

ISED CABid: ES1909

Lab. Company Number: 4621A

Test Report No:
82047RRF.002

Partial Test Report

USA FCC Part 15.247, 15.209

CANADA RSS-247, RSS-Gen

(*) Identification of item tested	Outdoor Multisport Watch
(*) Trademark	Polar
(*) Model and /or type reference	Model name: 6G Commercial name: Grit X2
Other identification of the product	FCC ID: INW6B IC: 6248A-6B
(*) Features	Bluetooth LE, GNSS: Dual band GNSS (L1 & L5), GPS, Galileo, Glonass, BDS HW version: 007114910 SW version: 3.0.7
Applicant	Polar Electro Oy Professorintie 5, 90440 Kempele, FINLAND
Test method requested, standard	USA FCC Part 15.247 (10-1-23 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.209 (10-1-23 Edition): Radiated emission limits; general requirements. CANADA RSS-247 Issue 3 (August 2023). CANADA RSS-Gen Issue 5 amendment 2 (February 2021). Guidance for Performing Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid Systems Devices Operating Under Section 15.247 of the FCC Rules. 558074 D01 Meas Guidance v05r02 dated April 2, 2019. ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager
Date of issue	2025-05-21
Report template No	FDT08_25 (*) "Data provided by the client"

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Acronyms

Acronym ID	Acronym Description
Detector	Detector used
Equipment	Equipment Type
EUT	Equipment Under Test
Freq	Frequency
Freq Rng	Frequency Range
MP	Measurement Point
Mod	Modulation
Operation Band	Operation Band
Pol	Polarization
Port	Active Port
RU	Resource Unit
Unwanted Freq	Unwanted Emissions Frequency
Unwanted Lvl	Unwanted Emissions Level

Competences and guarantees

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Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

The total uncertainty of the measurement system for the radiated emissions of EUT from 30 MHz to 1 GHz is:
Measurement uncertainty $\leq \pm 5,35$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the radiated emissions of EUT from 1 GHz to 17 GHz is:
Measurement uncertainty $\leq \pm 4,32$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the radiated emissions of EUT from 17 GHz to 26 GHz is:
Measurement uncertainty $\leq \pm 5,51$ dB with factor ($k = 2$).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample consists of an Outdoor Multisport Watch. Outdoor Multisport Watch with Bluetooth low-energy connectivity and wrist-based optical heart rate.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results. The laboratory is not responsible for such information and it is not covered by accreditation.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	82047_4.1	Smartwatch	Outdoor Multisport Watch	C5126H0200163	2025-03-31	Element Under Test
	82047_7.1	Charger Cable	-	-	2025-03-31	Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Sample used for Radiated test

Test sample description

Ports..... :	Port name and description		Cable				
			Specified max length [m]	Attached during test	Shielded		
	USB port		0,6	[X]	[]		
Supplementary information to the ports..... :							
Rated power supply	Voltage and Frequency			Reference poles			
				L1	L2	L3	N
	[]	AC:	[]	[]	[]	[]	[]
	[X]	DC: 3,85 Vdc					
Rated Power	1,24 W						
Clock frequencies..... :	32 MHz, 26 MHz, 24 MHz, 32.768 kHz						
Other parameters							
Software version	3.0.7						
Hardware version	007114910						
Dimensions in cm (W x H x D)							
Mounting position	[]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[X]	Hand-held equipment					
	[]	Other:					
Modules/parts..... :	Module/parts of test item			Type		Manufacturer	
							
Accessories (not part of the test item)	Description			Type		Manufacturer	
							
Documents as provided by the applicant..... :	Description			File name		Issue date	
							

Identification of the client

Polar Electro Oy
Professorintie 5, 90440 Kempele, FINLAND

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2025-04-21
Date (finish)	2025-04-23

Document history

Report number	Date	Description
82047RRF.002	2025-05-21	First release.

