EMC Test Report
2024-0450-EMC-TR-25-0095-V01

Designation:	UAP-R [BRS]
Manufacturer:	CommScope
Serial No(s):	SZBEBE2508A0005
ID No.	7862370-00 Rev: 00
FCC ID	XS5-IONEUAPR
ISED ID	2237E-IONEUAPR
Test Specifications:	ANSI 63.26:2015 Spot check according the following rules: FCC Rules and Regulations as listed in 47 CFR, Part 20 and Part 27 RSS-199 Issue 4 with RSS-GEN Issue 5 and RSS-131 Issue 4
Test Plan:	"BU-PC-2336-58" from customer
Test Result:	**Passed**

Date of issue:	13.06.2025		Signature:
Version:	01	Technical Reviewer:	Thomas Gerngroß Test Engineer Digitally signed by Thomas Gerngroß DN: cn=Thomas Gerngroß, o=Bureau Veritas CPS Germany GmbH, ou=ECL, email=thomas.gerngross@bureauveritas.com, c=DE Date: 2025.06.13 10:16:10 +02'00'
Date of receipt EUT:	26.02.2025		
Performance date:	09.05.2025 . 14.05.2025	Report Reviewer:	Thomas Hufnagel Test Engineer Digitally signed by Thomas Hufnagel Date: 2025.06.13 11:11:52 +02'00'

Bundesnetzagentur

BNetzA-CAB-19/21-20

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Laboratory accreditation no:	DAkkS D-PL-12024-06-04 BNETZA-CAB-19/21-20
FCC Designation Number:	DE0023
FCC Test Firm Registration:	366481
ISED CAB Identifier	DE0016
ISED Company Number	3475A

Versions management:

V 01.00	Initial release

Table of Contents

1.1 CFR APPLIED STANDARDS

Type of Authorization
Certification for an Industrial Signal Booster.

Applicable FCC Rules

Prepared in accordance with the requirements of FCC Rules and Regulations as listed in 47 CFR Chapter 1 Parts 2 and 20 and 27. The following subparts are applicable to the results in this test report.

Part 2, Subpart J - Equipment Authorization Procedures, Certification

Part 20, Commercial Mobiles Services

§ 20.21 Signal Boosters

Part 27; Miscellaneous Wireless Communications Services
Subpart C – Technical standards

§ 27.50 – Power and duty cycle limits
§ 27.54 – Frequency stability
§ 27.53 – Emission limits

The tests were selected and performed with reference to:

- FCC Public Notice 935210 applying "Signal Boosters Basic Certification Requirements" 935210 D02, 2024-11-20.
- FCC Public Notice 935210 applying "Measurement guidance for industrial and non-consumer signal booster, repeater and amplifier devices"
- 935210 D05, 2020-04-03.
- FCC Public Notice 971168 applying "Measurement guidance for certification of licensed digital transmitters" 971168 D01, 2018-04-09.
- ANSI C63.26: 2015 "American National Standard for Compliance Testing of Transmitters Used in Licensec Radio Services"
- RSS-199 Issue 4 "Broadband Radio Services (BRS) Equipment Operating in the Band 2500-2690 MHz"
- RSS-GEN Issue 5 "General Requirements for Compliance of Radio Apparatus"
- RSS-131 Issue 4 "Zone Enhancers"

1.2 DECLARATION TO THE TESTS IN THIS REPORT

A similar type of signal booster with the AWS band, UAP-XR was tested in all required tests, see test report "2024-0451-EMC-TR-25-0072-V01".

The difference between UAP-XR and UAP-R is, that UAP-XR has one connector for an external antenna and UAP-R has twointernal antennas connected via a BALUN to the internal RF output.

Therefore the power of each antenna output connector of the UAP-R is less than the output power of tha UAP-XR at its one antenna connector.

In this report the vaulues of the antenna port with the most output power are shown.

Because of the similarity of the two types only the most important tests regarding the conducted tests were performed.

1.3 FCC-ISED CORRELATION TABLE

Correlation of measurement requirements for Industrial signal booster from FCC and ISED Canada

Measurement	FCC reference	ISED reference
Effective radiated power, mean output power and zone enhancer gain	§ 27.50 KDB 935210 D05 v01r04: 3.5	RSS-GEN Issue 5, 6.12 RSS-199 Issue 4, 5.5
Peak to average ratio	§ 27.50	RSS-199 Issue 4, 5.5
Occupied bandwidth Input-versus-output spectrum	§ 2.1049 KDB 935210 D05 v01r04: 3.4	RSS-GEN Issue 5, 6.7 RSS-131 Issue 4: 9.2
Conducted spurious emission at antenna terminal(s)	§ 2.1051 § 27.53 KDB 935210 D05 v01r04: 3.6	RSS-GEN Issue 5, 6.13 RSS-199 Issue 4, 5.6
Out-of-band emissions limits	§ 2.1051 § 27.53 KDB 935210 D05 v01r04: 3.6	RSS-GEN Issue 5, 6.13 RSS-199 Issue 4, 5.6
Out-of-band rejection	KDB 935210 D05 v01r04: 3.3	RSS-131 Issue 4: 9.1
All measurements	ANSI 63.26	ANSI 63.26

The test case frequency stability was not performed since the EUT is not equipped with signal processing capabilities. According KDB 935210 D05 in this case a measurement is not required.

1.4 MEASUREMENT SUMMARY/SIGNATURES

47 CFR CHAPTER I FCC PART 27 Subpart C [Base stations/Repeater] **§ 27.50**

Effective radiated power, mean output power and zone enhancer gain
The measurement was performed according to ANSI C63.26, KDB 935210 D05 v01r04: 3.5

Final Result

OP-Mode Frequency band; Direction; Input power; Signal type	**FCC**	**ISED**
Band 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Band 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Band 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed

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Peak to average ratio
The measurement was performed according to ANSI C63.26

Final Result

	FCC	ISED
BAND 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed

47 CFR CHAPTER I FCC PART 2 § 2.1049

Occupied bandwidth/Input-versus-output spectrum
The measurement was performed according to ANSI C63.26, KDB 935210 D05 v01r04: 3.4

Final Result

OP-Mode Frequency band; Direction; Input power; Signal type	FCC	ISED
BAND 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
BAND 41 BRS (LBS), RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 0.3 dB < AGC, Wideband5G	Passed	Passed
BAND 41 BRS (MBS), RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Wideband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
BAND 41 BRS (UBS), RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed

47 CFR CHAPTER I FCC PART 27 Subpart C [Base stations/Repeater] § 2.1051, § 27.53

Conducted spurious emissions at antenna terminals
The measurement was performed according to ANSI C63.26, KDB 935210 D05 v01r04: 3.6

OP-Mode	**Final Result**	
	FCC	**ISED**
Frequency band; Direction; Input power; Signal type		
BAND 41 BRS (LBS), low, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (LBS), mid, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (LBS), high, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (LBS)low, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (LBS), mid, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (LBS), high, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (LBS), low, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (LBS), mid, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (LBS), high, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (MBS), low, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (MBS), mid, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (MBS), high, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (MBS)low, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (MBS), mid, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (MBS), high, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (MBS), low, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (MBS), mid, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (LBS), high, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (UBS), mid, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (UBS), high, RF downlink, Wideband	Passed	Passed
BAND 41 BRS (UBS)low, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (UBS), mid, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (UBS), high, RF downlink, Narrowband	Passed	Passed
BAND 41 BRS (UBS), low, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (UBS), mid, RF downlink, Wideband 5G	Passed	Passed
BAND 41 BRS (UBS), high, RF downlink, Wideband 5G	Passed	Passed

47 CFR CHAPTER I FCC PART 27 Subpart C [Base stations/Repeater] §2.1051, § 27.53

Out-of-band emission limits
The measurement was performed according to ANSI C63.26,
KDB 935210 D05 v01r04: 3.6

OP-Mode Band edge; Frequency band; Number of signals; Direction; Input power; Signal type	**FCC**	**ISED**
	Passed	Passed
Upper, Band 41 BRS (LBS), 1, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (LBS), 1, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (LBS), 1, RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
Upper, Band 41 BRS (LBS), 1, RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Upper, Band 41 BRS (LBS), 1, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (LBS), 1, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (LBS), 1, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (LBS), 1, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (LBS), 1, RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
Lower, Band 41 BRS (LBS), 1, RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Lower, Band 41 BRS (LBS), 1, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (LBS), 1, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (LBS), 2, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (LBS), 2, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (LBS), 2, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (LBS), 2, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (LBS), 2, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (LBS), 2, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (LBS), 2, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (LBS), 2, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed

47 CFR CHAPTER I FCC PART 27 Subpart C [Base stations/Repeater] §2.1051, § 27.53

Out-of-band emission limits
The measurement was performed according to ANSI C63.26,
KDB 935210 D05 v01r04: 3.6

OP-Mode Band edge; Frequency band; Number of signals; Direction; Input power; Signal type	**FCC**	**ISED**
	Passed	Passed
Upper, Band 41 BRS (MBS), 1, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (MBS), 1, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (MBS), 1, RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
Upper, Band 41 BRS (MBS), 1, RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Upper, Band 41 BRS (MBS), 1, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (MBS), 1, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (MBS), 1, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (MBS), 1, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (MBS), 1, RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
Lower, Band 41 BRS (MBS), 1, RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Lower, Band 41 BRS (MBS), 1, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (MBS), 1, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (MBS), 2, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (MBS), 2, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (MBS), 2, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (MBS), 2, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (MBS), 2, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (MBS), 2, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (MBS), 2, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (MBS), 2, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed

47 CFR CHAPTER I FCC PART 27 Subpart C [Base stations/Repeater] §2.1051, § 27.53

Out-of-band emission limits
The measurement was performed according to ANSI C63.26,
KDB 935210 D05 v01r04: 3.6

OP-Mode Band edge; Frequency band; Number of signals; Direction; Input power; Signal type	**FCC**	**ISED**
	Passed	Passed
Upper, Band 41 BRS (UBS), 1, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (UBS), 1, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (UBS), 1, RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
Upper, Band 41 BRS (UBS), 1, RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Upper, Band 41 BRS (UBS), 1, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (UBS), 1, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (UBS), 1, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (UBS), 1, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (UBS), 1, RF downlink, 0.3 dB < AGC, Wideband 5G	Passed	Passed
Lower, Band 41 BRS (UBS), 1, RF downlink, 3 dB > AGC, Wideband 5G	Passed	Passed
Lower, Band 41 BRS (UBS), 1, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (UBS), 1, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (UBS), 2, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (UBS), 2, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Upper, Band 41 BRS (UBS), 2, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Upper, Band 41 BRS (UBS), 2, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (UBS), 2, RF downlink, 0.3 dB < AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (UBS), 2, RF downlink, 3 dB > AGC, Wideband	Passed	Passed
Lower, Band 41 BRS (UBS), 2, RF downlink, 0.3 dB < AGC, Narrowband	Passed	Passed
Lower, Band 41 BRS (UBS), 2, RF downlink, 3 dB > AGC, Narrowband	Passed	Passed

47 CFR CHAPTER I FCC PART 27 Subpart C [Base stations/Repeater] KDB 935210 D05 v01r04: 3.3

Out-of-band rejection
The measurement was performed according to ANSI C63.26; **Final Result**
KDB 935210 D05 v01r04: 3.3

OP-Mode Frequency Band, Direction	**FCC**	**ISED**
Band 41 BRS (LBS), RF downlink	Passed	Passed
Band 41 BRS (MBS), RF downlink	Passed	Passed
Band 41 BRS (UBS), RF downlink	Passed	Passed

2 ADMINISTRATIVE DATA

2.1 TESTING LABORATORY

Bureau Veritas Consumer Products Services
Germany GmbH
Thurn-und-Taxis-Straße 18
D-90411 Nürnberg
Tel.: +49 40 74041 0
Fax: +49 40 74041-2755

2.2 APPLICANT DATA

Company Name:	CommScope Andrew Wireless Systems GmbH
Address:	Industriering 10 86675 Buchdorf Germany
Contact Person:	Mr. Jiri Čečka

2.3 MANUFACTURER DATA

Company Name:	Please see applicant data.
Address:	

3 TEST OBJECT DATA

3.1 GENERAL EUT DESCRIPTION

Kind of Device product description	Cellular repeater
Product name	Cellular repeater
Type	UAP-R
Declared EUT data by the supplier	
General Product Description	The EUT is an industrial signal booster supporting the following: Band 30/WCS 2300: 2350 – 2360 MHz Band 41 (BRS 2500), Broadband Radio Service: ● Lower Band Segment (LBS): 2496- 2568 MHz (Range for FCC) ● Lower Band Segment (LBS): 2500- 2568 MHz (Range for ISED) ● Middle Band Segment (MBS): 2572- 2614 MHz ● Upper Band Segment (UBS): 2618 – 2690 MHz Band 25/PCS 1900 Band 66/AWS 1700 A RF operation is only supported for the downlink.
Booster Type	Industrial signal booster
Voltage Type	DC, supply about PoE
Voltage Level	-60 V - -36 V, -57 V nominal
Maximum Output Donor Port [Uplink]	-
Maximum Output Server Port [Downlink]	18 dBm in all bands at amplifier output. before the BALUN, after the BALUN about 13 dBm per antenna connection port.
Maximum Gain [Uplink]	-
Maximum Gain [Downlink]	20 dB in all bands at amplifier output before the BALUN, after the BALuN about 15 dB per antenna connction port.

After the amplifier output the signal is routed to a BALUN with two antenna port connectors. Two built in dipole antennas are connected to the antenna port connectors of the BALUN.

The measurements were taken at the antenna port with the highter output level, here Antenna port 1.

The main components of the EUT are listed and described in chapter 3.2 EUT Main components.

