

FCC Measurement/Technical Report on

Multimedia Equipment with WLAN and Bluetooth

BCI3L4PTN1(Star 3.5 / Star 3.0)

FCC ID: 2AUXS- BCI3L4PTN1
IC: 25847-BCI3L4PTN1

Test Report Reference: MDE_BOSCH_2411_FCC_09_rev01

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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.

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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 (only in case of direct or indirect connection to AC main)

§ 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 §15.31, §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 Diversity, high, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN a Diversity, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN a Diversity, low, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN a Diversity, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN a Diversity, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN a Diversity, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 80 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ac 80 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN ax 20 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 80 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 80 MHz MIMO(SU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 20 MHz MIMO(MU), mid, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 40 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 80 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN ax 80 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Performed	N/A
WLAN n 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	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	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN n 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	Performed	N/A
WLAN n 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Performed	N/A

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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	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Subband				
WLAN a Diversity, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN a Diversity, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN a Diversity, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN ac 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN ac 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN ac 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN ac 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN ac 80 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), mid, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN n 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN n 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN n 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed
WLAN n 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	Passed	Passed

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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 Diversity, high, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN a Diversity, high, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN a Diversity, low, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN a Diversity, low, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN a Diversity, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN a Diversity, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 80 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ac 80 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN ax 20 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 80 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 80 MHz MIMO(SU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 20 MHz MIMO(MU), mid, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 40 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 80 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN ax 80 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	N/A	Performed
WLAN n 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed

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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 n 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2024-12-19	N/A	Performed
WLAN n 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2024-12-19	N/A	Performed

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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 a Diversity, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, mid, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 80 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 80 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed

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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 Radio Technology, Operating Frequency, Subband	Setup	Date	FCC	IC
WLAN ax 80 MHz MIMO(SU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), mid, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN n 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed

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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 Radio Technology, Operating Frequency, Subband	Setup	Date	FCC	IC
WLAN a Diversity, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN a Diversity, mid, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed

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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 ac 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 80 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ac 80 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(SU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(SU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 20 MHz MIMO(MU), mid, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(MU), low, U-NII-3	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN ax 80 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.5	2025-02-18	Passed	Passed
WLAN n 20 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, mid, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 20 MHz MIMO, mid, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, low, U-NII-1	S01_AA01#S3.5	2025-01-23	Passed	Passed
WLAN n 40 MHz MIMO, low, U-NII-3	S01_AA01#S3.5	2025-01-23	Passed	Passed

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Undesirable Emissions; General Field Strength Limits

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

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range, Subband				
WLAN a Diversity, high, 1 - 26GHz, U-NII-1	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN a Diversity, high, 1 - 26GHz, U-NII-3	S01_AB01#S3.5	2025-01-22	Passed	Passed
WLAN a Diversity, low, 1 - 26GHz, U-NII-1	S01_AB01#S3.5	2024-12-22	Passed	Passed
WLAN a Diversity, low, 1 - 26GHz, U-NII-3	S01_AB01#S3.5	2024-12-24	Passed	Passed
WLAN a Diversity, low, 9kHz - 30MHz, U-NII-1	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN a Diversity, mid, 1 - 26GHz, U-NII-1	S01_AB01#S3.5	2024-12-23	Passed	Passed
WLAN a Diversity, mid, 1 - 26GHz, U-NII-3	S01_AB01#S3.5	2025-01-22	Passed	Passed
WLAN a Diversity, mid, 26 - 40GHz, U-NII-1	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN a Diversity, mid, 26 - 40GHz, U-NII-3	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN a Diversity, mid, 30MHz - 1GHz, U-NII-1	S01_AB01#S3.5	2024-12-25	Passed	Passed
WLAN a Diversity, mid, 30MHz - 1GHz, U-NII-3	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN a Diversity, mid, 9kHz - 30MHz, U-NII-3	S01_AB01#S3.5	2024-12-15	Passed	Passed
WLAN ac 40 MHz MIMO, high, 1 - 18GHz, U-NII-1	S01_AB01#S3.5	2024-12-30	Passed	Passed
WLAN ac 40 MHz MIMO, high, 1 - 18GHz, U-NII-3	S01_AB01#S3.5	2025-01-02	Passed	Passed
WLAN ac 40 MHz MIMO, low, 1 - 18GHz, U-NII-1	S01_AB01#S3.5	2024-12-30	Passed	Passed
WLAN ac 40 MHz MIMO, low, 1 - 18GHz, U-NII-3	S01_AB01#S3.5	2024-12-30	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, 1 - 26GHz, U-NII-3 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-06-14	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, 1 - 26GHz, U-NII-3 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-06-14	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, 1 - 26GHz, U-NII-1 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, 1 - 26GHz, U-NII-1 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 40 MHz MIMO(SU), high, 1 - 26GHz, U-NII-3 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-06-14	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, 1 - 26GHz, U-NII-3 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-06-14	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, 1 - 26GHz, U-NII-1 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, 1 - 26GHz, U-NII-1 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 80 MHz MIMO(SU), low, 1 - 26GHz, U-NII-3 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-06-14	Passed	Passed
WLAN ax 80 MHz MIMO(MU), low, 1 - 26GHz, U-NII-3 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-06-14	Passed	Passed
WLAN ax 80 MHz MIMO(SU), mid, 1 - 26GHz, U-NII-1 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 80 MHz MIMO(MU), mid, 1 - 26GHz, U-NII-1 Remark: Only Band Edges and harmonics	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN n 20 MHz MIMO, high, 1 - 18GHz, U-NII-1	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN n 20 MHz MIMO, high, 1 - 18GHz, U-NII-3	S01_AB01#S3.5	2024-12-29	Passed	Passed
WLAN n 20 MHz MIMO, low, 1 - 18GHz, U-NII-1	S01_AB01#S3.5	2024-12-25	Passed	Passed
WLAN n 20 MHz MIMO, low, 1 - 18GHz, U-NII-3	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN n 20 MHz MIMO, mid, 1 - 18GHz, U-NII-1	S01_AB01#S3.5	2024-12-24	Passed	Passed
WLAN n 20 MHz MIMO, mid, 1 - 18GHz, U-NII-3	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN n 40 MHz MIMO, high, 1 - 26GHz, U-NII-1	S01_AB01#S3.5	2025-01-03	Passed	Passed

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Undesirable Emissions; General Field Strength Limits

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

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range, Subband				
WLAN n 40 MHz MIMO, high, 1 - 26GHz, U-NII-3	S01_AB01#S3.5	2024-12-30	Passed	Passed
WLAN n 40 MHz MIMO, high, 30MHz - 1GHz, U-NII-3	S01_AB01#S3.5	2024-12-29	Passed	Passed
WLAN n 40 MHz MIMO, low, 1 - 26GHz, U-NII-1	S01_AB01#S3.5	2024-12-29	Passed	Passed
WLAN n 40 MHz MIMO, low, 1 - 26GHz, U-NII-3	S01_AB01#S3.5	2025-01-03	Passed	Passed
WLAN n 40 MHz MIMO, low, 30MHz - 1GHz, U-NII-1	S01_AB01#S3.5	2024-12-15	Passed	Passed
WLAN n 40 MHz MIMO, low, 9kHz - 30MHz, U-NII-1	S01_AB01#S3.5	2024-12-15	Passed	Passed
Simultaneous Transmission A, 1 - 26GHz	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN a Diversity, low, 9kHz - 30MHz, U-NII-1	S01_AA01#S3.0	2025-01-15	Passed	Passed
WLAN a Diversity, low, 1 - 26GHz, U-NII-1	S01_AA01#S3.0	2025-02-19	Passed	Passed
WLAN a Diversity, mid, 30MHz - 1GHz, U-NII-1	S01_AA01#S3.0	2025-01-15	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, 30MHz - 1GHz, U-NII-1	S01_AA01#S3.0	2025-01-15	Passed	Passed
WLAN n 40 MHz MIMO, high, 1 - 26GHz, U-NII-3	S01_AA01#S3.0	2025-02-20	Passed	Passed
WLAN n 40 MHz MIMO, low, 30MHz - 1GHz, U-NII-1	S01_AA01#S3.0	2025-01-15	Passed	Passed
Simultaneous Transmission B, 1 - 26GHz	S01_AA01#S3.0	2025-02-01	Passed	Passed

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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 Diversity, high, U-NII-3	S01_AB01#S3.5	2025-01-12	Passed	Passed
WLAN a Diversity, high, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN a Diversity, low, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN a Diversity, low, U-NII-3	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN ac 20 MHz MIMO, high, U-NII-3	S01_AB01#S3.5	2025-03-22	Passed	Passed
WLAN ac 20 MHz MIMO, high, U-NII-1	S01_AB01#S3.5	2024-12-24	Passed	Passed
WLAN ac 20 MHz MIMO, low, U-NII-1	S01_AB01#S3.5	2024-12-24	Passed	Passed
WLAN ac 20 MHz MIMO, low, U-NII-3	S01_AB01#S3.5	2025-03-22	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-3	S01_AB01#S3.5	2025-01-02	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN ac 40 MHz MIMO, low, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN ac 40 MHz MIMO, low, U-NII-3	S01_AB01#S3.5	2024-12-30	Passed	Passed
WLAN ac 80 MHz MIMO, low, U-NII-3	S01_AB01#S3.5	2025-03-22	Passed	Passed
WLAN ac 80 MHz MIMO, mid, U-NII-1	S01_AB01#S3.5	2024-12-24	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-3	S01_AB01#S3.5	2025-03-23	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-1	S01_AB01#S3.5	2025-01-12	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, U-NII-1	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 20 MHz MIMO(SU), low, U-NII-3	S01_AB01#S3.5	2025-01-27	Passed	Passed
WLAN ax 40 MHz MIMO(SU), high, U-NII-3	S01_AB01#S3.5	2025-03-23	Passed	Passed

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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 MIMO(SU), high, U-NII-1	S01_AB01#S3.5	2025-01-06	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-1	S01_AB01#S3.5	2025-01-06	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-3	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 80 MHz MIMO(SU), low, U-NII-3	S01_AB01#S3.5	2025-03-23	Passed	Passed
WLAN ax 80 MHz MIMO(SU), mid, U-NII-1	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-3	S01_AB01#S3.5	2025-03-23	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-1	S01_AB01#S3.5	2025-01-12	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, U-NII-1	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 20 MHz MIMO(MU), low, U-NII-3	S01_AB01#S3.5	2025-01-27	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, U-NII-3	S01_AB01#S3.5	2025-03-23	Passed	Passed
WLAN ax 40 MHz MIMO(MU), high, U-NII-1	S01_AB01#S3.5	2025-01-06	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-1	S01_AB01#S3.5	2025-01-06	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-3	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN ax 80 MHz MIMO(MU), low, U-NII-3	S01_AB01#S3.5	2025-03-23	Passed	Passed
WLAN ax 80 MHz MIMO(MU), mid, U-NII-1	S01_AB01#S3.5	2025-02-20	Passed	Passed
WLAN n 20 MHz MIMO, high, U-NII-3	S01_AB01#S3.5	2024-12-29	Passed	Passed
WLAN n 20 MHz MIMO, high, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN n 20 MHz MIMO, low, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN n 20 MHz MIMO, low, U-NII-3	S01_AB01#S3.5	2024-12-26	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-3	S01_AB01#S3.5	2024-12-30	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN n 40 MHz MIMO, low, U-NII-1	S01_AB01#S3.5	2025-03-16	Passed	Passed
WLAN n 40 MHz MIMO, low, U-NII-3	S01_AB01#S3.5	2024-12-29	Passed	Passed
WLAN a Diversity, low, U-NII-1	S01_AA01#S3.0	2025-02-19	Passed	Passed
WLAN ac 40 MHz MIMO, high, U-NII-1	S01_AA01#S3.0	2025-03-16	Passed	Passed
WLAN ac 80 MHz MIMO, low, U-NII-3	S01_AA01#S3.0	2025-03-23	Passed	Passed
WLAN ax 20 MHz MIMO(SU), high, U-NII-3	S01_AA01#S3.0	2025-03-23	Passed	Passed
WLAN ax 40 MHz MIMO(SU), low, U-NII-1	S01_AA01#S3.0	2025-01-06	Passed	Passed
WLAN ax 80 MHz MIMO(SU), mid, U-NII-1	S01_AA01#S3.0	2025-02-20	Passed	Passed
WLAN ax 20 MHz MIMO(MU), high, U-NII-3	S01_AA01#S3.0	2025-03-23	Passed	Passed
WLAN ax 40 MHz MIMO(MU), low, U-NII-1	S01_AA01#S3.0	2025-01-06	Passed	Passed
WLAN ax 80 MHz MIMO(MU), mid, U-NII-1	S01_AA01#S3.0	2025-02-20	Passed	Passed
WLAN n 40 MHz MIMO, high, U-NII-3	S01_AA01#S3.0	2025-03-23	Passed	Passed

N/A: Not applicable

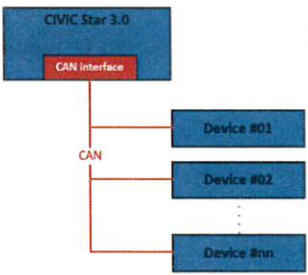
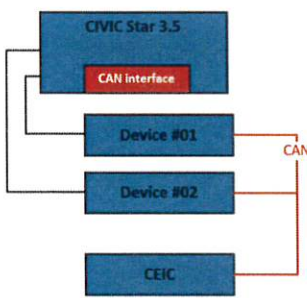
N/P: Not performed

2 REVISION HISTORY / SIGNATURES

Report version control			
Version	Release date	Change Description	Version validity
initial	2025-04-15	--	invalid
rev01	2025-08-05	- changed the values in test case output power and PSD. - the rest of the plots for "Spurious Radiated Emissions" measurements have been added.	valid

COMMENT:

The EUT (Multimedia Equipment with WLAN and Bluetooth) supports two different software variants. The differences between these variants are explained in the following table:

Parameter	LS4T	LS4+T
SW-SKU	ABBC	AABC
GPU frequency	635 MHz	731 MHz
Software variant	Star 3.0	Star 3.5
Blockdiagram Star Architectures	The following block diagram shows the fundamental Star 3.0 architecture that uses the CAN interface. 	The following block diagram shows the fundamental Star 3.5 architecture that does not use the CAN interface, but it is assembled on the CIVIC device. 

The CAN interface is always built on both Star architectures, but only Star 3.0 uses the CAN interface.

Based on the previous table and the applicant's suggested test plan, the measurements were conducted as follows:

- Variant "Star 3.5": Full testing
- Variant "Star 3.0": Spot checks only

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



(responsible for accreditation scope)
 Dipl.-Ing. Daniel Gall



(responsible for testing and report)
 BSc. Mhd Mouaz Saad

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-12140-01-00
FCC Designation Number: DE0015
FCC Test Firm Registration: 929146
ISED CAB Identifier DE0007; ISED#: 3699A

Responsible for accreditation scope: Dipl.-Ing. Daniel Gall
Report Template Version: 2024-11-06

3.2 PROJECT DATA

Responsible for testing and report: BSc. Mhd Mouaz Saad
Employees who performed the tests: documented internally at 7Layers
Date of Report: 2025-08-05
Testing Period: 2024-12-15 to 2025-06-14

3.3 APPLICANT DATA

Company Name: Robert Bosch GmbH
Address: Robert-Bosch-Platz 1, 70839 Gerlingen
Germany
Contact Person: Karin Silberhorn

3.4 MANUFACTURER DATA

Manufacturer 1

Company Name: Bosch Car Multimedia Portugal

Address: S.A. Rua Max Grundig
35-Lomar,
4705-820 Braga

Manufacturer 2

Company Name: Bosch Automotive Products (Suzhou) Co., Ltd.

