深圳开源通信有限公司

OpenVox-Best Cost Effective Asterisk Cards

OpenVox D110P/D110E User Manual

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深圳开源通信有限公司

OpenVox-Best Cost Effective Asterisk Cards

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Table of Contents

Chapter 1 Overview

1. What is D110P/D110E

D110P is a single span E1/T1/J1 digital line telephony product。It's non-Rohs for D110PG.

D110P is a high-performance, cost-effective single span digital voice card. It provides compact and powerful interface to asterisk that can support E1/T1/J1 and PRI interface.

D110P supports industry standard protocols, including MFR2, PRI, Cisco PPP, Frame relay etc. The low profile allows it to fit within a 2U rack-mount case.

D110P is 100% hardware compatible with Digium TE110P. It can run by using TE110P driver without any patch file.

Certificates: CE, FCC

Misc:(for D110P)
1) Temperature Operation: 0 to 70° C
2) Temperature Storage: - 65 to 125° C
3) Humidity:10 TO 90% NON-CONDENSING
4) Voltage:3.3V
5) Power Dissipation Max:1.2W

Misc:(for D110E)
1) Temperature Operation: 0 to 70° C
2) Temperature Storage: - 65 to 125° C
3) Humidity:10 TO 90% NON-CONDENSING
4) Voltage:3.3V
5) Power Dissipation Max:1.43W

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.

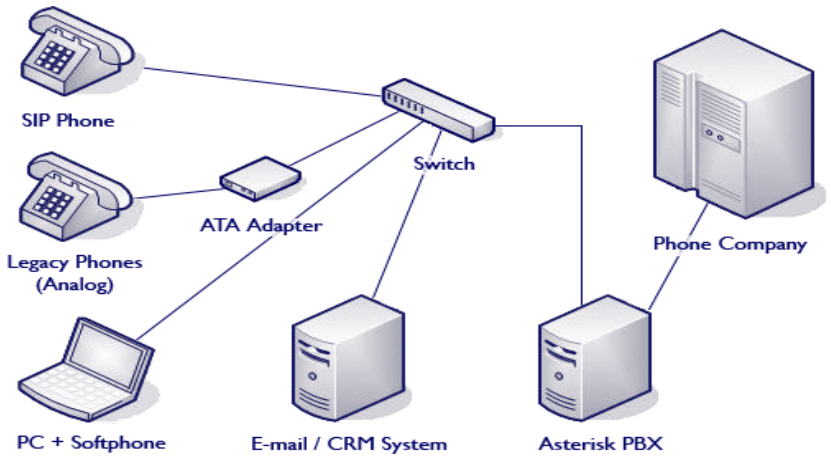

Figure 1: Asterisk Setup

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

Before inserting the D110P card in to PC, customer should set the jumpers correctly. There are four points that customers should check:

1) SPAN Type Setup

P5 controls the function of each span at E1 or T1 mode.

2) Timing cable: D110P/D110E ver1.2 or above support timing cable, when you use timing cable, please make sure the timing cable connection input on the first card and output on the second card. For more detail information, please refer to the following link:

http://bbs.openvox.cn/viewthread.php?tid=874&extra=page%3D

2. Software Installation and Setup

D110P/D110E supports original zaptel wcte11xp driver. Customers can download zaptel driver from asterisk.org. There are few steps to install wcte11xp drivers.

1) Checking the D110P/D110E 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 Network controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface
        Subsystem: Unknown device 79fe:0001
        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) Downloading and compiling

To make the asterisk and zaptel running, users have to download libpri, zaptel and asterisk. For more details about source of these packages, please visit the asterisk.org.

Checking and installing these packages before proceeding with the installation of Asterisk.

* Linux 2.4 kernel sources or kernel 2.6 header files(for libpri)
* bison and bison-devel packages (This is used to build Asterisk)
* ncurses and ncurses-devel packages (Used to build astman, etc.)
* zlib and zlib-devel packages
* openssl and openssl-devel packages

Here, assuming the three packages are stored in /usr/src directory. Customers compile those packages as following in order:

1. Installing libpri:
   cd /usr/src/libpri
   make clean
   make
   make install
2. Installing zaptel
   cd /usr/src/zaptel
   make clean
   make
   make install

