

# **Ruijie RG-MTFi v2.0 In-vehicle Wi-Fi Device Datasheet**

Ruijie Networks Co., Ltd.

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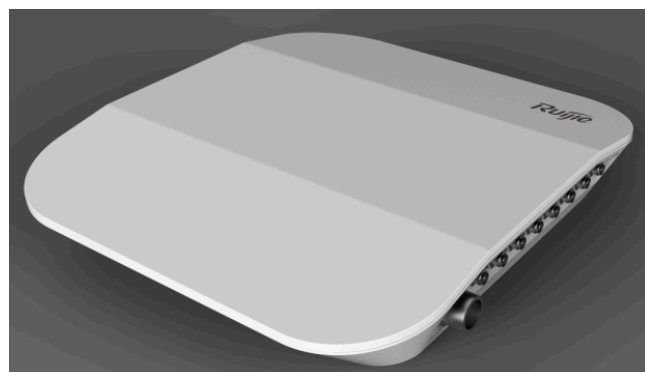
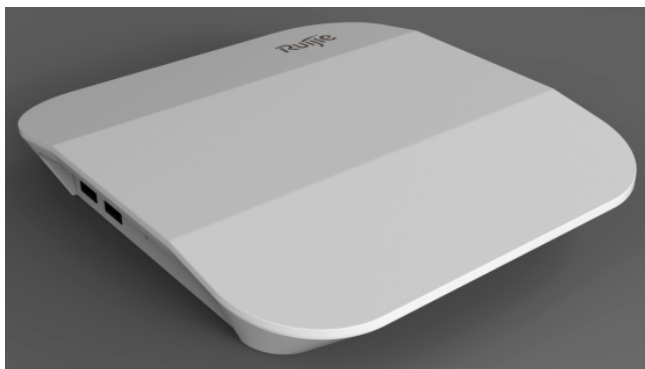
## Revision Record

| Revision Date | Version | Revised Sections | Details                              | Authors                   |
|---------------|---------|------------------|--------------------------------------|---------------------------|
| 2016-4        | V1.0    | All              | - Chinese version completed          | HQ<br>Headquarter         |
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# 1 Product Pictures



RG-MTFi v2.0

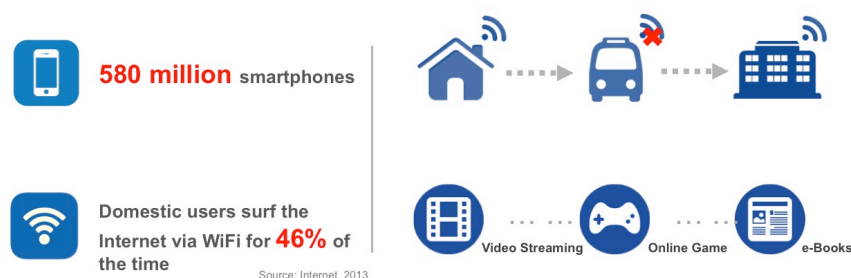
## 2 Product Overview

Ruijie RG-MTFi v2.0 exclusively offers you an in-vehicle wireless system and entertainment hub - all in one easy-to-use platform. Onboard with dual-SIM capacity, the RG-MTFi v2.0 transforms 3G/4G to wireless connectivity with ease. The device implements the latest MIMO-LTE solution supporting advanced communication systems such as TD-LTE, FDD-LTE, TD-SCDMA and WCDMA for streamlined LTE applications on the ride. Featuring the leading MIMO technology and 802.11ac standard, the RG-MTFi v2.0 supports access rates of up to 300Mbps per radio and 600Mbps per device for the best-in-class user experience on the go.

The RG-MTFi v2.0 also transforms your automotive Wi-Fi network into a revenue-generating entertainment asset. Just get connected and passengers can enjoy a variety of multimedia resources via the RG-MTFi v2.0. The built-in hard disk enables videos, music, e-books and others to be stored locally - no extra costs on downloading from the 3G/4G network. The entertainment features attract passengers to use the Wi-Fi service onboard and advert push will be delivered when they log in to the network. The RG-MTFi v2.0 gains you more passenger loyalty and engagement. More passengers, more business revenue.

