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Preface

If you want to set up an Asterisk system based on the Synway board FXM3201P, read this file for detailed information on installation, configuration and testing.

Chapter 1 introduces the hardware and software that you need to prepare before installing Asterisk.

Chapter 2 presents the way to install CentOS Linux system.

Chapter 3 describes the automatic installation of the Dahdi and SynAST drivers.

Chapter 4 teaches you to install Asterisk step by step.

Chapter 5 gives the instruction on automatic uninstallation of Asterisk, SynAST and Dahdi.

Appendix A tells how to install the Dahdi and SynAST drivers manually.

Appendix B tells how to uninstall Asterisk, SynAST and Dahdi manually.

Appendix C gives the contact way of Synway technical support and sales department.

Although Synway has scrupulously checked through this manual, but cannot guarantee the absence of errors and omissions. We sincerely apologize for any consequent inconvenience brought to you and will be very grateful if you kindly give your advice regarding amendments to this manual.
Chapter 1 Preparation

1.1 Hardware

First you shall prepare the following items: A PC with a new HD (what we use herein is MAXSTOR, ATA/133 HDD 40GB) and a Synway FXM3201P board with two trunk modules (CH1 and CH2) and two station modules (CH3 and CH4).

1.2 Software

Make sure you have these software: CentOS 5.4 (Core: Version 2.6.18-164.el5, gcc: Version 4.1.2), asterisk-1.6.0.10, Dahdi and SynAst-1.4.0.0.

1. Six CD mirror image files of CentOS 5.4, totally about 3.7GB in size, can be downloaded from:

   http://mirrors.163.com/centos/5.4/isos/i386/CentOS-5.4-i386-bin-1of6.iso
   http://mirrors.163.com/centos/5.4/isos/i386/CentOS-5.4-i386-bin-2of6.iso
   http://mirrors.163.com/centos/5.4/isos/i386/CentOS-5.4-i386-bin-3of6.iso
   http://mirrors.163.com/centos/5.4/isos/i386/CentOS-5.4-i386-bin-4of6.iso
   http://mirrors.163.com/centos/5.4/isos/i386/CentOS-5.4-i386-bin-5of6.iso
   http://mirrors.163.com/centos/5.4/isos/i386/CentOS-5.4-i386-bin-6of6.iso

   Burn six CDs respectively with the downloaded mirror image files and leave marks on them.

2. asterisk-1.6.0.10, 22MB in size, can be downloaded from:

   http://downloads.asterisk.org/pub/telephony/asterisk/old-releases/asterisk-1.6.0.10.tar.gz

3. dahdi-linux-complete-2.2.0.2+2.2.0, about 1.8MB in size, can be downloaded from:

   http://downloads.asterisk.org/pub/telephony/dahdi-linux-complete/releases/dahdi-linux-comple te-2.2.0.2+2.2.0.tar.gz

4. SynAst-1.4.0.0, about 10 MB in size, can be downloaded from:

Chapter 2  Installation of CentOS Linux

To be simple, we use the whole HD to install with the Linux system herein and select the auto areaing method to avoid any inconvenience that the manual areaing may bring.

To install the CentOS Linux system, follow the steps below.

**Step1:** Set BIOS to boot from CD-ROM.

**Step2:** Put the first burned CD with CentOS mirror to CD-ROM and restart the system.

**Step3:** The ‘Start CentOS Installation’ menu appears on the PC screen. Click Enter to go into the graphical installation mode.

**Step4:** The dialog ‘Choose a Language’ pops up. Select the default ‘English’ and click Enter or OK.

**Step5:** In the dialog ‘Keyboard Type’, select the default ‘us’ and click Enter or OK.

**Step6:** In the dialog ‘Installation Method’, select the default ‘Local CDROM’ and click Enter or OK.

**Step7:** In the dialog for CD test, select OK.

**Step8:** Select ‘Test’ and the system starts testing CD. It needs a few seconds, please wait.

**Step9:** When the testing program is finished, click Enter or OK.

**Step10:** Now the computer enters the CentOS installation interface. Click Next.

**Step11:** Select ‘Install CentOS’ and Click Next.

**Step12:** Select ‘Remove all partitions on selected drives and create default layout’ and click Next.

**Step13:** Then you see the question ‘Are you sure you want to do this?’ Select ‘Yes’.

**Step14:** For Network setting, select the default option and click Next.

**Step15:** For Time Zone setting, select the default option and click Next.

**Step16:** Keep clicking Next until you see the page for Root Password setting. Input the root password (Remember the password. It will be used soon).

