Idea6410 Ubuntu User Manual V 0.19

Version: Ubuntu-9.04_v0.19
Linux PC environment: Ubuntu-9.04
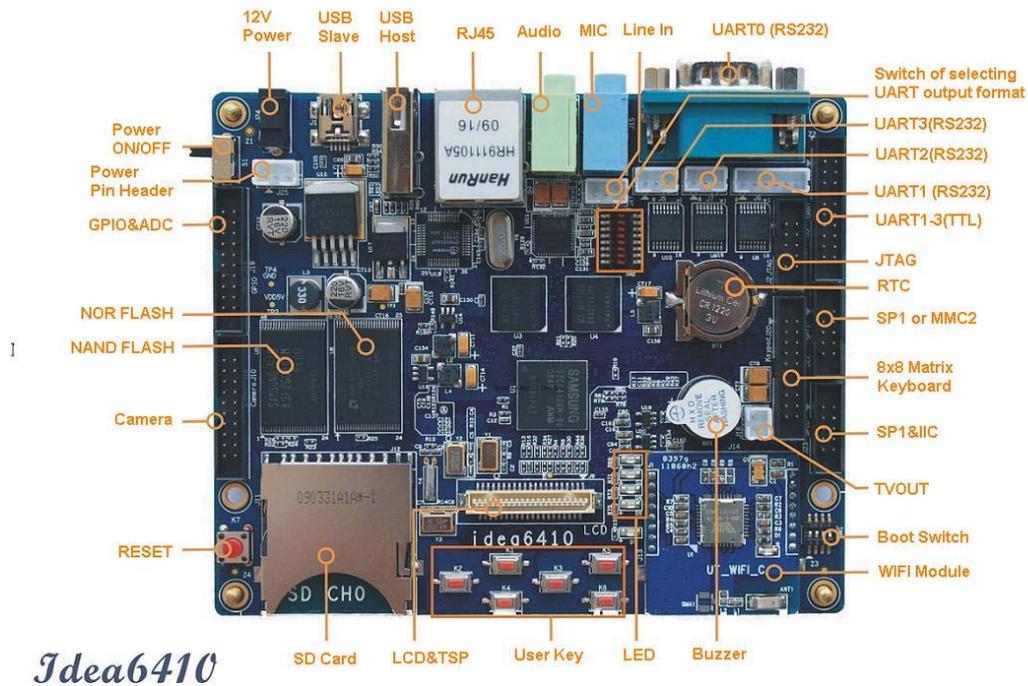
1. Install Cross-compile

1.1 Open Linux-ubuntu_v0.19\cross_compile\ folder, and copy Arm-none-lunux-gnueabi-arm-2008q3-72-for-linux.tar.bz2 to linux PC working folder.

1.2 Install arm-none-linux-gnueabi-arm-2008q3-72-for-linux.tar.bz2 to /usr/local/arm/ and execute the command:

fusq@fusq-urbetter:~/test$ tar jxvf arm-none-linux-gnueabi-arm-2008q3-72-for-linux.tar.bz2 –C /

Notice : Default location is /usr/local/arm/, no need to specify

1.3 Check the compiler installation
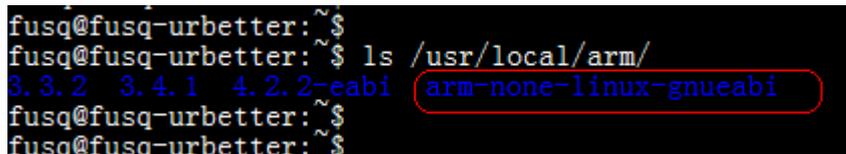
```
fusq@fusq-urbetter:~$
fusq@fusq-urbetter:~$ ls /usr/local/arm/
3.3.2  3.4.1  4.2.2-eabi  arm-none-linux-gnueabi
fusq@fusq-urbetter:~$
fusq@fusq-urbetter:~$
```

