

FCC and ISED Test Report

GRUNDFOS Holding A/S
RA2G4MSR (Multi-Standard Radio) Module

In accordance with FCC 47 CFR Part 15C, ISED RSS-247
and ISED RSS-GEN
(2.4 GHz Bluetooth Low Energy)

Prepared for: GRUNDFOS Holding A/S
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Add value.
Inspire trust.

FCC ID: OG3-RA2G4MSR IC: 10447A-RA2G4MSR

COMMERCIAL-IN-CONFIDENCE

Document 75958532-02 Issue 02

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Steve Marshall	Senior Engineer	Authorised Signatory	06 March 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 15C and ISED RSS-247 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	Aakash Rawal	06 March 2024	
	Neil Rousell	06 March 2024	
	Thomas Biddlecombe	06 March 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 15C (2022), ISED RSS-247 Issue 3 (08-2023) and ISED RSS-GEN Issue 5 (04-2018) + A2 (02-2021) for the tests detailed in section 1.3.



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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-August-2023
2	Additional test results	06-March-2024

Table 1

1.2 Introduction

Applicant	GRUNDFOS Holding A/S
Manufacturer	GRUNDFOS Holding A/S
Model Number(s)	RA2G4MSR - Multi-Standard Radio
Serial Number(s)	01217
Hardware Version(s)	R02
Software Version(s)	xxxModule_CC2652Rx_V06.00.02.xxxxx
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 15C (2022) ISED RSS-247 Issue 3 (08-2023) ISED RSS-GEN Issue 5 (04-2018) + A2 (02-2021)
Order Number	4515414087
Date	15-May-2023
Date of Receipt of EUT	05-May-2023
Start of Test	22-May-2023
Finish of Test	07-February-2024
Name of Engineer(s)	Aakash Rawal, Neil Rousell, Thomas Biddlecombe
Related Document(s)	ANSI C63.10 (2020) ANSI C63.10 (2013)



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C, ISED RSS-247 and ISED RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration and Mode: 2.4 GHz Bluetooth Low Energy						
2.1	15.247 (e)	5.2	6.12	Power Spectral Density	Pass	
2.2	15.247 (b)	5.4	6.12	Maximum Conducted Output Power	Pass	
2.3	15.205	3.3	8.10	Restricted Band Edges	Pass	
2.4	15.247 (d)	5.5	N/A	Authorised Band Edges	Pass	

Table 2

A gap analysis between ISED RSS-247 Issue 2 to ISED RSS-247 Issue 3 was performed and it was confirmed there were no changes to the requirements related to the testing performed prior to the release of ISED RSS-247 Issue 3.



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 MSR module can be used in products for different types of wireless connectivity. The Bluetooth function can be used for smart devices and 802.15.4 based protocols e.g. Thread, GLoWPAN, etc. for monitoring, control or cloud services	
Manufacturer:	Grundfos Holding A/S	
Model:	RA2G4MSR – MSR Multi-standard radio	
Part Number:	BLE Module 92542810 ; MSR Module 92542811	
Hardware Version:	R02	
Software Version:	xxxModule_CC2652Rx_V06.00.02.xxxxx	
FCC ID of the product under test – see guidance here	OG3-RA2G4MSR	
IC ID of the product under test – see guidance here	10447A-RA2G4MSR	

Table 3

Intentional Radiators

Technology	BLE					
Frequency Range (MHz to MHz)	2400 – 2483.5 MHz					
Conducted Declared Output Power (dBm)	4					
Antenna Gain (dBi)	2.15					
Supported Bandwidth(s) (MHz) (e.g 1 MHz, 20 MHz, 40 MHz)	1 & 2MHz					
Modulation Scheme(s) (e.g GFSK, QPSK etc)	GFSK					
ITU Emission Designator (see guidance here) (not mandatory for Part 15 devices)	1M00WDX					
Bottom Frequency (MHz)	2400 MHz					
Middle Frequency (MHz)						
Top Frequency (MHz)	2483.5 MHz					

Table 4

Un-intentional Radiators

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) ☐	

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:	3.3	V
Extreme upper voltage:	3.8	V
Extreme lower voltage:	2.0	V
Max current:	100 m	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:	-10	°C
Maximum temperature:	+70	°C

