TEST REPORT

No. I20N01974-RLAN

for

Spectralink Corporation

Mobile Phone

Model Name: VC9240

with

Hardware Version: DVT1

Software Version: V138

FCC ID: IYG9240

IC: 2128B-9240

Issued Date: 2020-09-07

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	Mobile Phone
Model Name	VC9240
Applicant's name	Spectralink Corporation
Manufacturer's Name	Spectralink Corporation

1.2. Test Standards

FCC Part15-2019; ANSI C63.10-2013; RSS-247 Issue 2; RSS-Gen Issue 5 A1; KDB789033-V02r01

1.3. Test Result

Pass

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:	2020-07-22
Testing End Date:	2020-09-04

1.6. Signature

Lin Zechuang

(Prepared this test report)

Tang Weisheng

(Reviewed this test report)

Zhang Bojun

(Approved this test report)

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2. Client Information

2.1. Applicant Information

Company Name:	Spectralink Corporation
Address:	2560 55th Street, Boulder CO 80301, USA
Contact Person	Paul Hampton
E-Mail	Paul.Hampton@spectralink.com
Telephone:	+1303-441-7593
Fax:	/

2.2. Manufacturer Information

Company Name:	Spectralink Corporation
Address:	2560 55th Street, Boulder CO 80301, USA
Contact Person	Paul Hampton
E-Mail	Paul.Hampton@spectralink.com
Telephone:	+1303-441-7593
Fax:	/

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

3.1. About EUT

Description	Mobile Phone
Model Name	VC9240
Brand Name	Spectralink
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:1.7dBi MIMO:1.8dBi
Power Supply	3.85V DC by Battery
FCC ID	IYG9240
IC	2128B-9240
Condition of EUT as received	No abnormality in appearance

Note1: According to the customer's description, VC9240 is a variant of VC9253. The differences between them are as follows.
Different rear cover and antenna frame. The VC9253 with scanner lens while the VC9240 without scanner lens, and their software is different because the VC9240 without driver code of scanner. Their Antenna is different, and the antenna gain of VC9240 are 1.7dBi (SISO) and 1.8dBi (MIMO) while the antenna gain of VC9253 are 1.8dBi (SISO) and 1.7dBi (MIMO).
The conduction test data has been adjusted and the radiation test has been retested. The initial model report number is I20N01960-RLAN.
Note2: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Shenzhen Academy of Information and Communications Technology.

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version	Receive Date
UT07aa	velc02bdcjd000t	DVT1	V138	2020-07-20
UT01aa	velc02bdcjd0020	DVT1	V138	2020-07-22
UT02aa	velc02bdcjd0058	DVT1	V138	2020-07-22

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

3.3. Internal Identification of AE

AE ID*	Description	AE ID*
AE1	Battery	/
AE2	Charger	/

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AE3	Data Cable	/

AE1

Model	BLI9200100
Manufacturer	Ningbo Veken Battery Co., Ltd.
Capacity	3040mAh
Nominal Voltage	3.85V

AE2

Model	IN-CA-310Q
Manufacturer	INNO VISION INTERNATIONAL HOLDINGS LTD.

AE3

Model	XG-US008
Manufacturer	Xunguang Electronics Co.,Ltd.

*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 Mobile Phone with integrated antenna and battery. It consists of normal options: Lithium Battery, Charger and USB Cable.
Manual and specifications of the EUT were provided to fulfil the test.
Samples undergoing test were selected by the client.

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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
RSS-247	Spectrum Management and Telecommunications Radio Standards Specification Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices	Issue 2 February, 2017
RSS-Gen	Spectrum Management and Telecommunications Radio Standards Specification General Requirements for Compliance of Radio Apparatus	Issue 5 March,2019 Amendment 1
KDB789033	GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E	V02r01

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5. Test Results

5.1. Testing Environment

Normal Temperature: 15~35℃

Relative Humidity: 20~75%

5.2. Test Results

No.	Test cases	Sub-clause of Part15E	Sub-clause of IC	Verdict
0	Maximum Output Power	15.407(a)	RSS-247 section 6.2	**P**
1	Power Spectral Density	15.407(a)	RSS-247 section 6.2	**P**
2	Occupied 26dB Bandwidth	15.403(i)	RSS-247 section 6.2	**/**
3	Occupied 6dB Bandwidth	15.407(e)	RSS-247 section 6.2.4	**P**
4	99% Occupied Bandwidth	15.403	RSS-247 section 6.2	**/**
5	Band edge compliance	15.209,15.407	RSS-247 section 6.2	**P**
6	Radiated Spurious Emissions	15.209,15.407	RSS-Gen section 8.9	**P**
7	AC Power line Conducted	15.207	RSS-Gen section 8.8	**P**
8	Transmit Power Control	15.407	**/**	**NA**

See **ANNEX A** for details.

Note: According to the definition of the application description, the device will automatically discontinue transmission in case of either absence of information to transmit or operational failure.

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

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6. Test Equipments Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2021-01-15	1 year
2	Power Sensor	U2021XA	MY55430013	Agilent	2021-01-15	1 year
3	Test Receiver	ESCI	100701	Rohde & Schwarz	2021-08-09	1 year
4	LISN	ENV216	102067	Rohde & Schwarz	2021-07-16	1 year

Radiated test system

NO.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Loop Antenna	HLA6120	35779	TESEQ	2022-04-25	3 years
2	BiLog Antenna	3142E	00224831	ETS-Lindgren	2021-05-17	3 years
3	Horn Antenna	3117	00066577	ETS-Lindgren	2022-04-02	3 years
4	Test Receiver	ESR7	101676	Rohde & Schwarz	2020-11-27	1 year
5	Spectrum Analyser	FSV40	101192	Rohde & Schwarz	2021-01-14	1 year
6	Chamber	FACT3-2.0	1285	ETS-Lindgren	2021-07-19	2 years
7	Antenna	QSH-SL-18-26-S-20	17013	Q-par	2023-01-06	3 years
8	Antenna	QSH-SL-18-40-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	10.01.00
3	EMC32	Rohde & Schwarz	10.01.00

EUT is Qualcomm engineering software provided by the customer to control the transmitting signal.

Anechoic chamber

Fully anechoic chamber by ETS-Lindgren

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7. Laboratory Environment

Semi-anechoic chambe

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-1000MHz>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

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8. Measurement Uncertainty

Test Name	Uncertainty (*k*=2)	
1. RF Output Power - Conducted	1.32dB	
2.Power Spectral Density - Conducted	2.32dB	
3.Occupied channel bandwidth - Conducted	±66Hz	
4 Transmitter Spurious Emission - Conducted	30MHz≤f≤1GHz	1.41dB
	1GHz≤f≤7GHz	1.92dB
	7GHz≤f≤13GHz	2.31dB
	13GHz≤f≤26GHz	2.61dB
5. Transmitter Spurious Emission - Radiated	9kHz≤f≤30MHz	1.70dB
	30MHz≤f≤1GHz	4.90dB
	1GHz≤f≤18GHz	4.60dB
	18GHz≤f≤40GHz	4.10dB
6. AC Power line Conducted Emission	150kHz≤f≤30MHz	3.00dB

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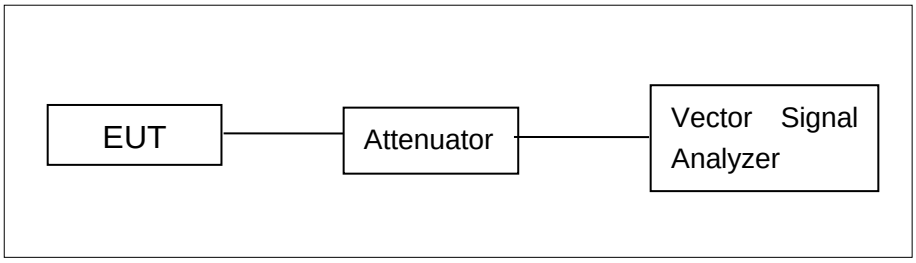
ANNEX A: Detailed Test Results

A.1. Measurement Method

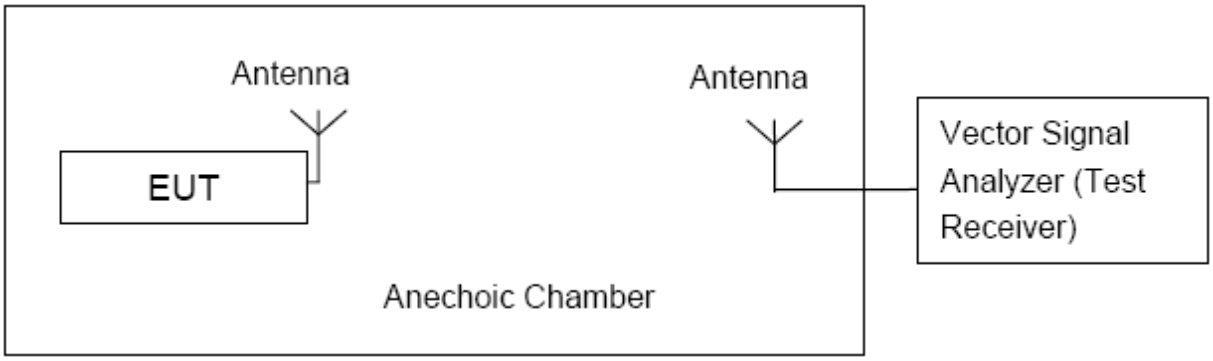
Conducted Measurements

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.

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A.2. Maximum output Power

Measurement Limit and Method:

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407(a)	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.

Standard	Frequency (MHz)	Limit (dBm)
RSS-247 6.2	5150MHz~5250MHz	23 (EIRP) or 10+10logB(EIRP)
	5250MHz~5350MHz	24 or 11+10logB
	5470MHz~5600MHz	24 or 11+10logB
	5650MHz~5725MHz	24 or 11+10logB
	5725MHz~5850MHz	30

Limit use the less value, and B is the 99% 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)	Average power (dBm)	
				ANT 0	ANT 1
5.2GHz Band (UNII-1)	802.11a	CH 36	5180	15.14	14.93
		CH 40	5200	15.07	14.75
		CH 48	5240	14.94	14.63
	802.11n-HT20	CH 36	5180	10.97	10.62
		CH 40	5200	10.91	10.56
		CH 48	5240	10.74	10.37
	802.11n-HT40	CH 38	5190	11.08	10.83
		CH 46	5230	10.97	10.57
	802.11ac-VHT20	CH 36	5180	10.99	10.69
		CH 40	5200	10.90	10.60
		CH 48	5240	10.72	10.36
	802.11ac-VHT40	CH 38	5190	11.04	10.84
		CH 46	5230	10.95	10.55
	802.11ac-VHT80	CH 42	5210	10.26	10.09

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U–NII Band	Mode	Channel	Frequency (MHz)	Average power (dBm)	
				ANT 0	ANT 1
5.3GHz Band (UNII-2A)	802.11a	CH 52	5260	15.07	14.53
		CH 56	5280	14.96	14.41
		CH 64	5320	14.89	14.37
	802.11n-HT20	CH 52	5260	10.90	10.31
		CH 56	5280	10.79	10.19
		CH 64	5320	10.65	10.04
	802.11n-HT40	CH 54	5270	11.03	10.46
		CH 62	5310	10.98	10.34
	802.11ac-VHT20	CH 52	5260	10.88	10.32
		CH 56	5280	10.77	10.20
		CH 64	5320	10.63	10.08
	802.11ac-VHT40	CH 54	5270	11.01	10.47
		CH 62	5310	10.96	10.37
	802.11ac-VHT80	CH 58	5290	10.13	9.87

U–NII Band	Mode	Channel	Frequency (MHz)	Average power (dBm)	
				ANT 0	ANT 1
5.5GHz Band (UNII-2C)	802.11a	CH 100	5500	14.83	14.75
		CH 120	5600	14.75	14.64
		CH 140	5700	14.73	14.56
	802.11n-HT20	CH 100	5500	10.42	10.38
		CH 120	5600	10.20	10.33
		CH 140	5700	10.34	10.29
	802.11n-HT40	CH 102	5510	10.70	10.59
		CH 118	5590	10.49	10.54
		CH 134	5670	10.62	10.52
	802.11ac-VHT20	CH 100	5500	10.42	10.41
		CH 120	5600	10.21	10.34
		CH 140	5700	10.33	10.28
	802.11ac-VHT40	CH 102	5510	10.68	10.60
		CH 118	5590	10.45	10.56
		CH 134	5670	10.63	10.49
	802.11ac-VHT80	CH 106	5530	10.04	9.93
		CH 122	5610	10.01	9.85

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U–NII Band	Mode	Channel	Frequency (MHz)	Average power (dBm)	
				ANT 0	ANT 1
5.8GHz Band (UNII-3)	802.11a	CH 149	5745	13.20	13.03
		CH 157	5785	14.65	14.51
		CH 165	5825	14.67	14.50
	802.11n-HT20	CH 149	5745	10.40	10.31
		CH 157	5785	10.30	10.23
		CH 165	5825	10.21	10.21
	802.11n-HT40	CH 151	5755	10.63	10.52
		CH 159	5795	10.55	10.42
	802.11ac-VHT20	CH 149	5745	10.41	10.32
		CH 157	5785	10.29	10.23
		CH 165	5825	10.24	10.20
	802.11ac-VHT40	CH 151	5755	10.64	10.51
		CH 159	5795	10.53	10.40
	802.11ac-VHT80	CH 155	5775	10.08	9.81

MIMO:

U–NII Band	Mode	Channel	Frequency (MHz)	Average power (dBm)		
				ANT 0	ANT 1	SUM
5.2GHz Band (UNII-1)	802.11n-HT20	CH 36	5180	10.86	10.63	13.76
		CH 40	5200	10.79	10.50	13.66
		CH 48	5240	10.61	10.38	13.51
	802.11n-HT40	CH 38	5190	10.98	10.80	13.90
		CH 46	5230	10.85	10.53	13.70
	802.11ac-VHT20	CH 36	5180	10.82	10.66	13.75
		CH 40	5200	10.81	10.54	13.69
		CH 48	5240	10.58	10.40	13.50
	802.11ac-VHT40	CH 38	5190	10.95	10.81	13.89
		CH 46	5230	10.88	10.49	13.70
	802.11ac-VHT80	CH 42	5210	10.17	10.05	13.12

U–NII Band	Mode	Channel	Frequency (MHz)	Average power (dBm)		
				ANT 0	ANT 1	SUM
5.3GHz Band (UNII-2A)	802.11n-HT20	CH 52	5260	10.80	10.27	13.55
		CH 56	5280	10.70	10.15	13.44
		CH 64	5320	10.57	10.04	13.32
	802.11n-HT40	CH 54	5270	10.95	10.42	13.70
		CH 62	5310	10.89	10.34	13.63
	802.11ac-VHT20	CH 52	5260	10.81	10.28	13.56
		CH 56	5280	10.67	10.16	13.43
		CH 64	5320	10.55	10.03	13.31

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	802.11ac-VHT40	CH 54	5270	10.94	10.43	13.70
		CH 62	5310	10.86	10.38	13.64
	802.11ac-VHT80	CH 58	5290	10.04	9.83	12.95

U–NII Band	Mode	Channel	Frequency (MHz)	Average power (dBm)		
				ANT 0	ANT 1	SUM
5.5GHz Band (UNII-2C)	802.11n-HT20	CH 100	5500	10.39	10.35	13.38
		CH 120	5600	10.18	10.28	13.24
		CH 140	5700	10.29	10.27	13.29
	802.11n-HT40	CH 102	5510	10.67	10.59	13.64
		CH 118	5590	10.43	10.43	13.44
		CH 134	5670	10.56	10.37	13.48
	802.11ac-VHT20	CH 100	5500	10.37	10.32	13.36
		CH 120	5600	10.20	10.28	13.25
		CH 140	5700	10.24	10.24	13.25
	802.11ac-VHT40	CH 102	5510	10.66	10.57	13.63
		CH 118	5590	10.45	10.44	13.46
		CH 134	5670	10.58	10.32	13.46
	802.11ac-VHT80	CH 106	5530	9.90	9.83	12.88
		CH 122	5610	9.89	9.76	12.84

U–NII Band	Mode	Channel	Frequency (MHz)	Average power (dBm)		
				ANT 0	ANT 1	SUM
5.8GHz Band (UNII-3)	802.11n-HT20	CH 149	5745	10.35	10.29	13.33
		CH 157	5785	10.22	10.21	13.23
		CH 165	5825	10.15	10.18	13.18
	802.11n-HT40	CH 151	5755	10.57	10.55	13.57
		CH 159	5795	10.45	10.43	13.45
	802.11ac-VHT20	CH 149	5745	10.32	10.28	13.31
		CH 157	5785	10.24	10.22	13.24
		CH 165	5825	10.11	10.19	13.16
	802.11ac-VHT40	CH 151	5755	10.54	10.54	13.55
		CH 159	5795	10.41	10.41	13.42
	802.11ac-VHT80	CH 155	5775	9.92	9.87	12.91

Note:

Worst-case data rates as provided by the client were: 6Mbps (802.11a), MCS0 (802.11n), MCS0 (802.11ac).SISO-ANT 0 (802.11a, 802.11n-HT40 and 802.11ac-VHT80) and MIMO (802.11n-HT20, 802.11n-HT40 and 802.11ac-VHT80) are selected as the worst-case. The following cases and test graphs are mostly performed with this condition.

