



深圳开源通信有限公司

*OpenVox-Best Cost Effective Asterisk Cards*

## OpenVox A400P/A400E User Manual



*Written by: James. zhu*

*Email: james. zhu@openvox. cn, zhulizhong@gmail. com*

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OpenVox Communication Co. Ltd.

Address: F/2, Building No. 14, Shangsha Science & Technology Park,  
No. 9283, Binhe Road, Futian District, ShenZhen ,Guangdong 518048, China

Tel:+86-755-82535095, 82535461, Fax:+86-755-82535174

E-Mail: [sales@openvox.com.cn](mailto:sales@openvox.com.cn)

IM for Sales: [betty\\_yljiang@hotmail.com](mailto:betty_yljiang@hotmail.com) [ruby Zhang1217@hotmail.com](mailto:ruby Zhang1217@hotmail.com)

IM for Technical Support: [support@openvox.com.cn](mailto:support@openvox.com.cn), [zhulizhong@gmail.com](mailto:zhulizhong@gmail.com), [zhulizhongum@hotmail.com](mailto:zhulizhongum@hotmail.com)

Business Hours: 9:30AM-17:30PM from Monday-Friday

URL: [www.openvox.com.cn](http://www.openvox.com.cn)

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## Table of Contents

Chapter 1	Overview.....	4
Chapter 2	Card Installation and Configuration.....	6
Chapter 3	Hardware Setting .....	9
Chapter 4	References.....	10

## Chapter 1 Overview

### 1. What is A400P/A400E

A400P/A400E is a modular analog telephony interface product. It is designed to be hardware compatible with Digium's TDM400p. A400P/A400E must be used with FXO-100 or FXS-100 together to build a workable system. The FXO-100 and FXS-100 modules are also pin to pin compatible with X100M and S100M.

Key Benefits:

Scalable: just add additional cards to extend system

Support PCI for A400P and PCI Express for A400E

Be easy to use : full software and hardware compatible with Digium's TDM400P. You can use Digium's X100M/S100M module on this card, or use our FXO-100/ FXS-100 Module on TDM400P

RoHS Compliant

Certificates: CE and FCC

### 2. What is Asterisk:

The Definition of Asterisk is described as follow:

Asterisk is a complete PBX in software. It runs on Linux, BSD, Windows (emulated) and provides all of the features you would expect from a PBX and more. Asterisk does voice over IP in four protocols, and can interoperate with almost all standards-based telephony equipment using relatively inexpensive hardware.

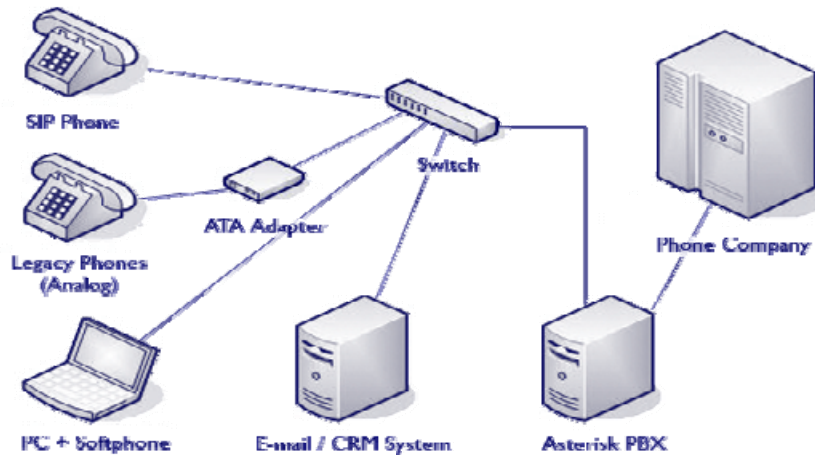


Figure 1: Asterisk Setup

Source (<http://www.siriusit.co.uk/uploads/images/consulting/asteriskSetup.gif>)

Asterisk provides Voicemail services with Directory, Call Conferencing, Interactive Voice Response, Call Queuing. It has support for three-way calling, caller ID services, ADSI, IAX, SIP, H.323 (as both client and gateway), MGCP (call manager only) and SCCP/Skinny([voip-info.org](http://voip-info.org)).

## Chapter 2 Card Installation and Configuration

### 1. Hardware Installation and Setup

1. Power off your pc, remember unplug the AC power cable
2. Insert A400P/A400E into a 3.3V or 5.0V PCI slot or PCI express slot
3. If the card has FXS modules (green color), plug in the hard disk power supply cable (D style) for A400P only.
4. Plug back the AC power cable, and power on PC.

### 2. Software Installation and Setup

- 1) Checking the A400P/A400E hardware by command: `lspci -v`

```
02:05.0 Ethernet controller: Marvell Technology Group Ltd. 88E8001 Gigabit Ethernet Controller (rev 13)
Subsystem: ASUSTeK Computer Inc. Marvell 88E8001 Gigabit Ethernet Controller (Asus)
Flags: bus master, 66Mhz, medium devsel, latency 64, IRQ 209
Memory at feafc000 (32-bit, non-prefetchable) [size=16K]
I/O ports at d800 [size=256]
Expansion ROM at feac0000 [disabled] [size=128K]
Capabilities: [48] Power Management version 2
Capabilities: [50] Vital Product Data

02:0d.0 Communication controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface
Subsystem: Unknown device b100:0003
Flags: bus master, medium devsel, latency 64, IRQ 217
I/O ports at d400 [size=256]
Memory at feafb000 (32-bit, non-prefetchable) [size=4K]
Capabilities: [40] Power Management version 2
```

