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OpenVox-Best Cost Effective Asterisk Cards

OpenVox A800P A1200P User Manual

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Chapter 1 Overview

1. What is A800P/A1200P

A800P/A1200P series is a modular analog telephony interface product. It is designed to be the small to middle business PBX usage. For example, each A1200P can have up to 12 ports per card, and user can install 4 pcs of A1200P in one PC to get 48 ports.

A800P/A1200P series 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:
Low CPU Payload : below 25% with 8 PCs of A1200P(96 ports) after driver installed, on a Celereon D 2.53Ghz
Scalable: just add additional cards to extend system
Be easy to use: module Pin to Pin compatible with Digium’s X100M and S100M. User can use diguim’s X100M/S100M module on this card, or use our FXO-100/ FXS-100 Module on TDM1200P
Excellent choice of upgrade Digium’s TDM400P based Asterisk system to A1200P, achieving 96 ports density or more in one PC, and protecting user investment by directly making use of user investment on modules of TDM400P

RoHS compliant
Certificates: CE, 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.

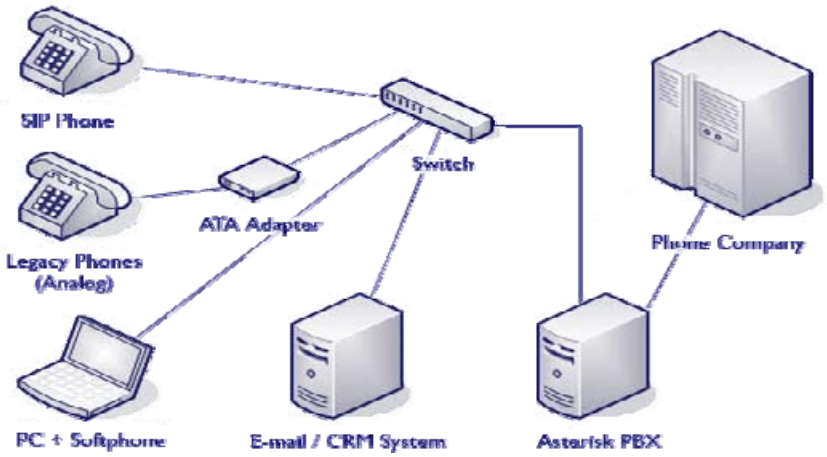


Figure 1: Asterisk Setup

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).

Chapter 2 Card Installation and Configuration

1. Hardware Installation and Setup

A800P/A1200P series has 2 RJ45 sockets for A800P and 3 RJ45 sockets for A1200P on the bracket. Each jack has 4 corresponding module install positions on the motherboard.

Each RJ45 socket has 8 pins. A800P/A1200P series uses the 2 pins of it as a pair, to connect to you 2-wire telephone line, so each RJ45 socket can connect 4 telephone lines. Please see figure 2 and figure 3 for the setting of A800P/A1200P.

2. Software Installation and Setup

A800P/A1200P series supports zaptel software device driver on Linux. OpenVox releases Trxibox-OpenVox ISO version for OpenVox users. User can download from Openvox website (www.openvox.com.cn). That one will help user install the system without any modification and user is able to configure the user account and dial plan through GUI in an easy way. If user wants to install A800P/A1200P manually, user can download the driver from OpenVox Website (www.openvox.com.cn), and build it in Linux system. To use A800P/A1200P series, user should have zaptel pre-installed.

A800P/A1200P series device driver is a signal file named opvxa1200.c. A800P and A1200P shares the same driver (opvxa1200.c).

Before installing libpri, zaptel and asterisk, please make sure some supporting are installed.

Note that if there is no kernel source in the system, user should install them. User can run **yum** again: ***yum install kernel-devel***`. If user uses this command **yum** will install the sources for your current version of the kernel.

It is time to check for the availability of some other packages:

```
rpm -q bison
rpm -q bison-devel
rpm -q ncurses
rpm -q ncurses-devel
rpm -q zlib
```

```
rpm -q zlib-devel
rpm -q openssl
rpm -q openssl-devel
rpm -q gnutls-devel
rpm -q gcc
rpm -q gcc-c++
```

If any of those packages are not installed install them by using yum

```
yum install bison
yum install bison-devel
yum install ncurses
yum install ncurses-devel
yum install zlib
yum install zlib-devel
yum install openssl
yum install openssl-devel
yum install gnutls-devel
yum install gcc
yum install gcc-c++
```

User can build and install it via the following steps (assuming you have the source code of zaptel device driver installed in /usr/src/zapatel directory):

1) Checking the A800P/A1200P 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)
        Control: I/O+ Mem+ BusMaster+ SpecCycle- MemWINV+ VGASnoop- ParErr- Stepping- SERR+ FastB2B-
        Status: Cap+ 66Mhz+ UDF- FastB2B+ ParErr- DEVSEL=medium >TAbort- <TAbort- <MAbort- >SERR- <PERR-
        Latency: 64 (5750ns min, 7750ns max), Cache Line Size 04
        Interrupt: pin A routed to IRQ 209
        Region 0: Memory at feafc000 (32-bit, non-prefetchable) [size=16K]
        Region 1: I/O ports at d800 [size=256]
        Expansion ROM at feac0000 [disabled] [size=128K]
        Capabilities: [48] Power Management version 2
                Flags: PMEClk- DSI- D1+ D2+ AuxCurrent=0mA PME(D0+,D1+,D2+,D3hot+,D3cold+)
                Status: D0 PME-Enable- DSel=0 DScale=1 PME-
        Capabilities: [50] Vital Product Data

02:0d.0 Communication controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface
        Subsystem: Unknown device 9519:0003
        Control: I/O+ Mem+ BusMaster+ SpecCycle- MemWINV- VGASnoop- ParErr- Stepping- SERR+ FastB2B-
        Status: Cap+ 66Mhz- UDF- FastB2B- ParErr- DEVSEL=medium >TAbort- <TAbort- <MAbort- >SERR- <PERR-
        Latency: 64 (250ns min, 32000ns max)
        Interrupt: pin A routed to IRQ 217
        Region 0: I/O ports at d400 [size=256]
        Region 1: Memory at feafb000 (32-bit, non-prefetchable) [size=4K]
        Capabilities: [40] Power Management version 2
                Flags: PMEClk- DSI+ D1- D2+ AuxCurrent=55mA PME(D0+,D1-,D2+,D3hot+,D3cold+)
                Status: D0 PME-Enable- DSel=0 DScale=0 PME-
```

2) Downloading and compiling

1. Copy opvxa1200.c to /usr/src/zaptel.
2. Modify /usr/src/zap/makefile:
   - ✓ Find the line start with Modules=
   - ✓ Add opvxa1200. Before editing, the Makefile should be like this:

     MODULES=zaptel tor2 torisa wcusb wcfxo wctdm wctdm24xxp \
     ztdynamic ztd-eth wct1xxp wct4xxp wcte11xp pciradio \
     ztd-loc # ztdummy

     After modified, it looks like

     MODULES=zaptel tor2 torisa wcusb wcfxo wctdm wctdm24xxp \
     ztdynamic ztd-eth wct1xxp wct4xxp wcte11xp pciradio \
     opvxa1200 \
     ztd-loc # ztdummy
   - ✓ Find the line: wctdm.o: zaptel.h wctdm.h
   - ✓ After that line, add another a new line: **opvxa1200.o : zaptel.h wctdm.h**
   - ✓ Save the Makefile and exit your editor

3. Under /usr/src/zaptel, execute the commands:

   make clean
   ./configure
   make
   make install
   make config

4. In order to make drivers auto load during the system booting, user must go through follow steps:

   ✓ Modify zaptel.sysconfig in /usr/src/zaptel directory.
   ✓ Add the following line
   MODULES="$MODULES opvxa1200" # OPENVOX A1200P
   ✓ Modify zaptel.init in /usr/src/zaptel:
   i. Find the following section
   ```
   if [ -z "${MODULES}" ]; then
   # Populate defaults if not present
   MODULES="tor2 wct4xxp wct1xxp wcte11xp wcfxo wctdm wctdm24xxp"
   ```
   ii. Add opvxa1200 after wctdm, after modified, that section will like this:
   ```
   if [ -z "${MODULES}" ]; then
   # Populate defaults if not present
   MODULES="tor2 wct4xxp wct1xxp wcte11xp wcfxo wctdm opvxa1200 wctdm24xxp"
   ```
   ✓ Run the following commands: make clean, make, make install and make config

5. Detect and load modules for opvxa1200:
   ./genzaptelconf -d under /usr/src/zaptel/xpp/utils

   Before load opvxa1200 module, make sure the zaptel.conf in right format.
   modprobe zaptel
   modprobe opvxa1200
   ztcfg -vvvv

