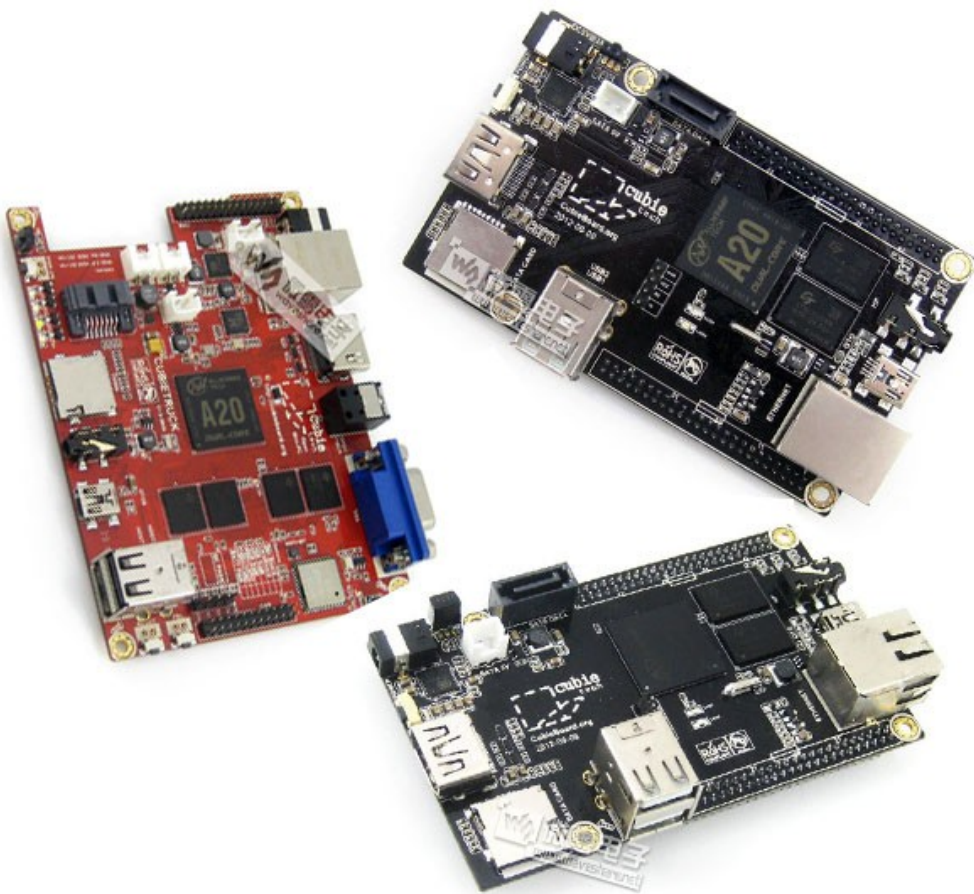


# Kernel Porting Manual

2014.06.17 V1.1



Waveshare Electronics

[www.wvshare.com](http://www.wvshare.com)

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## Version update records

Version	Date	Description
V1.1	2014.06.17	Initial Release

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## Special instruction

This document is mainly for porting kernel of Version 3.4.61。

# 1. Install compiler

Cross-compiler tool chain is needed when porting the kernel, execute the following command to install:

```
#apt-get update  
#apt-get install gcc-arm-linux-gnueabi
```

# 2. Compile the kernel

## 2.1. Obtain source code

Download kernel source code linux-sunxi-sunxi-3.4.61.tar.gz of version 3.4.61 and related configuration profile cubieboard1\_defconfig\_3.4.61 or cubieboard2\_defconfig\_3.4.61 from

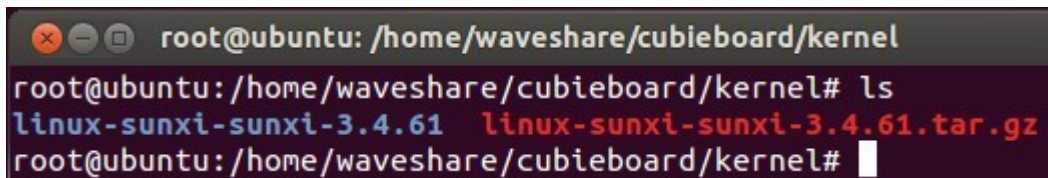
[http://dl.cubieboard.org/parteners/waveshare/Source\\_Code/](http://dl.cubieboard.org/parteners/waveshare/Source_Code/),

copy to home directory of the Ubuntu system in the PC. Such as copy to directory :/home/waveshare/cubieboard/kernel.

