



FCC 47 CFR PART 15 SUBPART E 15.407
TEST REPORT
FOR
TABLET PC

Model : MG133-JP

Issued to
J P Sa Couto SA
Rua da Guarda, 675 4455-466 Perafita Portugal

Issued by
WH Technology Corp.



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Contents

PHOTOS OF EUT 1. General Information	3
1. General Information.....	4
2. Report of Measurements and Examinations	5
2.1 List of Measurements and Examinations	5
3. Test Configuration of Equipment under Test.....	6
3.1 Description of the tested samples.....	6
3.2 Carrier Frequency of Channels.....	7
3.3 Test Mode and Test Software.....	8
3.4 TEST Methodology & General Test Procedures	9
3.5 Measurement Uncertainty	10
3.6 Description of the Support Equipments	10
4. Test and measurement equipment.....	11
4.1 calibration	11
4.2 equipment	11
5. Antenna Requirements.....	14
5.1 Standard Applicable	14
5.2 Antenna Construction and Directional Gain.....	14
6. Test of Conducted Emission.....	15
6.1 Test Limit	15
6.2 Test Procedures	15
6.3 Typical Test Setup	16
6.4 Test Result and Data	17
7. Test of Radiated Emission	19
7.1 Test Limit	19
7.2 Test Procedures	19
7.3 Typical Test Setup	20
7.4 Test Result and Data (9kHz ~ 30MHz).....	21
7.5 Test Result and Data (30MHz ~ 1GHz, worst emissions found).....	21
7.6 Test Result and Data (Between 1~40 GHz).....	25
8. Bandwidth Measurement Data.....	35
8.1 Test Result and Data	36
9. Output Power.....	73
9.1 Test Result and Data	74
10. Power Spectral Density	76
10.1 Test Result and Data	77
11. Band Edges Measurement.....	96
11.1 Test Result and Data	99
12. Frequency stability	107
13. Restricted Bands of Operation	111



13.1 Labeling Requirement.....	111
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APPENDIX 1 PHOTOS OF TEST CONFIGURATION
PHOTOS OF EUT



1. General Information

Applicant : J P Sa Couto SA

Address : Rua da Guarda, 675 4455-466 Perafita Portugal

Manufacturer : Shenzhen Emdoor Digital Technology CO.,LTD

Address : 6 th Floor, Jin Fu Lai Mansion, No.49-1 Dabaolu Rd
Baoan28 District, Shenzhen, China

EUT : TABLET PC

Model Name : MG133-JP

Model Differences : N/A

Is here with confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart C and the measurement procedures were according to ANSI C63.4-2014. The said equipment in the configuration described in this report shows the maximum emission levels emanating

FCC part 15 subpart E

Receipt Date : 03/05/2018

Final Test Date : 07/31/2018

Tested By:

Reviewed by:

Jul. 31, 2018

Date

Bing Chang/ Engineer

Date

Bell Wei / Manager

Designation Number: TW2954



2. Report of Measurements and Examinations

2.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.203	Antenna requirement	Pass
15.207	AC Power Line Conducted Emission	Pass
15.407(a)(1)	Peak Transmit Power	Pass
15.407(a)(1)	Power Spectral Density	Pass
15.407(e)	Channel Bandwidth	Pass
15.407(b)(6), 15.205/15.209	Undesirable Emission	Pass
15.205/15.209	Radiated Emission	Pass
15.205	Band Edge	Pass
15.407(f)	Frequency Stability	Pass



3. Test Configuration of Equipment under Test

3.1 Description of the tested samples

EUT Name	: TABLET PC
Model Number	: MG133-JP
FCCID	: 2APDE-MG133-JP
Receipt Date	: 03/05/2018
Power From	: ☒ Inside ☒ Outside ☒ Adaptor ☒ Battery ☐ AC Power Source ☐ DC Power Source ☐ Support Unit PC or NB
Adapter	: Input: 100-240V~0.5A Output: DC 12V/2.5 A
Battery	: 7.6V 5950mAh
Operate Frequency	: WiFi: 802.11a/802.11n(HT20) /ac(VHT20): 5180MHz ~ 5240MHz; 5745MHz ~ 5825MHz 802.11n(HT40)/ac(VHT40): 5190MHz ~ 5230MHz, 5755MHz ~ 5795MHz 802.11ac(VHT80): 5210MHz, 5775MHz,
Modulation Technique	: 802.11a/n/ac: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Number of Channels	: Refer to the channel list as described below
Antenna Type	: FPCB Antenna
Antenna gain	Antenna A : 5G WIFI 1.8dBi (Main antenna WiFi only) Antenna B : 5G WIFI 1.9dBi(Aux antenna BT&WiFi)



3.2 Carrier Frequency of Channels

1. Channel List for 802.11a/n-HT20/ac-VHT20

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

2. Channel List for 802.11n-HT40/ac-VHT40

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

3. Channel List for 802.11ac-VHT80

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



3.3 Test Mode and Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- b. The complete test system included Notebook and EUT for RF test.
- c. Test Software: Radio Test.exe
- d. Full charge Battery was used for all testing and the worst radiated emission case from X,Y and Z axis evaluation was selected for testing.
- e. Per-test antenna **A** and antenna **B**, find the worst-case is antenna **A**, and record in report.

Note:

Have verified all construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as Test Mode as below:

Transmit (802.11a)

Transmit (802.11n MCS0 20MBW)

Transmit (802.11n MCS0 40MBW)

Transmit (802.11ac MCS0 80MBW)



3.4 TEST Methodology & General Test Procedures

All testing as described bellowed were performed in accordance with ANSI C63.4:2014 and ANSI C63.10:2013.

Conducted Emissions

The EUT is placed on a wood table, which is at 0.8 m above ground plane acceding to clause 15.207 and requirements of ANSI C63.4:2014. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz are using CISPR Quasi-Peak / Average detectors.

Radiated Emissions

The EUT is a placed on a turn table, which is 0.8 m above ground plane. The turntable was rotated through 360 degrees to determine the position of maximum emission level. The EUT is placed at 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

- 1) Putting the EUT on the platform and turning on the EUT (on/off button on the bottom of the EUT).
- 2) Setting test channel described as "Channel setting and operating condition", and testing channel by channel.
- 3) For the maximum output power measurement, we followed the method of measurement KDB 789033 D02.
- 4) For the spurious emission test based on ANSI(2014), at the frequency where below 1GHz used quasi-peak detector mode; where above 1GHz used the peak and average detector mode. IF the peak value may be under average limit, the average mode will not be performed.



3.5 Measurement Uncertainty

Measurement Item	Uncertainty
Peak Output Power(conducted)	±1.345dB
Power Spectral Density	±1.347dB
Radiated emission(1G-40GHz)	±5.00dB
Radiated emission(30M-1GHz)	±3.89dB
Conducted emission	±1.81dB

3.6 Description of the Support Equipments

Setup Diagram

See test photographs attached in appendix 1 for the actual connections between EUT and support equipment.

Support Equipment

Peripherals Devices:

OUTSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: All the above equipment /cable were placed in worse case position to maximize emission signals during emission test

Grounding: Grounding was in accordance with the manufacturer's requirement and conditions for the intended use.



4. Test and measurement equipment

4.1 calibration

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2 equipment

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and. Other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.



TABLELIST OF TEST AND MEASUREMENT EQUIPMENT

Test Site	Instrument	Manufacturer	Model No.	S/N	Next Cal. Date
Conduction	Spectrum (9K--3GHz)	R&S	FSP3	833387/010	2018/09/20
	EMI Receiver	R&S	ESHS10	830223/008	2019/05/22
	LISN	Rolf Heine Hochfrequenztechnik	NNB-2/16z	98062	2019/05/25
	ISN	Schwarzbeck	8-Wire ISN CAT5	CAT5-8158-0094	2018/09/21
	RF Cable	N/A	N/A	EMI-3	2018/10/19
Radiation	Bilog antenna(30M-1G)	ETC	MCTD2786B	BLB16M04004/J B-5-004	2019/05/03
	Double Ridged Guide Horn antenna(1G-18G)	ETC	MCTD 1209	DRH15N0 2009	2018/11/23
	Horn antenna (18G-26G)	com-power	AH-826	81000	2018/08/15
	LOOP Antenna (Below 30M)	com-power	AL-130	17117	2018/10/04
	Pre amplifier (30M-1G)	EMC INSTRUMENT	EMC9135	980334	2019/05/04
	Microwave Preamplifier (1G-18G)	EMC INSTRUMENT	EMC051845	980108&AT -18001	2018/10/23
	Pre amplifier (18G~26G)	MITEQ	JS4-18002600-3 0-5A	808329	2018/08/10
	EMI Test Receiver	R&S	ESVS30 (20M-1000MHz)	826006/002	2018/11/28
	RF Cable	EMCI	N male on end	30m	2018/10/19



	(open site)		of both sides (EMI4)		
	RF CABLE (1~26.5G)	HARBOUT INDUSTRIES	LL142MI(4M+4M)	NA	2019/03/08
	RF CABLE (1~26.5G)	HARBOUR INDUSTRIES	LL142MI(7M)	NA	2018/08/11
	Spectrum (9K--7GHz)	R&S	FSP7	830180/006	2019/03/25
	Spectrum (9K--40GHz)	AGILENT	8564EC	4046A0032	2019/03/01
--	Power Meter	R&S	NRVS	100696	2018/08/10
--	Power Sensor	R&S	URV5-Z4	0395.1619.05	2018/08/10

***CALIBRATION INTERVAL OF INSTRUMENTS LISTED ABOVE IS ONE YEAR**



5. Antenna Requirements

5.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.2 Antenna Construction and Directional Gain

Antenna Type: FPCB Antenna

Antenna Gain: Gain:

Antenna A : 5G WIFI 1.8dBi (Main antenna WiFi only)

Antenna B : 5G WIFI 1.9dBi(Aux antenna BT&WiFi)



6. Test of Conducted Emission

6.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 110 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2014 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

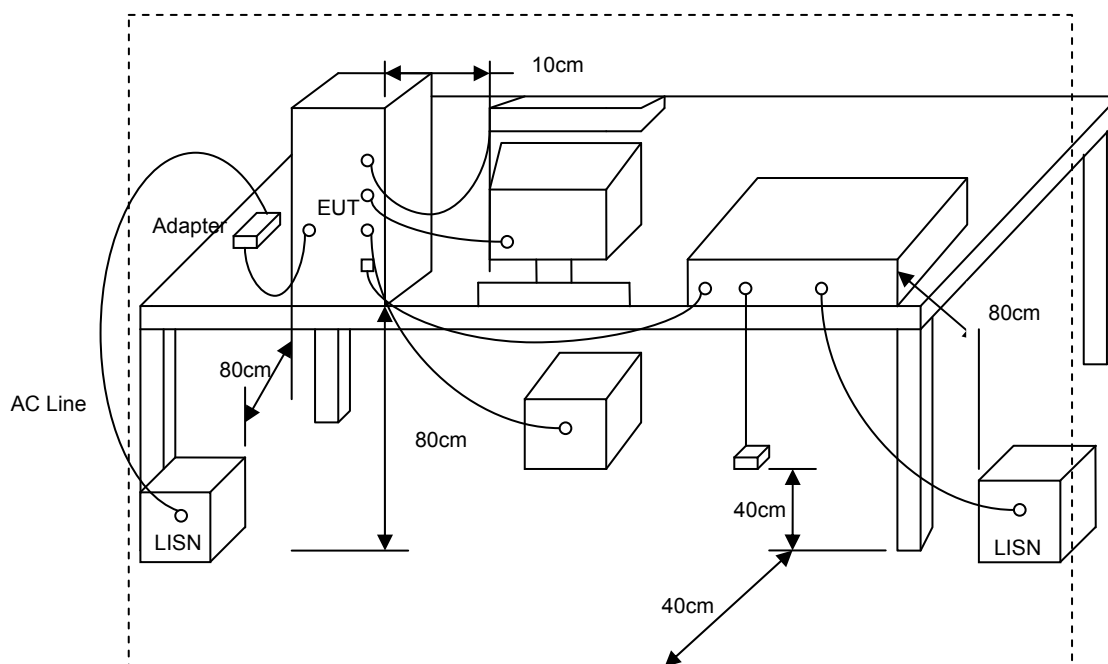
*Decreases with the logarithm of the frequency.

6.2 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



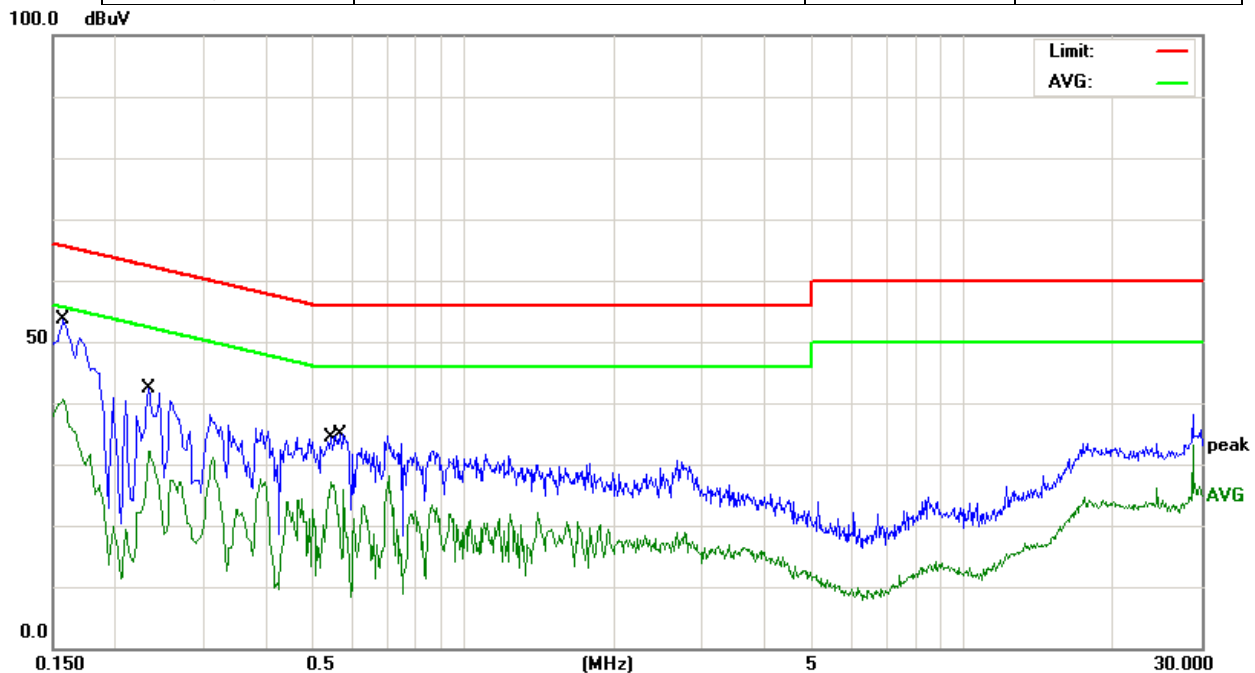
6.3 Typical Test Setup





6.4 Test Result and Data

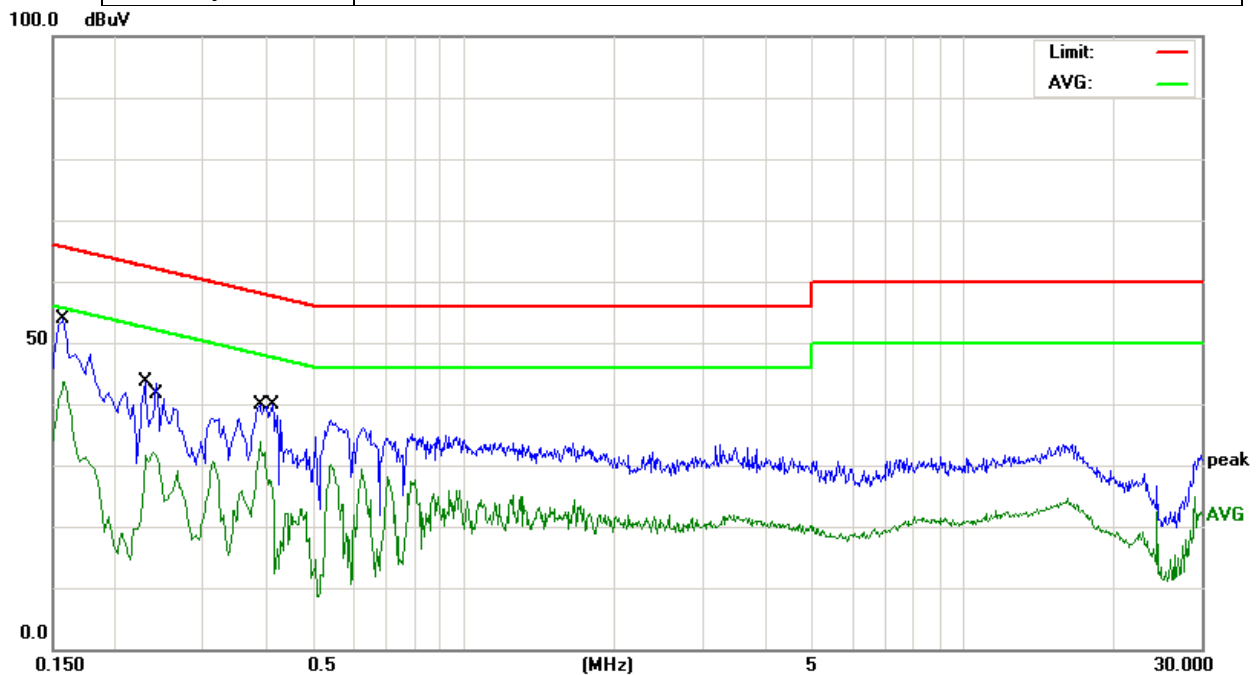
Power	: 120V/60Hz for adapter	Pol/Phase	: LINE
Test Mode 1	: TX CH38 5180MHz(worst-case)	Temperatur	: 22 °C
Humidity	: 43 %		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1580	41.89	11.75	53.64	65.56	-11.92	QP
2		0.1580	28.80	11.75	40.55	55.56	-15.01	AVG
3		0.2340	31.53	10.94	42.47	62.30	-19.83	QP
4		0.2340	21.20	10.94	32.14	52.30	-20.16	AVG
5		0.5420	17.18	10.00	27.18	46.00	-18.82	AVG
6		0.5660	24.91	10.00	34.91	56.00	-21.09	QP



Power	: 120V/60Hz for adapter	Pol/Phase	: NEUTRAL
Test Mode 1	: TX CH38 5180MHz(worst-case)	Temperatur	: 22 °C
Humidity	: 43 %		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1580	42.10	11.75	53.85	65.56	-11.71	QP
2		0.1580	31.97	11.75	43.72	55.56	-11.84	AVG
3		0.2300	32.75	10.95	43.70	62.45	-18.75	QP
4		0.2380	21.09	10.93	32.02	52.16	-20.14	AVG
5		0.3899	23.83	10.13	33.96	48.06	-14.10	AVG
6		0.4140	29.82	10.11	39.93	57.57	-17.64	QP



7. Test of Radiated Emission

7.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

Frequency (MHz)	Field Strength (microvolt/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

7.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise,

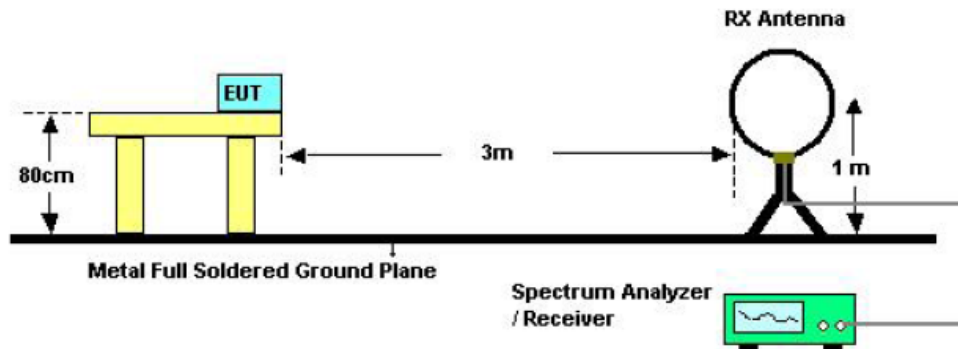


the emissions will be measured in average mode again and reported.

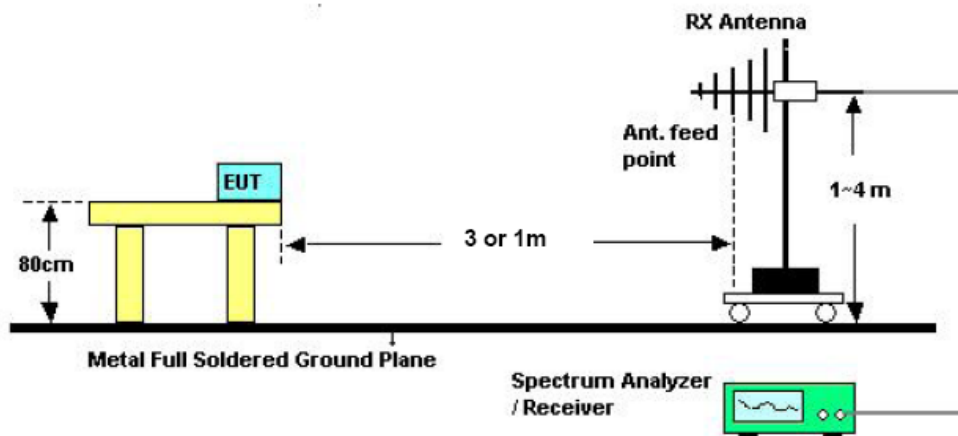
- i. "Cone of radiation" has been considered to be 3dB bandwidth of the measurement antenna.

7.3 Typical Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.

Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].



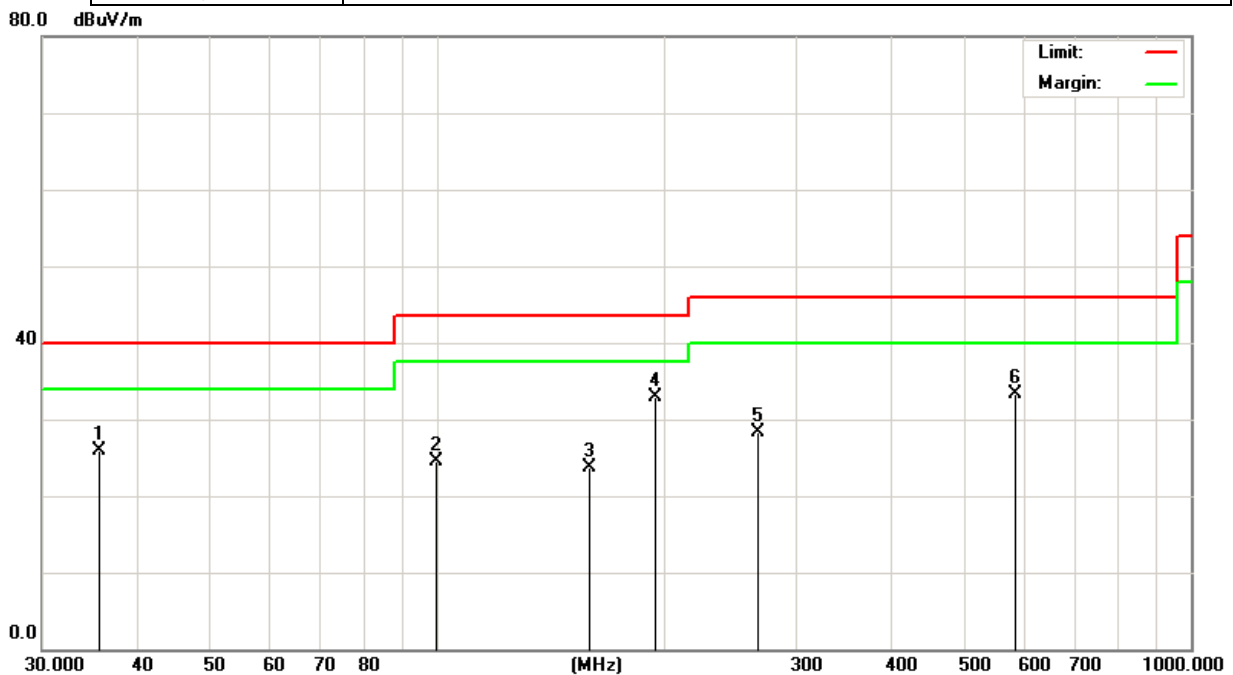
7.4 Test Result and Data (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

7.5 Test Result and Data (30MHz ~ 1GHz, worst emissions found)

Antenna A:

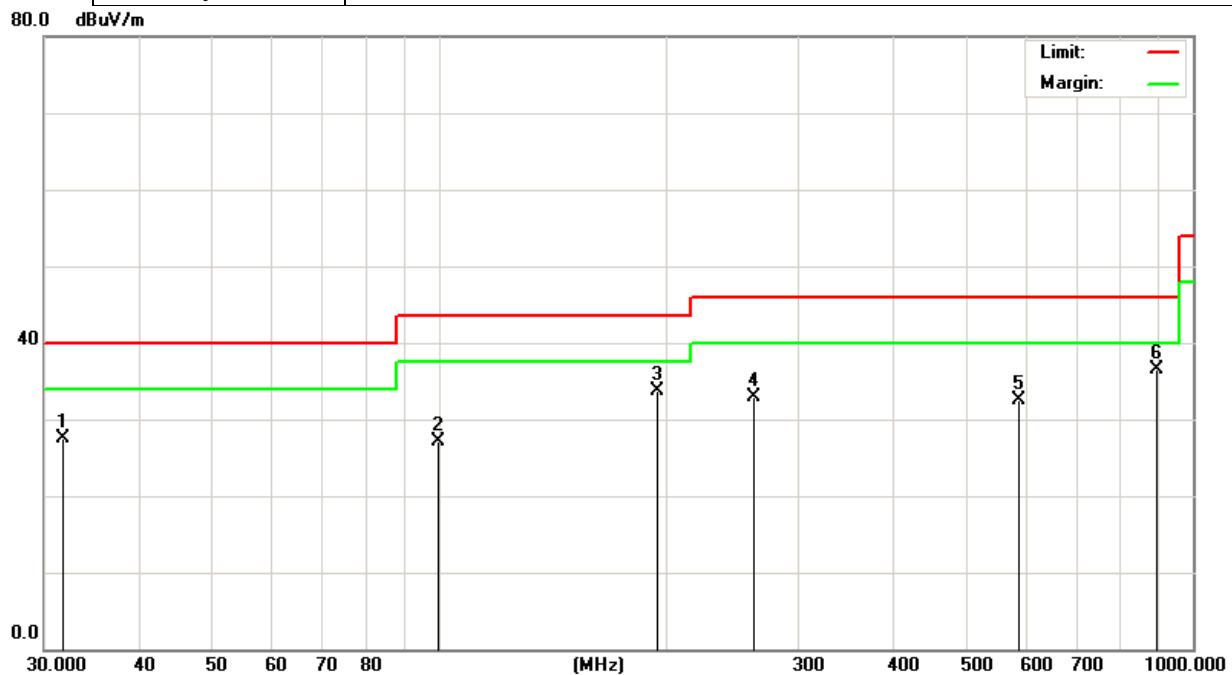
Power	: DC 7.6V from battery	Pol/Phase	: HORIZONTAL
Test Mode 1	: TX 5180MHz(worst-case)	Temperature	: 22 °C
Humidity	: 59%		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		35.7490	42.61	-16.77	25.84	40.00	-14.16	QP
2		99.8777	38.56	-14.08	24.48	43.50	-19.02	QP
3		159.7844	38.63	-15.01	23.62	43.50	-19.88	QP
4	*	195.1365	49.35	-16.36	32.99	43.50	-10.51	QP
5		266.6089	41.12	-12.81	28.31	46.00	-17.69	QP
6		584.7894	35.69	-2.41	33.28	46.00	-12.72	QP



Power	: DC 7.6V from battery	Pol/Phase	: VERTICAL
Test Mode 1	: TX 5180MHz(worst-case)	Temperature	: 22 °C
Humidity	: 59%		

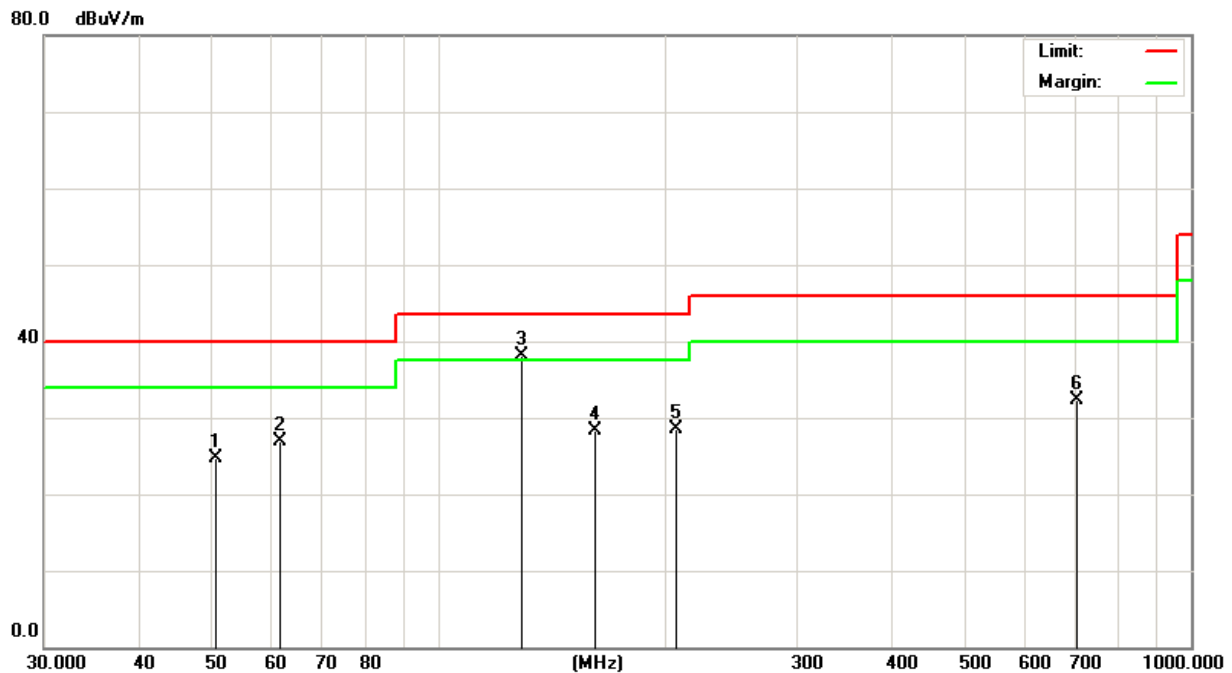


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		31.8427	44.77	-17.24	27.53	40.00	-12.47	QP
2		99.8777	41.26	-14.08	27.18	43.50	-16.32	QP
3		195.1365	50.02	-16.36	33.66	43.50	-9.84	QP
4		261.0582	45.77	-12.83	32.94	46.00	-13.06	QP
5		586.8437	34.89	-2.35	32.54	46.00	-13.46	QP
6	*	893.8567	33.75	2.75	36.50	46.00	-9.50	QP



Antenna B:

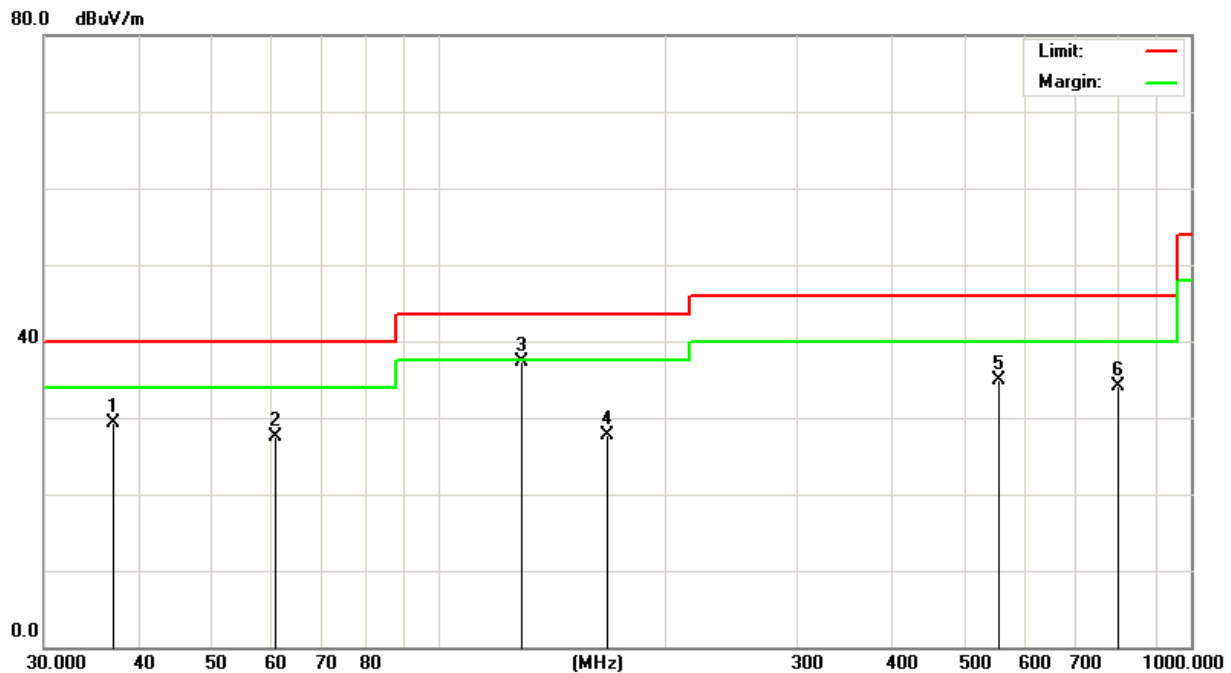
Power	: DC 7.6V from battery	Pol/Phase	: HORIZONTAL
Test Mode 1	: TX 5180MHz(worst-case)	Temperature	: 22 °C
Humidity	: 59%		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		50.7637	39.15	-14.50	24.65	40.00	-15.35	QP
2		61.5618	45.17	-18.30	26.87	40.00	-13.13	QP
3	*	128.5630	53.08	-15.00	38.08	43.50	-5.42	QP
4		160.9089	43.21	-14.91	28.30	43.50	-15.20	QP
5		207.1226	45.24	-16.77	28.47	43.50	-15.03	QP
6		701.7610	32.00	0.32	32.32	46.00	-13.68	QP



Power	: DC 7.6V from battery	Pol/Phase	: VERTICAL
Test Mode 1	: TX 5180MHz(worst-case)	Temperature	: 22 °C
Humidity	: 59%		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1		36.8953	46.10	-16.72	29.38	40.00	-10.62
2		60.7044	46.92	-19.38	27.54	40.00	-12.46
3	*	128.5630	52.29	-15.00	37.29	43.50	-6.21
4		167.2368	42.79	-15.04	27.75	43.50	-15.75
5		554.8254	38.33	-3.48	34.85	46.00	-11.15
6		796.1830	31.01	3.01	34.02	46.00	-11.98

Note:

All the modulation modes were tested, the data of the worst mode are recorded in the above pages and the others modulation methods do not exceed the limits.

