## AM1808 Mango1808 Wince 6.0 이미지 Write 방법

http://www.mangoboard.com/ http://cafe.naver.com/embeddedcrazyboys Crazy Embedded Laboratory

## **Document History**

Revision	Date	Change note

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## **1. AM1808 Mango1808 Wince 6.0 이미지 Write 방법** Soc :

**1.1. Connections and ready for download** 

1.1.1. MANGO1808 전원 및 Cable 연결 방법



### 1.1.2. 다운로드 및 준비

소스를 다운





#### OMAPL138\_AM18X.zip 압축 풀어줌



Command 창 실행 Cd <경로>₩OMAPL138\_AM18X₩SRC₩BOOT₩TOOLS₩new\_bin

UART2 Boot SW [1],[2],[4]ON 나머진 OFF

#### 1.2. How to erase and eboot writer

#### 1.2.1. MANGO1808 How to NAND Erase

> sfh\_OMAP-L138.exe -erase -targetType MANGO1808 -flashType NAND -p COM'X'
D:\#image\#mango1808\#20130423\#OMAPL138\_AM18X\#SRC\#BOOT\#TOOLS\#bin>sfh\_OMAP-L138.exe -erase -targetType MANGO1808 -flashType NAND -p COM11
TI Serial Flasher Host Program for OMAP-L138
(C) 2010, Texas Instruments, Inc.
Ver. 1.67

[TYPE] Global erase [TARGET] AM1808 [DEVICE] NAND

Attempting to connect to device COM11... Press any key to end this program at any time.

(AIS Parse): Read magic word 0x41504954.(AIS Parse): Waiting for BOOTME... (power on or reset target now)

Power on & reset

(AIS Parse): BOOTME received!

- (AIS Parse): Performing Start-Word Sync...
- (AIS Parse): Performing Ping Opcode Sync...
- (AIS Parse): Processing command 0: 0x58535901.
- (AIS Parse): Performing Opcode Sync...
- (AIS Parse): Loading section...
- (AIS Parse): Loaded 14376-Byte section to address 0x80000000.
- (AIS Parse): Processing command 1: 0x58535901.
- (AIS Parse): Performing Opcode Sync...
- (AIS Parse): Loading section...
- (AIS Parse): Loaded 1320-Byte section to address 0x80003828.
- (AIS Parse): Processing command 2: 0x58535906.
- (AIS Parse): Performing Opcode Sync...
- (AIS Parse): Performing jump and close...
- (AIS Parse): AIS complete. Jump to address 0x80000000.
- (AIS Parse): Waiting for DONE ...
- (AIS Parse): Boot completed successfully.

Waiting for SFT on the OMAP-L138...

Erasing flash

Erase complete

Operation completed successfully.

#### 1.2.2. Mango1808 How to Eboot NAND writer

> sfh\_OMAP-L138.exe -flash -flashType NAND -targetType MANGO1808 -v -p COM'X' appStartAddr 0xc7f60000 -appLoadAddr 0xc7f60000 ubl\_MANGO1808\_NAND.bin EBOOTNANDFLASH.nb0 D:\#image\#mango1808\#20130423\#OMAPL138\_AM18X\#SRC\#BOOT\#TOOLS\#new\_bin>sfh\_OMAP -L138.exe -flash -flashType NAND -targetType MANGO1808 -v -p COM11 -appStartAddr 0xc7f60000 -appLoadAddr 0xc7f60000 ubl\_MANGO1808\_NAND.bin EBOOTNANDFLASH.nb0 \_\_\_\_\_ TI Serial Flasher Host Program for OMAP-L138 (C) 2012, Texas Instruments, Inc. Ver. 1.67 \_\_\_\_\_ [TYPE] UBL and application image [UBL] ubl\_MANGO1808\_NAND.bin [APP IMAGE] EBOOTNANDFLASH.nb0 [TARGET] MANGO1808 [DEVICE] NAND [NAND Block] 1 Attempting to connect to device COM11... Press any key to end this program at any time. (AIS Parse): Read magic word 0x41504954. (AIS Parse): Waiting for BOOTME... (power on or reset target now)

Power on & reset

(AIS Parse): BOOTME received!

