



RADIO EXPOSURE TEST REPORT

FCC ID : 2AHXD-5301478
Equipment : CarBack Radar
Brand Name : TREK
Model Name : 5301478
Applicant : Trek Bicycle Corporation
801 W Madison St, Waterloo, WI 53594
Manufacturer : Universal Microelectronics co.,LTD
3,27TH RD.,Taichung Industrial Park.Taichung, Taiwan
Standard : 47 CFR Part 2.1093

The product was received on Jun. 19, 2023, and testing was started from Aug. 11, 2023 and completed on Nov. 06, 2023. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1093 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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Photographs of EUT v01



History of this test report

Report No.	Version	Description	Issued Date
FA360116	01	Initial issue of report	Nov. 22, 2023
FA360116	02	Revising the error in Summary of Test Result	Nov. 28, 2023



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen

Report Producer: Sophia Shiung



1. General Description

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
76-81GHz	76000-81000	76150-76310	FMCW
Bluetooth	2400-2483.5	2402-2480	LE: DSSS (GFSK)
ANT plus	2400-2483.5	2457	DSSS (GFSK)

1.2. Antenna Information

Ant.	Port			Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	Bluetooth / ANT plus	76~81GHz TX	RX					
1	-	1~3	1~6	UMEC	S78*	Patch	N/A	11.2
2	1	-	-	JOHANSON	2450AT18D0100E	Chip	N/A	1.5

Note 1: The above information was declared by manufacturer.

Note 2: The Bluetooth and ANT plus cannot function at the same time.

Note 3: **For Bluetooth function (1TX/1RX):**

Only Port 1 can be used as transmitting/receiving antenna.

For ANT plus function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

For 76~81GHz function (3TX/6RX):

Port 1~3 can be used as transmitting antenna.

Port 1~3 could transmit simultaneously.

Port 1~6 can be used as receiving antenna.

Port 1~6 could receive simultaneously.

1.3. Accessories

Accessories
USB cable*1: Shielded, 1.5m
Lithium-ion battery*1



1.4. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR Part 2.1093
- ◆ KDB 447498 D04 Interim General RF Exposure Guidance v01

The following reference test guidance is not within the scope of accreditation of TAF.

- ◆ 47 CFR Part 1.1307

1.5. Testing Location

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.



2. SAR-based and MPE-based exclusions

2.1. Applicable Standards

In accordance with FCC 47 CFR part 2 (2.1093) this device has been defined as a portable device which is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

Portable devices must be evaluated using the specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2003.

2.2. Determination of exemption.

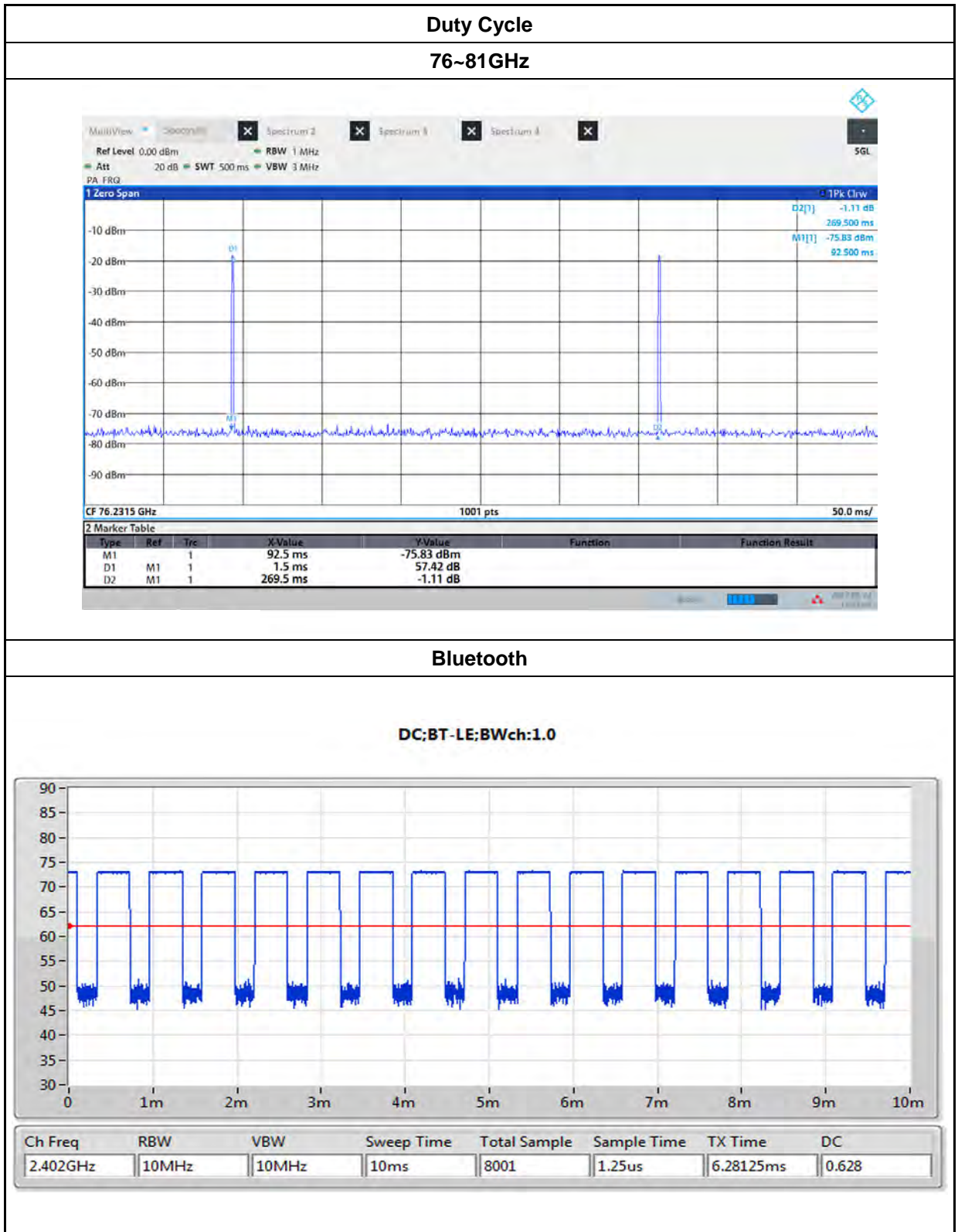
1. In accordance with FCC 47 CFR part 1 (1.1307(b)(3)(i)(A)) for single RF sources exemption:
The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.
2. In accordance with FCC 47 CFR part 1 (1.1307(b)(3)(ii)(A)) for multiple RF sources exemption:
The available 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).