3.2 EUT MAIN COMPONENTS

Sample Parameter	**Value**
Serial Number	SZBEBE2508A0005
HW Version	7862370-00 Rev: 00
SW Version	01.03.0012
Comment	-----

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

3.3 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**
-	-	-

3.4 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, S/N)	Description
AUX1	CommScope; ION-E PSU Shelf AC; HD20882	Power supply rack
AUX1	CommScope; ION-E WCS-2; SZAEAJ1952A0032	Power supply rack
AUX3	GE Power Electronics Inc.; CAR1212FPBC-Z; FK69111	Power module
AUX4	GE Energy; CP2000AC54TEP-CM; LBLNPW13KZ07004506	Power module
AUX5	CommScope; ION E SUI; (e1)MA34	Ethernet module
AUX6	CommScope; ION E CAT; SZBEAE1810A0009	PoE module
AUX8	CommScope, ION E RFD, SZBEAG1825A0004	RF card plug-in module
AUX8	CommScope, ION E RFD, SZBEA G1849A0043	RF card plug-in module

3.5 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
	,	Setup for all tests

3.6 OPERATING MODES

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

3.6.1 TEST CHANNELS

Channel frequencies for FCC use:

Band	Direction	Lower Frequency Band edge [MHz]	Upper Frequency Band edge [MHz]	Center Frequency [MHz]	Port
41, BRS (LBS)	Downlink	2496.00	2568.00	2532.00	Donor
41; BRS (MBS)	Downlink	2572.00	2614.00	2593.00	Donor
41, BRS (UBS)	Downlink	2618.00	2690.00	2654.00	Donor

Channel frequencies for ISED use:

Band	Direction	Lower Frequency Band edge [MHz]	Upper Frequency Band edge [MHz]	Center Frequency [MHz]	Port
41, BRS (LBS)	Downlink	2500.00	2568.00	2534.00	Donor
41; BRS (MBS)	Downlink	2572.00	2614.00	2593.00	Donor
41, BRS (UBS)	Downlink	2618.00	2690.00	2654.00	Donor

3.6.2 DEFINITION OF USED FREQUENCY BANDS

Narrowband: representation by a GSM signal
Wideband : representation by an AWGN signal with 4.1 MHz
Wideband 5G: representation by an AWGN signal with 43.6 MHz for LBS und UBS. For MBS the representation was done with 23.9 MHz.

3.6.3 AUTOMATIC GAIN CONTROL LEVELS

AGC Levels							
Band	**Direction**	**Signal Type**	**AGC Start Pin [dBm]**	**AGC Start Pin -0.3 dB [dBm]**	**AGC Start Pin +3 dB [dBm]**	**Frequency [MHz]**	**Frequency**
41, BRS (LBS)	Downlink	Wideband	-0.5	-0.8	2.5	2532.0	
41, BRS (LBS)	Downlink	Narrowband	0.4	0.1	3.2	2532.0	
41, BRS (LBS)	Downlink	Wideband 5G	0.0	-0.3	3.0	2532.0	
41, BRS (MBS)	Downlink	Wideband	-0.5	-0.8	2.6	2593.0	
41, BRS (MBS)	Downlink	Narrowband	-0.6	-0.9	2.5	2593.0	Mid
41, BRS (MBS)	Downlink	Wideband 5G	-0.3	-0.6	2.8	2593.0	
41, BRS (UBS)	Downlink	Wideband	-0.4	-0.7	2.7	2654.0	
41, BRS (UBS)	Downlink	Narrowband	0.7	0.4	3.5	2654.0	
41, BRS (UBS)	Downlink	Wideband 5G	0.3	0.0	3.4	2654.0	
41, BRS (LBS)	Downlink	Wideband	1.0	0.7	4.0	2498.5	
41, BRS (LBS)	Downlink	Narrowband	1.0	0.7	4.0	2496.2	
41, BRS (LBS)	Downlink	Wideband 5G	0.7	0.4	3.4	2518.5	
41, BRS (MBS)	Downlink	Wideband	0.2	-0.1	3.2	2574.5	
41, BRS (MBS)	Downlink	Narrowband	0.2	-0.1	3.2	2572.2	Low
41, BRS (MBS)	Downlink	Wideband 5G	-0.1	-0.4	2.6	2584.5	
41, BRS (UBS)	Downlink	Wideband	1.6	1.3	4.6	2620.5	
41, BRS (UBS)	Downlink	Narrowband	1.6	1.3	4.6	2618.2	
41, BRS (UBS)	Downlink	Wideband 5G	1.3	1.0	4.0	2640.5	
41, BRS (LBS)	Downlink	Wideband	0.4	0.1	3.4	2565.5	
41, BRS (LBS)	Downlink	Narrowband	0.4	0.1	3.4	2567.8	
41, BRS (LBS)	Downlink	Nwideband 5G	0.5	0.2	2.8	2545.5	
41, BRS (MBS)	Downlink	Wideband	-0.6	-0.9	2.4	2611.5	
41, BRS (MBS	Downlink	Narrowband	-0.8	-1.1	2.2	2613.8	High
41, BRS (MBS	Downlink	Nwideband 5G	-0.9	-1.2	1.8	2601.5	
41, BRS (UBS)	Downlink	Wideband	0.6	0.3	3.6	2687.5	
41, BRS (UBS)	Downlink	Narrowband	0.6	0.3	3.6	2689.8	
41, BRS (UBS)	Downlink	Nwideband 5G	0.3	0.0	3.0	2667.5	
41, BRS (LBS)	Downlink	Wideband	-0.4	-0.7	2.6	2538.0	
41, BRS (LBS)	Downlink	Narrowband	-0.6	-0.9	2.6	2538.0	
41, BRS (LBS)	Downlink	Wideband 5G	0.0	-0.3	3.0	2532.0	
41, BRS (MBS)	Downlink	Wideband	-0.6	-0.9	2.5	2602.7	
41, BRS (MBS)	Downlink	Narrowband	-0.8	-1.1	2.4	2602.7	Max. Power
41, BRS (MBS)	Downlink	Wideband 5G	-0.3	-0.6	2.8	2593.0	
41, BRS (UBS)	Downlink	Wideband	-0.4	-0.7	2.7	2660.1	
41, BRS (UBS)	Downlink	Narrowband	-0.2	-0.5	2.7	2660.1	
41, BRS (UBS)	Downlink	Wideband 5G	0.3	0.0	3.4	2654.0	

Remark:

If the measured frequency f_0 for the max power has a too low distance to the band edges, because in the tests modulated signals must be used: The next possible frequency to the according band edge is used.
For example for minimum distances to the band edges:

GSM signal (narrowband): 0.2 MHz
AWGN signal (wideband): 2.5 MHz
AWGN signal (wideband 5G): Here only measurements at the mid frequency were performed.

3.7 PRODUCT LABELLING

3.7.1 FCC ID LABEL

Please refer to the documentation of the applicant.

3.7.2 LOCATION OF THE LABEL ON THE EUT

Please refer to the documentation of the applicant.

4 DESCRIPTION OF EMC TEST CENTRE

4.1 CLIMATIC CONDITIONS DURING MEASUREMENTS

The climatic conditions were within the following ranges.
For ESD testing, the conditions during the test were denoted in the corresponding chapter.

Ambient temperature:	25 ± 10 °C
Relative humidity:	20 – 60 %
Air pressure:	860 - 1060 hPa

4.2 CONFORMITY STATEMENT/DECISION RULE

4.2.1 EMISSION

If the standard or the customer defines no decision rule, the laboratory applies a decision rule following the "Binary Statement for Simple Acceptance Rule (w=0)" (chapter 4.2.1) of ILAC Guidelines on Decision Rules and Statements of Conformity (ILAC-G8:09/2019). If the measured value is at the limit value, it is evaluated as PASS. The client has agreed with application of the decision rule prior testing and demanded a statement of conformity by the test laboratory.

4.3 MEASUREMENT UNCERTAINTIES

KDB 935210 D05	Test laboratory
Power measurement	0,68 dB
Measuring AGC threshold level	0,90 dB
Out of band rejection	0,90 dB
Input-versus-output signal comparison	0,91 dB
Mean power output	0,90 dB
Measuring out-of-band/out-of-block (including intermodulation) emissions and spurious emissions	0,90 dB
Out-of-band/out-of-block emissions conducted measurements	0,90 dB
Spurious emissions conducted	2,18 dB
Spurious emissions radiated mesurements	5,38 dB
Total frequency uncertainty	2×10^{-7}

Reference : ECL-MU5.4.6.3-EMC-14-001-V03.00 MU Wireless.xlsx

5 TEST RESULTS

5.1 EFFECTIVE RADIATED POWER, MEAN OUTPUT POWER AND ZONE ENHANCER GAIN

Standard FCC Part 27, §27.50

The test was performed according to:
ANSI C63.26, KDB 935210 D05 v01r04: 3.5

Test date: 2025-05-09 – 2025-05-14

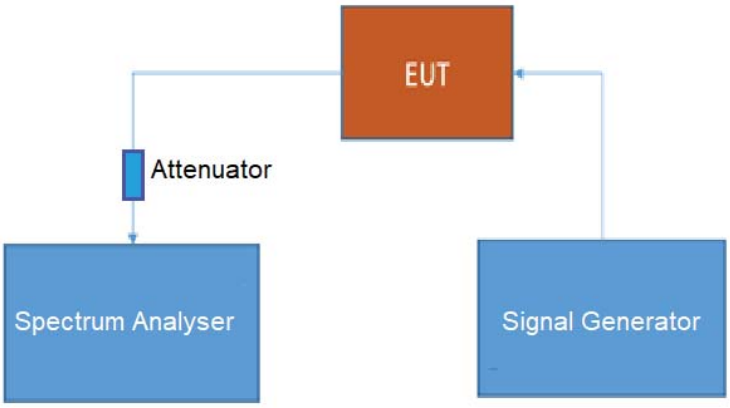
Environmental conditions: 24.0 °C; 26 % r. H., average values of all test dates

Test engineer: Thomas Hufnagel

5.1.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the signal booster power and gain limits and requirements for industrial signal boosters.

The EUT was connected to the test setup according to the following diagram:



The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.

5.1.2 TEST REQUIREMENTS/LIMITS

Abstract from FCC Part 27:

Part 27; Miscellaneous Wireless Communication Services

Subpart C – Technical standards

§ 27.50

Band 41:

(h) The following power limits shall apply in the BRS and EBS:

(i) The maximum EIRP of a main, booster or base station shall not exceed 33 dBW + 10log(X/Y) dBW, where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition, except as provided in paragraph (h)(1)(ii) of this section.

(ii) If a main or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern, the maximum EIRP in dBW in a given direction shall be determined by the following formula: EIRP = 33 dBW + 10 log(X/Y) dBW + 10 log(360/beamwidth) dBW, where X is the actual channel width in MHz, Y is either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition, and beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the station or any sector measured at the half-power points.

Abstract from RSS-199:

5.5 Transmitter power

The maximum output power of the equipment shall comply with the limits specified in table 3. In this table, maximum power refers to the equivalent isotropically radiated power (e.i.r.p.) or total radiated power (TRP), measured in terms of average values.

Subscriber equipment other than fixed subscriber equipment shall not exceed an e.i.r.p of 2W per channel bandwidth.

Fixed subscriber equipment shall not exceed the following:
i i. conducted power of 2W per channel bandwidth for all ports
ii ii. e.i.r.p of 40 W per channel bandwidth

The maximum power limits for fixed station and base station are provided in Table 3. The limits in this RSS are specified for the purpose of certification and may not apply to all deployment scenarios. Consult SRSP-517 for more deployment details in the band 2500-2690 MHz.

Table 3: Maximum power of fixed station and base station in the band 2500-2690 MHz

Equipment type	Maximum power
Non-AAS fixed station and base station	e.i.r.p of 1640 W /MHz
AAS fixed station and base station	TRP of 43 dBm /MHz

5.1.3 TEST PROTOCOL

FCC table

Band 41, BRS (LBS), downlink							
Signal type	**Input power**	**Frequency [MHz]**	**Input power [dBm]**	**Maximum average output power [dBm]**	**Limit average output power [dBm] EIRP**	**Margin to limit [dB]**	**Gain [dB]**
Wideband	0.3 dB < AGC	2538.0	-0.7	14.0	62.6	48.6	14.7
Wideband	3 dB > AGC	2538.0	2.6	13.5	62.6	49.1	10.9
Narrowband	0.3 dB < AGC	2538.0	-0.9	14.0	51.6	37.6	14.9
Narrowband	3 dB > AGC	2500.0	2.6	13.5	51.6	38.2	10.9
Wideband 5G	0.3 dB < AGC	2532.0	-0.3	14.1	72.1	58.0	14.4
Wideband 5G	3 dB > AGC	2532.0	3.0	13.5	72.1	58.6	10.5

Band 41, BRS (MBS), downlink							
Signal type	**Input power**	**Frequency [MHz]**	**Input power [dBm]**	**Maximum average output power [dBm]**	**Limit average output power [dBm] EIRP**	**Margin to limit [dB]**	**Gain [dB]**
Wideband	0.3 dB < AGC	2602.7	-0.9	13.9	62.2	48.4	14.8
Wideband	3 dB > AGC	2602.7	2.5	13.9	62.2	48.3	11.4
Narrowband	0.3 dB < AGC	2602.7	-1.1	13.8	51.2	37.4	14.8
Narrowband	3 dB > AGC	2602.7	2.4	13.8	51.2	37.4	11.4
Wideband 5G	0.3 dB < AGC	2593.0	-0.6	14.1	69.2	55.2	14.6
Wideband 5G	3 dB > AGC	2593.0	2.8	14.0	69.2	55.2	11.2

Band 41, BRS (UBS), downlink							
Signal type	**Input power**	**Frequency [MHz]**	**Input power [dBm]**	**Maximum average output power [dBm]**	**Limit average output power [dBm] EIRP**	**Margin to limit [dB]**	**Gain [dB]**
Wideband	0.3 dB < AGC	2660.1	-0.7	14.0	62.6	48.6	14.7
Wideband	3 dB > AGC	2660.1	2.7	13.5	62.6	49.1	10.8
Narrowband	0.3 dB < AGC	2660.1	-0.5	14.3	51.6	37.3	14.8
Narrowband	3 dB > AGC	2660.1	2.7	13.8	51.6	37.9	11.0
Wideband 5G	0.3 dB < AGC	2654.0	0.0	14.3	72.1	57.8	14.3
Wideband 5G	3 dB > AGC	2654.0	3.4	14.2	72.1	57.9	10.9

ISED table

Band 41, BRS (LBS), downlink							
Signal type	**Input power**	**Frequency [MHz]**	**Input power [µW; dBm]**	**Maximum average output power [mW; dBm]**	**Limit average output power [W; dBm] EIRP**	**Margin to limit [dB]**	**Gain [dB]**
Wideband	0.3 dB < AGC	2538.0	846; -0.7	25; 14.0	1640; 62.1	43.0	18.5
Wideband	3 dB > AGC	2538.0	1840; 2.6	22.1; 13.4	1640; 62.1	42.9	16.6
Narrowband	0.3 dB < AGC	2538.0	808; -0.9	25.9; 14.1	1640; 62.1	43.0	18.6
Narrowband	3 dB > AGC	2500.0	1780; 2.5	22.2; 13.5	1640; 62.1	42.5	15.7
Wideband 5G	0.3 dB < AGC	2532.0	934; -0.3	25.6; 14.1	1640; 62.1	43.2	19.5
Wideband 5G	3 dB > AGC	2532.0	2010; 3.0	22.5; 13.5	1640; 62.1	43.7	15.6

Band 41, BRS (MBS), downlink							
Signal type	**Input power**	**Frequency [MHz]**	**Input power [µW; dBm]**	**Maximum average output power [mW; dBm]**	**Limit average output power [W; dBm] EIRP**	**Margin to limit [dB]**	**Gain [dB]**
Wideband	0.3 dB < AGC	2602.7	808; -0.9	24.3; 13.9	1640; 62.1	43.5	19.4
Wideband	3 dB > AGC	2602.7	1760; 2.5	24.3; 13.9	1640; 62.1	44.1	15.5
Narrowband	0.3 dB < AGC	2602.7	796; -1.0	24; 13.8	1640; 62.1	43.4	19.6
Narrowband	3 dB > AGC	2602.7	1710; 2.3	24; 13.8	1640; 62.1	43.9	15.8
Wideband 5G	0.3 dB < AGC	2593.0	880; -0.6	25.4; 14.0	1640; 62.1	43.5	19.2
Wideband 5G	3 dB > AGC	2593.0	1900; 2.8	25.3; 14.0	1640; 62.1	44.0	15.4

Band 41, BRS (UBS), downlink							
Signal type	**Input power**	**Frequency [MHz]**	**Input power [µW; dBm]**	**Maximum average output power [mW; dBm]**	**Limit average output power [W; dBm] EIRP**	**Margin to limit [dB]**	**Gain [dB]**
Wideband	0.3 dB < AGC	2660.1	857; -0.7	25.4; 14.0	1640; 62.1	43.6	19.3
Wideband	3 dB > AGC	2660.1	1860; 2.7	22.3; 13.5	1640; 62.1	44.2	15.3
Narrowband	0.3 dB < AGC	2660.1	893; -0.5	27.3; 14.4	1640; 62.1	43.6	19.2
Narrowband	3 dB > AGC	2660.1	1930; 2.9	24; 13.8	1640; 62.1	44.2	15.2
Wideband 5G	0.3 dB < AGC	2654.0	1010; 0.0	26.7; 14.3	1640; 62.1	43.2	18.9
Wideband 5G	3 dB > AGC	2654.0	2160; 3.3	26.4; 14.2	1640; 62.1	43.8	15.1

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

5.1.4 SAMPLE CALCULATION OF OUTPUT POWER

FCC calculation:

Maximum output power (EIRP) in consideration together with the send antennas

The highest power level together in consideration with the lowest margin to limit in the tables above is
$p_{highest}$ = 14.3 dBm at the channel which has the most output power of all channels.

Hereby at an antenna gain of G_{dBi} = 9.0 dB the highest effecitve radiated output power EIRP $p_{EIRP\ 1CH}$ of one channel is:

$p_{EIRP\ 1CH} = p_{highest} + G_{dBi}$

This results in:

$p_{EIRP\ 1CH}$ = 14.3 dBm + 9.0 dB = 23.3 dBm

MIMO level:

There are two antennas built in the device therefore at MIMO the maximum power is:

$p_{MIMO} = p_{EIRP\ 1\ CH}$ + 3 dB= 23.3 dBm + 3 dB= 26.3 dBm

Final result of this consideration:

$p_{EIRP\ all\ channels}$ = 26.3 dBm < 51.6 dBm

The DUT doesn't exceed the limit.

ISED calculation:

Maximum output power (EIRP) in consideration together with the send antennas

The highest power level together in consideration with the lowest margin to limit in the tables above is
$p_{highest}$ = 14.3 dBm at the channel which has the most output power of all channels.

Hereby at an antenna gain of G_{dBi} = 9.0 dB the highest effecitve radiated output power EIRP $p_{EIRP\ 1CH}$ of one channel is:

$p_{EIRP\ 1CH} = p_{highest} + G_{dBi}$

This results in:

$p_{EIRP\ 1CH}$ = 14.3 dBm + 9.0 dB = 23.3 dBm

The eqivalent power P is according the given formula:

$P_{EIRP\ 1CH}$ =

$$P\ EIRP\ 1CH\ [W] = 10EXP\quad \left(p\ EIRP\ 1CH\ [dBm]\quad /\quad 10\right) * 0.001\ [W]$$

This results in:

$$P\ EIRP\ 1CH\ [W] = 10EXP\quad \left(23.3\ [dBm]\quad /\quad 10\right) * 0.001\ [W] = 0.21\ W$$

MIMO level:

There are two antennas built in the device therefore at MIMO the maximum power is:

p_{MIMO} = 2 * $p_{EIRP\ 1\ CH}$ = 2 * 0.21 W = 0.42 W

Final result of this consideration:

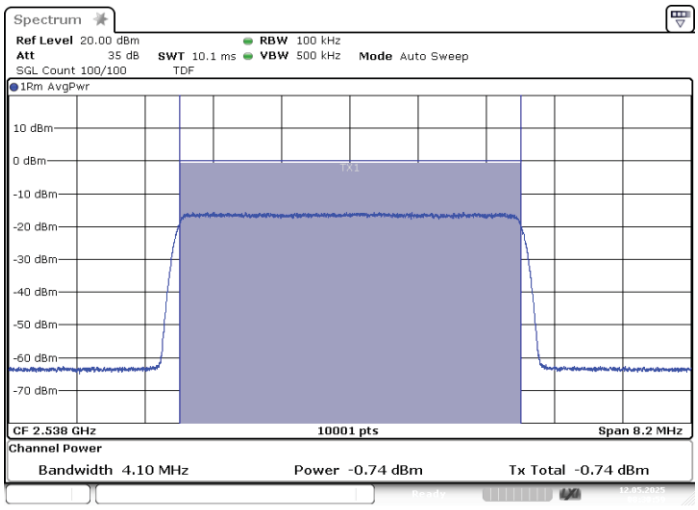
$p_{EIRP\ all\ channels}$ = 0.42 W < 1640 W/MHz, hereby 1640 W/MHz is the highest allowed limit in this band which equates 62.1 dBm/MHz.

The DUT doesn't exceed the limit.

5.1.5 0.MEASUREMENT PLOT

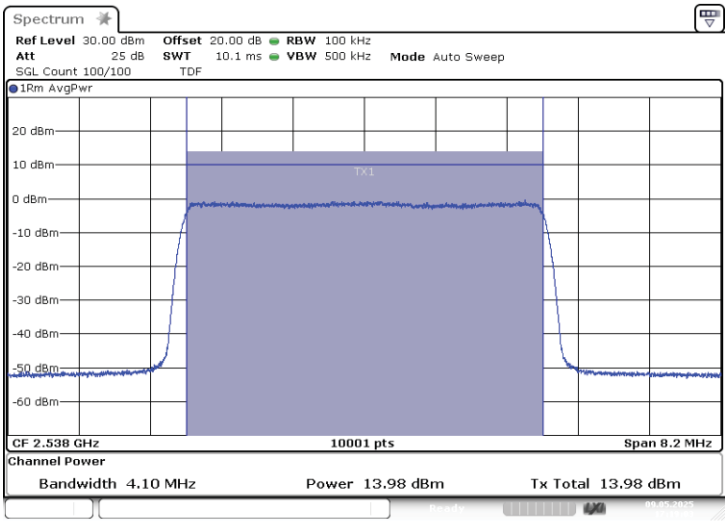
FCC plots

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Input power 0.3 dB < AGC



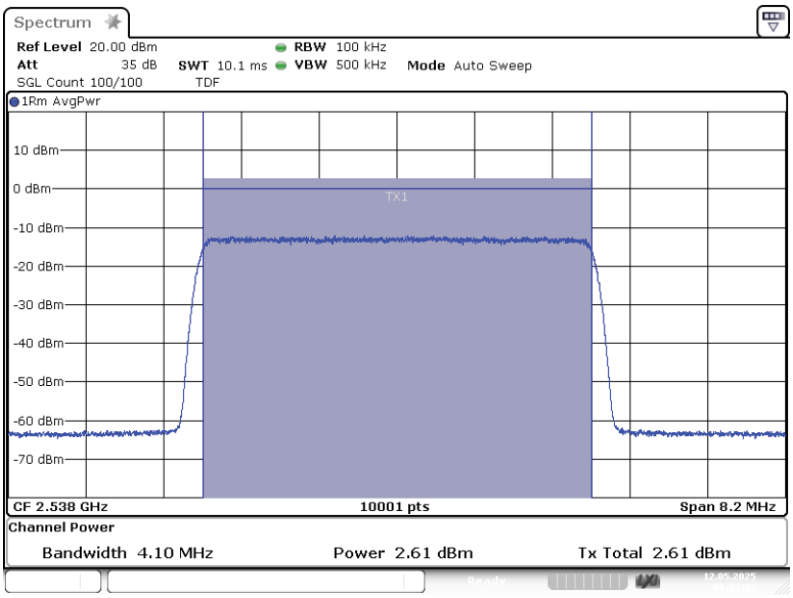
3.5.3 Power AWGN In-0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Output power 0.3 dB < AGC



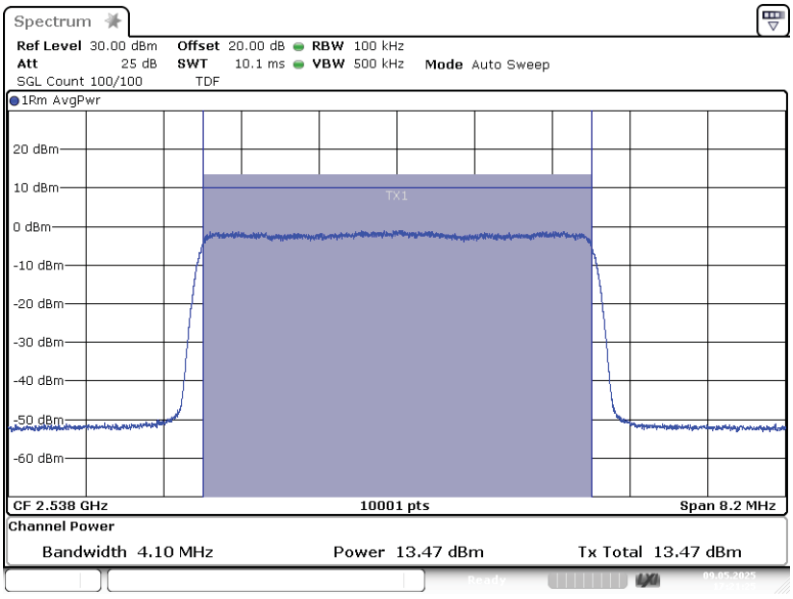
3.5.3 Power AWGN Out -0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Input power 3 dB > AGC



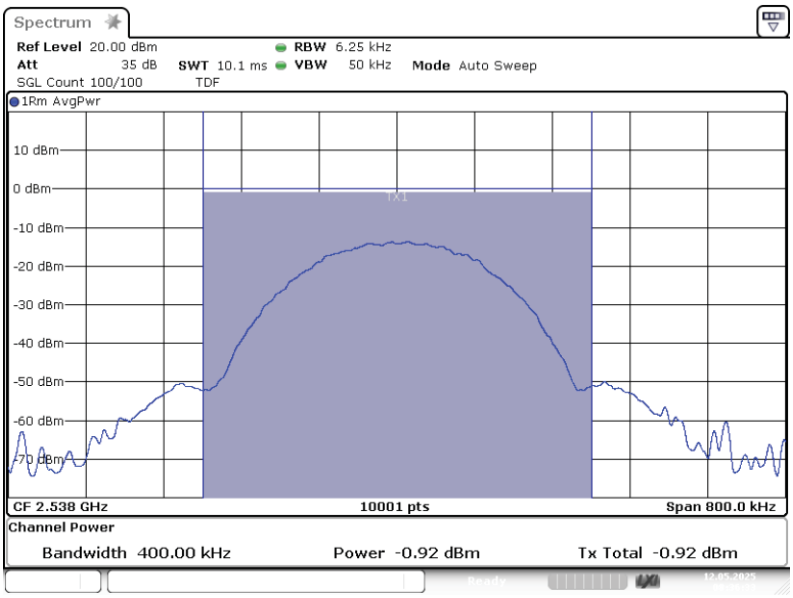
3.5.3 Power AWGN In+3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Output power 3 dB > AGC



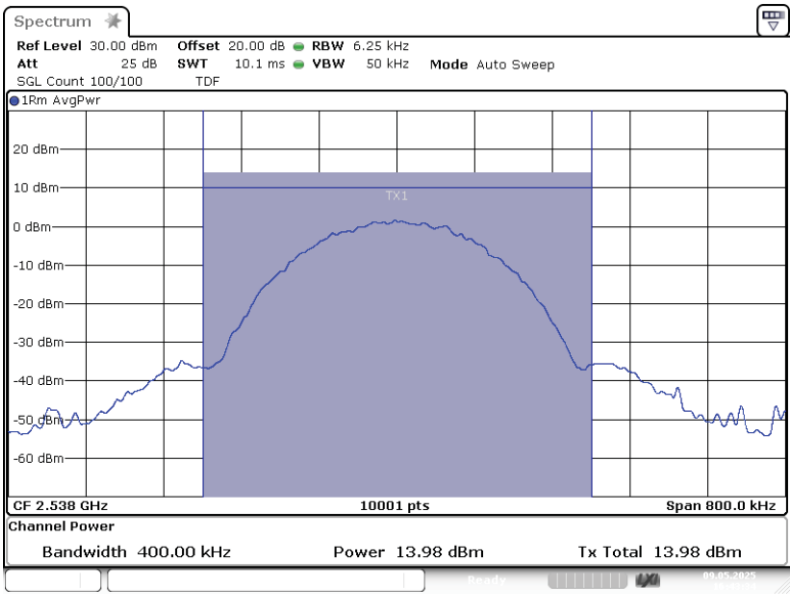
3.5.3 Power AWGN Out +3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Input power 0.3 dB < AGC



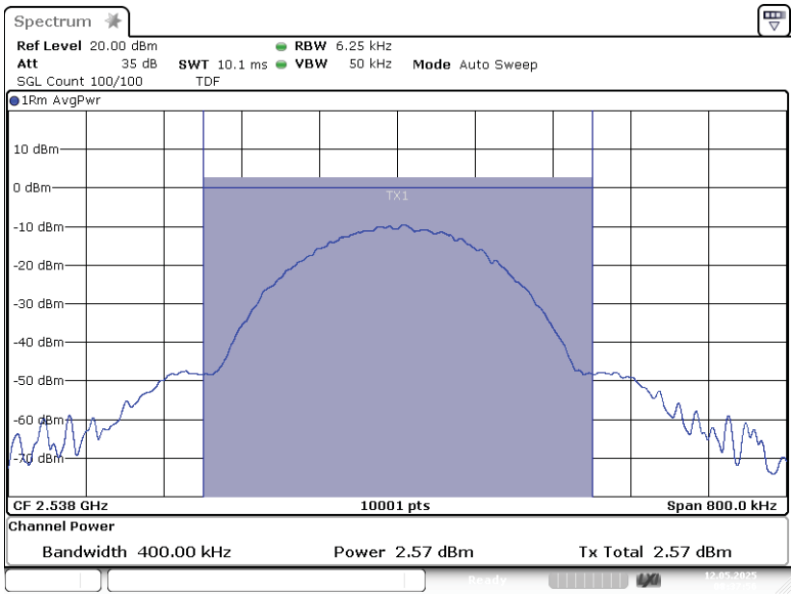
3.5.3 Power GSM In-0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Output power 0.3 dB < AGC



