

Mango64R3 How to write Wince 6.0

<http://www.mangoboard.com/>

<http://cafe.naver.com/embeddedcrazyboys>

Crazy Embedded Laboratory

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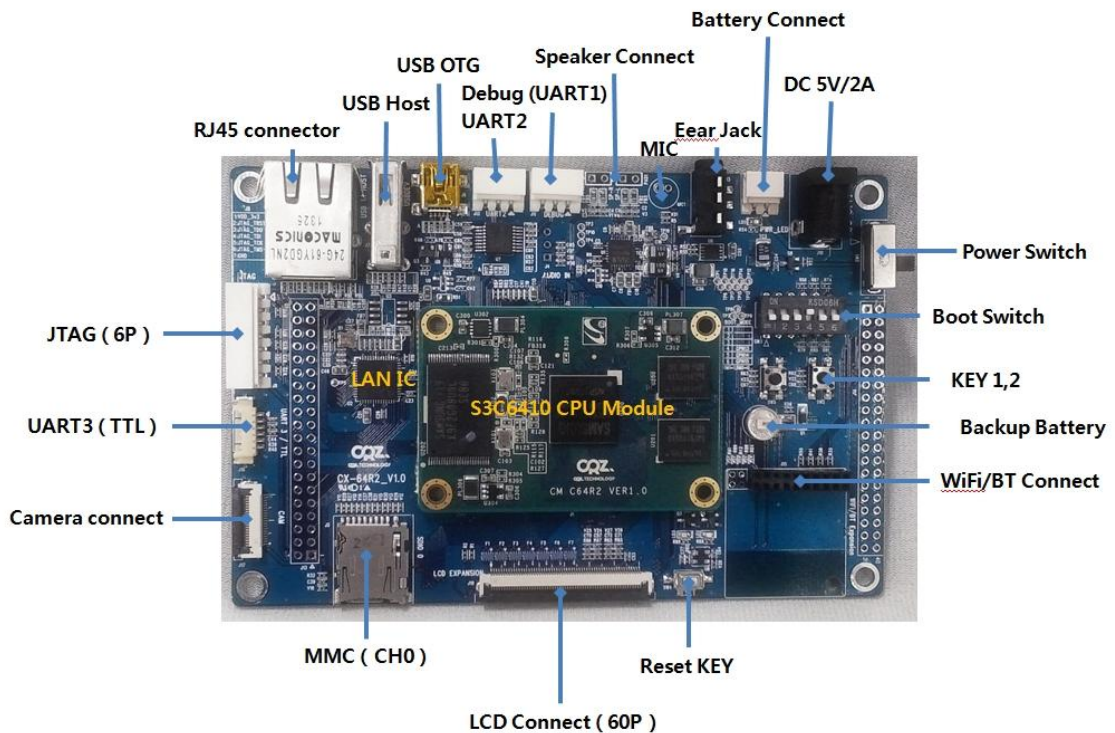
1. Mango64R3 How to write

[Source Download](#)

보드에는 전원 , 3pin Serial cable , JTAG를 연결합니다.

부팅 모드는 NAND 모드로 하세요.

NAND Mode : 2, 3, 4 ON , 나머지 Off



Mango64R3-OpenOCD-Cygwin 이동
도스 Command 창을 실행을 합니다.

```
$ openocd.exe -f mango64.cfg
```

실행을 합니다.

실행 결과

```
y:\work\mango64R3\Mango64R3-OpenOCD-Cygwin> openocd.exe -f mango64.cfg  
Open On-Chip Debugger 1.0 (2009-04-30-01:48) svn:1547
```

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

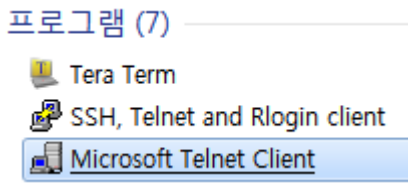
```
$URL: svn://svn.berlios.de/openocd/trunk/src/openocd.c $
jtag_speed: 5
Info : JTAG tap: s3c6410.unknown tap/device found: 0x2b900f0f (Manufacturer: 0x7
87, Part: 0xb900, Version: 0x2)
Info : JTAG Tap/device matched
Info : JTAG tap: s3c6410.cpu tap/device found: 0x07b76f0f (Manufacturer: 0x787,
Part: 0x7b76, Version: 0x0)
Info : JTAG Tap/device matched
Info : found ARM1176
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
```

또 다른 command 창을 실행을 합니다.

Window XP 32 bit에서는 아래와 같이 실행합니다.

```
$ telnet localhost 4444
```

Window 7 64bit에서는 아래와 같이 실행합니다.



```
$ open localhost 4444
```

입력 후 실행합니다.

아래는 실행 결과

```
Open On-Chip Debugger
>
```

```
script mango64-eboot.tcl
```

입력을 합니다. Enter를 입력합니다.

만약 되지 않으면, mango64-eboot.tcl 파일안에 내용을 복사해서 붙여넣기로 실행하시기 바랍니다.

터미널 프로그램을 PC에서 실행을 합니다.

eboot가 터미널 프로그램에서 아래와 같이 실행이 되면 됩니다.

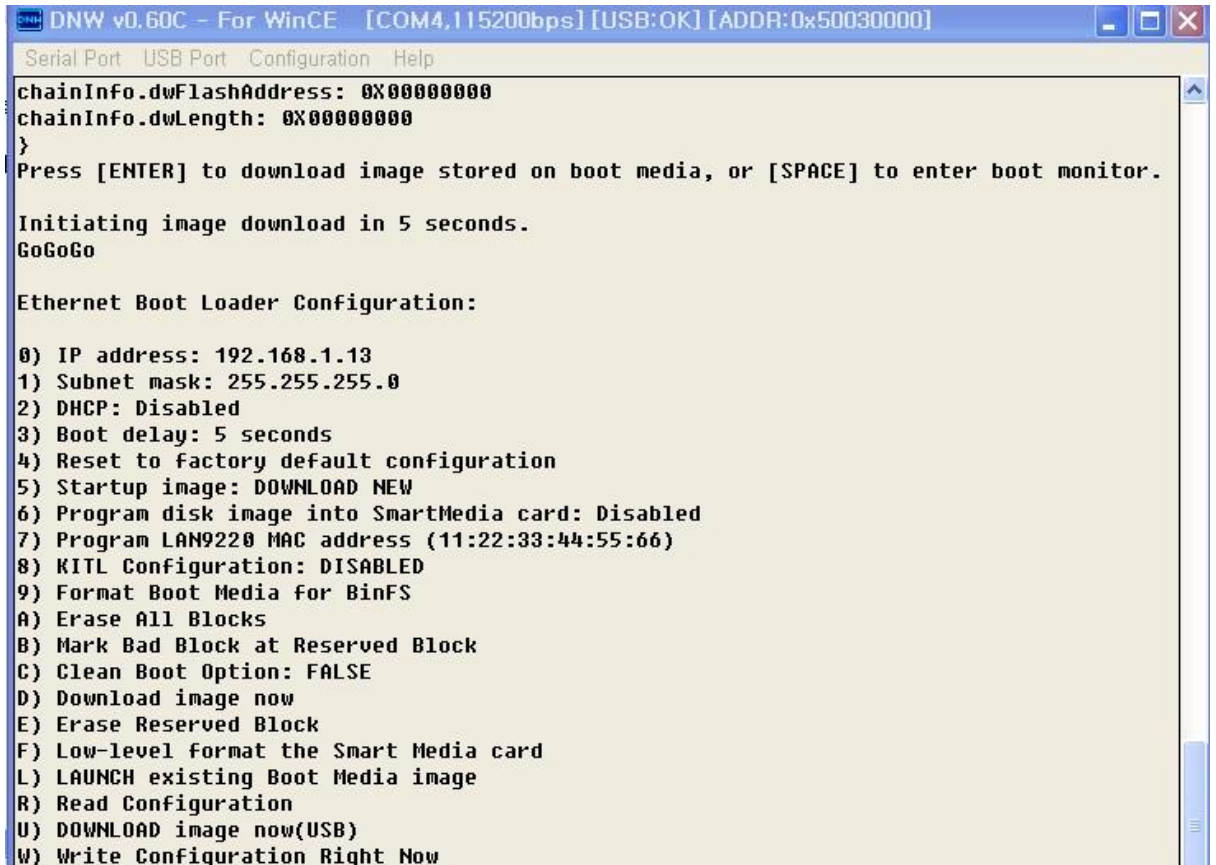
Ethernet Boot Loader Configuration:

