FCC PART 15
TEST REPORT
No.I22Z60036-IOT04

for

HMD Global Oy

Smart Phone

N150DL

With

FCC ID: 2AJOTTA-1500

Hardware Version: V1.0

Software Version: 02US_0_076

Issued Date: 2022-03-10

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.

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Test Laboratory:

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Email: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z60036-IOT04	Rev.0	1st edition	2022-03-10

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

Testing Location: 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: 2022-01-11

Testing End Date: 2022-03-10

1.5. Signature

Xie Xiuzhen

(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:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
City:	Espoo
Postal Code:	/
Country:	Finland
Contact:	Reza Serafat
Email:	reza.serafat@hmdglobal.com

2.2 Manufacturer Information

Company Name:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
City:	Espoo
Postal Code:	/
Country:	Finland
Contact:	Reza Serafat
Email:	reza.serafat@hmdglobal.com

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

3.1. About EUT

Description	Smart Phone
Model name	N150DL
FCC ID	2AJOTTA-1500
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
UT41a	351116900017392	V1.0	02US_0_076
UT16a	351116900005454	V1.0	02US_0_076

*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	SN
AE1	Battery	/
AE2	USB Cable	/
AE3	Charger	/

AE1

Model	TN-BP5000N1
Manufacturer	Guangdong Fenghua new energy co.,ltd.
Capacity	5000mAh
Nominal Voltage	3.85V

AE2

Model	TN-TC2A1MFB
Manufacturer	Saibao(Jiangxi) Communication Industrial Co., Ltd
Length of cable	/

AE3

Model	1-CHUSQ302-097
Manufacturer	HUIZHOU PUAN ELECTRONICS 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 Smart Phone 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

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**
Frequency Stability	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	2022-05-24
2	Test Receiver	ESCI	100766	R&S	1 year	2022-04-09
3	LISN	ENV216	101200	R&S	1 year	2022-05-30
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESW44	103015	R&S	1 year	2022-09-03
2	EMI Antenna	VULB 9163	01223	SCHWARZBECK	1 year	2022-03-22
3	EMI Antenna	3117	00058889	ETS-Lindgren	1 year	2022-11-19

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	5.16
1GHz ≤ f ≤18GHz	5.44
18GHz ≤ f ≤40GHz	5.28

8.6. AC Power-line Conducted Emission

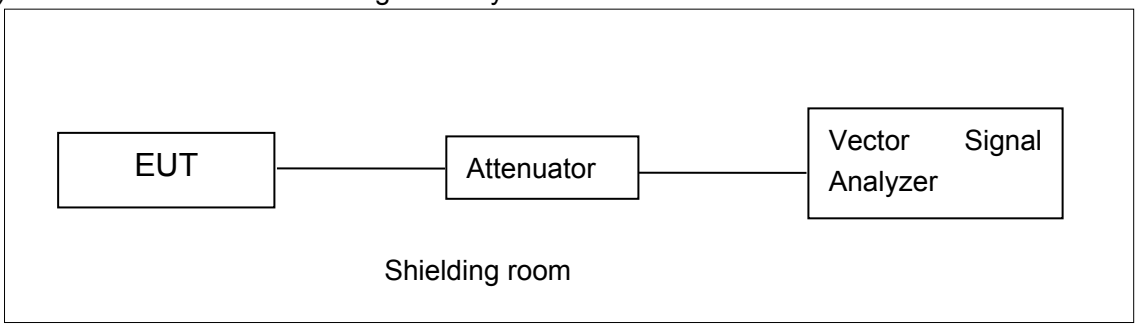
Measurement Uncertainty : 3.08,k=2

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

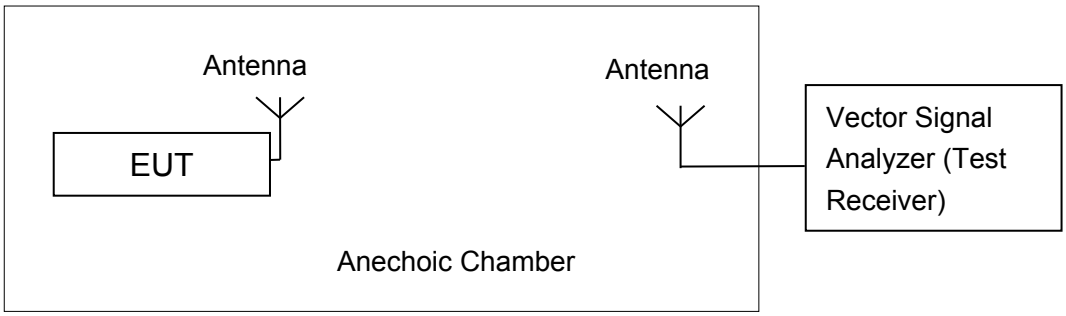
A.1.1. Conducted Measurements

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



A.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.

A.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)=23.97, B=29.60/2+5=19.80MHz,

802.11n-HT20=11+10*log(B)=23.72, B=27.45/2+5=18.725MHz,

802.11ac-VHT20=11+10*log(B)=22.97, B=21.45/2+5= 15.725MHz,

For straddle channel 40/80MHz Bandwidth, conducted output power limit=24 dBm

802.11n-HT40: B=66.64/2+15=48.32MHz,

802.11ac-VHT40: B=41.36/2+15=35.68MHz,

802.11ac-VHT80: B=98.56/2+15=84.28MHz

Measurement Results:

mode	802.11a	802.11n-HT20	802.11ac-HT20	802.11n-HT40	802.11ac-HT40	802.11ac-HT80
Duty cycle	98%	99%	99%	99%	98%	98%

802.11a mode

Mode	Frequency	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz	17.55	/	/	/	/	/	/	/
	5200MHz	17.14	/	/	/	/	/	/	/
	5240MHz	17.40	/	/	/	/	/	/	/
	5260MHz	18.02	/	/	/	/	/	/	/
	5280MHz	17.20	/	/	/	/	/	/	/
	5320MHz	17.22	/	/	/	/	/	/	/
	5500MHz	17.78	/	/	/	/	/	/	/
	5580MHz	17.95	/	/	/	/	/	/	/
	5700MHz	17.43	/	/	/	/	/	/	/
	5720MHz	17.20	/	/	/	/	/	/	/

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

802.11n-HT20 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT20)	5180MHz	18.29	/	/	/	/	/	/	/
	5200MHz	17.92	/	/	/	/	/	/	/
	5240MHz	18.17	/	/	/	/	/	/	/
	5260MHz	17.90	/	/	/	/	/	/	/
	5280MHz	17.68	/	/	/	/	/	/	/
	5320MHz	17.14	/	/	/	/	/	/	/
	5500MHz	17.87	/	/	/	/	/	/	/
	5580MHz	18.25	/	/	/	/	/	/	/
	5700MHz	17.51	/	/	/	/	/	/	/
	5720MHz	17.63	/	/	/	/	/	/	/

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

802.11ac-HT20 mode

Mode	Frequency	Test Result (dBm)								
		Data Rate								
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
802.11ac (HT20)	5180MHz	16.09	/	/	/	/	/	/	/	/
	5200MHz	15.69	/	/	/	/	/	/	/	/
	5240MHz	16.62	/	/	/	/	/	/	/	/
	5260MHz	16.21	/	/	/	/	/	/	/	/
	5280MHz	15.74	/	/	/	/	/	/	/	/
	5320MHz	15.21	/	/	/	/	/	/	/	/
	5500MHz	15.64	/	/	/	/	/	/	/	/
	5580MHz	15.81	/	/	/	/	/	/	/	/
	5700MHz	15.59	/	/	/	/	/	/	/	/
	5720MHz	15.68	/	/	/	/	/	/	/	/

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

802.11n-HT40 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT40)	5190MHz	15.50	/	/	/	/	/	/	/
	5230MHz	15.29	/	/	/	/	/	/	/
	5270MHz	15.25	/	/	/	/	/	/	/

	5310MHz	14.71	/	/	/	/	/	/	/
	5510MHz	15.19	/	/	/	/	/	/	/
	5550MHz	15.28	/	/	/	/	/	/	/
	5670MHz	14.74	/	/	/	/	/	/	/
	5710MHz	15.03	/	/	/	/	/	/	/

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

802.11ac-HT40 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (HT40)	5190MHz	13.51	/	/	/	/	/	/	/	/	/
	5230MHz	13.89	/	/	/	/	/	/	/	/	/
	5270MHz	13.85	/	/	/	/	/	/	/	/	/
	5310MHz	12.87	/	/	/	/	/	/	/	/	/
	5510MHz	13.23	/	/	/	/	/	/	/	/	/
	5550MHz	13.27	/	/	/	/	/	/	/	/	/
	5670MHz	13.05	/	/	/	/	/	/	/	/	/
	5710MHz	13.12	/	/	/	/	/	/	/	/	/

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

802.11ac-HT80 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (HT80)	5210MHz	13.23	/	/	/	/	/	/	/	/	/
	5290MHz	12.42	/	/	/	/	/	/	/	/	/
	5530MHz	12.75	/	/	/	/	/	/	/	/	/
	5610MHz	12.54	/	/	/	/	/	/	/	/	/
	5690MHz	12.11	/	/	/	/	/	/	/	/	/

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

A.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	7.47	P
	5200 MHz	6.62	P
	5240 MHz	7.08	P
	5260 MHz	6.69	P
	5280 MHz	6.85	P
	5320 MHz	5.76	P
	5500 MHz	6.68	P
	5580 MHz	7.15	P
	5700 MHz	6.50	P
	5720 MHz	6.75	P
802.11n HT20	5180 MHz	6.86	P
	5200 MHz	6.22	P
	5240 MHz	6.62	P
	5260 MHz	6.22	P
	5280 MHz	6.41	P
	5320 MHz	5.26	P
	5500 MHz	6.29	P
	5580 MHz	6.67	P
	5700 MHz	6.18	P
	5720 MHz	6.75	P
802.11n HT40	5190 MHz	1.29	P
	5230 MHz	1.20	P
	5270 MHz	1.16	P
	5310 MHz	0.61	P
	5510 MHz	1.10	P
	5550 MHz	1.22	P
	5670 MHz	0.79	P
	5710 MHz	0.99	P
802.11ac	5210MHz	-4.49	P

HT80	5290MHz	-4.81	P
	5530MHz	-4.50	P
	5610MHz	-4.98	P
	5690MHz	-5.42	P

Conclusion: PASS

A.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	21.45	P
	5200 MHz	Fig.2	21.50	P
	5240 MHz	Fig.3	21.40	P
	5260 MHz	Fig.4	21.65	P
	5280 MHz	Fig.5	21.40	P
	5320 MHz	Fig.6	21.15	P
	5500 MHz	Fig.7	32.40	P
	5580 MHz	Fig.8	33.55	P
	5700 MHz	Fig.9	26.75	P
	5720 MHz	Fig.10	29.60	P
802.11n HT20	5180 MHz	Fig.11	21.90	P
	5200 MHz	Fig.12	21.65	P
	5240 MHz	Fig.13	21.70	P
	5260 MHz	Fig.14	21.90	P
	5280 MHz	Fig.15	21.60	P
	5320 MHz	Fig.16	21.80	P
	5500 MHz	Fig.17	32.65	P
	5580 MHz	Fig.18	34.45	P
	5700 MHz	Fig.19	28.40	P
	5720 MHz	Fig.20	27.45	P
802.11n HT40	5190 MHz	Fig.21	50.40	P
	5230 MHz	Fig.22	51.36	P
	5270 MHz	Fig.23	52.24	P

	5310 MHz	Fig.24	46.48	P
	5510 MHz	Fig.25	69.20	P
	5550 MHz	Fig.26	70.16	P
	5670 MHz	Fig.27	66.24	P
	5710 MHz	Fig.28	66.64	P
802.11ac HT80	5210MHz	Fig.29	93.60	P
	5290MHz	Fig.30	95.04	P
	5530MHz	Fig.31	95.36	P
	5610MHz	Fig.32	94.56	P
	5690MHz	Fig.33	98.56	P

Conclusion: PASS

Test graphs as below:

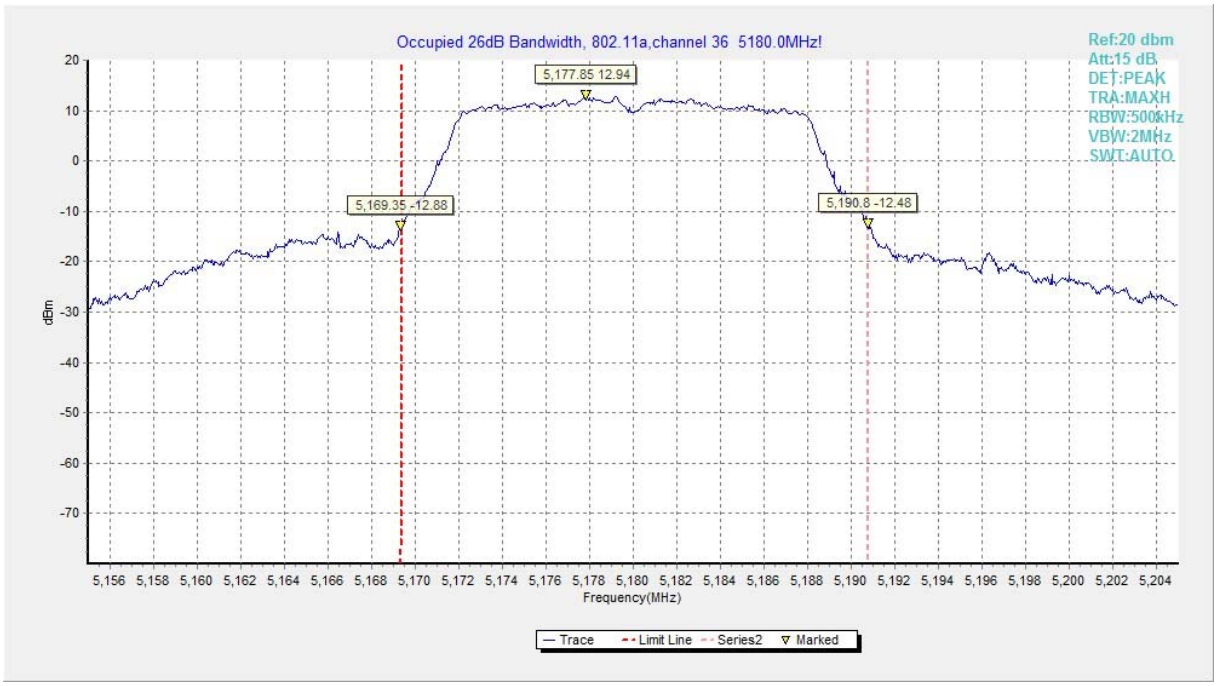


Fig.1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

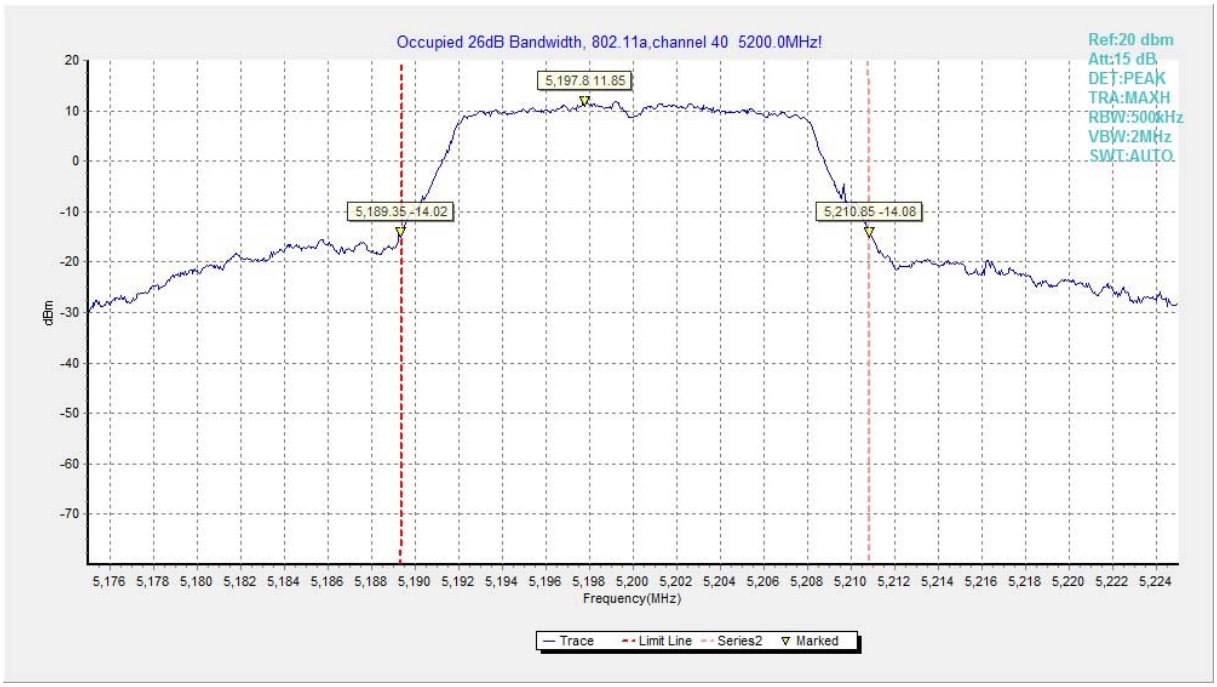


Fig.2 Occupied 26dB Bandwidth (802.11a, 5200MHz)

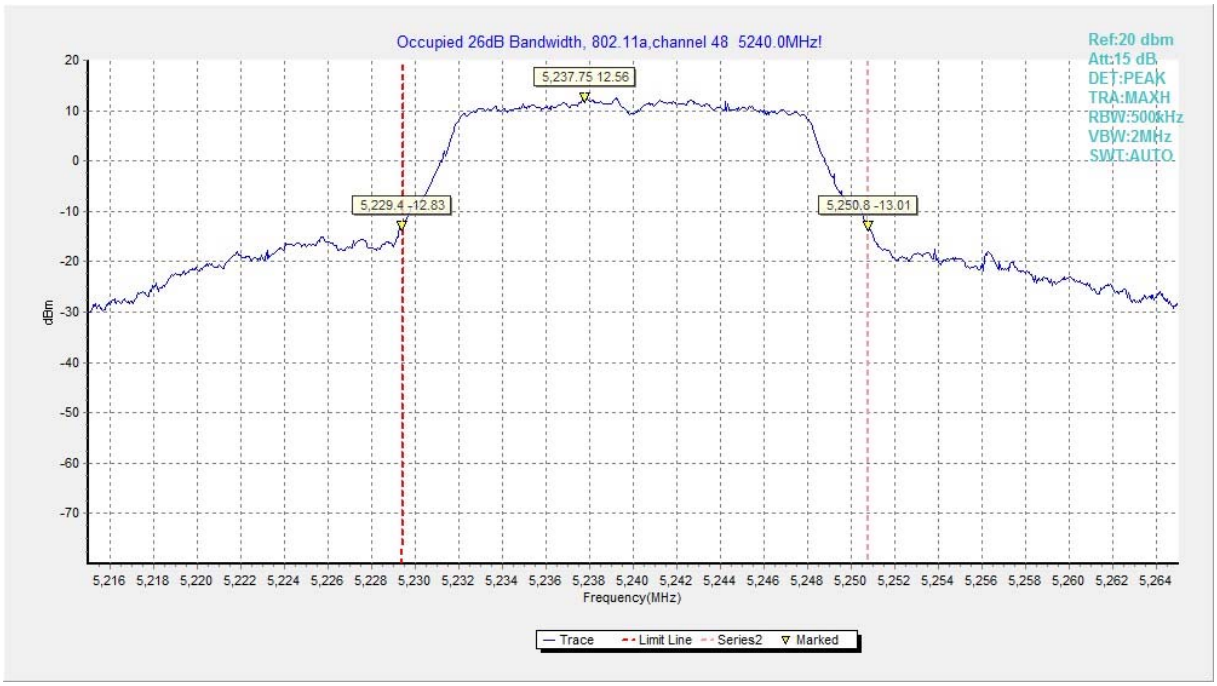


Fig.3 Occupied 26dB Bandwidth (802.11a, 5240MHz)

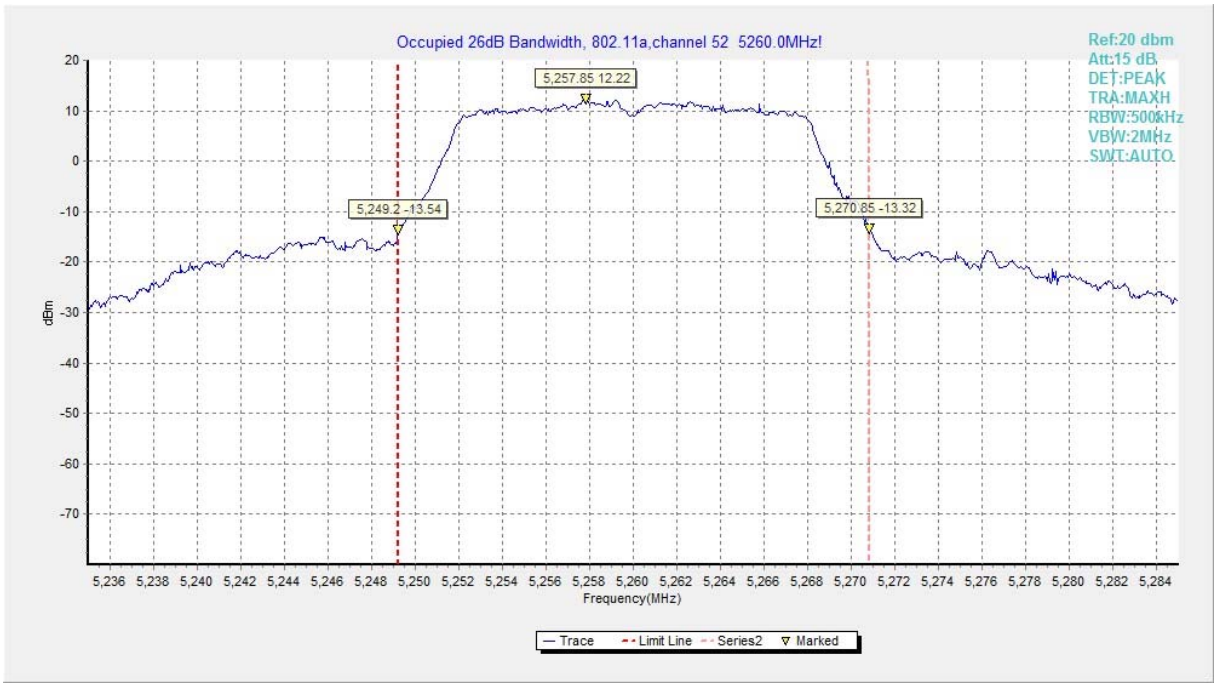


Fig.4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

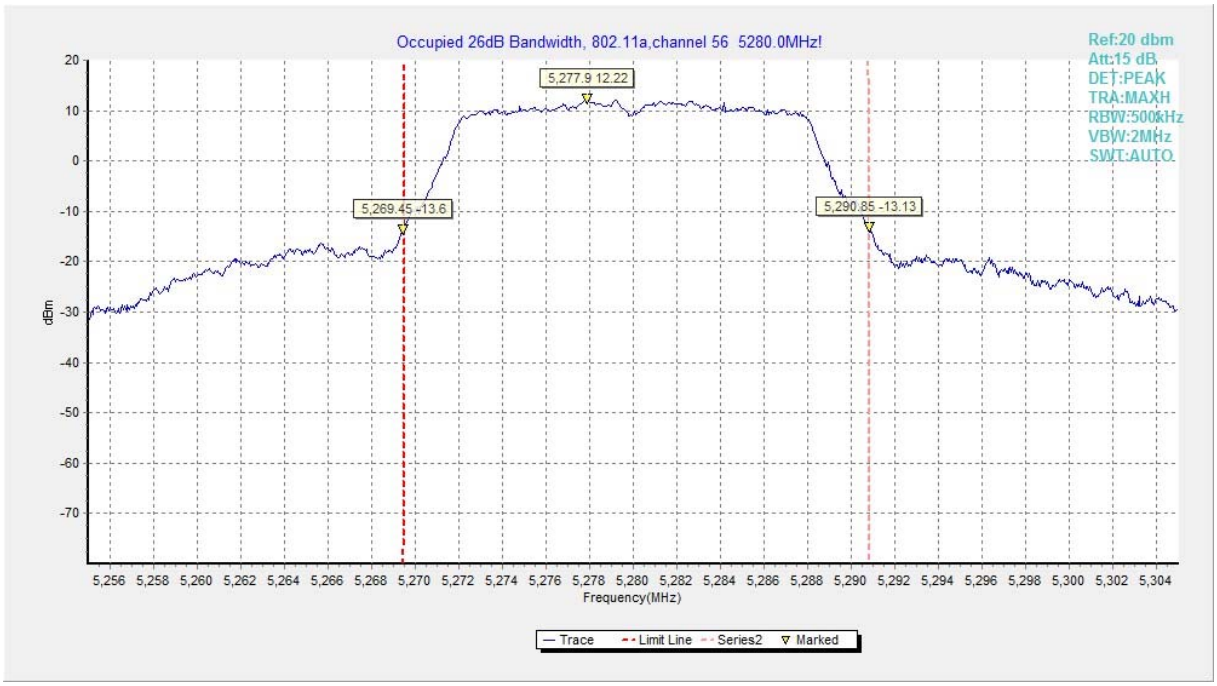


Fig.5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

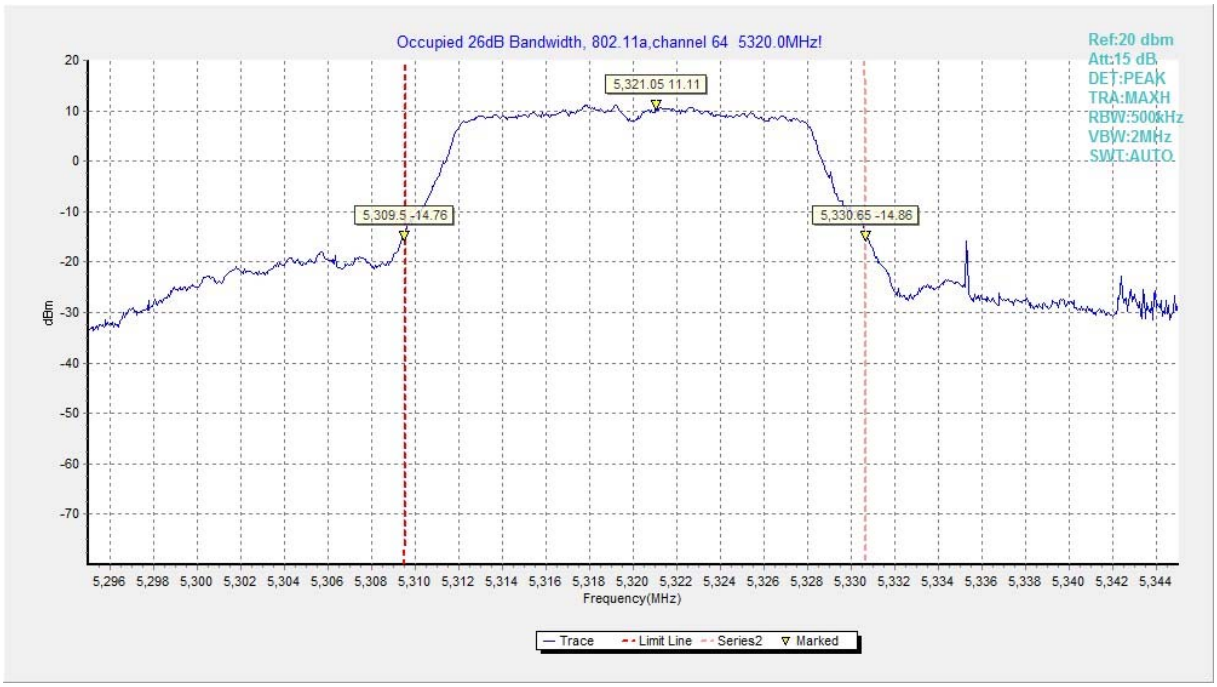


Fig.6 Occupied 26dB Bandwidth (802.11a, 5320MHz)

