

# **User Manual For**

## **WiFi Module**

**Model Number: F31953501,**

**F31953500**

**V1.0**

# Introduction

The RT5350 SoC combines Ralink's IEEE 802.11n draft compliant 1T1R MAC/BBP/PA/RF, a high performance 360 MHz MIPS24KEc CPU core, a 5-port integrated 10/100 Ethernet switch/PHY and a USB host/device. With the RT5350, there are very few external components required for 2.4 GHz 802.11n wireless products. The RT5350 employs Ralink's 2nd generation 802.11n technologies for longer range and better throughput. The embedded, high performance CPU can easily manage advanced applications such as Wi-Fi data processing without overloading the host processor. In addition, the RT5350 offers a variety of hardware interfaces (SPI/I<sub>2</sub>S/I<sub>2</sub>C/PCM/UART/USB) to support a range of possible applications.

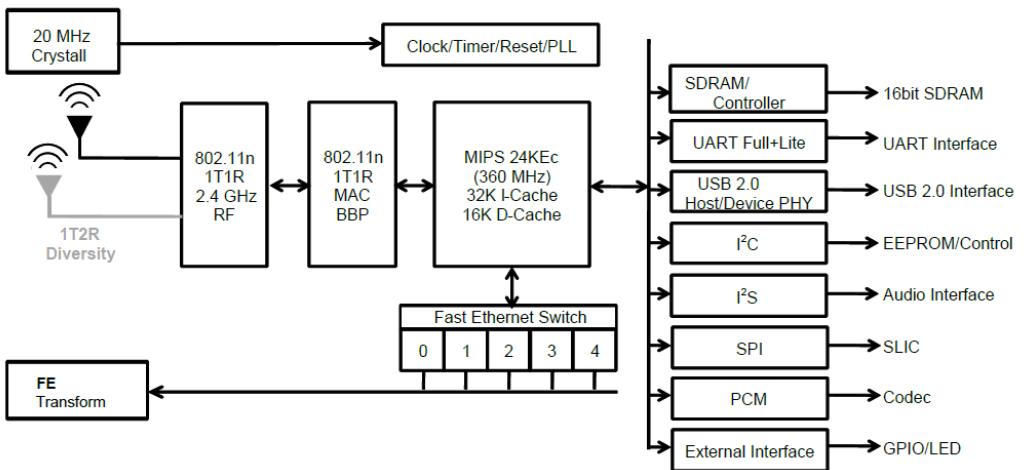
## Applications

- iNIC
- AP/Router

## Features

- Embedded 1T1R 2.4G CMOS RF
- Embedded 802.11n 1T1R MAC/BBP with MLD enhancement
- Embedded PA/LNA
- 150 Mbps PHY data rate
- 20 Mhz/40 MHz channel width
- Legacy and high throughout modes
- Compressed block ACK
- Multiple BSSID (up to 16)
- WEP64/128, WPA, WPA2, WAPI engines
- QOS - WMM, WMM Power Save
- Hardware frame aggregation
- Supports 802.11h TPC
- MIPS 24KEc 360 Mhz with 32 KB I cache/16 KB D cache
- Supports 16-bit SDR SDRAM (up to 64 MB)
- Supports boot from ROM, FLASH
- USB 2.0 HOST/Device dual mode x1
- Embedded 5-port 10/100 Mbps Ethernet switch and 5-port UTP PHY
- Supports 5 10/100 UTP ports
- Slow speed I/O : GPIO, SPI, I<sub>2</sub>C, I<sub>2</sub>S, PCM, UART, and JTAG
- Packaging and I/O voltage
- 12 mm x 12 mm TFBGA-196 package
- I/O: 3.3 V I/O
- Temperature Range: -10 to 55°C
- Packaging: Green/RoHS Compliant TFBGA196 ball(12mm\*12mm)
- Hardware Version: Tailor D30713WF0 V1.0
- Software Version: 1.3.0.5
- Antenna Specification: IPEX Connector, Dipole Antenna, 3dBi

# Functional Block Diagram



## FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## FCC Caution

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1)This device may not cause harmful interference, and (2)This device must accept any interference received, including interference that may cause undesired operation.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. such modifications could void the user's authority to operate this equipment.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **IMPORTANT NOTE:**

### **Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/CANADA.

### **This device is intended only for OEM integrators under the following conditions:**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna,
- 3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

### **End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: RBA-EZSEE-3268".

### **Manual Information to the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.