

FCC Measurement/Technical Report on

WLAN and Bluetooth Module

MAYA-W381

FCC ID: XPYMAW3A
IC: 8595A-MAYAW3A

Test Report Reference: MDE_UBLOX_2408_FCC_01_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.

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 (10-1-24 Edition). The following subparts are applicable to the results in this test report.

Part 2, Subpart J - Equipment Authorization Procedures, Certification

Part 15, Subpart C – Intentional Radiators

§ 15.201 Equipment authorization requirement

§ 15.207 Conducted limits

§ 15.209 Radiated emission limits; general requirements

§ 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz

Note:

The tests were selected and performed with reference to the FCC Public Notice "Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under Section 15.247 of the FCC Rules, 558074 D01 15.247 Meas Guidance v05r02, 2019-04-02".

ANSI C63.10-2020 + Cor. 1-2023 + C63.10a-2024 + Errata to C63.10a-2024 is applied.

1.2 FCC-IC CORRELATION TABLE

Correlation of measurement requirements for DTS (e.g. WLAN 2.4 GHz, BT LE) equipment from FCC and IC

DTS 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	§ 15.247 (a) (2)	RSS-247 Issue 4: 6.3.1 (a)
Peak conducted output power	§ 15.247 (b) (3), (4)	RSS-247 Issue 4: 6.3.2 / 6.5
Transmitter spurious RF conducted emissions	§ 15.247 (d)	RSS-Gen Issue 5 & AMD 1 & AMD 2: 6.13 / 8.9/8.10; RSS-247 Issue 4: 6.6
Transmitter spurious radiated emissions	§ 15.247 (d); § 15.209 (a)	RSS-Gen Issue 5 & AMD 1 & AMD 2: 6.13 / 8.9/8.10; RSS-247 Issue 4: 6.6
Band edge compliance	§ 15.247 (d)	RSS-247 Issue 4: 6.6
Power density	§ 15.247 (e)	RSS-247 Issue 4: 6.3.1 (b)
Antenna requirement	§ 15.203 / 15.204	RSS-Gen Issue 5 & AMD 1 & AMD 2: 8.3
Receiver spurious emissions	–	–

1.3 MEASUREMENT SUMMARY

47 CFR CHAPTER I FCC PART 15 § 15.207 Subpart C §15.247

Conducted Emissions at AC Mains

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

Final Result

OP-Mode	Setup	Date	FCC	IC
Operating mode, Connection to AC mains				
BT BDR, via ancillary/auxiliary equipment	S01_ACDC_AA01	2025-07-16	Passed	Passed
WLAN b, via ancillary/auxiliary equipment	S01_ACDC_AA01	2025-07-16	Passed	Passed

47 CFR CHAPTER I FCC PART 15 § 15.247 (a) (2) Subpart C §15.247

Occupied Bandwidth (6 dB)

The measurement was performed according to ANSI C63.10, chapter 11.8.1

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency				
Bluetooth BDR, high	S01_AA01	2025-06-02	Passed	Passed
Bluetooth BDR, low	S01_AA01	2025-06-02	Passed	Passed
Bluetooth BDR, mid	S01_AA01	2025-06-02	Passed	Passed
Bluetooth EDR 2, high	S01_AA01	2025-06-02	Passed	Passed
Bluetooth EDR 2, low	S01_AA01	2025-06-02	Passed	Passed
Bluetooth EDR 2, mid	S01_AA01	2025-06-02	Passed	Passed
Bluetooth EDR 3, high	S01_AA01	2025-06-02	Passed	Passed
Bluetooth EDR 3, low	S01_AA01	2025-06-02	Passed	Passed
Bluetooth EDR 3, mid	S01_AA01	2025-06-02	Passed	Passed
Bluetooth LE 1 Mbps, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, mid	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, mid	S01_AA01	2025-04-25	Passed	Passed
WLAN ax 20 MHz, high	S01_AA01	2025-03-04	Passed	Passed
WLAN ax 20 MHz, low	S01_AA01	2025-03-04	Passed	Passed
WLAN ax 20 MHz, mid	S01_AA01	2025-03-04	Passed	Passed
WLAN b, high	S01_AA01	2025-02-13	Passed	Passed
WLAN b, low	S01_AA01	2025-02-13	Passed	Passed
WLAN b, mid	S01_AA01	2025-03-04	Passed	Passed
WLAN g, high	S01_AA01	2025-02-13	Passed	Passed
WLAN g, low	S01_AA01	2025-02-13	Passed	Passed
WLAN g, mid	S01_AA01	2025-02-13	Passed	Passed
WLAN n 20 MHz, high	S01_AA01	2025-03-04	Passed	Passed
WLAN n 20 MHz, low	S01_AA01	2025-03-04	Passed	Passed
WLAN n 20 MHz, mid	S01_AA01	2025-03-04	Passed	Passed

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Subpart C §15.247
§ 15.247 (a) (2)

Occupied Bandwidth (6 dB)

The measurement was performed according to ANSI C63.10, chapter 11.8.1

Final Result
OP-Mode

Radio Technology, Operating Frequency

Setup
Date
FCC
IC
OFDMA:

WLAN ax 20 MHz RU 5, high	S01_AA01	2025-08-27	Passed	Passed
WLAN ax 20 MHz RU 5, low	S01_AA01	2025-08-27	Passed	Passed
WLAN ax 20 MHz RU 5, mid	S01_AA01	2025-08-27	Passed	Passed

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Subpart C §15.247
IC RSS-Gen & IC TRC-43; Ch. 6.7 & Ch. 8

Occupied Bandwidth (99%)

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

Final Result
OP-Mode

Radio Technology, Operating Frequency

Setup
Date
FCC
IC

Bluetooth BDR, high	S01_AA01	2025-04-25	N/A	Performed
Bluetooth BDR, low	S01_AA01	2025-04-25	N/A	Performed
Bluetooth BDR, mid	S01_AA01	2025-04-25	N/A	Performed
Bluetooth EDR 2, high	S01_AA01	2025-04-25	N/A	Performed
Bluetooth EDR 2, low	S01_AA01	2025-04-25	N/A	Performed
Bluetooth EDR 2, mid	S01_AA01	2025-04-25	N/A	Performed
Bluetooth EDR 3, high	S01_AA01	2025-04-25	N/A	Performed
Bluetooth EDR 3, low	S01_AA01	2025-04-25	N/A	Performed
Bluetooth EDR 3, mid	S01_AA01	2025-04-25	N/A	Performed
Bluetooth LE 1 Mbps, high	S01_AA01	2025-04-25	N/A	Performed
Bluetooth LE 1 Mbps, low	S01_AA01	2025-04-25	N/A	Performed
Bluetooth LE 1 Mbps, mid	S01_AA01	2025-04-25	N/A	Performed
Bluetooth LE 2 Mbps, high	S01_AA01	2025-04-25	N/A	Performed
Bluetooth LE 2 Mbps, low	S01_AA01	2025-04-25	N/A	Performed
Bluetooth LE 2 Mbps, mid	S01_AA01	2025-04-25	N/A	Performed
WLAN ax 20 MHz, high	S01_AA01	2025-03-04	N/A	Performed
WLAN ax 20 MHz, low	S01_AA01	2025-03-04	N/A	Performed
WLAN ax 20 MHz, mid	S01_AA01	2025-03-04	N/A	Performed
WLAN b, high	S01_AA01	2025-02-13	N/A	Performed
WLAN b, low	S01_AA01	2025-02-13	N/A	Performed
WLAN b, mid	S01_AA01	2025-03-04	N/A	Performed
WLAN g, high	S01_AA01	2025-02-13	N/A	Performed
WLAN g, low	S01_AA01	2025-02-13	N/A	Performed
WLAN g, mid	S01_AA01	2025-02-13	N/A	Performed
WLAN n 20 MHz, high	S01_AA01	2025-03-04	N/A	Performed
WLAN n 20 MHz, low	S01_AA01	2025-03-04	N/A	Performed
WLAN n 20 MHz, mid	S01_AA01	2025-03-04	N/A	Performed

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§ 15.247 (b) (3)

Peak Power Output

The measurement was performed according to ANSI C63.10, chapter 11.9.1.1/11.9.2.3.2

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement method				
Bluetooth BDR, high, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth BDR, low, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth BDR, mid, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, high, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, low, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, mid, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, high, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, low, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, mid, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, high, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, low, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, mid, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, high, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, low, conducted	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, mid, conducted	S01_AA01	2025-04-25	Passed	Passed
WLAN ax 20 MHz, high, conducted	S01_AA01	2025-03-04	Passed	Passed
WLAN ax 20 MHz, low, conducted	S01_AA01	2025-03-04	Passed	Passed
WLAN ax 20 MHz, mid, conducted	S01_AA01	2025-03-04	Passed	Passed
WLAN b, high, conducted	S01_AA01	2025-02-13	Passed	Passed
WLAN b, low, conducted	S01_AA01	2025-02-13	Passed	Passed
WLAN b, mid, conducted	S01_AA01	2025-03-04	Passed	Passed
WLAN g, high, conducted	S01_AA01	2025-02-13	Passed	Passed
WLAN g, low, conducted	S01_AA01	2025-02-13	Passed	Passed
WLAN g, mid, conducted	S01_AA01	2025-02-13	Passed	Passed
WLAN n 20 MHz, high, conducted	S01_AA01	2025-03-04	Passed	Passed
WLAN n 20 MHz, low, conducted	S01_AA01	2025-03-04	Passed	Passed
WLAN n 20 MHz, mid, conducted	S01_AA01	2025-03-04	Passed	Passed
OFDMA:				
WLAN ax 20 MHz RU 5, high, conducted	S01_AA01	2025-08-27	Passed	Passed
WLAN ax 20 MHz RU 5, low, conducted	S01_AA01	2025-08-27	Passed	Passed
WLAN ax 20 MHz RU 5, mid, conducted	S01_AA01	2025-08-27	Passed	Passed

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§ 15.247 (d)

Spurious RF Conducted Emissions

The measurement was performed according to ANSI C63.10, chapter 11.11

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency				
Bluetooth BDR, high	S01_AA01	2025-05-19	Passed	Passed
Bluetooth BDR, low	S01_AA01	2025-05-19	Passed	Passed
Bluetooth BDR, mid	S01_AA01	2025-05-19	Passed	Passed
Bluetooth EDR 2, high	S01_AA01	2025-05-19	Passed	Passed
Bluetooth EDR 2, low	S01_AA01	2025-05-19	Passed	Passed
Bluetooth EDR 2, mid	S01_AA01	2025-05-19	Passed	Passed
Bluetooth EDR 3, high	S01_AA01	2025-05-19	Passed	Passed
Bluetooth EDR 3, low	S01_AA01	2025-05-19	Passed	Passed
Bluetooth EDR 3, mid	S01_AA01	2025-05-19	Passed	Passed
Bluetooth LE 1 Mbps, high	S01_AA01	2025-05-19	Passed	Passed
Bluetooth LE 1 Mbps, low	S01_AA01	2025-05-19	Passed	Passed
Bluetooth LE 1 Mbps, mid	S01_AA01	2025-05-19	Passed	Passed
Bluetooth LE 2 Mbps, high	S01_AA01	2025-05-19	Passed	Passed
Bluetooth LE 2 Mbps, low	S01_AA01	2025-05-19	Passed	Passed
Bluetooth LE 2 Mbps, mid	S01_AA01	2025-05-19	Passed	Passed
WLAN ax 20 MHz, high	S01_AA01	2025-03-13	Passed	Passed
WLAN ax 20 MHz, low	S01_AA01	2025-03-13	Passed	Passed
WLAN ax 20 MHz, mid	S01_AA01	2025-03-13	Passed	Passed
WLAN b, high	S01_AA01	2025-03-13	Passed	Passed
WLAN b, low	S01_AA01	2025-03-13	Passed	Passed
WLAN b, mid	S01_AA01	2025-03-13	Passed	Passed
WLAN g, high	S01_AA01	2025-03-13	Passed	Passed
WLAN g, low	S01_AA01	2025-03-13	Passed	Passed
WLAN g, mid	S01_AA01	2025-03-13	Passed	Passed
WLAN n 20 MHz, high	S01_AA01	2025-03-13	Passed	Passed
WLAN n 20 MHz, low	S01_AA01	2025-03-13	Passed	Passed
WLAN n 20 MHz, mid	S01_AA01	2025-03-13	Passed	Passed

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§ 15.247 (d)

Transmitter Spurious Emissions in Restricted Bands

The measurement was performed according to ANSI C63.10, chapter 6.4, 6.5, 6.6.5 (radiated method), 11.12.2.5.2.1 (conducted method)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range				
Bluetooth BDR, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, high, 1 GHz - 26 GHz Remark: radiated measurement with 50 Ohm termination	S02_AG03	2025-07-18	Passed	Passed
Bluetooth BDR, high, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, high, 30 MHz - 1 GHz Remark: radiated measurement with 50 Ohm termination	S02_AG03	2025-07-11	Passed	Passed
Bluetooth BDR, high, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, low, 1 GHz - 26 GHz Remark: radiated measurement with 50 Ohm termination	S02_AG03	2025-07-19	Passed	Passed
Bluetooth BDR, low, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, low, 30 MHz - 1 GHz Remark: radiated measurement with 50 Ohm termination	S02_AG03	2025-07-10	Passed	Passed
Bluetooth BDR, low, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, mid, 1 GHz - 26 GHz Remark: radiated measurement with 50 Ohm termination	S02_AG03	2025-07-18	Passed	Passed
Bluetooth BDR, mid, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, mid, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth BDR, mid, 9 kHz - 30 MHz Remark: radiated measurement with 50 Ohm termination	S02_AG03	2025-07-11	Passed	Passed
Bluetooth EDR 2, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 2, high, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 2, high, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 2, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 2, low, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 2, low, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 2, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 2, mid, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed

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§ 15.247 (d)

Transmitter Spurious Emissions in Restricted Bands

The measurement was performed according to ANSI C63.10, chapter 6.4, 6.5, 6.6.5 (radiated method), 11.12.2.5.2.1 (conducted method)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range				
Bluetooth EDR 2, mid, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, high, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, high, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, low, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, low, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, mid, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth EDR 3, mid, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 1 Mbps, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-06-24	Passed	Passed
Bluetooth LE 1 Mbps, high, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 1 Mbps, high, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 1 Mbps, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-06-24	Passed	Passed
Bluetooth LE 1 Mbps, low, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 1 Mbps, low, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 1 Mbps, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-06-24	Passed	Passed
Bluetooth LE 1 Mbps, mid, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 1 Mbps, mid, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 2 Mbps, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-06-24	Passed	Passed
Bluetooth LE 2 Mbps, high, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 2 Mbps, high, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 2 Mbps, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-06-24	Passed	Passed

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§ 15.247 (d)

Transmitter Spurious Emissions in Restricted Bands

The measurement was performed according to ANSI C63.10, chapter 6.4, 6.5, 6.6.5 (radiated method), 11.12.2.5.2.1 (conducted method)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range				
Bluetooth LE 2 Mbps, low, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 2 Mbps, low, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 2 Mbps, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-06-24	Passed	Passed
Bluetooth LE 2 Mbps, mid, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
Bluetooth LE 2 Mbps, mid, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN ax 20 MHz, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN ax 20 MHz, high, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN ax 20 MHz, high, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN ax 20 MHz, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN ax 20 MHz, low, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN ax 20 MHz, low, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN ax 20 MHz, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN ax 20 MHz, mid, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN ax 20 MHz, mid, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN b, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN b, high, 1 GHz - 26 GHz Remark: radiated measurement with 50 Ohm termination, harmonics tested only	S01_AA01	2025-07-16	Passed	Passed
WLAN b, high, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN b, high, 30 MHz - 1 GHz Remark: radiated measurement with 50 Ohm termination	S01_AA01	2025-07-10	Passed	Passed
WLAN b, high, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN b, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN b, low, 1 GHz - 26 GHz Remark: radiated measurement with 50 Ohm termination	S01_AA01	2025-07-10	Passed	Passed
WLAN b, low, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN b, low, 30 MHz - 1 GHz Remark: radiated measurement with 50 Ohm termination	S01_AA01	2025-07-10	Passed	Passed

47 CFR CHAPTER I FCC PART 15 Subpart C §15.247 **§ 15.247 (d)**

Transmitter Spurious Emissions in Restricted Bands

The measurement was performed according to ANSI C63.10, chapter 6.4, 6.5, 6.6.5 (radiated method), 11.12.2.5.2.1 (conducted method)

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Measurement range				
WLAN b, low, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN b, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN b, mid, 1 GHz - 26 GHz Remark: radiated measurement with 50 Ohm termination, harmonics tested only	S01_AA01	2025-07-10	Passed	Passed
WLAN b, mid, 30 MHz - 1 GHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN b, mid, 9 kHz - 30 MHz Remark: conducted measurement	S01_AA01	2025-05-16	Passed	Passed
WLAN b, mid, 9 kHz - 30 MHz Remark: radiated measurement with 50 Ohm termination	S01_AA01	2025-07-11	Passed	Passed
WLAN g, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN g, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN g, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN n 20 MHz, high, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN n 20 MHz, low, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed
WLAN n 20 MHz, mid, 1 GHz - 26 GHz Remark: conducted measurement	S01_AA01	2025-03-13	Passed	Passed

47 CFR CHAPTER I FCC PART 15
Subpart C §15.247

§ 15.247 (d)

Band Edge Compliance Conducted

The measurement was performed according to ANSI C63.10, chapter 11.11

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency, Band Edge				
Bluetooth BDR, high, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth BDR, low, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, high, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, low, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, high, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, low, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, high, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, low, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, high, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 2 Mbps, low, low	S01_AA01	2025-04-25	Passed	Passed
WLAN ax 20 MHz, high, high	S01_AA01	2025-03-04	Passed	Passed
WLAN ax 20 MHz, low, low	S01_AA01	2025-03-04	Passed	Passed
WLAN b, high, high	S01_AA01	2025-02-13	Passed	Passed
WLAN b, low, low	S01_AA01	2025-02-13	Passed	Passed
WLAN g, high, high	S01_AA01	2025-02-13	Passed	Passed
WLAN g, low, low	S01_AA01	2025-02-13	Passed	Passed
WLAN n 20 MHz, high, high	S01_AA01	2025-03-04	Passed	Passed
WLAN n 20 MHz, low, low	S01_AA01	2025-03-04	Passed	Passed
OFDMA:				
WLAN ax 20 MHz RU 5, high, high	S01_AA01	2025-08-27	Passed	Passed
WLAN ax 20 MHz RU 5, low, low	S01_AA01	2025-08-27	Passed	Passed

47 CFR CHAPTER I FCC PART 15 Subpart C §15.247

§ 15.247 (d)

Band Edge Compliance Restricted Bands

The measurement was performed according to ANSI C63.10, chapter 6.6.5, 11.12.2.5.2.1

Final Result

OP-Mode

Radio Technology, Operating Frequency, Band Edge

Bluetooth BDR, low/high, low/high

Remark: conducted measurement

Setup

Date

FCC

IC

S01_AA01

2025-04-25

Passed

Passed

Bluetooth BDR, low/high, low/high

Remark: radiated measurement with 50 Ohm termination

S02_AG03

2025-07-18

Passed

Passed

2025-12-10

Bluetooth EDR 2, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-04-25

Passed

Passed

Bluetooth EDR 3, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-04-25

Passed

Passed

Bluetooth EDR 3, low/high, low/high

Remark: radiated measurement with 50 Ohm termination

S02_AG03

2025-12-10

Passed

Passed

Bluetooth LE 1 Mbps, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-04-25

Passed

Passed

Bluetooth LE 2 Mbps, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-04-25

Passed

Passed

WLAN ax 20 MHz, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-03-04

Passed

Passed

WLAN ax 20 MHz, low/high, low/high

Remark: radiated measurement with 50 Ohm termination

S02_AG03

2025-03-04

Passed

Passed

WLAN b, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-02-13

Passed

Passed

WLAN b, low/high, low/high

Remark: radiated measurement with 50 Ohm termination

S02_AG03

2025-07-16

Passed

Passed

2025-12-10

WLAN g, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-02-13

Passed

Passed

WLAN n 20 MHz, low/high, low/high

Remark: conducted measurement

S01_AA01

2025-03-04

Passed

Passed

OFDMA:

WLAN ax 20 MHz, low/high, low/high

Remark: conducted measurement, see test case for tested RUs

S01_AA01

2025-08-27

Passed

Passed

47 CFR CHAPTER I FCC PART 15
Subpart C §15.247
§ 15.247 (e)

Power Density

The measurement was performed according to ANSI C63.10, chapter 11.10.2/11.10.3

Final Result

OP-Mode	Setup	Date	FCC	IC
Radio Technology, Operating Frequency				
Bluetooth BDR, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth BDR, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth BDR, mid	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 2, mid	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, high	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, low	S01_AA01	2025-04-25	Passed	Passed
Bluetooth EDR 3, mid	S01_AA01	2025-04-25	Passed	Passed
Bluetooth LE 1 Mbps, high	S01_AA01	2025-05-23	Passed	Passed
Bluetooth LE 1 Mbps, low	S01_AA01	2025-05-23	Passed	Passed
Bluetooth LE 1 Mbps, mid	S01_AA01	2025-05-23	Passed	Passed
Bluetooth LE 2 Mbps, high	S01_AA01	2025-05-23	Passed	Passed
Bluetooth LE 2 Mbps, low	S01_AA01	2025-05-23	Passed	Passed
Bluetooth LE 2 Mbps, mid	S01_AA01	2025-05-23	Passed	Passed
WLAN ax 20 MHz, high	S01_AA01	2025-03-04	Passed	Passed
WLAN ax 20 MHz, low	S01_AA01	2025-03-04	Passed	Passed
WLAN ax 20 MHz, mid	S01_AA01	2025-03-04	Passed	Passed
WLAN b, high	S01_AA01	2025-02-13	Passed	Passed
WLAN b, low	S01_AA01	2025-02-13	Passed	Passed
WLAN b, mid	S01_AA01	2025-03-04	Passed	Passed
WLAN g, high	S01_AA01	2025-02-13	Passed	Passed
WLAN g, low	S01_AA01	2025-02-13	Passed	Passed
WLAN g, mid	S01_AA01	2025-02-13	Passed	Passed
WLAN n 20 MHz, high	S01_AA01	2025-03-04	Passed	Passed
WLAN n 20 MHz, low	S01_AA01	2025-03-04	Passed	Passed
WLAN n 20 MHz, mid	S01_AA01	2025-03-04	Passed	Passed
OFDMA:				
WLAN ax 20 MHz RU 5, high	S01_AA01	2025-08-27	Passed	Passed
WLAN ax 20 MHz RU 5, low	S01_AA01	2025-08-27	Passed	Passed
WLAN ax 20 MHz RU 5, mid	S01_AA01	2025-08-27	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	2025-10-01	--	invalid
rev01	2025-10-22	Corrected channel and freq. in result table power density. Corrected path attenuation and values for Bluetooth Output Power and Power Density.	valid
rev02	2025-12-11	Added radiated plots of lower band edge BT BDR and WLAN b and lower/higher band edge BT EDR 3 Mbps as well as WLAN ax to band edge restricted bands chapter.	valid

COMMENT: -



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



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



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

3 ADMINISTRATIVE DATA

3.1 TESTING LABORATORY

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

The test facility is accredited by the following accreditation organisation:

Laboratory accreditation no: DAkkS D-PL-12140-01-00
FCC Designation Number: DE0015
FCC Test Firm Registration: 929146
ISED CAB Identifier DE0007; ISED#: 3699A

Responsible for accreditation scope: Dipl.-Ing. Marco Kullik
Report Template Version: 2025-02-28

3.2 PROJECT DATA

Responsible for testing and report: Dipl.-Ing. Daniel Gall
Employees who performed the tests: documented internally at 7Layers
Date of Report: 2025-12-11
Testing Period: 2025-02-13 to 2025-12-11

3.3 APPLICANT DATA

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

3.4 MANUFACTURER DATA

Company Name: please see Applicant Data

Address:

Contact Person:

4 TEST OBJECT DATA

4.1 GENERAL EUT DESCRIPTION

Kind of Device product description	Host-based module with WLAN and Bluetooth technology																																																																								
Product name	MAYA-W381																																																																								
Type	MAYA-W381-00B																																																																								
Declared EUT data by the supplier																																																																									
Voltage Type	DC																																																																								
Voltage Level	1.8 / 3.3 V																																																																								
Antenna / Gain	External / 4.1 dBi (For radiated tests antenna ports are terminated by 50 Ohm terminations)																																																																								
Tested Modulation Type	BT Classic: GFSK (BDR), Pi/4 DQPSK (EDR 2), 8DPSK (EDR 3) BT LE: GFSK WLANb: DSSS WLANg/n/ax: OFDM																																																																								
Specific product description for the EUT	The EUT is a Bluetooth and WLAN module. Supported technologies are Bluetooth Classic, Bluetooth Low Energy and WLAN b, g, n, ax in 20 MHz bandwidth.																																																																								
EUT ports (connected cables during testing):	Enclosure Data DC Antenna The EUT is a module with solder pads for surface mounting, so no cables were connected to the EUT itself.																																																																								
Tested datarates	BT Classic: 1 (BDR), 2 (EDR 2) and 3 Mbps (EDR 3) BT LE: 1 and 2 Mbps WLAN b: 2 Mbps, g: 9 Mbps, n: MCS 3, ax: MCS 0																																																																								
Special software used for testing	Scripts provided on a computer board by the applicant.																																																																								
Used output power setting in test software	<table><tr><th colspan="12">2.4 GHz</th></tr><tr><th>Mode</th><th>Ch.1</th><th>Ch.2</th><th>Ch.3</th><th>Ch.4</th><th>Ch.5</th><th>Ch.6</th><th>Ch.7</th><th>Ch.8</th><th>Ch.9</th><th>Ch.10</th><th>Ch.11</th></tr><tr><td>b</td><td>18</td><td></td><td></td><td></td><td></td><td>18</td><td></td><td></td><td></td><td></td><td>18</td></tr><tr><td>g</td><td>16</td><td>17</td><td></td><td></td><td></td><td>18</td><td></td><td></td><td></td><td>17</td><td>16</td></tr><tr><td>n20</td><td>16</td><td>17</td><td></td><td></td><td></td><td>18</td><td></td><td></td><td></td><td>17</td><td>15</td></tr><tr><td>ax20</td><td>16</td><td>17</td><td></td><td></td><td></td><td>18</td><td></td><td></td><td></td><td>17</td><td>16</td></tr></table> Ax 20 OFDMA: 14	2.4 GHz												Mode	Ch.1	Ch.2	Ch.3	Ch.4	Ch.5	Ch.6	Ch.7	Ch.8	Ch.9	Ch.10	Ch.11	b	18					18					18	g	16	17				18				17	16	n20	16	17				18				17	15	ax20	16	17				18				17	16
2.4 GHz																																																																									
Mode	Ch.1	Ch.2	Ch.3	Ch.4	Ch.5	Ch.6	Ch.7	Ch.8	Ch.9	Ch.10	Ch.11																																																														
b	18					18					18																																																														
g	16	17				18				17	16																																																														
n20	16	17				18				17	15																																																														
ax20	16	17				18				17	16																																																														