Table 10

Cable Loss

Adapter Cable Loss (Conducted sample)	1.0	dB
--	-----	----

Table 11



Antenna Characteristics

Antenna connector ☐			State impedance		Ohm
Temporary antenna connector ☐			State impedance		Ohm
Integral antenna ☒	Type:		Gain	2.15	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 ☐					

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: Jianyang Liu
Position held: Senior Digital Compliance Specialist
Date: 18-May-2023



1.5 Product Information

1.5.1 Technical Description

The MSR module can be used in products for different types of wireless connectivity. The Bluetooth function can be used for smart devices and 802.15.4 based protocols e.g. Thread, GLoWPAN, etc. for monitoring, control or cloud services.

The MSR module has been previously assessed for LE1M. The results are contained within 75951634, Report 01. The current report covers the additional testing for LE2M.

1.5.2 Additional Information

The LE2M mode does not support the advertising channels on 2480 MHz, therefore restricted band edges have been tested on 2402 MHz & 2478 MHz.

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: RA2G4MSR - MSR, Serial Number: 01217			
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: 2.4 GHz Bluetooth Low Energy		
Power Spectral Density	Aakash Rawal	UKAS
Maximum Conducted Output Power	Aakash Rawal	UKAS
Restricted Band Edges	Neil Rousell	UKAS
Authorised Band Edges	Aakash Rawal & Tom Biddlecombe	UKAS
Emissions Bandwidth	Aakash Rawal	UKAS

Table 15

Office Address:

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



2 Test Details

2.1 Power Spectral Density

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (e)
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.12

2.1.2 Equipment Under Test and Modification State

RA2G4MSR – MSR, S/N: 01217- Modification State 0

2.1.3 Date of Test

24-May-2023

2.1.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.2.

2.1.5 Environmental Conditions

Ambient Temperature 22.3 °C
Relative Humidity 44.2 %

2.1.6 Test Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 2M)	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (A)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402	3.0	-8.50	-	-	-	-	8.00	-16.50
2440	3.0	-10.21	-	-	-	-	8.00	-18.21
2480	3.0	-9.48	-	-	-	-	8.00	-17.48

Table 16 - Maximum Power Spectral Density Results



FCC 47 CFR Part 15, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

ISED RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

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 Expires
Hygrometer	Rotronic	I-1000	3220	12	15-Nov-2023
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	5759	12	05-Jul-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	13-Jul-2023
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	21-Mar-2024
Meter	ETI Ltd	Therma Elite	6326	12	27-Mar-2024

Table 17



2.2 Maximum Conducted Output Power

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)
ISED RSS-247, Clause 5.4
ISED RSS-GEN, Clause 6.12

2.2.2 Equipment Under Test and Modification State

RA2G4MSR - MSR, S/N: 01217- Modification State 0

2.2.3 Date of Test

24-May-2023

2.2.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 11.9.1.2 Method PKPM1.

2.2.5 Environmental Conditions

Ambient Temperature	22.3 °C
Relative Humidity	44.5 %



2.2.6 Test Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 2M)	Duty Cycle (%):	100.0
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (A)	Peak Antenna Gain (dBi):	2.15

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402	4.55	-	-	-	-	30.00	-25.45
2440	4.43	-	-	-	-	30.00	-25.57
2480	4.15	-	-	-	-	30.00	-25.85

Table 18 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2402	4.55	-	-	-	-	30.00	-25.45	6.70	36.00	-29.30
2440	4.43	-	-	-	-	30.00	-25.57	6.58	36.00	-29.42
2480	4.15	-	-	-	-	30.00	-25.85	6.30	36.00	-29.70

Table 19 - ISED Maximum Conducted (peak) Output Power Results

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(1)

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

ISED RSS-247, Limit Clause 5.4 (b)

For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channel; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channel. The e.i.r.p. shall not exceed 4 W except as provided in section 5.4(e) of the specification.