**7.6 Test Result and Data (Between 1~40 GHz)****Antenna A:****Above 1GHz:**

802.11a-5180MHz	H	10360	34.21	12.56	46.77	74	-27.23	PEAK
	H	15540	35.76	16.45	52.21	74	-21.79	PEAK
	V	10360	35.49	12.56	48.05	74	-25.95	PEAK
	V	15540	36.38	16.45	52.83	74	-21.17	PEAK
802.11a-5200 MHz	H	10400	35.74	12.64	48.38	74	-25.62	PEAK
	H	15600	35.42	16.53	51.95	74	-22.05	PEAK
	V	10400	37.24	12.64	49.88	74	-24.12	PEAK
	V	15600	35.32	16.53	51.85	74	-22.15	PEAK
802.11a-5240 MHz	H	10480	32.96	12.68	45.64	74	-28.36	PEAK
	H	15720	35.01	16.54	51.55	74	-22.45	PEAK
	V	10480	36.11	12.68	48.79	74	-25.21	PEAK
	V	15720	33.99	16.54	50.53	74	-23.47	PEAK
802.11a-5745 MHz	H	11490	33.43	16.82	50.25	74	-23.75	PEAK
	H	17235	30.62	22.93	53.55	74	-20.45	PEAK
	V	11490	34.41	16.82	51.23	74	-22.77	PEAK
	V	17235	29.58	22.93	52.51	74	-21.49	PEAK
802.11a-5785 MHz	H	11570	32.13	16.71	48.84	74	-25.16	PEAK
	H	17355	27.61	24.37	51.98	74	-22.02	PEAK
	V	11570	30.12	16.71	46.83	74	-27.17	PEAK
	V	17355	28.33	24.37	52.7	74	-21.30	PEAK
802.11a-5825 MHz	H	11650	34.24	16.61	50.85	74	-23.15	PEAK
	H	17475	27.29	25.01	52.3	74	-21.7	PEAK
	V	11650	32.48	16.61	49.09	74	-24.91	PEAK
	V	17475	29.01	25.01	54.02	74	-19.98	PEAK



802.11n HT20-5180MHz	H	10360	33.1	12.56	45.66	74	-28.34	PEAK
	H	15540	35.09	16.45	51.54	74	-22.46	PEAK
	V	10360	35.42	12.56	47.98	74	-26.02	PEAK
	V	15540	35.91	16.45	52.36	74	-21.64	PEAK
802.11n HT20-5200MHz	H	10400	35.01	12.64	47.65	74	-26.35	PEAK
	H	15600	33.32	16.53	49.85	74	-24.15	PEAK
	V	10400	36	12.64	48.64	74	-25.36	PEAK
	V	15600	35.1	16.53	51.63	74	-22.37	PEAK
802.11n HT20-5240MHz	H	10480	35.3	12.68	47.98	74	-26.02	PEAK
	H	15720	29.31	16.54	45.85	74	-28.15	PEAK
	V	10480	33.99	12.68	46.67	74	-27.33	PEAK
	V	15720	33.06	16.54	49.6	74	-24.40	PEAK
802.11n HT20-5745MHz	H	11490	35.01	16.82	51.83	74	-22.17	PEAK
	H	17235	30.16	22.93	53.09	74	-20.91	PEAK
	V	11570	35.34	16.71	52.05	74	-21.95	PEAK
	V	17235	28.09	22.93	51.02	74	-22.98	PEAK
802.11n HT20-5785MHz	H	11570	30.41	16.71	47.12	74	-26.88	PEAK
	H	17355	28.68	24.37	53.05	74	-20.95	PEAK
	V	11570	33.09	16.71	49.8	74	-24.20	PEAK
	V	17355	29.21	24.37	53.58	74	-20.42	PEAK
802.11n HT20-5825MHz	H	11650	32.23	16.61	48.84	74	-25.16	PEAK
	H	17475	27.61	25.01	52.62	74	-21.38	PEAK
	V	11650	34.71	16.61	51.32	74	-22.68	PEAK
	V	17475	28.00	25.01	53.01	74	-20.99	PEAK
802.11n HT40-5190MHz	H	10380	36.13	12.58	48.71	74	-25.29	PEAK
	H	15570	34.21	16.48	50.69	74	-23.31	PEAK
	V	10380	38.11	12.58	50.69	74	-23.31	PEAK
	V	15570	33.32	16.48	49.8	74	-24.20	PEAK



802.11n HT40-5230MHz	H	10460	36.95	12.66	49.61	74	-24.39	PEAK
	H	15690	35.05	16.53	51.58	74	-22.42	PEAK
	V	10460	36.63	12.66	49.29	74	-24.71	PEAK
	V	15690	32.25	16.53	48.78	74	-25.22	PEAK
802.11n HT40-5755MHz	H	11510	34.19	16.78	50.97	74	-23.03	PEAK
	H	17265	28.25	23.29	51.54	74	-22.46	PEAK
	V	11510	35.09	16.78	51.87	74	-22.13	PEAK
	V	17265	29.31	23.29	52.60	74	-21.40	PEAK
802.11n HT40-5795MHz	H	11590	32.11	16.69	48.80	74	-25.20	PEAK
	H	17385	27.33	24.73	52.06	74	-21.94	PEAK
	V	11590	34.42	16.69	51.11	74	-22.89	PEAK
	V	17385	28.22	24.73	52.95	74	-21.05	PEAK
802.11ac HT20-5180MHz	H	10360	35.06	12.56	47.62	74	-26.38	PEAK
	H	15540	33.93	16.45	50.38	74	-23.62	PEAK
	V	10360	33.97	12.56	46.53	74	-27.47	PEAK
	V	15540	35.17	16.45	51.62	74	-22.38	PEAK
802.11ac HT20-5200MHz	H	10400	34.85	12.64	47.49	74	-26.51	PEAK
	H	15600	31.38	16.53	47.91	74	-26.09	PEAK
	V	10400	33.49	12.64	46.13	74	-27.87	PEAK
	V	15600	32.02	16.53	48.55	74	-25.45	PEAK
802.11ac HT20-5240MHz	H	10480	34.32	12.68	47.00	74	-27.00	PEAK
	H	15720	32.09	16.54	48.63	74	-25.37	PEAK
	V	10480	33.33	12.68	46.01	74	-27.99	PEAK
	V	15720	34.49	16.54	51.03	74	-22.97	PEAK
802.11ac HT20-5745MHz	H	11490	32.84	16.82	49.66	74	-24.34	PEAK
	H	17235	30.62	22.93	53.55	74	-20.45	PEAK
	V	11490	32.06	16.82	48.88	74	-25.12	PEAK
	V	17235	29.13	22.93	52.06	74	-21.94	PEAK



802.11ac HT20-5785MHz	H	11570	33.74	16.71	50.45	74	-23.55	PEAK
	H	17355	29.09	24.37	53.46	74	-20.54	PEAK
	V	11570	32.13	16.71	48.84	74	-25.16	PEAK
	V	17355	28.52	24.37	52.89	74	-21.11	PEAK
802.11ac HT20-5825MHz	H	11650	32.39	16.61	49.00	74	-25.00	PEAK
	H	17475	27.26	25.01	52.27	74	-21.73	PEAK
	V	11650	33.30	16.61	49.91	74	-24.09	PEAK
	V	17475	28.71	25.01	53.72	74	-20.28	PEAK
						0		
802.11ac HT40-5190MHz	H	10380	34.04	12.58	46.62	74	-27.38	PEAK
	H	15570	35.18	16.48	51.66	74	-22.34	PEAK
	V	10380	35.43	12.58	48.01	74	-25.99	PEAK
	V	15570	32.24	16.48	48.72	74	-25.28	PEAK
802.11ac HT40-5230MHz	H	10460	34.96	12.66	47.62	74	-26.38	PEAK
	H	15690	33.01	16.53	49.54	74	-24.46	PEAK
	V	10460	35.51	12.66	48.17	74	-25.83	PEAK
	V	15690	33.64	16.53	50.17	74	-23.83	PEAK
802.11ac HT40-5755MHz	H	11510	33.14	16.78	49.92	74	-24.08	PEAK
	H	17265	27.33	23.29	50.62	74	-23.38	PEAK
	V	11510	32.46	16.78	49.24	74	-24.76	PEAK
	V	17265	28.74	23.29	52.03	74	-21.97	PEAK
802.11ac HT40-5795MHz	H	11590	33.36	16.69	50.05	74	-23.95	PEAK
	H	17385	27.46	24.73	52.19	74	-21.81	PEAK
	V	11590	31.82	16.69	48.51	74	-25.49	PEAK
	V	17385	28.33	24.73	53.06	74	-20.94	PEAK
802.11ac HT80-5210MHz	H	10420	34.32	12.62	46.94	74	-27.06	PEAK
	H	15630	33.32	16.52	49.84	74	-24.16	PEAK
	V	10420	34.27	12.62	46.89	74	-27.11	PEAK
	V	15630	32.49	16.52	49.01	74	-24.99	PEAK



802.11ac HT80-5775MHz	H	11550	32.28	16.73	49.01	74	-24.99	PEAK
	H	17325	27.46	24.01	51.47	74	-22.53	PEAK
	V	11550	30.63	16.73	47.36	74	-26.64	PEAK
	V	17325	26.65	24.01	50.66	74	-23.34	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 very low 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.

**Antenna B:****Above 1GHz:**

802.11a-5180MHz	H	10360	34.31	12.56	46.87	74	-27.13	PEAK
	H	15540	35.85	16.45	52.3	74	-21.7	PEAK
	V	10360	35.52	12.56	48.08	74	-25.92	PEAK
	V	15540	36.49	16.45	52.94	74	-21.06	PEAK
802.11a-5200 MHz	H	10400	35.67	12.64	48.31	74	-25.69	PEAK
	H	15600	35.54	16.53	52.07	74	-21.93	PEAK
	V	10400	37.12	12.64	49.76	74	-24.24	PEAK
	V	15600	35.36	16.53	51.89	74	-22.11	PEAK
802.11a-5240 MHz	H	10480	33.48	12.68	46.16	74	-27.84	PEAK
	H	15720	34.75	16.54	51.29	74	-22.71	PEAK
	V	10480	36.12	12.68	48.8	74	-25.2	PEAK
	V	15720	34.37	16.54	50.91	74	-23.09	PEAK
802.11a-5745 MHz	H	11490	33.84	16.82	50.66	74	-23.34	PEAK
	H	17235	30.72	22.93	53.65	74	-20.35	PEAK
	V	11490	34.21	16.82	51.03	74	-22.97	PEAK
	V	17235	29.58	22.93	52.51	74	-21.49	PEAK
802.11a-5785 MHz	H	11570	32.1	16.71	48.81	74	-25.19	PEAK
	H	17355	27.79	24.37	52.16	74	-21.84	PEAK
	V	11570	30.25	16.71	46.96	74	-27.04	PEAK
	V	17355	28.58	24.37	52.95	74	-21.05	PEAK
802.11a-5825 MHz	H	11650	34.12	16.61	50.73	74	-23.27	PEAK
	H	17475	27.38	25.01	52.39	74	-21.61	PEAK
	V	11650	32.72	16.61	49.33	74	-24.67	PEAK
	V	17475	28.82	25.01	53.83	74	-20.17	PEAK



802.11n HT20-5180MHz	H	10360	33.24	12.56	45.8	74	-28.2	PEAK
	H	15540	35.37	16.45	51.82	74	-22.18	PEAK
	V	10360	35.73	12.56	48.29	74	-25.71	PEAK
	V	15540	36.15	16.45	52.6	74	-21.4	PEAK
802.11n HT20-5200MHz	H	10400	34.98	12.64	47.62	74	-26.38	PEAK
	H	15600	33.44	16.53	49.97	74	-24.03	PEAK
	V	10400	36.12	12.64	48.76	74	-25.24	PEAK
	V	15600	35.91	16.53	52.44	74	-21.56	PEAK
802.11n HT20-5240MHz	H	10480	35.15	12.68	47.83	74	-26.17	PEAK
	H	15720	29.36	16.54	45.9	74	-28.1	PEAK
	V	10480	34.5	12.68	47.18	74	-26.82	PEAK
	V	15720	32.83	16.54	49.37	74	-24.63	PEAK
802.11n HT20-5745MHz	H	11490	34.95	16.82	51.77	74	-22.23	PEAK
	H	17235	29.91	22.93	52.84	74	-21.16	PEAK
	V	11570	35.83	16.71	52.54	74	-21.46	PEAK
	V	17235	28.42	22.93	51.35	74	-22.65	PEAK
802.11n HT20-5785MHz	H	11570	30.39	16.71	47.1	74	-26.9	PEAK
	H	17355	28.72	24.37	53.09	74	-20.91	PEAK
	V	11570	33.12	16.71	49.83	74	-24.17	PEAK
	V	17355	29.48	24.37	53.85	74	-20.15	PEAK
802.11n HT20-5825MHz	H	11650	32.56	16.61	49.17	74	-24.83	PEAK
	H	17475	27.71	25.01	52.72	74	-21.28	PEAK
	V	11650	34.82	16.61	51.43	74	-22.57	PEAK
	V	17475	28.37	25.01	53.38	74	-20.62	PEAK
802.11n HT40-5190MHz	H	10380	36.13	12.58	48.71	74	-25.29	PEAK
	H	15570	34.5	16.48	50.98	74	-23.02	PEAK
	V	10380	38.3	12.58	50.88	74	-23.12	PEAK
	V	15570	33.43	16.48	49.91	74	-24.09	PEAK



802.11n HT40-5230MHz	H	10460	37.4	12.66	50.06	74	-23.94	PEAK
	H	15690	35.21	16.53	51.74	74	-22.26	PEAK
	V	10460	36.23	12.66	48.89	74	-25.11	PEAK
	V	15690	32.54	16.53	49.07	74	-24.93	PEAK
802.11n HT40-5755MHz	H	11510	34.59	16.78	51.37	74	-22.63	PEAK
	H	17265	28.31	23.29	51.6	74	-22.4	PEAK
	V	11510	35.12	16.78	51.9	74	-22.1	PEAK
	V	17265	29.43	23.29	52.72	74	-21.28	PEAK
802.11n HT40-5795MHz	H	11590	31.31	16.69	48	74	-26	PEAK
	H	17385	27.4	24.73	52.13	74	-21.87	PEAK
	V	11590	34.87	16.69	51.56	74	-22.44	PEAK
	V	17385	28.2	24.73	52.93	74	-21.07	PEAK
802.11ac HT20-5180MHz	H	10360	34.79	12.56	47.35	74	-26.65	PEAK
	H	15540	34.48	16.45	50.93	74	-23.07	PEAK
	V	10360	34.05	12.56	46.61	74	-27.39	PEAK
	V	15540	35.34	16.45	51.79	74	-22.21	PEAK
802.11ac HT20-5200MHz	H	10400	34.87	12.64	47.51	74	-26.49	PEAK
	H	15600	31.69	16.53	48.22	74	-25.78	PEAK
	V	10400	33.66	12.64	46.3	74	-27.7	PEAK
	V	15600	32.01	16.53	48.54	74	-25.46	PEAK
802.11ac HT20-5240MHz	H	10480	34.46	12.68	47.14	74	-26.86	PEAK
	H	15720	32.93	16.54	49.47	74	-24.53	PEAK
	V	10480	33.15	12.68	45.83	74	-28.17	PEAK
	V	15720	34.79	16.54	51.33	74	-22.67	PEAK
802.11ac HT20-5745MHz	H	11490	32.93	16.82	49.75	74	-24.25	PEAK
	H	17235	30.76	22.93	53.69	74	-20.31	PEAK
	V	11490	32.17	16.82	48.99	74	-25.01	PEAK
	V	17235	29.22	22.93	52.15	74	-21.85	PEAK



802.11ac HT20-5785MHz	H	11570	33.86	16.71	50.57	74	-23.43	PEAK
	H	17355	29.14	24.37	53.51	74	-20.49	PEAK
	V	11570	32.27	16.71	48.98	74	-25.02	PEAK
	V	17355	28.66	24.37	53.03	74	-20.97	PEAK
802.11ac HT20-5825MHz	H	11650	32.58	16.61	49.19	74	-24.81	PEAK
	H	17475	27.3	25.01	52.31	74	-21.69	PEAK
	V	11650	33.29	16.61	49.9	74	-24.1	PEAK
	V	17475	28.76	25.01	53.77	74	-20.23	PEAK
802.11ac HT40-5190MHz	H	10380	34.12	12.58	46.7	74	-27.3	PEAK
	H	15570	35.35	16.48	51.83	74	-22.17	PEAK
	V	10380	35.57	12.58	48.15	74	-25.85	PEAK
	V	15570	32.6	16.48	49.08	74	-24.92	PEAK
802.11ac HT40-5230MHz	H	10460	35.21	12.66	47.87	74	-26.13	PEAK
	H	15690	32.66	16.53	49.19	74	-24.81	PEAK
	V	10460	35.14	12.66	47.8	74	-26.2	PEAK
	V	15690	33.77	16.53	50.3	74	-23.7	PEAK
802.11ac HT40-5755MHz	H	11510	32.37	16.78	49.15	74	-24.85	PEAK
	H	17265	27.92	23.29	51.21	74	-22.79	PEAK
	V	11510	32.85	16.78	49.63	74	-24.37	PEAK
	V	17265	28.2	23.29	51.49	74	-22.51	PEAK
802.11ac HT40-5795MHz	H	11590	33.17	16.69	49.86	74	-24.14	PEAK
	H	17385	27.62	24.73	52.35	74	-21.65	PEAK
	V	11590	31.8	16.69	48.49	74	-25.51	PEAK
	V	17385	28.35	24.73	53.08	74	-20.92	PEAK
802.11ac HT80-5210MHz	H	10420	34.16	12.62	46.78	74	-27.22	PEAK
	H	15630	33.94	16.52	50.46	74	-23.54	PEAK
	V	10420	34.52	12.62	47.14	74	-26.86	PEAK
	V	15630	32.76	16.52	49.28	74	-24.72	PEAK



802.11ac HT80-5775MHz	H	11550	33.11	16.73	49.84	74	-24.16	PEAK
	H	17325	27.45	24.01	51.46	74	-22.54	PEAK
	V	11550	30.78	16.73	47.51	74	-26.49	PEAK
	V	17325	26.54	24.01	50.55	74	-23.45	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.

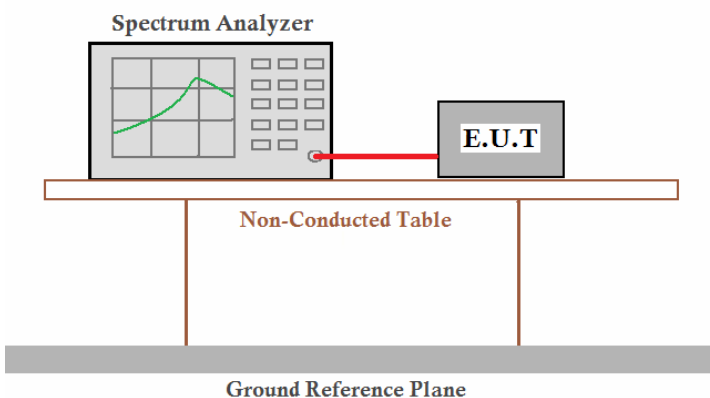
No any other emissions level very low which are attenuated less than 20dB below the limit.

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.



8. Bandwidth Measurement Data

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General UNII Test Procedures New Rules v01
Limit:	N/A (Band I)
	>500KHz(Band IV)
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer, shown with a green trace on its screen, is connected to an E.U.T. (Equipment Under Test) by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a table labeled 'Non-Conducted Table'. This table is supported by two vertical legs. Below the table, a thick grey horizontal bar represents the 'Ground Reference Plane'.
Test procedure:	According to KDB 789033 D02 General UNII Test Procedures New Rules v01.
Test Instruments:	Refer to section 5.10 f & section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

**8.1 Test Result and Data**

Antenna A:

CH. No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)			99% Occupied Bandwidth (MHz)		
		802.11a	802.11n (HT20)	802.11ac (VHT20)	802.11a	802.11n (HT20)	802.11ac (VHT20)
36	5180.00	25.26	25.26	25.01	16.52	17.72	17.67
40	5200.00	23.36	26.06	24.66	16.57	17.67	17.62
48	5240.00	22.96	26.51	24.21	16.62	17.67	17.62
CH. No.	Frequency (MHz)	6dB Occupied Bandwidth (MHz)			99% Occupied Bandwidth (MHz)		
		802.11a	802.11n (HT20)	802.11ac (VHT20)	802.11a	802.11n (HT20)	802.11ac (VHT20)
149	5745.00	15.32	15.92	15.87	16.37	17.57	17.57
157	5785.00	15.47	15.62	15.37	16.47	17.57	17.57
165	5825.00	15.62	15.32	15.47	16.37	17.57	17.62

CH. No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(VHT40)	802.11n(HT40)	802.11ac(VHT40)
38	5190.00	43.63	43.93	36.34	36.14
46	5230.00	43.93	43.53	36.24	36.24
CH. No.	Frequency (MHz)	6B Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(VHT40)	802.11n(HT40)	802.11ac(VHT40)
151	5755.00	35.28	35.19	35.94	35.94
159	5795.00	35.19	35.19	36.02	35.94



CH. No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
		802.11ac(VHT80)	802.11ac(VHT80)
42	5210	90.45	75.67
CH. No.	Frequency (MHz)	6dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
		802.11ac(VHT80)	802.11ac(VHT80)
155	5775	75.47	75.07

Antenna B:

CH. No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)			99% Occupied Bandwidth (MHz)		
		802.11a	802.11n (HT20)	802.11ac (VHT20)	802.11a	802.11n (HT20)	802.11ac (VHT20)
36	5180.00	25.14	25.18	24.69	16.27	17.44	17.34
40	5200.00	23.24	25.98	24.34	16.32	17.39	17.29
48	5240.00	22.84	26.43	23.89	16.37	17.32	17.24
CH. No.	Frequency (MHz)	6dB Occupied Bandwidth (MHz)			99% Occupied Bandwidth (MHz)		
		802.11a	802.11n (HT20)	802.11ac (VHT20)	802.11a	802.11n (HT20)	802.11ac (VHT20)
149	5745.00	15.22	15.84	15.55	16.12	17.29	17.24
157	5785.00	15.35	15.54	15.05	16.22	17.29	17.24
165	5825.00	15.51	15.24	15.15	16.12	17.29	17.29

CH. No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(VHT40)	802.11n(HT40)	802.11ac(VHT40)
38	5190.00	43.51	43.85	36.02	35.89
46	5230.00	43.81	43.45	35.92	35.99
CH. No.	Frequency (MHz)	6B Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(VHT40)	802.11n(HT40)	802.11ac(VHT40)
151	5755.00	35.16	35.11	35.62	35.69
159	5795.00	35.07	35.11	35.7	35.69

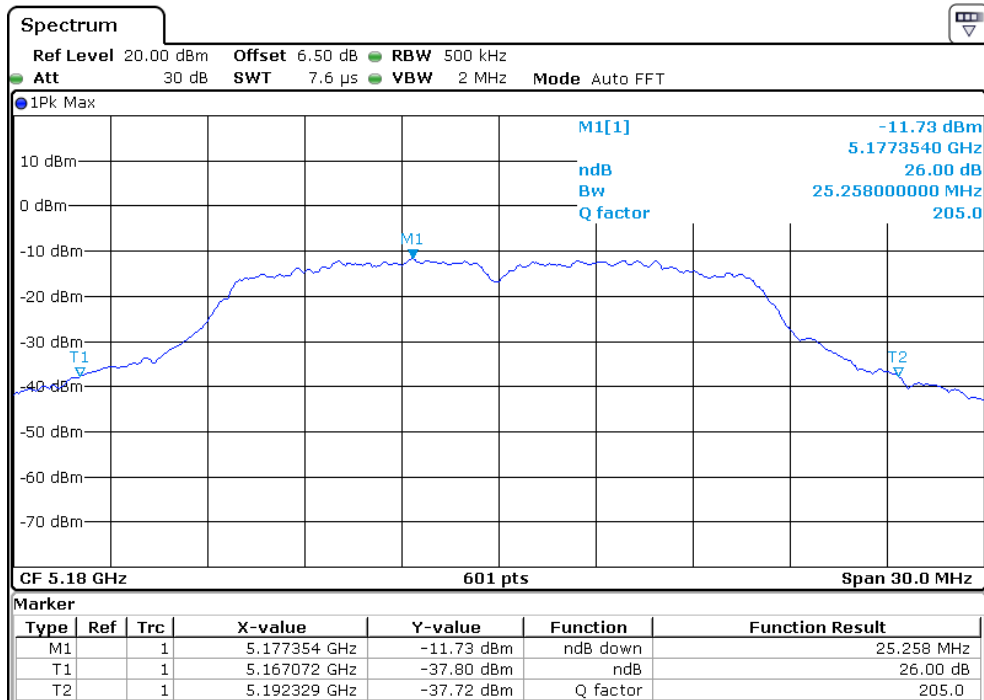


CH. No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
		802.11ac(VHT80)	802.11ac(VHT80)
42	5210	90.36	75.56
CH. No.	Frequency (MHz)	6dB Occupied Bandwidth (MHz) 802.11ac(VHT80)	99% Occupied Bandwidth (MHz) 802.11ac(VHT80)
155	5775	75.33	75.03

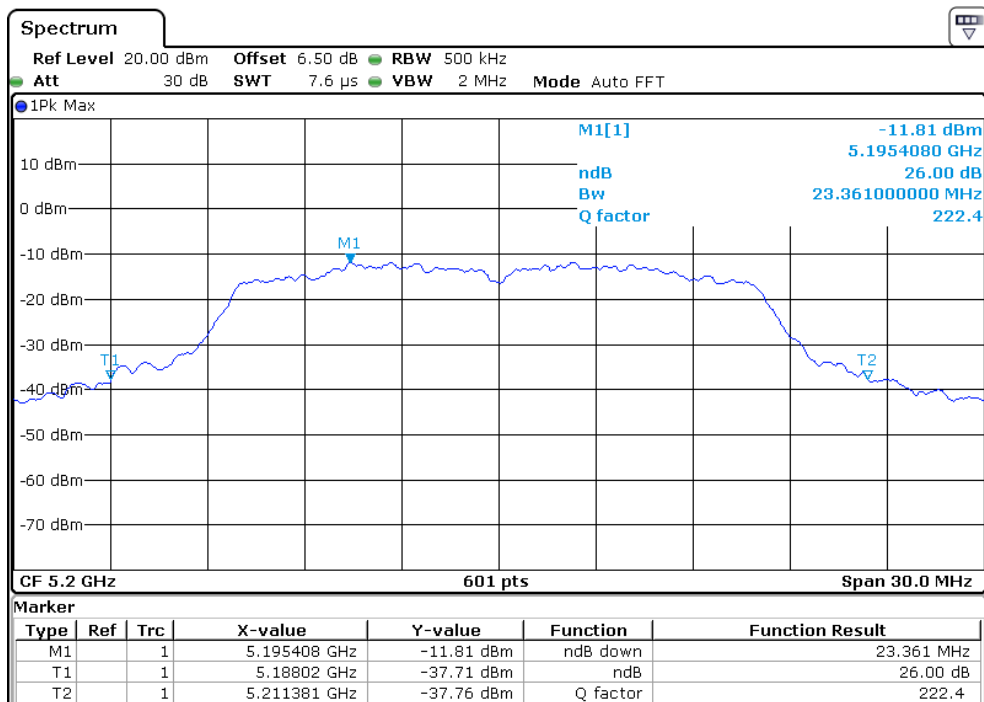
Note: The worst data is Antenna A, only shown Antenna A Plot.