(AIS Parse): Performing Start-Word Sync...

(AIS Parse): Performing Ping Opcode Sync...

(AIS Parse): Processing command 0: 0x58535901.

(AIS Parse): Performing Opcode Sync...

(AIS Parse): Loading section...

(AIS Parse): Loaded 14376-Byte section to address 0x80000000.

(AIS Parse): Processing command 1: 0x58535901.

(AIS Parse): Performing Opcode Sync...

(AIS Parse): Loading section...

(AIS Parse): Loaded 1320-Byte section to address 0x80003828.

(AIS Parse): Processing command 2: 0x58535906.

(AIS Parse): Performing Opcode Sync...

(AIS Parse): Performing jump and close...

(AIS Parse): AIS complete. Jump to address 0x80000000.

(AIS Parse): Waiting for DONE...

(AIS Parse): Boot completed successfully.

Waiting for SFT on the OMAP-L138...

Target: BOOTUBL

Target: BEGIN

Target: DONE

Target: CurrBlockNum =0x00000001

Target: Writing image data to Block 0x0000001, Page 0x00000000 Target: Writing image data to Block 0x0000001, Page 0x00000001 Target: Writing image data to Block 0x0000001, Page 0x00000002 Target: Writing image data to Block 0x0000001, Page 0x00000004 Target: Writing image data to Block 0x0000001, Page 0x00000004 Target: Writing image data to Block 0x0000001, Page 0x00000005 Target: Writing image data to Block 0x0000001, Page 0x00000005 Target: Writing image data to Block 0x0000001, Page 0x00000006 Target: Writing image data to Block 0x0000001, Page 0x00000006 Target: Writing image data to Block 0x0000001, Page 0x00000007 Target: SENDING

Target: DONE

Flashing application EBOOTNANDFLASH.nb0 (262144 bytes)

Target: SENDIMG

Target: BEGIN

Target: DONE

100% [ ??????????????????????????????????
Application programming complete
Target: Number of blocks needed for header and data: 0x0x00000003
Target: Attempting to start in block number 0x0x00000006.
Target: Magicnum: 0x0x55424CBB
Target: Entrypoint: 0x0xC7F60000
Target: Numpage: 0x0x0000080
Target: Writing header and image data to Block 0x0000006, Page 0x000000
00
Target: DONE
Target: DONE
Operation completed successfully.

### 1.3. How to NAND that NK Writer and boot setting

NAND Boot SW [1],[5]ON 나머진 OFF

Reset

```
_____
  Main Menu
 _____
  [1] Show Current Settings
  [2] Boot Settings
  [3] Network Settings
  [5] Video Settings
  [6] Save Settings
  [7] Peripheral Tests
  [R] Reset Settings To Default Values
  [0] Exit and Continue
  Selection:
Selection: 1
Boot:
 Boot delay ...... 3
 Boot device ..... NK from SD
 Debug device ..... EMAC
 Clean Boot ..... No
 Write RAM NK to flash: .. No
```

Device ID Strin	g (not specified)
Allow DSP to B	Boot: No
Network:	
KITL state	disabled
KITL mode	interrupt
DHCP	enabled
MAC address	
MAC address IP address	04:32:f4:fd:e9:21 0.0.0.0
MAC address IP address IP mask	04:32:f4:fd:e9:21 0.0.0.0 0.0.0.0
MAC address IP address IP mask IP router	04:32:f4:fd:e9:21 0.0.0.0 0.0.0.0 0.0.0.0

모든 메뉴에서 1을 누르면 Show Current Settings [3] Network Settings 선택

[3] KITL interrupt/poll mode 선택 후 > y

[8] Enable/disable VMINI 선택 후 > y

\_\_\_\_\_ **Network Settings** \_\_\_\_\_ [1] Show Current Settings [2] Enable/disable KITL [3] KITL interrupt/poll mode [4] Enable/disable DHCP [5] Set IP address [6] Set IP mask [7] Set default router [8] Enable/disable VMINI [0] Exit and Continue Selection: Selection: 3 Set KITL to poll mode [y/-]: y KITL set to pool mode Selection: 8 Enable VMINI (actually disabled) [y/-]: y VMINI enabled Selection: 1 Network: KITL state ..... disabled

