China

FCC - TEST REPORT

Report Number	:	60.790.18.060.01R02	Date of Issue	: January 23, 2019
Model	:	RIDEtime ELITE		
Product Type	:	**Bike Computer**		
Applicant	:	DAYTON INDUSTRIAL CO., LTD		
Address	:	2-12 Kwai Fat Road, 11-A Kwai Chung, New Territories, Hong Kong		
Production Facility	:	KENDY ELECTRONICS (DONGGUAN) CO., LTD		
Address	:	XIN SI HUANG TANG VILLAGE HENG LI TOWN, DONGGUANG CITY, GUANGDONG, CHINA		
Test Result	:	■Positive ☐Negative		
Total pages including Appendices	:	15		

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1 Table of Contents

2 Description of Equipment Under Test

Description of the Equipment Under Test

Product:	Bike Computer
Model no.:	RIDEtime ELITE
FCC ID:	O4GRTELITE
Rating:	3V DC (CR2032 battery)
Frequency:	2457MHz
Antenna gain:	0 dBi
Number of operated channel:	1
Modulation:	GFSK

3 Summary of Test Standards

Test Standards
FCC Part 15 Subpart C 10-1-17 Edition Federal Communications Commission, PART 15 — Radio Frequency Devices, Subpart C — Unintentional Radiators

All the tests were performed using the procedures from ANSI C63.4(2014) and ANSI C63.10 (2013).

4 Details about the Test Laboratory

Site 1

Company name: TÜV SÜD Hong Kong Ltd.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin, Hong Kong

Site 2

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13 Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2,
Shenzhen 518052, P.R.China
FCC Registration Number: 502708

Emission Tests	
Test Item	Test Site
FCC Part 15 Subpart C	
FCC Title 47 Part 15.205, 15.209 & 15.249 & Radiated Emission	Site 2
FCC Title 47 Part 15.207 Conduct Emission	NIL
FCC Title 47 Part 15.215 20dB & 99% Bandwidth	Site 2
FCC Title 47 Part 15.203 Antenna Requirement	Site 2

4.1 Test Equipment Site List

Radiated emission Test – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2019-7-6
Signal Analyzer	Rohde & Schwarz	FSV40	101031	2019-7-6
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100398	2019-7-6
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2019-6-28
Horn Antenna	Rohde & Schwarz	HF907	102294	2019-6-28
Wideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	12827	2019-7-12
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2019-7-6
Pre-amplifier	Rohde & Schwarz	SCU 40A	100432	2019-7-6
Signal Generator	Rohde & Schwarz	SMY01	839369/005	2019-7-6
Attenuator	Agilent	8491A	MY39264334	2019-7-6
3m Semi-anechoic chamber	TDK	9X6X6	----	2020-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

Conducted Emission Test – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2019-7-6
LISN	Rohde & Schwarz	ENV4200	100249	2019-7-6
LISN	Rohde & Schwarz	ENV432	101318	2019-7-6
LISN	Rohde & Schwarz	ENV216	100326	2019-7-6
ISN	Rohde & Schwarz	ENY81	100177	2019-7-6
ISN	Rohde & Schwarz	ENY81-CA6	101664	2019-7-6
High Voltage Probe	Rohde & Schwarz	TK9420(VT9420)	9420-584	2019-6-30
RF Current Probe	Rohde & Schwarz	EZ-17	100816	2019-6-30
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2019-7-6
Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A

20dB & 99% Bandwidth – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Signal Generator	Rohde & Schwarz	SMB100A	108272	2019-7-6
Signal Analyzer	Rohde & Schwarz	FSV40	101030	2019-7-6
Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	2019-7-6
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	2019-7-6

4.2 Measurement System Uncertainty

Measurement System Uncertainty Emissions

System Measurement Uncertainty	
Items	**Extended Uncertainty**
Uncertainty for Radiated Emission in 3m chamber 9kHz-30MHz	4.46dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.91dB; Vertical: 4.89dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz	Horizontal: 4.80dB; Vertical: 4.79dB;
Uncertainty for Conducted Emission at AC Power Line 150kHz-30MHz	3.21dB
Uncertainty for frequency test	0.6×10-7

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart C				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
FCC Title 47 Part 15.205,15.209 & 15.249 Radiated Emission	10-11	☒	☐	☐
FCC Title 47 Part 15.207 Conduct Emission (1)	NIL	☒	☐	☐
FCC Title 47 Part 15.215 20dB & 99% Bandwidth	13	☒	☐	☐
FCC Title 47 Part 15.203 Antenna Requirement	14	☒	☐	☐

Remark:
(1) Conducted Emission testing is not applicable for battery operating device.