Address: Changzhou Branch
No. 17, Long Men Road,
Wujin Hi-tech Industrial Zone
Changzhou, Jiangsu, P.R. China

4 TEST OBJECT DATA

4.1 GENERAL EUT DESCRIPTION

Kind of Device product description	Central In-Vehicle Infotainment Computer	
Product name	Multimedia Device with WLAN and Bluetooth	
Model name	BCI3L4PTN1(Star 3.5 / Star 3.0)	
Declared EUT data by the supplier		
Voltage Type	DC	
Voltage Level	12 VDC	
Tested Modulation Type	OFDM and OFDMA ; supports Cyclic Delay Diversity (CDD)	
General product description	Central In-Vehicle Infotainment Computer Gen20x.i3 infotainment system is the main unit in the vehicle, which combines the instrument cluster and infotainment functionality. It supports Bluetooth classic (BT), Bluetooth Low Energy (BTLE) and Wi-Fi (2.4GHz(SISO) and 5GHz(MIMO 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 80MHz (mode ac, ax) BW. The ax Mode Supports MU-MIMO and OFDMA. The U-NII bands 1 and 3 are supported.	
Specific product description for the EUT	The EUT has the following modules for Bluetooth and WLAN:	
	ATC6QPL002(Chip02): Only BT and BTLE	ATC6QPL004(Chip01): BT, BTLE, Wi-Fi (2.4GHz and 5GHz).
Antenna / Gain	External	
	Antenna 3	Antenna 4
	5.1 dBi	5.1 dBi
EUT ports (connected cables during testing):	Main Connector A (incl. DC Power) (unshielded, 1m)	GNSS antenna (shielded, 1.5m)
	Main Connector B (unshielded, 1m)	BT/WLAN Antenna (shielded, 1.5m)
	Ethernet (shielded, 1.5m)	HD-BaseT (shielded, 1.5m)
	FM/AM/SDARS/Ref.-Antennas	USB 2.0 – TGS (shielded, 1.5m)
	Video-Out Displays (shielded, 1.5m)	USB 2.0 - MM-Box (shielded, 1.5m)
	CamsControl(shielded, 1.5m)	Video-in Cameras (shielded, 1.5m)
	USB 3.0 High Speed Flashing/CAM Logging (shielded, 1.5m)	
Tested Datarates	WLAN a: 6 Mbit WLAN n, ac, ax: MCS 0	
Special software used for testing	ADB shell.exe / civic_wlan_rta_tool_v2_11.exe	
Connection to AC main is supported	No (no direct or indirect connection)	

4.2 EUT MAIN COMPONENTS

Sample Name	Sample Code	Description
EUT A	DE1050025aa01	Conducted Sample
Sample Parameter	Value	
Serial No.	0015674	
HW Version	D5	
SW Version	E064.4	
Comment	BCI3L4PTN1 - Star 3.5	

Sample Name	Sample Code	Description
EUT B	DE1050025ab01	Radiated Sample
Sample Parameter	Value	
Serial No.	0015673	
HW Version	D5	
SW Version	E064.4	
Comment	BCI3L4PTN1 - Star 3.5	

Sample Name	Sample Code	Description
EUT C	DE1050026aa01	Radiated Sample
Sample Parameter	Value	
Serial No.	0018792	
HW Version	D5	
SW Version	E064.4	
Comment	BCI3L4PTN1 - Star 3.0	

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
ANC 1	Continental, RKE223E1GNS, DE1050025/026AUX01	GNSS Antenna + Antenna Cable (1.5m)
ANC 2	Mercedes-Benz, A1779052902, DE1050025/026AUX45	4x WIFI/BT Antenna + 4x Antenna Cable (1.5m)

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 A	Bosch, -, -, -, -	2x Cable Harness

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
S01_AA01#S3.5	EUT A, AUX A	Conducted Setup
S01_AB01#S3.5	EUT B, ANC 1, ANC 2, AUX A	Radiated Setup
S01_AA01#S3.0	EUT C, ANC 1, ANC 2, AUX A	Radiated Setup

4.6 OPERATING MODES / TEST CHANNELS

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

4.6.1 TEST CHANNELS

U-NII-Subband 1 (5150 - 5250 MHz)			U-NII-Subband 3 (5725 - 5850 MHz)			Nom. BW
low	mid	high	low	mid	high	20 MHz
36	40	48	149	157	165	Ch.-No.
5180	5200	5240	5745	5785	5825	MHz

low	mid	high	low	mid	high	40 MHz
38	-	46	151	-	159	Ch.-No.
5190	-	5230	5755	-	5795	MHz

low	mid	high	low	mid	high	80 MHz
-	42	-	155	-	-	Ch.-No.
-	5210	-	5775	-	-	MHz

4.6.2 OPERATING MODES

The testing was conducted at the maximum output power setting specified by the manufacturer.

- WLAN a-mode diversity
- WLAN n-mode MIMO (20, 40 MHz BW)
- WLAN ac-mode MIMO (20, 40 and 80 MHz BW)
- WLAN ax-mode MIMO (20, 40 and 80 MHz BW), support also the following modes:
 - o ax-mode MIMO **Single User (SU)** (not supported by all Test Channels)
 - o ax- mode MIMO **Multi User (MU)** (supported by all Test Channels)
- WLAN 2.4 GHz low: WLAN b-mode, channel (1) = 2412 MHz, Data Rate = 1 Mbps
- WLAN 2.4 GHz mid: WLAN b-mode, channel (6) = 2437 MHz, Data Rate = 1 Mbps
- BTLE high: GFSK, channel (39) = 2480 MHz, Data Rate = 1 Mbps
- BTLE low: GFSK, channel (0) = 2402 MHz, Data Rate = 1 Mbps
- BT Classic high: 8-DPSK, channel (78) = 2480 MHz, Data Rate = 3 Mbps
- BT Classic mid: 8-DPSK, channel (39) = 2441 MHz, Data Rate = 3 Mbps

Simultaneous Transmission:

Simultaneous Transmission A:

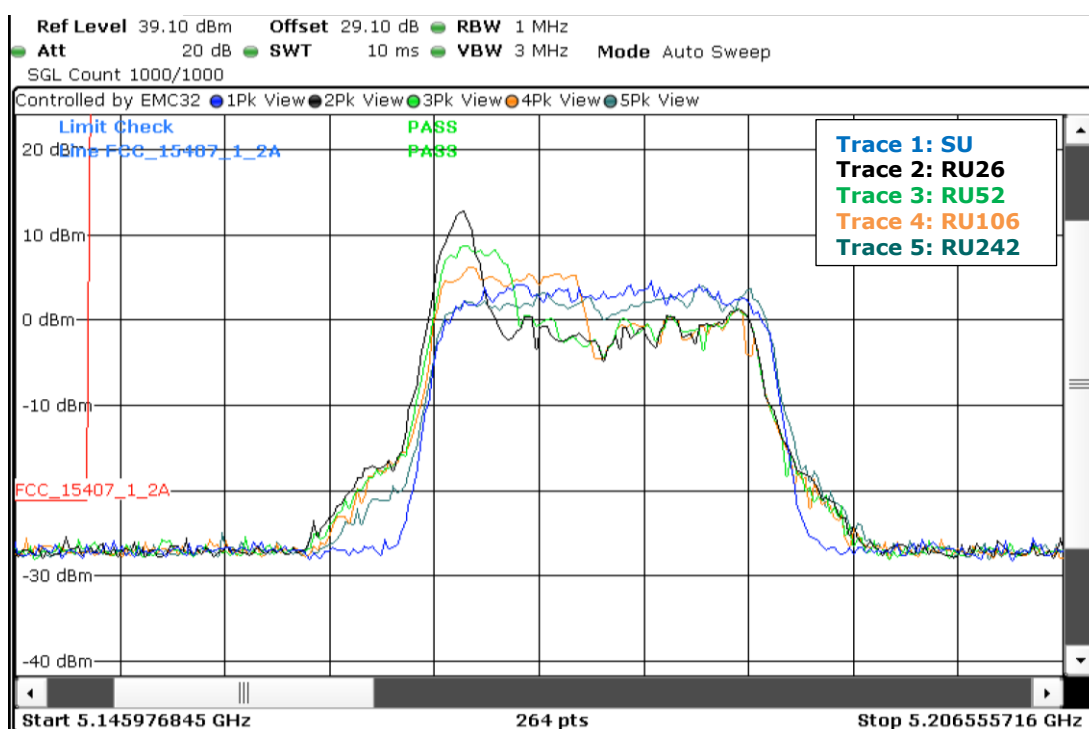
- o **Chip01:**
 - BTLE low
 - WLAN 2.4 GHz mid
 - WLAN a-mode diversity, CH 36
- o **Chip02:**
 - BT Classic high

Simultaneous Transmission B:

- o **Chip01:**
 - BT Classic mid
 - WLAN 2.4 GHz low
 - WLAN ac40-mode MIMO, CH 159
- o **Chip02:**
 - BTLE high

The test case RU26 represents the worst-case scenario for ax-mode MU, which is why MU mode was performed exclusively by RU26. (except by ax 80 MHz)

ax20-mode_CH36



The supported test cases of the ax-mode MIMO MU by WLAN 5 GHz are in the following table:

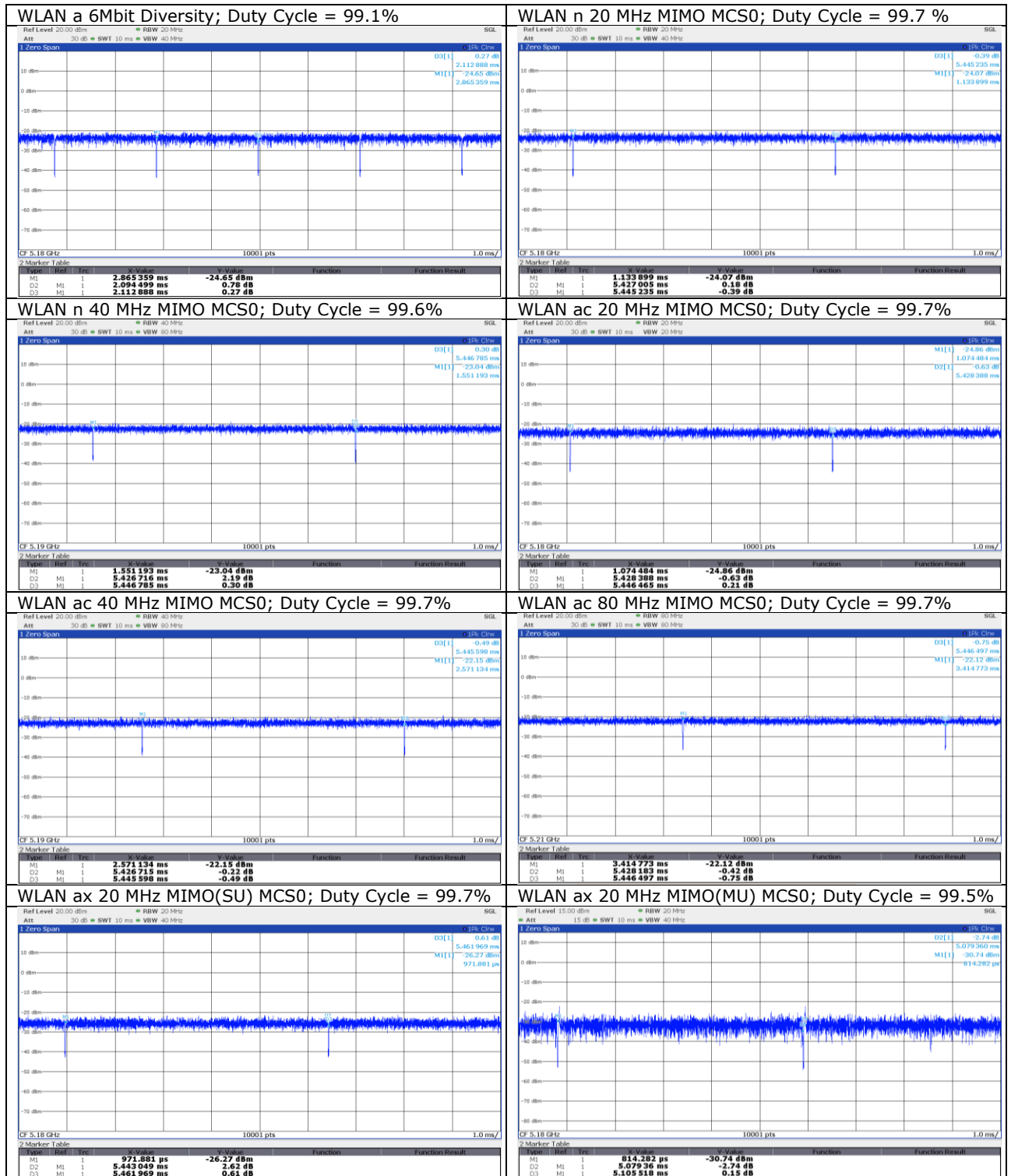
BW 20											
5180 [MHz]		5200 [MHz]		5240 [MHz]		5745 [MHz]		5785 [MHz]		5825 [MHz]	
SU/RU	RU offset	SU/RU	RU offset	SU/RU	RU offset	SU/RU	RU offset	SU/RU	RU offset	SU/RU	RU offset
SU	-	-	-	SU	-	SU	-	-	-	SU	-
RU26	0	RU26	4	RU26	8	RU26	0	RU26	4	RU26	8
RU52	37	-	-	RU52	40	RU52	37	-	-	RU52	40
RU106	53	-	-	RU106	54	RU106	53	-	-	RU106	54
RU242	61	-	-	RU242	61	RU242	61	-	-	RU242	61

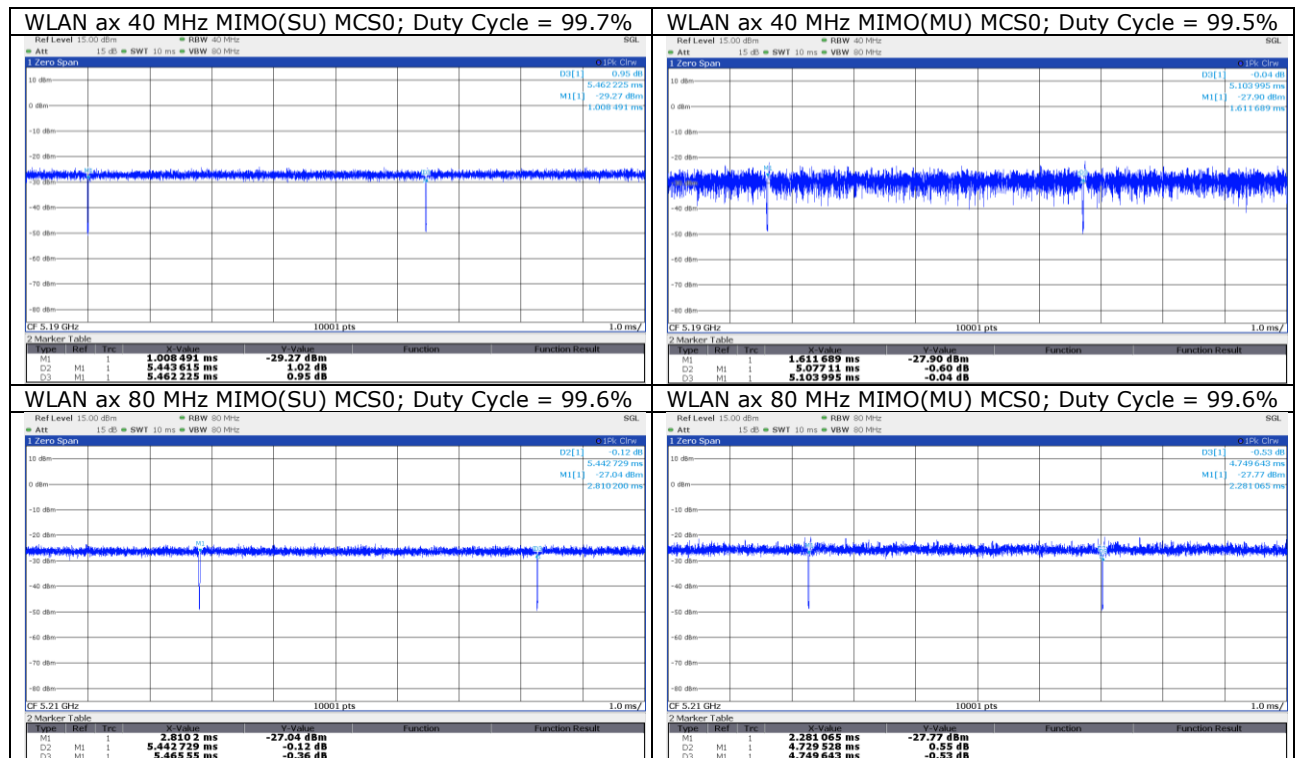
BW 40							
5190 [MHz]		5230 [MHz]		5755 [MHz]		5795 [MHz]	
SU/RU	RU offset	SU/RU	RU offset	SU/RU	RU offset	SU/RU	RU offset
SU	-	SU	-	SU	-	SU	-
RU26	8	RU26	9	RU26	8	RU26	9
RU52	40	RU52	41	RU52	40	RU52	41
RU106	54	RU106	55	RU106	54	RU106	55
RU242	61	RU242	62	RU242	61	RU242	62
RU484	65	RU484	65	RU484	65	RU484	65

BW 80			
5210 [MHz]		5775 [MHz]	
SU/RU	RU offset	SU/RU	RU offset
SU	-	SU	-
RU996	67	RU996	67

4.7 DUTY CYCLE

The test was performed according to:
ANSI C63.10, chapter 10.6





4.8 PRODUCT LABELLING

4.8.1 FCC ID LABEL

Please refer to the documentation of the applicant.

4.8.2 LOCATION OF THE LABEL ON THE EUT

Please refer to the documentation of the applicant.

5 TEST RESULTS

5.1 26 DB BANDWIDTH

Standard **FCC Part 15 Subpart E**

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

5.1.1 TEST DESCRIPTION

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

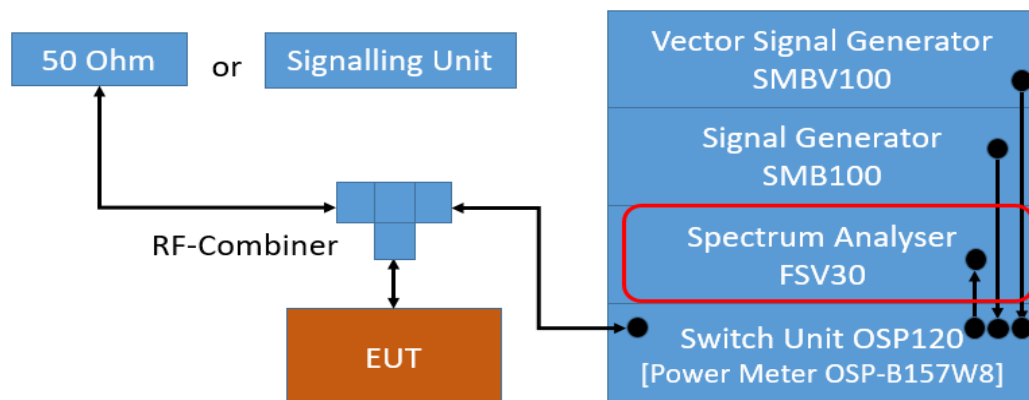
The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

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: Until the trace is stable
- Sweep time: Auto
- Detector: Peak



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

5.1.2 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.

