

Migration Guide

WizFi630A to WizFi630S

(Version 1.0.0)

WIZnet <https://wiznet.io>
WIZnet <https://wizwiki.net>



© 2019 WIZnet Co., Ltd. All Rights Reserved.

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

Document Revision History

Date	Revision	Changes
2019-09-09	1.0	Release

Contents

1. Overview	4
2. New Features	4
3. Major Differences	4
3.1 UART Function.....	4
3.2 Ethernet Transformer Center-tap.....	4
3.3 Pins	6
4. Comparison between two modules	7
4.1 Dimensions and Pin-out.....	7
4.2 Pin Comparison Table	8
4.3 Process Comparison	10

1. Overview

This document is a guide for customers who wish to migrate from WizFi630A to WizFi630S. Similarities and upgrades between WizFi630S and WizFi630A will be explained.

2. New Features

- WizFi630S has the identical dimensions and pin-out as WizFi630A
- Upgraded processor with larger RAM and FLASH
- Added pin for SD/eMMC interface
- Added pin for I2S interface
- Added PWM pin

3. Major Differences

3.1 UART Function

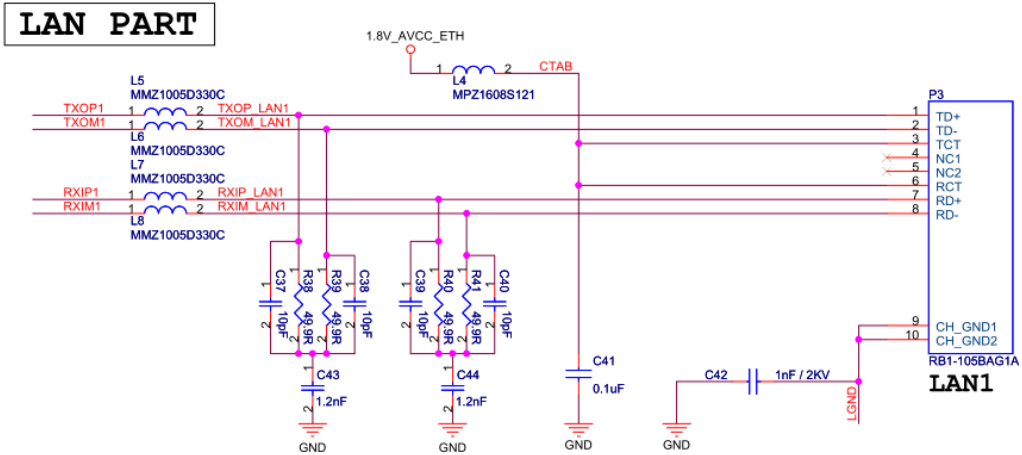
WizFi630S does not support UART Flow Control whereas WizFi630A supported FULL UART(CTS/RTS/RIN/DTR/DSR/DCD).

WizFi630S supports only UART lite(TX/RX).

