TESTING
NVLAP LAB CODE 600118-0

FCC PART 15
TEST REPORT
No. I22Z61951-IOT02

for

TCL Communication Ltd.

LINKHUB

HH63AF

With

FCC ID: 2ACCJB195

Hardware Version: PIO

Software Version: HH63A_00_02.00_03

Issued Date: 2022-11-22

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

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

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z61951-IOT02	Rev.0	1st edition	2022-11-15
I22Z61951-IOT02	Rev.1	Update maximum antenna gain.	2022-11-22

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: CTTL(Huayuan North Road)

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

1.3. Testing Environment

Normal Temperature: 15-35℃

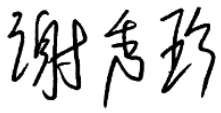
Relative Humidity: 20-75%

1.4. Project date

Testing Start Date: 2022-10-09

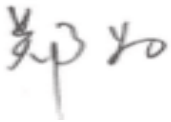
Testing End Date: 2022-11-15

1.5. Signature



Xie Xiuzhen

(Prepared this test report)



Zheng Wei

(Reviewed this test report)

Pang Shuai

(Approved this test report)

2. CLIENT INFORMATION

2.1 Applicant Information

Company Name:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
City:	Hong Kong
Postal Code:	/
Contact:	nianxiang.jiang
Email:	nianxiang.jiang@tcl.com
Country:	China
Telephone:	+86 755 36611621
Fax:	+86 755 3661 2000-81722

2.2 Manufacturer Information

Company Name:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
City:	Hong Kong
Postal Code:	/
Contact:	nianxiang.jiang
Email:	nianxiang.jiang@tcl.com
Country:	China
Telephone:	+86 755 36611621
Fax:	+86 755 3661 2000-81722

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

3.1. About EUT

Description	LINKHUB
Model name	HH63AF
FCC ID	2ACCJB195
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz -5470MHz~5725MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Voltage	12V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
UT05a	358814640110054	PIO	HH63A_00_02.00_03
UT14a	358814640110237	PIO	HH63A_00_02.00_03

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

UT14a,UT05a is used for Conduction test, UT05a is used for Radiation test.

3.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Charger1	/	/
AE2	Charger2	/	/

AE1

Model	CYSE12-120100U
Manufacturer	CHENYANG
Length of cable	/

AE2

Model	1-CHUSB102-131
Manufacturer	PUAN
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 LINKHUB 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**
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	12V
Humidity	44%

7. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2022-12-02
2	Test Receiver	ESCI	100344	R&S	1 year	2023-03-21
3	LISN	ENV216	101200	R&S	1 year	2023-06-29
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU 26	100235	R&S	1 year	2023-03-08
2	EMI Antenna	VULB 9163	302	SCHWARZBECK	1 year	2022-12-28
3	EMI Antenna	3115	00167250	ETS-Lindgren	1 year	2022-12-23

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	5.15
1GHz ≤ f ≤18GHz	5.54
18GHz ≤ f ≤40GHz	5.26

8.6 AC Power-line Conducted Emission

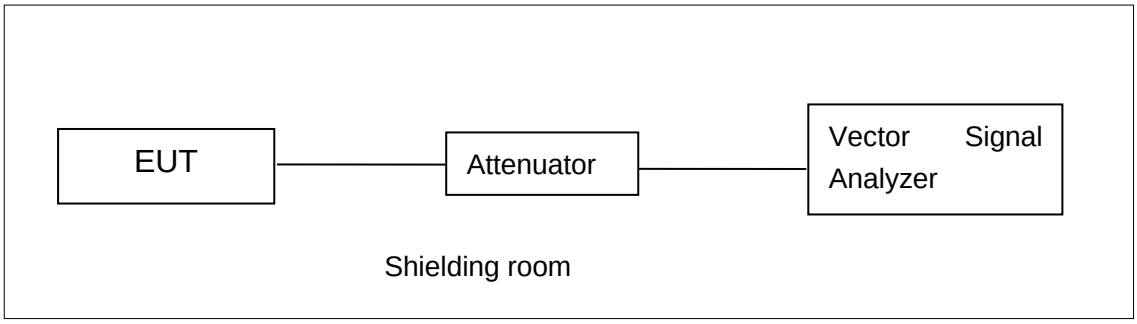
Measurement Uncertainty : 3.08,k=2

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

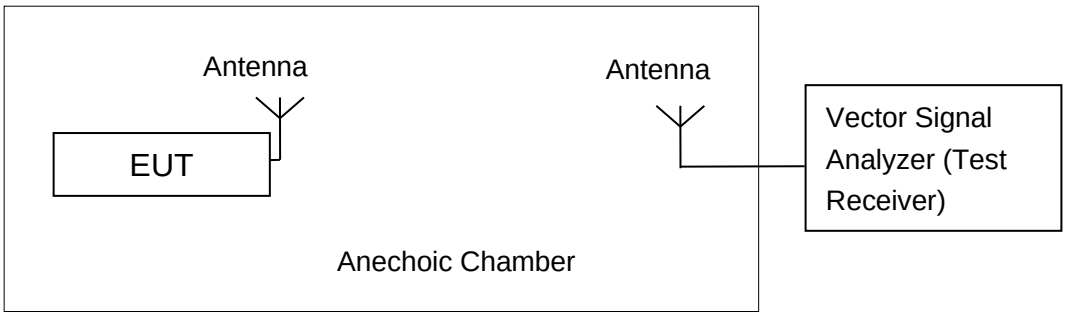
A.1.1. Conducted Measurements

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	30dBm
	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

Antenna Gain

ANT0	ANT1
-1.20dBi	2.89dBi

Measurement Results:

SISO

802.11a mode

Channel	Test Result (dBm)	
	MCS0	
	Ant0	Ant1
5180MHz (Ch36)	13.14	14.60
5200MHz (Ch40)	13.33	13.05
5240MHz (Ch48)	14.09	13.65
5260MHz (Ch52)	13.98	13.76
5280MHz (Ch56)	14.17	13.98
5320MHz (Ch64)	13.83	13.67
5500MHz (Ch100)	14.39	14.20
5580MHz (Ch116)	14.40	13.88
5700MHz (Ch140)	14.27	12.97
5720MHz (Ch144)	14.20	12.75

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

802.11n-HT20 mode

Channel	Test Result (dBm)	
	MCS0	
	Ant0	Ant1
5180MHz (Ch36)	13.24	13.56
5200MHz (Ch40)	13.60	13.11
5240MHz (Ch48)	14.09	13.82
5260MHz (Ch52)	14.11	13.89
5280MHz (Ch56)	14.34	14.00
5320MHz (Ch64)	14.08	13.81
5500MHz (Ch100)	14.55	14.15
5580MHz (Ch116)	14.28	13.86
5700MHz (Ch140)	14.83	13.27
5720MHz (Ch144)	14.57	13.08

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

802.11ac-VHT20 mode

Channel	Test Result (dBm)	
	MCS0	
	Ant0	Ant1
5180MHz (Ch36)	13.36	13.58
5200MHz (Ch40)	12.88	12.80
5240MHz (Ch48)	13.45	13.26
5260MHz (Ch52)	13.50	13.45
5280MHz (Ch56)	13.60	13.59
5320MHz (Ch64)	13.72	13.29

5500MHz (Ch100)	13.94	13.35
5580MHz (Ch116)	13.31	12.99
5700MHz (Ch140)	13.53	12.43
5720MHz (Ch144)	13.20	12.40

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

802.11n-HT40 mode

Channel	Test Result (dBm)	
	MCS0	
	Ant0	Ant1
5190MHz (Ch38)	13.94	12.78
5230MHz (Ch46)	12.43	12.37
5270MHz (Ch54)	13.11	12.72
5310MHz (Ch62)	13.45	12.50
5510MHz (Ch102)	13.00	12.05
5550MHz (Ch110)	12.82	12.32
5670MHz (Ch134)	13.91	12.64
5710MHz (Ch142)	13.63	12.20

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

802.11ac-VHT40 mode

Channel	Test Result (dBm)	
	MCS0	
	Ant0	Ant1
5190MHz (Ch38)	13.52	11.50
5230MHz (Ch46)	12.21	11.87

5270MHz (Ch54)	12.85	11.70
5310MHz (Ch62)	13.16	11.21
5510MHz (Ch102)	14.70	14.22
5550MHz (Ch110)	12.15	14.25
5670MHz (Ch134)	14.30	12.81
5710MHz (Ch142)	11.78	12.73

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

802.11ac-VHT80 mode

Channel	Test Result (dBm)	
	MCS0	
	Ant0	Ant1
5210MHz (Ch42)	12.17	11.70
5290MHz (Ch58)	12.57	11.77
5530MHz (Ch106)	12.42	11.19
5610MHz (Ch122)	14.83	13.15
5690MHz (Ch138)	14.47	13.46

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

MIMO

802.11n-HT20 mode

Channel	Test Result (dBm)		
	MCS0		
	Ant0	Ant1	Sum
5180MHz (Ch36)	12.28	12.58	15.44
5200MHz (Ch40)	12.71	12.83	15.78
5240MHz (Ch48)	13.14	13.22	16.19

5260MHz (Ch52)	13.21	13.54	16.39
5280MHz (Ch56)	13.33	13.48	16.42
5320MHz (Ch64)	13.10	12.81	15.97
5500MHz (Ch100)	13.31	12.88	16.11
5580MHz (Ch116)	13.44	13.55	16.51
5700MHz (Ch140)	13.42	11.96	15.76
5720MHz (Ch144)	14.37	12.33	16.48

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

802.11ac-VHT20 mode

Channel	**Test Result (dBm)**		
	MCS0		
	Ant0	**Ant1**	**Sum**
5180MHz (Ch36)	12.21	12.67	15.46
5200MHz (Ch40)	12.67	12.55	15.62
5240MHz (Ch48)	12.78	12.80	15.80
5260MHz (Ch52)	13.03	13.15	16.10
5280MHz (Ch56)	12.91	12.99	15.96
5320MHz (Ch64)	12.31	12.44	15.39
5500MHz (Ch100)	12.58	12.21	15.41
5580MHz (Ch116)	13.00	12.67	15.85
5700MHz (Ch140)	12.31	11.45	14.91
5720MHz (Ch144)	12.44	11.65	15.07

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

802.11n-HT40 mode

Channel	Test Result (dBm)		
	MCS0		
	Ant0	Ant1	Sum
5190MHz (Ch38)	13.53	12.37	16.00
5230MHz (Ch46)	11.74	12.24	15.01
5270MHz (Ch54)	12.32	12.34	15.34
5310MHz (Ch62)	12.79	11.02	15.00
5510MHz (Ch102)	12.49	11.47	15.02
5550MHz (Ch110)	12.53	11.89	15.23
5670MHz (Ch134)	13.39	12.07	15.79
5710MHz (Ch142)	13.22	11.75	15.56

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

802.11ac-VHT40 mode

Channel	Test Result (dBm)		
	MCS0		
	Ant0	Ant1	Sum
5190MHz (Ch38)	12.96	11.02	15.11
5230MHz (Ch46)	11.66	12.03	14.86
5270MHz (Ch54)	12.18	10.35	14.37
5310MHz (Ch62)	12.59	10.70	14.76
5510MHz (Ch102)	13.66	14.27	16.99
5550MHz (Ch110)	11.67	13.77	15.86
5670MHz (Ch134)	13.28	11.88	15.65
5710MHz (Ch142)	11.29	12.38	14.88

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

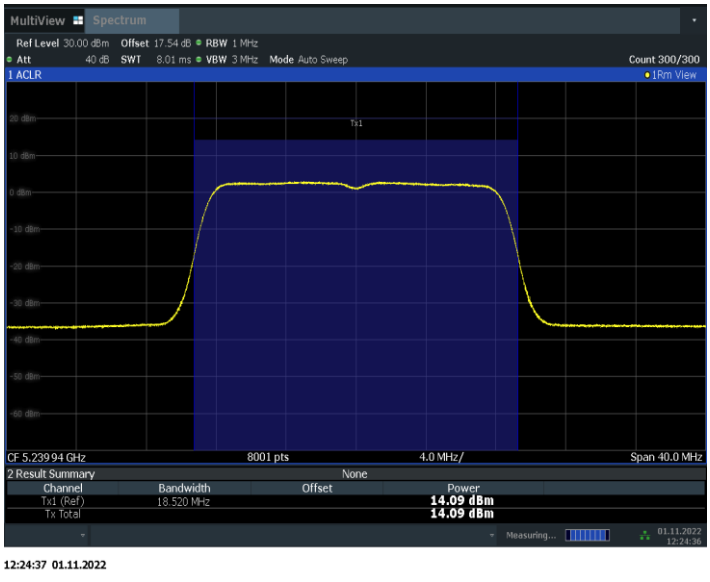
802.11ac-VHT80 mode

Channel	Test Result (dBm)		
	MCS0		
	Ant0	Ant1	Sum
5210MHz (Ch42)	11.42	11.43	14.44
5290MHz (Ch58)	12.00	10.42	14.29
5530MHz (Ch106)	11.87	10.89	14.42
5610MHz (Ch122)	14.09	13.29	16.72
5690MHz (Ch138)	14.28	12.96	16.68

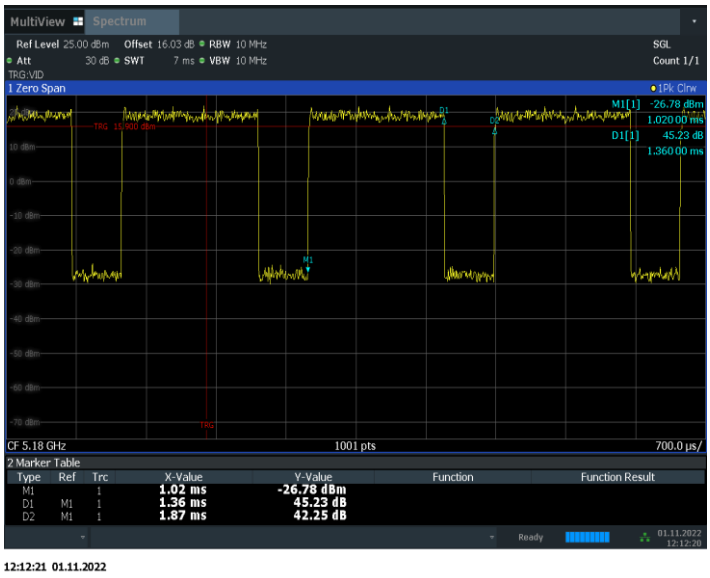
The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

Duty Cycle

Mode	11a	11n20	11ac20	11n40	11ac40	11ac80
Duty Cycle	73%	72%	72%	57%	57%	39%



802.11a-ANT0



802.11a

Conclusion: PASS

A.3. Peak Power Spectral Density (conducted)

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	17
	5250MHz~5350MHz	11
	5470MHz~5725MHz	11

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

Measurement Results:

SISO-ANT0

Mode	Frequency	Power Spectral Density (dBm/MHz)	Conclusion
802.11a	5180 MHz	2.97	P
	5200 MHz	2.27	P
	5240 MHz	3.12	P
	5260 MHz	3.14	P
	5280 MHz	3.39	P
	5320 MHz	3.65	P
	5500 MHz	3.80	P
	5580 MHz	3.37	P
	5700 MHz	4.40	P
	5720 MHz	5.48	P
802.11n HT20	5180 MHz	2.51	P
	5200 MHz	2.43	P

	5240 MHz	2.99	P
	5260 MHz	3.05	P
	5280 MHz	3.55	P
	5320 MHz	3.39	P
	5500 MHz	3.56	P
	5580 MHz	3.01	P
	5700 MHz	4.33	P
	5720 MHz	5.41	P
802.11ac VHT40	5190 MHz	0.59	P
	5230 MHz	-0.90	P
	5270 MHz	-0.17	P
	5310 MHz	-0.56	P
	5510 MHz	0.98	P
	5550 MHz	0.97	P
	5670 MHz	0.66	P
	5710 MHz	2.56	P
802.11ac VHT80	5210MHz	-3.91	P
	5290MHz	-3.90	P
	5530MHz	-2.49	P
	5610MHz	-1.26	P
	5690MHz	0.30	P

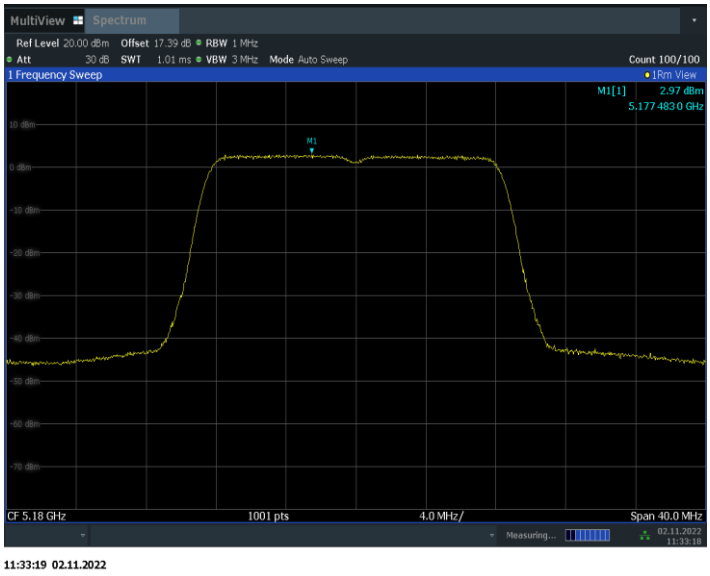
MIMO

Mode	Frequency	Power Spectral Density (dBm/MHz)			Conclusion
		Ant0	Ant1	Sum	
802.11n HT20	5180 MHz	1.96	1.86	4.92	P
	5200 MHz	1.37	1.73	4.56	P
	5240 MHz	1.99	1.77	4.89	P
	5260 MHz	2.07	2.66	5.39	P
	5280 MHz	2.28	2.69	5.50	P
	5320 MHz	2.3	1.92	5.12	P
	5500 MHz	2.31	1.42	4.90	P
	5580 MHz	2.00	1.74	4.88	P
	5700 MHz	3.23	1.81	5.59	P
	5720 MHz	4.56	1.94	6.45	P
802.11ac VHT40	5190 MHz	-0.38	-0.18	2.73	P
	5230 MHz	-1.47	-2.18	1.20	P
	5270 MHz	-1.03	-2.4	1.35	P
	5310 MHz	-1.41	-0.69	1.98	P
	5510 MHz	-0.13	1.18	3.58	P
	5550 MHz	0.22	-0.17	3.04	P

	5670 MHz	-0.28	-0.85	2.45	P
	5710 MHz	1.76	-0.96	3.62	P
802.11ac VHT80	5210MHz	-4.42	-4.98	-1.68	P
	5290MHz	-4.85	-5.17	-2.00	P
	5530MHz	-3.77	-5.13	-1.39	P
	5610MHz	-2.62	-2.39	0.51	P
	5690MHz	-1.01	-3.63	0.88	P

Note: All Antenna are tested, only the worst-case plot have been reported.