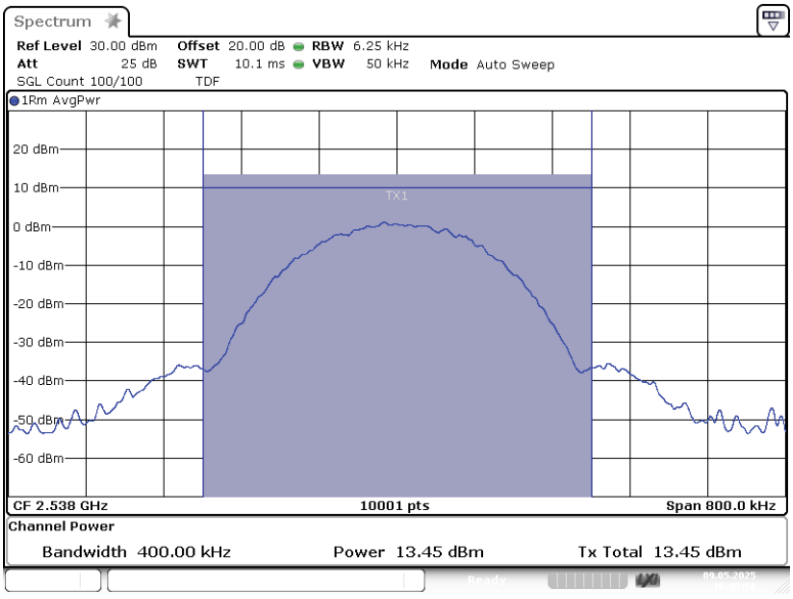
3.5.3 Power GSM Out -0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Input power 3 dB > AGC



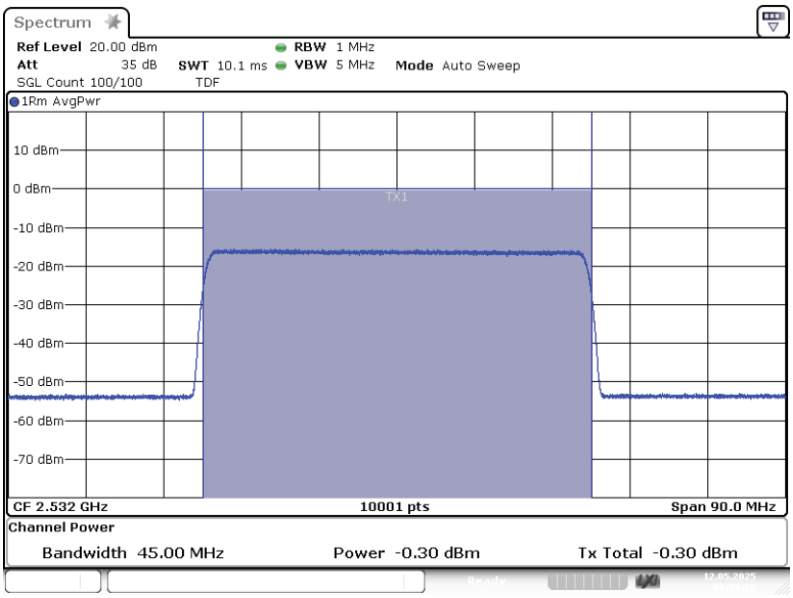
3.5.3 Power GSM In+3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Output power 3 dB > AGC



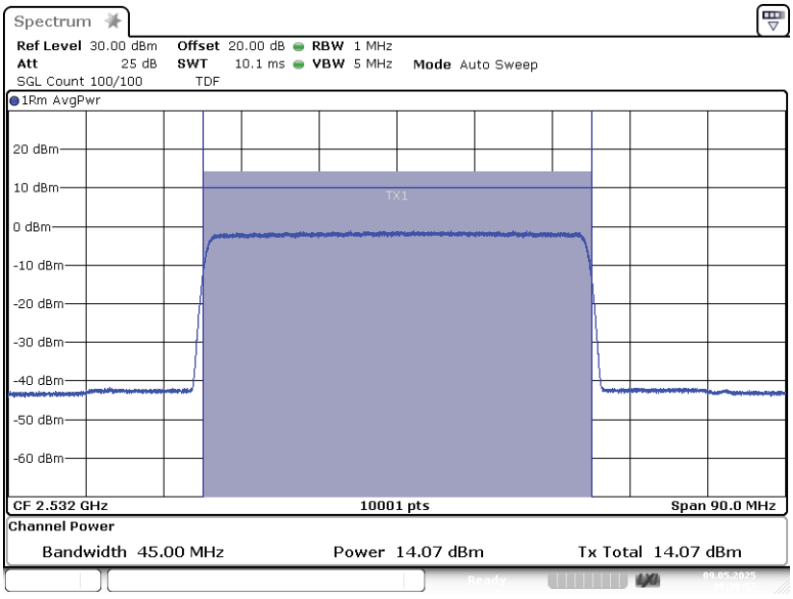
3.5.3 Power GSM Out +3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Input power 0.3 dB < AGC



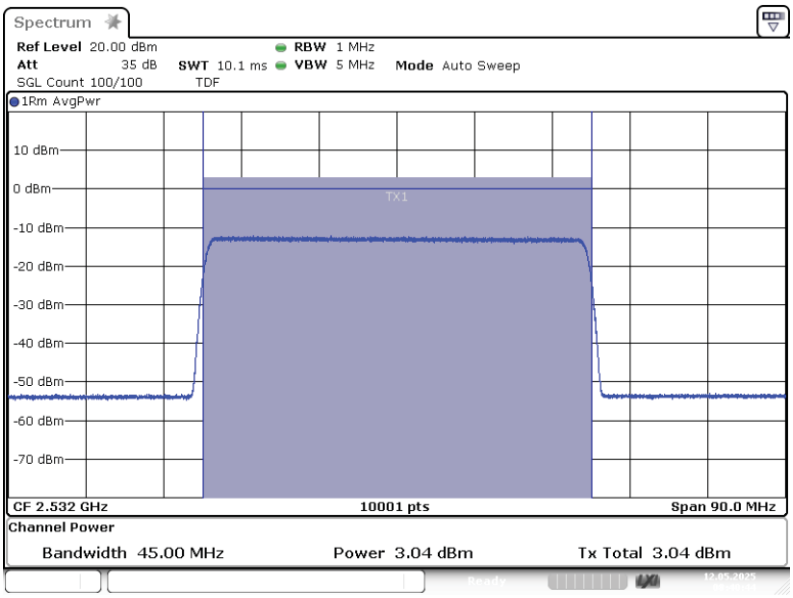
3.5.3 Power AWGN 45M In-0.3 2.53200G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Output power 0.3 dB < AGC



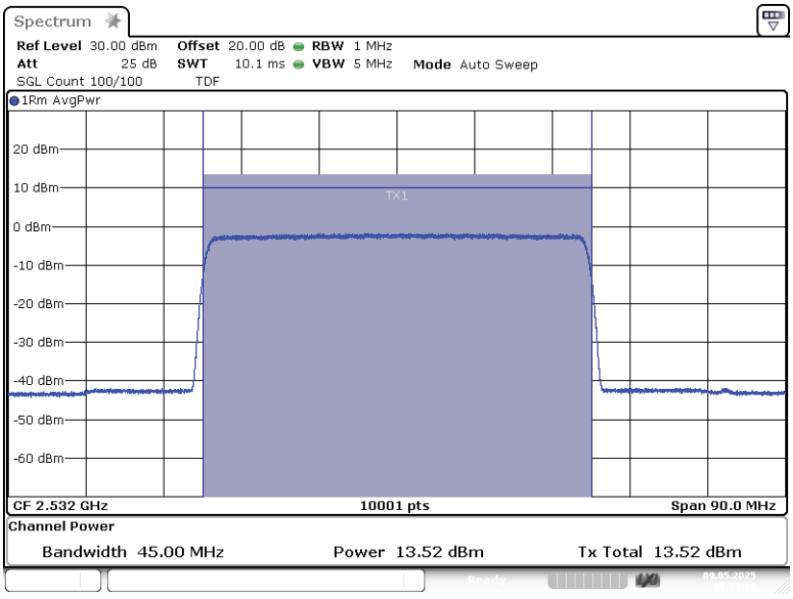
3.5.3 Power AWGN 45M Out -0.3 2.53200G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Input power 3 dB > AGC



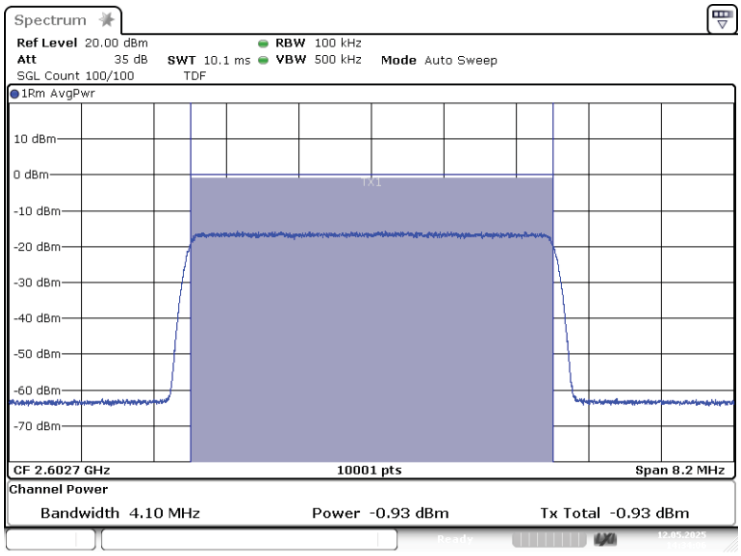
3.5.3 Power AWGN 45M In+3 2.53200G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Output power 3 dB > AGC



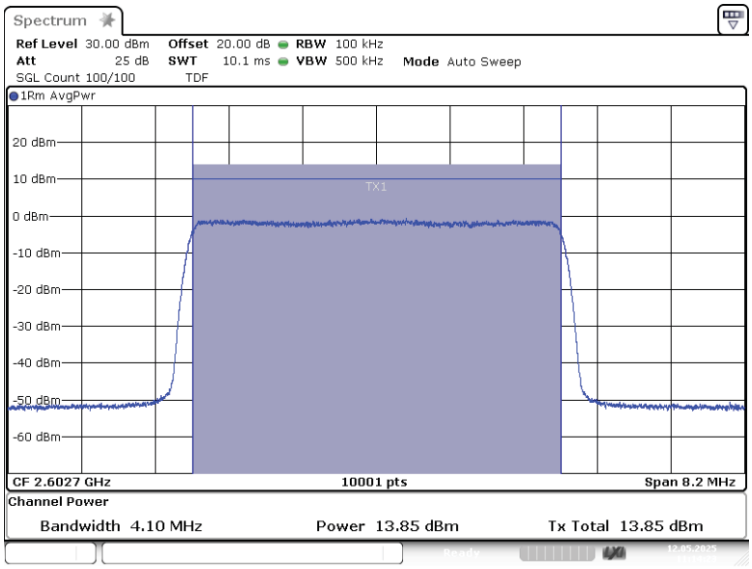
3.5.3 Power AWGN 45M Out +3 2.53200G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Input power 0.3 dB < AGC



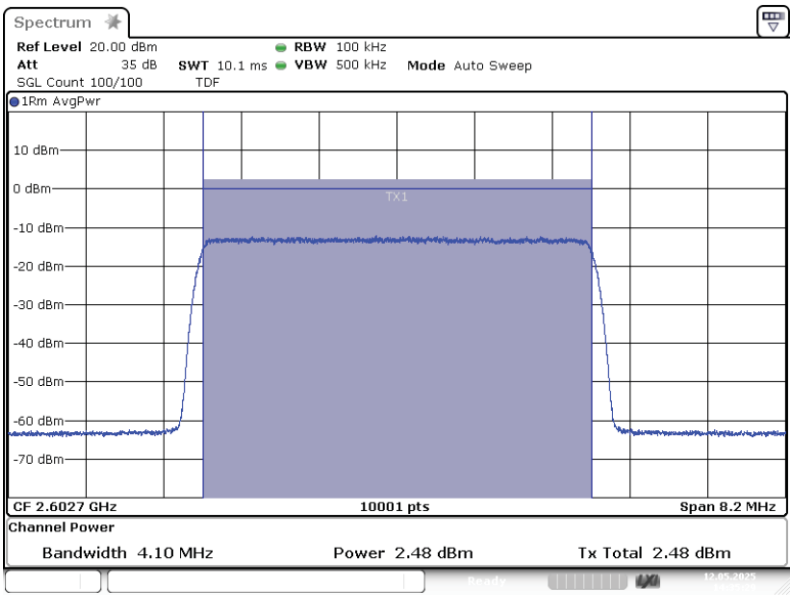
3.5.3 Power AWGN In-0.3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Output power 0.3 dB < AGC



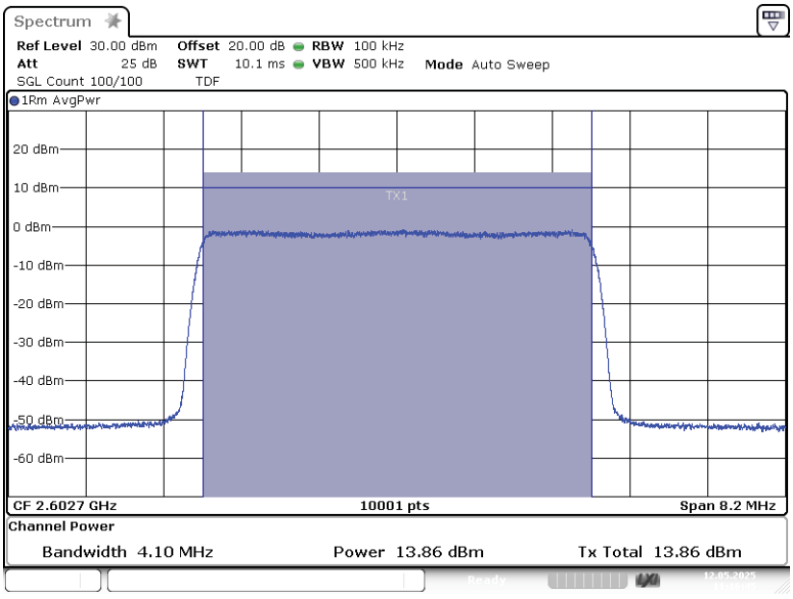
3.5.3 Power AWGN Out -0.3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Input power 3 dB > AGC