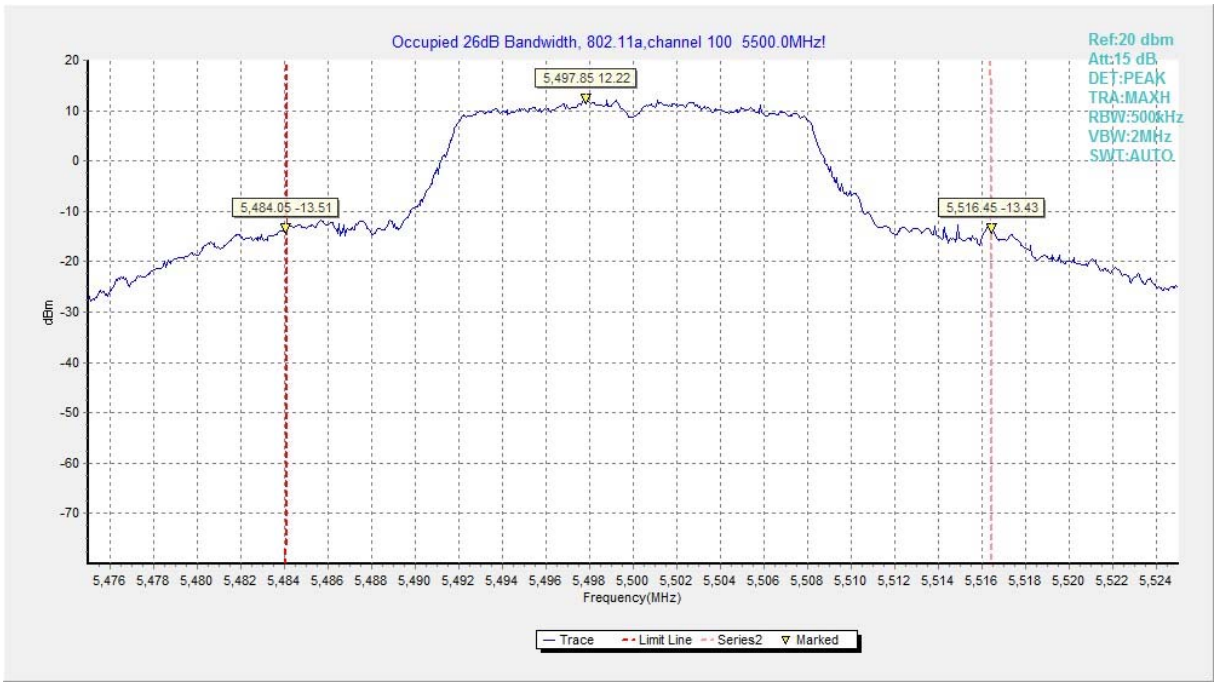


Fig.7 Occupied 26dB Bandwidth (802.11a, 5500MHz)

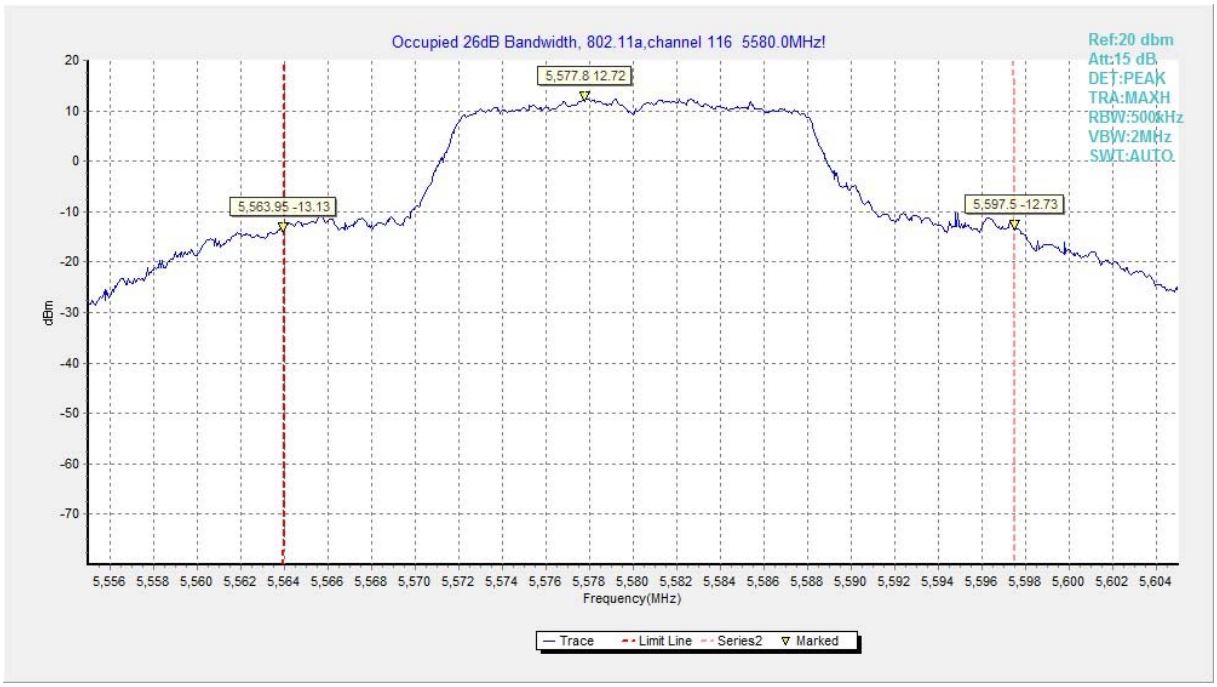


Fig.8 Occupied 26dB Bandwidth (802.11a, 5580MHz)

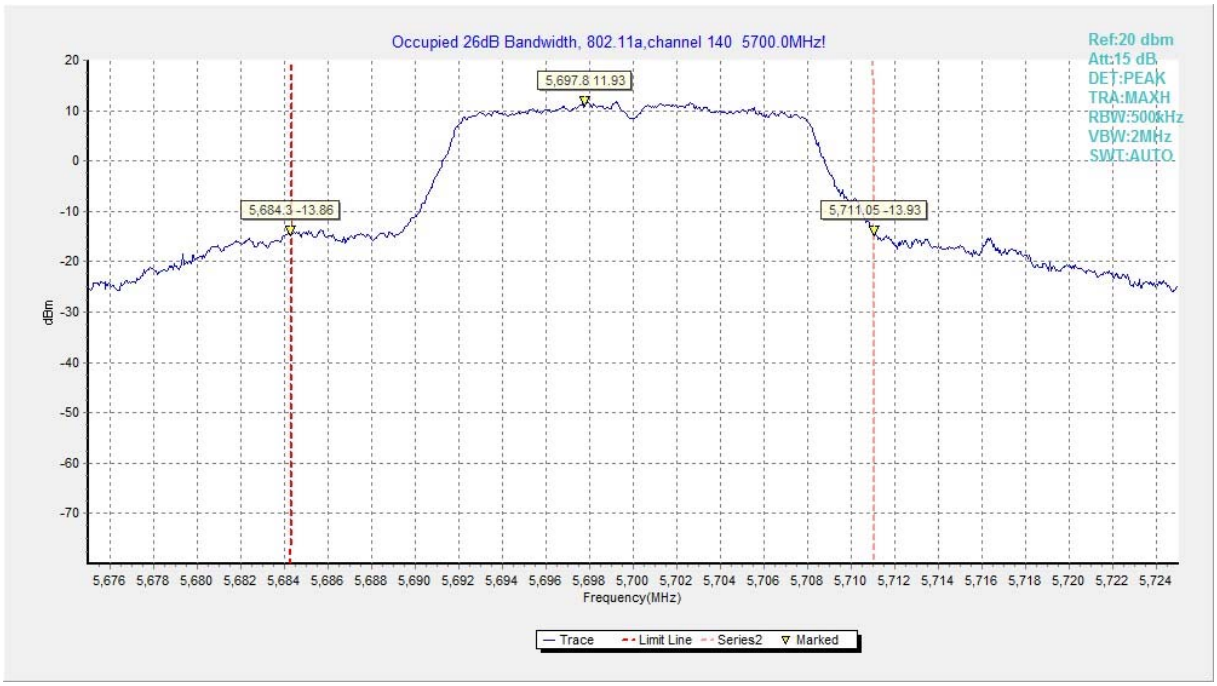


Fig.9 Occupied 26dB Bandwidth (802.11a, 5700MHz)

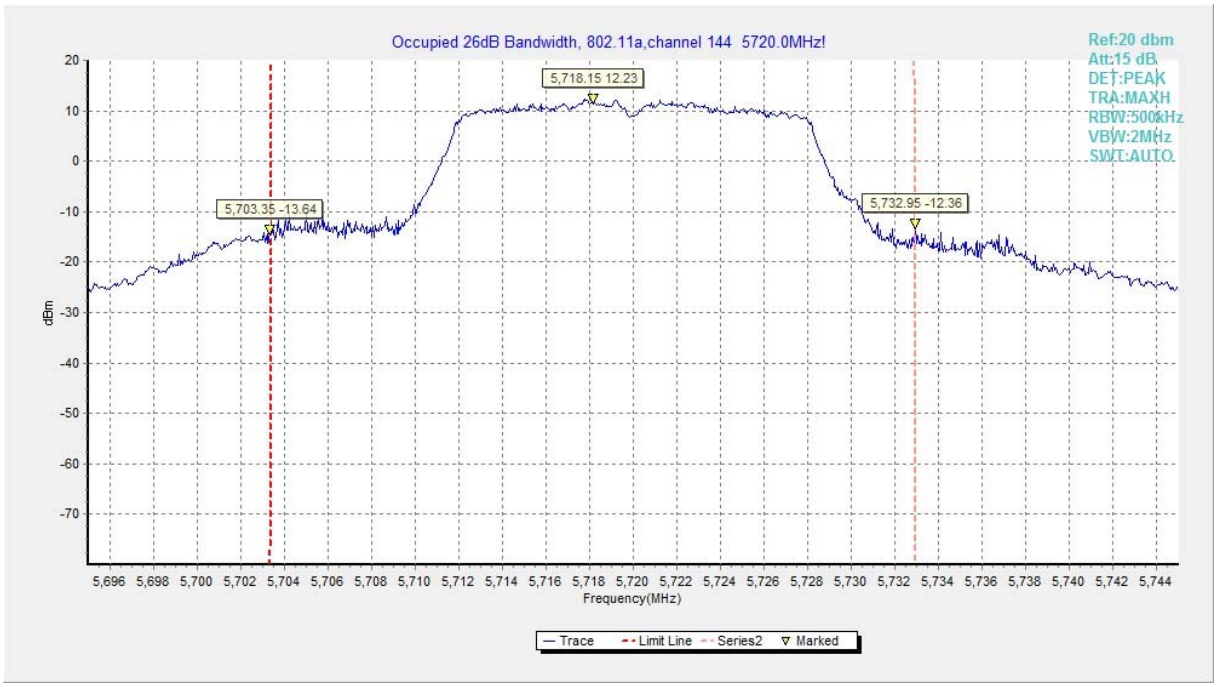


Fig.10 Occupied 26dB Bandwidth (802.11a, 5720MHz)

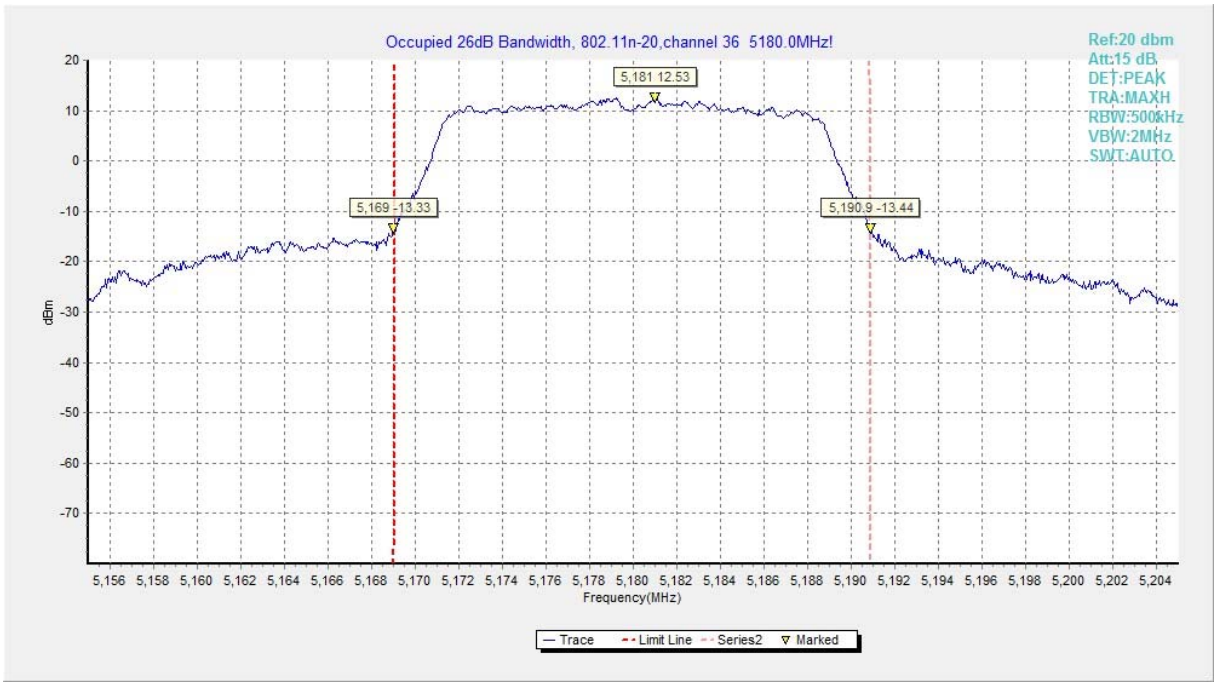


Fig.11 Occupied 26dB Bandwidth (802.11n-HT20, 5180MHz)

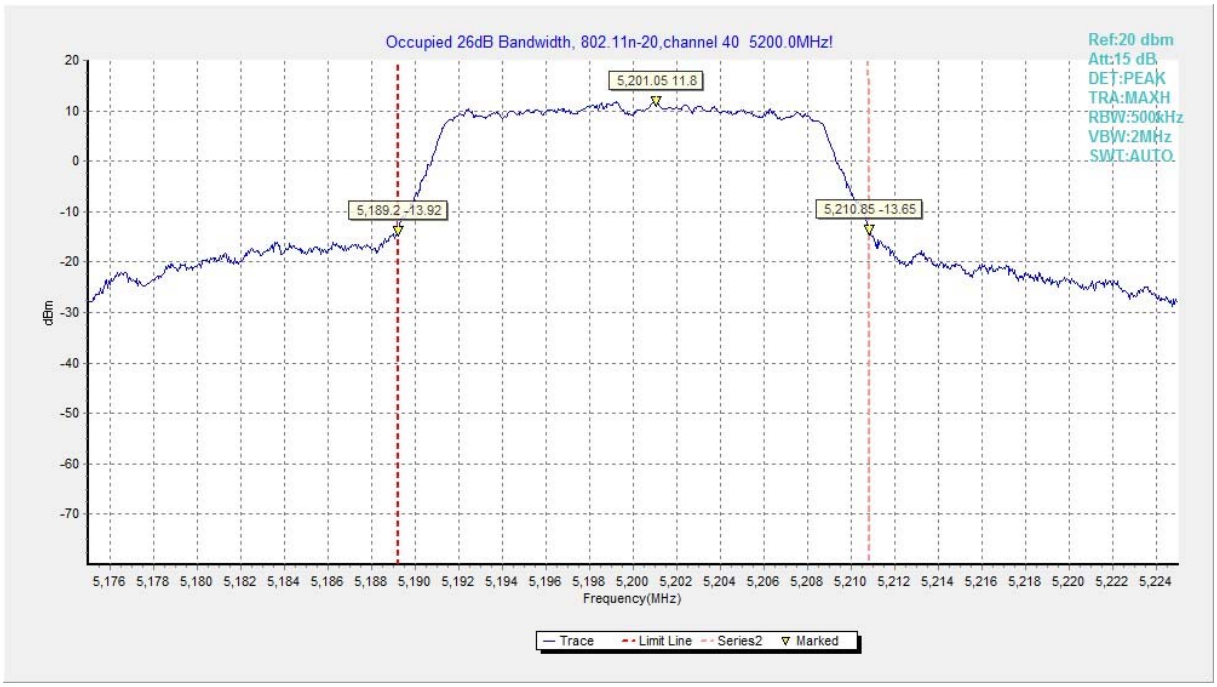


Fig.12 Occupied 26dB Bandwidth (802.11n-HT20, 5200MHz)

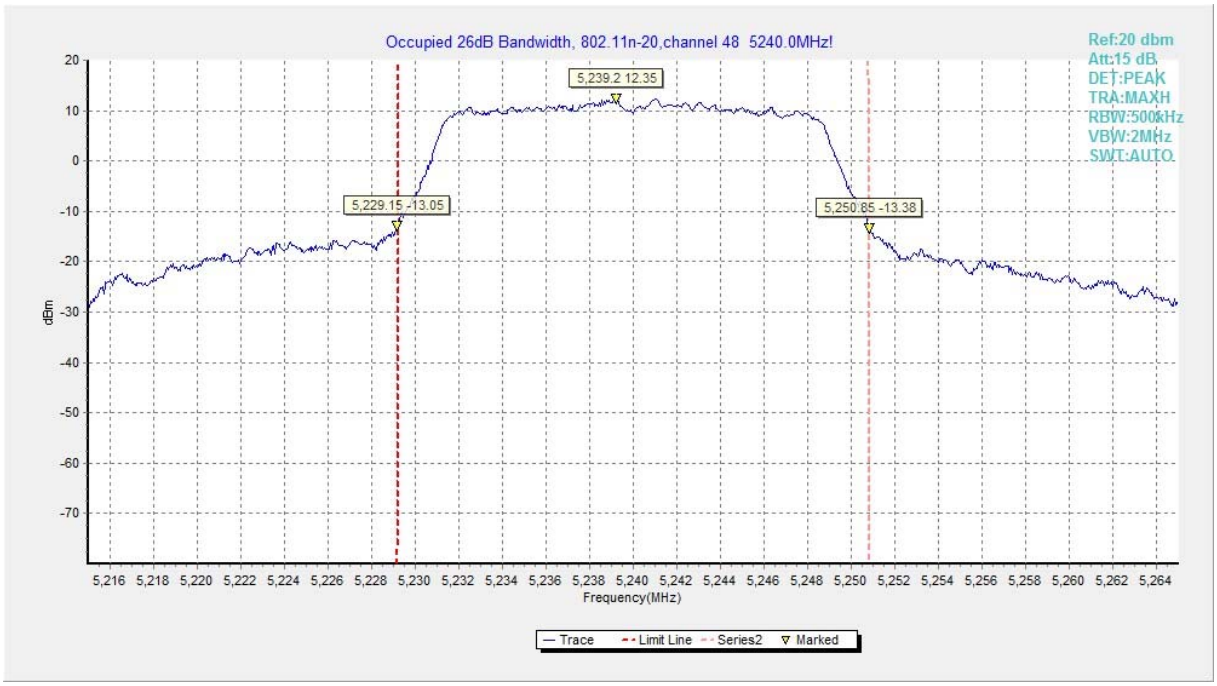


Fig.13 Occupied 26dB Bandwidth (802.11n-HT20, 5240MHz)

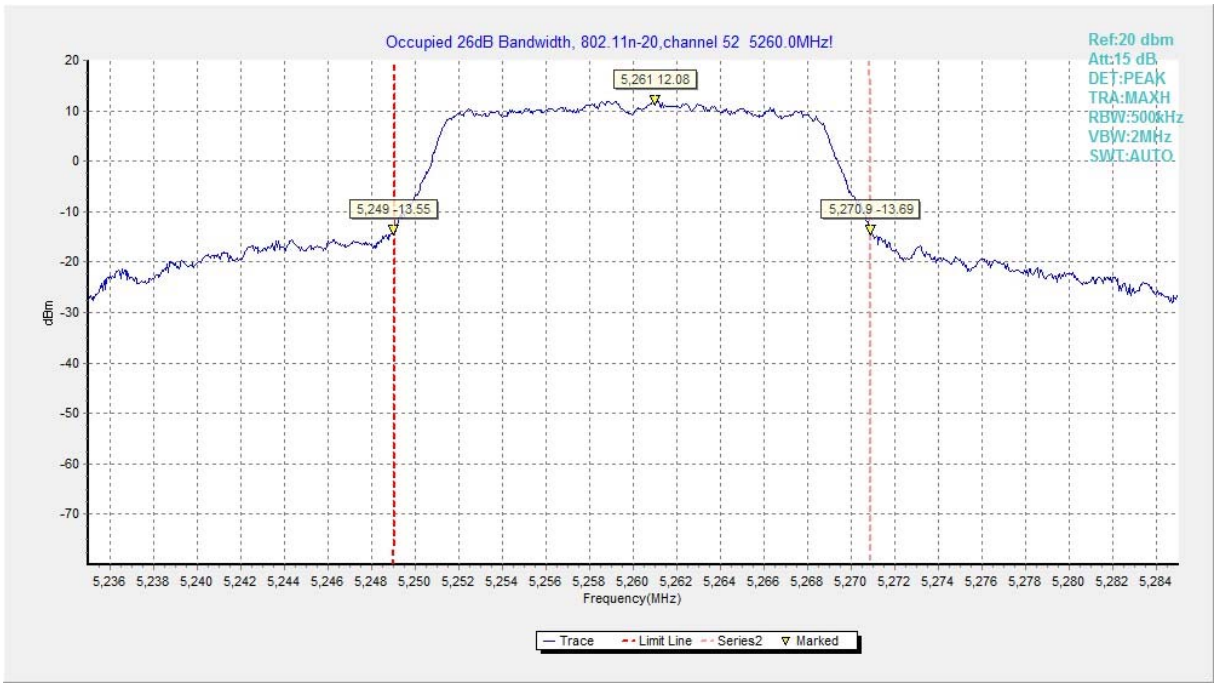


Fig.14 Occupied 26dB Bandwidth (802.11n-HT20, 5260MHz)

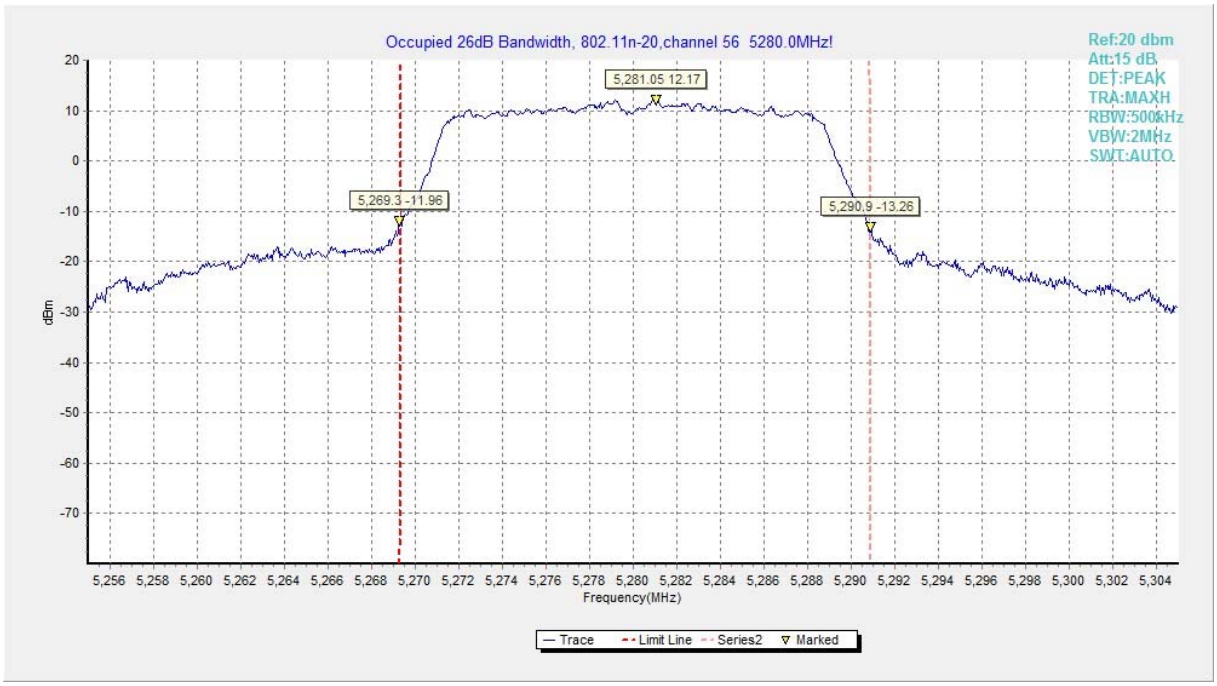


Fig.15 Occupied 26dB Bandwidth (802.11n-HT20, 5280MHz)