Conclusion: PASS



802.11a

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

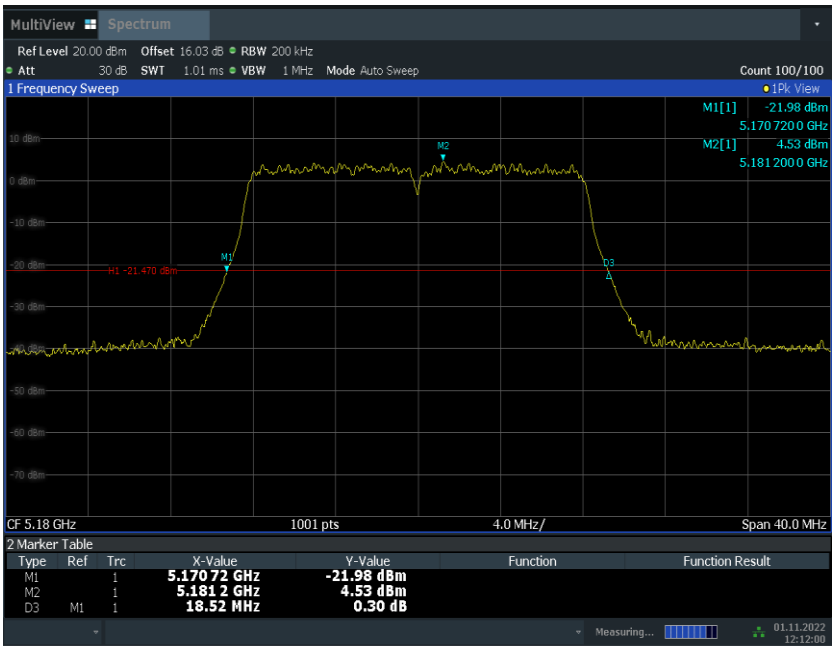
Measurement Result:

Mode	Frequency	Occupied 26dB Bandwidth (MHz)		conclusion
802.11a	5180 MHz	Fig.1	18.52	P
	5200 MHz	Fig.2	18.48	P
	5240 MHz	Fig.3	18.52	P
	5260 MHz	Fig.4	18.60	P

	5280 MHz	Fig.5	18.48	P
	5320 MHz	Fig.6	18.52	P
	5500 MHz	Fig.7	18.56	P
	5580 MHz	Fig.8	18.56	P
	5700 MHz	Fig.9	18.52	P
	5720 MHz	Fig.10	18.52	P
802.11n HT20	5180 MHz	Fig.11	19.44	P
	5200 MHz	Fig.12	19.40	P
	5240 MHz	Fig.13	19.36	P
	5260 MHz	Fig.14	19.52	P
	5280 MHz	Fig.15	19.36	P
	5320 MHz	Fig.16	19.44	P
	5500 MHz	Fig.17	19.44	P
	5580 MHz	Fig.18	19.44	P
	5700 MHz	Fig.19	19.44	P
	5720 MHz	Fig.20	19.40	P
802.11ac HT40	5190 MHz	Fig.21	41.92	P
	5230 MHz	Fig.22	41.60	P
	5270 MHz	Fig.23	42.08	P
	5310 MHz	Fig.24	42.64	P
	5510 MHz	Fig.25	41.76	P
	5550 MHz	Fig.26	42.08	P
	5670 MHz	Fig.27	41.68	P
	5710 MHz	Fig.28	41.84	P
802.11ac HT80	5210MHz	Fig.29	82.08	P
	5290MHz	Fig.30	82.56	P
	5530MHz	Fig.31	82.24	P
	5610MHz	Fig.32	82.08	P
	5690MHz	Fig.33	82.56	P

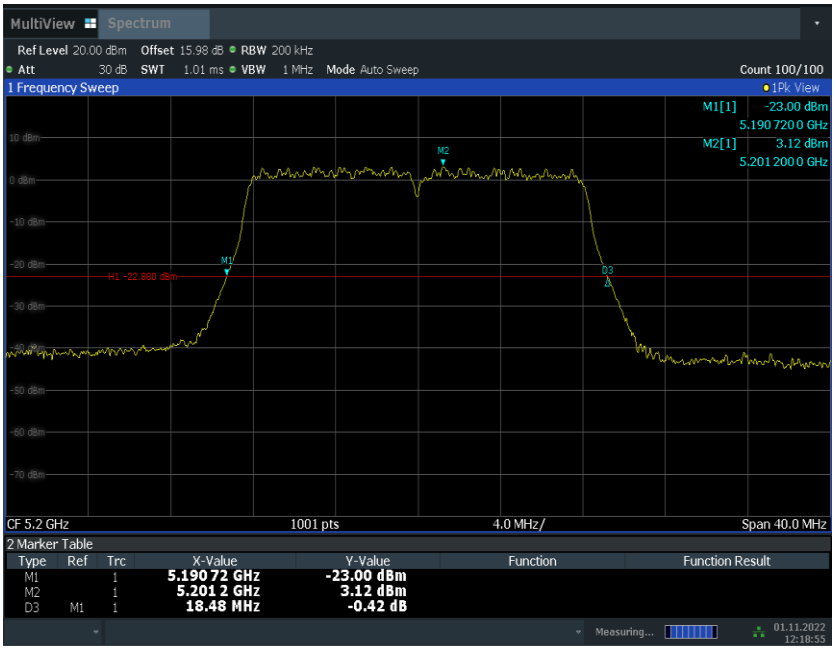
Conclusion: PASS

Test graphs as below:



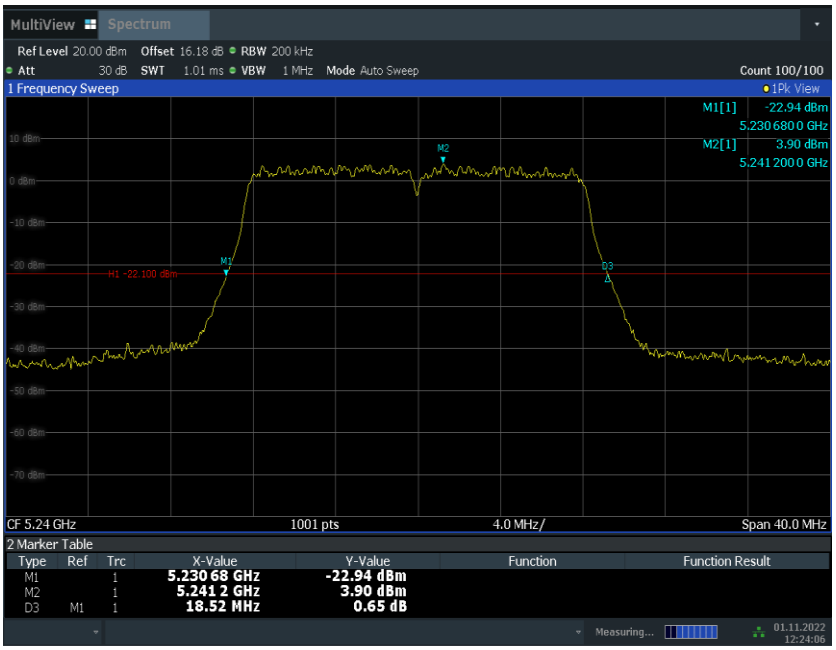
12:12:00 01.11.2022

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



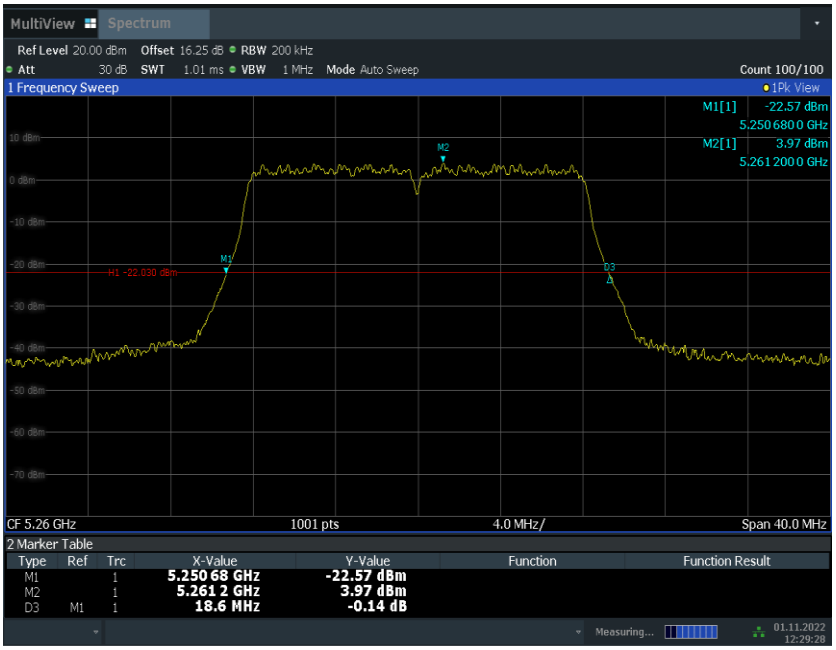
12:18:56 01.11.2022

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



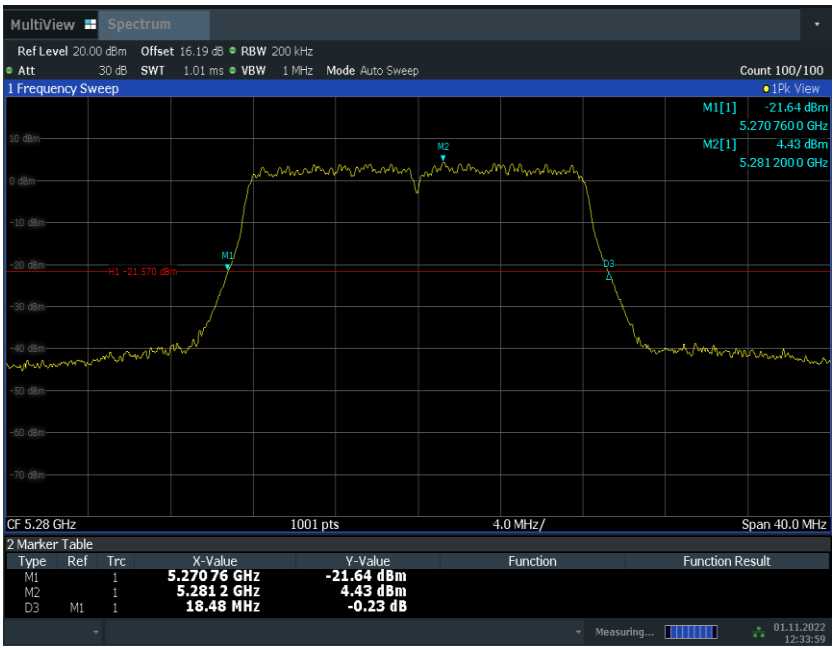
12:24:06 01.11.2022

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



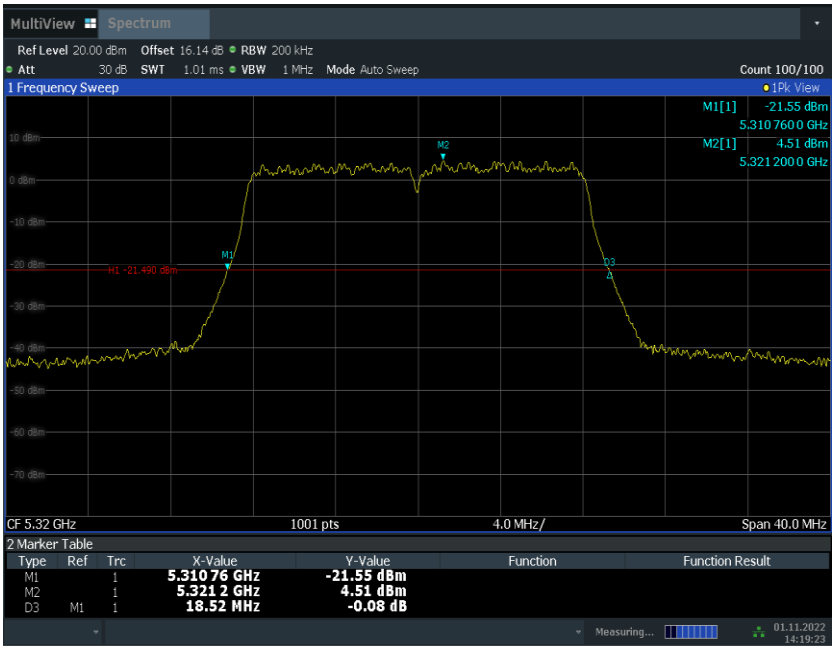
12:29:28 01.11.2022

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



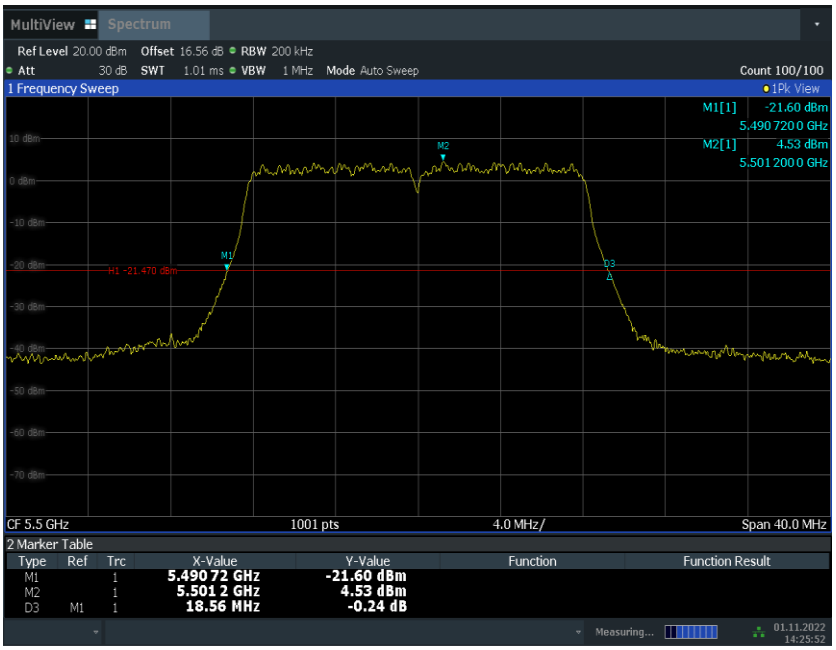
12:34:00 01.11.2022

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



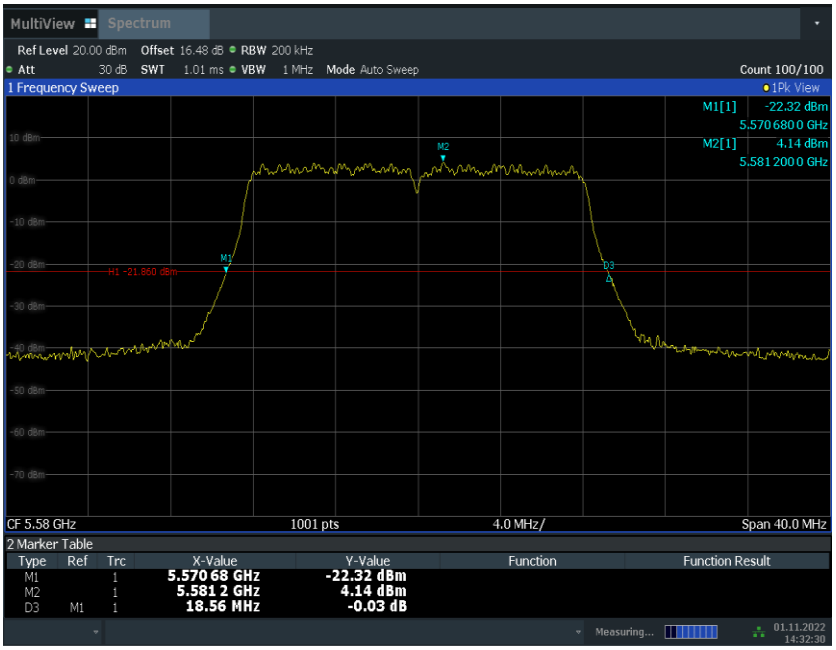
14:19:23 01.11.2022

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



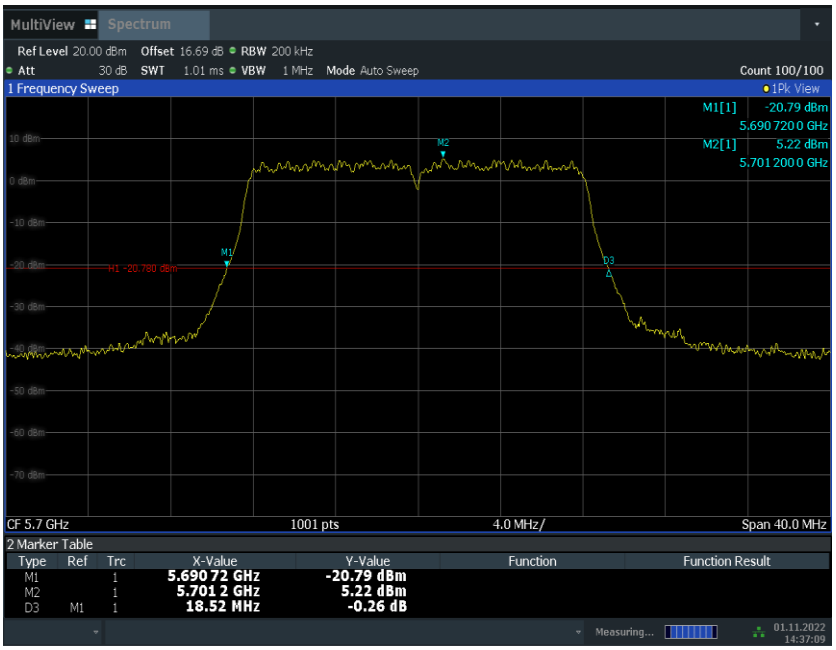
14:25:52 01.11.2022

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



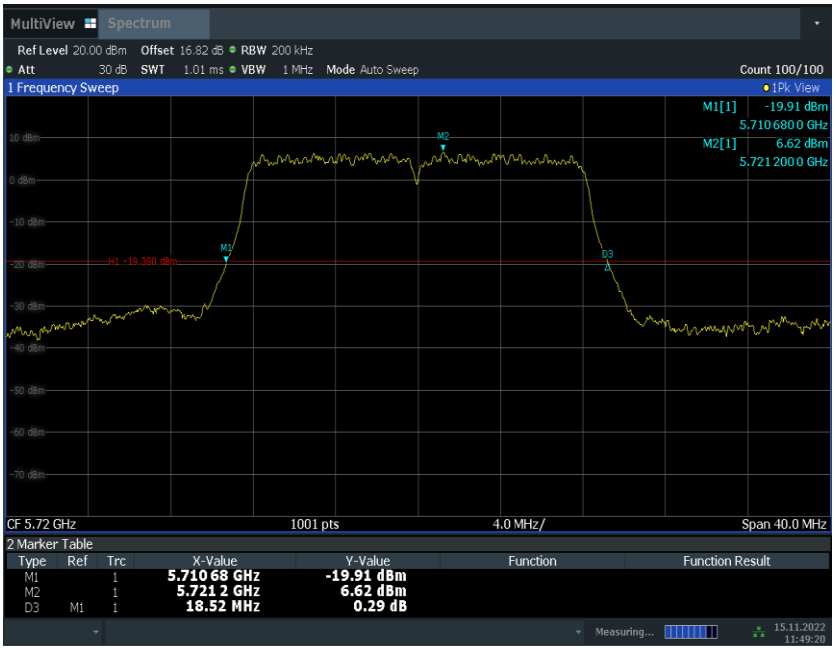
14:32:30 01.11.2022

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



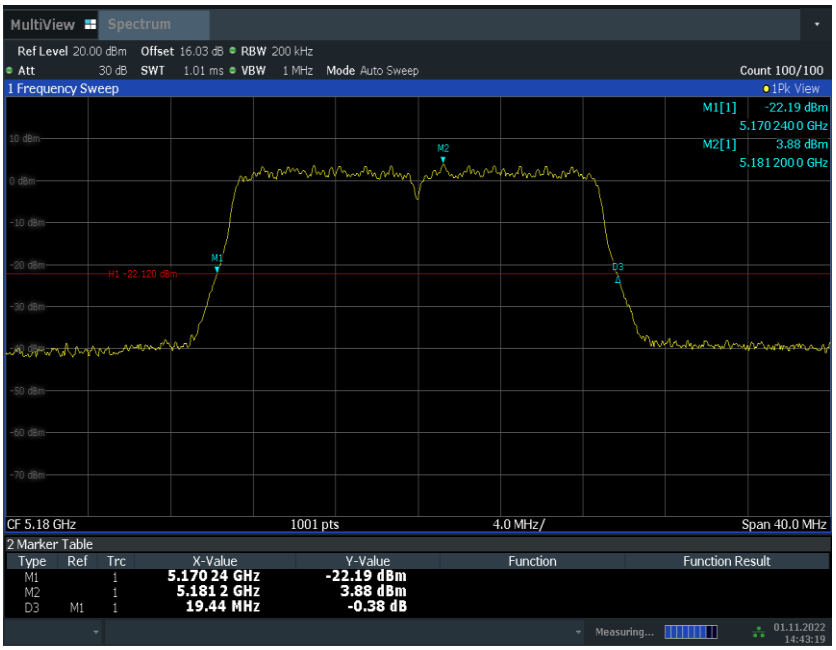
14:37:10 01.11.2022

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



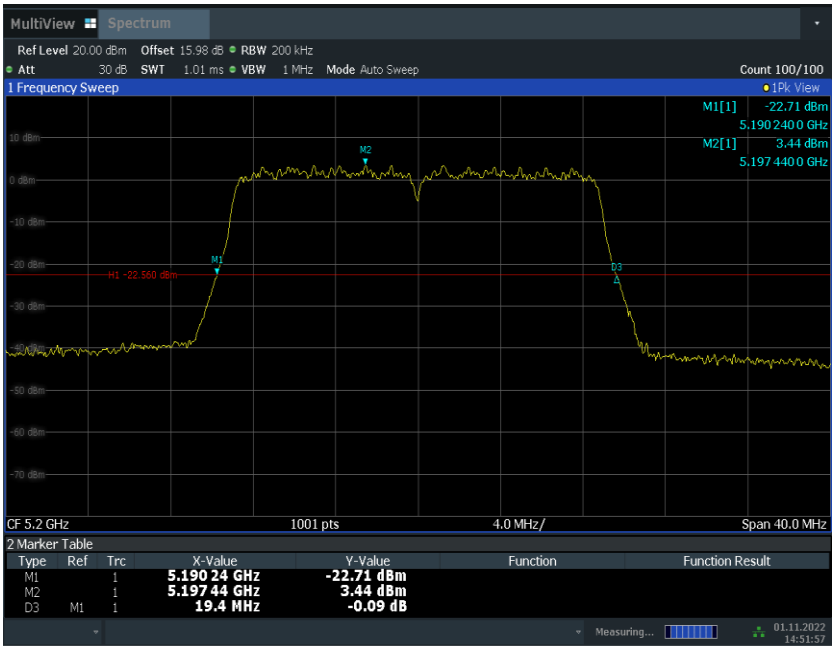
11:49:20 15.11.2022

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



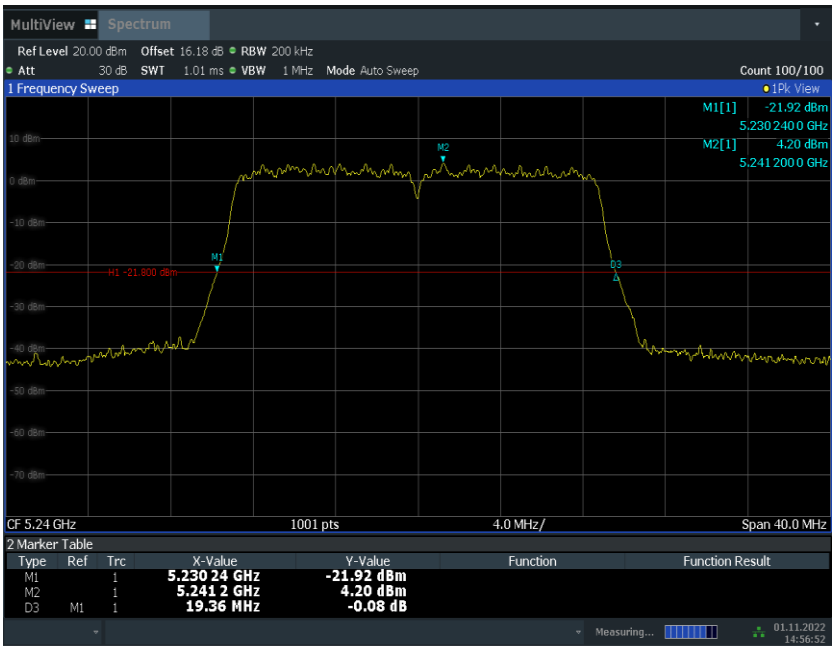
14:43:19 01.11.2022

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



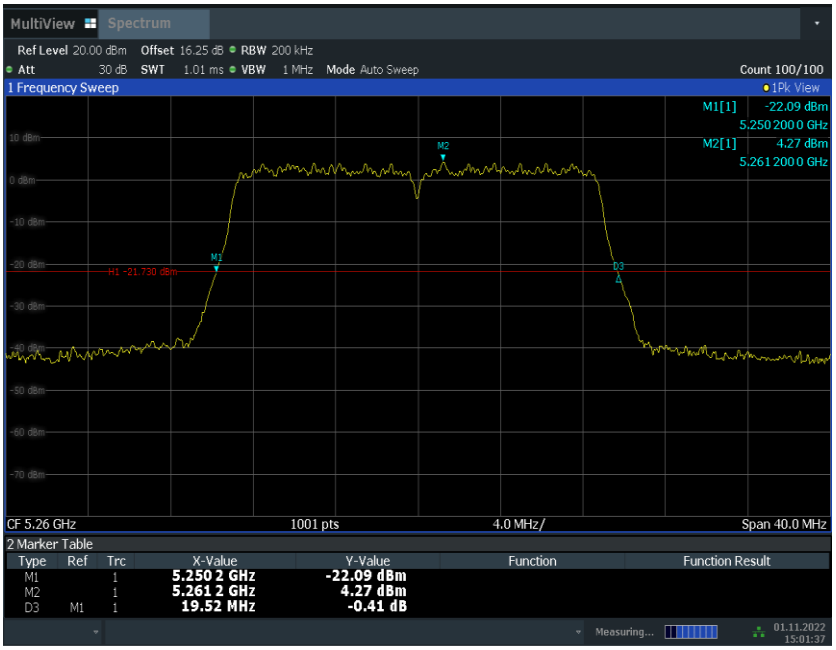
14:51:57 01.11.2022

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



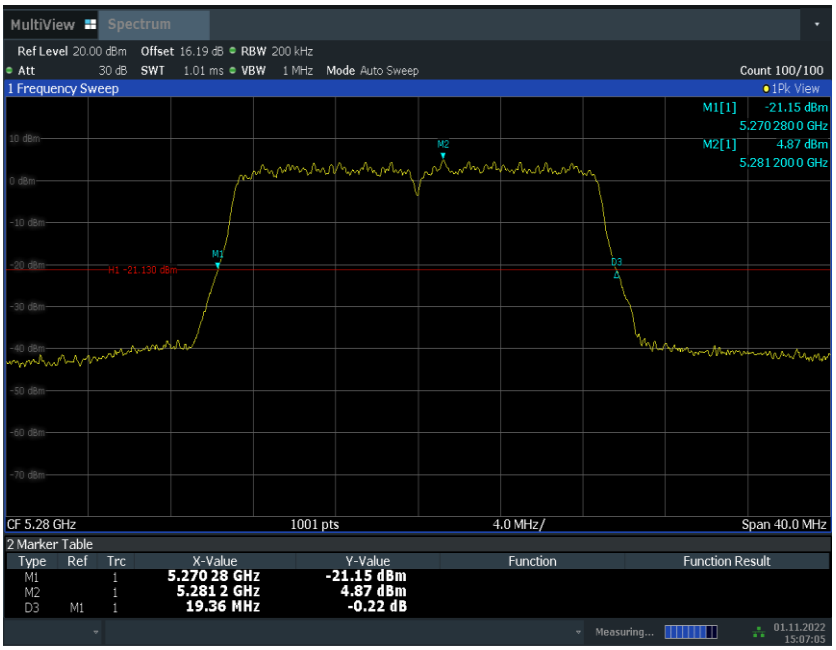
14:56:52 01.11.2022

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



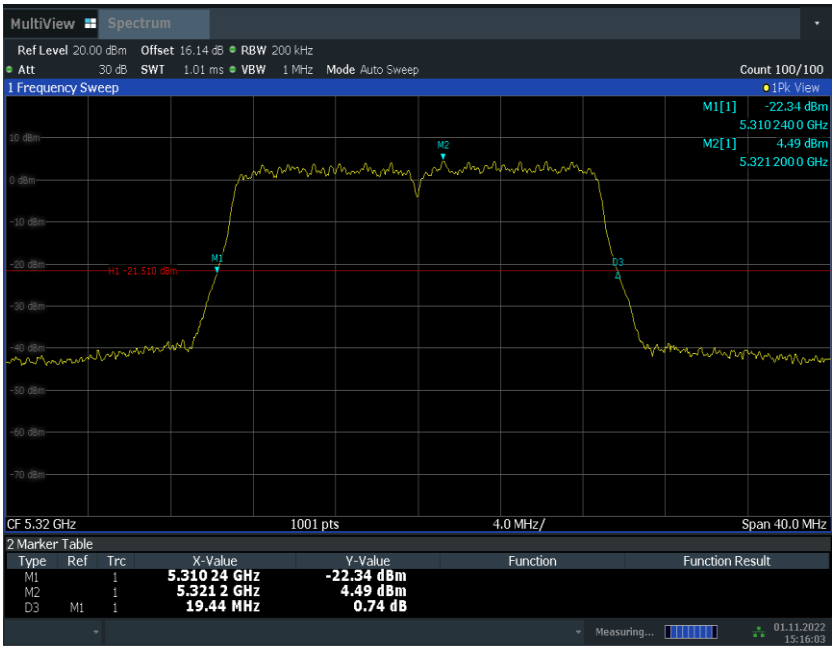
15:01:38 01.11.2022

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



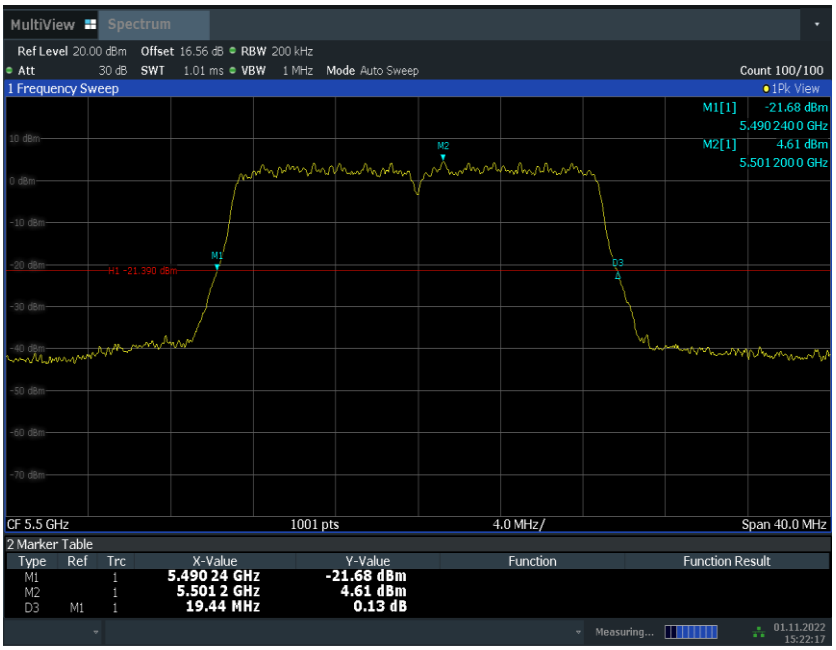
15:07:05 01.11.2022

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



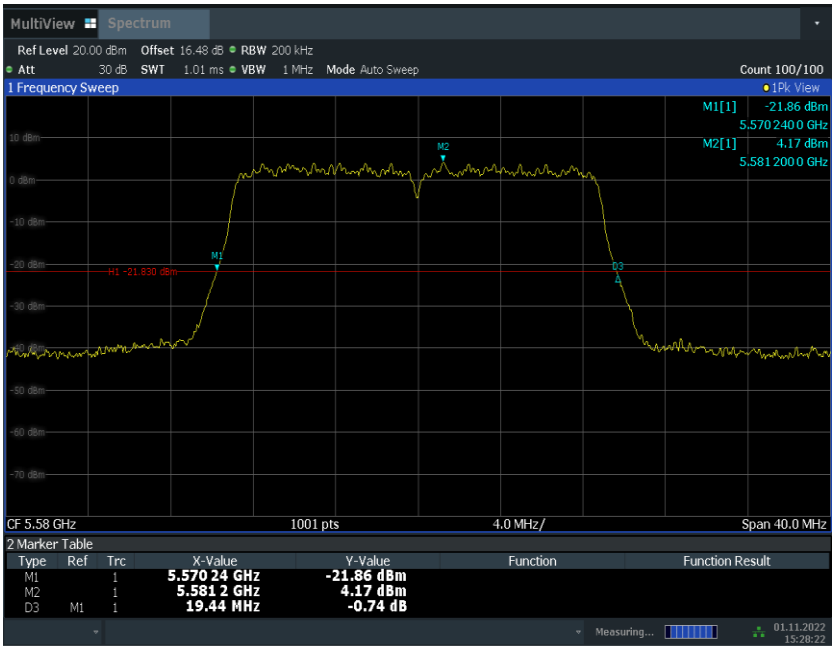
15:16:03 01.11.2022

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



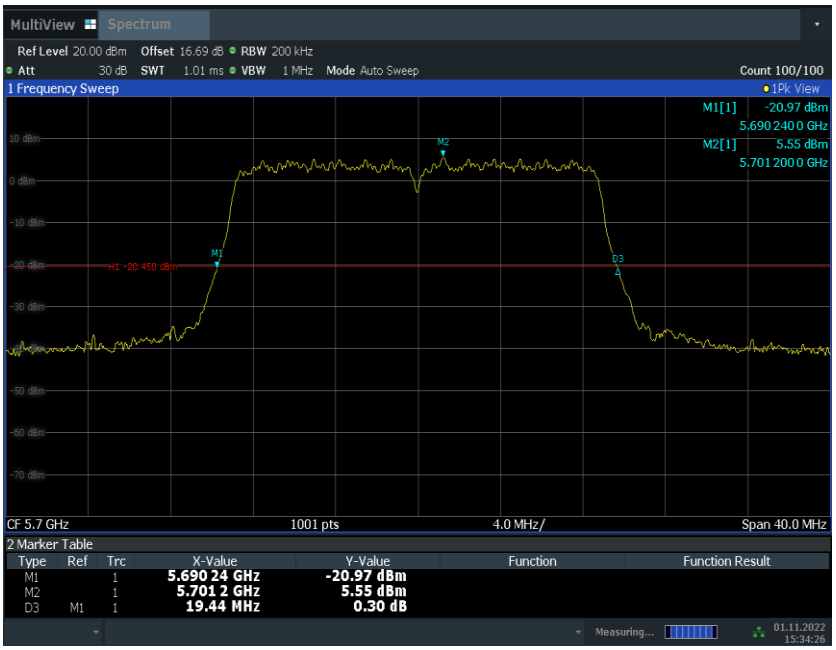
15:22:17 01.11.2022

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



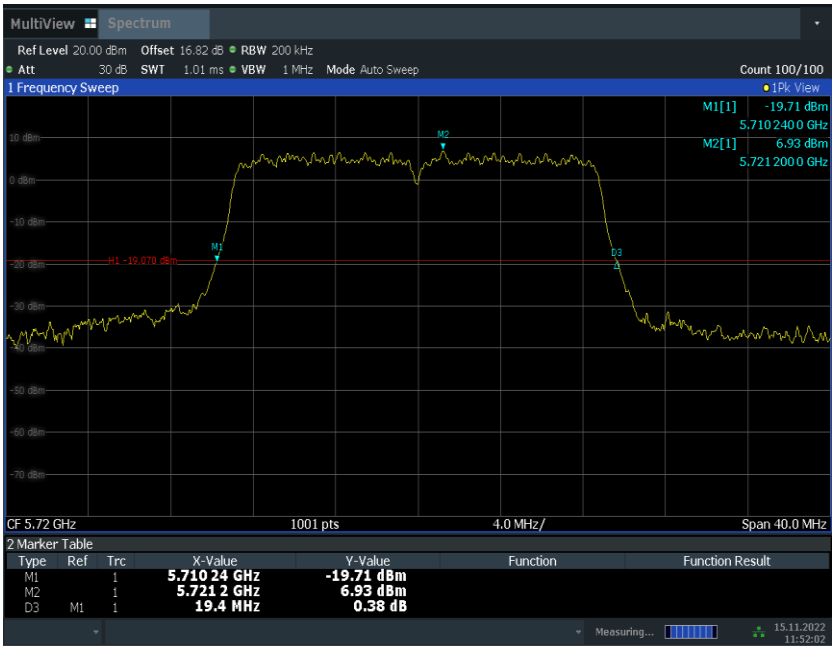
15:28:22 01.11.2022

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