5.1.3 TEST PROTOCOL

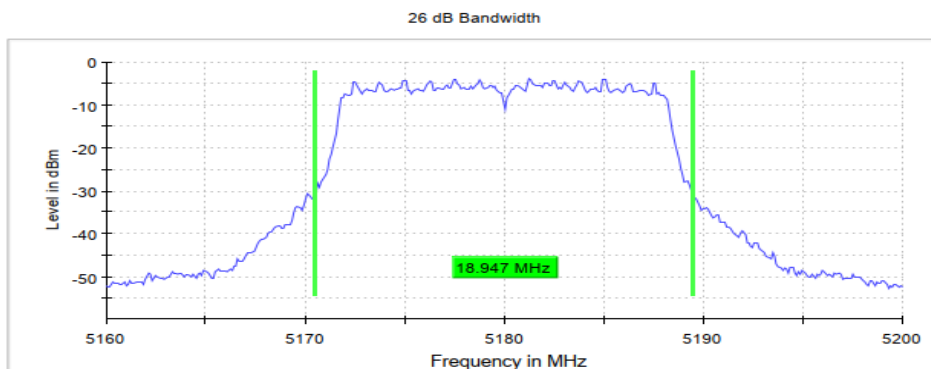
Ambient temperature: 19 - 23 °C
 Air Pressure: 999 - 1008 hPa
 Humidity: 33 - 51 %

Radio Technology	Subband	Operating Frequency	26 dB Bandwidth [MHz]
WLAN a Diversity	U-NII-1	low	18.9
WLAN a Diversity	U-NII-1	mid	18.7
WLAN a Diversity	U-NII-1	high	18.7
WLAN a Diversity	U-NII-3	low	18.8
WLAN a Diversity	U-NII-3	mid	18.7
WLAN a Diversity	U-NII-3	high	18.8
WLAN n 20 MHz MIMO	U-NII-1	low	20.3
WLAN n 20 MHz MIMO	U-NII-1	mid	20.2
WLAN n 20 MHz MIMO	U-NII-1	high	20.2
WLAN n 20 MHz MIMO	U-NII-3	low	20.1
WLAN n 20 MHz MIMO	U-NII-3	mid	20.3
WLAN n 20 MHz MIMO	U-NII-3	high	20.3
WLAN n 40 MHz MIMO	U-NII-1	low	39.5
WLAN n 40 MHz MIMO	U-NII-1	high	39.5
WLAN n 40 MHz MIMO	U-NII-3	low	39.4
WLAN n 40 MHz MIMO	U-NII-3	high	39.9
WLAN ac 20 MHz MIMO	U-NII-1	low	20.2
WLAN ac 20 MHz MIMO	U-NII-1	mid	20.0
WLAN ac 20 MHz MIMO	U-NII-1	high	20.1
WLAN ac 20 MHz MIMO	U-NII-3	low	20.0
WLAN ac 20 MHz MIMO	U-NII-3	mid	20.2
WLAN ac 20 MHz MIMO	U-NII-3	high	20.0
WLAN ac 40 MHz MIMO	U-NII-1	low	39.4
WLAN ac 40 MHz MIMO	U-NII-1	high	39.5
WLAN ac 40 MHz MIMO	U-NII-3	low	39.7
WLAN ac 40 MHz MIMO	U-NII-3	high	39.5
WLAN ac 80 MHz MIMO	U-NII-1	mid	83.8
WLAN ac 80 MHz MIMO	U-NII-3	low	83.8
WLAN ax 20 MHz MIMO(SU)	U-NII-1	low	21.3
WLAN ax 20 MHz MIMO(SU)	U-NII-1	high	21.2
WLAN ax 20 MHz MIMO(SU)	U-NII-3	low	21.2
WLAN ax 20 MHz MIMO(SU)	U-NII-3	high	21.1
WLAN ax 40 MHz MIMO(SU)	U-NII-1	low	40.6
WLAN ax 40 MHz MIMO(SU)	U-NII-1	high	40.6
WLAN ax 40 MHz MIMO(SU)	U-NII-3	low	40.6
WLAN ax 40 MHz MIMO(SU)	U-NII-3	high	40.6
WLAN ax 80 MHz MIMO(SU)	U-NII-1	mid	84.3
WLAN ax 80 MHz MIMO(SU)	U-NII-3	low	84.3
WLAN ax 20 MHz MIMO(MU)	U-NII-1	low	20.2
WLAN ax 20 MHz MIMO(MU)	U-NII-1	mid	18.8
WLAN ax 20 MHz MIMO(MU)	U-NII-1	high	20.3
WLAN ax 20 MHz MIMO(MU)	U-NII-3	low	20.3
WLAN ax 20 MHz MIMO(MU)	U-NII-3	high	20.2
WLAN ax 40 MHz MIMO(MU)	U-NII-1	low	38.5
WLAN ax 40 MHz MIMO(MU)	U-NII-1	high	38.3
WLAN ax 40 MHz MIMO(MU)	U-NII-3	low	38.5
WLAN ax 40 MHz MIMO(MU)	U-NII-3	high	38.5
WLAN ax 80 MHz MIMO(MU)	U-NII-1	mid	90.8
WLAN ax 80 MHz MIMO(MU)	U-NII-3	low	90.8

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

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

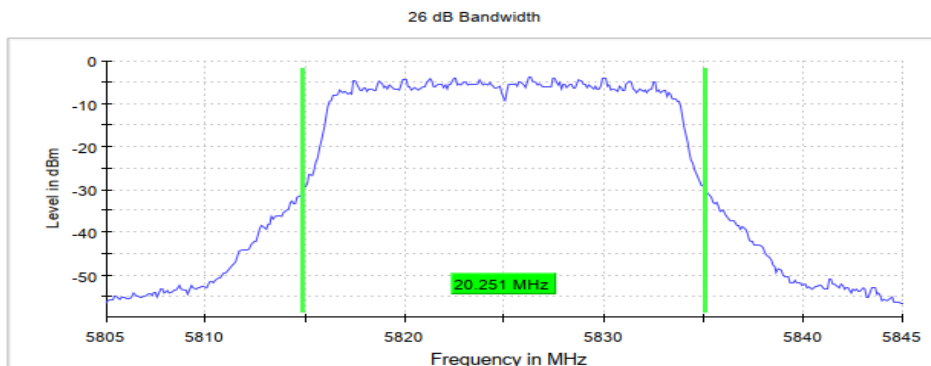
Radio Technology = WLAN a Diversity, Operating Frequency = low, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.16000 GHz
Stop Frequency	5.20000 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	0.000 dBm
Attenuation	10.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	39 / max. 150
Stable	5 / 5
Max Stable Difference	0.04 dB

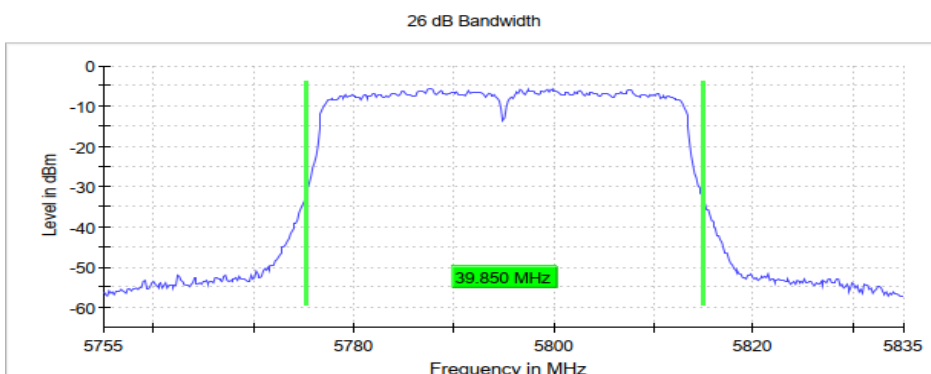
Radio Technology = WLAN n20 MIMO, Operating Frequency = high, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.80500 GHz
Stop Frequency	5.84500 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	52 / max. 150
Stable	5 / 5
Max Stable Difference	0.20 dB

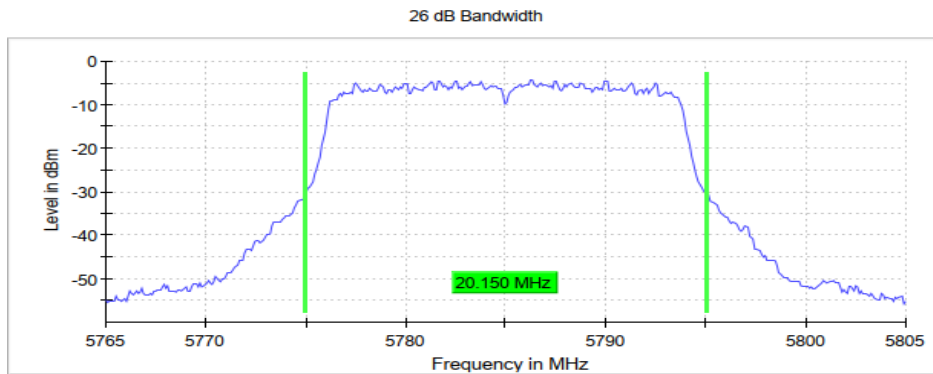
Radio Technology = WLAN n40 MIMO, Operating Frequency = high, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.75500 GHz
Stop Frequency	5.83500 GHz
Span	80.000 MHz
RBW	300.000 kHz
VBW	1.000 MHz
SweepPoints	533
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	76 / max. 150
Stable	5 / 5
Max Stable Difference	0.22 dB

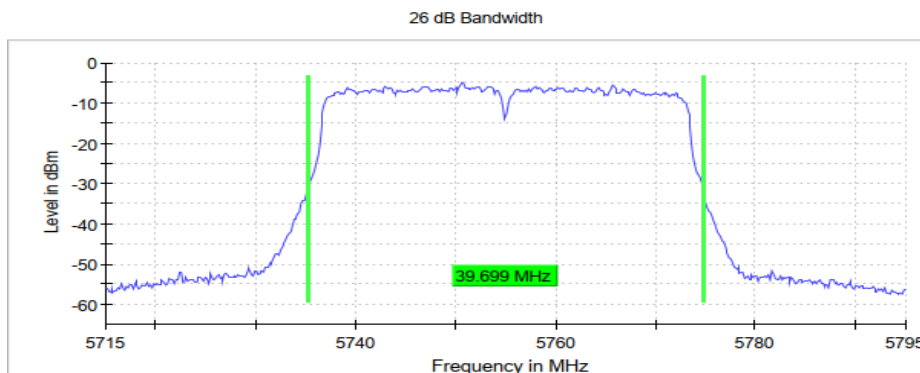
Radio Technology = WLAN ac20 MIMO, Operating Frequency = mid, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.76500 GHz
Stop Frequency	5.80500 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	90 / max. 150
Stable	5 / 5
Max Stable Difference	0.19 dB

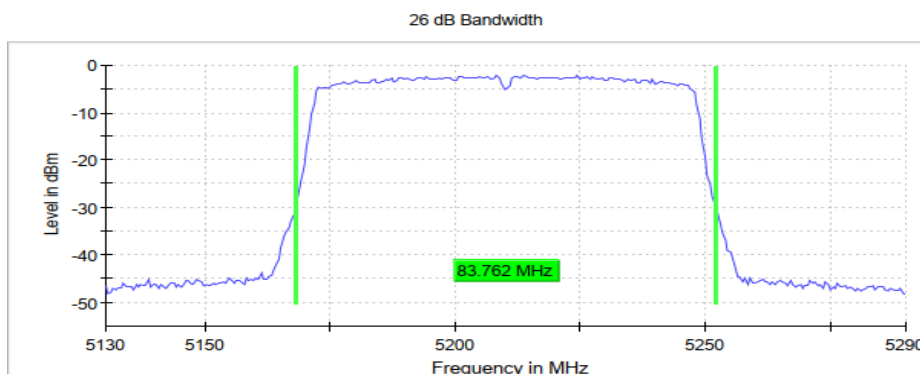
Radio Technology = WLAN ac40 MIMO, Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.71500 GHz
Stop Frequency	5.79500 GHz
Span	80.000 MHz
RBW	300.000 kHz
VBW	1.000 MHz
SweepPoints	533
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	69 / max. 150
Stable	5 / 5
Max Stable Difference	0.25 dB

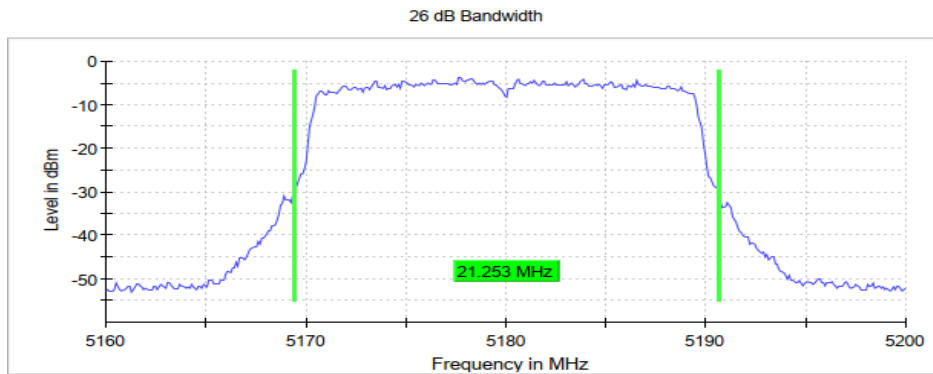
Radio Technology = WLAN ac80 MIMO, Operating Frequency = mid, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	0.000 dBm
Attenuation	10.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	34 / max. 150
Stable	5 / 5
Max Stable Difference	0.09 dB

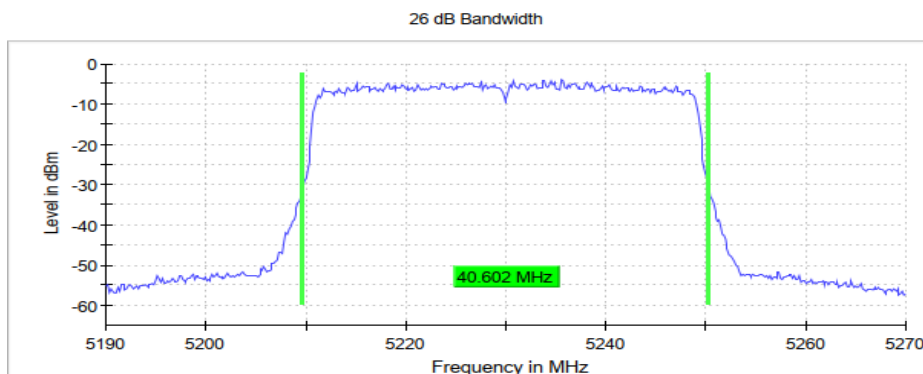
Radio Technology = WLAN ax20 MIMO(SU), Operating Frequency = low, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.16000 GHz
Stop Frequency	5.20000 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	0.000 dBm
Attenuation	10.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	112 / max. 151
Stable	5 / 5
Max Stable Difference	0.14 dB

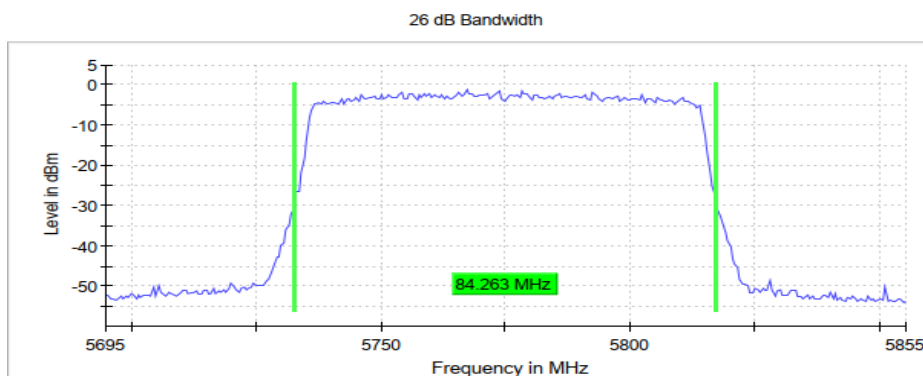
Radio Technology = WLAN ax40 MIMO(SU), Operating Frequency = high, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.19000 GHz
Stop Frequency	5.27000 GHz
Span	80.000 MHz
RBW	300.000 kHz
VBW	1.000 MHz
SweepPoints	533
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	142 / max. 151
Stable	5 / 5
Max Stable Difference	0.00 dB

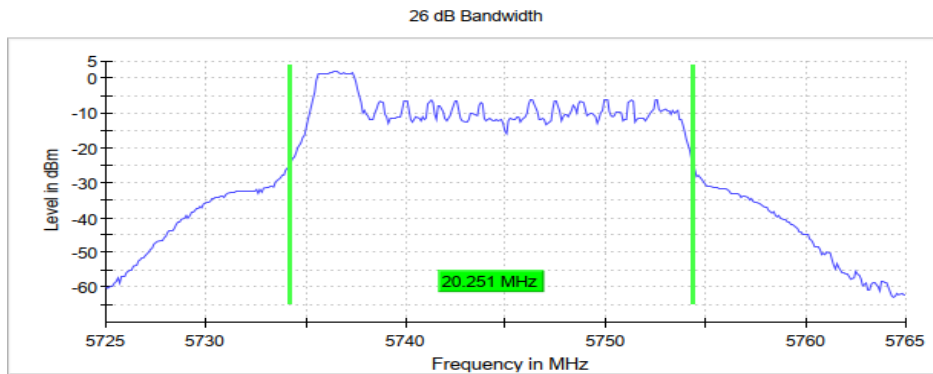
Radio Technology = WLAN ax80 MIMO(SU), Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.69500 GHz
Stop Frequency	5.85500 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	79 / max. 150
Stable	5 / 5
Max Stable Difference	0.23 dB

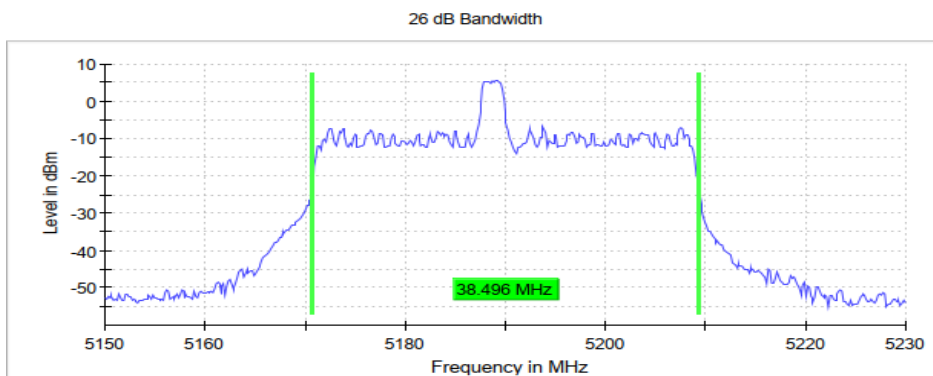
Radio Technology = WLAN ax20 MIMO(MU), Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.72500 GHz
Stop Frequency	5.76500 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	15 / max. 150
Stable	5 / 5
Max Stable Difference	0.02 dB

