FCC and ISED Test Report

Sepura Limited
TETRA mobile radio, Model: SCG2221 Standard

In accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 90, ISED RSS-119 and ISED RSS-GEN (TETRA)

Add value.
Inspire trust.

Prepared for: Sepura Limited
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Beach Drive
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Cambridge
CB25 9TL
United Kingdom

FCC ID: XX6SCG2221M IC: 8739A-SCG2221M

COMMERCIAL-IN-CONFIDENCE

Document 75957883-03 Issue 01

SIGNATURE			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Simon Bennett	Head Of New Service Development	Authorised Signatory	18 September 2023

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 90, FCC 47 CFR Part 2 and ISED RSS-119 and ISED RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Pier-Angelo Lorusso	18 September 2023	

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

ISED Accreditation
12669A Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 2, 2021, FCC 47 CFR Part 90, 2021, ISED RSS-119: Issue 12 (05-2015) and ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021) for the tests detailed in section 1.3.

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Contents

1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	18-Sept-2023

Table 1

1.2 Introduction

Applicant	Sepura Limited
Manufacturer	Sepura Limited
Model Number(s)	SCG2221 Standard
Serial Number(s)	1PR002250GPB2N7
Hardware Version(s)	PLX-8V015560-02 (Hardware Mod State 7)
Software Version(s)	1807 004 10138
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 2, 2021 FCC 47 CFR Part 90, 2021 ISED RSS-119: Issue 12 (05-2015) ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021)
Order Number	PLC-PO025039-1
Date	20-February-2023
Date of Receipt of EUT	24-March-2023
Start of Test	28-April-2023
Finish of Test	18-July-2023
Name of Engineer(s)	Pier-Angelo Lorusso
Related Document(s)	ANCI C63.26: 2015 SRSP 500 Issue 1 (03-2004).

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 90, ISED RSS-119 and ISED RSS-GEN is shown below.

Section	Specification Clause				Test Description	Result	Comments/Base Standard
	Part 2	Part 90	RSS-119	RSS-GEN			
Configuration and Mode: 136 MHz to 174 MHz (ISEDC only)							
2.1	2.1046	90.205	5.4	6.12	Maximum Conducted Output Power	Pass	
2.2	2.1051	90.210	5.8	6.13	Spurious Emissions at Antenna Terminals	Pass	
Configuration and Mode: 150 MHz to 174 MHz (FCC and ISEDC)							
2.1	2.1046	90.205	5.4	6.12	Maximum Conducted Output Power	Pass	
2.2	2.1051	90.210	5.8	6.13	Spurious Emissions at Antenna Terminals	Pass	

Table 2

Note: Channels configured in production devices for use in Canada to be configured as per SRSP-500 (138-174 MHz).

1.4 Application Form

Equipment Description

Technical Description: *(Please provide a brief description of the intended use of the equipment including the technologies the product supports)*	The SCG2221 is a TETRA mobile radio in the SCG22 series of radios, operating in the VHF band, with TETRA operating frequencies 136-174 MHz. The SCG2221 supports GNSS, Bluetooth, Bluetooth LE, WLAN at 2.4 GHz and a range of accessories and ancillary equipment. The SCG2221 may be installed in a vehicle or in a desk mount unit.		
Manufacturer:	Sepura Limited		
Model:	SCG2221 Standard		
Part Number:	SCG2221		
Hardware Version:	PLX-8V015560-02 (Hardware Mod State 7)		
Software Version:	1807 004 10138		
FCC ID of the product under test – see guidance here		XX6SCG2221M	
IC ID of the product under test – see guidance here		8739A-SCG2221M	
Device Category	Mobile ☒	Portable ☐	Fixed ☐
Equipment is fitted with an Audio Low Pass Filter		Yes ☒	No ☐

Table 3

Intentional Radiators

Technology	TETRA	Bluetooth	WLAN 802.11b	WLAN 802.11g	WLAN 802.11n	BLE
Frequency Range (MHz to MHz)	136-174	2402-2480	2412-2462	2412-2462	2412-2462	2402-2480
Conducted Declared Output Power (dBm)	40	8	17	17	17	7.5
Antenna Gain (dBi)	No antenna supplied.	No antenna supplied.	No antenna supplied.	No antenna supplied.	No antenna supplied.	No antenna supplied.
Supported Bandwidth(s) (MHz) (e.g. 1 MHz, 20 MHz, 40 MHz)	0.025	1	20	20	20	2
Modulation Scheme(s) (e.g. GFSK, QPSK etc)	π/4 DQPSK	GFSK / π/4-DPSK / 8-DPSK	CCK / DBPSK / DQPSK	OFDM (BPSK / QPSK / 16-QAM / 64-QAM)	BPSK / QPSK / 16-QAM / 64-QAM)	GFSK
ITU Emission Designator (see guidance here) (not mandatory for Part 15 devices)	20K0DXW	1M01F1D 1M01G1D	19M7G1D	19M7G1D	19M7D1D	1M81F1D
Bottom Frequency (MHz)	136	2402	2412	2412	2412	2402
Middle Frequency (MHz)	155	2441	2437	2437	2437	2441
Top Frequency (MHz)	174	2480	2462	2462	2462	2480

Table 4

Un-intentional Radiators

Highest frequency generated or used in the device or on which the device operates or tunes	2480 MHz
Lowest frequency generated or used in the device or on which the device operates or tunes	32.768 kHz
Class A Digital Device (Use in commercial, industrial or business environment) ☒ Class B Digital Device (Use in residential environment only) ☐	

Table 5

AC Power Source

AC supply frequency:		Hz
Voltage		V
Max current:		A
Single Phase ☐ Three Phase ☐		

Table 6

DC Power Source

Nominal voltage:	13.6	V
Extreme upper voltage:	15.6	V
Extreme lower voltage:	10.8	V
Max current:	4	A

Table 7

Battery Power Source

Voltage:		V
End-point voltage:		V *(Point at which the battery will terminate)*
Alkaline ☐ Leclanche ☐ Lithium ☐ Nickel Cadmium ☐ Lead Acid* ☐ **(Vehicle regulated)*		
Other ☐ Please detail:		

Table 8

Charging

Can the EUT transmit whilst being charged Unit does not charge	Yes ☐ No ☐

Table 9

Temperature

Minimum temperature:	-20	°C
Maximum temperature:	55	°C

Table 10

Cable Loss

Adapter Cable Loss (Conducted sample)	N/A	dB

Table 11

Antenna Characteristics

Antenna connector ☒			State impedance	50	Ohm
Temporary antenna connector ☐			State impedance		Ohm
Integral antenna ☐	Type:		Gain		dBi
External antenna ☐	Type:		Gain		dBi
For external antenna only: Standard Antenna Jack ☐ If yes, describe how user is prohibited from changing antenna (if not professional installed): Equipment is only ever professionally installed ☒ Non-standard Antenna Jack ☐ All part 15 applications will need to show how the antenna gain was derived either from a manufacturer data sheet or a measurement. Where the gain of the antenna is inherently accounted for as a result of the measurement, such as field strength measurements on a part 15.249 or 15.231 device, so the gain does not necessarily need to be verified. However, enough information regarding the construction of the antenna shall be provided. Such information maybe photographs, length of wire antenna etc. Antenna Gains are from https://uk.rs-online.com/web/p/wifi-antennas/7985368 and https://www.panorama-antennas.com/site/Mobile-Radio/PMR-Antennas/AFQNT-VAR					

Table 12

Ancillaries (if applicable)

Manufacturer:	Panorama Antennas	Part Number:	AFQNT-H5
Model:	TETRA antenna	Country of Origin:	UK
Manufacturer:	Microchip	Part Number:	RN-SMA-4
Model:	WLAN Antenna	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-00063
Model:	GNSS Antenna	Country of Origin:	UK
Manufacturer:	Sepura	Part Number:	300-02012 rev001
Model:	Extended SCG Loudspeaker / IO USB Host lead	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-02010
Model:	SCG Power/ignition Lead	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-00069
Model:	Mobile Remote Cable 5.0M	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-00670

Model:	HBC Interface and Hands-free Box	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-00079
Model:	Remote Microphone And Switch Set	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-00292
Model:	Remote Microphone (Handsfree Kit) 3m	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-01801
Model:	Handset Based Console (HBC3)	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-00062
Model:	Fist microphone	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-01808
Model:	SCC3 (colour console)	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-01961
Model:	CC VAC RSM (Long Cable)	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-00719
Model:	Loudspeaker	Country of Origin:	Unknown
Manufacturer:	Sepura	Part Number:	300-02009
Model:	USB Data/Programming Lead	Country of Origin:	UK
Manufacturer:	Sepura	Part Number:	300-02012
Model:	SCG Loudspeaker / IO USB Host lead	Country of Origin:	UK
Manufacturer:	Sepura	Part Number:	300-00784
Model:	AMPS attachments	Country of Origin:	UK
Manufacturer:	Sepura	Part Number:	300-00068
Model:	Mobile Remote Cable 3.0M	Country of Origin:	UK

Table 13

I hereby declare that the information supplied is correct and complete.

Name: Chris Beecham
Position held: Conformance Engineer
Date: 21/03/2023

1.5 Product Information

1.5.1 Technical Description

The SCG2221 is a TETRA mobile radio in the SCG22 series of radios, operating in the VHF band, with TETRA operating frequencies 136-174 MHz. The SCG2221 supports GNSS, Bluetooth, Bluetooth LE, WLAN at 2.4 GHz and a range of accessories and ancillary equipment.

The SCG2221 may be installed in a vehicle or in a desk mount unit.

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: SCG2221 Standard, Serial Number: 1PR002250GPB2N7			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 14

1.8 Test Location

TÜV SÜD conducted the following tests at our Octagon House Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: 136 MHz to 174 MHz (ISEDC only)		
Maximum Conducted Output Power	Pier-Angelo Lorusso	UKAS
Spurious Emissions at Antenna Terminals	Pier-Angelo Lorusso	UKAS
Configuration and Mode: 150 MHz to 174 MHz (FCC and ISEDC)		
Maximum Conducted Output Power	Pier-Angelo Lorusso	UKAS
Spurious Emissions at Antenna Terminals	Pier-Angelo Lorusso	UKAS

Table 15

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
United Kingdom

2 Test Details

2.1 Maximum Conducted Output Power

2.1.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1046,
FCC 47 CFR Part 90, Clause 90.205
ISED RSS-119, Clause 5.4
ISED RSS-GEN, Clause 6.12

2.1.2 Equipment Under Test and Modification State

SCG2221 Standard, S/N: 1PR002250GPB2N7 - Modification State 0

2.1.3 Date of Test

28-April-2023 to 02-May-2023

2.1.4 Test Method

The test was applied in accordance with the test method requirements of FCC 47 CFR Part 90, ISED RSS-119, and ISED RSS-GEN with reference to ANSI C63.26, clause 5.2.4.3.3.

The EUT was powered by the customer supplied AC/DC Power supply unit. The EUTwas configured to transmit on maximum power of 40 dBm on the bottom, middle and top channels in burst mode. The EUT was connected to a spectrum analyser via a cable and 20 dB of attenuation. The path loss was entered as a reference level offset in the spectrum analyser including the manufacturers declared maximum antenna gain. The Antenna provided by the customer, was a standard quarter wave, and the stated peak gain would be around 2 dBi when measured on a large ground plane. The loss of the 5 m of CS23 used in the M8 will be less than 0.2 dB/m, so the total peak gain (of the antenna assembly) is around 1 dBi. The RBW of the spectrum analyser was set to 30 kHz and the video bandwidth to 100 kHz with the trace set to max hold using a RMS detector and the result was recorded.

The test method given in 5.2.4.3.3 of ANSI C63.26 produces an average power measurement 1.9 dB above the nominal average power measurement when using a dedicated TETRA test set. Therefore, the nominal average power has been increased from 40 to 41.9 dBm to compensate for this method.

