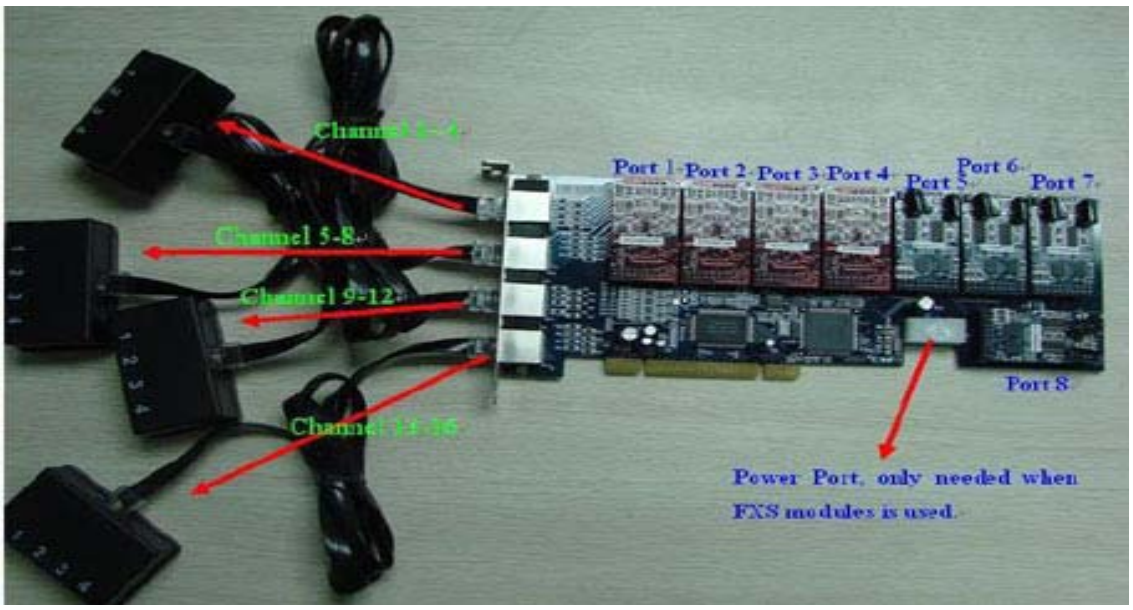
Install Guide

Allvoip AV58 AV516



Chapter1 Product Description

AV516 is an asterisk PCI card support 8 or 16 analog ports, There are eight module interfaces in the AV516 mother board. It supports below modules:

FXO single FXO module
FXS single FXS module
FXO dual FXO module
FXS dual FXS module

To install the AV516 in your system, you just need to copy wctdm.c file with the one.
You can download it from our website,it's name wctdm.c.v.1.4.txt.
The following is the installation method in detail.

How to install the AV516 in asterisk version 1.4.X

1、 Hardware Installation and Setup

1) In this instance we use the FXO and FXS in the mother board. We put six FXO dual FXO modules on slot 1~6 and two FXS dual FXS modules on slot 7~8.

In these configuration, the Channel 1~12 are set as FXO channels and the Channel 13~16 are set FXS channels.

2) Power off your PC, and unplug the AC power cable

3) Insert AV516 into a 3.3V or 5.0V PCI slot

4) Because our used PCI card have FXS modules, So please plugging the power supply cable into AV516. If your PCI card haven't FXS module, you can not plugging the power cable.

5) Plug back the AC power cable and power on PC.

