

RF Exposure Evaluation Report

Date of Report:	17/09/2025	Client's Contact person:	Michal Maslik
Number of pages:	9	Responsible Test engineer:	Kalle Orava
Testing laboratory:	Verkotan Oy Elektroniikkatie 17 90590 Oulu Finland	Client:	Circadia Technologies Ltd 92 Albert Embankment Tintagel House London SE1 7TY UK
Tested device:	Circadia C300 Contactless Cardiorespiratory Monitor		
Related reports:	-		
Testing has been carried out in accordance with:	47CFR §2.1091 Radiofrequency Radiation Exposure Evaluation: Mobile Devices 447498 D04 Interim General RF Exposure Guidance v01		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory		
Test Results:	The EUT complies with the requirements in respect of all parameters subject to the test. The test results relate only to devices specified in this document		
Date and signatures:	17.09.2025		

Miia Nurkkala
Laboratory Manager

TABLE OF CONTENTS

1. EVALUATION SUMMARY.....	3
1.1 TEST DETAILS	3
1.2 EVALUATION RESULTS	4
1.2.1 Standalone Exposure	4
1.2.2 Simultaneous Transmission Exposure.....	4
2. DESCRIPTION OF THE DEVICE UNDER TEST (DUT).....	5
2.1 SUPPORTED FREQUENCY BANDS AND OPERATIONAL MODES	6
3. TEST EXCLUSIONS.....	7
4. RESULTS.....	8
4.1 STANDALONE EXPOSURE.....	8
4.2 SIMULTANEOUS TRANSMISSION ANALYSIS	9

1. EVALUATION SUMMARY

1.1 Test Details

Device under Test (DUT):

Product:	Circadia C300 Contactless Cardiorespiratory Monitor
Manufacturer:	Circadia Technologies Ltd
Model:	C300
Hardware Version:	C300
FCC ID:	2BPIS-C300
Mobile/Portable device:	Mobile
FCC Test Firm Designation Number:	FI0005
Document ID:	FCC_RF Exposure Evaluation_Circadia C300 Contactless Cardiorespiratory Monitor_ID7668_17092025.docx
Document History:	Initial version

1.2 Evaluation Results

1.2.1 Standalone Exposure

The device conforms to the requirements of the standards when the maximum ERP is less than or equal to the Test Exclusion Threshold Limit.

Mode of Operation	Maximum ERP [mW]	Separation Distance [mm]	MPE-Based Exemption threshold [mW]	Evaluation Result
2.4 GHz WLAN	144.88	200	768	PASS
60GHz FMCW Radar	18.75	200	768	PASS

1.2.2 Simultaneous Transmission Exposure

Highest Simultaneous Transmission SAR	$\sum ERP_j / ERP_{th,j}$	Limit	Evaluation Result
2.4 GHz WLAN + 60GHz FMCW Radar	0.21	1	PASS

2. DESCRIPTION OF THE DEVICE UNDER TEST (DUT)

The C300 Monitor is a contactless cardiorespiratory monitor that is either wall-mounted above a patient's bed or placed at a bedside table. The Monitor records heart rate and respiratory rate of adult patients in clinical settings such as hospitals and post-acute and long-term care facilities (e.g., nursing homes, skilled nursing facilities, inpatient rehabilitation facilities, long-term care hospitals). In addition, the Circadia C300 System is intended to monitor motion and user presence or absence in the vicinity of the Monitor. The Monitor continuously streams data to the Cloud Service over a 2.4GHz Wi-Fi network. Bio motion signals are monitored using a 60GHz FMCW radar unit.



Figure 1. Overview of the DUT

Exposure Environment	General population, uncontrolled
-----------------------------	----------------------------------

2.1 Supported Frequency Bands and Operational Modes

TX Frequency bands	Modes of Operation	Transmitter Frequency Range [MHz]	EIRP [dBm]
	2.4 GHz WLAN	2412 – 2462	23.76
	60GHz FMCW Radar	58000 – 61500	14.88

Origin of the EIRP information for Wlan is Sporton International RF Exposure Evaluation Report No. : FA1N0920

Kiwa 60 GHz FMCW Radar report number reference: 05-14955-4-25 Issue 01, shows EIRP measurement for the radar.

3. TEST EXCLUSIONS

FCC MPE-based Exemption thresholds in 447498 D04 Interim General RF Exposure Guidance v01 are shown in a table below.

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES
SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source Frequency			Minimum Distance			Threshold ERP
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	–	1.34	159 m	–	35.6 m	$1,920 R^2$
1.34	–	30	35.6 m	–	1.6 m	$3,450 R^2/f^2$
30	–	300	1.6 m	–	159 mm	$3.83 R^2$
300	–	1,500	159 mm	–	31.8 mm	$0.0128 R^2 f$
1,500	–	100,000	31.8 mm	–	0.5 mm	$19.2 R^2$
Subscripts L and H are low and high; λ is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.						

According to Table B.1 in 447498 D04 Interim General RF Exposure Guidance v01, FCC MPE-based Exemption threshold can be calculated according to formulas:

$$\begin{aligned}
 300\text{-}1500 \text{ MHz:} & \quad 0.0128 * R^2 * f \\
 1500\text{-}100\,000 \text{ MHz:} & \quad 19.2R^2
 \end{aligned}$$

where:

R = Separation distance (m)

f = Frequency (MHz)

Modes of Operation	Frequency [MHz]	Separation Distance [mm]	P_{th} [mW]
2.4 GHz WLAN	2412	200	768
60GHz FMCW Radar	58000	200	768

4. RESULTS

4.1 Standalone Exposure

Modes of Operation	Frequency [MHz]	Distance, R [mm]	Time Averaging Factor	Time-Averaged Input Power to Antenna, P [dBm]	Power Gain of Antenna, G [dBi]	Time-Averaged EIRP [dBm]	Time-Averaged ERP [dBm]	Time-Averaged ERP [mW]	P _{th} [mW]
2.4 GHz WLAN	2412	200	1	20.50	3.26	23.76	21.61	144.88	768
60GHz FMCW Radar	58000	200	1	NA	NA	14.88	12.73	18.75	768

The ERP of the DUT is below the test exclusion threshold.

4.2 Simultaneous Transmission Analysis

The simultaneous transmission compliance is determined by sum of the ratios that can be transmitting simultaneously using formula C.1 from 447498 D04 Interim General RF Exposure Guidance v01.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1 \quad (C.1)$$

where

ERP_j = the available maximum time-averaged power or the ERP, whichever is greater, of fixed, mobile, or portable RF source j.

$ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least $\lambda/2\pi$, according to the applicable § 1.1307(b)(3)(i)(C) Table 1 formula at the location in question.

Following simultaneous transmission combinations are supported:

- 2.4 GHz WLAN + Radar

Modes of Operation	$ERP_j / ERP_{th,j}$
2.4 GHz WLAN	0.19
60GHz FMCW Radar	0.024
Simultaneous Compliance Ratio	0.21

The sum of simultaneously transmitting radios is below 1 thus the results **PASS**.