



TEST REPORT

No. I22N01324-WLAN 5GHz

TCL Communication Ltd.

LINKZONE

Model Name: R228t

with

Hardware Version: R228t-V1.0

Software Version: vdfeu_R228t_IZ_02.00_04

FCC ID: 2ACCJB182

Issued Date: 2022-08-25

Designation Number: CN1210

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

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1. Summary of Test Report

1.1. Test Items

Description	LINKZONE
Model Name	R228t
Applicant's name	TCL Communication Ltd.
Manufacturer's Name	TCL Communication Ltd.

1.2. Test Standards

FCC Part15-2019; ANSI C63.10-2013

1.3. Test Result

Pass

Please refer to 5.2 Test Results.

1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China

1.5. Project data

Testing Start Date:	2022-06-17
Testing End Date:	2022-07-14

1.6. Signature

Lin Kanfeng
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2. Client Information

2.1. Applicant Information

Company Name: TCL Communication Ltd.
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2.2. Manufacturer Information

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3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	LINKZONE
Model Name	R228t
RLAN Frequency Range	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz -5470MHz~5725MHz -5725MHz~5850MHz
RLAN Protocol	IEEE 802.11a,802.11n-HT20/40,802.11ac-VHT20/40/80
Type of modulation	OFDM
Antenna Type	Integrated
Antenna Gain	SISO: Antenna 0 = 1.4 dBi, Antenna 1 = 3.6 dBi; MIMO: Antenna 01 = 5.55 dBi.
Power Supply	4V DC by Battery
FCC ID	2ACCJB182
Condition of EUT as received	No abnormality in appearance
Note:	According to KDB 662911, beamforming directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$ dBi

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version	Receive Date
UT01aa	/	R228t-V1.0	vdfeu_R228t_IZ_02.00_04	2022-06-15
UT07aa	/	R228t-V1.0	vdfeu_R228t_IZ_02.00_04	2022-06-15

*EUT ID: is used to identify the test sample in the lab internally.

*UT01aa is used for Conduction test; UT07aa is used for radiation test.

3.3. Internal Identification of AE

AE ID*	Description	Mode
AE1	Battery	TLi021F7
AE2	Battery	TLi021FA
AE3	Charger	UC11US

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment under Test (EUT) is a model of LINKZONE with integrated antenna and battery. It consists of normal options: Lithium Battery and Charger. Manual and specifications of the EUT were provided to fulfil the test. Samples undergoing test were selected by the client.



4. REFERENCE DOCUMENTS

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C FCC CFR 47, Part 15, Subpart E	2019
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
KDB 789033	GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E	v02r01
KDB 662911	Provision to Allow Measurement of Directional Gain of Multi-Antenna Systems for Compliance Verification	v01



5. Test Results

5.1. Testing Environment

Normal Temperature: 15~35°C

Relative Humidity: 20~75%

5.2. Test Results

No.	Test cases	Sub-clause of Part15E	Verdict
1	Maximum Output Power	15.407	P
2	Power Spectral Density	15.407	P
3	Occupied 26dB Bandwidth	15.403	P
4	Occupied 6dB Bandwidth	15.407	P
5	99% Occupied Bandwidth	15.403	P
6	Band edge compliance	15.209	P
7	Transmitter Spurious Emissions	15.407, 15.205	P
8	AC Power line Conducted	15.107, 15.207	P
9	Transmit Power Control	15.407	NA

Please refer to **ANNEX A** for detail.

5.3. Statements

SAICT has evaluated the test cases requested by the applicant/manufacturer as listed in section 5.2 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2.

Disclaimer:

A. After confirmation with the customer, the sample information provided by the customer may affect the validity of the measurement results in this report, and the impact and consequences arising therefrom shall be borne by the customer.

B. The samples in this report are provided by the customer, and the test results are only applicable to the samples received.



6. Test Equipments Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2022-12-29	1 year
2	Power Sensor	U2021XA	MY55430013	Keysight	2022-12-29	1 year
3	Data Acquisition	U2531A	TW55443507	Keysight	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	LISN	ENV216	102067	R&S	2023-07-14	1 year
2	Test Receiver	ESCI	100702	R&S	2023-01-12	1 year
3	Loop Antenna	HLA6120	35779	TESEQ	2025-04-24	3 years
4	BiLog Antenna	3142E	0224831	ETS-Lindgren	2024-05-27	3 years
5	Horn Antenna	3117	00066577	ETS-Lindgren	2025-04-01	3 years
6	Test Receiver	ESR7	101676	R&S	2022-11-24	1 year
7	Spectrum Analyzer	FSV40	101192	R&S	2023-01-12	1 year
8	Chamber	FACT3-2.0	1285	ETS-Lindgren	2023-05-29	2 years
9	Antenna	QSH-SL-1 8-26-S-20	17013	Q-par	2023-01-06	3 years
10	Antenna	QSH-SL-1 8-40-K-SG	15979	Q-par	2023-01-06	3 years

Test software

No.	Equipment	Manufacturer	Version
1	TechMgr Software	CAICT	2.1.1
2	EMC32	Rohde & Schwarz	10.50.40

EUT is engineering software provided by the customer to control the transmitting signal. The EUT was programmed to be in continuously transmitting mode.

Anechoic chamber

Fully anechoic chamber by ETS-Lindgren

7. Laboratory Environment

Semi-anechoic chamber

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ±4 dB, 3 m distance, from 30 to 1000 MHz

Shielded room

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω

Fully-anechoic chamber

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18 GHz, 3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

**8. Measurement Uncertainty**

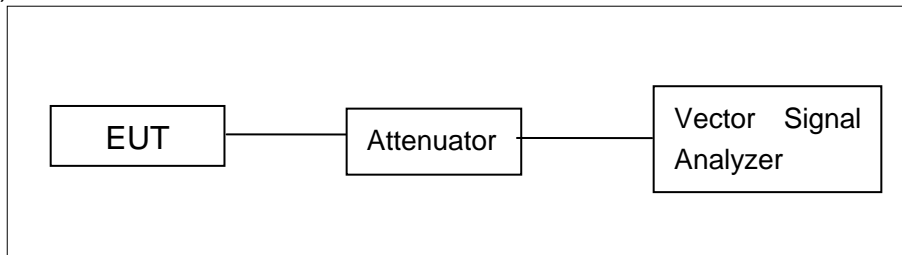
Test Name	Uncertainty ($k=2$)	
1. RF Output Power - Conducted	1.36dB	
2. Power Spectral Density - Conducted	1.36dBm/MHz	
3. Occupied channel bandwidth - Conducted	4.56kHz	
4. Transmitter Spurious Emission - Radiated	$9\text{kHz} \leq f < 30\text{MHz}$	1.79dB
	$30\text{MHz} \leq f < 1\text{GHz}$	4.86dB
	$1\text{GHz} \leq f < 18\text{GHz}$	4.50dB
	$18\text{GHz} \leq f \leq 40\text{GHz}$	2.90dB
5. AC Power line Conducted Emission	$150\text{kHz} \leq f \leq 30\text{MHz}$	2.62dB

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

Conducted Measurements

- 1). Connect the EUT to the test system correctly.
- 2). Set the EUT to the required work mode.
- 3). Set the EUT to the required channel.
- 4). Set the spectrum analyzer to start measurement.
- 5). Record the values.

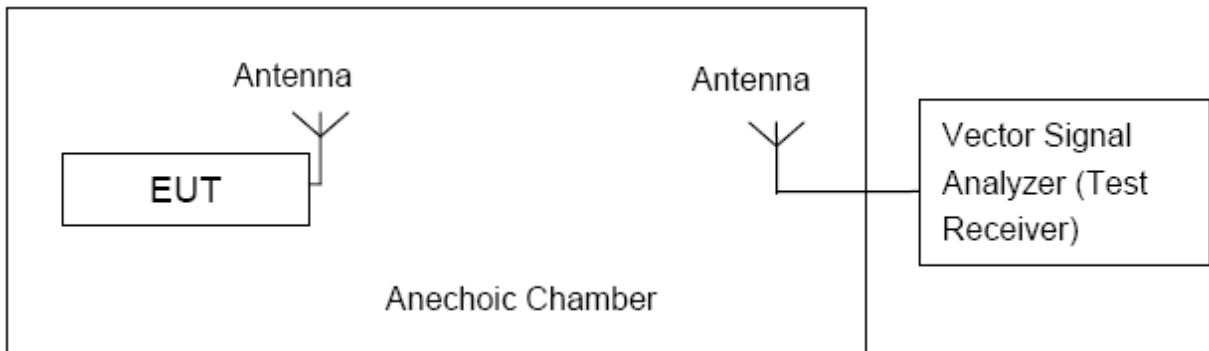


Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows:

Sweep frequency from 30 MHz to 1 GHz, RBW = 100 KHz, VBW = 300 KHz;

Sweep frequency from 1 GHz to 26 GHz, RBW = 1 MHz, VBW = 10 Hz;



The measurement is made according to KDB 789033.

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.



A.2. Maximum Output Power

Measurement Limit and Method:

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407	5150MHz~5250MHz	24
	5250MHz~5350MHz	24 or 11+10logB
	5470MHz~5725MHz	24 or 11+10logB
	5725MHz~5850MHz	30

Limit use the less value, and B is the 26dB bandwidth.

Measurement of method: See ANSI C63.10-2013-Clause 12.3.3.2

Method PM-G is a measurement using a gated RF average power meter.

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Measurement Results:

SISO

U-NII Band	Mode	Channel	Frequency (MHz)	Output Power (dBm)	
				Antenna 0	Antenna 1
5.2GHz Band (UNII-1)	802.11a	CH 36	5180	11.94	11.48
		CH 40	5200	11.92	11.35
		CH 48	5240	12.07	11.17
	802.11n-HT20	CH 36	5180	10.72	10.29
		CH 40	5200	10.76	10.26
		CH 48	5240	10.82	10.03
	802.11n-HT40	CH 38	5190	9.61	9.14
		CH 46	5230	9.73	9.12
	802.11ac-VHT20	CH 36	5180	8.81	9.23
		CH 40	5200	9.79	9.19
		CH 48	5240	9.89	9.06
	802.11ac-VHT40	CH 38	5190	9.78	9.27
CH 46		5230	9.85	9.16	
802.11ac-VHT80	CH 42	5210	9.86	9.12	
5.3GHz Band (UNII-2A)	802.11a	CH 52	5260	11.92	11.14
		CH 56	5280	11.88	11.05
		CH 64	5320	11.94	11.17
	802.11n-HT20	CH 52	5260	10.76	9.93
		CH 56	5280	10.72	9.90
		CH 64	5320	10.74	10.07
	802.11n-HT40	CH 54	5270	9.67	9.00



	802.11ac-VHT20	CH 62	5310	9.74	9.05
		CH 52	5260	9.83	8.99
		CH 56	5280	9.77	8.94
		CH 64	5320	9.79	9.02
	802.11ac-VHT40	CH 54	5270	9.77	9.06
		CH 62	5310	9.83	9.11
	802.11ac-VHT80	CH 58	5290	9.65	8.88
5.5GHz Band (UNII-2C)	802.11a	CH 100	5500	12.56	11.53
		CH 116	5580	12.64	11.44
		CH 140	5700	12.49	11.33
	802.11n-HT20	CH 100	5500	11.42	10.45
		CH 116	5580	11.44	10.31
		CH 140	5700	11.34	10.26
	802.11n-HT40	CH 102	5510	10.31	9.33
		CH 134	5670	10.18	9.01
	802.11ac-VHT20	CH 100	5500	10.48	9.35
		CH 116	5580	10.51	9.27
		CH 140	5700	10.32	9.18
	802.11ac-VHT40	CH 102	5510	10.43	9.37
		CH 134	5670	10.26	9.05
	802.11ac-VHT80	CH 122	5610	10.35	9.13
	5.8GHz Band (UNII-3)	802.11a	CH 149	5745	12.55
CH 157			5785	12.82	11.61
CH 165			5825	12.95	11.78
802.11n-HT20		CH 149	5745	11.35	10.28
		CH 157	5785	11.72	10.67
		CH 165	5825	11.85	10.79
802.11n-HT40		CH 151	5755	10.28	9.30
		CH 159	5795	10.60	9.64
802.11ac-VHT20		CH 149	5745	10.43	9.39
		CH 157	5785	10.67	9.77
		CH 165	5825	10.86	9.86
802.11ac-VHT40		CH 151	5755	10.35	9.39
		CH 159	5795	10.71	9.71
802.11ac-VHT80		CH 155	5775	10.64	9.72

MIMO

U-NII Band	Mode	Channel	Frequency (MHz)	Output Power (dBm)		
				Antenna 0	Antenna 1	Sum
5.2GHz Band (UNII-1)	802.11n-HT20	CH 36	5180	10.63	10.28	13.47
		CH 40	5200	10.62	10.25	13.45
		CH 48	5240	10.67	10.02	13.37



	802.11n-HT40	CH 38	5190	9.57	9.25	12.42	
		CH 46	5230	9.72	9.17	12.46	
	802.11ac-VHT20	CH 36	5180	9.75	9.46	12.62	
		CH 40	5200	9.69	9.35	12.53	
		CH 48	5240	9.76	9.18	12.49	
	802.11ac-VHT40	CH 38	5190	9.67	9.29	12.49	
		CH 46	5230	9.78	9.18	12.50	
802.11ac-VHT80	CH 42	5210	9.77	9.19	12.50		
5.3GHz Band (UNII-2A)	802.11n-HT20	CH 52	5260	10.65	10.02	13.36	
		CH 56	5280	10.64	9.89	13.29	
		CH 64	5320	10.67	10.07	13.39	
	802.11n-HT40	CH 54	5270	9.65	8.96	12.33	
		CH 62	5310	9.66	9.10	12.40	
	802.11ac-VHT20	CH 52	5260	9.71	9.08	12.42	
		CH 56	5280	9.67	8.99	12.35	
		CH 64	5320	9.71	9.06	12.41	
	802.11ac-VHT40	CH 54	5270	9.71	8.94	12.35	
		CH 62	5310	9.74	9.06	12.42	
	802.11ac-VHT80	CH 58	5290	9.63	8.95	12.31	
	5.5GHz Band (UNII-2C)	802.11n-HT20	CH 100	5500	11.34	10.37	13.89
			CH 116	5580	11.42	10.31	13.91
			CH 140	5700	11.26	10.24	13.79
802.11n-HT40		CH 102	5510	10.28	9.33	12.84	
		CH 134	5670	10.12	9.10	12.65	
802.11ac-VHT20		CH 100	5500	10.42	9.36	12.93	
		CH 116	5580	10.45	9.39	12.96	
		CH 140	5700	10.28	9.31	12.83	
802.11ac-VHT40		CH 102	5510	10.38	9.46	12.95	
		CH 134	5670	10.19	8.99	12.64	
802.11ac-VHT80		CH 122	5610	10.31	9.13	12.77	
5.8GHz Band (UNII-3)	802.11n-HT20	CH 149	5745	11.29	10.33	13.85	
		CH 157	5785	11.57	10.72	14.18	
		CH 165	5825	11.73	10.82	14.31	
	802.11n-HT40	CH 151	5755	10.23	9.34	12.82	
		CH 159	5795	10.52	9.73	13.15	
	802.11ac-VHT20	CH 149	5745	10.29	9.31	12.84	
		CH 157	5785	10.61	9.71	13.19	
		CH 165	5825	10.78	9.78	13.32	
	802.11ac-VHT40	CH 151	5755	10.31	9.27	12.83	
		CH 159	5795	10.63	9.64	13.17	
	802.11ac-VHT80	CH 155	5775	10.58	9.68	13.16	

Conclusion: PASS



Note:

Worst-case data rates as provided by the client were: 6Mbps (802.11a), MCS0 (802.11n), MCS0 (802.11ac). 802.11a, 802.11ac-VHT40 and 802.11ac-VHT80 modes are selected as the worst case. **Antenna 0** is selected as the worst condition (SISO). The following cases and test graphs are performed with this condition. The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.



A.3. Peak Power Spectral Density

Measurement Limit:

Standard	Frequency (MHz)	Limit
FCC CRF Part 15.407	5150MHz~5250MHz	11dBm/MHz
	5250MHz~5350MHz	11dBm/MHz
	5470MHz~5725MHz	11dBm/MHz
	5725MHz~5850MHz	30dBm/500KHz

The PPSD measurement method SA-1 is made according to KDB 789033.

