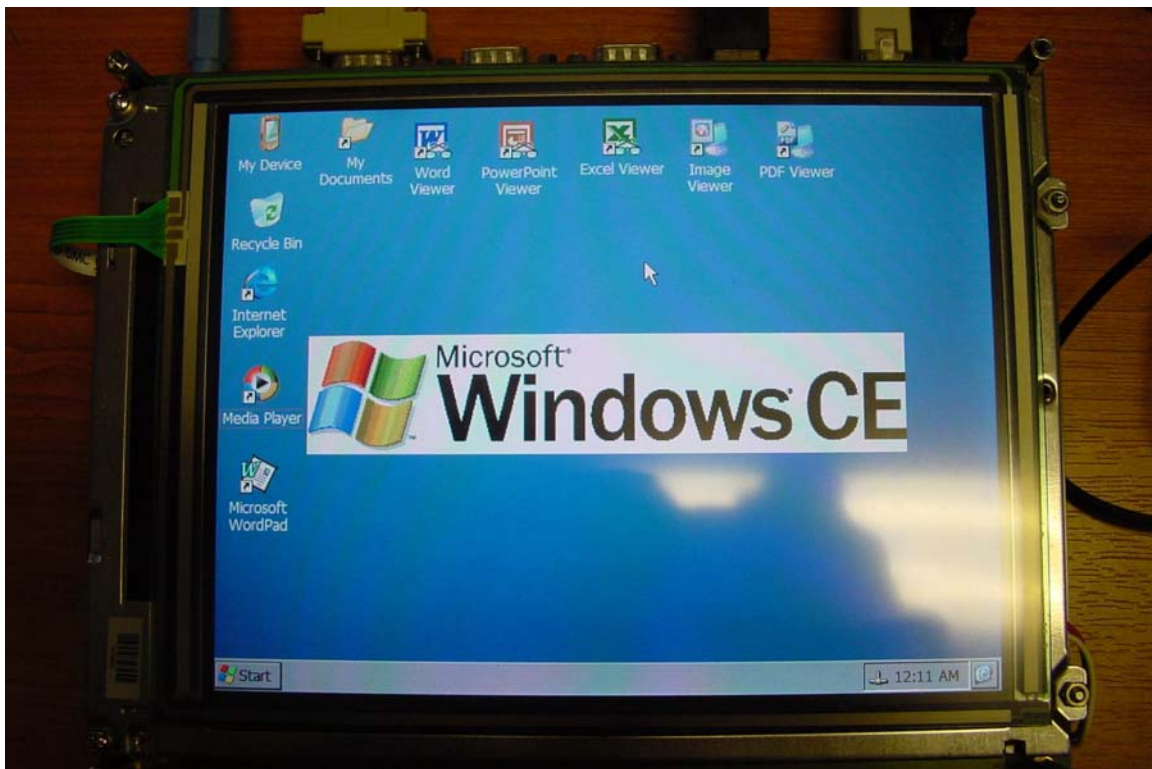


# Loading WinCE v 5.0 on the phytec PXA270

## introduction

---

In this application note, we will use the following tools *jflashmm.exe* and the *eshell.exe*, We recommend to use the files used by Phytec



Rev 2.1

**1) loading the Eboot bootloader.**

- Connect the hardware debugger (**JA-001**) to the board. (connector : **X29**) make sure to locate the PIN 1 on the board...
- Open a command DOS window
- Type into the Jflash folder : **prog eboot.nb0** , which send the command *jflashmm bulbcx eboot.bin P 0 PAR*

In the DOS window, you will see the details executed. It will erase a part of the memory and will program the eboot.nb0 on the flash. Then it will verify the application in memory.

At this stage, you can check that the eboot is running correctly.

**a) verification of the eboot.nb0**

Open a “HyperTerminal” window with the following parameters : **115200, 8,N,1,N**  
Plug your RS232 cable onto the board (FF-UART = “P1”the one close to the speaker !!)

