1 Software - Windows Embedded Compact 7

1.1 Warning

Important! To install Windows CE, you need a null modem to follow process.

1.2 Update to the latest Windows Embedded Compact 7

Make sure you have downloaded all patches for Windows Embedded Compact 7. The Patches can be found at the Microsoft website

1.3 Get the BSP

1.3.1 Download the BSP from the web-Site

Go to www.technexion.com > Support > download Center > ARM_CPU_Modules> THB-3517; and download the THB-3517 Windows Embedded Compact 7 BSP".

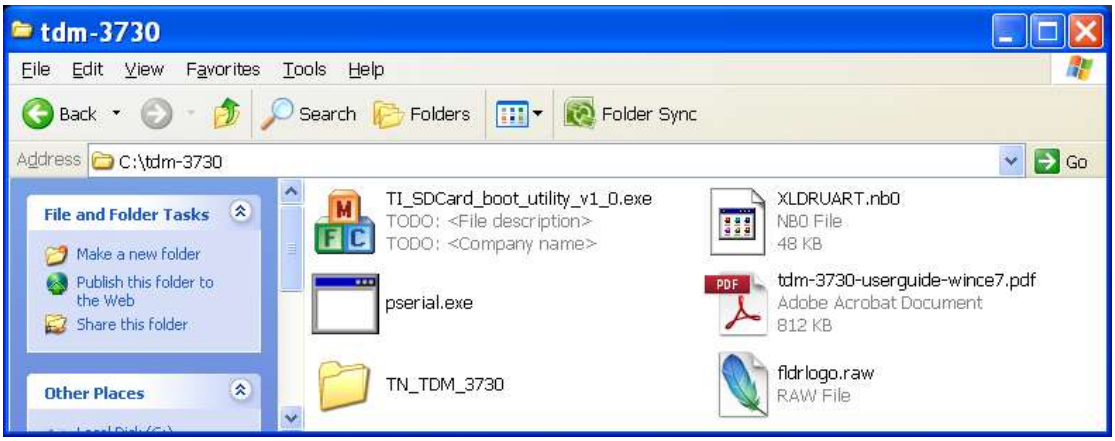


Figure 1: Decompress the downloaded file.

1.3.2 Install BSP to "Platform Builder"

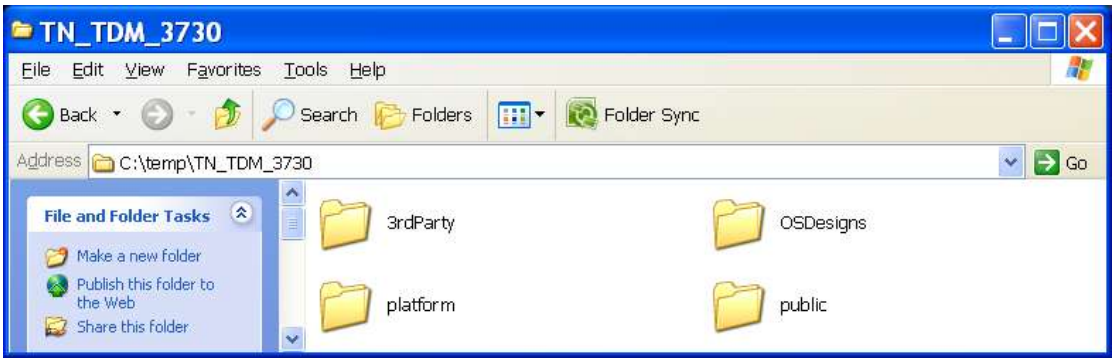


Figure 2: After entering the "TN_TAM_3517" folder, copy all folders, and paste the folders into c:\WINCE700\ (overwrite is OK)

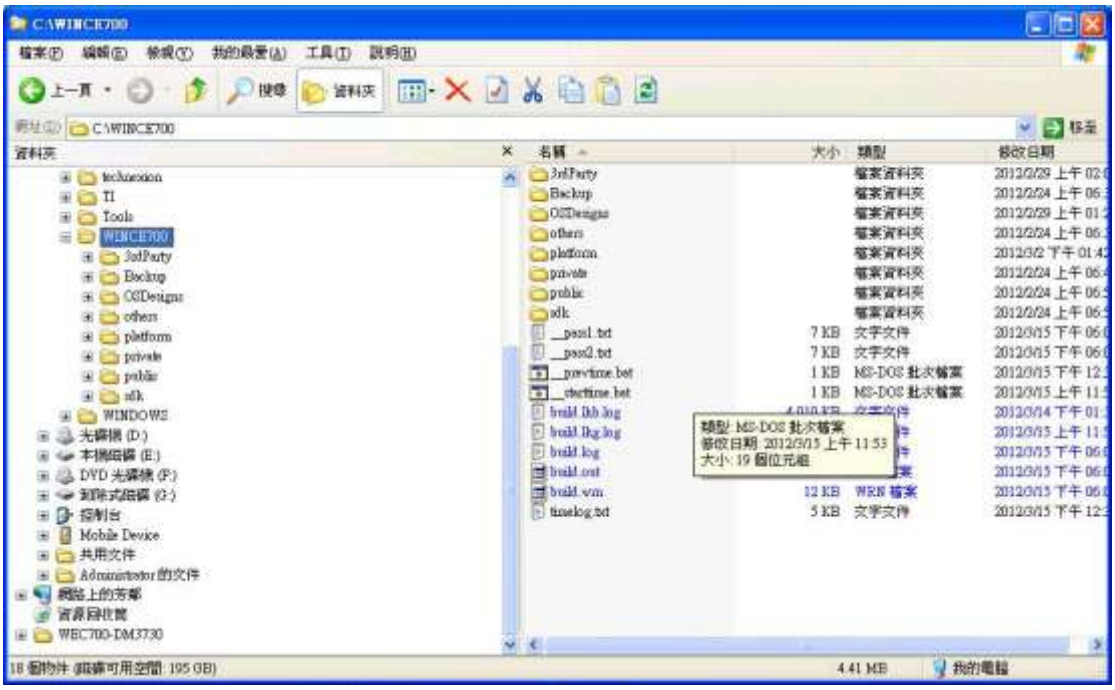


Figure 3: the folders in c:\WINCE700\

1.4 Create the files for a SD card

The following chapter describes how to create the files that will be placed on a SD card.

- Open "Microsoft Visual Studio 2008".

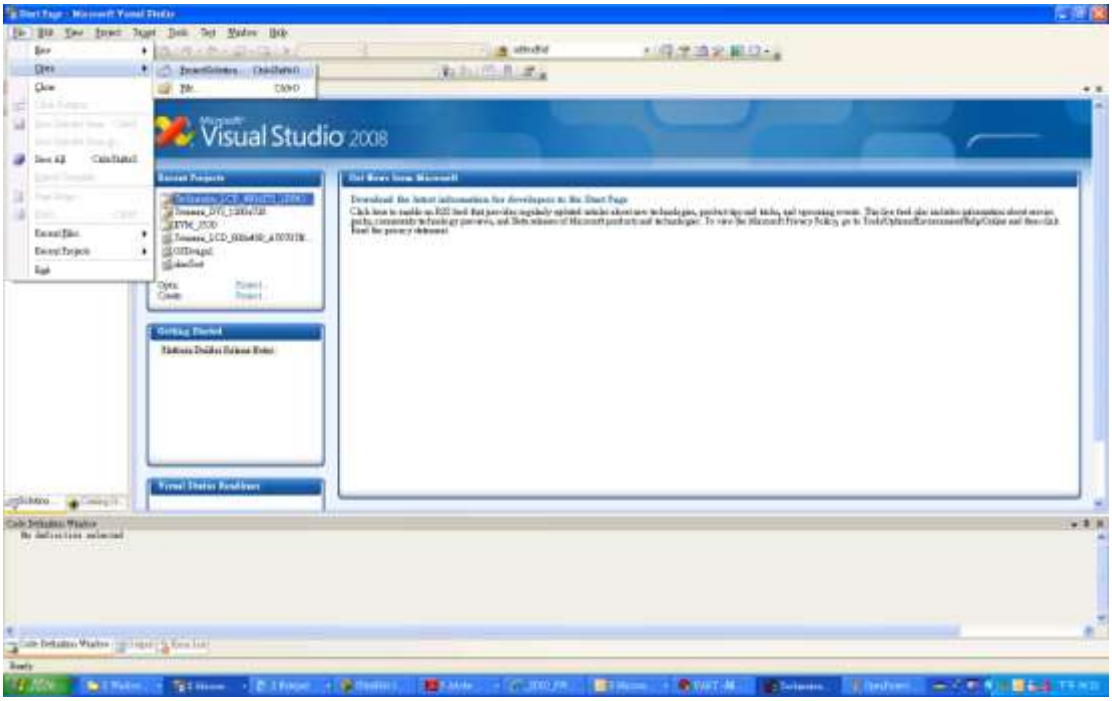


Figure 4: Click “File → Open → Project Solution”