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Valentin Andarias Diaz.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
06791	SEMIANECHOIC ABSORBER LINED CHAMBER IV	FACT 3 200 STP	ETS LINDGREN	N/A
06792	SHIELDED ROOM	S101	ETS LINDGREN	N/A
06615	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2026-04-24
06609	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2026-04-21
06143	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2027-01-22
06142	PRE-AMPLIFIER G>38dB 30MHz-6GHz	BLNA 0360-01N	BONN ELEKTRONIK	2025-07-25
06496	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK	2026-12-01
03783	PRE-AMPLIFIER G>30dB 1GHz-18GHz	BLMA 0118-3A	BONN ELEKTRONIK	2026-03-17
07817	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2026-07-01
04657	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2026-06-12
10573	PRE-AMPLIFIER G>46dB 18-40 GHz	BLMA 1840-5G	BONN ELEKTRONIK	2026-03-07
06157	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2026-01-01
07445	DC POWER SUPPLY 30V/5A	U8002A	KEYSIGHT TECHNOLOGIES	N/A
07760	DIGITAL MULTIMETER	175	FLUKE	2025-11-07
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	N/A

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P

Summary

Bluetooth Low Energy (2M)

FCC PART 15 PARAGRAPH/ RSS-247			
Requirement – Test case		Verdict	Remark
FCC 15.247 (a)(2) / RSS-247 5.2. (a)	6 dB Bandwidth	N/M	(1)
FCC 15.247 (b) / RSS-247 5.4. (d)	Maximum output power and antenna gain	N/M	(1)
FCC 15.247 (d) / RSS-247 5.5.	Band-edge emissions compliance (Transmitter)	N/M	(1)
FCC 15.247 (e) / RSS-247 5.2. (b)	Power spectral density	N/M	(1)
FCC 15.247 (d) / RSS-247 5.5.	Emission limitations radiated (Transmitter)	P	(2)
<u>Supplementary information and remarks:</u>			
(1) Test not requested by the client.			
(2) Only has been requested a Spot-check. The Middle Channel of the BTLE 2M has been determined as worst case.			

Appendix A: Test results. Bluetooth Low Energy (2M)

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TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal: 3.85 Vdc
Type of Power Supply: Battery.

ANTENNA (*):

Type of Antenna: Internal L-antenna
Maximum Declared Antenna Gain: -1 dBi

TEST FREQUENCIES FOR RADIATED TESTS (*):

Modulation	Data rates	Middle Channel
BTLE GFSK	2M 2 Mbit/s	2440 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

TEST CASES DETAILS

RSS-247 5.5 / FCC 15.247 (d) Emission limitations radiated (Transmitter)

Limits

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c) / RSS-Gen):

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	-	300
0.490 - 1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table, specified when measuring with peak detector function.

RSS-247:

Attenuation below the general field strength limits specified in RSS-Gen is not required.

Frequency range tested for Radiated emissions:

Start frequency: no radiofrequency signal generated in the device found below 10th sub-harmonic, no further investigation required.

Stop frequency: it has been performed the radiated spurious emissions until 10th harmonic.

Modulation: BTLE 5.0 (GFSK 2 Mbit/s) (worst-case)

Freq Rng (GHz)	Operation Band (MHz)	Equipment	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[0.03, 1]	[2400, 2483.5]	Digital Transmission System (DTS)	2440.00000	1	46.005	26.47	V	QP
					55.850	31.36		
					68.315	27.59		
					106.630	22.20		
					597.499	28.12		
					837.768	30.32		

Verdict

Pass

Attachments

Frequency Range GHz = [0.03, 1]

Operation Band MHz = [2400, 2483.5]