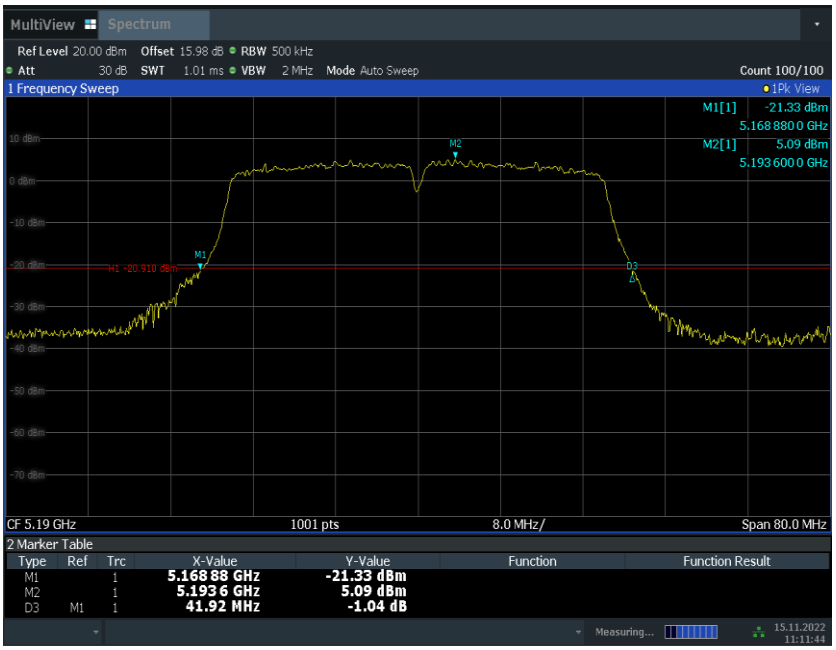
15:34:27 01.11.2022

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



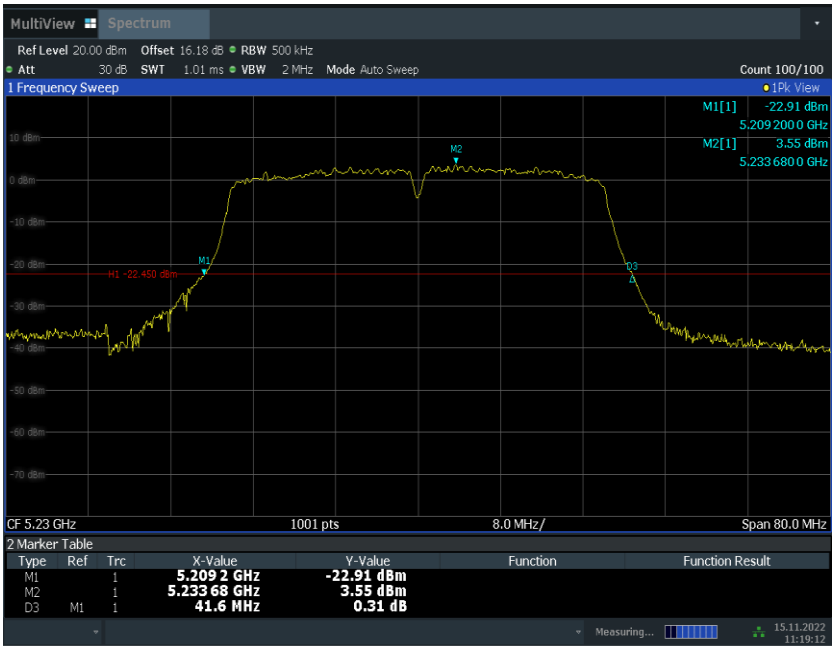
11:52:02 15.11.2022

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



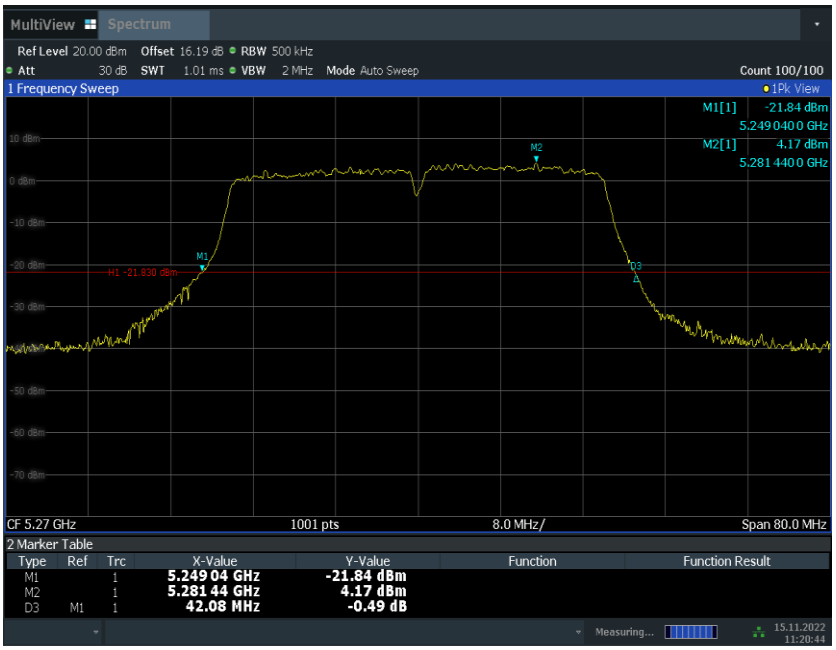
11:11:45 15.11.2022

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



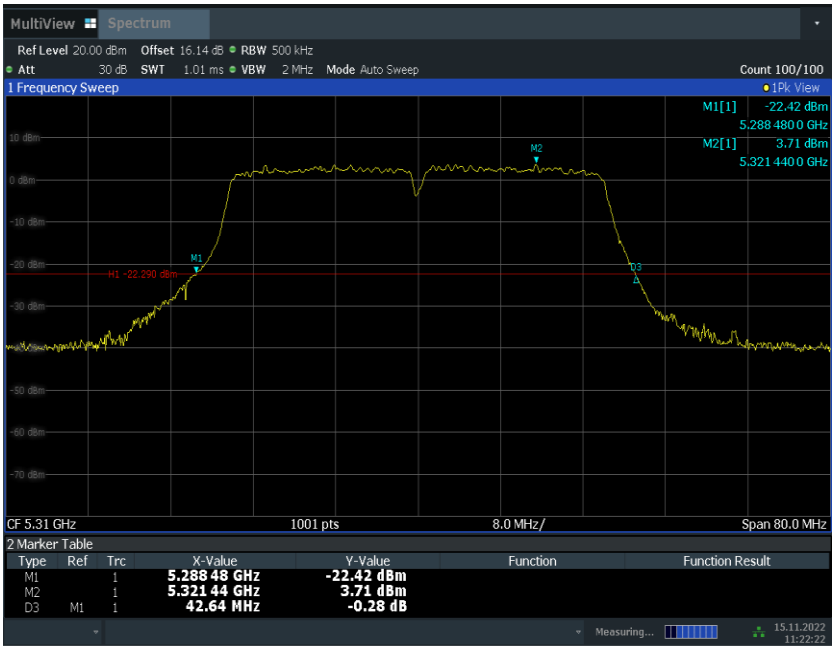
11:19:12 15.11.2022

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



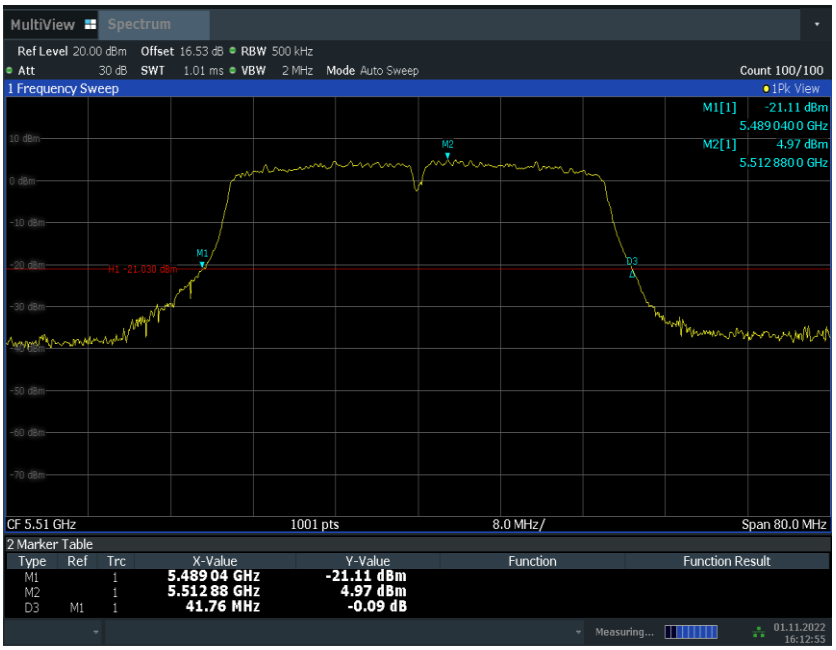
11:20:45 15.11.2022

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



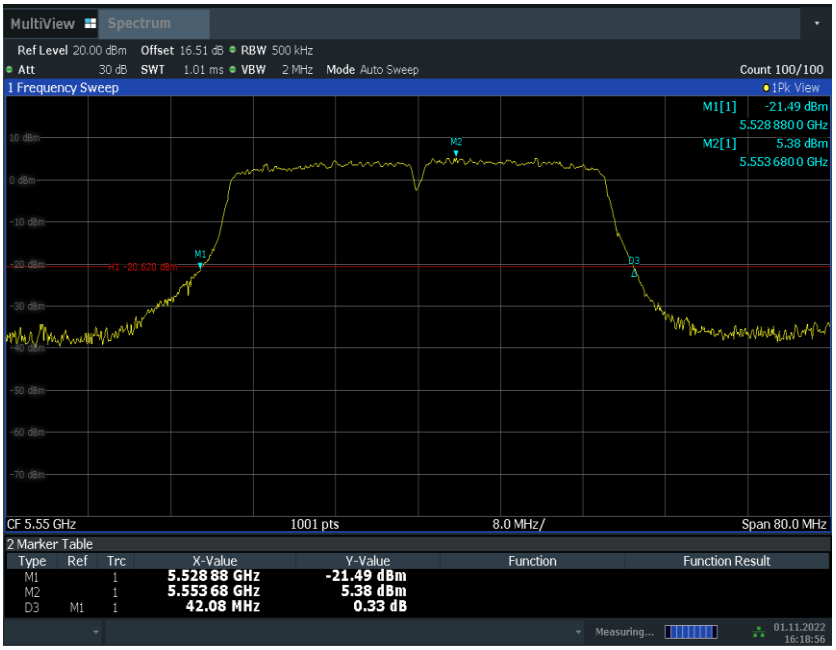
11:22:23 15.11.2022

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



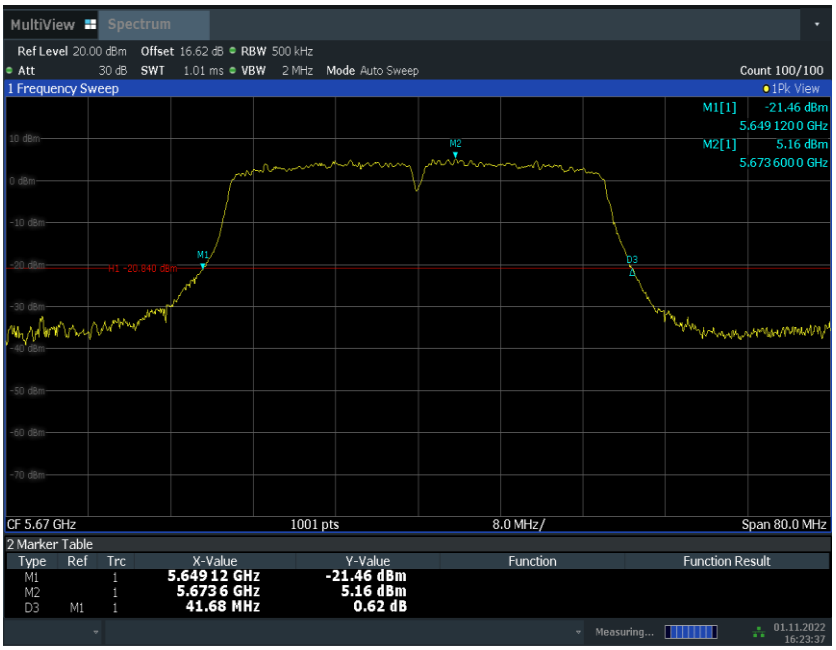
16:12:55 01.11.2022

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



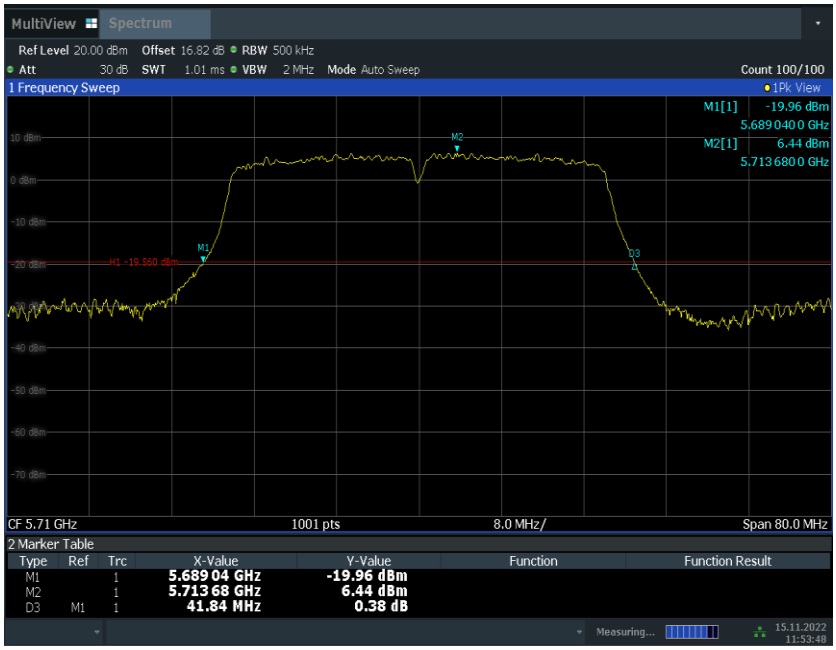
16:18:56 01.11.2022

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



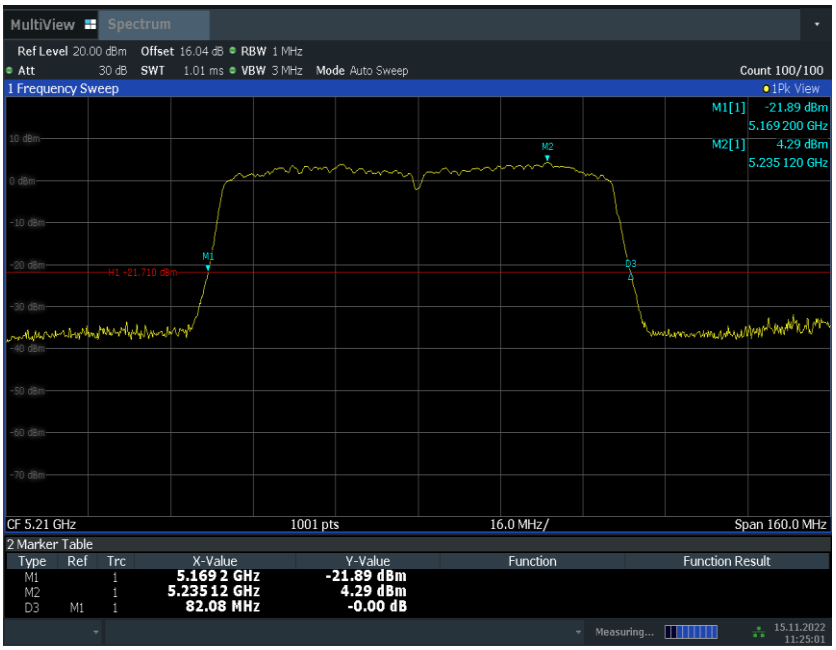
16:23:38 01.11.2022

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



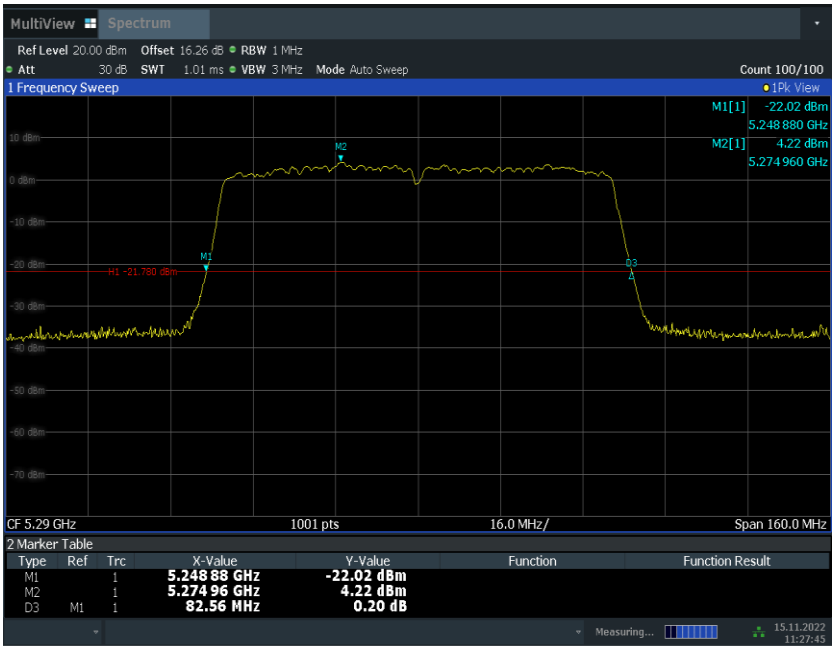
9 11:53:49 15.11.2022

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



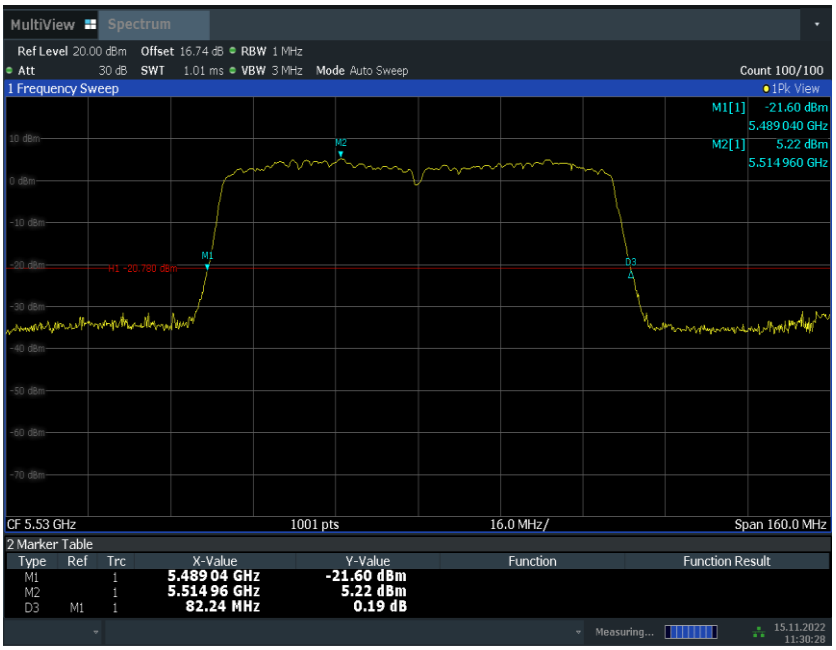
11:25:02 15.11.2022

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



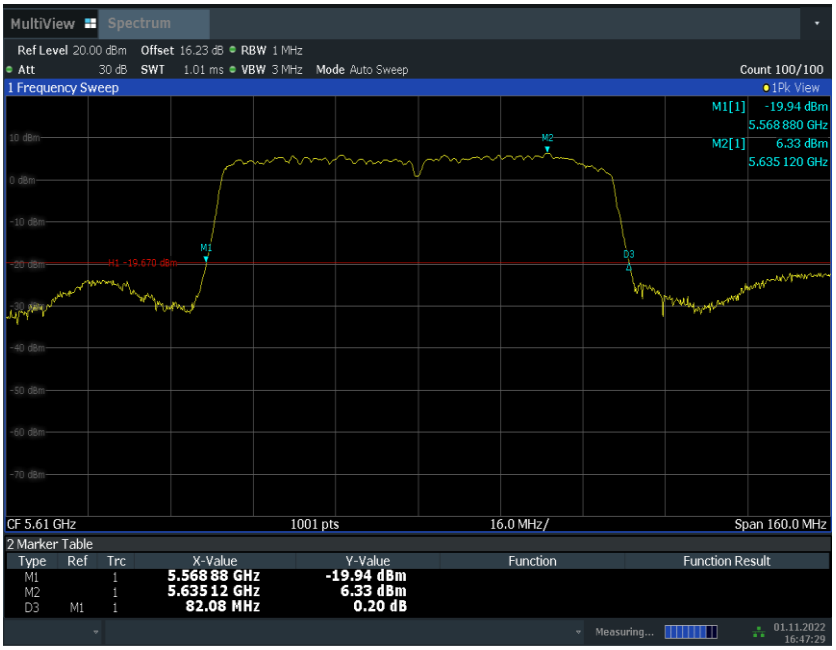
11:27:45 15.11.2022

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



11:30:29 15.11.2022

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



16:47:30 01.11.2022

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

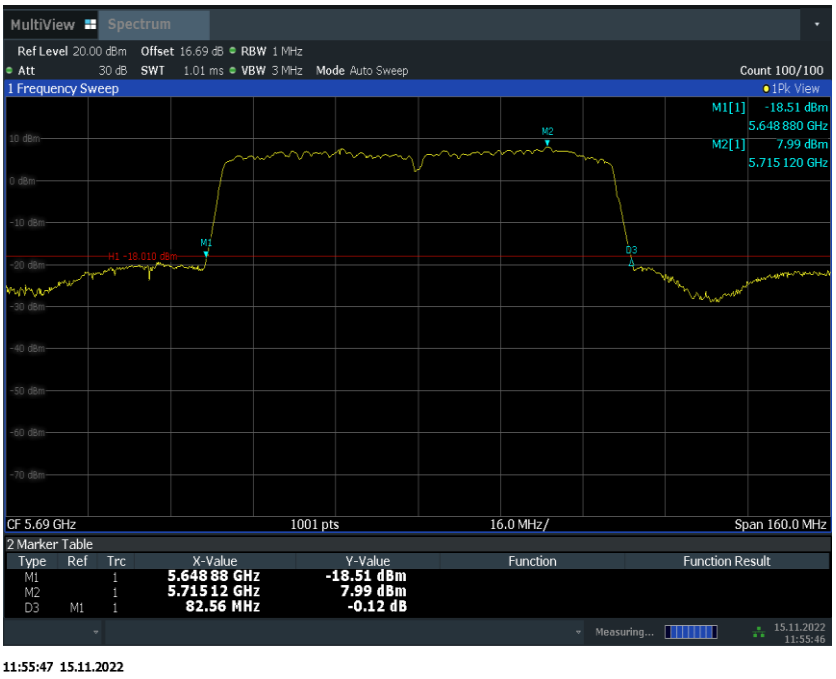


Fig.33 Occupied 26dB Bandwidth (802. 11ac-HT80, 5690MHz)

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	5180 MHz	Fig.38	P

HT20	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:

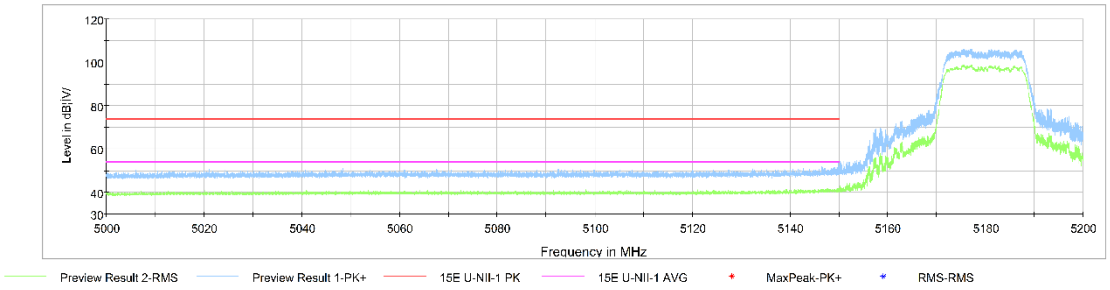


Fig.34 Band Edges (802.11a Ch36, 5180MHz)

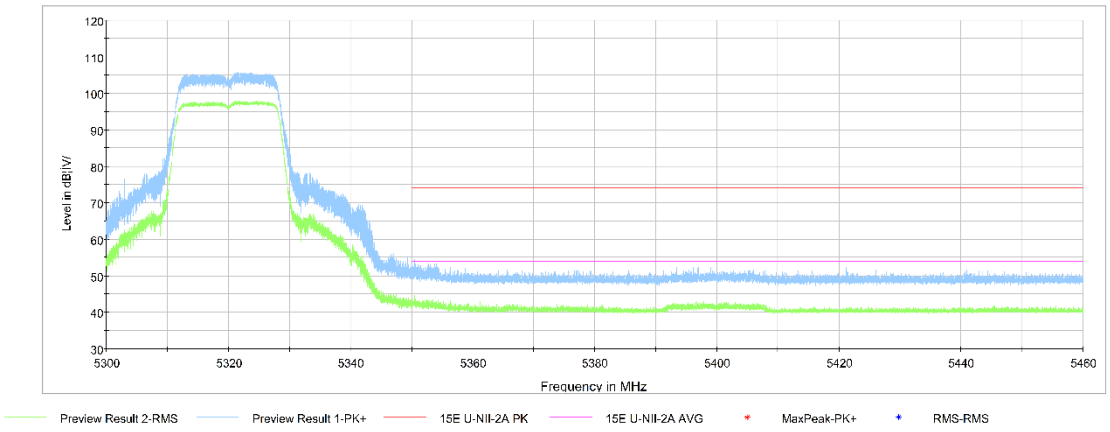


Fig.35 Band Edges (802.11a Ch64, 5320MHz)

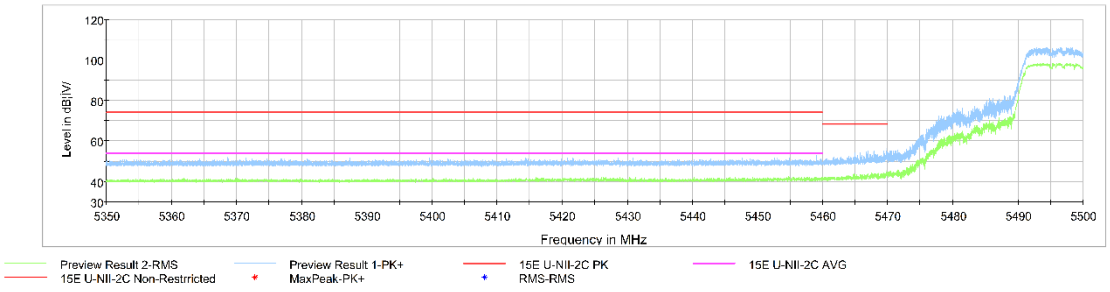


Fig.36 Band Edges (802.11a Ch100, 5500MHz)

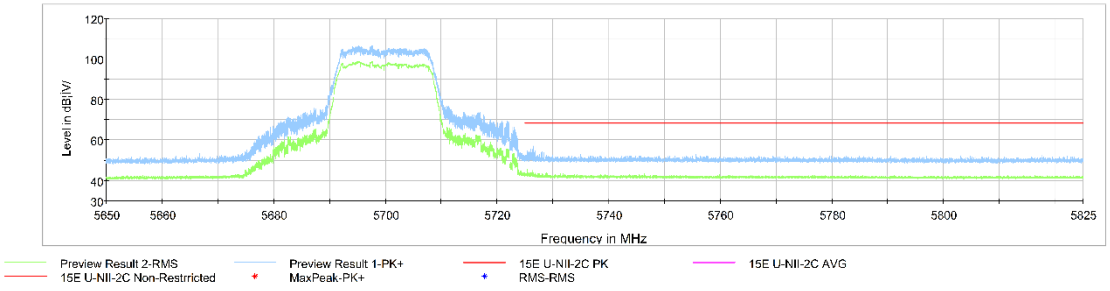


Fig.37 Band Edges (802.11a Ch140, 5700MHz)