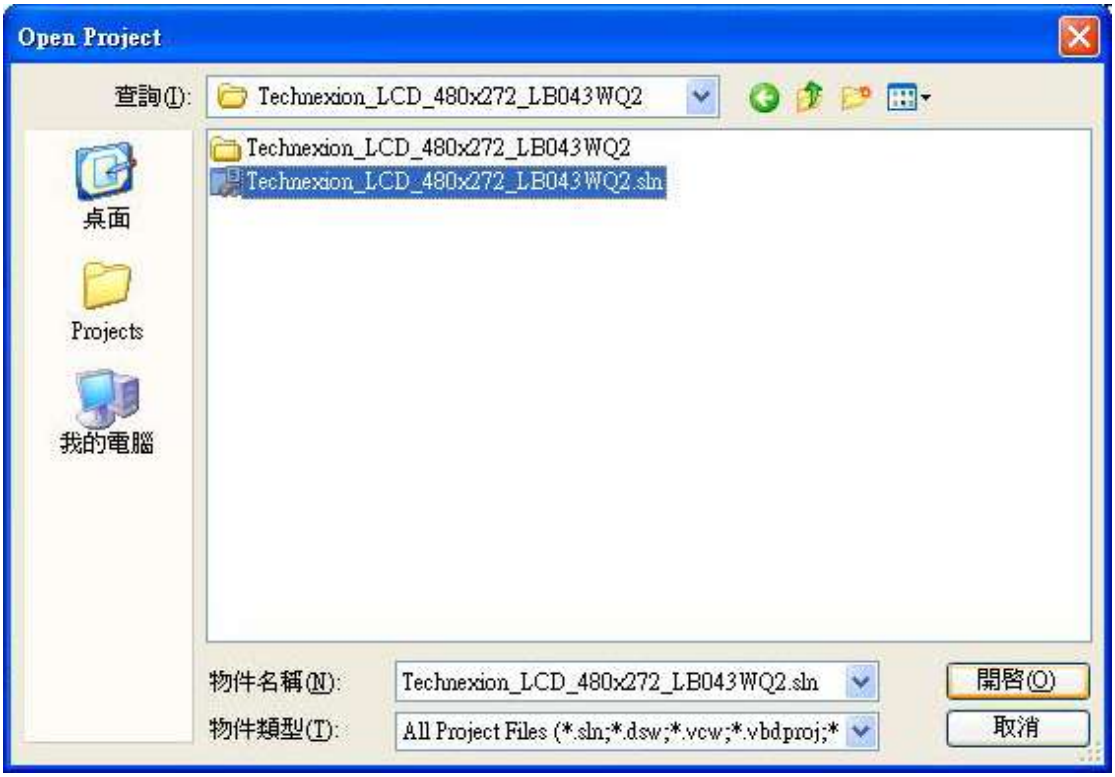


Figure 5: Go into the folder and open the SLN-file of your board (As example in this manual we use “Technexion_LCD_480x272_LB043WQ2”)

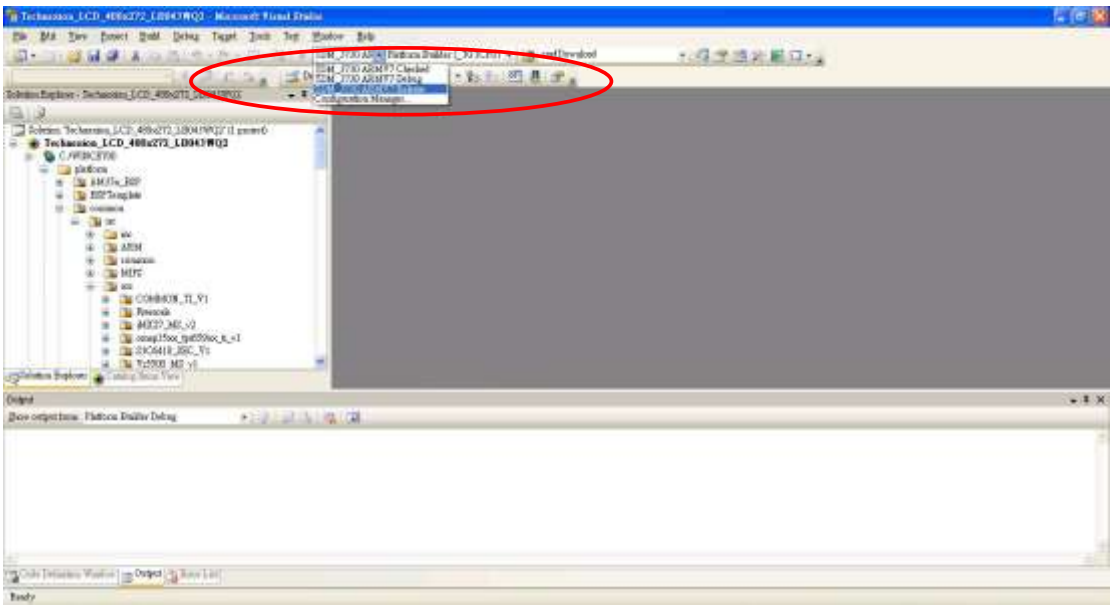


Figure 6: Before building, choose the THB-3517 ARMV7 Release mode

In the menu click “build/advanced build command/Clean Sysgen” (Figure 7) this will take approximately 30 minutes, after which you will see “build complete” (Figure 8)

