



Quick Start

---Apply to WL-R220(MTK) Series OpenWrt Router

V1.1

<http://www.wlink-tech.com>

Oce, 2022



Copyright © Shenzhen WLINK Technology Company Limited 2012 ~ 2022

Without our written approval, Anyone can't extract, copy whole or part of content of this file and can't spread out in any format.

Caution

Due to product updates or functional upgrading, we may renew the content of this file, and this file only for reference. All statement, information, suggestion .etc in this file does not compose any form of guarantee and we WLINK reserves the right of final explanation.

Shenzhen WLINK Technology Company Limited

Add: 2A, F5 Building, TCL International E City, No.1001 Zhongshanyuan Rd., Nanshan Dist., Shenzhen, 518052, China

Web: <http://www.wlink-tech.com>

Service Email: support@wlink-tech.com

Tel: 86-755-86089513

Fax: 86-755-26059261

Contents

1 Product Introduction	3
1.1 Product overview	3
1.2 Model Introduction	3
1.3 Typical Application Diagram	3
1.4 Hardware Features	4
2 Hardware Installation	6
2.1 Panel	6
2.2 How to Install	7
3 OpenWrt Instruction	9
3.1 GPIO and LED Indicators	9
3.2 Interface(8PINs) indication	11
3.3 OpenWrt Configuration	12

1

Product Introduction

1.1 Product overview

WL-WL-R220-M 4G/3G OpenWrt industrial router is the internet of thing mobile broadband router and a machine to machine (M2M) industrial cellular router, which can optional works on 4G/3G cellular network to provide reliable, secure and high speed wireless connectivity. It is powerful and programmable industrial mobile router with high performance and harden casing design for remote management, telemetry, condition monitoring, CCTV, ATMs, vending machine and other M2M applications.

WLINK WL-WL-R220 4G/3G OpenWrt industrial router is based on the OpenWrt trunk system, which is configured using a web interface (LuCI). Customers can be allowed to customize WL-WL-R220 series router to fit any application from the selection and configuration by WLINK provided . It'll be used for anything that an embedded Linux system can be used for, including functions as SNMP, SSH, VPN, traffic-shaping system, and so on.

1.2 Model Introduction

WLINK industrial grade router OpenWrt Series have single module / single SIM card, single module / double SIM card, double module / double SIM card design, support multi-band frequency WCDMA, HSPA+,4G FDD/TDD etc., mobile wide-band, backward compatibility with GPRS/EDGE/CDMA 1x, etc., mobile narrow-band, optional built-in Wi-Fi module to build WLAN network, optional GPS module Expansion positioning function, to suit different requirement and different network environment of different operators, our OpenWrt Series router have many available models for option, please consult WLINK sales manager for details.

1.3 Typical Application Diagram

WLINK 4G/3G Router are widely used in Telecom, economic, advertisement, traffic,

environment protection business area.

For example, in economic area, WL-WL-R220 OpenWrt Series Router connect server by IPSec & GRE to ensure data security, tiny design makes it easily installed into ATM machine. All these technology ensure safe and reliable data transmission, and minimize the probability of network disconnection, and maximize the usability of economic business like ATM, POS .etc.

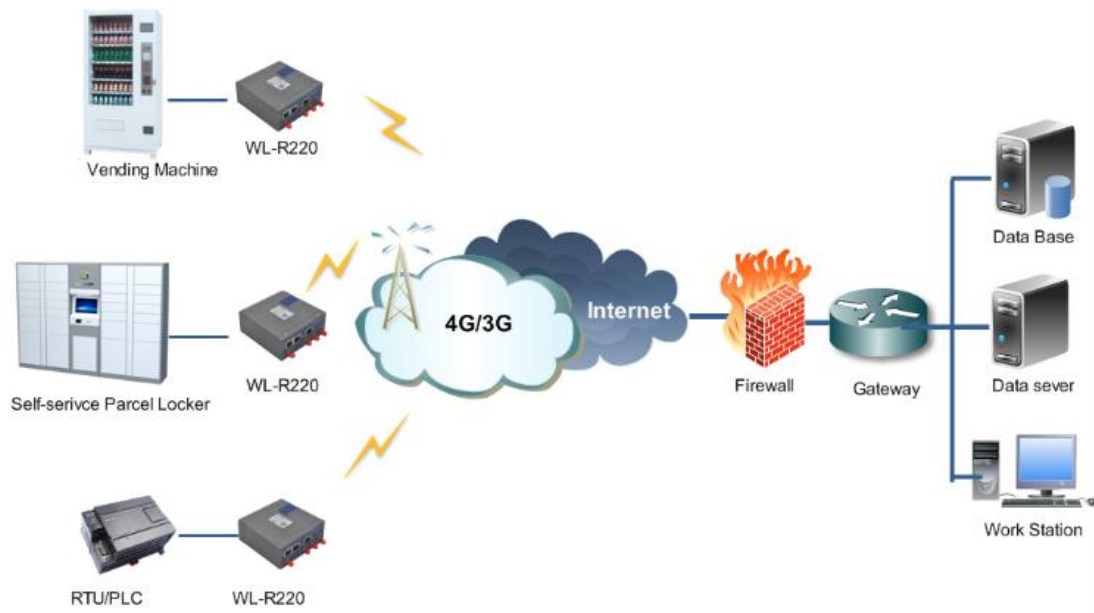


Figure 1-1 Network Topology

1.4 Hardware Features

- CPU: MT7628, 580MHz
- Flash - 16MB
- Storage 8GB
- DDR2: 16Bit 64MB
- Mini PCIe Adapter USB2.0 3G/4G Module, 4G/HSPA+/WCDMA module

