

WizFi630S User Manual

(Version 0.0.1)

Preliminary not approved



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

For more information, please visit our website at <http://www.wiznet.co.kr> , TELL: +82-31-8023-5678

Document Revision History

Date	Revision	Changes
2019-05-22	0.0	Release
2019-05-29	0.1	Update

<Contents>

1.	Product introduction	5
1.1.	The main function.....	6
1.2.	The characteristics of wireless	7
1.3.	Hardware characteristics.....	8
1.4.	The characteristics of wireless.....	9
1.5.	EVB	9
1.5.1.	Contents	9
1.6.	Block diagram	9
2.	The operating mode and menu description	10
2.1.	The operating mode	12
2.1.1.	Access point mode.....	13
2.1.2.	Gateway mode	14
2.1.3.	The client (station)	15
2.1.4.	AP-Client	15
2.2.	Status.....	16
2.2.1.	Overview	17
2.2.2.	Routes	17
2.2.3.	System Log	18
2.2.4.	Kernel Log	19
2.2.5.	Processes.....	20
2.3.	System.....	21
2.3.1.	System Management.....	22
2.3.2.	Administration.....	23
2.3.3.	Software.....	24
2.3.4.	Startup.....	25
2.3.5.	Firmware	26
2.4.	Network.....	27
2.4.1.	Interface.....	28
2.4.2.	Wireless	29
2.4.3.	DHCP and DNS	31
2.4.4.	Firewall	32
2.5.	Serial	34
2.5.1.	Serial to LAN(Wired and Wireless)	34
3.	Hardware information	37
3.1.	WizFi630S Pin Map	37
3.2.	Mechanism design.....	39
4.	STATEMENT	40

1. Product introduction

WizFi630S is RS-232 protocol and TCP /IP protocol IEEE802.11 b / g / n protocol to convert a wireless command gateway module, the serial interface RS- 232 was the installation of equipment connected to lan or WLAN network, remote sensing the management and the possible meaning to the product. moreover, the Embedded switch in function of the public, is to practice.

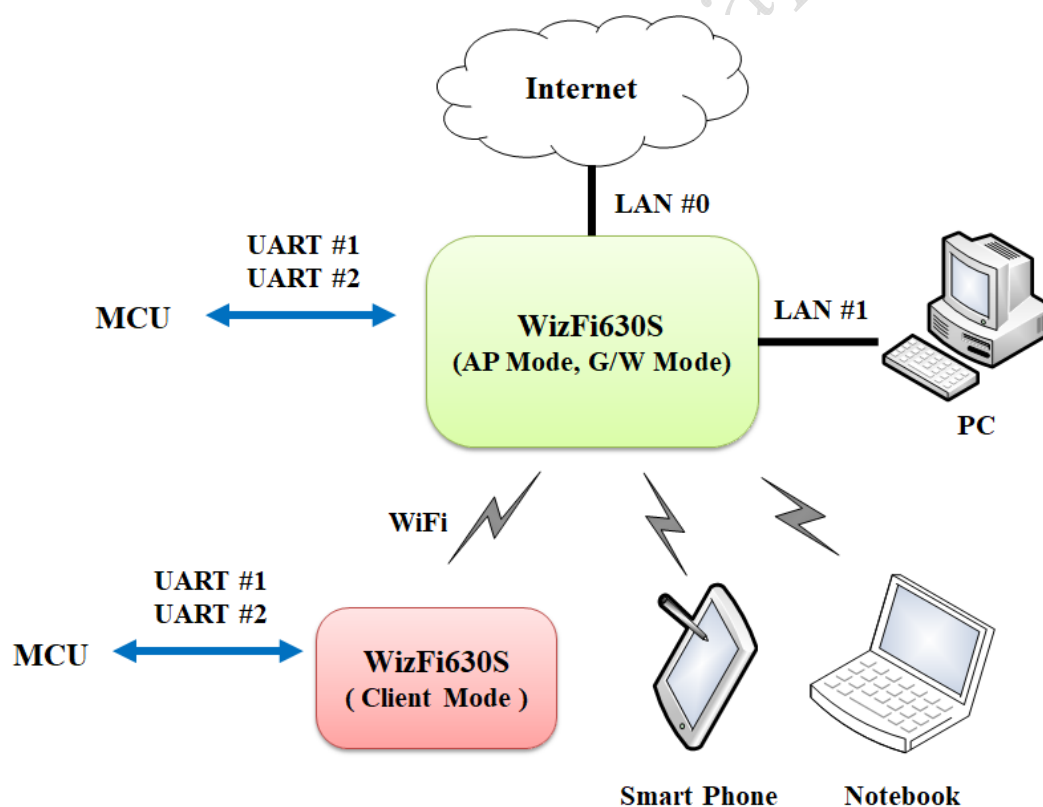
serial (UART), lan, WiFi (WLAN) composed of serial interface in use (UART) - to - WiFi, serial - to - Ethernet, Ethernet - to - WiFi can perform other functions. in the WizFi630S on the web server to connect to the serial command, or even the use of easily available, the equipment is not serial, 8 / 16 / 32 bit micro controller is UART through simple configuration WiFi can.

the use of WizFi630S wireless module design and test, and the authentication process can be decreased to. therefore, the wireless network does not have the experience or limited to the customer the best solution is likely to be. WizFi630S is 802.11b / g / n standard for wireless interface. at the rate of 150 Mbps to support.

WizFi630S is a convenient test platform and easy testing of the pc software and document, which is easy to provide mobile solution development environment can provide.

1.1. The main function

- ◆ WizFi630A Pin compatible
- ◆ 580MHz Clock
- ◆ 16-bit DDR2 128Mbytes SRAM, 32Mbytes SPI Flash
- ◆ Complies with IEEE802.11b/g/n.
- ◆ Gateway/AP(Bridge)/AP-Client/Client(Station)/Ad-hoc Mode , WDS/Repeater supports
- ◆ 1T1R RF Interface (2.4G only)
- ◆ Physical link rate up to 150Mbps
- ◆ Built-in 3 Ethernet Ports
- ◆ 2 Serial Ports supports
- ◆ Working as Wi-Fi Router
- ◆ WEP 64/128bit, WPA/WPA2-PSK TKIP, AES
- ◆ Router and Firewall function supports



3

Figure 1. Example of WizFi630S's Application

1.2. The wireless characteristics

Operating Channels: USA/Canada: 11(1 ~ 11)
Major Europe Countries: 13(1 ~ 13)
France: 4(10 ~ 13)
Japan: 13for 802.11b(1 ~ 13), 13 for 802.11g(1 ~ 13), 13 for 802.11n(1 ~ 13)
Korea/China: 13(1 ~ 13)

1) Product should not collocate with other radio. 2) Host label should content modular FCC ID : 2AKKWWIZFI630S) type of antenna:External Dipole Antenna,Internal Antenna,Rod Antenna.
antenna gain tolerance :1~3.2dBi

1.3.