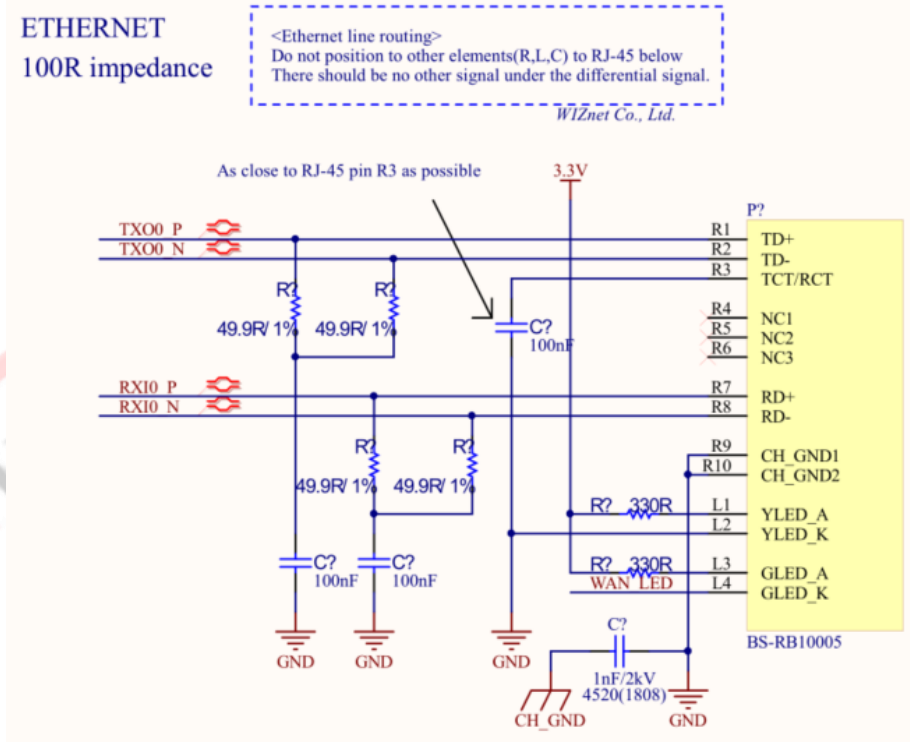
3.2 Ethernet Transformer Center-tap

The center-tap of WizFi630S connects to GND.

Previously, the center-tap of WizFi630A operated in 1.8V ~ 3.3V but the center-tap of WizFi630S must be connected to GND.



WizFi630A reference schematic (Center Tap)



WizFi630S reference schematic (Center Tap)

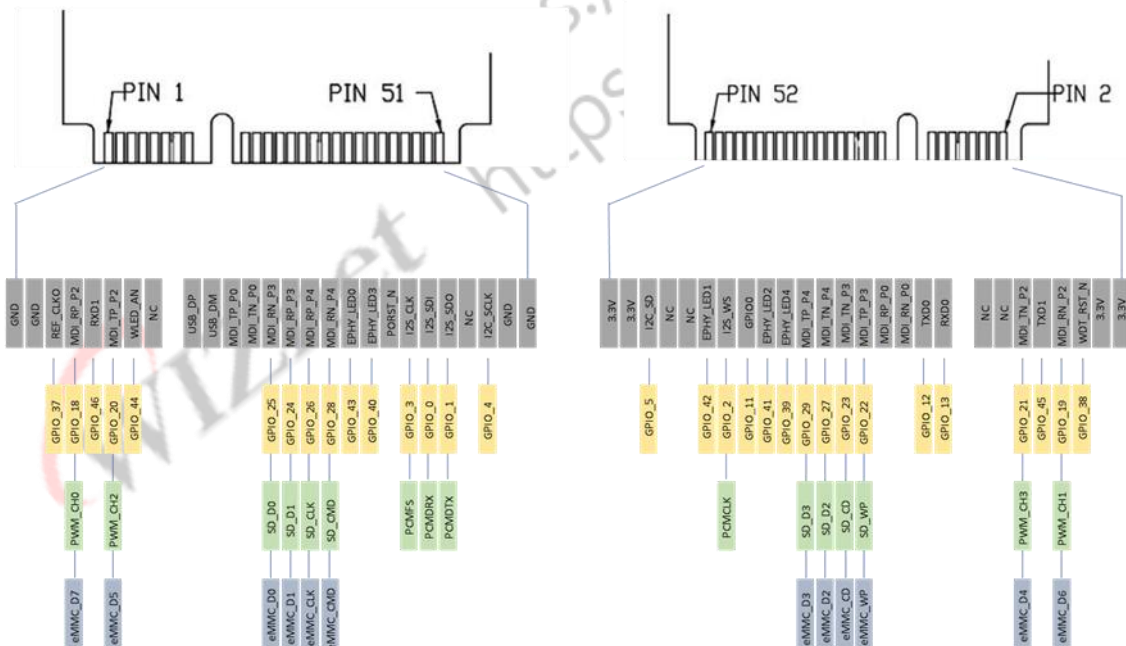
3.3 Pins

Since the main chipset was changed, the alternative (shared) functions of each pin has changed. The below chart shows the differences of the alternative functions.