Reboot the board, you should find after few seconds something like :

```
.....  
.....  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255  
Sent BOOTME to 255.255.255.255
```

(this is normal, there is no image at this stage.....)

Reboot the board and press the “space” before booting (as indicated on Hyperterminal. You will find a menu where you can modify some features.... DHCP enable, IP address, Netmask and so on....

Rev 2.1

Microsoft Windows CE Ethernet Boot loader Common Library Version 1.1 Built Sep 8  
2005 12:01:25

Microsoft Windows CE Ethernet Boot loader 1.7 for the Intel **MainstoneII** Development Platform  
Built Sep 9 2005

**Press [ENTER] to launch image stored in flash or [SPACE] to cancel.**

Initiating image launch in 1 seconds.

**If you use [SPACE]**

Ethernet Boot Loader Configuration:

- 0) IP address: 0.0.0.0
- 1) Subnet mask: 0.0.0.0
- 2) Boot delay: 3 seconds
- 3) DHCP: (Enabled)
- 4) Reset to factory default configuration
- 5) Launch existing flash resident image at startup
- 6) Boot device order: SMSC -> PCMCIA0 -> PCMCIA1
- 7) Debug serial port: BTUART
- D) Download image now
- L) Launch existing flash resident image now

NB : If you have a look on the first lines of your Bootloader into the Hyper terminal, you will notice the name into the Eboot..... **Mainstone**

## **2) loading the WinCE5.0 IMAGE**

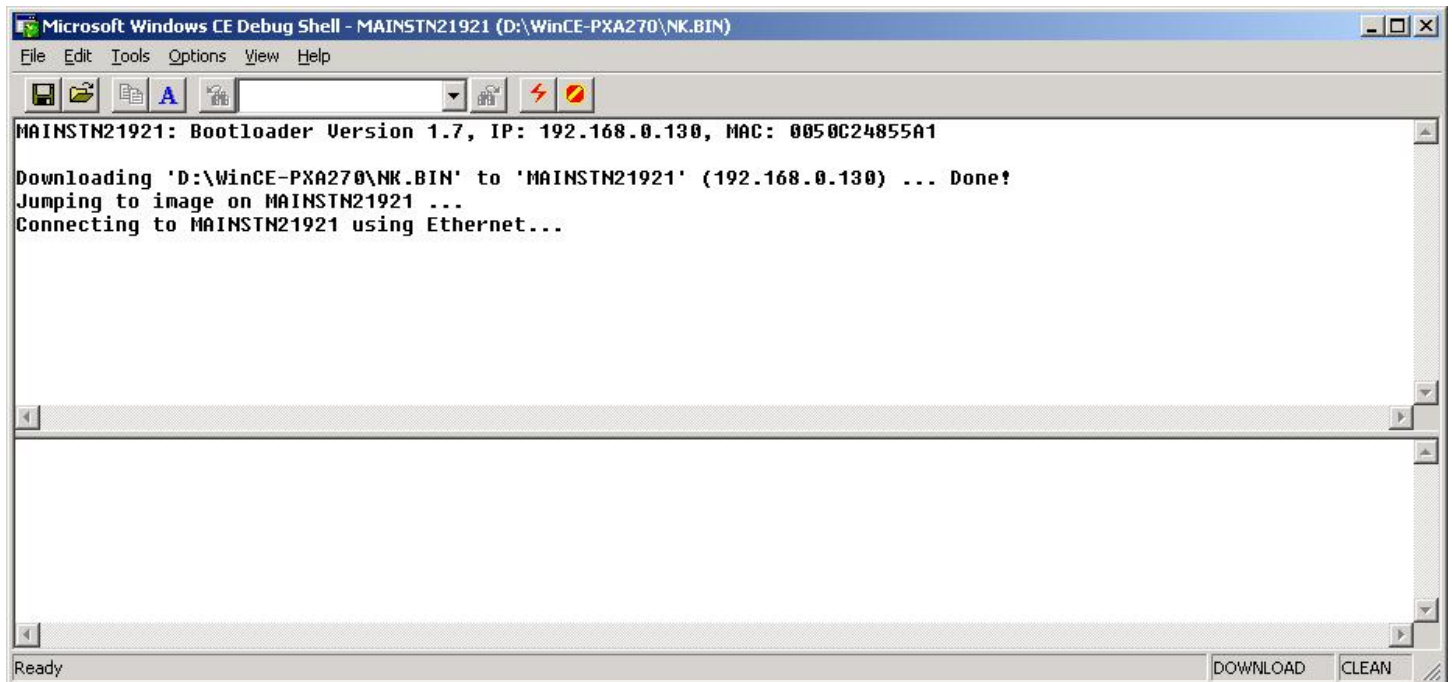
Make sure that the Ethernet connection is connected (for DHCP server and the download of your Image)