2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1 and RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Hygrometer	Rotronic	I-1000	3220	12	15-Nov-2023
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	5759	12	05-Jul-2023
USB Power Sensor	Boonton	RTP5008	5830	12	07-Jul-2023
Meter	ETI Ltd	Therma Elite	6326	12	27-Mar-2024

Table 20



2.3 Restricted Band Edges

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
ISED RSS-247, Clause 3.3
ISED RSS-GEN, Clause 8.10

2.3.2 Equipment Under Test and Modification State

RA2G4MSR - MSR, S/N: 01217- Modification State 0

2.3.3 Date of Test

21-July-2023

2.3.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.10.5 and 11.12.1.

The plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.1.

The following conversion can be applied to convert from dBμV/m to μV/m:

$10^{(\text{Field Strength in dB}\mu\text{V/m}/20)}$.

2.3.5 Environmental Conditions

Ambient Temperature 21.4 °C
Relative Humidity 57.1 %

2.3.6 Test Results

Modulation	Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
GFSK LE2M	2404	2390	50.9	30.4
GFSK LE2M	2478	2483.5	52.2	38.1

Table 21

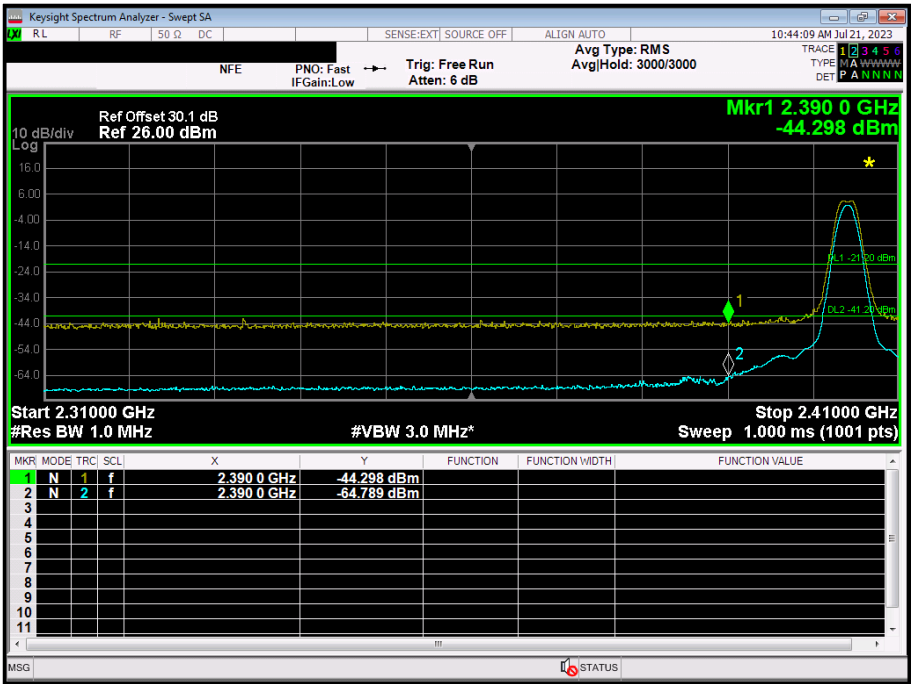


Figure 1 - GFSK LE2M - 2404 MHz - Band Edge Frequency 2390 MHz

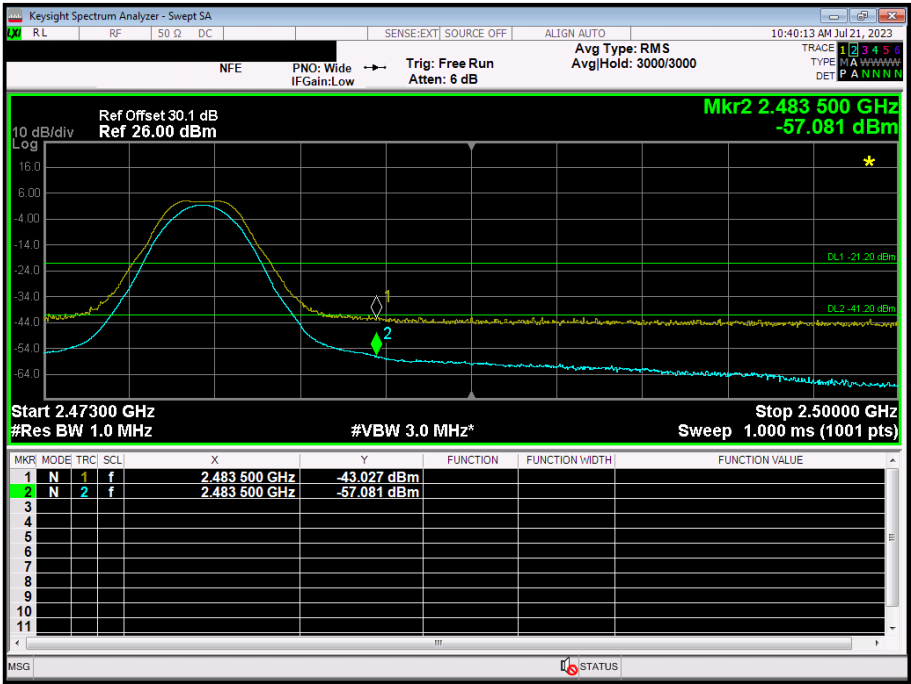


Figure 2 - GFSK LE2M - 2478 MHz - Band Edge Frequency 2483.5 MHz



FCC 47 CFR Part 15, Limit Clause 15.209

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

Table 22

ISED RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960*	500

Table 23

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

2.3.7 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
HygroPalm	Rotronic	HygroPalm 0	3484	12	30-Aug-2023
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	16-Jan-2024
Attenuator 5W 30dB DC-18GHz	Aaren	AT40A-4041-D18-30	5502	12	14-Jun-2024

Table 24



2.4 Authorised Band Edges

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d)
ISED RSS-247, Clause 5.5

2.4.2 Equipment Under Test and Modification State

RA2G4MSR - MSR, S/N: 01217- Modification State 0

2.4.3 Date of Test

05-June-2023 and 07-February-2024

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

2.4.5 Environmental Conditions

Ambient Temperature	20.9 - 21.0 °C
Relative Humidity	40.4 % - 40.5 %

2.4.6 Test Results

Modulation	Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	2402	2400	-33.20
GFSK	2440	2400	-61.56
GFSK	2440	2483.5	-62.06
GFSK	2480	2483.5	-57.47