2.1.5 Environmental Conditions

Ambient Temperature	20.1 - 22.5 °C
Relative Humidity	42.1 - 51.8 %

2.1.6 Test Results

136 MHz to 174 MHz (ISEDC only)

Parameter	136 MHz	155 MHz	174 MHz
Conducted Output Power (dBm)	40.97	40.97	41.22
Antenna Gain (dBd)	-1.15	-1.15	-1.15
ERP (dBm)	39.82	39.82	40.07

Table 16 - ERP

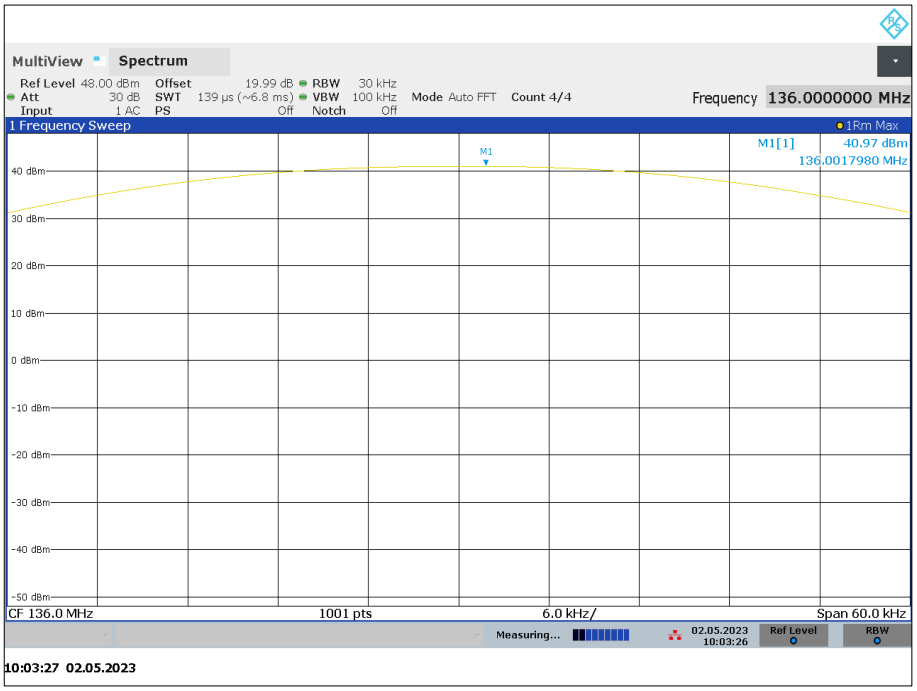

Figure 1 - 136 MHz

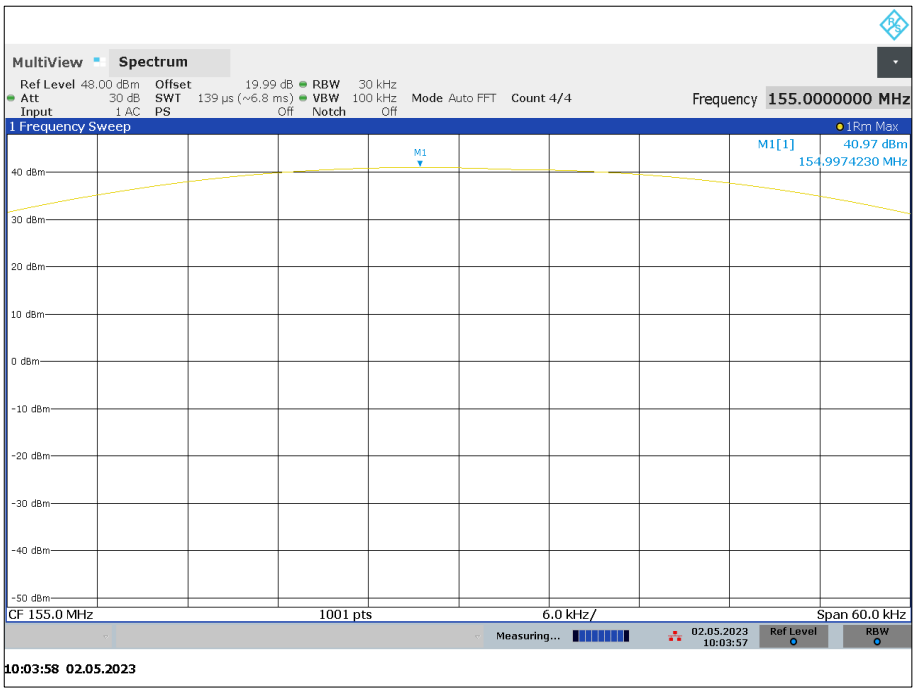

Figure 2 - 155 MHz

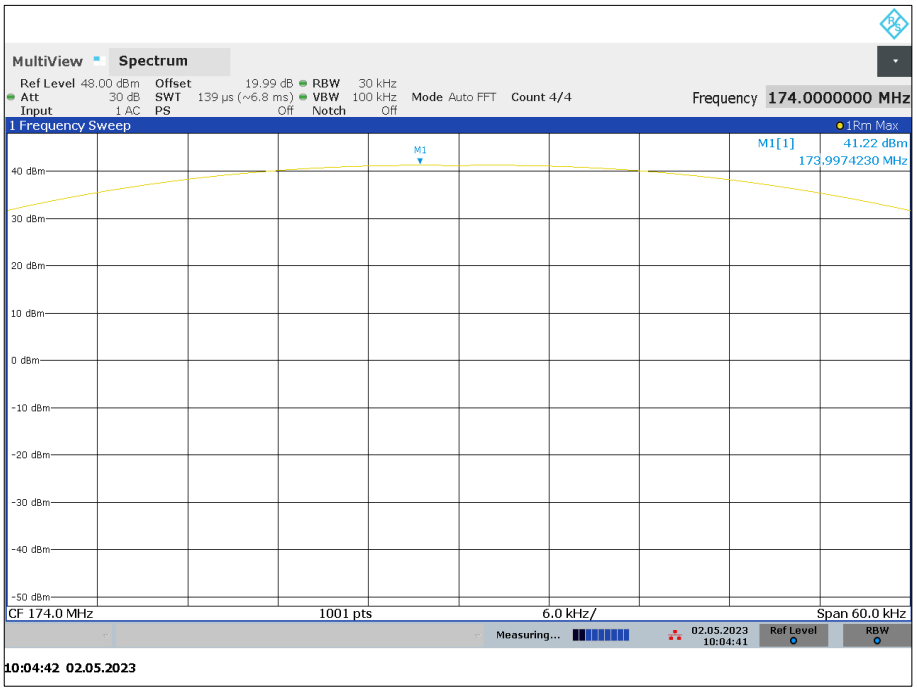

Figure 3 - 174 MHz

150 MHz to 174 MHz (FCC and ISEDC)

Parameter	150 MHz	160 MHz	174 MHz
Conducted Output Power (dBm)	40.96	41.03	41.22
Antenna Gain (dBd)	-1.15	-1.15	-1.15
ERP (dBm)	39.81	39.88	40.07

Table 17 - ERP

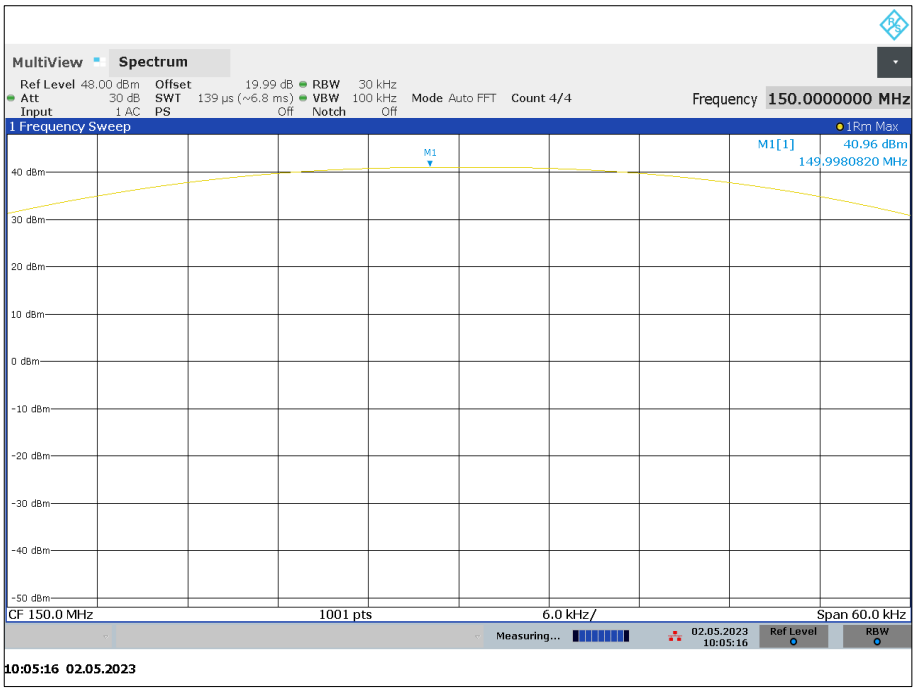

Figure 4 - 150 MHz

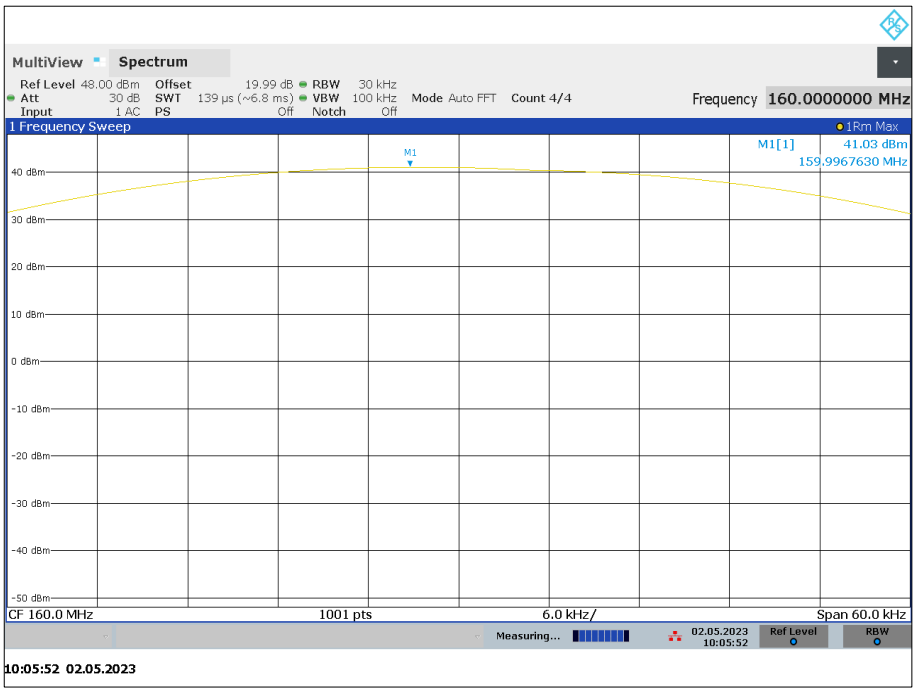

Figure 5 - 160 MHz

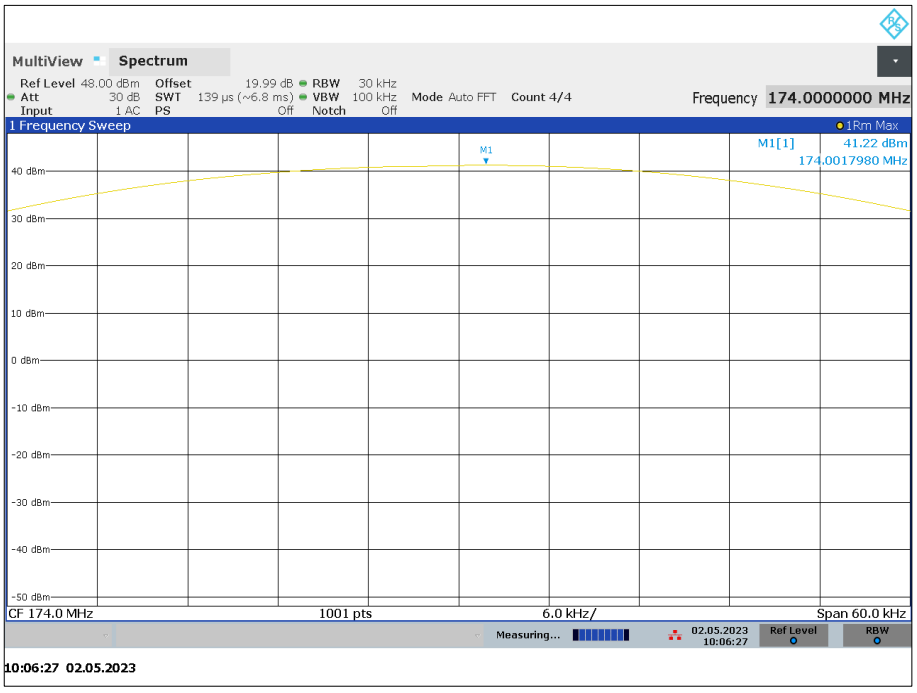

Figure 6 - 174 MHz

FCC 47 CFR Part 90, Limit Clause 90.205

Frequency (MHz)	Limit
< 25	1000 W
25 to 50	300 W
72 to 76	300 W
150 to 174	Refer to 90.205 (d) of the specification
217 to 220	Refer to 90.259 of the specification
220 to 222	Refer to 90.729 of the specification
421 to 430	Refer to 90.279 of the specification
450 to 470	Refer to 90.205 (h) of the specification
470 to 512	Refer to 90.307 and 90.309 of the specification
758 to 775 and 788 to 805	Refer to 90.541 and 90.542 of the specification
806 to 824, 851 to 869, 869 to 901 and 935 to 940	Refer to 90.635 of the specification
902 to 927.25	LMS systems operating pursuant to subpart M of the specification : 30 W
927.25 to 928	LMS equipment: 300 W
929 to 930	Refer to 90.494 of the specification
1427 to 1429.5 and 1429.5 to 1432	Refer to 90.259 of the specification
2450 to 2483.5	5 W
4940 to 4990	Refer to 90.1215 of the specification
5850 to 5925	Refer to subpart M of the specification
All other frequency bands	On a case by case basis

Table 18 - FCC Limits for Maximum ERP

ISED RSS-119, Limit Clause 5.4

The output power shall be within ±1 dB of the manufacturer's rated power listed in the equipment specifications.