**Step17:** Go to ‘Desktop’. Select the default ‘Gnome’ and ‘Customize now’ at the bottom. Then click Next.

**Step18:** Select ‘Development’ and tick all options in the right box. Then click Next.

**Step19:** Click Next and the system starts installing CentOS 5.4.

**Step20:** A dialog pops up to prompt that you shall make the remaining five CDs ready.
Select ‘Continue’.

**Step21:** Then the system will prompt you in order to insert the 2nd, 3rd, 4th, 5th, 6th CDs. Each time you insert a CD, click OK to complete.

**Step22:** After that, click Reboot.

**Step23:** Upon reboot, enter the CentOS setup interface and click Forward.

**Step24:** Click Forward.

**Step25:** Click Forward.

**Step26:** Click Create User to establish a user account. Enter user name and password.

**Step27:** Click Sound Card and select the default option. Then click Forward.

**Step28:** Click Finish to complete the setup.

**Step29:** Use the root user name to log on the CentOS system. (Note: The password is just the one input in Step 16).

**Step30:** Check the core and gcc versions.

```
# cat /proc/version
```

Figure 1 Checking Core and gcc Versions

*Note: When the CentOS Linux is installed in some other computers, the step of CD testing may appear in the first place followed by the step to choose language.*
Chapter 3  Auto Installation of Dahdi and SynAST

3.1 Preparation

1. After you properly install the Linux system, copy the downloaded SynAst-1.4.0, dahdi-linux-complete-2.2.0.2+2.2.0 and asterisk-1.6.0.10 to the directory /opt by using a USB disk or other methods. See the figure below.

   ![Figure 2 Copying Three Files to /opt](image)

2. Make sure the network connection is available. Although you are not required to install extra network card drivers for CentOS5.4, you need to perform the IP configuration and activate the network. Go System -> Administration -> Network to set. After configuring IP, click on the Activate button to activate the network.

   Note: To install Dahdi, you need to visit the digium website to download something. Not connecting to network may cause installation failure.

3.2 Installation

1. Get installation packages.

   To install SynAST and Dahdi drivers, you need two compression packages SynAST-1.4.0.0_cn.tar.gz and dahdi-linux-complete-2.2.0.2+2.2.0.tar.gz.
2. Use the following commands to decompress these two packages.

```
# tar  –zxvf  SynAST-1.4.0.0_cn.tar.gz
# tar  -zxvf  dahdi-linux-complete-2.2.0.2+2.2.0.tar.gz
```

Then two folders SynAST-1.4.0.0_cn and dahdi-linux-complete-2.2.0.2+2.2.0 will appear.

![Interface after Dahdi Decompression](image)

3. Enter SynAST-1.4.0.0_cn to start auto installation

```
# cd  SynAST-1.4.0.0_cn
# ls
# cd for_dahdi
# ls
# ./Setup install
```
4. When you see the question ‘Would you like to install SynAST AST package now (y/n)?’, input ‘y’.

Then you see a word ‘Please enter working dahdi directory [q] (exit install) :’. Input the directory to Dahdi. Here it is /opt/dahdi-linux-complete-2.2.0.2+2.2.0.

5. Once the statement ‘Install Driver Completed’ pops up, Dahdi and SynAST drivers
are successfully installed.

6. Check if the driver modules are already loaded.

Enter the command: `# lsmod | grep fxm`. You will see the following results if they are well installed.

![Figure 6 Checking Driver Installation](image)

As long as the line of fxm32 appears, the installation is believed being installed successfully. For example, just the line `fxm32  49056 0` in the above figure has proved the proper driver installation.
Chapter 4 Asterisk Installation

4.1 Installation Procedure

Now let’s start installing Asterisk. Here you need the installation package asterisk-1.6.0.10.tar.gz which are already copied to the /opt directory.

