FCC and ISED Test Report

Sepura Limited
Model: SCG2228

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
9000 Cambridge Research Park
Beach Drive
Waterbeach
Cambridge, CB25 9TL
United Kingdom

FCC ID: XX6SCG2228M IC: 8739A-SCG2228ME

COMMERCIAL-IN-CONFIDENCE

Document 75958868-01 Issue 01

SIGNATURE			
			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Steve Marshall	Senior Engineer	Authorised Signatory	23 February 2024

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 2, FCC 47 CFR Part 90, 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	Thomas Biddlecombe	23 February 2024	
	George Williams	23 February 2024	

FCC Accreditation
492497/UK2010 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: 2022, 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.

TÜV SÜD
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Registered in Scotland at East Kilbride,
Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TUV SUD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuvsud.com/en

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

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	23-February-2024

Table 1

1.2 Introduction

Applicant	Sepura Limited
Manufacturer	Sepura Limited
Model Number(s)	SCG2228
Serial Number(s)	1PR002401GPT84J
Hardware Version(s)	PLX-850155A0
Software Version(s)	Development
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 2: 2021 FCC 47 CFR Part 90: 2022 ISED RSS-119: Issue 12 (05-2015) ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021)
Order Number	PLC-PO026141-1
Date	27-June-2023
Date of Receipt of EUT	19-January-2024
Start of Test	29-January-2024
Finish of Test	15-February-2024
Name of Engineer(s)	Thomas Biddlecombe and George Williams
Related Document(s)	ANCI C63.26: 2015

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: Tetra - 806 MHz to 825 MHz							
2.1	2.1046	90.205	5.4	6.12	Maximum Conducted Output Power	Pass	ANCI C63.26: 2015
2.2	2.1047	90.207	5.2	-	Types of Emissions	Pass	
2.3	2.1049	90.209	5.5	6.7	Bandwidth Limitations	Pass	ANSI C63.26: 2015
2.4	2.1051	90.210	5.8	6.13	Spurious Emissions at Antenna Terminals	Pass	
2.5	2.1053	90.210	5.8	6.13	Radiated Spurious Emissions	Pass	ANSI C63.26: 2015
2.6	2.1055	90.213	5.3	6.11	Frequency Stability	Pass	ANSI C63.26: 2015
2.7	-	90.221	5.8.9.1	-	Adjacent Channel Power	Pass	
Configuration and Mode: Tetra - 851 MHz to 870 MHz							
2.1	2.1046	90.205	5.4	6.12	Maximum Conducted Output Power	Pass	ANCI C63.26: 2015
2.2	2.1047	90.207	5.2	-	Types of Emissions	Pass	
2.3	2.1049	90.209	5.5	6.7	Bandwidth Limitations	Pass	ANSI C63.26: 2015
2.4	2.1051	90.210	5.8	6.13	Spurious Emissions at Antenna Terminals	Pass	
2.5	2.1053	90.210	5.8	6.13	Radiated Spurious Emissions	Pass	ANSI C63.26: 2015
2.6	2.1055	90.213	5.3	6.11	Frequency Stability	Pass	ANSI C63.26: 2015
2.7	-	90.221	5.8.9.1	-	Adjacent Channel Power	Pass	

Table 2

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 SCG2228 mobile terminal is a TETRA enabled radio with Bluetooth and Wi-Fi capability		
Manufacturer:	Sepura Limited		
Model:	SCG2228		
Part Number:	SCG2228		
Hardware Version:	PLX-850155A0		
Software Version:	Development		
FCC ID of the product under test – see guidance here		XX6SCG2228M	
IC ID of the product under test – see guidance here		8739A-SCG2228ME	
Device Category	Mobile ☒	Portable ☐	Fixed ☐
Equipment is fitted with an Audio Low Pass Filter		Yes ☐	No ☐

Table 3

Intentional Radiators

Technology	TETRA	TETRA	Bluetooth	WLAN 802.11b	WLAN 802.11g	WLAN 802.11n	BLE
Frequency Range (MHz to MHz)	806 to 824	851 to 870	2402-2480	2412-2462	2412-2462	2412-2462	2402-2480
Conducted Declared Output Power (dBm)	40	40	8	17	17	17	7.5
Antenna Gain (dBi)	5	5	1	1	1	1	1
Supported Bandwidth(s) (MHz) (e.g. 1 MHz, 20 MHz, 40 MHz)	25 kHz	25 kHz	1	20	20	20	2
Modulation Scheme(s) (e.g. GFSK, QPSK etc)	π/4 DQPSK	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)	22K0DXW, 20K0DXW	22K0DXW, 20K0DXW	1M01F1D	19M7G1D	19M7G1D	19M7D1D	1M81F1D
Bottom Frequency (MHz)	806	851.0125	2402	2412	2412	2412	2402
Middle Frequency (MHz)	815.00	860.00	2441	2437	2437	2437	2441
Top Frequency (MHz)	824	868.9875	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:	50	Hz
Voltage	240	V
Max current:	90W	A
Single Phase ☒ Three Phase ☐		

Table 6

DC Power Source

Nominal voltage:	12	V
Extreme upper voltage:	15.6	V
Extreme lower voltage:	10.8	V
Max current:	90W	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	Yes ☐ No ☐

Table 9

Temperature

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

Table 10

Cable Loss

Adapter Cable Loss (Conducted sample)		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:	Panorama AFGB-S5	Gain	5	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.					

Table 12

Ancillaries (if applicable)

Manufacturer:		Part Number:	
Model:		Country of Origin:	

Table 13

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

Name:Prakriti Gupta
Position held: Conformance team leader
Date: 23/02/2024

1.5 Product Information

1.5.1 Technical Description

The SCG2228 mobile terminal is a TETRA enabled radio with Bluetooth and Wi-Fi capability.

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: SCG2228, Serial Number: 1PR002401GPT84J			
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: Tetra - 806 MHz to 825 MHz		
Maximum Conducted Output Power	Thomas Biddlecombe	UKAS
Types of Emissions	Thomas Biddlecombe	UKAS
Bandwidth Limitations	Thomas Biddlecombe	UKAS
Spurious Emissions at Antenna Terminals	Thomas Biddlecombe	UKAS
Radiated Spurious Emissions	George Williams	UKAS
Frequency Stability	Thomas Biddlecombe	UKAS
Adjacent Channel Power	Thomas Biddlecombe	UKAS
Configuration and Mode: Tetra - 851 MHz to 870 MHz		
Maximum Conducted Output Power	Thomas Biddlecombe	UKAS
Types of Emissions	Thomas Biddlecombe	UKAS
Bandwidth Limitations	Thomas Biddlecombe	UKAS
Spurious Emissions at Antenna Terminals	Thomas Biddlecombe	UKAS
Radiated Spurious Emissions	George Williams	UKAS
Frequency Stability	Thomas Biddlecombe	UKAS
Adjacent Channel Power	Thomas Biddlecombe	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

SCG2228, S/N: 1PR002401GPT84J - Modification State 0

2.1.3 Date of Test

15-February-2024

2.1.4 Test Method

The test was applied in accordance with the test method requirements of FCC 47 CFR Part 90, Industry Canada RSS-119, and ISED RSS-GEN with reference to ANSI C63.26, clause 5.2.4.3.

The EUT was configured to transmit on maximum power 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 measured using a network analyser and entered as a reference level offset in the spectrum analyser. The RBW of the spectrum analyser was set to 30 kHz and the video bandwidth to 91 kHz with the trace set to average using an RMS detector and the result was recorded.

2.1.5 Environmental Conditions

Ambient Temperature	21.2 °C
Relative Humidity	52.5 %

2.1.6 Test Results

Tetra - 806 MHz to 825 MHz

Parameter	806.0125 MHz	815 MHz	823.9875 MHz
Conducted Output Power (dBm)	39.075	39.037	39.067
Manufacturer Declared Power (dBm)	40.0	40.0	40.0
Δ from manufacturer Power (dB)	0.925	0.963	0.933
Antenna Gain (dBi)	5.0	5.0	5.0
ERP (dBm)	44.075	44.037	44.067

Table 16 - ERP

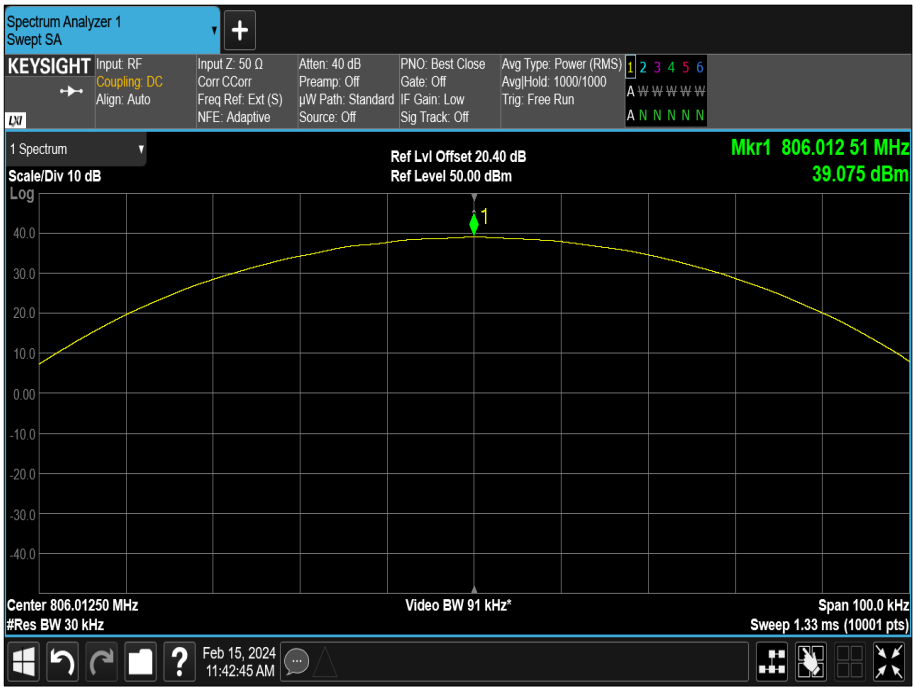

Figure 1 - 806.0125 MHz

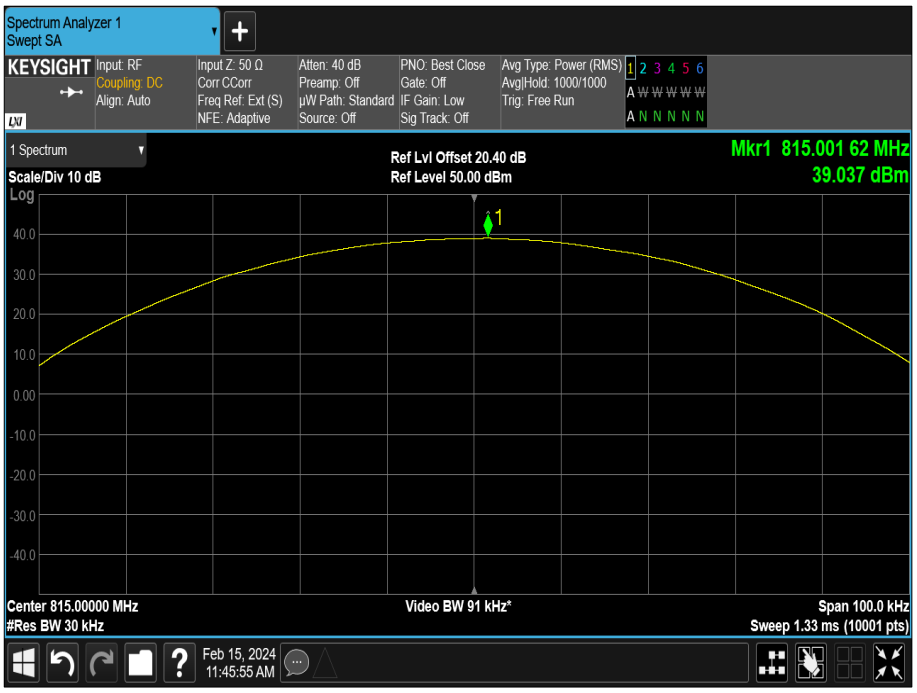

Figure 2 - 815 MHz

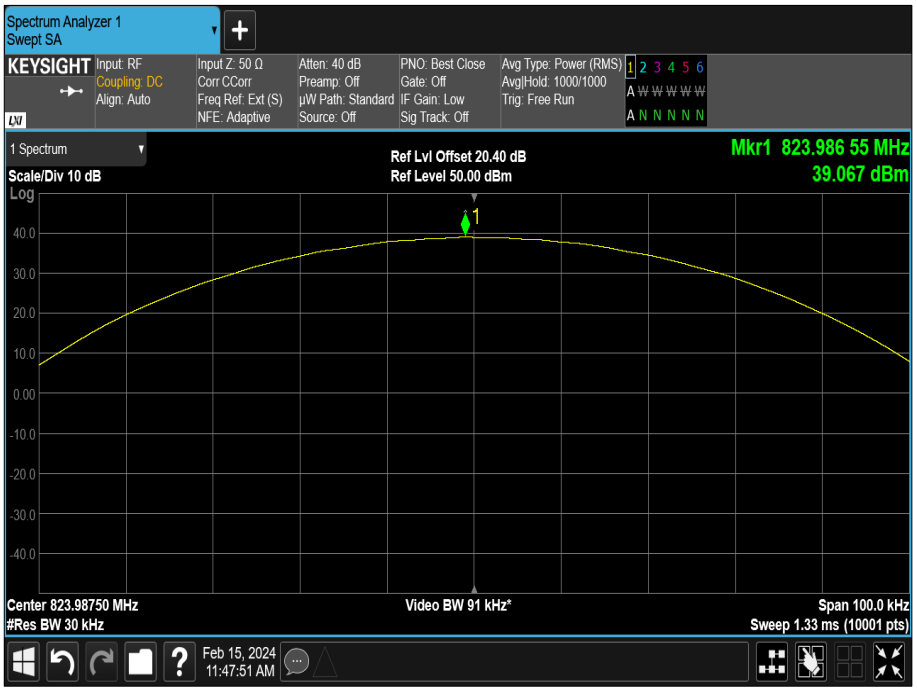

Figure 3 - 823.9875 MHz

Tetra - 851 MHz to 870 MHz

Parameter	851.0125 MHz	860 MHz	868.9875 MHz
Conducted Output Power (dBm)	39.030	39.016	39.144
Manufacturer Declared Power (dBm)	40.0	40.0	40.0
Δ from manufacturer Power (dB)	0.970	0.984	0.856
Antenna Gain (dBi)	5	5	5
ERP (dBm)	44.030	44.016	44.144

Table 17 - ERP

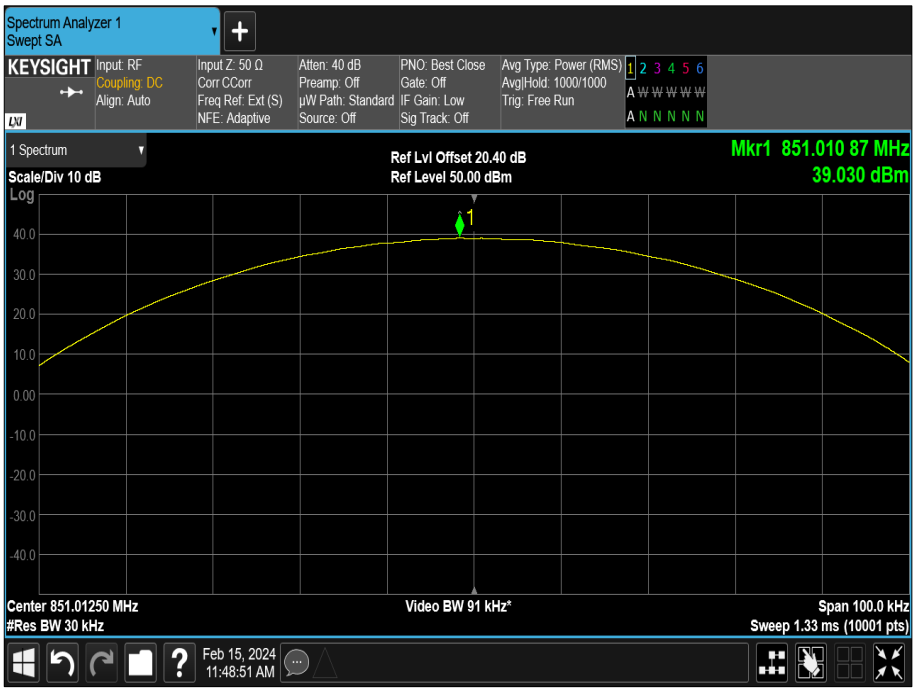

Figure 4 - 851.0125 MHz

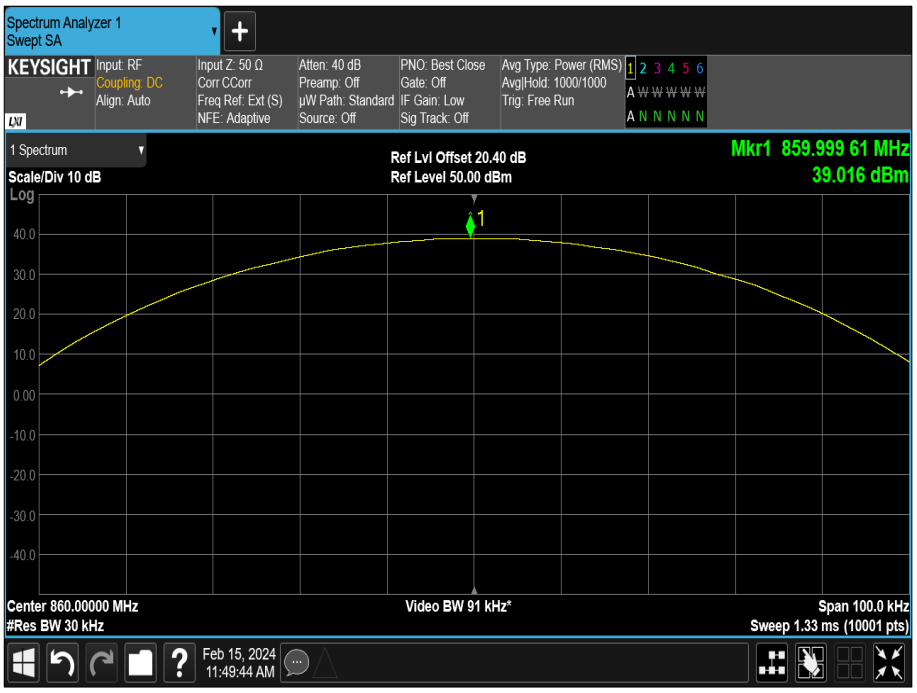

Figure 5 - 860 MHz

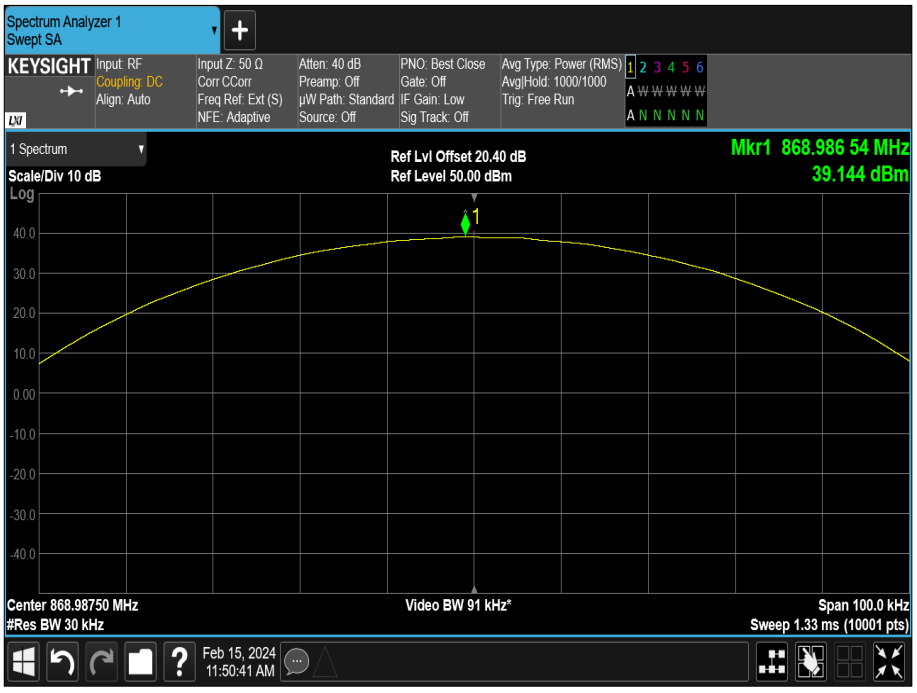

Figure 6 - 868.9875 MHz

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

Industry Canada 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 - Industry Canada Limits for Transmitter Output Power

2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	611	12	15-Dec-2024
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
Signal Analyzer	Keysight Technologies	PXA N9030B	5432	12	08-Jun-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	21-May-2024
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon
1m K-Type Cable	Junkosha	MWX221/B	5908	12	21-May-2024
Frequency Standard	Orolia	SecureSync 2402-053	6339	6	12-Mar-2024

Table 20

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.2 Types of Emissions

2.2.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1047
FCC 47 CFR Part 90, Clause 90.207
ISED RSS-119, Clause 5.2

2.2.2 Equipment Under Test and Modification State

SCG2228, S/N: 1PR002401GPT84J - Modification State 0

2.2.3 Date of Test

02-February-2024

2.2.4 Test Method

This test was performed on middle frequency using a modulated carrier output from the EUT and measured on a spectrum analyser. The path loss was measured using a network analyser and entered as a reference level offset in the spectrum analyser. The spectrum analyser was set to the transmit frequency. The burst measurements were made in zero span mode and the frequency spectrum with a span sufficient to show the transmitters response.