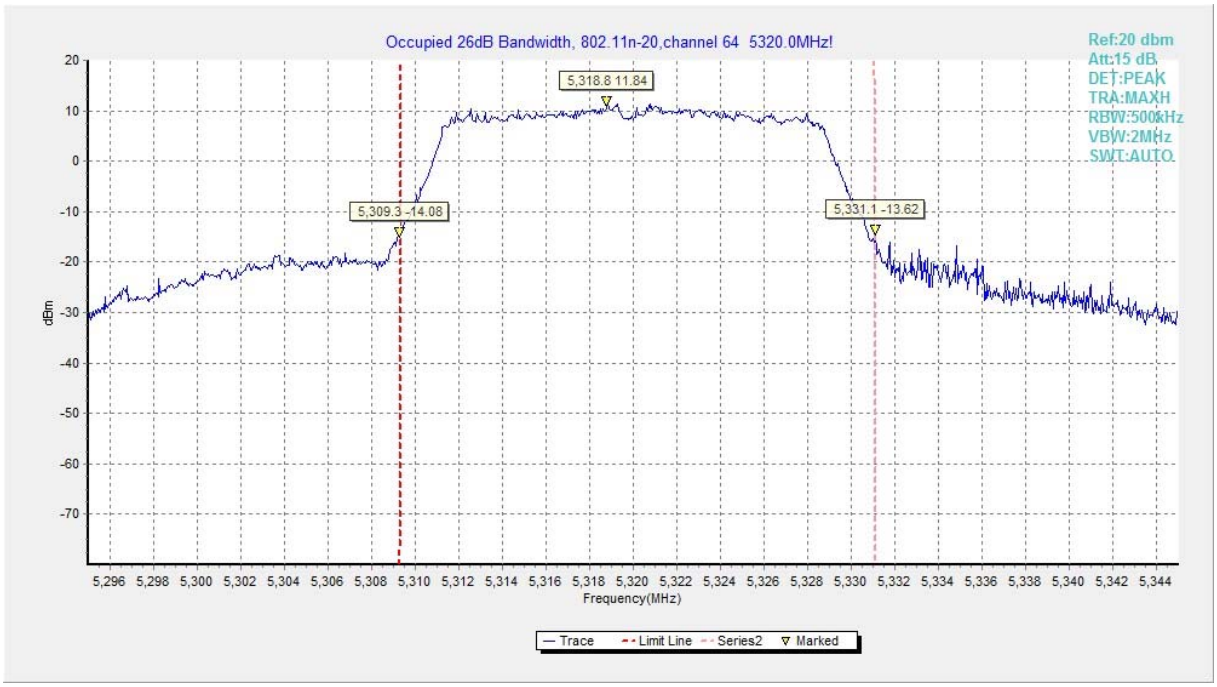


Fig.16 Occupied 26dB Bandwidth (802.11n-HT20, 5320MHz)

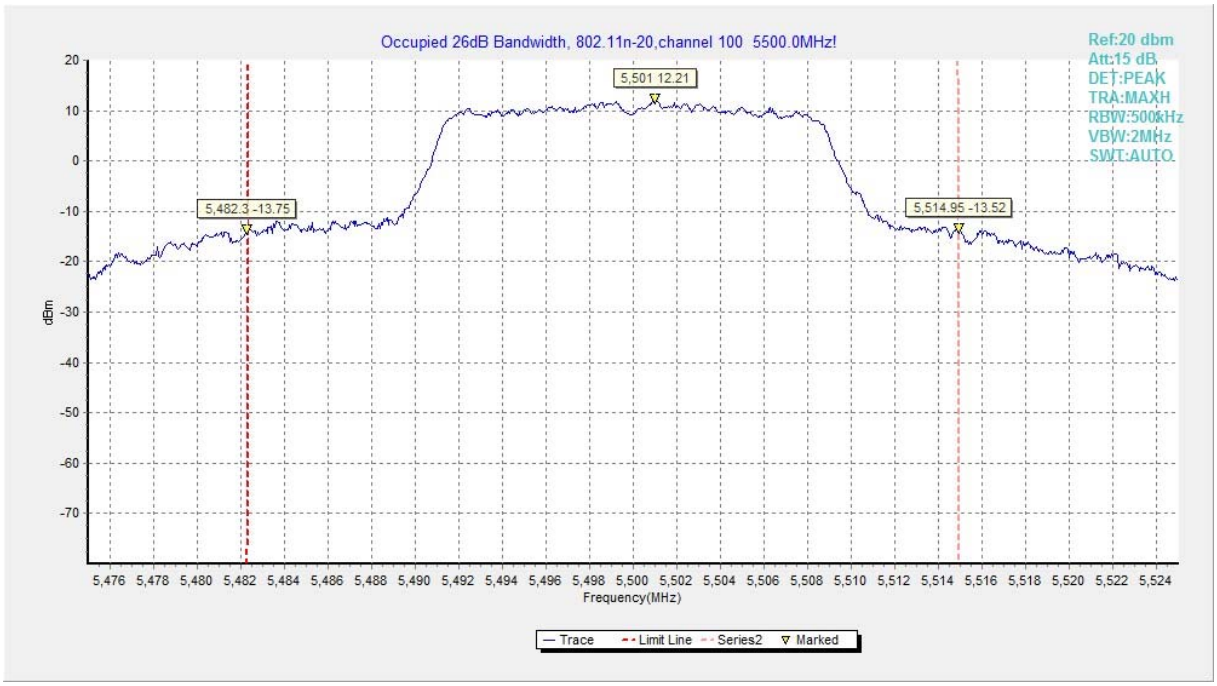


Fig.17 Occupied 26dB Bandwidth (802. 11n-HT20, 5500MHz)

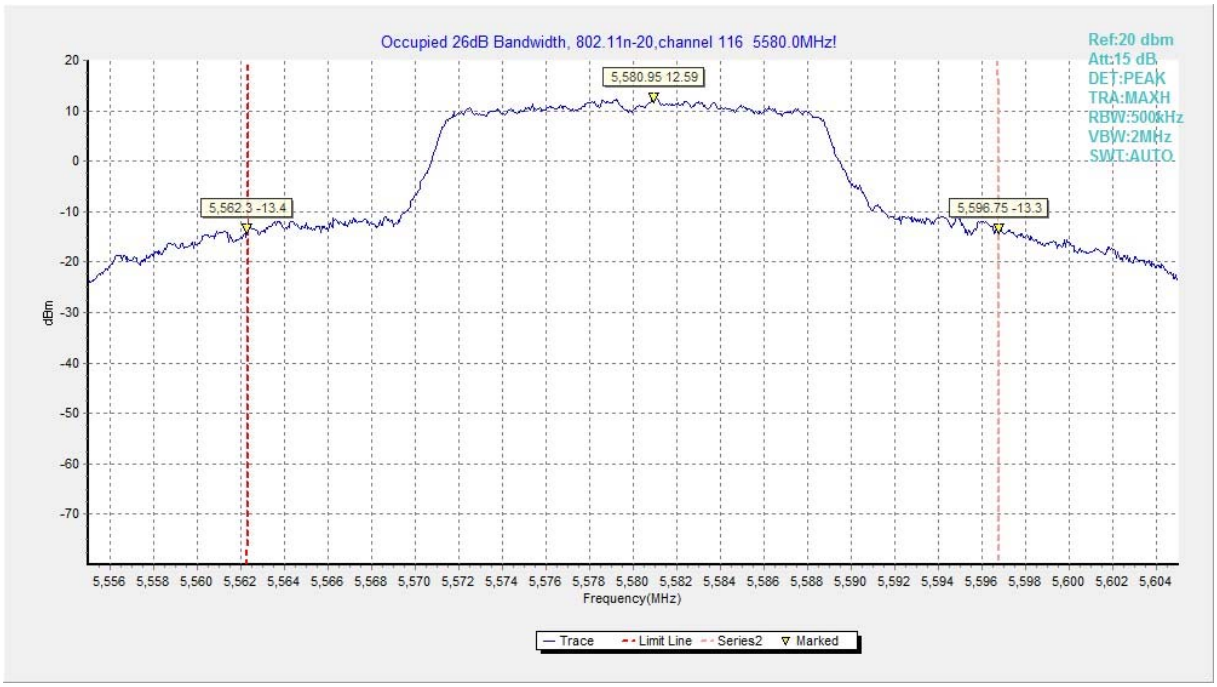


Fig.18 Occupied 26dB Bandwidth (802. 11n-HT20, 5580MHz)

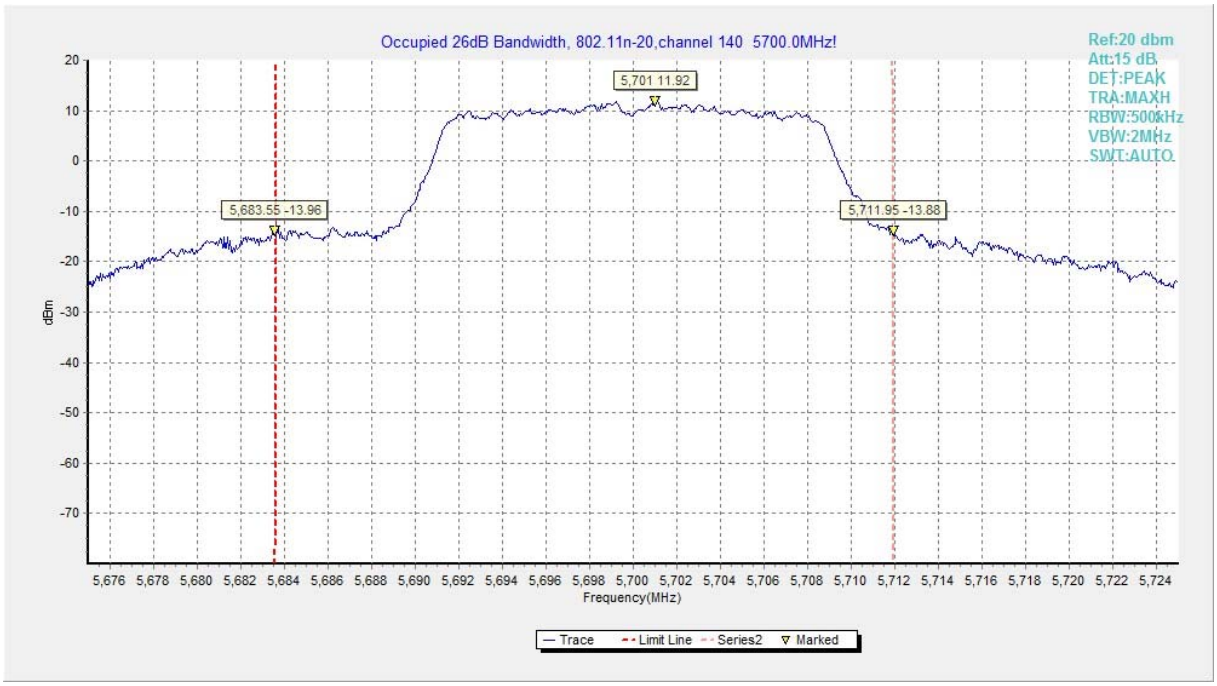


Fig.19 Occupied 26dB Bandwidth (802. 11n-HT20, 5700MHz)

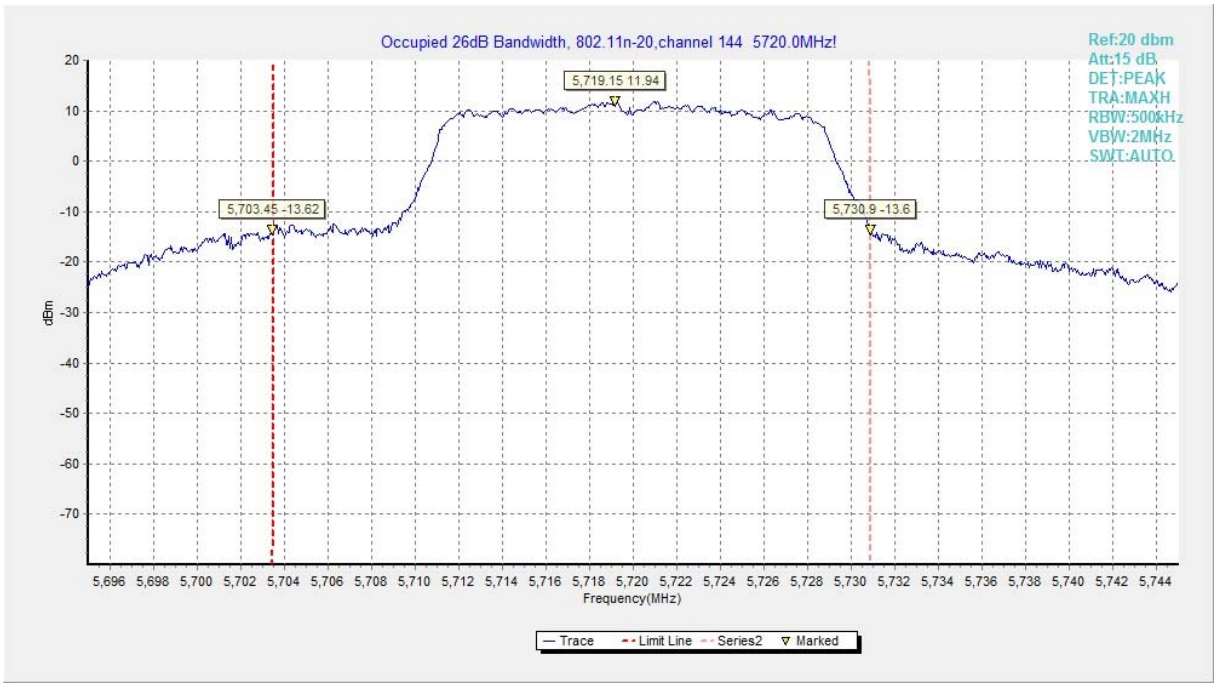


Fig.20 Occupied 26dB Bandwidth (802. 11n-HT20, 5720MHz)

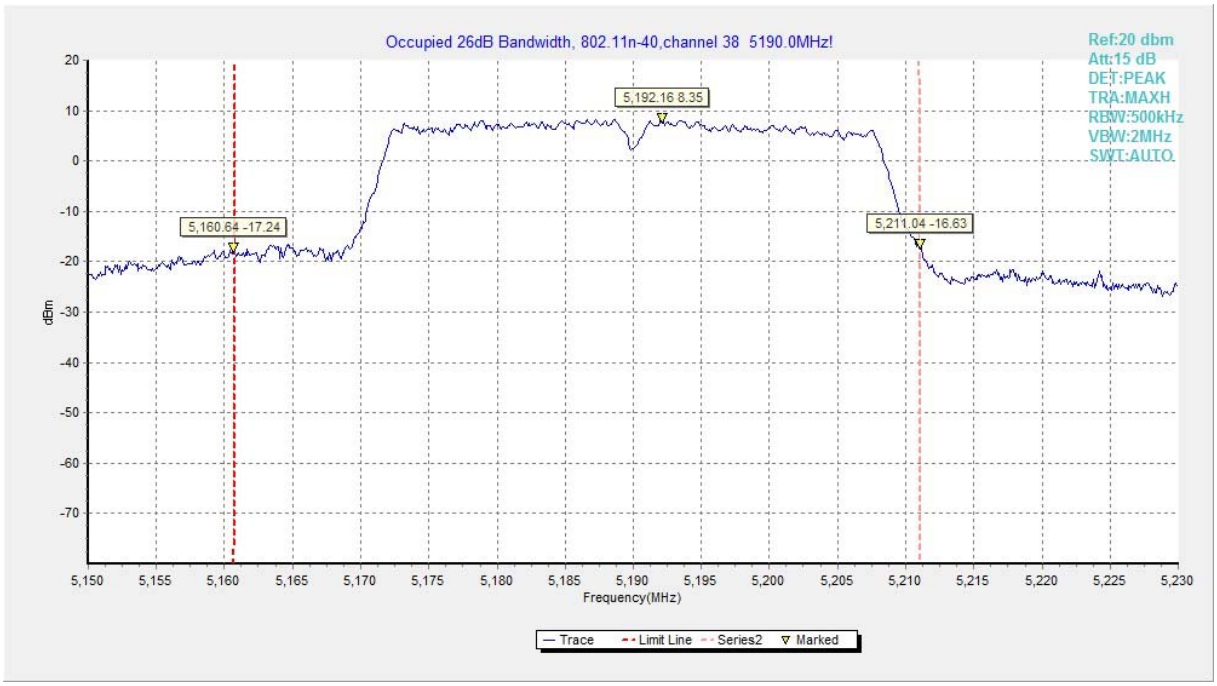


Fig.21 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)

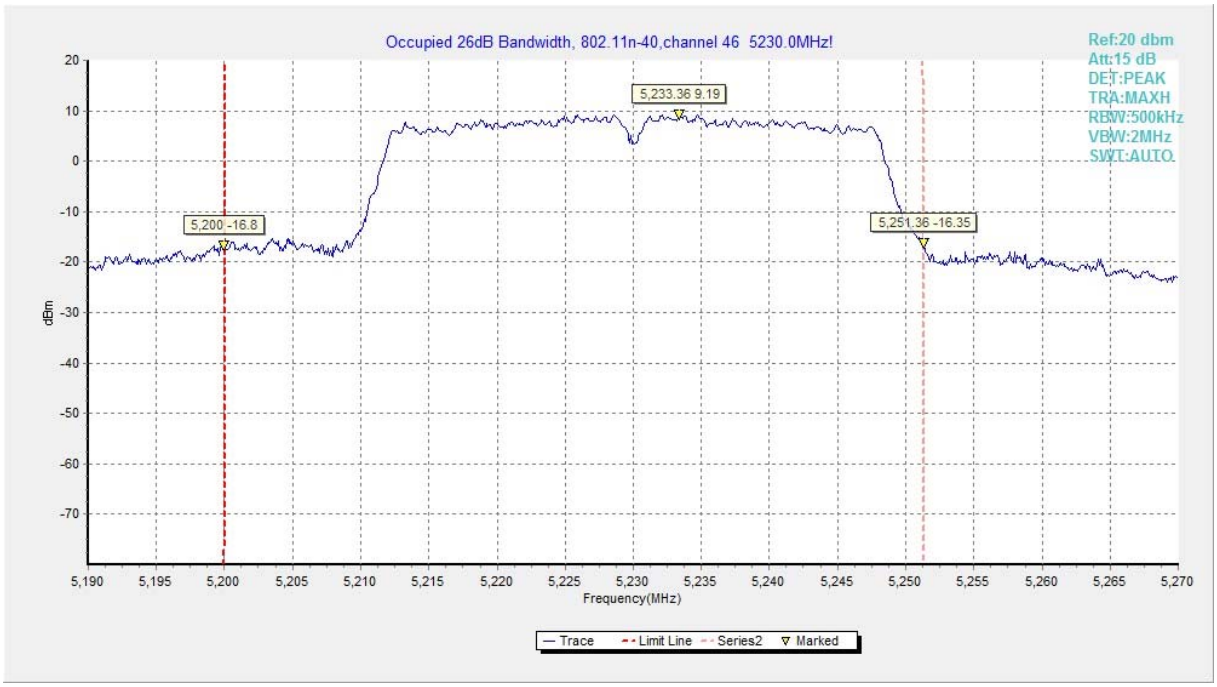


Fig.22 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)

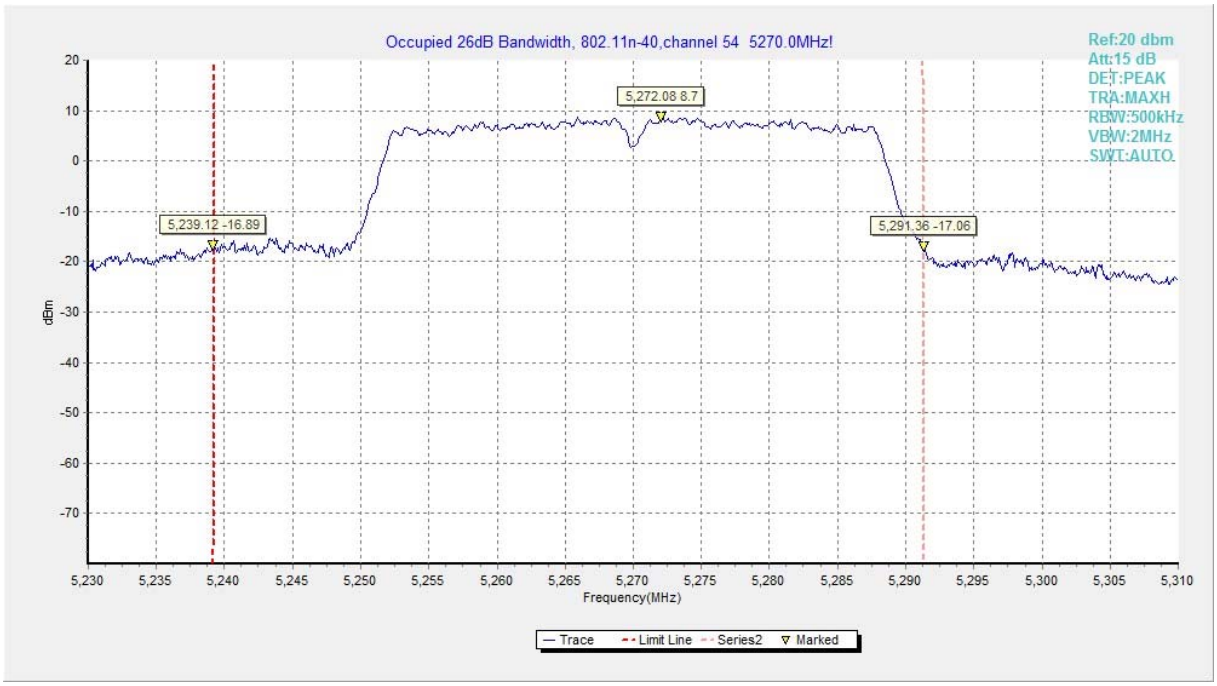


Fig.23 Occupied 26dB Bandwidth (802.11n-HT40, 5270MHz)

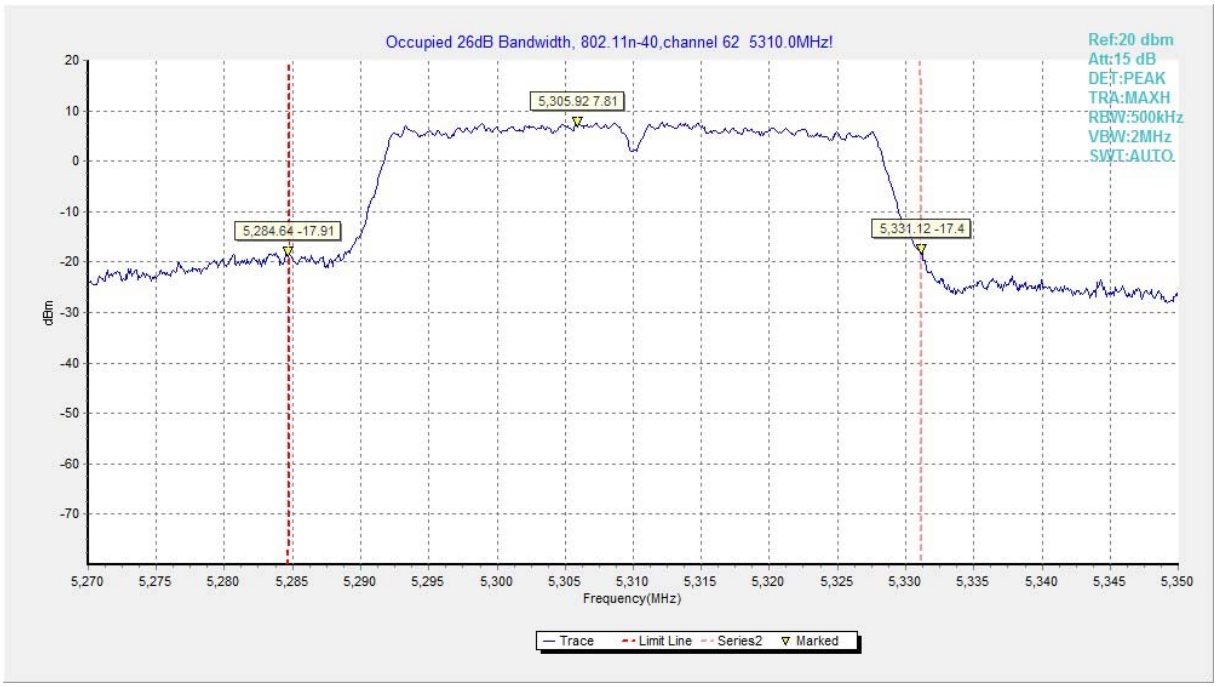


Fig.24 Occupied 26dB Bandwidth (802.11n-HT40, 5310MHz)

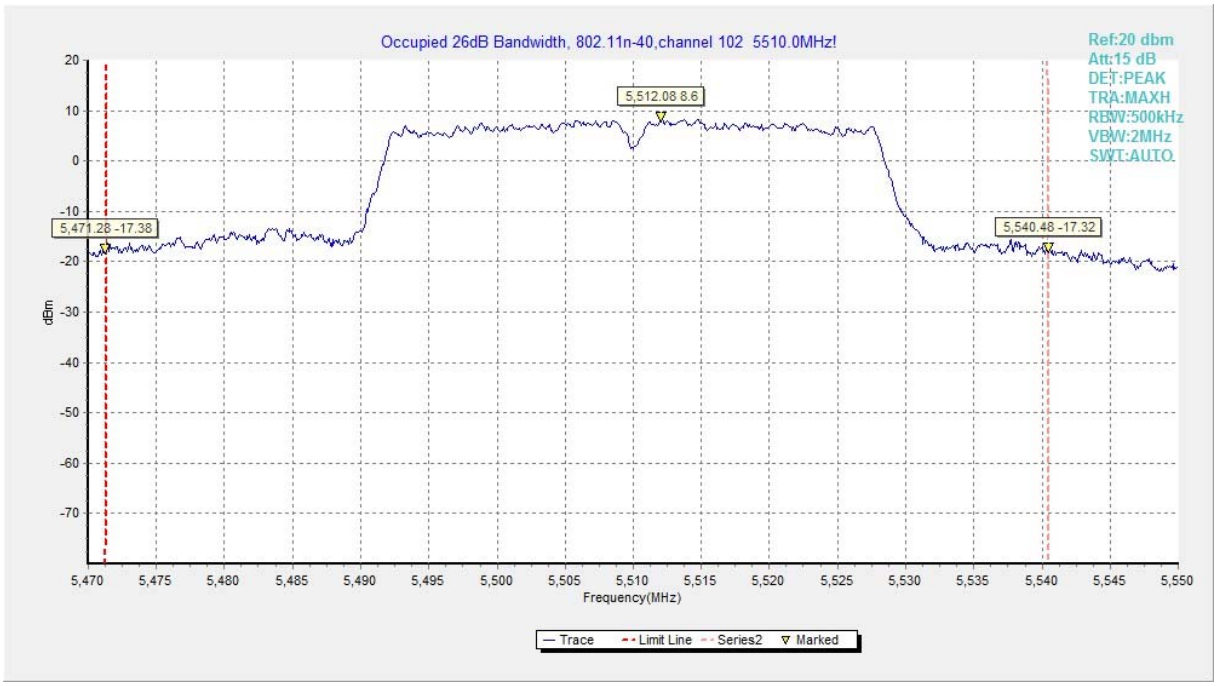


Fig.25 Occupied 26dB Bandwidth (802. 11n-HT40, 5510MHz)

