FCC PART 15
TEST REPORT
No.I21Z60214-IOT02

for

Shenzhen Tinno Mobile Technology Corp.

4G MIFI

UM200AA

With

FCC ID: XD6UM200AA

Hardware Version: V1.0

Software Version: UM200AAV01.56.11

Issued Date: 2021-03-10

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 CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z60214-IOT02	Rev.0	1st edition	2021-02-26
I21Z60214-IOT02	Rev.1	2nd edition. Add test instructions on P49.	2021-03-10

CONTENTS

1. TEST LATORATORY

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1:CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

Location 2: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

1.3. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

1.4. Project date

Testing Start Date: 2021-01-26

Testing End Date: 2021-02-26

1.5. Signature

Jiang Xue

(Prepared this test report)

Zheng Wei

(Reviewed this test report)

Hu Xiaoyu

(Approved this test report)

2. CLIENT INFORMATION

2.1 Applicant Information

Company Name:	Shenzhen Tinno Mobile Technology Corp.
Address:	4/F, H-3 Building,OCT Eastern Industrial Park. NO.1 XiangShan East Road, Nan Shan District,Shenzhen, P.R.China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755-86095550
Fax:	/

2.2 Manufacturer Information

Company Name:	Shenzhen Tinno Mobile Technology Corp.
Address:	4/F, H-3 Building,OCT Eastern Industrial Park. NO.1 XiangShan East Road, Nan Shan District,Shenzhen, P.R.China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755-86095550
Fax:	/

3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARYEQUIPMENT(AE)

3.1. About EUT

Description	4G MIFI
Model name	UM200AA
FCC ID	XD6UM200AA
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz -5470MHz~5725MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Voltage	3.85V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	865770050001215	V1.0	UM200AAV01.56.11
EUT2	865770050001892	V1.0	UM200AAV01.55.10

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

3.3. Internal Identification of AE used during the test

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

AE1

Model	LT25H436270J
Manufacturer	Ningbo Veken Battery Co., Ltd.
Capacitance	2500mAh
Nominal voltage	3.85V

AE2

Model	TN-050120U8
Manufacturer	Chongqing Lianmao Electronic Co., Ltd.
Length of cable	/

*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 4G MIFI with integrated antenna and inbuilt battery.
It has Bluetooth (EDR)function.
It consists of normal options: travel charger, USB cable.
Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor k=2.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

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.

FCC Part15	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices	2018
ANSI C63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2013
UNII: KDB 789033 D02	General U-NII Test Procedures New Rules v02r01	2017-12
KDB 558074 D01	Federal Communications Commission Office of Engineering and Technology Laboratory Division GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES	2019

5. LABORATORY ENVIRONMENT

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

6. SUMMARY OF TEST RESULTS

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15E	Sub-clause of IC	Verdict
Maximum Output Power	15.407	/	**P**
Peak Power Spectral Density	15.407	/	**P**
Occupied 26dB Bandwidth	15.403	/	**P**
Band edge compliance (Radiated)	15.209	/	**P**
Transmitter spurious emissions (Radiated)	15.407	/	**P**
AC Powerline Conducted Emission (150kHz- 30MHz)	15.407	/	**P**
99% Occupied bandwidth	/	/	**P**
Transmit Power Control	15.407	/	**NA**

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

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NM	Not measured, The test was not measured by CTTL
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Statements

CTTL has evaluated the test cases requested by the client/manufacturer as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.1.

This report only deals with the WLAN function among the features described in section 3.

6.3. Test Conditions

For this report, all the test cases are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	26℃
Voltage	3.85V
Humidity	44%

7. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2021-05-06
2	LISN	ENV216	101459	Rohde & Schwarz	1 year	2021-03-17
3	Test Receiver	ESCI	100766	Rohde & Schwarz	1 year	2021-03-10
4	Shielding Room	S81	WL-SB-1005054	Beijing Lingkun Electromagnetic Technology Co. LTD	/	/
5	Attenuator	10dB/2W	/	Rosenberger	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100235	Rohde & Schwarz	1 year	2021-03-18
2	BiLog Antenna	VULB9163	9163-483	Schwarzbeck	1 years	2021-08-27
3	EMI Antenna	3115	00167250	ETS-Lindgren	1 Years	2021-05-14
4	Dual-Ridge Waveguide Horn Antenna	3116	2661	ETS-Lindgren	1 year	2021-10-06
5	Vector Signal Analyzer	FSV40	101047	Rohde & Schwarz	1 year	2021-06-15

8. Measurement Uncertainty

8.1 Transmitter Output Power

Measurement Uncertainty: 0.387dB,k=1.96

8.2 Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

8.3 Occupied Channel Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

8.4 Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

8.5 Spurious Emissions

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	1.22
2GHz ≤ f ≤3.6GHz	1.22
3.6GHz ≤ f ≤8GHz	1.22
8GHz ≤ f ≤12.75GHz	1.51
12.75GHz ≤ f ≤26GHz	1.51
26GHz ≤ f ≤40GHz	1.59

Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
30MHz ≤ f ≤ 1GHz	4.86
1GHz ≤ f ≤18GHz	5.26
18GHz ≤ f ≤40GHz	5.28

8.6 AC Powerline Conducted Emission

Measurement Uncertainty: 3.38dB, k=2.

ANNEX A: EUT parameters

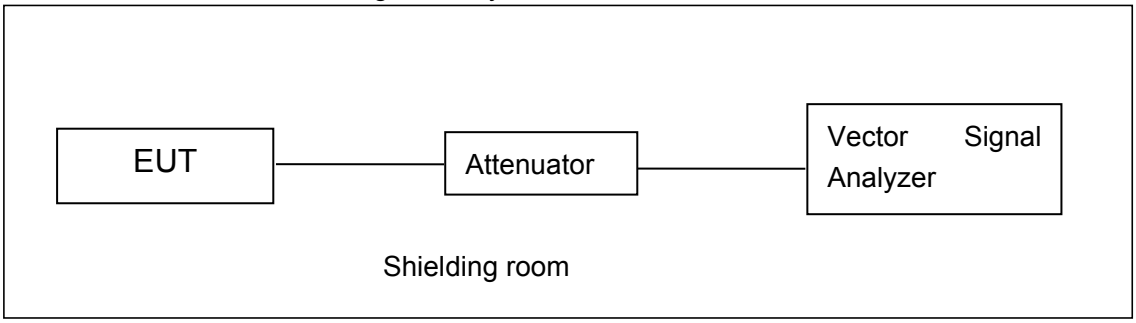
Disclaimer: the power worse case provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX B: MEASUREMENT RESULTS

B.1. Measurement Method

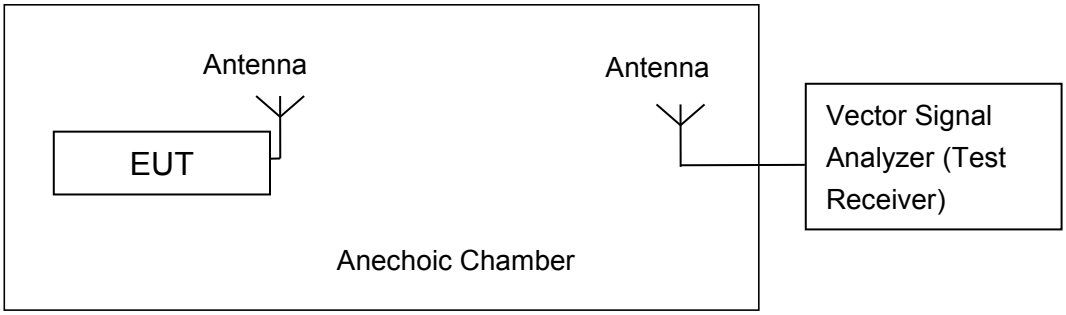
B.1.1. Conducted Measurements

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. Vector Signal Analyzer



B.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,
Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;
Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;



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.

B.2. Maximum output Power

Measurement Limit and Method:

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

Limit use the less value, and B is the 26dB bandwidth.
The measurementmethod SA-2 is made according to KDB 789033
Note：
For straddle channel 20MHz Bandwidth 5720MHz, Conducted Output Power Limit:
802.11a=11+10*log(B)=23.00, B=21.75/2+5=15.86MHz,
802.11n-HT20=11+10*log(B)=22.98, B=21.55/2+5=15.78MHz,
802.11ac-VHT20=11+10*log(B)=22.97, B=21.50/2+5=15.75MHz,

For straddle channel 40/80MHz Bandwidth, conducted output power limit=24 dBm
802.11n-HT40: B=46.24/2+15=38.12MHz,
802.11ac-VHT40: B=45.44/2+15=37.72MHz,
802.11ac-VHT80: B=81.76/2+35=75.88MHz,

Measurement Results:

Duty Cycle

Mode	802.11a	802.11n-HT20	802.11ac-HT20	802.11n-HT40	802.11ac-HT40	802.11ac-HT80
Duty Cycle	98%	98%	98%	98%	98%	94%

802.11a mode

Mode	Data Rate	Test Result (dBm)									
		Frequency (MHz)									
		5180	5200	5240	5260	5280	5320	5500	5580	5700	5720
802.11a	6Mbps	11.62	11.91	11.95	11.81	11.55	11.12	11.36	11.91	12.10	12.39

The data rate 6Mbps is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate	Test Result (dBm)									
		Frequency (MHz)									
		5180	5200	5240	5260	5280	5320	5500	5580	5700	5720
802.11n -HT20	MCS0	10.45	10.65	10.57	10.48	10.29	10.18	10.65	10.05	10.30	10.43

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ac-HT20 mode

Mode	Data Rate	Test Result (dBm)									
		Frequency (MHz)									
		5180	5200	5240	5260	5280	5320	5500	5580	5700	5720
802.11ac-HT20	MCS0	9.64	9.71	9.48	10.10	9.88	9.76	10.21	9.63	9.84	9.95

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT40 mode

Mode	Data Rate	Test Result (dBm)							
		Frequency (MHz)							
		5190	5230	5270	5310	5510	5550	5670	5710
802.11n(HT40)	MCS0	10.23	10.13	10.50	10.22	10.13	9.84	9.76	9.87

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ac-HT40 mode

Mode	Data Rate	Test Result (dBm)							
		Frequency (MHz)							
		5190	5230	5270	5310	5510	5550	5670	5710
802.11ac(HT40)	MCS0	9.76	9.55	10.09	9.80	9.73	9.27	9.20	9.39

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ac-HT80 mode

Mode	Rate	Test Result (dBm)				
		Frequency (MHz)				
		5210	5290	5530	5610	5690
802.11ac(HT80)	MCS0	9.49	9.43	9.01	9.20	9.37

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

B.3. Peak Power Spectral Density (conducted)

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	11
	5250MHz~5350MHz	11
	5470MHz~5725MHz	11

The output power measurement method Section F is made according to KDB 789033

Measurement Results:

Mode	Frequency	Power Spectral Density (dBm/MHz)	Conclusion
802.11a	5180 MHz	0.57	P
	5200 MHz	0.56	P
	5240 MHz	0.30	P
	5260 MHz	0.22	P
	5280 MHz	0.07	P
	5320 MHz	-0.09	P
	5500 MHz	0.36	P
	5580 MHz	-0.31	P
	5700 MHz	-0.02	P
	5720 MHz	-0.64	P
802.11n HT20	5180 MHz	-0.49	P
	5200 MHz	-0.50	P
	5240 MHz	-0.66	P
	5260 MHz	-0.72	P
	5280 MHz	-0.87	P
	5320 MHz	-1.01	P
	5500 MHz	-0.60	P
	5580 MHz	-1.27	P
	5700 MHz	-1.01	P
	5720 MHz	-1.61	P
802.11n HT40	5190 MHz	-4.03	P
	5230 MHz	-4.29	P
	5270 MHz	-3.70	P
	5310 MHz	-4.05	P
	5510 MHz	-4.12	P
	5550 MHz	-4.69	P
	5670 MHz	-3.56	P
	5710 MHz	-5.27	P
802.11ac HT80	5210MHz	-8.09	P
	5290MHz	-8.15	P
	5530MHz	-8.57	P

	5610MHz	-7.74	P
	5690 MHz	-9.17	P

Conclusion: PASS

B.4. Occupied 26dB Bandwidth(conducted)

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.403 (i)	/

The measurement is made according to KDB 789033

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz

Measurement Result:

Mode	Frequency	Occupied 26dB Bandwidth (MHz)		conclusion
802.11a	5180 MHz	Fig.1	21.25	P
	5200 MHz	Fig.2	21.05	P
	5240 MHz	Fig.3	20.55	P
	5260 MHz	Fig.4	21.50	P
	5280 MHz	Fig.5	21.80	P
	5320 MHz	Fig.6	21.50	P
	5500 MHz	Fig.7	21.15	P
	5580 MHz	Fig.8	21.40	P
	5700 MHz	Fig.9	21.05	P
	5720 MHz	Fig.10	21.75	P
802.11n HT20	5180 MHz	Fig.11	21.20	P
	5200 MHz	Fig.12	22.15	P
	5240 MHz	Fig.13	22.15	P
	5260 MHz	Fig.14	21.45	P
	5280 MHz	Fig.15	21.75	P
	5320 MHz	Fig.16	21.70	P
	5500 MHz	Fig.17	21.20	P
	5580 MHz	Fig.18	21.60	P
	5700 MHz	Fig.19	21.70	P
	5720 MHz	Fig.20	21.55	P
802.11n HT40	5190 MHz	Fig.21	46.08	P
	5230 MHz	Fig.22	44.80	P
	5270 MHz	Fig.23	45.84	P
	5310 MHz	Fig.24	45.60	P
	5510 MHz	Fig.25	44.24	P
	5550 MHz	Fig.26	44.80	P
	5670 MHz	Fig.27	44.16	P
	5710 MHz	Fig.28	46.24	P

802.11ac HT80	5210MHz	Fig.29	81.28	P
	5290MHz	Fig.30	81.28	P
	5530MHz	Fig.31	81.12	P
	5610MHz	Fig.32	81.60	P
	5690 MHz	Fig.33	81.76	P

Conclusion: PASS

Test graphs as below:

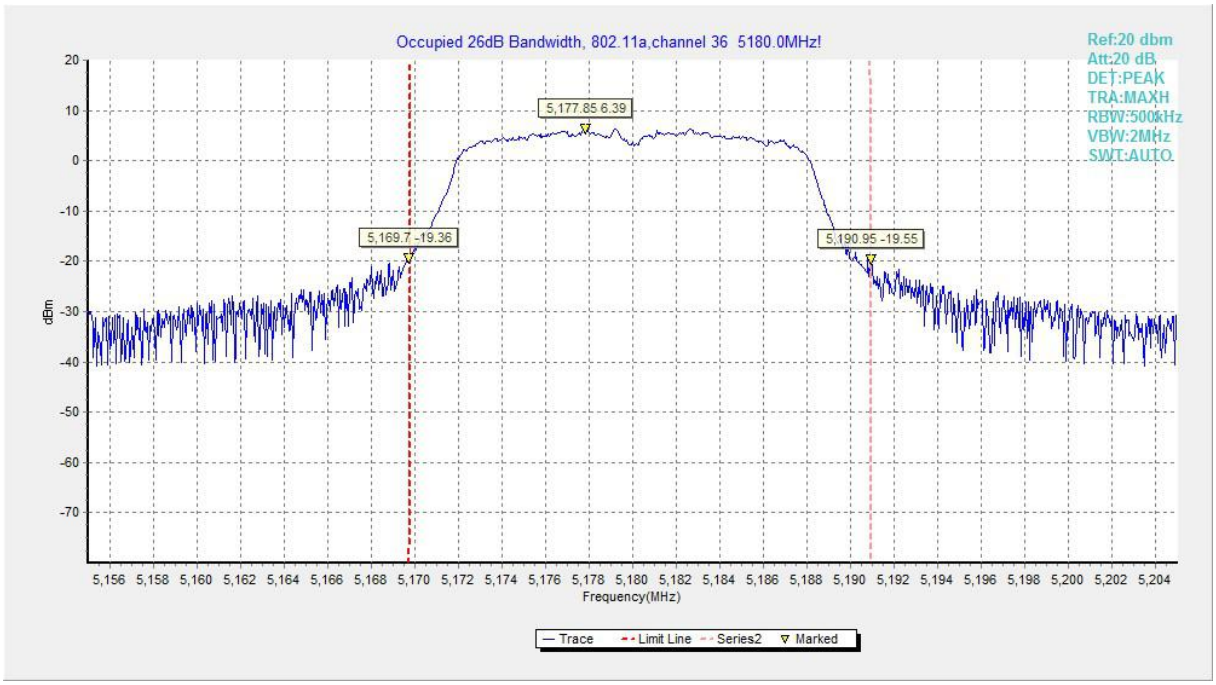


Fig.1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

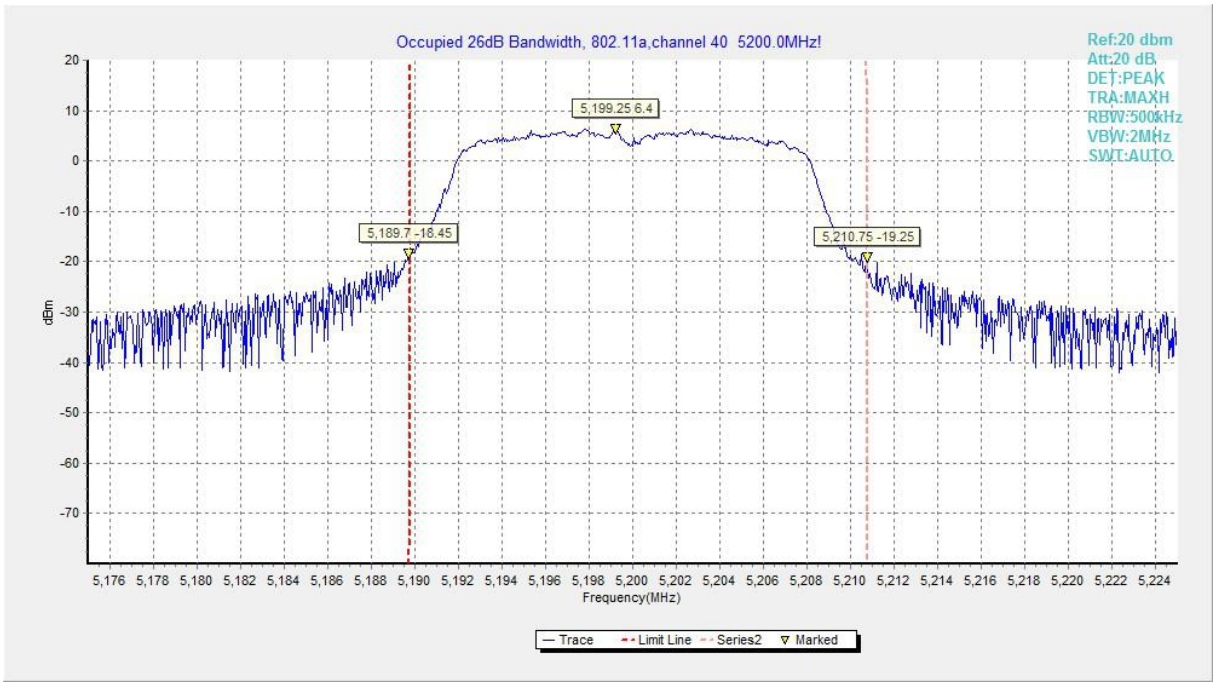


Fig.2 Occupied 26dB Bandwidth (802.11a, 5200MHz)

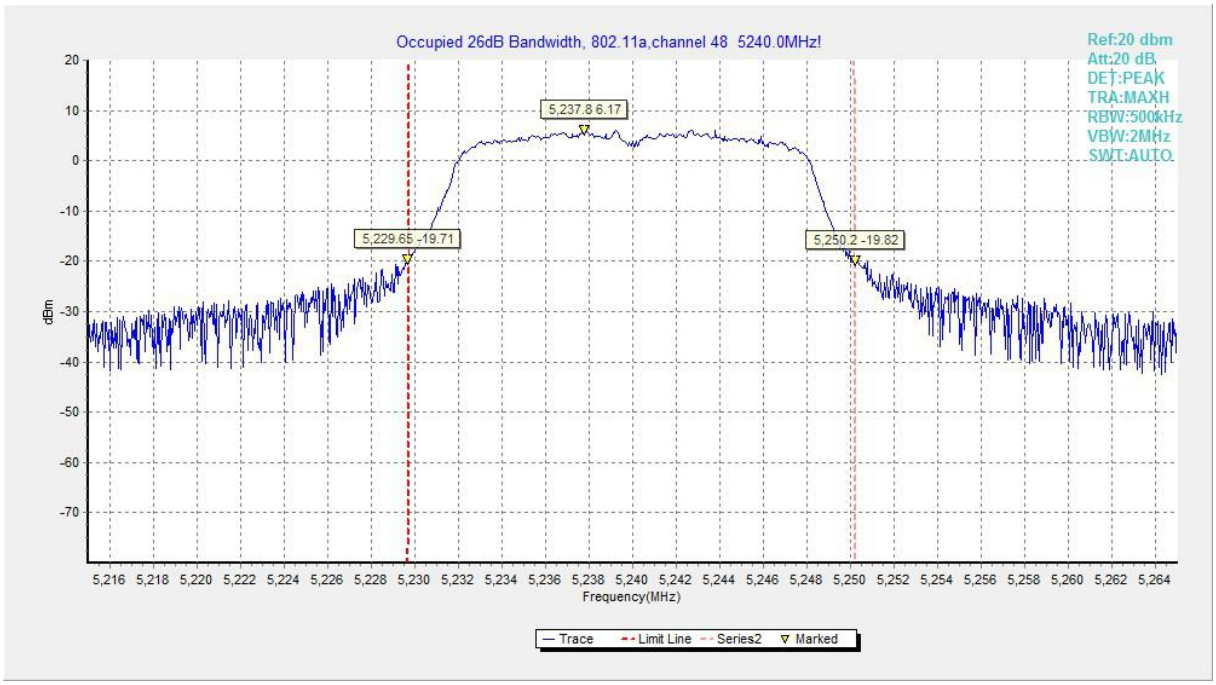


Fig.3 Occupied 26dB Bandwidth (802.11a, 5240MHz)

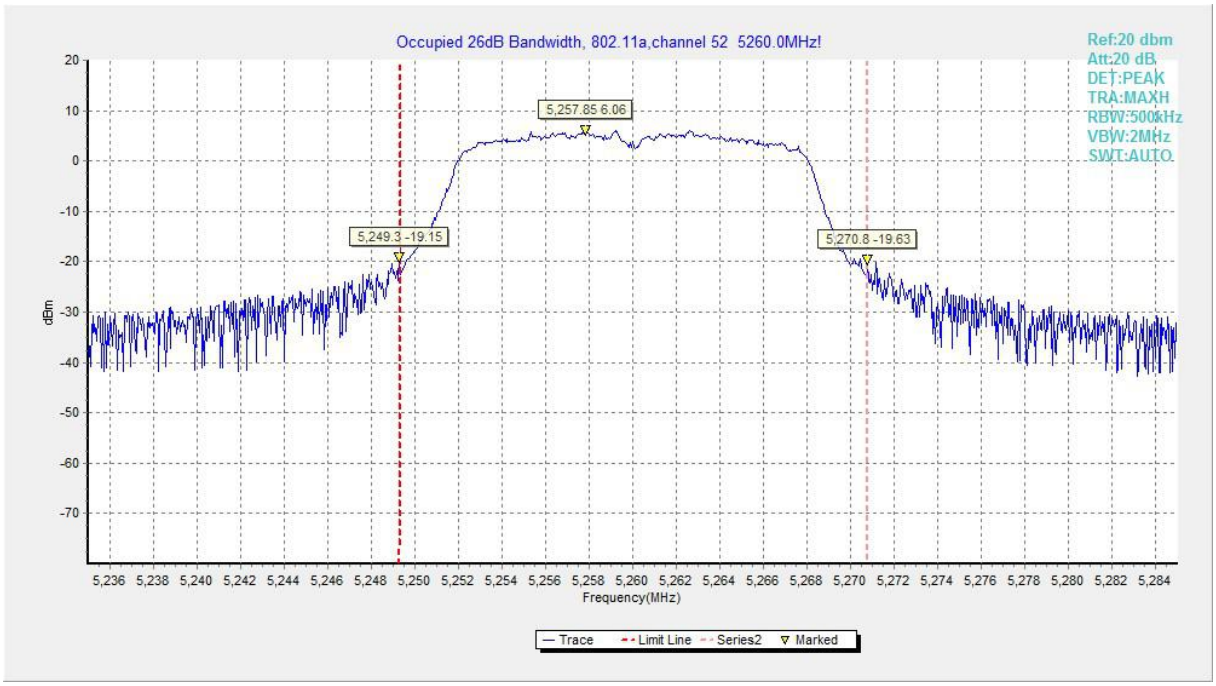


Fig.4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

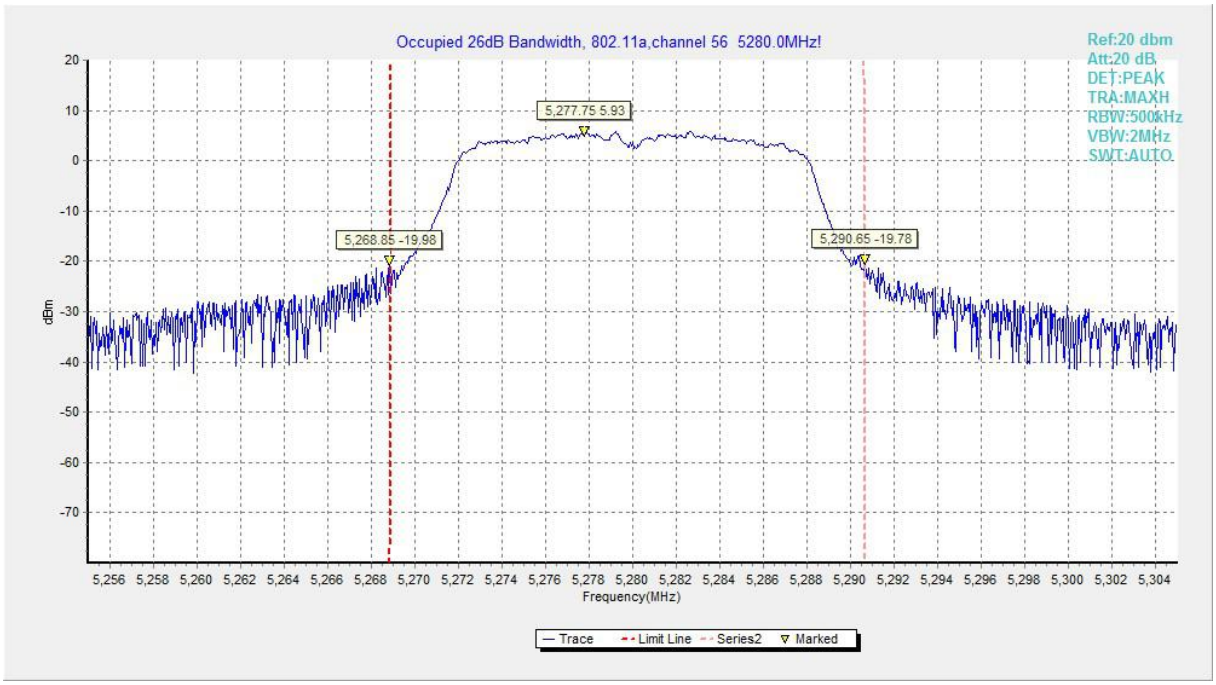


Fig.5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

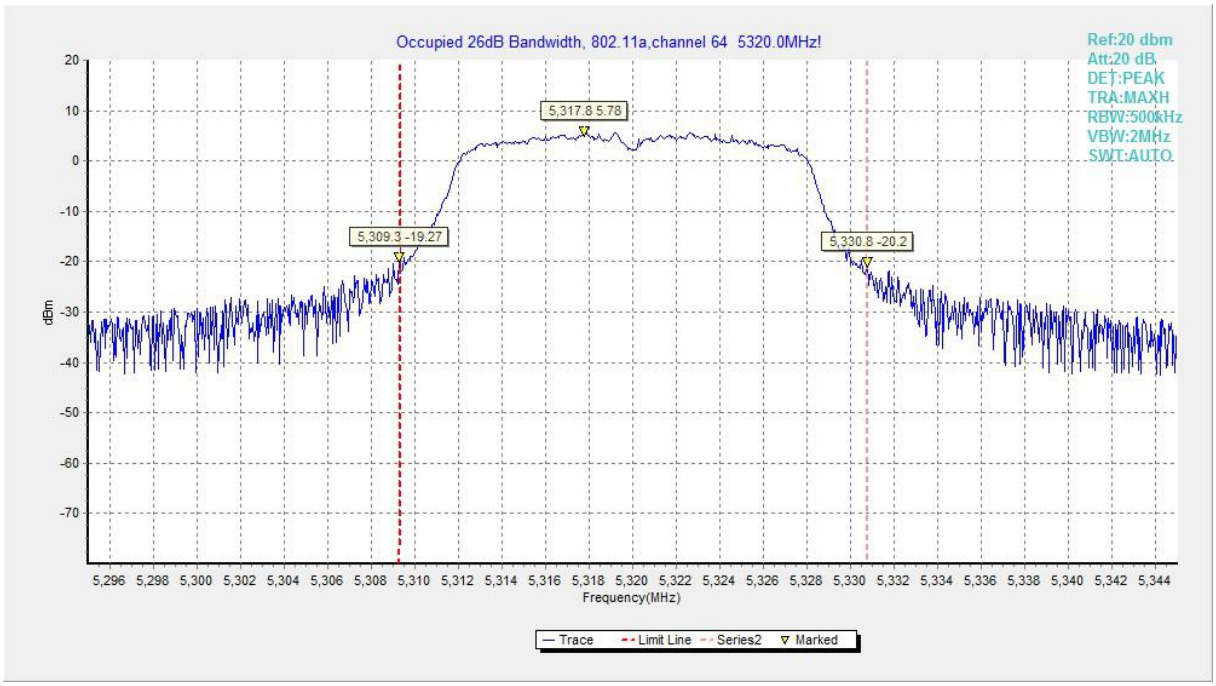


Fig.6 Occupied 26dB Bandwidth (802.11a, 5320MHz)