Frequency (MHz)	Transmitter Output Power (W)	
	Base/Fixed Equipment	Mobile Equipment
27.41 to 28 and 29.7 to 50	300	30
72 to 76	No Limit	1
138 to 174	111100	60
217 to 217 and 219 to 220	See SRSP-512 for ERP limit	30*
220 to 222	110	50
406.1 to 430 and 450 to 470	See SRSP-511 for ERP limit	60
768 to 776 and 798 to 806	110	30 3 W ERP for portable equipment
806 to 821, 851 to 866, 821 to 824 and 866 to 869	110	30
896 to 901 and 935 to 940	110	60
929 to 930 and 931 to 932	110	30
928 to 929, 952 to 953, 932 to 932.5 and 941 to 941.5	110	30
932.5 to 935 ad 941.5 to 944	110	30
*Equipment is generally authorised for effective radiated power (ERP) of less than 5 W.		

Table 19 - ISED Limits for Transmitter Output Power

2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Hygrometer	Rotronic	A1	2138	12	28-Sep-2023
Test Receiver	Rohde & Schwarz	ESW44	5084	12	17-May-2023
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	04-May-2023
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5516	12	23-Oct-2023

Table 20

2.2 Spurious Emissions at Antenna Terminals

2.2.1 Specification Reference

FCC 47 CFR Part 2, Cause 2.1051
FCC 47 CFR Part 90, Clause 90.210
ISED RSS-119, Clause 5.8
ISED RSS-GEN, Clause 6.13

2.2.2 Equipment Under Test and Modification State

SCG2221 Standard, S/N: 1PR002250GPB2N7 - Modification State 0

2.2.3 Date of Test

28-April-2023 to 18-July-2023

2.2.4 Test Method

For emissions where the frequency is removed less than 250 % of the authorised bandwidth measurements were performed conducted as follows:

The EUT was powered by the customer supplied AC/DC Power supply unit. The EUT was connected to a spectrum analyser via a cable and attenuator. The path loss between the EUT and analyser was entered into the spectrum analyser as a reference level offset. The reference level for the mask was established with an RBW approximately 2 or 3 times the emission bandwidth. The RBW was then reduced to at least 1 % of the emission bandwidth, with a VBW of 3 times RBW. The mask as per FCC 47 CFR Part 90.210 (b) and ISED RSS-119 Section 5.8.1 was applied.

For emissions where the frequency is removed more than 250 % of the authorized bandwidth measurements were performed for conducted as follows:

Conducted: The Calibration Certificates were used to measure the path loss and the worst case was entered as a reference level offset in to the spectrum analyser. The EUT was connected to a spectrum analyser via an attenuator, filter and cable. Between 300 MHz and 2 GHz a 300 MHz high pass filter was used. The spectrum analyser was configured with an RBW of 1 kHz for 9kHz to 150kHz, 10kHz for 150kHz to 30MHz, 100kHz for 30 to 1MHz and 1 MHz for frequencies greater than 1 GHz with the trace set to max hold using a peak detector.

