



FCC PART 15 TEST REPORT No.I23Z60697-IOT09

for

TCL Communication Ltd.

Tablet PC

8492A

With

FCC ID: 2ACCJB207

Hardware Version: 05

Software Version: KZ12

Issued Date: 2023-06-28

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: ctl_terminals@caict.ac.cn, website: www.caict.ac.cn



REPORT HISTORY

Report Number	Revision	Description	Issue Date
I23Z60957-IOT09	Rev.0	1st edition	2023-06-28

CONTENTS

CONTENTS	3
1. TEST LATORATORY.....	5
1.1. INTRODUCTION & ACCREDITATION	5
1.2. TESTING LOCATION	5
1.3. TESTING ENVIRONMENT.....	5
1.4. PROJECT DATE	5
1.5. SIGNATURE	6
2. CLIENT INFORMATION.....	7
2.1 APPLICANT INFORMATION	7
2.2 MANUFACTURER INFORMATION	7
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARYEQUIPMENT(AE).....	8
3.1. ABOUT EUT	8
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST	8
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....	8
4.1. GENERAL DESCRIPTION.....	9
4.2. INTERPRETATION OF THE TEST ENVIRONMENT.....	9
5. REFERENCE DOCUMENTS	9
5.1. DOCUMENTS SUPPLIED BY APPLICANT	9
5.2. REFERENCE DOCUMENTS FOR TESTING.....	9
6. LABORATORY ENVIRONMENT.....	9
7. SUMMARY OF TEST RESULTS	10
7.1. SUMMARY OF TEST RESULTS.....	10
7.2. STATEMENTS.....	10
7.3. TEST CONDITIONS	10
8. TEST EQUIPMENTS UTILIZED	11
9. MEASUREMENT UNCERTAINTY	12
8.1 TRANSMITTER OUTPUT POWER	12
8.2 PEAK POWER SPECTRAL DENSITY	12
8.3 OCCUPIED CHANNEL BANDWIDTH.....	12
8.4 BAND EDGES COMPLIANCE.....	12
8.5 SPURIOUS EMISSIONS	12
8.6 AC POWER-LINE CONDUCTED EMISSION.....	12
ANNEX A: MEASUREMENT RESULTS.....	13
A.1. MEASUREMENT METHOD	13
A.2. MAXIMUM OUTPUT POWER	14
A.3. PEAK POWER SPECTRAL DENSITY (CONDUCTED).....	16



A.4. OCCUPIED 26DB BANDWIDTH(CONDUCTED)..... 17

A.5. BAND EDGES COMPLIANCE 22

A5.1 BAND EDGES - RADIATED..... 22

A.6. TRANSMITTER SPURIOUS EMISSION 25

A.7. AC POWERLINE CONDUCTED EMISSION (150KHZ- 30MHZ)..... 38

A.8. 99% OCCUPIED BANDWIDTH 41

A.9. POWER CONTROL 46

ANNEX B: EUT PARAMETERS..... 47

ANNEX C: ACCREDITATION CERTIFICATE 47



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

Conducted testing Location: CTTL(Huayuan North Road)

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

Radiated testing Location:

CTTL(huayuan North Road)

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

1.3. Testing Environment

Normal Temperature: 15-35°C

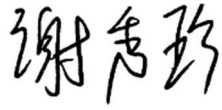
Relative Humidity: 20-75%

1.4. Project date

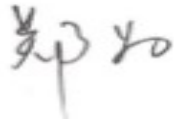
Testing Start Date: 2023-05-26

Testing End Date: 2023-06-28

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: /
Country: China
Telephone: +86 755 3661 1621
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: /
Country: China
Telephone: +86 755 3661 1621
Fax: +86 755 3661 2000-81722

3. EQUIPMENT UNDER TEST (EUT) AND

ANCILLARY EQUIPMENT(AE)

3.1. About EUT

Description	Tablet PC
Model name	8492A
FCC ID	2ACCJB207
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Voltage	3.7V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
UT03a	B4695F5551182EC	05	KZ12
UT24a	B4695F5641182F5	05	KZ12

*EUT ID: is used to identify the test sample in the lab internally.
 UT03a is used for Conduction test, UT24a is used for Radiation test.

3.3. Internal Identification of AE used during the test

4. AE ID*	Description	SN
AE1	Battery	/
AE2	Charger1	/
AE3	Data Cable	/

AE1

Model	2853B7PL - 2P
Manufacturer	Gaoyuan
Capacity(mAh)	6000mAh

AE2

Model	CG10A0502000UU
Manufacturer	JUWEI
Length of cable	/

AE3

Model	JWUB1591-J51R
Manufacturer	JUWEI
Length of cable	/

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

4.1. General Description

The Equipment under Test (EUT) is a model of Tablet PC with integrated antenna and inbuilt battery.

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.

4.2. 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

5. REFERENCE DOCUMENTS

5.1. Documents supplied by applicant

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

5.2. 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	2021
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

6. LABORATORY ENVIRONMENT

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

7. SUMMARY OF TEST RESULTS

7.1. 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

7.2. 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.

7.3. 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°C
Voltage	3.7V
Humidity	44%

8. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2024-06-05
2	LISN	ENV216	101200	Rohde & Schwarz	1 year	2023-06-29
3	Test Receiver	ESCI	100344	Rohde & Schwarz	1 year	2024-02-21
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESW44	103144	R&S	1 year	2023-10-25
2	EMI Antenna	VULB 9163	01223	SCHWARZBECK	1 year	2023-07-25
3	EMI Antenna	3115	00167250	ETS-Lindgren	1 year	2023-06-20
4	EMI Antenna	3116	2661	ETS-Lindgren	1 year	2024-01-30

※Note: The EMI Antenna with series number of 00167250 did not exceed the CAL.DUE.DATE when used.

9. 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)
$30\text{MHz} \leq f \leq 2\text{GHz}$	1.22
$2\text{GHz} \leq f \leq 3.6\text{GHz}$	1.22
$3.6\text{GHz} \leq f \leq 8\text{GHz}$	1.22
$8\text{GHz} \leq f \leq 12.75\text{GHz}$	1.51
$12.75\text{GHz} \leq f \leq 26\text{GHz}$	1.51
$26\text{GHz} \leq f \leq 40\text{GHz}$	1.59

Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
$30\text{MHz} \leq f \leq 1\text{GHz}$	4.72dB
$1\text{GHz} \leq f \leq 18\text{GHz}$	4.84dB
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.12dB

8.6 AC Power-line Conducted Emission

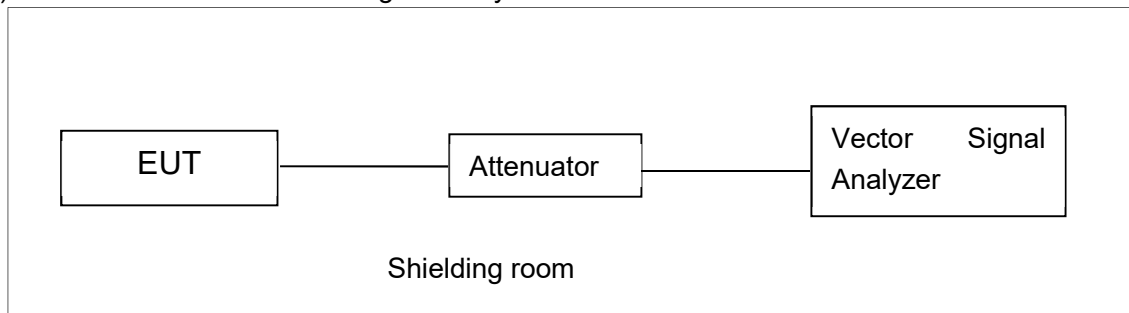
Measurement Uncertainty : 3.08,k=2

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

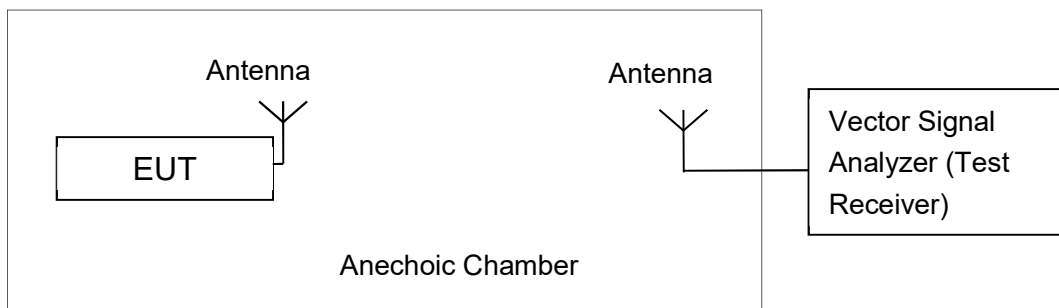


A.1.2. Radiated Emission Measurements

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 = 3MHz;



The measurement is made according to KDB 789033

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

A.2. Maximum output Power

Measurement Limit and Method:

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

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

The measurement method SA-2 is made according to KDB 789033

Measurement Results:

802.11a mode

Mode	Frequency	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz	18.67	/	/	/	/	/	/	/
	5200MHz	18.55	/	/	/	/	/	/	/
	5240MHz	18.63	/	/	/	/	/	/	/

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

802.11n-HT20 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT20)	5180MHz	16.59	/	/	/	/	/	/	/
	5200MHz	16.61	/	/	/	/	/	/	/
	5240MHz	16.77	/	/	/	/	/	/	/

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

802.11ac-HT20 mode

Mode	Frequency	Test Result (dBm)								
		Data Rate								
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
802.11ac (HT20)	5180MHz	14.42	/	/	/	/	/	/	/	/
	5200MHz	14.43	/	/	/	/	/	/	/	/
	5240MHz	14.60	/	/	/	/	/	/	/	/

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

802.11n-HT40 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT40)	5190MHz	14.67	/	/	/	/	/	/	/
	5230MHz	14.44	/	/	/	/	/	/	/

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

802.11ac-HT40 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (HT40)	5190MHz	14.22	/	/	/	/	/	/	/	/	/
	5230MHz	14.43	/	/	/	/	/	/	/	/	/

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

802.11ac-HT80 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (HT80)	5210MHz	14.56	/	/	/	/	/	/	/	/	/

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

The duty cycle of all mode are 100%

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	11
	5250MHz~5350MHz	11

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

Measurement Results:

Mode	Frequency	Power Spectral Density (dBm/MHz)	Conclusion
802.11a	5180 MHz	7.84	P
	5200 MHz	8.18	P
	5240 MHz	8.32	P
802.11n -HT20	5180 MHz	5.23	P
	5200 MHz	5.46	P
	5240 MHz	5.56	P
802.11n -HT40	5190 MHz	0.4	P
	5230 MHz	0.39	P
802.11ac VHT80	5210MHz	-2.87	P

Conclusion: PASS

A.4. Occupied 26dB Bandwidth(conducted)

Measurement Limit:

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

The measurement is made according to KDB 789033

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
-------------------------	---------

Measurement Result:

Mode	Frequency	Occupied 26dB Bandwidth (MHz)		conclusion
		Fig.	Value	
802.11a	5180 MHz	Fig.1	27.48	P
	5200 MHz	Fig.2	20.64	P
	5240 MHz	Fig.3	20.92	P
802.11n -HT20	5180 MHz	Fig.4	21.52	P
	5200 MHz	Fig.5	20.04	P
	5240 MHz	Fig.6	20.04	P
802.11n -HT40	5190 MHz	Fig.7	40.48	P
	5230 MHz	Fig.8	40.24	P
802.11ac VHT80	5210MHz	Fig.9	81.12	P

Conclusion: PASS

Test graphs as below:

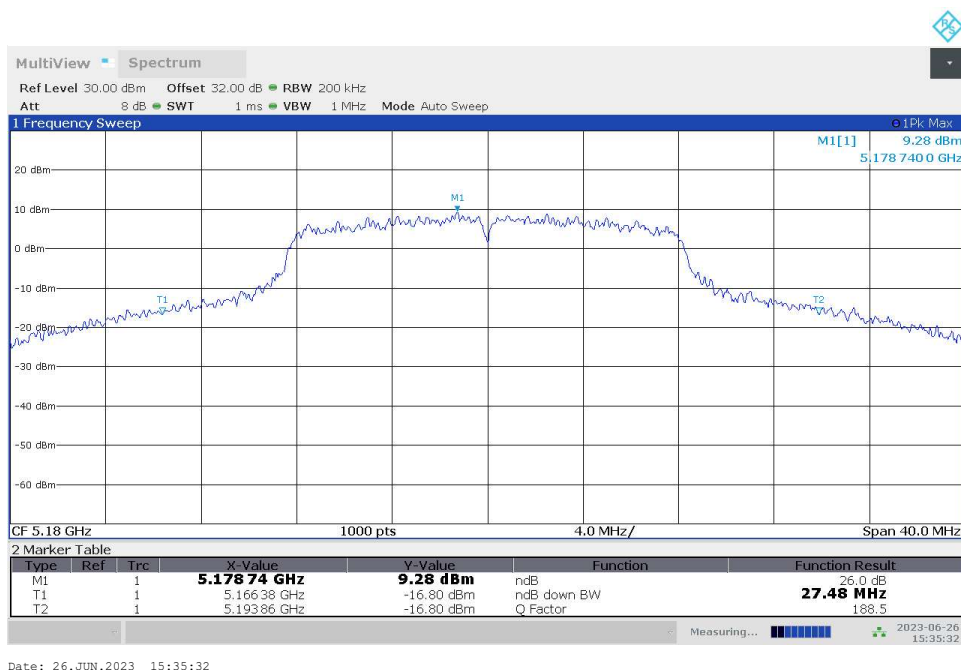


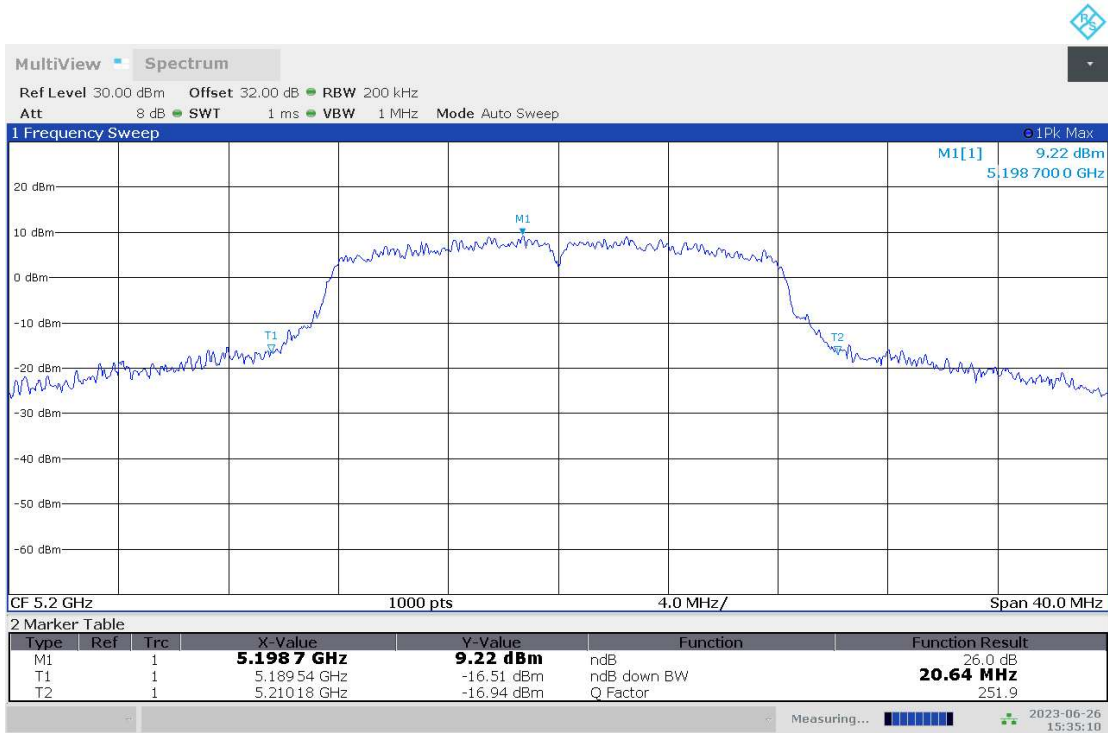
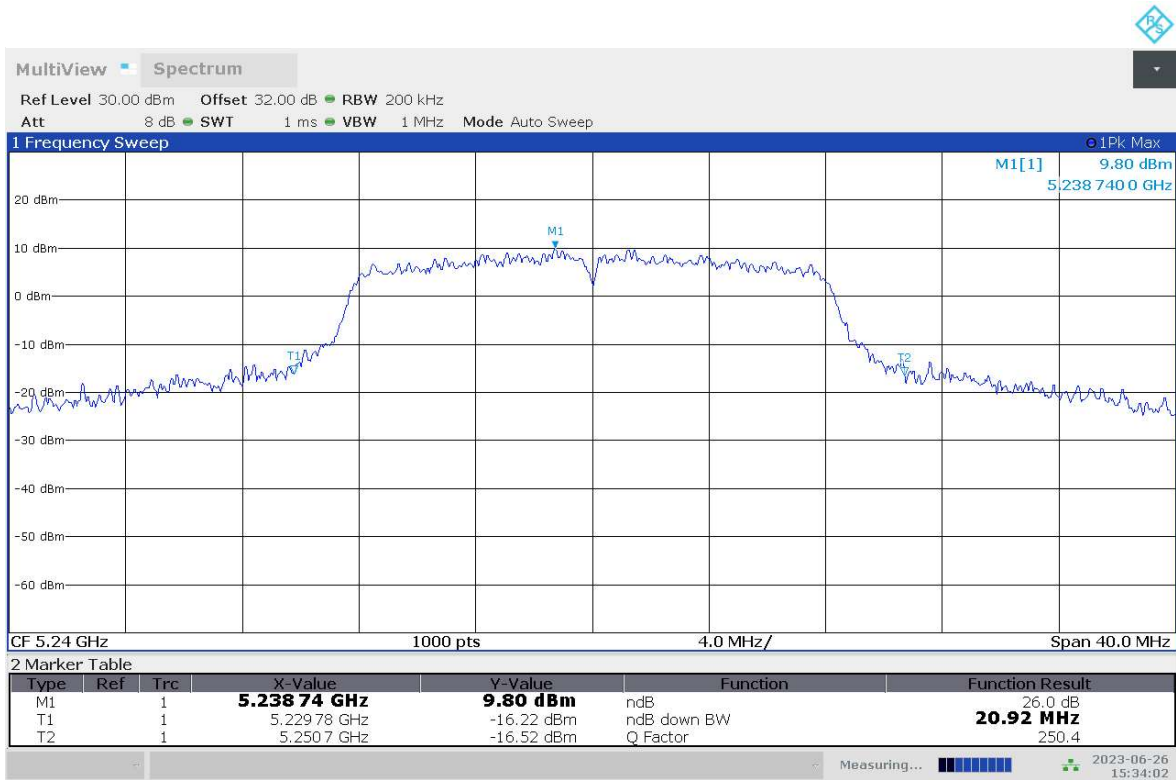
Fig.1 Occupied 26dB Bandwidth (802.11a, 5180MHz)