Measurement Results:

SISO

U-NII Band	Mode	Channel	Frequency (MHz)	Test Results (dBm/MHz)
5.2GHz Band (UNII-1)	802.11a	CH 36	5180	-0.79
		CH 40	5200	-0.77
		CH 48	5240	-0.86
	802.11ac-VHT40	CH 38	5190	-5.98
		CH 46	5230	-5.90
	802.11ac-VHT80	CH 42	5210	-9.27
5.3GHz Band (UNII-2A)	802.11a	CH 52	5260	-0.92
		CH 56	5280	-0.86
		CH 64	5320	-0.84
	802.11ac-VHT40	CH 54	5270	-6.08
		CH 62	5310	-6.18
	802.11ac-VHT80	CH 58	5290	-9.91
5.5GHz Band (UNII-2C)	802.11a	CH 100	5500	-0.09
		CH 116	5580	-0.17
		CH 140	5700	-0.39
	802.11ac-VHT40	CH 102	5510	-5.34
		CH 134	5670	-5.63
	802.11ac-VHT80	CH 122	5610	-8.85
5.8GHz Band (UNII-3)	802.11a	CH 149	5745	-0.15
		CH 157	5785	-0.11
		CH 165	5825	-0.02
	802.11ac-VHT40	CH 151	5755	-5.22
		CH 159	5795	-4.90
	802.11ac-VHT80	CH 155	5775	-8.73

MIMO

U-NII Band	Mode	Channel	Frequency (MHz)	Output Power (dBm)		
				Ant 1	Ant 2	Sum



5.2GHz Band (UNII-1)	802.11n-HT20	CH 36	5180	-0.84	-1.45	1.88
		CH 40	5200	-0.78	-1.55	1.86
		CH 48	5240	-0.62	-1.68	1.89
	802.11ac-VHT40	CH 38	5190	-6.05	-6.45	-3.24
		CH 46	5230	-6.04	-6.80	-3.39
	802.11ac-VHT80	CH 42	5210	-9.34	-9.99	-6.64
5.3GHz Band (UNII-2A)	802.11n-HT20	CH 52	5260	-0.84	-1.63	1.79
		CH 56	5280	-0.81	-1.66	1.80
		CH 64	5320	-0.77	-1.57	1.86
	802.11ac-VHT40	CH 54	5270	-6.19	-6.68	-3.42
		CH 62	5310	-6.27	-6.62	-3.43
	802.11ac-VHT80	CH 58	5290	-9.97	-10.99	-7.44
5.5GHz Band (UNII-2C)	802.11n-HT20	CH 100	5500	0.03	-1.44	2.37
		CH 116	5580	-0.11	-1.62	2.21
		CH 140	5700	-0.28	-1.87	2.01
	802.11ac-VHT40	CH 102	5510	-5.40	-6.77	-3.02
		CH 134	5670	-5.69	-6.86	-3.23
	802.11ac-VHT80	CH 122	5610	-8.90	-10.32	-6.54
5.8GHz Band (UNII-3)	802.11n-HT20	CH 149	5745	-0.04	-1.78	2.19
		CH 157	5785	0.08	-1.36	2.43
		CH 165	5825	0.22	-0.85	2.73
	802.11ac-VHT40	CH 151	5755	-5.41	-6.87	-3.07
		CH 159	5795	-4.97	-6.21	-2.54
	802.11ac-VHT80	CH 155	5775	-8.81	-9.97	-6.34

Conclusion: PASS



A.4. Occupied 26dB Bandwidth

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.403	/

The measurement is made according to KDB 789033.

Measurement Result:

Mode	Channel	Occupied 26dB Bandwidth (MHz)		Conclusion
		Fig.	Value	
802.11a	5180MHz (Ch36)	Fig.1	20.55	P
	5200MHz (Ch40)	Fig.2	22.55	P
	5240MHz (Ch48)	Fig.3	21.00	P
	5260MHz (Ch52)	Fig.4	21.45	P
	5280MHz (Ch56)	Fig.5	22.55	P
	5320MHz (Ch64)	Fig.6	21.05	P
	5500MHz (Ch100)	Fig.7	22.30	P
	5580MHz (Ch116)	Fig.8	21.45	P
	5700MHz (Ch140)	Fig.9	21.15	P
802.11ac-VHT40	5190MHz (Ch38)	Fig.10	46.32	P
	5230MHz (Ch46)	Fig.11	46.24	P
	5270MHz (Ch54)	Fig.12	45.60	P
	5310MHz (Ch62)	Fig.13	43.76	P
	5510MHz (Ch102)	Fig.14	45.20	P
	5670MHz (Ch134)	Fig.15	45.04	P
802.11ac-VHT80	5210MHz (Ch42)	Fig.16	81.44	P
	5290MHz (Ch58)	Fig.17	81.28	P
	5610MHz (Ch122)	Fig.18	84.48	P

Conclusion: PASS

Test graphs as below:

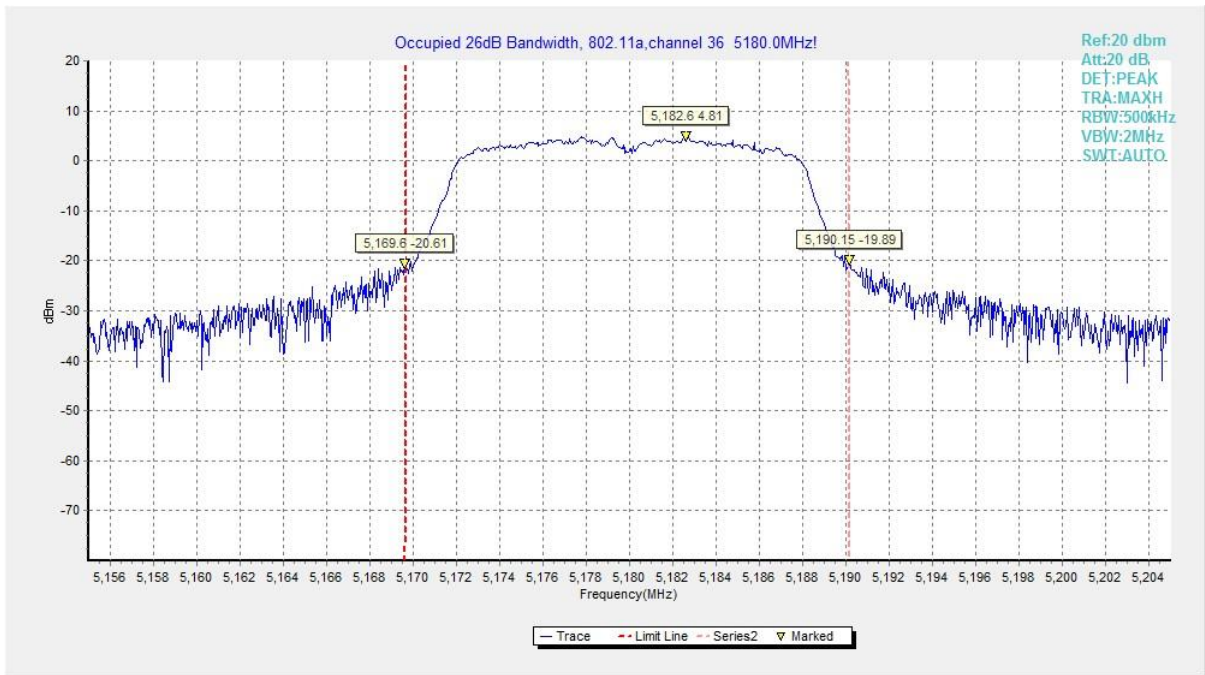


Fig. 1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

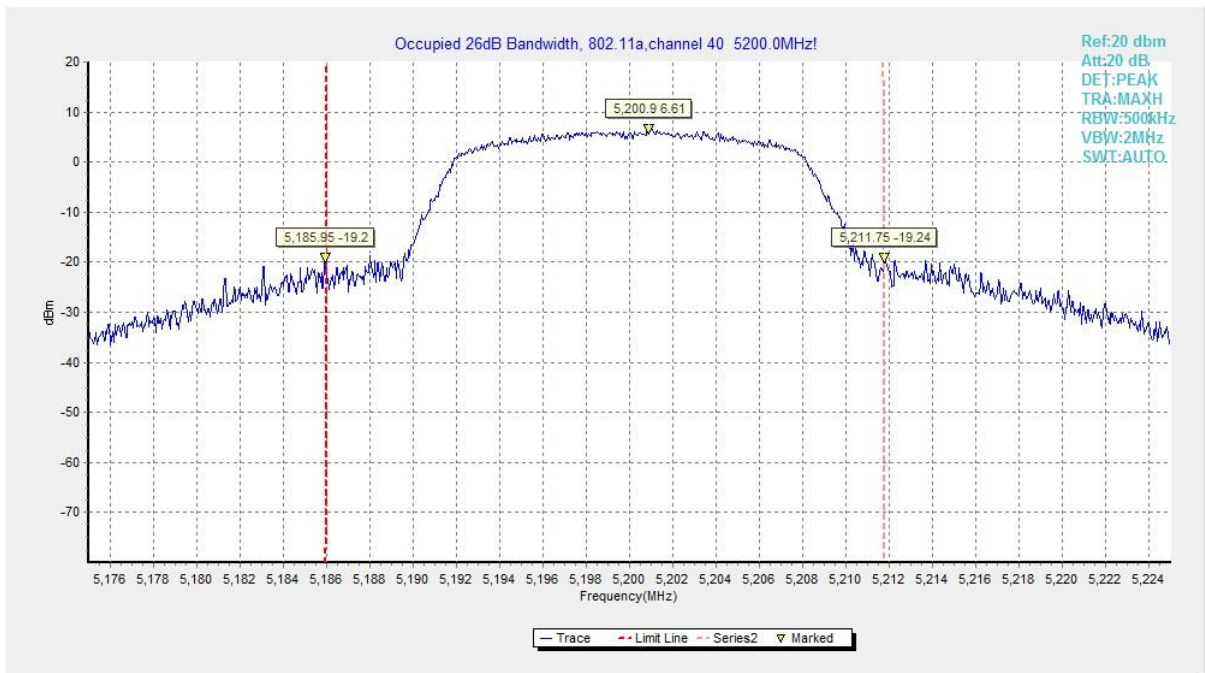


Fig. 2 Occupied 26dB Bandwidth (802.11a, 5200MHz)

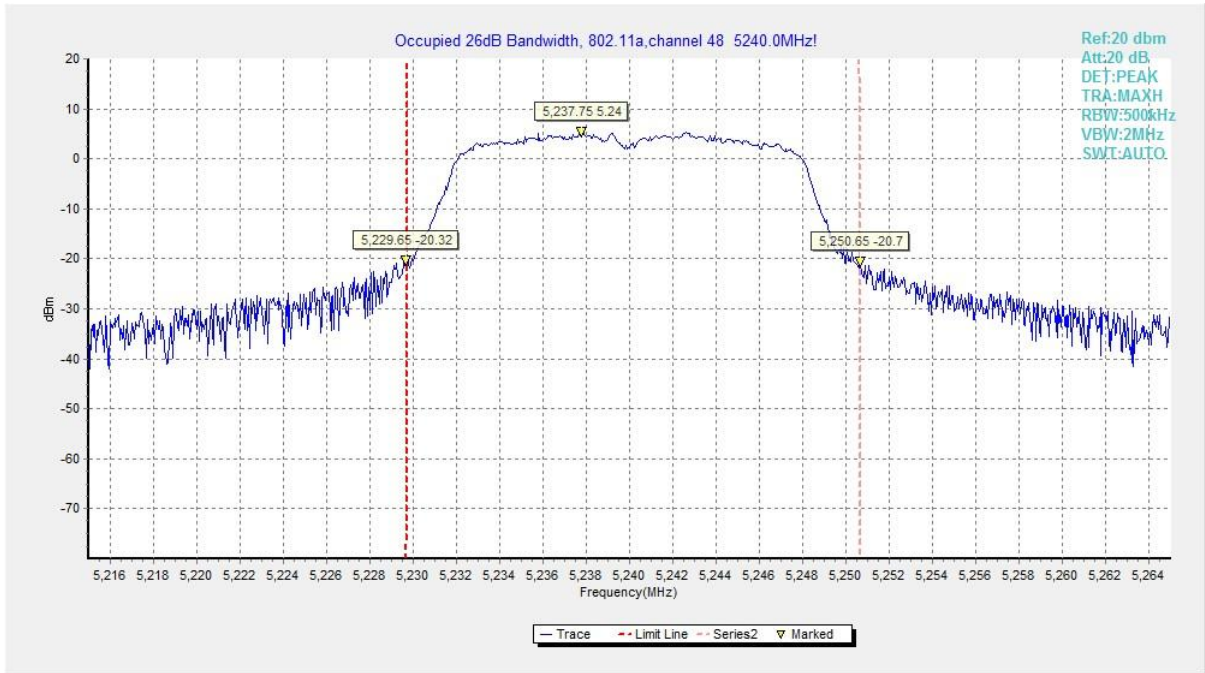


Fig. 3 Occupied 26dB Bandwidth (802.11a, 5240MHz)

