

DreamPlug reflash uboot guide

- Aug 28, 2012

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1. Preparatory work

- 1.1 Computer: Installed with Fedora 14;
- 1.2 Log in computer as root user;
- 1.3 Download the windows driver for GTI JTAG Box named "CDM 2.04.16_SHEEVA";
- 1.4 Download "dream_burn_uboot_v10_Aug-28-2012.tar.gz" files;
- 1.5 Here is the download site:

<http://code.google.com/p/dreamplug/downloads/list>

2. Reflash steps

- 2.1 Run Fedora 14 OS, and open command terminal, so copy the downloaded "dream_burn_uboot_v10_Aug-28-2012.tar.gz" file to /home directory, you can rename the file to "dream_burn_uboot.tar.gz", and unzip too.

```
[root@localhost home]# ls
dream_burn_uboot.tar.gz tony
[root@localhost home]# tar -zxvf dream_burn_uboot.tar.gz
[root@localhost home]# ls
dream_burn_uboot dream_burn_uboot.tar.gz tony
```

- 2.2 Enter command:

```
# cd /home/dream_burn_uboot.
```

Go into "dream_burn_uboot" directory and you will see "testenv_install_f14.sh".

- 2.3 Enter command :

```
#!/testenv_install_f14.sh.
```

This will install the reflash environment and necessary files.

```
[root@localhost dream_burn_uboot]# ./testenv_install_f14.sh
warning: /home/dream_burn_uboot/rpm_minicom/lrzsz-0.12.20-27.fc12.i686.rpm: Header V3 RSA/SHA256 Signature, key ID 97a1071f: NOKEY
Preparing... ##### [100%]
 1:lrzsz ##### [ 50%]
 2:minicom ##### [100%]
warning: /home/dream_burn_uboot/rpm_openocd/libftdi-0.18-3.fc14.i686.rpm: Header V3 RSA/SHA256 Signature, key ID 97a1071f: NOKEY
Preparing... ##### [100%]
 1:libftdi ##### [ 50%]
 2:openocd ##### [100%]
==== Environment for DreamPlug Install Complete! ====
[root@localhost dream_burn_uboot]#
```

Get GTI JTAG box, connect 4pin uart and 8pin JTAG cables from box to Dreamplug then connect mini-USB cable from box to your linux PC's USB port.



2.4 Configure minicom on Fedora14 by giving commands below:

```
# ls /dev/tty*
```

You should see /dev/tty/USB0, or both USB0 and USB1

```
# lsusb
```

You should see ID 9e88:9e8f

If not, you may try to reconnect then connect these cables again or install the device driver once more.

Send email to service center listed on the warranty card if you still have problem with this.

