

Compex Board NAND Flash Issue

(Created BY Tian Yee, 25th Nov, 2010, V1.04)

Issue Noted:

1. NAND Flash corrupted.
2. Cannot load firmware.
3. Firmware Kernel Panic
4. CRC Error

Cause/Reason:

NAND Flash accumulated bad sectors after many times of uploading and downloading.

How to solve the issue:

A new loader to clear off all the bad sectors need to be uploaded to the board, and then sectors need to be cleared and rebuilt. The loader automatically re-partitioned the NAND flash if error is detected.

1. Download zMylo_25thNov.bin onto the board
 - a) Enter into the loader mode by pressing “Esc” when it is loading on the Serial Console
 - b) Select Update Flash (Binary Mode) - Press 5
 - c) Select Update BIOS – Press 1
 - d) TFTP in the loader (zMylo_25thNov.bin) into the loader.
 - e) Once it is completed, REBOOT the router by pressing “Esc”, “Esc”, “7”

```

Main Menu
1 - Load Firmware
2 - Load Program
3 - BIOS Setup
4 - Fdisk Utility
5 - Update Flash (Binary Mode)
6 - Update Firmware (Image Mode)
7 - Reboot System
8 - Memory Test
9 - USB Flash

Please select : 5

Update Flash (Binary Mode)

1 - Update BIOS
2 - Update System Paramters
3 - Update Board Paramters
4 - Update Partition Table

Please select : 1

Update BIOS

Mini IFTP Server 1.0 (IP : 192.168.168.1)
Usage (Windows 2000/XP) :
  tftp -i 192.168.168.1 put <filename>
```

Fig 1 Update Bios

2. Initialize the NAND flash

- a) After reboot the board, select 9 – USB Flash (Refer to Fig 2)
- b) Select Init Flash – Press 2 (Refer to Fig 2)
- c) Press "y" to Continue (2 times) (Refer to Fig 3)

```
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Please select : 9

USB Flash
1 - Show Info
2 - Init Flash
3 - Boot Device
4 - USB Flash ID
5 - Init FAT System

Please select : 
```

Fig 2. Main Menu

```
USB flash size = 31 MB
WARNING: All data will be erased! Continue(Y/N)? y

After This Routine, Make Sure Reboot For 3 Times ![ Y/N ]: y

Clear Table: 0x0020 CheckSum=c0c0
Clear Table: 0x0040 CheckSum=c0c0
Clear Table: 0x0060 CheckSum=c0c0
Clear Table: 0x00A0 CheckSum=c0c0
Clear Table: 0x00C0 CheckSum=c0c0
Clear Table: 0x0300 CheckSum=c0c0
Clear Table: 0x8040 CheckSum=c0c0
Clear Table: 0xFD80 CheckSum=c0c0
>>> Rebuild Table Number: 0x0020
>>> Rebuild Table Number: 0x0040
>>> Rebuild Table Number: 0x0041
>>> Rebuild Table Number: 0x0042
>>> Rebuild Table Number: 0x0043
>>> Rebuild Table Number: 0x0044
>>> Rebuild Table Number: 0x0045
>>> Rebuild Table Number: 0x0046
>>> Rebuild Table Number: 0x0047
>>> Rebuild Table Number: 0x0048
>>> Rebuild Table Number: 0x0049
>>> Rebuild Table Number: 0x0060
>>> Rebuild Table Number: 0x00a0
>>> Rebuild Table Number: 0x0300
>>> Rebuild Table Number: 0x0301
>>> Rebuild Table Number: 0x0302
>>> Rebuild Table Number: 0x0303
>>> Rebuild Table Number: 0x0304
>>> Rebuild Table Number: 0x8040
>>> Rebuild Table Number: 0x8041
>>> Rebuild Table Number: 0x8042
>>> Rebuild Table Number: 0x8043
>>> Rebuild Table Number: 0xFD80

WARNING: Remove Power Cable And Restart The AP !
```

Fig 3. Init Flash

3. Please FOLLOW the below in STRICT order.
Step 1: Power down the device (Reboot is not sufficient. You have to POWER DOWN)
Step 2: Reboot 3 times (by pressing “Esc”, “7”)
4. After the below appears, the procedure is successfully completed.

```
Device 0: Vendor: Generic Prod.: USB Flash Drive Rev: 1.00
          Type: Removable Hard Disk
          Capacity: 31.5 MB = 0.0 GB (64576 x 512)
Partition 1: Filesystem: FAT16 "myloader"
Partition 1: start 16, active 0x80, type 0x06, size 32768
4 sector/s per cluster, 1 reserved sector/s, volume total 32768 sectors.
32 sectors per FAT, first FAT at sector #17, root dir at #81.
512 root dir entries, data area commences at sector #113.
8163 clusters (16717824 bytes) in data area, filesystem is FAT16.
```

Fig 4. USB Nand Flash Information

Notes: