



FCC PART 15 TEST REPORT No.I23Z60093-IOT04

for

TCL Communication Ltd.

Tablet PC

9138S,9150S

With

FCC ID: 2ACCJB199

Hardware Version: 05

Software Version: YNS7

Issued Date: 2023-03-09

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.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I23Z60093-IOT04	Rev.0	1st edition	2023-03-09

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1. TEST LABORATORY

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

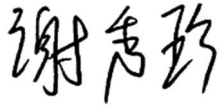
Relative Humidity: 20-75%

1.4. Project date

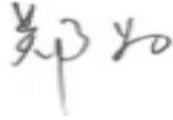
Testing Start Date: 2023-01-31

Testing End Date: 2023-03-09

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.
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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	9138S,9150S
FCC ID	2ACCJB199
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Voltage	3.85V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
UT25a	358975210000866	05	YNS7
UT32a	358975210000676	05	YNS7

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

UT32a is used for Conduction test, UT25a is used for Radiation test.

3.3. Internal Identification of AE used during the test

AE ID*	Description	Mode	Manufacture
AE1	Battery	TLp053C1	BYD
AE2-1	Charger	QC13US	PUAN
AE3	USB cable	CDA0000128C1	JUWEI

*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 Tablet PC 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	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

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°C
Voltage	3.85V
Humidity	44%

7. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2023-05-15
2	Test Receiver	ESU26	100235	R&S	1 year	2023-04-07
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	ESW44	103144	Rohde & Schwarz	1 year	2023-10-25
2	BiLog Antenna	VULB9163	9163-1223	Schwarzbeck	1 year	2023-07-25
3	EMI Antenna	3115	00167250	ETS-Lindgren	1 year	2023-06-20
4	Loop Antenna	HFH2-Z2	829324/007	R&S	1 year	2024-12-23
5	EMI Antenna	3116	2663	ETS-Lindgren	1 year	2023-11-22

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)
$30\text{MHz} \leq f \leq 2\text{GHz}$	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	4.92
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.18
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.54
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.26

8.6 AC Power-line Conducted Emission

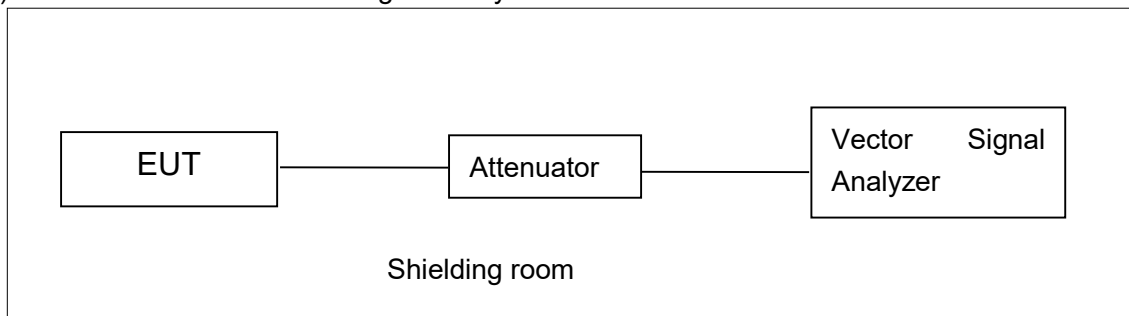
Measurement Uncertainty : 3.08,k=2

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

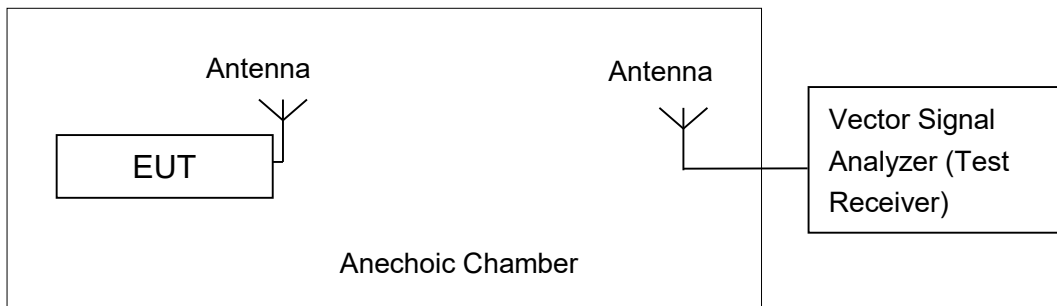


A.1.2. Radiated Emission Measurements

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	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

Antenna Gain: 1.75 dBi

Measurement Results:

802.11a mode

Mode	Frequency	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz	14.54	/	/	/	/	/	/	/
	5200MHz	14.10	/	/	/	/	/	/	/
	5240MHz	15.18	/	/	/	/	/	/	/
	5260MHz	14.45	/	/	/	/	/	/	/
	5280MHz	15.07	/	/	/	/	/	/	/
	5320MHz	14.82	/	/	/	/	/	/	/

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	16.21	/	/	/	/	/	/	/
	5200MHz	16.12	/	/	/	/	/	/	/
	5240MHz	15.77	/	/	/	/	/	/	/
	5260MHz	15.60	/	/	/	/	/	/	/
	5280MHz	15.75	/	/	/	/	/	/	/
	5320MHz	16.26	/	/	/	/	/	/	/

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	15.07	/	/	/	/	/	/	/	/
	5200MHz	15.02	/	/	/	/	/	/	/	/

	5240MHz	15.61	/	/	/	/	/	/	/	/
	5260MHz	15.37	/	/	/	/	/	/	/	/
	5280MHz	16.04	/	/	/	/	/	/	/	/
	5320MHz	15.79	/	/	/	/	/	/	/	/

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	13.32	/	/	/	/	/	/	/	/
	5230MHz	13.83	/	/	/	/	/	/	/	/
	5270MHz	14.02	/	/	/	/	/	/	/	/
	5310MHz	13.94	/	/	/	/	/	/	/	/

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	13.20	/	/	/	/	/	/	/	/	/
	5230MHz	13.83	/	/	/	/	/	/	/	/	/
	5270MHz	14.04	/	/	/	/	/	/	/	/	/
	5310MHz	13.99	/	/	/	/	/	/	/	/	/

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	10.61	/	/	/	/	/	/	/	/	/
	5290MHz	11.13	/	/	/	/	/	/	/	/	/

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	4.24	P
	5200 MHz	3.65	P
	5240 MHz	4.52	P
	5260 MHz	4.14	P
	5280 MHz	4.78	P
	5320 MHz	4.65	P
802.11n HT20	5180 MHz	4.50	P
	5200 MHz	4.48	P
	5240 MHz	5.18	P
	5260 MHz	4.78	P
	5280 MHz	5.34	P
	5320 MHz	5.28	P
802.11ac HT40	5190 MHz	0.02	P
	5230 MHz	0.53	P
	5270 MHz	0.64	P
	5310 MHz	0.64	P
802.11ac HT80	5210MHz	-6.39	P
	5290MHz	-5.13	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
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Measurement Result:

Mode	Frequency	Occupied 26dB Bandwidth (MHz)		conclusion
802.11a	5180 MHz	Fig.1	20.20	P
	5200 MHz	Fig.2	20.08	P
	5240 MHz	Fig.3	20.20	P
	5260 MHz	Fig.4	20.32	P
	5280 MHz	Fig.5	20.24	P
	5320 MHz	Fig.6	20.16	P
802.11n HT20	5180 MHz	Fig.7	23.24	P
	5200 MHz	Fig.8	20.88	P
	5240 MHz	Fig.9	21.20	P
	5260 MHz	Fig.10	21.72	P
	5280 MHz	Fig.11	20.44	P
	5320 MHz	Fig.12	23.44	P
802.11ac HT40	5190 MHz	Fig.13	40.96	P
	5230 MHz	Fig.14	41.12	P
	5270 MHz	Fig.15	41.44	P
	5310 MHz	Fig.16	41.12	P
802.11ac HT80	5210MHz	Fig.17	81.60	P
	5290MHz	Fig.18	81.44	P

Conclusion: PASS

Test graphs as below:



