WizFi630S Peripherals

(Version 1.2.0)

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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

이 문서는 WizFi630S의 각 핀이 지원하는 Peripheral function에 대한 정보를 제공합니다. 또한 Ethernet에 reserved된 핀을 사용할 때 주의사항에 대해서도 참고하시길 바랍니다.

WizFi630S는 기본적으로는 Ethernet, USB, UART, I2C, I2S, SDIO, GPIOs를 지원하며, 설정에 따라 차이가 발생할 수 있습니다.

2. WizFi630S Pin Description

2.1 WizFi630S mini PCI-e interface
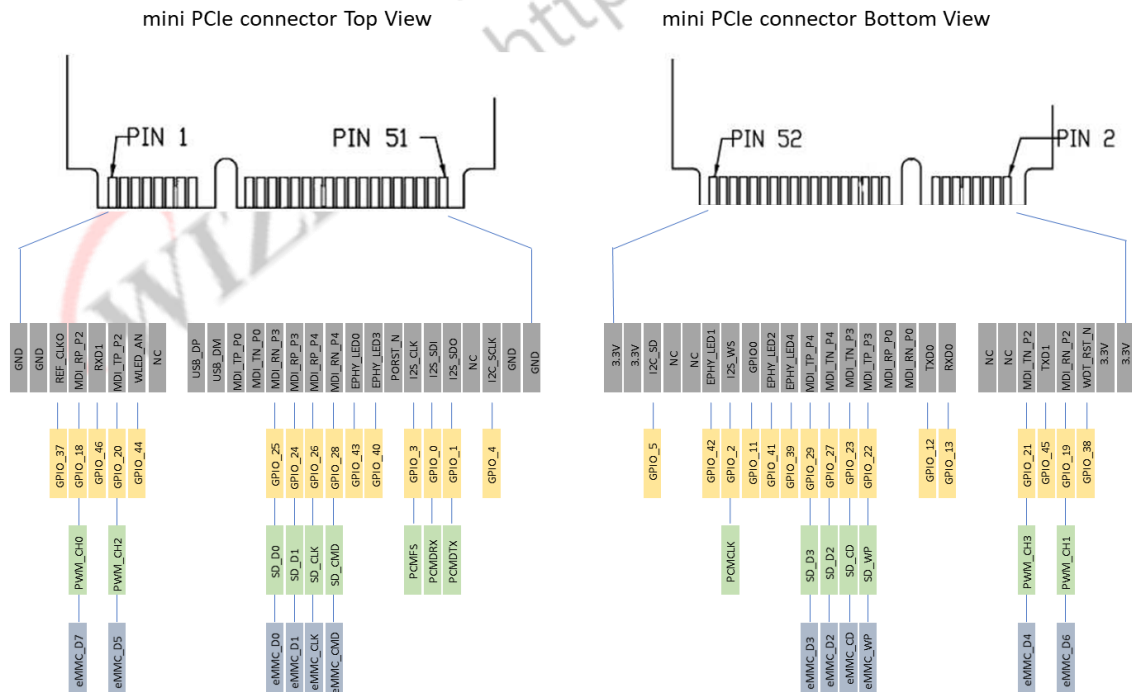
2.2 Pin map

WizFi630S의 기본 펌웨어는 아래와 같이 Pin map을 지원합니다.

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

WizFi630S의 기본 펌웨어에는 몇 개의 핀들이 시스템에 예약되어 있습니다.

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

Pin 38은 WizFI630S-EVB의 RST Jumper를 SW로 연결했을 때 버튼은 모듈의 Soft RESET과 연결됩니다. RST Jumper를 HW로 연결했을 때에는 Hard RESET과 연결됩니다.

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

WizFi630S는 ETH0 ~ ETH4까지 최대 5개의 Ethernet Port를 지원합니다. ETH1~ETH4를 사용하기 위해서는 내부 Ethernet Switch를 사용하여 VLAN 4 Port를 구성합니다.

따라서 WizFi630S는 openWRT 설정에 의해 오직 ETH0만을 사용하거나 ETH0 ~ ETH4를 사용할 수 있습니다.

GPIO#18~21 핀은 ETH2 Port로 Reserved 되어 있으며, 만약 GPIO나 PWM 기능을 사용하기 위해서는 ETH1~ETH4를 VLAN 기능으로 사용할 수 없습니다.

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