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


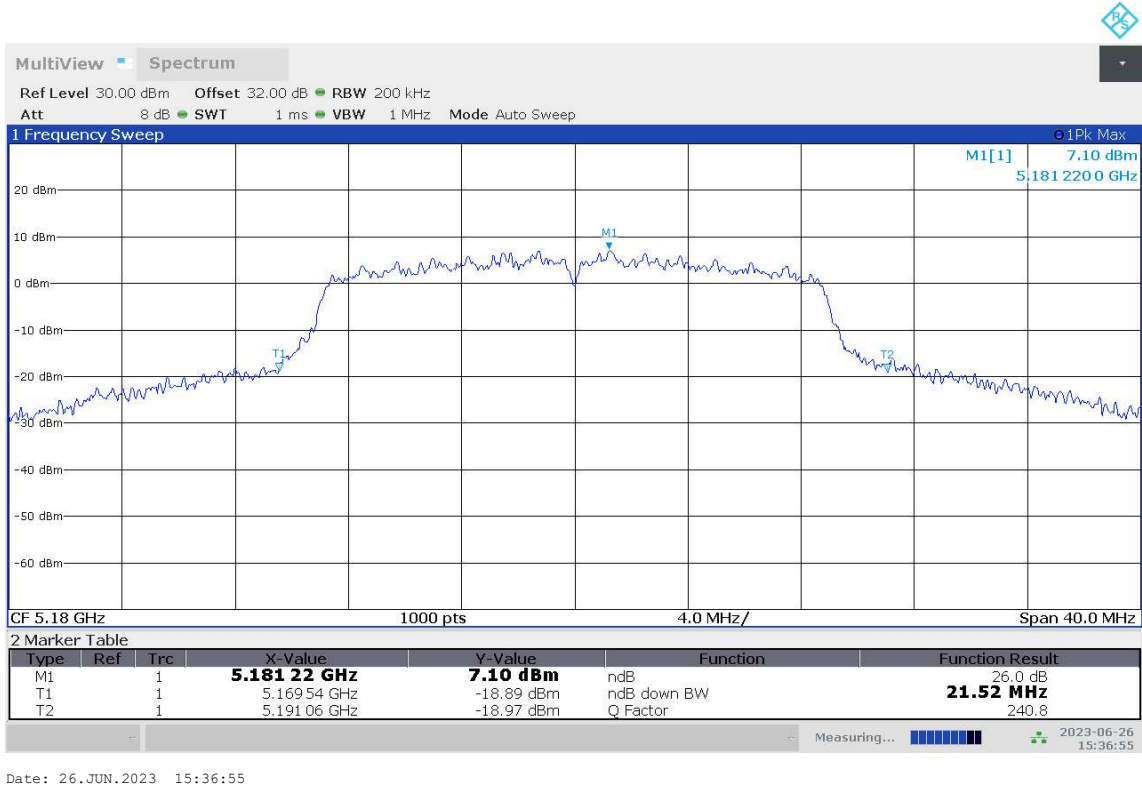
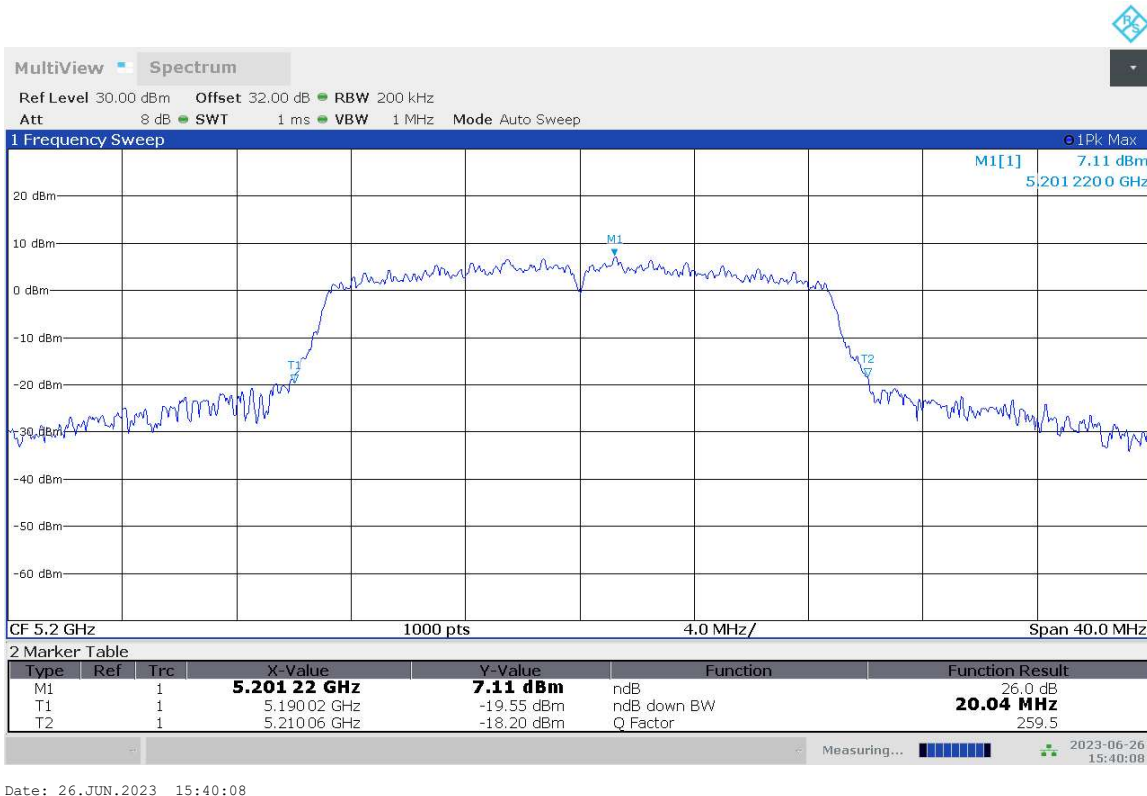
Fig.3 Occupied 26dB Bandwidth (802.11a, 5240MHz)

Fig.4 Occupied 26dB Bandwidth (802.11n-HT20, 5180MHz)


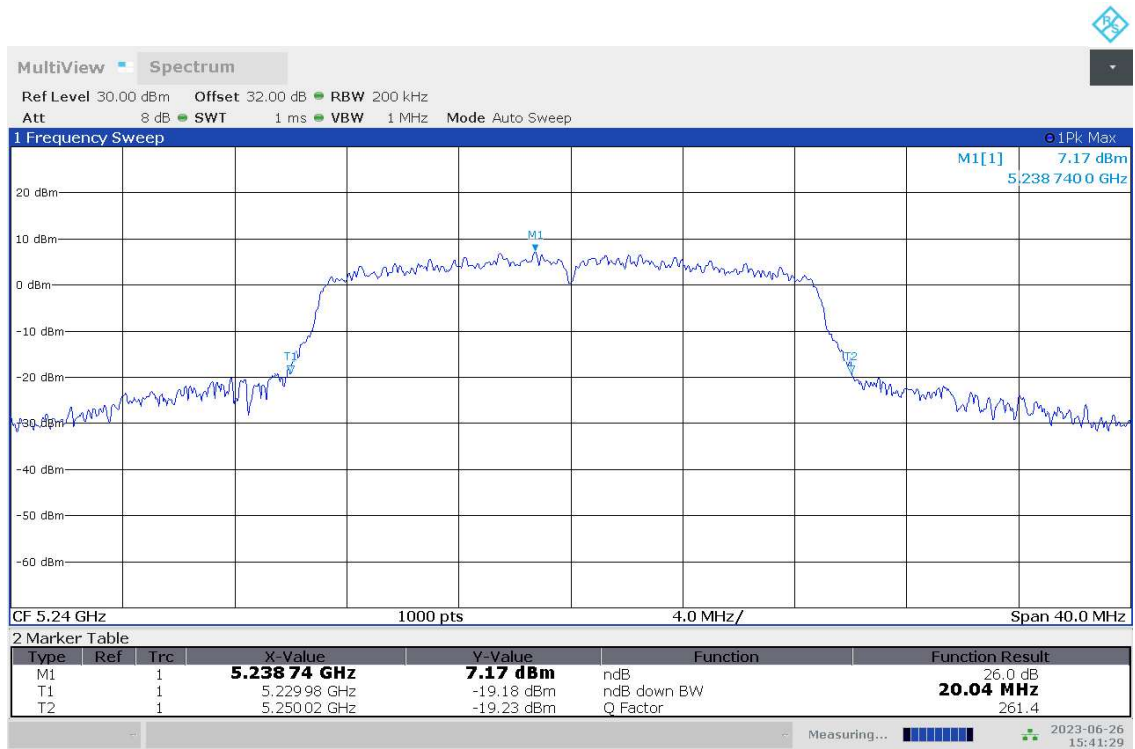
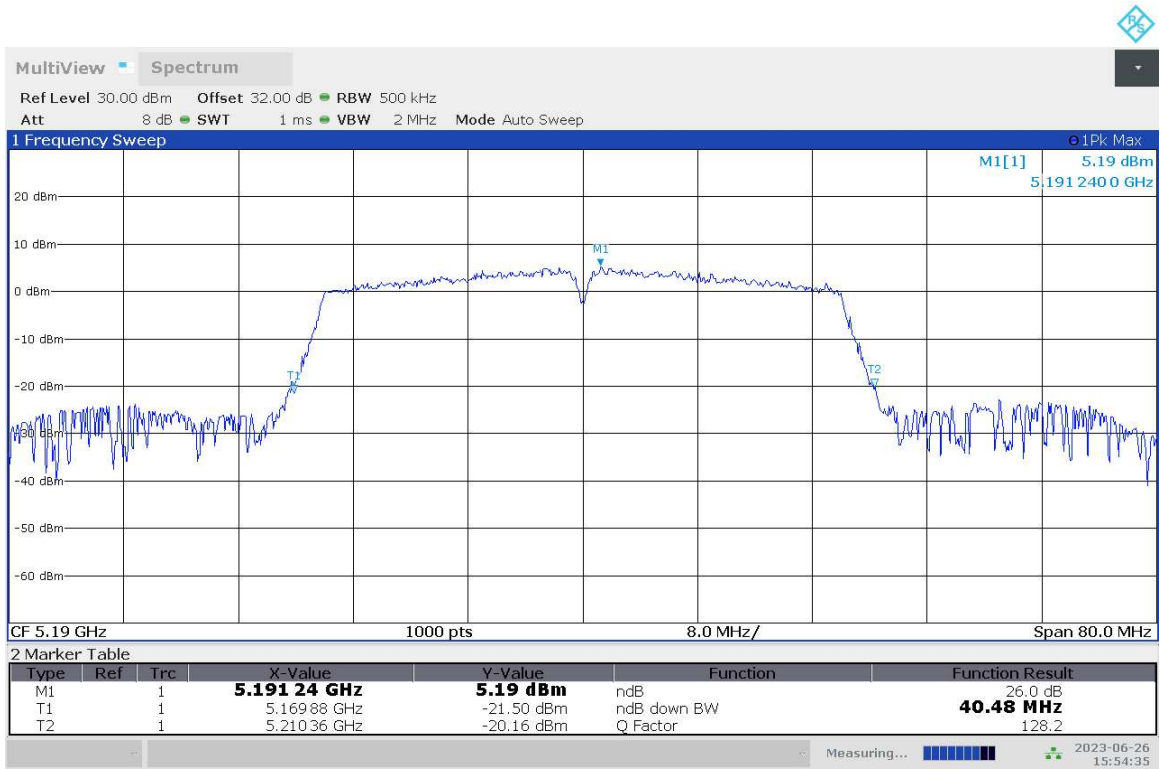
Fig.5 Occupied 26dB Bandwidth (802.11n-HT20, 5200MHz)

Fig.6 Occupied 26dB Bandwidth (802.11n-HT20, 5240MHz)


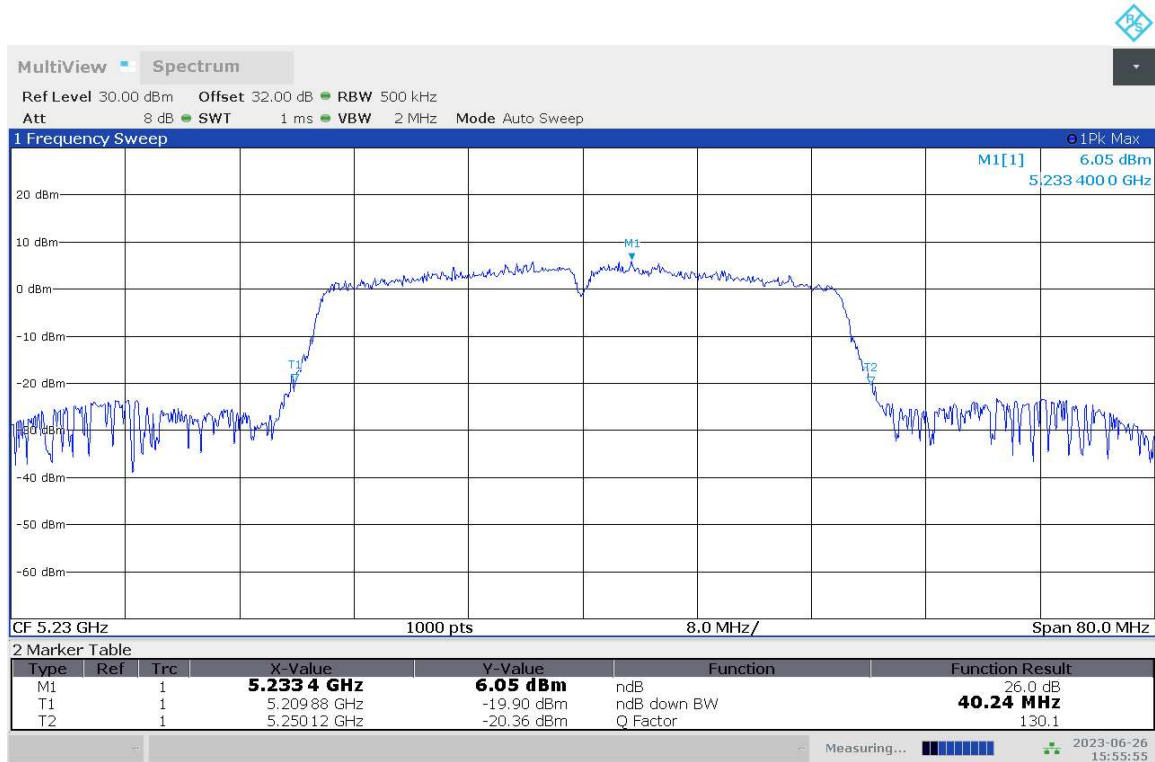
Fig.7 Occupied 26dB Bandwidth (802.11n-HT40, 5190MHz)