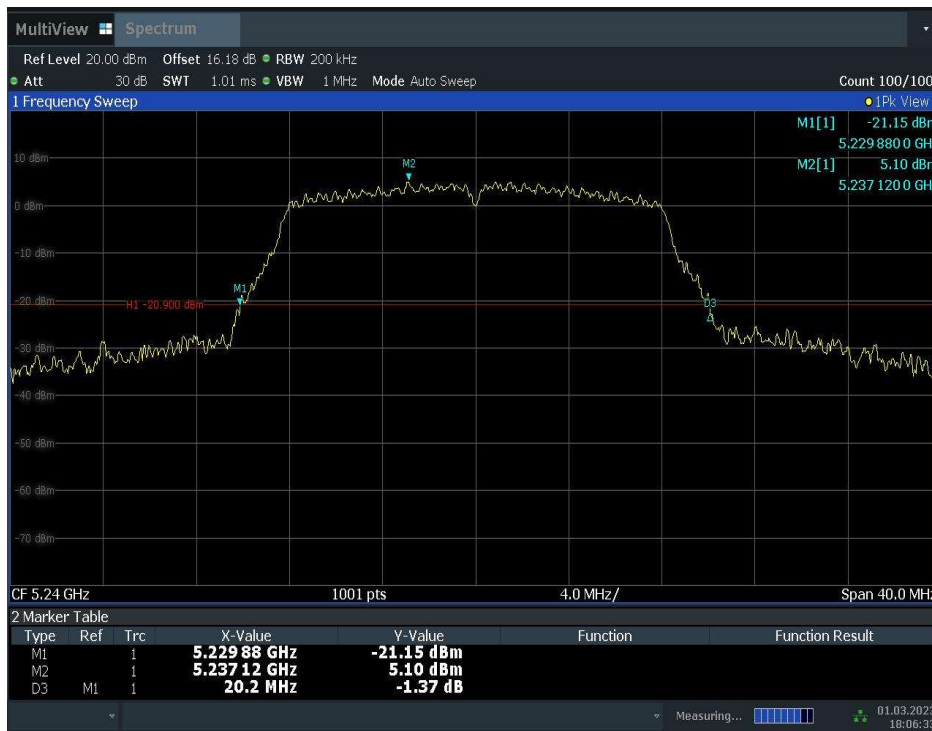
18:02:50 01.03.2023

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



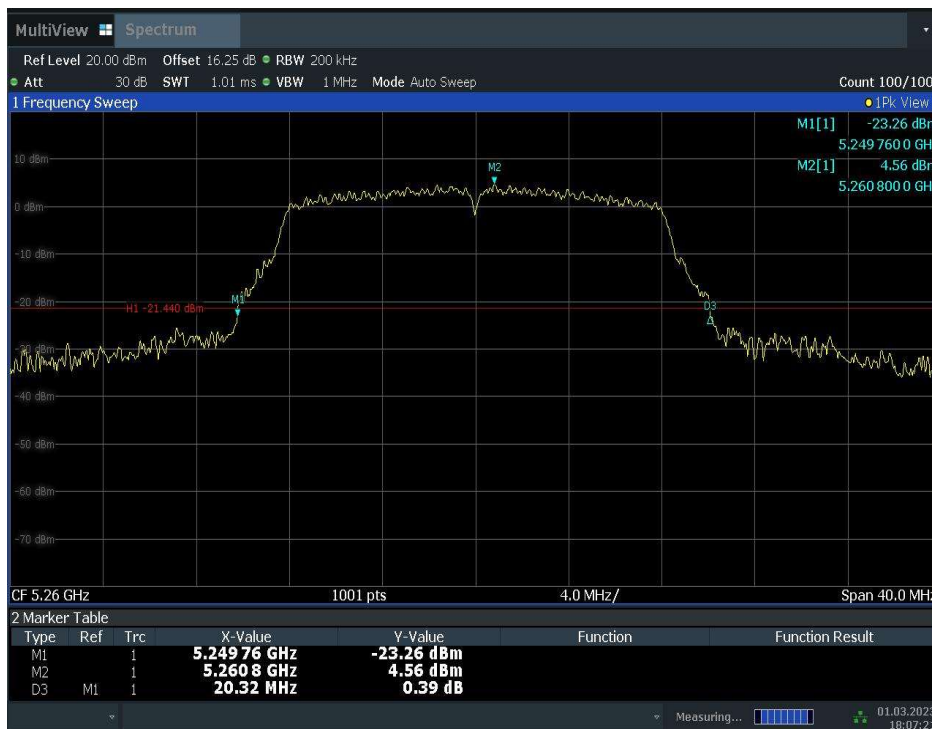
18:05:54 01.03.2023

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



18:06:34 01.03.2023

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



18:07:22 01.03.2023

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



18:08:04 01.03.2023

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



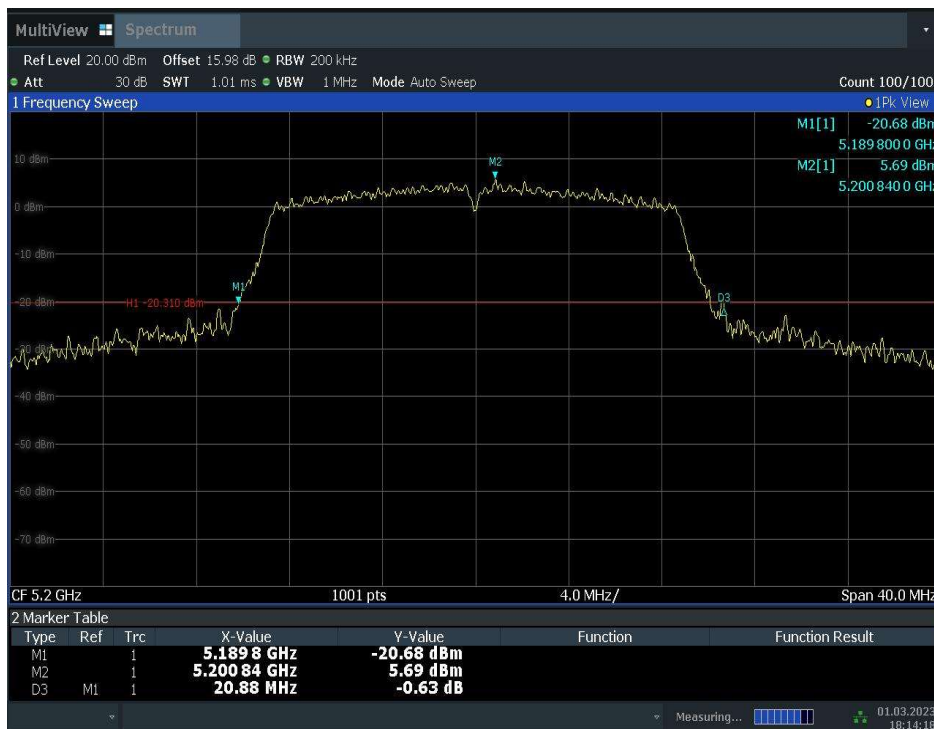
18:09:56 01.03.2023

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



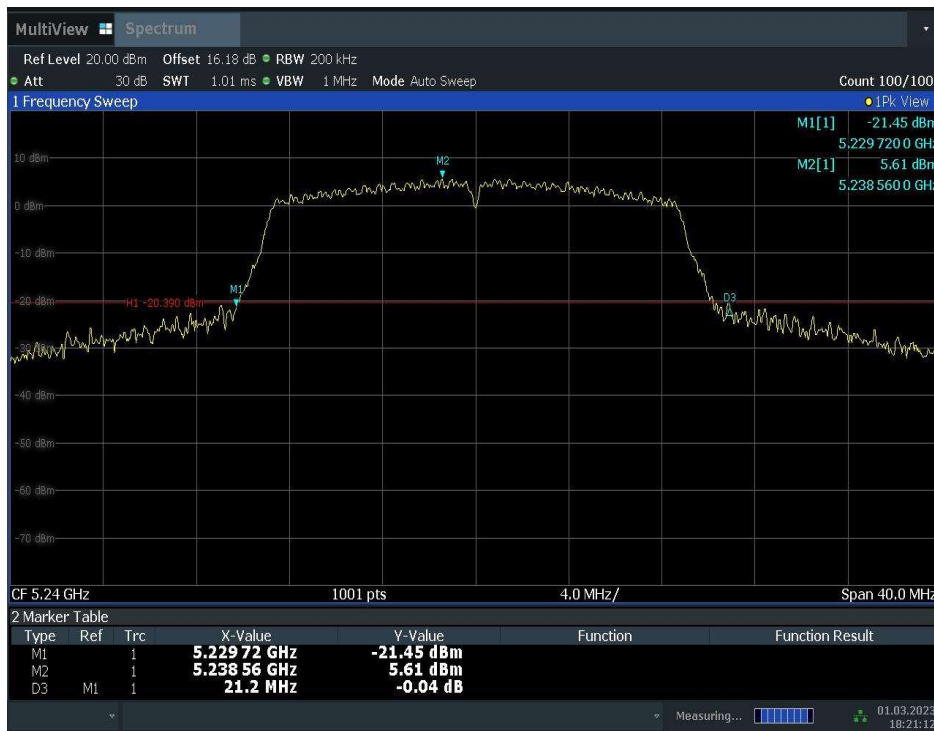
18:13:01 01.03.2023

Fig.7 Occupied 26dB Bandwidth (802.11n-HT20, 5180MHz)



18:14:18 01.03.2023

Fig.8 Occupied 26dB Bandwidth (802.11n-HT20, 5200MHz)



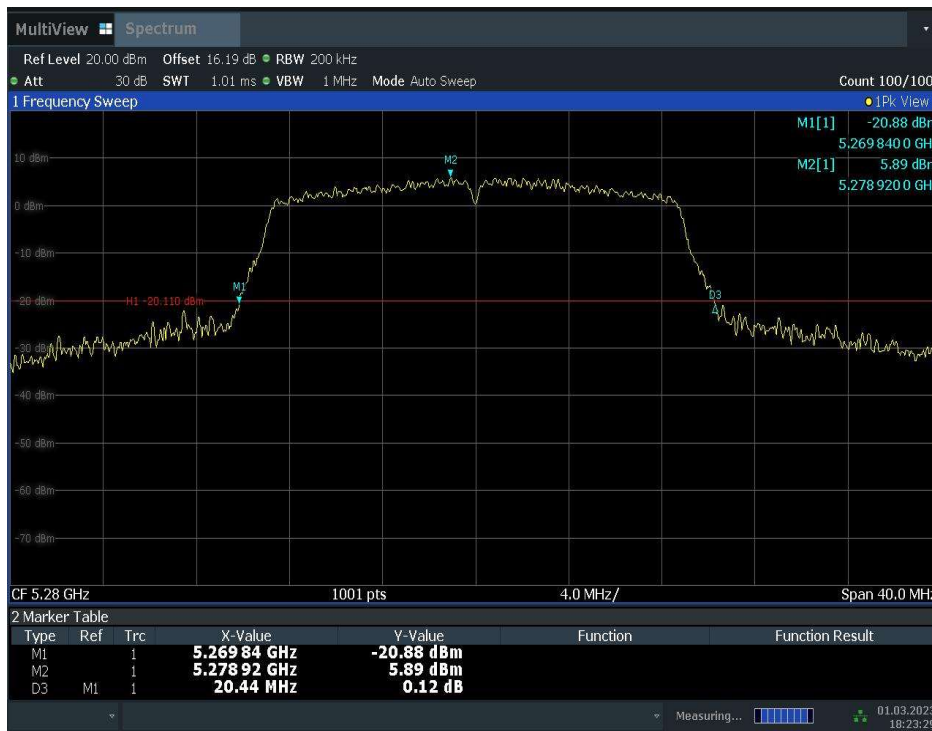
18:21:13 01.03.2023

Fig.9 Occupied 26dB Bandwidth (802.11n-HT20, 5240MHz)



18:22:40 01.03.2023

Fig.10 Occupied 26dB Bandwidth (802.11n-HT20, 5260MHz)



18:23:29 01.03.2023

Fig.11 Occupied 26dB Bandwidth (802.11n-HT20, 5280MHz)



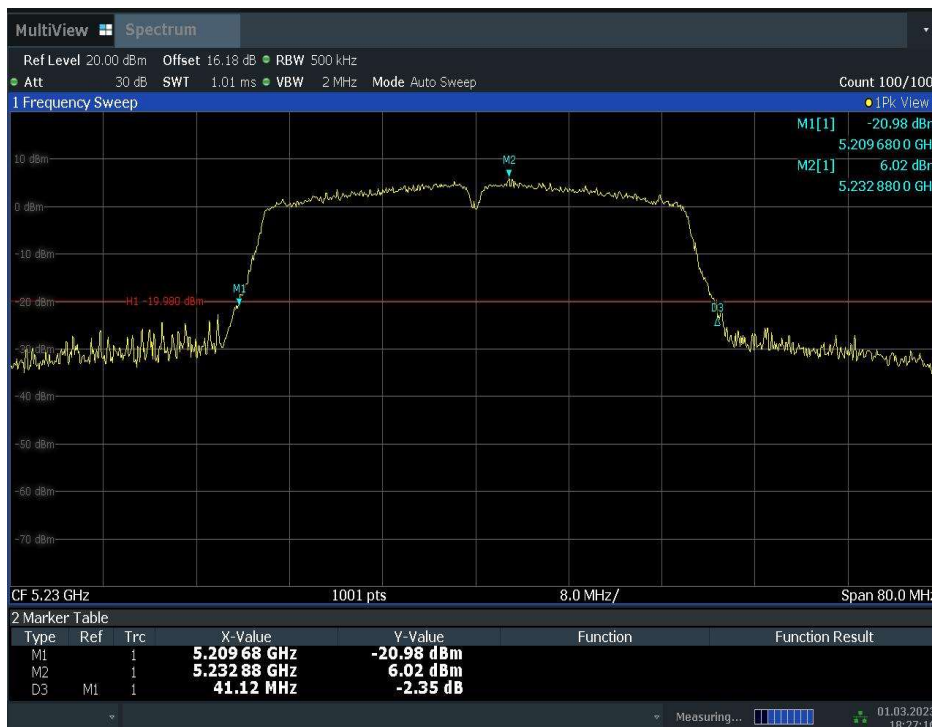
18:24:19 01.03.2023

Fig.12 Occupied 26dB Bandwidth (802.11n-HT20, 5320MHz)



18:26:42 01.03.2023

Fig.13 Occupied 26dB Bandwidth (802.11ac-HT40, 5190MHz)



18:27:17 01.03.2023

Fig.14 Occupied 26dB Bandwidth (802.11ac-HT40, 5230MHz)



18:27:54 01.03.2023

Fig.15 Occupied 26dB Bandwidth (802.11ac-HT40, 5270MHz)



18:28:29 01.03.2023

Fig.16 Occupied 26dB Bandwidth (802.11ac-HT40, 5310MHz)