2.2.5 Environmental Conditions

Ambient Temperature	22.7 °C
Relative Humidity	40.3 %

2.2.6 Test Results

Tetra - 806 MHz to 825 MHz

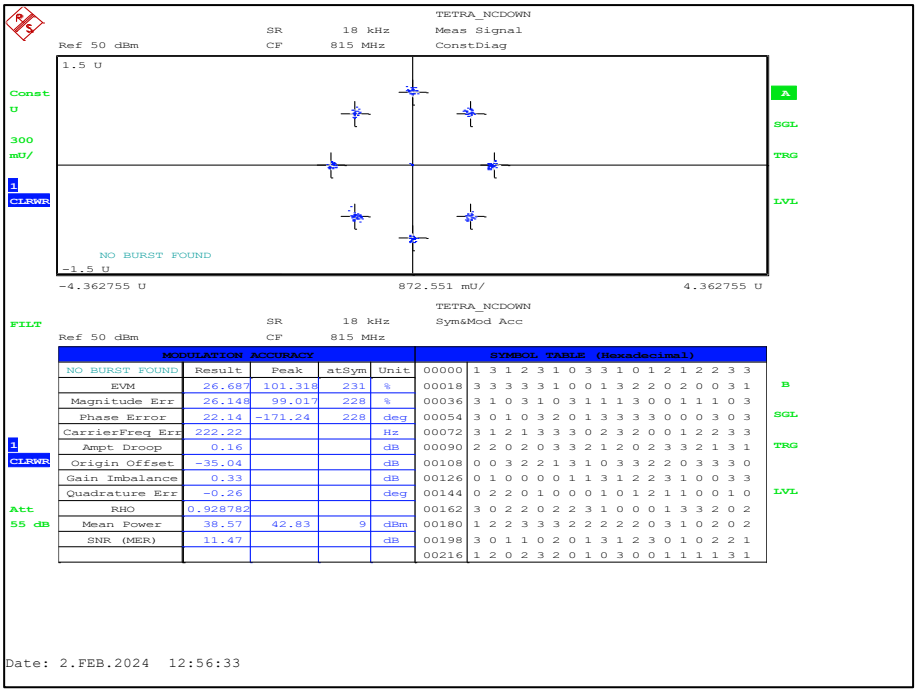

Figure 7-Modulation Accuracy

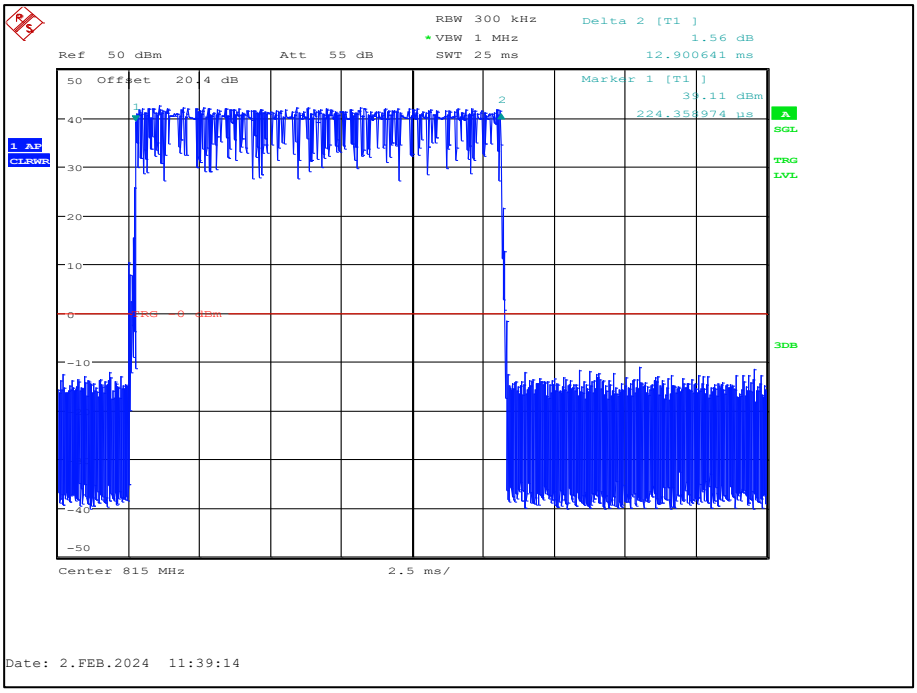

Figure 8-Burst Length

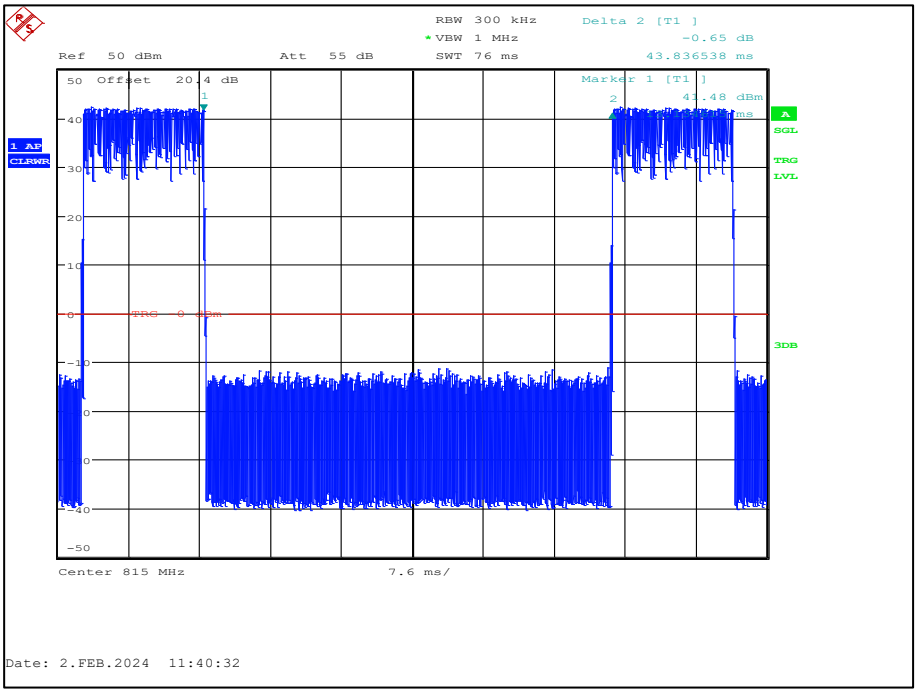

Figure 9-Burst Duty Cycle

Tetra - 851 MHz to 870 MHz

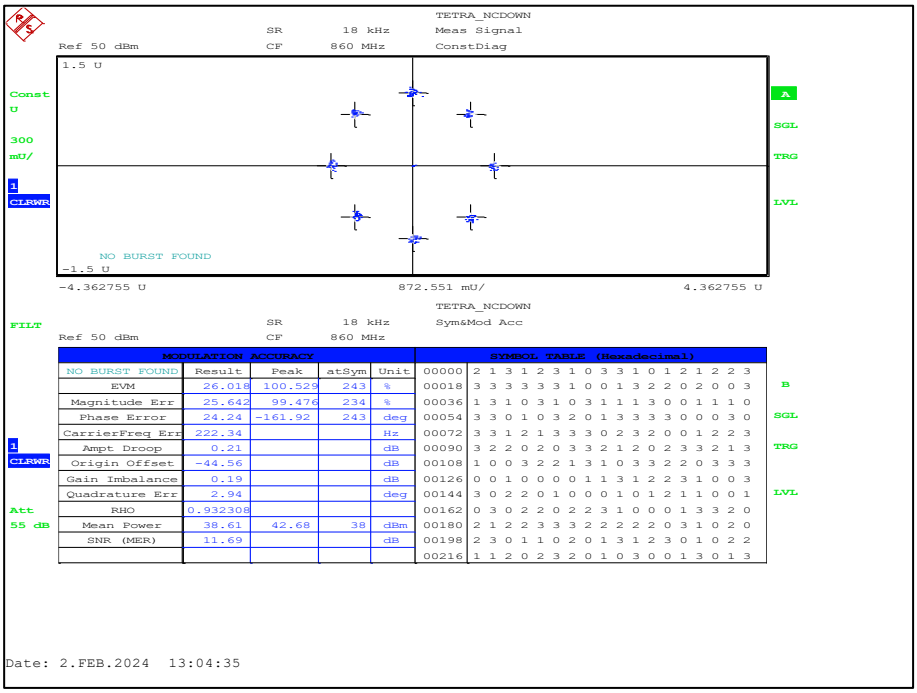

Figure 10-Modulation Accuracy

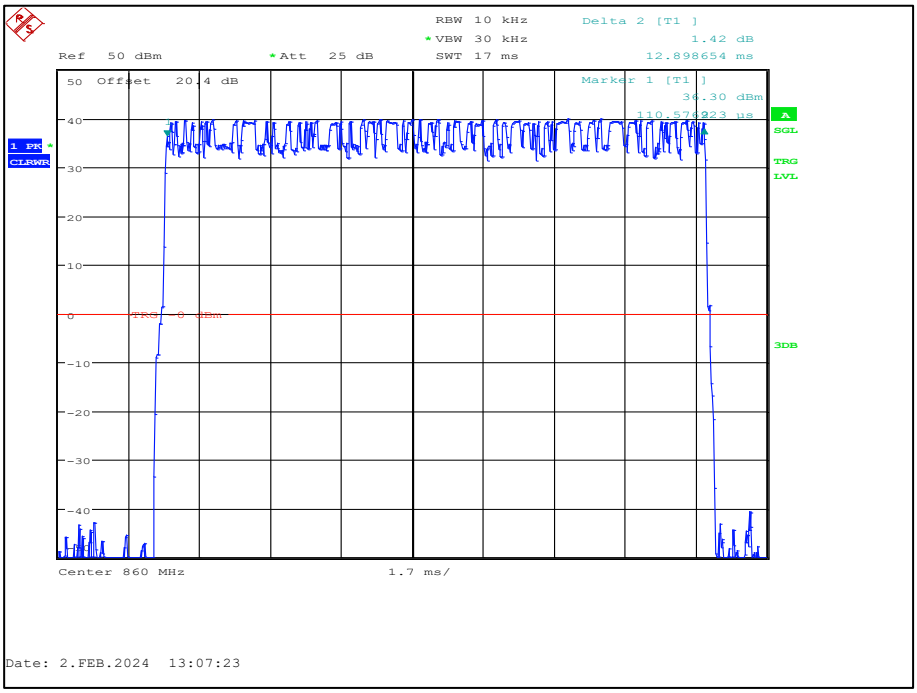

Figure 11-Burst Length

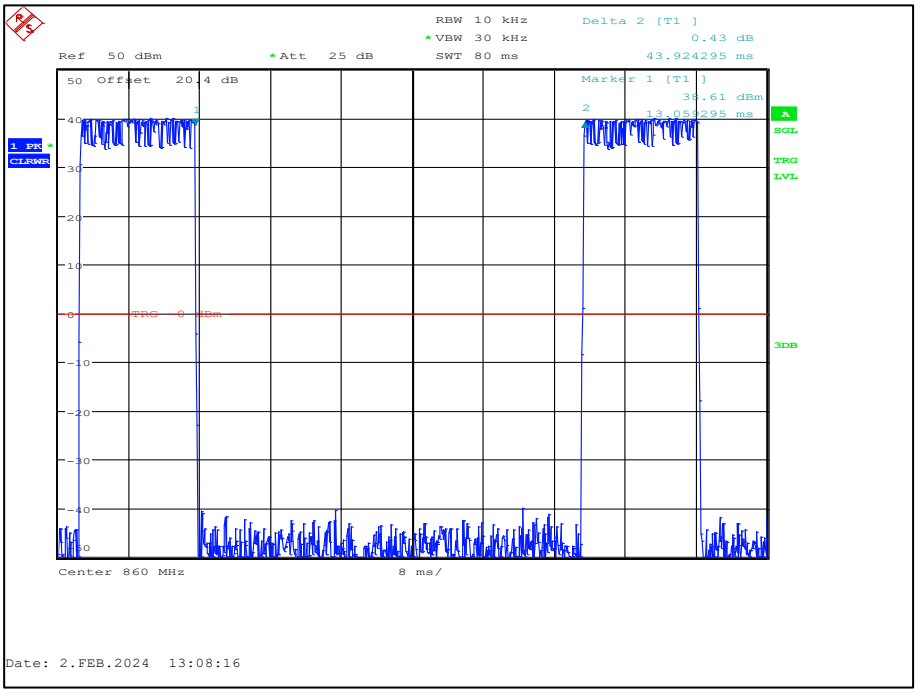

Figure 12-Burst Duty Cycle

FCC 47 CFR Part 90, Limit Clause 90.207

As per FCC Part 90.207 (b) through (n).

FCC 47 CFR Part 2, Limit Clause 2.1047

Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.

Equipment which employs modulation limiting. A curve or family of curves showing the percentage of modulation versus the modulation input voltage shall be supplied. The information submitted shall be sufficient to show modulation limiting capability throughout the range of modulating frequencies and input modulating signal levels employed.

Industry Canada RSS-119, Limit Clause 5.3

Equipment that operates in the bands 768-776 MHz and 798-806 MHz shall use digital modulation. Mobile and portable transmitters that operate in these bands may have analogue modulation capability only as a secondary mode in addition to their primary digital mode. However, mobile and portable transmitters that operate only on the low-power channels as defined in SRSP-511 may employ any type of modulation.

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	611	12	15-Dec-2024
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	09-May-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5497	12	18-Apr-2024
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5514	12	21-May-2024
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon

Table 21

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.3 Bandwidth Limitations

2.3.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1049
FCC 47 CFR Part 90, Clause 90.209
ISED RSS-119, Clause 5.5
ISED RSS-GEN, Clause 6.7

2.3.2 Equipment Under Test and Modification State

SCG2228, S/N: 1PR002401GPT84J - Modification State 0

2.3.3 Date of Test

30-January-2024

2.3.4 Test Method

The test was applied in accordance with the test method requirements of FCC 47 CFR Part 90, Industry Canada RSS-119, and ISED RSS-GEN with reference to ANSI C63.26, Clause 5.4.

The EUT was configured to transmit on maximum power 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 measured using a network analyser and entered as a reference level offset in the spectrum analyser. The RBW of the spectrum analyser was set to 100 Hz and the video bandwidth to 300 Hz with the trace set to max hold using a peak detector and the result was recorded.

2.3.5 Environmental Conditions

Ambient Temperature	20.5 °C
Relative Humidity	36.7 %

2.3.6 Test Results

Tetra - 806 MHz to 825 MHz

806.0125 MHz	815 MHz	823.9875 MHz
21.092	21.085	21.085

Table 22

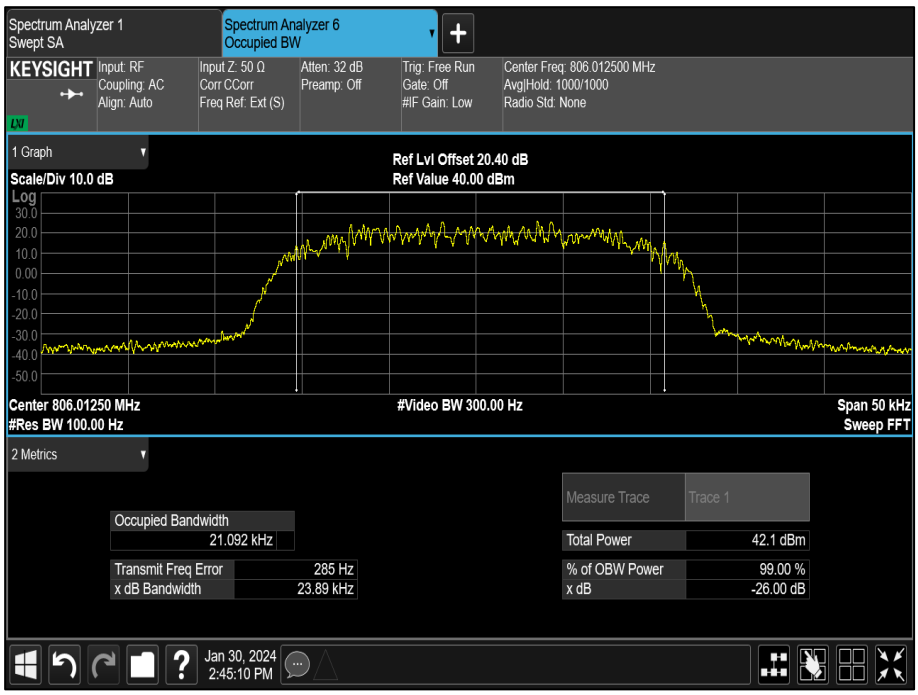

Figure 13 - 806.0125 MHz

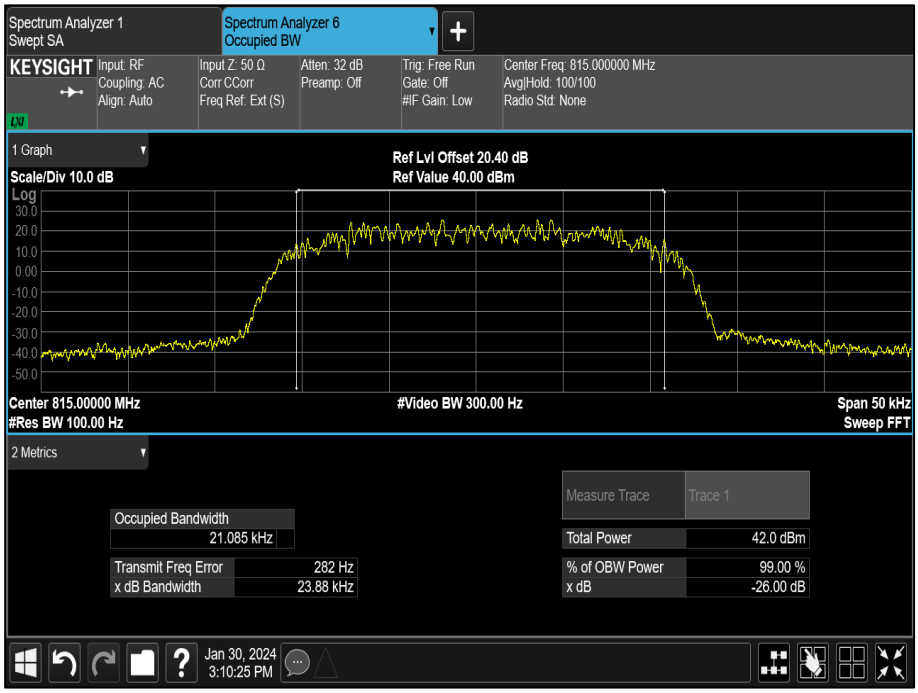

Figure 14- 815 MHz

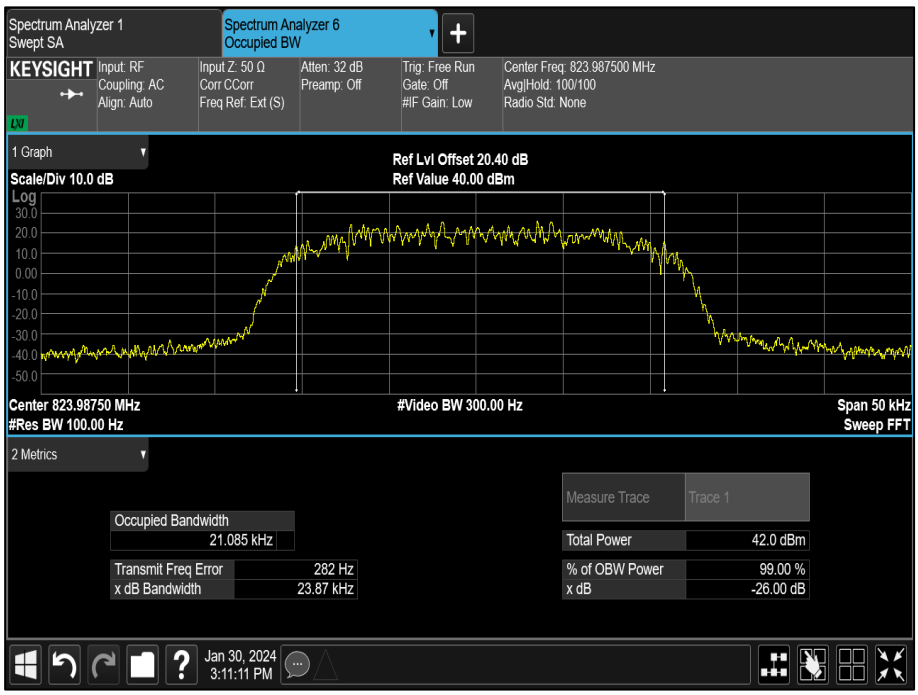

Figure 15- 823.9875 MHz

Tetra - 851 MHz to 870 MHz

851.0125 MHz	860 MHz	868.9875 MHz
21.086	21.088	21.073

Table 23

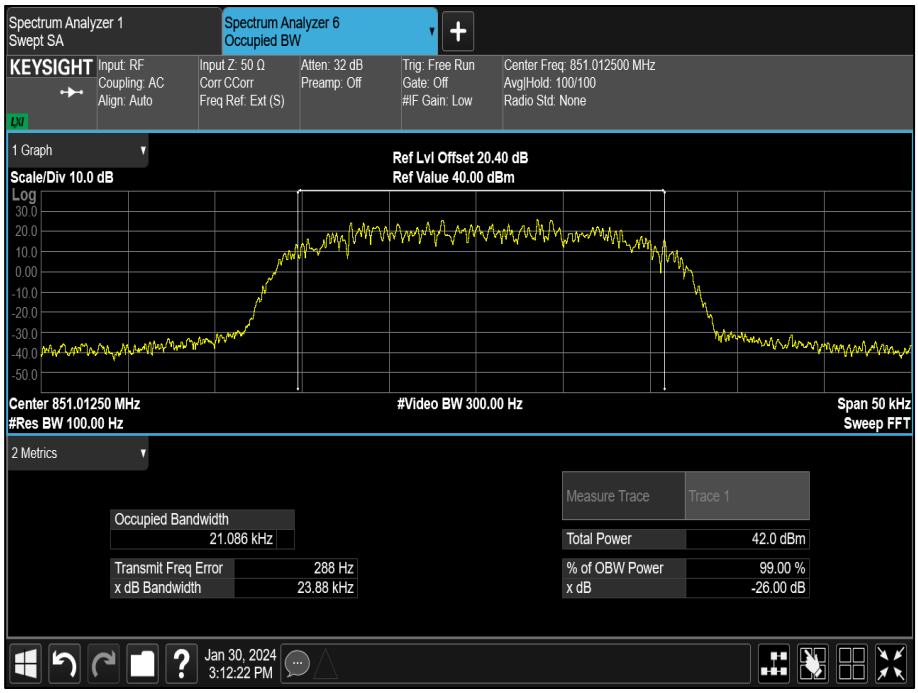

Figure 16 - 851.0125 MHz

Figure 17- 860 MHz

Figure 18- 868.9875 MHz

FCC 47 CFR Part 90, Limit Clause 90.209

< 0.022 MHz

Industry Canada RSS-119, Limit Clause 5.5

The maximum permissible occupied bandwidth shall not exceed the authorized bandwidth specified in table 3 of the test specification for the equipment's frequency band as specified below.