2.2.5 Environmental Conditions

Ambient Temperature	20.1 - 23.3 °C
Relative Humidity	48.3 - 51.8 %

2.2.6 Test Results

136 MHz to 174 MHz (ISEDC only)

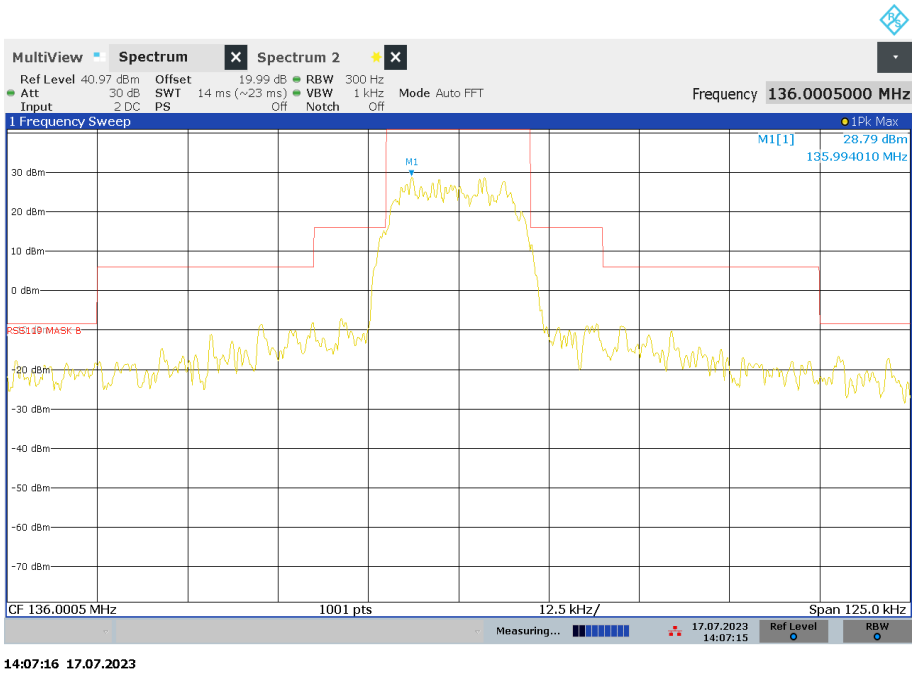

Figure 7 - 136 MHz, Transmitter Mask

Figure 8 - 155 MHz, Transmitter Mask

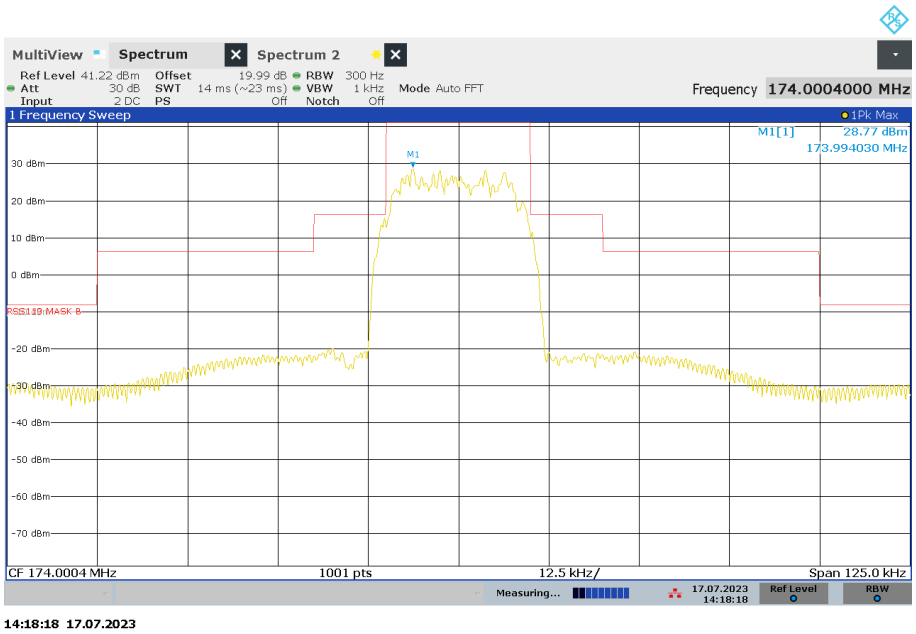

Figure 9 - 174 MHz, Transmitter Mask

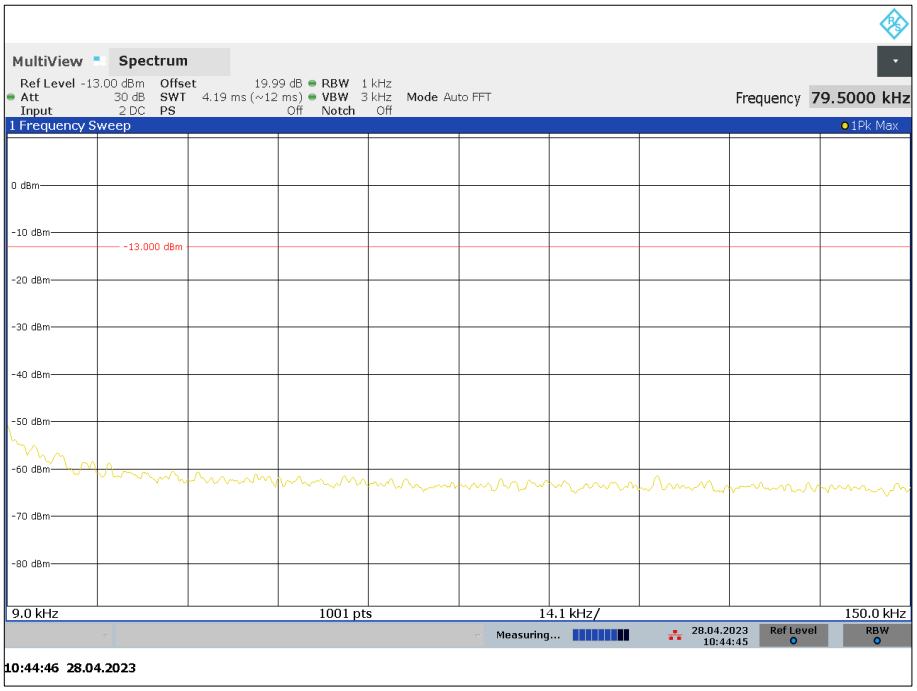

Figure 10 - 136 MHz, 9 kHz to 150 kHz

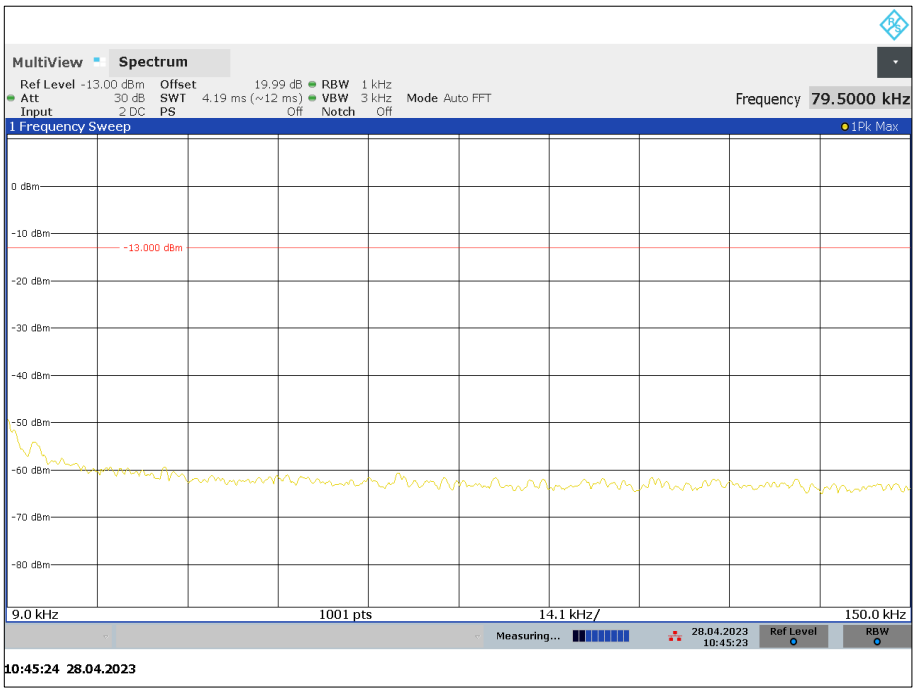

Figure 11 - 155 MHz, 9 kHz to 150 kHz

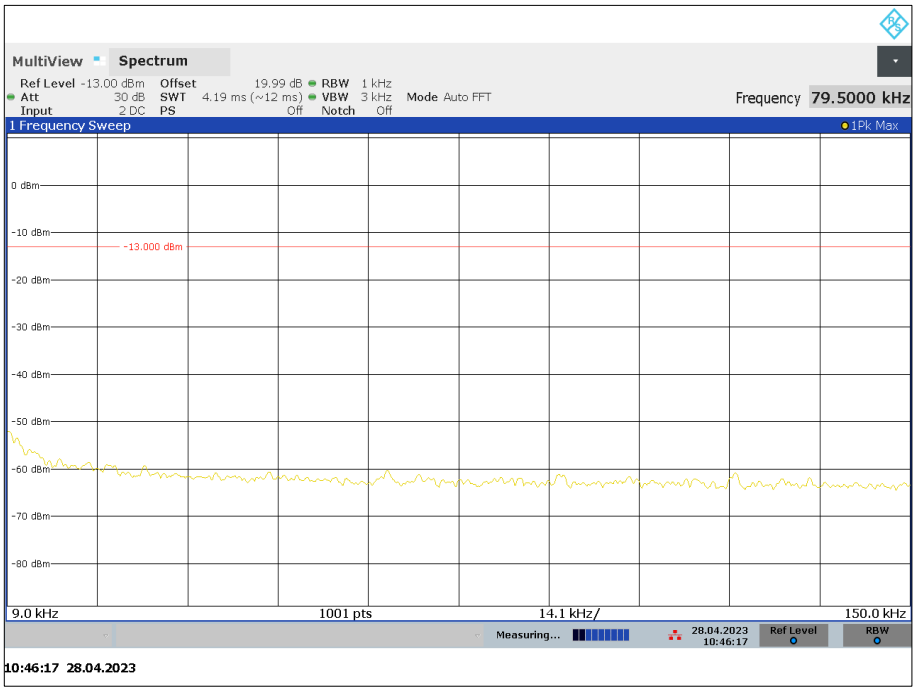

Figure 12 - 174 MHz - 9 kHz to 150 kHz

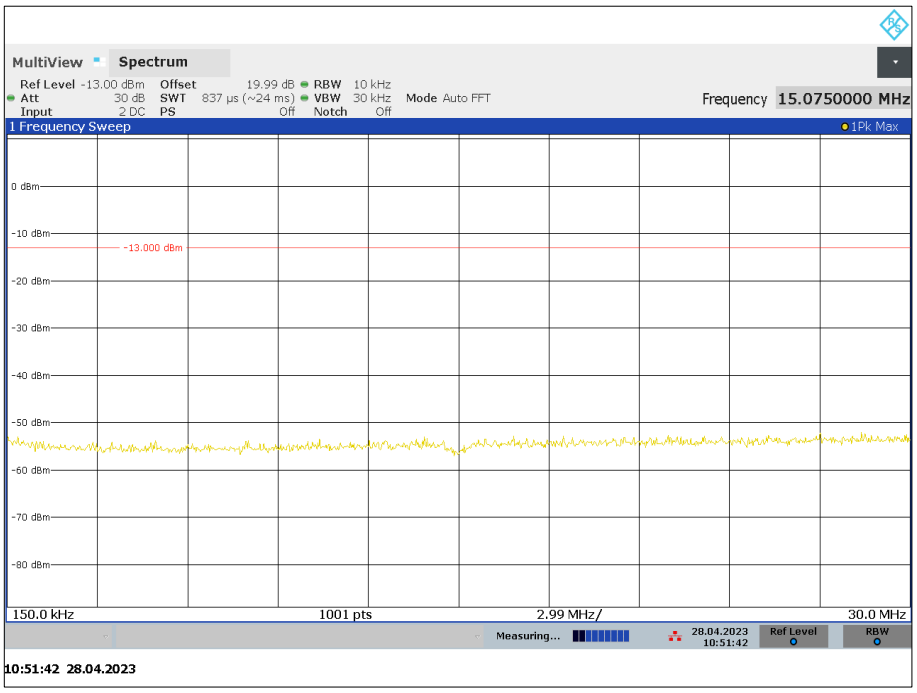

Figure 13 - 136 MHz, 150 kHz to 30 MHz

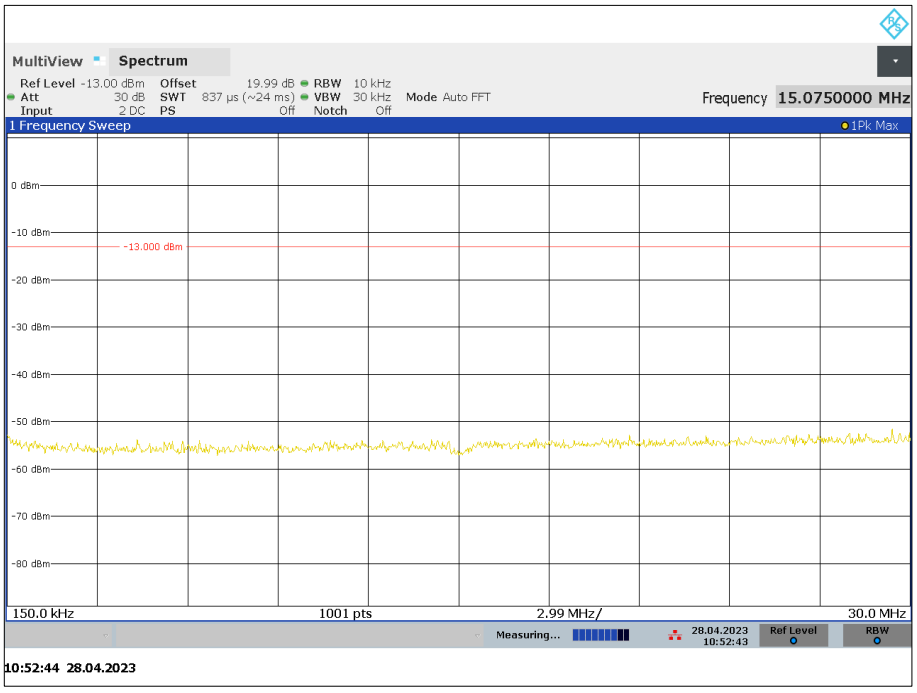

Figure 14 - 155 MHz, 150 kHz to 30 MHz

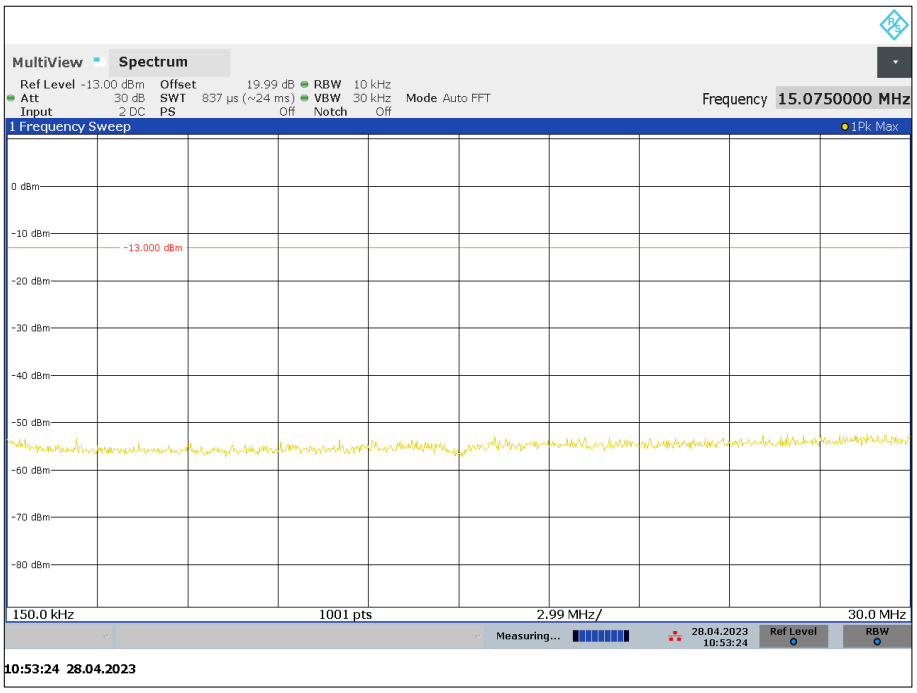

Figure 15 - 174 MHz - 150 kHz to 30 MHz

