WizFi630S Peripherals

(Version 1.2.0)

For more information, please visit our website at http://www.wiznet.io/

Document Revision History

Date	Revision	Changes
2019-09-09	1.0	Release
2019-10-28	1.1	Add reserved pin description
2019-11-21	1.2	update

1. Overview

This document will explain the peripheral functions of each pins of WizFi630S.

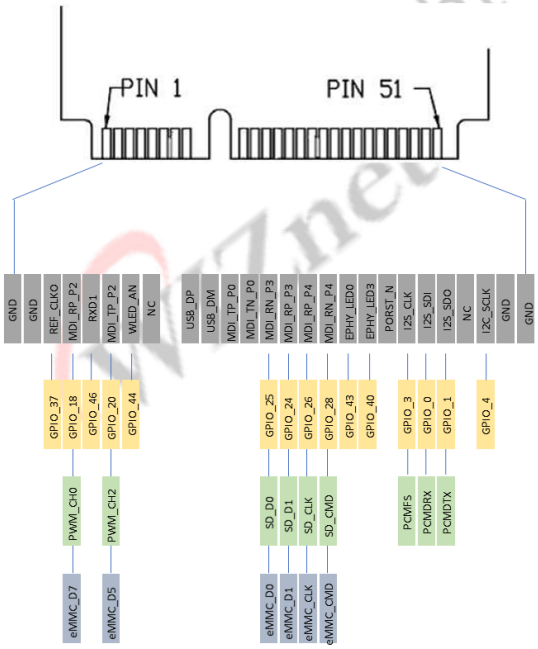
Please take note of the precautions about using pins reserved for Ethernet.

WizFi630S supports Ethernet, USB, UART, I2C, I2S, SDIO, GPIOs but can differ depending on settings.

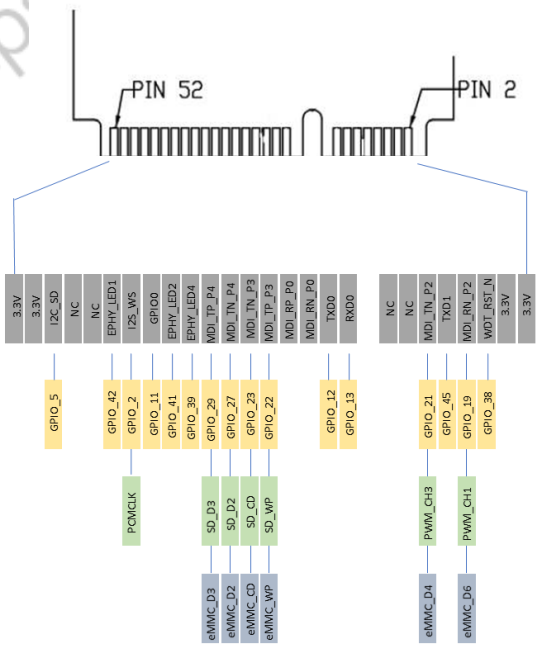
2. WizFi630S Pin Description

2.1 WizFi630S mini PCI-e interface

mini PCIe connector Top View



mini PCIe connector Bottom View



2.2 Pin map

The default firmware of WizFi630S provides the pin map as shown below.

