

FCC Measurement/Technical Report on

WLAN and Bluetooth Module

JODY-W5

FCC ID: XPYJODYW562
IC: 8595A-JODYW562

Test Report Reference: MDE_UBLOX_2317_FCC_02

Test Laboratory:

7layers GmbH
Borsigstrasse 11
40880 Ratingen
Germany



Deutsche
Akkreditierungsstelle
D-PL-12140-01-00

Note:

The following test results relate only to the devices specified in this document. This report shall not be reproduced in parts without the written approval of the test laboratory.

7layers GmbH

Borsigstraße 11
40880 Ratingen, Germany
T +49 (0) 2102 749 0
F +49 (0) 2102 749 350

Geschäftsführer/
Managing Directors:
Sebastian Doose
Bernhard Retka

Registergericht/registered:
Düsseldorf HRB 75554
USt-Id.-Nr./VAT-No. DE203159652
Steuer-Nr./TAX-No. 147/5869/0385

a Bureau Veritas
Group Company

www.7layers.com

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1 APPLIED STANDARDS AND TEST SUMMARY

1.1 APPLIED STANDARDS

Type of Authorization

Certification for an Intentional Radiator (Digital Device / Spread Spectrum).

Applicable FCC Rules

Prepared in accordance with the requirements of FCC Rules and Regulations as listed in 47 CFR Ch.1 Parts 2 and 15 (10-1-23 Edition). The following subparts are applicable to the results in this test report.

Part 2, Subpart J - Equipment Authorization Procedures, Certification

Part 15, Subpart C – Intentional Radiators

§ 15.201 Equipment authorization requirement

§ 15.207 Conducted limits

§ 15.209 Radiated emission limits; general requirements

Part 15, Subpart E – Unlicensed National Information Infrastructure Devices

§ 15.403 Definitions

§ 15.407 General technical requirements

Note:

The tests were selected and performed with reference to the FCC KDB "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, 789033 D02 General U-NII Test Procedures New Rules v02r01, 2017-12-14". and

"GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE 6 GHz (U-NII) DEVICES PART 15, SUBPART E, 987594 D02 U-NII 6GHz EMC Measurement v01r01, 2021-02-04".

ANSI C63.10-2013 is applied.

1.2 FCC-IC CORRELATION TABLE

Correlation of measurement requirements for UNII / LE-LAN (e.g. WLAN 5 GHz) equipment from FCC and IC

UNII equipment

Measurement	FCC reference	IC reference
Conducted emissions on AC Mains	§ 15.207	RSS-Gen Issue 5 & AMD 1 & AMD 2: 8.8
Occupied bandwidth	§ 15.403 (26 dB) / § 15.407 (e) (6 dB)	RSS-247 Issue 3: 6.2.1.1, 6.2.2.1, 6.2.3.1 (99%) RSS-247 Issue 3: 6.2.4.2 (6 dB) RSS-248 Issue 2: 4.4
Maximum conducted output power	§ 15.407 (a) (1) to (8), (11)	RSS-247 Issue 3: 6.2.1.1, 6.2.2.1, 6.2.3.1, 6.2.4.2 RSS-248 Issue 2: 4.5
Maximum power spectral density	§ 15.407 (a) (1) to (8), (12)	RSS-247 Issue 3: 6.2.1.1, 6.2.2.1, 6.2.3.1, 6.2.4.1 RSS-248 Issue 2: 4.5
Transmitter undesirable emissions; General Field Strength Limits, Restricted Bands, In-Band Emissions	§ 15.407 (b) § 15.209 (a)	RSS-Gen Issue 5: 6.13/8.9/8.10; RSS-247 Issue 3: 3.3/6.2 6.2.1.2, 6.2.2.2, 6.2.3.2, 6.2.4.2 RSS-248 Issue 2: 4.6
Frequency stability	§ 15.407 (g)	RSS-Gen Issue 5: 6.11/8.11
Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS)	§ 15.407 (h)	RSS-247 Issue 3: 6.2.2.1, 6.2.3.1, 6.3
Antenna requirement	§ 15.203 / 15.204 § 15.407 (a) (9)	RSS-Gen Issue 5 & AMD 1 & AMD 2: 8.3
Contention Based Protocol	§ 15.407 (d) (6)	RSS-248 Issue 2: 4.7
Receiver spurious emissions	-	-

1.3 MEASUREMENT SUMMARY

47 CFR CHAPTER I FCC PART 15 Subpart E §15.407 FCC §15.207

AC Conducted Emissions

The measurement was performed according to ANSI C63.10, chapter 6.2

Final Result

OP-Mode

Operating mode

worst case

Setup

S06_AC02

Date

2024-10-16

FCC

Passed

IC

Passed

47 CFR CHAPTER I FCC PART 15 Subpart E §15.407 FCC §15.31, §15.403 (i)

26 dB Bandwidth

The measurement was performed according to ANSI C63.10, chapter 12.4.1

Final Result

OP-Mode

Radio Technology, Operating Frequency, Subband

Setup

Date

FCC

IC

WLAN a, high, U-NII-1

S01_AD02

2024-09-03

Performed

N/A

WLAN a, high, U-NII-2A

S01_AD02

2024-08-15

Performed

N/A

WLAN a, high, U-NII-2C

S01_AD02

2024-09-05

Performed

N/A

WLAN a, low, U-NII-1

S01_AD02

2024-09-03

Performed

N/A

WLAN a, low, U-NII-2A

S01_AD02

2024-09-03

Performed

N/A

WLAN a, low, U-NII-2C

S01_AD02

2024-09-05

Performed

N/A

WLAN a, mid, U-NII-1

S01_AD02

2024-09-03

Performed

N/A

WLAN a, mid, U-NII-2A

S01_AD02

2024-09-03

Performed

N/A

WLAN a, mid, U-NII-2C

S01_AD02

2024-08-15

Performed

N/A

WLAN a, straddle, U-NII-2C + U-NII-3

S01_AD02

2024-08-15

Performed

N/A

WLAN ac 20 MHz, high, U-NII-1

S01_AD02

2024-09-03

Performed

N/A

WLAN ac 20 MHz, high, U-NII-2A

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 20 MHz, high, U-NII-2C

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 20 MHz, low, U-NII-1

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 20 MHz, low, U-NII-2A

S01_AD02

2024-07-25

Performed

N/A

WLAN ac 20 MHz, low, U-NII-2C

S01_AD02

2024-09-09

Performed

N/A

WLAN ac 20 MHz, mid, U-NII-1

S01_AD02

2024-09-03

Performed

N/A

WLAN ac 20 MHz, mid, U-NII-2A

S01_AD02

2024-09-03

Performed

N/A

WLAN ac 20 MHz, mid, U-NII-2C

S01_AD02

2024-07-25

Performed

N/A

WLAN ac 20 MHz, straddle, U-NII-2C + U-NII-3

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 40 MHz, high, U-NII-1

S01_AD02

2024-09-03

Performed

N/A

WLAN ac 40 MHz, high, U-NII-2A

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 40 MHz, high, U-NII-2C

S01_AD02

2024-09-05

Performed

N/A

WLAN ac 40 MHz, low, U-NII-1

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 40 MHz, low, U-NII-2A

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 40 MHz, low, U-NII-2C

S01_AD02

2024-09-05

Performed

N/A

WLAN ac 40 MHz, mid, U-NII-2C

S01_AD02

2024-08-19

Performed

N/A

WLAN ac 40 MHz, straddle, U-NII-2C + U-NII-3

S01_AD02

2024-11-15

Performed

N/A

WLAN ac 80 MHz, low, U-NII-2C

S01_AD02

2024-08-20

Performed

N/A

47 CFR CHAPTER I FCC PART 15 Subpart E §15.407

26 dB Bandwidth

The measurement was performed according to ANSI C63.10, chapter 12.4.1

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN ac 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	Performed	N/A
WLAN ac 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	Performed	N/A
WLAN ac 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-09-03	Performed	N/A
WLAN ax 20 MHz, high, U-NII-1	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, high, U-NII-2A	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, high, U-NII-2C	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, low, U-NII-1	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, low, U-NII-2A	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, low, U-NII-2C	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, mid, U-NII-1	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, mid, U-NII-2A	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, mid, U-NII-2C	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-07-26	Performed	N/A
WLAN ax 40 MHz, high, U-NII-1	S01_AD02	2024-09-05	Performed	N/A
WLAN ax 40 MHz, high, U-NII-2A	S01_AD02	2024-08-20	Performed	N/A
WLAN ax 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Performed	N/A
WLAN ax 40 MHz, low, U-NII-1	S01_AD02	2024-08-20	Performed	N/A
WLAN ax 40 MHz, low, U-NII-2A	S01_AD02	2024-08-20	Performed	N/A
WLAN ax 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Performed	N/A
WLAN ax 40 MHz, mid, U-NII-2C	S01_AD02	2024-09-05	Performed	N/A
WLAN ax 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Performed	N/A
WLAN ax 80 MHz, low, U-NII-2C	S01_AD02	2024-08-20	Performed	N/A
WLAN ax 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	Performed	N/A
WLAN ax 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	Performed	N/A
WLAN ax 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Performed	N/A
WLAN n 20 MHz, high, U-NII-1	S01_AD02	2024-09-03	Performed	N/A
WLAN n 20 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Performed	N/A
WLAN n 20 MHz, high, U-NII-2C	S01_AD02	2024-08-19	Performed	N/A
WLAN n 20 MHz, low, U-NII-1	S01_AD02	2024-08-15	Performed	N/A
WLAN n 20 MHz, low, U-NII-2A	S01_AD02	2024-09-03	Performed	N/A
WLAN n 20 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Performed	N/A
WLAN n 20 MHz, mid, U-NII-1	S01_AD02	2024-09-03	Performed	N/A
WLAN n 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-03	Performed	N/A
WLAN n 20 MHz, mid, U-NII-2C	S01_AD02	2024-07-24	Performed	N/A
WLAN n 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Performed	N/A
WLAN n 40 MHz, high, U-NII-1	S01_AD02	2024-09-03	Performed	N/A
WLAN n 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Performed	N/A
WLAN n 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Performed	N/A
WLAN n 40 MHz, low, U-NII-1	S01_AD02	2024-08-19	Performed	N/A
WLAN n 40 MHz, low, U-NII-2A	S01_AD02	2024-08-19	Performed	N/A
WLAN n 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Performed	N/A

47 CFR CHAPTER I FCC PART 15 Subpart E §15.407 FCC §15.31, §15.403 (i)

26 dB Bandwidth

The measurement was performed according to ANSI C63.10, chapter 12.4.1 **Final Result**

OP-Mode

Radio Technology, Operating Frequency, Subband

Setup	Date	FCC	IC
WLAN n 40 MHz, mid, U-NII-2C	S01_AD02	2024-11-15	Performed N/A
WLAN n 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Performed N/A

47 CFR CHAPTER I FCC PART 15 Subpart E §15.407 FCC §15.31, §15.407 (e)

6 dB Bandwidth

The measurement was performed according to ANSI C63.10, chapter 6.9.2 **Final Result**

OP-Mode

Radio Technology, Operating Frequency, Subband

Setup	Date	FCC	IC
WLAN a, high, U-NII-3	S01_AD02	2024-08-15	Passed Passed
WLAN a, low, U-NII-3	S01_AD02	2024-08-15	Passed Passed
WLAN a, mid, U-NII-3	S01_AD02	2024-08-15	Passed Passed
WLAN a, straddle, U-NII-3	S01_AD02	2024-08-15	Passed Passed
WLAN ac 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN ac 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN ac 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN ac 20 MHz, straddle, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN ac 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ac 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ac 40 MHz, straddle, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ac 80 MHz, mid, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ac 80 MHz, straddle, U-NII-3	S01_AD02	2024-09-03	Passed Passed
WLAN ax 20 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ax 20 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ax 20 MHz, mid, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ax 20 MHz, straddle, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ax 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ax 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ax 40 MHz, straddle, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN ax 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	Passed Passed
WLAN ax 80 MHz, straddle, U-NII-3	S01_AD02	2024-08-20	Passed Passed
WLAN n 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN n 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN n 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN n 20 MHz, straddle, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN n 40 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN n 40 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed Passed
WLAN n 40 MHz, straddle, U-NII-3	S01_AD02	2024-08-19	Passed Passed

47 CFR CHAPTER I FCC PART 15
FCC §15.31, IC RSS 247 Ch. 6.2.x
Subpart E §15.407

99 % Bandwidth

The measurement was performed according to ANSI C63.10, chapter 12.4.2 (6.9.3)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN a, high, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN a, high, U-NII-2A	S01_AD02	2024-08-15	N/A	Performed
WLAN a, high, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN a, high, U-NII-3	S01_AD02	2024-08-15	N/A	Performed
WLAN a, low, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN a, low, U-NII-2A	S01_AD02	2024-09-03	N/A	Performed
WLAN a, low, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN a, low, U-NII-3	S01_AD02	2024-08-15	N/A	Performed
WLAN a, mid, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN a, mid, U-NII-2A	S01_AD02	2024-09-03	N/A	Performed
WLAN a, mid, U-NII-2C	S01_AD02	2024-08-15	N/A	Performed
WLAN a, mid, U-NII-3	S01_AD02	2024-08-15	N/A	Performed
WLAN a, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-15	N/A	Performed
WLAN ac 20 MHz, high, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN ac 20 MHz, high, U-NII-2A	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 20 MHz, high, U-NII-2C	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 20 MHz, low, U-NII-1	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 20 MHz, low, U-NII-2A	S01_AD02	2024-09-03	N/A	Performed
WLAN ac 20 MHz, low, U-NII-2C	S01_AD02	2024-09-09	N/A	Performed
WLAN ac 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 20 MHz, mid, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN ac 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-03	N/A	Performed
WLAN ac 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 40 MHz, high, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN ac 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN ac 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ac 40 MHz, low, U-NII-1	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 40 MHz, low, U-NII-2A	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN ac 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ac 40 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	N/A	Performed
WLAN ac 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ac 80 MHz, low, U-NII-2C	S01_AD02	2024-08-20	N/A	Performed
WLAN ac 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	N/A	Performed
WLAN ac 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	N/A	Performed
WLAN ac 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	N/A	Performed

47 CFR CHAPTER I FCC PART 15
FCC §15.31, IC RSS 247 Ch. 6.2.x
Subpart E §15.407

99 % Bandwidth

The measurement was performed according to ANSI C63.10, chapter 12.4.2 (6.9.3)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN ac 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-09-03	N/A	Performed
WLAN ax 20 MHz, high, U-NII-1	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 20 MHz, high, U-NII-2A	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 20 MHz, high, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 20 MHz, high, U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 20 MHz, low, U-NII-1	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 20 MHz, low, U-NII-2A	S01_AD02	2024-09-04	N/A	Performed
WLAN ax 20 MHz, low, U-NII-2C	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 20 MHz, low, U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 20 MHz, mid, U-NII-1	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-04	N/A	Performed
WLAN ax 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 20 MHz, mid, U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 40 MHz, high, U-NII-1	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 40 MHz, high, U-NII-2A	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 40 MHz, low, U-NII-1	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 40 MHz, low, U-NII-2A	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 40 MHz, mid, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN ax 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 80 MHz, low, U-NII-2C	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	N/A	Performed
WLAN ax 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	N/A	Performed
WLAN ax 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	N/A	Performed
WLAN n 20 MHz, high, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN n 20 MHz, high, U-NII-2A	S01_AD02	2024-08-19	N/A	Performed
WLAN n 20 MHz, high, U-NII-2C	S01_AD02	2024-08-19	N/A	Performed
WLAN n 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN n 20 MHz, low, U-NII-1	S01_AD02	2024-08-15	N/A	Performed
WLAN n 20 MHz, low, U-NII-2A	S01_AD02	2024-09-03	N/A	Performed
WLAN n 20 MHz, low, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN n 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN n 20 MHz, mid, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN n 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-03	N/A	Performed
WLAN n 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	N/A	Performed

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FCC §15.31, IC RSS 247 Ch. 6.2.x
Subpart E §15.407

99 % Bandwidth

The measurement was performed according to ANSI C63.10, chapter 12.4.2 (6.9.3)

Final Result
OP-Mode

Radio Technology, Operating Frequency, Subband

Setup
Date
FCC
IC

WLAN n 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN n 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN n 40 MHz, high, U-NII-1	S01_AD02	2024-09-03	N/A	Performed
WLAN n 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	N/A	Performed
WLAN n 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN n 40 MHz, high, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN n 40 MHz, low, U-NII-1	S01_AD02	2024-08-19	N/A	Performed
WLAN n 40 MHz, low, U-NII-2A	S01_AD02	2024-08-19	N/A	Performed
WLAN n 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	N/A	Performed
WLAN n 40 MHz, low, U-NII-3	S01_AD02	2024-08-19	N/A	Performed
WLAN n 40 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	N/A	Performed
WLAN n 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	N/A	Performed

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FCC §15.31, §15.407 (a)(1)
Subpart E §15.407

Maximum Conducted Output Power

The measurement was performed according to ANSI C63.10, chapter 12.3.3.2

Final Result
OP-Mode

Radio Technology, Operating Frequency, Subband

Setup
Date
FCC
IC

WLAN a, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN a, high, U-NII-2A	S01_AD02	2024-08-15	Passed	Passed
WLAN a, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN a, high, U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN a, low, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN a, low, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN a, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN a, low, U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN a, mid, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN a, mid, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN a, mid, U-NII-2C	S01_AD02	2024-08-15	Passed	Passed
WLAN a, mid, U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN a, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN ac 20 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 20 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, high, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, low, U-NII-1	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, low, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed

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Subpart E §15.407
FCC §15.31, §15.407 (a)(1)

Maximum Conducted Output Power

The measurement was performed according to ANSI C63.10, chapter 12.3.3.2

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN ac 20 MHz, low, U-NII-2C	S01_AD02	2024-09-09	Passed	Passed
WLAN ac 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 40 MHz, low, U-NII-1	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, low, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 40 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, low, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	Passed	Passed
WLAN ac 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-09-03	Passed	Passed
WLAN ax 20 MHz, high, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, high, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, low, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, low, U-NII-2A	S01_AD02	2024-09-04	Passed	Passed
WLAN ax 20 MHz, low, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-04	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, high, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, high, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, low, U-NII-1	S01_AD02	2024-08-20	Passed	Passed

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Subpart E §15.407

FCC §15.31, §15.407 (a)(1)

Maximum Conducted Output Power

The measurement was performed according to ANSI C63.10, chapter 12.3.3.2

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN ax 40 MHz, low, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, mid, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, low, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	Passed	Passed
WLAN ax 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN n 20 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, high, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, low, U-NII-1	S01_AD02	2024-08-15	Passed	Passed
WLAN n 20 MHz, low, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, mid, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN n 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 40 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-1	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 40 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Passed	Passed

47 CFR CHAPTER I FCC PART 15
FCC §15.31, §15.407 (a) (1),(5)
Subpart E §15.407

Peak Power Spectral Density

The measurement was performed according to ANSI C63.10, chapter 12.5 (SA-3)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN a, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN a, high, U-NII-2A	S01_AD02	2024-08-15	Passed	Passed
WLAN a, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN a, high, U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN a, low, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN a, low, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN a, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN a, low, U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN a, mid, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN a, mid, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN a, mid, U-NII-2C	S01_AD02	2024-08-15	Passed	Passed
WLAN a, mid, U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN a, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-15	Passed	Passed
WLAN ac 20 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 20 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, high, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, low, U-NII-1	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, low, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 20 MHz, low, U-NII-2C	S01_AD02	2024-09-09	Passed	Passed
WLAN ac 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN ac 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 40 MHz, low, U-NII-1	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, low, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 40 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, low, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	Passed	Passed

47 CFR CHAPTER I FCC PART 15
FCC §15.31, §15.407 (a) (1),(5)
Subpart E §15.407

Peak Power Spectral Density

The measurement was performed according to ANSI C63.10, chapter 12.5 (SA-3)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN ac 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-09-03	Passed	Passed
WLAN ax 20 MHz, high, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, high, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, low, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, low, U-NII-2A	S01_AD02	2024-09-04	Passed	Passed
WLAN ax 20 MHz, low, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-04	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, mid, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, high, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, high, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, high, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, low, U-NII-1	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, low, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, low, U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, mid, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, low, U-NII-2C	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-1	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-2A	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	Passed	Passed
WLAN ax 80 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-20	Passed	Passed
WLAN n 20 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, high, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, low, U-NII-1	S01_AD02	2024-08-15	Passed	Passed
WLAN n 20 MHz, low, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 20 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, mid, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, mid, U-NII-2A	S01_AD02	2024-09-03	Passed	Passed
WLAN n 20 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed

47 CFR CHAPTER I FCC PART 15
Subpart E §15.407
FCC §15.31, §15.407 (a) (1),(5)

Peak Power Spectral Density

The measurement was performed according to ANSI C63.10, chapter 12.5 (SA-3)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN n 20 MHz, mid, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 20 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, high, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN n 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 40 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-1	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 40 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, mid, U-NII-2C	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, straddle, U-NII-2C + U-NII-3	S01_AD02	2024-08-19	Passed	Passed

47 CFR CHAPTER I FCC PART 15
Subpart E §15.407
FCC §15.407 (b), (1),(2),(3),(4); FCC §15.205, §15.209, §15.407 (b) (5),(6)

Undesirable Emissions; General Field Strength Limits

The measurement was performed according to ANSI C63.10, chapter 6.4, 6.5, 6.6.5

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range, Subband				
WLAN a, high, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN a, high, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-08	Passed	Passed
WLAN a, high, 1GHz - 26GHz, U-NII-2A Remark: only Harmonics & Band Edge tested	S02_AC02	2024-08-13	Passed	Passed
WLAN a, high, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-09	Passed	Passed
WLAN a, high, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-12	Passed	Passed
WLAN a, high, 1GHz - 26GHz, U-NII-3 Remark: only Harmonics & Band Edge tested	S02_AE02	2024-09-09	Passed	Passed
WLAN a, high, 30MHz - 1GHz, U-NII-3	S02_AA01	2024-03-25	Passed	Passed
WLAN a, high, 9kHz - 30MHz, U-NII-2C	S02_AA01	2024-03-15	Passed	Passed
WLAN a, low, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN a, low, 1GHz - 26GHz, U-NII-1	S02_AC02	2024-08-13	Passed	Passed
WLAN a, low, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-08	Passed	Passed
WLAN a, low, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-09	Passed	Passed
WLAN a, low, 1GHz - 26GHz, U-NII-2C Remark: only Harmonics & Band Edge tested	S02_AC02	2024-08-13	Passed	Passed
WLAN a, low, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-09	Passed	Passed
WLAN a, low, 9kHz - 30MHz, U-NII-1	S02_AA01	2024-03-15	Passed	Passed
WLAN a, mid, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN a, mid, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-08	Passed	Passed

47 CFR CHAPTER I FCC PART 15
Subpart E §15.407
FCC §15.407 (b), (1),(2),(3),(4); FCC
§15.205, §15.209, §15.407 (b) (5),(6)

Undesirable Emissions; General Field Strength Limits

 The measurement was performed according to ANSI C63.10, chapter
 6.4, 6.5, 6.6.5

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range, Subband				
WLAN a, mid, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-09	Passed	Passed
WLAN a, mid, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-09	Passed	Passed
WLAN a, mid, 26GHz - 40GHz, U-NII-1	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 26GHz - 40GHz, U-NII-1	S02_AC02	2024-08-21	Passed	Passed
WLAN a, mid, 26GHz - 40GHz, U-NII-2A	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 26GHz - 40GHz, U-NII-2C	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 26GHz - 40GHz, U-NII-3	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 30MHz - 1GHz, U-NII-1	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 30MHz - 1GHz, U-NII-1	S02_AA01	2024-03-25	Passed	Passed
WLAN a, mid, 30MHz - 1GHz, U-NII-2A	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 30MHz - 1GHz, U-NII-2A	S02_AA01	2024-03-25	Passed	Passed
WLAN a, mid, 30MHz - 1GHz, U-NII-2C	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 30MHz - 1GHz, U-NII-2C	S02_AA01	2024-03-25	Passed	Passed
WLAN a, mid, 30MHz - 1GHz, U-NII-3	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 9kHz - 30MHz, U-NII-1	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 9kHz - 30MHz, U-NII-2A	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 9kHz - 30MHz, U-NII-2C	S01_AD02	2024-09-11	Passed	Passed
WLAN a, mid, 9kHz - 30MHz, U-NII-3	S01_AD02	2024-09-11	Passed	Passed
WLAN ac 20 MHz, high, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-09	Passed	Passed
WLAN ac 20 MHz, high, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-09	Passed	Passed
WLAN ac 20 MHz, high, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 20 MHz, high, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 20 MHz, low, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-09	Passed	Passed
WLAN ac 20 MHz, low, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-09	Passed	Passed
WLAN ac 20 MHz, low, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 20 MHz, low, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 20 MHz, mid, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-09	Passed	Passed
WLAN ac 20 MHz, mid, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-09	Passed	Passed
WLAN ac 20 MHz, mid, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 40 MHz, high, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-12	Passed	Passed
WLAN ac 40 MHz, high, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-12	Passed	Passed
WLAN ac 40 MHz, high, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 40 MHz, high, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 40 MHz, low, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-12	Passed	Passed
WLAN ac 40 MHz, low, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-12	Passed	Passed
WLAN ac 40 MHz, low, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 40 MHz, low, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ac 80 MHz, mid, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-12	Passed	Passed
WLAN ax 20 MHz, high, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-09	Passed	Passed
WLAN ax 20 MHz, high, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-09	Passed	Passed

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Subpart E §15.407
FCC §15.407 (b), (1),(2),(3),(4); FCC
§15.205, §15.209, §15.407 (b) (5),(6)

Undesirable Emissions; General Field Strength Limits

 The measurement was performed according to ANSI C63.10, chapter
 6.4, 6.5, 6.6.5

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range, Subband				
WLAN ax 20 MHz, high, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 20 MHz, high, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 20 MHz, low, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-09	Passed	Passed
WLAN ax 20 MHz, low, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-09	Passed	Passed
WLAN ax 20 MHz, low, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 20 MHz, low, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 20 MHz, mid, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-09	Passed	Passed
WLAN ax 20 MHz, mid, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-09	Passed	Passed
WLAN ax 20 MHz, mid, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 20 MHz, mid, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 40 MHz, high, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-12	Passed	Passed
WLAN ax 40 MHz, high, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-12	Passed	Passed
WLAN ax 40 MHz, high, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 40 MHz, high, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 40 MHz, low, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-12	Passed	Passed
WLAN ax 40 MHz, low, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-12	Passed	Passed
WLAN ax 40 MHz, low, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 40 MHz, low, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN ax 80 MHz, mid, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-12	Passed	Passed
WLAN n 20 MHz, high, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN n 20 MHz, high, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN n 20 MHz, high, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN n 20 MHz, low, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN n 20 MHz, low, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-08	Passed	Passed
WLAN n 20 MHz, low, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN n 20 MHz, low, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN n 20 MHz, mid, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN n 20 MHz, mid, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-08	Passed	Passed
WLAN n 20 MHz, mid, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN n 20 MHz, mid, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN n 40 MHz, high, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN n 40 MHz, high, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-08	Passed	Passed
WLAN n 40 MHz, high, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN n 40 MHz, high, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed
WLAN n 40 MHz, low, 1GHz - 26GHz, U-NII-1	S01_AD02	2024-08-08	Passed	Passed
WLAN n 40 MHz, low, 1GHz - 26GHz, U-NII-2A	S01_AD02	2024-08-08	Passed	Passed
WLAN n 40 MHz, low, 1GHz - 26GHz, U-NII-2C	S01_AD02	2024-09-10	Passed	Passed
WLAN n 40 MHz, low, 1GHz - 26GHz, U-NII-3	S01_AD02	2024-09-10	Passed	Passed

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Subpart E §15.407
FCC §15.407 (b), (1),(2),(3),(4)

Band Edge

The measurement was performed according to ANSI C63.10, chapter 6.6.5

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN a, high, U-NII-2A	S01_AD02	2024-07-18	Passed	Passed
WLAN a, high, U-NII-2A	S02_AC02	2024-08-13	Passed	Passed
WLAN a, high, U-NII-2C	S01_AD02	2024-07-18	Passed	Passed
WLAN a, high, U-NII-2C	S02_AC02	2024-08-13	Passed	Passed
WLAN a, high, U-NII-3	S02_AE02	2024-09-09	Passed	Passed
WLAN a, high, U-NII-3	S01_AD02	2024-07-19	Passed	Passed
WLAN a, low, U-NII-1	S01_AD02	2024-09-03	Passed	Passed
WLAN a, low, U-NII-1	S02_AC02	2024-08-13	Passed	Passed
WLAN a, low, U-NII-2C	S01_AD02	2024-07-18	Passed	Passed
WLAN a, low, U-NII-2C	S02_AC02	2024-08-13	Passed	Passed
WLAN a, low, U-NII-3	S01_AD02	2024-07-19	Passed	Passed
WLAN ac 20 MHz, high, U-NII-2A	S01_AD02	2024-07-19	Passed	Passed
WLAN ac 20 MHz, high, U-NII-2C	S01_AD02	2024-07-19	Passed	Passed
WLAN ac 20 MHz, high, U-NII-3	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 20 MHz, low, U-NII-1	S01_AD02	2024-07-19	Passed	Passed
WLAN ac 20 MHz, low, U-NII-2C	S01_AD02	2024-09-09	Passed	Passed
WLAN ac 20 MHz, low, U-NII-3	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 40 MHz, high, U-NII-2A	S01_AD02	2024-08-19	Passed	Passed
WLAN ac 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 40 MHz, high, U-NII-3	S01_AD02	2024-07-30	Passed	Passed
WLAN ac 40 MHz, low, U-NII-1	S01_AD02	2024-07-19	Passed	Passed
WLAN ac 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 40 MHz, low, U-NII-3	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 80 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 80 MHz, low, U-NII-2C	S01_AD02	2024-08-01	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-1	S01_AD02	2024-08-01	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-2A	S01_AD02	2024-09-05	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	Passed	Passed
WLAN ac 80 MHz, mid, U-NII-3	S02_AC02	2024-08-13	Passed	Passed
WLAN ax 20 MHz, high, U-NII-2A	S01_AD02	2024-07-19	Passed	Passed
WLAN ax 20 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, high, U-NII-3	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, low, U-NII-1	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 20 MHz, low, U-NII-2C	S01_AD02	2024-07-19	Passed	Passed
WLAN ax 20 MHz, low, U-NII-3	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, high, U-NII-2A	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 40 MHz, high, U-NII-3	S01_AD02	2024-07-30	Passed	Passed
WLAN ax 40 MHz, low, U-NII-1	S01_AD02	2024-08-20	Passed	Passed
WLAN ax 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed

47 CFR CHAPTER I FCC PART 15
Subpart E §15.407
FCC §15.407 (b), (1),(2),(3),(4)

Band Edge

The measurement was performed according to ANSI C63.10, chapter 6.6.5

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN ax 40 MHz, low, U-NII-3	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 80 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 80 MHz, low, U-NII-2C	S01_AD02	2024-08-01	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-1	S01_AD02	2024-08-01	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-2A	S01_AD02	2024-09-05	Passed	Passed
WLAN ax 80 MHz, mid, U-NII-3	S01_AD02	2024-09-12	Passed	Passed
WLAN n 20 MHz, high, U-NII-2A	S01_AD02	2024-07-19	Passed	Passed
WLAN n 20 MHz, high, U-NII-2C	S01_AD02	2024-07-19	Passed	Passed
WLAN n 20 MHz, high, U-NII-3	S01_AD02	2024-07-19	Passed	Passed
WLAN n 20 MHz, low, U-NII-1	S01_AD02	2024-07-19	Passed	Passed
WLAN n 20 MHz, low, U-NII-2C	S01_AD02	2024-07-19	Passed	Passed
WLAN n 20 MHz, low, U-NII-3	S01_AD02	2024-07-19	Passed	Passed
WLAN n 40 MHz, high, U-NII-2A	S01_AD02	2024-07-19	Passed	Passed
WLAN n 40 MHz, high, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 40 MHz, high, U-NII-3	S01_AD02	2024-08-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-1	S01_AD02	2024-07-19	Passed	Passed
WLAN n 40 MHz, low, U-NII-2C	S01_AD02	2024-09-05	Passed	Passed
WLAN n 40 MHz, low, U-NII-3	S01_AD02	2024-08-19	Passed	Passed

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Subpart E §15.407
FCC §15.31, §15.407 (h)

Dynamic Frequency Selection - In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

The measurement was performed according to KDB 905462

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology				
WLAN ax 80 MHz	S04_AD02	2024-09-12	Passed	Passed

N/A: Not applicable

N/P: Not performed

2 REVISION HISTORY / SIGNATURES

Report version control			
Version	Release date	Change Description	Version validity
initial	2024-11-15	--	valid
--	--	--	--

COMMENT: -



(responsible for accreditation scope)
Dipl.-Ing. Marco Kullik



(responsible for testing and report)
Dipl.-Ing. Daniel Gall



7 layers GmbH, Borsigstr. 11
40880 Ratingen, Germany
Phone +49 (0)2102 749 0

3 ADMINISTRATIVE DATA

3.1 TESTING LABORATORY

Company Name: 7layers GmbH
Address: Borsigstr. 11
40880 Ratingen
Germany

The test facility is accredited by the following accreditation organisation:

Laboratory accreditation no: DAKKS D-PL-12140-01-01 | -02 | -03
FCC Designation Number: DE0015
FCC Test Firm Registration: 929146
ISED CAB Identifier: DE0007; ISED#: 3699A

Responsible for accreditation scope: Dipl.-Ing. Marco Kullik
Report Template Version: 2023-09-29

3.2 PROJECT DATA

Responsible for testing and report: Dipl.-Ing. Daniel Gall
Employees who performed the tests: documented internally at 7Layers
Date of Report: 2024-11-15
Testing Period: 2024-03-15 to 2024-11-15

3.3 APPLICANT DATA

Company Name: u-blox AG
Address: Zürcherstrasse 68
8800 Thalwil
Switzerland
Contact Person: Filip Kruzela

3.4 MANUFACTURER DATA

Company Name: please see Applicant Data

Address:

Contact Person:

4 TEST OBJECT DATA

4.1 GENERAL EUT DESCRIPTION

Kind of Device product description	WLAN and Bluetooth Module																																																																																																																																																																																																																																																							
Product name	JODY-W5																																																																																																																																																																																																																																																							
Type	JODY-W562-00A																																																																																																																																																																																																																																																							
Declared EUT data by the supplier																																																																																																																																																																																																																																																								
Voltage Type	DC																																																																																																																																																																																																																																																							
Voltage Level	1.8 V + 3.3 V																																																																																																																																																																																																																																																							
Tested Modulation Type	OFDM																																																																																																																																																																																																																																																							
Specific product description	The EUT is a Bluetooth and WLAN module. It supports SISO Mode only. Supported WLAN modes are a, n, ac and ax with 20 MHz (mode a, n, ac, ax), 40 MHz (mode n, ac, ax) and 80 MHz (mode ac, ax) BW. The U-NII bands 1, 2A, 2C and 3 are supported. For this report the EUT is a slave without radar detection in the relevant DFS bands.																																																																																																																																																																																																																																																							
Ports of the device	Enclosure Data DC Power Antenna The EUT is a module with solder pads for surface mounting, so no cables were connected to the EUT itself.																																																																																																																																																																																																																																																							
Antenna 1	External / 5.1 dBi (Radiated measurements were performed with 50 Ohm termination at the antenna ports)																																																																																																																																																																																																																																																							
Tested Datarates	WLAN a: 6 Mbit WLAN n: MCS 0 WLAN ac, ax: MCS 0																																																																																																																																																																																																																																																							
Special software used for testing	Labtool on computer board provided by applicant																																																																																																																																																																																																																																																							
Used output power	<table><tr><th colspan="2"></th><th colspan="20">5-GHz*</th></tr><tr><th>Mode\Ch.*</th><th>36*</th><th>40*</th><th>44*</th><th>48*</th><th>52*</th><th>56*</th><th>60*</th><th>64*</th><th>100*</th><th>104*</th><th>108*</th><th>112*</th><th>116*</th><th>132*</th><th>136*</th><th>140*</th><th>144*</th><th>149*</th><th>153*</th><th>157*</th><th>161*</th><th>165*</th></tr><tr><td>A*</td><td>15*</td><td>15*</td><td>15*</td><td>15*</td><td>17*</td><td>17*</td><td>17*</td><td>17*</td><td>14*</td><td>17*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>15*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td></tr><tr><td>N20-SISO*</td><td>15*</td><td>15*</td><td>15*</td><td>15*</td><td>17*</td><td>17*</td><td>17*</td><td>15*</td><td>14*</td><td>16*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>17*</td><td>15*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td></tr><tr><td>N40-SISO*</td><td>14*</td><td>15*</td><td>15*</td><td>17*</td><td>17*</td><td>17*</td><td>15*</td><td>14*</td><td>12*</td><td>17*</td><td>N/A*</td><td>13*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>N/A*</td></tr><tr><td>Ac20-SISO*</td><td>15*</td><td>15*</td><td>15*</td><td>15*</td><td>17*</td><td>17*</td><td>17*</td><td>15*</td><td>14*</td><td>16*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>17*</td><td>15*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td></tr><tr><td>Ac40-SISO*</td><td>14*</td><td>15*</td><td>15*</td><td>17*</td><td>17*</td><td>17*</td><td>15*</td><td>14*</td><td>12*</td><td>17*</td><td>N/A*</td><td>13*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>N/A*</td></tr><tr><td>Ac80-SISO*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>N/A*</td><td>17*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>N/A*</td></tr><tr><td>Ax20-SISO*</td><td>14*</td><td>14*</td><td>14*</td><td>14*</td><td>17*</td><td>17*</td><td>17*</td><td>15*</td><td>14*</td><td>15*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>16*</td><td>14*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td></tr><tr><td>Ax40-SISO*</td><td>13*</td><td>14*</td><td>14*</td><td>17*</td><td>17*</td><td>17*</td><td>15*</td><td>14*</td><td>12*</td><td>16*</td><td>N/A*</td><td>12*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>N/A*</td></tr><tr><td>Ax80-SISO*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>10*</td><td>N/A*</td><td>17*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>18*</td><td>N/A*</td></tr></table>			5-GHz*																				Mode\Ch.*	36*	40*	44*	48*	52*	56*	60*	64*	100*	104*	108*	112*	116*	132*	136*	140*	144*	149*	153*	157*	161*	165*	A*	15*	15*	15*	15*	17*	17*	17*	17*	14*	17*	18*	18*	18*	18*	18*	15*	18*	18*	18*	18*	18*	18*	N20-SISO*	15*	15*	15*	15*	17*	17*	17*	15*	14*	16*	18*	18*	18*	18*	17*	15*	18*	18*	18*	18*	18*	18*	N40-SISO*	14*	15*	15*	17*	17*	17*	15*	14*	12*	17*	N/A*	13*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*	Ac20-SISO*	15*	15*	15*	15*	17*	17*	17*	15*	14*	16*	18*	18*	18*	18*	17*	15*	18*	18*	18*	18*	18*	18*	Ac40-SISO*	14*	15*	15*	17*	17*	17*	15*	14*	12*	17*	N/A*	13*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*	Ac80-SISO*	10*	10*	10*	10*	10*	10*	10*	10*	10*	10*	N/A*	17*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*	Ax20-SISO*	14*	14*	14*	14*	17*	17*	17*	15*	14*	15*	18*	18*	18*	18*	16*	14*	18*	18*	18*	18*	18*	18*	Ax40-SISO*	13*	14*	14*	17*	17*	17*	15*	14*	12*	16*	N/A*	12*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*	Ax80-SISO*	10*	10*	10*	10*	10*	10*	10*	10*	10*	10*	N/A*	17*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*
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Mode\Ch.*	36*	40*	44*	48*	52*	56*	60*	64*	100*	104*	108*	112*	116*	132*	136*	140*	144*	149*	153*	157*	161*	165*																																																																																																																																																																																																																																		
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N20-SISO*	15*	15*	15*	15*	17*	17*	17*	15*	14*	16*	18*	18*	18*	18*	17*	15*	18*	18*	18*	18*	18*	18*																																																																																																																																																																																																																																		
N40-SISO*	14*	15*	15*	17*	17*	17*	15*	14*	12*	17*	N/A*	13*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*																																																																																																																																																																																																																																			
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Ac80-SISO*	10*	10*	10*	10*	10*	10*	10*	10*	10*	10*	N/A*	17*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*																																																																																																																																																																																																																																			
Ax20-SISO*	14*	14*	14*	14*	17*	17*	17*	15*	14*	15*	18*	18*	18*	18*	16*	14*	18*	18*	18*	18*	18*	18*																																																																																																																																																																																																																																		
Ax40-SISO*	13*	14*	14*	17*	17*	17*	15*	14*	12*	16*	N/A*	12*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*																																																																																																																																																																																																																																			
Ax80-SISO*	10*	10*	10*	10*	10*	10*	10*	10*	10*	10*	N/A*	17*	18*	18*	18*	18*	18*	18*	18*	18*	N/A*																																																																																																																																																																																																																																			

4.2 EUT MAIN COMPONENTS

Sample Name	Sample Code	Description
EUT aa01	DE1015185aa01	Type JODY-W562-00A on M.2 KEY-E board
Sample Parameter	Value	
Serial No.	BU520BA36D796380200	
HW Version	3	
SW Version	v2.0.0.31-18.99.2.p66.20	
Comment		

Sample Name	Sample Code	Description
EUT ac02	DE1015185ac02	Type JODY-W562-00A on M.2 KEY-E board
Sample Parameter	Value	
Serial No.	BU520BA36D796200200	
HW Version	3	
SW Version	v2.0.0.31-18.99.2.p66.20	
Comment		

Sample Name	Sample Code	Description
EUT ad02	DE1015185ad02	Type JODY-W562-00A on M.2 KEY-E board
Sample Parameter	Value	
Serial No.	BU520BA36D798100200	
HW Version	3	
SW Version	v2.0.0.31-18.99.2.p66.20	
Comment		

Sample Name	Sample Code	Description
EUT ae02	DE1015185ae02	Type JODY-W562-00A on M.2 KEY-E board
Sample Parameter	Value	
Serial No.	BU520BA36D799900200	
HW Version	3	
SW Version	v2.0.0.31-18.99.2.p66.20	
Comment		

NOTE: The short description is used to simplify the identification of the EUT in this test report.