1. First decompress Asterisk under the directory /opt.

```
# cd /opt
# ls
# tar –zxvf asterisk-1.6.0.10.tar.gz
```

![Figure 7 Decompressing Asterisk Package](image)

2. Go into the decompressed Asterisk folder. Start installing Asterisk by the following steps.

```
# cd asterisk-1.6.0.10
# ./configure
# make
# make install
# make samples
```

   # Directory to Asterisk source codes
   # Check the target feature of your installation platform
   # Compile
   # Install Asterisk
   # Install example files
Input \texttt{#/configure} and get the following results.

```
root@localhost:/opt/asterisk-1.6.0.10
[root@localhost opt]# ls
asterisk-1.6.0.10
dahdi-linux-complete-2.2.0.2+2.2.0.tar.gz
SvnAST-1.4.0.0.cn
dahdi-linux-complete-2.2.0.2+2.2.0 SvnAST-1.4.0.0.cn.tar.gz
[root@localhost opt]# cd asterisk-1.6.0.10
[root@localhost asterisk-1.6.0.10]# ./configure
```

Figure 8 Entering Asterisk Folder to Start Installation

Input \texttt{# make} and get the following results.
Figure 10 Interface upon Inputting Command make

Input `# make install` and get the following results.

Figure 11 Interface upon Inputting Command make install

Input `# make samples` and get the following results.

**Note:** Once this command is entered, example files will override the old configuration files. Users who have modified configuration files and have the system run normally with the passed modifications should pay attention to this note.
3. Start Asterisk to see if it has been installed properly.

    # asterisk -vvvc

Normally you would see the following interface.

4. Use the auto configuration tool to configure Asterisk.

    # astcfg_dahdi asterisk
5. Check the configuration result.

# dahdi_cfg -vv

**Note:** Here as this system ever has failure in auto configuration and shows 0 channel is configured, we have to restart the operating system and use the auto configuration tool to configure it again. If you meet the same problem, you can handle it in the same way.
Note: FXS (station) and FXO (trunk) shown in Figure 15 represent signalings used by channel, but not the type of channel. In fact, the actual channel type is just opposed to the signaling type shown above. Therefore, Channel 1 and Channel 2 are trunk channels while Channel 3 and Channel 4 are station channels.

'Ports are defined in the configuration by the signaling they use, as opposed to the physical type of port they are. For instance, a physical FXO port will be defined in the configuration with FXS signaling, and an FXS port will be defined with FXO signaling. This can be confusing until you understand the reasons for it. FX_ cards are named not according to what they are, but rather according to what is connected to them. An FXS card, therefore, is a card that connects to a station. Since that is so, you can see that in order to do its job, an FXS card must behave like a central office and use FXO signaling. Similarly, an FXO card connects to a central office (CO), which means it will need to behave like a station and use FXS signaling. The modem in your computer is a classic example of an FXO device.'


6. Restart Asterisk upon proper configuration.

```
# asterisk -vvvc  # Start Asterisk
```

Note: Skip this step if your system failed to perform auto configuration in the previous step and has made a success by restarting the operating system and taking auto configuration of Asterisk again. As the system will load Asterisk automatically upon restart, what you shall do is just input the command # asterisk –r to connect the Asterisk server.
4.2 Channel Status Check

# dahdi show channels

![Figure 17 Checking Channel Status](image.png)

You can see from Figure 17 that there are four channels and the number of channels is consistent with that shown by the command ‘dahdiCfg -vv’. It means channels are well configured and the configuration files are properly loaded by Asterisk.

