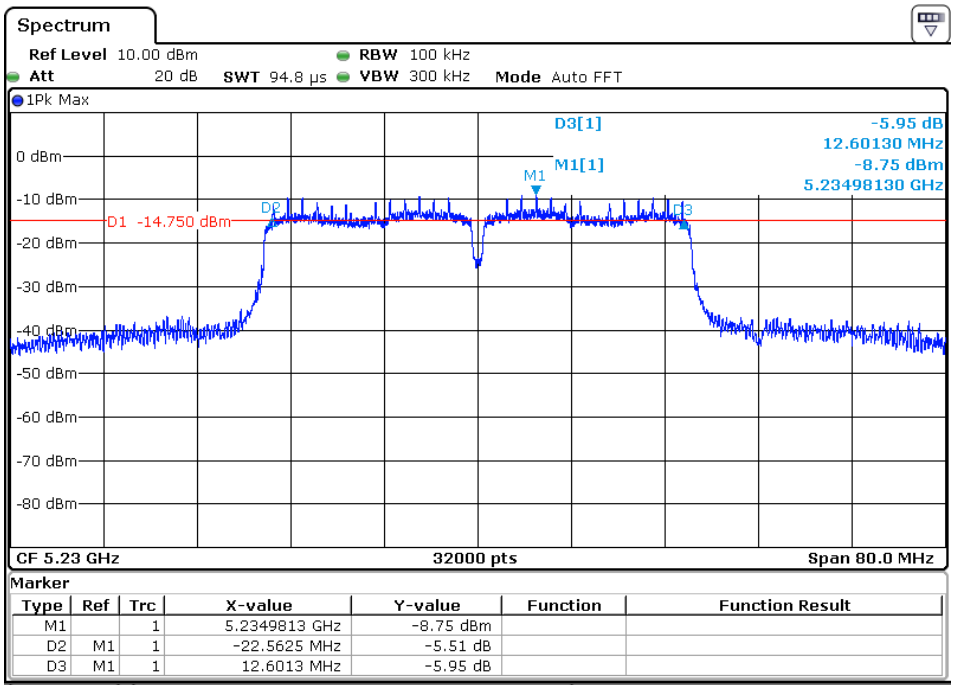


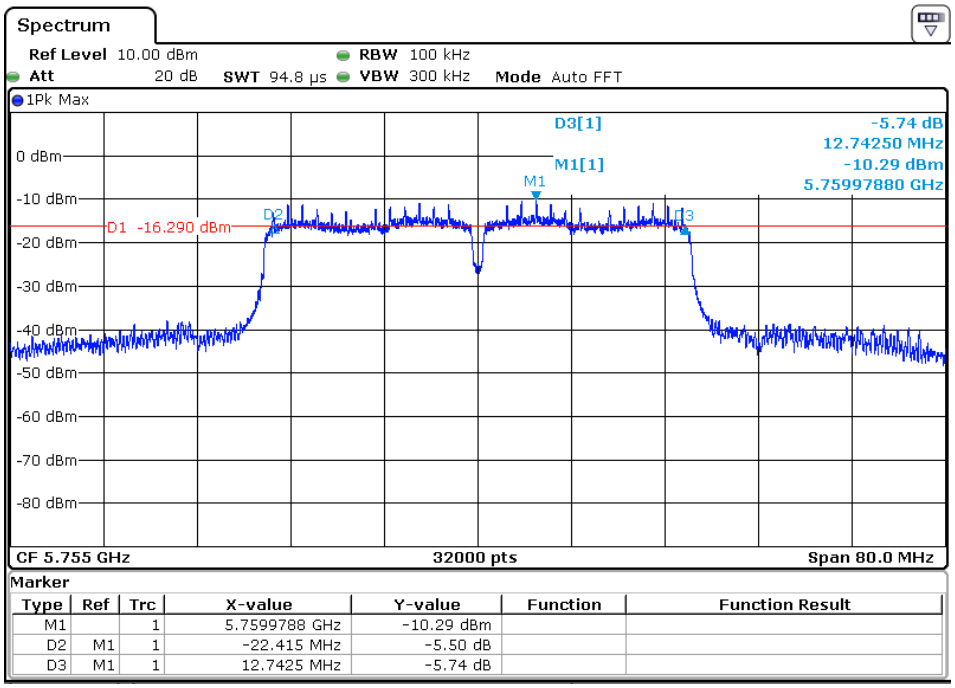
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.8274742 GHz	-8.33 dBm		
D2	M1	1	-11.2422 MHz	-6.14 dB		
D3	M1	1	6.2766 MHz	-6.43 dB		

Ant 1 802.11 ac40

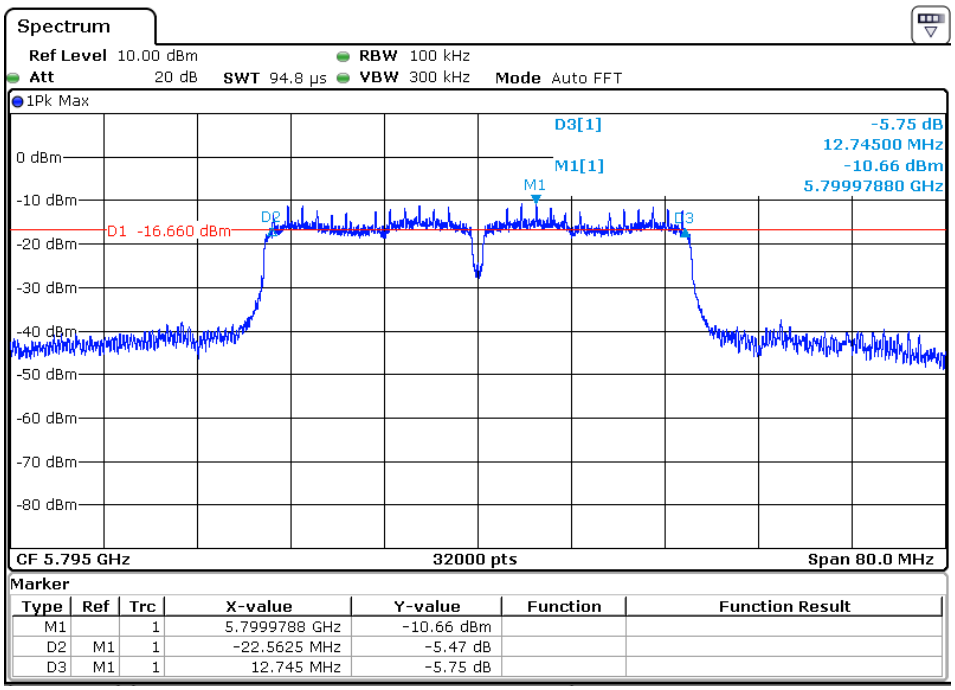






Marker

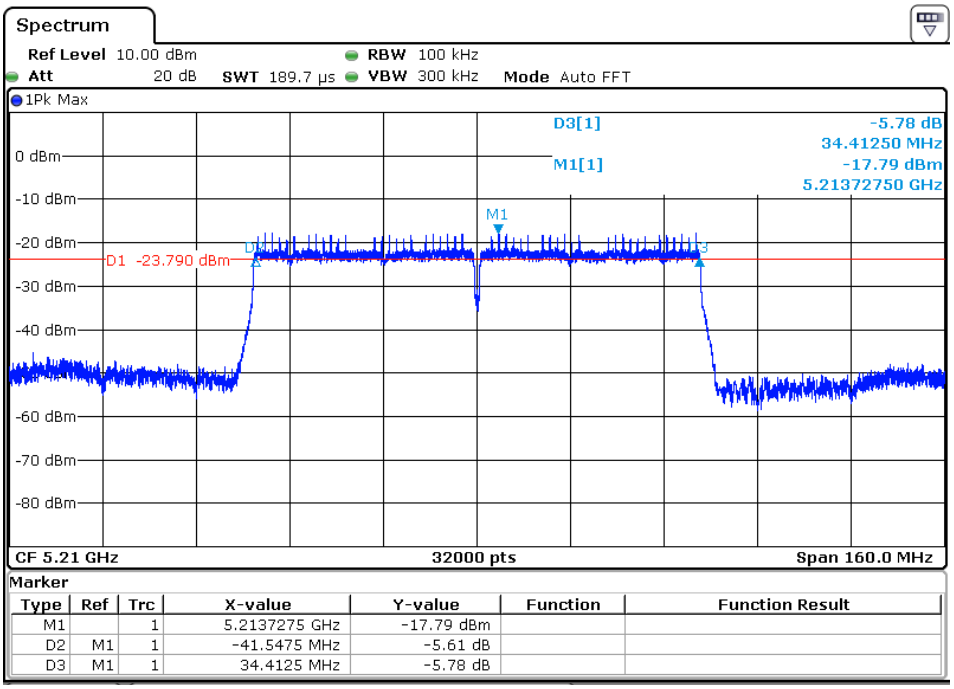
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7599788 GHz	-10.29 dBm		
D2	M1	1	-22.415 MHz	-5.50 dB		
D3	M1	1	12.7425 MHz	-5.74 dB		

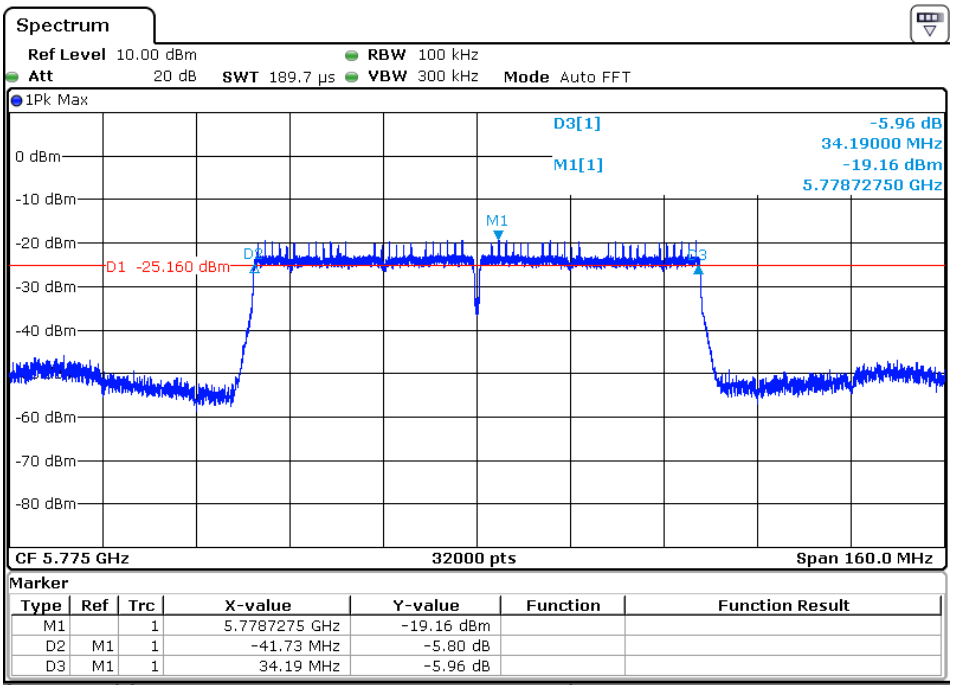


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.7999788 GHz	-10.66 dBm		
D2	M1	1	-22.5625 MHz	-5.47 dB		
D3	M1	1	12.745 MHz	-5.75 dB		