The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

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The E.I.R.P Results are listed below:

SISO:

U–NII Band	Mode	Channel	Frequency (MHz)	E.I.R.P（dBm）	
				ANT 0	ANT 1
5.2GHz Band (UNII-1)	802.11a	CH 36	5180	16.84	16.63
		CH 40	5200	16.77	16.45
		CH 48	5240	16.64	16.33
	802.11n-HT20	CH 36	5180	12.67	12.22
		CH 40	5200	12.61	12.26
		CH 48	5240	12.44	12.07
	802.11n-HT40	CH 38	5190	12.78	12.53
		CH 46	5230	12.67	12.27
	802.11ac-VHT20	CH 36	5180	12.69	12.39
		CH 40	5200	12.60	12.30
		CH 48	5240	12.42	12.06
	802.11ac-VHT40	CH 38	5190	12.74	12.54
		CH 46	5230	12.65	12.25
	802.11ac-VHT80	CH 42	5210	11.96	11.79

MIMO:

U–NII Band	Mode	Channel	Frequency (MHz)	E.I.R.P（dBm）
5.2GHz Band (UNII-1)	802.11n-HT20	CH 36	5180	15.56
		CH 40	5200	15.46
		CH 48	5240	15.31
	802.11n-HT40	CH 38	5190	15.70
		CH 46	5230	15.50
	802.11ac-VHT20	CH 36	5180	15.55
		CH 40	5200	15.49
		CH 48	5240	15.30
	802.11ac-VHT40	CH 38	5190	15.69
		CH 46	5230	15.50
	802.11ac-VHT80	CH 42	5210	14.92

Note:

E.I.R.P value = Conducted values (with conducted samples) + Antenna Gain.

Conclusion: PASS

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A.3. Peak Power Spectral Density (conducted)

Measurement Limit:

Standard	Frequency (MHz)	Limit
FCC CRF Part 15.407(a) & RSS-247 6.2	5150MHz~5250MHz	11dBm/MHz(FCC)
		10dBm/MHz EIRP(IC)
	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:

5.2GHz Band (UNII-1):

Mode	Channel	Power Spectral Density (dBm/MHz)	E.I.R.P Spectral Density (dBm)
802.11a	5180MHz(Ch36)	7.14	8.84
	5200MHz(Ch40)	6.93	8.63
	5240MHz(Ch48)	6.60	8.30
802.11n-HT40	5190MHz(Ch38)	1.80	3.50
	5230MHz(Ch46)	1.69	3.39
802.11ac-VHT80	5210MHz(Ch42)	-0.54	1.16

Note: E.I.R.P value= Conducted values (with conducted samples) + Antenna Gain.

5.3GHz Band (UNII-2A) & 5.5GHz Band (UNII-2C):

Mode	Channel	Power Spectral Density (dBm/MHz)
802.11a	5260MHz(Ch52)	6.78
	5280MHz(Ch56)	6.36
	5320MHz(Ch64)	6.42
	5500MHz(Ch100)	7.04
	5580MHz(Ch116)	6.75
	5700MHz(Ch140)	6.49
802.11n-HT40	5270MHz(Ch54)	1.68
	5310MHz(Ch62)	1.24
	5510MHz(Ch102)	1.97
	5550MHz(Ch110)	1.05
	5670MHz(Ch134)	1.24
802.11ac-VHT80	5290MHz(Ch58)	-0.92
	5530MHz(Ch106)	-0.49
	5610MHz(Ch122)	-0.59

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5.8GHz Band (UNII-3):

Mode	Channel	Power Spectral Density (dBm/500kHz)
802.11a	5745MHz(CH149)	5.54
	5785MHz(CH157)	6.49
	5825MHz(CH165)	7.11
802.11n HT40	5755MHz(CH151)	-0.61
	5795MHz(CH159)	-0.90
802.11ac-VHT80	5775MHz(CH155)	-3.30

MIMO:

5.2GHz Band (UNII-1):

Mode	Channel	Power Spectral Density (dBm/MHz)			E.I.R.P Spectral Density (dBm)
		Ant 0	Ant 1	Sum	
802.11n-HT20	5180MHz(Ch36)	4.73	4.21	7.49	9.39
	5200MHz(Ch40)	4.60	4.18	7.41	9.31
	5240MHz(Ch48)	4.15	3.93	7.05	8.95
802.11n-HT40	5190MHz(Ch38)	1.97	1.84	4.92	6.82
	5230MHz(Ch46)	1.70	1.41	4.57	6.47
802.11ac-VHT80	5210MHz(Ch42)	-0.57	-0.86	2.30	4.20

5.3GHz Band (UNII-2A) & 5.5GHz Band (UNII-2C):

Mode	Channel	Power Spectral Density (dBm/MHz)		
		Ant 0	Ant 1	Sum
802.11n-HT20	5260MHz(Ch52)	4.53	4.26	7.41
	5280MHz(Ch56)	4.40	4.10	7.26
	5320MHz(Ch64)	4.50	4.32	7.42
	5500MHz(Ch100)	4.51	4.20	7.37
	5580MHz(Ch116)	4.13	3.83	6.99
	5700MHz(Ch140)	4.08	4.06	7.08
802.11n-HT40	5270MHz(Ch54)	1.44	1.49	4.48
	5310MHz(Ch62)	1.13	1.01	4.08
	5510MHz(Ch102)	1.73	1.52	4.64
	5550MHz(Ch110)	1.62	1.16	4.41
	5670MHz(Ch134)	1.66	1.27	4.48
802.11ac-VHT80	5290MHz(Ch58)	-1.01	-1.20	1.91
	5530MHz(Ch106)	-0.67	-0.65	2.35
	5610MHz(Ch122)	-0.63	-0.53	2.43

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5.8GHz Band (UNII-3):

Mode	Channel	Power Spectral Density (dBm/500kHz)		
		Ant 0	Ant 1	Sum
802.11n-HT20	5745MHz(CH149)	2.61	2.61	5.62
	5785MHz(CH157)	2.99	2.35	5.69
	5825MHz(CH165)	2.96	2.46	5.73
802.11n-HT40	5755MHz(CH151)	-0.31	-0.56	2.58
	5795MHz(CH159)	-0.08	-0.35	2.80
802.11ac-VHT80	5775MHz(CH155)	-3.30	-3.38	-0.33

Conclusion: PASS

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A.4. Occupied 26dB Bandwidth (conducted)

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.403 (i) & RSS-247 6.2	/

The measurement is made according to KDB 789033

Measurement Result:

Mode	Channel	Occupied 26dB Bandwidth(MHz)		Conclusion
802.11a	5180MHz(Ch36)	Fig.1	20.35	/
	5200MHz(Ch40)	Fig.2	20.20	/
	5240MHz(Ch48)	Fig.3	20.15	/
	5260MHz(Ch52)	Fig.4	20.25	/
	5280MHz(Ch56)	Fig.5	20.15	/
	5320MHz(Ch64)	Fig.6	20.40	/
	5500MHz(Ch100)	Fig.7	20.15	/
	5580MHz(Ch116)	Fig.8	20.15	/
	5700MHz(Ch140)	Fig.9	20.25	/
802.11n-HT40	5190MHz(Ch38)	Fig.10	40.88	/
	5230MHz(Ch46)	Fig.11	40.80	/
	5270MHz(Ch54)	Fig.12	40.72	/
	5310MHz(Ch62)	Fig.13	41.04	/
	5510MHz(Ch102)	Fig.14	40.48	/
	5550MHz(Ch110)	Fig.15	42.72	/
	5670MHz(Ch134)	Fig.16	41.28	/
802.11 ac-VHT80	5210MHz(Ch42)	Fig.17	83.20	/
	5290MHz(Ch58)	Fig.18	83.04	/
	5530MHz(Ch106)	Fig.19	83.52	/
	5610MHz(Ch122)	Fig.20	83.68	/

Conclusion: PASS

Test graphs as below:

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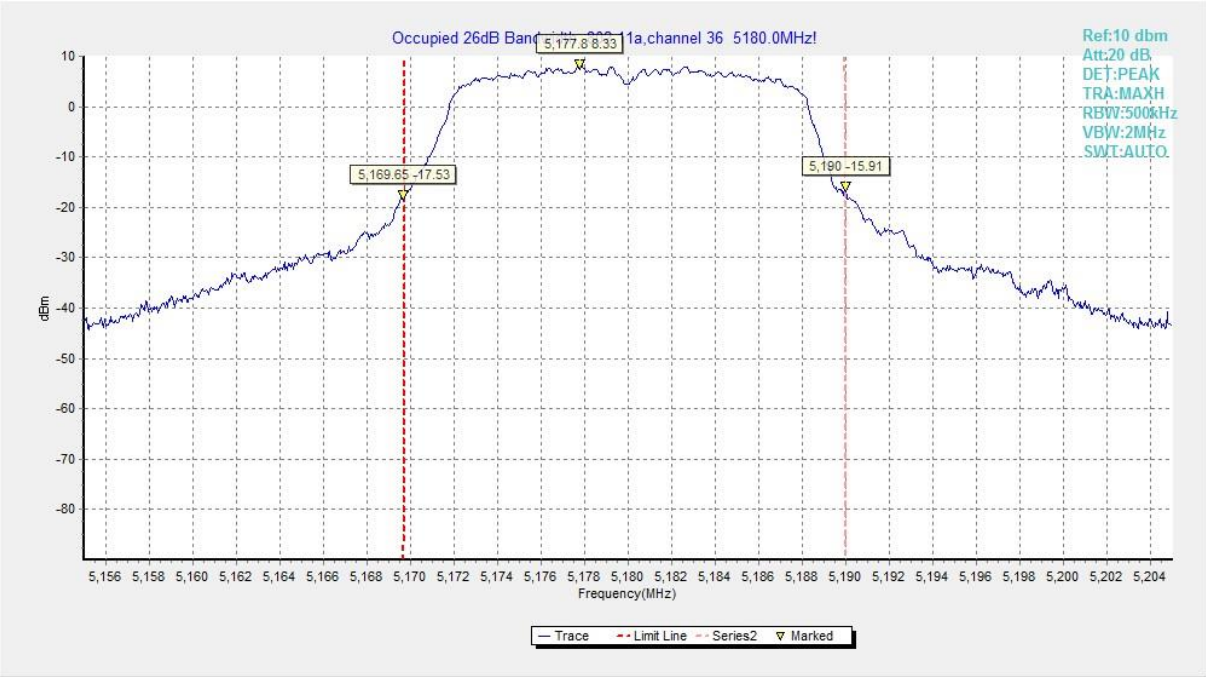

Fig. 1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

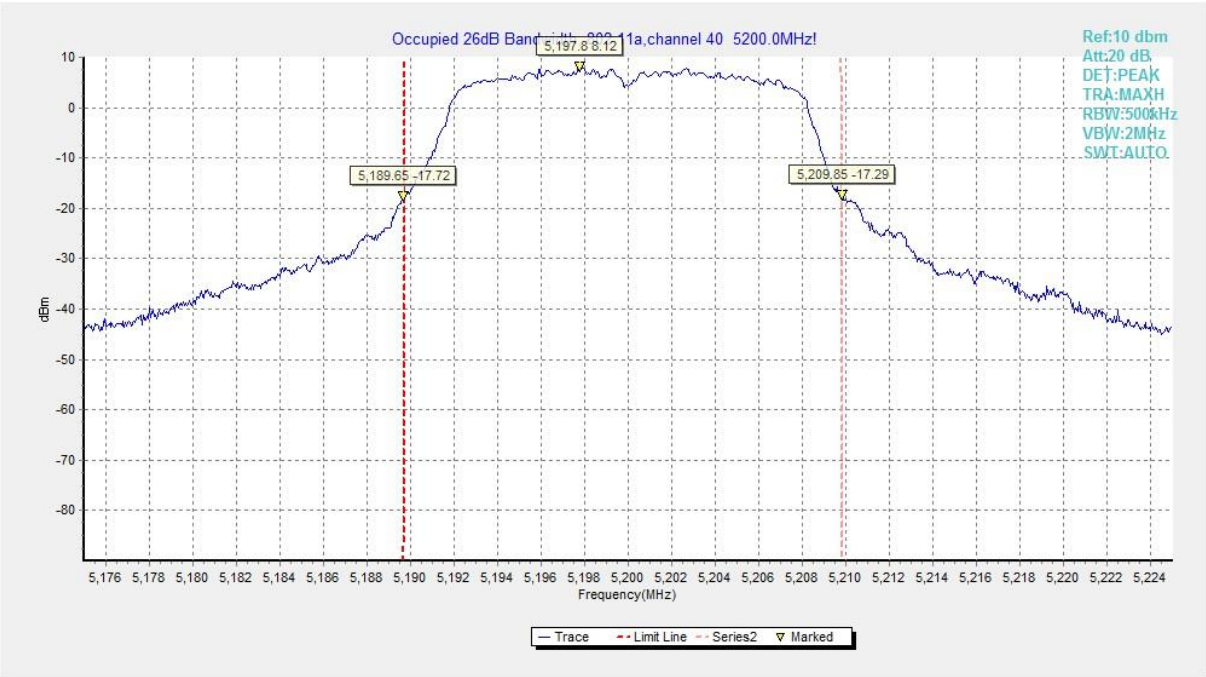

Fig. 2 Occupied 26dB Bandwidth (802.11a, 5200MHz)

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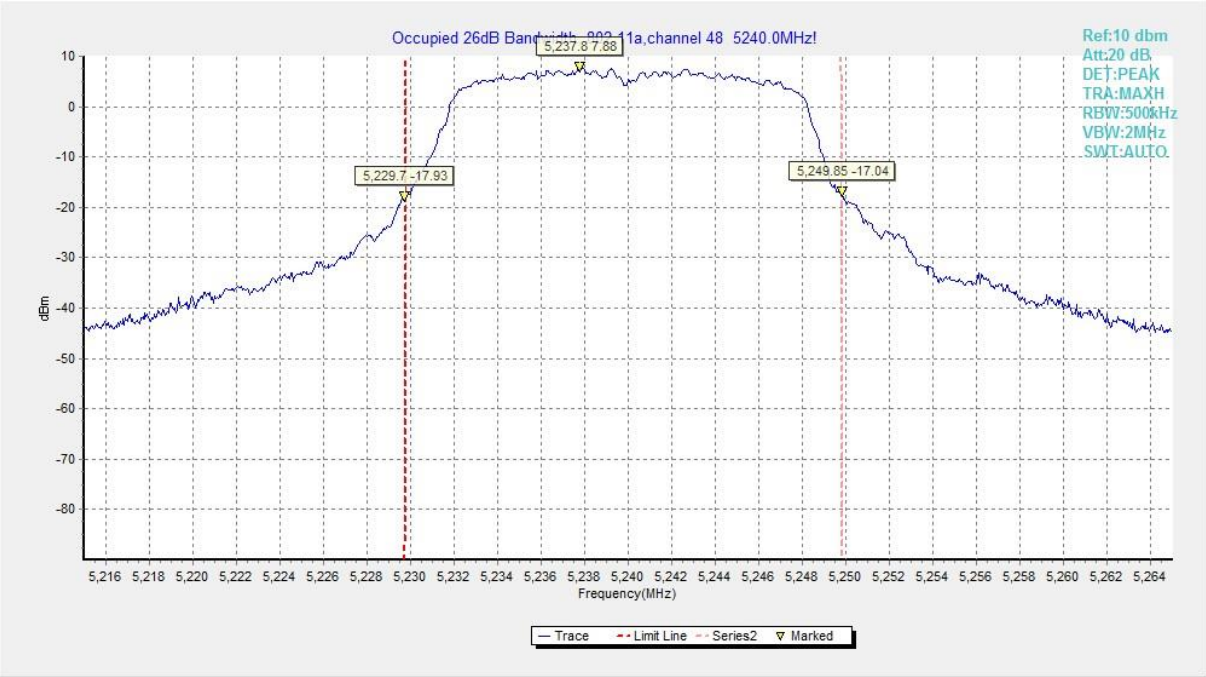