Warning! Be patient: let “clean sysgen” finish, this can take up to 30 minutes

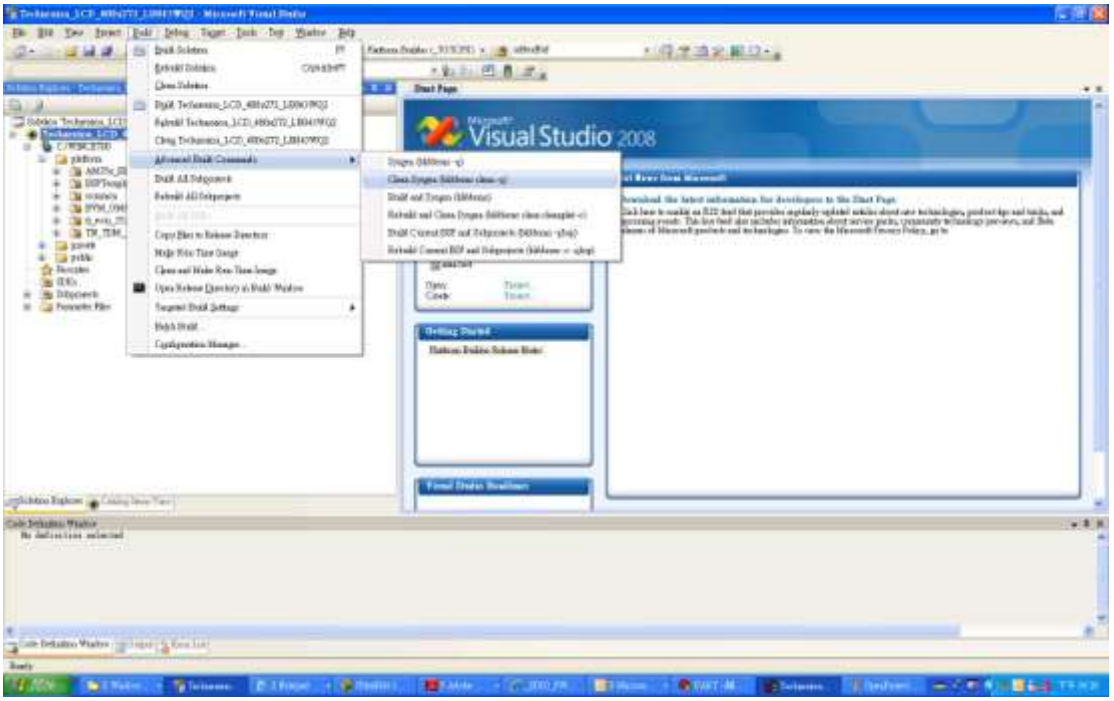


Figure 7: build/advanced build command/Clean Sysgen

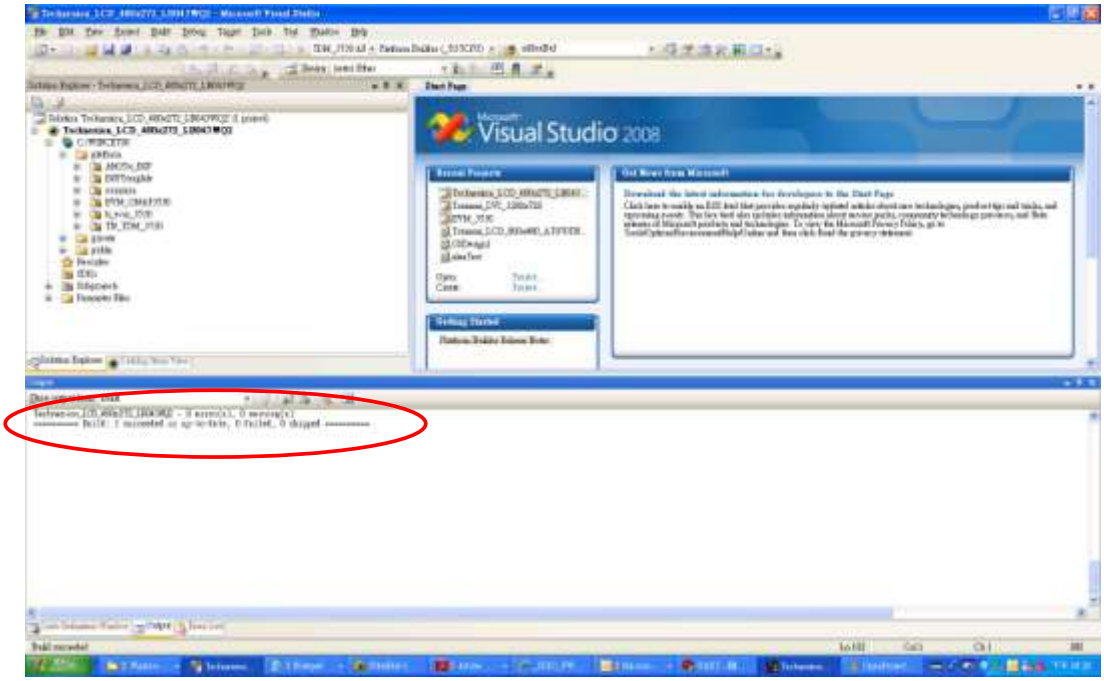


Figure 8: build complete

1.5 Creating the SD card

- Plug an microSD in your computer (with for instance a USB card reader)


Figure 9: An example of an USB card reader

Go to:
C:\WINCE700\OSDesigns\Technexion_LCD_480x272_LB043WQ2\Technexion_LCD_480x272_LB043WQ2\RelDir\TN_TAM_3517_ARMV7_Release
Open the folder. The folder contains files named: MLO, EBOOTSD.nb0, NK.bin
(These files are needed for a bootable SD-card)

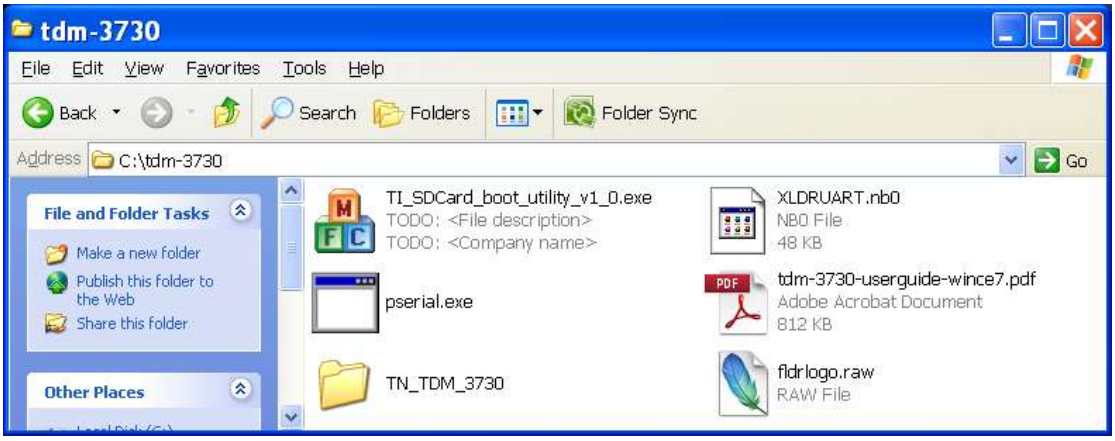


Figure 10: Step 1 - THB-3517.zip contains these files (in this example extracted on “c :”)

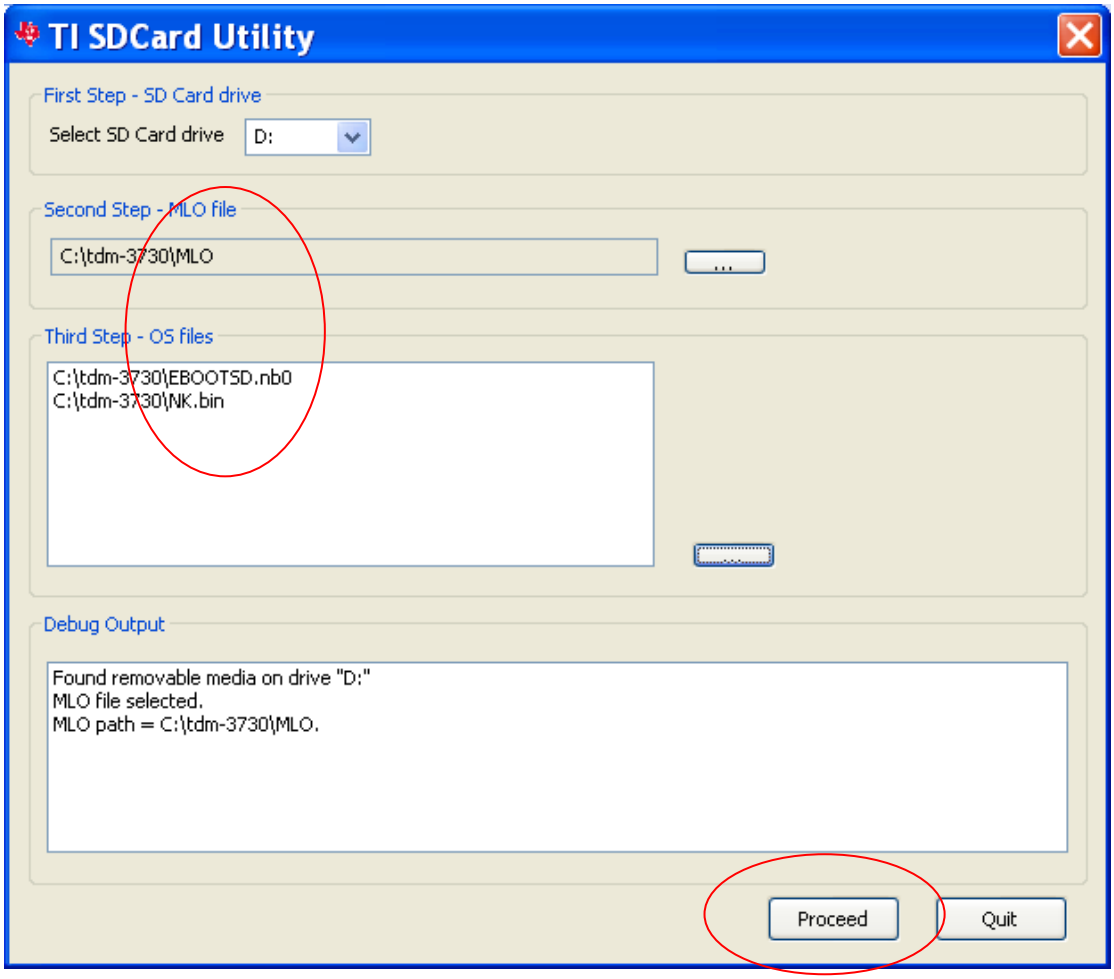


Figure 11: Step 2 -Use the “TI_SDCard_boot_utility_v1_0.exe” tool to format the SD card and copy the files (MLO, EBOOTSD.nb0, and NK.bin). Press the “Proceed” Button