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6 General Remarks

Remarks

This submittal(s) (test report) is intended for **FCC ID: O4GRTELITE**, complies with Section 15.203, 15.205, 15.207, 15.209, 15.249 of the FCC Part 15, Subpart C rules.

The TX and RX range is 2457MHz.

SUMMARY:

- All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

- The Equipment Under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: November 28, 2018

Testing Start Date: November 30, 2018

Testing End Date: December 30, 2018

Reviewed by:

Hosea CHAN
EMC Project Engineer

Prepared by:

Eric LI
EMC Senior Project Engineer

7 Emission Test Results

7.1 Radiated Emission

EUT:	RIDEtime ELITE
Op Condition:	Operated, TX Mode (2457MHz)
Test Specification:	FCC15.249 & 15.209, Antenna: Horizontal
Comment:	3 VDC
Remark:	9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
38.137222	17.42	40.00	-22.58	Quasi Peak
45.412222	17.05	40.00	-22.95	Quasi Peak
864.253889	25.73	46.00	-20.27	Quasi Peak
2329.062500	38.96	54.00	-15.04	Peak
2457.000000	91.74	114.00	-22.26	Peak
2457.000000	73.66	94.00	-20.34	Average
2585.062500	34.90	54.00	-19.10	Peak
4913.906250	41.69	54.00	-12.31	Peak
7640.156250	42.84	54.00	-11.16	Peak
9374.062500	42.41	54.00	-11.59	Peak

Remark: As the peak value were below the average limit, so average value no need to be measured.

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Radiated Emission

EUT:	RIDEtime ELITE
Op Condition:	Operated, TX Mode (2457MHz)
Test Specification:	FCC15.249 & 15.209, Antenna: Vertical
Comment:	3 VDC
Remark:	9kHz to 25GHz

Test Result
☒ Passed
☐ Not Passed

Frequency MHz	Result dBµV/m	Limit dBµV/m	Margin dB	Detector
49.885000	15.60	40.00	-24.40	Quasi Peak
108.893333	13.16	43.50	-30.34	Quasi Peak
872.876111	25.68	46.00	-20.32	Quasi Peak
2145.562500	28.02	54.00	-25.98	Peak
2292.187500	30.26	54.00	-23.74	Peak
2457.000	77.88	114.00	-36.12	Peak
2457.000	61.63	94.00	-32.37	Average
4758.750000	39.46	54.00	-14.54	Peak
7603.593750	43.02	54.00	-10.98	Peak
12364.218750	45.21	54.00	-8.79	Peak

Remark*: As the peak value were below the average limit, so average value no need to be measured.

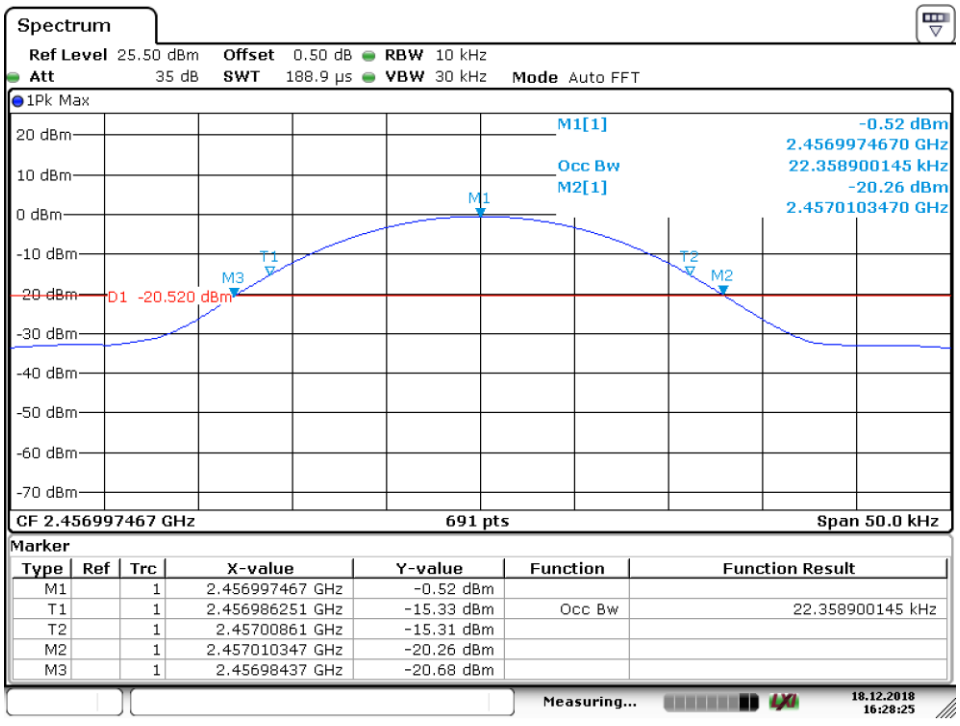
7.2 Conducted Emission at AC Power line

Conducted Emission testing is not applicable for this device as it is a battery operating device.