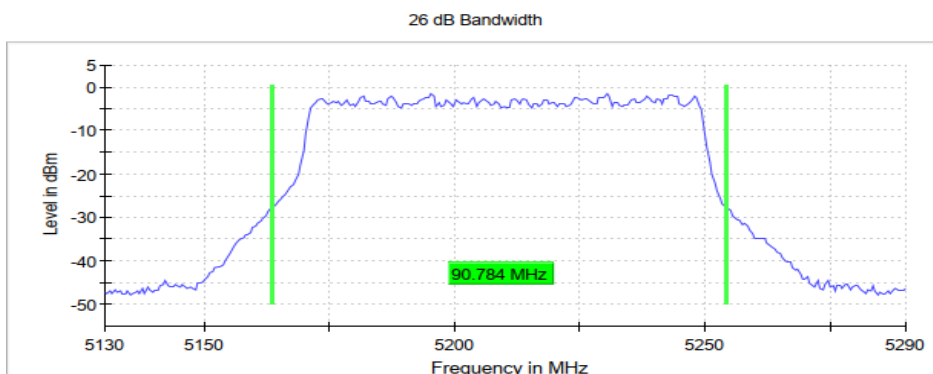
Radio Technology = WLAN ax40 MIMO(MU), Operating Frequency = low, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.15000 GHz
Stop Frequency	5.23000 GHz
Span	80.000 MHz
RBW	300.000 kHz
VBW	1.000 MHz
SweepPoints	533
SweepTime	1.000 ms
Reference Level	0.000 dBm
Attenuation	10.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	23 / max. 150
Stable	5 / 5
Max Stable Difference	0.02 dB

Radio Technology = WLAN ax80 MIMO(MU), Operating Frequency = mid, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	0.000 dBm
Attenuation	10.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	47 / max. 150
Stable	5 / 5
Max Stable Difference	0.07 dB

5.1.1.5 TEST EQUIPMENT USED

- R&S TS8997

5.2 6 DB BANDWIDTH

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 6.9.2

5.2.1 TEST DESCRIPTION

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

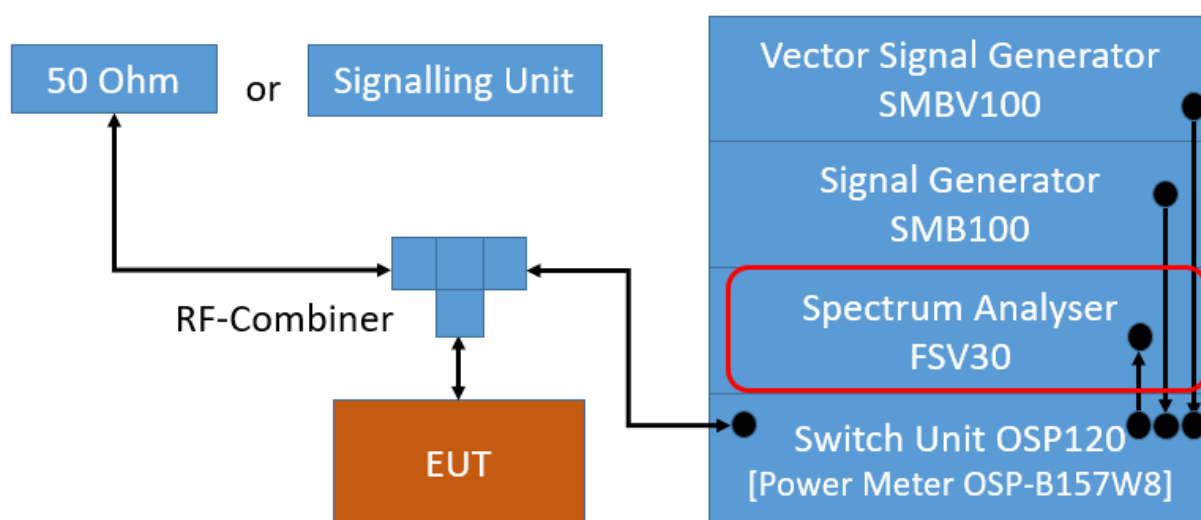
The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

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: Until the trace is stable
- 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, §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.

5.2.3 TEST PROTOCOL

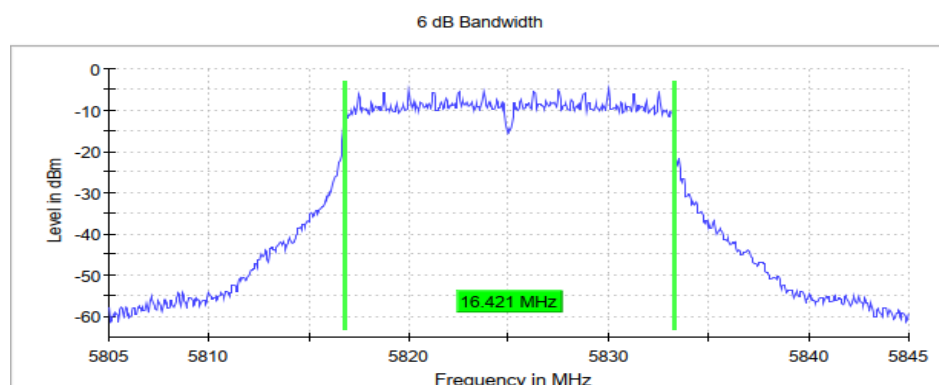
Ambient temperature: 19 - 23 °C
 Air Pressure: 999 - 1008 hPa
 Humidity: 33 - 51 %

Radio Technology	Operating Frequency	6 dB Bandwidth [MHz]	Limit [MHz]	Margin [MHz]
WLAN a Diversity	low	16.7	0.5	16.24
WLAN a Diversity	mid	16.5	0.5	15.97
WLAN a Diversity	high	16.4	0.5	15.92
WLAN n 20 MHz MIMO	low	17.5	0.5	17.02
WLAN n 20 MHz MIMO	mid	17.5	0.5	17.02
WLAN n 20 MHz MIMO	high	17.5	0.5	17.02
WLAN n 40 MHz MIMO	low	36.0	0.5	35.52
WLAN n 40 MHz MIMO	high	36.1	0.5	35.57
WLAN ac 20 MHz MIMO	low	17.5	0.5	17.02
WLAN ac 20 MHz MIMO	mid	17.5	0.5	17.02
WLAN ac 20 MHz MIMO	high	17.5	0.5	17.02
WLAN ac 40 MHz MIMO	low	35.7	0.5	35.17
WLAN ac 40 MHz MIMO	high	36.0	0.5	35.47
WLAN ac 80 MHz MIMO	low	75.6	0.5	75.07
WLAN ax 20 MHz MIMO(SU)	low	18.9	0.5	18.42
WLAN ax 20 MHz MIMO(SU)	high	19.0	0.5	18.47
WLAN ax 40 MHz MIMO(SU)	low	38.0	0.5	37.52
WLAN ax 40 MHz MIMO(SU)	high	38.0	0.5	37.52
WLAN ax 80 MHz MIMO(SU)	low	77.6	0.5	77.12
WLAN ax 20 MHz MIMO(MU)	low	2.2	0.5	1.70
WLAN ax 20 MHz MIMO(MU)	mid	6.5	0.5	5.96
WLAN ax 20 MHz MIMO(MU)	high	2.2	0.5	1.70
WLAN ax 40 MHz MIMO(MU)	low	2.2	0.5	1.65
WLAN ax 40 MHz MIMO(MU)	high	2.2	0.5	1.70
WLAN ax 80 MHz MIMO(MU)	low	78.2	0.5	77.72

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

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

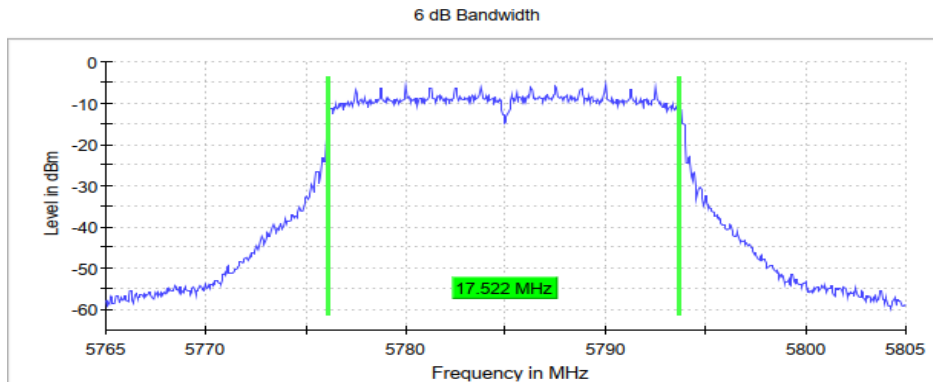
Radio Technology = WLAN a Diversity, Operating Frequency = high, Subband = U-NII-3
 (S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.80500 GHz
Stop Frequency	5.84500 GHz
Span	40.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	800
SweepTime	1.040 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
StableMode	Trace
StableValue	0.30 dB
Run	45 / max. 150
Stable	5 / 5
Max Stable Difference	0.10 dB

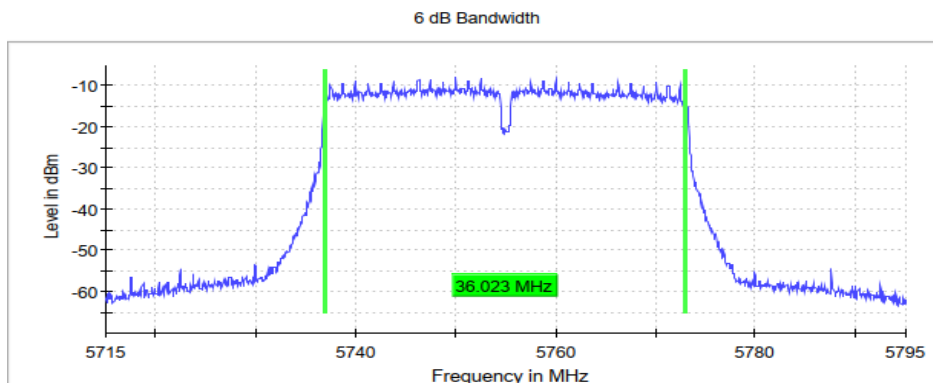
Radio Technology = WLAN n20 MIMO, Operating Frequency = mid, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.76500 GHz
Stop Frequency	5.80500 GHz
Span	40.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	800
SweepTime	1.040 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	54 / max. 150
Stable	5 / 5
Max Stable Difference	0.23 dB

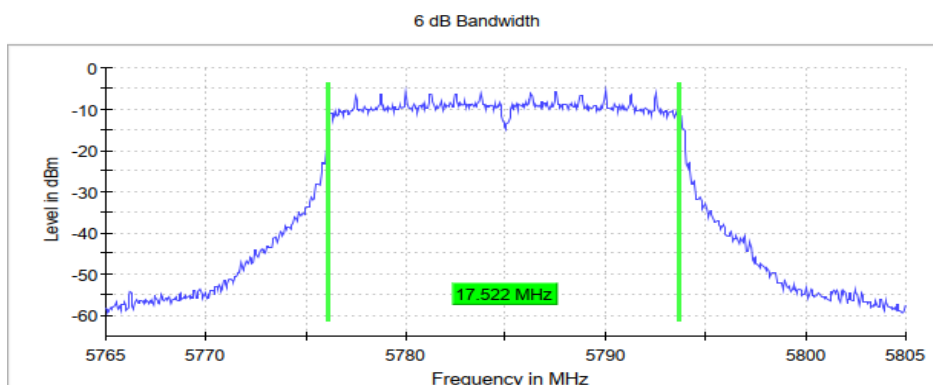
Radio Technology = WLAN n40 MIMO, Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.71500 GHz
Stop Frequency	5.79500 GHz
Span	80.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	1600
SweepTime	1.600 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	79 / max. 150
Stable	5 / 5
Max Stable Difference	0.25 dB

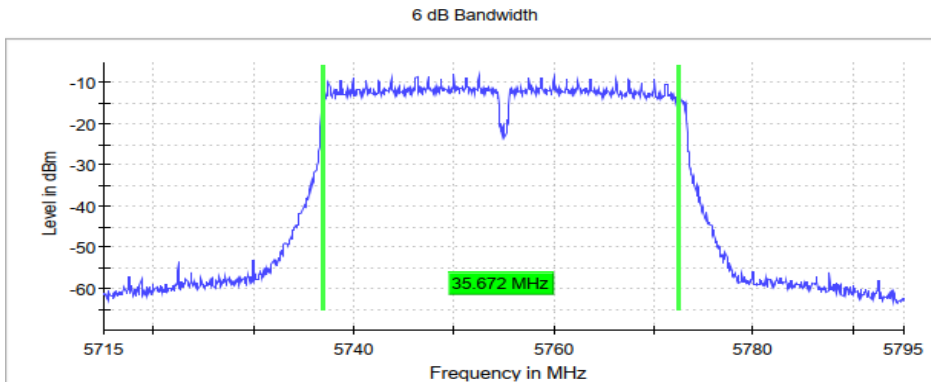
Radio Technology = WLAN ac20 MIMO, Operating Frequency = mid, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.76500 GHz
Stop Frequency	5.80500 GHz
Span	40.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	800
SweepTime	1.040 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	62 / max. 150
Stable	5 / 5
Max Stable Difference	0.08 dB

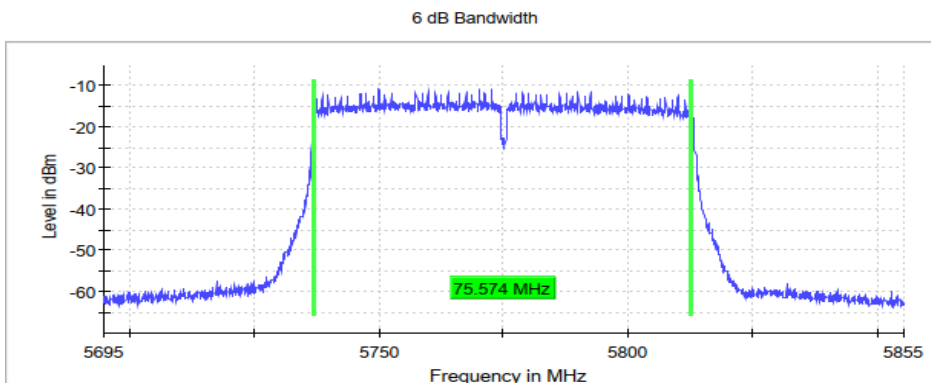
Radio Technology = WLAN ac40 MIMO, Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.71500 GHz
Stop Frequency	5.79500 GHz
Span	80.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	1600
SweepTime	1.600 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	81 / max. 150
Stable	5 / 5
Max Stable Difference	0.15 dB

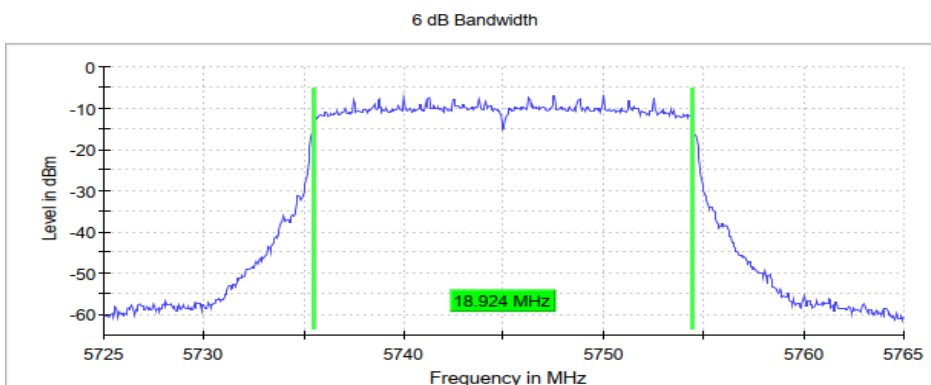
Radio Technology = WLAN ac80 MIMO, Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.69500 GHz
Stop Frequency	5.85500 GHz
Span	160.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	3200
SweepTime	3.200 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	71 / max. 150
Stable	5 / 5
Max Stable Difference	0.28 dB

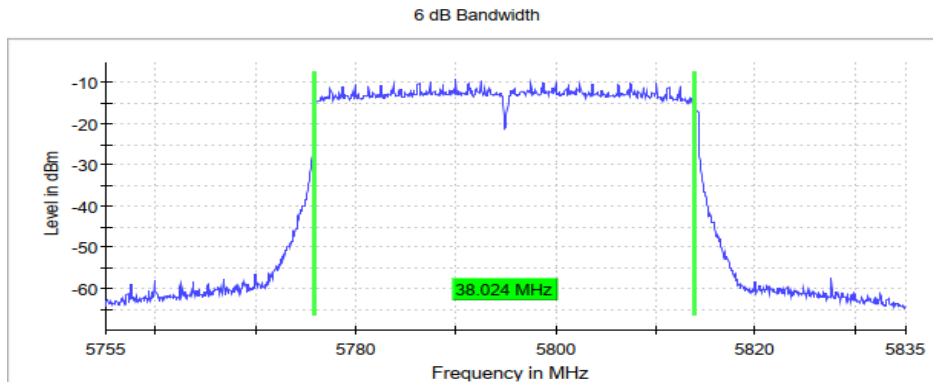
Radio Technology = WLAN ax20 MIMO(SU), Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.72500 GHz
Stop Frequency	5.76500 GHz
Span	40.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	800
SweepTime	1.040 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	93 / max. 150
Stable	5 / 5
Max Stable Difference	0.13 dB