4.3 ANCILLARY EQUIPMENT

For the purposes of this test report, ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Ancillary Equipment can influence the test results.

Device	Details (Manufacturer, Type Model, OUT Code)	Description
-	-	-

4.4 AUXILIARY EQUIPMENT

For the purposes of this test report, auxiliary equipment is defined as equipment which is used temporarily to enable operational and control features especially used for the tests of the EUT which is not used during normal operation or equipment that is used during the tests in combination with the EUT but is not subject of this test report. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Auxiliary Equipment can influence the test results.

Device	Details (Manufacturer, Type Model, HW, SW, S/N)	Description
AUX 01	UBLOX, JODY Carrier Board M.2 Adapter, REV. A, - , -	M.2 Adapter board
AUX 02	UBLOX, JODY-Carrier Board, Rev. D, - , 10000002459130006001	Jody Carrier Board
AUX 04	EDACPOWER ELEC., EA1045CR, -, - , -	AC Adapter
AUX 05	UBLOX, JODY-Carrier Board, Rev. D, - , 10000003369561020001	Jody Carrier Board
AUX 06	UBLOX, JODY-Carrier Board, Rev. D, - , 10000003369561002002	Jody Carrier Board
AUX 07	UBLOX, JODY-Carrier Board, Rev. D, - , 10000003370145008001	Jody Carrier Board
AUX 08	NXP, i.MX 8M MINI on 8MMINI-BB, REV A2, -, NT19150864	Computer Board
AUX 09	Linksys, Hydra Pro 6E MR7500, -, 1.1.10.210455, 45C10M27C01246	Master for DFS test 80 MHz BW FCC ID: K7S-03689
ACDC1	Agilent, E3631A, -, -, MY40018563	120 V 60 Hz AC laboratory power supply

4.5 EUT SETUPS

This chapter describes the combination of EUTs and equipment used for testing. The rationale for selecting the EUTs, ancillary and auxiliary equipment and interconnecting cables, is to test a representative configuration meeting the requirements of the referenced standards.

Setup	Combination of EUTs	Description and Rationale
S02_AC02	EUT ac02, AUX 01, AUX 05,	Radiated Setup
S01_AD02	EUT ad02, AUX 08, AUX 04, AUX 06, AUX 01,	Conducted Setup
S04_AD02	EUT ad02, AUX 08, AUX 04, AUX 06, AUX 01,	DFS AP Setup
S02_AA01	EUT aa01, AUX 02, AUX 01,	Radiated Setup
S02_AE02	EUT ae02, AUX 01, AUX 07,	Radiated Setup
S06_AC02	EUT ac02, AUX 01, AUX 05, ACDC1	AC conducted Setup

4.6 OPERATING MODES / TEST CHANNELS

This chapter describes the operating modes of the EUTs used for testing.

U-NII-Subband 1 5150 - 5250 MHz			U-NII-Subband 2A 5250 - 5350 MHz			U-NII-Subband 2C 5470 - 5725 MHz			U-NII-Subband 3 5725 - 5850 MHz			Nom. BW
low	mid	high	low	mid	high	low	mid	high	low	mid	high	20 MHz
36	40	48	52	60	64	100	116	140 / 144 ¹⁾	149	157	165	Ch.-No.
5180	5200	5240	5260	5300	5320	5500	5580	5700 / 5720	5745	5785	5825	MHz

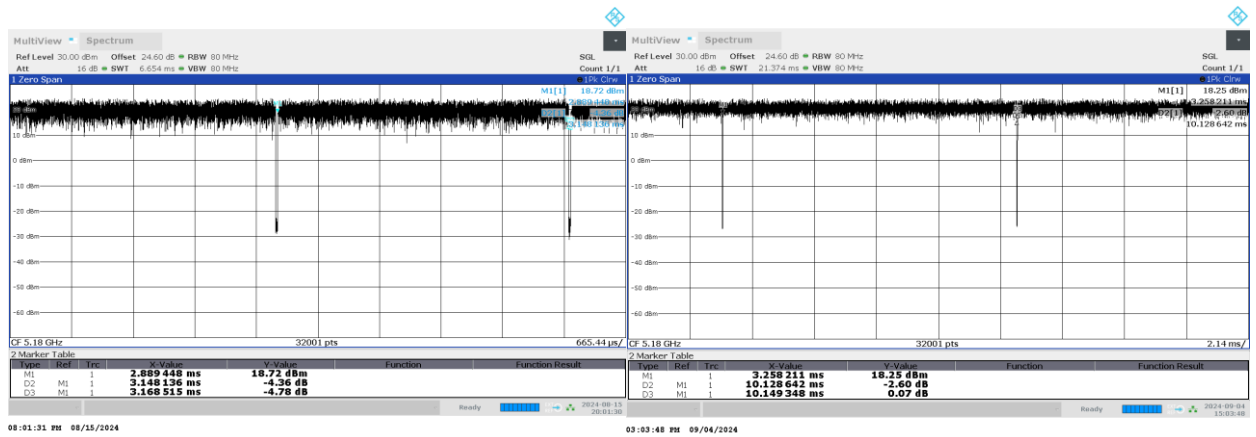
low	mid	high	low	mid	high	low	mid	high	low	mid	high	40 MHz
38	-	46	54	-	62	102	110	134 / 142 ¹⁾	151	-	159	Ch.-No.
5190	-	5230	5270	-	5310	5510	5550	5670 / 5710	5755	-	5795	MHz

low	mid	high	low	mid	high	low	mid	high	low	mid	high	80 MHz
-	42	-	-	58	-	106	-	138 ¹⁾	155	-	-	Ch.-No.
-	5210	-	-	5290	-	5530	-	5690	5775	-	-	MHz

1) Channels 144, 142 and 138 are straddle channels. Relevant high channels for upper Band Edge of band 2C are CH.140, CH. 134 and Ch 106.

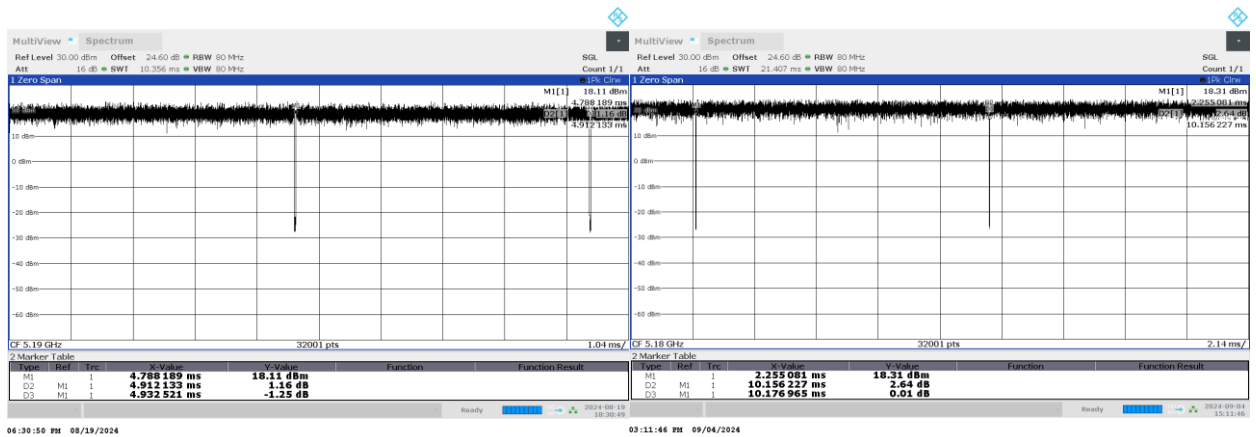
Duty Cycles:

Mode	Duty Cycle
WLAN a	99 %
WLAN n 20 MHz	99 %
WLAN n 40 MHz	99 %
WLAN ac 20 MHz	99 %
WLAN ac 40 MHz	99 %
WLAN ac 80 MHz	99 %
WLAN ax 20 MHz	99 %
WLAN ax 40 MHz	99 %
WLAN ax 80 MHz	99 %



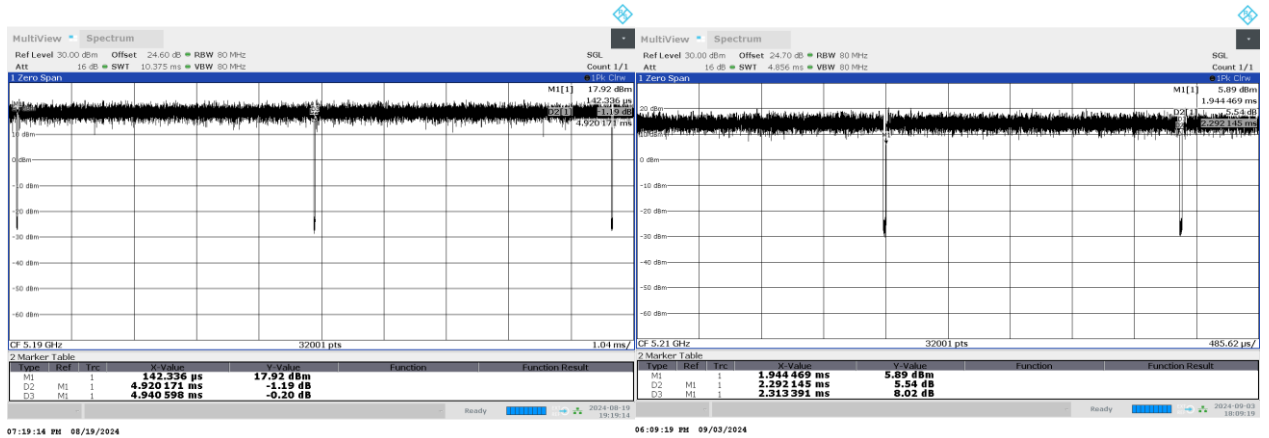
WLAN a

WLAN n 20 MHz



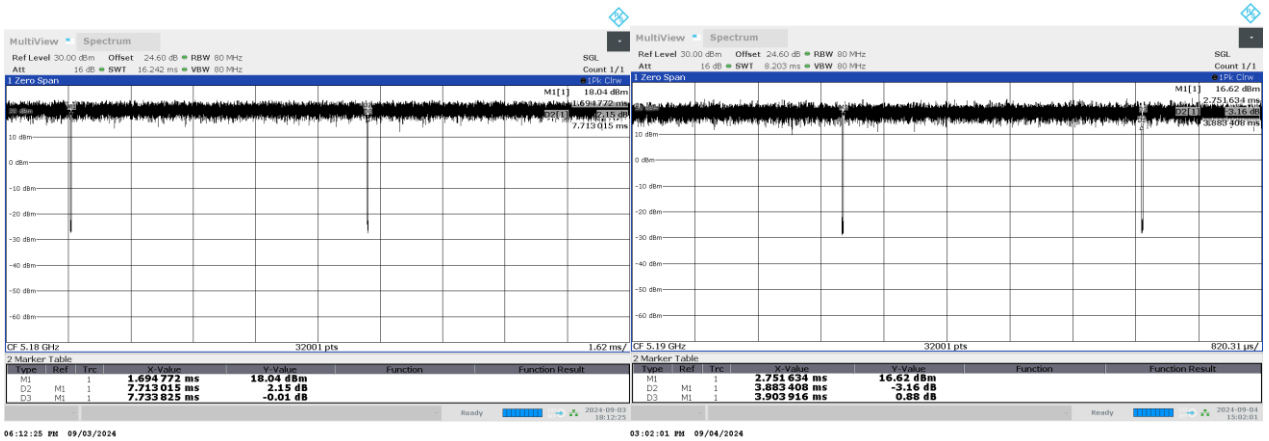
WLAN n 40 MHz

WLAN ac 20 MHz



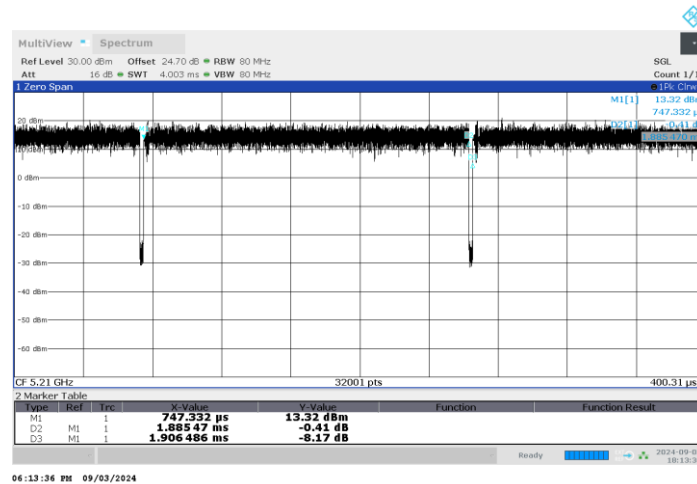
WLAN ac 40 MHz

WLAN ac 80 MHz



WLAN ax 20 MHz

WLAN ax 40 MHz



WLAN ax 80 MHz

4.7 PRODUCT LABELLING

4.7.1 FCC ID LABEL

Please refer to the documentation of the applicant.

4.7.2 LOCATION OF THE LABEL ON THE EUT

Please refer to the documentation of the applicant.

5 TEST RESULTS

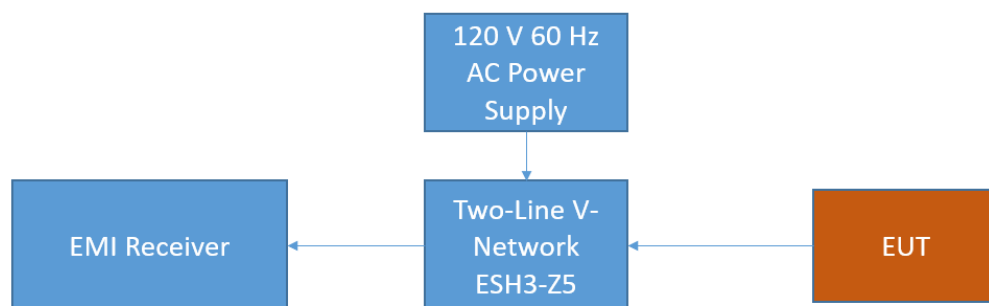
5.1 AC CONDUCTED EMISSIONS

Standard **FCC Part 15 Subpart E**

The test was performed according to:
 ANSI C63.10, chapter 6.2

5.1.1 TEST DESCRIPTION

The test set-up was made in accordance to the general provisions of ANSI C 63.10. The Equipment Under Test (EUT) was setup in a shielded room to perform the conducted emissions measurements in a typical installation configuration. The EUT was powered from 50 μ H || 50 Ohm Line Impedance Stabilization Network (LISN). The LISN's unused connections were terminated with 50 Ohm loads.



FCC Conducted Emissions on AC

The measurement procedure consists of two steps. It is implemented into the EMI test software EMC-32 from R&S.

Step 1: Preliminary scan

Intention of this step is, to determine the conducted EMI-profile of the EUT.

EMI receiver settings:

- Detector: Peak – Maxhold & Average
- Frequency range: 150 kHz – 30 MHz
- Frequency steps: 2.5 kHz
- IF-Bandwidth: 9 kHz
- Measuring time / Frequency step: 100 ms (FFT-based)
- Measurement on phase + neutral lines of the power cords

On basis of this preliminary scan the highest amplitudes and the corresponding frequencies relative to the limit are identified. Emissions above the limit and emissions which are in the 10 dB range below the limit are considered.

Step 2: Final measurement

Intention of this step is, to determine the highest emissions with the settings defined in the test specification for the frequencies identified in step 1.

EMI receiver settings:

- Detector: Quasi-Peak & (CISPR) Average

- IF Bandwidth: 9 kHz
- Measuring time: 1 s / frequency

At each frequency determined in step 1, four measurements are performed in the following combinations:

- 1) Neutral lead - reference ground (PE grounded)
- 2) Phase lead - reference ground (PE grounded)
- 3) Neutral lead - reference ground (PE floating)
- 4) Phase lead - reference ground (PE floating)

The highest value is reported.

5.1.2 TEST REQUIREMENTS / LIMITS

FCC Part 15, Subpart C, §15.207

Frequency (MHz)	QP Limits (dBµV)	AV Limits (dBµV)
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

5.1.3 TEST PROTOCOL

Temperature: 25 °C
 Air Pressure: 1003 hPa
 Humidity: 47 %

Power line	PE	Frequency [MHz]	Measured value QP [dBµV]	Measured value AV [dBµV]	Limit [dBµV]	Margin [dB]
N	GND	12.01	46.0	---	60.0	14.0
N	GND	12.01	---	42.4	50.0	7.7
N	FLO	24.01	---	44.7	50.0	5.3
N	FLO	24.01	47.8	---	60.0	12.3
L1	GND	26.83	40.1	---	60.0	19.9
L1	GND	26.83	---	30.5	50.0	19.5

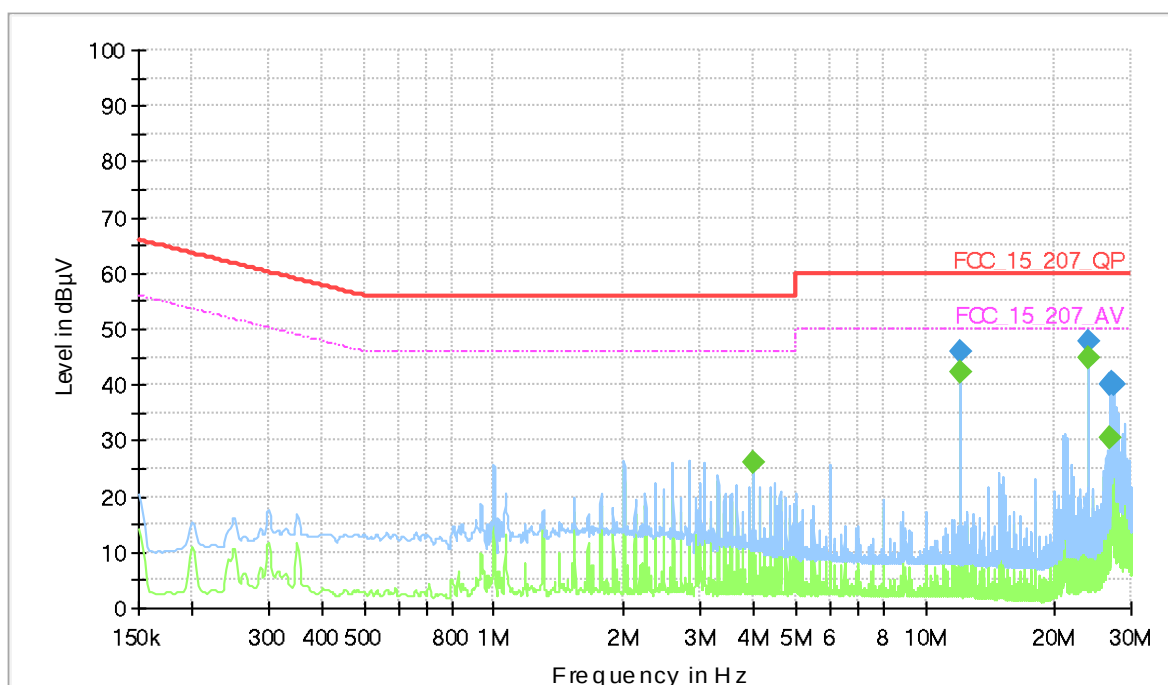
Remark: Please see next sub-clause for the measurement plot.

5.1.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Operating mode = worst case
(S06_AC02)

Common Information

Test Description:	Conducted Emissions
Test Standard:	FCC §15.207, ANSI C63.10
EUT / Setup Code:	DE1015185ac02
Operating Conditions:	120 V 60 Hz, WLAN a 6Mbps CH.48
Operator Name:	GAL
Legend:	Trace: blue = QP, green = CISPR AV; Star: red or blue = critical frequency; Rhombus: blue = final QP, green = final CISPR AV
Tested Port / used LISN:	AC mains => 1st LISN ESH3-Z5
Termination of other ports:	N/A



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	PE	Corr. (dB)
4.002000	---	26.22	46.00	19.78	1000.0	9.000	N	GND	10.3
12.005250	46.03	---	60.00	13.97	1000.0	9.000	N	GND	10.7
12.005250	---	42.35	50.00	7.65	1000.0	9.000	N	GND	10.7
24.009000	---	44.70	50.00	5.30	1000.0	9.000	N	FLO	11.2
24.009000	47.75	---	60.00	12.25	1000.0	9.000	N	FLO	11.2
26.832750	40.08	---	60.00	19.92	1000.0	9.000	L1	GND	11.2
26.832750	---	30.49	50.00	19.51	1000.0	9.000	L1	GND	11.2
27.186000	40.41	---	60.00	19.59	1000.0	9.000	L1	GND	11.2
27.240000	39.96	---	60.00	20.04	1000.0	9.000	L1	GND	11.2

5.1.5 TEST EQUIPMENT USED

- Conducted Emissions FCC

5.2 26 DB BANDWIDTH

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 12.4.1

5.2.1 TEST DESCRIPTION

The Equipment Under Test (EUT) was set up to perform the occupied bandwidth measurements.

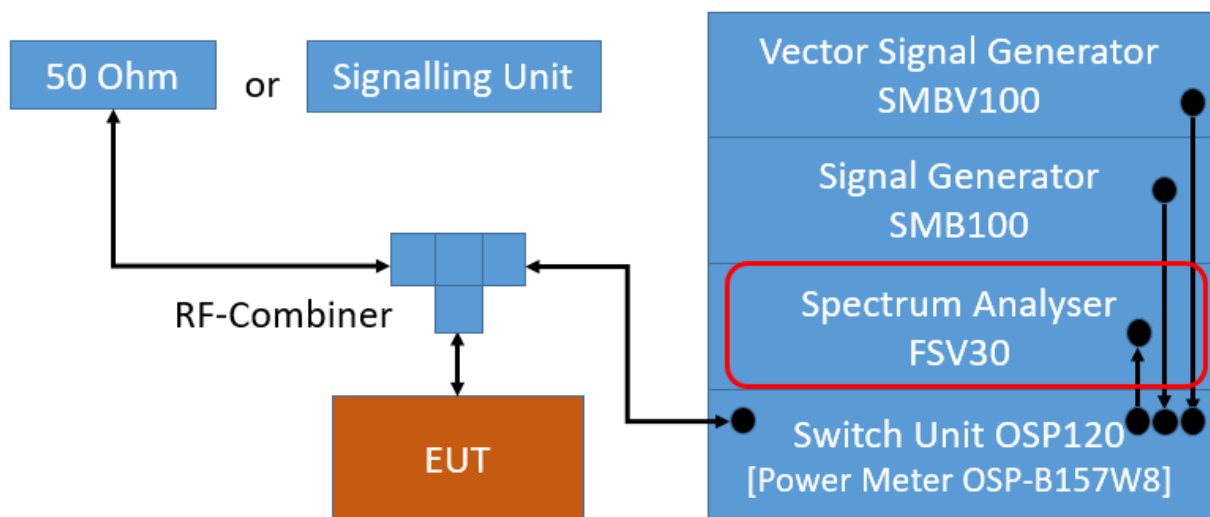
The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

The results recorded were measured with the modulation which produce the worst-case (widest) emission bandwidth.

The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

Analyzer settings:

- Resolution Bandwidth (RBW): initially approx. 1 % of nominal emission bandwidth
- Video Bandwidth (VBW): > RBW
- Span: 40 / 80 / 160 / 320 MHz (for 20 / 40 / 80 / 160 MHz nominal bandwidth)
- Trace: Maxhold
- Sweeps: See example plots
- Sweep time: Auto
- Detector: Peak



TS8997; Occupied Channel Bandwidth 6 dB / 26 dB / 99 %

5.2.2 TEST REQUIREMENTS / LIMITS

FCC Part 15, Subpart E

There exist no applicable limits. The test was performed to determine the limits for the "Maximum Conducted Output Power" and DFS test cases.

Therefore no result was applied.

5.2.3 TEST PROTOCOL

Ambient temperature: 22 - 27 °C

Air Pressure: 1001 - 1015 hPa

Humidity: 39 - 56 %

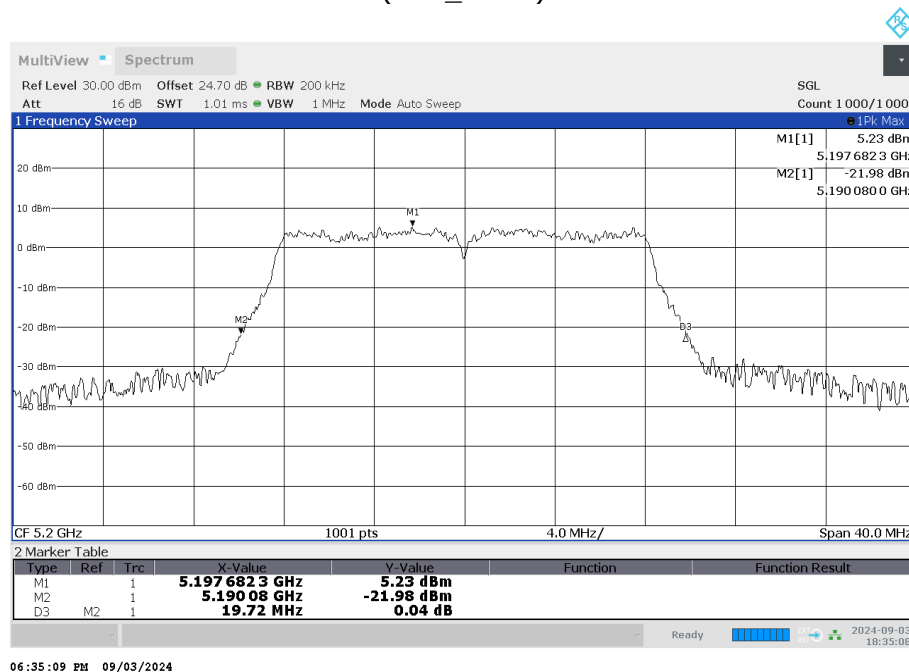
Radio Technology	Band	Operating Frequency	26 dB Bandwidth [MHz]
WLAN a	U-NII-1	low	19.3
WLAN a	U-NII-1	mid	19.7
WLAN a	U-NII-1	high	19.6
WLAN a	U-NII-2A	low	19.6
WLAN a	U-NII-2A	mid	19.7
WLAN a	U-NII-2A	high	19.6
WLAN a	U-NII-2C	low	19.6
WLAN a	U-NII-2C	mid	19.7
WLAN a	U-NII-2C	high	19.5
WLAN a	U-NII-2C/3	straddle	14.8
WLAN n 20 MHz	U-NII-1	low	19.9
WLAN n 20 MHz	U-NII-1	mid	19.8
WLAN n 20 MHz	U-NII-1	high	20.0
WLAN n 20 MHz	U-NII-2A	low	19.8
WLAN n 20 MHz	U-NII-2A	mid	19.9
WLAN n 20 MHz	U-NII-2A	high	19.8
WLAN n 20 MHz	U-NII-2C	low	20.0
WLAN n 20 MHz	U-NII-2C	mid	21.8
WLAN n 20 MHz	U-NII-2C	high	19.9
WLAN n 20 MHz	U-NII-2C/3	straddle	15.0
WLAN n 40 MHz	U-NII-1	low	40.7
WLAN n 40 MHz	U-NII-1	high	40.7
WLAN n 40 MHz	U-NII-2A	low	41.1
WLAN n 40 MHz	U-NII-2A	high	41.0
WLAN n 40 MHz	U-NII-2C	low	41.0
WLAN n 40 MHz	U-NII-2C	mid	60.7
WLAN n 40 MHz	U-NII-2C	high	41.1
WLAN n 40 MHz	U-NII-2C/3	straddle	35.6
WLAN ac 20 MHz	U-NII-1	low	19.9
WLAN ac 20 MHz	U-NII-1	mid	19.8
WLAN ac 20 MHz	U-NII-1	high	20.0
WLAN ac 20 MHz	U-NII-2A	low	23.1
WLAN ac 20 MHz	U-NII-2A	mid	19.9
WLAN ac 20 MHz	U-NII-2A	high	19.8
WLAN ac 20 MHz	U-NII-2C	low	20.0
WLAN ac 20 MHz	U-NII-2C	mid	22.3
WLAN ac 20 MHz	U-NII-2C	high	19.8
WLAN ac 20 MHz	U-NII-2C/3	straddle	15.0

WLAN ac 40 MHz	U-NII-1	low	41.2
WLAN ac 40 MHz	U-NII-1	high	41.0
WLAN ac 40 MHz	U-NII-2A	low	46.5
WLAN ac 40 MHz	U-NII-2A	high	40.8
WLAN ac 40 MHz	U-NII-2C	low	41.1
WLAN ac 40 MHz	U-NII-2C	mid	47.7
WLAN ac 40 MHz	U-NII-2C	high	40.7
WLAN ac 40 MHz	U-NII-2C/3	straddle	35.5
WLAN ac 80 MHz	U-NII-1	mid	82.1
WLAN ac 80 MHz	U-NII-2A	mid	82.1
WLAN ac 80 MHz	U-NII-2C	low	82.1
WLAN ac 80 MHz	U-NII-2C/3	straddle	76.3
WLAN ax 20 MHz	U-NII-1	low	20.6
WLAN ax 20 MHz	U-NII-1	mid	27.7
WLAN ax 20 MHz	U-NII-1	high	28.5
WLAN ax 20 MHz	U-NII-2A	low	25.8
WLAN ax 20 MHz	U-NII-2A	mid	23.2
WLAN ax 20 MHz	U-NII-2A	high	20.6
WLAN ax 20 MHz	U-NII-2C	low	20.7
WLAN ax 20 MHz	U-NII-2C	mid	25.4
WLAN ax 20 MHz	U-NII-2C	high	20.7
WLAN ax 20 MHz	U-NII-2C/3	straddle	15.3
WLAN ax 40 MHz	U-NII-1	low	40.7
WLAN ax 40 MHz	U-NII-1	high	40.7
WLAN ax 40 MHz	U-NII-2A	low	40.7
WLAN ax 40 MHz	U-NII-2A	high	40.7
WLAN ax 40 MHz	U-NII-2C	low	40.7
WLAN ax 40 MHz	U-NII-2C	mid	41.0
WLAN ax 40 MHz	U-NII-2C	high	40.7
WLAN ax 40 MHz	U-NII-2C/3	straddle	35.3
WLAN ax 80 MHz	U-NII-1	mid	81.3
WLAN ax 80 MHz	U-NII-2A	mid	81.1
WLAN ax 80 MHz	U-NII-2C	low	81.3
WLAN ax 80 MHz	U-NII-2C/3	straddle	75.6

Remark: Please see next sub-clause for the measurement plot.

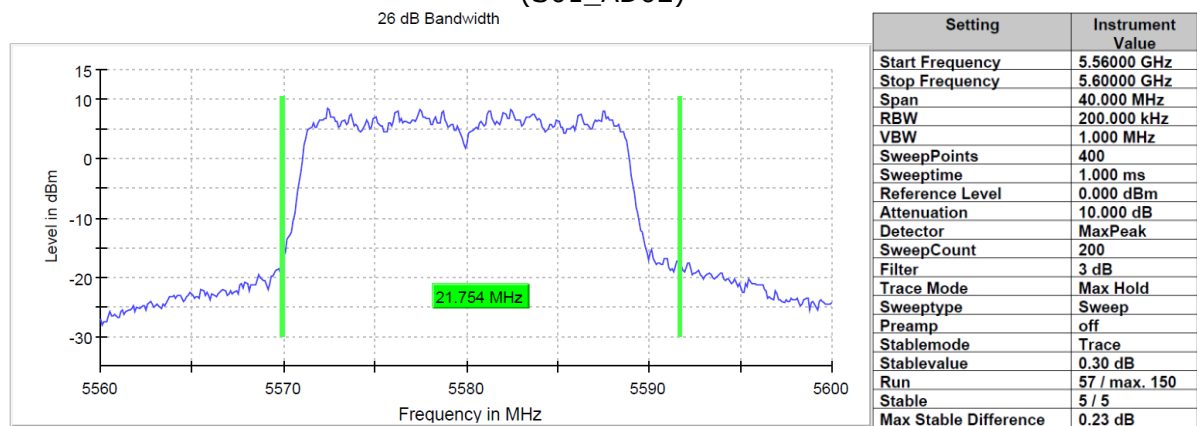
5.2.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-1 (S01_AD02)

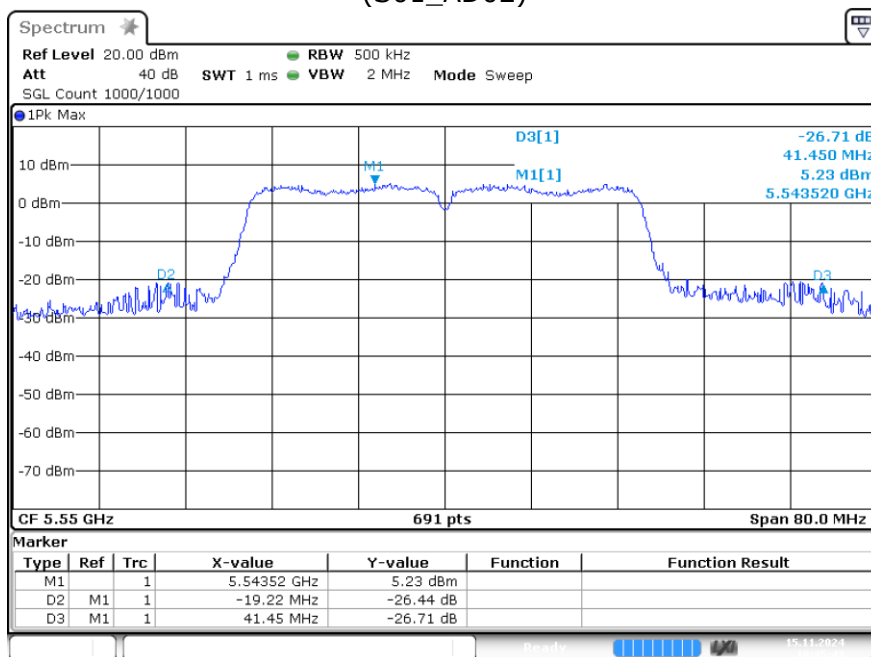


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Radio Technology = WLAN n 20 MHz, Operating Frequency = mid, Subband = U-NII-2C (S01_AD02)

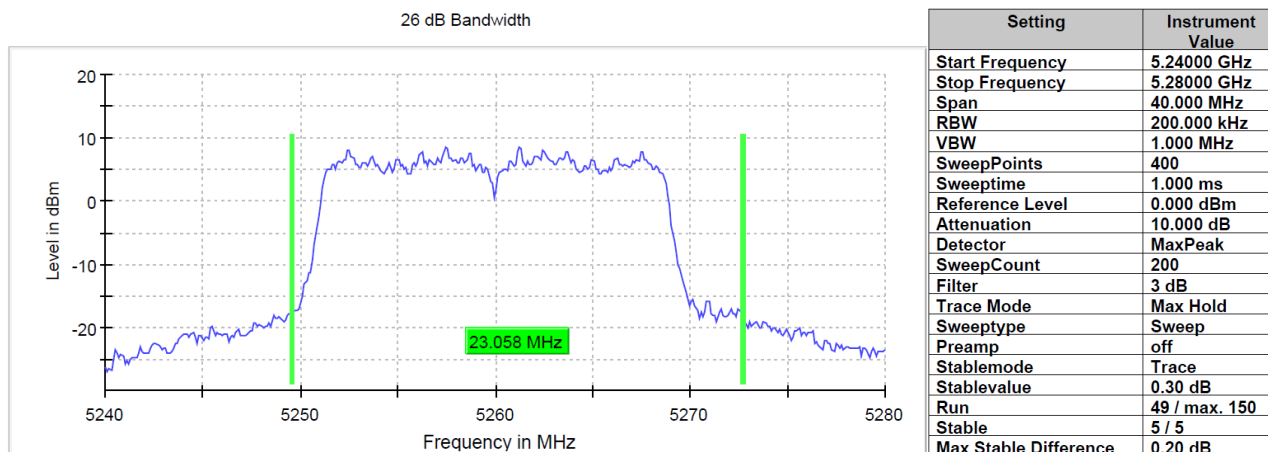


Radio Technology = WLAN n 40 MHz, Operating Frequency = mid, Subband = U-NII-2C
(S01_AD02)

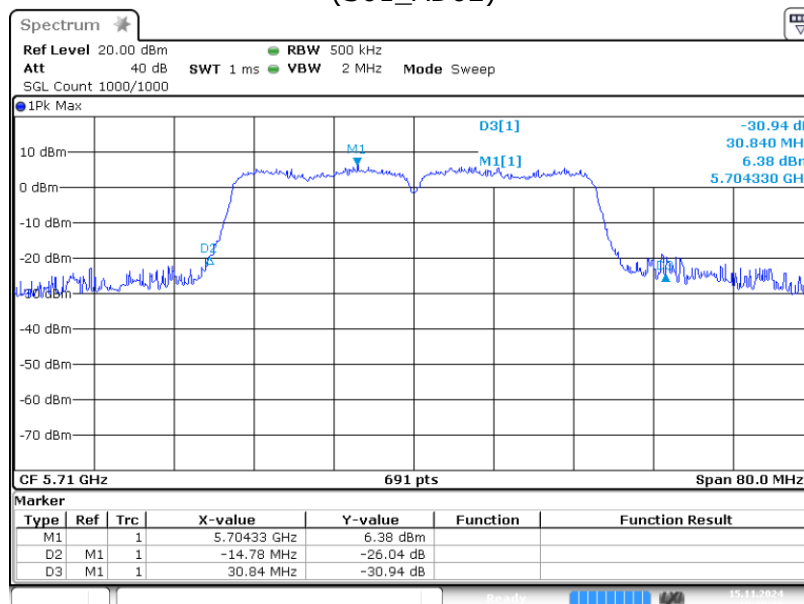


Date: 15.NOV.2024 19:35:43

Radio Technology = WLAN ac 20 MHz, Operating Frequency = low, Subband = U-NII-2A
(S01_AD02)

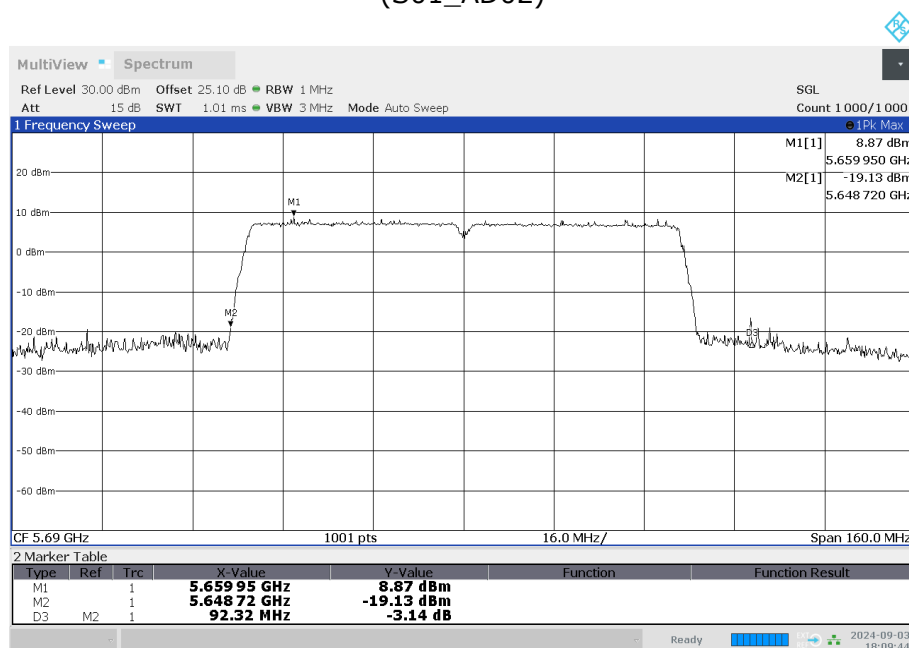


Radio Technology = WLAN ac 40 MHz, Operating Frequency = straddle, Subband = U-NII-2C +
U-NII-3
(S01_AD02)



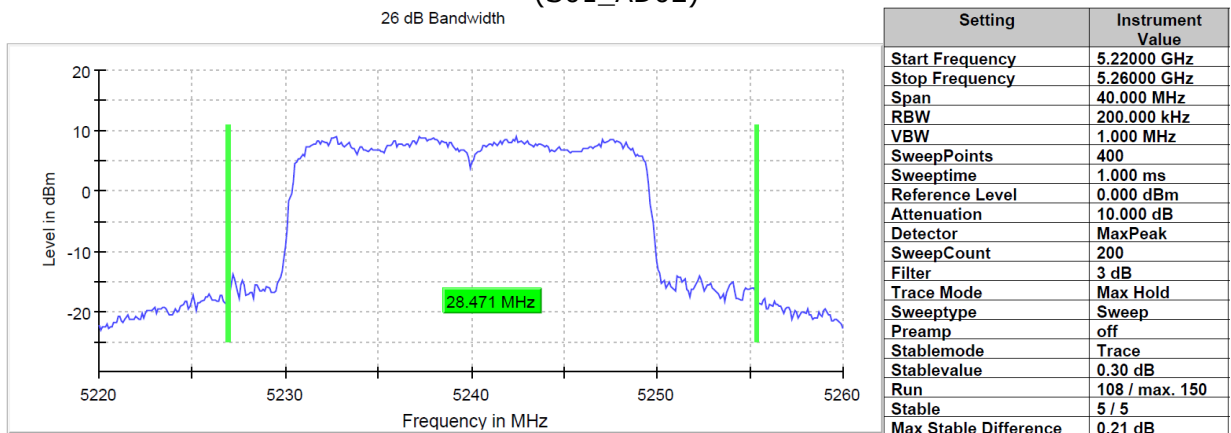
Date: 15.NOV.2024 19:39:29

Radio Technology = WLAN ac 80 MHz, Operating Frequency = straddle, Subband = U-NII-2C +
U-NII-3
(S01_AD02)

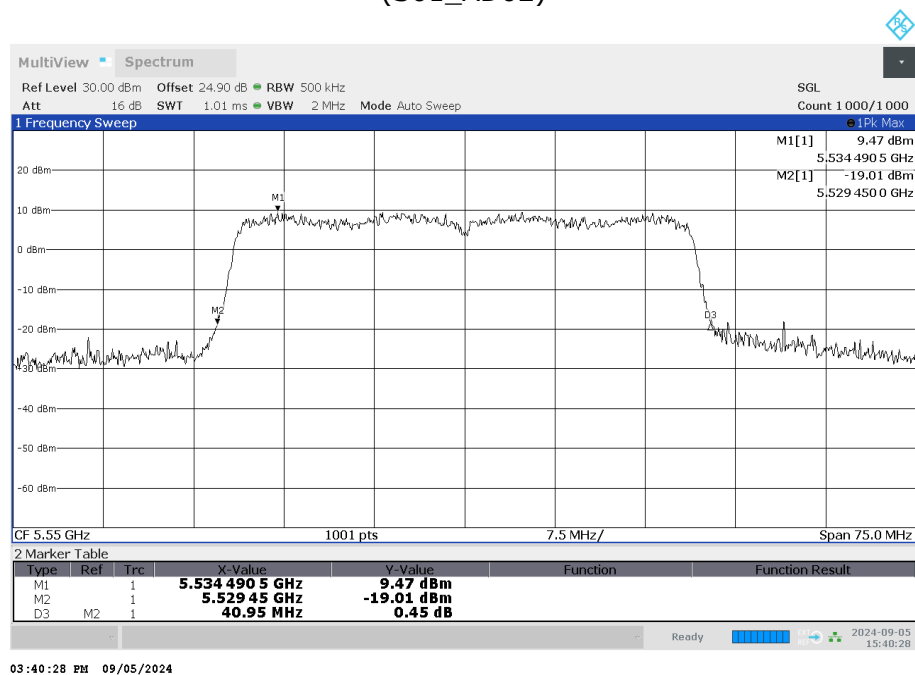


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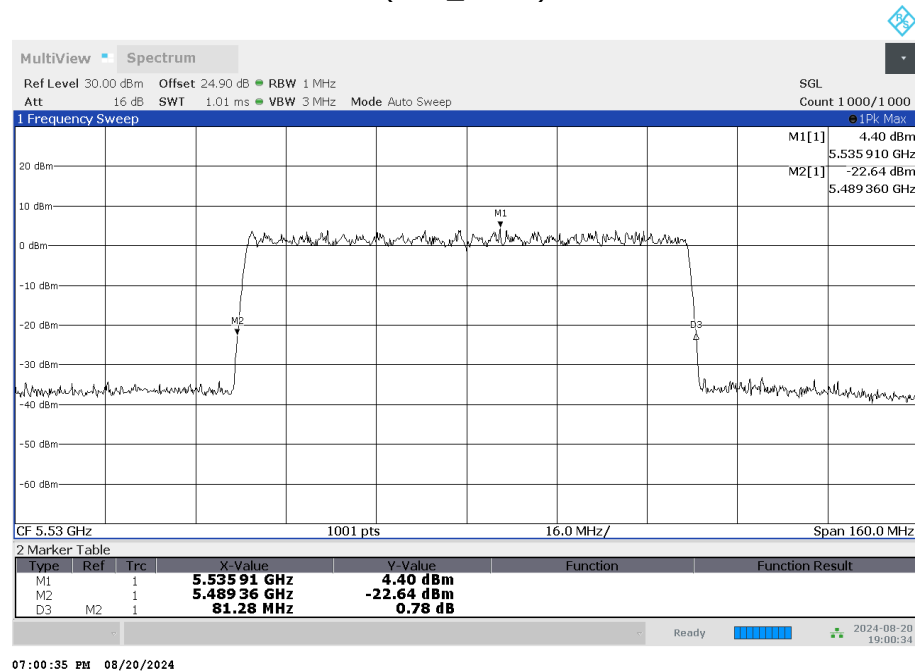
Radio Technology = WLAN ax 20 MHz, Operating Frequency = high, Subband = U-NII-1
(S01_AD02)



Radio Technology = WLAN ax 40 MHz, Operating Frequency = mid, Subband = U-NII-2C
(S01_AD02)



Radio Technology = WLAN ax 80 MHz, Operating Frequency = low, Subband = U-NII-2C (S01_AD02)



5.2.5 TEST EQUIPMENT USED

- R&S TS8997

5.3 6 DB BANDWIDTH

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 6.9.2

5.3.1 TEST DESCRIPTION

The Equipment Under Test (EUT) was setup in a shielded room to perform the occupied bandwidth measurements.