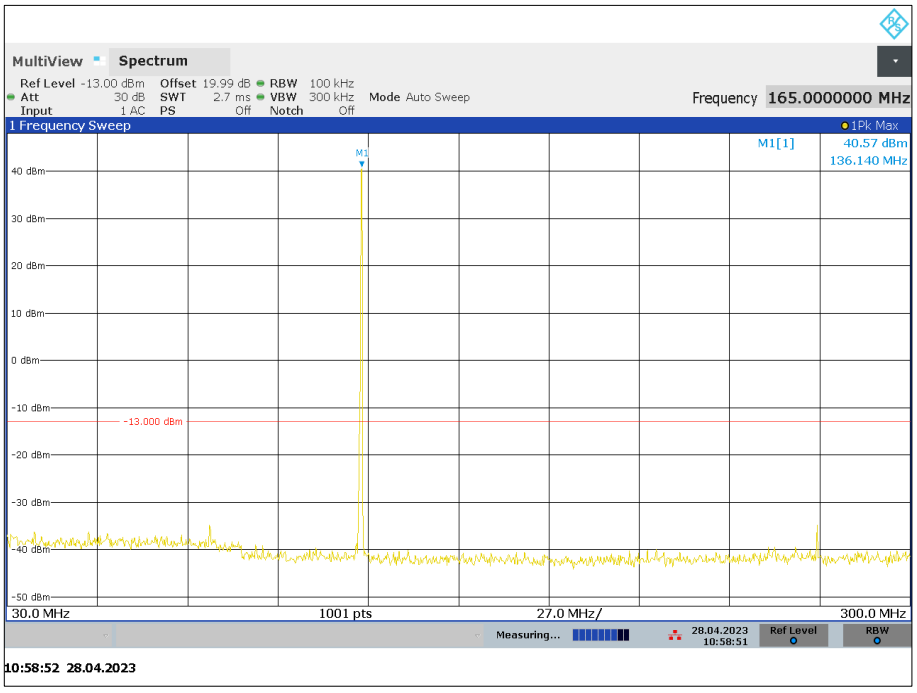

Figure 16 - 136 MHz, 30 MHz to 300 MHz

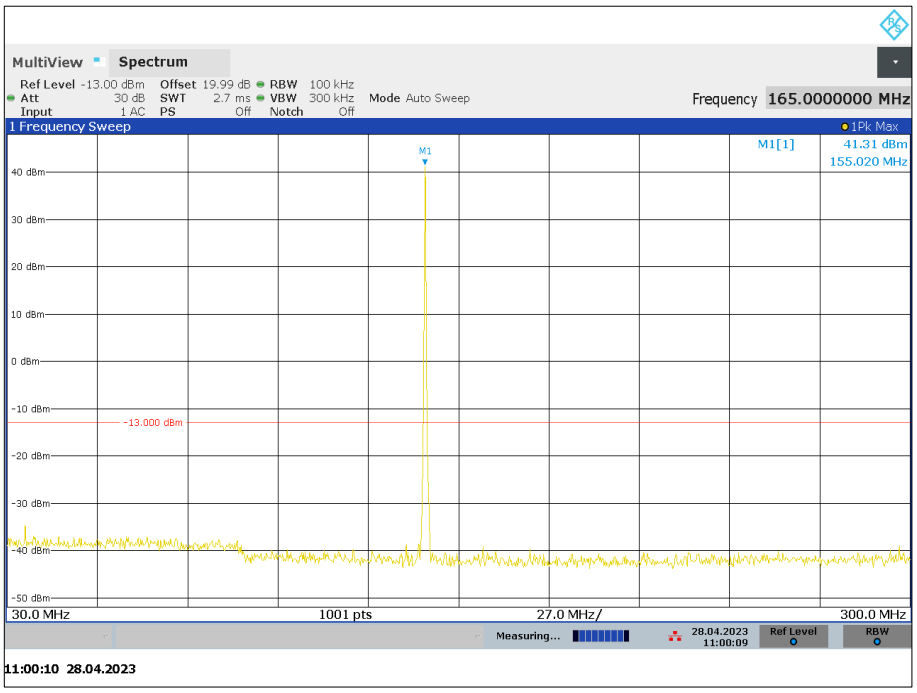

Figure 17 - 155 MHz, 30 MHz to 300 MHz

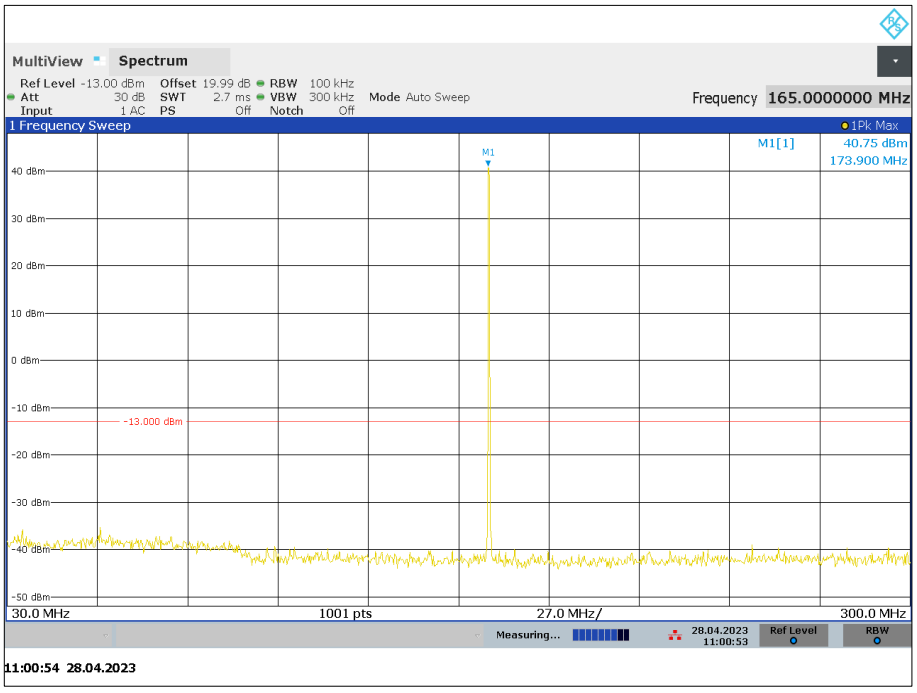

Figure 18 - 174 MHz - 30 MHz to 300 MHz

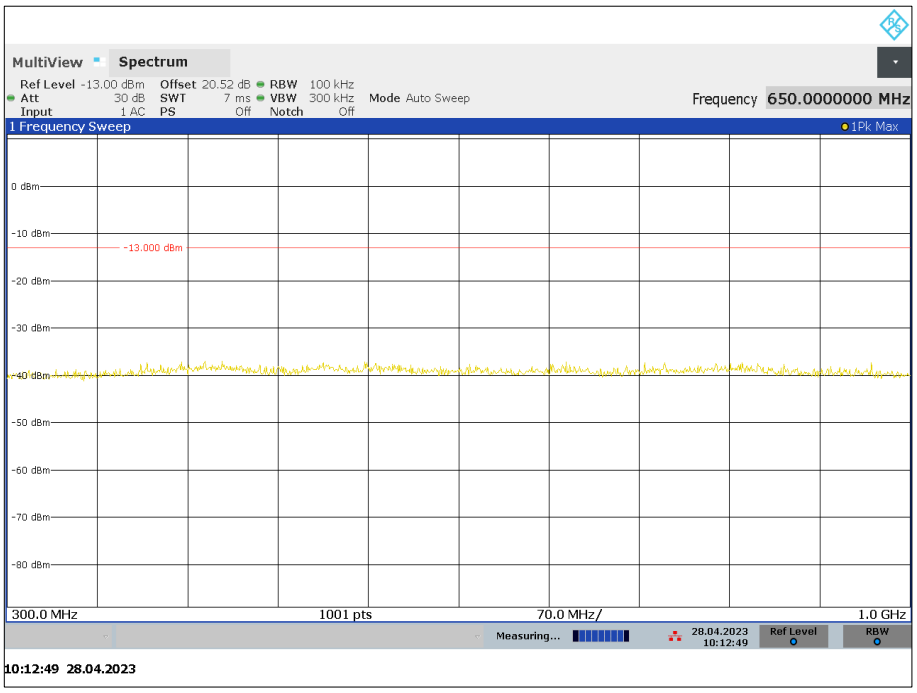

Figure 19 - 136 MHz, 300 MHz to 1 GHz

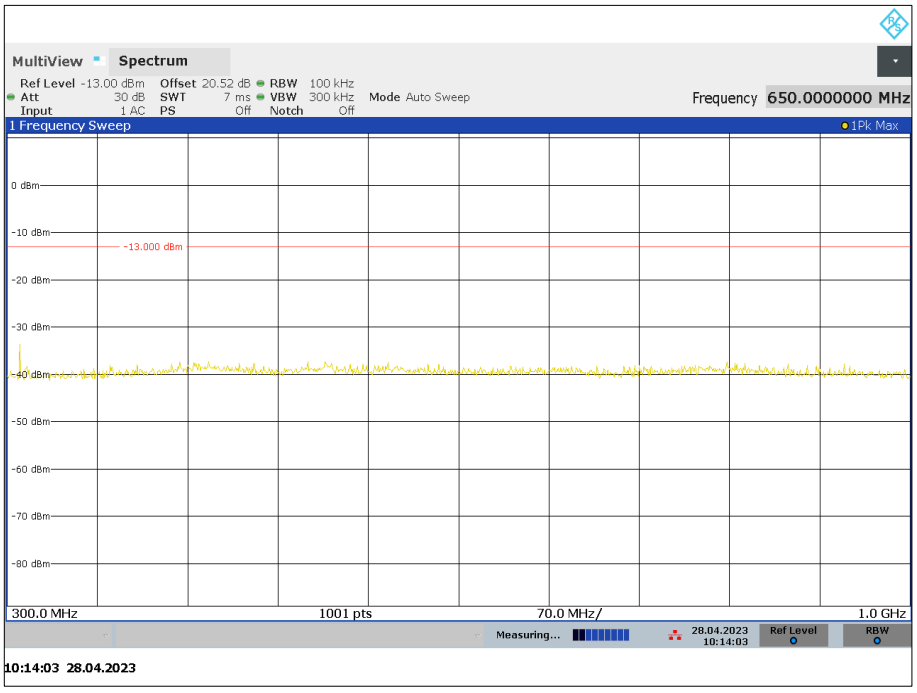

Figure 20 - 155 MHz, 300 MHz to 1 GHz

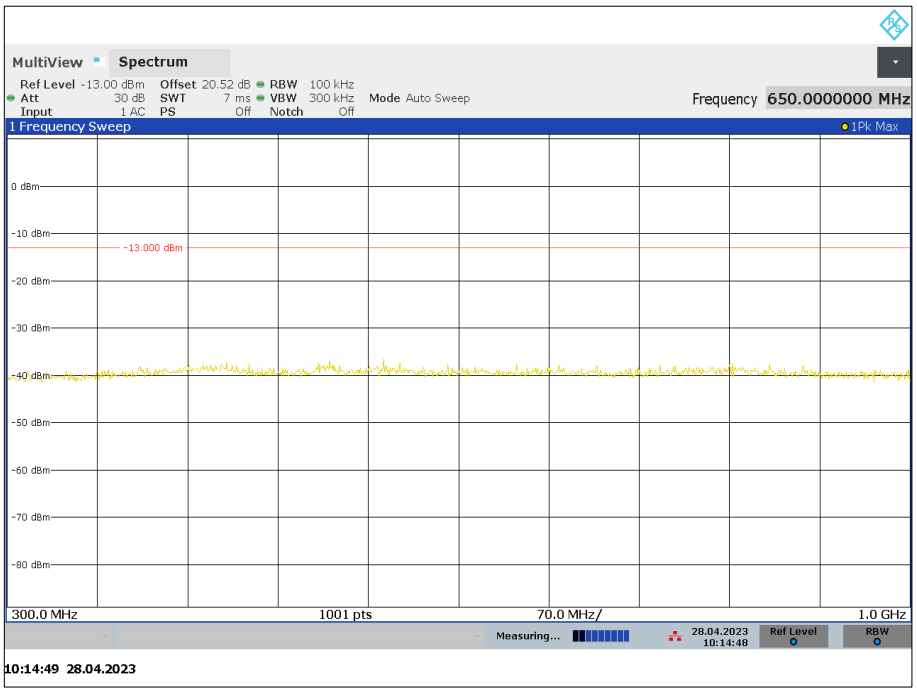

Figure 21 - 174 MHz - 300 MHz to 1 GHz

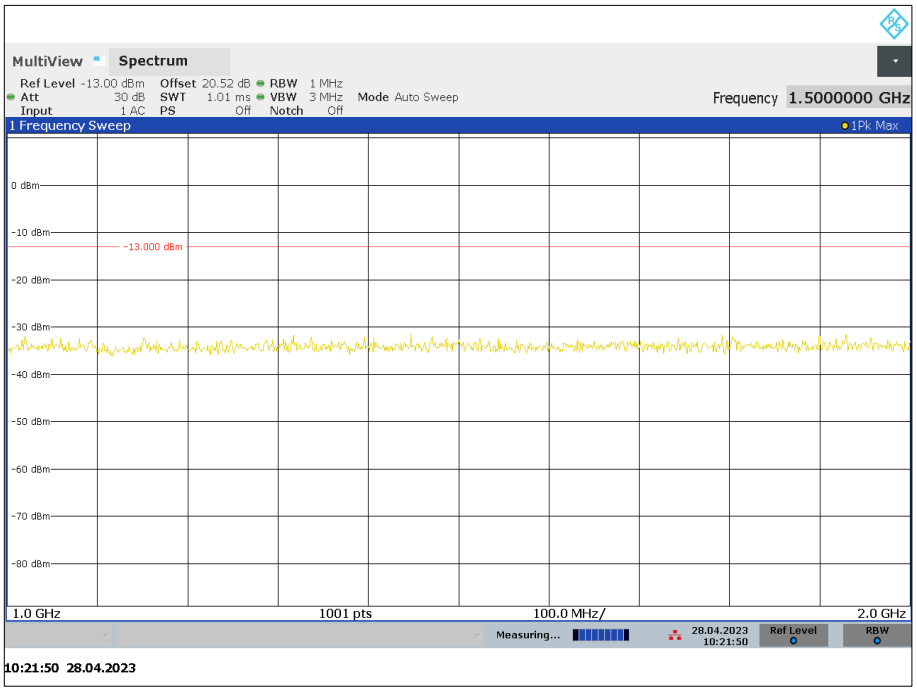

Figure 22 - 136 MHz, 1 GHz to 2 GHz

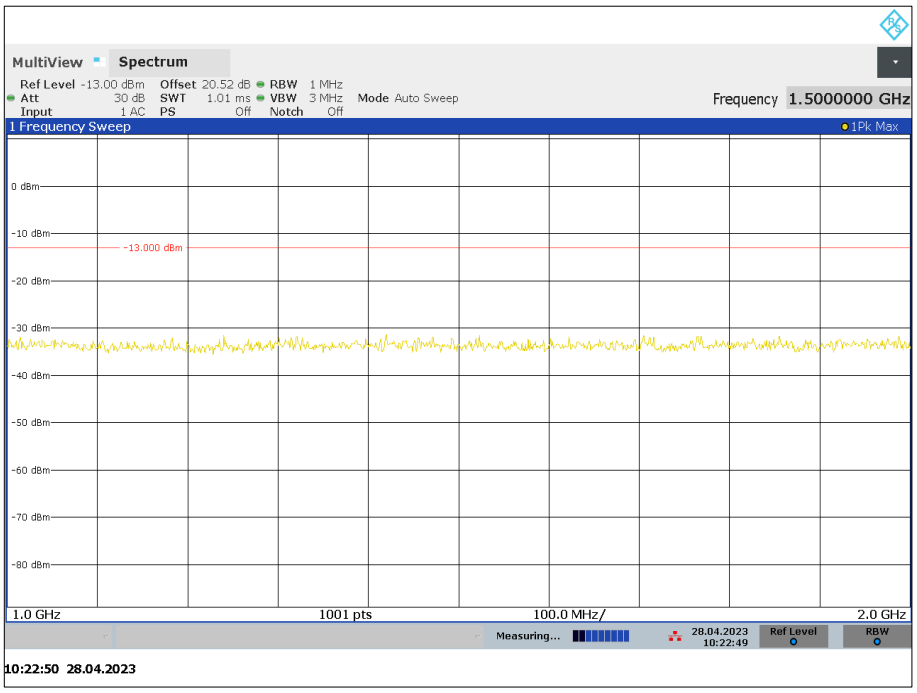

Figure 23 - 155 MHz, 1 GHz to 2 GHz

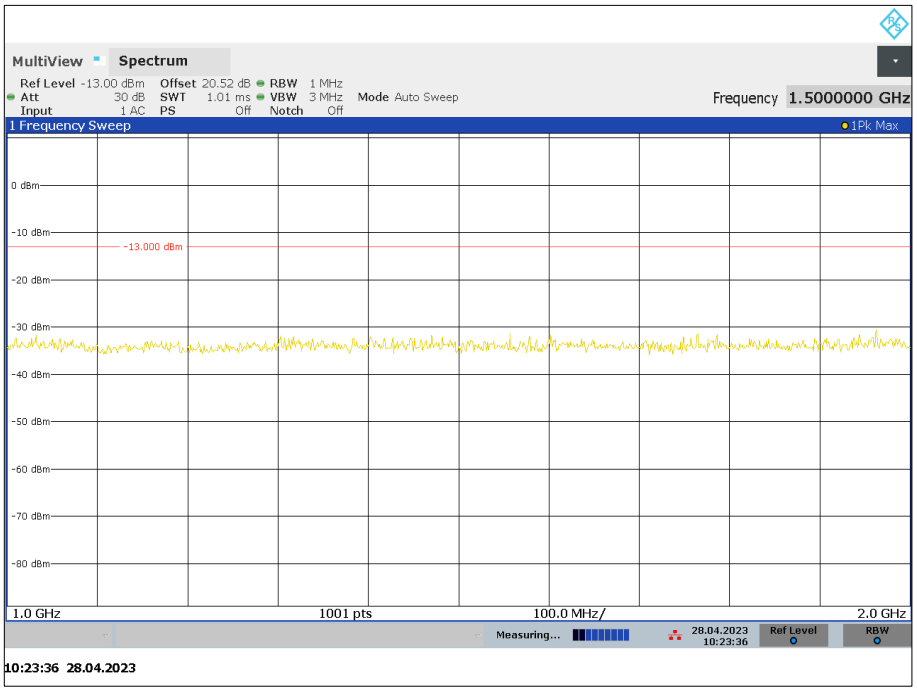

Figure 24 - 174 MHz - 1 GHz to 2 GHz

150 MHz to 174 MHz (FCC and ISEDC)

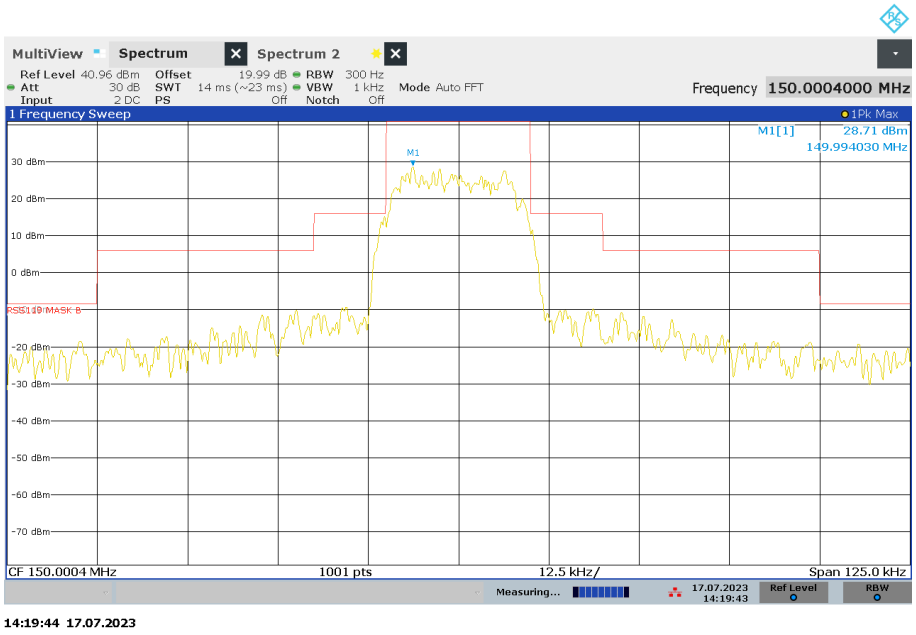

Figure 25 - 150 MHz, Transmitter Mask

