

Installation Linux Device Driver

1. Please check whether the power off or not in your PC..
2. Install a PCI MultiPort in the PCI slot of the PC.
3. If you have any external cable for each ports, please connect the cable to the board.
4. Turn on the PC.
5. After the linux operating system booted, log-in with administrator id as root.
6. Please copy the device driver supported from SystemBase to current working directory.

```
[~/tmp] ls  
sysbas_mpdrr.v10.sh  
[~/tmp]
```

The filename is "sysbas_mpdrr.version.sh". Currently the version is v1.12.

So you can use the device driver file, "sysbas_mpdrr.v12.sh".

7. Execute the device driver file.

The device driver file is a executable file. You could just type the name in shell.

After you execute the file, you can see a sub directory named "sysbas_multiport" with installation information like follow picture.

You could see kind of multiport, type of serial interface-RS232/RS422/RS485, port name and version in the installation information

```
[~/tmp] ./sysbas_mpdrr.v10.sh  
  
=====
```

```
SystemBase Multiport PCI/PCIe Board Installation  
Version : 4.0    revision: 2009-12-15  
contact: tech@sysbas.com  
=====
```

```
1 board(s) installed  
Board No.1 : Multi-4 PCIe (rev 10)  
    /dev/ttyMP0 (RS232 , 16C105X)  
    /dev/ttyMP1 (RS232 , 16C105X)  
    /dev/ttyMP2 (RS232 , 16C105X)  
    /dev/ttyMP3 (RS232 , 16C105X)  
[~/tmp] ls  
sysbas_mpdrr.v10.sh  sysbas_multiport
```

8. SystemBase's serial test program(**sb_test**) is included in the linux device driver.

The test program, **sb_test** is in the sub directory, sysbas_multiport.

If you want to use it, you have to make a execute file using sb_test.c.

```
$cd sysbas_multiport/
```

```
$make
```

```
$ls
```

← you can see the execute file, **sb_test**.

```
[~/tmp] cd sysbas_multiport/
[~/tmp/sysbas_multiport] ls
Makefile  Uninstall  sb_test.c
[~/tmp/sysbas_multiport] make
gcc      -c -o sb_test.o sb_test.c
rm -f sb_test
gcc      -o sb_test sb_test.o
[~/tmp/sysbas_multiport] ls
Makefile  Uninstall  sb_test  sb_test.c  sb_test.o
```

If you want to know how to use the sb_test, you just type the name without any argument. And then you can see the method of the usage.

```
[~/tmp/sysbas_multiport] ./sb_test
Usage: ./sb_test [Port Name] [Baudrate] [TestMode]
Port Name : /dev/ttyMP0 ~ /dev/ttyMP32
Baudrate  : 9600, 19200, ...
TestMode   : 0(Loopback) 1(Send) 2(Recv)
```

Usage : ./sb_test [Port Name] [Baudrate] [TestMode]

Port Name : /dev/ttyMP0 ~ /dev/ttyMP32

Baudrate : 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600

TestMode : 0 (Loopback)

1 (Send)

2 (Receive)

Example :

```
./sb_test /dev/ttyMP0 9600 0
```

```
./sb_test/dev/ttyMP5 921600 0
```

```
./sb_test/dev/ttyMP3 115200 1
```

After you connected a loopback connector to a port, you can test using loopback mode.

The test pattern are "abcdefghijklmnopqrstuvwxyz" and the program generate increase one more character from "a" to "z" repeatedly.

```
[~/tmp/sysbas_multiport] ./sb_test /dev/ttyMP0 9600 0
Loopback Test Mode !
a
ab
abc
abcd
abcde
abcdef
abcdefg
abcdefgh
abcdefghi
abcdefghij
abcdefghijk
abcdefghijkl
abcdefghijklm
abcdefghijklmn
abcdefghijklmno
abcdefghijklmnop
abcdefghijklmnopq
abcdefghijklmnopqr
abcdefghijklmnopqrs
abcdefghijklmnopqrst
abcdefghijklmnopqrstu
abcdefghijklmnopqrstuv
```

When the multiport is installed correctly, you can see the test pattern like upper picture repeatedly.

Remove Linux Device Driver

1. Move to installed directory. If you installed at "~/tmp", you move to "~/tmp".
2. Please execute **Uninstall** command.

```
$/Uninstall
```

```
[~/tmp/sysbas_multiport] ./Uninstall
```

3. All installed files will be remove automatically after executing Uninstall command.

```
Remove Multiports PCI/PCIe Driver...!!
remove device(/dev).....done
modify /etc/rc.d/rc.local.....done
[~/tmp/sysbas_multiport]
```