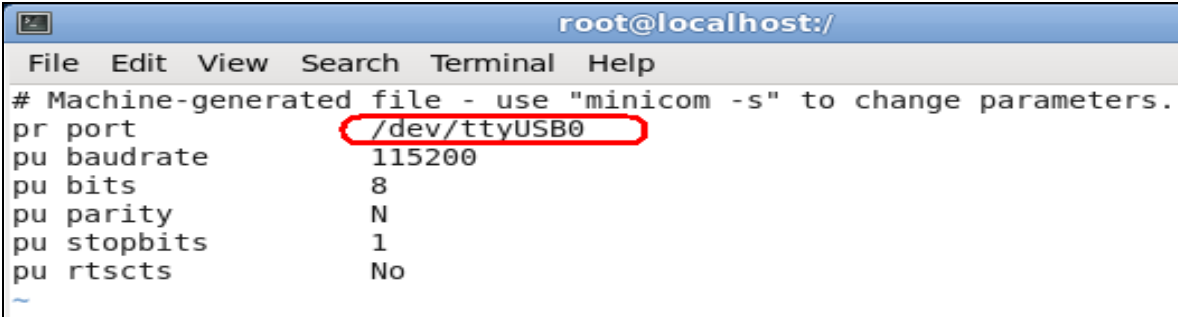
```
[root@localhost ~]# ls /dev/tty*
/dev/tty      /dev/tty19  /dev/tty3   /dev/tty40  /dev/tty51  /dev/tty62
/dev/tty0     /dev/tty2   /dev/tty30  /dev/tty41  /dev/tty52  /dev/tty63
/dev/tty1     /dev/tty20  /dev/tty31  /dev/tty42  /dev/tty53  /dev/tty7
/dev/tty10    /dev/tty21  /dev/tty32  /dev/tty43  /dev/tty54  /dev/tty8
/dev/tty11    /dev/tty22  /dev/tty33  /dev/tty44  /dev/tty55  /dev/tty9
/dev/tty12    /dev/tty23  /dev/tty34  /dev/tty45  /dev/tty56  /dev/ttyS0
/dev/tty13    /dev/tty24  /dev/tty35  /dev/tty46  /dev/tty57  /dev/ttyS1
/dev/tty14    /dev/tty25  /dev/tty36  /dev/tty47  /dev/tty58  /dev/ttyS2
/dev/tty15    /dev/tty26  /dev/tty37  /dev/tty48  /dev/tty59  /dev/ttyS3
/dev/tty16    /dev/tty27  /dev/tty38  /dev/tty49  /dev/tty6   /dev/ttyUSB0
/dev/tty17    /dev/tty28  /dev/tty39  /dev/tty5   /dev/tty60
/dev/tty18    /dev/tty29  /dev/tty4   /dev/tty50  /dev/tty61
```

```
[root@localhost /]# lsusb
Bus 002 Device 007: ID 9e88:9e8f
Bus 002 Device 002: ID 0e0f:0002 VMware, Inc. Virtual USB Hub
Bus 002 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 001 Device 004: ID 0951:1643 Kingston Technology
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
[root@localhost /]#
```

Edit the minicom configure file by entering command:

```
# vi /etc/minirc.marvell
```

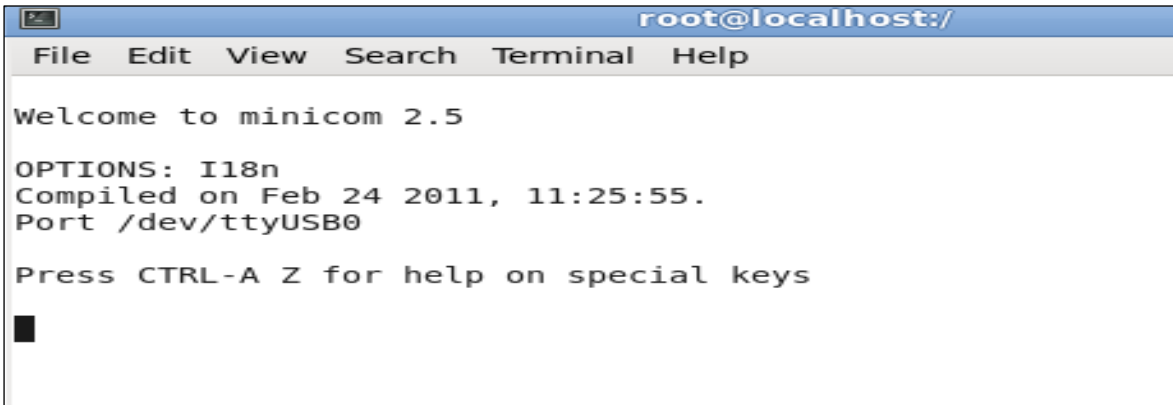
Configure as illustrated below, then save and exit:



```
root@localhost:/  
File Edit View Search Terminal Help  
# Machine-generated file - use "minicom -s" to change parameters.  
pr port /dev/ttyUSB0  
pu baudrate 115200  
pu bits 8  
pu parity N  
pu stopbits 1  
pu rtscts No  
~
```

2.5 Open minicom:

```
# minicom -o marvell
```



```
root@localhost:/  
File Edit View Search Terminal Help  
  
Welcome to minicom 2.5  
  
OPTIONS: I18n  
Compiled on Feb 24 2011, 11:25:55.  
Port /dev/ttyUSB0  
  
Press CTRL-A Z for help on special keys  
■
```

