

# OpenVox

深圳开源通信有限公司

*OpenVox-Best Cost Effective Asterisk Cards*



## OpenVox A400M 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 A400M

A400M is a modular analog telephony interface product. It supports mini PCI with 124 pins. A400M must be used with FXO-100 or FXS-100 together to build a workable system.

Key Benefits:

Be suitable for miniPCI type III slots

Support Zaptel/wctdm driver

Support AskoziaPBX 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.

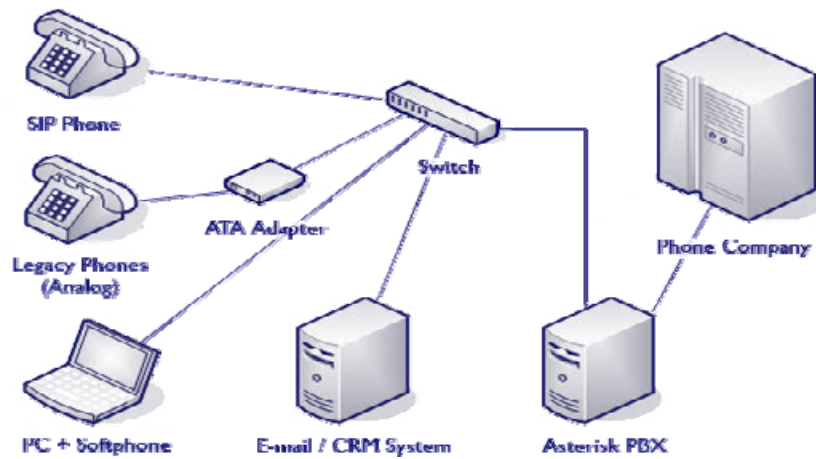


Figure 1: Asterisk Setup

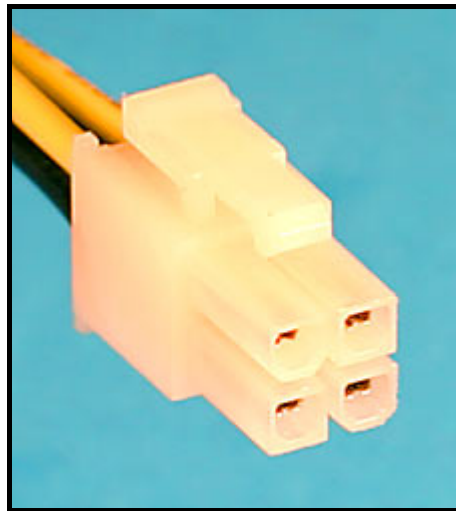
Source (<http://www.siriusit.co.uk/uploads/images/consulting/asteriskSetup.gif>)

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

## Chapter 2 Card Installation and Configuration

### 1. Software and Hardware Installation

1. Power off your pc, remember unplug the AC power cable
2. Insert A400M into mini pci slot.
3. If the card equips FXS modules (green color), plug in the 12v power supply. Please check the cable. It should like this:

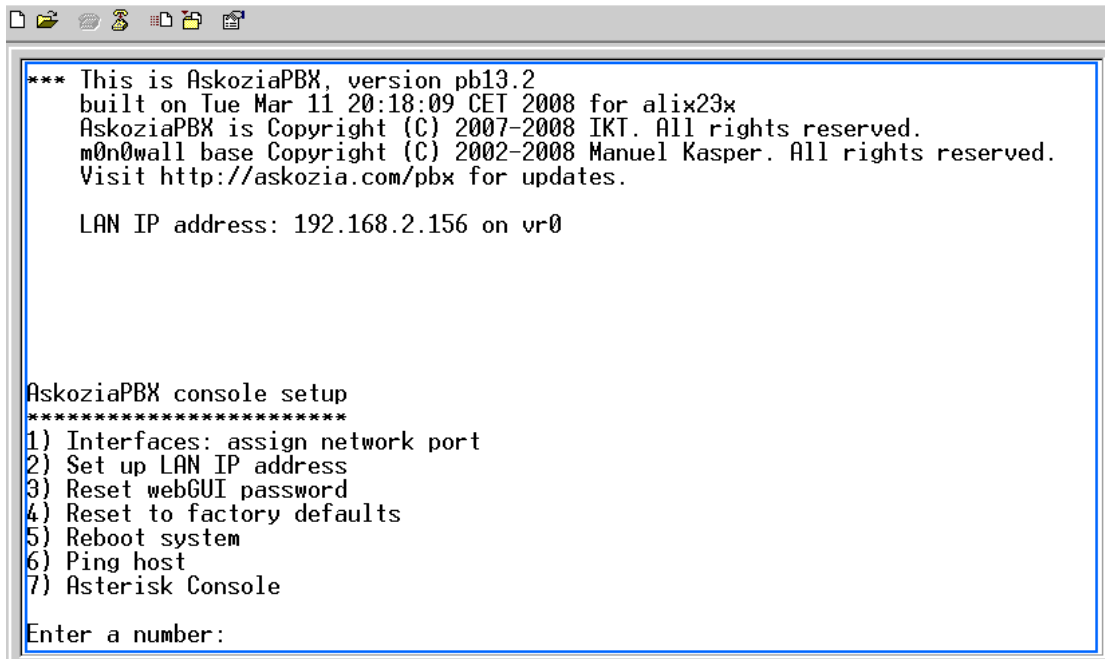


4. Make a bootable CF card
  - a) Download pbx image file from the <http://downloads.askozia.com/pbx/releases/pb13.2/-pbx-alix23x-pb13.2.img>. You can choose different operating systems to make a bootable CF card. More details for installation, please refer the documentation from: <http://www.askozia.com/pbx/getting-started/>
  - b) **Insert the CF card into the slot for CF card.**
5. Plug back the AC power cable, and power on PC

### 2. Access the system console and GUI

- 1) To access the system, please connect the serial port and open the super terminal to enter the system. Please check as follow steps:  
**Click all programs->utility->communication-super terminal** to open create user. For more details, please go to <http://www.pcengines.ch> to check.

- 2) Access the system console from serial port:



```
*** This is AskoziaPBX, version pb13.2
built on Tue Mar 11 20:18:09 CET 2008 for alix23x
AskoziaPBX is Copyright (C) 2007-2008 IKT. All rights reserved.
m0n0wall base Copyright (C) 2002-2008 Manuel Kasper. All rights reserved.
Visit http://askozia.com/pbx for updates.

LAN IP address: 192.168.2.156 on vr0

AskoziaPBX console setup
*****
1) Interfaces: assign network port
2) Set up LAN IP address
3) Reset webGUI password
4) Reset to factory defaults
5) Reboot system
6) Ping host
7) Asterisk Console

Enter a number:
```

- 3) Visit system GUI from IP(192.168.2.156, for example), the example is given:

The screenshot shows the AskoziaPBX webGUI Configuration interface. The top header includes the AskoziaPBX logo, the title "webGUI Configuration", and the IP address "AskoziaPBX.local". A left sidebar contains a navigation menu with categories: System, Accounts, Dialplan (print), Services, Status, Live Stats, and Advanced. The "Dialplan (print)" category is expanded to show "Applications". The main content area is titled "Dialplan: Applications" and contains a table with three columns: Extension, Name, and Description. To the right of the table are icons for editing, deleting, and adding entries.

| Extension | Name      | Description                                                                                        |
|-----------|-----------|----------------------------------------------------------------------------------------------------|
| 00003246  | Echo      | Echos audio and video back to the caller as soon as it is received. Used to test connection delay. |
| 00009253  | WakeMe    | Wake-Up call manager. Call to set and cancel wake-up calls on the current extension.               |
| 000064554 | Milliwatt | Generates a constant 1000Hz tone. Used to test connection quality.                                 |

4) Set inbound and outbound calls.



## webGUI Configuration

AskoziaPBX.local

- System
  - General Setup
  - Interfaces
  - Firmware
  - Backup/Restore
  - Factory Defaults
  - Reboot
- Accounts
  - Providers
  - Phones
- Dialplan (print)
  - Applications
  - Call Groups
  - Transfers
- Services
  - Conferencing
  - Voicemail
- Status
  - Summary
  - Interfaces
  - Channels
  - Conferences
- Live Stats
  - Network Traffic
  - CPU Load
  - ▶ Advanced
  - ▶ Diagnostics

## Interfaces: Analog

| Unit | Name       | Type | Start | Gain (rx/tx) | Echo Canceller |
|------|------------|------|-------|--------------|----------------|
| 1    | 101        | fxs  | Kewl  | 0.0/0.0      | 128            |
| 2    | 100        | fxs  | Kewl  | 0.0/0.0      | 128            |
| 3    | from-pstn1 | fxo  | Kewl  | 0.0/0.0      | 128            |
| 4    | from-pstn2 | fxo  | Kewl  | 0.0/0.0      | 128            |

