



## SheevaPlug Development Kit - Configuring and Building the Linux kernel with LSP for KW(A0) based device

This document provides the procedure to configure the Linux kernel 2.6.22.18 with the `linux-feroceon_4_2_7_KW.zip` for the SheevaPlug platform based on Kirkwood 6281(A0).

1. On a Linux machine, go to the 'home' directory and create a directory 'SheevaPlug'.  
*/home# mkdir SheevaPlug*
2. Copy the source of the Linux kernel in /home/SheevaPlug folder: *linux-2.6.22.18.tar.bz2*
3. On the same Linux machine, copy Marvell's LSP in the /home/SheevaPlug folder: *linux-feroceon\_4\_2\_7\_KW.zip*
4. Copy the patch '*0011\_nand\_4bit\_ecc\_support.patch*'
5. Expand the source in the /home/SheevaPlug folder  
*~/SheevaPlug# tar -xjvf linux-2.6.22.18.tar.bz2*
6. Move the folder linux-2.6.22.18 to a new folder linux-feroceon\_4\_2\_7\_KW  
*~/SheevaPlug# mv linux-2.6.22.18 linux-feroceon\_4\_2\_7\_KW*
7. Unzip LSP package.  
*~/SheevaPlug# unzip linux-feroceon\_4\_2\_7\_KW.zip*
8. During the unzip process, the following message will appear. Select the option 'All'.  
Replace linux-feroceon\_4\_2\_7\_kw/init/do\_mounts\_rd.c? [Y]es, [N]o, [A]ll, [R]ename: All
9. Go to the working directory where all the configuration files are unzipped.  
*~/SheevaPlug# cd linux-feroceon\_4\_2\_7\_KW*
10. Copy the 4-bit NAND ECC patch from the base directory to the working directory.  
*~/SheevaPlug# cp -a 0011\_nand\_4bit\_ecc\_support.patch ./linux-feroceon\_4\_2\_7\_KW*
11. Apply the 4-bit NAND ECC patch '*0011\_nand\_4bit\_ecc\_support.patch*' and check for any errors. If none, proceed to the next step.



```
~/SheevaPlug /linux-feroceon_4_2_7_KW# patch -p1 <  
0011_nand_4bit_ecc_support.patch
```

*Please make the following change to u-boot environment variable 'nandEcc' after applying the above patch. At the u-boot prompt, do the following:*

```
Marvell>> setenv nandEcc 4  
Marvell>> saveenv
```

12. Provide the arm compiler path

```
~/SheevaPlug /linux-feroceon_4_2_7_KW# export PATH=/arm-none-linux-gnu-  
eabi/bin:$PATH
```

13. Do a make mrproper for a total clean build.

```
~/SheevaPlug /linux-feroceon_4_2_7_KW # make mrproper
```

14. Goto the configs folder and check for the mv88f6281\_defconfig file.

```
~/SheevaPlug /linux-feroceon_4_2_7_KW # make mv88f6281_defconfig
```

15. Ensure the following settings are set by doing make menuconfig.

```
~/SheevaPlug /linux-feroceon_4_2_7_KW # make menuconfig
```

- a. Change the SDIO setting from modular <M> to included <\*>  
System Type -> Feroceon Options -> Marvell SDIOMMC driver -> <\*>

16. Create a uImage

```
~/SheevaPlug /linux-feroceon_4_2_7_KW # make uImage
```

17. Rename it as uImage.sheeva.xxxxxxx

```
~/SheevaPlug /linux-feroceon_4_2_7_KW # cp -a arch/arm/boot/uImage  
/SheevaPlug /linux-feroceon_4_2_7_KW /uImage.sheeva.040309
```