2.6 Power on Dreamplug, then you will see the running information on the minicom terminal.

Open 2nd linux terminal window, then enter commands:

```
# cd /home/sheevaplug/openocd.bin
```

```
# ./openocd -f target/board/dreamplug.cfg -c init -c dreamplug_burn_uboot
```

It will start reflashing, do not press any key before completion.

```

root@localhost:/home/dream_burn_spi/testenv/sheevaplug/openocd.binar
File Edit View Search Terminal Help
[root@localhost bin]#
[root@localhost bin]# ./openocd -f target/board/dreamplug.cfg -c init -c dreampl
ug_burn_uboot
Open On-Chip Debugger 1.0 (2009-03-08-08:14) svn:exported

BUGS? Read http://svn.berlios.de/svnroot/repos/openocd/trunk/BUGS

$URL: http://svn.berlios.de/svnroot/repos/openocd/trunk/src/openocd.c $
3000 kHz
dcc downloads are enabled
Info : JTAG tap: feroceon.cpu tap/device found: 0x20a023d3 (Manufacturer: 0x1e9,
Part: 0x0a02, Version: 0x2)
Info : JTAG Tap/device matched
Error: unknown EmbeddedICE version (comms ctrl: 0x00000018)
Warn : no telnet port specified, using default port 4444
Warn : no gdb port specified, using default port 3333
Warn : no tcl port specified, using default port 6666
target state: halted
target halted in ARM state due to debug-request, current mode: Supervisor
cpsr: 0x000000d3 pc: 0xffff0000
MMU: disabled, D-Cache: disabled, I-Cache: disabled
0 0 1 0: 00052078

```

```

root@localhost:/home/sheevaplug
File Edit View Search Terminal Help
Port /dev/ttyUSB0

Press CTRL-A Z for help on special keys

U-Boot 2011.06-02334-g8f495d9-dirty (Mar 01 2011 - 20:36:44)
Marvell-DreamPlug

SoC: Kirkwood 88F6281_A0
DRAM: 512 MiB
SF: Detected MX25L1606 with page size 256, total 1 MiB
*** Warning - bad CRC, using default environment

In: serial
Out: serial
Err: serial
Net: egiga0, egiga1
88E1121 Initialized on egiga0
88E1121 Initialized on egiga1
Hit any key to stop autoboot: 0
SF: Detected MX25L1606 with page size 256, total 1 MiB
1024 KiB MX25L1606 at 0:0 is now current device
Marvell>>

```

2.7 Reflash completed when you see the prompt below:

Marvell >>

Press reset button on Dreamplug to re-start the system, then press <enter> after boot up to abort running and you should see messages as illustrated which means the reflash of uboot was successful.

Note: It will continue running the kernel and root-fs if they exist and if you do not press enter to abort the unoot process.

```

root@localhost:/home/sheevaplug
File Edit View Search Terminal Help
Net: egiga0, egiga1
88E1121 Initialized on egiga0
88E1121 Initialized on egiga1
Hit any key to stop autoboot: 0
SF: Detected MX25L1606 with page size 256, total 1 MiB
1024 KiB MX25L1606 at 0:0 is now current device
Marvell>>
U-Boot 2011.06 (Oct 15 2011 - 02:02:08)
Marvell-DreamPlug

SoC: Kirkwood 88F6281_A0
DRAM: 512 MiB
SF: Detected MX25L1606 with page size 256, total 1 MiB
*** Warning - bad CRC, using default environment

In: serial
Out: serial
Err: serial
Net: egiga0, egiga1
88E1121 Initialized on egiga0
88E1121 Initialized on egiga1
Hit any key to stop autoboot: 0
Marvell>>

```

3. Possible issues & solutions

3.1 Q 1: How to open or exit minicom?

Open: Enter command: #minicom -o marvell

Exit: Push down "Ctrl+A", then press "Q" button under the minicom window, choose "YES" on the popup talking box as follows, enter:

```

+-----+
| Leave without reset? |
|  Yes      No        |
+-----+

```

3.2 Q 2: Cannot open minicom by giving #minicom -o marvell.

```

[root@localhost /]# minicom -o marvell
[root@localhost /]#

```

Following the step 2.4 to settle.