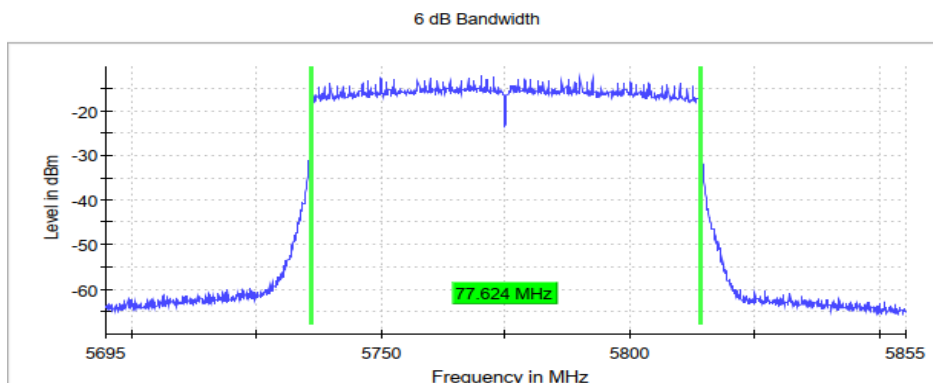
Radio Technology = WLAN ax40 MIMO(SU), Operating Frequency = high, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.75500 GHz
Stop Frequency	5.83500 GHz
Span	80.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	1600
SweepTime	1.600 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	124 / max. 151
Stable	5 / 5
Max Stable Difference	0.00 dB

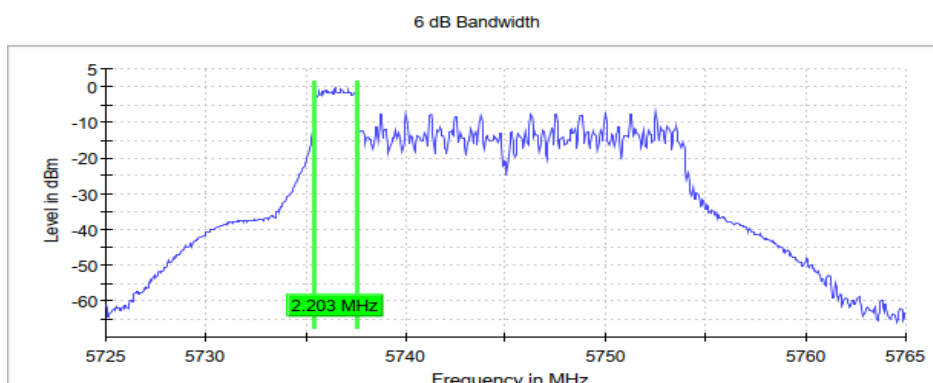
Radio Technology = WLAN ax80 MIMO(SU), Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.69500 GHz
Stop Frequency	5.85500 GHz
Span	160.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	3200
SweepTime	3.200 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	126 / max. 151
Stable	5 / 5
Max Stable Difference	0.00 dB

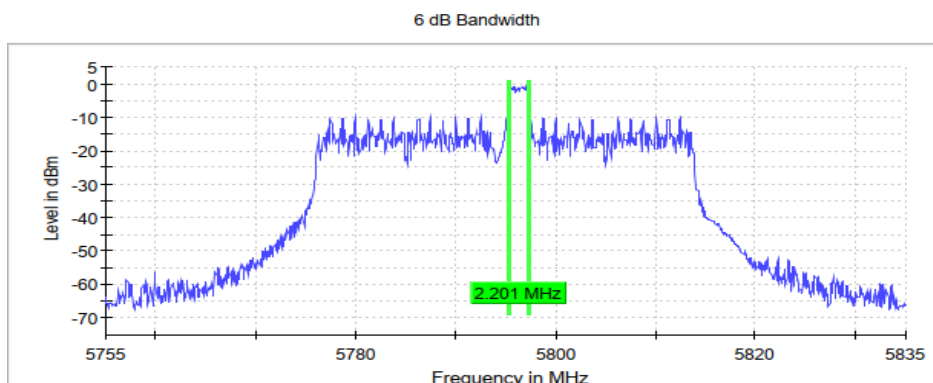
Radio Technology = WLAN ax20 MIMO(MU), Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.72500 GHz
Stop Frequency	5.76500 GHz
Span	40.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	800
SweepTime	1.040 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	24 / max. 150
Stable	5 / 5
Max Stable Difference	0.00 dB

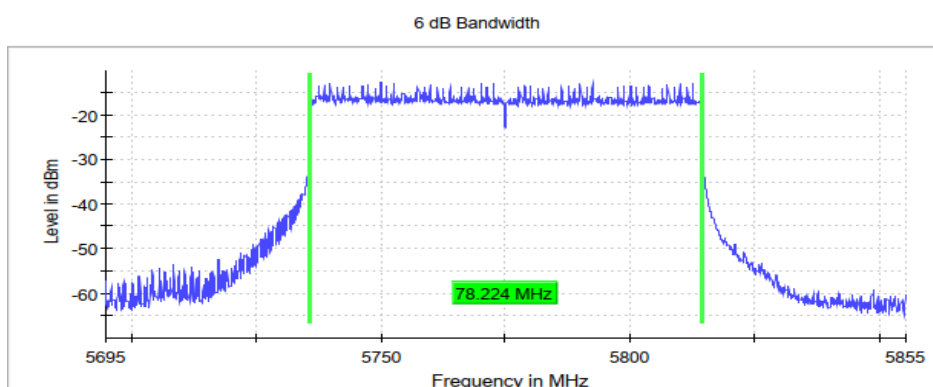
Radio Technology = WLAN ax40 MIMO(MU), Operating Frequency = high, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.75500 GHz
Stop Frequency	5.83500 GHz
Span	80.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	1600
SweepTime	1.600 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	24 / max. 150
Stable	5 / 5
Max Stable Difference	0.09 dB

Radio Technology = WLAN ax80 MIMO(MU), Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.69500 GHz
Stop Frequency	5.85500 GHz
Span	160.000 MHz
RBW	100.000 kHz
VBW	300.000 kHz
SweepPoints	3200
SweepTime	3.200 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	45 / max. 150
Stable	5 / 5
Max Stable Difference	0.28 dB

5.2.5 TEST EQUIPMENT USED

- R&S TS8997

5.3 99 % BANDWIDTH

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 12.4.2 (6.9.3)

5.3.1 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.

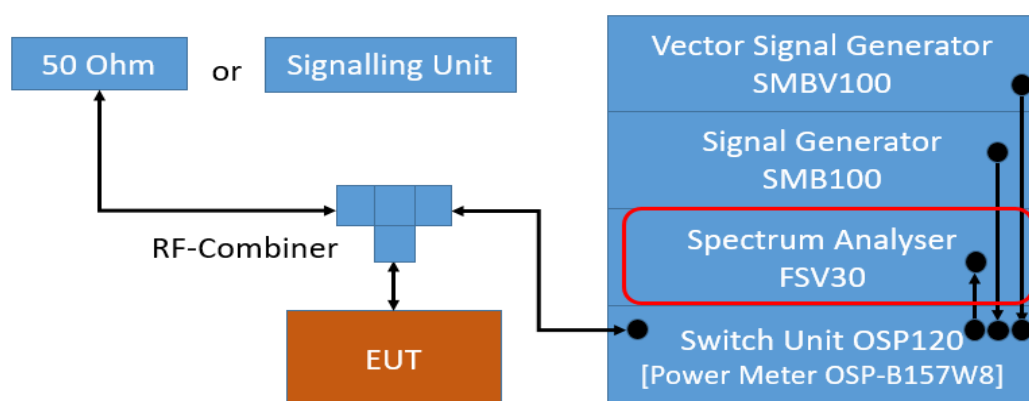
The results recorded were measured with the modulation which produce the worst-case (widest) emission bandwidth.

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: Until the trace is stable
- 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 %

5.3.2 TEST REQUIREMENTS / LIMITS

No applicable limit.

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

5.3.3 TEST PROTOCOL

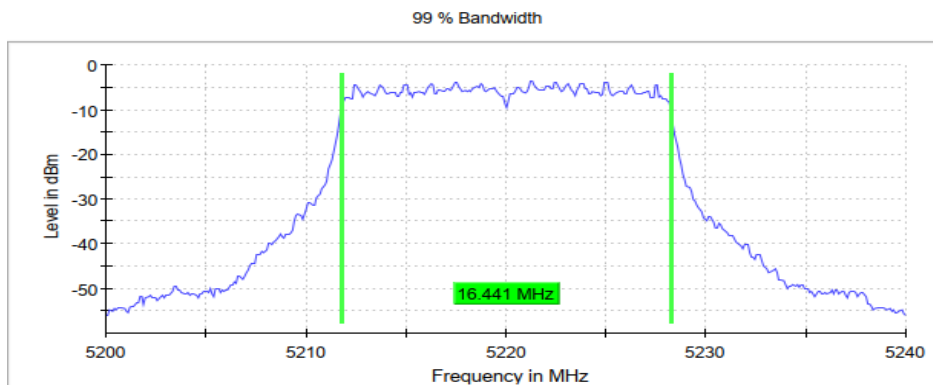
Ambient temperature: 19 - 23 °C
 Air Pressure: 999 - 1008 hPa
 Humidity: 33 - 51 %

Radio Technology	Subband	Operating Frequency	99% Bandwidth [MHz]
WLAN a Diversity	U-NII-1	low	16.3
WLAN a Diversity	U-NII-1	mid	16.4
WLAN a Diversity	U-NII-1	high	16.4
WLAN a Diversity	U-NII-3	low	16.3
WLAN a Diversity	U-NII-3	mid	16.3
WLAN a Diversity	U-NII-3	high	16.3
WLAN n 20 MHz MIMO	U-NII-1	low	17.5
WLAN n 20 MHz MIMO	U-NII-1	mid	17.5
WLAN n 20 MHz MIMO	U-NII-1	high	17.5
WLAN n 20 MHz MIMO	U-NII-3	low	17.5
WLAN n 20 MHz MIMO	U-NII-3	mid	17.5
WLAN n 20 MHz MIMO	U-NII-3	high	17.5
WLAN n 40 MHz MIMO	U-NII-1	low	35.9
WLAN n 40 MHz MIMO	U-NII-1	high	35.9
WLAN n 40 MHz MIMO	U-NII-3	low	36.1
WLAN n 40 MHz MIMO	U-NII-3	high	35.9
WLAN ac 20 MHz MIMO	U-NII-1	low	17.5
WLAN ac 20 MHz MIMO	U-NII-1	mid	17.5
WLAN ac 20 MHz MIMO	U-NII-1	high	17.5
WLAN ac 20 MHz MIMO	U-NII-3	low	17.5
WLAN ac 20 MHz MIMO	U-NII-3	mid	17.5
WLAN ac 20 MHz MIMO	U-NII-3	high	17.5
WLAN ac 40 MHz MIMO	U-NII-1	low	36.4
WLAN ac 40 MHz MIMO	U-NII-1	high	36.4
WLAN ac 40 MHz MIMO	U-NII-3	low	36.1
WLAN ac 40 MHz MIMO	U-NII-3	high	36.4
WLAN ac 80 MHz MIMO	U-NII-1	mid	75.7
WLAN ac 80 MHz MIMO	U-NII-3	low	76.2
WLAN ax 20 MHz MIMO(SU)	U-NII-1	low	18.9
WLAN ax 20 MHz MIMO(SU)	U-NII-1	high	18.9
WLAN ax 20 MHz MIMO(SU)	U-NII-3	low	18.9
WLAN ax 20 MHz MIMO(SU)	U-NII-3	high	18.9
WLAN ax 40 MHz MIMO(SU)	U-NII-1	low	37.9
WLAN ax 40 MHz MIMO(SU)	U-NII-1	high	37.9
WLAN ax 40 MHz MIMO(SU)	U-NII-3	low	37.9
WLAN ax 40 MHz MIMO(SU)	U-NII-3	high	37.9
WLAN ax 80 MHz MIMO(SU)	U-NII-1	mid	77.7
WLAN ax 80 MHz MIMO(SU)	U-NII-3	low	77.7
WLAN ax 20 MHz MIMO(MU)	U-NII-1	low	18.4
WLAN ax 20 MHz MIMO(MU)	U-NII-1	mid	17.3
WLAN ax 20 MHz MIMO(MU)	U-NII-1	high	18.6
WLAN ax 20 MHz MIMO(MU)	U-NII-3	low	18.4
WLAN ax 20 MHz MIMO(MU)	U-NII-3	mid	17.3
WLAN ax 20 MHz MIMO(MU)	U-NII-3	high	18.5
WLAN ax 40 MHz MIMO(MU)	U-NII-1	low	36.6
WLAN ax 40 MHz MIMO(MU)	U-NII-1	high	36.4
WLAN ax 40 MHz MIMO(MU)	U-NII-3	low	36.6
WLAN ax 40 MHz MIMO(MU)	U-NII-3	high	36.6
WLAN ax 80 MHz MIMO(MU)	U-NII-1	mid	78.7
WLAN ax 80 MHz MIMO(MU)	U-NII-3	low	78.7

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

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

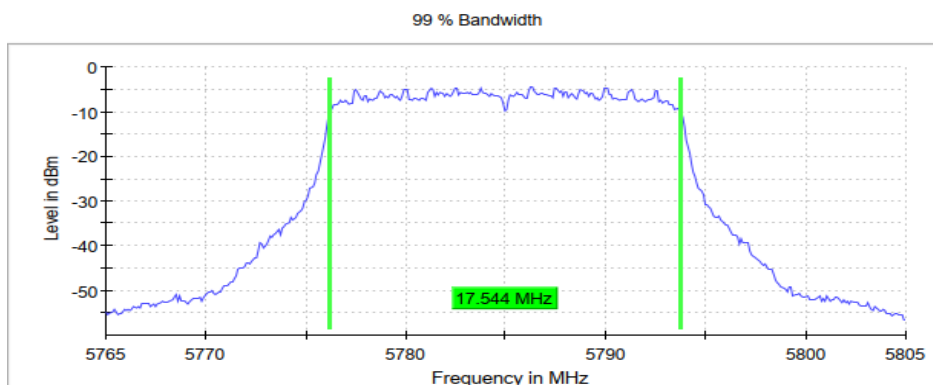
Radio Technology = WLAN a Diversity, Operating Frequency = mid, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.20000 GHz
Stop Frequency	5.24000 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	34 / max. 150
Stable	5 / 5
Max Stable Difference	0.10 dB

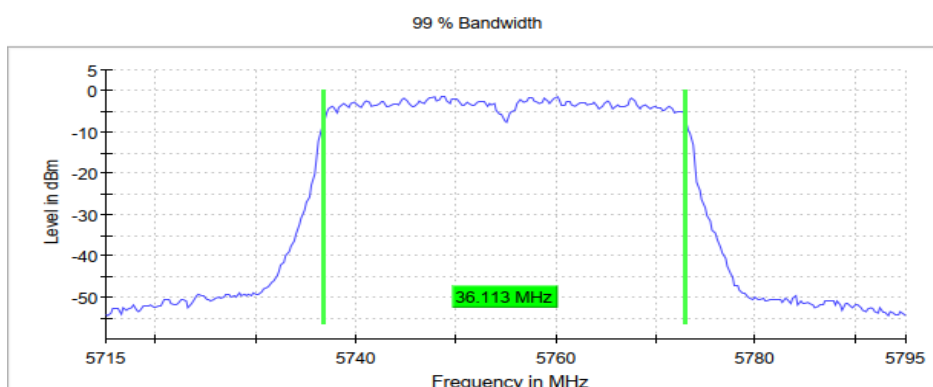
Radio Technology = WLAN n20 MIMO, Operating Frequency = mid, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.76500 GHz
Stop Frequency	5.80500 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	48 / max. 150
Stable	5 / 5
Max Stable Difference	0.15 dB

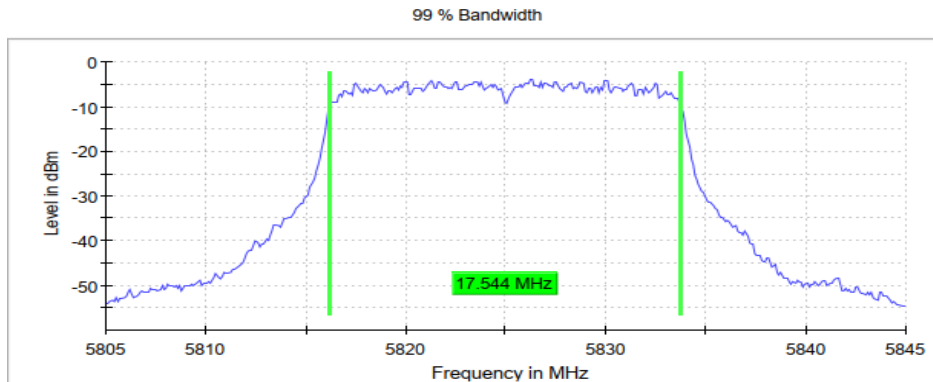
Radio Technology = WLAN n40 MIMO, Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.71500 GHz
Stop Frequency	5.79500 GHz
Span	80.000 MHz
RBW	500.000 kHz
VBW	2.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	92 / max. 150
Stable	5 / 5
Max Stable Difference	0.26 dB

