



REPORT No.: XM19070047W04

# RF EXPOSURE

# EVALUATION REPORT

**APPLICANT** : Nanjing Juplink Intelligent Technologies Co., Ltd.

**PRODUCT NAME** : Dual-band Gigabit Router

**MODEL NAME** : RX4-1500

**BRAND NAME** : JupLink

**FCC ID** : 2AT9Z-RX4-1500

**STANDARD(S)** : 47 CFR§2.1091 KDB 447498 D01v06

**TEST DATE** : 2019-08-07 to 2019-08-21

**ISSUE DATE** : 2019-09-02

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Approved by:

  
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Change History		
Issue	Date	Reason for change
1.0	2018-6-12	First edition



# 1. Technical Information

**Note:** Provide by manufacturer.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	Nanjing Juplink Intelligent Technologies Co., Ltd.
<b>Applicant Address:</b>	No. 757, Dixiu Road, Binjiang Economic Development Zone, Jiangning District, Nanjing, China
<b>Manufacturer:</b>	Sichuan Tianyi Comheart Telecom Co., Ltd.
<b>Manufacturer Address:</b>	No. 198, Section 1, Xueshan Avenue, Dayi County, Chengdu, Sichuan, China

## 1.2. Equipment Under Test (EUT) Description

<b>Product Name:</b>	Dual-band Gigabit Router
<b>Serial No:</b>	(N/A, marked #1 by test site)
<b>Hardware Version:</b>	N/A
<b>Software Version:</b>	N/A
<b>Modulation Type:</b>	DSSS, OFDM
<b>Operating Frequency Range:</b>	802.11b/g/n-20MHz: 2.412GHz - 2.462GHz 802.11n-40MHz: 2.422GHz - 2.452GHz 802.11a/n/ac/ax-20MHz: 5.180 GHz- 5.240 GHz; 5.725GHz- 5.850GHz 802.11n/ac/ax-40MHz: 5.180 GHz- 5.240 GHz; 5.725GHz- 5.850GHz 802.11ac/ax-80MHz: 5.180 GHz- 5.240 GHz; 5.725GHz- 5.850GHz
<b>Channel Number:</b>	802.11b/g/n-20MHz: 11 802.11n-40MHz: 7 802.11a/n/ac/ax-20MHz: 36, 40, 44, 48, 149, 153, 157, 161 802.11n/ac/ax-40MHz: 38, 46, 151, 159 802.11ac/ax-80MHz: 42, 155
<b>Antenna Type:</b>	External antenna
<b>Antenna Gain:</b>	Ant 0:5dBi; Ant 1:5dBi



## 1.3. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	<b>47 CFR§2.1091</b>	Radiofrequency Radiation Exposure Evaluation: mobile devices
2	<b>KDB 447498 D01v06</b>	General RF Exposure Guidance

## 2. Device category and RF exposure limit

Per user manual, Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

### Mobile Devices:

47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

### GENERAL POPULATION / UNCONTROLLED EXPOSURE

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.



TABLE 1—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> )	Averaging time (minutes)
<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

f = frequency in MHz

\* = Plane-wave equivalent power density



### 3. RF Exposure Evaluation

#### Standalone transmission MPE evaluation

Mode	Frequency	Antenna Gain	Conducted Power	EIRP (P+G)	Power density(S)	Limit for MPE
	(MHz)	(dBi)	(dBm)	(mW)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )
2.4GHz Wi-Fi ANT 0	2412	5	17.94	196.789	0.039	1
2.4GHz Wi-Fi ANT 1	2437	5	20.3	338.844	0.067	1
2.4GHz Wi-Fi ANT 0+ ANT 1	2452	5	18.81	240.436	0.048	1
5.2GHz Wi-Fi ANT 0	5210	5	13.75	74.989	0.015	1
5.8GHz Wi-Fi ANT 0	5745	5	14.26	84.333	0.017	1
5.2GHz Wi-Fi ANT 1	5210	5	14.7	93.325	0.019	1
5.8GHz Wi-Fi ANT 1	5745	5	13.31	67.764	0.013	1
5.2GHz Wi-Fi ANT 0+ ANT 1	5210	5	17.26	168.267	0.033	1
5.8GHz Wi-Fi ANT 0+ ANT 1	5745	5	16.82	152.055	0.030	1



## Annex A General Information

### 1. Identification of the Responsible Testing Laboratory

<b>Laboratory Name:</b>	XIAMEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd. Kehu-Morlab Test Laboratory
<b>Laboratory Address:</b>	Unit 101, No.1732 Gangzhong Road, Xiamen Area, Pilot Free Trade Zone (Fujian) China
<b>Telephone:</b>	+86-592-5612050
<b>Facsimile:</b>	+86-592-5612095

### 2. Identification of the Responsible Testing Location

<b>Name:</b>	XIAMEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd. Kehu-Morlab Test Laboratory
<b>Address:</b>	Unit 101, No.1732 Gangzhong Road, Xiamen Area, Pilot Free Trade Zone (Fujian) China

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