optional

- 2*USIM Slots
- 2*LAN,
- RS232 as default
- Reset Button

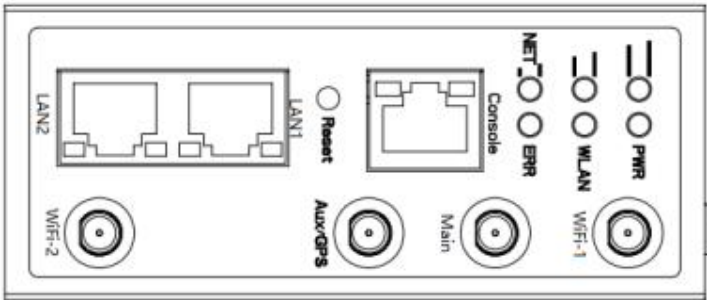
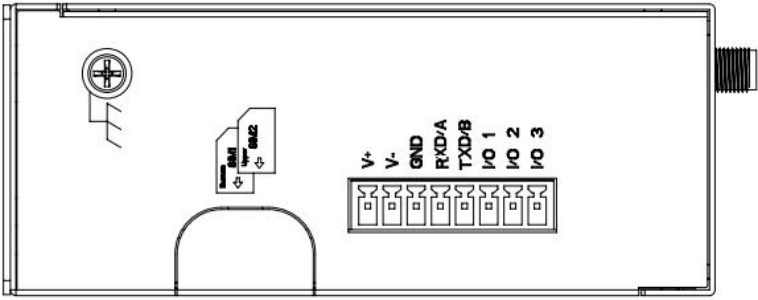
- Wi-Fi: IEEE 802.11n 300Mbps
- 2*DI, 1*DO

2 Hardware Installation

This chapter is mainly for installation introduction, there would be some difference between the scheme and real object. But the difference won't have any influence to products performance.

2.1 Panel

Table 2-1 WL-WL-R220 Structure

WLINK Tech.	WL-WL-R220 OpenWrt Router
Front	
Top	



NOTE

There are difference on Antenna interface and indicator light for the device with extended GPS features.

Table 2-2 Router Interface

Port	Instruction	Remark
USIM	Plug type SIM Slot, support 1.8/3V/5V automatic detection.	
Main	3G/LTE antenna, SMA connector, 50Ω.	
Aux/GPS	Optional for LTE MIMO antenna or GPS antenna ,SMA connector, 50Ω.	
Wi-Fi1	Wi-Fi antenna, SMA connector,	
Wi-Fi2	Wi-Fi antenna, SMA connector,	Wi-Fi MIMO
LAN1	10/100Base-TX, MDI/MDIX self-adaption.	
LAN2	10/100Base-TX, MDI/MDIX self-adaption.	
Console	Reserved	
Reset	Reset button,(press on button at least 5 seconds)	
PWR	Power connector	7.5~32V DC
I/O	Reserved	

2.2 How to Install

2.3.1 SIM/UIM card install

If use dual SIM/UIM card router, you need insert dual SIM before configure it. After inserting, please follow below steps to connect the router.



Before connecting, please disconnect any power resource of router

2.3.2 Ethernet Cable Connection

Use an Ethernet cable to connect the cellular Router with computer directly, or transit by a switch.

2.3.3 Serial Port Connection

If you want to connect the router via serial port to laptop or other devices, you should prepare a serial port or RJ45 cable, this cable is optional available from WLINK. One end connect to computer serial port, the other end connects to the console port of the router



Before connecting, please disconnect any power resource.

2.3.4 Power Supply

In order to get high reliability, WLINK OpenWrt Series Router power adapt supports wide voltage input range from +7.5V to +32VDC, support hot plug and complex application environment.

2.3.5 Review

After insert the SIM/UM card and connect Ethernet cable and antenna, connect power supply adaptor or power cable.



Please connect the antenna before power on, otherwise the signal maybe poor because of impedance mismatching.

Notice:

- Step 1 Check the antenna connection.
- Step 2 Check SIM/UM card, confirm SIM/UM card is available.
- Step 3 Power on the industrial Router

----END

3 OpenWrt Instruction

3.1 GPIO and LED Indicators

GPIO List		
GPIO45 ND-D0	Signal_1 Net1_Green	Signal LED1, light at high level
GPIO5 ND-D1	Signal_2 Net1_Green	Signal LED2, light at high level
GPIO4 ND-D2	Signal_3 Net2_Green	Signal LED3, light at high level
GPIO46 ND-D3	Error Net2_Green	Error LED. light at low level No 5G module or network for Red
GPIO2	Module_PWR	4G Module power control High level for power on Low level for power off
GPIO3 JTRST	SIM_Choose	Control SIM card High level for SIM2 Low level for SIM1 Power OFF 4G module at first, then control GPIO to switch SIM card. Then power on 4G module in 8sec.
GPIO38	Default Factory	
GPIO44	WLAN	



Function Description

GPIO2

GPIO2 for 4G module power control

- `cd /sys/class/gpio/usb0` (GPIO2 is exported from dts file)
- `echo 1 > value` (Power on)

- echo 0 > value (Power off)

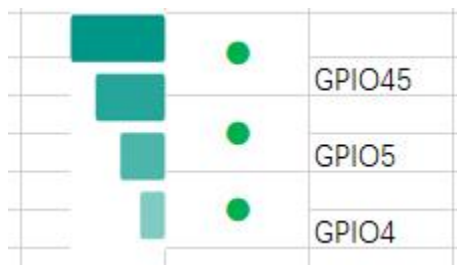
GPIO 3

GPIO3 for SIM choose

- cd /sys/class/gpio/sim (GPIO3 is exported from dts file)
- echo 1 > value (High level for SIM2)
- echo 0 > value (Low level for SIM1)

Power OFF 4G module at first, then control GPIO to switch SIM card. Then power on 4G module in 8sec.