3.3 Q3: Error happened as below while reflashing uboot.

```

root@localhost:/home/sheevaplug/openocd.binaries/bin
File Edit View Search Terminal Help
[root@localhost bin]# ./openocd -f target/board/sheevaplug.cfg -c init -c sheeva
plug_reflash_uboot
Open On-Chip Debugger 1.0 (2009-03-08-08:14) svn:exported

BUGS? Read http://svn.berlios.de/svnroot/repos/openocd/trunk/BUGS

$URL: http://svn.berlios.de/svnroot/repos/openocd/trunk/src/openocd.c $
3000 kHz
dcc downloads are enabled
Info : JTAG tap: feroceon.cpu tap/device found: 0xfc0000e3 (Manufacturer: 0x071,
Part: 0xc000, Version: 0xf)
Error: JTAG tap: feroceon.cpu got: 0xfc0000e3 (mfg: 0x071, part: 0xc
000, ver: 0xf)
Error: JTAG tap: feroceon.cpu expected 1 of 1: 0x20a023d3 (mfg: 0x1e9, part: 0x0
a02, ver: 0x2)
Error: trying to validate configured JTAG chain anyway...
Warn : TAP feroceon.cpu:
Warn : value captured during scan didn't pass the requested check:
Warn : captured: 0x00 check_value: 0x01 check_mask: 0x0f
Warn : in_handler: w/o "in_value", mismatch in SIR
Warn : no telnet port specified, using default port 4444
Warn : no gdb port specified, using default port 3333
Warn : no tcl port specified, using default port 6666
Error: Target not examined yet
Runtime error, file "target/board/sheevaplug.cfg", line 22:
[root@localhost bin]#
[root@localhost bin]#

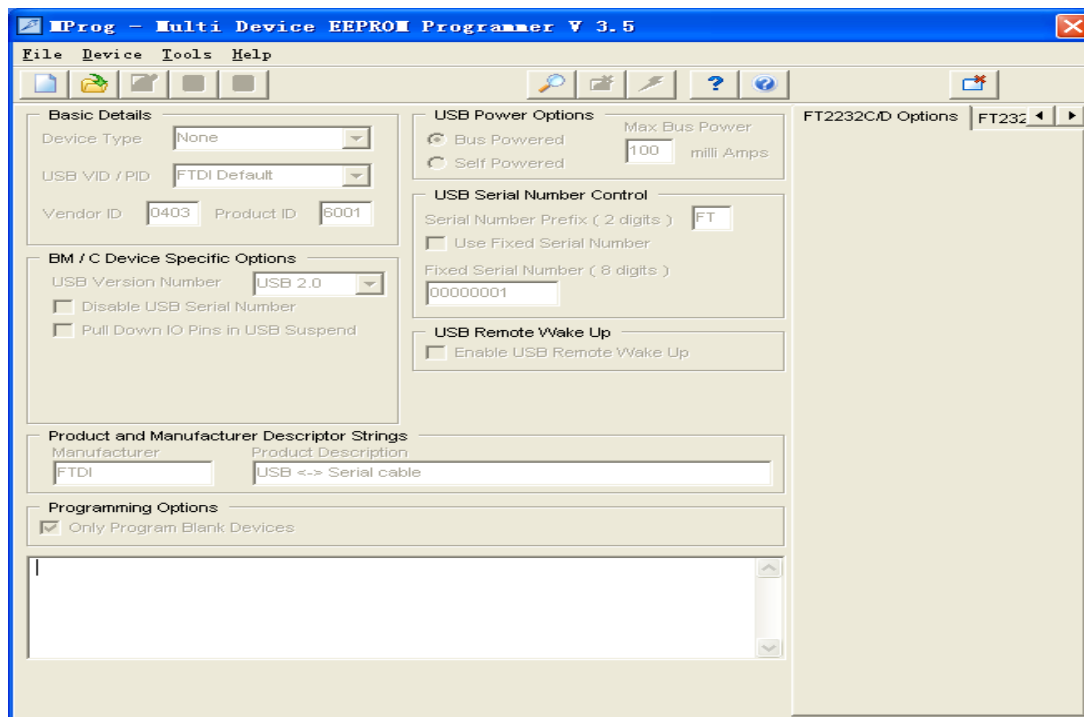
```

