

ATCOM® Analog Card AX-1600P

Product Guide

Version: 1.0

The Installation of AX-1600P with Ubuntu 8.10

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Contact ATCOM

The Introduction of ATCOM

Founded in 1998, ATCOM technology has been always endeavoring in the R&D and manufacturing of the internet communication terminals. The product line of ATCOM includes IP Phone, USB Phone, IP PBX, VoIP gateway and Asterisk Card.

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

ATCOM Wiki Website: http://www.openippbx.org/index.php?title=Main_Page

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

Chapter 1 the Introduction of AX-1600P

Overview of the AX-1600P

AX1600P Asterisk card is the telephony PCI card that supports up to sixteen FXO and FXS ports. Using AX1600P analog card, open source Asterisk PBX and stand alone PC, users can create their SOHO telephony solution which include all the sophisticated features of traditional PBX, and extend features such as voicemail in IP PBX. The FXO and FXS modules are interchangeable to suit various requirements.

Features

- Analog card for Asterisk PBX
- Support Asterisk PBX and zaptel driver
- Support up to 16 fxo/fxs analog port
- Suitable for SOHO PBX / VoiceMail / IVR.
- Caller ID and Call waiting Caller ID
- Conference

Applications

- IP PBX
- IVR system
- Traditional Calls/VoIP Calls Conference

Hardware requirement

- 500-Mhz Pentium III
- 64MB RAM
- 3.3V or 5V PCI 2.2 slot

PCI card dimension:

102mm (height) × 249mm (Length)

Chapter 2 Hardware Introduction

Hardware Configuration

Motherboard: AX-1600P

Dual ports FXS module: AX-210S

Dual ports FXO module: AX-210X

One FXS port and one FXO port module: AX-210XS

Splitter: SP400

Customers can use the combination of AX-210S, AX-210X, AX-210XS modules according to their requirements. One AX-210S module supports two FXS ports, one AX-210X module supports two FXO ports, One AX-210XS module supports one FXS port and one FXO port.

Attention: If you want to use fxs port, you have to provide 12V power for the card.

Warning: Please do not plug and unplug the card and modules when the PC power is on.