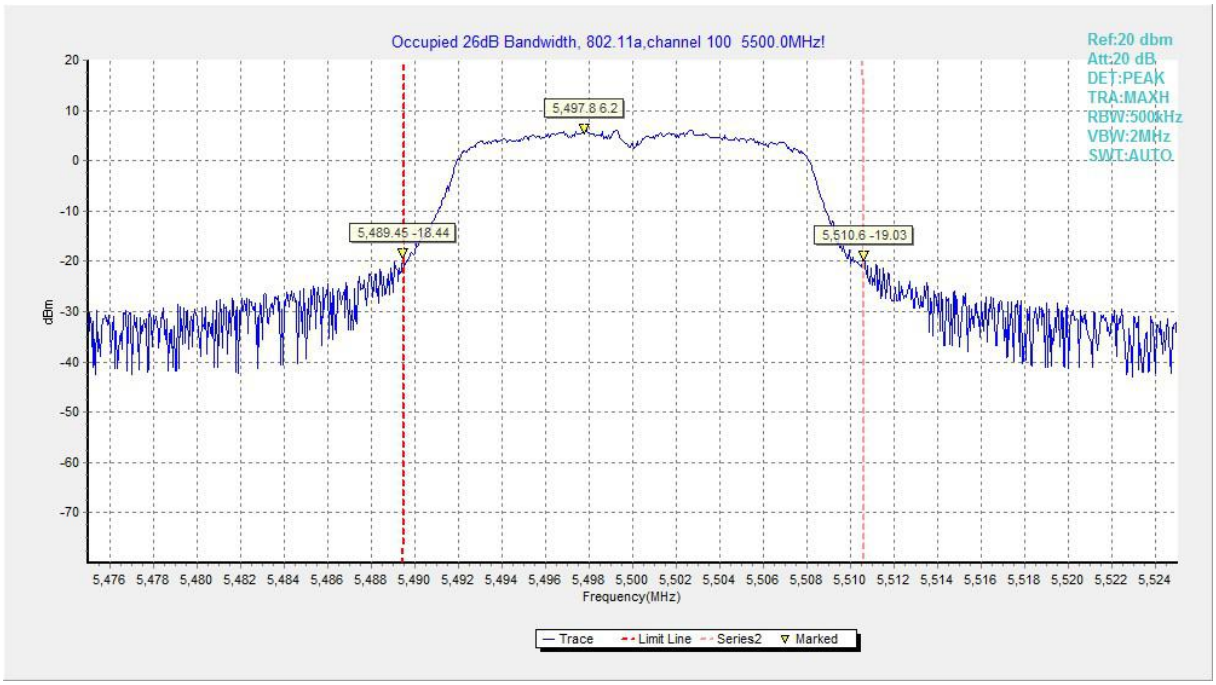


Fig.7 Occupied 26dB Bandwidth (802.11a, 5500MHz)

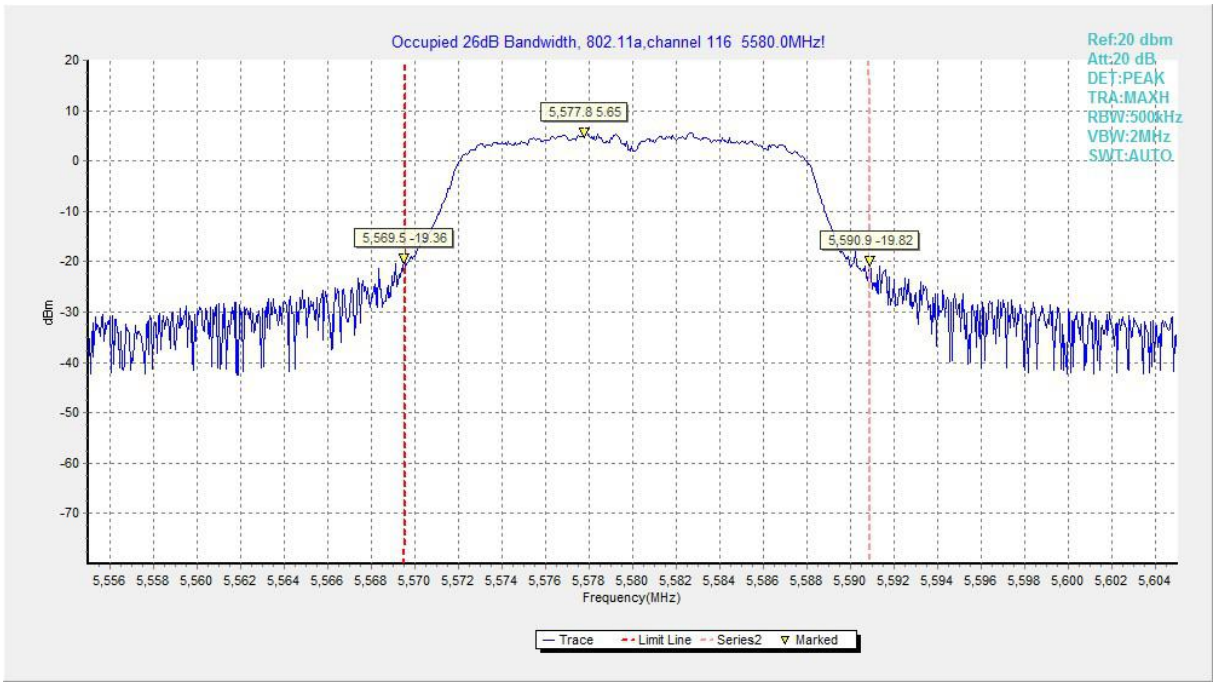


Fig.8 Occupied 26dB Bandwidth (802.11a, 5580MHz)

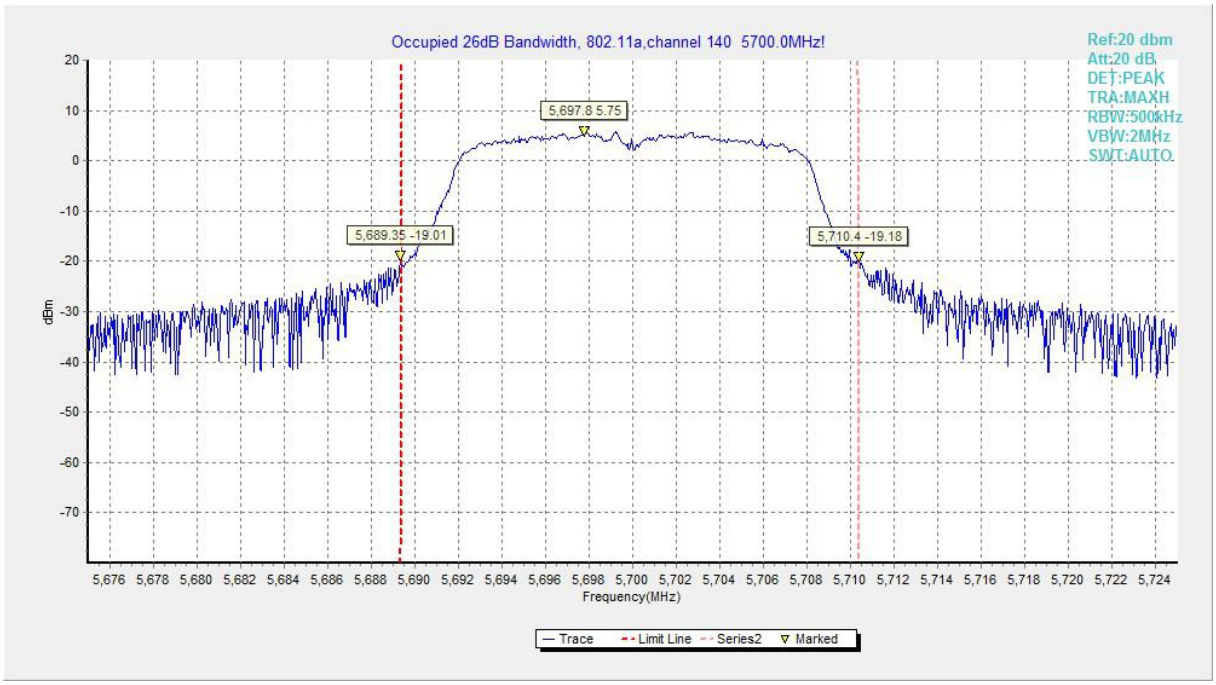


Fig.9 Occupied 26dB Bandwidth (802.11a, 5700MHz)

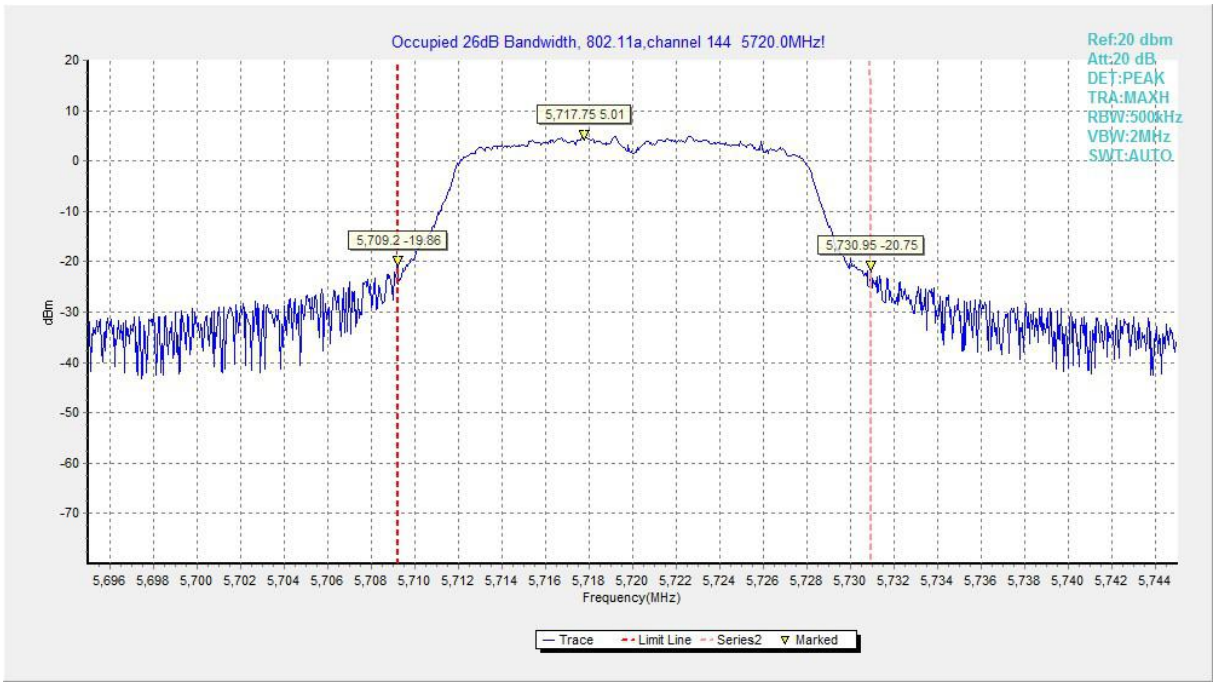


Fig.10 Occupied 26dB Bandwidth (802.11a, 5720MHz)

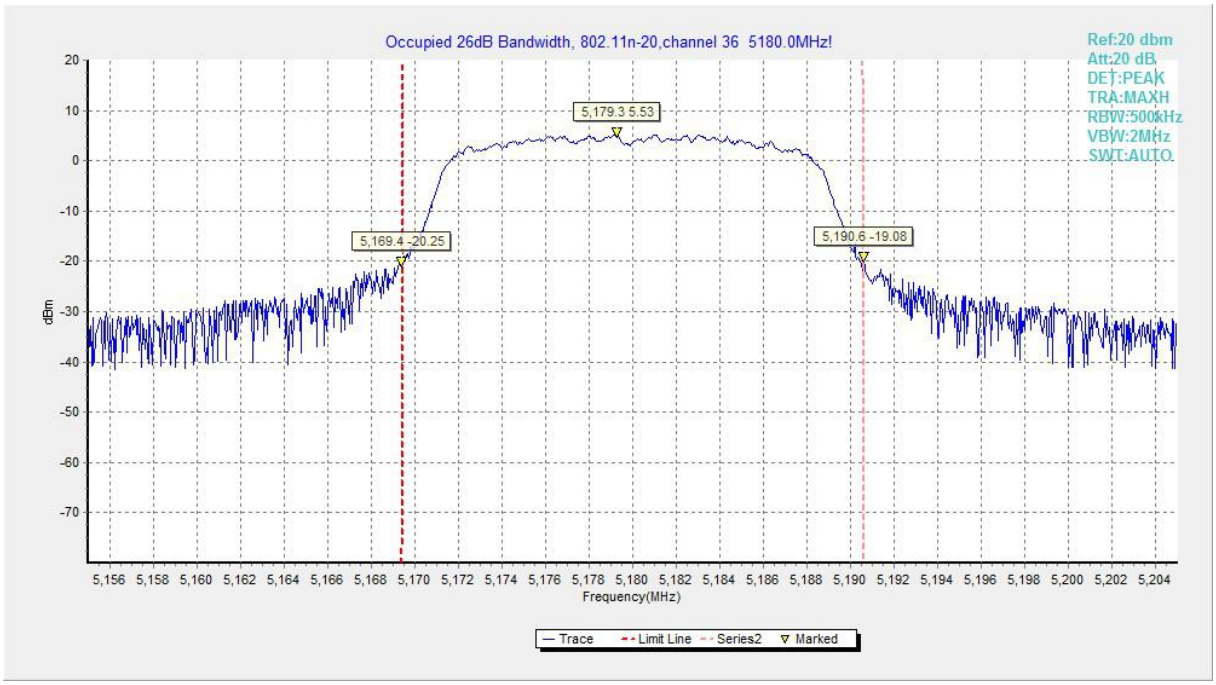


Fig.11 Occupied 26dB Bandwidth (802.11n-20, 5180MHz)

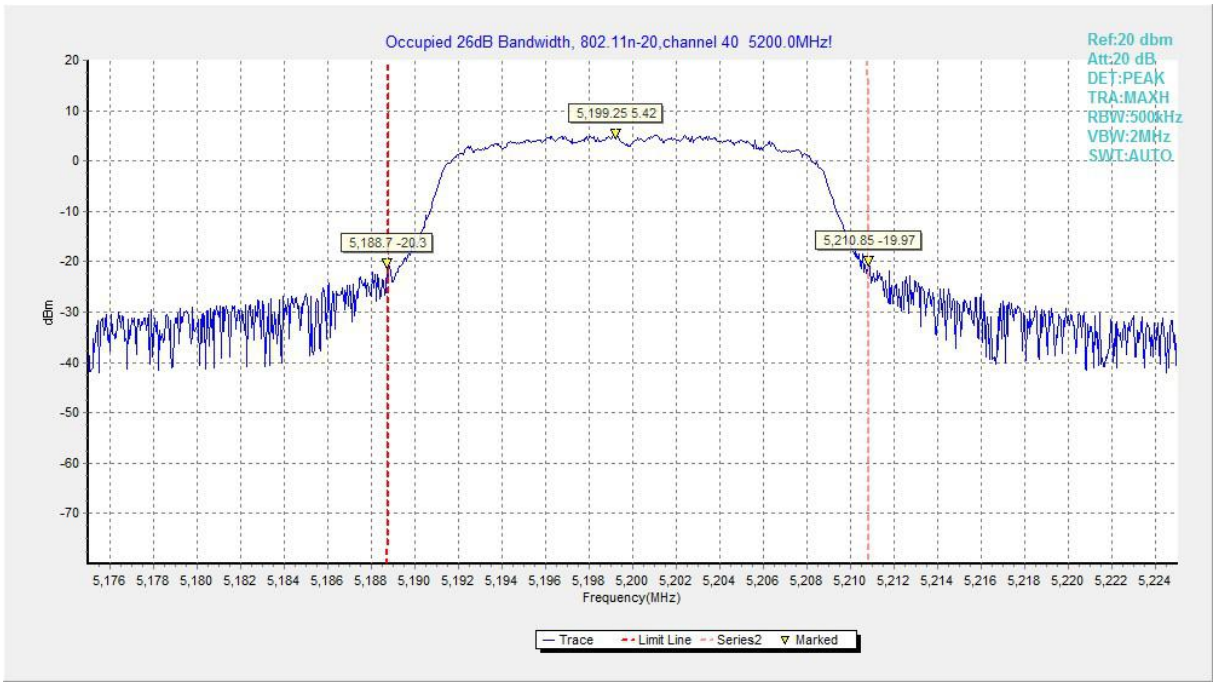


Fig.12 Occupied 26dB Bandwidth (802.11n-20, 5200MHz)

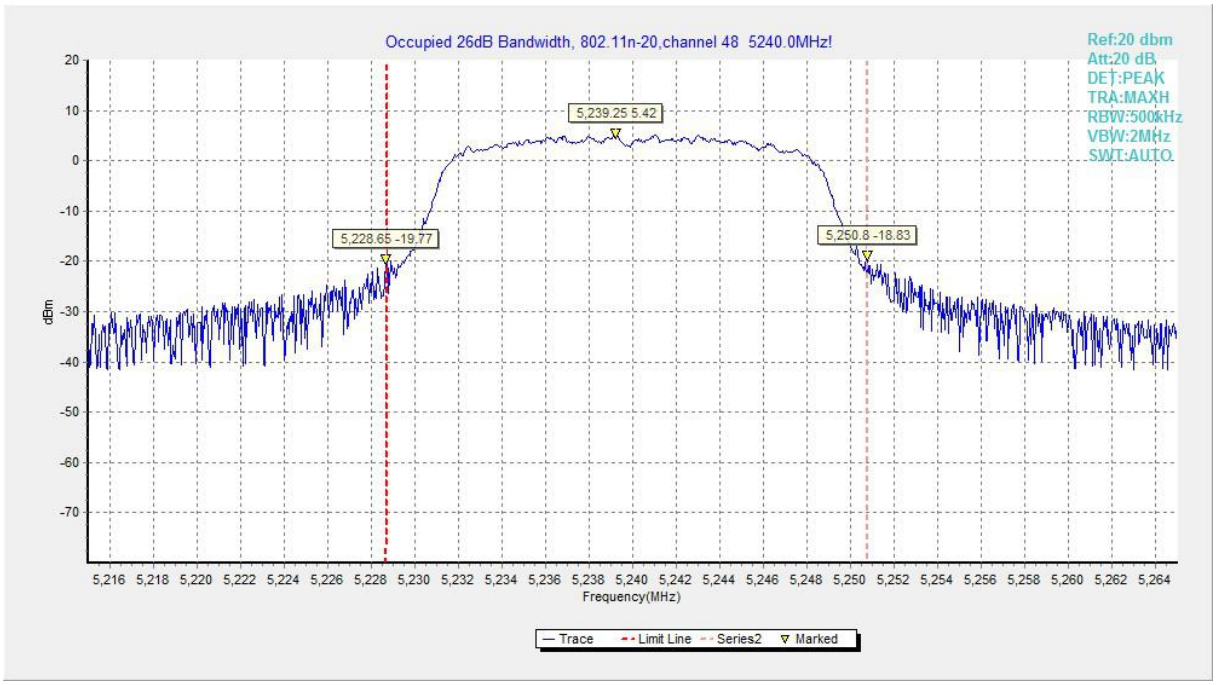


Fig.13 Occupied 26dB Bandwidth (802.11n-20, 5240MHz)

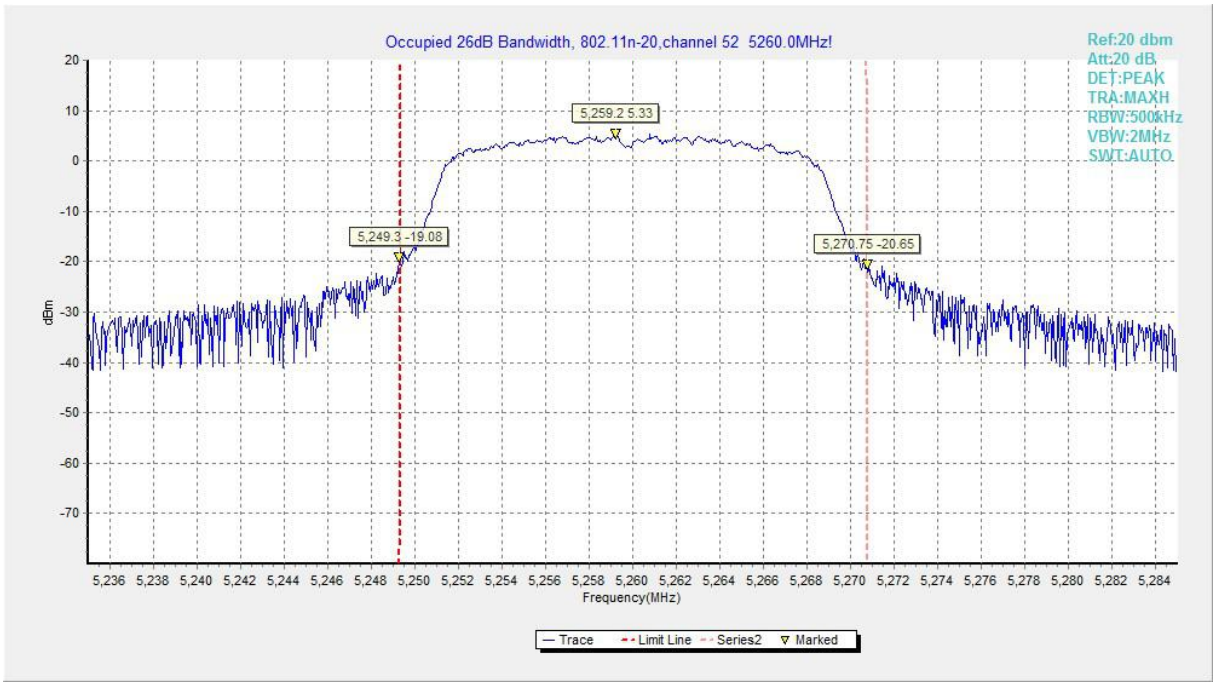


Fig.14 Occupied 26dB Bandwidth (802.11n-20, 5260MHz)

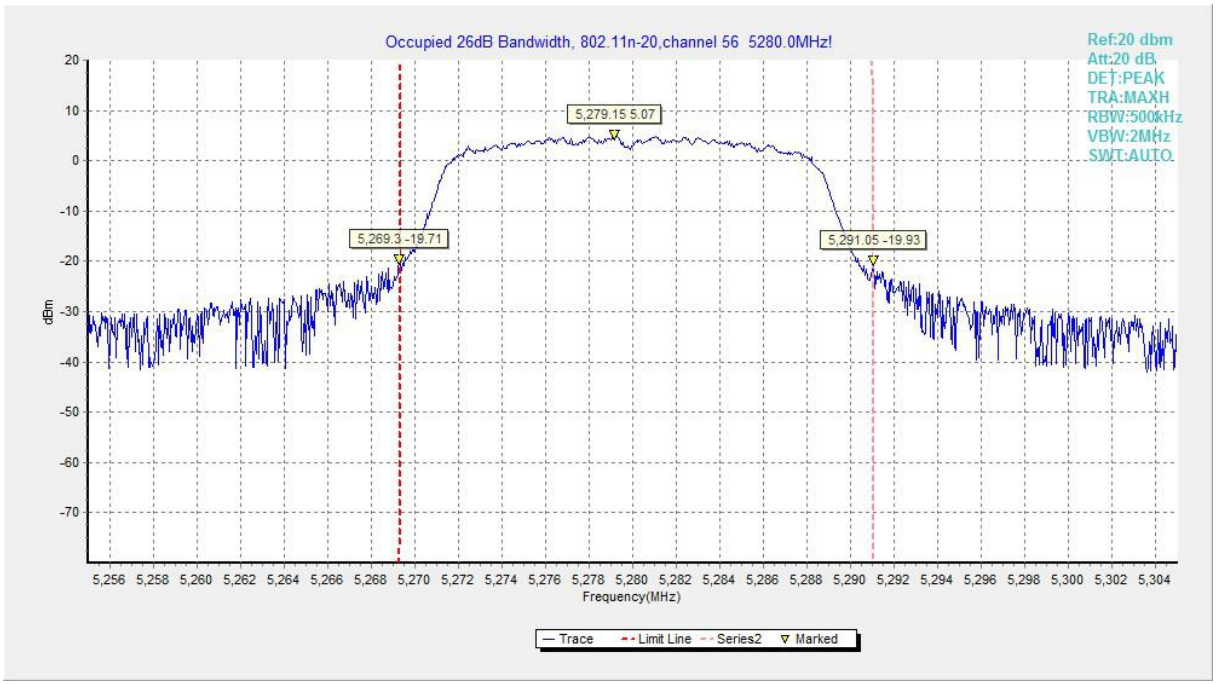


Fig.15 Occupied 26dB Bandwidth (802.11n-20, 5280MHz)

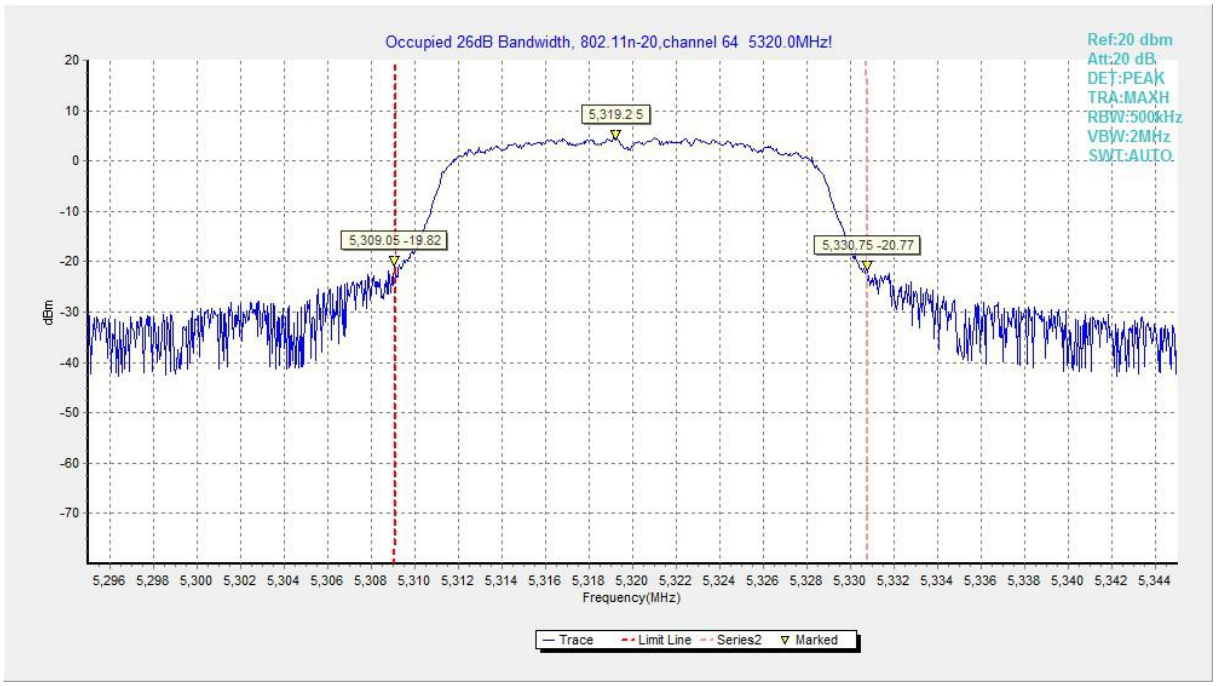


Fig.16 Occupied 26dB Bandwidth (802.11n-20, 5320MHz)

