

成都智科电子信息技术有限责任公司  
ZYCOO IT CO.,LTD

Zycoo-Tech Asterisk analog card

## ZA4E Install Guide



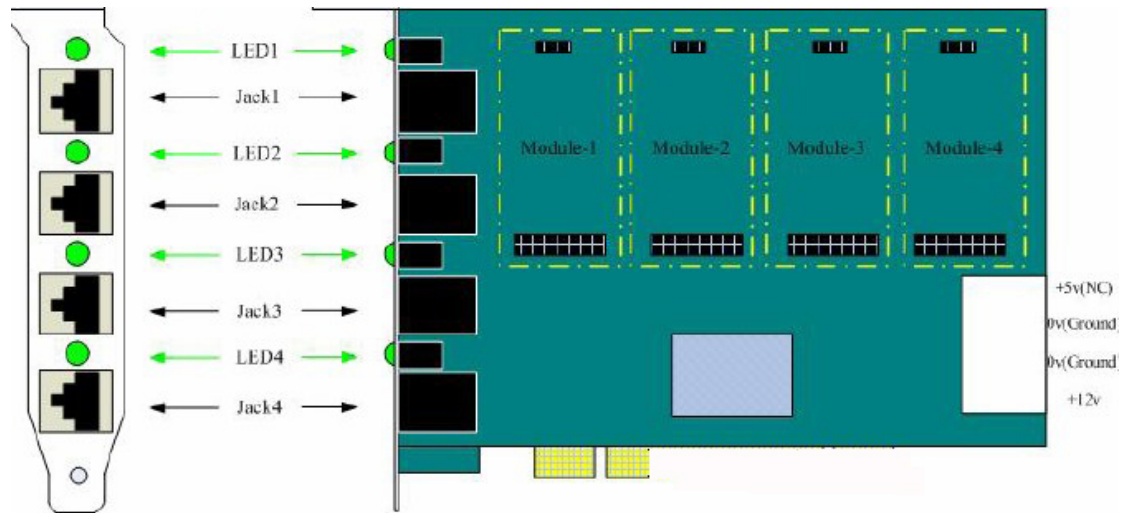
Version	Date	Editor	Description
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## Chapter1 Product Description

ZA4E is an asterisk PCI-E card support 4 analog ports. There are 4 modules interface on the ZA4E mother board. It support below modules:

- FXO-100 Single FXO module
- FXS-100 Single FXS module

The ZA4E Card Full software and hardware can the rate of compatible for Digium's AEX410 is 100%.



## Chapter2 Software Installation and Configuration

1. Hardware Installation and Setup
  - 1) Power off your PC, and unplug the AC power cable
  - 2) Insert ZA4E into a 3.3V or 5.0V PCI-E slot
  - 3) If the PCI-E card have FXS modules(the green color module), please plugging the power supply cable into ZA4E
  - 4) Plug back the AC power cable and power on PC.
2. Software Installation and Setup
  - 1) Checking the ZA4E hardware by comm and: lspci -vvvv you can see the follow

Figure 1 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 ZA4E, user needs install the following package before compiling asterisk and zaptel driver:
  - Kernel-devel
  - Zlib
  - Zlib-devel
  - Openssl
  - Openssl-devel
- 3) Download zaptel and asterisk  
You can download the source code from asterisk.org, Unzip those packages under /usr/src.
- 4) Compile zaptel-xxx and asterisk-xxx  
Under /usr/src, execute the commands:  
**cd zaptel-xxx**  
**./configure**  
**make**  
**make install**  
**make config**  
  
**cd asterisk-xxx**  
**./configure**

**make**  
**make install**  
**make samples**

if you use set port1 and port2 with FXO modules, port3 and port4 with FXS modules on ZA4E. Please edit /etc/zaptel.conf file, like the follow example file.

```
# Span 1: WCTDM/0 "Wildcard S400P Prototype Board 1"
fxsks=1
fxsks=2
fxoks=3
fxoks=4

# Global data

loadzone      = us
defaultzone   = us
```

After load zaptel, driver and run asterisk system, your executes:

**modprobe zaptel**  
**modprobe wctdm**  
**ztcfg**  
**ztcfg -vvvvvvvvvvvvvv**

After the ztcfg -vvvvvvvvvvvvvv command, you can see the follow info:

```
[root@elastix etc]# ztcfg -vvvvvvv

Zaptel Configuration
=====

Channel map:

Channel 01: FXS Kewlstart (Default) (Slaves: 01)
Channel 02: FXS Kewlstart (Default) (Slaves: 02)
Channel 03: FXO Kewlstart (Default) (Slaves: 03)
Channel 04: FXO Kewlstart (Default) (Slaves: 04)

4 channels configured.
```

## 5) Start asterisk

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

```
; Span 1: WCTDM/0 "Wildcard TDM400P REV I Board 1"
;;; line="1 WCTDM/0/0 FXSKS"
signalling=fxs_ks
callerid=asreceived
group=0
context=from-pstn
channel => 1
context=default

;;; line="2 WCTDM/0/1 FXSKS"
signalling=fxs_ks
callerid=asreceived
group=0
context=from-pstn
channel => 2
context=default

;;; line="3 WCTDM/0/2 FXOKS"
signalling=fxo_ks
callerid="Channel 3" <6003>
mailbox=6003
group=5
context=from-internal
channel => 3
callerid=
mailbox=
group=
context=default

;;; line="4 WCTDM/0/3 FXOKS"
signalling=fxo_ks
callerid="Channel 4" <6004>
mailbox=6004
group=5
context=from-internal
channel => 4
callerid=
mailbox=
group=
context=default
```

3. Please edit the extensions.conf, 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 -vvvvvvvvvvvvvgr**

login to asterisk CLI. Under asterisk console, run command: **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-internal default
 4                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.

#### Notes:

Test environments are:

Centos-5.0

Kernel version: 2.6.18 -53.1.19.el5

Zaptel: 1.4.11

Asterisk: 1.4.22

Analog Card: Zycoo ZA4E