WizFi630 Hardware Design Guide

(Version 1.0)

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Document Revision History

Date	Revision	Changes
2012-07-02	1.0	Release

1. Overview

This document describes hardware specification of WizFi630.

1.1 WizFi630-EVB Package Block Diagram

The following is a simplified block diagram of the WizFi630-EVB.
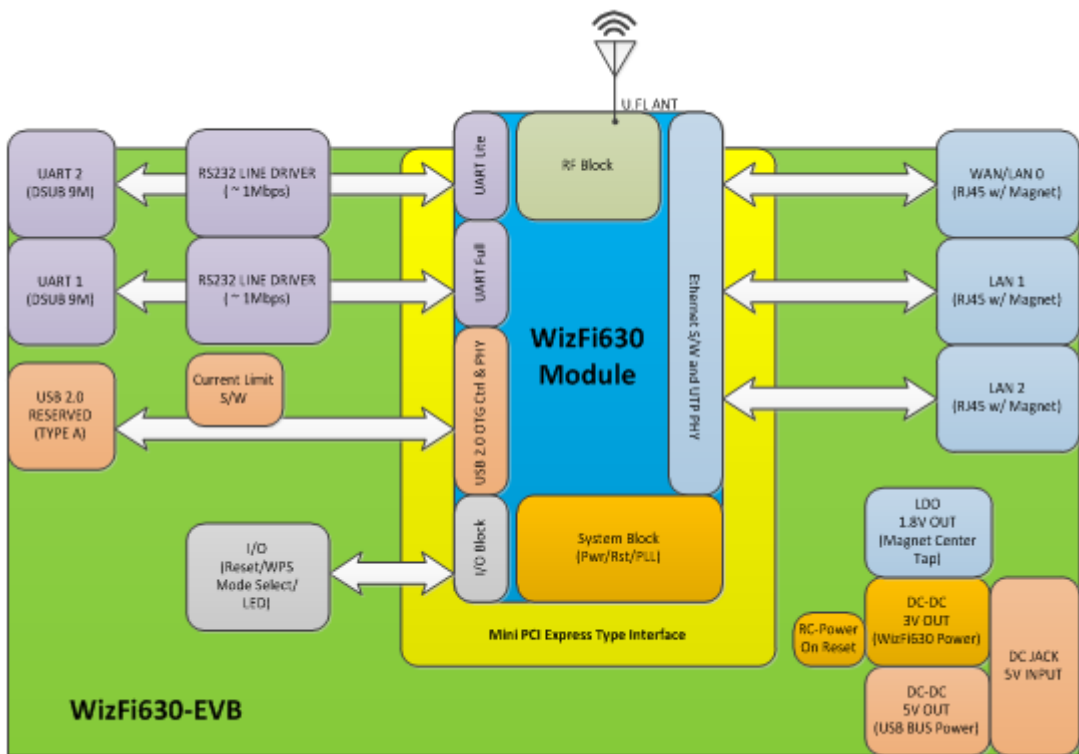
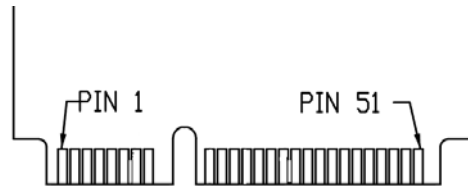
<Figure 1> Block-diagram of the WizFi630-EVB
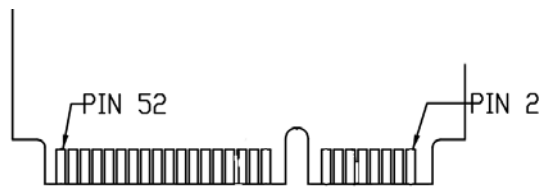
2. Signal List

2.1 WizFi630 Pin-out

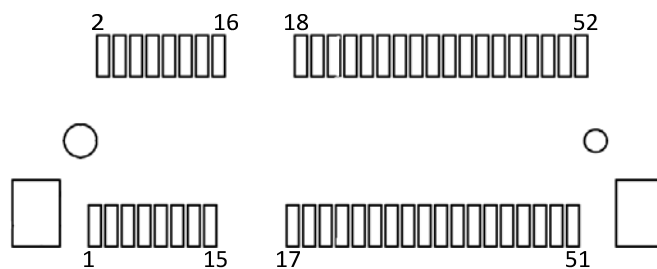The WizFi630 Pin-out is shown in Figure 2 – 4.

