

AX4B User Manual

ATCOM® Digital Card AX4B

User Manual

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Release note

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Contact ATCOM

The Introduction of ATCOM

ATCOM is the leading VoIP hardware manufacturer in global market. We have been keeping innovating with customer's needs oriented, working with partners to establish a total solution for SMB VoIP with IP phone, IP PBX and Asterisk cards.

With over 10 years' experience of R&D, manufacturing and service in network and VoIP field; mission of creating the biggest value for IP terminals, we commit ourselves in supplying the competitive IP phone and other terminals for IP PBX, softswitch, IMS, NGN providers and carriers; supplying the competitive total VoIP solution for SMB market. We keep improving the customer's experience and creating the bigger value with our reliable products. Until now, our VoIP products has been sold to over 60 countries and used by millions of end users.

Contact sales:

Address	District C, east of 2nd floor, #3, Crown industry buildings, Chegongmiao Industry area, Futian district, Shenzhen, China
Tel	+(86)755-23487618
Fax	+(86)755-23485319
E-mail	sales@atcomemail.com

Contact Technical Support:

Tel	+(86)755-23481119
E-mail	Support@atcomemail.com

Website address: <http://www.atcom.cn/>

Download Center: <http://www.atcom.cn/download.html>

Chapter 1 The Introduction of AX4B

Overview of the AX4B

AX4B Asterisk card is the telephony PCI card which supports four ISDN BRI ports. Using AX4B digital BRI card, open source Asterisk PBX and stand alone PC, users can create their IP PBX telephony solution which includes all the sophisticated features of traditional PBX, and extended features in IP PBX, such as voicemail, call transfer, call park, call pick up, call forward and so on.

Features

Four ISDN BRI ports

Support Dahdi and mISDN

Support Asterisk, Freeswitch, Yate

Support Elastix, Trixbox, AsteriskNOW, PBX in a Flash

support ISDN phone

Supports NT and TE mode

100% compatible with all features of Asterisk PBX

32-bit bus master DMA data exchanges across PCI interface at 132 Mbytes/sec for minimum host processor intervention

Application

ISDN BRI IP PBX

ISDN least cost router

Voice over IP BRI termination gateways

IVR system

Traditional Calls/VoIP Calls Conference

Hardware Requirement

1.6-Ghz Pentium IV

512 MB RAM

3.3V or 5V PCI 2.2 slot

PCI Card Dimension

150mm (Length)*94mm (height)

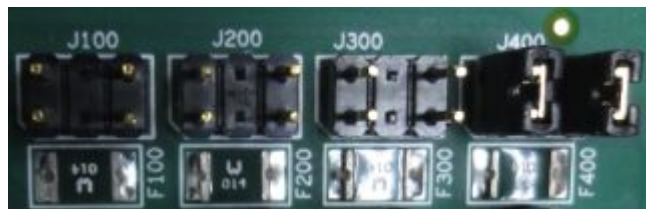
Operating System

Linux (all versions, releases and distributions from 1.0 up)

Chapter 2 Hardware Introduction



TE/NT Setting 1



TE/NT Setting 2

LED Red: If the driver of the card is loaded correctly and the `/etc/dahdi/system.conf` file is configured correctly, the LED Red of the four ports will be red clearly.

LED Green: If the BRI line is connected correctly, and it synchronizes to the other end successfully, then the LED Green will be green clearly.

JP3: This connector is used to connect to a 4-PIN power supply, when ISDN phone is used, user need to provide 4-PIN power for the card; if you do not use ISDN phone, then you do not need to use JP3.

SW1: It is not available now.

CON2, CON3: The two connectors are not available now.

JP2: It is used for selecting the PCI power feeding for the card, by default we choose the 3.3v for the card, customer do not need to reset the jumper; the card can also choose 5.0v for power feeding in the case that the 3.3v in the motherboard of PC is not enough for the card, but this phenomenon happens rarely.



For selecting 3.3v power



For selecting 5.0v power

Chapter 3 Test Environment

Test Environment:

libpri-1.4.12

(download from Digium website)

dahdi-linux-complete-2.5.0.1+2.5.0.1

(download from Digium website)

asterisk-1.8

(download from Digium website)

Centos6.0

(kernel version: 2.6.32-279.22.1.el6.i686)

AX4B

Chapter 4 Software Installation

After inserting the card into the PCI slot and boot the server, please use the “lspci” command to check the PCI bus compatibility. From the correct output, users can get the following messages:

```
-----  
01:05.0 ISDN controller: Cologne Chip Designs GmbH ISDN network Controller [HFC-4S] (rev  
01)  
-----
```

The Cologne Chip will be detected, if users cannot get the information as the above, please power off the server and try to use another PCI slot.

If it cannot get the messages still, users need check the compatibility issue between the card and the PCI bus.