0.022 MHz

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	611	12	15-Dec-2024
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5497	12	18-Apr-2024
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5511	12	21-May-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon

Table 24

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.4 Spurious Emissions at Antenna Terminals

2.4.1 Specification Reference

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

2.4.2 Equipment Under Test and Modification State

SCG2228, S/N: 1PR002401GPT84J - Modification State 0

2.4.3 Date of Test

15-February-2024

2.4.4 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 connected to a spectrum analyser via a cable and attenuator. The path loss between the EUT and analyser was calibrated using a network analyser and entered into the spectrum analyser as a reference level offset. The reference level for the mask was established using the results from the Maximum Conducted Output Power test. The RBW was set to at least 1 % of the emission bandwidth, with a VBW of 3 times RBW. The masks as per FCC 47 CFR Part 90.210 (b) and RSS-119 5.8.10 were applied.

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

A network analyser was 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 and cable. The spectrum analyser was configured with an RBW of 1 kHz below 150 kHz, 10 kHz between 150 kHz and 30 MHz, 100 kHz between 30 MHz and 1 GHz and 1 MHz for frequencies greater than 1 GHz with the trace set to max hold using a peak detector.

The Emissions were tested against RSS-119 Clause 5.8.10, as opposed to FCC Part 90.210(b), since the limit in RSS-119 is -17dBm, compliance with the limits provided also prove compliance with FCC Part 90.210(b).