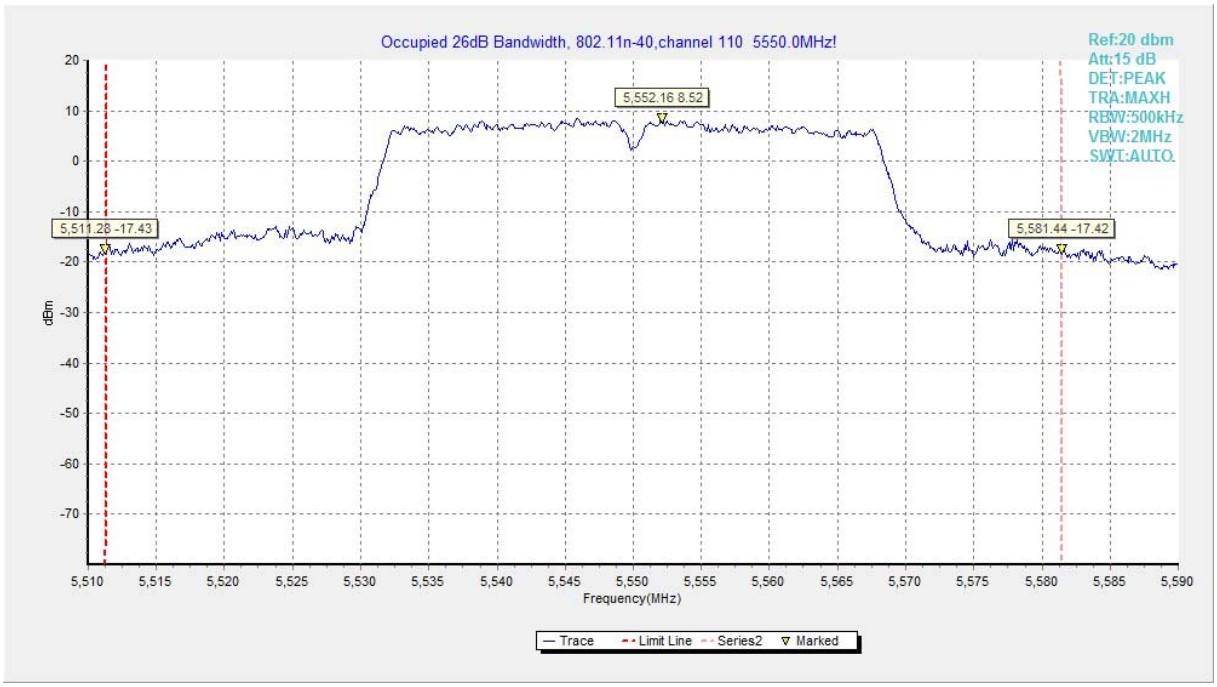


Fig.26 Occupied 26dB Bandwidth (802. 11n-HT40, 5590MHz)

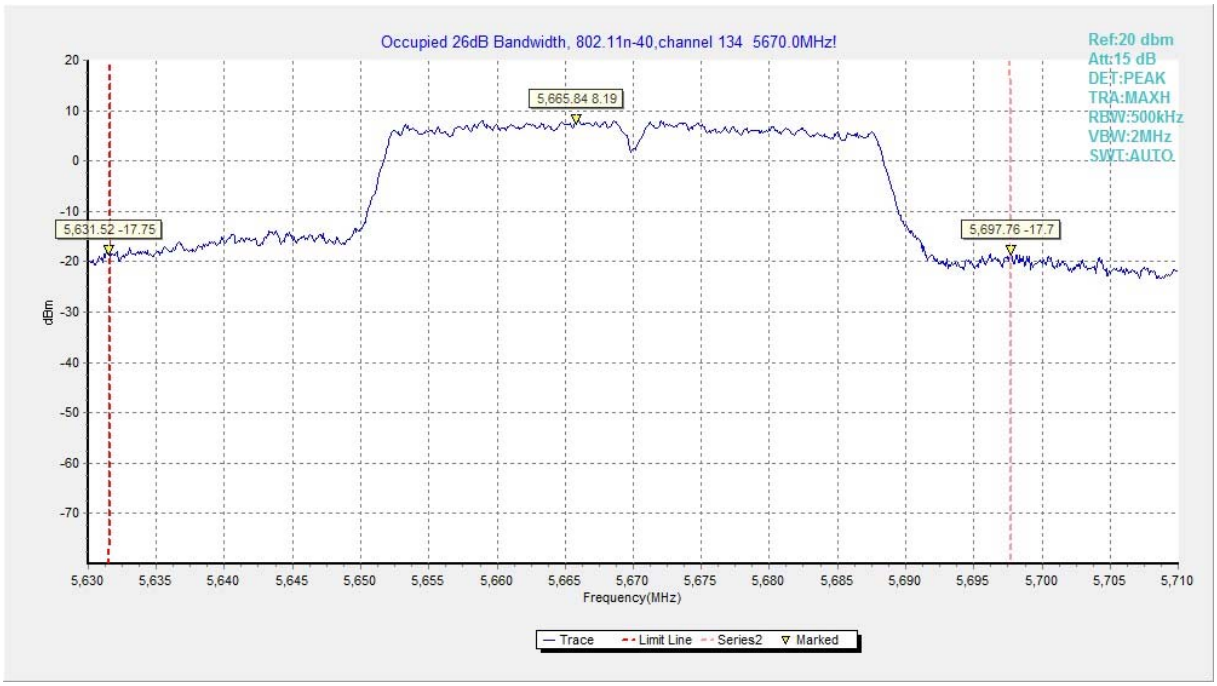


Fig.27 Occupied 26dB Bandwidth (802. 11n-HT40, 5670MHz)

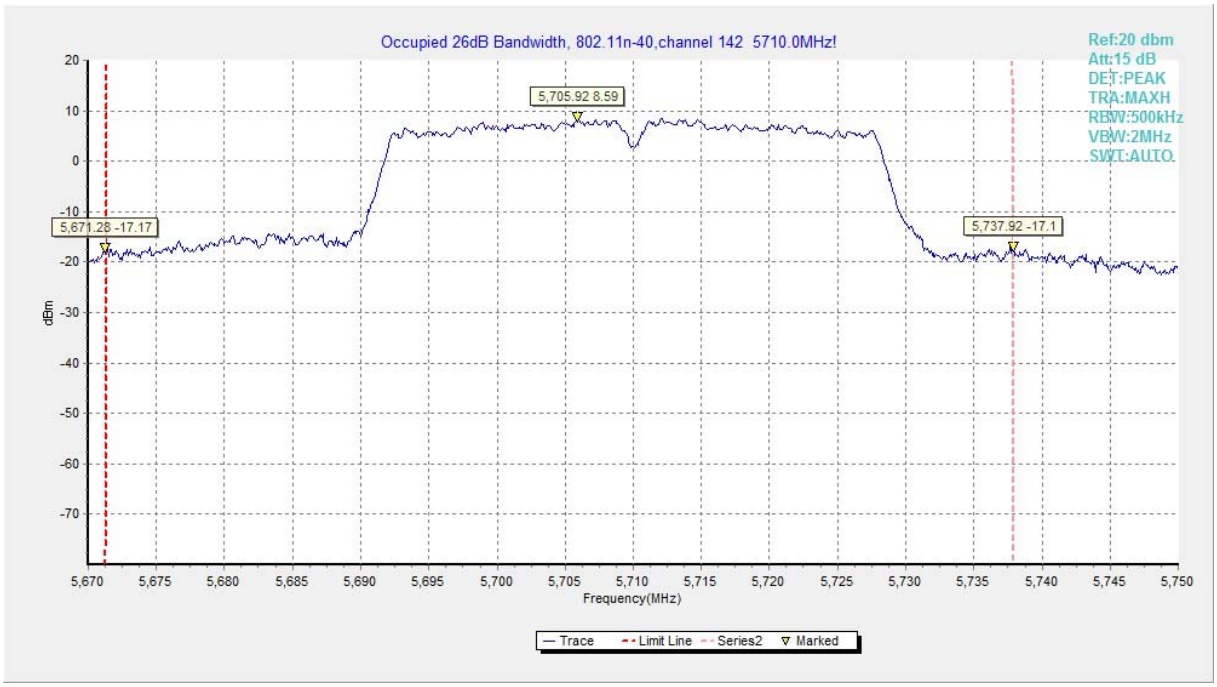


Fig.28 Occupied 26dB Bandwidth (802. 11n-HT40, 5710MHz)

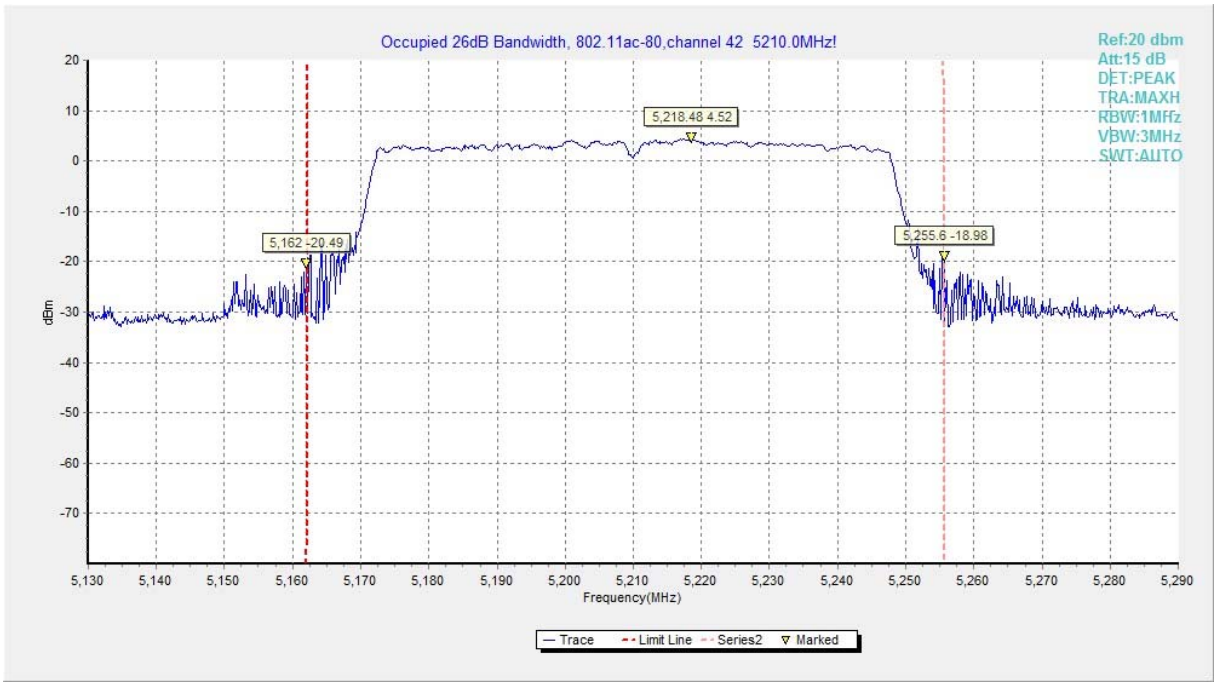


Fig.29 Occupied 26dB Bandwidth (802. 11ac-HT80, 5210MHz)

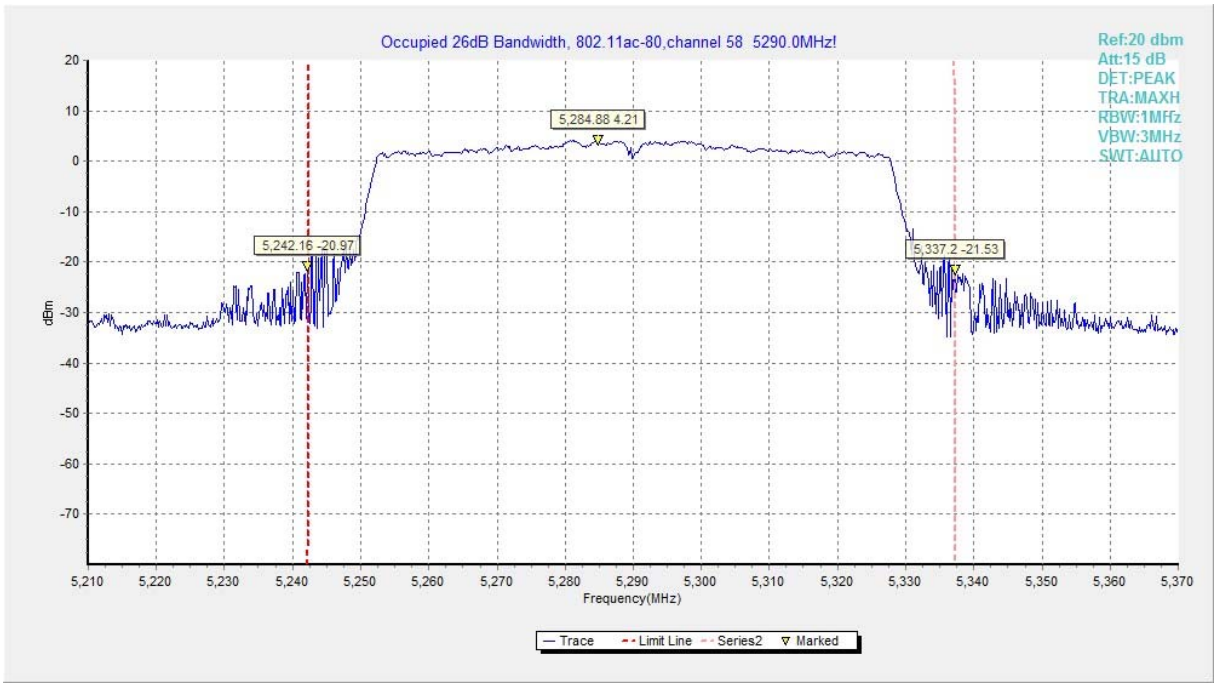


Fig.30 Occupied 26dB Bandwidth (802. 11ac-HT80, 5290MHz)

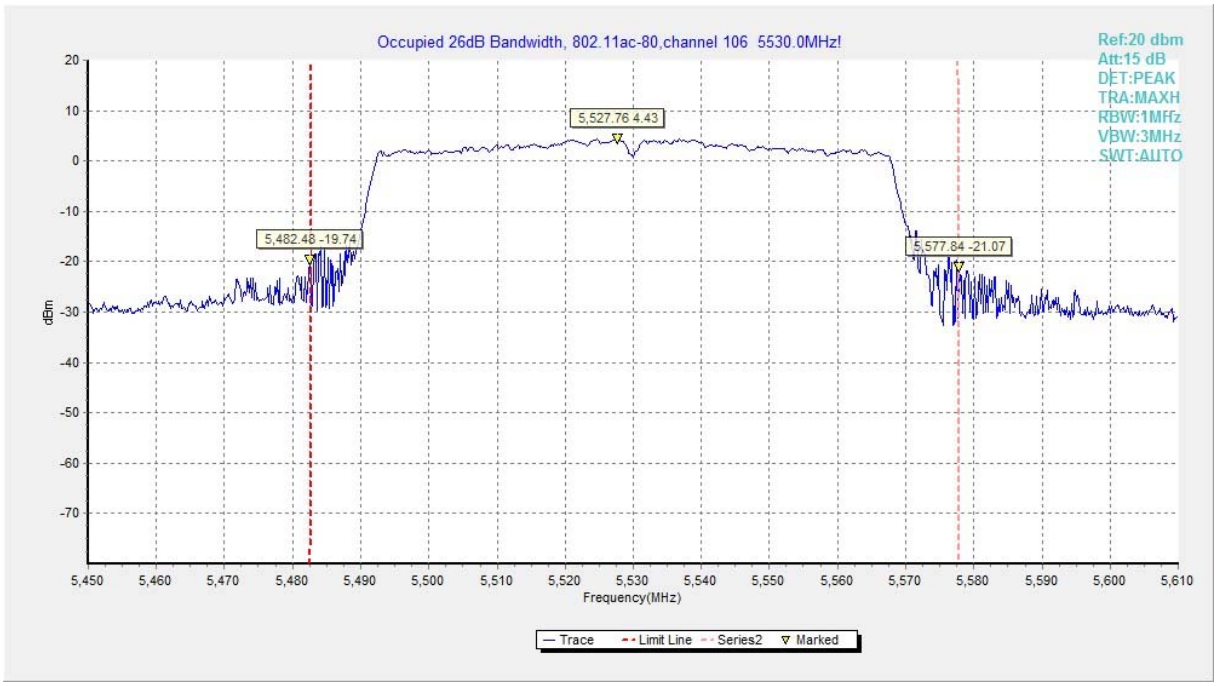


Fig.31 Occupied 26dB Bandwidth (802. 11ac-HT80, 5530MHz)

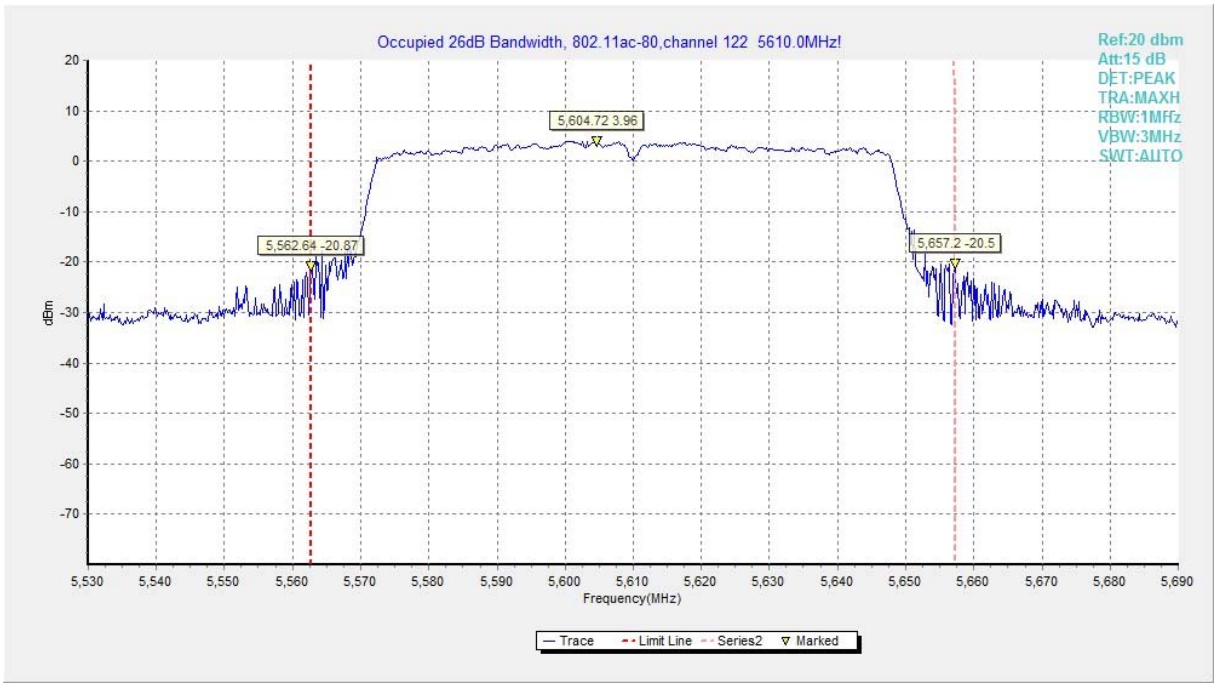


Fig.32 Occupied 26dB Bandwidth (802. 11ac-HT80, 5610MHz)

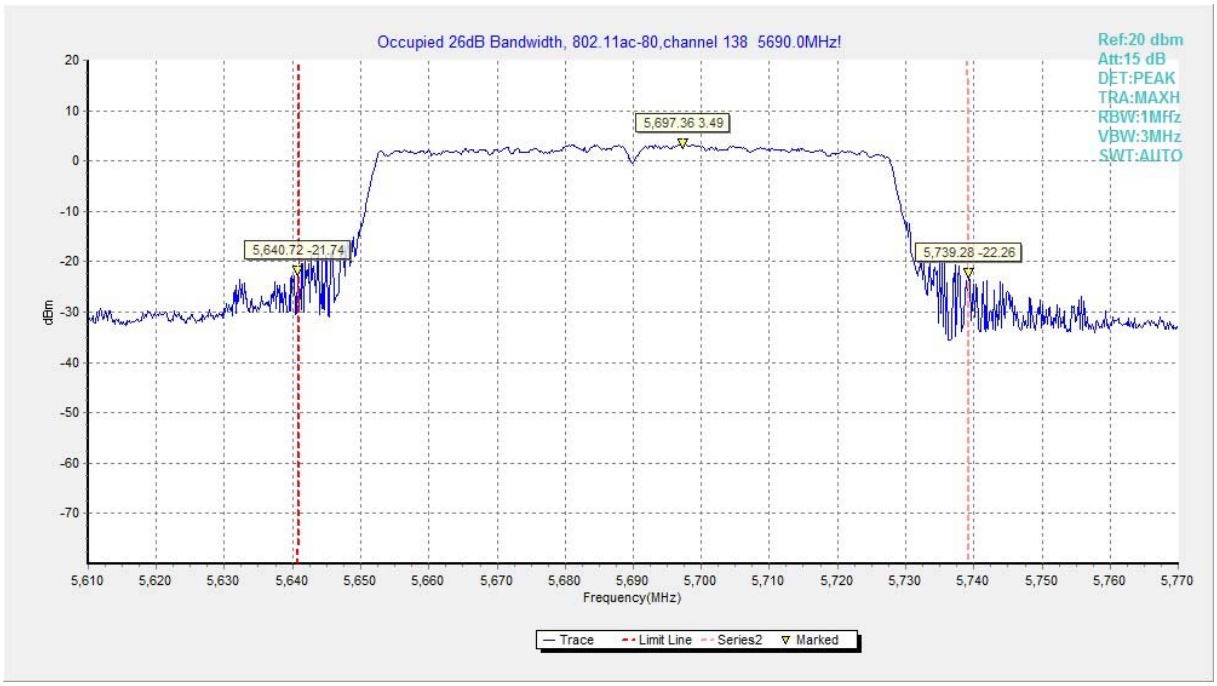


Fig.33 Occupied 26dB Bandwidth (802. 11ac-HT80, 5690MHz)

A.5. Band Edges Compliance

A5.1 Band Edges - Radiated

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)).

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

The measurement is made according to ANSI C63.10-2013 and KDB 789033

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
802.11n HT40	5190 MHz	Fig.42	P
	5310 MHz	Fig.43	P
	5510 MHz	Fig.44	P
	5670 MHz	Fig.45	P
802.11ac HT20	5180 MHz	Fig.46	P
	5320 MHz	Fig.47	P
	5500 MHz	Fig.48	P
	5700 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

	5610MHz	Fig.57	P

Conclusion: PASS

Test graphs as below:

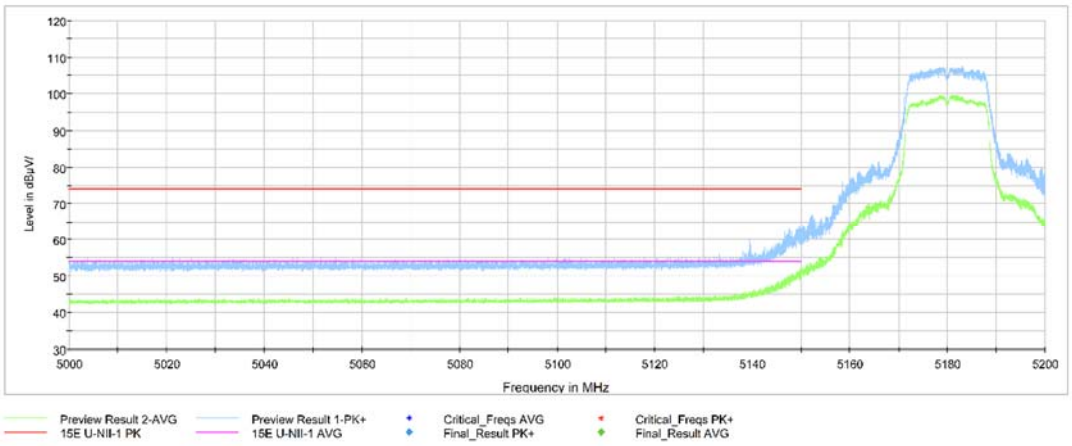


Fig.34 Band Edges (802.11a Ch36, 5180MHz)

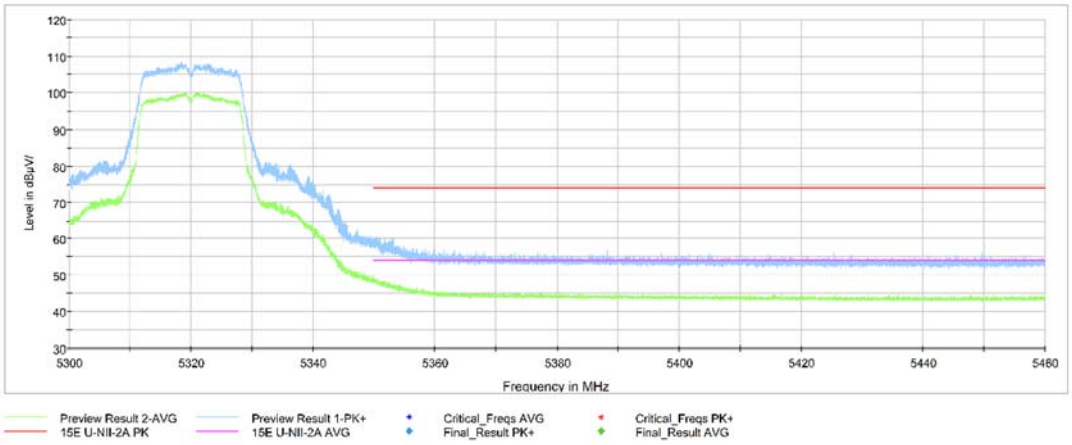


Fig.35 Band Edges (802.11a Ch64, 5320MHz)

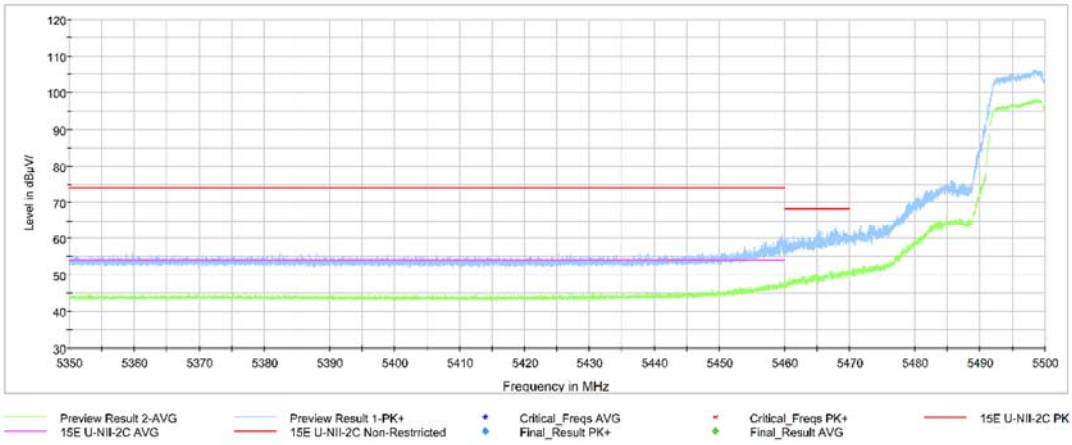


Fig.36 Band Edges (802.11a Ch100, 5500MHz)