Make sure that a DHCP server is running.

- Start **ESHELL.EXE** a pop up window will appear with the board name... If not, just reset the board... it should appear... ( the name appearing is a combination of **Mainstone** and your MAC address...)
- Select the board
- File -> open : Select the image that you want to download
- Reset the board
- Press the download function from your eboot loader.

The download should start automatically

Rev 2.1



if everything is fine, after a while. You should see the WinCE running on the board

The first time, the execution of WinCE is not really fast.

While booting, you can see into the hype terminal

```
+AudioOutMute 0
Irq Enable: 0x19 0x19
Irq Enable: 0xb 0xb
LAN91C111 ==> MiniportInitialize
LAN91C111:Allocated Tx Buffer Successfully!
LAN91C111 ==> GetRegistrySettings
LAN91C111:BusType = 0x1
LAN91C111:BusNumber = 0x0
LAN91C111:New IRQ Value found in register.. overiding the default value
LAN91C111:New IOBase address found in register.. overiding the default value
LAN91C111:BusNumber = 0
LAN91C111:BusType = 1
LAN91C111:IoBase = 0xaba00300
LAN91C111:Interrupt = 14
LAN91C111:Speed = 254
LAN91C111:Duplex = 254
LAN91C111 <== GetRegistrySettings
LAN91C111:Interrupt Registered !!!
```

Rev 2.1

```
LAN91C111: VirtualAlloc/Copy Succeeded.....
LAN91C111:Allocated LookAhead Buffer Successfully!
LAN91C111:==> Adapter Verify
LAN91C111:A.IO 0x 2a0300!
LAN91C111:IO 0x 2a0300!
LAN91C111:<== Adapter Verify - OK
LAN91C111: MAC Address - 00-50-C2-48-55-A1
LAN91C111:==> Adapter Reset 2a0300
LAN91C111:<== Adapter Reset 2a0300
LAN91C111 <== MiniportInitialize
TurnOnUSBHostClocks: Initial Values: ccsr: 0000030e cken: 00408a44 oscc: 0000000
7 ccsr: 3000030e
TurnOnUSBHostClocks: Final Values: ccsr: 0000030e cken: 00408e44 oscc: 0000000
7 ccsr: 3000030e
+ private_WaveGetDevCaps
SetupUSBHostPWR
- private_WaveGetDevCaps (pCaps == NULL)
SetupUSBHostPEN
+ private_WaveGetDevCaps
SOhcdPdd::InitPddInterrupts() - Initial UHCHIE = 0x0
- private_WaveGetDevCaps (pCaps == NULL)
OHCI_Reset: Resetting Bulverde OHCI.
OHCI_Reset: done.
OHCD: Read config from registry: Base Address: 0x4C000000, Length: 0x1000, I/O P
ort: NO, SysIntr: 0x11, Interface Type: 0, Bus Number: 0
SOhcdPdd::Init - Can't get "DmaMemBase" registry value.
SOhcdPdd::Init - Can't get "DmaMenLen" registry value.
Irq Enable: 0x3 0x3
HcdPdd_Init: Checking SW18 - controls OHCI loading.
DeviceFolder::LoadDevice!Enumerate Found deprecated load instructions at (Driver
s\BuiltInVAFD). Driver cannot be unloaded.
PCC_MAINSTONEII : DLL_PROCESS_ATTACH
CPcmciaBusBridge::CPcmciaBusBridge
+ PCC_MAINSTONEII : Init
- PCC_MAINSTONEII : Init 1
CPcmciaBusBridge::CPcmciaBusBridge
+ PCC_MAINSTONEII : Init
- PCC_MAINSTONEII : Init 1
DeviceFolder::LoadDevice!Enumerate Found deprecated load instructions at (Driver
s\BuiltInPPP). Driver cannot be unloaded.
mdrefr=213a00b; mdcnfg=8c908c9
cfg ADU pwr.
CSJA1000::InitPointer 1
CSJA1000::InitPointer 2
OEMIoControl: Unsupported Code 0x9c4124e4 - device 0x9c41 func 2361
CSJA1000::InitPointer 3
map phys address: 22000000
CSJA1000::InitPointer 4 (0x520000 0x22000000)
CSJA1000::InitPointer 5 lpvVirtualBase=0x520000 dwIoOffs=0x0 CANDATA_OFFSET=0x2
CSJA1000::InitPointer 6
+CSJA1000::SetBaudrate(125)
Bus Timing is 125 kBaud; btr0=3, btr1=1c
cc->dwIRQ=16 SYSINTR_FIRMWARE=16 (=>32)
```

