

LOC
LinuxOnChip
User' Manual



LINUX Co., Ltd.

Evaluation board

Host PC file LOC

Flash file system

Monitor mode

Root directory

Console, shell enable/disable

IP

Directory

Evaluation board

- Terminal emulate program host PC RS-232C port LOC RS-232C port

- Linux emulator minicom program .

- minicom #minicom -s , .

Serial port setup

serial device : /dev/ttyS0

Bps/par/bits : 9600 8N1

Hardware flow control : No

Software flow control : No .

9600 bps, 8 bit data, 1 stop bit, flow control .

Host PC COM1 /dev/ttyS0, COM2 /dev/ttyS1

- minicom ctrl+a, z .

- minicom , evaluation board . minicom consol

booting procedure 가 log in prompt 가 .

- Log in ID root , password uClinux .

- LOC log in . Linux ,

```
"Hello! LinuxOnChip." console print . Host PC
directory /home/LOC sample directory code
```

```
#pwd
/home/LOC
#mkdir sample
#cd sample
#buildenv
```

```
hello.c file .
```

```
main(int argc, char *argv[])
{
    puts("Hello! LinuxOnChip.");
}
```

```
compile . compile option .
```

```
#m68k-pic-coff-gcc hello.c -o hello
m68k-pic-coff-gcc : compiler file
hello.c : test program source
-o : compiler option
hello : file
```

```
Host PC file LOC
```

```
- file LOC target board NFS(Network File System)
```

```
- Host PC directory LOC mount , LOC host PC
directory LOC local directory .
```

```
- NFS host pc /etc/exports file /etc/hosts file
nfs daemon stop, start .
```

```
- Host PC /home/LOC directory directory 가 ,
```

```
- vi editor host pc /etc/exports file
/home/LOC (rw, insecure)
가 .
```

```
#cd /etc
#vi exports
/home/LOC (rw, insecure)
#
```

```
- host pc /etc/hosts file . /etc/hosts file
192.168.1.200 LOC
가 .
```

```
#cd /etc
#vi hosts
192.168.1.200 LOC
#
```

```
LOC IP 가 192.168.1.200 . IP 'IP
' .
```

```
- /etc/exports, /etc/hosts file ,
```

```
#/etc/rc.d/init.d/nfs stop
#/etc/rc.d/init.d/nfs start
```

```
- LOC host PC directory mount file 가
. Minicom console LOC
.
```

```
#mount -t nfs 192.168.1.7:/home/LOC /mnt
#mount
/dev/root on / type umsdos (rw)
```

```
/dev/ram0 on /var type ext2 (rw)
proc on /proc type proc (rw)
192.168.1.7:/home/LOC on /mnt type nfs (rw,addr=192.168.1.7)
/dev/vsbb on /usr type umsdos (rw)
```

```
          , LOC host PC local directory
가 . 192.168.1.7 host PC IP address .
```

```
- file 'test' LOC copy .
```

```
#cd /mnt
#cp hello /usr/hello
#sync
```

```
LOC /usr directory file hello 가 .
,
```

```
#pwd
/usr
#./hello
Hello! LinuxOnChip.
#
```

```
가 . LOC 가
/usr/rc file 가 .
```

```
/usr/hello &
```

Flash file system

```
LOC Flash memory file system 가 ,
    가 file , , , , 가 .
"mount" key in , .
# mount
/dev/root on / type umsdos (rw)
/dev/ram0 on /var type ext2 (rw)
proc on /proc type proc (rw)
/dev/vsbb on /usr type umsdos (rw)

PC directory NFS(Network File System) mount ,
# mount
/dev/root on / type umsdos (rw)
/dev/ram0 on /var type ext2 (rw)
proc on /proc type proc (rw)
192.168.1.7:/home2 on /mnt type nfs (rw,addr=192.168.1.7)
/dev/vsbb on /usr type umsdos (rw)

, 192.168.1.7 host /home2 directory 가 mount .
LOC 192.168.1.7:/home2 directory local directory 가 .

Flash disk file sync . sync
    swap memory flash memory .
#sync

Directory / , file , , , /, /usr partition
    sync . sync 가 flash
disk file write 가 .

) LOC program flash disk
    . flash disk ROM
    , system file program .
```

1. /usr directory

/etc/rc

/bin/mount /dev/vsbb /usr .

/bin/mount -o ro /usr

2. / (root)

LOC monitor mode .

('Monitor mode ' .)

Monitor mode .

Mon>setenv cmdline Arg!ro

LOC booting .