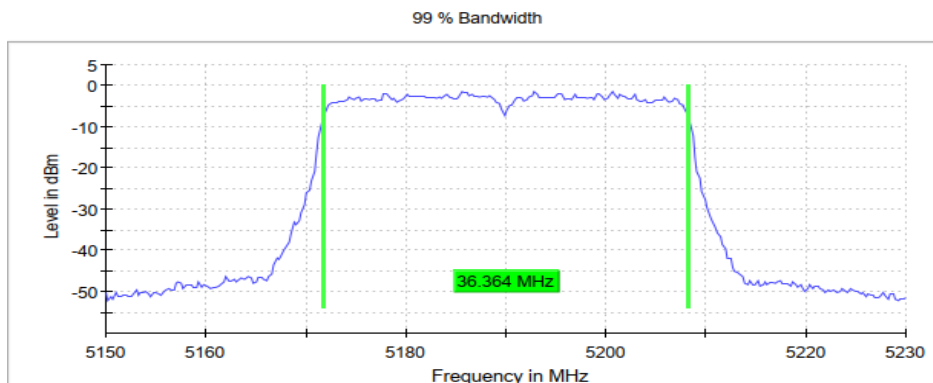
Radio Technology = WLAN ac20 MIMO, Operating Frequency = high, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.80500 GHz
Stop Frequency	5.84500 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	41 / max. 150
Stable	5 / 5
Max Stable Difference	0.28 dB

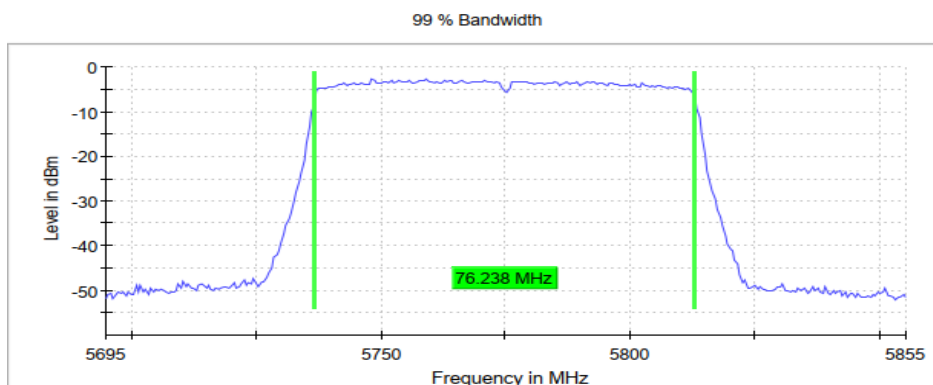
Radio Technology = WLAN ac40 MIMO, Operating Frequency = low, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.15000 GHz
Stop Frequency	5.23000 GHz
Span	80.000 MHz
RBW	500.000 kHz
VBW	2.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	47 / max. 150
Stable	5 / 5
Max Stable Difference	0.20 dB

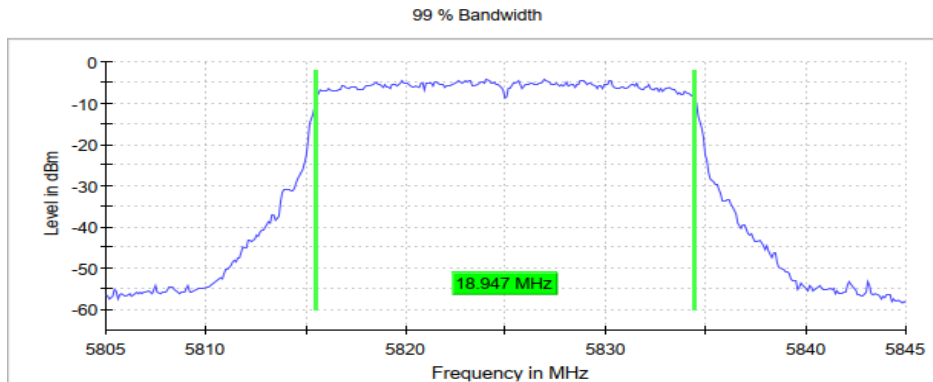
Radio Technology = WLAN ac80 MIMO, Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.69500 GHz
Stop Frequency	5.85500 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	46 / max. 150
Stable	5 / 5
Max Stable Difference	0.17 dB

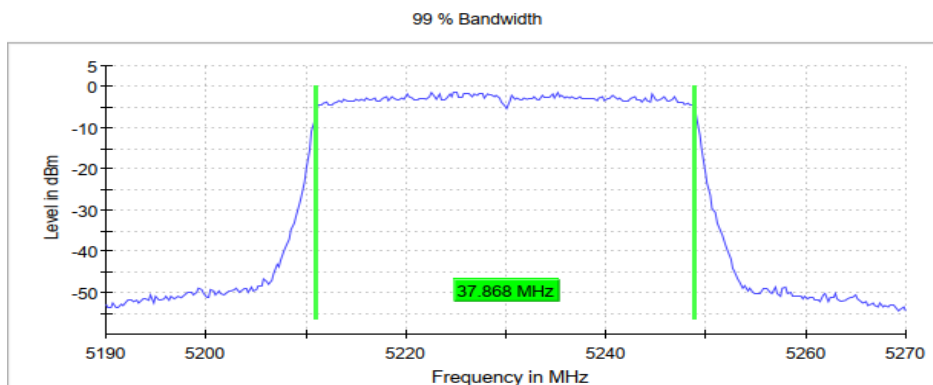
Radio Technology = WLAN ax20 MIMO(SU), Operating Frequency = high, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.80500 GHz
Stop Frequency	5.84500 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	122 / max. 151
Stable	5 / 5
Max Stable Difference	0.04 dB

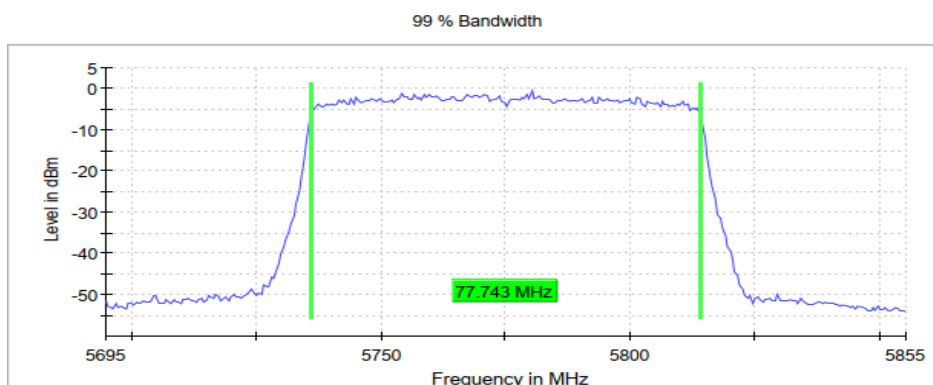
Radio Technology = WLAN ax40 MIMO(SU), Operating Frequency = high, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.19000 GHz
Stop Frequency	5.27000 GHz
Span	80.000 MHz
RBW	500.000 kHz
VBW	2.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	116 / max. 151
Stable	5 / 5
Max Stable Difference	0.26 dB

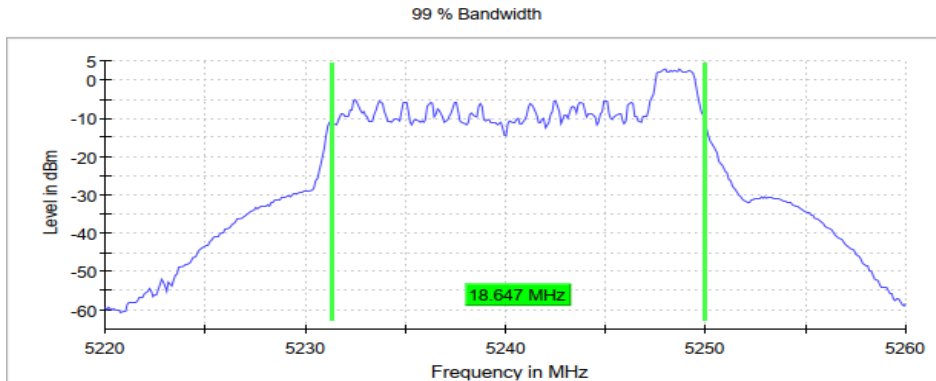
Radio Technology = WLAN ax80 MIMO(SU), Operating Frequency = low, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.69500 GHz
Stop Frequency	5.85500 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	140 / max. 151
Stable	5 / 5
Max Stable Difference	0.00 dB

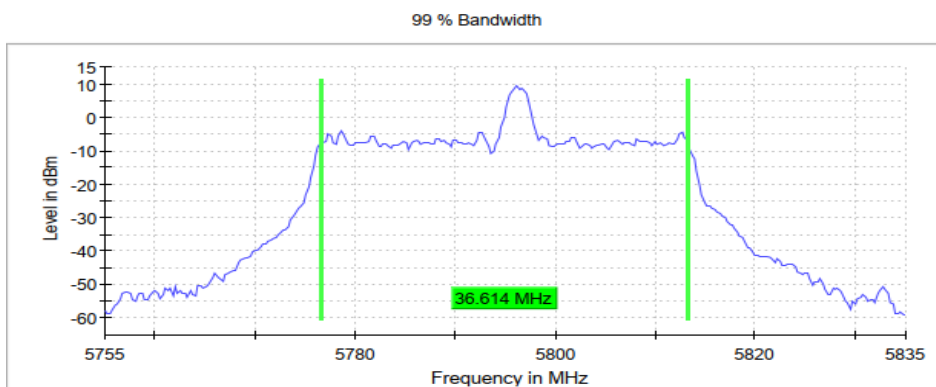
Radio Technology = WLAN ax20 MIMO(MU), Operating Frequency = high, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.22000 GHz
Stop Frequency	5.26000 GHz
Span	40.000 MHz
RBW	200.000 kHz
VBW	1.000 MHz
SweepPoints	400
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	34 / max. 150
Stable	5 / 5
Max Stable Difference	0.06 dB

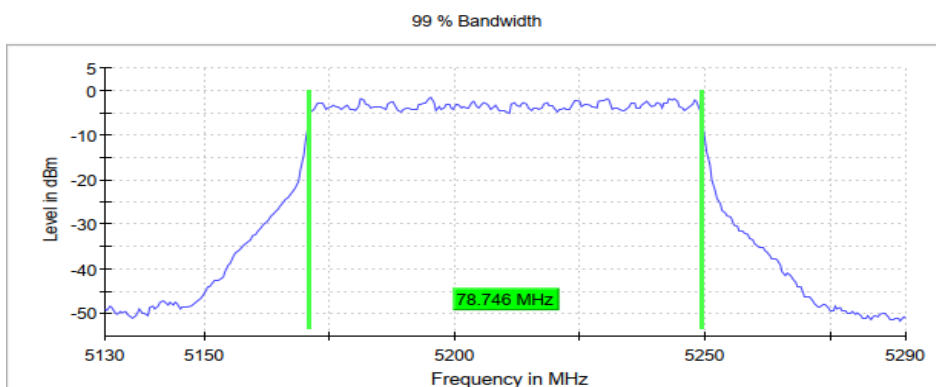
Radio Technology = WLAN ax40 MIMO(MU), Operating Frequency = high, Subband = U-NII-3
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.75500 GHz
Stop Frequency	5.83500 GHz
Span	80.000 MHz
RBW	500.000 kHz
VBW	2.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	22 / max. 150
Stable	5 / 5
Max Stable Difference	0.18 dB

Radio Technology = WLAN ax80 MIMO(MU), Operating Frequency = mid, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.13000 GHz
Stop Frequency	5.29000 GHz
Span	160.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
SweepPoints	320
SweepTime	1.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	MaxPeak
SweepCount	200
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamp	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	51 / max. 150
Stable	5 / 5
Max Stable Difference	0.20 dB

5.3.5 TEST EQUIPMENT USED

- R&S TS8997

5.4 MAXIMUM CONDUCTED OUTPUT POWER

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 12.3.3.2

5.4.1 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

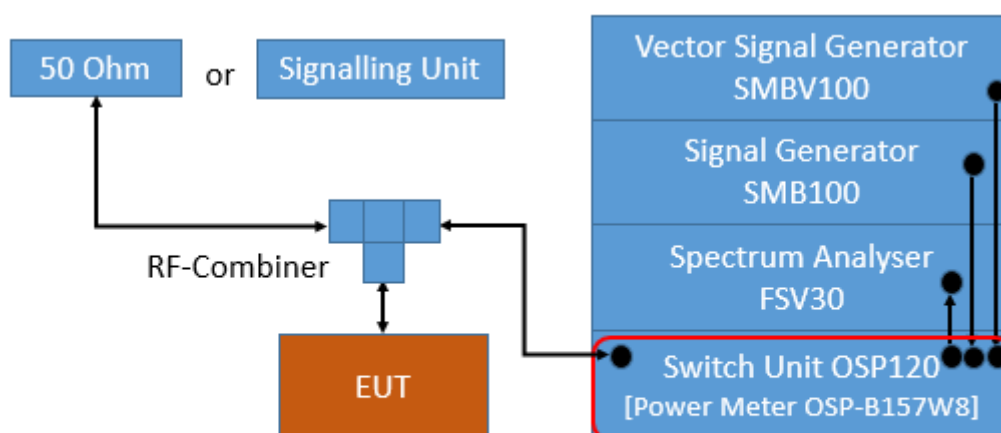
For U-NII bands 1, 2A, 2C, 3:

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.

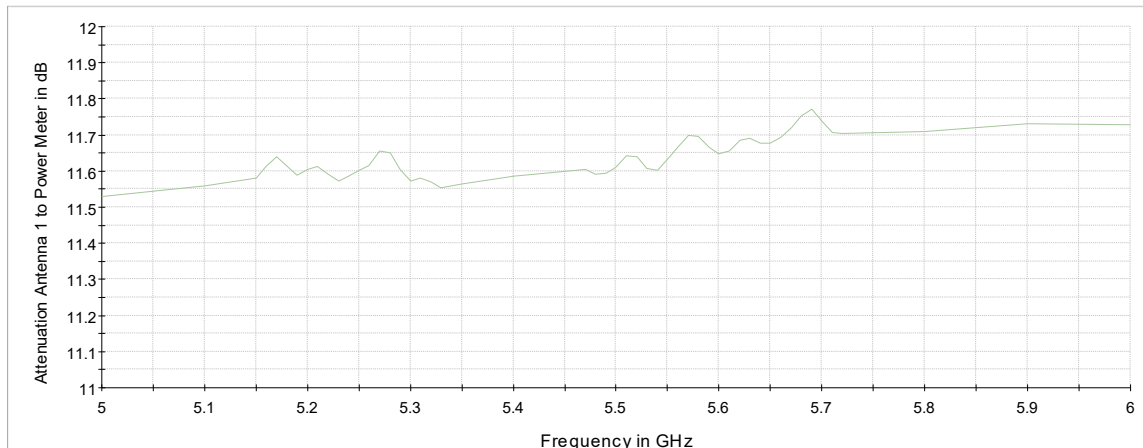
The OSP-B157W is a gated RF average power meter with a signal bandwidth > 300 MHz.

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.

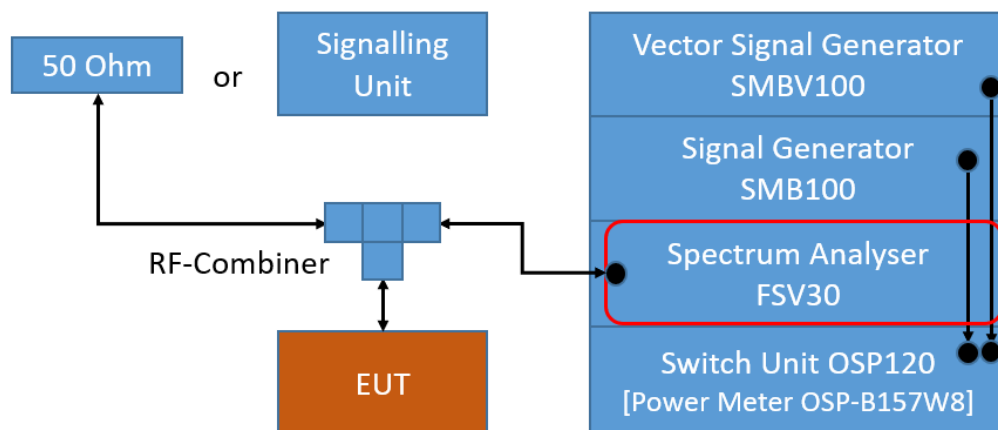
Analyzer settings:

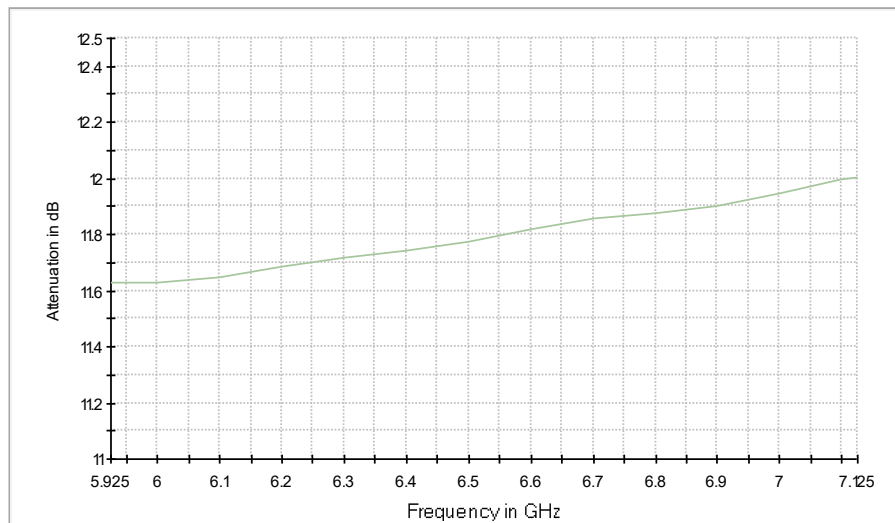
- Resolution Bandwidth (RBW): 1 MHz
- Video Bandwidth (VBW): 3 MHz
- Trace: Average, RMS power averaging mode
- Sweeps: at least 100
- Sweep time: Auto
- Detector: RMS
- Trigger: free run (DC > 98 %) or gated mode (DC < 98 %)

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

5.4.2 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) (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) (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) (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, 6.2.4.1, Band 5725-5850 MHz:

Limits:

Maximum conducted Power: 1 W (30 dBm)

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

5.4.3 TEST PROTOCOL

FCC:

Ambient temperature:

23 °C

Air Pressure:

1030.5 hPa

Humidity:

34.5 %

WLAN a-Mode; 20 MHz; 6 Mbit/s; Diversity

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
36	5180	6.36	6.52	-1.39	-1.66	4.97	4.86	7.9	24.0	16.1	10.07	9.96	13.0	21	8.0
40	5200	6.78	6.88	-1.39	-1.67	5.39	5.22	8.3	24.0	15.7	10.49	10.32	13.4	21	7.6
48	5240	6.80	6.97	-1.40	-1.68	5.40	5.29	8.4	24.0	15.6	10.50	10.39	13.5	21	7.5
149	5745	6.36	5.74	-1.49	-1.78	4.87	3.96	7.4	30.0	22.6	9.97	9.06	12.5	36	23.5
157	5785	6.56	5.58	-1.49	-1.79	5.07	3.79	7.5	30.0	22.5	10.17	8.89	12.6	36	23.4
165	5825	6.47	5.63	-1.50	-1.80	4.97	3.83	7.5	30.0	22.5	10.07	8.93	12.6	36	23.4

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
36	5180	6.22	6.35	-1.39	-1.66	4.83	4.69	7.8	24.0	16.2	9.93	9.79	12.9	21	8.1
40	5200	6.62	6.72	-1.39	-1.67	5.23	5.06	8.2	24.0	15.8	10.33	10.16	13.3	21	7.7
48	5240	6.63	6.81	-1.40	-1.68	5.23	5.13	8.2	24.0	15.8	10.33	10.23	13.3	21	7.7
149	5745	6.20	5.55	-1.49	-1.78	4.71	3.77	7.3	30.0	22.7	9.81	8.87	12.4	36	23.6
157	5785	6.37	5.39	-1.49	-1.79	4.88	3.60	7.3	30.0	22.7	9.98	8.70	12.4	36	23.6
165	5825	6.25	5.35	-1.50	-1.80	4.75	3.55	7.2	30.0	22.8	9.85	8.65	12.3	36	23.7

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
38	5190	6.88	6.61	-1.39	-1.67	5.49	4.94	8.2	24.0	15.8	10.59	10.04	13.3	21	7.7
46	5230	6.97	7.11	-1.40	-1.67	5.57	5.44	8.5	24.0	15.5	10.67	10.54	13.6	21	7.4
151	5755	6.32	5.58	-1.49	-1.78	4.83	3.79	7.4	30.0	22.6	9.93	8.89	12.5	36	23.5
159	5795	6.63	5.82	-1.49	-1.79	5.13	4.02	7.6	30.0	22.4	10.23	9.12	12.7	36	23.3

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
36	5180	6.14	6.28	-1.39	-1.66	4.75	4.62	7.7	24.0	16.3	9.85	9.72	12.8	21	8.2
40	5200	6.52	6.62	-1.39	-1.67	5.13	4.95	8.1	24.0	15.9	10.23	10.05	13.2	21	7.8
48	5240	6.59	6.74	-1.40	-1.68	5.20	5.07	8.1	24.0	15.9	10.30	10.17	13.2	21	7.8
149	5745	6.15	5.52	-1.49	-1.78	4.67	3.74	7.2	30.0	22.8	9.77	8.84	12.3	36	23.7
157	5785	6.32	5.38	-1.49	-1.79	4.83	3.59	7.3	30.0	22.7	9.93	8.69	12.4	36	23.6
165	5825	6.28	5.36	-1.50	-1.80	4.78	3.56	7.2	30.0	22.8	9.88	8.66	12.3	36	23.7

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
38	5190	6.88	6.59	-1.39	-1.67	5.49	4.93	8.2	24.0	15.8	10.59	10.03	13.3	21	7.7
46	5230	6.93	7.07	-1.40	-1.67	5.54	5.40	8.5	24.0	15.5	10.64	10.50	13.6	21	7.4
151	5755	6.34	5.61	-1.49	-1.78	4.86	3.82	7.4	30.0	22.6	9.96	8.92	12.5	36	23.5
159	5795	6.67	5.86	-1.49	-1.79	5.17	4.07	7.7	30.0	22.3	10.27	9.17	12.8	36	23.2

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
42	5210	6.67	6.74	-1.39	-1.67	5.27	5.07	8.2	24.0	15.8	10.37	10.17	13.3	21	7.7
155	5775	6.47	5.52	-1.49	-1.79	4.98	3.73	7.4	30.0	22.6	10.08	8.83	12.5	36	23.5

WLAN ax-Mode; 20 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
36	5180	4.54	3.86	-1.39	-1.66	3.15	2.19	5.7	24.0	18.3	8.25	7.29	10.8	21	10.2
48	5240	4.74	4.31	-1.40	-1.68	3.34	2.63	6.0	24.0	18.0	8.44	7.73	11.1	21	9.9
149	5745	3.94	2.68	-1.49	-1.78	2.46	0.90	4.8	30.0	25.2	7.56	6.00	9.9	36	26.1
165	5825	4.29	3.30	-1.50	-1.80	2.79	1.50	5.2	30.0	24.8	7.89	6.60	10.3	36	25.7

WLAN ax-Mode; 40 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
38	5190	4.79	4.05	-1.39	-1.67	3.40	2.38	5.9	24.0	18.1	8.50	7.48	11.0	21	10.0
46	5230	4.88	4.81	-1.40	-1.67	3.48	3.13	6.3	24.0	17.7	8.58	8.23	11.4	21	9.6
151	5755	4.30	3.15	-1.49	-1.78	2.81	1.36	5.2	30.0	24.8	7.91	6.46	10.3	36	25.7
159	5795	4.43	3.29	-1.49	-1.79	2.93	1.50	5.3	30.0	24.7	8.03	6.60	10.4	36	25.6

WLAN ax-Mode; 80 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
42	5210	4.67	4.32	-1.39	-1.67	3.28	2.65	6.0	24.0	18.0	8.38	7.75	11.1	21	9.9
155	5775	4.24	3.14	-1.49	-1.79	2.75	1.35	5.1	30.0	24.9	7.85	6.45	10.2	36	25.8

WLAN ax-Mode; 20 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
36	5180	4.38	3.59	-1.39	-1.66	2.99	1.92	5.5	24.0	18.5	8.09	7.02	10.6	21	10.4
40	5200	4.16	3.38	-1.39	-1.67	2.77	1.71	5.3	24.0	18.7	7.87	6.81	10.4	21	10.6
48	5240	4.59	4.27	-1.40	-1.68	3.20	2.60	5.9	24.0	18.1	8.30	7.70	11.0	21	10.0
149	5745	3.96	2.98	-1.49	-1.78	2.48	1.20	4.9	30.0	25.1	7.58	6.30	10.0	36	26.0
157	5785	3.85	2.97	-1.49	-1.79	2.36	1.17	4.8	30.0	25.2	7.46	6.27	9.9	36	26.1
165	5825	4.21	3.44	-1.50	-1.80	2.71	1.64	5.2	30.0	24.8	7.81	6.74	10.3	36	25.7

WLAN ax-Mode; 40 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
38	5190	4.42	3.47	-1.39	-1.67	3.03	1.80	5.5	24.0	18.5	8.13	6.90	10.6	21	10.4
46	5230	4.44	4.27	-1.40	-1.67	3.04	2.60	5.8	24.0	18.2	8.14	7.70	10.9	21	10.1
151	5755	3.92	2.83	-1.49	-1.78	2.43	1.05	4.8	30.0	25.2	7.53	6.15	9.9	36	26.1
159	5795	4.03	2.92	-1.49	-1.79	2.54	1.13	4.9	30.0	25.1	7.64	6.23	10.0	36	26.0

WLAN ax-Mode; 80 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	FCC Cond. Limit [dBm]	FCC Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	FCC EIRP Limit [dBm]	FCC EIRP Margin [dB]
42	5210	4.78	4.37	-1.39	-1.67	3.38	2.70	6.1	24.0	17.9	8.48	7.80	11.2	21	9.8
155	5775	4.27	3.24	-1.49	-1.79	2.78	1.45	5.2	30.0	24.8	7.88	6.55	10.3	36	25.7

ISED:

WLAN a-Mode; 20 MHz; 6 Mbit/s; Diversity

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
36	5180	4.62	4.06	-1.39	-1.66	3.23	2.39	5.8	N/A	-	8.33	7.49	10.9	11.8	0.9
40	5200	4.80	4.85	-1.39	-1.67	3.41	3.19	6.3	N/A	-	8.51	8.29	11.4	11.8	0.4
48	5240	4.90	4.64	-1.40	-1.68	3.50	2.96	6.3	N/A	-	8.60	8.06	11.4	11.8	0.4
149	5745	6.36	5.74	-1.49	-1.78	4.87	3.96	7.4	30	22.6	9.97	9.06	12.5	36	23.5
157	5785	6.56	5.58	-1.49	-1.79	5.07	3.79	7.5	30	22.5	10.17	8.89	12.6	36	23.4
165	5825	6.47	5.63	-1.50	-1.80	4.97	3.83	7.5	30	22.5	10.07	8.93	12.6	36	23.4

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
36	5180	4.43	3.87	-1.39	-1.66	3.05	2.20	5.7	N/A	-	8.15	7.30	10.8	11.8	1.0
40	5200	4.64	4.69	-1.39	-1.67	3.25	3.02	6.1	N/A	-	8.35	8.12	11.2	11.8	0.6
48	5240	4.72	4.48	-1.40	-1.68	3.32	2.80	6.1	N/A	-	8.42	7.90	11.2	11.8	0.6
149	5745	6.20	5.55	-1.49	-1.78	4.71	3.77	7.3	30	22.7	9.81	8.87	12.4	36	23.6
157	5785	6.37	5.39	-1.49	-1.79	4.88	3.60	7.3	30	22.7	9.98	8.70	12.4	36	23.6
165	5825	6.25	5.35	-1.50	-1.80	4.75	3.55	7.2	30	22.8	9.85	8.65	12.3	36	23.7

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
38	5190	4.87	4.43	-1.39	-1.67	3.48	2.76	6.1	N/A	-	8.58	7.86	11.2	11.8	0.6
46	5230	4.97	5.11	-1.40	-1.67	3.57	3.44	6.5	N/A	-	8.67	8.54	11.6	11.8	0.2
151	5755	6.32	5.58	-1.49	-1.78	4.83	3.79	7.4	30	22.6	9.93	8.89	12.5	36	23.5
159	5795	6.63	5.82	-1.49	-1.79	5.13	4.02	7.6	30	22.4	10.23	9.12	12.7	36	23.3

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
36	5180	4.34	3.91	-1.39	-1.66	2.95	2.24	5.6	N/A	-	8.05	7.34	10.7	11.8	1.1
40	5200	4.52	4.64	-1.39	-1.67	3.12	2.98	6.1	N/A	-	8.22	8.08	11.2	11.8	0.6
48	5240	4.57	4.40	-1.40	-1.68	3.17	2.73	6.0	N/A	-	8.27	7.83	11.1	11.8	0.7
149	5745	6.15	5.52	-1.49	-1.78	4.67	3.74	7.2	30	22.8	9.77	8.84	12.3	36	23.7
157	5785	6.32	5.38	-1.49	-1.79	4.83	3.59	7.3	30	22.7	9.93	8.69	12.4	36	23.6
165	5825	6.28	5.36	-1.50	-1.80	4.78	3.56	7.2	30	22.8	9.88	8.66	12.3	36	23.7

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
38	5190	4.90	4.41	-1.39	-1.67	3.51	2.74	6.2	N/A	-	8.61	7.84	11.3	11.8	0.5
46	5230	4.97	5.13	-1.40	-1.67	3.57	3.46	6.5	N/A	-	8.67	8.56	11.6	11.8	0.2
151	5755	6.34	5.61	-1.49	-1.78	4.86	3.82	7.4	30	22.6	9.96	8.92	12.5	36	23.5
159	5795	6.67	5.86	-1.49	-1.79	5.17	4.07	7.7	30	22.3	10.27	9.17	12.8	36	23.2

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

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
42	5210	4.75	4.74	-1.39	-1.67	3.35	3.07	6.2	N/A	-	8.45	8.17	11.3	11.8	0.5
155	5775	6.47	5.52	-1.49	-1.79	4.98	3.73	7.4	30	22.6	10.08	8.83	12.5	36	23.5

WLAN ax-Mode; 20 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
36	5180	4.54	3.86	-1.39	-1.66	3.15	2.19	5.7	N/A	-	8.25	7.29	10.8	11.8	1.0
48	5240	4.74	4.31	-1.40	-1.68	3.34	2.63	6.0	N/A	-	8.44	7.73	11.1	11.8	0.7
149	5745	3.94	2.68	-1.49	-1.78	2.46	0.90	4.8	30	25.2	7.56	6.00	9.9	36	26.1
165	5825	4.29	3.30	-1.50	-1.80	2.79	1.50	5.2	30	24.8	7.89	6.60	10.3	36	25.7

WLAN ax-Mode; 40 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
38	5190	4.79	4.05	-1.39	-1.67	3.40	2.38	5.9	N/A	-	8.50	7.48	11.0	11.8	0.8
46	5230	4.88	4.81	-1.40	-1.67	3.48	3.13	6.3	N/A	-	8.58	8.23	11.4	11.8	0.4
151	5755	4.30	3.15	-1.49	-1.78	2.81	1.36	5.2	30	24.8	7.91	6.46	10.3	36	25.7
159	5795	4.43	3.29	-1.49	-1.79	2.93	1.50	5.3	30	24.7	8.03	6.60	10.4	36	25.6

WLAN ax-Mode; 80 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
42	5210	4.67	4.32	-1.39	-1.67	3.28	2.65	6.0	N/A	-	8.38	7.75	11.1	11.8	0.7
155	5775	4.24	3.14	-1.49	-1.79	2.75	1.35	5.1	30	24.9	7.85	6.45	10.2	36	25.8

WLAN ax-Mode; 20 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
36	5180	4.38	3.59	-1.39	-1.66	2.99	1.92	5.5	N/A	-	8.09	7.02	10.6	11.8	1.2
40	5200	4.16	3.38	-1.39	-1.67	2.77	1.71	5.3	N/A	-	7.87	6.81	10.4	11.8	1.4
48	5240	4.59	4.27	-1.40	-1.68	3.20	2.60	5.9	N/A	-	8.30	7.70	11.0	11.8	0.8
149	5745	3.96	2.98	-1.49	-1.78	2.48	1.20	4.9	30	25.1	7.58	6.30	10.0	36	26.0
157	5785	3.85	2.97	-1.49	-1.79	2.36	1.17	4.8	30	25.2	7.46	6.27	9.9	36	26.1
165	5825	4.21	3.44	-1.50	-1.80	2.71	1.64	5.2	30	24.8	7.81	6.74	10.3	36	25.7

WLAN ax-Mode; 40 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
38	5190	4.42	3.47	-1.39	-1.67	3.03	1.80	5.5	N/A	-	8.13	6.90	10.6	11.8	1.2
46	5230	4.44	4.27	-1.40	-1.67	3.04	2.60	5.8	N/A	-	8.14	7.70	10.9	11.8	0.9
151	5755	3.92	2.83	-1.49	-1.78	2.43	1.05	4.8	30	25.2	7.53	6.15	9.9	36	26.1
159	5795	4.03	2.92	-1.49	-1.79	2.54	1.13	4.9	30	25.1	7.64	6.23	10.0	36	26.0

WLAN ax-Mode; 80 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. Power Ant. 4 @EUT [dBm]	Cond. Power Ant. 3 @EUT [dBm]	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. Power Ant. 4 [dBm]	Cond. Power Ant. 3 [dBm]	Cond. MIMO Power [dBm]	ISED Cond. Limit [dBm]	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm]	EIRP. Power Ant. 3 [dBm]	EIRP. MIMO Power [dBm]	ISED EIRP Limit [dBm]	ISED EIRP Margin [dB]
42	5210	4.78	4.37	-1.39	-1.67	3.38	2.70	6.1	N/A	-	8.48	7.80	11.2	11.8	0.6
155	5775	4.27	3.24	-1.49	-1.79	2.78	1.45	5.2	30	24.8	7.88	6.55	10.3	36	25.7

no additional limit applies related to the elevation.

Comment:

- "MAXIMUM CONDUCTED OUTPUT POWER" measurements were performed for FCC and IC separately, because for Canada the output power will be limited to fulfil the ISED output power Limits.
- **The manufacturer declared:** "For Canada, the device will automatically reduce its output power to comply with SUB-UNII 1 regulation, using its GNSS module to detect when to apply the lower Canadian power level."
- This output power reduction does not affect the device's ax-mode operation.
- Power Meter measurement, no plots provided.
- The EUT supports both client mode and access point mode at an equivalent power level.
- Only client mode limits were used, as they represent the most restrictive requirements.