<Figure 2> WizFi630 Module Top-Side

<Figure 3> WizFi630 Module Bottom-Side

<Figure 4> WizFi630-EVB Mini-PCIe Connector PCB Footprit

2.2 WizFi630 Pin Description

Pin Number.	Drive (mA)	I/O / IPU / IPD	Name	Description
1		P	GND	Ground
2		P	3.3V	3.3V supply
3		P	GND	Ground
4		P	3.3V	3.3V supply
5	4	I/O, IPD	CTS_N	UART1 CTS-N
6	4	I/O, IPD	RTS_N	UART1 RTS-N
7	4	I/O, IPD	RIN	UART1 RIN
8	4	I/O, IPD	DTR_N	UART1 DTR-N
9	4	I/O, IPD	RxD	UART1 RXD
10	4	I/O, IPD	TxD	UART1 TXD
11	4	I/O, IPD	DSR_N	UART1 DSR-N
12	4	I/O, IPD	DCD_N	UART1 DCD-N
13	4	O	WLAN_LED	Wireless Init On/ Active Data:blinking
14			NC	No connection
15		I/O	VBUS	USB OTG VBUS pin;Connect VBUS pin of the USB
16			NC	No connection
17		I/O	PADP	USB OTG data pin Data+
18	4	I/O, IPD	UART_RX	UART2 RxD

19		I/O	PADM	USB OTG data pin Data-
20	4	I/O, IPD	UART_TX	UART2 TxD
21		O	TXOP0	10/100 PHY Port #0 TXP
22		I	RXIM0	10/100 PHY Port #0 RXN
23		O	TXOM0	10/100 PHY Port #0 TXN
24		I	RXIP0	10/100 PHY Port #0 RXP
25		I	RXIM1	10/100 PHY Port #1 RXN
26		O	TXOP1	10/100 PHY Port #1 TXP
27		I	RXIP1	10/100 PHY Port #1 RXP
28		O	TXOM1	10/100 PHY Port #1 TXN
29		I	RXIP2	10/100 PHY Port #2 RXP
30		O	TXOM2	10/100 PHY Port #2 TXN
31		I	RXIM2	10/100 PHY Port #2 RXN
32		O	TXOP2	10/100 PHY Port #2 TXP
33	4	O	LINK_LED_0	LAN port 0 Link LED
34	4	O	LINK_LED_2	LAN port 2 Link LED
35	4	O	LINK_LED_1	LAN port 1 Link LED
36	4	I/O, IPD	GPIO0	WPS Button Push
37	2	I, IPU	CPURST_N	Power on reset
38		I/O, IPD	EJT_TDO	Reset Button Push(GPIO17)
39		I/O, IPD	EJT_TRSTN	UART2 Tx/Rx LED

40		I/O, IPD	EJT_TMS	Serial Command Mode #1(GPIO19)
41		I/O, IPD	EJT_TDI	UART1 Tx/Rx LED
42		I/O, IPD	EJT_TCK	WPS LED(GPIO20)
43			NC	No connection
44			NC	No connection
45			NC	No connection
46			NC	No connection
47	8	I/O, IPD	I2C_SCLK	Serial Command Mode #2(GPIO2)
48	8	I/O, IPD	I2C_SD	RUN LED(GPIO1)
49		P	GND	Ground
50		P	3.3V	3.3V supply
51		P	GND	Ground
52		P	3.3V	3.3V supply

Note:

1. IPD means internal pull-down; IPU means internal pull-up; P means power.

3. Electrical Specification

3.1 Absolute Maximum Ratings

Supply Voltage	3.6V
Vcc to Vcc Decouple	-0.3 to +0.3V
Input, Output or I/O Voltage	GND-0.3V to Vcc+0.3V