Fig. 3 Occupied 26dB Bandwidth (802.11a, 5240MHz)

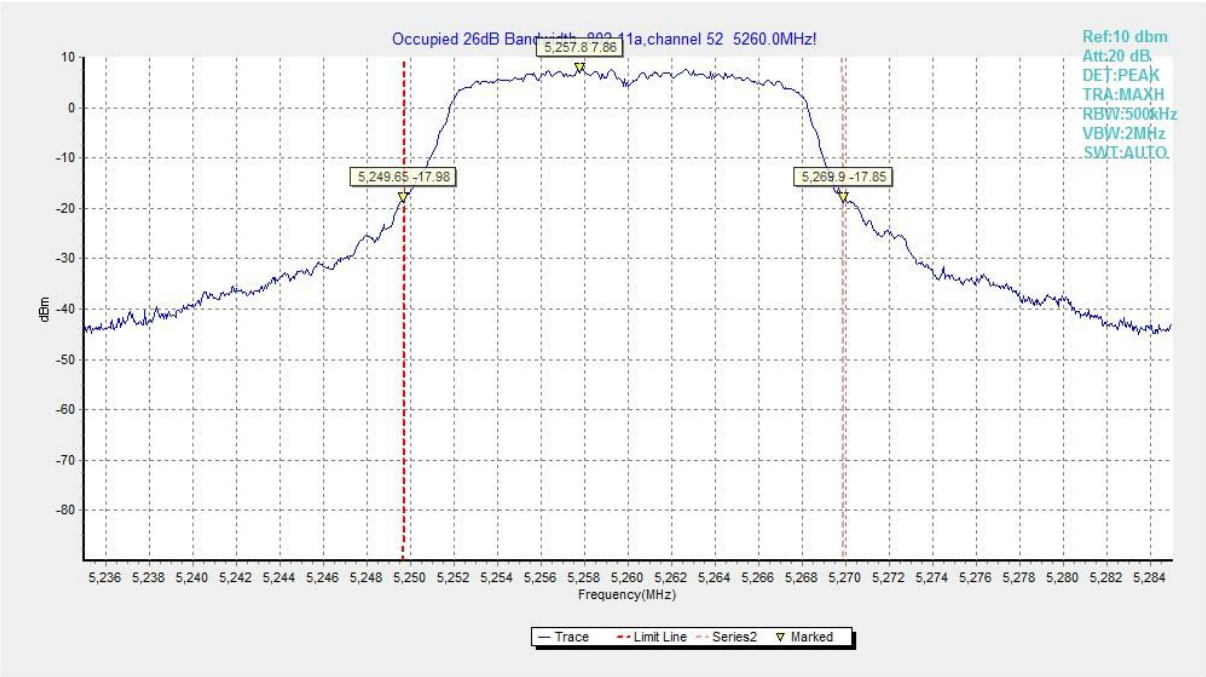

Fig. 4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

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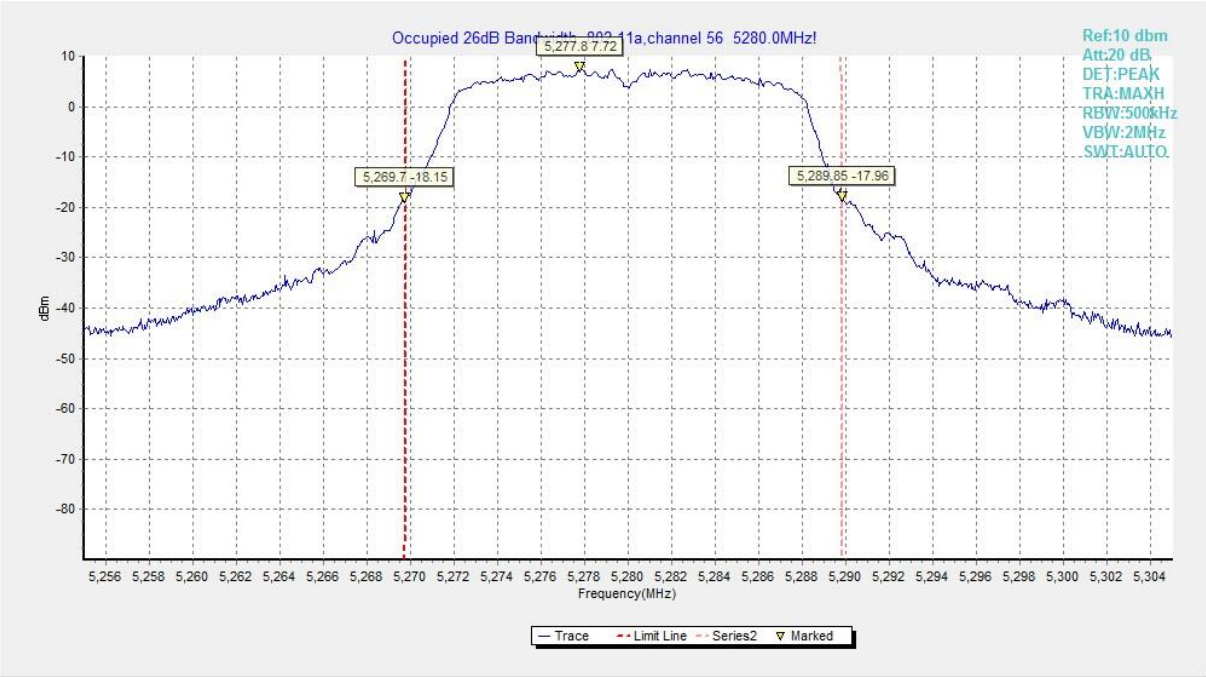

Fig. 5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

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

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Fig. 7 Occupied 26dB Bandwidth (802. 11a, 5500MHz)

Fig. 8 Occupied 26dB Bandwidth (802. 11a, 5600MHz)

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Fig. 9 Occupied 26dB Bandwidth (802. 11a, 5700MHz)

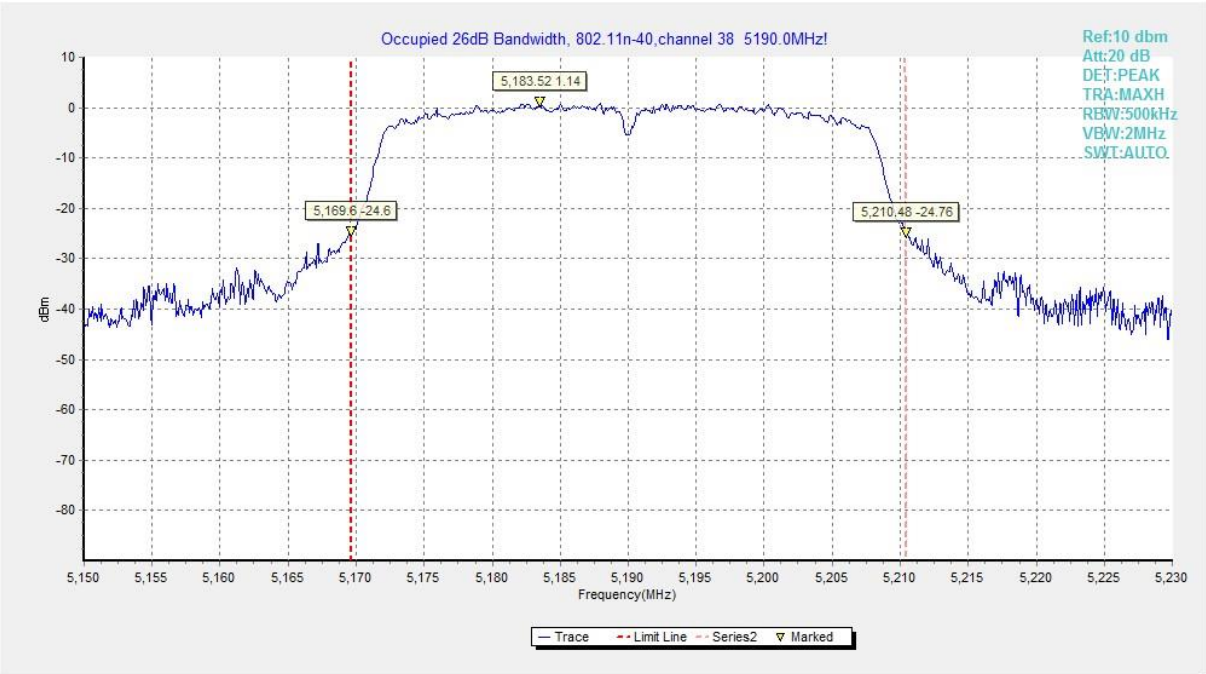

Fig. 10 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)

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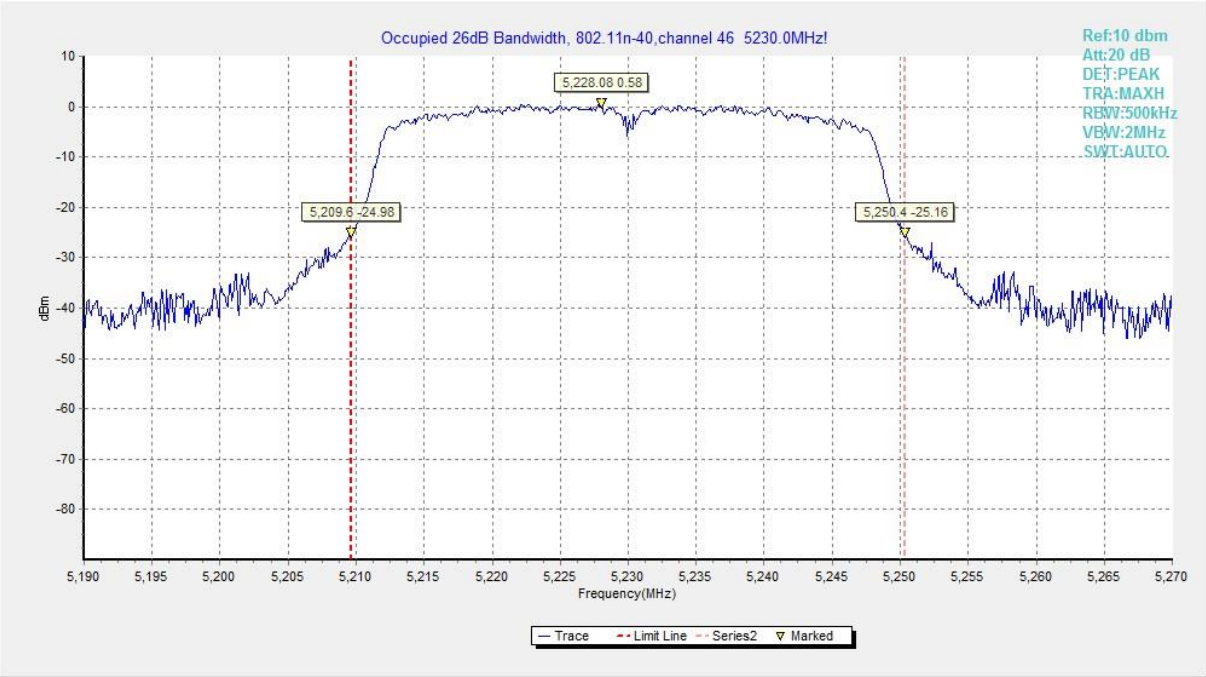

Fig. 11 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)

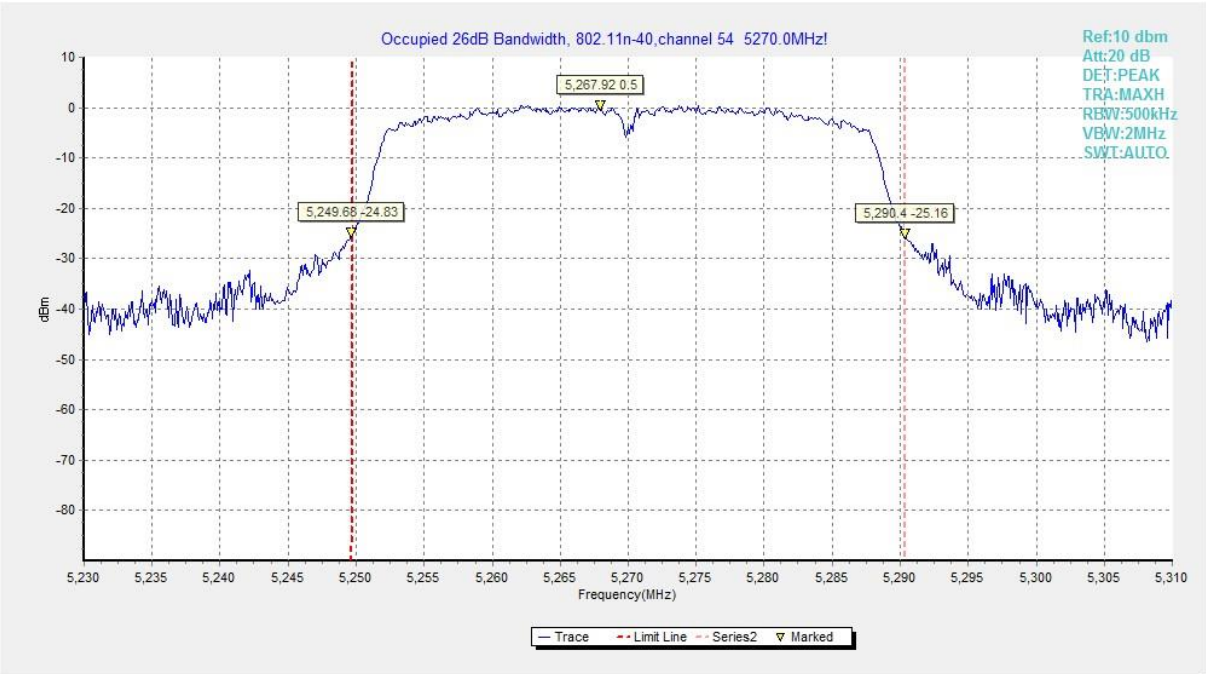

Fig. 12 Occupied 26dB Bandwidth (802.11n-HT40, 5270MHz)

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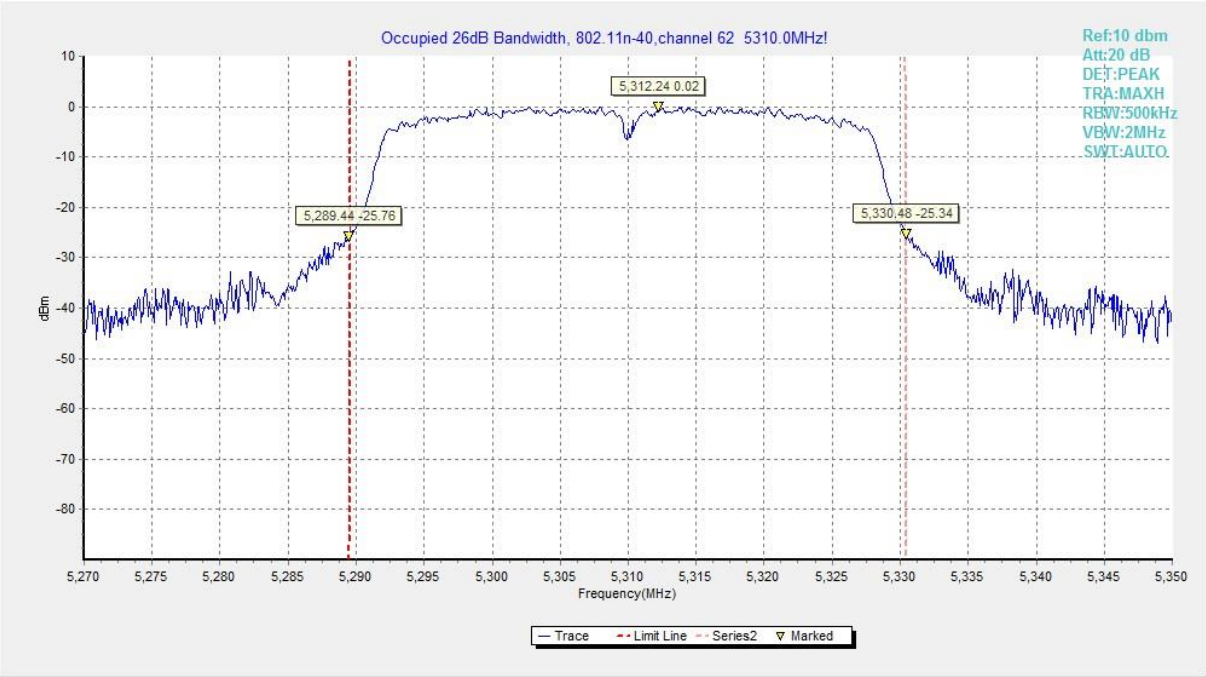