Hardware characteristics

Type	Description
Interface	Serial port : 2 EA (optional 3EA) LAN port : 3 EA USB 2.0 port : 1 USB Host Port I2S : 1EA I2C : 1EA PWM : 1EA
	U.FL(wireless)
Temperature	Operation: -25°C~+80°C Storage:
Humidity	Operation: Storage:
Serial	Baud Rate : 115200
	Stop bits: 1, 2
	Parity: None, Odd, Even
	Flow Control: UART1: none UART2: none
Input Power	DC 3.3V / 1A
Power Consumption	Max : 605.4mA (3.3V) (Device boot up)
Dimension	33mm X 43mm X 3.8mm
Weight	6g

Table 2. WizFi630S Module Specifications

1.4.

Software characteristics

Type	Description
Operation Mode	Access Point(Bridge), Client(Station), AP-Client
Wireless	Radio Enable/Disable
	SSID Hidden
	Multi SSID
	Rate Control
	TX Power Control
	Beacon Interval
	DTIM Period
	Fragment Length
Protocol	TCP, UDP, ARP, ICMP, DHCP, PPPoE, HTTP
Security	WEP 64/128bit
	WPA/WPA2-PSK - with Radius Server or Pre-Shared Key - Unicast Encryption: AES/TKIP
	MAC Address Filtering / Limiting
Network	Port Forwarding(UDP and/or TCP)
	DHCP Client / Server
	WDS(Wireless Distribution System) Support
	NAT
	VLAN
Management	Administrator ID / PWD
	Station & AP Association Information
	SSH(Secure Shell) Support
	Web based Configuration / Serial Command Configuration
	Upgrade through WEB UI
Serial To Wi-Fi	2 Serial Port supports

Table 3. SW Specifications

1.5.

EVB

1.5.1. Contents

Section	Qnt.	Contents
WizFi630S	1ea	WizFi630S
		
WizFi630S-EVB	1ea	WizFi630S-EVB
		
Antenna	1 ea	2dBi WI-FI Antenna (Model : W5I-B0-08)
		
Serial Cable	1 ea	Serial Cable
		
LAN Cable	1 ea	LAN Cable

		
		DC 5V/2A Adapter

Table 4. WizFi630S-EVB Contents

1.6. Block diagram

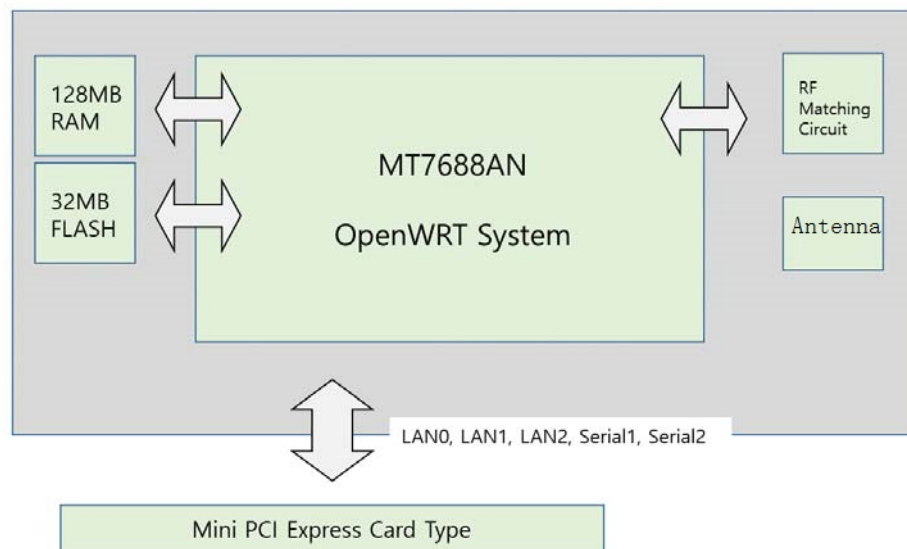
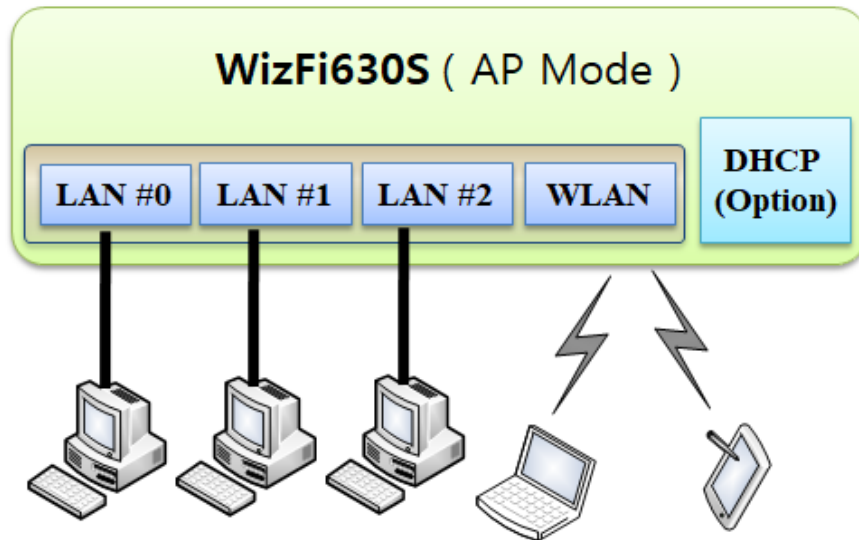