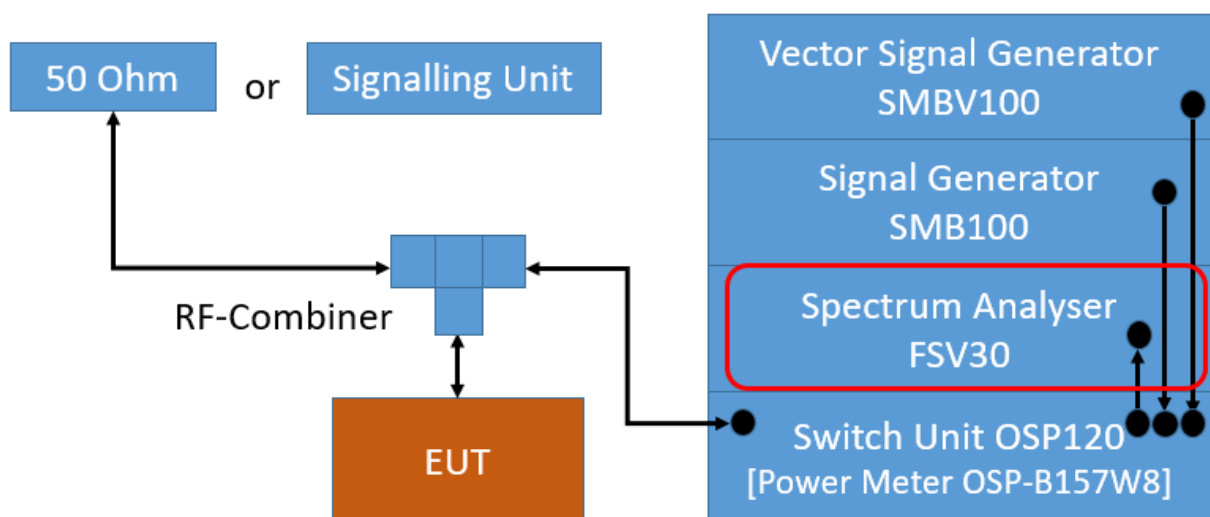
The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

The results recorded were measured with the modulation which produce the worst-case (smallest) emission bandwidth.

The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

Analyzer settings:

- Resolution Bandwidth (RBW): 100 kHz
- Video Bandwidth (VBW): 300 kHz
- Span: 40 / 80 / 160 / 320 MHz (for 20 / 40 / 80 / 160 MHz nominal bandwidth))
- Trace: Maxhold
- Sweeps: See example plots
- Sweep time: Auto
- Detector: Peak



TS8997; Occupied Channel Bandwidth 6 dB / 26 dB / 99 %

5.3.2 TEST REQUIREMENTS / LIMITS

FCC Part 15, Subpart E, §15.407 (e)

Within the 5.725-5.850 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.3.3 TEST PROTOCOL

Ambient temperature: 25 - 27 °C

Air Pressure: 1001 - 1010 hPa

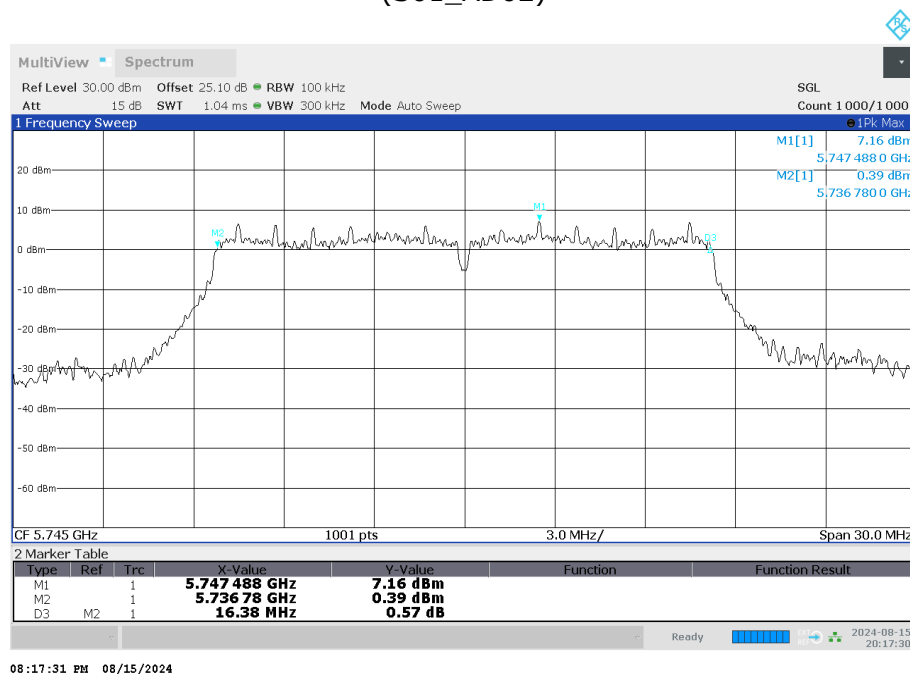
Humidity: 40 - 56 %

Radio Technology	Band	Operating Frequency	6 dB Bandwidth [MHz]	Limit [MHz]	Margin [MHz]
WLAN a	U-NII-2C/3	straddle	3.19	0.5	2.69
WLAN a	U-NII-3	low	16.4	0.5	15.88
WLAN a	U-NII-3	mid	16.4	0.5	15.91
WLAN a	U-NII-3	high	16.4	0.5	15.91
WLAN n 20 MHz	U-NII-2C/3	straddle	3.55	0.5	3.05
WLAN n 20 MHz	U-NII-3	low	17.2	0.5	16.66
WLAN n 20 MHz	U-NII-3	mid	17.1	0.5	16.63
WLAN n 20 MHz	U-NII-3	high	17.6	0.5	17.14
WLAN n 40 MHz	U-NII-2C/3	straddle	2.58	0.5	2.08
WLAN n 40 MHz	U-NII-3	low	35.5	0.5	34.96
WLAN n 40 MHz	U-NII-3	high	35.8	0.5	35.32
WLAN ac 20 MHz	U-NII-2C/3	straddle	3.52	0.5	3.02
WLAN ac 20 MHz	U-NII-3	low	17.4	0.5	16.87
WLAN ac 20 MHz	U-NII-3	mid	17.1	0.5	16.60
WLAN ac 20 MHz	U-NII-3	high	17.0	0.5	16.51
WLAN ac 40 MHz	U-NII-2C/3	straddle	2.58	0.5	2.08
WLAN ac 40 MHz	U-NII-3	low	35.3	0.5	34.78
WLAN ac 40 MHz	U-NII-3	high	35.7	0.5	35.20
WLAN ac 80 MHz	U-NII-2C/3	straddle	3.28	0.5	2.78
WLAN ac 80 MHz	U-NII-3	mid	76.6	0.5	76.06
WLAN ax 20 MHz	U-NII-2C/3	straddle	4.09	0.5	3.59
WLAN ax 20 MHz	U-NII-3	low	18.5	0.5	18.01
WLAN ax 20 MHz	U-NII-3	mid	18.5	0.5	17.98
WLAN ax 20 MHz	U-NII-3	high	18.4	0.5	17.92
WLAN ax 40 MHz	U-NII-2C/3	straddle	3.48	0.5	2.98
WLAN ax 40 MHz	U-NII-3	low	36.2	0.5	35.74
WLAN ax 40 MHz	U-NII-3	high	37.1	0.5	36.58
WLAN ax 80 MHz	U-NII-2C/3	straddle	4.12	0.5	3.62
WLAN ax 80 MHz	U-NII-3	mid	78.4	0.5	77.86

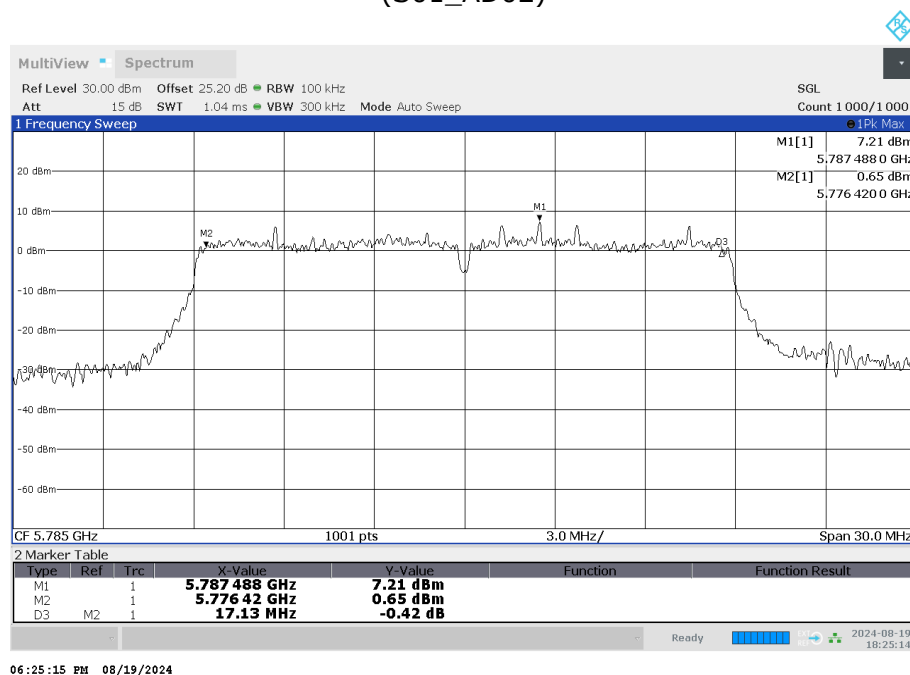
Remark: Please see next sub-clause for the measurement plot.

5.3.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

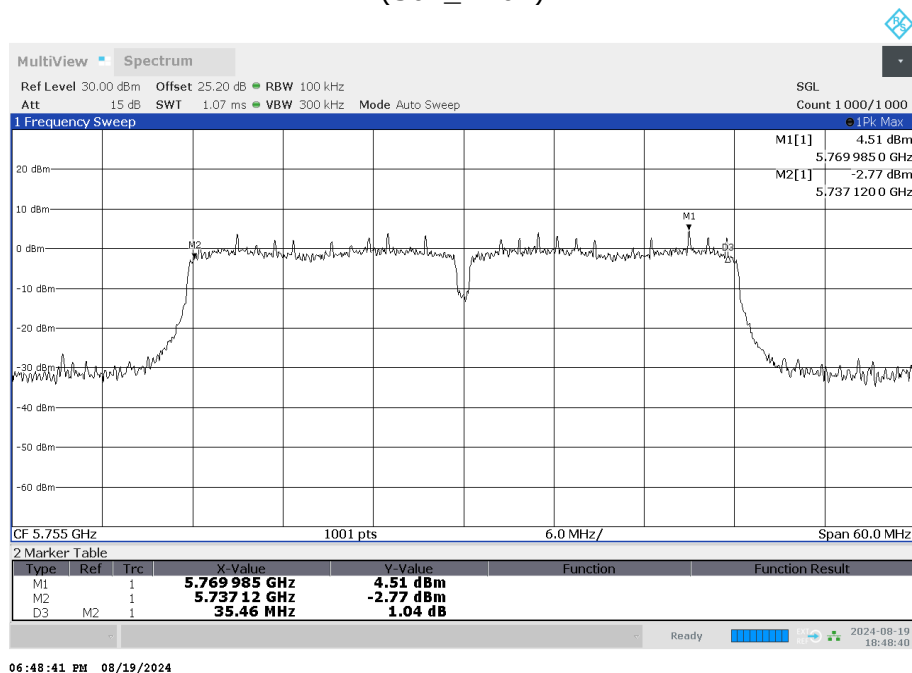
Radio Technology = WLAN a, Operating Frequency = low, Subband = U-NII-3
(S01_AD02)



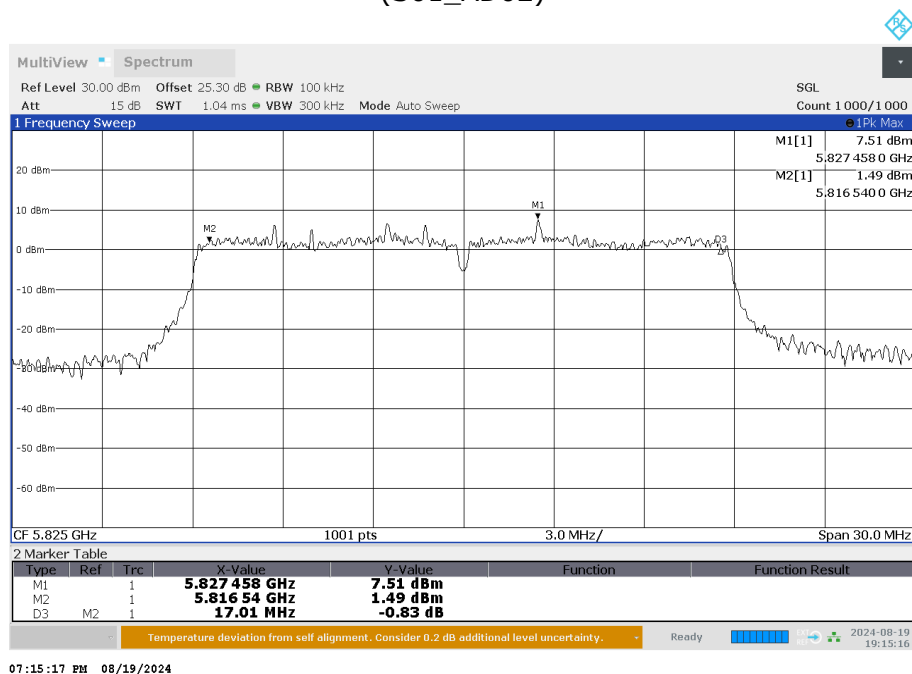
Radio Technology = WLAN n 20 MHz, Operating Frequency = mid, Subband = U-NII-3
(S01_AD02)



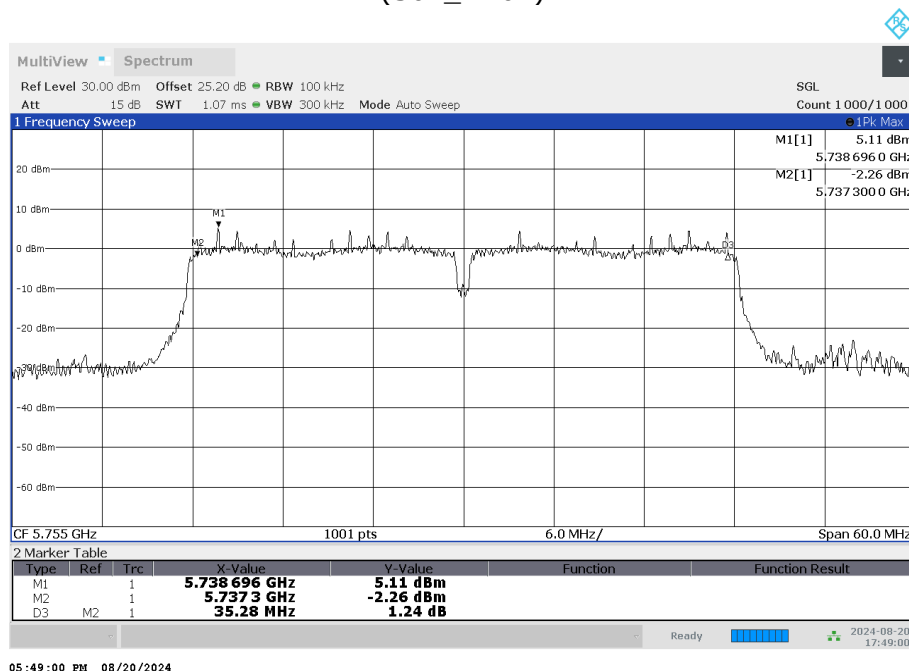
Radio Technology = WLAN n 40 MHz, Operating Frequency = low, Subband = U-NII-3
(S01_AD02)



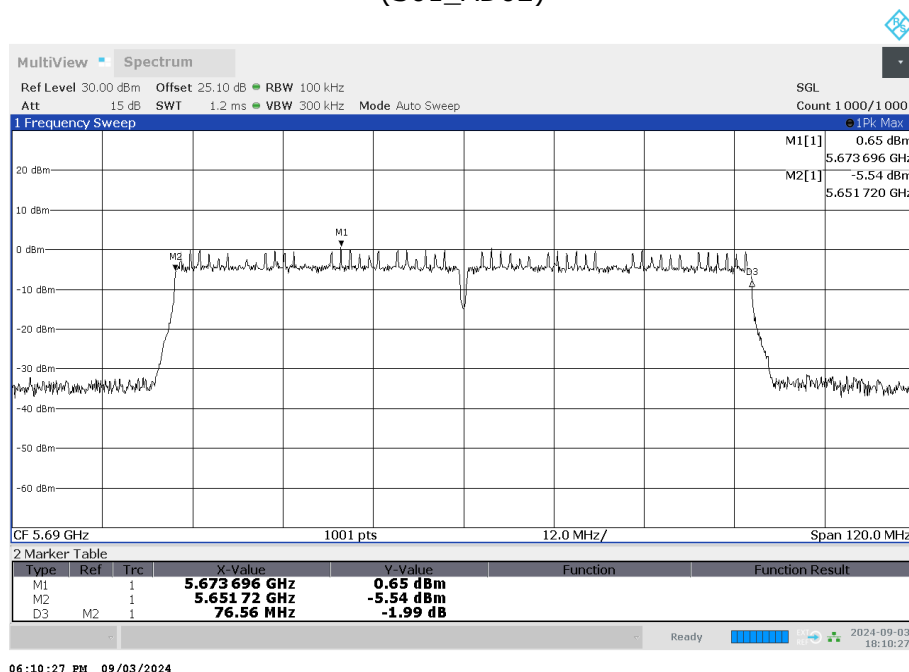
Radio Technology = WLAN ac 20 MHz, Operating Frequency = high, Subband = U-NII-3
(S01_AD02)



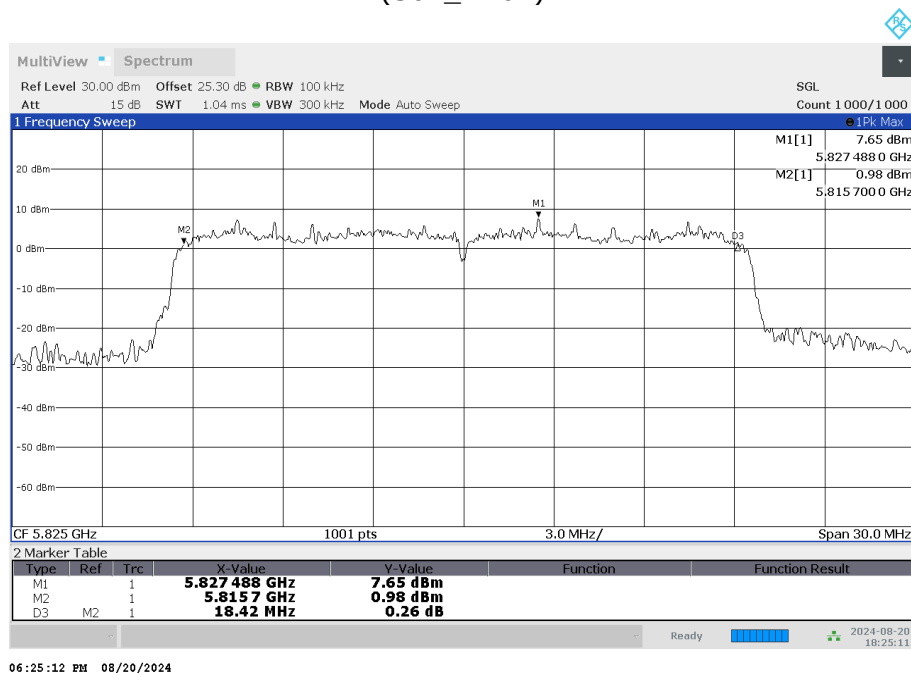
Radio Technology = WLAN ac 40 MHz, Operating Frequency = low, Subband = U-NII-3
(S01_AD02)



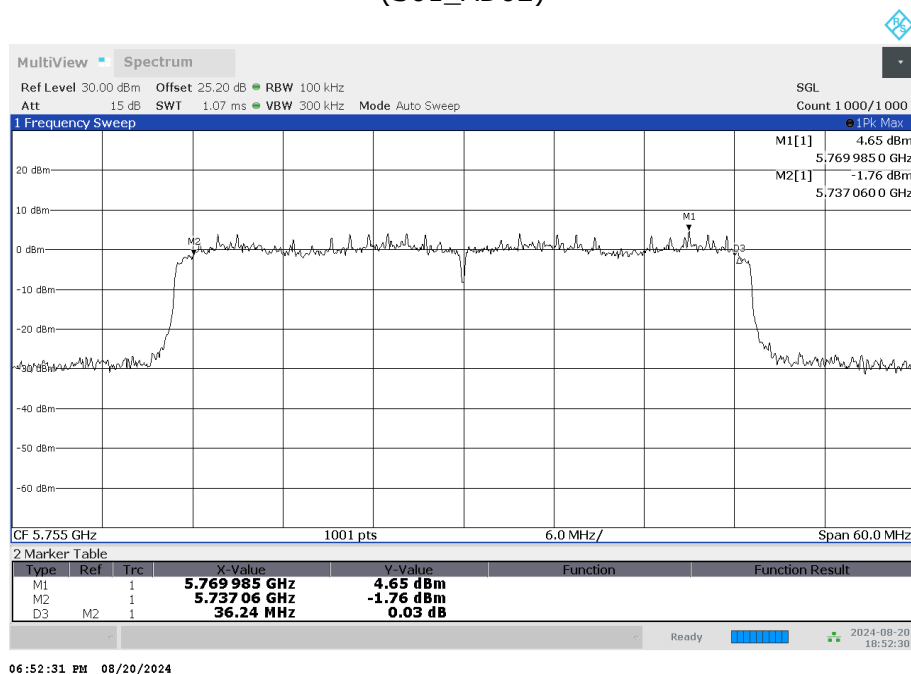
Radio Technology = WLAN ac 80 MHz, Operating Frequency = straddle, Subband = U-NII-3
(S01_AD02)



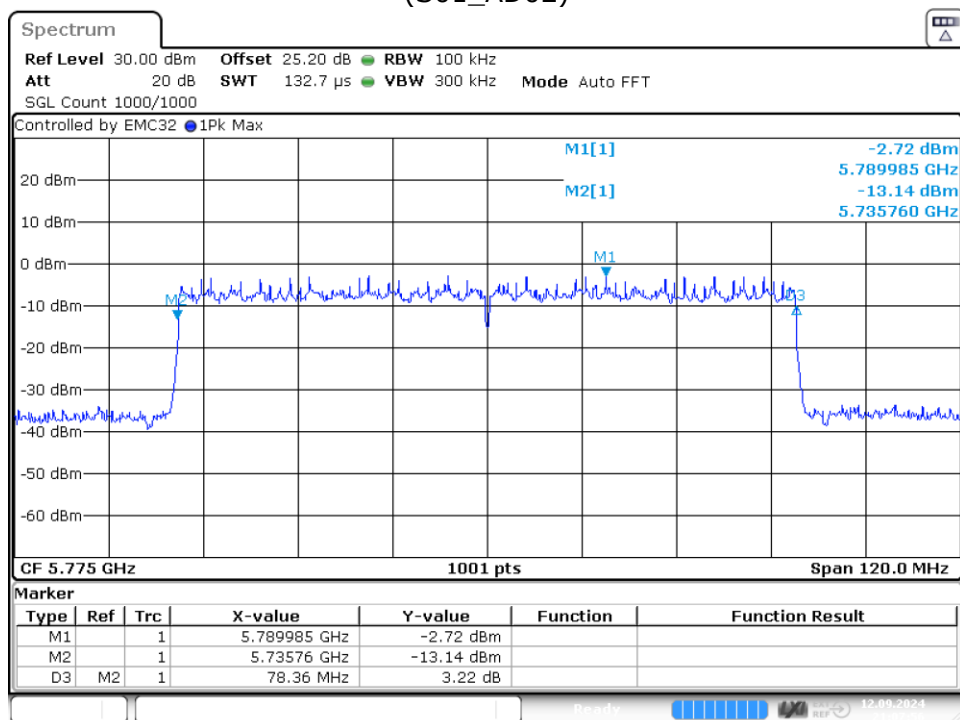
Radio Technology = WLAN ax 20 MHz, Operating Frequency = high, Subband = U-NII-3
(S01_AD02)



Radio Technology = WLAN ax 40 MHz, Operating Frequency = low, Subband = U-NII-3
(S01_AD02)



Radio Technology = WLAN ax 80 MHz, Operating Frequency = mid, Subband = U-NII-3
 (S01_AD02)



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5.3.5 TEST EQUIPMENT USED

- R&S TS8997

5.4 99 % BANDWIDTH

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 12.4.2 (6.9.3)

5.4.1 TEST DESCRIPTION

The Equipment Under Test (EUT) was set up to perform the occupied bandwidth measurements.

The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

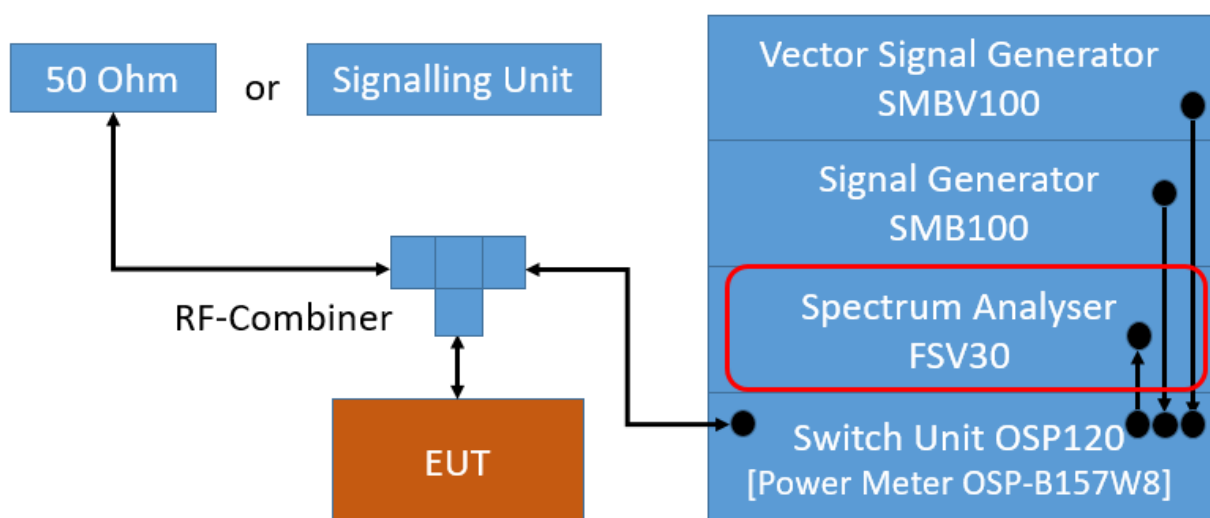
The results recorded were measured with the modulation which produce the worst-case (widest) emission bandwidth.

The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

Analyzer settings:

- Resolution Bandwidth (RBW): approx. ≥ 1 % of the span, but not below
- Video Bandwidth (VBW): ≥ 3 times the RBW
- Span: 40 / 80 / 160 / 320 MHz (for 20 / 40 / 80 / 160 MHz nominal bandwidth)
- Trace: Maxhold
- Sweeps: See example plots
- Sweep time: Auto
- Detector: Peak

The 99 % measurement function of the spectrum analyser function was used to determine the 99 % bandwidth.



TS8997; Occupied Channel Bandwidth 6 dB / 26 dB / 99 %

5.4.2 TEST REQUIREMENTS / LIMITS

No applicable limit.

The test was performed to determine the limits for the "Maximum Conducted Output Power" and DFS test cases.

5.4.3 TEST PROTOCOL

Ambient temperature: 22 - 27 °C

Air Pressure: 1001 - 1015 hPa

Humidity: 39 - 56 %

Radio Technology	Subband	Operating Frequency	99% Bandwidth [MHz]
WLAN a	U-NII-1	low	16.6
WLAN a	U-NII-1	mid	16.6
WLAN a	U-NII-1	high	16.6
WLAN a	U-NII-2A	low	16.6
WLAN a	U-NII-2A	mid	16.6
WLAN a	U-NII-2A	high	16.6
WLAN a	U-NII-2C	low	16.6
WLAN a	U-NII-2C	mid	16.6
WLAN a	U-NII-2C	high	16.6
WLAN a	U-NII-2C/3	straddle	13.3 (Band 2C), 3.3 (Band 3)
WLAN a	U-NII-3	low	16.6
WLAN a	U-NII-3	mid	16.6
WLAN a	U-NII-3	high	16.6
WLAN n 20 MHz	U-NII-1	low	17.6
WLAN n 20 MHz	U-NII-1	mid	17.6
WLAN n 20 MHz	U-NII-1	high	17.6
WLAN n 20 MHz	U-NII-2A	low	17.6
WLAN n 20 MHz	U-NII-2A	mid	17.6
WLAN n 20 MHz	U-NII-2A	high	17.6
WLAN n 20 MHz	U-NII-2C	low	17.6
WLAN n 20 MHz	U-NII-2C	mid	17.7
WLAN n 20 MHz	U-NII-2C	high	17.6
WLAN n 20 MHz	U-NII-2C/3	straddle	13.8 (Band 2C), 3.8 (Band 3)
WLAN n 20 MHz	U-NII-3	low	17.6
WLAN n 20 MHz	U-NII-3	mid	17.6
WLAN n 20 MHz	U-NII-3	high	17.6
WLAN n 40 MHz	U-NII-1	low	36.0
WLAN n 40 MHz	U-NII-1	high	36.0
WLAN n 40 MHz	U-NII-2A	low	36.0
WLAN n 40 MHz	U-NII-2A	high	36.0
WLAN n 40 MHz	U-NII-2C	low	36.0
WLAN n 40 MHz	U-NII-2C	mid	36.0
WLAN n 40 MHz	U-NII-2C	high	36.0
WLAN n 40 MHz	U-NII-2C/3	straddle	33.0 (Band 2C), 3.0 (Band 3)
WLAN n 40 MHz	U-NII-3	low	36.0
WLAN n 40 MHz	U-NII-3	high	36.0
WLAN ac 20 MHz	U-NII-1	low	17.6

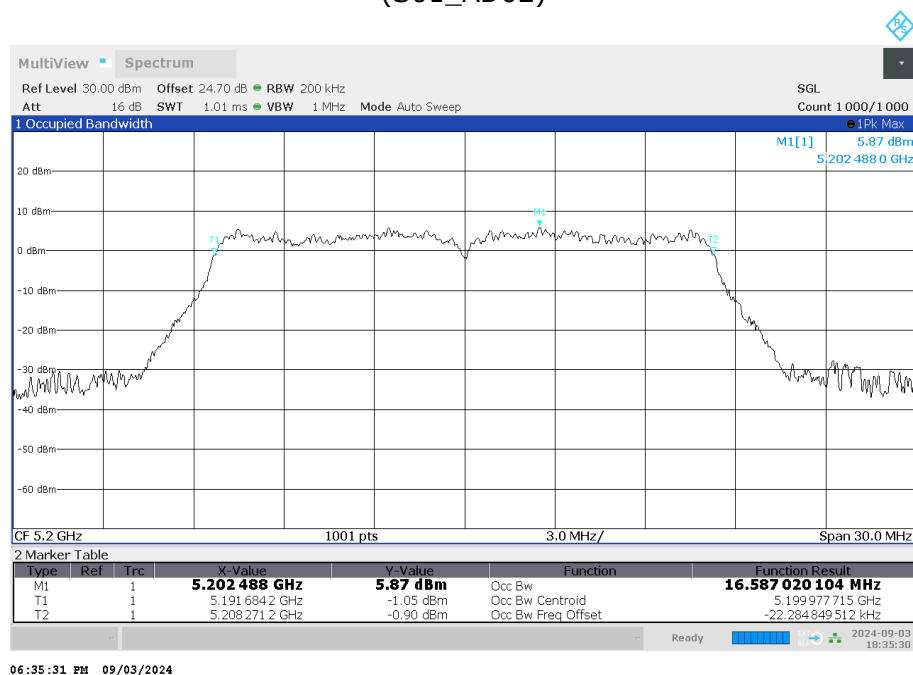
WLAN ac 20 MHz	U-NII-1	mid	17.6
WLAN ac 20 MHz	U-NII-1	high	17.6
WLAN ac 20 MHz	U-NII-2A	low	17.6
WLAN ac 20 MHz	U-NII-2A	mid	17.6
WLAN ac 20 MHz	U-NII-2A	high	17.6
WLAN ac 20 MHz	U-NII-2C	low	17.6
WLAN ac 20 MHz	U-NII-2C	mid	17.6
WLAN ac 20 MHz	U-NII-2C	high	17.6
WLAN ac 20 MHz	U-NII-2C/3	straddle	13.8 (Band 2C), 3.8 (Band 3)
WLAN ac 20 MHz	U-NII-3	low	17.6
WLAN ac 20 MHz	U-NII-3	mid	17.6
WLAN ac 20 MHz	U-NII-3	high	17.7
WLAN ac 40 MHz	U-NII-1	low	36.0
WLAN ac 40 MHz	U-NII-1	high	36.0
WLAN ac 40 MHz	U-NII-2A	low	36.0
WLAN ac 40 MHz	U-NII-2A	high	36.0
WLAN ac 40 MHz	U-NII-2C	low	36.0
WLAN ac 40 MHz	U-NII-2C	mid	36.0
WLAN ac 40 MHz	U-NII-2C	high	36.0
WLAN ac 40 MHz	U-NII-2C/3	straddle	33.0 (Band 2C), 3.0 (Band 3)
WLAN ac 40 MHz	U-NII-3	low	36.0
WLAN ac 40 MHz	U-NII-3	high	36.0
WLAN ac 80 MHz	U-NII-1	mid	75.7
WLAN ac 80 MHz	U-NII-2A	mid	75.8
WLAN ac 80 MHz	U-NII-2C	low	75.7
WLAN ac 80 MHz	U-NII-2C/3	straddle	73.0 (Band 2C), 2.8 (Band 3)
WLAN ac 80 MHz	U-NII-3	mid	75.9
WLAN ax 20 MHz	U-NII-1	low	18.7
WLAN ax 20 MHz	U-NII-1	mid	18.7
WLAN ax 20 MHz	U-NII-1	high	18.7
WLAN ax 20 MHz	U-NII-2A	low	18.8
WLAN ax 20 MHz	U-NII-2A	mid	18.8
WLAN ax 20 MHz	U-NII-2A	high	18.8
WLAN ax 20 MHz	U-NII-2C	low	18.7
WLAN ax 20 MHz	U-NII-2C	mid	18.8
WLAN ax 20 MHz	U-NII-2C	high	18.8
WLAN ax 20 MHz	U-NII-2C/3	straddle	14.4 (Band 2C), 4.4 (Band 3)
WLAN ax 20 MHz	U-NII-3	low	18.8
WLAN ax 20 MHz	U-NII-3	mid	18.8
WLAN ax 20 MHz	U-NII-3	high	18.8
WLAN ax 40 MHz	U-NII-1	low	37.5
WLAN ax 40 MHz	U-NII-1	high	37.5
WLAN ax 40 MHz	U-NII-2A	low	37.5
WLAN ax 40 MHz	U-NII-2A	high	37.4
WLAN ax 40 MHz	U-NII-2C	low	37.5
WLAN ax 40 MHz	U-NII-2C	mid	37.4
WLAN ax 40 MHz	U-NII-2C	high	37.5
WLAN ax 40 MHz	U-NII-2C/3	straddle	33.8 (Band 2C), 3.7 (Band 3)
WLAN ax 40 MHz	U-NII-3	low	37.5
WLAN ax 40 MHz	U-NII-3	high	37.5
WLAN ax 80 MHz	U-NII-1	mid	77.5
WLAN ax 80 MHz	U-NII-2A	mid	77.5

WLAN ax 80 MHz	U-NII-2C	low	77.5
WLAN ax 80 MHz	U-NII-2C/3	straddle	73.8 (Band 2C), 3.6 (Band 3)
WLAN ax 80 MHz	U-NII-3	mid	77.6

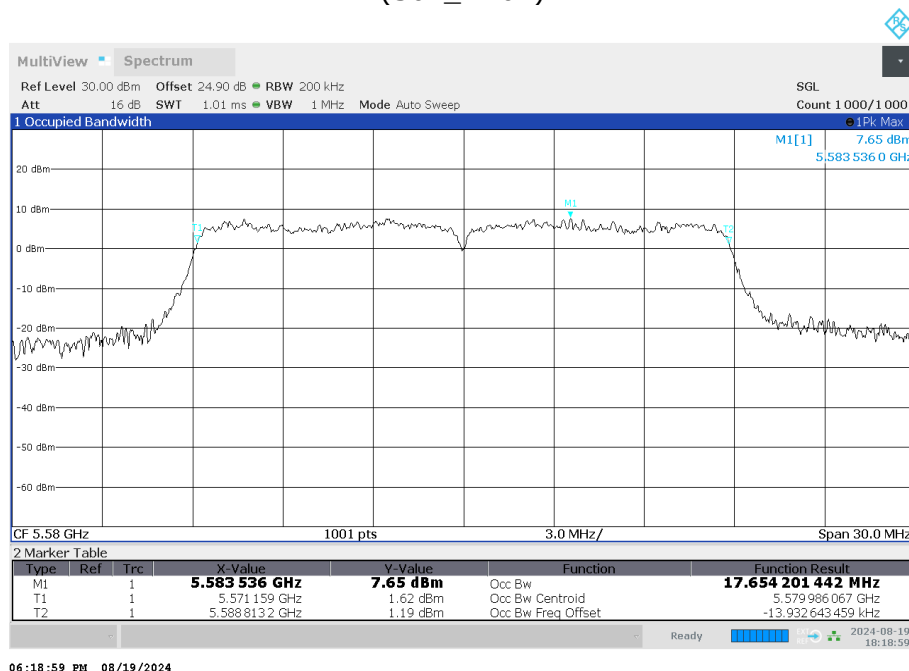
Remark: Please see next sub-clause for the measurement plot.