- 0) IP address: 192.168.1.13
- 1) Subnet mask: 255.255.255.0
- 2) DHCP: Disabled
- 3) Boot delay: 5 seconds
- 4) Reset to factory default configuration
- 5) Startup image: LAUNCH EXISTING
- 6) Program disk image into SmartMedia card: Enabled
- 7) Program LAN9220 MAC address (11:22:33:44:55:66)
- 8) KITL Configuration: DISABLED
- 9) Format Boot Media for BinFS
 - A) Erase All Blocks
 - B) Mark Bad Block at Reserved Block
 - C) Clean Boot Option: FALSE
 - D) Download image now
 - E) Erase Reserved Block
 - F) Low-level format the Smart Media card
 - L) LAUNCH existing Boot Media image
 - R) Read Configuration
 - U) DOWNLOAD image now(USB)
 - W) Write Configuration Right Now

DNW 창에 Eboot가 실행이 됩니다.

5초가 되기전에 "Space"바를 누릅니다. 그렇지 않으면, Eboot가 NK 이미지를 로드하게 됩니다.

Eboot의 역할은 NK이미지를 로드하여, Wince 를 실행시키는 역할도 하지만, stbldr,eboot,nk이미지를 Nand에 퓨징하는 역할도 합니다. 리눅스와 비교한다면, u-boot역할을 합니다.



```
DNW v0.60C - For WinCE [COM4,115200bps] [USB:OK] [ADDR:0x50030000]
Serial Port USB Port Configuration Help
chainInfo.dwFlashAddress: 0X00000000
chainInfo.dwLength: 0X00000000
}
Press [ENTER] to download image stored on boot media, or [SPACE] to enter boot monitor.

Initiating image download in 5 seconds.
GoGoGo

Ethernet Boot Loader Configuration:

0) IP address: 192.168.1.13
1) Subnet mask: 255.255.255.0
2) DHCP: Disabled
3) Boot delay: 5 seconds
4) Reset to factory default configuration
5) Startup image: DOWNLOAD NEW
6) Program disk image into SmartMedia card: Disabled
7) Program LAN9220 MAC address (11:22:33:44:55:66)
8) KITL Configuration: DISABLED
9) Format Boot Media for BinFS
A) Erase All Blocks
B) Mark Bad Block at Reserved Block
C) Clean Boot Option: FALSE
D) Download image now
E) Erase Reserved Block
F) Low-level format the Smart Media card
L) LAUNCH existing Boot Media image
R) Read Configuration
U) DOWNLOAD image now(USB)
W) Write Configuration Right Now
```

그림 1-1

1.1. Eboot 메뉴에서 Nand Erase 하기

A) Erase All Blocks

를 선택하면 됩니다. Nand에 저장된 모든 데이터가 지워지므로 주의하세요.

실행은 간단합니다.

“A”를 입력하면 됩니다.

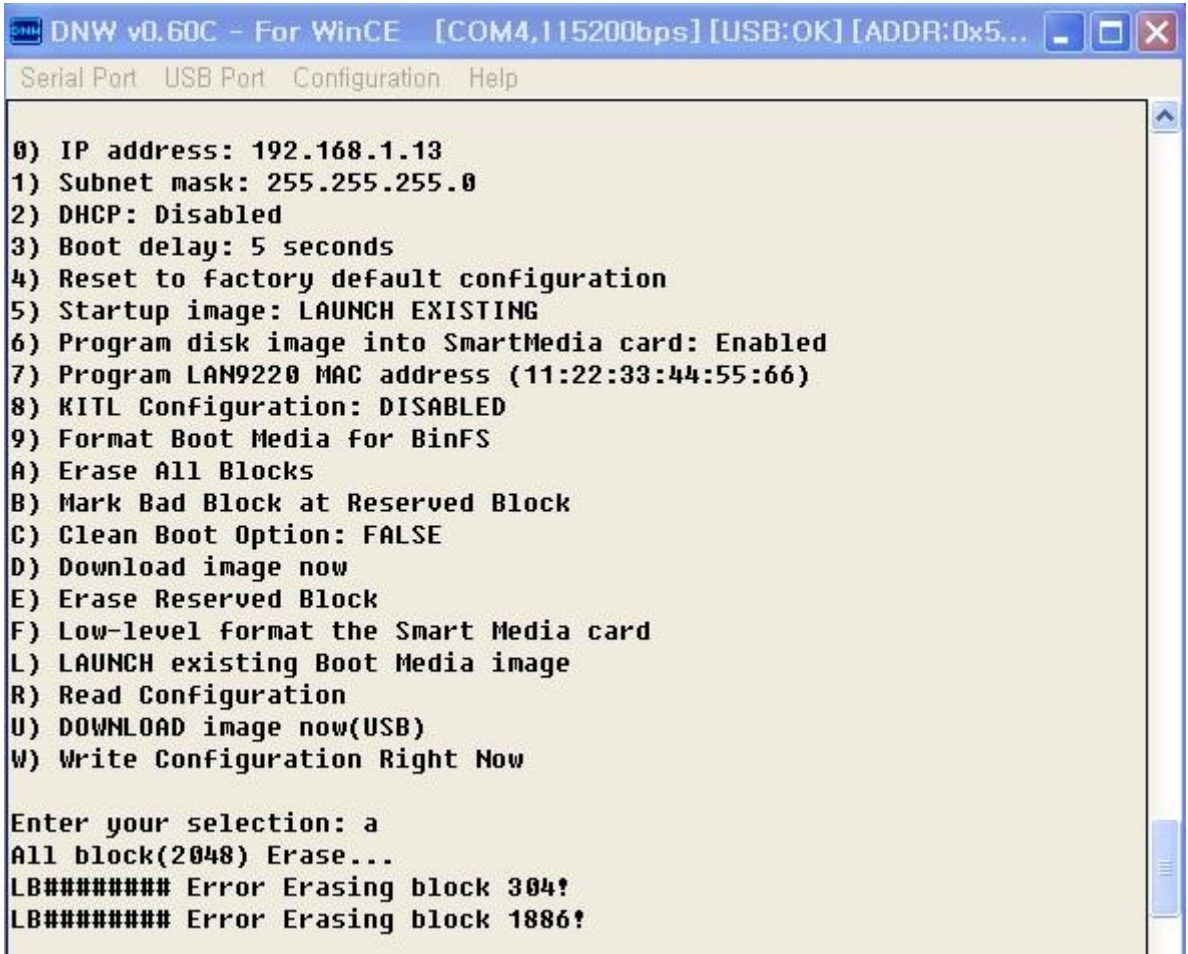
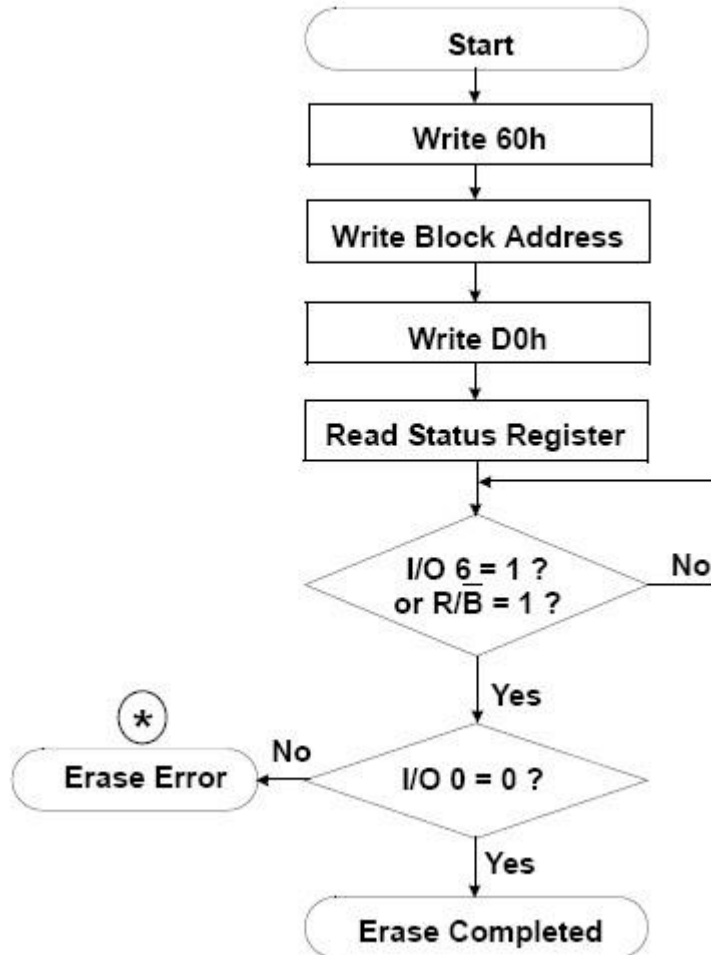