This means the JTAG uboot has failed, try to plug in/out the JTAG, mini USB and UART cables, if failed again, here's the procedure to re-flash the firmware of your JTAG box under windows PC:

- Run Windows PC with the driver-CDM 2.04.16_SHEEVA installed.
- Connect GTI JTAG Box, run "Mprog.exe"

Note: you can download "Mprog.exe" from the following link:

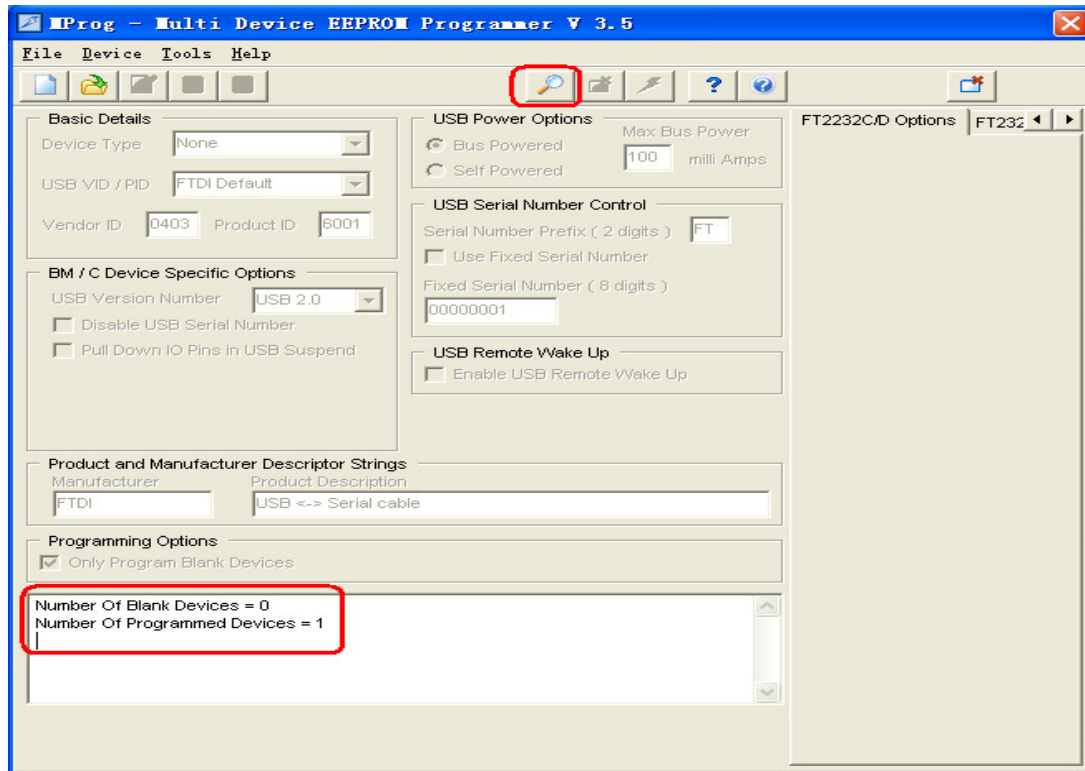
<http://code.google.com/p/dreamplug/downloads/list>