3.2 Operating Conditions

Operational Ambient Range	-10 to 70℃
Supply Voltage	3.3V +/-10%

3.3 DC Electrical Characteristics

3.3.1 Power Consumption

Parameters	Conditions	Min	Type	Max	Unit
3.3V Current Consumption	@WizFi630		675		mA

3.3.2 DC characteristics for GPIO pins with 4mA driving capability

Symbol	Min	Normal	Max	Unit
VIH	2.0		5.5	V
VIL	-0.3		0.8	V
VOH	2.4			V
VOL			0.4	V
IOH	10.0	19.4	32.1	mA
IOL	6.5	10.4	14.4	mA

3.3.3 DC charactereistics for GPIO pins with 8mA driving capability

Symbol	Min	Normal	Max	Unit
VIH	2.0		5.5	V
VIL	-0.3		0.8	V
VOH	2.4			V
VOL			0.4	V

IOH	14.0	27.2	44.9	mA
IOL	9.8	15.7	21.8	mA

3.4 AC Electrical Characteristics

3.4.1 Power On Sequence
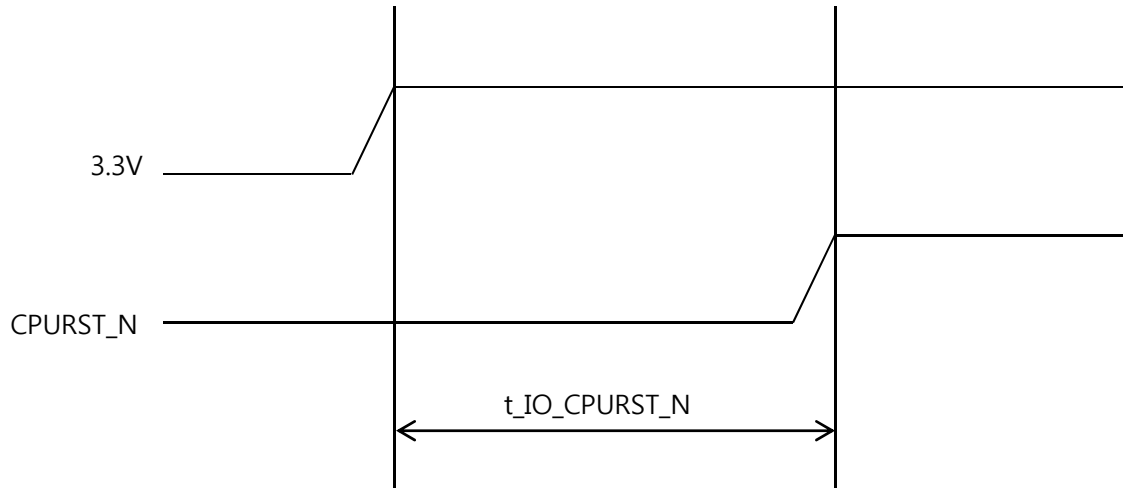
<Figure 5> Power On Sequence

Symbol	Description	Min	Max	Unit
t_IO_CPURST_N	Time between 3.3V power on to CPURST_N de-assertion	10	-	ms

3.5 RF Specifications

| Type	Description
Wireless Standard	IEEE802.11b/g/n
Frequency Range	USA: 2.400 ~ 2.483GHz
	Europe: 2.400 ~ 2.483GHz
	Japan: 2.400 ~ 2.497GHz
	China: 2.400 ~ 2.483GHz
Operating Channels	USA/Canada: 11(1 ~ 11)
	Major Europe Countries: 13(1 ~ 13)
	France: 4(10 ~ 13)
	Japan: 14 for 802.11b(1 ~ 14), 13 for 802.11g(1 ~ 13)