The RG-MTFi v2.0 offers value-added applications including GPS, power failure alert, real-time clock (RTC) and more. The industrial-grade device supports power supply from the vehicle (9 to 36V DC). All power connectors, internal modules and components are shock and vibration proof. The RG-MTFi v2.0 truly delivers stable and high-performance network connectivity on the go.

### Growing Demand for WiFi on Public Transport



Smart devices have spawned a large amount of Internet applications. Users have accustomed to using WiFi and they are expecting WiFi access at home, office and even on public transport. However, there is hardly any WiFi coverage on public transport at the moment.

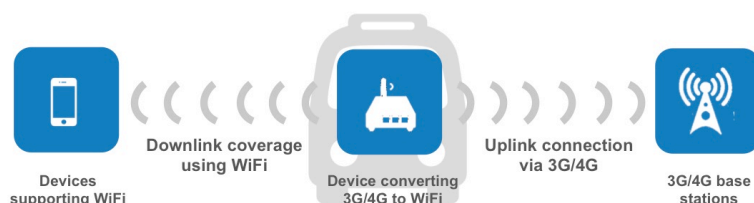
Wi-Fi on the ride is the upcoming trend

## 3 Product Features

### 3.1 High-speed Dual-LTE Access Solution

The RG-MTFi v2.0 features dual-SIM 3G/4G uplink access, hence 2 different network operators can work together for configurable failover. The design totally gets rid of the signal loss problem in weak 4G coverage areas. One SIM acts as the fallback network, which the switching to 3G takes place automatically. Also, one SIM fulfills network demand from general passengers while the other supports high-security specialized functions. With the adoption of the MIMO-LTE each SIM supports downlink rate up to 100Mbps. A wide range of communication systems is available including TD-LTE (38, 39, 40, 41), FDD-LTE (1, 3, 7), TD-SCDMA and WCDMA. The RG-MTFi v2.0 offers flexible and comprehensive LTE applications for vehicles of any kind.

#### 3G/4G Network Makes Vehicle WiFi Deployment Possible



With the uninterrupted coverage and fast switching feature of the 3G/4G network, the device offers WiFi access by converting the mobile network to WiFi signal to deploy the Bus WiFi Network.

RG-MTFi v2.0 offers smooth transition from LTE to wireless connectivity

### 3.2 802.11ac Leading Access

The RG-MTFi v2.0 totally upgrades wireless experience on the ride. The dual-radio design boosts the 802.11ac network performance to up to 600Mbps.

### 3.3 Remote Software Upgrade

Upgrade for the RG-MTFi v2.0 can be remotely completed via Ruijie Cloud AC. Upgrade failure alert ensures extra resilience. No more on-site work means maximized cost savings.

### 3.4 Remote and Local Portals Push

Deliver customized information to every target user with the support of both remote and local portals.

#### Local Media Updates and Broadcast



Enabling online games download and video streaming on vehicle

### 3.5 Local Storage for Painless Content Update

The RG-MTFi v2.0 offers a built-in hard disk (128G by default) for local content update. Featured videos, music and popular APPs can be locally stored to eliminate 3G/4G data costs. And passengers can easily and quickly access such resources via the Wi-Fi network. The RG-MTFi v2.0 brings in-vehicle wireless experience to a new standard.

### 3.6 Hybrid Local and Network Access

Passengers can easily access both the local storage and Internet via the RG-MTFi v2.0, satisfying various user requirements.

## 3.7 Specialized In-vehicle GPS

GPS is one of the many value-added applications offered by the RG-MTFi v2.0. The service enables users to precisely master the vehicle location in real time. Users can locally check the GPS data or send the data to multiple backend devices.

Regular upload of the GPS data enables you to analyze your passenger demographics. By looking at the commuting routes, if it is relatively stable from Monday to Friday, the places where passengers live and work can be easily deduced. With the big data at hand, advert push can be delivered precisely to the target audience.

## 3.8 Robust Design with Carrier-class Reliability

The RG-MTFi v2.0 supports anti-shock and anti-vibration protection - both internally and The anti-shock rack and vibration resistant power connector supports ACC signal detection, enabling vehicle ACC power failure alarm and AC remote data synchronization. The LTE link will also be released automatically.