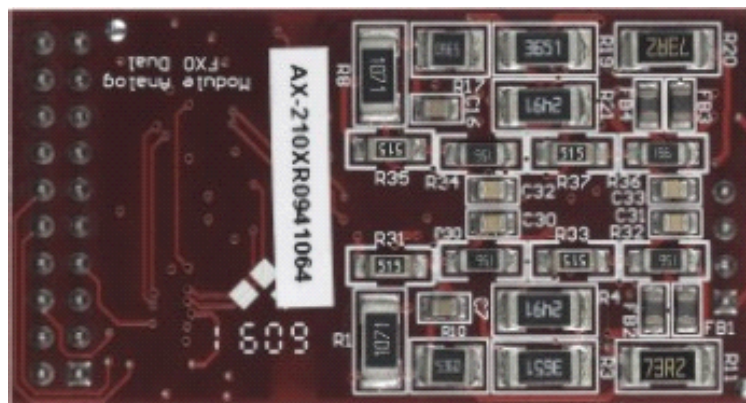


Figure 1: AX-210X

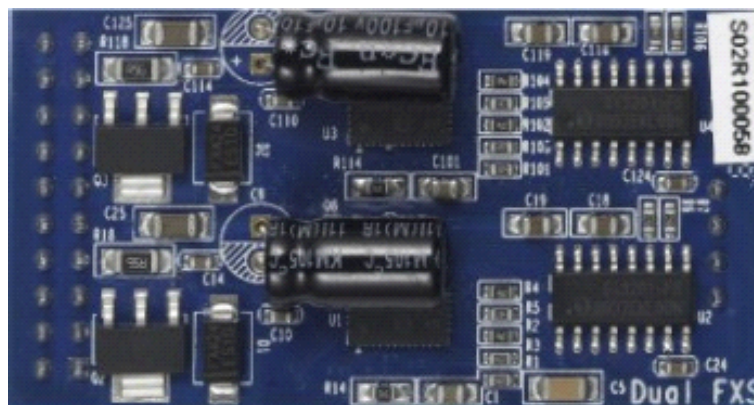


Figure 2: AX-210S

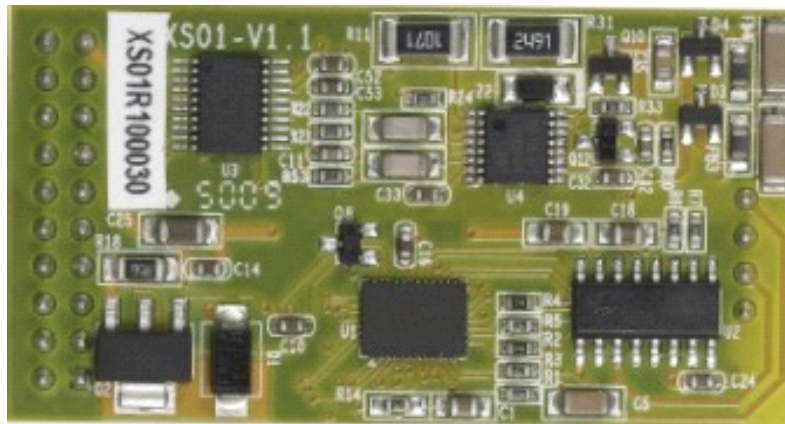


Figure 3: AX-210XS



Figure 4: SP400

Chapter 3 Software Installation

Test Environment:

Ubuntu 8.10
dahdi-linux-2.3.0
dahdi-tools-2.3.0
asterisk 1.6.0.27
wctdm.c.v1.6
AX-1600P + 8 AX-210X

1. please use the 'lspci' command to check the PCI bus compatibility.

```
root@atcom-desktop:~# lspci
```

The correct output will like the following:

```
=====
03:02.0 Communication controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface
=====
```

A Tiger Jet device will be found, if you can not see the Tiger Jet device, please poweroff your server and try another PCI slot, if it still does not help, you have to check the compatibility issue between the card and your PCI bus.

2. Please use "apt-get install" command to install necessary packages:

```
root@atcom-desktop:~# apt-get install g++
root@atcom-desktop:~# apt-get install vim
root@atcom-desktop:~# apt-get install libxml2-dev
root@atcom-desktop:~# apt-get install ncurses-dev
root@atcom-desktop:~# cd /usr/src
```

3. Download dahdi-linux, dahdi-tools and asterisk:

```
root@atcom-desktop:/usr/src# wget http://downloads.asterisk.org/pub/telephony/dahdi-linux/releases/dahdi-linux-2.3.0.tar.gz
root@atcom-desktop:/usr/src# wget http://downloads.asterisk.org/pub/telephony/dahdi-tools/releases/dahdi-tools-2.3.0.tar.gz
root@atcom-desktop:/usr/src# wget
http://downloads.asterisk.org/pub/telephony/asterisk/releases/asterisk-1.6.0.27.tar.gz
root@atcom-desktop:/usr/src# tar -xzvf dahdi-linux-2.3.0.tar.gz
root@atcom-desktop:/usr/src# tar -xzvf dahdi-tools-2.3.0.tar.gz
root@atcom-desktop:/usr/src# tar -xzvf asterisk-1.6.0.27.tar.gz
```

4. Install dahdi:

Please download the wctdm.c.v1.6 file and replace the file wctdm.c as following:

```
root@atcom-desktop:/usr/src# cd dahdi-linux-2.3.0/drivers/dahdi
root@atcom-desktop:/usr/src/dahdi-linux-2.3.0/drivers/dahdi# rm -rf wctdm.c
root@atcom-desktop:/usr/src/dahdi-linux-2.3.0/drivers/dahdi# wget
http://www.atcom.cn/downloads/TelephonyCard/drivers/AX-1600P/wctdm.c.v1.6
root@atcom-desktop:/usr/src/dahdi-linux-2.3.0/drivers/dahdi# cp wctdm.c.v1.6 wctdm.c
root@atcom-desktop:/usr/src/dahdi-linux-2.3.0/drivers/dahdi# cd ../..
root@atcom-desktop:/usr/src/dahdi-linux-2.3.0# make
root@atcom-desktop:/usr/src/dahdi-linux-2.3.0# make install
```

In the end you will see:

```
#####
###
### DAHDI installed successfully.
### If you have not done so before, install the package
### dahdi-tools.
###
#####
root@atcom-desktop:/usr/src/dahdi-linux-2.3.0# cd ..
root@atcom-desktop:/usr/src# cd dahdi-tools-2.3.0
root@atcom-desktop:/usr/src/dahdi-tools-2.3.0# ./configure
```

You will see:

```
=====
configure: *** dahdi-tools build successfully configured ***
=====
```

```
root@atcom-desktop:/usr/src/dahdi-tools-2.3.0# make
root@atcom-desktop:/usr/src/dahdi-tools-2.3.0# make install
```