Rev 2.1

```
CanThreadProc::cc->dwPortNumber = 1
CanThreadProc::szSemaName = CanReceiveSemaphore1
CanThreadProc::szMutexName = WarteSchlange1
Start Monitor for Can1
+OALIoCtlHalRequestSysIntr
+OALIntrRequestSysIntr(1, 0x0602e928, 0x00000000)
-OALIntrRequestSysIntr(sysIntr = 16)
+OALIoCtlHalRequestSysIntr(rc = 1)
Irq Enable: 0x17 0x17
SDMMC::ProcessCardRemoval

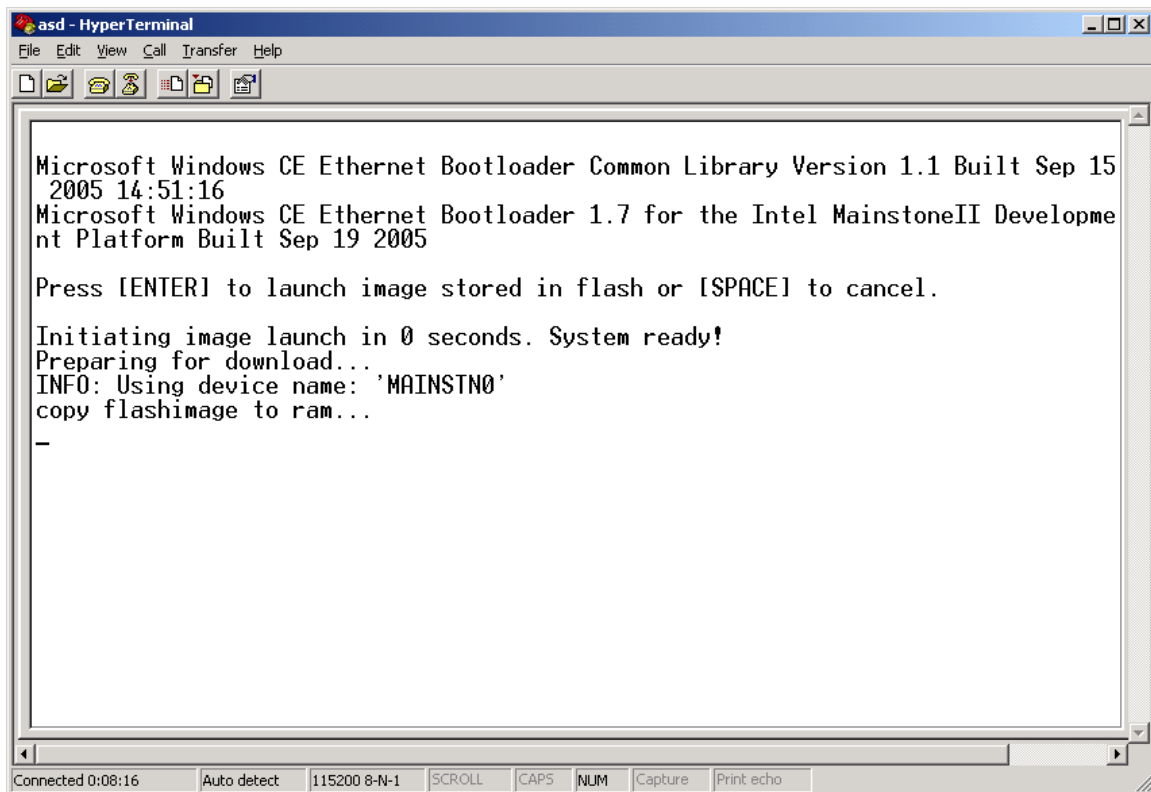
DISPLAY: INIT
Done getting Registry values:
bpp: 0x10
CxScreen: 0x280
CyScreen: 0x1e0
Display Type: LQ048
Setting display type LQ048 16 Bit / Pixel
LCCR0    = 0x3ff8f8
LCCR1    = 0x6805ca7f
LCCR2    = 0x90a61df
LCCR3    = 0x4700001
LCCR4    = 0x0
PCD      = 0x0
LCD_PCD(PCD) = 0x0
OEMIoControl: Unsupported Code 0x10100fc - device 0x0101 func 63
Lyg.p: Layout Manager successfully initialized to 1
Entering DdsiTouchPanelEnable()
ReadRegDWORD: RegQueryValueEx(Sense) returned 2
Sense is set to 4
4 Wire touch !!
*****ACLink Alloc successful
AC97GpioConfigure
p_CLKRegs->cken = 0x519e44
AC97GpioConfigure SET
Setting up codec irq
Setting up codec irq 4 Wire (1) returns 0x1
Setting up codec irq 4 Wire (2) returns 0x1
Setting up codec irq Power Handler
DdsiTouchPanelPowerHandler(0x0)