Figure 1. WizFi630S Block Diagram

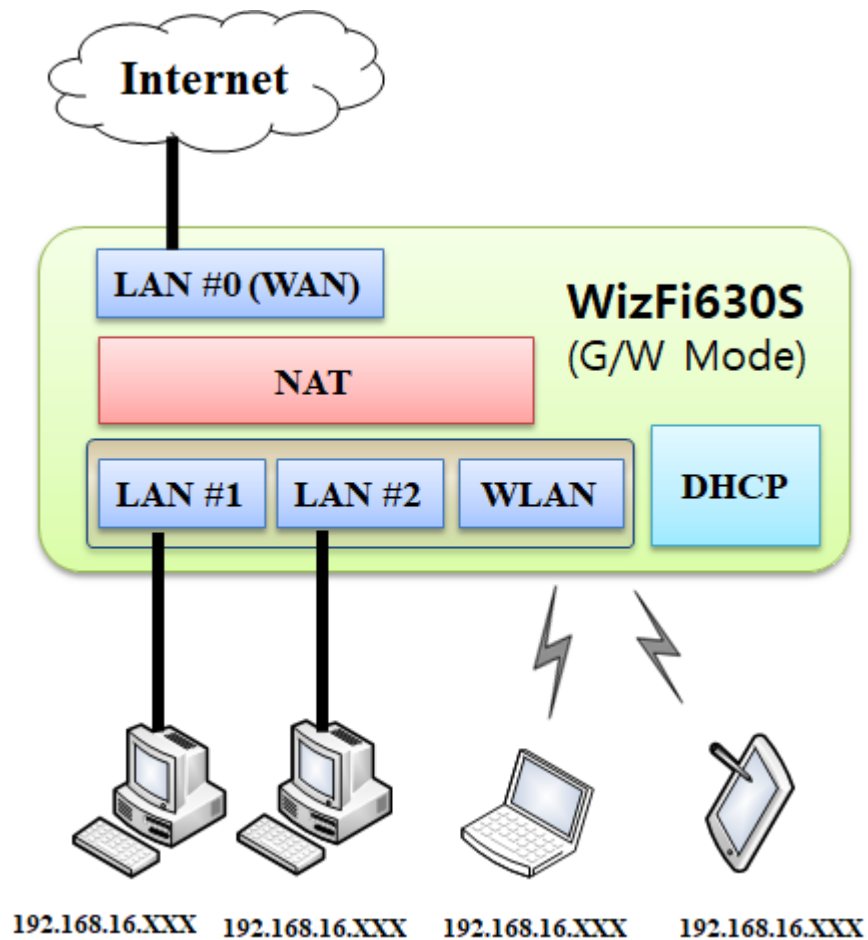
2. Operating mode

2.1.1 Access point mode



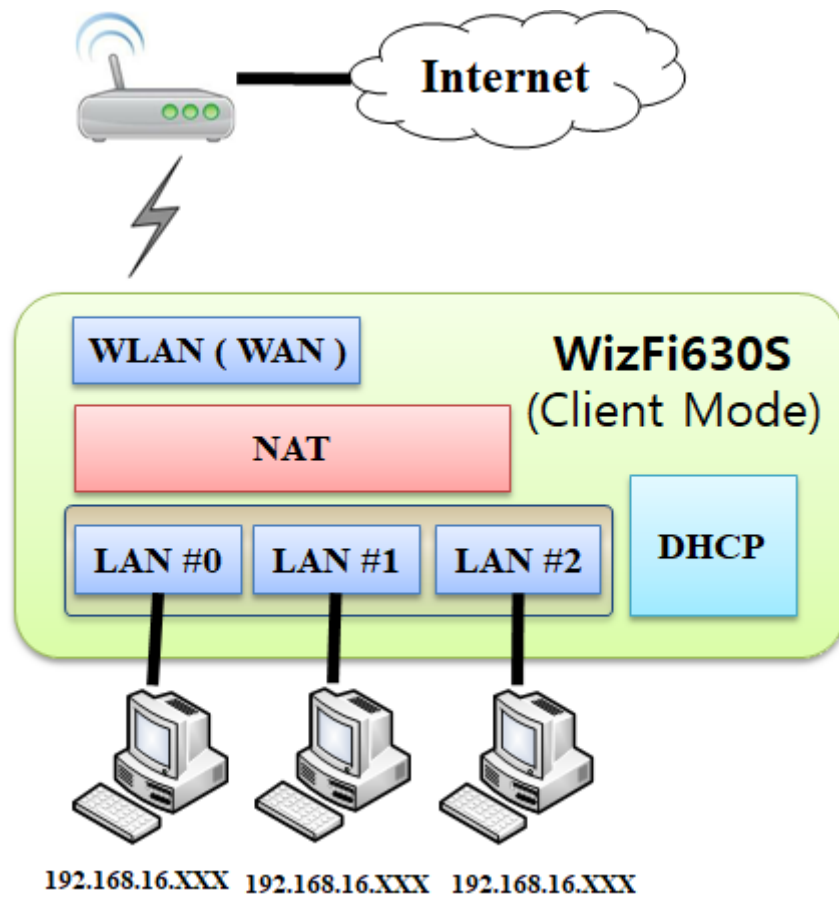
The wired interface and a wireless interface with a bridge three. wired / wireless interface is the same ip address field of the network with. DHCP Server function is disable. WizFi630S is the ip address assigned to you. WizFi630S is regularly Station Broadcast Packet transmission, and to maintain the connection.

2.1.2 Gateway mode



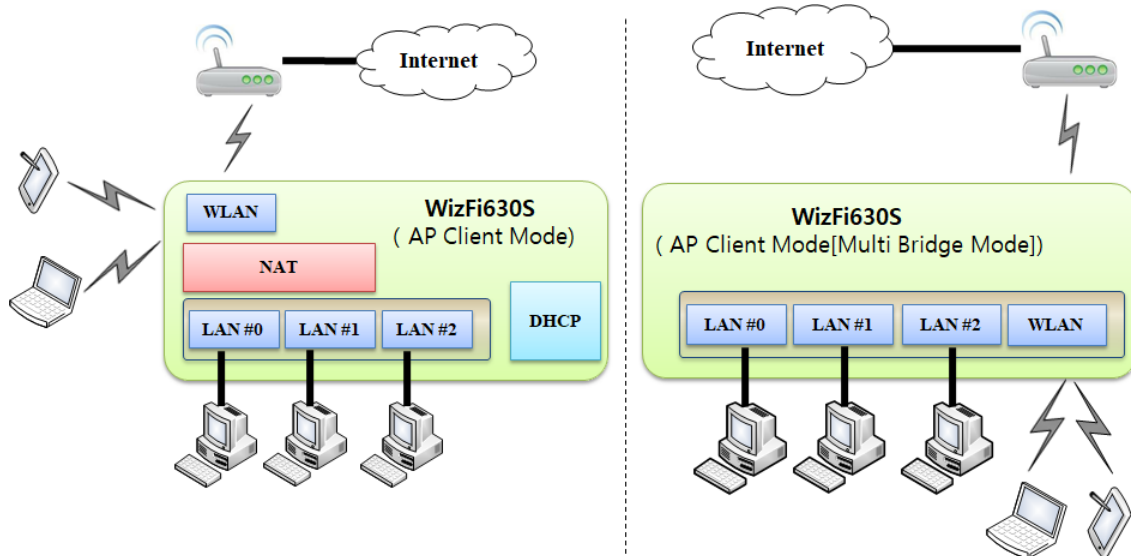
Internet sharing mode of action. WAN interface (network business, the network) and the lan interface (the private network: 192.168.16. xxx), wireless interface (the private network: 192.168.16. xxx) division, # WAN port 0 is designated as a port. WizFi630S is regularly Station Broadcast Packet transmission, and to maintain the connection.

2.1.3 Client (station)



The wireless interface of the port and the port WAN all Ethernet lan port for the packet. the configuration file, the next time you start in a set of wireless AP to automatically link. through the lan port connected to the private ip address of the equipment. the top of the AP (Gateway) regularly, PING Packet transmission in wireless AP disconnect to prevent.

2.1.4 AP-Client



The wireless interface to the wireless interface WAN port, and all of them Ethernet lan port to port packet. Station model and similar, the biggest difference is the wireless interface is AP and Client (Station function at the same time. WizFi630S is regularly Station Broadcast Packet transmission, and to maintain the connection.

2.2 Status

2.2.1 Overview

- ◆ System state information, the system of network information, the lan port of the link status scale.