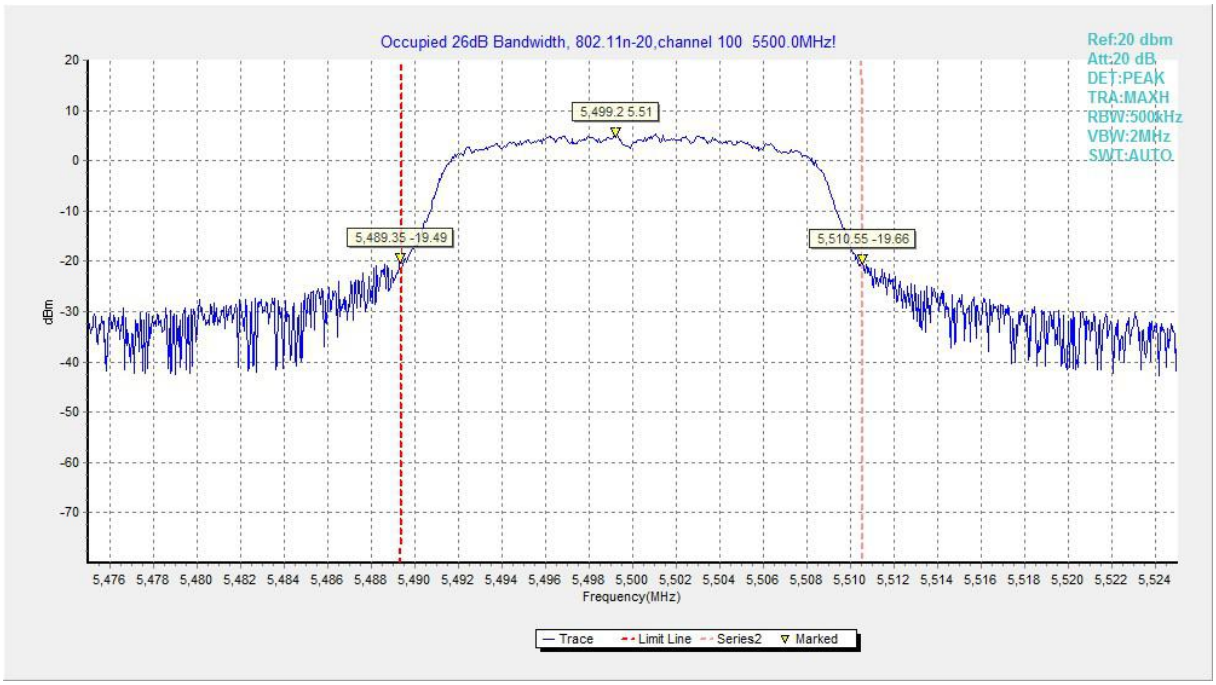


Fig.17 Occupied 26dB Bandwidth (802.11n-20, 5500MHz)

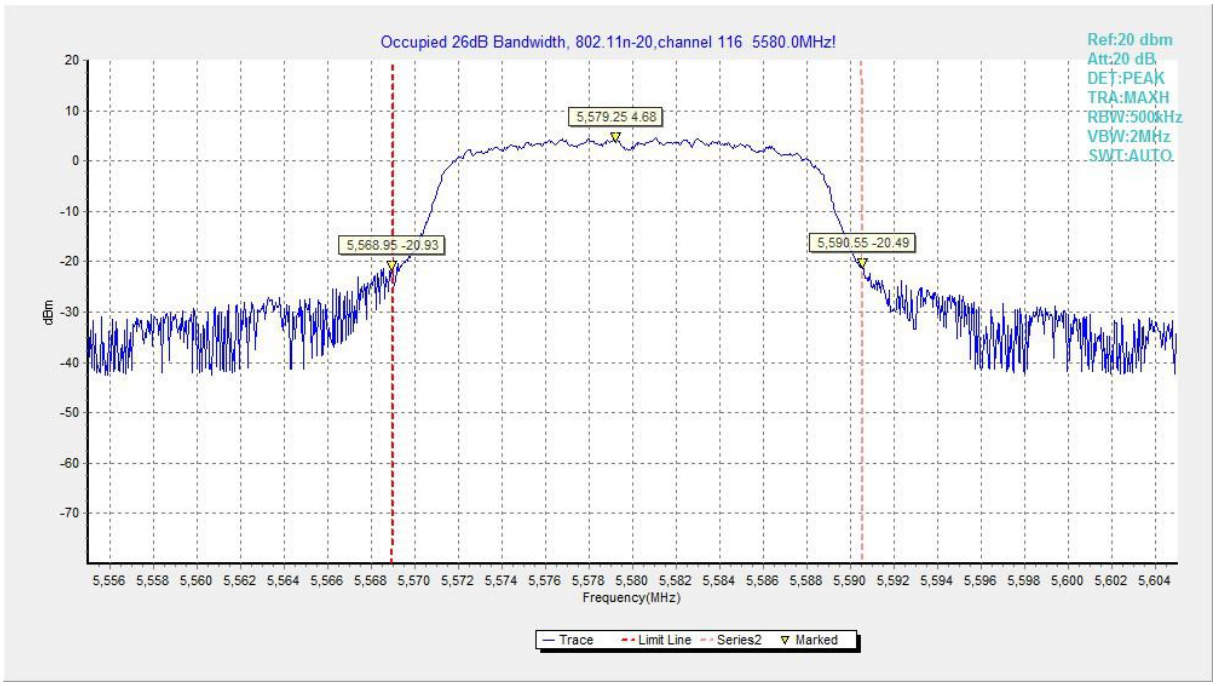


Fig.18 Occupied 26dB Bandwidth (802.11n-20, 5580MHz)

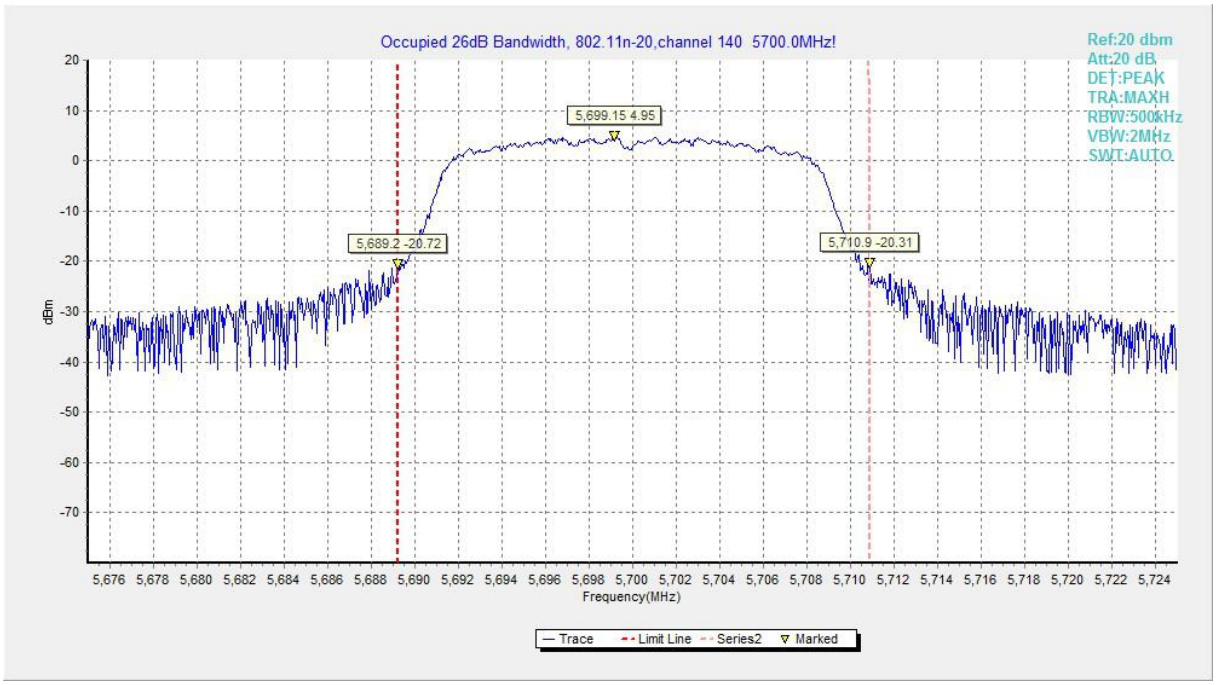


Fig.19 Occupied 26dB Bandwidth (802.11n-20, 5700MHz)

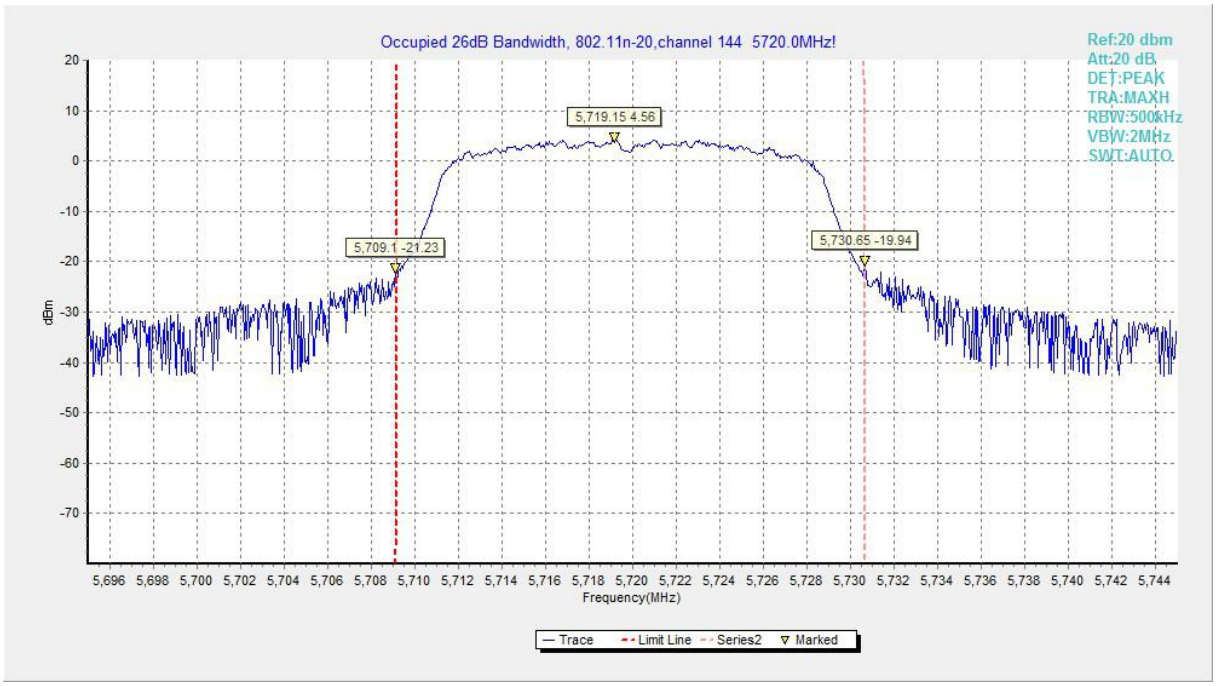


Fig.20 Occupied 26dB Bandwidth (802.11n-20, 5720MHz)

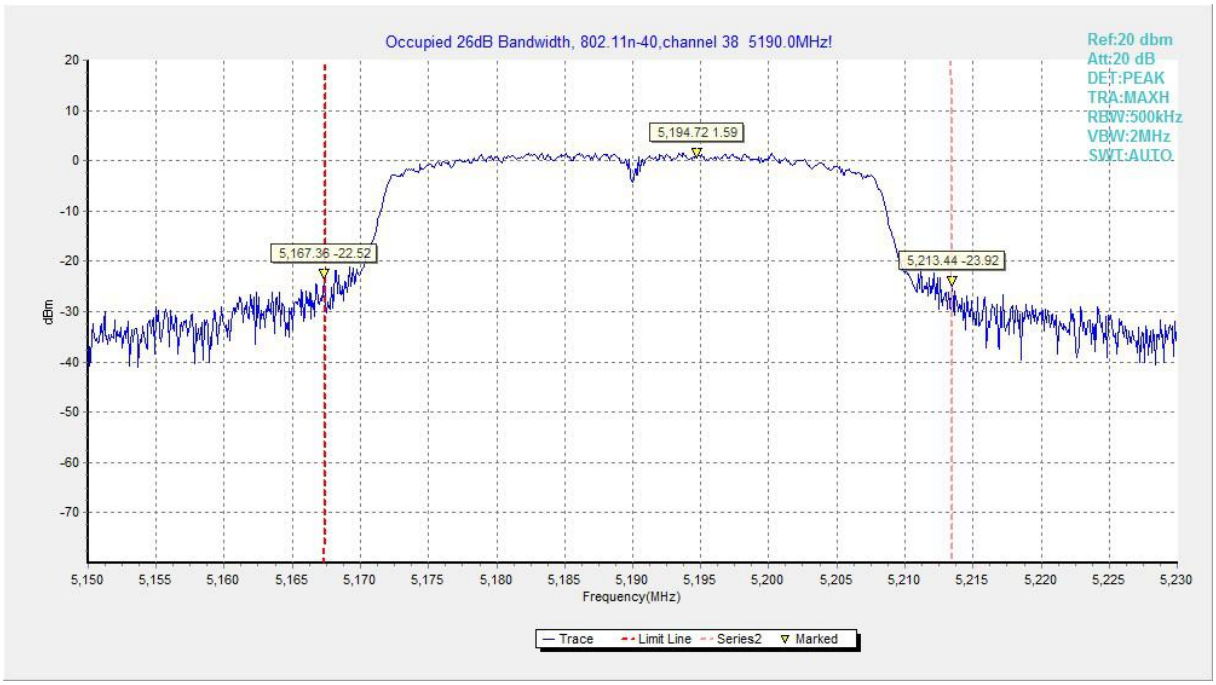


Fig.21 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)

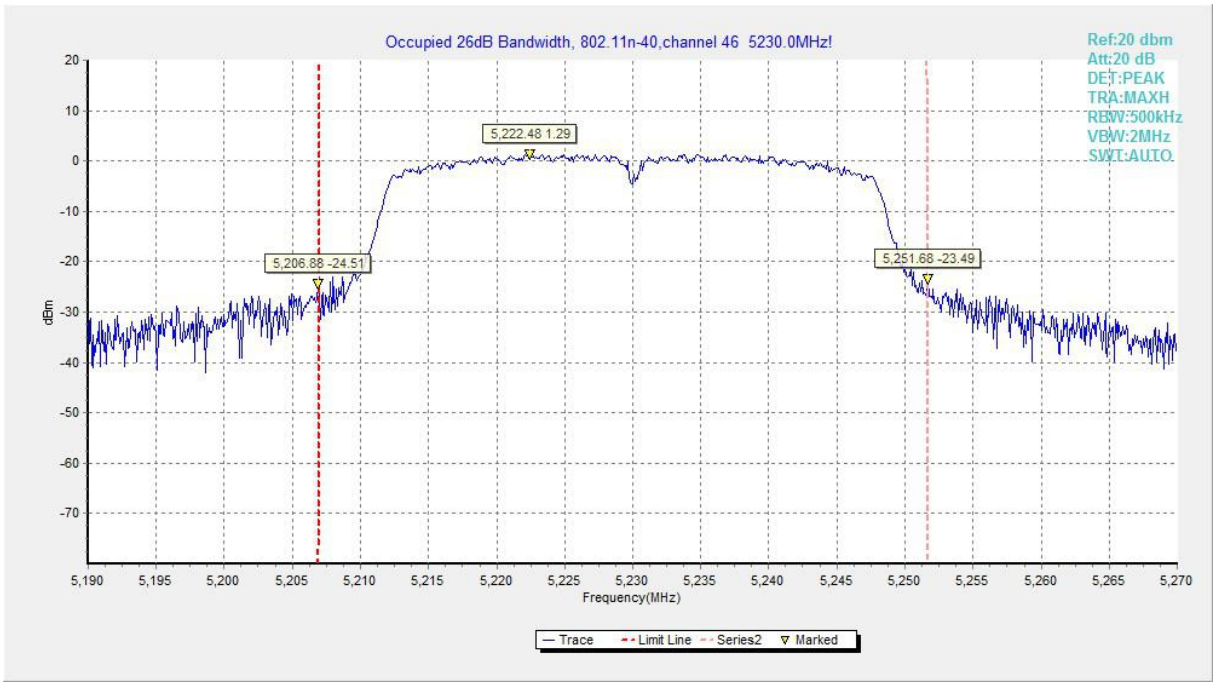


Fig.22 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)

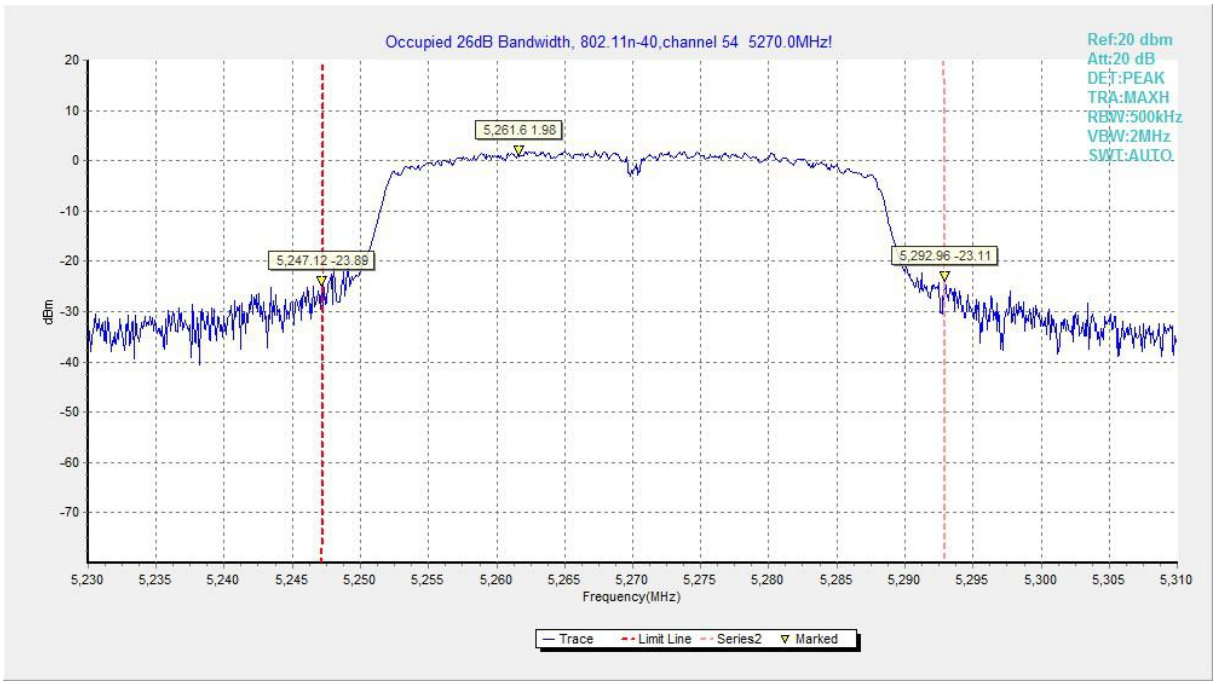


Fig.23 Occupied 26dB Bandwidth (802.11n-HT40, 5270MHz)

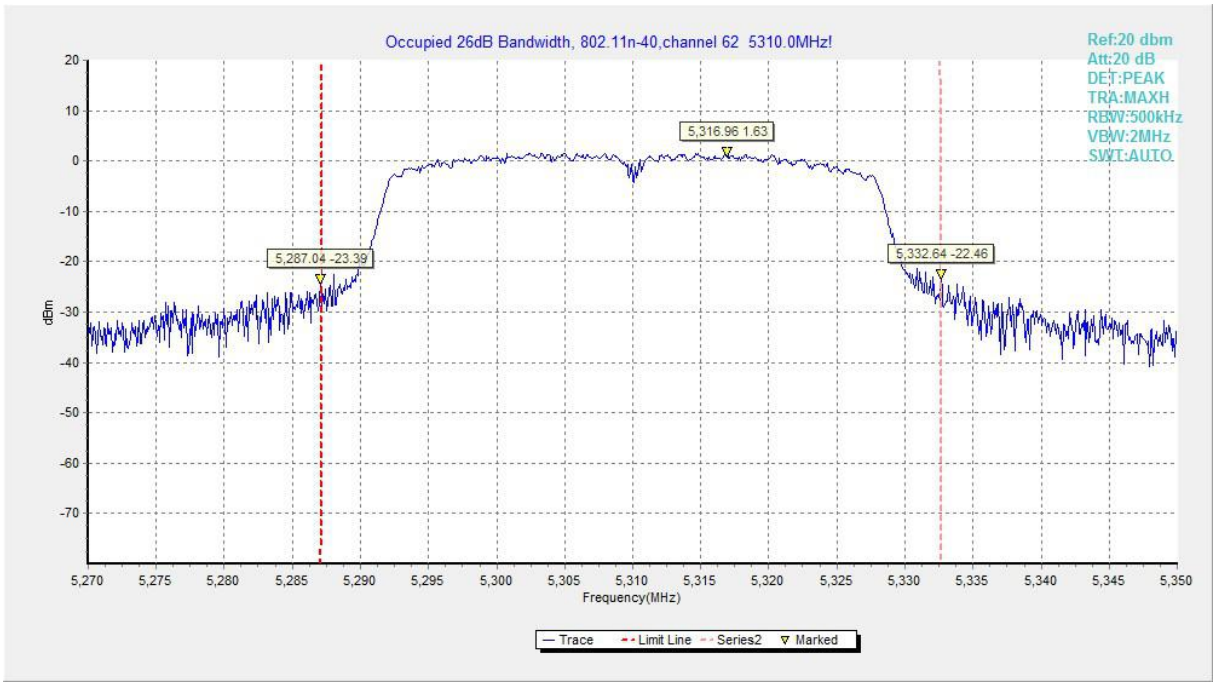


Fig.24 Occupied 26dB Bandwidth (802.11n-HT40, 5310MHz)

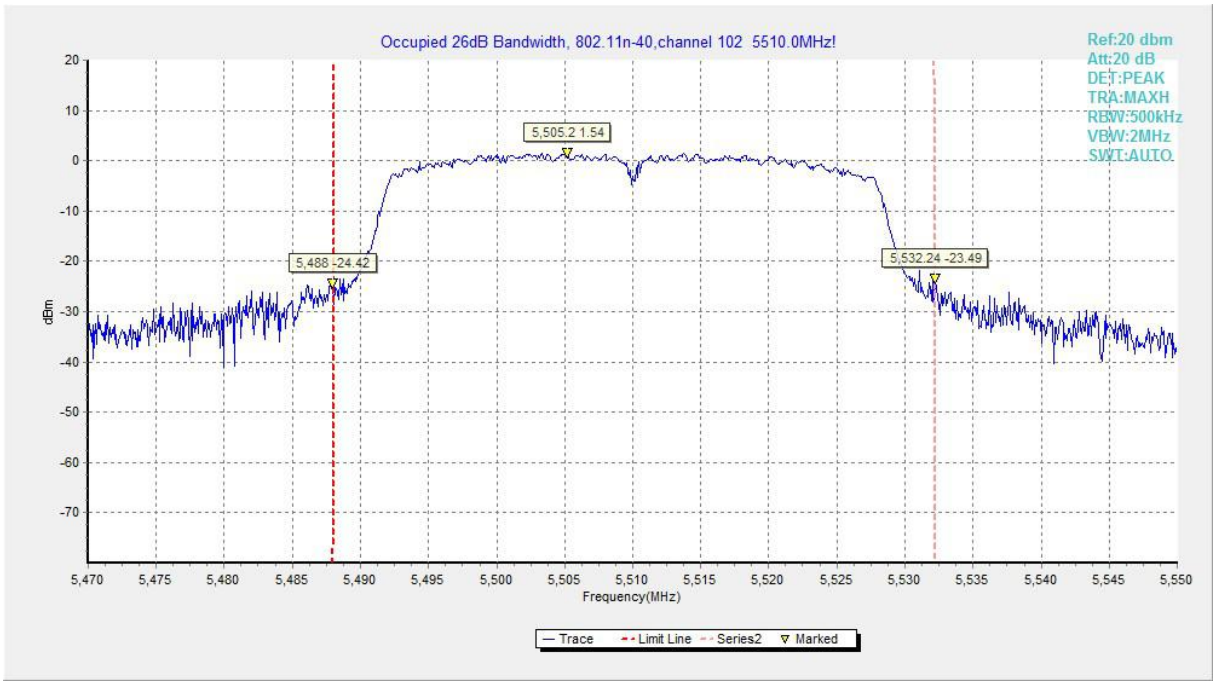


Fig.25 Occupied 26dB Bandwidth (802. 11n-HT40, 5510MHz)

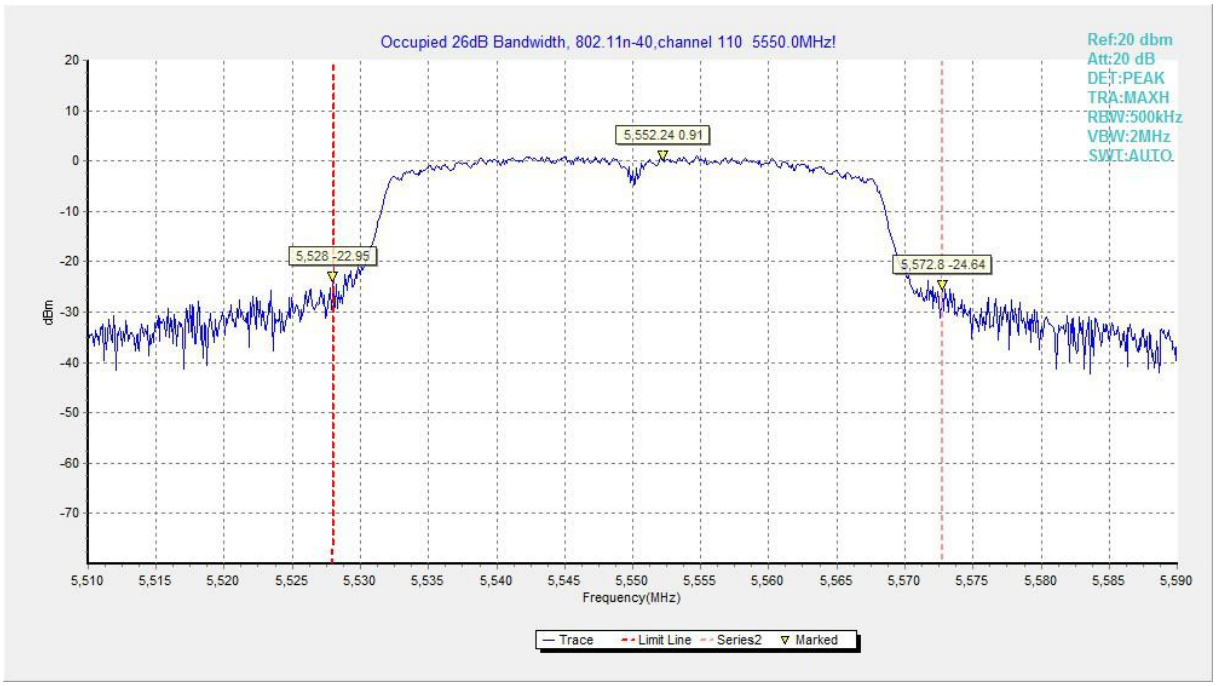


Fig.26 Occupied 26dB Bandwidth (802. 11n-HT40, 5550MHz)