```
# Autogenerated by ./genzaptelconf -- do not hand edit
# Zaptel Configuration File
#
# This file is parsed by the Zaptel Configurator, ztcfg
#

# It must be in the module loading order


# Span 1: OPVXA1200/0 "OpenVox A1200P Board 1"
fxsks=1
fxoks=2
fxoks=3
fxoks=4
fxoks=5
# channel 6, WCTDM, no module.
# channel 7, WCTDM, no module.
# channel 8, WCTDM, no module.
# channel 9, WCTDM, no module.
# channel 10, WCTDM, no module.
# channel 11, WCTDM, no module.
# channel 12, WCTDM, no module.

# Global data

loadzone        = us
defaultzone     = us
```

```
[root@new-host-3 ~]# vi /etc/zaptel.conf
[root@new-host-3 ~]# ztcfg -vvvvv

Zaptel Version: 1.4.5.1
Echo Canceller: MG2
Configuration
=====================


Channel map:

Channel 01: FXS Kewlstart (Default) (Slaves: 01)
Channel 02: FXO Kewlstart (Default) (Slaves: 02)
Channel 03: FXO Kewlstart (Default) (Slaves: 03)
Channel 04: FXO Kewlstart (Default) (Slaves: 04)
Channel 05: FXO Kewlstart (Default) (Slaves: 05)

5 channels configured.
```

6. Installing asterisk

```
cd /usr/src/asterisk
make clean
make
make install
```

7. Starting asterisk

Before starting asterisk, please configure the Zapata.conf and extensions.conf besed on your business environment, and run asterisk by