Ant 1 802.11 ac80

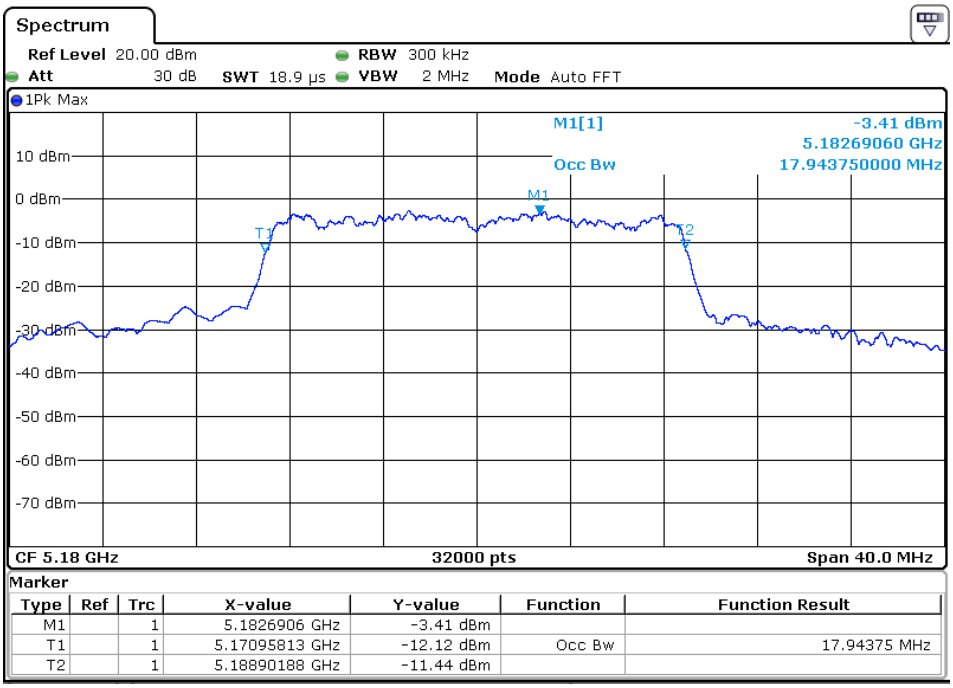


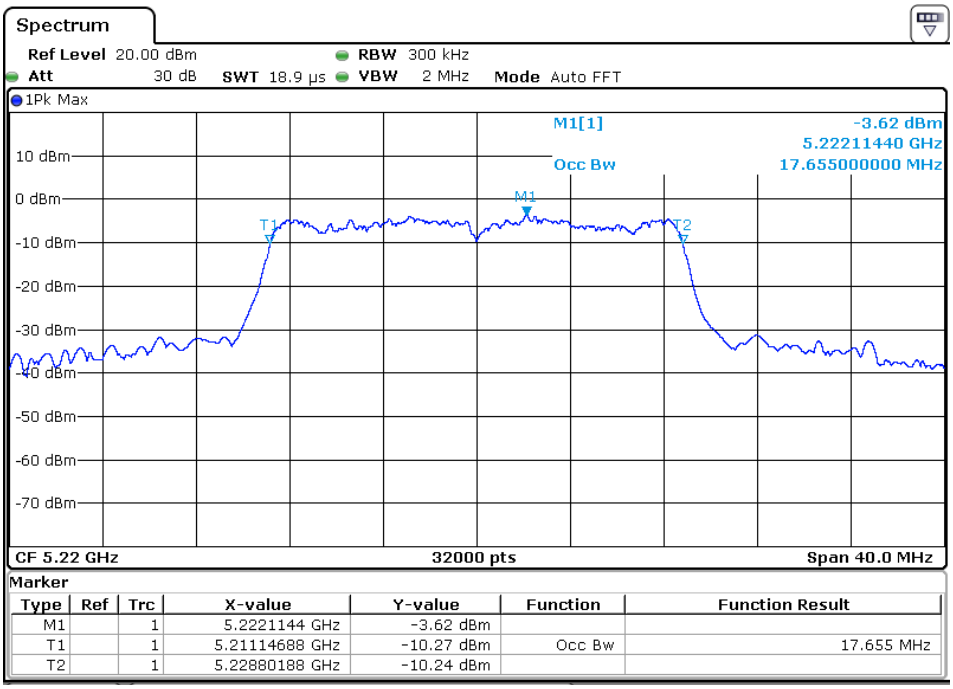


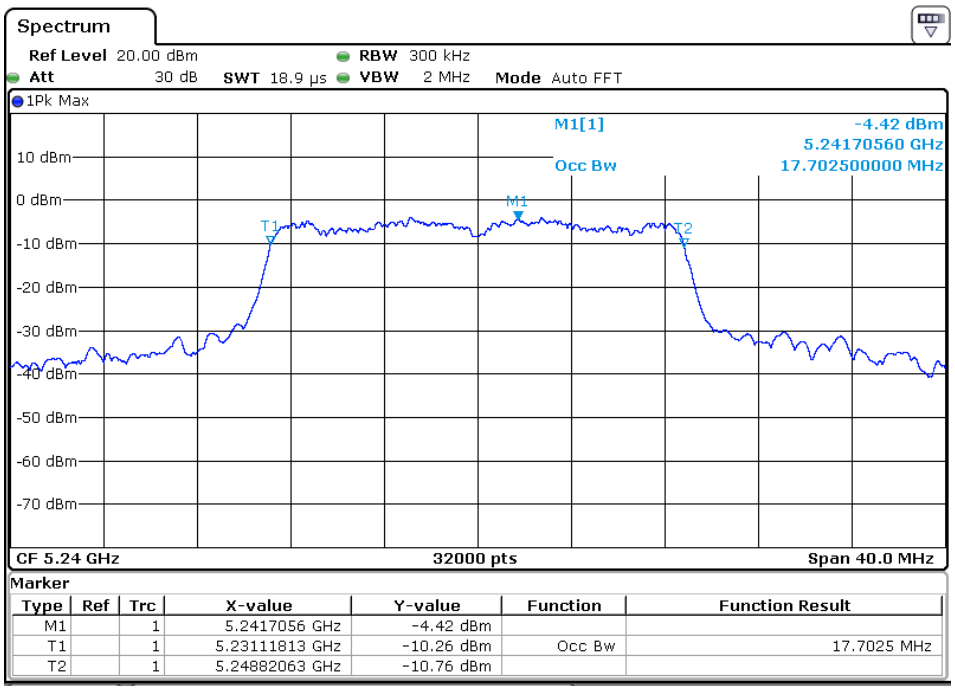
Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	99%Bandwidth (MHz)	Result
Ant 1					
802.11a	6	36	5180	17.94375	Pass
802.11a	6	44	5220	17.655	Pass
802.11a	6	48	5240	17.7025	Pass
802.11n-HT20	7.2	36	5180	17.7275	Pass
802.11n-HT20	7.2	44	5220	17.72125	Pass
802.11n-HT20	7.2	48	5240	17.78	Pass
802.11n-HT40	15	38	5190	36.355	Pass
802.11n-HT40	15	46	5230	36.3325	Pass
802.11ac-VHT20	7.2	36	5180	17.8075	Pass
802.11ac-VHT20	7.2	44	5220	17.97125	Pass
802.11ac-VHT20	7.2	48	5240	17.9325	Pass
802.11ac-VHT40	15	38	5190	36.3125	Pass
802.11ac-VHT40	15	46	5230	36.2725	Pass
802.11ac-VHT80	32.5	42	5210	76.39	Pass

99% Bandwidth plot as follows:

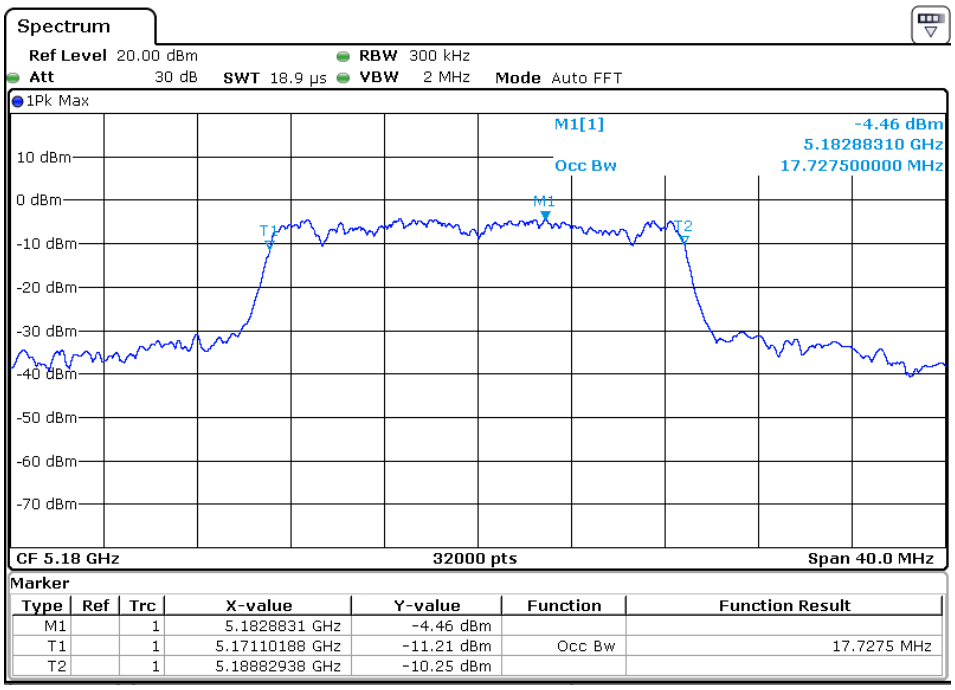
Ant 1 802.11 a

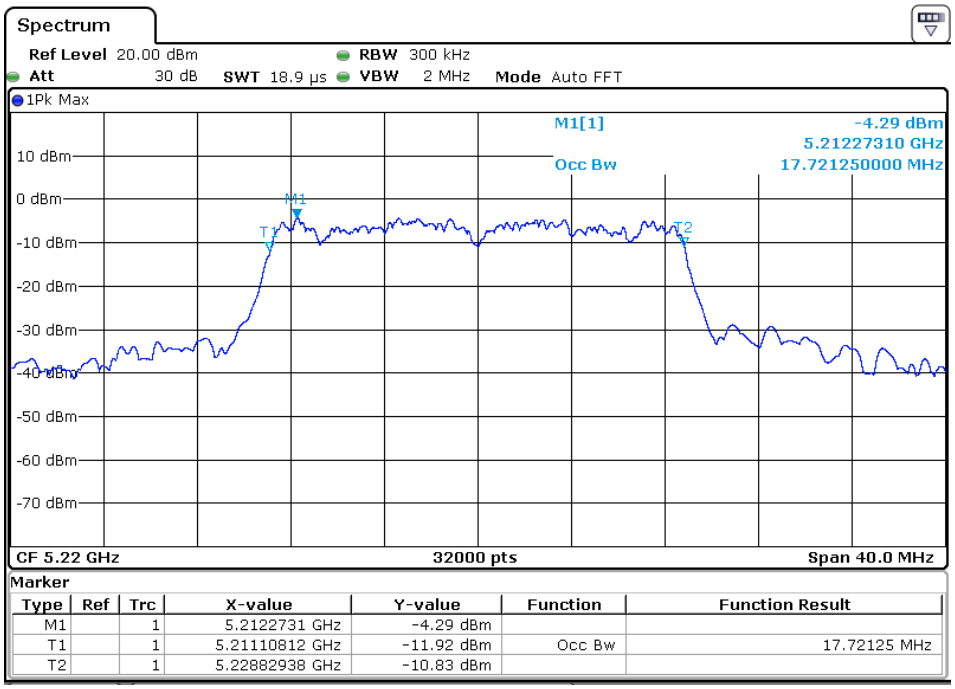






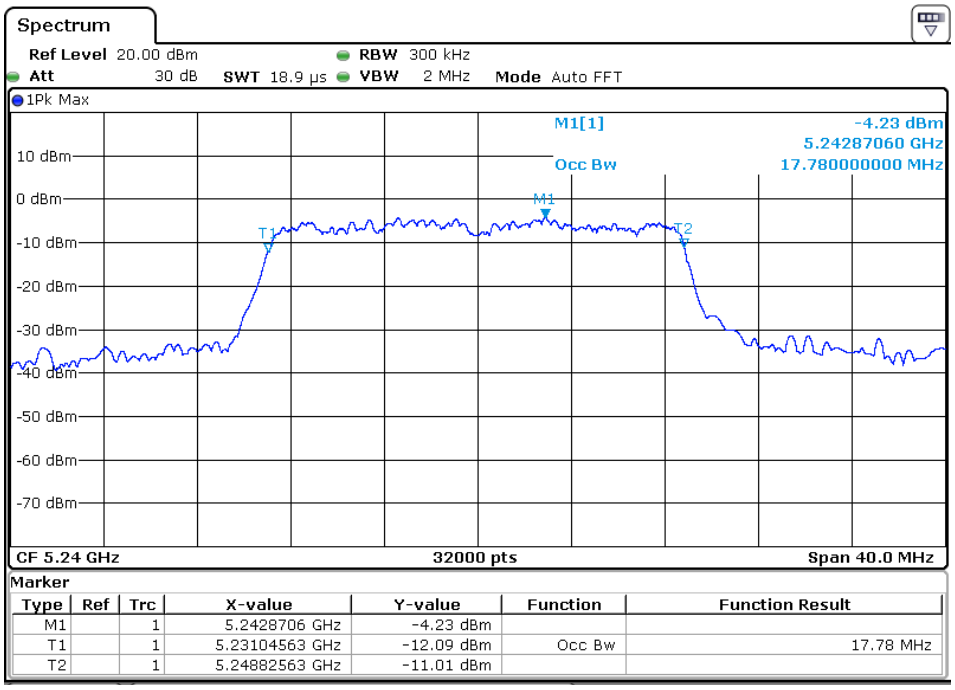
Ant 1 802.11 n20





Marker

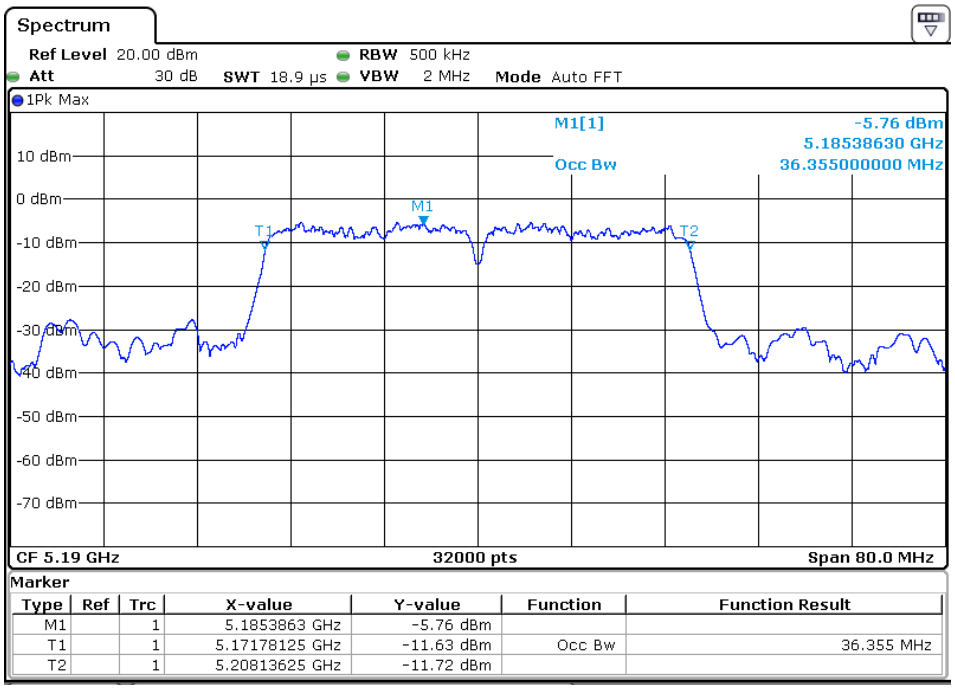
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2122731 GHz	-4.29 dBm		
T1		1	5.21110812 GHz	-11.92 dBm	Occ Bw	17.72125 MHz
T2		1	5.22882938 GHz	-10.83 dBm		

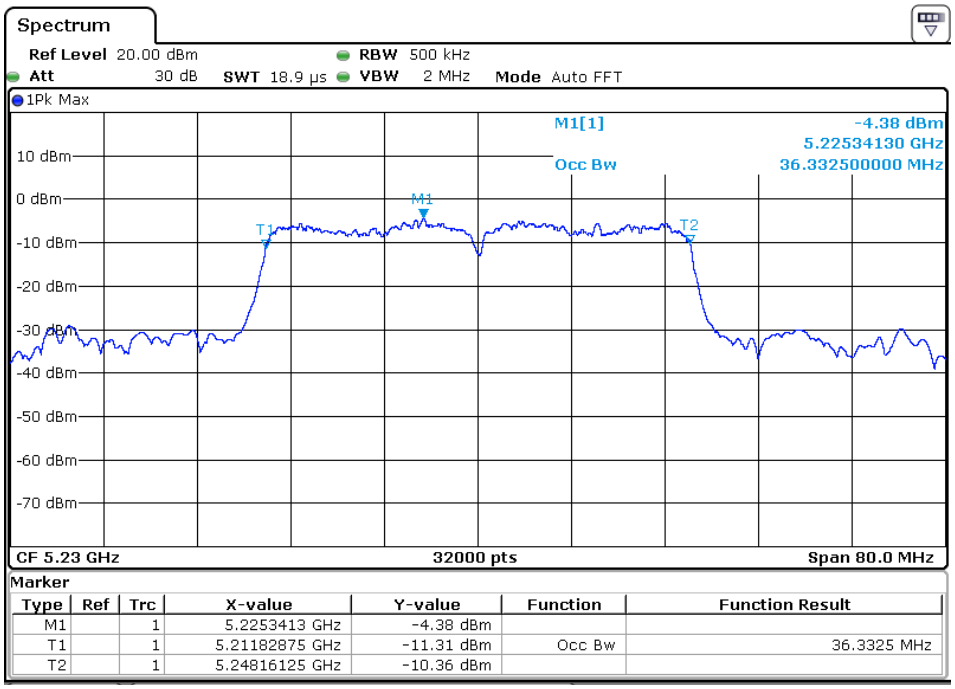


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.2428706 GHz	-4.23 dBm		
T1		1	5.23104563 GHz	-12.09 dBm	Occ Bw	17.78 MHz
T2		1	5.24882563 GHz	-11.01 dBm		