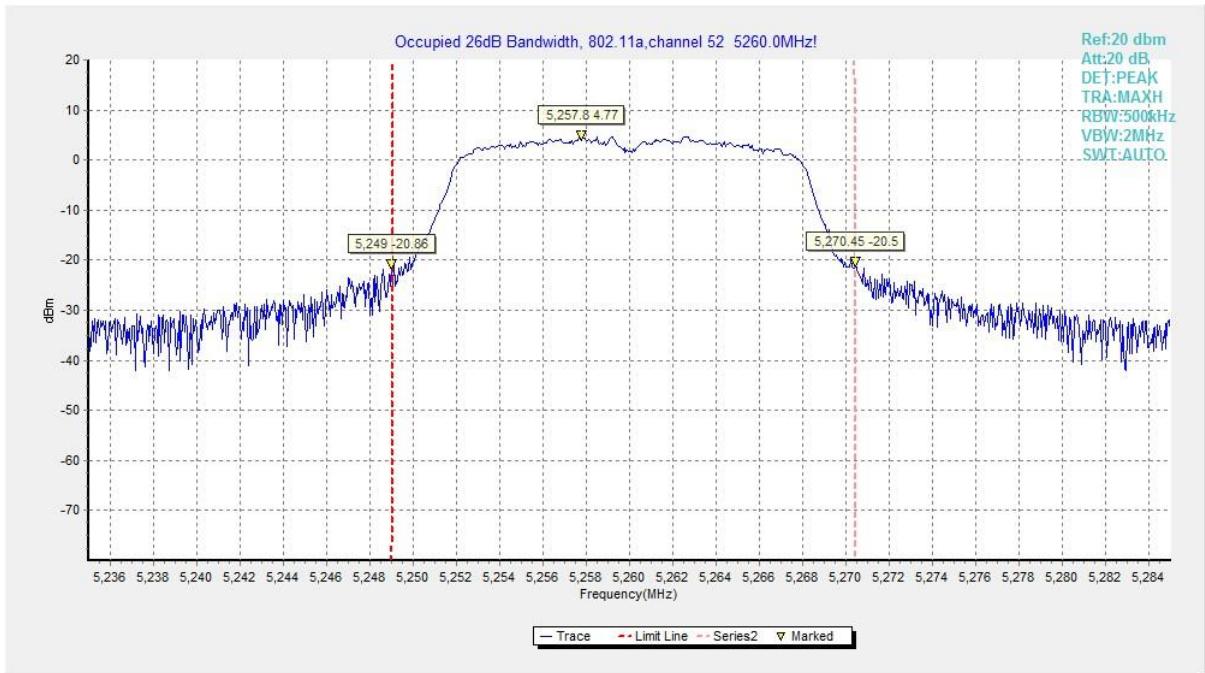


Fig. 4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

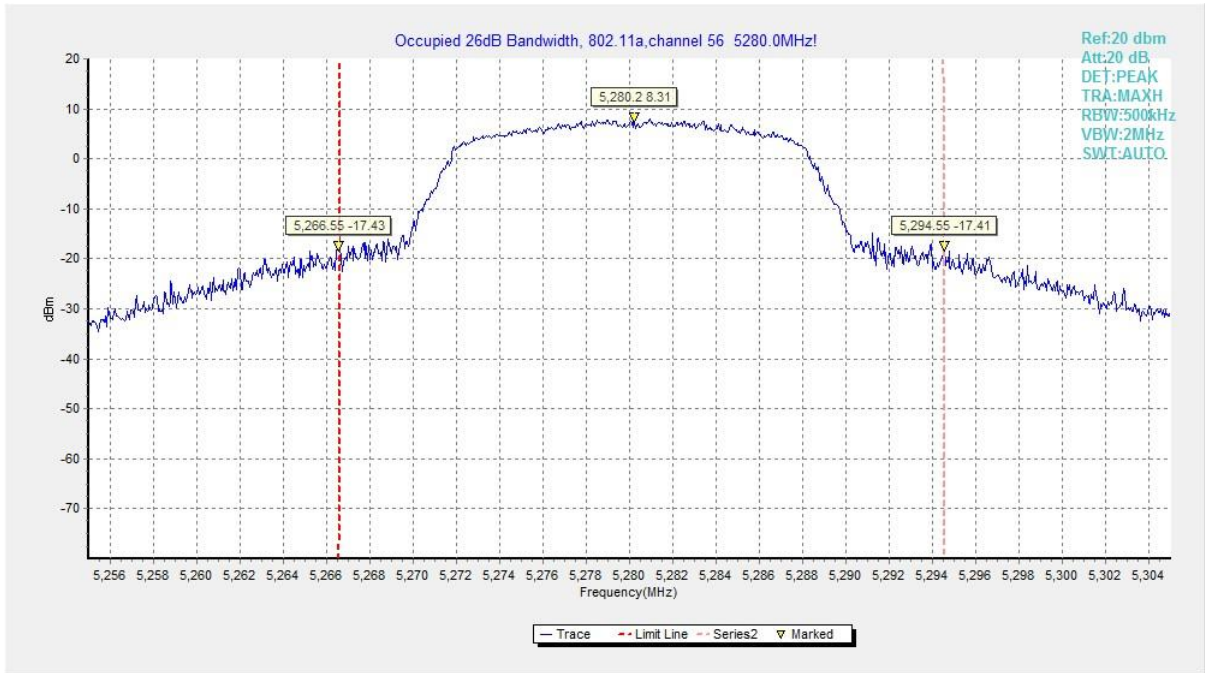


Fig. 5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

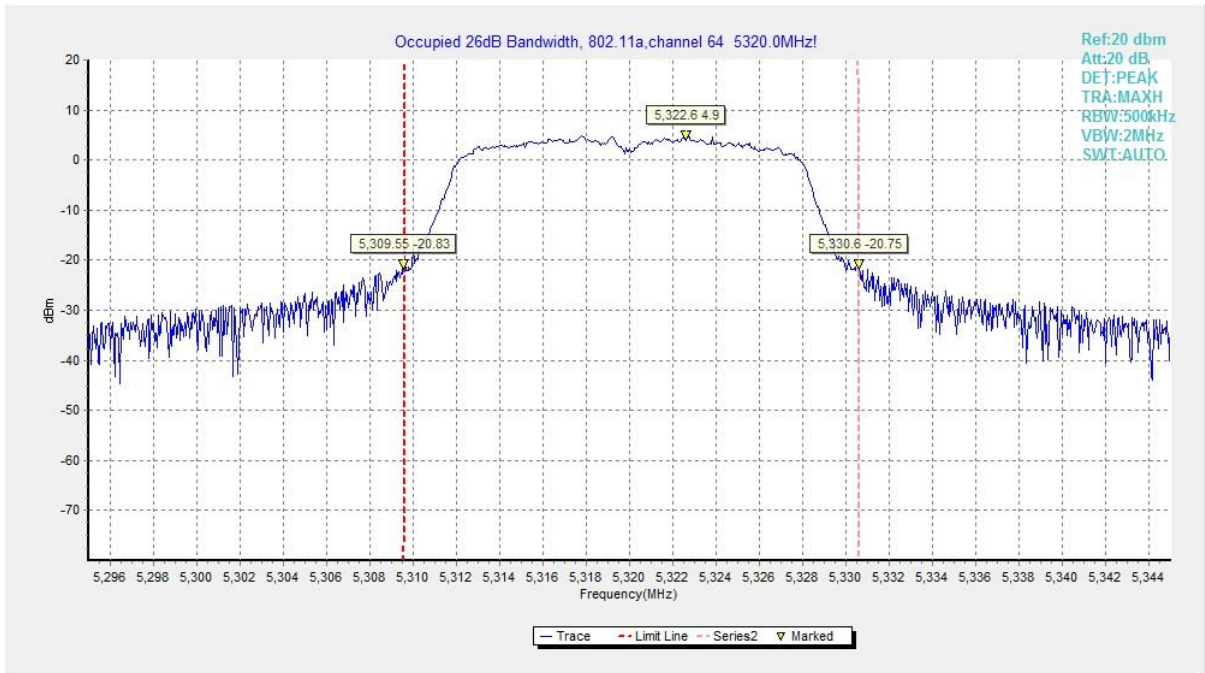


Fig. 6 Occupied 26dB Bandwidth (802.11a, 5320MHz)

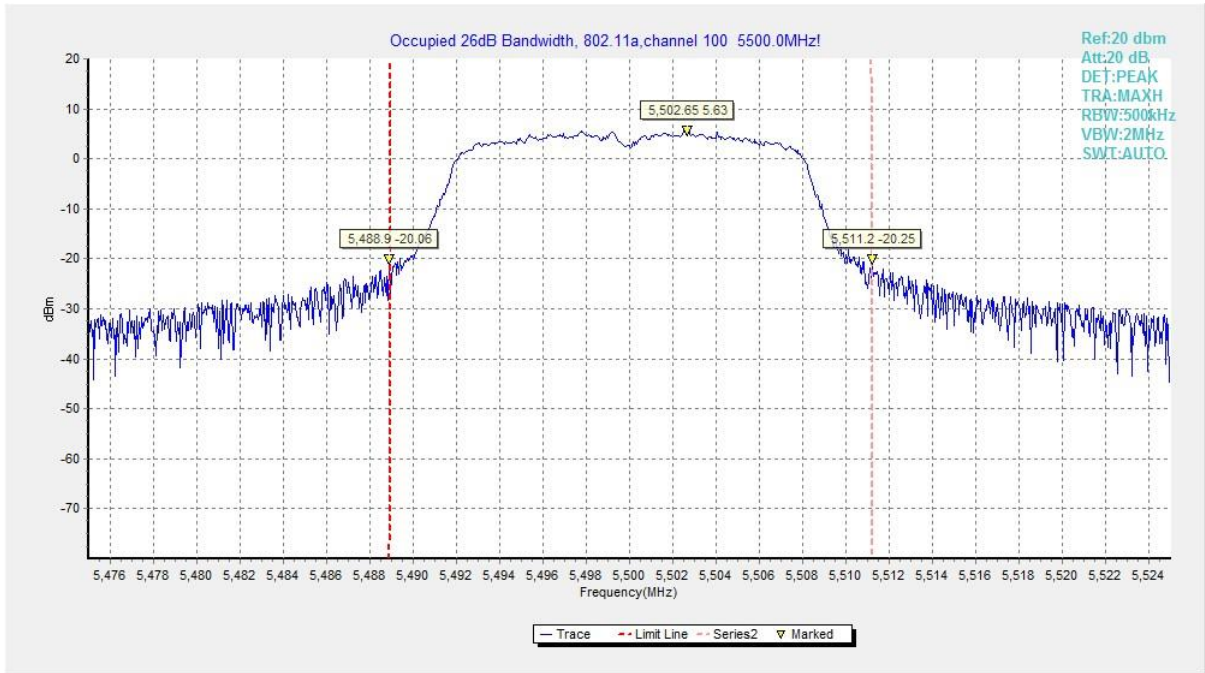


Fig. 7 Occupied 26dB Bandwidth (802.11a, 5500MHz)

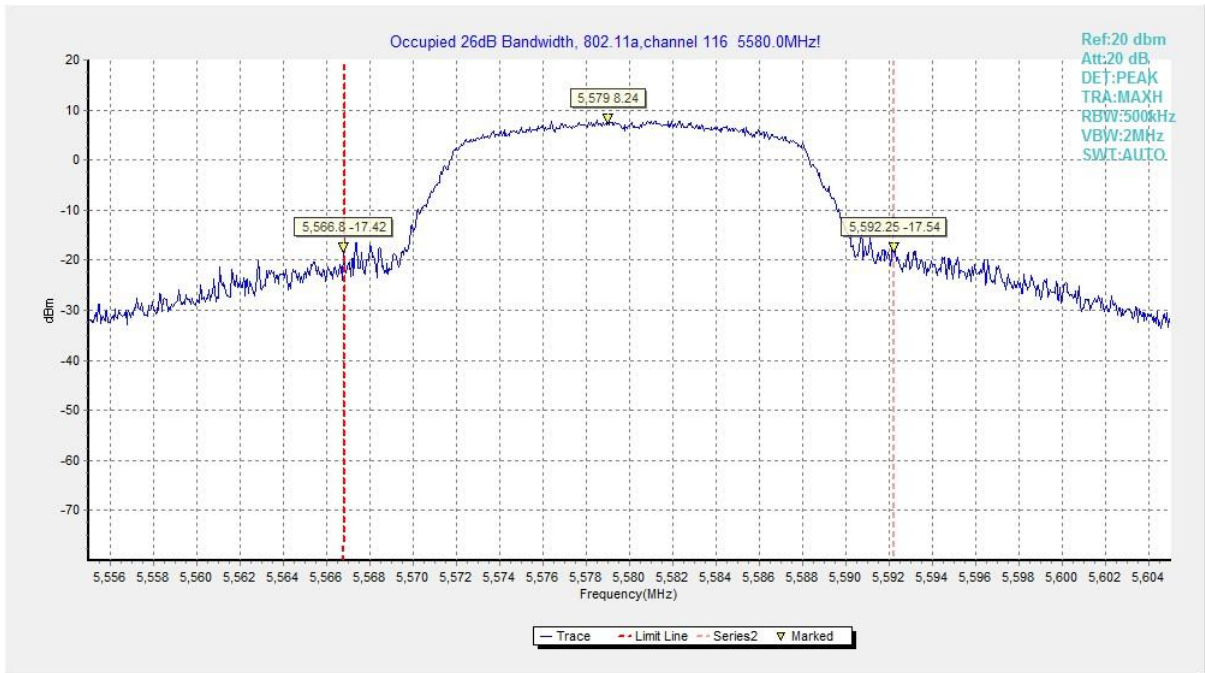


Fig. 8 Occupied 26dB Bandwidth (802.11a, 5580MHz)

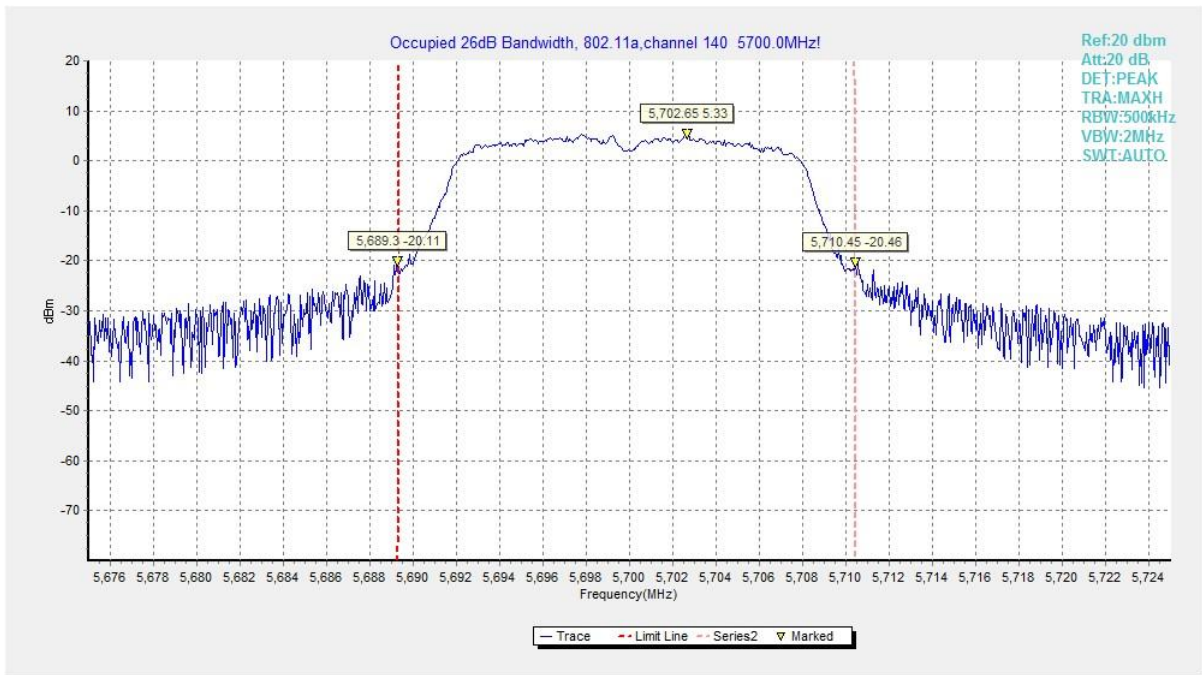


Fig. 9 Occupied 26dB Bandwidth (802.11a, 5700MHz)

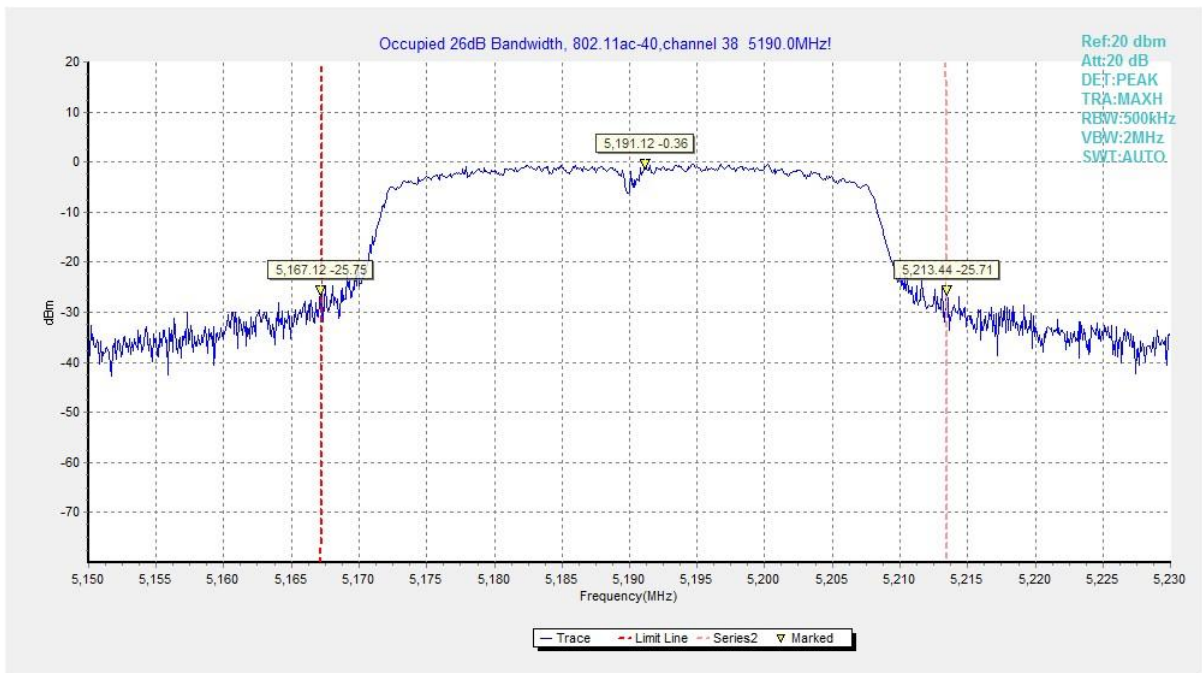


Fig. 10 Occupied 26dB Bandwidth (802.11ac-VHT40, 5190MHz)

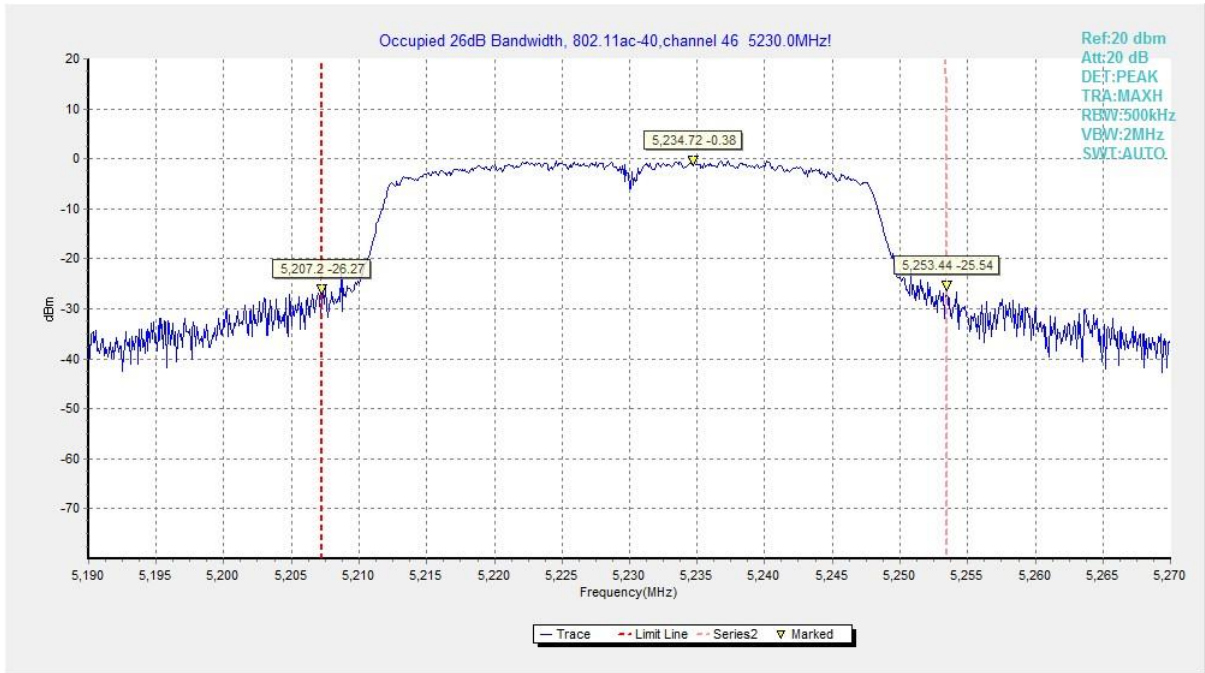


Fig. 11 Occupied 26dB Bandwidth (802.11ac-VHT40, 5230MHz)

