# FCC RF Exposure Exemption report

**for**

**GPS enabled cycling computer**

**Model No.: Rider 460**

**FCC ID: YDM-CA2205**

of

Applicant: Bryton Inc.
Address: 3F-1., No.79-1, Zhouzi St., Neihu Dist., Taipei City 114, Taiwan

Tested and Prepared

by

**Worldwide Testing Services (Taiwan) Co., Ltd.**

**FCC Registration No.: TW1477, TW1072**

**Industry Canada filed test laboratory Reg. No.: 20037, 5107A**

**Report No.: W6M22305-22653-EE**

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: wts@wts-lab.com

Registration number: W6M22305-22653-EE
FCC ID: YDM-CA2205

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# 1 General Information

## 1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.
The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

Laboratory disclaimer-
1. The test results of this test report relate exclusively to the item tested as specified in 1.5.
2. The test report may only be reproduced or published in full.
3. Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.
4. Antenna gain is provided by applicant and laboratory issue relevant data and results.

**Tester:**

| Date | WTS-Lab. | Name | Signature |
|---|---|---|---|
| August 25, 2023 | | Sora Kuo | Sora |

**Technical responsibility for area of testing:**

| Date | WTS | Name | Signature |
|---|---|---|---|
| August 25, 2023 | | Kevin Wang | Kevin Wang |

Registration number: W6M22305-22653-EE
FCC ID: YDM-CA2205

## 1.2 Testing laboratory

### 1.2.1 Location

10m OATS
No.5-1, Lishui, Shuang Sing Village, Wanli Dist.,
New Taipei City 207, Taiwan (R.O.C.)

3 meter semi-anechoic chamber
No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist.,
Taipei City 114, Taiwan (R.O.C.)
Tel: 886-2-6613-0228

Worldwide Testing Services (Taiwan) Co., Ltd.
6F., No. 58, Ln. 188, Ruiguang Rd., Neihu Dist.,
Taipei City 114 , Taiwan (R.O.C.)
Tel: 886-2-6606-8877

### 1.2.2 Details of accreditation status

Accredited testing laboratory
FCC filed test laboratory Reg. No.: TW1477, TW1072
Industry Canada filed test laboratory Reg. No.: 20037, 5107A

**Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :**

| | |
|---|---|
| Name: | ./. |
| Accredited no.: | ./. |
| Street: | ./. |
| Town: | ./. |
| Country: | ./. |

## 1.3 Application details

**Approval holder**

| | |
|---|---|
| Name: | Bryton Inc. |
| Street: | 3F-1., No.79-1, Zhouzi St., Neihu Dist., |
| Town: | Taipei City 114, |
| Country: | Taiwan |

Registration number: W6M22305-22653-EE
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**Manufacturer: (if applicable)**

1.

| | |
|---|---|
| Name: | Pan-international Precision Electronic Co.,Ltd |
| Street: | Xinlian Indl. Area , Hu-men , |
| Town: | Dongguan ,Guangdong , |
| Country: | China |

2.

| | |
|---|---|
| Name: | Q.S.C INDUSTRY CO.LTD |
| Street: | 5F., No. 193-2, Zhongxing N. St., Sanchong Dist., |
| Town: | New Taipei City |
| Country: | Taiwan |

| | |
|---|---|
| Date of receipt of test item: | May 11, 2023 |
| Date of test: | from May 12, 2023 to July 27, 2023 |

## 1.4 General information of Test item

| | |
|---|---|
| Type of test item: | GPS enabled cycling computer |
| Model no.: | Rider 460 |
| Multi-listing model no.: | ./. |
| Brand name: | Bryton |
| Power supply: | Battery 3.7Vd.c., 500mAh, 1.85Wh |
| | USB 5Vd.c. |
| Type of antenna: | PCB antenna |
| Antenna gain: | 0 dBi |
| Technical data: | |

| Mode | Channel | Conducted Power (dBm) |
|---|---|---|
| BLE 1M | Ch 0 : 2402 MHz | -1.88 |
| | Ch 19 : 2440 MHz | -2.20 |
| | Ch 39 : 2480 MHz | -2.23 |

| Mode | Channel | Conducted Power (dBm) |
|---|---|---|
| BLE 2M | Ch 0 : 2402 MHz | -1.81 |
| | Ch 19 : 2440 MHz | -2.23 |
| | Ch 39 : 2480 MHz | -2.19 |

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Operation modes: Duplex

Modulation type: GFSK

Sample no.: #02

Special statement: ./.

