

Foxconn WFU03 series

Hardware Specification

Introduction

Product Overview

The Foxconn WFU03 series wireless LAN module contains the Ralink® MT7601 single chip which is a highly integrated MAC/BBP for 2.4GHz RF transmission and supporting 150Mbps PHY rate. It fully complies with IEEE 802.11 b/g/n feature rich wireless connectivity at high standards, delivers reliable, cost-effective, throughput from an extended distance. The optimized radio frequency architecture and baseband algorithms provide super performance and low power consumption. Deploy a high efficient USB engine and hardware data processing accelerators without overloading the host processor. Security, quality of service and international regulation are supported by WFU03 series and giving end users the greatest performance anytime in any circumstance.

Key Features

- Legacy data rates 1, 2 in DSSS mode and rates 5.5, and 11 Mbps in CCK mode, 6, 9, 12, 18, 24, 36, 48, and 54 in OFDM mode
- Support 40MHz wide channel bandwidth
- Uses the 2.412 to 2.497GHz ISM frequency band defined by the IEEE 802.11b/g/n specifications
- Reverse direction grant data flow and frame aggregation
- WEP 64/128, WPA, WPA2, TKIP, AES, WAPI
- QoS-WMM, WMM-PS, WPS/WPS2, PIN, PBC
- Multiple BSSID Support
- Fully compliance with USB 2.0 high-speed mode
- Form Factor: PCI Express 1.1 Half Mini Card(single side)
- International Regulation – 802.11d/h/k
- Supports Wi-Fi Direct
- Low power with advanced power management

Electrical Specifications

Pin Definitions

Table. Pin Definitions

Pin	# Name	Pin	# Name
51	N/A	52	+3.3V
49	N/A	50	GND
47	N/A	48	N/A
45	N/A	46	N/A
43	GND	44	LED_WLAN#
41	+3.3V	42	N/A
39	+3.3V	40	GND
37	GND	38	USB_D+
35	GND	36	USB_D-
33	N/A	34	GND
31	N/A	32	N/A
29	GND	30	N/A
27	GND	28	N/A
25	N/A	26	GND
23	N/A	24	N/A
21	GND	22	PERST#
19	N/A	20	W_DISABLE#
17	N/A	18	GND

Mechanical Key

15	GND	16	N/A
13	N/A	14	N/A
11	N/A	12	N/A
9	GND	10	N/A
7	CLKREQ#	8	N/A
5	N/A	6	N/A
3	N/A	4	GND
1	WAKE#	2	+3.3V

DC Specifications

The Max Power (as max defined in the Mini-card Spec) is 2000mW → 667mA (need at lease

2 Power Pins of the 5 exists in the Mini-Card spec, Max limit for each Pin is 500mA).

For all MiniCard voltage rails (3.3V), it is recommended not to exceed 100mVpp noise in the frequency range of 10-500KHz.

Table DC Specifications

Parameters	Symbol	Conditions	Min.	Typ.	Max.	Unit
3.3V Supply Voltage	+3.3V	-	3.0	3.3	3.6	V
Receiver						
3.3 V Current consumption	Icc 33rx	HT 40MHz MCS 7		200		mA
Transmitter						
3.3 V Current consumption	Icc 33tx	HT 40MHz MCS 7		300		mA

Power Consumption Specifications

Power consumption is measured using current probe loop on the Power rails of the USB interface (Pins). Assuming ASMP enabled (L1-active enabled and L0s is disabled).

Table. Power Consumption Specifications(preliminary)

Description	Typical	Unit
Sleep mode	1.1	mA
Rx Active, HT40, MCS7	151	mA
Rx Power Saving. DTIM=1	15	mA
Rx Listen	6	mA
Tx HT40, MCS7 @15dBm	210	mA
Tx CCK, 11Mbps @19dBm	242	mA

Antenna Specifications

Nominal antenna port impedance specification is 50 ohms for the Foxconn WFU03 series hardware.

For regulatory requirements, it is assumed that the antenna gain is:

- ◆ Antenna gain for the 2.4GHz band : 2.5 dBi

There are two antennas supporting 2.4-2.5GHz band.

The Foxconn HD96017 connector will be used on the Foxconn WFU03 series hardware.

The antenna will be defined Main and Aux where is listing below:

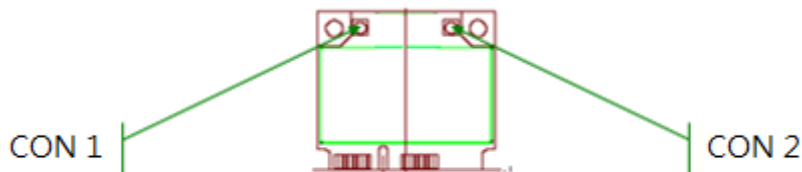


Figure WFU03 series Perspective

Label Specifications



Figure 5.3 WFU03 Label Drawing

Environmental Specifications

The following tables provide normal operating conditions and maximum rating requirements for WFU03 series hardware.

Table . Operating Conditions (preliminary)

Environment	Limits
Operating	-10-70°C

※The radio parts at operating state and above temperature of T-shield.

Table . Non-operating Conditions (preliminary)

Environment	Temperature				Humidity			
	Min.	Typ.	Max.	Unit	Min.	Typ.	Max.	Unit
Non-Operating	-40	25	85	°C	45	-	90	%

※ Temperature condition for storage (Packaged) in warehouse is Maximum 40°C up to 6 months.

Part Numbering

ID Definitions

Table ID Definitions

WLAN Type	Mode	PID	VID
WFU03UXXX-MT7601U	BGN	0x7601	0x148F

Module Photo

Top side



Bottom side