4.2 EUT MAIN COMPONENTS

Sample Name	Sample Code	Description
EUT aa01	DE1015193aa01	
Sample Parameter	Value	
Serial No.	GZ4B8F44FA23A480400	
HW Version	W3A	
SW Version	28.10.387.10	
Comment		

Sample Name	Sample Code	Description
EUT ag03	DE1015193ag03	
Sample Parameter	Value	
Serial No.	GZ4B8F44FA23A080400	
HW Version	W3A	
SW Version	28.10.387.10	
Comment		

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

4.3 ANCILLARY EQUIPMENT

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

-	-	-
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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
AC/DC supply	Agilent, E3631A, -, -, MY40018563	Laboratory Power Supply 120 V 60 Hz
Control board 1	Radxa, ROCK 5B, v1.46, -, 1	Mini host layer PC

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	EUT aa01, Control board 1,	Conducted Setup
S01_ACDC_AA01	EUT aa01, AC/DC supply	AC conducted setup
S02_AG03	EUT ag03,	Radiated Setup

4.6 OPERATING MODES / TEST CHANNELS

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

WLAN
20 MHz Test Channels:
Channel:
Frequency [MHz]

2.4 GHz ISM 2400 - 2483.5 MHz		
low	mid	high
1	6	11
2412	2437	2462

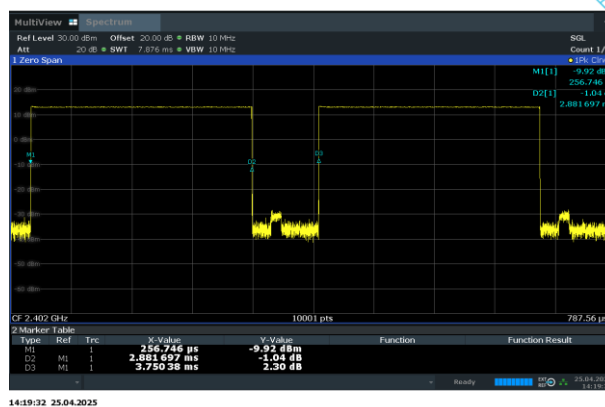
BT Test Channels:
Channel:
Frequency [MHz]

2.4 GHz ISM 2400 - 2483.5 MHz		
low	mid	high
0	39	78
2402	2441	2480

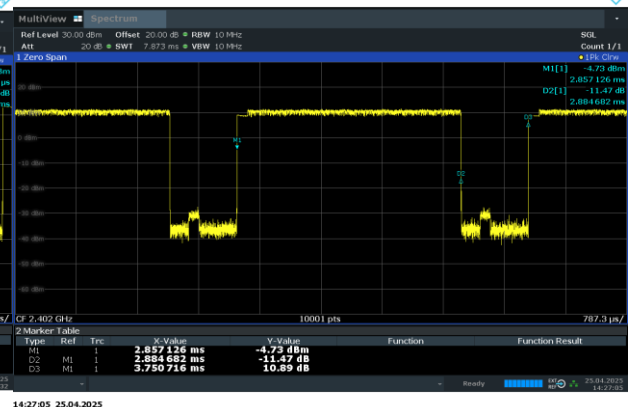
BT LE Test Channels:
Channel:
Frequency [MHz]

2.4 GHz ISM 2400 - 2483.5 MHz		
low	mid	high
0	19	39
2402	2440	2480

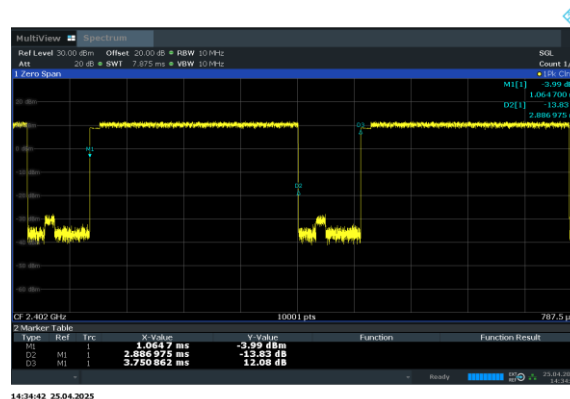
Duty Cycle:



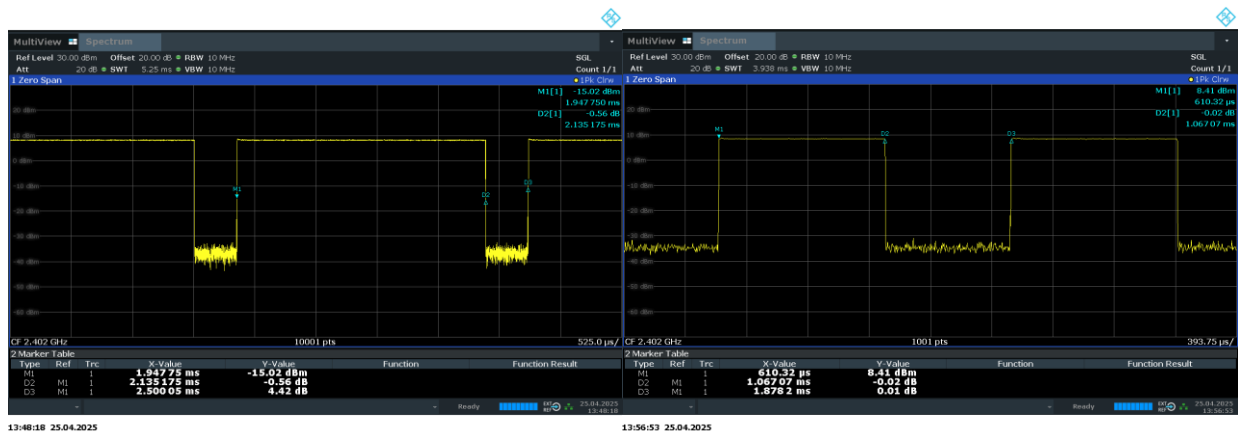
Bluetooth BDR DH5



Bluetooth EDR2 2-DH5



Bluetooth EDR3 3-DH5



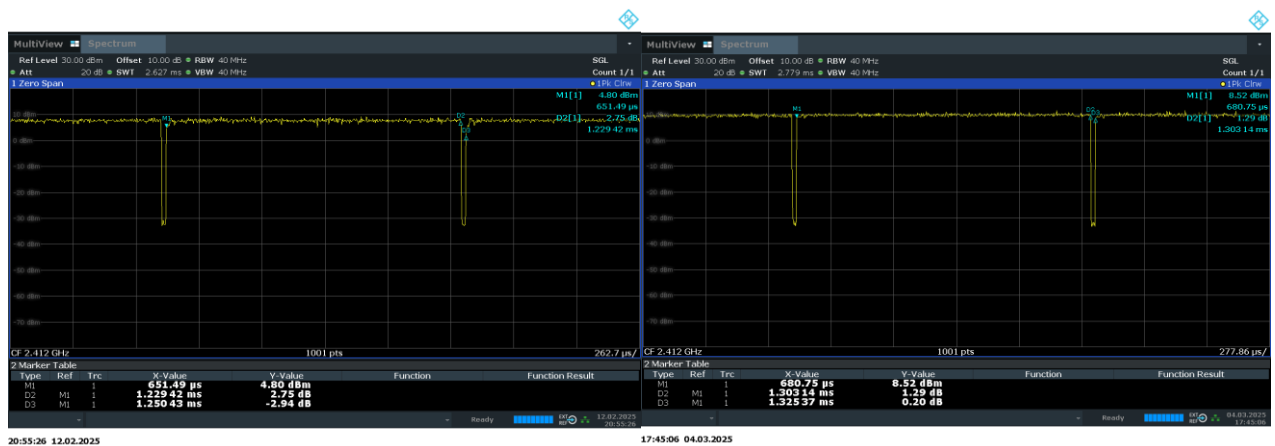
Bluetooth Low Energy 1 Mbps

Bluetooth Low Energy 2Mbps



WLAN b mode 2 Mbps

WLAN g mode 9 Mbps



WLAN n 20 MHz MCS 3

WLAN ax 20 MHz MCS 0

Resulting Duty Cycle					
Mode	BT DH5	BT 2-DH5	BT 3-DH5	BT LE 1 Mbps	BT LE 2 Mbps
Duty Cycle [%]	77	77	77	85	57
Corr. [dB]	2.3	2.3	2.3	1.4	4.9
Mode	WLAN b	WLAN g	WLAN n20	WLAN ax 20	
Duty Cycle [%]	99	99	98	98	
Corr. [dB]	0.0	0.1	0.1	0.1	

Worst case Mode exploration:

Check of Power, Power Density and Band Edge restricted bands on channel 2412:

Mode	Data Rate	Power [dBm]	Power Density [dBm/MHz]	Band Edge PK [dBm]	Band Edge AV [dBm]
WLAN b	1 Mbps	18.7	-8.1	-37.0	-45.6
WLAN b	2 Mbps	19.0	-7.9	-36.4	-44.6
WLAN b	5.5 Mbps	18.6	-8.2	-36.5	-49.9
WLAN b	11 Mbps	18.6	-7.6	-36.6	-47.4
WLAN g	6 Mbps	17.4	-9.1	-31.3	-43.6
WLAN g	9 Mbps	17.9	-8.5	-26.0	-42.0
WLAN g	12 Mbps	17.9	-9.6	-25.7	-41.5
WLAN g	18 Mbps	17.9	-9.9	-27.6	-41.2
WLAN g	24 Mbps	17.6	-9.6	-27.9	-42.4
WLAN g	36 Mbps	17.4	-10.5	-25.8	-41.0
WLAN g	48 Mbps	17.6	-10.5	-17.8	-36.1
WLAN g	54 Mbps	17.8	-10.0	-18.9	-36.2
WLAN n20	MCS 0	15.6	-12.7	-33.6	-46.8
WLAN n20	MCS 1	15.2	-13.2	-34.9	-46.7
WLAN n20	MCS 2	15.2	-13.0	-35.3	-46.5
WLAN n20	MCS 3	15.7	-12.7	-33.3	-46.1
WLAN n20	MCS 4	15.3	-12.9	-34.0	-46.1
WLAN n20	MCS 5	15.3	-14.4	-22.1	-45.2
WLAN n20	MCS 6	15.5	-14.0	-20.8	-44.7
WLAN n20	MCS 7	15.5	-14.0	-21.0	-44.6
WLAN ax20	MCS 0	13.7	-15.3	-34.1	-47.6
WLAN ax20	MCS 1	12.8	-16.4	-34.5	-48.7
WLAN ax20	MCS 2	12.7	-16.6	-35.5	-48.2
WLAN ax20	MCS 3	13.0	-16.2	-34.9	-48.4
WLAN ax20	MCS 4	13.3	-15.9	-35.2	-47.9
WLAN ax20	MCS 5	12.4	-17.5	-32.5	-47.9
WLAN ax20	MCS 6	12.6	-17.7	-33.7	-47.7
WLAN ax20	MCS 7	12.6	-17.7	-33.7	-47.7
WLAN ax20	MCS 8	12.6	-17.7	-33.5	-47.8
WLAN ax20	MCS 9	12.7	-17.3	-33.8	-48.0
WLAN ax20	MCS 10	12.7	-17.4	-33.6	-47.8
WLAN ax20	MCS 11	12.6	-17.1	-30.8	-48.2

Chosen mode: WLAN b: 2 Mbps (worst case overall), g: 9 Mbps (highest power / PD), exception: 48 Mbps at BE restricted bands, n20: MCS3 (highest power / PD), MCS6 at BE restricted bands, ax20: MCS0 (worst case Power / PD / AV BE value)

4.7 PRODUCT LABELLING

4.7.1 FCC ID LABEL

Please refer to the documentation of the applicant.

4.7.2 LOCATION OF THE LABEL ON THE EUT

Please refer to the documentation of the applicant.

5 TEST RESULTS

5.1 CONDUCTED EMISSIONS AT AC MAINS

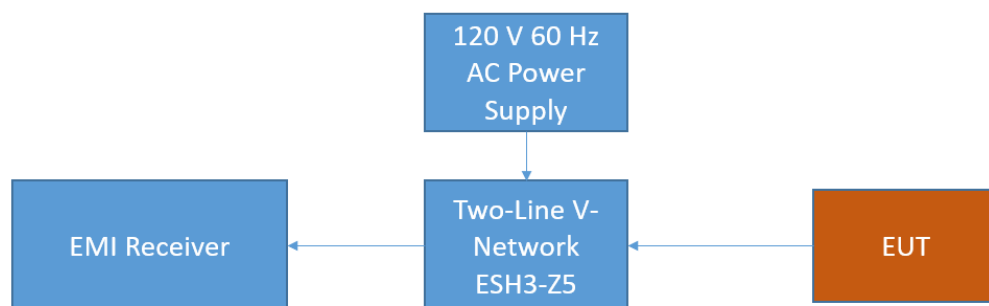
Standard **FCC Part 15 Subpart C**

The test was performed according to:

ANSI C63.10, chapter 6.2

5.1.1 TEST DESCRIPTION

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



FCC Conducted Emissions on AC

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

Step 1: Preliminary scan

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

EMI receiver settings:

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

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

Step 2: Final measurement

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

EMI receiver settings:

- Detector: Quasi-Peak & (CISPR) Average
- IF Bandwidth: 9 kHz
- Measuring time: 1 s / frequency

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

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

The highest value is reported.

5.1.2 TEST REQUIREMENTS / LIMITS

FCC Part 15, Subpart C, §15.207

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

Used conversion factor: Limit (dBμV) = 20 log (Limit (μV)/1μV).

5.1.3 TEST PROTOCOL

Temperature: 26 °C
 Air Pressure: 1006 hPa
 Humidity: 47 %
 BT BDR Ch 39

Power line	PE	Frequency [MHz]	Measured value QP [dBμV]	Measured value AV [dBμV]	Limit [dBμV]	Margin [dB]
L1	GND	2.803	---	26.6	46.0	19.4
L1	GND	4.002	---	26.3	46.0	19.7
L1	GND	12.005	---	42.4	50.0	7.6
L1	GND	12.005	46.1	---	60.0	14.0
L1	FLO	24.009	46.4	---	60.0	13.6
L1	FLO	24.009	---	44.6	50.0	5.4

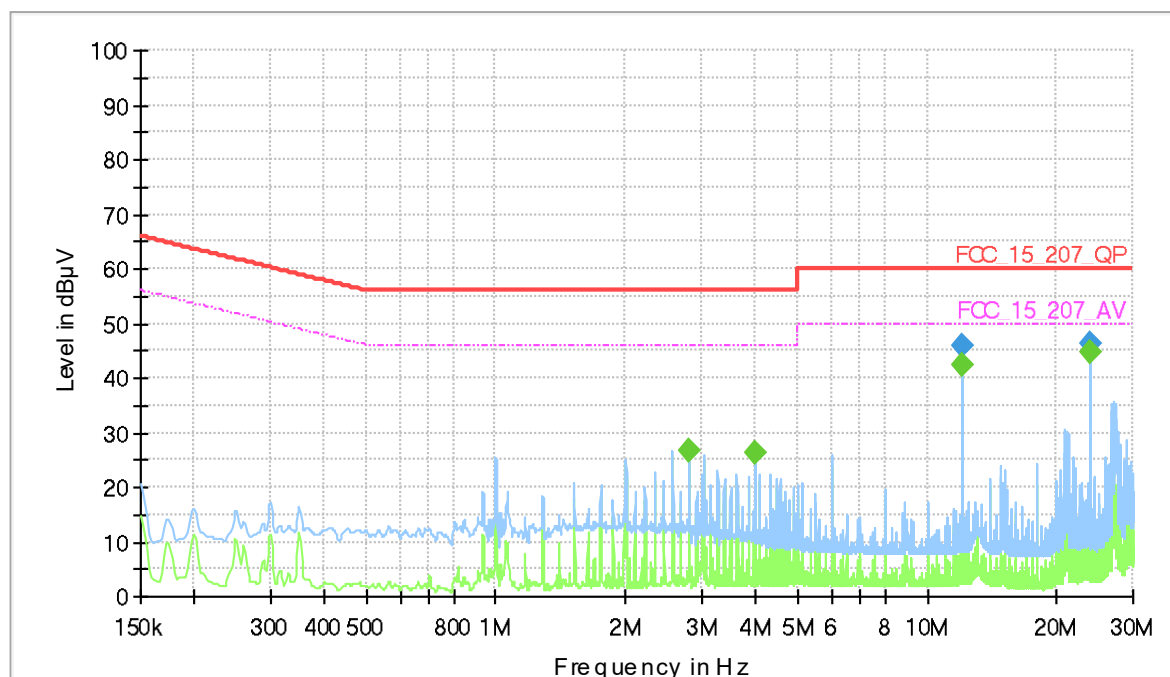
Temperature: 26 °C
 Air Pressure: 1006 hPa
 Humidity: 47 %
 WLAN b mode 2 Mbps Ch. 7

Power line	PE	Frequency [MHz]	Measured value QP [dBμV]	Measured value AV [dBμV]	Limit [dBμV]	Margin [dB]
L1	GND	2.805	---	26.5	46.0	19.5
L1	GND	4.002	---	26.3	46.0	19.7
L1	GND	12.005	---	42.4	50.0	7.6
L1	GND	12.005	46.1	---	60.0	14.0
L1	FLO	24.009	46.1	---	60.0	13.9
L1	FLO	24.009	---	44.5	50.0	5.5

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

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

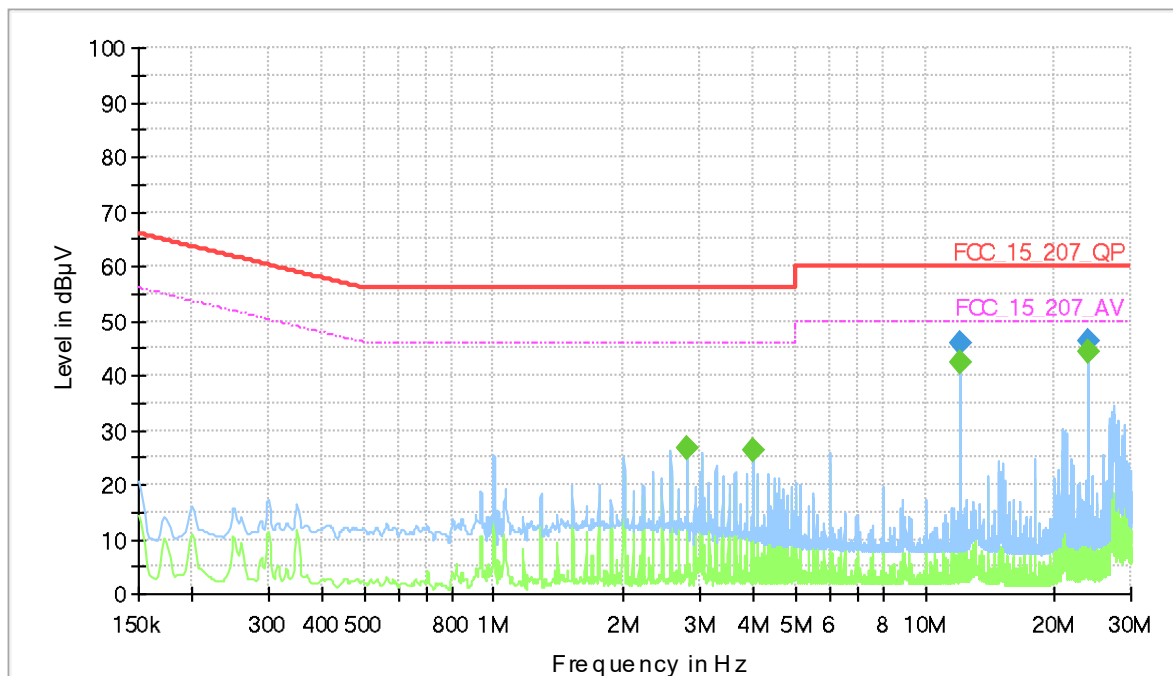
Operating mode = BT BDR, Connection to AC mains = via ancillary/auxiliary equipment (S01_AA01)



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	PE	Corr. (dB)
2.802750	---	26.58	46.00	19.42	1000.0	9.000	L1	GND	10.3
4.002000	---	26.29	46.00	19.71	1000.0	9.000	L1	GND	10.3
12.005250	---	42.38	50.00	7.62	1000.0	9.000	L1	GND	10.7
12.005250	46.05	---	60.00	13.95	1000.0	9.000	L1	GND	10.7
24.009000	46.41	---	60.00	13.59	1000.0	9.000	L1	FLO	11.2
24.009000	---	44.61	50.00	5.39	1000.0	9.000	L1	FLO	11.2

Operating mode = WLAN b, Connection to AC mains = via ancillary/auxiliary equipment
(S01_AA01)



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	PE	Corr. (dB)
2.805000	---	26.53	46.00	19.47	1000.0	9.000	L1	GND	10.3
4.002000	---	26.27	46.00	19.73	1000.0	9.000	L1	GND	10.3
12.005250	---	42.38	50.00	7.62	1000.0	9.000	L1	GND	10.7
12.005250	46.05	---	60.00	13.95	1000.0	9.000	L1	GND	10.7
24.009000	46.08	---	60.00	13.92	1000.0	9.000	L1	FLO	11.2
24.009000	---	44.49	50.00	5.51	1000.0	9.000	L1	FLO	11.2

5.1.5 TEST EQUIPMENT USED

- Conducted Emissions FCC

5.2 OCCUPIED BANDWIDTH (6 DB)

Standard **FCC Part 15 Subpart C**

The test was performed according to:
 ANSI C63.10, chapter 11.8.1

5.2.1 TEST DESCRIPTION

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

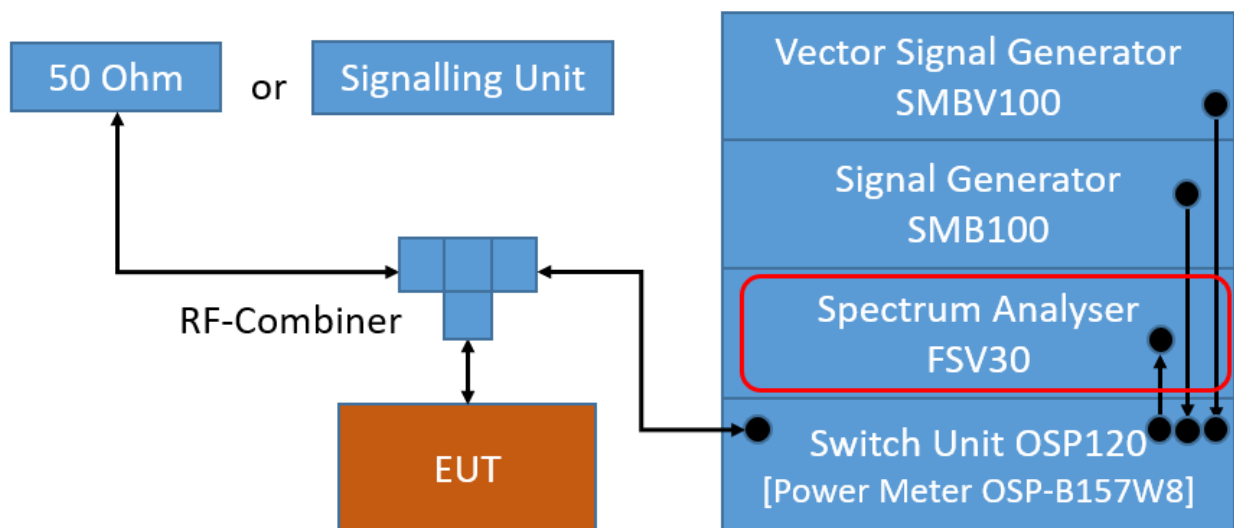
The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

The results recorded were measured with the modulation which produce the worst-case (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.

