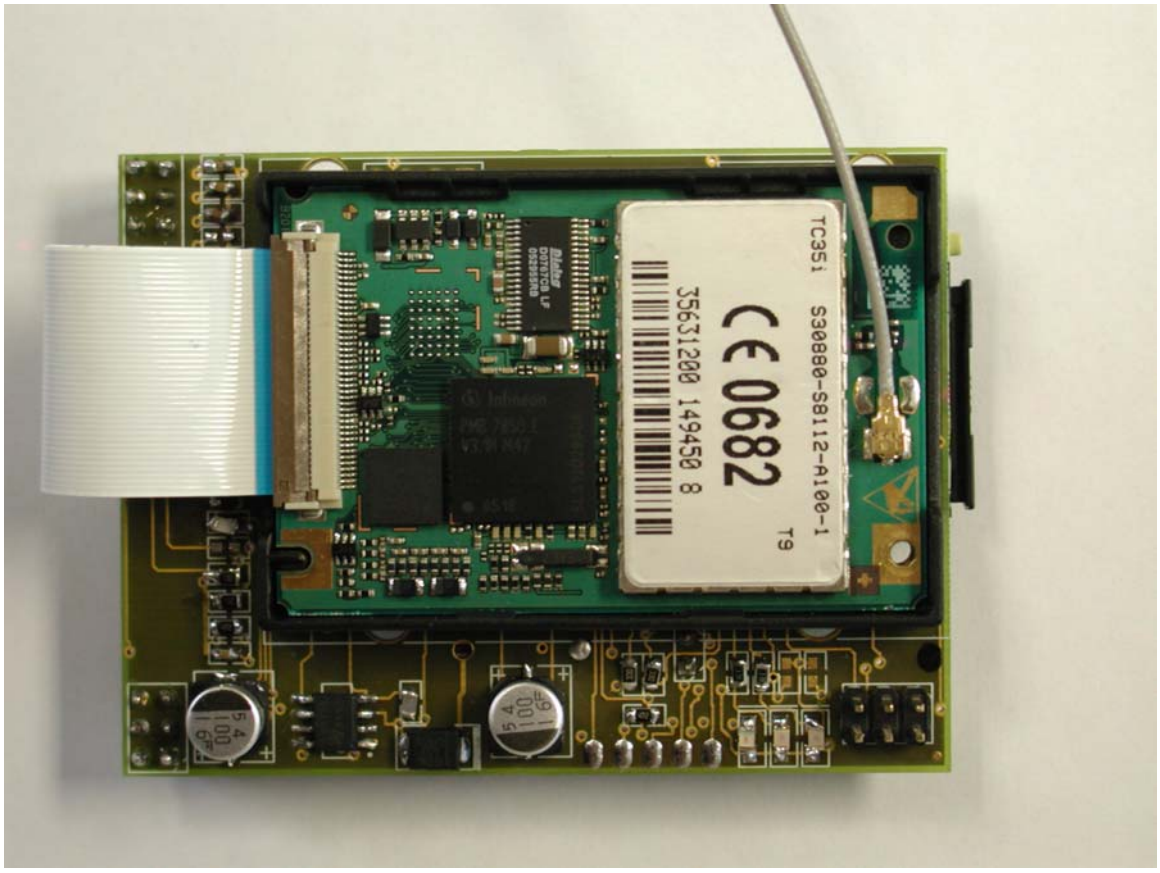
General Information

The TDM GSM module emulates a X100M FXO module utilizing the standard 'wctdm' device driver supplied with Asterisk. To allow Asterisk to make GSM module calls, simply replace your FXO modules with GSM modules.

Specifications:

- Siemens GSM Sub-System
- Internationally approved
- ARM 7 Based Module
- Dual Band GSM (900/1800Mhz)
- Supports up to 2 GSM Modules per TDM-400P PCI Card