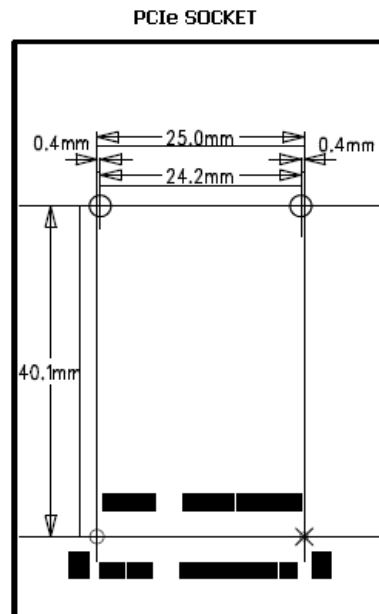|	Korea/China: 13(1 ~ 13)
Output Power(Tolerance +/-1dBm)	802.11b: 17dBm@11Mbps
	802.11g: 14dBm@54Mbps
	802.11n: 14dBm@150Mbps/72Mbps
Receive Sensitivity	802.11b: -89dBm@11Mbps
	802.11g: -74dBm@54Mbps
	802.11n(40MHz): -66dBm@150Mbps
	802.11n(20MHz): -70dBm@72Mbps
Data Rates	802.11b: 1,2,5.5,11Mbps
	802.11g: 6,9,12,18,24,36,48,54Mbps
	802.11n(20MHz): 7,14.5,21.5,28.5,43.5,57.5,65,72Mbps
	802.11n(40MHz): 29.5,86.5,115,130,144,150Mbps
Modulation Type	11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
	11b: DSS(CCK, DQPSK, DBPSK)
Antenna	u.FL (EVB : 1T1R 2dBi)