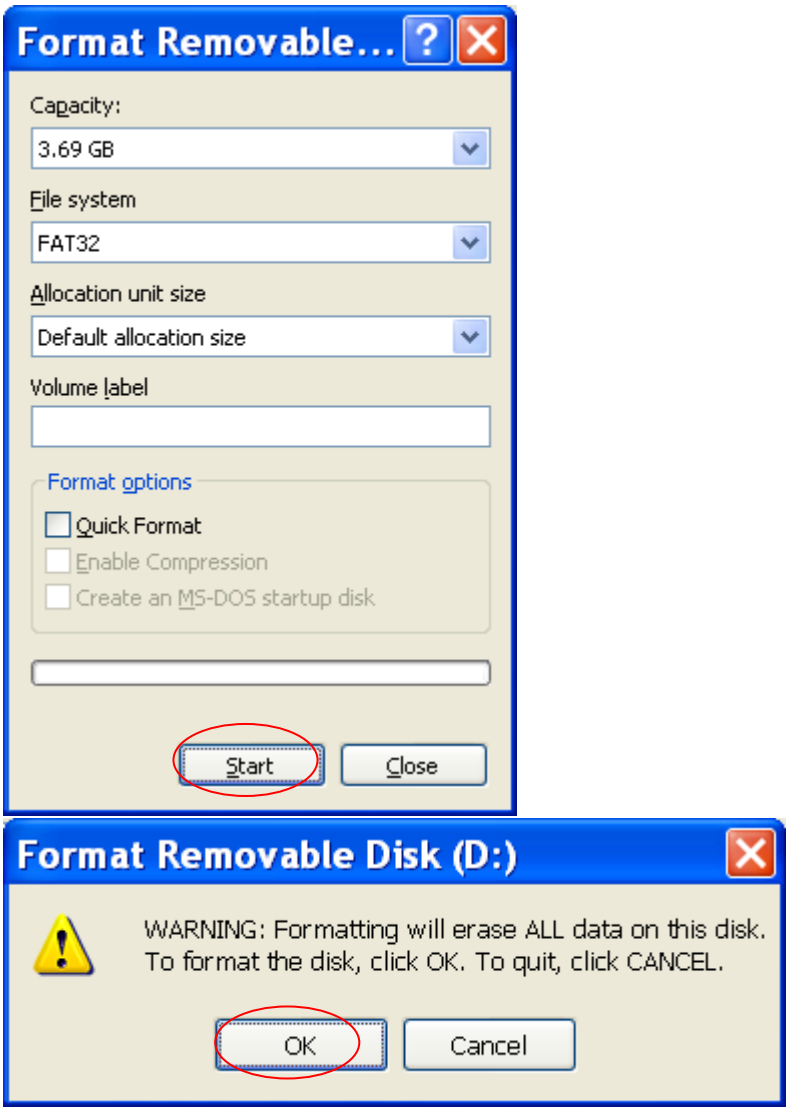


Figure 12: Step 3 - Press “Start” Button and then press the “OK” button



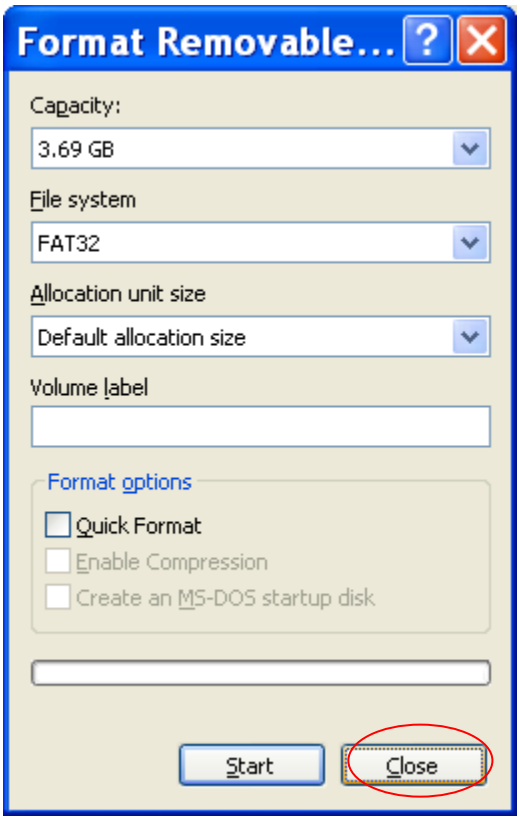


Figure 13: Step 4 - After format is complete press “OK” button” and then press “close”

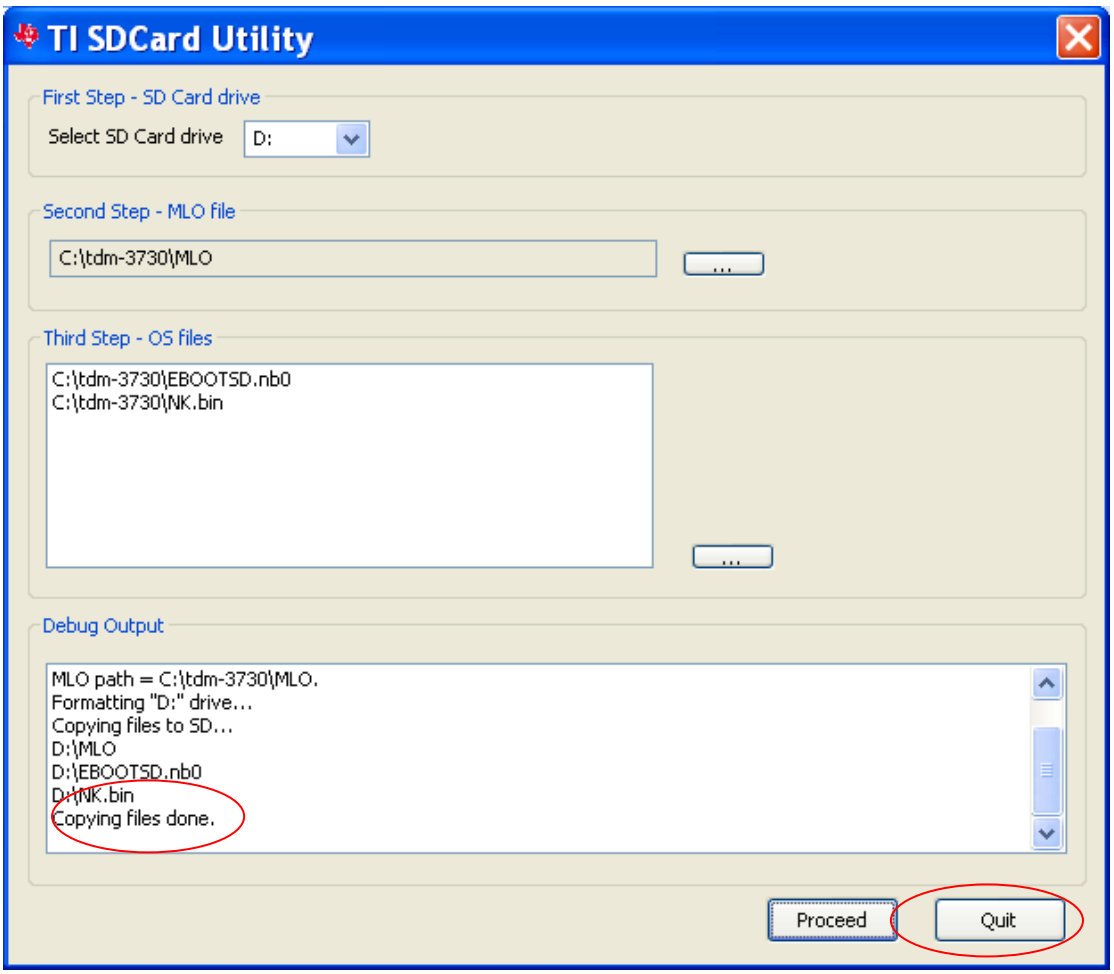


Figure 14: Step 5 - Wait until the copying of the files to the SD is done, then Press Quit

1.6 Starting HyperTerminal



Figure 15: Step 6 -Execute HyperTerminal

(This requires the use of a null-modem, if you are not sure how this works then please read the chapter about connecting the null-modem)

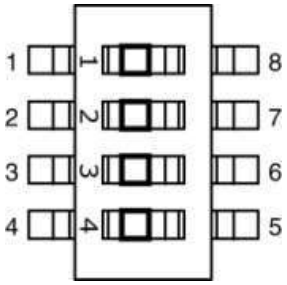


Figure 16: set all the switches on SW2 to "ON"