Fig. 13 Occupied 26dB Bandwidth (802.11n-HT40, 5310MHz)

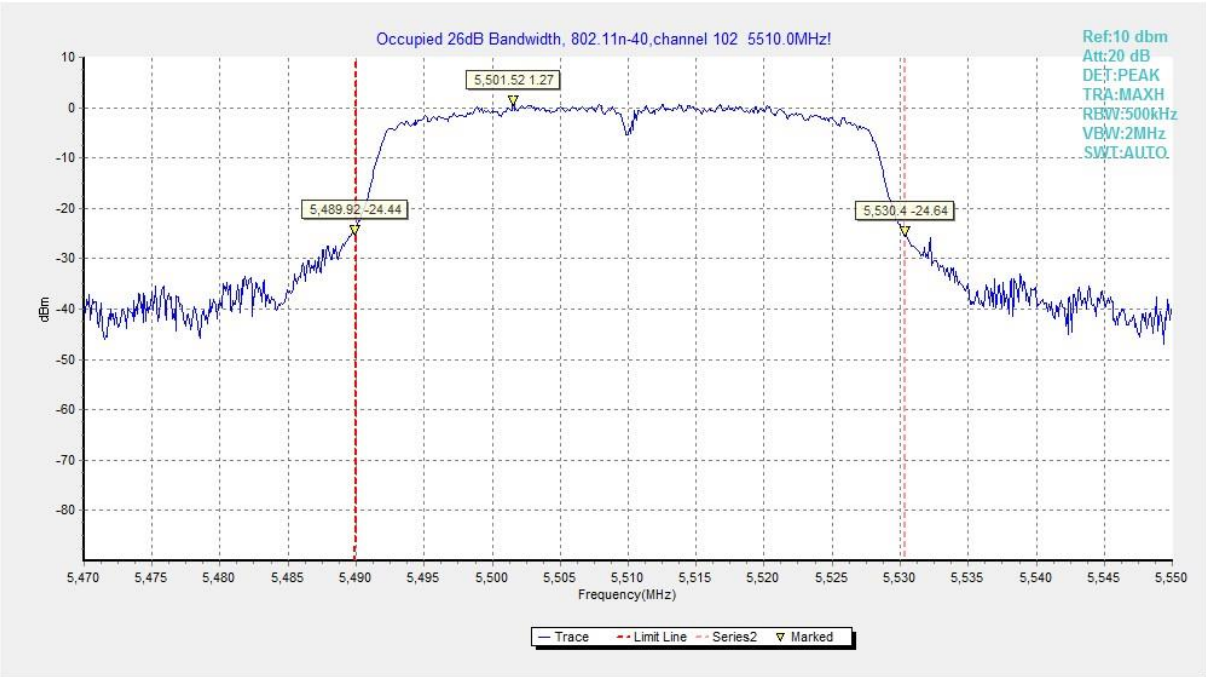

Fig. 14 Occupied 26dB Bandwidth (802. 11n-HT40, 5510MHz)

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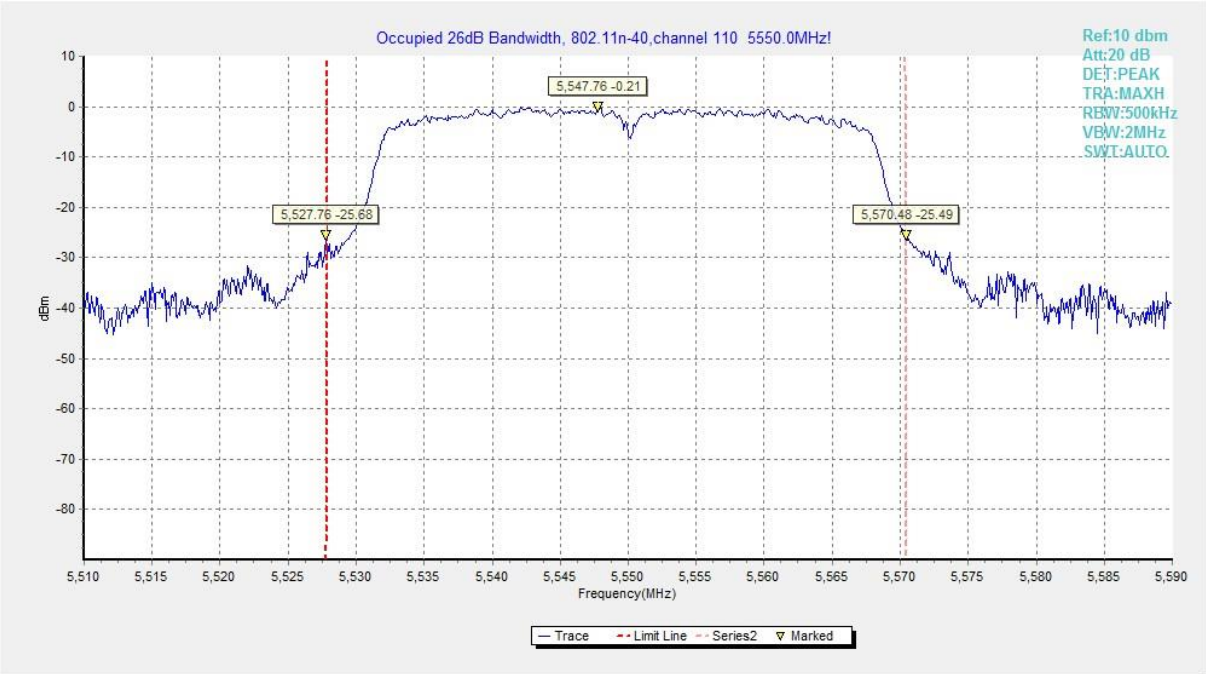

Fig. 15 Occupied 26dB Bandwidth (802. 11n-HT40, 5590MHz)

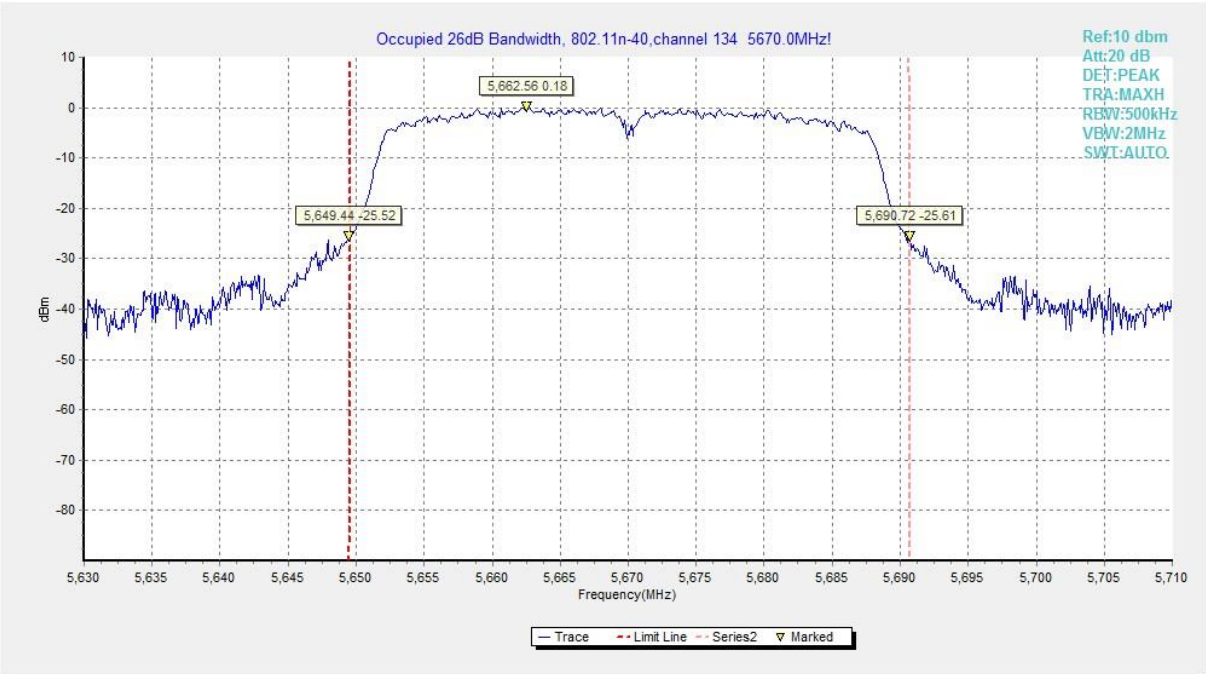

Fig. 16 Occupied 26dB Bandwidth (802. 11n-HT40, 5670MHz)

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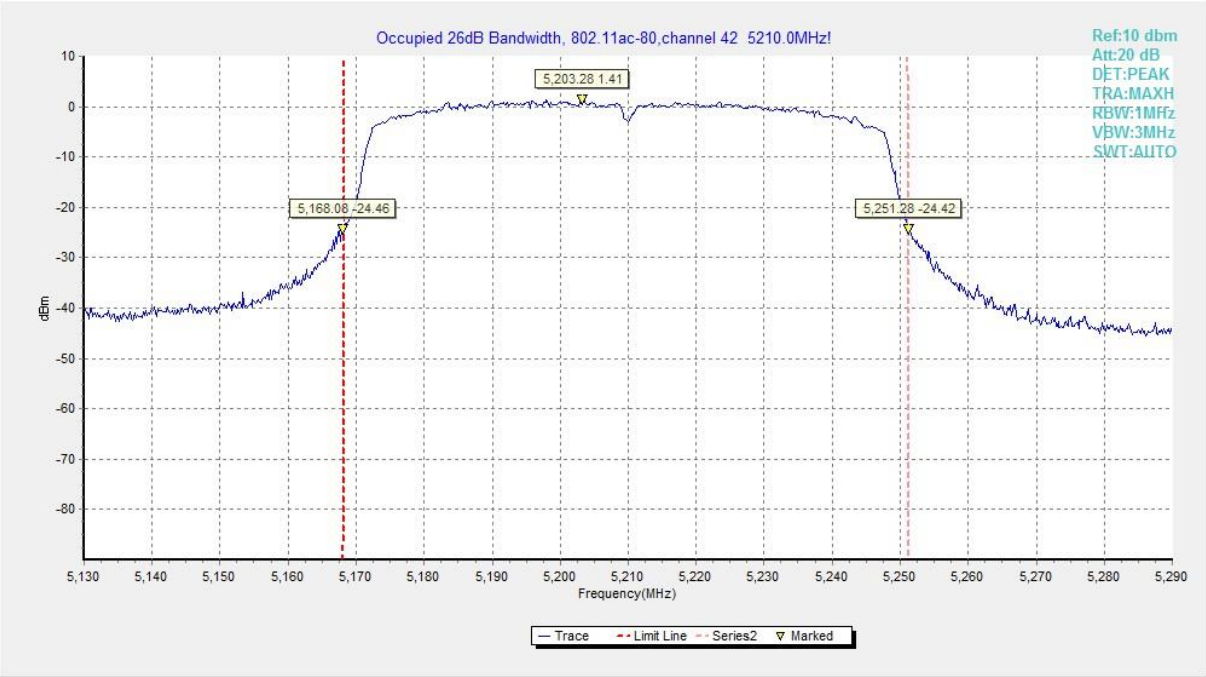

Fig. 17 Occupied 26dB Bandwidth (802. 11ac-VHT80, 5210MHz)

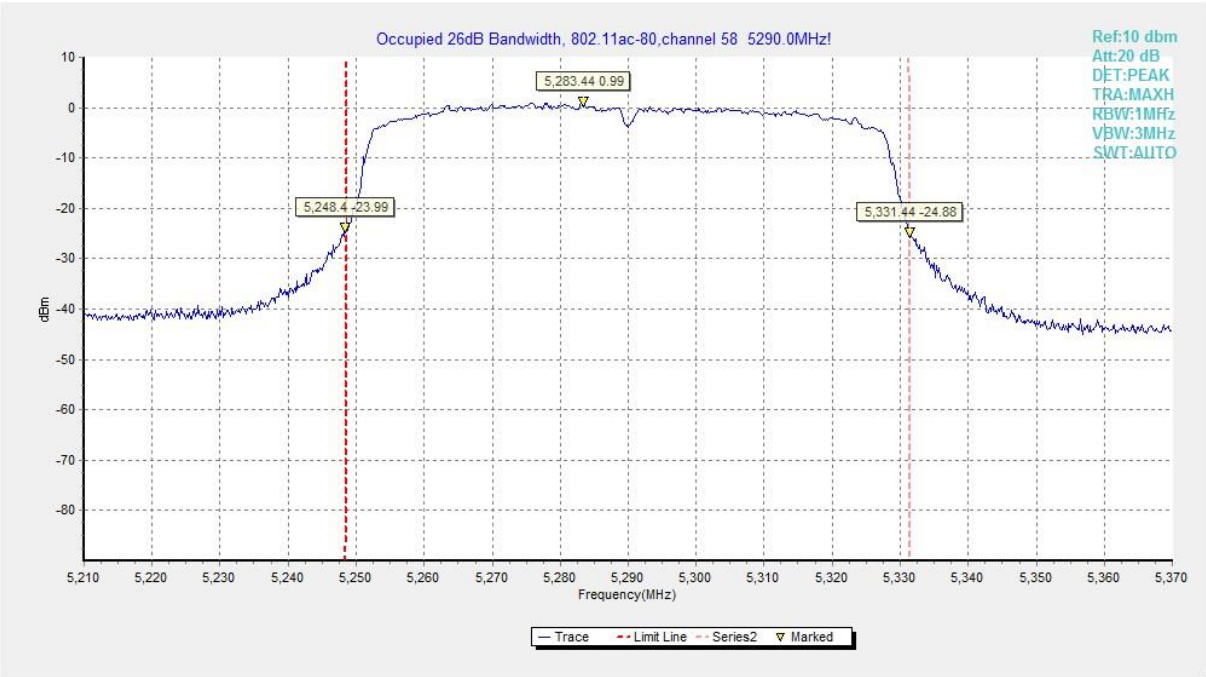

Fig. 18 Occupied 26dB Bandwidth (802. 11ac-VHT80, 5290MHz)

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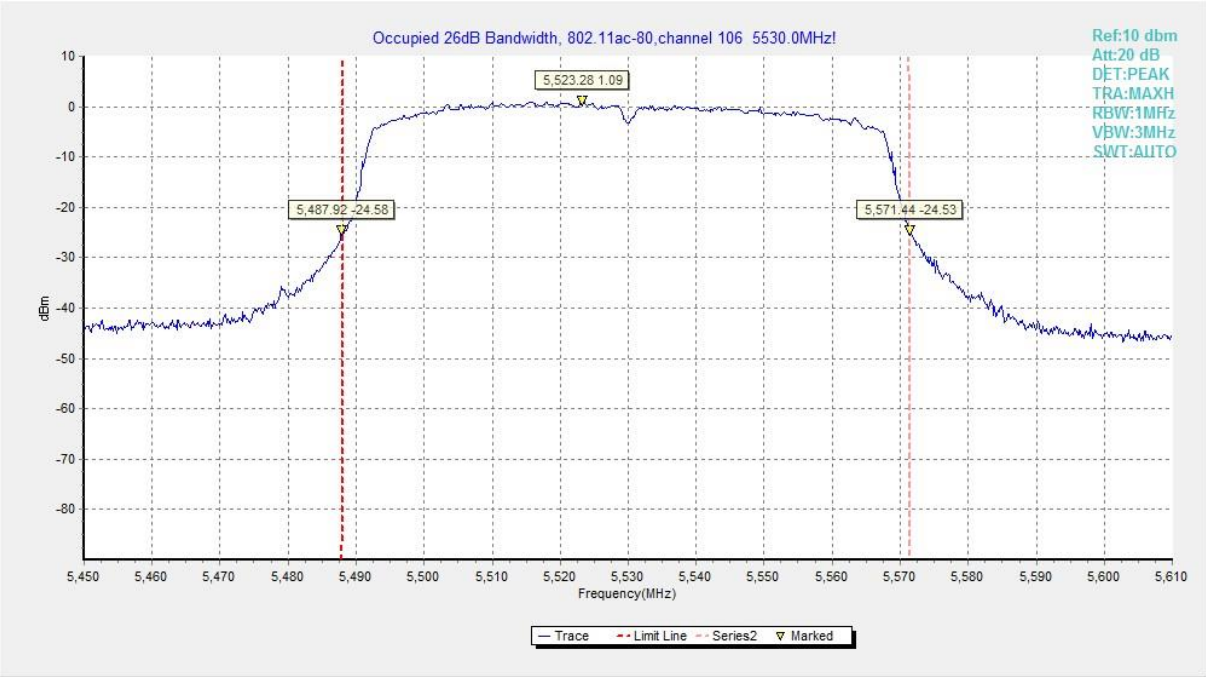