AC97GpioConfigure
p_CLKRegs->cken = 0x519e44
AC97GpioConfigure SET
0x4c is set to 0xf83e
Exit DdsiTouchPanelPowerHandler Done
Exiting DdsiTouchPanelEnable() - timer is set to = 36864
Irq Enable: 0x1b 0x1b
Maximum Allowed Error 32:
Explorer(V2.0) taskbar thread started.
+AudioOutMute 0
NDISPWR:: Found adapter [LAN90001]
+AudioOutMute 1
```

Rev 2.1

At the end of the boot, don't worry if the HyperTerminal stays in this position.

Make sure to reboot the board and edit the Eboot.nb0 into the HyperTerminal... and make sure that the option 5 will start the image into the flash at startup and not reload another one.

You can always start an HyperTerminal window. It's always interesting to see what your bootloader does.



```
asd - HyperTerminal
File Edit View Call Transfer Help
Microsoft Windows CE Ethernet Bootloader Common Library Version 1.1 Built Sep 15
2005 14:51:16
Microsoft Windows CE Ethernet Bootloader 1.7 for the Intel MainstoneII Developme
nt Platform Built Sep 19 2005

Press [ENTER] to launch image stored in flash or [SPACE] to cancel.

Initiating image launch in 0 seconds. System ready!
Preparing for download...
INFO: Using device name: 'MAINSTN0'
copy flashimage to ram...
-
```