2.4.5 Environmental Conditions

Ambient Temperature	21.2 °C
Relative Humidity	52.5 %

2.4.6 Test Results

Tetra - 806 MHz to 825 MHz

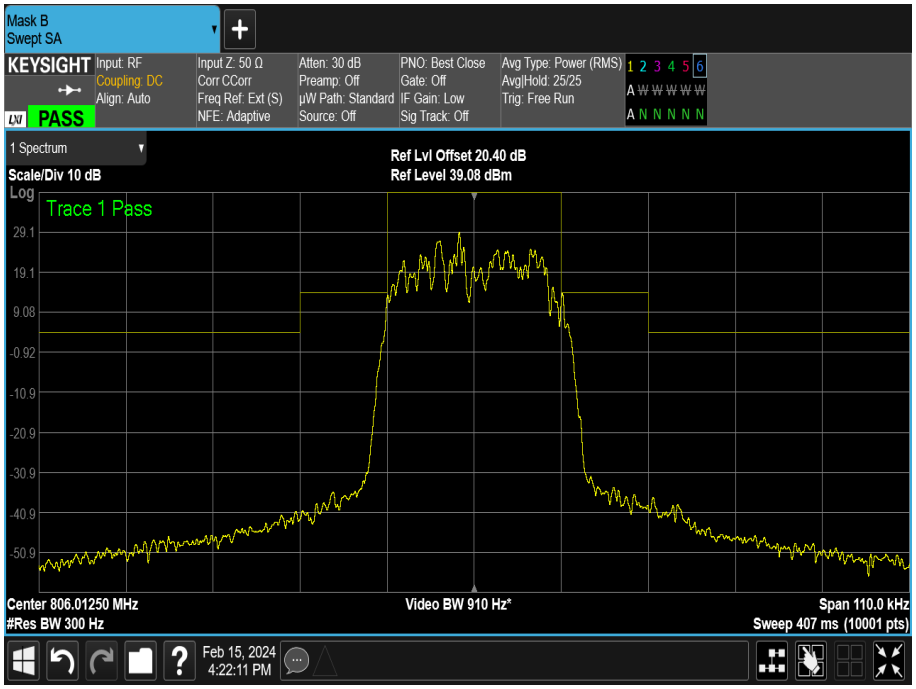

Figure 19 -806.0125 MHz, FCC Part 90 Transmitter Mask B

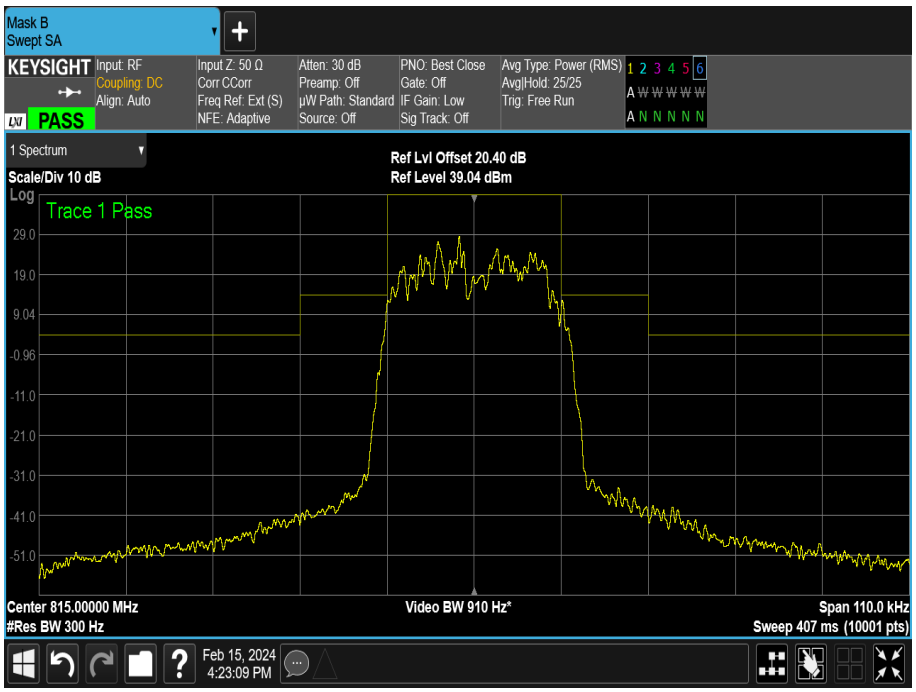

Figure 20 -815 MHz, FCC Part 90 Transmitter Mask B

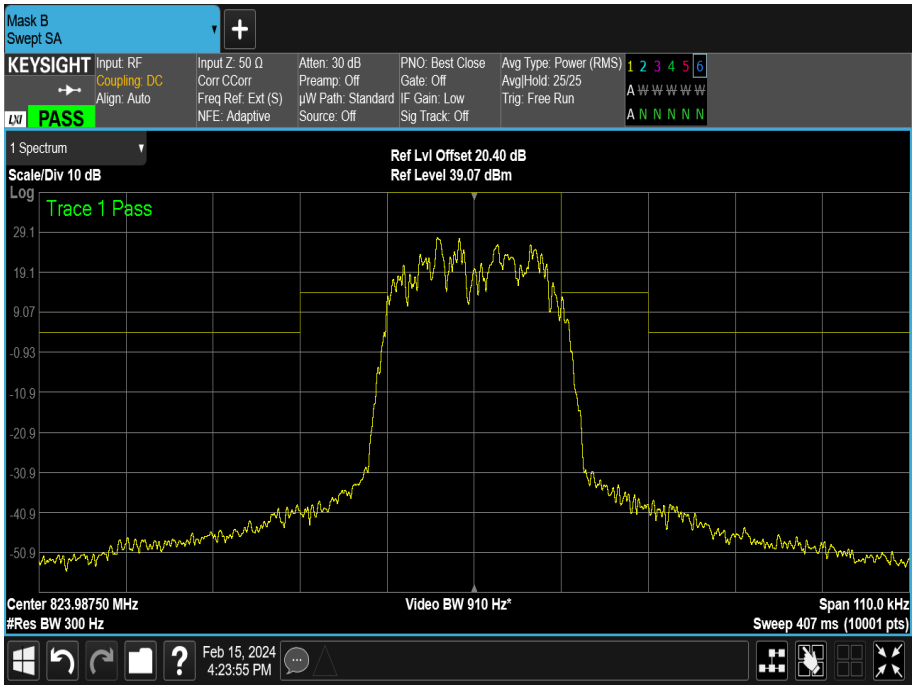

Figure 21 -823.9875 MHz, FCC Part 90 Transmitter Mask B

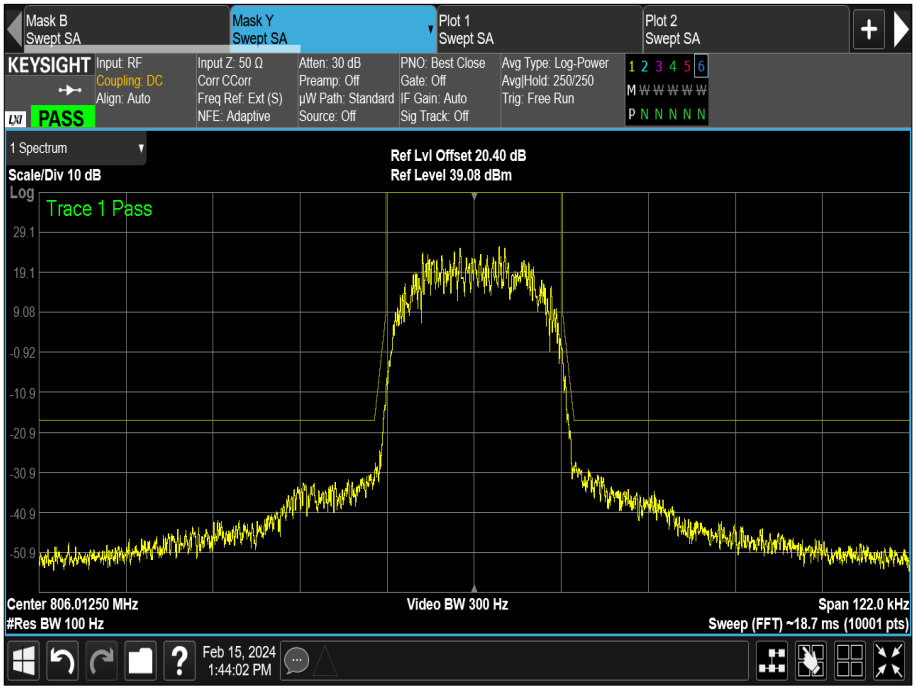

Figure 22 -806.0125 MHz, RSS-119 Transmitter Mask Y

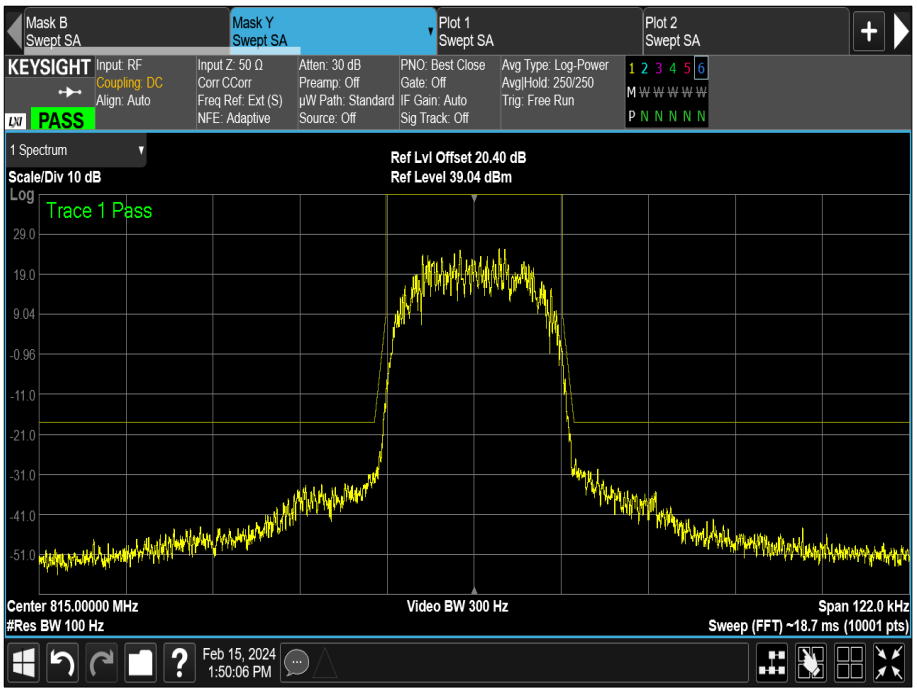

Figure 23 -815 MHz, RSS-119 Transmitter Mask Y

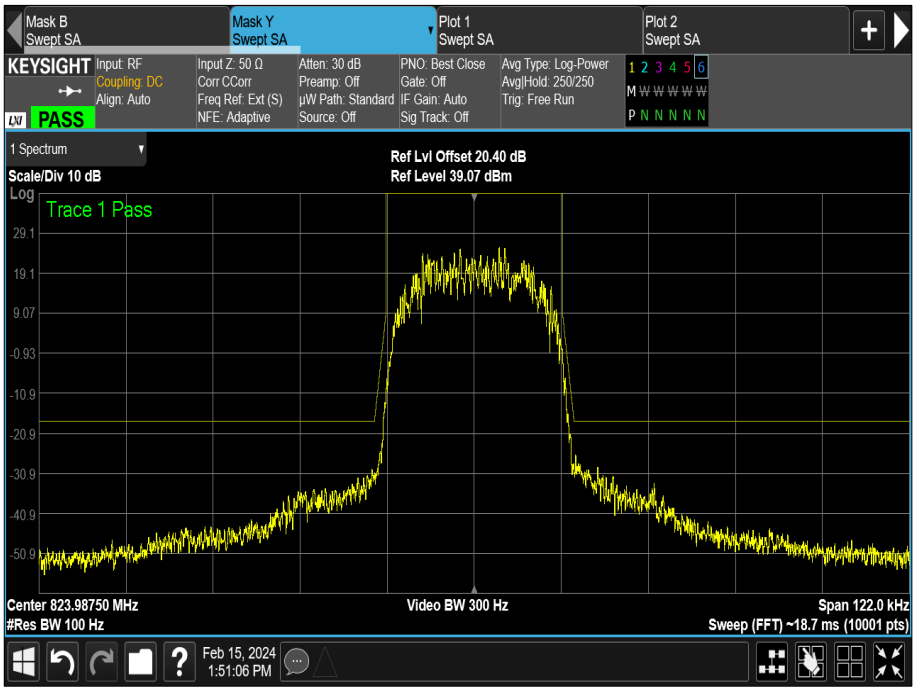

Figure 24 -823.9875 MHz, RSS-119 Transmitter Mask Y

Figure 25 -806.0125 MHz,9 kHz to 150 kHz

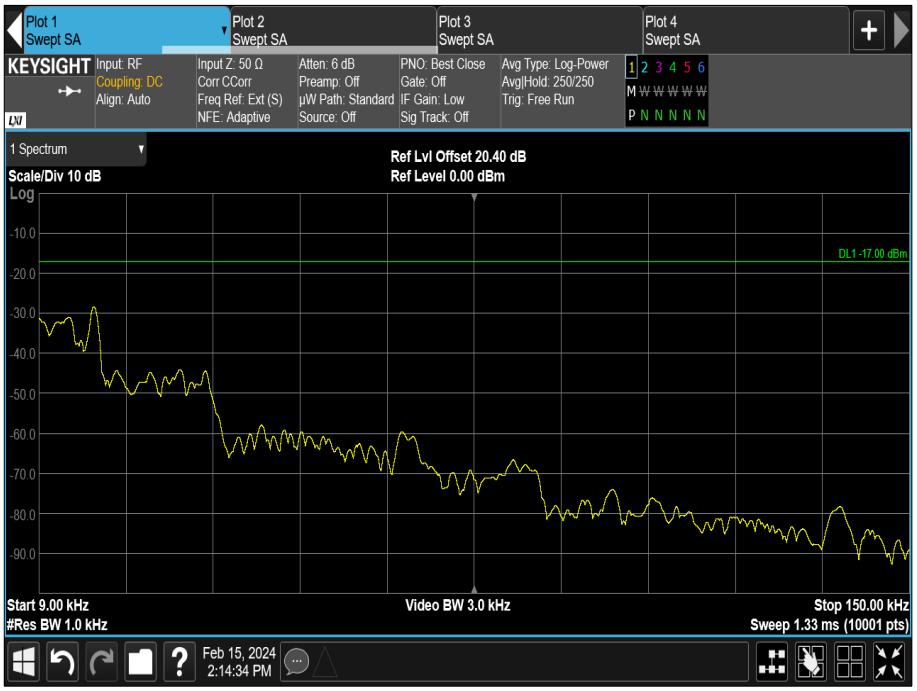

Figure 26 - 815 MHz, 9 kHz to 150 kHz

Figure 27 - 823.9875 MHz - 9 kHz to 150 kHz

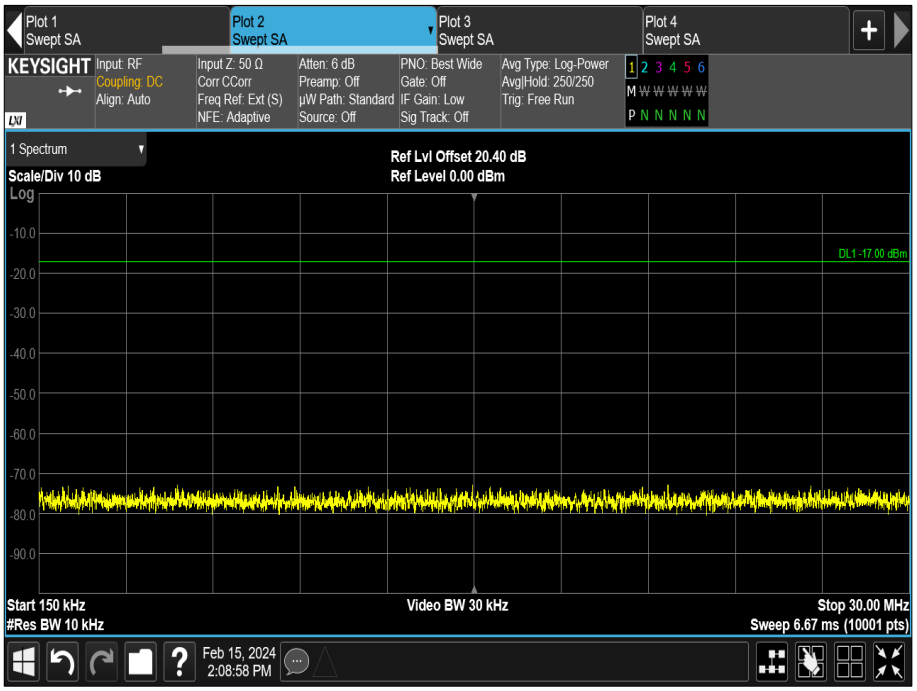

Figure 28 -806.0125 MHz,150 kHz to 30 MHz

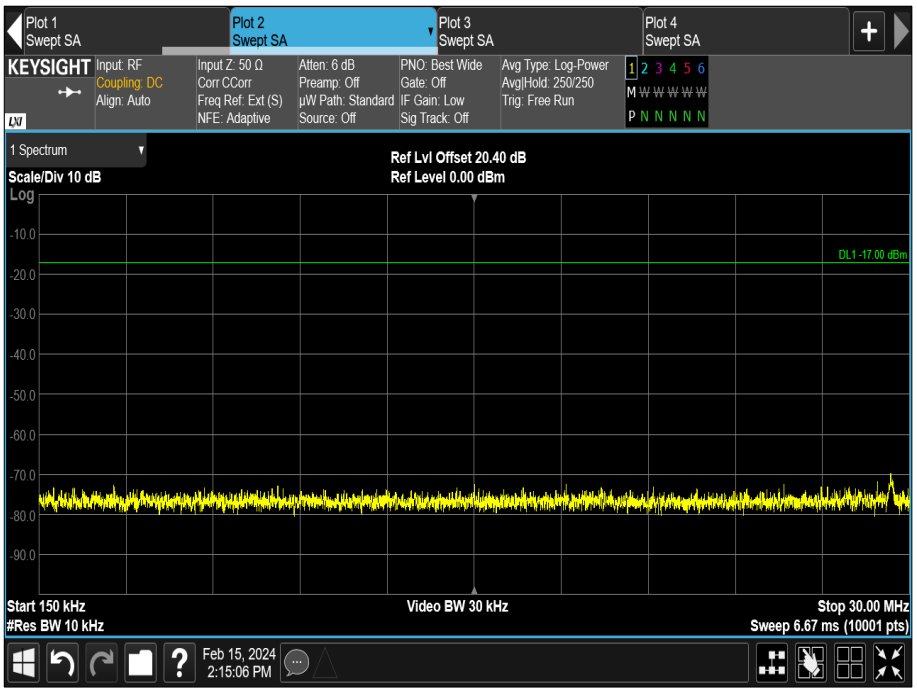

Figure 29 - 815 MHz, 150 kHz to 30 MHz

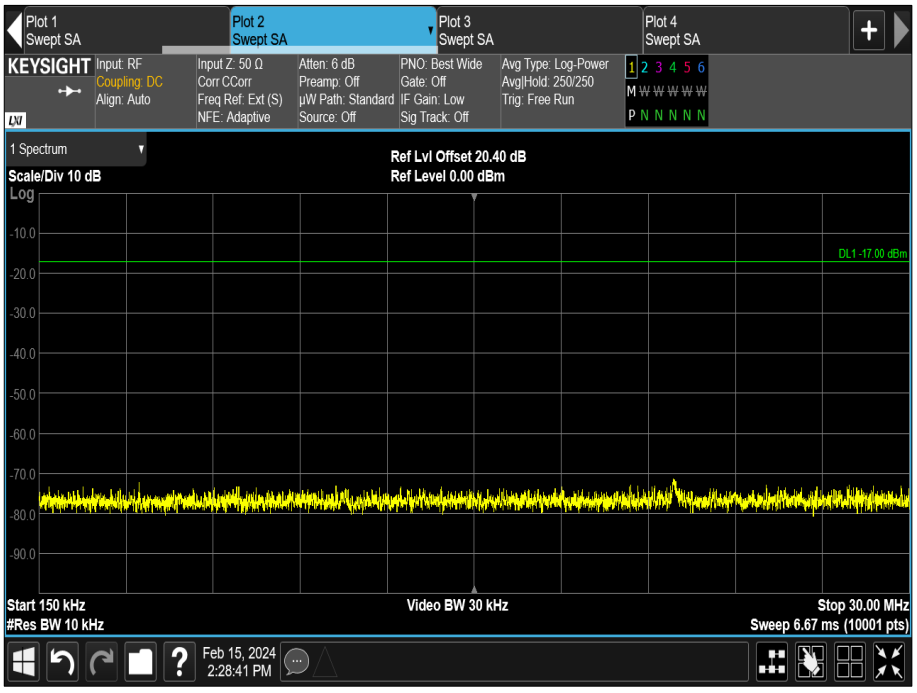

Figure 30 - 823.9875 MHz - 150 kHz to 30 MHz

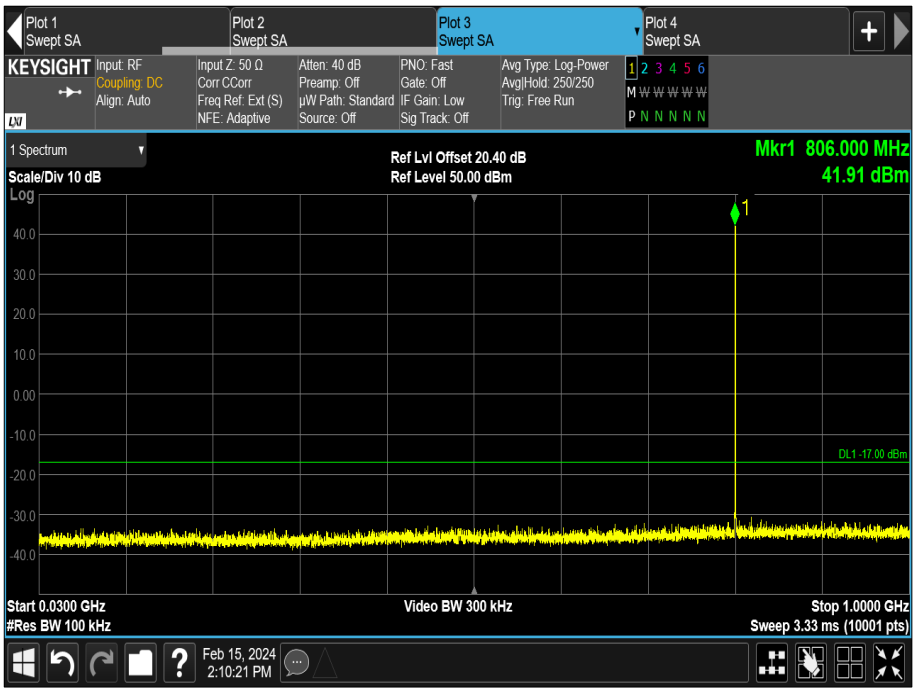

Figure 31 -806.0125 MHz,30 MHz to 1 GHz

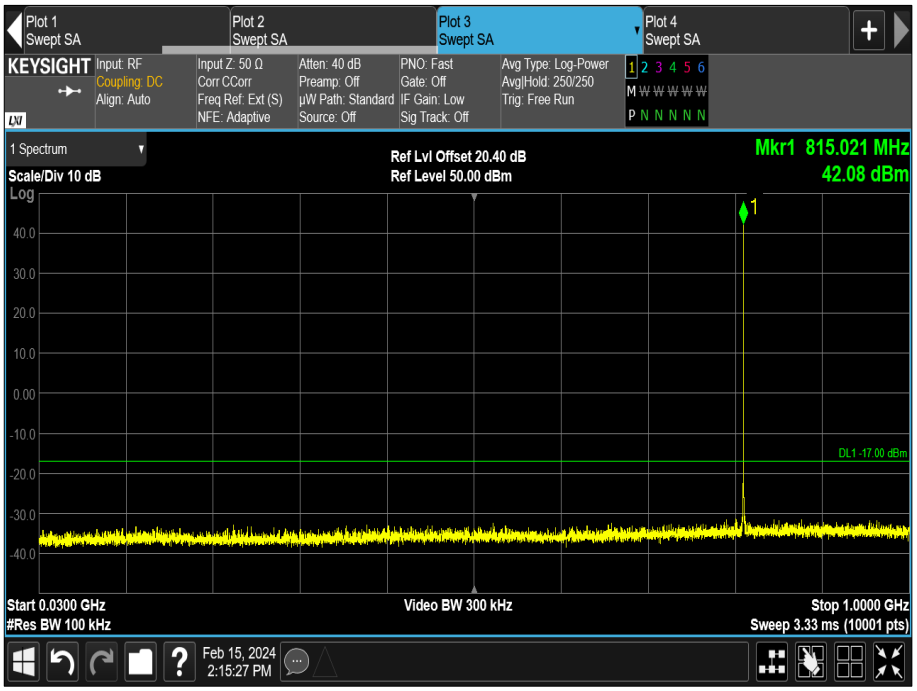

Figure 32 - 815 MHz, 30 MHz to 1 GHz

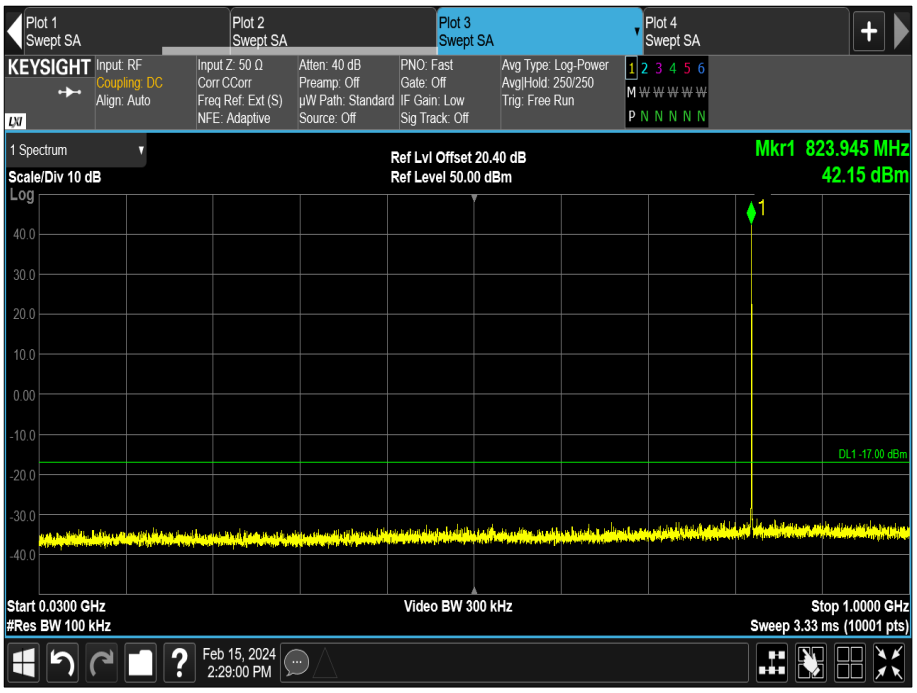

Figure 33 - 823.9875 MHz - 30 MHz to 1 GHz

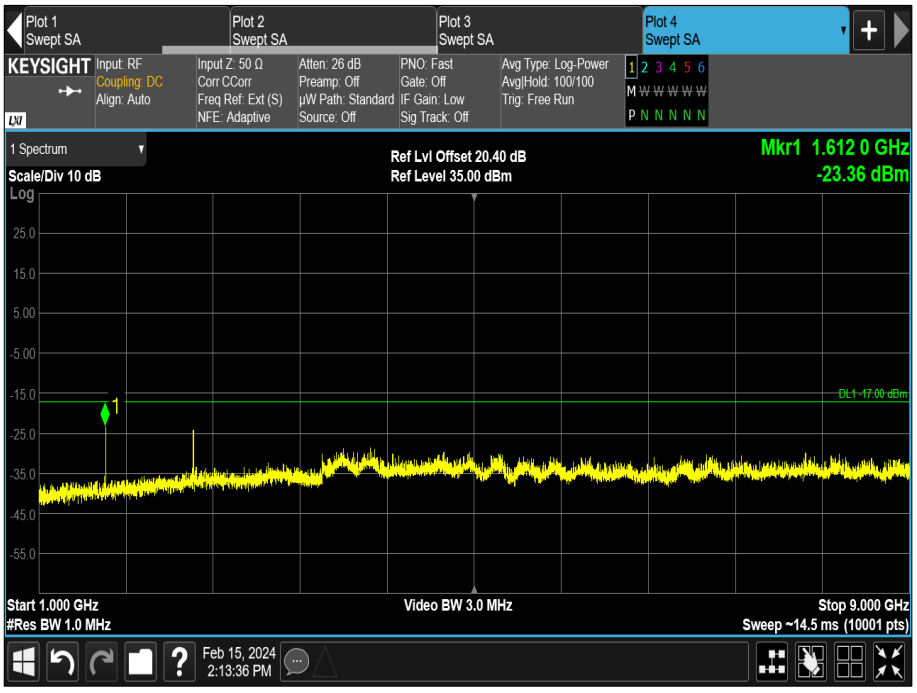

Figure 34 -806.0125 MHz,1 GHz to 9 GHz

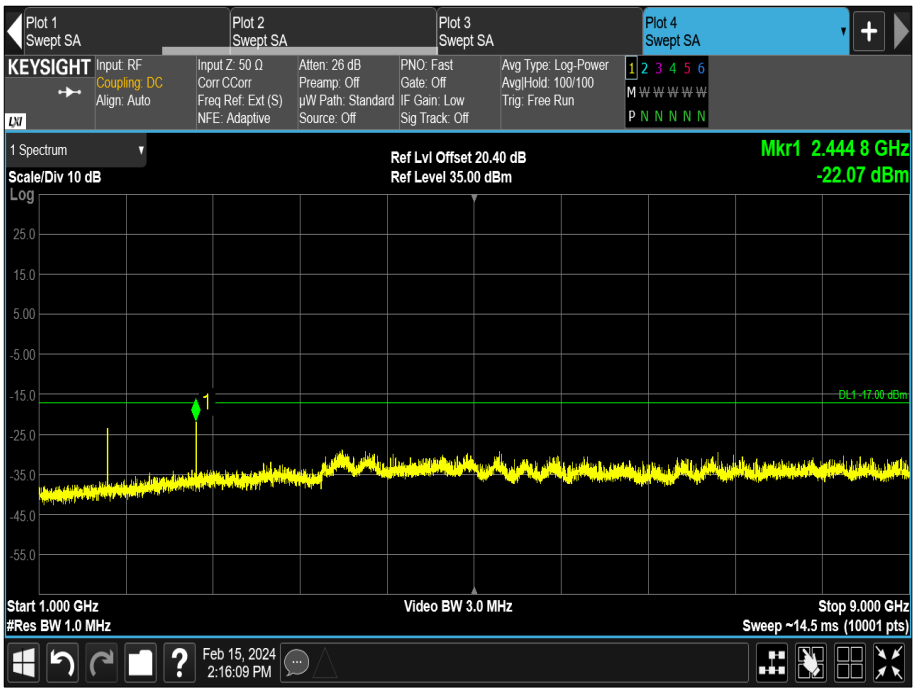

Figure 35 - 815 MHz, 1 GHz to 9 GHz

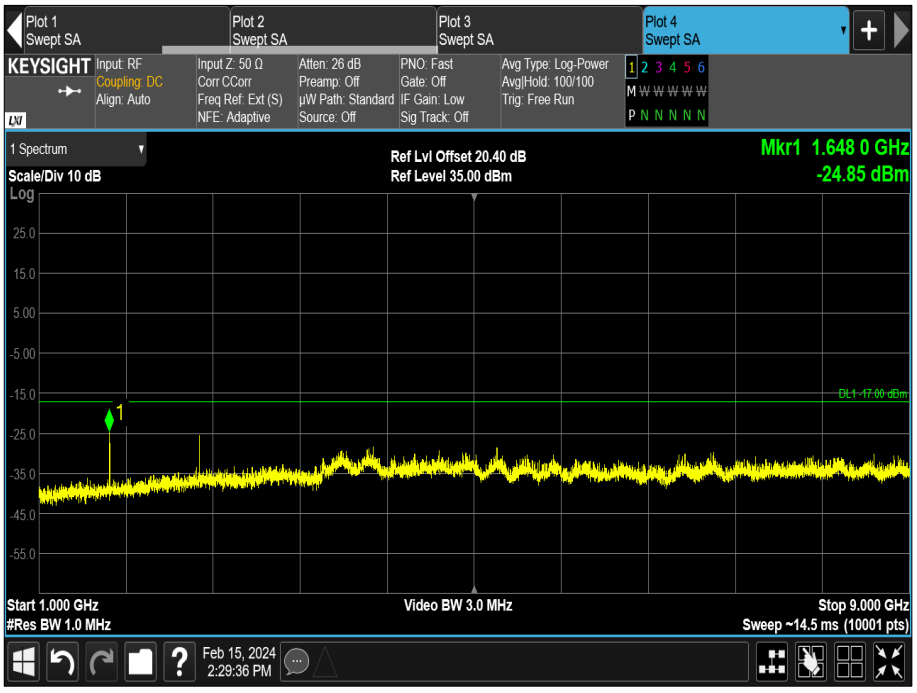

Figure 36 - 823.9875 MHz - 1 GHz to 9 GHz

Tetra - 851 MHz to 870 MHz

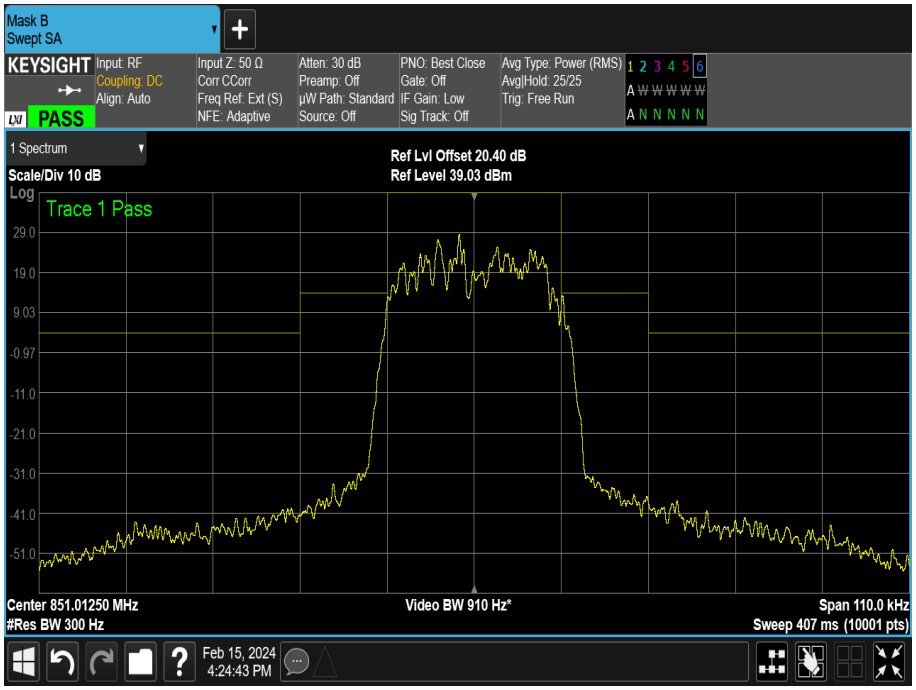

Figure 37 -851.0125 MHz, FCC Part 90 Transmitter Mask B

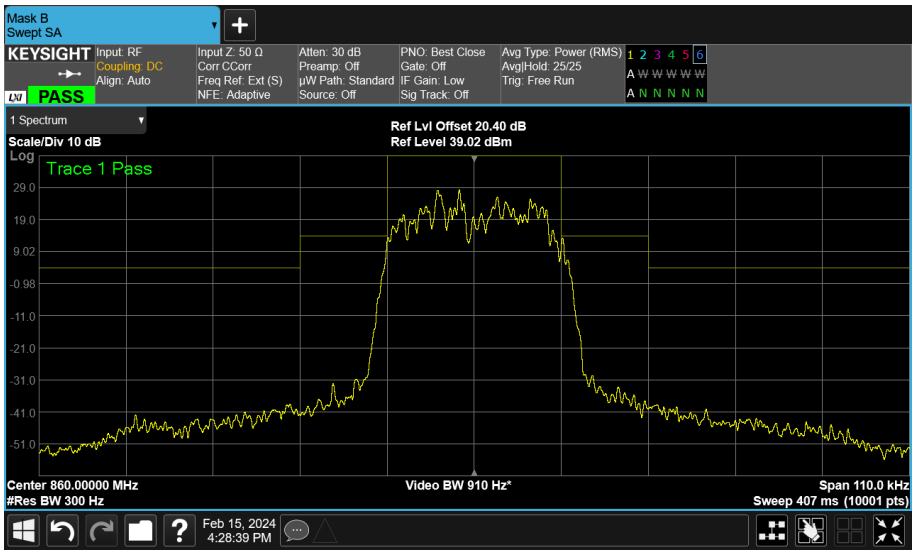

Figure 38 -860 MHz, FCC Part 90 Transmitter Mask B

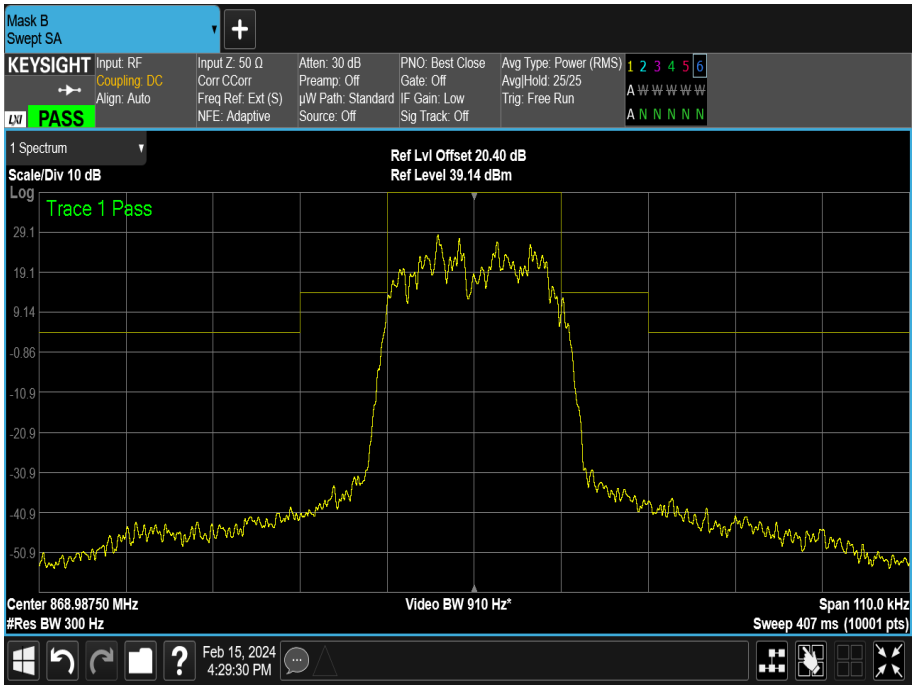

Figure 39 -868.9875 MHz, FCC Part 90 Transmitter Mask B

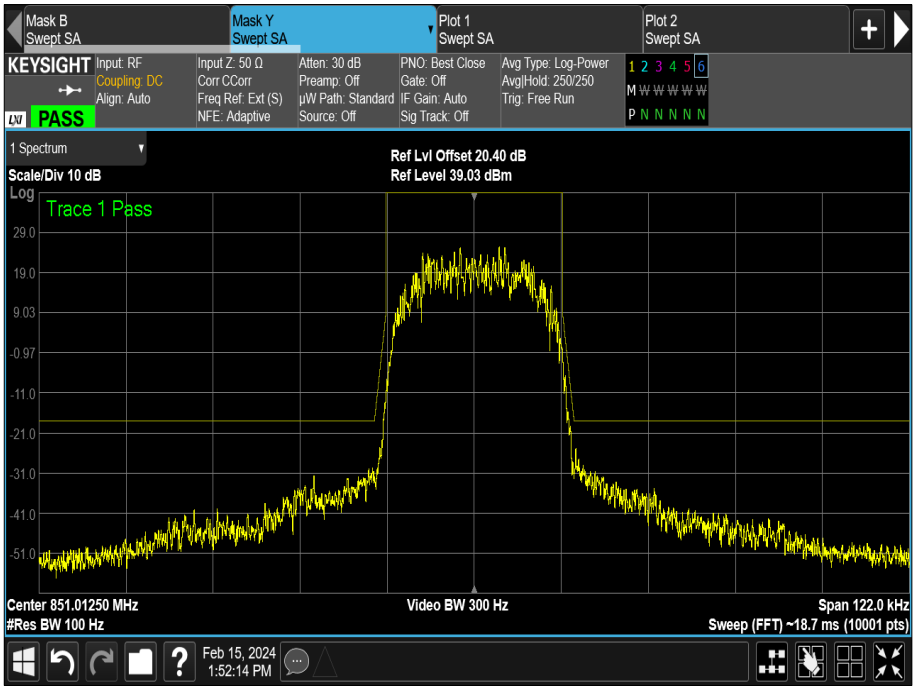

Figure 40 -851.0125 MHz, RSS-119 Transmitter Mask Y