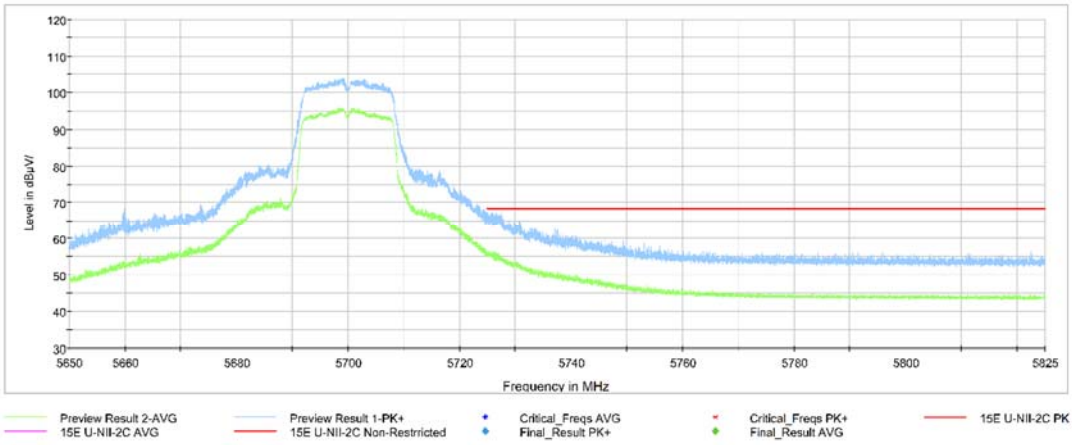


Fig.37 Band Edges (802.11a Ch140, 5700MHz)

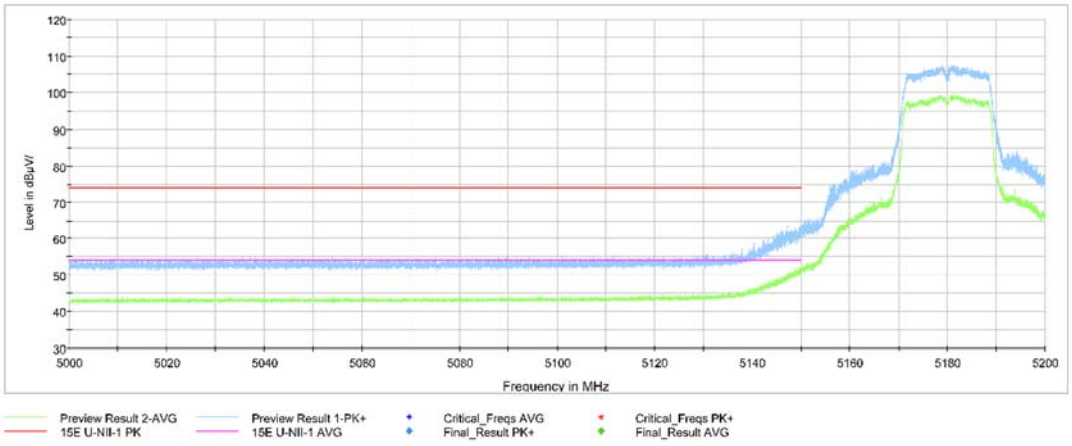


Fig.38 Band Edges (802.11n-HT20 Ch36, 5180MHz)

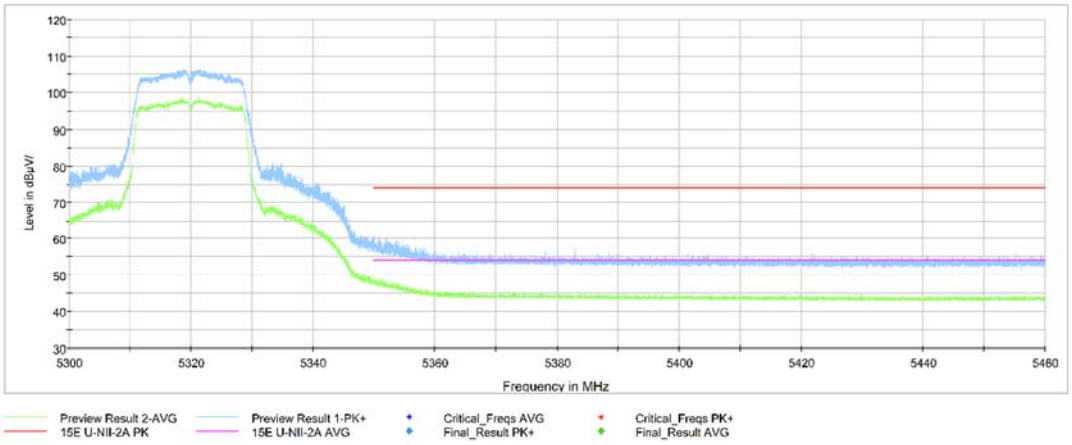


Fig.39 Band Edges (802.11n-HT20 Ch64, 5320MHz)

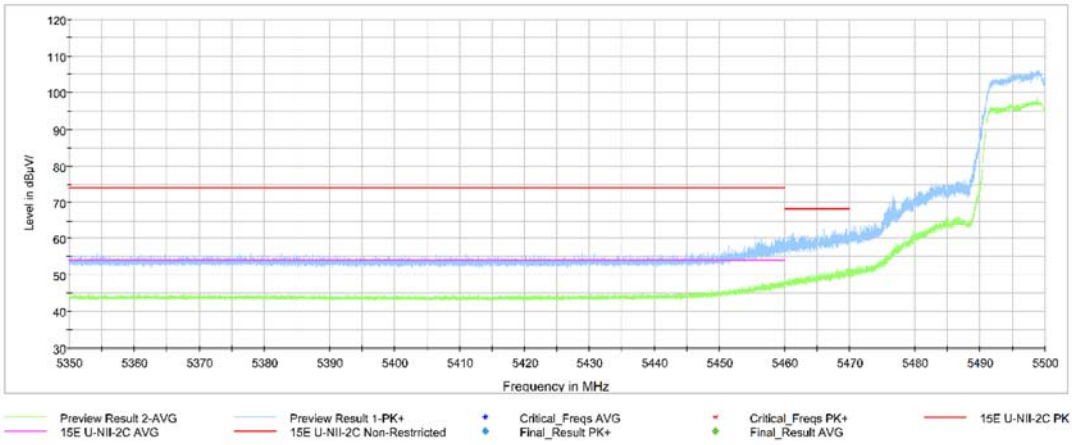


Fig.40 Band Edges (802.11n-HT20 Ch100, 5500MHz)

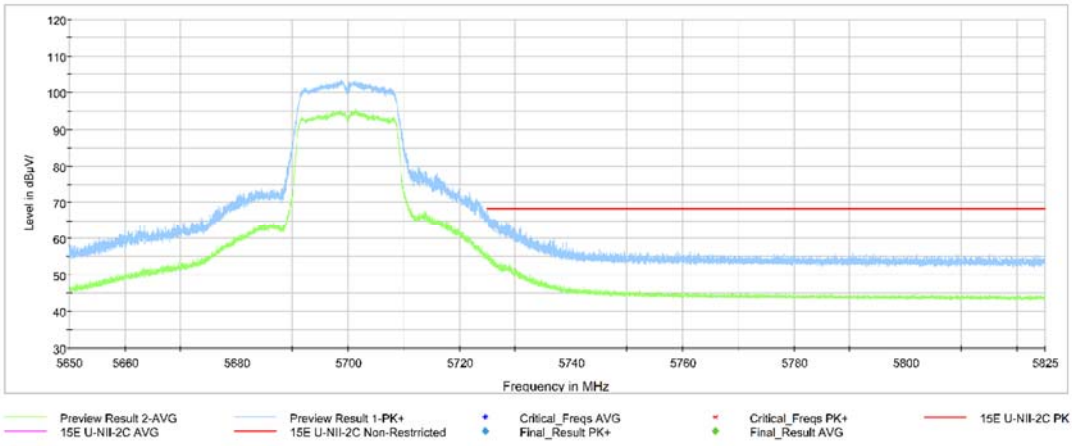


Fig.41 Band Edges (802.11n-HT20 Ch140, 5700MHz)

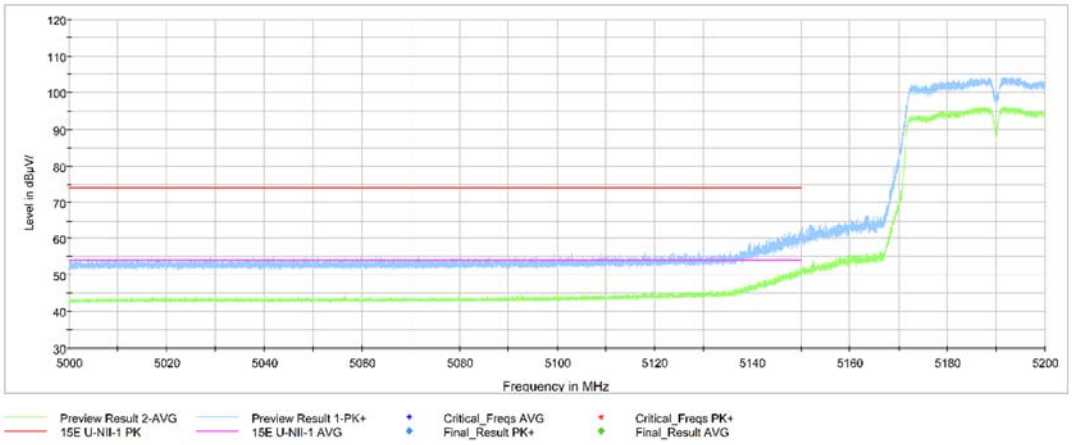


Fig.42 Band Edges (802.11n-HT40 Ch38, 5190MHz)

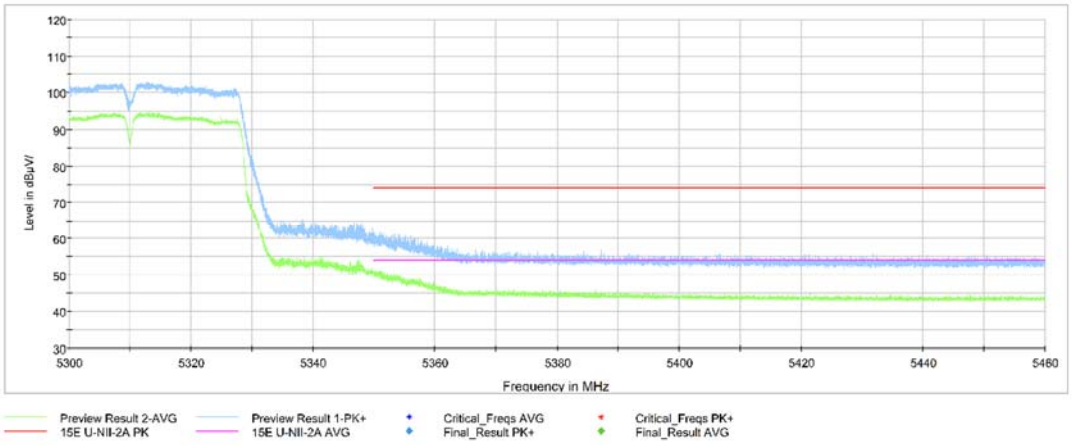


Fig.43 Band Edges (802.11n-HT40 Ch62, 5310MHz)

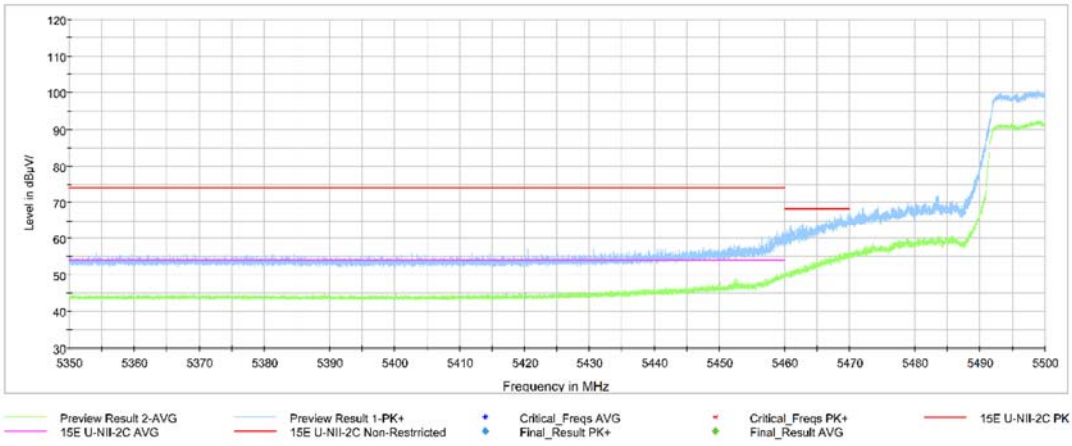


Fig.44 Band Edges (802.11n-HT40 Ch102, 5510MHz)

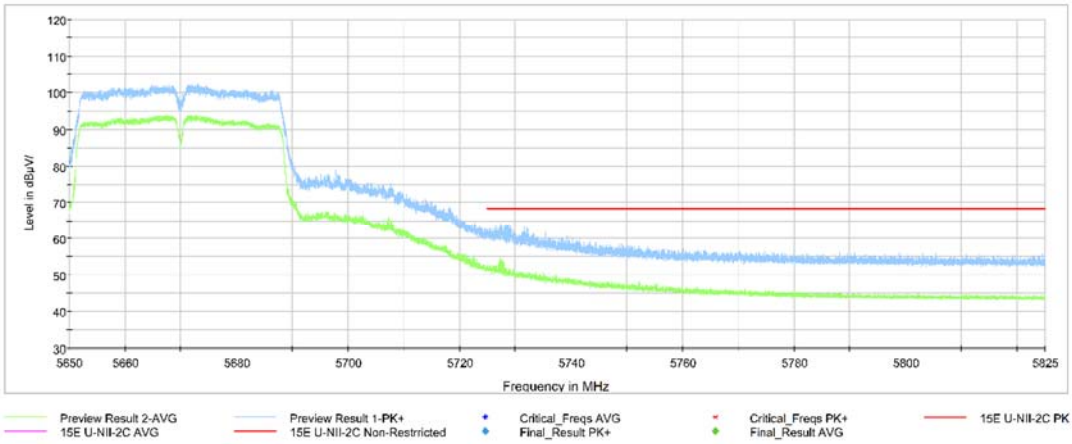


Fig.45 Band Edges (802.11n-HT40 Ch134, 5670MHz)

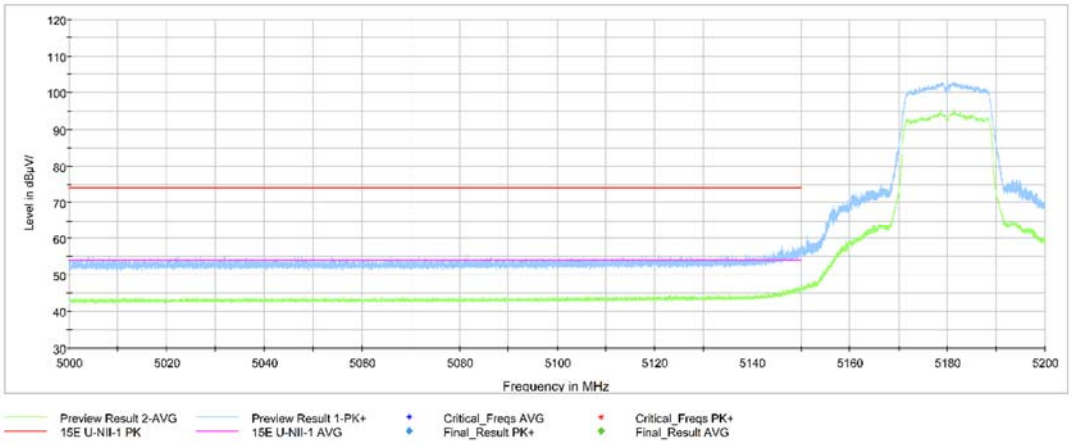


Fig.46 Band Edges (802.11ac-HT20 Ch36, 5180MHz)

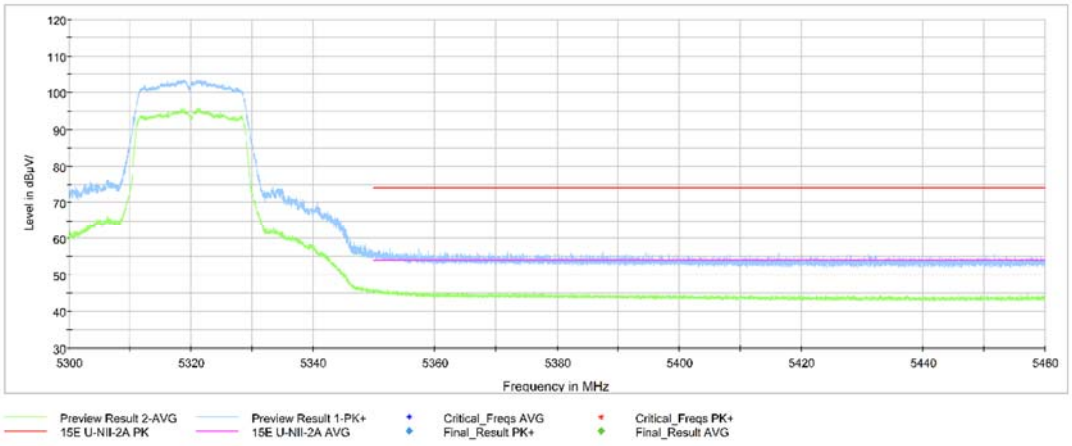


Fig.47 Band Edges (802.11ac-HT20 Ch64, 5320MHz)

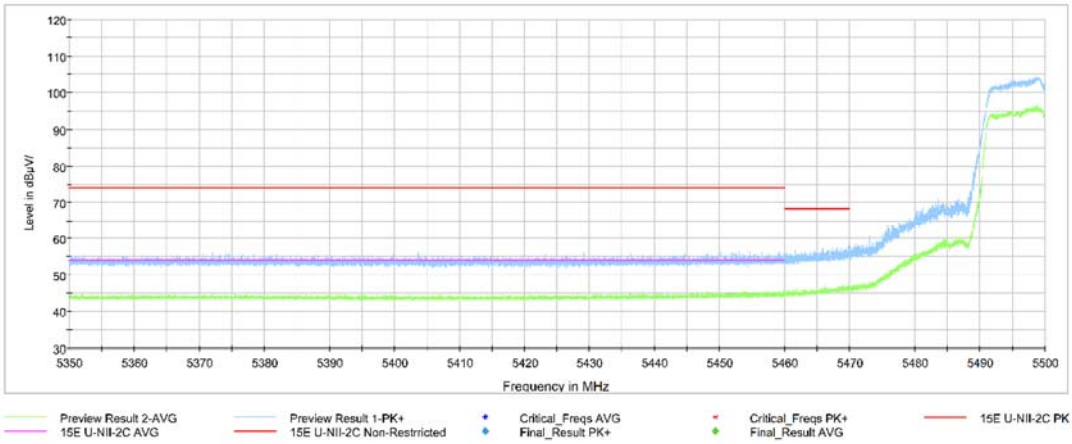


Fig.48 Band Edges (802.11ac-HT20 Ch100, 5500MHz)

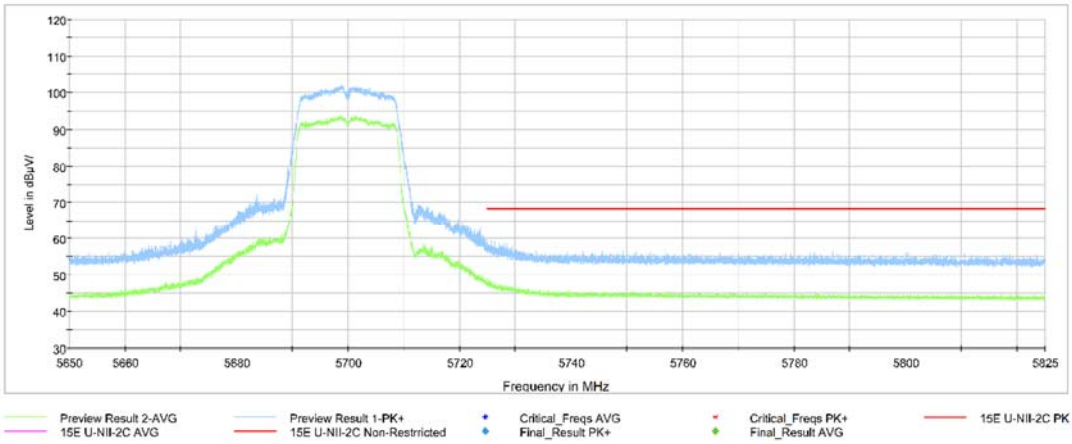


Fig.49 Band Edges (802.11ac-HT20 Ch140, 5700MHz)

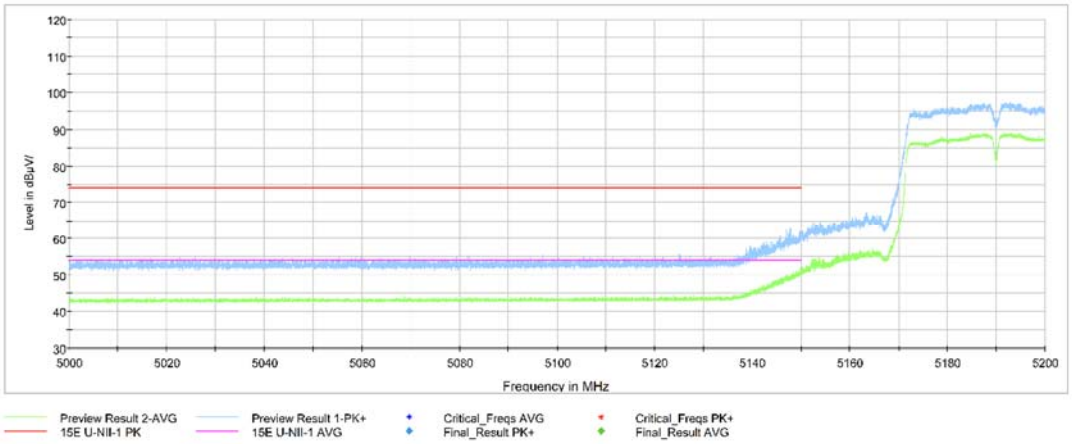


Fig.50 Band Edges (802.11ac-HT40 Ch38, 5190MHz)

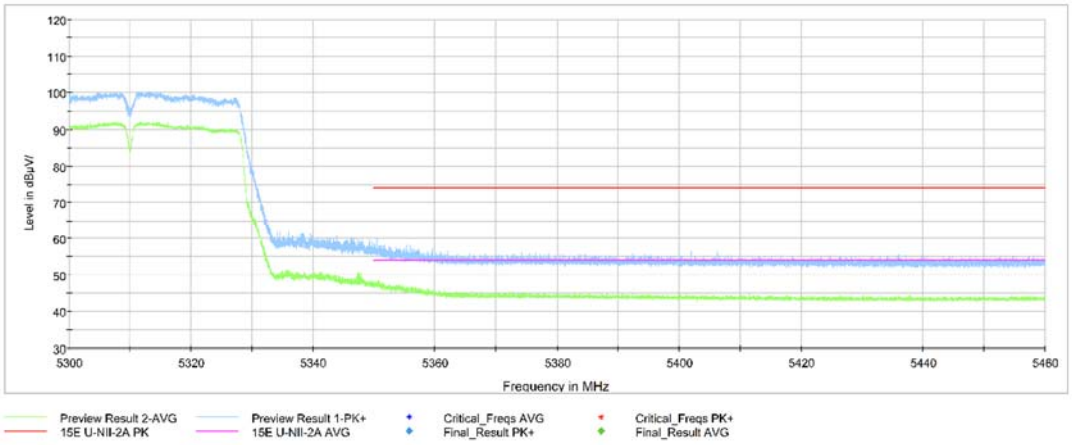


Fig.51 Band Edges (802.11ac-HT40 Ch62, 5310MHz)

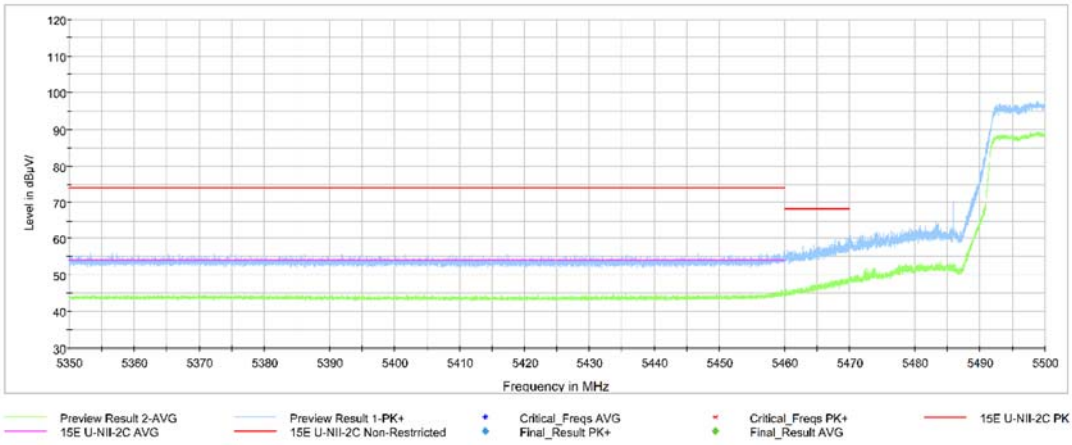


Fig.52 Band Edges (802.11ac-HT40 Ch102, 5510MHz)

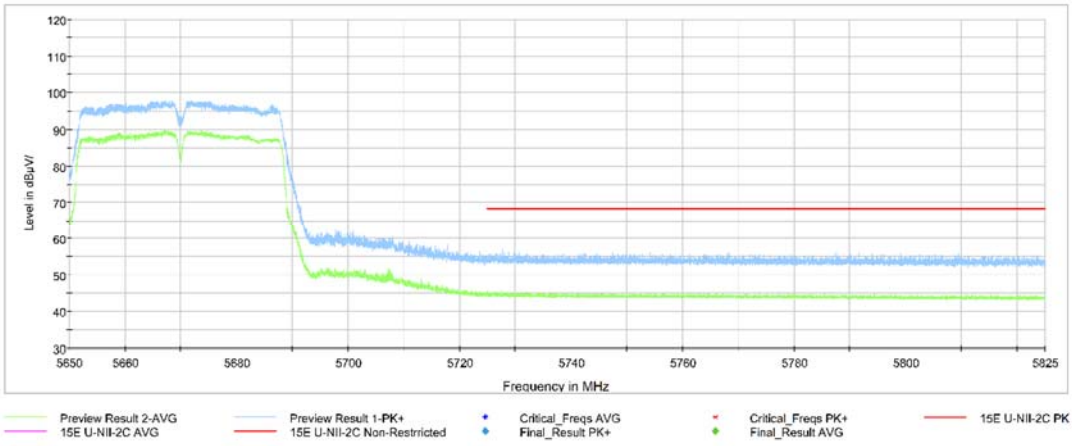


Fig.53 Band Edges (802.11ac-HT40 Ch134, 5670MHz)