No	Type	Name	Shared	Description
1		GND		
2		3.3V		
3		GND		
4		3.3V		
5	I/O, IPD	REF_CLKO	GPIO#37	Will be provided as UART1 CTS-N
6	I/O, IPD	WDT_RST_N	GPIO#38	Will be provided as UART1 RTS-N
7	I/O, IPD	RXIP2	GPIO#18	Reserved
8	I/O, IPD	RXIM2	GPIO#19	Reserved
9	I/O, IPD	RxD1	GPIO#46	UART1 RXD
10	I/O, IPD	TxD1	GPIO#45	UART1 TXD
11	I/O, IPD	TXOP2	GPIO#20	Reserved
12	I/O, IPD	TXOM2	GPIO#21	Reserved
13	O	WLAN_LED	GPIO#44	Wireless Init On
14		NC		
15		NC(VBUS)		USB OTG VBUS pin in WizFi630
16		NC		
17	I/O	USB_PADP		USB OTG data pin Data+
18	I/O, IPD	UART_RX	GPIO#13	UART0 RxD
19	I/O	USB_PADM		USB OTG data pin Data-
20	I/O, IPD	UART_TX	GPIO#12	UART0 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	RXIM3	GPIO#25	10/100 PHY Port #3 RXN
26	O	TXOP3	GPIO#22	10/100 PHY Port #3 TXP
27	I	RXIP3	GPIO#24	10/100 PHY Port #3 RXP
28	O	TXOM3	GPIO#23	10/100 PHY Port #3 TXN
29	I	RXIP4	GPIO#26	10/100 PHY Port #4 RXP
30	O	TXOM4	GPIO#27	10/100 PHY Port #4 TXN

31	I	RXIM4	GPIO#28	10/100 PHY Port #4 RXN
32	O	TXOP4	GPIO#29	10/100 PHY Port #4 TXP
33	O	LINK0_LED	GPIO#43	LAN port 0 Link LED
34	O	LINK4_LED	GPIO#39	LAN port 4 Link LED
35	O	LINK3_LED	GPIO#40	LAN port 3 Link LED
36	I/O, IPD	LINK2	GPIO#41	WPS Button Push
37	I, IPU	CPURST_N		
38	I/O, IPD	GPIO_0	GPIO#11	Reset Button Push
39	I/O, IPD	I2S_CLK	GPIO#3	General Purpose Output LED
40	I/O, IPD	I2S_WS	GPIO#2	General Purpose Input Switch SW1-1
41	I/O, IPD	I2S_SDI	GPIO#0	General Purpose Output LED
42	I/O, IPD	LINK1	GPIO#42	WPS LED
43		I2S_DO	GPIO#1	GPIO
44		NC		
45		NC		
46		NC		
47	I/O, IPD	I2C_SCLK	GPIO#4	General Purpose Input Switch SW1-2
48	I/O, IPD	I2C_SD	GPIO#5	RUN LED
49		GND		
50		3.3V		
51		GND		
52		3.3V		