1. To install asterisk and dahdi, we have to use “yum” command to install the following prerequisite packages:

```
bison bison-devel zlib zlib-devel openssl openssl-devel gnutls-devel gcc gcc-c++
```

2. Download libpri, dahdi-linux-complete, and asterisk

```
[root@localhost src]#
```

```
wget http://downloads.asterisk.org/pub/telephony/libpri/releases/libpri-1.4.12.tar.gz
```

```
[root@localhost src]#
```

```
Wget
```

```
http://downloads.asterisk.org/pub/telephony/dahdi-linux/releases/dahdi-linux-complete-2.5.0.1+2.5.0.1.tar.gz
```

```
[root@localhost src]#
```

```
wget http://downloads.asterisk.org/pub/telephony/asterisk/releases/asterisk-1.8.7.1.tar.gz
```

3. Install libpri

```
1) [root@localhost src]# tar -xvzf libpri-1.4.12.tar.gz
```

```
2) [root@localhost libpri-1.4.12]# make
```

```
3) [root@localhost libpri-1.4.12]# make install
```

4. Install dahdi-linux-complete

```
1) [root@localhost src]# tar -xvzf dahdi-linux-complete-2.5.0.1+2.5.0.1.tar.gz
```

```
2) [root@localhost src]# cd dahdi-linux-complete-2.5.0.1+2.5.0.1
```

```
3) [root@localhost dahdi-linux-complete-2.5.0.1+2.5.0.1]# make
```

```
4) [root@localhost dahdi-linux-complete-2.5.0.1+2.5.0.1]# make install
```

```
5) [root@localhost dahdi-linux-complete-2.5.0.1+2.5.0.1]# make config
```

5. Install asterisk

- 1) [root@localhost src]# tar -xvzf asterisk-1.8.7.1.tar.gz
- 2) [root@localhost asterisk-1.8.7.1]# ./configure
- 3) [root@localhost asterisk-1.8.7.1]# make
- 4) [root@localhost asterisk-1.8.7.1]# make install
- 5) [root@localhost asterisk-1.8.7.1]# make samples

Chapter 5 Software Configuration

1. Please use “cat /proc/interrupts” command to check if the driver of AX4B is loaded or not, if the AX4B driver is loaded correctly, you can get one line with wcb4xxp

```
20: 2310670 2218516 IO-APIC-fasteoi wcb4xxp
```

If you can not get the line above, but you can get one line with hfc4s8s_11, then please use the following command to delete the “hfc4s8s_11.ko” module.

```
[root@localhost ~]# cd /lib/modules/2.6.18-238.el5/kernel/drivers/isdn/hisax/
```

```
[root@localhost hisax]# mv hfc4s8s_11.ko hfc4s8s_11.ko.bak
```

After that, please reboot the server.

2. Please use the “dahdi_genconf” command to configure the /etc/dahdi/system.conf file and generate /etc/asterisk/dahdi-channels.conf file.

```
[root@localhost ~]# dahdi_genconf
```

It does not show any output if dahdi_genconf run successfully.

After running “dahdi_genconf” command successfully, the “system.conf” and “dahdi-channels.conf” file will get the following configuration:

/etc/dahdi/system.conf:

```
# Autogenerated by /usr/sbin/dahdi_genconf on Tue Oct 18 11:20:32 2011
```

```
# This file is parsed by the Dahdi Configurator, dahdi_cfg
```

```
# Span 1: B4/0/1 "B4XXP (PCI) Card 0 Span 1" (MASTER) RED
```

```
span=1,1,0,ccs,ami
```

```
# termtype: te
```

```
bchan=1-2
```

```
hardhdlc=3
```

```
echocanceller=mg2,1-2
```

```
... ..
```

```
... ..
```

```
# Span 4: B4/0/4 "B4XXP (PCI) Card 0 Span 4" RED
```

```
span=4,4,0,ccs,ami
```

```
# termtype: te
```

```
bchan=10-11
```

```
hardhdlc=12
```

```
echocanceller=mg2,10-11
```

After running “dahdi_genconf” successfully, the dahdi-channels.conf file will get the following configuration:

```
/etc/asterisk/dahdi-channels.conf file:
; Span 1: B4/0/1 "B4XXP (PCI) Card 0 Span 1" (MASTER) RED
group=0,11
context=from-pstn
switchtype = euroisdn
signalling = bri_cpe_ptmp
channel => 1-2
context = default
group = 63

... ..
... ..

; Span 4: B4/0/4 "B4XXP (PCI) Card 0 Span 4" RED
group=0,14
context=from-pstn
switchtype = euroisdn
signalling = bri_cpe_ptmp
channel => 10-11
context = default
group = 63
```

3. Please add the following line in the end of chan_dahdi.conf file
#include dahdi-channels.conf
4. Please run asterisk with the following command:
asterisk
asterisk -vvvgrc
reload
5. Please run dahdi show channels command
You should get the following channels:
*CLI> dahdi show channels
You can get the following 8 channels:
1, 2, 4, 5, 7, 8, 10, 11

Chapter 6 Reference

<http://www.asteriskguru.com/>

<http://www.asterisk.org/downloads>

<http://www.atcom.cn/>