26dB BW 802.11a Channel: 36

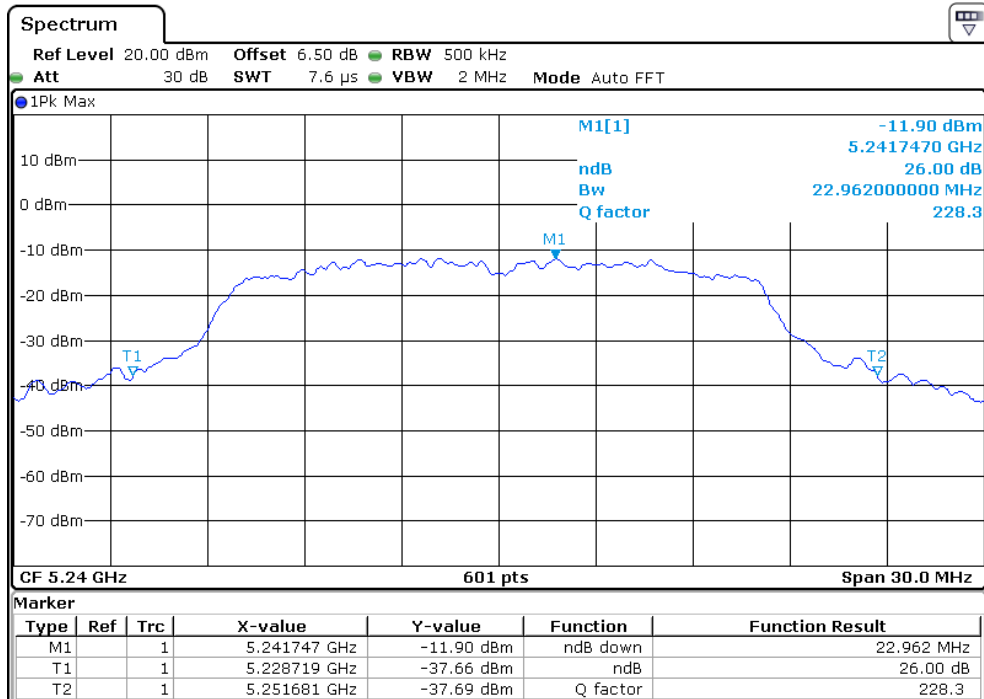


Channel: 40



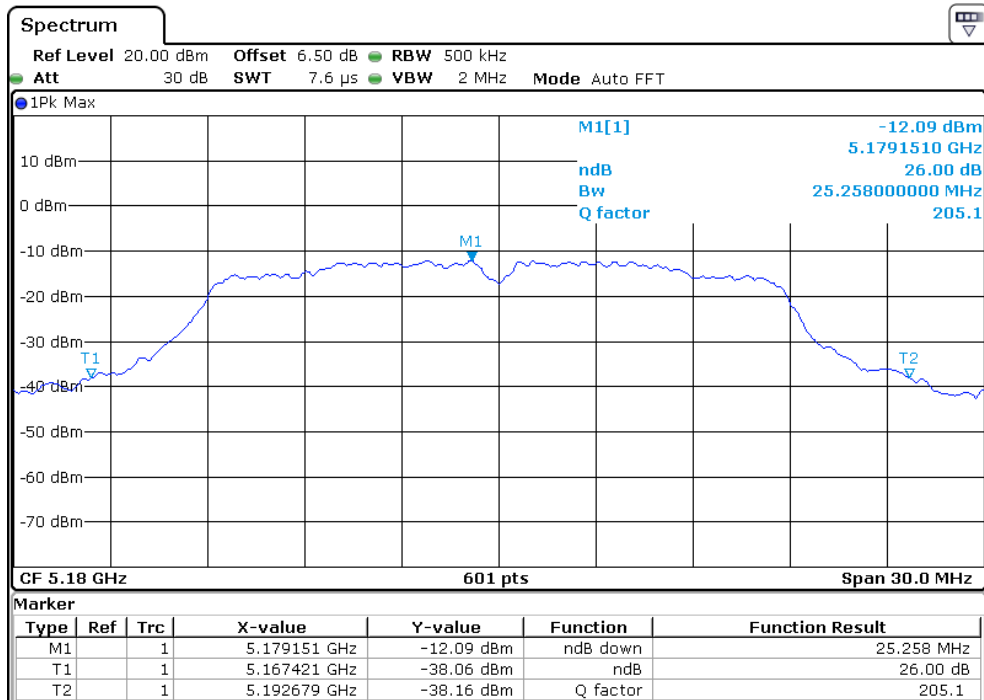


Channel: 48

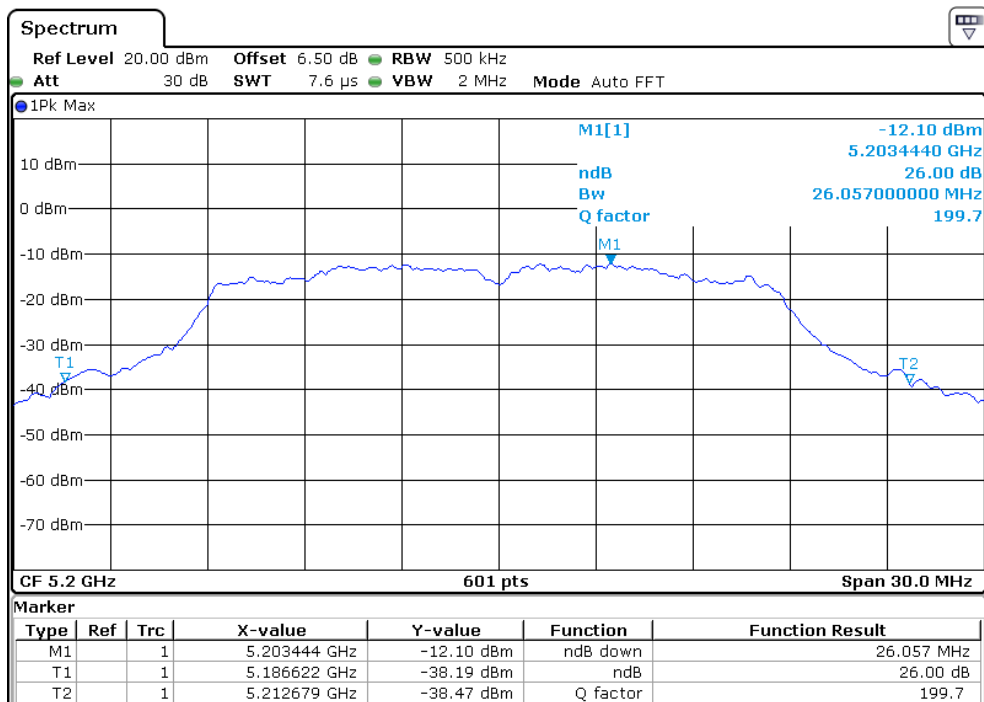




26dB BW 802.11n20 Channel: 36

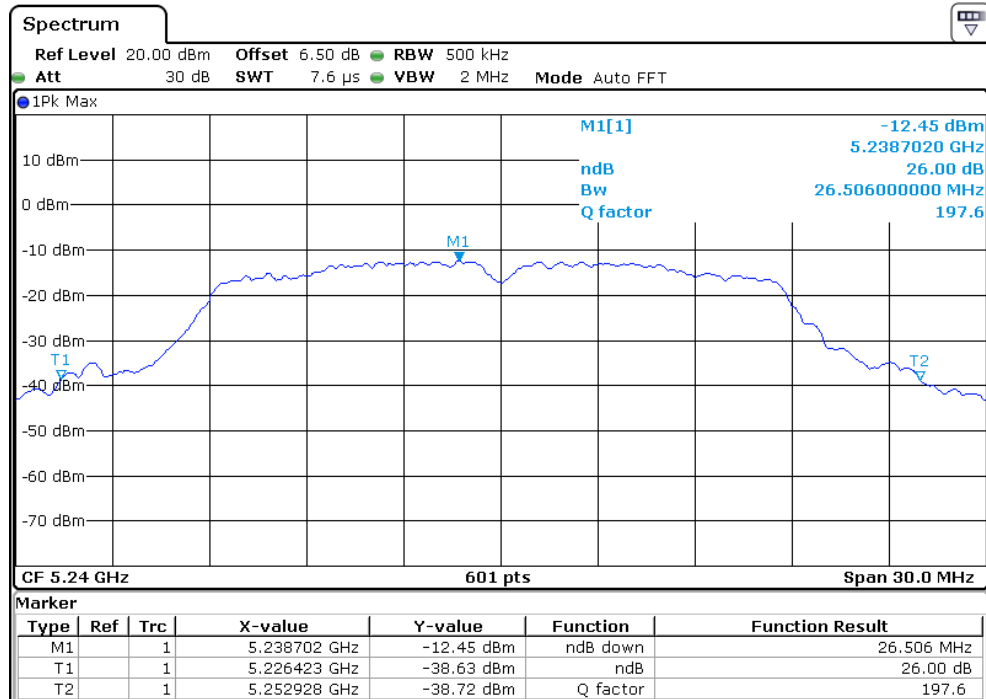


Channel: 40



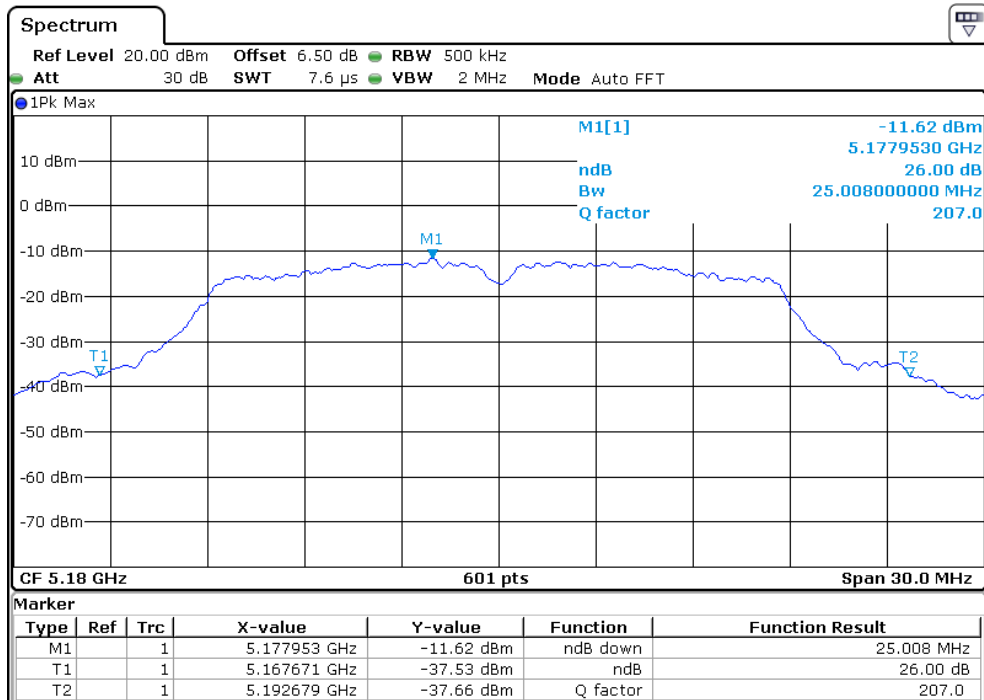


Channel: 48

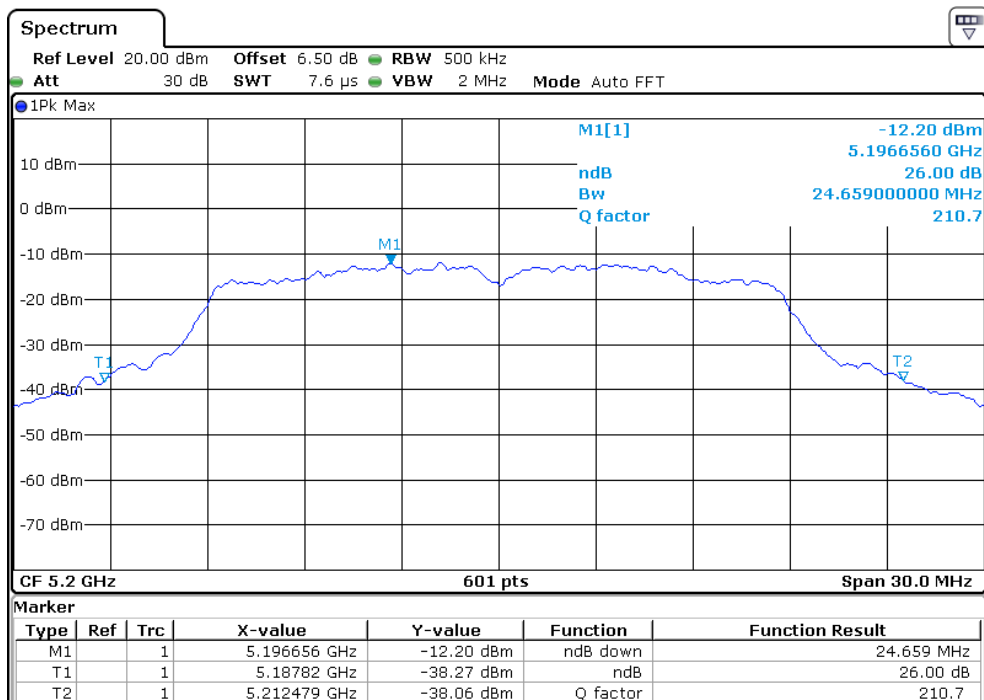




802.11ac20 Channel: 36

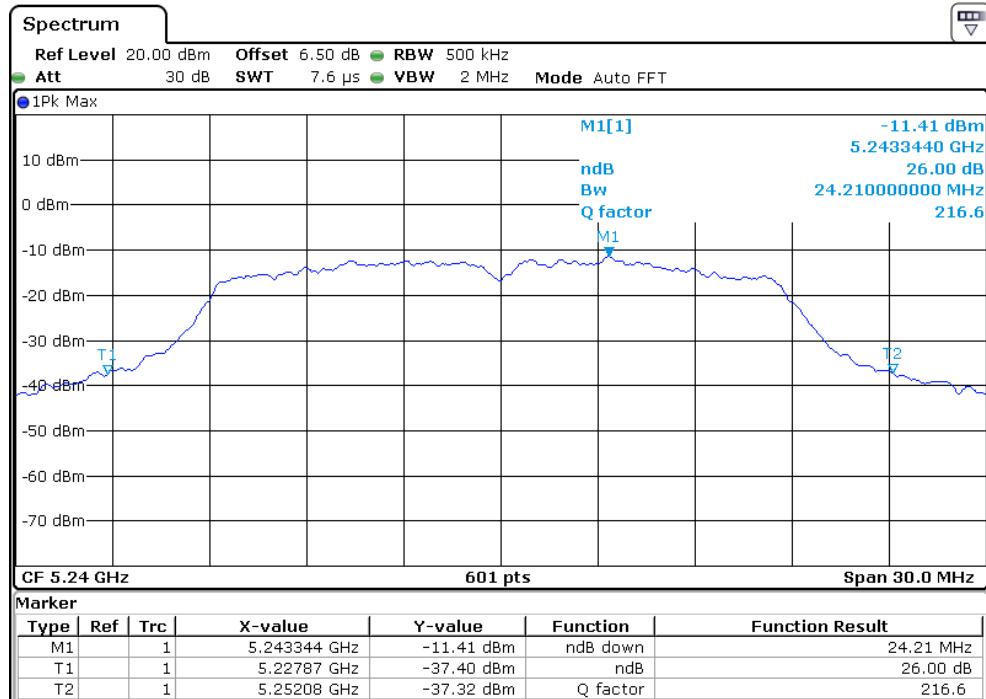


Channel: 40





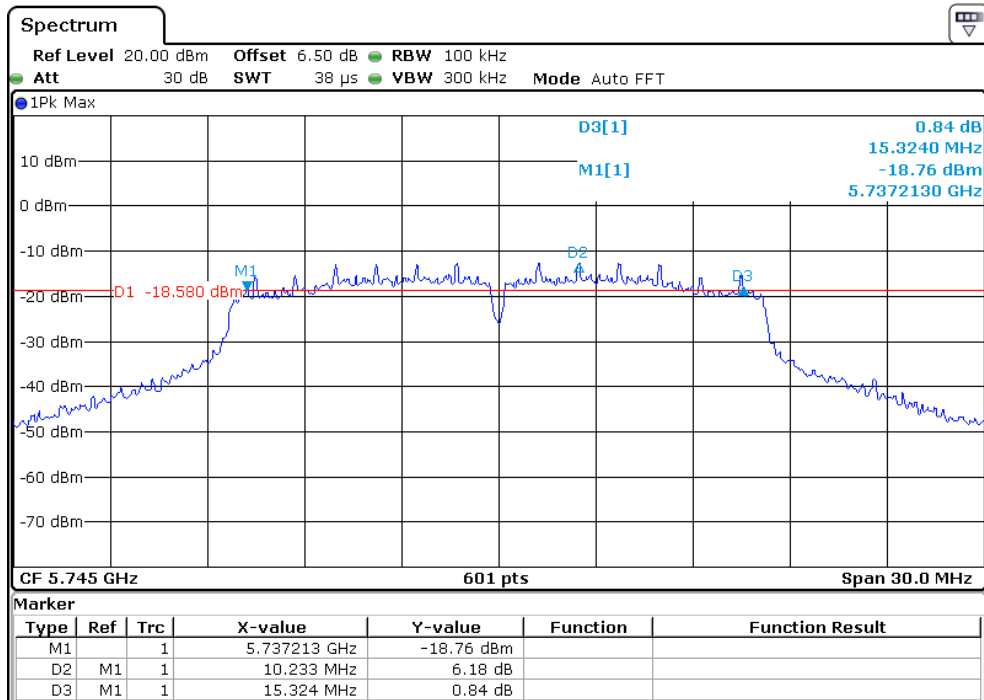
Channel: 48



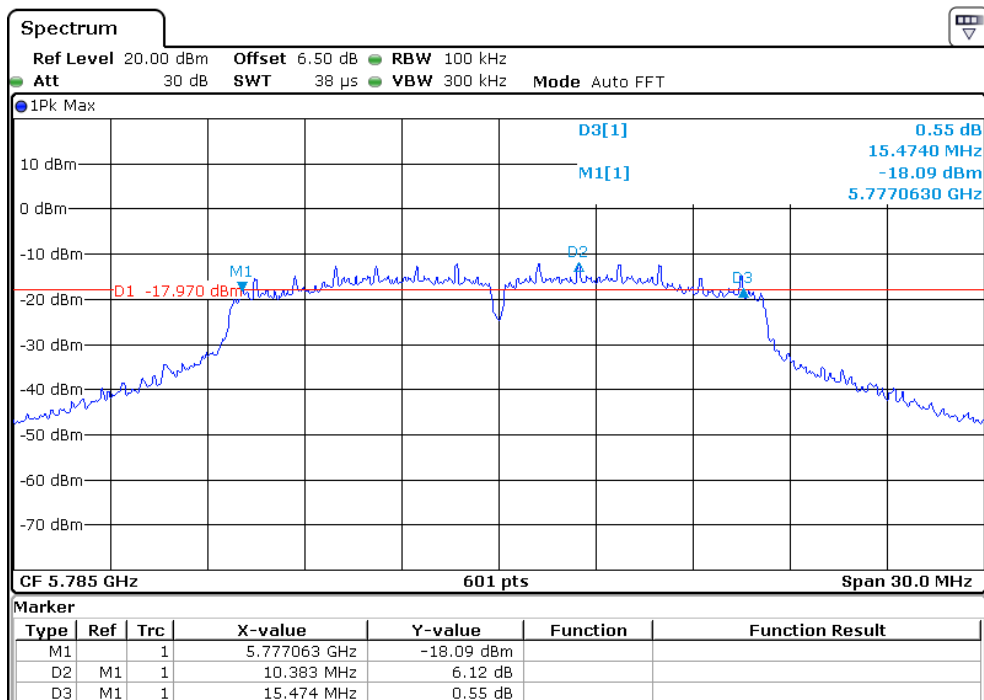


6dB BW 802.11a

Channel: 149

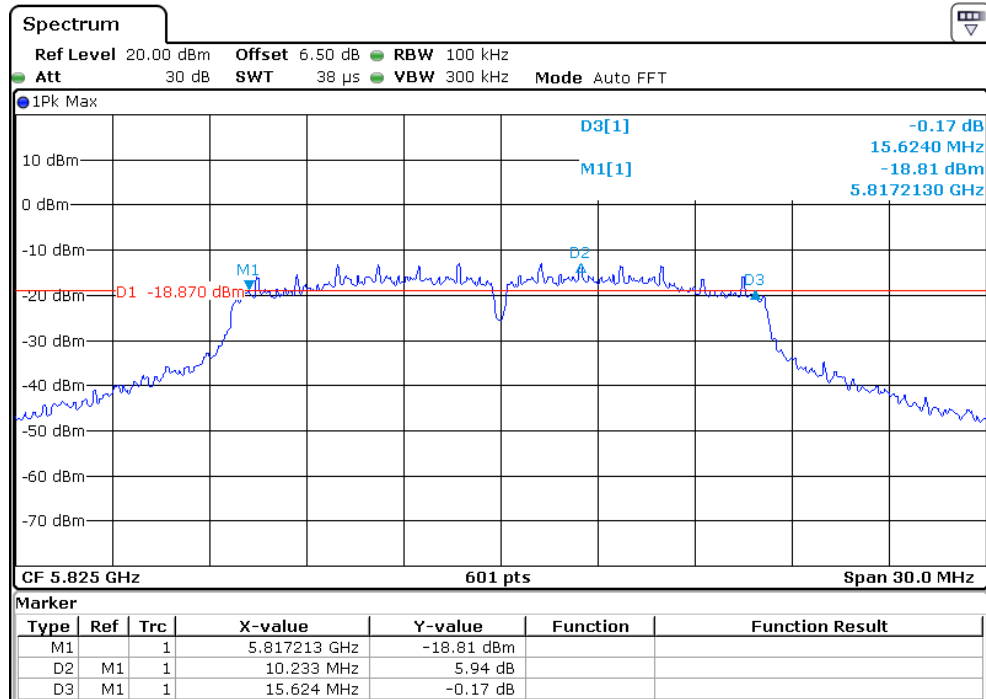


Channel: 157





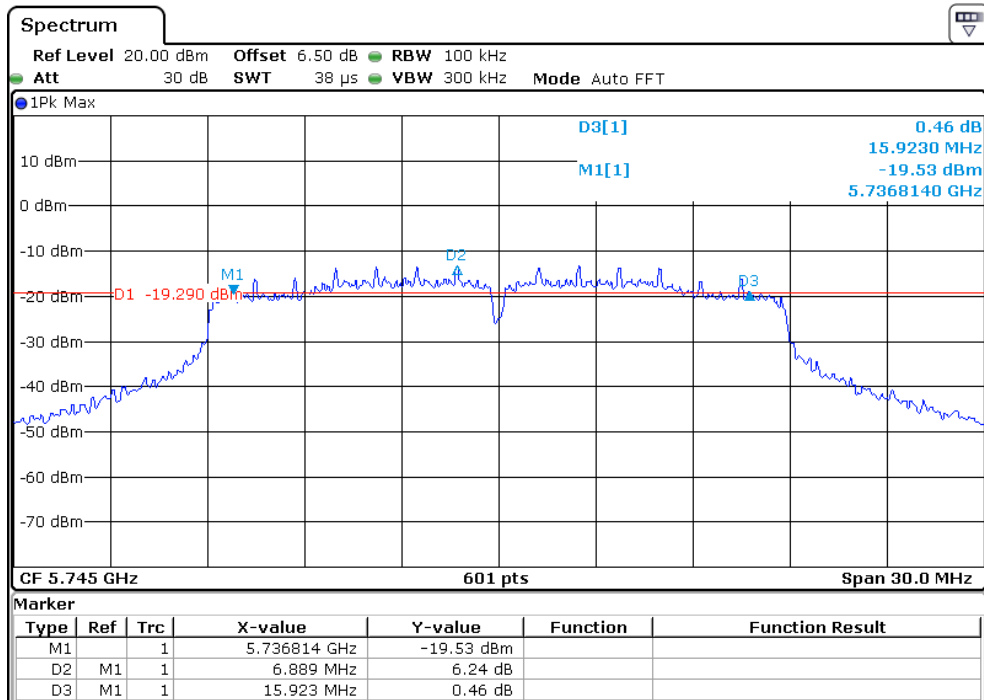
Channel: 165



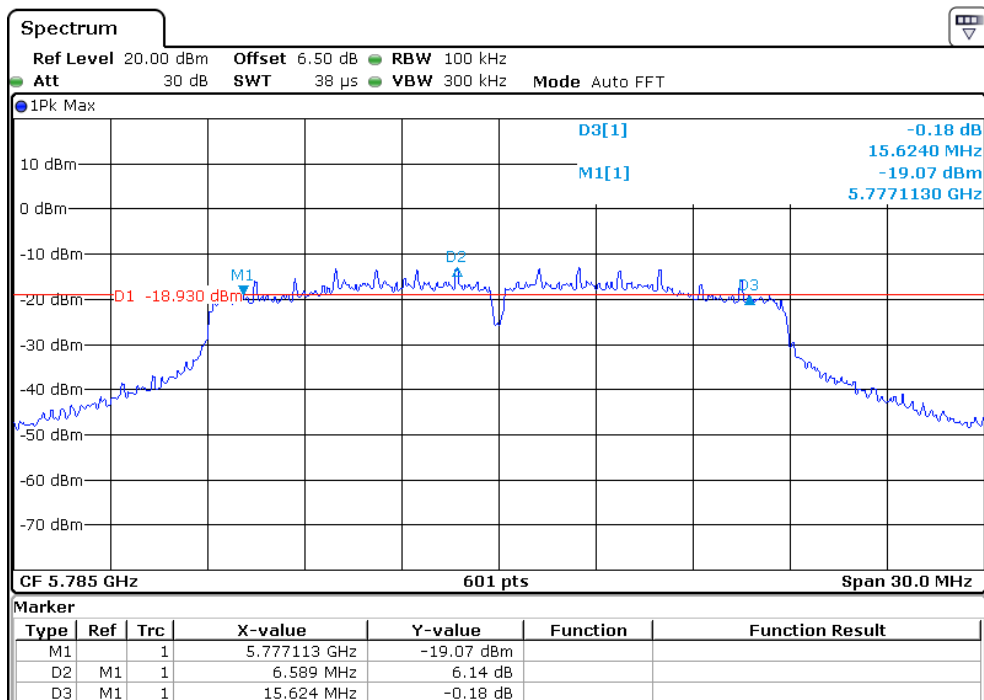


6dB BW 802.11n20

Channel: 149

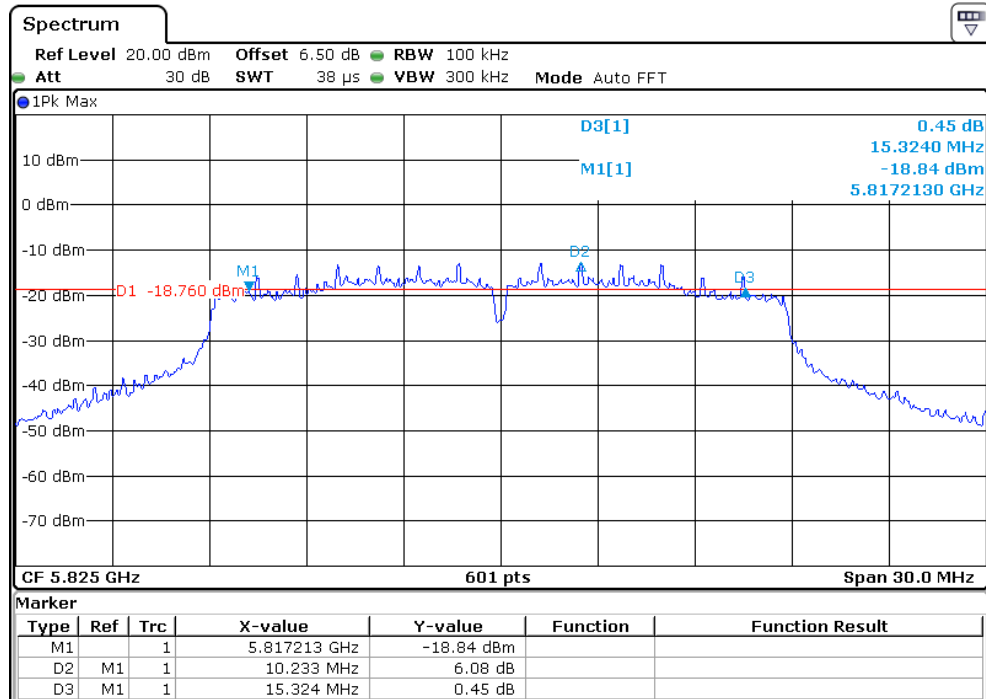


Channel: 157



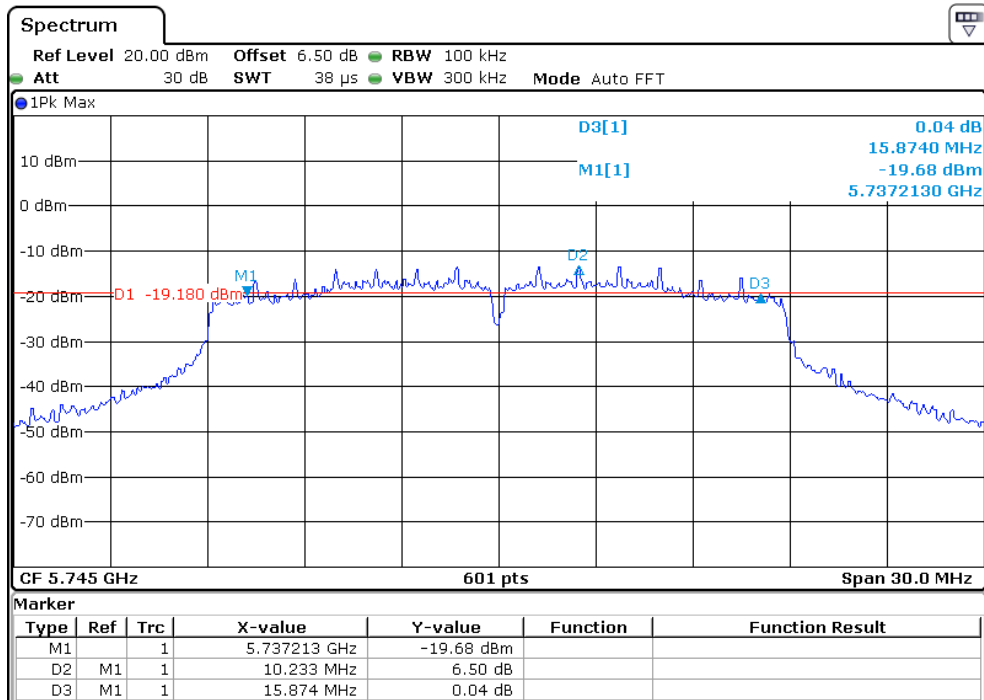


Channel: 165

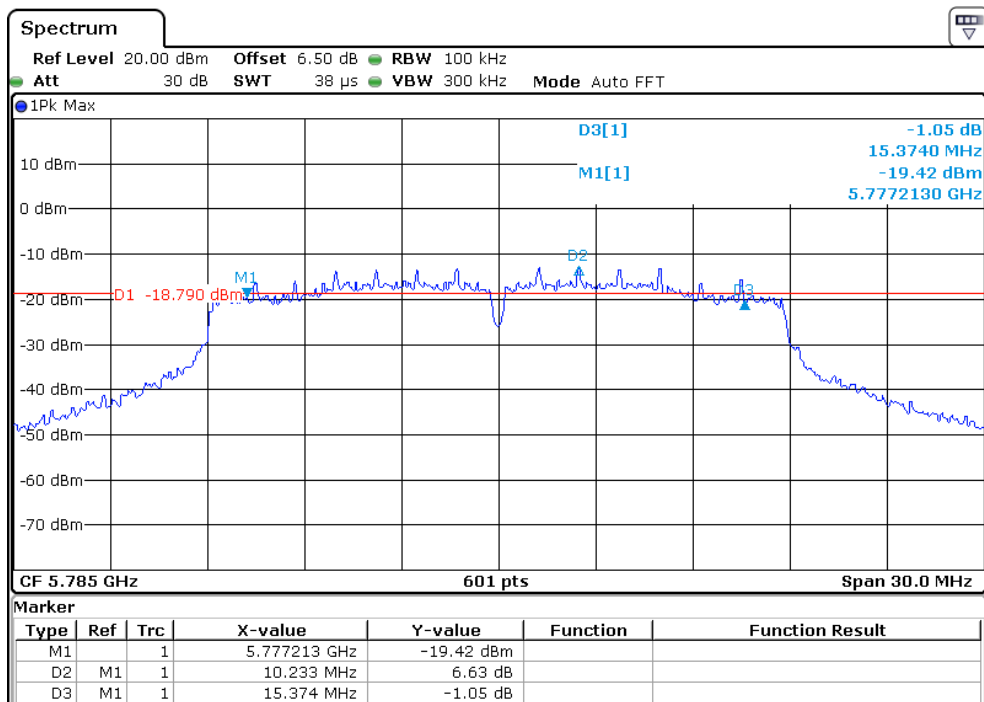




6dB BW 802.11ac20 Channel: 149

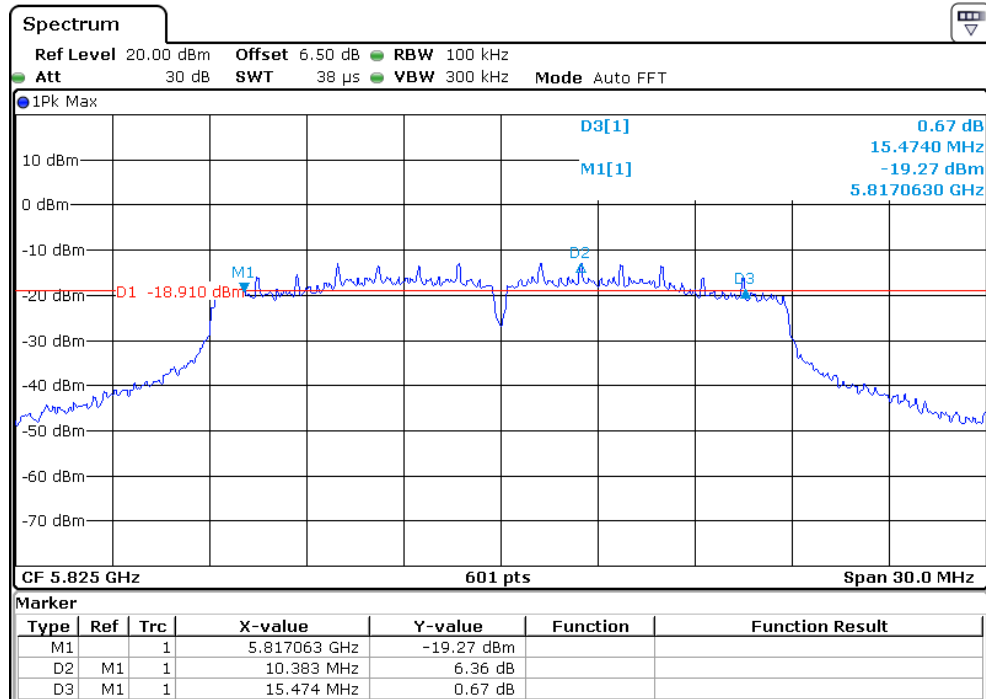


Channel: 157



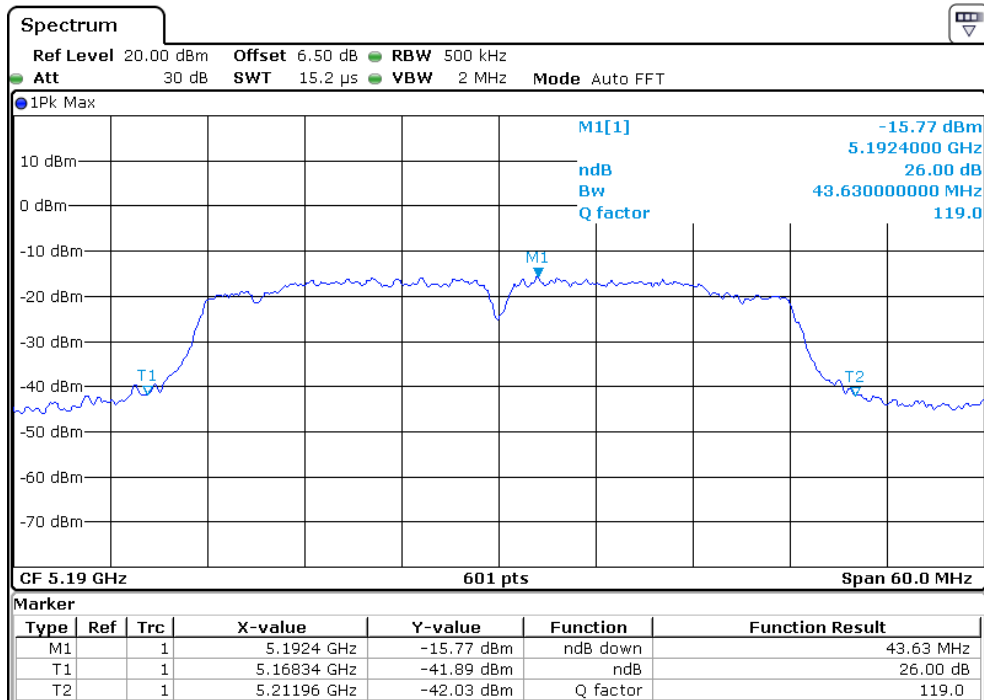


Channel: 165

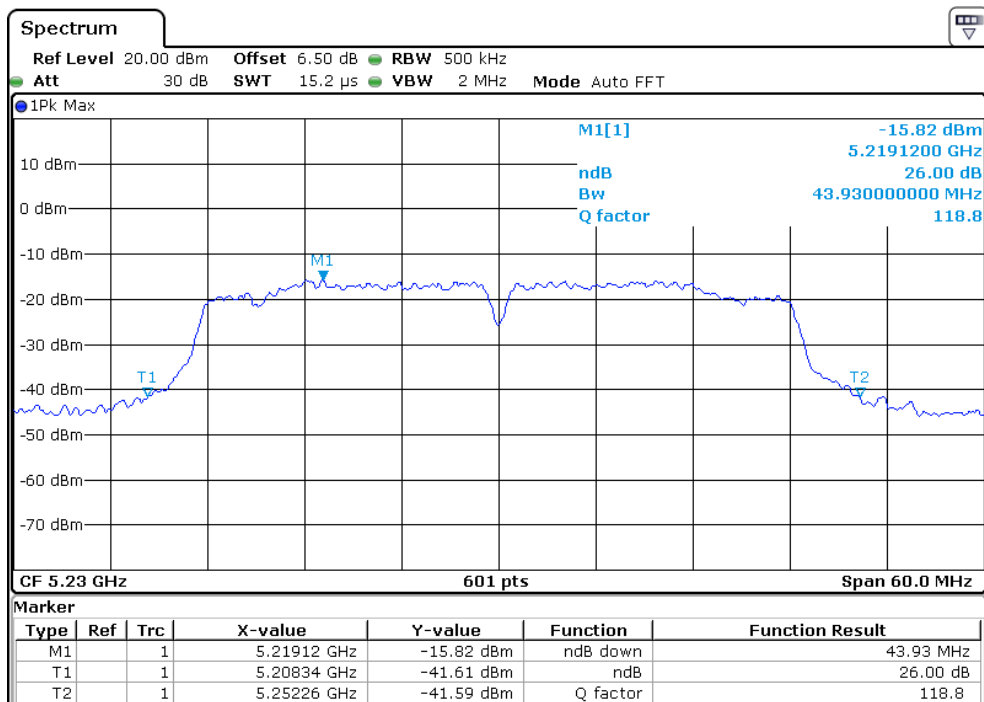




26dB BW 802.11n40 Channel: 38



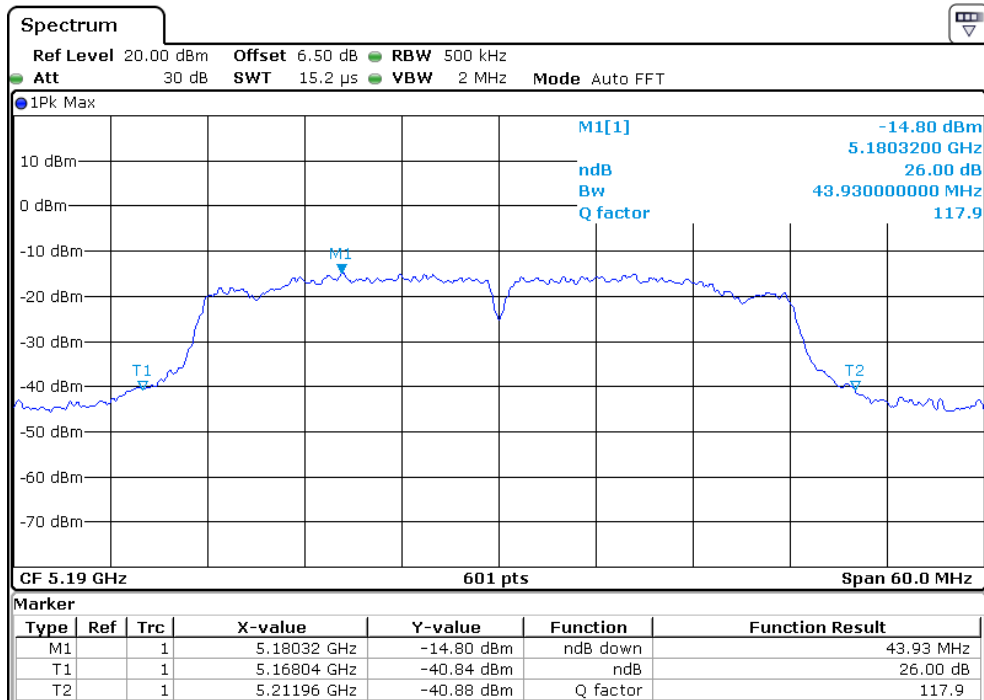
Channel: 46



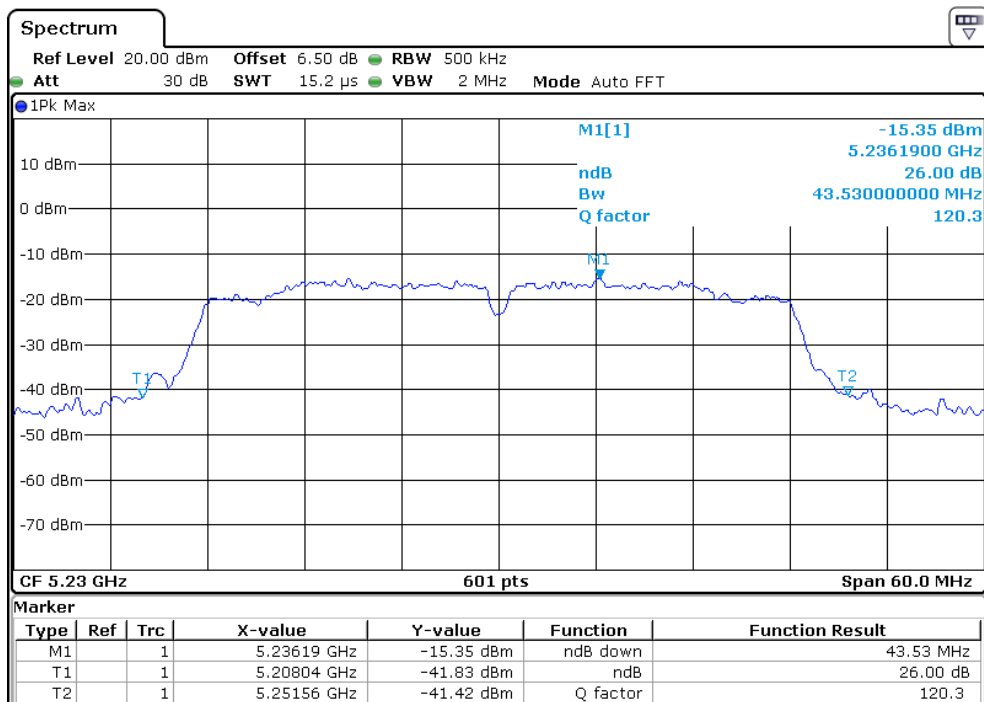


26dB BW 802.11ac40

Channel: 38



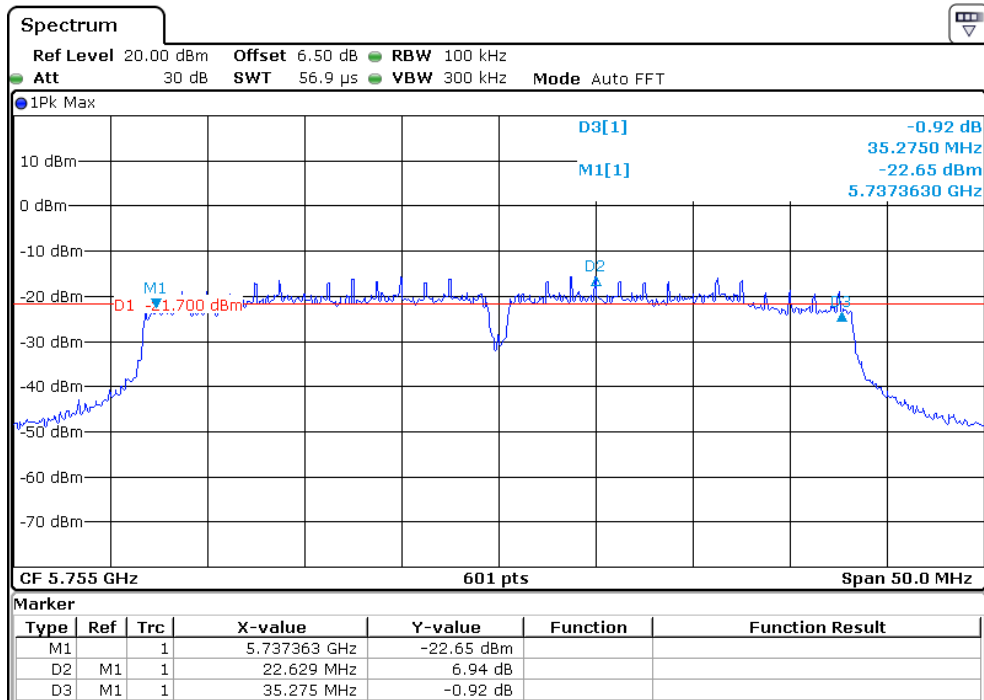
Channel: 46



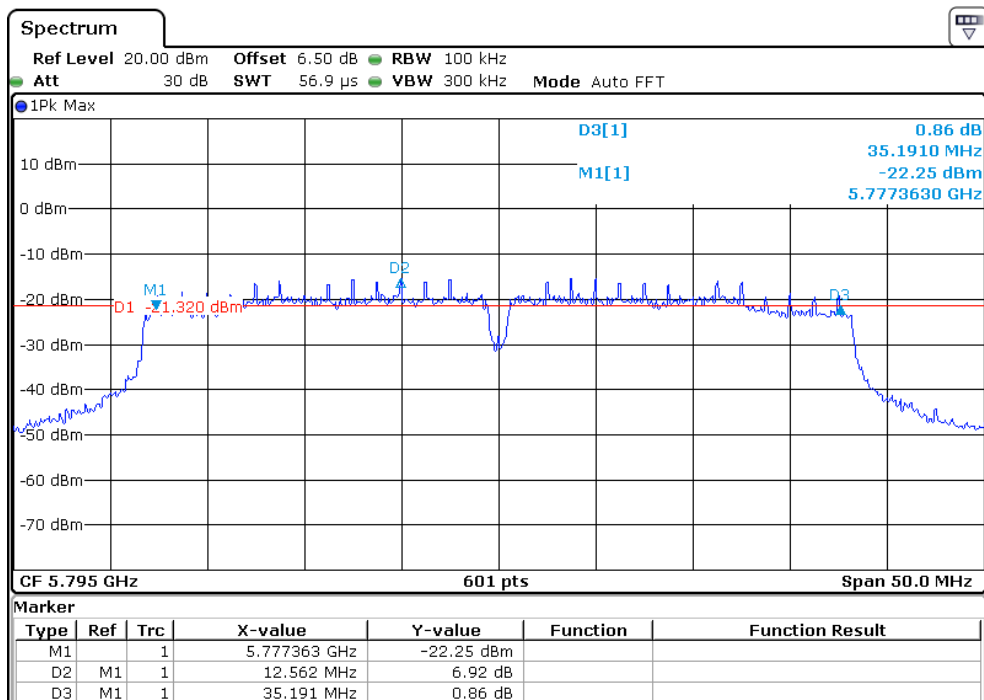


6dB BW 802.11n40

Channel: 151



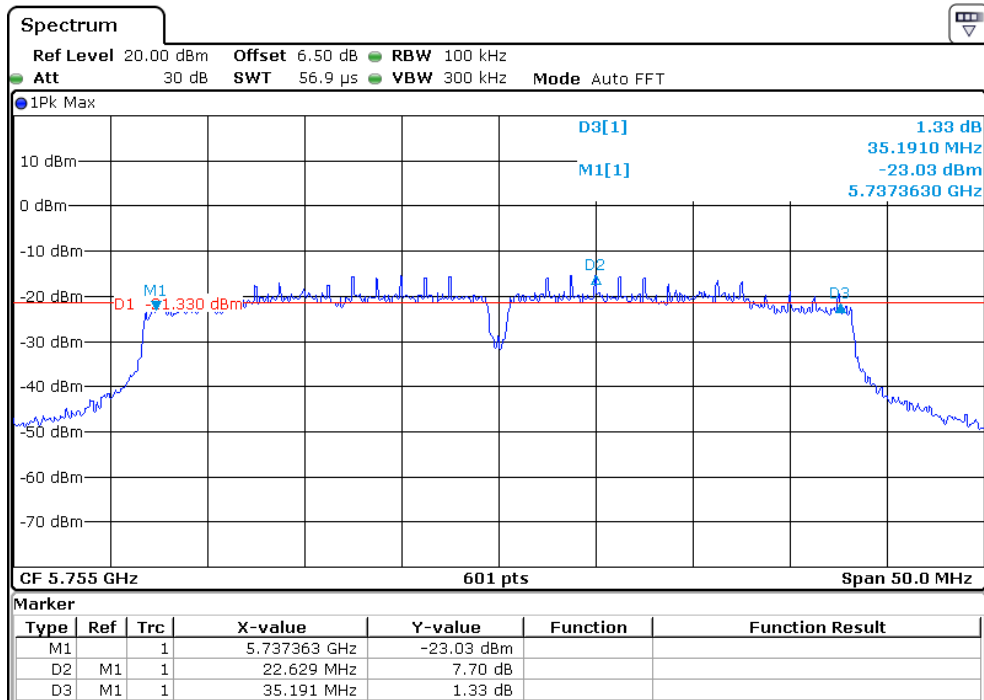
Channel: 159



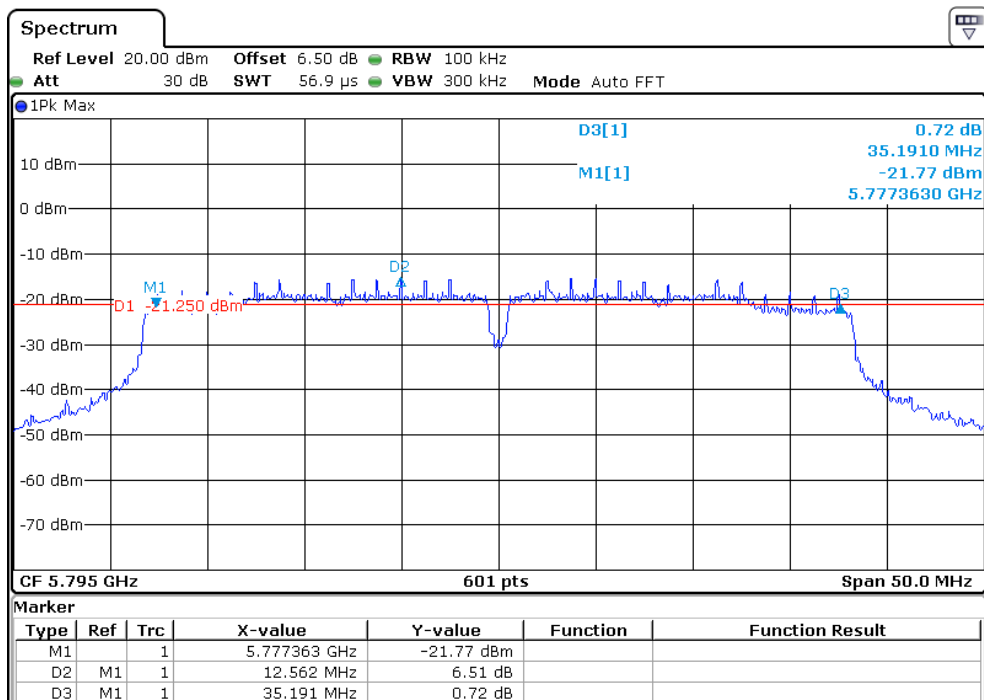


6dB BW 802.11ac40

Channel: 151

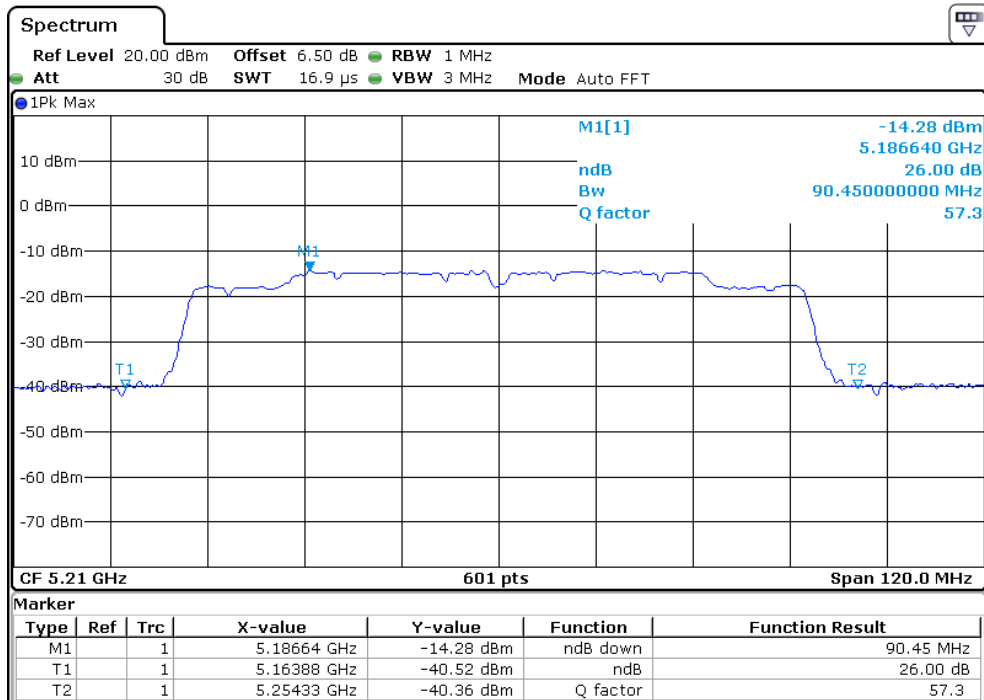


Channel: 159

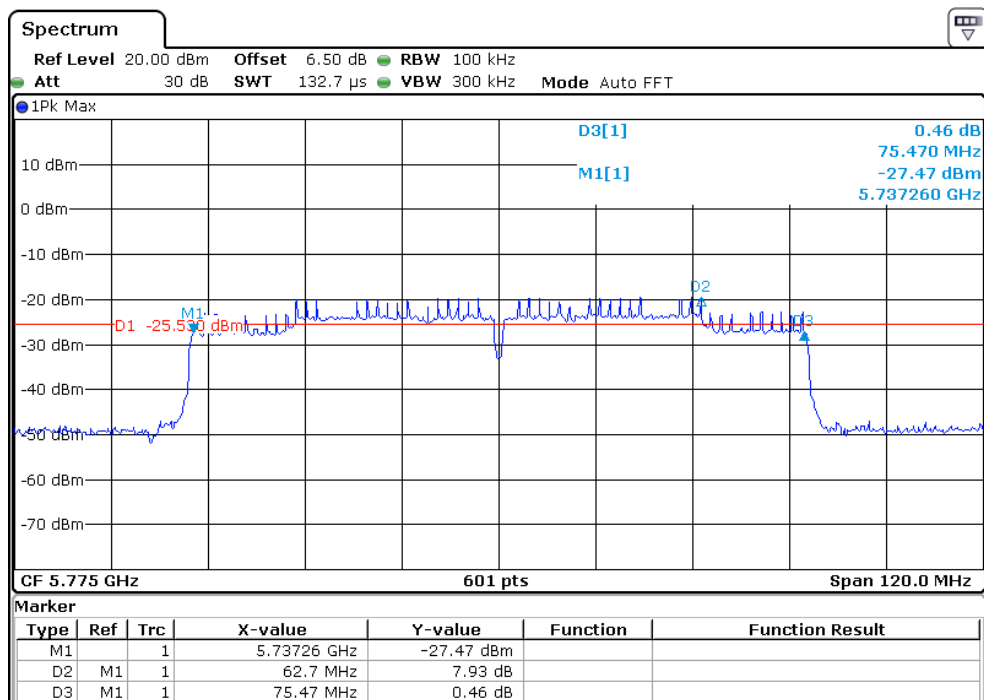




26dB BW 802.11ac80 Channel:42



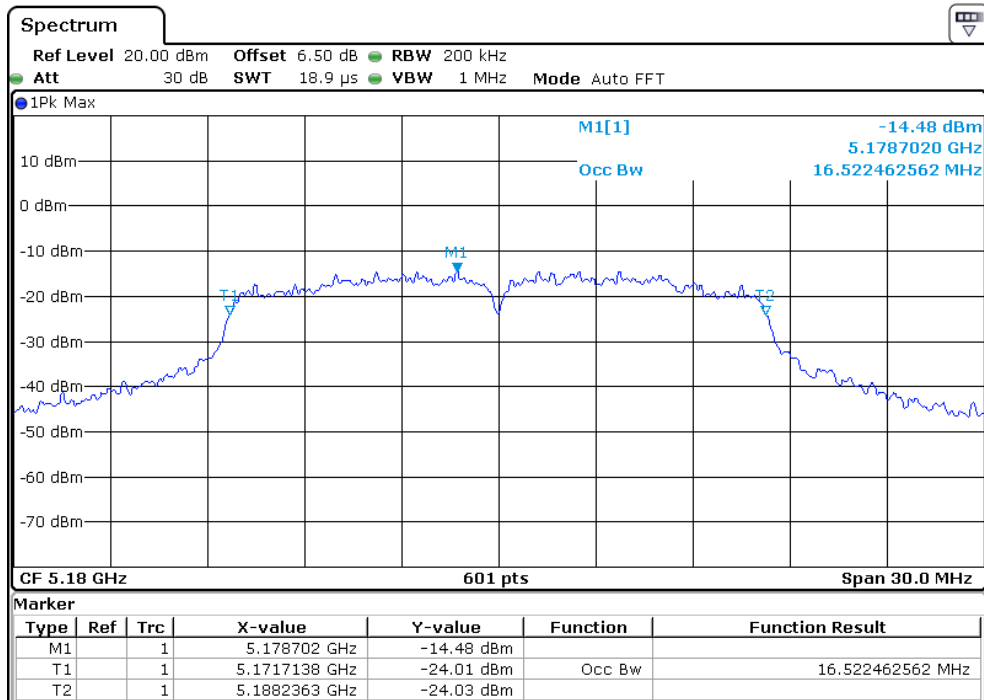
6dB BW 802.11ac80 Channel: 155



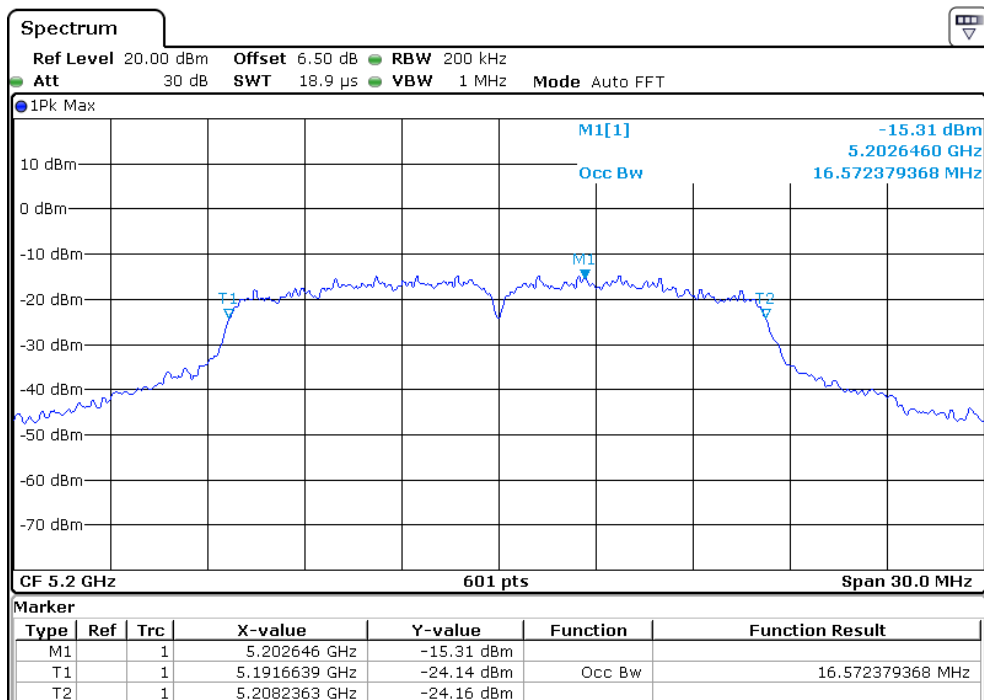


99% OBW 802.11a

Channel: 36

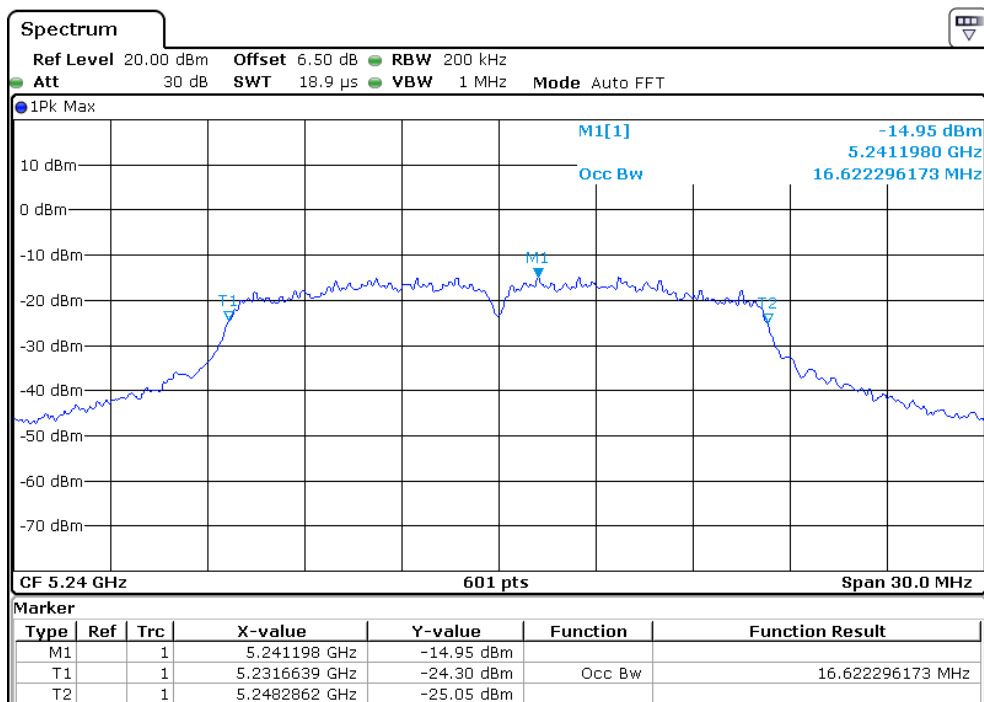


Channel: 40





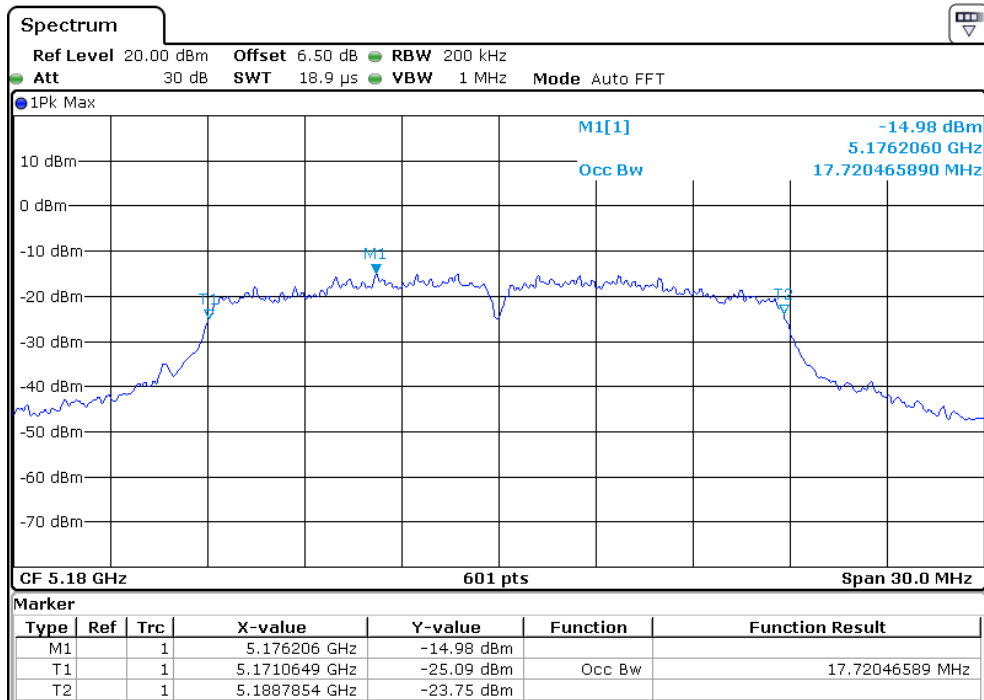
Channel: 48



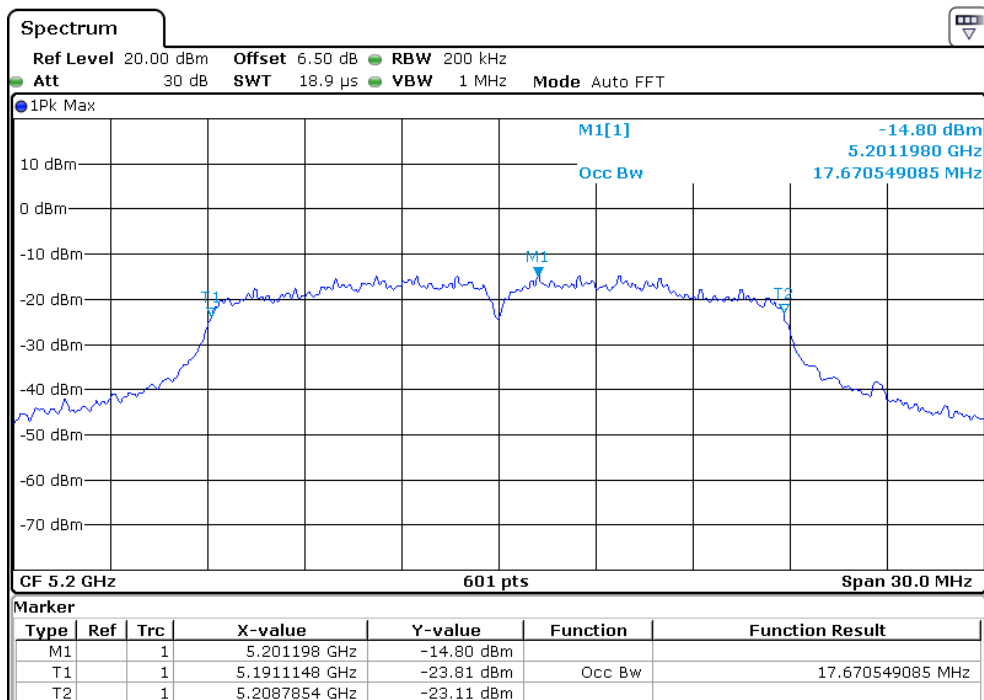