Ant 1 802.11 n40





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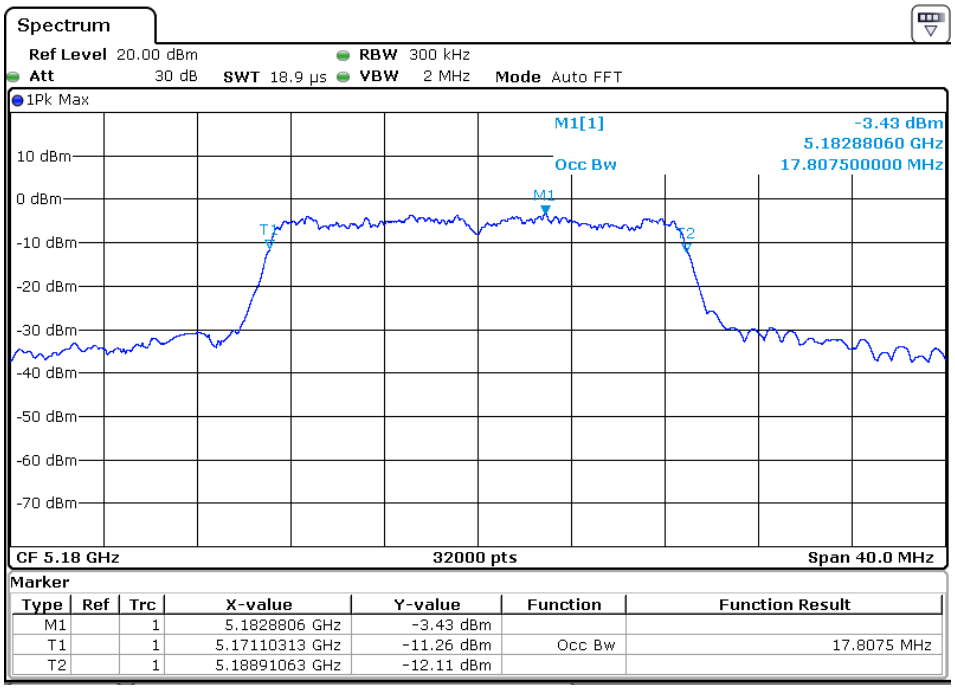
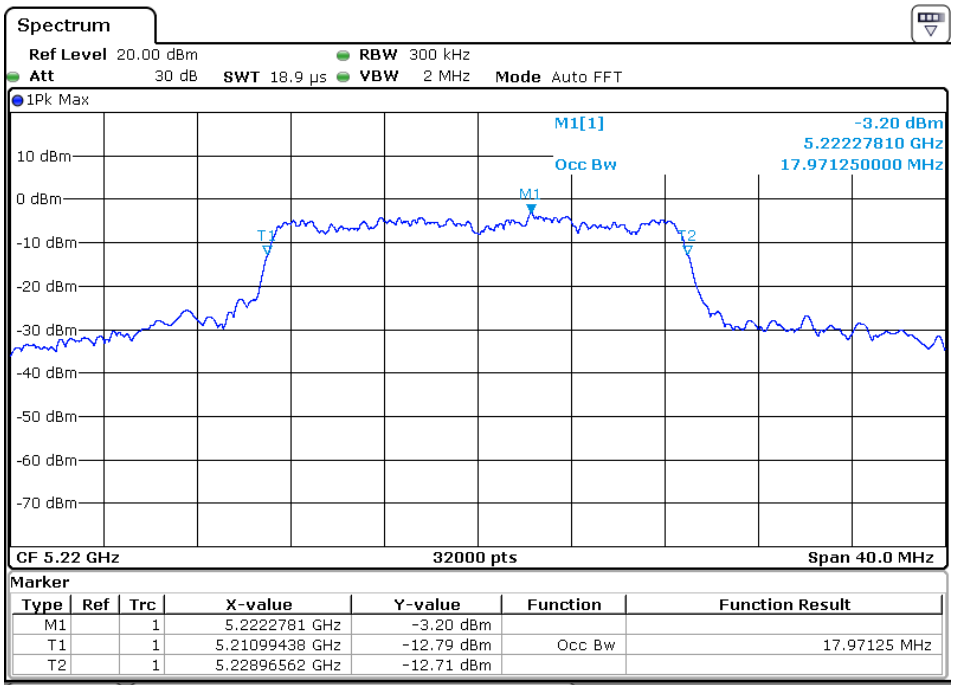
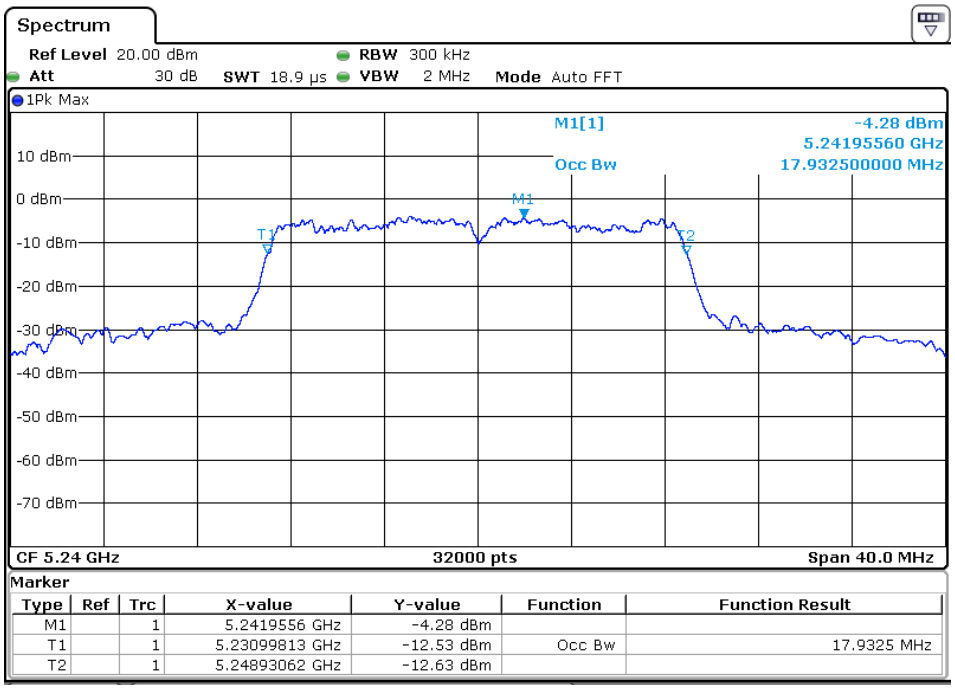
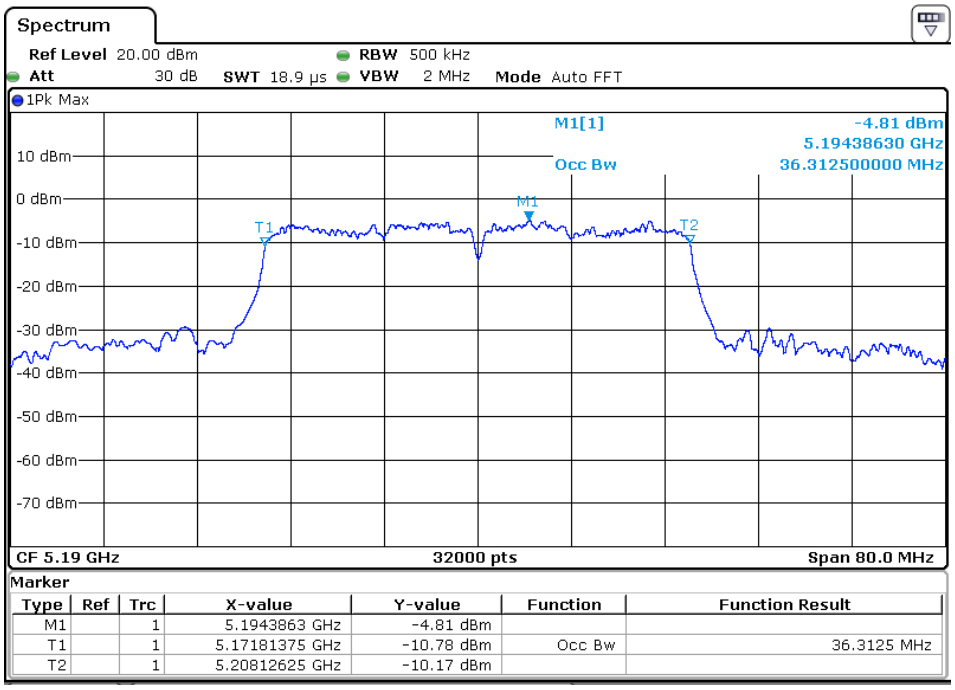
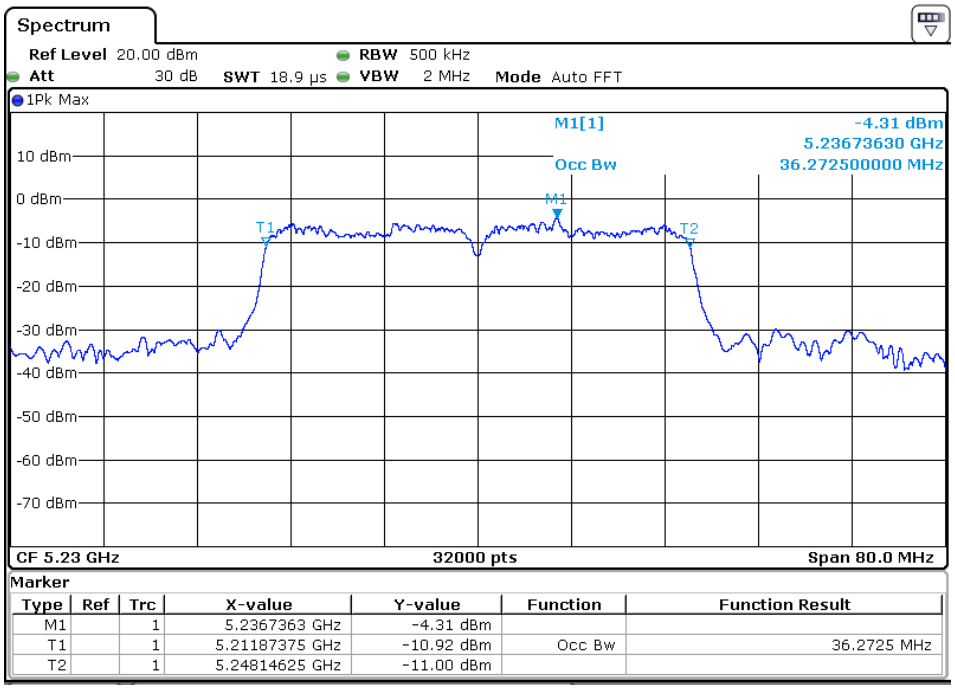




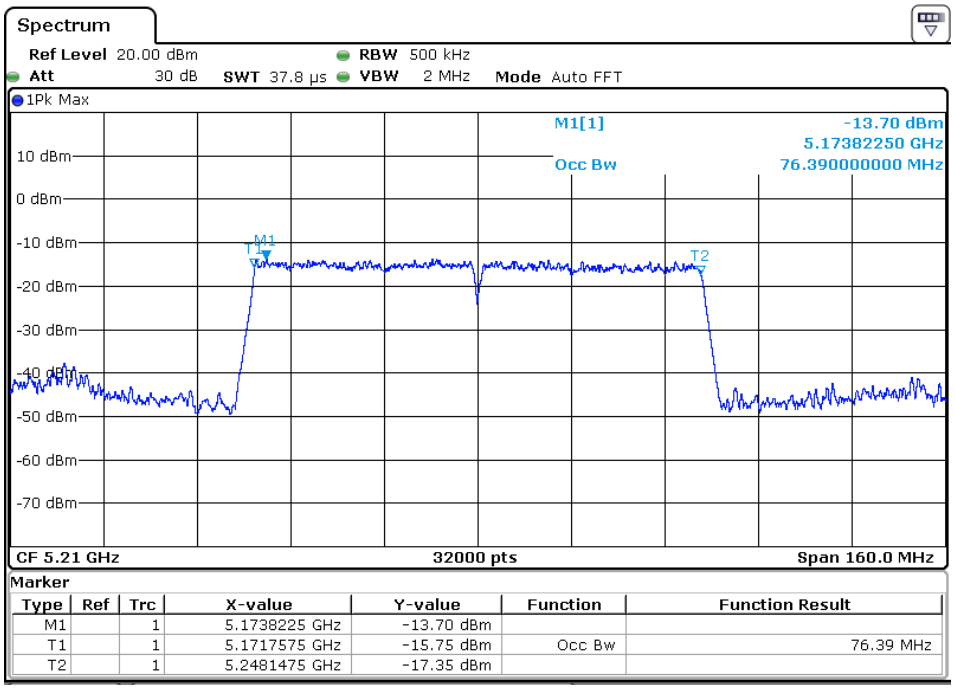


Ant 1 802.11 ac40





Ant 1 802.11 ac80



6.5 Peak Power Density

6.5.1 Applied procedures / Limit

1.For the band 5.150-5.250 GHz, the peak power spectral density shall not exceed 11 dBm in any 1000KHz band.
2.For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.5.2 Test procedure

1. The setting follows Method SA-1 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01 . For devices operating in the band, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (*i.e.,* 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

   a) Set RBW ≥ 1/T, where T is defined in section II.B.l.a).
   b) Set VBW ≥ 3 RBW.
   c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
   d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
   e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

6.5.3 TEST SETUP

6.5.4 Deviation from standard

No deviation.

