

# WizFi630S Peripherals

## UART

(Version 1.0.0)

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## Document Revision History

Date	Revision	Changes
2019-12-20	1.0	Release

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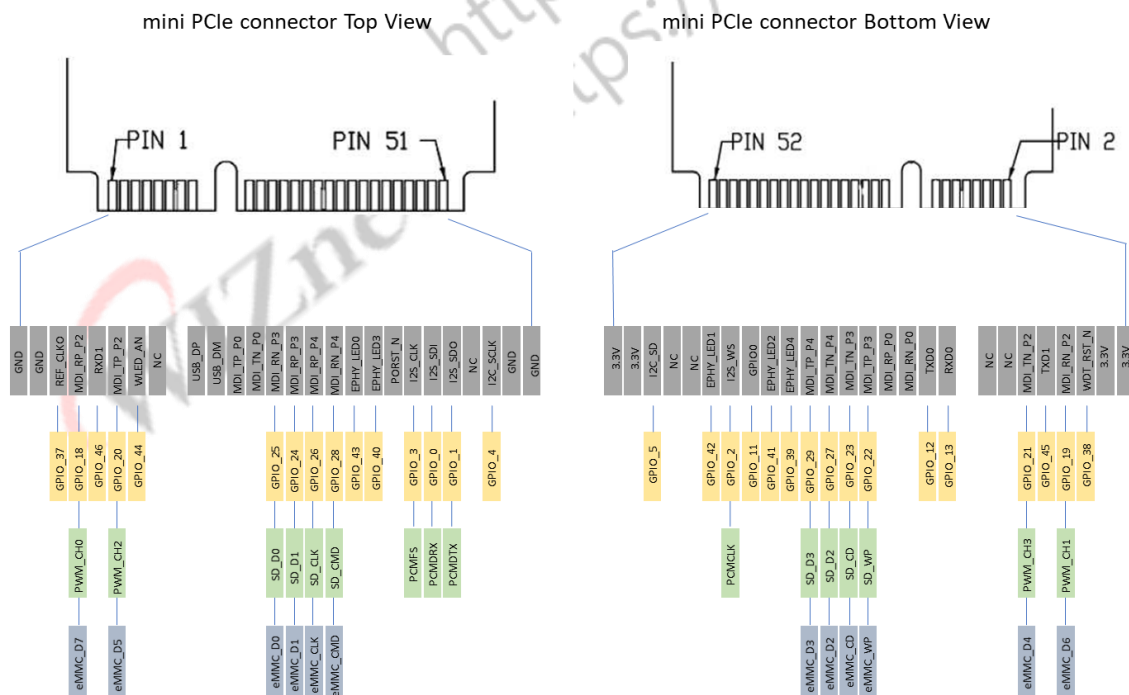
# 1. Overview

This document will describe how to use UART with WizFi630S.

WizFi630S can use OpenWRT to control GPIO from the user-space via `sysfs(/sys/class/ttyS*)`.

## 2. WizFi630S Pin Description

### 2.1 WizFi630S mini PCI-e interface



## 2.2 Pin map

The default firmware of WizFi630S supports the below pin map.

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(GPIO20)
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 Available UARTs

WizFi630S supports 3 UARTs and operates in 3.3V TTL level.

Users can control WizFi630S and check the log via UART0 since UART0 is synced with the system console in the default firmware.

And users should use UART1 in the user-space since UART2 operates as Ethernet VLAN(TXOP2, TXOM2) in the default firmware.

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. UART1 Handling

### 3.1 WizFi630S UART

The WizFi630S provides UART Lite interface but without Flow control. UART communication is provided through 2-pins only, which are Tx/Rx.

Data bit can be configured as 5,6,7,8, Stop bit as 1 and 2, Parity bit as none, even, odd.

Maximum baud rate is 345,600 bps. However 115,200bps rate is recommended as default.

### 3.2 UART Initialization

UART must be set to default settings in order to use the UART port.

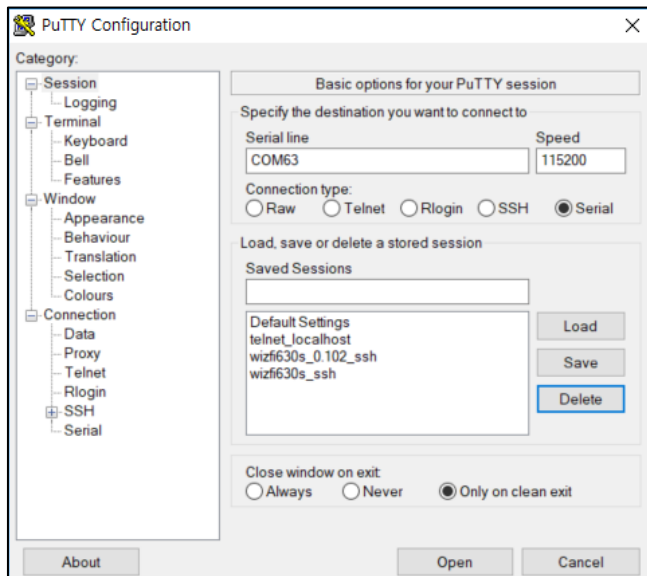
The settings include baud rate, data bit, and etc.

Use the below command to set the baud rate of /dev/ttyS0 to 115,200.

```
stty -F /dev/ttyS0 115200
```

### 3.3 UART Transmit

Users should use a serial terminal tool, such as PuTTY, in order to test the Transmitting/receiving data between WizFi630S and the PC.



Users can check the data transmitted from WizFi630S on the PC if the PuTTY tool session is successfully opened.

Use the below command to transmit the data 'sent from WizFi630S' to the PC.

```
echo "sent from WizFi630S" > /dev/ttyS0
```





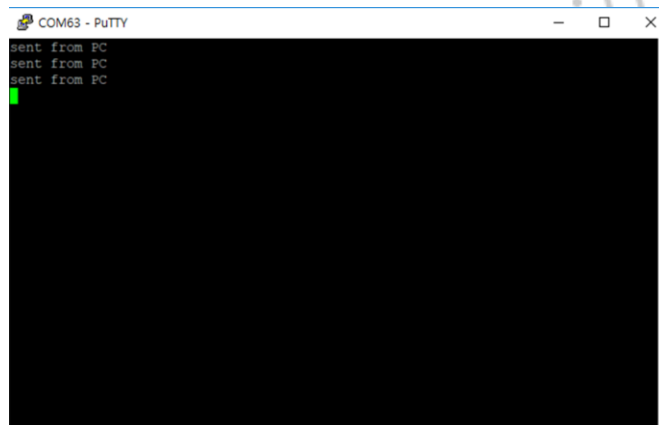
### 3.4 UART Receive

One of the easiest way to check the serial data received by WizFi630S is by using 'cat command.'

Use the below command to check the received data.

```
Cat /dev/ttyS0
```

Users can check the data transmitted from PC on the WizFi630S if the PuTTY tool session is successfully opened.



→  
root@wizfi630s:/# cat /dev/ttyS0  
sent from PC  
sent from PC  
sent from PC