18:30:26 01.03.2023

Fig.17 Occupied 26dB Bandwidth (802. 11ac-HT80, 5210MHz)



18:31:19 01.03.2023

Fig.18 Occupied 26dB Bandwidth (802. 11ac-HT80, 5290MHz)

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.19	P
	5320 MHz	Fig.20	P
802.11n HT20	5180 MHz	Fig.21	P
	5320 MHz	Fig.22	P
802.11n HT40	5190 MHz	Fig.23	P
	5310 MHz	Fig.24	P
802.11ac HT20	5180 MHz	Fig.25	P
	5320 MHz	Fig.26	P
802.11ac HT40	5190 MHz	Fig.27	P
	5310 MHz	Fig.28	P
802.11ac HT80	5210MHz	Fig.29	P
	5290MHz	Fig.30	P

Conclusion: PASS

Test graphs as below:

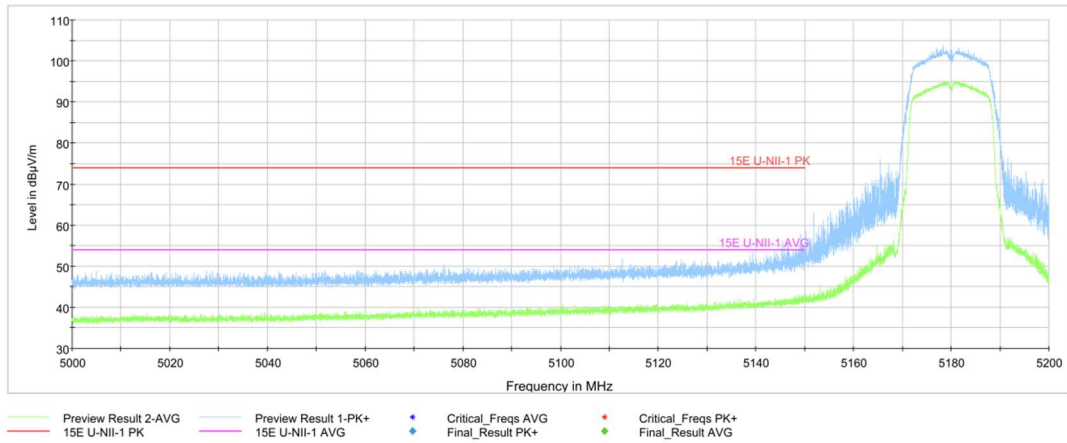


Fig.19 Band Edges (802.11a Ch36, 5180MHz)

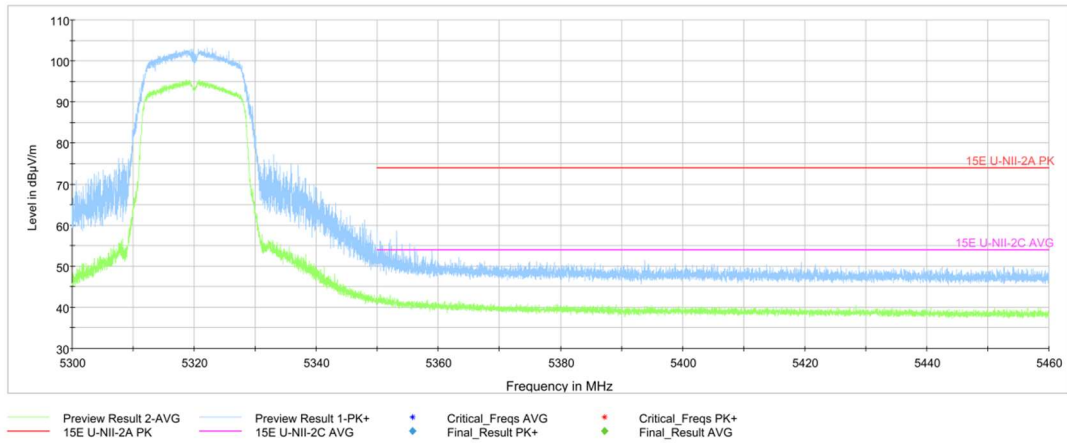


Fig.20 Band Edges (802.11a Ch64, 5320MHz)

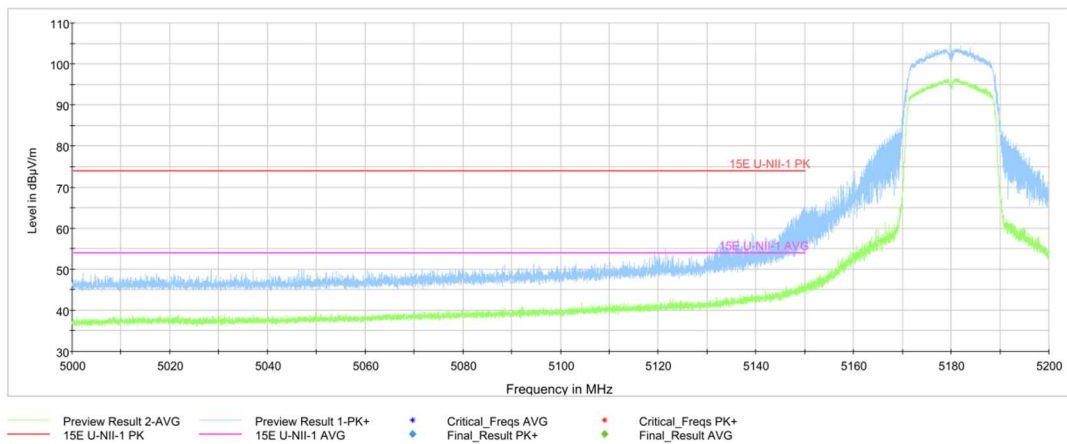


Fig.21 Band Edges (802.11n-HT20 Ch36, 5180MHz)

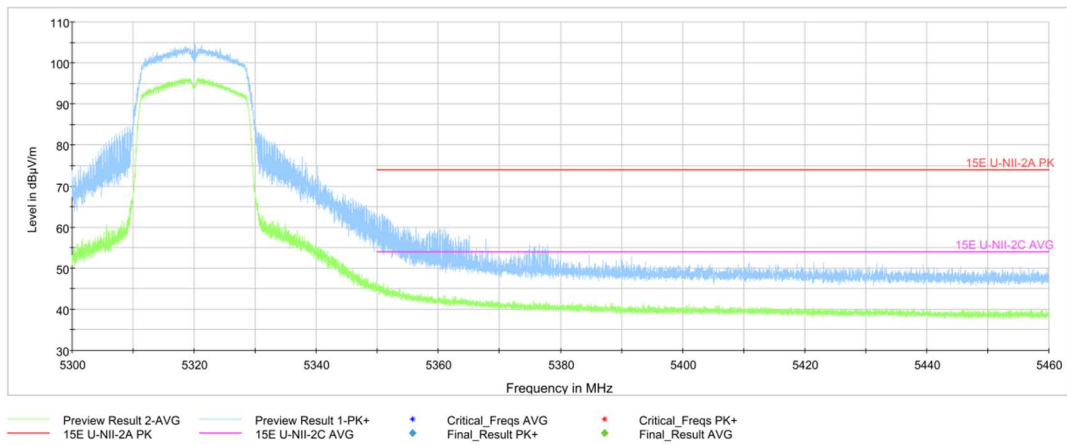


Fig.22 Band Edges (802.11n-HT20 Ch64, 5320MHz)

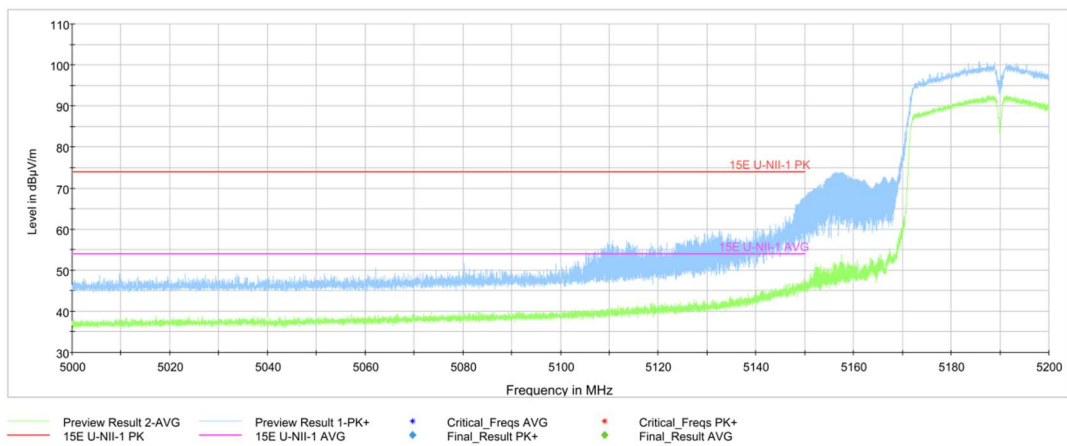


Fig.23 Band Edges (802.11n-HT40 Ch38, 5190MHz)

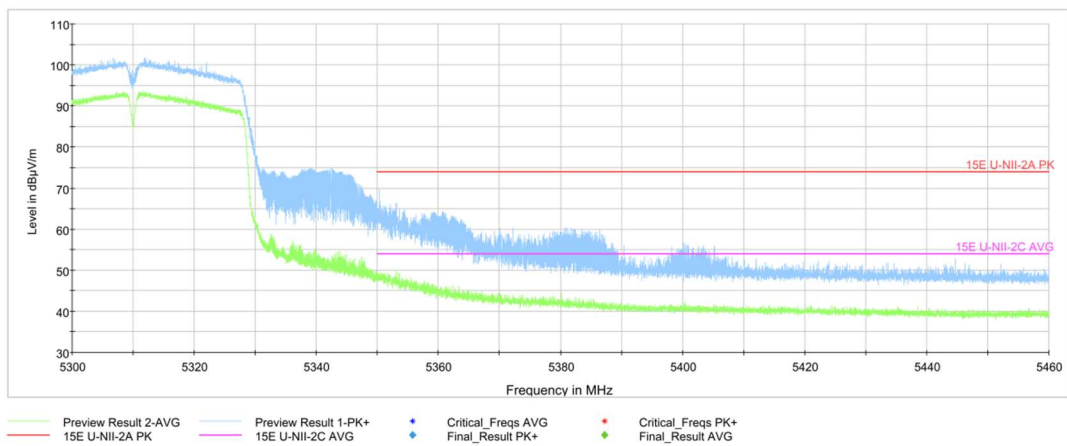


Fig.24 Band Edges (802.11n-HT40 Ch62, 5310MHz)

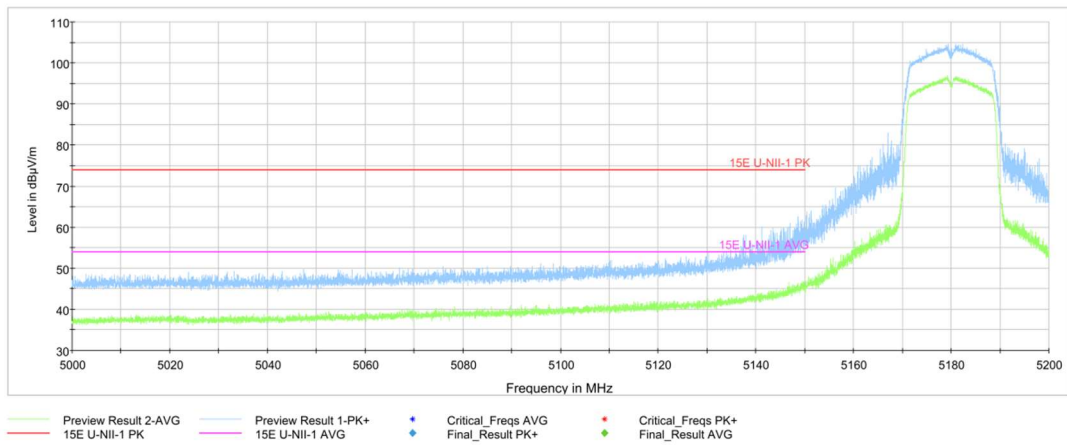


Fig.25 Band Edges (802.11ac-HT20 Ch36, 5180MHz)