Status

System

Hostname	OpenWrt
Model	Wiznet WizFi630S
Architecture	MediaTek MT7688 ver:1 eco:2
Firmware Version	OpenWrt SNAPSHOT r7051-d0fbe19 / LuCI Master (git-18.204.47455-c27a777)
Kernel Version	4.14.43
Local Time	Sun Sep 30 01:37:44 2018
Uptime	2d 23h 50m 9s
Load Average	0.00, 0.02, 0.00

Memory

Total Available	96188 kB / 125216 kB (76%)
Free	92860 kB / 125216 kB (74%)
Buffered	3328 kB / 125216 kB (2%)

Network

IPv4 Upstream

Protocol: Not connected
Address: 0.0.0.0
Netmask: 255.255.255.255
Gateway: 0.0.0.0

Device: -

IPv6 Upstream

Protocol: Not connected
Address: ::
Gateway: ::

Device: -

Active Connections 368 / 16384 (2%)

Active DHCP Leases

Hostname	IPv4-Address	MAC-Address	Leasetime remaining
DESKTOP-169021I	192.168.3.179	74:D4:35:E6:08:AC	11h 41m 6s

Active DHCPv6 Leases

Host	IPv6-Address	DUID	Leasetime remaining
DESKTOP-169021I	fd:c9:dfb1:e938:9ae/128	000100012240c78674d435e608ac	11h 39m 54s

Wireless

radio0

Type: MAC80211 802.11bgn
Channel: -
Bitrate: -

SSID: OpenWrt
Mode: Master
Wireless is disabled

SSID: WizFi630S_AP
Mode: Master
Wireless is not associated

SSID: MyRouter
Mode: Client
Wireless is not associated

SSID: OpenWrt
Mode: Master
BSSID: 02:11:7F:0F:69:3B
Encryption: None
Associations: -

2.2.2 Routes

- ◆ WizFi630S is in use in the network interface that is able to.

Routes

The following rules are currently active on this system.

ARP

IPv4-Address	MAC-Address	Interface
192.168.88.233	74-D4-35-E6-08-AC	lan
192.168.3.179	74-D4-35-E6-08-AC	lan

Active IPv4-Routes

Network	Target	IPv4-Gateway	Metric	Table
lan	192.168.3.0/24	-	0	main

Active IPv6-Routes

Network	Target	Source	Metric	Table
lan	fdcd:dfb1:e938::/64		1024	main
(eth0)	ff00::/8		256	local
lan	ff00::/8		256	local
wan	ff00::/8		256	local

IPv6 Neighbours

IPv6-Address	MAC-Address	Interface
fdcd:dfb1:e938::e47f:504:ff19:37f4	74-D4-35-E6-08-AC	lan
fdcd:dfb1:e938::7924:5c59:4abd:98c1	74-D4-35-E6-08-AC	lan
fdcd:dfb1:e938::f525:24c2:84bd:557f	74-D4-35-E6-08-AC	lan
fdcd:dfb1:e938::29bf:7e6a:9ab5:3ef3	74-D4-35-E6-08-AC	lan

2.2.3 System Log

- ◆ System log function, the action of WizFi630S content can be confirmed.

System Log

```
Sat Sep 29 22:24:45 2018 kern.notice kernel: [ 0.000000] Linux version 4.14.43 (jehoon@daniel-ubuntu) (gcc version 7.3.0 (OpenWrt GCC 7.3.0 r7051-d0f1be19)) #0 Sun May 27 17:4
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Board has DDR2
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Analog PMU set to hw control
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Digital PMU set to hw control
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] SoC Type: MediaTek MT7688 ver:1 eco:2
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] bootconsole [early0] enabled
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] CPU0 revision is: 00019655 (MIPS 24KEc)
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] MIPS: machine is Wiznet WizFi630S
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Determined physical RAM map:
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] memory: 08000000 @ 00000000 (usable)
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Initrd not found or empty - disabling initrd
Sat Sep 29 22:24:45 2018 kern.warn kernel: [ 0.000000] Primary instruction cache 64kB, VIPT, 4-way, linesize 32 bytes.
Sat Sep 29 22:24:45 2018 kern.warn kernel: [ 0.000000] Primary data cache 32kB, 4-way, PIPT, no aliases, linesize 32 bytes
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Zone ranges:
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Normal: [mem 0x0000000000000000-0x000000007fffffff]
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Movable zone start for each node
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Early memory node ranges
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] node 0: [mem 0x0000000000000000-0x000000007fffffff]
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Initmem setup node 0 [mem 0x0000000000000000-0x000000007fffffff]
Sat Sep 29 22:24:45 2018 kern.debug kernel: [ 0.000000] On node 0 totalpages: 32768
Sat Sep 29 22:24:45 2018 kern.debug kernel: [ 0.000000] free_area_init_node: node 0, pgdat 8044cce0, node_mem_map 81000040
Sat Sep 29 22:24:45 2018 kern.debug kernel: [ 0.000000] Normal zone: 256 pages used for memmap
Sat Sep 29 22:24:45 2018 kern.debug kernel: [ 0.000000] Normal zone: 0 pages reserved
Sat Sep 29 22:24:45 2018 kern.debug kernel: [ 0.000000] Normal zone: 32768 pages, LIFO batch:7
Sat Sep 29 22:24:45 2018 kern.notice kernel: [ 0.000000] random: get_random_bytes called from start_kernel+0x8c/0x47c with crng_init=0
Sat Sep 29 22:24:45 2018 kern.debug kernel: [ 0.000000] pcpu-alloc: s0 r0 d32768 u32768 alloc=1*32768
Sat Sep 29 22:24:45 2018 kern.debug kernel: [ 0.000000] pcpu-alloc: [0] 0
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Built 1 zonelists, mobility grouping on. Total pages: 32512
Sat Sep 29 22:24:45 2018 kern.notice kernel: [ 0.000000] Kernel command line: console=ttyS0,115200 rootfstype=squashfs,jffs2
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] PID hash table entries: 512 (order: -1, 2048 bytes)
Sat Sep 29 22:24:45 2018 kern.info kernel: [ 0.000000] Dentry cache hash table entries: 16384 (order: 4, 65536 bytes)
```

2.2.4 Kernel Log

- ◆ Kernel log function, the action of WizFi630S content can be confirmed.

