

FCC Test Report

Sepura Ltd

Portable TETRA Handset, Model: SC2124

In accordance with FCC 47 CFR Part 22 and
FCC 47 CFR Part 2

Prepared for: Sepura Ltd
9000 Cambridge Research Park
Beach Drive
Waterbeach
Cambridge
CB25 9TL
United Kingdom



Add value.
Inspire trust.

FCC ID: XX6SC2124

COMMERCIAL-IN-CONFIDENCE

Document 75944487-03 Issue 01

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Matthew Russell	RF Team Leader	Authorised Signatory	06 January 2020

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 22 and FCC 47 CFR Part 2. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Francis Kane	06 January 2020	

FCC Accreditation

90987 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 22: 2018 and FCC 47 CFR Part 2: 2018 for the tests detailed in section 1.3.



DISCLAIMER AND COPYRIGHT

This non-binding report has been prepared by TÜV SÜD with all reasonable skill and care. The document is confidential to the potential Client and TÜV SÜD. No part of this document may be reproduced without the prior written approval of TÜV SÜD. © 2020 TÜV SÜD. This report relates only to the actual item/items tested.

ACCREDITATION

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation. Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

TÜV SÜD
is a trading name of TÜV SÜD Ltd
Registered in Scotland at East Kilbride,
Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TÜV SÜD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuv-sud.co.uk

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



Contents

1 Report Summary2

1.1 Report Modification Record.....2

1.2 Introduction.....2

1.3 Brief Summary of Results3

1.4 Application Form4

1.5 Product Information6

1.6 Deviations from the Standard.....6

1.7 EUT Modification Record6

1.8 Test Location7

2 Test Details8

2.1 Occupied Bandwidth8

3 Measurement Uncertainty 10



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	06 January 2020

Table 1

1.2 Introduction

Applicant	Sepura Ltd
Manufacturer	Sepura Ltd
Model Number(s)	SC2124
Serial Number(s)	2PS001845GM55XL
Hardware Version(s)	Production
Software Version(s)	2001 723 07367
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 22: 2018 FCC 47 CFR Part 2: 2018
Order Number	PLC-PO011393-1
Date	07-December-2018
Date of Receipt of EUT	01-February-2019
Start of Test	19-December-2019
Finish of Test	19-December-2019
Name of Engineer(s)	Francis Kane
Related Document(s)	ANSI C63.26: 2015



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 22 and FCC 47 CFR Part 2 is shown below.

Section	Specification Clause		Test Description	Result	Comments/Base Standard
	Part 22	Part 2			
Configuration and Mode: TETRA - Transmit					
2.1	22.917 (b)	2.1049 (h)	Occupied Bandwidth	Pass	

Table 2



1.4 Application Form

EQUIPMENT DESCRIPTION	
Model Name/Number	SC2124
Part Number	N/A
Hardware Version	Production
Software Version	1) 1754 006 07367 2) 2001 684 07367
FCC ID (if applicable)	XX6SC2124
Industry Canada ID (if applicable)	8739A-SC2124
Technical Description (Please provide a brief description of the intended use of the equipment)	Portable TETRA Radio for use by the emergency services etc.

INTENTIONAL RADIATORS									
Technology	Frequency Band (MHz)	Conducted Declared Output Power (dBm)	Antenna Gain (dBi)	Supported Bandwidth (s) (MHz)	Modulation Scheme(s)	ITU Emission Designator	Test Channels (MHz)		
							Bottom	Middle	Top
TETRA	403-470	34	>-1	25 kHz	π /4DQPS K	22K0DXW	403	436.5	470
TETRA	403-470	34	>-1	22 kHz	π /4DQPS K	20K0DXW	403	436.5	470
Bluetooth	2402-2480	7.382	2.5	1.0	8PSK, DQPSK, GFSK	1M00F1D	2402	2441	2480

UN-INTENTIONAL RADIATOR	
Highest frequency generated or used in the device or on which the device operates or tunes	
Lowest frequency generated or used in the device or on which the device operates or tunes	
Class A Digital Device (Use in commercial, industrial or business environment) ☒	
Class B Digital Device (Use in residential environment only) ☐	

Power Source			
AC	Single Phase	Three Phase	Nominal Voltage
External DC	Nominal Voltage	Maximum Current	
	7.4V DC	2A	
Battery	Nominal Voltage	Battery Operating End Point Voltage	
	7.4V DC	6.2V DC	
Can EUT transmit whilst being charged?		Yes ☒ No ☐	