4.3 Dial Plan Configuration

To configure dial plan is just to modify the /etc/asterisk/extensions.conf file

1. First, back up the old file /etc/asterisk/extensions.conf
   
   # mv /etc/asterisk/extensions.conf /etc/asterisk/extensions_bk.conf

2. Second, create the new file /etc/asterisk/extensions.conf

   #vim /etc/asterisk/extensions.conf

3. Then add relative content according to the following conditions.

   a) Trunk to station

   [text]
   exten => s,1,Answer();  # Call from trunk, auto pickup
   exten => s,2,Dial(DAHDI/3,50);  # Station channel 3 rings, 50 seconds overtime
   exten => s,3,Hangup();  # No answer after 50 seconds, auto hangup
b) Station to trunk

```
exten => 3000,1,Dial(DAHDI/1/8354,50); # Dial 3000 from station, Trunk Channel 1 auto
dials 8354. Also you may change it to other
PSTN number like 110.

exten => 3001,1,Dial(DAHDI/2/8354,50); # Dial 3001 from station, Trunk Channel 2 auto
dials 8354. Also you may change it to other
PSTN number like 110.
```

c) Station to station

```
exten => 100,1,Dial(DAHDI/3); # Station Channel 4 dials 100. Station Channel 3
rings.

exten => 101,1,Dial(DAHDI/4); # Station Channel 3 dials 101. Station Channel 4
rings.
```

d) To integrate all the above functions, write as follows.

```
root@d1l-201-123-114-31-dyn:/etc/asterisk
[extension]

exten => s,1,Answer(); # Call from trunk, auto pickup

exten => s,2,Dial(DAHDI/3,50); # Station Channel 3 rings, 50 seconds overtime

exten => s,3,Hangup(); # No answer after 50 seconds, auto hangup

exten => 3000,1,Dial(DAHDI/1/8354,50); # Dial 3000 from station, Trunk Channel 1 auto
dials 8354. Also you may change it to other
PSTN number like 110.

exten => 3001,1,Dial(DAHDI/2/8354,50); # Dial 3001 from station, Trunk Channel 2 auto
dials 8354. Also you may change it to other
PSTN number like 110.

exten => 100,1,Dial(DAHDI/3); # Station Channel 4 dials 100. Station Channel 3
```

4. Save the file extensions.conf and exit. Restart the Asterisk server.

Switch to the Asterisk interface and input the following commands:

CLI> stop now  # Stop Asterisk
# asterisk –vvvc  # Start Asterisk

To learn how to write the dial plan, refer to the following website.
http://www.voip-info.org/wiki/view/Asterisk+config+extensions.conf

4.4 Testing Examples

1. Creating a hardware environment

On the FXM3201P board, Channel 1 and Channel 2 are analog trunk channels and connect with two PSTN trunks; Channel 3 and Channel 4 are station channels and connect with two ordinary phones A and B.

2. Testing calls from station to station

Pick up the station phone A that is connected with Channel 3 and dial 101 upon hearing dial tones. Then the station phone B that is connected with Channel 4 rings. Pick up B to talk.

Pick up the station phone B that is connected with Channel 4 and dial 100 upon hearing dial tones. Then the station phone A that is connected with Channel 3 rings. Pick up A to talk.

3. Testing calls from station to trunk

Pick up Station A or B and dial 3000 upon hearing dial tones. Then the trunk channel 1 auto dials the number 8354. If you want it to dial other number, modify the statement exten => 3000,1,Dial(DAHDIC/1/8354,50) in the file /etc/asterisk/extensions.conf, replacing 8354 with the number you want.

Pick up Station A or B and dial 3001 upon hearing dial tones. Then the trunk channel 2 auto dials the number 8354. If you want it to dial other number, modify the statement exten => 3001,1,Dial(DAHDIC/2/8354,50) in the file /etc/asterisk/extensions.conf, replacing 8354 with the number you want.

4. Testing calls from trunk to station

Find a PSTN phone and make a call from it to the trunk channel 1 on FXM3201P. Here we dial 8353. However, you can determine the dial number according to the number your trunk channel 1 is configured to connect. The trunk channel 1 will transfer the call to the station channel 3 automatically once the call is connected. Then the station phone A rings. Pick up A to talk.
Note: Here represents only the dial plan transferring calls from trunk channel 1 to station channel 3. If you want other methods to dial from trunk to station, you can modify the dial plan on your demand.
Chapter 5  Auto Uninstall of Asterisk, SynAST and Dahdi

1. Stop Asterisk

While Asterisk is running, switch it to Asterisk terminal and execute the following command to stop Asterisk.