그림 1-2

그림 1-11에 보면, 304,1886 Block이 erase시에 error가 발생을 했습니다.
Nand를 Erase하는 Flowchart는 K9F2G08U0M Datasheet에 나와 있습니다.

Erase Flow Chart



Wince 소스는 c:\WINCE600\PLATFORM\CB6410\SRC\COMMON\NANDFLASH\Fmd\fmd.cpp
에 FMD_LB_EraseBlock()가 수행을 합니다.

```

// Enable the chip
NF_nFCE_L(); // Select the flash chip.
NF_CLEAR_RB();
// Issue command
NF_CMD(CMD_ERASE); // 60H
// Set up address
NF_ADDR((dwPageID & 0xff);
NF_ADDR((dwPageID >> 8) & 0xff);
#if LB_NEED_EXT_ADDR
NF_ADDR((dwPageID >> 16) & 0xff);
#endif
// Complete erase operation
NF_CMD(CMD_ERASE2); // D0H
// Wait for ready bit
NF_DETECT_RB(); // Wait tR(max 12us)
if (NF_RDSTAT & STATUS_ILLACC )
{
    RETAILMSG(1, (TEXT("LB##### Error Erasing block (Illigiar Access) %d! \n"), blockID));
    g_pNFConReg->NFSTAT = STATUS_ILLACC; // Write 1 to clear.
    bRet = FALSE;
}
else
{
    // Check the status
    NF_CMD(CMD_STATUS); // 70H

    if (NF_RDDATA_BYTE() & STATUS_ERROR)
    {
        RETAILMSG(1, (TEXT("LB##### Error Erasing block %d! \n"), blockID));
        bRet = FALSE;
    }
}
}

NF_nFCE_H(); // Select the flash chip.

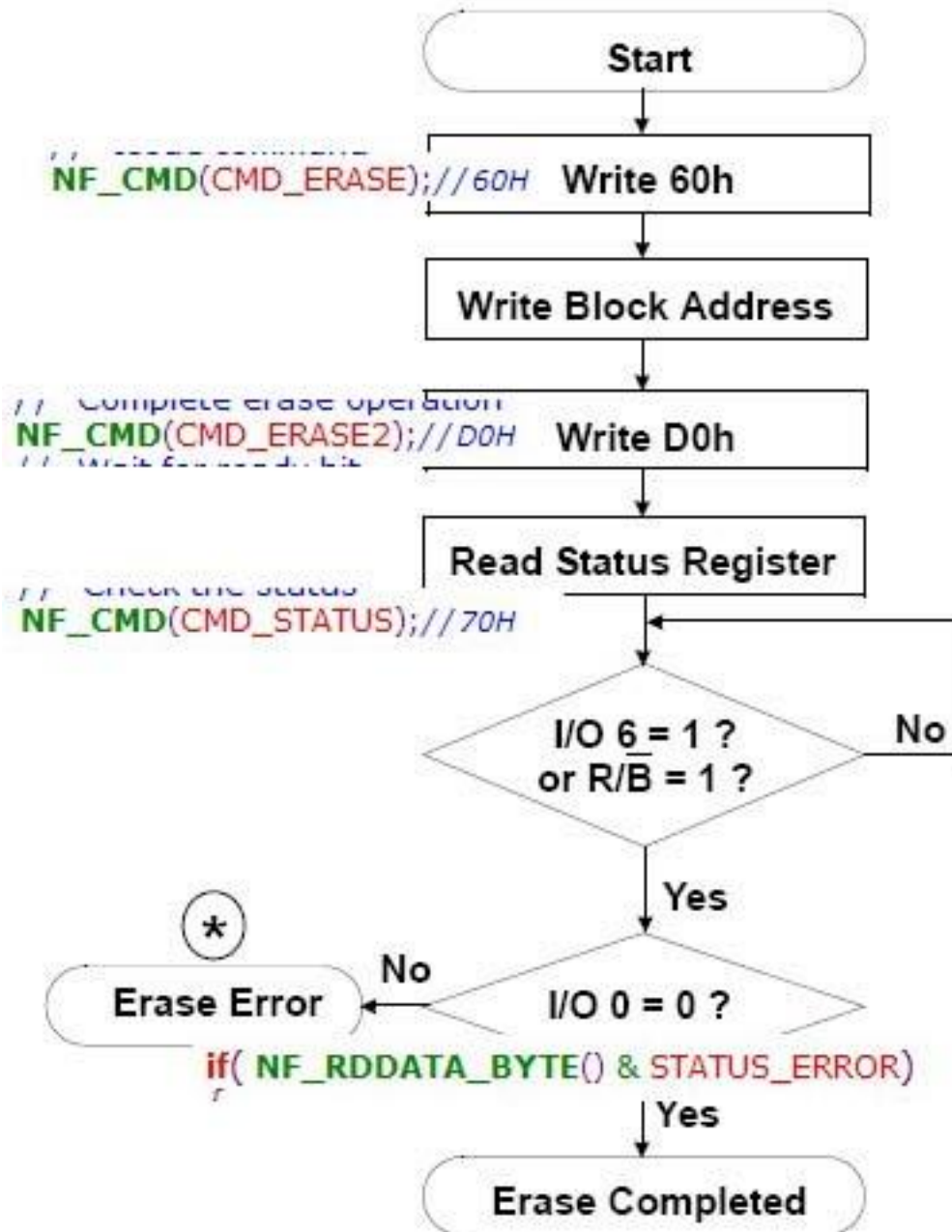
```

그림 1-3

소스와 Flow Chart가 동일하게 일치합니다.

즉, Flow Chart를 보고, 코딩을 하면 했다는 것입니다.

Erase Flow Chart



1.2. Eboot 메뉴를 통하여, stbldr 이미지 올리기

Stbldr의 역할은 PLL, Watchdog, IRQ, SDRAM 초기화하고, Eboot 이미지를 load 역할을 합니다. 그래서, 사이즈도 아주 작습니다.

파일 위치는

c:\WINCE600\OSDesigns\CB6410-V01\RelDir\Mango64_CB6410_Release\stebldr.bin

에 있습니다.

올리는 방법은 Eboot 메뉴에서

5)Startup image: LAUNCH EXISTING

6) Program disk image into SmartMedia card: Enabled

U) DOWNLOAD image now(USB)

선택합니다.