EXTREME CONDITIONS			
Maximum temperature	65	°C	Minimum temperature
			-30 °C



Ancillaries
Please list all ancillaries which will be used with the device.
Remote speaker microphone, leather cases, pocket clips, earpieces

ANTENNA CHARACTERISTICS			
☐	Antenna connector	State impedance	Ohm
☒	Temporary antenna connector	State impedance	50 Ohm
☒	Integral antenna	Type	Bluetooth
☐	External antenna	Type	

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

Name: Chris Beecham
Position held: Conformance Engineer Date: 06/12/2019

1.5 Product Information

1.5.1 Technical Description

Portable TETRA Radio for use by the emergency services etc.

1.5.2 Test Setup Diagram(s)

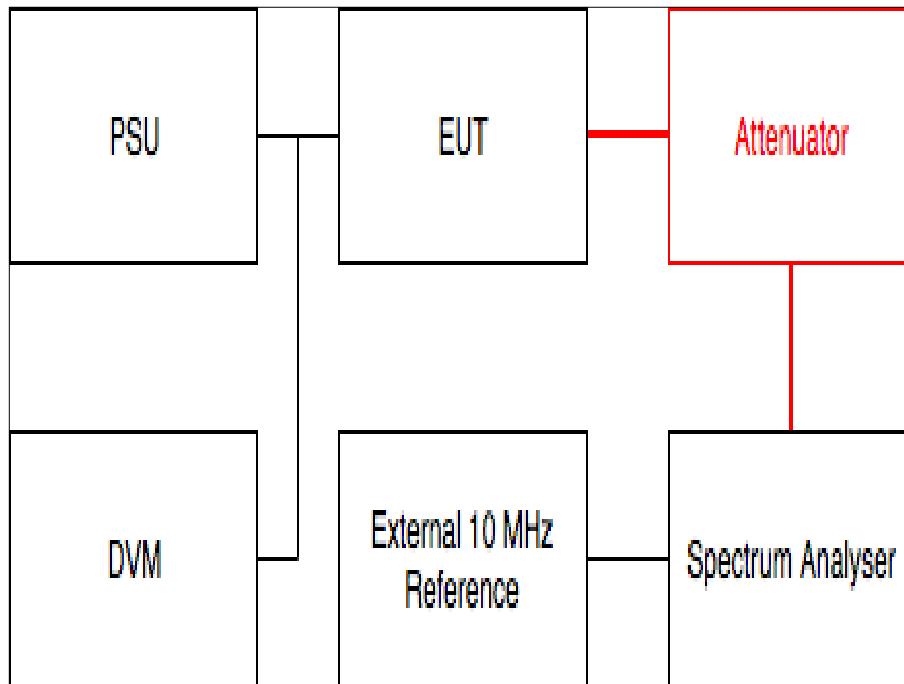


Figure 1 - Conducted Tests

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: SC2124; Serial Number: 2PS000055XL			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 3



1.8 Test Location

TÜV SÜD conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: TETRA - Transmit		
Occupied Bandwidth	Francis Kane	UKAS

Table 4

Office Address:

Octagon House
Concorde Way
Segensworth North
Fareham
Hampshire
PO15 5RL
United Kingdom

2 Test Details

2.1 Occupied Bandwidth

2.1.1 Specification Reference

FCC 47 CFR Part 22, Clause 22.917 (b)
FCC 47 CFR Part 2, Clause 2.1049 (h)

2.1.2 Equipment Under Test and Modification State

SC2124, S/N: 2PS000055XL - Modification State 0

2.1.3 Date of Test

19-December-2019

2.1.4 Test Method

The test was performed in accordance with ANSI C63.26, clause 5.4.4.