Table 25

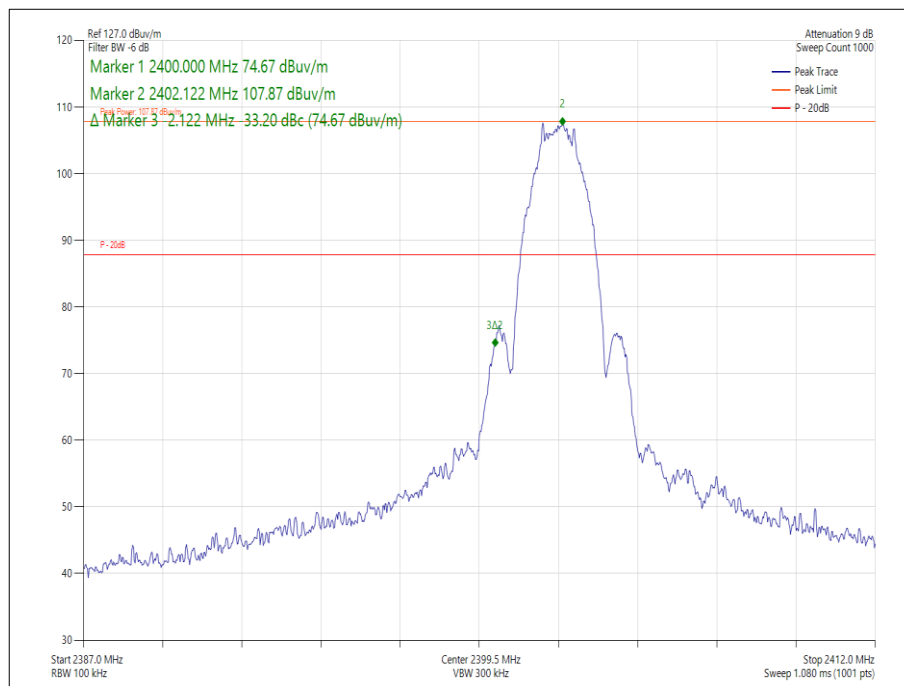
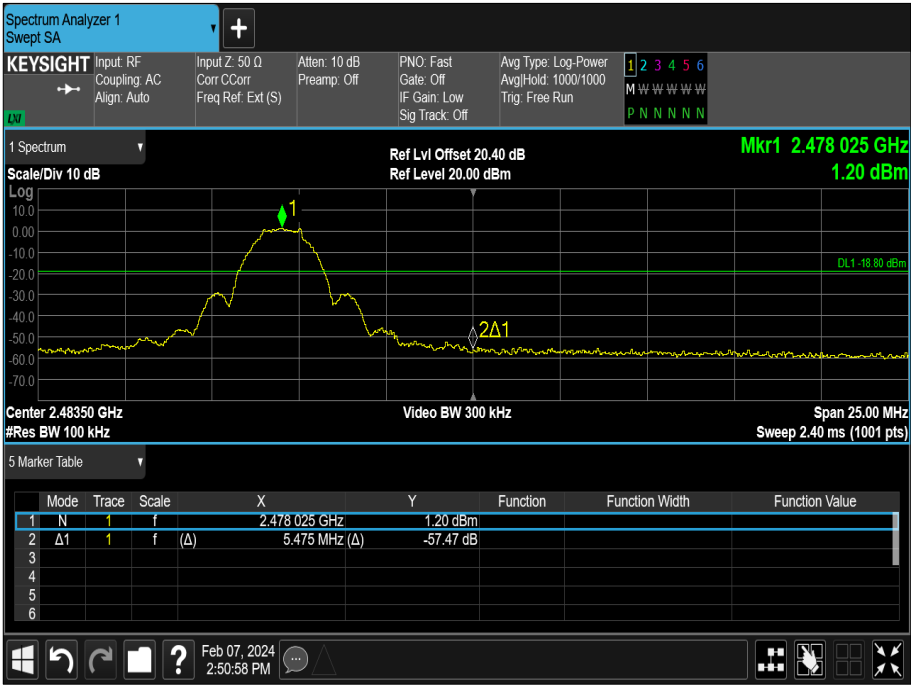
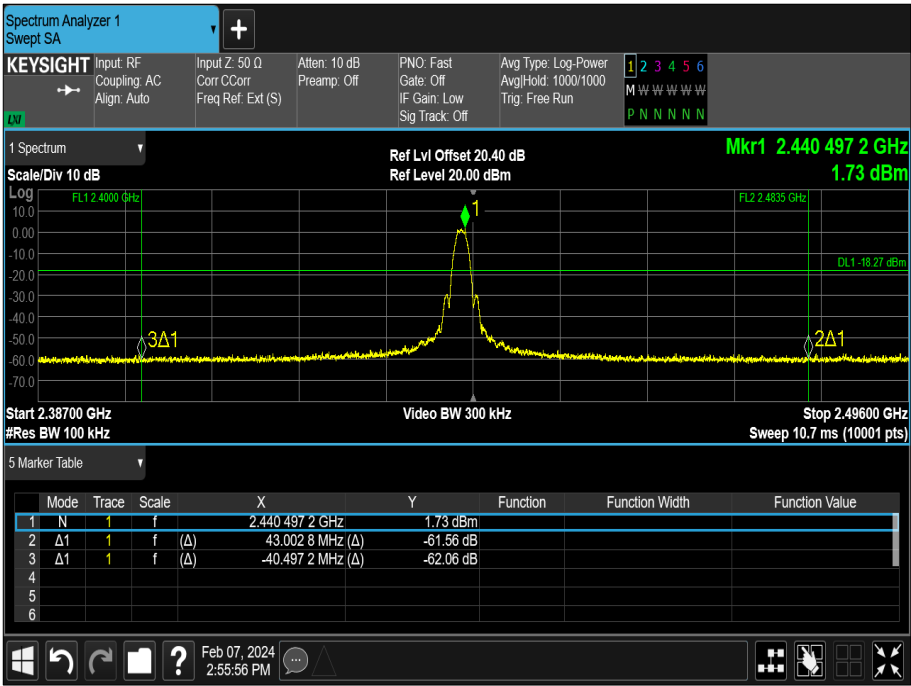


Figure 3 - GFSK, 2402 MHz - Band Edge Frequency 2400 MHz





FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

ISED RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.4.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5 and RF Lab 1