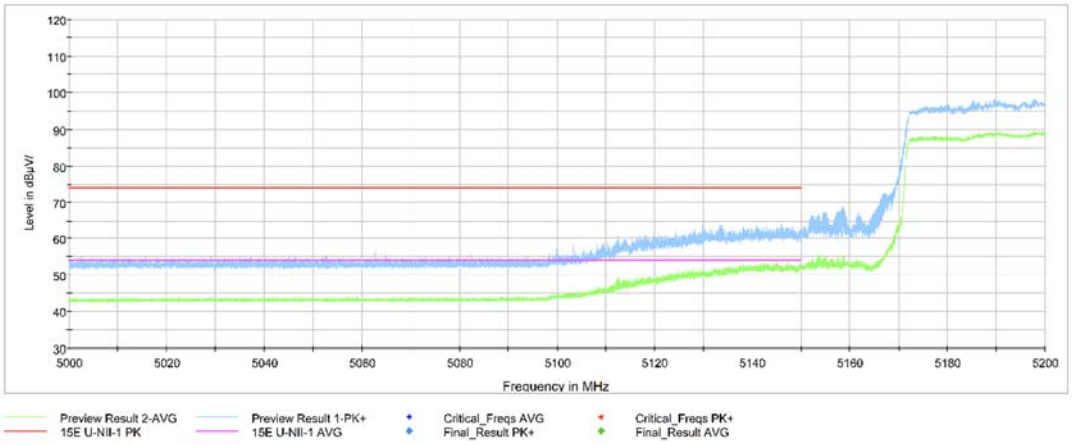


Fig.54 Band Edges (802.11ac-HT80 Ch42 , 5210MHz)

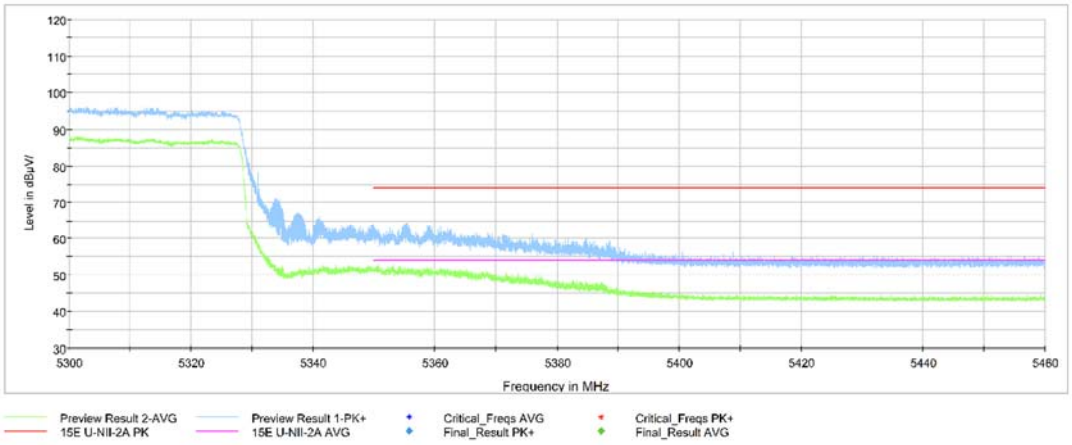


Fig.55 Band Edges (802.11ac-HT80 Ch58, 5290MHz)

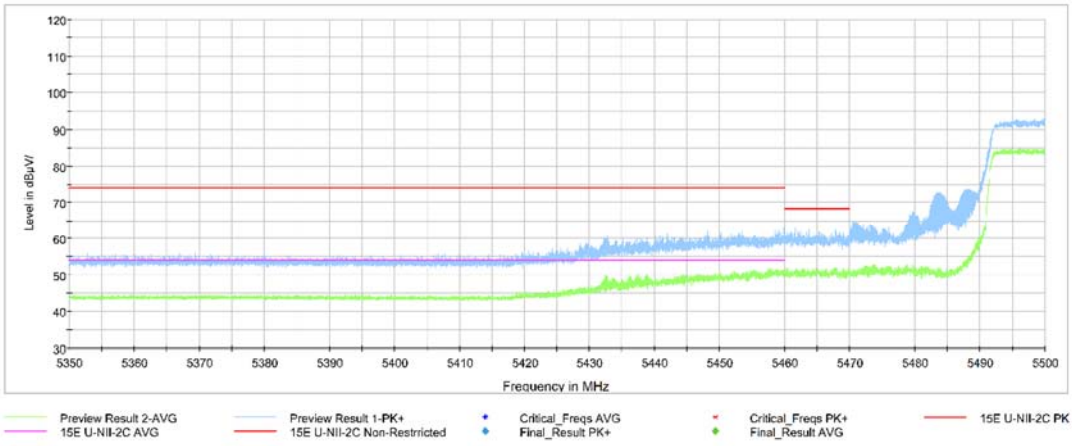


Fig.56 Band Edges (802.11ac-HT80 Ch106, 5530MHz)

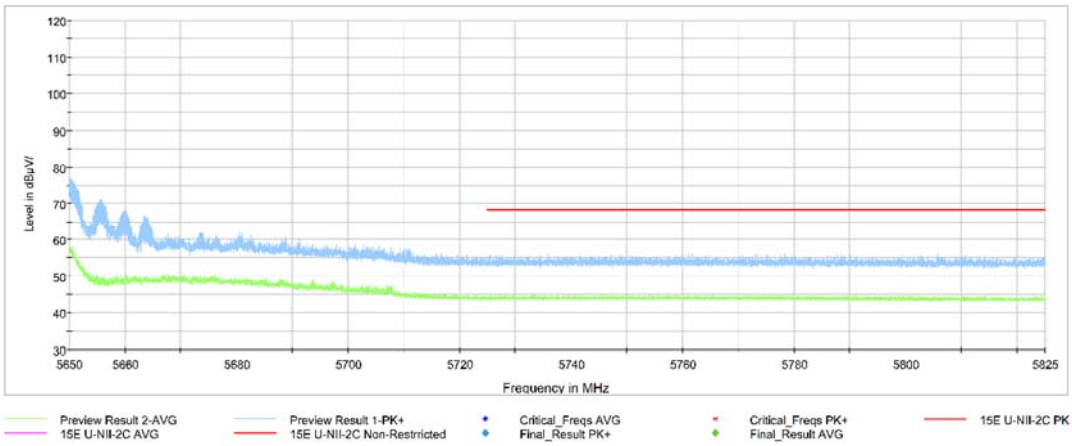


Fig.57 Band Edges (802.11ac-HT80 Ch122, 5610MHz)

A.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)).

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

The measurement is made according to ANSI C63.10-2013 and KDB 789033

Measurement Results:

802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	116(5580MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	140(5700MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n -HT20	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	116(5580MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	140(5700MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT40	38(5190MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	46(5230MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	54(5270MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	62(5310MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	102(5510MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	118(5590MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	134(5670MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P

802.11ac-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac -HT20	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	116(5580MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	140(5700MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11ac-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac HT40	38(5190MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	46(5230MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	54(5270MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	62(5310MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	102(5510MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	118(5590MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	134(5670MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P

802.11ac-HT80 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac –HT80	42(5210MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	58(5290MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	106(5530MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	122(5610MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

Conclusion: PASS

Note:

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

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 Results:

802.11a

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17996.900	43.29	-25.50	46.66	22.13	54.00	10.71	V
17999.000	43.26	-25.50	46.66	22.10	54.00	10.74	V
11821.400	38.53	-31.85	39.05	31.33	54.00	15.47	V
11435.800	38.29	-32.42	38.79	31.92	54.00	15.71	V
5150.000	52.12	-27.61	33.67	46.06	54.00	1.88	V
5149.900	51.67	-27.61	33.67	45.61	54.00	2.33	V

Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17963.200	43.18	-25.50	46.66	22.02	54.00	10.82	V
17984.200	42.68	-25.50	46.66	21.52	54.00	11.32	V
11428.900	37.69	-32.42	38.79	31.32	54.00	16.31	V
11427.800	37.65	-32.42	38.79	31.28	54.00	16.35	V
9369.500	36.04	-33.91	37.97	31.98	54.00	17.96	V
9380.800	35.33	-33.91	37.97	31.27	54.00	18.67	V

Channel 48

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	43.05	-25.50	46.66	21.89	54.00	10.95	V
17985.900	42.68	-25.50	46.66	21.52	54.00	11.32	V
11614.500	37.85	-32.31	38.91	31.26	54.00	16.15	V
11849.600	37.81	-31.85	39.05	30.61	54.00	16.19	V
9354.300	35.49	-33.91	37.97	31.43	54.00	18.51	V
9371.200	35.42	-33.91	37.97	31.36	54.00	18.58	V

Channel 52

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17982.400	42.16	-25.50	46.66	21.00	54.00	11.84	V
17986.800	42.08	-25.50	46.66	20.92	54.00	11.92	V
12655.100	37.86	-30.47	39.06	29.27	54.00	16.14	V
12656.800	37.76	-30.47	39.06	29.17	54.00	16.24	H
11820.200	36.97	-31.85	39.05	29.77	54.00	17.03	H
11598.000	36.95	-32.31	38.91	30.36	54.00	17.05	H

Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17981.300	42.08	-25.50	46.66	20.92	54.00	11.92	H
17992.800	41.97	-25.50	46.66	20.81	54.00	12.03	H
12652.900	37.87	-30.47	39.06	29.28	54.00	16.13	V
12642.500	37.76	-31.05	38.99	29.82	54.00	16.24	H
11821.900	37.09	-31.85	39.05	29.89	54.00	16.91	H
11822.400	37.02	-31.85	39.05	29.82	54.00	16.98	V

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.900	42.49	-25.50	46.66	21.33	54.00	11.51	H
17972.000	42.23	-25.50	46.66	21.07	54.00	11.77	V
12646.300	37.82	-30.47	39.06	29.23	54.00	16.18	V
12650.100	37.81	-30.47	39.06	29.22	54.00	16.19	V
5350.200	48.90	-27.43	34.01	42.32	54.00	5.10	V
5350.200	48.80	-27.43	34.01	42.22	54.00	5.20	V

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17977.500	42.77	-25.50	46.66	21.61	54.00	11.23	H
17980.800	42.65	-25.50	46.66	21.49	54.00	11.35	V
12646.300	39.18	-30.47	39.06	30.59	54.00	14.82	H
12034.700	38.91	-31.59	39.04	31.46	54.00	15.09	H
5459.500	48.49	-27.18	34.17	41.50	54.00	5.51	V
5459.900	48.14	-27.18	34.17	41.15	54.00	5.86	V

Channel 116

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.900	42.66	-25.50	46.66	21.50	54.00	11.34	V
17997.800	42.54	-25.50	46.66	21.38	54.00	11.46	V
12651.200	38.46	-30.47	39.06	29.87	54.00	15.54	H
12645.200	38.03	-31.05	38.99	30.09	54.00	15.97	H
11825.700	37.54	-31.85	39.05	30.34	54.00	16.46	H
11427.000	37.48	-32.42	38.79	31.11	54.00	16.52	H

Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17990.700	42.14	-25.50	46.66	20.98	54.00	11.86	V
17998.900	42.14	-25.50	46.66	20.98	54.00	11.86	H
12679.900	37.80	-30.47	39.06	29.21	54.00	16.20	V
13265.000	37.72	-29.67	39.55	27.84	54.00	16.28	H
11439.600	37.52	-32.42	38.79	31.15	54.00	16.48	V
11438.500	37.46	-32.42	38.79	31.09	54.00	16.54	H

802.11n-HT20

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.200	42.94	-25.50	46.66	21.78	54.00	11.06	V
17974.200	42.56	-25.50	46.66	21.40	54.00	11.44	V
11430.900	37.71	-32.42	38.79	31.34	54.00	16.29	V
11832.100	37.67	-31.85	39.05	30.47	54.00	16.33	V
5149.500	52.12	-27.61	33.67	46.06	54.00	1.88	V
5150.000	51.94	-27.61	33.67	45.88	54.00	2.06	V

Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17999.300	42.81	-25.50	46.66	21.65	54.00	11.19	V
17984.200	42.61	-25.50	46.66	21.45	54.00	11.39	V
11845.200	37.77	-31.85	39.05	30.57	54.00	16.23	V
11444.300	37.64	-32.42	38.79	31.27	54.00	16.36	V
9354.000	35.62	-33.91	37.97	31.56	54.00	18.38	V
9463.000	35.61	-32.95	37.91	30.64	54.00	18.39	V

Channel 48

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17999.000	42.63	-25.50	46.66	21.47	54.00	11.37	V
17996.900	42.53	-25.50	46.66	21.37	54.00	11.47	V
11367.000	37.85	-32.42	38.79	31.48	54.00	16.15	V
11448.100	37.83	-32.42	38.79	31.46	54.00	16.17	V
9330.300	35.41	-33.91	37.97	31.35	54.00	18.59	V
9438.600	35.40	-32.95	37.91	30.43	54.00	18.60	V

Channel 52

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.200	42.55	-25.50	46.66	21.39	54.00	11.45	V
17978.000	42.19	-25.50	46.66	21.03	54.00	11.81	V
12654.000	37.96	-30.47	39.06	29.37	54.00	16.04	H
12651.800	37.72	-30.47	39.06	29.13	54.00	16.28	H
11447.900	37.67	-32.42	38.79	31.30	54.00	16.33	H
11831.800	37.04	-31.85	39.05	29.84	54.00	16.96	H

Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17994.000	42.28	-25.50	46.66	21.12	54.00	11.72	V
17985.200	42.03	-25.50	46.66	20.87	54.00	11.97	H
12652.900	37.71	-30.47	39.06	29.12	54.00	16.29	V
12651.800	37.59	-30.47	39.06	29.00	54.00	16.41	H
11468.800	37.46	-32.26	38.84	30.89	54.00	16.54	H
11826.200	37.35	-31.85	39.05	30.15	54.00	16.65	V

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.900	42.15	-25.50	46.66	20.99	54.00	11.85	H
17978.500	42.09	-25.50	46.66	20.93	54.00	11.91	H
12656.200	37.79	-30.47	39.06	29.20	54.00	16.21	H
12650.100	37.62	-30.47	39.06	29.03	54.00	16.38	H
5350.400	49.08	-27.43	34.01	42.50	54.00	4.92	V
5350.200	49.06	-27.43	34.01	42.48	54.00	4.94	V

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.800	42.67	-25.50	46.66	21.51	54.00	11.33	H
17985.200	42.66	-25.50	46.66	21.50	54.00	11.34	H
12649.600	38.76	-30.47	39.06	30.17	54.00	15.24	H
12637.000	38.29	-31.05	38.99	30.35	54.00	15.71	H
5460.000	48.64	-27.18	34.17	41.65	54.00	5.36	V
5457.900	48.12	-27.18	34.17	41.13	54.00	5.88	V

Channel 116

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.800	42.36	-25.50	46.66	21.20	54.00	11.64	V
17996.200	42.13	-25.50	46.66	20.97	54.00	11.87	V
12650.100	37.71	-30.47	39.06	29.12	54.00	16.29	H
13296.400	37.69	-29.49	39.71	27.47	54.00	16.31	V
11438.500	37.43	-32.42	38.79	31.06	54.00	16.57	H
11433.500	37.37	-32.42	38.79	31.00	54.00	16.63	H

Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	42.02	-25.50	46.66	20.86	54.00	11.98	H
17964.200	41.93	-25.50	46.66	20.77	54.00	12.07	H
12643.000	37.96	-31.05	38.99	30.02	54.00	16.04	H
12614.400	37.94	-31.05	38.99	30.00	54.00	16.06	H
11431.900	37.50	-32.42	38.79	31.13	54.00	16.50	V
11848.200	37.22	-31.85	39.05	30.02	54.00	16.78	H

802.11n-HT40

Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17980.800	43.31	-25.50	46.66	22.15	54.00	10.69	V
17995.500	42.92	-25.50	46.66	21.76	54.00	11.08	V
11437.500	38.08	-32.42	38.79	31.71	54.00	15.92	V
11403.800	37.81	-32.42	38.79	31.44	54.00	16.19	V
5149.300	51.87	-27.61	33.67	45.81	54.00	2.13	V
5149.900	51.81	-27.61	33.67	45.75	54.00	2.19	V

Channel 46

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17991.200	42.54	-25.50	46.66	21.38	54.00	11.46	V
17985.200	42.53	-25.50	46.66	21.37	54.00	11.47	V
12647.400	38.30	-30.47	39.06	29.71	54.00	15.70	H
12644.100	38.29	-31.05	38.99	30.35	54.00	15.71	V
11425.900	38.13	-32.42	38.79	31.76	54.00	15.87	V
11445.100	38.01	-32.42	38.79	31.64	54.00	15.99	H

Channel 54

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17983.500	42.47	-25.50	46.66	21.31	54.00	11.53	V
17987.900	42.38	-25.50	46.66	21.22	54.00	11.62	V
13292.000	37.59	-29.49	39.71	27.37	54.00	16.41	V
12653.500	37.57	-30.47	39.06	28.98	54.00	16.43	V
11843.900	37.02	-31.85	39.05	29.82	54.00	16.98	V
11827.400	37.00	-31.85	39.05	29.80	54.00	17.00	H

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17996.200	42.33	-25.50	46.66	21.17	54.00	11.67	V
17985.200	42.22	-25.50	46.66	21.06	54.00	11.78	V
13263.400	37.80	-29.67	39.55	27.92	54.00	16.20	H
12652.400	37.59	-30.47	39.06	29.00	54.00	16.41	H
5350.400	51.12	-27.43	34.01	44.54	54.00	2.88	V
5350.100	51.09	-27.43	34.01	44.51	54.00	2.91	V

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.900	42.27	-25.50	46.66	21.11	54.00	11.73	H
17976.300	42.02	-25.50	46.66	20.86	54.00	11.98	H
12657.900	38.01	-30.47	39.06	29.42	54.00	15.99	V
12643.500	37.76	-31.05	38.99	29.82	54.00	16.24	H
5460.000	51.01	-27.18	34.17	44.02	54.00	2.99	V
5460.000	50.81	-27.18	34.17	43.82	54.00	3.19	V

Channel 118

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.200	42.27	-25.50	46.66	21.11	54.00	11.73	H
17994.500	41.99	-25.50	46.66	20.83	54.00	12.01	H
12639.700	37.70	-31.05	38.99	29.76	54.00	16.30	H
12652.400	37.65	-30.47	39.06	29.06	54.00	16.35	V
11794.900	37.31	-31.99	38.98	30.32	54.00	16.69	V
11427.500	37.15	-32.42	38.79	30.78	54.00	16.85	V

Channel 134

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17996.200	42.47	-25.50	46.66	21.31	54.00	11.53	V
17998.900	42.21	-25.50	46.66	21.05	54.00	11.79	V
12652.900	37.85	-30.47	39.06	29.26	54.00	16.15	H
13266.100	37.71	-29.67	39.55	27.83	54.00	16.29	H
11439.600	37.26	-32.42	38.79	30.89	54.00	16.74	V
11843.900	37.21	-31.85	39.05	30.01	54.00	16.79	V

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Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17992.100	44.06	-25.50	46.66	22.90	54.00	9.94	V
17998.300	43.38	-25.50	46.66	22.22	54.00	10.62	V
11435.100	39.32	-32.42	38.79	32.95	54.00	14.68	V
11428.900	38.60	-32.42	38.79	32.23	54.00	15.40	V
5149.600	47.02	-27.61	33.67	40.96	54.00	6.98	V
5149.700	46.69	-27.61	33.67	40.63	54.00	7.31	V

Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17978.700	42.88	-25.50	46.66	21.72	54.00	11.12	V
17984.900	42.75	-25.50	46.66	21.59	54.00	11.25	V
11579.400	38.11	-32.31	38.91	31.52	54.00	15.89	V
11428.900	37.73	-32.42	38.79	31.36	54.00	16.27	V
9409.300	35.61	-32.95	37.91	30.64	54.00	18.39	V
9409.700	35.60	-32.95	37.91	30.63	54.00	18.40	V

Channel 48

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17996.600	42.88	-25.50	46.66	21.72	54.00	11.12	V
17982.500	42.76	-25.50	46.66	21.60	54.00	11.24	V
11805.300	38.04	-31.85	39.05	30.84	54.00	15.96	V
11405.500	37.63	-32.42	38.79	31.26	54.00	16.37	V
9368.400	35.97	-33.91	37.97	31.91	54.00	18.03	V
9349.900	35.76	-33.91	37.97	31.70	54.00	18.24	V

Channel 52

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.900	42.52	-25.50	46.66	21.36	54.00	11.48	H
17979.100	41.97	-25.50	46.66	20.81	54.00	12.03	V
12649.600	38.36	-30.47	39.06	29.77	54.00	15.64	H
12648.000	37.73	-30.47	39.06	29.14	54.00	16.27	V
11603.500	37.18	-32.31	38.91	30.59	54.00	16.82	H
11434.100	37.10	-32.42	38.79	30.73	54.00	16.90	H

Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17984.600	42.19	-25.50	46.66	21.03	54.00	11.81	V
17982.400	42.12	-25.50	46.66	20.96	54.00	11.88	V
12648.000	37.54	-30.47	39.06	28.95	54.00	16.46	V
12615.000	37.45	-31.05	38.99	29.51	54.00	16.55	H
11830.600	37.17	-31.85	39.05	29.97	54.00	16.83	V
11809.200	37.07	-31.85	39.05	29.87	54.00	16.93	V

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17981.300	42.24	-25.50	46.66	21.08	54.00	11.76	V
17994.500	42.22	-25.50	46.66	21.06	54.00	11.78	H
13305.800	37.62	-29.49	39.71	27.40	54.00	16.38	V
12652.900	37.58	-30.47	39.06	28.99	54.00	16.42	V
5352.300	46.05	-27.43	34.01	39.47	54.00	7.95	V
5350.400	46.00	-27.43	34.01	39.42	54.00	8.00	V

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.800	42.85	-25.50	46.66	21.69	54.00	11.15	V
17980.800	42.81	-25.50	46.66	21.65	54.00	11.19	V
12613.900	38.63	-31.05	38.99	30.69	54.00	15.37	H
13295.900	38.47	-29.49	39.71	28.25	54.00	15.53	H
5459.000	45.73	-27.18	34.17	38.74	54.00	8.27	V
5459.900	45.71	-27.18	34.17	38.72	54.00	8.29	V

Channel 116

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.200	42.51	-25.50	46.66	21.35	54.00	11.49	V
17973.600	42.46	-25.50	46.66	21.30	54.00	11.54	V
12649.000	38.98	-30.47	39.06	30.39	54.00	15.02	H
13264.500	37.99	-29.67	39.55	28.11	54.00	16.01	V
11603.500	37.21	-32.31	38.91	30.62	54.00	16.79	V
11450.000	37.19	-32.26	38.84	30.62	54.00	16.81	H

Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	43.39	-25.50	46.66	22.23	54.00	10.61	H
17984.600	42.34	-25.50	46.66	21.18	54.00	11.66	H
12644.100	37.84	-31.05	38.99	29.90	54.00	16.16	V
12646.900	37.81	-30.47	39.06	29.22	54.00	16.19	H
11811.400	37.54	-31.85	39.05	30.34	54.00	16.46	V
11578.200	37.35	-32.31	38.91	30.76	54.00	16.65	V

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Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	43.21	-25.50	46.66	22.05	54.00	10.79	V
17998.900	42.92	-25.50	46.66	21.76	54.00	11.08	V
13299.100	38.42	-29.49	39.71	28.20	54.00	15.58	V
13298.000	38.41	-29.49	39.71	28.19	54.00	15.59	V
5149.800	52.04	-27.61	33.67	45.98	54.00	1.96	V
5149.900	51.52	-27.61	33.67	45.46	54.00	2.48	V

Channel 46

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.900	42.58	-25.50	46.66	21.42	54.00	11.42	V
17983.000	42.42	-25.50	46.66	21.26	54.00	11.58	H
12679.300	38.25	-30.47	39.06	29.66	54.00	15.75	H
12652.900	38.18	-30.47	39.06	29.59	54.00	15.82	H
11448.400	37.87	-32.26	38.84	31.30	54.00	16.13	H
11817.500	37.81	-31.85	39.05	30.61	54.00	16.19	V

Channel 54

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17983.000	42.54	-25.50	46.66	21.38	54.00	11.46	H
17982.400	41.96	-25.50	46.66	20.80	54.00	12.04	V
12646.900	38.03	-30.47	39.06	29.44	54.00	15.97	H
12680.400	37.75	-30.47	39.06	29.16	54.00	16.25	H
11812.000	37.07	-31.85	39.05	29.87	54.00	16.93	H
11607.900	37.04	-32.31	38.91	30.45	54.00	16.96	H

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17963.700	41.95	-25.50	46.66	20.79	54.00	12.05	H
17998.300	41.95	-25.50	46.66	20.79	54.00	12.05	V
12645.800	37.96	-31.05	38.99	30.02	54.00	16.04	H
12648.500	37.88	-30.47	39.06	29.29	54.00	16.12	H
5350.700	48.36	-27.43	34.01	41.78	54.00	5.64	V
5350.900	48.25	-27.43	34.01	41.67	54.00	5.75	V

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	42.27	-25.50	46.66	21.11	54.00	11.73	H
17979.700	42.21	-25.50	46.66	21.05	54.00	11.79	V
12651.200	37.79	-30.47	39.06	29.20	54.00	16.21	V
12650.700	37.75	-30.47	39.06	29.16	54.00	16.25	V
5459.700	46.09	-27.18	34.17	39.10	54.00	7.91	V
5459.500	45.79	-27.18	34.17	38.80	54.00	8.21	V

Channel 118

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17976.900	42.38	-25.50	46.66	21.22	54.00	11.62	V
17997.800	42.26	-25.50	46.66	21.10	54.00	11.74	H
12651.800	37.61	-30.47	39.06	29.02	54.00	16.39	H
12643.500	37.57	-31.05	38.99	29.63	54.00	16.43	V
11823.000	37.22	-31.85	39.05	30.02	54.00	16.78	H
11573.200	37.13	-32.31	38.91	30.54	54.00	16.87	H

Channel 134

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17996.200	42.34	-25.50	46.66	21.18	54.00	11.66	H
17997.800	42.33	-25.50	46.66	21.17	54.00	11.67	V
12648.000	37.93	-30.47	39.06	29.34	54.00	16.07	V
12647.400	37.82	-30.47	39.06	29.23	54.00	16.18	H
11427.500	37.28	-32.42	38.79	30.91	54.00	16.72	H
11815.800	37.28	-31.85	39.05	30.08	54.00	16.72	V

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Channel 42

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	42.85	-25.50	46.66	21.69	54.00	11.15	V
17998.900	42.60	-25.50	46.66	21.44	54.00	11.40	H
11439.000	38.10	-32.42	38.79	31.73	54.00	15.90	V
12617.700	38.10	-31.05	38.99	30.16	54.00	15.90	H
5145.100	53.43	-27.61	33.67	47.37	54.00	0.57	V
5142.400	53.13	-27.61	33.67	47.07	54.00	0.87	V