From above picture we can see the arm-none-linux-gnueabi has already successful installed under /usr/local/arm folder

2. Compiling Kernel

Copy the ubuntu-9.04_v0.19\kernel\ubuntu-linux-2.6.29.1.tar.gz to working folder, enter the working folder and decompress the ubuntu-linux-2.6.29.1.tar.gz to the currently folder.
Execute the command:

fusq@fusq-urbetter:~/test$ tar zxvf ubuntu-linux-2.6.29.1.tar.gz

fusq@fusq-urbetter:~/test$ cd linux-2.6.29.1/

fusq@fusq-urbetter:~/test$ make clean

fusq@fusq-urbetter:~/test$ make menuconfig

fusq@fusq-urbetter:~/test$ make

fusq@fusq-urbetter:~/test$ ./fix-image

Finally the generate the zImage-fix file under the currently folder \arch\arm\boot\

3. Burning Image

3.1 SD card partition
Prepare a 1GB or larger than 1GB SD card, (recommend 2GB), and set two partitions for the SD card, set the first partition to FAT format around 100MB, and set the second partition to EXT3 format larger than 800MB. The partition must be done under linux environment, and the partition step refer to below:
● Insert SD card to linux host, uninstall the SD card.
● Enter terminal and execute command: sudo fdisk /dev/sdb

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```
fusq@fusq-urbetter:~$
fusq@fusq-urbetter:~$
fusq@fusq-urbetter:~$ sudo fdisk /dev/sdb
[sudo] password for fusq:

Command (m for help): m
Command action
   a   toggle a bootable flag
   b   edit bsd disklabel
   c   toggle the dos compatibility flag
   d   delete a partition
   l   list known partition types
   m   print this menu
   n   add a new partition
   o   create a new empty DOS partition table
   p   print the partition table
   q   quit without saving changes
   s   create a new empty Sun disklabel
   t   change a partition's system id
   u   change display/entry units
   v   verify the partition table
   w   write table to disk and exit
   x   extra functionality (experts only)
```

● Select d, delete the partition.

```
Command (m for help): d
Selected partition 1

Command (m for help):
```

● Create the first partition
Input "n", "enter";
Input "p", "enter";
Input "1", "enter";
Directly "enter";
Input "20M" enter;

Notice, the 20M here not equal to 20M Bytes.

```
Command (m for help): n
Command action
   e   extended
   p   primary partition (1-4)
p
Partition number (1-4): 1
First cylinder (1-239, default 1):
Using default value 1
Last cylinder, +cylinders or +size{K,M,G} (1-239, default 239): 20M
```

● Create the second partition
Input "n"; "enter";

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Input "p"; "enter";
Input "2"; "enter".
Directly "enter";
Directly "enter"

```
Command (m for help): n
Command action
   e   extended
   p   primary partition (1-4)
p
Partition number (1-4): 2
First cylinder (21-239, default 21):
Using default value 21
Last cylinder, +cylinders or +size{K,M,G} (21-239, default 239):
Using default value 239
```

● Mark the first partition
Input "a"; "enter";
Input "1"; "enter";
Input "p"; "enter";

```
Command (m for help): a
Partition number (1-4): 1

Command (m for help): p

Disk /dev/sdb: 1967 MB, 1967128576 bytes
255 heads, 63 sectors/track, 239 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Disk identifier: 0x00000000

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1   *           1          20      160618+  83  Linux
/dev/sdb2              21         239     1759117+  83  Linux
```

● Write the partition table
Input "w", "enter"

```
Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
fusq@fusq-urbetter:~$
```

Thus, the two partitions has been set, and user need to format the partition.
Notice: After the partition finished, the system will automatically load, so before format the partition please confirm the partition is on "Unload" status.

● Format the first partition and set to vfat format, execute the command:
   Sudo mkfs.vfat/dev/sdb1

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```
fusq@fusq-urbetter: $
fusq@fusq-urbetter:~$ sudo mkfs.vfat /dev/sdb1
mkfs.vfat 3.0.1 (23 Nov 2008)
fusq@fusq-urbetter:~$
```