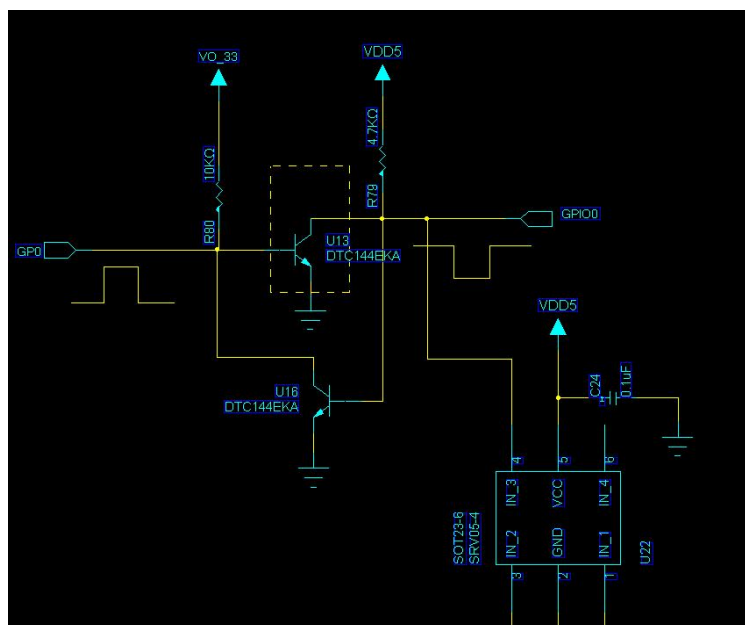
LED Control



- cd /sys/class/gpio
- echo N > export (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44)
- echo out > gpioN/direction (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44. Direction for output)
- echo 1 > gpioN/value (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44. value 1 for WLAN LED Light on)
- echo 0 > gpioN/value (N for GPIO value. Signal LED indicators for 4,5,45. Error LED indicator for 46. WLAN LED indicator for 44. value 0 for WLAN LED Light off)

Extend GPIO to Control DI/DO

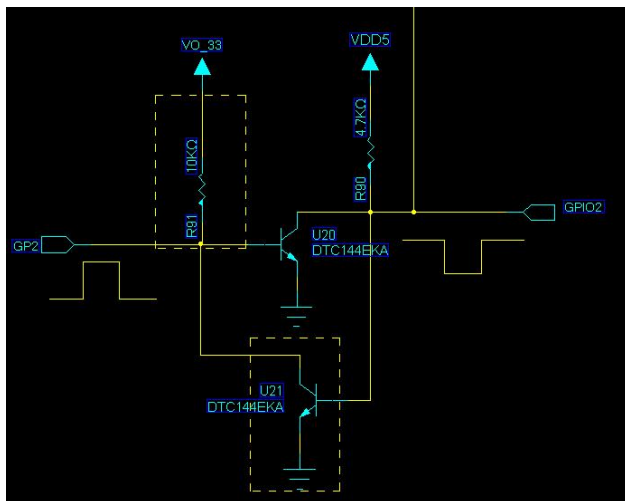
GPIO 0~1



- cd /sys/class/gpio (PL2303 driver file patch exports gpiochip508)

- echo 508 > export (508 for DI 1. gpio508/value for input signal. 1 for low level. 0 for high level)
- echo 509 > export (509 for DI 2. gpio509/value for input signal. 1 for low level. 0 for high level)

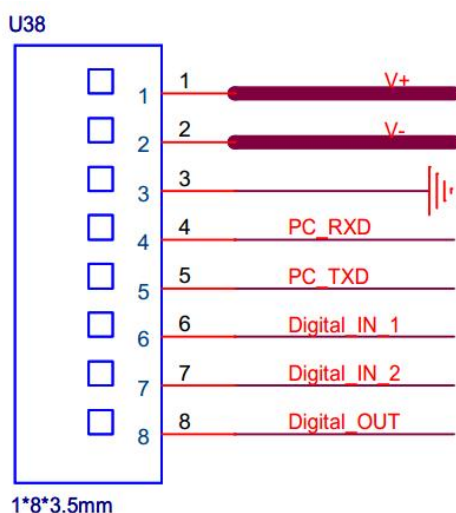
GPIO2



- echo 510 > export (510 for DO. gpio510/value for output signal. 1 for low level. 0 for high level)

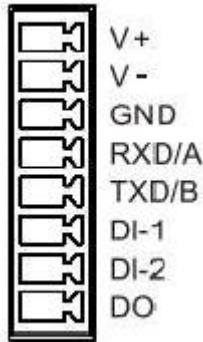
3.2 Interface(8PINs) indication

The RS232 port is used to debugging OpenWrt.

