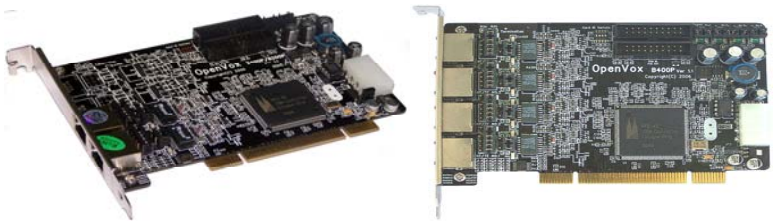
深圳开源通信有限公司

OpenVox-Best Cost Effective Asterisk Cards

OpenVox B200P B400P 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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Chapter 1 Overview

1. What is B200P/B400P

B200P/B400P series is a PCI 2.2 compliant card supporting 2/4 BRI S/T interfaces, with an onboard multi NT power feeding circuit. NT/TE mode can be independently configured on each of the 2 or 4 ports.

B200P/B400p series can be implemented for building Open Source Asterisk based systems such as ISDN PBX and VoIP gateway.

Target Applications:
High Performance ISDN PC Cards
ISDN PABX for BRI
VoIP Gateways
ISDN LAN Routers for BRI
ISDN Least Cost Routers for BRI
ISDN Test Equipment for BRI

Main Features:
Two/Four integrated S/T interfaces
ITU-T I.430 and TBR 3 certified and S/T ISDN supporting in TE and NT mode
Integrated PCI bus interface (Spec.2.2) for 3.3V and 5V signal environments
DTMF detection on all B-channels
Multiparty audio conferences bridge
Onboard power feeding
PCM bus connectors daisy chaining
Each of the 2/4 ports can be independently configured for TE or NE mode
Full software and hardware compatible with bristuff and mISDN driver
Application ready: u se Asterisk to build your IP-PBX/Voicemail system

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.

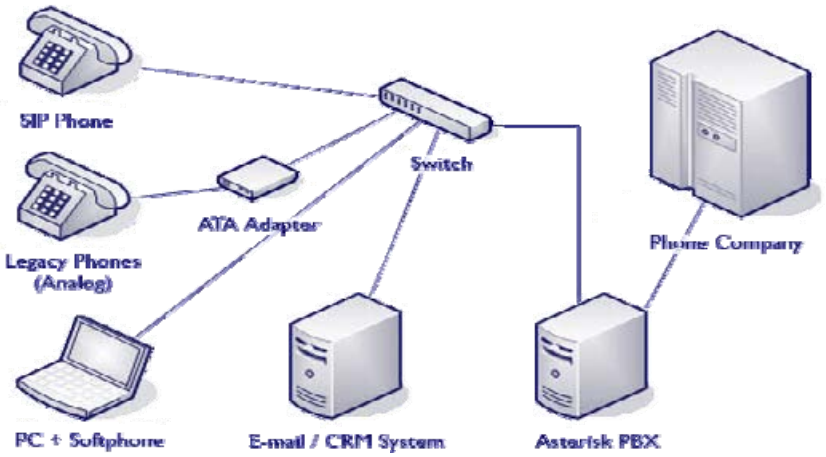

Figure 1: Asterisk Setup

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

1) Configure the Jumper Settings

Please check jumper setting for details. To install B200P/B400P, user should follow these steps:

A. Setting Card ID Switch

If user wants to install more than one cards of B200P or B400P in one pc, you should take care of the card id switch. It has three rules, which user must follow:

1. The card id of the first card must be set to 0, and the second card should be set to 1, and so on.
2. The First Card is a card that will be initialized (i.e installing driver) first when system is booting.
3. At most of cases, Linux will initialize PCI devices according to PCI slot order. The slot is nearest to the CPU will be initialized first; the slot at the far end from CPU will be initialized at last. That is to say, if user has more than one cards of B200P or B400P in pc, the one is nearest to CPU should be set to card id 0.

B. Adjusting Termination of S/T Interface (100 ohm)

1. If a port will work on NT mode, you should set jumper to CONNECT (ON).
2. If a port will work on TE mode, Theoretically it should be to OPEN(OFF), but user might connect to some non-standard isdn terminal equipments that do not have terminal resistors, for such equipments, you should set it to CONNECT(ON).