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
3m Semi-Anechoic Chamber	Rainford	RF Chamber 5	1545	36	15-Apr-2024
Turntable Controller	Inn-Co GmbH	CO1000	1606	-	TU
Hygropalm Temperature and Humidity Meter	Rotronic	HP21	4410	12	08-Aug-2024
Mast Controller	Maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	Maturo GmbH	TAM 4.0-P	4811	-	TU
Cable (40 GHz)	Rosenberger	LU1-001-1000	5022	12	29-Jan-2024
Emissions Software	TUV SUD	EmX V3.1.12	5125	-	Software
Attenuator 5W 10dB DC-18GHz	Aaren	AT40A-4041-D18-10	5492	12	18-Apr-2024
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5514	12	21-May-2024
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5517	12	21-May-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
EMI Test Receiver	Rohde & Schwarz	ESW44	5911	12	05-May-2024

Table 26



2.5 Emission Bandwidth

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2)
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.7

2.5.2 Equipment Under Test and Modification State

RA2G4MSR - MSR, S/N: 01217- Modification State 0

2.5.3 Date of Test

24-May-2023

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.8.1 for 6 dB BW and 6.9.3 for 99% occupied bandwidth measurements.

2.5.5 Environmental Conditions

Ambient Temperature	22.3 °C
Relative Humidity	44.2 %



2.5.6 Test Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 2M)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	A (A)	Peak Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	1.360	-	-	-	≥500.0
2440	1.392	-	-	-	≥500.0
2480	1.392	-	-	-	≥500.0

Table 27 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402	2.064	-	-	-	-
2440	2.072	-	-	-	-
2480	2.080	-	-	-	-