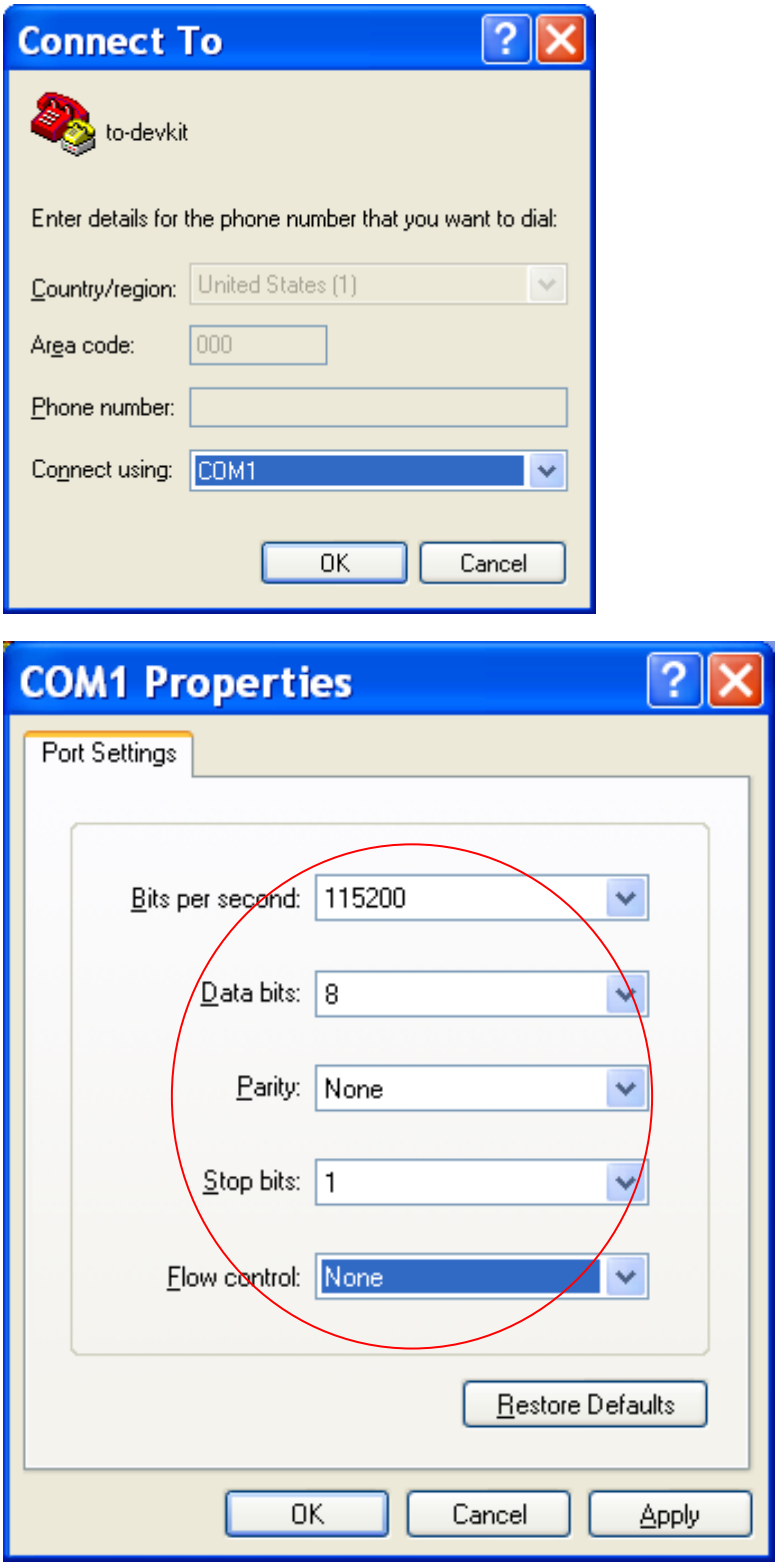


Figure 17: And configure the same port settings.

1.6.1 Checking if the NAND of the Development kit is empty

Power ON the development kit, then Press any key, you can see one of the following messages on the hyper terminal:

1.6.1.1 The development kit runs Linux or the Default Screen

Ease the NAND in u-boot:

```
u-boot#        nand erase.chip
```

```
TDM-3730
Loading u-boot.bin from nand


U-Boot 2011.03-rc1 (Sep 30 2011 - 16:14:19)

OMAP36XX/37XX-GP ES2.1, CPU-OPP2, L3-165MHz, Max CPU Clock 1 Ghz
OMAP3 TDM-3730 board + LPDDR/NAND
I2C:   ready
DRAM:  512 MiB
NAND:  512 MiB
MMC:   OMAP SD/MMC: 0
Using built-in environmentIn:    serial
Out:   serial
Err:   serial
Die ID #4f9e00029e380000016849ab0e022016
Net:   smc911x-0
Hit any key to stop autoboot:  0
OMAP3 TDM-3730 # nand erase.chip clean

NAND erase.chip: device 0 whole chip
Erasing at 0x1ffe0000 -- 100% complete. Cleanmarker written at 0x1ffe0000.
OK
OMAP3 TDM-3730 #
```

Figure 18: press any key to enter u-boot and do a nand erase.chip

1.6.1.2 The development kit runs a version of windows

```
>>> Forcing cold boot (non-persistent registry and other data will be wiped) <<<

Hit space to enter configuration menu 5...
Hit space to enter configuration menu 4...

--------------------------------------------------------------------------------

 Main Menu
--------------------------------------------------------------------------------

 [1] Show Current Settings
 [2] Select Boot Device
 [3] Select KITL (Debug) Device
 [4] Network Settings
 [5] Flash Management
 [6] Set Device ID
 [7] Save Settings
 [8] Enable/Disable OAL Retail Messages
 [9] Select Display Resolution
 [a] Select OPP Mode
 [0] Exit and Continue

 Selection:
```

Figure 19: Step 7b - Output on the terminal when the THB-3517 has a “windows” image in NAND

Step 8 - To clean the NAND, key in the following:

- Key in “5” (Flash management)
- Key in “4” (Erase Block Range)
- Key in “0” and press Enter (First Block)
- Key in “3999” and press Enter (Last Block)
- Key in “y” (continue)

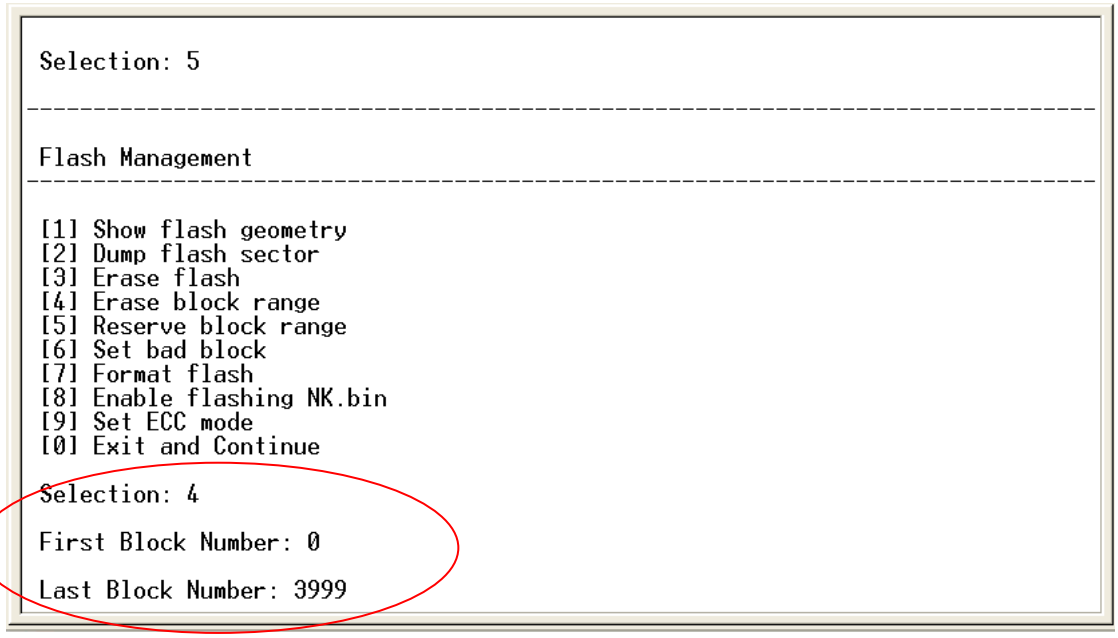


Figure 20: erasing the blocks and enter”y” to confirm.