Channel 58

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.200	42.46	-25.50	46.66	21.30	54.00	11.54	H
17981.300	42.36	-25.50	46.66	21.20	54.00	11.64	H
12646.300	38.15	-30.47	39.06	29.56	54.00	15.85	H
12682.000	38.07	-30.47	39.06	29.48	54.00	15.93	H
5353.200	52.80	-27.43	34.01	46.22	54.00	1.20	V
5350.800	52.67	-27.43	34.01	46.09	54.00	1.33	V

Channel 106

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17980.200	42.11	-25.50	46.66	20.95	54.00	11.89	H
17982.400	42.11	-25.50	46.66	20.95	54.00	11.89	H
13314.000	38.17	-29.49	39.71	27.95	54.00	15.83	V
12651.200	38.00	-30.47	39.06	29.41	54.00	16.00	V
5457.500	51.84	-27.18	34.17	44.85	54.00	2.16	V
5457.900	51.67	-27.18	34.17	44.68	54.00	2.33	V

Channel 122

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17984.600	42.19	-25.50	46.66	21.03	54.00	11.81	H
17992.800	42.17	-25.50	46.66	21.01	54.00	11.83	H
12660.000	37.81	-30.47	39.06	29.22	54.00	16.19	H
12659.000	37.79	-30.47	39.06	29.20	54.00	16.21	H
11849.400	37.11	-31.85	39.05	29.91	54.00	16.89	V
11439.000	37.09	-32.42	38.79	30.72	54.00	16.91	H

PEAK Results:

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Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17984.500	53.22	-25.50	46.66	32.06	74.00	20.78	V
17960.500	53.08	-25.50	46.66	31.92	74.00	20.92	V
11936.900	48.63	-31.48	39.09	41.02	74.00	25.37	V
11845.200	48.20	-31.85	39.05	41.00	74.00	25.80	V
5149.800	63.72	-27.61	33.67	57.66	74.00	10.28	V
5149.600	63.50	-27.61	33.67	57.44	74.00	10.50	V

Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17391.200	52.99	-26.85	45.25	34.59	68.30	15.31	V
17999.300	52.99	-25.50	46.66	31.83	74.00	21.01	V
11445.700	47.96	-32.42	38.79	41.59	74.00	26.04	V
10596.000	47.81	-32.76	38.38	42.19	68.30	20.49	V
10095.800	45.68	-33.45	38.13	41.00	68.30	22.62	V
9988.600	45.52	-33.63	38.11	41.04	68.30	22.78	V

Channel 48

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17391.200	52.43	-26.85	45.25	34.03	68.30	15.87	V
17392.200	52.31	-26.85	45.25	33.91	68.30	15.99	V
11957.200	47.76	-31.48	39.09	40.15	74.00	26.24	V
11890.200	47.51	-31.85	39.05	40.31	74.00	26.49	V
9993.400	46.61	-33.63	38.11	42.13	68.30	21.69	V
8643.800	45.89	-34.38	37.93	42.34	68.30	22.41	V

Channel 52

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17982.400	52.77	-25.50	46.66	31.61	74.00	21.23	V
17995.600	52.57	-25.50	46.66	31.41	74.00	21.43	V
14256.700	49.24	-28.42	42.34	35.32	68.30	19.06	H
14895.200	49.16	-28.59	40.79	36.96	68.30	19.14	V
11612.900	47.49	-32.31	38.91	40.90	74.00	26.51	V
11337.300	47.47	-32.42	38.79	41.10	74.00	26.53	V

Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17987.300	53.60	-25.50	46.66	32.44	74.00	20.40	V
17852.600	53.13	-25.50	46.66	31.97	74.00	20.87	V
14718.100	49.04	-28.32	41.35	36.02	68.30	19.26	V
14265.500	48.94	-28.42	42.34	35.02	68.30	19.36	H
11608.500	48.65	-32.31	38.91	42.06	74.00	25.35	H
11392.300	48.33	-32.42	38.79	41.96	74.00	25.67	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17967.500	53.13	-25.50	46.66	31.97	74.00	20.87	H
17962.000	52.58	-25.50	46.66	31.42	74.00	21.42	V
14256.100	49.10	-28.42	42.34	35.18	68.30	19.20	V
13250.200	49.07	-29.67	39.55	39.19	74.00	24.93	H
5350.300	60.47	-27.43	34.01	53.89	74.00	13.53	V
5350.300	60.37	-27.43	34.01	53.79	74.00	13.63	V

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17381.800	54.64	-25.95	44.35	36.23	68.30	13.66	V
17981.800	53.87	-25.50	46.66	32.71	74.00	20.13	V
14243.000	50.62	-28.99	42.00	37.60	68.30	17.68	V
14238.500	50.36	-28.99	42.00	37.34	68.30	17.94	V
5459.600	61.34	-27.18	34.17	54.35	74.00	12.66	V
5467.800	63.57	-27.18	34.17	56.58	68.30	4.73	V

Channel 116

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	53.10	-25.50	46.66	31.94	74.00	20.90	V
17428.500	52.98	-26.85	45.25	34.58	68.30	15.32	H
14222.600	49.51	-28.99	42.00	36.49	68.30	18.79	H
14243.500	49.23	-28.99	42.00	36.21	68.30	19.07	V
11545.800	48.75	-32.26	38.84	42.18	74.00	25.25	V
11765.200	48.60	-31.99	38.98	41.61	74.00	25.40	V

Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17433.500	53.38	-26.85	45.25	34.98	68.30	14.92	H
17403.200	52.91	-26.85	45.25	34.51	68.30	15.39	V
14310.000	50.40	-28.42	42.34	36.48	68.30	17.90	H
13275.000	49.94	-29.67	39.55	40.06	74.00	24.06	V
5725.200	67.40	-27.07	34.31	60.16	68.30	0.90	V
5725.900	67.39	-27.07	34.31	60.15	68.30	0.91	V

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Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17975.200	52.90	-25.50	46.66	31.74	74.00	21.10	V
17975.600	52.76	-25.50	46.66	31.60	74.00	21.24	V
11825.600	48.21	-31.85	39.05	41.01	74.00	25.79	V
11828.300	47.75	-31.85	39.05	40.55	74.00	26.25	V
5147.200	63.43	-27.61	33.67	57.37	74.00	10.57	V
5149.800	63.29	-27.61	33.67	57.23	74.00	10.71	V

Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17986.900	52.46	-25.50	46.66	31.30	74.00	21.54	V
17976.600	52.43	-25.50	46.66	31.27	74.00	21.57	V
11466.000	48.29	-32.26	38.84	41.72	74.00	25.71	V
11998.100	47.78	-31.48	39.09	40.17	74.00	26.22	V
8729.400	46.61	-34.42	38.00	43.02	68.30	21.69	V
8739.000	46.38	-34.42	38.00	42.79	68.30	21.92	V

Channel 48

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17376.800	52.76	-25.95	44.35	34.35	68.30	15.54	V
17975.200	52.73	-25.50	46.66	31.57	74.00	21.27	V
11436.800	48.13	-32.42	38.79	41.76	74.00	25.87	V
11836.900	47.69	-31.85	39.05	40.49	74.00	26.31	V
10029.500	46.44	-33.63	38.11	41.96	68.30	21.86	V
9960.400	46.35	-33.63	38.11	41.87	68.30	21.95	V

Channel 52

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17979.700	53.53	-25.50	46.66	32.37	74.00	20.47	V
17365.300	52.79	-25.95	44.35	34.38	68.30	15.51	V
13580.800	49.04	-29.50	40.43	38.11	68.30	19.26	H
14213.800	48.93	-28.99	42.00	35.91	68.30	19.37	H
10600.300	48.15	-32.76	38.38	42.53	74.00	25.85	V
11023.200	47.88	-32.49	38.72	41.64	74.00	26.12	V

Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17343.300	53.18	-25.95	44.35	34.77	68.30	15.12	H
17407.700	53.16	-26.85	45.25	34.76	68.30	15.14	V
14240.200	49.20	-28.99	42.00	36.18	68.30	19.10	V
14272.600	49.12	-28.42	42.34	35.20	68.30	19.18	V
11601.300	47.84	-32.31	38.91	41.25	74.00	26.16	H
11024.400	47.54	-32.49	38.72	41.30	74.00	26.46	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17963.200	53.05	-25.50	46.66	31.89	74.00	20.95	H
17978.500	52.58	-25.50	46.66	31.42	74.00	21.42	H
14259.500	49.26	-28.42	42.34	35.34	68.30	19.04	V
14266.000	49.24	-28.42	42.34	35.32	68.30	19.06	V
5350.100	60.48	-27.43	34.01	53.90	74.00	13.52	V
5351.900	60.09	-27.43	34.01	53.51	74.00	13.91	V

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17323.000	53.34	-25.95	44.35	34.93	68.30	14.96	V
17975.200	53.19	-25.50	46.66	32.03	74.00	20.81	H
14321.600	50.11	-28.42	42.34	36.19	68.30	18.19	H
14661.000	49.96	-27.29	41.90	35.35	68.30	18.34	H
5455.500	60.91	-27.18	34.17	53.92	74.00	13.09	V
5470.000	62.58	-27.18	34.17	55.59	68.30	5.72	V

Channel 116

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17990.700	53.20	-25.50	46.66	32.04	74.00	20.80	H
17830.000	53.10	-25.50	46.66	31.94	74.00	20.90	V
14258.900	49.45	-28.42	42.34	35.53	68.30	18.85	V
14379.900	49.25	-28.42	42.34	35.33	68.30	19.05	V
10617.400	47.90	-32.76	38.38	42.28	74.00	26.10	H
11802.000	47.83	-31.85	39.05	40.63	74.00	26.17	V

Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17510.000	52.82	-26.85	45.25	34.42	68.30	15.48	H
17314.700	52.63	-25.95	44.35	34.22	68.30	15.67	V
12652.400	49.34	-30.47	39.06	40.75	74.00	24.66	H
14328.800	49.29	-28.42	42.34	35.37	68.30	19.01	H
5725.000	67.52	-27.07	34.31	60.28	68.30	0.78	V
5725.300	66.56	-27.07	34.31	59.32	68.30	1.74	V

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Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17957.000	52.43	-25.50	46.66	31.27	74.00	21.57	V
17448.600	52.36	-26.85	45.25	33.96	68.30	15.94	V
11462.200	47.74	-32.26	38.84	41.17	74.00	26.26	V
11433.300	47.51	-32.42	38.79	41.14	74.00	26.49	V
5147.300	61.79	-27.61	33.67	55.73	74.00	12.21	V
5149.900	61.74	-27.61	33.67	55.68	74.00	12.26	V

Channel 46

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17412.600	53.13	-26.85	45.25	34.73	68.30	15.17	H
17980.200	53.11	-25.50	46.66	31.95	74.00	20.89	H
14217.600	50.23	-28.99	42.00	37.21	68.30	18.07	H
13612.100	49.83	-29.50	40.43	38.90	68.30	18.47	V
10413.900	48.53	-33.22	38.19	43.56	68.30	19.77	H
11600.200	48.43	-32.31	38.91	41.84	74.00	25.57	V

Channel 54

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17418.100	54.02	-26.85	45.25	35.62	68.30	14.28	V
17401.600	52.89	-26.85	45.25	34.49	68.30	15.41	V
14279.800	49.50	-28.42	42.34	35.58	68.30	18.80	V
14260.500	49.10	-28.42	42.34	35.18	68.30	19.20	V
10588.800	48.35	-32.76	38.38	42.73	68.30	19.95	V
11427.500	47.89	-32.42	38.79	41.52	74.00	26.11	V

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17415.900	52.73	-26.85	45.25	34.33	68.30	15.57	H
17979.100	52.55	-25.50	46.66	31.39	74.00	21.45	H
14262.800	49.72	-28.42	42.34	35.80	68.30	18.58	V
14220.400	49.19	-28.99	42.00	36.17	68.30	19.11	V
5351.600	61.75	-27.43	34.01	55.17	74.00	12.25	V
5350.000	61.63	-27.43	34.01	55.05	74.00	12.37	V

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17968.700	53.07	-25.50	46.66	31.91	74.00	20.93	H
17416.500	52.96	-26.85	45.25	34.56	68.30	15.34	H
14687.400	49.38	-28.32	41.35	36.36	68.30	18.92	H
14219.300	49.07	-28.99	42.00	36.05	68.30	19.23	V
5459.800	61.69	-27.18	34.17	54.70	74.00	12.31	V
5468.800	67.56	-27.18	34.17	60.57	68.30	0.74	V

Channel 118

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17384.000	53.19	-25.95	44.35	34.78	68.30	15.11	H
17373.000	53.13	-25.95	44.35	34.72	68.30	15.17	H
14223.100	49.20	-28.99	42.00	36.18	68.30	19.10	V
14264.400	49.10	-28.42	42.34	35.18	68.30	19.20	V
11847.100	48.09	-31.85	39.05	40.89	74.00	25.91	V
11816.900	48.01	-31.85	39.05	40.81	74.00	25.99	H

Channel 134

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17400.000	52.99	-26.85	45.25	34.59	68.30	15.31	V
17382.300	52.59	-25.95	44.35	34.18	68.30	15.71	V
13641.800	49.59	-29.50	40.43	38.66	68.30	18.71	H
14263.900	49.30	-28.42	42.34	35.38	68.30	19.00	H
5727.500	64.12	-27.07	34.31	56.88	68.30	4.18	V
5727.400	63.93	-27.07	34.31	56.69	68.30	4.37	V

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Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17972.800	53.53	-25.50	46.66	32.37	74.00	20.47	V
17425.600	53.18	-26.85	45.25	34.78	68.30	15.12	V
11452.900	48.85	-32.26	38.84	42.28	74.00	25.15	V
11443.000	48.43	-32.42	38.79	42.06	74.00	25.57	V
5146.200	58.05	-27.61	33.67	51.99	74.00	15.95	V
5148.300	57.74	-27.61	33.67	51.68	74.00	16.26	V

Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17986.600	52.75	-25.50	46.66	31.59	74.00	21.25	V
17386.400	52.62	-25.95	44.35	34.21	68.30	15.68	V
10636.200	48.53	-32.76	38.38	42.91	74.00	25.47	V
11465.000	48.12	-32.26	38.84	41.55	74.00	25.88	V
9636.900	45.71	-33.06	37.97	40.80	68.30	22.59	V
9747.600	45.69	-33.00	38.01	40.69	68.30	22.61	V

Channel 48

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17432.800	52.80	-26.85	45.25	34.40	68.30	15.50	V
17386.800	52.64	-25.95	44.35	34.23	68.30	15.66	V
11398.300	48.01	-32.42	38.79	41.64	74.00	25.99	V
11433.300	47.86	-32.42	38.79	41.49	74.00	26.14	V
10085.500	46.03	-33.45	38.13	41.35	68.30	22.27	V
9743.800	45.90	-33.00	38.01	40.90	68.30	22.40	V

Channel 52

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17385.100	53.35	-25.95	44.35	34.94	68.30	14.95	H
17350.500	52.80	-25.95	44.35	34.39	68.30	15.50	H
14282.500	49.17	-28.42	42.34	35.25	68.30	19.13	V
14245.100	49.11	-28.99	42.00	36.09	68.30	19.19	H
11441.800	48.11	-32.42	38.79	41.74	74.00	25.89	V
11816.900	48.02	-31.85	39.05	40.82	74.00	25.98	H

Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17277.800	52.96	-25.95	44.35	34.55	68.30	15.34	H
17935.100	52.84	-25.50	46.66	31.68	74.00	21.16	H
13651.100	49.13	-29.50	40.43	38.20	68.30	19.17	V
13631.400	48.97	-29.50	40.43	38.04	68.30	19.33	H
11381.900	48.30	-32.42	38.79	41.93	74.00	25.70	V
11814.700	47.92	-31.85	39.05	40.72	74.00	26.08	V

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17451.100	52.70	-26.85	45.25	34.30	68.30	15.60	H
17391.200	52.45	-26.85	45.25	34.05	68.30	15.85	H
13639.000	49.15	-29.50	40.43	38.22	68.30	19.15	V
14268.200	49.09	-28.42	42.34	35.17	68.30	19.21	V
5352.600	57.40	-27.43	34.01	50.82	74.00	16.60	V
5351.700	57.15	-27.43	34.01	50.57	74.00	16.85	V

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17417.500	53.54	-26.85	45.25	35.14	68.30	14.76	V
17389.000	53.44	-26.85	45.25	35.04	68.30	14.86	V
14273.800	50.35	-28.42	42.34	36.43	68.30	17.95	H
14267.700	50.21	-28.42	42.34	36.29	68.30	18.09	V
5376.300	56.56	-27.36	34.09	49.84	74.00	17.44	V
5469.700	58.02	-27.18	34.17	51.03	68.30	10.28	V

Channel 116

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17427.500	53.51	-26.85	45.25	35.11	68.30	14.79	H
17987.900	52.91	-25.50	46.66	31.75	74.00	21.09	V
14263.300	49.85	-28.42	42.34	35.93	68.30	18.45	H
14306.800	49.36	-28.42	42.34	35.44	68.30	18.94	H
11824.600	48.24	-31.85	39.05	41.04	74.00	25.76	H
11581.000	48.02	-32.31	38.91	41.43	74.00	25.98	V

Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17984.000	52.93	-25.50	46.66	31.77	74.00	21.07	V
17427.500	52.81	-26.85	45.25	34.41	68.30	15.49	H
14260.500	49.54	-28.42	42.34	35.62	68.30	18.76	H
14288.600	49.28	-28.42	42.34	35.36	68.30	19.02	V
5725.700	59.37	-27.07	34.31	52.13	68.30	8.93	V
5726.400	59.29	-27.07	34.31	52.05	68.30	9.01	V

802.11ac-HT40

Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17980.800	53.53	-25.50	46.66	32.37	74.00	20.47	V
17983.000	53.36	-25.50	46.66	32.20	74.00	20.64	V
14243.000	49.78	-28.99	42.00	36.76	68.30	18.52	V
13689.100	49.71	-29.50	40.43	38.78	68.30	18.59	V
5147.900	62.80	-27.61	33.67	56.74	74.00	11.20	V
5147.800	62.46	-27.61	33.67	56.40	74.00	11.54	V

Channel 46

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17393.900	53.63	-26.85	45.25	35.23	68.30	14.67	H
17979.100	53.44	-25.50	46.66	32.28	74.00	20.56	H
13636.900	49.47	-29.50	40.43	38.54	68.30	18.83	V
14249.500	49.43	-28.99	42.00	36.41	68.30	18.87	H
11466.000	48.59	-32.26	38.84	42.02	74.00	25.41	H
10572.800	48.33	-32.76	38.38	42.71	68.30	19.97	V

Channel 54

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17976.300	52.94	-25.50	46.66	31.78	74.00	21.06	V
17927.400	52.50	-25.50	46.66	31.34	74.00	21.50	H
14261.100	49.43	-28.42	42.34	35.51	68.30	18.87	V
14648.300	49.15	-27.29	41.90	34.54	68.30	19.15	V
11845.500	48.38	-31.85	39.05	41.18	74.00	25.62	H
11434.100	48.23	-32.42	38.79	41.86	74.00	25.77	H

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17429.700	52.94	-26.85	45.25	34.54	68.30	15.36	V
17981.300	52.70	-25.50	46.66	31.54	74.00	21.30	H
14259.500	49.26	-28.42	42.34	35.34	68.30	19.04	V
14305.600	48.84	-28.42	42.34	34.92	68.30	19.46	H
5350.500	59.96	-27.43	34.01	53.38	74.00	14.04	V
5350.100	58.45	-27.43	34.01	51.87	74.00	15.55	V

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17939.500	53.46	-25.50	46.66	32.30	74.00	20.54	H
17965.300	53.10	-25.50	46.66	31.94	74.00	20.90	V
14265.000	49.03	-28.42	42.34	35.11	68.30	19.27	V
14254.500	48.83	-28.42	42.34	34.91	68.30	19.47	V
5459.900	56.29	-27.18	34.17	49.30	74.00	17.71	V
5469.800	60.95	-27.18	34.17	53.96	68.30	7.35	V

Channel 118

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17984.600	53.18	-25.50	46.66	32.02	74.00	20.82	H
17991.200	52.85	-25.50	46.66	31.69	74.00	21.15	V
14295.800	49.13	-28.42	42.34	35.21	68.30	19.17	V
13666.000	48.95	-29.50	40.43	38.02	68.30	19.35	V
11804.800	48.55	-31.85	39.05	41.35	74.00	25.45	H
11999.500	47.98	-31.48	39.09	40.37	74.00	26.02	H

Channel 134

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17427.500	52.93	-26.85	45.25	34.53	68.30	15.37	H
17566.000	52.66	-25.74	45.95	32.45	68.30	15.64	H
14264.400	49.74	-28.42	42.34	35.82	68.30	18.56	V
14269.400	49.43	-28.42	42.34	35.51	68.30	18.87	V
5727.800	56.89	-27.07	34.31	49.65	68.30	11.41	V
5725.600	56.52	-27.07	34.31	49.28	68.30	11.78	V

802.11ac-HT80

Channel 42

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17965.900	53.55	-25.50	46.66	32.39	74.00	20.45	V
17978.000	53.09	-25.50	46.66	31.93	74.00	20.91	V
14257.800	50.46	-28.42	42.34	36.54	68.30	17.84	V
14259.500	49.88	-28.42	42.34	35.96	68.30	18.42	H
5145.900	64.25	-27.61	33.67	58.19	74.00	9.75	V
5129.900	63.83	-27.61	33.67	57.77	74.00	10.17	V

Channel 58

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17426.900	53.81	-26.85	45.25	35.41	68.30	14.49	V
17394.500	53.42	-26.85	45.25	35.02	68.30	14.88	V
14250.100	49.81	-28.42	42.34	35.89	68.30	18.49	H
14260.000	49.71	-28.42	42.34	35.79	68.30	18.59	H
5355.300	64.38	-27.43	34.01	57.80	74.00	9.62	V
5355.600	64.34	-27.43	34.01	57.76	74.00	9.66	V

Channel 106

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17972.500	52.72	-25.50	46.66	31.56	74.00	21.28	H
17929.000	52.54	-25.50	46.66	31.38	74.00	21.46	H
14261.600	49.50	-28.42	42.34	35.58	68.30	18.80	H
14350.200	49.22	-28.42	42.34	35.30	68.30	19.08	V
5459.900	63.05	-27.18	34.17	56.06	74.00	10.95	V
5461.600	62.78	-27.18	34.17	55.79	68.30	5.52	V

Channel 122

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.600	52.66	-25.50	46.66	31.50	74.00	21.34	H
17482.500	52.49	-26.85	45.25	34.09	68.30	15.81	H
14256.700	49.23	-28.42	42.34	35.31	68.30	19.07	H
14258.400	49.20	-28.42	42.34	35.28	68.30	19.10	V
5806.600	56.24	-27.07	34.33	48.98	68.30	12.06	V
5773.000	56.22	-27.07	34.33	48.96	68.30	12.08	V

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

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement uncertainty:

Expanded measurement uncertainty for this test item is U =3.10dB, k=2.

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger AE5		
		802.11a	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 AE5		
		802.11a	Idle	
0.15 to 0.5	67 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:

Traffic:

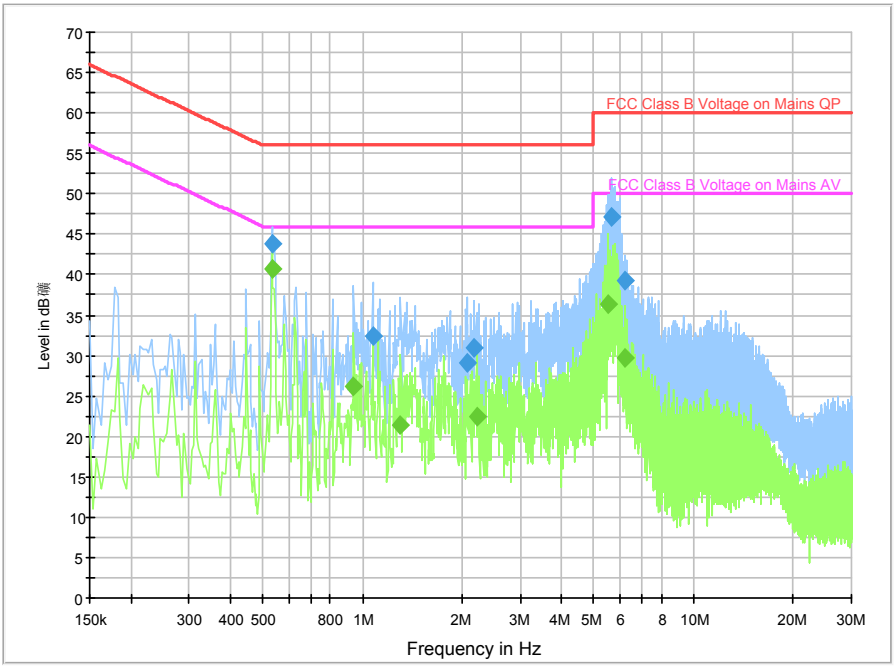

Fig.58 Conducted Emission (802.11a, Ch36, TX)

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.534000	43.9	5000.0	9.000	On	L1	19.9	12.1	
1.074000	32.4	5000.0	9.000	On	N	19.8	23.6	
2.078000	29.2	5000.0	9.000	On	N	19.7	26.8	
2.166000	31.0	5000.0	9.000	On	N	19.7	25.0	
5.650000	47.2	5000.0	9.000	On	L1	19.5	12.8	
6.178000	39.3	5000.0	9.000	On	L1	19.6	20.7	

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.534000	40.8	5000.0	9.000	On	L1	19.9	5.2	
0.942000	26.1	5000.0	9.000	On	N	19.8	19.9	
1.306000	21.4	5000.0	9.000	On	N	19.8	24.6	
2.210000	22.5	5000.0	9.000	On	N	19.7	23.5	
5.550000	36.3	5000.0	9.000	On	L1	19.5	13.7	
6.178000	29.6	5000.0	9.000	On	L1	19.6	20.4	

Note2: The measurement results showed here are worst cases of the combinations of different cables and chargers

Idle:

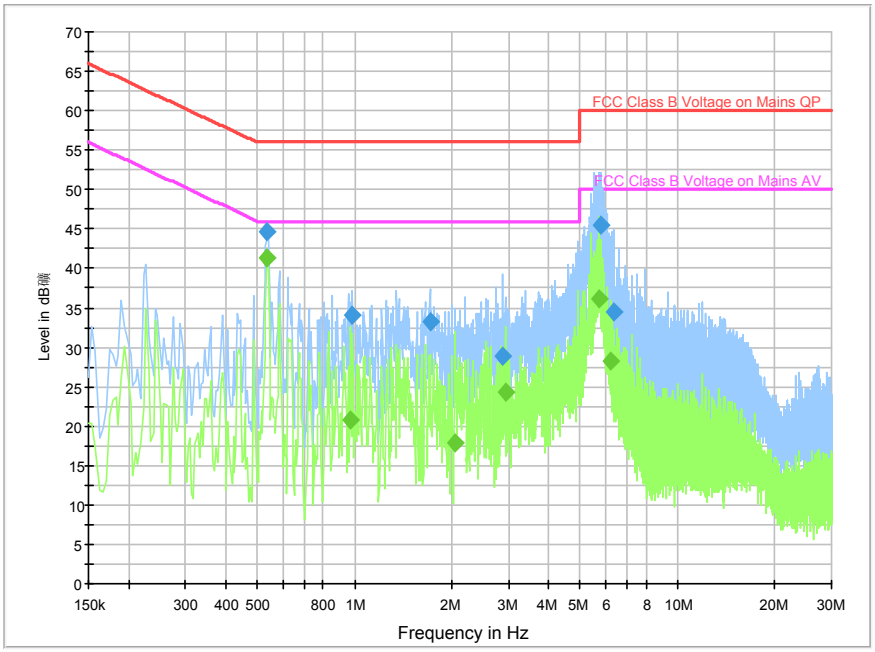

Fig.59 Conducted Emission(802.11a, IDLE)

