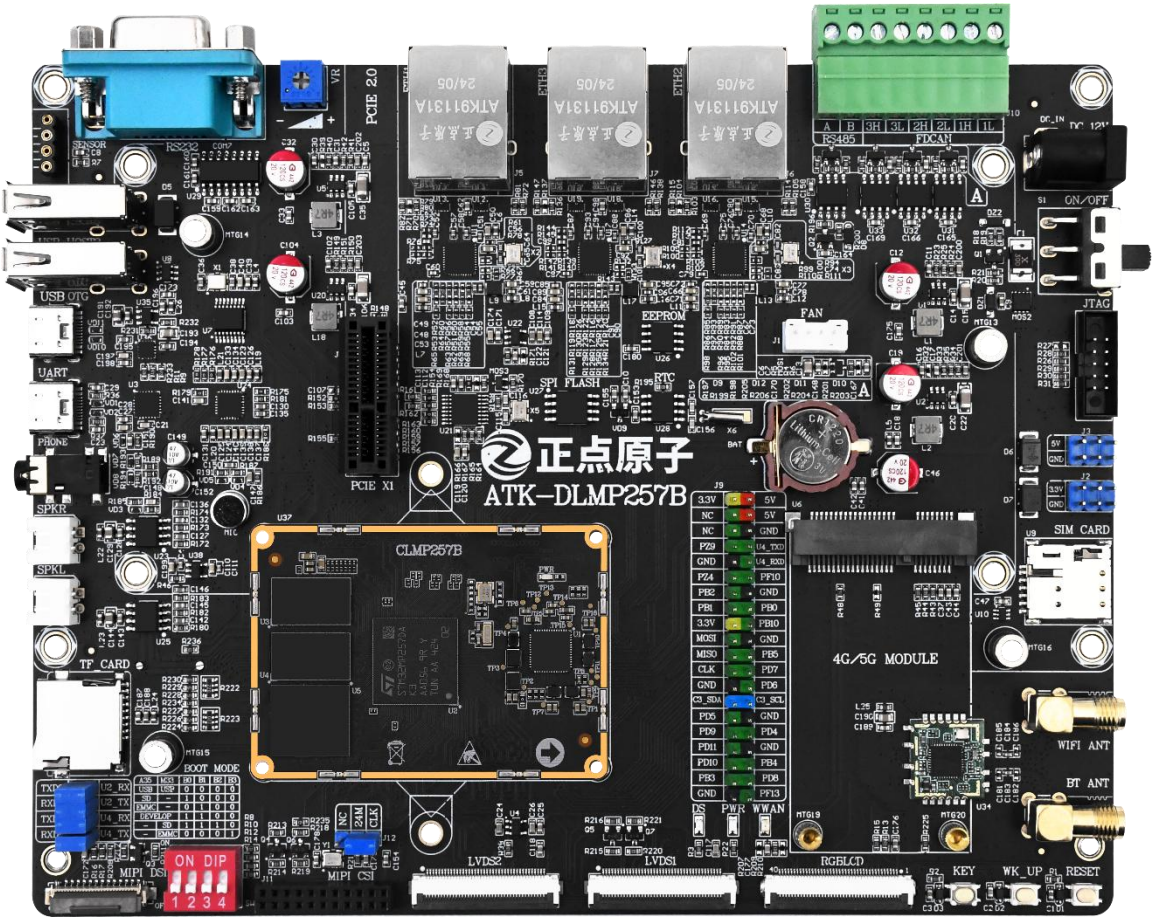
ATK-DLMP257B

Static IP Address Modification Document

V1.0



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Revision History:

Version	Version Update Notes	Responsible person	Proofreading	Date
V1.0	release officially	ALIENTEK	ALIENTEK	2025.04.01

Catalogue

Chapter 1. Sets up a static IP address

1.1 Setting up a static IP address temporarily

Enter the development board system, you can use the ifconfig command to set a temporary static IP address for testing, as shown in the following example:

```
ifconfig [Network card device] [IP address]
```

```
root@ATK-DLMP257:~# ifconfig end0 192.168.6.110
root@ATK-DLMP257:~# ifconfig
br0       Link encap:Ethernet  HWaddr 92:5D:C5:C9:07:90
          inet6 addr: fe80::905d:c5ff:fec9:790/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:12 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:1559 (1.5 KiB)

end0      Link encap:Ethernet  HWaddr 42:DA:E5:59:0E:BB
          inet addr:192.168.6.110  Bcast:192.168.6.255  Mask:255.255.255.0
          inet6 addr: fe80::40da:e5ff:fe59:ebb/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:7902 errors:0 dropped:0 overruns:0 frame:0
          TX packets:164 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:604656 (590.4 KiB)  TX bytes:36036 (35.1 KiB)
          Interrupt:68 Base address:0x8000
```

Figure 1.1-1 Set a static IP address

Then we can test it according to our requirements. Here we test the ping gateway:

```
ping 192.168.6.1-I end0
```

```
root@ATK-DLMP257:~# ping 192.168.6.1 -I end0
PING 192.168.6.1 (192.168.6.1) from 192.168.6.117 end0: 56(84) bytes of data.
64 bytes from 192.168.6.1: icmp_seq=1 ttl=128 time=0.310 ms
64 bytes from 192.168.6.1: icmp_seq=2 ttl=128 time=0.338 ms
64 bytes from 192.168.6.1: icmp_seq=3 ttl=128 time=0.317 ms
64 bytes from 192.168.6.1: icmp_seq=4 ttl=128 time=0.377 ms
^C
--- 192.168.6.1 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3072ms
rtt min/avg/max/mdev = 0.310/0.335/0.377/0.026 ms
root@ATK-DLMP257:~#
```