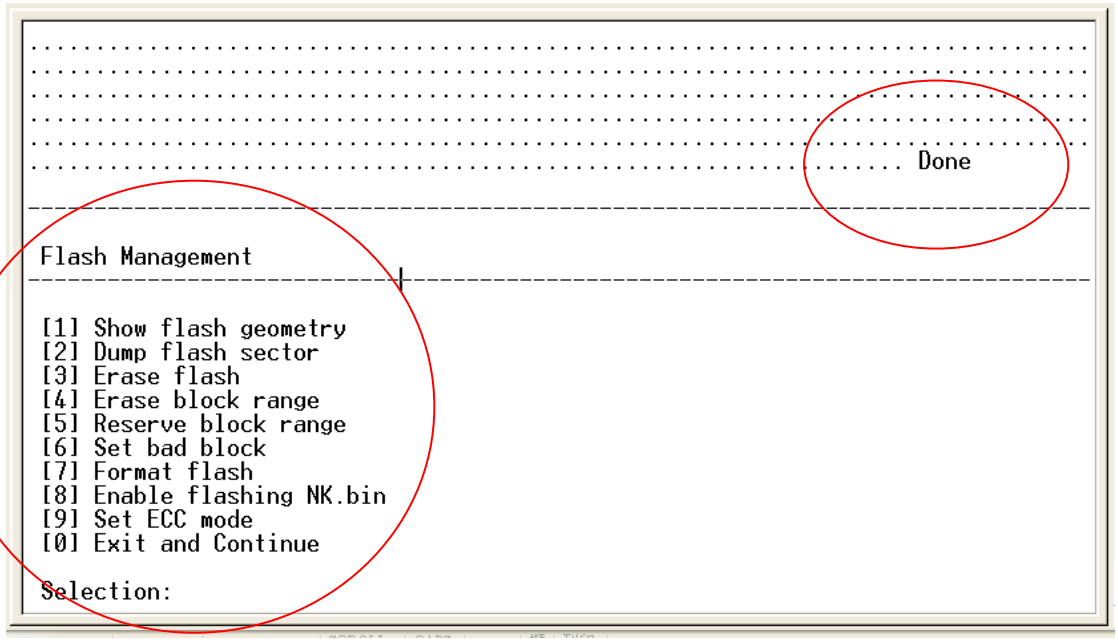


Figure 21: erasing of the blocks finished

Remove the power cable and reinsert the power cable again

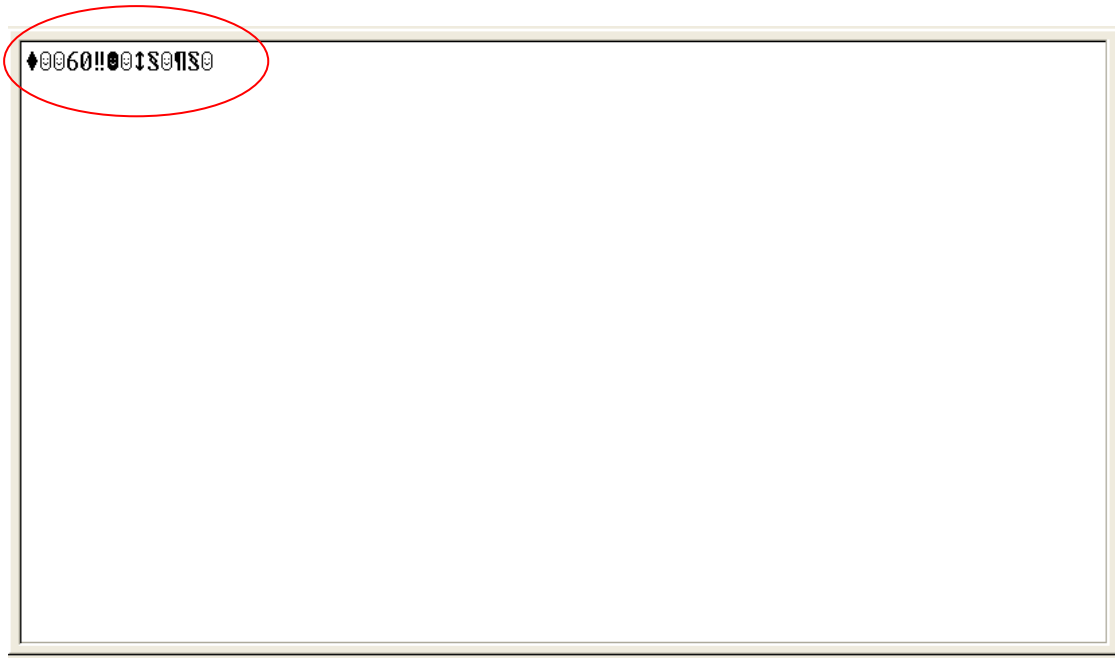
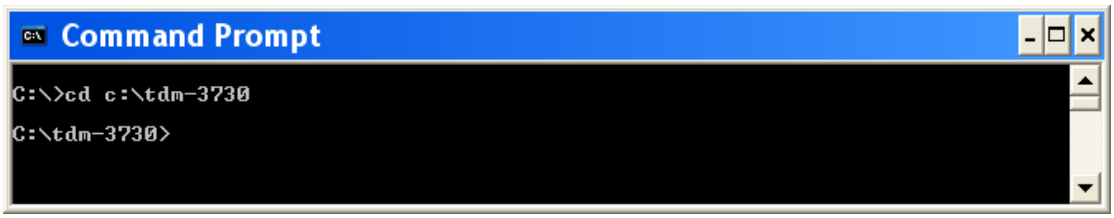


Figure 22: Step 7a - Output on the terminal when the THB-3517 has no image in NAND.

1.7 Establish a serial connection

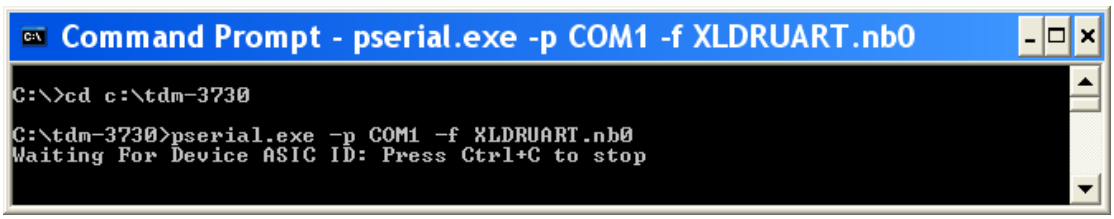
Step 9 - Execute the “All Programs>Accessoiries>Command Prompt” (console), and enter the Path: cd c:/thb-3517 (It means changing to the directory of THB-3517).



Step 10 - Terminate the hyper terminal

Step 11 - Execute this command:

pserial.exe -p COM1 -f XLDRUART.nb0 (enter)



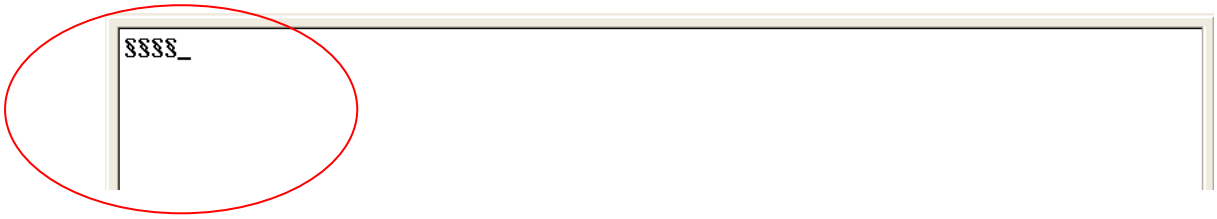
Then remove the power cable from the development kit, and reinsert it, to reboot.

```
C:\tdm-3730>pserial.exe -p COM1 -f XLDRUART.nb0
Waiting For Device ASIC ID: Press Ctrl+C to stop
ASIC ID Detected.
Sending 2ndFile:
Downloading file: 50.000% completed(24576/49152 bytes)
```

```
C:\tdm-3730>pserial.exe -p COM1 -f XLDRUART.nb0
Waiting For Device ASIC ID: Press Ctrl+C to stop
ASIC ID Detected.
Sending 2ndFile:
Downloading file: 100.000% completed(49152/49152 bytes)
File download completed.
```

1.7.1 Transfer a file to the development kit

Step 12 - Execute the Hyper terminal, you can see these characters every 10 seconds