Fig.8 Occupied 26dB Bandwidth (802.11n-HT40, 5230MHz)


Fig.9 Occupied 26dB Bandwidth (802. 11n-HT80, 5210MHz)

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.10	P
802.11n HT20	5180 MHz	Fig.11	P
802.11n HT40	5190 MHz	Fig.12	P
802.11ac HT20	5180 MHz	Fig.13	P
802.11ac HT40	5190 MHz	Fig.14	P
802.11ac HT80	5210MHz	Fig.15	P

Conclusion: PASS

Test graphs as below:

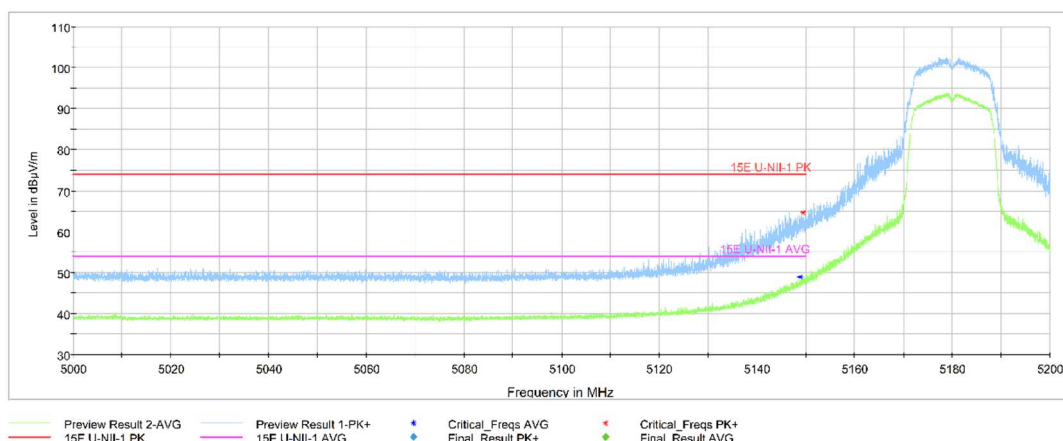


Fig.10 Band Edges (802.11a Ch36, 5180MHz)

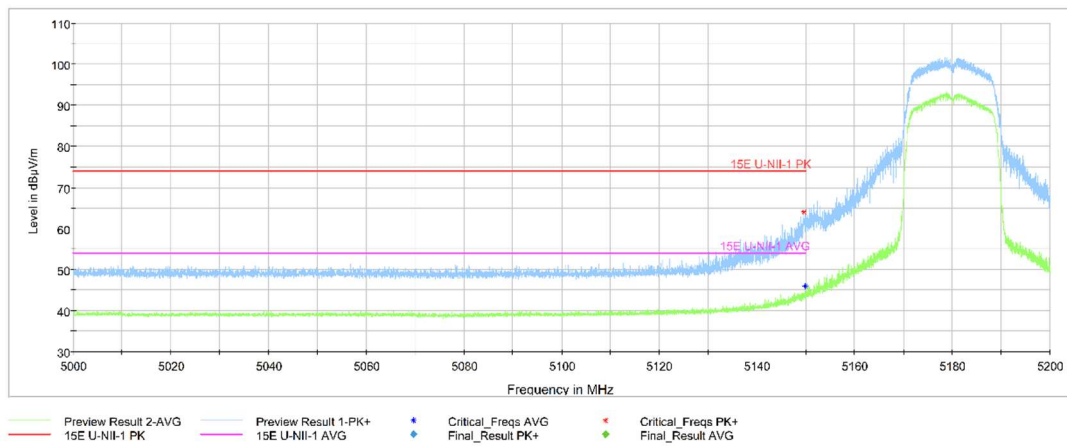


Fig.11 Band Edges (802.11n-HT20 Ch36, 5180MHz)

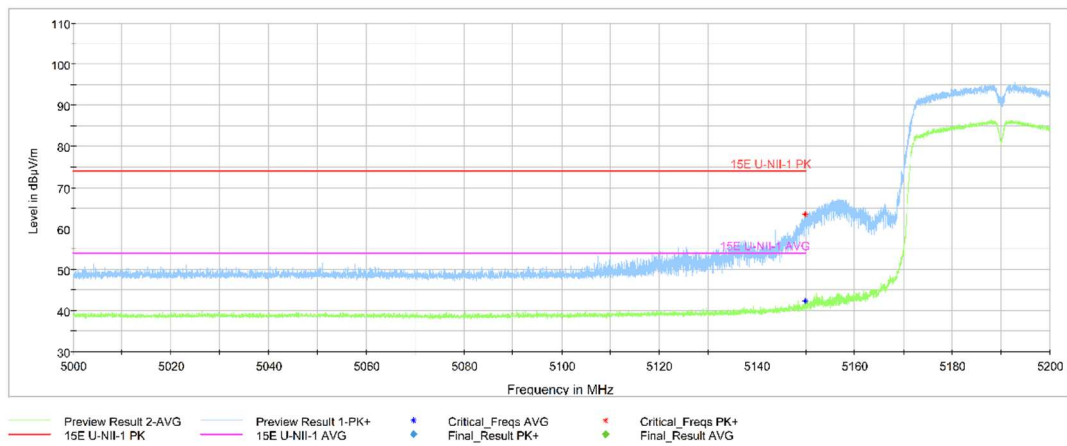


Fig.12 Band Edges (802.11n-HT40 Ch38, 5190MHz)

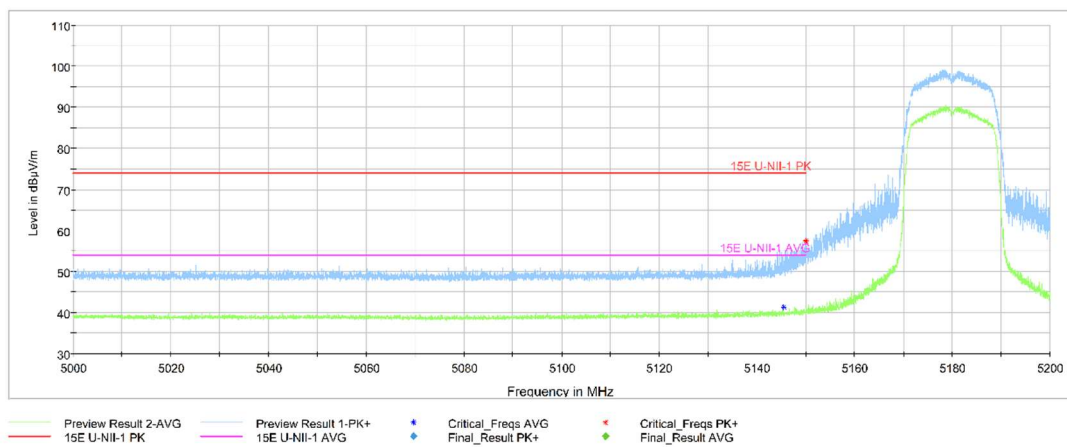


Fig.13 Band Edges (802.11ac-HT20 Ch36, 5180MHz)

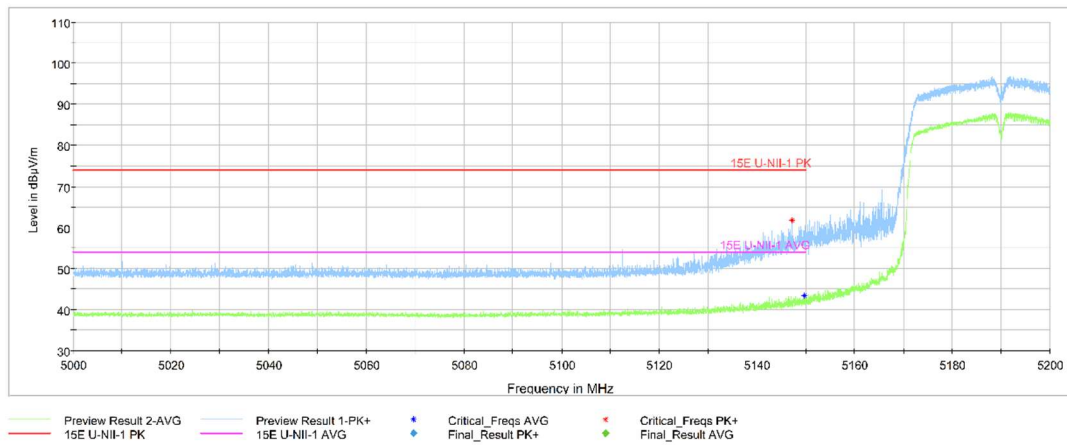


Fig.14 Band Edges (802.11ac-HT40 Ch38, 5190MHz)

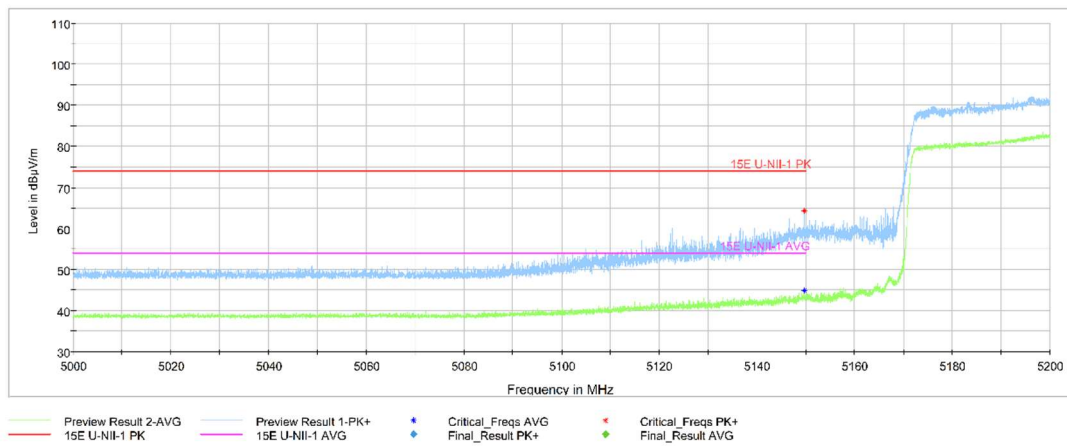


Fig.15 Band Edges (802.11ac-HT80 Ch42 , 5210MHz)

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
	48(5240MHz)	26.5 GHz ~ 40 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
			7 GHz ~ 18 GHz	---