6.5.5 Test results

Note:1/2 Represent the value of antenna1/2,The worst data is Antenna 1,only shown Antenna 1Plot.

Test Mode	NTx	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 PSD (dBm/MHz)	Limit (dBm /MHz)	Result
11a	2	6	36	5180	0.35	11.00	Pass
11a	2	6	44	5220	0.66	11.00	Pass
11a	2	6	48	5240	1.14	11.00	Pass
11n-HT20	2	7.2	36	5180	0.44	11.00	Pass
11n-HT20	2	7.2	44	5220	0.78	11.00	Pass
11n-HT20	2	7.2	48	5240	1.18	11.00	Pass
11n-HT40	2	15	38	5190	-2.31	11.00	Pass
11n-HT40	2	15	46	5230	-2.10	11.00	Pass
11ac-VHT20	2	7.2	36	5180	0.66	11.00	Pass
11ac-VHT20	2	7.2	44	5220	0.95	11.00	Pass
11ac-VHT20	2	7.2	48	5240	1.04	11.00	Pass
11ac-VHT40	2	15	38	5190	-2.95	11.00	Pass
11ac-VHT40	2	15	46	5230	-2.44	11.00	Pass
11ac-VHT80	2	32.5	42	5210	-10.44	11.00	Pass
11a	2	6	149	5745	-4.16	30.00	Pass
11a	2	6	157	5785	-3.78	30.00	Pass
11a	2	6	165	5825	-4.26	30.00	Pass
11n-HT20	2	7.2	149	5745	-3.65	30.00	Pass
11n-HT20	2	7.2	157	5785	-3.72	30.00	Pass
11n-HT20	2	7.2	165	5825	-4.30	30.00	Pass
11n-HT40	2	15	151	5755	-6.54	30.00	Pass
11n-HT40	2	15	159	5795	-6.81	30.00	Pass
11ac-VHT20	2	7.2	149	5745	-4.06	30.00	Pass
11ac-VHT20	2	7.2	157	5785	-3.95	30.00	Pass
11ac-VHT20	2	7.2	165	5825	-3.90	30.00	Pass
11ac-VHT40	2	15	151	5755	-6.29	30.00	Pass
11ac-VHT40	2	15	159	5795	-7.41	30.00	Pass
11ac-VHT80	2	32.5	155	5775	-15.19	30.00	Pass

Result plot as follows:

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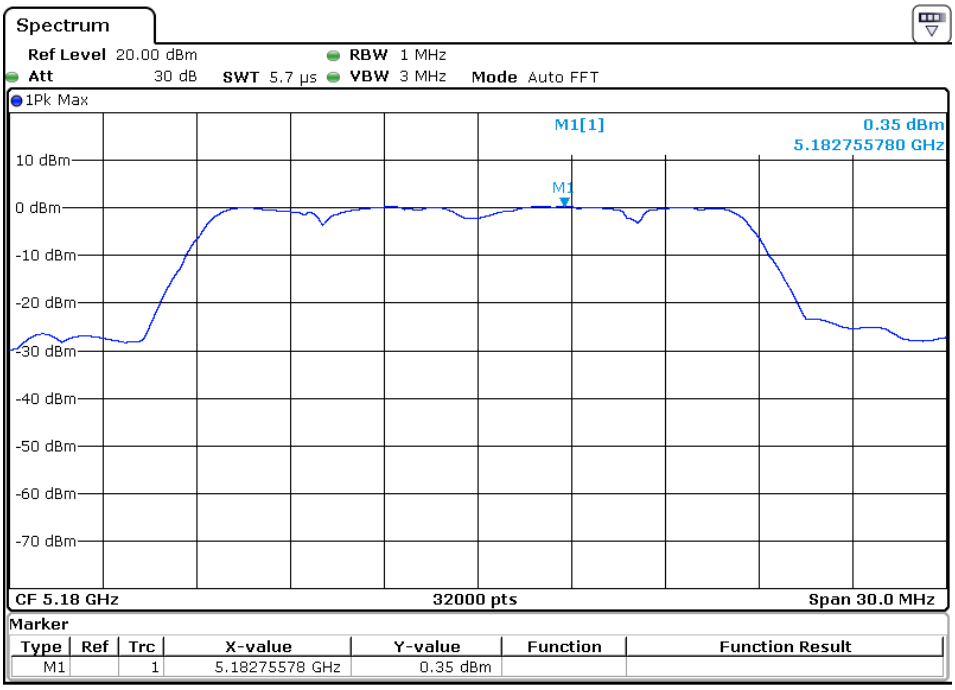
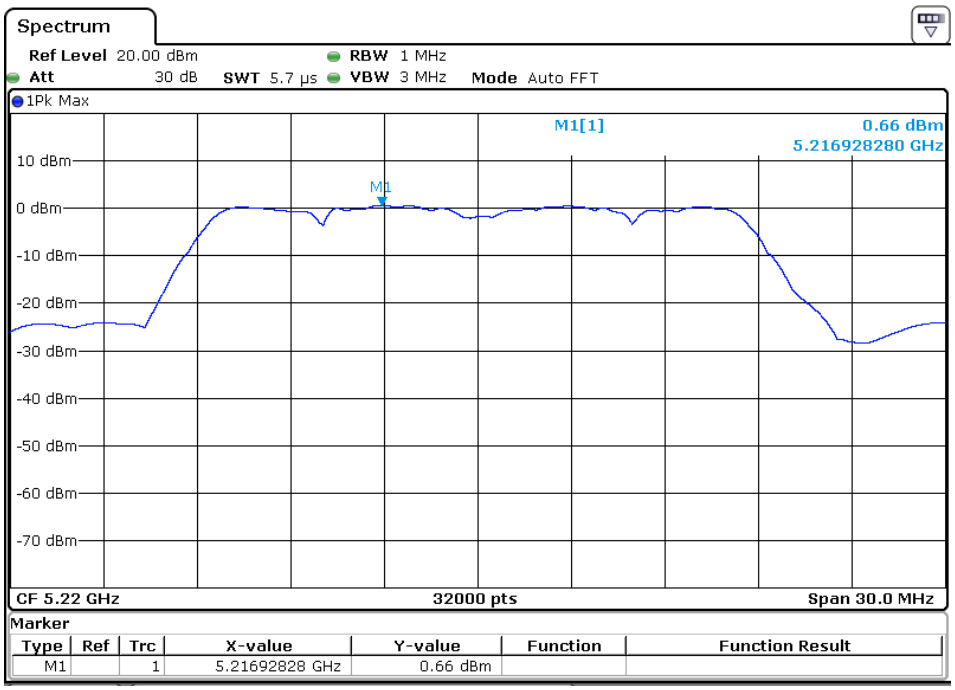
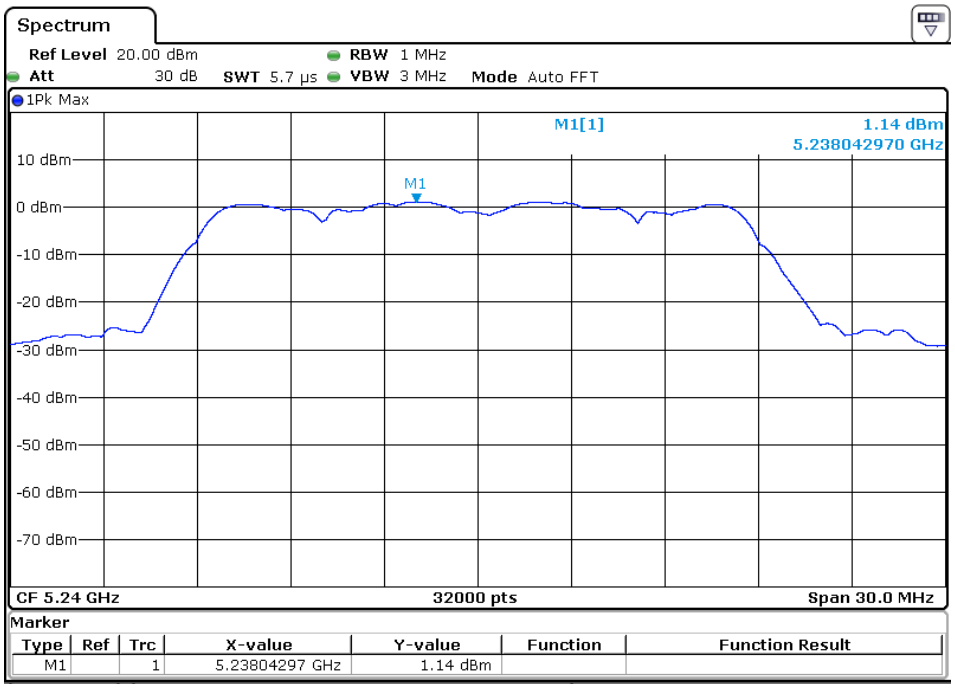
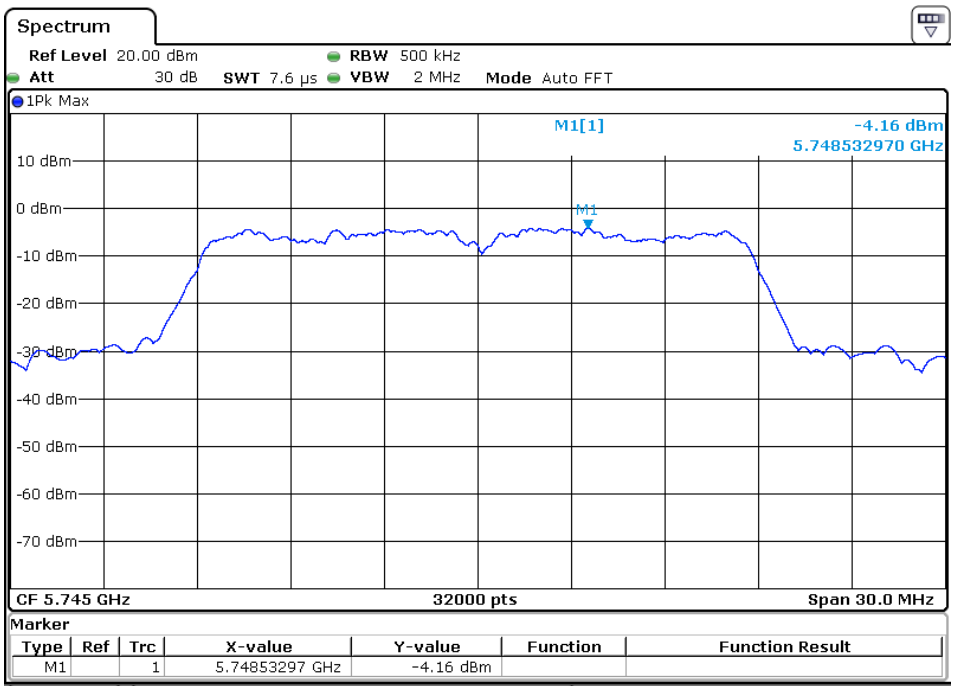
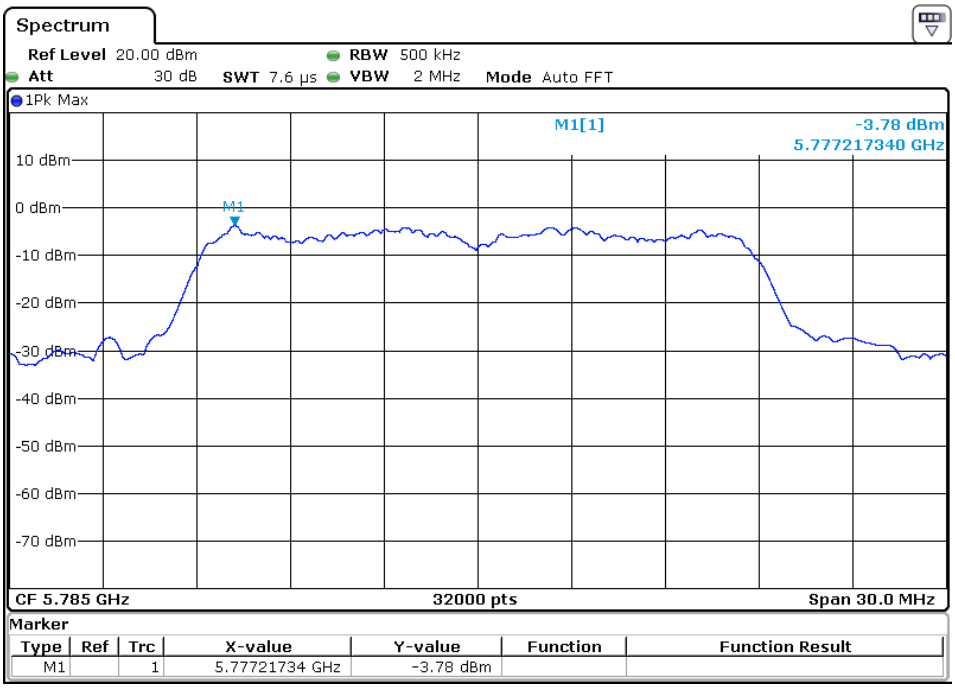
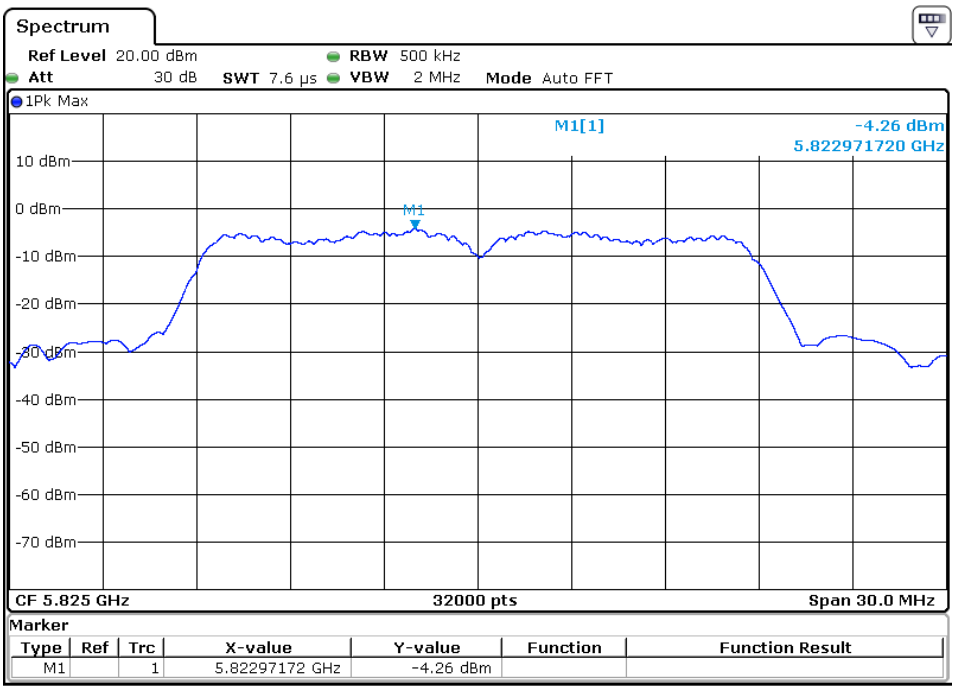