CLI> stop now

2. Enter the directory to Asterisk source codes to uninstall Asterisk

   # cd /opt/asterisk-1.6.0.10
   # make uninstall-all  # Remove relative services and folders

3. Enter the directory to SynAST source codes to uninstall SynAST

   # cd /opt/SynAST-1.4.0.0_cn/for_dahdi  # Enter the source code directory
   # ls
   # ./Setup remove  # Uninstall SynAST and Dahdi drivers as well as the SynAST folder

4. Remove the Dahdi directory and folder

   At present the method supported is using a new Dahdi to override the old.
Appendix A Manual Installation of Dahdi and SynAST

**Note:** This part is a substitute for Chapter 3 Auto Installation of Dahdi and SynAST.

In case the system fails to auto install Dahdi and SynAST drivers or you want to install them manually, refer to the following steps.

1. **Dahdi Installation**

   ```
   # cd /opt               # Enter the directory to the package of Dahdi source codes
   # tar –zxvf dahdi-linux-complete-2.2.0.2+2.2.0.tar.gz  # Decompress the Dahdi driver
   # cd dahdi-linux-complete-2.2.0.2+2.2.0               # Enter the directory to Dahdi source codes
   # make          # Compile the driver
   # make install  # Install the driver
   # modprobe dahdi  # Load the driver
   # lsmod |grep dahdi  # Check if the driver is successfully loaded
   ```

   1) Enter the directory to Dahdi source codes and start compiling

   ![Figure 19 Compile Dahdi Source Codes](Image)

2) Input the command: # make and get the following result
3) **Input the command:** 

```
# make install
```

and get the following result

4) **Input the commands:**

```
# modprobe dahdi

# lsmod |grep dahdi
```

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2. SynAST Installation

    # Enter the directory to the package of SynAST source codes
    # Enter the directory to SynAST source codes in Dahdi

    # Decompress the source codes
    #tar --zxvf SynAST-1.4.0.0.tar.gz

    # Copy the fxm32 driver to the Dahdi directory
    # Copy the fxm32 driver to the Dahdi directory
    #cp --rf /opt/SynAST-1.4.0.0/for_dahdi/src/fxm/fxm32
    /opt/dahdi-linux-complete-2.2.0.2+2.2.0/linux/drivers/dahdi

    # Enter the directory to SynAST source codes in Dahdi
    #cd /opt/dahdi-linux-complete-2.2.0.2+2.2.0/linux/drivers/dahdi/fxm32

Note: While using dahdi-2.2 or above versions, you should modify the file /opt/dahdi
    /linux/drivers/dahdi/fxm32/Kbuild, changing the statement EXTRA_CFLAGS :=
    -I$(src)/.. -Wno-undef -I/usr/include $(ECHOCAN) in the Kbuild file to
    EXTRA_CFLAGS := -I$(src)/.. -Wno-undef -I/usr/include $(ECHOCAN) -DDAHDI22 (Pay
    attention that there is a blank before -DDAHDI22).

    # Modify the above content in Kbuild
    #gedit Kbuild

    # Compile the driver
    #make

    # Load the driver
    #insmod fxm32.ko

    # Check if the driver is successfully loaded
    #lsmod |grep fxm
**Note:** When using other AST series boards except FXM3201P, you should refer to the table below to find the corresponding driver file and use the filename to replace the parts ‘fxm’ and ‘fxm32’ in the above commands.

<table>
<thead>
<tr>
<th>Subseries</th>
<th>Board Model</th>
<th>Directory to Source Codes</th>
<th>Driver File</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>FXM</td>
<td>FXM-8A/PCI</td>
<td>fxm8apci</td>
<td>fxm8apci.ko</td>
<td>Follow the above example.</td>
</tr>
<tr>
<td></td>
<td>FXM-16A/PCle</td>
<td>fxm16apcie</td>
<td>fxm16apcie.ko</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FXM3201P</td>
<td>fxm32</td>
<td>fxm32.ko</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FXM3201E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FXM3200P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FXM3200E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEJ</td>
<td>TEJ-1A/PCI</td>
<td>tejxapci</td>
<td>tejxapci.ko</td>
<td>Use the name of the driver file which corresponds to the board model you use to replace the parts ‘fxm’ and ‘fxm32’ in the above commands.</td>
</tr>
<tr>
<td></td>
<td>TEJ-2A/PCI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TEJ-4A/PCI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TEJ101E</td>
<td>tej21</td>
<td>tej21.ko</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TEJ201E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TEJ101P</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>TEJ100E</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>TEJ200E</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>TEJ100P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TEJ200P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDC</td>
<td>CDC-1522A/PCI</td>
<td>cdcx522apci</td>
<td>cdcx522apci.ko</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CDC-2522A/PCI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CDC-3522A/PCI</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 1) Input the command: #gedit Kbuild and add the following codes marked in red frames |
2) **Input the command**: `#make`