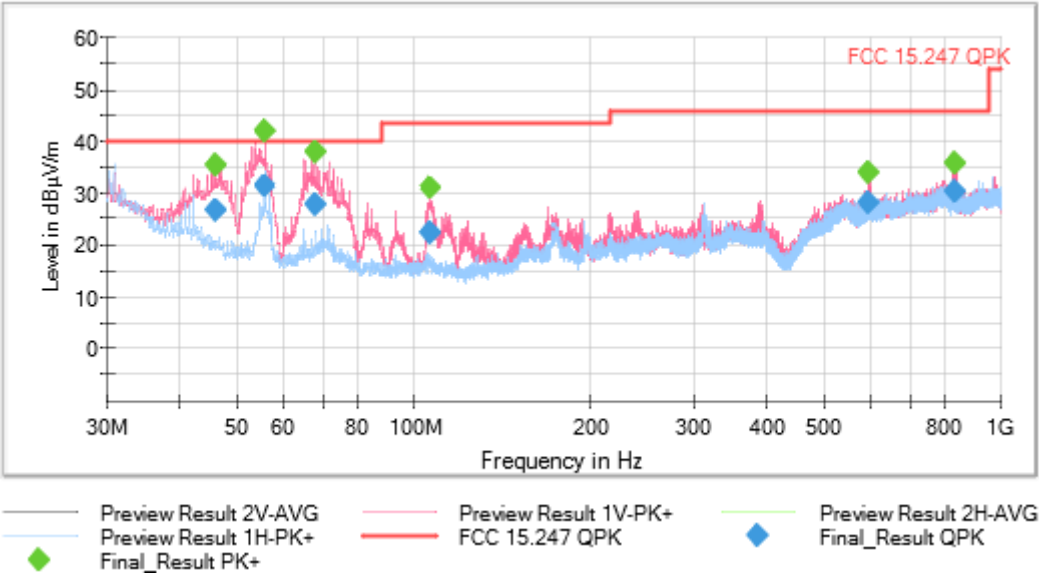
Equipment Type = Digital Transmission System (DTS)

Frequency MHz = 2440.00000

Active Port = 1

Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



Tables:

Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	0 dB

Frequency Range GHz = [1, 17]

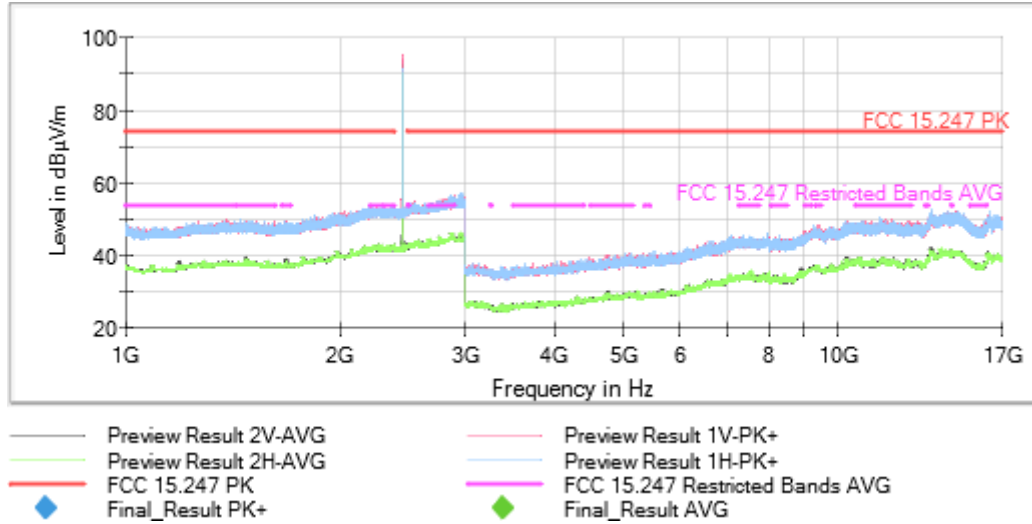
Operation Band MHz = [2400, 2483.5]