● Format the first partition and set to ext3 format. Execute the command: Sudo mkfs.ext3/dev/sdb2

```
fusq@fusq-urbetter: $
fusq@fusq-urbetter:~$ sudo mkfs.ext3 /dev/sdb2
mke2fs 1.41.4 (27-Jan-2009)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
109984 inodes, 439779 blocks
21988 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=452984832
14 block groups
32768 blocks per group, 32768 fragments per group
7856 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912

Writing inode tables: done
Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

This filesystem will be automatically checked every 35 mounts or
180 days, whichever comes first.  Use tune2fs -c or -i to override.
fusq@fusq-urbetter:~$
```

● Execute the command: sudo fsck.ext3/dev/sdb2, check the second partition file system.

```
fusq@fusq-urbetter: $
fusq@fusq-urbetter:~$ sudo fsck.ext3 /dev/sdb2
e2fsck 1.41.4 (27-Jan-2009)
/dev/sdb2: clean, 11/109984 files, 15763/439779 blocks
fusq@fusq-urbetter:~$
fusq@fusq-urbetter:~$
```

3.2   Burn the u-boot-movibin and zImage-fix into SD card
● Insert the SD card to PC
● Under WindowXP environment, open ubuntu-9.04_v0.19\image\moviNAND_Fusing_Tool.exe
● Select SD card   mapping Disk under Windows from SD/MMC Driver,
● Click "Browse" to select u-boot-movi-bin file as the image file of the bootloader
● Input 32 to the **sector** of Specific Sector table; and click browse near the **Image** to add the zImage-fix.

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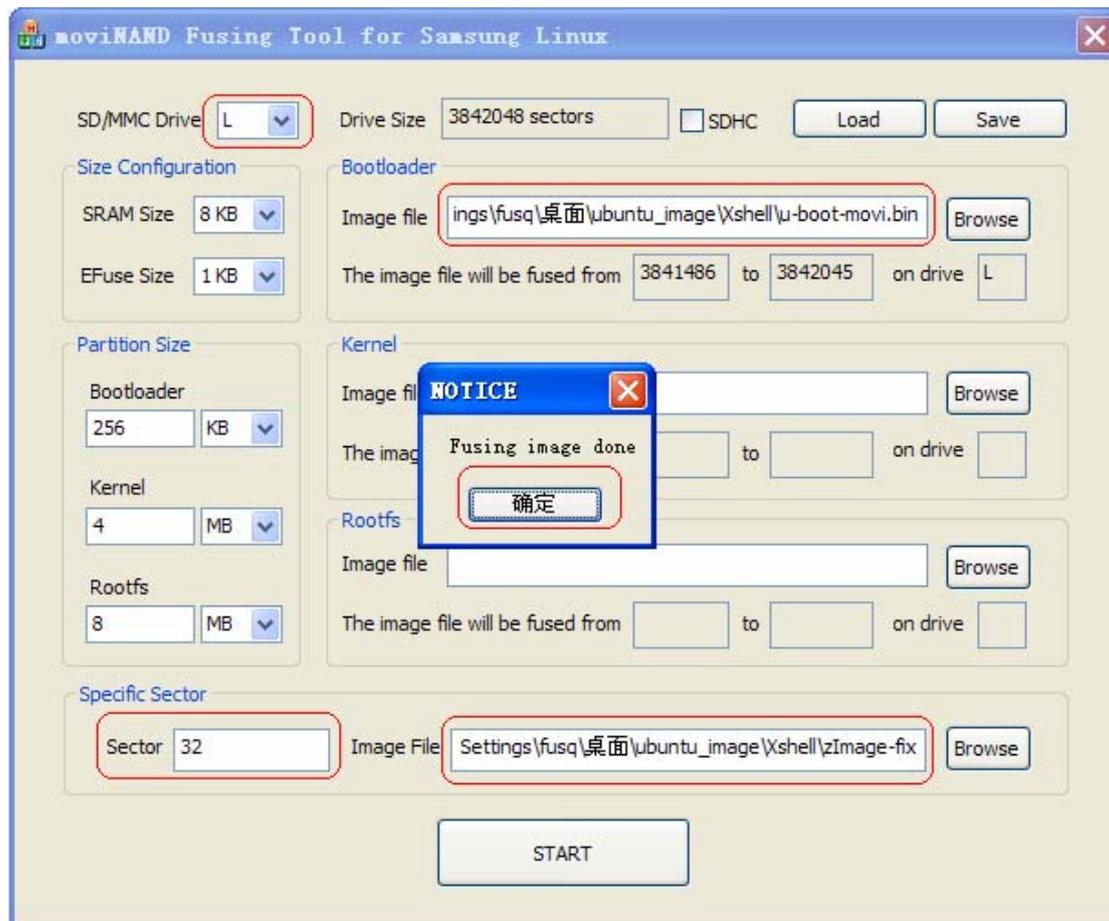
- Click " START", if the Write successfully there will be a pop-up windows "Fusing image done"