Fig. 19 Occupied 26dB Bandwidth (802. 11ac-VHT80, 5530MHz)

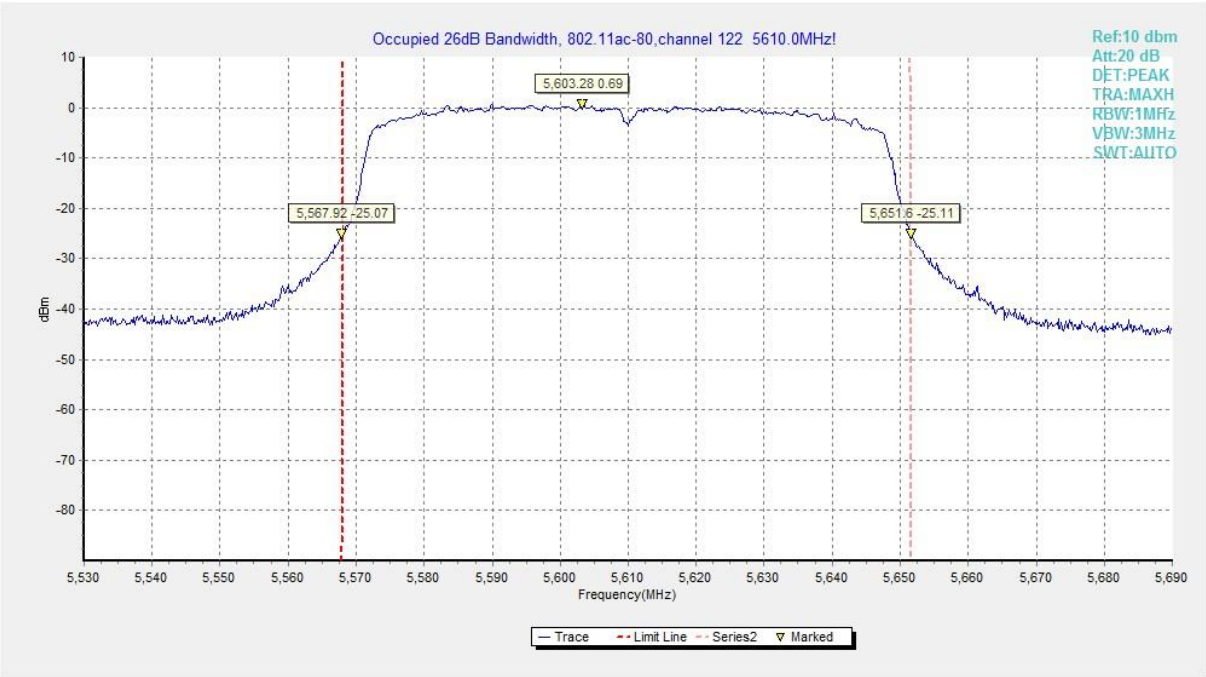

Fig. 20 Occupied 26dB Bandwidth (802. 11ac-VHT80, 5610MHz)

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A.5. Occupied 6dB Bandwidth (conducted)

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.407 (e) & RSS-247 6.2.4	⩾0.5

The measurement is made according to KDB 789033

Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth(MHz)		Conclusion
802.11a	5745MHz(Ch149)	Fig.21	15.30	**P**
	5785MHz(Ch157)	Fig.22	15.35	**P**
	5825MHz(Ch165)	Fig.23	15.30	**P**
802.11n-HT40	5755MHz(Ch151)	Fig.24	35.04	**P**
	5795MHz(Ch159)	Fig.25	35.12	**P**
802.11ac-VHT80	5775MHz(Ch155)	Fig.26	75.20	**P**

Conclusion: PASS

Test graphs as below:

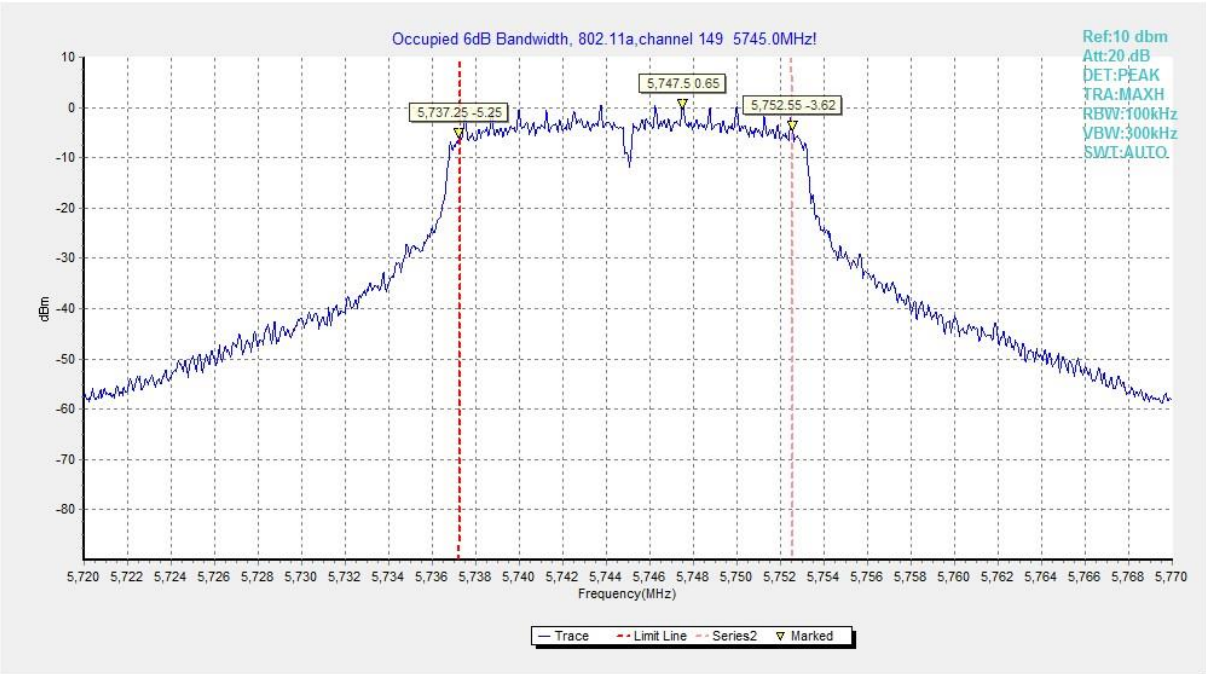

Fig. 21 Occupied 6dB Bandwidth (802.11a, 5745MHz)

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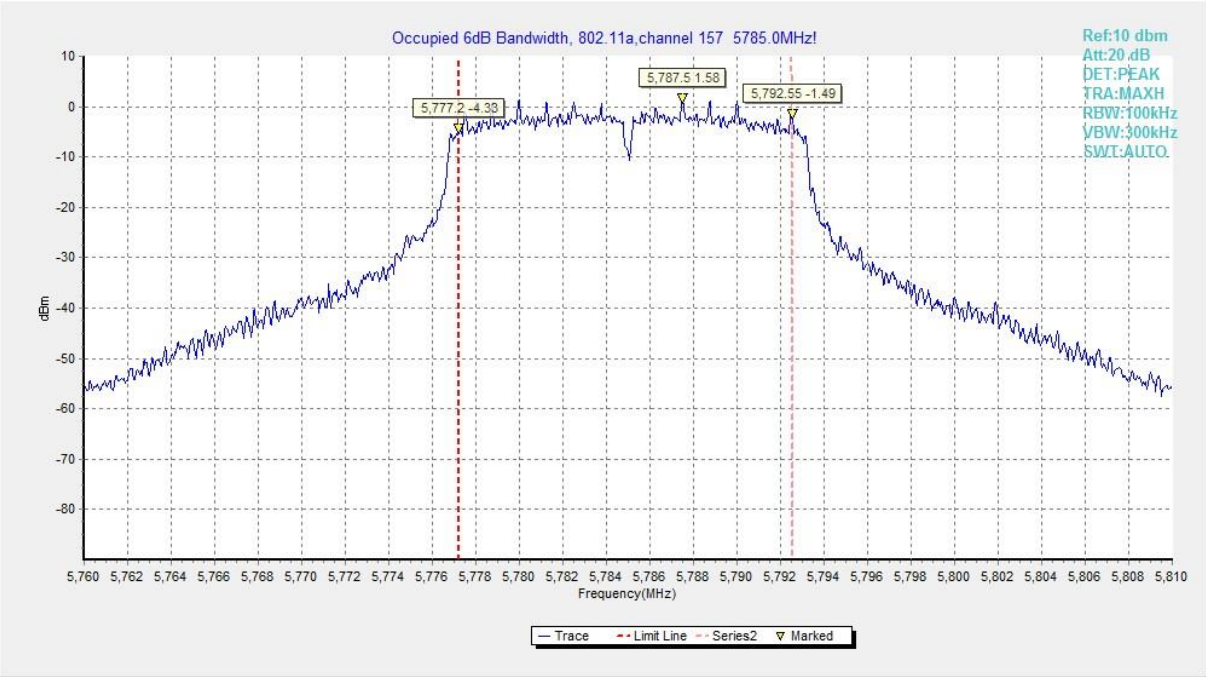

Fig. 22 Occupied 6dB Bandwidth (802.11a, 5785MHz)

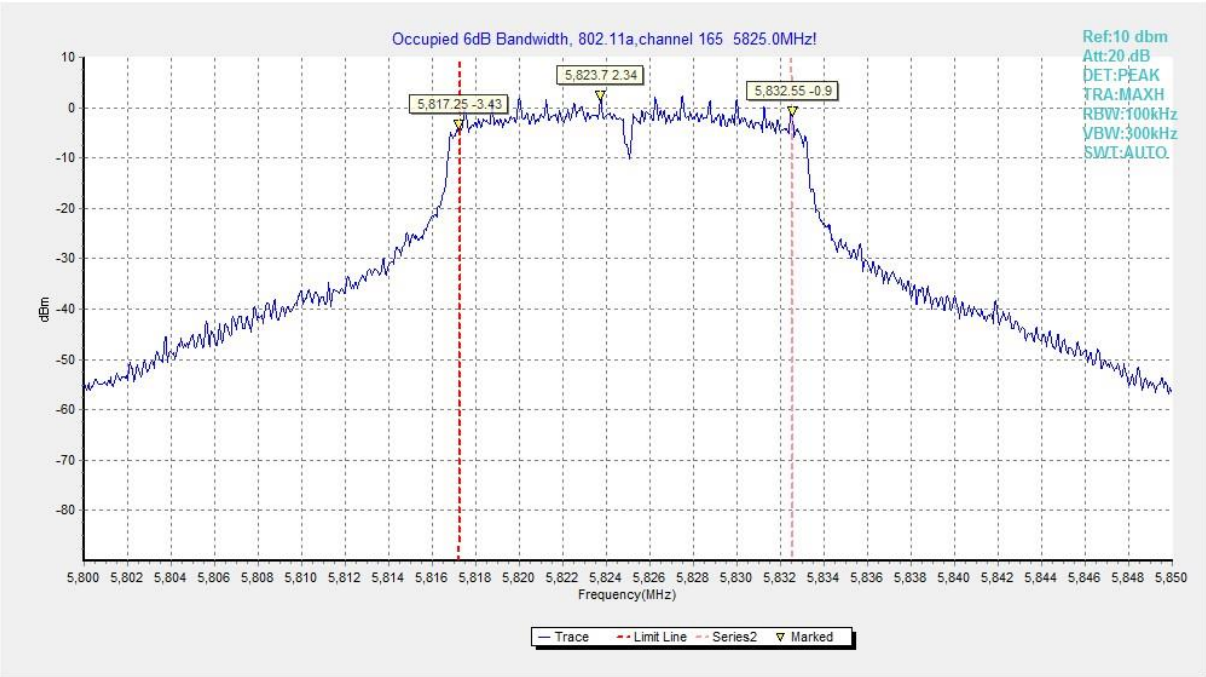

Fig. 23 Occupied 6dB Bandwidth (802.11a, 5825MHz)

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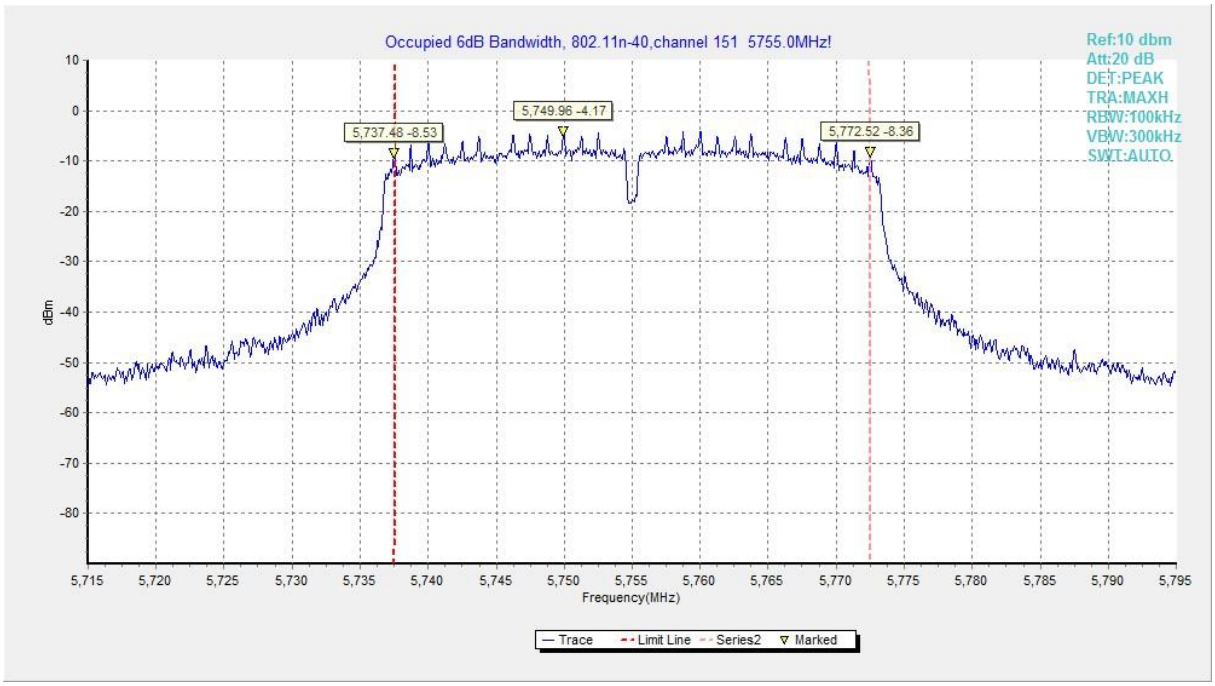

Fig. 24 Occupied 6dB Bandwidth (802.11n-HT40, 5755MHz)

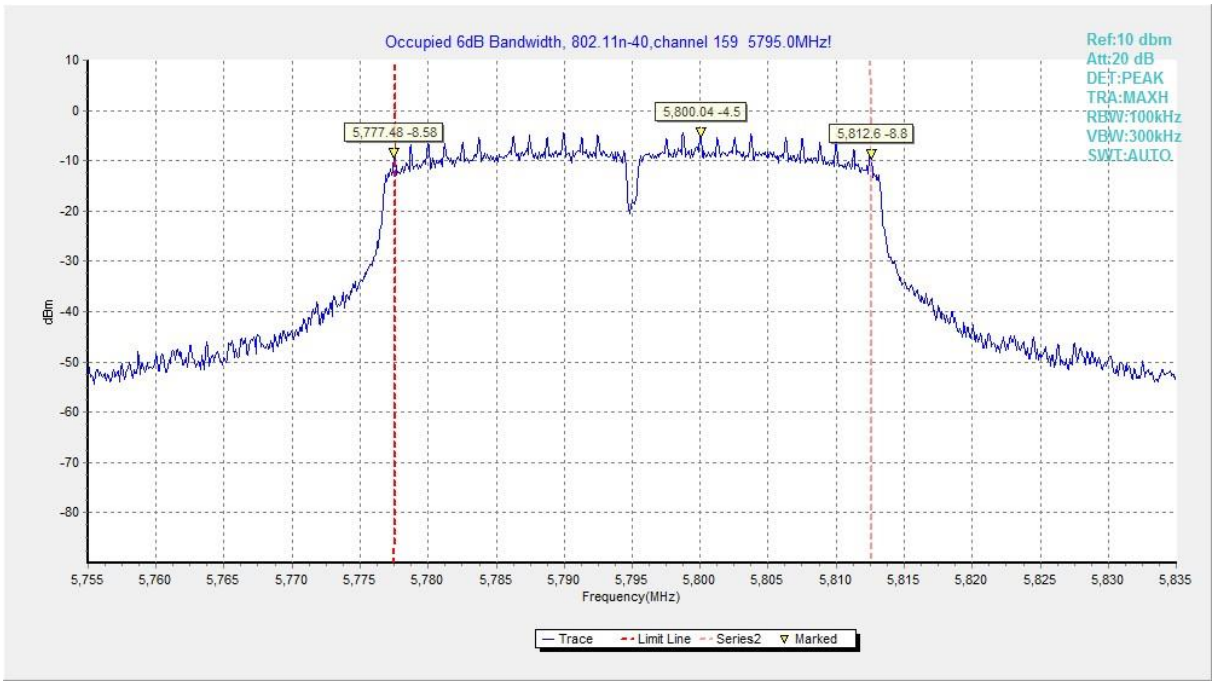

Fig. 25 Occupied 6dB Bandwidth (802.11n-HT40, 5795MHz)