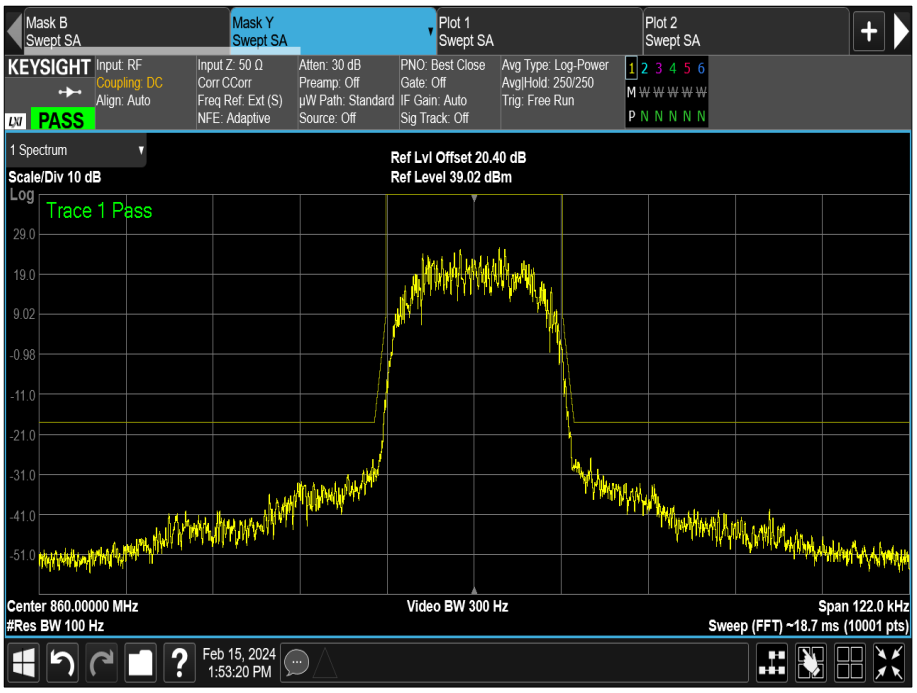

Figure 41 -860 MHz, RSS-119 Transmitter Mask Y

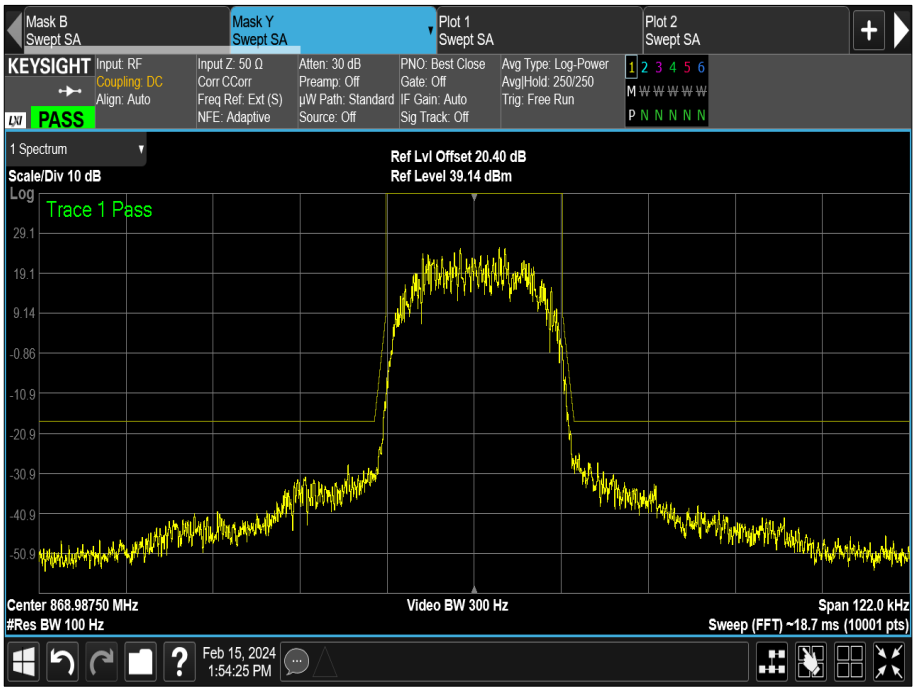

Figure 42 -868.9875 MHz, RSS-119 Transmitter Mask Y

Figure 43 -851.0125 MHz,9 kHz to 150 kHz

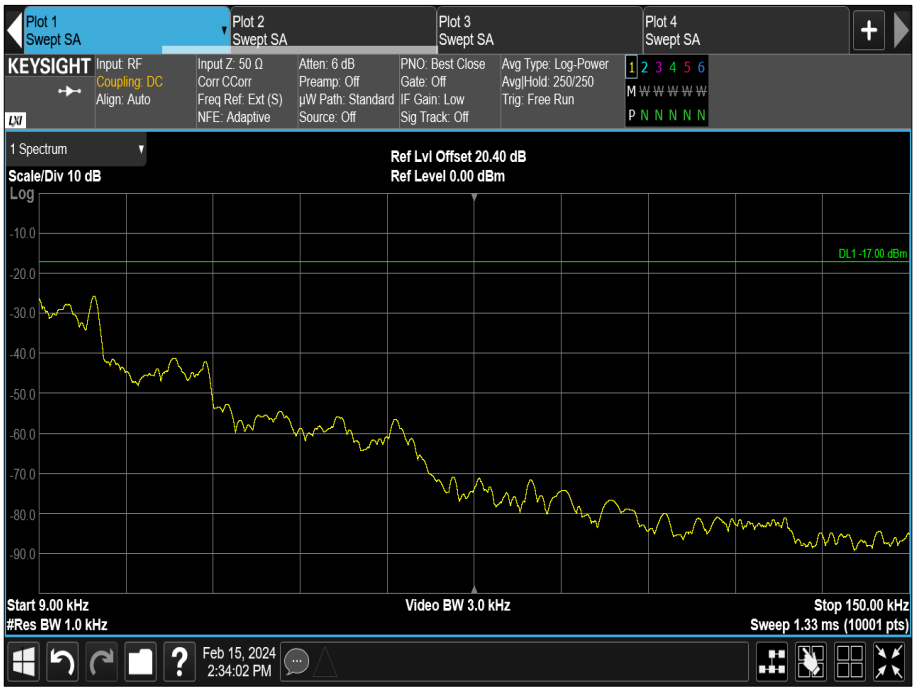

Figure 44 - 860 MHz, 9 kHz to 150 kHz

Figure 45 - 868.9875 MHz - 9 kHz to 150 kHz

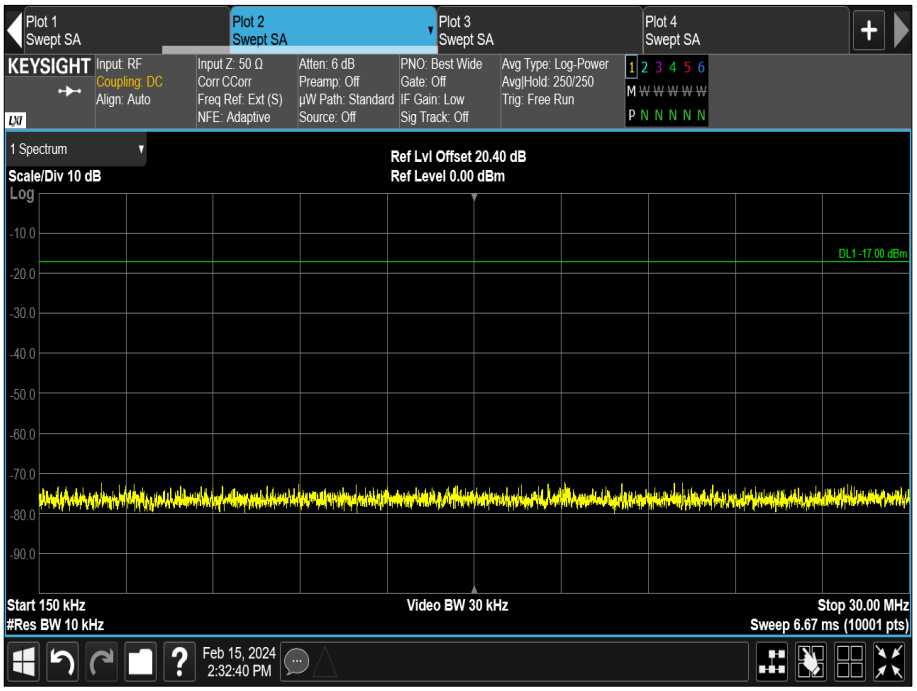

Figure 46 -851.0125 MHz,150 kHz to 30 MHz

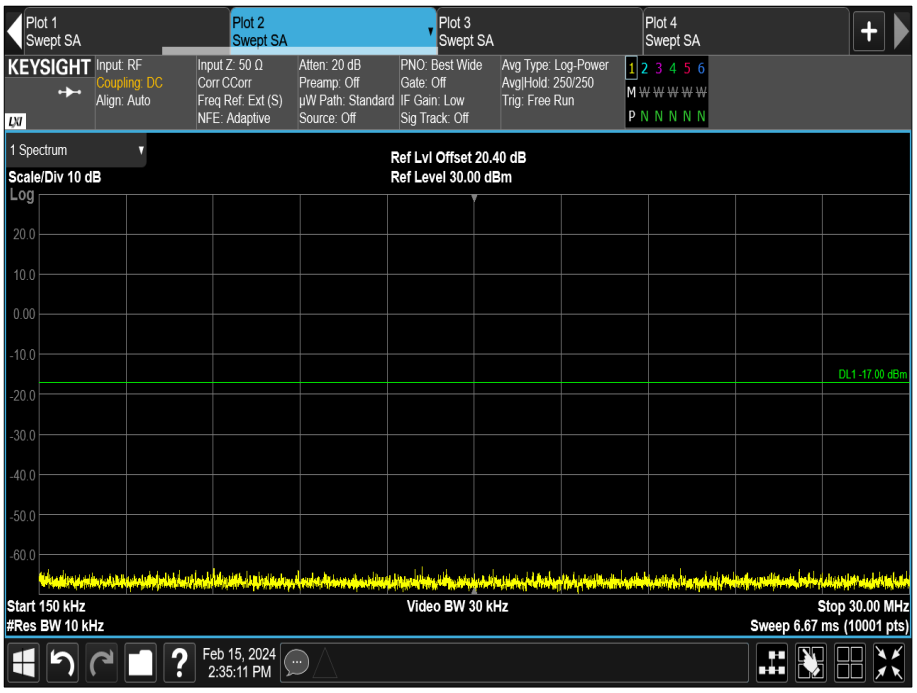

Figure 47 - 860 MHz, 150 kHz to 30 MHz

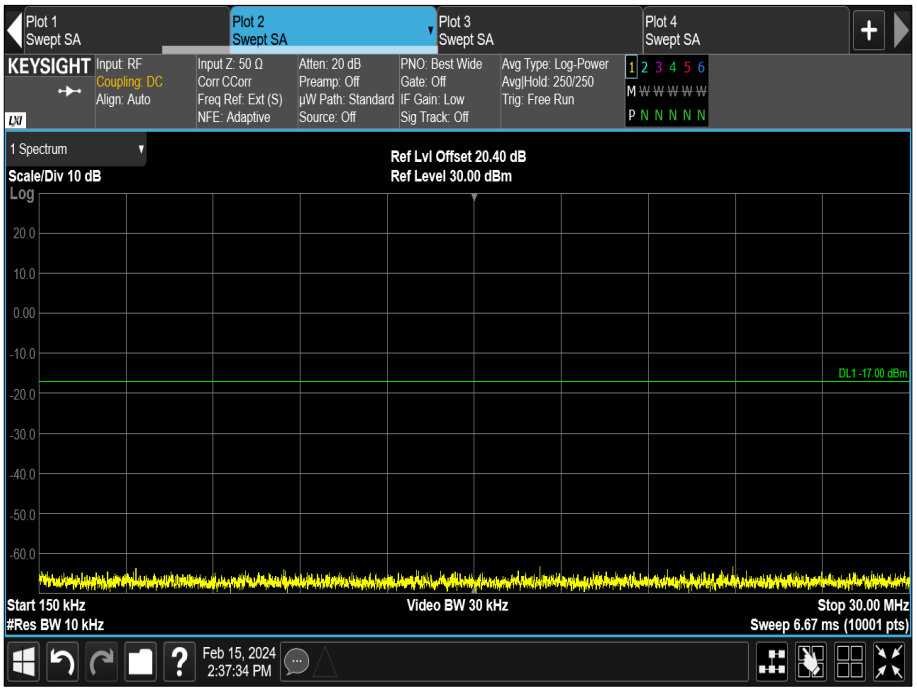

Figure 48 - 868.9875 MHz - 150 kHz to 30 MHz

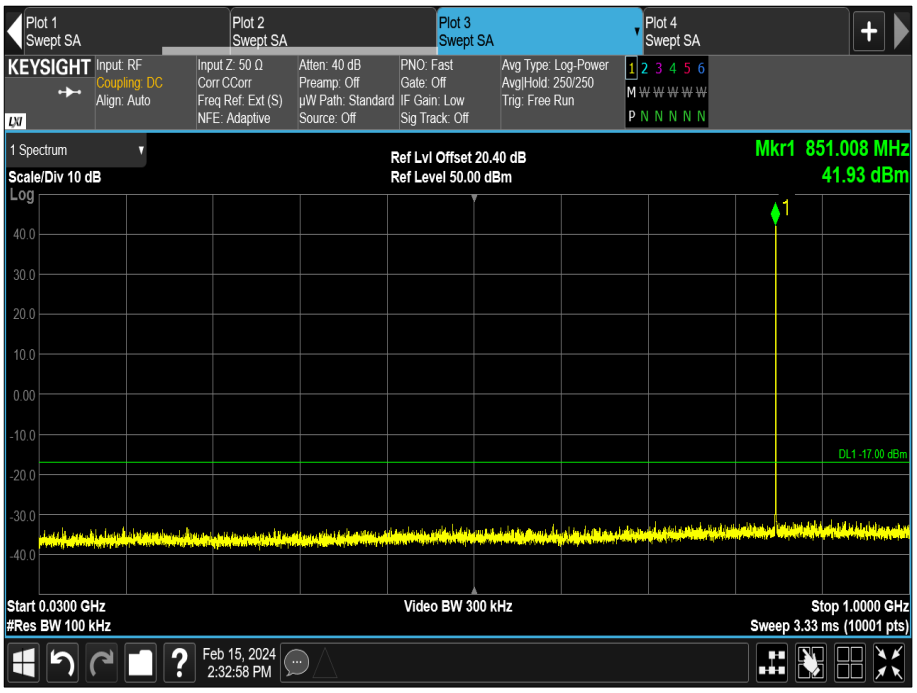

Figure 49 -851.0125 MHz,30 MHz to 1 GHz

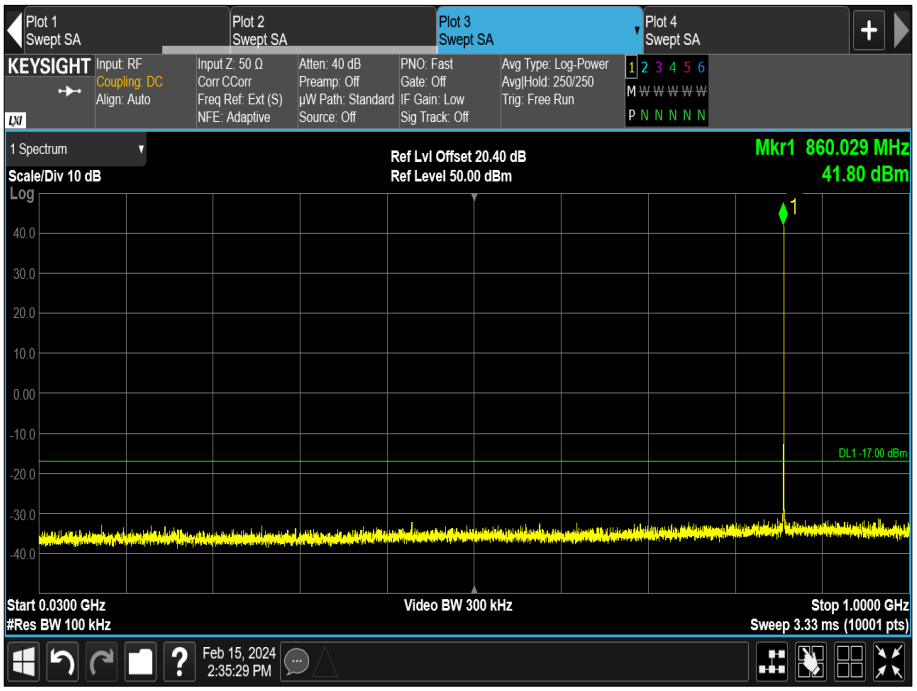

Figure 50 - 860 MHz, 30 MHz to 1 GHz

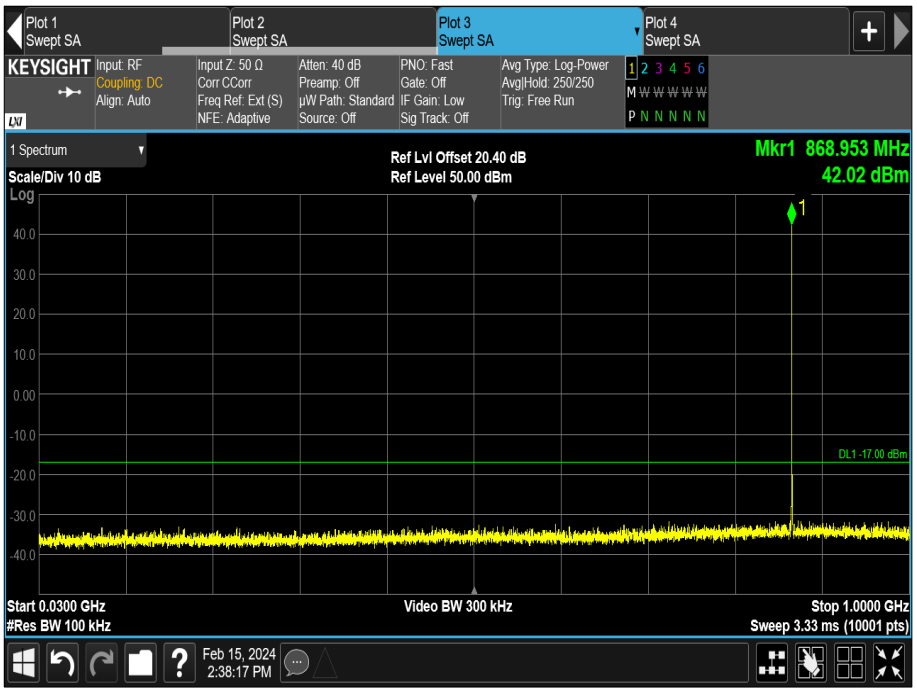

Figure 51 - 868.9875 MHz - 30 MHz to 1 GHz

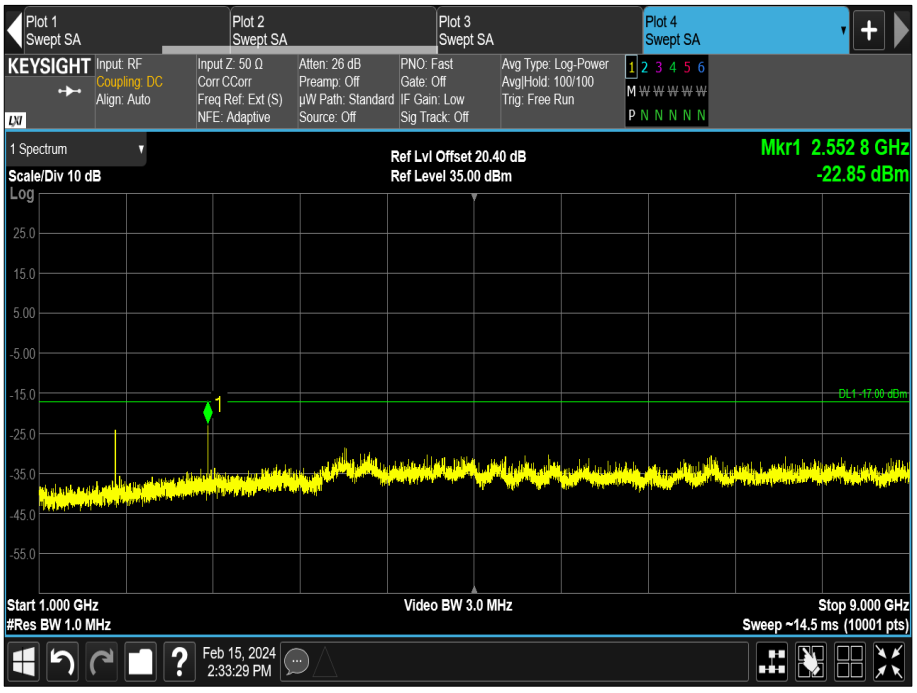

Figure 52 -851.0125 MHz,1 GHz to 9 GHz

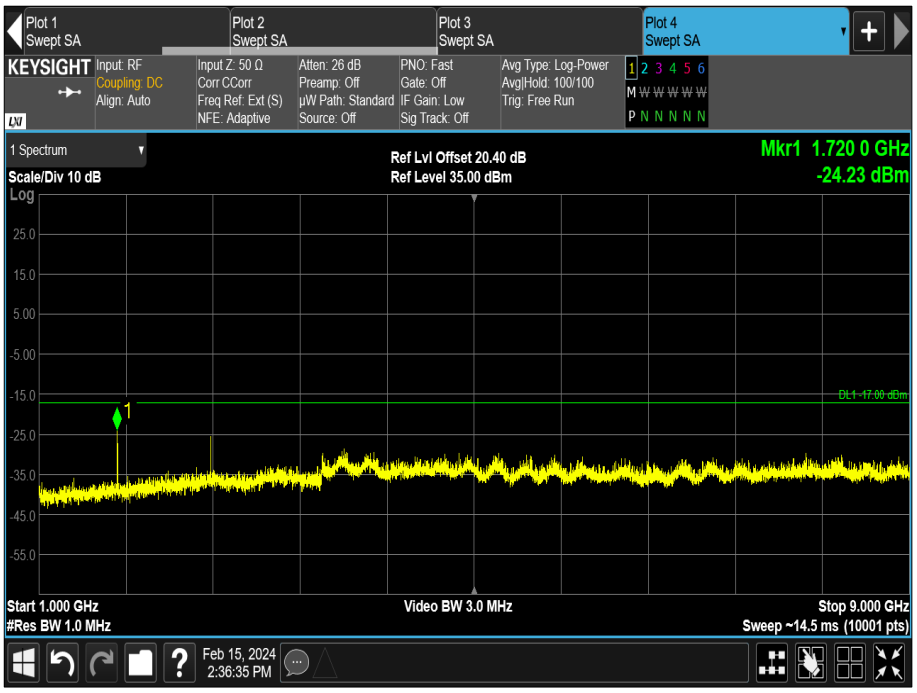

Figure 53 - 860 MHz, 1 GHz to 9 GHz

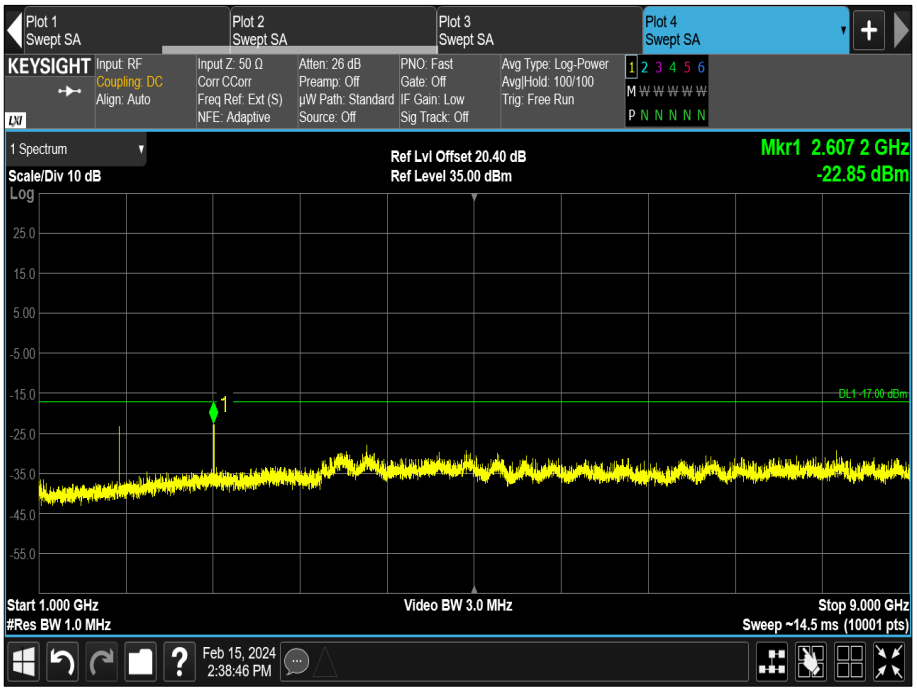

Figure 54 - 868.9875 MHz - 1 GHz to 9 GHz

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.

Industry Canada RSS-119, Limit Clause 5.8

The EUT shall comply with emission mask Y as per Industry Canada RSS-119, clause 5.8.10

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	611	12	15-Dec-2024
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
Signal Analyzer	Keysight Technologies	PXA N9030B	5432	12	08-Jun-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	21-May-2024
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon
1m K-Type Cable	Junkosha	MWX221/B	5908	12	21-May-2024
Frequency Standard	Orolia	SecureSync 2402-053	6339	6	12-Mar-2024

Table 25

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.5 Radiated Spurious Emissions

2.5.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1053
FCC 47 CFR Part 90, Clause 90.210
ISED RSS-119, Clause 5.8
ISED RSS-GEN, Clause 6.13

2.5.2 Equipment Under Test and Modification State

SCG2228, S/N: 1PR002401GPT84J - Modification State 0