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

	48(5240MHz)	26.5 GHz ~ 40 GHz	---	P
		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

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

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

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

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:

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

AVERAGE Results:
802.11a

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
15541.500	43.32	-29.88	38.55	34.65	54.00	10.68	V
15545.350	43.11	-29.86	38.50	34.47	54.00	10.89	V
8287.550	40.52	-34.84	37.10	38.25	54.00	13.48	H
8288.100	40.11	-34.84	37.10	37.84	54.00	13.89	H
5148.940	48.88	-28.00	34.00	42.88	54.00	5.12	V
5149.960	48.80	-28.00	34.00	42.80	54.00	5.20	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)
15598.150	44.39	-29.74	38.35	35.78	54.00	9.61	V
15600.900	44.17	-29.74	38.35	35.56	54.00	9.83	V
8320.000	37.62	-34.93	37.20	35.35	54.00	16.38	H
8319.450	37.43	-34.93	37.20	35.16	54.00	16.57	H
14495.400	36.91	-29.56	41.90	24.57	54.00	17.09	V
13300.800	36.79	-31.40	40.60	27.59	54.00	17.21	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)
15718.600	41.54	-29.18	38.15	32.57	54.00	12.46	V
15712.550	41.29	-29.18	38.15	32.32	54.00	12.71	V
14498.150	37.11	-29.56	41.90	24.77	54.00	16.89	V
8383.800	37.05	-34.42	37.30	34.17	54.00	16.95	H
14497.600	36.76	-29.56	41.90	24.42	54.00	17.24	H
11771.250	35.80	-32.71	39.20	29.31	54.00	18.20	H

802.11n-HT20

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17922.450	40.26	-29.59	45.95	23.90	54.00	13.74	V
17903.750	40.19	-29.59	45.95	23.83	54.00	13.81	H
8287.550	39.41	-34.84	37.10	37.14	54.00	14.59	H
8288.100	39.06	-34.84	37.10	36.79	54.00	14.94	H
5149.860	45.90	-28.00	34.00	39.90	54.00	8.10	V
5149.680	44.32	-28.00	34.00	38.32	54.00	9.68	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)
15599.250	41.89	-29.74	38.35	33.28	54.00	12.11	V
15597.050	41.52	-29.74	38.35	32.91	54.00	12.48	V
8320.000	39.41	-34.93	37.20	37.14	54.00	14.59	H
8319.450	38.59	-34.93	37.20	36.32	54.00	15.41	H
14497.050	36.90	-29.56	41.90	24.56	54.00	17.10	H
13296.950	36.79	-31.40	40.60	27.59	54.00	17.21	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)
17924.650	40.19	-29.59	45.95	23.83	54.00	13.81	H
17913.100	39.85	-29.59	45.95	23.49	54.00	14.15	V
8383.800	38.03	-34.42	37.30	35.15	54.00	15.97	H
13315.650	36.65	-31.40	40.60	27.45	54.00	17.35	V
14478.350	36.62	-29.56	41.90	24.28	54.00	17.38	V
11836.150	35.92	-32.73	39.15	29.50	54.00	18.08	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)
17954.350	40.13	-29.59	45.95	23.77	54.00	13.87	V
17931.250	39.91	-29.59	45.95	23.55	54.00	14.09	V
14491.000	36.91	-29.56	41.90	24.57	54.00	17.09	V
14486.600	36.89	-29.56	41.90	24.55	54.00	17.11	V
5149.920	42.31	-28.00	34.00	36.31	54.00	11.69	V
5148.540	42.30	-28.00	34.00	36.30	54.00	11.70	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)
17970.300	40.06	-29.59	45.95	23.70	54.00	13.94	V
17924.650	40.03	-29.59	45.95	23.67	54.00	13.97	V
8367.850	37.40	-34.42	37.30	34.52	54.00	16.60	H
13299.150	36.70	-31.40	40.60	27.50	54.00	17.30	H
13301.350	36.68	-31.40	40.60	27.48	54.00	17.32	V
11841.100	35.91	-32.73	39.15	29.49	54.00	18.09	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)
17931.250	40.09	-29.59	45.95	23.73	54.00	13.91	H
17944.450	40.09	-29.59	45.95	23.73	54.00	13.91	V
8287.550	39.92	-34.84	37.10	37.65	54.00	14.08	H
14487.700	37.00	-29.56	41.90	24.66	54.00	17.00	V
5145.540	41.41	-27.79	34.00	35.20	54.00	12.59	V
5147.820	41.35	-27.79	34.00	35.14	54.00	12.65	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)
17998.900	40.17	-29.59	45.95	23.81	54.00	13.83	H
17921.900	39.95	-29.59	45.95	23.59	54.00	14.05	V
8320.000	39.68	-34.93	37.20	37.41	54.00	14.32	H
8319.450	39.00	-34.93	37.20	36.73	54.00	15.00	H
13266.700	36.86	-31.62	40.50	27.98	54.00	17.14	H
13320.050	36.81	-31.19	40.65	27.35	54.00	17.19	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)
17953.250	39.78	-29.59	45.95	23.42	54.00	14.22	H
17929.050	39.77	-29.59	45.95	23.41	54.00	14.23	H
8383.800	37.27	-34.42	37.30	34.39	54.00	16.73	H
13304.100	36.80	-31.40	40.60	27.60	54.00	17.20	V
14498.150	36.71	-29.56	41.90	24.37	54.00	17.29	V
11851.550	36.10	-32.73	39.15	29.68	54.00	17.90	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)
17937.850	39.85	-29.59	45.95	23.49	54.00	14.15	H
17968.650	39.84	-29.59	45.95	23.48	54.00	14.16	V
13302.450	36.94	-31.40	40.60	27.74	54.00	17.06	V
14497.050	36.68	-29.56	41.90	24.34	54.00	17.32	V
5149.800	43.33	-28.00	34.00	37.33	54.00	10.67	V
5147.860	43.22	-27.79	34.00	37.01	54.00	10.78	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)
17978.000	40.25	-29.59	45.95	23.89	54.00	13.75	V
17942.800	40.10	-29.59	45.95	23.74	54.00	13.90	H
8367.850	36.72	-34.42	37.30	33.84	54.00	17.28	H
14490.450	36.70	-29.56	41.90	24.36	54.00	17.30	V
13318.950	36.65	-31.19	40.65	27.19	54.00	17.35	V
11776.750	36.04	-32.71	39.20	29.55	54.00	17.96	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)
17923.550	39.98	-29.59	45.95	23.62	54.00	14.02	H
17941.150	39.88	-29.59	45.95	23.52	54.00	14.12	H
8335.950	39.30	-34.93	37.20	37.03	54.00	14.70	H
14499.250	36.67	-29.56	41.90	24.33	54.00	17.33	V
5149.760	44.87	-28.00	34.00	38.87	54.00	9.13	V
5149.140	44.38	-28.00	34.00	38.38	54.00	9.62	V

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)
15536.550	53.14	-29.88	38.55	44.47	74.00	20.86	V
15549.200	52.79	-29.86	38.50	44.15	74.00	21.21	V
13758.400	49.15	-31.18	41.10	39.23	68.20	19.05	H
13635.200	49.12	-31.29	40.90	39.51	68.20	19.08	H
5149.440	64.71	-28.00	34.00	58.71	74.00	9.29	V
5146.680	64.69	-27.79	34.00	58.48	74.00	9.31	V

Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
15601.450	53.79	-29.74	38.35	45.18	74.00	20.21	V
15599.800	53.09	-29.74	38.35	44.48	74.00	20.91	V
14100.500	48.81	-30.20	41.70	37.31	68.20	19.39	V
14181.900	48.31	-30.42	41.70	37.03	68.20	19.89	H
11918.100	46.55	-32.53	39.10	39.98	74.00	27.45	V
11882.900	46.45	-32.53	39.10	39.88	74.00	27.55	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)
15717.500	51.50	-29.18	38.15	42.53	74.00	22.50	V
15721.350	51.50	-29.18	38.15	42.53	74.00	22.50	V
13779.850	48.93	-30.98	41.20	38.71	68.20	19.27	V
13755.650	48.62	-31.18	41.10	38.70	68.20	19.58	H
11382.400	46.74	-33.31	38.85	41.20	74.00	27.26	V
10858.250	46.66	-33.07	38.50	41.23	74.00	27.34	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)
17957.650	51.39	-29.59	45.95	35.03	74.00	22.61	H
15538.200	51.22	-29.88	38.55	42.55	74.00	22.78	V
13743.000	49.37	-31.18	41.10	39.45	68.20	18.83	H
13753.450	48.73	-31.18	41.10	38.81	68.20	19.47	H
5149.620	64.02	-28.00	34.00	58.02	74.00	9.98	V
5149.940	63.12	-28.00	34.00	57.12	74.00	10.88	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)
15602.550	52.34	-29.74	38.35	43.73	74.00	21.66	V
15609.700	52.24	-29.74	38.35	43.63	74.00	21.76	V
13677.550	48.51	-30.98	41.00	38.49	68.20	19.69	V
14691.200	48.38	-30.04	41.50	36.92	68.20	19.82	V
11371.950	46.58	-33.31	38.85	41.04	74.00	27.42	V
10781.250	46.57	-32.42	38.45	40.54	74.00	27.43	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)
15712.550	51.76	-29.18	38.15	42.79	74.00	22.24	V
17135.950	51.43	-29.31	41.70	39.04	68.20	16.77	V
14571.850	49.04	-29.14	41.90	36.28	68.20	19.16	V
13679.750	48.59	-30.98	41.00	38.57	68.20	19.61	V
10474.350	47.52	-33.87	38.20	43.19	68.20	20.68	V
11785.000	46.61	-32.09	39.20	39.50	74.00	27.39	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)
17443.950	51.02	-28.70	44.20	35.52	68.20	17.18	V
17602.900	50.96	-29.60	45.15	35.41	68.20	17.24	V
13626.950	49.72	-31.29	40.90	40.11	68.20	18.48	V
13680.850	49.43	-30.98	41.00	39.41	68.20	18.77	H
5149.920	63.47	-28.00	34.00	57.47	74.00	10.53	V
5149.760	62.71	-28.00	34.00	56.71	74.00	11.29	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)
16956.650	51.39	-29.68	40.60	40.47	68.20	16.81	V
17419.750	50.93	-29.44	43.80	36.57	68.20	17.27	V
13623.100	49.05	-31.29	40.90	39.44	68.20	19.15	H
13610.450	48.76	-31.27	40.80	39.23	68.20	19.44	V
11864.750	46.62	-32.73	39.15	40.20	74.00	27.38	V
10449.600	46.26	-33.87	38.20	41.93	68.20	21.94	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)
16944.000	50.81	-29.68	40.60	39.89	68.20	17.39	V
17547.900	50.80	-29.39	44.90	35.30	68.20	17.40	V
13732.000	48.68	-31.18	41.10	38.76	68.20	19.52	V
14598.250	48.62	-29.14	41.90	35.86	68.20	19.58	V
5149.980	57.42	-28.00	34.00	51.42	74.00	16.58	H
5149.860	57.35	-28.00	34.00	51.35	74.00	16.65	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)
17252.550	51.86	-29.33	42.40	38.79	68.20	16.34	H
17552.300	50.89	-29.39	44.90	35.39	68.20	17.31	V
14166.500	48.54	-30.42	41.70	37.26	68.20	19.66	V
13753.450	48.48	-31.18	41.10	38.56	68.20	19.72	V
10766.400	47.08	-32.42	38.45	41.05	74.00	26.92	V
11863.650	46.65	-32.73	39.15	40.23	74.00	27.35	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)
17368.600	50.89	-28.74	43.40	36.23	68.20	17.31	H
17424.150	50.66	-29.44	43.80	36.30	68.20	17.54	H
13761.700	49.31	-31.18	41.10	39.39	68.20	18.89	V
13638.500	48.70	-31.29	40.90	39.09	68.20	19.50	V
11851.550	47.04	-32.73	39.15	40.62	74.00	26.96	H
11517.150	46.84	-32.80	39.10	40.54	74.00	27.16	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)
16851.050	51.05	-29.50	40.00	40.55	68.20	17.15	V
17978.550	50.91	-29.59	45.95	34.55	74.00	23.09	V
13829.900	49.04	-30.20	41.25	37.99	68.20	19.16	H
14082.900	48.42	-30.20	41.70	36.92	68.20	19.78	V
5147.140	61.76	-27.79	34.00	55.55	74.00	12.24	V
5149.940	60.49	-28.00	34.00	54.49	74.00	13.51	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)
17963.150	50.62	-29.59	45.95	34.26	74.00	23.38	V
17339.450	50.54	-28.74	43.40	35.88	68.20	17.66	V
14592.750	48.99	-29.14	41.90	36.23	68.20	19.21	V
13723.750	48.77	-31.18	41.10	38.85	68.20	19.43	V
9338.600	46.30	-34.04	37.80	42.54	74.00	27.70	V
11354.900	46.20	-33.31	38.85	40.66	74.00	27.80	H