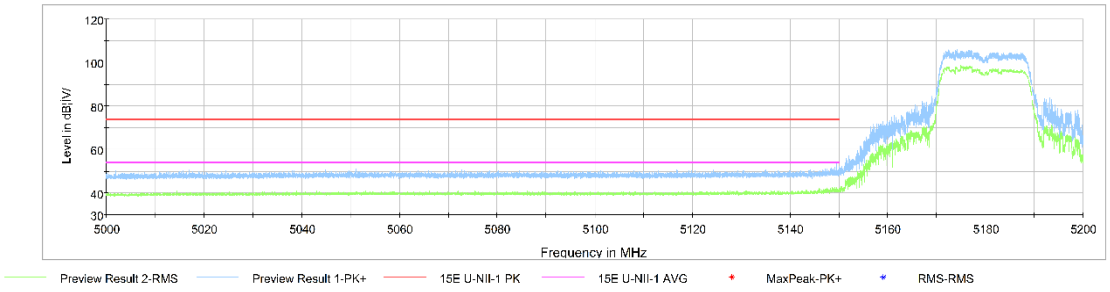


Fig.38 Band Edges (802.11n-HT20 Ch36, 5180MHz)

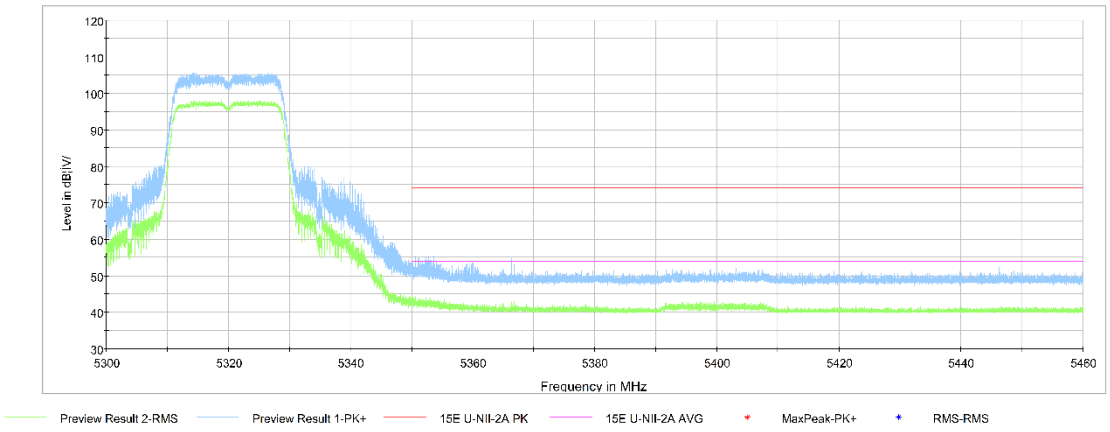


Fig.39 Band Edges (802.11n-HT20 Ch64, 5320MHz)

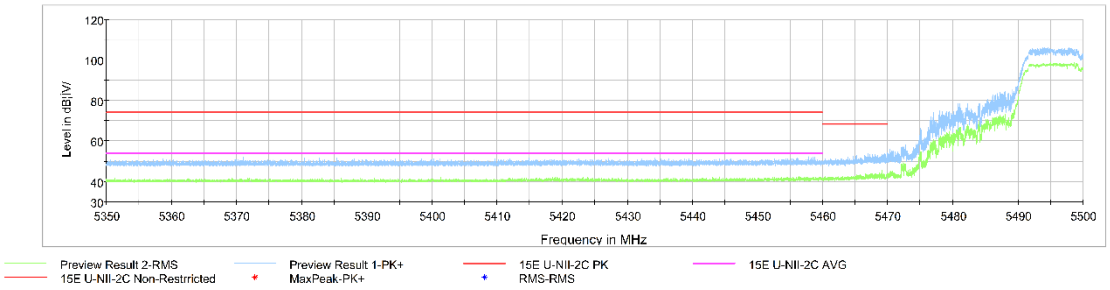


Fig.40 Band Edges (802.11n-HT20 Ch100, 5500MHz)

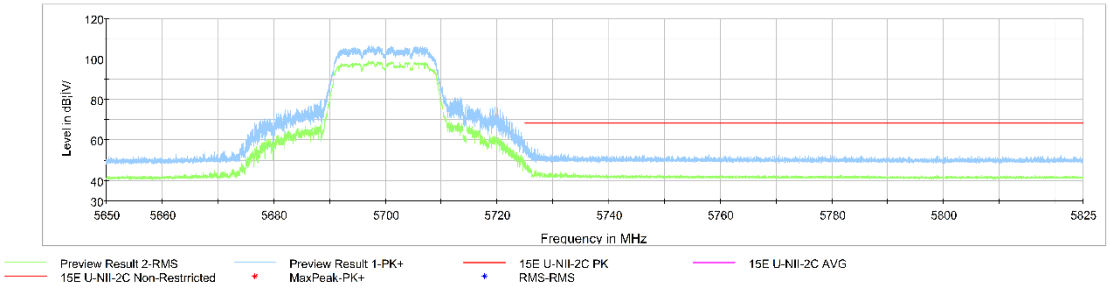


Fig.41 Band Edges (802.11n-HT20 Ch140, 5700MHz)

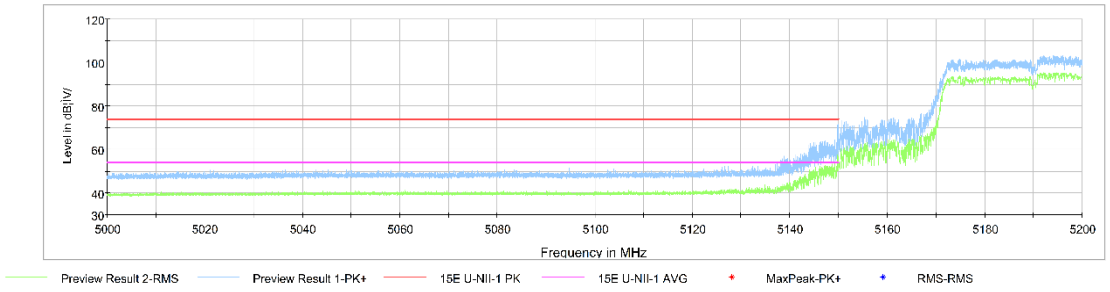


Fig.42 Band Edges (802.11n-HT40 Ch38, 5190MHz)

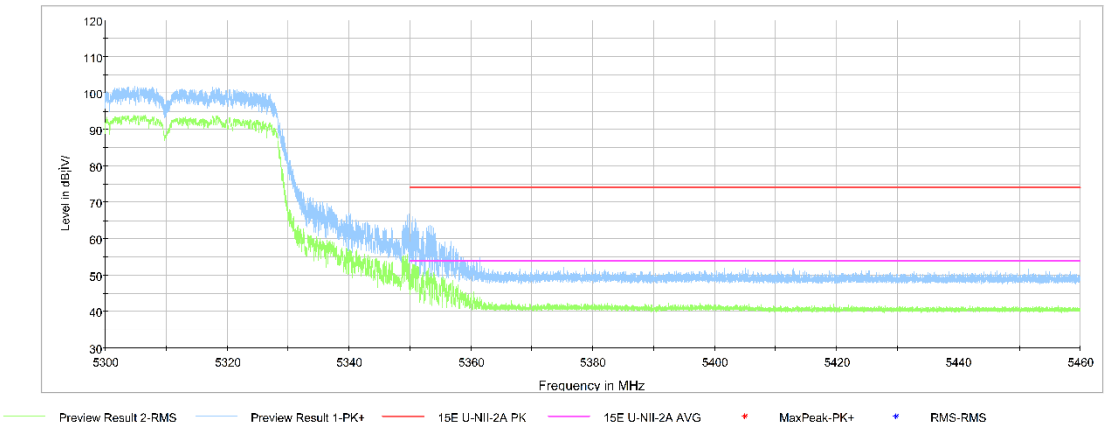


Fig.43 Band Edges (802.11n-HT40 Ch62, 5310MHz)

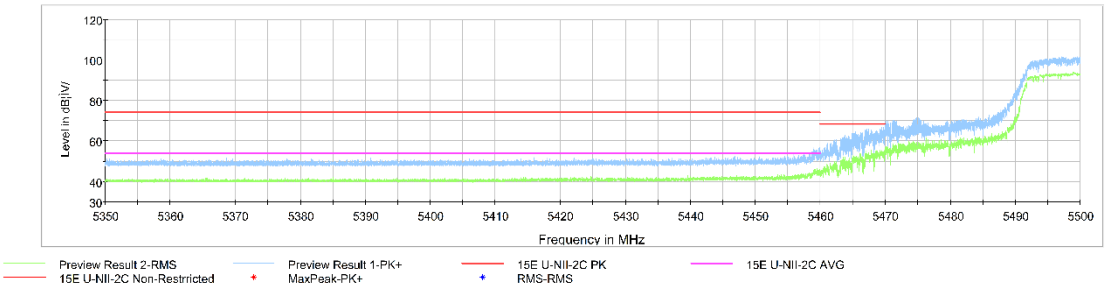


Fig.44 Band Edges (802.11n-HT40 Ch102, 5510MHz)

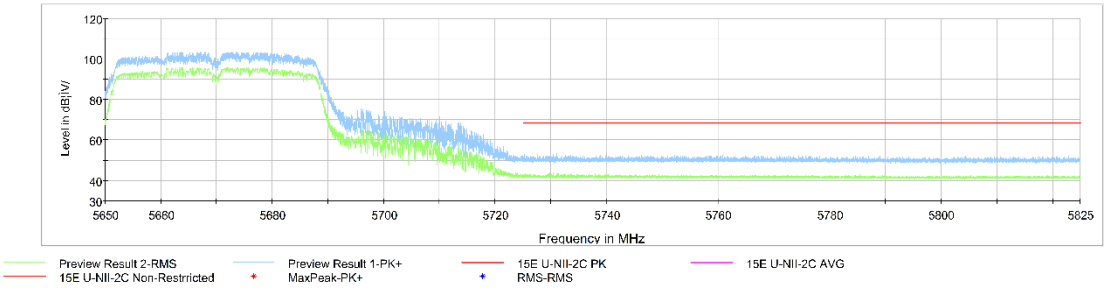


Fig.45 Band Edges (802.11n-HT40 Ch134, 5670MHz)

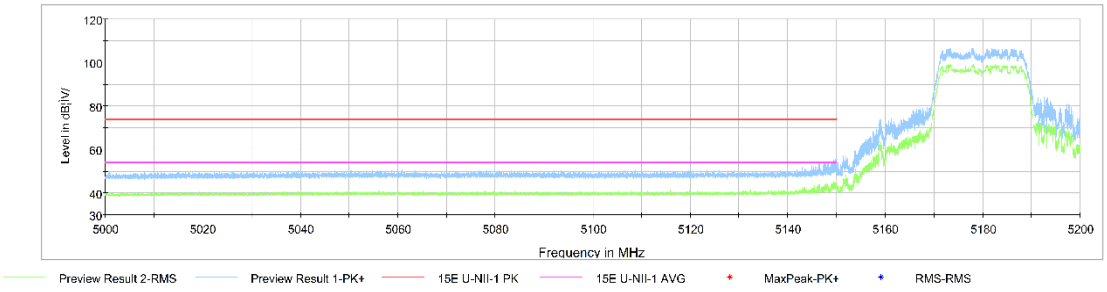


Fig.46 Band Edges (802.11ac-HT20 Ch36, 5180MHz)

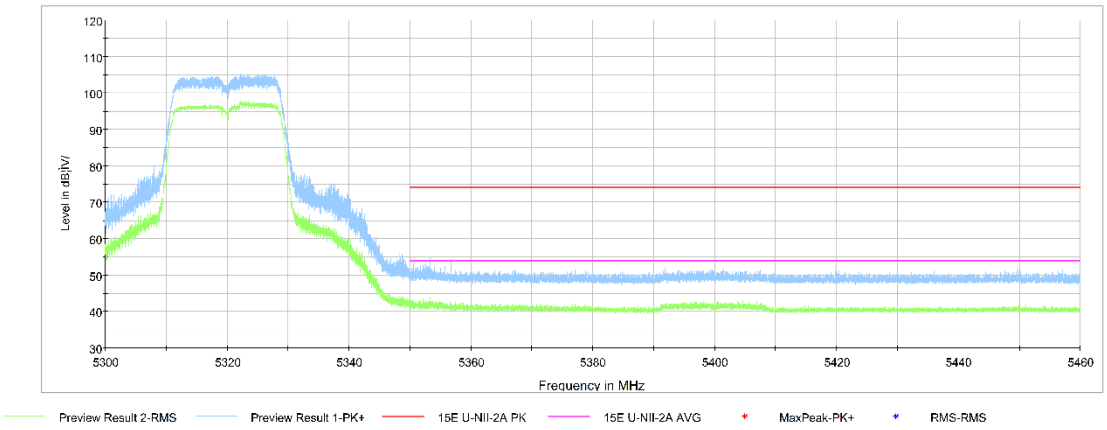


Fig.47 Band Edges (802.11ac-HT20 Ch64, 5320MHz)

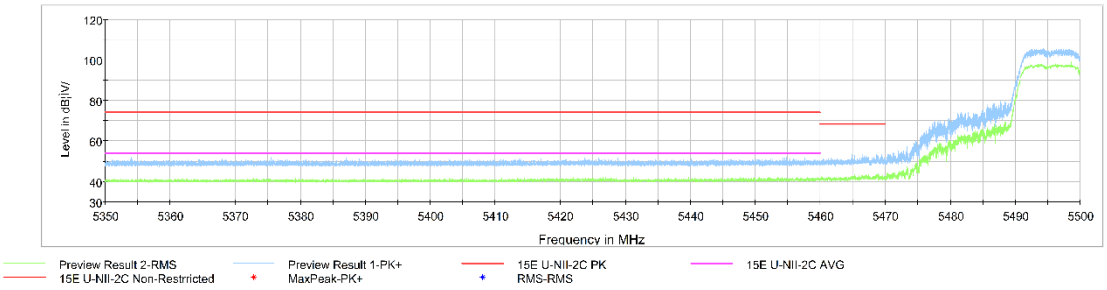


Fig.48 Band Edges (802.11ac-HT20 Ch100, 5500MHz)

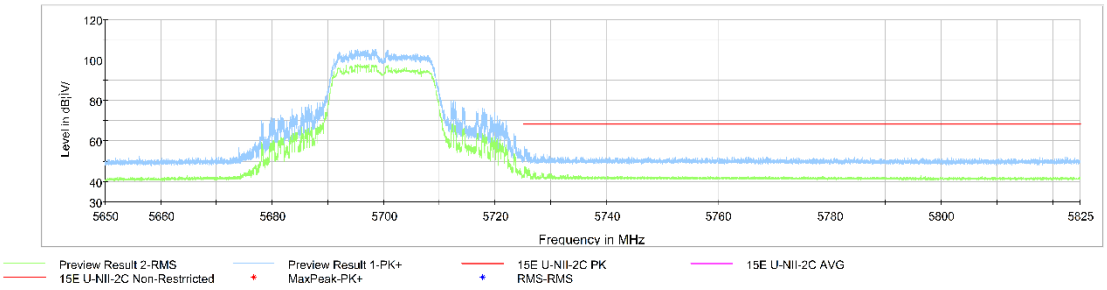


Fig.49 Band Edges (802.11ac-HT20 Ch140, 5700MHz)

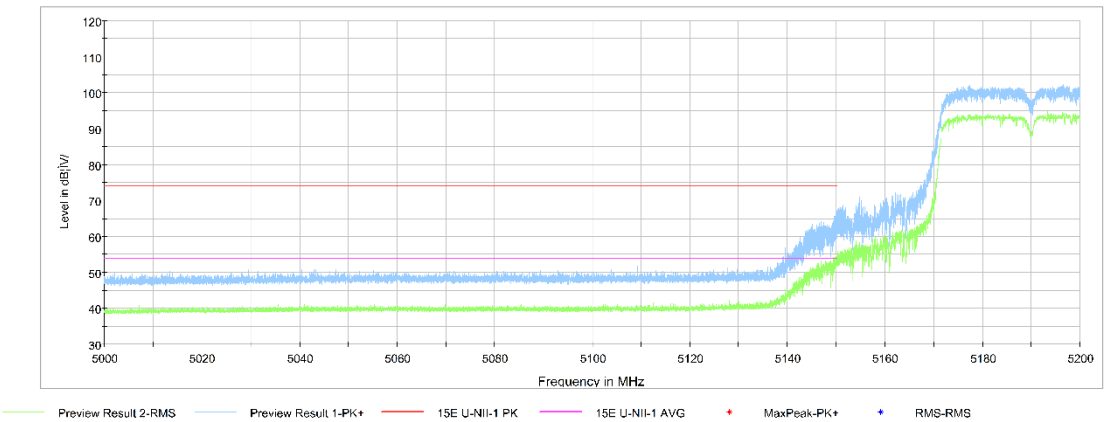


Fig.50 Band Edges (802.11ac-HT40 Ch38, 5190MHz)

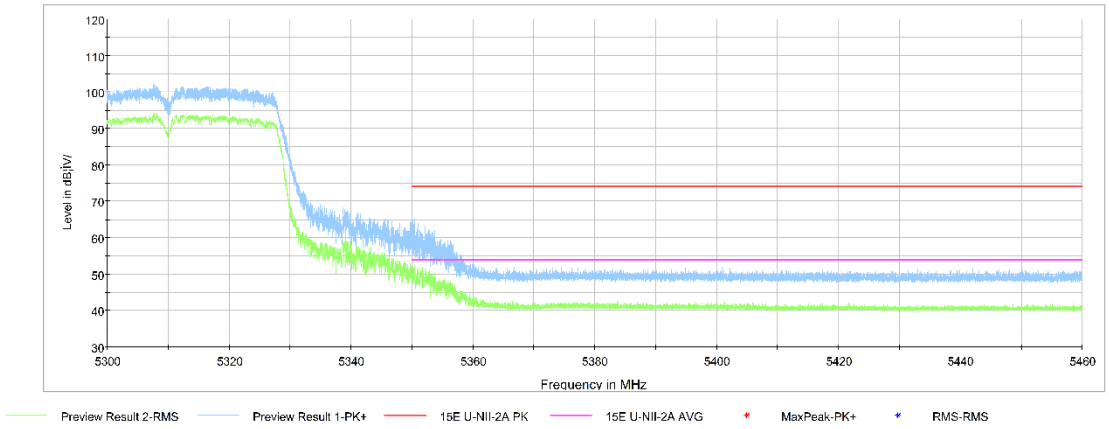


Fig.51 Band Edges (802.11ac-HT40 Ch62, 5310MHz)

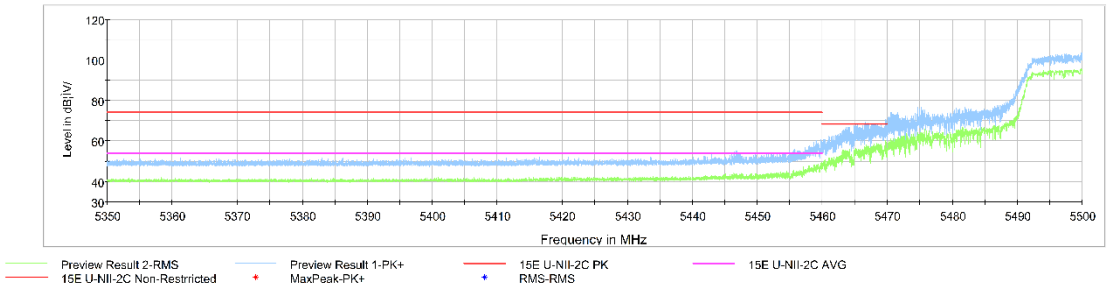


Fig.52 Band Edges (802.11ac-HT40 Ch102, 5510MHz)

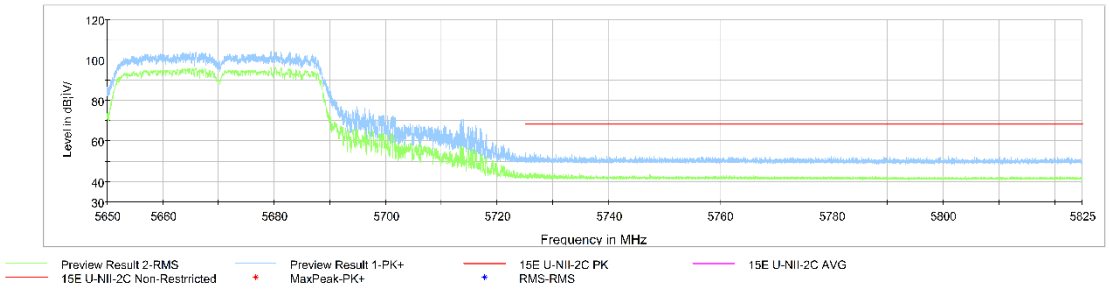


Fig.53 Band Edges (802.11ac-HT40 Ch134, 5670MHz)