Equipment Type = Digital Transmission System (DTS) Frequency MHz = 2440.00000

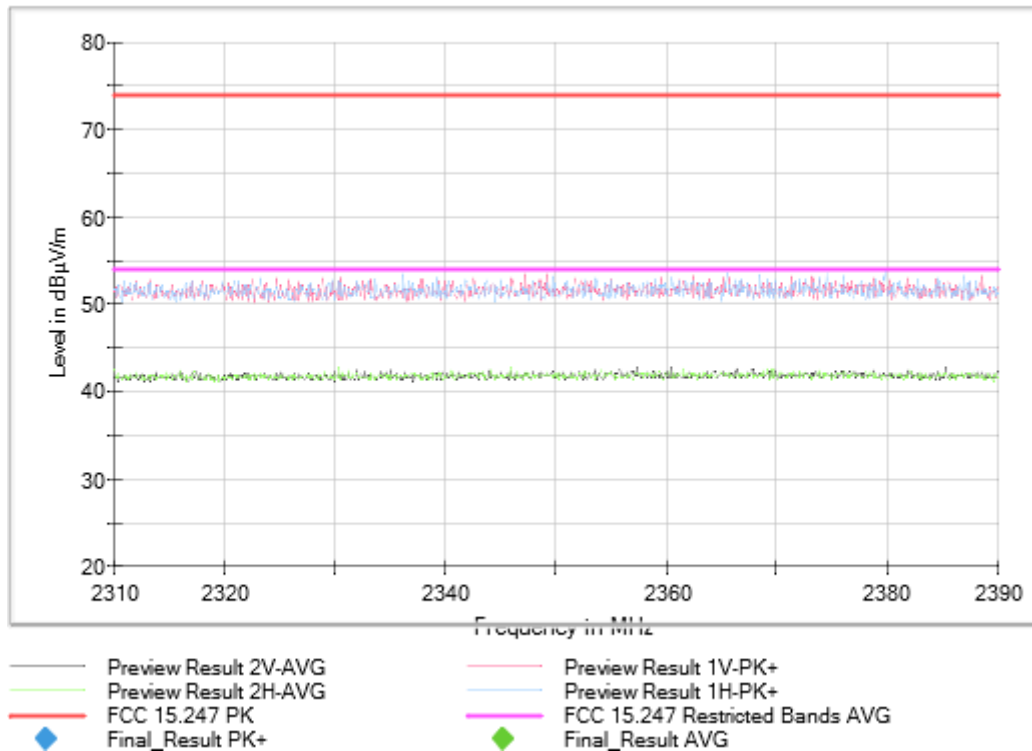
Active Port = 1

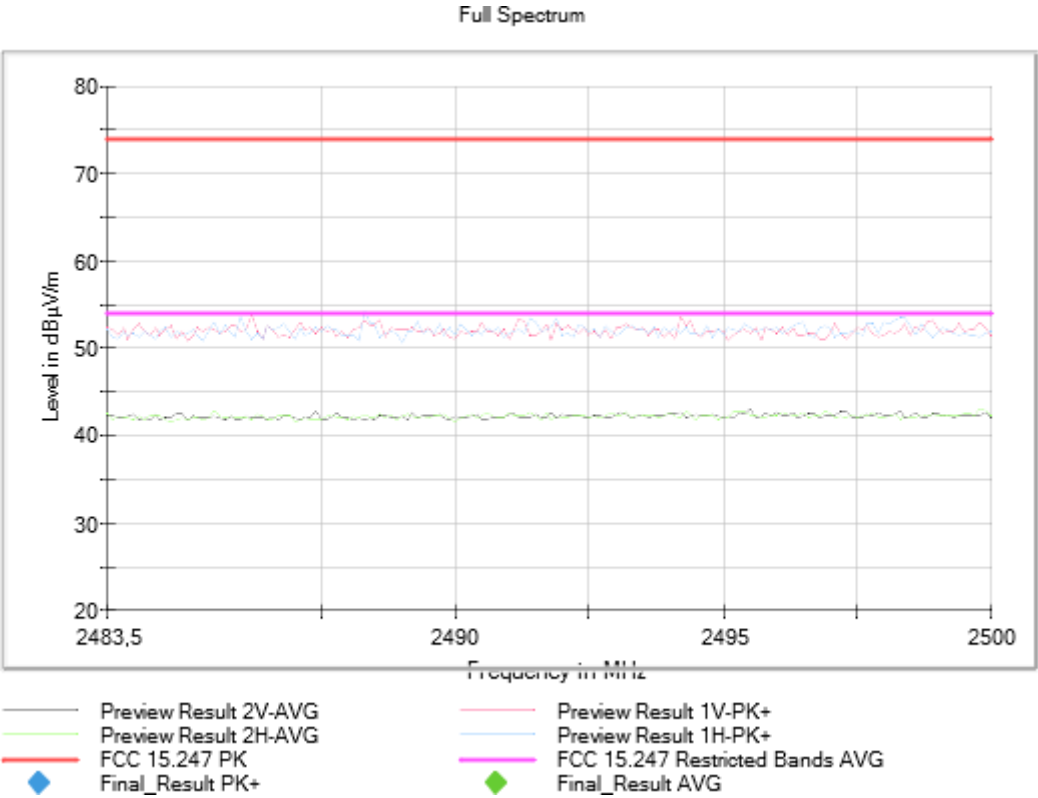
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



Full Spectrum





Tables:
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 3 GHz	100 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