Spectrum
Ref Level 20.00 dBm
RBW 1 MHz
Att 30 dB
SWT 5.7 µs
VBW 3 MHz
Mode Auto FFT
1Pk Max
M1[1]
1.14 dBm
5.238042970 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.24 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.23804297 GHz 1.14 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-4.16 dBm
5.748532970 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.745 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.74853297 GHz -4.16 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-3.78 dBm
5.777217340 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.785 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.77721734 GHz -3.78 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-4.26 dBm
5.822971720 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.825 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.82297172 GHz -4.26 dBm

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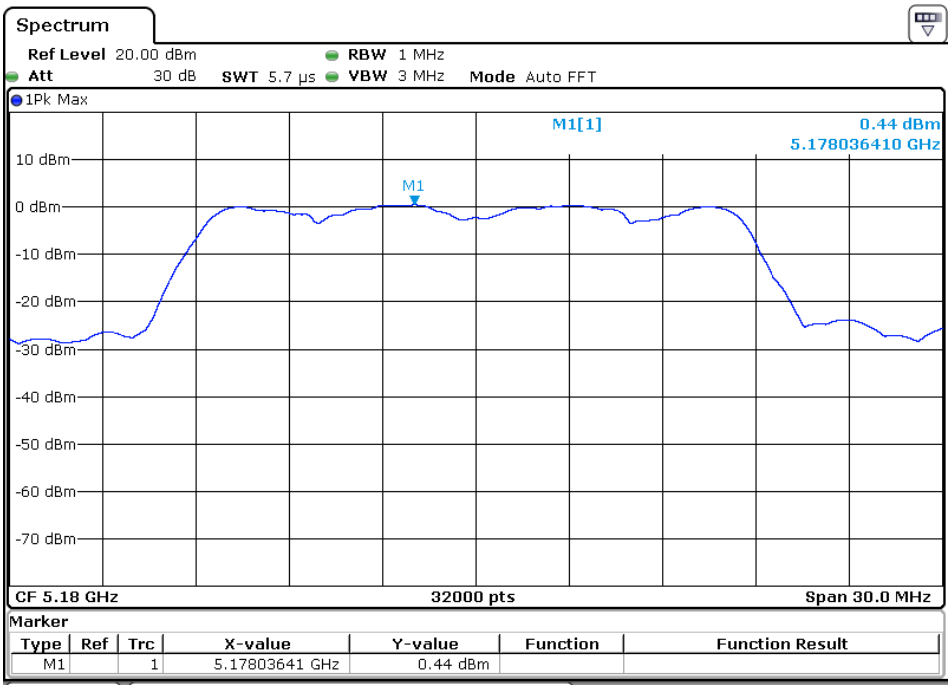
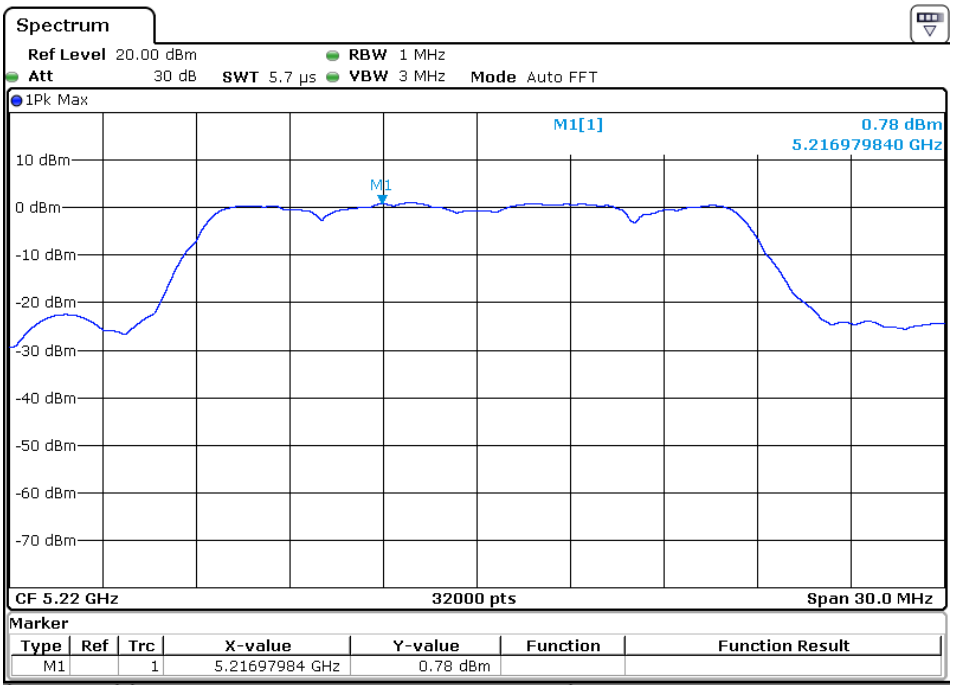
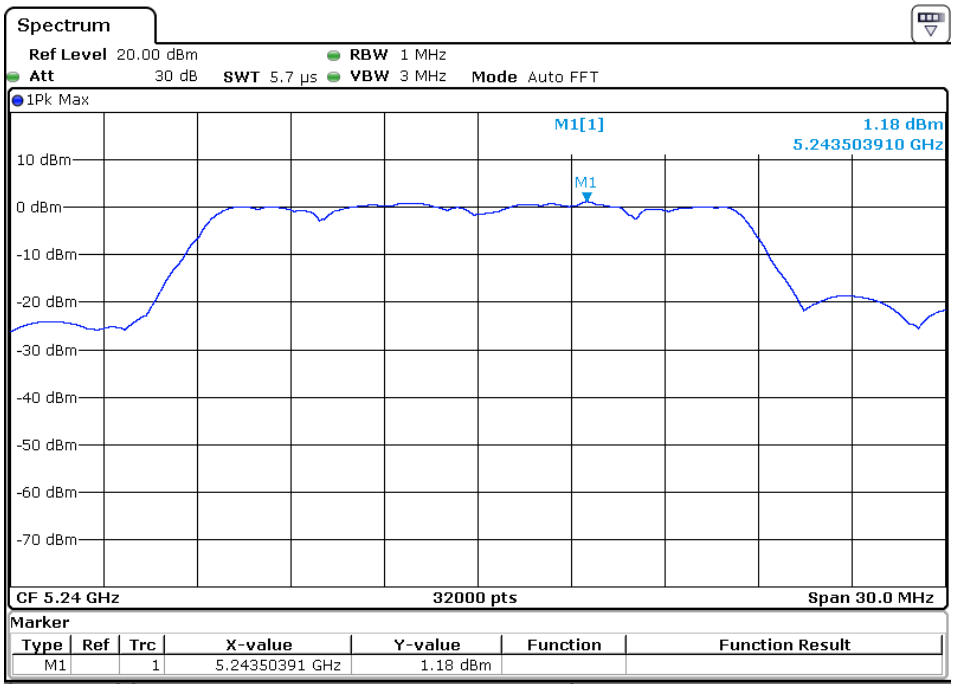
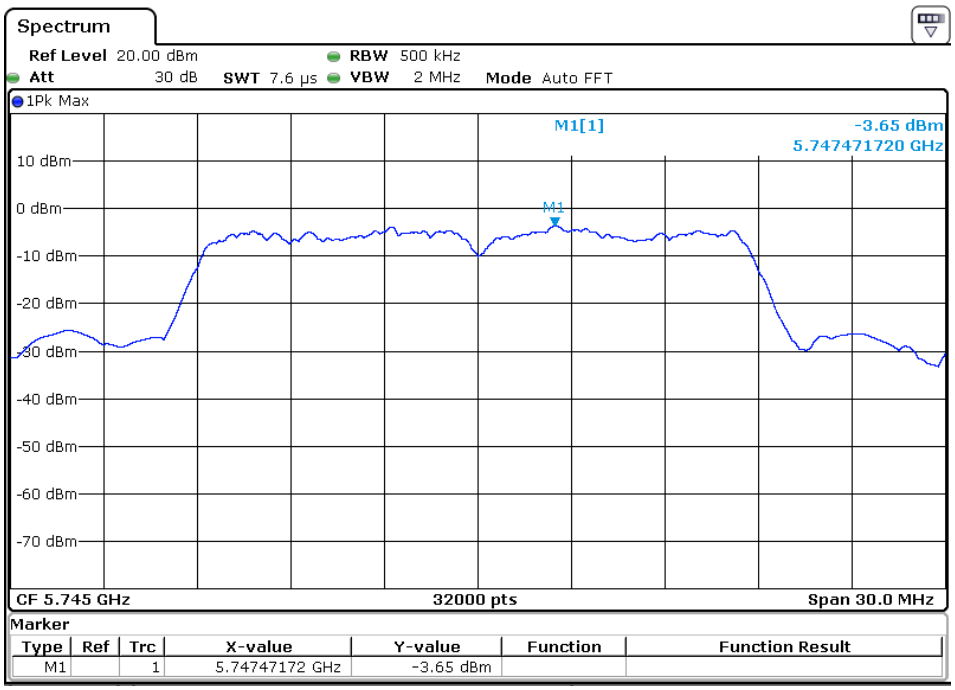
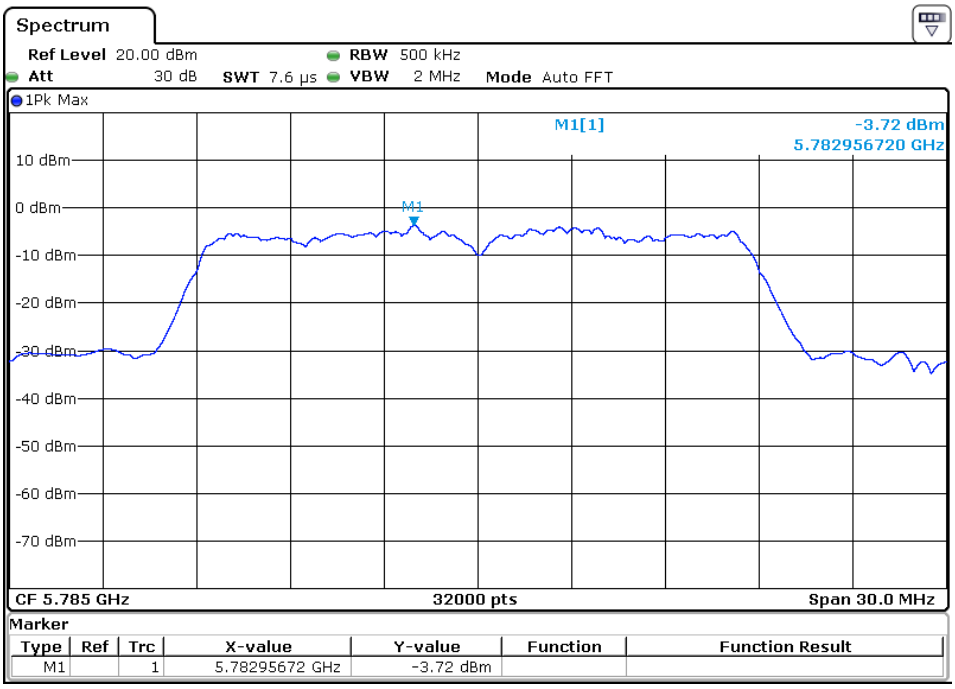
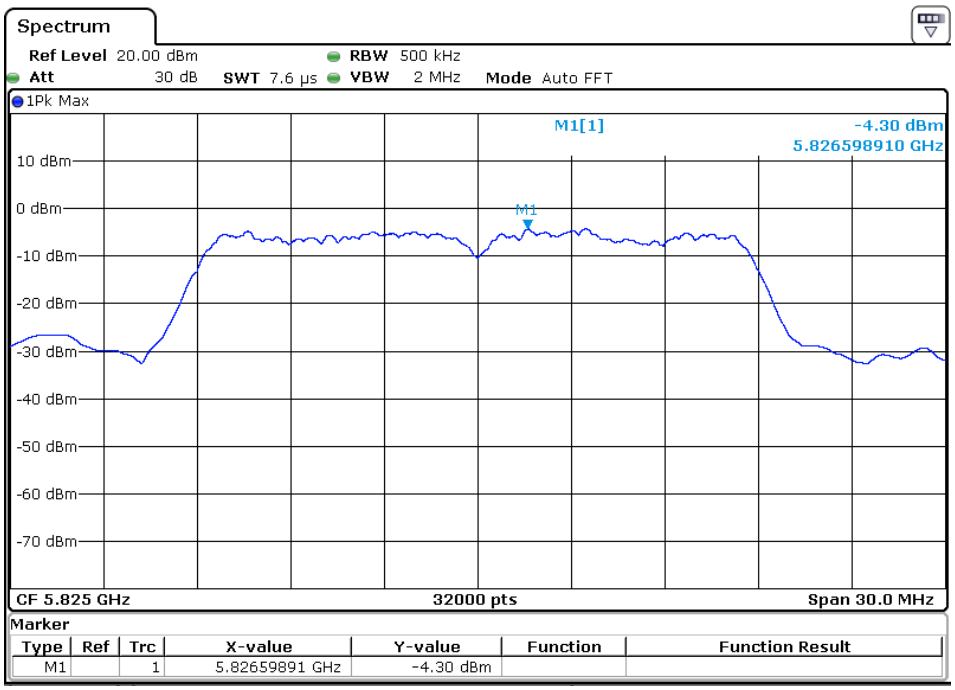