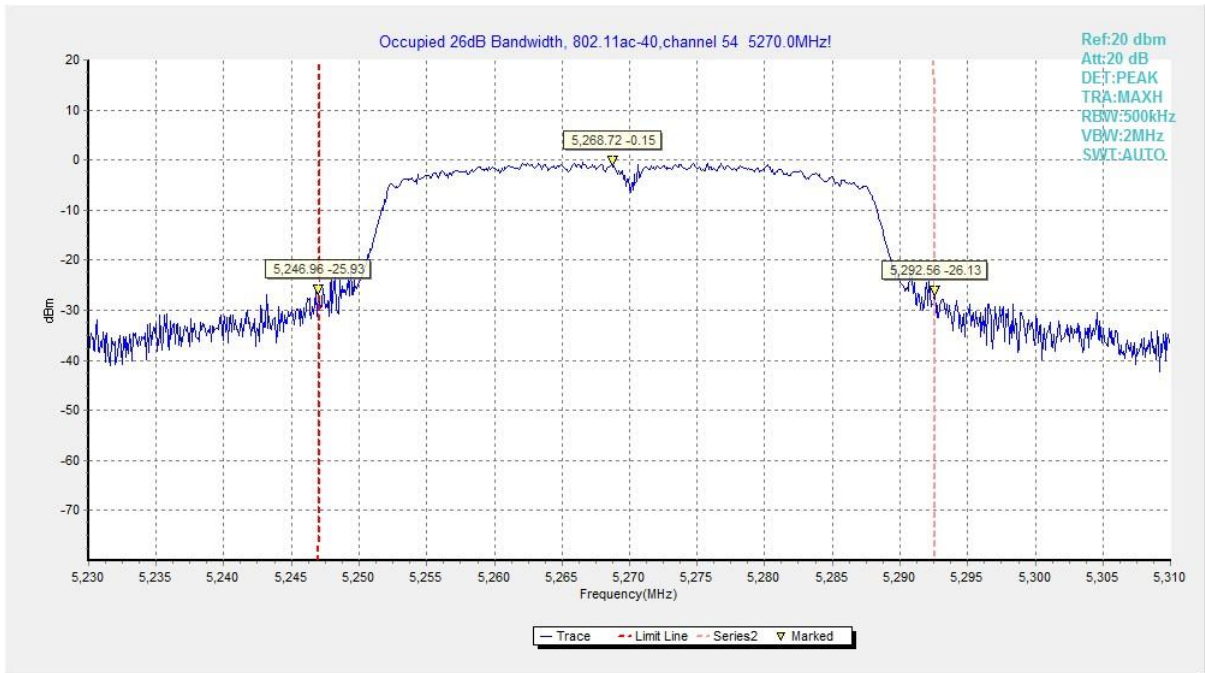


Fig. 12 Occupied 26dB Bandwidth (802.11ac-VHT40, 5270MHz)

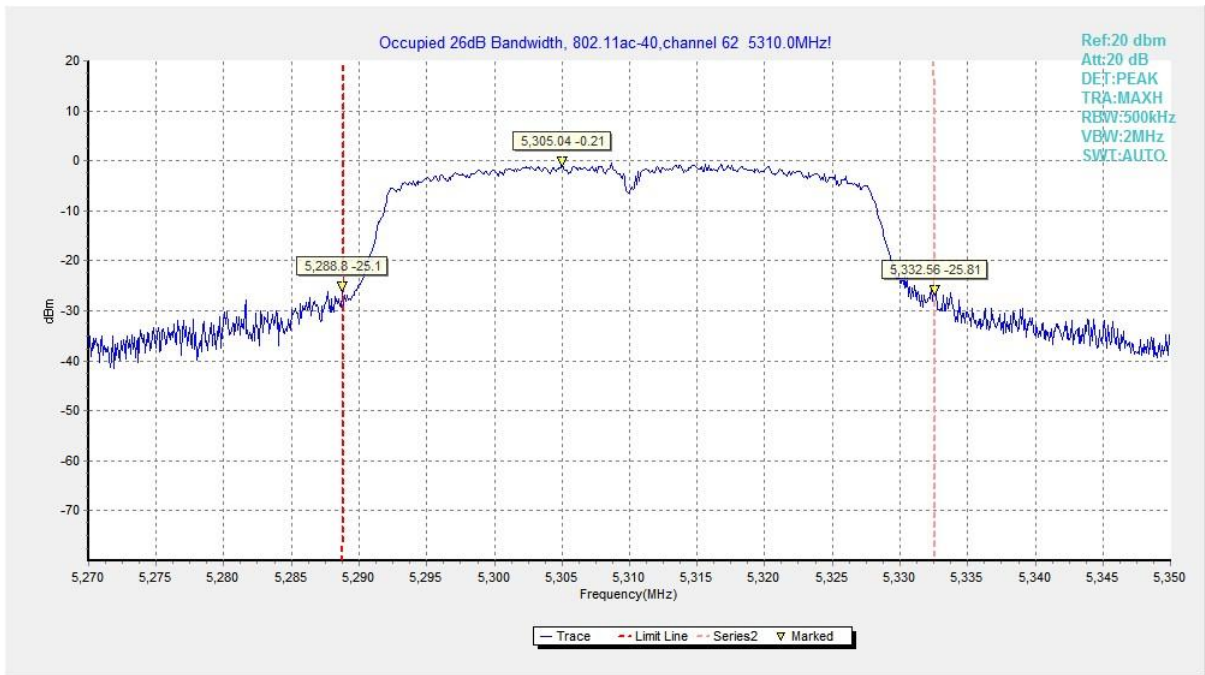


Fig. 13 Occupied 26dB Bandwidth (802.11ac-VHT40, 5310MHz)

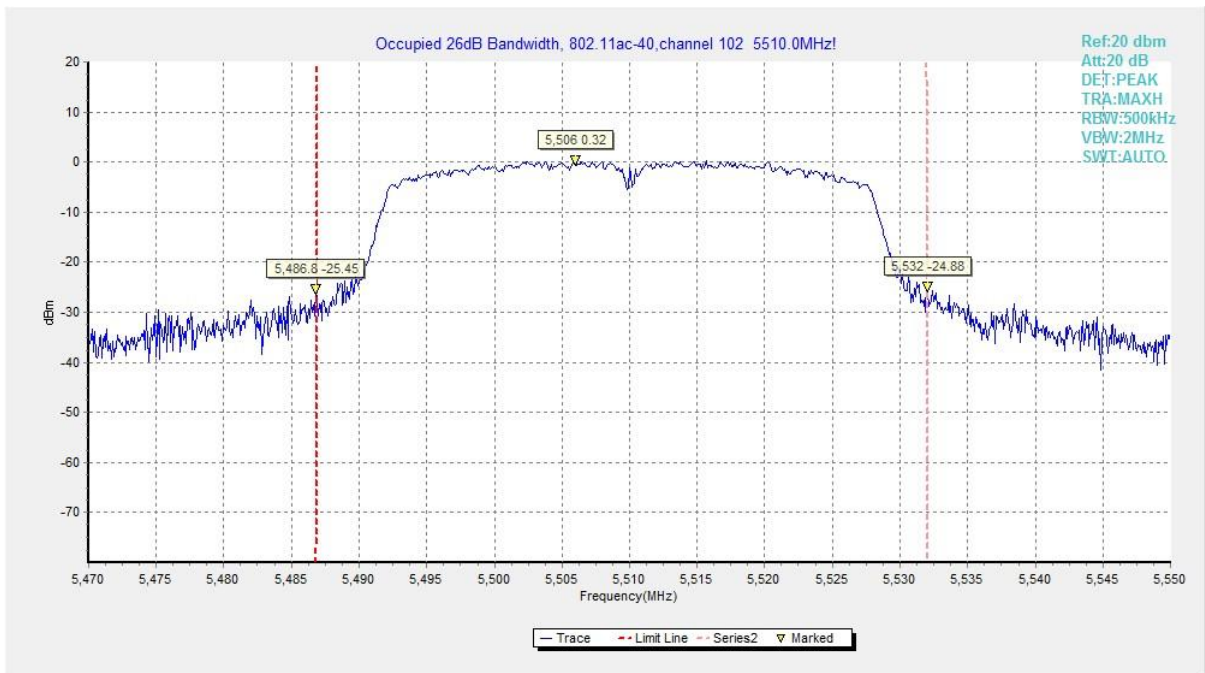


Fig. 14 Occupied 26dB Bandwidth (802.11ac-VHT40, 5510MHz)

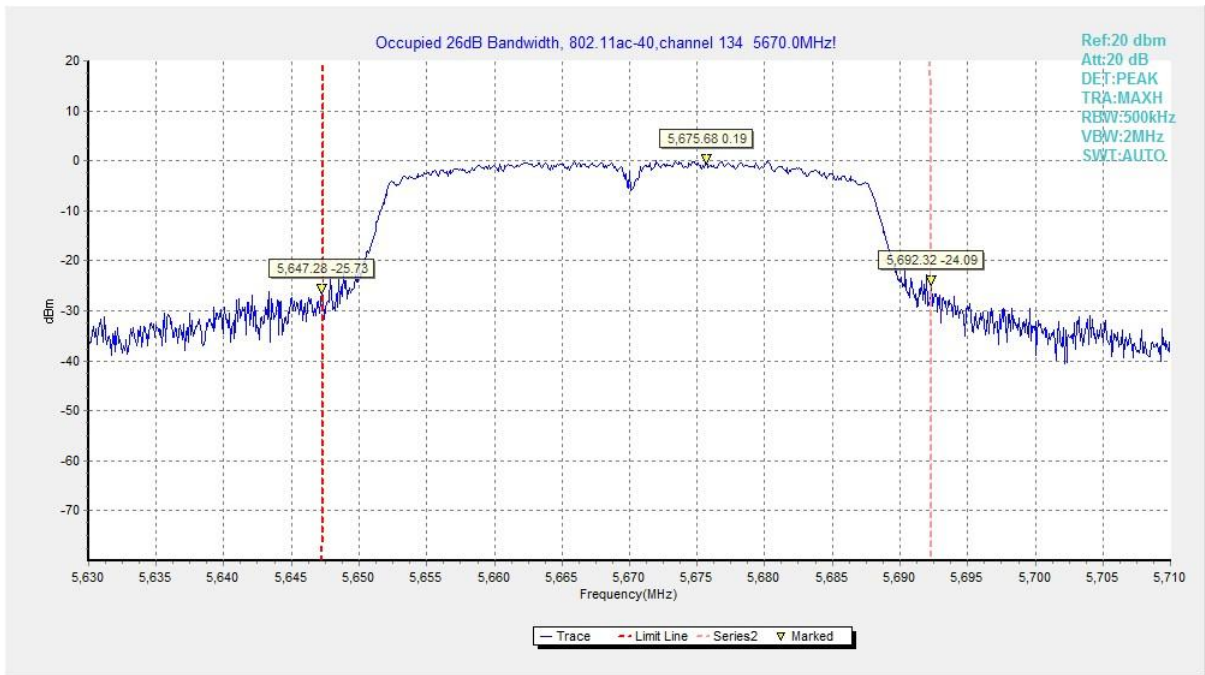


Fig. 15 Occupied 26dB Bandwidth (802.11ac-VHT40, 5670MHz)

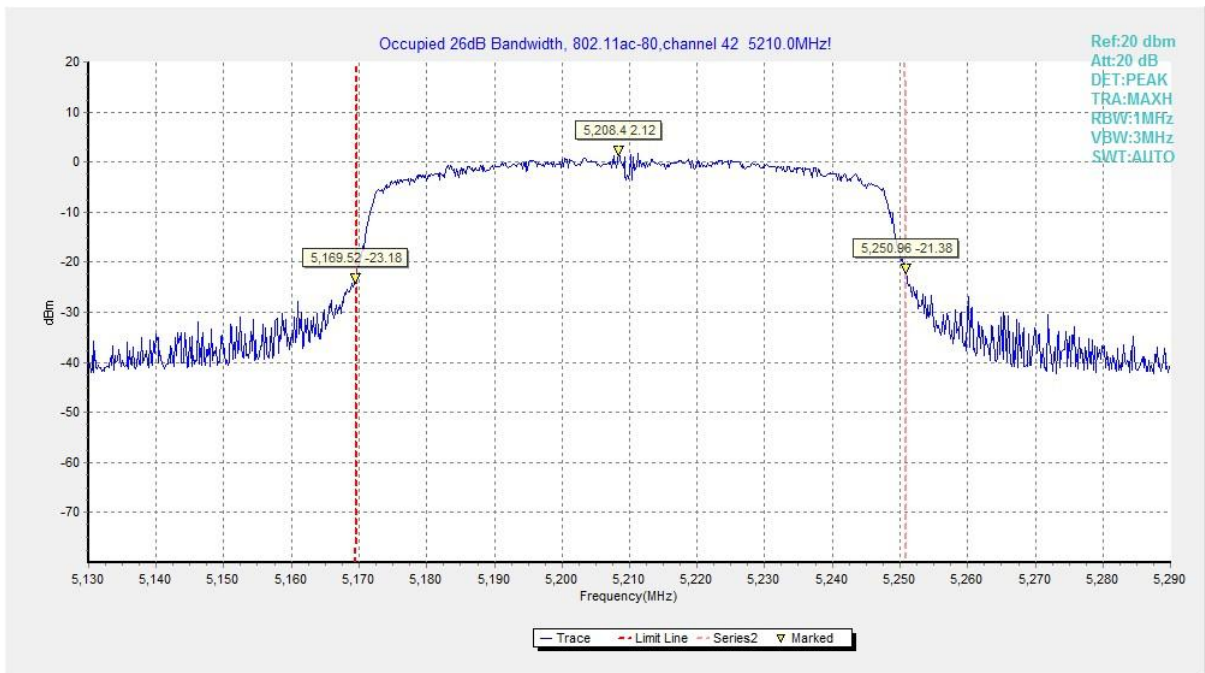


Fig. 16 Occupied 26dB Bandwidth (802.11ac-VHT80, 5210MHz)

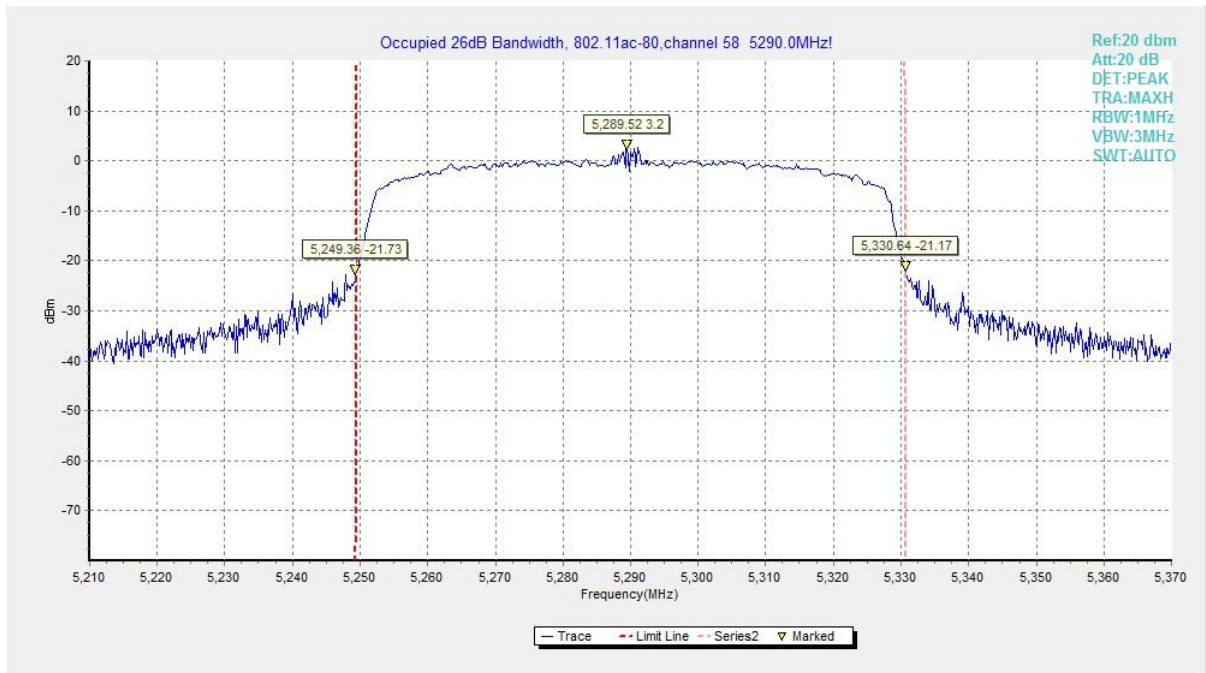


Fig. 17 Occupied 26dB Bandwidth (802.11ac-VHT80, 5290MHz)