Kernel Log

```
[ 0.000000] Linux version 4.14.43 (jehoon@daniel-ubuntu) (gcc version 7.3.0 (OpenWrt GCC 7.3.0 r7051-d0f1be19)) #0 Sun May 27 17:44:43 2018
[ 0.000000] Board has DDR2
[ 0.000000] Analog PMU set to hw control
[ 0.000000] Digital PMU set to hw control
[ 0.000000] SoC Type: MediaTek MT7688 ver:1 eco:2
[ 0.000000] bootconsole [early0] enabled
[ 0.000000] CPU0 revision is: 00019655 (MIPS 24KEc)
[ 0.000000] MIPS: machine is Wiznet WizFi630S
[ 0.000000] Determined physical RAM map:
[ 0.000000] memory: 08000000 @ 00000000 (usable)
[ 0.000000] Initrd not found or empty - disabling initrd
[ 0.000000] Primary instruction cache 64kB, VIPT, 4-way, linesize 32 bytes.
[ 0.000000] Primary data cache 32kB, 4-way, PIPT, no aliases, linesize 32 bytes
[ 0.000000] Zone ranges:
[ 0.000000] Normal: [mem 0x0000000000000000-0x000000007fffffff]
[ 0.000000] Movable zone start for each node
[ 0.000000] Early memory node ranges
[ 0.000000] node 0: [mem 0x0000000000000000-0x000000007fffffff]
[ 0.000000] Initmem setup node 0 [mem 0x0000000000000000-0x000000007fffffff]
[ 0.000000] On node 0 totalpages: 32768
[ 0.000000] free_area_init_node: node 0, pgdat 8044cce0, node_mem_map 81000040
[ 0.000000] Normal zone: 256 pages used for memmap
[ 0.000000] Normal zone: 0 pages reserved
[ 0.000000] Normal zone: 32768 pages, LIFO batch:7
[ 0.000000] random: get_random_bytes called from start_kernel+0x8c/0x47c with crng_init=0
[ 0.000000] pcpu-alloc: s0 r0 d32768 u32768 alloc=1*32768
[ 0.000000] pcpu-alloc: [0] 0
```

2.2.5 Processes

- ◆ the action of the processes and state values of the control and status display.

Processes

This list gives an overview over currently running system processes and their status.

PID	Owner	Command	CPU usage (%)	Memory usage (%)	Hang Up	Terminate	Kill
1	root	/sbin/procd	0%	1%	Hang Up	Terminate	Kill
2	root	[kthreadd]	0%	0%	Hang Up	Terminate	Kill
7	root	[ksoftirqd/0]	0%	0%	Hang Up	Terminate	Kill
8	root	[oom_reaper]	0%	0%	Hang Up	Terminate	Kill
134	root	[kswapd0]	0%	0%	Hang Up	Terminate	Kill
189	root	[spi0]	0%	0%	Hang Up	Terminate	Kill
371	root	[jfs2_gcd_mtd6]	0%	0%	Hang Up	Terminate	Kill
431	root	/sbin/ubusd	0%	1%	Hang Up	Terminate	Kill
433	root	/bin/ash --login	0%	1%	Hang Up	Terminate	Kill
652	root	/sbin/logd -S 64	0%	1%	Hang Up	Terminate	Kill
669	root	/sbin/rpcd	0%	2%	Hang Up	Terminate	Kill
745	root	/sbin/netifd	0%	1%	Hang Up	Terminate	Kill
779	root	/usr/sbin/odhcpd	0%	1%	Hang Up	Terminate	Kill
832	root	/usr/sbin/dropbear -F -P /var/run/dropbear.1.pid -p 22 -K 300 -T 3	0%	1%	Hang Up	Terminate	Kill
865	root	/usr/sbin/uhttpd -f -h /www -r OpenWrt -x /cgi-bin -u /ubus -t 60 -T 30 -k 20 -A 1 -n 3 -N 100 -R -p 0.0.0.0:80 -p [:]:80 -C /etc/uhttpd.crt -K /etc/uhttpd.key -s 0.0.0.0:443 -s [:]:443 -q	0%	2%	Hang Up	Terminate	Kill
1074	root	udhcpd -p /var/run/udhcpd-eth0.2.pid -s /lib/netifd/dhcp.script -f -t 0 -i eth0.2 -x hostname:OpenWrt -C -O 121	0%	1%	Hang Up	Terminate	Kill
1077	root	odhcp6c -s /lib/netifd/dhcpv6.script -P0 -t120 eth0.2	0%	1%	Hang Up	Terminate	Kill
1402	dnsmasq	/usr/sbin/dnsmasq -C /var/etc/dnsmasq.conf:cfg01411c -k -x /var/run/dnsmasq/dnsmasq.cfg01411c.pid	0%	1%	Hang Up	Terminate	Kill
12487	root	/usr/sbin/hostapd -s -P /var/run/wifi-phy0.pid -B /var/run/hostapd-phy0.conf	0%	1%	Hang Up	Terminate	Kill
12506	root	/usr/sbin/wpa_supplicant -B -P /var/run/wpa_supplicant-wlan0.pid -D nl80211 -i wlan0 -c /var/run/wpa_supplicant-wlan0.conf -C /var/run/wpa_supplicant -H /var/run/hostapd/wlan0-1	0%	1%	Hang Up	Terminate	Kill
12529	root	udhcpd -p /var/run/udhcpd-wlan0.pid -s /lib/netifd/dhcp.script -f -t 0 -i wlan0 -x hostname:OpenWrt -C -O 121	0%	1%	Hang Up	Terminate	Kill
15022	root	luci-bwc 1	0%	1%	Hang Up	Terminate	Kill
15045	root	{luci} /usr/bin/lua /www/cgi-bin/luci	0%	2%	Hang Up	Terminate	Kill
15053	root	{top} /bin/busybox top -bn1	0%	1%	Hang Up	Terminate	Kill

2.3 System

2.3.1 System Management

System Properties

General Settings	Logging	Language and Style												
Local Time		Sun Sep 30 01:21:29 2018 Sync with browser												
Hostname		OpenWrt												
Timezone		UTC												
Time Synchronization														
Enable NTP client	☒													
Provide NTP server	☐													
NTP server candidates	<table><tr><td>0</td><td>openwrt.pool.ntp.org</td><td>x</td></tr><tr><td>1</td><td>openwrt.pool.ntp.org</td><td>x</td></tr><tr><td>2</td><td>openwrt.pool.ntp.org</td><td>x</td></tr><tr><td>3</td><td>openwrt.pool.ntp.org</td><td>+</td></tr></table>		0	openwrt.pool.ntp.org	x	1	openwrt.pool.ntp.org	x	2	openwrt.pool.ntp.org	x	3	openwrt.pool.ntp.org	+
0	openwrt.pool.ntp.org	x												
1	openwrt.pool.ntp.org	x												
2	openwrt.pool.ntp.org	x												
3	openwrt.pool.ntp.org	+												

System Properties

General Settings	Logging	Language and Style
Language		auto
Design		OpenWrt

2.3.2 Administration

- ◆ WizFi630S management page.

Router Password

Changes the administrator password for accessing the device

Password	
Confirmation	

SSH Access

Dropbear offers [SSH](#) network shell access and an integrated [SCP](#) server

Dropbear Instance

Interface	unspecified Listen only on the given interface or, if unspecified, on all
Port	22 Specifies the listening port of this Dropbear instance
Password authentication	☒ Allow SSH password authentication
Allow root logins with password	☒ Allow the <i>root</i> user to login with password
Gateway ports	☐ Allow remote hosts to connect to local SSH forwarded ports

2.3.3 Software

- ◆ WizFi630S software package to manage.

