



## RF Exposure Evaluation Declaration

Applicant : AsiaRF Ltd.  
Product : Top Catcher CC Tactical  
Model No. : AWUHN2408, AW2405boat8  
FCC ID : TKZAWUHN24O8  
Standards : FCC Oet65 Supplement C June 2001  
Test Date : October 14, 2013 ~ November 06, 2013

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( Engineer: Sunny Sun )  
Approved By : *Marlin Chen*  
( Manager: Marlin Chen )

The test results relate only to the samples tested.

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

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

## Revision History

| Report No.   | Version | Description    | Issue Date |
|--------------|---------|----------------|------------|
| 1310RSU00102 | Rev. 01 | Initial report | 2013-11-07 |
|              |         |                |            |

## 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) |
|--|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| <b>(A) Limits for Occupational/ Control Exposures</b>            |                               |                               |                                     |                        |
| 300-1500   | --                            | --                            | F/300                               | 6                      |
| 1500-100,000   | --                            | --                            | 5                                   | 6                      |
| <b>(B) Limits for General Population/ Uncontrolled Exposures</b> |                               |                               |                                     |                        |
| 300-1500   | --                            | --                            | F/1500                              | 6                      |
| 1500-100,000   | --                            | --                            | 1                                   | 30                     |

F= Frequency in MHz

Friis Formula

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

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, 1mW/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: 18°C and 78% RH.

**1.3. Test Result of RF Exposure Evaluation**

|           |                         |
|-----------|-------------------------|
| Product   | Top Catcher CC Tactical |
| Test Item | RF Exposure Evaluation  |

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 15dBi for 2.4GHz in logarithm scale.

**Output Power into Antenna:**

| Operation Mode     | Frequency Range (MHz) | Maximum Output Power (dBm) | Power Density at R = 20 cm (mW/cm <sup>2</sup> ) | Limit of Power Density S(mW/cm <sup>2</sup> ) |
|--------------------|-----------------------|----------------------------|--|---|
| 802.11b/g/n(20MHz) | 2412~2462             | 21.82                      | 0.957  | 1   |
| 802.11n(40MHz)     | 2422~2452             | 21.25                      | 0.839  | 1   |

Note: Antenna to user separation ≥ 20cm

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