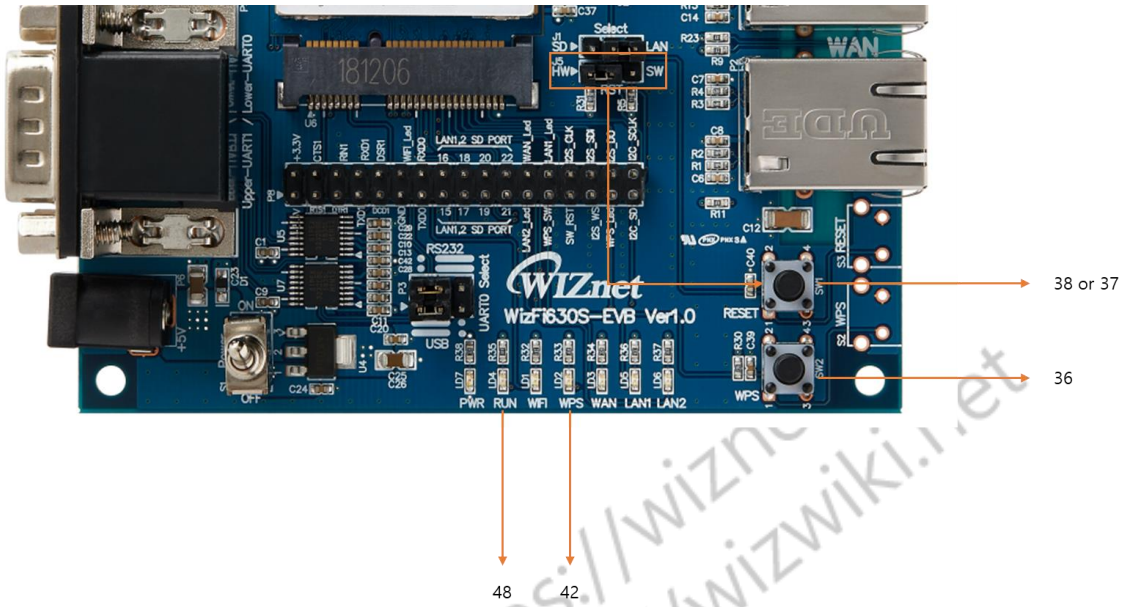
2.3 Reserved Pin Description

Some pins below are reserved with the default firmware of WizFi630S

Pin Num	GPIO No	Description
36	GPIO#41	WPS Button Push
38	GPIO#11	Reset Button Push
39	GPIO#3	General Purpose Output LED
40	GPIO#2	General Purpose Input Switch SW1-1
41	GPIO#0	General Purpose Output LED
42	GPIO#42	WPS LED

47	GPIO#4	General Purpose Input Switch SW1-2
48	GPIO#5	RUN LED

WizFi630S-EVB



When the RST Jumper on the EVB is shorted to SW, the button is connected to Pin 38(Soft RESET). When RST Jumper is shorted to HW, it is connected to Pin 37(Hard RESET).

3. Pin Sharing Schemes

3.1 GPIOs

Pin Name	GPIO No	Shared	Shared	Shared
GPIO#0	GPIO#0	I2S_SDI		
GPIO#1	GPIO#1	I2S_SDO		
GPIO#2	GPIO#2	I2S_WS		
GPIO#3	GPIO#3	I2S_CLK		
GPIO#4	GPIO#4	I2C_SCLK		
GPIO#5	GPIO#5	I2C_SD		
GPIO#11	GPIO#11	GPIO0		
GPIO#18	GPIO#18	RXIP2		
GPIO#19	GPIO#19	RXIM2		

GPIO#20	GPIO#20	TXOP2		
GPIO#21	GPIO#21	TXOM2		
GPIO#22	GPIO#22	TXOP3		
GPIO#23	GPIO#23	TXOM3		
GPIO#24	GPIO#24	RXIP3		
GPIO#25	GPIO#25	RXIM3		
GPIO#26	GPIO#26	RXIP4		
GPIO#27	GPIO#27	RXIM4		
GPIO#28	GPIO#28	TXOP4		
GPIO#29	GPIO#29	TXOM4		
GPIO#37	GPIO#37	REF_CLKO		
GPIO#38	GPIO#38	WDT_RST_N		
GPIO#39	GPIO#39	LINK4_LED		
GPIO#40	GPIO#40	LINK3_LED		
GPIO#41	GPIO#41	LINK2_LED		
GPIO#42	GPIO#42	LINK1_LED		
GPIO#43	GPIO#43	LINK0_LED		
GPIO#44	GPIO#44	WAN_LED		
GPIO#45	GPIO#45	UART_TX1		
GPIO#46	GPIO#46	UART_RX1		

3.1 UART1, 2

Pin Name	GPIO No	Shared	Shared	Shared
UART1_TX	GPIO#46	PWM_CH1		
UART1_RX	GPIO#45	PWM_CH0		
UART2_TX	GPIO#20	TXOP2	PWM_CH2	eMMC_D5
UART2_RX	GPIO#21	TXOM2	PWM_CH3	eMMC_D4

