

# TI81XX PSP EMAC Boot

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## TI81XX EMAC Boot

Linux PSP

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### IMPORTANT

TI81xx refers to DM816x, DM814x and DM813X.

## Introduction

This document provides the procedure to boot TI814x and DM385 devices over Ethernet. Ethernet booting can be used for the following.

- End to End booting the device
- Flashing the device over Ethernet

Ethernet Mac ID e-fused device is required for EMAC Boot.

**Note:** EMAC Boot for TI814X/TI813X is supported from DEV\_TI81XXPSP\_04.04.00.01 release.

## ROM Code Requirements

ROM code needs these fields in BOOTP reply to be able to work:

- Client IP address
- Tftp server IP (called "next-server")
- Boot file name

In addition, we need these additional optional fields if the TFTP server is in a different subnet:

- subnet mask (option number 1)
- router (option number 3)

The DHCP server should be configured to correctly supply these parameters to all devices.

## Boot Mode Switch settings

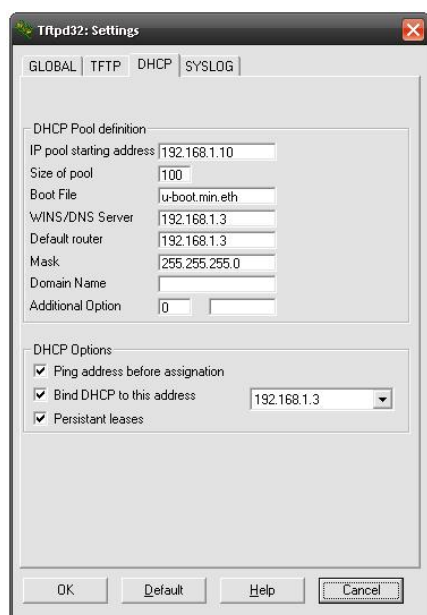
SW1---> BTM[4:0] 00100 or 00111

## ROM Phy Mode selection SW9---> BTM[9:8]

| BTMODE[9:8] | PHY Mode |
|-------------|----------|
| 00b         | MII/GMII |
| 01b         | RMII     |
| 10b         | RGMI     |
| 11b         | reserved |

Please ensure that only one DHCP server responds to the BOOTP request from the EVM.

## Setting in Tftpd32



## Building U-Boot for ETH boot

### TI814X/TI813X

#### U-Boot 1st stage

##### TI8148 EVM

```
$ make CROSS_COMPILE=arm-none-linux-gnueabi- ARCH=arm distclean
$ make CROSS_COMPILE=arm-none-linux-gnueabi- ARCH=arm ti8148_evm_min_eth
$ make CROSS_COMPILE=arm-none-linux-gnueabi- ARCH=arm u-boot.ti
```

##### DM385 EVM

```
$ make CROSS_COMPILE=arm-none-linux-gnueabi- ARCH=arm distclean
$ make CROSS_COMPILE=arm-none-linux-gnueabi- ARCH=arm dm385_evm_min_eth
$ make CROSS_COMPILE=arm-none-linux-gnueabi- ARCH=arm u-boot.ti
```

This will generate a file **u-boot.min.eth** which has to be used for booting over ethernet.

## U-Boot 2nd Stage

Either SD or NAND u-boot.bin can be taken according to where the environment variables should be stored. Custom environment variable can be added through CONFIG\_EXTRA\_ENV\_SETTINGS to either Flash to memory or End to End booting the device.

## TI816X

No specific Ethernet boot config, any single stage u-boot.bin can be used for booting the Device over ethernet.

## References

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