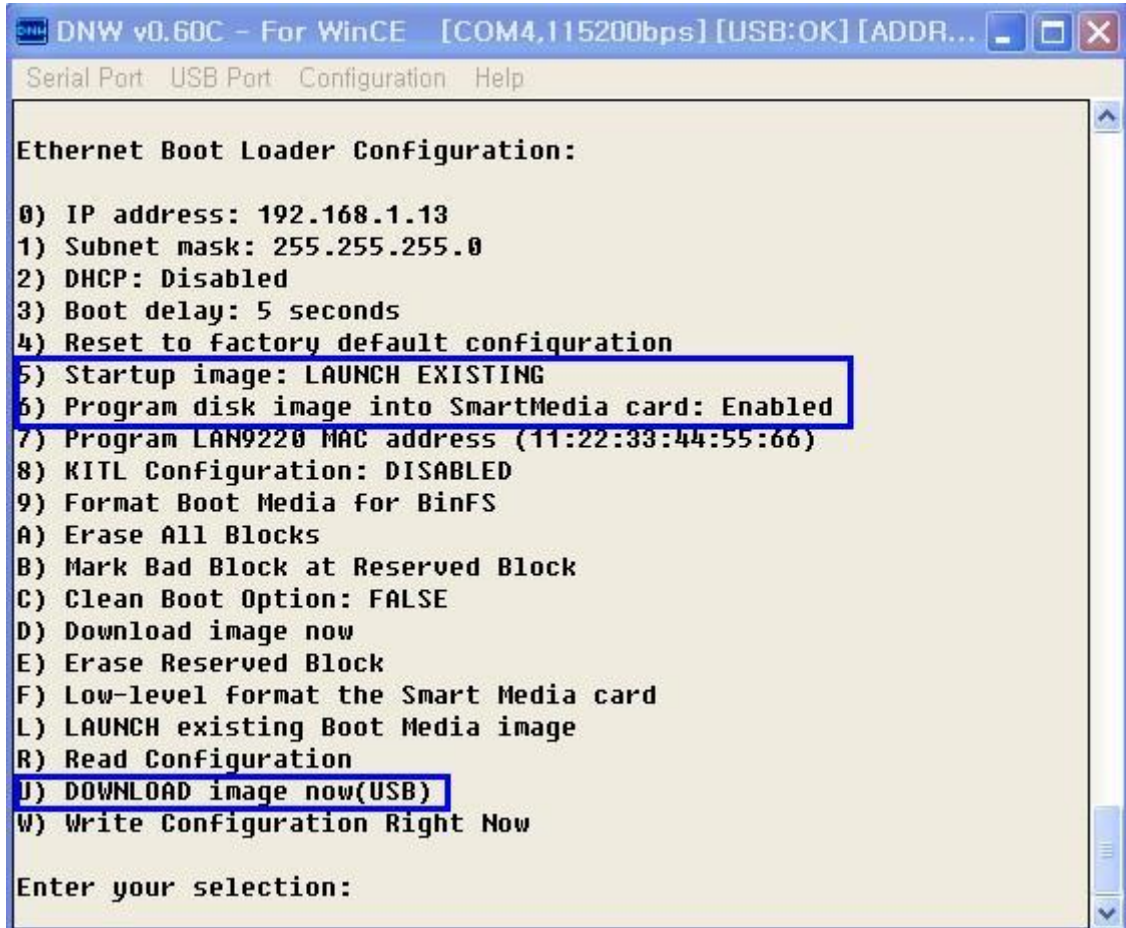


그림 1-4

U) DOWNLOAD image now(USB)

선택하면, USB로 이미지를 다운로드 할 수 있습니다.

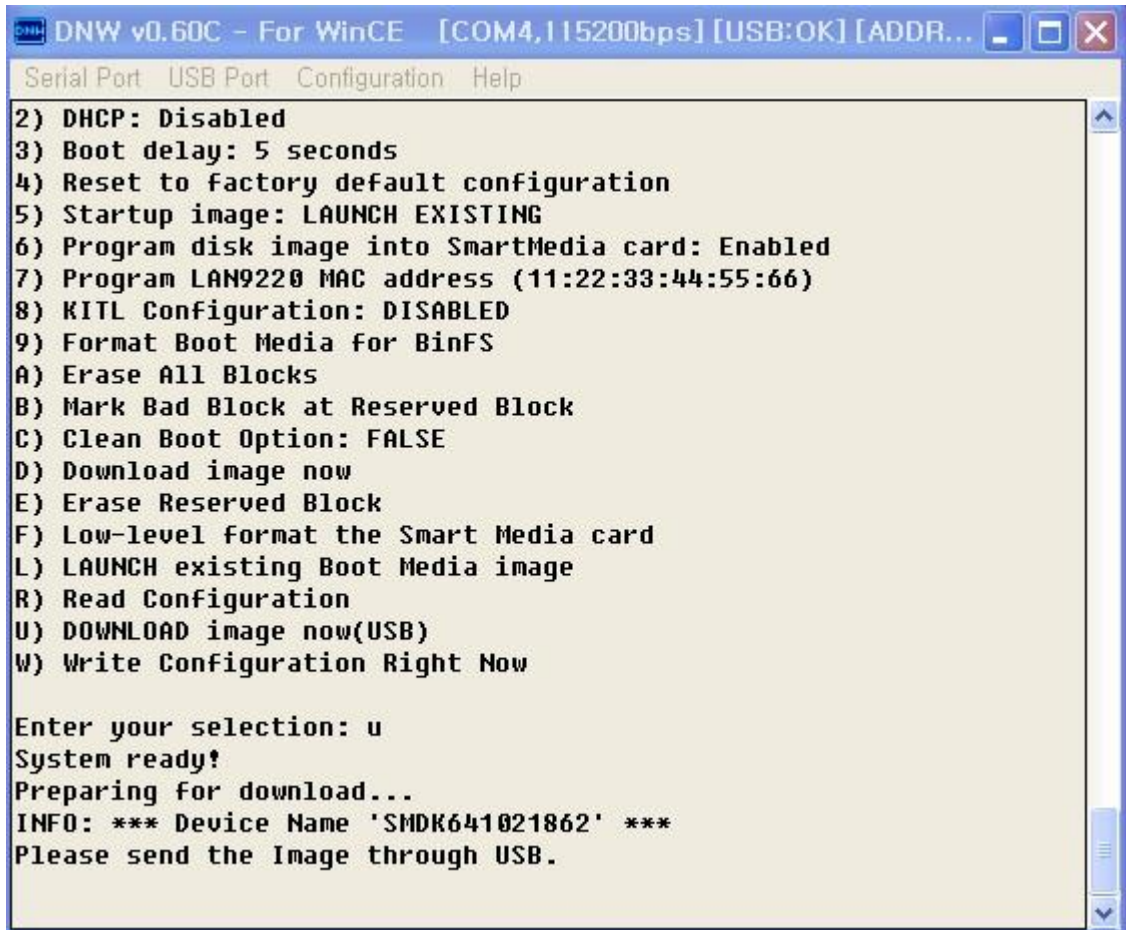


그림 1-5

“Please Send The Image through USB” 메시지가 출력이 되면, USB로 다운로드가 가능하게 됩니다. Steblldr.bin 이미지는 0x50030000 주소에 로드되고, Nand에 0번~2번 Block에 Write이 됩니다. 그 역할을 eboot가 합니다.

DNW Tool에서 “USB Port->UBOOT” 선택

c:\WINCE600\OSDesigns\WC6410-V01\RelDir\Mango64_CB6410_Release\stebldr.bin

선택합니다.