3.2 Ethernet PHY LED

Pin Name	GPIO No	Shared	Shared	Shared

LINK0_LED	GPIO#43			
LINK1_LED	GPIO#42			
LINK2_LED	GPIO#41			
LINK3_LED	GPIO#40			
LINK4_LED	GPIO#39			

3.3 WLAN LED

Pin Name	GPIO No	Shared	Shared	Shared
WLAN_LED	GPIO#44			

3.4 WDT_RST/ REF_CLKO

Pin Name	GPIO No	Shared	Shared	Shared
REF_CLKO	GPIO#38			
WDT_RST_N	GPIO#37			

3.5 GPIO0

Pin Name	GPIO No	Shared	Shared	Shared
GPIO_0	GPIO#11	REF_CLKO	PERST_N	

3.6 I2C

Pin Name	GPIO No	Shared	Shared	Shared
I2C_SCLK	GPIO#4			
I2C_SD	GPIO#5			

3.7 I2S

Pin Name	GPIO No	Shared	Shared	Shared
I2S_SDI	GPIO#0	I2C_SCLK	PCMDRX	
I2S_SDO	GPIO#1	I2C_SD	PCMDTX	

I2S_WS	GPIO#2	I2C_SCLK	PCMCLK	
I2C_CLK	GPIO#3	I2C_SD	PCMFS	

3.8 SD/eMMC

Pin Name	GPIO No	Shared	Shared	Shared
SD_WP	GPIO#22	TXOP3		
SD_CD	GPIO#23	TXOM3		
SD_CLK	GPIO#26	RXIP4		
SD_CMD	GPIO#28	RXIM4		
SD_D0	GPIO#25	RXIM3		
SD_D1	GPIO#24	RXIP3		
SD_D2	GPIO#27	TXOP4		
SD_D3	GPIO#29	TXOP4		

3.9 eMMC

Pin Name	GPIO No	Shared	Shared	Shared
eMMC_WP	GPIO#22	TXOP3		
eMMC_CD	GPIO#23	TXOM3		
eMMC_CLK	GPIO#26	RXIP4		
eMMC_CMD	GPIO#28	RXIM4		
eMMC_D0	GPIO#25	RXIM3		
eMMC_D1	GPIO#24	RXIP3		
eMMC_D2	GPIO#27	TXOP4		
eMMC_D3	GPIO#29	TXOP4		
eMMC_D4	GPIO#21	PWM_CH3	TXOM2	UART1_RX
eMMC_D5	GPIO#20	PWM_CH4	TXOP2	UART2_TX
eMMC_D6	GPIO#19	PWM_CH1		
eMMC_D7	GPIO#18	PWM_CH0		

3.10 PWM

Pin Name	GPIO No	Shared	Shared	Shared
PWM_CH0	GPIO#18	RXIP2	eMMC_D7	
PWM_CH0	GPIO#45	UART_RX1		
PWM_CH1	GPIO#19	RXIM2	eMMC_D6	
PWM_CH1	GPIO#46	UART_RX1		
PWM_CH2	GPIO#20	UART_TX2	TXOP2	eMMC_D5
PWM_CH4	GPIO#21	UART_RX2	TXOM2	eMMC_D4

4. Ethernet VLAN Configuration

WizFi630S supports up to maximum 5 Ethernet ports (ETH0 ~ ETH4).
In order to use ETH1~ETH4, the internal Ethernet switch must be used to compose VLAN 4 Port.
Hence, WizFi630S can use only ETH0 or all ETH0 ~ ETH4 depending on the OpenWRT settings.
GPIO#18 ~ 29 can be used for GPIO or other peripherals only in case that ETH0 mode is set because these pins share specific peripheral function and Ethernet signals for ETH1 ~ ETH4 .

PIN		Ethernet VLAN Configuration	
GPIO No.	No. of Module	Only ETH0	ETH0 ~ ETH4
GPIO#18, 19	7, 8	GPIO, PWM 가능	GPIO, PWM 불가능
GPIO#20, 21	11, 12	GPIO, UART2 가능	GPIO, UART2 불가능
GPIO#22~29	25~32	GPIO, SDIO 가능 ETH1~4 불가능	GPIO, SDIO 불가능 ETH1~4 가능
ETH0	21~24	ETH0 가능	ETH0 가능