5.4.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

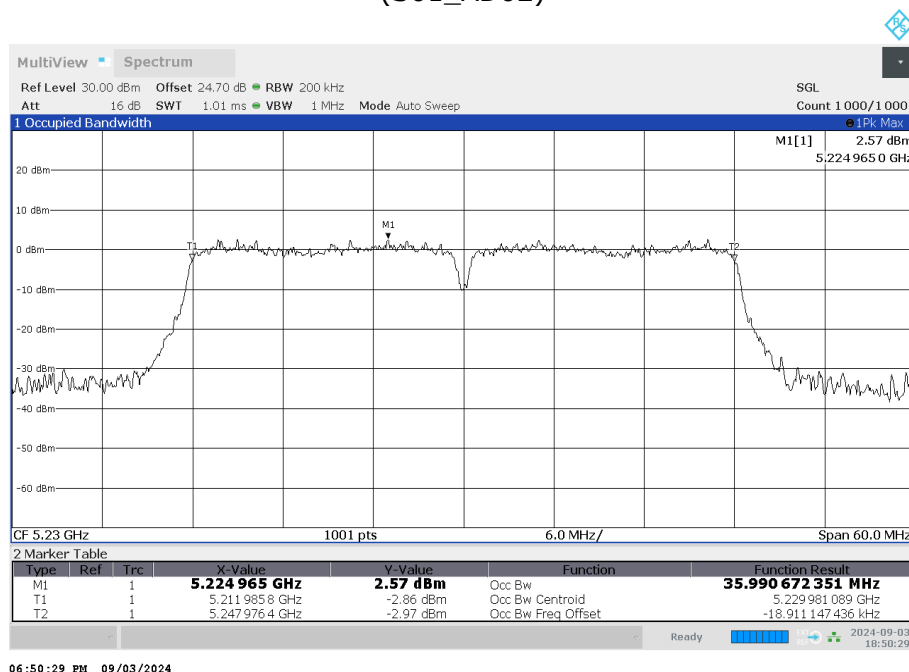
Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-1
(S01_AD02)



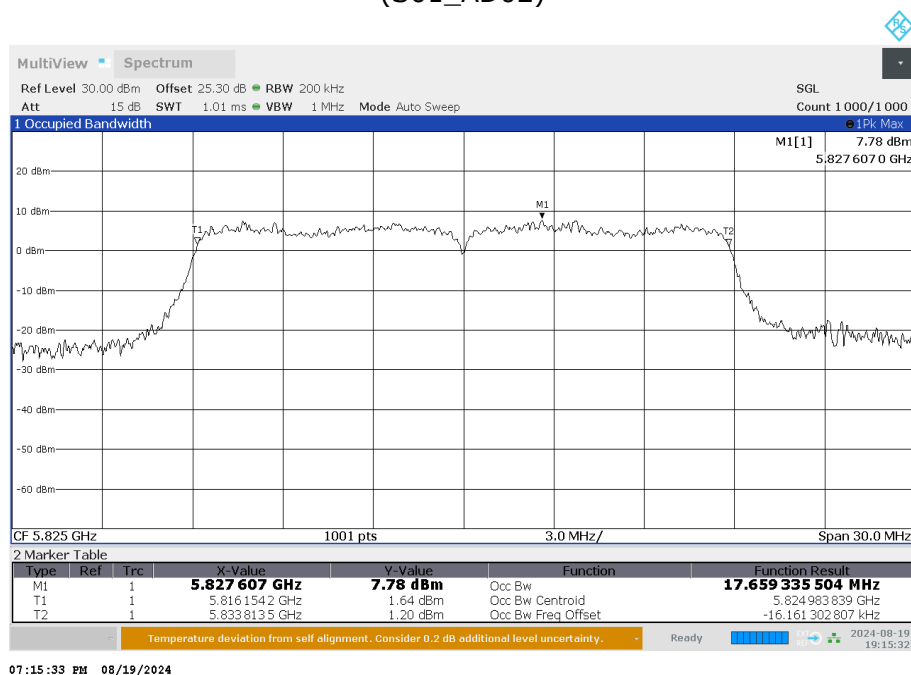
Radio Technology = WLAN n 20 MHz, Operating Frequency = mid, Subband = U-NII-2C
(S01_AD02)



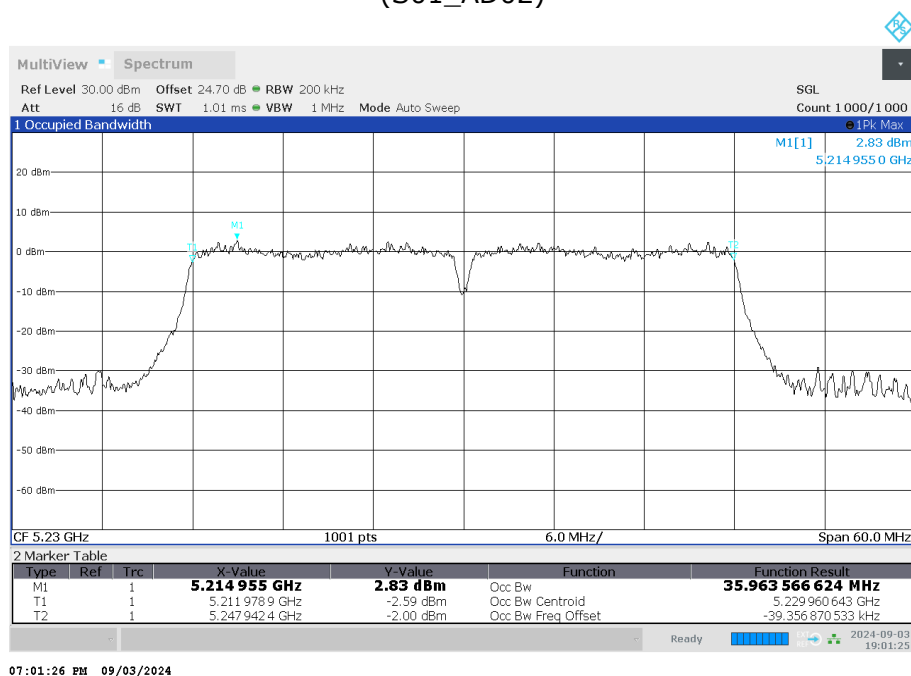
Radio Technology = WLAN n 40 MHz, Operating Frequency = high, Subband = U-NII-1
(S01_AD02)



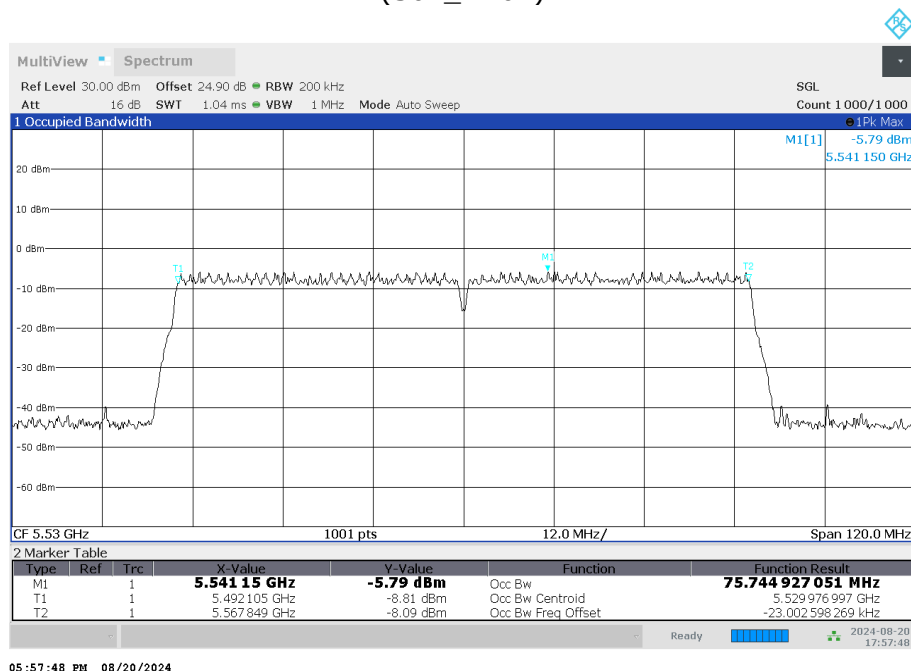
Radio Technology = WLAN ac 20 MHz, Operating Frequency = high, Subband = U-NII-3
(S01_AD02)



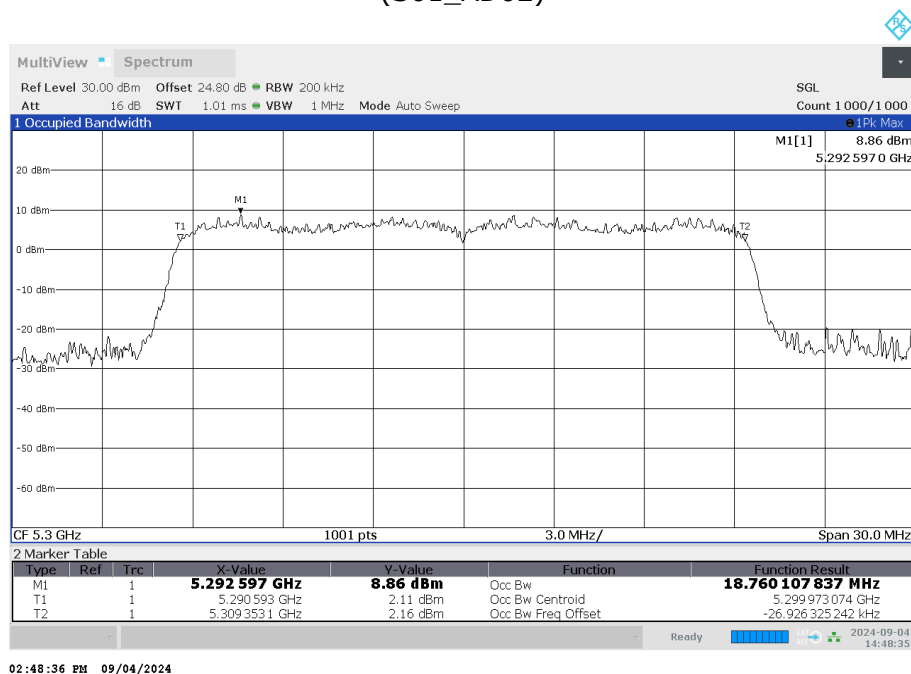
Radio Technology = WLAN ac 40 MHz, Operating Frequency = high, Subband = U-NII-1
(S01_AD02)



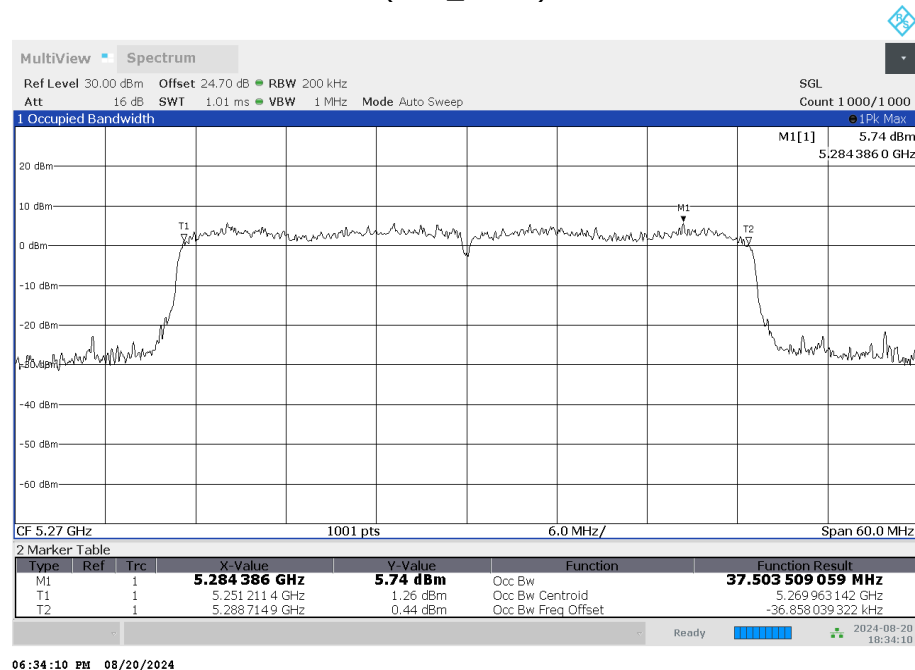
Radio Technology = WLAN ac 80 MHz, Operating Frequency = low, Subband = U-NII-2C
(S01_AD02)



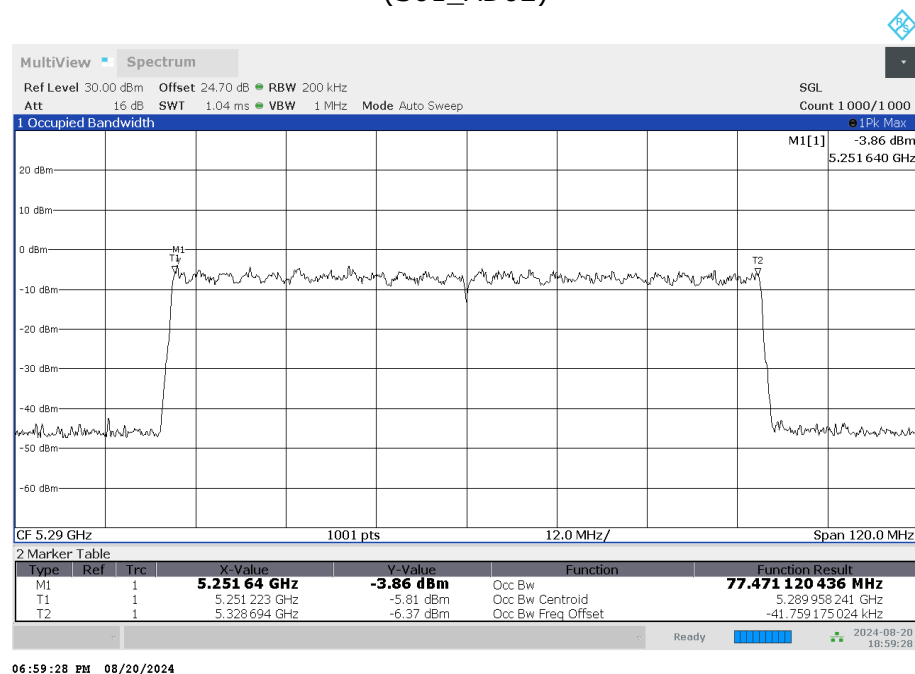
Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid, Subband = U-NII-2A
(S01_AD02)



Radio Technology = WLAN ax 40 MHz, Operating Frequency = low, Subband = U-NII-2A (S01_AD02)



Radio Technology = WLAN ax 80 MHz, Operating Frequency = mid, Subband = U-NII-2A (S01_AD02)



5.4.5 TEST EQUIPMENT USED

- R&S TS8997

5.5 MAXIMUM CONDUCTED OUTPUT POWER

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 12.3.3.2

5.5.1 TEST DESCRIPTION

The Equipment Under Test (EUT) was set up to perform the output power measurements. The results recorded were measured with the modulation which produces the worst-case (highest) output power

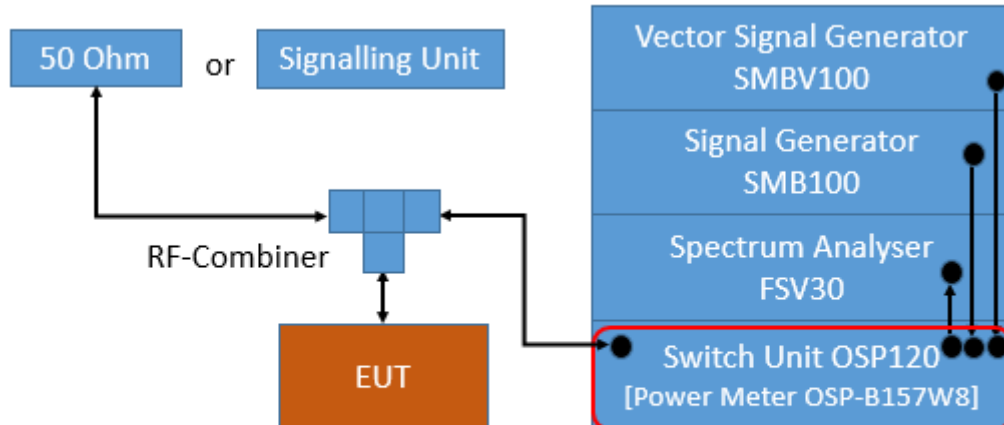
For U-NII bands 1, 2A, 2C, 3:

The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

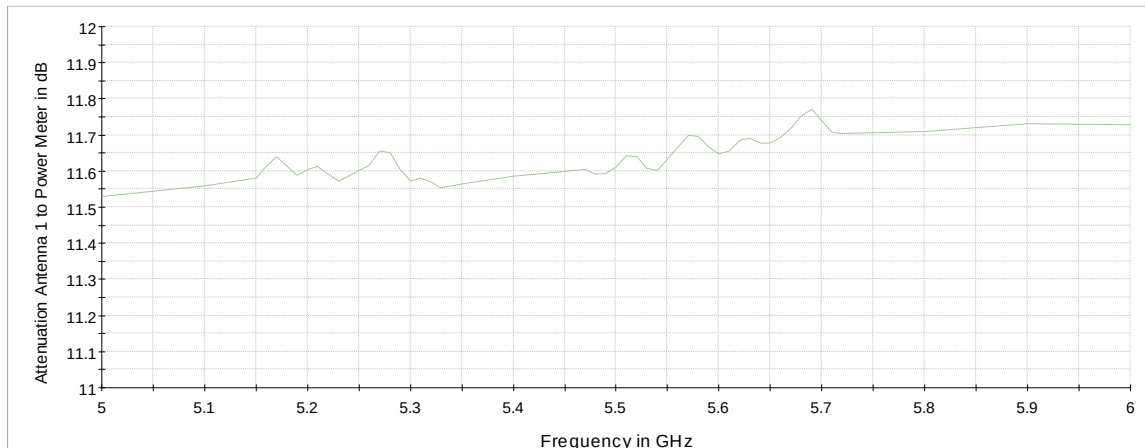
The OSP-B157W is a gated RF average power meter with a signal bandwidth > 300 MHz.

Note:

The measurement was performed according FCC Public Note "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, 789033 D02", method **PM-G**.



TS8997; Maximum Conducted Output Power



Attenuation of measurement path

For U-NII bands 5,6,7,8:

The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

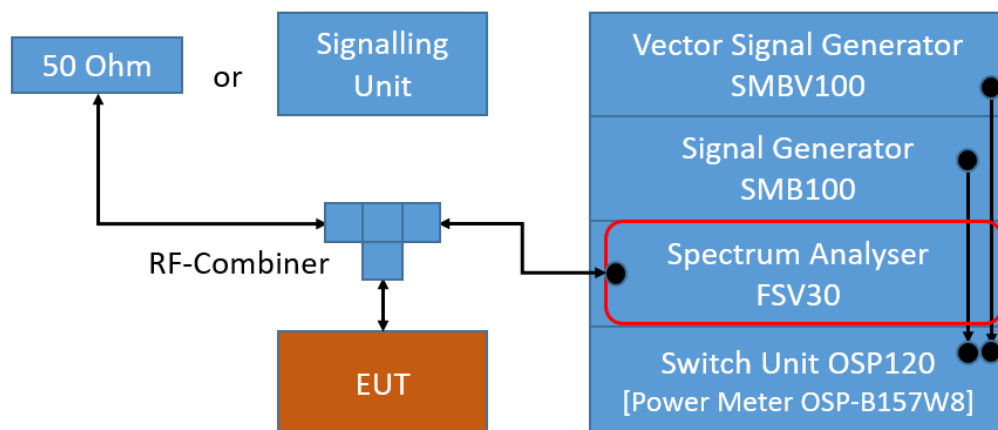
Analyzer settings:

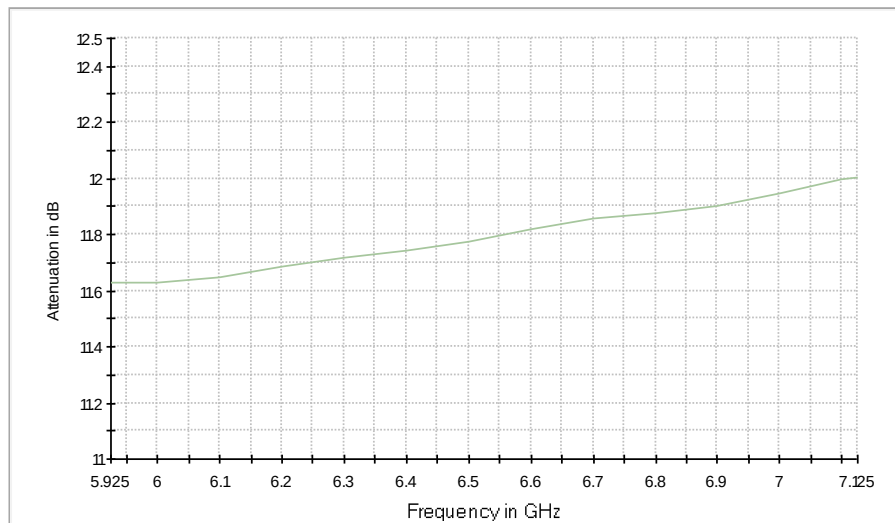
- Resolution Bandwidth (RBW): 1 MHz
- Video Bandwidth (VBW): 3 MHz
- Trace: Average, RMS power averaging mode
- Sweeps: at least 100
- Sweep time: Auto
- Detector: RMS
- Trigger: free run (DC > 98 %) or gated mode (DC < 98 %)

See worst case result plots for details

Note:

The measurement was performed according FCC Public Note "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, 789033 D02", method **SA-1**.





Attenuation of measurement path

5.5.2 TEST REQUIREMENTS / LIMITS

A) FCC

FCC Part 15, Subpart E, §15.407 (a) (1) (i): Outdoor access point:

For systems using digital modulation techniques in the 5.15 – 5.25 GHz bands:

Limit: 1 W (30 dBm) provided the maximum antenna gain does not exceed 6 dBi.

The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

§15.407 (a) (1) (ii): Indoor access point:

Limit: 1 W (30 dBm) provided the maximum antenna gain does not exceed 6 dBi.

§15.407 (a) (1) (iii): Fixed point-to-point access points:

Limit: 1 W (30 dBm) provided the maximum antenna gain does not exceed 23 dBi.

§15.407 (a) (1) (iv): Client devices:

Limit: 250 mW (24 dBm) provided the maximum antenna gain does not exceed 6 dBi.

FCC Part 15, Subpart E, §15.407 (a) (2)

For systems using digital modulation techniques in the 5.25 – 5.35 GHz and 5.47 – 5.725 GHz bands:

Limit: 250 mW (24 dBm) or $11 \text{ dBm} + 10 \log (26 \text{ dB bandwidth/MHz})$ whatever is the lesser.

FCC Part 15, Subpart E, §15.407 (a) (3):

For systems using digital modulation techniques in the 5.725 – 5.850 GHz bands:

Limit: 1 W (30 dBm) provided the maximum antenna gain does not exceed 6 dBi. The antenna gain limitation is not applicable for fixed point-to-point devices.

FCC Part 15, Subpart E, §15.407 (a) (4):

For a standard power access point and fixed client devices in the 5.925 – 6.425 GHz and 6.525 – 6.875 GHz bands:

Limit: 4 W (36 dBm) e.i.r.p.

For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

FCC Part 15, Subpart E, §15.407 (a) (5):

For an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: 1 W (30 dBm)e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (6):

For a subordinate device operating under an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: 1 W (30 dBm)e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (7):

For a client device, except for fixed client devices, operating under standard power access point in the 5.925-6.425 GHz and 6.525-6.875 GHz bands:

Limit: 1 W (30 dBm)e.i.r.p.

The client device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power.

FCC Part 15, Subpart E, §15.407 (a) (8):

For client devices operating under the control of an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: 250 mW (24 dBm)e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (11):

The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

B) IC

Different frequency bands and limits apply, as compared to the FCC requirements.

All frequency bands: B is the 99% emission bandwidth in MHz.

RSS-247, 6.2.1.1, Band 5150-5250 MHz, indoor operation only, except for OEM devices installed by vehicle manufacturers:

Limits:

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dBm, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW. (e.i.r.p.)

Other devices: 200 mW (23 dBm) or $10 + 10 \log_{10}B$ [dBm], whichever power is less.

RSS-247, 6.2.2.1, Band 5250-5350 MHz:

Limits:

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or $1.76 + 10 \log_{10}B$, dBm, whichever is less. Devices shall implement TPC in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

Devices, other devices than installed in vehicles:

Maximum conducted Power: 250 mW (24 dBm) or $11 + 10 \log_{10} B$ [dBm], whichever power is less.

e.i.r.p.: 1.0 W (30 dBm) or $17 + 10 \log_{10} B$ [dBm], whichever power is less.

Outdoor fixed devices with a maximum e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below:

- i. -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$
- ii. $-13 - 0.716 (\theta - 8)$ dBW/MHz for $8^\circ \leq \theta < 40^\circ$
- iii. $-35.9 - 1.22 (\theta - 40)$ dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$
- iv. -42 dBW/MHz for $\theta > 45^\circ$

RSS-247, 6.2.3.1, Bands 5470-5600 MHz and 5650-5725 MHz:

Limits:

Maximum conducted Power: 250 mW (24 dBm) or $11 + 10 \log_{10} B$ [dBm], whichever power is less.

e.i.r.p.: 1.0 W (30 dBm) or $17 + 10 \log_{10} B$ [dBm], whichever power is less.

Note: Devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

RSS-247, 6.2.4.1, Band 5725-5850 MHz:

Limits:

Maximum conducted Power: 1 W (30 dBm)

e.i.r.p.: 4 W (36 dBm)

5.5.3 TEST PROTOCOL

Ambient temperature: 22 - 27 °C
Air Pressure: 1001 - 1015 hPa
Humidity: 39 - 56 %
WLAN a-Mode; 20 MHz; 6 Mbit/s

U-NII-band	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5180	15.6	20.7	24.0	8.4	30.0	9.3	N/A	-	22.2	1.5	1)
	Conducted	5200	15.8	20.9	24.0	8.2	30.0	9.1	N/A	-	22.2	1.3	1)
	Conducted	5240	15.6	20.7	24.0	8.4	30.0	9.3	N/A	-	22.2	1.5	1)
2A	Conducted	5260	17.8	22.9	23.9	6.1	27.0	4.1	23.2	5.4	23.0	0.1	1)
	Conducted	5300	17.6	22.7	23.9	6.3	27.0	4.3	23.2	5.6	23.0	0.3	1)
	Conducted	5320	17.2	22.3	23.9	6.8	27.0	4.7	23.2	6.0	23.0	0.7	1)
2C	Conducted	5500	14.0	19.1	23.9	9.9	27.0	7.9	23.2	9.2	27.0	7.9	
	Conducted	5580	18.4	23.5	23.9	5.6	27.0	3.5	23.2	4.8	27.0	3.5	
	Conducted	5700	15.4	20.5	23.9	8.5	27.0	6.5	23.2	7.7	27.0	6.5	
2C+3	Conducted	5720	18.2	23.3	22.7	4.5	27.0	3.7	22.2	4.0	27.0	3.7	
3	Conducted	5745	18.1	23.2	30.0	11.9	36.0	12.8	30.0	11.9	36.0	12.8	
	Conducted	5785	18.3	23.4	30.0	11.7	36.0	12.6	30.0	11.7	36.0	12.6	
	Conducted	5825	18.6	23.7	30.0	11.4	36.0	12.3	30.0	11.4	36.0	12.3	

WLAN n-Mode; 20 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5180	15.6	20.7	24.0	8.4	30.0	9.3	N/A	-	22.5	1.8	1)
	Conducted	5200	15.7	20.8	24.0	8.3	30.0	9.2	N/A	-	22.5	1.7	1)
	Conducted	5240	15.6	20.7	24.0	8.4	30.0	9.3	N/A	-	22.5	1.8	1)
2A	Conducted	5260	17.7	22.8	24.0	6.2	27.0	4.2	23.5	5.7	23.0	0.2	1)
	Conducted	5300	17.6	22.7	24.0	6.4	27.0	4.3	23.5	5.9	23.0	0.3	1)
	Conducted	5320	14.6	19.7	24.0	9.4	27.0	7.3	23.5	8.9	23.0	3.3	1)
2C	Conducted	5500	14.0	19.1	24.0	10.0	27.0	7.9	23.5	9.5	27.0	7.9	
	Conducted	5580	18.0	23.1	24.0	6.0	27.0	3.9	23.5	5.5	27.0	3.9	
	Conducted	5700	14.9	20.0	24.0	9.0	27.0	7.0	23.5	8.5	27.0	7.0	
2C+3	Conducted	5720	17.8	22.9	22.8	4.9	27.0	4.1	22.4	4.6	27.0	4.1	
3	Conducted	5745	17.9	23.0	30.0	12.1	36.0	13.0	30.0	12.1	36.0	13.0	
	Conducted	5785	17.9	23.0	30.0	12.1	36.0	13.0	30.0	12.1	36.0	13.0	
	Conducted	5825	18.2	23.3	30.0	11.8	36.0	12.7	30.0	11.8	36.0	12.7	

WLAN n-Mode; 40 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5190	13.9	19.0	24.0	10.1	30.0	11.0	N/A	-	23.0	4.0	1)
	Conducted	5230	15.6	20.7	24.0	8.4	30.0	9.3	N/A	-	23.0	2.3	1)
2A	Conducted	5270	16.9	22.0	24.0	7.1	27.0	5.0	24.0	7.1	23.0	1.0	1)
	Conducted	5310	13.6	18.7	24.0	10.4	27.0	8.3	24.0	10.4	23.0	4.3	1)
2C	Conducted	5510	12.1	17.2	24.0	11.9	27.0	9.8	24.0	11.9	27.0	9.8	
	Conducted	5550	17.0	22.1	24.0	7.0	27.0	4.9	24.0	7.0	27.0	4.9	
	Conducted	5670	13.5	18.6	24.0	10.5	27.0	8.4	24.0	10.5	27.0	8.4	
2C+3	Conducted	5710	17.9	23.0	24.0	6.1	27.0	4.0	24.0	6.1	27.0	4.0	
3	Conducted	5755	17.9	23.0	30.0	12.1	36.0	13.0	30.0	12.1	36.0	13.0	
	Conducted	5795	17.8	22.9	30.0	12.2	36.0	13.1	30.0	12.2	36.0	13.1	

WLAN ac-Mode; 20 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5180	15.2	20.3	24.0	8.8	30.0	9.7	N/A	-	22.5	2.2	1)
	Conducted	5200	15.5	20.6	24.0	8.5	30.0	9.4	N/A	-	22.5	1.8	1)
	Conducted	5240	15.6	20.7	24.0	8.4	30.0	9.3	N/A	-	22.5	1.7	1)
2A	Conducted	5260	17.7	22.8	24.0	6.3	27.0	4.2	23.5	5.7	23.0	0.2	1)
	Conducted	5300	17.7	22.8	24.0	6.3	27.0	4.2	23.5	5.8	23.0	0.2	1)
	Conducted	5320	14.7	19.8	24.0	9.2	27.0	7.2	23.5	8.7	23.0	3.2	1)
2C	Conducted	5500	14.0	19.1	24.0	10.0	27.0	7.9	23.5	9.5	27.0	7.9	
	Conducted	5580	18.2	23.3	24.0	5.8	27.0	3.7	23.5	5.3	27.0	3.7	
	Conducted	5700	15.0	20.1	24.0	9.0	27.0	6.9	23.5	8.5	27.0	6.9	
2C+3	Conducted	5720	17.9	23.0	22.8	4.9	27.0	4.0	22.4	4.5	27.0	4.0	
3	Conducted	5745	17.9	23.0	30.0	12.1	36.0	13.0	30.0	12.1	36.0	13.0	
	Conducted	5785	17.9	23.0	30.0	12.1	36.0	13.0	30.0	12.1	36.0	13.0	
	Conducted	5825	18.2	23.3	30.0	11.8	36.0	12.7	30.0	11.8	36.0	12.7	

WLAN ac-Mode; 40 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5190	13.9	19.0	24.0	10.1	30.0	11.0	N/A	-	23.0	4.0	1)
	Conducted	5230	15.6	20.7	24.0	8.4	30.0	9.3	N/A	-	23.0	2.3	1)
2A	Conducted	5270	16.8	21.9	24.0	7.2	27.0	5.1	24.0	7.2	23.0	1.1	1)
	Conducted	5310	13.6	18.7	24.0	10.4	27.0	8.3	24.0	10.4	23.0	4.3	1)
2C	Conducted	5510	12.2	17.3	24.0	11.8	27.0	9.7	24.0	11.8	27.0	9.7	
	Conducted	5550	17.0	22.1	24.0	7.0	27.0	4.9	24.0	7.0	27.0	4.9	
	Conducted	5670	13.7	18.8	24.0	10.3	27.0	8.2	24.0	10.3	27.0	8.2	
2C+3	Conducted	5710	18.1	23.2	24.0	5.9	27.0	3.8	24.0	5.9	27.0	3.8	
3	Conducted	5755	18.3	23.4	30.0	11.7	36.0	12.6	30.0	11.7	36.0	12.6	
	Conducted	5795	18.3	23.4	30.0	11.7	36.0	12.6	30.0	11.7	36.0	12.6	

WLAN ac-Mode; 80 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5210	10.8	15.9	24.0	13.2	30.0	14.1	N/A	-	23.0	7.1	1)
2A	Conducted	5290	10.4	15.5	24.0	13.6	27.0	11.5	24.0	13.6	23.0	7.5	1)
2C	Conducted	5530	10.5	15.6	24.0	13.5	27.0	11.4	24.0	13.5	27.0	11.4	
2C+3	Conducted	5690	17.5	22.6	24.0	6.5	27.0	4.4	24.0	6.5	27.0	4.4	
3	Conducted	5775	14.8	19.9	30.0	15.2	36.0	16.1	30.0	15.2	36.0	16.1	

WLAN ax-Mode; 20 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5180	14.7	19.8	24.0	9.3	30.0	10.2	N/A	-	22.7	2.9	1)
	Conducted	5200	14.8	19.9	24.0	9.2	30.0	10.1	N/A	-	22.7	2.8	1)
	Conducted	5240	14.7	19.8	24.0	9.3	30.0	10.2	N/A	-	22.7	2.9	1)
2A	Conducted	5260	17.8	22.9	24.0	6.2	27.0	4.1	23.7	5.9	23.0	0.1	1)
	Conducted	5300	17.7	22.8	24.0	6.3	27.0	4.2	23.7	6.1	23.0	0.2	1)
	Conducted	5320	15.5	20.6	24.0	8.5	27.0	6.4	23.7	8.2	23.0	2.4	1)
2C	Conducted	5500	15.7	20.8	24.0	8.3	27.0	6.2	23.7	8.0	27.0	6.2	
	Conducted	5580	18.4	23.5	24.0	5.6	27.0	3.5	23.7	5.4	27.0	3.5	
	Conducted	5700	14.7	19.8	24.0	9.3	27.0	7.2	23.7	9.1	27.0	7.2	
2C+3	Conducted	5720	18.4	23.5	22.8	4.4	27.0	3.5	22.6	4.2	27.0	3.5	
3	Conducted	5745	18.6	23.7	30.0	11.4	36.0	12.3	30.0	11.4	36.0	12.3	
	Conducted	5785	18.6	23.7	30.0	11.4	36.0	12.3	30.0	11.4	36.0	12.3	
	Conducted	5825	18.9	24.0	30.0	11.1	36.0	12.0	30.0	11.1	36.0	12.0	

WLAN ax-Mode; 40 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5190	13.8	18.9	24.0	10.2	30.0	11.1	N/A	-	23.0	4.1	1)
	Conducted	5230	14.9	20.0	24.0	9.1	30.0	10.0	N/A	-	23.0	3.0	1)
2A	Conducted	5270	17.7	22.8	24.0	6.3	27.0	4.2	24.0	6.3	23.0	0.2	1)
	Conducted	5310	13.5	18.6	24.0	10.5	27.0	8.4	24.0	10.5	23.0	4.4	1)
2C	Conducted	5510	12.5	17.6	24.0	11.5	27.0	9.4	24.0	11.5	27.0	9.4	
	Conducted	5550	16.9	22.0	24.0	7.1	27.0	5.0	24.0	7.1	27.0	5.0	
	Conducted	5670	12.9	18.0	24.0	11.1	27.0	9.0	24.0	11.1	27.0	9.0	
2C+3	Conducted	5710	18.5	23.6	24.0	5.5	27.0	3.4	24.0	5.5	27.0	3.4	
3	Conducted	5755	18.7	23.8	30.0	11.3	36.0	12.2	30.0	11.3	36.0	12.2	
	Conducted	5795	18.6	23.7	30.0	11.4	36.0	12.3	30.0	11.4	36.0	12.3	

WLAN ax-Mode; 80 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	TX Freq. [MHz]	Cond. Power [dBm]	EIRP [dBm]	FCC Cond. Limit [dBm]	Margin [dB]	FCC EIRP Limit [dBm]	Margin [dB]	ISED Cond. Limit [dBm]	Margin [dB]	ISED EIRP Limit [dBm]	Margin [dB]	
1	Conducted	5210	11.0	16.1	24.0	13.0	30.0	13.9	N/A	-	23.0	6.9	1)
2A	Conducted	5290	10.8	15.9	24.0	13.2	27.0	11.1	24.0	13.2	23.0	7.1	1)
2C	Conducted	5530	10.7	15.8	24.0	13.3	27.0	11.2	24.0	13.3	27.0	11.2	
2C+3	Conducted	5690	17.9	23.0	24.0	6.1	27.0	4.0	24.0	6.1	27.0	4.0	
3	Conducted	5775	15.3	20.4	30.0	14.7	36.0	15.6	30.0	14.7	36.0	15.6	

Remark: Power Meter Measurement, no plots provided.

1) No additional limit applies related to the elevation.

5.5.4 TEST EQUIPMENT USED

- R&S TS8997

5.6 PEAK POWER SPECTRAL DENSITY

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 12.5 (SA-1)

5.6.1 TEST DESCRIPTION

The Equipment Under Test (EUT) was set up in a shielded room to perform the Maximum Power Spectral Density measurements.

The results recorded were measured with the modulation which produces the worst-case (highest) output power.

