MRT Technology (Suzhou) Co., Ltd Report No.: 1311RSU00202 Phone: +86-512-66308358 Fax: +86-512-66308368 Report Version: V01

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## RF Exposure Evaluation Declaration

Applicant : AsiaRF Ltd.

**Product** : WiFi USB Dongle Versa3

Model No. : AWUHN2487

FCC ID : TKZAWUHN2487

Test Date : November 07 ~ 26, 2013

(Engineer: Sunny Sun) Reviewed By

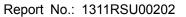
Marlinchen Approved By

( 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
1311RSU00202	Rev. 01	Initial report	11-27-2013



### 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/cm2)	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:  $Pd = (Pout*G)/(4*pi*r^2)$ 

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = 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

Pd id the limit of MPE, 1mW/cm². 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

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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	WiFi USB Dongle Versa3	
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 Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit of Power Density S(mW/cm²)
802.11b/g//n(20MHz)	2412~2462	16.33	0.270	1
802.11n(40MHz)	2422~2452	8.34	0.043	1

Note: Antenna to user separation ≥ 20cm