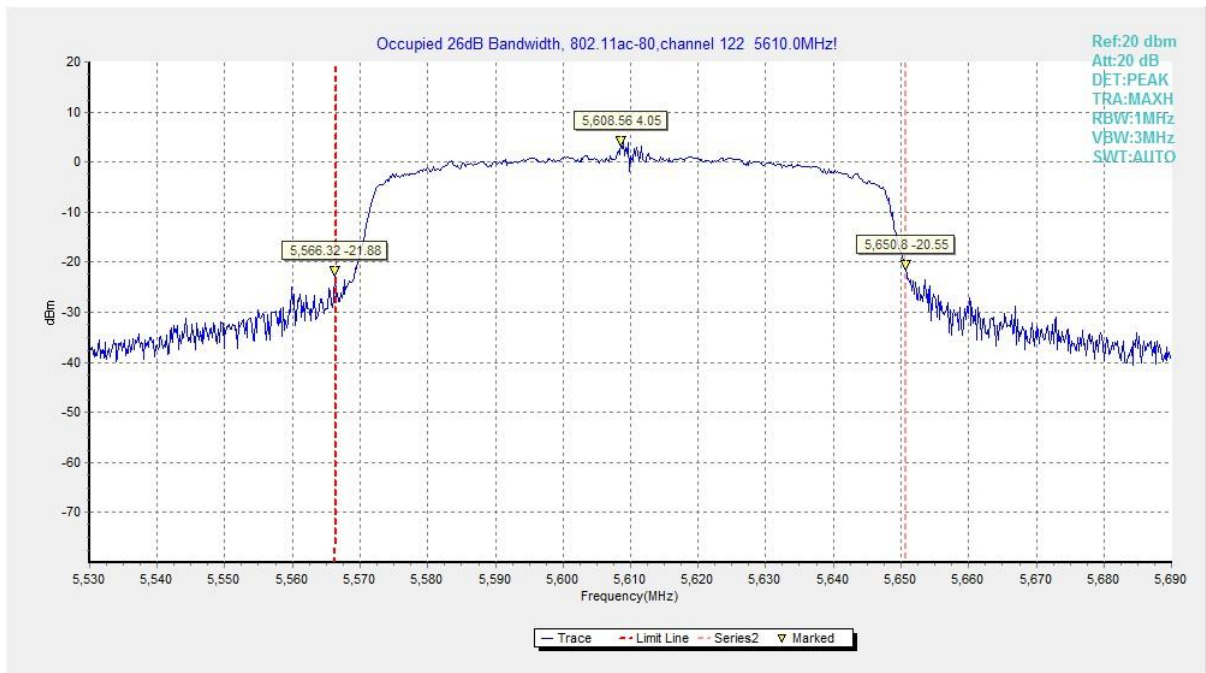


Fig. 18 Occupied 26dB Bandwidth (802.11ac-VHT80, 5610MHz)

A.5. Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.407	≥ 0.5

The measurement is made according to KDB 789033.

Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth (MHz)		Conclusion
802.11a	5745MHz (Ch149)	Fig.19	15.15	P
	5785MHz (Ch157)	Fig.20	15.45	P
	5825MHz (Ch165)	Fig.21	15.30	P
802.11ac-VHT40	5755MHz (Ch151)	Fig.22	35.12	P
	5795MHz (Ch159)	Fig.23	35.04	P
802.11ac-VHT80	5775MHz (Ch155)	Fig.24	75.04	P

Conclusion: PASS

Test graphs as below:

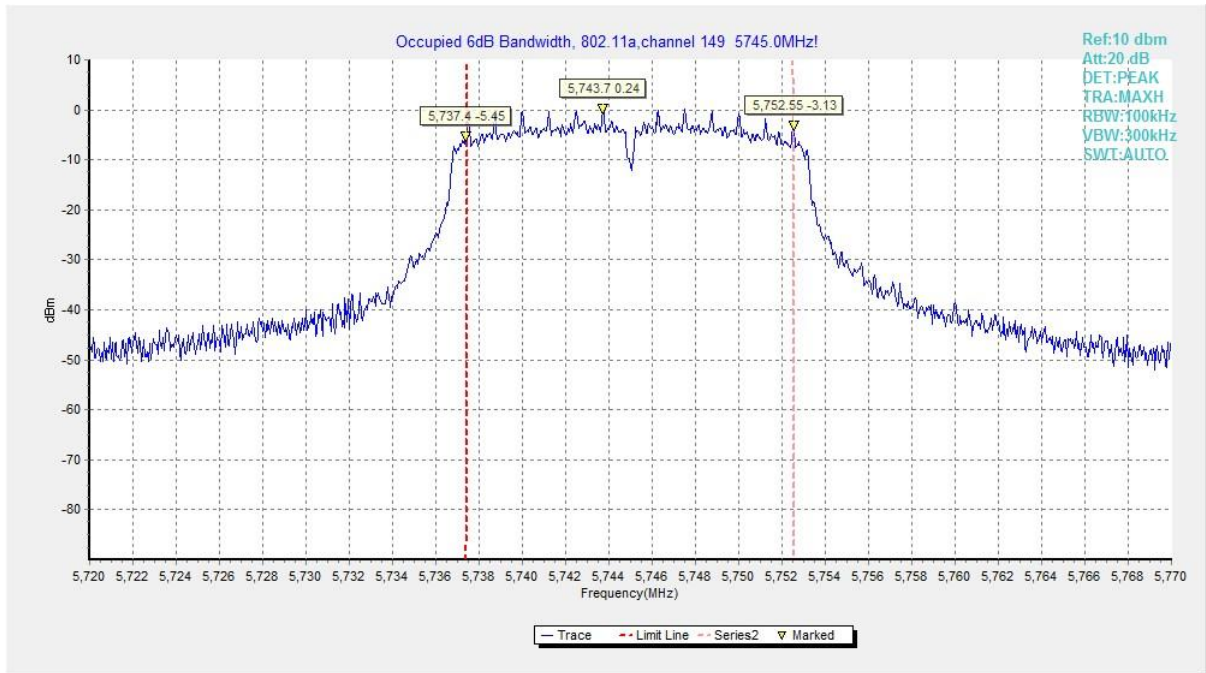


Fig. 19 Occupied 6dB Bandwidth (802.11a, 5745MHz)

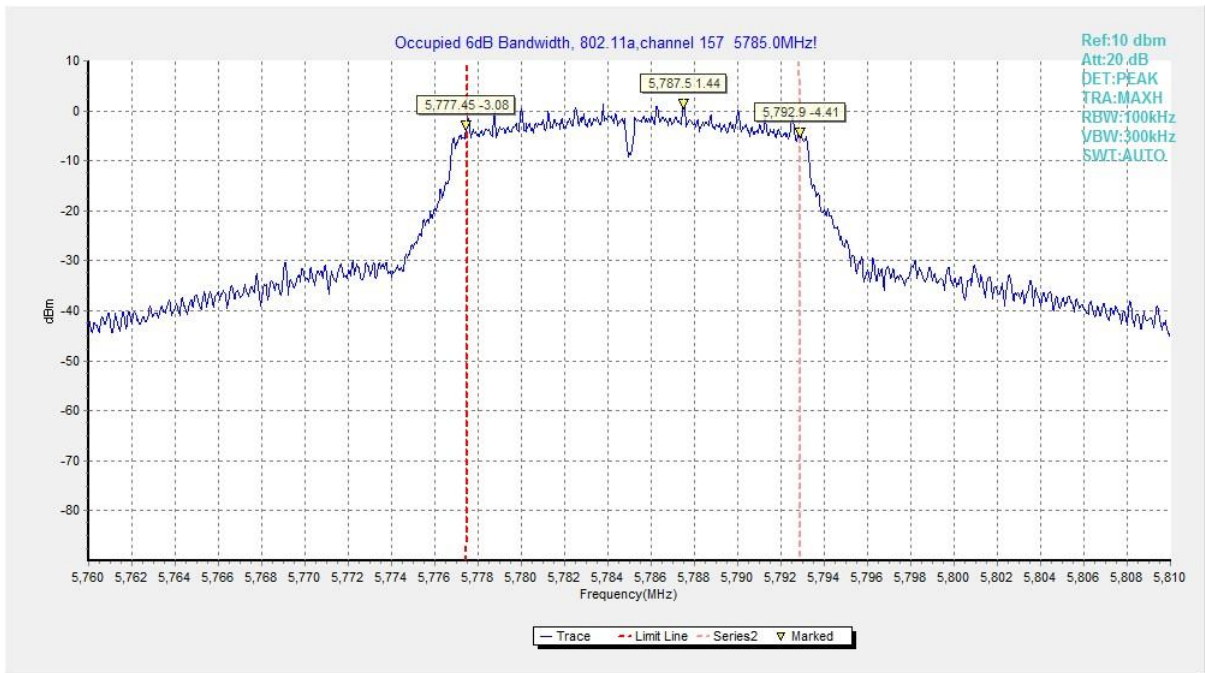


Fig. 20 Occupied 6dB Bandwidth (802.11a, 5785MHz)

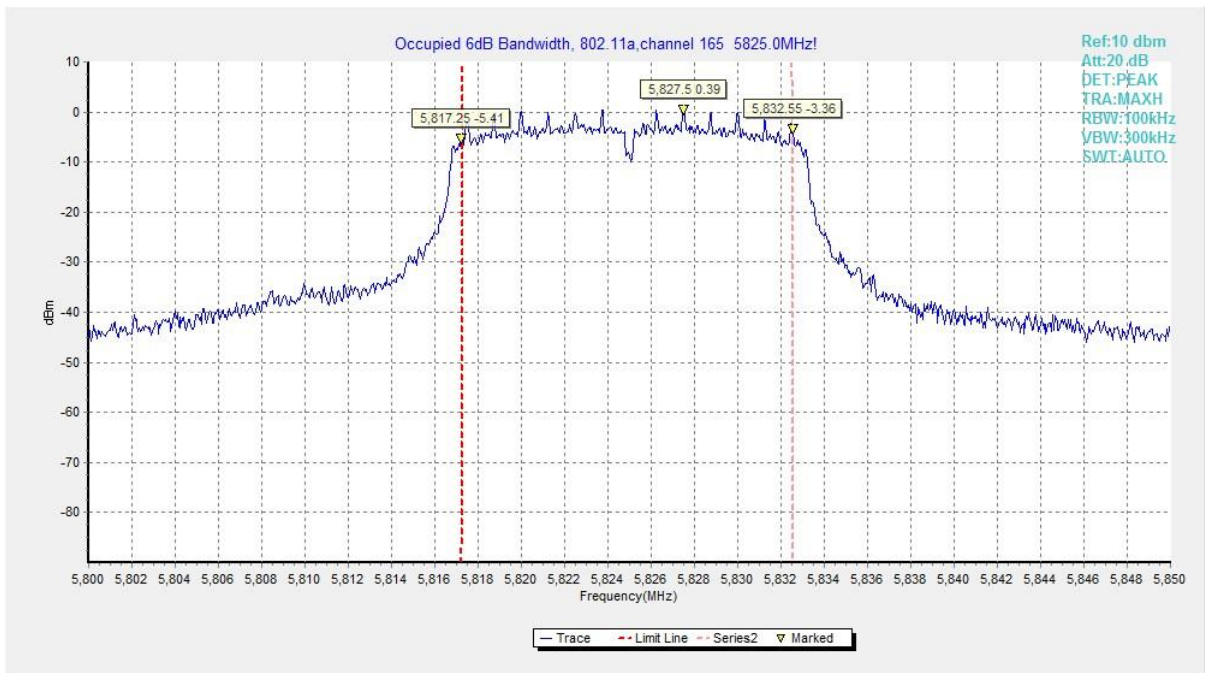


Fig. 21 Occupied 6dB Bandwidth (802.11a, 5825MHz)

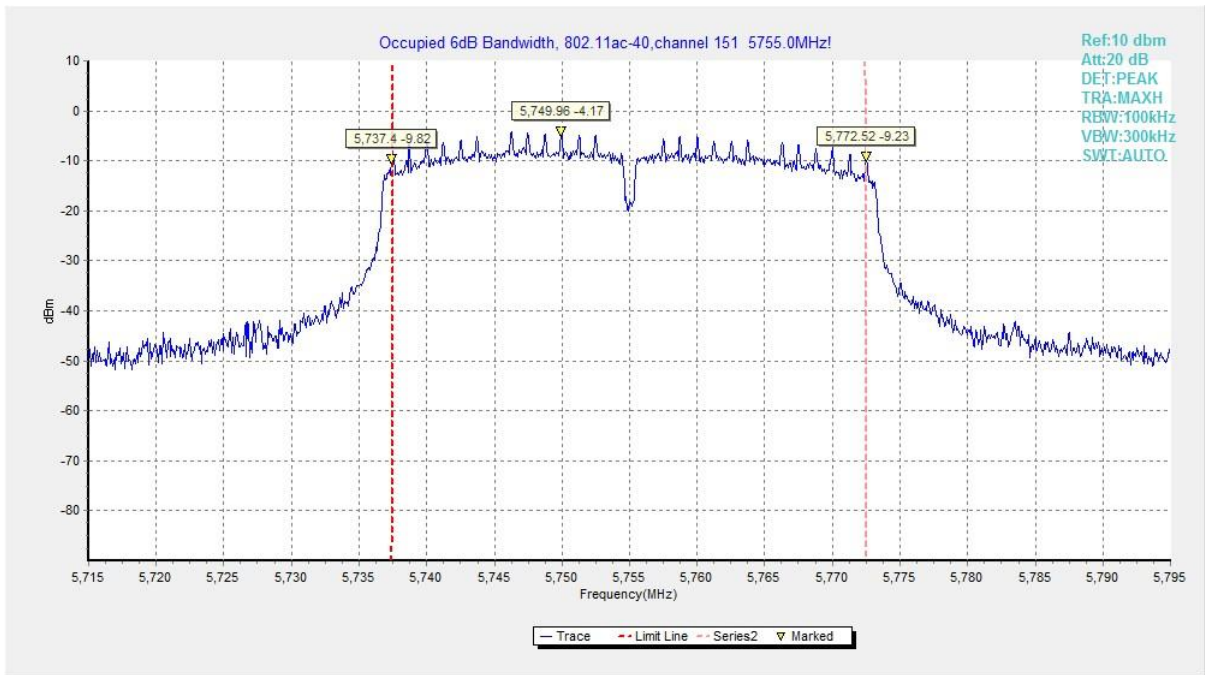


Fig. 22 Occupied 6dB Bandwidth (802.11ac-VHT40, 5755MHz)