Analyser settings:

- Resolution Bandwidth (RBW): 1-5 % of OBW, at least 100 kHz
- Video Bandwidth (VBW): $\geq 3 \times \text{RBW}$
- Span: see plots
- Trace: Maxhold
- Sweeps: see plots
- Sweep time: Auto
- Detector: Peak



TS8997; Channel Bandwidth

5.2.2 TEST REQUIREMENTS / LIMITS

FCC Part 15, Subpart C, §15.247 (a) (2)

Systems using digital modulation techniques may operate in the 902-928 MHz and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

5.2.3 TEST PROTOCOL

Ambient temperature: 21 - 23 °C
 Air Pressure: 991 - 1020 hPa
 Humidity: 31 - 45 %
 BT GFSK (1-DH5)

Band / Mode	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	0	2402	0.505	0.5	0.005
	39	2441	0.505	0.5	0.005
	78	2480	0.505	0.5	0.005

BT π/4 DQPSK (2-DH5)

Band / Mode	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	0	2402	1.109	0.5	0.609
	39	2441	1.090	0.5	0.590
	78	2480	1.108	0.5	0.608

BT 8-DPSK (3-DH5)

Band	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	0	2402	1.089	0.5	0.589
	39	2441	1.089	0.5	0.589
	78	2480	1.099	0.5	0.599

BT LE 1 Mbit/s

Band / Mode	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	0	2402	0.741	0.5	0.241
	19	2440	0.759	0.5	0.259
	39	2480	0.744	0.5	0.244

BT LE 2 Mbit/s

Band / Mode	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	0	2402	1.403	0.5	0.903
	19	2440	1.399	0.5	0.899
	39	2480	1.394	0.5	0.894

WLAN b-Mode; 20 MHz; 2 Mbit/s

Band	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	1	2412	7.9	0.5	7.4
	6	2437	7.7	0.5	7.2
	11	2462	7.7	0.5	7.2

WLAN g-Mode; 20 MHz; 9 Mbit/s

Band	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	1	2412	16.2	0.5	15.7
	6	2437	16.2	0.5	15.7
	11	2462	16.2	0.5	15.7

WLAN n-Mode; 20 MHz; MCS3

Band	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	1	2412	17.5	0.5	17.0
	6	2437	17.6	0.5	17.1
	11	2462	17.6	0.5	17.1

WLAN ax-Mode; 20 MHz; MCS0

Band	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	1	2412	18.9	0.5	18.4
	6	2437	18.9	0.5	18.4
	11	2462	18.9	0.5	18.4

OFDMA:

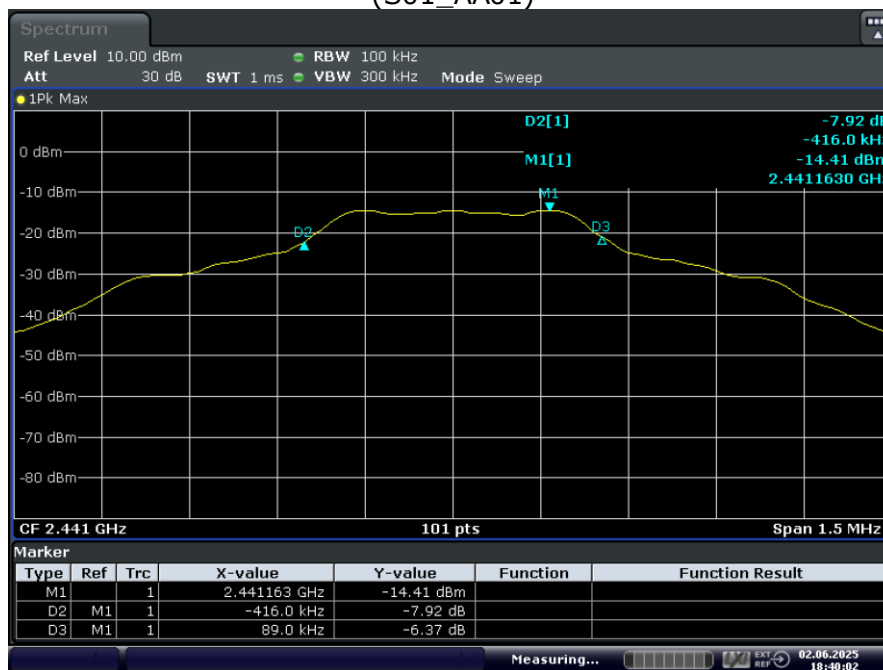
WLAN ax-Mode RU 5; 20 MHz; MCS0

Band	Channel No.	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Margin to Limit [MHz]
2.4 GHz ISM	1	2412	2.1	0.5	1.6
	6	2437	2.1	0.5	1.6
	11	2462	2.1	0.5	1.6

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

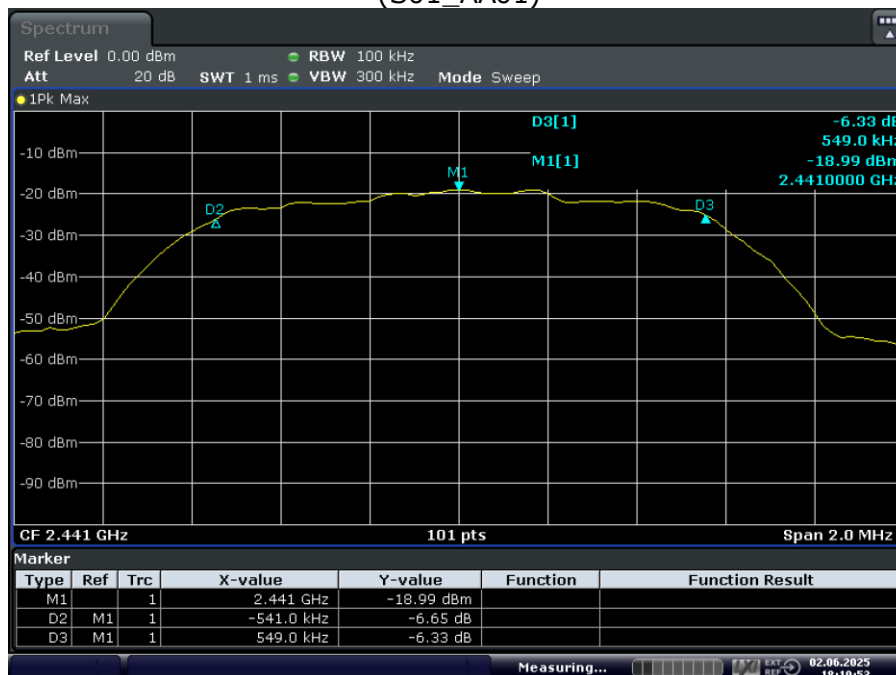
5.2.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Radio Technology = Bluetooth BDR, Operating Frequency = mid
(S01_AA01)



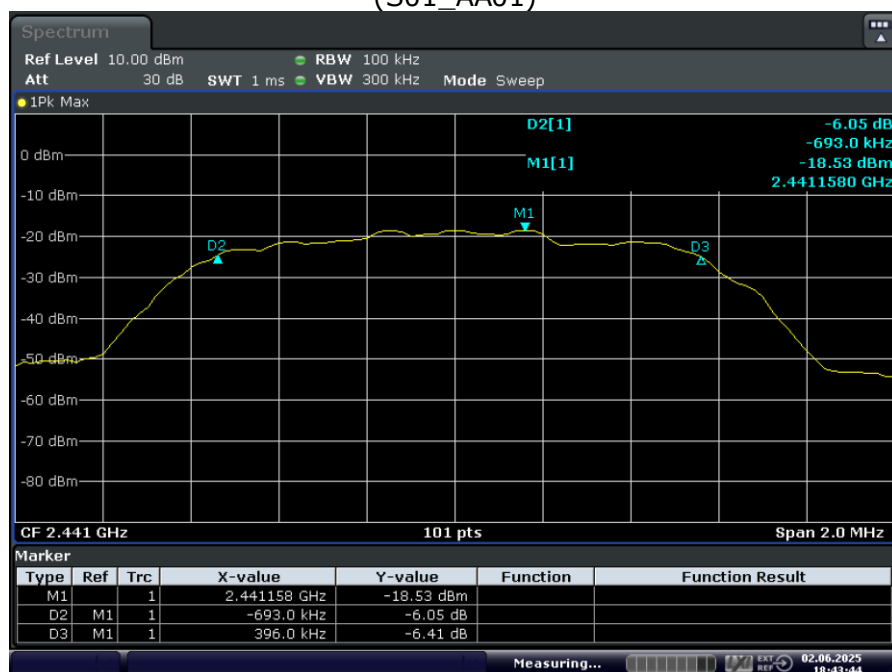
Date: 2 JUN 2025 18:40:03

Radio Technology = Bluetooth EDR 2 Mbps, Operating Frequency = mid
(S01_AA01)



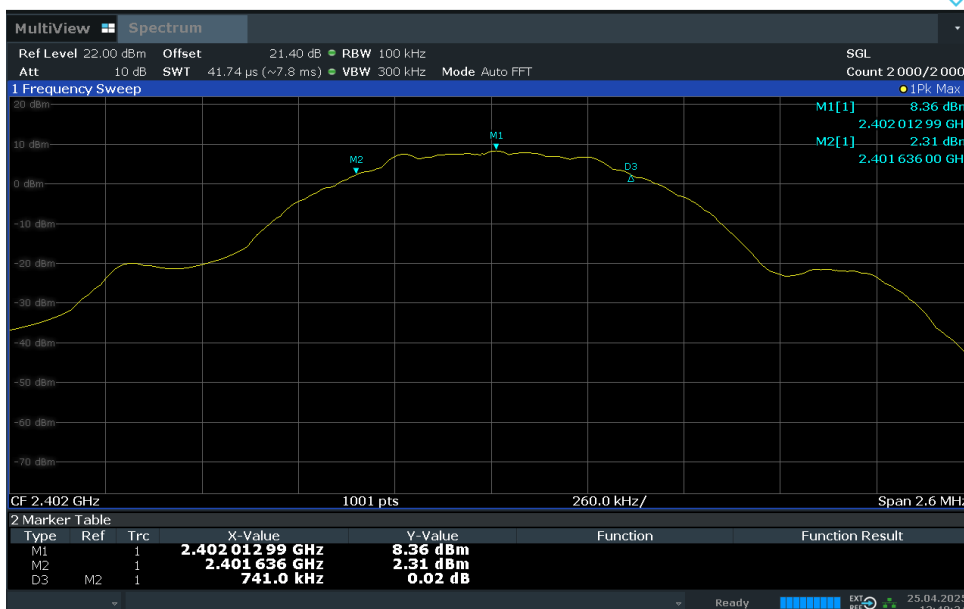
Date: 2 JUN 2025 18:19:53

Radio Technology = Bluetooth EDR 3 Mbps, Operating Frequency = mid
(S01_AA01)



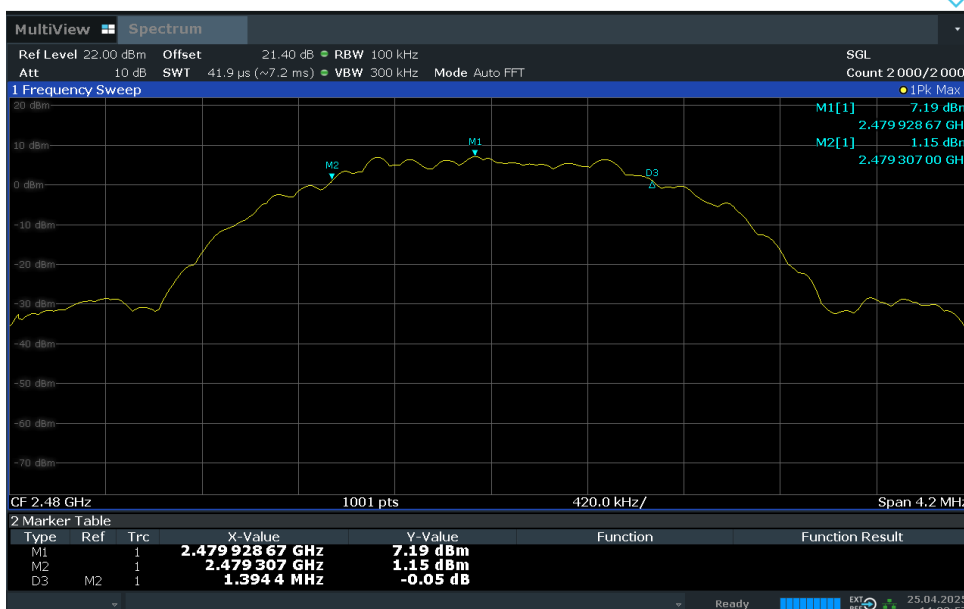
Date: 2.JUN.2025 18:43:44

Radio Technology = Bluetooth LE 1 Mbps, Operating Frequency = low
(S01_AA01)



13:48:34 25.04.2025

Radio Technology = Bluetooth LE 2 Mbps, Operating Frequency = high
(S01_AA01)



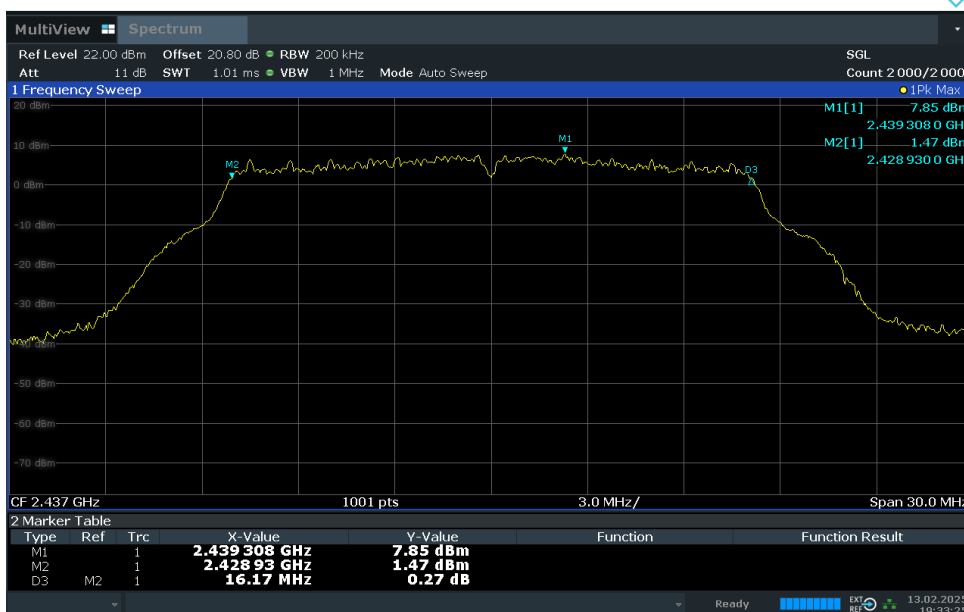
14:02:58 25.04.2025

Radio Technology = WLAN b, Operating Frequency = mid
(S01_AA01)



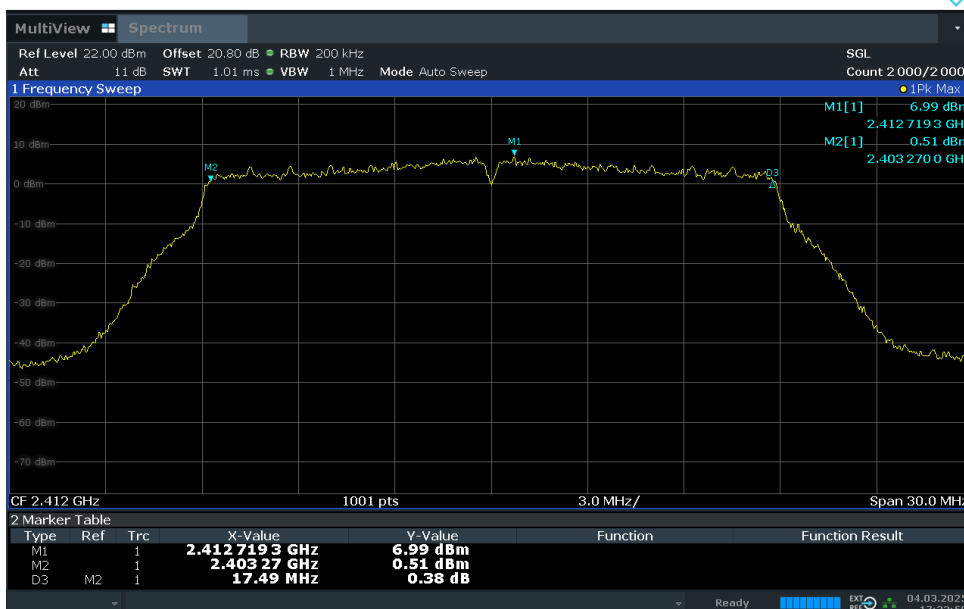
09:50:07 23.05.2025

Radio Technology = WLAN g, Operating Frequency = mid
(S01_AA01)



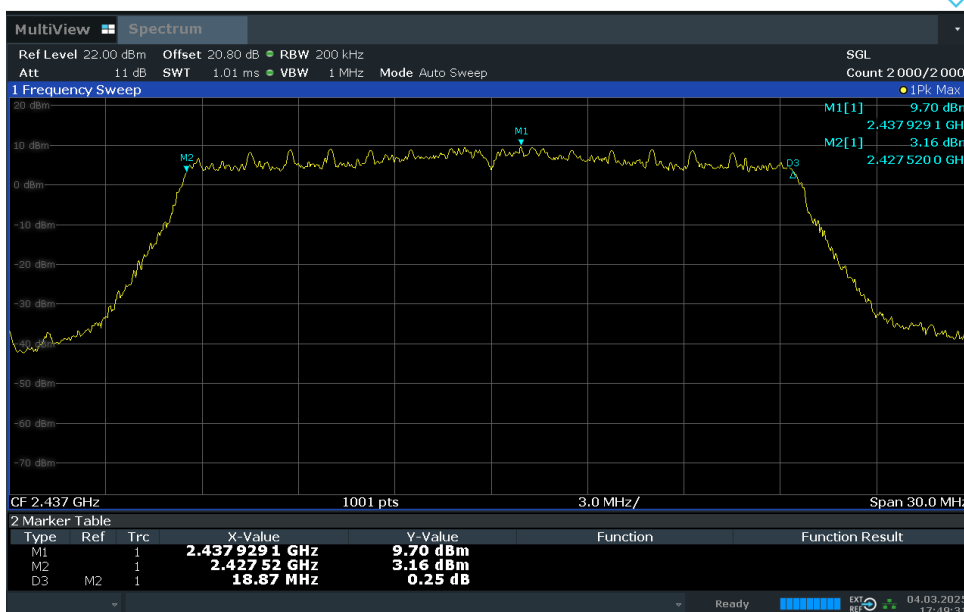
19:33:26 13.02.2025

Radio Technology = WLAN n 20 MHz, Operating Frequency = low
(S01_AA01)



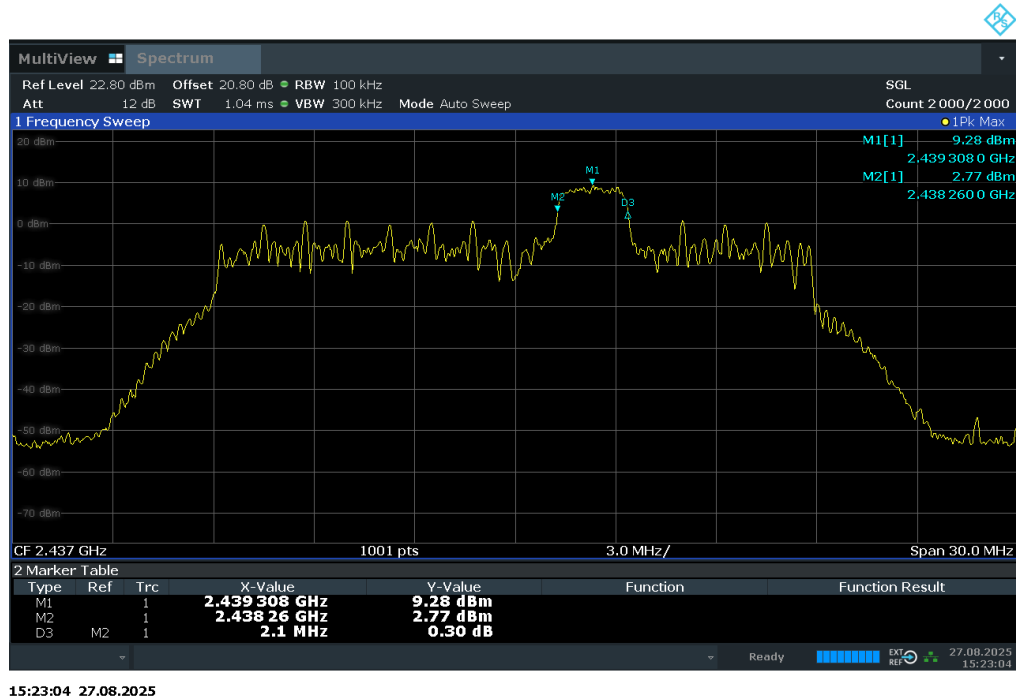
17:32:59 04.03.2025

Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid
(S01_AA01)



17:49:32 04.03.2025

Radio Technology = WLAN ax 20 MHz RU 5, Operating Frequency = mid
(S01_AA01)



5.2.5 TEST EQUIPMENT USED

- R&S TS8997

5.3 OCCUPIED BANDWIDTH (99%)

Standard **FCC Part 15 Subpart C**

The test was performed according to:
 ANSI C63.10, chapter 6.9.3

5.3.1 TEST DESCRIPTION

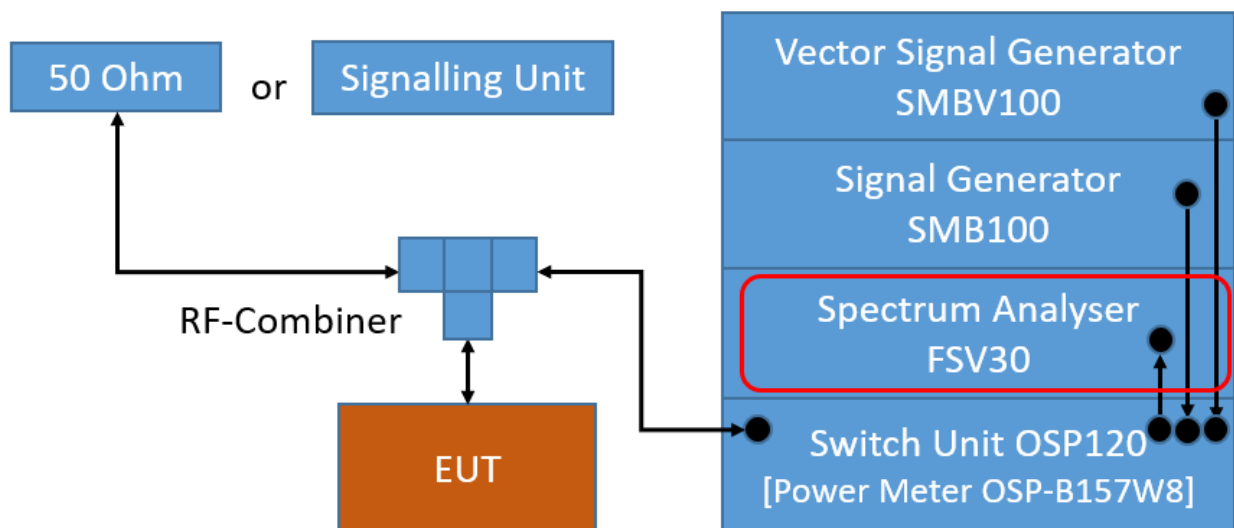
The Equipment Under Test (EUT) was set up to perform the occupied bandwidth measurements.

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 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.

Analyser settings:

- Resolution Bandwidth (RBW): 1 to 5 % of the OBW
- Video Bandwidth (VBW): ≥ 3 times the RBW
- Span: 1.5 to 5 times the OBW
- Trace: Maxhold
- Sweeps: see plots
- Sweep time: Auto
- Detector: Peak



TS8997; Channel Bandwidth

5.3.2 TEST REQUIREMENTS / LIMITS

No applicable limit.

5.3.3 TEST PROTOCOL

Ambient temperature: 21 - 23 °C
 Air Pressure: 991 - 1020 hPa
 Humidity: 31 - 45 %
 BT GFSK (1-DH5)

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	0	2402	0.871
	39	2441	0.872
	78	2480	0.872

BT π/4 DQPSK (2-DH5)

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	0	2402	1.196
	39	2441	1.195
	78	2480	1.196

BT 8-DPSK (3-DH5)

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	0	2402	1.206
	39	2441	1.206
	78	2480	1.205

BT LE 1 Mbit/s

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	0	2402	1.044
	19	2440	1.045
	39	2480	1.044

BT LE 2 Mbit/s

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	0	2402	2.037
	19	2440	2.038
	39	2480	2.039

WLAN b-Mode; 20 MHz; 2 Mbit/s

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	1	2412	11.5
	6	2437	11.2
	11	2462	11.4

WLAN g-Mode; 20 MHz; 9 Mbit/s

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	1	2412	18.3
	6	2437	18.3
	11	2462	18.3

WLAN n-Mode; 20 MHz; MCS3

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	1	2412	17.7
	6	2437	17.7
	11	2462	17.7

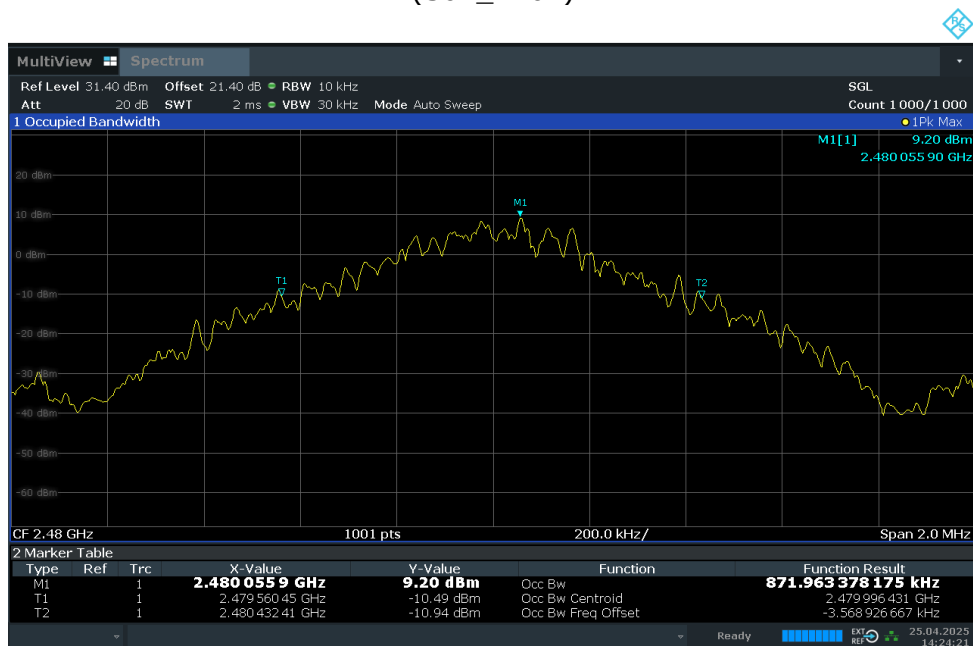
WLAN ax-Mode; 20 MHz; MCS0

Band	Channel No.	Frequency [MHz]	99 % Bandwidth [MHz]
2.4 GHz ISM	1	2412	19.0
	6	2437	19.0
	11	2462	18.9

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

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

Radio Technology = Bluetooth BDR, Operating Frequency = high
(S01_AA01)



14:24:21 25.04.2025

Radio Technology = Bluetooth EDR 2, Operating Frequency = high
(S01_AA01)



14:32:16 25.04.2025

Radio Technology = Bluetooth EDR 3, Operating Frequency = low
(S01_AA01)



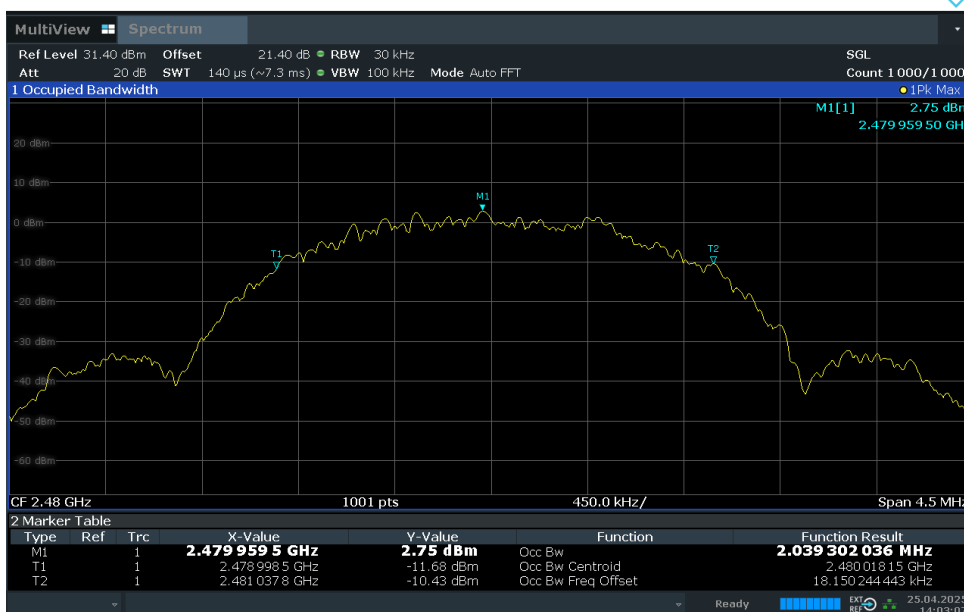
14:35:16 25.04.2025

Radio Technology = Bluetooth LE 1 Mbps, Operating Frequency = mid (S01_AA01)