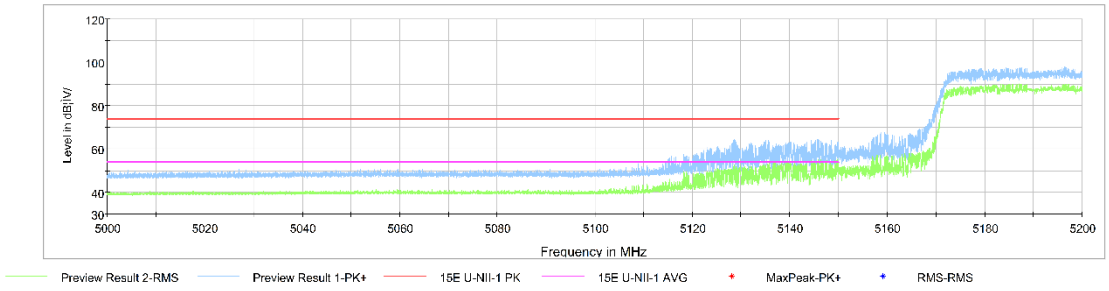


Fig.54 Band Edges (802.11ac-HT80 Ch42 , 5210MHz)

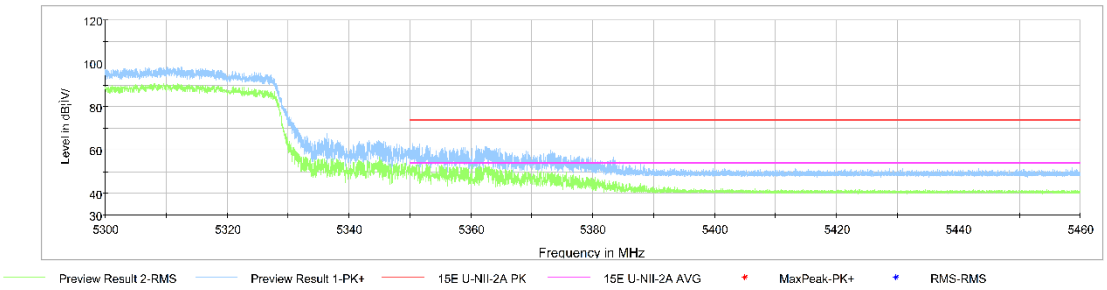


Fig.55 Band Edges (802.11ac-HT80 Ch58, 5290MHz)

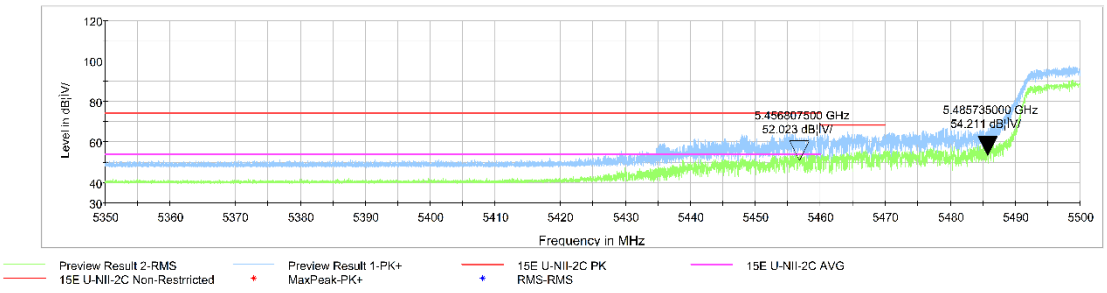


Fig.56 Band Edges (802.11ac-HT80 Ch106, 5530MHz)

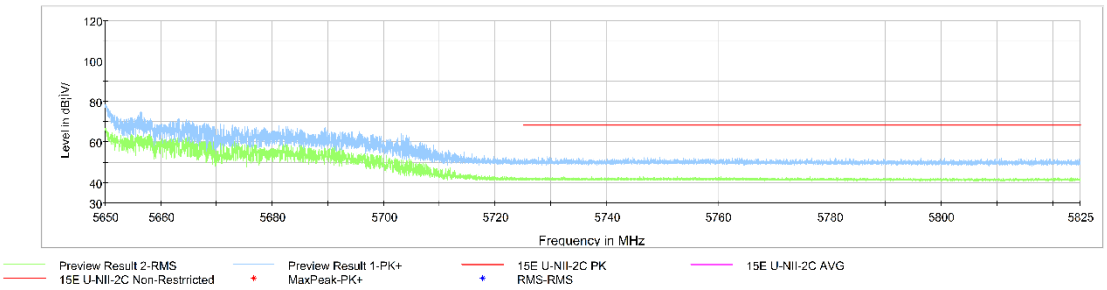


Fig.57 Band Edges (802.11ac-HT80 Ch122, 5610MHz)

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
	120(5600MHz)	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
	120(5600MHz)	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
	120(5600MHz)	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

The EUT supports SISO and MIMO, all of transmission mode has been tested, only the worst cases are reported.

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)
15535.633	41.99	-27.36	38.73	30.62	54.00	12.01	V
17956.367	41.58	-25.50	46.66	20.42	54.00	12.42	V
12331.700	37.30	-31.10	38.94	29.46	54.00	16.70	V
12330.233	37.25	-31.10	38.94	29.41	54.00	16.75	V
5149.980	41.99	-27.61	33.67	35.93	54.00	12.01	V
5149.570	41.90	-27.61	33.67	35.84	54.00	12.10	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)
17965.167	41.37	-25.50	46.66	20.21	54.00	12.63	H
15593.567	41.31	-27.23	38.61	29.93	54.00	12.69	V
12330.967	37.59	-31.10	38.94	29.75	54.00	16.41	V
12331.700	37.14	-31.10	38.94	29.30	54.00	16.86	V
8495.633	34.02	-34.13	37.86	30.28	54.00	19.98	V
8416.067	33.87	-34.35	37.79	30.43	54.00	20.13	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)
15716.033	41.53	-27.23	38.61	30.15	54.00	12.47	V
15716.400	40.69	-27.23	38.61	29.31	54.00	13.31	V
12291.367	37.79	-31.10	38.94	29.95	54.00	16.21	H
12331.700	37.42	-31.10	38.94	29.58	54.00	16.58	V
8282.967	34.06	-34.97	37.56	31.46	54.00	19.94	V
8225.767	33.91	-35.19	37.45	31.66	54.00	20.09	H

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)
15776.167	40.77	-26.97	38.48	29.26	54.00	13.23	V
17980.567	40.48	-25.50	46.66	19.32	54.00	13.52	H
12332.433	37.41	-31.10	38.94	29.57	54.00	16.59	V
12240.767	37.25	-31.43	38.99	29.69	54.00	16.75	V
8340.533	33.87	-34.50	37.68	30.69	54.00	20.13	H
9121.167	33.73	-33.85	38.08	29.50	54.00	20.27	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)
15843.633	41.42	-26.97	38.48	29.91	54.00	12.58	H
15844.367	40.86	-26.97	38.48	29.35	54.00	13.14	H
12333.167	37.57	-31.10	38.94	29.73	54.00	16.43	H
12287.700	37.29	-31.10	38.94	29.45	54.00	16.71	V
9387.733	34.12	-32.95	37.91	29.15	54.00	19.88	V
9017.767	33.77	-33.76	38.13	29.40	54.00	20.23	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)
15961.700	46.55	-27.35	38.54	35.36	54.00	7.45	V
15957.300	45.69	-27.35	38.54	34.50	54.00	8.31	V
10641.000	39.17	-32.76	38.38	33.55	54.00	14.83	H
10639.900	38.95	-32.76	38.38	33.33	54.00	15.05	H
5350.464	44.55	-27.43	34.01	37.97	54.00	9.45	V
5350.280	44.30	-27.43	34.01	37.72	54.00	9.70	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)
17937.300	40.96	-25.50	46.66	19.80	54.00	13.04	H
17964.433	40.88	-25.50	46.66	19.72	54.00	13.12	H
11000.333	40.16	-32.82	38.70	34.28	54.00	13.84	V
11005.467	39.96	-32.49	38.72	33.72	54.00	14.04	V
5455.390	42.44	-27.18	34.17	35.45	54.00	11.56	V
5455.570	42.29	-27.18	34.17	35.30	54.00	11.71	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)
11160.200	42.01	-32.60	38.75	35.87	54.00	11.99	V
11156.167	41.32	-32.60	38.75	35.18	54.00	12.68	V
17841.600	40.43	-25.50	46.66	19.27	54.00	13.57	V
17934.733	40.38	-25.50	46.66	19.22	54.00	13.62	H
7440.000	37.31	-35.17	36.75	35.73	54.00	16.69	V
7439.633	36.86	-35.17	36.75	35.28	54.00	17.14	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)
11399.633	42.20	-32.42	38.79	35.83	54.00	11.80	V
11397.067	42.00	-32.42	38.79	35.63	54.00	12.00	V
17954.533	40.87	-25.50	46.66	19.71	54.00	13.13	H
17932.167	40.85	-25.50	46.66	19.69	54.00	13.15	V
7599.867	36.76	-35.04	36.87	34.93	54.00	17.24	V
7599.500	35.92	-35.04	36.87	34.09	54.00	18.08	V

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)
15543.333	45.01	-27.36	38.73	33.64	54.00	8.99	V
15546.633	44.18	-27.36	38.73	32.81	54.00	9.82	V
12302.733	37.19	-31.10	38.94	29.35	54.00	16.81	V
12331.333	37.14	-31.10	38.94	29.30	54.00	16.86	V
5148.860	42.90	-27.61	33.67	36.84	54.00	11.10	V
5149.500	42.59	-27.61	33.67	36.53	54.00	11.41	H

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)
17977.633	40.62	-25.50	46.66	19.46	54.00	13.38	H
17934.000	40.58	-25.50	46.66	19.42	54.00	13.42	V
12311.900	37.62	-31.10	38.94	29.78	54.00	16.38	H
12330.600	37.41	-31.10	38.94	29.57	54.00	16.59	H
8379.400	34.27	-34.50	37.68	31.09	54.00	19.73	H
9459.600	33.87	-32.95	37.91	28.90	54.00	20.13	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)
17957.100	40.84	-25.50	46.66	19.68	54.00	13.16	H
17982.767	40.68	-25.50	46.66	19.52	54.00	13.32	V
12316.300	37.25	-31.10	38.94	29.41	54.00	16.75	V
12262.767	37.17	-31.43	38.99	29.61	54.00	16.83	H
8365.100	33.86	-34.50	37.68	30.68	54.00	20.14	H
9050.033	33.82	-33.76	38.13	29.45	54.00	20.18	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)
17944.633	40.82	-25.50	46.66	19.66	54.00	13.18	V
17828.400	40.77	-25.50	46.66	19.61	54.00	13.23	V
12327.667	37.65	-31.10	38.94	29.81	54.00	16.35	H
12328.400	37.10	-31.10	38.94	29.26	54.00	16.90	V
8494.167	33.68	-34.13	37.86	29.94	54.00	20.32	V
8238.600	33.67	-35.19	37.45	31.42	54.00	20.33	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)
15841.800	40.64	-26.97	38.48	29.13	54.00	13.36	H
17979.100	40.60	-25.50	46.66	19.44	54.00	13.40	H
12333.167	37.32	-31.10	38.94	29.48	54.00	16.68	V
12330.233	37.15	-31.10	38.94	29.31	54.00	16.85	V
8355.933	33.90	-34.50	37.68	30.72	54.00	20.10	V
8482.433	33.87	-34.35	37.79	30.43	54.00	20.13	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)
17955.267	40.99	-25.50	46.66	19.83	54.00	13.01	V
17953.800	40.89	-25.50	46.66	19.73	54.00	13.11	V
10637.700	39.03	-32.76	38.38	33.41	54.00	14.97	H
10640.633	38.43	-32.76	38.38	32.81	54.00	15.57	H
5350.008	44.51	-27.43	34.01	37.93	54.00	9.49	H
5350.632	44.21	-27.43	34.01	37.63	54.00	9.79	H

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)
17931.433	40.84	-25.50	46.66	19.68	54.00	13.16	H
17905.033	40.80	-25.50	46.66	19.64	54.00	13.20	H
10998.867	40.36	-32.82	38.70	34.48	54.00	13.64	V
10994.833	39.86	-32.82	38.70	33.98	54.00	14.14	V
5456.395	42.59	-27.18	34.17	35.60	54.00	11.41	V
5444.140	42.44	-27.18	34.17	35.45	54.00	11.56	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)
11160.933	41.11	-32.60	38.75	34.97	54.00	12.89	V
17940.600	40.89	-25.50	46.66	19.73	54.00	13.11	H
17937.300	40.81	-25.50	46.66	19.65	54.00	13.19	V
11162.033	40.38	-32.60	38.75	34.24	54.00	13.62	V
7439.633	37.48	-35.17	36.75	35.90	54.00	16.52	V
7440.000	37.39	-35.17	36.75	35.81	54.00	16.61	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)
11402.567	42.05	-32.42	38.79	35.68	54.00	11.95	V
11399.633	41.25	-32.42	38.79	34.88	54.00	12.75	V
17963.700	40.88	-25.50	46.66	19.72	54.00	13.12	V
17972.500	40.63	-25.50	46.66	19.47	54.00	13.37	H
7599.867	36.92	-35.04	36.87	35.09	54.00	17.08	V
7600.233	35.26	-35.04	36.87	33.43	54.00	18.74	V

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)
17978.000	40.75	-25.50	46.66	19.59	54.00	13.25	V
17973.967	40.62	-25.50	46.66	19.46	54.00	13.38	H
12264.600	37.69	-31.43	38.99	30.13	54.00	16.31	V
12270.100	37.17	-31.43	38.99	29.61	54.00	16.83	V
5149.770	59.91	-27.61	33.67	53.85	54.00	-5.91	V
5149.820	59.78	-27.61	33.67	53.72	54.00	-5.78	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)
17942.067	40.70	-25.50	46.66	19.54	54.00	13.30	V
17961.133	40.57	-25.50	46.66	19.41	54.00	13.43	V
12332.800	37.80	-31.10	38.94	29.96	54.00	16.20	V
12329.500	37.39	-31.10	38.94	29.55	54.00	16.61	V
8344.200	34.23	-34.50	37.68	31.05	54.00	19.77	H
8423.767	34.13	-34.35	37.79	30.69	54.00	19.87	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)
17844.533	40.97	-25.50	46.66	19.81	54.00	13.03	H
17980.933	40.74	-25.50	46.66	19.58	54.00	13.26	V
12330.967	37.55	-31.10	38.94	29.71	54.00	16.45	V
12332.800	37.32	-31.10	38.94	29.48	54.00	16.68	H
9143.533	33.87	-33.85	38.08	29.64	54.00	20.13	V
9446.767	33.79	-32.95	37.91	28.82	54.00	20.21	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)
17968.833	40.45	-25.50	46.66	19.29	54.00	13.55	H
17957.100	40.39	-25.50	46.66	19.23	54.00	13.61	H
12333.167	37.67	-31.10	38.94	29.83	54.00	16.33	H
12332.800	37.38	-31.10	38.94	29.54	54.00	16.62	V
5350.792	53.35	-27.43	34.01	46.77	54.00	0.65	H
5350.376	53.11	-27.43	34.01	46.53	54.00	0.89	H

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)
17935.833	40.51	-25.50	46.66	19.35	54.00	13.49	V
17862.867	40.47	-25.50	46.66	19.31	54.00	13.53	V
12263.500	38.01	-31.43	38.99	30.45	54.00	15.99	H
11013.900	37.59	-32.49	38.72	31.35	54.00	16.41	V
5459.538	46.40	-27.18	34.17	39.41	54.00	7.60	V
5459.222	46.16	-27.18	34.17	39.17	54.00	7.84	V

Channel 110

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)
17942.800	40.48	-25.50	46.66	19.32	54.00	13.52	H
17897.333	40.46	-25.50	46.66	19.30	54.00	13.54	V
11101.167	37.87	-32.49	38.72	31.63	54.00	16.13	V
12287.700	37.19	-31.10	38.94	29.35	54.00	16.81	H
7399.667	36.74	-35.17	36.75	35.16	54.00	17.26	V
7400.033	35.70	-35.17	36.75	34.12	54.00	18.30	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)
17867.267	40.70	-25.50	46.66	19.54	54.00	13.30	V
17944.633	40.68	-25.50	46.66	19.52	54.00	13.32	V
11335.833	38.46	-32.42	38.79	32.09	54.00	15.54	V
11333.633	38.42	-32.36	38.77	32.02	54.00	15.58	V
7559.900	35.46	-35.04	36.87	33.63	54.00	18.54	V
7559.533	34.49	-35.04	36.87	32.66	54.00	19.51	H

802.11ac-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)
15541.867	41.10	-27.36	38.73	29.73	54.00	12.90	V
15543.700	40.99	-27.36	38.73	29.62	54.00	13.01	H
12288.800	37.61	-31.10	38.94	29.77	54.00	16.39	H
12330.233	37.39	-31.10	38.94	29.55	54.00	16.61	V
5149.450	45.36	-27.61	33.67	39.30	54.00	8.64	V
5149.960	45.26	-27.61	33.67	39.20	54.00	8.74	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)
15596.133	40.77	-27.23	38.61	29.39	54.00	13.23	V
17929.600	40.67	-25.50	46.66	19.51	54.00	13.33	H
12266.433	37.46	-31.43	38.99	29.90	54.00	16.54	H
12332.433	37.21	-31.10	38.94	29.37	54.00	16.79	H
8208.167	33.98	-35.19	37.45	31.73	54.00	20.02	V
8429.633	33.74	-34.35	37.79	30.30	54.00	20.26	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)
17977.633	40.35	-25.50	46.66	19.19	54.00	13.65	H
17862.133	40.28	-25.50	46.66	19.12	54.00	13.72	H
12332.433	37.52	-31.10	38.94	29.68	54.00	16.48	H
12328.400	37.12	-31.10	38.94	29.28	54.00	16.88	V
9054.433	34.26	-33.76	38.13	29.89	54.00	19.74	V
8350.067	33.74	-34.50	37.68	30.56	54.00	20.26	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)
15777.267	41.32	-26.97	38.48	29.81	54.00	12.68	H
15779.833	40.66	-26.97	38.48	29.15	54.00	13.34	V
12296.500	37.42	-31.10	38.94	29.58	54.00	16.58	H
12295.033	37.21	-31.10	38.94	29.37	54.00	16.79	V
8497.100	34.68	-34.13	37.86	30.94	54.00	19.32	V
9064.700	33.63	-33.76	38.13	29.26	54.00	20.37	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)
17929.600	40.90	-25.50	46.66	19.74	54.00	13.10	V
17943.900	40.66	-25.50	46.66	19.50	54.00	13.34	V
12332.067	37.43	-31.10	38.94	29.59	54.00	16.57	V
12327.667	37.03	-31.10	38.94	29.19	54.00	16.97	V
9066.167	33.99	-33.76	38.13	29.62	54.00	20.01	H
9049.300	33.78	-33.76	38.13	29.41	54.00	20.22	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)
17944.633	41.03	-25.50	46.66	19.87	54.00	12.97	H
17957.833	40.93	-25.50	46.66	19.77	54.00	13.07	V
10641.367	38.24	-32.76	38.38	32.62	54.00	15.76	H
10634.033	37.85	-32.76	38.38	32.23	54.00	16.15	H
5353.320	43.77	-27.43	34.01	37.19	54.00	10.23	V
5352.216	43.47	-27.43	34.01	36.89	54.00	10.53	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)
17835.367	40.69	-25.50	46.66	19.53	54.00	13.31	H
17840.133	40.58	-25.50	46.66	19.42	54.00	13.42	H
10998.133	39.57	-32.82	38.70	33.69	54.00	14.43	V
10998.867	39.42	-32.82	38.70	33.54	54.00	14.58	V
5456.410	42.46	-27.18	34.17	35.47	54.00	11.54	V
5454.160	42.02	-27.18	34.17	35.03	54.00	11.98	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)
17948.667	40.79	-25.50	46.66	19.63	54.00	13.21	V
17977.633	40.42	-25.50	46.66	19.26	54.00	13.58	H
11158.733	40.33	-32.60	38.75	34.19	54.00	13.67	V
11161.300	40.28	-32.60	38.75	34.14	54.00	13.72	V
7440.000	36.83	-35.17	36.75	35.25	54.00	17.17	V
7439.633	36.74	-35.17	36.75	35.16	54.00	17.26	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)
17934.733	40.69	-25.50	46.66	19.53	54.00	13.31	H
17960.400	40.68	-25.50	46.66	19.52	54.00	13.32	V
11401.100	39.53	-32.42	38.79	33.16	54.00	14.47	V
11402.200	39.51	-32.42	38.79	33.14	54.00	14.49	V
7599.867	35.53	-35.04	36.87	33.70	54.00	18.47	V
7599.500	35.26	-35.04	36.87	33.43	54.00	18.74	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)
17938.767	41.10	-25.50	46.66	19.94	54.00	12.90	V
17979.833	40.79	-25.50	46.66	19.63	54.00	13.21	H
12223.900	37.53	-31.43	38.99	29.97	54.00	16.47	V
12269.000	37.02	-31.43	38.99	29.46	54.00	16.98	V
5149.990	54.39	-27.61	33.67	48.33	54.00	-0.39	H
5149.750	54.29	-27.61	33.67	48.23	54.00	-0.29	H