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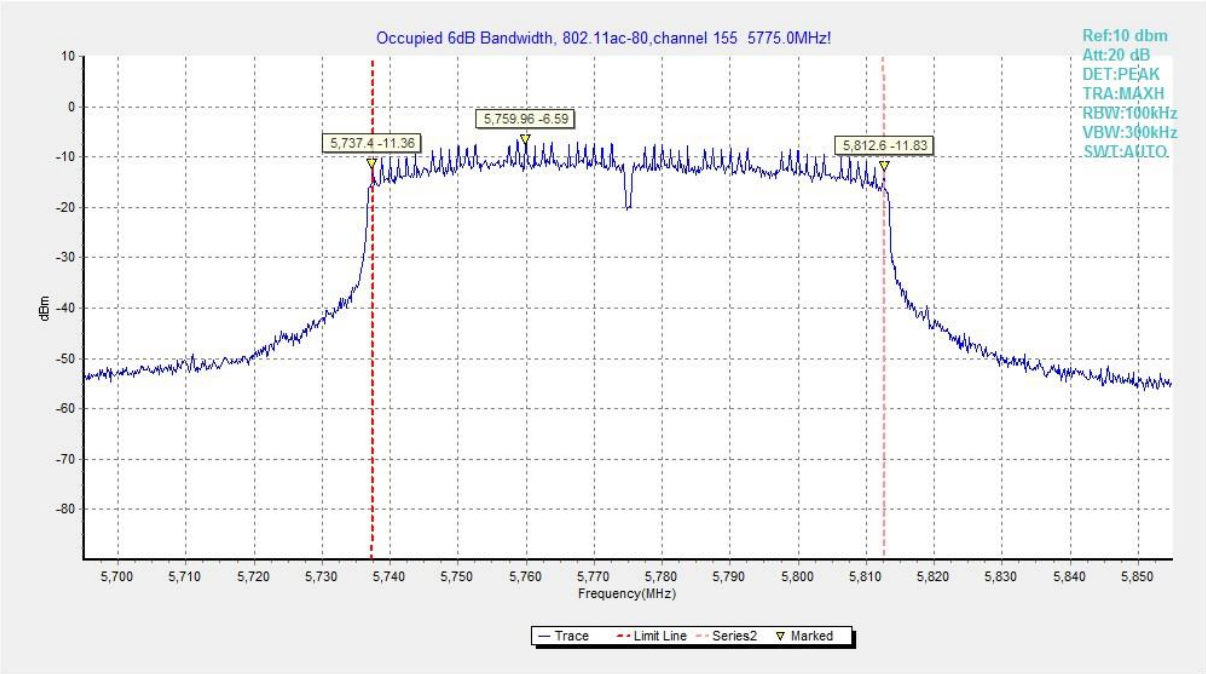

Fig. 26 Occupied 6dB Bandwidth (802.11ac-VHT80, 5775MHz)

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A.6. 99% Occupied Bandwidth (conducted)

Measurement Limit:

Standard	Limit (MHz)
FCC 47 CFR Part 15.403 & RSS-247 6.2	/

The measurement is made according to KDB 789033

Measurement Result:

Mode	Channel	99% Occupied Bandwidth(MHz)		Conclusion
802.11a	5180MHz(Ch36)	Fig.27	16.54	/
	5200MHz(Ch40)	Fig.28	16.50	/
	5240MHz(Ch48)	Fig.29	16.50	/
	5260MHz(Ch52)	Fig.30	16.54	/
	5280MHz(Ch56)	Fig.31	16.50	/
	5320MHz(Ch64)	Fig.32	16.50	/
	5500MHz(Ch100)	Fig.33	16.54	/
	5580MHz(Ch116)	Fig.34	16.50	/
	5700MHz(Ch140)	Fig.35	16.50	/
802.11n-HT40	5190MHz(Ch38)	Fig.36	35.96	/
	5230MHz(Ch46)	Fig.37	35.80	/
	5270MHz(Ch54)	Fig.38	35.80	/
	5310MHz(Ch62)	Fig.39	35.88	/
	5510MHz(Ch102)	Fig.40	35.88	/
	5550MHz(Ch110)	Fig.41	35.96	/
	5670MHz(Ch134)	Fig.42	35.96	/
802.11 ac-VHT80	5210MHz(Ch42)	Fig.43	74.97	/
	5290MHz(Ch58)	Fig.44	74.81	/
	5530MHz(Ch106)	Fig.45	74.81	/
	5610MHz(Ch122)	Fig.46	74.97	/

Conclusion: PASS

Test graphs as below:

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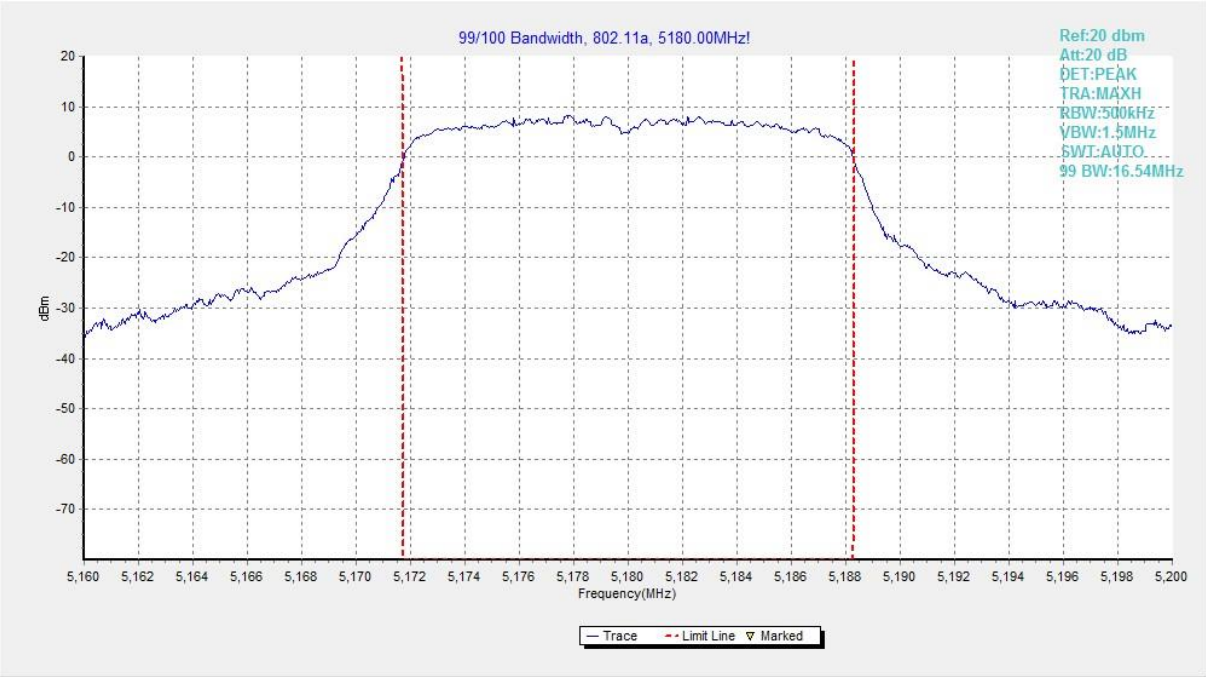

Fig. 27 99% Occupied Bandwidth (802.11a, 5180MHz)

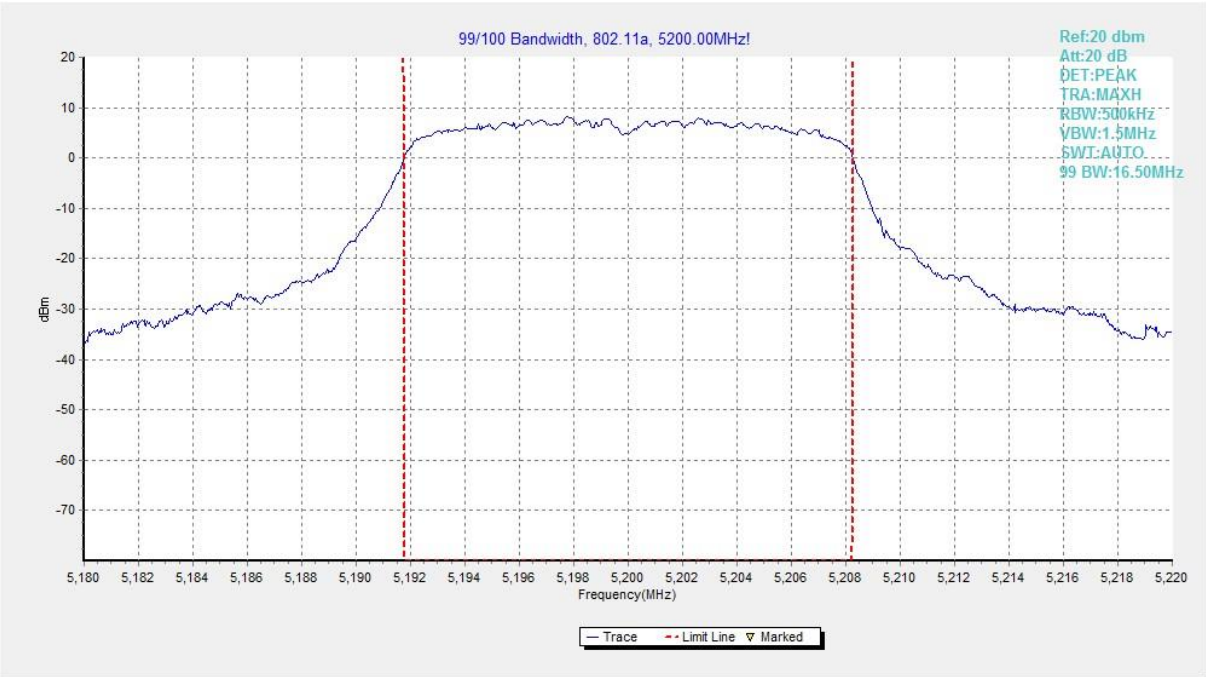

Fig. 28 99% Occupied Bandwidth (802.11a, 5200MHz)

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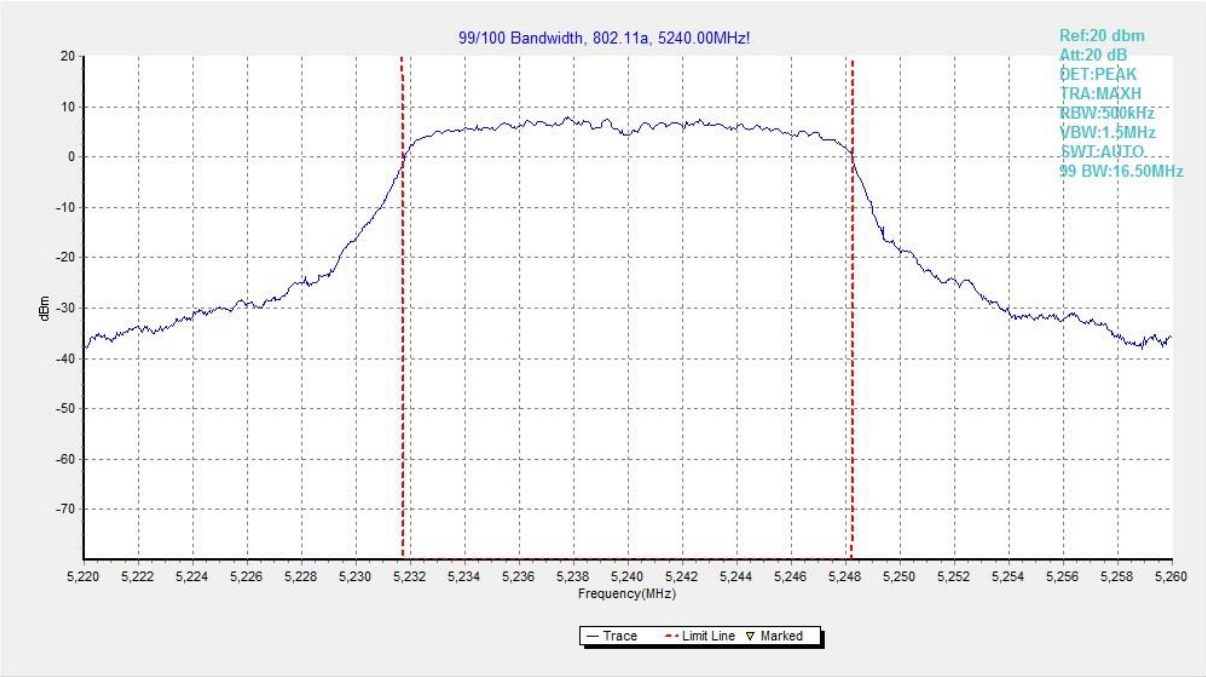

Fig. 29 99% Occupied Bandwidth (802.11a, 5240MHz)

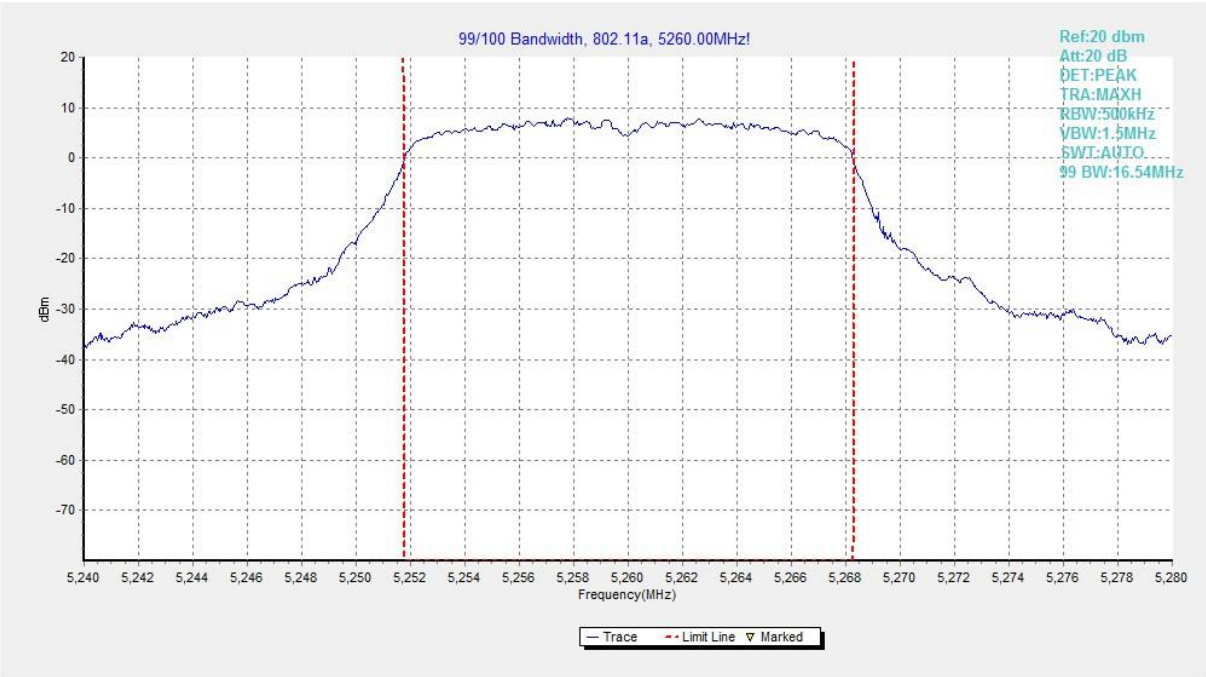

Fig. 30 99% Occupied Bandwidth (802.11a, 5260MHz)

