

Realtek Linux USB PG Tool User Guide

1.install Linux driver

- Unzip driver/PG tool by command `tar -jxvBpf filename;`
- Compile the linux driver by make command, and create `r8152.ko/r8153.ko` file;
- Remove `CDC_ETHER` module if auto-load in linux system;
- Load the driver module created by step b;
- After installing the driver, un-plug and plug dongle (or reboot EUT), then check if the driver that USB NIC using is correct by command: `ethtool -i ethx`

for example:

`ethtool -i eth4`

driver: `r8152`

version: `v1.03.0 (2013/10/28)`

firmware-version:

bus-info: `usb-0000:00:14.0-9`









supports-statistics: `no`

supports-test: `no`

supports-eprom-access: `no`

supports-register-dump: `no`

2.Modify cfg file

 EF8153.txt	2013/10/31 10:25	文本文档	1 KB
 EF8153.cfg	2013/10/31 10:26	CFG 文件	1 KB
 EF8152b.txt	2013/10/31 10:26	文本文档	1 KB
 EF8152b.cfg	2013/10/31 10:25	CFG 文件	1 KB
 EE8153.txt	2013/10/31 10:27	文本文档	1 KB
 EE8153.cfg	2013/10/31 10:26	CFG 文件	1 KB
 EE8152b.txt	2013/10/31 10:26	文本文档	1 KB
 EE8152b.cfg	2013/10/31 10:25	CFG 文件	1 KB

EE8152b.cfg/EE8153.cfg-----configuration file for pg eeprom, when execute pg command the value will be programmed into eeprom

EE8152b.txt/ EE8153.txt -----with mac address in it, when execute pg command with `/fmac` parameter.

EF8152b.cfg/ EF8153.cfg -----configuration file for pg efuse, when execute pg command the value will be programmed into efuse

EF8152b.txt/ EF8153.txt -----with mac address in it, when execute pg command with `/fmac` parameter.

The content below is captured from cfg file(take `EF8152b.cfg` for example):

```
NODEID = 00 E0 4C 36 00 01 //mac address, will be increased automatically after Efuse/EEPORM programming.
STARTID = 00 E0 4C 36 00 01
ENDID = 00 E0 4C 36 FF FF
VID = 0B DA
PID = 81 52
//Vendor ID and Product ID for USB LAN device
//(Realtek USB driver would be failed to load if customer modify ID without approval).
```

;Do not change following parameters without Realtek approval

```

;
; 00: disable, 01: enable
LPM_BESL_EN = 00
SPI_FLASH_EN = 00
;EEPROM_EN for 8152BN Only
EEPROM_EN = 00
NO_REMOTE_WAKEUP = 00
BOS_DESC_SUPERSPEED = 00
;LED_SEL_CFG = Low-Byte High-Byte
LED_SEL_CFG = A9 3C
;Maximum string length allowed - 17 characters
MANUFACTURE = Realtek
PRODUCT = USB 10/100 LAN

```

Characteristics

- LPM_BESL_EN

RTL8152B(N) supports configuration for Link Power Management (LPM) Capability to be version 1 LPM, known as HIRD (Host Initiated Resume Duration) or advanced LPM, known as BESL (Best Effort Service Latency)

- SPI_FLASH_EN

In Windows operating system, it can load Realtek windows driver from SPI Flash(but it is not needed in linux or android OS). Set PG Tool AutoInstall capability (SPI_Flash_EN) to enable if necessary,

- EEPROM_EN

EEPROM_EN for 8152BN Only

Set EEPROM_EN to enable if external EEPROM is using.

- NO_REMOTE_WAKEUP

RTL8152(N) will not support remote wake up function when NO_REMOTE_WAKE is enabled.

- BOS_DESC_SUPERSPEED

RTL8152B(N) supports BOS_DESC_SUPERSPEED programming for USB-IF test. SuperSpeed USB device capability descriptor will appended to the BOS descriptor tree when BOS_DESC_SUPERSPEED is enabled.





- LED_SEL_CFG

LED_SEL_CFG = Low-Byte High-Byte

Customized LED configuration. Please refer to RTL8152B(N)_EEPROM_eFuse Datasheet

3. Program

There are different execute file for different CPU:

 rtunicpg-x86_64	2013/10/31 11:18	文件	664 KB
 rtunicpg-mipsel-32r2	2013/10/31 11:18	文件	819 KB
 rtunicpg-i686	2013/10/31 11:18	文件	579 KB
 rtunicpg-arm-cortex-a9	2013/10/31 11:18	文件	602 KB

Make sure execute file and configuration file are in the same path before programming.

Choose correct one to program with suitable parameter below:

/efuse

--- Programming EFUSE

Example: /efuse

/eeprom

--- Programming EEPROM

/r

--- Read EEPROM or EFuse content to standard output

/s

--- Search Realtek NIC adapters

/# NICnumber

--- Select one of Multi_NIC

If no NIC number selected, default use all NICs

Example: **/# 0**

/nodeid

--- Write EEPROM or EFuse NODEID

--- NIC number must selected

Exapmle: **/eeprom /# 0 /nodeid 00E04C360001**

Exapmle: **/efuse /# 1 /nodeid 00E04C360001**

/dump

--- dump Efuse, EEPROM or FLASH to log file

/fmac

--- Write MAC address from txt file

/nchkct

--- Bypass Check unknown content

Example: **/efuse /r /nchkct**

Example: **/eeprom /r /nchkct**

For example

1. In programming process, you can run **rtunicpg-x86_64 /s** first to search all Realtek NIC, if 2 USB NICs found below:

root@-desktop:/home/Desktop/linuxpg/new/rtunicpg# ./rtunicpg-x86_64 /s

* **RTUNicPG - EFUSE/EEPROM/FLASH Programming Utility for**
* **RTL8152/RTL8153 Family USB FE/GBE Network Adapter**
* **Version : v1.0.0.15-1**

* **Copyright (C) Realtek Semiconductor Corp. 2013. All Rights Reserved.**

0 eth1 VID:0BDA PID:8153 bcdDevice:3000 00:E0:4C:68:00:A2 path:1
1 eth4 VID:0BDA PID:8152 bcdDevice:2000 00:E0:4C:36:A0:1A path:2

2. Then, you can program one of them by command **./rtunicpg-x86_64 /# 0 /efuse**

3. Or read the efuse content by command **./rtunicpg-x86_64 /# 0 /efuse /r**

If show un-recognized efuse content, you can read efuse by command ./rtunicpg-x86_64 /# 0 /nchkct /efuse /r

4. Or program MAC address only by command **./rtunicpg-x86_64 /# 0 /efuse /nodeid 00E04C360001**

Notes:

1. USB Ethernet cannot work fine without programing (mac address is needed at least);
2. USB Ethernet can be programmed in windows, linux and android, we provide programming tool for each of the 3 OS;
3. In Linux and android operating system, CDC-ECM driver is enough for USB Ethernet to work , but Realtek driver is needed for programing;
4. If you want to program LED_SEL_CFG to efuse only, you can mask all the other line value by adding “;” in the front of each line except LED_SEL_CFG line;
5. All commands should be executed by root user.

The END