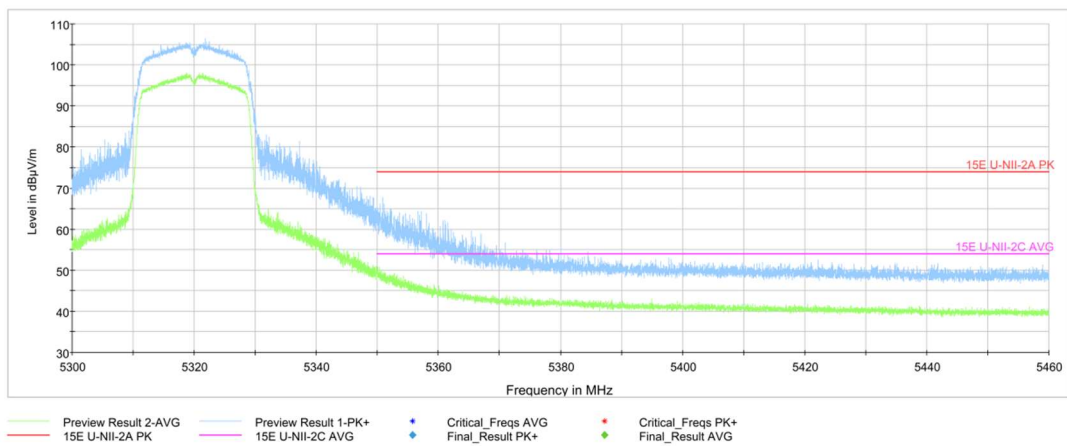


Fig.26 Band Edges (802.11ac-HT20 Ch64, 5320MHz)

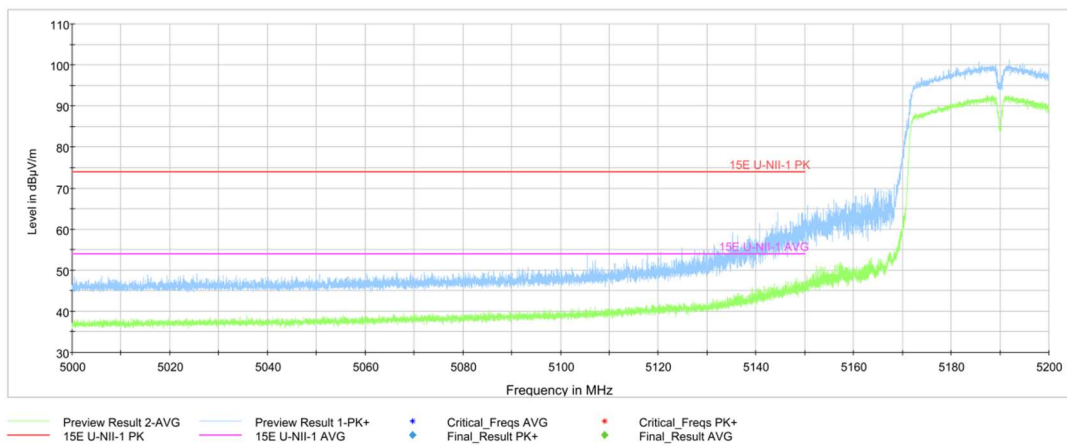


Fig.27 Band Edges (802.11ac-HT40 Ch38, 5190MHz)

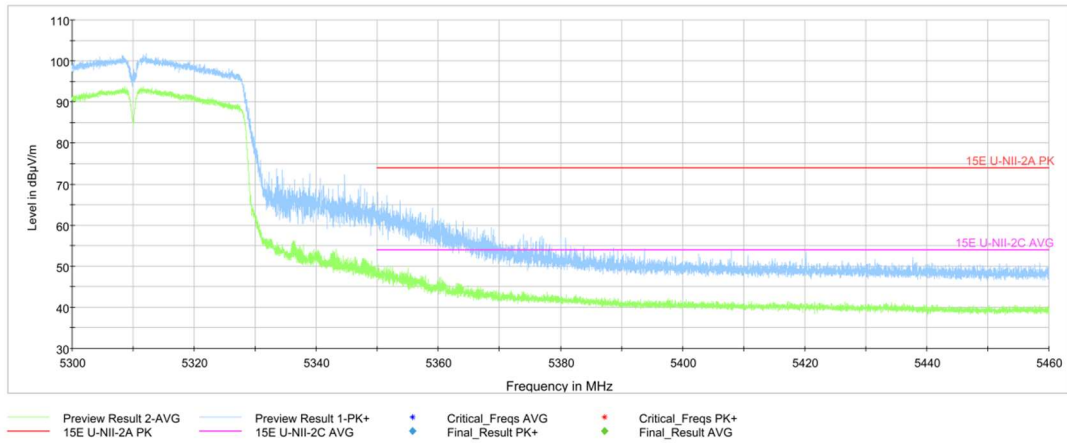


Fig.28 Band Edges (802.11ac-HT40 Ch62, 5310MHz)

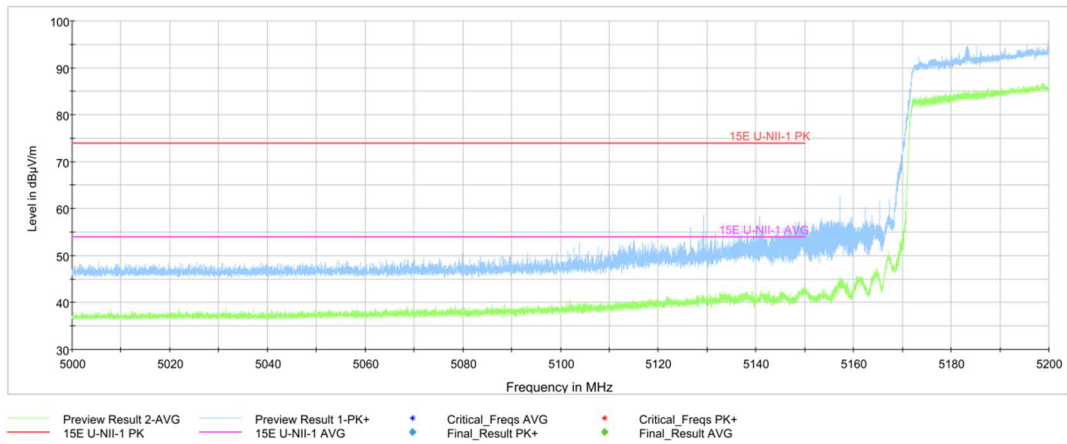


Fig.29 Band Edges (802.11ac-HT80 Ch42 , 5210MHz)

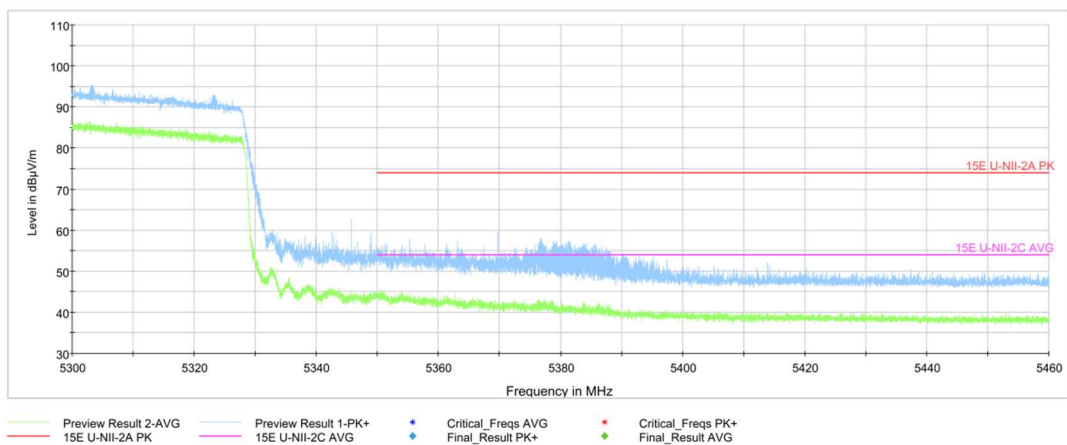


Fig.30 Band Edges (802.11ac-HT80 Ch58, 5290MHz)

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	---
	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
		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
		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	---
	106(5530MHz)	3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		122(5610MHz)	1 GHz ~ 3 GHz	---
	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)
8287.550	39.90	-34.97	37.56	37.30	54.00	14.10	H
17994.500	39.02	-25.50	46.66	17.86	54.00	14.98	H
17960.950	38.85	-25.50	46.66	17.69	54.00	15.15	V
8288.100	38.27	-34.97	37.56	35.67	54.00	15.73	H
5149.720	43.18	-27.61	33.67	37.12	54.00	10.82	H
5148.960	43.09	-27.61	33.67	37.03	54.00	10.91	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)
17977.450	38.76	-25.50	46.66	17.60	54.00	15.24	V
17965.900	38.56	-25.50	46.66	17.40	54.00	15.44	V
8320.000	38.18	-34.97	37.56	35.58	54.00	15.82	H
8319.450	37.19	-34.97	37.56	34.59	54.00	16.81	H
13290.350	36.51	-29.67	39.55	26.63	54.00	17.49	H
13262.850	36.09	-29.67	39.55	26.21	54.00	17.91	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)
17960.950	38.89	-25.50	46.66	17.73	54.00	15.11	V
17954.900	38.79	-25.50	46.66	17.63	54.00	15.21	H
8383.800	36.69	-34.50	37.68	33.51	54.00	17.31	H
13273.850	36.21	-29.67	39.55	26.33	54.00	17.79	H
13303.000	36.10	-29.49	39.71	25.88	54.00	17.90	H
11873.000	35.38	-31.85	39.05	28.18	54.00	18.62	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)
17990.650	38.23	-25.50	46.66	17.07	54.00	15.77	V
17962.050	38.14	-25.50	46.66	16.98	54.00	15.86	V
13304.100	35.76	-29.49	39.71	25.54	54.00	18.24	V
13261.200	35.61	-29.67	39.55	25.73	54.00	18.39	V
11880.150	35.00	-31.85	39.05	27.80	54.00	19.00	H
11856.500	34.85	-31.85	39.05	27.65	54.00	19.15	H

Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17994.500	38.50	-25.50	46.66	17.34	54.00	15.50	V
17961.500	38.39	-25.50	46.66	17.23	54.00	15.61	H
13284.300	35.96	-29.67	39.55	26.08	54.00	18.04	H
13298.050	35.93	-29.49	39.71	25.71	54.00	18.07	H
11888.400	34.81	-31.85	39.05	27.61	54.00	19.19	V
11880.150	34.73	-31.85	39.05	27.53	54.00	19.27	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)
17955.450	38.35	-25.50	46.66	17.19	54.00	15.65	V
17995.600	38.35	-25.50	46.66	17.19	54.00	15.65	H
13267.800	35.93	-29.67	39.55	26.05	54.00	18.07	H
13296.950	35.88	-29.49	39.71	25.66	54.00	18.12	H
5350.384	43.16	-27.43	34.01	36.58	54.00	10.84	H
5350.576	43.02	-27.43	34.01	36.44	54.00	10.98	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)
17986.250	39.30	-25.50	46.66	18.14	54.00	14.70	H
8287.550	38.75	-34.97	37.56	36.15	54.00	15.25	H
17980.750	38.69	-25.50	46.66	17.53	54.00	15.31	V
8288.100	37.69	-34.97	37.56	35.09	54.00	16.31	H
5149.300	46.86	-27.61	33.67	40.80	54.00	7.14	H
5149.860	46.39	-27.61	33.67	40.33	54.00	7.61	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)
17957.650	38.71	-25.50	46.66	17.55	54.00	15.29	H
17991.200	38.54	-25.50	46.66	17.38	54.00	15.46	V
8320.000	38.36	-34.97	37.56	35.76	54.00	15.64	H
8319.450	38.23	-34.97	37.56	35.63	54.00	15.77	H
13274.950	36.19	-29.67	39.55	26.31	54.00	17.81	H
13288.700	36.18	-29.67	39.55	26.30	54.00	17.82	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)
17912.000	39.00	-25.50	46.66	17.84	54.00	15.00	H
17980.750	38.95	-25.50	46.66	17.79	54.00	15.05	H
8383.800	37.86	-34.50	37.68	34.68	54.00	16.14	H
13270.000	36.54	-29.67	39.55	26.66	54.00	17.46	V
13291.450	36.07	-29.49	39.71	25.85	54.00	17.93	H
11861.450	35.13	-31.85	39.05	27.93	54.00	18.87	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)
17974.150	38.16	-25.50	46.66	17.00	54.00	15.84	H
17984.600	38.15	-25.50	46.66	16.99	54.00	15.85	H
13271.650	36.60	-29.67	39.55	26.72	54.00	17.40	V
13326.650	36.10	-29.49	39.71	25.88	54.00	17.90	H
11864.750	35.43	-31.85	39.05	28.23	54.00	18.57	H
11860.350	35.04	-31.85	39.05	27.84	54.00	18.96	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)
17977.450	38.16	-25.50	46.66	17.00	54.00	15.84	V
17941.150	38.11	-25.50	46.66	16.95	54.00	15.89	H
13270.000	35.95	-29.67	39.55	26.07	54.00	18.05	H
13300.800	35.95	-29.49	39.71	25.73	54.00	18.05	V
11876.300	34.89	-31.85	39.05	27.69	54.00	19.11	H
11871.900	34.79	-31.85	39.05	27.59	54.00	19.21	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17987.900	38.19	-25.50	46.66	17.03	54.00	15.81	V
17997.800	38.09	-25.50	46.66	16.93	54.00	15.91	V
13278.800	35.78	-29.67	39.55	25.90	54.00	18.22	V
13281.000	35.77	-29.67	39.55	25.89	54.00	18.23	V
5350.976	46.51	-27.43	34.01	39.93	54.00	7.49	H
5350.240	46.28	-27.43	34.01	39.70	54.00	7.72	H

802.11n-HT40

Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17960.400	38.48	-25.50	46.66	17.32	54.00	15.52	H
17990.650	38.46	-25.50	46.66	17.30	54.00	15.54	V
13261.750	35.88	-29.67	39.55	26.00	54.00	18.12	H
13266.700	35.88	-29.67	39.55	26.00	54.00	18.12	V
5149.920	48.01	-27.61	33.67	41.95	54.00	5.99	H
5149.660	47.33	-27.61	33.67	41.27	54.00	6.67	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)
17962.600	38.68	-25.50	46.66	17.52	54.00	15.32	H
17998.900	38.30	-25.50	46.66	17.14	54.00	15.70	H
13271.650	35.96	-29.67	39.55	26.08	54.00	18.04	H
13282.650	35.75	-29.67	39.55	25.87	54.00	18.25	V
11909.300	35.20	-31.85	39.05	28.00	54.00	18.80	V
11842.750	35.11	-31.85	39.05	27.91	54.00	18.89	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)
17967.550	39.19	-25.50	46.66	18.03	54.00	14.81	V
17989.550	38.68	-25.50	46.66	17.52	54.00	15.32	H
13291.450	35.97	-29.49	39.71	25.75	54.00	18.03	H
13302.450	35.95	-29.49	39.71	25.73	54.00	18.05	H
11884.550	34.90	-31.85	39.05	27.70	54.00	19.10	H
11853.750	34.87	-31.85	39.05	27.67	54.00	19.13	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)
17978.000	38.58	-25.50	46.66	17.42	54.00	15.42	H
17975.800	38.55	-25.50	46.66	17.39	54.00	15.45	V
13295.850	36.05	-29.49	39.71	25.83	54.00	17.95	H
13274.950	35.98	-29.67	39.55	26.10	54.00	18.02	H
5353.040	49.73	-27.43	34.01	43.15	54.00	4.27	H
5350.576	49.60	-27.43	34.01	43.02	54.00	4.40	H

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Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17913.650	39.10	-25.50	46.66	17.94	54.00	14.90	V
17981.850	38.56	-25.50	46.66	17.40	54.00	15.44	V
8287.550	38.23	-34.97	37.56	35.63	54.00	15.77	H
8288.100	37.27	-34.97	37.56	34.67	54.00	16.73	H
5149.620	46.88	-27.61	33.67	40.82	54.00	7.12	H
5149.840	46.69	-27.61	33.67	40.63	54.00	7.31	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)
17997.250	38.70	-25.50	46.66	17.54	54.00	15.30	H
8320.000	38.59	-34.97	37.56	35.99	54.00	15.41	H
17942.250	38.58	-25.50	46.66	17.42	54.00	15.42	H
8319.450	36.85	-34.97	37.56	34.25	54.00	17.15	H
13278.250	36.17	-29.67	39.55	26.29	54.00	17.83	H
13294.750	36.06	-29.49	39.71	25.84	54.00	17.94	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)
17968.650	39.44	-25.50	46.66	18.28	54.00	14.56	V
17949.950	38.62	-25.50	46.66	17.46	54.00	15.38	H
8383.800	38.53	-34.50	37.68	35.35	54.00	15.47	H
13279.350	35.87	-29.67	39.55	25.99	54.00	18.13	H

13288.700	35.82	-29.67	39.55	25.94	54.00	18.18	H
11888.400	35.10	-31.85	39.05	27.90	54.00	18.90	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)
17947.200	38.45	-25.50	46.66	17.29	54.00	15.55	V
17968.100	38.32	-25.50	46.66	17.16	54.00	15.68	H
13278.800	36.43	-29.67	39.55	26.55	54.00	17.57	V
13303.550	36.05	-29.49	39.71	25.83	54.00	17.95	H
11852.100	34.99	-31.85	39.05	27.79	54.00	19.01	V
11870.250	34.97	-31.85	39.05	27.77	54.00	19.03	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)
17997.800	38.45	-25.50	46.66	17.29	54.00	15.55	H
17979.650	38.24	-25.50	46.66	17.08	54.00	15.76	V
13277.700	36.37	-29.67	39.55	26.49	54.00	17.63	H
13304.100	36.27	-29.49	39.71	26.05	54.00	17.73	H
11869.150	35.00	-31.85	39.05	27.80	54.00	19.00	V
11858.700	34.77	-31.85	39.05	27.57	54.00	19.23	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)
17942.800	38.51	-25.50	46.66	17.35	54.00	15.49	V
17978.550	38.21	-25.50	46.66	17.05	54.00	15.79	V
13277.700	35.96	-29.67	39.55	26.08	54.00	18.04	V
13302.450	35.85	-29.49	39.71	25.63	54.00	18.15	H
5350.336	50.81	-27.43	34.01	44.23	54.00	3.19	H
5350.096	50.79	-27.43	34.01	44.21	54.00	3.21	H

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Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17991.750	38.20	-25.50	46.66	17.04	54.00	15.80	H
17943.350	38.19	-25.50	46.66	17.03	54.00	15.81	H
13278.250	36.13	-29.67	39.55	26.25	54.00	17.87	V
13283.200	36.01	-29.67	39.55	26.13	54.00	17.99	V
5148.300	48.15	-27.61	33.67	42.09	54.00	5.85	H
5148.020	47.35	-27.61	33.67	41.29	54.00	6.65	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)
17997.250	38.17	-25.50	46.66	17.01	54.00	15.83	H
17990.100	38.11	-25.50	46.66	16.95	54.00	15.89	H
13294.750	35.97	-29.49	39.71	25.75	54.00	18.03	H
13275.500	35.79	-29.67	39.55	25.91	54.00	18.21	H
11856.500	35.10	-31.85	39.05	27.90	54.00	18.90	V
11882.900	34.93	-31.85	39.05	27.73	54.00	19.07	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)
17991.750	38.45	-25.50	46.66	17.29	54.00	15.55	V
17967.000	38.43	-25.50	46.66	17.27	54.00	15.57	H
13272.750	36.26	-29.67	39.55	26.38	54.00	17.74	V
13310.700	36.04	-29.49	39.71	25.82	54.00	17.96	V
11869.700	35.22	-31.85	39.05	28.02	54.00	18.78	V
11864.200	35.19	-31.85	39.05	27.99	54.00	18.81	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)
17990.650	38.27	-25.50	46.66	17.11	54.00	15.73	V
17985.150	38.23	-25.50	46.66	17.07	54.00	15.77	H
13304.650	35.75	-29.49	39.71	25.53	54.00	18.25	V
13278.800	35.57	-29.67	39.55	25.69	54.00	18.43	V
5350.224	50.51	-27.43	34.01	43.93	54.00	3.49	H
5351.696	50.16	-27.43	34.01	43.58	54.00	3.84	H

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Channel 42

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17960.400	38.56	-25.50	46.66	17.40	54.00	15.44	H
17985.150	38.45	-25.50	46.66	17.29	54.00	15.55	H
13261.200	36.07	-29.67	39.55	26.19	54.00	17.93	H
13277.150	35.82	-29.67	39.55	25.94	54.00	18.18	H
5149.460	43.39	-27.61	33.67	37.33	54.00	10.61	H
5149.880	43.09	-27.61	33.67	37.03	54.00	10.91	H

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)
17991.750	38.27	-25.50	46.66	17.11	54.00	15.73	H
17997.800	38.18	-25.50	46.66	17.02	54.00	15.82	H
13304.650	36.12	-29.49	39.71	25.90	54.00	17.88	H
13267.250	36.10	-29.67	39.55	26.22	54.00	17.90	V
5350.480	45.42	-27.43	34.01	38.84	54.00	8.58	H
5350.960	45.18	-27.43	34.01	38.60	54.00	8.82	H