Figure 1.1-2 ping Gateway testing

1.1.1 A Fixed static IP address

Temporarily setting a static IP address is sometimes not enough, and it will not be available after restart. In this case, you need to set a fixed static IP address, as follows:

Enter the factory system of the development board and open the 52-static.network.static file.

```
vi /usr/lib/systemd/network/52-static.network.static
```

```
[Match]
Name=end0

[Network]
DNS=192.168.72.254
Address=192.168.72.2/24
Gateway=192.168.72.254

# to enable static IP on eth0/end0:
# $> cp 80-wired.network 80-wired.network.notused
# $> cp 52-static.network.static 52-static.network
# $> systemctl restart systemd-networkd.service
```

Figure 1.1-3 static.network.static file contents

According to the user's static IP address requirements, set the static IP address, the author here is 192.168.6.0 network segment, need to be set as the IP address of the network segment, such as 192.168.6.120.

Address is set to a static IP address. /24 is the subnet mask, which can be modified according to the actual network segment. Gateway A gateway that sets a static IP address. DNS Settings that meet the static IP address requirements can be set to 114.114.114.114 or static gateway. Here the author's setting reference is as follows:

```
[Match]
Name=end0

[Network]
DNS=114.114.114.114
Address=192.168.6.120/24
Gateway=192.168.6.1

# to enable static IP on eth0/end0:
# $> cp 80-wired.network 80-wired.network.notused
# $> cp 52-static.network.static 52-static.network
# $> systemctl restart systemd-networkd.service
```

Figure 1.1-4 Modify the static.network.static file

Save the file, and follow the prompts to do one after another.

```
cd /usr/lib/systemd/network/
cp 80-wired.network 80-wired.network.notused
cp 52-static.network.static 52-static.network
systemctl restart systemd-networkd.service
sync
```

```
root@ATK-DLMP257:~# cd /usr/lib/systemd/network/
root@ATK-DLMP257:/usr/lib/systemd/network# cp 80-wired.network 80-wired.network.notused
root@ATK-DLMP257:/usr/lib/systemd/network# cp 52-static.network.static 52-static.network
root@ATK-DLMP257:/usr/lib/systemd/network# systemctl restart systemd-networkd.service
root@ATK-DLMP257:/usr/lib/systemd/network# sync
root@ATK-DLMP257:/usr/lib/systemd/network#
```

Figure 1.1-5 Set up a static IP service

When all operations are complete, run reboot to restart the system.

```
reboot
```

```
root@ATK-DLMP257:/usr/lib/systemd/network# reboot
root@ATK-DLMP257:/usr/lib/systemd/network#          Stopping Session c2 of User root...
[  OK  ] R[  OK  ] Stopped target Bluetooth Support.
[  OK  ] Stopped target Multi-User System.
[  OK  ] Stopped target Login Prompts.
[  OK  ] Stopped target Host and Network Name Lookups.
[  OK  ] Stopped target RPC Port Mapper.
[  OK  ] Stopped target Sound Card.
```

Figure 1.1-6 Restart the system

After restarting the system, enter the system and execute the ifconfig command to see the IP address setting effect:

ifconfig

```
root@ATK-DLMP257:~# ifconfig
br0       Link encap:Ethernet  HWaddr 92:5D:C5:C9:07:90
          inet6 addr: fe80::905d:c5ff:fec9:790/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:24 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:3598 (3.5 KiB)

end0      Link encap:Ethernet  HWaddr 42:DA:E5:59:0E:BB
          inet addr:192.168.6.120  Bcast:192.168.6.255  Mask:255.255.255.0
          inet6 addr: fe80::40da:e5ff:fe59:ebb/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:2362 errors:0 dropped:60 overruns:0 frame:0
          TX packets:67 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:182524 (178.2 KiB)  TX bytes:9953 (9.7 KiB)
          Interrupt:68 Base address:0x8000
```

Figure 1.1-7 See the static IP address effect

You can see that the author set the static IP address effective, you can ping gateway and other tests.

```
root@ATK-DLMP257:~# ping 192.168.6.120 -I end0
PING 192.168.6.120 (192.168.6.120) from 192.168.6.120 end0: 56(84) bytes of data.
64 bytes from 192.168.6.120: icmp_seq=1 ttl=64 time=0.079 ms
64 bytes from 192.168.6.120: icmp_seq=2 ttl=64 time=0.096 ms
64 bytes from 192.168.6.120: icmp_seq=3 ttl=64 time=0.100 ms
64 bytes from 192.168.6.120: icmp_seq=4 ttl=64 time=0.084 ms
64 bytes from 192.168.6.120: icmp_seq=5 ttl=64 time=0.085 ms
^C
--- 192.168.6.120 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4079ms
rtt min/avg/max/mdev = 0.079/0.088/0.100/0.007 ms
root@ATK-DLMP257:~#
```

Figure 1.1-8 ping Gateway testing