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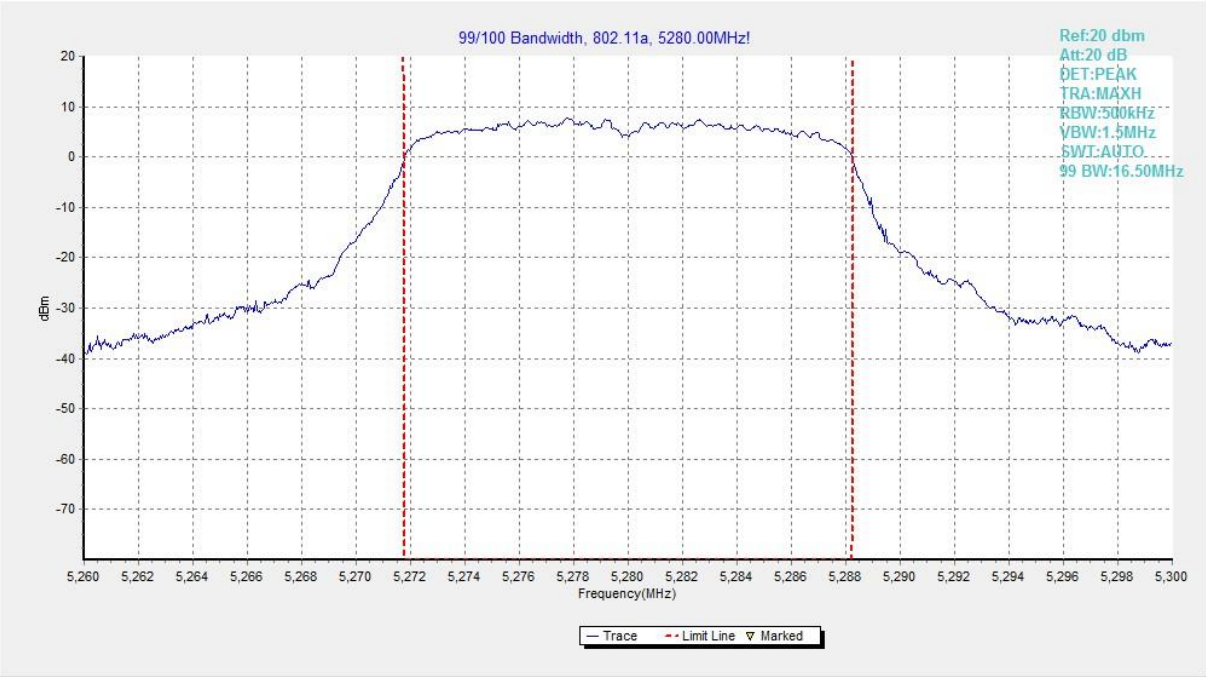

Fig. 31 99% Occupied Bandwidth (802.11a, 5280MHz)

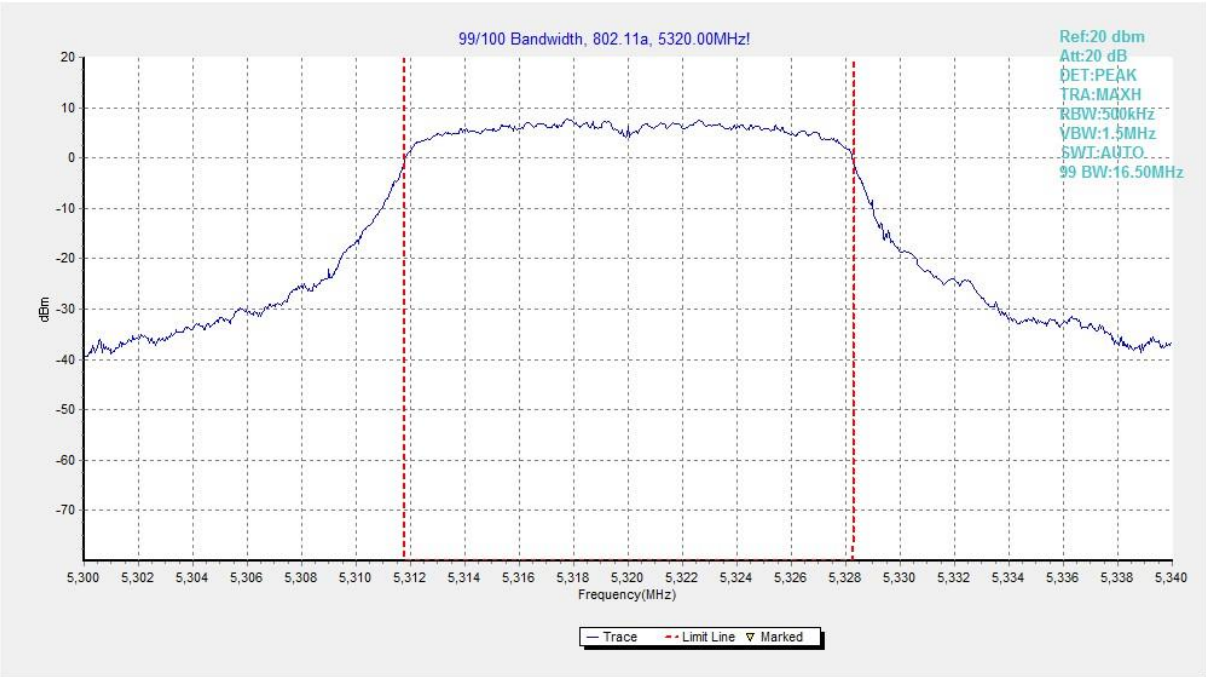

Fig. 32 99% Occupied Bandwidth (802.11a, 5320MHz)

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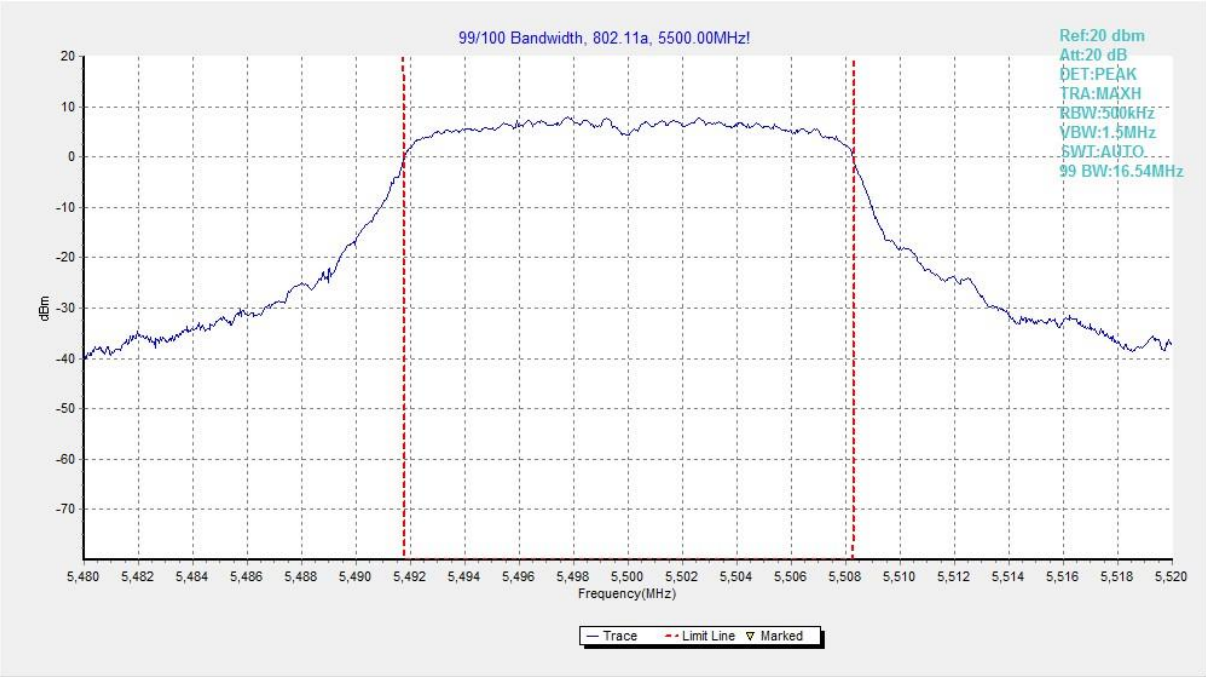

Fig. 33 99% Occupied Bandwidth (802. 11a, 5500MHz)

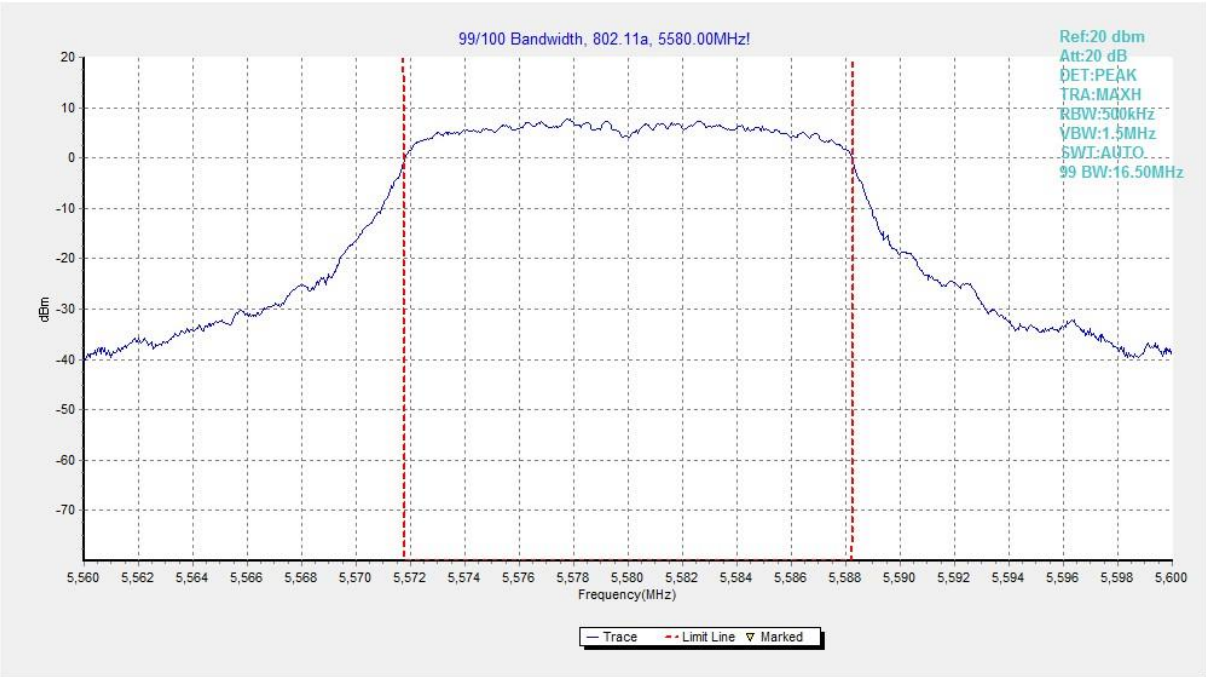

Fig. 34 99% Occupied Bandwidth (802. 11a, 5580MHz)

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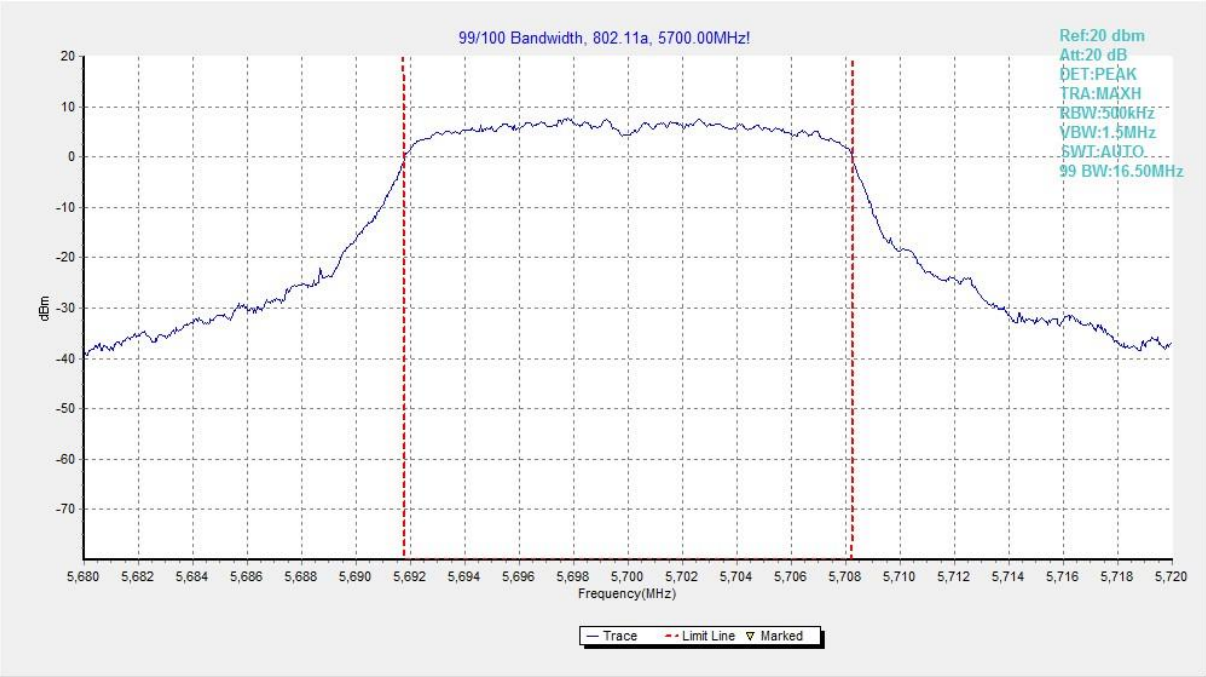

Fig. 35 99% Occupied Bandwidth (802. 11a, 5700MHz)

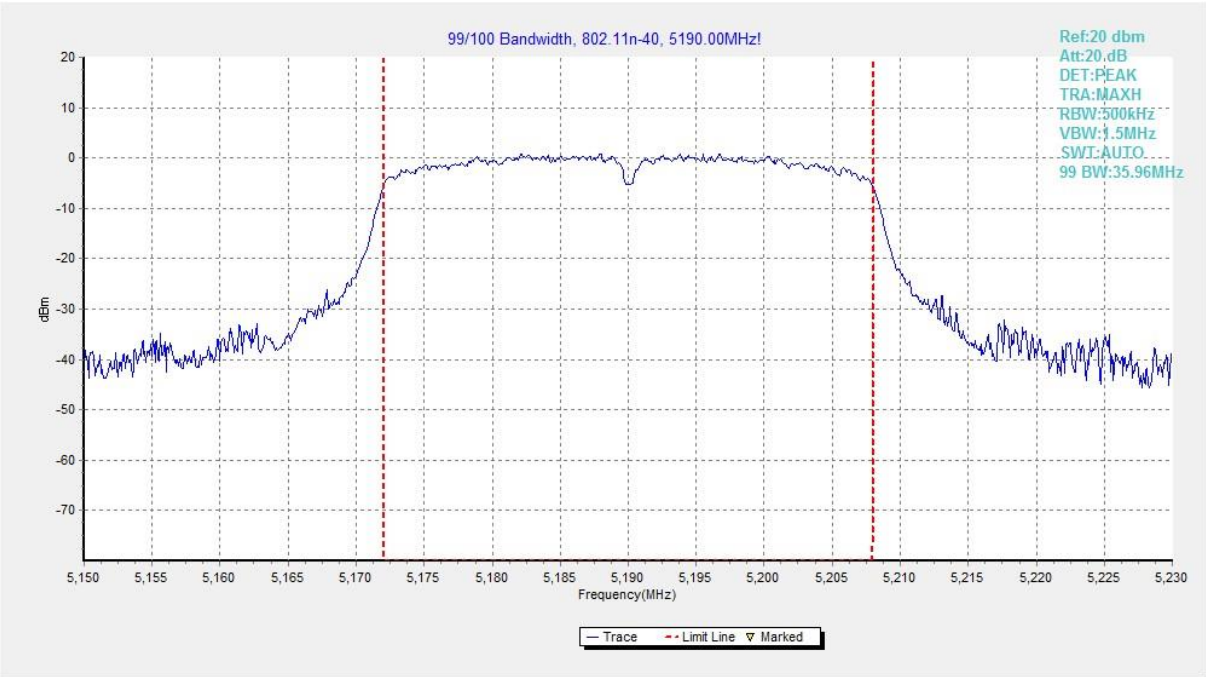

Fig. 36 99% Occupied Bandwidth (802.11n-HT40, 5190MHz)