99% OBW 802.11n20

Channel: 36

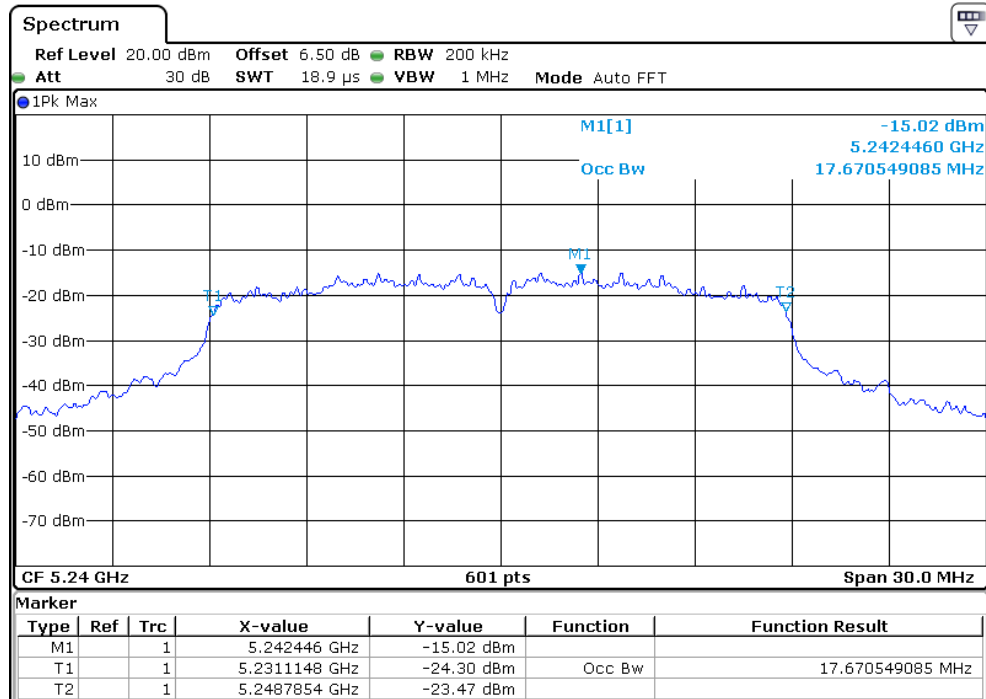


Channel: 40



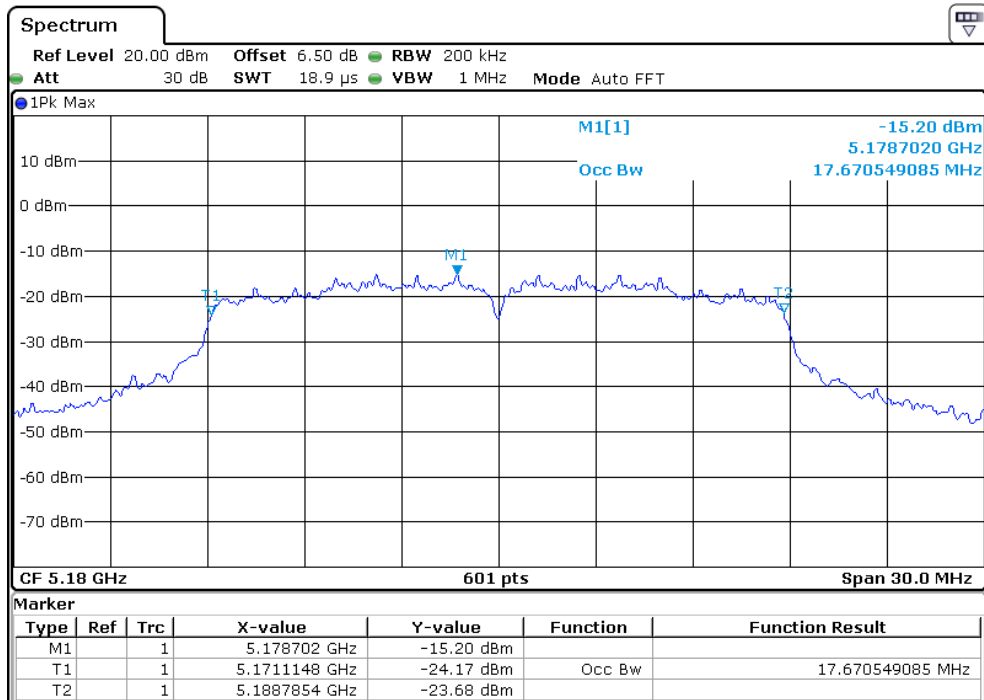


Channel: 48

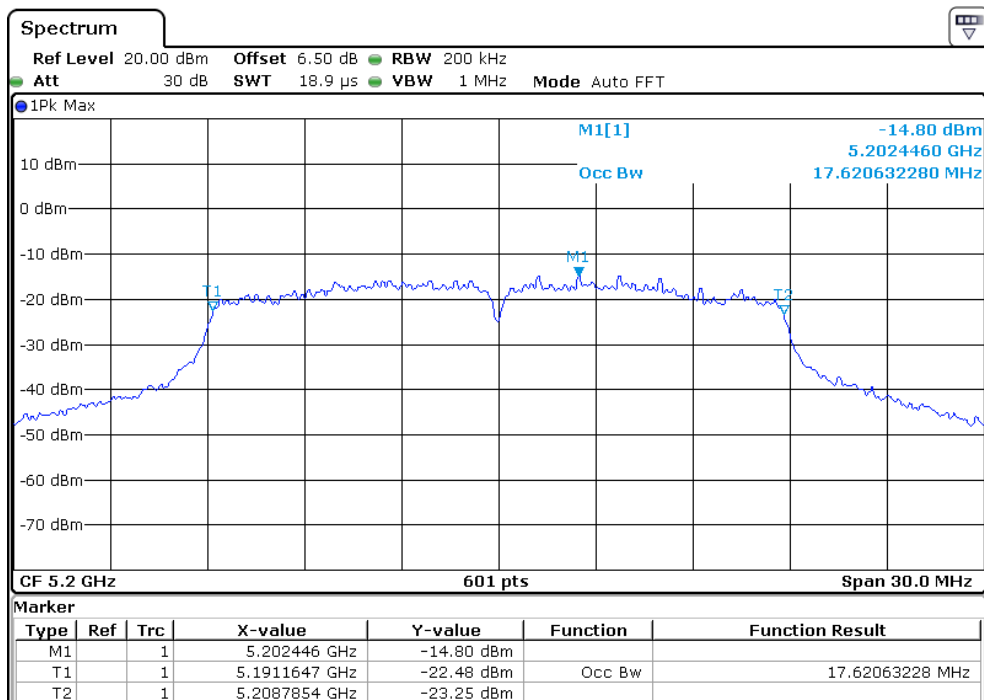




99% OBW 802.11ac20 Channel: 36

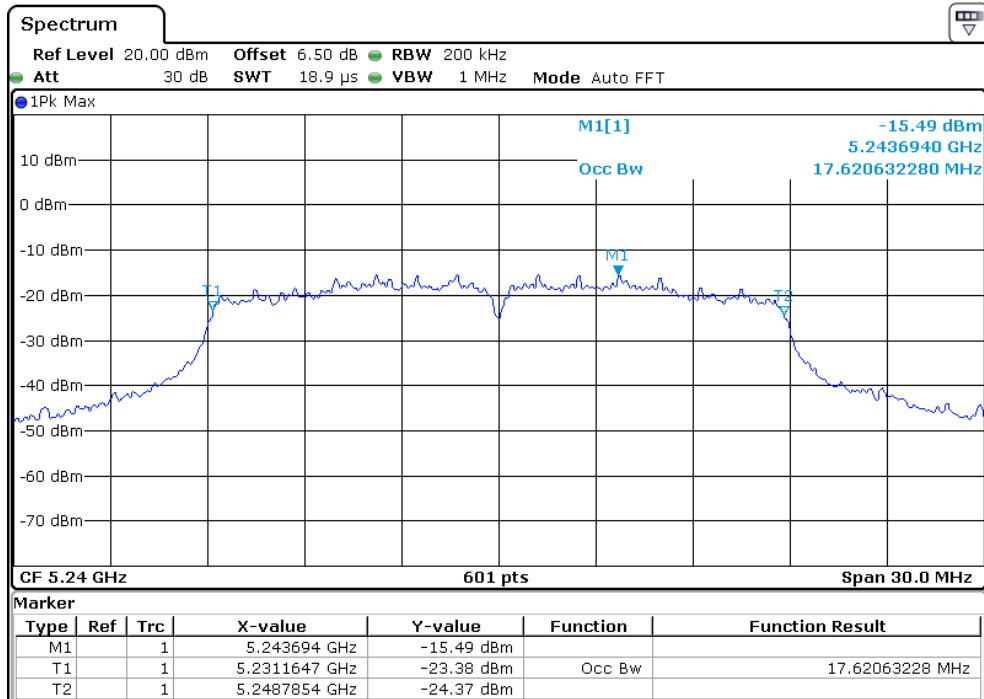


Channel: 40



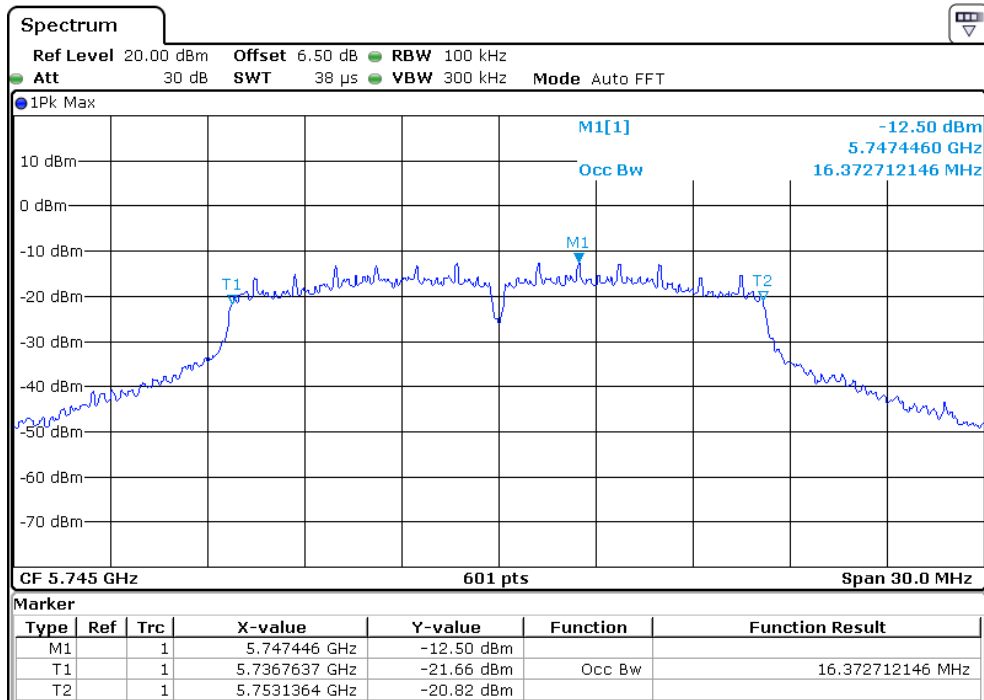


Channel: 48

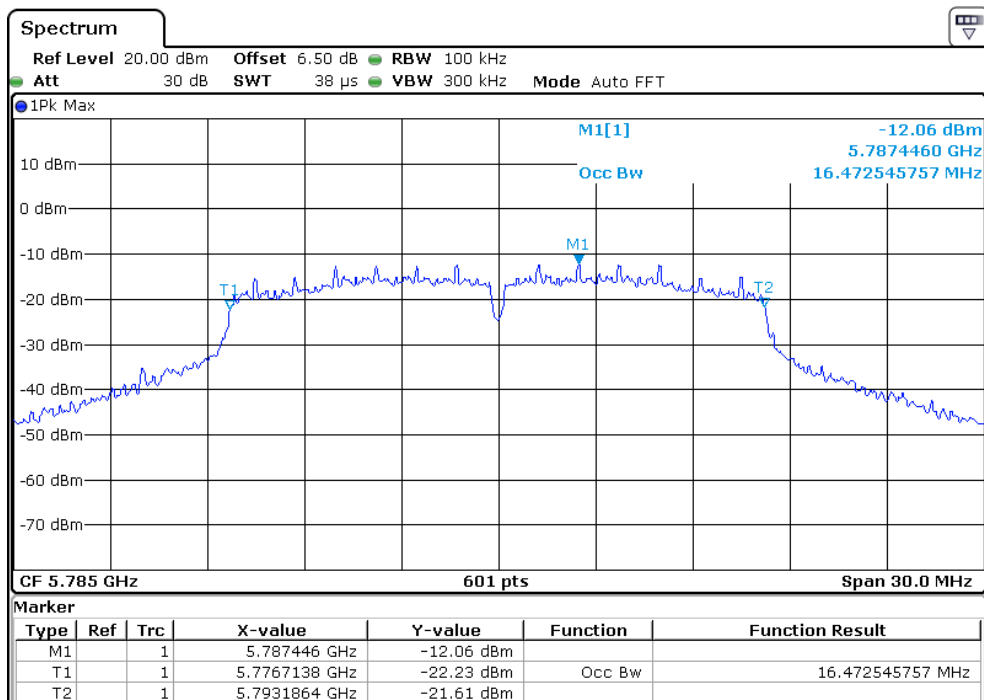




99% OBW 802.11a Channel: 149

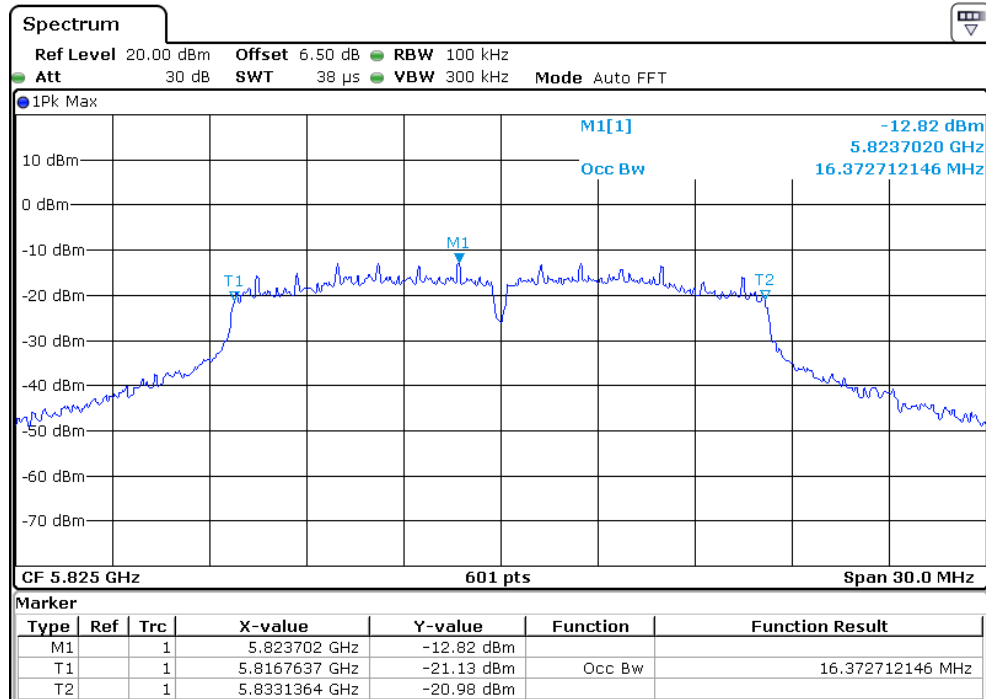


Channel: 157





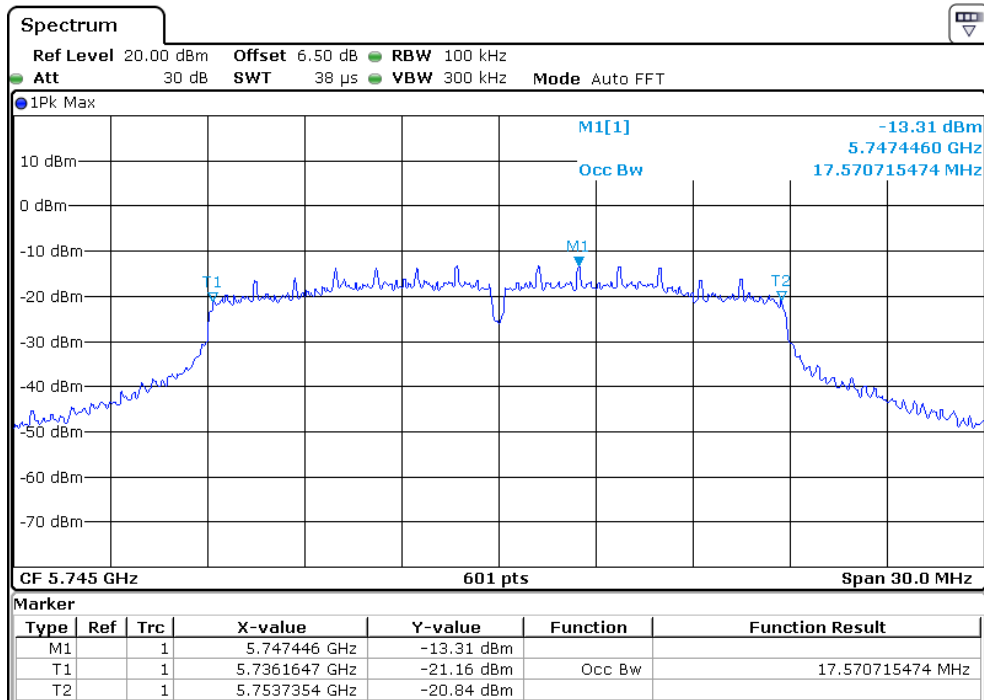
Channel: 165



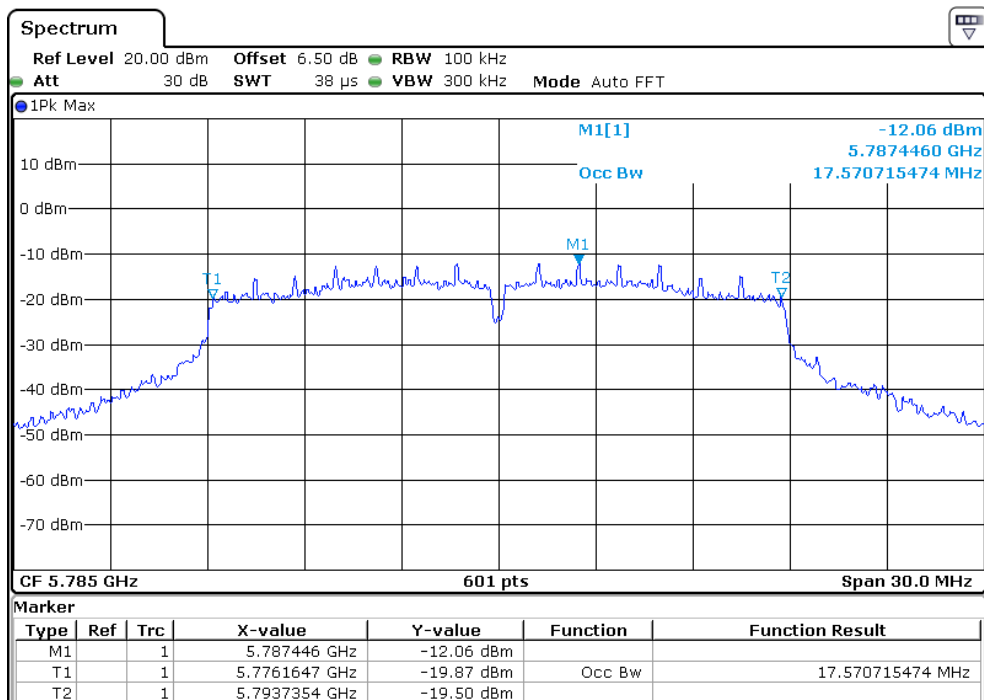


99% OBW 802.11n20

Channel: 149

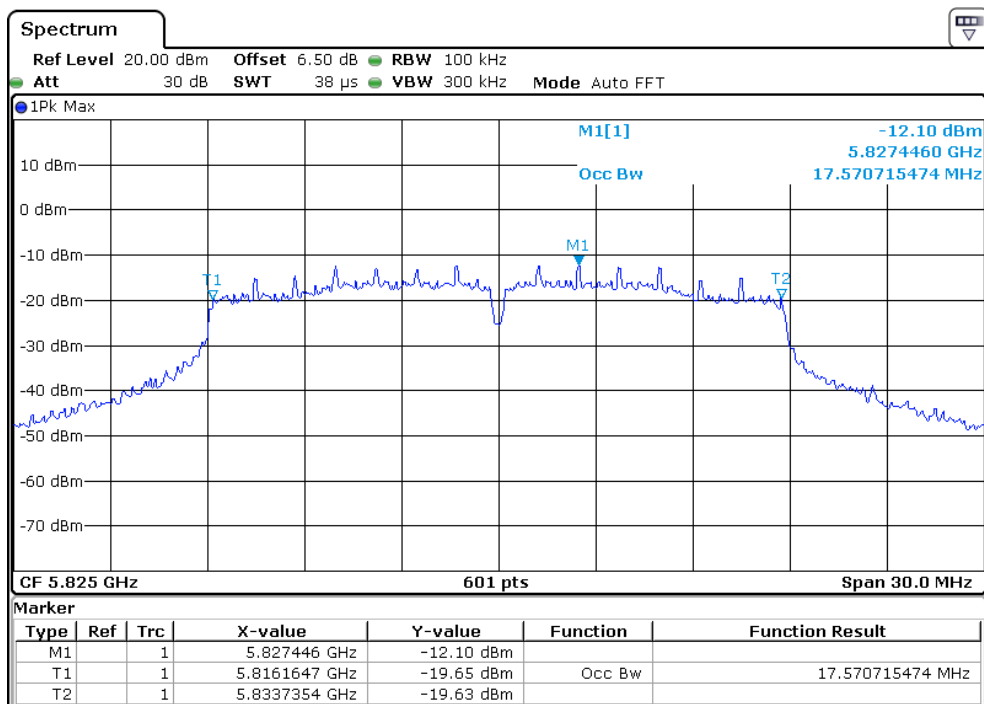


Channel: 157





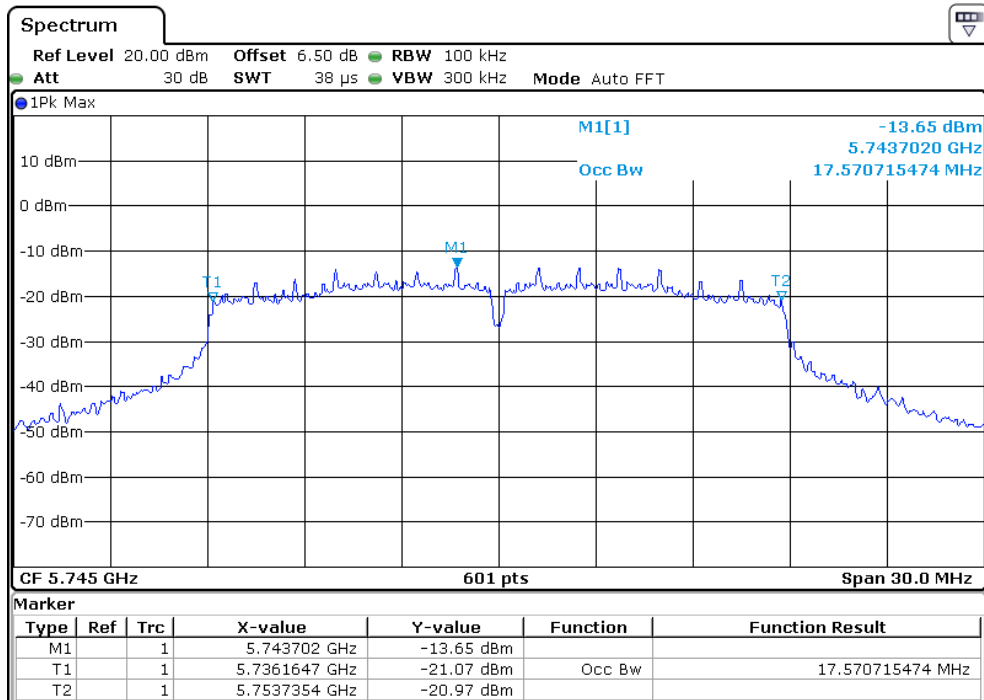
Channel: 165



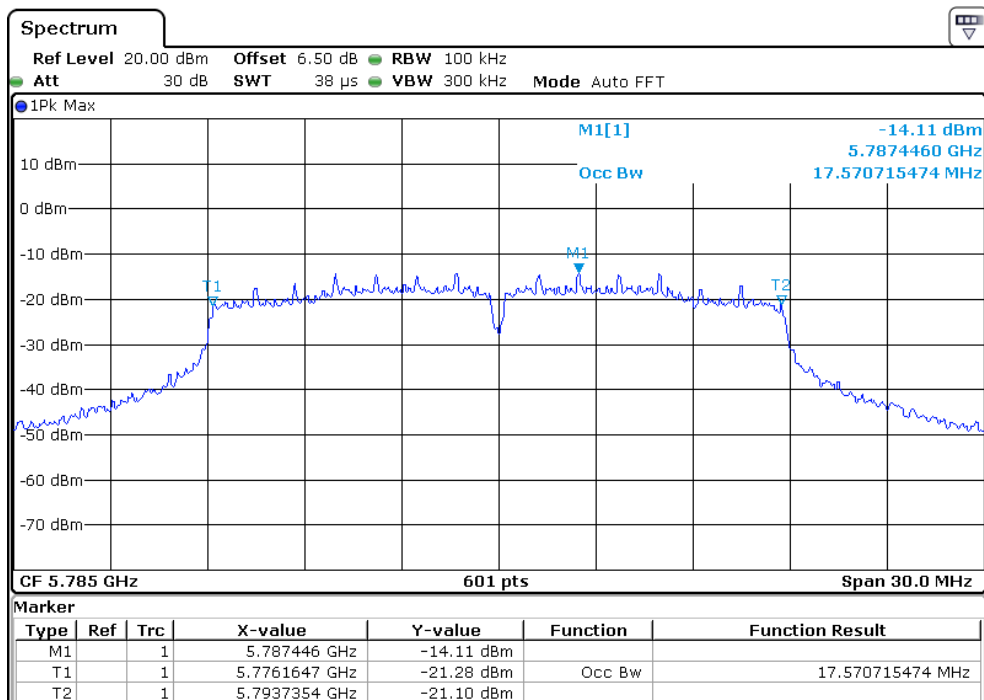


99% OBW 802.11ac20

Channel: 149

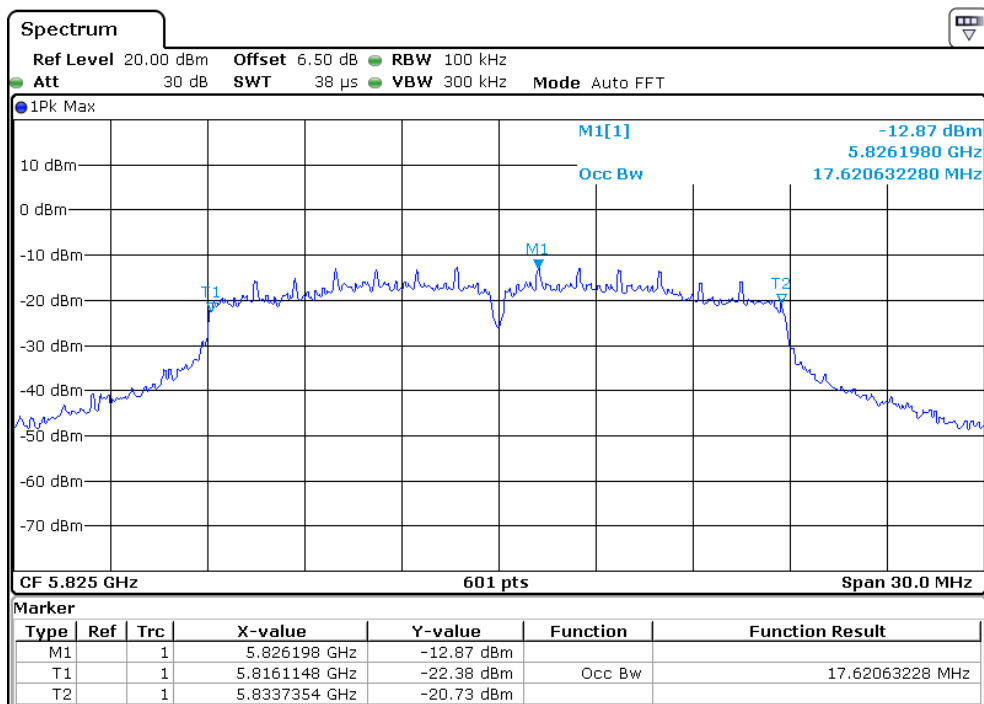


Channel: 157



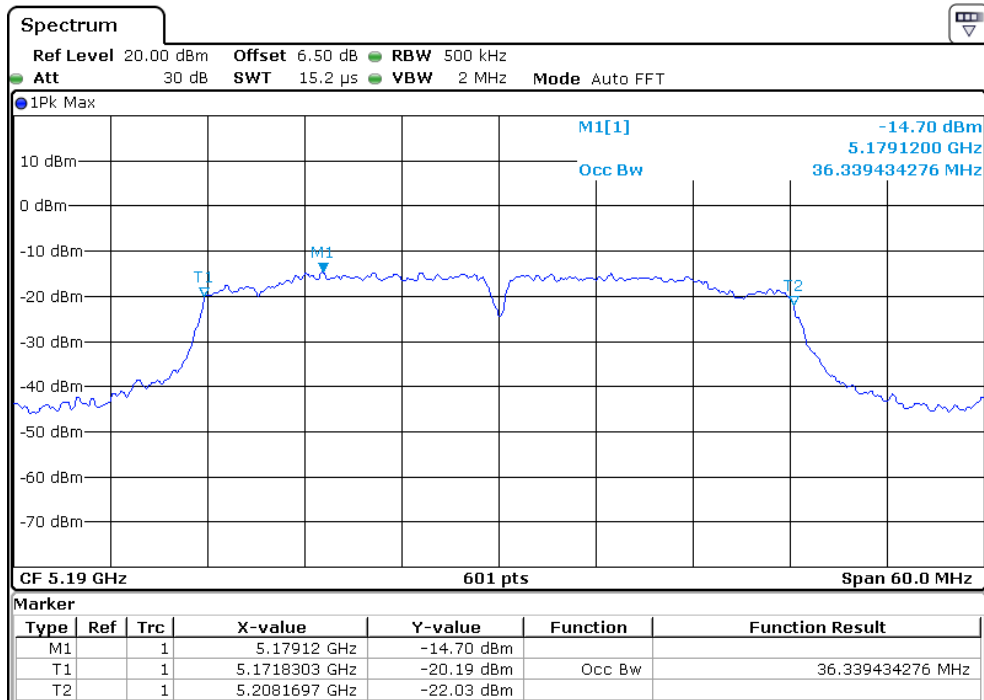


Channel: 165

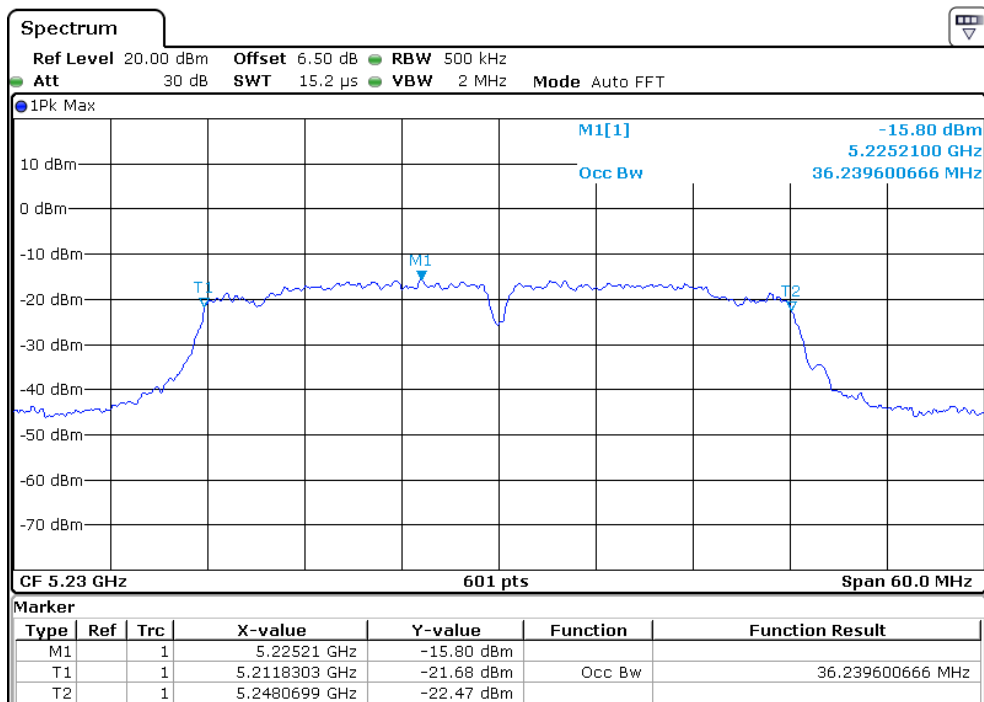




99% OBW 802.11n40 Channel: 38



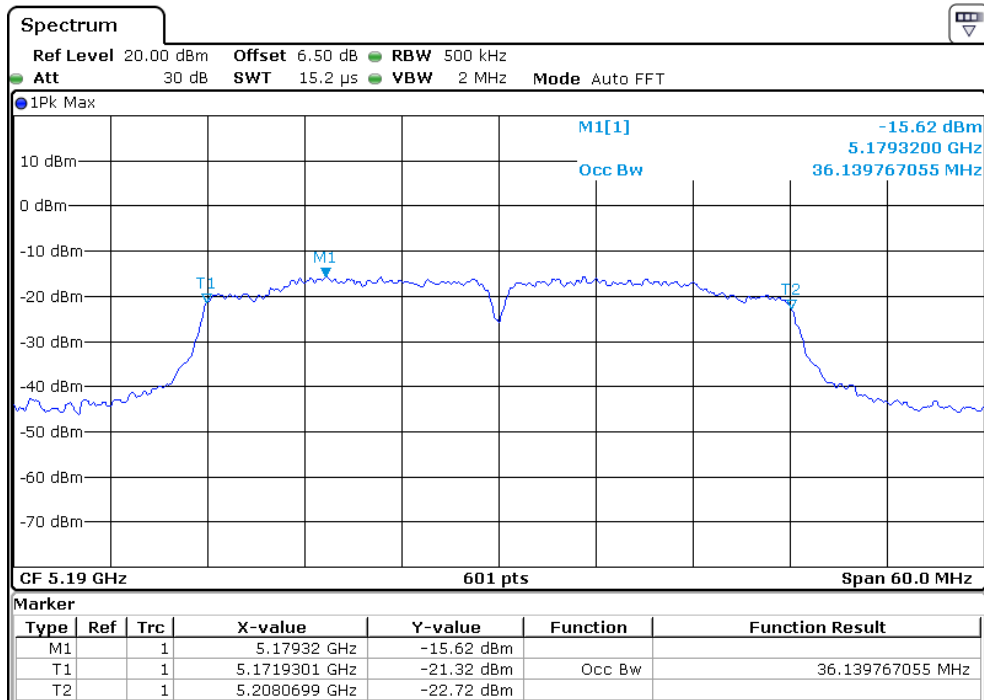
Channel: 46



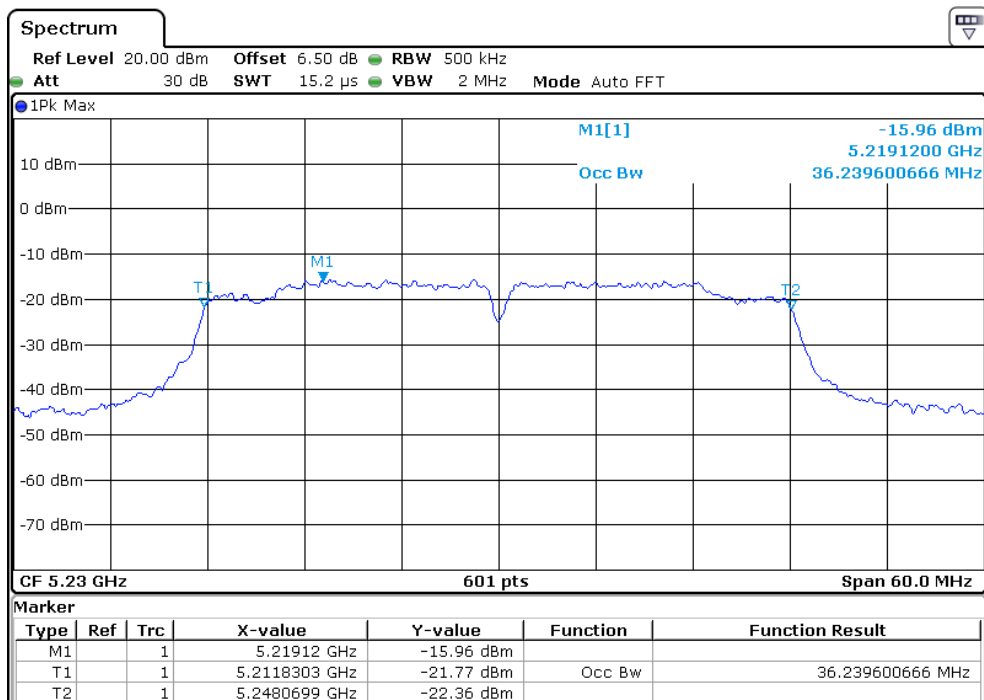


99% OBW 802.11ac40

Channel: 38

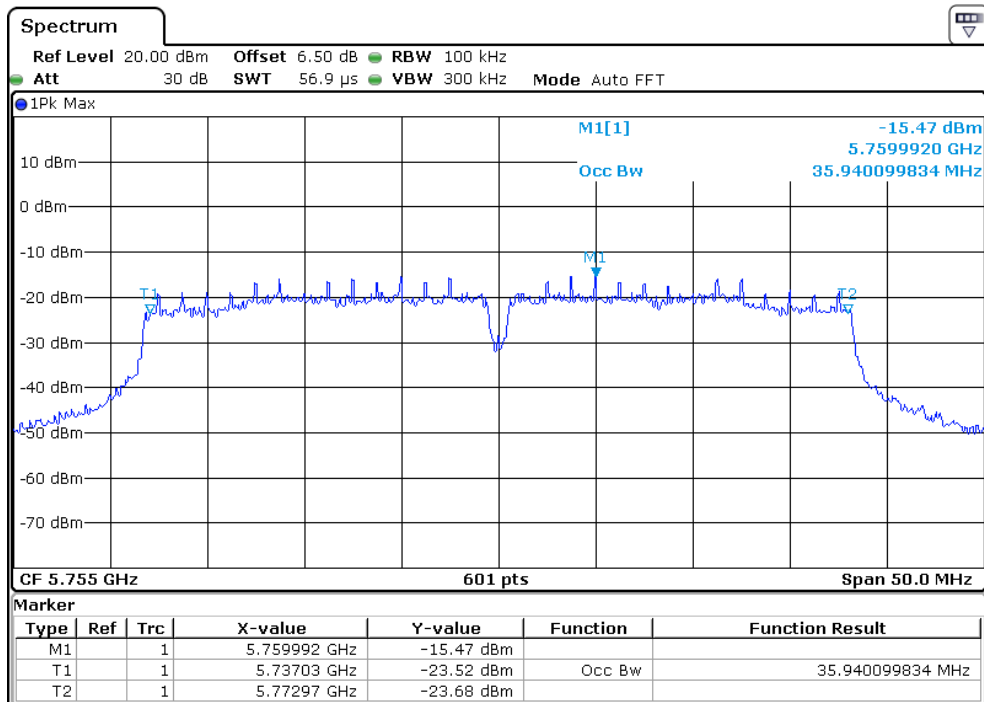


Channel: 46

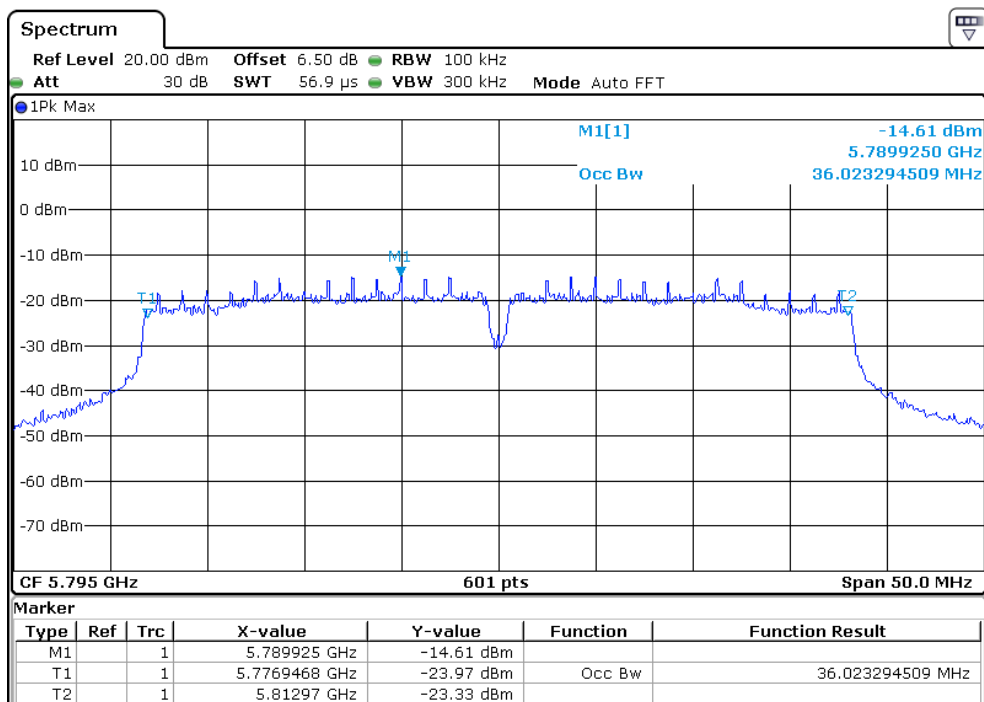




99% OBW 802.11n40 Channel: 151



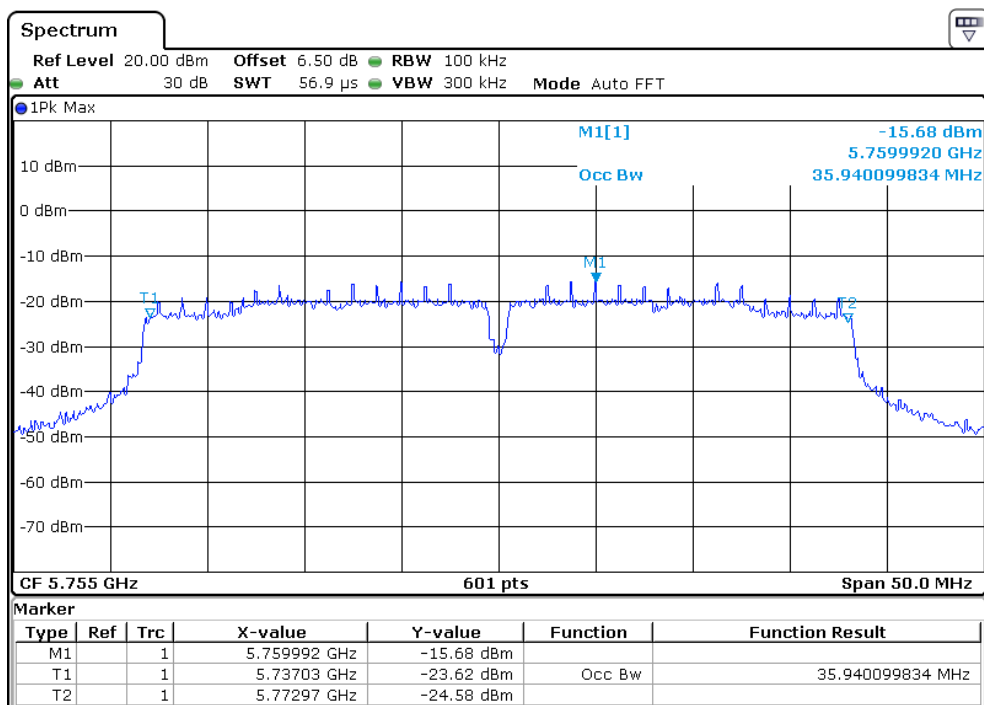
Channel: 159



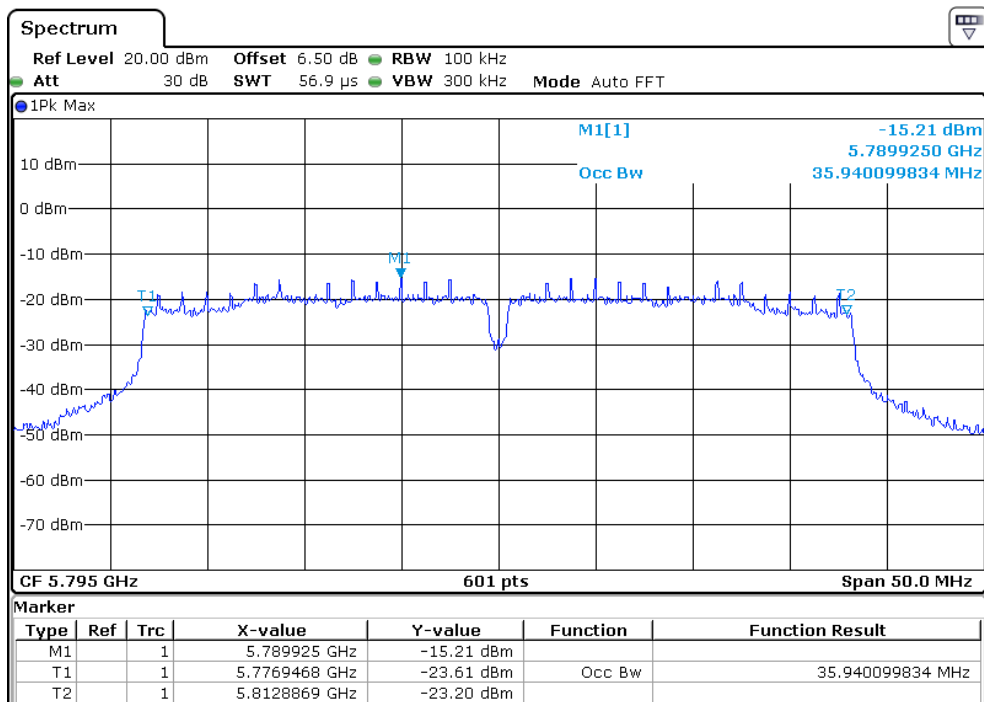


99% OBW 802.11ac40

Channel: 151

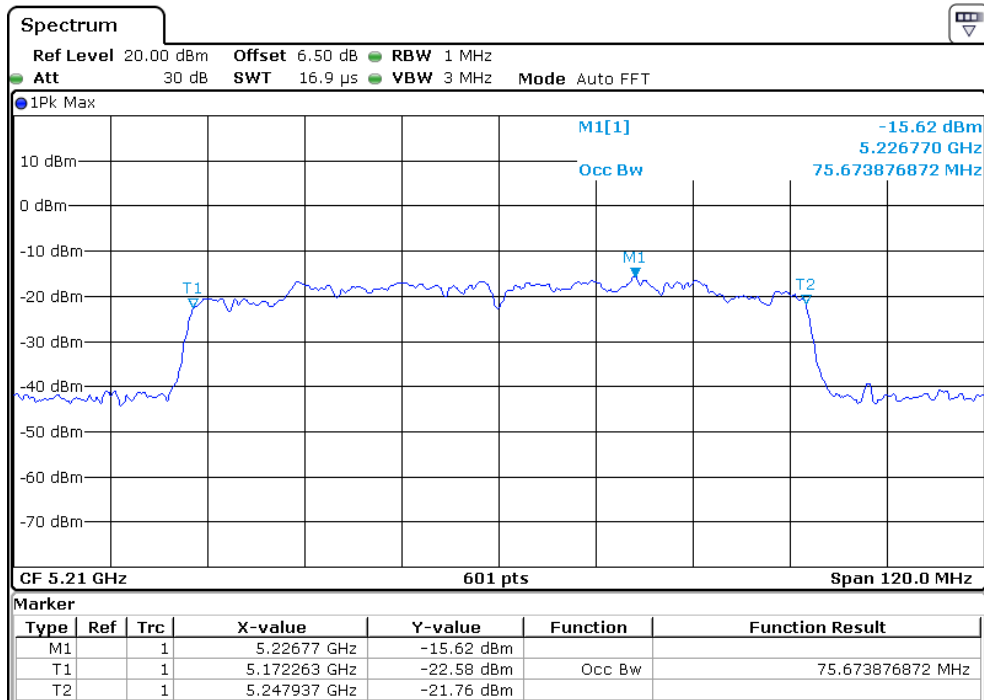


Channel: 159

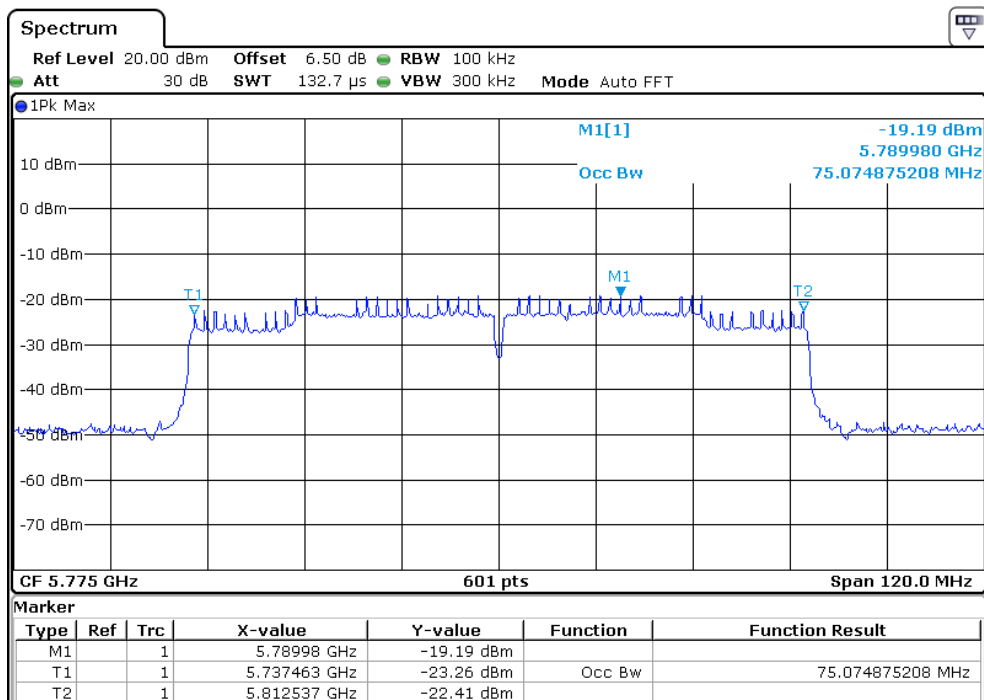




99% OBW 802.11ac80 Channel:42

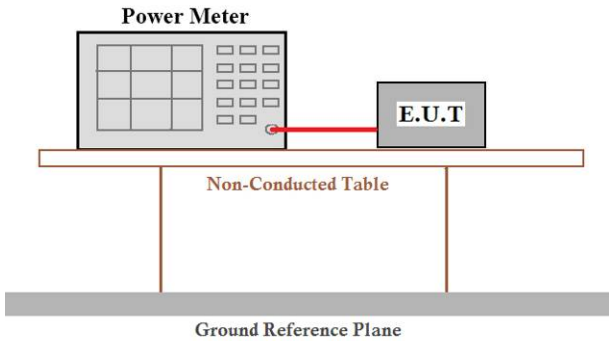


Channel: 155





9. Output Power

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v01
Limit:	For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 250mW. For the band 5.745-5.850 GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 30dBm