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.538000	44.6	5000.0	9.000	On	L1	19.9	11.4	
0.986000	34.0	5000.0	9.000	On	N	19.8	22.0	
1.710000	33.3	5000.0	9.000	On	L1	19.5	22.7	
2.882000	28.8	5000.0	9.000	On	N	19.7	27.2	
5.798000	45.5	5000.0	9.000	On	L1	19.5	14.5	
6.386000	34.4	5000.0	9.000	On	L1	19.5	25.6	

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.538000	41.4	5000.0	9.000	On	L1	19.9	4.6	
0.974000	20.8	5000.0	9.000	On	L1	19.6	25.2	
2.050000	17.9	5000.0	9.000	On	N	19.7	28.1	
2.926000	24.3	5000.0	9.000	On	L1	19.5	21.7	
5.742000	36.2	5000.0	9.000	On	L1	19.5	13.8	
6.238000	28.3	5000.0	9.000	On	L1	19.6	21.7	

Note2: The measurement results showed here are worst cases of the combinations of different cables and chargers

A.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	17.20	P
	5200 MHz	Fig.61	17.20	P
	5240 MHz	Fig.62	17.16	P
802.11n HT20	5180 MHz	Fig.63	18.16	P
	5200 MHz	Fig.64	18.20	P
	5240 MHz	Fig.65	18.16	P
802.11n HT40	5190 MHz	Fig.66	36.56	P
	5230 MHz	Fig.67	36.48	P
802.11ac HT80	5210 MHz	Fig.68	75.84	P

Conclusion: PASS

Test graphs as below:

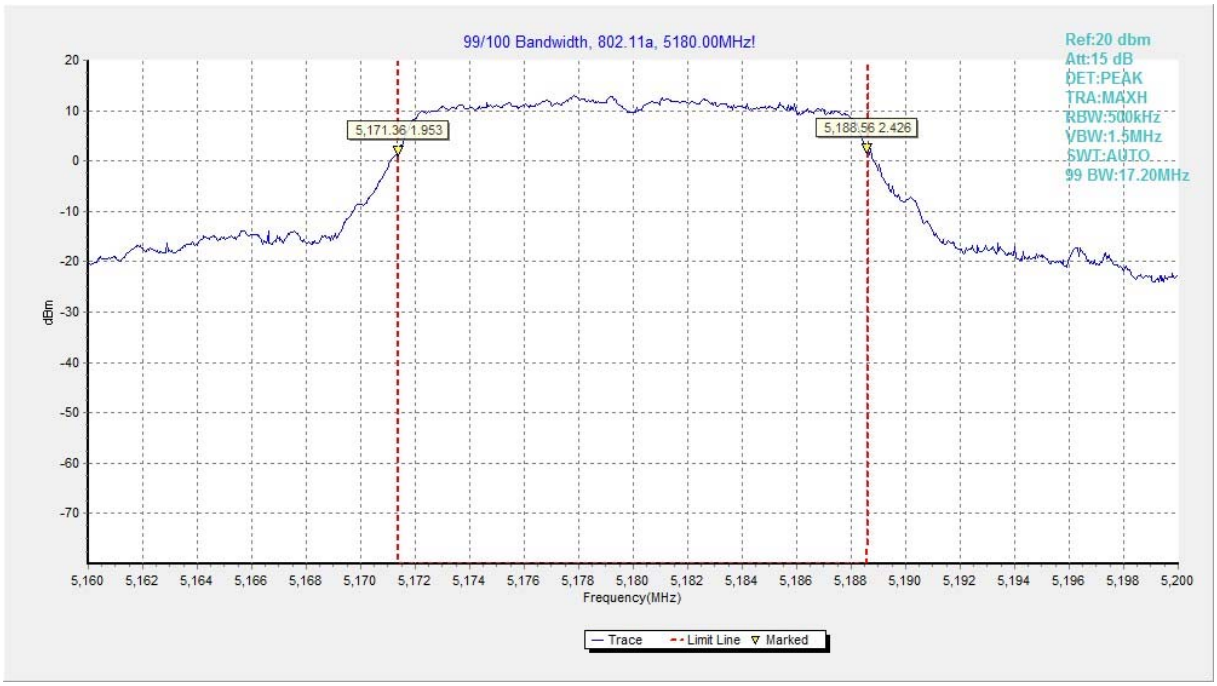

Fig.60 99% Occupied bandwidth (802.11a, 5180MHz)

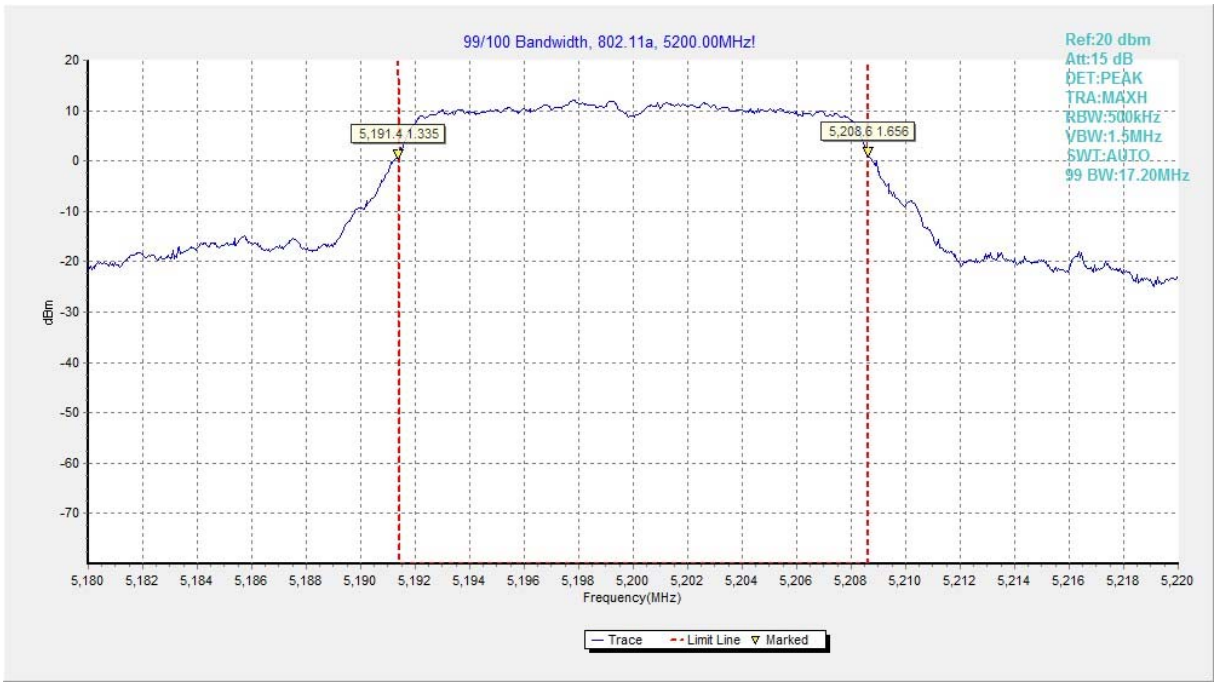

Fig.61 99% Occupied bandwidth (802.11a, 5200MHz)

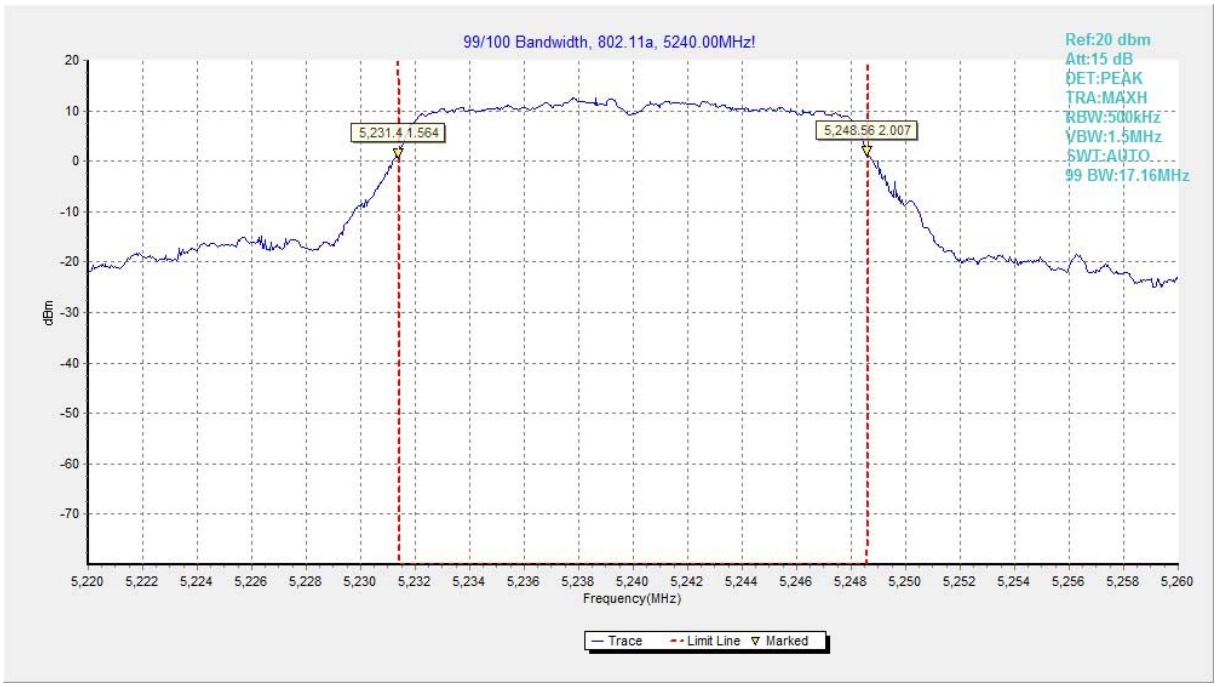

Fig.62 99% Occupied bandwidth (802.11a, 5240MHz)

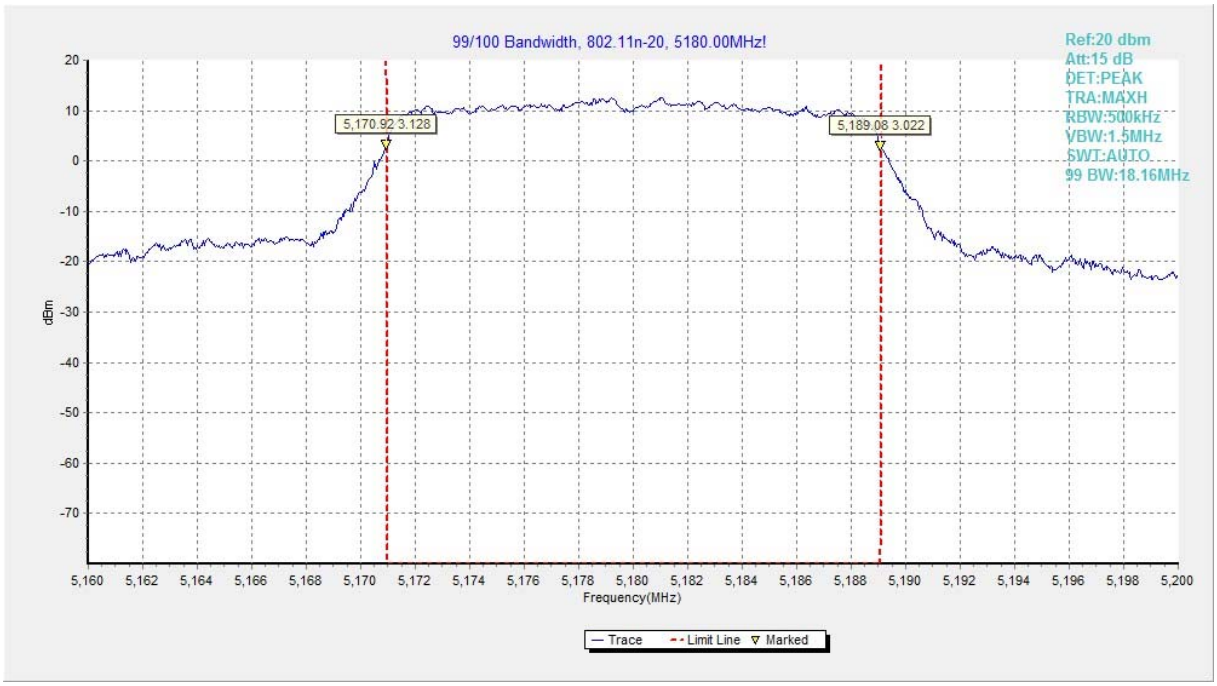

Fig.63 99% Occupied bandwidth (802.11n-HT20, 5180MHz)

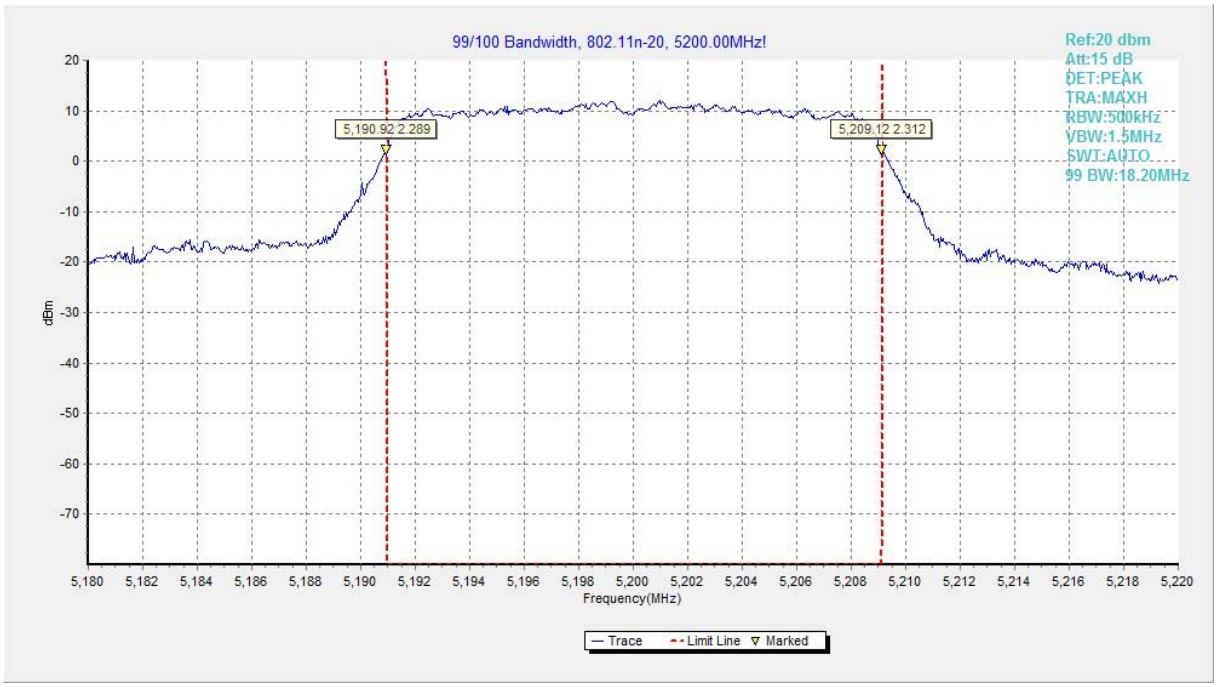

Fig.64 99% Occupied bandwidth (802.11n-HT20, 5200MHz)

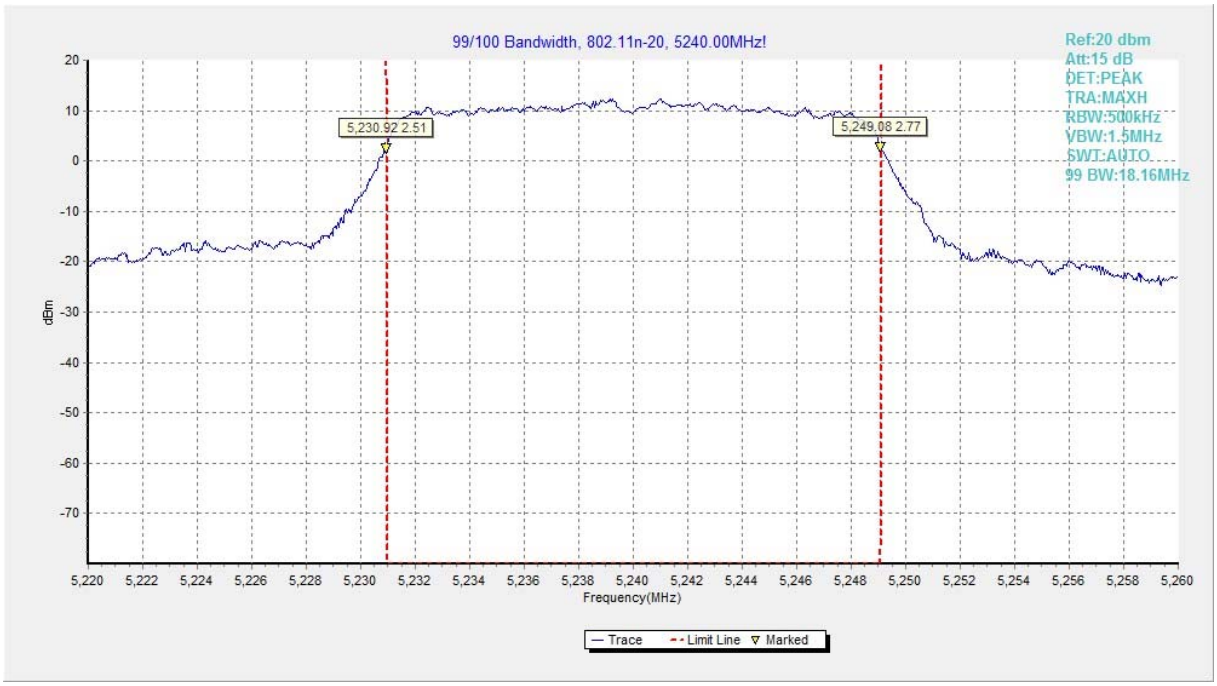

Fig.65 99% Occupied bandwidth (802.11n-HT20, 5240MHz)

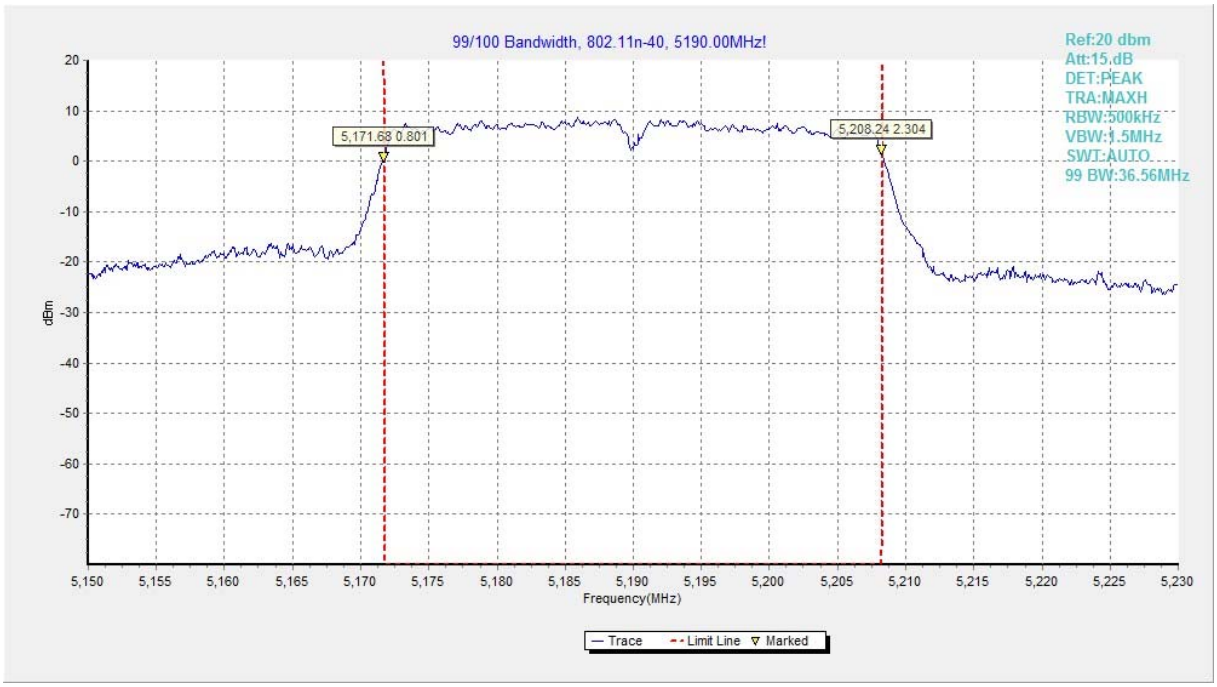

Fig.66 99% Occupied bandwidth (802.11n-HT40, 5190MHz)

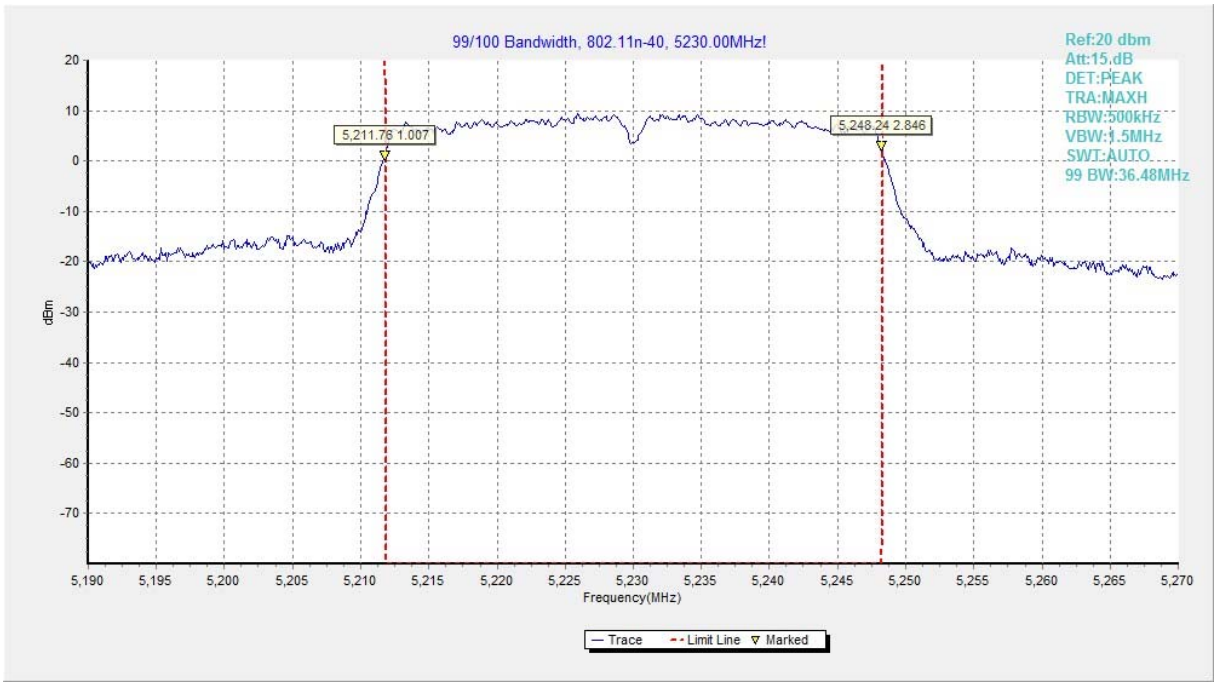

Fig.67 99% Occupied bandwidth (802.11n-HT40, 5230MHz)

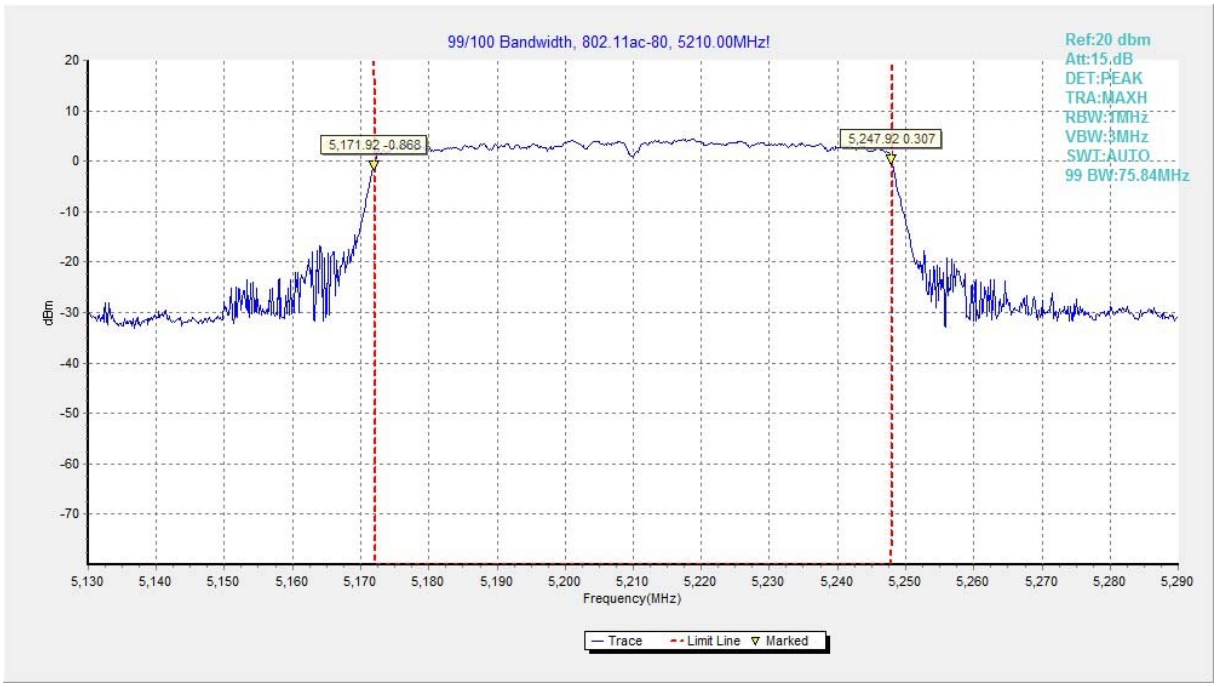

Fig.68 99% Occupied bandwidth (802.11ac-HT80, 5210MHz)

A.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 B: EUT parameters

Disclaimer: The 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 C: Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ilac-MRA

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).

2021-09-29 through 2022-09-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

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