### Reliable WiFi Device Offers High-quality Experience

2.4/5.8 dual-band deployment offers up to 600Mbps performance. The no. of concurrent users is up to 100 with no pressure for 50 users loading videos concurrently.



Support dual module and dual card uplink for effective redundancy and connection to multiple operators.



Changing the uplink module can support various standards such as TDD, FDD, TD-SCDMA and WCDMA.



The operating temperature ranges from -20°C to 70°C, which meets the requirement for WiFi deployment in



Passed the 5M3 vibration test of a 3rd party laboratory and the Ministry of Transportation & Communications laboratory.



Passed the IP53 test of an authoritative laboratory and comply with the fire-retardant safety standards of the Ministry of Transportation & Communications.



Supports 9 to 36V DC broad-range power supply, power off control, ACC signal interface and power plug stabilizer. The boot delay is 10s with undervoltage and overvoltage protection.



RG-MTFi

A variety of storage such as built-in TF card, SD card and hard drive provides smooth local resources storage.



Robust features power a stable and high-speed wireless network

## 3.9 Smart Wi-Fi Management

The RG-MTFi v2.0 offers flexible a channel allocation policy for remote user management and power adjustment. Wireless resources can be flexibly allocated to meet different application needs. Wi-Fi signals are adjustable according to various deployment scenarios.



## 3.10 Abundant QoS

The RG-MTFi v2.0 supports comprehensive QoS features (e.g. WLAN/AP/STA bandwidth limitations) to ensure key data transmission and offer priority bandwidth guarantee.

## 3.11 User Data Encryption

The RG-MTFi v2.0 offers protected Wi-Fi access with the support of cutting-edge encryption technologies such as WEP, TKIP and AES.

## 3.12 Virtual AP Technology

With the adoption of the virtual AP technology, the RG-MTFi v2.0 supports up to 16 ESSIDs and 16 802.1QVLANs. The network administrator can independently encrypt and isolate subnet or VLAN with the same SSID. For each SSID, the administrator can customize the authentication mode and encryption mechanism.

## 3.13 Secure User Access

The RG-MTFi v2.0 supports a Web authentication mode. Integrated with Ruijie authentication platform, passengers can easily log in using any web browser for the highest level of user-friendliness.

## 3.14 Protection Against ARP Spoofing

The ARP detection effectively protects the network from ARP spoofing (host and gateway). Automatic binding can be enabled in both dynamic and static IP address allocation environments to greatly save manpower resources and management costs. The system can monitor and control the transmission rate of ARP packets to prevent malicious use of scanning tools, which triggers ARP flooding and causes network congestion.

## 3.15 DHCP Snooping

With Dynamic Host Configuration Protocol (DHCP) snooping, the system permits DHCP response

messages from the trusted ports only. It can thus prevent unauthorized deployment of any DHCP server to disturb the allocation and management of IP addresses and affect normal operation of network. By dynamically monitoring ARP and checking source IP address, it also effectively prevents ARP host spoofing and source IP address spoofing in the dynamic IP allocation environment.

## 3.16 Data Communication Security

SSH (Secure Shell) and SNMPv3 are leading technologies for secure data communication using Telnet and SNMP. Telnet, a network protocol based on source IP address, provides refined device management. It ensures only those authorized IP addresses can access the AP for high-level security.

## 3.17 Comprehensive Remote Management

Ruijie Mobile Access Cloud Center(RG-MACC) can remotely and centrally manage all wireless parameters such as channel, power ranking, SSID configuration, security settings and so on. The feature enhances security and simplifies management.

