

# RF Exposure Evaluation Report

Product Name : MOBILE DATA TERMINAL

Model No. : MT7010

FCC ID : 2ABTU-MT7010

Applicant : RuggON Corporation

Address : 4F, No. 298, Yang Guang St. Neihu Dist., Taipei City, Taiwan

Date of Receipt : Aug. 29, 2017

Date of Declaration : Oct. 23, 2017

Report No. : 1780508R-SAUSP03V00

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

## 1. RF Exposure Evaluation

### 1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

### 1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 21°C and 55% RH.

### 1.3. Test Result of RF Exposure Evaluation

Product : MOBILE DATA TERMINAL  
 Test Item : RF Exposure Evaluation  
 Test Site : No.3 OATS

Operation Frequency	802.11b/g/n-20MHz: 2412-2462MHz Bluetooth: 2402-2480MHz
Maximum Conducted output power	18.55dBm
Antenna gain	2.14dBi

#### Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
71.614	0.0233

Power density is lower than the limit (1 mW/cm<sup>2</sup>).

Operation Frequency	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310MHz, 5510-5670MHz, 5755-5795MHz
Maximum Conducted output power	13.41dBm
Antenna gain	4.18dBi

#### Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )
21.928	0.0114

Power density is lower than the limit (1 mW/cm<sup>2</sup>).