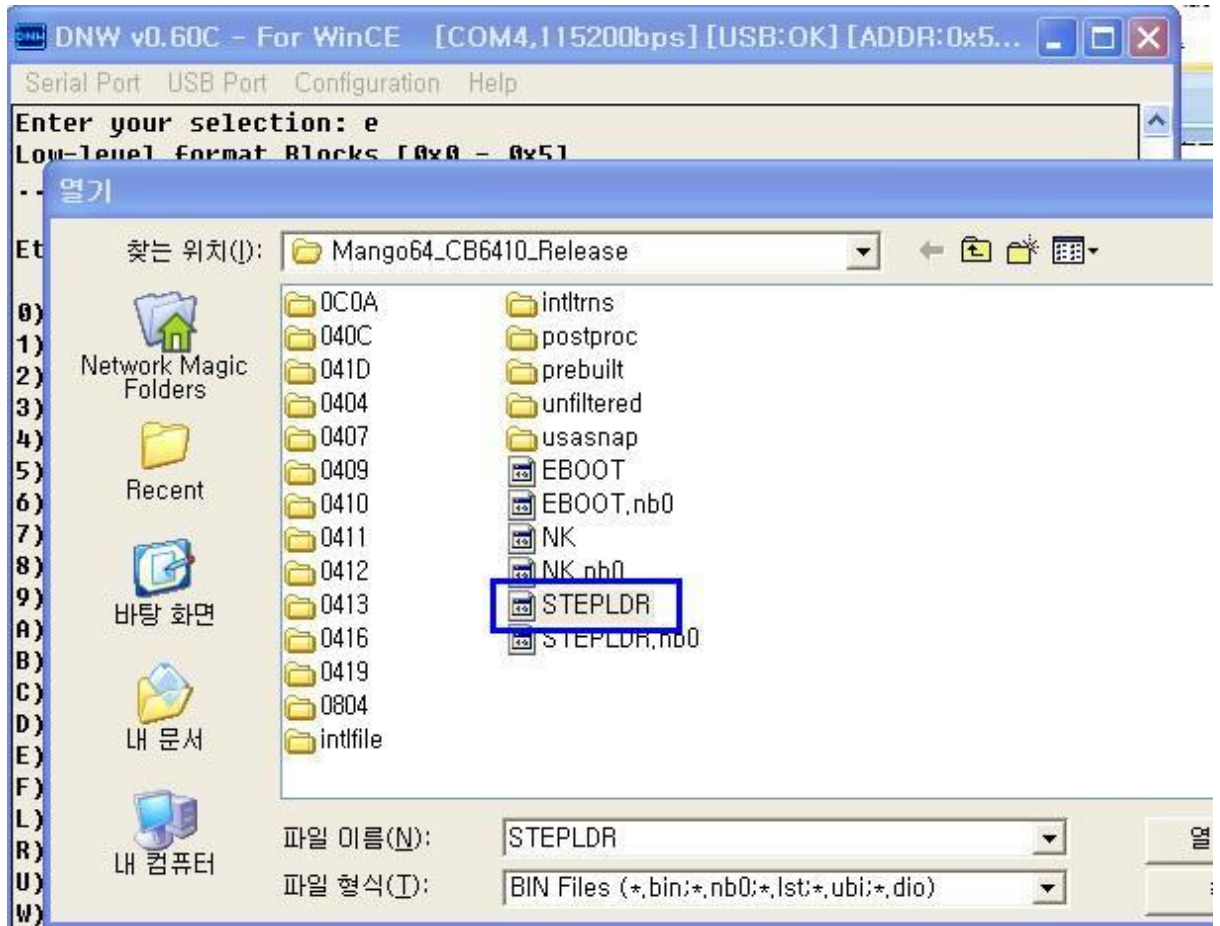


그림 1-6

선택하고 , 그림 1-16같이 메시지가 나오면, 완료가 된 것입니다.


```
DNW v0.60C - For WinCE [COM4,115200bps] [USB:OK] [ADDR:0x5...
Serial Port USB Port Configuration Help

Enter your selection: u
System ready!
Preparing for download...
INFO: *** Device Name 'SMDK641021862' ***
Please send the Image through USB.

BL_IMAGE_TYPE_BIN

Download BIN file information:
-----
[0]: Base Address=0xfffff000 Length=0x2174
-----

Stepldr image
ImageStart = 0x0, ImageLength = 0x0, LaunchAddr = 0x0

Completed file(s):
-----
[0]: Address=0xFFFFF000 Length=0x2174 Name="" Target=RAM
dwImageLength = 0x2000
dwNumBlocks = 0x1
dwBlock(0x0) X g_FlashInfo.wSectorsPerBlock(0x40) = 0x0
dwBytesPerBlock : 131072
INFO: Step loader image stored to Smart Media. Please Reboot.
Halting...
```

그림 1-7

망고64보드를 리부팅하라는 메시지가 나옵니다.
리부팅하면, 됩니다.

1.3. Eboot.bin 이미지 퓨징하기

Eboot를 퓨징해 보도록 하겠습니다.

1.3.1. Nor Flash Mode 부팅 후 Eboot.bin 퓨징하기.

Nor Flash Mode로 부팅 된 상태에서 진행을 하겠습니다.

먼저 Eboot.nb0를 SDRAM에 업로드하여, 실행을 하도록 하겠습니다.

하는 방법은 "1.5. Eboot.nb0 실행하기 " Chapter를 먼저 수행해야 합니다.

Eboot 실행 후 메뉴에서

5) Startup image: LAUNCH EXISTING

6) Program disk image into SmartMedia card: Enabled

U) DOWNLOAD image now(USB)

를 선택합니다.

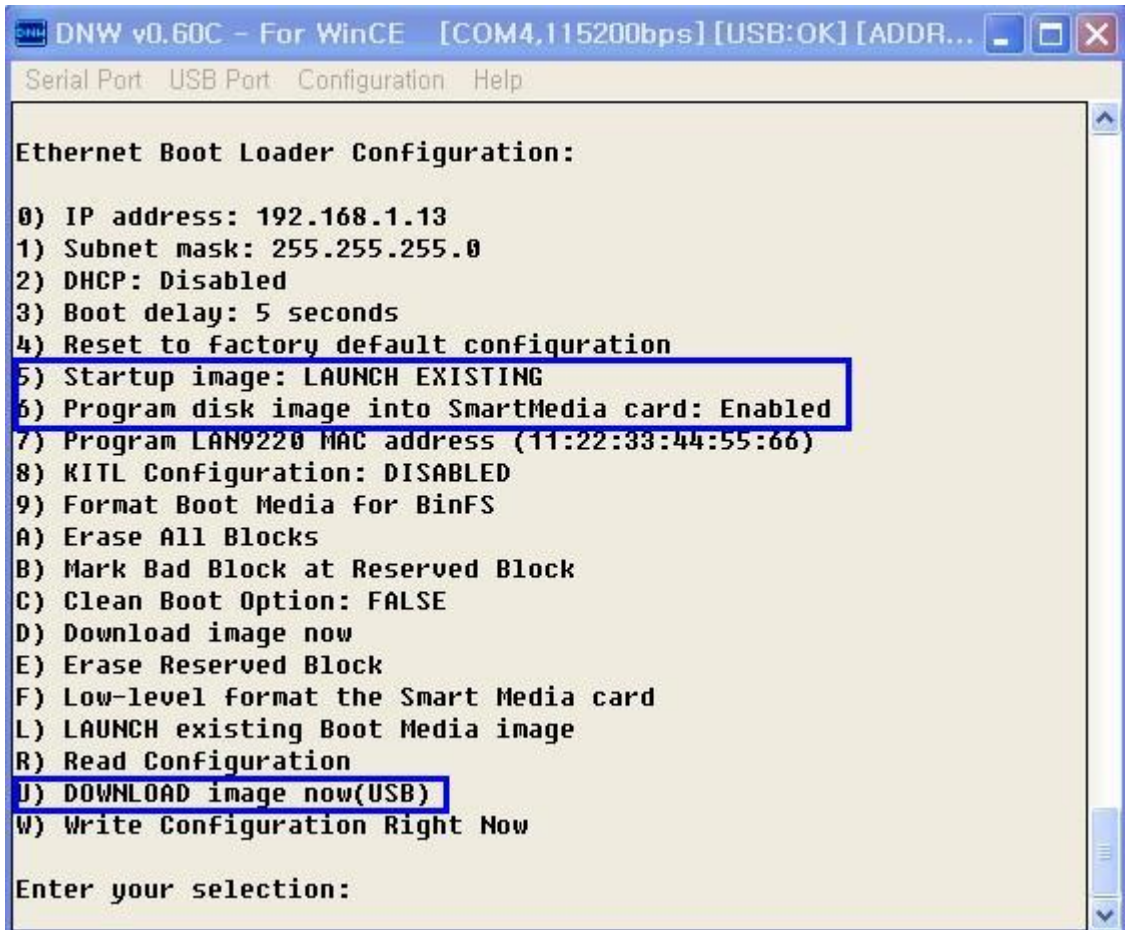


그림 1-8

"USB Port->UBOOT"선택하여

c:\\WINCE600\\OSDesigns\\CB6410-V01\\RelDir\\Mango64_CB6410_Release\\eboot.bin

을 선택합니다.