	WizFi630S	WizFi630A
USB Host 2.0	1	1
SD/eMMC	1	0
Ethernet	3	3
GPIOs	31	16
PWM	4	0
UART	3	2
I2C	1	1
I2S	1	0

mini PCIe connector Top View

mini PCIe connector Bottom View



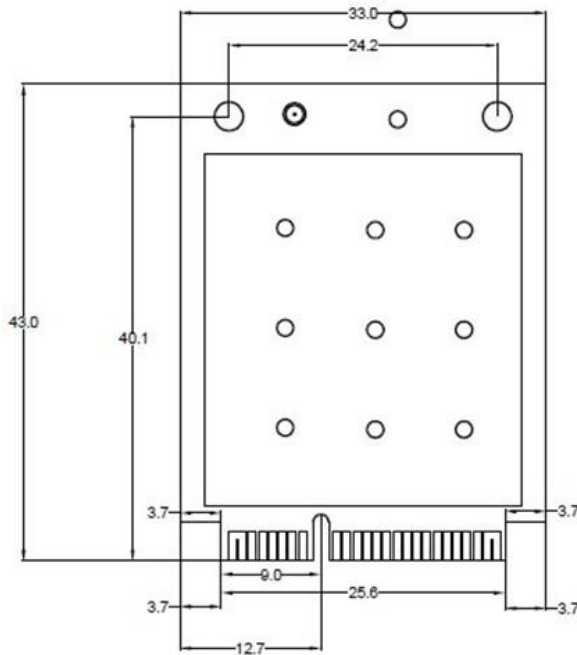
4. Comparison between two modules

4.1 Dimensions and Pin-out

WizFi630S was designed to be pin-compatible with WizFi630A hardware-wise.

Hence WizFi630S has almost identical dimensions and pin-out as WizFi630A.

Dimensions (mm)	Length	Width	Height	Hole Width	HOLE Height	HOLE Φ	PCB Thickness
	43	33	3	24.2	40	2.5	1.0
Tolerance +/- 0.1mm							