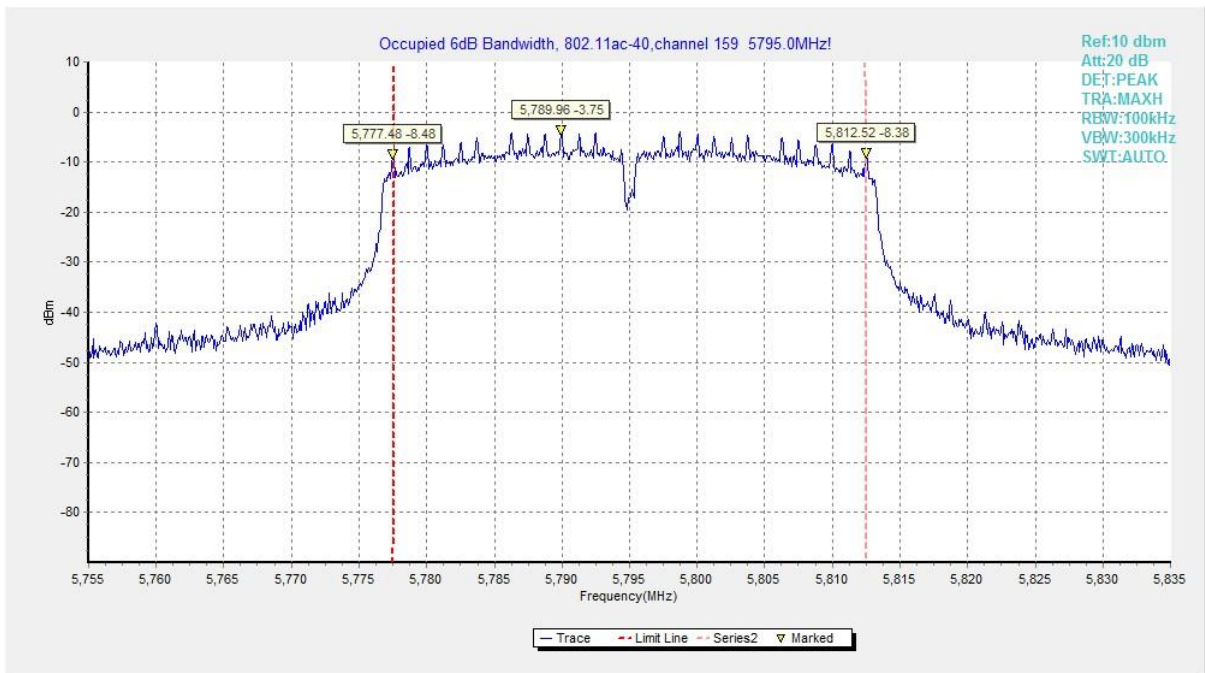


Fig. 23 Occupied 6dB Bandwidth (802.11ac-VHT40, 5795MHz)

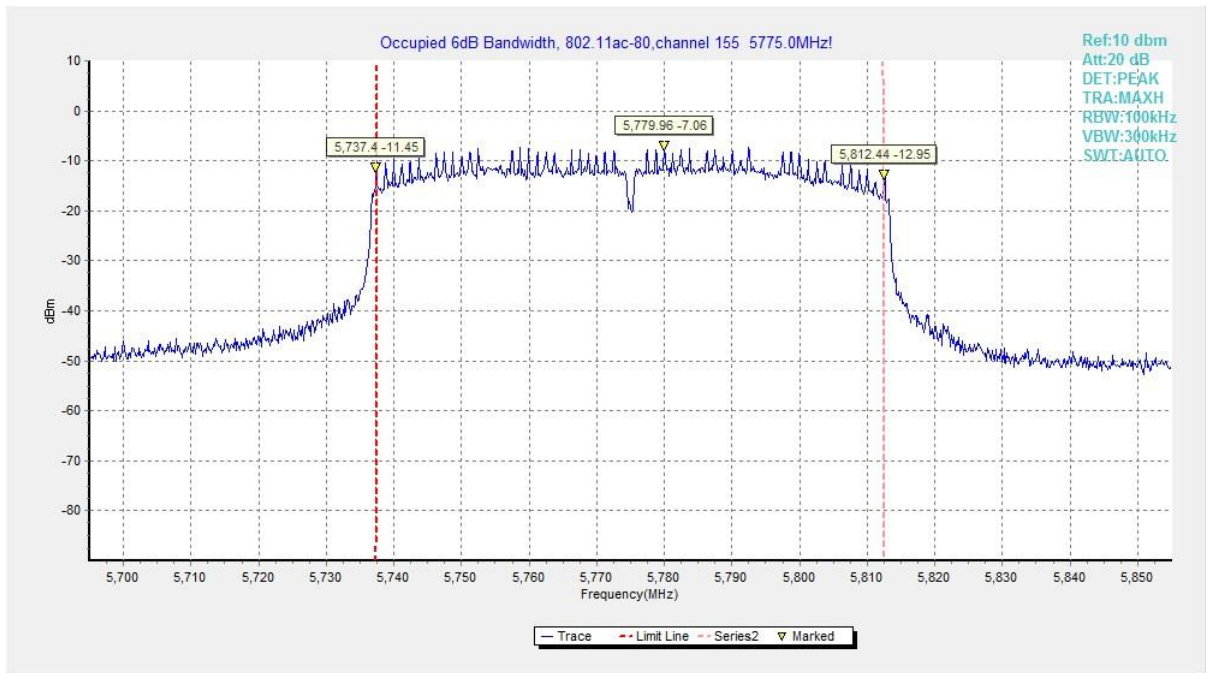


Fig. 24 Occupied 6dB Bandwidth (802.11ac-VHT80, 5775MHz)



A.6. 99% Occupied Bandwidth

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.403	/

The measurement is made according to KDB 789033.

Measurement Result:

Mode	Channel	99% Occupied Bandwidth (MHz)		Conclusion
		Fig.	Value	
802.11a	5180MHz (Ch36)	Fig.25	16.56	P
	5200MHz (Ch40)	Fig.26	16.60	P
	5240MHz (Ch48)	Fig.27	16.56	P
	5260MHz (Ch52)	Fig.28	16.56	P
	5280MHz (Ch56)	Fig.29	16.60	P
	5320MHz (Ch64)	Fig.30	16.60	P
	5500MHz (Ch100)	Fig.31	16.60	P
	5580MHz (Ch116)	Fig.32	16.56	P
	5700MHz (Ch140)	Fig.33	16.56	P
	5745MHz (Ch149)	Fig.34	16.56	P
	5785MHz (Ch157)	Fig.35	16.56	P
	5825MHz (Ch165)	Fig.36	16.60	P
802.11ac-VHT40	5190MHz (Ch38)	Fig.37	35.92	P
	5230MHz (Ch46)	Fig.38	35.92	P
	5270MHz (Ch54)	Fig.39	35.92	P
	5310MHz (Ch62)	Fig.40	35.92	P
	5510MHz (Ch102)	Fig.41	35.84	P
	5670MHz (Ch134)	Fig.42	36.00	P
	5755MHz (Ch151)	Fig.43	35.92	P
	5795MHz (Ch159)	Fig.44	35.84	P
802.11ac-VHT80	5210MHz (Ch42)	Fig.45	74.72	P
	5290MHz (Ch58)	Fig.46	74.88	P
	5610MHz (Ch122)	Fig.47	74.72	P
	5775MHz (Ch155)	Fig.48	74.88	P

Conclusion: PASS

Test graphs as below:

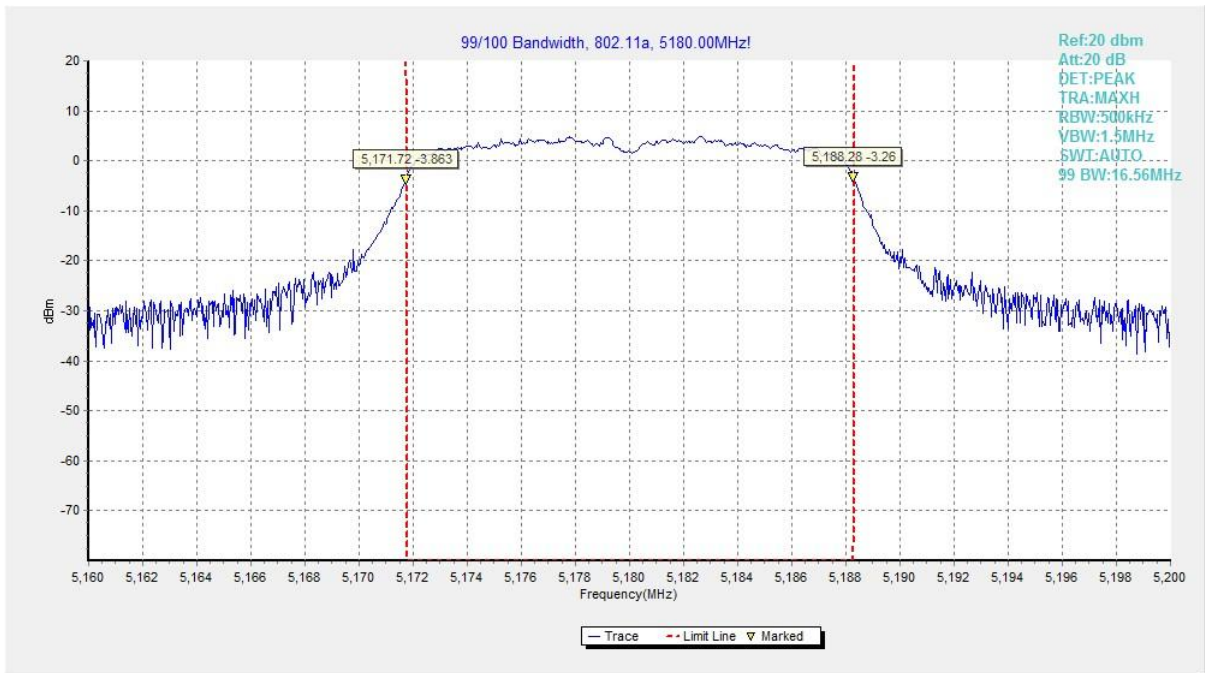


Fig. 25 99% Occupied Bandwidth (802.11a, 5180MHz)

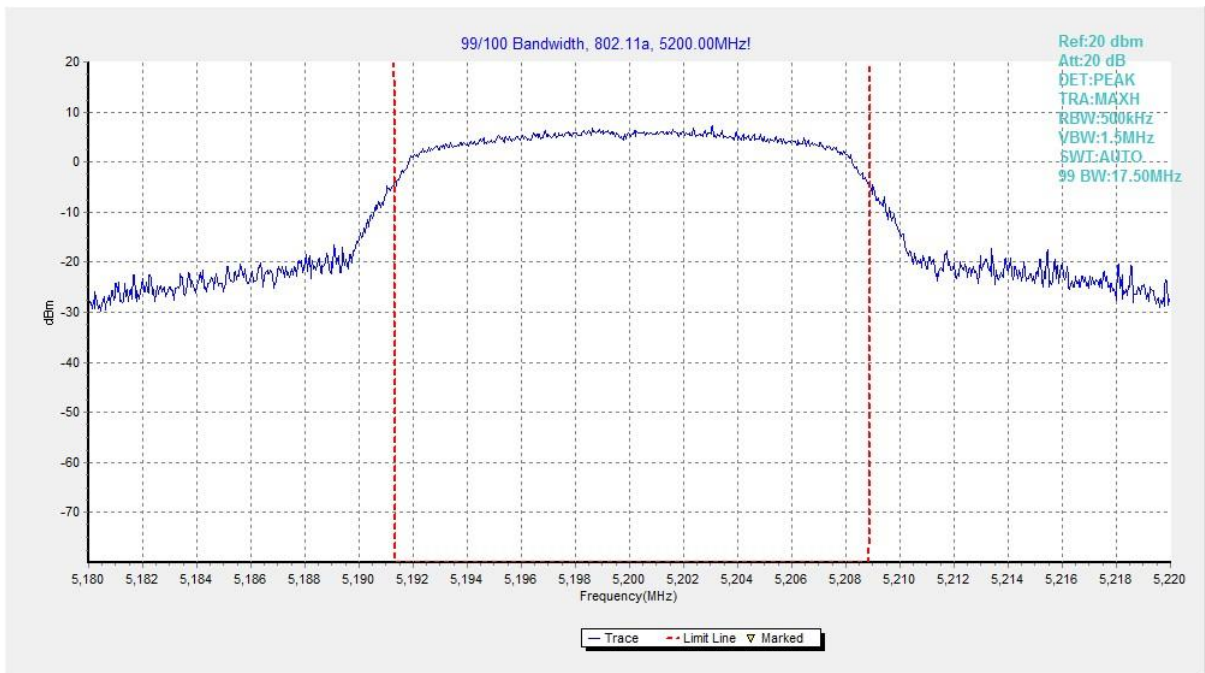


Fig. 26 99% Occupied Bandwidth (802.11a, 5200MHz)

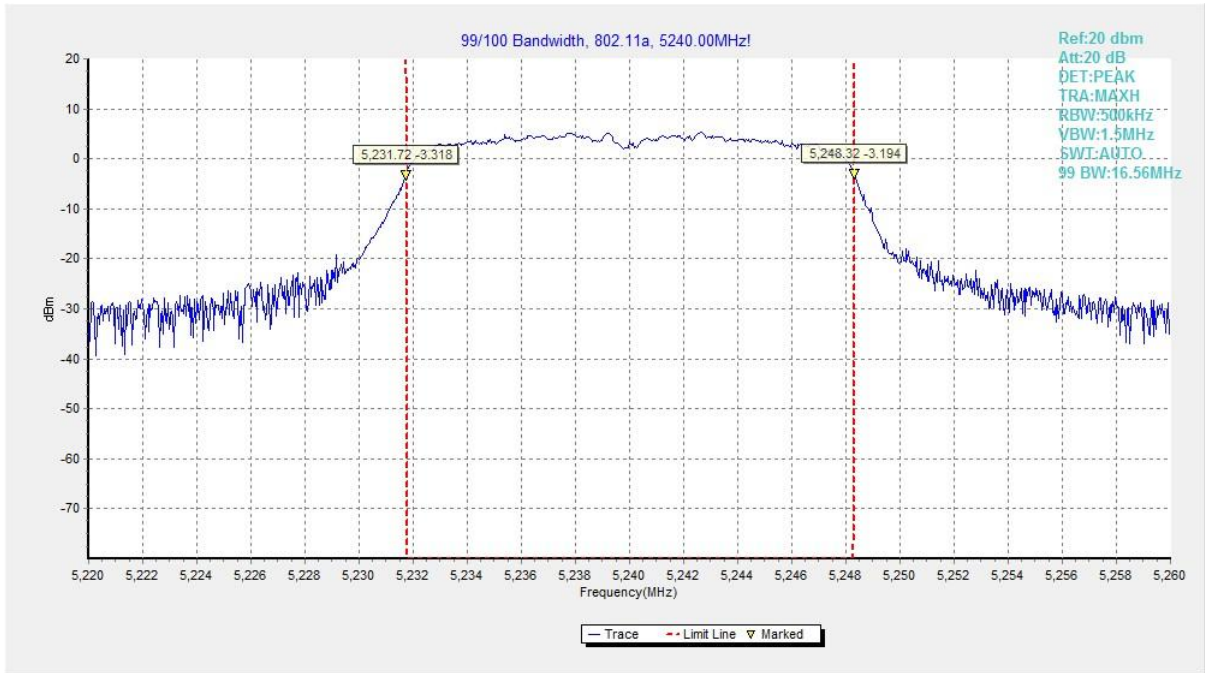


Fig. 27 99% Occupied Bandwidth (802.11a, 5240MHz)

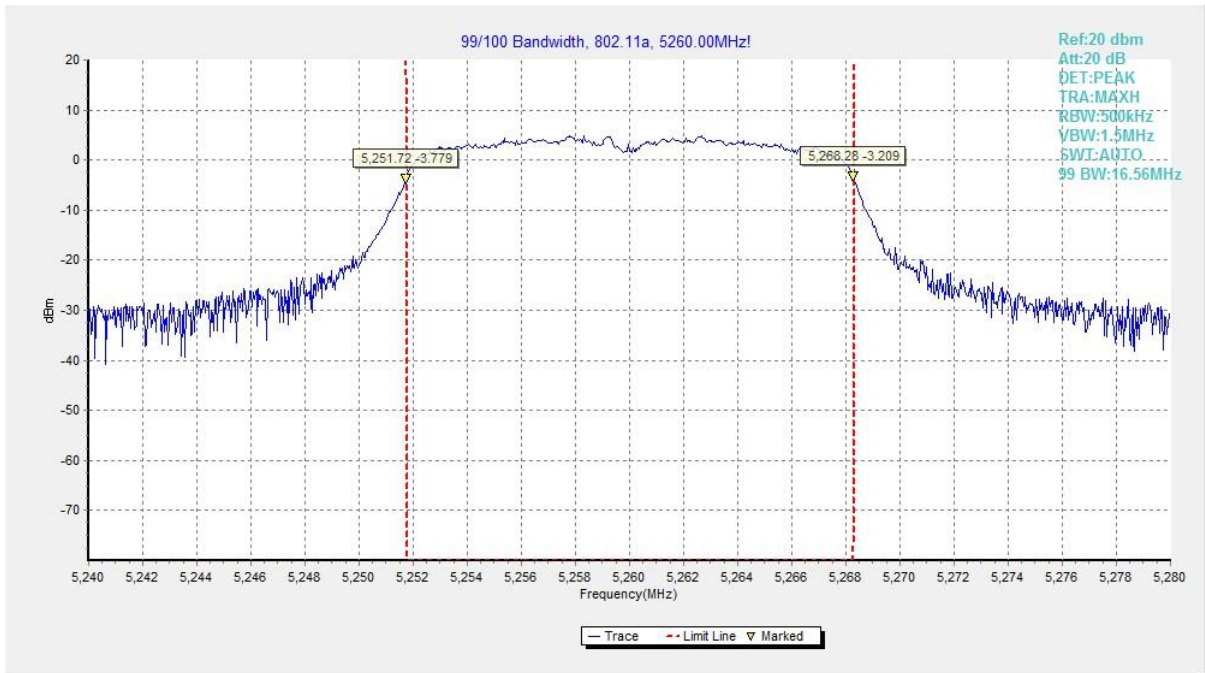


Fig. 28 99% Occupied Bandwidth (802.11a, 5260MHz)