2、 Software Installation and Setup

1) Checking the AV516 hardware by command: lspci –vvvv you can see the follow info

```
00:1f.3 SMBus: Intel Corporation 82801G (ICH7 Family) SMBus Controller (rev 01)
        Subsystem: Intel Corporation Unknown device 464c
        Flags: medium devsel, IRQ 185
        I/O ports at 3000 [size=32]

01:00.0 Ethernet controller: Realtek Semiconductor Co., Ltd. RTL8111/8168B PCI Express Gigabit Ethernet controller (rev 02)
        Subsystem: Unknown device 8680:0100
        Flags: bus master, fast devsel, latency 0, IRQ 50
        I/O ports at 2000 [size=256]
        Memory at 50200000 (64-bit, non-prefetchable) [size=4K]
        Memory at 50000000 (64-bit, prefetchable) [size=64K]
        Expansion ROM at 50020000 [disabled] [size=128K]
        Capabilities: [40] Power Management version 3
        Capabilities: [50] Message Signalled Interrupts: 64bit+ Queue=0/0 Enable+
        Capabilities: [70] Express Endpoint IRQ 1
        Capabilities: [b0] MSI-X: Enable- Mask- TabSize=2
        Capabilities: [d0] Vital Product Data
        Capabilities: [100] Advanced Error Reporting
        Capabilities: [140] Virtual Channel
        Capabilities: [160] Device Serial Number 00-e0-4c-68-00-00-00-01

04:00.0 Communication controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface
        Subsystem: Unknown device b1d9:0003
        Flags: bus master, medium devsel, latency 32, IRQ 58
        I/O ports at 1000 [size=256]
        Memory at 50100000 (32-bit, non-prefetchable) [size=4K]
        Capabilities: [40] Power Management version 2
```

Figure 1

2) Install supporting Packages

To install AV516, user needs install the following package before compiling asterisk and zaptel driver:

- **kernel-devel** (yum –y install kernel-devel) or (apt-get install kernel-devel)
- **zlib** (yum –y install zlib) or (apt-get install zlib)
- **zib-devel** (yum –y install zlib-devell) or (apt-get install zlib-devel)
- **openssl** (yum –y install openssl) or (apt-get install openssl)
- **openssl-devel** (yum –y install openssl-devel) or (apt-get install openssl-devel)

3) Download zaptel and asterisk

You can download the source code from asterisk.org, Unzip those packages under /usr/src.

wget http://downloads.digium.com/pub/zaptel/releases/zaptel-1.4.12.tar.gz

4) Compile zaptel-1.4.X and asterisk-1.4.X

Under /usr/src, execute the commands:

```
tar –zxvf zaptel-1.4.X.tar.gz
cd zaptel-1.4.X
```

Replace the wctdm.c file with the one .

```
wget http://www.zycoo.com/downloads/wctdm.c.v1.4.txt
mv wctdm.c.v1.4.txt wctdm.c
./configure
make clean
make
make install
make config

tar –zxvf asterisk-1.4.X.tar.gz
cd asterisk-1.4.X
./configure
make
make install
make samples
```

If you set port1~port10 is FXO modules, port11~port16 is FXS modules on AV516. Please

edit /etc/zaptel.conf file, like the follow example file:

```
# Span 1: WCTDM/0 "Wildcard S400P Prototype Board 1" (MASTER)
fxsks=1
fxsks=2
fxsks=3
fxsks=4
fxsks=5
fxsks=6
fxsks=7
fxsks=8
fxsks=9
fxsks=10
fxoks=11
fxoks=12
fxoks=13
fxoks=14
fxoks=15
fxoks=16

# Global data

loadzone        = us
defaultzone     = us
```

After load zaptle, driver and run asterisk system, you executes:

modprobe zaptel

modprobe wctdm

At this time, the status light of AV516 will be light.

genzaptelconf

ztcfg

ztcfg –vvvvvv

After the ztcfg –vvvvvv command, you can see the follow info

```
Zaptel Version: 1.4.11
Echo Canceller: MG2
Configuration
======================


Channel map:

Channel 01: FXS Kewlstart (Default) (Slaves: 01)
Channel 02: FXS Kewlstart (Default) (Slaves: 02)
Channel 03: FXS Kewlstart (Default) (Slaves: 03)
Channel 04: FXS Kewlstart (Default) (Slaves: 04)
Channel 05: FXS Kewlstart (Default) (Slaves: 05)
Channel 06: FXS Kewlstart (Default) (Slaves: 06)
Channel 07: FXS Kewlstart (Default) (Slaves: 07)
Channel 08: FXS Kewlstart (Default) (Slaves: 08)
Channel 09: FXS Kewlstart (Default) (Slaves: 09)
Channel 10: FXS Kewlstart (Default) (Slaves: 10)
Channel 11: FXO Kewlstart (Default) (Slaves: 11)
Channel 12: FXO Kewlstart (Default) (Slaves: 12)
Channel 13: FXO Kewlstart (Default) (Slaves: 13)
Channel 14: FXO Kewlstart (Default) (Slaves: 14)
Channel 15: FXO Kewlstart (Default) (Slaves: 15)
Channel 16: FXO Kewlstart (Default) (Slaves: 16)

16 channels to configure.
```

