

**FCC RF Exposure Exemption report**

**for**

**GPS enabled cycling computer**

**Model No.: Rider 750 SE**

**FCC ID: YDM-CA2203**

**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.: W6M22302-22457-EE**

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.  
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# Worldwide Testing Services(Taiwan) Co., Ltd.

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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 its 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:**

March 17, 2023

Rick Chen

*Rick Chen.*

Date

WTS-Lab.

Name

Signature

### **Technical responsibility for area of testing:**

March 17, 2023

Kevin Wang

*Kevin Wang*

Date

WTS

Name

Signature



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

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## **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



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

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**Manufacturer: (if applicable)**

1.

Name: Pan-international Precision Electronic Co.,Ltd  
Street: Xinlian Indl. Area , Hu-men , Dongguan ,  
Town: 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: February 10, 2023

Date of test: from February 13, 2023 to March 16, 2023

## 1.4 General information of Test item

Type of test item: GPS enabled cycling computer  
Model no.: Rider 750 SE  
Multi-listing model no.: ./.  
Brand name: Bryton  
Power supply: Battery 3.7Vd.c., 1000mAh, 3.7Wh  
USB 5Vd.c.  
Type of antenna: PCB antenna  
Antenna gain: 0 dBi

### Technical data

Mode	Channel	Conducted Power (dBm)
BLE	Ch 0 : 2402 MHz	3.04
	Ch 19 : 2440 MHz	2.88
	Ch 39 : 2480 MHz	2.81

Operation modes: Duplex  
Modulation type: GFSK  
Sample no.: #01  
Special statement: ./.



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Classification:

Fixed Device	<input type="checkbox"/>
Mobile Device (Human Body distance > 20cm)	<input type="checkbox"/>
Portable Device (Human Body distance < 20cm)	<input checked="" type="checkbox"/>

## 1.5 Power setting

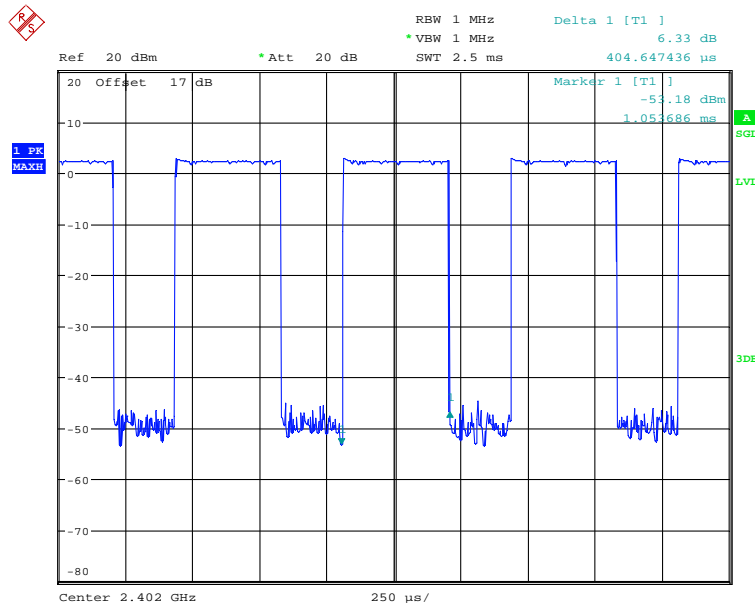
Modulation mode	Channel		
	Ch 0 : 2402 MHz	Ch 19 : 2440 MHz	Ch 39 : 2480 MHz
1Mbps	0	0	0

## 1.6 Duty cycle and factor

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

Mode	T <sub>on</sub> (ms)	T <sub>on</sub> +T <sub>off</sub> (ms)	Duty cycle (%)	1/T - VBW (kHz)
BLE 1M	0.405	0.629	64.39%	2.47
BLE 2M	0.22	0.629	34.98%	4.55