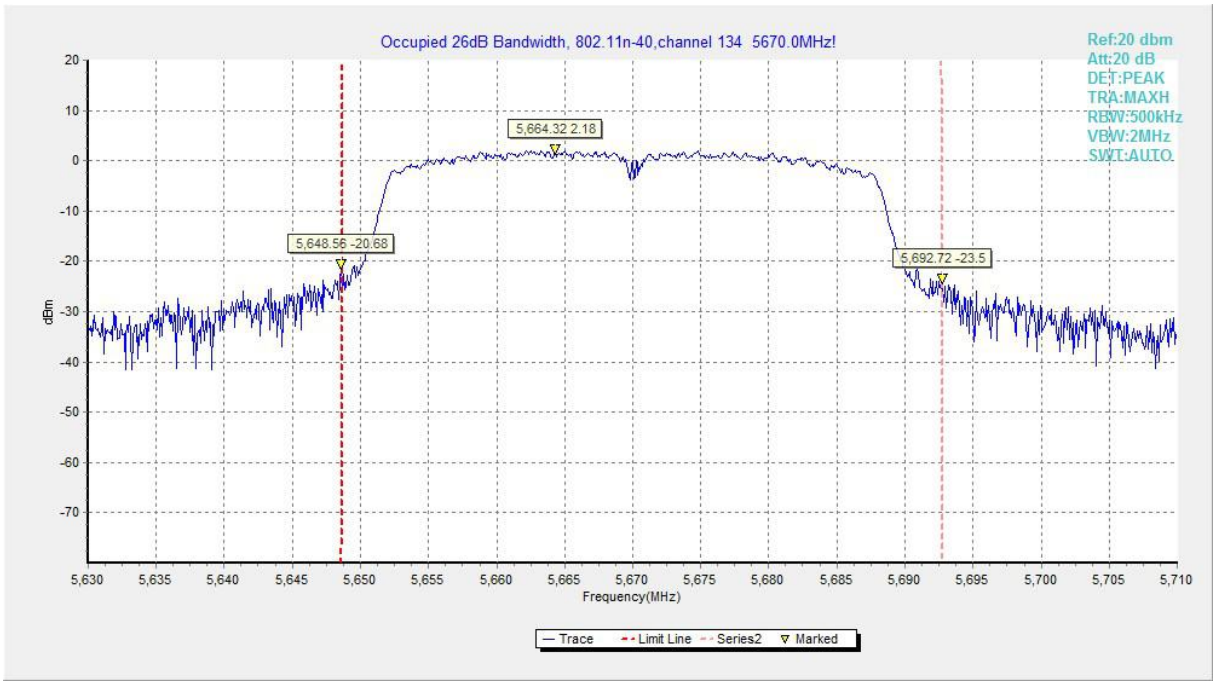


Fig.27 Occupied 26dB Bandwidth (802. 11n-HT40, 5670MHz)

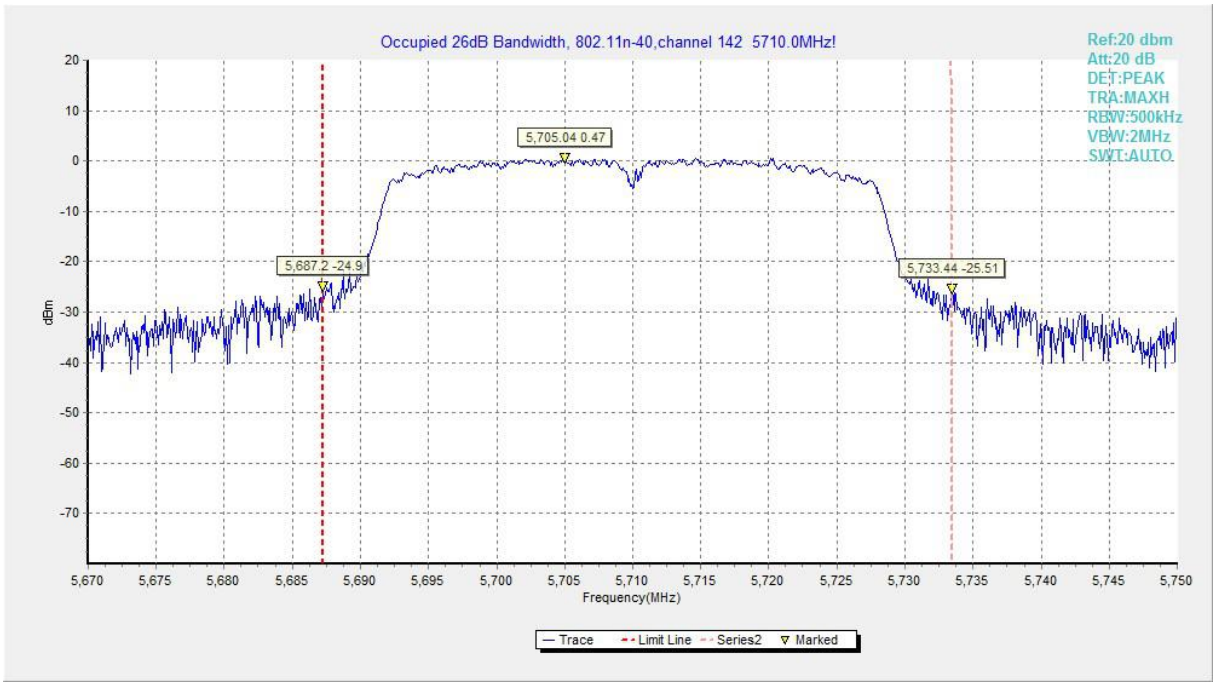


Fig.28 Occupied 26dB Bandwidth (802. 11n-HT40, 5710MHz)

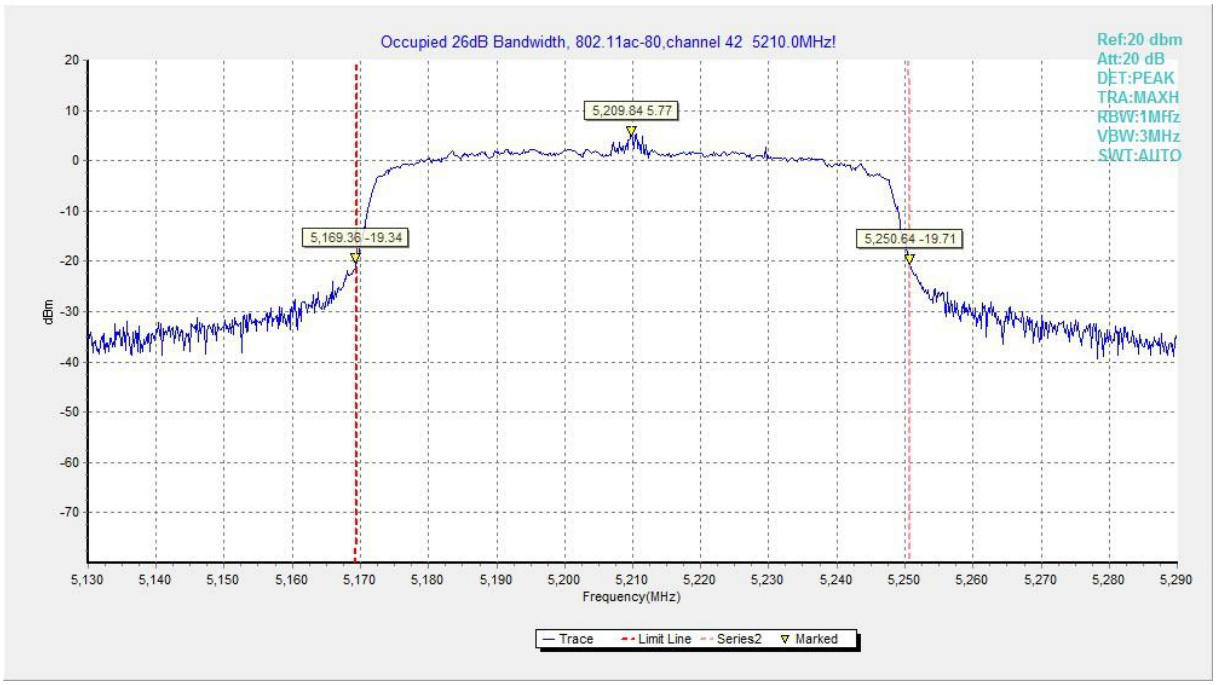


Fig.29 Occupied 26dB Bandwidth (802. 11ac-HT80, 5210MHz)

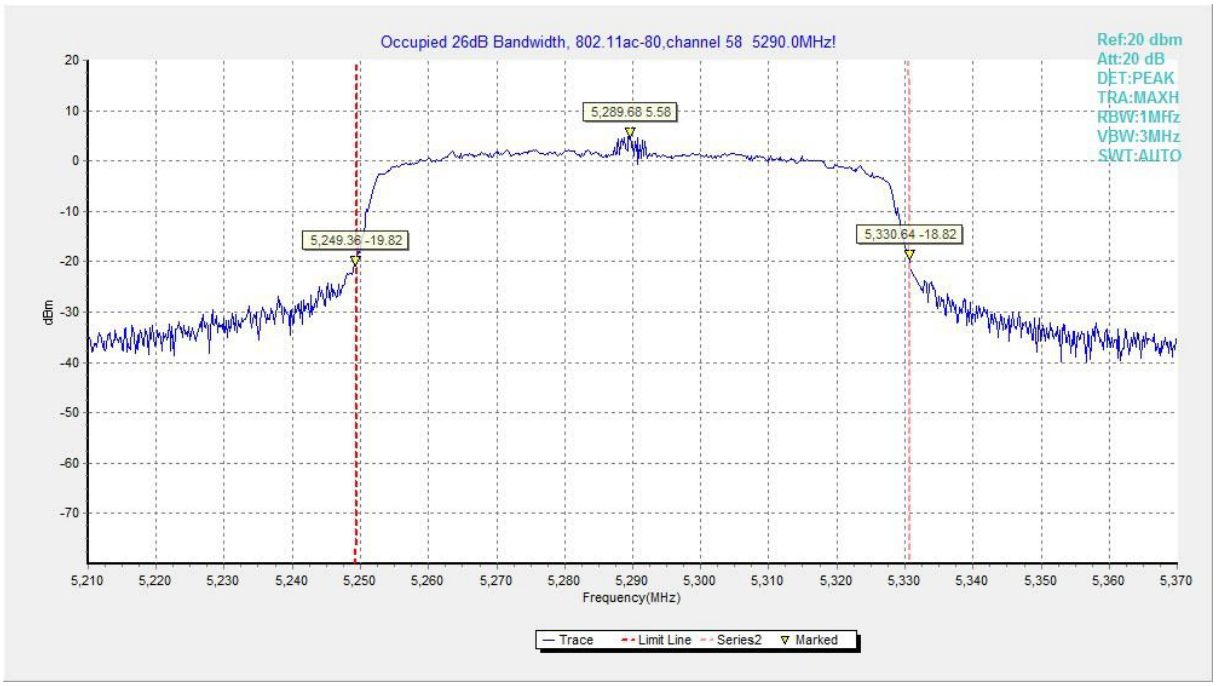


Fig.30 Occupied 26dB Bandwidth (802. 11ac-HT80, 5290MHz)

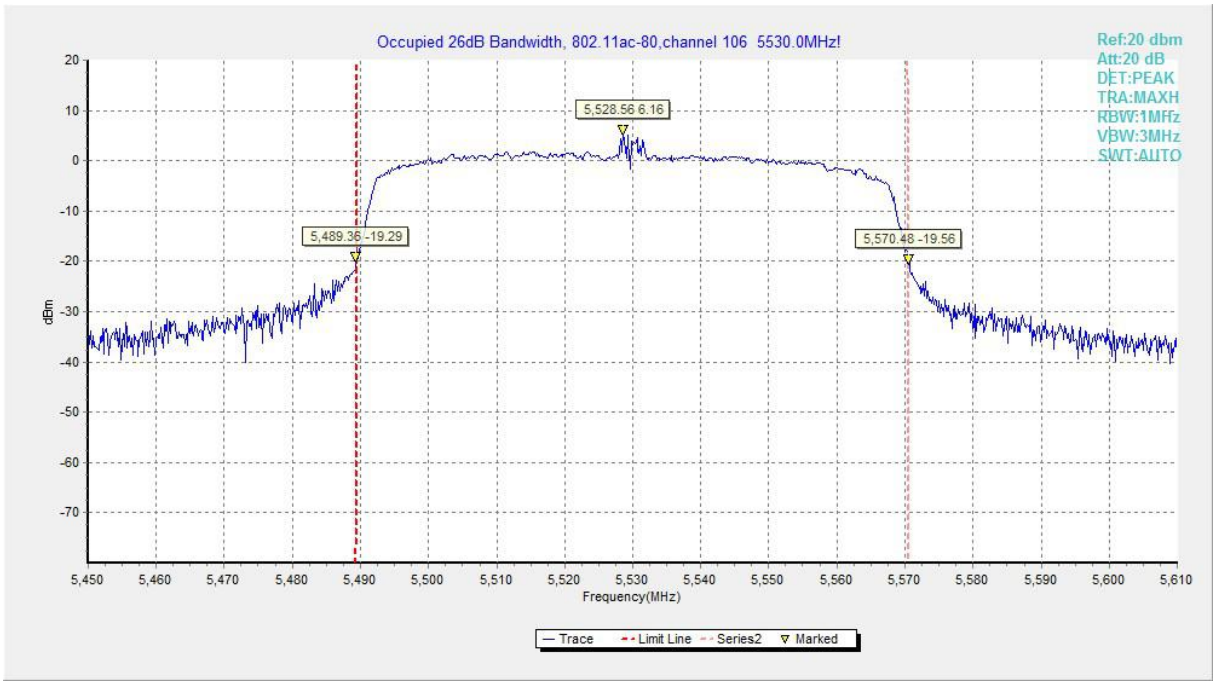


Fig.31 Occupied 26dB Bandwidth (802. 11ac-HT80, 5530MHz)

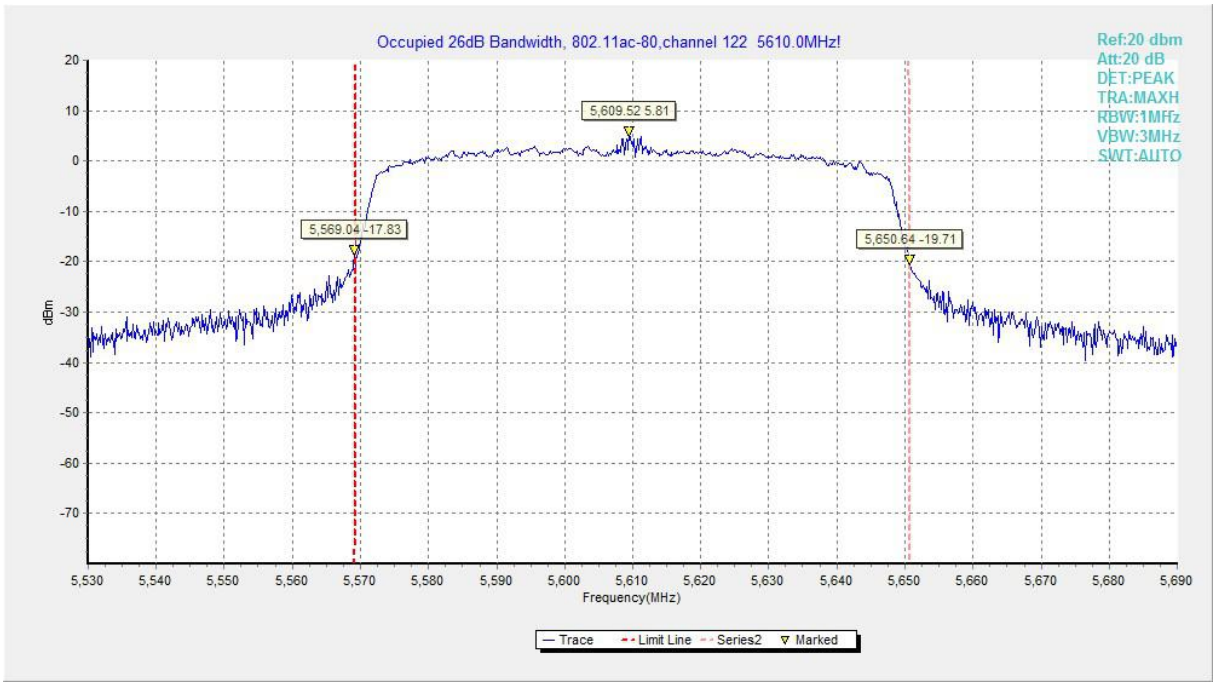


Fig.32 Occupied 26dB Bandwidth (802. 11ac-HT80, 5610MHz)

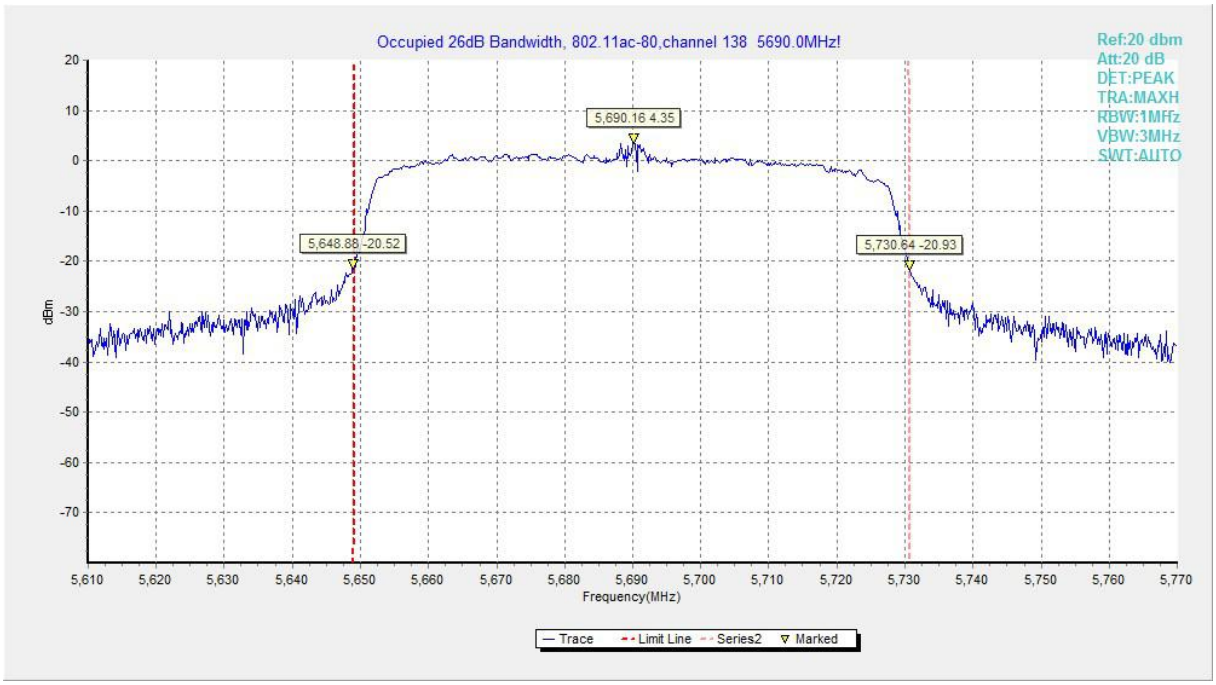


Fig.33 Occupied 26dB Bandwidth (802. 11ac-HT80, 5690MHz)

B.5. Band Edges Compliance

B.5.1 Band Edges - Radiated

Measurement Limit:

Standard	Limit (dB μ V/m)	
FCC 47 CFR Part 15.209	Peak	74
	Average	54

The measurement is made according to KDB 789033

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11a	5180 MHz	Fig.34	P
	5320 MHz	Fig.35	P
	5500 MHz	Fig.36	P
	5700 MHz	Fig.37	P
802.11n HT20	5180 MHz	Fig.38	P
	5320 MHz	Fig.39	P
	5500 MHz	Fig.40	P
	5700 MHz	Fig.41	P
802.11ac HT20	5180 MHz	Fig.42	P
	5320 MHz	Fig.43	P
	5500 MHz	Fig.44	P
	5700 MHz	Fig.45	P
02.11n HT40	5190 MHz	Fig.46	P
	5310 MHz	Fig.47	P
	5510 MHz	Fig.48	P
	5670 MHz	Fig.49	P
802.11ac HT40	5190 MHz	Fig.50	P
	5310 MHz	Fig.51	P
	5510 MHz	Fig.52	P
	5670 MHz	Fig.53	P
802.11ac HT80	5210MHz	Fig.54	P
	5290MHz	Fig.55	P
	5530MHz	Fig.56	P
	5610 MHz	Fig.57	P

Conclusion: PASS

Test graphs as below:

Conclusion: PASS

Test graphs as below:

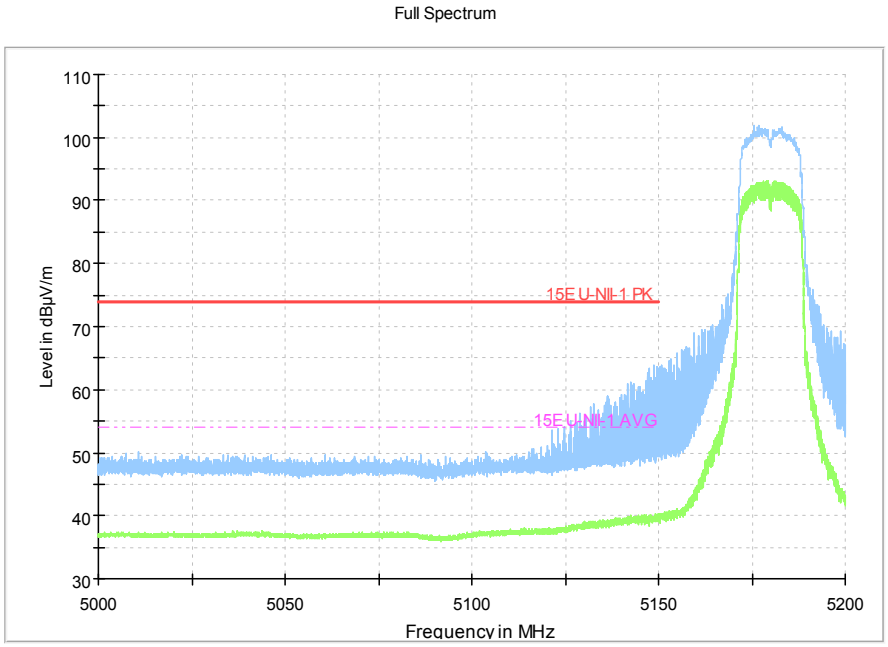


Fig.34 Band Edges (802.11a, 5180MHz)

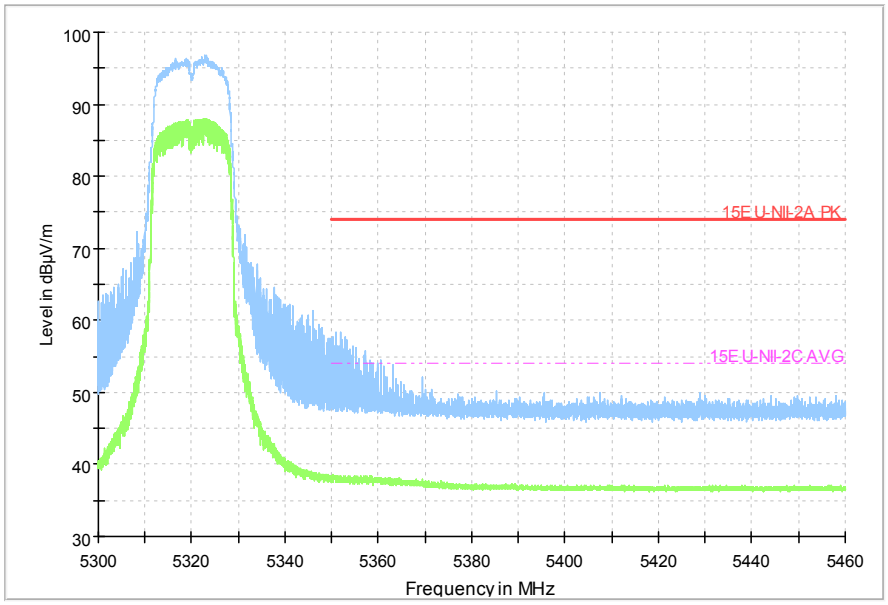


Fig.35 Band Edges (802.11a, 5320MHz)

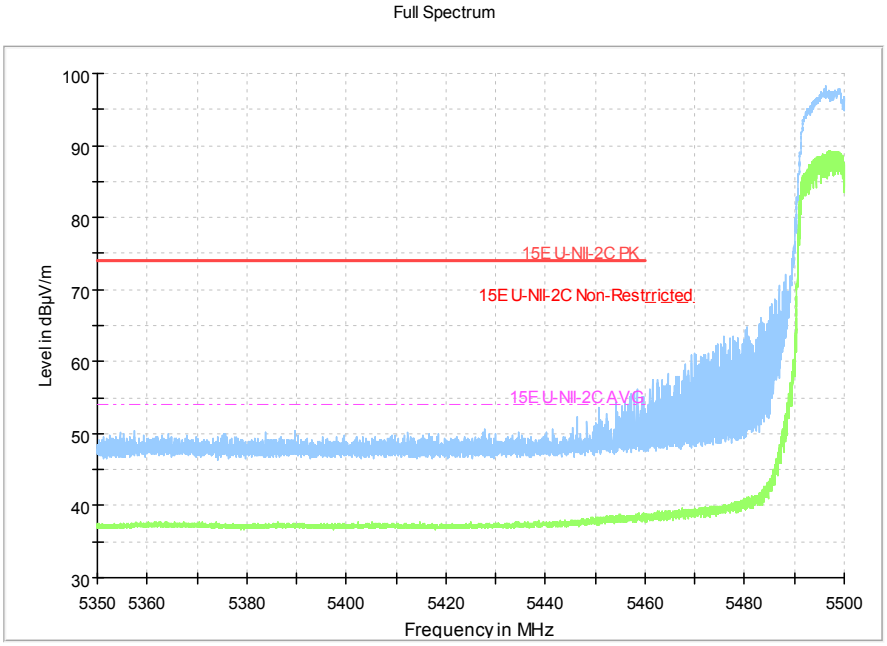


Fig.36 Band Edges (802.11a, 5500MHz)

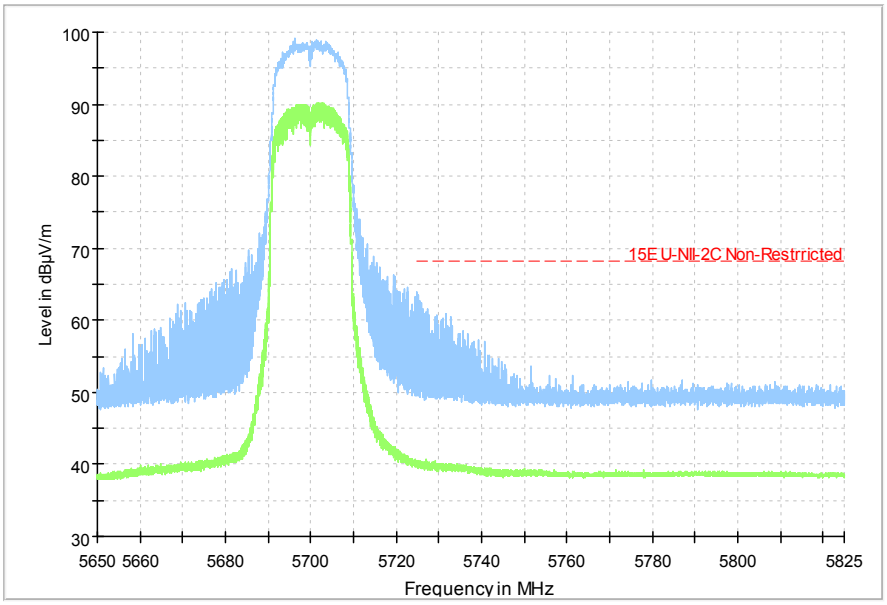


Fig.37 Band Edges (802.11a, 5700MHz)