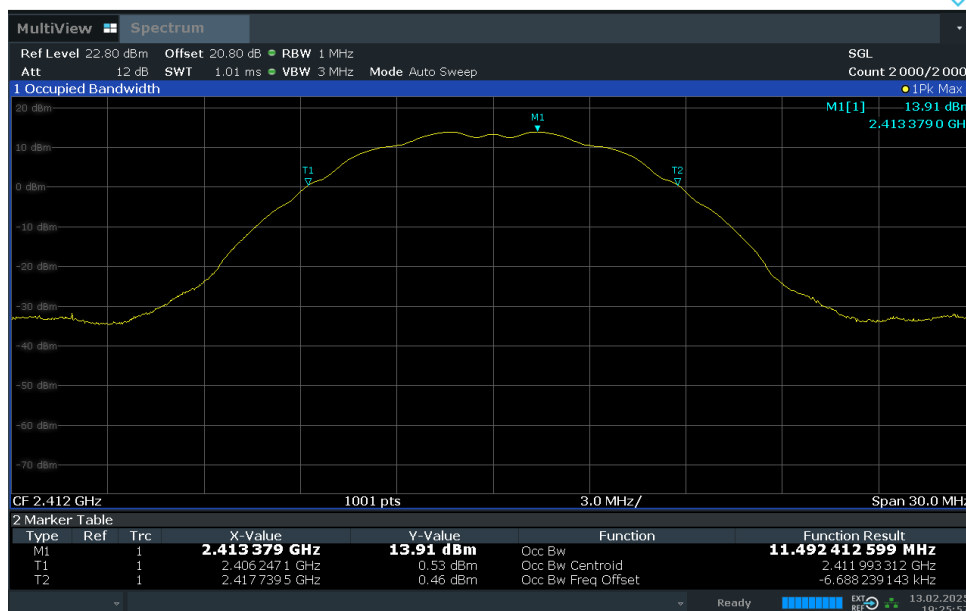
13:52:48 25.04.2025

Radio Technology = Bluetooth LE 2 Mbps, Operating Frequency = high (S01_AA01)



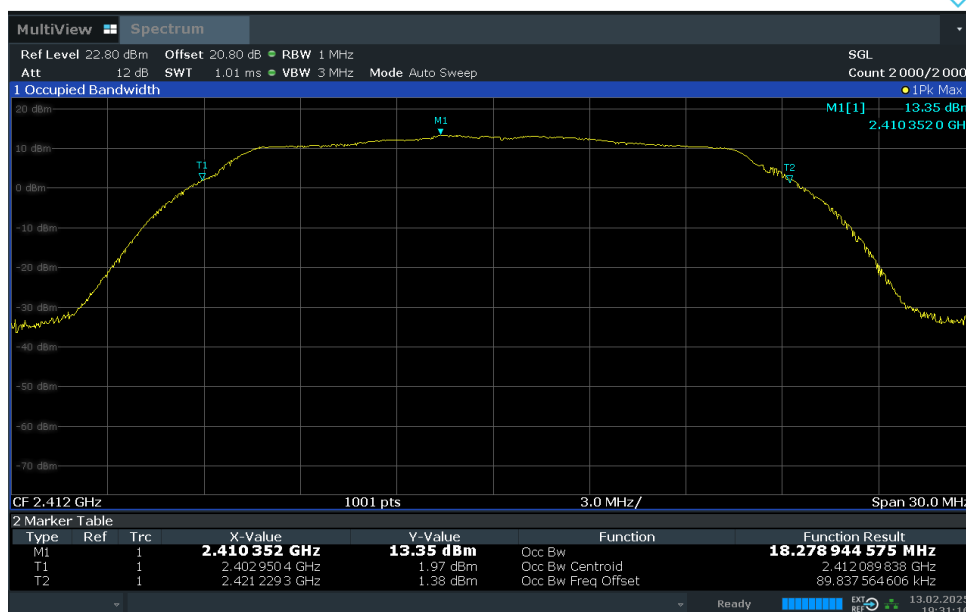
14:03:07 25.04.2025

Radio Technology = WLAN b, Operating Frequency = low
(S01_AA01)



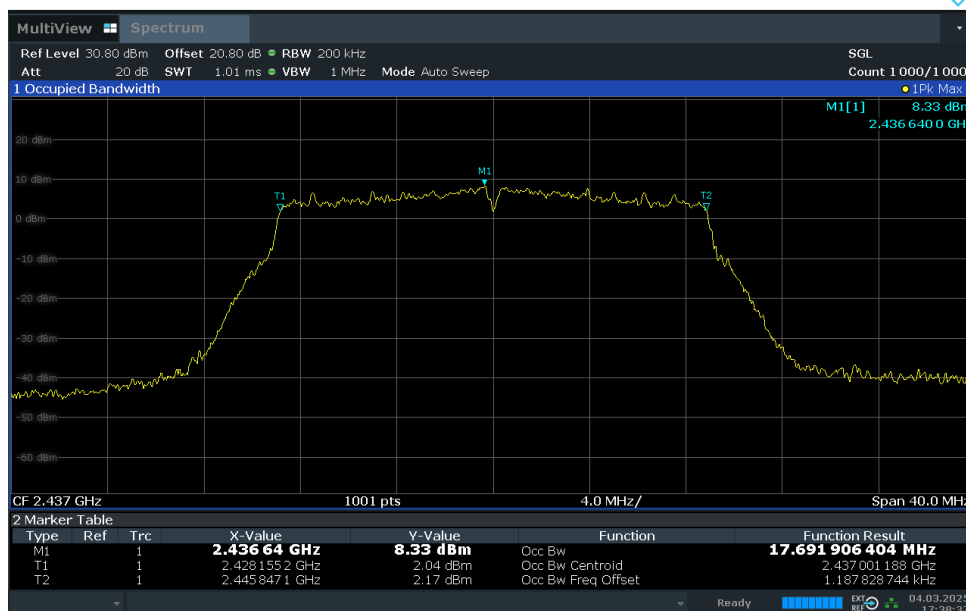
19:25:58 13.02.2025

Radio Technology = WLAN g, Operating Frequency = low
(S01_AA01)



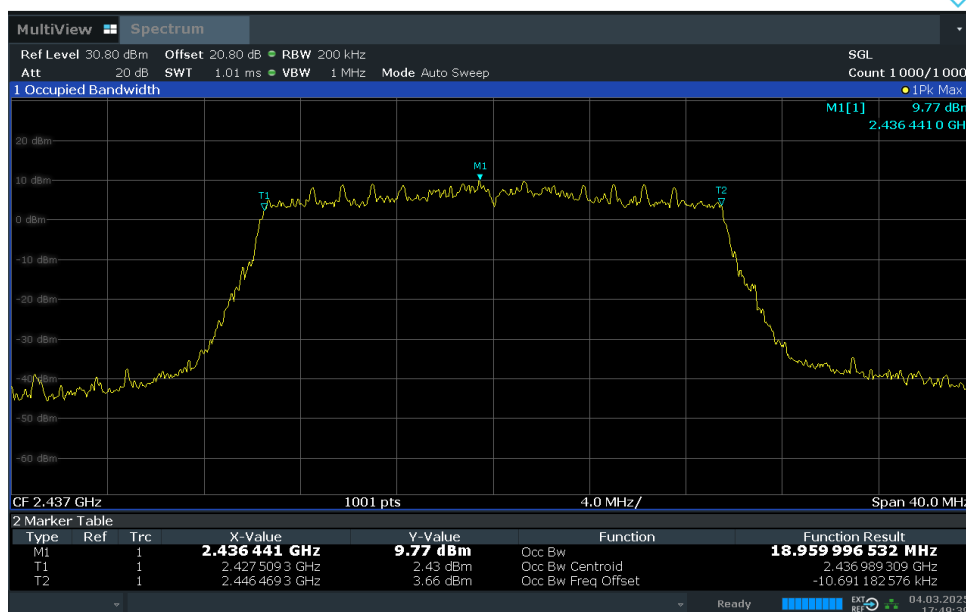
19:31:16 13.02.2025

Radio Technology = WLAN n 20 MHz, Operating Frequency = mid (S01_AA01)



17:38:38 04.03.2025

Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid (S01_AA01)



17:49:40 04.03.2025

5.3.5 TEST EQUIPMENT USED

- R&S TS8997

5.4 PEAK POWER OUTPUT

Standard **FCC Part 15 Subpart C**

The test was performed according to:
 ANSI C63.10, chapter 11.9.1.1/11.9.2.3.2

5.4.1 TEST DESCRIPTION

DTS EQUIPMENT:

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.

Maximum peak conducted output power (Bluetooth):

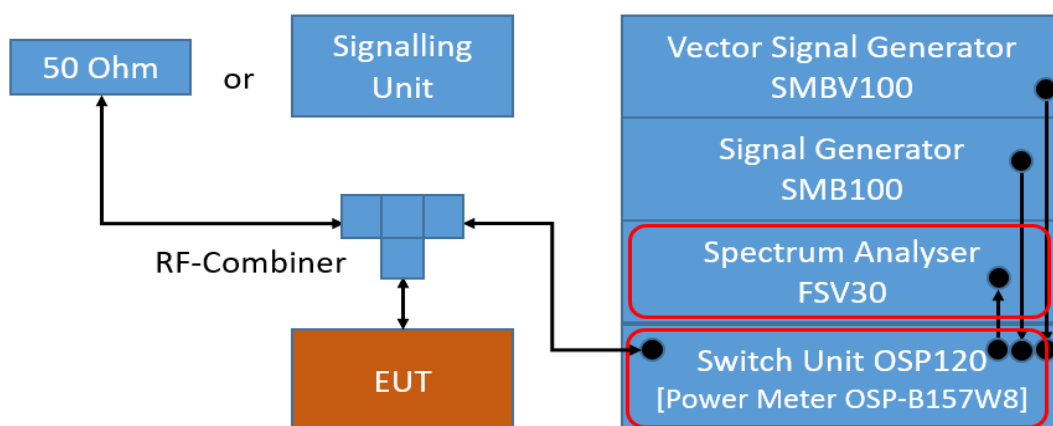
The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered. The reference level of the spectrum analyser was set higher than the output power of the EUT.

Analyser settings:

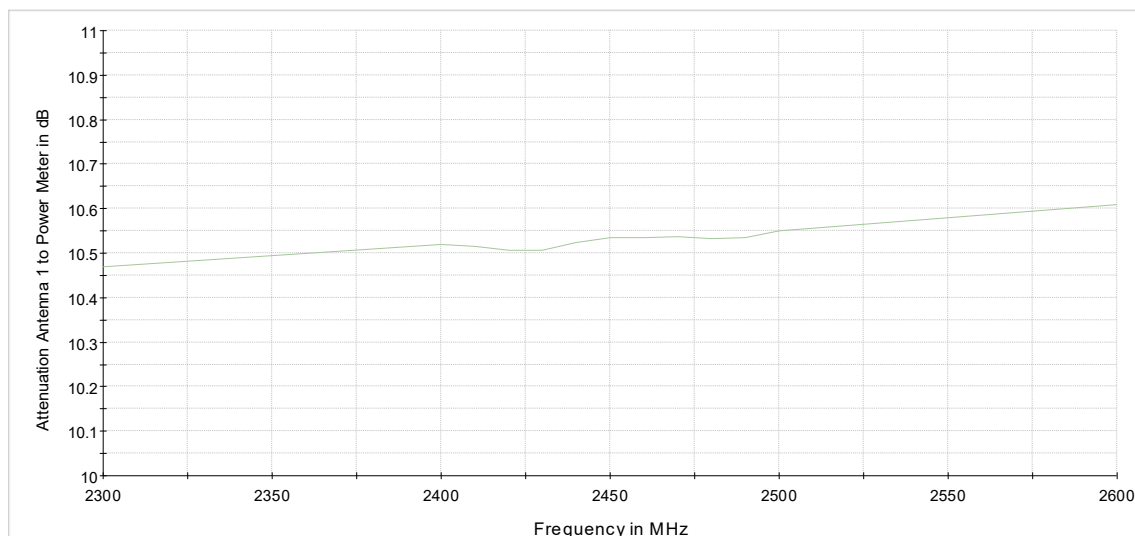
- Resolution Bandwidth (RBW): $\geq$ DTS bandwidth
- Video Bandwidth (VBW): $\geq$ 3 times RBW or maximum of analyzer
- Span: $\geq$ 3 times RBW
- Trace: Maxhold
- Sweeps: see plots
- Sweep time: Auto
- Detector: Peak

Maximum conducted average output power (WLAN):

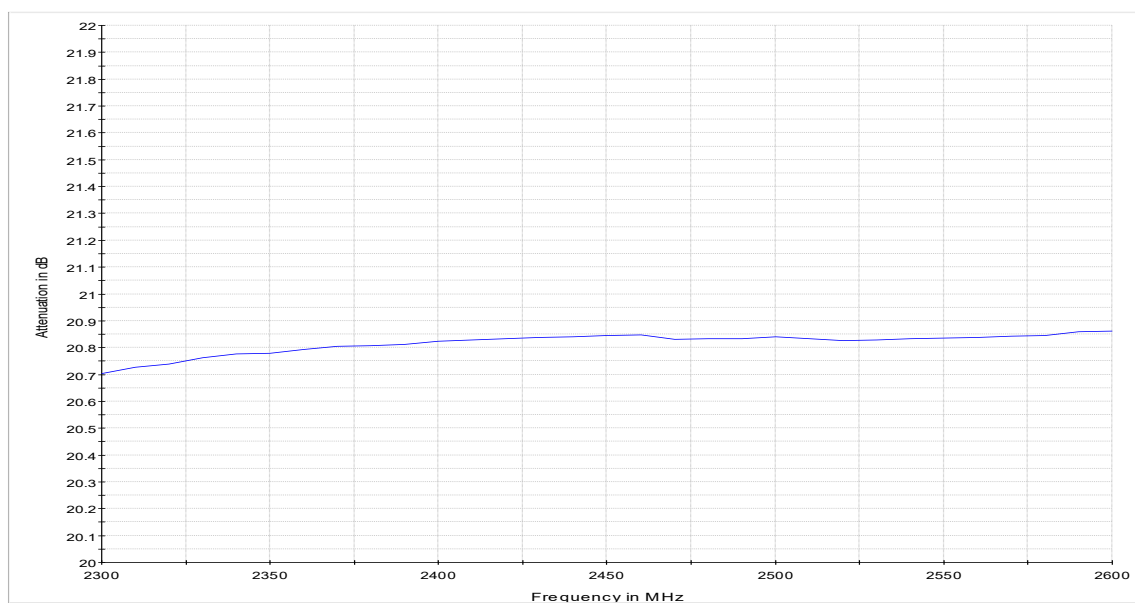
The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered. Measurement is performed using the gated RF average power meter integrated in the OSP 120 module OSP-B157W8 with signal bandwidth > 300 MHz.



TS8997; Output Power



Attenuation of the measurement path to Power Meter



Attenuation of the measurement path to Analyser

5.4.2 TEST REQUIREMENTS / LIMITS

DTS devices:

FCC Part 15, Subpart C, §15.247 (b) (3)

For systems using digital modulation techniques in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands: 1 watt.

==> Maximum conducted peak output power: 30 dBm (excluding antenna gain, if antennas with directional gains that do not exceed 6 dBi are used).

Frequency Hopping Systems:

FCC Part 15, Subpart C, §15.247 (b) (1)

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

FCC Part 15, Subpart C, §15.247 (b) (2)

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

Used conversion factor: $\text{Limit (dBm)} = 10 \log (\text{Limit (W)}/1\text{mW})$

5.4.3 TEST PROTOCOL

Ambient temperature: 21 - 23 °C
 Air Pressure: 991 - 1020 hPa
 Humidity: 31 - 45 %
 BT GFSK (1-DH5)

Band	Channel No.	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	0	2402	14.4	30.0	15.6	18.5
	39	2441	14.6	30.0	15.4	18.7
	78	2480	14.5	30.0	15.5	18.6

BT $\pi/4$ DQPSK (2-DH5)

Band	Channel No.	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	0	2402	12.1	30.0	17.9	16.2
	39	2441	11.9	30.0	18.1	16.0
	78	2480	11.7	30.0	18.3	15.8

BT 8-DPSK (3-DH5)

Band	Channel No.	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	0	2402	12.6	30.0	17.4	16.7
	39	2441	12.4	30.0	17.6	16.5
	78	2480	12.2	30.0	17.8	16.3

BT LE 1 Mbit/s

Band	Channel No.	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	0	2402	9.4	30.0	20.6	13.5
	19	2440	9.7	30.0	20.3	13.8
	39	2480	9.7	30.0	20.3	13.8

BT LE 2 Mbit/s

Band	Channel No.	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	0	2402	9.6	30.0	20.4	13.7
	19	2440	10.0	30.0	20.0	14.1
	39	2480	10.2	30.0	19.8	14.3

WLAN b-Mode; 20 MHz; 2 Mbit/s

Band	Channel No.	Frequency [MHz]	Maximum Average Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	1	2412	19.0	30.0	11.0	23.1
	6	2437	18.9	30.0	11.1	23.0
	11	2462	18.7	30.0	11.3	22.8

WLAN g-Mode; 20 MHz; 9 Mbit/s

Band	Channel No.	Frequency [MHz]	Maximum Average Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	1	2412	15.6	30.0	14.4	19.7
	6	2437	17.7	30.0	12.3	21.8
	11	2462	15.3	30.0	14.7	19.4

WLAN n-Mode; 20 MHz; MCS3

Band	Channel No.	Frequency [MHz]	Maximum Average Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	1	2412	15.7	30.0	14.3	19.8
	6	2437	17.6	30.0	12.4	21.7
	11	2462	14.2	30.0	15.8	18.3

WLAN ax-Mode; 20 MHz; MCS0

Band	Channel No.	Frequency [MHz]	Maximum Average Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	1	2412	15.9	30.0	14.1	20.0
	6	2437	17.6	30.0	12.4	21.7
	11	2462	15.6	30.0	14.4	19.7

OFDMA:

WLAN ax-Mode RU 5; 20 MHz; MCS0

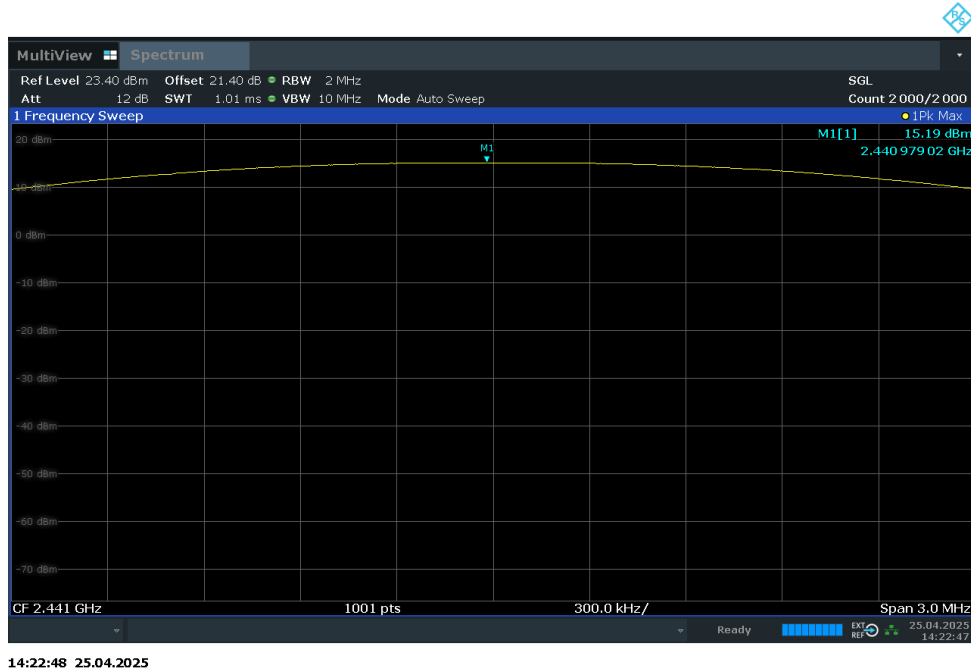
Band	Channel No.	Frequency [MHz]	Maximum Average Power [dBm]	Limit [dBm]	Margin to Limit [dB]	E.I.R.P [dBm]
2.4 GHz ISM	1	2412	14.9	30.0	15.1	19.0
	6	2437	17.1	30.0	12.9	21.2
	11	2462	14.7	30.0	15.3	18.8

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

Plots are only provided for Bluetooth, since WLAN was tested with a power meter.
 Offset in plots is 0.6 dB too high, values in table above are reduced accordingly.

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

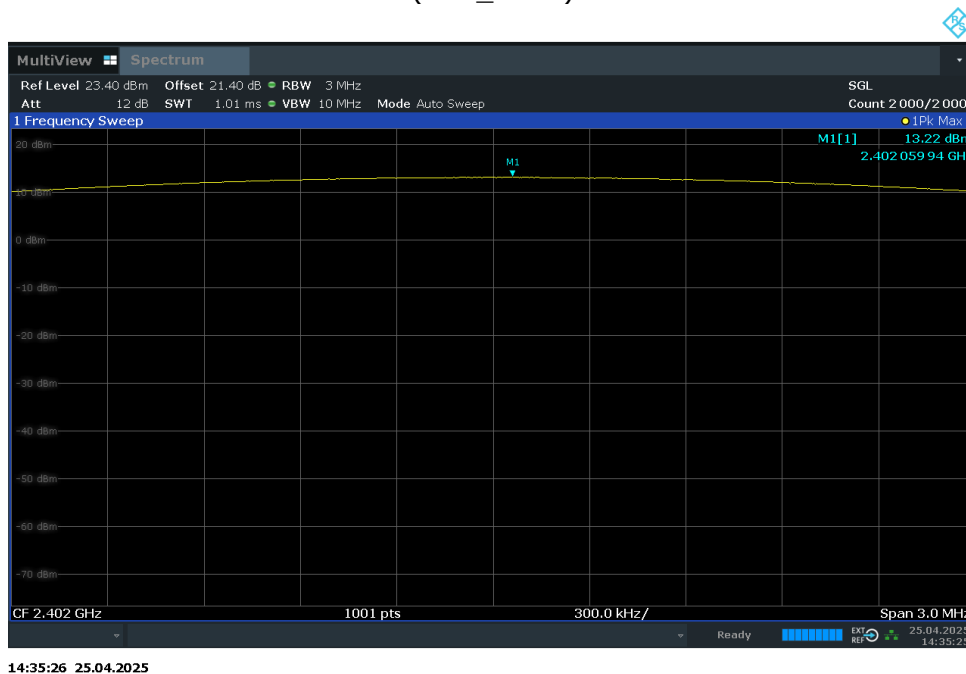
Radio Technology = Bluetooth BDR, Operating Frequency = mid, Measurement method = conducted
(S01_AA01)



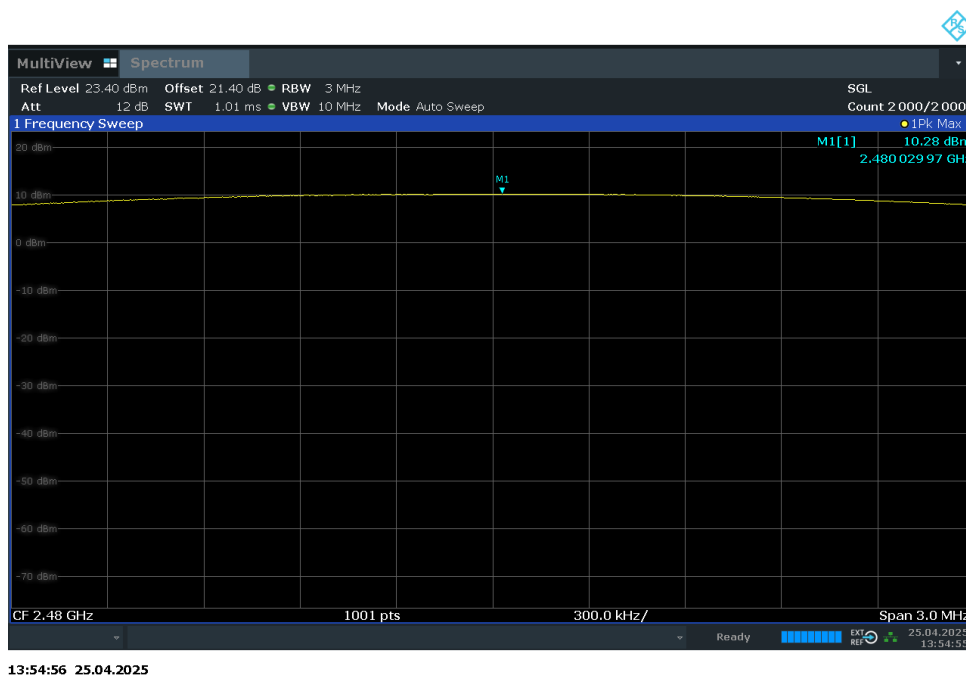
Radio Technology = Bluetooth EDR 2, Operating Frequency = low, Measurement method = conducted
(S01_AA01)



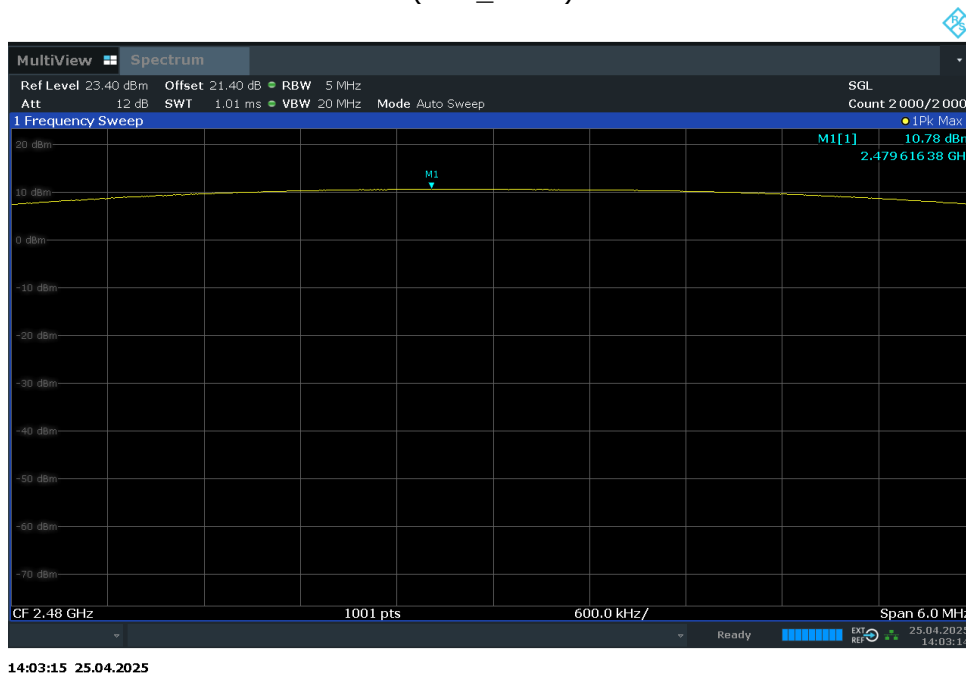
Radio Technology = Bluetooth EDR 3, Operating Frequency = low, Measurement method =
conducted
(S01_AA01)



Radio Technology = Bluetooth LE 1 Mbps, Operating Frequency = high, Measurement method =
conducted
(S01_AA01)



Radio Technology = Bluetooth LE 2 Mbps, Operating Frequency = high, Measurement method = conducted (S01_AA01)



5.4.5 TEST EQUIPMENT USED

- R&S TS8997

5.5 SPURIOUS RF CONDUCTED EMISSIONS

Standard **FCC Part 15 Subpart C**

The test was performed according to:
 ANSI C63.10, chapter 11.11

5.5.1 TEST DESCRIPTION

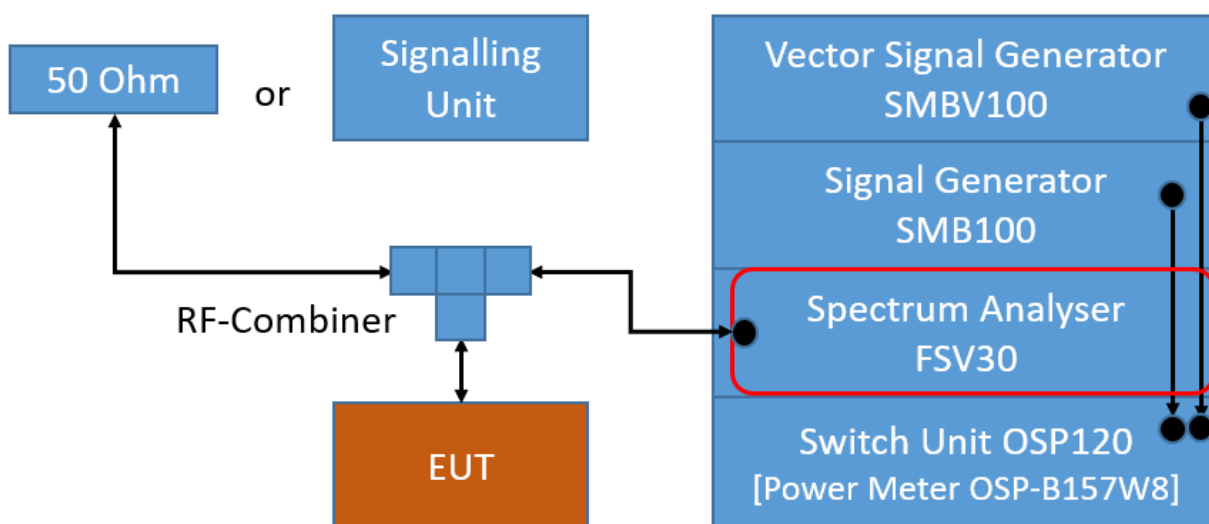
The Equipment Under Test (EUT) was set up to perform the spurious emissions measurements.