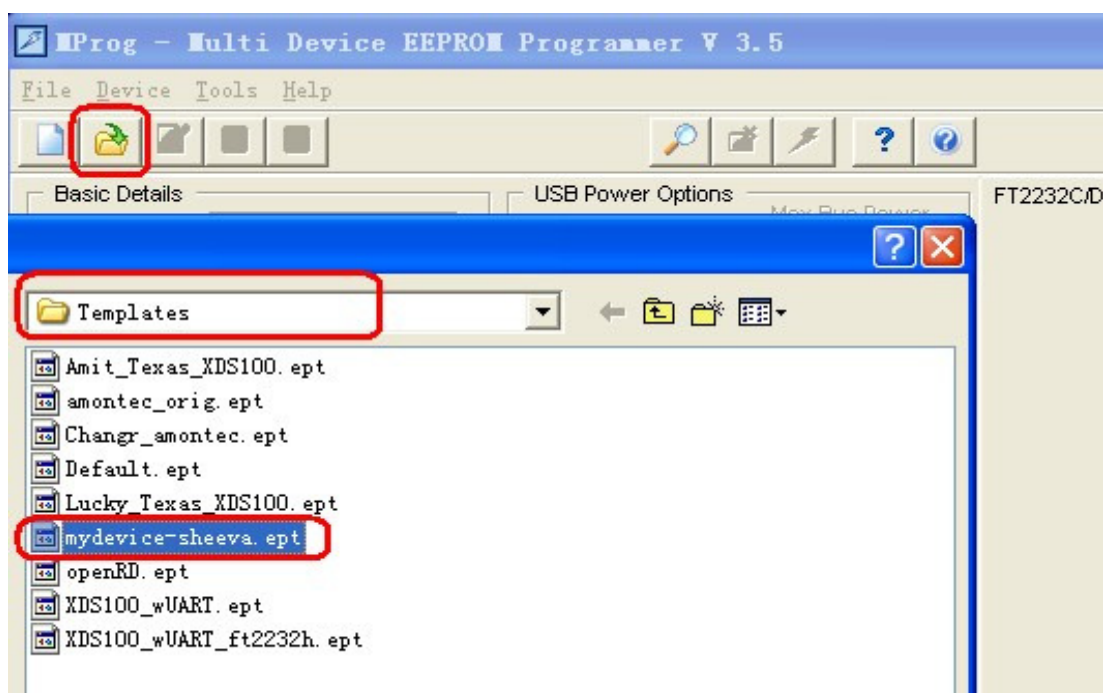
- c. Scan for Devices
- d. Click the “Scan for Available devices” button on the toolbar and you will see the following messages.

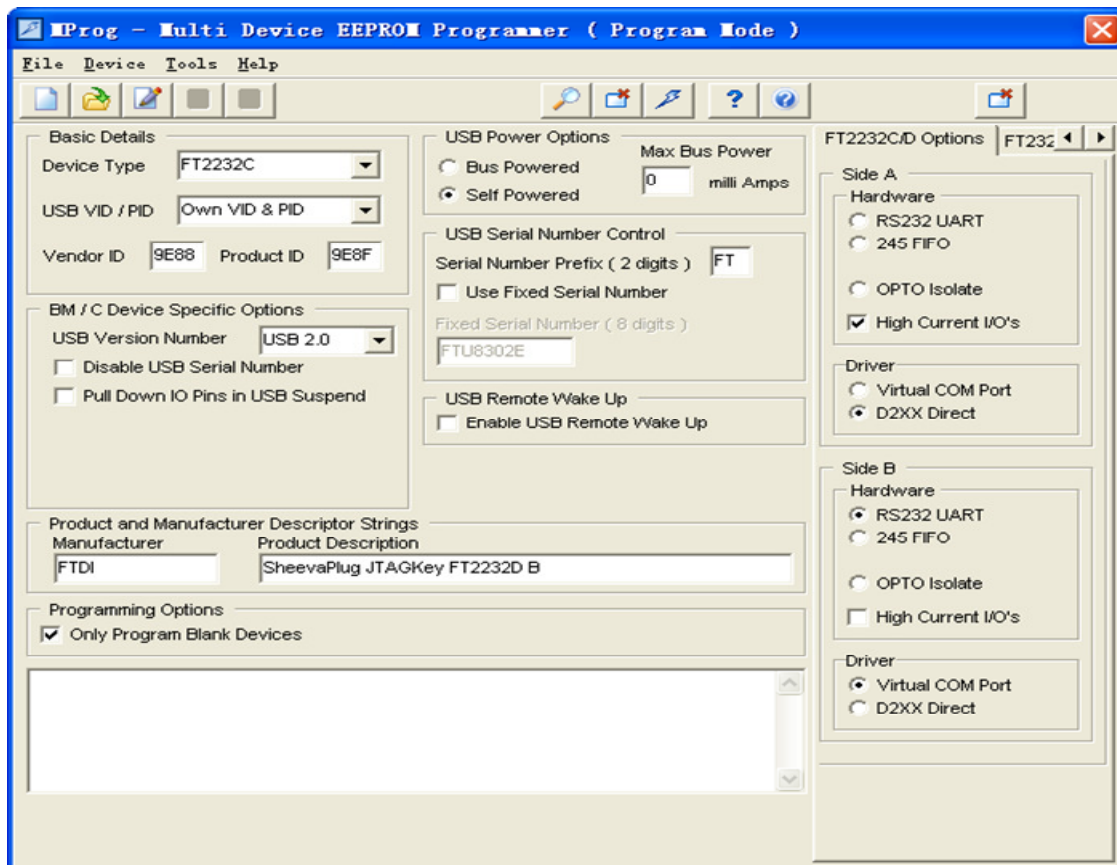
“Number Of Blank Devices = 0”