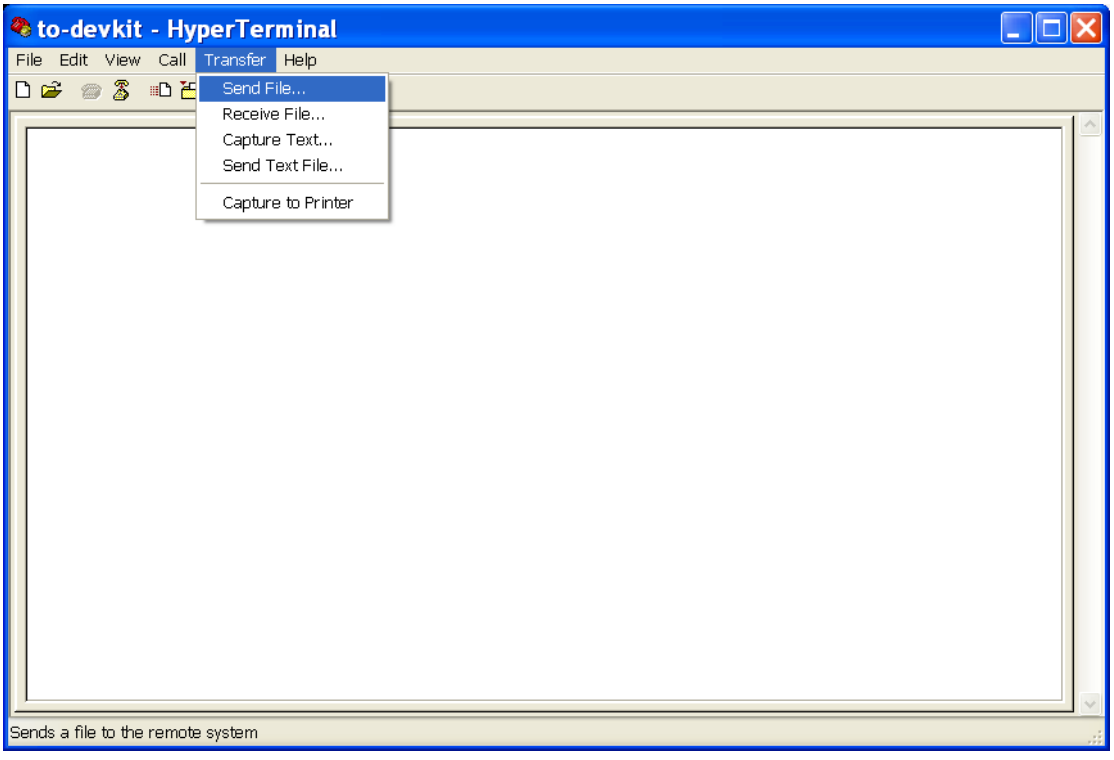


Figure 23: Start HyperTerminal and transfer files by using “send file”.

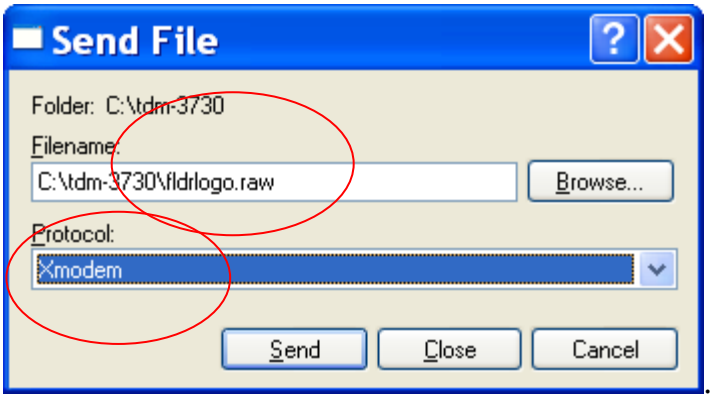


Figure 24: Select Xmodem and select the file (fldrlogo.raw),

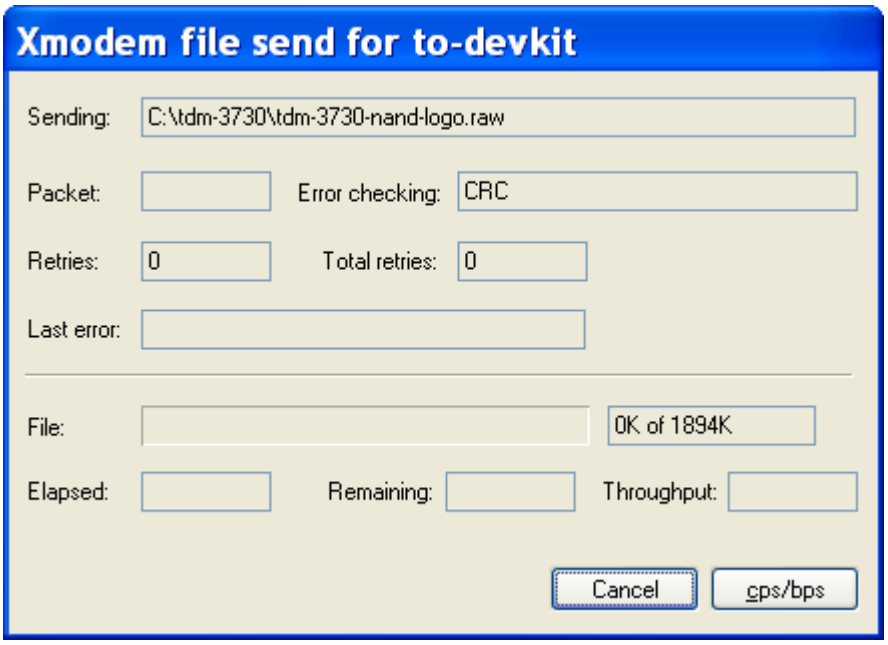


Figure 25: Wait for the transfer to finish

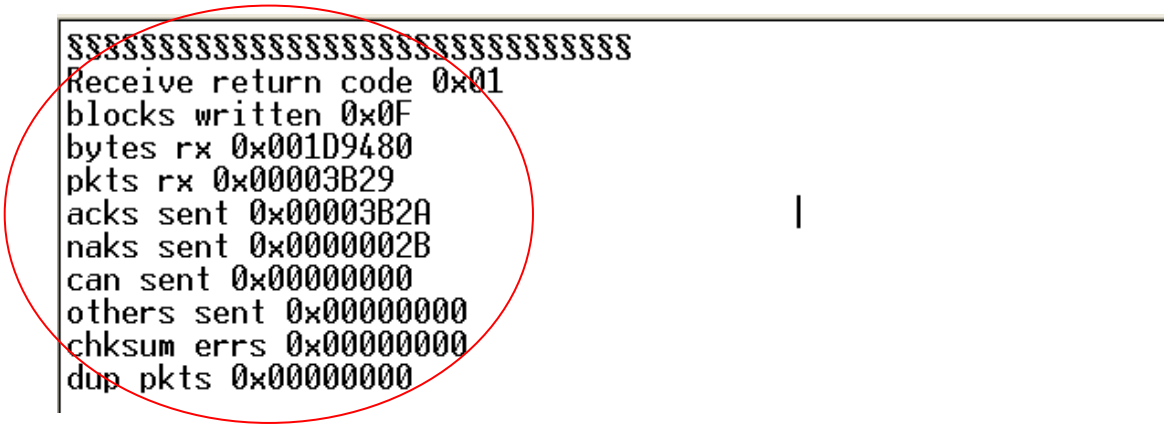


Figure 26: When the download finishes, you can see this message.

Step 13 - Power OFF, and again Power ON the THB-3517 board. You will see the following.