2.5.3 Date of Test

08-February-2024

2.5.4 Test Method

A preliminary profile of the Radiated Spurious Emissions was obtained up to the 10th harmonic by operating the EUT on a remotely controlled turntable within a semi-anechoic chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations. The profiling produced a list of the worst-case emissions together with the EUT azimuth and antenna polarisation.

Testing was performed in accordance with ANSI C63.26, Clause 5.5.

Prescans and final measurements were performed using the direct field strength method.

Field strength measurements were performed and then converted to Equivalent Power Measurements in accordance with ANSI C63.26, Clause 5.2.7 equation c)

Example calculation:

E (dBuV/m) + 20log(d) - 104.8 = EIRP (dBm) where (d) is the measurement distance.
82.2 (dBuV/m) + 20log(3) – 104.8 = EIRP (dBm)

-13.0 = EIRP (dBm)

The Emissions were tested against RSS-119 Clause 5.8.10, as opposed to FCC Part 90.210(b), since the limit in RSS-119 is -17dBm, compliance with the limits provided also prove compliance with FCC Part 90.210(b).

2.5.5 Example Test Setup Diagram

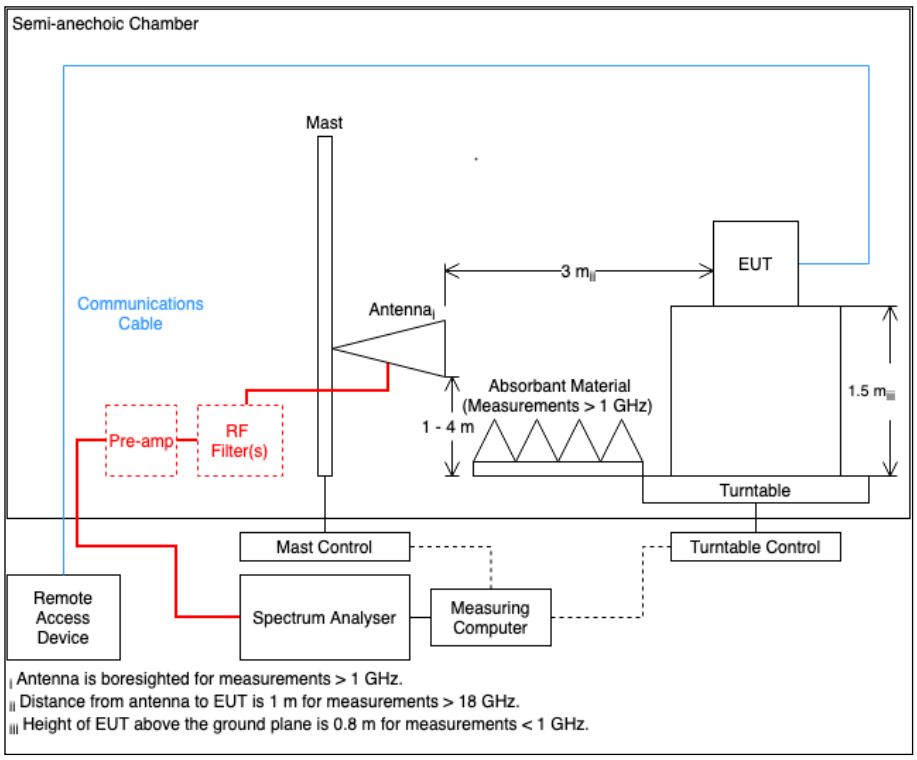

Figure 55

2.5.6 Environmental Conditions

Ambient Temperature	21.5 °C
Relative Humidity	45.0 %

2.5.7 Test Results

Tetra - 806 MHz to 825 MHz

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								

Table 26 - 806.0125 MHz

*No emissions were detected within 10 dB of the limit.

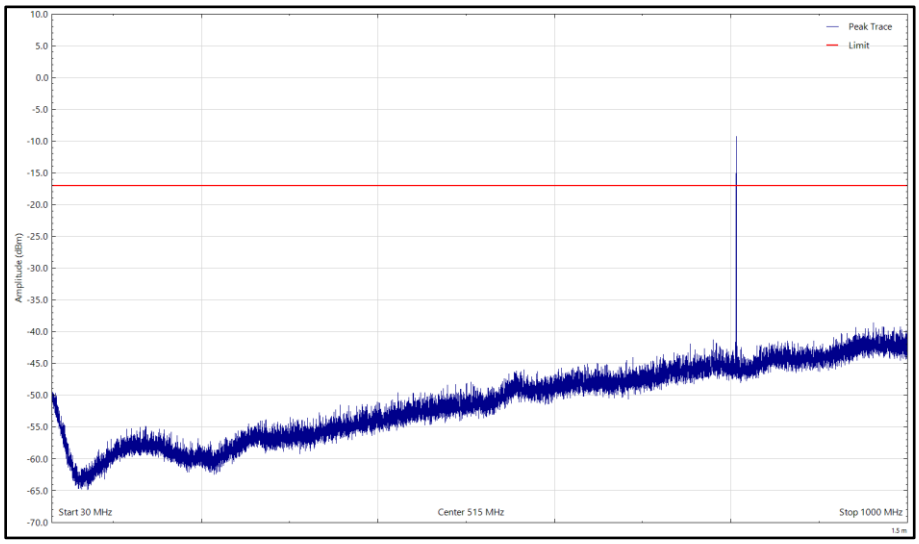

Figure 56 - 806.0125 MHz - 30 MHz to 1 GHz, Horizontal Polarisation

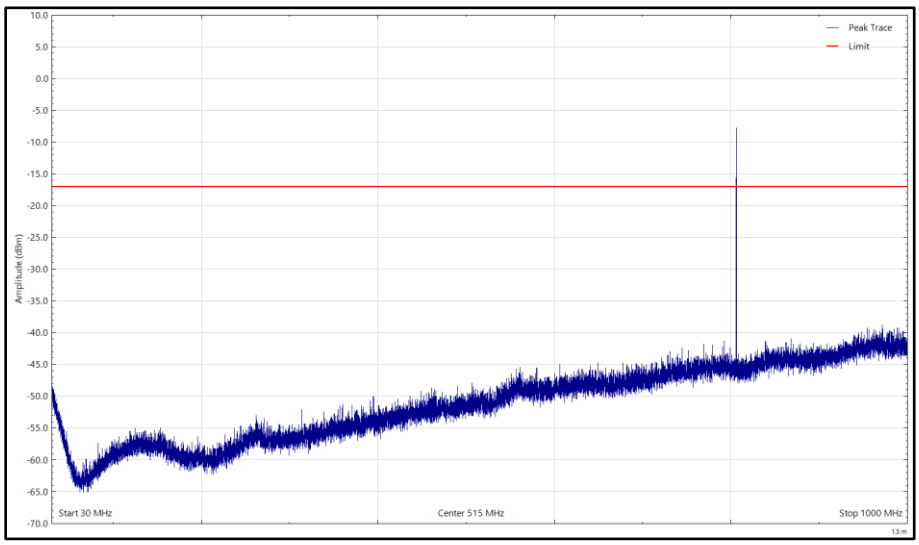

Figure 57 - 806.0125 MHz - 30 MHz to 1 GHz, Vertical Polarisation

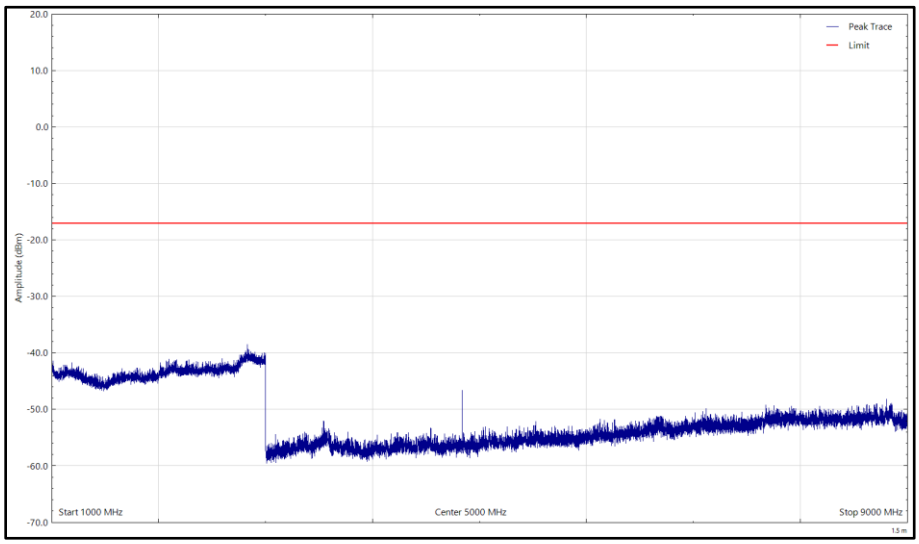

Figure 58 - 806.0125 MHz - 1 GHz to 9 GHz, Horizontal Polarisation

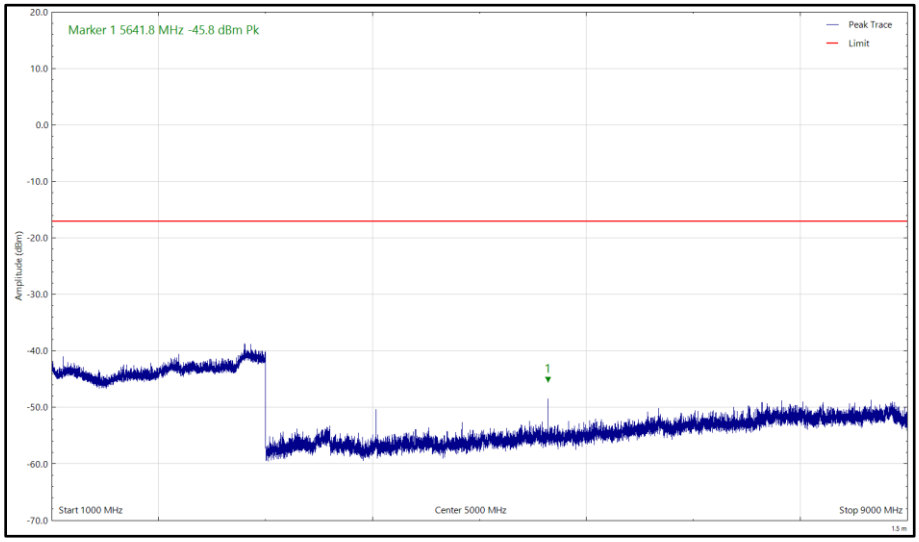

Figure 59 - 806.0125 MHz - 1 GHz to 9 GHz, Vertical Polarisation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								

Table 27 - 815 MHz

*No emissions were detected within 10 dB of the limit.

