

OpenVox

深圳开源通信有限公司

OpenVox-Best Cost Effective Asterisk Cards

OpenVox B100P User Manual



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OpenVox-Best Cost Effective Asterisk Cards

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Chapter 1 Overview

1. What is B100P

B100P is a PCI 2.2 compliant card supporting one BRI S/T interface. It can be configured as a NT/TE mode.

B100P 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:

One integrated S/T interface

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

Port can be independently configured for TE or NE mode

Full software and hardware compatible with Bristuff driver

Application ready: use Asterisk to build your IP-PBX/Voicemail system

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.

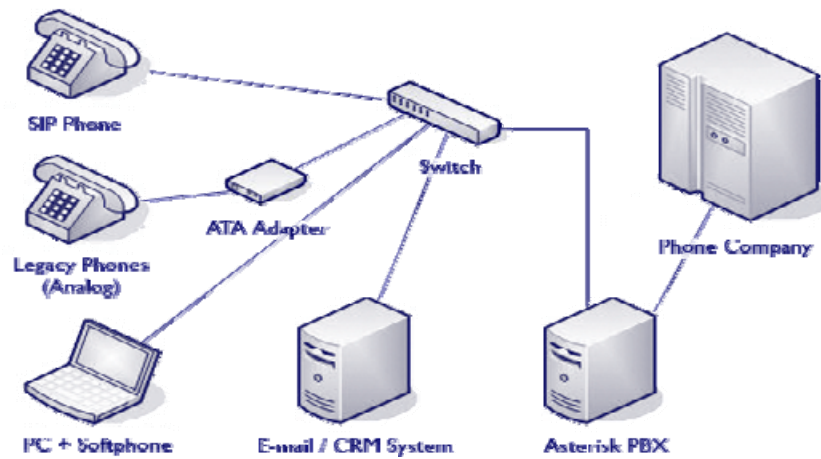


Figure 1: Asterisk Setup

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).

Chapter 2 Card Installation and Configuration

1. Hardware Installation and Setup

1) Configure the Jumper Settings

Please check jumper setting for details. To install B100P, user should follow these steps:

A. 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).

B. 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.

- 2) Power off PC, remembering unplug the AC power cable
- 3) Insert B100P into a 3.3v or 5.0v PCI slot
- 4) Plug back the AC power cable, and power on PC

2. Software Installation and Setup

B100P supports original Bristuff driver from [junghanns.net](http://www.junghanns.net). Customers can download it from <http://www.junghanns.net/>. There are few steps to install the driver drivers.

1) Checking the B100P hardware by command: `lspci -vvvvvvvv`

```
01:02.0 Network controller: Cologne Chip Designs GmbH ISDN network controller [HFC-PCI] (rev 02)
Subsystem: Cologne Chip Designs GmbH ISDN Board
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: 16 (4000ns max)
Interrupt: pin A routed to IRQ 58
Region 0: I/O ports at 9c00 [disabled] [size=8]
Region 1: Memory at ddfec00 (32-bit, non-prefetchable) [size=256]
Capabilities: [40] Power Management version 1
Flags: PMEClk- DSI+ D1+ D2+ AuxCurrent=0mA PME(D0+,D1+,D2+,D3hot+,D3cold-)
Status: D0 PME-Enable- DSel=0 DScale=0 PME+
```

2) Checking the support 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. 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-2 zaphfc]# pwd
/usr/src/bristuff-0.3.0-PRE-1y-j/zaphfc
[root@new-host-2 zaphfc]# cd ..
[root@new-host-2 bristuff-0.3.0-PRE-1y-j]# ls -l
total 27252
lrwxrwxrwx 1 root root      15 Dec  4 02:01 asterisk -> asterisk-1.2.23
drwxr-sr-x 25 root root    4096 Dec  4 17:50 asterisk-1.2.23
-rw-r--r-- 1 root root 19005440 Nov 28 14:07 asterisk-1.2.23.tar
-r--r--r-- 1 root root   17933 Jul 25 15:40 CHANGES
-rwxrwxrwx 1 root root    2181 Jun  9 2006 compile.sh
dr-xr-xr-x 3 root root    4096 Dec  4 17:47 cwain
-rwxrwxrwx 1 root root    558 Dec  4 02:01 download.sh
-r--r--r-- 1 root root   2314 Apr 27 2005 INSTALL
-rwxrwxrwx 1 root root    40 Dec  4 02:01 install.sh
dr-xr-xr-x 2 root root    4096 Mar 26 2007 ISDNguard
lrwxrwxrwx 1 root root      14 Dec  4 02:01 libgsmat -> libgsmat-0.0.2
drwxr-xr-x 2 root root    4096 Dec  4 17:47 libgsmat-0.0.2
lrwxrwxrwx 1 root root     12 Dec  4 02:01 libpri -> libpri-1.2.4
drwxr-xr-x 2 1000 1000    4096 Dec  4 17:47 libpri-1.2.4
-rw-r--r-- 1 root root 348160 Nov 28 14:06 libpri-1.2.4.tar
dr-xr-xr-x 2 root root    4096 Jun 25 2007 patches
dr-xr-xr-x 3 root root    4096 Jan  3 02:05 qozap
-rw-r--r-- 1 root root 63208 Nov  8 16:07 qozap.c
dr-xr-xr-x 4 root root    4096 Jul 11 2005 SAMPLES
dr-xr-xr-x 3 root root    4096 Jul 11 2005 TESTING
dr-xr-xr-x 3 root root    4096 Jan  3 22:42 zaphfc
lrwxrwxrwx 1 root root     13 Dec  4 02:01 zaptel -> zaptel-1.2.19
drwxr-xr-x 10 root root  12288 Dec 19 22:51 zaptel-1.2.19
-rw-r--r-- 1 root root 8345600 Nov 28 14:07 zaptel-1.2.19.tar
drwxr-xr-x 3 root root    4096 Dec  4 17:47 ztcsm
  
```

C. 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.

D. Modifying and loading modules for zaptel and zapata. of

vi /etc/zaptel, and edit the zaptel.conf like this:

```

loadzone=nl
defaultzone=nl

span=1, 1, 3, ccs, ami
bchan=1, 2
dchan=3
  
```

```

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

```
modprobe zaptel
make load
ztcfg -vvvvvvvvvvvvvvv and dmesg
```

```
zaphfc: CCD/Billion/Asuscom 2BDO configured at mem e08c8c00 fifo d4a78000(0x14a78000) IRQ 58 HZ 1000
zaphfc: Card 0 configured for TE mode
zaphfc: 1 hfc-pci card(s) in this box.
Registered tone zone 3 (Netherlands)
```

- E. If user wants to modify the call rules, edit zapata.conf and extensions.conf file under /etc/asterisk to make sure asterisk run successfully:

```
; Zapata telephony interface
;
; Configuration file

[channels]
;
; Default language
;
;language=en
;
; Default context
;
;
switchtype = euroisdn
; p2mp TE mode
signalling = bri_cpe_ptmp           Set with TE Mode

; p2p TE mode
;signalling = bri_cpe
; p2mp NT mode
;signalling = bri_net_ptmp
; p2p NT mode
;signalling = bri_net

pridialplan = dynamic
prilocaldialplan = local
nationalprefix = 0
internationalprefix = 00

echocancel=yes
echotraining = 100
echocancelwhenbridged=yes

immediate=yes
group = 1
context=demo
channel => 1-2           Channels
```

```
[demo]
;
; We start with what to do when a call first comes in.
;
exten => s,1,Wait,1                ; Wait a second, just for fun
exten => s,n,Answer                ; Answer the line
exten => s,n,Set(TIMEOUT(digit)=5) ; Set Digit Timeout to 5 seconds
exten => s,n,Set(TIMEOUT(response)=10) ; Set Response Timeout to 10 seconds
exten => s,n(restart),BackGround(demo-congrats) ; Play a congratulatory message
exten => s,n(instruct),BackGround(demo-instruct) ; Play some instructions
exten => s,n,WaitExten            ; Wait for an extension to be dialed.

exten => 2,1,BackGround(demo-moreinfo) ; Give some more information.
exten => 2,n,Goto(s,instruct)
```

F. Start running asterisk:

`asterisk -vvvvvvvvvvc` and check the zap channels

```
*CLI> zap show channels
Chan Extension Context Language MusicOnHold
pseudo demo
1 demo
2 demo
```

Make inbound call and play IVR

```
*CLI> -- Going to extension s|1 because of immediate=yes
-- Accepting voice call from '82535095' to 's' on channel 0/2, span 1
-- Executing Wait("Zap/2-1", "1") in new stack
-- Executing Answer("Zap/2-1", "") in new stack
-- Executing Set("Zap/2-1", "TIMEOUT(digit)=5") in new stack
-- Digit timeout set to 5
-- Executing Set("Zap/2-1", "TIMEOUT(response)=10") in new stack
-- Response timeout set to 10
-- Executing BackGround("Zap/2-1", "demo-congrats") in new stack
-- Playing 'demo-congrats' (language 'en')
```

Inbound call

Notes:

Test environments:

OS: CentOS 5

Kernel version: 2.6.18-8.15

Bristuff version: bristuff-0.3.0-PRE-1y-j

Hardware: OpenVox B100P

References:

<http://www.asteriskguru.com/tutorials/bri.html>

<http://www.voip-info.org/wiki/index.php>

<http://www.voip-info.org/wiki-Asterisk+zaphfc+install>

asterisk.org

www.openvox.com.cn

<http://www.junghanns.net/>

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Chapter 3 Hardware Setting