Spectrum
Ref Level 20.00 dBm
RBW 1 MHz
Att 30 dB
SWT 5.7 µs
VBW 3 MHz
Mode Auto FFT
1Pk Max
M1[1]
1.18 dBm
5.243503910 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.24 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.24350391 GHz 1.18 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-3.65 dBm
5.747471720 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.745 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.74747172 GHz -3.65 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-3.72 dBm
5.782956720 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.785 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.78295672 GHz -3.72 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-4.30 dBm
5.826598910 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.825 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.82659891 GHz -4.30 dBm

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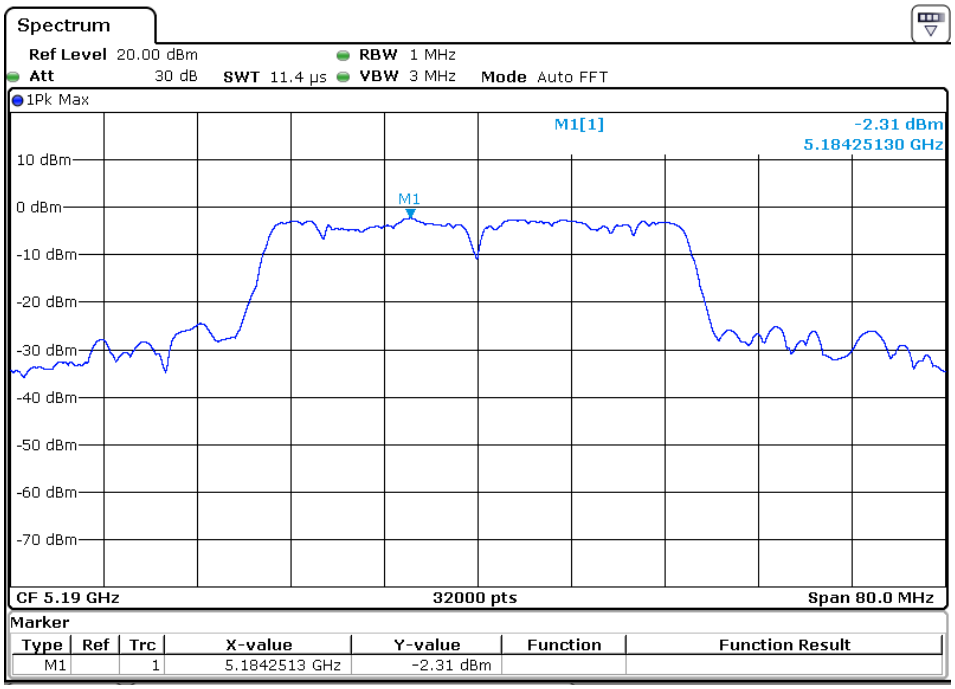
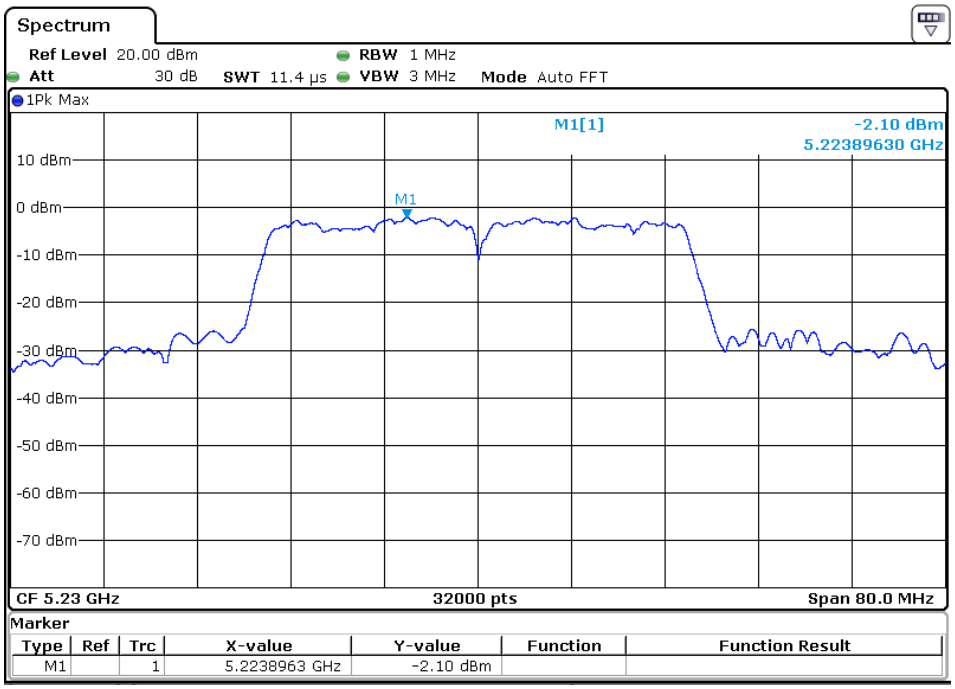
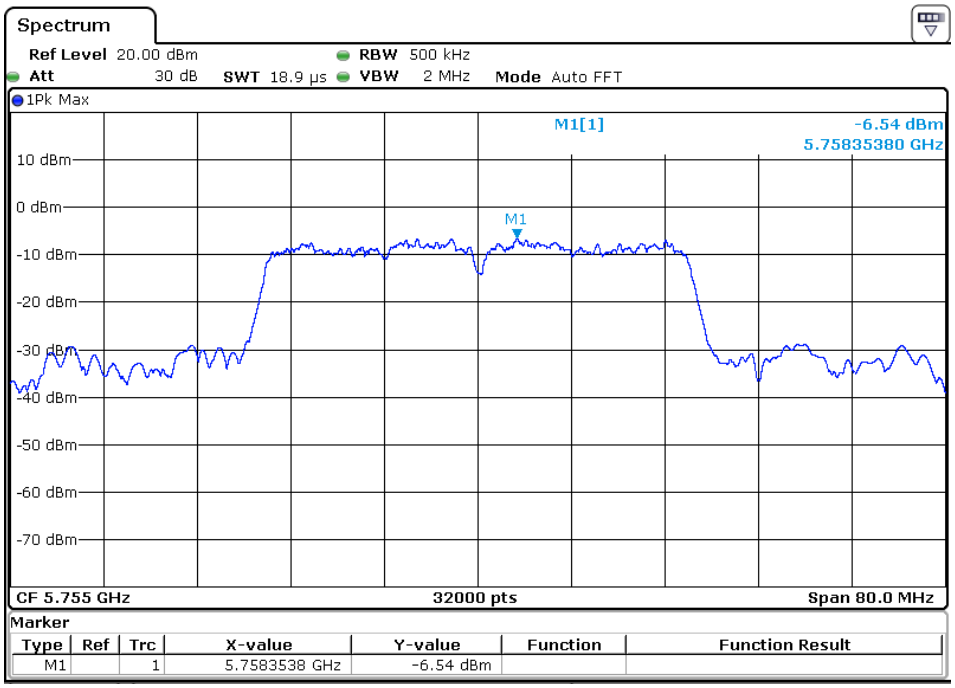
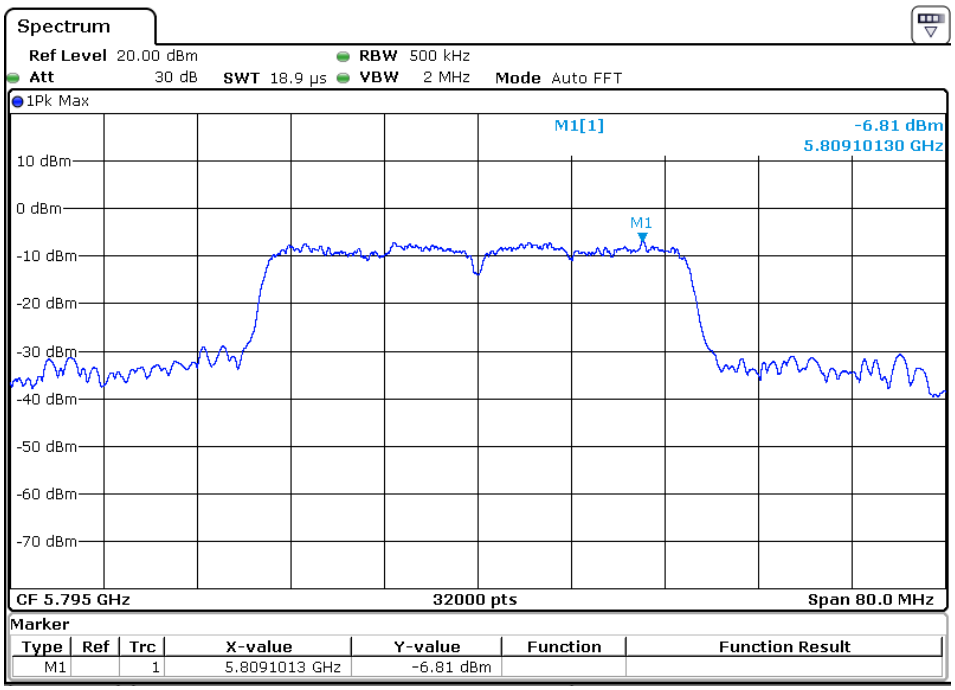





Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 18.9 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-6.54 dBm
5.75835380 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.755 GHz
32000 pts
Span 80.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.7583538 GHz -6.54 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 18.9 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-6.81 dBm
5.80910130 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.795 GHz
32000 pts
Span 80.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.8091013 GHz -6.81 dBm