- 2) Install supporting packages

TO install A400P/A400E, user needs the following packages before compiling asterisk and zaptel driver:

- ◆ kernel-devel
- ◆ zlib
- ◆ zlib-devel
- ◆ openssl
- ◆ openssl-devel

- 3) Download zaptel and asterisk

User can download the source code from [asterisk.org](http://asterisk.org). Unzip those packages under `/usr/src`

- 4) Compile zaptel and asterisk  
Under /usr/src, execute the commands:

```
cd zaptel
make clean
make
make install
make config
```

```
cd asterisk
make clean
make
make install
make config
make samples
```

After installing zaptel and asterisk, user executes:

```
modprobe zaptel
modprobe wctdm
```

- 5) Configure zaptel.conf under /etc directory and check driver loading by:  
ztcfg -vv and dmesg

```
[root@new-host-3 ~]# ztcfg -vvvv
Zaptel Version: 1.4.5.1
Echo Cancellor: MG2
Configuration
=====
Channel map:
Channel 01: FXS Kewlstart (Default) (Slaves: 01)
Channel 02: FXS Kewlstart (Default) (Slaves: 02)
Channel 03: FXO Kewlstart (Default) (Slaves: 03)
Channel 04: FXO Kewlstart (Default) (Slaves: 04)
# channels configured.
```

```
Zapata Telephony Interface Registered on major 196
Zaptel Version: 1.4.5.1
Zaptel Echo Canceller: MG2
Registered Tormenta2 PCI
ACPI: PCI Interrupt 0000:02:0d.0[A] -> GSI 21 (level, low) -> IRQ 217
Freshmaker version: 71
Freshmaker passed register test
Module 0: Installed -- AUTO FXO (FCC mode)
Module 1: Installed -- AUTO FXO (FCC mode)
Module 2: Installed -- AUTO FXS/DPO
Module 3: Installed -- AUTO FXS/DPO
Found a Wildcard TDM: Wildcard TDM400P REV E/F (4 modules)
Registered tone zone 0 (United States / North America)
Registered tone zone 0 (United States / North America)
usbcore: registered new driver wcusb
Wildcard USB FXS Interface driver registered
Registered tone zone 0 (United States / North America)
Registered tone zone 0 (United States / North America)
```

6) Start asterisk

Before starting asterisk, please configure the zapata.conf and extensions.conf based on your business environment, and run asterisk by:

```
asterisk -vvvvvvvc
```

## Chapter 3 Hardware Setting

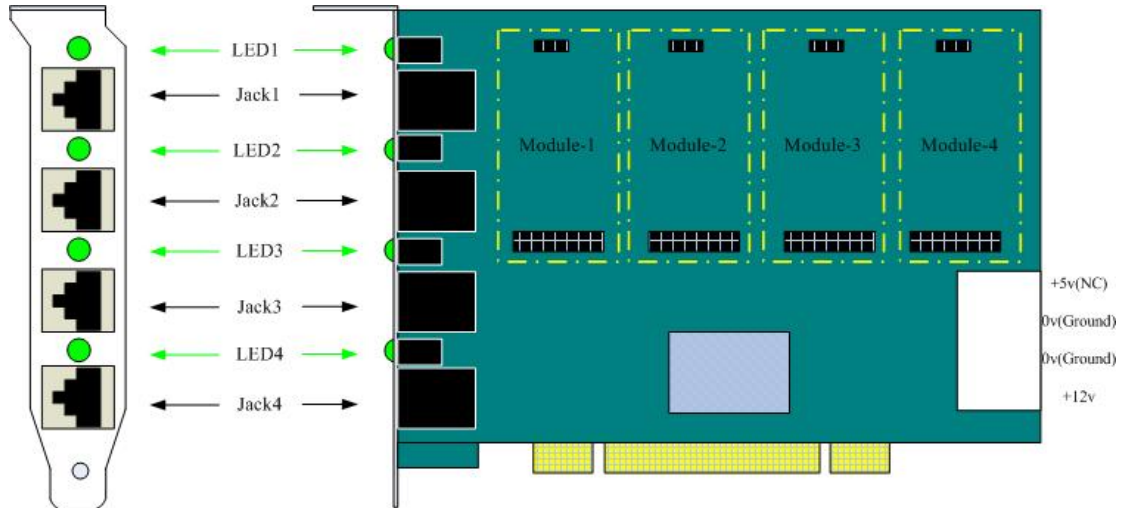


Figure 2: A400P Modules and Jacks/LEDs

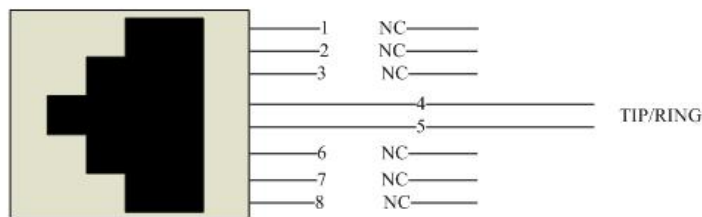


Figure 3: A400P Phone Jack Wire

NC means not connect

**Notes:**

Test environments are:

Centos-4.5

Kernel version: 2.6.9-55.EL

Zaptel: 1.4.5.1

Asterisk: 1.4.11

Analog Card: OpenVox A400P

If user has any problem in installing A400P/A400E, please report to us.

## Chapter 4 References

[www.openvox.com.cn](http://www.openvox.com.cn)

[www.digium.com](http://www.digium.com)

[www.asterisk.org](http://www.asterisk.org)

[www.voip-info.org](http://www.voip-info.org)

[www.asteriskguru.com](http://www.asteriskguru.com)