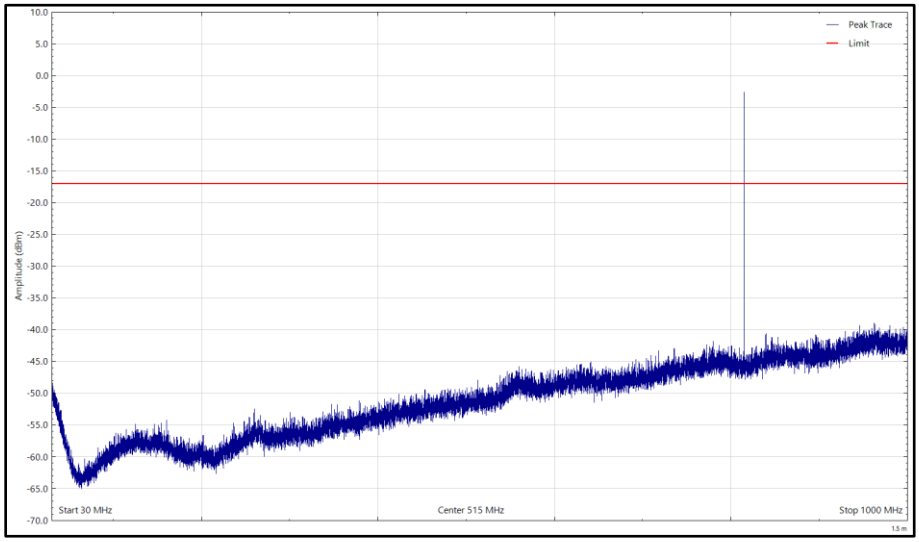

Figure 60 - 815 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

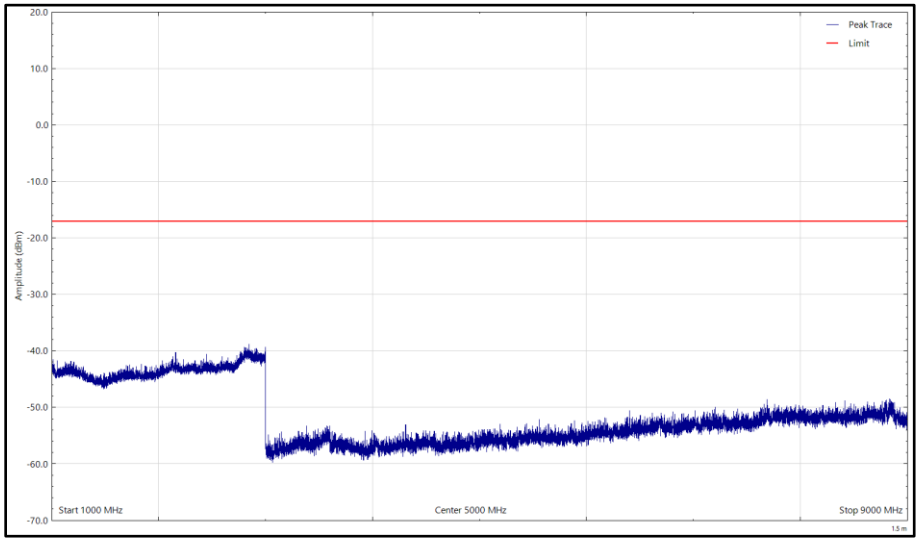

Figure 61 - 815 MHz, 1 GHz to 9 GHz, Horizontal (Peak)

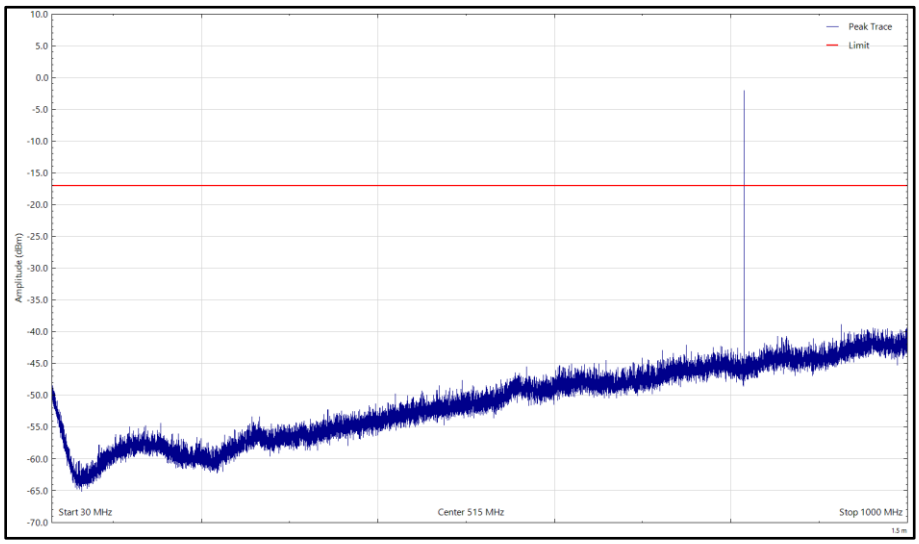

Figure 62 - 815 MHz, 30 MHz to 1 GHz, Vertical (Peak)

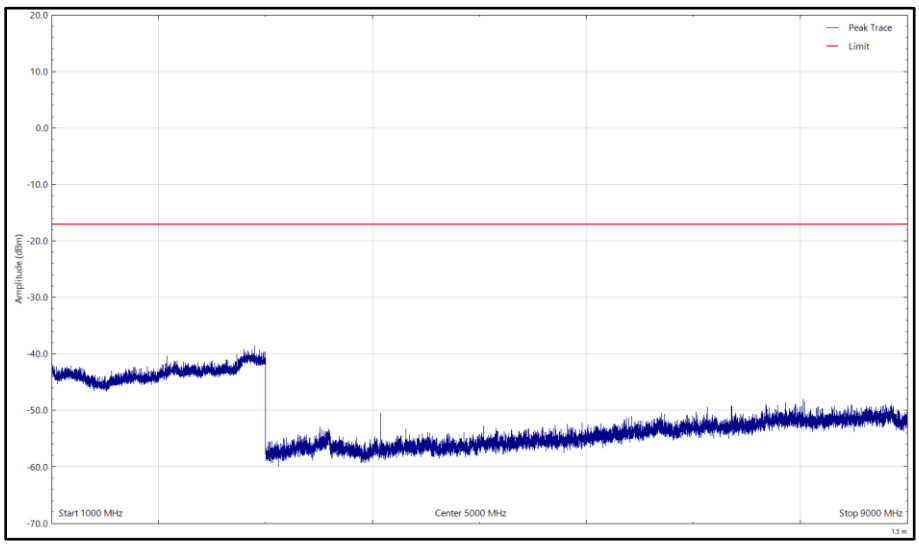

Figure 63 - 815 MHz, 1 GHz to 9 GHz, Vertical (Peak)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								

Table 28 - 823.9875 MHz

*No emissions were detected within 10 dB of the limit.

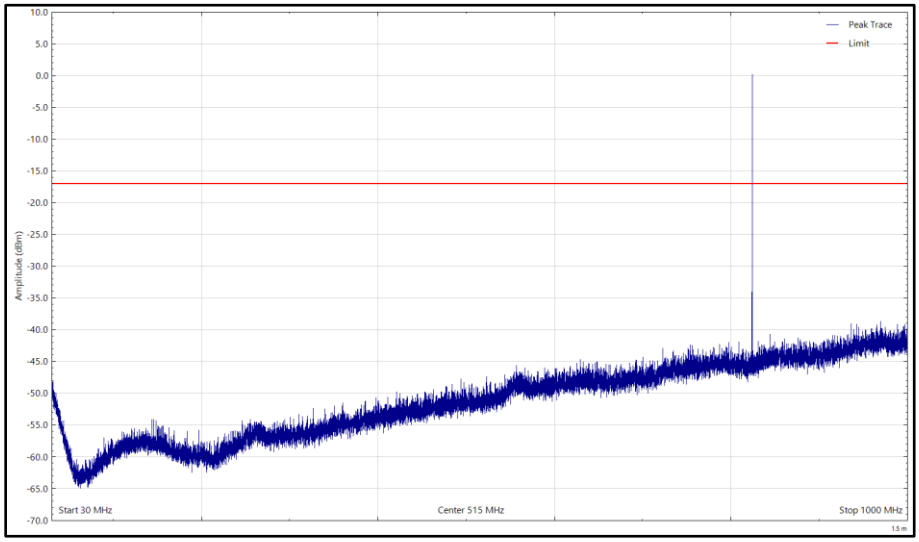

Figure 64 - 823.9875 MHz - 30 MHz to 1 GHz, Horizontal Polarisation

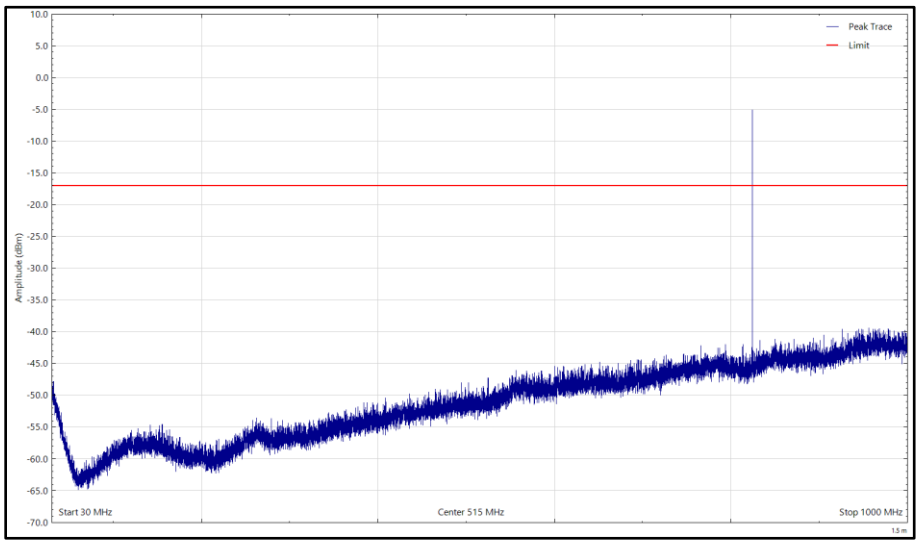

Figure 65 - 823.9875 MHz - 30 MHz to 1 GHz, Vertical Polarisation

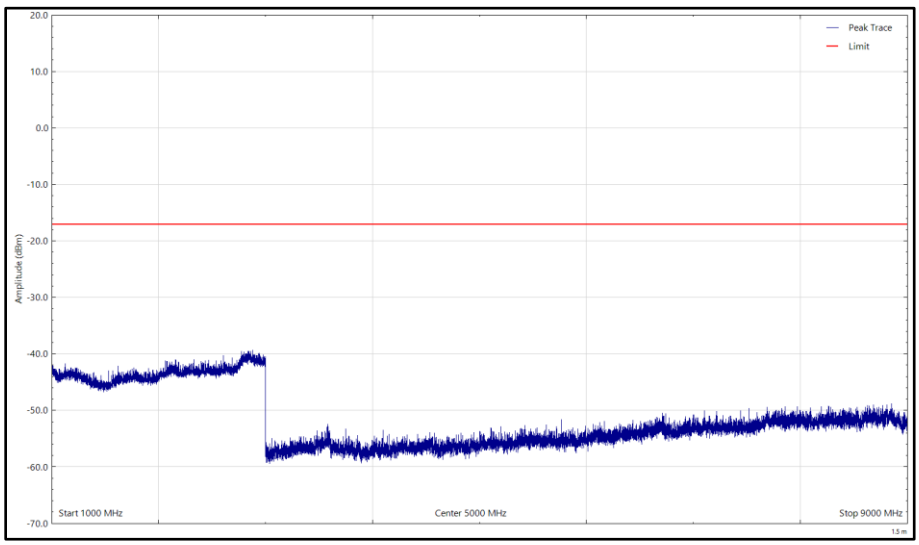

Figure 66 - 823.9875 MHz - 1 GHz to 9 GHz, Horizontal Polarisation

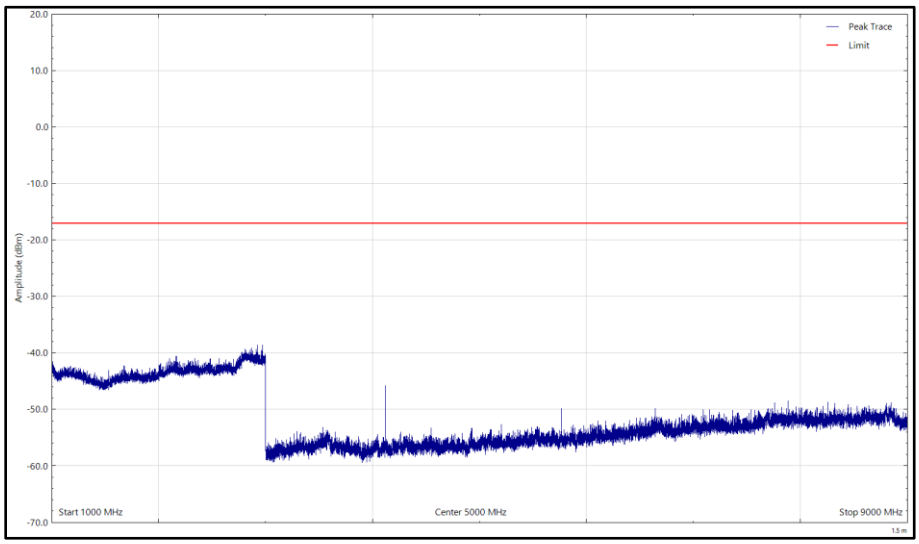

Figure 67 - 823.9875 MHz - 1 GHz to 9 GHz, Vertical Polarisation

Tetra - 851 MHz to 870 MHz

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation

Table 29 - 851.0125 MHz

*No emissions were detected within 10 dB of the limit.

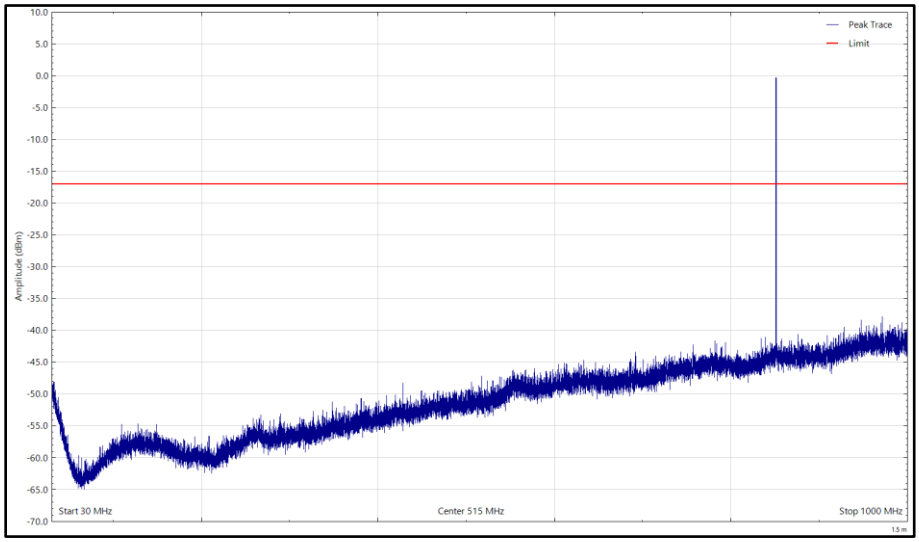

Figure 68 - 851.0125 MHz - 30 MHz to 1 GHz, Horizontal Polarisation

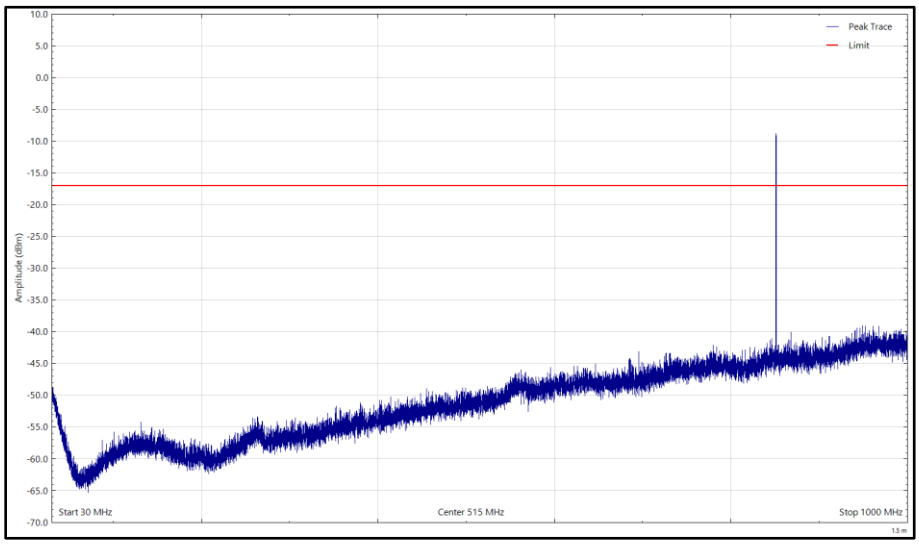

Figure 69 - 851.0125 MHz - 30 MHz to 1 GHz, Vertical Polarisation

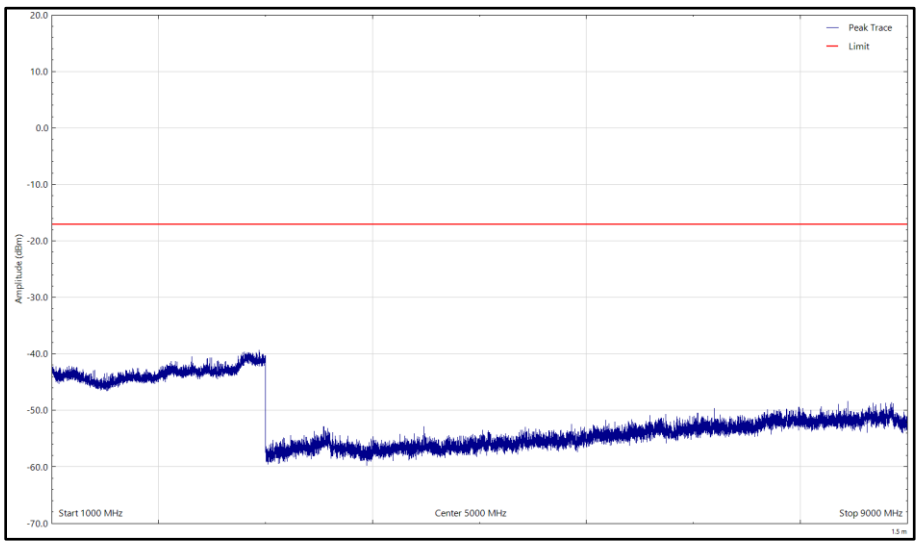

Figure 70 - 851.0125 MHz - 1 GHz to 9 GHz, Horizontal Polarisation

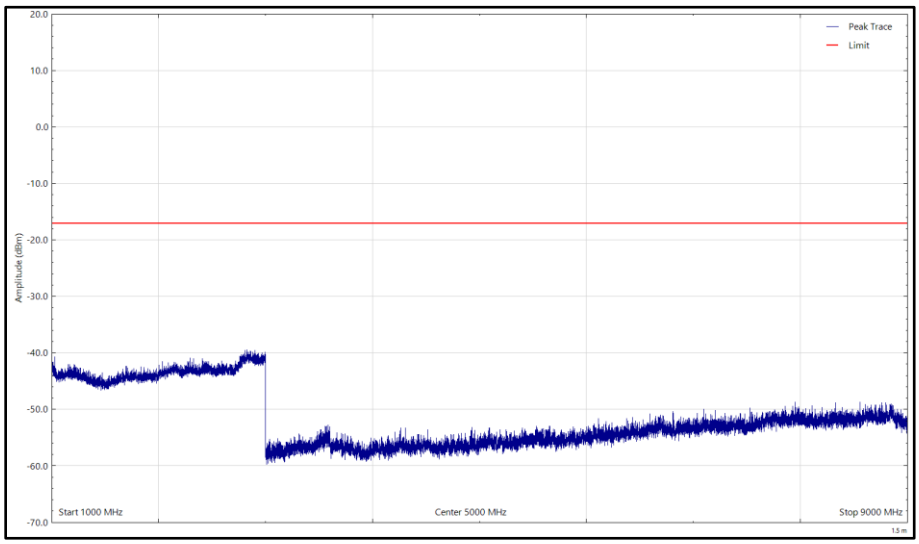

Figure 71 - 851.0125 MHz - 1 GHz to 9 GHz, Vertical Polarisation

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 30 - 860 MHz

*No emissions found within 10 dB of the limit.