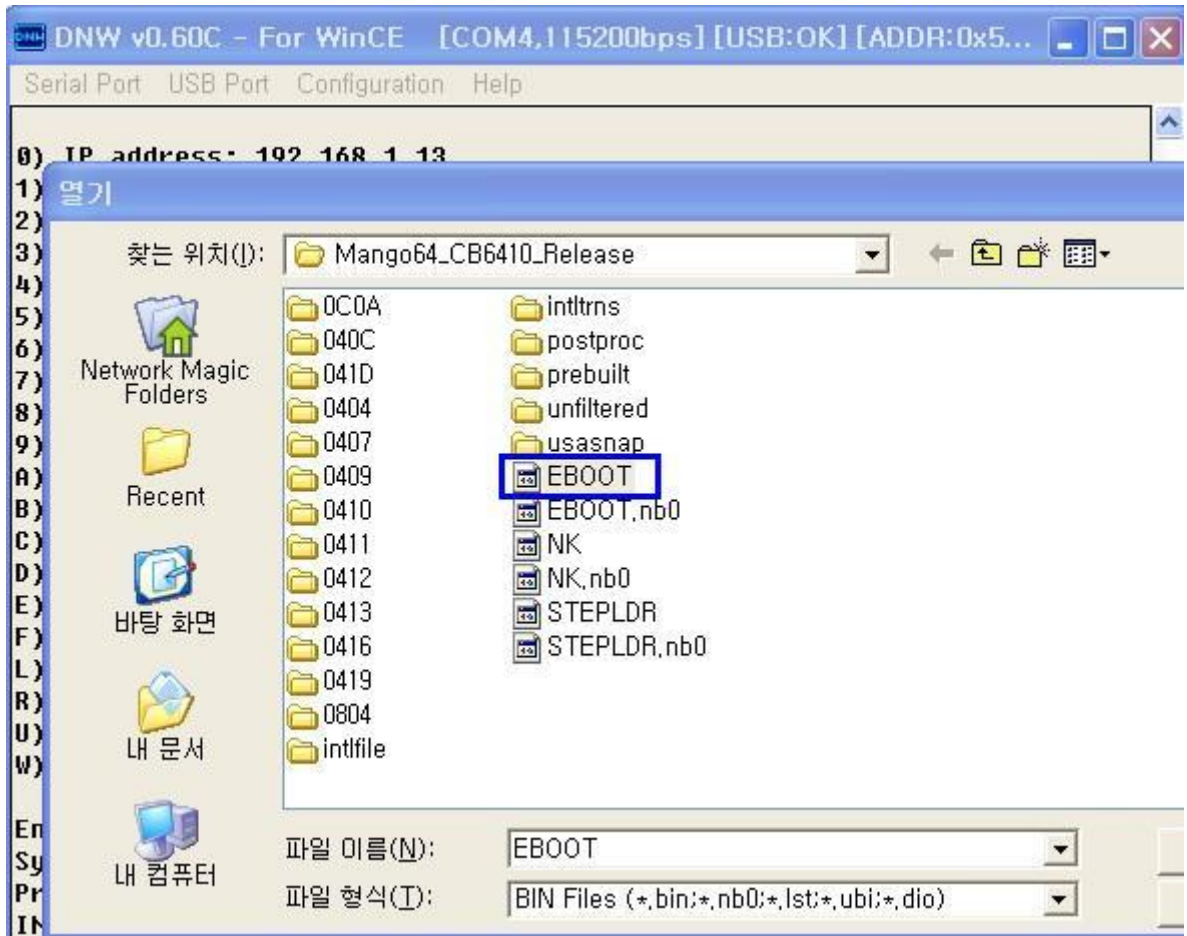


그림 1-9

실행 결과는 아래 그림 1-19 처럼 출력이 되면 정상입니다.

```
DNW v0.60C - For WinCE [COM4,115200bps] [USB:OK] [ADDR:0x500300...
Serial Port USB Port Configuration Help
Port: 0.0.0.0
SubnetMask: 255.255.255.0
}
ID[0] {
  dwVersion: 0x20004
  dwSignature: 0x45424F54
  String: 'eboot.nb0'
  dwImageType: 0x2
  dwTtlSectors: 0x8A
  dwLoadAddress: 0x80030000
  dwJumpAddress: 0x800656D4
  dwStoreOffset: 0x0
  sgList[0].dwSector: 0x80
  sgList[0].dwLength: 0x8A
}
ID[1] {
  dwVersion: 0x1
  dwSignature: 0x43465348
  String: ''
  dwImageType: 0x2
  dwTtlSectors: 0x0
  dwLoadAddress: 0x0
  dwJumpAddress: 0x0
  dwStoreOffset: 0x0
}
chainInfo.dwLoadAddress: 0X00000000
chainInfo.dwFlashAddress: 0X00000000
chainInfo.dwLength: 0X00000000
}
INFO: Eboot image stored to Smart Media. Please Reboot. Halting...
```

그림 1-10

또, Reboot하라는 메시지를 출력합니다.

1.3.2. Nand로 부팅하여 Eboot.bin 퓨징하기

Nand Mode로 부팅하기 위해서는, Nand flash에 stebldr과 eboot가 퓨징이 되어 있어야 합니다.

“1.5. 망고64 Nand Mode로 부팅하기”를 보고, SW100 스위치를 조정합니다.

그리고, 전원을 인가합니다.

Eboot 메뉴에서

- 5) Startup image: LAUNCH EXISTING
- 6) Program disk image into SmartMedia card: Enabled
- U) DOWNLOAD image now(USB)

를 선택합니다.