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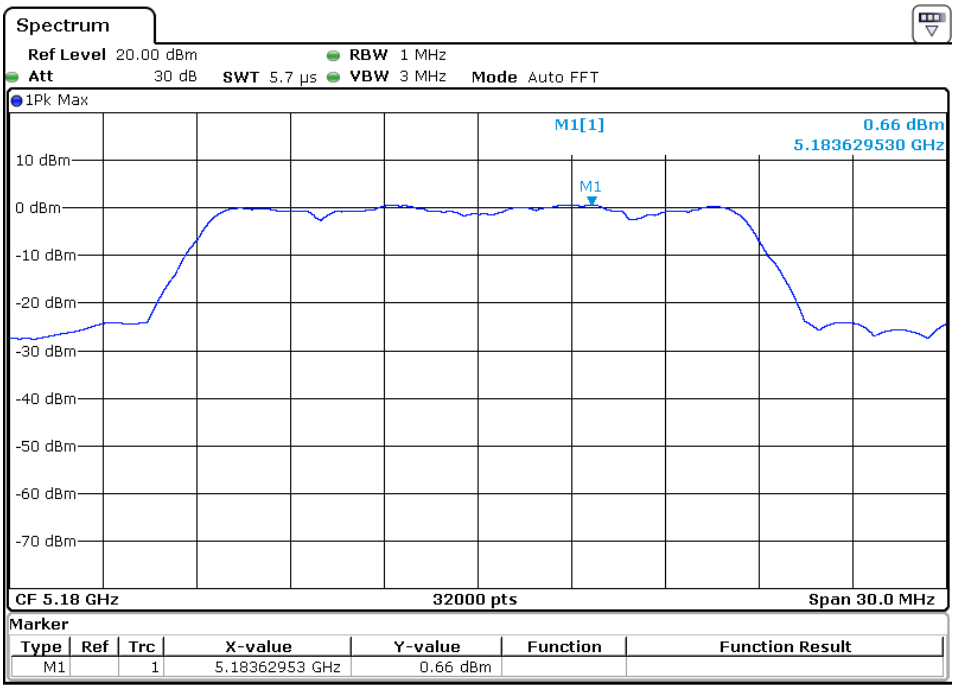
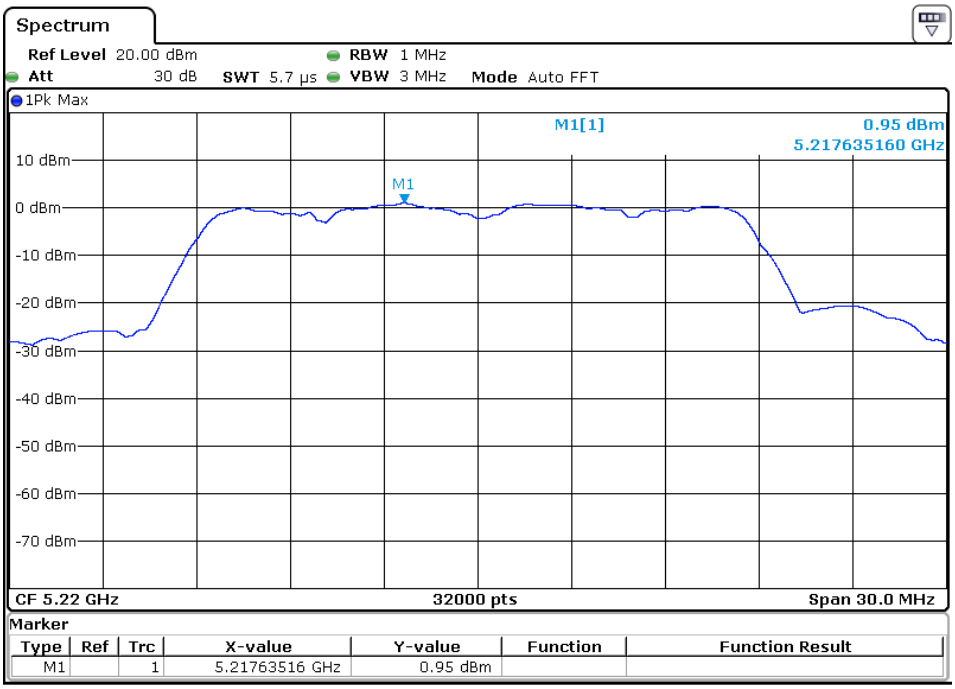
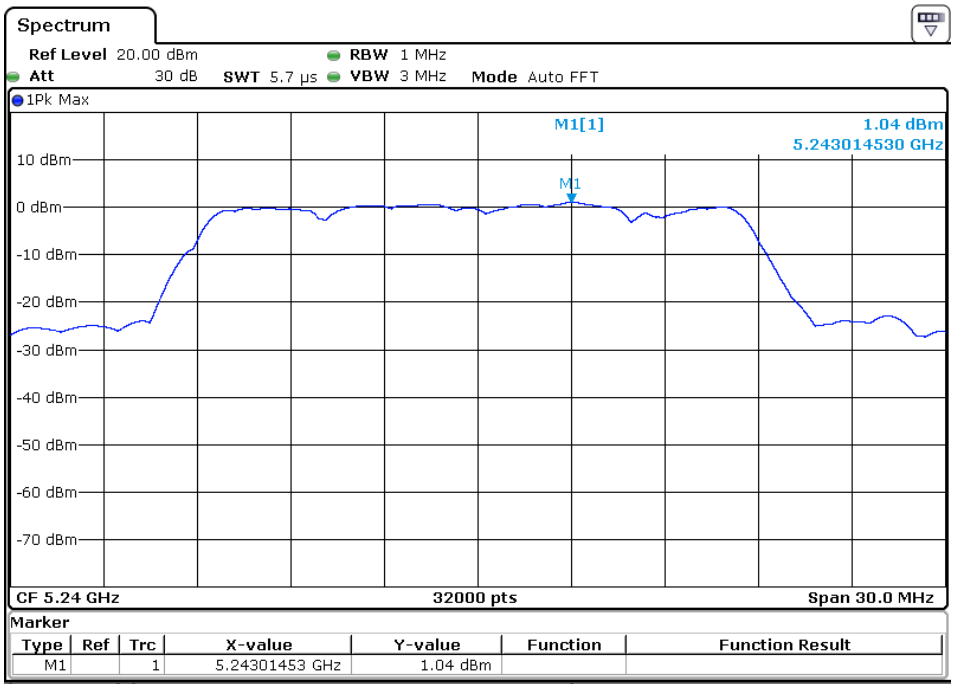
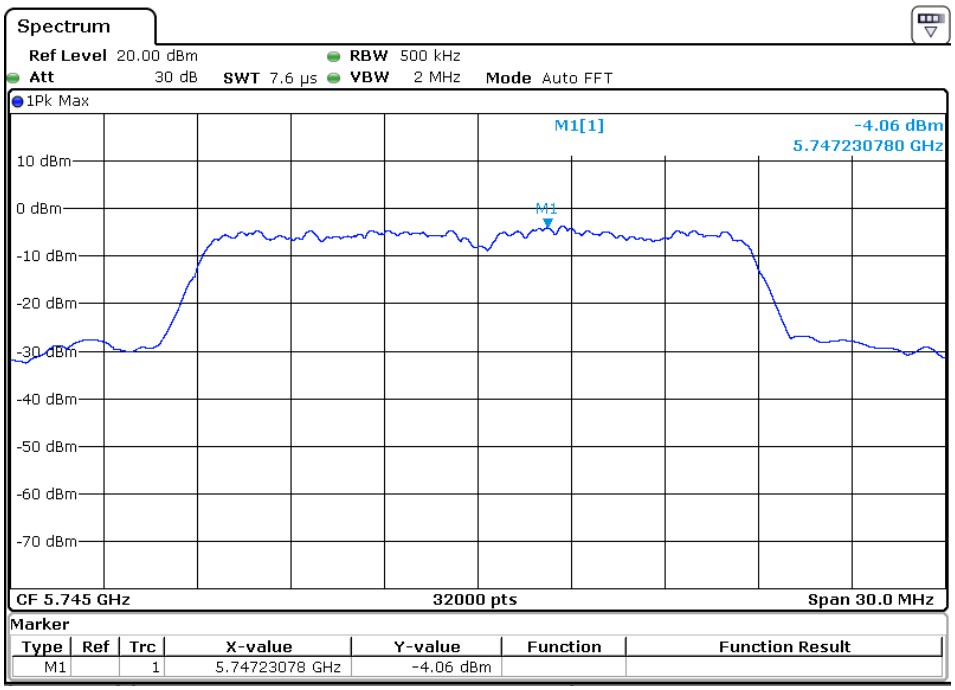
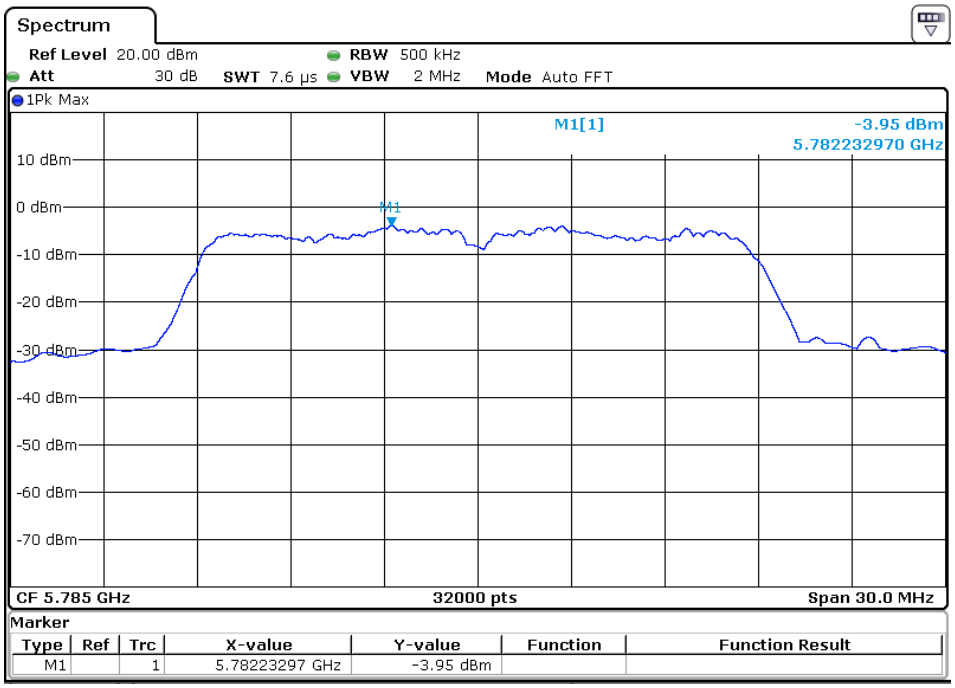
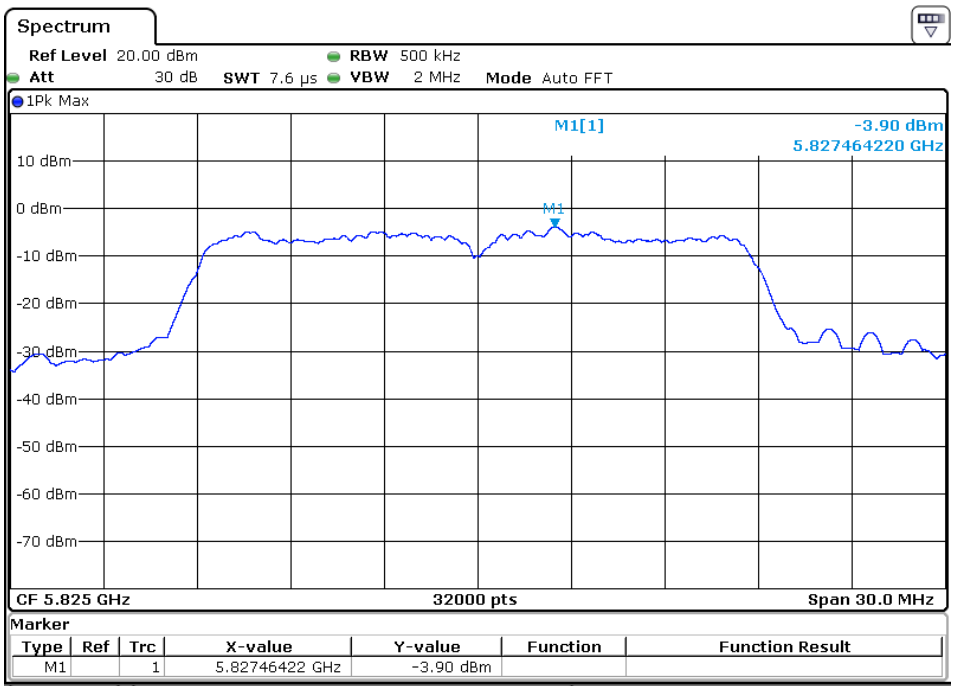




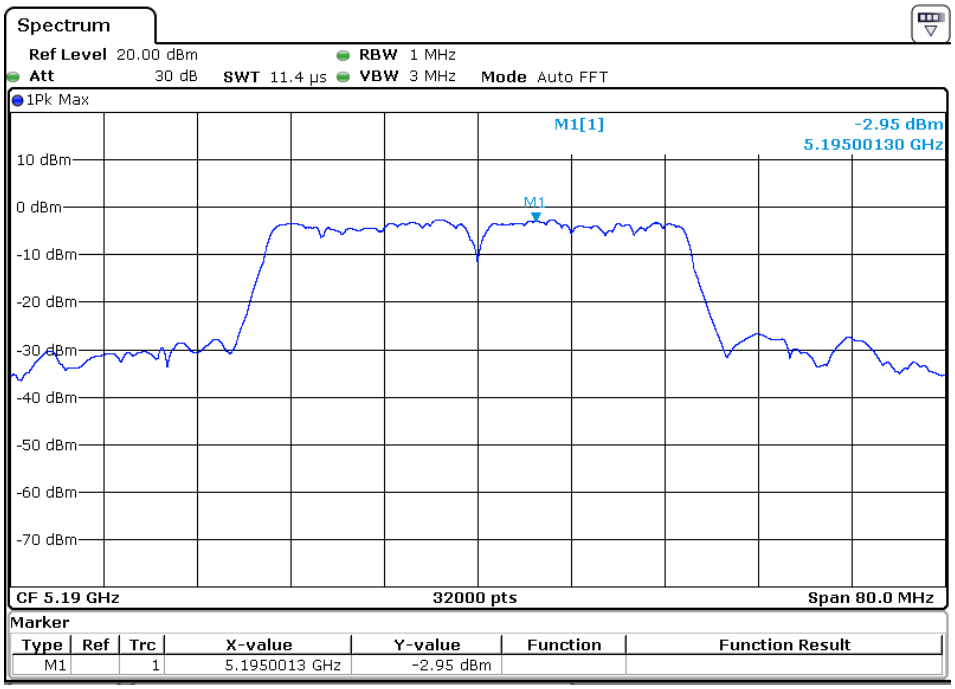

Spectrum
Ref Level 20.00 dBm
RBW 1 MHz
Att 30 dB
SWT 5.7 µs
VBW 3 MHz
Mode Auto FFT
1Pk Max
M1[1]
1.04 dBm
5.243014530 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.24 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.24301453 GHz 1.04 dBm

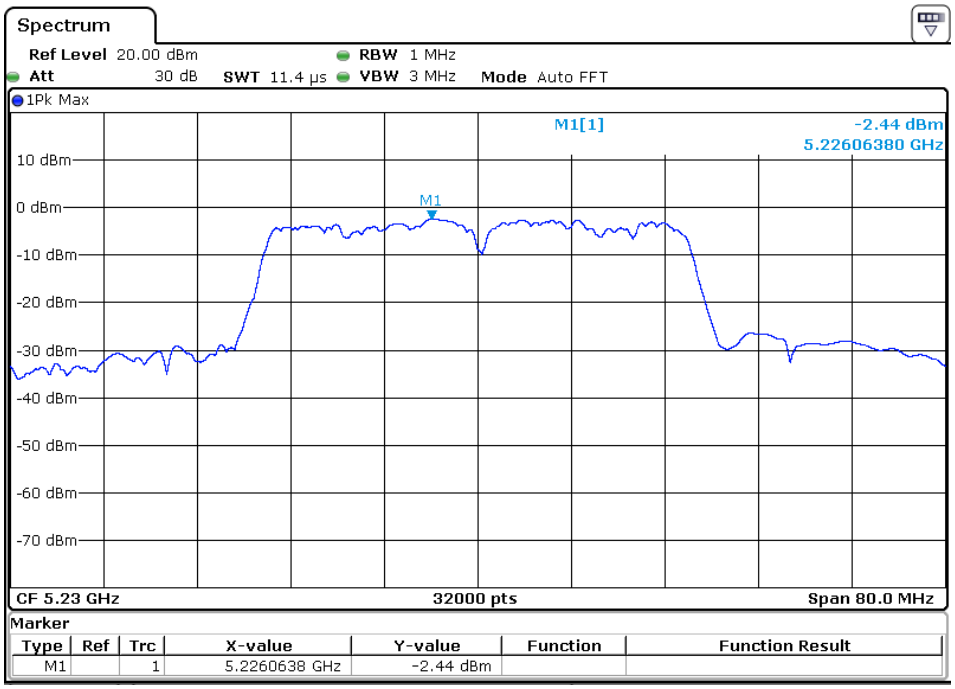

Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-4.06 dBm
5.747230780 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.745 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.74723078 GHz -4.06 dBm

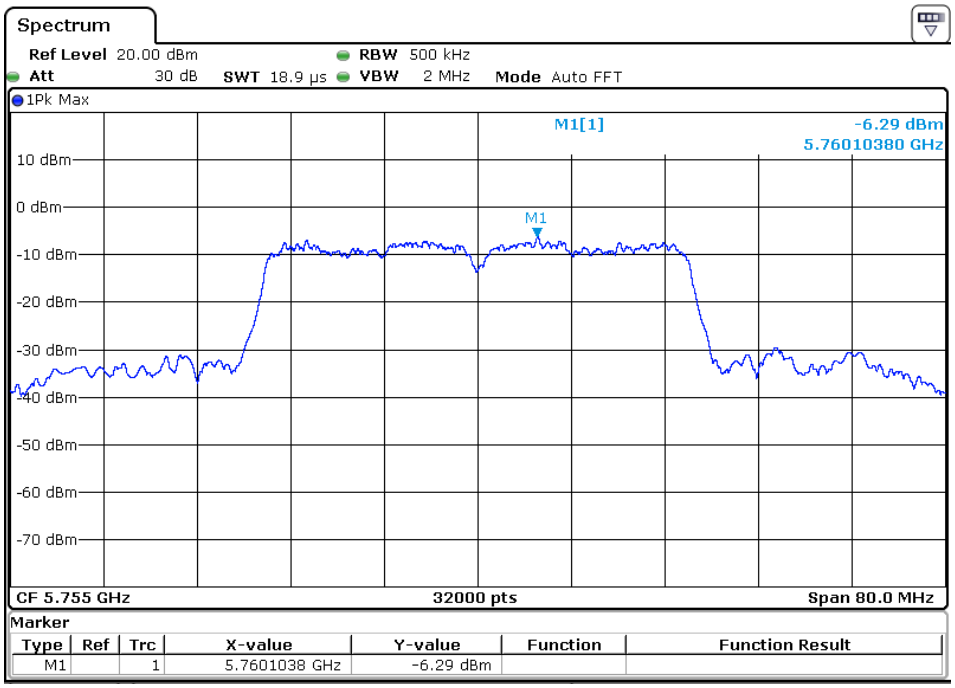

Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-3.95 dBm
5.782232970 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.785 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.78223297 GHz -3.95 dBm

