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Test report No:
NIE: 78983RAN.004

# Assessment report
## RF EXPOSURE REPORT ACCORDING TO
FCC 47 CFR Part 2.1093
FCC 47 CFR Part 1.1307

| | |
|---|---|
| (*) Identification of item under evaluation | A multifunctional device that powers bicycle lights, charges external devices via USB-C, stores energy in an external battery, and connects to a mobile phone via Bluetooth LE to display device and battery status. |
| (*) Trademark | Canyon |
| (*) Model and /or type reference | GP0625-01 |
| (*) Other identification of the product | FCC ID : 2BNCI-GP062501<br>IC : 33475-GP062501<br>HW version : 0.0.1<br>SW Version : 0.0.1 |
| (*) Features | Bluetooth LE |
| (*) Manufacturer | Canyon Bicycles GmbH<br>KARL TESCHE STRASSE 12, 56073 KOBLENZ, Germany |
| Test method requested, standard | FCC 47 CFR Part 2.1093. Radiofrequency radiation exposure evaluation: portable devices.<br>FCC 47 CFR Part 1.1307: Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared. |
| Summary | IN COMPLIANCE |
| Approved by (name / position & signature) | Manuel García<br>Antennas Lab Technical Responsible<br>74862741H MANUEL GARCÍA (C:A29507456) 74862741H MANUEL GARCÍA (C:A29507456) 2025.02.26 15:47:03 +01'00' |
| Date of issue | 2025-02-26 |
| Report template No | FAN24_03<br>(*) "Data provided by the client" |

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# 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 under evaluation", "Trademark", "Model and/or type reference", “General description of the device”, “Other identification of the product”).
2. Maximum output power, maximum antenna gain and use distance information.
3. The device under evaluation consists of a device that powers bicycle lights by drawing energy from either a bicycle dynamo or a USB-C input, storing it in an external battery connected to the device. It can also use the stored energy to charge external devices through the same USB-C interface. Additionally, the device supports Bluetooth LE, allowing it to connect to a mobile phone to display information about the device and the battery’s state of charge.

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.

# Identification of the client

Canyon Bicycles GmbH

KARL TESCHE STRASSE 12, 56073 KOBLENZ, Germany

# Document history

| Report number | Date | Description |
|---|---|---|
| 78983RAN.004 | 2025-02-26 | First release |

# **Appendix A:** FCC RF Exposure assessment result

# General description of the device under evaluation

Table 1 provides details for the RF Evaluation, based on the following declared device specifications:

**Description and technologies:** the device under evaluation consists of a device that powers bicycle lights by drawing energy from either a bicycle dynamo or a USB-C input, storing it in an external battery connected to the device. It can also use the stored energy to charge external devices through the same USB-C interface. Additionally, the device supports Bluetooth LE, allowing it to connect to a mobile phone to display information about the device and the battery's state of charge with the following features: Bluetooth LE.

**Evaluation Distance:** according to the manufacturer, during normal use, the device's radiating structures will maintain a separation distance greater than 1 cm from nearby users. For assessment purposes, a conservative evaluation distance of 1 cm has been applied.

**Maximum output power:**

- Values corresponding to maximum output power have been declared by the device manufacturer (maximum output power values stated in module manufacturer´s datasheet.

**Antennas:** the device supports one antenna for the Bluetooth LE transmitting technology:

- "PCB printed antenna" for Bluetooth transmissions.
- Values corresponding to antenna gain have been declared by the device manufacturer (maximum peak gain stated in antenna manufacturer´s datasheet).

The following table shows the information provided above:

| Technology / Mode | Operating Band | Frequency under evaluation (MHz) | Maximum Conducted Output Power (Incl. Tune-Up) (dBm) | Antenna peak gain (dBi) | Maximum E.R.P. (dBm) | Maximum E.R.P. (mW) | Maximum E.I.R.P. (dBm) | Maximum E.I.R.P. (mW) |
|---|---|---|---|---|---|---|---|---|
| BTLE | 2.4 GHz | 2400 - 2483.5 | 8.00 | -1.00 | 4.85 | 3.05 | 7.00 | 5.01 |

**Table 1:** Equipment specifications

# Evaluation Results

**Determination of Exemption according to FCC 47 CFR Part 1.1307:**

The evaluation according to the minimum intended use distance of 1cm will be as follow:

| Technology / Mode | Operating Band | Frequency under evaluation (MHz) | Distance (cm) | Maximum Conducted Power (mW) | §1.1307(b)(3).i.(C) Exposure Limit (mW) | § 1.1307(b)(3).i.(B) Exposure Limit (mW) | Verdict |
|---|---|---|---|---|---|---|---|
| BTLE | 2.4 GHz | 2400 - 2483.5 | 1.00 | 6.31 | 1.92 | 10.17 | Pass |

**Table 2:** FCC Exemption Evaluation Result

The computed value(s) are below the exemption limit(s), so these modes meet the requirements stated in FCC 47 CFR Part 1.1307.

# **Appendix B:** FCC RF Exposure information

# RF Exposure determination of exemption

According to FCC 47 CFR §1.1307 (b)(3) Determination of exemption:

(i) For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2), a single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^x & d \leq 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \leq 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \leq f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \leq f \leq 6\ \text{GHz} \end{cases}$$

$d$ = the separation distance (cm);

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

**TABLE 1 TO §1.1307(b)(3)(i)(C)—SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION**

| RF Source frequency (MHz) | Threshold ERP (watts) |
|---|---|
| 0.3-1.34 | 1,920 $R^2$. |
| 1.34-30 | 3,450 $R^2/f^2$. |
| 30-300 | 3.83 $R^2$. |
| 300-1,500 | 0.0128 $R^2f$. |
| 1,500-100,000 | 19.2$R^2$. |

(ii) For multiple RF sources: Multiple RF sources are exempt if:

(A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph (b)(3)(i)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).

(B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

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

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for Pth, including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

Pi = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

Pth,i = the exemption threshold power (Pth) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i.

ERPj = the ERP of fixed, mobile, or portable RF source j.

ERPth,j = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least λ/2π according to the applicable formula of paragraph (b)(3)(i)(C) of this section.

Evaluated,k = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

Exposure Limit,k = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from §1.1310 of this chapter.

The available maximum time-averaged power or effective radiated power (ERP), can be calculated using the following formula to assess compliance with the Exemption Limits:

$P_{E.I.R.P.} = P_T + G_T - L_C$

Where:

$P_T$= transmitter time-averaged output power (including Duty Cycle and tune-up tolerance, if applicable)

$G_T$= gain of the transmitting antenna

$L_C$ = signal attenuation in the connecting cable between the transmitter and the antenna if applicable

$P_{E.R.P.} = P_{E.I.R.P.} – 2.15$ dB