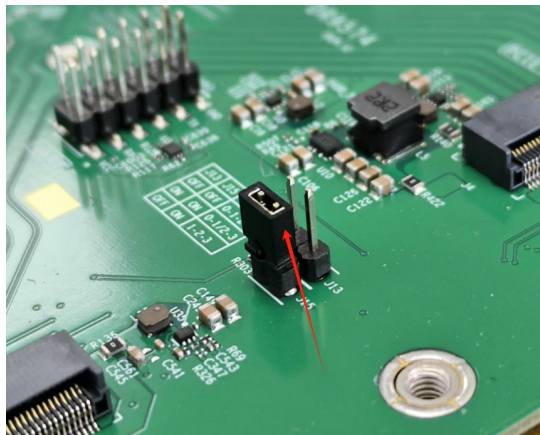


How to load firmware and configure MLO

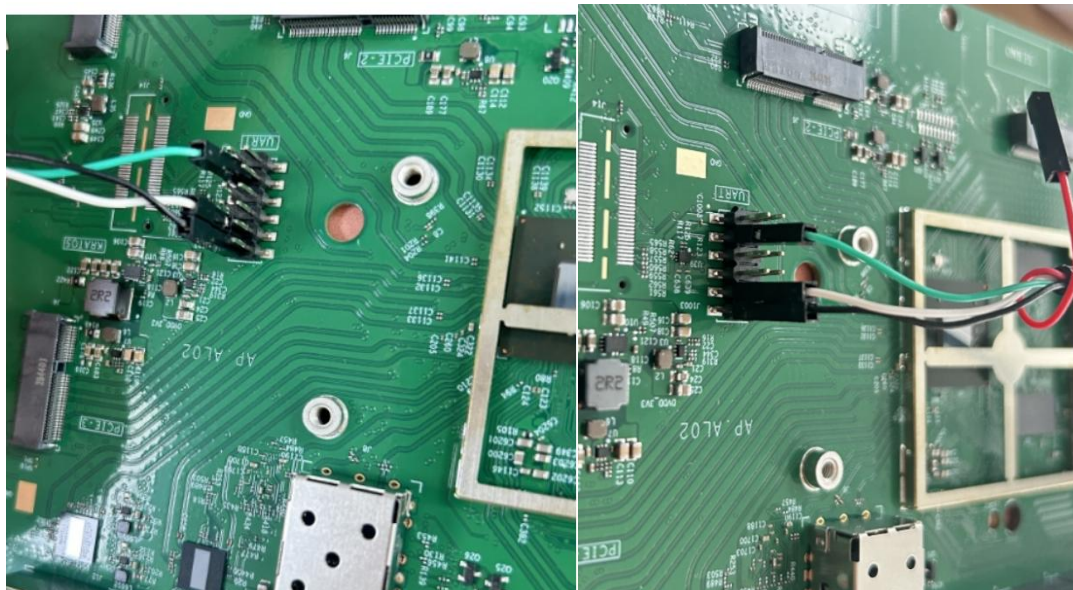
Hardware Connect



Add Jumper on J15

Connect Uart Cable as below

Connector: GND, TX, RX, VCC, And we need use GND connect black cable, TX connect to white cable, RX connect to Green cable VCC don't use.



SOFTWARE CONFIGURE

Note: the firmware needs to be in the same folder as tftpd32 Load firmware requires opening tftpd32

1. enter uboot

```
DRAM: smem ram ptable found: ver: 2 len: 4
1 GiB
NAND: QPIC controller support serial NAND
ID = 82c882c8
Vendor = c8
Device = 82
Serial Nand Device Found With ID : 0xc8 0x82
Serial NAND device Manufacturer:GD5F2GM7REYIG
Device Size:256 MiB, Page size:2048, Spare Size:128, ECC:8-bit
qplic_nand: changing oobsize to 80 from 128 bytes
SPI_ADDR_LEN=3
SF: Detected MX25U25635F with page size 256 Bytes, erase size
total 32 MiB
ipq_spi: page_size: 0x100, sector_size: 0x10000, size: 0x20000
288 MiB
MMC: sdhci: Node Not found, skipping initialization

PCI0 is not defined in the device tree
PCI1 is not defined in the device tree
In: serial@78B1000
Out: serial@78B1000
Err: serial@78B1000
machid: 8050501
MMC Device 0 not found
Hit any key to stop autoboot: 0
```

2 .Modify machid,and configure the card slots insert with DR9274-2G,DR9274-5G,DR9274-6G