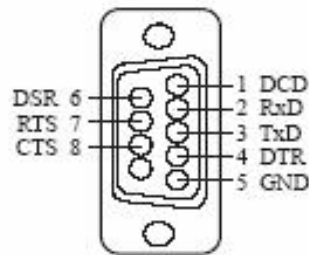


Pin	Indication	Note
1	V+	Vin+ (Nonpolar)
2	V-	Vin- (Nonpolar)
3	GND	GND

4	PC_RXD/485-B	RX
5	PC_TXD/485-A	TX
6	Digital_IN_1	Digital Input (I/O1)
7	Digital_IN_2	Digital Input (I/O2)
8	Digital_Output	Digital Output I/O



PINs



DB9(Female)

PINs		DB9(Female)
V+		
V-		
GND	----	5
RX	----	2
TX	----	3
DI-1		
DI-2		
DI-3		

Serial port properties

Properties	Note
Baud rate	115200bps
Data bits	8
Stop bits	1
Parity bits	none
Flow control	none

3.3 OpenWrt Configuration

3.3.1 OpenWrt Source Code Libraries

1)git clone <https://github.com/openwrt/openwrt.git>

2)cd openwrt; git bracr -a

3)git checkout -b openwrt-18.06 origin/openwrt-18.06

Especially, please download openwrt v18.06. The v19.07+Ethernet driver will cause system crash.

3.3.2 Feeds.conf.default to add modem management tool

src-git mobile_broadband

<https://gitlab.freedesktop.org/mobile-broadband/mobile-broadband-openwrt.git>

The embedded modem supports MBIM, QMI/ECM and PPP connection.

src-git luci_proto_modemmanager

<https://github.com/nickberry17/luci-proto-modemmanager.git>

This function is to add the Mobile Data function in the LUCI interface. The Makefile may report an error because it does not conform to the rules. It needs to replace The leading spaces with TAB in the new rule.

3.3.3 make menuconfig to choose ZBT-WE3526 version

1)Target System (MediaTek Ralink MIPS) --->

2)Subtarget (MT76x8 based boards) --->

3)Target Profile (MediaTek MT7628 EVB) --->

3.3.4 make menuconfig to choose modem management tool and qmi/mbim driver

1) LUCI

Protocols --->

➤ <*> luci-proto-modemmanager. Support for ModemManager

➤ <*> luci-proto-qmi. Support for QMI

2) Network --->

WWAN --->

➤ <*> comgt. Option/Vodafone 3G/GPRS control tool

➤ <*> umbim. Control utility for mobile broadband modems

➤ <*> uqmi. Control utility for mobile broadband modems

-*- modemmanager..... Control utility for any kind of mobile broadband modem

3.3.5 Custom Kernel

3.3.5.1 Modify firmware volume and partition size

1) <openwrt>/target/linux/ramips/image/mt76x8.mk

```
--- a/target/linux/ramips/image/mt76x8.mk
+++ b/target/linux/ramips/image/mt76x8.mk
@@ -84,7 +84,7 @@ TARGET_DEVICES += miwifi-nano
define Device/mt7628
    DTS := MT7628
    BLOCKSIZE := 64k
    - IMAGE_SIZE := $(ralink_default_fw_size_4M)
    + IMAGE_SIZE := 16064k
    DEVICE_TITLE := MediaTek MT7628 EVB
    DEVICE_PACKAGES := kmod-usb2 kmod-usb-ohci kmod-usb-ledtrig-usbport
endef
```

2) <openwrt>/target/linux/ramips/dts/MT7628.dts

```
@@ -56,7 +116,7 @@
    partition@50000 {
        label = "firmware";
        reg = <0x50000 0x7b0000>;
        reg = <0x50000 0xfb0000>;
    };
};
```

3) <openwrt>/target/linux/ramips/dts/MT7628.dts

```
--- a/target/linux/ramips/dts/MT7628.dts
+++ b/target/linux/ramips/dts/MT7628.dts
@@ -1,5 +1,7 @@
/dts-v1/;

#include <dt-bindings/input/input.h>
#include <dt-bindings/gpio/gpio.h>
#include "mt7628an.dtsi"

/ {
@@ -8,14 +10,72 @@
    memory@0 {
        device_type = "memory";
        reg = <0x0 0x2000000>;
        reg = <0x0 0x4000000>;
    };
};
```

3.3.5.2 Modify debugging serial port baudrate

<openwrt>/target/linux/ramips/dts/mt7628an.dtsi

```
--- a/target/linux/ramips/dts/mt7628an.dtsi
+++ b/target/linux/ramips/dts/mt7628an.dtsi
@@ -10,7 +10,7 @@
};

chosen {
    bootargs = "console=ttyS0,57600";
    bootargs = "console=ttyS0,115200";
};

aliases {
```

3.3.5.3 GPIO Control

Define GPIO and remove GPIO multiplex:

<openwrt>/target/linux/ramips/dts/MT7628.dts


```

--- a/target/linux/ramips/dts/MT7628.dts
+++ b/target/linux/ramips/dts/MT7628.dts
@@ -1,5 +1,7 @@
 /dts-v1/;

+#include <dt-bindings/input/input.h>
+#include <dt-bindings/gpio/gpio.h>
+#include "mt7628an.dtsi"

/ {
@@ -10,12 +12,70 @@
        device_type = "memory";
        reg = <0x0 0x2000000>;
    };
    gpio-keys-polled {
        compatible = "gpio-keys-polled";
        #address-cells = <1>;
        #size-cells = <0>;
        poll-interval = <20>;

        reset {
            label = "reset";
            gpios = <&gpio1 38 GPIO_ACTIVE_LOW>;
            linux,code = <KEY_RESTART>;
        };
    };
    gpio_export {
        compatible = "gpio-export";
        #size-cells = <0>;
        sim {
            gpio-export,name = "sim";
            gpio-export,output = <1>;
            gpios = <&gpio0 3 GPIO_ACTIVE_HIGH>;
        };
        usb0 {
            gpio-export,name = "usb0";
            gpio-export,output = <1>; // GPIOF_OUT_INIT_HIGH
            gpios = <&gpio0 2 GPIO_ACTIVE_HIGH>;
        };
    };
    gpio-leds {
        compatible = "gpio-leds";

        signal1 {
            label = "mt7628an-eval-board:green:signal1";
            gpios = <&gpio0 4 GPIO_ACTIVE_HIGH>;
        };

        signal2 {
            label = "mt7628an-eval-board:green:signal2";
            gpios = <&gpio0 5 GPIO_ACTIVE_HIGH>;
        };

        signal3 {
            label = "mt7628an-eval-board:green:signal3";
            gpios = <&gpio1 13 GPIO_ACTIVE_HIGH>;
        };

        err {
            label = "mt7628an-eval-board:green:err";
            gpios = <&gpio1 14 GPIO_ACTIVE_LOW>;
        };

        wlan {
            label = "mt7628an-eval-board:green:wlan";
            gpios = <&gpio1 42 GPIO_ACTIVE_LOW>;
        };
    };
};
    
```


3.3.5.4 PL2303 serial port HXD GPIOs DI/DO



pl2303-gpio-sysfs.patch

- 1) Kernel patch file
- 2) Modify driver module Makefile

```
--- a/package/kernel/linux/modules/usb.mk
+++ b/package/kernel/linux/modules/usb.mk
@@ -712,7 +712,8 @@ $(eval $(call KernelPackage,usb-serial-mos7720))

define kernelPackage/usb-serial-pl2303
    TITLE:=Support for Prolific PL2303 devices
-   KCONFIG:=CONFIG_USB_SERIAL_PL2303
+   KCONFIG:=CONFIG_USB_SERIAL_PL2303 \
+       CONFIG_USB_SERIAL_PL2303_GPIO
    FILES:=$(LINUX_DIR)/drivers/usb/serial/pl2303.ko
    AUTOLOAD:=$(call AutoProbe,pl2303)
    $(call AddDepends,usb-serial)
```

3.3.6 Enable 4G module

The SIM2 is available as default SIM in the original firmware. There are 3 types of 4G connection as Mobile Data Connection, QMI Connection and PPP Connection. However, it's alternative between the Mobile Data connection and PPP connection.

3.3.6.1 Mobile Data Connection

No password set!

There is no password set on this router. Please configure a root password to protect the web interface and enable SSH.

[Go to password configuration...](#)

WAN LTE LAN

Interfaces

<div>LTE</div> <div>ppp0</div>	Protocol: Mobile Data Uptime: 0h 7m 24s MAC: 00:00:00:00:00:00 RX: 12.14 KB (105 Pkts.) TX: 10.17 KB (132 Pkts.) IPv4: 10.44.41.99/32	<div>Restart</div> <div>Stop</div> <div>Edit</div> <div>Delete</div>
<div>LAN</div> <div>br-lan</div>	Protocol: Static address Uptime: 0h 8m 10s MAC: 82:54:FC:12:57:E3 RX: 194.44 KB (866 Pkts.) TX: 129.44 KB (418 Pkts.) IPv4: 192.168.1.1/24 IPv6: fd83:787e:e912::1/60	<div>Restart</div> <div>Stop</div> <div>Edit</div> <div>Delete</div>
<div>WAN</div> <div>eth0.2</div>	Protocol: DHCP client MAC: 82:54:FC:12:57:E4 RX: 0 B (0 Pkts.) TX: 56.30 KB (170 Pkts.)	<div>Restart</div> <div>Stop</div> <div>Edit</div> <div>Delete</div>

[Add new interface...](#)

Global network options

IPv6 ULA-Prefix

Save & Apply

Save

Reset

Powered by LuCI openwrt-18.06 branch (git-21.041.07147-20b3600) / OpenWrt 18.06-SNAPSHOT r8080-9f2a40c

No password set!

There is no password set on this router. Please configure a root password to protect the web interface and enable SSH.

[Go to password configuration...](#)


[WAN](#) [LTE](#) [LAN](#)

Interfaces - LTE

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](#) [Firewall Settings](#)

Status  Device: ppp0
Uptime: 0h 6m 23s
MAC: 00:00:00:00:00:00
RX: 11.34 KB (98 Pkts.)
TX: 9.59 KB (124 Pkts.)
IPv4: 10.44.41.99/32

Protocol

Modem device

APN

PIN

PAP/CHAP username

PAP/CHAP password *

Authentication type

IP connection type

Gateway metric

[Back to Overview](#)

[Save & Apply](#)

[Save](#)

[Reset](#)

3.3.6.2 QMI Cellular Connection

OpenWrt
Status
System
Network
Logout

General Setup
Advanced Settings
Firewall Settings

Status

Device: wwan0
Uptime: 0h 6m 51s
MAC: 00:00:00:00:00:00
RX: 75.96 KB (338 Pkts.)
TX: 65.62 KB (507 Pkts.)

Protocol
QMI Cellular

Bring up on boot
☒

Modem device
/dev/cdc-wdm0

APN

PIN

PAP/CHAP username

PAP/CHAP password

Authentication Type
-- Please choose --

Back to Overview

No password set!

There is no password set on this router. Please configure a root password to protect the web interface and enable SSH.

Go to password configuration...