PEAK Results:
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Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17629.300	49.43	-25.74	45.95	29.22	68.20	18.77	H
17453.300	49.23	-26.85	45.25	30.83	68.20	18.97	V
14594.950	47.19	-27.29	41.90	32.58	68.20	21.01	V
14707.700	46.89	-28.32	41.35	33.87	68.20	21.31	H
5149.160	57.71	-27.61	33.67	51.65	74.00	16.29	H
5148.720	56.88	-27.61	33.67	50.82	74.00	17.12	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)
16951.700	49.16	-26.32	42.36	33.11	68.20	19.04	H
16949.500	49.08	-26.32	42.36	33.03	68.20	19.12	V
14065.850	47.49	-29.44	41.66	35.27	68.20	20.71	V
13296.950	46.66	-29.49	39.71	36.44	74.00	27.34	H
11843.300	45.47	-31.85	39.05	38.27	74.00	28.53	H
11406.600	45.41	-32.42	38.79	39.04	74.00	28.59	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)
17540.200	49.74	-26.85	45.25	31.34	68.20	18.46	H
16997.350	49.40	-26.32	42.36	33.35	68.20	18.80	H
13299.700	47.11	-29.49	39.71	36.89	74.00	26.89	H
13744.100	47.04	-29.10	40.86	35.27	68.20	21.16	H
11881.800	45.89	-31.85	39.05	38.69	74.00	28.11	V
11867.500	45.79	-31.85	39.05	38.59	74.00	28.21	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)
16846.100	48.51	-26.62	41.49	33.64	68.20	19.69	V
17230.550	48.48	-25.95	44.35	30.07	68.20	19.72	V
13650.050	46.89	-29.50	40.43	35.96	68.20	21.31	V
13687.450	46.89	-29.50	40.43	35.96	68.20	21.31	H
11805.900	45.22	-31.85	39.05	38.02	74.00	28.78	H
11857.600	45.09	-31.85	39.05	37.89	74.00	28.91	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)
17457.700	49.23	-26.85	45.25	30.83	68.20	18.97	V
17305.350	48.96	-25.95	44.35	30.55	68.20	19.24	H
13902.500	46.50	-29.51	41.30	34.71	68.20	21.70	H
14653.250	46.38	-27.29	41.90	31.77	68.20	21.82	V
11848.800	44.96	-31.85	39.05	37.76	74.00	29.04	V
11885.100	44.91	-31.85	39.05	37.71	74.00	29.09	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)
17445.050	49.08	-26.85	45.25	30.68	68.20	19.12	V
16829.050	48.75	-26.62	41.49	33.88	68.20	19.45	V
14587.250	46.50	-27.29	41.90	31.89	68.20	21.70	V
13266.700	46.21	-29.67	39.55	36.33	74.00	27.79	V
5353.200	58.64	-27.43	34.01	52.06	74.00	15.36	H
5352.080	56.57	-27.43	34.01	49.99	74.00	17.43	H

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Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
16918.150	49.42	-26.32	42.36	33.37	68.20	18.78	V
17936.750	49.06	-25.50	46.66	27.90	74.00	24.94	V
13268.350	46.97	-29.67	39.55	37.09	74.00	27.03	H
13857.950	46.73	-29.51	41.30	34.94	68.20	21.47	H
5149.900	65.13	-27.61	33.67	59.07	74.00	8.87	H
5149.960	65.04	-27.61	33.67	58.98	74.00	8.96	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)
17965.900	49.22	-25.50	46.66	28.06	74.00	24.78	V
17576.500	48.90	-25.74	45.95	28.69	68.20	19.30	H
14594.950	48.55	-27.29	41.90	33.94	68.20	19.65	H
13824.950	47.01	-29.10	40.86	35.24	68.20	21.19	H
11380.750	45.59	-32.42	38.79	39.22	74.00	28.41	V
11089.800	45.45	-32.49	38.72	39.21	74.00	28.55	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)
17445.600	49.86	-26.85	45.25	31.46	68.20	18.34	H
16787.250	49.43	-26.62	41.49	34.56	68.20	18.77	V
13268.350	46.92	-29.67	39.55	37.04	74.00	27.08	H
14596.600	46.78	-27.29	41.90	32.17	68.20	21.42	V
10473.250	45.89	-32.99	38.27	40.60	68.20	22.31	V
10860.450	45.48	-32.33	38.59	39.22	74.00	28.52	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)
17022.100	49.36	-26.32	42.36	33.31	68.20	18.84	H
17045.750	49.32	-26.60	43.36	32.56	68.20	18.88	V
14597.150	47.33	-27.29	41.90	32.72	68.20	20.87	V
14202.250	46.65	-28.99	42.00	33.63	68.20	21.55	H
11534.200	45.46	-32.26	38.84	38.89	74.00	28.54	V
11908.200	45.43	-31.85	39.05	38.23	74.00	28.57	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)
17897.150	48.95	-25.50	46.66	27.79	74.00	25.05	H
16856.550	48.75	-26.62	41.49	33.88	68.20	19.45	V
14068.600	47.59	-29.44	41.66	35.37	68.20	20.61	H
13272.750	47.21	-29.67	39.55	37.33	74.00	26.79	V
11897.200	45.26	-31.85	39.05	38.06	74.00	28.74	H
11790.500	44.99	-31.99	38.98	38.00	74.00	29.01	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)
16968.750	49.11	-26.32	42.36	33.06	68.20	19.09	H
17998.900	48.73	-25.50	46.66	27.57	74.00	25.27	H
14181.350	46.88	-28.99	42.00	33.86	68.20	21.32	V
13848.050	46.30	-29.51	41.30	34.51	68.20	21.90	V
5350.864	63.25	-27.43	34.01	56.67	74.00	10.75	H
5350.768	63.22	-27.43	34.01	56.64	74.00	10.78	H

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Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
16986.900	49.18	-26.32	42.36	33.13	68.20	19.02	V
16780.650	48.65	-26.62	41.49	33.78	68.20	19.55	H
14079.600	46.95	-29.44	41.66	34.73	68.20	21.25	H
13911.300	46.78	-29.51	41.30	34.99	68.20	21.42	V
5149.920	67.80	-27.61	33.67	61.74	74.00	6.20	H
5149.760	67.51	-27.61	33.67	61.45	74.00	6.49	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)
17250.900	49.15	-25.95	44.35	30.74	68.20	19.05	V
17251.450	49.12	-25.95	44.35	30.71	68.20	19.08	V
14603.750	46.38	-27.29	41.90	31.77	68.20	21.82	V
14004.800	46.30	-29.44	41.66	34.08	68.20	21.90	H
11851.000	46.04	-31.85	39.05	38.84	74.00	27.96	V
11881.800	45.34	-31.85	39.05	38.14	74.00	28.66	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)
17547.900	49.43	-26.85	45.25	31.03	68.20	18.77	H
17534.700	49.01	-26.85	45.25	30.61	68.20	19.19	V
13882.700	47.40	-29.51	41.30	35.61	68.20	20.80	H
14591.100	46.98	-27.29	41.90	32.37	68.20	21.22	H
11786.100	44.94	-31.99	38.98	37.95	74.00	29.06	V
8955.250	44.80	-33.28	38.19	39.89	68.20	23.40	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)
17044.100	49.51	-26.32	42.36	33.46	68.20	18.69	H
17445.600	49.34	-26.85	45.25	30.94	68.20	18.86	V
14595.500	47.53	-27.29	41.90	32.92	68.20	20.67	H
14691.750	46.66	-28.32	41.35	33.64	68.20	21.54	V
5350.304	69.68	-27.43	34.01	63.10	74.00	4.32	H
5350.400	66.79	-27.43	34.01	60.21	74.00	7.21	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)
16955.550	49.52	-26.32	42.36	33.47	68.20	18.68	H
16867.550	49.35	-26.62	41.49	34.48	68.20	18.85	H
13932.200	47.13	-29.51	41.30	35.34	68.20	21.07	V
14117.550	46.74	-28.99	42.00	33.72	68.20	21.46	H
5148.680	62.72	-27.61	33.67	56.66	74.00	11.28	H
5149.500	61.78	-27.61	33.67	55.72	74.00	12.22	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)
16967.650	49.14	-26.32	42.36	33.09	68.20	19.06	V
17039.150	48.81	-26.32	42.36	32.76	68.20	19.39	V
14605.400	47.93	-27.29	41.90	33.32	68.20	20.27	V
14524.550	47.48	-28.59	42.46	33.61	68.20	20.72	V
10463.900	46.45	-33.22	38.19	41.48	68.20	21.75	H
10400.100	45.75	-33.22	38.19	40.78	68.20	22.45	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)
17044.100	49.33	-26.32	42.36	33.28	68.20	18.87	V
16798.800	48.97	-26.62	41.49	34.10	68.20	19.23	V
13283.750	46.60	-29.67	39.55	36.72	74.00	27.40	H
14723.100	46.59	-28.32	41.35	33.57	68.20	21.61	H

10479.850	45.67	-32.99	38.27	40.38	68.20	22.53	V
8970.650	45.51	-33.28	38.19	40.60	68.20	22.69	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)
17991.750	49.29	-25.50	46.66	28.13	74.00	24.71	H
17154.650	49.03	-26.60	43.36	32.27	68.20	19.17	V
13872.800	47.31	-29.51	41.30	35.52	68.20	20.89	V
14165.950	47.07	-28.99	42.00	34.05	68.20	21.13	H
11870.250	45.70	-31.85	39.05	38.50	74.00	28.30	H
11776.750	45.47	-31.99	38.98	38.48	74.00	28.53	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)
17141.450	49.75	-26.60	43.36	32.99	68.20	18.45	V
17344.950	49.42	-25.95	44.35	31.01	68.20	18.78	H
13155.050	47.67	-30.13	39.39	38.40	68.20	20.53	H
13923.950	47.00	-29.51	41.30	35.21	68.20	21.20	V
11286.150	45.34	-32.36	38.77	38.94	74.00	28.66	V
11351.050	45.23	-32.42	38.79	38.86	74.00	28.77	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17637.000	49.01	-25.74	45.95	28.80	68.20	19.19	H
17346.050	48.97	-25.95	44.35	30.56	68.20	19.23	H
13912.400	47.26	-29.51	41.30	35.47	68.20	20.94	V
14602.650	46.77	-27.29	41.90	32.16	68.20	21.43	V
5350.896	67.75	-27.43	34.01	61.17	74.00	6.25	H
5350.416	66.19	-27.43	34.01	59.61	74.00	7.81	H

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)
17054.000	48.57	-26.60	43.36	31.81	68.20	19.63	H
16946.750	48.40	-26.32	42.36	32.35	68.20	19.80	V
14020.750	46.93	-29.44	41.66	34.71	68.20	21.27	H
14576.800	46.54	-27.29	41.90	31.93	68.20	21.66	H
5149.500	64.25	-27.61	33.67	58.19	74.00	9.75	H
5144.480	64.04	-27.61	33.67	57.98	74.00	9.96	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)
17228.900	49.35	-25.95	44.35	30.94	68.20	18.85	H
17225.600	49.16	-25.95	44.35	30.75	68.20	19.04	H
14120.850	46.49	-28.99	42.00	33.47	68.20	21.71	H
12764.000	46.29	-30.47	39.06	37.70	68.20	21.91	V
11797.650	45.56	-31.85	39.05	38.36	74.00	28.44	H
11866.950	45.31	-31.85	39.05	38.11	74.00	28.69	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)
17443.400	49.10	-26.85	45.25	30.70	68.20	19.10	H
16756.450	48.94	-26.62	41.49	34.07	68.20	19.26	V
13920.100	46.48	-29.51	41.30	34.69	68.20	21.72	V
13306.300	46.39	-29.49	39.71	36.17	74.00	27.61	V
11844.950	45.53	-31.85	39.05	38.33	74.00	28.47	V
11864.750	45.41	-31.85	39.05	38.21	74.00	28.59	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)
17552.300	49.42	-26.85	45.25	31.02	68.20	18.78	H
17381.800	48.76	-25.95	44.35	30.35	68.20	19.44	V
13276.050	47.31	-29.67	39.55	37.43	74.00	26.69	V
13943.750	46.58	-29.51	41.30	34.79	68.20	21.62	H
5350.048	68.01	-27.43	34.01	61.43	74.00	5.99	H
5351.584	67.20	-27.43	34.01	60.62	74.00	6.80	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)
16924.200	49.03	-26.32	42.36	32.98	68.20	19.17	H
17038.600	48.93	-26.32	42.36	32.88	68.20	19.27	V
13298.600	46.56	-29.49	39.71	36.34	74.00	27.44	V
14548.750	46.38	-27.29	41.90	31.77	68.20	21.82	H
5129.300	58.50	-27.61	33.67	52.44	74.00	15.50	H
5140.740	58.28	-27.61	33.67	52.22	74.00	15.72	H