For U-NII bands 1, 2A, 2C, 3:

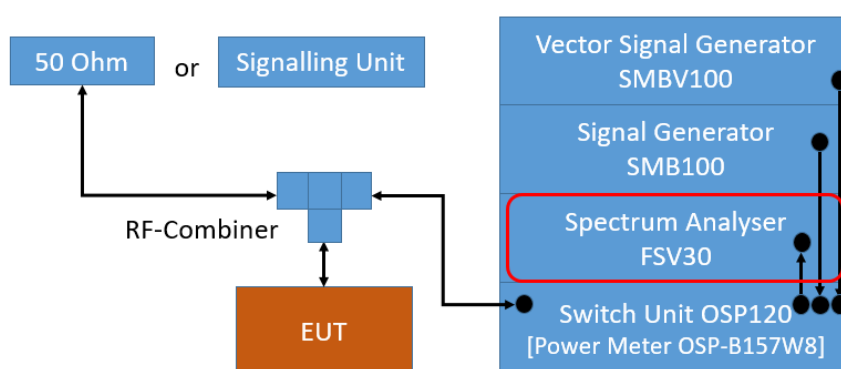
The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

Analyzer settings:

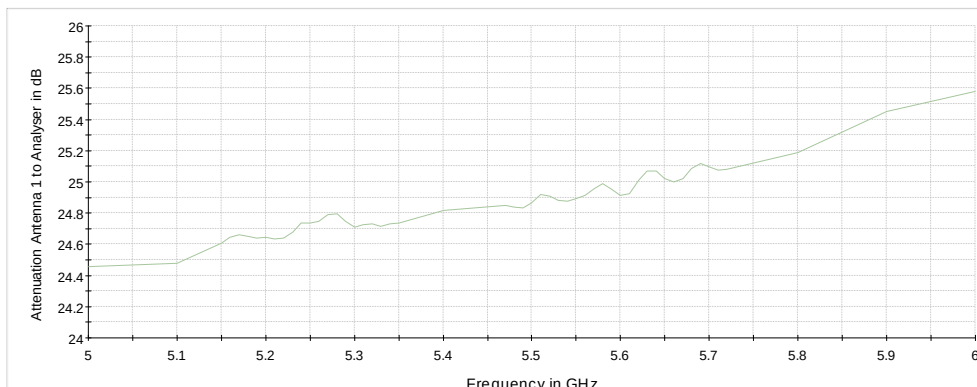
- Resolution Bandwidth (RBW): 1 MHz (for subband 3: 500 kHz)
- Video Bandwidth (VBW): 3 MHz (for subband 3: 2 MHz)
- Trace: Average, power
- Sweeps: At least 100, see example plots
- Sweep time: Auto
- Detector: RMS
- Trigger: free run

Note:

The analyser settings are according FCC Public Note "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, 789033 D02", method **SA-1**.



TS8997; Maximum Power Spectral Density



Attenuation of the measurement path

For U-NII bands 5, 6, 7, 8:

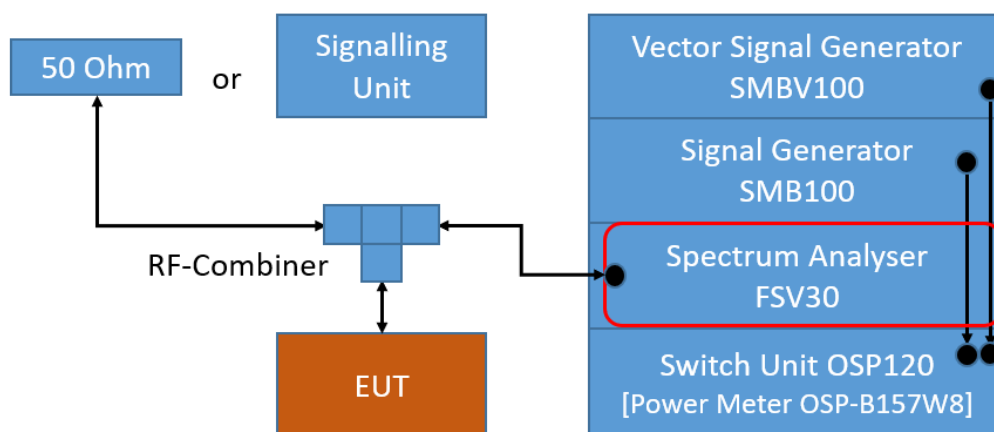
The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

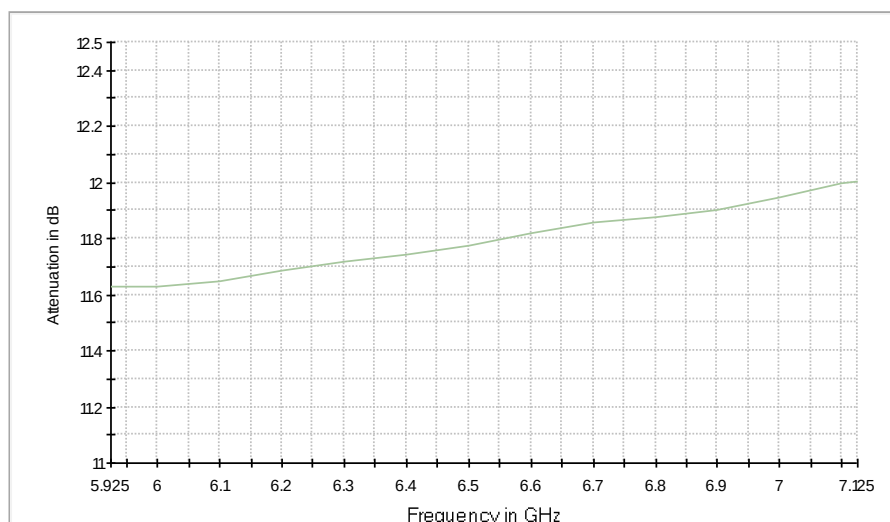
Analyzer settings:

- Resolution Bandwidth (RBW): 1 MHz
- Video Bandwidth (VBW): 3 MHz
- Trace: Average, RMS power averaging mode
- Sweeps: at least 100
- Sweep time: Auto
- Detector: RMS
- Trigger: free run (DC >98 %) or gated mode (DC < 98 %)

Note:

The analyser settings are according FCC Public Note "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, 789033 D02", method **SA-1**.





Attenuation of measurement path

5.6.2 TEST REQUIREMENTS / LIMITS

A) FCC

FCC Part 15, Subpart E, §15.407 (a) (1)

For systems using digital modulation techniques in the 5.15 – 5.25 GHz bands:

(i) and (ii), outdoor and indoor access points: Limit: 17 dBm/MHz.

(iv), mobile and portable client devices: Limit: 11 dBm/MHz.

FCC Part 15, Subpart E, §15.407 (a) (2)

For systems using digital modulation techniques in the 5.25 – 5.35 GHz and 5.47 – 5.725 GHz bands:

Limit: 11 dBm/MHz.

FCC Part 15, Subpart E, §15.407 (a) (3)

For systems using digital modulation techniques in the 5.725 – 5.850 GHz bands:

Limit: 30 dBm/500 kHz.

FCC Part 15, Subpart E, §15.407 (a) (4):

For a standard power access point and fixed client devices in the 5.925 – 6.425 GHz and 6.525 – 6.875 GHz bands:

Limit: 23 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (5):

For an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: 5 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (6):

For a subordinate device operating under an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: 5 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (7):

For a client device, except for fixed client devices, operating under standard power access point in the 5.925-6.425 GHz and 6.525-6.875 GHz bands:

Limit: 17 dBm/MHz e.i.r.p.

FCC Part 15, Subpart E, §15.407 (a) (8):

For client devices operating under the control of an indoor access point in the 5.925 – 7.125 GHz bands:

Limit: -1 dBm/MHz e.i.r.p.

B) IC

Different frequency bands and limits apply, as compared to the FCC requirements.

RSS-247, 6.2.1 (1), Band 5150-5250 MHz, indoor operation only:

Limit (e.i.r.p.): 10 dBm/MHz.

RSS-247, 6.2.2 (1), Band 5250-5350 MHz:

Limit: 11 dBm/MHz.

RSS-247, 6.2.3 (1), Bands 5470-5600 MHz and 5650-5725 MHz:

Limit: 11 dBm/MHz.

RSS-247, 6.2.4 (1), Band 5725-5850 MHz:

Limit: 30 dBm/500 kHz.

5.6.3 TEST PROTOCOL

Ambient temperature: 22 - 27 °C
 Air Pressure: 1001 - 1015 hPa
 Humidity: 26 - 56 %
 WLAN a-Mode; 20 MHz; 6 Mbit/s

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5180	4.3	9.4	11.0	6.7	10	0.6
	Conducted	5200	4.5	9.6	11.0	6.5	10	0.4
	Conducted	5240	4.2	9.3	11.0	6.8	10	0.7
2A	Conducted	5260	6.4	11.5	11.0	4.6	11.0	4.6
	Conducted	5300	6.3	11.4	11.0	4.7	11.0	4.7
	Conducted	5320	5.8	10.9	11.0	5.2	11.0	5.2
2C	Conducted	5500	2.9	8.0	11.0	8.1	11.0	8.1
	Conducted	5580	7.1	12.2	11.0	3.9	11.0	3.9
	Conducted	5700	4.0	9.1	11.0	7.0	11.0	7.0
2C+3	Conducted	5720	6.7	11.8	11.0	4.3	11.0	4.3
3	Conducted	5745	3.9	9.0	30.0	26.1	30.0	26.1
	Conducted	5785	3.9	9.0	30.0	26.1	30.0	26.1
	Conducted	5825	4.4	9.5	30.0	25.6	30.0	25.6

WLAN n-Mode; 20 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5180	3.9	9.0	11.0	7.1	10	1.0
	Conducted	5200	4.1	9.2	11.0	6.9	10	0.8
	Conducted	5240	3.9	9.0	11.0	7.1	10	1.0
2A	Conducted	5260	6.1	11.2	11.0	4.9	11.0	4.9
	Conducted	5300	6.0	11.1	11.0	5.0	11.0	5.0
	Conducted	5320	3.1	8.2	11.0	7.9	11.0	7.9
2C	Conducted	5500	2.6	7.7	11.0	8.4	11.0	8.4
	Conducted	5580	6.7	11.8	11.0	4.3	11.0	4.3
	Conducted	5700	3.3	8.4	11.0	7.7	11.0	7.7
2C+3	Conducted	5720	6.2	11.3	11.0	4.8	11.0	4.8
3	Conducted	5745	3.3	8.4	30.0	26.7	30.0	26.7
	Conducted	5785	3.3	8.4	30.0	26.7	30.0	26.7
	Conducted	5825	3.6	8.7	30.0	26.4	30.0	26.4

WLAN n-Mode; 40 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5190	-0.7	4.4	11.0	11.7	10	5.6
	Conducted	5230	1.0	6.1	11.0	10.0	10	3.9
2A	Conducted	5270	2.2	7.3	11.0	8.8	11.0	8.8
	Conducted	5310	-0.9	4.2	11.0	11.9	11.0	11.9
2C	Conducted	5510	-2.3	2.8	11.0	13.3	11.0	13.3
	Conducted	5550	2.6	7.7	11.0	8.4	11.0	8.4
	Conducted	5670	-1.0	4.1	11.0	12.0	11.0	12.0
2C+3	Conducted	5710	3.3	8.4	11.0	7.7	11.0	7.7
3	Conducted	5755	0.2	5.3	30.0	29.8	30.0	29.8
	Conducted	5795	0.2	5.3	30.0	29.8	30.0	29.8

WLAN ac-Mode; 20 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5180	3.4	8.5	11.0	7.6	10	1.5
	Conducted	5200	4.1	9.2	11.0	6.9	10	0.8
	Conducted	5240	4.0	9.1	11.0	7.0	10	0.9
2A	Conducted	5260	6.1	11.2	11.0	4.9	11.0	4.9
	Conducted	5300	6.0	11.1	11.0	5.0	11.0	5.0
	Conducted	5320	3.0	8.1	11.0	8.0	11.0	8.0
2C	Conducted	5500	2.5	7.6	11.0	8.5	11.0	8.5
	Conducted	5580	6.5	11.6	11.0	4.5	11.0	4.5
	Conducted	5700	3.3	8.4	11.0	7.7	11.0	7.7
2C+3	Conducted	5720	6.1	11.2	11.0	4.9	11.0	4.9
3	Conducted	5745	3.3	8.4	30.0	26.7	30.0	26.7
	Conducted	5785	3.3	8.4	30.0	26.7	30.0	26.7
	Conducted	5825	3.5	8.6	30.0	26.5	30.0	26.5

WLAN ac-Mode; 40 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5190	-0.9	4.2	11.0	11.9	10	5.8
	Conducted	5230	1.0	6.1	11.0	10.0	10	3.9
2A	Conducted	5270	2.1	7.2	11.0	8.9	11.0	8.9
	Conducted	5310	-1.1	4.0	11.0	12.1	11.0	12.1
2C	Conducted	5510	-2.3	2.8	11.0	13.3	11.0	13.3
	Conducted	5550	2.5	7.6	11.0	8.5	11.0	8.5
	Conducted	5670	-1.1	4.0	11.0	12.1	11.0	12.1
2C+3	Conducted	5710	3.8	8.9	11.0	7.2	11.0	7.2
3	Conducted	5755	1.1	6.2	30.0	28.9	30.0	28.9
	Conducted	5795	1.0	6.1	30.0	29.0	30.0	29.0
3+4	Conducted	5835	-7.6	-2.5	14	21.6	14	16.5
4	Conducted	5875	-7.8	-2.7	14	21.8	14	16.7

WLAN ac-Mode; 80 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5210	-7.6	-2.5	11.0	18.6	10	12.5
2A	Conducted	5290	-7.8	-2.7	11.0	18.8	11.0	18.8
2C	Conducted	5530	-7.6	-2.5	11.0	18.6	11.0	18.6
2C+3	Conducted	5690	-1.0	4.1	11.0	12.0	11.0	12.0
3	Conducted	5775	-4.6	0.5	30.0	34.6	30.0	34.6

WLAN ax-Mode; 20 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5180	2.9	8.0	11.0	8.1	10	2.0
	Conducted	5200	3.1	8.2	11.0	7.9	10	1.8
	Conducted	5240	3.0	8.1	11.0	8.0	10	1.9
2A	Conducted	5260	6.0	11.1	11.0	5.0	11.0	5.0
	Conducted	5300	6.0	11.1	11.0	5.0	11.0	5.0
	Conducted	5320	3.7	8.8	11.0	7.3	11.0	7.3
2C	Conducted	5500	4.3	9.4	11.0	6.7	11.0	6.7
	Conducted	5580	7.1	12.2	11.0	3.9	11.0	3.9
	Conducted	5700	3.1	8.2	11.0	7.9	11.0	7.9
2C+3	Conducted	5720	6.6	11.7	11.0	4.4	11.0	4.4
3	Conducted	5745	3.9	9.0	30.0	26.1	30.0	26.1
	Conducted	5785	3.9	9.0	30.0	26.1	30.0	26.1
	Conducted	5825	4.3	9.4	30.0	25.7	30.0	25.7

WLAN ax-Mode; 40 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5190	-0.9	4.2	11.0	11.9	10	5.8
	Conducted	5230	0.1	5.2	11.0	10.9	10	4.8
2A	Conducted	5270	3.0	8.1	11.0	8.0	11.0	8.0
	Conducted	5310	-1.0	4.1	11.0	12.0	11.0	12.0
2C	Conducted	5510	-2.1	3.0	11.0	13.1	11.0	13.1
	Conducted	5550	2.3	7.4	11.0	8.7	11.0	8.7
	Conducted	5670	-1.8	3.3	11.0	12.8	11.0	12.8
2C+3	Conducted	5710	3.8	8.9	11.0	7.2	11.0	7.2
3	Conducted	5755	1.0	6.1	30.0	29.0	30.0	29.0
	Conducted	5795	1.1	6.2	30.0	28.9	30.0	28.9

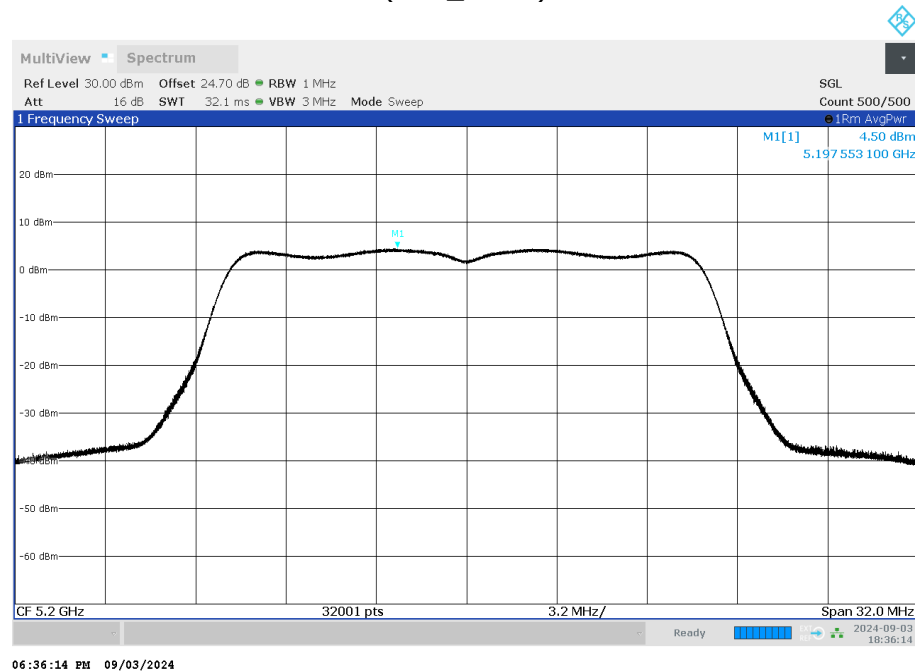
WLAN ax-Mode; 80 MHz; MCS 0; SISO

U-NII-Subband	Meas. Method	Freq. [MHz]	MPSD [dBm/MHz]	E.I.R.P MPSD [dBm/MHz]	FCC Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]	ISED Limit [dBm/MHz] or [dBm/500kHz] (U-NII-3)	Margin [dB]
1	Conducted	5210	-6.7	-1.6	11.0	17.7	10	11.6
2A	Conducted	5290	-7.0	-1.9	11.0	18.0	11.0	18.0
2C	Conducted	5530	-6.9	-1.8	11.0	17.9	11.0	17.9
2C+3	Conducted	5690	0.1	5.2	11.0	10.9	11.0	10.9
3	Conducted	5775	-3.5	1.6	30.0	33.5	30.0	33.5

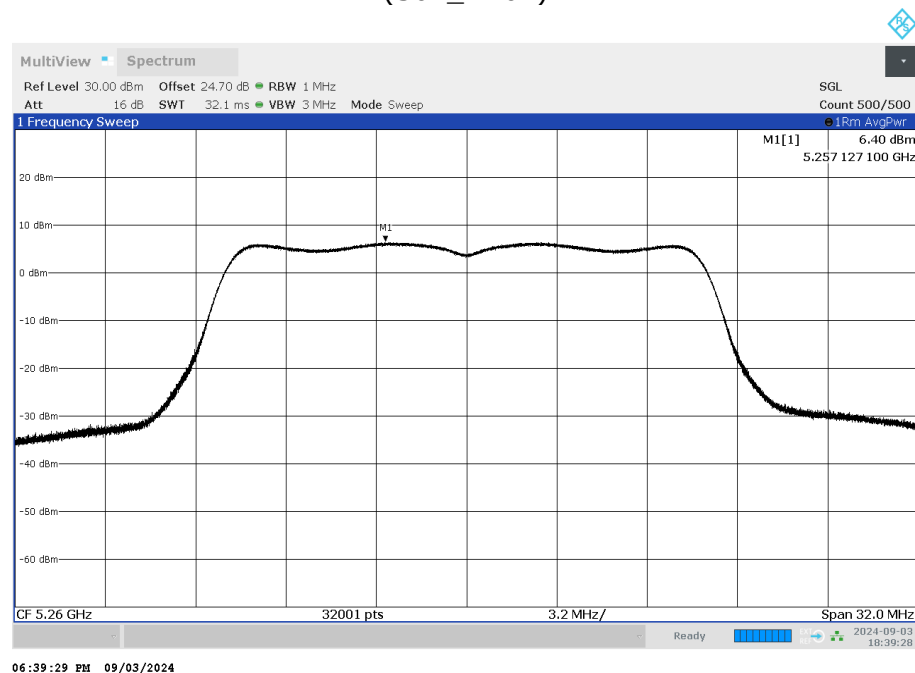
Remark: Please see next sub-clause for the measurement plot.

5.6.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

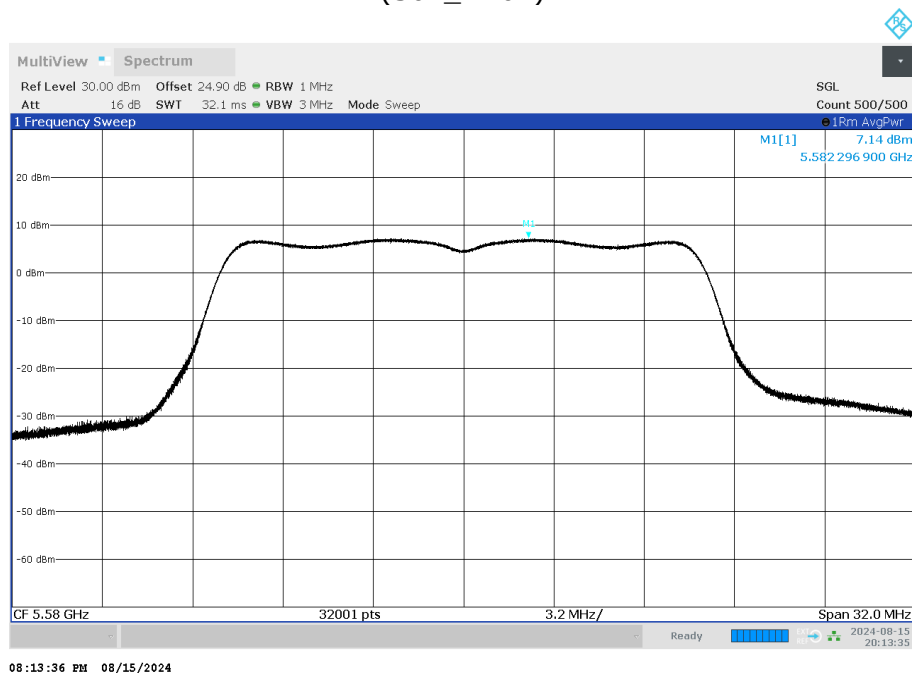
Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-1
(S01_AD02)



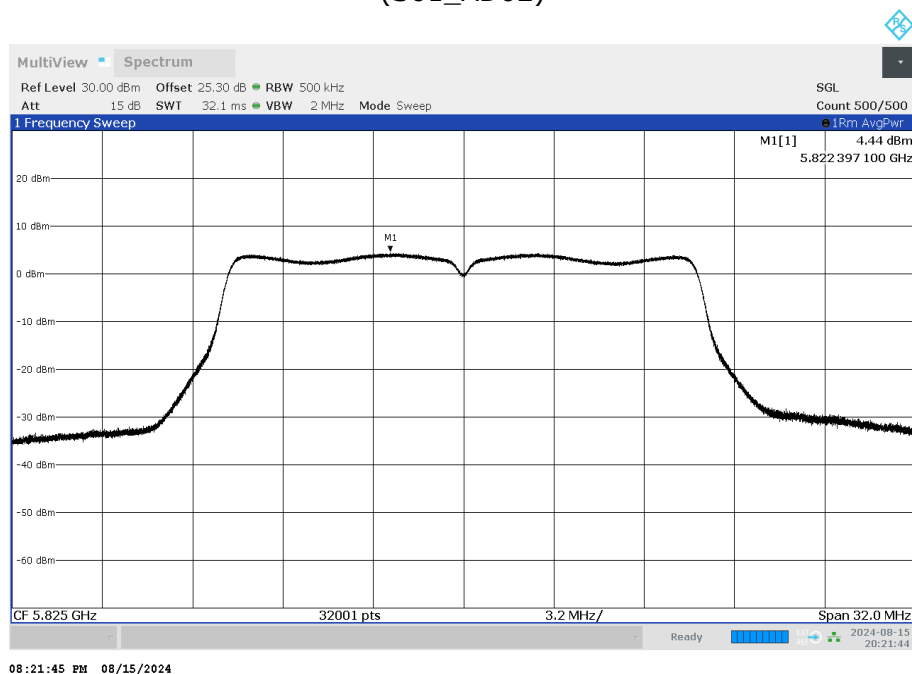
Radio Technology = WLAN a, Operating Frequency = low, Subband = U-NII-2A
(S01_AD02)



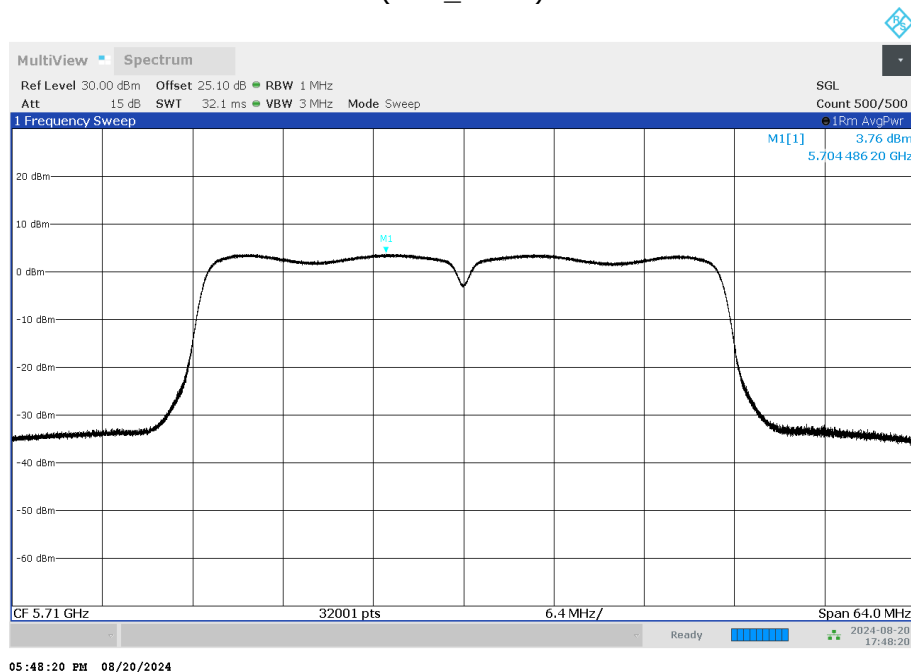
Radio Technology = WLAN a, Operating Frequency = mid, Subband = U-NII-2C
(S01_AD02)



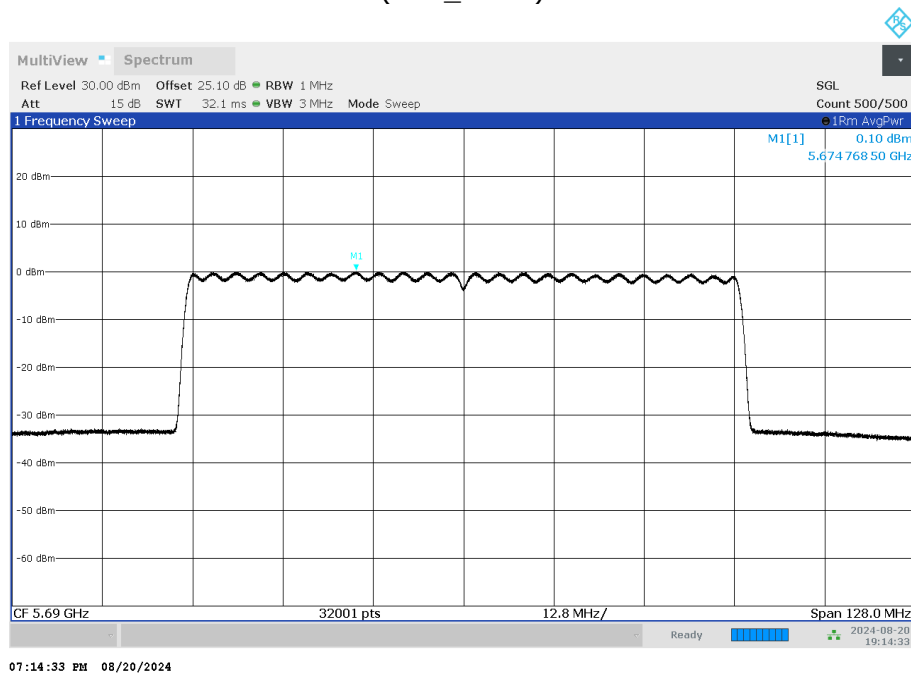
Radio Technology = WLAN a, Operating Frequency = high, Subband = U-NII-3
(S01_AD02)



Radio Technology = WLAN ac 40 MHz, Operating Frequency = straddle, Subband = U-NII-2C + U-NII-3 (S01_AD02)



Radio Technology = WLAN ax 80 MHz, Operating Frequency = straddle, Subband = U-NII-2C + U-NII-3 (S01_AD02)



5.6.5 TEST EQUIPMENT USED

- R&S TS8997

5.7 UNDESIRABLE EMISSIONS; GENERAL FIELD STRENGTH LIMITS

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 6.4, 6.5, 6.6.5

5.7.1 TEST DESCRIPTION

The test set-up was made in accordance to the general provisions of ANSI C63.10 in a typical installation configuration. The measurements were performed according the following sub-chapters of ANSI C63.10:

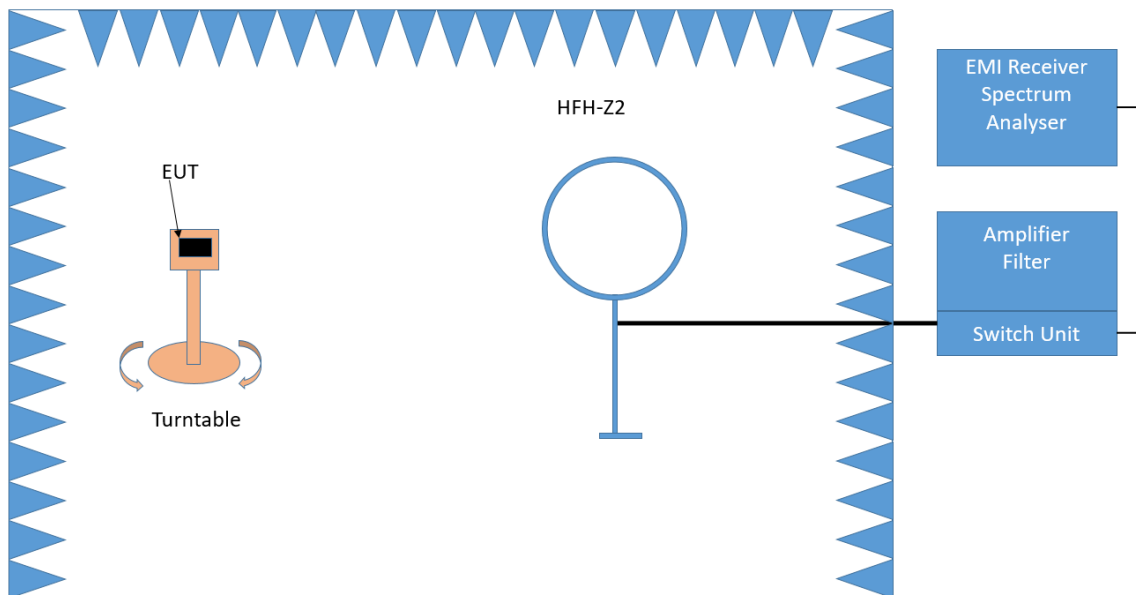
- < 30 MHz: Chapter 6.4
- 30 MHz – 1 GHz: Chapter 6.5
- > 1 GHz: Chapter 6.6 (procedure according 6.6.5 used)

The measurement procedure is implemented into the EMI test software EMC32 from R&S. Exploratory tests are performed at 3 orthogonal axes to determine the worst-case orientation of a body-worn or handheld EUT. The final test on all kind of EUTs is also performed at 3 axes. A pre-check is performed while the EUT is powered.

Below 1 GHz:

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The influence of the EUT support table that is used between 30–1000 MHz was evaluated.

1. Measurement up to 30 MHz



Test Setup; Spurious Emission Radiated (SAC), 9 kHz – 30 MHz

The Loop antenna HFH2-Z2 is used.

Step 1: pre measurement

- Anechoic chamber
- Antenna distance: 3 m

- Detector: Peak-Maxhold
- Frequency range: 0.009 - 0.15 MHz and 0.15 - 30 MHz
- Frequency steps: 0.05 kHz and 2.25 kHz
- IF-Bandwidth: 0.2 kHz and 9 kHz
- Measuring time / Frequency step: 100 ms (FFT-based)

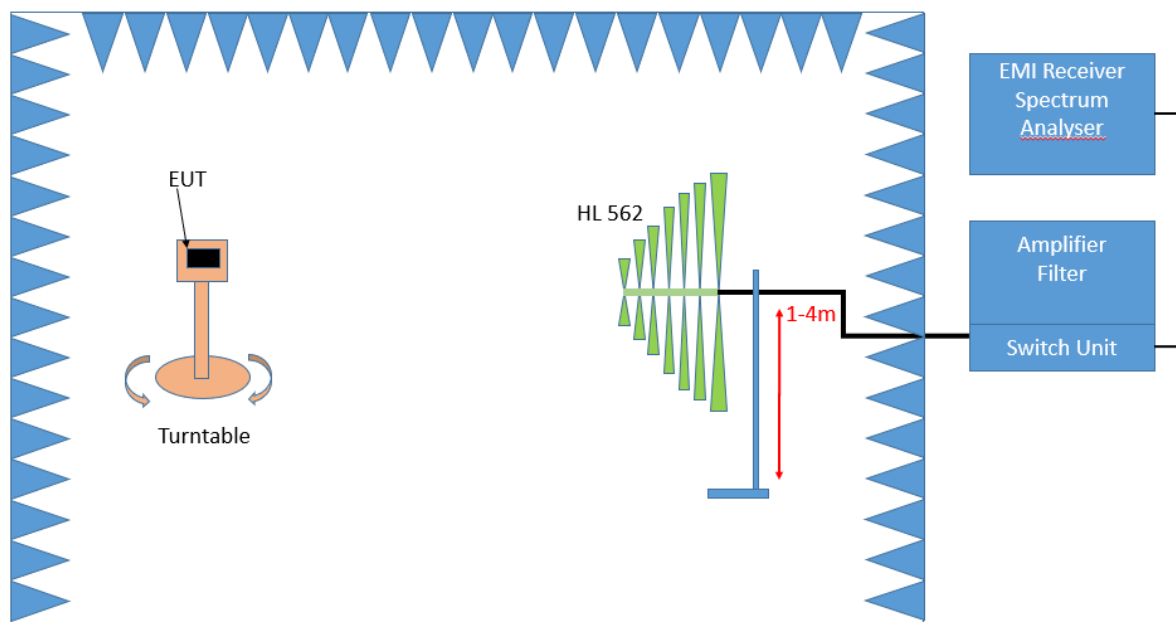
Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

Step 2: final measurement

For the relevant emissions determined in step 1, an additional measurement with the following settings will be performed. Intention of this step is to find the maximum emission level.

- Open area test site
- Antenna distance: according to the Standard
- Detector: Quasi-Peak
- Frequency range: 0.009 - 30 MHz
- Frequency steps: measurement at frequencies detected in step 1
- IF-Bandwidth: 0.2 - 10 kHz
- Measuring time / Frequency step: 1 s

2. Measurement above 30 MHz and up to 1 GHz



Test Setup; Spurious Emission Radiated (SAC), 30 MHz- 1GHz

Step 1: Preliminary scan

This is a preliminary test to identify the highest amplitudes relative to the limit.

Settings for step 1:

- Antenna distance: 3 m
- Detector: Peak-Maxhold / Quasipeak (FFT-based)
- Frequency range: 30 - 1000 MHz
- Frequency steps: 30 kHz
- IF-Bandwidth: 120 kHz
- Measuring time / Frequency step: 100 ms
- Turntable angle range: -180° to 90°
- Turntable step size: 90°
- Height variation range: 1 - 4 m
- Height variation step size: 1.5 m

- Polarisation: Horizontal + Vertical

Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

Step 2: Adjustment measurement

In this step the accuracy of the turntable azimuth and antenna height will be improved. This is necessary to find out the maximum value of every frequency.

For each frequency, which was determined the turntable azimuth and antenna height will be adjusted. The turntable azimuth will slowly vary by 360°. During this action, the value of emission is continuously measured. The turntable azimuth at the highest emission will be recorded and adjusted. In this position, the antenna height will also slowly vary by 1 – 4 meter. During this action, the value of emission is also continuously measured. The antenna height of the highest emission will also be recorded and adjusted.

- Detector: Peak – Maxhold
- Measured frequencies: in step 1 determined frequencies
- IF – Bandwidth: 120 kHz
- Measuring time: 100 ms
- Turntable angle range: 360 °
- Height variation range: 1 – 4 m
- Antenna Polarisation: max. value determined in step 1

Step 3: Final measurement with QP detector

With the settings determined in step 2, the final measurement will be performed:

EMI receiver settings for step 3:

- Detector: Quasi-Peak (< 1 GHz)
- Measured frequencies: in step 1 determined frequencies
- IF – Bandwidth: 120 kHz
- Measuring time: 1 s

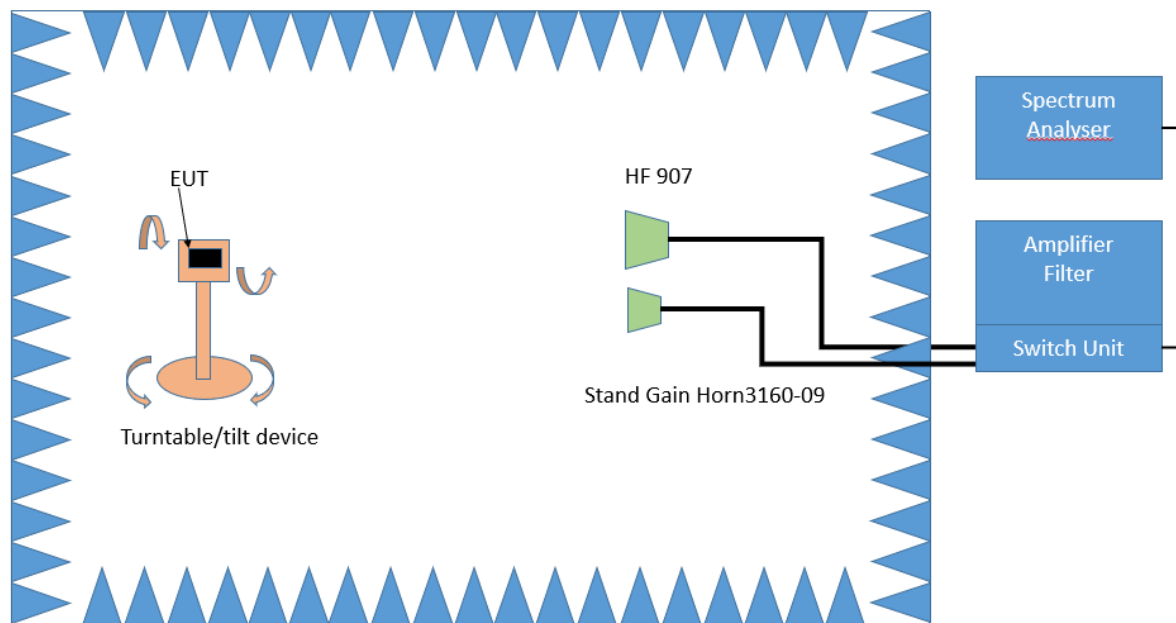
After the measurement a plot will be generated which contains a diagram with the results of the preliminary scan and a chart with the frequencies and values of the results of the final measurement.

Above 1 GHz:

The Equipment Under Test (EUT) was set up on a non-conductive support (tilt device) at 1.5 m height in the fully-anechoic chamber.

All steps were performed with one height (1.5 m) of the receiving antenna only.

3. Measurement 1 GHz up to 26.5 GHz



Test Setup; Spurious Emission Radiated (FAC), 1 GHz-26.5 GHz

Step 1:

The Equipment Under Test (EUT) was set up on a non-conductive support (tilt device) at 1.5 m height in the fully-anechoic chamber.

All steps were performed with one height (1.5 m) of the receiving antenna only.

The EUT is turned during the preliminary measurement across the elevation axis, with a step size of 90 °.

The turn table step size (azimuth angle) for the preliminary measurement is 45 °.

Step 2:

Due to the fact, that in this frequency range the test is performed in a fully anechoic room, the height scan of the receiving antenna in step 2 is omitted. Instead of this, a maximum search with a step size $\pm 45^\circ$ for the elevation axis is performed.

The turn table azimuth will slowly vary by $\pm 22.5^\circ$.