Classification:

| | |
|---|---|
| Fixed Device | ☐ |
| Mobile Device (Human Body distance ＞ 20cm) | ☐ |
| Portable Device (Human Body distance ＜ 20cm) | ☒ |

## 1.5 Duty cycle and factor

The duty factor is computed as [10 log (1 / D)], where D is the duty cycle.

| Mode | $T_{on}$ (ms) | $T_{on}+T_{off}$ (ms) | Duty cycle (%) | 1/T - VBW (kHz) |
|---|---|---|---|---|
| BLE 1M | 0.404 | 0.625 | 64.64% | 2.48 |
| BLE 2M | 0.224 | 0.633 | 35.39% | 4.46 |

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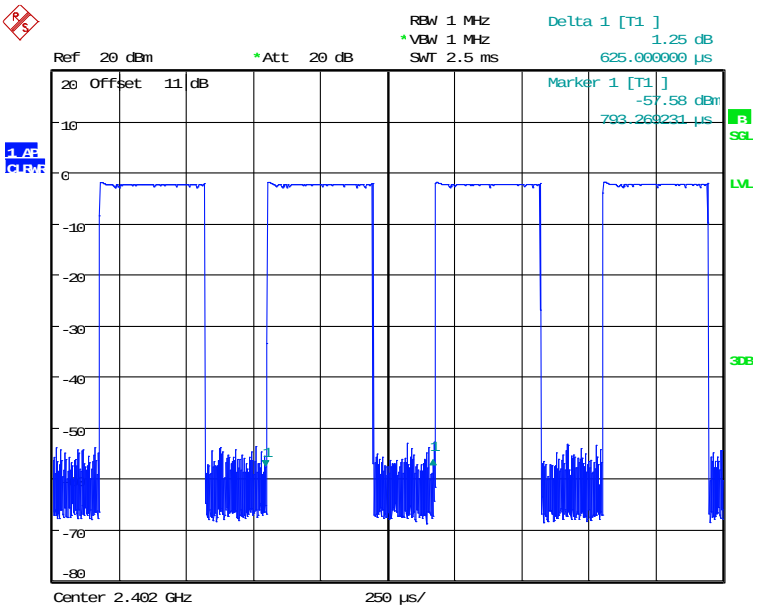
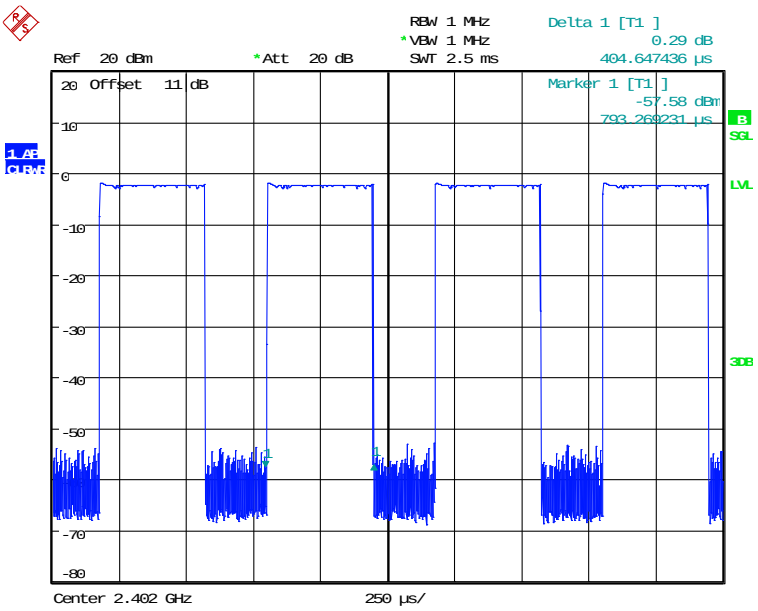
FCC ID: YDM-CA2205
Duty cycle plot
BLE
1M




DUTY BLE 1M
Date: 15.MAY.2023 16:18:50

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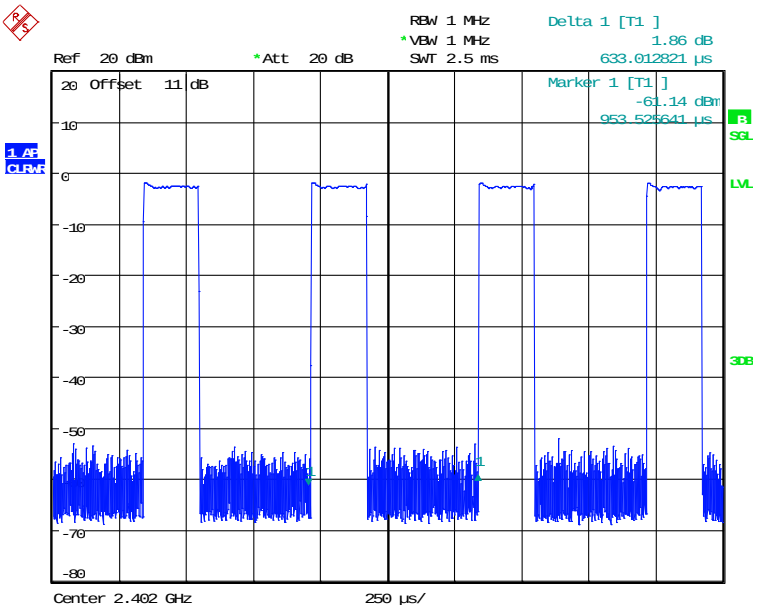
Registration number: W6M22305-22653-EE
FCC ID: YDM-CA2205
2M