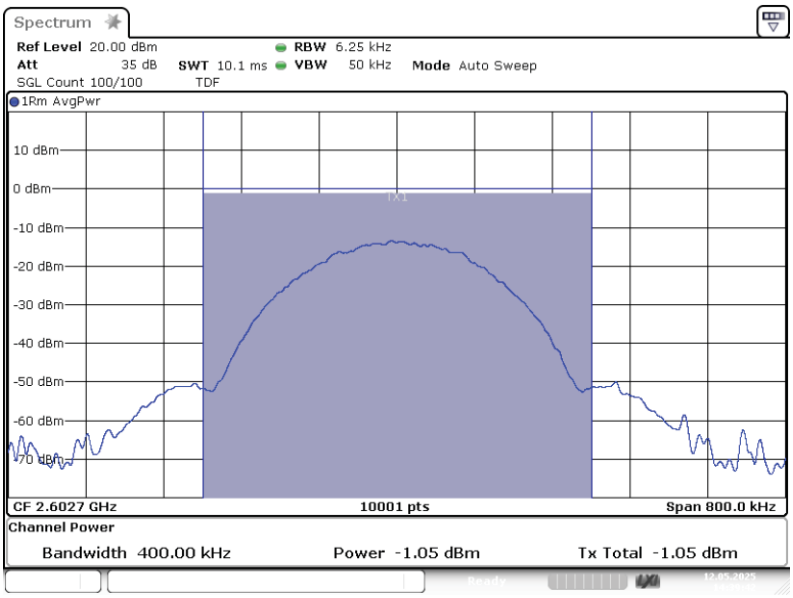
3.5.3 Power AWGN In+3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Output power 3 dB > AGC



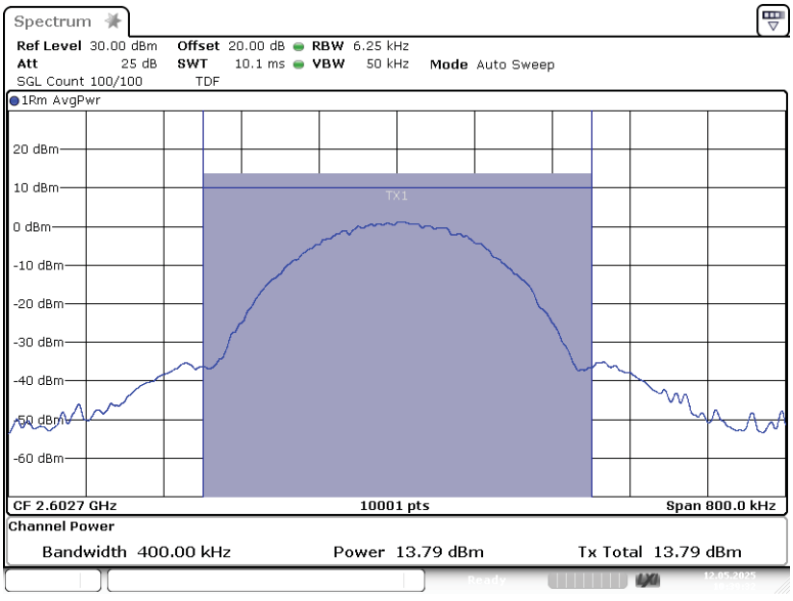
3.5.3 Power AWGN Out +3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: GSM;
Input power 0.3 dB < AGC



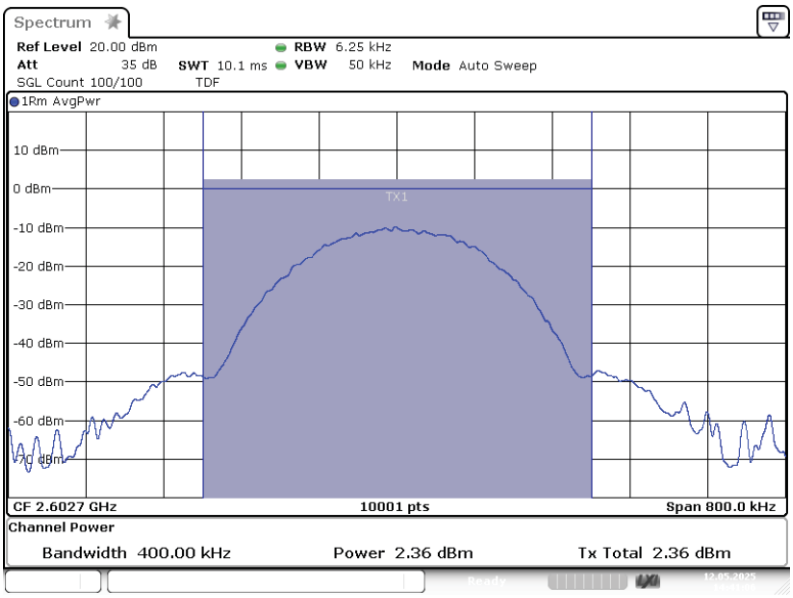
3.5.3 Power GSM In-0.3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: GSM;
Output power 0.3 dB < AGC



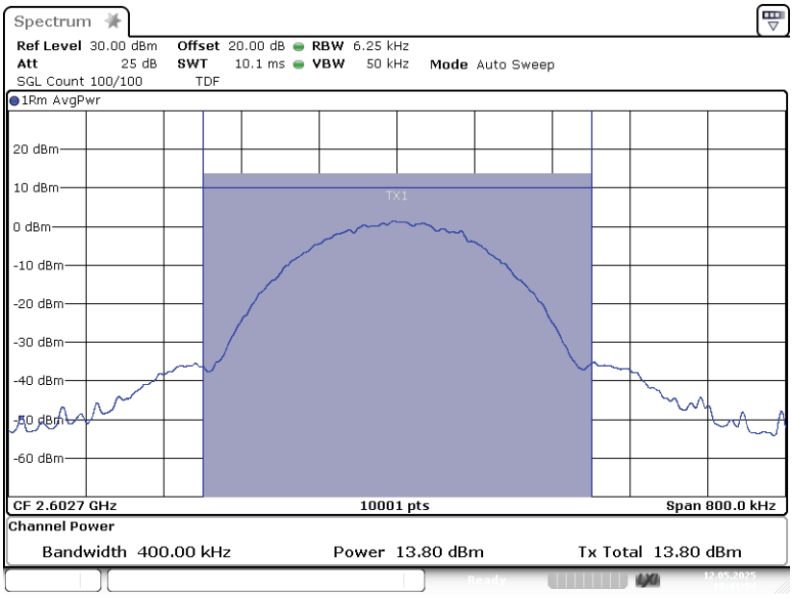
3.5.3 Power GSM Out -0.3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: GSM;
Input power 3 dB > AGC



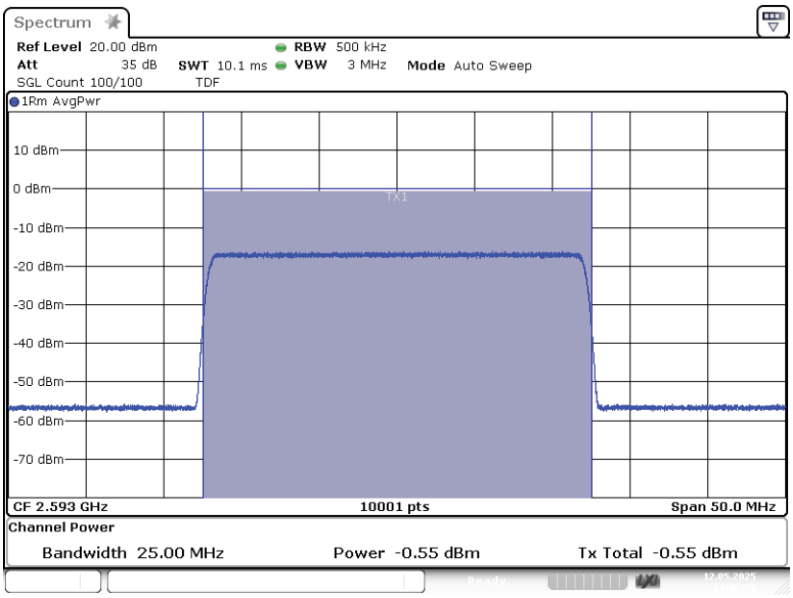
3.5.3 Power GSM In+3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: GSM;
Output power 3 dB > AGC



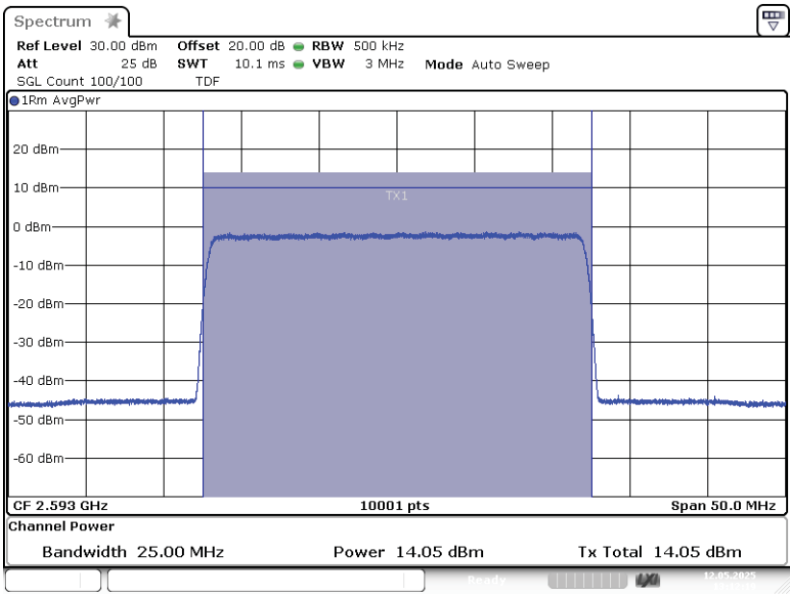
3.5.3 Power GSM Out +3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.5930 GHz; Band edge: mid; Mod: AWGN 25M; Input power 0.3 dB < AGC



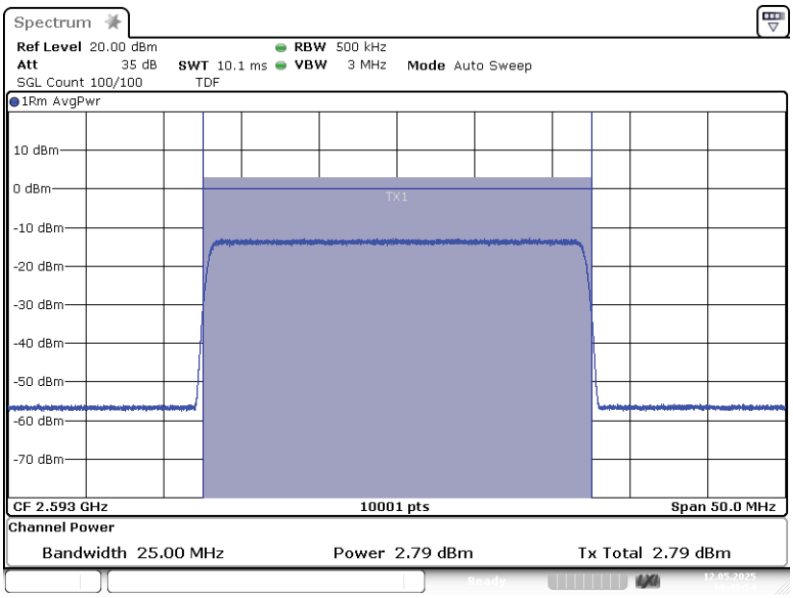
3.5.3 Power AWGN 25M In-0.3 2.59300G

Band: BRS MBS, Antenna 1; Frequency: 2.5930 GHz; Band edge: mid; Mod: AWGN 25M; Output power 0.3 dB < AGC



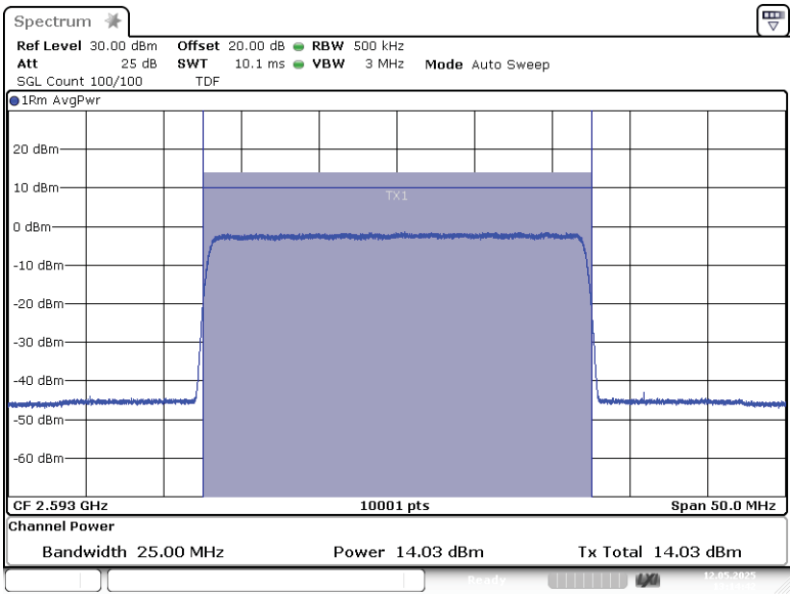
3.5.3 Power AWGN 25M Out -0.3 2.59300G

Band: BRS MBS, Antenna 1; Frequency: 2.5930 GHz; Band edge: mid; Mod: AWGN 25M; Input power 3 dB > AGC



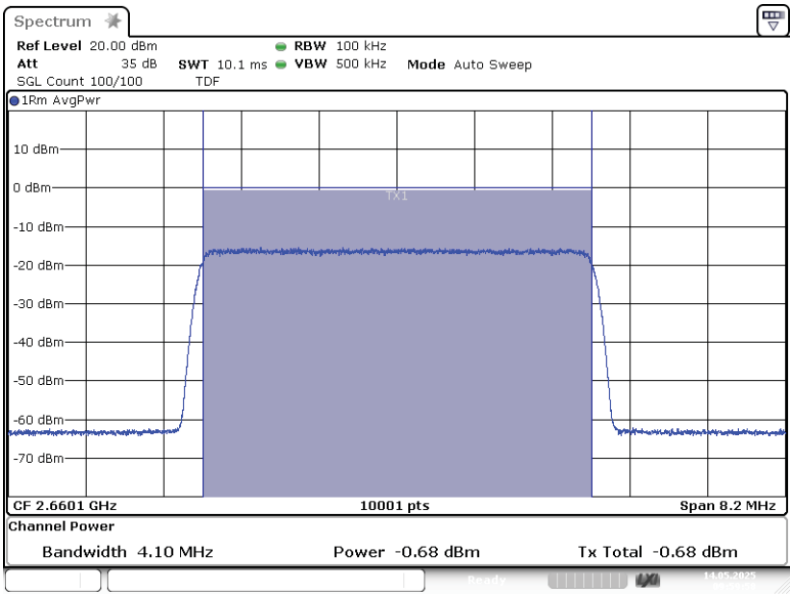
3.5.3 Power AWGN 25M In+3 2.59300G

Band: BRS MBS, Antenna 1; Frequency: 2.5930 GHz; Band edge: mid; Mod: AWGN 25M; Output power 3 dB > AGC