Software

Actions

Configuration

No package lists available

Update lists

Free space: 97% (19.44 MB)

Download and install package:

OK

Filter:

Find package

Status

Available packages

Installed packages

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

#

Package name	Version	Size (.ipk)	Description	
announce	1.0.1-1	0		Install

OPKG-Configuration

General options for opkg

Actions

Configuration

```
dest root /
dest ram /tmp
lists_dir ext /var/opkg-lists
option overlay_root /overlay
option check_signature 1
```

Submit

Reset

Distribution feeds

Build/distribution specific feed definitions. This file will NOT be preserved in any sysupgrade.

```
src/gz openwrt_core http://downloads.lede-project.org/snapshots/targets/ramips/mt76x8/packages
src/gz openwrt_base http://downloads.lede-project.org/snapshots/packages/mipsel_24kc/base
src/gz openwrt_linkit http://downloads.lede-project.org/snapshots/packages/mipsel_24kc/linkit
src/gz openwrt_luci http://downloads.lede-project.org/snapshots/packages/mipsel_24kc/luci
src/gz openwrt_packages http://downloads.lede-project.org/snapshots/packages/mipsel_24kc/packages
src/gz openwrt_routing http://downloads.lede-project.org/snapshots/packages/mipsel_24kc/routing
src/gz openwrt_telephony http://downloads.lede-project.org/snapshots/packages/mipsel_24kc/telephony
src/gz openwrt_wizfi630s http://downloads.lede-project.org/snapshots/packages/mipsel_24kc/wizfi630s
```

Submit

Reset

Custom feeds

Custom feed definitions. e.g. private feeds. This file can be preserved in a sysupgrade.

```
# add your custom package feeds here
#
# src/gz example_feed_name http://www.example.com/path/to/files
```

Submit

Reset

2.3.4 Startup

Initscripts

You can enable or disable installed init scripts here. Changes will applied after a device reboot.
Warning: If you disable essential init scripts like "network", your device might become inaccessible!

Start priority	Initscript	Enable/Disable	Start	Restart	Stop
0	sysfixtime	☐ Enabled	Start	Restart	Stop
10	boot	☐ Enabled	Start	Restart	Stop
10	system	☐ Enabled	Start	Restart	Stop
11	sysctl	☐ Enabled	Start	Restart	Stop
12	log	☐ Enabled	Start	Restart	Stop
12	rpcd	☐ Enabled	Start	Restart	Stop
19	dnsmasq	☐ Enabled	Start	Restart	Stop
19	firewall	☐ Enabled	Start	Restart	Stop
20	network	☐ Enabled	Start	Restart	Stop
35	odhcpd	☐ Enabled	Start	Restart	Stop
50	cron	☐ Enabled	Start	Restart	Stop
50	dropbear	☐ Enabled	Start	Restart	Stop
50	uhttpd	☐ Enabled	Start	Restart	Stop
80	ucitrack	☐ Enabled	Start	Restart	Stop
94	announce	☐ Enabled	Start	Restart	Stop
94	gpio_switch	☐ Enabled	Start	Restart	Stop
95	done	☐ Enabled	Start	Restart	Stop
96	led	☐ Enabled	Start	Restart	Stop
98	sysntpd	☐ Enabled	Start	Restart	Stop
99	bootcount	☐ Enabled	Start	Restart	Stop
99	socat	☐ Enabled	Start	Restart	Stop
99	urandom_seed	☐ Enabled	Start	Restart	Stop

2.3.5 Firmware

- ◆ Boot firmware and more to upgrade..

Backup

Click "Generate archive" to download a tar archive of the current configuration files.

Download backup: [Generate archive](#)

Restore

To restore configuration files, you can upload a previously generated backup archive here. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).

Reset to defaults: [Perform reset](#)

Restore backup: [파일 선택](#) 선택된 파일 없음 [Upload archive...](#)

Custom files (certificates, scripts) may remain on the system. To prevent this, perform a factory-reset first.

Flash new firmware image

Upload a sysupgrade-compatible image here to replace the running firmware. Check "Keep settings" to retain the current configuration (requires a compatible firmware image).

Keep settings: ☒

Image: [파일 선택](#) 선택된 파일 없음 [Flash image...](#)

2.4 Network

2.4.1 Interface

- ◆ Network Interface for Scanning WizFi630S

WWAN	WIFI	WAN	LAN	WAN6
Interfaces				
LAN br-lan		Protocol: Static address Uptime: 2d 19h 26m 17s MAC-Address: 00:08:DC:00:08:DC RX: 1.49 MB (14161 Pkts.) TX: 2.09 MB (12471 Pkts.) IPv4: 192.168.3.1/24 IPv6: fd:c9:dfb1:e938::1/64		
WAN eth0.2		Protocol: DHCP client MAC-Address: 00:08:DC:00:08:DE RX: 0 B (0 Pkts.) TX: 27.99 MB (82877 Pkts.)		
WAN6 eth0.2		Protocol: DHCPv6 client MAC-Address: 00:08:DC:00:08:DE RX: 0 B (0 Pkts.) TX: 27.99 MB (82877 Pkts.)		
WWAN Client "MyRouter"		Protocol: DHCP client MAC-Address: 00:11:7F:0F:69:3B RX: 0 B (0 Pkts.) TX: 0 B (0 Pkts.)		
WIFI Master "WizFi630S__AP"		Protocol: Static address RX: 0 B (0 Pkts.) TX: 0 B (0 Pkts.)		
Add new interface...				

- ◆ Select "scan" network service mode and set WizFi630S to connect to the network.

Interfaces - WWAN

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation INTERFACE.VLANNR (e.g.: eth0.1).

Common Configuration

General Setup	Advanced Settings	Physical Settings	Firewall Settings
Status Device: wlan0 MAC-Address: 00:11:7F:0F:69:3B RX: 0 B (0 Pkts.) TX: 0 B (0 Pkts.)			
Protocol		DHCP client	
Hostname to send when requesting DHCP		OpenWrt	
Back to Overview		Save & Apply Save Reset	

2.4.1.1 LAN

- ◆ WizFi630S internal ip settings, DHCP server configuration and DHCP configuration.

Interfaces - LAN

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation INTERFACE.VLANNR (e.g.: eth0.1).

Common Configuration

General Setup
Advanced Settings
Physical Settings
Firewall Settings

Status	 Device: br-lan Uptime: 2d 19h 32m 34s MAC-Address: 00:08:DC:00:08:DC RX: 1.58 MB (15053 Pkts.) TX: 2.48 MB (13425 Pkts.) IPv4: 192.168.3.1/24 IPv6: fdc9:dfb1:e938::1/64
Protocol	Static address
IPv4 address	192.168.3.1
IPv4 netmask	255.255.255.0
IPv4 gateway	
IPv4 broadcast	
Use custom DNS servers	
IPv6 assignment length	60
	Assign a part of given length of every public IPv6-prefix to this interface
IPv6 assignment hint	
	Assign prefix parts using this hexadecimal subprefix ID for this interface.
IPv6 suffix	::1
	Optional. Allowed values: 'eui64', 'random', fixed value like '::1' or '::1:2'. When IPv6 prefix (like 'a:b:c:d::') is received from a delegating server, use the suffix (like '::1') to form the IPv6 address ('a:b:c:d::1') for the interface.

2.4.1.2 A set of wireless 2.4.1.2 (WiFi)

- ◆ wireless lan's basic attribute set.