3 GHz - 17 GHz	466,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [17, 26]

Operation Band MHz = [2400, 2483.5]

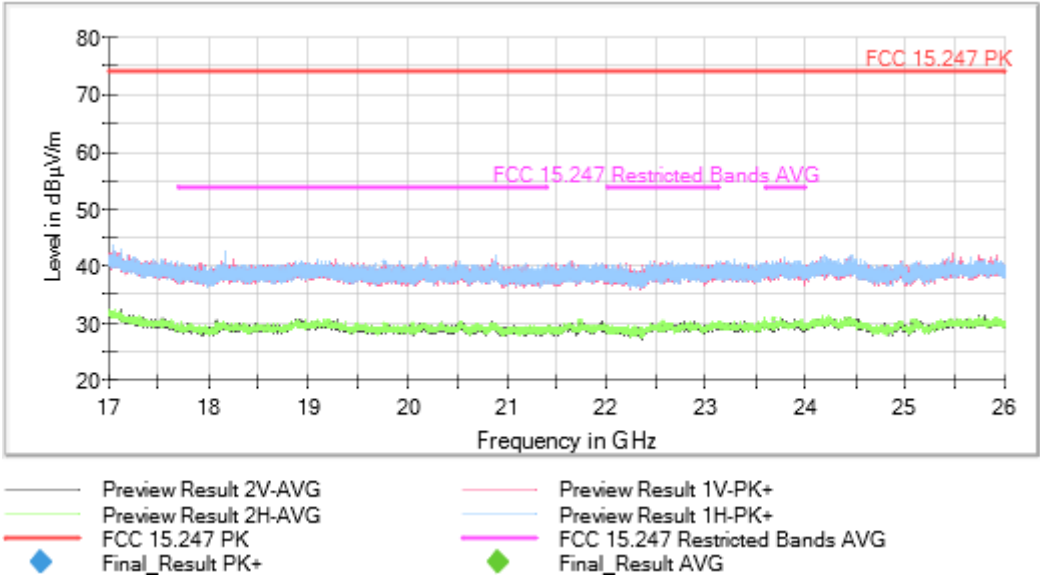
Equipment Type = Digital Transmission System (DTS)

Frequency MHz = 2440.00000

Active Port = 1

Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



Tables:
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
17 GHz - 26 GHz	281,25 kHz	PK+ ; AVG	1 MHz	1 s	0 dB