**Note:** fxs interfaces connect to telephones and fxo interfaces connect to provider lines. fxs interfaces produce electricity to power the telephone and fxo interfaces accept the electricity generated by the provider. **Connecting a provider line to an fxs port can damage your hardware! If you are unsure which ports are fxo or fxs on your card, configure and connect your phone accounts before connecting any provider lines.**

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- 5) Make inbound calls and outbound calls.

```
wlan: mac acl pol
-- Starting simple switch on 'Zap/3-1'
kbd0 at kbdmux0

"Zap/3-1", "" in new stack
-- Executing [s@ANALOG-PROVIDER-1645433343386d478aeb1cf-incoming:3] Wait("Zap/3-1", "1") in new stack
-- Executing [s@ANALOG-PROVIDER-1645433343386d478aeb1cf-incoming:4] Set("Zap/3-1", "SENDNOTIFICATIONS=no") in new stack
-- Executing [s@ANALOG-PROVIDER-1645433343386d478aeb1cf-incoming:5] Macro("Zap/3-1", "vm|ZAP/2|100|100|to|20") in new stack
-- Executing [s@macro-vm:1] Dial("Zap/3-1", "ZAP/2|20|to") in new stack
-- Called 2
-- Zap/2-1 is ringing
-- Zap/2-1 is ringing
-- Zap/2-1 answered Zap/3-1
-- Hungup 'Zap/2-1'
== Spawn extension (macro-vm, s, 1) exited non-zero on 'Zap/3-1' in macro 'vm'
== Spawn extension (macro-vm, s, 1) exited non-zero on 'Zap/3-1'
-- Executing [h@macro-vm:1] NoOp("Zap/3-1", "DIALSTATUS: ANSWER") in new stack
-- Executing [h@macro-vm:2] GosubIf("Zap/3-1", "1?callcompleted") in new stack
-- Executing [h@macro-vm:8] Hangup("Zap/3-1", "") in new stack
== Spawn extension (macro-vm, h, 8) exited non-zero on 'Zap/3-1'
-- Hungup 'Zap/3-1'
AskoziaPBX*CLI> _
```

```

ap/3-1", "vm|ZAP/2|100|100|to|20") in new stack
-- Executing [s@macro-vm:1] Dial("Zap/3-1", "ZAP/2|20|to") in new stack
vr1: <VIA VT6105M Rhine III 10/100BaseTX> port 0x1400-0x14ff
-- Called 20xe0

-- Zap/2-1 answered Zap/3-1
-- Hungup 'Zap/2-1'
== Spawn extension (macro-vm, s, 1) exited non-zero on 'Zap/3-1' in macro 'vm'
== Spawn extension (macro-vm, s, 1) exited non-zero on 'Zap/3-1'
-- Executing [h@macro-vm:1] NoOp("Zap/3-1", "DIALSTATUS: ANSWER") in new stack
ck
-- Executing [h@macro-vm:2] GosubIf("Zap/3-1", "1?callcompleted") in new stack
ck
-- Executing [h@macro-vm:8] Hangup("Zap/3-1", "") in new stack
== Spawn extension (macro-vm, h, 8) exited non-zero on 'Zap/3-1'
-- Hungup 'Zap/3-1'
-- Starting simple switch on 'Zap/2-1'
-- Executing [613570807877@ANALOG-PHONE-1227863662386d45b701494:1] NoOp("Zap
/2-1", "") in new stack
-- Executing [613570807877@ANALOG-PHONE-1227863662386d45b701494:2] Dial("Zap
/2-1", "ZAP/3/13570807877||To") in new stack
-- Called 3/13570807877
-- Zap/3-1 answered Zap/2-1
-- Hungup 'Zap/3-1'
== Spawn extension (ANALOG-PHONE-1227863662386d45b701494, 613570807877, 2) exi
ted non-zero on 'Zap/2-1'
-- Hungup 'Zap/2-1'
AskoziaPBX*CLI>