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

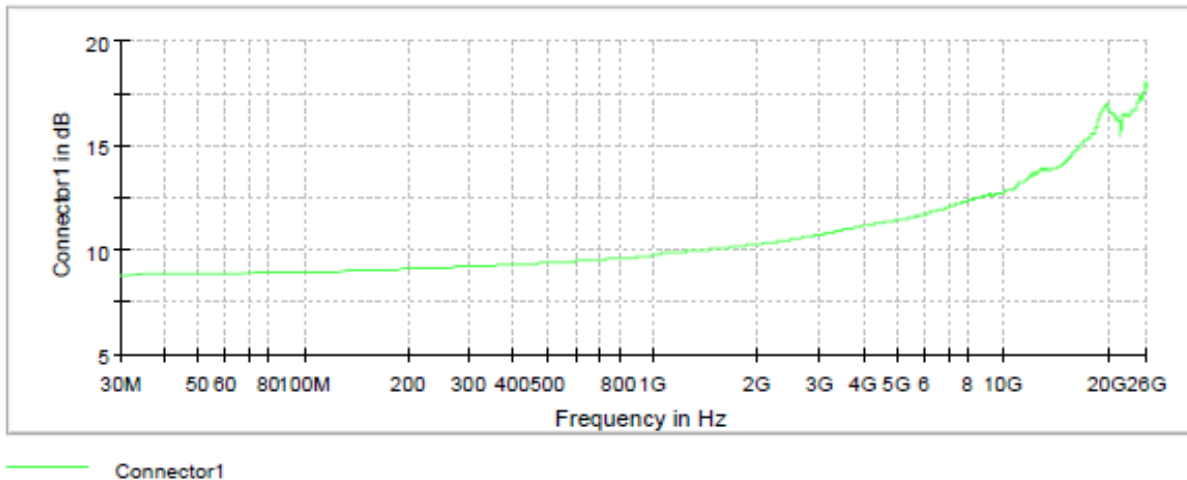
Analyser settings:

- Frequency range: 30 – 26000 MHz
- Resolution Bandwidth (RBW): 100 kHz
- Video Bandwidth (VBW): 300 kHz
- Trace: Maxhold
- Sweeps: Till Stable (max. 120)
- Sweep Time: Auto
- Detector: Peak

The reference value for the measurement of the spurious RF conducted emissions is determined during the test "band edge compliance conducted". This value is used to calculate the 20 dBc or 30 dBc limit.



TS8997; Spurious RF Conducted Emissions



Attenuation of the measurement part

5.5.2 TEST REQUIREMENTS / LIMITS

FCC Part 15, Subpart C, §15.247 (c)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

5.5.3 TEST PROTOCOL

Ambient temperature: 21 - 23 °C
 Air Pressure: 991 - 1020 hPa
 Humidity: 31 - 45 %
 BT GFSK (1-DH5)

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
0	2402	3202.4	-44.4	PEAK	100	13.0	-7.0	37.4
39	2441	3254.3	-46.7	PEAK	100	13.2	-6.8	39.9
78	2480	25939.1	-47.4	PEAK	100	13.3	-6.7	40.8

BT $\pi/4$ DQPSK (2-DH5)

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
0	2402	3202.4	-44.9	PEAK	100	8.6	-11.4	33.5
39	2441	3254.3	-47.0	PEAK	100	6.9	-13.1	33.9
78	2480	25837.7	-47.0	PEAK	100	8.1	-11.9	35.1

BT 8-DPSK (3-DH5)

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
0	2402	3202.4	-44.9	PEAK	100	7.9	-12.1	32.8
39	2441	3254.3	-47.4	PEAK	100	8.2	-11.8	35.7
78	2480	25888.8	-47.5	PEAK	100	7.4	-12.6	34.9

BT LE 1 Mbit/s

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
0	2402	3202.4	-41.8	PEAK	100	8.3	-11.7	30.0
19	2440	3252.7	-44.3	PEAK	100	8.6	-11.4	32.9
39	2480	3306.3	-47.1	PEAK	100	9.0	-11.0	36.1

BT LE 2 Mbit/s

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
0	2402	3202.4	-41.7	PEAK	100	5.6	-14.4	27.3
19	2440	3252.7	-44.6	PEAK	100	8.2	-11.8	32.8
39	2480	25800.4	-46.5	PEAK	100	8.2	-11.8	34.7

WLAN b-Mode; 20 MHz; 2 Mbit/s

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
1	2412	7818.6	-46.8	PEAK	100	3.9	-26.1	20.7
6	2437	7836.4	-46.4	PEAK	100	4.1	-25.9	20.5
11	2462	7971.1	-46.5	PEAK	100	4.5	-25.5	21.0

WLAN g-Mode; 20 MHz; 9 Mbit/s

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
1	2412	7954.1	-46.4	PEAK	100	-2.4	-32.4	14.0
6	2437	7909.5	-46.7	PEAK	100	0.4	-29.6	17.1
11	2462	7963.0	-46.4	PEAK	100	-2.7	-32.7	13.7

WLAN n-Mode; 20 MHz; MCS3

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
1	2412	2383.5	-41.3	PEAK	100	-3.4	-33.4	7.9
6	2437	7986.6	-46.3	PEAK	100	0.2	-29.8	16.6
11	2462	7909.5	-46.7	PEAK	100	-3.8	-33.8	12.9

WLAN ax-Mode; 20 MHz; MCS0

Channel No	Channel Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBm]	Detector	RBW [kHz]	Ref. Level [dBm]	Limit [dBm]	Margin to Limit [dB]
1	2412	2388.4	-44.3	PEAK	100	0.4	-29.6	14.6
6	2437	7825.1	-46.2	PEAK	100	2.8	-27.2	19.0
11	2462	7825.1	-46.4	PEAK	100	0.2	-29.8	16.6

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

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

Radio Technology = Bluetooth BDR, Operating Frequency = low
(S01_AA01)



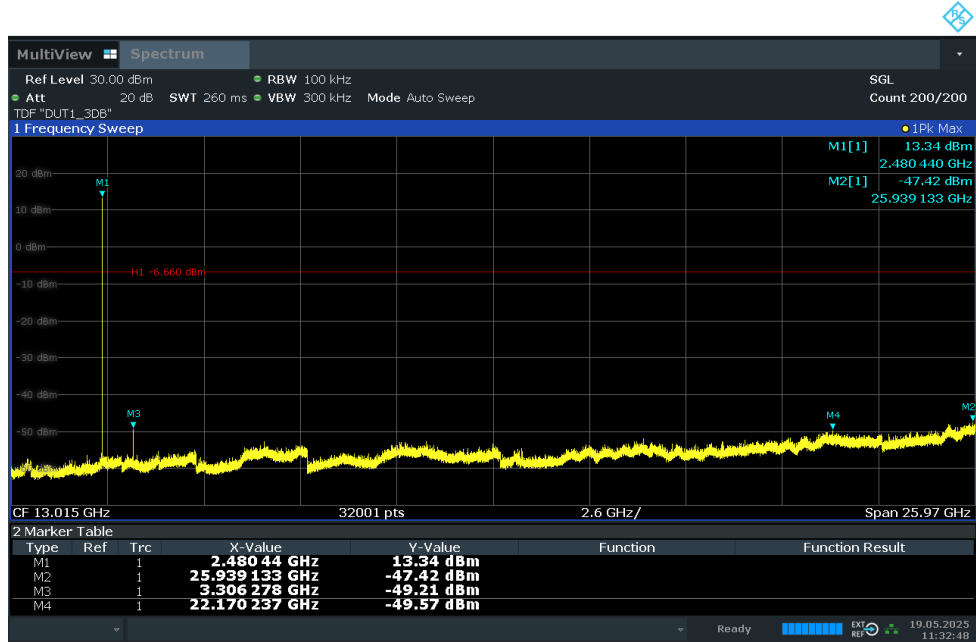
11:28:44 19.05.2025

Radio Technology = Bluetooth BDR, Operating Frequency = mid
(S01_AA01)



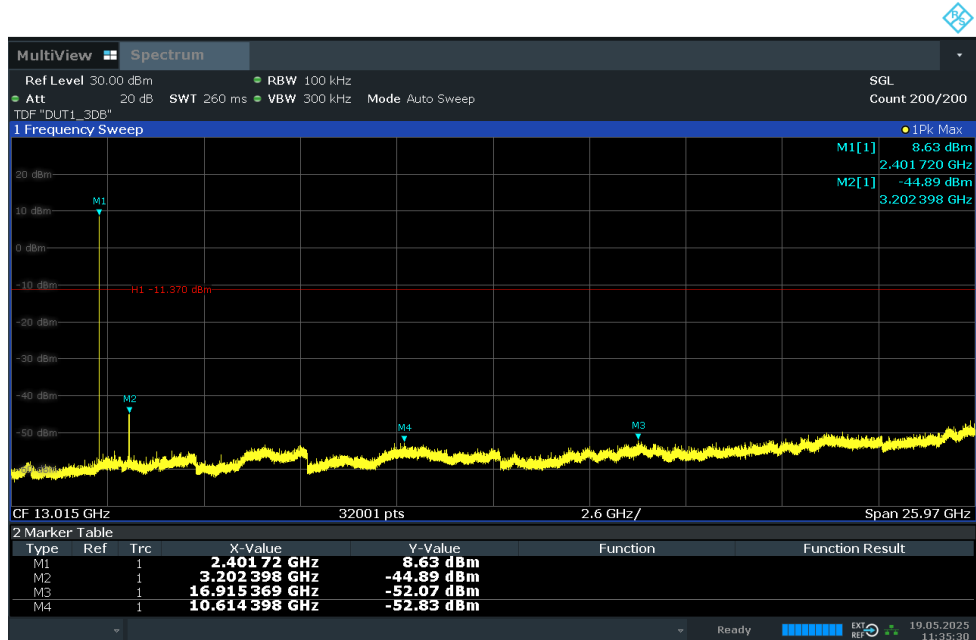
11:30:33 19.05.2025

Radio Technology = Bluetooth BDR, Operating Frequency = high
(S01_AA01)



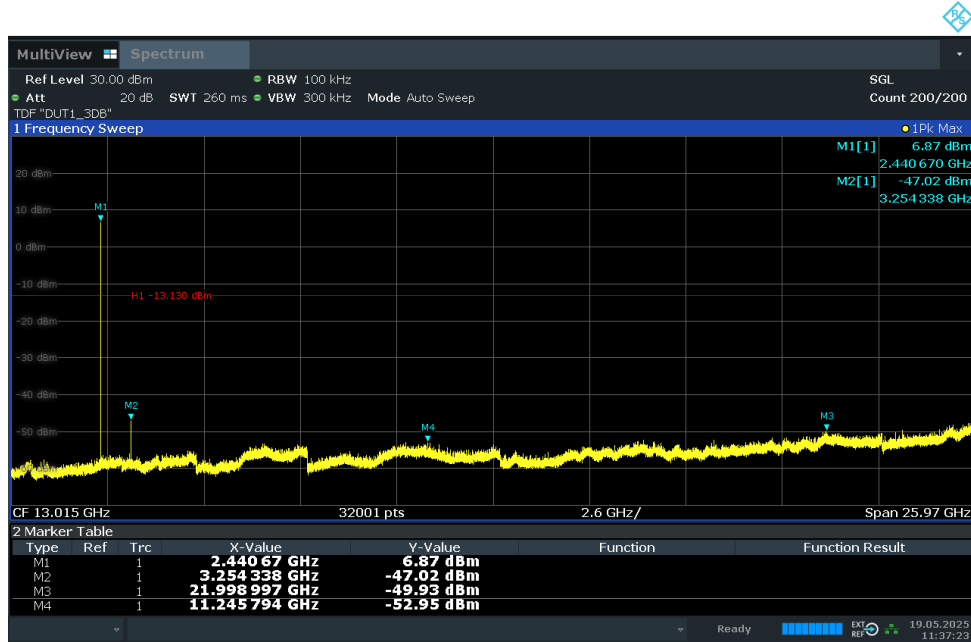
11:32:48 19.05.2025

Radio Technology = Bluetooth EDR 2, Operating Frequency = low
(S01_AA01)



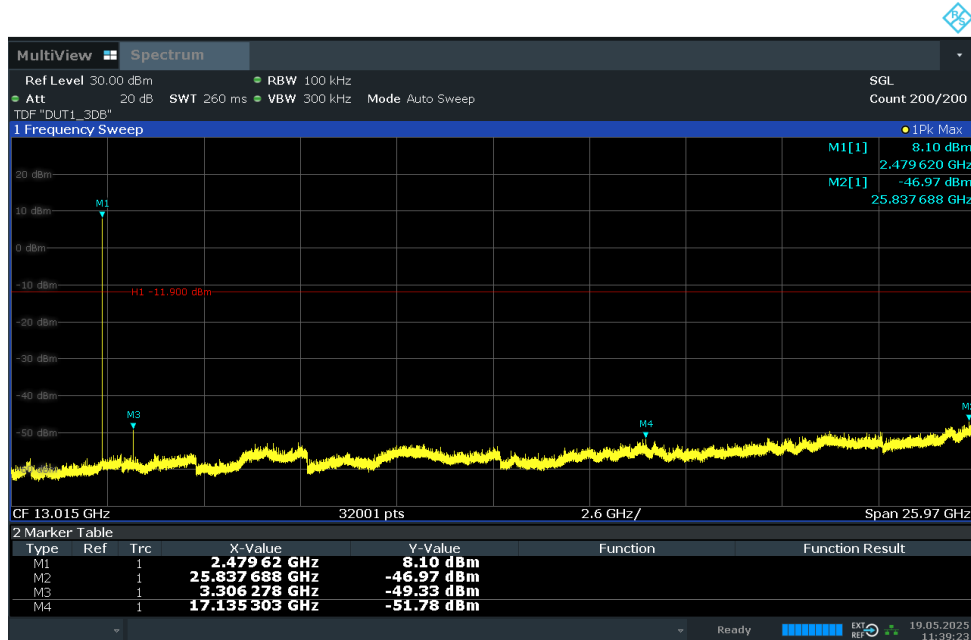
11:35:31 19.05.2025

Radio Technology = Bluetooth EDR 2, Operating Frequency = mid
(S01_AA01)



11:37:24 19.05.2025

Radio Technology = Bluetooth EDR 2, Operating Frequency = high
(S01_AA01)



11:39:23 19.05.2025

Radio Technology = Bluetooth EDR 3, Operating Frequency = low
(S01_AA01)



11:41:46 19.05.2025

Radio Technology = Bluetooth EDR 3, Operating Frequency = mid
(S01_AA01)



11:44:10 19.05.2025

Radio Technology = Bluetooth EDR 3, Operating Frequency = high
(S01_AA01)



11:47:15 19.05.2025

Radio Technology = Bluetooth LE 1 Mbps, Operating Frequency = low
(S01_AA01)



11:50:21 19.05.2025

Radio Technology = Bluetooth LE 1 Mbps, Operating Frequency = mid
(S01_AA01)



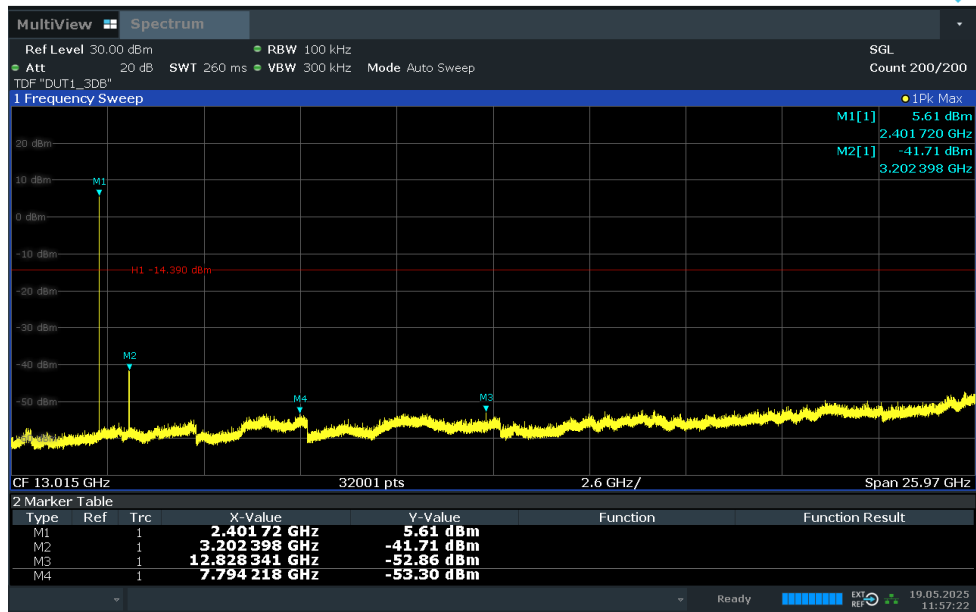
11:53:58 19.05.2025

Radio Technology = Bluetooth LE 1 Mbps, Operating Frequency = high
(S01_AA01)



11:55:41 19.05.2025

Radio Technology = Bluetooth LE 2 Mbps, Operating Frequency = low
(S01_AA01)



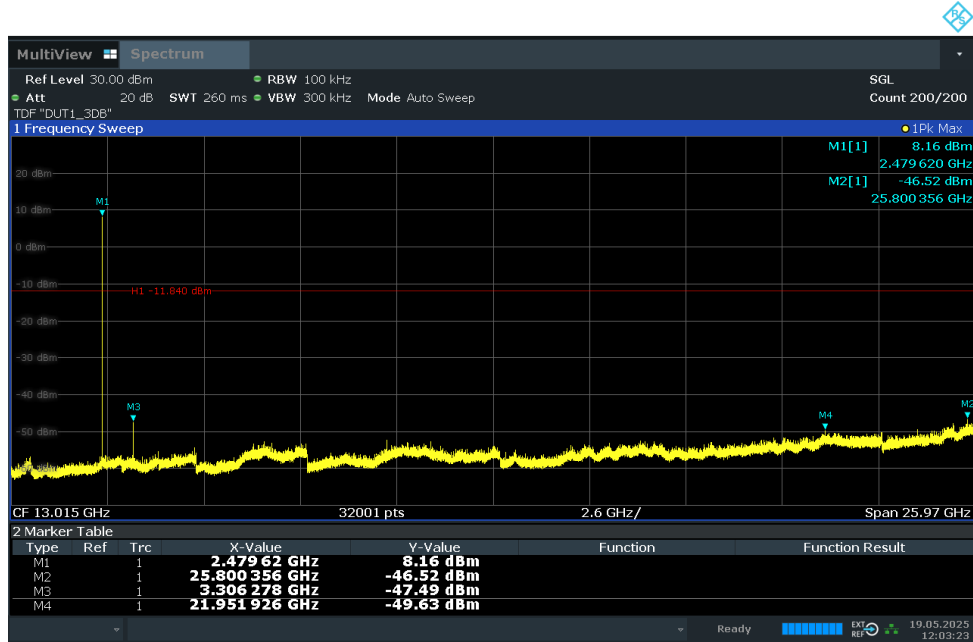
11:57:23 19.05.2025

Radio Technology = Bluetooth LE 2 Mbps, Operating Frequency = mid
(S01_AA01)



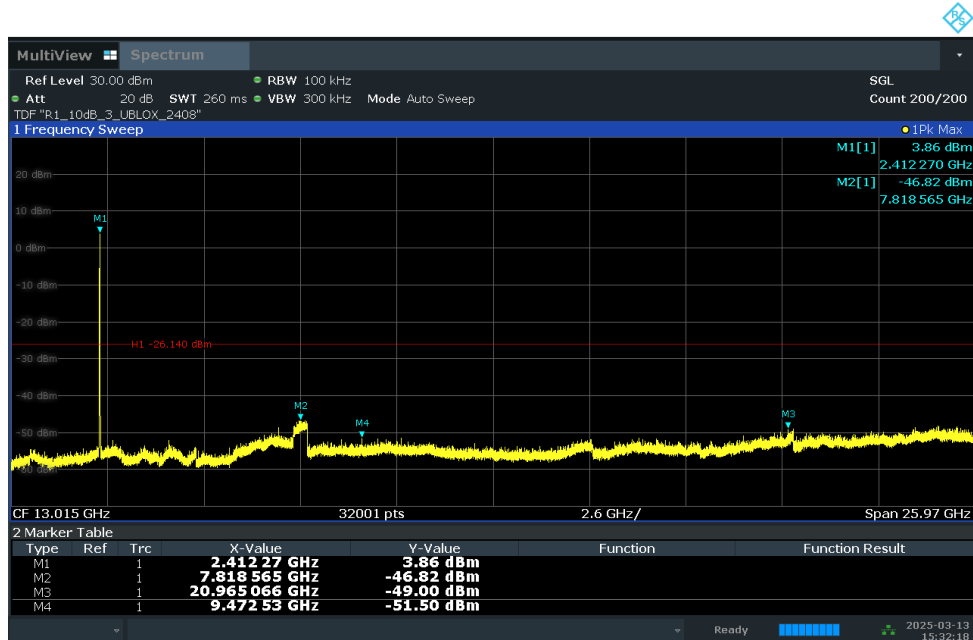
12:00:56 19.05.2025

Radio Technology = Bluetooth LE 2 Mbps, Operating Frequency = high
(S01_AA01)



12:03:23 19.05.2025

Radio Technology = WLAN b, Operating Frequency = low
(S01_AA01)



03:32:19 PM 03/13/2025

Radio Technology = WLAN b, Operating Frequency = mid
(S01_AA01)



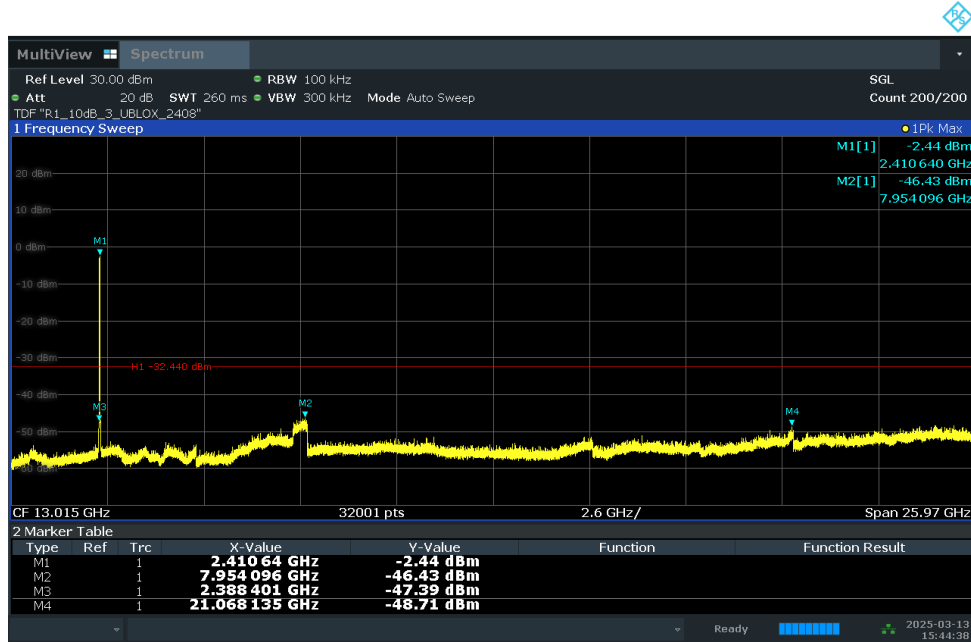
03:39:34 PM 03/13/2025

Radio Technology = WLAN b, Operating Frequency = high
(S01_AA01)



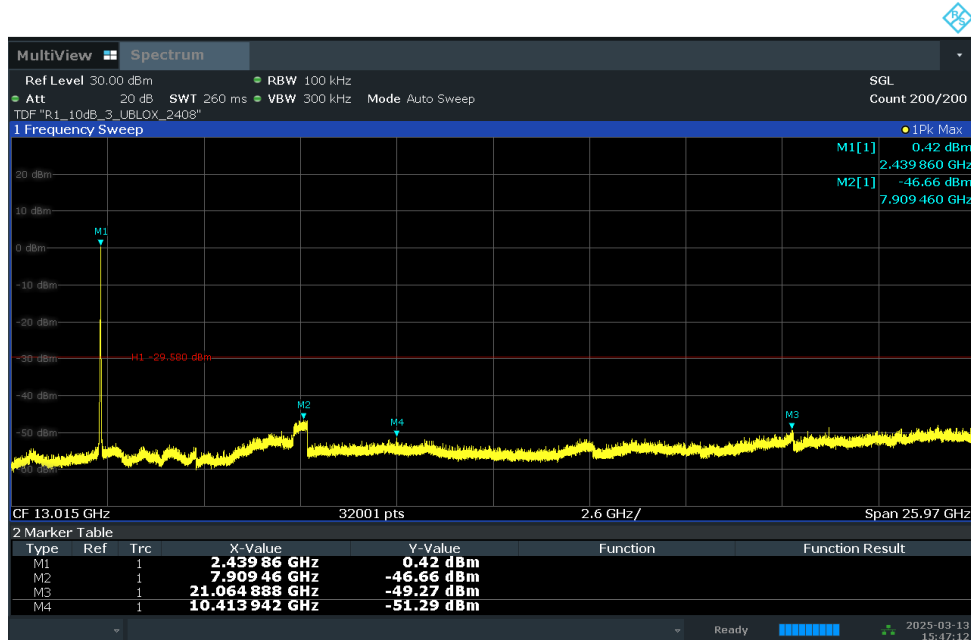
03:42:06 PM 03/13/2025

Radio Technology = WLAN g, Operating Frequency = low
(S01_AA01)