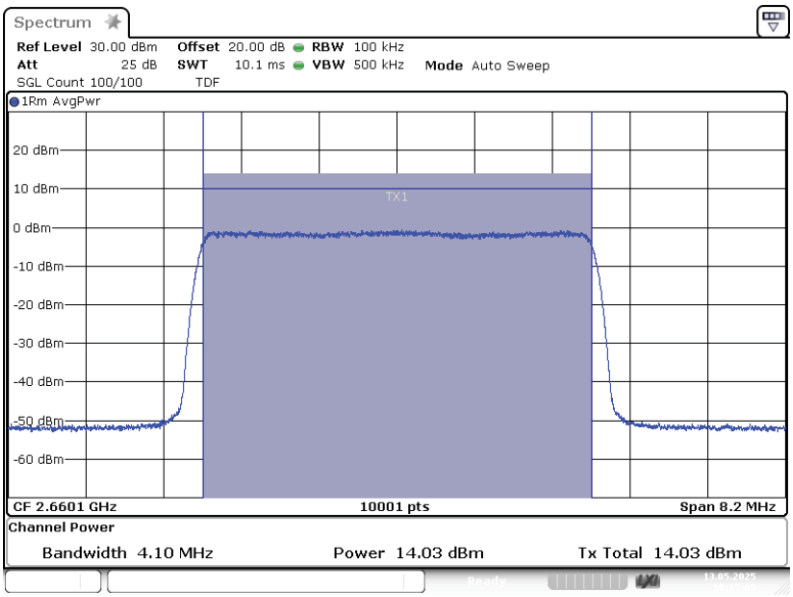
3.5.3 Power AWGN 25M Out +3 2.59300G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: AWGN;
Input power 0.3 dB < AGC



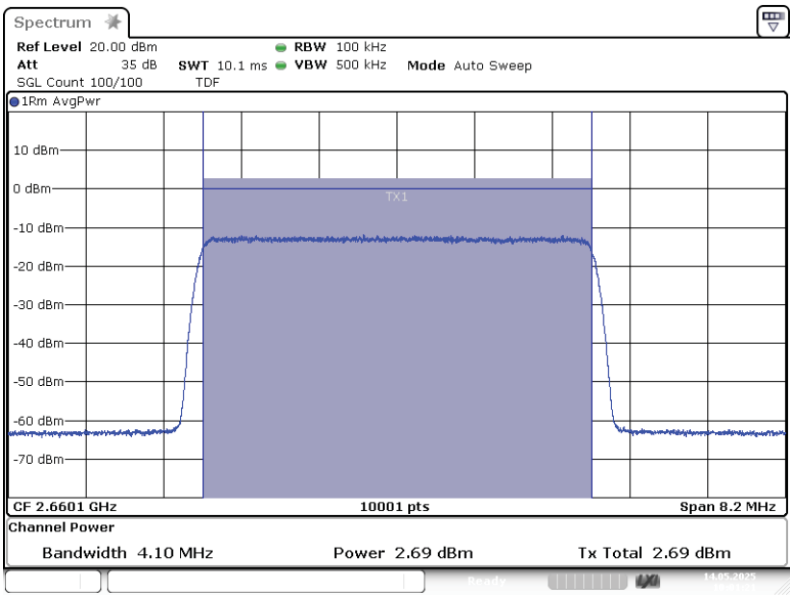
3.5.3 Power AWGN In-0.3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: AWGN;
Output power 0.3 dB < AGC



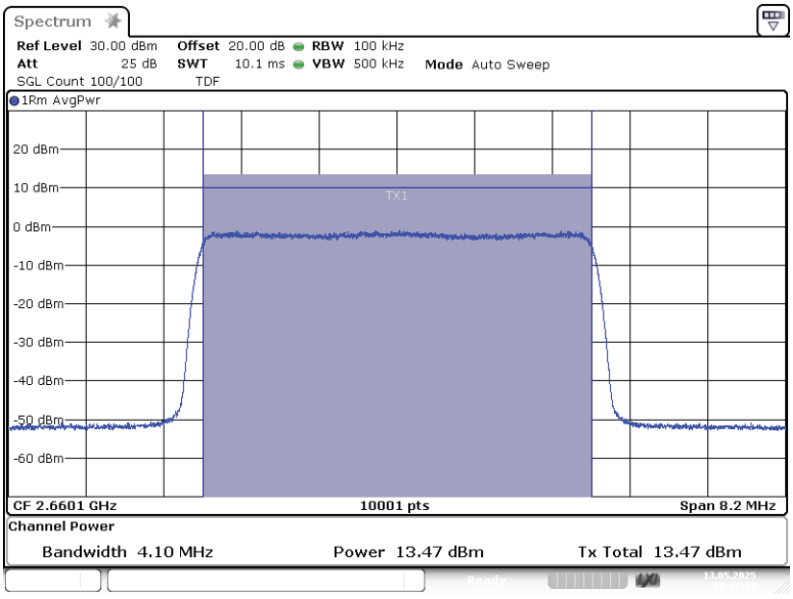
3.5.3 Power AWGN Out -0.3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: AWGN;
Input power 3 dB > AGC



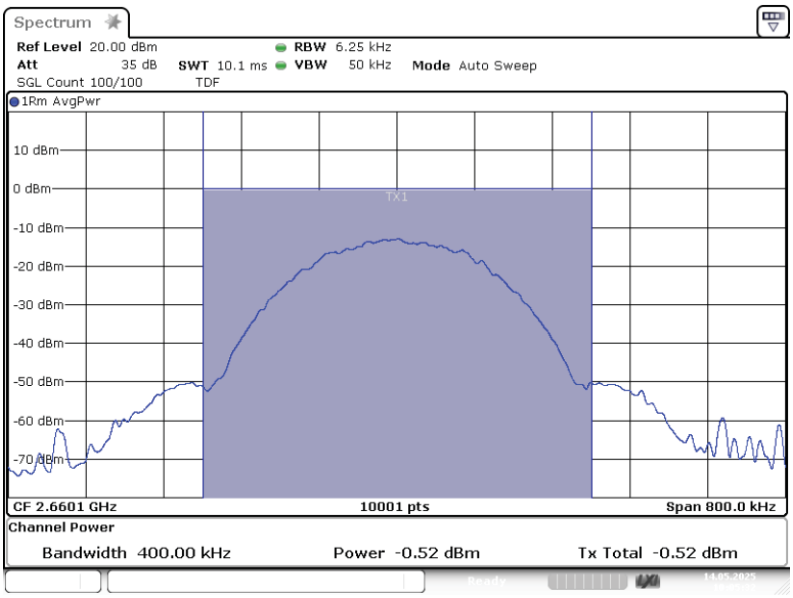
3.5.3 Power AWGN In+3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: AWGN;
Output power 3 dB > AGC



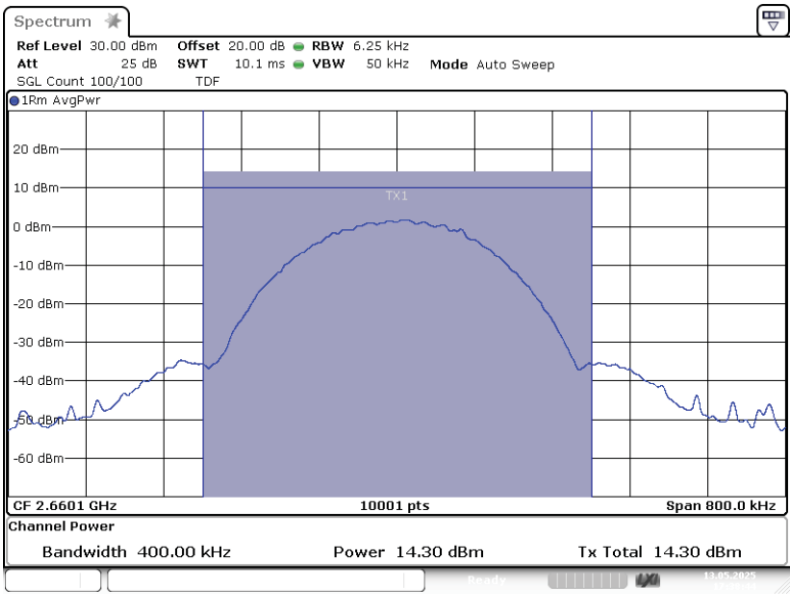
3.5.3 Power AWGN Out +3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: GSM;
Input power 0.3 dB < AGC



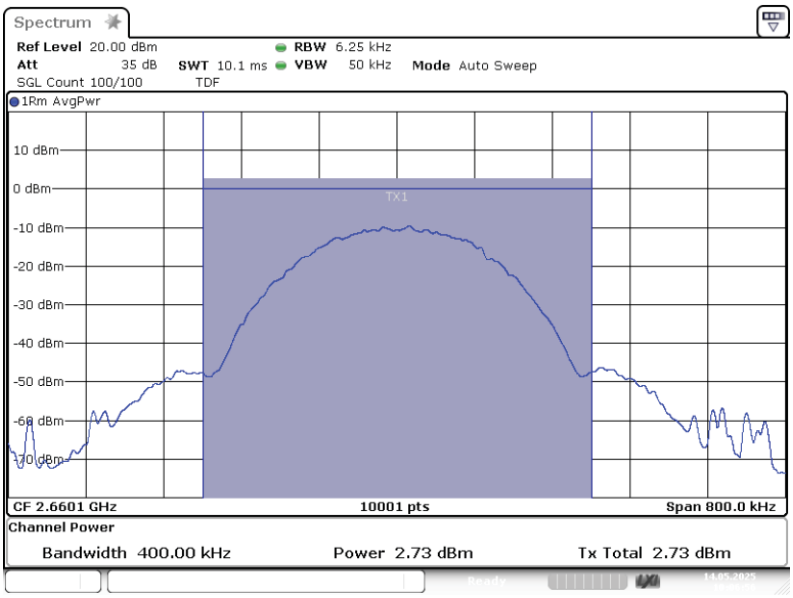
3.5.3 Power GSM In-0.3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: GSM;
Output power 0.3 dB < AGC



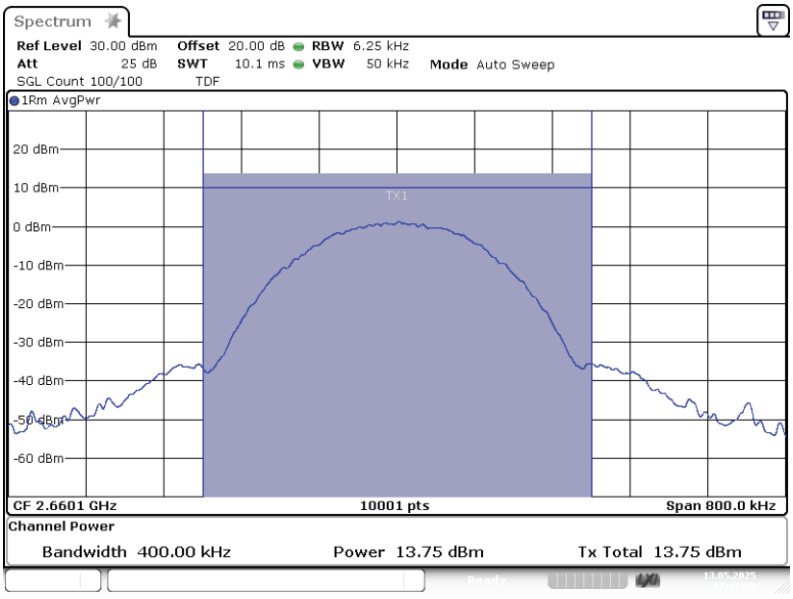
3.5.3 Power GSM Out -0.3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: GSM;
Input power 3 dB > AGC



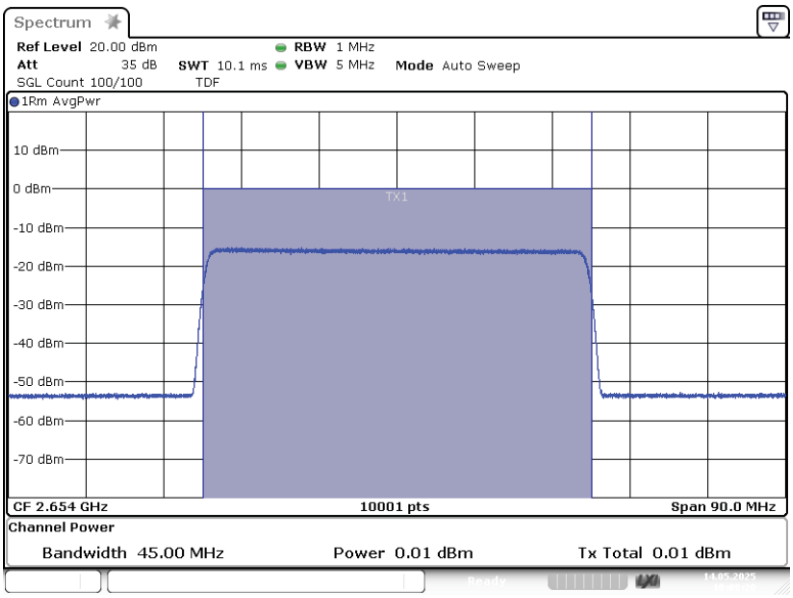
3.5.3 Power GSM In+3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6601 GHz; Band edge: f0; Mod: GSM;
Output power 3 dB > AGC



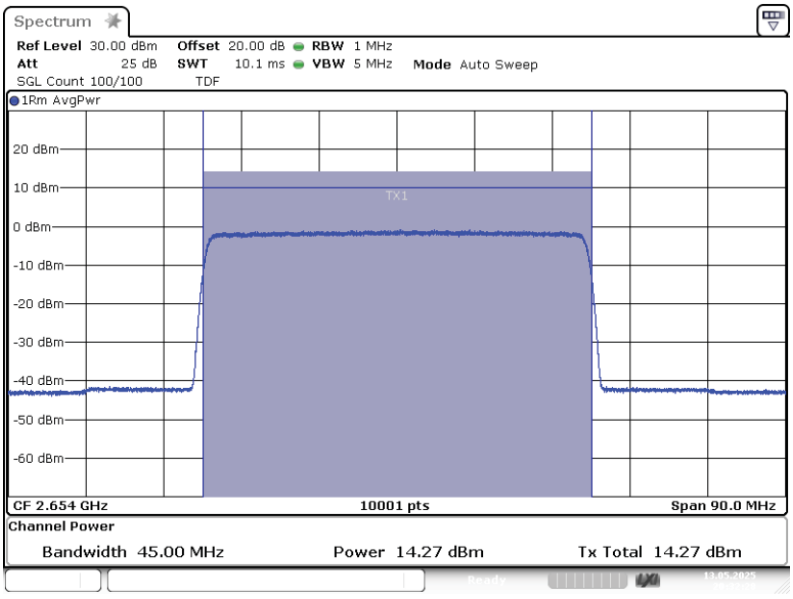
3.5.3 Power GSM Out +3 2.66010G

Band: BRS UBS, Antenna 1; Frequency: 2.6540 GHz; Band edge: mid; Mod: AWGN 45M; Input power 0.3 dB < AGC