Test setup:	 The diagram illustrates the test setup. A Power Meter is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test procedure:	Measurement using an RF average power meter (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five. (ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B). (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter. (iv) Adjust the measurement in dBm by adding $10 \log(1/x)$ where x is the duty cycle (e.g., $10 \log(1/0.25)$ if the duty cycle is 25 percent).
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details

**9.1 Test Result and Data**

Antenna A:

CH. No.	Frequency (MHz)	Output Power (dBm)			Limit(dBm)	Result
		802.11a	802.11n (HT20)	802.11ac (VHT20)		
36	5180.00	5.65	5.41	5.71	24	Pass
40	5200.00	5.53	5.55	5.50	24	Pass
48	5240.00	5.72	5.53	5.55	24	Pass
149	5745.00	5.53	5.40	5.50	30	Pass
157	5785.00	5.48	5.36	5.51	30	Pass
165	5825.00	5.55	5.53	5.81	30	Pass

CH. No.	Frequency (MHz)	Output Power (dBm)		Limit(dBm)	Result
		802.11n(HT40)	802.11ac(VHT40)		
38	5190.00	4.17	4.25	24	Pass
46	5230.00	4.19	4.19	24	Pass
151	5755.00	4.29	4.16	30	Pass
159	5795.00	4.32	4.19	30	Pass

CH. No.	Frequency (MHz)	Output Power (dBm)	Limit(dBm)	Result
		802.11ac(VHT80)		
42	5210	5.05	24	Pass
155	5775	5.22	30	Pass



Antenna B:

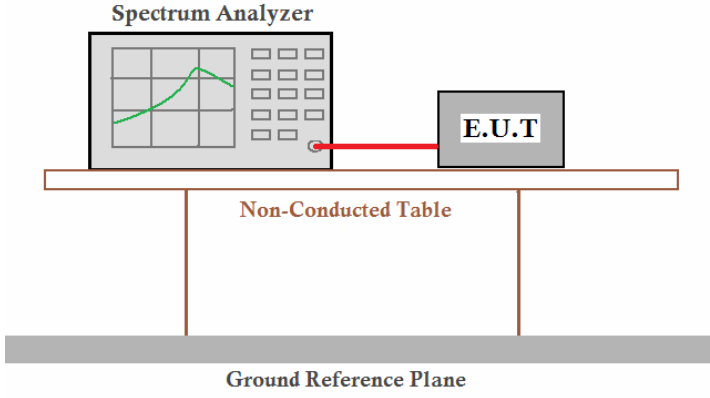
CH. No.	Frequency (MHz)	Output Power (dBm)			Limit(dBm)	Result
		802.11a	802.11n (HT20)	802.11ac (VHT20)		
36	5180.00	5.33	5.32	5.39	24	Pass
40	5200.00	5.31	5.37	5.12	24	Pass
48	5240.00	5.43	5.35	5.23	24	Pass
149	5745.00	5.31	5.32	5.14	30	Pass
157	5785.00	5.33	5.23	5.19	30	Pass
165	5825.00	5.42	5.25	5.39	30	Pass

CH. No.	Frequency (MHz)	Output Power (dBm)		Limit(dBm)	Result
		802.11n(HT40)	802.11ac(VHT40)		
38	5190.00	4.05	4.17	24	Pass
46	5230.00	4.07	4.11	24	Pass
151	5755.00	4.17	4.08	30	Pass
159	5795.00	4.12	4.11	30	Pass

CH. No.	Frequency (MHz)	Output Power (dBm)	Limit(dBm)	Result
		802.11ac(VHT80)		
42	5210	5.02	24	Pass
155	5775	5.14	30	Pass



10. Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v01
Limit:	11dBm/MHz(Band I), 30 dBm(Band IV)
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.