“Number Of Programmed Devices = 1”



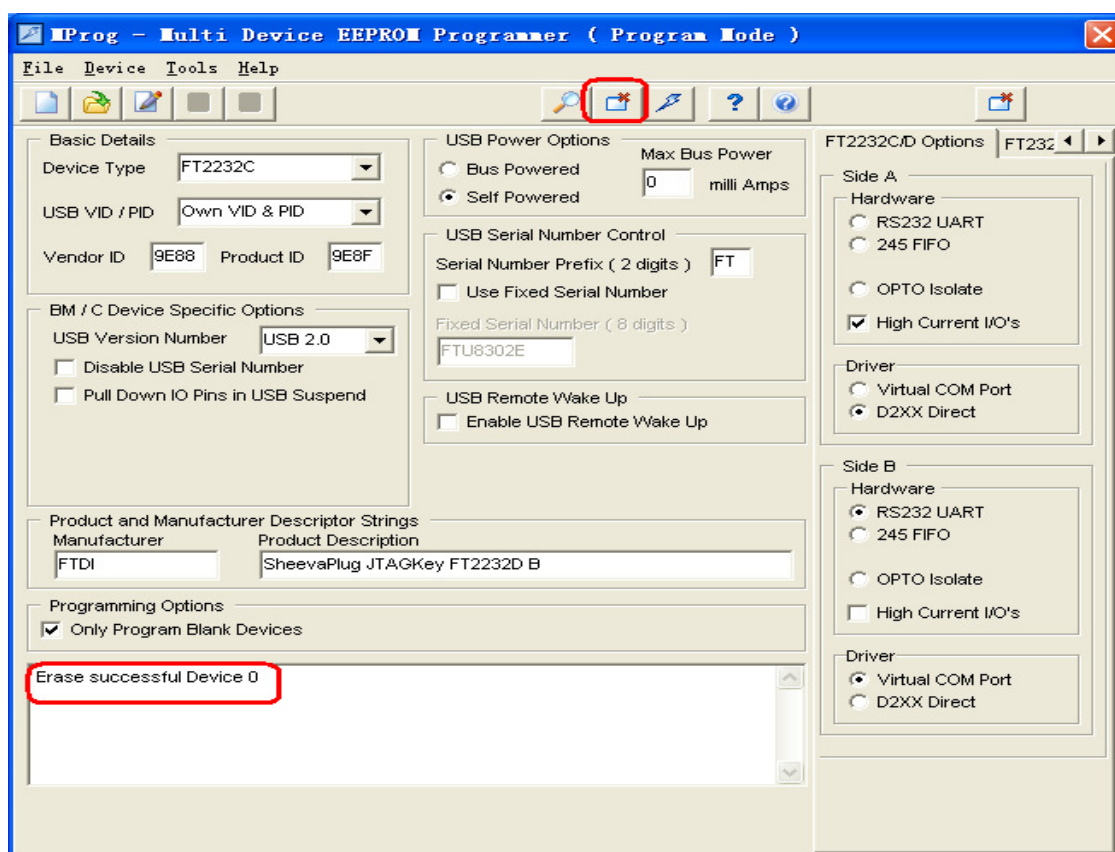
- e. Open EEPROM Program Template file
- Click the “Open Existing Programming Template” button on the toolbar, click “Templates” then select “mydevice-sheeva.ept” and click “open” as shown below.





