

TI81XX PSP EMAC Boot



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Linux PSP

IMPORTANT

TI81XX refers to TI816X, TI814X and TI813X.

Introduction

This document provides the procedure to boot DM814X and DM813X 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 DM814X/DM813X 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

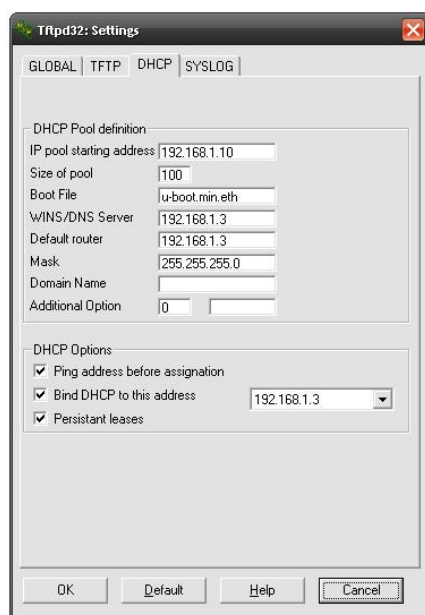
SW1---> BTM[4:0] 00100 or 00111, refer switch setting http://processors.wiki.ti.com/index.php/TI81XX_PSP_U-Boot#EVM_Switch_Settings

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

DM814X/DM813X

U-Boot 1st stage

TI8148 EVM

```
$ make CROSS_COMPILE=arm-arago-linux-gnueabi- ARCH=arm distclean
$ make CROSS_COMPILE=arm-arago-linux-gnueabi- ARCH=arm ti8148_evm_min_eth
$ make CROSS_COMPILE=arm-arago-linux-gnueabi- ARCH=arm u-boot.ti
```

DM813X EVM

```
$ make CROSS_COMPILE=arm-arago-linux-gnueabi- ARCH=arm distclean
$ make CROSS_COMPILE=arm-arago-linux-gnueabi- ARCH=arm ti813x_evm_min_eth
$ make CROSS_COMPILE=arm-arago-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.

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