Test procedure:	1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power...". 2) Use the peak search function on the instrument to find the peak of the spectrum. 3) Make the following adjustments to the peak value of the spectrum, if applicable: a) If Method SA-2 or SA-2 Alternative was used, add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum. b) If Method SA-3 Alternative was used and the linear mode was used in step E)2)g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. 4) The result is the PPSD.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

**10.1 Test Result and Data**

CH. No.	Frequency	Power Density ANT A (dBm/MHz)	Power Density ANT B (dBm/MHz)	total power density (dBm/MHz)	Limit (dBm/MHz)	Result
TX 802.11a Mode						
CH36	5180	-8.57	-8.78	--	11	Pass
CH40	5200	-8.49	-8.68	--	11	Pass
CH48	5240	-8.38	-8.64	--	11	Pass
CH 149	5745	-5.67	-5.73	--	30	Pass
CH 157	5785	-5.26	-5.67	--	30	Pass
CH 165	5825	-5.94	-5.74	--	30	Pass
TX 802.11n20 Mode						
CH36	5180	-9.92	-9.98	--	11	Pass
CH40	5200	-9.42	-9.76	--	11	Pass
CH48	5240	-8.50	-9.24	--	11	Pass
CH 149	5745	-5.50	-5.83	--	30	Pass
CH 157	5785	-5.21	-5.52	--	30	Pass
CH 165	5825	-5.23	-5.32	--	30	Pass
TX 802.11n40 Mode						
CH38	5190	-13.14	-13.54	--	11	Pass
CH46	5230	-11.72	-11.83	--	11	Pass
CH151	5755	-8.79	-8.97	--	30	Pass
CH159	5795	-8.86	-8.94	--	30	Pass



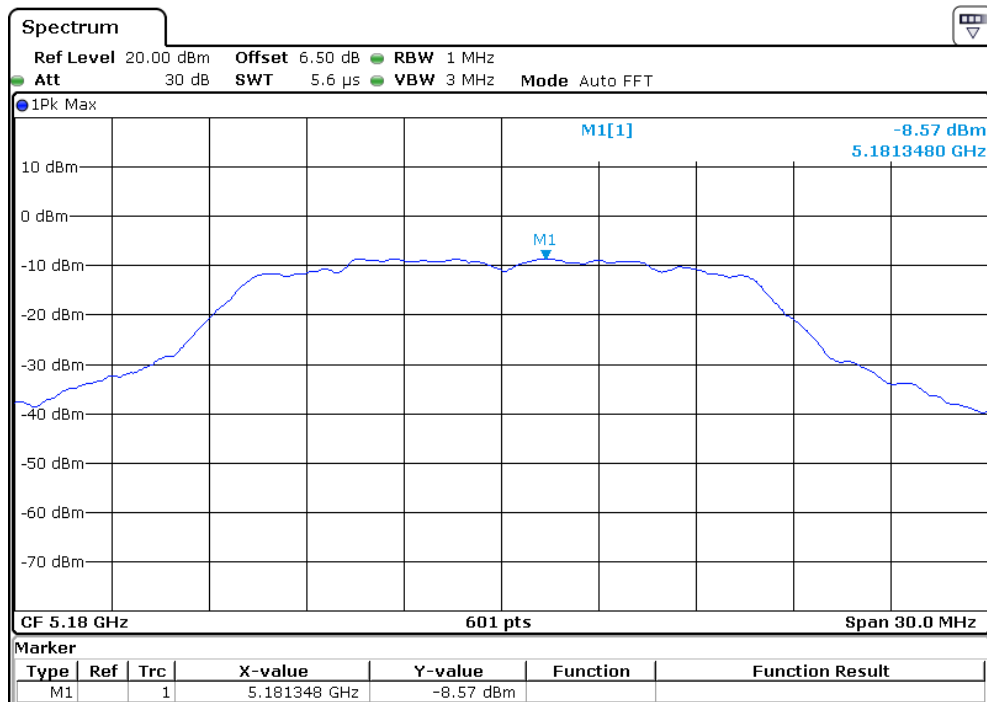
CH. No.	Frequency	Power Density ANT A (dBm/MHz)	Power Density ANT B (dBm/MHz)	total power density (dBm/MHz)	Limit (dBm/MHz)	Result
TX 802.11 ac(VHT20) Mode						
CH36	5180	-10.41	-11.16	--	11	Pass
CH40	5200	-9.83	-10.17	--	11	Pass
CH48	5240	-8.62	-9.18	--	11	Pass
CH 149	5745	-5.95	-6.27	--	30	Pass
CH 157	5785	-4.75	-5.02	--	30	Pass
CH 165	5825	-5.06	-5.34	--	30	Pass
TX 802.11 ac(VHT40) Mode						
CH38	5190	-11.59	-11.87	--	11	Pass
CH46	5230	-11.86	-12.06	--	11	Pass
CH 151	5755	-9.18	-9.97	--	30	Pass
CH 159	5795	-8.90	-9.42	--	30	Pass
TX 802.11 ac(VHT80) Mode						
CH42	5210	-16.28	-16.54	--	11	Pass
CH155	5775	-11.72	-11.89	--	30	Pass

Note: The worst data is Antenna A, only shown Antenna A Plot.