## 4 Technical Specifications

|               |                    |   |
|---------------|--------------------|---|
| Model         | RG-MTFi-M520       |   |
| Hardware Spec | CPU                | Dual core 1.4G  |
|               | 4G Radio Frequency | FDD-LTE B1/B2/B3/B5/B7/B8/B20<br>TDD-LTE B38/B39/B40/B41  |
|               | MIMO Standard      | 4G 1 TX 2 RX / WIFI 2*2   |
|               | Memory             | 2GB supported   |
|               | eMMC               | 4GB   |
|               | Storage            | 128GB SSD   |
|               | LAN                | 1000M/100M/10M RJ45 Interface x1  |
|               | Management Port    | Micro USB console port  |
|               | GPS                | Supported   |
|               | Bluetooth          | Supported   |
|               | Extension          | USB3.0 x1   |
|               | Power Connection   | M12 Aviation plug   |
|               | Power Input        | 9 – 36V DC broadband power, 12V/24V supported, power shut down control interface, ACC signal interface  |
|               |                    | ACC/regular dual power supported  |
|               |                    | Power plug anti-shake   |
|               |                    | Anti-access protection  |
|               |                    | 10s startup delay. Under voltage protection (12v System 8.5V+-0.5V under voltage protection, 24v System 17V+0.5V under voltage protection )   |
|               | Indicators         | Top panel: sys indicator x1   |
|               |                    | Front panel:<br>Power indicator x1<br>2.4G WiFi indicator x1<br>5.8G WiFi indicator x1<br>3G4G module status indicator x2<br>GPS indicator x1<br>Lan indicator (RJ45 integrated) x2 |
|               |                    |   |
|               |                    |   |
|               |                    |   |
|               | Button             | Reset Button x1   |
|               | Sim Lock           | Protected panel locked by allen screws  |
|               |                    |   |

|                     |                            |  |
|---------------------|----------------------------|--|
| WiFi Features       | Supported channels         | 802.11a/n, 802.11b/g/n, 802.11ac supported   |
|                     | WiFi RF                    | Dual-radio, dual-band  |
|                     | WiFi Operating Bands       | 802.11b/g/n: 2.4GHz-2.483GHz – World wide<br>802.11a/n/ac: 5.150GHz to 5.350GHz: China, Malaysia, Japan, USA, United Kingdom, EU, Russia, CIS.<br>802.11a/n/ac: 5.65GHz to 5.725GHz: China, Malaysia, Japan, USA, United Kingdom, EU, Russia, CIS.<br>802.11a/n/ac: 5.725GHz to 5.850GHz: China, Malaysia, Japan, USA, United Kingdom. |
|                     | Transmit power             | 23dBm (2.4G)/19dBm (5G)<br>Support adjustable power levels: 100%, 75%, 50%   |
|                     | Channels                   | 802.11a/n : 5 channels   |
|                     |                            | 802.11b/g/n : 13 channels  |
|                     | Overall access performance | Support 802.11AC:<br>HT40:180Mbps<br>HT80:580Mbps<br>802.11/n:110Mbps  |
|                     | Concurrent Users           | Support 80 and more STA  |
|                     | SSID                       | Support 16 SSID  |
| Physical Parameters | humidity                   | 5 ~ 95%(no condensing)   |
|                     | Storage Temperature:       | -40 ~ 85℃  |
|                     | Operating Temperature:     | -20~ 70℃   |
|                     | Cooling                    | Heat radiation without fan   |
|                     | Dimension                  | 200*198*42mm   |
|                     | Weight                     | 1.6KG  |
|                     | Vibration Standard         | GB/T26775-2011   |
|                     | EMI Standard               | GB/T17619-1998   |
|                     | Fire Retardancy            | V0   |
|                     | Protection Rating          | Support IP54 protection  |

## 5 Typical Applications



Bus station billboard, bus body advertising.



Passengers can click to view the ads and clips stored in the device. They can also make online purchase.

## 6 Ordering Information

| Model                       | Description   |
|-----------------------------|---|
| RG-MTFi-M520                | In-vehicle Wi-Fi Device (Enhanced Version), 2GB RAM |
| <b>Optional Accessories</b> |   |
| ANT-GPS-MTFi                | GPS Antenna   |
| RG-MTFiCab-3m2pin           | In-vehicle Power Cable                              |
| RG-MTFiCab-3m3pin           | In-vehicle Power Cable                              |
| RG-MTFiCab-0.5m4pin         | In-vehicle Power Cable                              |
| RG-MTFiCab-1m4pin           | In-vehicle Power Cable                              |
| RG-MTFiCab-2m3pin           | In-vehicle Power Cable                              |
| MTFi Conversion Mount Kit   | Conversion Rack Mount Accessories                   |
| MTFi Standard Mount Kit     | Standard Rack Mount Accessories                     |

## 7 More Information

For more information about the Ruijie RG-MTFi v2.0 Vehicle Wi-Fi Device, please visit <http://www.ruijienetworks.com> or contact your local Ruijie sales representative.



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