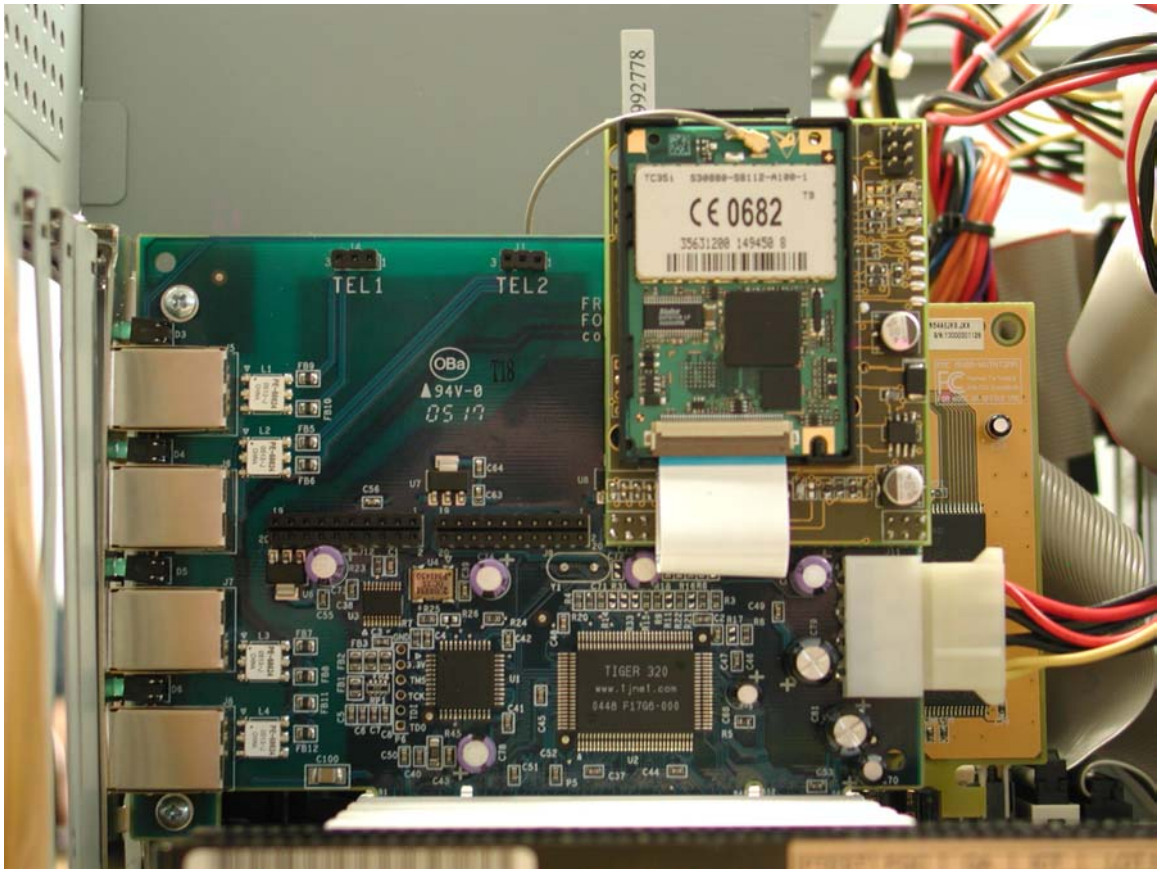


Configuration and Installation Instructions

Please follow the subsequent guide to configure and install your GSM TDM module:

- Shutdown Asterisk system
- Install one Digium X100M-FXO module in position 3 on the TDM-400P and remove all other modules from the card

- Switch on Asterisk server
- Configure Asterisk to work with this configuration
- Connect a POTS phone line and make calls, testing the dialplan as well
- Shutdown the Asterisk system
- Remove the Digium X100M-FXO module
- Install a SIM card on the TDM GSM module
- Connect the HDD PSU Connector to the TDM-400P
- Install the TDM GSM module in position 3 on the TDM-400P PCI card
- Connect the antenna to the TDM-400P module
- Switch on Asterisk server
- When Asterisk is running proceed with making calls



Warning

Due to the size of the TDM GSM module, care must be taken to ensure that it does not obstruct other hardware or the case of the Asterisk server. Always ensure that module is firmly attached when the PC has been moved.

Important

- Always ensure a qualified computer technician installs the hardware
- Ensure that the PIN code is switched off on the SIM card
- Do NOT change the SIM while the system is running

- You can install the GSM module in either the 1 or 3 position on the TDM-400P

Detecting the GSM TDM Module

To see if the Asterisk server detects the TDM module, you can execute the following function:

/usr/local/sbin/genzaptelconf

This will run through the detection system and attempt to detect any FXO modules in the system. It will report the TDM GSM module as follows:

```
 May 26 21:54:32 hubris kernel: Freshmaker version: 63
 May 26 21:54:32 hubris kernel: Freshmaker passed register test
 May 26 21:54:32 hubris kernel: Module 0: NOT                          installed
 May 26 21:54:32 hubris kernel: Module 1: NOT                          installed
 May 26 21:54:32 hubris kernel: Module 2: Installed – AUTO FXO
 May 26 21:54:32 hubris kernel: Module 3: NOT                          installed
 May 26 21:54:32 hubris kernel: Found a Wildcard TDM: Wildcard TDM400P REV E/F
(1 modules)
```

If the Asterisk fails to detect the module please see the section marked “Driver Issues”.

Diagnostic Indicators

Three diagnostic LED’s are located on the TDM GSM module and have the following diagnostic function:

	Function
GSM LED (Red)	Off – GSM Sub-System is Off 600ms On/600ms Off – No SIM Card or PIN Error 75ms On/3s Off – Logged onto GSM Network On – Call in Progress
Driver LED (Red)	On – wctdm Driver failed, possible timing issue ** Off – wctdm Driver ready
Status LED (Green)	Off – TDM GSM Module Error Flashing – Processing GSM and Driver Requests

** Please note that this indicator will only go OFF after the driver has been loaded by Asterisk. Up until this point it is normal for this indicator to be ON.

Driver Issues

In rare cases the computer may operate too fast for the TDM GSM module, as the “wctdm” driver polls the FXO card. To bypass this, please see the attached file called wctdm.c. We have marked sections of the source code where changes must be implemented. These changes should be done on your stable Asterisk installation and will effectively slow the “wctdm” driver down by 1-2 microseconds.

Please see the “__write_8bits” and “__read_8bits” functions with the “SLOW DOWN” comments. After editing these files, ensure that you perform the following rebuild:

cd /usr/local/src/zaptel

make clean
make
make install

After restarting the Asterisk, the TDM GSM will operate correctly.