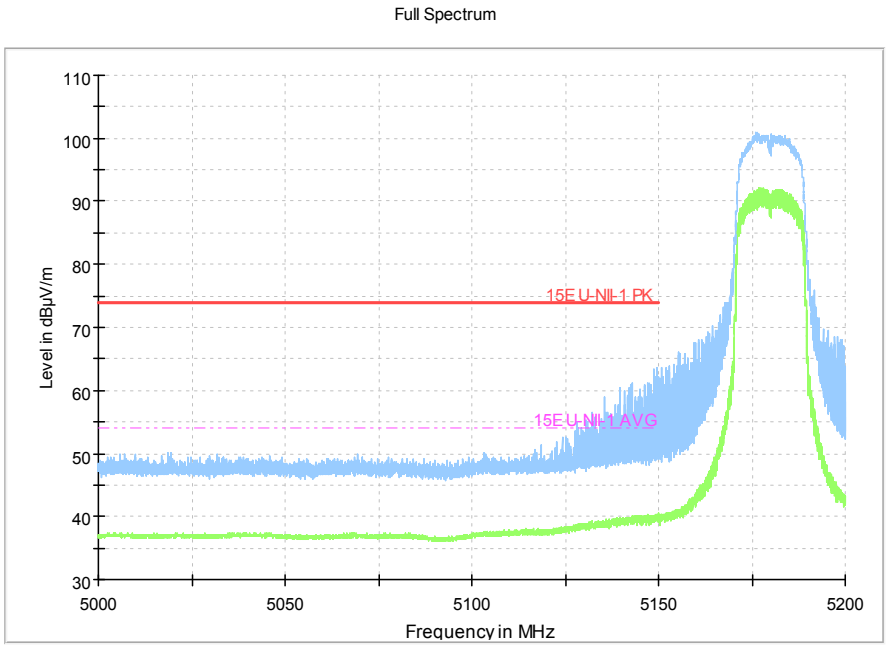


Fig.38 Band Edges (802.11n-HT20, 5180MHz)

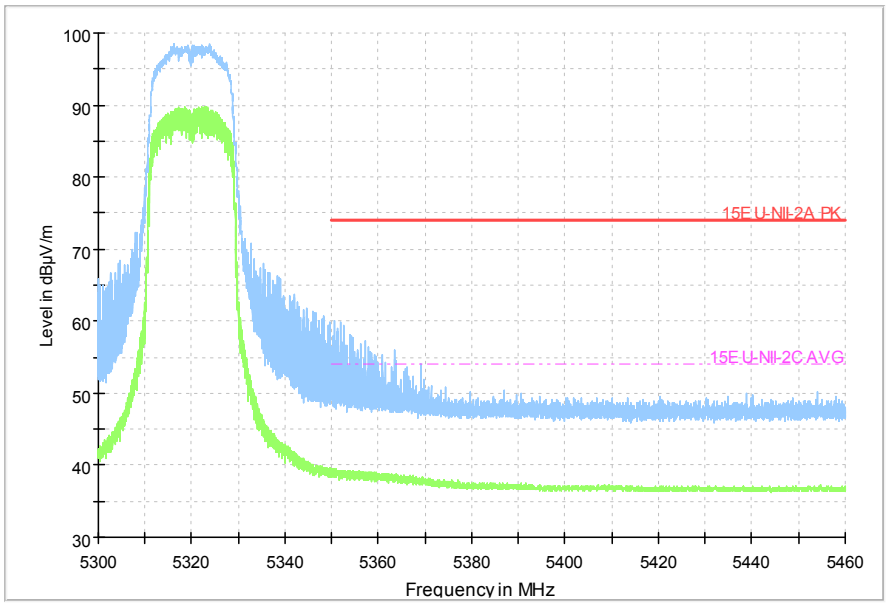


Fig.39 Band Edges (802.11n-HT20, 5320MHz)

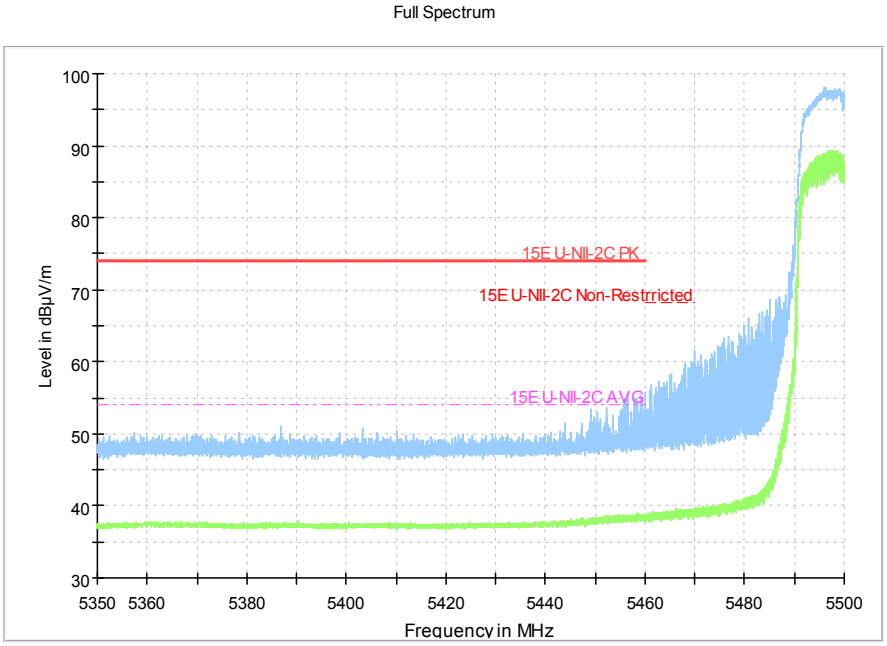


Fig.40 Band Edges (802.11n-HT20, 5500MHz)

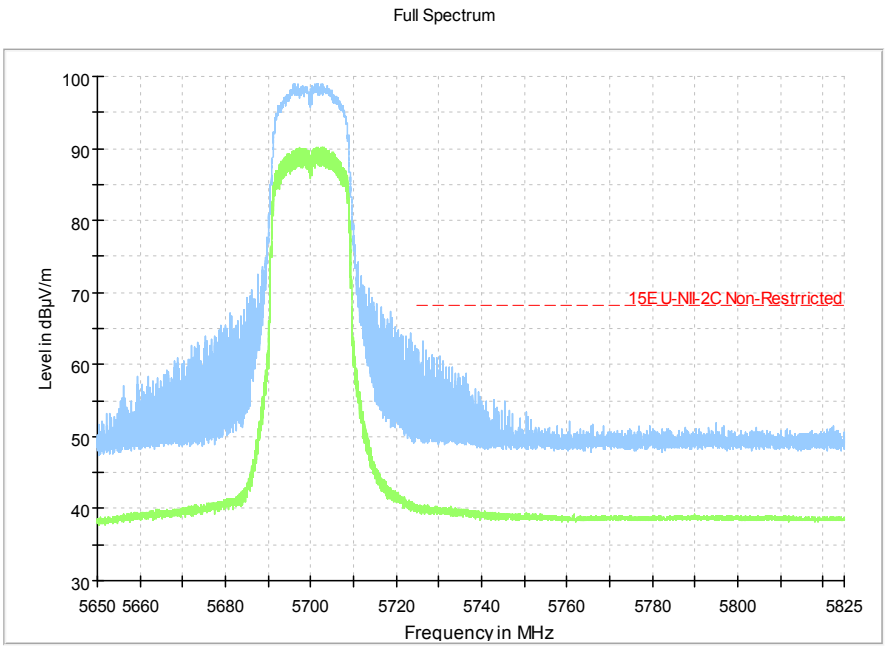


Fig.41 Band Edges (802.11n-HT20, 5700MHz)

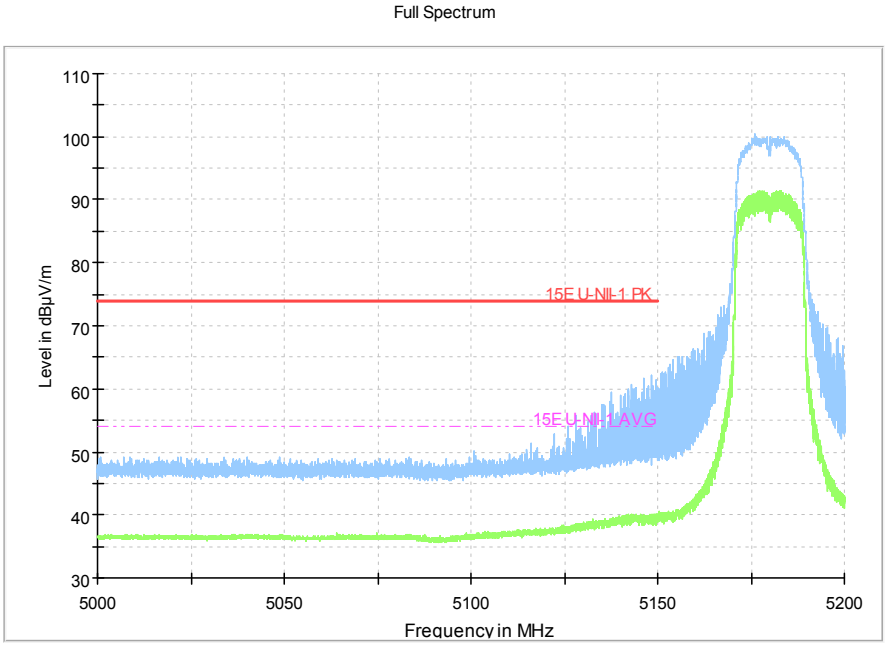


Fig.42 Band Edges (802.11ac-HT20, 5180MHz)

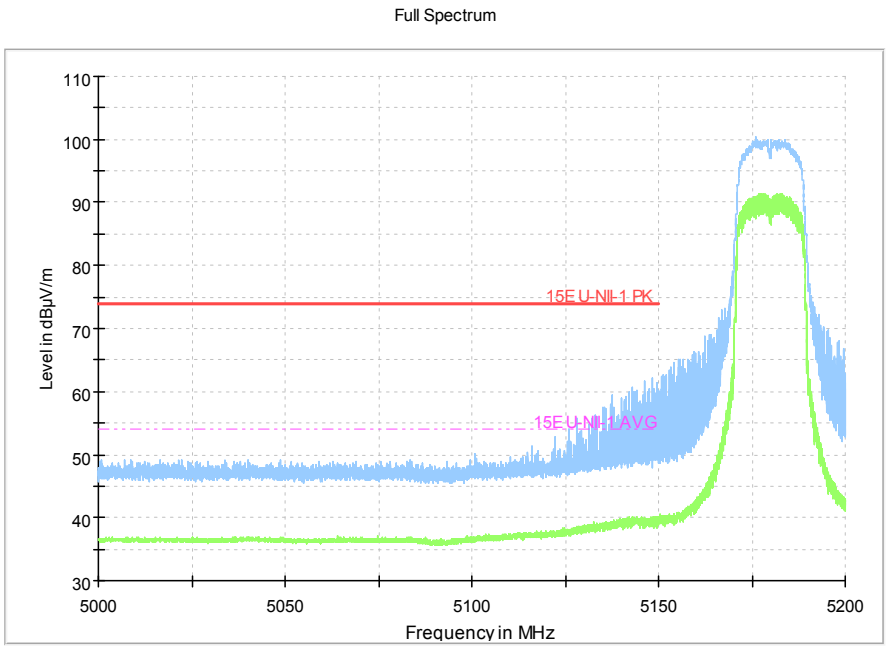


Fig.43 Band Edges (802.11ac-HT20, 5320MHz)

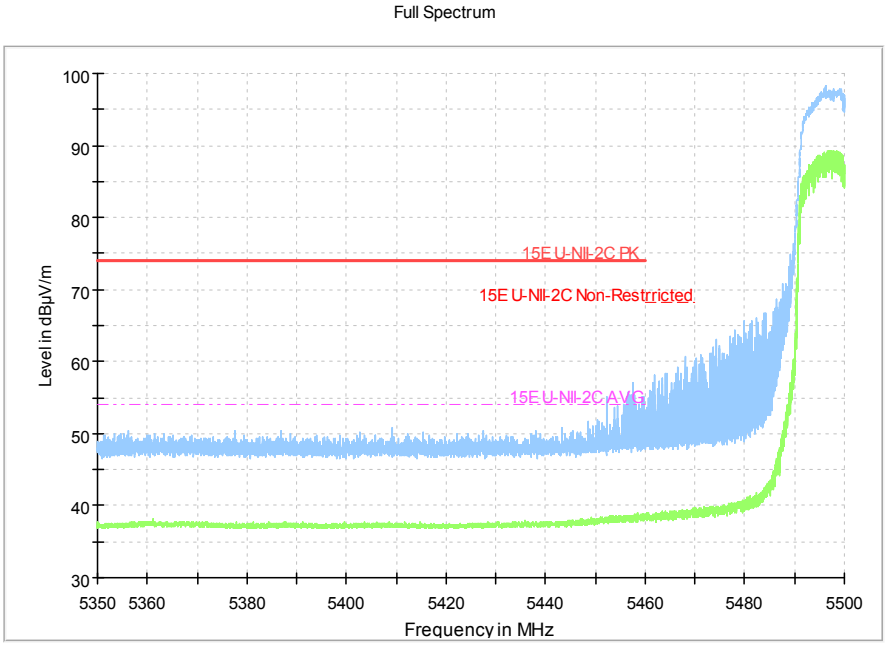


Fig.44 Band Edges (802.11ac-HT20, 5500MHz)

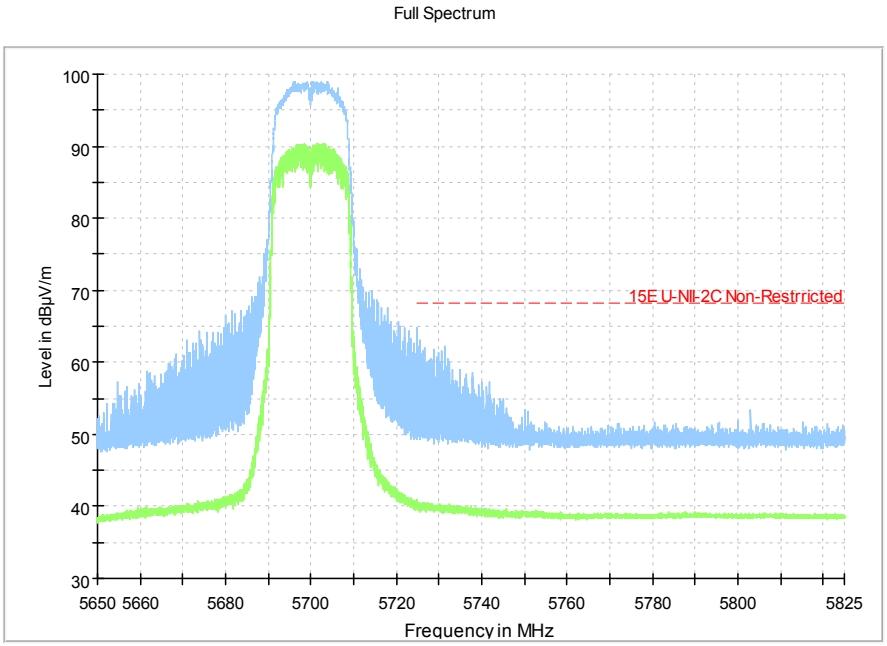


Fig.45 Band Edges (802.11ac-HT20, 5700MHz)

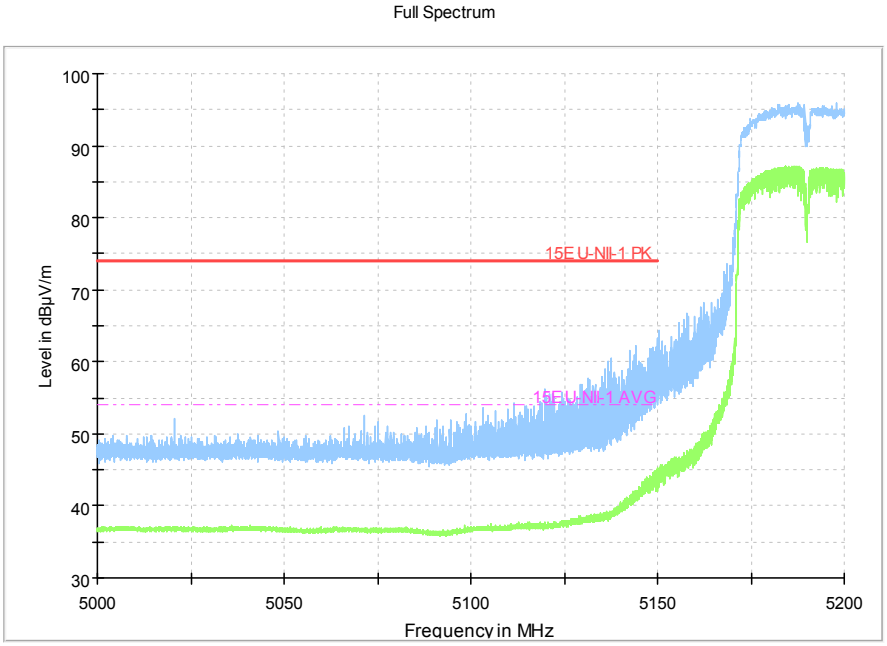


Fig.46 Band Edges (802.11n-HT40, 5190MHz)

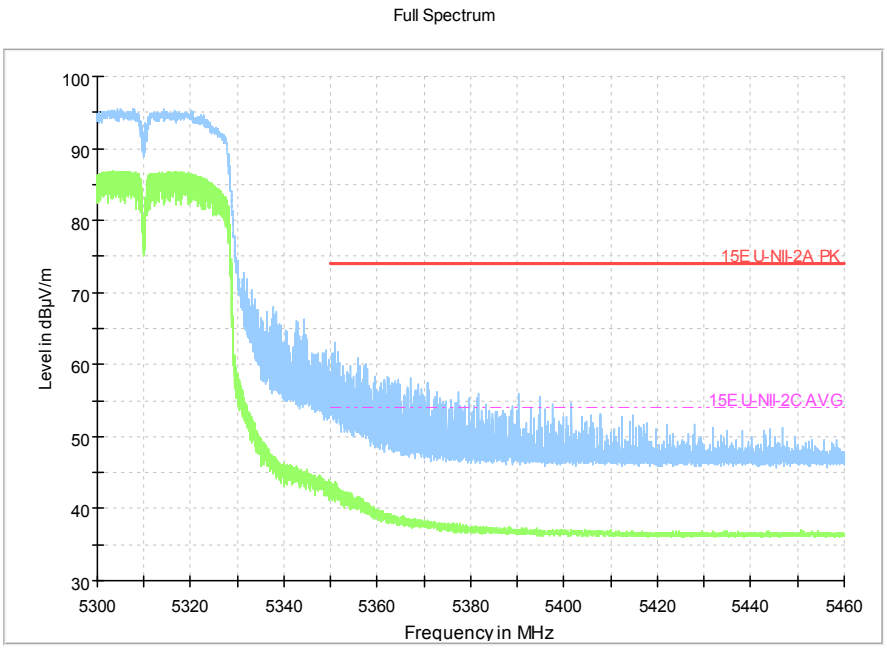


Fig.47 Band Edges (802.11n-HT40, 5310MHz)

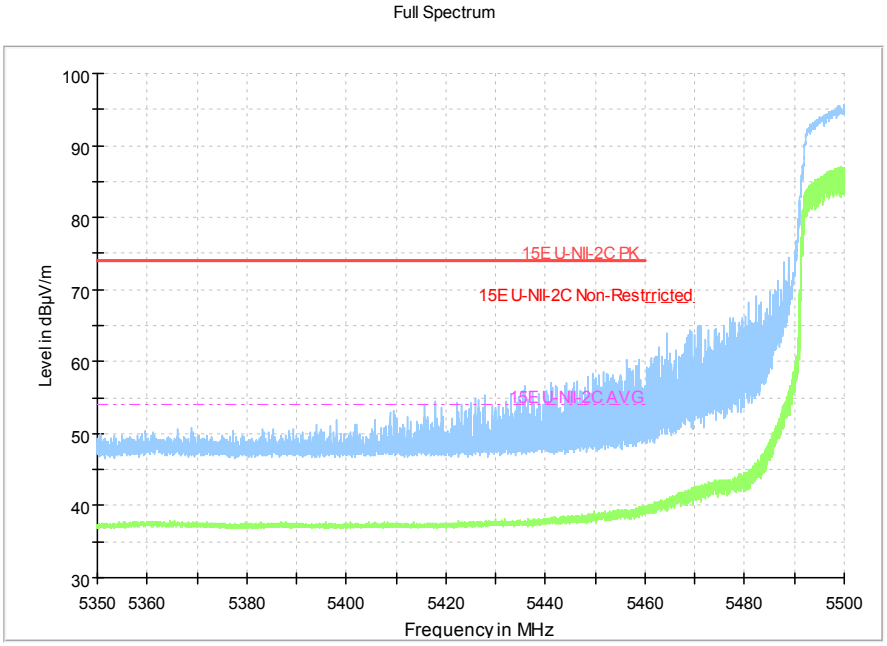


Fig.48 Band Edges (802.11n-HT40, 5510MHz)

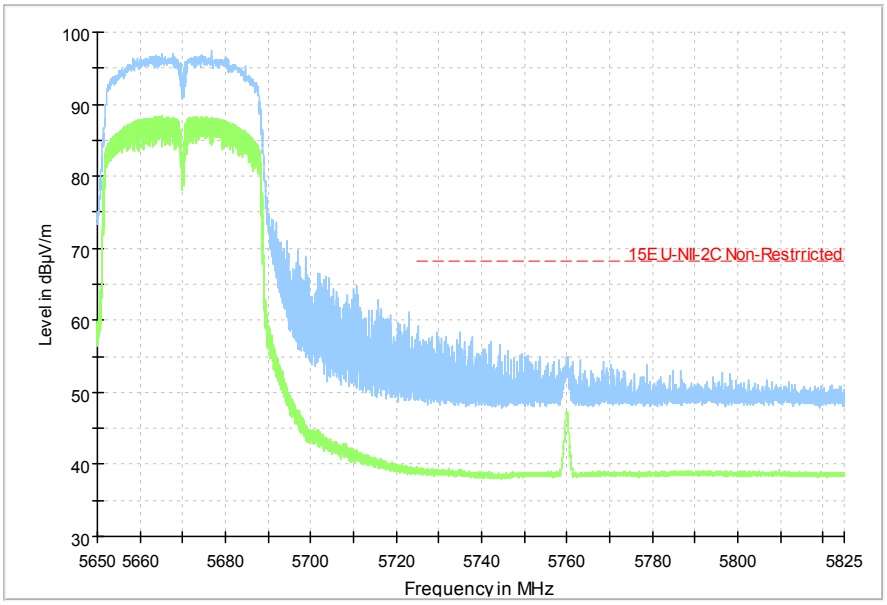


Fig.49 Band Edges (802.11n-HT40, 5670MHz)

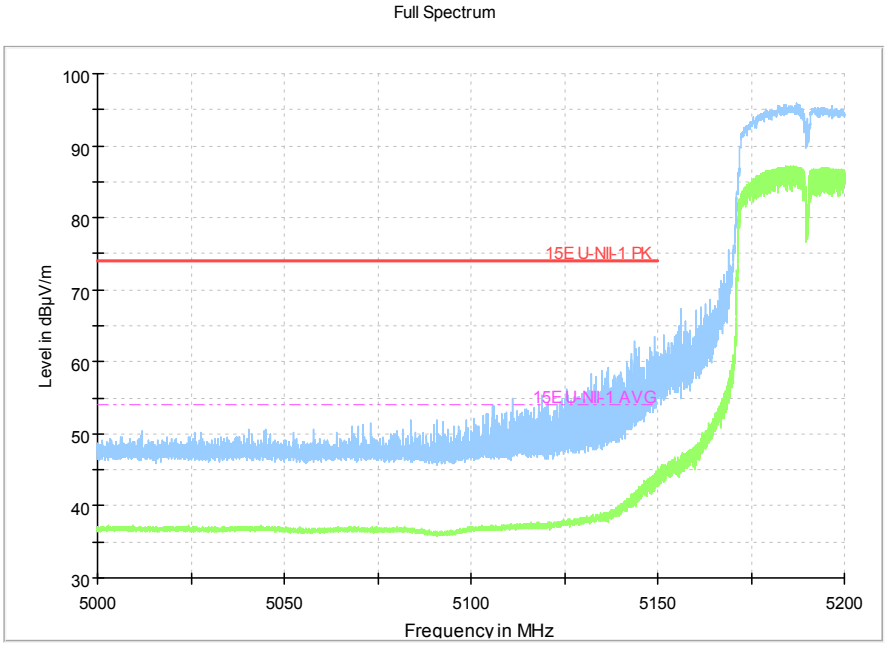


Fig.50 Band Edges (802.11ac-HT40, 5190MHz)

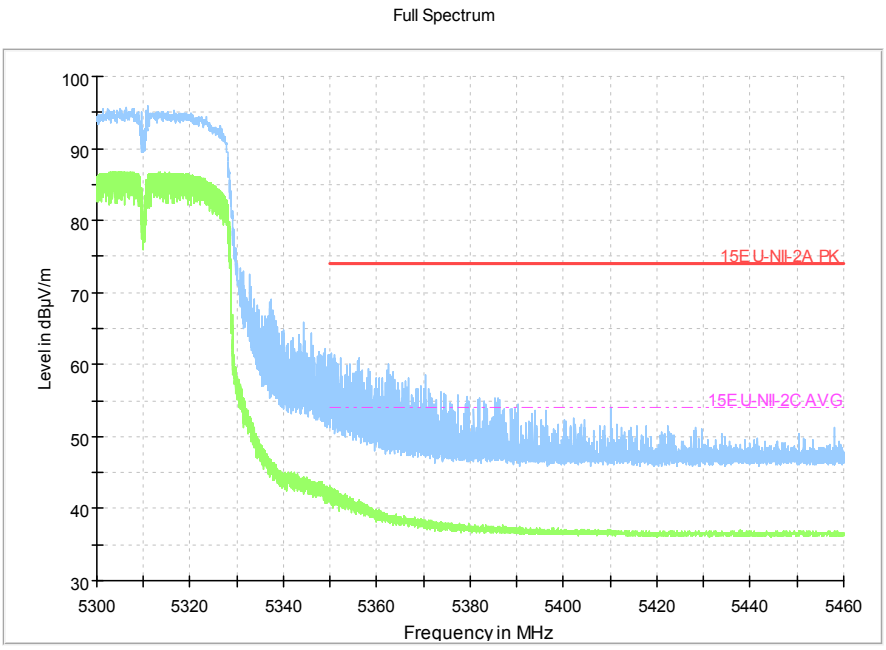


Fig.51 Band Edges (802.11ac-HT40, 5310MHz)

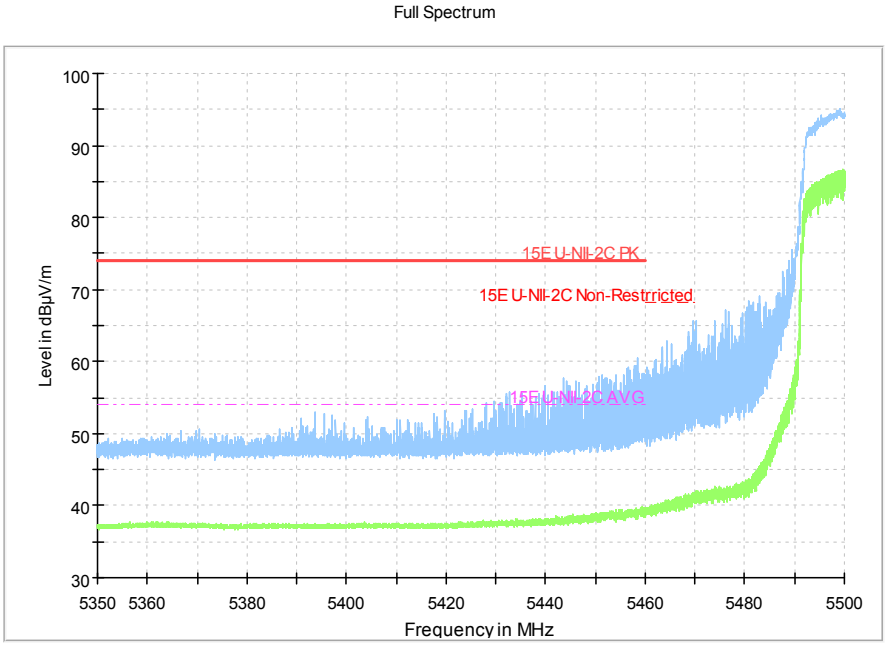


Fig.52 Band Edges (802.11ac-HT40, 5510MHz)