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)
17352.650	51.21	-28.74	43.40	36.55	68.20	16.99	H
16852.150	50.53	-29.50	40.00	40.03	68.20	17.67	V
14561.950	49.10	-29.14	41.90	36.34	68.20	19.10	V
13773.250	48.79	-30.98	41.20	38.57	68.20	19.41	H
5149.760	64.29	-28.00	34.00	58.29	74.00	9.71	V
5147.480	62.72	-27.79	34.00	56.51	74.00	11.28	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 (dB μ V)	Result (dB μ V)		Conclusion
		With charger AE5		
		802.11a	Idle	
0.15 to 0.5	66 to 56	Fig.16	Fig.17	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 (dB μ V)	Result (dB μ V)		Conclusion
		With charger AE5		
		802.11a	Idle	
0.15 to 0.5	67 56 to 46	Fig.16	Fig.17	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:

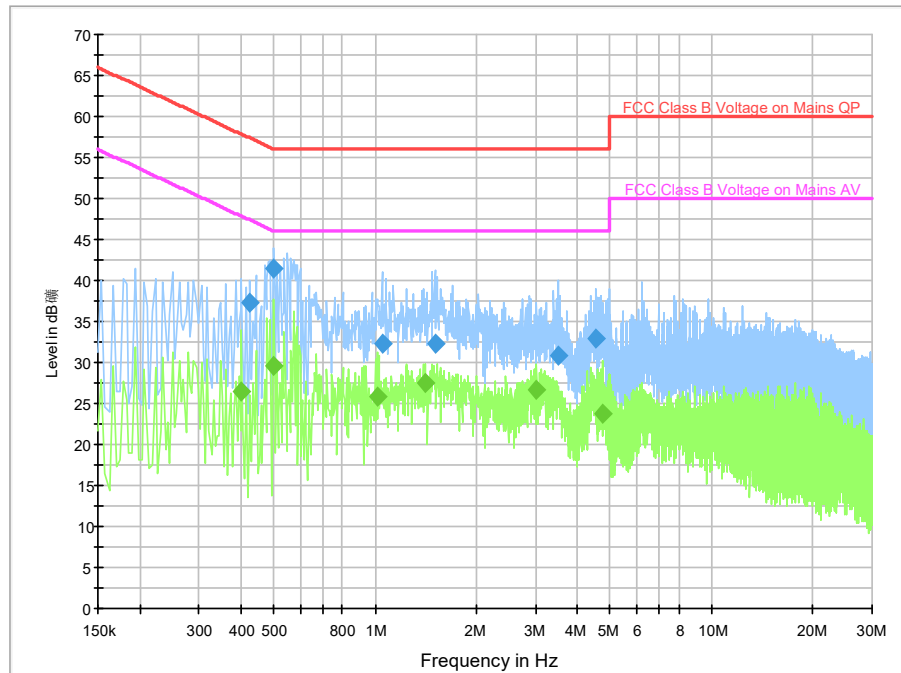


Fig.16 Conducted Emission (802.11a, Ch36, TX)

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.426000	37.2	2000.0	9.000	On	N	19.7	20.1	57.3
0.498000	41.5	2000.0	9.000	On	N	19.7	14.5	56.0
1.050000	32.2	2000.0	9.000	On	N	19.6	23.8	56.0
1.506000	32.2	2000.0	9.000	On	N	19.6	23.8	56.0
3.498000	30.9	2000.0	9.000	On	N	19.6	25.1	56.0
4.538000	33.0	2000.0	9.000	On	N	19.6	23.0	56.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.402000	26.5	2000.0	9.000	On	L1	19.7	21.3	47.8
0.498000	29.7	2000.0	9.000	On	N	19.7	16.3	46.0
1.014000	25.8	2000.0	9.000	On	L1	19.7	20.2	46.0
1.414000	27.4	2000.0	9.000	On	L1	19.7	18.6	46.0
3.026000	26.7	2000.0	9.000	On	L1	19.6	19.3	46.0
4.742000	23.7	2000.0	9.000	On	N	19.6	22.3	46.0

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

Idle:

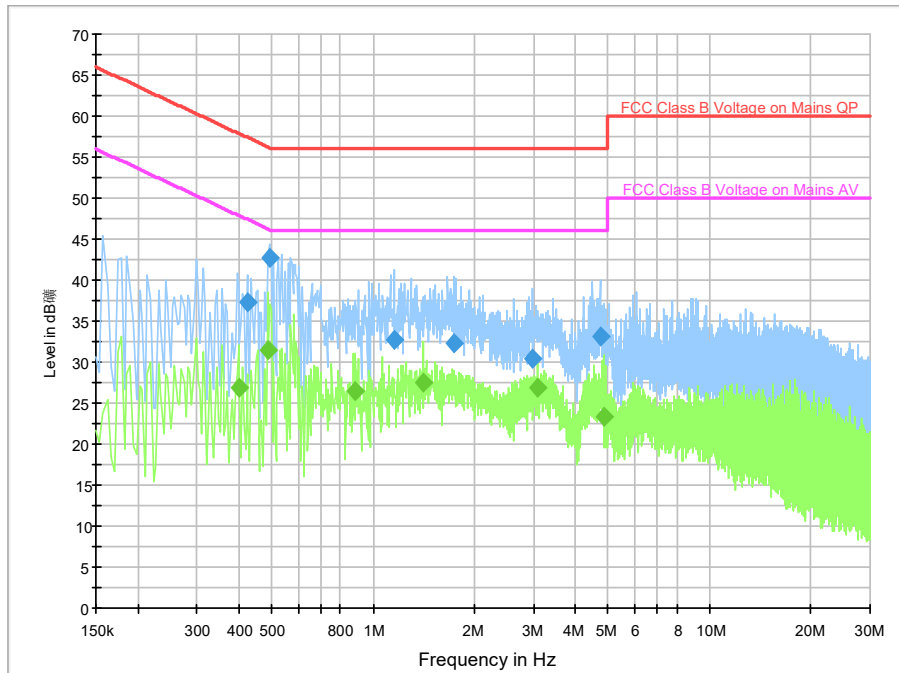


Fig.17 Conducted Emission(802.11a, IDLE)

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.422000	37.3	2000.0	9.000	On	N	19.7	20.1	57.4
0.494000	42.7	2000.0	9.000	On	N	19.7	13.4	56.1
1.154000	32.6	2000.0	9.000	On	N	19.6	23.4	56.0
1.746000	32.2	2000.0	9.000	On	L1	19.6	23.8	56.0
2.978000	30.4	2000.0	9.000	On	N	19.6	25.6	56.0
4.722000	33.2	2000.0	9.000	On	N	19.6	22.8	56.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.398000	26.8	2000.0	9.000	On	L1	19.7	21.1	47.9
0.486000	31.4	2000.0	9.000	On	L1	19.7	14.8	46.2
0.886000	26.5	2000.0	9.000	On	L1	19.7	19.5	46.0
1.414000	27.4	2000.0	9.000	On	L1	19.7	18.6	46.0
3.094000	26.8	2000.0	9.000	On	L1	19.6	19.2	46.0
4.866000	23.3	2000.0	9.000	On	N	19.6	22.7	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% of the 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
		Lower	Upper	
802.11a	5180 MHz	Fig.18	19.12	P
	5200 MHz	Fig.19	17.80	P
	5240 MHz	Fig.20	17.90	P
802.11n -HT20	5180 MHz	Fig.21	18.55	P
	5200 MHz	Fig.22	18.22	P
	5240 MHz	Fig.23	18.34	P
802.11n -HT40	5190 MHz	Fig.24	36.19	P
	5230 MHz	Fig.25	36.15	P
802.11ac HT80	5210 MHz	Fig.26	75.26	P

Conclusion: PASS

Test graphs as below:

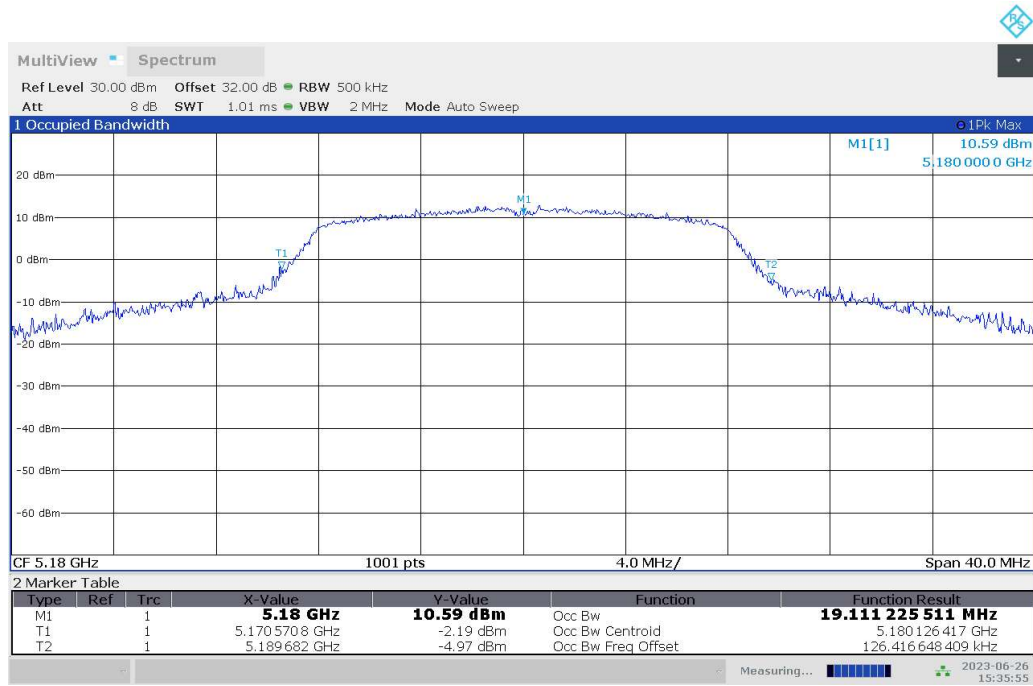


Fig.18 99% Occupied bandwidth (802.11a, 5180MHz)

