

ZTE MF 823 (Megafon M100-3) 4G Modem

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Device Identification

Examine the output of lsusb. You should get:

```
$ Bus 002 Device 018: ID 19d2:1405 ZTE WCDMA Technologies MSM
```

Here are the modes for this modem:

1225 - Default Mode. Available USB Mass Storage Device with CD-ROM and card reader. Corresponds to AT+ZCDRUN=9+AT+ZCDRUN=F

1403 - Operating Mode. Available RNDIS adapter and Mass Storage Device. Corresponds to AT+ZCDRUN=8+AT+ZCDRUN=F

1405 - CDC Ethernet Mode (the one we need). A mode similar to that described above (1403). Included in

Linux after starting `usb_modeswitch` c default settings.

0016 - Download Mode. Under the name of ZTE., but simply a mode where available diagnostic port and two command (analog modem port and PC UI devices Huawei). Corresponds to `AT+ZCDRUN=E`

0076 - "real" Download Mode. Includes a standard for devices running QC methods.

If your modem does not appear as 19d2:1405 (or 1403), check USB 3G Modem#Mode switching article.

Ethernet Connection Established

This modem is recognised as Ethernet interface. That means you don't need special programs to work with it.

Use NetworkManager or `dhcpcd`.

You will see that the LED (Blue - 2G/3G or Green - 4G) on modem is not blinking. To establish a connection, the following link (CGI command) should be entered in a browser:

`http://192.168.0.1/goform/goform_set_cmd_process?goformId=CONNECT_NETWORK`

To avoid entering this link every time, switch the modem to auto-connection mode:

`http://192.168.0.1/goform/goform_set_cmd_process?goformId=SET_CONNECTION_MODE&ConnectionMode=auto_dial`

If you are setting up internet using console (and therefore you have no browser), you should make request with referer, example:

```
curl --header "Referer: http://192.168.0.1/index.html" http://192.168.0.1/goform/goform_set_cmd_process?goformId=CONNECT_NETWORK
```

otherwise you'll get response `{"result":"faulure"}`

Commands

CGI command for 2G/3G/4G mode selection:

```
http://192.168.0.1/goform/goform_set_cmd_process?goformId=SET_BEARER_PREFERENCE&BearerPreference=
```

following options available after "=" sign (case-sensetive)

```
'NETWORK_auto  
'WCDMA_preferred  
'GSM_preferred  
'Only_GSM  
'Only_WCDMA  
'Only_LTE  
'WCDMA_AND_GSM  
'WCDMA_AND_LTE  
'GSM_AND_LTE
```

This should be followed by the **NETWORK CONNECT** CGI command given before.

To switch the modem to **FACTORY mode (WARNING! Unable to recieve further CGI commands, connection will be lost!)**, issue this link:

```
http://192.168.0.1/goform/goform_process?goformId=MODE_SWITCH&switchCmd=FACTORY
```

After switching to **FACTORY mode** you can issues commands via PuTTY:

```
putty /dev/ttyUSB0  
AT+ZCDRUN=8 - switch to 1403 mode (RNDIS)  
AT+ZCDRUN=9 - switch to 1225 mode (default)  
AT+ZCDRUN=F - exit DOWNLOAD mode and switch to selected mode (RNDIS or default)
```

Telnet Connection

The modem is available for telnet connection:

```
telnet 192.168.0.1
login: root
password: zte9x15
```

As you can see, the modem has Linux system inside. You can even install some ARM-base packages (mc, nano...) or change something in Web-menu. Explore it carefully!

Switch Mode in OSX

For some reason this device can get stuck in mode 0016 and fails to switch to any other mode. I was unsuccessful in trying to switch modes using usb_modeswitch and sending AT commands to /dev/ttyUSB0 on various Linux systems. I successfully managed to change modes from 0016 to 1403 using Mac OSX. I was then able to use the dongle on Linux.

In mode 0016 on OSX you will see the follow interfaces:

```
/dev/tty.ZTEUSBATPort_
/dev/tty.ZTEUSBModem_
/dev/tty.ZTEUSBDIAGPort_
```

You can switch modes to 1403 by sending AT commands to the USBModem_ port by doing:

```
screen /dev/tty.ZTEUSBModem_ 9600
>>ATI
Manufacturer: ZTE CORPORATION
Model: MF823
Revision: MF823_T03
IMEI: 866948013728723
+GCAP: +CGSM
>>AT+CREG?
+CREG: 0,1
```

```
OK
->>AT+COPS?
+COPS: 0,0,"Telstra Mobile",7
OK
->>AT+ZCDRUN=8+AT+ZCDRUN=F
exit download mode result(0:FAIL 1:SUCCESS):1
OK
```

Now the device should act as a ethernet interface no matter which system you plug it into.

See also

ZTE MF823 Modem - Linux & Serial Diags (<http://forums.whirlpool.net.au/archive/2212748>)

Gsmforum.ru - ZTE MF823 thread (in Russian), check #7 thread for unlock instructions (<http://www.gsmforum.ru/threads/188925-ZTE-MF823-%D0%B8-%D0%B2%D1%81%D1%91-%D1%87%D1%82%D0%BE-%D1%81-%D0%BD%D0%B8%D0%BC-%D1%81%D0%B2%D1%8F%D0%B7%D0%B0%D0%BD%D0%BE>)

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