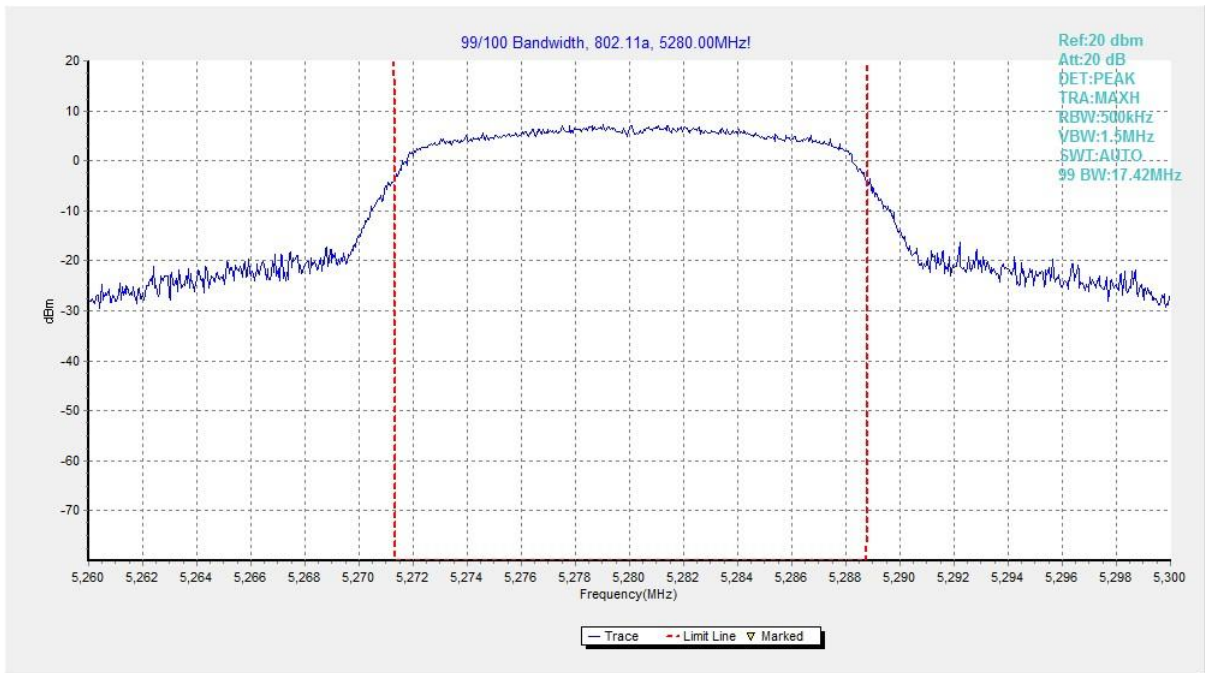


Fig. 29 99% Occupied Bandwidth (802.11a, 5280MHz)

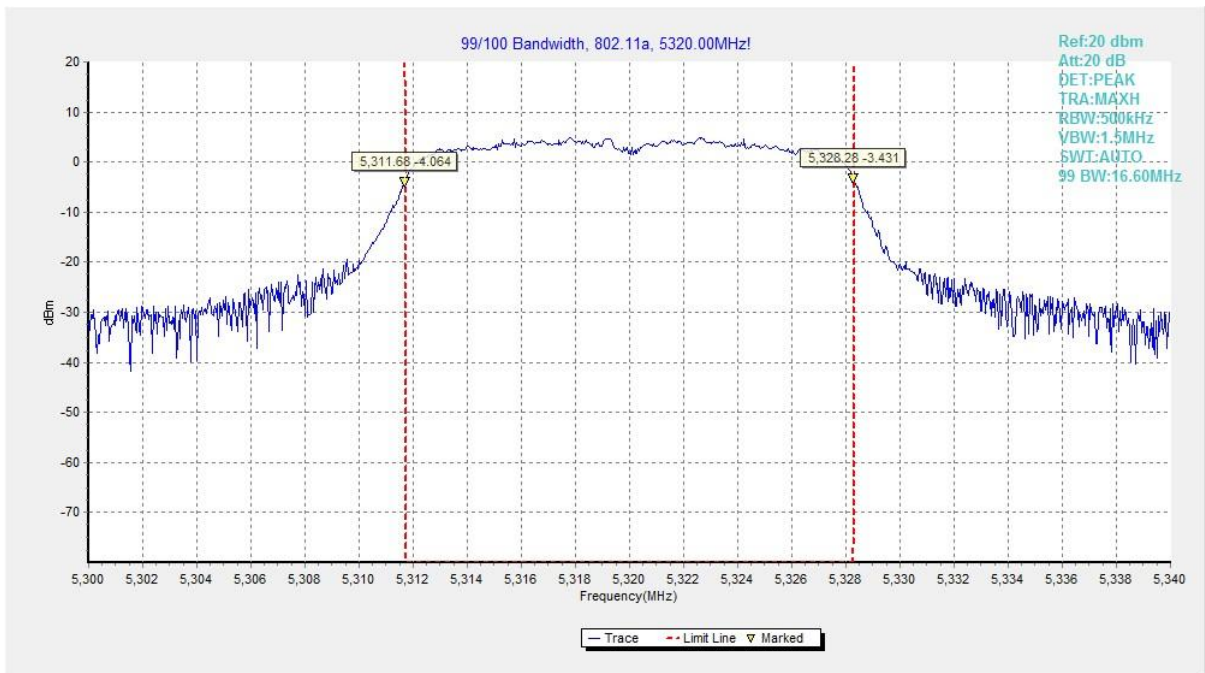


Fig. 30 99% Occupied Bandwidth (802.11a, 5320MHz)

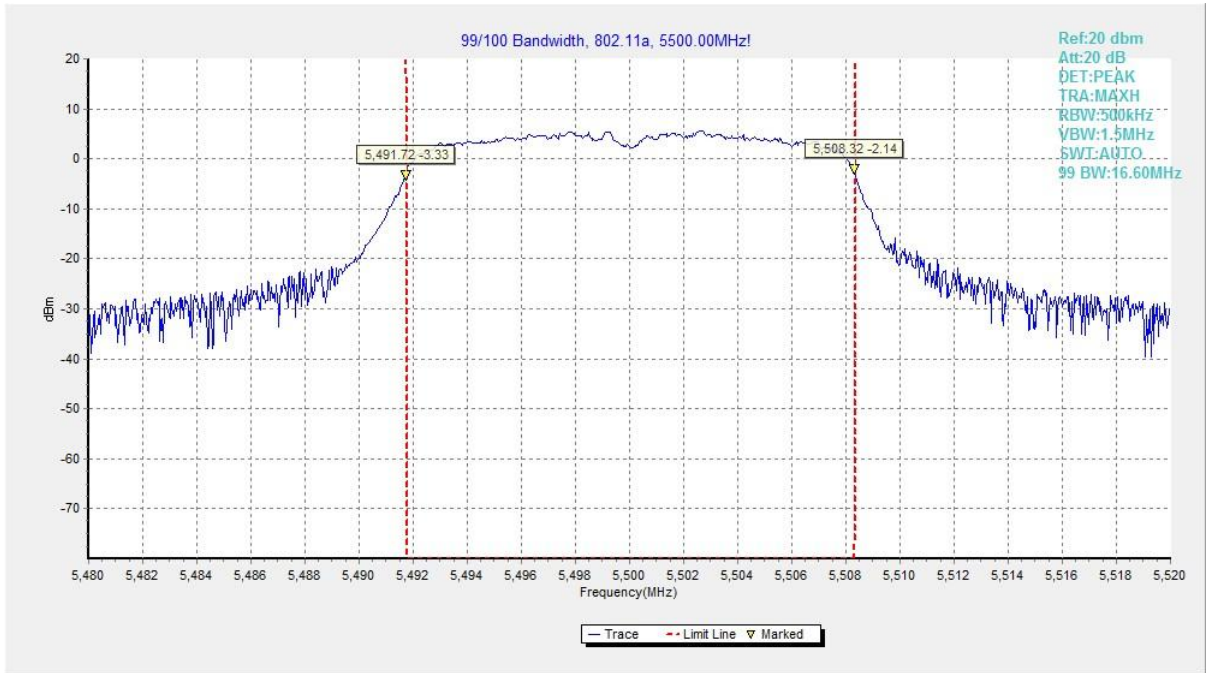


Fig. 31 99% Occupied Bandwidth (802.11a, 5500MHz)

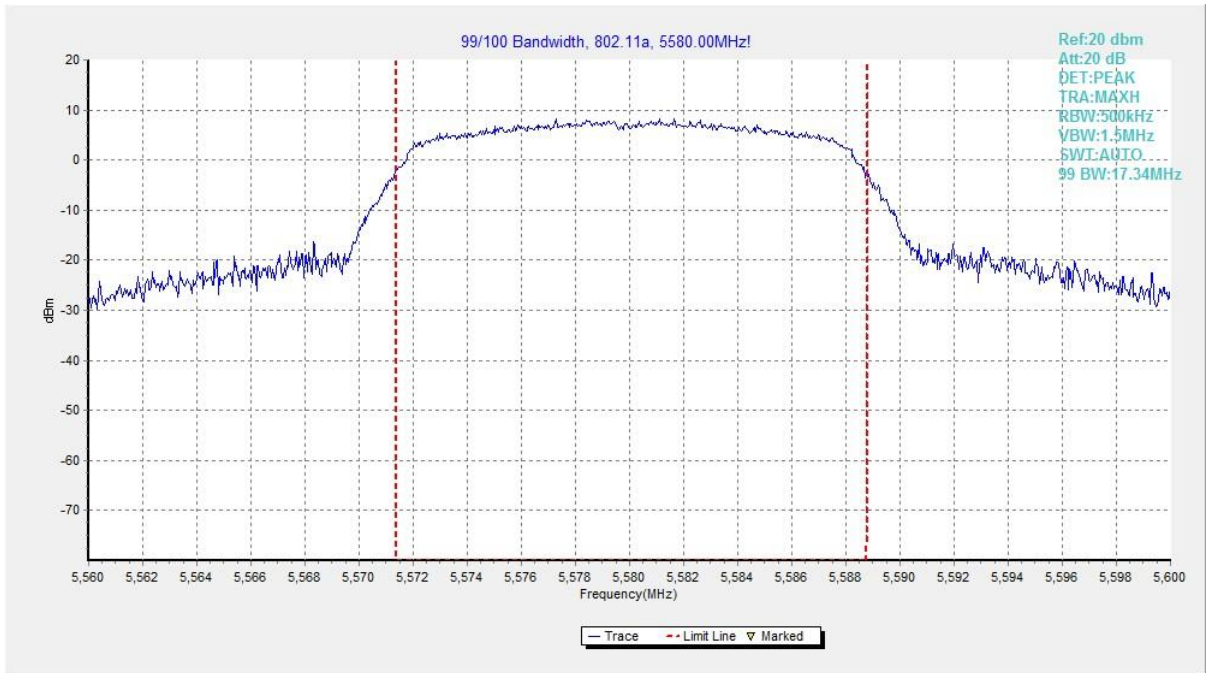


Fig. 32 99% Occupied Bandwidth (802.11a, 5580MHz)

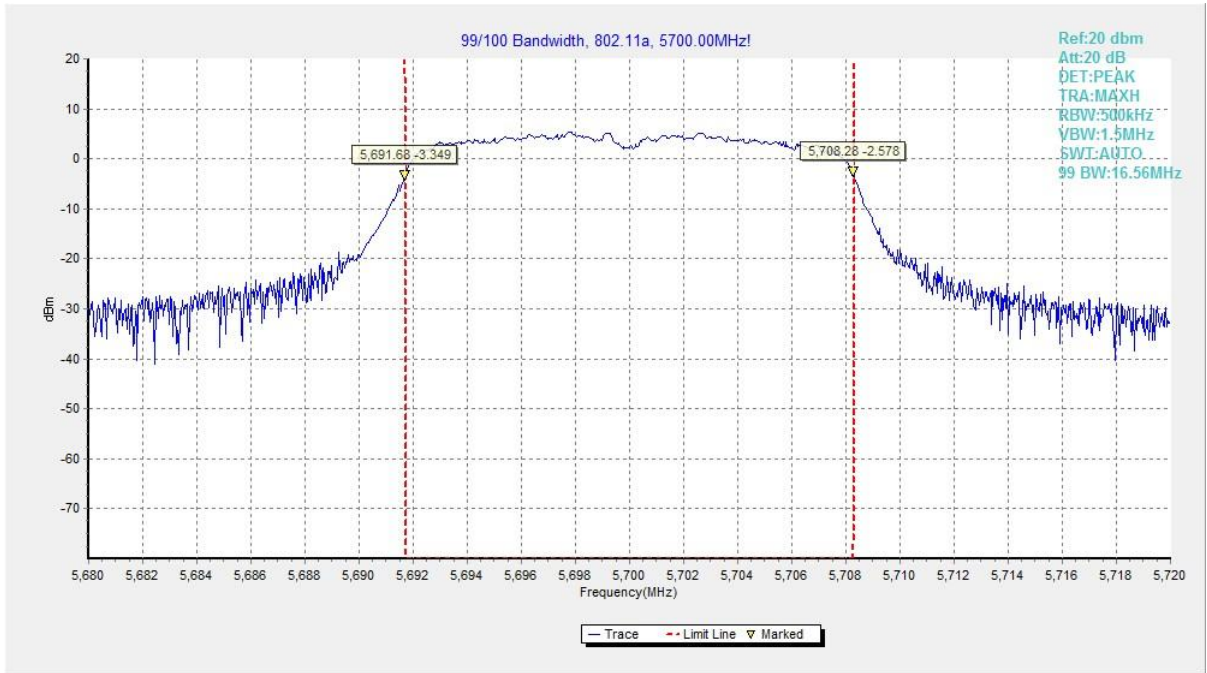


Fig. 33 99% Occupied Bandwidth (802.11a, 5700MHz)

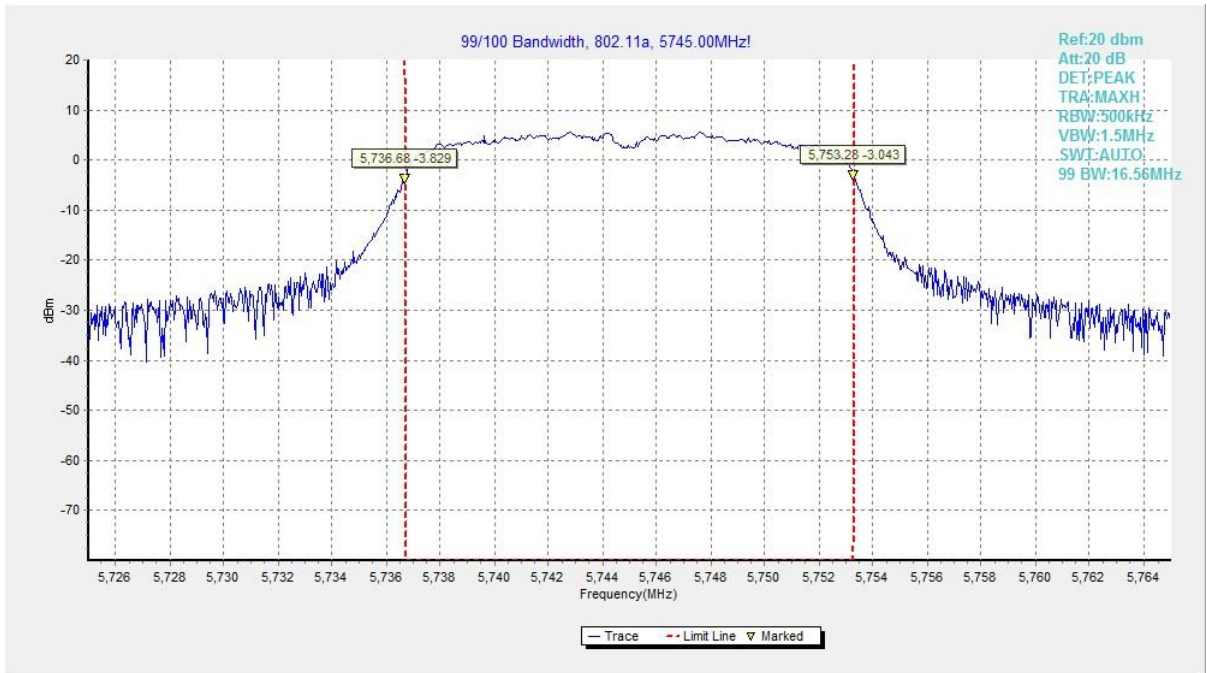


Fig. 34 99% Occupied Bandwidth (802.11a, 5745MHz)