The elevation angle will slowly vary by $\pm 45^\circ$

EMI receiver settings (for all steps):

- Detector: Peak, Average
- IF Bandwidth = 1 MHz

Step 3:

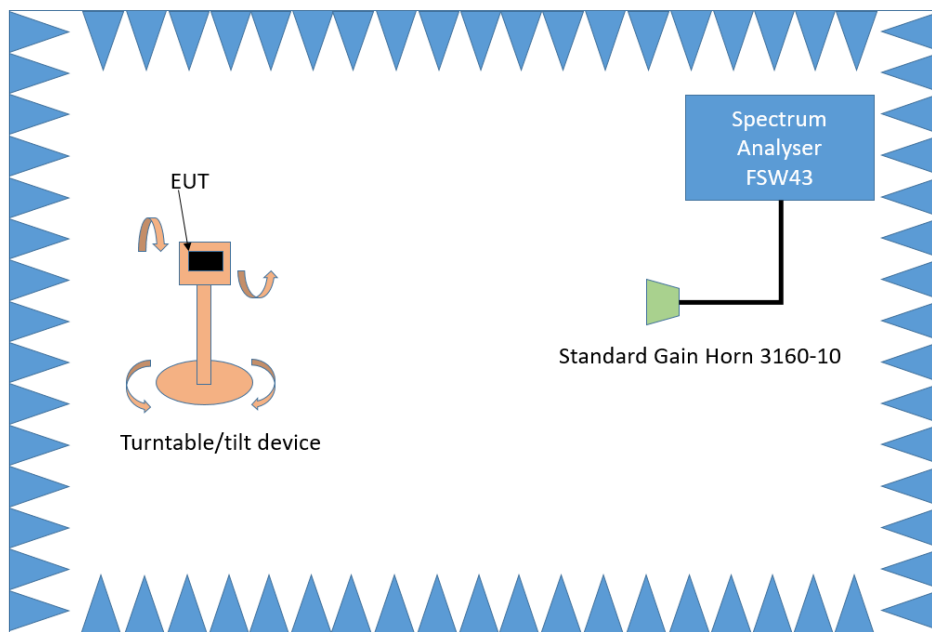
Spectrum analyser settings for step 3:

- Detector: Peak / Average
- Measured frequencies: in step 1 determined frequencies
- IF – Bandwidth: 1 MHz
- Measuring time: 1 s

4. Measurement above 26.5 GHz up to 40 GHz

The following modifications, compared to the frequency range 1 GHz – 26.5 GHz, apply to the measurement procedure for the frequency range above 26.5 GHz:

- Measurement distance: 1m

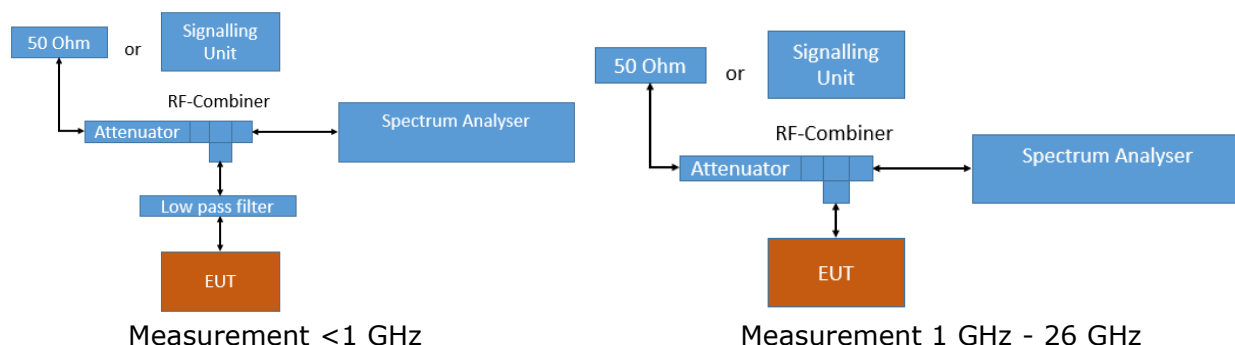


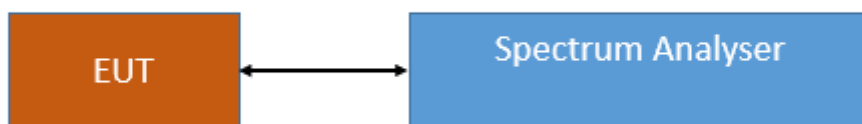
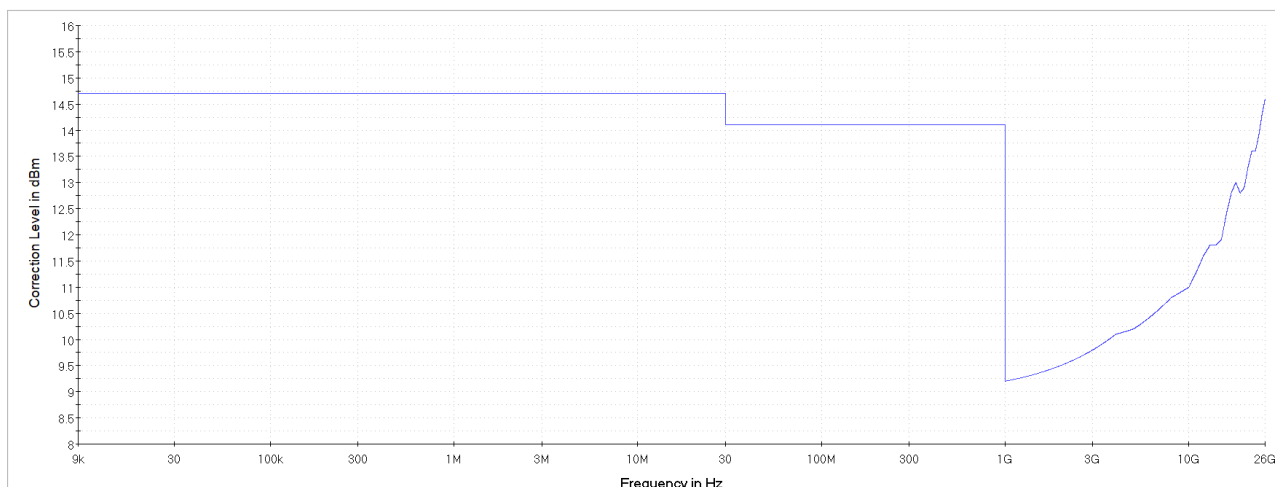
Test Setup; Spurious Emission Radiated (FAC), 26.5 – 40 GHz

Conducted Measurements at antenna ports

The Equipment Under Test (EUT) was set up to perform the spurious emissions measurements.

The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.





Measurement 26 GHz - 40 GHz

Analyser settings:

- Frequency range: 0.009 – 30 MHz
 - Resolution Bandwidth (RBW): 10 kHz
 - Video Bandwidth (VBW): 30 kHz
 - Trace: Maxhold
 - Sweeps: till stable
 - Sweep Time: coupled
 - Detector: Peak
-
- Frequency range: 30 – 1000 MHz
 - Resolution Bandwidth (RBW): 100 kHz
 - Video Bandwidth (VBW): 300 kHz
 - Trace: Maxhold
 - Sweeps: till stable
 - Sweep Time: coupled
 - Detector: Peak
-
- Frequency range: 1000 – 26000 MHz
 - Resolution Bandwidth (RBW): 1000 kHz
 - Video Bandwidth (VBW): 3000 kHz
 - Trace: Maxhold, Average Power
 - Sweeps: 500
 - Sweep Time: coupled
 - Detector: Peak, RMS

- Frequency range: 26000 – 40000 MHz
- Resolution Bandwidth (RBW): 1000 kHz
- Video Bandwidth (VBW): 3000 kHz
- Trace: Maxhold, Average Power
- Sweeps: 1000
- Sweep Time: coupled
- Detector: Peak, RMS

For the conducted emissions in restricted bands the Value is measured in dBm and then converted to dBμV/m as given in KDB 789033:

1. Measure the conducted output power in dBm.
2. Add the maximum antenna gain in dBi. (Included in measurement result by offset)
3. Add the appropriate ground reflection factor (included in measurement result by transducer factor)
 - 6 dB for frequencies ≤ 30 MHz;
 - 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive; and
 - 0 dB for frequencies > 1000 MHz).
4. Convert the resultant EIRP level to an equivalent electric field strength level using the following relationship:

$$E = \text{EIRP} - 20 \log D + 104.8$$
 Where E is the electric field strength in dBμV/m,
 EIRP is the equivalent isotropically radiated power in dBm
 D is the specified measurement distance in m

Value [dBμV/m] = Measured value [dBm] (including gain and ground reflection factor) – 20 log D + 104.8

5.7.2 TEST REQUIREMENTS / LIMITS

A) FCC

FCC Part 15 Subpart E, §15.407 (b)(1)

For transmitters operating in the 5150–5250 MHz band:

Limit: –27 dBm/MHz EIRP outside of the band 5150–5350 MHz.

FCC Part 15 Subpart E, §15.407 (b)(2)

For transmitters operating in the 5250–5350 MHz band:

Limit: –27 dBm/MHz EIRP outside of the band 5150–5350 MHz.

FCC Part 15 Subpart E, §15.407 (b)(3)

For transmitters operating in the 5470–5725 MHz band:

Limit: –27 dBm/MHz EIRP outside of the band 5470–5725 MHz.

FCC Part 15 Subpart E, §15.407 (b)(4)

For transmitters operating in the 5725–5850 MHz band:

Limit: –27 dBm/MHz at 75 MHz or more above or below the band edge
 increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge
 increasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edge
 increasing linearly to 27 dBm/MHz at the band edge.

FCC Part 15 Subpart E, §15.407 (b) (5)

For transmitters operating within the 5.925–7.125 GHz band:

Limit: -27 dBm/MHz EIRP outside of the band 5.925-7.125 GHz.

FCC Part 15 Subpart E, §15.407 (b) (6)

For transmitters operating within the 5.925-7.125 GHz bands:

Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

B) IC

Different frequency bands and limits apply, as compared to the FCC requirements.

RSS-247, 6.2.1.2, Emissions outside the band 5150-5250 MHz, indoor operation only:

Limit: -27 dBm/MHz EIRP outside of the band 5150-5250 MHz.

RSS-247, 6.2.2.2, Emissions outside the band 5250-5350 MHz:

Limit: -27 dBm/MHz EIRP outside of the band 5250-5350 MHz.

RSS-247, 6.2.3.2, Emissions outside the bands 5470-5600 MHz and 5650-5725 MHz:

Limit: -27 dBm/MHz EIRP outside of the band 5470-5725 MHz.

However, devices with bandwidth overlapping the band edge of 5725 MHz can meet the emission limit of -27 dBm/MHz e.i.r.p. at 5850 MHz instead of 5725 MHz.

Note: No operation is permitted for the frequency range 5600-5650 MHz.

RSS-247, 6.2.4.2, Emissions outside the band 5725-5850 MHz:

- a. 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 Bm/MHz at 5 MHz above or below the band edges;
- b. 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- c. 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- d. -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

C) FCC & IC

FCC Part 15 Subpart E, §15.405

The provisions of §§ 15.203 and 15.205 are included.

§15.407 (b)(6)

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

§15.407 (b)(7)

The provisions of §15.205 apply to intentional radiators operating under this section

FCC Part 15, Subpart C, §15.209, Radiated Emission Limits

Frequency in MHz	Limit (μV/m)	Measurement distance (m)	Limits (dBμV/m)
0.009 – 0.49	2400/F(kHz)@300m	3	(48.5 – 13.8)@300m
0.49 – 1.705	24000/F(kHz)@30m	3	(33.8 – 23.0)@30m
1.705 – 30	30@30m	3	29.5@30m

The measured values are corrected with an inverse linear distance extrapolation factor (40 dB/decade) according FCC 15.31 (2).

Frequency in MHz	Limit (μV/m)	Measurement distance (m)	Limits (dBμV/m)
30 – 88	100@3m	3	40.0@3m
88 – 216	150@3m	3	43.5@3m
216 – 960	200@3m	3	46.0@3m
960 – 26000	500@3m	3	54.0@3m
26000 – 40000	500@3m	1	54.0@3m

The measured values above 26 GHz are corrected with an inverse linear distance extrapolation factor (20 dB/decade).

§15.35(b) ..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

Used conversion factor:

- Limit (dBμV/m) = 20 log (Limit (μV/m)/1μV/m)
- Limit (dBμV/m) = EIRP [dBm] – 20 log (d [m]) + 104.8

Limit types (in result tables):

RB – Emissions falls into a "Restricted Band" according FCC §§15.205 and 15.209 *)

UE – "Undesirable Emission Limit" according FCC §15.407

BE-RB – Band Edge Limit basing on "Restricted Band Limits"

BE-UE – Band Edge Limit basing on "Undesirable Emission Limit"

*) Below 1 GHz the limits of §15.209 are applied for all frequencies.

5.7.3 TEST PROTOCOL

Ambient temperature: 22 °C
 Air Pressure: 1007 hPa
 Humidity: 40 %
 WLAN a-Mode; 20 MHz; 6 Mbit/s
 Applied duty cycle correction (AV): 0.1 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
Radiated	5180	5150.0	56.3	PEAK	1000	74.0	17.7	RB
Radiated	5180	5150.0	43.8	AV	1000	54.0	10.2	RB
Radiated	5180	10363.6	40.5	PEAK	1000	68.2	27.7	UE
Radiated	5200	222.6	14.6	QP	120	46.0	31.4	RB
Radiated	5300	834.6	20.9	QP	120	46.0	25.1	RB
Radiated	5320	5350.0	57.3	PEAK	1000	74.0	16.7	RB
Radiated	5320	5350.0	44.1	AV	1000	54.0	9.9	RB
Radiated	5320	10637.0	52.0	PEAK	1000	74.0	22.0	RB
Radiated	5320	10637.0	38.0	AV	1000	54.0	16.0	RB
Radiated	5500	5459.9	57.4	PEAK	1000	74.0	16.6	RB
Radiated	5500	5459.9	44.6	AV	1000	54.0	9.4	RB
Radiated	5500	5469.9	57.5	PEAK	1000	68.2	10.7	UE
Radiated	5500	10996.6	51.3	PEAK	1000	74.0	22.7	RB
Radiated	5500	10996.6	37.5	AV	1000	54.0	16.5	RB
Radiated	5580	151.6	4.2	QP	120	43.5	39.3	RB
Radiated	5580	211.2	14.0	QP	120	43.5	29.5	RB
Radiated	5580	864.0	22.6	QP	120	46.0	23.4	RB
Radiated	5700	-	-	-	-	-	-	-
Radiated	5825	5850.8	60.9	PK	1000	120.3	59.4	UE

Ambient temperature: 22 - 27 °C
 Air Pressure: 1001 - 1015 hPa
 Humidity: 39 - 56 %
 WLAN a-Mode; 20 MHz; 6 Mbit/s
 Applied duty cycle correction (AV): 0.1 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
Conducted	5180	-	-	-	-	-	-	-
Conducted	5200	-	-	-	-	-	-	-
Conducted	5240	-	-	-	-	-	-	-
Conducted	5260	-	-	-	-	-	-	-
Conducted	5300	-	-	-	-	-	-	-
Conducted	5320	-	-	-	-	-	-	-
Conducted	5500	-	-	-	-	-	-	-
Conducted	5580	-	-	-	-	-	-	-
Conducted	5700	-	-	-	-	-	-	-
Conducted	5745	-	-	-	-	-	-	-
Conducted	5785	-	-	-	-	-	-	-
Conducted	5825	-	-	-	-	-	-	-

WLAN n-Mode; 20 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
Conducted	5180	-	-	-	-	-	-	-
Conducted	5200	-	-	-	-	-	-	-
Conducted	5240	-	-	-	-	-	-	-
Conducted	5260	-	-	-	-	-	-	-
Conducted	5300	-	-	-	-	-	-	-
Conducted	5500	-	-	-	-	-	-	-
Conducted	5580	-	-	-	-	-	-	-
Conducted	5700	-	-	-	-	-	-	-
Conducted	5745	-	-	-	-	-	-	-
Conducted	5785	-	-	-	-	-	-	-
Conducted	5825	-	-	-	-	-	-	-

WLAN n-Mode; 40 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
Conducted	5190	-	-	-	-	-	-	-
Conducted	5230	-	-	-	-	-	-	-
Conducted	5270	-	-	-	-	-	-	-
Conducted	5310	-	-	-	-	-	-	-
Conducted	5510	-	-	-	-	-	-	-
Conducted	5670	-	-	-	-	-	-	-
Conducted	5755	-	-	-	-	-	-	-
Conducted	5795	-	-	-	-	-	-	-

WLAN ac-Mode; 20 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
Conducted	5180	-	-	-	-	-	-	-
Conducted	5200	-	-	-	-	-	-	-
Conducted	5240	-	-	-	-	-	-	-
Conducted	5260	-	-	-	-	-	-	-
Conducted	5300	-	-	-	-	-	-	-
Conducted	5320	-	-	-	-	-	-	-
Conducted	5500	-	-	-	-	-	-	-
Conducted	5580	-	-	-	-	-	-	-
Conducted	5700	-	-	-	-	-	-	-
Conducted	5745	-	-	-	-	-	-	-
Conducted	5825	-	-	-	-	-	-	-

WLAN ac-Mode; 40 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin [dB]	Limit Type
Conducted	5190	-	-	-	-	-	-	-
Conducted	5230	-	-	-	-	-	-	-
Conducted	5270	-	-	-	-	-	-	-
Conducted	5310	-	-	-	-	-	-	-
Conducted	5510	-	-	-	-	-	-	-
Conducted	5670	-	-	-	-	-	-	-
Conducted	5755	-	-	-	-	-	-	-
Conducted	5795	-	-	-	-	-	-	-

WLAN ac-Mode; 80 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0.1 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dB μ V/m]	Detector	RBW [kHz]	Limit [dB μ V/m]	Margin [dB]	Limit Type
Conducted	5210	-	-	-	-	-	-	-

WLAN ax-Mode; 20 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dB μ V/m]	Detector	RBW [kHz]	Limit [dB μ V/m]	Margin [dB]	Limit Type
Conducted	5180	-	-	-	-	-	-	-
Conducted	5200	-	-	-	-	-	-	-
Conducted	5240	-	-	-	-	-	-	-
Conducted	5260	-	-	-	-	-	-	-
Conducted	5300	-	-	-	-	-	-	-
Conducted	5320	-	-	-	-	-	-	-
Conducted	5500	-	-	-	-	-	-	-
Conducted	5580	-	-	-	-	-	-	-
Conducted	5700	-	-	-	-	-	-	-
Conducted	5745	-	-	-	-	-	-	-
Conducted	5785	-	-	-	-	-	-	-
Conducted	5825	-	-	-	-	-	-	-

WLAN ax-Mode; 40 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dB μ V/m]	Detector	RBW [kHz]	Limit [dB μ V/m]	Margin [dB]	Limit Type
Conducted	5190	-	-	-	-	-	-	-
Conducted	5230	-	-	-	-	-	-	-
Conducted	5270	-	-	-	-	-	-	-
Conducted	5310	-	-	-	-	-	-	-
Conducted	5510	-	-	-	-	-	-	-
Conducted	5670	-	-	-	-	-	-	-
Conducted	5755	-	-	-	-	-	-	-
Conducted	5795	-	-	-	-	-	-	-

WLAN ax-Mode; 80 MHz; MCS 0; SISO
Applied duty cycle correction (AV): 0.1 dB

Meas. Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dB μ V/m]	Detector	RBW [kHz]	Limit [dB μ V/m]	Margin [dB]	Limit Type
Conducted	5210	-	-	-	-	-	-	-

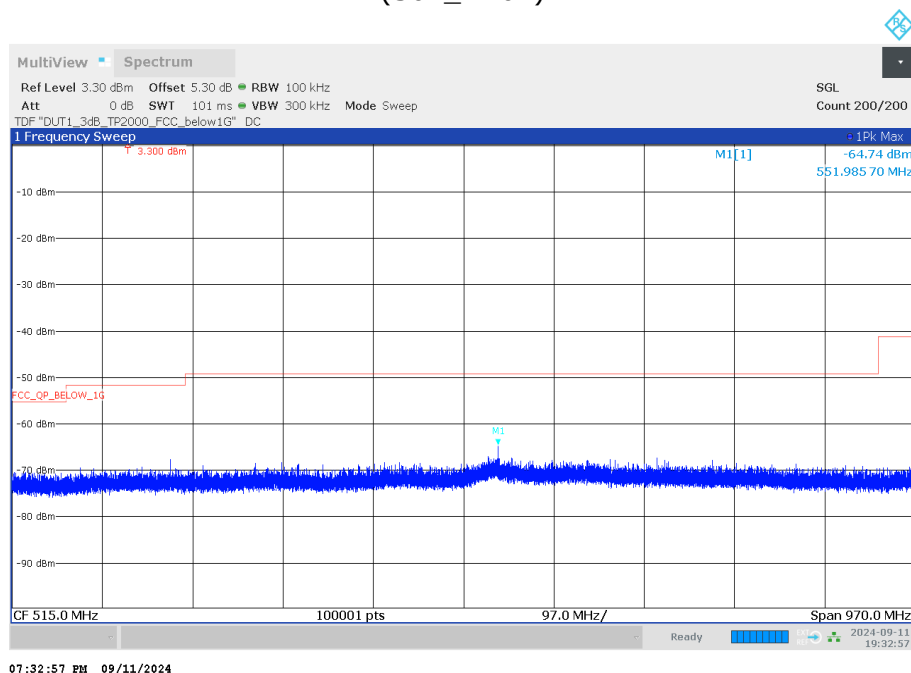
Remark: Please see next sub-clause for the measurement plot.

Radiated tests were performed at power setting 18 dBm and not repeated at final power (worse case). The transducer factor of the conducted measurements contains the path attenuation as well as ground reflection factor. The offset contains the antenna gain. The result is then given by adding 95.2 dB to the marker values.

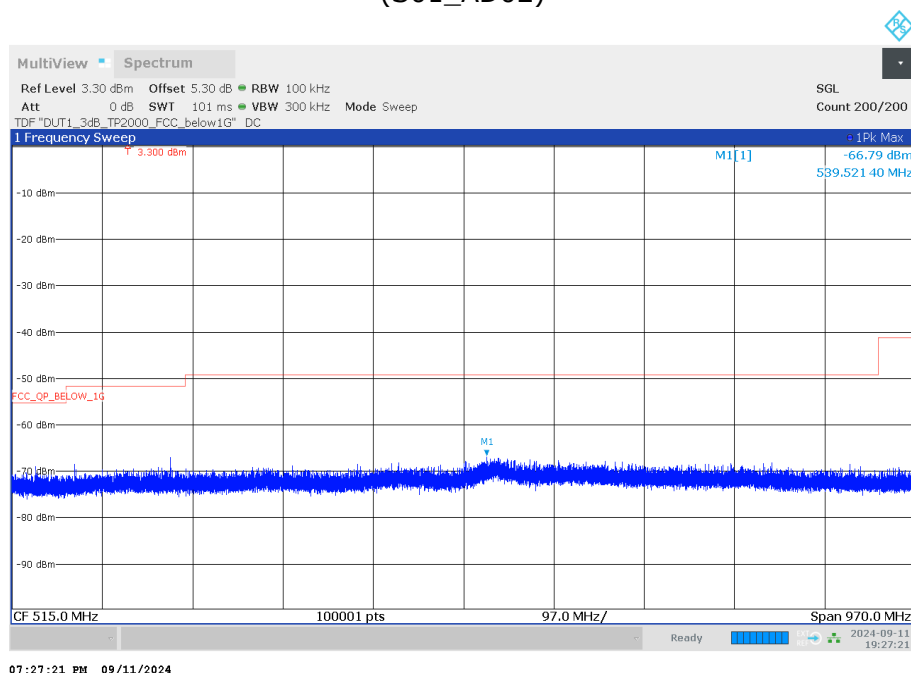
Since the conducted measurements show noise floor and the radiated plots with 50 Ohm termination also show just a slight raise at second harmonic further than 10 dB from limit, only spot checks in a mode (highest power density) were performed for radiated testing, for 20 and 40 MHz conducted some channels were omitted and for 80 MHz conducted only one channel was checked (40 and 80 MHz have lower power and power density compared to 20 MHz).

5.7.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

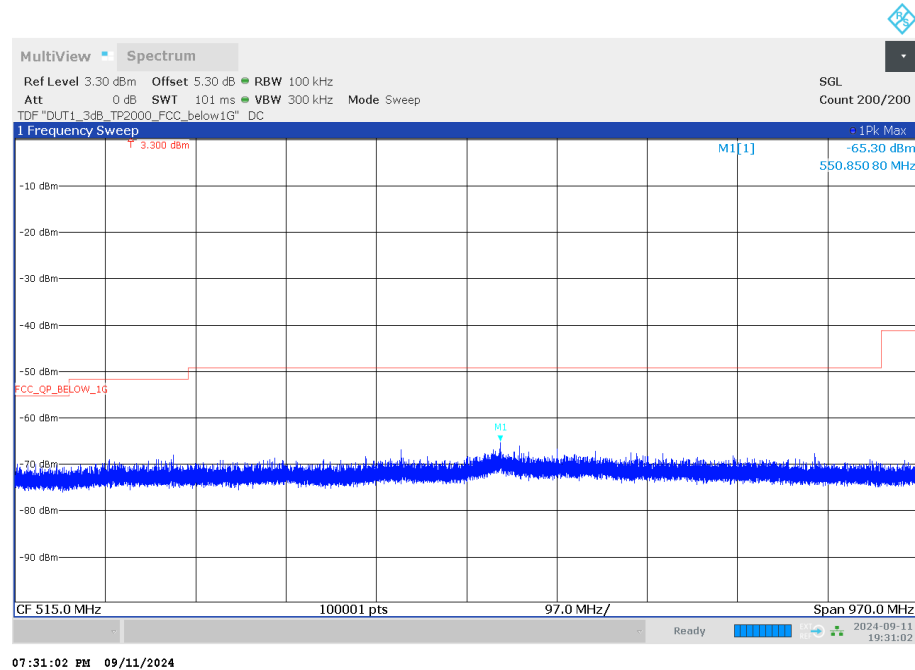
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 30MHz - 1GHz, Subband = U-NII-3 (S01_AD02)



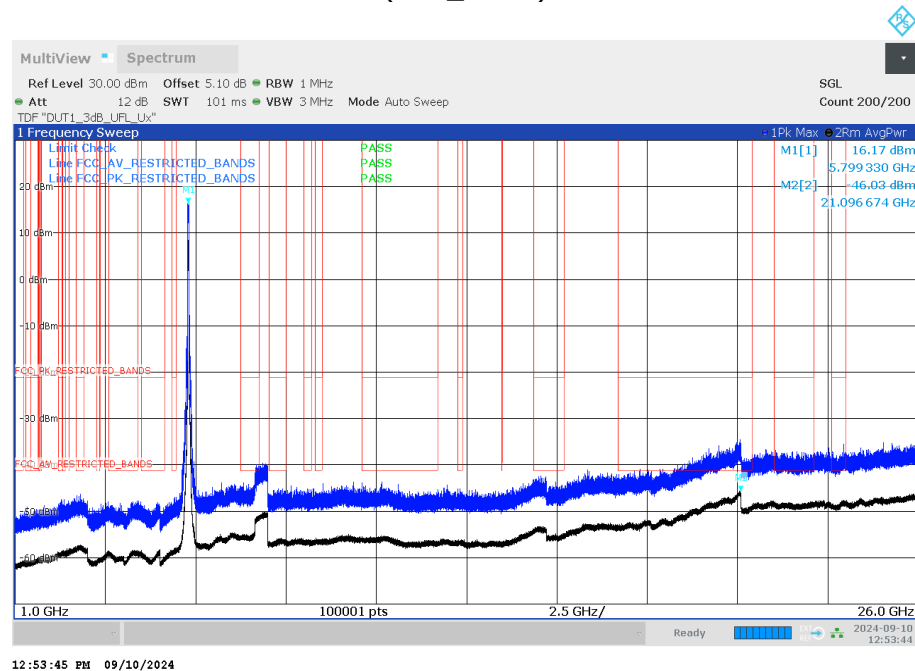
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 30MHz - 1GHz, Subband = U-NII-1 (S01_AD02)



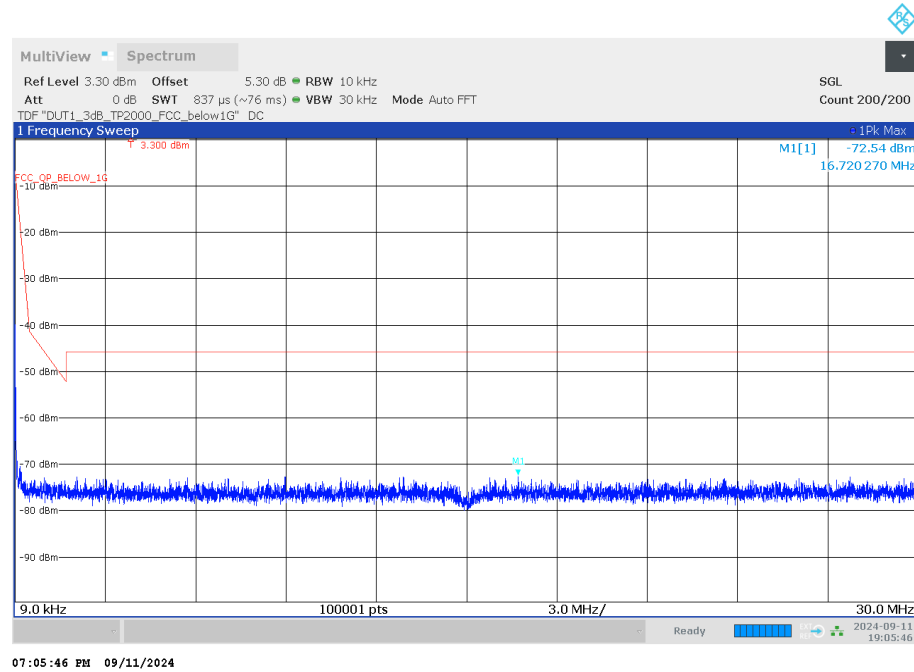
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 30MHz - 1GHz, Subband = U-NII-2C (S01_AD02)



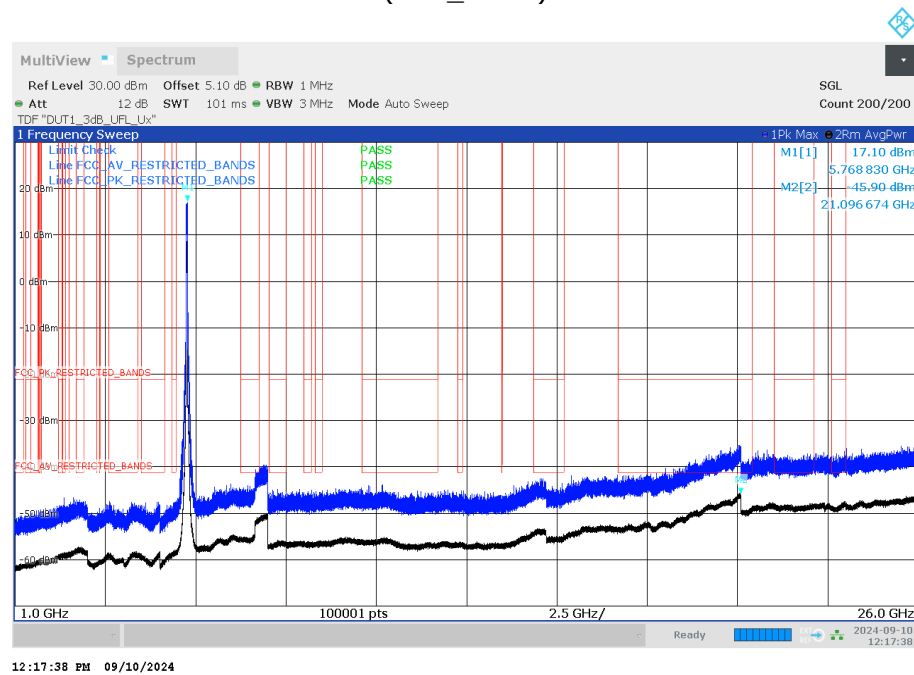
Radio Technology = WLAN ac 40 MHz, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-3 (S01_AD02)



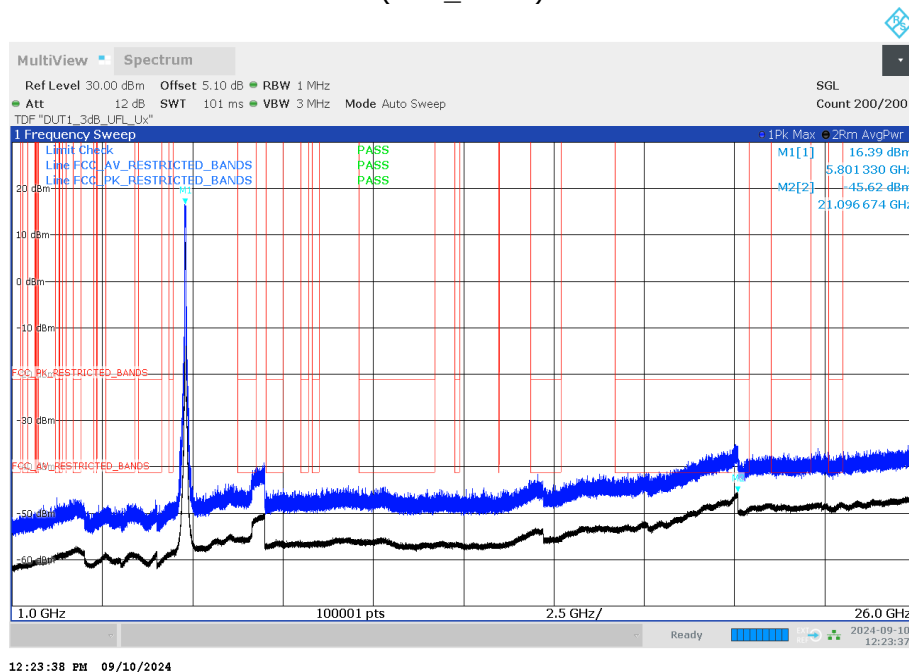
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 9kHz - 30MHz, Subband = U-NII-2A (S01_AD02)



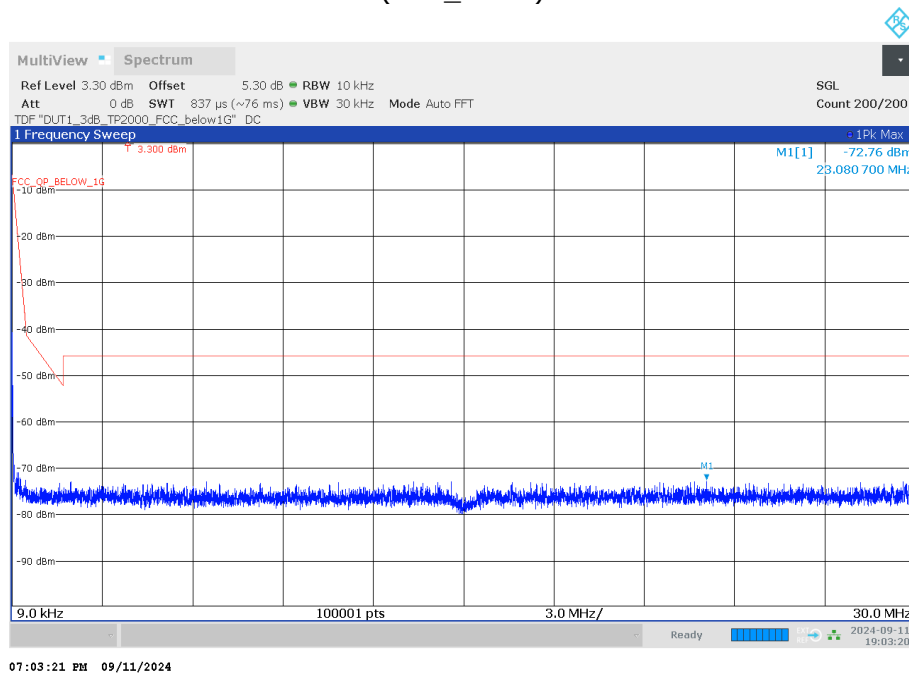
Radio Technology = WLAN n 40 MHz, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-3 (S01_AD02)



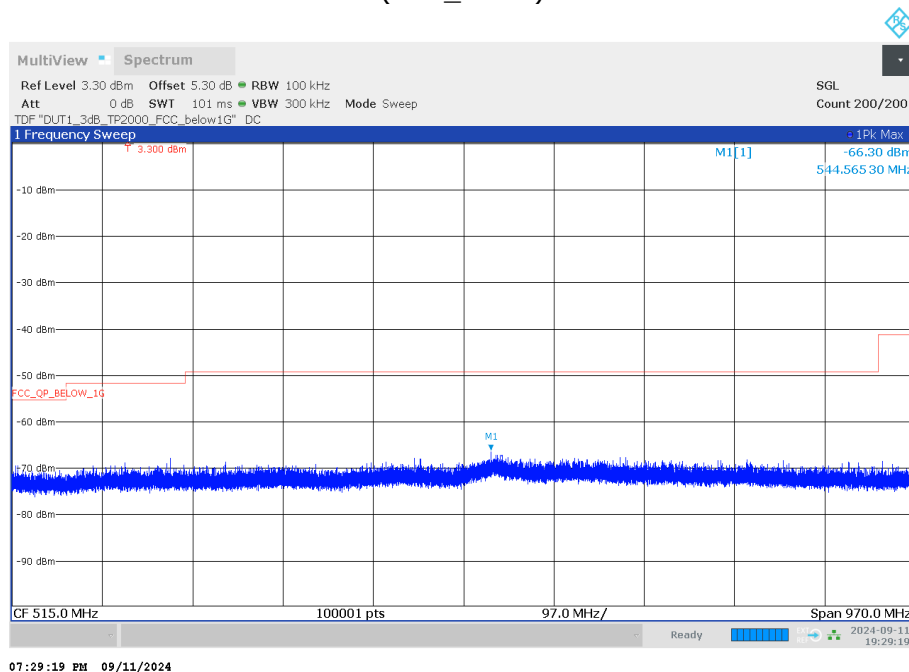
Radio Technology = WLAN n 40 MHz, Operating Frequency = high, Measurement range =
1GHz - 26GHz, Subband = U-NII-3
(S01_AD02)



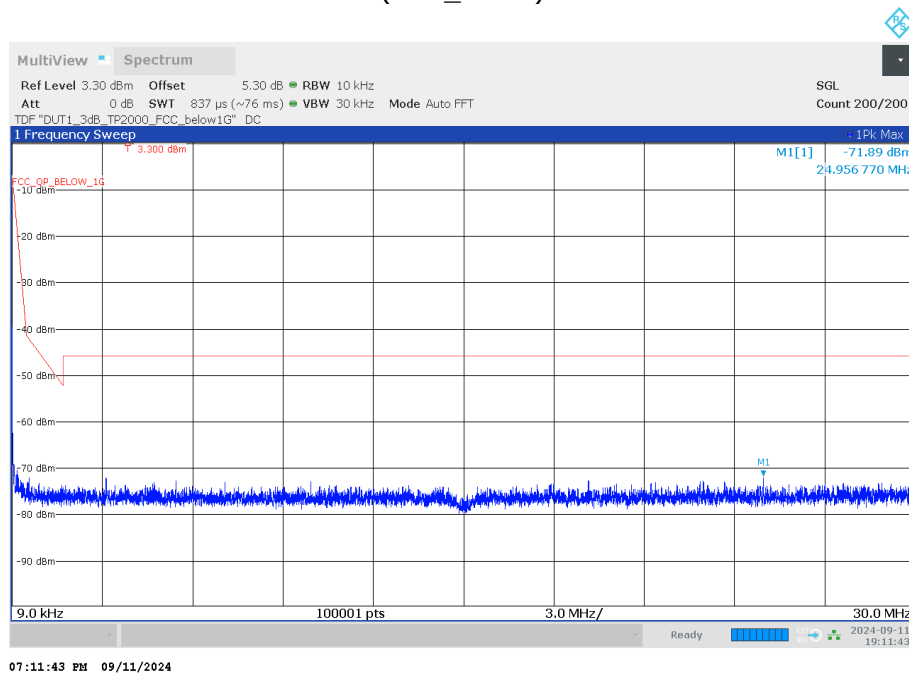
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 9kHz -
30MHz, Subband = U-NII-1
(S01_AD02)



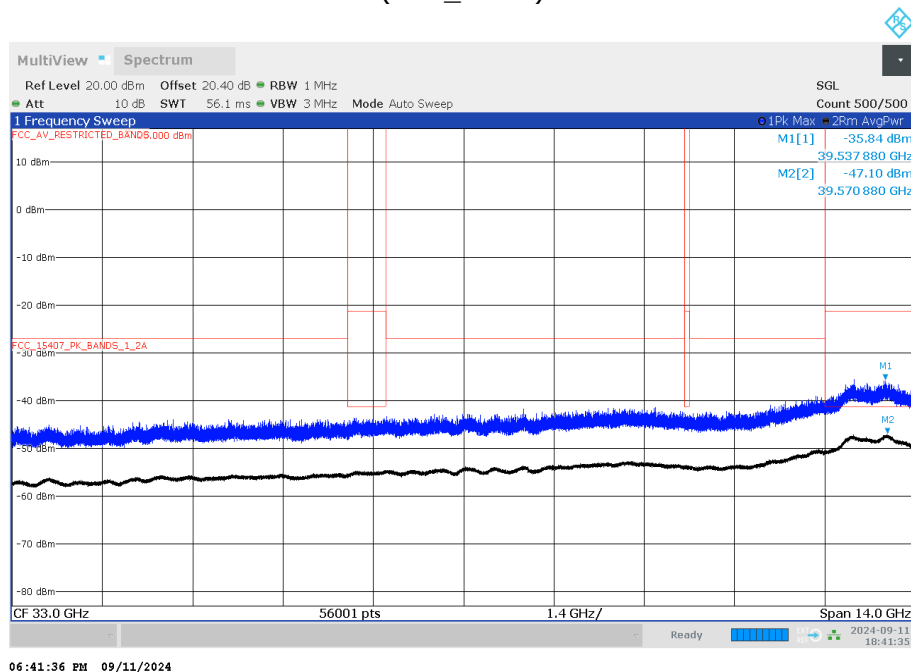
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 30MHz - 1GHz, Subband = U-NII-2A (S01_AD02)