WAN
LTE
LAN

LTE
wwan0

Protocol: QMI Cellular
Uptime: 16h 49m 1s
MAC: 00:00:00:00:00:00
RX: 1.34 MB (7867 Pkts.)
TX: 832.99 KB (9364 Pkts.)

Restart
Stop
Edit
Delete

LTE_4
wwan0

Protocol: Virtual dynamic interface (DHCP client)
Uptime: 16h 49m 0s
IPv4: 10.40.225.162/30

Restart
Stop
Edit
Delete

LAN
br-lan

Protocol: Static address
Uptime: 16h 49m 5s
MAC: 32:A8:ED:CF:56:0F
RX: 18.56 MB (102656 Pkts.)
TX: 28.56 MB (105399 Pkts.)
IPv4: 192.168.1.1/24
IPv6: fd65:adf4:ed3f::1/60

Restart
Stop
Edit
Delete

WAN
eth0.2

Protocol: DHCP client
MAC: 32:A8:ED:CF:56:10
RX: 0 B (0 Pkts.)
TX: 6.90 MB (20169 Pkts.)

Restart
Stop
Edit
Delete

Add new interface...

Global network options

IPv6 ULA-Prefix
fd65:adf4:ed3f::/48

Save & Apply
Save
Reset

3.3.6.3 PPP Connection

www.wlink-tech.com

19

OpenWrt
Status ▾
System ▾
Network ▾
Logout
AUTO REFRESH ON

Interfaces - LTE

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
Firewall Settings

Status

Device: 3g-LTE
Uptime: 0h 14m 18s
MAC: 00:00:00:00:00:00
RX: 53.44 KB (403 Pkts.)
TX: 31.29 KB (434 Pkts.)
IPv4: 10.75.52.3/32

Protocol

UMTS/GPRS/EV-DO ▾

Modem device

/dev/ttyUSB4 ▾

Service Type

UMTS/GPRS ▾

APN

PIN

PAP/CHAP username

PAP/CHAP password

OpenWrt
Status ▾
System ▾
Network ▾
Logout
AUTO REFRESH ON

WAN
WAN6
LTE
LAN

Interfaces

<div> LTE 3g-LTE </div>	Protocol: UMTS/GPRS/EV-DO Uptime: 0h 5m 47s MAC: 00:00:00:00:00:00 RX: 27.57 KB (211 Pkts.) TX: 16.05 KB (227 Pkts.) IPv4: 10.75.52.3/32	Restart Stop Edit Delete
<div> LAN br-lan </div>	Protocol: Static address Uptime: 0h 5m 53s MAC: 66:5A:9B:76:99:61 RX: 45.40 KB (489 Pkts.) TX: 87.30 KB (329 Pkts.) IPv4: 192.168.1.1/24 IPv6: fd9a:df8a:17bb::1/60	Restart Stop Edit Delete
<div> WAN eth0.2 </div>	Protocol: DHCP client MAC: 66:5A:9B:76:99:62 RX: 0 B (0 Pkts.) TX: 42.58 KB (137 Pkts.)	Restart Stop Edit Delete
<div> WAN6 eth0.2 </div>	Protocol: DHCPv6 client MAC: 66:5A:9B:76:99:62 RX: 0 B (0 Pkts.) TX: 42.58 KB (137 Pkts.)	Restart Stop Edit Delete

Add new interface...

3.3.7 Storage

1) Load Driver

- *- kmod-usb-storage..... USB Storage support
- <*> kmod-usb-storage-extras..... Extra drivers for usb-storage
- *- kmod-scsi-core..... SCSI device support
- <*> kmod-fs-ext4..... EXT4 filesystem support

➤ <*> kmod-fs-ntfs..... NTFS filesystem support

➤ <*> kmod-fs-vfat..... VFAT filesystem support

```
[ 6.902845] usb-storage 1-1.3:1.0: USB Mass Storage device detected
[ 6.910234] scsi host0: usb-storage 1-1.3:1.0
[ 7.949421] scsi 0:0:0:0: Direct-Access Kingston DataTraveler 2.0 1.00 PQ: 0 ANSI: 4
[ 7.963374] sd 0:0:0:0: [sda] 15131636 512-byte logical blocks: (7.75 GB/7.21 GiB)
[ 7.972245] sd 0:0:0:0: [sda] write Protect is off
[ 7.977120] sd 0:0:0:0: [sda] Mode Sense: 45 00 00 00
[ 7.977914] sd 0:0:0:0: [sda] write cache: disabled, read cache: enabled, doesn't support DPO or FUA
[ 7.996408] sd 0:0:0:0: [sda] Attached SCSI removable disk
```

2) mount -t vfat /dev/sda/mnt

3) Configure the auto loading

Mounted file systems

Filesystem	Mount Point	Available	Used	Unmount
/dev/root	/rom	0.00 B / 5.75 MB	100% (5.75 MB)	
tmpfs	/tmp	28.84 MB / 29.41 MB	2% (584.00 KB)	
/dev/mtdblock6	/overlay	8.32 MB / 8.75 MB	5% (436.00 KB)	
overlayfs:/overlay	/	8.32 MB / 8.75 MB	5% (436.00 KB)	
tmpfs	/dev	512.00 KB / 512.00 KB	0% (0.00 B)	
/dev/sda	/mnt/sda	7.19 GB / 7.22 GB	0% (22.76 MB)	Unmount

Mount Points

Mount Points define at which point a memory device will be attached to the filesystem

Enabled	Device	Mount Point	Filesystem	Options	Root	Check	
<input checked="" type="checkbox"/>	UUID: C29CB1069CB0F5CF (<i>not present</i>)	/mnt/sda	?	defaults	no	no	Edit Delete
Add							

3.3.8 VLAN Configuration

1) 2 LAN Port As default

OpenWrt
Status
System
Network
Logout
UNSAVED CHANGES: 2
AUTO REFRESH ON

No password set!
There is no password set on this router. Please configure a root password to protect the web interface and enable SSH.
[Go to password configuration...](#)

Switch

The network ports on this device can be combined to several VLANs in which computers can communicate directly with each other. VLANs are often used to separate different network segments. Often there is by default one Uplink port for a connection to the next greater network like the internet and other ports for a local network.