Common Configuration

General Setup | **Advanced Settings** | Physical Settings | Firewall Settings

Status	Device: radio0 network2 RX: 0 B (0 Pkts.) TX: 0 B (0 Pkts.)
Protocol	Static address
IPv4 address	192.168.2.1
IPv4 netmask	255.255.255.0
IPv4 gateway	
IPv4 broadcast	
Use custom DNS servers	
IPv6 assignment length	disabled
	Assign a part of given length of every public IPv6-prefix to this interface
IPv6 address	
IPv6 gateway	
IPv6 routed prefix	
	Public prefix routed to this device for distribution to clients.
IPv6 suffix	Optional. Allowed values: 'eui64', 'random', fixed value like '::1' or '::1:2'. When IPv6 prefix (like 'a:b:c:d::') is received from a delegating server, use the suffix (like '::1') to form the IPv6 address ('a:b:c:d::1') for the interface.

2.4.2 Wireless

- ◆ AP model, Gateway model, AP - Client model in wireless advanced settings.
- ◆ wireless advanced settings advanced wireless network users with the configuration.

Wireless Network: Master "WizFi630S_AP" (radio0.network2)

The *Device Configuration* section covers physical settings of the radio hardware such as channel, transmit power or antenna selection which are shared among all defined wireless networks (if the radio hardware is multi-SSID capable). Per network settings like encryption or operation mode are grouped in the *Interface Configuration*.

Device Configuration

General Setup Advanced Settings	
Status	 SSID: WizFi630S_AP Mode: Master 0% Wireless is not associated
Wireless network is enabled	Disable
Channel	Locked to channel (auto) used by: Client "MyRouter"
Transmit Power	auto ⓘ dBm

Interface Configuration

General Setup Wireless Security MAC-Filter Advanced Settings	
Mode	Access Point
ESSID	WizFi630S_AP
Network	lan: ⓘ ⓘ ⓘ ⓘ Choose the network(s) you want to attach to this wireless interface or fill out the <i>create</i> field to define a new network.
Hide ESSID	☐
WMM Mode	☒

◆ Client(Station) Mode

Wireless Network: Client "MyRouter" (wlan0)

The *Device Configuration* section covers physical settings of the radio hardware such as channel, transmit power or antenna selection which are shared among all defined wireless networks (if the radio hardware is multi-SSID capable). Per network settings like encryption or operation mode are grouped in the *Interface Configuration*.

Device Configuration

General Setup		Advanced Settings	
Status	 SSID: MyRouter Mode: Client 0% Wireless is not associated		
Wireless network is enabled	Disable		
Operating frequency	Mode N	Channel 8 (2447 MHz)	Width 20 MHz
Transmit Power	auto  dBm		

Interface Configuration

General Setup		Wireless Security		Advanced Settings	
Mode	Client				
ESSID	MyRouter				
BSSID					
Network	wlan0				
 Choose the network(s) you want to attach to this wireless interface or fill out the <i>create</i> field to define a new network.					

2.4.3 DHCP and DNS

- ◆ DHCP and dns server settings can be.

DHCP and DNS

Dnsmasq is a combined [DHCP-Server](#) and [DNS-Forwarder](#) for [NAT](#) firewalls

Server Settings

General Settings		Resolve and Hosts Files	TFTP Settings	Advanced Settings
Domain required	☒	☐ Don't forward DNS -Requests without DNS -Name		
Authoritative	☒	☐ This is the only DHCP in the local network		
Local server	/lan/	☐ Local domain specification. Names matching this domain are never forwarded and are resolved from DHCP or hosts files only		
Local domain	lan	☐ Local domain suffix appended to DHCP names and hosts file entries		
Log queries	☐	☐ Write received DNS requests to syslog		
DNS forwardings	/example.org/10.1.2.3	☐ List of DNS servers to forward requests to		
Rebind protection	☒	☐ Discard upstream RFC1918 responses		
Allow localhost	☒	☐ Allow upstream responses in the 127.0.0.0/8 range, e.g. for RBL services		
Domain whitelist	ihost.netflix.com	☐ List of domains to allow RFC1918 responses for		
Local Service Only	☒	☐ Limit DNS service to subnets interfaces on which we are serving DNS .		
Non-wildcard	☐	☐ Bind only to specific interfaces rather than wildcard address.		

2.4.4 Firewall

2.4.4.1 Default

- ◆ Firewall the function can be set.

Firewall - Zone Settings

The firewall creates zones over your network interfaces to control network traffic flow.

General Settings

Enable SYN-flood protection	☒
Drop invalid packets	☐
Input	accept
Output	accept
Forward	reject
Routing/NAT Offloading	☒ Experimental feature. Not fully compatible with QoS/SQM.
Software flow offloading	☐ Software based offloading for routing/NAT

Zones

Name	Zone ⇒ Forwardings	Input	Output	Forward	Masquerading	MSS clamping		
lan	lan ⇒ wan	accept	accept	accept	☐	☐	Edit	Delete
wifi	wifi ⇒ ACCEPT	accept	accept	accept	☐	☐	Edit	Delete
wan	wan ⇒ REJECT	accept	accept	reject	☒	☒	Edit	Delete

Add

2.4.4.2 The primary port.

The external network users WizFi630S internal network connection to use, the application port number of the internal network ip address and the port number to connect function is necessary, but this function was the primary port.

Firewall - Port Forwards

Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.

Port Forwards

Name	Match	Forward to	Enable
This section contains no values yet			

New port forward

Name	Protocol	External zone	External port	Internal zone	Internal IP address	Internal port
New port forward	TCP+UDP	wan		lan		

Add

2.5 Serial

- ◆ Serial 1 serial 2 / # # for individual configuration is possible.
- ◆ Serial to Wireless (Ethernet) function in order to use the serial Parameters set.
- ◆ Each serial two channel (Main connection, Aux connection) set.
- ◆ For each serial port 2 channel (Main connection, Aux connection) configuration management.

Preliminary not approved

2.5.1 Serial to Ethernet

2.5.1.1 Main Connection

Main Connection Configuration	
Status	☐ ☒ Enable
Protocol	tcp ☒ 2 Radio Button
Mode	client ☒ 3 Radio Button
Server IP	127.0.0.1
Server Port	5000
Local Port	6000
Reconnect Interval	10 ☒ Seconds(1-30, default : 10)
Inactivity Time	0 ☒ Seconds(00-60, default : 0)
Connection Option	bootup ☒ 2 Radio Button

2.5.1.2 Aux Connection

Serial Information(tty)

TTY

Baudrate	38400 ▼
Databits	8 ▼
Parity	none ▼
Stopbits	1 ▼
Flowcontrol	none ▼

2.5.1.3 Packing Condition (Incoming serial data packing condition)

Data Packing Condition	
Time	0 ⓘ milli-second(100-5000, default : 0)
Size	0 ⓘ Bytes(0-1500, default : 0)
Char	00 ⓘ Hexacode(00-ff, default : 0)
Command Mode	☒ ⓘ Enable(Enable : H/W GPIO Used)

2.5.1.4 Ethernet Data Tagging Option

Lan communication come from the data sent to the serial port, and serial data by the change in the Main, AUX lan communication can not be divided. this option is enabled, the device connected to the lan communication serial port information can give you.