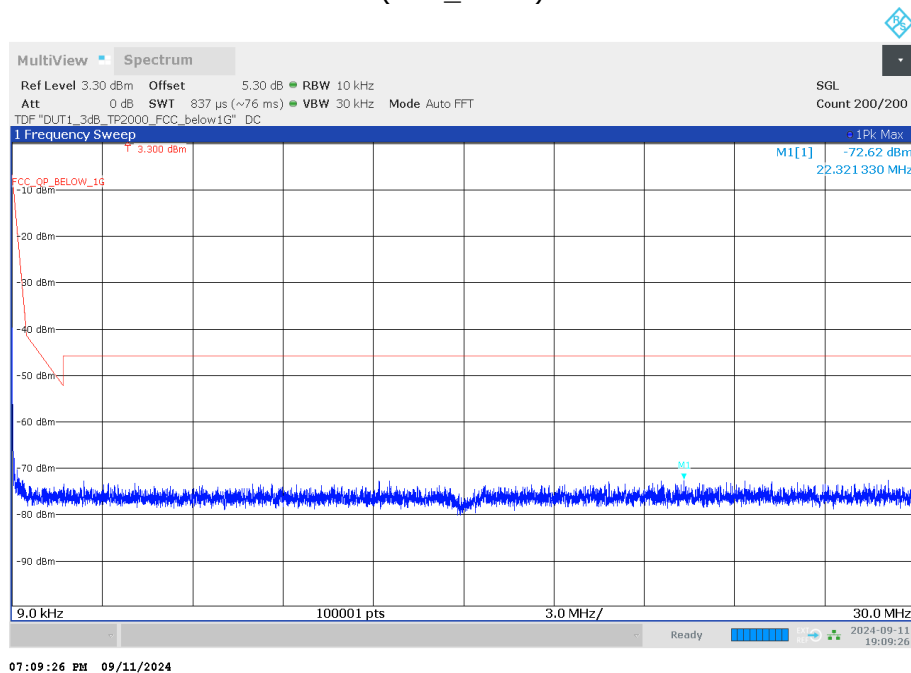
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 9kHz - 30MHz, Subband = U-NII-3 (S01_AD02)



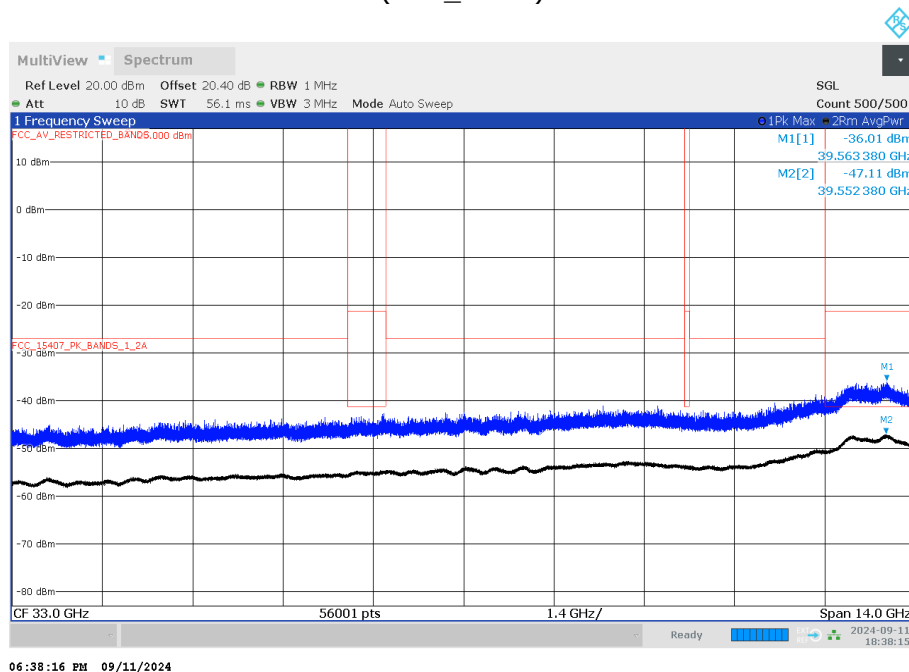
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 26GHz - 40GHz, Subband = U-NII-2C (S01_AD02)



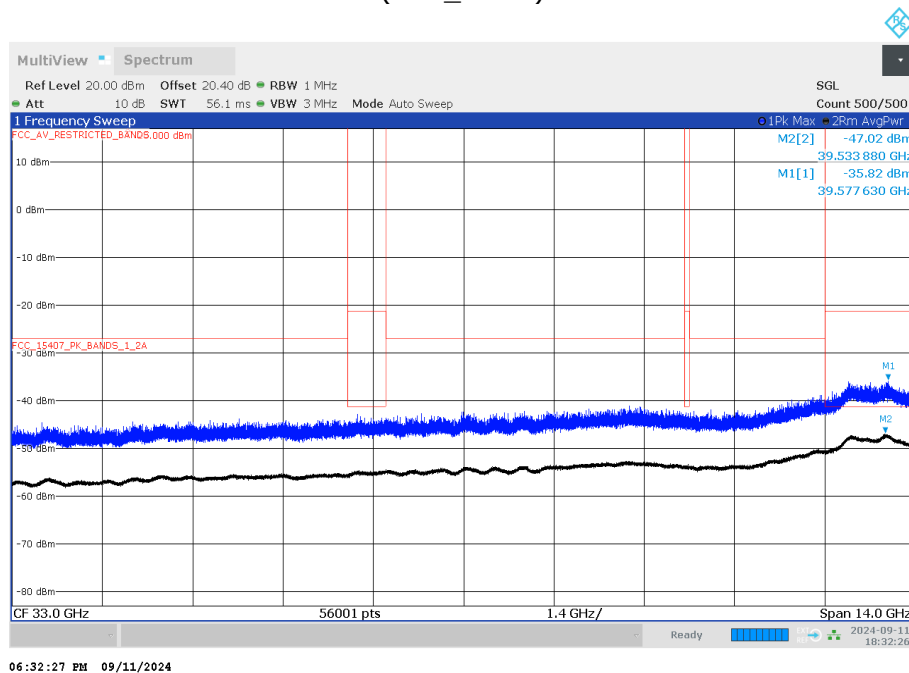
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 9kHz - 30MHz, Subband = U-NII-2C (S01_AD02)



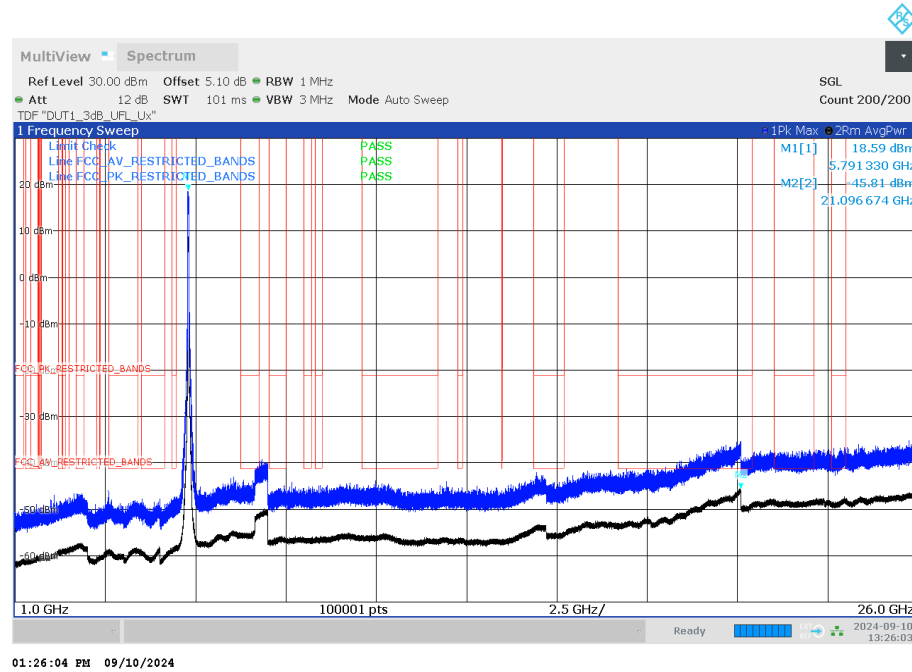
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 26GHz - 40GHz, Subband = U-NII-2A (S01_AD02)



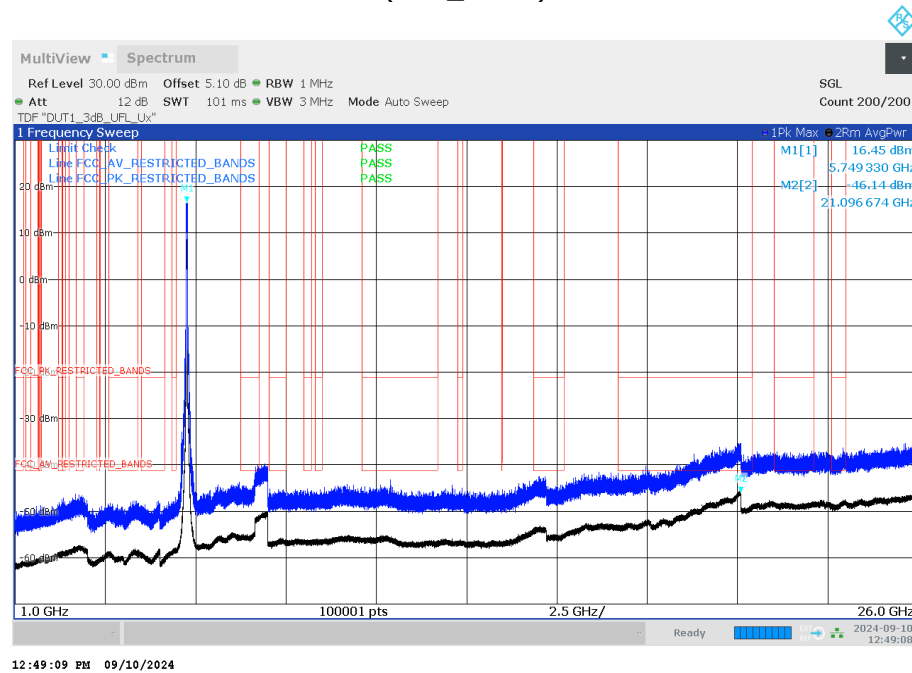
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 26GHz - 40GHz, Subband = U-NII-1 (S01_AD02)



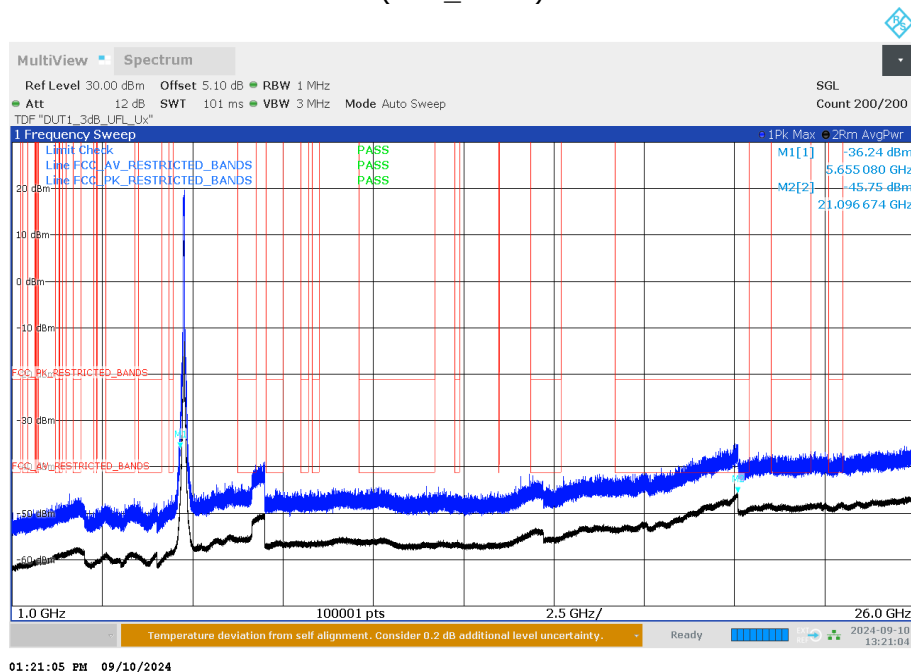
Radio Technology = WLAN ax 40 MHz, Operating Frequency = high, Measurement range =
1GHz - 26GHz, Subband = U-NII-3
(S01_AD02)



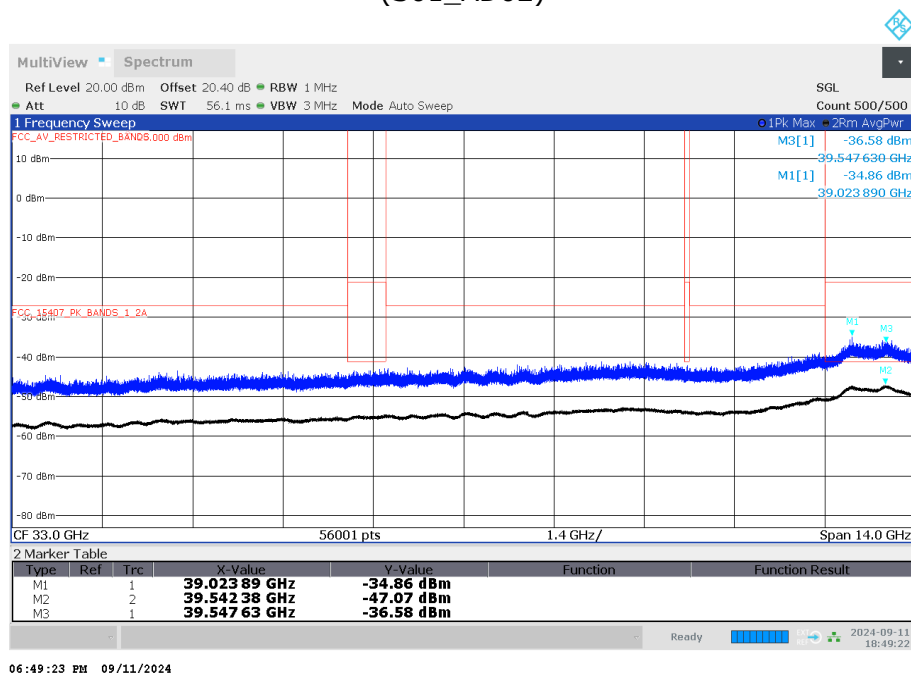
Radio Technology = WLAN ac 40 MHz, Operating Frequency = low, Measurement range =
1GHz - 26GHz, Subband = U-NII-3
(S01_AD02)



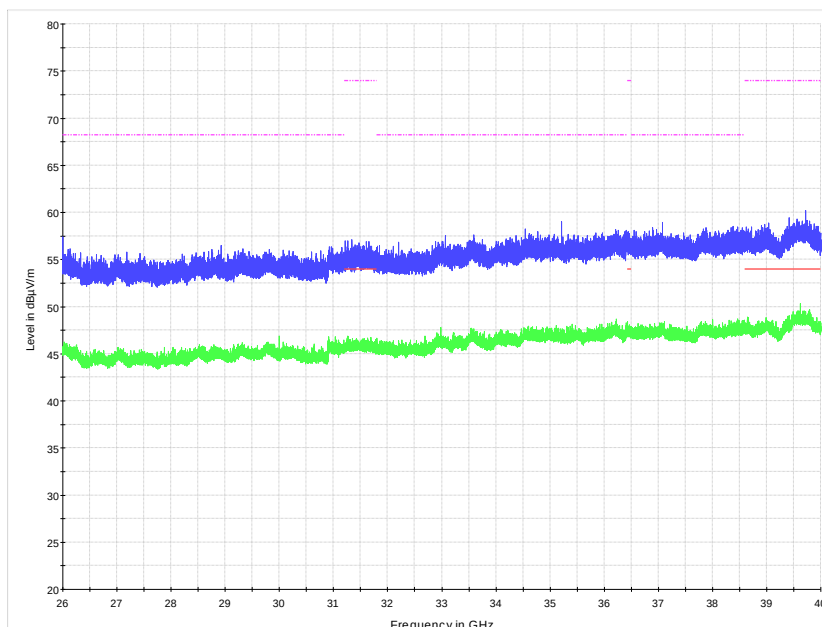
Radio Technology = WLAN ax 40 MHz, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-3 (S01_AD02)



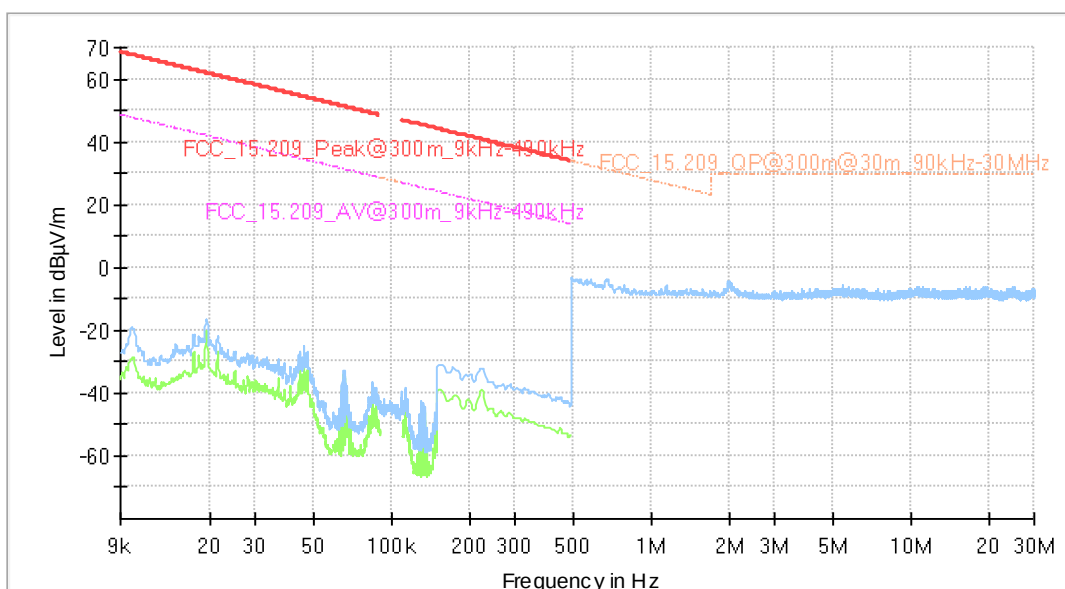
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 26GHz - 40GHz, Subband = U-NII-3 (S01_AD02)



Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 26GHz - 40GHz, Subband = U-NII-1 (S02_AC02)



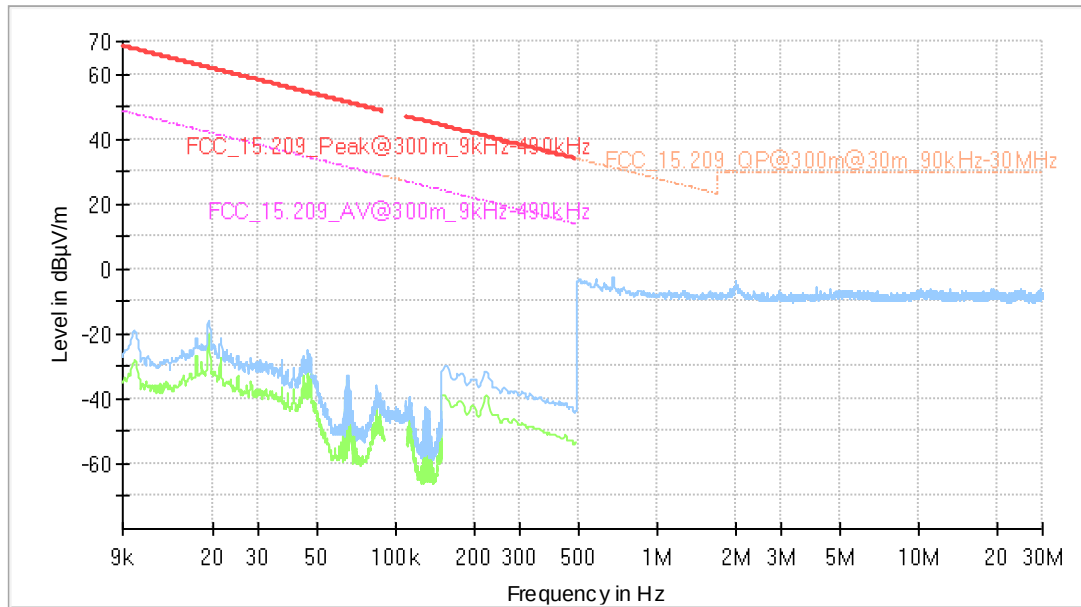
Radio Technology = WLAN a, Operating Frequency = low, Measurement range = 9kHz - 30MHz, Subband = U-NII-1 (S02_AA01)



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---	---	---

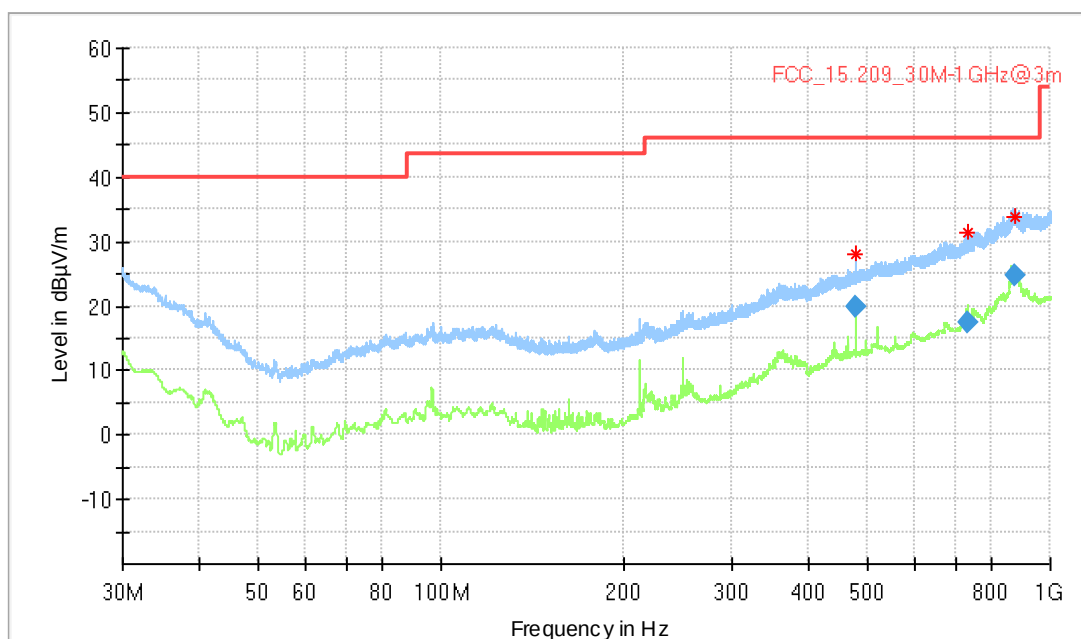
Radio Technology = WLAN a, Operating Frequency = high, Measurement range = 9kHz - 30MHz, Subband = U-NII-2C (S02_AA01)



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---	---	---

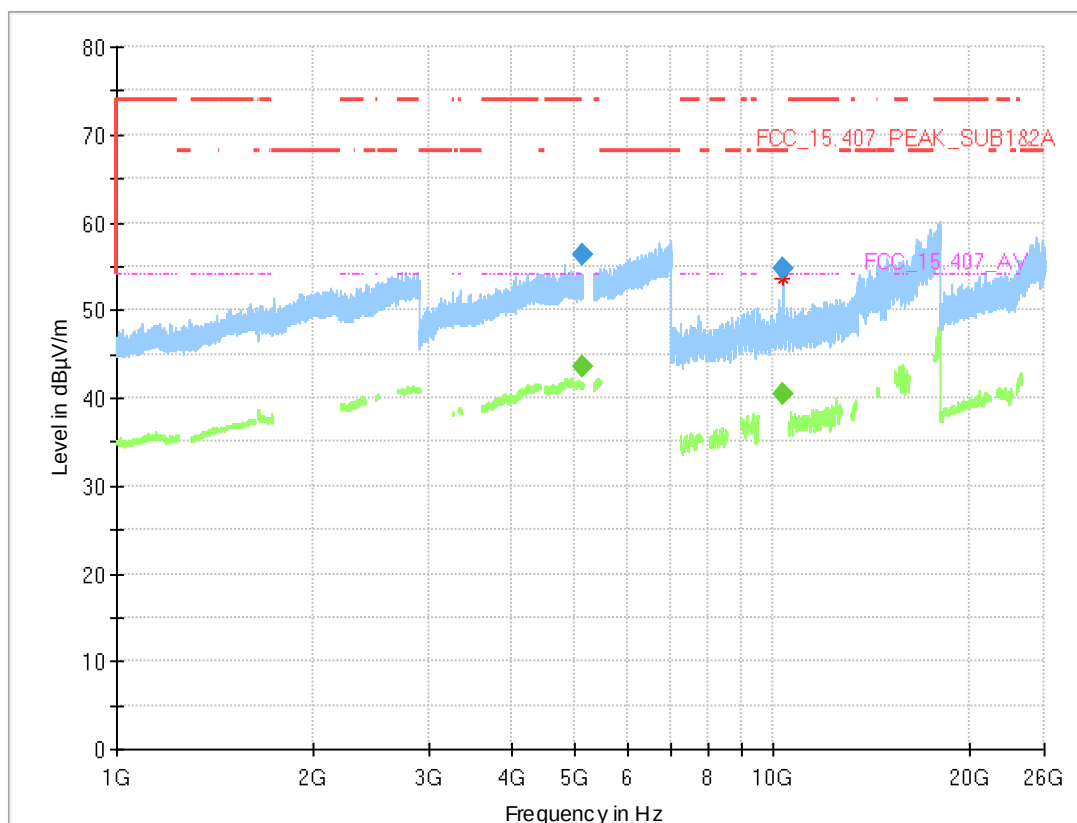
Radio Technology = WLAN a, Operating Frequency = high, Measurement range = 30MHz - 1GHz, Subband = U-NII-3 (S02_AA01)



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
480.000000	19.87	46.00	26.13	1000.0	120.000	230.0	V	4.0	20.1
729.720000	17.29	46.00	28.71	1000.0	120.000	219.0	H	-80.0	25.2
873.210000	24.61	46.00	21.39	1000.0	120.000	103.0	H	-182.0	27.1

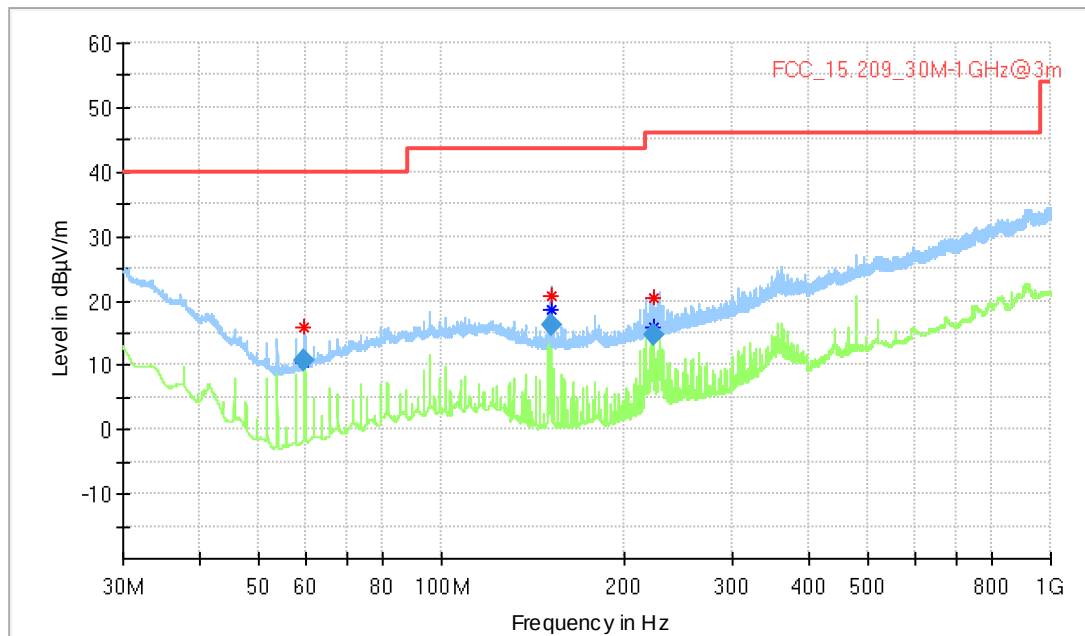
Radio Technology = WLAN a, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-1 (S02_AC02)



Final Result

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
5150.000	56.3	---	74.00	17.70	1000.0	1000.000	150.0	V	-53.0	105.0	15.0
5150.000	---	43.7	54.00	10.33	1000.0	1000.000	150.0	V	-53.0	105.0	15.0
10363.638	---	40.5	---	---	1000.0	1000.000	150.0	H	46.0	91.0	-8.7
10363.638	54.8	---	68.20	13.45	1000.0	1000.000	150.0	H	46.0	91.0	-8.7

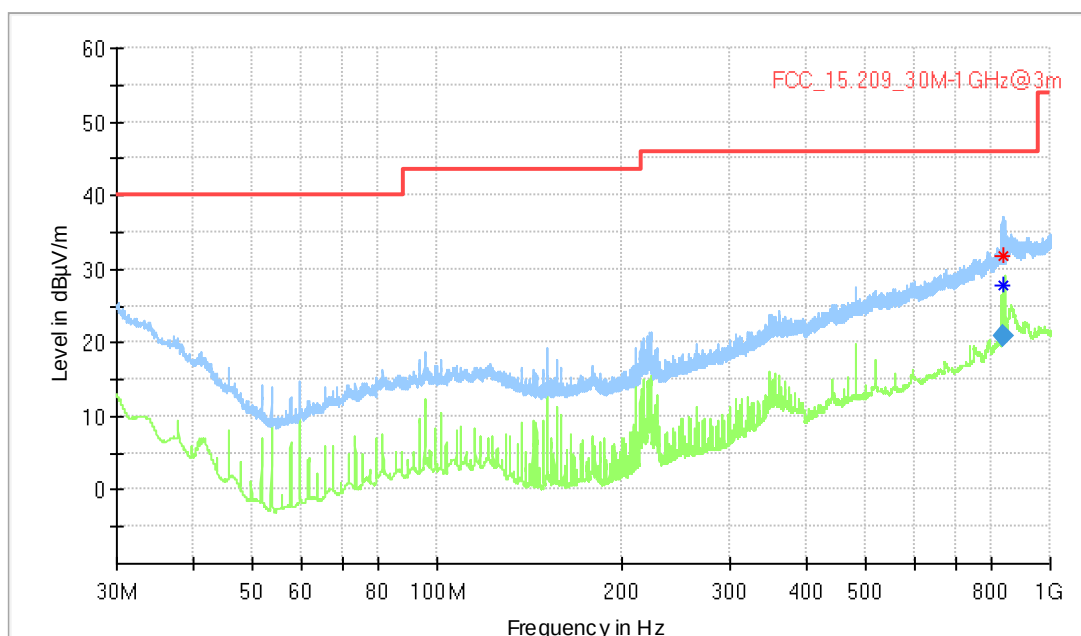
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 30MHz - 1GHz, Subband = U-NII-1 (S02_AA01)



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
59.640000	10.58	40.00	29.42	1000.0	120.000	114.0	V	-56.0	6.0
151.050000	16.07	43.50	27.43	1000.0	120.000	102.0	V	-182.0	9.8
222.570000	14.64	46.00	31.36	1000.0	120.000	105.0	V	-139.0	10.9

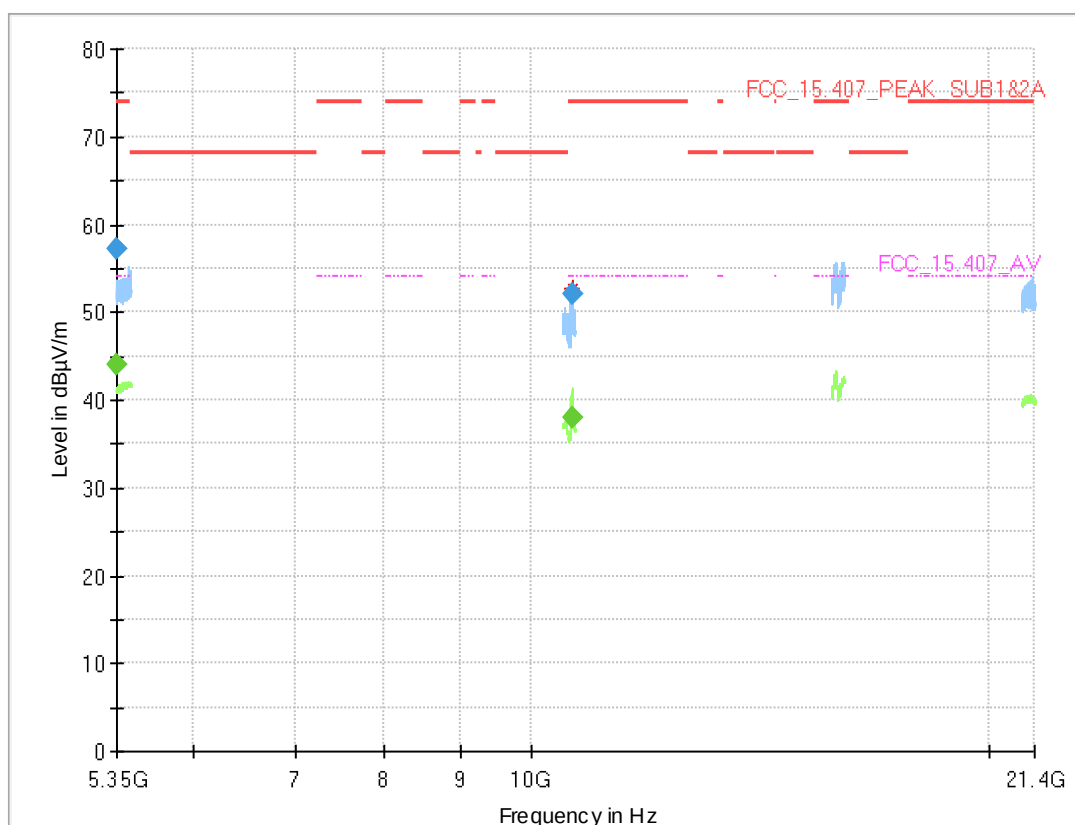
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 30MHz - 1GHz, Subband = U-NII-2A (S02_AA01)



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
834.600000	20.86	46.00	25.14	1000.0	120.000	152.0	H	-176.0	26.9

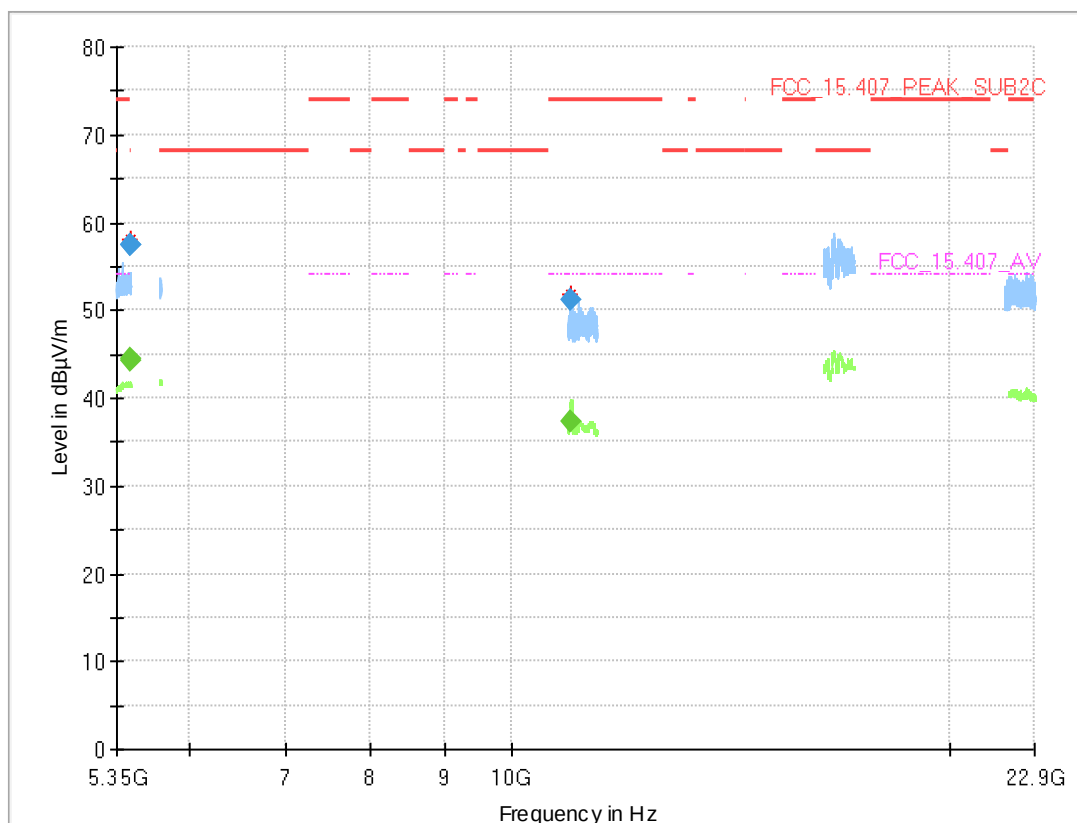
Radio Technology = WLAN a, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-2A (S02_AC02)



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
5350.000	---	44.0	54.00	10.04	1000.0	1000.000	150.0	H	-51.0	15.0	15.3
5350.000	57.3	---	74.00	16.72	1000.0	1000.000	150.0	H	-51.0	15.0	15.3
10637.000	---	37.9	54.00	16.06	1000.0	1000.000	150.0	H	44.0	105.0	-9.6
10637.000	52.0	---	74.00	22.01	1000.0	1000.000	150.0	H	44.0	105.0	-9.6

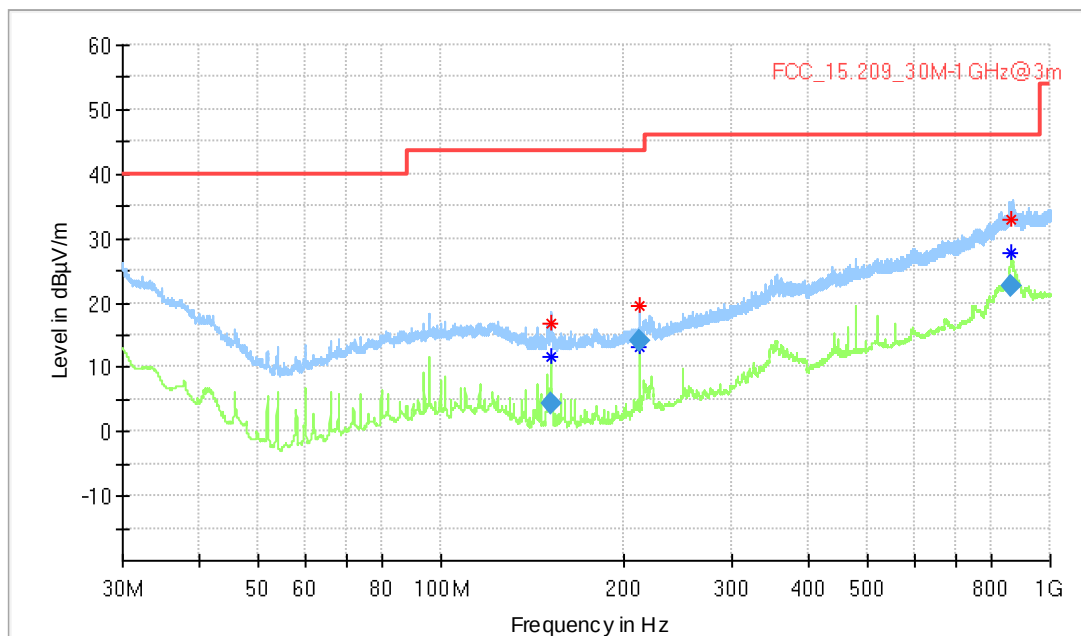
Radio Technology = WLAN a, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-2C (S02_AC02)



Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
5459.920	---	44.5	54.00	9.50	1000.0	1000.000	150.0	H	-140.0	10.0	15.9
5459.920	57.4	---	74.00	16.57	1000.0	1000.000	150.0	H	-140.0	10.0	15.9
5469.880	---	44.3	---	---	1000.0	1000.000	150.0	V	-10.0	15.0	15.7
5469.880	57.5	---	68.20	10.66	1000.0	1000.000	150.0	V	-10.0	15.0	15.7
10996.610	---	37.4	54.00	16.63	1000.0	1000.000	150.0	V	-34.0	80.0	-8.2
10996.610	51.3	---	74.00	22.72	1000.0	1000.000	150.0	V	-34.0	80.0	-8.2