Figure 26 - 162 MHz, Transmitter Mask

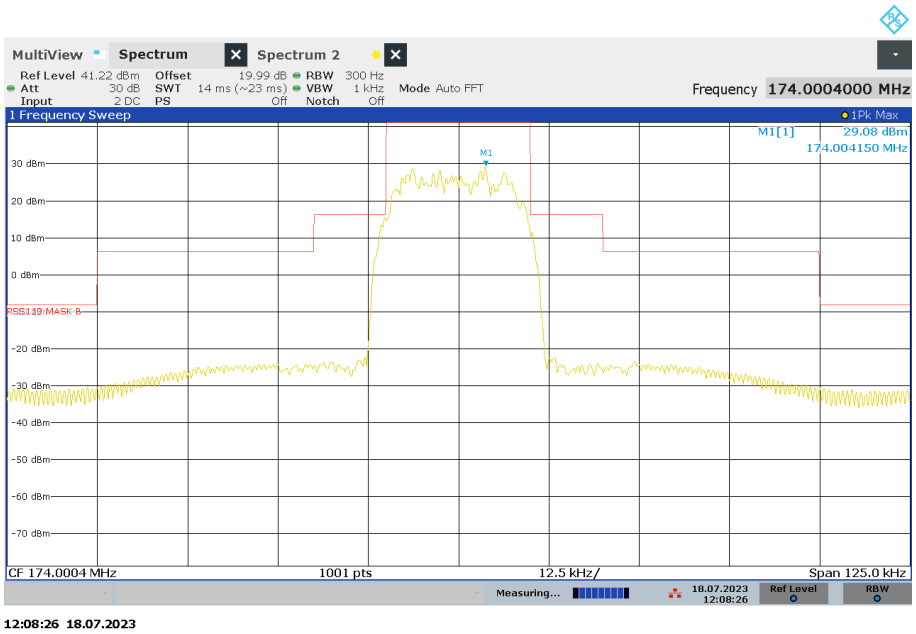

Figure 27 - 174 MHz, Transmitter Mask

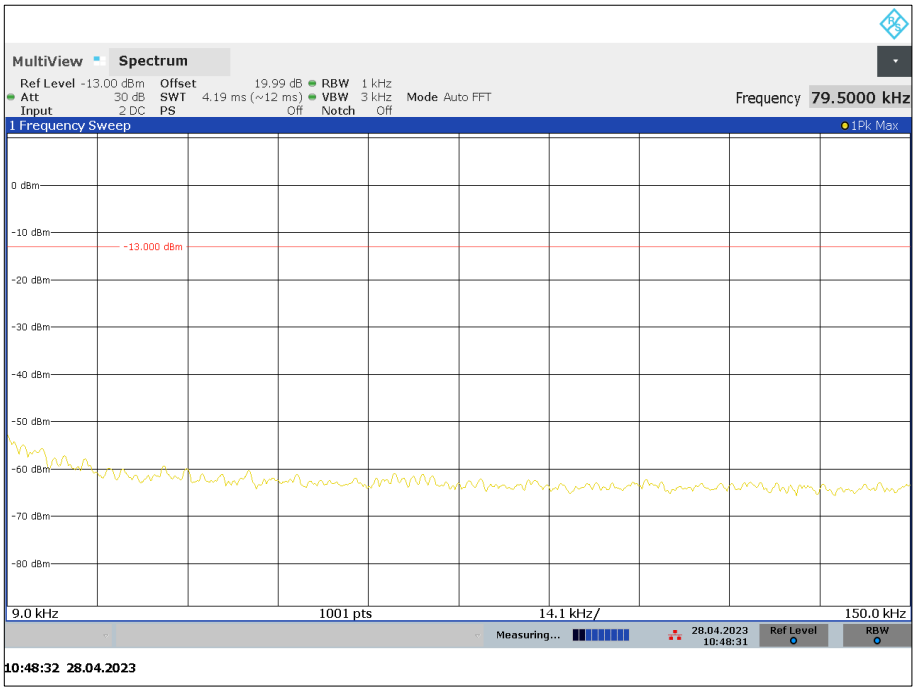

Figure 28 - 150 MHz, 9 kHz to 150 kHz

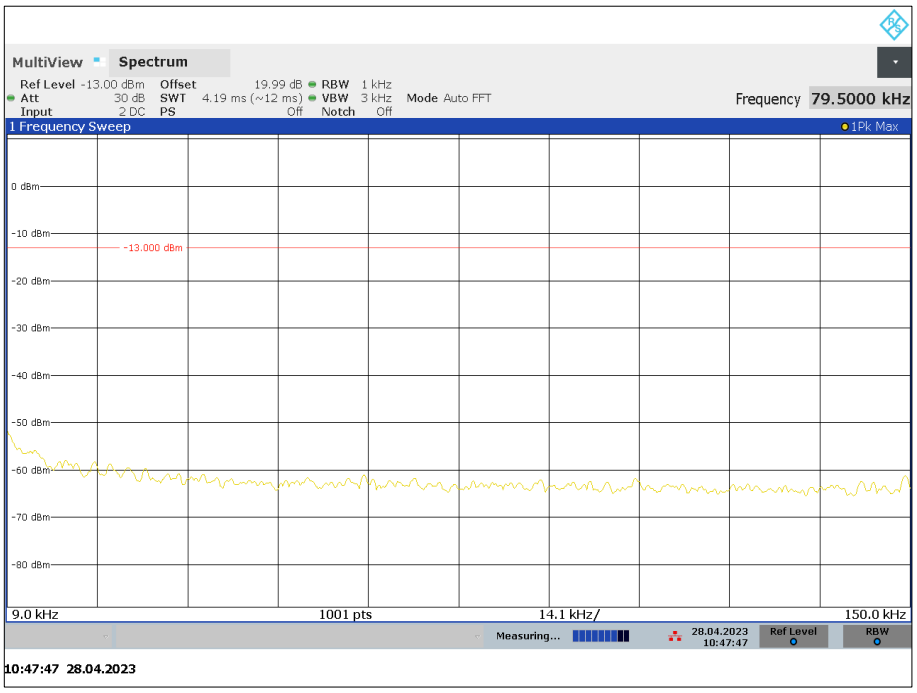

Figure 29 - 162 MHz, 9 kHz to 150 kHz

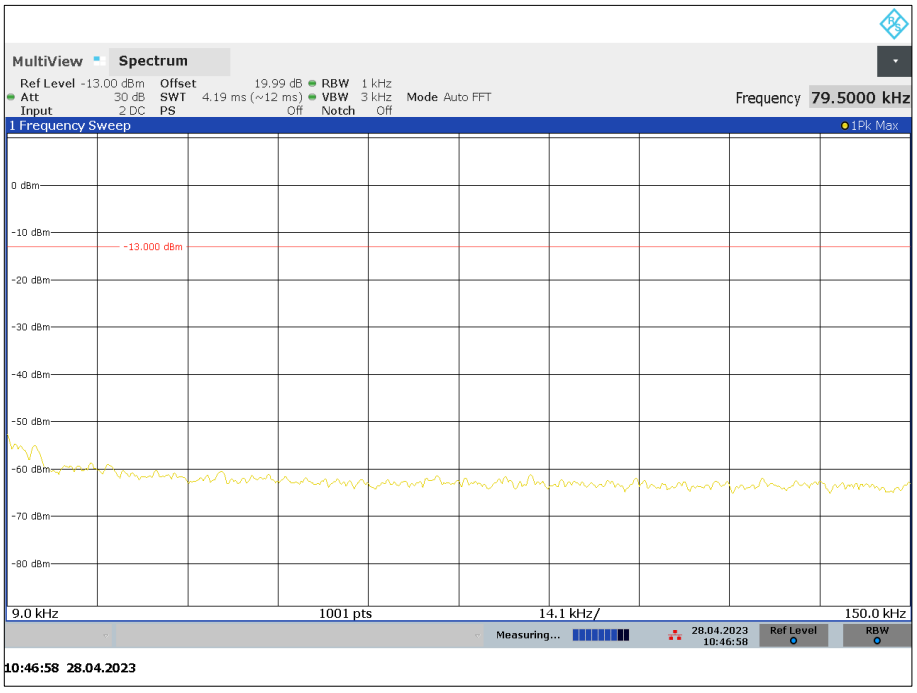

Figure 30 - 174 MHz - 9 kHz to 150 kHz

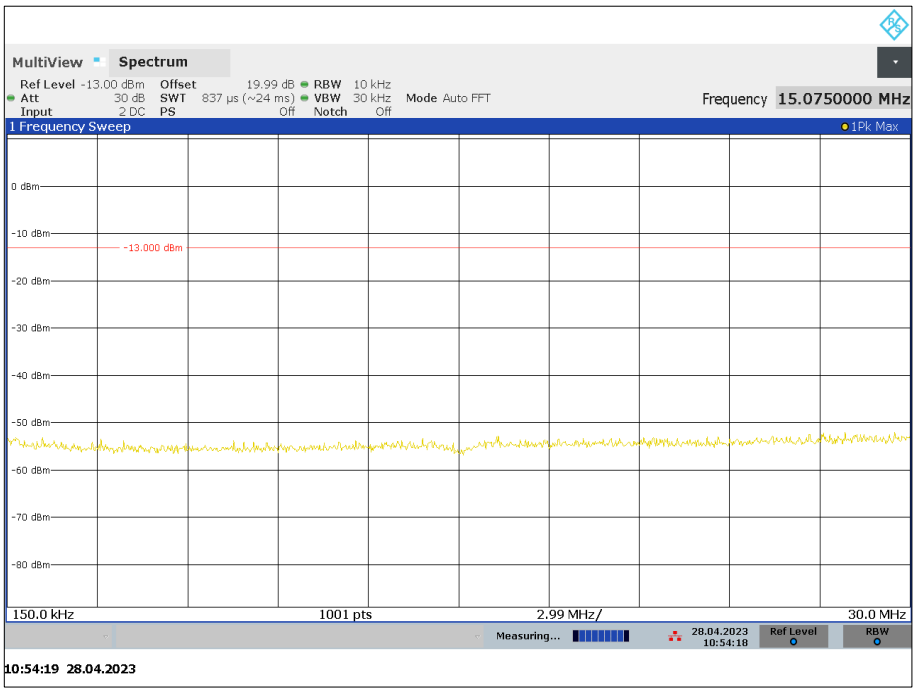

Figure 31 - 150 MHz, 150 kHz to 30 MHz

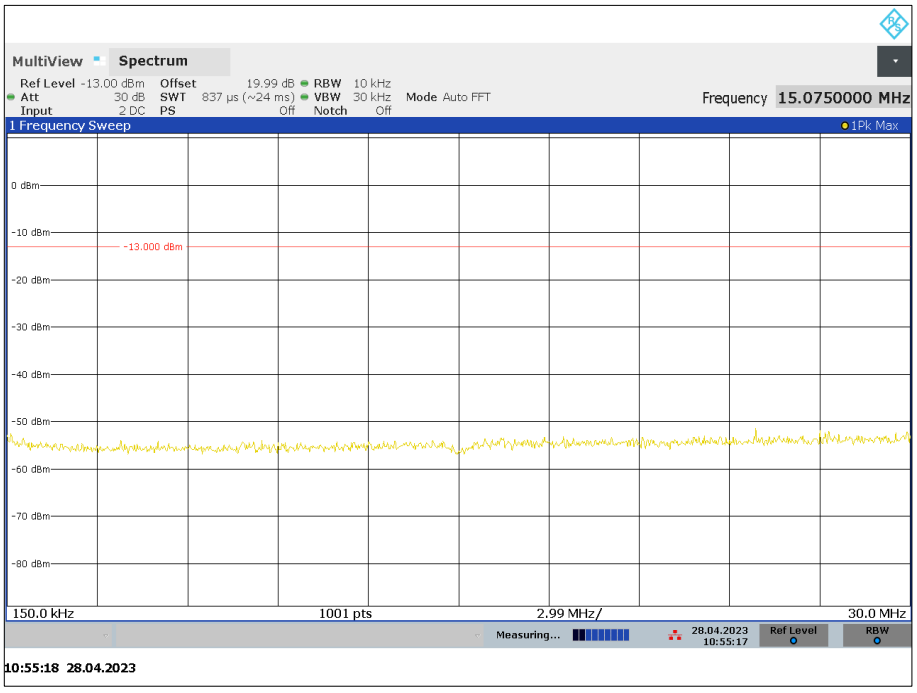

Figure 32 - 162 MHz, 150 kHz to 30 MHz

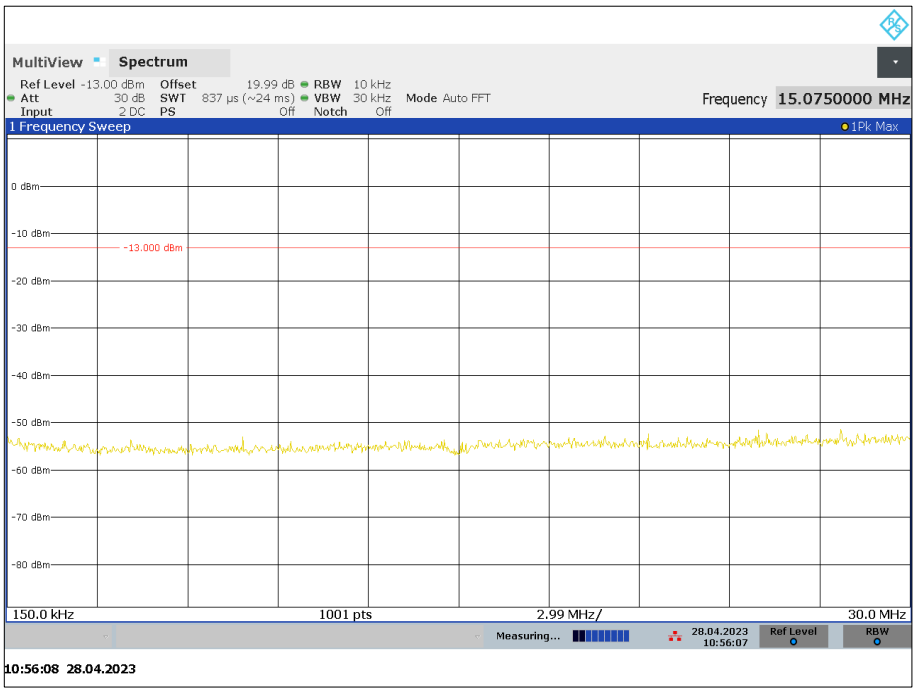

Figure 33 - 174 MHz - 150 kHz to 30 MHz

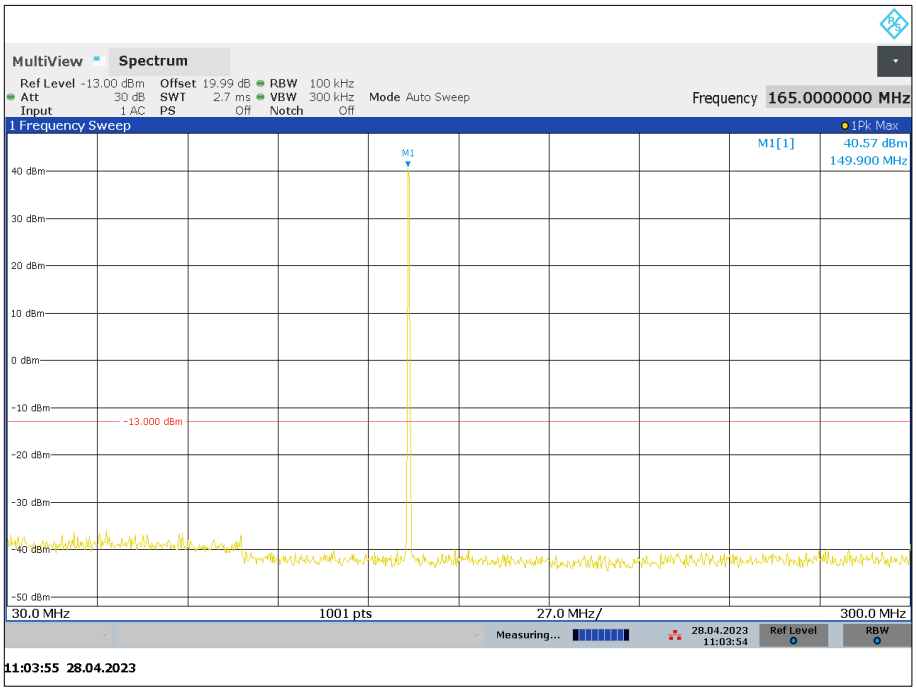

Figure 34 - 150 MHz, 30 MHz to 300 MHz

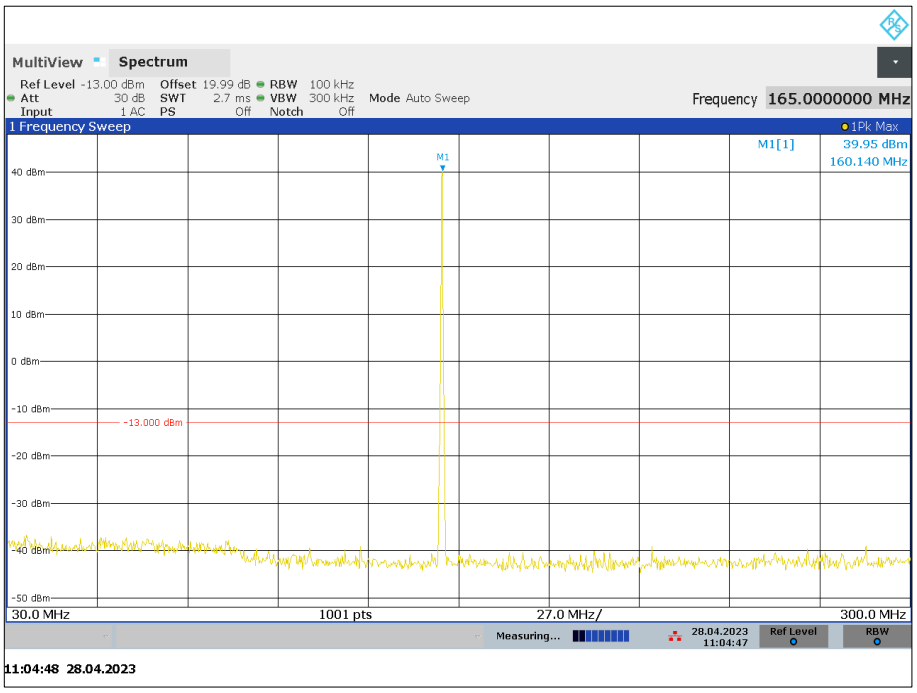

Figure 35 - 162 MHz, 30 MHz to 300 MHz

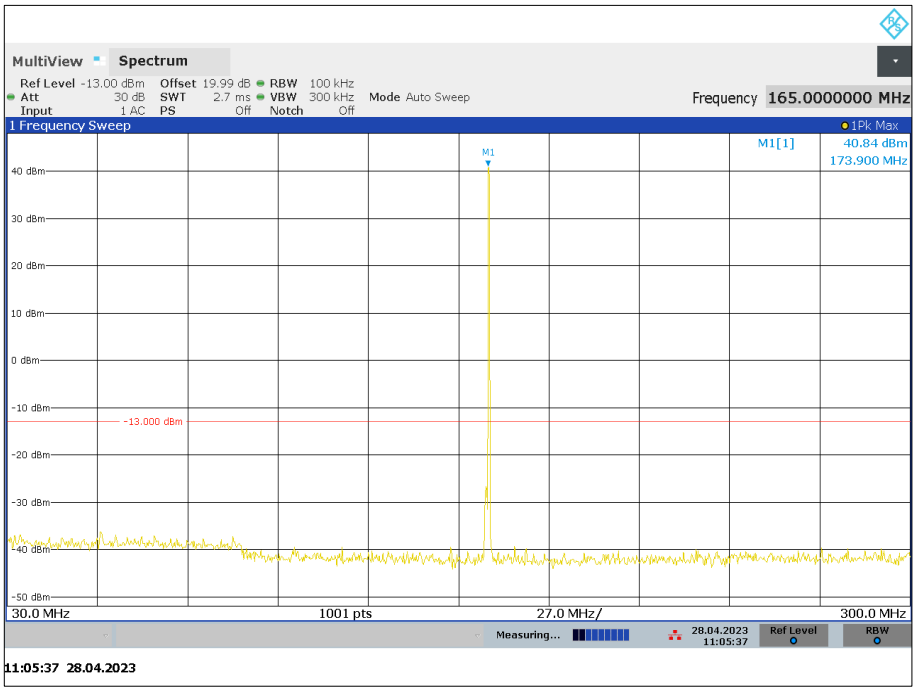

Figure 36 - 174 MHz - 30 MHz to 300 MHz