5.4.4 TEST EQUIPMENT USED

- R&S TS8997

5.5 PEAK POWER SPECTRAL DENSITY

Standard **FCC Part 15 Subpart E**

The test was performed according to:

ANSI C63.10, chapter 12.5 (SA-3)

5.5.1 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:

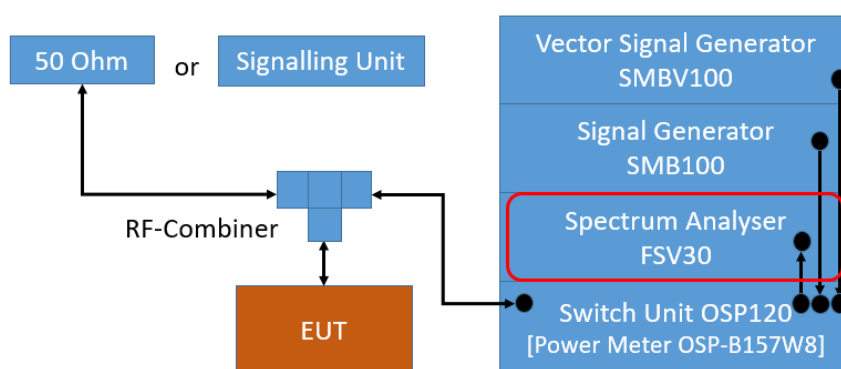
The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

Analyzer settings:

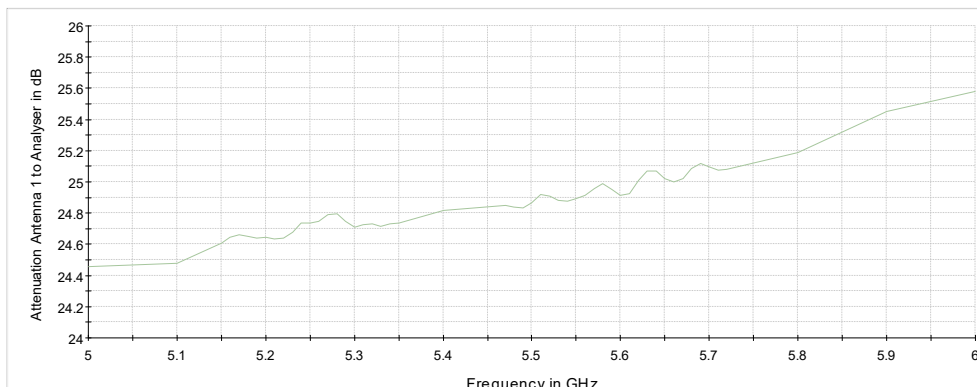
- Resolution Bandwidth (RBW): 1 MHz (for subband 3: 500 kHz)
- Video Bandwidth (VBW): 3 MHz (for subband 3: 2 MHz)
- Trace: Max Hold
- Sweeps: till stable (at least 180, max. 900)
- Sweep time: $\leq$ Number of sweep points x Min. Transmitter on time
- Detector: RMS
- Trigger: free run

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-3**.



TS8997; Maximum Power Spectral Density



Attenuation of the measurement path

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

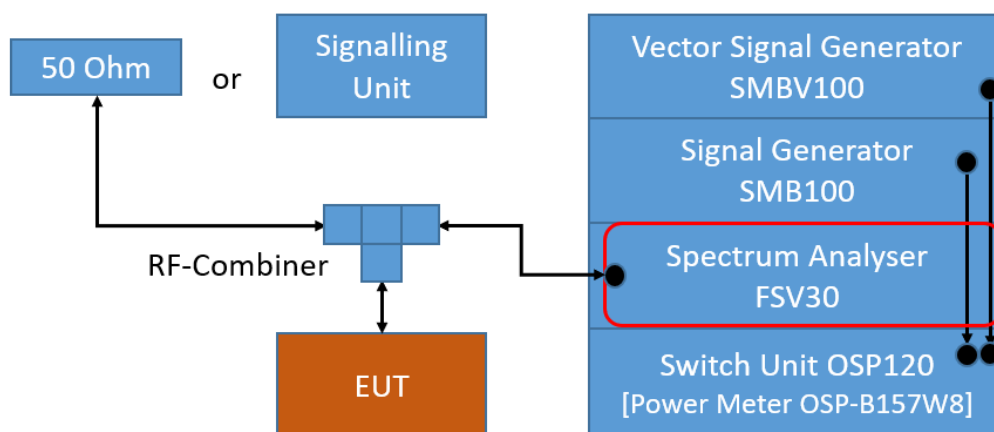
The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.

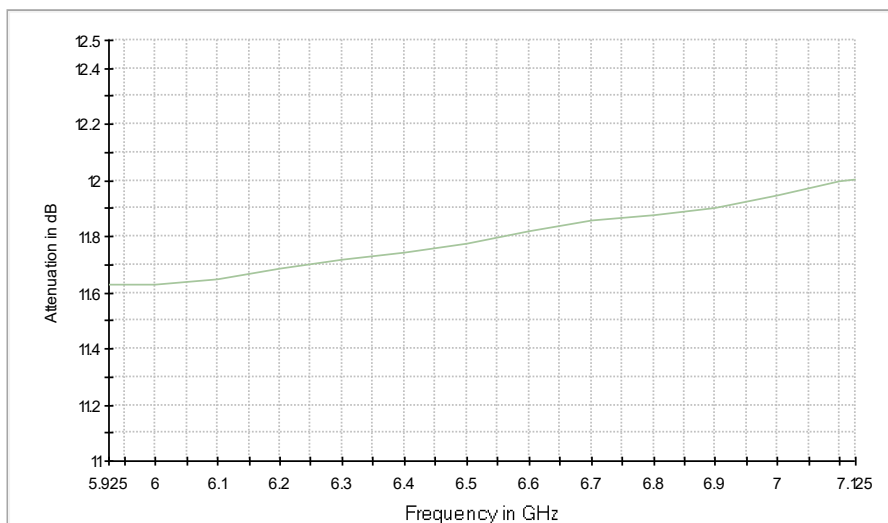
Analyzer settings:

- 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

5.5.2 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) (3)

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

Limit: 30 dBm/500 kHz.

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

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

Limit: 30 dBm/500 kHz.

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

According to '662911 D01 Multiple Transmitter Output v02r01', if the EUT supports Cyclic Delay Diversity (CDD), the signals from the transmitters are considered correlated. In this case, the directional gain should be calculated as follows:

$$\text{Directional gain} = G_{\text{ANT}} + 10 \log(N_{\text{ANT}}/N_{\text{SS}}) \text{ dBi}$$

where N_{Ant} : number of transmit antennas

N_{SS} : number of spatial streams (in this Report; $N_{\text{SS}} = 1$)

5.5.3 TEST PROTOCOL

Ambient temperature:

23 °C

Air Pressure:

1030.5 hPa

Humidity:

34.5 %

WLAN a-Mode; 20 MHz; 6 Mbit/s; Diversity

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
36	5180	-4.96	-4.77	-1.39	-1.66	-6.35	-6.44	-3.4	8.9	12.3	N/A	-	-1.25	-1.34	4.7
40	5200	-4.69	-4.47	-1.39	-1.67	-6.08	-6.14	-3.1	8.9	12.0	N/A	-	-0.98	-1.04	5.0
48	5240	-4.60	-4.36	-1.40	-1.68	-6.00	-6.04	-3.0	8.9	11.9	N/A	-	-0.90	-0.94	5.1
149	5745	-8.63	-7.93	-1.49	-1.78	-10.12	-9.71	-6.9	27.9	34.8	27.9	34.8	-5.02	-4.61	1.2
157	5785	-8.90	-8.33	-1.49	-1.79	-10.39	-10.12	-7.2	27.9	35.1	27.9	35.1	-5.29	-5.02	0.9
165	5825	-8.64	-7.76	-1.50	-1.80	-10.14	-9.56	-6.8	27.9	34.7	27.9	34.7	-5.04	-4.46	1.3

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

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
36	5180	-5.03	-4.91	-1.39	-1.66	-6.42	-6.58	-3.5	8.9	12.4	N/A	-	-1.32	-1.48	4.6
40	5200	-5.03	-4.91	-1.39	-1.67	-6.42	-6.58	-3.5	8.9	12.4	N/A	-	-1.32	-1.48	4.6
48	5240	-5.02	-4.88	-1.40	-1.68	-6.42	-6.56	-3.5	8.9	12.4	N/A	-	-1.32	-1.46	4.6
149	5745	-8.89	-8.37	-1.49	-1.78	-10.37	-10.15	-7.3	27.9	35.2	27.9	35.2	-5.27	-5.05	0.8
157	5785	-9.27	-8.69	-1.49	-1.79	-10.76	-10.48	-7.6	27.9	35.5	27.9	35.5	-5.66	-5.38	0.5
165	5825	-9.12	-8.21	-1.50	-1.80	-10.62	-10.01	-7.3	27.9	35.2	27.9	35.2	-5.52	-4.91	0.8

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

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
38	5190	-7.07	-5.78	-1.39	-1.67	-8.46	-7.44	-4.9	8.9	13.8	N/A	-	-3.36	-2.34	3.2
46	5230	-5.98	-5.79	-1.40	-1.67	-7.37	-7.46	-4.4	8.9	13.3	N/A	-	-2.27	-2.36	3.7
151	5755	-9.43	-9.21	-1.49	-1.78	-10.92	-10.99	-7.9	27.9	35.8	27.9	35.8	-5.82	-5.89	0.2
159	5795	-9.66	-9.26	-1.49	-1.79	-11.16	-11.05	-8.1	27.9	36.0	27.9	36.0	-6.06	-5.95	0.0

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

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
36	5180	-5.47	-5.39	-1.39	-1.66	-6.86	-7.05	-3.9	8.9	12.8	N/A	-	-1.76	-1.95	4.2
40	5200	-5.26	-5.05	-1.39	-1.67	-6.65	-6.71	-3.7	8.9	12.6	N/A	-	-1.55	-1.61	4.4
48	5240	-5.21	-5.03	-1.40	-1.68	-6.60	-6.70	-3.6	8.9	12.5	N/A	-	-1.50	-1.60	4.5
149	5745	-9.04	-8.45	-1.49	-1.78	-10.52	-10.23	-7.4	27.9	35.3	27.9	35.3	-5.42	-5.13	0.7
157	5785	-9.37	-8.93	-1.49	-1.79	-10.86	-10.72	-7.8	27.9	35.7	27.9	35.7	-5.76	-5.62	0.3
165	5825	-9.34	-8.29	-1.50	-1.80	-10.84	-10.09	-7.4	27.9	35.3	27.9	35.3	-5.74	-4.99	0.7

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

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
38	5190	-7.02	-6.45	-1.39	-1.67	-8.41	-8.11	-5.2	8.9	14.1	N/A	-	-3.31	-3.01	2.9
46	5230	-6.79	-6.23	-1.40	-1.67	-8.19	-7.91	-5.0	8.9	13.9	N/A	-	-3.09	-2.81	3.1
151	5755	-9.87	-9.00	-1.49	-1.78	-11.36	-10.78	-8.0	27.9	35.9	27.9	35.9	-6.26	-5.68	0.1
159	5795	-9.50	-9.04	-1.49	-1.79	-10.99	-10.83	-7.9	27.9	35.8	27.9	35.8	-5.89	-5.73	0.2

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

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
42	5210	-9.86	-9.33	-1.39	-1.67	-11.25	-10.99	-8.1	8.9	17.0	N/A	-	-6.15	-5.89	0.0
155	5775	-11.90	-10.73	-1.49	-1.79	-13.39	-12.51	-9.9	27.9	37.8	27.9	37.8	-8.29	-7.41	-1.8

WLAN ax-Mode; 20 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
36	5180	-7.84	-7.27	-1.39	-1.66	-9.23	-8.93	-6.1	8.9	15.0	N/A	-	-4.13	-3.83	2.0
48	5240	-7.83	-7.09	-1.40	-1.68	-9.23	-8.77	-6.0	8.9	14.9	N/A	-	-4.13	-3.67	2.1
149	5745	-11.90	-10.87	-1.49	-1.78	-13.39	-12.65	-10.0	27.9	37.9	27.9	37.9	-8.29	-7.55	-1.9
165	5825	-11.15	-10.44	-1.50	-1.80	-12.65	-12.24	-9.4	27.9	37.3	27.9	37.3	-7.55	-7.14	-1.3

WLAN ax-Mode; 40 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
38	5190	-7.84	-7.27	-1.39	-1.67	-9.23	-8.93	-6.1	8.9	15.0	N/A	-	-4.13	-3.83	2.0
46	5230	-9.96	-8.41	-1.40	-1.67	-11.35	-10.08	-7.7	8.9	16.6	N/A	-	-6.25	-4.98	0.4
151	5755	-11.75	-10.39	-1.49	-1.78	-13.24	-12.17	-9.7	27.9	37.6	27.9	37.6	-8.14	-7.07	-1.6
159	5795	-11.28	-10.89	-1.49	-1.79	-12.78	-12.68	-9.7	27.9	37.6	27.9	37.6	-7.68	-7.58	-1.6

WLAN ax-Mode; 80 MHz; MCS 0; MIMO(SU)

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
42	5210	-10.92	-10.94	-1.39	-1.67	-12.31	-12.61	-9.5	8.9	18.4	N/A	-	-7.21	-7.51	-1.4
155	5775	-15.40	-9.94	-1.49	-1.79	-16.89	-11.73	-10.6	27.9	38.5	27.9	38.5	-11.79	-6.63	-2.5

WLAN ax-Mode; 20 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
36	5180	1.34	2.02	-1.39	-1.66	-0.05	0.36	3.2	8.9	5.7	N/A	-	5.05	5.46	11.3
40	5200	-0.01	0.61	-1.39	-1.67	-1.40	-1.06	1.8	8.9	7.1	N/A	-	3.70	4.04	9.9
48	5240	2.02	2.16	-1.40	-1.68	0.62	0.49	3.6	8.9	5.3	N/A	-	5.72	5.59	11.7
149	5745	-2.20	-1.42	-1.49	-1.78	-3.68	-3.20	-0.4	27.9	28.3	27.9	28.3	1.42	1.90	7.7
157	5785	-2.38	-1.67	-1.49	-1.79	-3.87	-3.46	-0.7	27.9	28.6	27.9	28.6	1.23	1.64	7.4
165	5825	-1.81	-1.20	-1.50	-1.80	-3.31	-3.00	-0.1	27.9	28.0	27.9	28.0	1.79	2.10	8.0

WLAN ax-Mode; 40 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
38	5190	1.36	2.99	-1.39	-1.67	-0.03	1.32	3.7	8.9	5.2	N/A	-	5.07	6.42	11.8
46	5230	2.71	2.50	-1.40	-1.67	1.32	0.82	4.1	8.9	4.8	N/A	-	6.42	5.92	12.2
151	5755	-0.54	1.38	-1.49	-1.78	-2.03	-0.40	1.9	27.9	26.0	27.9	26.0	3.07	4.70	10.0
159	5795	0.54	0.48	-1.49	-1.79	-0.96	-1.31	1.9	27.9	26.0	27.9	26.0	4.14	3.79	10.0

WLAN ax-Mode; 80 MHz; MCS 0; MIMO(MU)

Ch. No.	Freq. [MHz]	Cond. MPSD Ant. 4 @EUT [dBm/MHz]*	Cond. MPSD Ant. 3 @EUT [dBm/MHz]*	Cable 4+ Insertion Loss [dB]	Cable 3+ Insertion Loss [dB]	Cond. MPSD Ant. 4 [dBm/MHz]*	Cond. MPSD Ant. 3 [dBm/MHz]*	Cond. MIMO MPSD [dBm/MHz]*	FCC Cond. Limit [dBm/MHz]*	FCC Cond. Margin [dB]	ISED Cond. Limit [dBm/MHz]*	ISED Cond. Margin [dB]	EIRP. Power Ant. 4 [dBm/MHz]*	EIRP. Power Ant. 3 [dBm/MHz]*	EIRP. MIMO MPSD [dBm/MHz]*
42	5210	-11.38	-12.48	-1.39	-1.67	-12.77	-14.15	-10.4	8.9	19.3	N/A	-	-7.67	-9.05	-2.3
155	5775	-13.02	-12.07	-1.49	-1.79	-14.51	-13.86	-11.2	27.9	39.1	27.9	39.1	-9.41	-8.76	-3.1

* = or [dBm/500kHz] for U-NII-3

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

- The Results in the following plots are before implementing the cable attenuation correction, the corrected Results are defined in the previous tables.

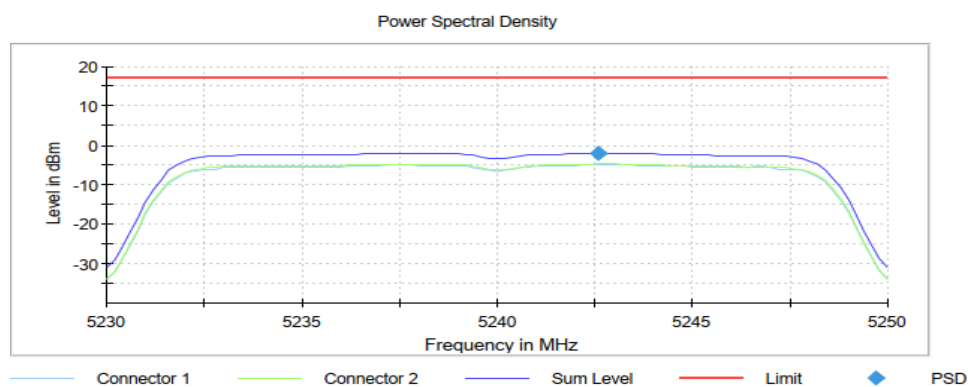
Comment:

- The "Peak Power Spectral Density" measurements used the higher USA power level for both FCC and ISED, as the power is only reduced for U-NII 1 where there are no ISED limits, and the USA level represents the worst-case scenario.
- The Results in the following plots are before implementing the cable attenuation correction, the corrected Results are defined in the previous tables.
- The EUT supports both client mode and access point mode at an equivalent power level.
- Only client mode limits were used, as they represent the most restrictive requirements.
- The PSD Limits have been reduced:
because the directional Gain for PSD = 5.1 dBi + 3 = 8.1 dBi > 6 dBi

→ 8.1 dBi – 6 dBi = **2.1 dB** is the amount in dB by which the PSD limits have been reduced.

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

Radio Technology = WLAN a Diversity, Operating Frequency = high, Subband = U-NII-1
(S01_AA01#S3.5)



Measurement

Setting	Instrument Value
Start Frequency	5.23000 GHz
Stop Frequency	5.25000 GHz
Span	20.000 MHz
RBW	1.000 MHz
VBW	3.000 MHz
SweepPoints	101
SweepTime	505.000 ms
Reference Level	-10.000 dBm
Attenuation	0.000 dB
Detector	RMS
SweepCount	119
Filter	3 dB
Trace Mode	Max Hold
SweepType	Sweep
Preamplifier	off
Stablemode	Trace
Stablevalue	0.30 dB
Run	4 / max. 15
Stable	3 / 3
Max Stable Difference	0.04 dB