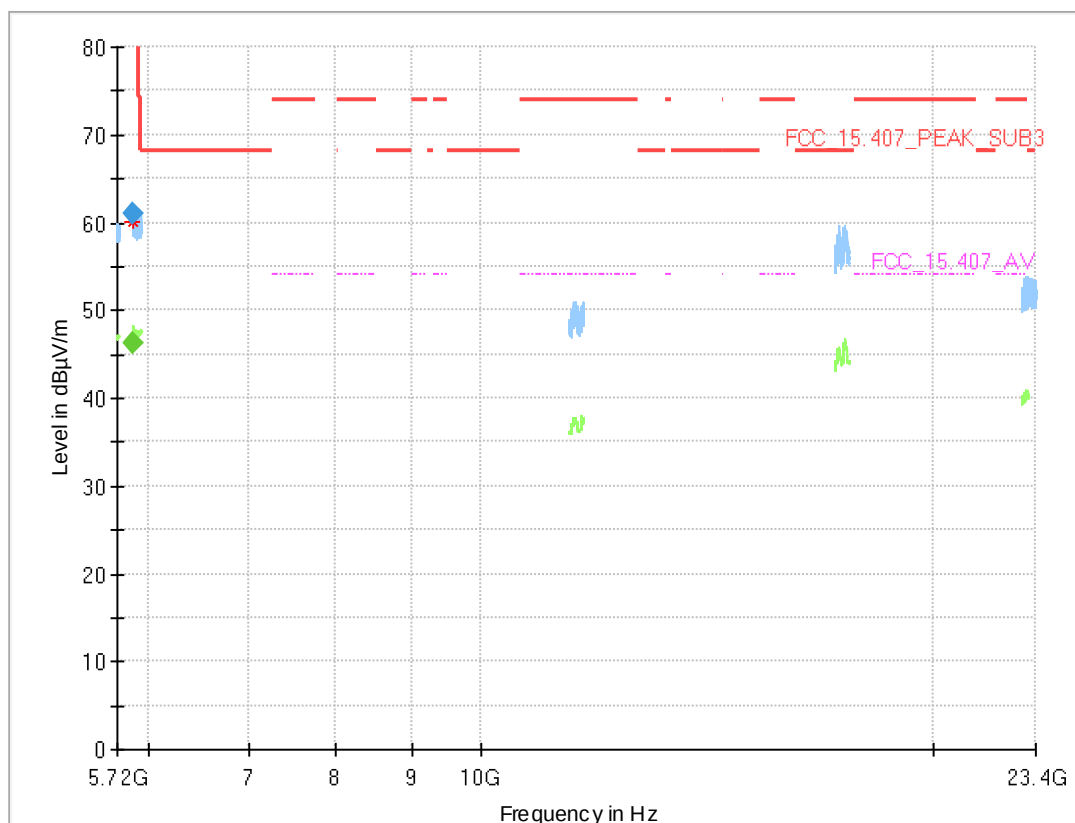
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 30MHz - 1GHz, Subband = U-NII-2C
(S02_AA01)



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
151.590000	4.23	43.50	39.27	1000.0	120.000	103.0	V	123.0	9.8
211.200000	13.99	43.50	29.51	1000.0	120.000	103.0	V	-154.0	11.2
864.000000	22.63	46.00	23.37	1000.0	120.000	100.0	H	-123.0	26.9

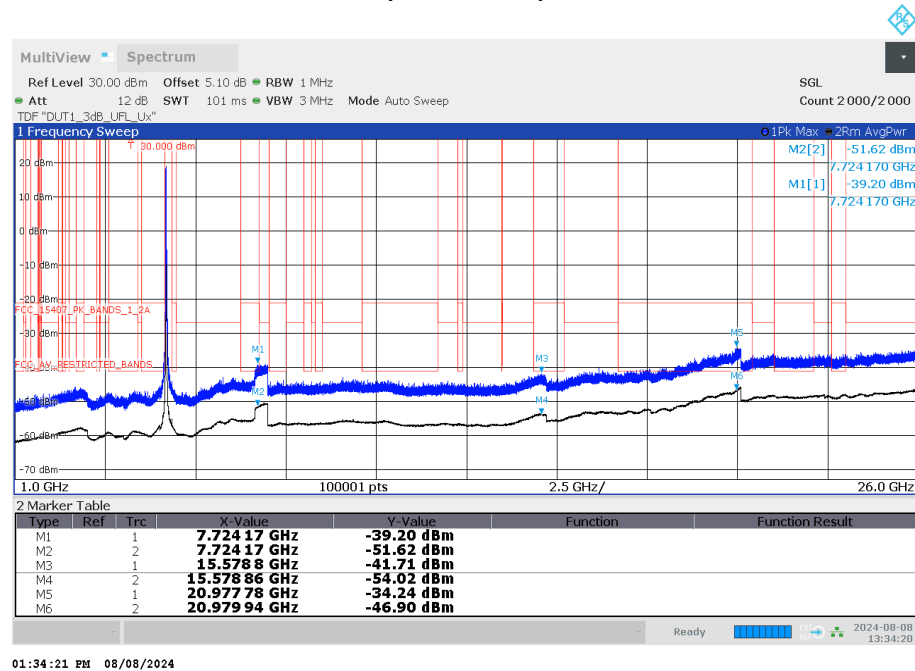
Radio Technology = WLAN a, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-3 (S02_AE02)



Final Result

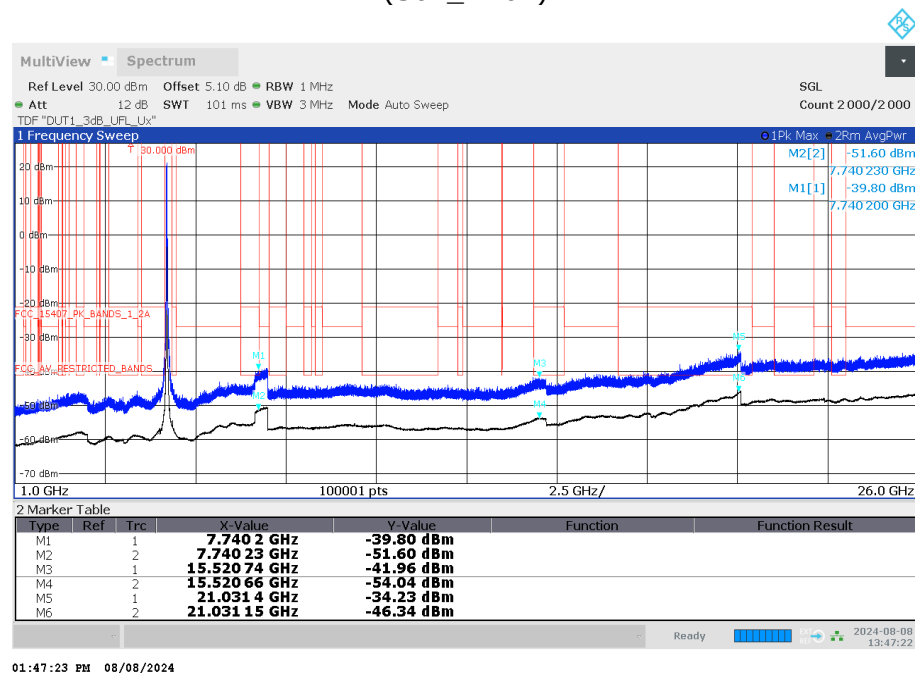
Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
5850.800	---	46.3	---	---	1000.0	1000.000	150.0	H	44.0	-15.0	15.8
5850.800	60.9	---	120.3	59.43	1000.0	1000.000	150.0	H	44.0	-15.0	15.8

Radio Technology = WLAN a, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-1 (S01_AD02)



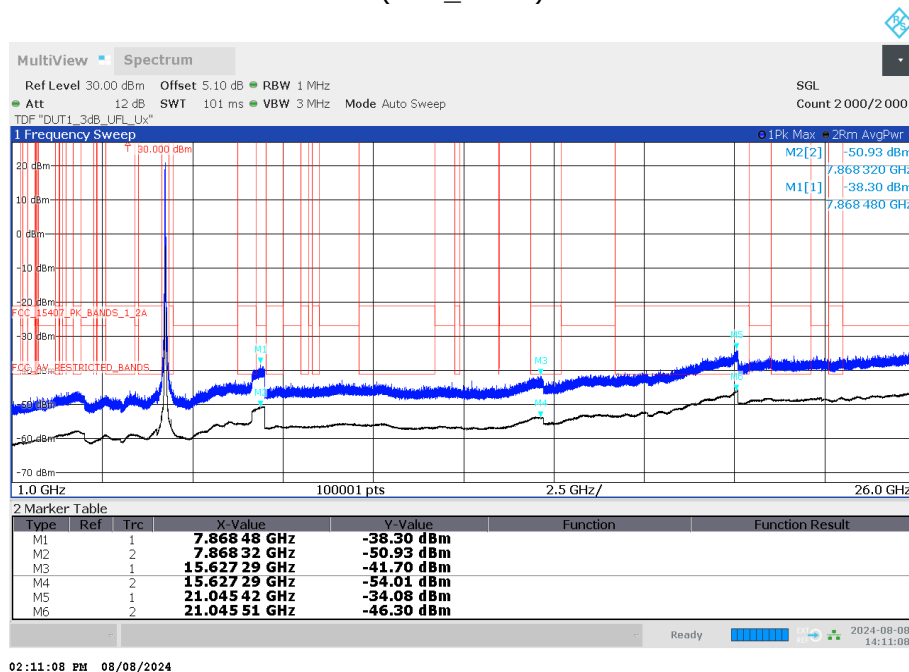
01:34:21 PM 08/08/2024

Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 1GHz - 26GHz, Subband = U-NII-1 (S01_AD02)

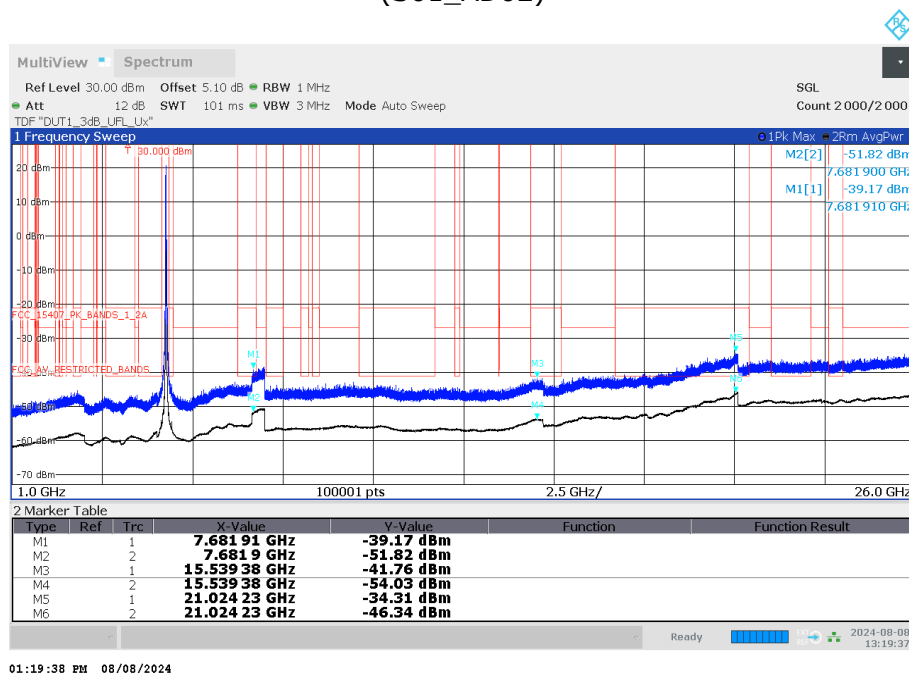


01:47:23 PM 08/08/2024

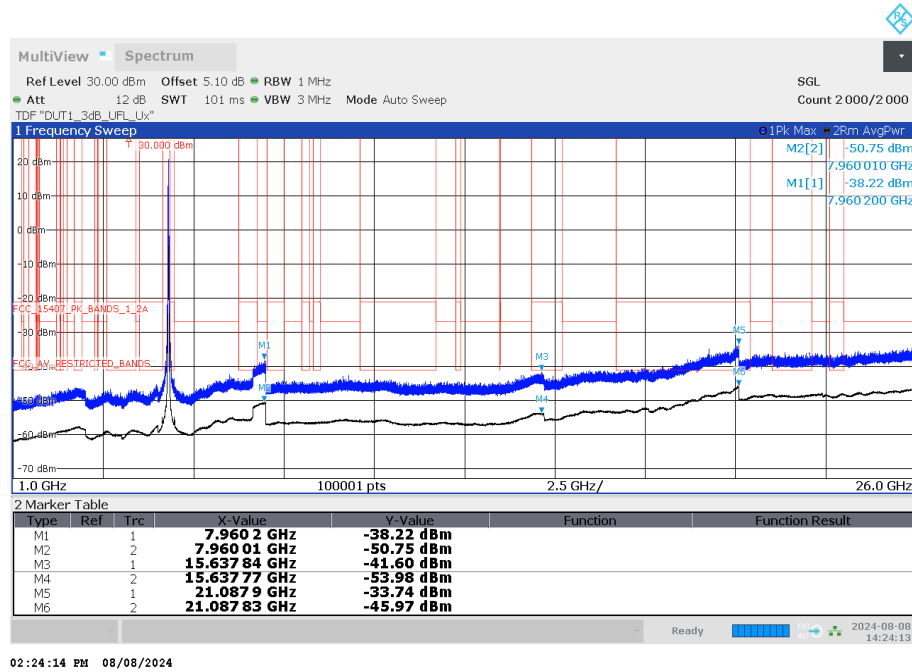
Radio Technology = WLAN a, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-1 (S01_AD02)



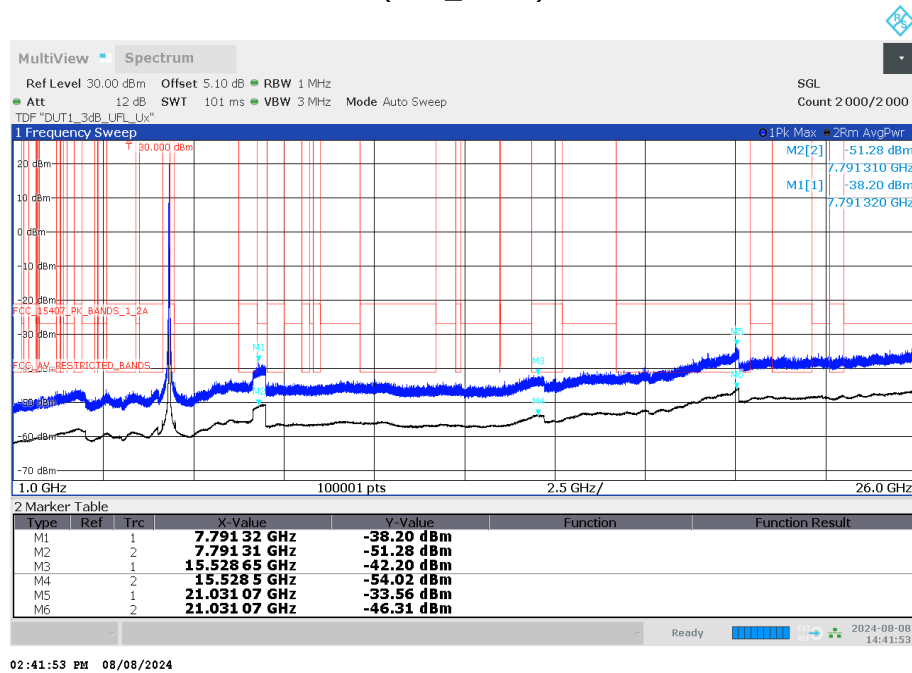
Radio Technology = WLAN a, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-2A (S01_AD02)



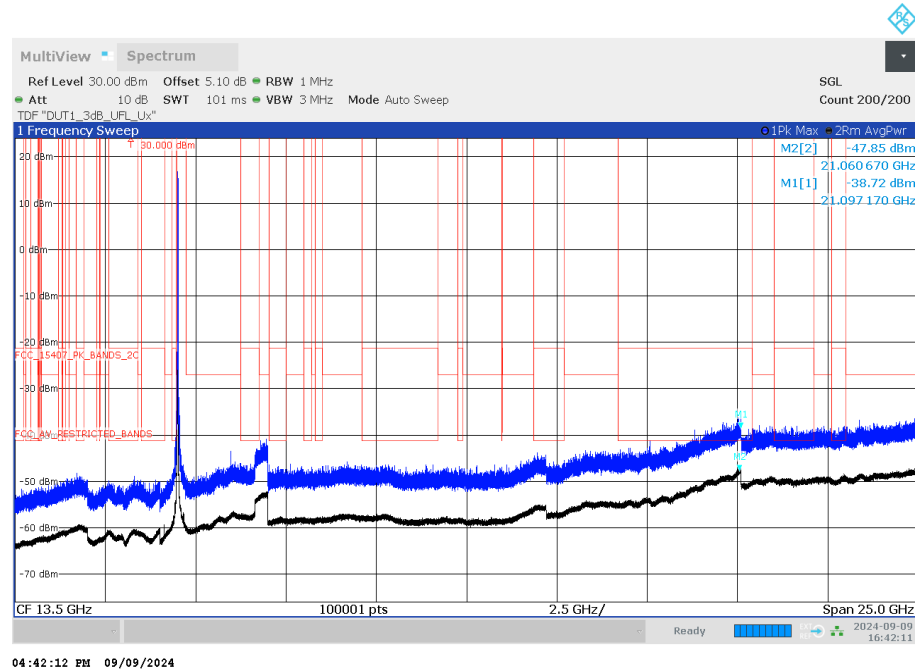
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 1GHz - 26GHz, Subband = U-NII-2A (S01_AD02)



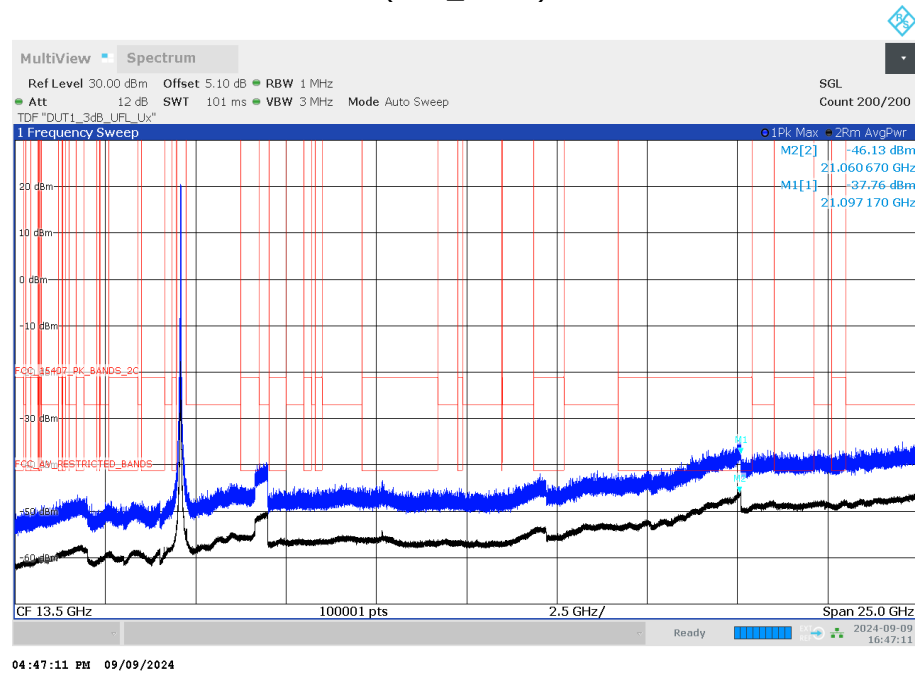
Radio Technology = WLAN a, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-2A (S01_AD02)



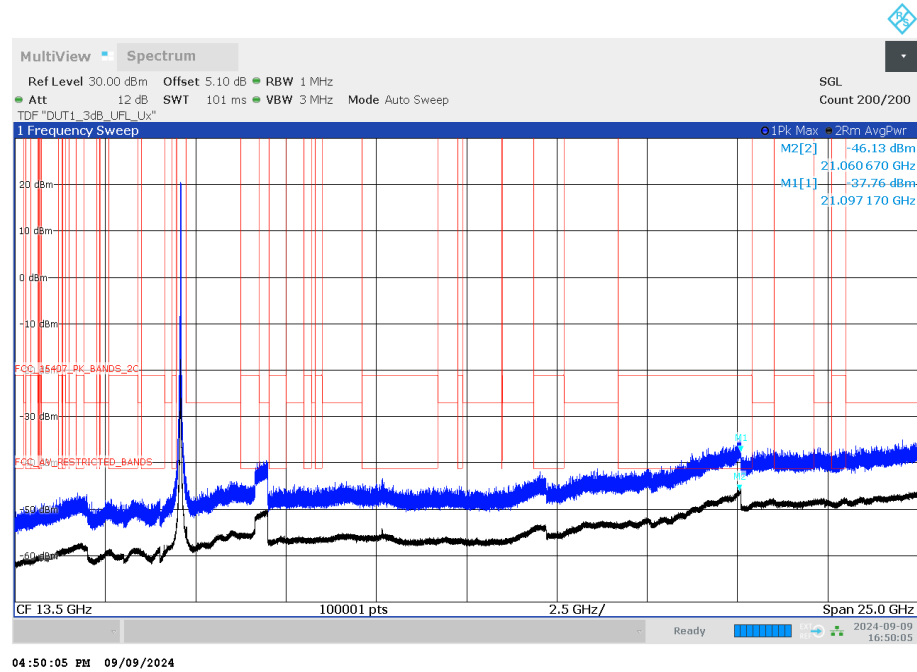
Radio Technology = WLAN a, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-2C (S01_AD02)



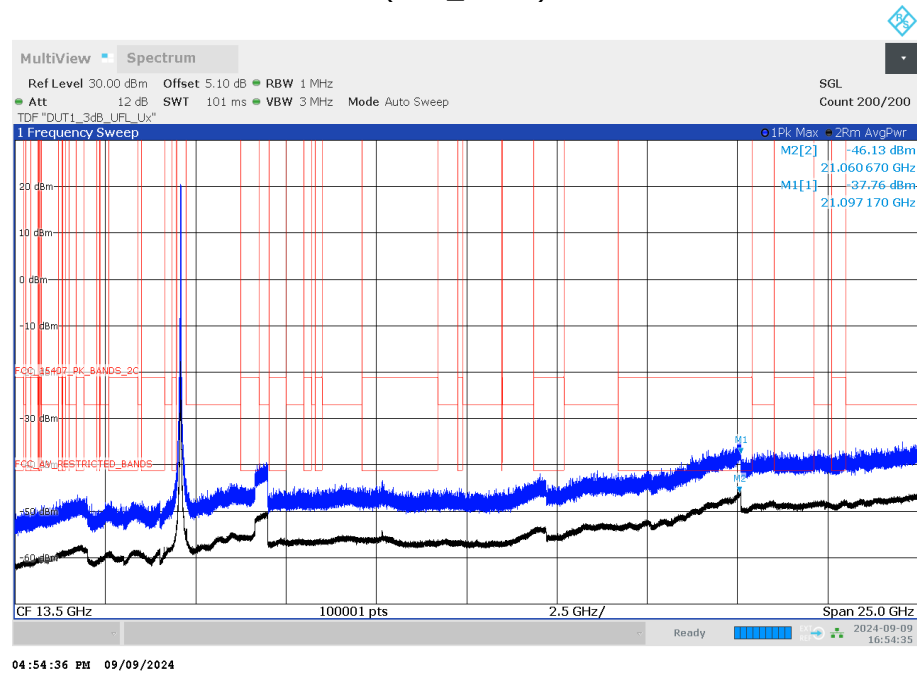
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 1GHz - 26GHz, Subband = U-NII-2C (S01_AD02)



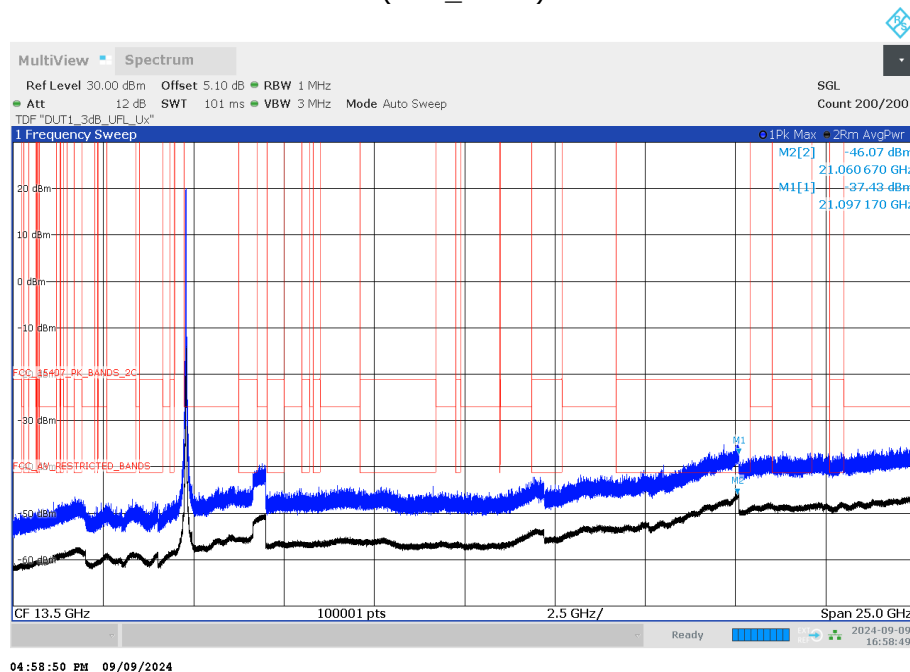
Radio Technology = WLAN a, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-2C (S01_AD02)



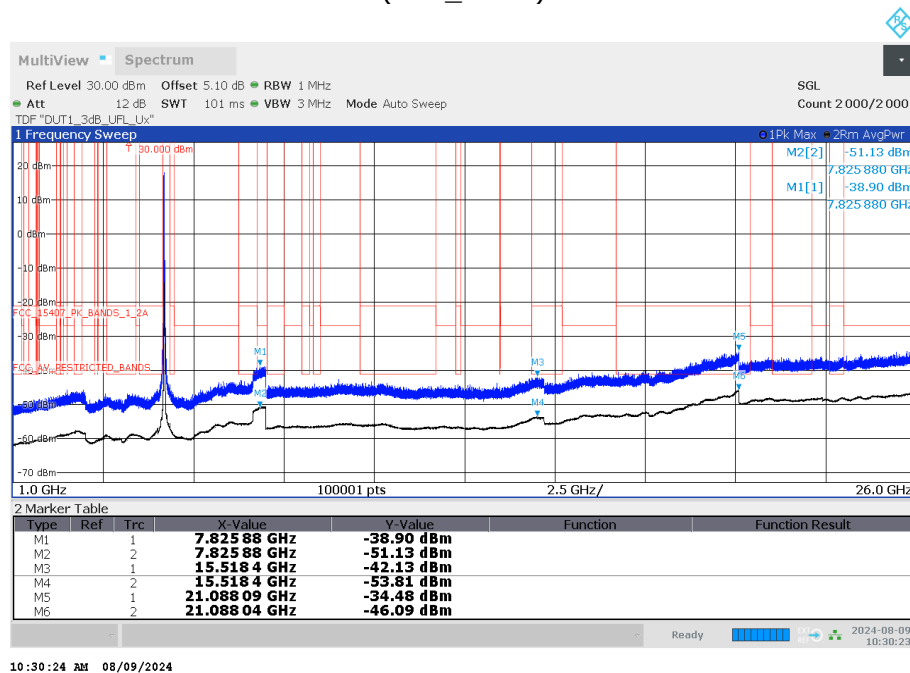
Radio Technology = WLAN a, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-3 (S01_AD02)



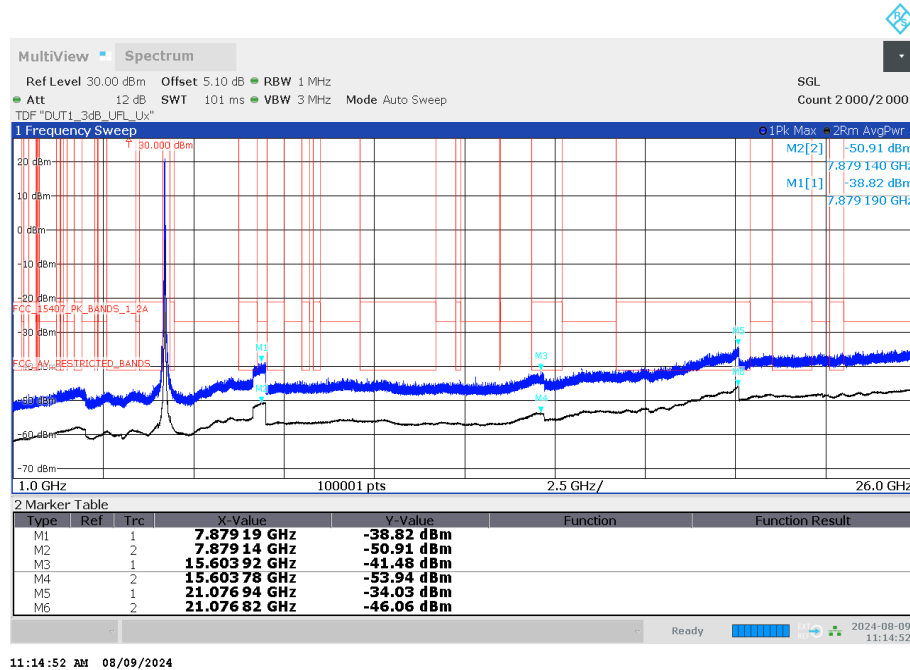
Radio Technology = WLAN a, Operating Frequency = mid, Measurement range = 1GHz - 26GHz, Subband = U-NII-3 (S01_AD02)



Radio Technology = WLAN ac 20 MHz, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-1 (S01_AD02)

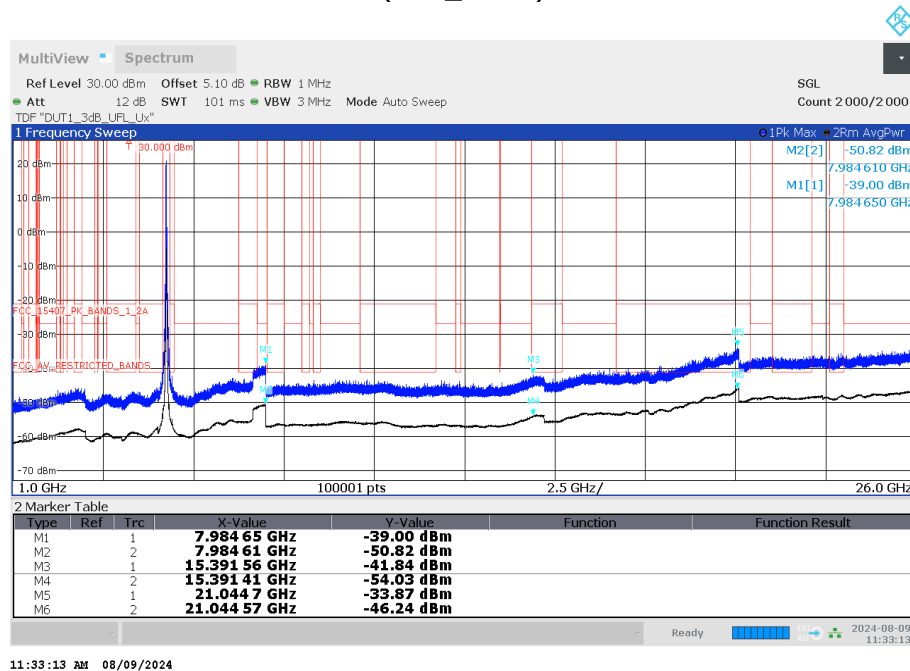


Radio Technology = WLAN ac 20 MHz, Operating Frequency = mid, Measurement range = 1GHz - 26GHz, Subband = U-NII-1 (S01_AD02)



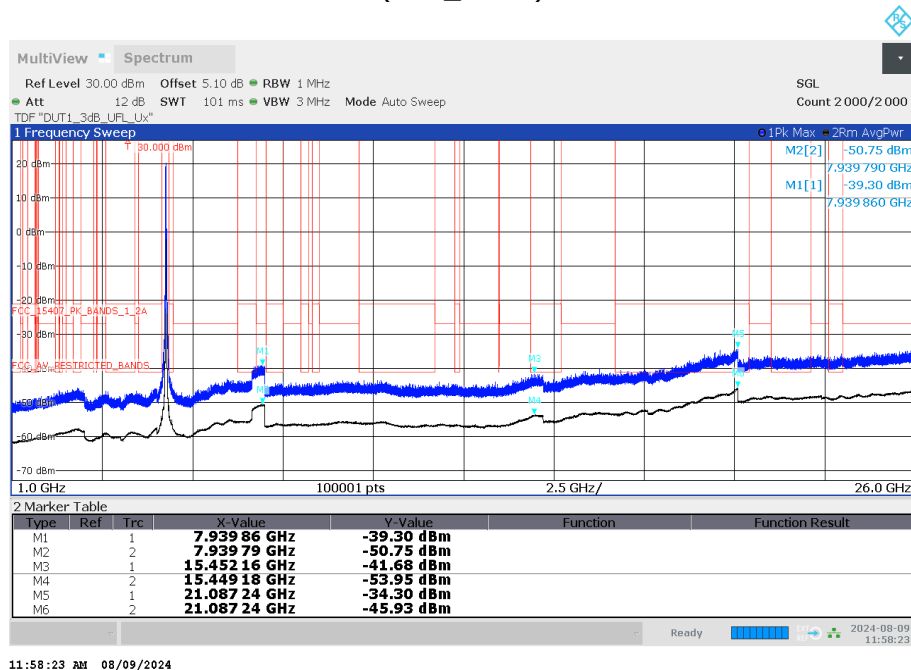
11:14:52 AM 08/09/2024

Radio Technology = WLAN ac 20 MHz, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-1 (S01_AD02)



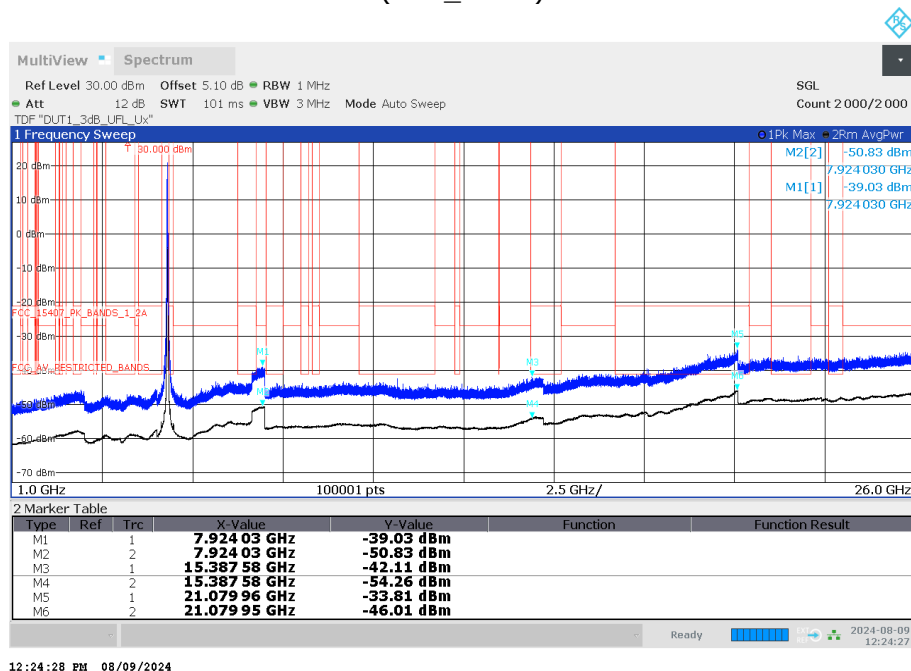
11:33:13 AM 08/09/2024

Radio Technology = WLAN ac 20 MHz, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-2A (S01_AD02)



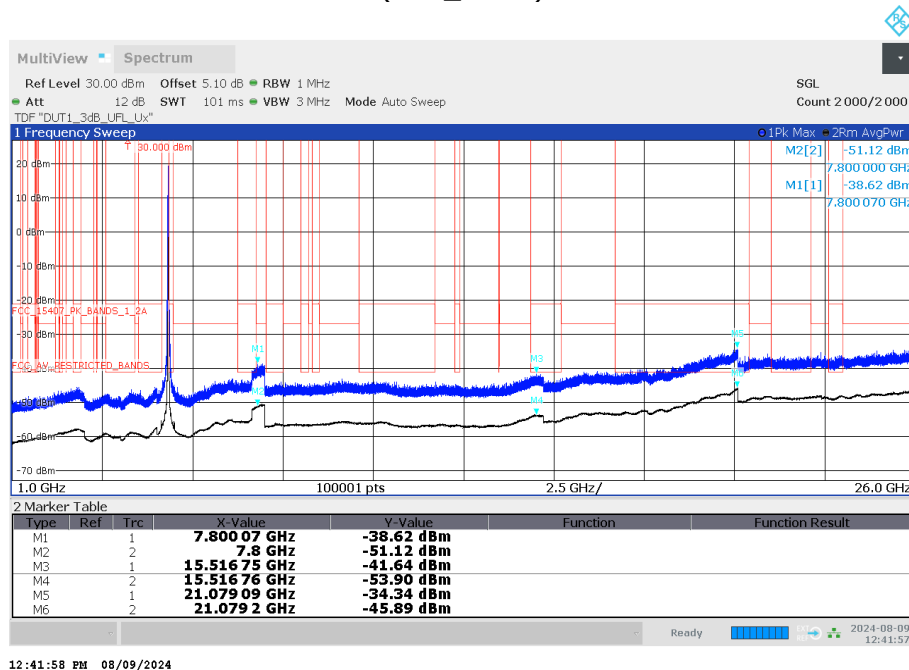
11:58:23 AM 08/09/2024

Radio Technology = WLAN ac 20 MHz, Operating Frequency = mid, Measurement range = 1GHz - 26GHz, Subband = U-NII-2A (S01_AD02)

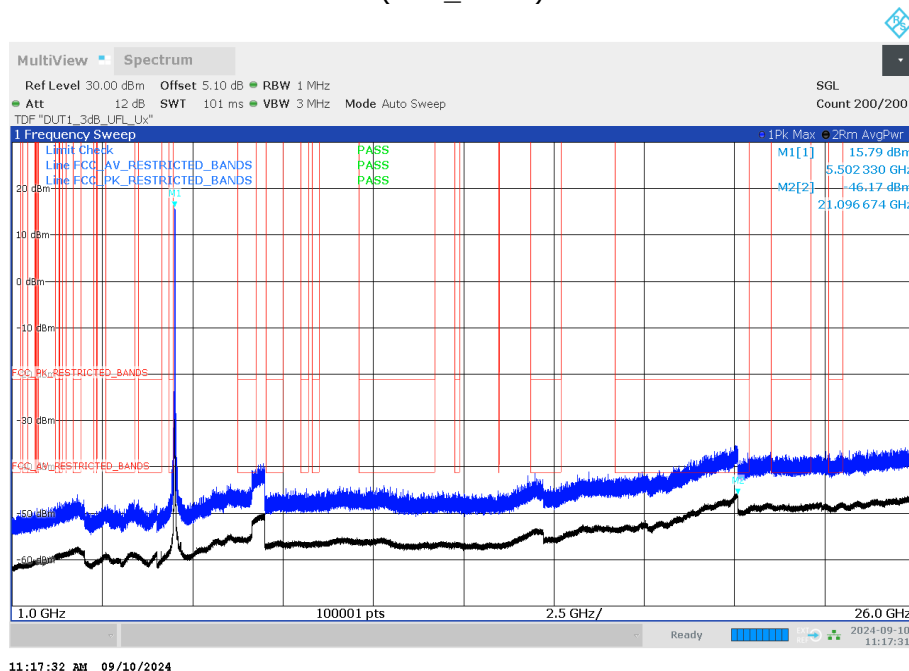


12:24:28 PM 08/09/2024

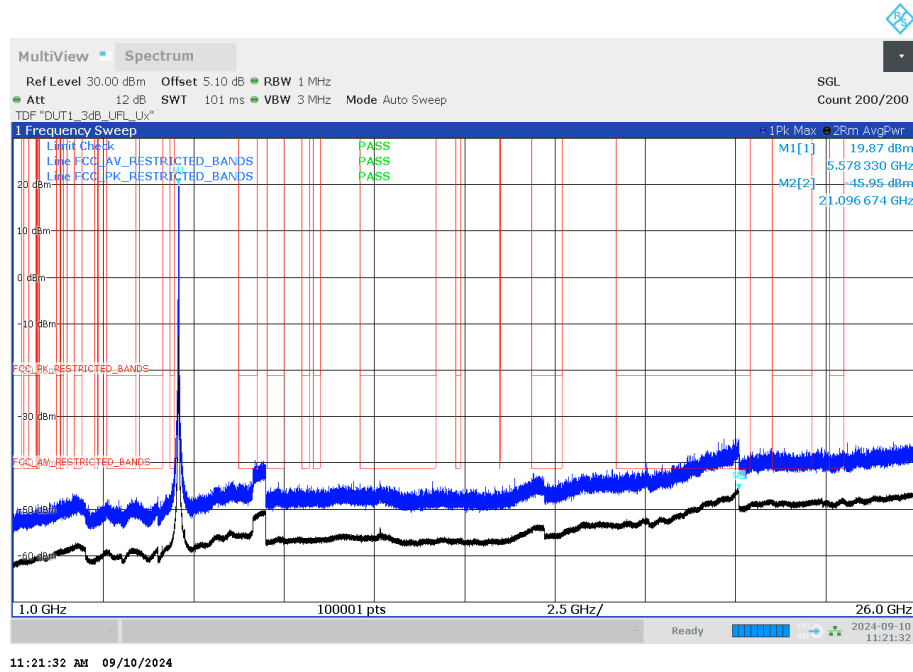
Radio Technology = WLAN ac 20 MHz, Operating Frequency = high, Measurement range = 1GHz - 26GHz, Subband = U-NII-2A (S01_AD02)



Radio Technology = WLAN ac 20 MHz, Operating Frequency = low, Measurement range = 1GHz - 26GHz, Subband = U-NII-2C (S01_AD02)



Radio Technology = WLAN ac 20 MHz, Operating Frequency = mid, Measurement range =
1GHz - 26GHz, Subband = U-NII-2C
(S01_AD02)



Radio Technology = WLAN ac 20 MHz, Operating Frequency = high, Measurement range =
1GHz - 26GHz, Subband = U-NII-2C
(S01_AD02)