```
asterisk -vvvvvvvgc
```

Chapter 3 Hardware Setting

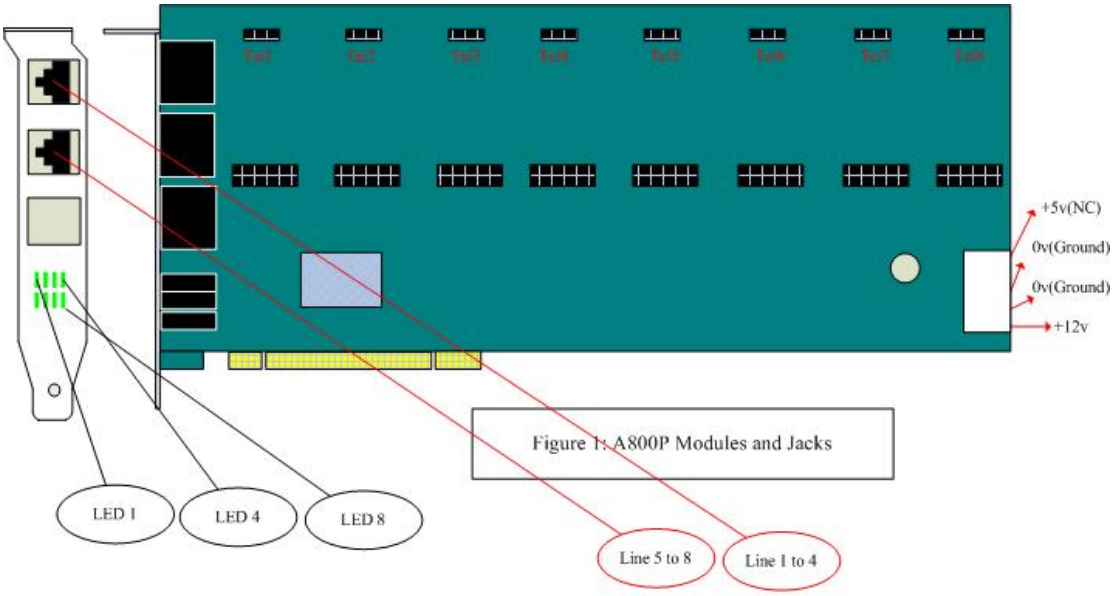
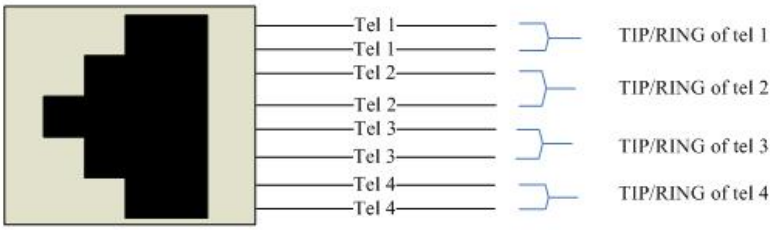
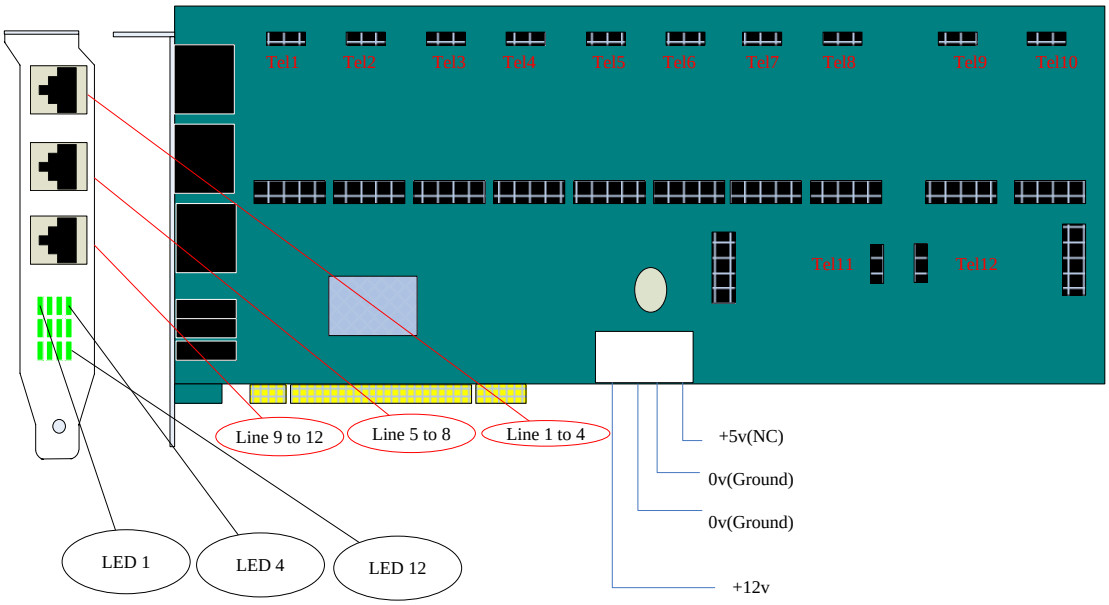


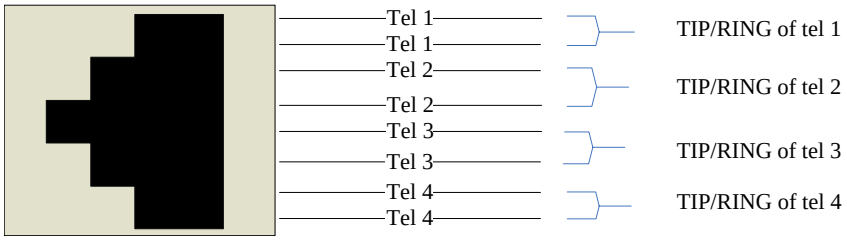
Figure 1: A800P Modules and Jacks



NC means not connect

Figure 2: A800P Hardware Configuration





NC means not connect

Figure 3: A1200P Hardware Configuration

Notes:

Test environments are:

Centos-4.5

Kernel version: 2.6.9-55.EL

Zaptel: 1.4.5.1

Asterisk: 1.4.11

If user has any problem in installing A800P/A1200P, please report to us.

Chapter 4 References

www.openvox.com.cn
www.digium.com
www.asterisk.org
www.voip-info.org
www.asteriskguru.com