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)
15683.767	40.64	-27.23	38.61	29.26	54.00	13.36	H
17873.500	40.57	-25.50	46.66	19.41	54.00	13.43	H
12291.367	37.30	-31.10	38.94	29.46	54.00	16.70	V
12331.333	37.08	-31.10	38.94	29.24	54.00	16.92	V
9067.633	33.96	-33.76	38.13	29.59	54.00	20.04	H
9114.933	33.81	-33.85	38.08	29.58	54.00	20.19	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)
17935.833	41.14	-25.50	46.66	19.98	54.00	12.86	V
17948.667	40.58	-25.50	46.66	19.42	54.00	13.42	V
12261.667	37.46	-31.43	38.99	29.90	54.00	16.54	V
12267.900	37.26	-31.43	38.99	29.70	54.00	16.74	V
9142.433	34.07	-33.85	38.08	29.84	54.00	19.93	H
8211.833	34.02	-35.19	37.45	31.77	54.00	19.98	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)
17894.033	41.11	-25.50	46.66	19.95	54.00	12.89	H
17866.533	40.75	-25.50	46.66	19.59	54.00	13.25	H
12288.067	37.44	-31.10	38.94	29.60	54.00	16.56	V
12332.067	37.43	-31.10	38.94	29.59	54.00	16.57	H
5350.528	52.89	-27.43	34.01	46.31	54.00	1.11	V
5350.504	52.30	-27.43	34.01	45.72	54.00	1.70	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)
17980.567	40.88	-25.50	46.66	19.72	54.00	13.12	V
17912.733	40.84	-25.50	46.66	19.68	54.00	13.16	H
11019.033	38.79	-32.49	38.72	32.55	54.00	15.21	V
11024.900	38.63	-32.49	38.72	32.39	54.00	15.37	V
5459.905	49.64	-27.18	34.17	42.65	54.00	4.36	V
5459.935	49.55	-27.18	34.17	42.56	54.00	4.45	V

Channel 110

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)
17980.567	41.13	-25.50	46.66	19.97	54.00	12.87	H
17931.433	40.69	-25.50	46.66	19.53	54.00	13.31	H
11093.833	39.81	-32.49	38.72	33.57	54.00	14.19	V
11103.367	38.89	-32.49	38.72	32.65	54.00	15.11	V
7399.667	36.89	-35.17	36.75	35.31	54.00	17.11	V
7400.033	36.33	-35.17	36.75	34.75	54.00	17.67	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)
17858.467	40.77	-25.50	46.66	19.61	54.00	13.23	H
17869.100	40.50	-25.50	46.66	19.34	54.00	13.50	H
11337.300	39.46	-32.42	38.79	33.09	54.00	14.54	V
11335.467	39.07	-32.42	38.79	32.70	54.00	14.93	V
7559.900	35.56	-35.04	36.87	33.73	54.00	18.44	V
7559.533	34.45	-35.04	36.87	32.62	54.00	19.55	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)
17943.900	40.79	-25.50	46.66	19.63	54.00	13.21	V
17935.833	40.65	-25.50	46.66	19.49	54.00	13.35	H
12287.700	37.50	-31.10	38.94	29.66	54.00	16.50	V
12331.333	37.37	-31.10	38.94	29.53	54.00	16.63	H
5149.860	55.93	-27.61	33.67	49.87	54.00	-1.93	V
5146.770	55.72	-27.61	33.67	49.66	54.00	-1.72	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)
17937.300	40.94	-25.50	46.66	19.78	54.00	13.06	H
17983.133	40.58	-25.50	46.66	19.42	54.00	13.42	H
12332.433	37.47	-31.10	38.94	29.63	54.00	16.53	V
12293.200	37.46	-31.10	38.94	29.62	54.00	16.54	H
5352.816	54.20	-27.43	34.01	47.62	54.00	-0.20	H
5351.544	53.76	-27.43	34.01	47.18	54.00	0.24	H

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)
17893.300	40.90	-25.50	46.66	19.74	54.00	13.10	H
17886.333	40.49	-25.50	46.66	19.33	54.00	13.51	H
12332.800	38.35	-31.10	38.94	30.51	54.00	15.65	V
12330.967	37.72	-31.10	38.94	29.88	54.00	16.28	V
5458.195	54.61	-27.18	34.17	47.62	54.00	-0.61	V
5458.908	54.46	-27.18	34.17	47.47	54.00	-0.46	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)
17978.367	41.00	-25.50	46.66	19.84	54.00	13.00	H
17917.133	40.52	-25.50	46.66	19.36	54.00	13.48	H
12329.867	37.42	-31.10	38.94	29.58	54.00	16.58	V
12330.233	37.31	-31.10	38.94	29.47	54.00	16.69	H
7479.600	35.63	-34.48	36.82	33.28	54.00	18.37	H
7479.967	35.63	-34.48	36.82	33.28	54.00	18.37	H

PEAK 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)
15535.633	52.54	-27.36	38.73	41.17	74.00	21.46	V
16953.533	49.94	-26.32	42.36	33.89	68.20	18.26	H
12312.633	45.94	-31.10	38.94	38.10	74.00	28.06	V
11764.833	45.78	-31.99	38.98	38.79	74.00	28.22	V
5149.960	53.71	-27.61	33.67	47.65	74.00	20.29	V
5149.980	51.96	-27.61	33.67	45.90	74.00	22.04	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)
15596.133	50.11	-27.23	38.61	38.73	74.00	23.89	H
15600.167	49.69	-27.23	38.61	38.31	74.00	24.31	H
12324.733	46.01	-31.10	38.94	38.17	74.00	27.99	V
12309.700	45.96	-31.10	38.94	38.12	74.00	28.04	V
9807.933	43.82	-33.52	38.05	39.29	68.20	24.38	V
10070.467	43.50	-33.45	38.13	38.82	68.20	24.70	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)
15716.033	51.32	-27.23	38.61	39.94	74.00	22.68	V
15718.233	51.15	-27.23	38.61	39.77	74.00	22.85	H
11767.767	45.69	-31.99	38.98	38.70	74.00	28.31	H
12264.967	45.64	-31.43	38.99	38.08	74.00	28.36	V
9807.567	44.01	-33.52	38.05	39.48	68.20	24.19	V
9807.933	43.85	-33.52	38.05	39.32	68.20	24.35	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)
15776.167	52.31	-26.97	38.48	40.80	74.00	21.69	V
17615.733	49.76	-25.74	45.95	29.55	68.20	18.44	H
12313.367	46.20	-31.10	38.94	38.36	74.00	27.80	H
12269.367	46.16	-31.43	38.99	38.60	74.00	27.84	H
9708.200	44.62	-33.00	38.01	39.62	68.20	23.58	V
9707.833	44.34	-33.00	38.01	39.34	68.20	23.86	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)
15836.300	53.42	-26.97	38.48	41.91	74.00	20.58	V
15835.933	51.81	-26.97	38.48	40.30	74.00	22.19	H
12220.600	45.59	-31.43	38.99	38.03	74.00	28.41	H
12313.000	45.46	-31.10	38.94	37.62	74.00	28.54	V
9707.833	44.30	-33.00	38.01	39.30	68.20	23.90	V
9708.200	44.14	-33.00	38.01	39.14	68.20	24.06	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)
15957.300	59.30	-27.35	38.54	48.11	74.00	14.70	V
15961.700	56.34	-27.35	38.54	45.15	74.00	17.66	V
10638.800	47.10	-32.76	38.38	41.48	74.00	26.90	H
9688.033	46.87	-33.00	38.01	41.87	68.20	21.33	H
5350.456	54.58	-27.43	34.01	48.00	74.00	19.42	V
5353.808	53.43	-27.43	34.01	46.85	74.00	20.57	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)
16497.033	55.97	-26.96	39.82	43.11	68.20	12.23	H
16501.800	54.69	-26.96	39.82	41.83	68.20	13.51	H
11000.333	49.91	-32.82	38.70	44.03	74.00	24.09	V
10999.967	47.21	-32.82	38.70	41.33	74.00	26.79	V
5459.050	52.87	-27.18	34.17	45.88	74.00	21.13	V
5469.842	56.60	-27.18	34.17	49.61	68.20	11.60	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)
11164.600	51.43	-32.60	38.75	45.29	74.00	22.57	V
16883.500	50.18	-26.32	42.36	34.13	68.20	18.02	H
17129.533	49.62	-26.60	43.36	32.86	68.20	18.58	H
11154.700	48.55	-32.60	38.75	42.41	74.00	25.45	V
9687.667	46.12	-33.00	38.01	41.12	68.20	22.08	H
9688.033	46.05	-33.00	38.01	41.05	68.20	22.15	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)
16599.700	49.80	-26.87	40.65	36.02	68.20	18.40	H
11399.633	49.44	-32.42	38.79	43.07	74.00	24.56	V
17095.067	49.35	-26.60	43.36	32.59	68.20	18.85	V
11398.900	48.34	-32.42	38.79	41.97	74.00	25.66	V
5726.580	56.97	-27.07	34.31	49.73	68.20	11.23	V
5726.939	56.28	-27.07	34.31	49.04	68.20	11.92	V

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)
15546.633	52.88	-27.36	38.73	41.51	74.00	21.12	V
15542.600	52.44	-27.36	38.73	41.07	74.00	21.56	V
12281.467	46.07	-31.10	38.94	38.23	74.00	27.93	H
12307.500	45.72	-31.10	38.94	37.88	74.00	28.28	H
5149.500	54.14	-27.61	33.67	48.08	74.00	19.86	H
5149.540	52.00	-27.61	33.67	45.94	74.00	22.00	H

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)
17834.633	49.66	-25.50	46.66	28.50	74.00	24.34	V
17977.633	49.57	-25.50	46.66	28.41	74.00	24.43	H
12288.067	46.47	-31.10	38.94	38.63	74.00	27.53	V
12332.800	46.29	-31.10	38.94	38.45	74.00	27.71	V
9807.933	44.51	-33.52	38.05	39.98	68.20	23.69	V
9945.433	43.06	-33.48	38.08	38.46	68.20	25.14	H

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)
16866.633	49.68	-26.62	41.49	34.81	68.20	18.52	V
17375.200	49.59	-25.95	44.35	31.18	68.20	18.61	H
12201.533	46.23	-31.43	38.99	38.67	74.00	27.77	H
12264.967	45.90	-31.43	38.99	38.34	74.00	28.10	V
9808.300	44.23	-33.52	38.05	39.70	68.20	23.97	V
9807.933	43.93	-33.52	38.05	39.40	68.20	24.27	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)
15784.233	49.06	-26.97	38.48	37.55	74.00	24.94	H
17685.400	49.06	-25.74	45.95	28.85	68.20	19.14	V
12295.400	46.09	-31.10	38.94	38.25	74.00	27.91	H
12080.533	45.85	-31.59	39.04	38.40	74.00	28.15	V
9707.467	44.47	-33.00	38.01	39.47	68.20	23.73	V
9707.833	44.45	-33.00	38.01	39.45	68.20	23.75	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)
15855.733	50.69	-26.97	38.48	39.18	74.00	23.31	H
15841.067	49.68	-26.97	38.48	38.17	74.00	24.32	H
12259.100	45.95	-31.43	38.99	38.39	74.00	28.05	V
12311.900	45.84	-31.10	38.94	38.00	74.00	28.16	H
9707.833	45.19	-33.00	38.01	40.19	68.20	23.01	V
9708.200	44.35	-33.00	38.01	39.35	68.20	23.85	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)
17977.267	50.40	-25.50	46.66	29.24	74.00	23.60	V
15957.667	49.95	-27.35	38.54	38.76	74.00	24.05	H
10637.700	47.03	-32.76	38.38	41.41	74.00	26.97	H
10640.267	46.70	-32.76	38.38	41.08	74.00	27.30	H
5352.808	55.52	-27.43	34.01	48.94	74.00	18.48	H
5353.640	55.48	-27.43	34.01	48.90	74.00	18.52	H

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)
17975.800	49.53	-25.50	46.66	28.37	74.00	24.47	H
17864.333	49.37	-25.50	46.66	28.21	74.00	24.63	V
10999.600	48.21	-32.82	38.70	42.33	74.00	25.79	V
10998.500	47.60	-32.82	38.70	41.72	74.00	26.40	V
5457.873	52.13	-27.18	34.17	45.14	74.00	21.87	V
5468.800	54.25	-27.18	34.17	47.26	68.20	13.95	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)
17012.567	49.26	-26.32	42.36	33.21	68.20	18.94	V
17845.267	48.84	-25.50	46.66	27.68	74.00	25.16	V
11157.267	48.10	-32.60	38.75	41.96	74.00	25.90	V
11151.767	47.89	-32.60	38.75	41.75	74.00	26.11	V
9688.033	46.09	-33.00	38.01	41.09	68.20	22.11	H
9687.667	46.04	-33.00	38.01	41.04	68.20	22.16	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)
17958.200	50.22	-25.50	46.66	29.06	74.00	23.78	V
17098.000	50.02	-26.60	43.36	33.26	68.20	18.18	V
11402.933	49.00	-32.42	38.79	42.63	74.00	25.00	V
11399.633	48.94	-32.42	38.79	42.57	74.00	25.06	V
5725.364	58.96	-27.07	34.31	51.72	68.20	9.24	V
5725.443	57.58	-27.07	34.31	50.34	68.20	10.62	V

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)
17843.067	49.60	-25.50	46.66	28.44	74.00	24.40	V
17962.233	49.44	-25.50	46.66	28.28	74.00	24.56	V
12327.667	45.42	-31.10	38.94	37.58	74.00	28.58	H
12328.767	45.41	-31.10	38.94	37.57	74.00	28.59	H
5149.970	71.76	-27.61	33.67	65.70	74.00	2.24	V
5149.760	71.40	-27.61	33.67	65.34	74.00	2.60	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)
17914.933	49.54	-25.50	46.66	28.38	74.00	24.46	V
16830.333	49.24	-26.62	41.49	34.37	68.20	18.96	H
12193.467	45.68	-31.43	38.99	38.12	74.00	28.32	H
12269.367	45.60	-31.43	38.99	38.04	74.00	28.40	H
9807.933	44.38	-33.52	38.05	39.85	68.20	23.82	V
9807.567	43.86	-33.52	38.05	39.33	68.20	24.34	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)
17343.667	49.54	-25.95	44.35	31.13	68.20	18.66	H
16859.667	49.44	-26.62	41.49	34.57	68.20	18.76	V
9688.033	46.41	-33.00	38.01	41.41	68.20	21.79	H
12332.433	46.04	-31.10	38.94	38.20	74.00	27.96	V
12226.467	45.93	-31.43	38.99	38.37	74.00	28.07	H
9687.667	45.73	-33.00	38.01	40.73	68.20	22.47	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)
17974.700	49.93	-25.50	46.66	28.77	74.00	24.07	H
17425.800	49.47	-26.85	45.25	31.07	68.20	18.73	H
9687.667	47.31	-33.00	38.01	42.31	68.20	20.89	H
9688.033	46.29	-33.00	38.01	41.29	68.20	21.91	H
5350.536	66.29	-27.43	34.01	59.71	74.00	7.71	H
5350.792	65.46	-27.43	34.01	58.88	74.00	8.54	H

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)
17199.933	49.48	-26.60	43.36	32.72	68.20	18.72	H
16906.967	49.33	-26.32	42.36	33.28	68.20	18.87	V
9688.033	46.26	-33.00	38.01	41.26	68.20	21.94	H
12263.500	46.24	-31.43	38.99	38.68	74.00	27.76	H
5459.403	57.11	-27.18	34.17	50.12	74.00	16.89	V
5469.910	68.10	-27.18	34.17	61.11	68.20	0.10	V

Channel 110

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)
17965.533	49.02	-25.50	46.66	27.86	74.00	24.98	H
16870.667	48.99	-26.62	41.49	34.12	68.20	19.21	V
11763.367	46.49	-31.99	38.98	39.50	74.00	27.51	V
9687.667	46.40	-33.00	38.01	41.40	68.20	21.80	H
12332.433	46.20	-31.10	38.94	38.36	74.00	27.80	H
9688.033	45.65	-33.00	38.01	40.65	68.20	22.55	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)
16978.833	49.40	-26.32	42.36	33.35	68.20	18.80	V
17929.967	49.21	-25.50	46.66	28.05	74.00	24.79	H
12332.433	46.05	-31.10	38.94	38.21	74.00	27.95	H
11336.567	45.83	-32.42	38.79	39.46	74.00	28.17	V
5730.938	53.29	-27.07	34.31	46.05	68.20	14.91	V
5730.360	53.03	-27.07	34.31	45.79	68.20	15.17	V

802.11ac-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)
17370.067	49.28	-25.95	44.35	30.87	68.20	18.92	H
15542.600	49.26	-27.36	38.73	37.89	74.00	24.74	H
12015.267	45.99	-31.48	39.09	38.38	74.00	28.01	V
10811.133	45.52	-32.33	38.59	39.26	74.00	28.48	V
5149.920	57.11	-27.61	33.67	51.05	74.00	16.89	V
5149.720	55.70	-27.61	33.67	49.64	74.00	18.30	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)
15596.133	50.09	-27.23	38.61	38.71	74.00	23.91	V
16873.967	49.50	-26.62	41.49	34.63	68.20	18.70	H
12311.900	45.50	-31.10	38.94	37.66	74.00	28.50	H
12291.733	45.18	-31.10	38.94	37.34	74.00	28.82	H
9807.933	44.29	-33.52	38.05	39.76	68.20	23.91	V
9807.567	44.00	-33.52	38.05	39.47	68.20	24.20	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)
17843.067	48.88	-25.50	46.66	27.72	74.00	25.12	V
17890.367	48.82	-25.50	46.66	27.66	74.00	25.18	H
12329.867	45.85	-31.10	38.94	38.01	74.00	28.15	H
12332.433	45.81	-31.10	38.94	37.97	74.00	28.19	H
9807.933	45.28	-33.52	38.05	40.75	68.20	22.92	V
9808.667	43.47	-33.52	38.05	38.94	68.20	24.73	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)
15773.967	50.04	-26.97	38.48	38.53	74.00	23.96	H
15778.000	49.96	-26.97	38.48	38.45	74.00	24.04	H
12311.533	45.93	-31.10	38.94	38.09	74.00	28.07	V
12013.433	45.64	-31.48	39.09	38.03	74.00	28.36	H
9708.200	44.87	-33.00	38.01	39.87	68.20	23.33	V
9707.467	44.78	-33.00	38.01	39.78	68.20	23.42	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)
16868.833	49.93	-26.62	41.49	35.06	68.20	18.27	V
16975.900	49.19	-26.32	42.36	33.14	68.20	19.01	H
11829.733	45.84	-31.85	39.05	38.64	74.00	28.16	V
12332.800	45.50	-31.10	38.94	37.66	74.00	28.50	H
9707.833	44.78	-33.00	38.01	39.78	68.20	23.42	V
9707.467	43.70	-33.00	38.01	38.70	68.20	24.50	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)
17911.267	51.17	-25.50	46.66	30.01	74.00	22.83	H
16817.500	49.65	-26.62	41.49	34.78	68.20	18.55	H
9688.033	47.01	-33.00	38.01	42.01	68.20	21.19	H
12333.167	46.31	-31.10	38.94	38.47	74.00	27.69	V
5353.320	55.15	-27.43	34.01	48.57	74.00	18.85	V
5356.776	54.38	-27.43	34.01	47.80	74.00	19.62	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)
16956.467	49.67	-26.32	42.36	33.62	68.20	18.53	H
17940.600	49.50	-25.50	46.66	28.34	74.00	24.50	V
10998.500	47.50	-32.82	38.70	41.62	74.00	26.50	V
10998.867	47.05	-32.82	38.70	41.17	74.00	26.95	V
5375.507	52.04	-27.36	34.09	45.32	74.00	21.96	V
5468.560	53.87	-27.18	34.17	46.88	68.20	14.33	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)
11164.600	51.43	-32.60	38.75	45.29	74.00	22.57	V
16883.500	50.18	-26.32	42.36	34.13	68.20	18.02	H
17129.533	49.62	-26.60	43.36	32.86	68.20	18.58	H
11154.700	48.55	-32.60	38.75	42.41	74.00	25.45	V
9687.667	46.12	-33.00	38.01	41.12	68.20	22.08	H
9688.033	46.05	-33.00	38.01	41.05	68.20	22.15	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)
17978.000	49.39	-25.50	46.66	28.23	74.00	24.61	V
17411.133	49.20	-26.85	45.25	30.80	68.20	19.00	V
11397.067	47.87	-32.42	38.79	41.50	74.00	26.13	V
11398.533	47.05	-32.42	38.79	40.68	74.00	26.95	V
5725.346	57.39	-27.07	34.31	50.15	68.20	10.81	V
5725.477	56.17	-27.07	34.31	48.93	68.20	12.03	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)
17884.867	49.56	-25.50	46.66	28.40	74.00	24.44	V
17478.233	48.99	-26.85	45.25	30.59	68.20	19.21	V
12294.667	45.76	-31.10	38.94	37.92	74.00	28.24	H
12223.900	45.70	-31.43	38.99	38.14	74.00	28.30	V
5149.990	66.55	-27.61	33.67	60.49	74.00	7.45	H
5149.960	66.29	-27.61	33.67	60.23	74.00	7.71	H