3. Installing asterisk
   cd /usr/src/asterisk
   make clean
   make
   make install

3) Loading wcte11xp driver for D110P:
   modprobe zaptel
   modprobe wcte11xp
   ztcfg -vvvvvvvv
   dmesg

```
[root@new-host-3 ~]# ztcfg -vvvvvv

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

SPAN 1: CCS/HDB3 Build-out: 133-266 feet (DSX-1)

Channel map:

Channel 01: Clear channel (Default) (Slaves: 01)
Channel 02: Clear channel (Default) (Slaves: 02)
Channel 03: Clear channel (Default) (Slaves: 03)
Channel 04: Clear channel (Default) (Slaves: 04)
Channel 05: Clear channel (Default) (Slaves: 05)
Channel 06: Clear channel (Default) (Slaves: 06)
Channel 07: Clear channel (Default) (Slaves: 07)
Channel 08: Clear channel (Default) (Slaves: 08)
Channel 09: Clear channel (Default) (Slaves: 09)
Channel 10: Clear channel (Default) (Slaves: 10)
Channel 11: Clear channel (Default) (Slaves: 11)
Channel 12: Clear channel (Default) (Slaves: 12)
Channel 13: Clear channel (Default) (Slaves: 13)
Channel 14: Clear channel (Default) (Slaves: 14)
Channel 15: Clear channel (Default) (Slaves: 15)
Channel 16: D-channel (Default) (Slaves: 16)
Channel 17: Clear channel (Default) (Slaves: 17)
Channel 18: Clear channel (Default) (Slaves: 18)
Channel 19: Clear channel (Default) (Slaves: 19)
Channel 20: Clear channel (Default) (Slaves: 20)
Channel 21: Clear channel (Default) (Slaves: 21)
Channel 22: Clear channel (Default) (Slaves: 22)
Channel 23: Clear channel (Default) (Slaves: 23)
Channel 24: Clear channel (Default) (Slaves: 24)
Channel 25: Clear channel (Default) (Slaves: 25)
Channel 26: Clear channel (Default) (Slaves: 26)
Channel 27: Clear channel (Default) (Slaves: 27)
Channel 28: Clear channel (Default) (Slaves: 28)
Channel 29: Clear channel (Default) (Slaves: 29)
Channel 30: Clear channel (Default) (Slaves: 30)
Channel 31: Clear channel (Default) (Slaves: 31)
```

```
eth0: no IPv6 routers present
usbcore: deregistering driver wcusb
Freed a Wildcard
Unregistered Tormenta2
Zapata Telephony Interface Unloaded
Zapata Telephony Interface Registered on major 196
Zaptel Version: 1.4.5.1
Zaptel Echo Canceller: MG2
ACPI: PCI Interrupt 0000:02:0d.0[A] -> GSI 21 (level, low) -> IRQ 217
FALC version: 00000005
TE110P: Setting up global serial parameters for E1 FALC V2.2
TE110P: Successfully initialized serial bus for card
Found a Wildcard: Digium Wildcard TE110P T1/E1
Registered Tormenta2 PCI
Specify address with base=0xNNNNN
usbcore: registered new driver wcusb
Wildcard USB FXS Interface driver registered
INFO-xpp: revision trunk-r4515 MAX_XPDS=64 (8*8)
INFO-xpp: FEATURE: with ECHO_SUPPRESSION
INFO-xpp: FEATURE: without XPP_EC_CHUNK
INFO-xpp: FEATURE: without BRISTUFF support
INFO-xpp: FEATURE: without sync_tick() from ZAPTEL
INFO-xpp: FEATURE: with PROTOCOL_DEBUG
INFO-xpp_usb: revision trunk-r4515
```

3) Configuration for zaptel.conf and zapata.conf

1) Modify the zaptel.conf by vi /etc/zaptel.conf

```
# Span 1: WCT1/0 "Digium Wildcard TE110P T1/E1 Card 0"
span=1,1,1,ccs,hdb3
# termtype: te
bchan=1-15,17-31
dchan=16
# Global data
loadzone        = us
defaultzone     = us
```

4) Edit the zapata.conf by vi /etc/asterisk/zapata.conf:

```
[channels]
context=zap-in
switchtype=euroisdn
pridialplan=national
signalling=pri_cpe
usecallerid=yes
hidecallerid=no
callwaiting=yes
callwaitingcallerid=yes
threewaycalling=yes
transfer=yes
cancallforward=yes
echocancel=yes
rxgain=0.0
txgain=0.0
group=1
callgroup=1
pickupgroup=1
immediate=no
callprogress=no
callerid=asreceived
group=1
signalling=pri_cpe
channel => 1-15,17-31
```

5) Starting asterisk by asterisk -vvvvvvvgc

Chapter 3 Hardware Setting

In order to support Different models for T1/E1, user can adjust the P5 as shown in figure 2. If taking out the jumper, the card will be T1 model. The default setting is E1 model. User can check the T1 or E1 model by running the command: dmesg. The system will show the card information shown as follow:

```
eth0: no IPv6 routers present
usbcore: deregistering driver wcusb
Freed a Wildcard
Unregistered Tormenta2
Zapata Telephony Interface Unloaded
Zapata Telephony Interface Registered on major 196
Zaptel Version: 1.4.5.1
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INFO-xpp_usb: revision trunk-r4515
```

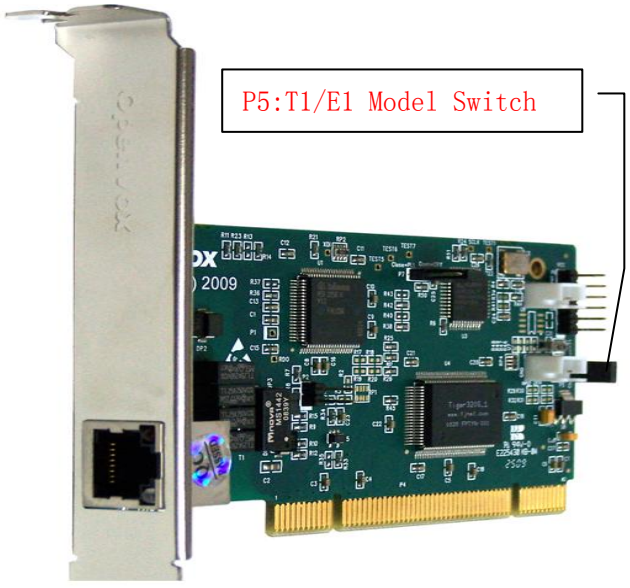

Figure 2: D110P/D110E Hardware Configuration

Chapter 4 References

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