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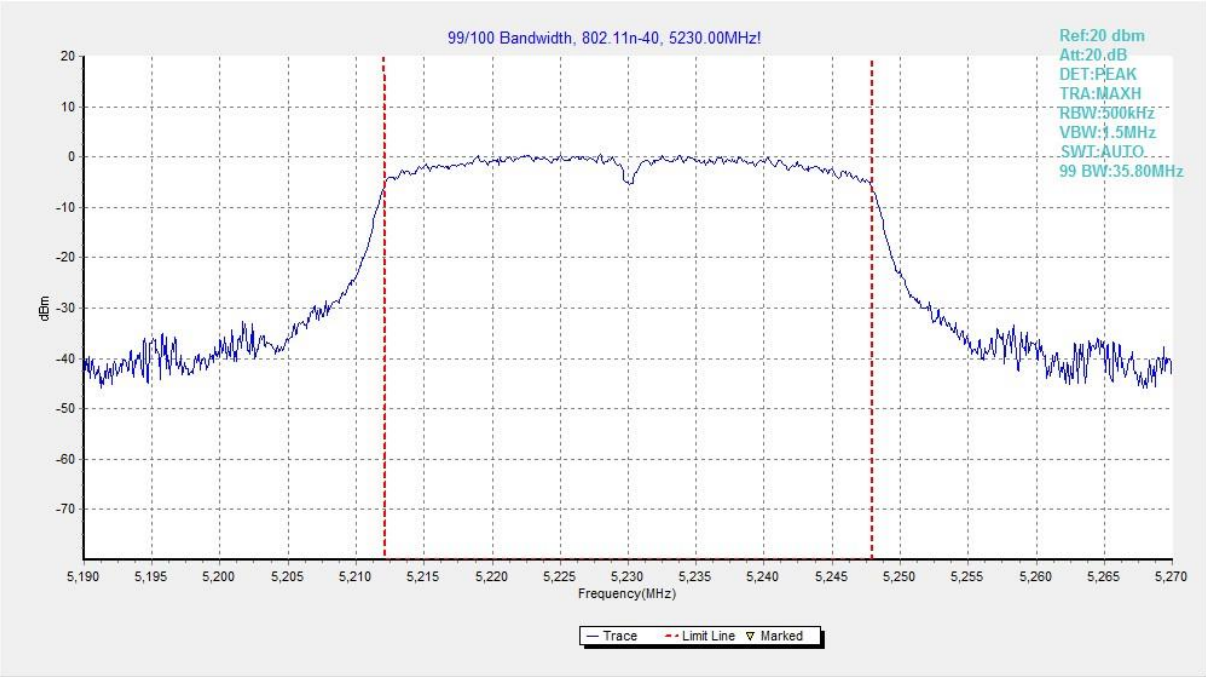

Fig. 37 99% Occupied Bandwidth (802.11n-HT40, 5230MHz)

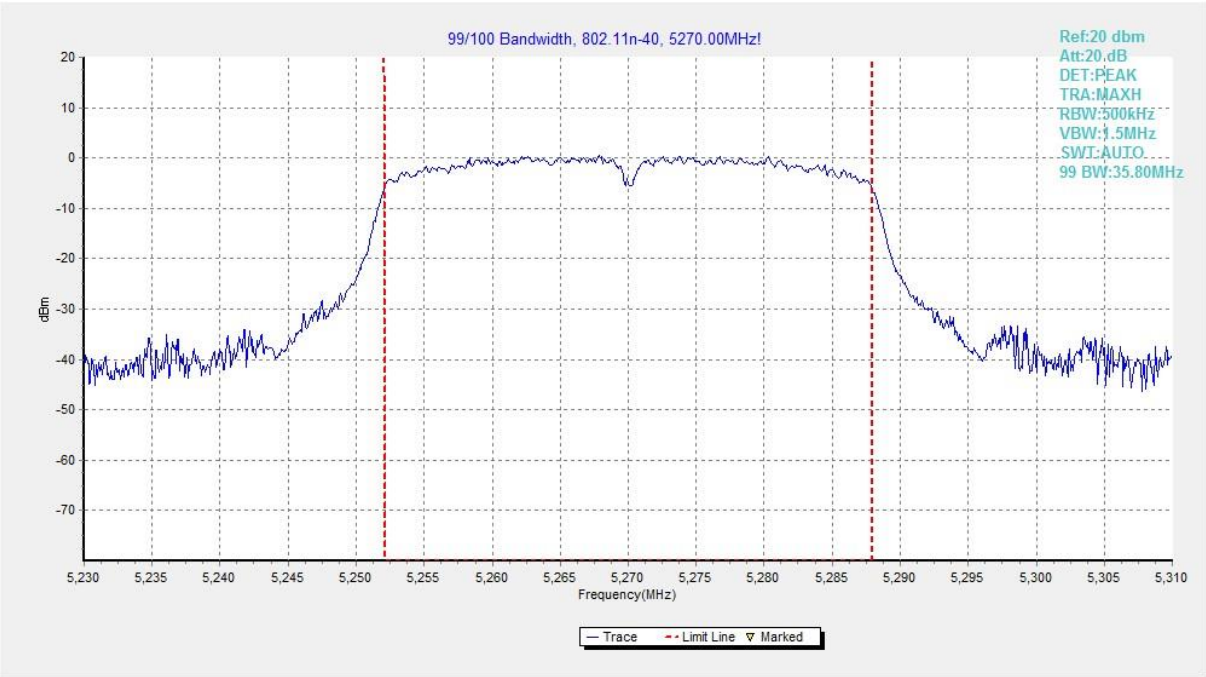

Fig. 38 99% Occupied Bandwidth (802.11n-HT40, 5270MHz)

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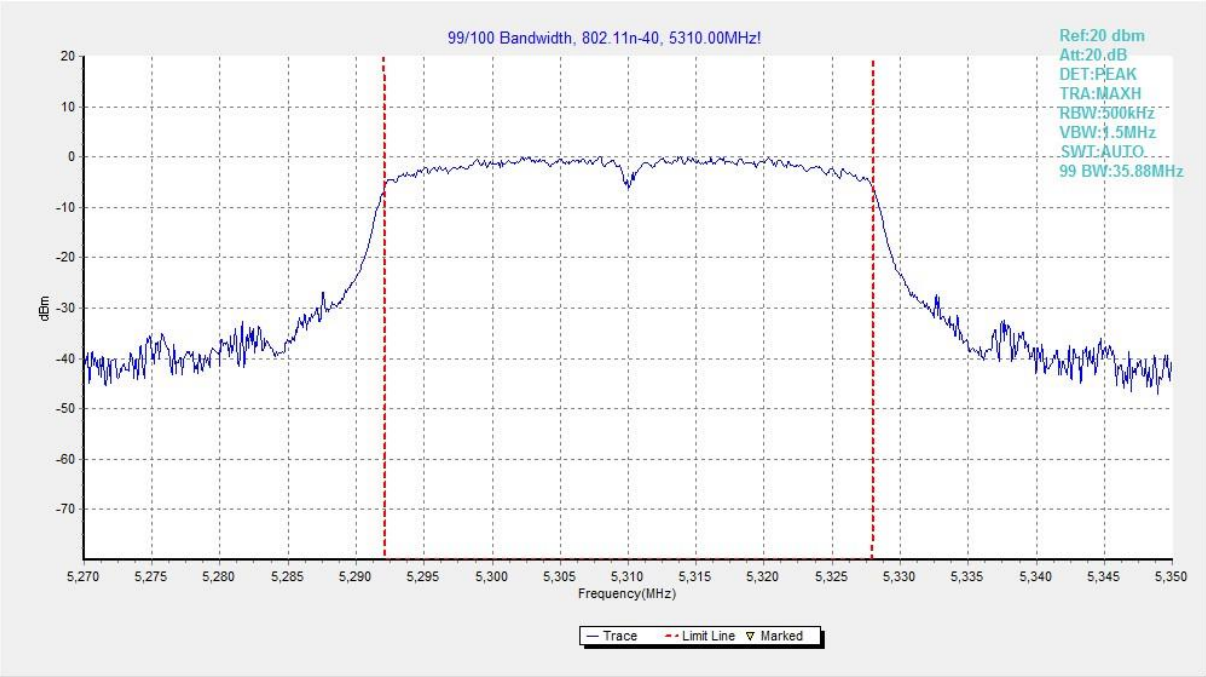

Fig. 39 99% Occupied Bandwidth (802.11n-HT40, 5310MHz)

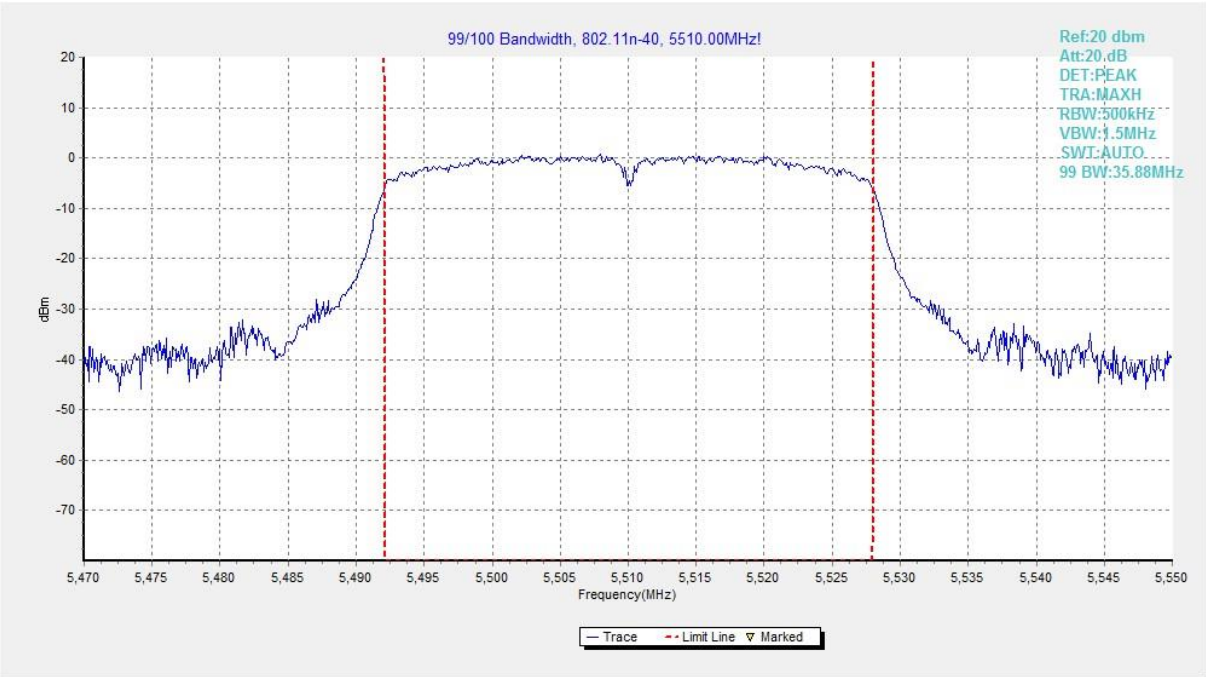

Fig. 40 99% Occupied Bandwidth (802. 11n-HT40, 5510MHz)

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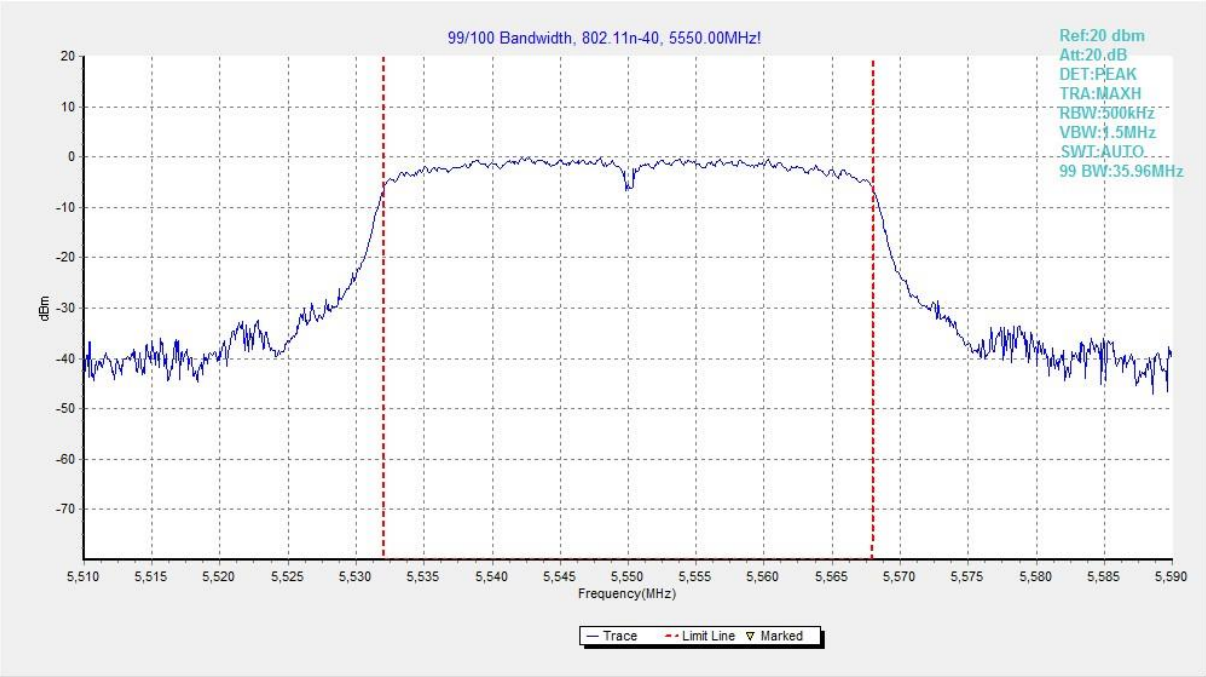

Fig. 41 99% Occupied Bandwidth (802. 11n-HT40, 5550MHz)

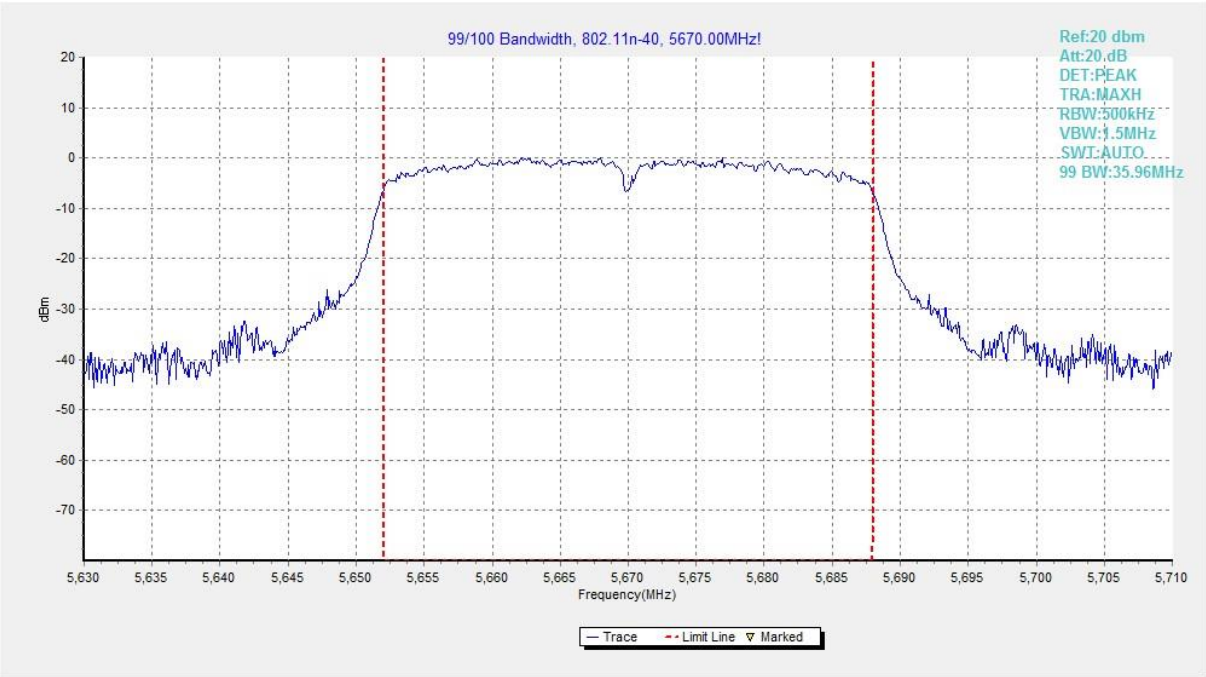

Fig. 42 99% Occupied Bandwidth (802. 11n-HT40, 5670MHz)

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