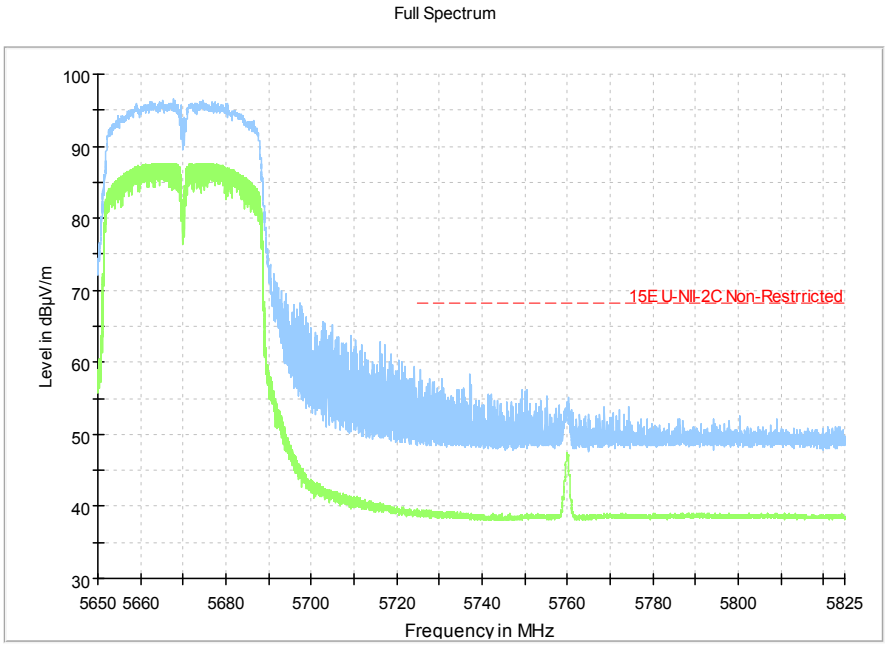


Fig.53 Band Edges (802.11ac-HT40, 5670MHz)

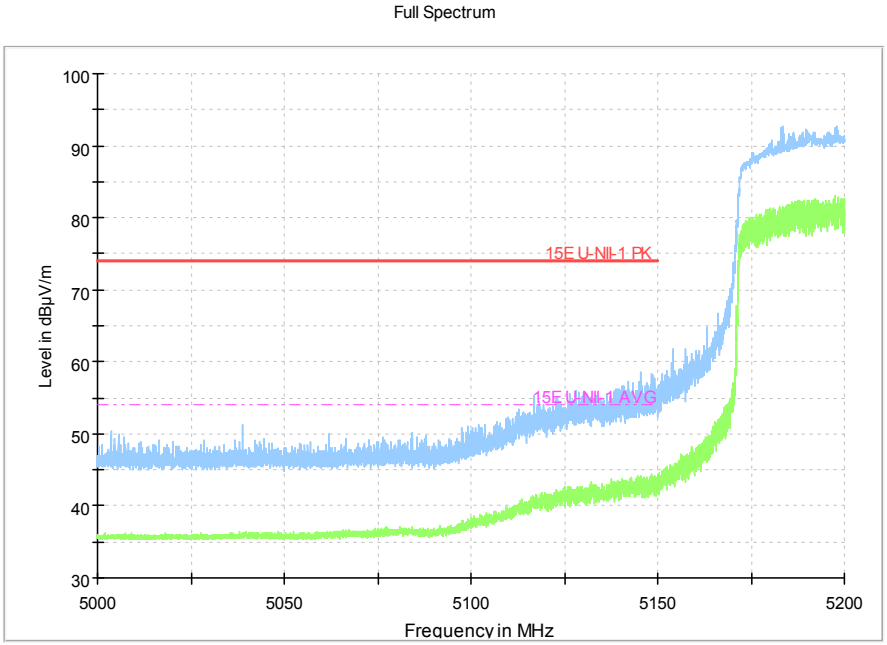


Fig.54 Band Edges (802.11ac-HT80, 5210MHz)

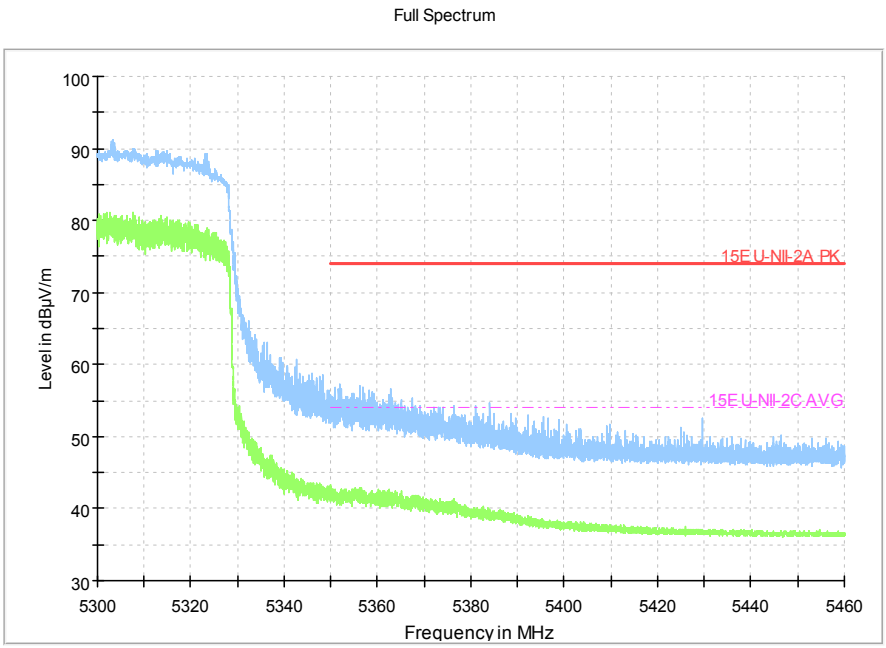


Fig.55 Band Edges (802.11ac-HT80, 5290MHz)

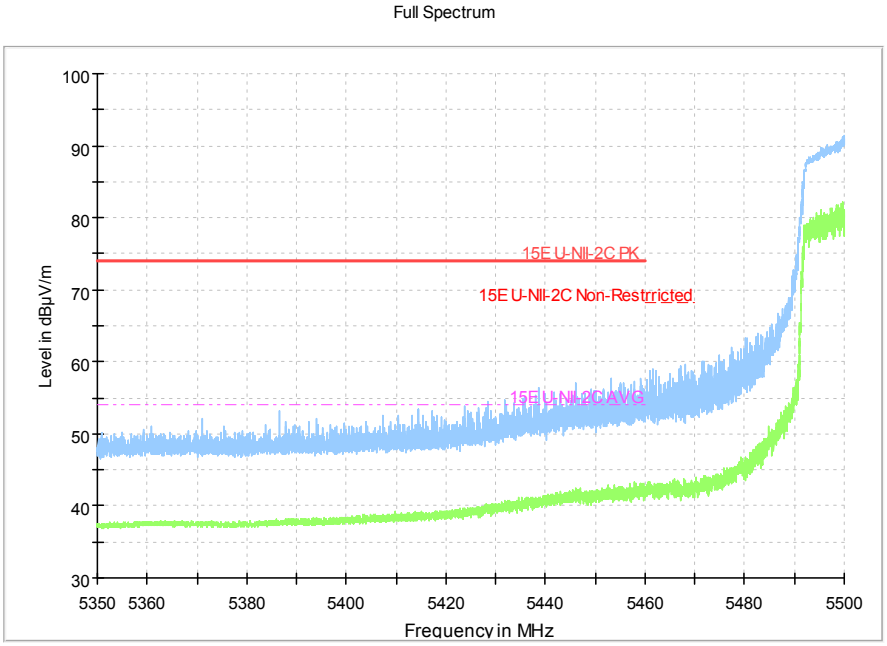


Fig.56 Band Edges (802.11ac-HT80, 5530MHz)

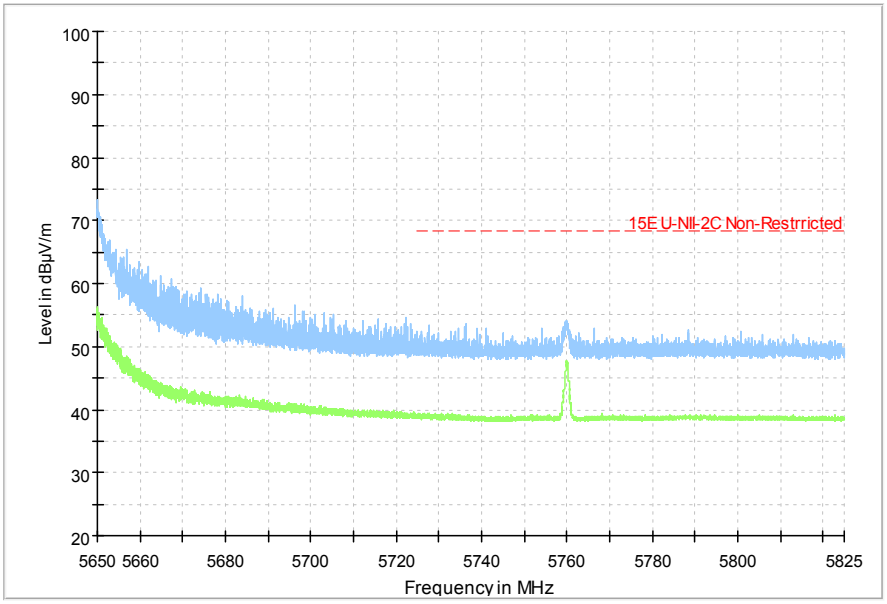


Fig.57 Band Edges (802.11ac-HT80, 5610MHz)

B.6. Transmitter Spurious Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407	-27 dBm/MHz

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

The measurement is made according to ANSI C63.10 .

Limit in restricted band:

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)	Measurement distance(m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Note: for frequency range below 960MHz, the limit in 15.209 is defined in 10m test distance. The limit used above is calculated from 10m to 3m

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Measurement Results: Conclusion: PASS

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the cable loss(the gain of the preamplifier), the gain of receive antenna.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result=P_{Mea}+A_{Rpl}= P_{Mea}+Cable Loss+Antenna Factor

Average

802.11a

Channel 36

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17991.8	42.8	-25.5	46.7	21.6	H	54	11.2
17986.8	42.7	-25.5	46.7	21.5	V	54	11.3
17987.9	42.7	-25.5	46.7	21.5	V	54	11.3
17956.5	42.5	-25.5	46.7	21.3	V	54	11.5
17961.5	42.5	-25.5	46.7	21.3	H	54	11.5
5149.8	40.3	-27.6	33.7	34.2	H	54	13.7

Channel 40

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17974.7	42.7	-25.5	46.7	21.5	H	54	11.3
17979.1	42.7	-25.5	46.7	21.5	H	54	11.3
17985.7	42.7	-25.5	46.7	21.5	H	54	11.3
17969.8	42.6	-25.5	46.7	21.4	H	54	11.4
17985.2	42.6	-25.5	46.7	21.4	H	54	11.4
17973.6	42.5	-25.5	46.7	21.3	V	54	11.5

Channel 48

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17994	42.7	-25.5	46.7	21.5	V	54	11.3
17996.7	42.7	-25.5	46.7	21.5	V	54	11.3
17973.6	42.6	-25.5	46.7	21.4	V	54	11.4
17985.2	42.5	-25.5	46.7	21.3	V	54	11.5
17996.2	42.5	-25.5	46.7	21.3	V	54	11.5
17959.8	42.4	-25.5	46.7	21.2	V	54	11.6

Channel 52

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7013.2	42.6	-35.2	36.1	41.7	V	54	11.4
17994.5	41.8	-25.5	46.7	20.6	H	54	12.2
17978	41.7	-25.5	46.7	20.5	V	54	12.3
17976.3	41.6	-25.5	46.7	20.4	V	54	12.4
17977.5	41.6	-25.5	46.7	20.4	V	54	12.4
17986.8	41.6	-25.5	46.7	20.4	H	54	12.4

Channel 56

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7039.6	44.5	-35.4	36.2	43.6	V	54	9.5
7040.1	42.9	-35.4	36.2	42	V	54	11.1
17976.9	41.8	-25.5	46.7	20.6	V	54	12.2
17994	41.8	-25.5	46.7	20.6	V	54	12.2
17962.6	41.7	-25.5	46.7	20.5	V	54	12.3
17986.2	41.6	-25.5	46.7	20.4	V	54	12.4

Channel 64

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7092.9	43.9	-35.4	36.2	43	V	54	10.1
7093.5	42.8	-35.4	36.2	41.9	V	54	11.2
17973.6	41.8	-25.5	46.7	20.6	V	54	12.2
17985.7	41.8	-25.5	46.7	20.6	V	54	12.2
17991.2	41.8	-25.5	46.7	20.6	V	54	12.2
5350.1	38.4	-27.4	34	31.8	H	54	15.6

Channel 100

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17980.2	42.9	-25.5	46.7	21.7	H	54	11.1
17980.8	42.8	-25.5	46.7	21.6	H	54	11.2
17946.7	42.7	-25.5	46.7	21.5	V	54	11.3
17995	42.7	-25.5	46.7	21.5	V	54	11.3
17976.3	42.6	-25.5	46.7	21.4	V	54	11.4
5458.5	38.9	-27.2	34.2	31.9	H	54	15.1

Channel 120

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17971.4	42.6	-25.5	46.7	21.4	V	54	11.4
17985.7	42.6	-25.5	46.7	21.4	H	54	11.4
17986.8	42.6	-25.5	46.7	21.4	H	54	11.4
17987.9	42.6	-25.5	46.7	21.4	V	54	11.4
17884.5	42.5	-25.5	46.7	21.3	V	54	11.5
17966.5	42.5	-25.5	46.7	21.3	V	54	11.5

Channel 140

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17975.8	42.8	-25.5	46.7	21.6	H	54	11.2
17971.4	42.7	-25.5	46.7	21.5	V	54	11.3
17983.5	42.7	-25.5	46.7	21.5	H	54	11.3
17966.5	42.6	-25.5	46.7	21.4	H	54	11.4
17987.3	42.6	-25.5	46.7	21.4	V	54	11.4
5729	40.5	-27.1	34.3	33.3	H	54	13.5

802.11n-HT20

Channel 36

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17947.8	42.6	-25.5	46.7	21.4	H	54	11.4
17973.6	42.6	-25.5	46.7	21.4	V	54	11.4
17983	42.5	-25.5	46.7	21.3	H	54	11.5
17994.5	42.5	-25.5	46.7	21.3	H	54	11.5
17957.7	42.4	-25.5	46.7	21.2	V	54	11.6
5144.3	40.2	-27.6	33.7	34.1	H	54	13.8

Channel 40

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17979.1	42.8	-25.5	46.7	21.6	V	54	11.2
17991.8	42.7	-25.5	46.7	21.5	H	54	11.3
17962.6	42.6	-25.5	46.7	21.4	H	54	11.4
17985.2	42.6	-25.5	46.7	21.4	V	54	11.4
17992.3	42.6	-25.5	46.7	21.4	H	54	11.4
17888.3	42.5	-25.5	46.7	21.3	V	54	11.5

Channel 48

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17977.5	42.6	-25.5	46.7	21.4	H	54	11.4
17987.9	42.6	-25.5	46.7	21.4	H	54	11.4
17989.5	42.6	-25.5	46.7	21.4	H	54	11.4
17954.9	42.5	-25.5	46.7	21.3	H	54	11.5
17973.6	42.5	-25.5	46.7	21.3	V	54	11.5
17981.3	42.4	-25.5	46.7	21.2	V	54	11.6

Channel 52

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17975.2	42.1	-25.5	46.7	20.9	V	54	11.9
17990.7	41.8	-25.5	46.7	20.6	V	54	12.2
17967	41.7	-25.5	46.7	20.5	V	54	12.3
17984	41.7	-25.5	46.7	20.5	V	54	12.3
17995.6	41.7	-25.5	46.7	20.5	V	54	12.3
17969.8	41.6	-25.5	46.7	20.4	V	54	12.4

Channel 56

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7039.6	44.8	-35.4	36.2	43.9	V	54	9.2
7040.1	43.1	-35.4	36.2	42.2	V	54	10.9
17964.8	41.9	-25.5	46.7	20.7	V	54	12.1
17976.3	41.8	-25.5	46.7	20.6	H	54	12.2
17991.2	41.7	-25.5	46.7	20.5	H	54	12.3
17943.3	41.6	-25.5	46.7	20.4	V	54	12.4

Channel 64

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17991.2	42	-25.5	46.7	20.8	H	54	12
17997.8	41.9	-25.5	46.7	20.7	V	54	12.1
17985.7	41.8	-25.5	46.7	20.6	V	54	12.2
17966.5	41.7	-25.5	46.7	20.5	H	54	12.3
17975.8	41.7	-25.5	46.7	20.5	V	54	12.3
5350.4	39.4	-27.4	34	32.8	H	54	14.6

Channel 100

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17996.2	42.7	-25.5	46.7	21.5	H	54	11.3
17995	42.6	-25.5	46.7	21.4	V	54	11.4
17966.5	42.5	-25.5	46.7	21.3	H	54	11.5
17993.4	42.5	-25.5	46.7	21.3	V	54	11.5
17964.8	42.4	-25.5	46.7	21.2	H	54	11.6
5458.6	39	-27.2	34.2	32	H	54	15

Channel 120

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17986.8	42.7	-25.5	46.7	21.5	H	54	11.3
17997.8	42.7	-25.5	46.7	21.5	H	54	11.3
17972.5	42.5	-25.5	46.7	21.3	H	54	11.5
17998.3	42.5	-25.5	46.7	21.3	V	54	11.5
17975.8	42.4	-25.5	46.7	21.2	V	54	11.6
17983.5	42.4	-25.5	46.7	21.2	V	54	11.6

Channel 140

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17989	42.6	-25.5	46.7	21.4	V	54	11.4
17962.6	42.5	-25.5	46.7	21.3	V	54	11.5
17979.1	42.5	-25.5	46.7	21.3	V	54	11.5
17992.3	42.5	-25.5	46.7	21.3	H	54	11.5
17994.5	42.4	-25.5	46.7	21.2	V	54	11.6
5726.8	40.5	-27.1	34.3	33.3	H	54	13.5

802.11n-HT40

Channel 38

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17988.5	42.7	-25.5	46.7	21.5	V	54	11.3
17985.2	42.6	-25.5	46.7	21.4	H	54	11.4
17962.6	42.5	-25.5	46.7	21.3	H	54	11.5
17963.7	42.5	-25.5	46.7	21.3	V	54	11.5
17980.2	42.5	-25.5	46.7	21.3	H	54	11.5
5150	44.9	-27.6	33.7	38.8	H	54	9.1

Channel 46

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17994	42.9	-25.5	46.7	21.7	V	54	11.1
17958.2	42.7	-25.5	46.7	21.5	V	54	11.3
17969.2	42.6	-25.5	46.7	21.4	H	54	11.4
17985.2	42.6	-25.5	46.7	21.4	H	54	11.4
17997.8	42.6	-25.5	46.7	21.4	V	54	11.4
17972	42.5	-25.5	46.7	21.3	H	54	11.5

Channel 54

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17985.2	42	-25.5	46.7	20.8	V	54	12
17966.5	41.8	-25.5	46.7	20.6	H	54	12.2
17967	41.8	-25.5	46.7	20.6	H	54	12.2
17973.6	41.8	-25.5	46.7	20.6	V	54	12.2
17981.8	41.8	-25.5	46.7	20.6	H	54	12.2
17992.3	41.8	-25.5	46.7	20.6	H	54	12.2

Channel 62

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7079.8	43.1	-35.4	36.2	42.2	V	54	10.9
17978	42.1	-25.5	46.7	20.9	V	54	11.9
17966.5	41.9	-25.5	46.7	20.7	H	54	12.1
17970.8	41.7	-25.5	46.7	20.5	H	54	12.3
17980.8	41.7	-25.5	46.7	20.5	H	54	12.3
5350.3	43.4	-27.4	34	36.8	H	54	10.6

Channel 102

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7346.5	44.4	-35.1	36.6	42.9	V	54	9.6
17990.1	42.6	-25.5	46.7	21.4	V	54	11.4
17975.2	42.5	-25.5	46.7	21.3	H	54	11.5
17989.5	42.5	-25.5	46.7	21.3	H	54	11.5
17968.1	42.4	-25.5	46.7	21.2	H	54	11.6
5459.8	39.9	-27.2	34.2	32.9	H	54	14.1

Channel 118

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7453.2	42.7	-35.2	36.7	41.1	V	54	11.3
17966.5	42.6	-25.5	46.7	21.4	V	54	11.4
17992.3	42.6	-25.5	46.7	21.4	V	54	11.4
17953.2	42.5	-25.5	46.7	21.3	V	54	11.5
17981.3	42.5	-25.5	46.7	21.3	V	54	11.5
17982.4	42.5	-25.5	46.7	21.3	V	54	11.5

Channel 134

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17979.7	42.6	-25.5	46.7	21.4	V	54	11.4
17989	42.6	-25.5	46.7	21.4	H	54	11.4
17981.3	42.5	-25.5	46.7	21.3	V	54	11.5
17985.7	42.5	-25.5	46.7	21.3	V	54	11.5
17990.1	42.5	-25.5	46.7	21.3	H	54	11.5
5725.4	39.4	-27.1	34.3	32.2	H	54	14.6

802.11ac-HT20

Channel 36

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17968.7	42.7	-25.5	46.7	21.5	V	54	11.3
17975.8	42.6	-25.5	46.7	21.4	H	54	11.4
17963.2	42.5	-25.5	46.7	21.3	V	54	11.5
17980.2	42.5	-25.5	46.7	21.3	H	54	11.5
17989.5	42.5	-25.5	46.7	21.3	H	54	11.5
5149.3	40.2	-27.6	33.7	34.1	H	54	13.8

Channel 40

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17978	42.6	-25.5	46.7	21.4	V	54	11.4
17987.9	42.6	-25.5	46.7	21.4	V	54	11.4
17998.3	42.5	-25.5	46.7	21.3	V	54	11.5
17970.8	42.4	-25.5	46.7	21.2	H	54	11.6
17974.7	42.4	-25.5	46.7	21.2	V	54	11.6
17977.5	42.4	-25.5	46.7	21.2	H	54	11.6

Channel 48

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17981.3	42.7	-25.5	46.7	21.5	V	54	11.3
17988.5	42.7	-25.5	46.7	21.5	V	54	11.3
17992.3	42.7	-25.5	46.7	21.5	H	54	11.3
17972.5	42.6	-25.5	46.7	21.4	V	54	11.4
17967	42.5	-25.5	46.7	21.3	V	54	11.5
17974.7	42.5	-25.5	46.7	21.3	V	54	11.5

Channel 52

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7013.2	42.9	-35.2	36.1	42	V	54	11.1
17969.8	42.1	-25.5	46.7	20.9	V	54	11.9
17994	41.7	-25.5	46.7	20.5	H	54	12.3
17995	41.7	-25.5	46.7	20.5	V	54	12.3
17976.3	41.6	-25.5	46.7	20.4	V	54	12.4
17976.9	41.6	-25.5	46.7	20.4	H	54	12.4

Channel 56

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7039.6	47.1	-35.4	36.2	46.2	V	54	6.9
7040.1	45.6	-35.4	36.2	44.7	V	54	8.4
17991.8	42.2	-25.5	46.7	21	H	54	11.8
17979.7	41.9	-25.5	46.7	20.7	H	54	12.1
17978.5	41.8	-25.5	46.7	20.6	H	54	12.2
17969.2	41.7	-25.5	46.7	20.5	H	54	12.3

Channel 64

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7092.9	42.2	-35.4	36.2	41.3	V	54	11.8
17993.4	42.2	-25.5	46.7	21	V	54	11.8
17976.9	41.9	-25.5	46.7	20.7	H	54	12.1
17975.2	41.7	-25.5	46.7	20.5	H	54	12.3
17978.5	41.6	-25.5	46.7	20.4	V	54	12.4
5351.8	39.2	-27.4	34	32.6	H	54	14.8

Channel 100

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17984.6	42.8	-25.5	46.7	21.6	V	54	11.2
17975.2	42.7	-25.5	46.7	21.5	H	54	11.3
17979.1	42.7	-25.5	46.7	21.5	V	54	11.3
17972.5	42.6	-25.5	46.7	21.4	V	54	11.4
17995	42.6	-25.5	46.7	21.4	H	54	11.4
5458.6	38.9	-27.2	34.2	31.9	H	54	15.1

Channel 120

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17987.3	42.6	-25.5	46.7	21.4	H	54	11.4
17972	42.5	-25.5	46.7	21.3	H	54	11.5
17979.7	42.5	-25.5	46.7	21.3	H	54	11.5
17984	42.5	-25.5	46.7	21.3	H	54	11.5
17995	42.5	-25.5	46.7	21.3	H	54	11.5
17968.7	42.4	-25.5	46.7	21.2	H	54	11.6

Channel 140

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17976.9	42.6	-25.5	46.7	21.4	H	54	11.4
17980.8	42.6	-25.5	46.7	21.4	H	54	11.4
17988.5	42.6	-25.5	46.7	21.4	V	54	11.4
17956	42.5	-25.5	46.7	21.3	H	54	11.5
17962.6	42.5	-25.5	46.7	21.3	V	54	11.5
5725.4	40.6	-27.1	34.3	33.4	H	54	13.4

802.11ac-HT40

Channel 38

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17991.2	42.8	-25.5	46.7	21.6	V	54	11.2
17975.8	42.7	-25.5	46.7	21.5	V	54	11.3
17963.2	42.6	-25.5	46.7	21.4	H	54	11.4
17986.2	42.6	-25.5	46.7	21.4	V	54	11.4
17955.5	42.5	-25.5	46.7	21.3	V	54	11.5
5149.7	44.8	-27.6	33.7	38.7	H	54	9.2

Channel 46

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17979.1	43	-25.5	46.7	21.8	V	54	11
17971.4	42.8	-25.5	46.7	21.6	H	54	11.2
17977.5	42.7	-25.5	46.7	21.5	V	54	11.3
17943.3	42.5	-25.5	46.7	21.3	V	54	11.5
17973	42.5	-25.5	46.7	21.3	V	54	11.5
17978	42.5	-25.5	46.7	21.3	H	54	11.5

Channel 54

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7026.4	43.7	-35.2	36.1	42.8	V	54	10.3
17991.8	42.1	-25.5	46.7	20.9	V	54	11.9
17980.8	42	-25.5	46.7	20.8	V	54	12
17968.1	41.8	-25.5	46.7	20.6	H	54	12.2
17969.8	41.8	-25.5	46.7	20.6	V	54	12.2
17972	41.8	-25.5	46.7	20.6	H	54	12.2

Channel 62

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7079.8	43.5	-35.4	36.2	42.6	V	54	10.5
17990.7	42.1	-25.5	46.7	20.9	V	54	11.9
17977.5	42	-25.5	46.7	20.8	V	54	12
17963.7	41.9	-25.5	46.7	20.7	H	54	12.1
17978.5	41.9	-25.5	46.7	20.7	H	54	12.1
5350.1	42.9	-27.4	34	36.3	H	54	11.1

Channel 102

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7346.5	44.4	-35.1	36.6	42.9	V	54	9.6
17973	42.6	-25.5	46.7	21.4	H	54	11.4
17981.8	42.6	-25.5	46.7	21.4	V	54	11.4
17983	42.6	-25.5	46.7	21.4	V	54	11.4
17972.5	42.4	-25.5	46.7	21.2	V	54	11.6
5459.4	40	-27.2	34.2	33	H	54	14

Channel 118

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17968.7	42.5	-25.5	46.7	21.3	V	54	11.5
17987.9	42.5	-25.5	46.7	21.3	V	54	11.5
17964.8	42.4	-25.5	46.7	21.2	H	54	11.6
17967	42.4	-25.5	46.7	21.2	V	54	11.6
17972.5	42.4	-25.5	46.7	21.2	H	54	11.6
17979.1	42.4	-25.5	46.7	21.2	V	54	11.6

Channel 134

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17981.8	42.9	-25.5	46.7	21.7	V	54	11.1
17980.2	42.7	-25.5	46.7	21.5	V	54	11.3
17992.8	42.5	-25.5	46.7	21.3	V	54	11.5
17931.2	42.4	-25.5	46.7	21.2	V	54	11.6
17965.9	42.4	-25.5	46.7	21.2	H	54	11.6
5725.9	39.5	-27.1	34.3	32.3	H	54	14.5