Main Menu로 돌아와 [2] Boot Settings 선택 [2] Select Boot Device 선택 [3] NK from NAND flash 선택 [6] Write Download RAM NK to Flash 선택 후 > y

Boot Settings
[1] Show Current Settings
[2] Select Boot Device
[3] Select Boot Delay
[4] Select Debug Device
[5] Force Clean Boot
[6] Write Download RAM NK to Flash
[7] Set Device ID String
[8] Allow DSP to Boot
[0] Exit and Continue
Selection:
Select Boot Device
[1] EMAC
[2] NK from SD
[3] NK from NAND flash
[0] Exit and Continue
Selection (actual NK from SD):
[3] NK from NAND flash
Boot Settings

[1] Show Current Settings [2] Select Boot Device [3] Select Boot Delay [4] Select Debug Device [5] Force Clean Boot [6] Write Download RAM NK to Flash [7] Set Device ID String [8] Allow DSP to Boot [0] Exit and Continue Selection: 6 Enable Write Download RAM NK to Flash (actually disabled) [y/-]: y Write Download RAM NK to Flash enabled Boot: Boot delay ...... 3 Boot device ..... NK from NAND flash Debug device ..... EMAC Clean Boot ..... No Write RAM NK to flash: .. Yes Device ID String ...... (not specified) Allow DSP to Boot: ..... No

Main Menu로 돌아와 [6] Save Settings 선택 후 > y

Main Menu
[1] Show Current Settings
[2] Boot Settings
[3] Network Settings
[5] Video Settings
[6] Save Settings
[7] Peripheral Tests
[R] Reset Settings To Default Values
[0] Exit and Continue
Selection:6
Do you want save current settings [-/y]? y
Current settings has been saved

Visual studio 2005 **(build가 완료되어 있어야 함)** 에서 Target > Connectivity Options... 선택

Ta	get	Tools	Window	Community
₽o	Atta	c <u>h</u> Devic	e	
₽.	Deta	ach Devi	се	
‰	Res	et De <u>v</u> ic	e	
CE>	Tar	get Cont	rol	Alt+1
	Run	Program	ns	
	CE	Debug <u>Z</u>	ones	
P	Cor	nectivity	Options	
	Deb	ug Mes	sage <u>O</u> ption	ns
	Rel	ease Dire	ectory Mod	ules
	Ren	note <u>T</u> oo	ls	۱.

#### 아래와 같이 설정 후 Apply

Device Configuration	Target Device:		
Delete Device	CE Device		
	Download:		
Service Configuration	Ethernet	•	Settings
Kernel Service Map	(AM1808-59681)		
Core Service Settings	Transport:		
Service Status	Ethernet	•	Settings
	(AM1808-59681)		
	D <u>e</u> bugger:		
	KdStub		Settings
	( Prompt On Error )		

Eboot Menu 돌아와

[2] Boot Settings 선택

[2] Select Boot Device 선택

[1] EMAC 선택

[0] Exit and Continue 로 나가 부팅되도록 함

-----

Boot Settings
[1] Show Current Settings
[2] Select Boot Device
[3] Select Boot Delay
[4] Select Debug Device
[5] Force Clean Boot
[6] Write Download RAM NK to Flash
[7] Set Device ID String
[8] Allow DSP to Boot
[0] Exit and Continue
Selection:
Select Boot Device
[1] EMAC
[2] NK from SD
[3] NK from NAND flash
[0] Exit and Continue
Selection (actual NK from SD):
[1] EMAC
Boot:
Boot delay 3
Boot device EMAC
Debug device EMAC
Clean Boot No
Write RAM NK to flash: Yes
Device ID String (not specified)
Allow DSP to Boot: No

#### 아래와 같은 로그 확인 가능

BBBBBBBlight On
Device ID set to AM1808-59681
MAC addr is 4:32:f4:fd:e9:21.
OMAPEmacInit: f_pEmacRxDesc = 0x1e20000
OMAPEmacInit: f_pEmacTxDesc = 0x1e21000
OMAPEmacInit: waiting for active phy
OMAPEmacInit: f_pMdioRegs->m_Alive = 0x3
INFO: Boot device uses MAC 04:32:f4:fd:e9:21