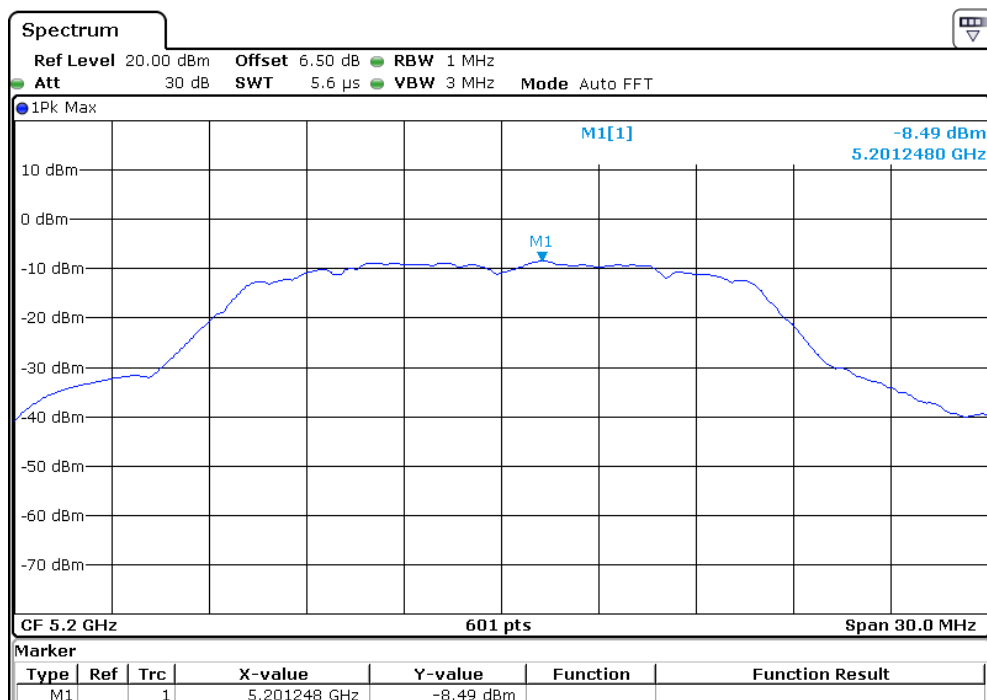


Test plots as followed: Antenna A

802.11a Channel: 36

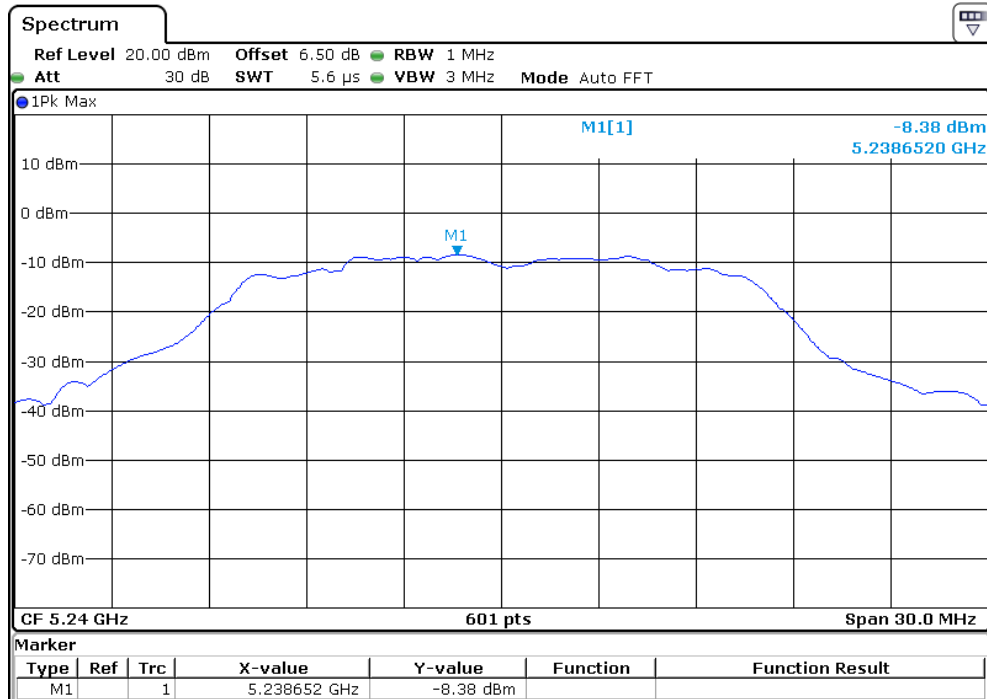


Channel: 40



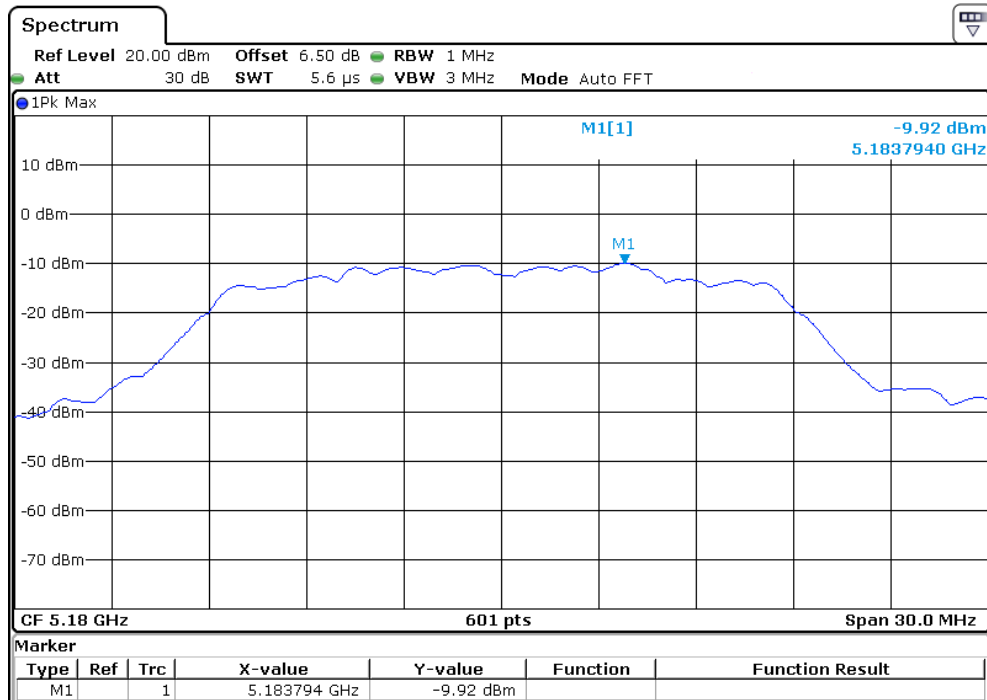


Channel: 48

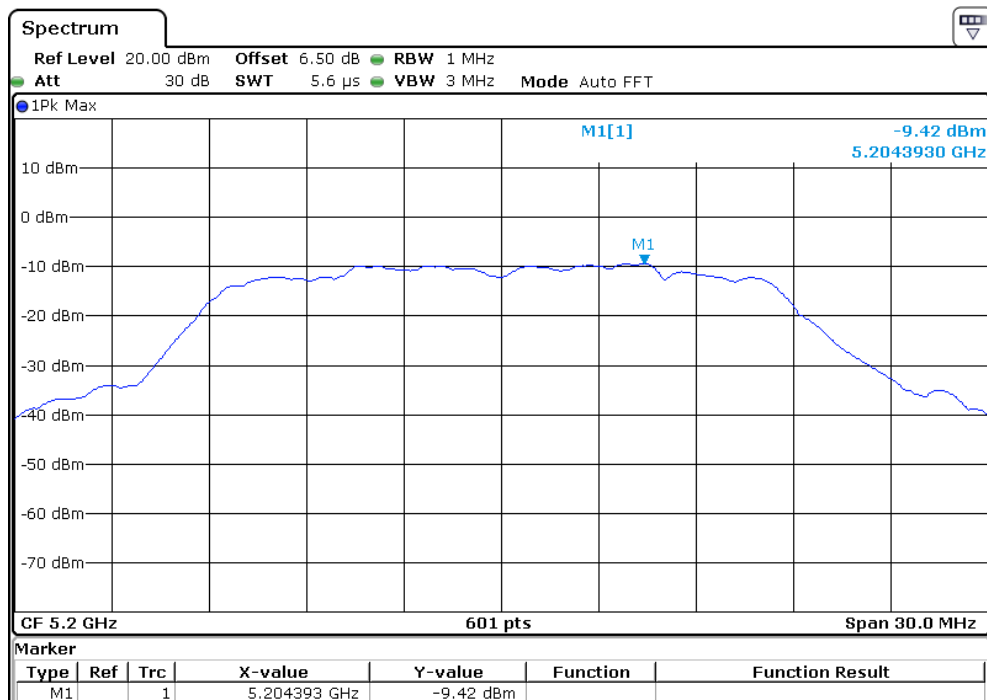




802.11n20 Channel: 36

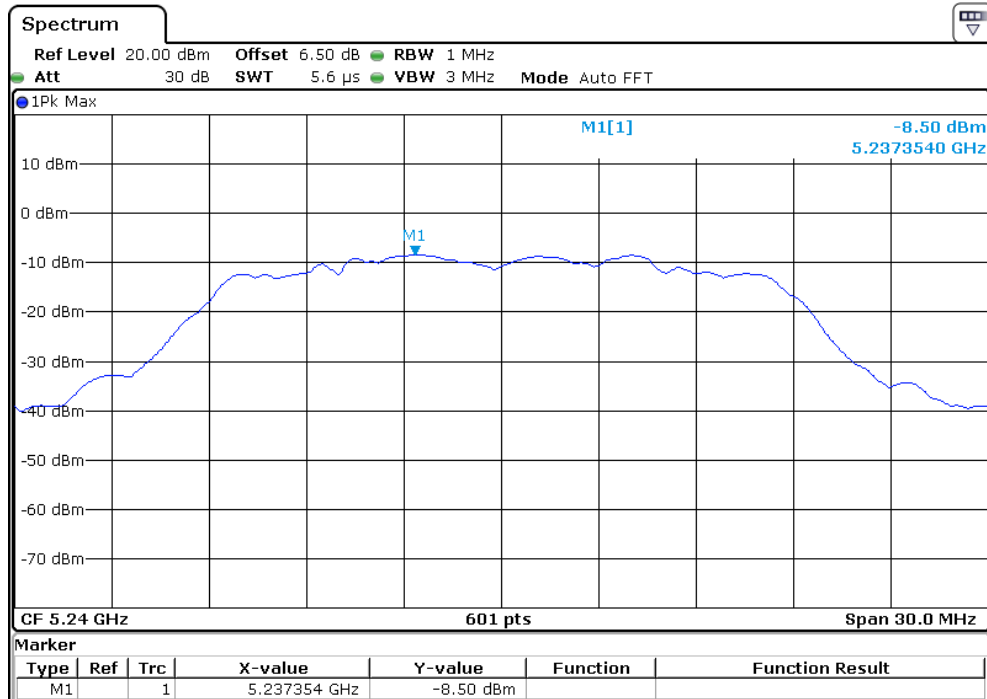


Channel: 40



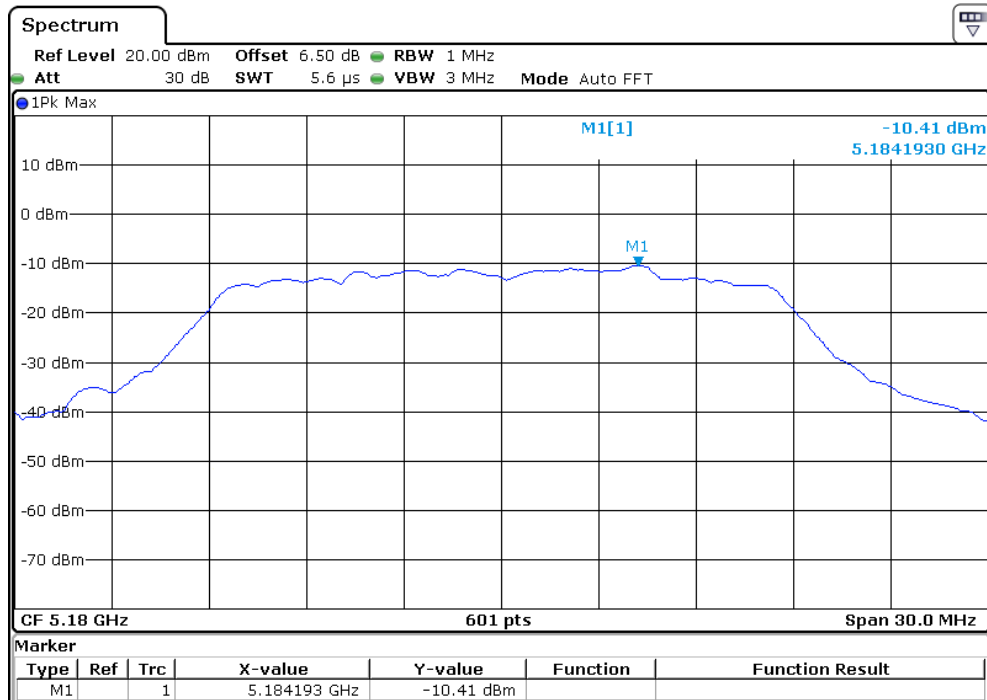


Channel: 48

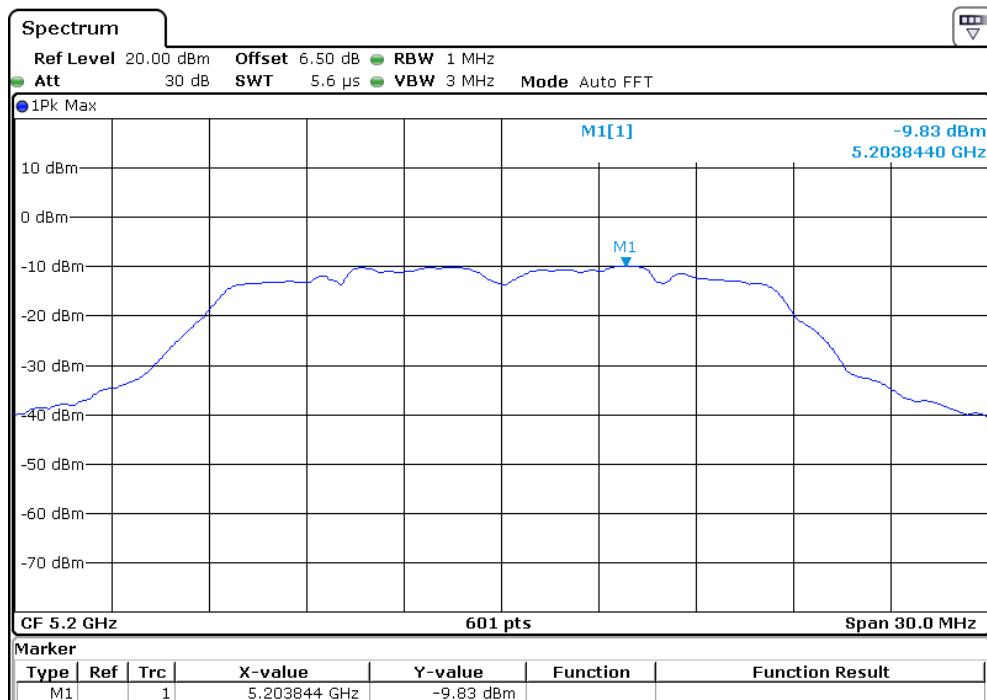




802.11ac20 Channel: 36

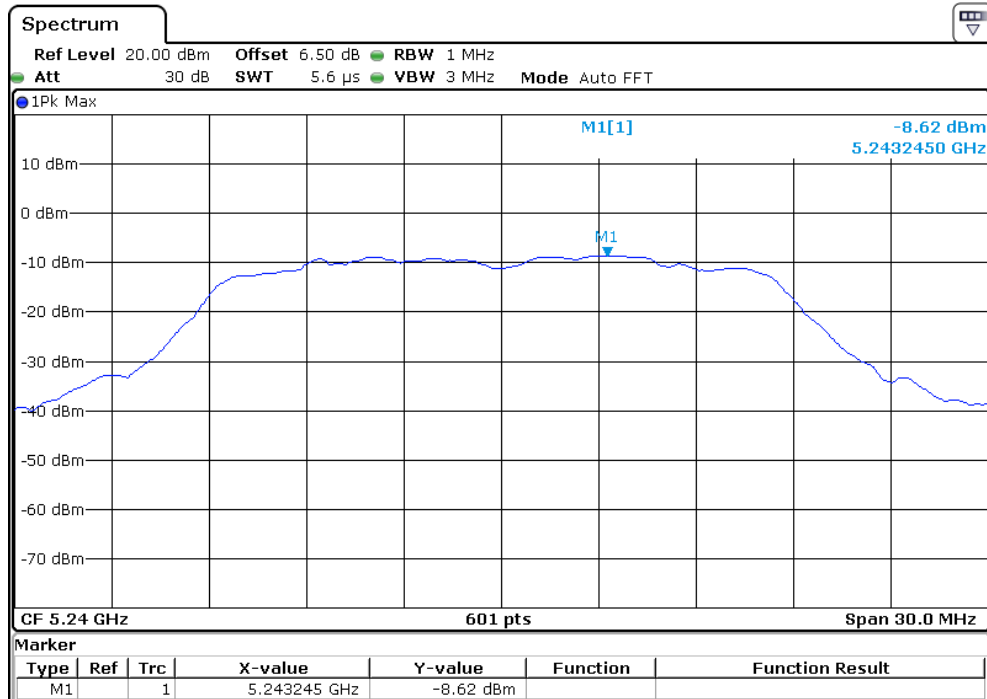


Channel: 40



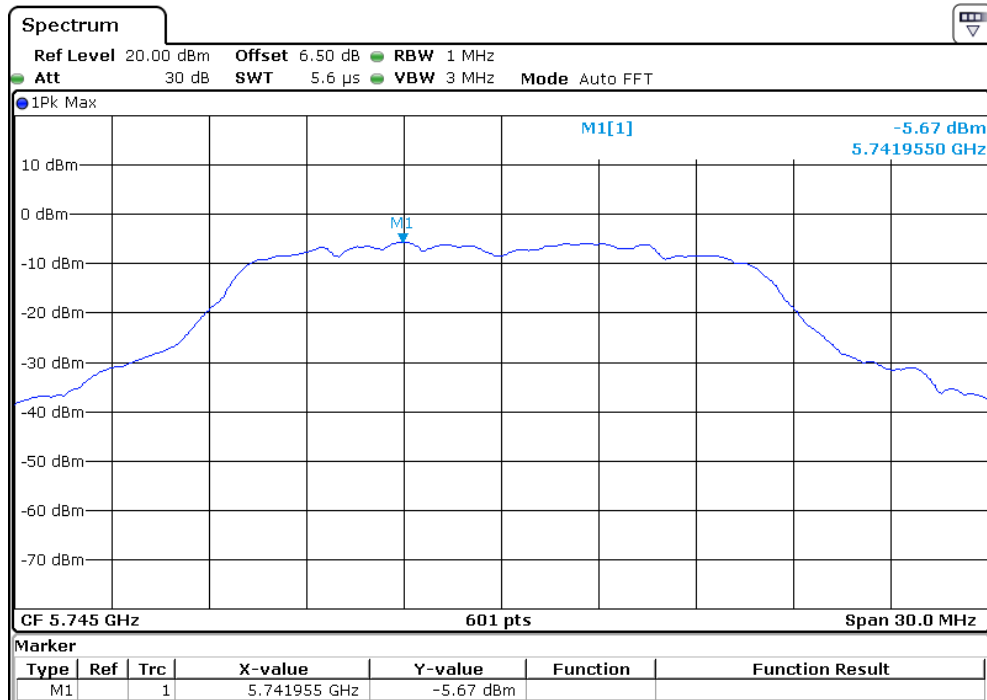


Channel: 48

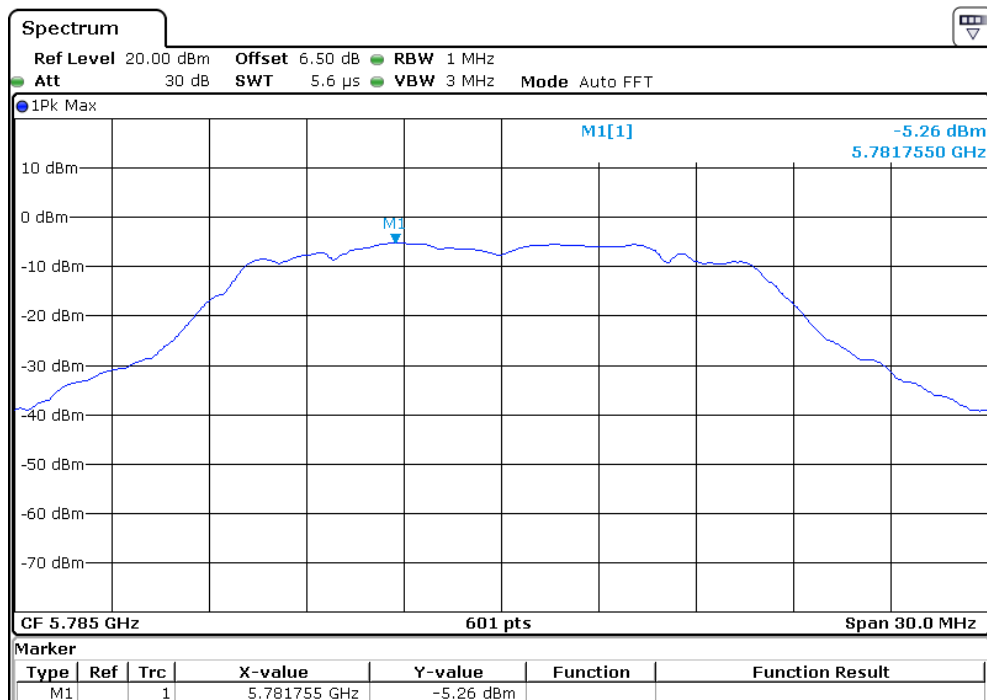




802.11a Channel: 149

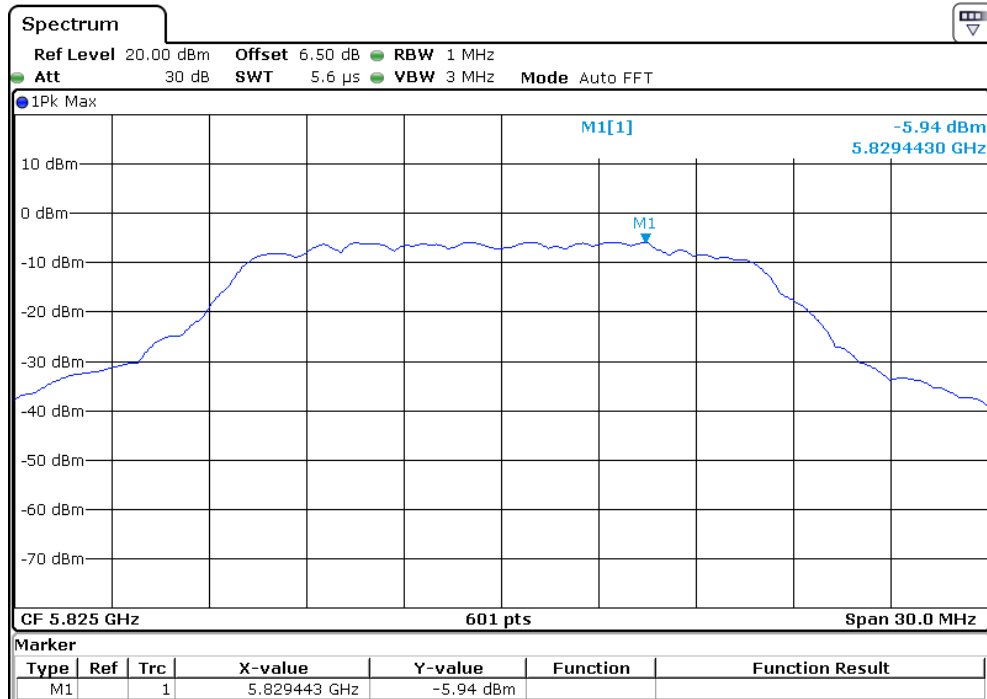


Channel: 157



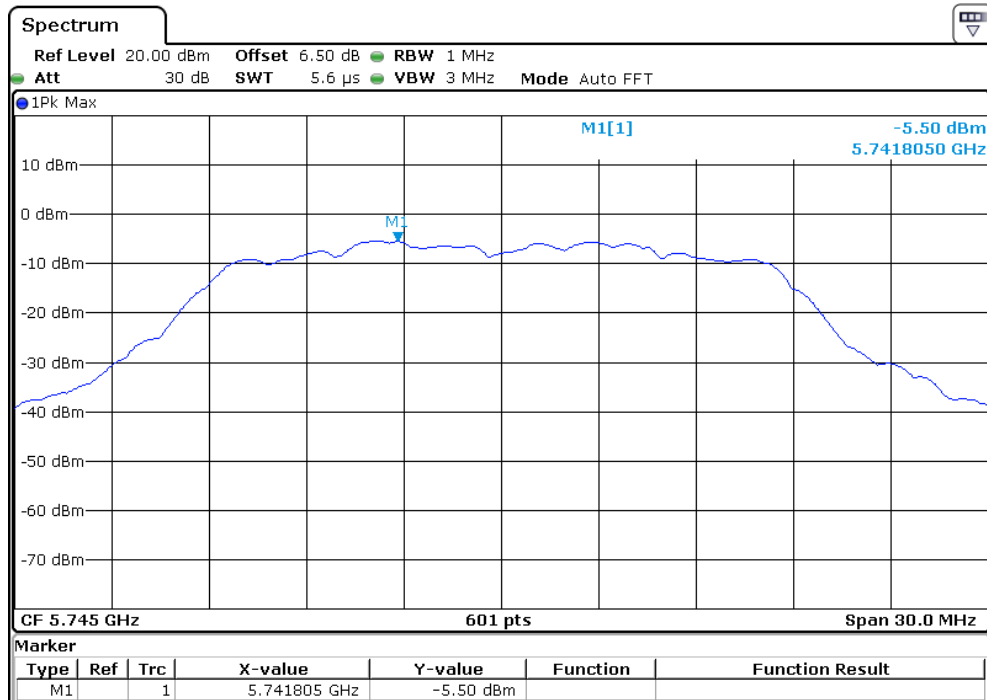


Channel: 165

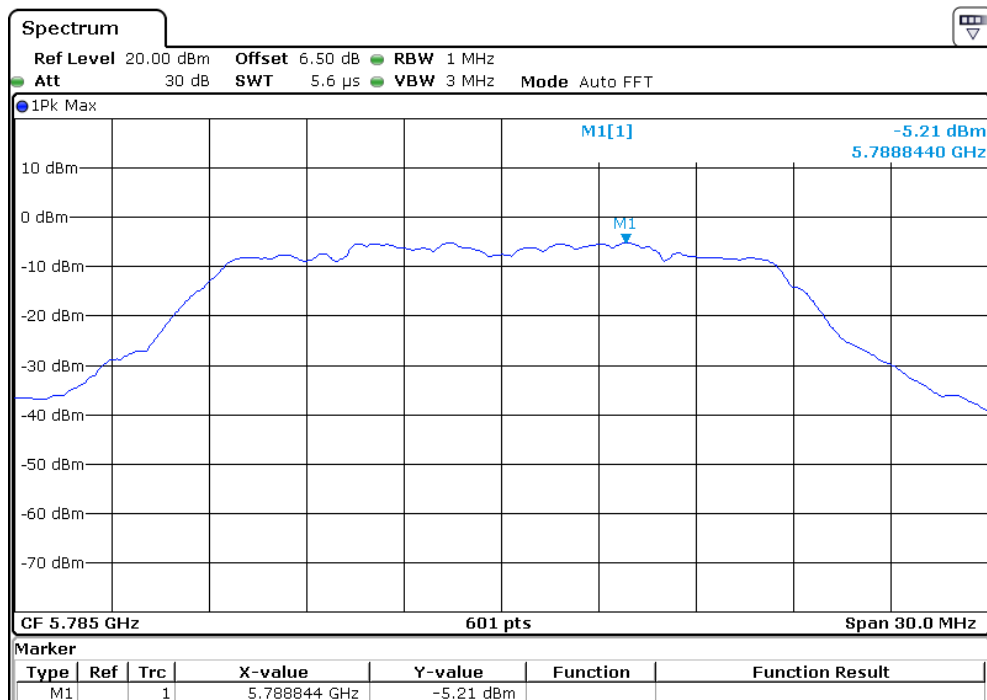




802.11n20 Channel: 149

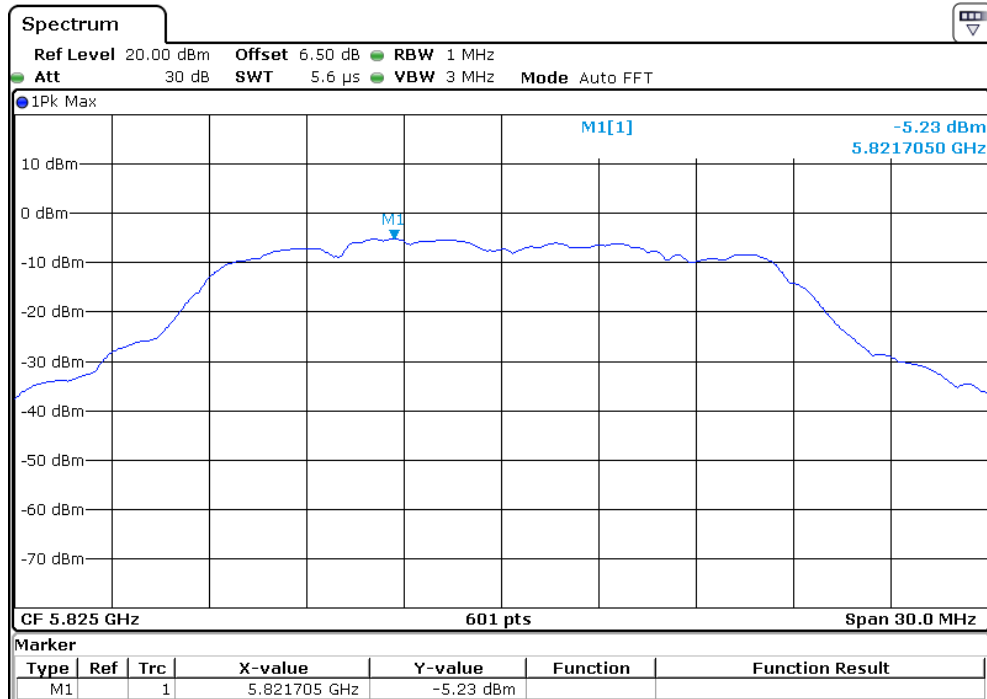


Channel: 157



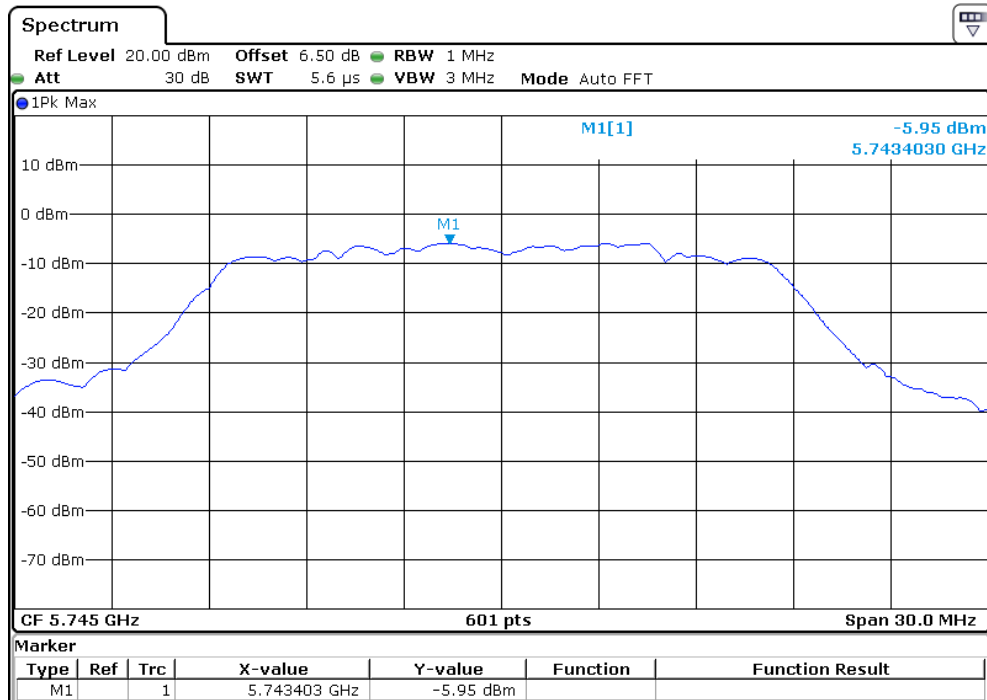


Channel: 165

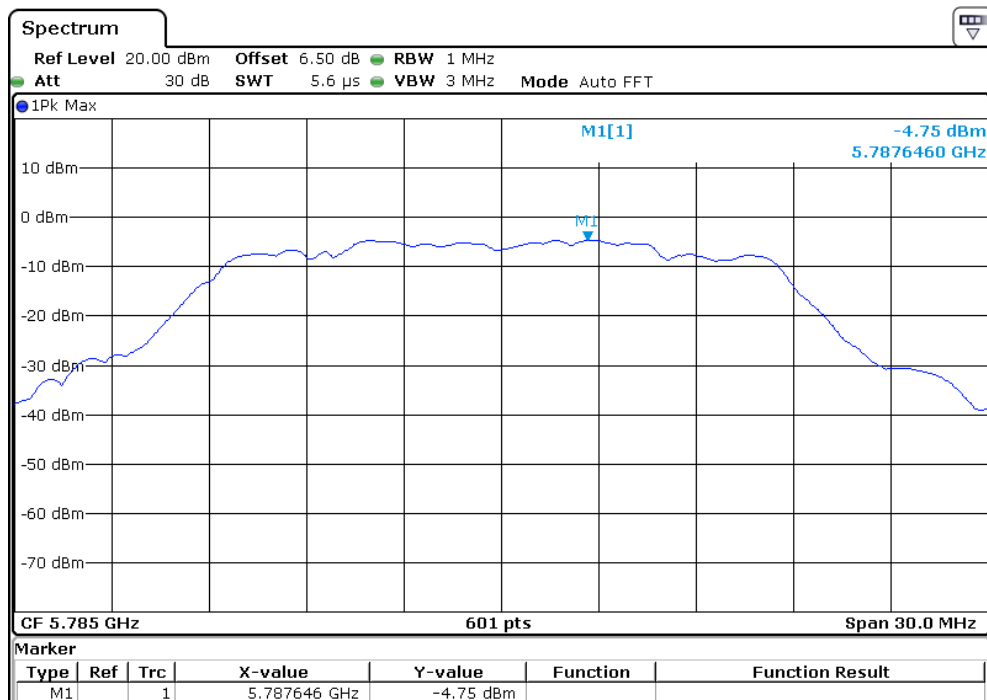




802.11ac20 Channel: 149

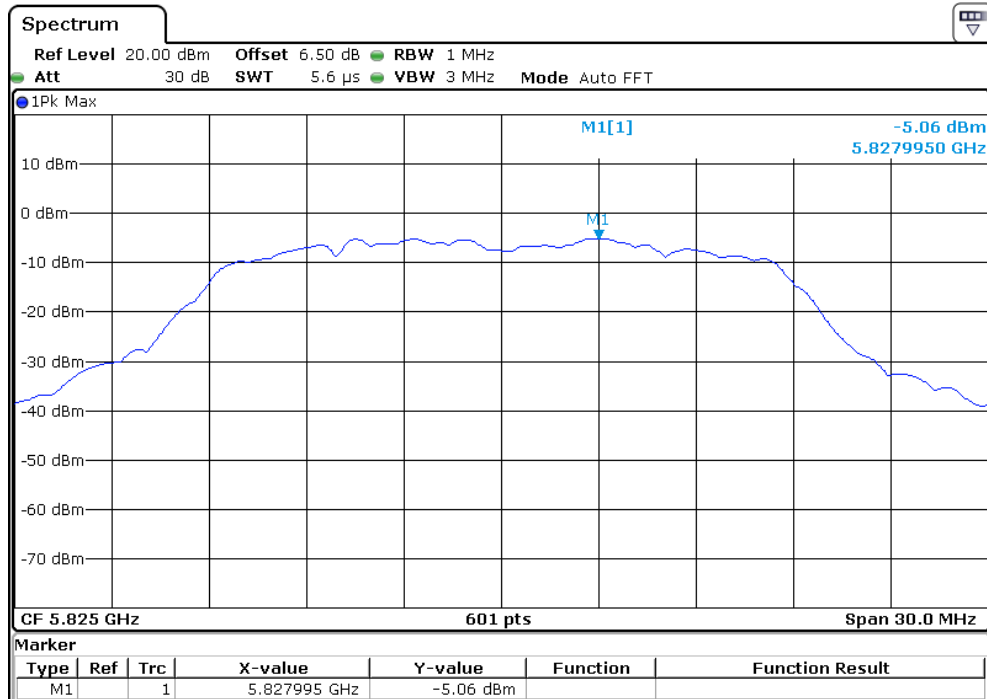


Channel: 157



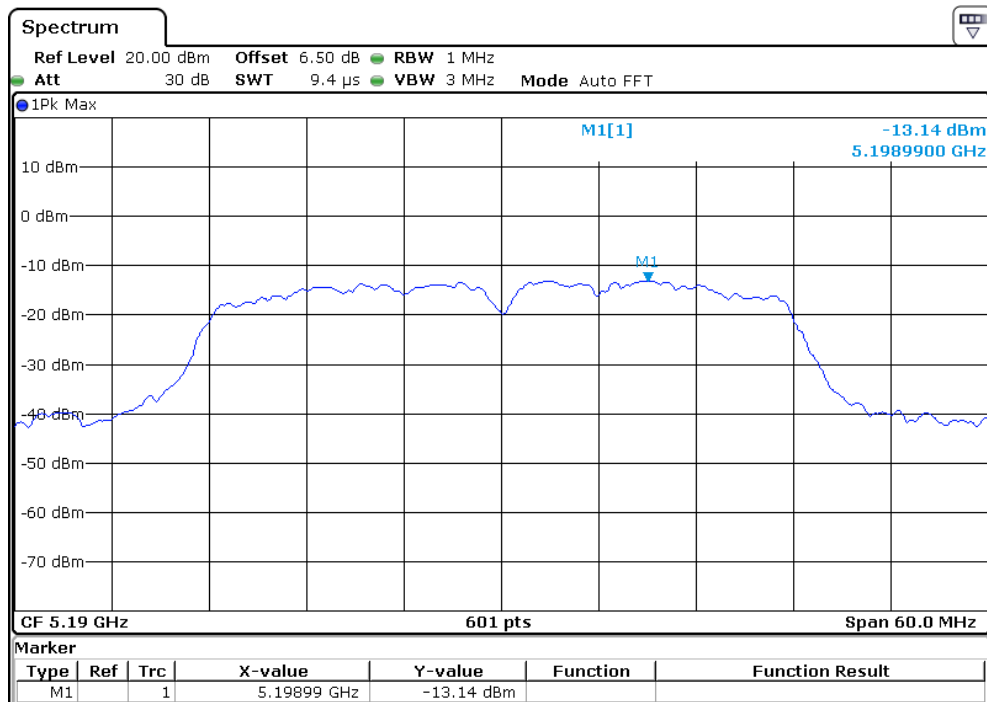


Channel: 165

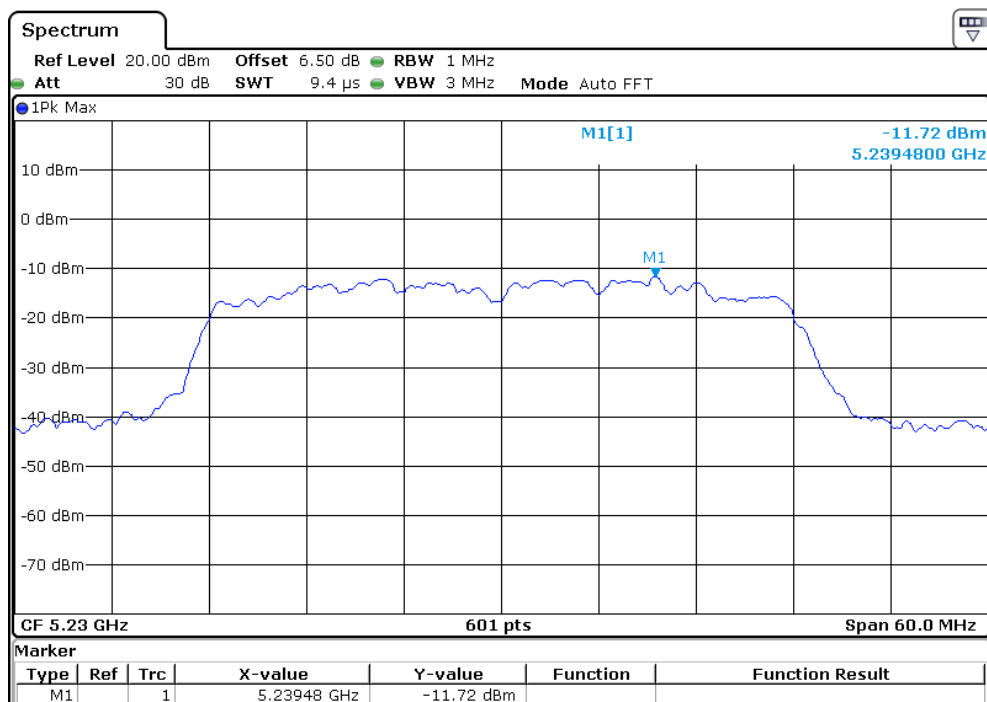




802.11n40 Channel: 38

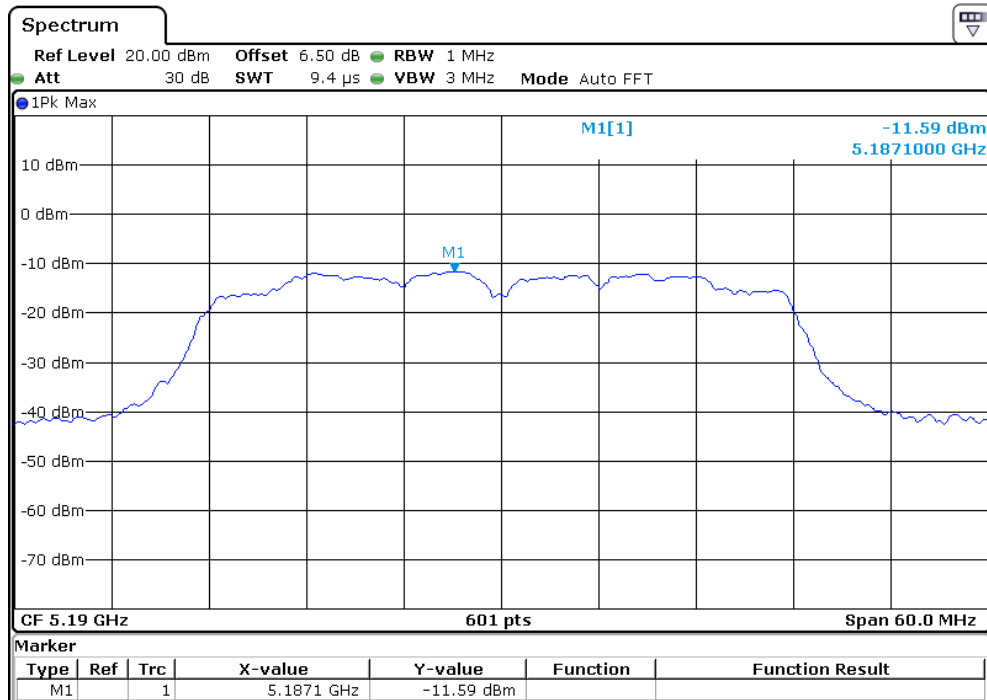


Channel: 46

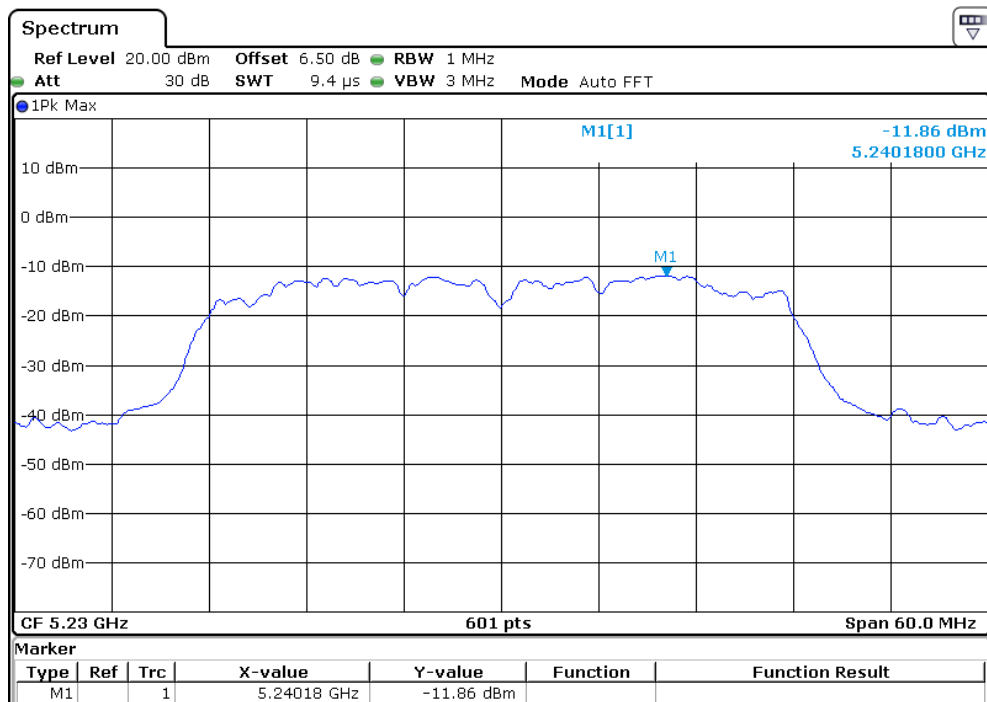




802.11ac40 Channel: 38

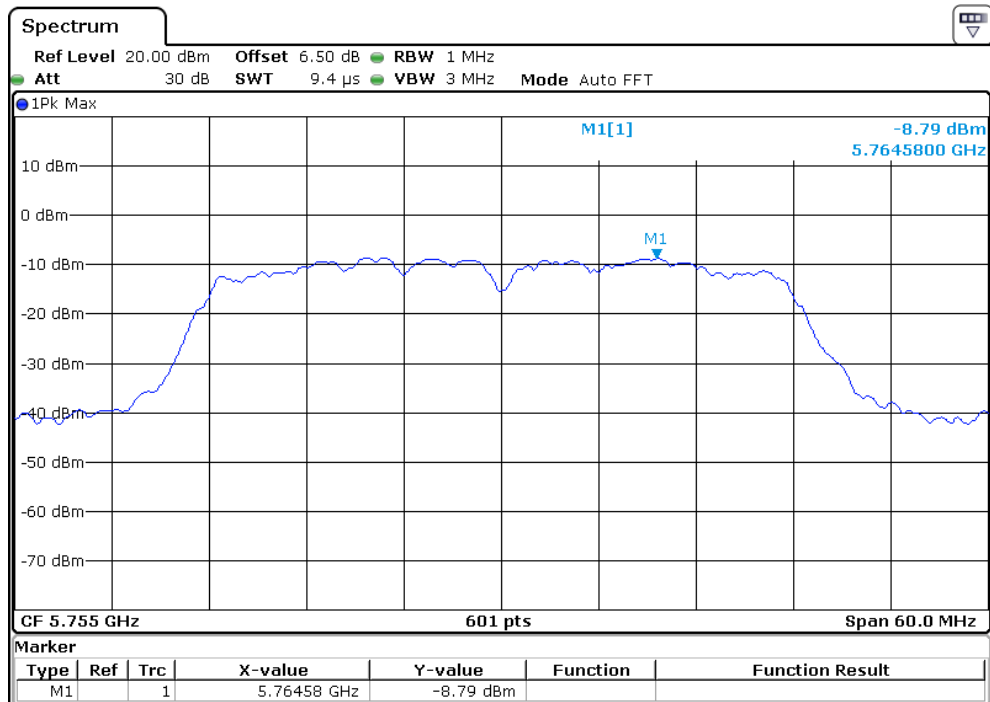


Channel: 46

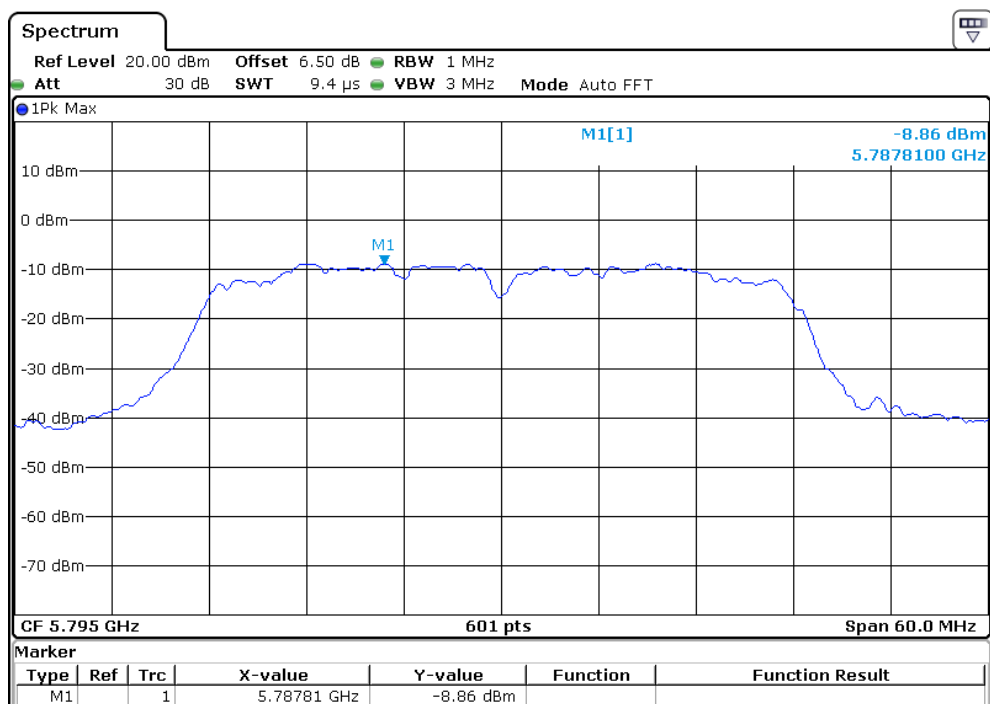




802.11n40 Channel: 151

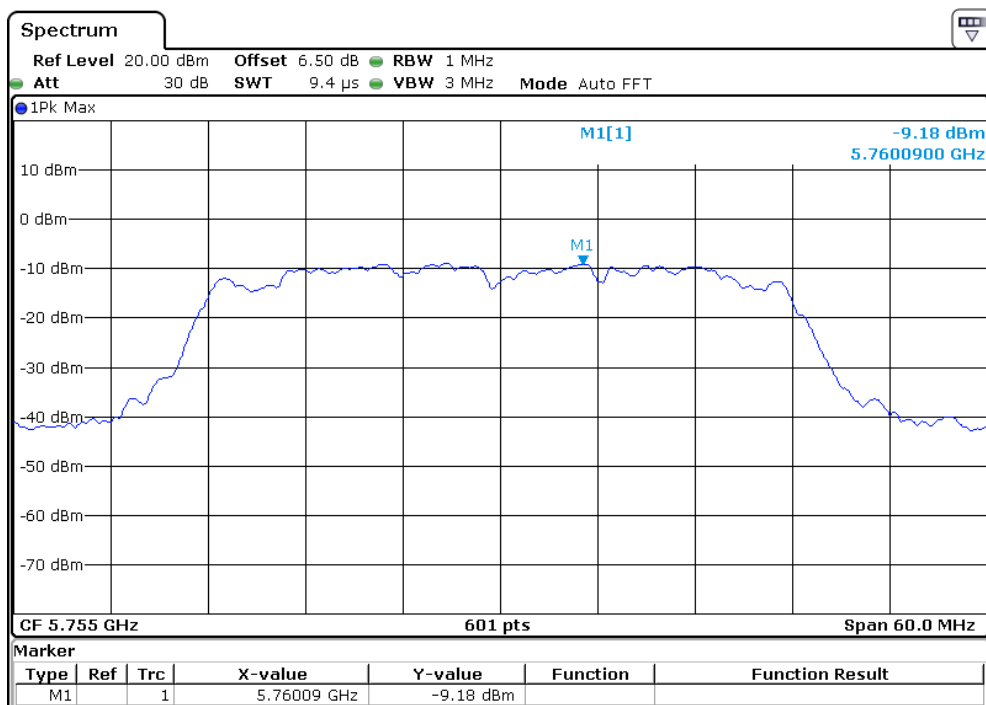


Channel: 159

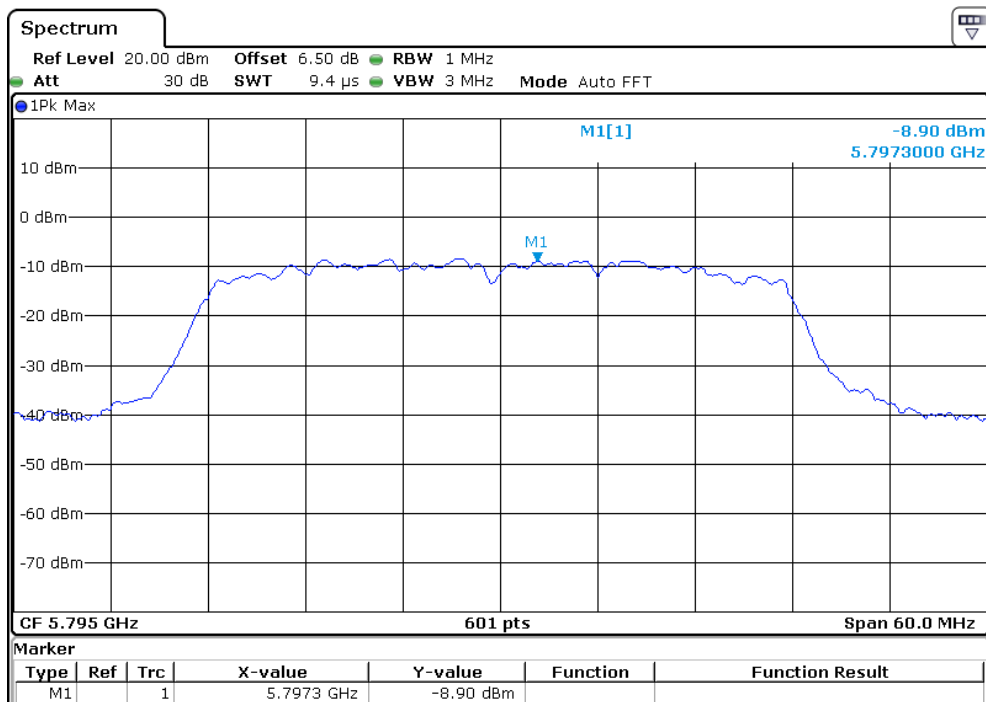




802.11ac40 Channel: 151

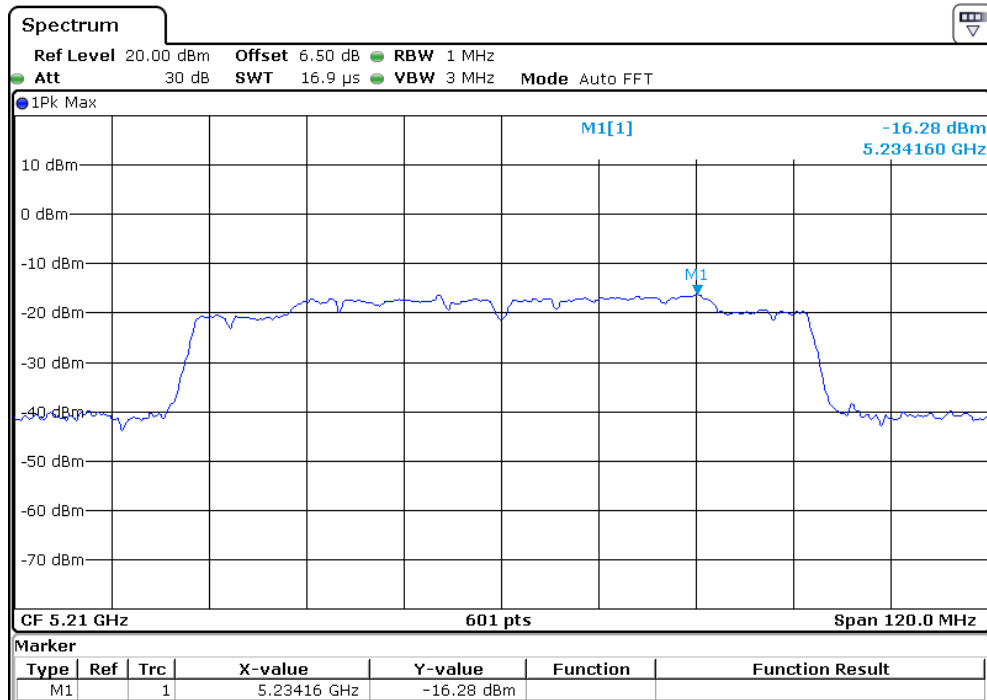


Channel: 159

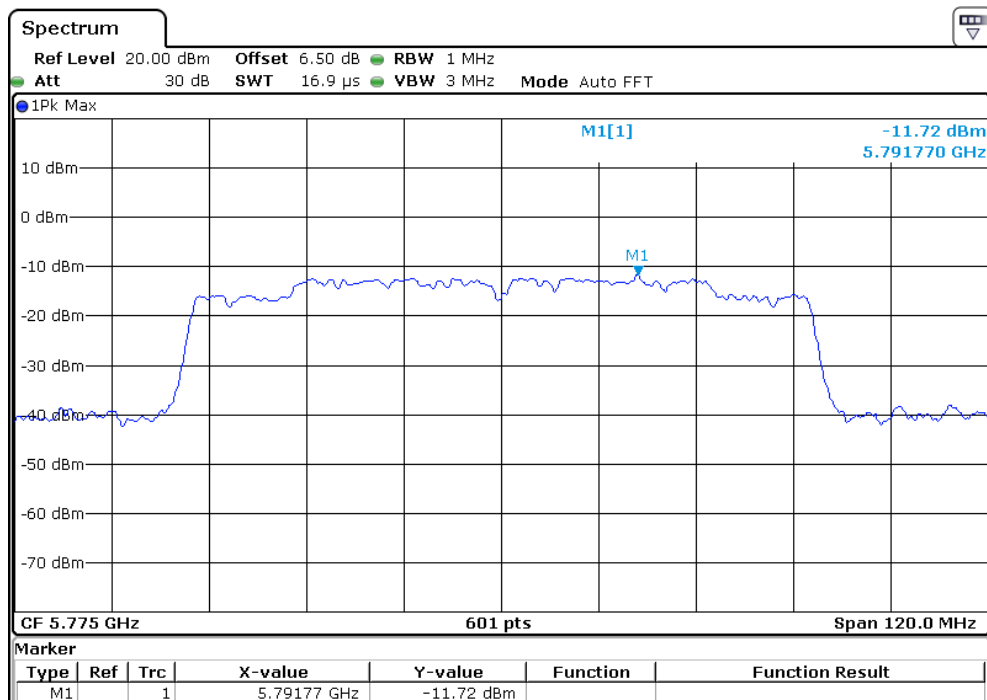




802.11ac80 Channel:42



Channel: 155





11. Band Edges Measurement

Test Requirement:	FCC Part15 E Section 15.407 and 5.205				
Test Method:	ANSI C63.10:2013				
Test site:	Measurement Distance: 3m				
Receiver setup:					
	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
AV		1MHz	3MHz	Average Value	
Limit:					
	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		54.0		Average Value
			74.0		Peak Value
	Undesirable emission 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 EIRP of -27 dBm/MHz.				
	(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.				
	(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.				
Test Procedure:	a. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 meter camber. The table was rotated 360 degrees to				



	determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test setup:	Above 1GHz
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass



Remark:

According to KDB 789033 D02V01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2;$$

For example, if EIRP = -27dBm

$$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m}.$$

**11.1 Test Result and Data****Peak value:**

Test mode:		802.11a		Test channel:		Lowest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5150	44.62	7.18	51.8	68.2	-16.4	PK	H
5150	43.47	7.18	50.65	68.2	-17.55	PK	V
Test mode:		802.11a		Test channel:		Highest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5350	43.58	7.2	50.78	68.2	-17.42	PK	H
5350	49.25	7.2	56.45	68.2	-11.75	PK	V

Average:

Test mode:		802.11a		Test channel:		Lowest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5150	31.65	7.18	39.83	48.2	-9.37	AV	H
5150	30.57	7.18	38.75	48.2	-10.45	AV	V
Test mode:		802.11a		Test channel:		Highest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5350	30.84	7.2	38.04	48.2	-10.16	AV	H
5350	36.22	7.2	44.42	48.2	-4.78	AV	V

**Peak value:**

Test mode:		802.11n(HT20)		Test channel:		Lowest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5150	47.88	7.18	55.06	68.2	-13.14	PK	H
5150	54.34	7.18	61.52	68.2	-6.68	PK	V
Test mode:		802.11n(HT20)		Test channel:		Highest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5350	43.41	7.2	50.61	68.2	-17.59	PK	H
5350	50.35	7.2	57.55	68.2	-10.65	PK	V

Average:

Test mode:		802.11n(HT20)		Test channel:		Lowest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5150	33.88	7.18	41.06	48.2	-7.14	AV	H
5150	38.34	7.18	45.52	48.2	-2.68	AV	V
Test mode:		802.11n(HT20)		Test channel:		Highest	
Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector	Antenna Pol.
5350	30.41	7.2	37.61	48.2	-10.59	AV	H
5350	36.35	7.2	43.55	48.2	-4.65	AV	V

**Peak value:**

Test mode:		802.11n(HT40)		Test channel:		Lowest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5150	43.21	7.18	50.39	68.2	-17.81	PK	H
5150	43.49	7.18	50.67	68.2	-17.53	PK	V
Test mode:		802.11n(HT40)		Test channel:		Highest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5350	44.15	7.2	51.35	68.2	-16.85	PK	H
5350	47.6	7.2	54.8	68.2	-13.4	PK	V

Average:

Test mode:		802.11n(HT40)		Test channel:		Lowest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5150	30.11	7.18	37.29	48.2	-10.91	AV	H
5150	29.43	7.18	36.61	48.2	-11.59	AV	V
Test mode:		802.11n(HT40)		Test channel:		Highest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5350	30.24	7.2	37.44	48.2	-10.76	AV	H
5350	32.16	7.2	39.36	48.2	-8.84	AV	V

**Peak value:**

Test mode:		802.11ac(VHT80)		Test channel:		Lowest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5150	45.53	7.18	52.71	68.2	-15.49	PK	H
5150	48.82	7.18	56	68.2	-12.2	PK	V
Test mode:		802.11ac(VHT80)		Test channel:		Highest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5350	46.22	7.2	53.42	68.2	-14.78	PK	H
5350	48.71	7.2	55.91	68.2	-12.29	PK	V

Average:

Test mode:		802.11ac(VHT80)		Test channel:		Lowest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5150	31.23	7.18	38.41	48.2	-9.79	AV	H
5150	34.86	7.18	42.04	48.2	-6.16	AV	V
Test mode:		802.11ac(VHT80)		Test channel:		Highest	
Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Pol.
5350	34.36	7.2	41.56	48.2	-6.64	AV	H
5350	35.71	7.2	42.91	48.2	-5.29	AV	V



Test mode: 802.11a Test channel: Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725	40.52	8.79	49.31	74	-24.69	Horizontal
5741.35	82.41	8.57	90.98	N/A	N/A	Horizontal
5725	41.08	8.79	49.87	74	-24.13	Vertical
5741.35	84.97	8.57	93.54	N/A	N/A	Vertical

Average

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725	30.15	8.79	38.94	54	-15.06	Horizontal
5741.35	72.33	8.57	80.9	N/A	N/A	Horizontal
5725	30.56	8.79	39.35	54	-14.65	Vertical
5741.35	75.98	8.57	84.55	N/A	N/A	Vertical

Test mode: 802.11a Test channel: Highest

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5826.2	78.38	8.79	87.17	N/A	N/A	Horizontal
5850	38.21	8.82	47.03	74	-26.97	Horizontal
5826.2	85.39	8.79	94.18	N/A	N/A	Vertical
5850	40.04	8.82	48.86	74	-25.14	Vertical

Average

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5826.2	70.48	8.79	79.27	N/A	N/A	Horizontal
5850	28.77	8.82	37.59	54	-16.41	Horizontal
5826.2	76.24	8.79	85.03	N/A	N/A	Vertical
5850	28.86	8.82	37.68	54	-16.32	Vertical



Test mode: 802.11n(HT20) Test channel: Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725	37.77	8.79	46.56	74	-27.44	Horizontal
5742.19	77.34	8.57	85.91	N/A	N/A	Horizontal
5725	40.03	8.79	48.82	74	-25.18	Vertical