Table 28 - 99% Bandwidth Results

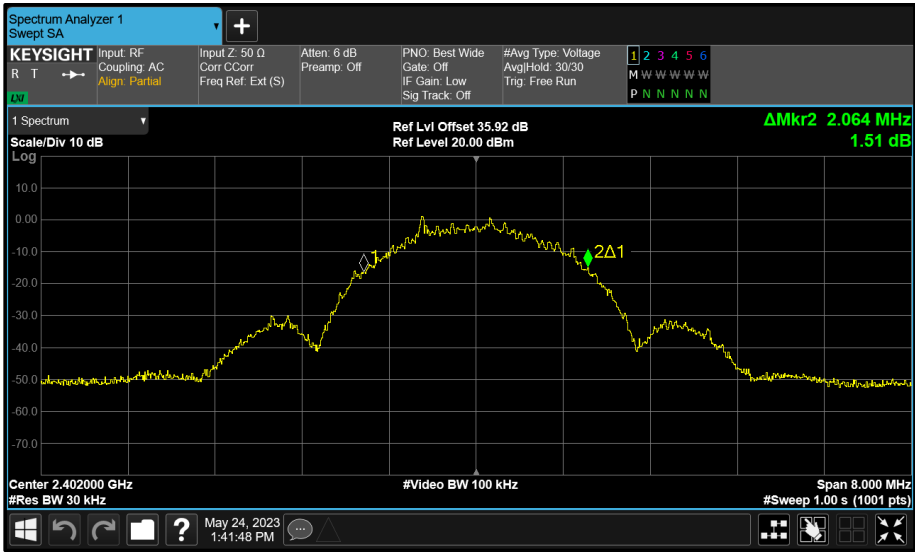


Figure 6 - A (A) 2402 MHz (CH37) 99% Bandwidth

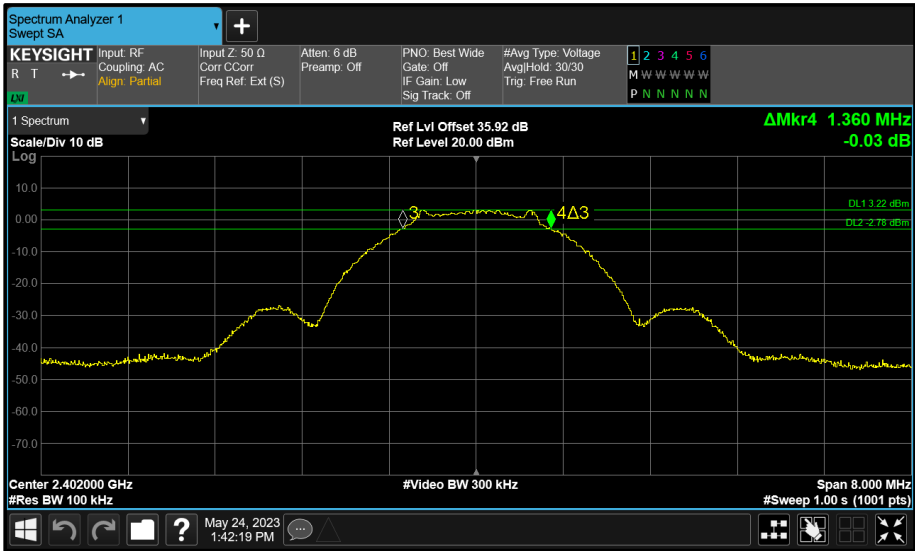


Figure 7 - A (A) 2402 MHz (CH37) 6 dB Bandwidth

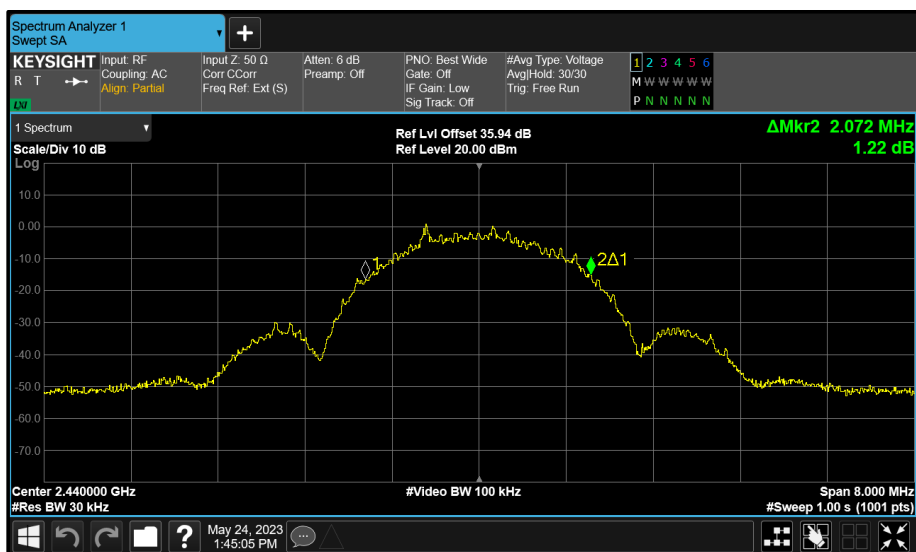


Figure 8 - A (A) 2440 MHz (CH17) 99% Bandwidth

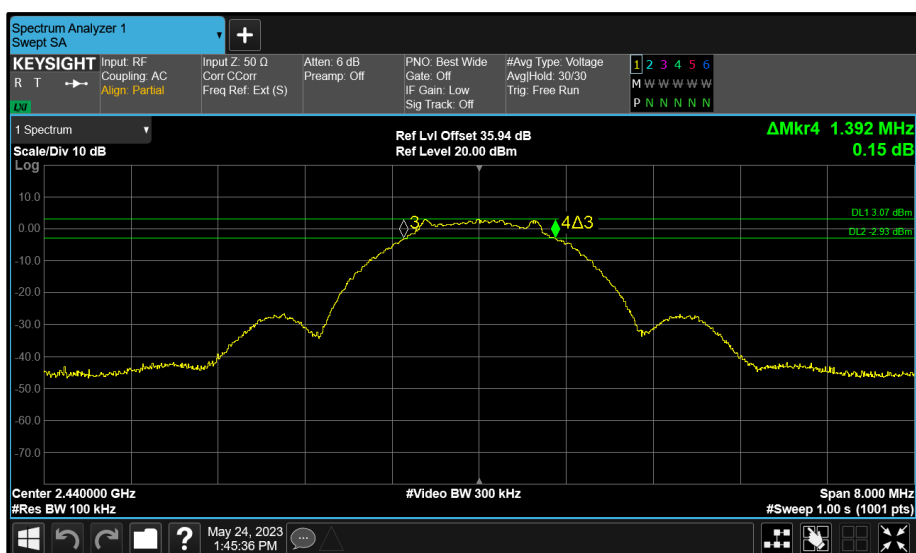


Figure 9 - A (A) 2440 MHz (CH17) 6 dB Bandwidth