InitDHCP():: Calling ProcessDHCP() ProcessDHCP()::DHCP\_INIT Got Response from DHCP server, IP address: 192.168.50.9

ProcessDHCP()::DHCP IP Address Resolved as 192.168.50.9, netmask: 255.255.255.0 Lease time: 864000 seconds Got Response from DHCP server, IP address: 192.168.50.9 No ARP response in 2 seconds, assuming ownership of 192.168.50.9 +EbootSendBootmeAndWaitForTftp Sent BOOTME to 255.255.255.255

위와 같이 연결이 되면

Visual studio 돌아와 Target Device Connectivity Options 에서 Settings클릭

Device Configuration			
Add Device	Target Device:		
Delete Device	CE Device		
	Download:	-	
Service Configuration	Ethernet	*	Settings
Kernel Service Map	(AM1808-59681)		
Core Service Settings	T <u>r</u> ansport:		
Service Status	Ethernet	-	Settings
	(AM1808-59681)		
	D <u>e</u> bugger:		
	KdStub	-	Settings
	( Prompt On Error )		
	Apply Close		Help

아래와 같은 창이 생성 Active target devices: 아래 AM1808-59681 생성되면 클릭 후 ok클릭

AM1808-59681		-
IP address:	192.168.50.9	
Boot loader:	1.0	
<u>A</u> ctive target de	vices:	
AM1808-59681		~
		×
IFTP block size in	n bytes:	~

#### Close 클릭

Device Configuration	Target Device:		
Dalata Davisa	CE Device		
<u>Delete Device</u>	Download:		
Service Configuration	Ethernet	•	Settings
Kernel Service Map	(AM1808-59681)	Rectander Street	
Core Service Settings	T <u>r</u> ansport:		
Service Status	Ethernet	-	Settings
	(AM1808-59681)		
	D <u>e</u> bugger:		
	KdStub	•	Settings
	( Prompt On Error )	_	

Target > Attach Device 선택



#### 다운로드 완료 후 Close로 창을 닫음

Download Complete!	
Estimated time left:	(25.5 MB of 25.5 MB copied)
Download through:	Ethernet
Transfer rate:	566 KB/sec
Close this dialog b	ox when download completes
	<u>Close</u> Cancel

Target > Detach Device 선택



#### Log 확인

Packet has the following data:
boot.bin[NULL]octet[NULL]
TFTP packet could have 1 name/value pairs
Locked Down Link 1
Src IP 192.168.50.9 Port 03D4 Dest IP 192.168.50.8 Port 085C
Default TFTP block size set to: 512 bytes
There were no options detected in the TFTP
EthDown::TFTPD_OPEN::boot.bin
-EbootSendBootmeAndWaitForTftp
EbootInitEtherTransport Done
BL_IMAGE_TYPE_BIN
OEMMultiBINNotify: Download BIN file information:
[0]: Address=0x80000000 Length=0x01a6592c Base=0xc0000000
DOWNLOAD_TYPE_FLASHRAM
TFTP: Desktop losing ACK, block number = 32968, Ack again
rom_offset=0x0.
ImageStart = 0x80000000, ImageLength = 0x1A6592C, LaunchAddr = 0x80001000
Completed file(s):
[0]: Address=0x80000000 Length=0x1A6592C Name="" Target=FLASH

OEMWriteFlash: Writing NK image to NAND flash OEMWriteFlash: Flash has 262144 sectors, 2048 bytes/sector

ROMHDR (pTOC = 0xc1a6334c) -----DLL First : 0x4001c001 DLL Last : 0x415ac0a0 Physical First : 0x8000000 Physical Last Num Modules : RAM Start : 0x81a70000 : 0x81a7f000 .0x8373f800 205 Num Copy Entries : 2 Copy Entries Offset : 0x8060ad08 Prof Symbol Length : 0x0000000 Prof Symbol Offset : 0x0000000 : Num Files 109 Kernel Flags : 0x0000000 FileSys RAM Percent : 0x30303030 Driver Glob Start : 0x0000000 Driver Glob Length : 0x0000000 CPU : 0x01c2 MiscFlags : 0x0002 Extensions : 0x80001070 Tracking Mem Start : 0x0000000 Tracking Mem Length : 0x00000000