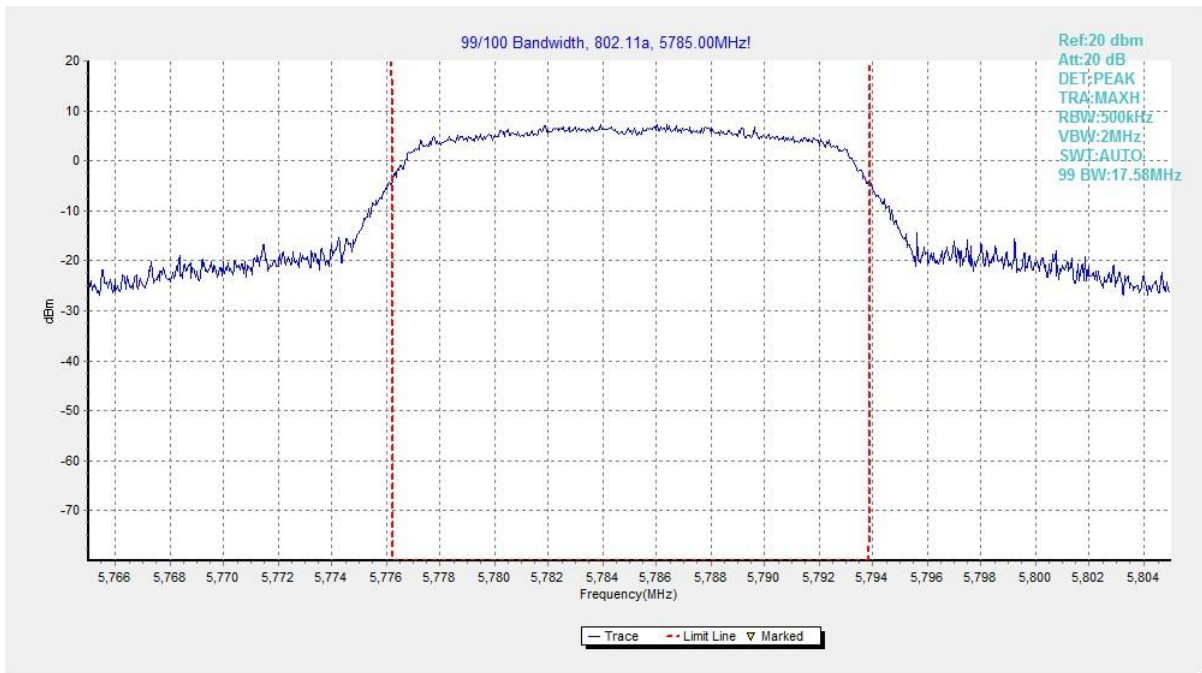


Fig. 35 99% Occupied Bandwidth (802.11a, 5785MHz)

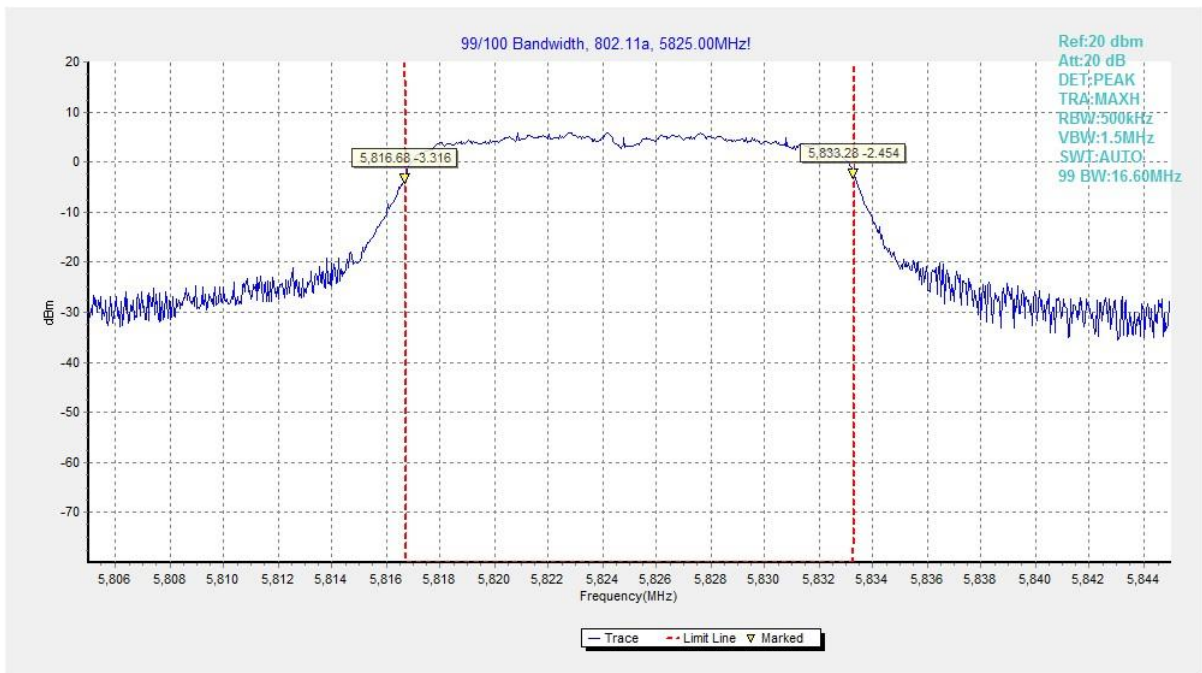


Fig. 36 99% Occupied Bandwidth (802.11a, 5825MHz)

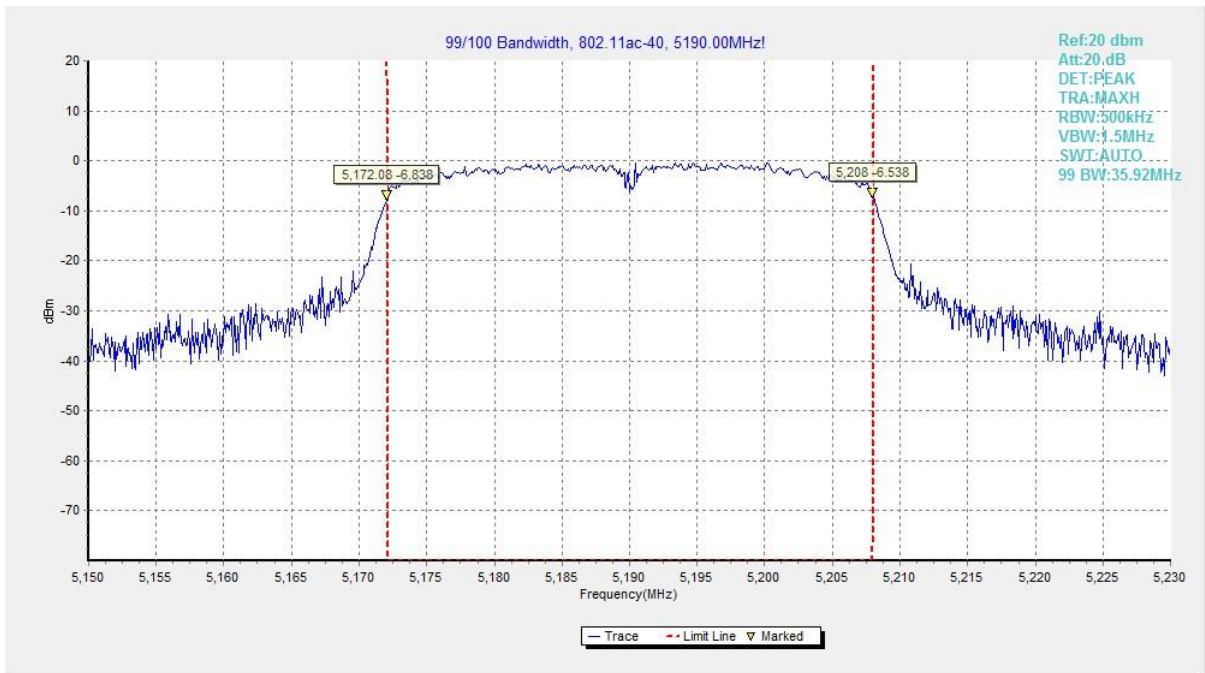


Fig. 37 99% Occupied Bandwidth (802.11ac-VHT40, 5190MHz)

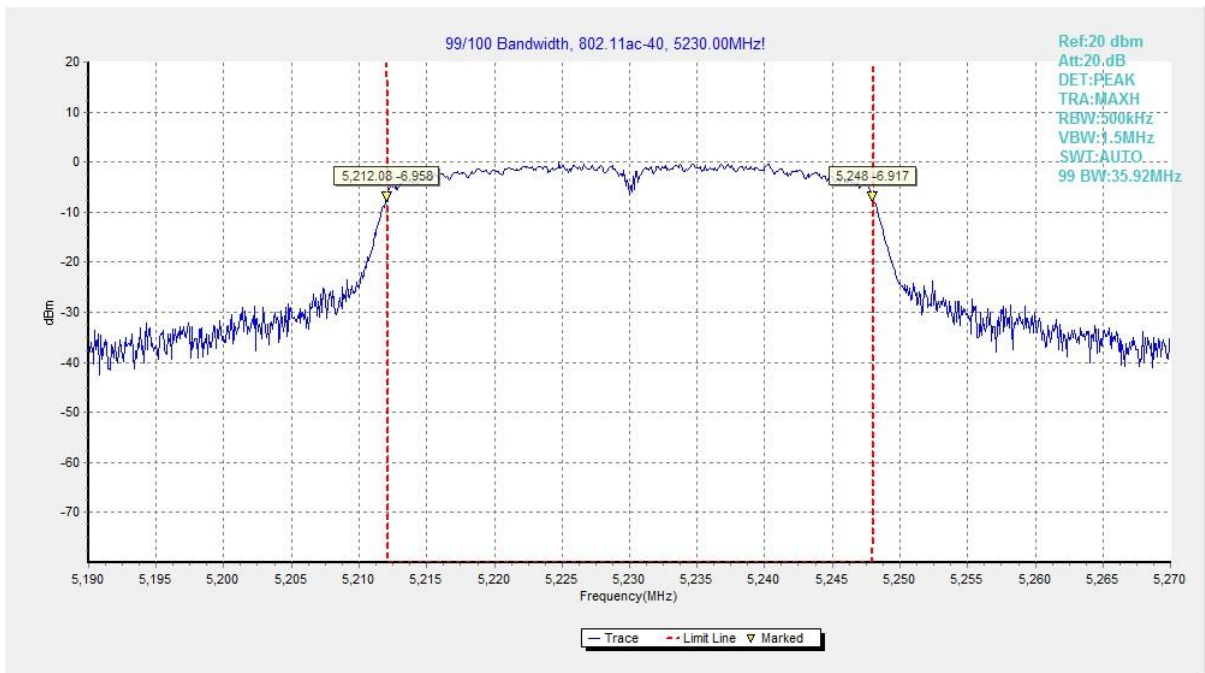


Fig. 38 99% Occupied Bandwidth (802.11ac-VHT40, 5230MHz)

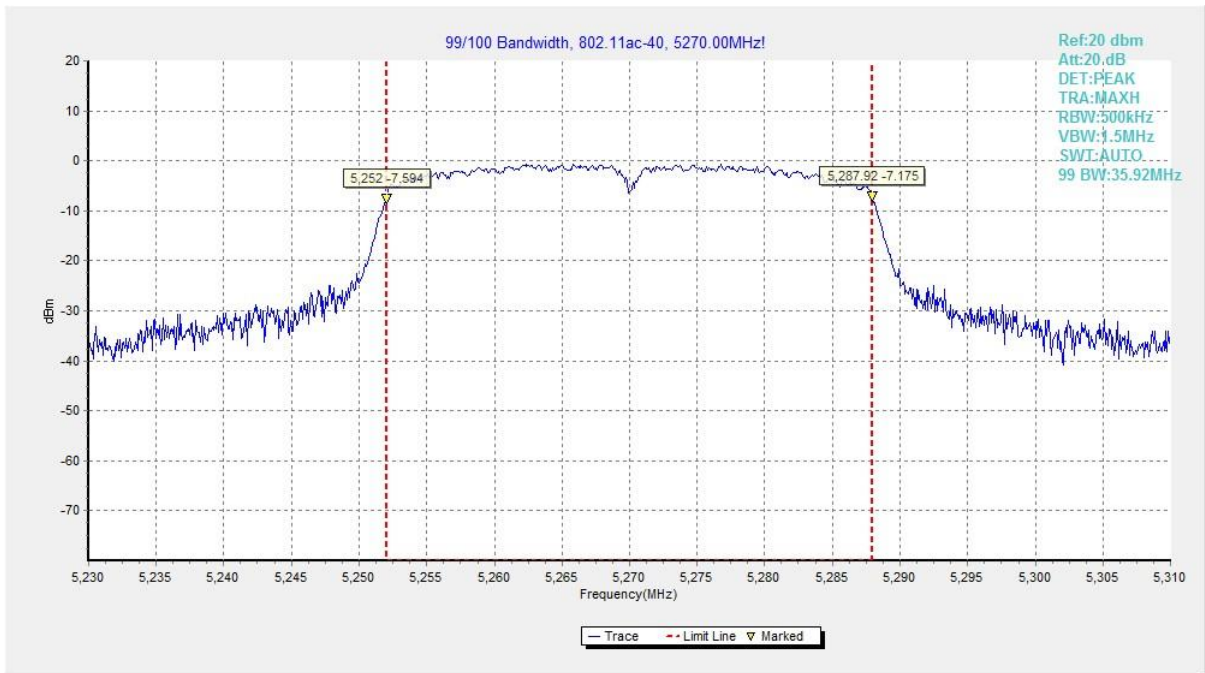


Fig. 39 99% Occupied Bandwidth (802.11ac-VHT40, 5270MHz)

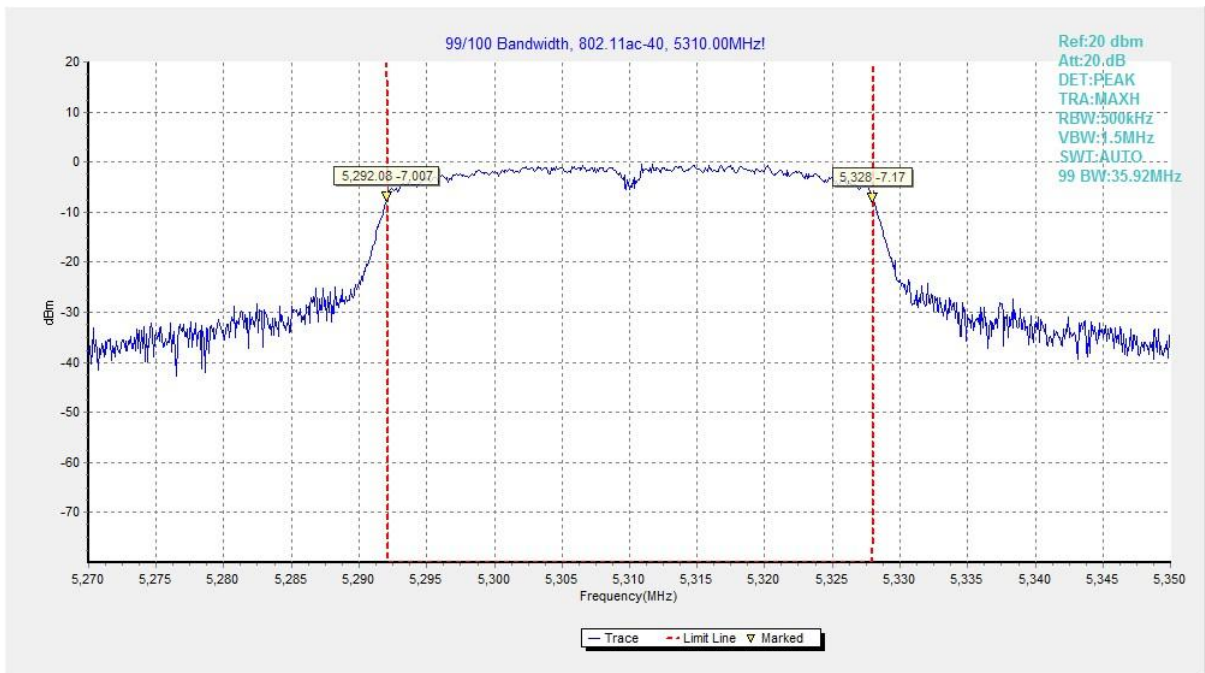


Fig. 40 99% Occupied Bandwidth (802.11ac-VHT40, 5310MHz)