5) Start asterisk

Before starting asterisk, please configure Zapata.conf under document /etc/asterisk.

```
channel => 13
callerid=
mailbox=
group=
context=default

;;; line="14 WCTDM/0/13 FXOKS"
signalling=fxo_ks
callerid="Channel 14" <6014>
mailbox=6014
group=5
context=from-internal
channel => 14
callerid=
mailbox=
group=
context=default

;;; line="15 WCTDM/0/14 FXOKS"
signalling=fxo_ks
callerid="Channel 15" <6015>
mailbox=6015
group=5
context=from-internal
channel => 15
callerid=
mailbox=
group=
context=default

;;; line="16 WCTDM/0/15 FXOKS"
signalling=fxo_ks
callerid="Channel 16" <6016>
mailbox=6016
group=5
context=from-internal
channel => 16
callerid=
mailbox=
group=
context=default
```

3. Please edit the extensions.conf file, make sure that there is a context called from-pstn and from-internal. Like follow the example:

```
[from-pstn]
exten => s,1,Dial(zap/1)
exten => s,2,Hangup
[from-internal]
exten => _X.,1,Dial(sip/${EXTEN})
exten => _X.,2,Hangup
```

4. After starting asterisk, you should check status of zap channels first

Use command:

asterisk –vvvvvvvvvvvvvvvvgr

login to asterisk CLI. Under asterisk console, run command:

zap show channels

```
  Chan Extension  Context         Language   MOH Interpret
pseudo            default                    default
     1            from-pstn                  default
     2            from-pstn                  default
     3            from-pstn                  default
     4            from-pstn                  default
     5            from-pstn                  default
     6            from-pstn                  default
     7            from-pstn                  default
     8            from-pstn                  default
     9            from-pstn                  default
    10            from-pstn                  default
    11            from-internal              default
    12            from-internal              default
    13            from-internal              default
    14            from-internal              default
    15            from-internal              default
    16            from-internal              default
```

If you can see the zap channels, which means that the zap channels are loaded

successfully. After then, you can make inbound calls and the call will be forward to FXS channel.

How to Install AV516 on Trixbox2.8 or Elastix 1.6

If you have FXS modules, please plugging the internal power supply cable of PC into AV516. If your PCI card haven't FXS module, you can not plugging the power cable.

Checking the AV516 hardware by command:

```
lspci –vvvv
```

you can see the follow info:

```
Communication controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface.
If you can not see this ,pls change another pci slot of PC to plug our card
```

To install the AV516 on Trixbox2.8,pls run from step 1,if you install the AV516 on Elastix ,pls run from step 2.

1. Install Kernel Source:

Entry the follow command

```
yum –y install kernel-devel kernel
yum –y install make
yum –y install gcc
```

2. Download the dahdi-linux, dahdi-tool:

Entry the follow command

```
cd /usr/src
wget http://downloads.digium.com/pub/telephony/dahdi-linux/dahdi-linux-current.tar.gz
wget http://downloads.digium.com/pub/telephony/dahdi-linux/dahdi-tools-current.tar.gz
```

3. Install dahdi-linux:

Entry the follow command

```
tar –zxvf dahdi-linux-current.tar.gz
cd dahdi-linux-2.2.1-rc2/drivers/dahdi/
wget http://www.zycoo.com/downloads/wctdm.c.dahdi.txt
mv wctdm.c.dahdi.txt wctdm.c
cd ../../
make
make install
```