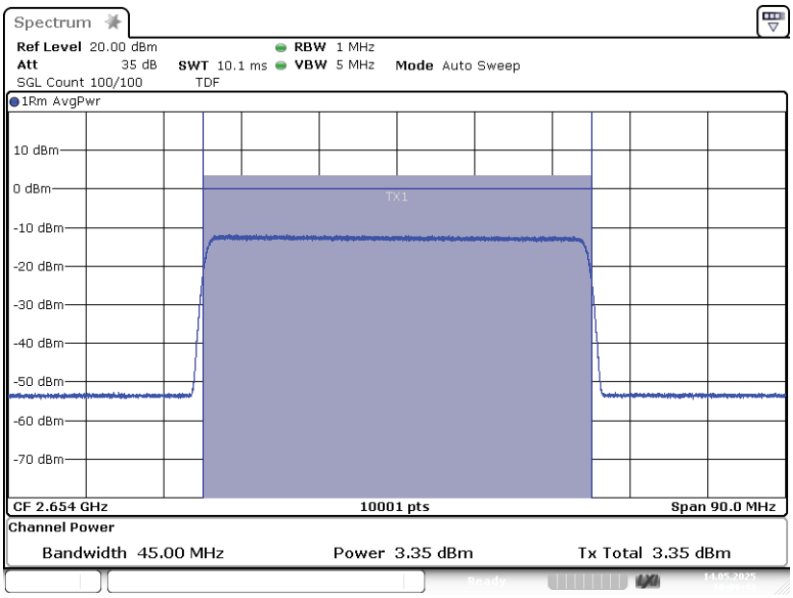
3.5.3 Power AWGN 45M In-0.3 2.65400G

Band: BRS UBS, Antenna 1; Frequency: 2.6540 GHz; Band edge: mid; Mod: AWGN 45M; Output power 0.3 dB < AGC



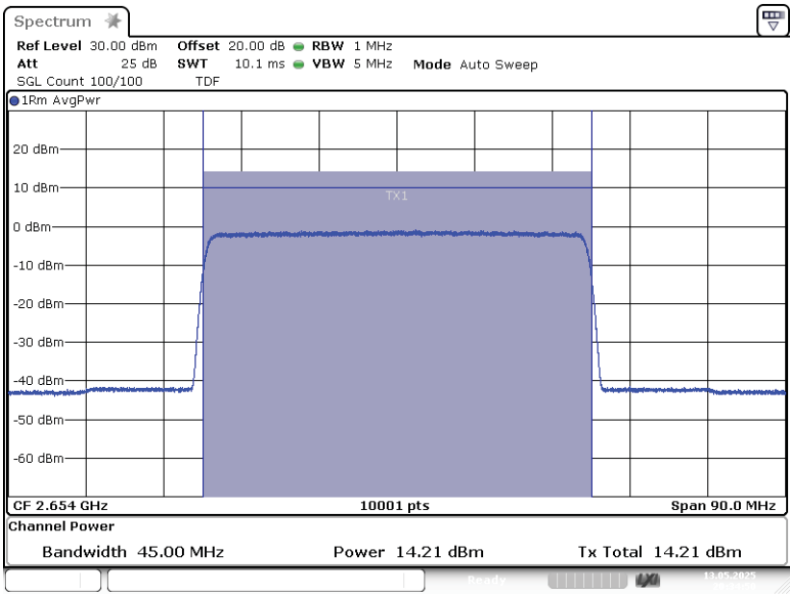
3.5.3 Power AWGN 45M Out -0.3 2.65400G

Band: BRS UBS, Antenna 1; Frequency: 2.6540 GHz; Band edge: mid; Mod: AWGN 45M; Input power 3 dB > AGC



3.5.3 Power AWGN 45M In+3 2.65400G

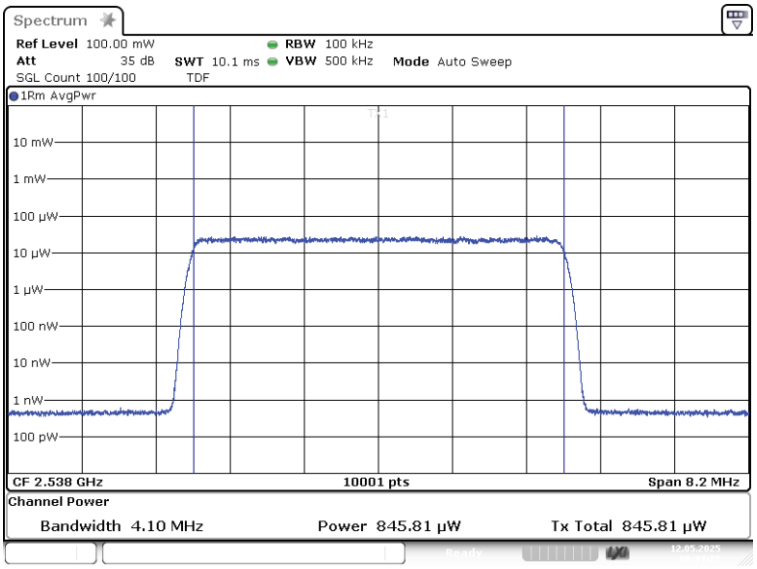
Band: BRS UBS, Antenna 1; Frequency: 2.6540 GHz; Band edge: mid; Mod: AWGN 45M; Output power 3 dB > AGC



3.5.3 Power AWGN 45M Out +3 2.65400G

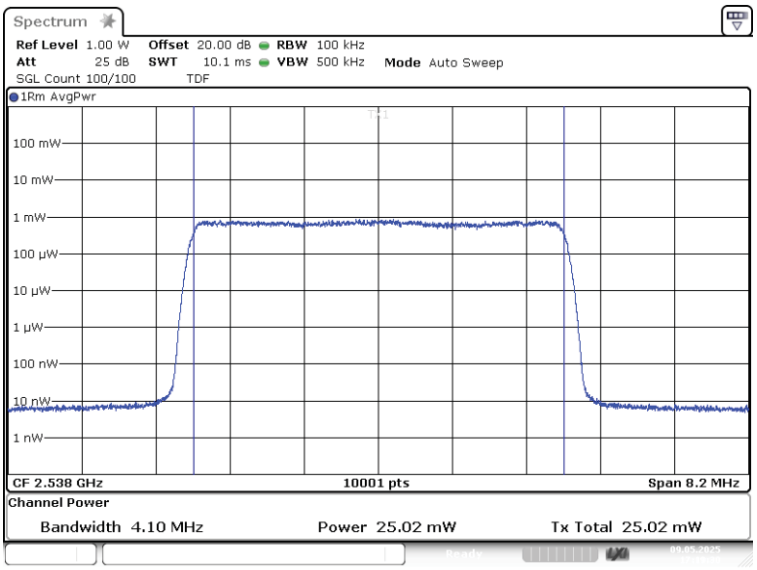
ISED plots

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Input power 0.3 dB < AGC



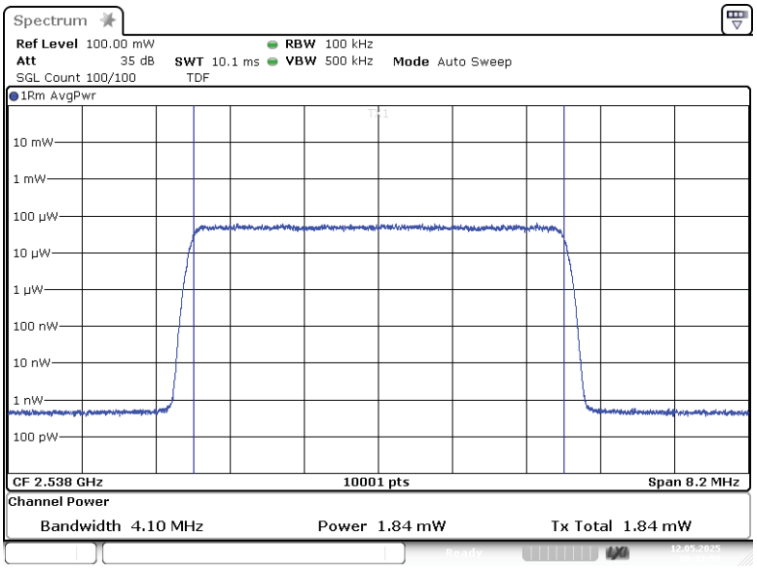
3.5.3 Power_W AWGN In-0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Output power 0.3 dB < AGC



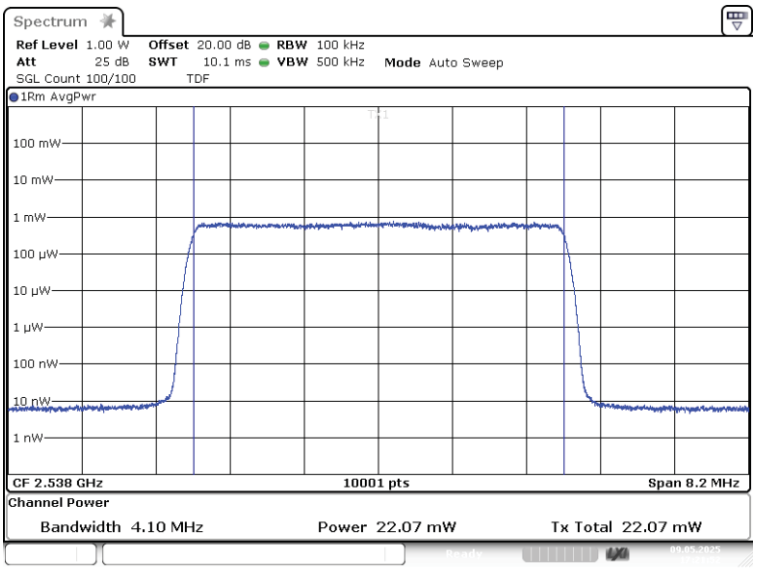
3.5.3 Power_W AWGN Out -0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Input power 3 dB > AGC



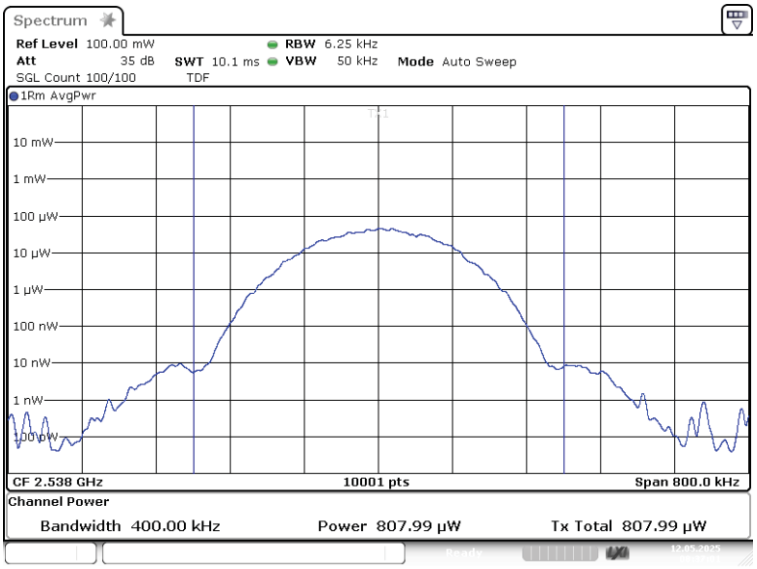
3.5.3 Power_W AWGN In+3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: AWGN;
Output power 3 dB > AGC



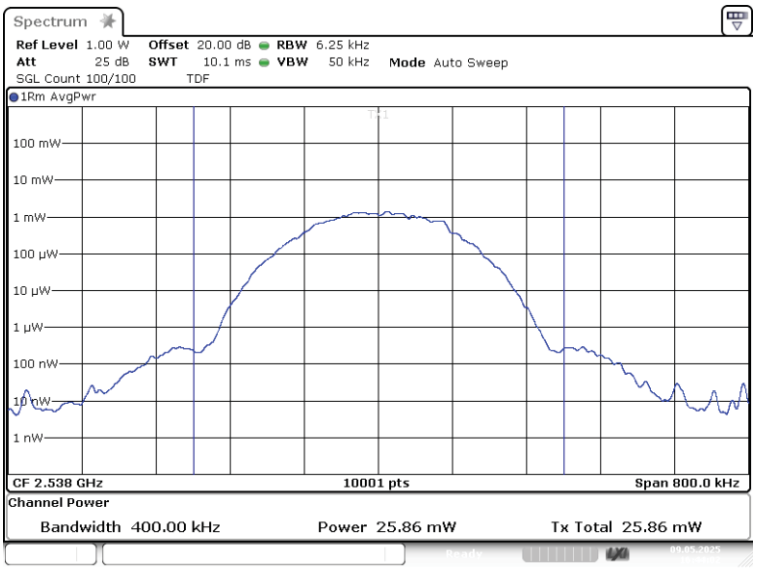
3.5.3 Power_W AWGN Out +3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Input power 0.3 dB < AGC



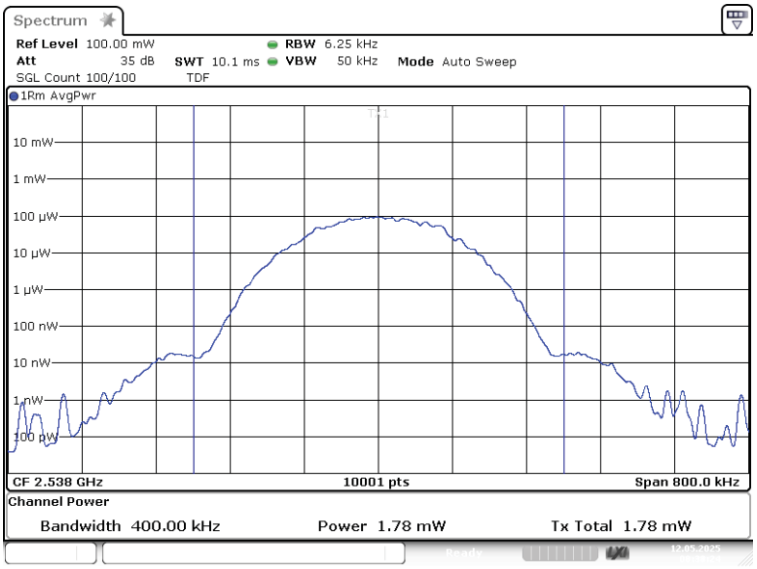
3.5.3 Power_W GSM In-0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Output power 0.3 dB < AGC