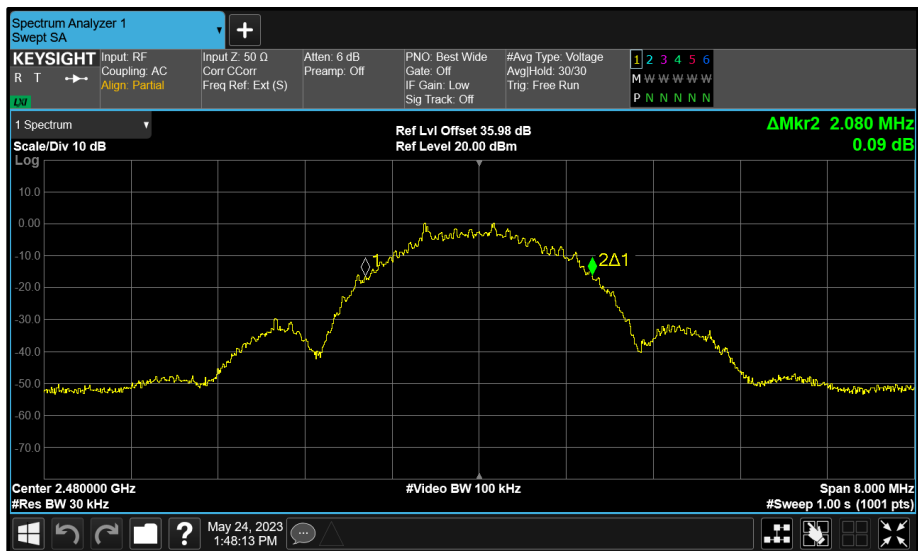


Figure 10 - A (A) 2480 MHz (CH39) 99% Bandwidth

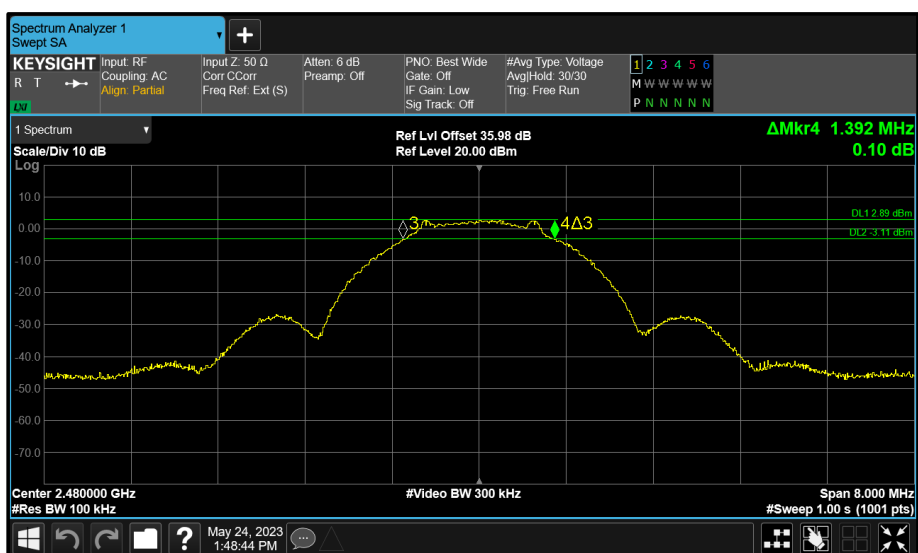


Figure 11 - A (A) 2480 MHz (CH39) 6 dB Bandwidth

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2) and ISSED RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.



2.5.7 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
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	5759	12	05-Jul-2023

Table 29



3 Measurement Uncertainty

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

Test Name	Measurement Uncertainty
Power Spectral Density	± 1.49 dB
Maximum Conducted Output Power	± 1.38 dB
Restricted Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Emission Bandwidth	± 42.87 kHz

Table 30

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.