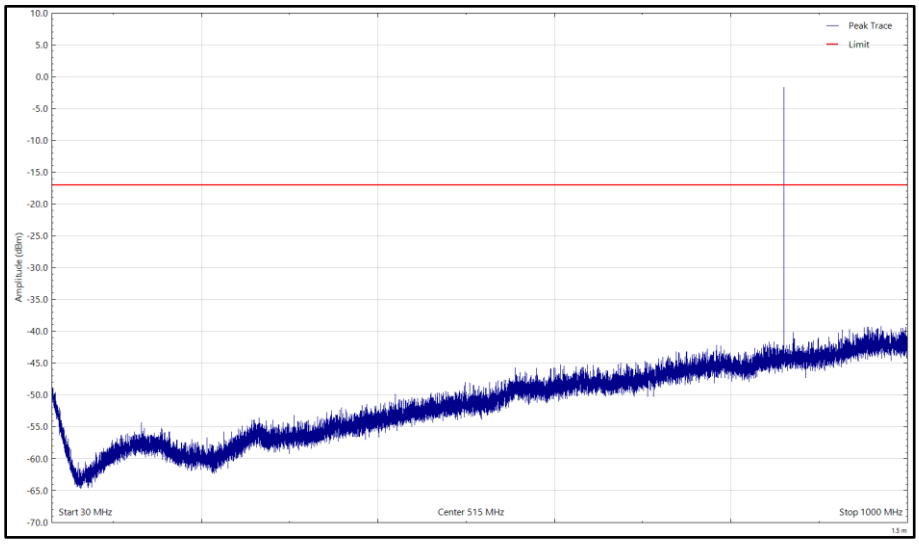

Figure 72 - 860 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

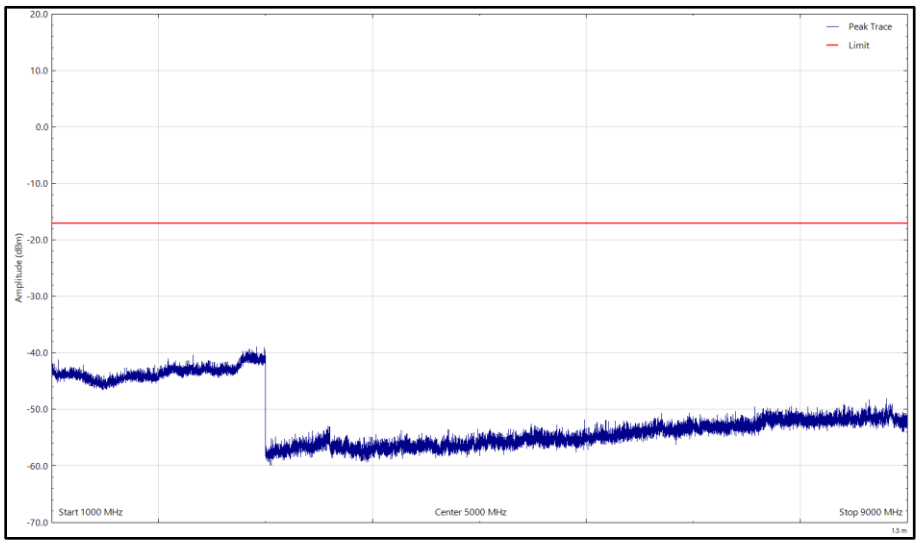

Figure 73 - 860 MHz, 1 GHz to 9 GHz, Horizontal (Peak)

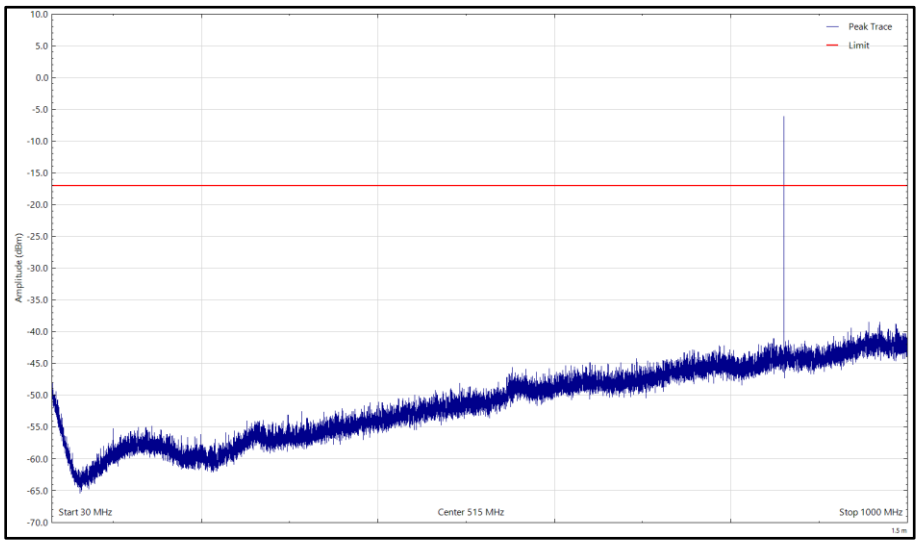

Figure 74 - 860 MHz, 30 MHz to 1 GHz, Vertical (Peak)

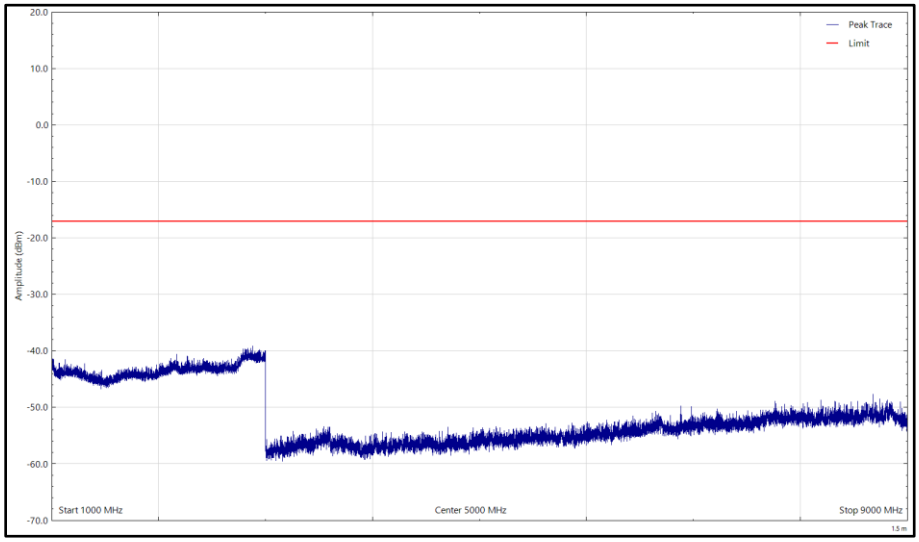

Figure 75 - 860 MHz, 1 GHz to 9 GHz, Vertical (Peak)

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 31 - 868.9875 MHz

*No emissions were detected within 10 dB of the limit.

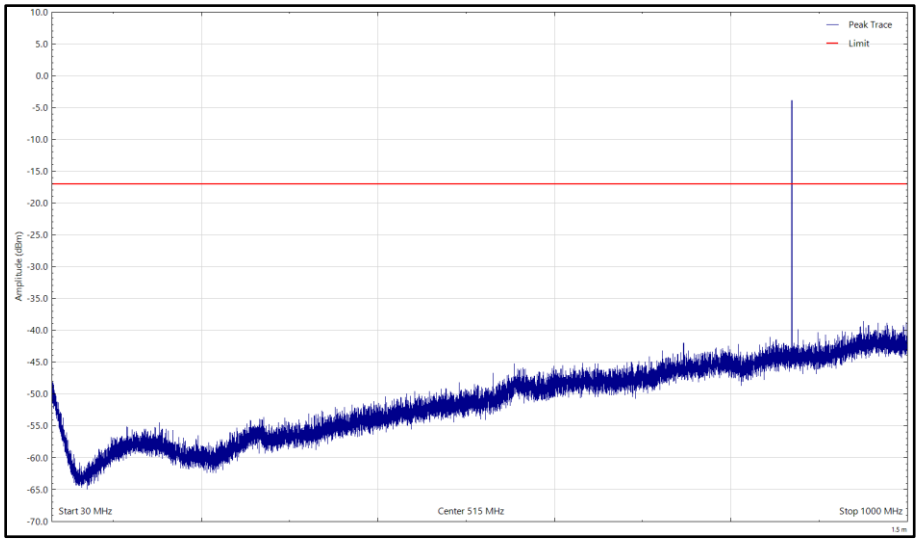

Figure 76 - 868.9875 MHz - 30 MHz to 1 GHz, Horizontal Polarisation

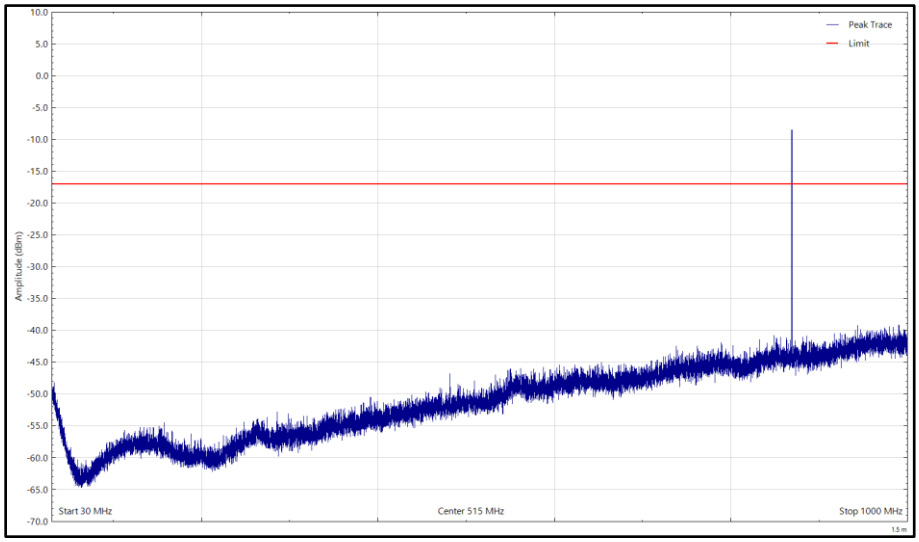

Figure 77 - 868.9875 MHz - 30 MHz to 1 GHz, Vertical Polarisation

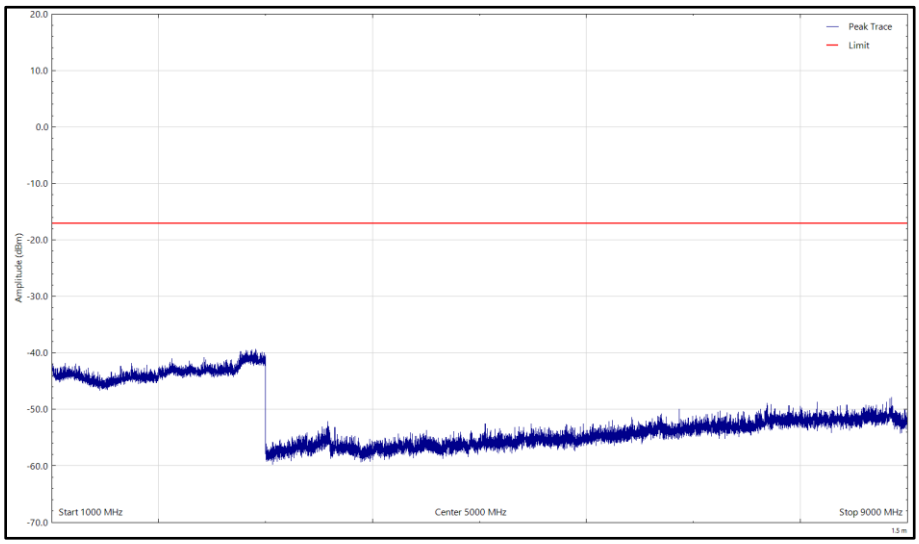

Figure 78 - 868.9875 MHz - 1 GHz to 9 GHz, Horizontal Polarisation

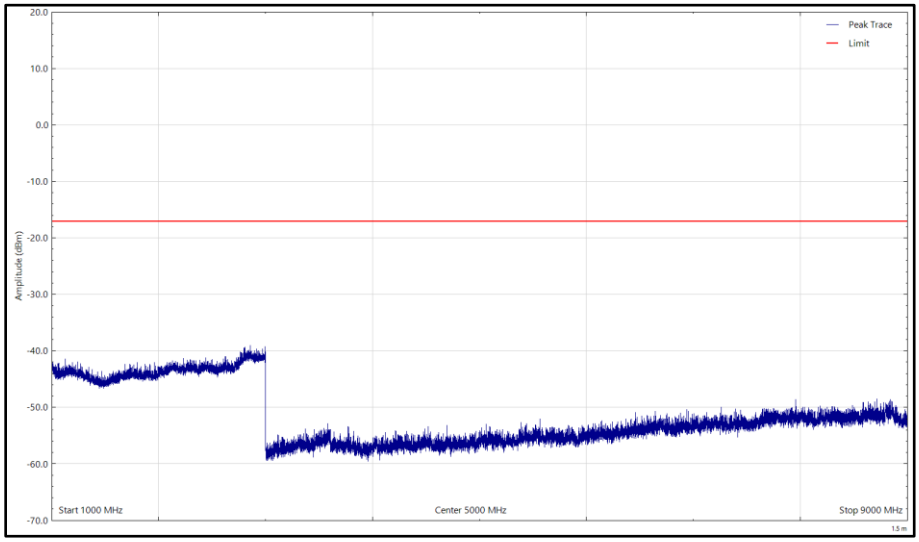

Figure 79 - 868.9875 MHz - 1 GHz to 9 GHz, Vertical Polarisation

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.

Industry Canada RSS-119, Limit Clause 5.8

The EUT shall comply with emission mask Y as per Industry Canada RSS-119. clause 5.8.

2.5.8 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 12.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Power Supply Unit	Hewlett Packard	6267B	21	-	TU
Termination (50ohm)	Meca	405-1	550	12	23-Nov-2024
Test Receiver	Rohde & Schwarz	ESU40	3506	12	30-Mar-2024
Antenna (DRG 1-10.5GHz)	Schwarzbeck	BBHA9120B	4848	12	09-Jul-2024
Emissions Software	TUV SUD	EmX V3.1.12	5125	-	Software
1 Meter Cable	Teledyne	PR90-088-1MTR	5194	12	10-Aug-2024
Pre-Amplifier (1 GHz to 18 GHz)	Schwarzbeck	BBV 9718 C	5350	12	01-Dec-2024
Cable (K Type 2m)	Junkosha	MWX241-02000KMS	5421	12	08-Mar-2024
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5471	12	28-Apr-2024
Turntable & Mast Controller	Maturo Gmbh	NCD/498/2799.01	5612	-	TU
Tilt Antenna Mast	Maturo Gmbh	TAM 4.0-P	5613	-	TU
Turntable	Maturo Gmbh	Turntable 1.5 SI-2t	5614	-	TU
Antenna (Bi-Log, 30 MHz to 1 GHz)	Teseq	CBL6111D	5615	24	15-Mar-2025
3m Semi-Anechoic Chamber	MVG	EMC Chamber 12	5621	36	07-Aug-2026
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/B	6330	12	16-Feb-2024
Termination, N-Type(M) 10W, DC-3GHz	Aaren	AT40T-10E03	6565	12	18-Jun-2024

Table 32

TU - Traceability Unscheduled

2.6 Frequency Stability

2.6.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1055
FCC 47 CFR Part 90, Clause 90.213
ISED RSS-119, Clause 5.3
ISED RSS-GEN, Clause 6.11

2.6.2 Equipment Under Test and Modification State

SCG2228, S/N: 1PR002401GPT84J - Modification State 0

2.6.3 Date of Test

01-February-2024

2.6.4 Test Method

This test was performed in accordance with ANSI C63.26, Clause 5.6. and the requirements of FCC 47 CFR Part 2, Clause 2.1055 (a)(2), (d)(1).

The EUT was set to transmit with an unmodulated carrier on bottom, middle and top channels. The EUT was connected to a spectrum analyser using an external 10 MHz frequency reference. The difference between the frequency of the fundamental and the frequency of the assigned channel in accordance with the manufacturer's documentation was recorded. In accordance with FCC 47 CFR, Clause 2.1055, the temperature was varied from -30 °C to +50 °C in 10 ° steps at nominal voltage and at ambient temperature for both minimum and maximum voltage extremes.

2.6.5 Environmental Conditions

Ambient Temperature	22.9 °C
Relative Humidity	38.5 %

2.6.6 Test Results

Tetra - 806 MHz to 825 MHz

Voltage	Frequency Error (ppm)		
	806.0125 MHz	815 MHz	823.9875 MHz
10.8	0.156	0.179	0.174
15.6	0.183	0.177	0.173

Table 33 - Frequency Stability Under Voltage Variations

Temperature	Frequency Error (ppm)		
	806.0125 MHz	815 MHz	823.9875 MHz
+50.0 °C	0.406	0.408	0.407
+40.0 °C	0.345	0.356	0.359
+30.0 °C	0.249	0.265	0.271
+20.0 °C	0.166	0.177	0.172
+10.0 °C	0.227	0.223	0.238
0 °C	0.150	0.179	0.187
-10.0 °C	0.123	0.144	0.154
-20.0 °C	0.061	0.084	0.096
-30.0 °C	0.295	0.293	0.283

Table 34 - Frequency Stability Under Temperature Variations

Tetra - 851 MHz to 870 MHz

Voltage	Frequency Error (ppm)		
	851.0125 MHz	860 MHz	868.9875 MHz
10.8	0.172	0.172	0.176
15.6	0.171	0.173	0.176

Table 35 - Frequency Stability Under Voltage Variations

Temperature	Frequency Error (ppm)		
	851.0125 MHz	860 MHz	868.9875 MHz
+50.0 °C	0.408	0.407	0.408
+40.0 °C	0.359	0.362	0.366
+30.0 °C	0.264	0.268	0.270
+20.0 °C	0.171	0.171	0.172
+10.0 °C	0.241	0.246	0.248
0 °C	0.184	0.183	0.179
-10.0 °C	0.159	0.163	0.167
-20.0 °C	0.102	0.107	0.144
-30.0 °C	0.271	0.263	0.257

Table 36 - Frequency Stability Under Temperature Variations

FCC 47 CFR Part 90, Limit Clause 90.213

1.5 ppm

Industry Canada RSS-199, Limit Clause 5.3

2.5 ppm

2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	611	12	15-Dec-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5497	12	18-Apr-2024
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5511	12	21-May-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	07-Nov-2024
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon
Climatic Chamber	Weiss Technik	TempEvent T/180/40/3	5894	12	07-Jul-2024

Table 37

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.7 Adjacent Channel Power

2.7.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.221
ISED RSS-119, Clause 5.8.9.1

2.7.2 Equipment Under Test and Modification State

SCG2228, S/N: 1PR002401GPT84J - Modification State 0

2.7.3 Date of Test

01-February-2024

2.7.4 Test Method

This test was performed conducted on the modulated carrier output from the EUT, measured using a spectrum analyser. The spectrum analyser was set to the transmit frequency, span to 0.2 MHz to measure the 3 x 25 kHz adjacent channels below and above the carrier.

A measurement integration bandwidth of 18 kHz was set, and the measurement used the Adjacent Channel Power function of the spectrum analyser.

2.7.5 Environmental Conditions

Ambient Temperature	22.3 °C
Relative Humidity	30.4 %

2.7.6 Test Results

Tetra - 806 MHz to 825 MHz

Offset (kHz)	Adjacent Channel Power (dB)		
	806.0125 MHz	815 MHz	823.9875 MHz
-25	-62.9	-62.9	-62.4
+25	-61.0	-60.7	-60.6
-50	-73.0	-72.5	-72.3
+50	-72.8	-72.5	-72.4
-75	-77.6	-77.1	-77.2
+75	-77.5	-77.2	-77.4

Table 38

Figure 80 - 806.0125 MHz

			Lower ACP		Lower Reference		Upper ACP		Upper Reference		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	25.00 kHz	18.00 kHz	-62.90	-21.12	41.78	1	-60.66	-18.88	41.78	1	-3 dB
B	50.00 kHz	18.00 kHz	-72.50	-30.72	41.78	1	-72.48	-30.70	41.78	1	-3 dB
C	75.00 kHz	18.00 kHz	-77.10	-35.32	41.78	1	-77.23	-35.45	41.78	1	-3 dB

Figure 81 - 815 MHz

			Lower ACP		Lower Reference		Upper ACP		Upper Reference		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	25.00 kHz	18.00 kHz	-62.43	-20.66	41.77	1	-60.59	-18.82	41.77	1	-3 dB
B	50.00 kHz	18.00 kHz	-72.30	-30.53	41.77	1	-72.44	-30.67	41.77	1	-3 dB
C	75.00 kHz	18.00 kHz	-77.21	-35.43	41.77	1	-77.42	-35.65	41.77	1	-3 dB

Figure 82 - 823.9875 MHz

Tetra - 851 MHz to 870 MHz

Offset (kHz)	Adjacent Channel Power (dB)		
	851.0125 MHz	860 MHz	868.9875 MHz
-25	-61.8	-61.2	-61.9
+25	-60.2	-59.9	-59.5
-50	-70.3	-69.9	-70.4
+50	-70.4	-70.4	-70.5
-75	-77.2	-77.0	-76.9
+75	-77.1	-77.0	-77.0

Table 39

Figure 83 - 851.0125 MHz

			Lower				Upper				
			ACP		Reference		ACP		Reference		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	25.00 kHz	18.00 kHz	-61.21	-19.37	41.84	1	-59.93	-18.09	41.84	1	-3 dB
B	50.00 kHz	18.00 kHz	-69.94	-28.10	41.84	1	-70.36	-28.52	41.84	1	-3 dB
C	75.00 kHz	18.00 kHz	-77.04	-35.20	41.84	1	-77.04	-35.20	41.84	1	-3 dB

Figure 84 - 860 MHz

			Lower				Upper				
			ACP		Reference		ACP		Reference		
	Offs Freq	Integ BW	dBc	dBm	dBm	Car #	dBc	dBm	dBm	Car #	Filter
A	25.00 kHz	18.00 kHz	-61.86	-20.01	41.85	1	-59.53	-17.68	41.85	1	-3 dB
B	50.00 kHz	18.00 kHz	-70.44	-28.60	41.85	1	-70.49	-28.65	41.85	1	-3 dB
C	75.00 kHz	18.00 kHz	-76.88	-35.04	41.85	1	-77.00	-35.15	41.85	1	-3 dB

Figure 85 - 868.9875 MHz

FCC Part 90, Limit Clause 90.221(c)

Frequency Offset	Maximum ACP (dBc) for devices ≤ 15W	Maximum ACP (dBc) for devices > 15W
25 kHz	-55	-55
50 kHz	-65	-65
75 kHz	-65	-70

Table 40

NOTE: In any case, no requirement in excess of -36 dBm shall apply.

2.7.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	611	12	15-Dec-2024
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
Signal Analyzer	Keysight Technologies	PXA N9030B	5432	12	08-Jun-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5497	12	18-Apr-2024
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5511	12	21-May-2024
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon

Table 41

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

3 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
Types of Emissions	-
Bandwidth Limitations	± 58.05 Hz
Spurious Emissions at Antenna Terminals	± 3.45 dB
Radiated Spurious Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 18 GHz: ± 6.3 dB
Frequency Stability	± 11 Hz
Adjacent Channel Power	± 3.0 dB

Table 42

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.