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)
17560.550	49.68	-26.85	45.25	31.28	68.20	18.52	H
17441.750	49.17	-26.85	45.25	30.77	68.20	19.03	H
13729.800	46.71	-29.10	40.86	34.94	68.20	21.49	V
13382.200	46.46	-29.49	39.71	36.24	74.00	27.54	H
5369.696	59.65	-27.43	34.01	53.07	74.00	14.35	H
5376.624	57.94	-27.36	34.09	51.22	74.00	16.06	H

Conclusion: PASS

Sample calculation: 17560.550MHz

$$\text{Peak ERP(dBm)} = P_{\text{Mea}}(31.28\text{dBuV/m}) + \text{Cable Loss}(-26.85) + \text{Antenna Factor}(45.25) = 49.68 \text{ dBuV/m}$$

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.31	Fig.32	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.31	Fig.32	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:

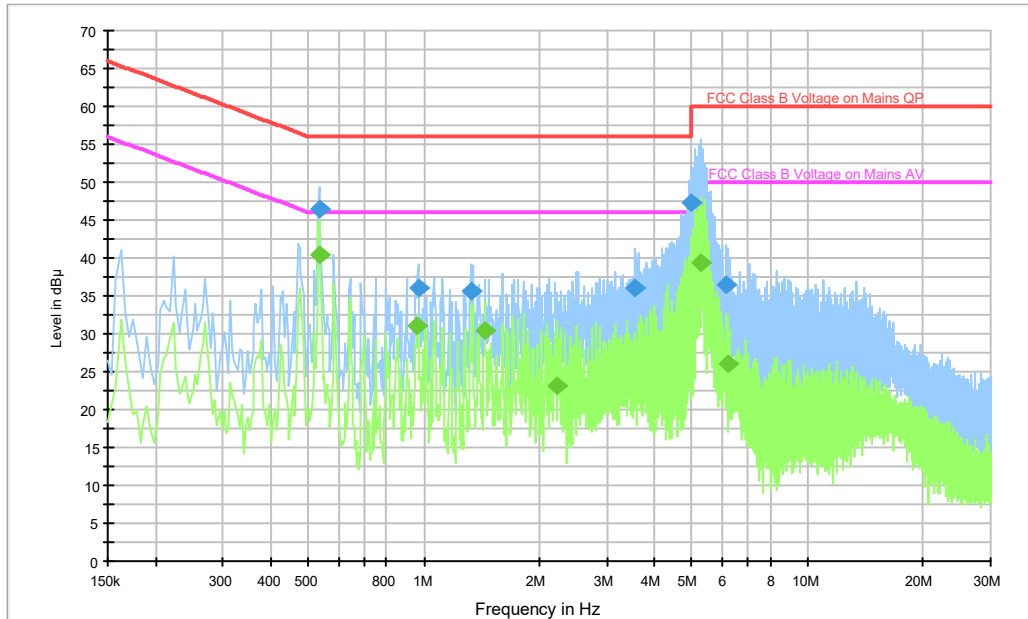


Fig.31 Conducted Emission (802.11a, Ch36, TX)

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

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.534000	46.5	2000.0	9.000	On	L1	19.7	9.5	56.0
0.966000	36.1	2000.0	9.000	On	N	19.6	19.9	56.0
1.326000	35.7	2000.0	9.000	On	L1	19.6	20.3	56.0
3.562000	36.1	2000.0	9.000	On	L1	19.6	19.9	56.0
4.990000	47.3	2000.0	9.000	On	L1	19.6	8.7	56.0
6.162000	36.4	2000.0	9.000	On	L1	19.6	23.6	60.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.534000	40.4	2000.0	9.000	On	N	19.7	5.6	46.0
0.962000	31.0	2000.0	9.000	On	L1	19.7	15.0	46.0
1.442000	30.4	2000.0	9.000	On	L1	19.7	15.6	46.0
2.230000	23.2	2000.0	9.000	On	L1	19.6	22.8	46.0
5.278000	39.4	2000.0	9.000	On	L1	19.6	10.6	50.0
6.218000	26.1	2000.0	9.000	On	L1	19.6	23.9	50.0

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

Idle:

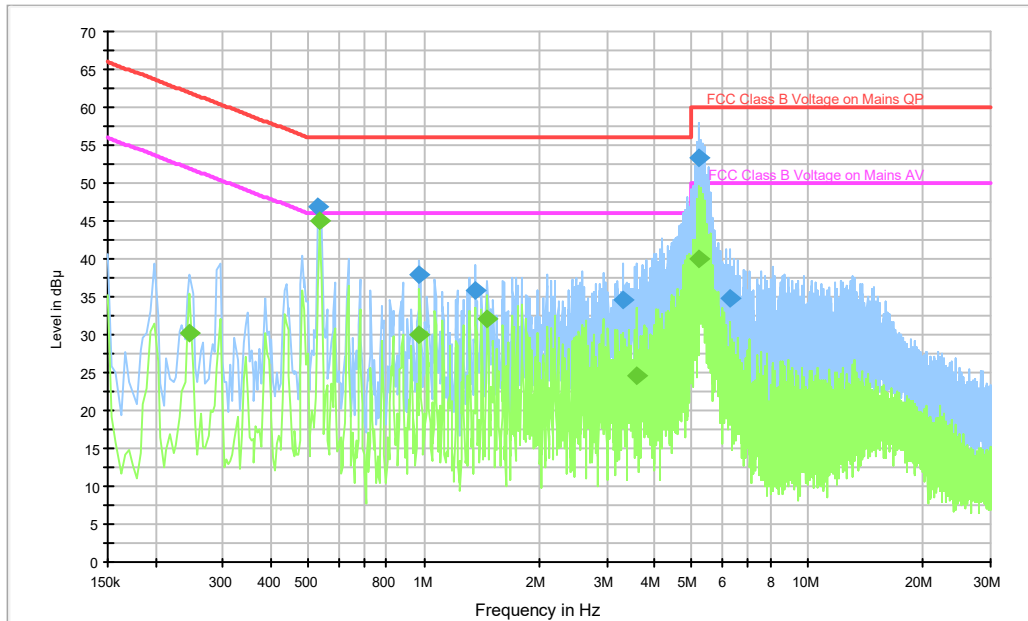


Fig.32 Conducted Emission(802.11a, IDLE)

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)
0.530000	46.8	2000.0	9.000	On	L1	19.7	9.2	56.0
0.974000	37.9	2000.0	9.000	On	N	19.6	18.1	56.0
1.362000	35.9	2000.0	9.000	On	L1	19.6	20.1	56.0
3.318000	34.7	2000.0	9.000	On	L1	19.6	21.3	56.0
5.202000	53.3	2000.0	9.000	On	L1	19.6	6.7	60.0
6.250000	34.8	2000.0	9.000	On	L1	19.6	25.2	60.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.246000	30.1	2000.0	9.000	On	N	19.7	21.8	51.9
0.534000	45.1	2000.0	9.000	On	L1	19.7	0.9	46.0
0.974000	30.0	2000.0	9.000	On	N	19.6	16.0	46.0
1.466000	32.0	2000.0	9.000	On	L1	19.7	14.0	46.0
3.598000	24.6	2000.0	9.000	On	L1	19.6	21.4	46.0
5.202000	40.0	2000.0	9.000	On	L1	19.6	10.0	50.0

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:

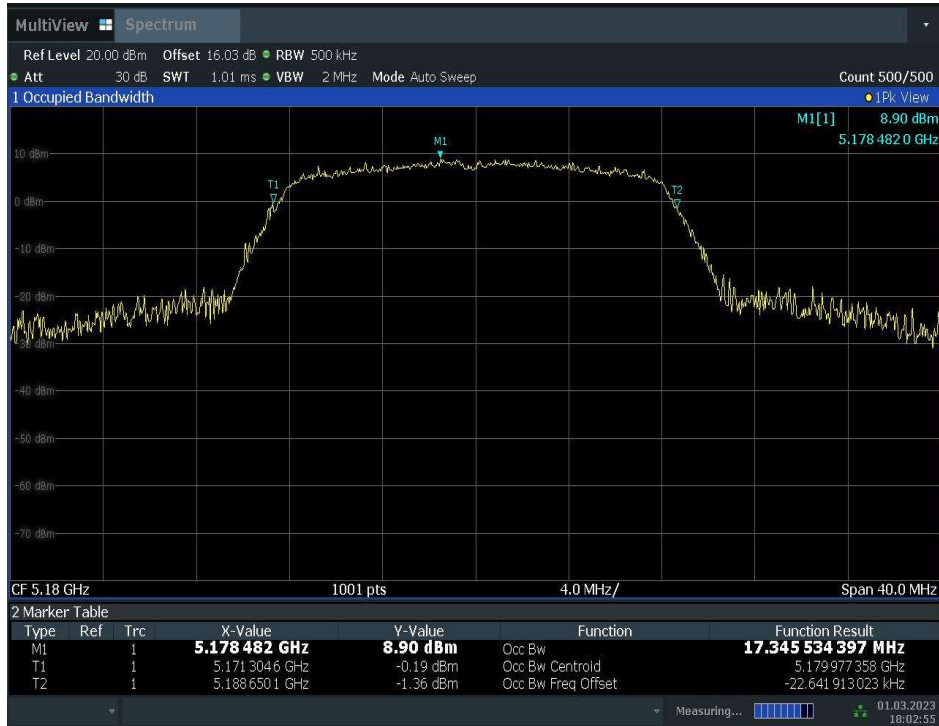
Measurement Uncertainty	60.80Hz
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Measurement Result:

Mode	Frequency	99% Occupied bandwidth (MHz)		conclusion
802.11a	5180 MHz	Fig.33	17.35	P
	5200 MHz	Fig.34	17.23	P
	5240 MHz	Fig.35	17.20	P
802.11n HT20	5180 MHz	Fig.36	18.16	P
	5200 MHz	Fig.37	18.10	P
	5240 MHz	Fig.38	18.16	P
802.11ac HT40	5190 MHz	Fig.39	36.36	P
	5230 MHz	Fig.40	36.33	P
802.11ac HT80	5210 MHz	Fig.41	75.31	P