4. Install dahdi-tools:

Entry the follow command

```
tar –zxvf dahdi-tools-current.tar.gz
cd dahdi-tools-2.2.1-rc2
./configure
make
make install
```

5. load wctdm driver

Remove the old wctdm model:

```
rmmod wctdm
```

load the new wctdm model:

modprobe wctdm

At this time, the status light of AV516 will be light.

configure asterisk

dahdi_genconf

6.load the system.conf configuration file:

dahdi_cfg

dahdi_cfg –vvvvvvvvvv

7. restart asterisk

asterisk –r

restart now

8. check the dahdi channels

asterisk –r

dahdi show channels

```
CLI> dahdi show channels
   Chan Extension  Context         Language   MOH Interpret
 pseudo            default                    default
      1            from-pstn                  default
      2            from-pstn                  default
      3            from-pstn                  default
      4            from-pstn                  default
      5            from-pstn                  default
      6            from-pstn                  default
      7            from-pstn                  default
      8            from-pstn                  default
      9            from-pstn                  default
     10            from-pstn                  default
     11            from-internal              default
     12            from-internal              default
     13            from-internal              default
     14            from-internal              default
     15            from-internal              default
     16            from-internal              default
```

How to Install AV516 on Trixbox2.6

If you have FXS modules, please plugging the internal power supply cable of PC into AV516.
If your PCI card haven't FXS module, you can not plugging the power cable.

Checking the AV516 hardware by command:

```
lspci –vvvv
```

you can see the follow info:

Communication controller: Tiger Jet Network Inc. Tiger3XX Modem/ISDN interface

If you can not see this ,pls change another pci of PC to plug our card

1.Install Kernel Source:

Entry the follow command

```
yum –y install kernel-devel kernel
yum –y install make
yum –y install gcc
reboot
```

2. Download the zaptel source.

```
wget http://downloads.digium.com/pub/zaptel/releases/zaptel-1.4.12.tar.gz
tar -zxvf zaptel-1.4.12.1.tar.gz
```

3. Install zaptel

Entry the follow command

```
cd zaptel-1.4.12.1/kernel
wget http://www.zycoo.com/downloads/wctdm.c.v1.4.txt
mv wctdm.c.v1.4.txt wctdm.c
cd ..
make
make install
make config
```

4. load wctdm driver

Remove the old wctdm model:

```
rmmod wctdm
```

load the new wctdm model:

```
modprobe wctdm
```

configure asterisk

```
genzaptelconf
```

At this time, the status light of AV516 will be light.

5.load the system.conf configuration file:

```
ztcfg
ztcfg –vvvvvvvvvv
```

6. restart asterisk

```
asterisk –r
restart now
```

For this version of Trixbox you should pay attention on the file etc/asterisk/zapata.conf it doesn't include the channel define file generated by genzaptelconf you should add this line:

#include zapata-channels.conf

7. check the zap channels

asterisk –r

zap show channels

```
Trixbox* CLI>  zap  show channels
   Chan Extension  Context         Language   MOH Interpret
 pseudo            default                    default
      1            from-pstn                  default
      2            from-pstn                  default
      3            from-pstn                  default
      4            from-pstn                  default
      5            from-pstn                  default
      6            from-pstn                  default
      7            from-pstn                  default
      8            from-pstn                  default
      9            from-pstn                  default
     10            from-pstn                  default
     11            from-internal              default
     12            from-internal              default
     13            from-internal              default
     14            from-internal              default
     15            from-internal              default
     16            from-internal              default
```

Notes:

Test environments are:

Centos-5.0 Centos-5.4

Kernel version: 2.6.18 -53.1.19.el5 , 2.6.18-92.1.22.el5 , 2.6.18-128.1.10.el5

Zaptel: 1.4.12

Dahdi: 2.2.1-rc

Asterisk: 1.4.22, 1.4.24 , 1.6.0.10

Analog Card: Allvoip AV58 , Allvoip AV58E, All Voip AV516, All Voip AV516B