Switch "switch0" (rt305x-esw)

Enable VLAN functionality ☒

VLANs on "switch0" (rt305x-esw)

VLAN ID	CPU (eth0)	LAN 1	LAN 2	LAN 3	LAN 4	WAN
Port status:	1000baseT full-duplex	no link	100baseT full-duplex	no link	no link	no link
1	tagged	untagged	untagged	untagged	untagged	off
2	tagged	off	off	off	off	untagged

[Add](#)

[Save & Apply](#) [Save](#) [Reset](#)

Powered by LuCI openwrt-18.06 branch (git-21.041.07147-20b3600) / OpenWrt 18.06-SNAPSHOT r8080-9f2a40c

2)If configure WAN, it will be customized by customer.

3.3.9 Enable Wi-Fi

OpenWrt
Status
System
Network
Logout
AUTO REFRESH ON

No password set!
There is no password set on this router. Please configure a root password to protect the web interface and enable SSH.
[Go to password configuration...](#)

radio0: Master "OpenWrt"

Wireless Overview

radio0	Generic MAC80211 802.11bgn Channel: 11 (2.462 GHz) Bitrate: 28.9 Mbit/s	Restart Scan Add
54%	SSID: OpenWrt Mode: Master BSSID: F2:3F:6B:6C:76:2D Encryption: None	Disable Edit Remove

Associated Stations

Network	MAC-Address	Host	Signal / Noise	RX Rate / TX Rate
Master "OpenWrt" (wlan0)	10:08:B1:24:45:A5	Detran-FyangWS.lan (192.168.1.147)	-72 / 0 dBm	19.5 Mbit/s, 20MHz, MCS 2 28.9 Mbit/s, 20MHz, MCS 3, Short GI

Powered by LuCI openwrt-18.06 branch (git-21.041.07147-20b3600) / OpenWrt 18.06-SNAPSHOT r8080-9f2a40c

3.3.10 Status GUI

OpenWrt
Status
System
Network
Logout
AUTO REFRESH ON

No password set!

There is no password set on this router. Please configure a root password to protect the web interface and enable SSH.

Go to password configuration...

Status

System

Hostname	OpenWrt
Model	Mediatek MT7628AN evaluation board
Architecture	MediaTek MT7628AN ver:1 eco:2
Firmware Version	OpenWrt 18.06-SNAPSHOT r8080-9f2a40c / LuCI openwrt-18.06 branch (git-21.041.07147-20b3600)
Kernel Version	4.14.206
Local Time	Sat Mar 26 03:50:25 2022
Uptime	17h 46m 29s
Load Average	0.03, 0.04, 0.01

Memory

Total Available	19944 kB / 60236 kB (33%)
Free	14868 kB / 60236 kB (24%)
Buffered	5076 kB / 60236 kB (8%)

Network

IPv4 Upstream

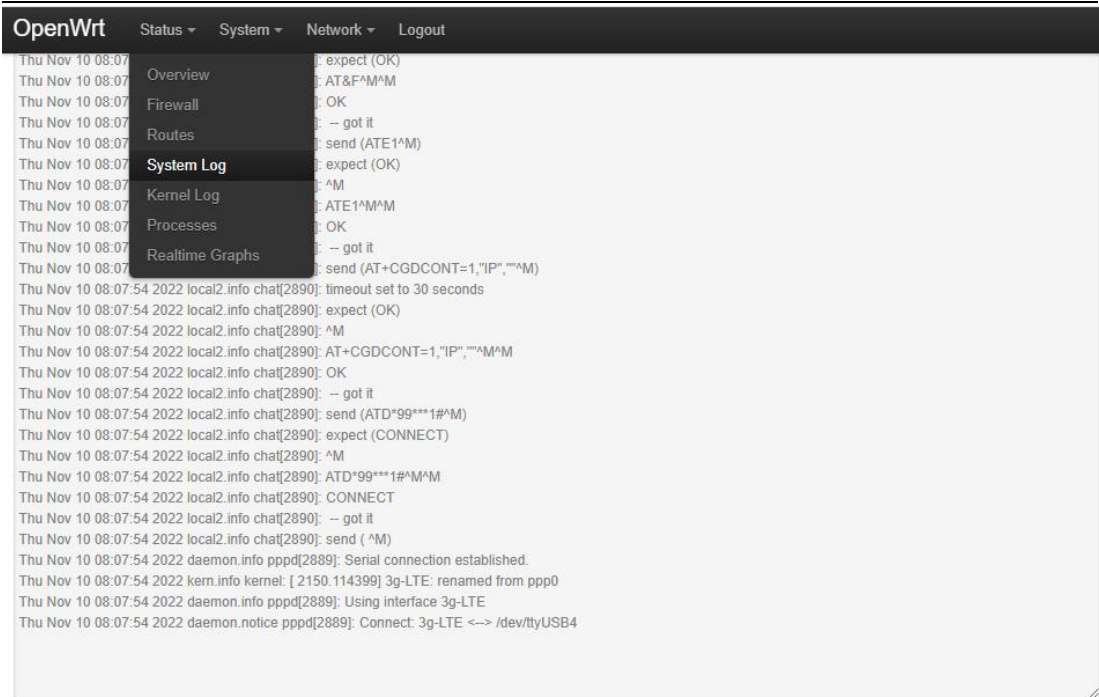
Protocol: DHCP client
Address: 10.40.225.162
Netmask: 255.255.255.252
Gateway: 10.40.225.161
DNS 1: 120.80.80.80
DNS 2: 221.5.88.88
Expires: 0h 14m 56s
Connected: 17h 45m 4s
Device: Ethernet Adapter: "wwan0"