7.3 20dB & 99% Bandwidth

EUT: RIDEtime ELITE
Op Condition: Operated, TX Mode (2457MHz)
Test Specification: FCC15.215
Comment: 3 VDC

Test Result
☒ Passed
☐ Not Passed



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20dB bandwidth
25.977 kHz

99% bandwidth
22.359 kHz

7.4 Antenna Requirement

EUT:	RIDEtime ELITE
Op Condition:	Operated, TX Mode
Test Specification:	FCC15.203 (b)
Comment:	3 VDC

Test Result
☒ Passed
☐ Not Passed

Limit

For intentional device, according to FCC Title 47 Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Connector Construction

The antenna used in this product is integrated antenna on PCB, which in accordance to section 15.203, is considered sufficient to comply with the antenna requirement.

8 Appendix A - General Product Information

Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1, For frequencies between 100 MHz to 6GHz and test separation distances ≤ 50 mm, the Numeric threshold is determined as:

Step a)
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR

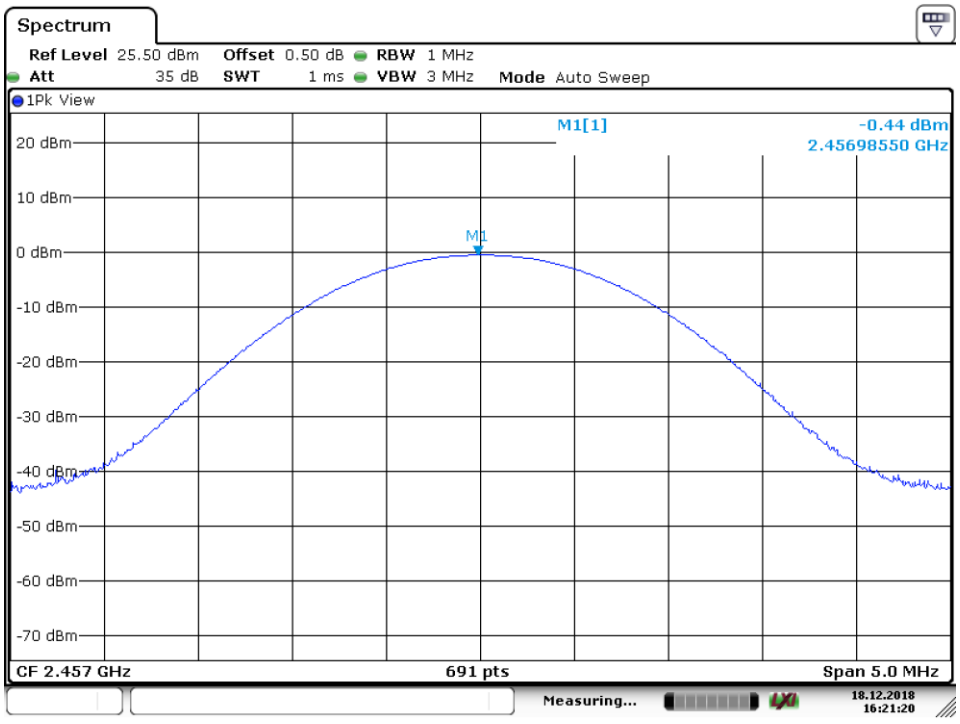
>> The fundamental frequency of the EUT is 2402-2480MHz,
the test separation distance is ≤ 20mm.
(Manufacturer specified the separation distance is: 20mm)

Step b)
>> Numeric threshold (2457MHz), mW / 20mm * √2.457GHz ≤ 3.0
Numeric threshold (2457MHz) ≤ 38.278mW

>>The power of EUT measured (2457MHz) is: -0.44dBm = 0.904mW

Which is smaller than the Numeric threshold.
Therefore, the device is exempt from stand-alone SAR test requirements.

Power Plot



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