

## Testing the CT840a Turntable

**Goal:** Use the `lf_chamber.pl` script to interact with chamber door sensor, lights and turntable.

The **CT840a chamber** has a Modbus interface that can provide telemetry about the the door-closed sensor, light control, and turntable control and position. In order to have access to the Modbus protocol, you need a Modbus package installed on your system. The modbus controller in these chambers is simple and does not understand IP routing. **You have to be connected on the same network as the modbus system.**

### 1. Using LANforge on Linux

2. Test your connection to the chamber with the `/home/lanforge/lf_chamber.pl` script. This will verify you can reach the modbus controller.

Available here: [https://www.candelatech.com/downloads/lf\\_chamber.pl](https://www.candelatech.com/downloads/lf_chamber.pl)

A. Source the `lanforge.profile` script:

```
$ source /home/lanforge/lanforge.profile
```

B. Use the command:

```
$ ./lf_chamber.pl --targ 192.168.100.10 --status 1
```

Expect output similar to:

```
Current-Angle: 3599 Door-Open: 0 Table-Moving: 0 Lights: 0 Fan: 1 Jog-Speed: 3 Return-Speed: 3 Absolute-Speed: 3 Jog Angle: 0
```

3. Use the `chamber-test.sh` script to test all the chamber features.

Available here: <https://www.candelatech.com/downloads/chamber-test.sh>

A. `./chamber-test.sh 192.168.3.123`

```
The desktop linux is 192.168.3.64, remember to use Alt-F2, 'mate-terminal' to get a shell.
Testing chamber at 192.168.3.123
Please close door.
Current-Angle: 3599 Door-Open: 0 Table-Moving: 0 Lights: 0 Fan: 1 Jog-Speed: 3 Return-Speed: 3 Absolute-Speed: 3
check output if door is closed: door == 1
Please open door.
Current-Angle: 3599 Door-Open: 0 Table-Moving: 0 Lights: 0 Fan: 1 Jog-Speed: 3 Return-Speed: 3 Absolute-Speed: 3
check output if door is closed: door == 0
Toggle lights
Did lights turn on?
Current clockwise angle: 3599 counter-clockwise-angle: 1 new-angle: 450
Did platform rotate 45 degrees?
Did platform rotate another 45? It should be at 90
Current clockwise angle: 2978 counter-clockwise-angle: 622 new-angle: 1
Did platform rotate back to zero?
Did fan turn on?
Toggle fan
Did fan turn off?
Toggle lights
Did lights turn off?
Current-Angle: 2700 Door-Open: 0 Table-Moving: 0 Lights: 0 Fan: 0 Jog-Speed: 3 Return-Speed: 3 Absolute-Speed: 3
You may close the chamber.
```

### 4. Using Linux without LANforge

#### 5. You will want to download

- A. LANforgeServer that matches your version of Fedora. For example, Fedora 30 would be `LANforgeServer-5.4.5_Linux-F36-x64.tar.gz`
- B. The modprobe interface script: `lf_chamber.pl`
- C. The chamber test script: `chamber-test.sh`

#### 6. Setup

: This setup is intended for versions of Fedora that LANforge has been compiled for. The version of mbpoll bundled with the Server archive is specific to the `glibc` version the Fedora distro is built with. You do not have to run the `lf_install.pl` script or use the `install.bash` script in the LANforgeServer directory.

- A. Create the following directories:

```
sudo mkdir -p /home/lanforge/local/lib
sudo mkdir -p /home/lanforge/local/bin
```
- B. Chown the directories to your current user:

```
sudo chown -R $USER: /home/lanforge
```
- C. Expand the LANforgeServer archive in /home/lanforge:

```
tar xf LANforgeServer-5.4.5_F30-x64.tar.gz
```
- D. Copy the mbpoll files to the new directories:

```
..cp -r LANforgeServer/local/lib/* /home/lanforge/local/lib,,
cp -r LANforgeServer/local/bin/mbpoll /home/lanforge/local/bin
```

## 7. Run the scripts

: These scripts require the mbpoll libraries in the **LD\_LIBRARY\_PATH**. The example below uses the address 192.168.0.3 as the address of the CT840a chamber. Please do not confuse this with the IP of the LANforge that might be in or attached to the chamber.

- A. 

```
$ export LD_LIBRARY_PATH='/home/lanforge/local/lib:/usr/lib64'
$ export PATH="/home/lanforge/local/bin:$PATH"
$ ./lf_chamber.pl --targ 192.168.0.3 --status 1
```

8.

## Using Windows without LANforge

9. Not at this time.