802.11ac-HT80

Channel 42

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17994	42.4	-25.5	46.7	21.2	V	54	11.6
17892.8	42.2	-25.5	46.7	21	V	54	11.8
17979.1	42.2	-25.5	46.7	21	H	54	11.8
17998.3	42.2	-25.5	46.7	21	H	54	11.8
17951.6	42.1	-25.5	46.7	20.9	V	54	11.9
5148.3	44.4	-27.6	33.7	38.3	H	54	9.6

Channel 58

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
7053.4	45.9	-35.4	36.2	45	V	54	8.1
17994	42.3	-25.5	46.7	21.1	V	54	11.7
17978	42.1	-25.5	46.7	20.9	H	54	11.9
17989.5	42.1	-25.5	46.7	20.9	H	54	11.9
17973	42	-25.5	46.7	20.8	H	54	12
5350.1	43.2	-27.4	34	36.6	H	54	10.8

Channel 106

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17987.3	42.9	-25.5	46.7	21.7	H	54	11.1
17981.8	42.6	-25.5	46.7	21.4	H	54	11.4
17969.8	42.5	-25.5	46.7	21.3	H	54	11.5
17978	42.5	-25.5	46.7	21.3	H	54	11.5
17996.2	42.5	-25.5	46.7	21.3	H	54	11.5
5458	43.3	-27.2	34.2	36.3	H	54	10.7

Channel 122

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17983	42.7	-25.5	46.7	21.5	V	54	11.3
17985.2	42.6	-25.5	46.7	21.4	V	54	11.4
17994.5	42.6	-25.5	46.7	21.4	V	54	11.4
17957.7	42.5	-25.5	46.7	21.3	H	54	11.5
17986.2	42.5	-25.5	46.7	21.3	V	54	11.5
5725.2	39.4	-27.1	34.3	32.2	H	54	14.6

Peak

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Channel 36

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17908.7	54.7	-25.5	46.7	33.5	V	74	19.3
17888.9	53.9	-25.5	46.7	32.7	H	74	20.1
17946.1	53.5	-25.5	46.7	32.3	V	74	20.5
17958.8	53.4	-25.5	46.7	32.2	V	74	20.6
17976.9	53.4	-25.5	46.7	32.2	V	74	20.6
5148.6	63.9	-27.6	33.7	57.8	H	74	10.1

Channel 40

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17974.2	53.7	-25.5	46.7	32.5	H	74	20.3
17951.6	53.6	-25.5	46.7	32.4	V	74	20.4
17617.2	53.5	-25.7	46	33.3	V	74	20.5
17804.2	53.5	-25.5	46.7	32.3	V	74	20.5
17935.1	53.5	-25.5	46.7	32.3	H	74	20.5
17871.8	53.4	-25.5	46.7	32.2	V	74	20.6

Channel 48

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17980.8	54.5	-25.5	46.7	33.3	H	74	19.5
17976.3	54.3	-25.5	46.7	33.1	H	74	19.7
17961	54.2	-25.5	46.7	33	V	74	19.8
17991.8	53.8	-25.5	46.7	32.6	H	74	20.2
17977.5	53.7	-25.5	46.7	32.5	V	74	20.3
17972.5	53.5	-25.5	46.7	32.3	V	74	20.5

Channel 52

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17912.5	53.1	-25.5	46.7	31.9	H	74	20.9
17905.4	53	-25.5	46.7	31.8	V	74	21
17986.8	52.9	-25.5	46.7	31.7	H	74	21.1
17962	52.8	-25.5	46.7	31.6	V	74	21.2
17910.9	52.7	-25.5	46.7	31.5	V	74	21.3
17866.3	52.6	-25.5	46.7	31.4	H	74	21.4

Channel 56

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17973.6	53.7	-25.5	46.7	32.5	V	74	20.3
17998.9	53.1	-25.5	46.7	31.9	V	74	20.9
17795.4	52.8	-25.5	46.7	31.6	V	74	21.2
17969.2	52.8	-25.5	46.7	31.6	H	74	21.2
17995	52.7	-25.5	46.7	31.5	H	74	21.3
17954.3	52.5	-25.5	46.7	31.3	V	74	21.5

Channel 64

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17942.2	53.2	-25.5	46.7	32	H	74	20.8
17966.5	53	-25.5	46.7	31.8	H	74	21
17879.5	52.9	-25.5	46.7	31.7	H	74	21.1
17788.2	52.6	-25.5	46.7	31.4	V	74	21.4
17866.9	52.6	-25.5	46.7	31.4	H	74	21.4
5350.8	58.4	-27.4	34	51.8	H	74	15.6

Channel 100

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17862.5	54.1	-25.5	46.7	32.9	H	74	19.9
17952.7	53.9	-25.5	46.7	32.7	H	74	20.1
17971.4	53.8	-25.5	46.7	32.6	H	74	20.2
17868.5	53.7	-25.5	46.7	32.5	V	74	20.3
17888.3	53.7	-25.5	46.7	32.5	H	74	20.3
5458.3	56.2	-27.2	34.2	49.2	H	74	17.8

Channel 120

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17998.9	55	-25.5	46.7	33.8	V	74	19
17912	54	-25.5	46.7	32.8	H	74	20
17880.1	53.7	-25.5	46.7	32.5	V	74	20.3
17899.9	53.7	-25.5	46.7	32.5	V	74	20.3
17882.8	53.6	-25.5	46.7	32.4	V	74	20.4
17985.2	53.5	-25.5	46.7	32.3	H	74	20.5

Channel 140

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17977.5	54.2	-25.5	46.7	33	V	74	19.8
17413.2	53.8	-26.9	45.2	35.4	H	74	20.2
17887.8	53.7	-25.5	46.7	32.5	H	74	20.3
17973	53.5	-25.5	46.7	32.3	H	74	20.5
17976.9	53.4	-25.5	46.7	32.2	V	74	20.6
5725.1	63.6	-27.1	34.3	56.4	H	74	10.4

802.11n-HT20

Channel 36

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17880.1	54.5	-25.5	46.7	33.3	V	74	19.5
17984	54.4	-25.5	46.7	33.2	H	74	19.6
17852	53.8	-25.5	46.7	32.6	V	74	20.2
17997.2	53.8	-25.5	46.7	32.6	V	74	20.2
17401	53.7	-26.9	45.2	35.3	V	74	20.3
5149.6	63.6	-27.6	33.7	57.5	H	74	10.4

Channel 40

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17974.7	54.7	-25.5	46.7	33.5	H	74	19.3
17860.3	53.6	-25.5	46.7	32.4	V	74	20.4
17881.2	53.6	-25.5	46.7	32.4	H	74	20.4
17993.4	53.6	-25.5	46.7	32.4	V	74	20.4
17870.2	53.5	-25.5	46.7	32.3	V	74	20.5
17942.2	53.5	-25.5	46.7	32.3	V	74	20.5

Channel 48

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17951.6	53.9	-25.5	46.7	32.7	V	74	20.1
17964.2	53.9	-25.5	46.7	32.7	H	74	20.1
17946.1	53.6	-25.5	46.7	32.4	V	74	20.4
17997.8	53.6	-25.5	46.7	32.4	V	74	20.4
17895.5	53.5	-25.5	46.7	32.3	H	74	20.5
17912.5	53.5	-25.5	46.7	32.3	H	74	20.5

Channel 52

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17877.3	53.1	-25.5	46.7	31.9	H	74	20.9
17950.5	53.1	-25.5	46.7	31.9	V	74	20.9
17839.4	52.9	-25.5	46.7	31.7	H	74	21.1
17955.5	52.8	-25.5	46.7	31.6	H	74	21.2
17711.8	52.7	-25.7	46	32.5	V	74	21.3
17859.8	52.7	-25.5	46.7	31.5	V	74	21.3

Channel 56

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17984	54.2	-25.5	46.7	33	H	74	19.8
17957.1	53	-25.5	46.7	31.8	H	74	21
17964.2	53	-25.5	46.7	31.8	H	74	21
17964.8	52.9	-25.5	46.7	31.7	V	74	21.1
17895	52.8	-25.5	46.7	31.6	V	74	21.2
17794.3	52.5	-25.5	46.7	31.3	V	74	21.5

Channel 64

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17913.7	53.7	-25.5	46.7	32.5	V	74	20.3
17785	53.5	-25.5	46.7	32.3	H	74	20.5
17952.2	53.2	-25.5	46.7	32	V	74	20.8
17898.8	53	-25.5	46.7	31.8	V	74	21
17995	53	-25.5	46.7	31.8	V	74	21
5350.5	60.1	-27.4	34	53.5	H	74	13.9

Channel 100

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17975.2	54.3	-25.5	46.7	33.1	V	74	19.7
17934	53.9	-25.5	46.7	32.7	V	74	20.1
17996.2	53.8	-25.5	46.7	32.6	H	74	20.2
17985.2	53.6	-25.5	46.7	32.4	H	74	20.4
17994	53.5	-25.5	46.7	32.3	H	74	20.5
5456.6	55.6	-27.2	34.2	48.6	H	74	18.4

Channel 120

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17987.9	53.9	-25.5	46.7	32.7	H	74	20.1
17896	53.8	-25.5	46.7	32.6	H	74	20.2
17937.8	53.8	-25.5	46.7	32.6	V	74	20.2
17981.8	53.8	-25.5	46.7	32.6	V	74	20.2
17951.6	53.6	-25.5	46.7	32.4	H	74	20.4
17972.5	53.5	-25.5	46.7	32.3	H	74	20.5

Channel 140

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17963.7	53.9	-25.5	46.7	32.7	V	74	20.1
17978	53.8	-25.5	46.7	32.6	V	74	20.2
17993.4	53.7	-25.5	46.7	32.5	V	74	20.3
17955.5	53.6	-25.5	46.7	32.4	V	74	20.4
17978.5	53.5	-25.5	46.7	32.3	V	74	20.5
5726.1	63.2	-27.1	34.3	56	H	74	10.8

802.11n-HT40

Channel 38

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17958.2	54.8	-25.5	46.7	33.6	V	74	19.2
17959.3	54.7	-25.5	46.7	33.5	V	74	19.3
17982.4	53.9	-25.5	46.7	32.7	V	74	20.1
17978.5	53.8	-25.5	46.7	32.6	H	74	20.2
17864.7	53.6	-25.5	46.7	32.4	V	74	20.4
5149.8	63.3	-27.6	33.7	57.2	H	74	10.7

Channel 46

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17937.3	54.5	-25.5	46.7	33.3	H	74	19.5
17893.8	54.3	-25.5	46.7	33.1	H	74	19.7
17885	53.9	-25.5	46.7	32.7	V	74	20.1
17980.8	53.8	-25.5	46.7	32.6	V	74	20.2
17985.2	53.7	-25.5	46.7	32.5	H	74	20.3
17892.8	53.5	-25.5	46.7	32.3	V	74	20.5

Channel 54

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17984	53	-25.5	46.7	31.8	H	74	21
17987.3	53	-25.5	46.7	31.8	H	74	21
17989	53	-25.5	46.7	31.8	V	74	21
17963.2	52.8	-25.5	46.7	31.6	H	74	21.2
17972.5	52.8	-25.5	46.7	31.6	V	74	21.2
17932.9	52.7	-25.5	46.7	31.5	V	74	21.3

Channel 62

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17961	53.2	-25.5	46.7	32	H	74	20.8
17983	52.9	-25.5	46.7	31.7	V	74	21.1
17886.7	52.8	-25.5	46.7	31.6	V	74	21.2
17800.9	52.7	-25.5	46.7	31.5	V	74	21.3
17882.3	52.7	-25.5	46.7	31.5	H	74	21.3
5351	63	-27.4	34	56.4	H	74	11

Channel 102

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17977.5	54	-25.5	46.7	32.8	H	74	20
17501.7	53.9	-26.9	45.2	35.5	H	74	20.1
17954.9	53.9	-25.5	46.7	32.7	H	74	20.1
17863.6	53.7	-25.5	46.7	32.5	V	74	20.3
17967	53.6	-25.5	46.7	32.4	H	74	20.4
5456.3	60.2	-27.2	34.2	53.2	H	74	13.8

Channel 118

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17968.7	53.8	-25.5	46.7	32.6	V	74	20.2
17986.8	53.8	-25.5	46.7	32.6	V	74	20.2
17975.2	53.7	-25.5	46.7	32.5	H	74	20.3
17971.4	53.6	-25.5	46.7	32.4	H	74	20.4
17945.5	53.5	-25.5	46.7	32.3	V	74	20.5
17995	53.5	-25.5	46.7	32.3	V	74	20.5

Channel 134

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17968.7	53.8	-25.5	46.7	32.6	V	74	20.2
17986.8	53.8	-25.5	46.7	32.6	V	74	20.2
17975.2	53.7	-25.5	46.7	32.5	H	74	20.3
17971.4	53.6	-25.5	46.7	32.4	H	74	20.4
17945.5	53.5	-25.5	46.7	32.3	V	74	20.5
17995	53.5	-25.5	46.7	32.3	V	74	20.5

802.11ac-HT20

Channel 36

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17963.7	54.6	-25.5	46.7	33.4	H	74	19.4
17980.2	54.1	-25.5	46.7	32.9	H	74	19.9
17912	54	-25.5	46.7	32.8	V	74	20
17880.7	53.8	-25.5	46.7	32.6	V	74	20.2
17962.6	53.8	-25.5	46.7	32.6	V	74	20.2
5148.3	62.2	-27.6	33.7	56.1	H	74	11.8

Channel 40

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17761.3	54.3	-25.5	46.7	33.1	V	74	19.7
17916.4	53.8	-25.5	46.7	32.6	H	74	20.2
17860.3	53.6	-25.5	46.7	32.4	V	74	20.4
17983	53.6	-25.5	46.7	32.4	V	74	20.4
17785	53.4	-25.5	46.7	32.2	H	74	20.6
17888.9	53.4	-25.5	46.7	32.2	H	74	20.6

Channel 48

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17798.7	53.7	-25.5	46.7	32.5	V	74	20.3
17878.5	53.5	-25.5	46.7	32.3	V	74	20.5
17892.2	53.5	-25.5	46.7	32.3	V	74	20.5
17896.6	53.4	-25.5	46.7	32.2	H	74	20.6
17920.8	53.4	-25.5	46.7	32.2	V	74	20.6
17967.5	53.4	-25.5	46.7	32.2	H	74	20.6

Channel 52

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17987.3	53.1	-25.5	46.7	31.9	V	74	20.9
17861.4	53	-25.5	46.7	31.8	H	74	21
17981.3	52.4	-25.5	46.7	31.2	H	74	21.6
17840.5	52.3	-25.5	46.7	31.1	H	74	21.7
17991.2	52.3	-25.5	46.7	31.1	H	74	21.7
17884	52.2	-25.5	46.7	31	V	74	21.8

Channel 56

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17997.2	53.3	-25.5	46.7	32.1	H	74	20.7
17984	53.1	-25.5	46.7	31.9	V	74	20.9
17973	53	-25.5	46.7	31.8	H	74	21
17943.9	52.8	-25.5	46.7	31.6	H	74	21.2
17952.2	52.8	-25.5	46.7	31.6	H	74	21.2
17589.7	52.6	-25.7	46	32.4	H	74	21.4

Channel 64

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17495.1	53.4	-26.9	45.2	35	V	74	20.6
17944.5	53.2	-25.5	46.7	32	H	74	20.8
17970.8	53.1	-25.5	46.7	31.9	V	74	20.9
17852	53	-25.5	46.7	31.8	V	74	21
17937.8	53	-25.5	46.7	31.8	V	74	21
5350.9	59.8	-27.4	34	53.2	H	74	14.2

Channel 100

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17972.5	53.7	-25.5	46.7	32.5	V	74	20.3
17992.8	53.7	-25.5	46.7	32.5	V	74	20.3
17893.8	53.6	-25.5	46.7	32.4	V	74	20.4
17988.5	53.6	-25.5	46.7	32.4	V	74	20.4
17996.7	53.6	-25.5	46.7	32.4	H	74	20.4
5457.6	57.1	-27.2	34.2	50.1	H	74	16.9

Channel 120

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17973.6	54.8	-25.5	46.7	33.6	V	74	19.2
17967	53.8	-25.5	46.7	32.6	H	74	20.2
17957.1	53.7	-25.5	46.7	32.5	V	74	20.3
17975.2	53.5	-25.5	46.7	32.3	V	74	20.5
17455.5	53.4	-26.9	45.2	35	V	74	20.6
17992.3	53.4	-25.5	46.7	32.2	V	74	20.6

Channel 140

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17993.4	55.3	-25.5	46.7	34.1	V	74	18.7
17893.3	54.2	-25.5	46.7	33	V	74	19.8
17991.2	53.8	-25.5	46.7	32.6	V	74	20.2
17907.6	53.7	-25.5	46.7	32.5	H	74	20.3
17891.7	53.4	-25.5	46.7	32.2	V	74	20.6
5725.6	63.1	-27.1	34.3	55.9	H	74	10.9

802.11ac-HT40

Channel 38

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17988.5	54.5	-25.5	46.7	33.3	V	74	19.5
17970.8	54.2	-25.5	46.7	33	V	74	19.8
17990.1	53.9	-25.5	46.7	32.7	H	74	20.1
17890.5	53.8	-25.5	46.7	32.6	H	74	20.2
17993.4	53.8	-25.5	46.7	32.6	H	74	20.2
5149.4	63.4	-27.6	33.7	57.3	H	74	10.6

Channel 46

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17979.1	55	-25.5	46.7	33.8	V	74	19
17909.2	54	-25.5	46.7	32.8	H	74	20
17990.7	54	-25.5	46.7	32.8	V	74	20
17991.8	54	-25.5	46.7	32.8	V	74	20
17869.7	53.8	-25.5	46.7	32.6	H	74	20.2
17917.5	53.5	-25.5	46.7	32.3	V	74	20.5

Channel 54

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17453.8	52.8	-26.9	45.2	34.4	V	74	21.2
17980.2	52.8	-25.5	46.7	31.6	V	74	21.2
17957.7	52.7	-25.5	46.7	31.5	H	74	21.3
17972	52.7	-25.5	46.7	31.5	H	74	21.3
17540.2	52.6	-26.9	45.2	34.2	H	74	21.4
17803.1	52.6	-25.5	46.7	31.4	V	74	21.4

Channel 62

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17951.6	53.4	-25.5	46.7	32.2	H	74	20.6
17921.9	53	-25.5	46.7	31.8	H	74	21
17975.2	53	-25.5	46.7	31.8	V	74	21
17962	52.9	-25.5	46.7	31.7	V	74	21.1
17875.2	52.8	-25.5	46.7	31.6	H	74	21.2
5350.3	61.6	-27.4	34	55	H	74	12.4

Channel 102

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17994	54.6	-25.5	46.7	33.4	V	74	19.4
17997.8	53.9	-25.5	46.7	32.7	V	74	20.1
17974.2	53.8	-25.5	46.7	32.6	H	74	20.2
17986.2	53.8	-25.5	46.7	32.6	H	74	20.2
17618.8	53.6	-25.7	46	33.4	V	74	20.4
5458.4	60.5	-27.2	34.2	53.5	H	74	13.5

Channel 118

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17972	54.7	-25.5	46.7	33.5	V	74	19.3
17918.6	54	-25.5	46.7	32.8	V	74	20
17834.5	53.8	-25.5	46.7	32.6	H	74	20.2
17905.4	53.6	-25.5	46.7	32.4	V	74	20.4
17974.2	53.6	-25.5	46.7	32.4	H	74	20.4
17994.5	53.5	-25.5	46.7	32.3	V	74	20.5

Channel 134

Frequency (MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17992.8	54	-25.5	46.7	32.8	V	74	20
17855.9	53.9	-25.5	46.7	32.7	H	74	20.1
17980.8	53.8	-25.5	46.7	32.6	V	74	20.2
17989.5	53.7	-25.5	46.7	32.5	V	74	20.3
17933.5	53.6	-25.5	46.7	32.4	H	74	20.4
5725.7	59	-27.1	34.3	51.8	H	74	15

802.11ac-HT80

Channel 42

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17938.4	53.7	-25.5	46.7	32.5	V	74	20.3
17891.7	53.6	-25.5	46.7	32.4	V	74	20.4
17958.2	53.1	-25.5	46.7	31.9	H	74	20.9
17990.1	53	-25.5	46.7	31.8	H	74	21
17882.8	52.9	-25.5	46.7	31.7	V	74	21.1
5145.3	58.5	-27.6	33.7	52.4	H	74	15.5

Channel 58

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17989.5	54.3	-25.5	46.7	33.1	H	74	19.7
17973	53.8	-25.5	46.7	32.6	H	74	20.2
17993.4	53.6	-25.5	46.7	32.4	H	74	20.4
17973.6	53.2	-25.5	46.7	32	V	74	20.8
17956	53.1	-25.5	46.7	31.9	V	74	20.9
5352	57.3	-27.4	34	50.7	H	74	16.7

Channel 106

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17960.4	54	-25.5	46.7	32.8	V	74	20
17946.1	53.6	-25.5	46.7	32.4	V	74	20.4
17975.2	53.6	-25.5	46.7	32.4	V	74	20.4
17492.9	53.5	-26.9	45.2	35.1	V	74	20.5
17852	53.4	-25.5	46.7	32.2	H	74	20.6
5453.2	57.7	-27.2	34.2	50.7	H	74	16.3

Channel 122

Frequency (MHz)	Result (dBuV/m)	Cable Loss (dB)	Antenna Factor	P_{Mea} (dBuV/m)	Polarization	Limit (dBuV/m)	Magin (dBuV/m)
17995.6	54.9	-25.5	46.7	33.7	H	74	19.1
17989	53.7	-25.5	46.7	32.5	V	74	20.3
17903.8	53.6	-25.5	46.7	32.4	H	74	20.4
17910.3	53.6	-25.5	46.7	32.4	V	74	20.4
17945.5	53.3	-25.5	46.7	32.1	H	74	20.7
5736.5	53.6	-27.1	34.3	46.4	H	74	20.4

Sample calculation:
802.11ac 80MHz CH106–Peak, 5450.080 MHz
Result (dBμV/m) = PMea(59.44) + Cable Loss(-32.7) + Antenna Factor(34.6) = 61.3dBuV/m

A.7. AC Powerline Conducted Emission (150kHz- 30MHz)

Test Condition:

Voltage（V）	Frequency（Hz）
110	60

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	66 to 56	Fig.58	Fig.59	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	56 to 46	Fig.58	Fig.59	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Conclusion: PASS

Test graphs as below:

Result for Traffic:

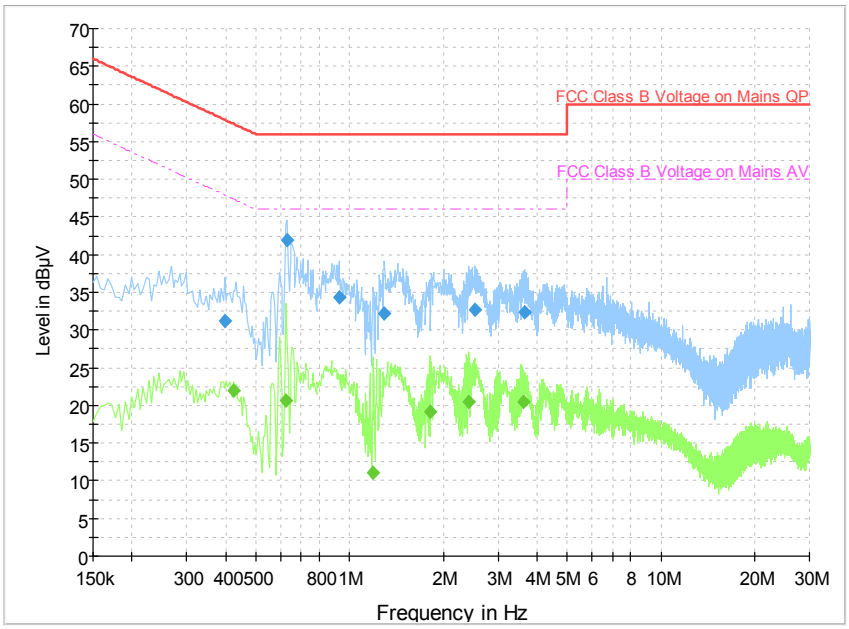


Fig.58 Conducted Emission (802.11a, Ch40, TX)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.397500	31.2	L1	19.6	26.7	57.9
0.631500	41.9	L1	19.6	14.1	56.0
0.924000	34.3	L1	19.6	21.7	56.0
1.293000	32.3	L1	19.6	23.7	56.0
2.517000	32.7	L1	19.6	23.3	56.0
3.651000	32.4	L1	19.7	23.6	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.424500	21.9	L1	19.6	25.4	47.4
0.622500	20.6	L1	19.6	25.4	46.0
1.189500	11.1	L1	19.6	34.9	46.0
1.806000	19.2	L1	19.5	26.8	46.0
2.409000	20.4	L1	19.6	25.6	46.0
3.615000	20.5	L1	19.7	25.5	46.0

Result for Idle:

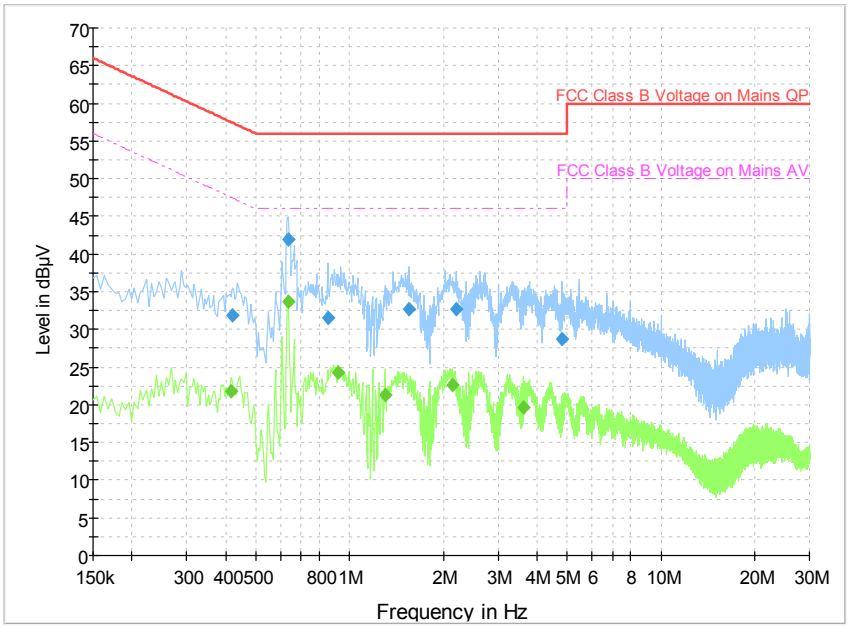


Fig.59 Conducted Emission (802.11a, IDLE)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.420000	31.9	L1	19.6	25.5	57.4
0.636000	41.9	L1	19.6	14.1	56.0
0.852000	31.6	L1	19.6	24.4	56.0
1.554000	32.6	L1	19.6	23.4	56.0
2.202000	32.6	L1	19.6	23.4	56.0
4.807500	28.7	L1	19.8	27.3	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.415500	21.8	L1	19.6	25.8	47.5
0.636000	33.7	L1	19.6	12.3	46.0
0.919500	24.2	L1	19.6	21.8	46.0
1.297500	21.3	L1	19.6	24.7	46.0
2.134500	22.7	L1	19.5	23.3	46.0
3.606000	19.6	L1	19.7	26.4	46.0

B.8. 99% Occupied bandwidth

Method of Measurement: See ANSI C63.10-2013-clause 12.4.2.

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

d) Step a) through step c) might require iteration to adjust within the specified range.