f. Erase Existing Devices

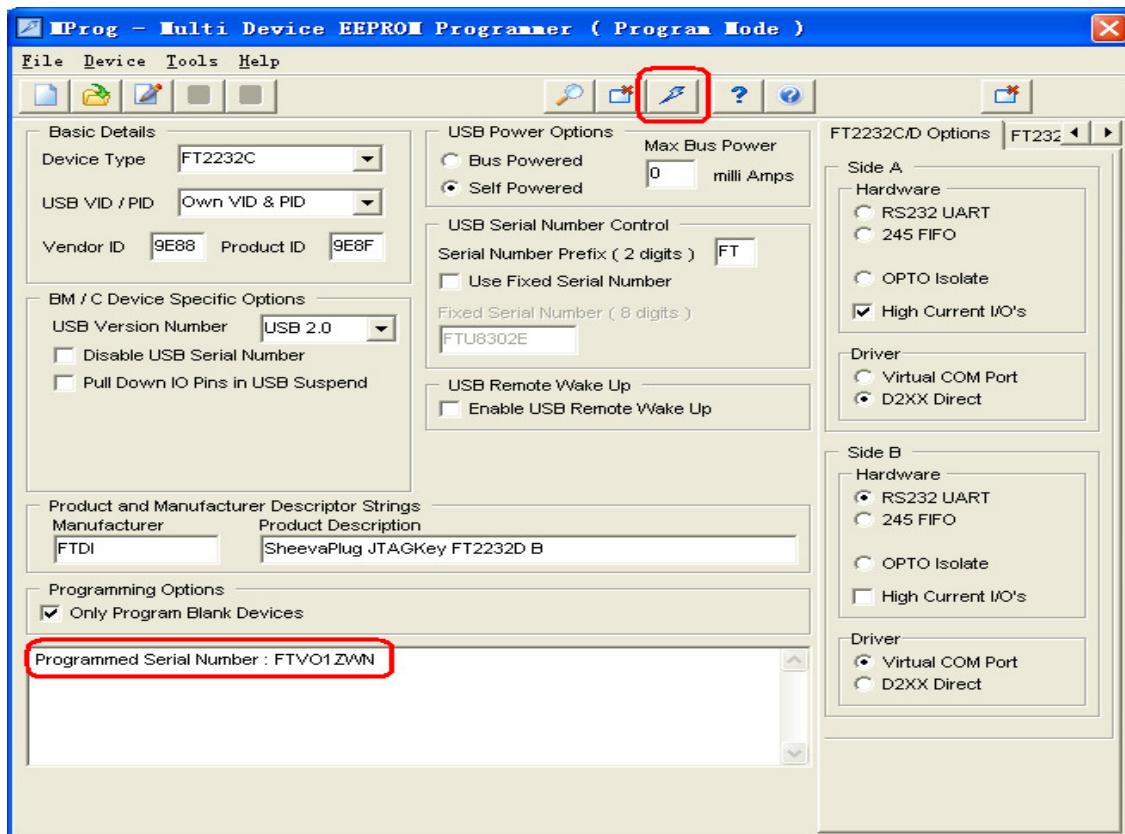
Click the “Erase All Existing Devices” button on the toolbar, we can see the info “Erase successful Device 0”:



g. Program Devices

Click the “Program All Existing Devices” button on the toolbar

You will see “Programmed Serial Number : FTVO1ZWN” when completed.



Now you may try to re-flash the Dreamplug uboot again.