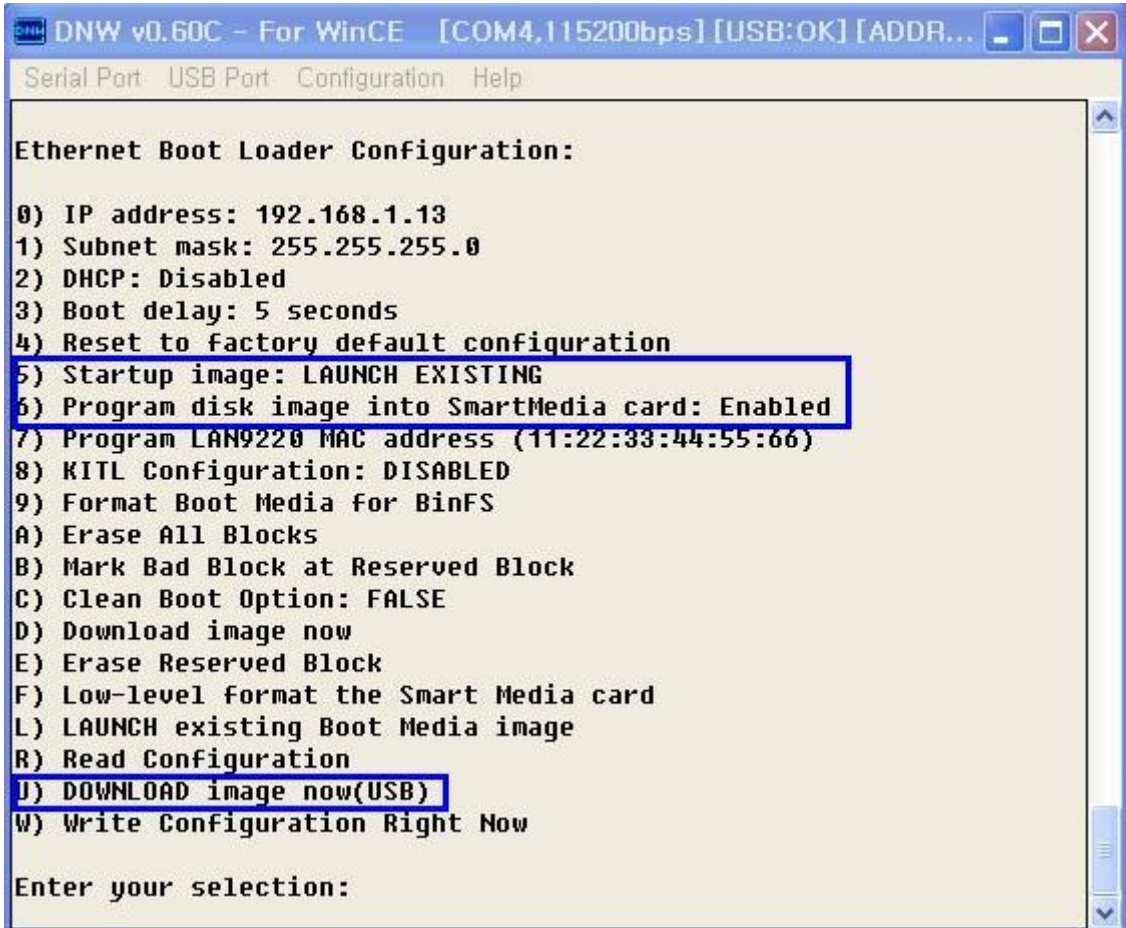


그림 1-11

"USB Port->UBOOT"선택하여

c:\WINCE600\OSDesigns\CB6410-V01\RelDir\Mango64_CB6410_Release\weboot.bin

을 선택합니다.

"1.9.1. Nor Flash Mode 부팅 후 Eboot.bin 퓨징하기"에 Eboot.bin을 퓨징 후 DNW 메시지 창에 나오면 완료가 된 것입니다.

1.4. Nand Flash에 NK.bin 퓨징하기

NK.bin 이미지가 Wince 6.0 OS 이미지입니다.

퓨징하기전에 Nand Flash에는 Steblldr(Stebloader)과 eboot는 퓨징이 되어 있어야 합니다.

망고64 보드에 전원을 인가를 한후, Eboot 실행 메뉴에서

F) Low-level format the Smart Media card

```

DNW v0.60C - For WinCE [COM4,115200bps] [USB:OK] [ADDR:0x500300...
Serial Port USB Port Configuration Help
4) Reset to factory default configuration
5) Startup image: LAUNCH EXISTING
6) Program disk image into SmartMedia card: Enabled
7) Program LAN9220 MAC address (11:22:33:44:55:66)
8) KILT Configuration: DISABLED
9) Format Boot Media for BinFS
A) Erase All Blocks
B) Mark Bad Block at Reserved Block
C) Clean Boot Option: FALSE
D) Download image now
E) Erase Reserved Block
F) Low-level format the Smart Media card
L) LAUNCH existing Boot Media image
R) Read Configuration
U) DOWNLOAD image now(USB)
W) Write Configuration Right Now

Enter your selection: f
Reserving Blocks [0x0 - 0x5] ...
...reserve complete.
Low-level format Blocks [0x6 - 0x7ff] ...
LB##### Error Erasing block 304!
LB##### Error Erasing block 1886!
...erase complete.

```

그림 1-12

Nand flash에 0번 Block에서 5번 Block까지 Reseving Block으로 설정하고,

Nand flash에 6번 Block에서 0x7ff(2047)번 Block까지 다시 Erase를 합니다.

0번 Block부터 5번 Block은 Steblldr(Steploader)와 Eboot가 퓨징이 있으므로, 보호를 하겠다는 의미입니다.

9) Format Boot Media for BinFS

선택하면,

c:\WINCE600\PUBLIC\COMMON\OAK\DRIVERS\WETHDBG\BOOTPART\bootpart.cpp

에 BP_LowLevelFormat()함수가 수행이 됩니다.


```

: BOOL BP_LowLevelFormat(DWORD dwStartBlock, DWORD dwNumBlocks, DWORD dwFlags)
: {
:     dwNumBlocks = min(dwNumBlocks, g_FlashInfo.dwNumBlocks);
:
:     RETAILMSG(1, (TEXT("Enter LowLevelFormat [0x%x, 0x%x].\r\n"), dwStartBlock, dwStartBlock + dwNumBlocks - 1));
:
:     // Erase all the flash blocks.
:     if (!EraseBlocks(dwStartBlock, dwNumBlocks, dwFlags))
:         return(FALSE);
:
:     // Determine first good starting block
:     while (IS_BLOCK_UNUSABLE(dwStartBlock) && dwStartBlock < g_FlashInfo.dwNumBlocks) {
:         dwStartBlock++;
:     }
:
:     if (dwStartBlock >= g_FlashInfo.dwNumBlocks) {
:         RETAILMSG(1, (TEXT("BP_LowLevelFormat: no good blocks\r\n")));
:         return FALSE;
:     }
:
:     // MBR goes in the first sector of the starting block. This will be logical sector 0.
:     g_dwMBRSectorNum = dwStartBlock * g_FlashInfo.wSectorsPerBlock;
:
:     // Create an MBR.
:     CreateMBR();
:
:     RETAILMSG(1, (TEXT("Done.\r\n\r\n")));
:     return(TRUE);
: } ? end BP_LowLevelFormat ?

```

그림 1-13

Wince 이미지라는 시작을 알리는 하나의 표시라고 생각하면 됩니다.

값은 아래 그림을 참조 바랍니다.

```

static BOOL CreateMBR()
{
    // This, plus a valid partition table, is all the CE partition manager needs to recognize
    // the MBR as valid. It does not contain boot code.

    memset(g_pbMBRSector, 0xff, g_FlashInfo.wDataBytesPerSector);
    g_pbMBRSector[0] = 0xE9;
    g_pbMBRSector[1] = 0xED;
    g_pbMBRSector[2] = 0xFF;
    g_pbMBRSector[SECTOR_SIZE-2] = 0x55;
    g_pbMBRSector[SECTOR_SIZE-1] = 0xAA;

    // Zero out partition table so that mspart treats entries as empty.
    memset(g_pbMBRSector+PARTTABLE_OFFSET, 0, sizeof(PARTENTRY) * NUM_PARTS);

    return WriteMBR();
}

```

그림 1-14

MBR을 만들고, Reserved 영역을 제외한 모든 Block을 또 Erase를 합니다.

MBR를 만드는 것은 OS image를 올리기 위한 재구성합니다.

U) DOWNLOAD image now(USB)

"USB Port->UBOOT" 선택 후

c:\WINCE600\OSDesigns\CB6410-V01\RelDir\Mango64_CB6410_Release\Wnk.bin

을 선택합니다.

다운로드가 완료가 되면, 아래와 같은 메시지가 출력이 됩니다.

Initiating image launch in 5 seconds1 seconds.

Launching image from boot media ...

OEMPlatformInit: IMAGE_TYPE_RAMIMAGE

RAM image

RAM image

System ready!

Preparing for download...

INFO: *** Device Name 'SMDK641021862' ***

INFO: Using static IP address 121811.

INFO: Using subnet mask 2525250.

waitforconnect

INFO: using TOC[1] dwJumpAddress: 0x801074a8

INFO: OEMLaunch: Jumping to Physical Address 0x501074A8h (Virtual Address 0x801074A8h)...