```

- 6) Troubleshoot. If you can not see any zap channels in the system, please scroll up to search the zapel log or go to GUI to get more information. Here, we can see the wctdm card information.

```

Zapata Telephony Interface Registered on major 196
Echo Canceller: OSLEC
FXS device: vendor=e159 device=1 subvendor=b100
wcfxs0: <Wildcard TDM400P REV E/F> port 0x1800-0x18ff mem 0xe0080000-0xe0080fff

irq 11 at device 14.0 on pci0
FXS Attach for wcfxs0: deviceID : 0xe159
wcfxs0: [FAST]
Freshmaker version: 71
Freshmaker passed register test
Module 0: Installed -- AUTO FXS
Module 1: Installed -- AUTO FXS
Module 3: Installed -- AUTO FXO
Found a Wildcard TDM: Wildcard TDM400P REV E/F (4 modules)
Initializing timezone... done
Configuring LAN interface... vr0: link state changed to UP
done
Starting suslog service... done

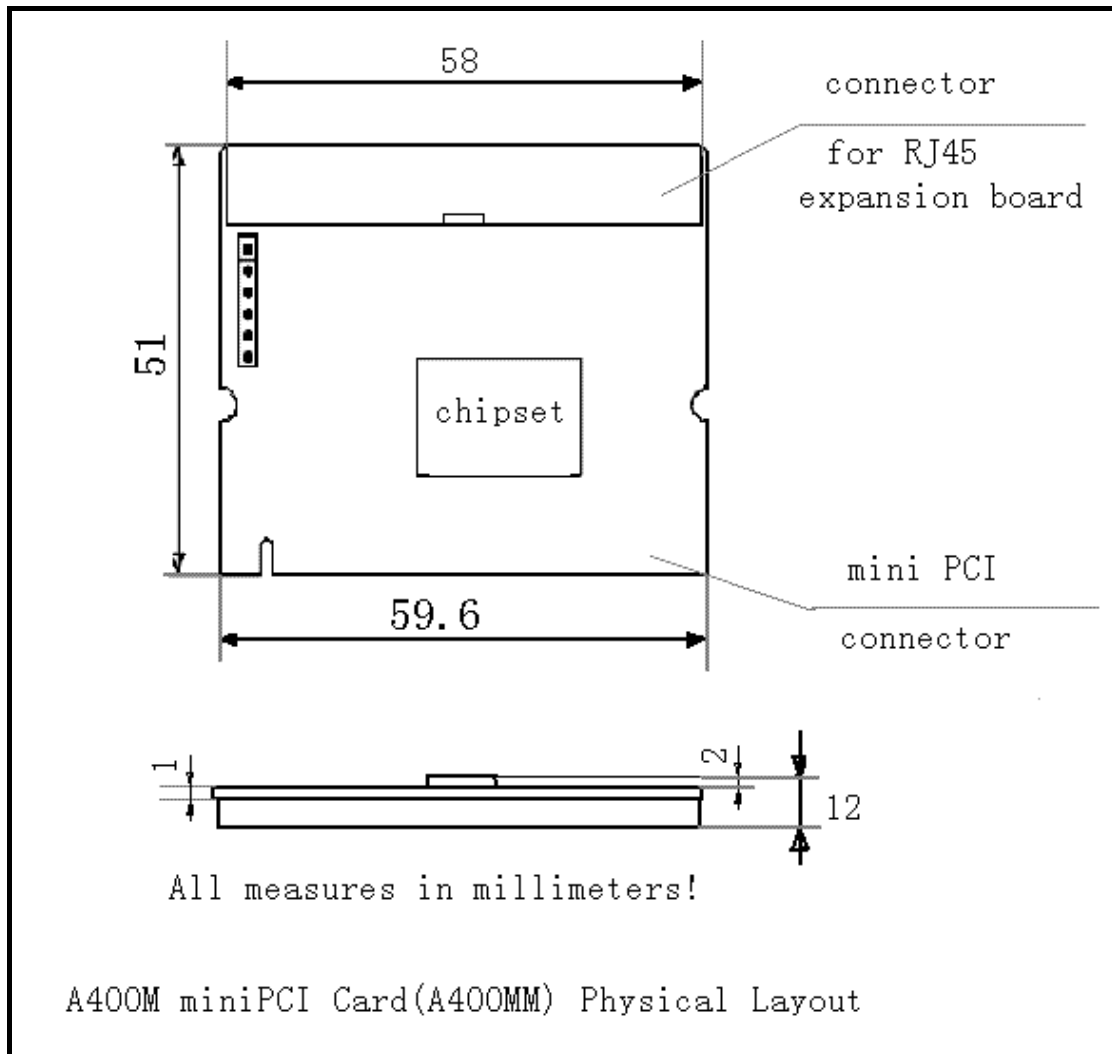
```