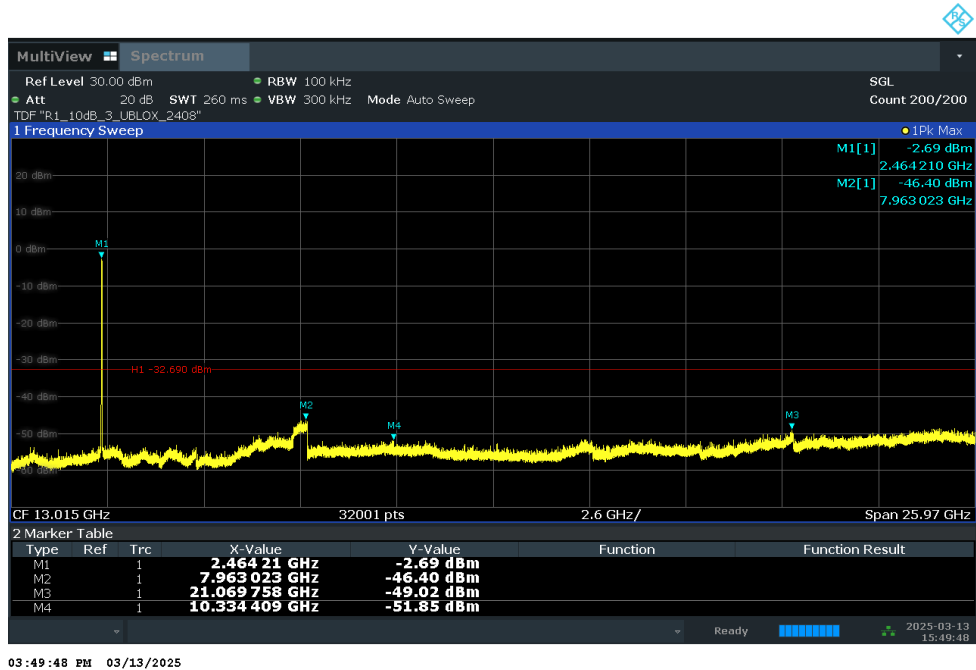
03:44:38 PM 03/13/2025

Radio Technology = WLAN g, Operating Frequency = mid
(S01_AA01)



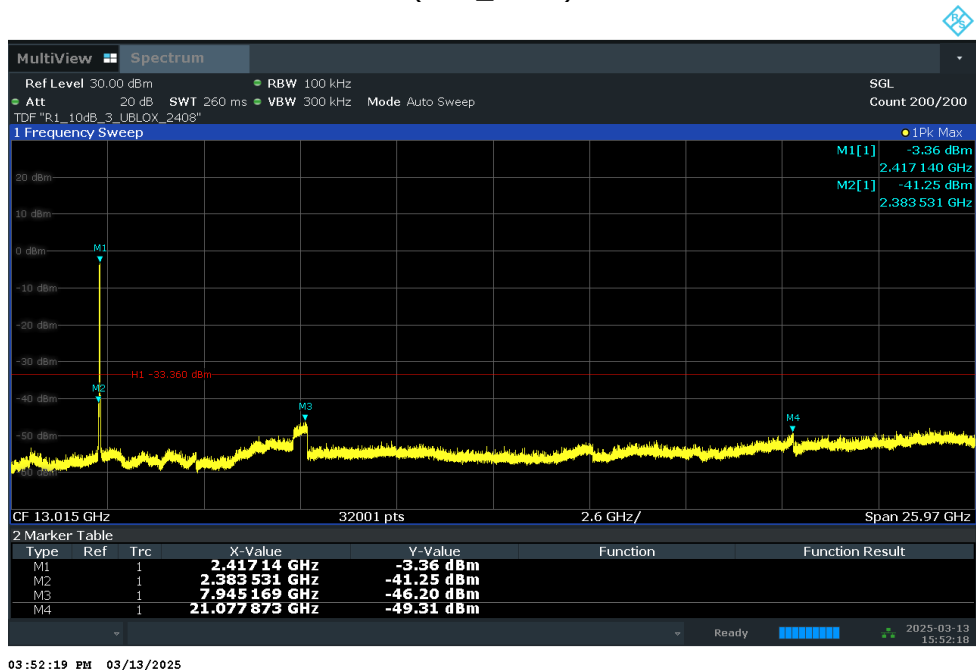
03:47:12 PM 03/13/2025

Radio Technology = WLAN g, Operating Frequency = high
(S01_AA01)



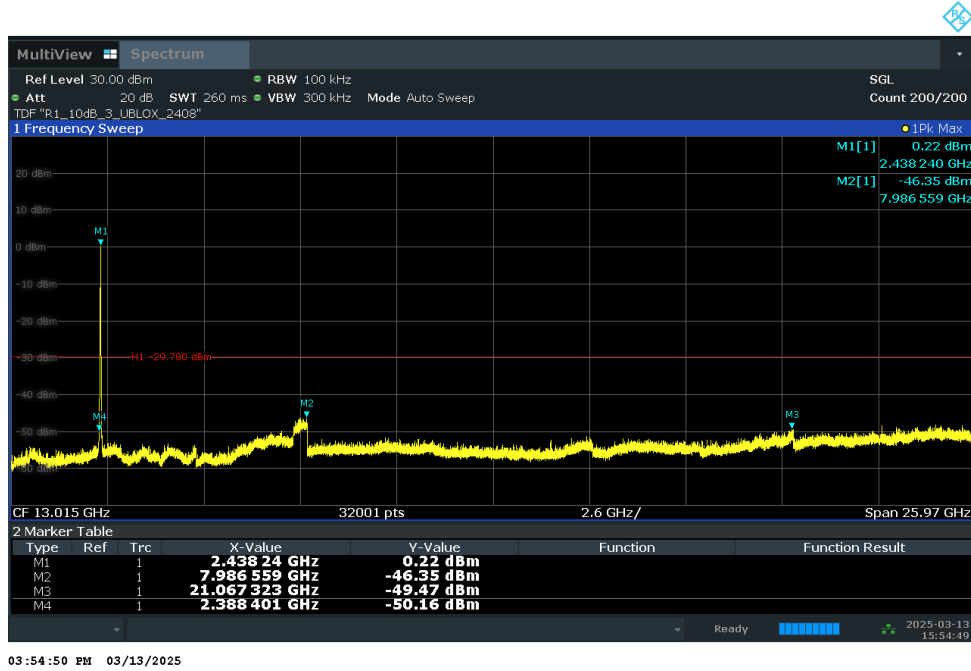
03:49:48 PM 03/13/2025

Radio Technology = WLAN n 20 MHz, Operating Frequency = low
(S01_AA01)

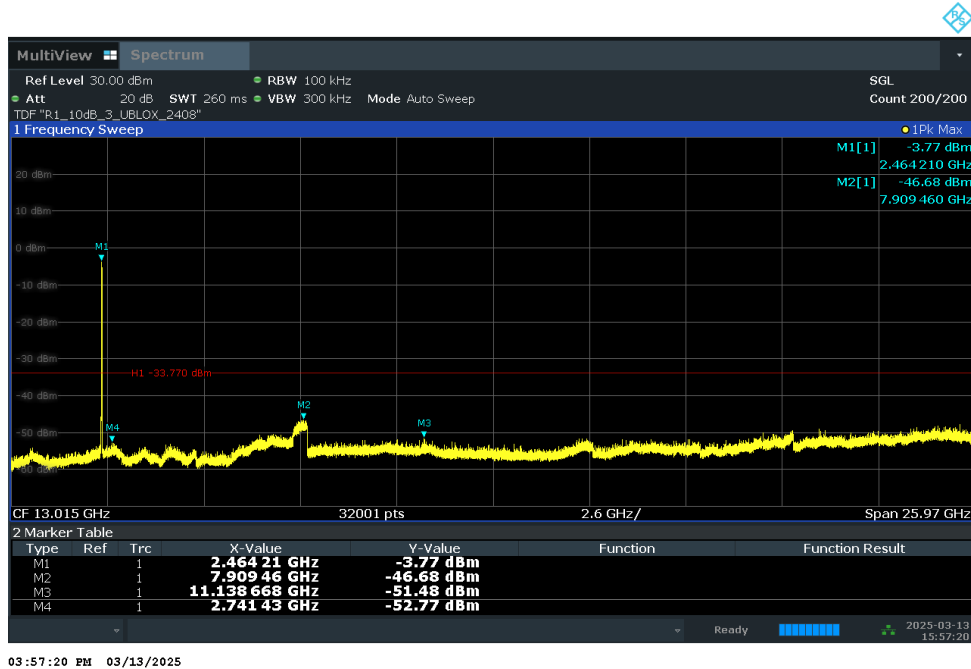


03:52:19 PM 03/13/2025

Radio Technology = WLAN n 20 MHz, Operating Frequency = mid
(S01_AA01)



Radio Technology = WLAN n 20 MHz, Operating Frequency = high
(S01_AA01)

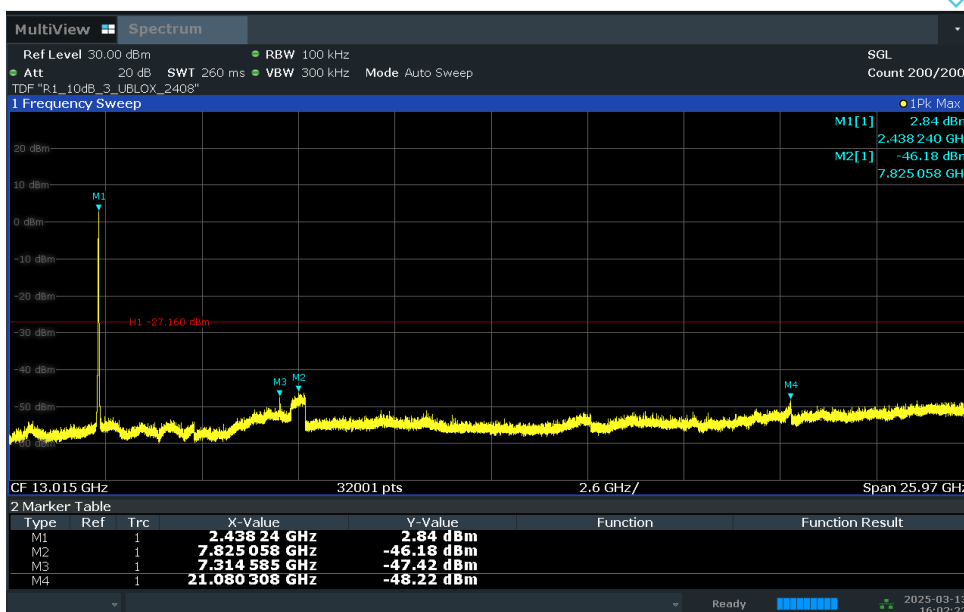


Radio Technology = WLAN ax 20 MHz, Operating Frequency = low
(S01_AA01)



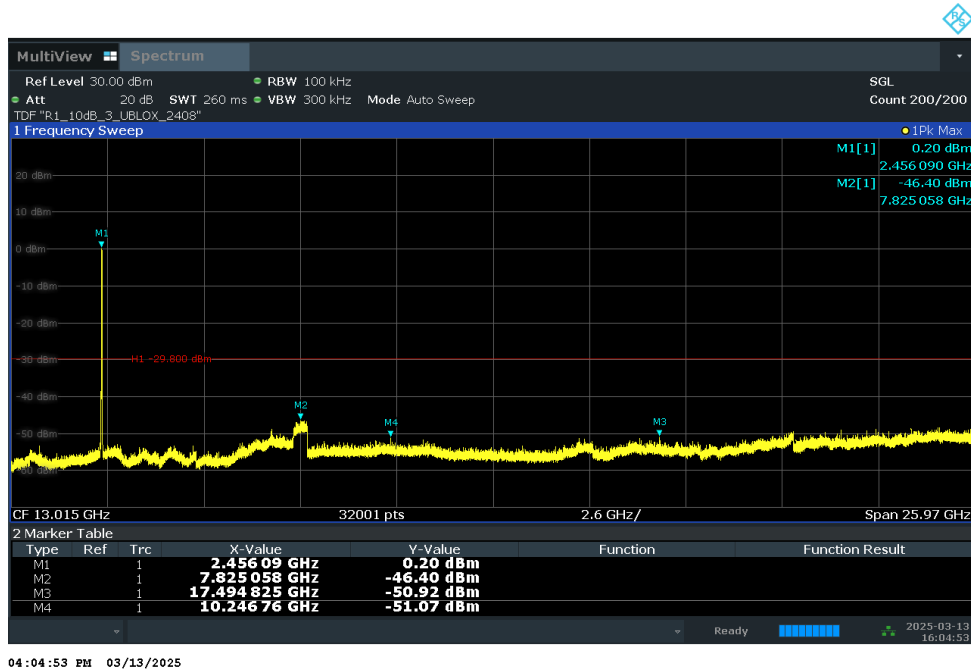
03:59:52 PM 03/13/2025

Radio Technology = WLAN ax 20 MHz, Operating Frequency = mid
(S01_AA01)



04:02:22 PM 03/13/2025

Radio Technology = WLAN ax 20 MHz, Operating Frequency = high
(S01_AA01)



5.5.5 TEST EQUIPMENT USED

- R&S TS8997

5.6 TRANSMITTER SPURIOUS EMISSIONS IN RESTRICTED BANDS

Standard **FCC Part 15 Subpart C**

Radiated Measurement Method:
The test was performed according to:
 ANSI C63.10, chapter 6.4, 6.5, 6.6.5

Conducted Measurement Method:
The test was performed according to:
 ANSI C63.10, chapter 11.12.2.5.2.1

5.6.1 TEST DESCRIPTION

Radiated Measurements with 50 Ohm termination at the antenna port:

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

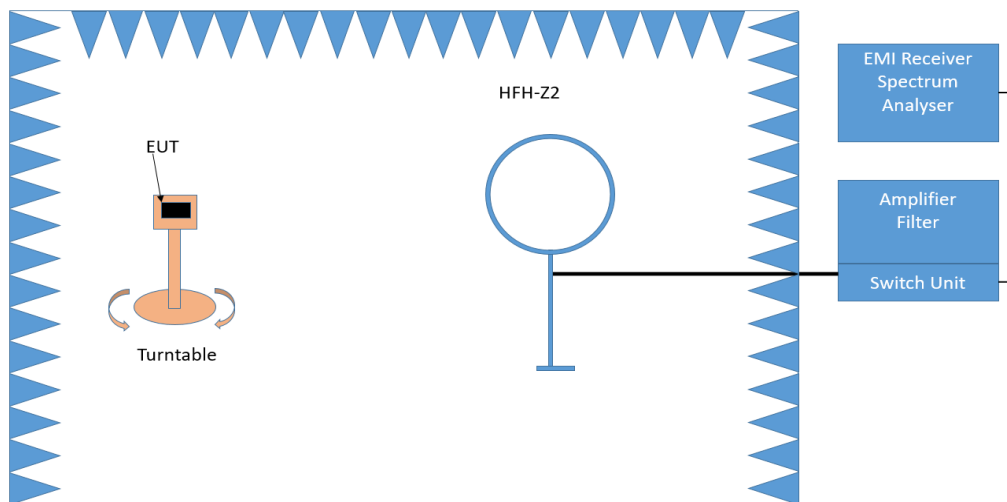
- < 30 MHz: Chapter 6.4
- 30 MHz – 1 GHz: Chapter 6.5
- > 1 GHz: Chapter 6.6 (procedure according 6.6.5 used)

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

Below 1 GHz:

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

1. Measurement up to 30 MHz



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

The Loop antenna HFH2-Z2 is used.

Step 1: pre measurement

- Anechoic chamber
- Antenna distance: 3 m
- Antenna height: 1 m
- Detector: Peak-Maxhold
- Frequency range: 0.009 - 0.15 MHz and 0.15 - 30 MHz
- Frequency steps: 0.05 kHz and 2.25 kHz
- IF-Bandwidth: 0.2 kHz and 9 kHz
- Measuring time / Frequency step: 100 ms (FFT-based)

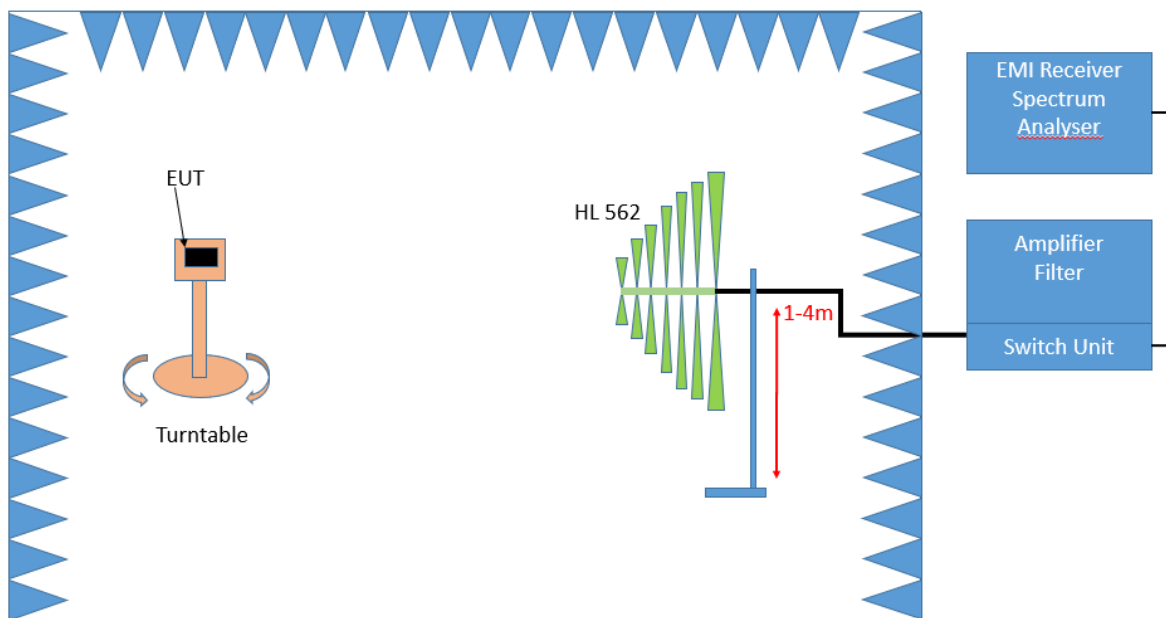
Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

Step 2: final measurement

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

- Detector: Quasi-Peak (9 kHz - 150 kHz, Peak / Average 150 kHz- 30 MHz)
- Frequency range: 0.009 - 30 MHz
- Frequency steps: measurement at frequencies detected in step 1
- IF-Bandwidth: 0.2 - 10 kHz
- Measuring time / Frequency step: 1 s

2. Measurement above 30 MHz and up to 1 GHz



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

Step 1: Preliminary scan

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

Settings for step 1:

- Antenna distance: 3 m
- Detector: Peak-Maxhold / Quasipeak (FFT-based)
- Frequency range: 30 - 1000 MHz
- Frequency steps: 30 kHz

- IF-Bandwidth: 120 kHz
- Measuring time / Frequency step: 100 ms
- Turntable angle range: -180° to 90°
- Turntable step size: 90°
- Height variation range: 1 – 4 m
- Height variation step size: 1.5 m
- Polarisation: Horizontal + Vertical

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

Step 2: Adjustment measurement

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

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

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

Step 3: Final measurement with QP detector

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

EMI receiver settings for step 3:

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

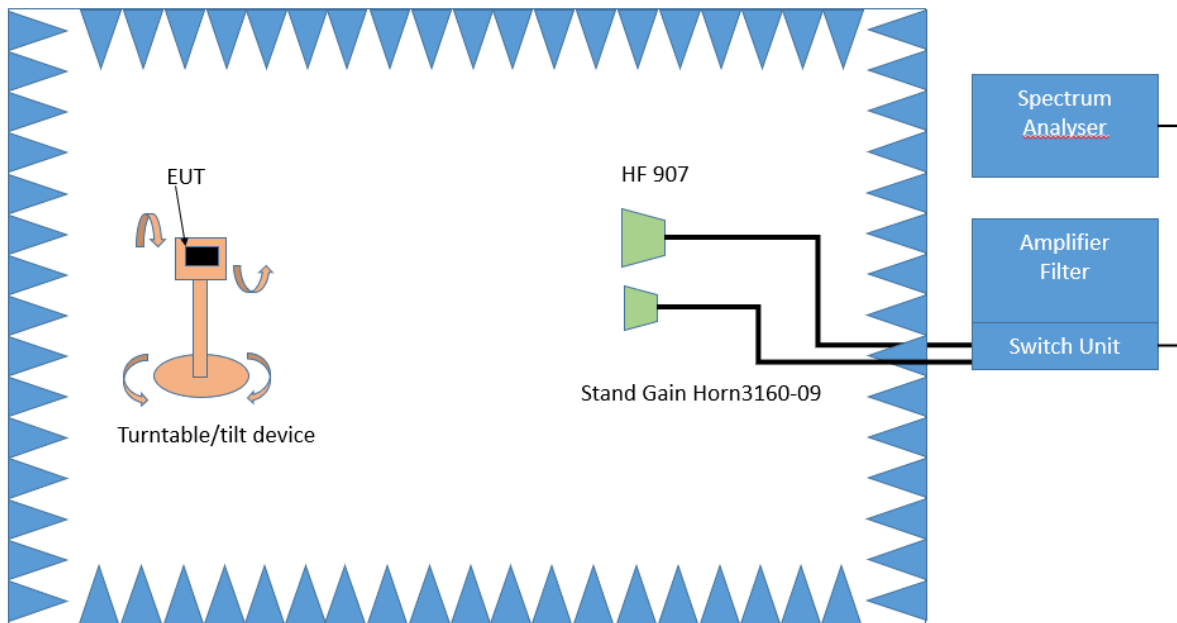
After the measurement a plot will be generated which contains a diagram with the results of the preliminary scan and a chart with the frequencies and values of the results of the final measurement.

Above 1 GHz:

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

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

3. Measurement above 1 GHz



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

Step 1:

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

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

Spectrum analyser settings:

- Detector: Peak, Average
- RBW = 1 MHz
- VBW = 3 MHz

Step 2:

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

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

Spectrum analyser settings:

- Detector: Peak

Step 3:

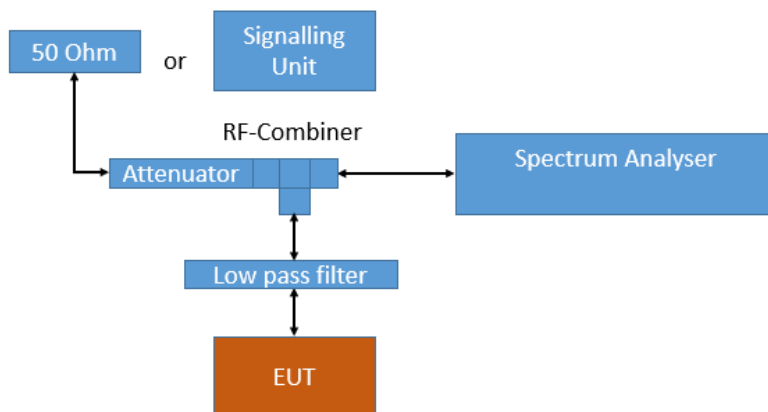
Spectrum analyser settings for step 3:

- Detector: Peak / CISPR Average
- Measured frequencies: in step 1 determined frequencies
- RBW = 1 MHz
- VBW = 3 MHz
- Measuring time: 1 s

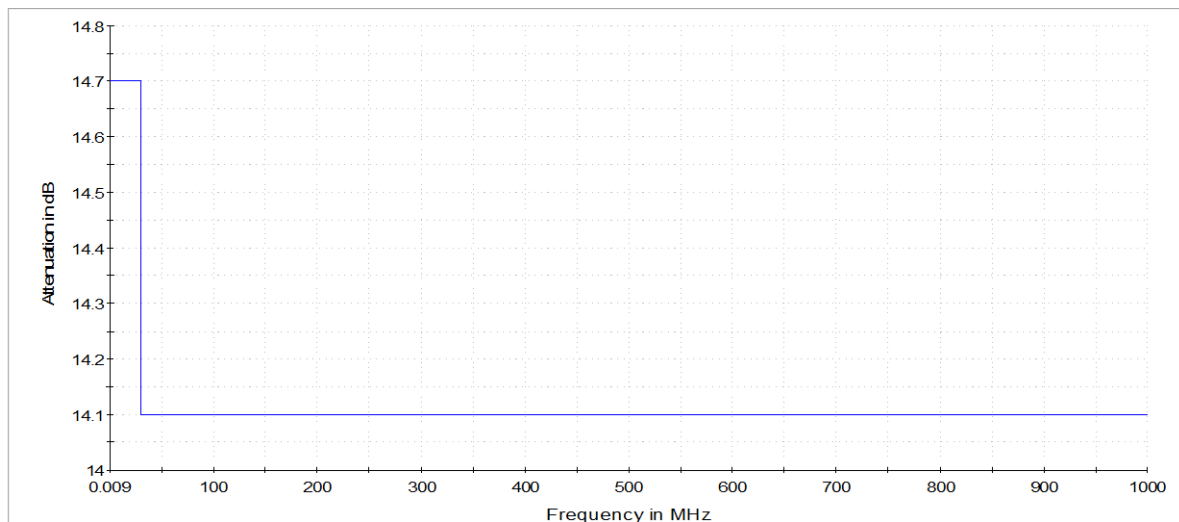
Conducted Measurements at antenna ports:

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

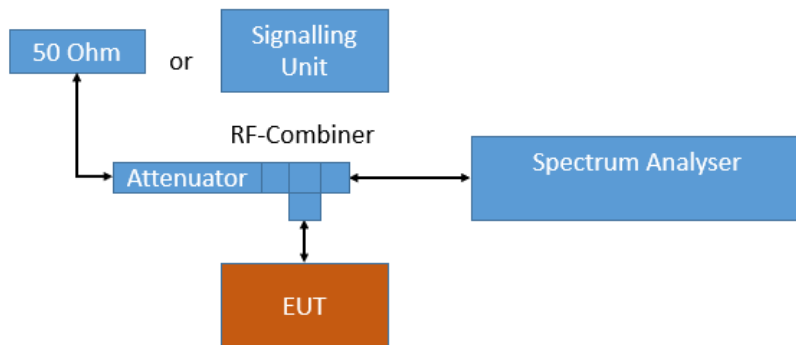
The EUT was connected to the test system as described in the block diagram below. The complete attenuation of the measurement path is known and considered.