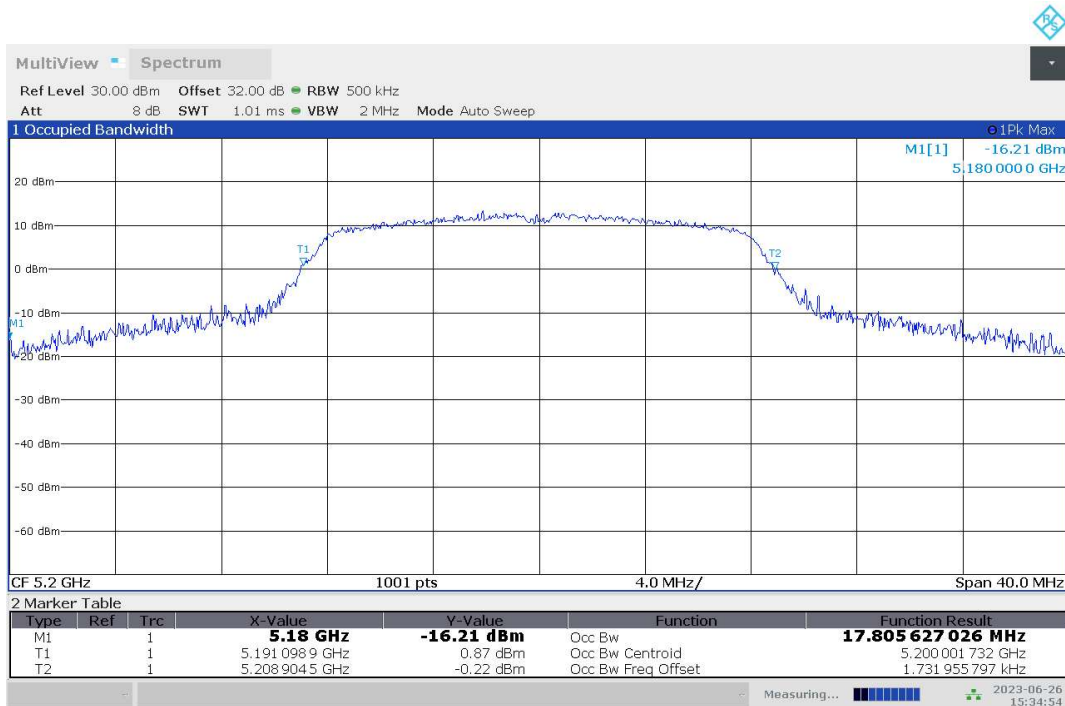


Fig.19 99% Occupied bandwidth (802.11a, 5200MHz)

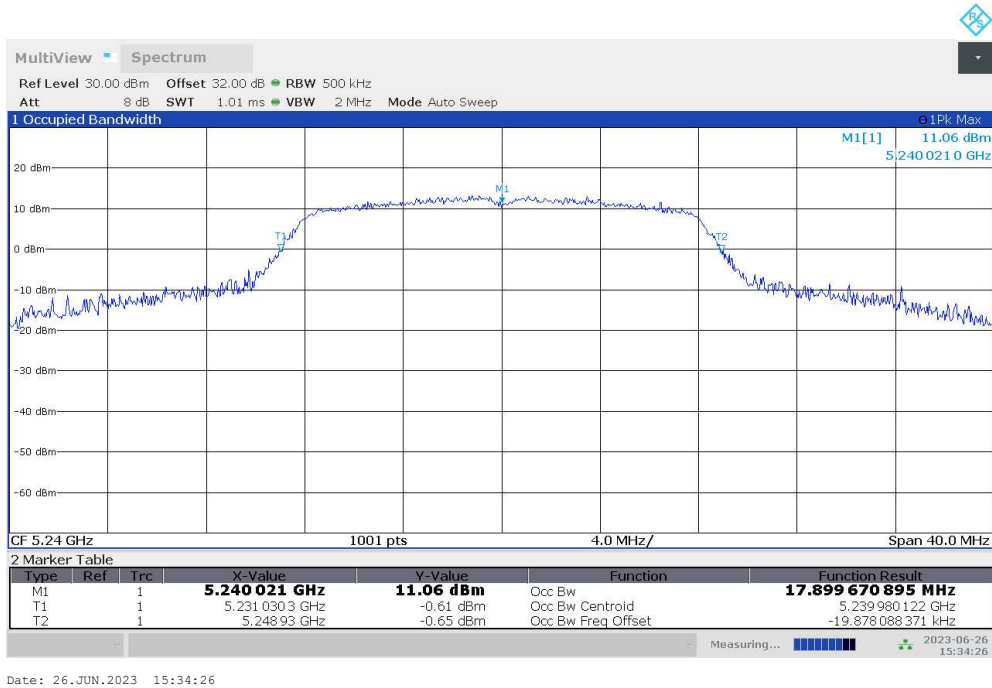


Fig.20 99% Occupied bandwidth (802.11a, 5240MHz)

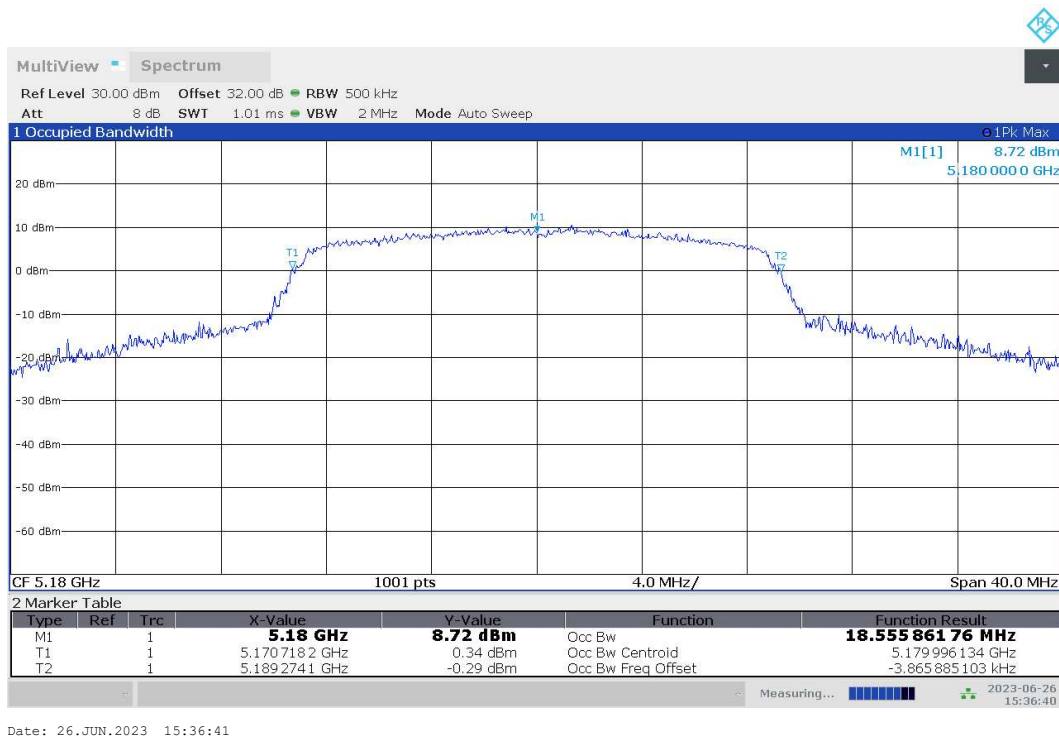


Fig.21 99% Occupied bandwidth (802.11n-HT20, 5180MHz)

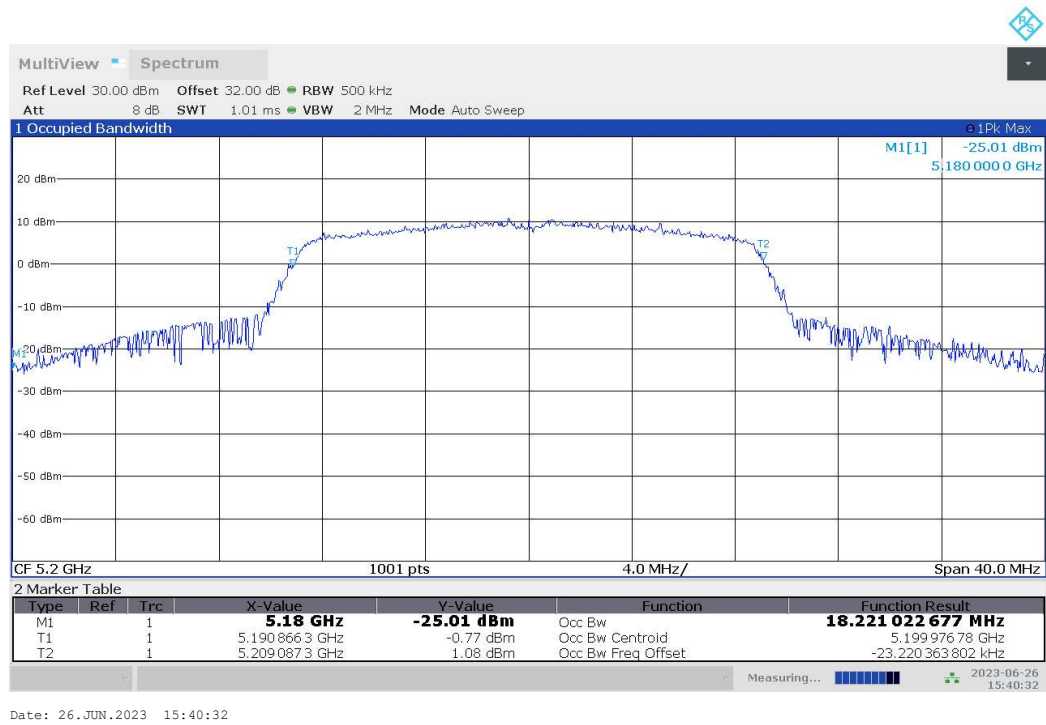


Fig.22 99% Occupied bandwidth (802.11n-HT20, 5200MHz)