4. WizFi630-EVB Schematic
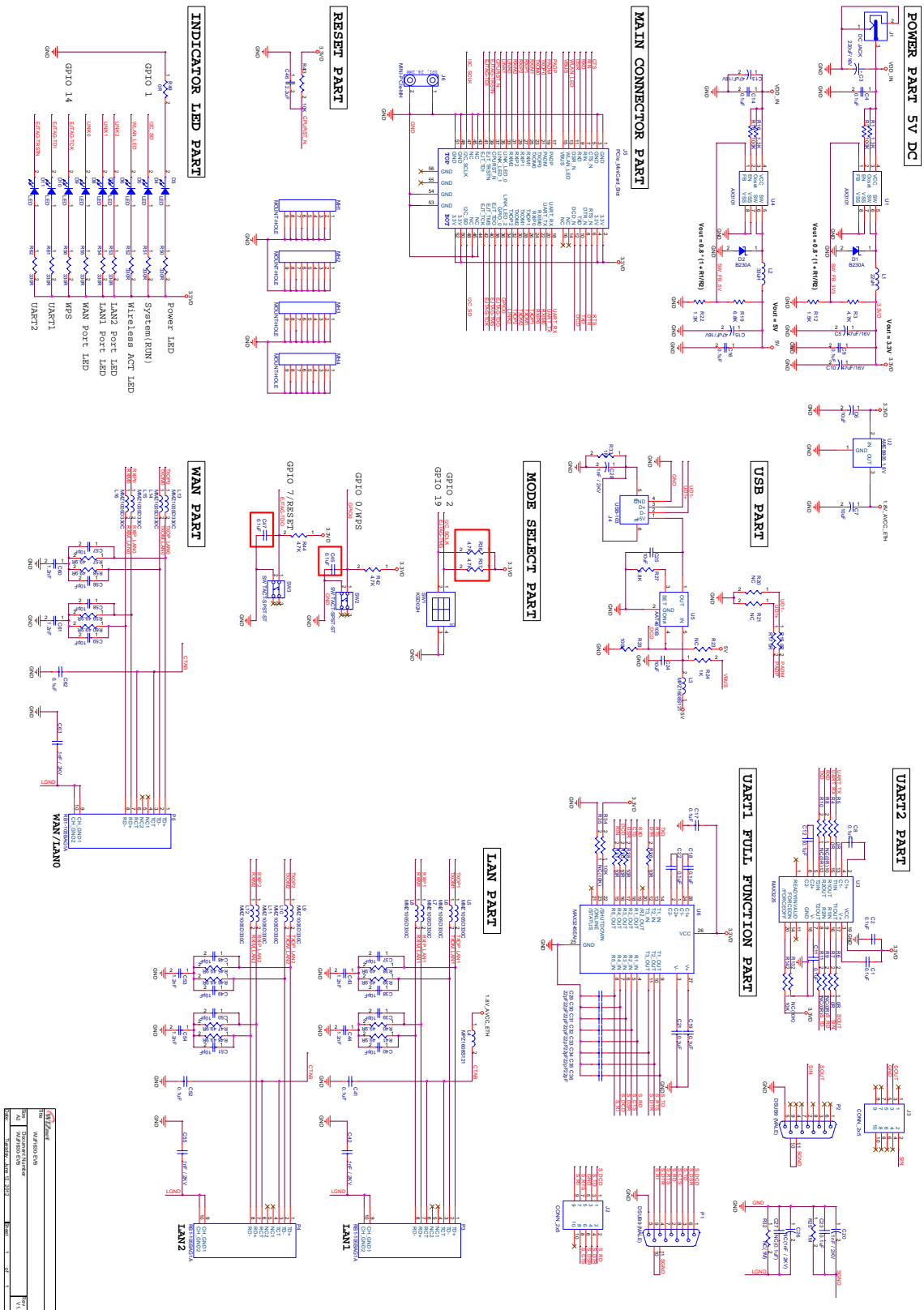
<Figure 6> WizFi630-EVB Schematic

5. WizFi630 Module Mechanical

TOP VIEW

SIDE VIEW
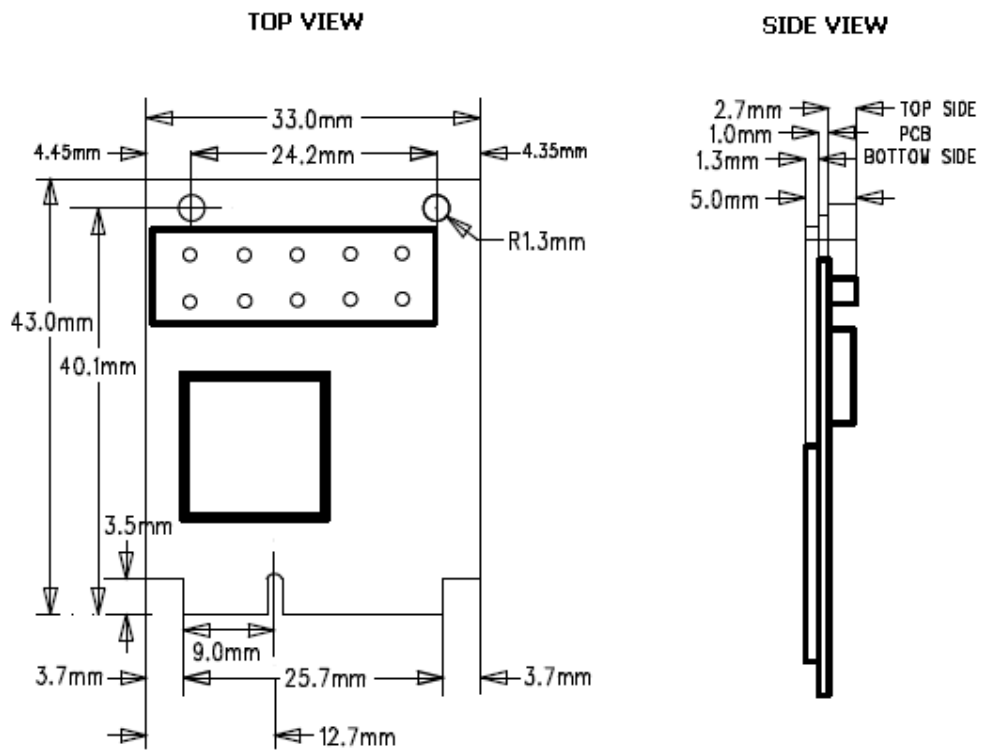
<Figure 7> WizFi630 Module demension

PCIe SOCKET

<Figure 8> WizFi630-EVB PCB Footprint