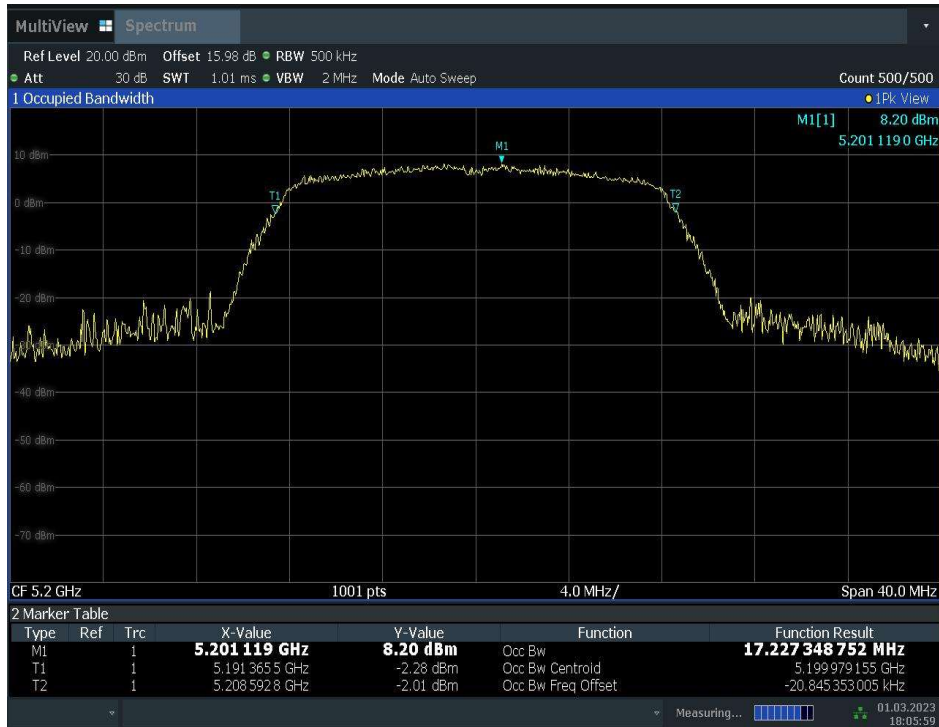
Conclusion: PASS

Test graphs as below:



18:02:56 01.03.2023

Fig.33 99% Occupied bandwidth (802.11a, 5180MHz)



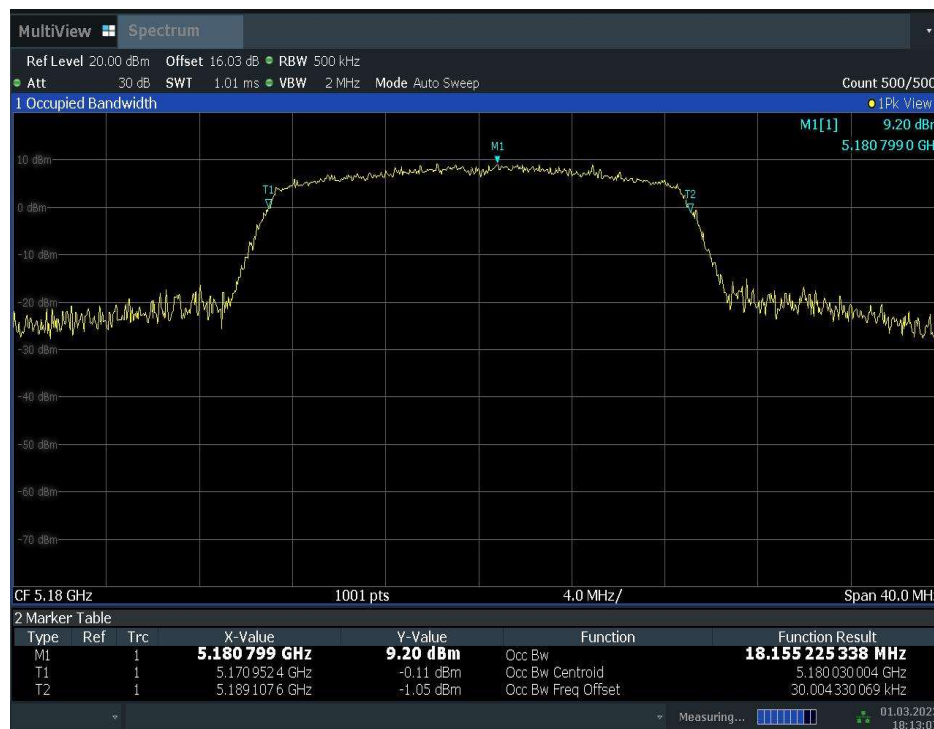
18:06:00 01.03.2023

Fig.34 99% Occupied bandwidth (802.11a, 5200MHz)



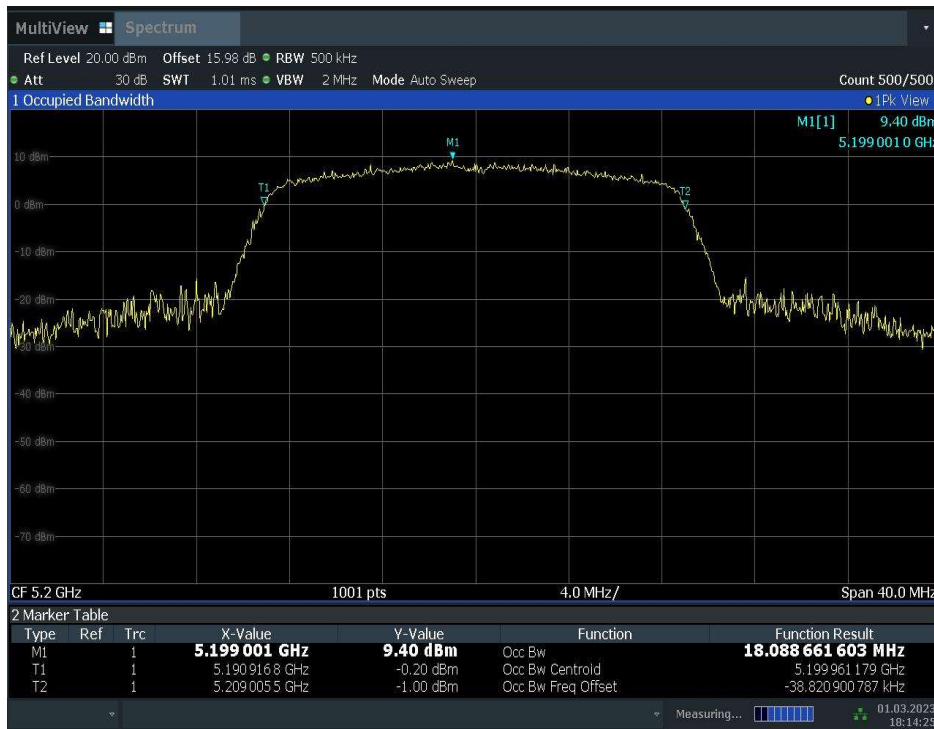
18:06:40 01.03.2023

Fig.35 99% Occupied bandwidth (802.11a, 5240MHz)



18:13:07 01.03.2023

Fig.36 99% Occupied bandwidth (802.11n-HT20, 5180MHz)



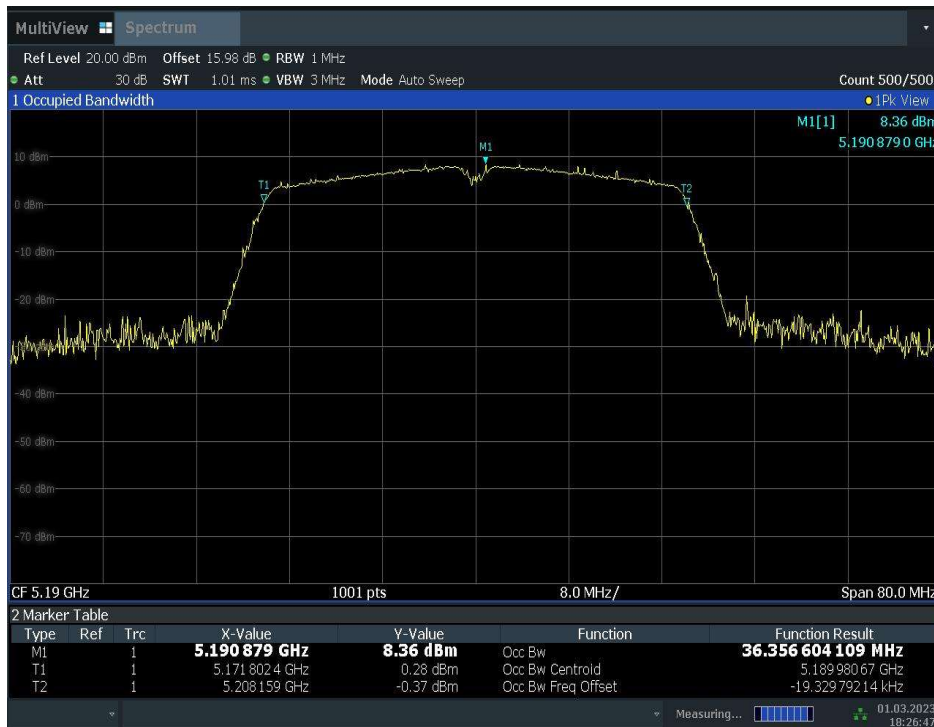
18:14:25 01.03.2023

Fig.37 99% Occupied bandwidth (802.11n-HT20, 5200MHz)



18:21:19 01.03.2023

Fig.38 99% Occupied bandwidth (802.11n-HT20, 5240MHz)



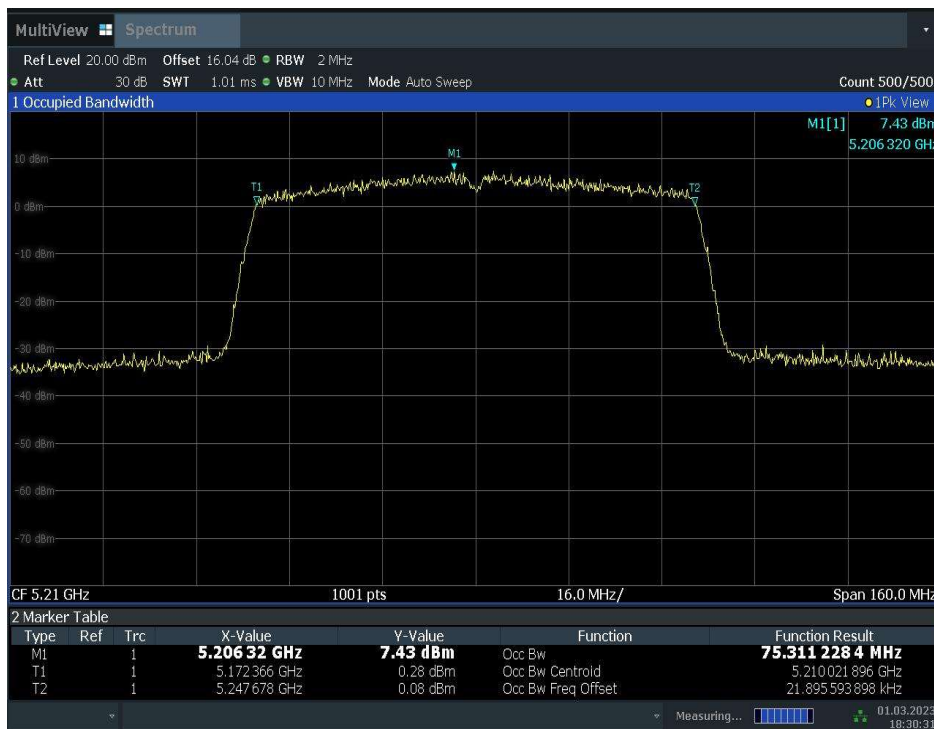
18:26:48 01.03.2023

Fig.39 99% Occupied bandwidth (802.11ac-HT40, 5190MHz)



18:27:22 01.03.2023

Fig.40 99% Occupied bandwidth (802.11ac-HT40, 5230MHz)



18:30:31 01.03.2023

Fig.41 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 ***