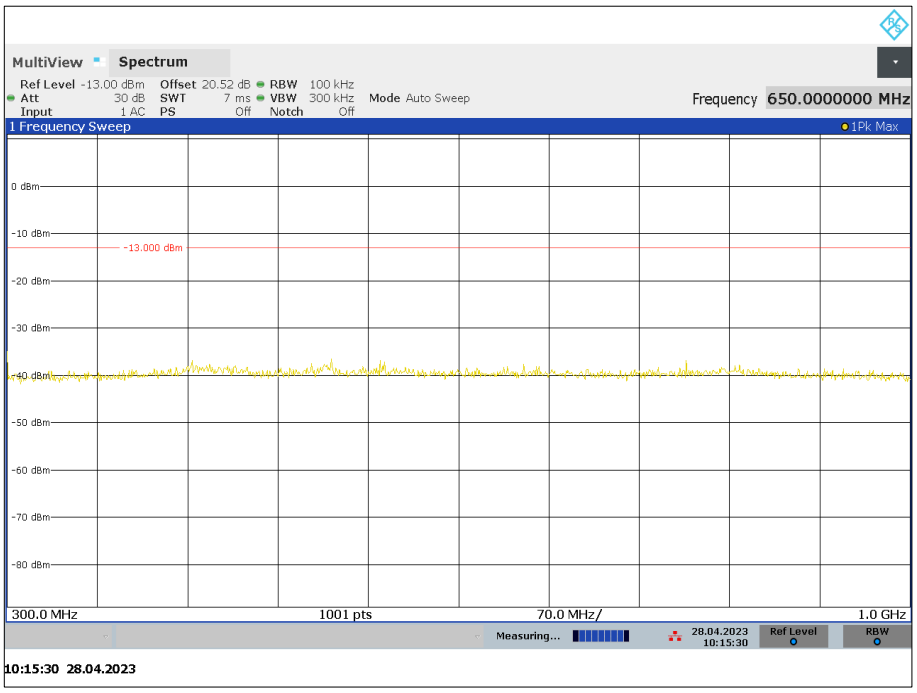

Figure 37 - 150 MHz, 300 MHz to 1 GHz

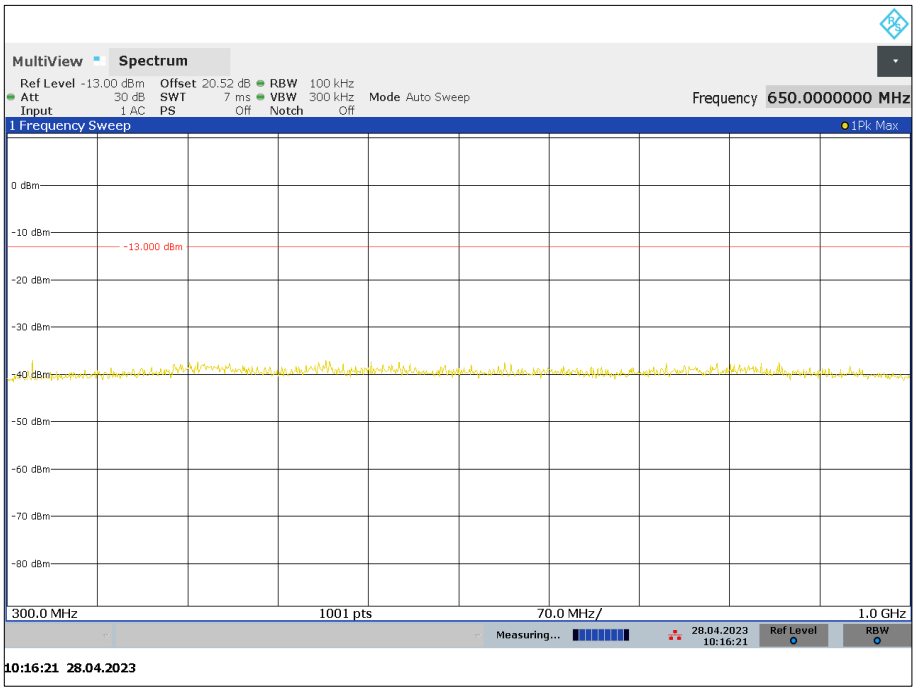

Figure 38 - 162 MHz, 300 MHz to 1 GHz

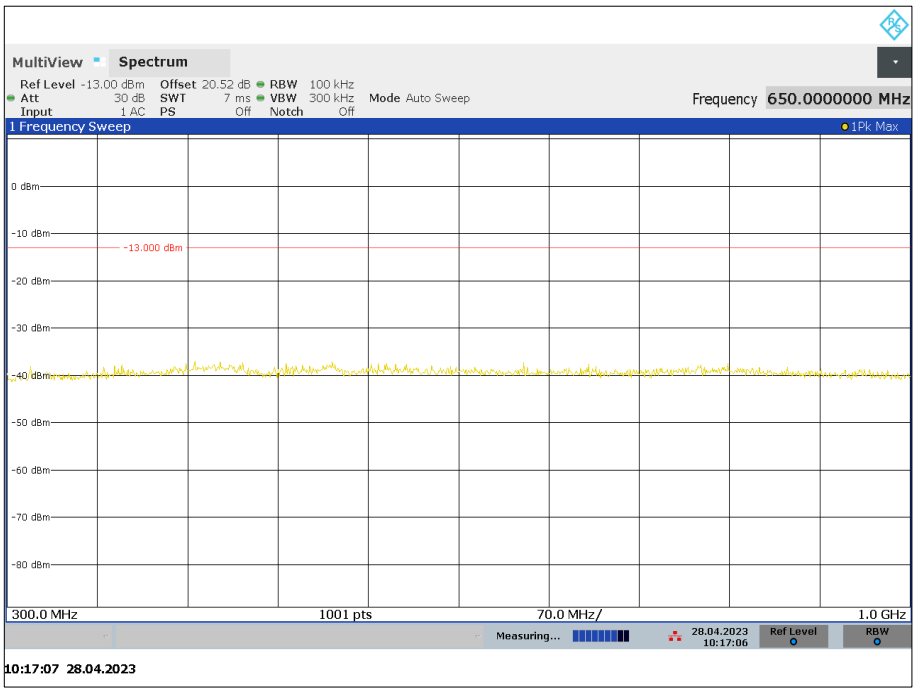

Figure 39 - 174 MHz - 300 MHz to 1 GHz

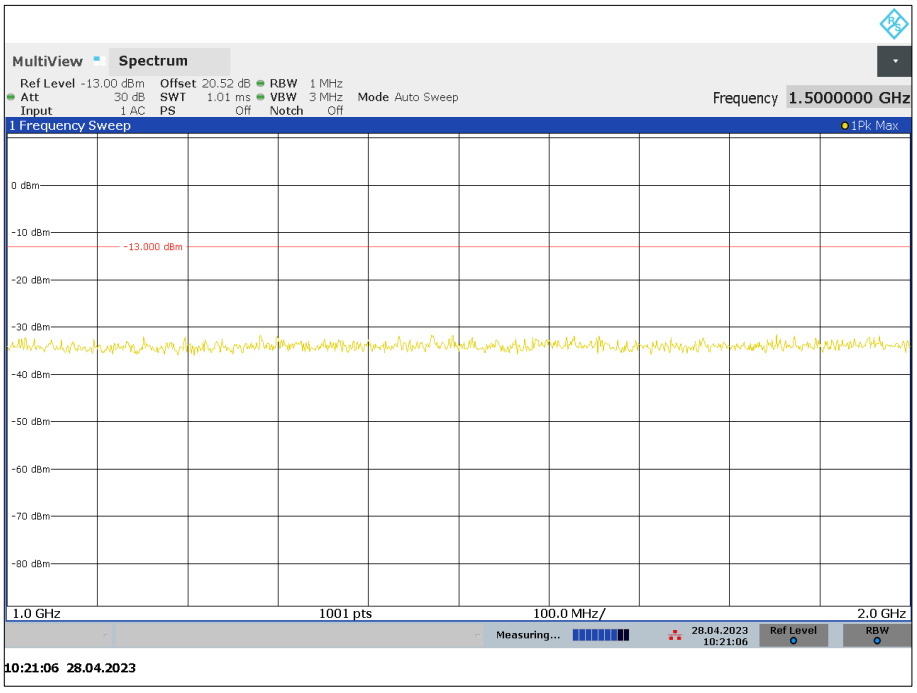

Figure 40 - 150 MHz, 1 GHz to 2 GHz

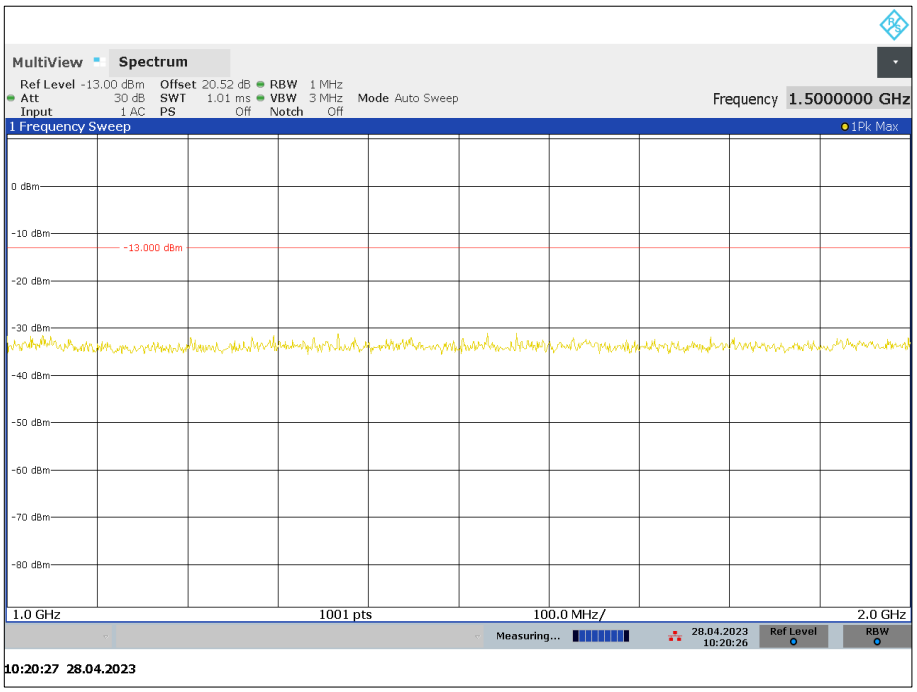

Figure 41 - 162 MHz, 1 GHz to 2 GHz

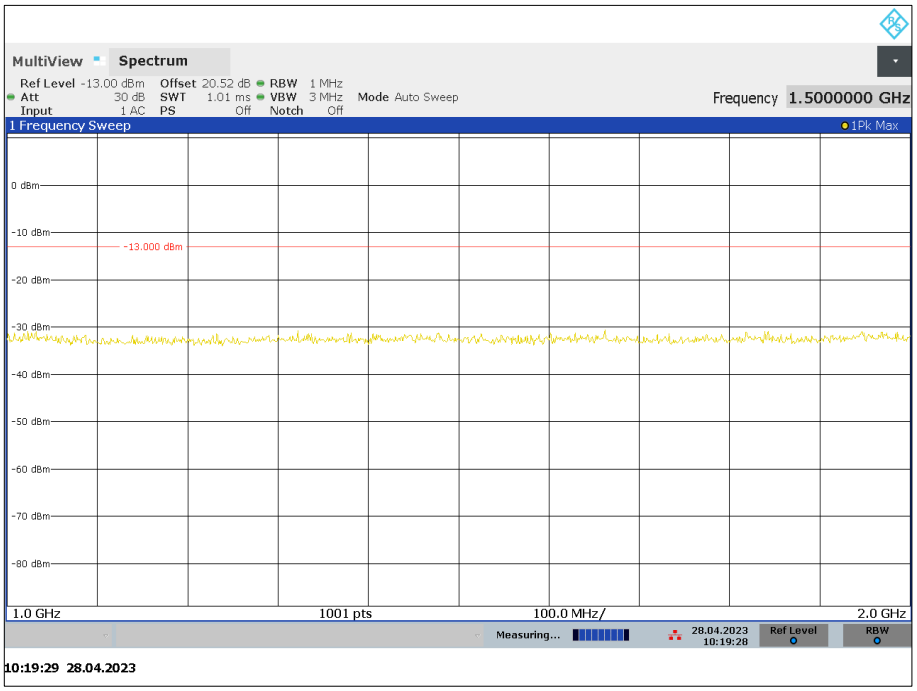

Figure 42 - 174 MHz - 1 GHz to 2 GHz

FCC 47 CFR Part 90, Limit Clause 90.210

The EUT shall comply with emission mask B as per FCC 47 CFR Part 90, clause 90.210.

ISED RSS-119, Limit Clause 5.8

The EUT shall comply with emission mask B as per ISED RSS-119, clause 5.8.

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Hygrometer	Rotronic	A1	2138	12	28-Sep-2023
Hygrometer	PCE Instruments	OCE-THB-40	5470	12	20-Apr-2024
