

Firmware Upgrade Procedure

ST1000SPEX / ST1000SPEXD2 / ST1000SPEX4

WARNING! Please be sure to read the entire firmware upgrade procedure before beginning to ensure you fully understand each step. Improperly upgrading the firmware may result in permanent damage to the card. If you are uncomfortable performing the upgrade on your own, please consult with a trained professional or contact our support department (1-800-265-1844).

1. In order to update the firmware for the RealTek chipset, the computer must be booted into DOS (FreeDOS, MS-DOS, etc.) using a DOS floppy boot disk, USB key, or CD. The upgrade utility will not work from a Windows Command Prompt.
2. Copy the files from the downloaded ZIP file onto external media, such as a floppy disk, USB key or CD that can be access from the DOS prompt. Using the same type of media as the DOS boot disk would be the best option.
3. Once the computer has loaded to a DOS prompt, insert the media that contains the download files (change the DOS prompt working directory if necessary, i.e. A:\ to B:\) and use the following command to display a list of the available chips/ports to be upgraded:

pg8168 /v

If the card is properly detected by the system, this command will provide a list of chips equal to the number of ports. Ex: ST1000SPEX4 will list 4 chips.

Port/Chip Number

```
*****
PG Mode is not assigned, default set to eeprom.

1.
This is RTL8168C
Use EEPROM
93C46 is Selected.
NODE ID: 00 E0 4C 68 C1 30 IOBASE:5000 IRQ:0B
2.
This is RTL8168C
Use EEPROM
93C46 is Selected.
NODE ID: 00 E0 4C 68 C1 61 IOBASE:4000 IRQ:0B
3.
This is RTL8168C
Use EEPROM
93C46 is Selected.
NODE ID: 00 E0 4C 68 C1 31 IOBASE:3000 IRQ:0B
4.
This is RTL8168C
Use EEPROM
93C46 is Selected.
NODE ID: 00 E0 4C 68 C1 60 IOBASE:2000 IRQ:0B
C:\>
```

4. After verifying that the chips are detected, use the following command to upgrade each chip. This command will need to be executed for each of the chips/ports.

pg8168 /manchg /# *

(where * equals the port/chip number)

Ex: For the ST1000SPEX4 the following commands will need to be executed.

pg8168 /manchg /# 1

pg8168 /manchg /# 2

pg8168 /manchg /# 3

pg8168 /manchg /# 4

If the firmware upgrade completes successfully, you should see an output similar to this:

```
* Realtek RTL8168 Family Ethernet Controller *
* Version : 2.37.0.31 *
* Copyright (C) Realtek Semiconductor Corp. 2011. All Rights Reserved. *
*****
PG Mode is not assigned, default set to eeprom.

This is RTL8168C
Use EEPROM
93C46 is Selected.

BUS=06,DEV=00,FUN=00 IOAddr=5000
Programming the following data to EEPROM:
29 81 EC 10 68 81 EC 10 23 01 04 01 0C 62 00 E0
4C 68 00 02 00 CF C3 FF 00 02 C1 8C 00 02 00 00
11 3C 07 00 10 20 76 00 63 01 01 FF 00 27 AA 03
02 20 66 25 80 02 00 20 10 00 21 00 10 00 21 3F
00 00 00 61 42 55 80 00 20 00 E0 00 68 4C 00 00
07 00 00 00 9E 72 B5 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
VERIFY EEPROM by Serial Clock SUCCEEDED !
NodeID = 00 E0 4C 68 00 02

C:\>pg8168 /manchg /# 2
```