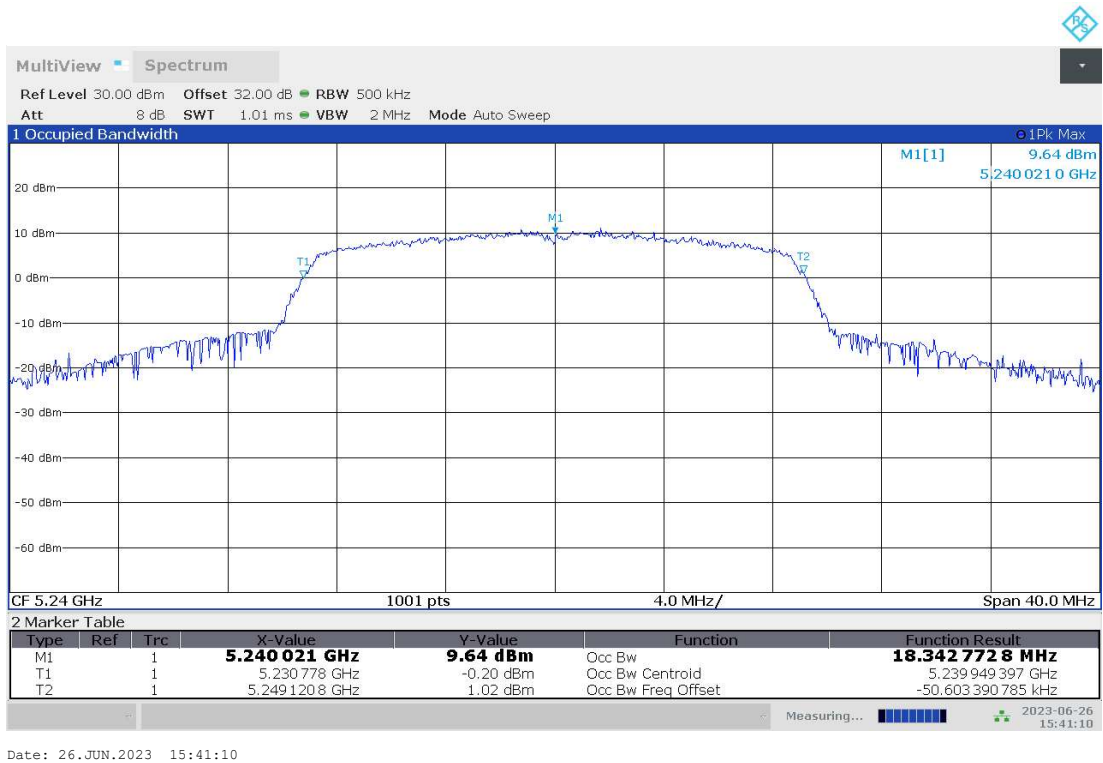


Fig.23 99% Occupied bandwidth (802.11n-HT20, 5240MHz)

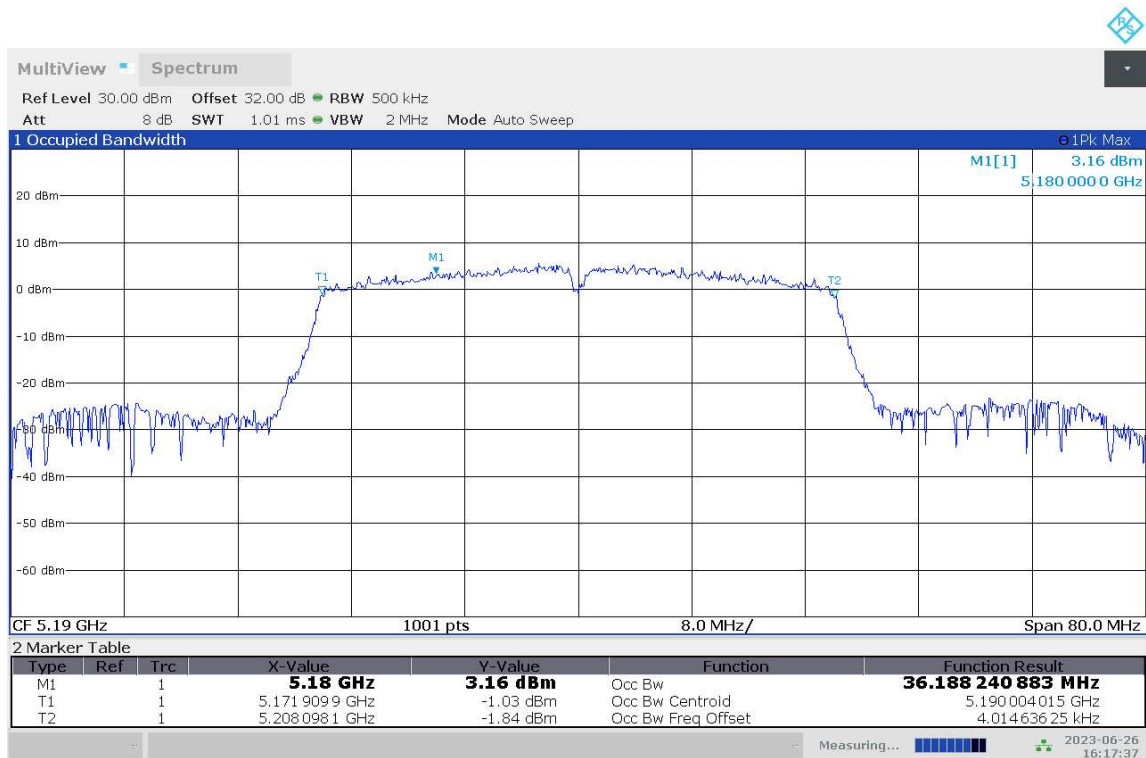


Fig.24 99% Occupied bandwidth (802.11n-HT40, 5190MHz)

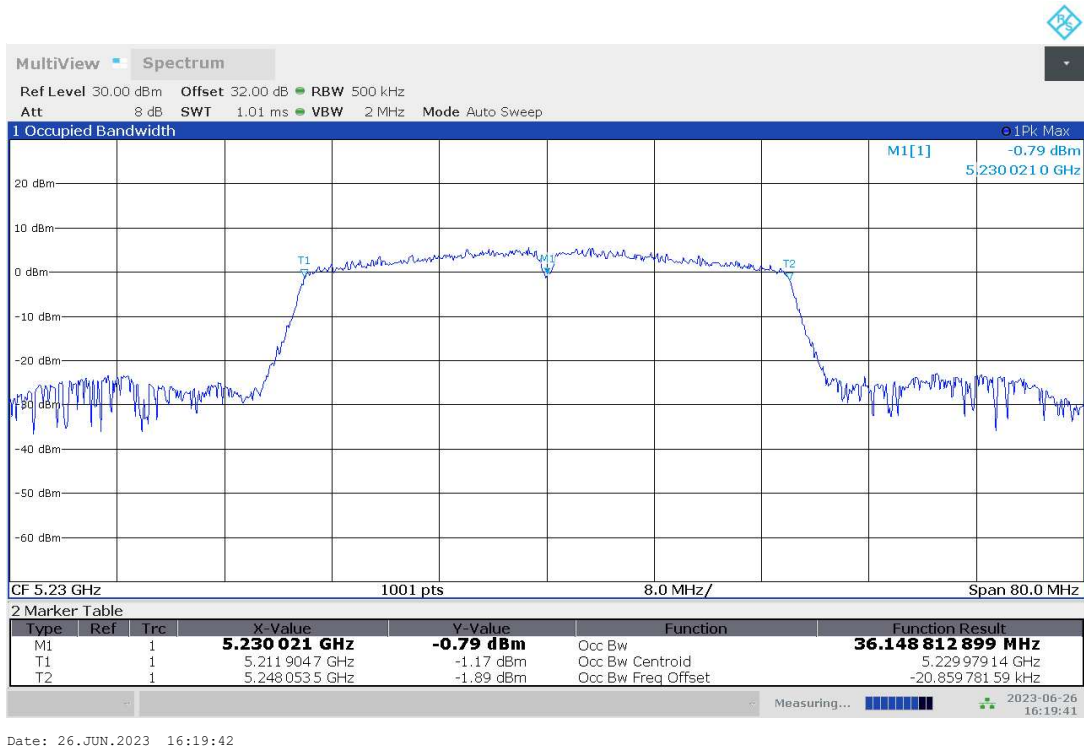
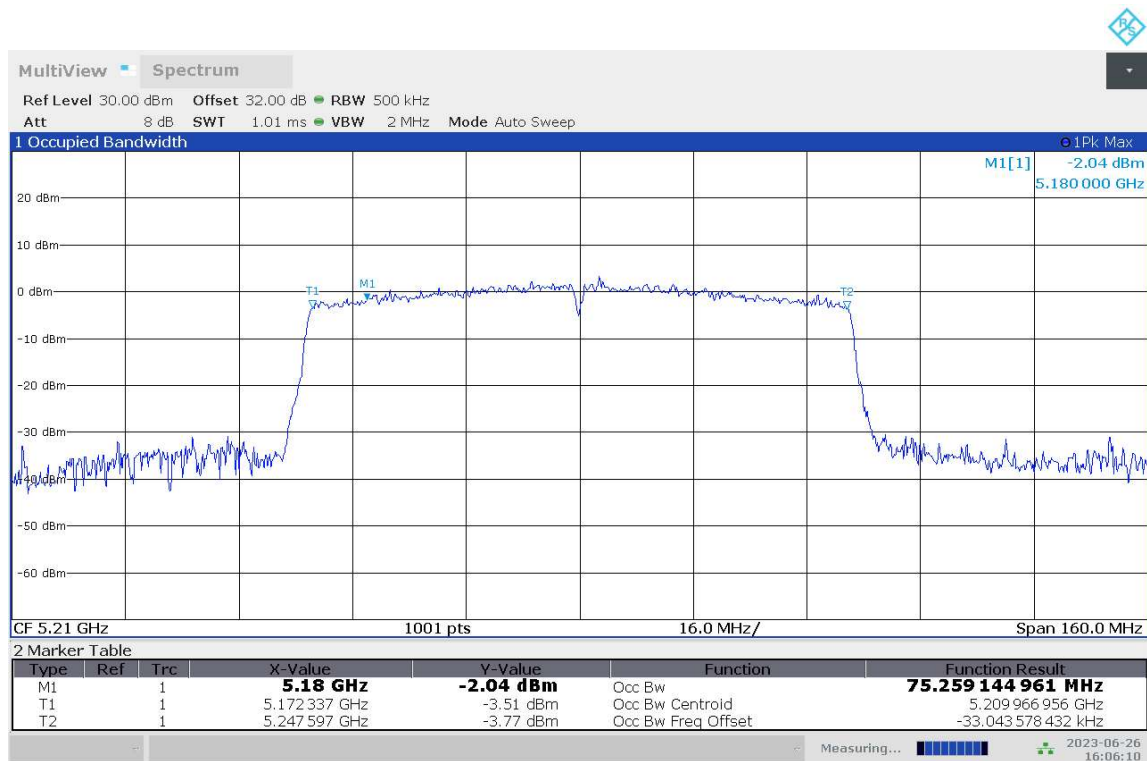


Fig.25 99% Occupied bandwidth (802.11n-HT40, 5230MHz)



Date: 26.JUN.2023 16:06:11

Fig.26 99% Occupied bandwidth (802.11ac-HT80, 5210MHz)

A.9. Power control

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

ANNEX B: EUT parameters

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

ANNEX C: Accreditation Certificate



*** END OF REPORT BODY ***