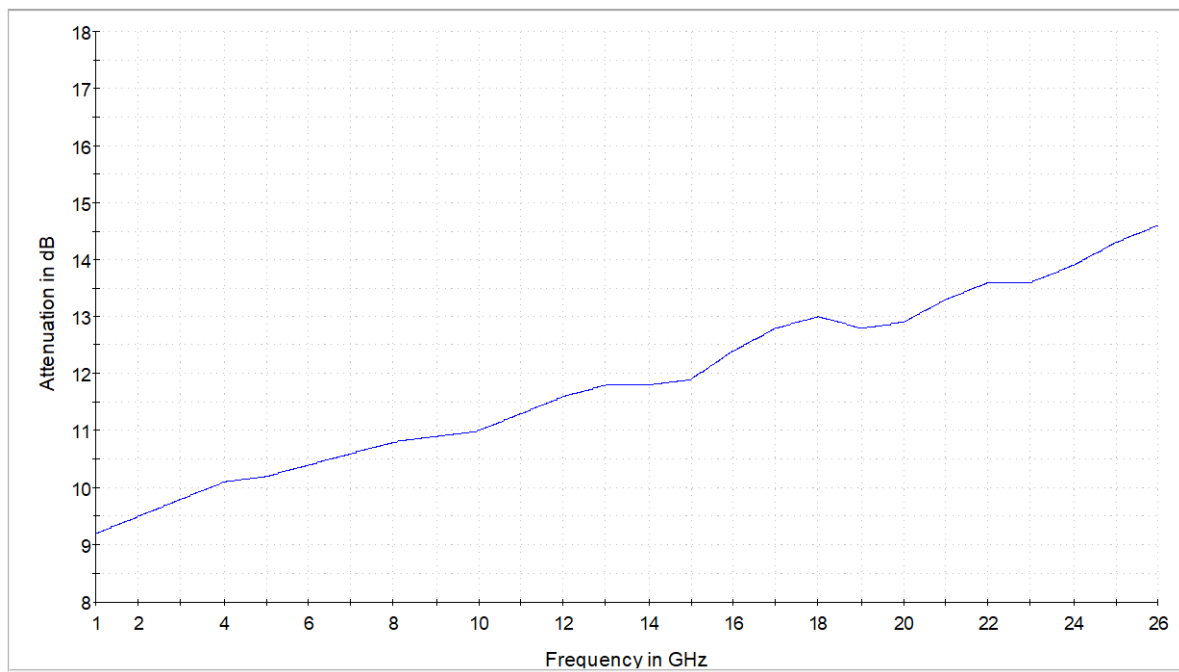
Measurement <1GHz: Path Attenuation Transducer DUT1_3dB_TP2000



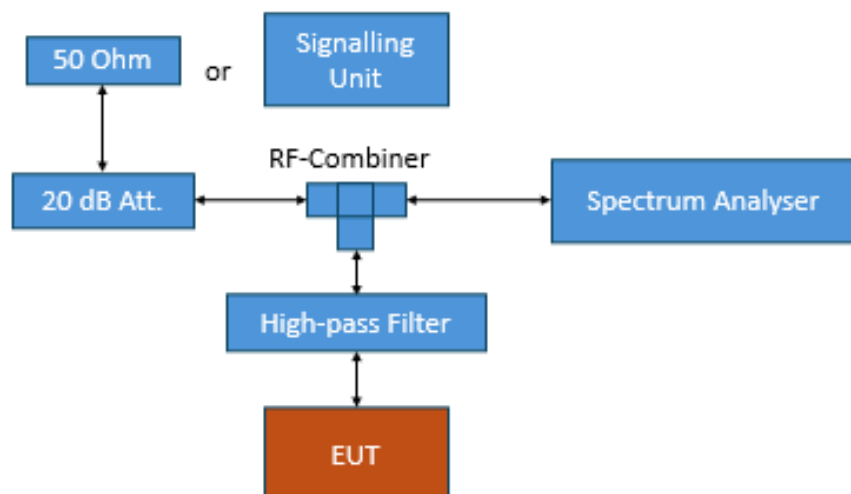
Transducer DUT1_3dB_TP2000



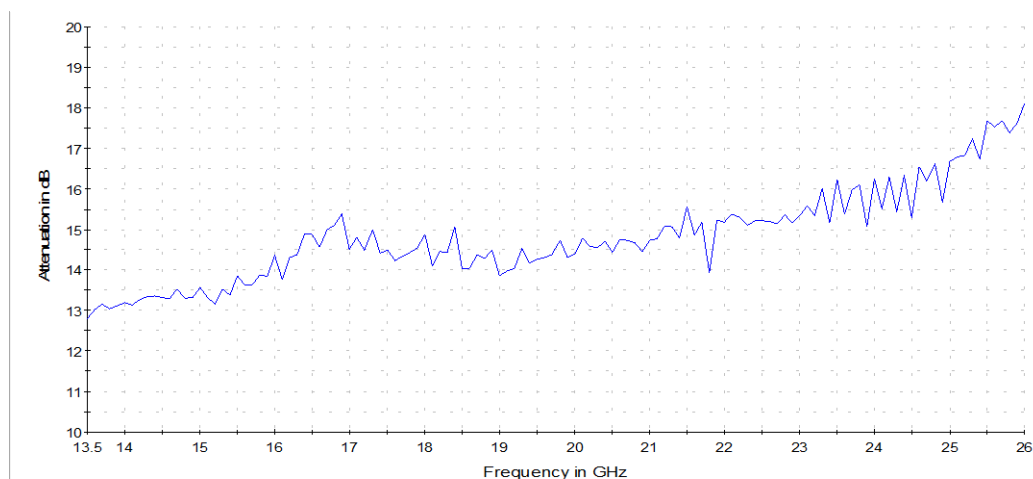
Measurement 1 – 13.5 GHz: Path Attenuation Transducer DUT1_3dB



Transducer DUT1_3dB



Measurement 13.5 - 26 GHz: Path Attenuation Transducer DUT1_3dB_HF11



Transducer DUT1_3dB_HF11

Analyser settings:

- Frequency range: 0.009 – 30 MHz
 - Resolution Bandwidth (RBW): 10 kHz
 - Video Bandwidth (VBW): 30 kHz
 - Trace: Maxhold
 - Sweeps: see plots
 - Sweep Time: coupled
 - Detector: Peak
-
- Frequency range: 30 – 1000 MHz
 - Resolution Bandwidth (RBW): 100 kHz
 - Video Bandwidth (VBW): 300 kHz
 - Trace: Maxhold
 - Sweeps: see plots
 - Sweep Time: coupled
 - Detector: Peak

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

For the conducted emissions in restricted bands the Value is measured in dBm and then converted to dBμV/m as given in KDB 558074:

1. Measure the conducted output power in dBm.
2. Add the maximum antenna gain in dBi. (Included in measurement result by offset)
3. Add the appropriate ground reflection factor (included in measurement result by transducer factor)
 - 6 dB for frequencies ≤ 30 MHz;
 - 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive; and
 - 0 dB for frequencies > 1000 MHz).
4. Convert the resultant EIRP level to an equivalent electric field strength level using the following relationship:
 - $E = \text{EIRP} - 20 \log D + 104.8$
 - Where E is the electric field strength in dBμV/m,
 - EIRP is the equivalent isotropically radiated power in dBm
 - D is the specified measurement distance in m

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

5.6.2 TEST REQUIREMENTS / LIMITS

FCC Part 15, Subpart C, §15.247 (d)

... In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

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

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

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

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

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

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

Used conversion factor: Limit (dBμV/m) = 20 log (Limit (μV/m)/1μV/m)

5.6.3 TEST PROTOCOL

Ambient temperature: 21 - 28 °C
 Air Pressure: 991 - 1020 hPa
 Humidity: 25 - 48 %
 BT GFSK (1-DH5)
 Applied duty cycle correction (AV): 2.3 dB

Measurement Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin to Limit [dB]
Radiated, enclosure, 50 Ohm termination	2402	- - -	- - -	- - -	- - -	- - -	- - -
Radiated, enclosure, 50 Ohm termination	2441	- - -	- - -	- - -	- - -	- - -	- - -
Radiated, enclosure, 50 Ohm termination	2480	- - -	- - -	- - -	- - -	- - -	- - -
Conducted	2402	800.7	33.4	PEAK	120	46.0	12.6
Conducted	2402	12540.2	54.6	PEAK	1000	74.0	19.4
Conducted	2402	12540.2	44.8	AV	1000	54.0	9.2
Conducted	2441	813.7	33.4	PEAK	120	46.0	12.6
Conducted	2441	6913.0	56.4	PEAK	1000	74.0	17.6
Conducted	2441	6913.0	47.6	AV	1000	54.0	6.4
Conducted	2480	826.7	32.0	PEAK	120	46.0	14.0
Conducted	2480	4960.2	53.5	PEAK	1000	74.0	20.5
Conducted	2480	4960.2	46.1	AV	1000	54.0	7.9

BT π/4 DQPSK (2-DH5)
 Applied duty cycle correction (AV): 2.3 dB

Measurement Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin to Limit [dB]
Conducted	2402	5450.0	54.8	PEAK	1000	74.0	19.2
Conducted	2402	5450.0	45.7	AV	1000	54.0	8.3
Conducted	2441	12497.3	54.6	PEAK	1000	74.0	19.4
Conducted	2441	12497.3	45.3	AV	1000	54.0	8.7
Conducted	2480	12121.5	54.9	PEAK	1000	74.0	19.2
Conducted	2480	12121.5	44.9	AV	1000	54.0	9.2

BT 8-DPSK (3-DH5)

Applied duty cycle correction (AV): 2.3 dB

Measurement Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin to Limit [dB]
Conducted	2402	5458.6	54.5	PEAK	1000	74.0	19.5
Conducted	2402	5458.6	46.0	AV	1000	54.0	8.0
Conducted	2441	12434.4	54.6	PEAK	1000	74.0	19.4
Conducted	2441	12434.4	45.3	AV	1000	54.0	8.7
Conducted	2480	5384.4	54.5	PEAK	1000	74.0	19.5
Conducted	2480	5384.4	45.9	AV	1000	54.0	8.1

WLAN b-Mode; 20 MHz; 2 Mbit/s

Applied duty cycle correction (AV): 0 dB

Measurement Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin to Limit [dB]
Radiated, enclosure, 50 Ohm termination	2412	- - -	- - -	- - -	- - -	- - -	- - -
Radiated, enclosure, 50 Ohm termination	2437	- - -	- - -	- - -	- - -	- - -	- - -
Radiated, enclosure, 50 Ohm termination	2462	- - -	- - -	- - -	- - -	- - -	- - -
Conducted	2412	7739.5	61.6	PEAK	1000	74.0	12.4
Conducted	2412	7739.5	50.8	AV	1000	54.0	3.2
Conducted	2437	7309.0	60.0	PEAK	1000	74.0	14.0
Conducted	2437	7309.0	51.3	AV	1000	54.0	2.7
Conducted	2462	7808.2	62.6	PEAK	1000	74.0	11.4
Conducted	2462	7808.2	50.9	AV	1000	54.0	3.1

WLAN g-Mode; 20 MHz; 9 Mbit/s

Applied duty cycle correction (AV): 0.1 dB

Measurement Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin to Limit [dB]
Conducted	2412	7725.0	61.7	PEAK	1000	74.0	12.3
Conducted	2412	7725.0	50.7	AV	1000	54.0	3.3
Conducted	2437	7309.8	59.1	PEAK	1000	74.0	14.9
Conducted	2437	7309.8	49.0	AV	1000	54.0	5.0
Conducted	2437	7731.6	60.9	PEAK	1000	74.0	13.1
Conducted	2437	7731.6	50.7	AV	1000	54.0	3.3
Conducted	2462	7731.6	60.9	PEAK	1000	74.0	13.1
Conducted	2462	7731.6	50.9	AV	1000	54.0	3.1

WLAN n-Mode; 20 MHz; MCS3

Applied duty cycle correction (AV): 0.1 dB

Measurement Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin to Limit [dB]
Conducted	2412	7726.6	61.1	PEAK	1000	74.0	12.9
Conducted	2412	7726.6	51.1	AV	1000	54.0	2.9
Conducted	2437	7313.7	59.0	PEAK	1000	74.0	15.0
Conducted	2437	7313.7	48.7	AV	1000	54.0	5.3
Conducted	2437	7746.9	61.3	PEAK	1000	74.0	12.7
Conducted	2437	7746.9	50.8	AV	1000	54.0	3.2
Conducted	2462	7682.4	61.4	PEAK	1000	74.0	12.6
Conducted	2462	7682.4	50.4	AV	1000	54.0	3.6

WLAN ax-Mode; 20 MHz; MCS0

Applied duty cycle correction (AV): 0.1 dB

Measurement Method	Ch. Center Freq. [MHz]	Spurious Freq. [MHz]	Spurious Level [dBμV/m]	Detector	RBW [kHz]	Limit [dBμV/m]	Margin to Limit [dB]
Conducted	2412	7714.1	61.1	PEAK	1000	74.0	12.9
Conducted	2412	7714.1	50.6	AV	1000	54.0	3.4
Conducted	2437	7309.0	59.4	PEAK	1000	74.0	14.6
Conducted	2437	7309.0	48.6	AV	1000	54.0	5.4
Conducted	2437	7693.4	62.8	PEAK	1000	74.0	11.3
Conducted	2437	7693.4	50.4	AV	1000	54.0	3.6
Conducted	2462	7746.5	61.5	PEAK	1000	74.0	12.5
Conducted	2462	7746.5	50.9	AV	1000	54.0	3.1

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

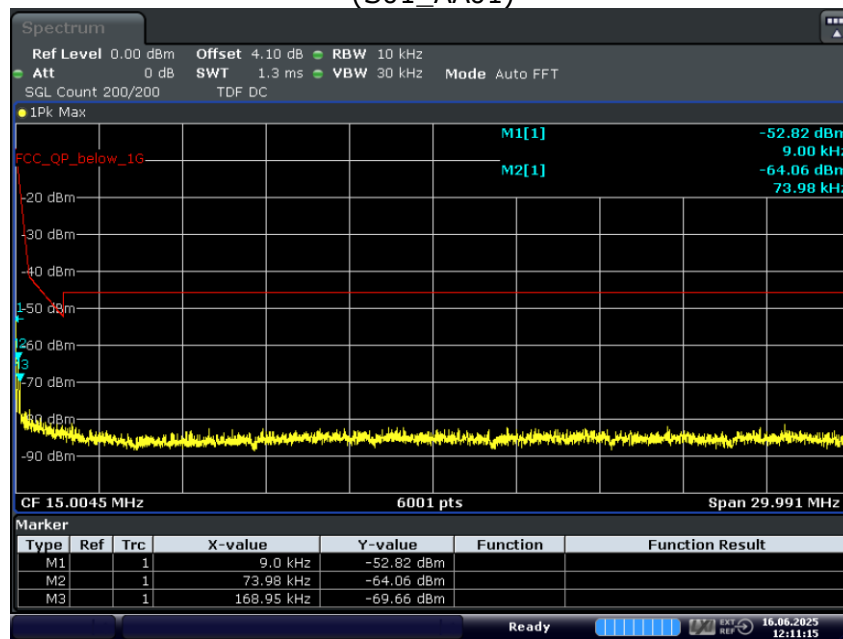
Radiated Measurements were performed with 50 Ohm termination at the antenna ports.

Where no values are entered in a line, no relevant peak was found. See plots for further details.

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

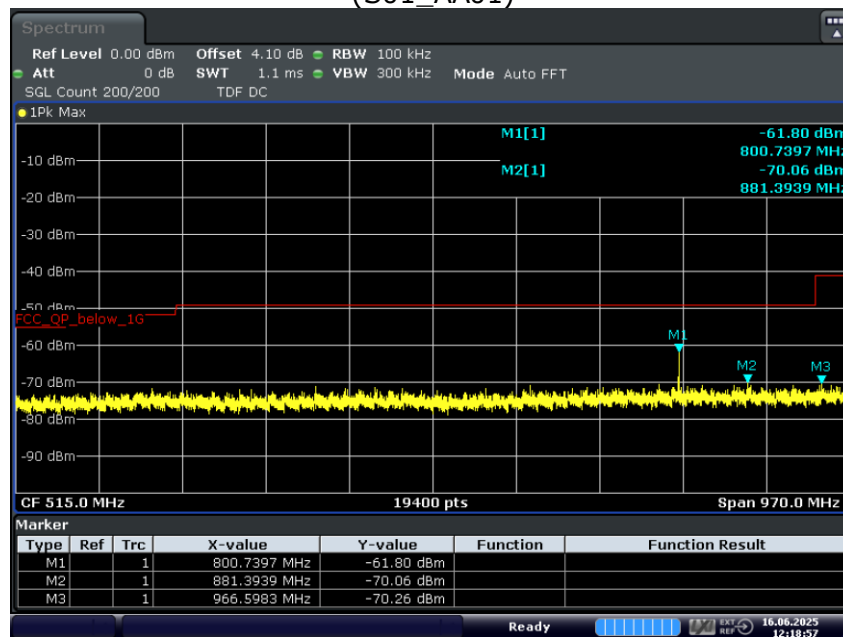
Conducted Measurement

Radio Technology = Bluetooth BDR, Operating Frequency = low, Measurement range = 9 kHz - 30 MHz
(S01_AA01)



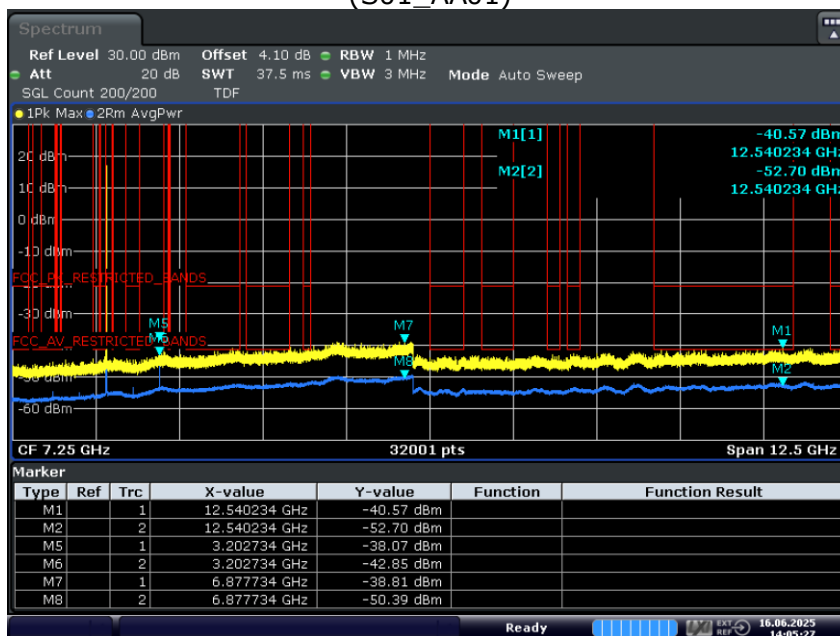
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Radio Technology = Bluetooth BDR, Operating Frequency = low, Measurement range = 30 MHz - 1 GHz
(S01_AA01)

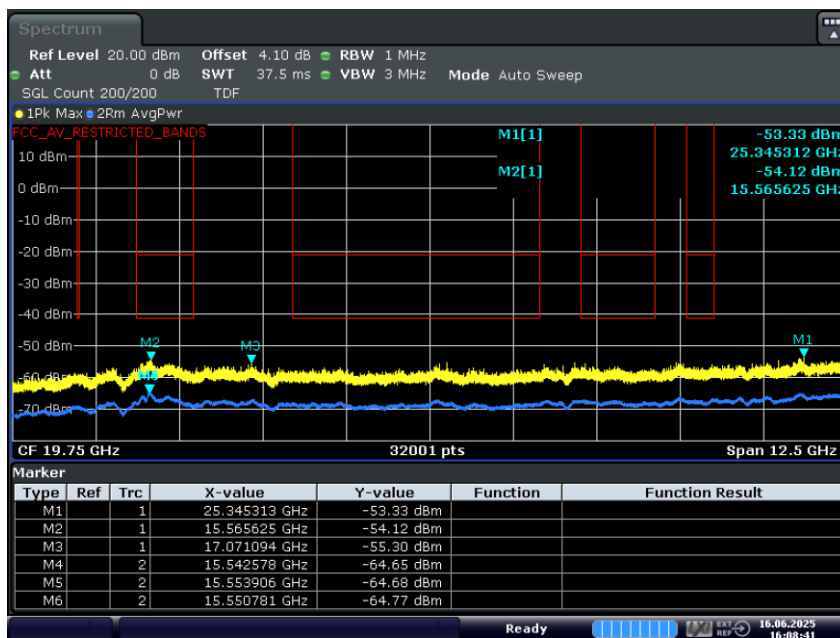


Date: 16 JUN 2025 12:18:57

Radio Technology = Bluetooth BDR, Operating Frequency = low, Measurement range = 1 GHz
- 26 GHz
(S01_AA01)

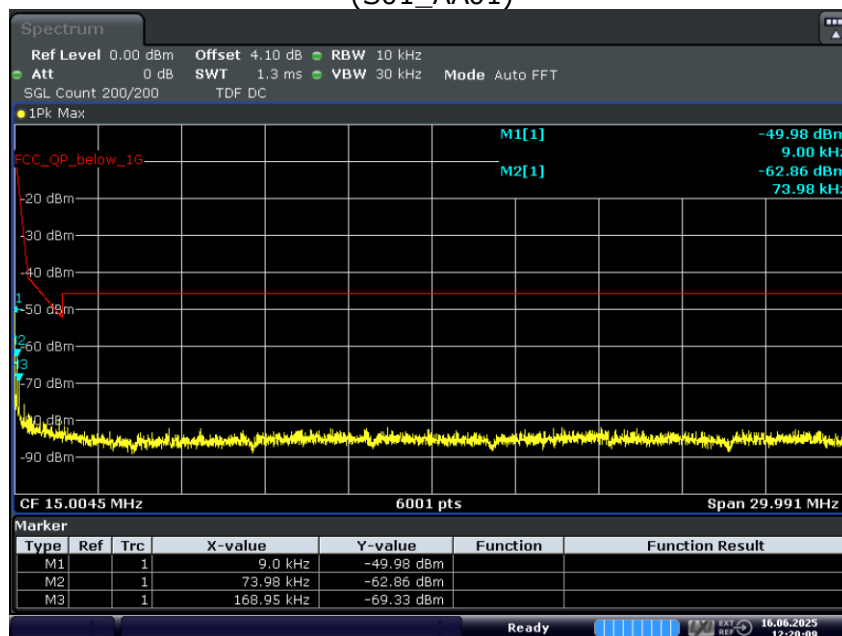


Date: 16 JUN 2025 14:05:28



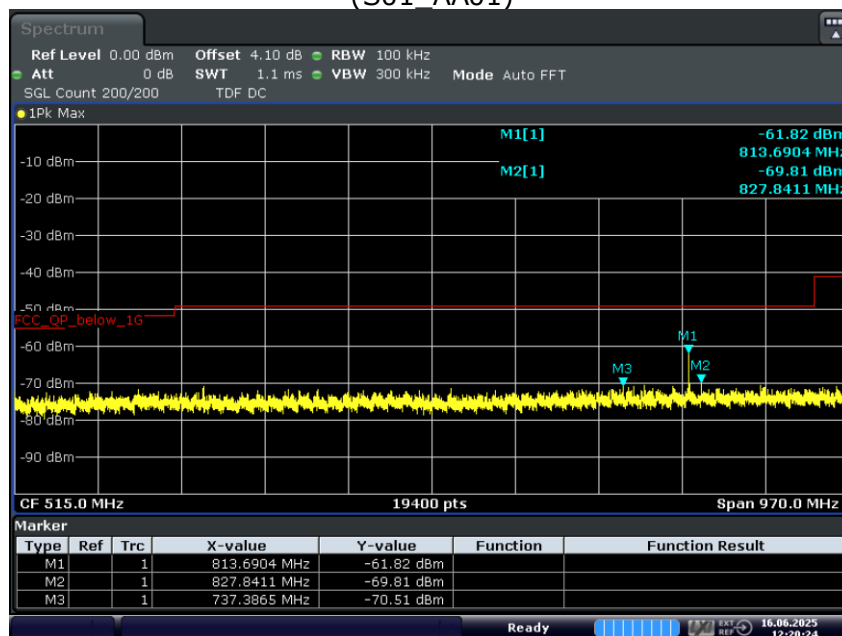
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Radio Technology = Bluetooth BDR, Operating Frequency = mid, Measurement range = 9 kHz
- 30 MHz
(S01_AA01)



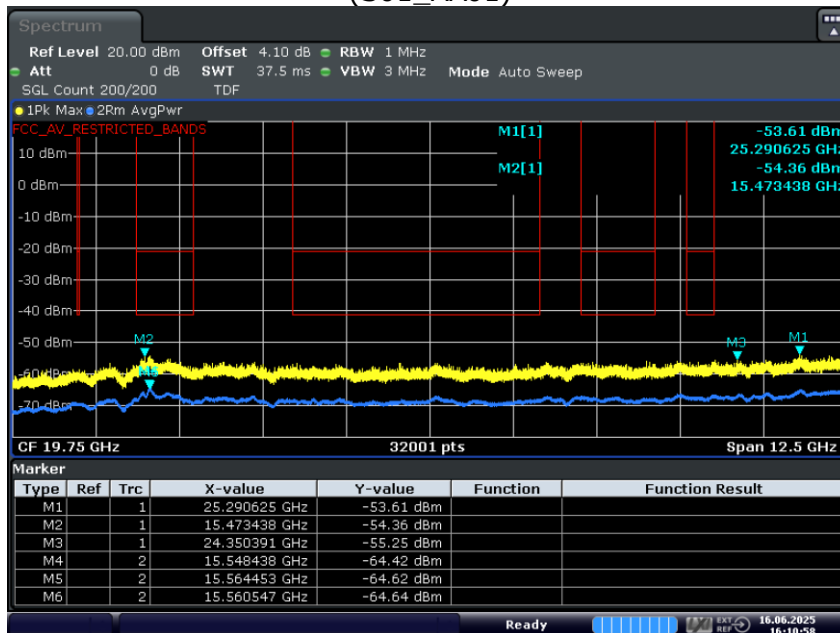
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Radio Technology = Bluetooth BDR, Operating Frequency = mid, Measurement range = 30 MHz - 1 GHz
(S01_AA01)