You will see:

```
#####
###
### DAHDI tools installed successfully.
### If you have not done so before, install init scripts with:
###
### make config
###
#####
root@atcom-desktop:/usr/src/dahdi-tools-2.3.0# make config
```

5. Install asterisk:

```
root@atcom-desktop:/usr/src/dahdi-tools-2.3.0# cd ..
root@atcom-desktop:/usr/src# cd asterisk-1.6.0.27
root@atcom-desktop:/usr/src/asterisk-1.6.0.27# ./configure
```

You will see:


```

                .$$$$$$$$$$$$$$$$$=..
                .7$7..                .7$7:..
                .$$:..                ,7.7
                .97.                7$$$$                .$$77
                ..$$                $$$$$                .$$$7
                ..7$ .?. $$$$$ .?. 7$$$
                $.$. .$$$7. $$$$7 .7$$$ .$$$
                .777. .$$$$$77$$$77$$$7. $$$
                $$$~ .7$$$$$$$$$$$$7. $$$
                .$$7 .7$$$$$$$7: ?$$$
                $$$ ?7$$$$$$$$$$$I .$$$7
                $$$ .7$$$$$$$$$$$$$$$ :$$$
                $$$ $$$$$$7$$$$$$$$$$$ .$$$
                $$$ $$$ 7$$$7 .$$$ .$$$
                $$$$                $$$7                .$$$
                7$$$7                7$$$$                7$$$
                $$$$$                $$$
                $$$7.                $$ (TM)
                $$$$$$.                .7$$$$$ $$
                $$$$$$$$$$$$$7$$$$$$$$$$$$.$$$$$
                $$$$$$$$$$$$$$.
    
```

root@atcom-desktop:/usr/src/asterisk-1.6.0.27# make

You will see:

```

+----- Asterisk Build Complete -----+
+ Asterisk has successfully been built, and +
+ can be installed by running:           +
+                                         +
+             make install                 +
+-----+
    
```

root@atcom-desktop:/usr/src/asterisk-1.6.0.27# make install

You will see:

```

+---- Asterisk Installation Complete -----+
+
+   YOU MUST READ THE SECURITY DOCUMENT   +
+
+ Asterisk has successfully been installed. +
+ If you would like to install the sample +
+ configuration files (overwriting any    +
+ existing config files), run:           +
+                                         +
+             make samples                 +
+
+----- or -----+
+
+ You can go ahead and install the asterisk +
+ program documentation now or later run:  +
+                                         +
+             make progdocs                +
+
+ **Note** This requires that you have    +
+ doxygen installed on your local system  +
+-----+
    
```

root@atcom-desktop:/usr/src/asterisk-1.6.0.27# make samples

Chapter 4 Software Configuration

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

```
root@atcom-desktop:/usr/src/asterisk-1.6.0.27# dahdi_genconf
```

It does not show any output if dahdi_genconf run successfully.

2. To check whether it has finished the configuration, please open the system.conf file:

```
root@atcom-desktop:/usr/src/asterisk-1.6.0.27# vim /etc/dahdi/system.conf
```

You will see:..

```
# Autogenerated by /usr/sbin/dahdi_genconf on Thu Jun 17 22:52:39 2010
# If you edit this file and execute /usr/sbin/dahdi_genconf again,
# your manual changes will be LOST.
# Dahdi Configuration File
#
# This file is parsed by the Dahdi Configurator, dahdi_cfg
#
# Span 1: WCTDM/16 "Wildcard TDM400P REV E/F Board 17" (MASTER)
fxsks=1
echocanceller=mg2,1
fxsks=2
echocanceller=mg2,2
fxsks=3
echocanceller=mg2,3
fxsks=4
echocanceller=mg2,4
fxsks=5
echocanceller=mg2,5
fxsks=6
echocanceller=mg2,6
fxsks=7
echocanceller=mg2,7
fxsks=8
echocanceller=mg2,8
fxsks=9
echocanceller=mg2,9
fxsks=10
echocanceller=mg2,10
fxsks=11
echocanceller=mg2,11
```

```
fxsks=12
echocanceller=mg2,12
fxsks=13
echocanceller=mg2,13
fxsks=14
echocanceller=mg2,14
fxsks=15
echocanceller=mg2,15
fxsks=16
echocanceller=mg2,16
```

```
# Global data
```

```
loadzone      = us
defaultzone   = us
```