mini PCI connector Top View

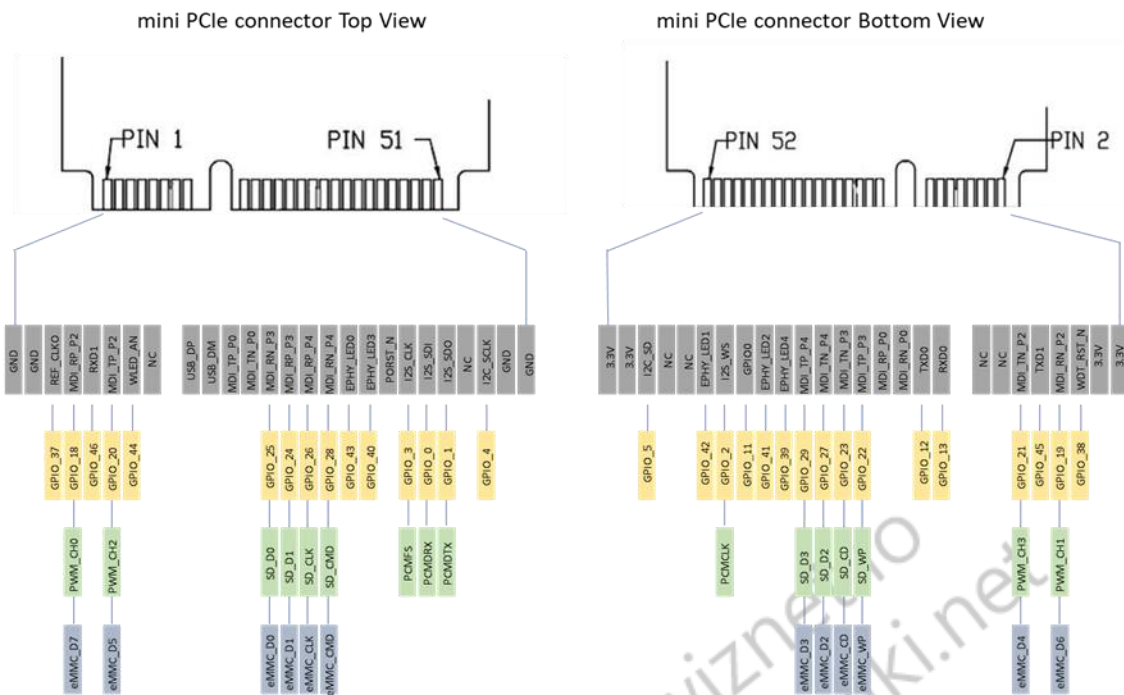
4.2 Pin Comparison Table

No	WizFi630S		WizFi630A		Description
	Name	Shared	Name	Shared	
1	GND		GND		
2	3.3V		3.3V		
3	GND		GND		
4	3.3V		3.3V		
5	REF_CLKO	GPIO#37	CTS_N	GPIO#9	
6	WDT_RST_N	GPIO#38	RTS_N	GPIO#7	
7	RXIP2	GPIO#18	RIN	GPIO#14	Reserved
8	RXIM2	GPIO#19	DTR_N	GPIO#11	Reserved
9	RxD1	GPIO#46	RxD1	GPIO#10	UART1 RXD
10	TxD1	GPIO#45	TxD1	GPIO#8	UART1 TXD
11	TXOP2	GPIO#20	DSR_N	GPIO#13	Reserved
12	TXOM2	GPIO#21	DCD_N	GPIO#12	Reserved
13	WLAN_LED	GPIO#44	WLAN_LED		Wireless Init On
14	NC		NC		
15	NC		NC(VBUS)		Mandatory NC
16	NC		NC		
17	USB_PADP		USB_PADP		USB OTG data pin Data+
18	UART_RX	GPIO#13	UART_RX		UART0 RxD (Sys console)
19	USB_PADM		USB_PADM		USB OTG data pin Data-
20	UART_TX	GPIO#12	UART_TX		UART0 TxD (Sys console)
21	TXOP0		TXOP0		WAN Port TXP
22	RXIM0		RXIM0		WAN Port RXN
23	TXOM0		TXOM0		WAN Port TXN
24	RXIP0		RXIP0		WAN Port RXP
25	RXIM3	GPIO#25	RXIM1		LAN Port-1 RXN
26	TXOP3	GPIO#22	TXOP1		LAN Port-1 TXP
27	RXIP3	GPIO#24	RXIP1		LAN Port-1 RXP
28	TXOM3	GPIO#23	TXOM1		LAN Port-1 TXN
29	RXIP4	GPIO#26	RXIP2		LAN Port-2 RXP

30	TXOM4	GPIO#27	TXOM2		LAN Port-2 TXN
31	RXIM4	GPIO#28	RXIM2		LAN Port-2 RXN
32	TXOP4	GPIO#29	TXOP2		LAN Port-2 TXP
33	LINK0_LED	GPIO#43	LINK0_LED		WAN Port Link LED
34	LINK4_LED	GPIO#39	LINK2_LED		LAN Port-2 Link LED
35	LINK3_LED	GPIO#40	LINK1_LED		LAN Port-1 Link LED
36	LINK2	GPIO#41	GPIO0	GPIO#0	WPS Button
37	CPURST_N		CPURST_N		
38	GPIO_0	GPIO#11	EJTAG_TDO	GPIO#17	Software Reset Button
39	I2S_CLK	GPIO#3	EJTAG_TRST_N	GPIO#21	General Purpose Output LED
40	I2S_WS	GPIO#2	EJTAG_TMS	GPIO#19	Switch SW1-1
41	I2S_SDI	GPIO#0	EJTAG_TDI	GPIO#18	General Purpose Output LED
42	LINK1	GPIO#42	EJTAG_TCK	GPIO#20	WPS LED
43	I2S_DO	GPIO#1	NC		GPIO
44	NC		NC		
45	NC		NC		
46	NC		NC		
47	I2C_SCLK	GPIO#4	I2C_SCLK	GPIO#2	Switch SW1-2
48	I2C_SD	GPIO#5	I2C_SD	GPIO#1	RUN LED
49	GND		GND		
50	3.3V		3.3V		
51	GND		GND		
52	3.3V		3.3V		

WizFi630S does not support 'hardware flow control' of UART1 and only supports UART1 TXD, UART1 RXD. The pins that were previously used for 'hardware flow control' has been allocated as two GPIOs and extra LAN port.

Also, PIN 43 has been allocated to add I2S pin.



4.3 Processor Comparison

No	WizFi630S	WizFi630A
Chipset	MediaTek MT7688AN	RALINK RT5350
Processor	580MHz MIPS	360MHz MIPS
Cache	64KB I cache, 32KB D cache	32KB I cache, 16KB D cache
SDRAM	128MB	32MB
Flash	32MB	8MB