2.1.5 Environmental Conditions

Ambient Temperature 21.4 °C
Relative Humidity 51.6 %

2.1.6 Test Results

Frequency (MHz)	99% Occupied Bandwidth (kHz)
454.000	-50.37
456.000	-63.65

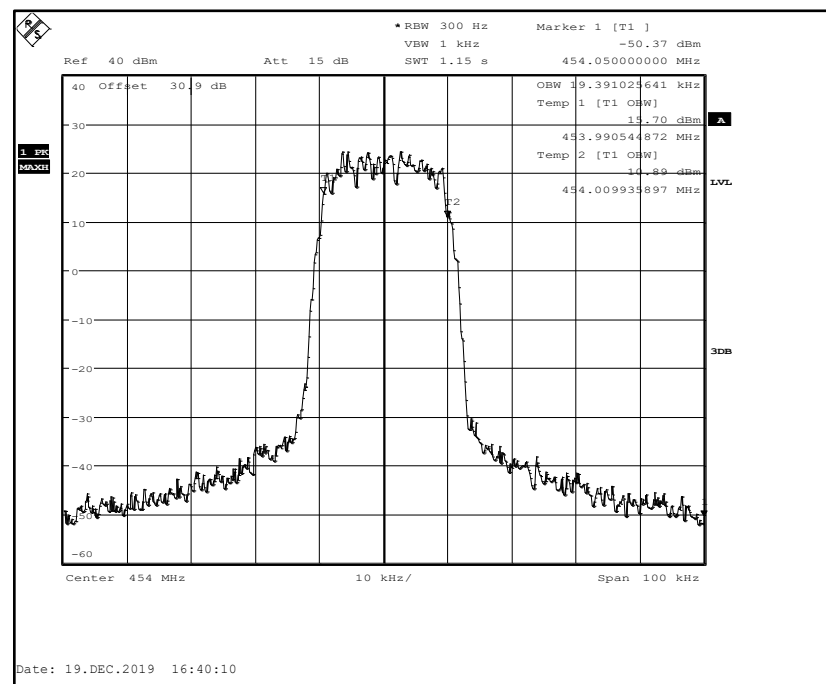


Figure 2 – 454 MHz, Occupied Bandwidth

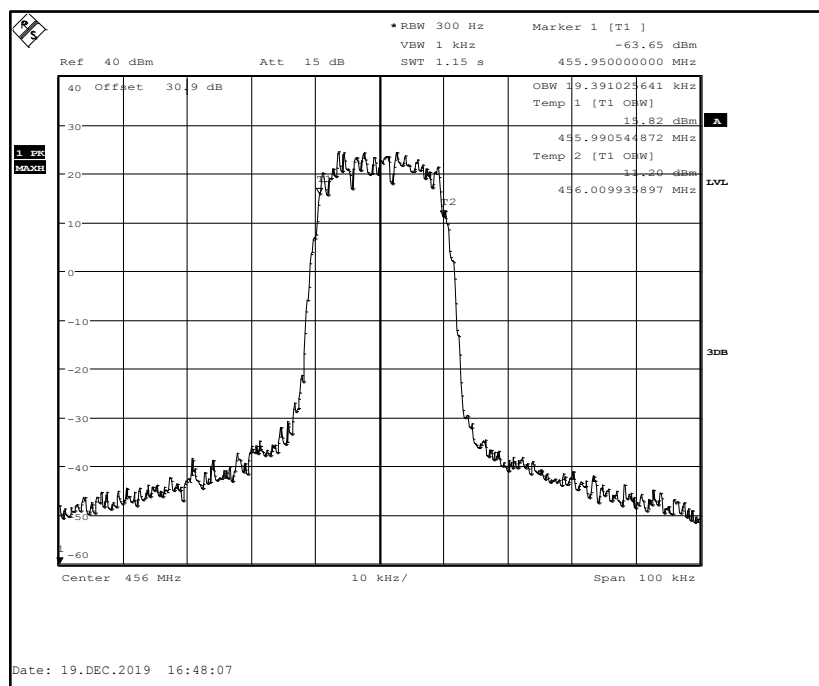


Figure 3 – 456 MHz, Occupied Bandwidth

2.1.7 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 Due
Multimeter	Fluke	75 Mk3	455	12	11-Oct-2020
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	16-Apr-2020
Hygrometer	Rotronic	A1	2138	12	05-Mar-2020
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	18-Mar-2020
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	16-Apr-2020
1 metre K-Type Cable	Florida Labs	KMS-180SP-39.4-KMS	4520	12	12-Nov-2020
Quad Power Supply	Rohde & Schwarz	HMP4040	4955	-	O/P Mon

Table 5

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
Occupied Bandwidth	$\pm 905.03 \text{ Hz}$

Table 6

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2007, clause 4.4.3 and 4.5.1.