3. Please check dahdi-channels.conf file:

```
root@atcom-desktop:/usr/src/asterisk-1.6.0.27# vim /etc/asterisk/dahdi-channels.conf
```

You will see:

```
; Autogenerated by /usr/sbin/dahdi_genconf on Thu Jun 17 22:52:39 2010
; If you edit this file and execute /usr/sbin/dahdi_genconf again,
; your manual changes will be LOST.
; Dahdi Channels Configurations (chan_dahdi.conf)
;
; This is not intended to be a complete chan_dahdi.conf. Rather, it is intended
; to be #include-d by /etc/chan_dahdi.conf that will include the global settings
;

; Span 1: WCTDM/16 "Wildcard TDM400P REV E/F Board 17" (MASTER)
;;; line="1 WCTDM/16/0 FXSKS (SWEC: MG2)"
signalling=fxs_ks
callerid=asreceived
group=0
context=from-pstn
channel => 1
callerid=
group=
context=default

;;; line="2 WCTDM/16/1 FXSKS (SWEC: MG2)"
signalling=fxs_ks
```

```
callerid=asreceived
group=0
context=from-pstn
channel => 2
callerid=
group=
context=default

;;; line="3 WCTDM/16/2 FXSKS (SWEC: MG2)"
signalling=fxs_ks
callerid=asreceived
group=0
context=from-pstn
channel => 3
callerid=
group=
context=default

;;; line="4 WCTDM/16/3 FXSKS (SWEC: MG2)"
signalling=fxs_ks
callerid=asreceived
group=0
context=from-pstn
channel => 4
callerid=
group=
context=default
...
...
...
=====
```

4. Please configure the chan_dahdi.conf file:

```
root@atcom-desktop:/usr/src/asterisk-1.6.0.27# vim /etc/asterisk/chan_dahdi.conf
```

Please add following word at the end of it:

```
=====
#include dahdi-channels.conf
=====
```

5. Reboot your system now

6. root@atcom-desktop:~# dahdi_cfg -vvvvvvvvvvvvvvvvvv

You will see:

=====

DAHDI Tools Version - 2.3.0

DAHDI Version: 2.3.0
Echo Canceller(s): MG2
Configuration

=====

Channel map:

Channel 01: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 01)
Channel 02: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 02)
Channel 03: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 03)
Channel 04: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 04)
Channel 05: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 05)
Channel 06: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 06)
Channel 07: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 07)
Channel 08: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 08)
Channel 09: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 09)
Channel 10: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 10)
Channel 11: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 11)
Channel 12: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 12)
Channel 13: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 13)
Channel 14: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 14)
Channel 15: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 15)
Channel 16: FXS Kewlstart (Default) (Echo Canceler: mg2) (Slaves: 16)

16 channels to configure.

Setting echocan for channel 1 to mg2
Setting echocan for channel 2 to mg2
Setting echocan for channel 3 to mg2
Setting echocan for channel 4 to mg2
Setting echocan for channel 5 to mg2
Setting echocan for channel 6 to mg2
Setting echocan for channel 7 to mg2
Setting echocan for channel 8 to mg2
Setting echocan for channel 9 to mg2
Setting echocan for channel 10 to mg2
Setting echocan for channel 11 to mg2

Setting echocan for channel 12 to mg2
Setting echocan for channel 13 to mg2
Setting echocan for channel 14 to mg2
Setting echocan for channel 15 to mg2
Setting echocan for channel 16 to mg2

7. root@atcom-desktop:~# asterisk -vvvvvvvvvvvgc

*CLI> dahdi show channels

You will see:

Chan Extension	Context	Language	MOH Interpret	Blocked	State
pseudo	from-pstn	en	default		In Service
1	from-pstn	en	default		In Service
2	from-pstn	en	default		In Service
3	from-pstn	en	default		In Service
4	from-pstn	en	default		In Service
5	from-pstn	en	default		In Service
6	from-pstn	en	default		In Service
7	from-pstn	en	default		In Service
8	from-pstn	en	default		In Service
9	from-pstn	en	default		In Service
10	from-pstn	en	default		In Service
11	from-pstn	en	default		In Service
12	from-pstn	en	default		In Service
13	from-pstn	en	default		In Service
14	from-pstn	en	default		In Service
15	from-pstn	en	default		In Service
16	from-pstn	en	default		In Service

It means that your AX-1600P can work now, then you can configure the /etc/asterisk/extensions.conf as you like to make the AX-1600P work for you.

Chapter 5 Reference

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

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

http://www.openippbx.org/index.php?title=Main_Page

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