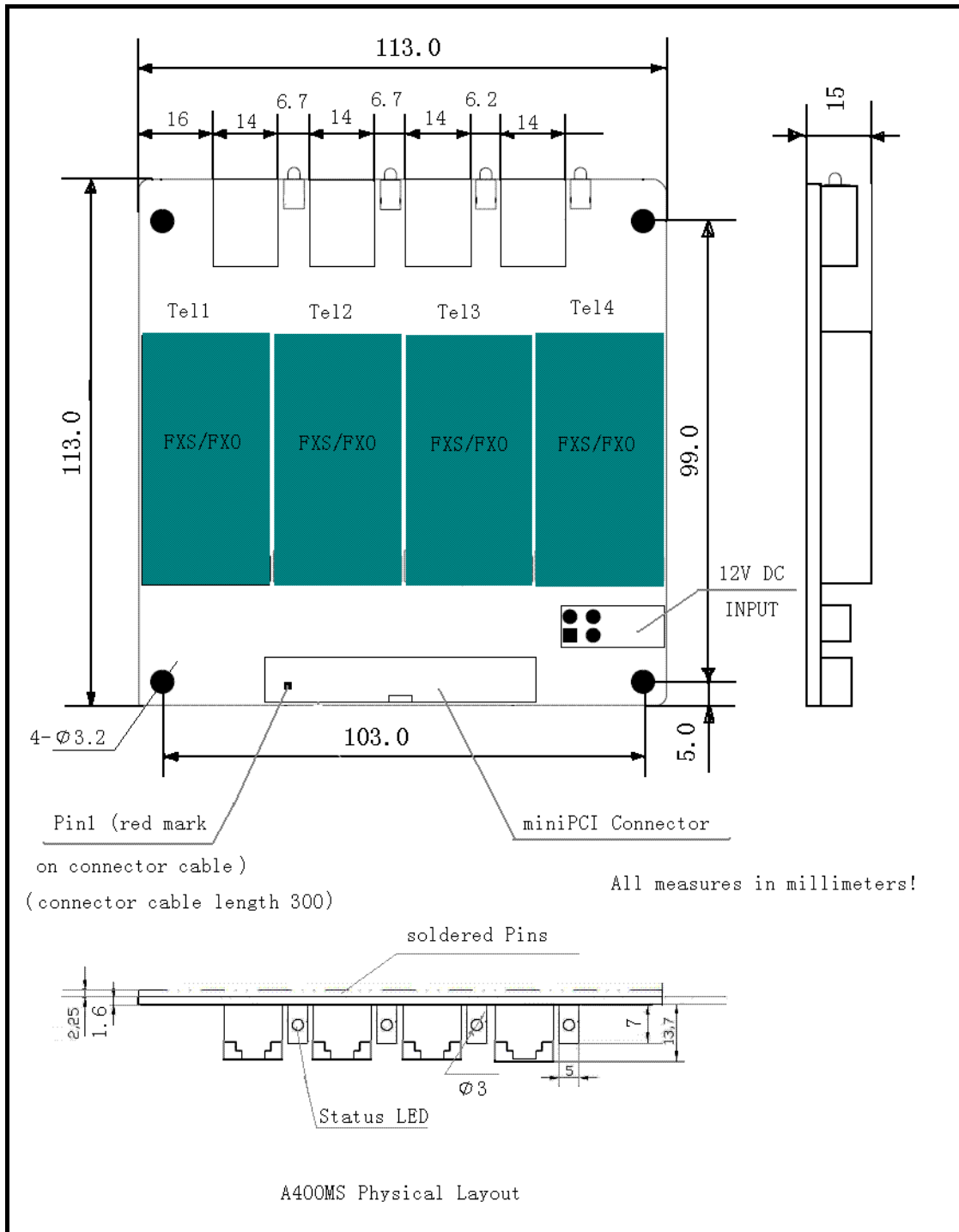
The screenshot shows the AskoziaPBX webGUI Configuration page. The top header includes the AskoziaPBX logo and the text "webGUI Configuration" and "AskoziaPBX.local". A left sidebar contains a navigation menu with categories: System, Accounts, Dialplan (print), Services, Status, and Live Stats. The main content area is titled "Interfaces: Analog" and has tabs for Network, Wireless, ISDN, and Analog. A message box states: "No compatible analog interfaces detected. If an analog interface is present but was not detected, please send [this output](#) to michael@askozia.com." Below this is a red note: "Note: fxs interfaces connect to telephones and fxo interfaces connect to provider lines. fxs interfaces produce electricity to power the telephone and fxo interfaces accept the electricity generated by the provider. Connecting a provider line to an fxs port can damage your hardware! If you are unsure which ports are fxo or fxs on your card, configure and connect your phone accounts before connecting any provider lines." The footer contains the copyright notice: "AskoziaPBX © 2007-2008 IKT. All rights reserved. [view license]"

If A400M can not be detected, you can click the colored word “this output” to check the logs.