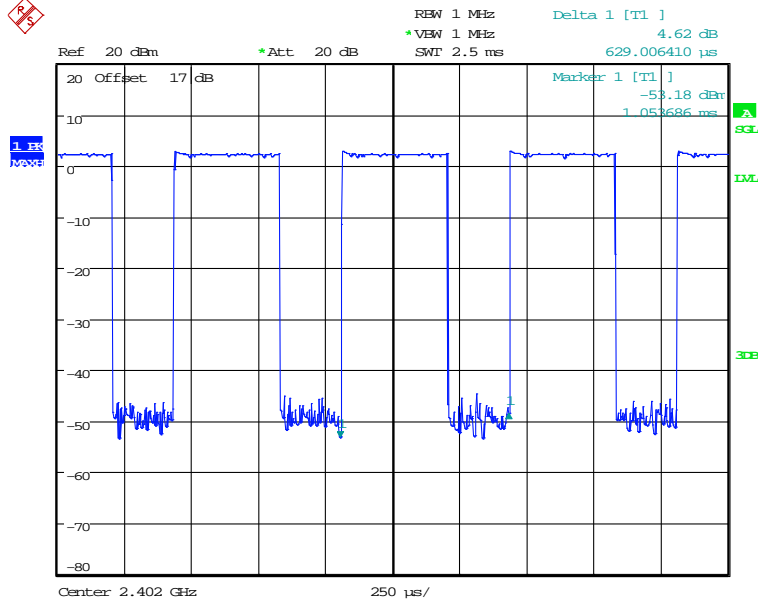
Duty cycle plot



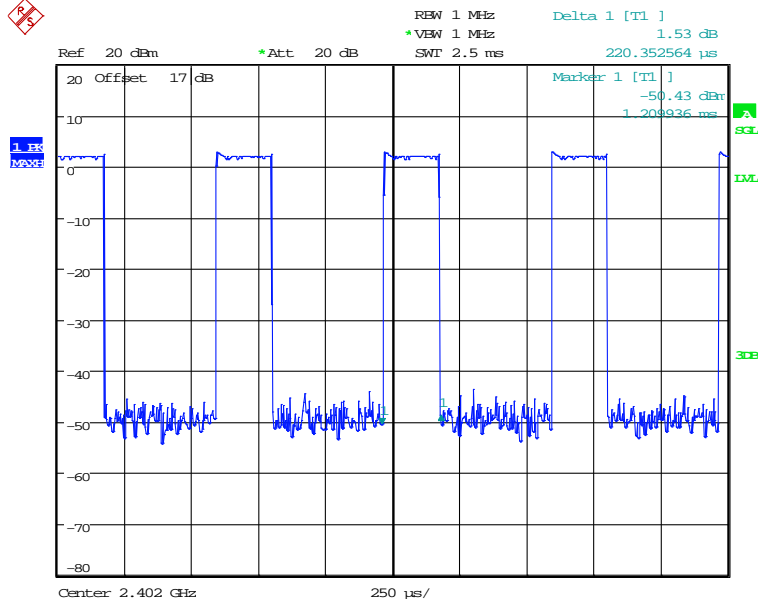
DUTY CYCLE  
 Date: 16.FEB.2023 21:35:12



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DUTY CYCLE  
Date: 16.FEB.2023 21:35:36



DUTY CYCLE  
Date: 16.FEB.2023 21:33:43







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**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	2022/8/3	2023/8/2
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	2023/2/17	2024/2/16
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2022/3/28	2023/3/27
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	2022/5/6	2023/5/5
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	2022/5/27	2023/5/26
WTSTW-SW 008	Signal studio	Agilent	None	AUDIX	Version 2.0.0.1	



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### **3 Equivalent Isotropic Radiated Power (EIRP)**

FCC Rule: 15.247

EIRP = max. conducted output power + antenna gain

EIRP = 3.04 dBm + (0 dBi [antenna gain claimed by manufacturer]) = 3.04 dBm = 2.01 mW

#### **3.1 Exemption Limits for Routine Evaluation according to FCC KDB Publication**

##### **RESULT:**

Test standard : FCC KDB Publication  
447498 D01 General RF Exposure Guidance v06

#### **3.3.1 Exemption Limits for Routine Evaluation – SAR Evaluation**

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table .

Table: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance

MHz	5	10	15	20	25	mm
2402	10.09	19.26	29.35	38.52	48.52	SAR Test Exclusion Threshold (mW)

MHz	30	35	40	45	50	mm
2402	57.70	67.79	77.87	87.05	97.13	SAR Test Exclusion Threshold (mW)

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power.

Established separation distance is 5 mm.

Operating frequency band : 2402-2480 MHz

Max. output power level at 5 mm separation distance at 2402 MHz according to table is: 10.09 mW

The product is exempt from SAR Evaluation/Testing because the output power of 2.01 mW is below the exemption limit of 10.09 mW.