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)
15683.767	49.67	-27.23	38.61	38.29	74.00	24.33	H
17955.267	49.26	-25.50	46.66	28.10	74.00	24.74	V
12300.900	46.58	-31.10	38.94	38.74	74.00	27.42	V
12264.600	46.47	-31.43	38.99	38.91	74.00	27.53	V
9807.933	44.71	-33.52	38.05	40.18	68.20	23.49	V
9808.300	43.57	-33.52	38.05	39.04	68.20	24.63	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)
17021.000	49.15	-26.32	42.36	33.10	68.20	19.05	V
17092.133	48.92	-26.60	43.36	32.16	68.20	19.28	V
9687.667	46.97	-33.00	38.01	41.97	68.20	21.23	H
12293.933	46.81	-31.10	38.94	38.97	74.00	27.19	H
9688.400	46.70	-33.00	38.01	41.70	68.20	21.50	H
11652.633	45.67	-32.31	38.91	39.08	74.00	28.33	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)
16963.067	49.37	-26.32	42.36	33.32	68.20	18.83	H
17894.033	49.31	-25.50	46.66	28.15	74.00	24.69	H
12289.900	46.06	-31.10	38.94	38.22	74.00	27.94	V
12222.067	46.00	-31.43	38.99	38.44	74.00	28.00	H
5350.528	65.57	-27.43	34.01	58.99	74.00	8.43	V
5350.136	64.96	-27.43	34.01	58.38	74.00	9.04	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)
17829.867	49.37	-25.50	46.66	28.21	74.00	24.63	H
16818.967	49.22	-26.62	41.49	34.35	68.20	18.98	V
9688.033	46.74	-33.00	38.01	41.74	68.20	21.46	H
12227.200	46.50	-31.43	38.99	38.94	74.00	27.50	V
5459.958	61.22	-27.18	34.17	54.23	74.00	12.78	V
5469.715	70.83	-27.18	34.17	63.84	68.20	-2.63	V

Channel 110

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)
17910.167	49.10	-25.50	46.66	27.94	74.00	24.90	H
16992.400	48.93	-26.32	42.36	32.88	68.20	19.27	H
11107.033	46.42	-32.49	38.72	40.18	74.00	27.58	V
11100.067	46.25	-32.49	38.72	40.01	74.00	27.75	V
9687.667	45.33	-33.00	38.01	40.33	68.20	22.87	H
9688.033	45.33	-33.00	38.01	40.33	68.20	22.87	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)
17976.900	50.10	-25.50	46.66	28.94	74.00	23.90	H
16844.633	49.18	-26.62	41.49	34.31	68.20	19.02	H
11325.200	48.61	-32.36	38.77	42.21	74.00	25.39	V
11345.367	46.15	-32.42	38.79	39.78	74.00	27.85	V
5726.694	54.44	-27.07	34.31	47.20	68.20	13.76	V
5725.092	54.22	-27.07	34.31	46.98	68.20	13.98	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)
17980.933	49.72	-25.50	46.66	28.56	74.00	24.28	H
17978.000	49.21	-25.50	46.66	28.05	74.00	24.79	V
9688.033	46.40	-33.00	38.01	41.40	68.20	21.80	H
9687.667	46.28	-33.00	38.01	41.28	68.20	21.92	H
5145.690	64.49	-27.61	33.67	58.43	74.00	9.51	V
5145.850	64.48	-27.61	33.67	58.42	74.00	9.52	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)
17951.600	51.40	-25.50	46.66	30.24	74.00	22.60	V
17993.767	49.30	-25.50	46.66	28.14	74.00	24.70	H
12292.833	46.06	-31.10	38.94	38.22	74.00	27.94	V
9687.667	45.98	-33.00	38.01	40.98	68.20	22.22	H
5350.528	63.28	-27.43	34.01	56.70	74.00	10.72	H
5351.632	63.09	-27.43	34.01	56.51	74.00	10.91	H

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)
17883.400	48.98	-25.50	46.66	27.82	74.00	25.02	H
17972.867	48.94	-25.50	46.66	27.78	74.00	25.06	V
9687.667	47.63	-33.00	38.01	42.63	68.20	20.57	H
11941.200	46.45	-31.48	39.09	38.84	74.00	27.55	H
5454.880	64.40	-27.18	34.17	57.41	74.00	9.60	V
5464.172	64.86	-27.18	34.17	57.87	68.20	3.34	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)
16821.533	49.56	-26.62	41.49	34.69	68.20	18.64	H
17953.800	49.23	-25.50	46.66	28.07	74.00	24.77	V
9687.667	46.00	-33.00	38.01	41.00	68.20	22.20	H
11693.333	45.97	-31.99	38.98	38.98	74.00	28.03	H
5729.398	52.77	-27.07	34.31	45.53	68.20	15.43	V
5727.788	52.74	-27.07	34.31	45.50	68.20	15.46	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:

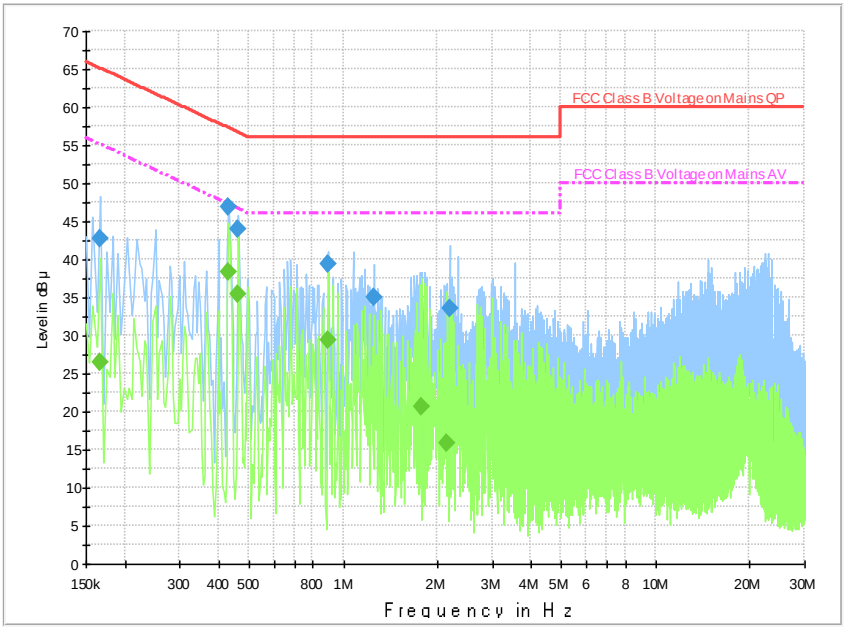


Fig.58 Conducted Emission (802.11a, Ch36, TX)

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)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	42.6	9.000	On	L1	19.8	22.5	65.2
0.430000	46.8	9.000	On	L1	19.7	10.4	57.3
0.462000	44.0	9.000	On	L1	19.7	12.6	56.7
0.894000	39.4	9.000	On	L1	19.7	16.6	56.0
1.258000	35.1	9.000	On	L1	19.6	20.9	56.0
2.186000	33.6	9.000	On	L1	19.6	22.4	56.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	26.4	9.000	On	L1	19.8	28.8	55.2
0.430000	38.4	9.000	On	L1	19.7	8.8	47.3
0.462000	35.4	9.000	On	L1	19.7	11.2	46.7
0.894000	29.3	9.000	On	L1	19.7	16.7	46.0
1.786000	20.6	9.000	On	L1	19.6	25.4	46.0
2.158000	15.9	9.000	On	L1	19.6	30.1	46.0

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

Idle:

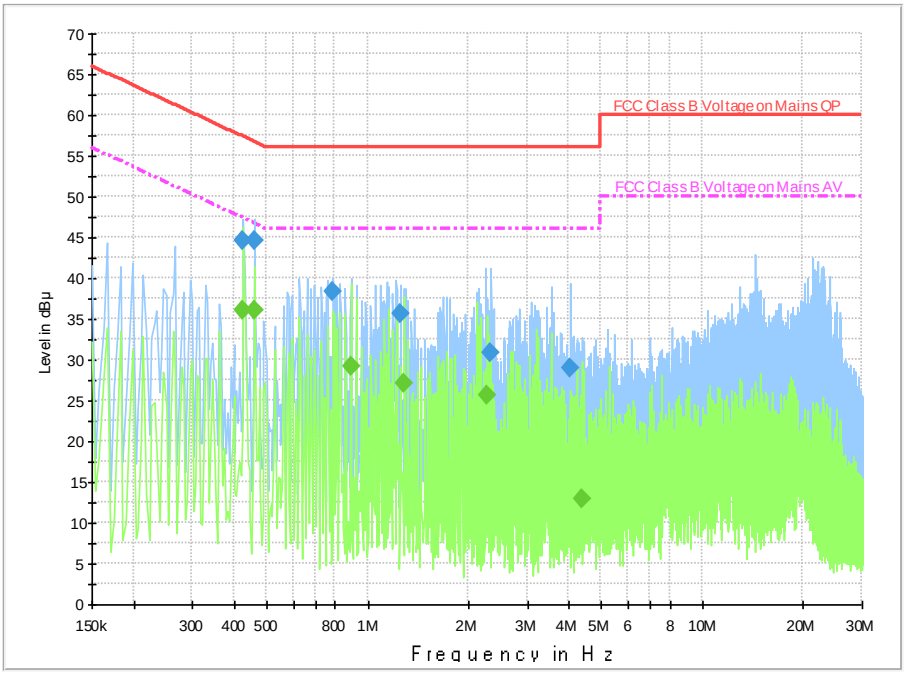


Fig.59 Conducted Emission(802.11a, IDLE)

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)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.426000	44.6	9.000	On	L1	19.7	12.7	57.3
0.458000	44.6	9.000	On	L1	19.7	12.1	56.7
0.790000	38.4	9.000	On	L1	19.7	17.6	56.0
1.254000	35.7	9.000	On	L1	19.6	20.3	56.0
2.342000	30.8	9.000	On	L1	19.6	25.2	56.0
4.026000	29.0	9.000	On	L1	19.6	27.0	56.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.426000	36.0	9.000	On	L1	19.7	11.3	47.3
0.458000	36.0	9.000	On	L1	19.7	10.7	46.7
0.890000	29.3	9.000	On	L1	19.7	16.7	46.0
1.286000	27.2	9.000	On	L1	19.7	18.8	46.0
2.270000	25.6	9.000	On	L1	19.6	20.4	46.0
4.378000	12.9	9.000	On	L1	19.6	33.1	46.0

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	16.62	P
	5200 MHz	Fig.61	16.60	P
	5240 MHz	Fig.62	16.59	P
802.11n HT20	5180 MHz	Fig.63	17.73	P
	5200 MHz	Fig.64	17.72	P
	5240 MHz	Fig.65	17.72	P
802.11ac HT40	5190 MHz	Fig.66	36.36	P
	5230 MHz	Fig.67	36.26	P
802.11ac HT80	5210 MHz	Fig.68	75.26	P

Conclusion: PASS

Test graphs as below:

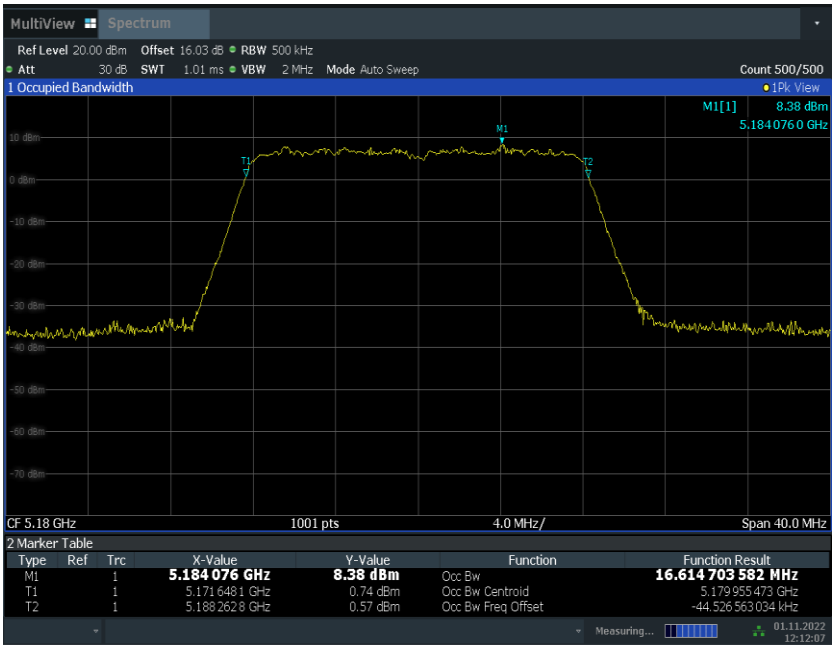
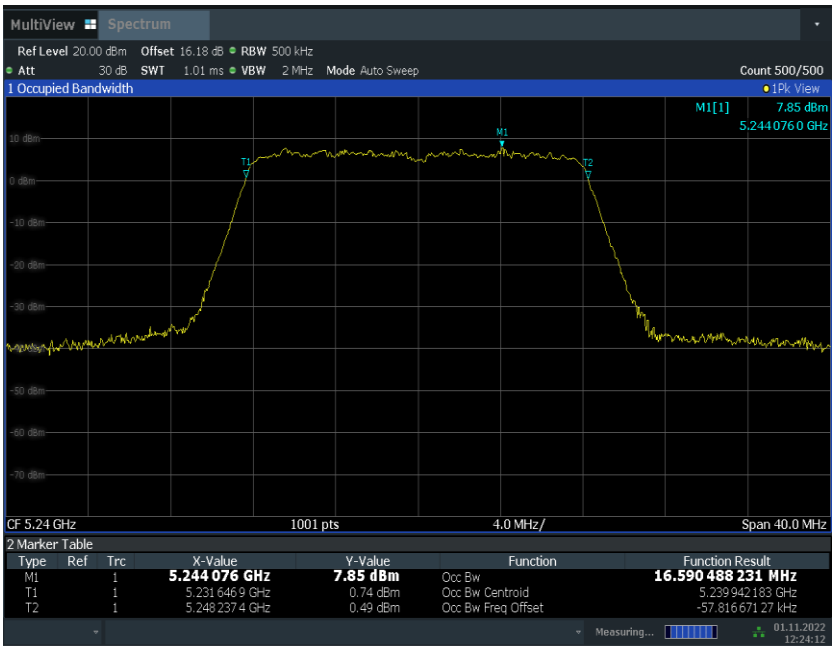


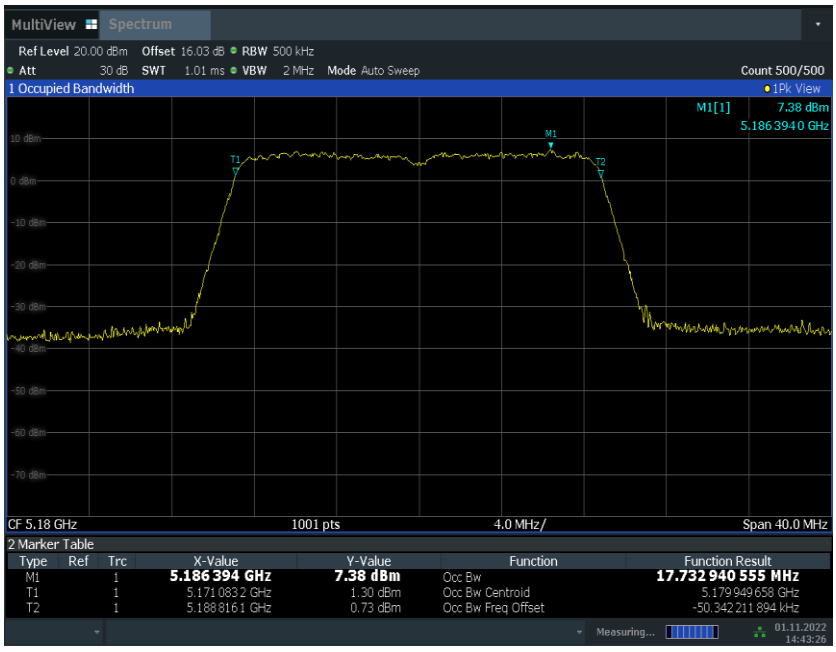
Fig.60 99% Occupied bandwidth (802.11a, 5180MHz)

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



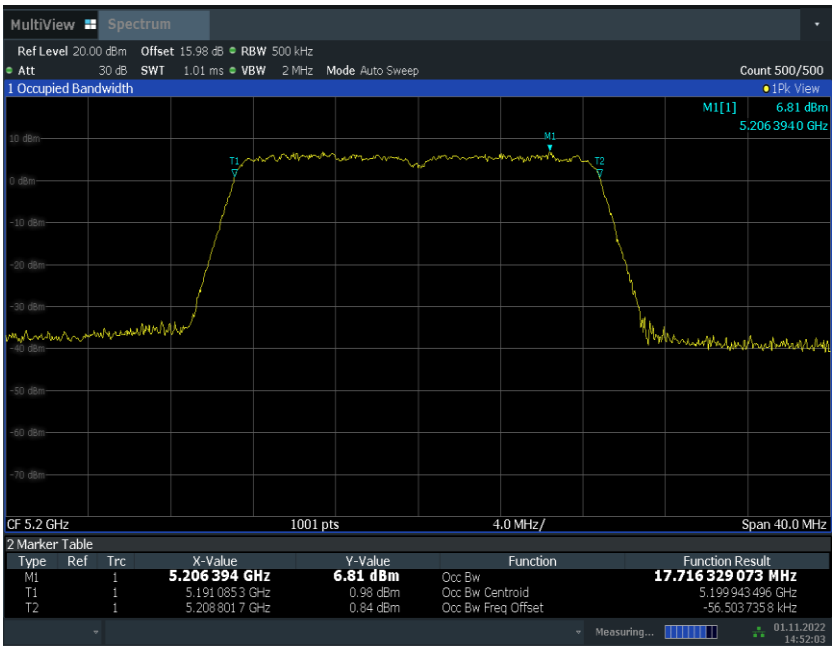
12:24:13 01.11.2022

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



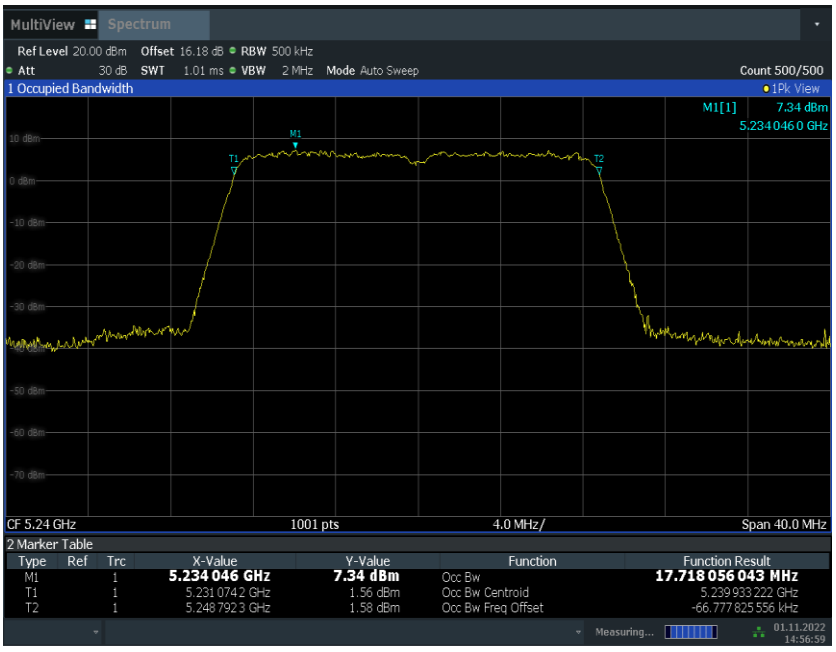
14:43:26 01.11.2022

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



14:52:04 01.11.2022

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

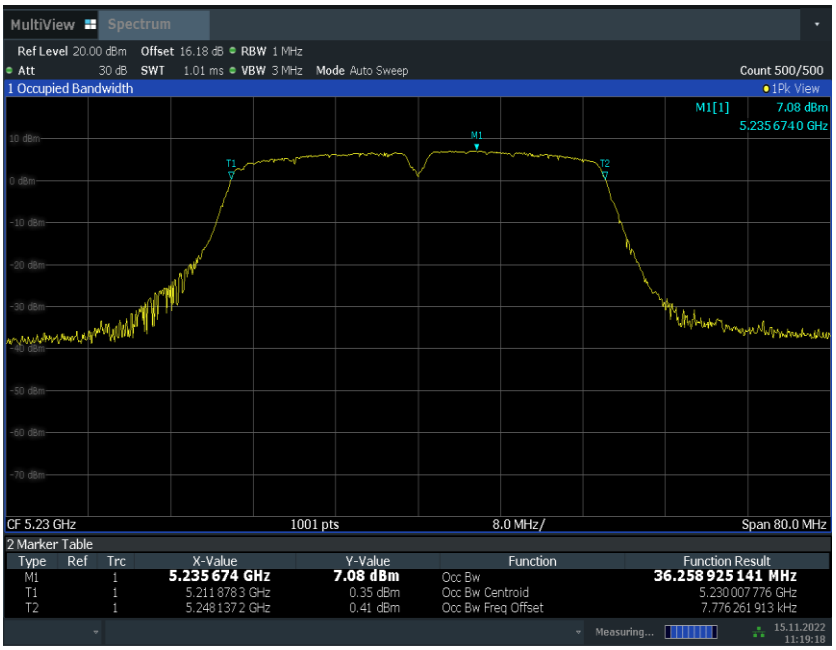


14:56:59 01.11.2022

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

11:11:51 15.11.2022

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



11:19:18 15.11.2022

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

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

ANNEX B: EUT parameters

Disclaimer: The worse case and antenna gain 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).

2022-10-01 through 2023-09-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

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