C. Power Feeding Connector

These jumpers control whether the card will feed power to the external isdn terminal. User should adjust accordingly.

- ✧ If the port will work on TE mode, user MUST set the jumper to OPEN(OFF)
- ✧ If this port will work on NT mode, the ISDN terminal requires ISDN power supply, user should set the jumper to CONNECT(ON). *ISDN terminal does not require ISDN power supply, user should set the jumper to OPEN(OFF).*

D. Power Feeding Input

If one of the four power feeding connectors is CONNECT(ON), user should connect a D-type connecter from pc power supply to this jack, the D-type connecter is used to provide power to your CDROM ahd 3.5" HDD.

E. Power Supply Selection

Some newest model PCs do not provide +5V on the PCI slots, at those cases, use has to set the jumper to 3.3v.

F. PCM IN/PCM OUT

These are for future usages.

2) Power off PC, remembering unplug the AC power cable
3) Insert B200P or B400P into a 3.3v or 5.0v PCI slot
4) Plug the hard disk power supply cable(D style) to power feeding input jack if need providing power to external equipment, please refer jumper setting section for the detail
5) Plug back the AC power cable, and power on PC

2. Software Installation and Setup

B200P/B400P supports original bristuff driver from junghanns.net. Customers can download it from http://www.junghanns.net/. There are few steps to install the driver drivers.

1) Checking the B200P/B400P hardware by command: **lspci -vvvvvvvvv**

```
02:04.0 ISDN controller: Cologne Chip Designs GmbH ISDN network Controller [HFC-4S] (rev 01)
        Subsystem: Cologne Chip Designs GmbH Unknown device e888
        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-
        Interrupt: pin A routed to IRQ 169
        Region 0: I/O ports at a000 [size=8]
        Region 1: Memory at f7004000 (32-bit, non-prefetchable) [size=4K]
        Capabilities: [40] Power Management version 2
                Flags: PMEClk- DSI+ D1+ D2+ AuxCurrent=0mA PME(D0+,D1+,D2+,D3hot+,D3cold-)
                Status: D0 PME-Enable- DSel=0 DScale=0 PME+

02:09.0 Ethernet controller: Marvell Technology Group Ltd. 88E8001 Gigabit Ethernet Controller (rev 13)
        Subsystem: Giga-byte Technology Marvell 88E8001 Gigabit Ethernet Controller (Gigabyte)
        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: 32 bytes
        Interrupt: pin A routed to IRQ 201
        Region 0: Memory at f7000000 (32-bit, non-prefetchable) [size=16K]
        Region 1: I/O ports at a400 [size=256]
        [virtual] Expansion ROM at 50000000 [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
```

2) Checking the supporting packages

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 runs 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++
```

3) Downloading, unzipping and compiling driver

A. Download the stable version of bristuff drivers from http://www.junghanns.net/, and copy the tar file to /usr/src/:

```
cp bristuff-<version>.tar.gz /usr/src
cd /usr/src/
tar -xvzf bristuff-<version>.tar.gz
```

B. Download OpenVox patch called qozap.c from www.openvox.com.cn. It contains a patched qozap.c file, overwrite the orginal qozap.c file with the new qozap.c under /usr/src/bristuff-<version>/qozap.

C. Make links with kernel source:

ln -s /usr/src/kernels/2.6.18-8.el5-i686/ /usr/src/linux-2.6

Here, under /usr/src there is kernel source, user must create link linux-2.6 under /usr/src/. There are many files under /usr/src/bristuff-0.3.0-PRE-1y-j, please check:

```
[root@new-host bristuff-0.3.0-PRE-1y-j]# ls
asterisk             CHANGES     download.sh  ISDNguard       libpri
asterisk-1.2.23      compile.sh  INSTALL      libgsmat        libpri-1.2.4
asterisk-1.2.23.tar  cwain       install.sh   libgsmat-0.0.2  libpri-1.2.4.tar
[root@new-host bristuff-0.3.0-PRE-1y-j]# cd ..
[root@new-host src]# cd bristuff-0.3.0-PRE-1y-j/
[root@new-host bristuff-0.3.0-PRE-1y-j]# ls
asterisk             CHANGES     download.sh  ISDNguard       libpri
asterisk-1.2.23      compile.sh  INSTALL      libgsmat        libpri-1.2.4
asterisk-1.2.23.tar  cwain       install.sh   libgsmat-0.0.2  libpri-1.2.4.tar
[root@new-host bristuff-0.3.0-PRE-1y-j]# ls -l
total 27188
lrwxrwxrwx  1 root root       15 Sep 19 13:36 asterisk -> asterisk-1.2.23
drwxr-sr-x 25 root root     4096 Sep 20 12:14 asterisk-1.2.23
-rw-r--r--  1 root root 19005440 Aug 20 16:50 asterisk-1.2.23.tar
-rw-r--r--  1 root root    18405 Jul 25 15:40 CHANGES
-rwxrwxrwx  1 root root     2181 Jun  9  2006 compile.sh
drwxr-xr-x  3 root root     4096 Sep 20 12:08 cwain
-rwxrwxrwx  1 root root      781 Sep 20 09:45 download.sh
-rw-r--r--  1 root root     2377 Apr 27  2005 INSTALL
-rw-r--r--  1 root root       40 Jul 12  2004 install.sh
drwxr-xr-x  2 root root     4096 Sep 19 12:18 ISDNguard
lrwxrwxrwx  1 root root       14 Sep 19 13:36 libgsmat -> libgsmat-0.0.2
drwxr-xr-x  2 root root     4096 Sep 20 12:08 libgsmat-0.0.2
lrwxrwxrwx  1 root root       12 Sep 19 13:36 libpri -> libpri-1.2.4
drwxr-xr-x  2 1000 1000     4096 Sep 20 12:08 libpri-1.2.4
-rw-r--r--  1 root root   348160 Sep 19 10:23 libpri-1.2.4.tar
drwxr-xr-x  2 root root     4096 Sep 19 12:18 patches
drwxr-xr-x  3 root root     4096 Sep 20 12:08 qozap
-rwxr-xr-x  1 root root      558 Sep 19 13:36 run_download.sh
drwxr-xr-x  4 root root     4096 Sep 19 12:18 SAMPLES
drwxr-xr-x  3 root root     4096 Sep 19 12:18 TESTING
drwxr-xr-x  3 root root     4096 Sep 20 12:09 zaphfc
lrwxrwxrwx  1 root root       13 Sep 19 13:36 zaptel -> zaptel-1.2.19
drwxr-xr-x 10 root root    12288 Sep 20 12:07 zaptel-1.2.19
-rw-r--r--  1 root root  8345600 Sep 19 10:23 zaptel-1.2.19.tar
drwxr-xr-x  3 root root     4096 Sep 20 12:08 ztgsm
[root@new-host bristuff-0.3.0-PRE-1y-j]#
```

D. Compiling Bristuff

cd /usr/src/usr/src/bristuff-0.3.0-PRE-1y-j

chmod 777 install.sh

./install.sh

Above steps will install zaptel, libpri and asterisk.

After finishing the three steps, under asterisk directory, running **make samples** if user install asterisk for first time.

E. Modifying and loading modules for zaptel and qozap
vi /etc/zaptel, and edit the zaptel.conf like this:

```
loadzone=nl
defaultzone=nl
# qozap span definitions
# most of the values should be bogus because we are not really zaptel
span=1,1,3,ccs,ami
span=2,2,3,ccs,ami
span=3,3,3,ccs,ami
span=4,4,3,ccs,ami