### Chapter 3 Layout of Hardware

A400M equips three components, which are A400MM, A400MS and connector cable. When you set up the A400M, please check the three components. The layouts are given as follow:





## Hardware and Software Environments:

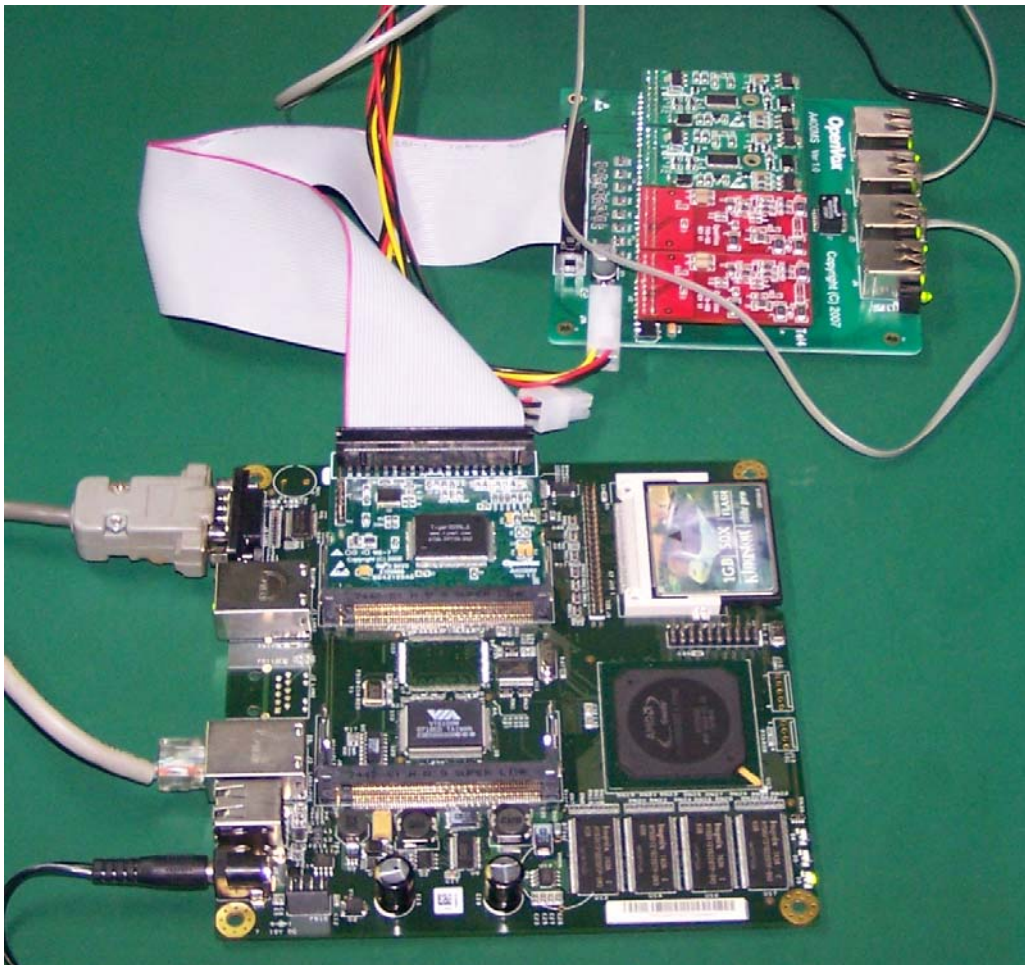
Motherboard: PC Engines alix2c2

Operating system: Askozia PBX - pb13.2

OpenVox A400M

CF card: Kingston, Size: 1 GB

### Layout of the motherboard with A400M



## References

<http://www.pcengines.ch/index.htm>

<http://www.askozia.com/>

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

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