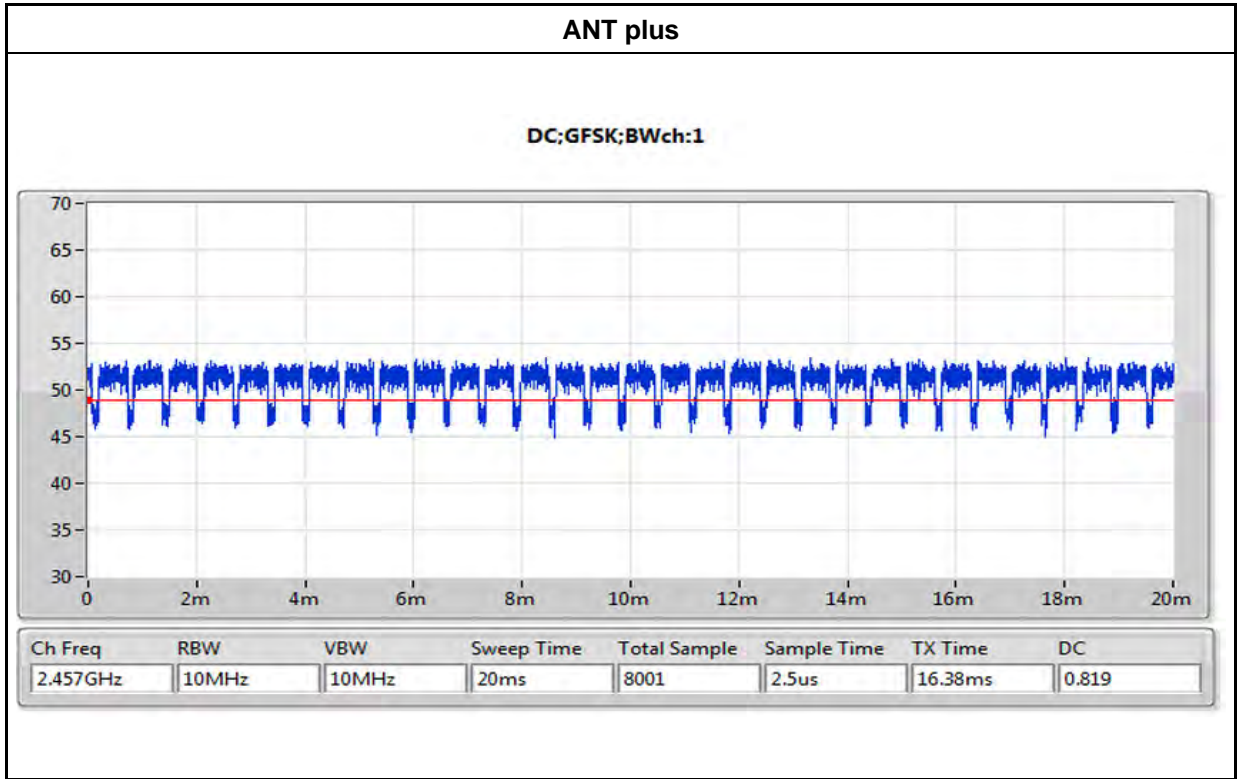
Test mode 1: 76~81GHz + Bluetooth

Max. Power		Duty Cycle (%)	Tune-up Max. Power		Test Distance (mm)	Frequency (GHz)	Exclusion thresholds (mW)	RF Exposure Evaluation Limit (mW)	Result
(dBm)	(mW)		(dBm)	(mW)					
-9.89	0.1	0.6	-31.7	0.0007	2.6	76.2315	0.00227	1	PASS
1.96	1.6	62.8	0.5	1.1220	2.6	2.402	0.66883	1	PASS
Sum Exclusion Thresholds							0.67110	1	PASS

Test mode 2: 76~81GHz + ANT plus

Max. Power		Duty Cycle (%)	Tune-up Max. Power		Test Distance (mm)	Frequency (GHz)	Exclusion thresholds (mW)	RF Exposure Evaluation Limit (mW)	Result
(dBm)	(mW)		(dBm)	(mW)					
-9.89	0.1	0.6	-31.7	0.0007	2.6	76.2315	0.00227	1	PASS
-12.39	0.1	81.9	-12.8	0.0525	2.6	2.457	0.03164	1	PASS
Sum Exclusion Thresholds							0.03391	1	PASS





————THE END————