bchan=1,2
dchan=3
bchan=4,5
dchan=6
bchan=7,8
dchan=9
bchan=10,11
dchan=12

cd /usr/src/bristuff-0.3.0-PRE-1y-j/qozap
modprobe zaptel
modprobe qozap.ko (for kernel 2.6.o)
ztcfg -vvvvvvvvvvvvvv
```

F. If user wants to modify the call rules, edit zapata.conf file under /etc/asterisk to make sure asterisk run successfully
asterisk -vvvvvvvvvgc

Notes:
Test environments:
OS: Centos 5
Kernel version: 2.6.18-8.15
Bristuff version: bristuff-0.3.0-PRE-1y-j
Hardware：OpenVox B400P

Chapter 3 Hardware Setting

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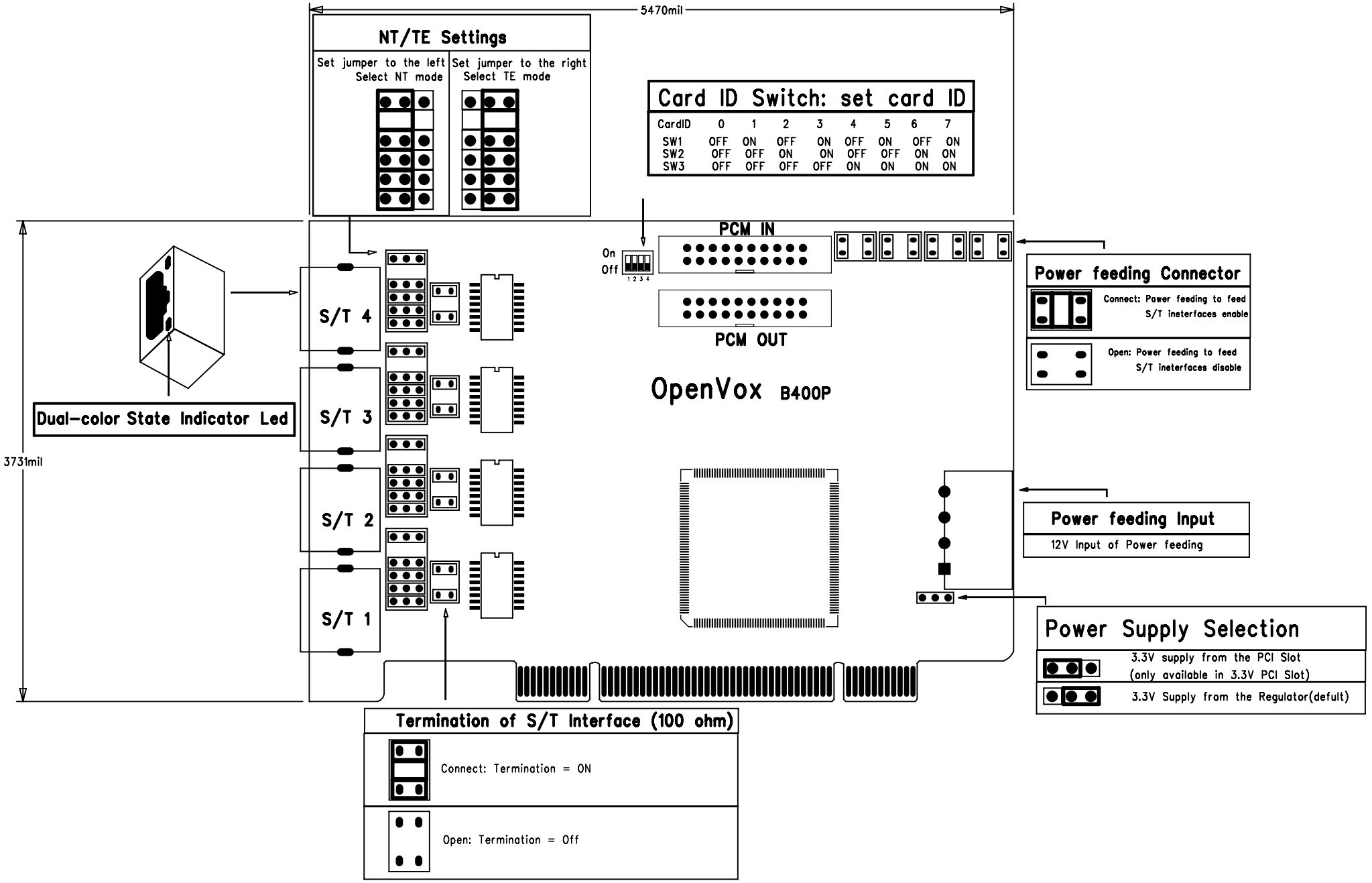

OpenVox B400P Jumper