Input below command:

```
setenv machid 8050301
```

```
setenv bootargs 'console=ttyMSM0,115200n8 cnss2.enable_qcn9224_support=1
```

```
cnss2.bdf_pci1=0x0001 cnss2.bdf_pci2=0x0002 cnss2.bdf_pci3=0x0004
```

```
cnss2.enable_mlo_support=1'
```

```
saveenv
```

```
Num rings - TxDesc:1 (0-0) TxCmpl:1 (0-0)
RxDesc:1 (0-0) RxFill:1 (0-0)
ipq9574_edma_alloc_rings: successfull
ipq9574_edma_setup_ring_resources: successfull
ipq9574_edma_configure_rings: successfull
ipq9574_edma_hw_init: successfull
eth0
IPQ9574# setenv machid 8050f01
IPQ9574# setenv bootargs 'console=ttyMSM0,115200n8 cnss2.enable_qcn9224_support=1 cnss2.bdf_pci1=0x0001 cnss2.bdf_pci2=0x0002 cnss2.bdf_pci3=0x0004 cnss2.enable_mlo_support=0'
IPQ9574# saveenv
```

4.open tftp tool and input below command to re-flash the new firmware to enable above

configure

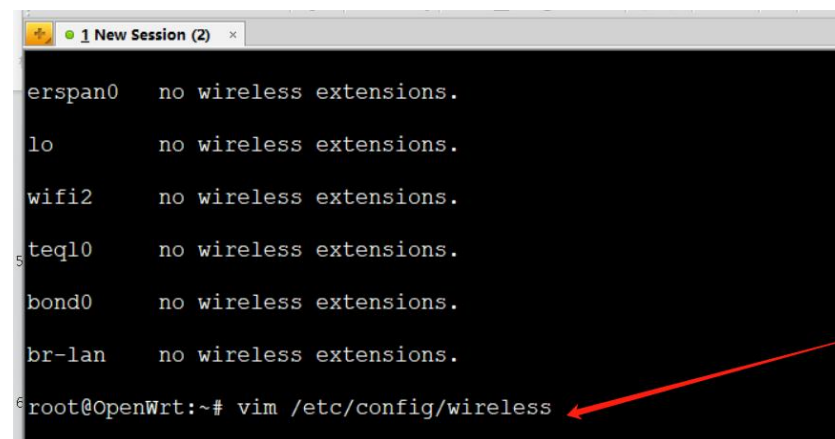
```
tftpboot norplusnand-ipq9574-single-3cardmlo.img && imgaddr=0x50000000 && source  
$imgaddr:script
```

5.Input "reset"

6.Configure the AP

1)Enter the root (root , asdf1234)

2)Input **vim /etc/config/wireless** Modify AP Configurations



```
1 New Session (2) x  
erspan0    no wireless extensions.  
lo         no wireless extensions.  
wifi2      no wireless extensions.  
teql0      no wireless extensions.  
bond0      no wireless extensions.  
br-lan     no wireless extensions.  
root@OpenWrt:~# vim /etc/config/wireless
```

7. Press "d G" on the keyboard and paste the AP configuration command below

config wifi-device wifi0

```
option type      qcawificfg80211  
option channel   auto  
option macaddr   c4:4b:d1:60:00:47  
option hwmode    11beg  
# REMOVE THIS LINE TO ENABLE WIFI:  
option disabled 0
```

config wifi-iface

```
option device     wifi0  
option network    lan  
option mode       ap  
option mld 'mld0'  
option ssid 'HBTEml0'  
option cactimeout '0'  
option encryption ccmp  
option sae 1  
option ieee80211w 2  
option sae_pwe 1  
list sae_group 19  
list sae_password 1234567890
```

```
config wifi-device  wifi1
    option type      qcawificfg80211
    option channel   auto
    option macaddr   c4:4b:d1:70:05:8a
    option hwmode    11bea
    # REMOVE THIS LINE TO ENABLE WIFI:
    option disabled  0
```

```
config wifi-iface
    option device    wifi1
    option network   lan
    option mode      ap
    option mld 'mld0'
    option ssid 'HBTEml0'
    option cactimeout '0'
    option encryption      ccmp
    option sae 1
    option ieee80211w 2
    option sae_pwe 1
    list sae_group 19
    list sae_password 1234567890
```