Monitor mode

LOC monitor mode . LOC 가 booting ESC code
console port 3 Linux booting monitor mode

1. minicom ESC

2. LOC

3. 'mon>' 가

1. Root directory read only, read/writable

2. Console shell enable/disable

가

- cmdline

- setenv

- Arg!

- setenv [[]]

- LOC

- 가

- LOC

Root directory

Root directory read only

mon>setenv cmdline Arg!ro

LOC booting

Root directory file

read & writable

가

mon>setenv cmdline

read only

root directory

가

```

. read only .
Root directory file IP address
root writable , /etc/rc.inet file
. , root writable LOC IP
가
netconfig
. 'IP' .

```

Console, shell enable/disable

```

Console minicom LOC programming, ,
serial port . LOC serial port 가 가 ,
console port serial port .

```

```

mon>setenv cmdline Arg!ro noprintk noshell
, console port program 가 가 serial port

```

```

Serial port program console mode
monitor mode booting , LOC programming

```

```

mon>setenv cmdline Arg!ro

```

```

noprintk LOC string console print

```

```

noshell getty

```

IP

```
LOC          IP          file(rc file)
          IP          netconfig
minicom emulator telnet LOC          prompt          netconfig
          IP
```

#netconfig

```
IPaddr : 192.168.1.200
netmask : 255.255.255.0
network : 192.168.1.0
gateway : 192.168.1.1
nameserver : 192.168.1.200
host : LinuxOnChip
```

```
IPaddr          IP address
netmask network 가          network
Linux
IP address          field network
field host
```

```
netmask : 255.255.255.0 (Host = 254 = 1 ~ 254)
network : 192.168.1.0
network = IPaddr && netmask= 0xC0.0xA8.0x01.0xC8 && 0xFF.0xFF.0xFf.0x00
          = 0xC0.0xA8.0x01.0x00 = 192.168.1.0
```

```
netmask : 255.255.255.128 (Host = 126 = 1 ~ 126 & 129 ~ 254)
network : 192.168.1.128
network = IPaddr && netmask= 0xC0.0xA8.0x01.0xC8 && 0xFF.0xFF.0xFf.0x80
          = 0xC0.0xA8.0x01.0x80 = 192.168.1.128
```

```
gateway nameserver . Host PC LOC 가 1:1
          IP field
```

host name

Directory

LOC

1.

/

DOS: Umsdos

Bin: LOC 가

Dev:

Sbin:

Etc: LOC

Lib: 가

Usr: /

Var: 가 512KB

Mnt:

Tmp:

Proc:

Ramfs.img: 512KB

2. /usr

가

/usr/bin:

/usr/rc.d: startup script 가 rc

rc LOC

shell script 가

3. /etc

/etc

/etc/rc: 가 shell script

script script /etc/rc.inet

가 가 startup shell script

```

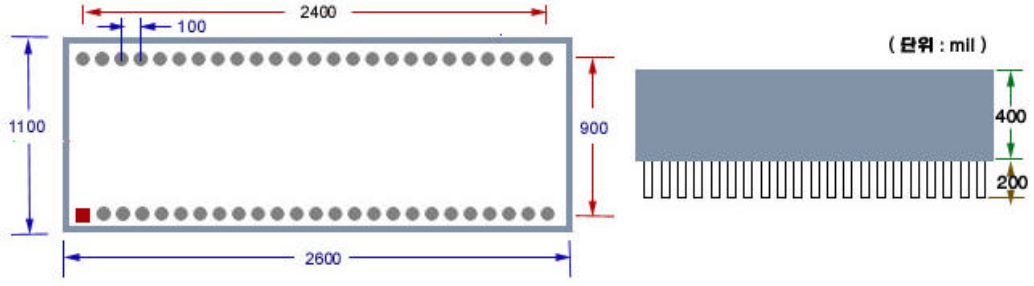
/usr/rc.d/rc .
/etc/rc.inet: shell script . IP
shell script .
netconfig
. Netconfig rc.inet
/etc/resolv.conf: DNS . Netconfig
/etc/inettab: LOC getty startup table
. 가 가 .
/ etc/inetd.conf, /etc/services: inetd .
가 가 .
/etc/passwd: . LOC . LOC root
passwd /bin/login .

```



```

-02      (optimize)   가
      가
.
가
#m68k-pic-coff-gcc -02 test.c
.
      gnu cross      가
1024      .      character
buffer      1024      (65536 )
.
      /   가      test
#/opt/uClinux/m68k-pic-coff/bin/coff2flt -s 65536 -o test test.coff
      coff2flt      cdrom
LOC/document/coff2flt.txt
```



Pin hole size 1mm(38mil)