Windows CE Kernel for ARM (Thumb Enabled) Built on Jun 16 2009 at 10:08:15

[OAL] ++OEMInit()

[OAL] S3C6410_APLL_CLK : 532000000

[OAL] ARMCLK : 532000000

[OAL] HCLK : 133000000

[OAL] PCLK : 66500000

[OAL] InitializeGPIO()

[OAL] Turn on WIFI power(CB)

[OAL] InitializeCLKSource()

[OAL] InitializeCLKGating()

[OAL] InitializeBlockPower()

DCache: 128 sets, 4 ways, 32 line size, 16384 size

ICache: 128 sets, 4 ways, 32 line size, 16384 size

+OALArgsInit()

Arguments area has some values

-OALArgsInit()

+OALTimerInit(1, 33249, 0)

-OALIntrRequestSysIntr(irq = 38, sysIntr = 16)


```
[OAL] --OEMInit()
OEMSetRealTime(2006/1/1 12:0:0.000)
++OALIoCtlHalInitRTC(CB) = 1
[OAL] Not Clear System Hive
[FMD] FMD_OEMIoControl() : IOCTL_FMD_GET_INTERFACE
[FMD] ++FMD_Init()
[FMD:INF] FMD_Init() : Read ID = 0x0000ecda

[FMD] FMD_Init() : NUM_OF_BLOCKS = 2048

[FMD] FMD_Init() : PAGES_PER_BLOCK = 64

[FMD] FMD_Init() : SECTORS_PER_PAGE = 4

[FMD] --FMD_Init()
[FMD] FMD_GetInfo() : NUMBLOCKS = 2048(0x800), SECTORS PERBLOCK = 64(0x40), BYTES PERSECTOR
= 2048(0x800)
[FMD:ERR] FMD_OEMIoControl() : Unknown IOCTL (0x00071c24)
[OAL] Not Clear Storage
[PWRCON:INF] ++PWC_Init(0xd02becf0)
[PWRCON:INF] g_pSysConReg    = 0xb2a0f000

[PWRCON:INF] --PWC_Init()
-OALIntrRequestSysIntr(irq = 40, sysIntr = 18)
-OALIntrRequestSysIntr(irq = 19, sysIntr = 19)
-OALIntrRequestSysIntr(irq = 23, sysIntr = 20)
-OALIntrRequestSysIntr(irq = 20, sysIntr = 21)
[DISP:INF] g_pDispConReg = 0xb1400000

[DISP:INF] g_pMSMIFReg = 0xb0b08000

[DISP:INF] g_pGPIOReg    = 0xb2b08000

[POST:INF] g_pPostReg = 0xb1300000

[ROT:INF] g_pRotatorReg = 0xb1500000

[TVSC:INF] g_pTVSCReg = 0xb1200000
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[TVEnc:INF] g_pTVEncReg = 0xb1100000

[TVEnc:INF] g_pGPIOReg = 0xb2b08000

[PWRCON:INF] PWC_IOControl(IOCTL_PWRCON_SET_POWER_ON, 7) : BLKPWR_DOMAIN_F On

[PWRCON:INF] PWC_IOControl(IOCTL_PWRCON_SET_POWER_ON, 8) : BLKPWR_DOMAIN_P On

-OALIntrRequestSysIntr(irq = 88, sysIntr = 22)

[PWRCON:INF] ++PowerMonitorThread()

[PWRCON:INF] PwrCon_get_reset_status() : H/W Reset [0x00000001]

[PWRCON:INF] Notified [PBT_POWERINFOCHANGE]

[IIS:INF] g_pIISReg = 0xb2b02000

[IIS:INF] g_pGPIOReg = 0xb2b08000

[DMA:INF] g_pDMAC0Reg = 0xb0e00000

[DMA:INF] g_pDMAC1Reg = 0xb0f00000

[DMA:INF] g_pSysConReg = 0xb2a0f000

[DMA:INF] All DMA Source is set to Normal DMA

[DMA:INF] DMA_request_channel() : Ch[0] in DMAC0 is Available for DMASrc[10]

[DMA:INF] DMA_request_channel() : Ch[1] in DMAC0 is Available for DMASrc[11]

-OALIntrRequestSysIntr(irq = 65, sysIntr = 23)

-OALIntrRequestSysIntr(irq = 66, sysIntr = 24)

[WAV:INF] ++InterruptThreadOutputDMA()

[WAV:INF] InitInterruptThread() : IST Priority = 149

[HSMMC0] Initializing the HSMMC Host Controller

-OALIntrRequestSysIntr(irq = 43, sysIntr = 25)

-OALIntrRequestSysIntr(irq = 94, sysIntr = 26)

[HSMMC0] Turn OFF the F/B delay control.

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[HSMMC1] Initializing the HSMMC Host Controller
-OALIntrRequestSysIntr(irq = 95, sysIntr = 27)
[HSMMC0] IsCardPresent: OK!
[HSMMC0] Card is Inserted!
[HSMMC1] Turn OFF the F/B delay control.
[HSMMC1] Card is Removed!
[HSMMC0] Turn OFF the F/B delay control.
[HSMMC0] Setting for 1 bit mode , Clock Rate = 100000 Hz
[HSMMC0] Turn OFF the F/B delay control.
[UFPNDD] USB Serial Function Class Enabled
[USB] dii.dwIrq = 96

-OALIntrRequestSysIntr(irq = 96, sysIntr = 28)
Current Client "Serial_Class"
[UFPNDD] USB Serial Function Class Enabled
[HSMMC0] Setting for 4 bit mode , Clock Rate = 25000000 Hz
[HSMMC0] Turn OFF the F/B delay control.
[UFPNDD] OTG Cable Attached
[USBH:INF] InitializeOHCI() : USB Host Cap : 0x00000004
[PWRCON:INF] PWC_IOControl(IOCTL_PWRCON_SET_POWER_ON, 13) : BLKPWR_DOMAIN_V On

[MFC POWER] Power is up.[PWRCON:INF] PWC_IOControl(IOCTL_PWRCON_SET_POWER_OFF, 13) :
BLKPWR_DOMAIN_V Off

[MFC POWER] Power is down-OALIntrRequestSysIntr(irq = 26, sysIntr = 29)
MFC Interrupt has been initialized.
[MFC IOCTL_POWER_CAPABILITIES]
[MFC IOCTL_POWER_CAPABILITIES] leaving...
[PWRCON:INF] PWC_IOControl(IOCTL_PWRCON_SET_POWER_ON, 13) : BLKPWR_DOMAIN_V On

[MFC POWER] Power is up.[PWRCON:INF] PWC_IOControl(IOCTL_PWRCON_SET_POWER_OFF, 13) :
BLKPWR_DOMAIN_V Off

[MFC POWER] Power is down-OALIntrRequestSysIntr(irq = 18, sysIntr = 30)
SMB_Init: Get chip info chipid 2, mlversion 2, alversion 0.
PRS_Init: SMD500 pressure sensor detected. chipid 0.
[UFPNDD] RESET Again
[PWRCON:INF] PWC_IOControl(IOCTL_PWRCON_SET_POWER_ON, 7) : BLKPWR_DOMAIN_F On

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-OALIntrRequestSysIntr(irq = 21, sysIntr = 31)
2D Sysintr : 31
[DISP:INF] VCLK Source = LCDCLK (133000000 Hz)

[DISP:INF] VCLKSrc = 133000000, VCLK = 24661140, Div = 5

[DISP:INF] VCLK Direction = Divided, Divider = 5, VCLK = 26600000 Hz

-OALIntrRequestSysIntr(irq = 100, sysIntr = 32)
-OALIntrRequestSysIntr(irq = 37, sysIntr = 33)
[TSP:INF] DdsiTouchPanelEnable() : gIntrTouch = 32
[TSP:INF] DdsiTouchPanelEnable() : gIntrT-OALIntrRequestSysIntr(irq = 32, sysIntr = 34)
ouchChanged = 33
[HSMC0] Setting for 4 bit mode , Clock Rate = 25000000 Hz
[HSMC0] Turn OFF the F/B delay control.
[WiFi]: Firmware Version: 9.70.3.23
OEMSetRealTime(2009/12/31 14:11:36.000)

메시지 1-15