Thus, u-boot-movi.bin and zImage-fix has been burned into the SD card, and user need to burn the file system to the SD card.

3.3   Burn the EXT3 file system into SD card
- Copy ubuntu-9.04_v0.19\filesystem\ 1xde-ubuntu.tar.bz2 to the working folder
- Insert the SD card to the linux host
- Depress the file system 1xde-ubuntu.tar.bz2 to the ext3 partition of the SD card
Execute the command: sudo tar xvf   1xde-ubuntu.tar.bz2-C/media/disk

The depressing take very long time, please be patient.

3.4 Set startup mode
- Set the SW1 of Idea6410 to SD boot mode
  Set the 1-4 bit to "1111" (switch On is 1)
- Insert the SD card to SD card socket
- Start the system
- Start u-boot

- Startup kernel

- Load the file system

```
Begin: Mounting root file system... ...
Begin: Running /scripts/local-top ...
Done.
Begin: Running /scripts/local-premount ...
Done.
modprobe: chdir(2.6.29.1): No such file or directory
kjournald starting.  Commit interval 5 seconds
EXT3-fs: mounted filesystem with ordered data mode.
Begin: Running /scripts/local-bottom ...
Done.
Done.
Begin: Running /scripts/init-bottom ...
Done.
```

● When the system at the user log-in interface (LCD display login user name interface)

```
[ OK ]
[ OK ]ting up console font and keymap...
 * Starting system log daemon...
Ubuntu 9.04 ubuntu s3c2410_serial0

[ OK ] login:
[ OK ] * Starting kernel log daemon...
[ OK ] * Starting system message bus dbus
[ OK ] * Starting OpenBSD Secure Shell server sshd
[ OK ] * Starting Hardware abstraction layer hald
[ OK ] * Starting GNOME Display Manager...
```

● Input user and password
Ubuntu login: root
Password: ubuntu

```
ubuntu login: root
Password:
Last login: Sat May  9 11:28:22 CST 2009
Linux ubuntu 2.6.29.1 #39 Wed May 13 11:

The programs included with the Ubuntu sy
the exact distribution terms for each pr
individual files in /usr/share/doc/*/cop

Ubuntu comes with ABSOLUTELY NO WARRANTY
applicable law.

To access official Ubuntu documentation,
http://help.ubuntu.com/
```

● Input user name and password the enter the terminal, and execute the

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command at the terminal
Killall-HUPgdm

```
root@ubuntu:~#
root@ubuntu:~# killall -HUP gdm
root@ubuntu:~# 
```

Thus, the system enter ubuntu desktop interface

Thank you!