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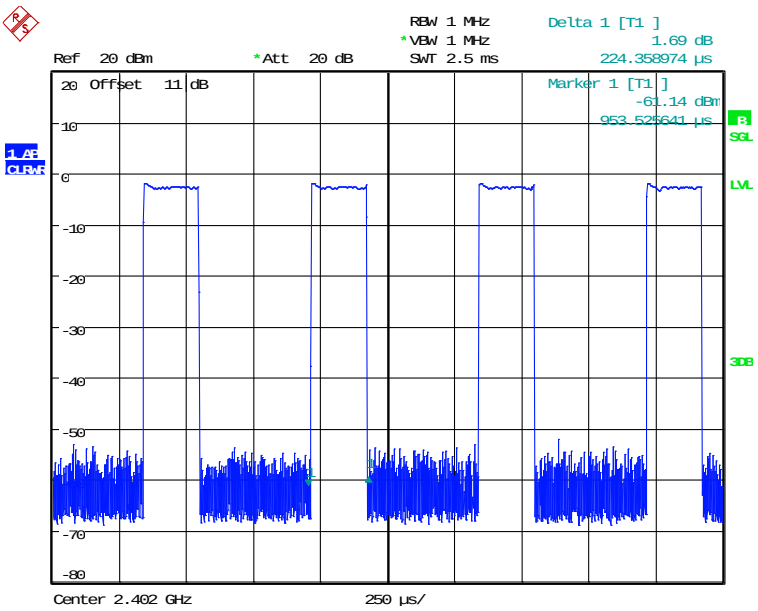


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## 1.6 Test standards

47 CFR FCC Part 2.1093
447498 D04 Interim General RF Exposure Guidance v01

# 2 Test configuration

## 2.1 Test environment

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

Extreme conditions parameters: ./.

## 2.2 Measurement uncertainty

| Test item Name | Uncertainty |
|---|---|
| Estimation Result of Uncertainty of Conducted Output Power Measurement (Peak Output Power (transmitter)) | Expanded Uncertainty：1.48 dB |

The decision rule is: Measurement uncertainty is not included in the calculation of test results.

## 2.3 Test Equipment List

**RF Conducted**

| No. | Test equipment | Type | Serial No. | Manufacturer | Cal. Date | Next Cal. Date |
|---|---|---|---|---|---|---|
| ETSTW-CE 009 | TEMP.&HUMIDITY CHAMBER | GTH-225-40-1P-U | MAA0305-009 | GIANT FORCE | 2023/7/28 | 2024/7/27 |
| ETSTW-RE 050 | Attenuator 10dB | 50HF-010-1 | None | JFW | 2023/2/17 | 2024/2/16 |
| ETSTW-RE 051 | Attenuator 6dB | 50HF-006-1 | None | JFW | 2023/2/17 | 2024/2/16 |
| ETSTW-RE 053 | Attenuator 3dB | 50HF-003-1 | None | JFW | 2023/3/22 | 2024/3/21 |
| ETSTW-RE 055 | SPECTRUM ANALYZER | FSU 26 | 200074 | R&S | 2023/3/22 | 2024/3/21 |
| ETSTW-RE 060 | Attenuator 30dB | 5015-30 | F651012z-01 | ATM | 2023/2/17 | 2024/2/16 |
| ETSTW-RE 099 | DC Block | 50DB-007-1 | None | JFW | 2023/2/17 | 2024/2/16 |
| ETSTW-RE 112 | AC POWER SOURCE | TFC-1005 | T-0A023536 | T-Power | Function test | |
| ETSTW-RE 127 | RF Switch Box | RFS-01 | None | WTS | 2023/2/17 | 2024/2/16 |
| ETSTW-RE 153 | Signal Analyzer | FSV40 | 101929 | R&S | 2022/10/3 | 2023/10/2 |
| ETSTW-GSM 023 | Power Divider | 4901.19.A | None | SUHNER | 2022/9/2 | 2023/9/1 |
| ETSTW-Cable 027 | Microwave Cable | SUCOFLEX 104 | 279083 | HUBER+SUHNER | 2023/4/27 | 2024/4/26 |
| ETSTW-Cable 030 | Microwave Cable | SUCOFLEX 104（S_Cable 9）（S_Cable 9） | 279067 | HUBER+SUHNER | 2023/02/17 | 2024/2/16 |
| ETSTW-Cable 045 | Microwave Cable | SUCOFLEX 104 | 325536 | HUBER+SUHNER | 2022/10/21 | 2023/10/20 |
| ETSTW-Cable 058 | Microwave Cable | SUCOFLEX 104 | none | HUBER+SUHNER | 2023/5/26 | 2024/5/25 |
| WTSTW-SW 008 | Signal studio | Agilent | None | AUDIX | Version 2.0.0.1 | |

# 3 Exemption calculation

## 1-mW Test Exemption

The maximum power is -1.81 dBm (0.6592 mW)

0.6592mW ≤ 1mW

The device is qualify for simultaneous transmission SAR exemption.