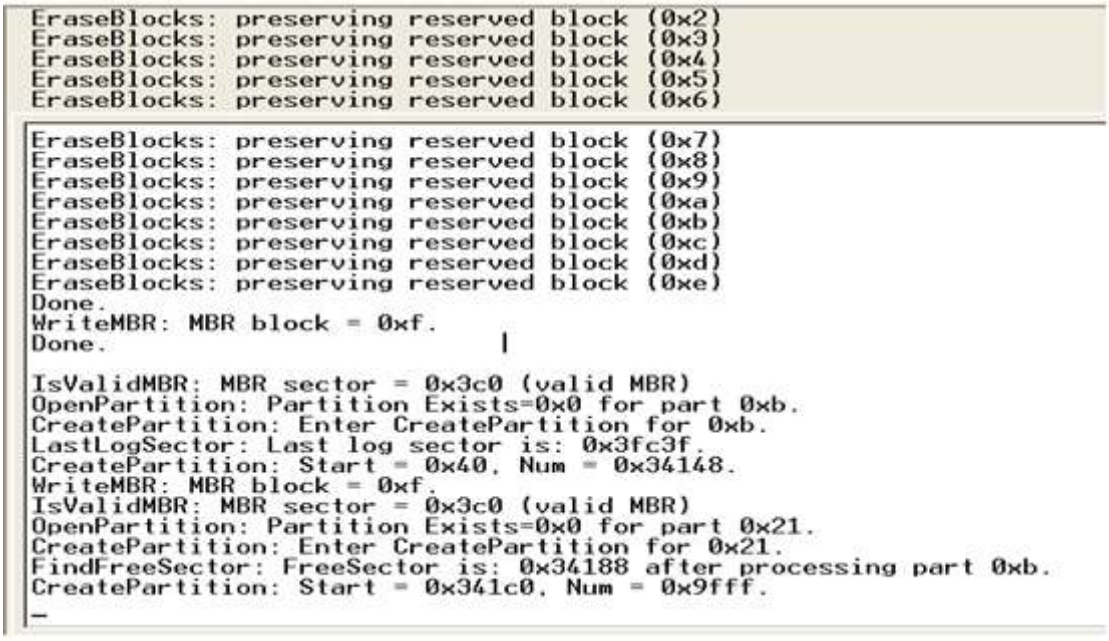


Figure 27 : partitioning

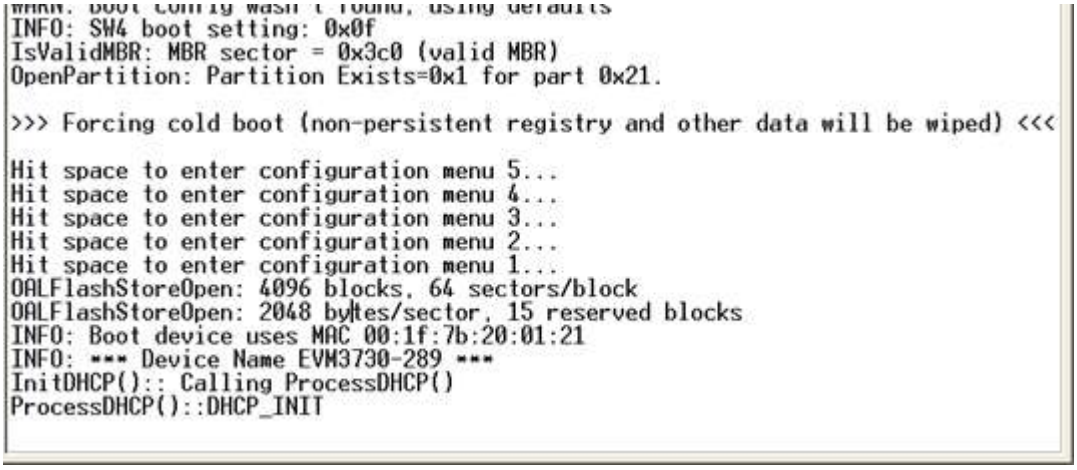


Figure 28: partitioning finished

1.8 Boot from SD-card

Step 14 - Insert SD card (the one created in step 2 to step 5), then keep THB-3517 board's user1 button pressed, and power ON again (with USER1 button is still pressed), and after this press any key

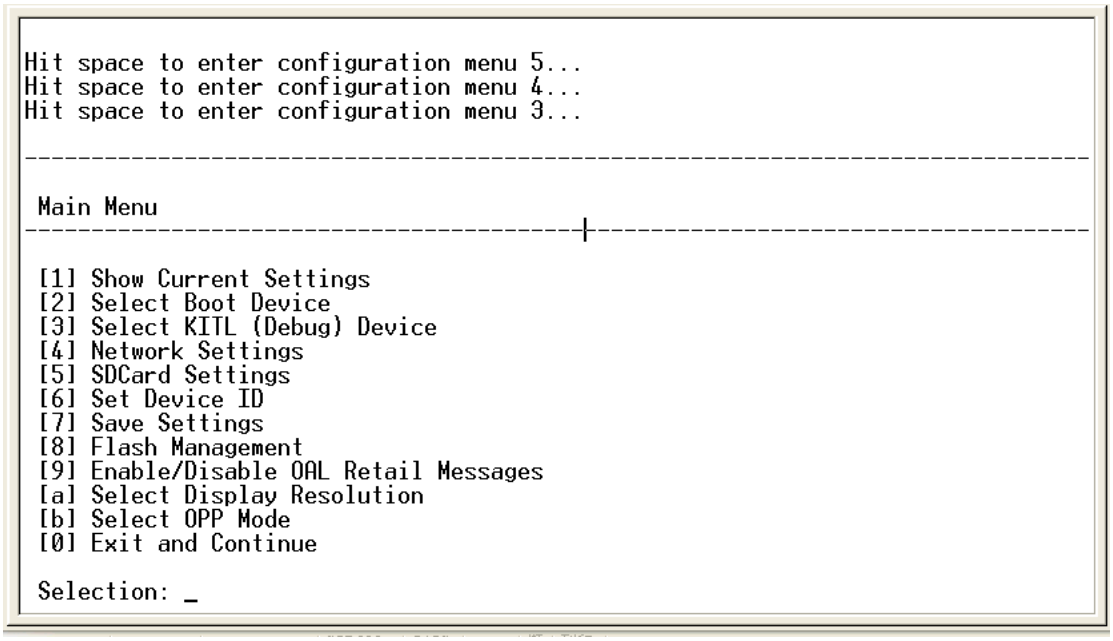


Figure 29: pressing any key on your PC's keyboard will show the menu

- Key in "2" (select boot device)
- Key in "3" (NK from SD card file)
- Key in "8" (Flash management)
- Key in "8" (enable flashing nk.bin)
- then key in "y" (to confirm)
- Key in "9" (set ecc mode)
- then key in "0" (hamming bit)
- Key in "0" (Exit and continue)
- Key in "a" (select display resolution)
- then key in"e" (LCD 800x480 60Hz) (this is the 7" LCD)
- Key in "7" (save settings)
- then key in "y" (to confirm)
- key in "0" (Exit and continue)

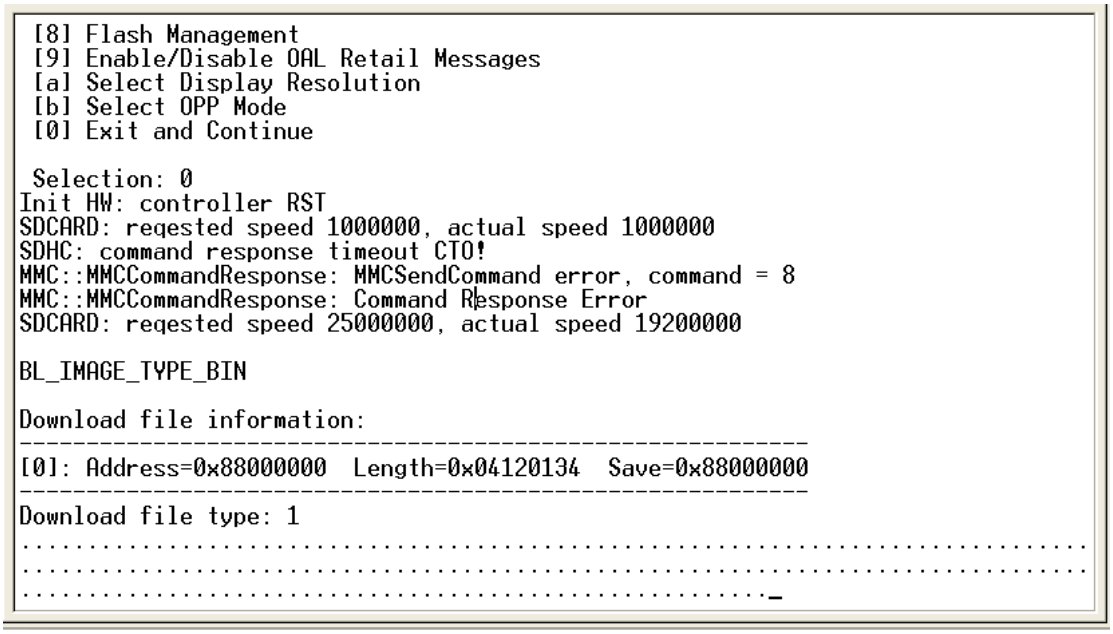


Figure 30: After this you can see the Windows Embedded Compact 7's desktop. (This is still booting from the SD-card).

1.9 Enable the development kit to boot from NAND

Step 15 - Reboot THB-3517, and then press any key.

- Key in "2" (select boot device)
- key in "3" (NK from NAND)
- Key in "7" (save settings)
- Then key in "y" (to confirm)
- key in "0" (Exit and continue)
- The development kit can now reboot from NAND.