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

f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

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

h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz

Measurement Result:

Mode	Frequency	99% Occupied bandwidth (MHz)		conclusion
802.11a	5180 MHz	Fig.60	16.56	P
	5200 MHz	Fig.61	16.56	P
	5240 MHz	Fig.62	16.56	P
802.11n-HT20	5180 MHz	Fig.63	17.56	P
	5200 MHz	Fig.64	17.56	P
	5240 MHz	Fig.65	17.56	P
802.11n HT40	5190 MHz	Fig.66	36.00	P
	5230 MHz	Fig.67	36.00	P
802.11ac HT80	5210 MHz	Fig.68	75.04	P

Conclusion: PASS

Test graphs as below:

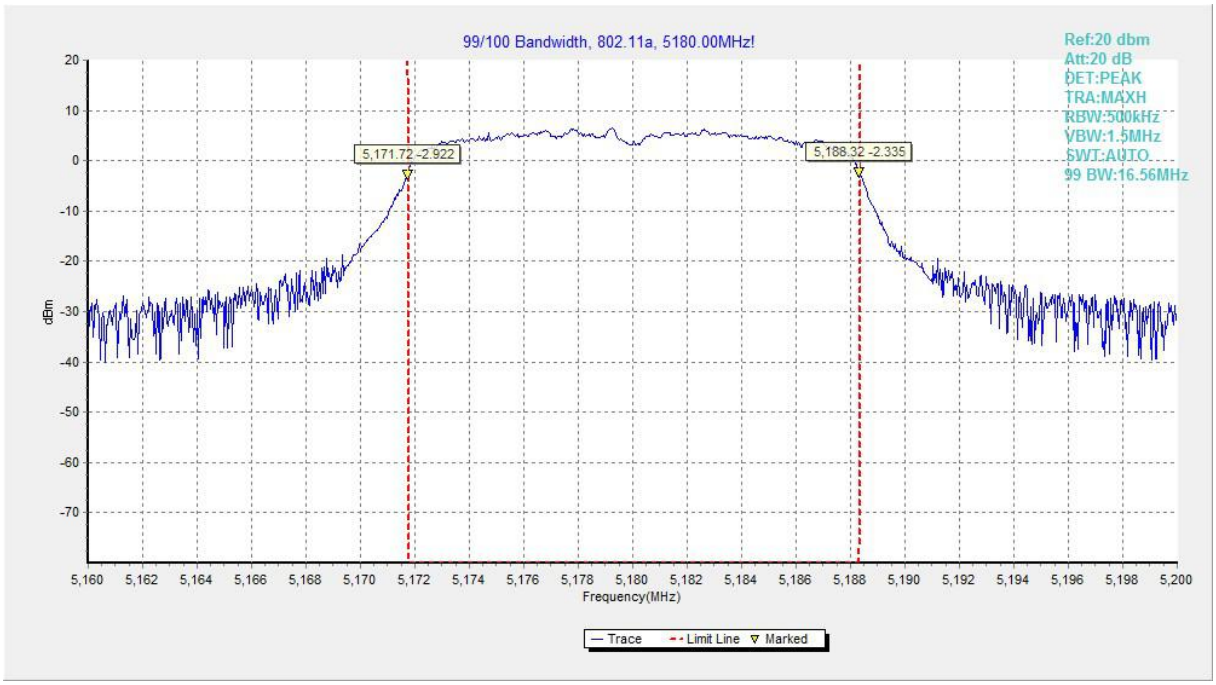


Fig.60 99% Occupied bandwidth (802.11a, 5180MHz)

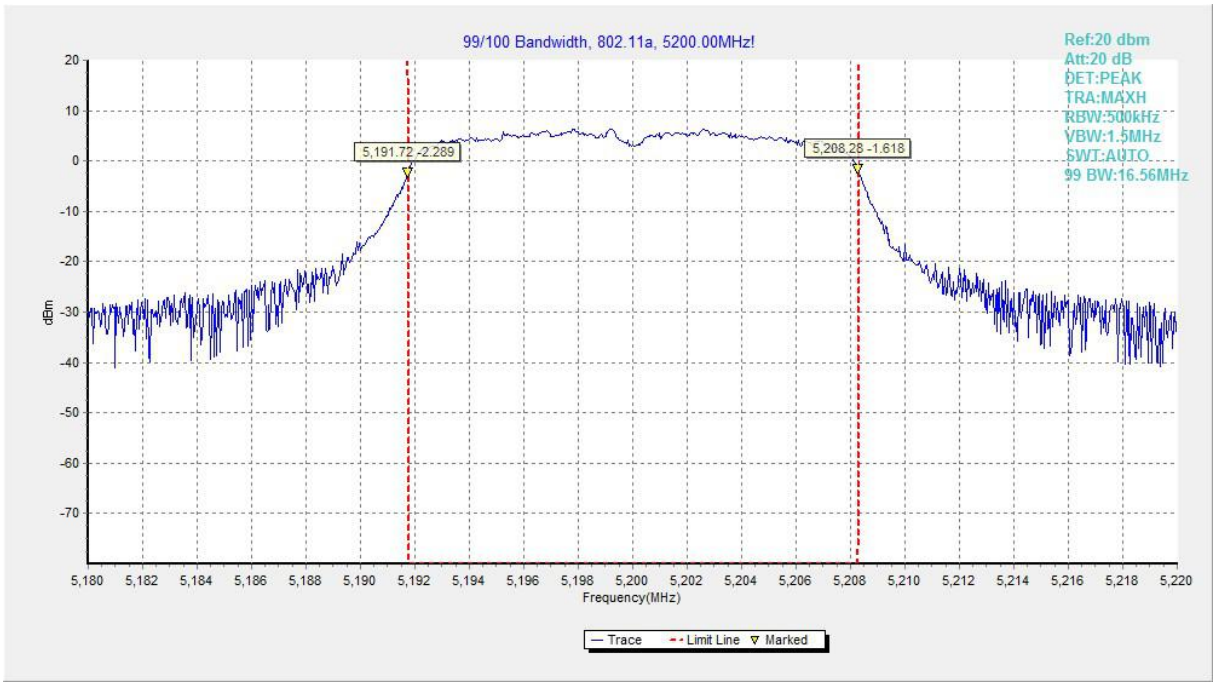


Fig.61 99% Occupied bandwidth (802.11a, 5200MHz)

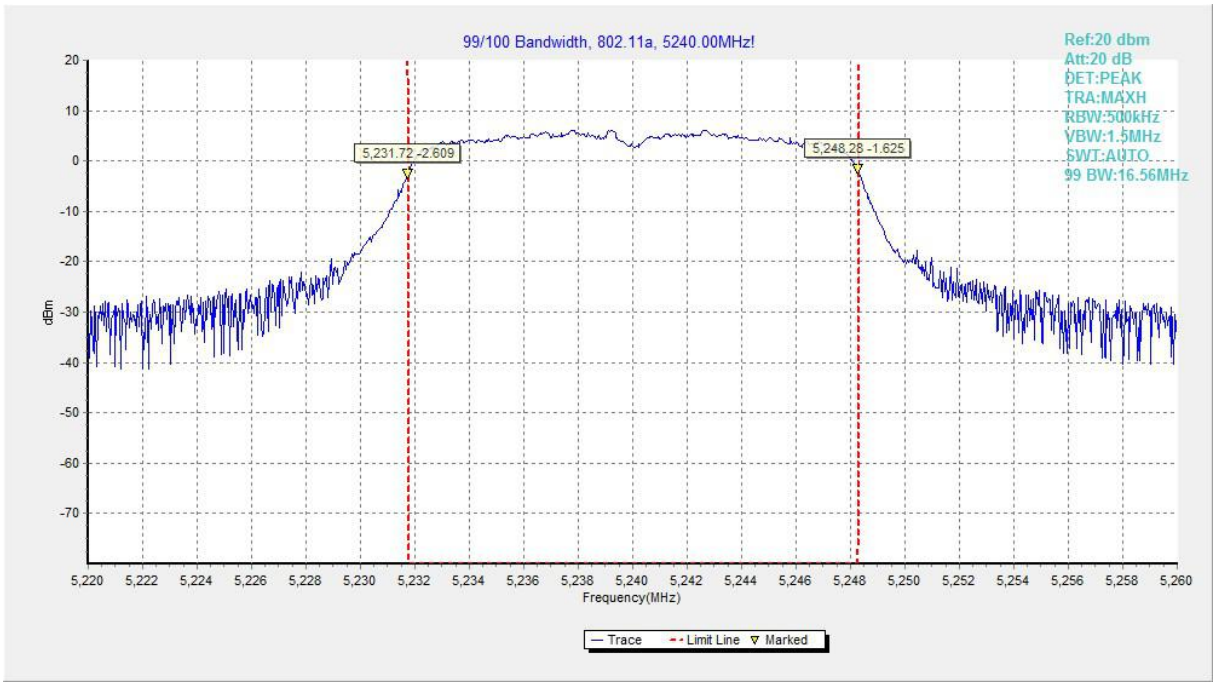


Fig.62 99% Occupied bandwidth (802.11a, 5240MHz)

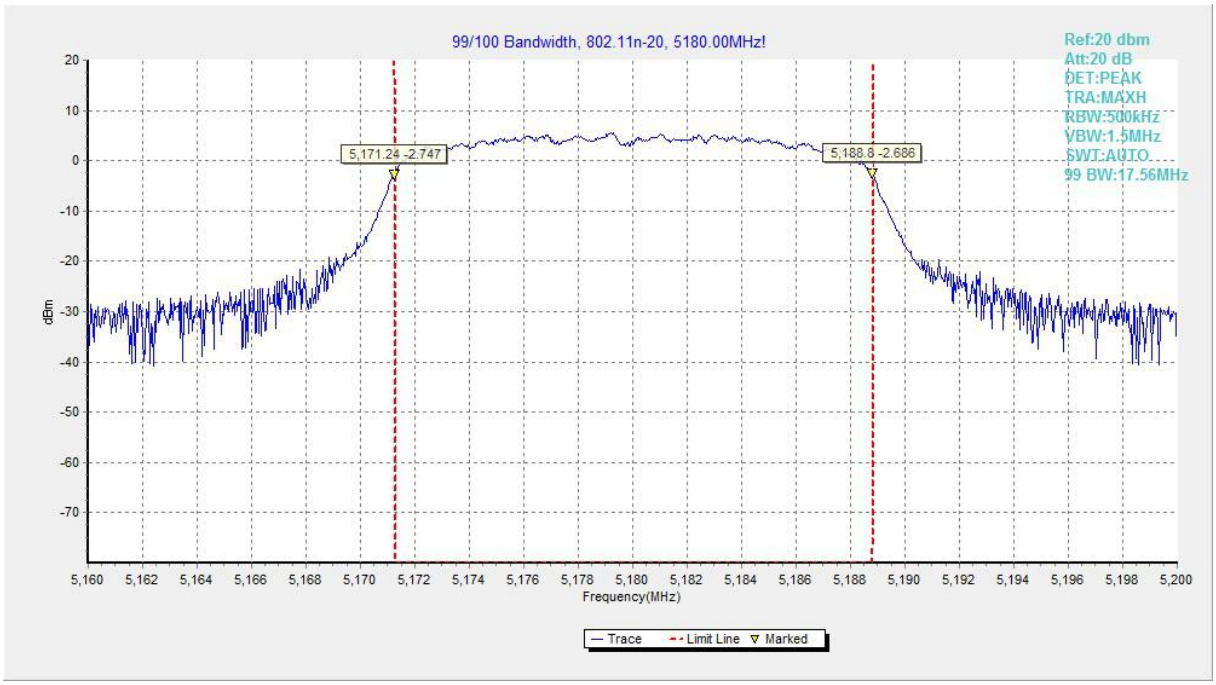


Fig.63 99% Occupied bandwidth (802.11n-HT20, 5180MHz)

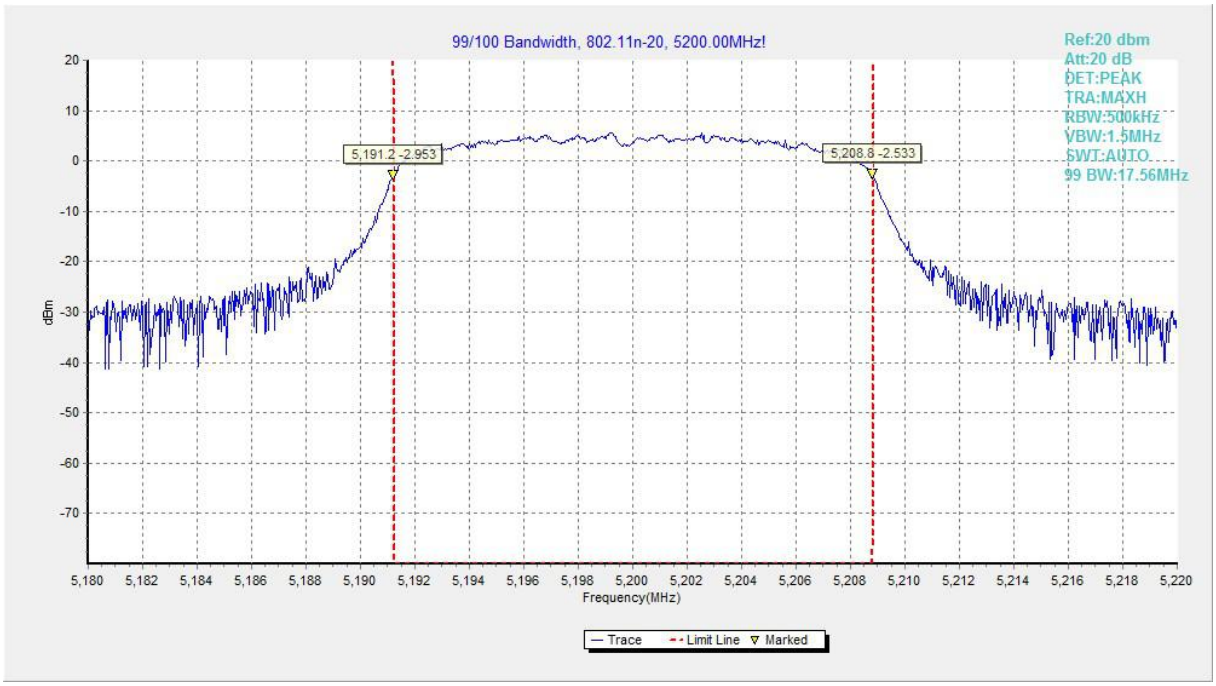


Fig.64 99% Occupied bandwidth (802.11 n-HT20, 5200MHz)

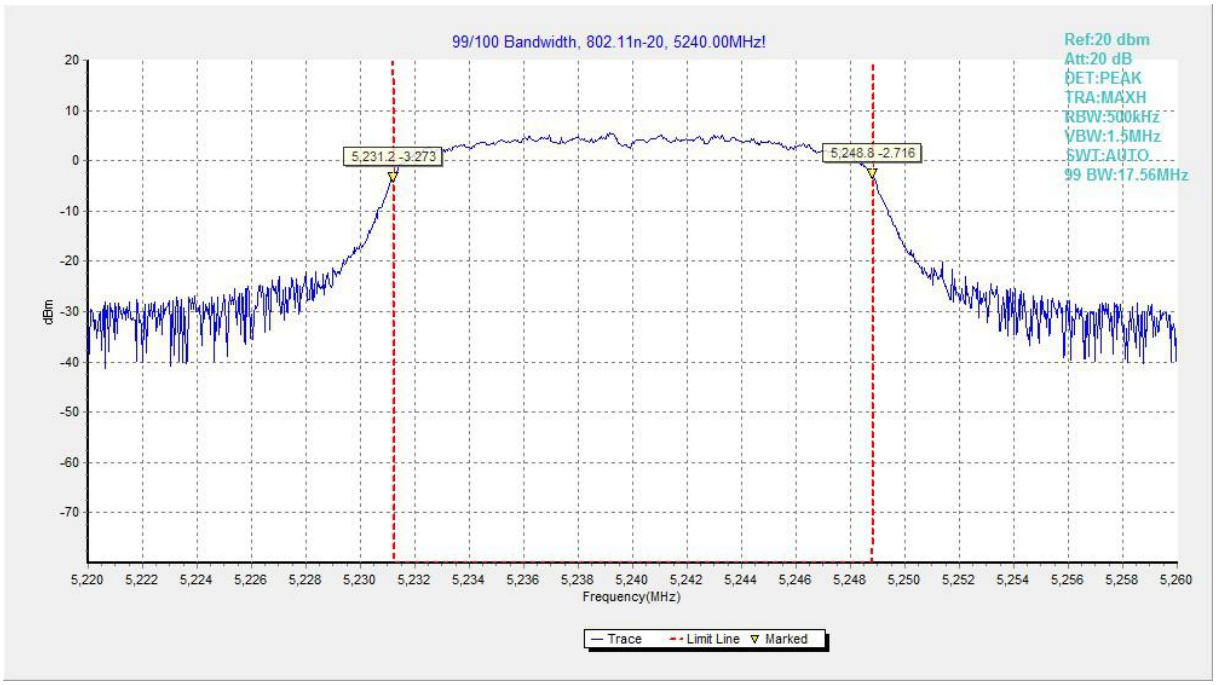


Fig.65 99% Occupied bandwidth (802.11 n-HT20, 5240MHz)

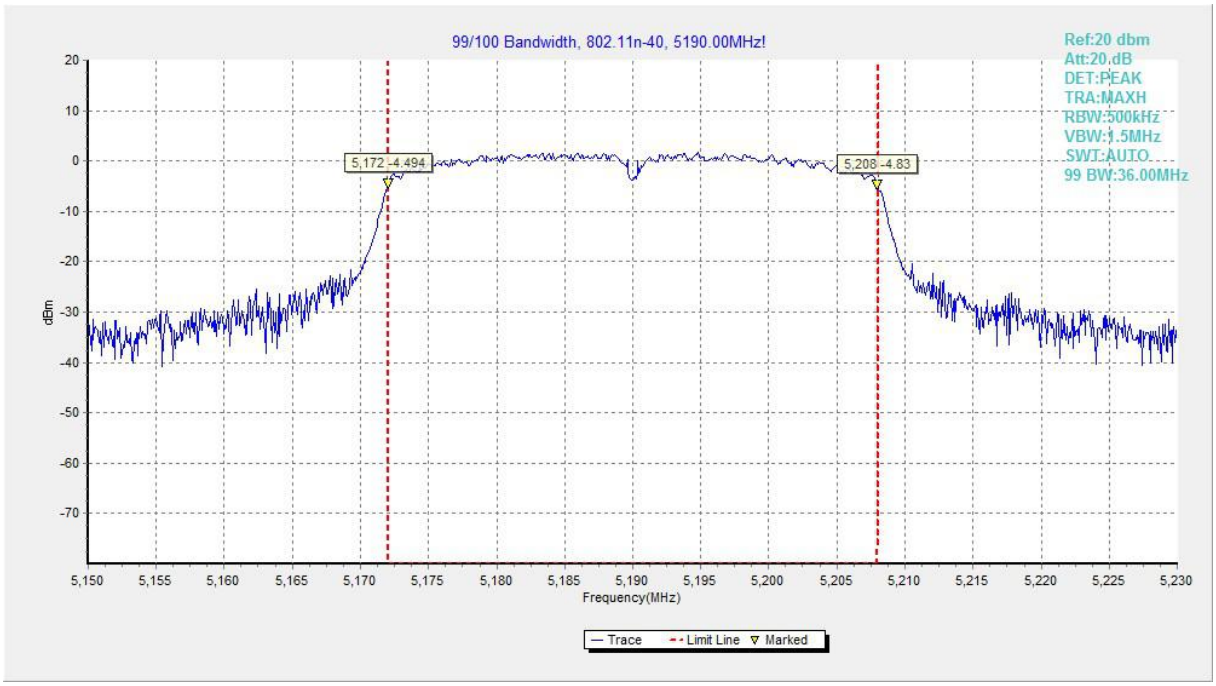


Fig.66 99% Occupied bandwidth (802.11n-HT40, 5190MHz)

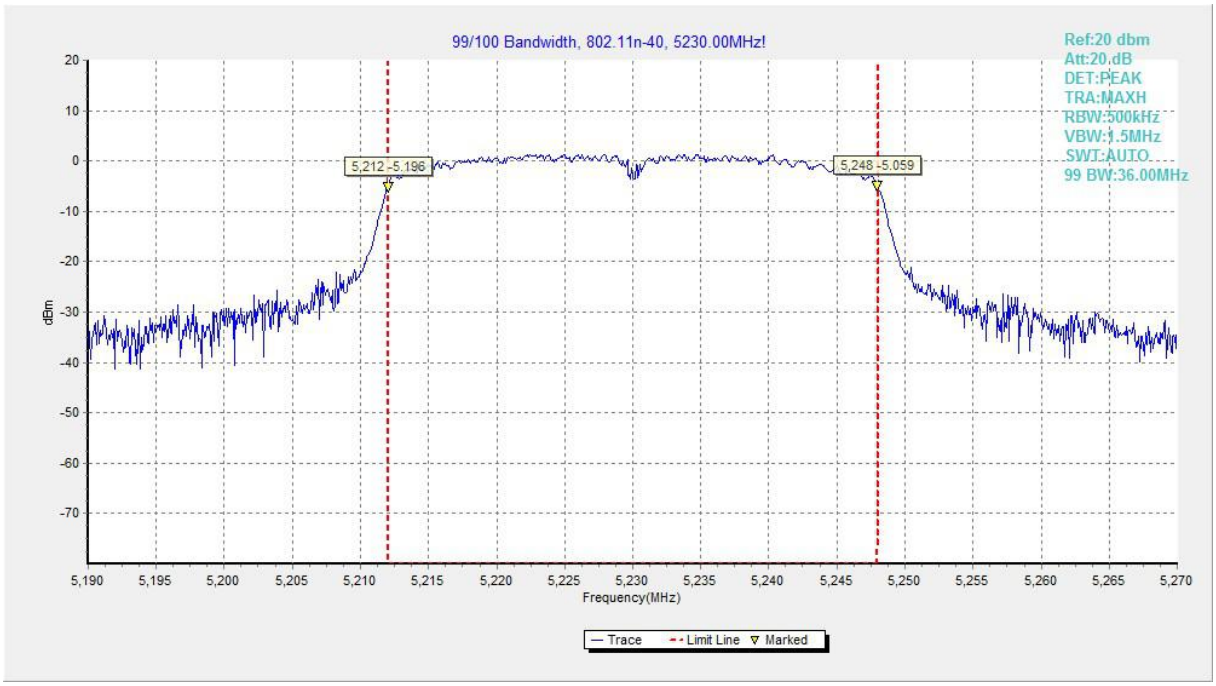


Fig.67 99% Occupied bandwidth (802.11n-HT40, 5230MHz)

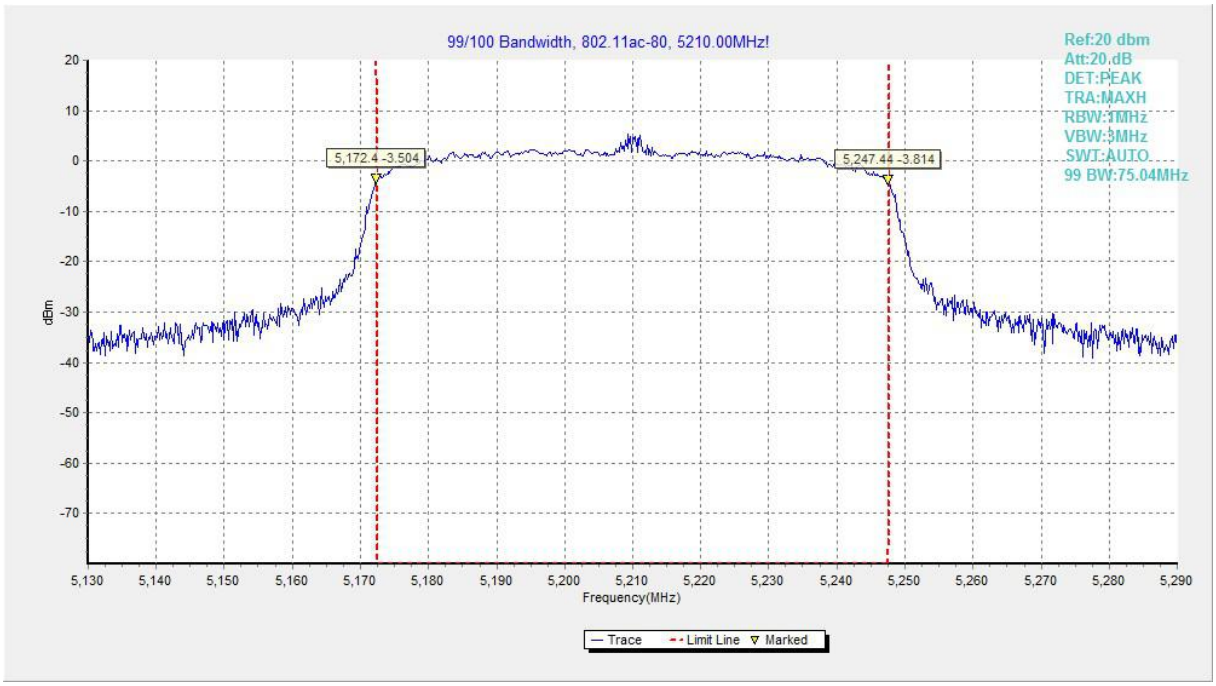
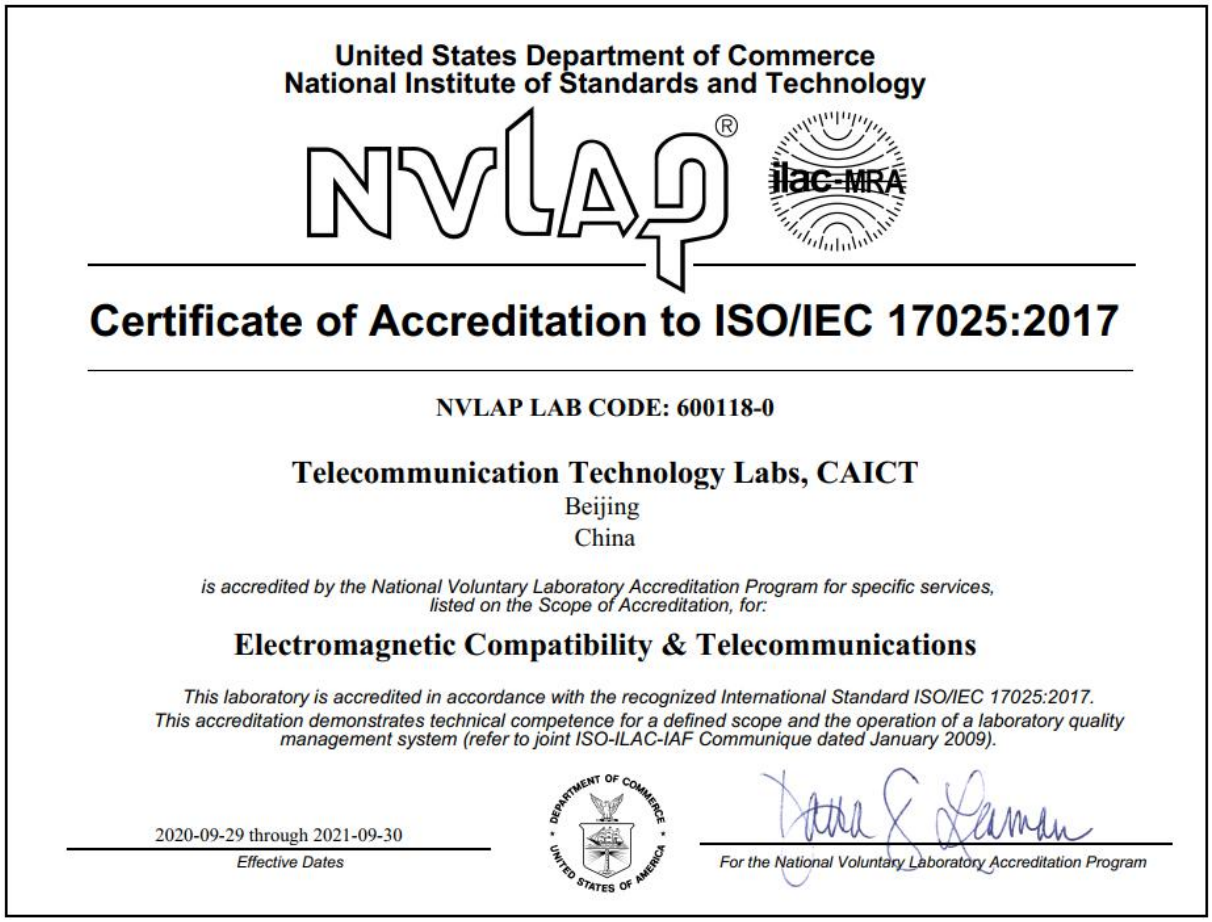


Fig.68 99% Occupied bandwidth (802.11ac-HT80, 5210MHz)

B.9. Power control

A Transmission Power Control mechanism is not required for systems with an e.i.r.p. of less than 27dBm (500 mW).

ANNEX C: Accreditation Certificate



United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

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Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT
Beijing
China

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2020-09-29 through 2021-09-30
Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

***** END OF REPORT BODY *****