Ethernet Data Tagging Option	
Status	☒ Enable ? string(1-16 chars)
Main Port	IMAIN ? string(1-16 chars)
AuX Port	IUART ? string(1-16 chars)

3 The hardware information.

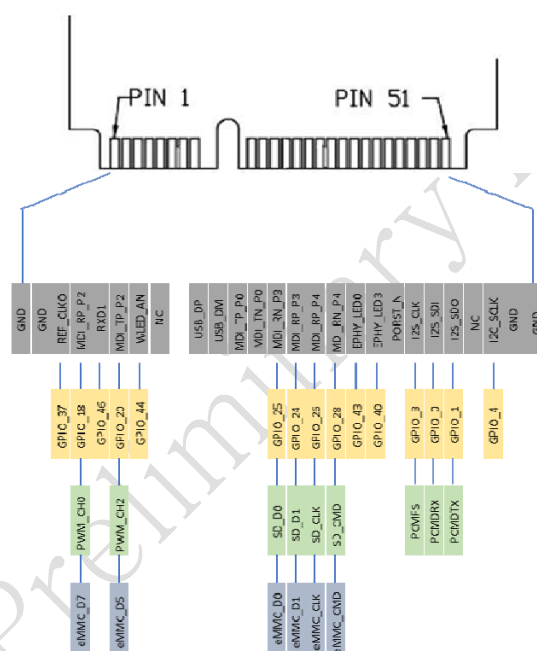
3.1WizFi630S Pin Map

No	T	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	Will be provided as UART1 RIN
8	I/O, IPD	RXIM2	GPIO#19	Will be provided as UART1 DTR-N
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	Will be provided as UART1 DSR-N
12	I/O, IPD	TXOM2	GPIO#21	Will be provided as UART1 DCD-N
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 Rx D
19	I/O	USB_PADM		USB OTG data pin Data-
20	I/O, IPD	UART_TX	GPIO#12	UART0 Tx D
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		

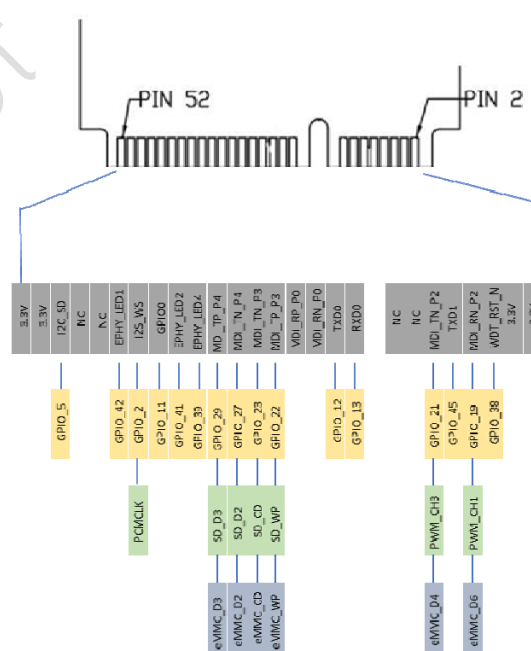
38	I/O, IPD	GPIO_0	GPIO#11	Reset Button Push
39	I/O, IPD	I2S_CLK	GPIO#3	General Purpose Output LED
40	I/O, IPD	I2S_WS	GPIO#2	General Purpose Input Switch SW1-1
41	I/O, IPD	I2S_SDI	GPIO#0	General Purpose Output LED
42	I/O, IPD	LINK1	GPIO#42	WPS LED(GPIO20)
43		I2S_DO	GPIO#1	GPIO
44		NC		
45		NC		
46		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		

Table 1. WizFi630S Pin Map

mini PCIe connector Top View

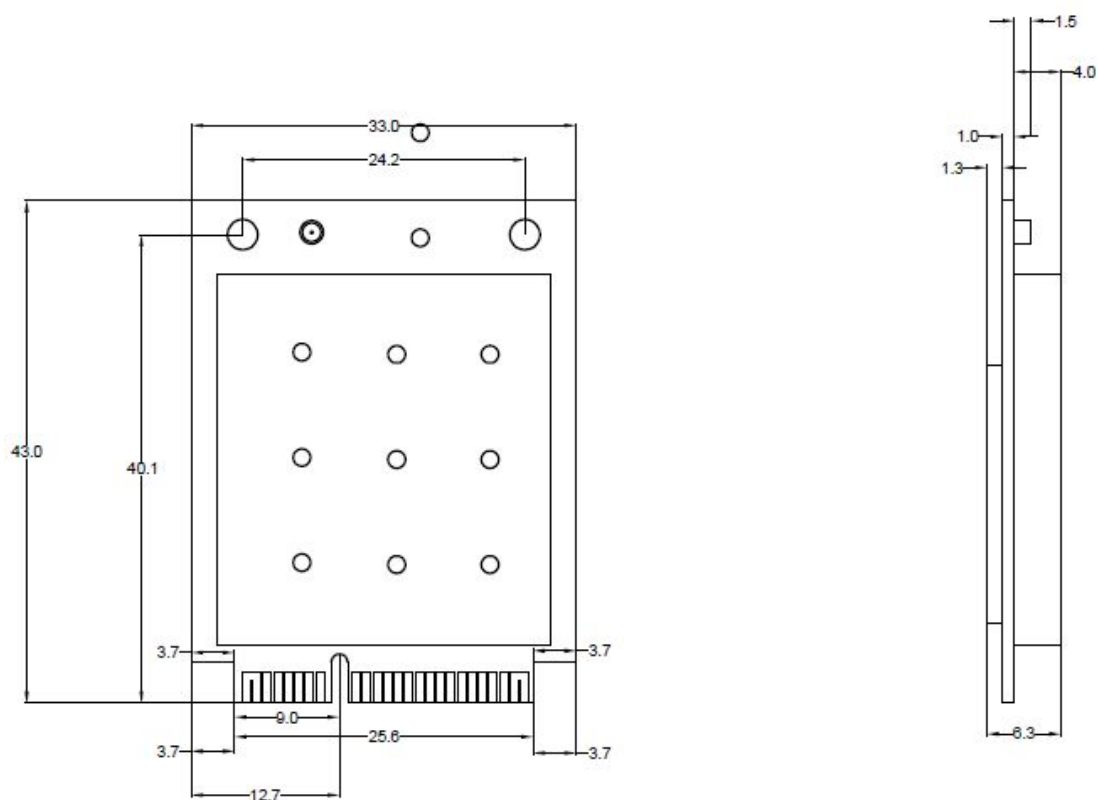


mini PCIe connector Bottom View



3.2 mechanism design

Dimensions (mm)	Length	Width	Height	Hole Width	HOLE Height	HOLE Φ	PCB Thickness
	43	33	3.8	24.2	40	2.5	1.1
Tolerance +/- 0.2mm							



4. STATEMENT

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body