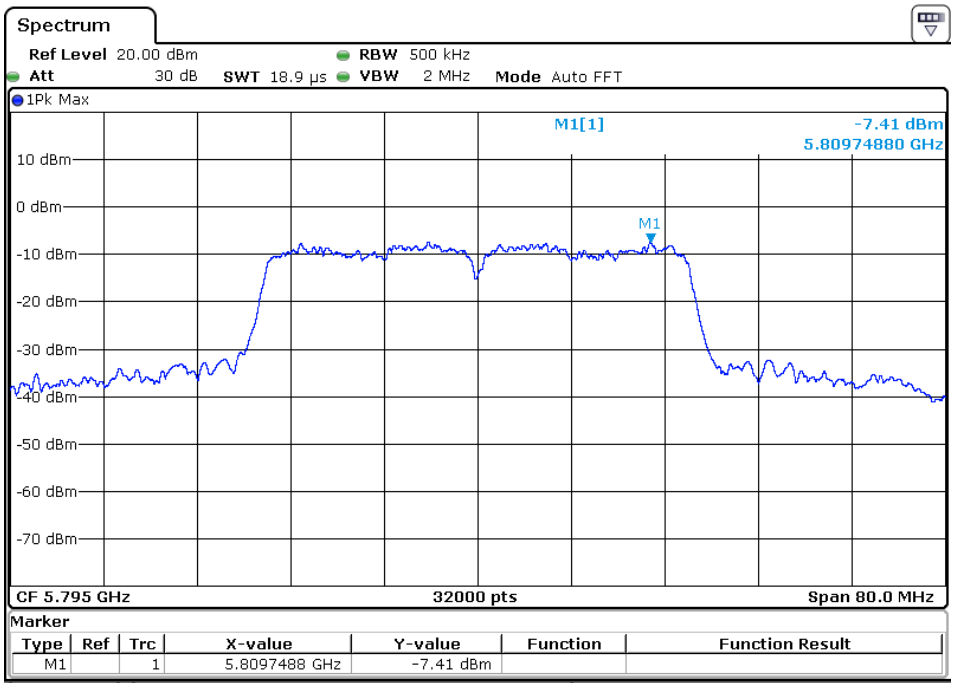

Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 7.6 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-3.90 dBm
5.827464220 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.825 GHz
32000 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.82746422 GHz -3.90 dBm

Ant 1 802.11 ac40






Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 18.9 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
-6.29 dBm
5.76010380 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.755 GHz
32000 pts
Span 80.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.7601038 GHz -6.29 dBm


Spectrum
Ref Level 20.00 dBm
RBW 500 kHz
Att 30 dB
SWT 18.9 µs
VBW 2 MHz
Mode Auto FFT
1Pk Max
M1[1]
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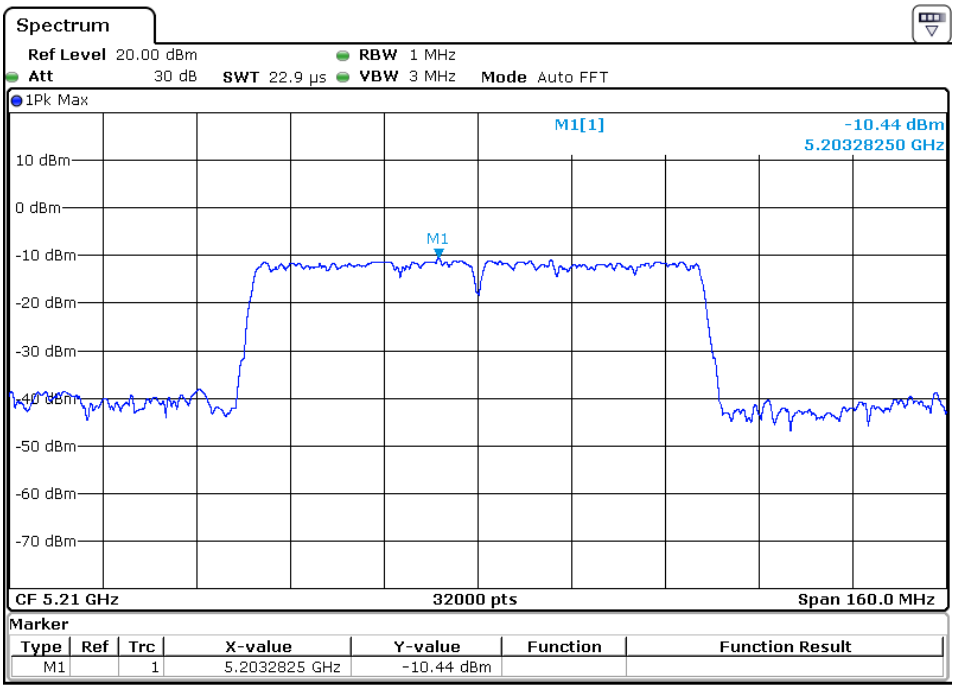
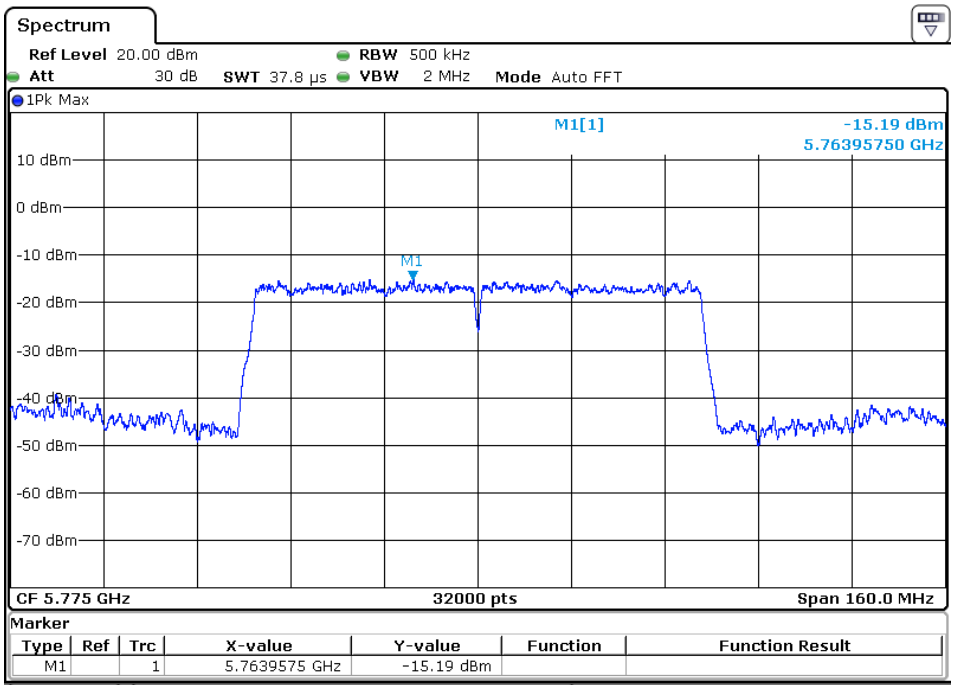
5.80974880 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.795 GHz
32000 pts
Span 80.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.8097488 GHz -7.41 dBm

Ant 1 802.11 ac80





6.6 Maximum Peak Output Power

6.6.1 Applied procedures / 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. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

FCC Part15 (15.407) , Subpart E

Section	Test Item	Limit	Frequency Range (MHz)	Result
15.407(E) (ii)/(3)	Peak Output Power	0.25 watt or 23.9794dBm	5150-5250	PASS
		1 watt or 30dBm	5725-5850	PASS

6.6.2 Test procedure

KDB 789033 D02v01r01 - Section E) 3) b) Method PM-G
The EUT was directly connected to the Power Sensor & Power meter.
Average power measurements were perform only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

6.6.3 Test Setup

6.6.4 Deviation from standard

No deviation.

6.6.5 Test results

Test Mode	Data Rate (Mbps)	Channel No.	Freq. (MHz)	Ant 1 Average Power (dBm)	Limit ≤(dBm)	Result
11a	6	36	5180	11.71	23.9794	Pass
11a	6	44	5220	11.69	23.9794	Pass
11a	6	48	5240	11.63	23.9794	Pass
11a	6	149	5745	10.77	30	Pass
11a	6	157	5785	10.71	30	Pass
11a	6	165	5825	10.54	30	Pass
11n-HT20	7.2	36	5180	11.12	23.9794	Pass
11n-HT20	7.2	44	5220	11.37	23.9794	Pass
11n-HT20	7.2	48	5240	11.04	23.9794	Pass
11n-HT20	7.2	149	5745	10.69	30	Pass
11n-HT20	7.2	157	5785	10.61	30	Pass
11n-HT20	7.2	165	5825	10.77	30	Pass
11n-HT40	15	38	5190	11.23	23.9794	Pass
11n-HT40	15	46	5230	11.81	23.9794	Pass
11n-HT40	15	151	5755	10.49	30	Pass
11n-HT40	15	159	5795	10.58	30	Pass
11ac-VHT20	7.2	36	5180	11.65	23.9794	Pass
11ac-VHT20	7.2	44	5220	11.71	23.9794	Pass
11ac-VHT20	7.2	48	5240	11.43	23.9794	Pass
11ac-VHT20	7.2	149	5745	10.29	30	Pass
11ac-VHT20	7.2	157	5785	10.77	30	Pass
11ac-VHT20	7.2	165	5825	10.38	30	Pass
11ac-VHT40	15	38	5190	11.54	23.9794	Pass
11ac-VHT40	15	46	5230	11.51	23.9794	Pass
11ac-VHT40	15	151	5755	10.85	30	Pass
11ac-VHT40	15	159	5795	10.36	30	Pass
11ac-VHT80	32.5	42	5210	6.89	23.9794	Pass
11ac-VHT80	32.5	155	5775	6.73	30	Pass

6.7 FREQUENCY STABILITY MEASUREMENT

6.7.1 Applied procedures / Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an Emission is maintained within the band of operation under all conditions of normal operation as specified in the user‟s manual.

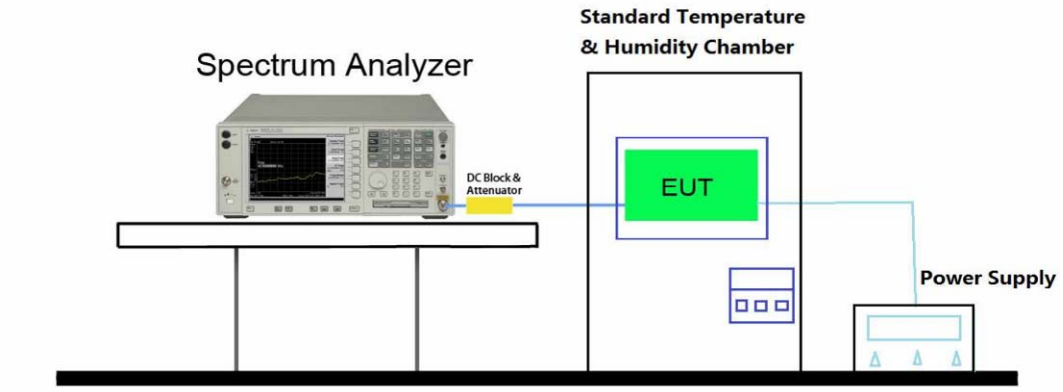
6.7.2 Test procedure

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

6.7.3 Deviation from standard

No deviation.

6.7.4 Test setup



6.7.5 Test results

Voltage (%)	Power (VAC)	Temp (℃)	Frequency Tolerance (ppm)
100%	120	- 20	2.63
		- 10	1.95
		0	1.48
		+ 10	3.82
		+ 20 (Ref)	4.62
		+ 30	3.80
		+ 40	2.16
		+ 50	4.17
115%	138	+ 20	2.87
85%	102	+ 20	3.28

Note: Frequency Tolerance (ppm) = {[Measured Frequency (Hz) - Declared Frequency (Hz)] / Declared Frequency (Hz)} *10^6.

6.8 AUTOMATICALLY DISCONTINUE TRANSMISSION

6.8.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

6.8.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission

6.9 ANTENNA REQUIREMENT

6.9.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

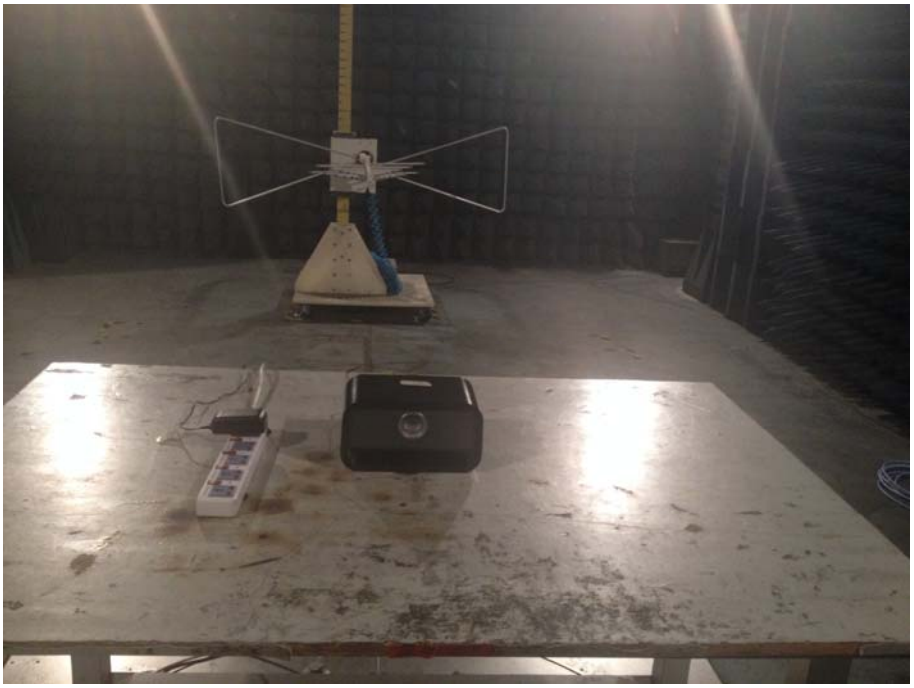
6.9.2 EUT ANTENNA

The EUT antenna comply with the standard requirement.

7 Photographs

7.1 Radiated Emission Test Setup

Below 1G



Above 1G

7.2 Conduction Emission Test Setup

7.3 EUT Constructional Details

Please refer to report E-F1609002-1.

****End of report****