RF EXPOSURE REPORT

FOR

Applicant	**:**	Tenetics, LLC
Address	**:**	10718 Vista Road, Columbia, MD 21044, United States
Equipment under Test	**:**	Ceres Gateway 2
Model No.	**:**	GW2
Trade Mark	**:**	Ceres
FCC ID	**:**	2AA6Q-GW2
Manufacturer	**:**	Tenetics, LLC
Address	**:**	10718 Vista Road, Columbia, MD 21044, United States

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel: +86-0769-89201699, **E-mail:** ddt@dgddt.com, http://www.dgddt.com

REPORT

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TEST REPORT DECLARE

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Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Dongguan Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No:	DDT-R18050304-1E3		
Date of Receipt:	May. 14, 2018	**Date of Test:**	May. 14, 2018 ~ Jun. 28, 2018

Prepared By: ***Approved By:***

Ella Gong

Ella Gong /Engineer ***Damon Hu /EMC Manager***

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jun. 28, 2018	

1. General information

1.1. Description of Equipment

EUT* Name	:	Ceres Gateway 2
Model Number	:	GW2
EUT function description	:	Please reference user manual of this device
Power supply	:	Input: DC 5V/150mA from external AC adapter
Operation frequency	:	910-920MHz
Modulation	:	GFSK
Data rate	:	Two data rates: 4.8kbps data rate with 5kHz frequency deviation; 50kbps data rate with 25kHz frequency deviation
Antenna Type	:	RP-SMA dipole antenna, maximum PK gain: 1.2dBi
Sample Type	:	Series production

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd

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CNAS Accreditation No. L6451; A2LA Accreditation No. 3870.01

2. RF Exposure evaluation for FCC

2.1. Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$,$|H|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2. Calculation Method

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } S(mW/cm^2) = \frac{E^2}{377}$$

E = Electric field (V/m)
P = Peak RF output power (mW)
G = EUT Antenna numeric gain (numeric)=
d = Separation distance between radiator and human body (m)
The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

2.3. Estimation Result

Mode	PK Output power (dBm)	Output power (mW)	Antenna Gain (dBi)	MPE Values (mW/cm^2)	MPE Limit (mW/cm^2)
FSK Max power	18.26	66.99	1.2	0.0176	0.613

Note: The estimation distance is 20cm.

Conclusion: No SAR evaluation required since transmitter power is below FCC threshold

END OF REPORT