IPv6 Upstream

Protocol: Not connected
Address: ::
Gateway: ::
Device: -

3.3.11 Debugging

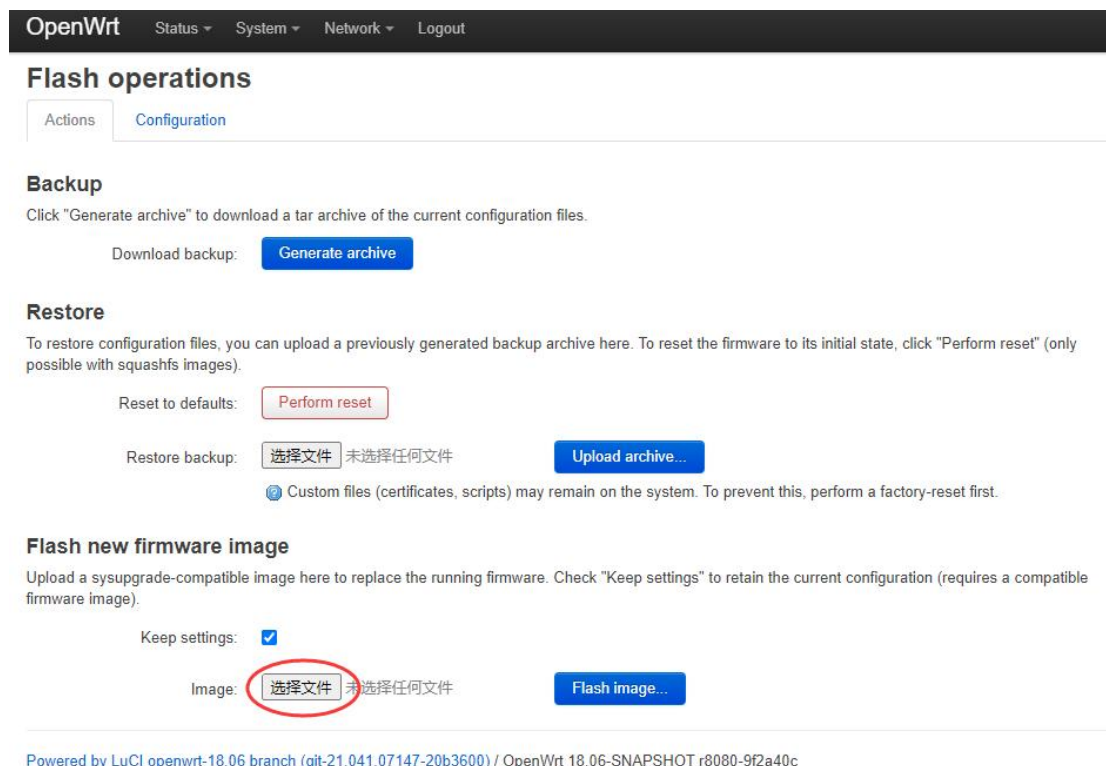
Check the system log during troubleshoot.



3.3.12 Upgrade Firmware

Upgrade firmware in the Back/Flash Firmware of System Menu.

Please don't power off the router. It will be taken a few minutes for upgrade process. It might be necessary to renew the address of your computer to reach the device again.

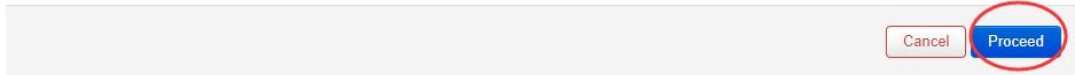


Powered by LuCI openwrt-18.06 branch (git-21.041.07147-20b3600) / OpenWrt 18.06-SNAPSHOT r8080-9f2a40c

Flash Firmware - Verify

The flash image was uploaded. Below is the checksum and file size listed, compare them with the original file to ensure data integrity. Click "Proceed" below to start the flash procedure.

- Checksum
MD5: c0847f0c2854b113e1dc568b67dd35df7
SHA256: b83b7c20b157f691ca5652ef8b457864ea870351745244164696756beb5f1485
- Size: 6.31 MB (15.69 MB available)
- Configuration files will be kept.



OpenWrt

System - Flashing...

The system is flashing now.

DO NOT POWER OFF THE DEVICE!

Wait a few minutes before you try to reconnect. It might be necessary to renew the address of your computer to reach the device again, depending on your settings.

 Waiting for changes to be applied...

3.3.13 Recover Router

The router supports to be recovered when firmware damaged during upgrade. The recover method as following.

- 1) Press and hold RST button, then power on the router.
- 2) Release the RST button at the 8th second.
- 3) The router will enter Mini Web upgrade mode. Please access to 192.168.1.1 in the browser as below.
- 4) Choose the correct firmware and click upload.



--- THE END