Test Receiver	Rohde & Schwarz	ESW44	5084	12	09-Aug-2023
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	04-May-2023
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	21-May-2024
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5516	12	23-Oct-2023
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5513	12	14-Apr-2024
300 MHz High Pass Filter	Mini-Circuits	NHP-300	5532	12	23-Mar-2023
300 MHz High Pass Filter	Mini-Circuits	NHP-300	5532	12	26-May-2024

Table 21

3 Photographs

3.1 Test Setup Photographs

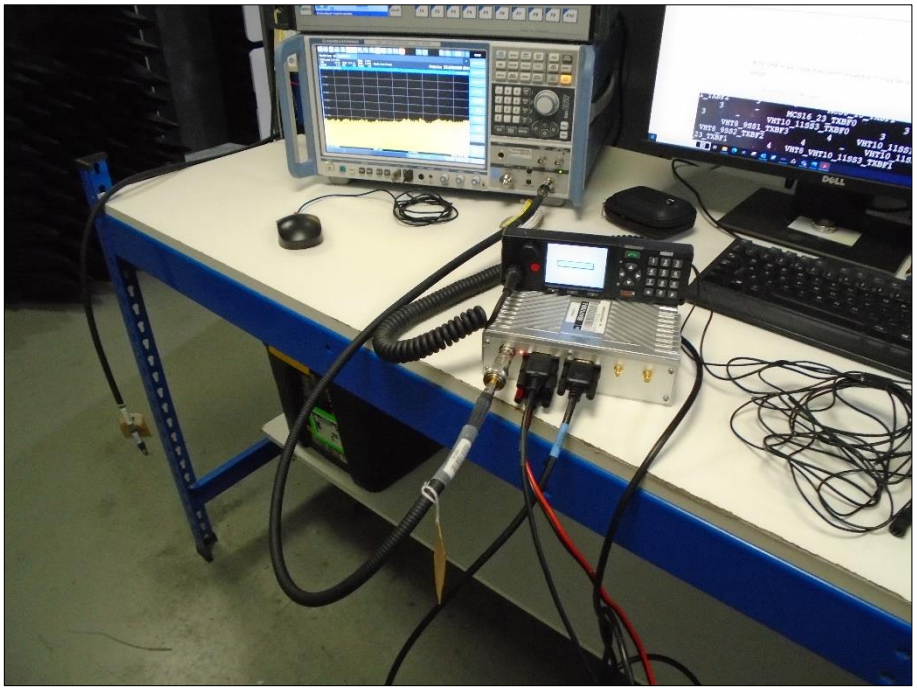

Figure 43 - Test Setup Photographs

4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Maximum Conducted Output Power	± 3.2 dB
Spurious Emissions at Antenna Terminals	± 3.45 dB

Table 22

Measurement Uncertainty Decision Rule – Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.