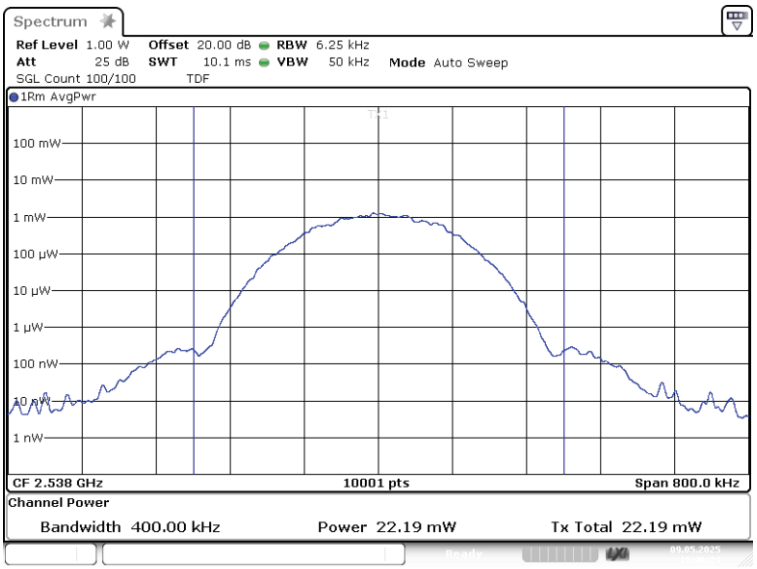
3.5.3 Power_W GSM Out -0.3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Input power 3 dB > AGC



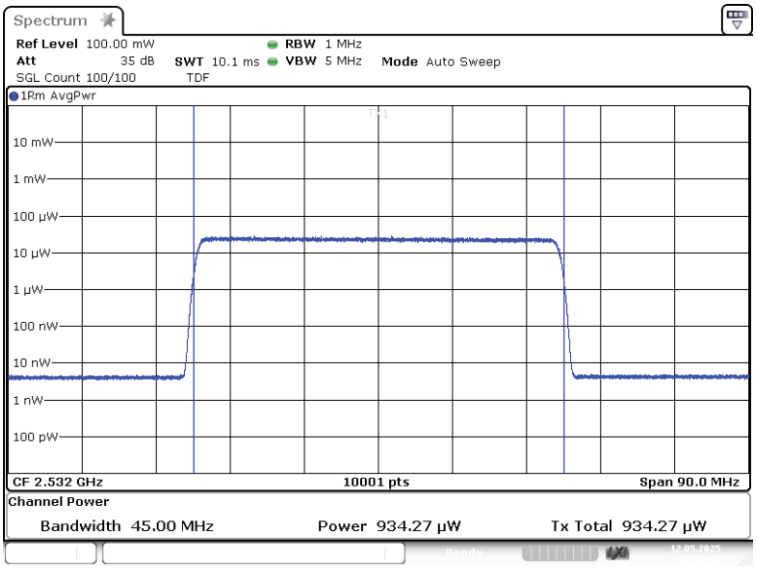
3.5.3 Power_W GSM In+3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5380 GHz; Band edge: f0; Mod: GSM;
Output power 3 dB > AGC



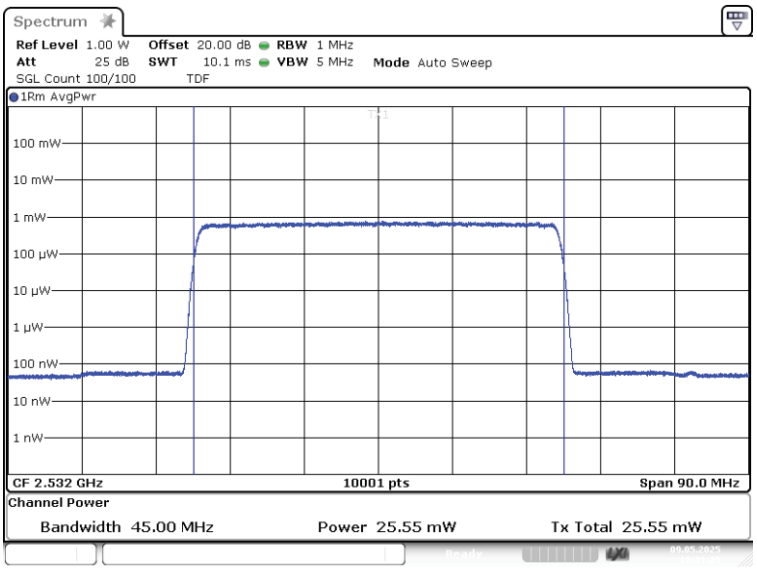
3.5.3 Power_W GSM Out +3 2.53800G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Input power 0.3 dB < AGC



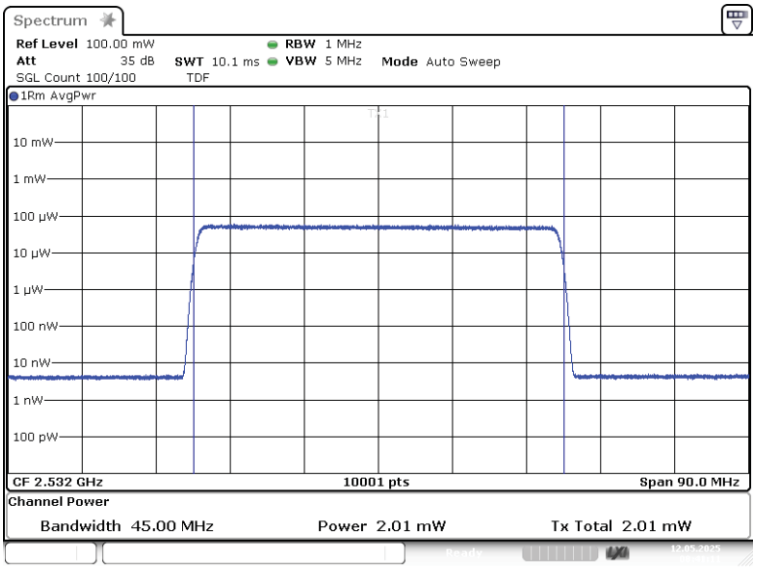
3.5.3 Power_W AWGN 45M In-0.3 2.53200G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Output power 0.3 dB < AGC



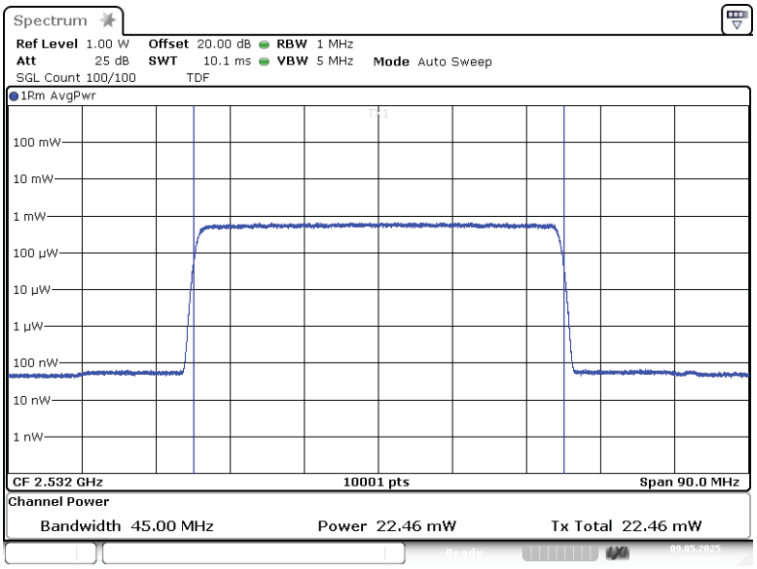
3.5.3 Power_W AWGN 45M Out -0.3 2.53200G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Input power 3 dB > AGC



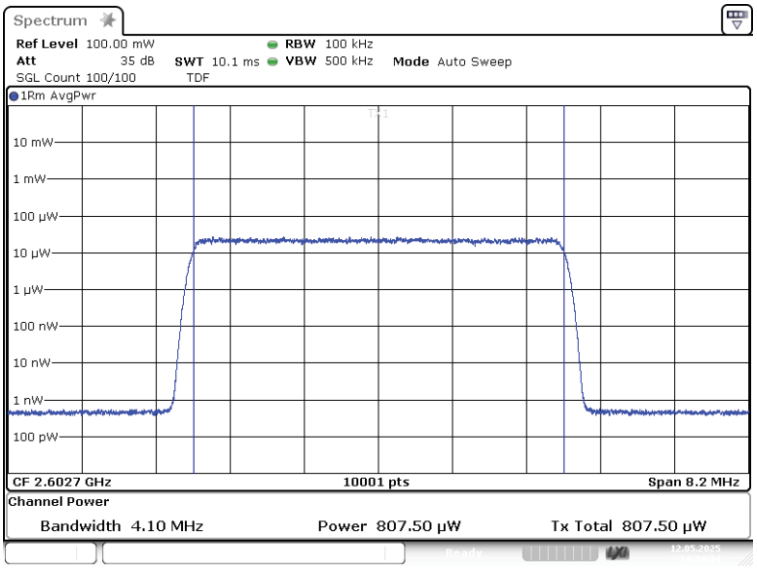
3.5.3 Power_W AWGN 45M In+3 2.53200G

Band: BRS LBS, Antenna 1; Frequency: 2.5320 GHz; Band edge: mid; Mod: AWGN 45M; Output power 3 dB > AGC



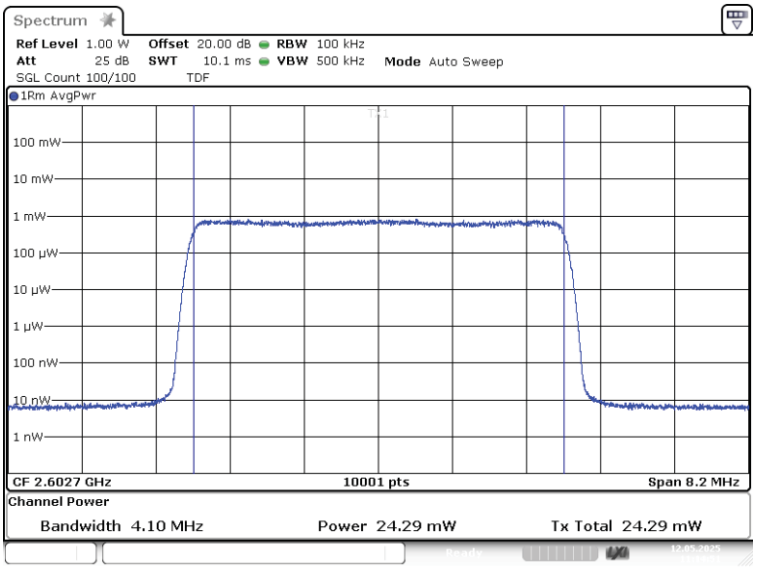
3.5.3 Power_W AWGN 45M Out +3 2.53200G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Input power 0.3 dB < AGC



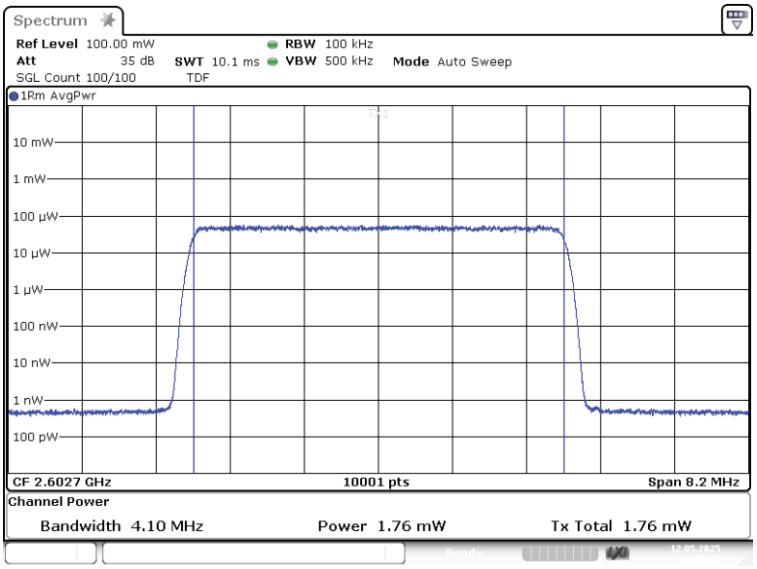
3.5.3 Power_W AWGN In-0.3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Output power 0.3 dB < AGC



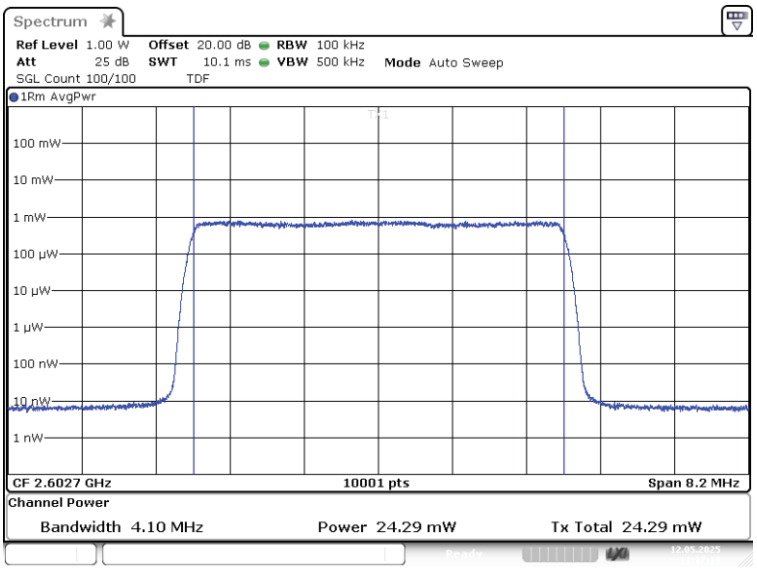
3.5.3 Power_W AWGN Out -0.3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Input power 3 dB > AGC



3.5.3 Power_W AWGN In+3 2.60270G

Band: BRS MBS, Antenna 1; Frequency: 2.6027 GHz; Band edge: f0; Mod: AWGN;
Output power 3 dB > AGC



3.5.3 Power_W AWGN Out +3 2.60270G