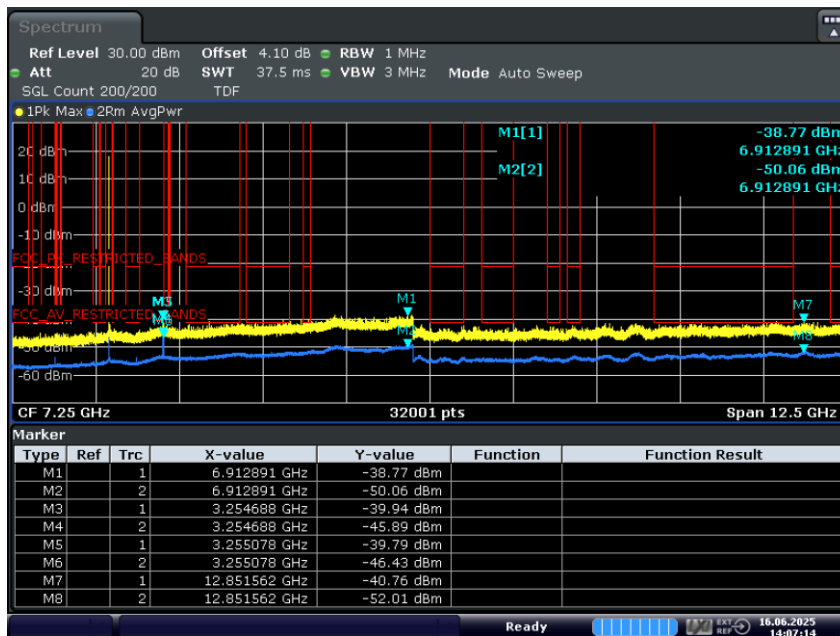


Date: 16 JUN.2025 12:20:25

Radio Technology = Bluetooth BDR, Operating Frequency = mid, Measurement range = 1 GHz
- 26 GHz
(S01_AA01)

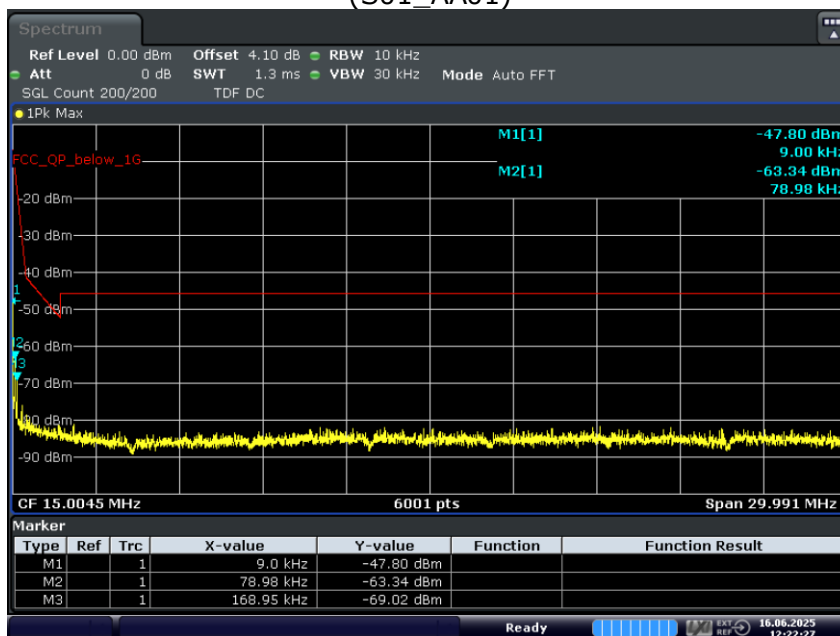


Date: 16 JUN 2025 16:10:58



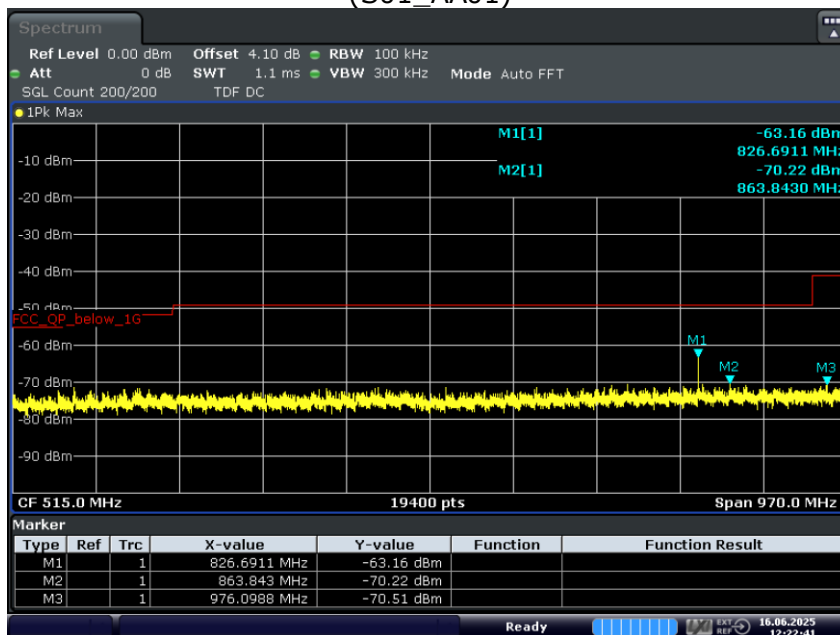
Date: 16 JUN 2025 14:07:14

Radio Technology = Bluetooth BDR, Operating Frequency = high, Measurement range = 9 kHz
- 30 MHz
(S01_AA01)



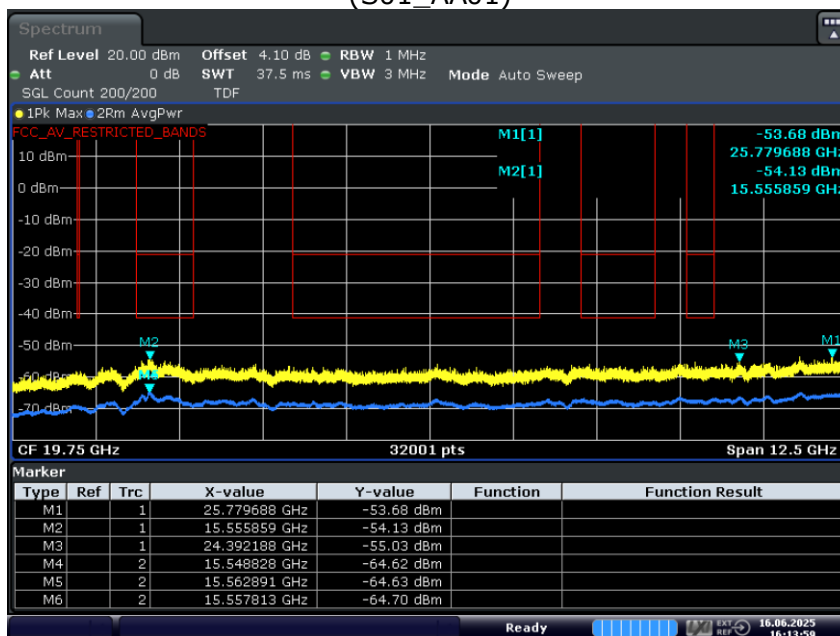
Date: 16 JUN.2025 12:22:27

Radio Technology = Bluetooth BDR, Operating Frequency = high, Measurement range = 30
MHz - 1 GHz
(S01_AA01)

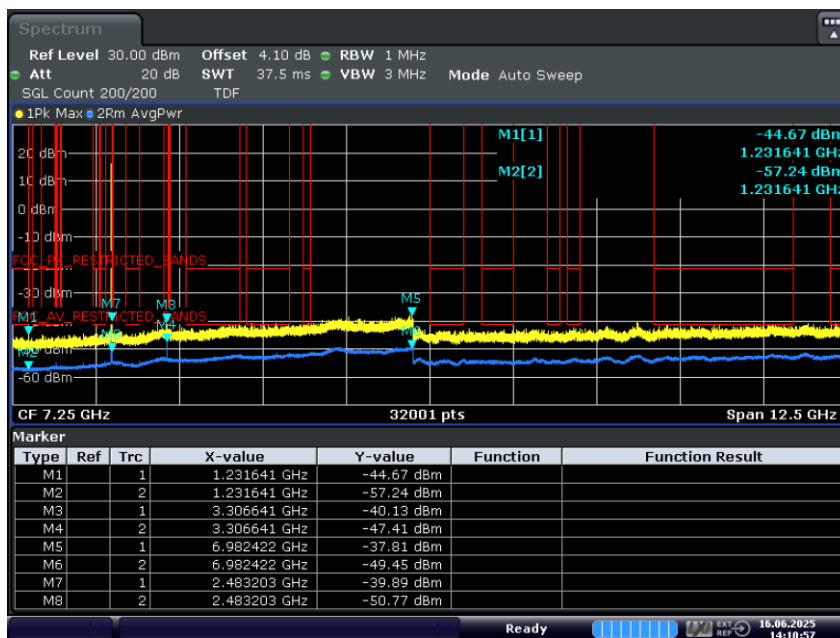


Date: 16 JUN.2025 12:22:41

Radio Technology = Bluetooth BDR, Operating Frequency = high, Measurement range = 1 GHz
- 26 GHz
(S01_AA01)

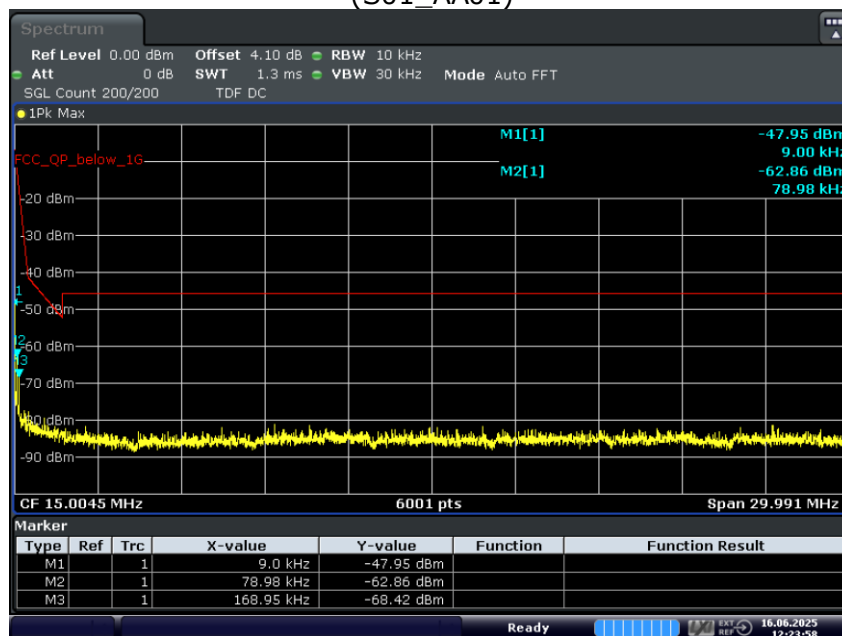


Date: 16 JUN 2025 16:13:59



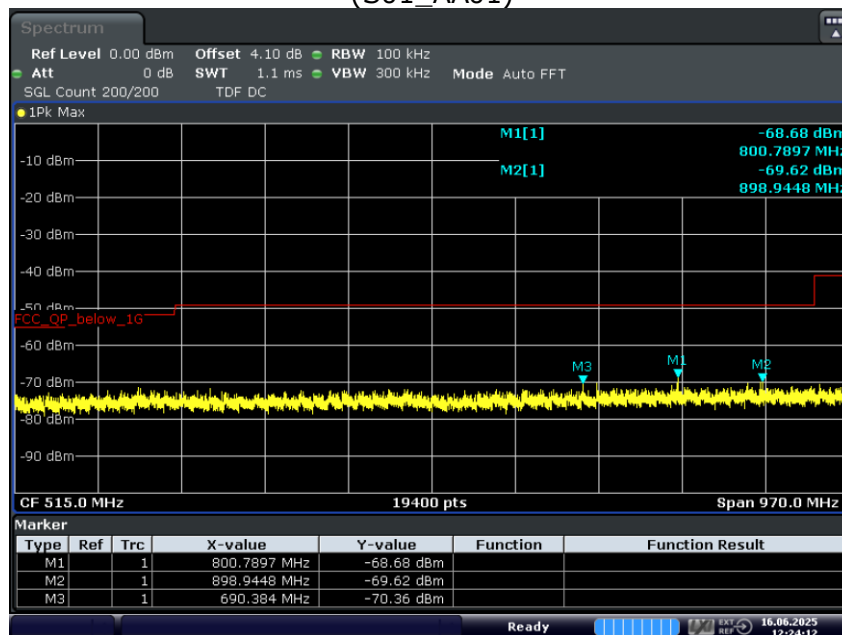
Date: 16 JUN 2025 14:10:57

Radio Technology = Bluetooth EDR 2, Operating Frequency = low, Measurement range = 9
kHz - 30 MHz
(S01_AA01)



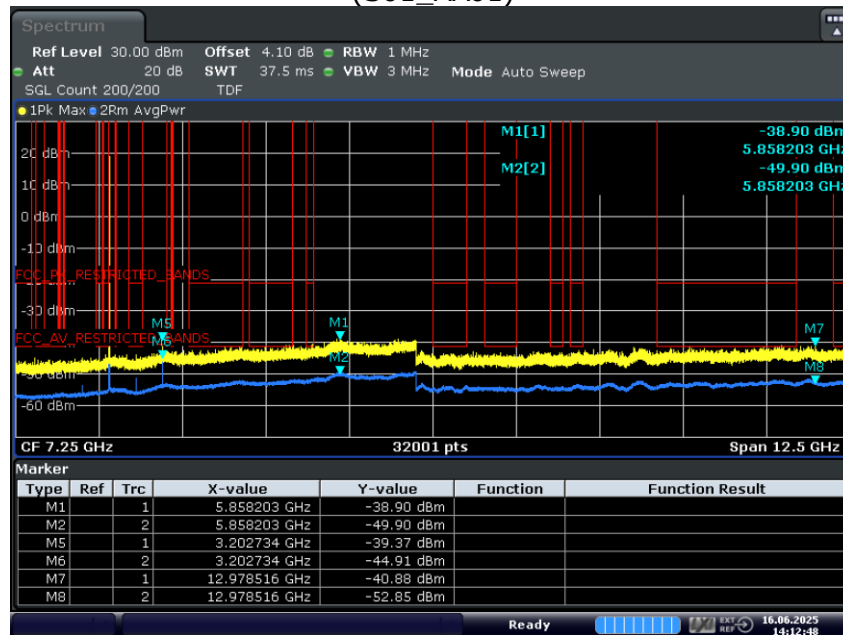
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Radio Technology = Bluetooth EDR 2, Operating Frequency = low, Measurement range = 30
MHz - 1 GHz
(S01_AA01)

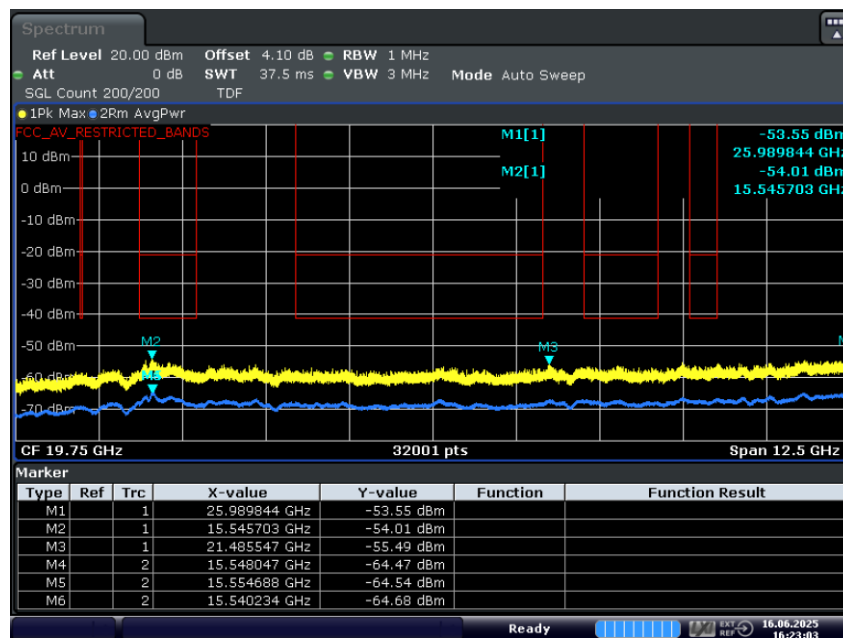


Date: 16 JUN.2025 12:24:13

Radio Technology = Bluetooth EDR 2, Operating Frequency = low, Measurement range = 1
GHz - 26 GHz
(S01_AA01)

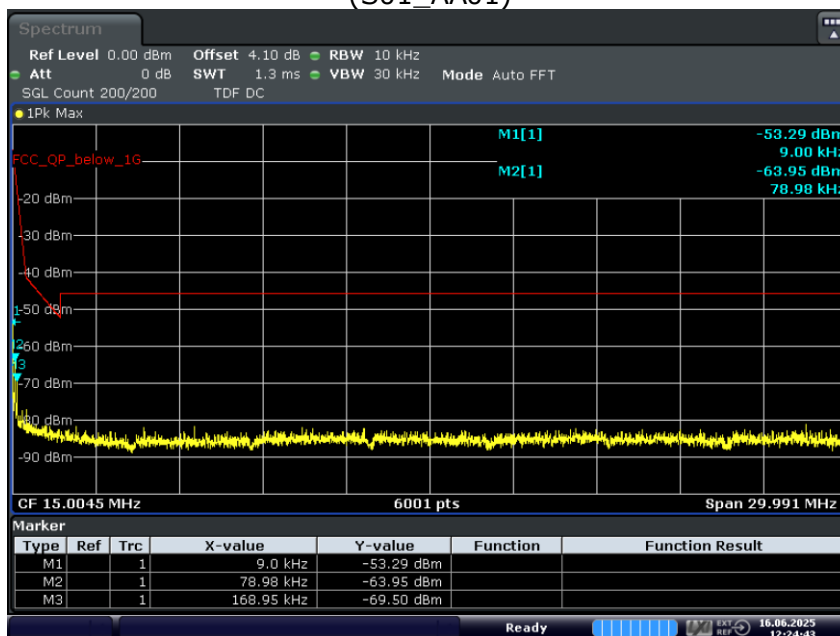


Date: 16 JUN.2025 14:12:48



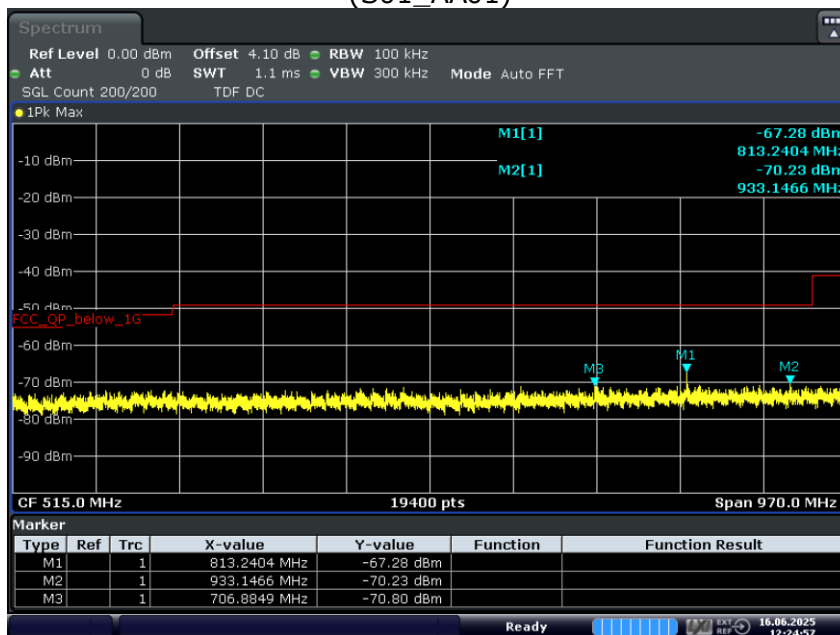
Date: 16 JUN.2025 16:23:03

Radio Technology = Bluetooth EDR 2, Operating Frequency = mid, Measurement range = 9
kHz - 30 MHz
(S01_AA01)



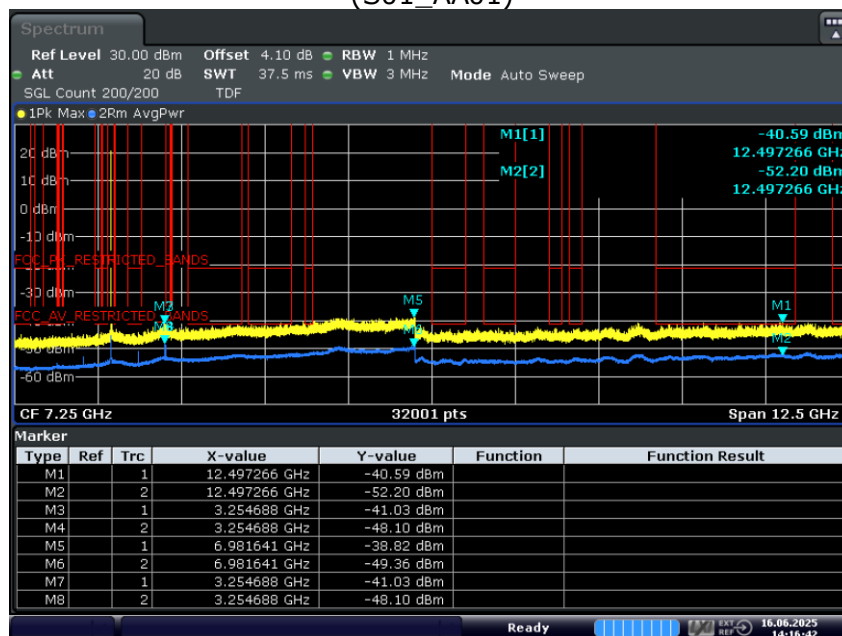
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Radio Technology = Bluetooth EDR 2, Operating Frequency = mid, Measurement range = 30
MHz - 1 GHz
(S01_AA01)

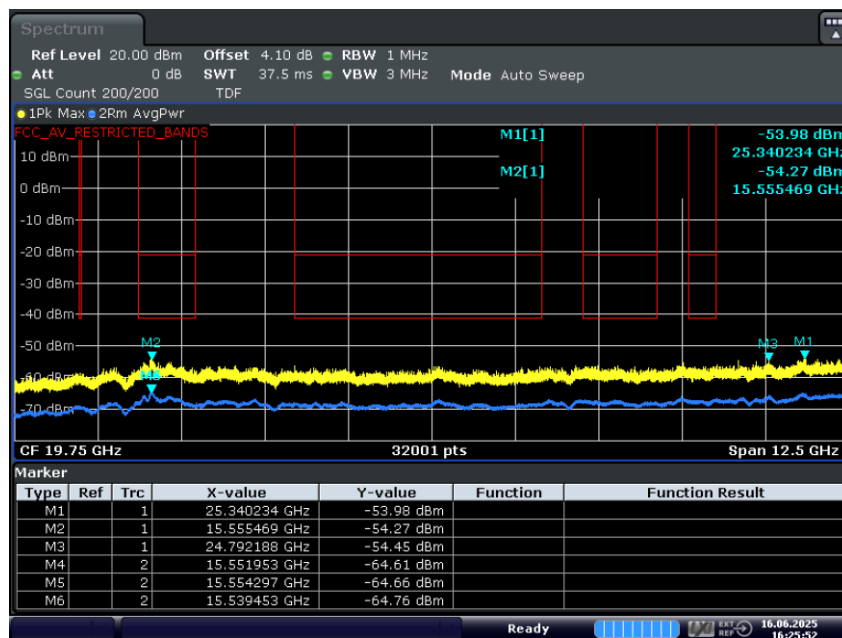


Date: 16 JUN.2025 12:24:57

Radio Technology = Bluetooth EDR 2, Operating Frequency = mid, Measurement range = 1
GHz - 26 GHz
(S01_AA01)

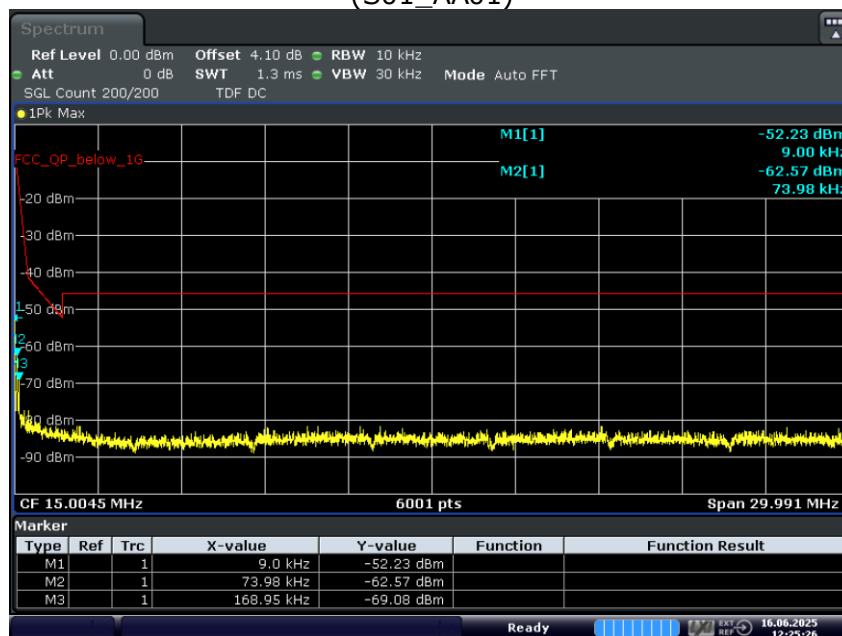


Date: 16 JUN 2025 14:16:42



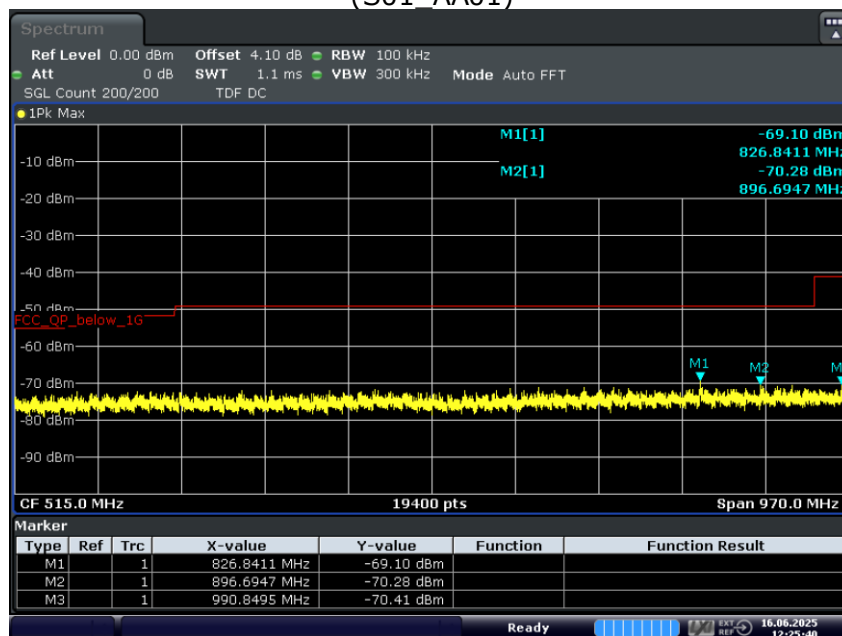
Date: 16 JUN 2025 16:25:52

Radio Technology = Bluetooth EDR 2, Operating Frequency = high, Measurement range = 9
kHz - 30 MHz
(S01_AA01)



Date: 16 JUN.2025 12:25:26

Radio Technology = Bluetooth EDR 2, Operating Frequency = high, Measurement range = 30
MHz - 1 GHz
(S01_AA01)



Date: 16 JUN.2025 12:25:40