![Figure 23 Using gedit to Edit Kbuild Interface](image1)

![Figure 24 Interface upon Executing Command make](image2)
3) Input the command: 

```bash
# insmod fxm32.ko
```

Load the fxm32 driver

```bash
# lsmod |grep fxm
```

Check if the fxm32 driver is successfully loaded

If the interface as shown in Figure 25 shows a line `fxm32 49056 0`, the driver `fxm32.ko` is already loaded successfully.

Note: If you failed to use the `insmod` command to load the driver, you may use it to check if the driver has been loaded. In case the driver is already loaded, errors probably occur in loading the driver again by the command `insmod`.

![Figure 25 Loading and Checking fxm32 Driver](image)
Appendix B Manual Uninstall of Asterisk, SynAST and Dahdi

1. Stop Asterisk

While Asterisk is running, switch it to Asterisk terminal and execute the following command to stop Asterisk.

CLI> stop now

2. Enter the directory to Asterisk source codes to uninstall Asterisk

# cd /opt/asterisk-1.6.0.10

# make uninstall-all     # Remove relative services and folders

3. Uninstall the fxm32.ko driver

After stopping Asterisk, start installing the fxm32.ko driver.

# lsmod |grep fxm    # Check the loaded driver

# rmmod fxm32       # Uninstall the fxm32.ko driver

To check if the fxm32.ko driver is uninstalled, use the following command.

#lsmod |grep fxm32

If there is no output when you execute this command, the fxm32.ko driver is already uninstalled; or, if there is any output with fxm32, the driver is not uninstalled properly.

Note: When the driver is failed to uninstall, we suggest you restart the system and uninstall the driver again on condition that you make sure the driver is not being used. That’s because errors may occur in uninstalling fxm32 by rmmod at the time fxm32.ko is being used by the application program.

4. Uninstall the Dahdi driver
Figure 26 Load and Check fxm32 Driver

```bash
#rmmod dahdi
ERROR: Module dahdi is in use by tej21,tejxapci,fxm16apcie,fxm8apci,fxm32,dahdi_transcode
[root@localhost ~]# rmmod fxm32
[root@localhost ~]# rmmod tej21
[root@localhost ~]# rmmod tejxapci fxm16apcie
[root@localhost ~]# rmmod fxm8apci
[root@localhost ~]# rmmod dahdi_transcode
[root@localhost ~]# rmmod dahdi
```

```
#rmmod dahdi
# Uninstall the Dahdi driver. If Dahdi is using other modules, the content marked in the red frame in the above figure will appear. To uninstall these modules being used, use the following commands.

#rmmod tej21 tejxapci fxm16apcie fxm8apci fxm32  # Uninstall these modules
#rmmod cdcx522apci  # First uninstall cdcx522apci
#rmmod dahdi_transcode  # Then uninstall dahdi_transcode
#rmmod dahdi  # Finally uninstall Dahdi
```

Check if Dahdi is successfully uninstalled.

```bash
#lsmod |grep dahdi
```

If there is no output when you execute this command, the Dahdi driver is already uninstalled; or, if there is any output with Dahdi, the driver is not uninstalled properly.

5. Remove folders

*Note: To uninstall relative folders, you should do it manually by the directory created upon installation.*
Appendix C Technical/Sales Support

Thank you for choosing Synway. Please contact us should you have any inquiry regarding our products. We shall do our best to help you. However, our technicians and salesmen are mainly responsible for maintaining our boards and providing relative technical support. If there are problems about Asterisk, please keep touch with Digium Inc. for help.

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