## 2.2. Unzip

```
# tar -xzf linux-sunxi-sunxi-3.4.61.tar.gz
```

Get original linux-sunxi-sunxi-3.4.61 after extracting.



```
root@ubuntu: /home/waveshare/cubieboard/kernel  
root@ubuntu: /home/waveshare/cubieboard/kernel# ls  
linux-sunxi-sunxi-3.4.61  linux-sunxi-sunxi-3.4.61.tar.gz  
root@ubuntu: /home/waveshare/cubieboard/kernel#
```

## 2.3. Specify compiler

```
#cd linux-sunxi-sunxi-3.4.61
```

```
#vi Makefile
```

Modify:

```
export KBUILD_BUILDHOST := $(SUBARCH)
```

```
ARCH ?= $(SUBARCH)
```

```
CROSS_COMPILE ?=
```

To:

```
export KBUILD_BUILDHOST := $(SUBARCH)
```

```
ARCH ?= arm
```

```
CROSS_COMPILE ?= arm-linux-gnueabihf-
```

```
194 export KBUILD_BUILDHOST := $(SUBARCH)
195 ARCH ?= arm
196 CROSS_COMPILE ?= arm-linux-gnueabihf-
```

Note: vim compiler is recommended as it comes with function of special character displayed in different color.

## 2.4. Clear temporary files

```
#make clean
```

## 2.5. Copy standard configuration files

**A10:**

```
#cp ../cubieboard1_defconfig_3.4.61 .config
```

**A20:**

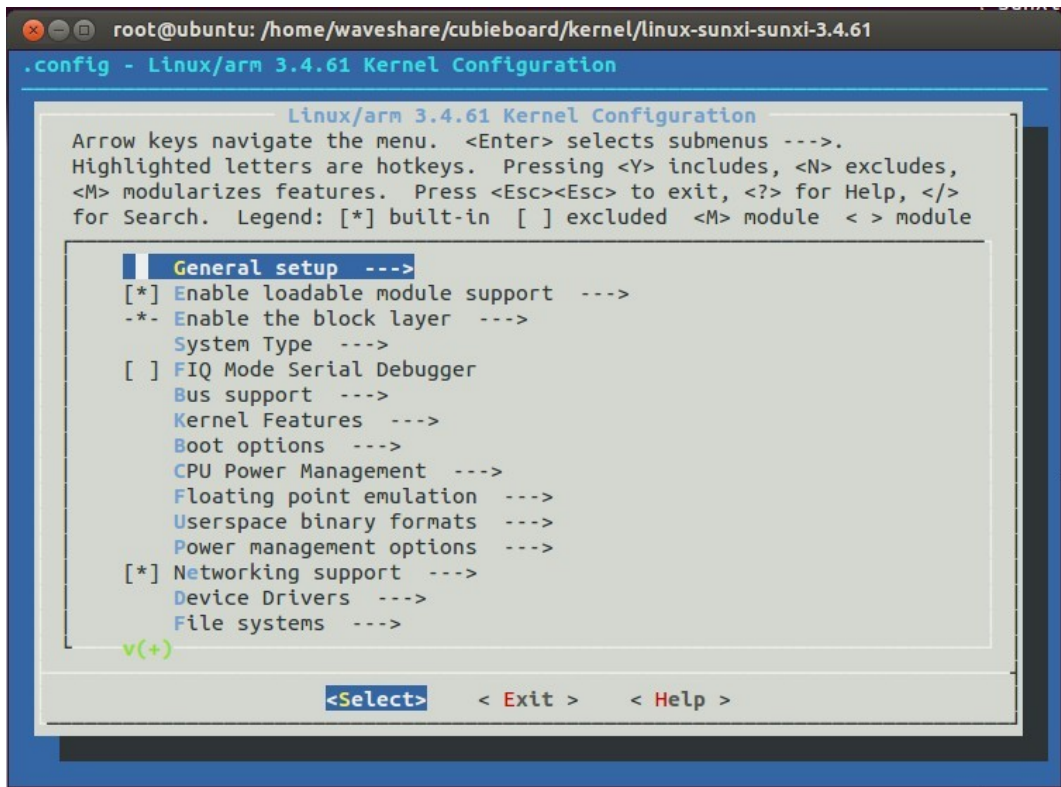
```
#cp ../cubieboard2_defconfig_3.4.61 .config
```

A hidden configuration file .config will be generated under top-level directory after executing the above operation.

## 2.6. Configure the kernel

```
#make menuconfig
```

There will be a pop up menu after executing the above command, detail configuration can be made for the kernel now.



## 2.7. Compile the kernel

```
#make ulmage
```

Ulmage will be generated under directory of arch/arm/boot after finished the compiling.

## 2.8. Compile kernel module

```
#make modules
```

## 2.9. Install kernel module

```
#make modules_install
```

Folder 3.4.61+ named as kernel version will be generated under directory of /lib/modules/ after finished installing.