



# RF EXPOSURE EVALUATION REPORT

**FCC ID** : SH6MDBT50Q  
**Equipment** : MDBT50Q  
**Brand Name** : Raytac  
**Model Name** : MDBT50Q  
**Applicant** : Raytac  
5F., No.3, Jiankang Rd., Zhonghe  
Dist., New Taipei City, Taiwan  
**Manufacturer** : Unigen Corporation  
39730 Eureka Dr, Newark, CA 94560  
**Standard** : 47 CFR Part 2.1091

The product was installed into Mobile Reader Nano Connect (Brand Name Proxy, Model Name: Mobile Reader Nano Inline)

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

Approved by: Cona Huang / Deputy Manager

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## History of this test report



## 1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	MDBT50Q
Brand Name	Raytac
Model Name	MDBT50Q
FCC ID	SH6MDBT50Q
Wireless Technology and Frequency Range	Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	Bluetooth LE
EUT Stage	Production Unit

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Host Information	
EUT Type	Proxy Mobile Reader Nano
Brand Name	Mobile Reader
Model Name	Mobile Reader Nano Connect
EUT Stage	Production Unit

Reviewed by: Jason Wang

Report Producer: Ching Chen

## 2. Maximum RF average output power among production units

Band / Mode	Average Power (dBm)	
	LE	BLE 5.0-2M
	GFSK	GFSK
Bluetooth	8	8



### 3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



## **4. Radio Frequency Radiation Exposure Evaluation**

### **4.1. Standalone Power Density Calculation**

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
Bluetooth	3.60	8.00	11.600	0.014	14.454	0.003	1.000

### **Conclusion:**

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.