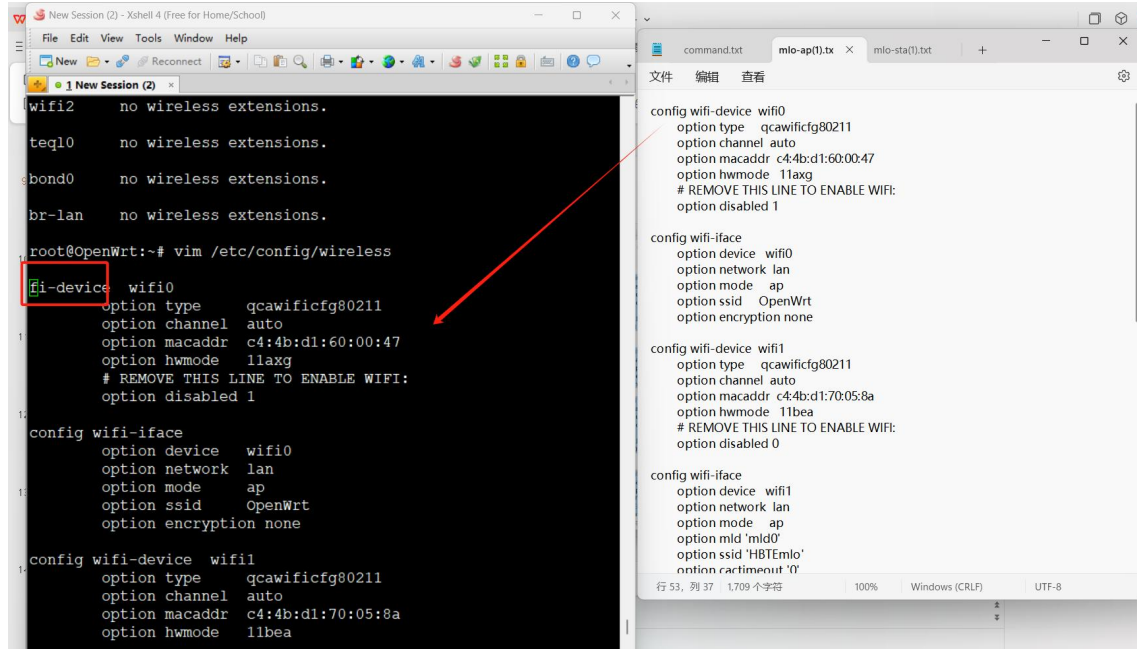
```
config wifi-device  wifi2
    option type      qcawificfg80211
    option channel   auto
    option macaddr   c4:4b:d1:70:04:fc
    option hwmode    11bea
    # REMOVE THIS LINE TO ENABLE WIFI:
    option disabled  0
```

```
config wifi-iface
    option device    wifi2
    option network   lan
    option mode      ap
    option mld 'mld0'
    option ssid 'HBTEml0'
    option cactimeout '0'
    option encryption      ccmp
    option sae 1
    option ieee80211w 2
    option sae_pwe 1
    list sae_group 19
    list sae_password 1234567890
```

config wifi-mld 'mld0'

option mld_macaddr '00:21:31:43:12:98'

option mld_ssid 'HBTEml0'



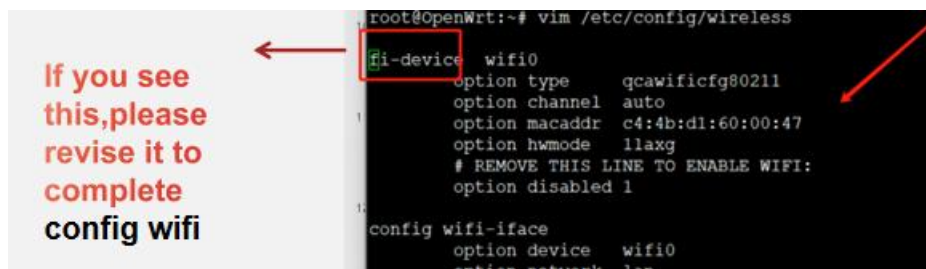
```
root@OpenWrt:~# vim /etc/config/wireless

config wifi-device wifi0
    option type      qca988x
    option channel    auto
    option macaddr    c4:4b:d1:60:00:47
    option hwmode     11axg
    # REMOVE THIS LINE TO ENABLE WIFI:
    option disabled 1

config wifi-iface
    option device      wifi0
    option network     lan
    option mode         ap
    option ssid         OpenWrt
    option encryption   none

config wifi-device wifi1
    option type      qca988x
    option channel    auto
    option macaddr    c4:4b:d1:70:05:8a
    option hwmode     11bea
    # REMOVE THIS LINE TO ENABLE WIFI:
    option disabled 0

config wifi-iface
    option device      wifi1
    option network     lan
    option mode         ap
    option mld          'mld0'
    option ssid         'HBTEml0'
    option ractimeout   0
```



8. Press "esc" and then press "shift" "zz" on the keyboard finish the AP configuration
9. Input "wifi" enable the configuration press enter
10. then input iwconfig for checking if the radio are up

Done