5742.19	84.15	8.57	92.72	N/A	N/A	Vertical

Average

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725	28.25	8.79	37.04	54	-16.96	Horizontal
5742.19	69.14	8.57	77.71	N/A	N/A	Horizontal
5725	29.57	8.79	38.36	54	-15.64	Vertical
5742.19	75.84	8.57	84.41	N/A	N/A	Vertical

Test mode: 802.11n(HT20) Test channel: Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5826.2	77.84	8.79	86.63	N/A	N/A	Horizontal
5850	38.48	8.82	47.3	74	-26.7	Horizontal
5826.2	85.72	8.79	94.51	N/A	N/A	Vertical
5850	40.25	8.82	49.07	74	-24.93	Vertical

Average

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5826.2	68.71	8.79	77.5	N/A	N/A	Horizontal
5850	28.06	8.82	36.88	54	-17.12	Horizontal
5826.2	74.33	8.79	83.12	N/A	N/A	Vertical
5850	29.15	8.82	37.97	54	-16.03	Vertical



Test mode: 802.11n(HT40) Test channel: Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725	38.79	8.52	47.31	74	-26.69	Horizontal
5745	75.04	8.57	83.61	N/A	N/A	Horizontal
5725	37.86	8.52	46.38	74	-27.62	Vertical
5745	84.53	8.57	93.1	N/A	N/A	Vertical

Average

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725	30.25	8.52	38.77	54	-15.23	Horizontal
5745	68.98	8.57	77.55	N/A	N/A	Horizontal
5725	28.33	8.52	36.85	54	-17.15	Vertical
5745	75.04	8.57	83.61	N/A	N/A	Vertical

Test mode: 802.11n(HT40) Test channel: Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5784.88	79.88	8.68	88.56	N/A	N/A	Horizontal
5850	38.96	8.82	47.78	74	-26.22	Horizontal
5784.88	84.57	8.68	93.25	N/A	N/A	Vertical
5850	42.65	8.82	51.47	74	-22.53	Vertical

Average

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5784.88	71.59	8.68	80.27	N/A	N/A	Horizontal
5850	28.15	8.82	36.97	54	-17.03	Horizontal
5784.88	74.07	8.68	82.75	N/A	N/A	Vertical
5850	27.64	8.82	36.46	54	-17.54	Vertical



Test mode: 802.11ac(VHT80) Test channel: Middle

Peak value:

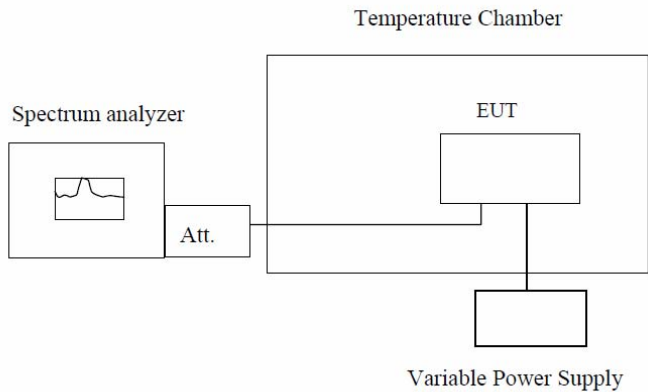
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.000	37.78	8.52	46.30	74.00	-27.70	Horizontal
5778.180	78.45	8.68	87.13	N/A	N/A	Horizontal
5850.000	36.48	8.82	45.30	74.00	-28.70	Horizontal
5725.000	37.85	8.52	46.37	74.00	-27.63	Vertical
5778.180	82.45	8.68	91.13	N/A	N/A	Vertical
5850.000	40.32	8.82	49.14	74.00	-24.86	Vertical

Average

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.000	29.36	8.52	37.88	54.00	-16.12	Horizontal
5778.180	69.99	8.68	78.67	N/A	N/A	Horizontal
5850.000	28.48	8.82	37.30	54.00	-16.70	Horizontal
5725.000	28.67	8.52	37.19	54.00	-16.81	Vertical
5778.180	71.54	8.68	80.22	N/A	N/A	Vertical
5850.000	29.21	8.82	38.03	54.00	-15.97	Vertical



12. Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures 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
Test Procedure:	The EUT was setup to ANSI C63.4, 2014; tested to 2.1055 for compliance to FCC Part 15.407(g) requirements.
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass



Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5180	5176.0687	5182.8249	5181.2442	5177.7389
	5200	5198.5202	5202.6701	5202.2740	5199.3058
	5220	5219.7007	5220.2992	5221.1674	5219.7837
	5240	5239.8969	5240.6706	5240.1099	5239.6216
	5745	5744.9831	5744.9839	5744.9852	5744.9859
	5785	5784.9836	5784.9844	5784.9856	5784.9864
	5825	5824.9841	5824.9849	5824.9860	5824.9868
-20	5180	5179.7573	5180.2944	5180.6480	5179.9911
	5200	5199.5906	5200.4019	5200.0567	5199.7522
	5220	5219.2967	5220.4812	5220.1215	5219.7237
	5240	5239.3734	5240.2079	5240.4396	5239.1181
	5745	5744.9850	5744.9857	5744.9868	5744.9875
	5785	5784.9854	5784.9861	5784.9872	5784.9879
	5825	5824.9859	5824.9865	5824.9876	5824.9882
-10	5180	5179.0013	5180.3317	5180.1444	5179.0542
	5200	5199.8815	5200.7827	5200.9887	5199.1987
	5220	5219.6089	5220.6000	5220.2218	5219.4777
	5240	5239.4328	5240.5442	5240.8986	5239.3408
	5745	5744.9867	5744.9873	5744.9883	5744.9889
	5785	5784.9871	5784.9877	5784.9887	5784.9892
	5825	5824.9874	5824.9880	5824.9890	5824.9895
0	5180	5179.9919	5180.4698	5180.3014	5179.2583
	5200	5199.4327	5200.6270	5200.7563	5199.8542
	5220	5219.0438	5220.0291	5220.0082	5219.9771
	5240	5239.4398	5240.6346	5240.2855	5239.5282
	5745	5744.9836	5744.9844	5744.9856	5744.9863
	5785	5784.9841	5784.9848	5784.9860	5784.9867
	5825	5824.9845	5824.9853	5824.9864	5824.9871



10	5180	5179.1846	5180.0709	5180.8798	5179.3336
	5200	5199.3751	5200.1582	5200.5461	5199.8214
	5220	5219.1598	5220.2019	5220.0809	5219.8280
	5240	5239.0553	5240.5216	5240.6426	5239.6225
	5745	5744.9854	5744.9861	5744.9872	5744.9879
	5785	5784.9859	5784.9865	5784.9876	5784.9882
	5825	5824.9863	5824.9869	5824.9880	5824.9886
20	5180	5179.7902	5180.2032	5180.3252	5179.3511
	5200	5199.6511	5200.4005	5200.8141	5199.4444
	5220	5219.4130	5220.6676	5220.3710	5219.5744
	5240	5239.1440	5240.8696	5240.3374	5239.3192
	5745	5744.9871	5744.9877	5744.9886	5744.9892
	5785	5784.9874	5784.9880	5784.9890	5784.9895
	5825	5824.9878	5824.9884	5824.9893	5824.9898
30	5180	5179.8476	5180.8221	5180.1961	5179.7338
	5200	5199.2194	5200.2297	5200.2910	5199.5565
	5220	5219.2583	5220.4507	5220.9143	5219.5430
	5240	5239.5687	5240.2940	5240.7564	5239.9917
	5745	5744.9830	5744.9838	5744.9851	5744.9858
	5785	5784.9835	5784.9842	5784.9855	5784.9862
	5825	5824.9839	5824.9847	5824.9859	5824.9866
40	5180	5179.8886	5180.6081	5180.1391	5179.9885
	5200	5199.4928	5200.6900	5200.8309	5199.7044
	5220	5219.3797	5220.5214	5220.5883	5219.6076
	5240	5239.3262	5240.8700	5240.6540	5239.9958
	5745	5744.9849	5744.9856	5744.9867	5744.9874
	5785	5784.9853	5784.9860	5784.9871	5784.9878
	5825	5824.9857	5824.9864	5824.9875	5824.9881
50	5180	5179.4018	5180.4764	5180.3674	5179.2140
	5200	5199.2490	5200.7946	5200.2013	5199.2759
	5220	5219.7416	5220.8228	5220.5299	5219.3600
	5240	5239.4667	5240.2276	5240.0121	5239.2702
	5745	5744.9865	5744.9872	5744.9882	5744.9888
	5785	5784.9869	5784.9876	5784.9885	5784.9891
	5825	5824.9873	5824.9879	5824.9889	5824.9894



Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
6.9	5180	5183.9048	5181.9198	5176.2708	5178.5336
	5200	5203.8262	5200.1891	5196.7549	5198.0041
	5220	5220.7493	5220.2034	5217.4129	5219.8387
	5240	5240.7087	5240.7518	5238.4864	5239.3392
	5745	5744.9849	5744.9856	5744.9868	5744.9874
	5785	5784.9854	5784.9861	5784.9872	5784.9878
	5825	5824.9858	5824.9865	5824.9875	5824.9882
7.6	5180	5180.9781	5180.2992	5179.2130	5179.3551
	5200	5200.1740	5200.5893	5199.8789	5199.2439
	5220	5220.9553	5220.2861	5219.6715	5219.6681
	5240	5240.0801	5240.7848	5239.3405	5239.7950
	5745	5744.9866	5744.9872	5744.9882	5744.9888
	5785	5784.9870	5784.9876	5784.9886	5784.9892
	5825	5824.9874	5824.9880	5824.9889	5824.9895
8.4	5180	5180.1700	5180.5389	5179.2287	5179.2840
	5200	5200.3835	5200.4865	5199.2229	5199.3899
	5220	5220.0028	5220.8285	5219.1584	5219.3015
	5240	5240.6934	5240.4117	5239.6403	5239.0381
	5745	5744.9881	5744.9887	5744.9896	5744.9901
	5785	5784.9884	5784.9890	5784.9899	5784.9904
	5825	5824.9888	5824.9893	5824.9902	5824.9907



13. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.150
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

13.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.