OEMWriteFlash: Written 0% OEMWriteFlash: Written 0% OEMWriteFlash: Written 0% OEMWriteFlash: Written 0%

... OEMWriteFlash: Written 99% OEMWriteFlash: Written 99% OEMWriteFlash: Written 99% OEMWriteFlash: Written 99%

•••

OEMWriteFlash: NK written ROMHDR at Address 80000044h Image Start .....: 0x8000000 Image Size .....: 0x01a6592c Image Launch Addr .: 0x80001000 Image ROMHDR .....: 0xc1a6334c Boot Device/Type ..: 2 / 6 Got EDBG\_CMD\_JUMPIMG Got EDBG\_CMD\_CONFIG, flags:0x00000000 BLFlashDownload: LogicalLoc - 0x62000000 Load NK image from flash memory (NAND) BLFlashDownload: cp1 ROMHDR (pTOC = 0xc1a6334c) -----: 0x4001c001 DLL First DLL Last : 0x415ac0a0 Physical First : 0x8000000 Physical Last : 0x81a6592c : Num Modules 205 : 0x81a70000 : 0x81a7f000 RAM Start RAM Free RAM End : 0x8373f800 Num Copy Entries : 2 Copy Entries Offset : 0x8060ad08 Prof Symbol Length : 0x0000000 Prof Symbol Offset : 0x0000000 Num Files : 109 Kernel Flags : 0x00000000 FileSys RAM Percent : 0x30303030 Driver Glob Start : 0x0000000 Driver Glob Length : 0x0000000 CPU : 0x01c2 : MiscFlags 0x0002 Extensions : 0x80001070 Tracking Mem Start : 0x00000000 Tracking Mem Length : 0x00000000 \_\_\_\_\_

ADEO: Launch Windows Embedded CE by jumping to 0xc0000000
Windows CE Kernel for ARM (Thumb Enabled) Built on Sep 25 2009 at 11:04:23
OEMInit: init.c built on Jun 7 2013 at 13:26:07.
BSP version 01.10.00, SOC version 01.10.00
INFO:OALLogSetZones: dpCurSettings.ulZoneMask: 0xf
WARN: Updating local copy of BSP_ARGS
Intr Init done
Timer Init done
+OALDumpClocks
Clock Configuration :
Reference Clock 0 24000000 Hz
PLL0 456000000 Hz
PLL0:SYSCLK1 456000000 Hz (DSP Subsystem)
PLL0:SYSCLK2 22800000 Hz
(UART,EDMA,SPI,MMC/SD,VPIF,LCDC,SATA,uPP,USB2.0,HPI,PRU)
PLL0:SYSCLK3 24000000 Hz (EMIFA)
PLL0:SYSCLK4 114000000 Hz (INTC, SYSCFG, GPIO, PSC, I2C1, USB1.1, EMAC/MDIO, GPIO)
PLL0:SYSCLK5 152000000 Hz (reserved)
PLL0:SYSCLK6 456000000 Hz (ARM Subsystem)
PLL0:SYSCLK7 50666666 Hz (EMAC)
PLL0:AUXCLK 24000000 Hz (I2C0, Timers, McASP0 serial clock, RTC, USB2.0 PHY)
PLL1 300000000 Hz
PLL1:SYSCLK1 300000000 Hz (DDR2/mDDR PHY)
PLL1:SYSCLK2 150000000 Hz (Optional for: McASP0,McBSP,ePWM,eCAP,SPI1)
PLL1:SYSCLK3 100000000 Hz (PLL0 input)
-OALDumpClocks
-OEMInit
PINMUX14=0x0000000
PINMUX15=0x0000000
PINMUX16=0x22222200
PINMUX17=0x22222222
PINMUX18=0x82000022
PINMUX19=0x02000022
OEMGetExtensionDRAM: Added 0x83E00000 -> 0x88000000
OEM: Cleaning system hive
OEM: Cleaning user profiles
WARN: Updating local copy of BSP_ARGS
OEM: Not cleaning system hive
Adapter's MAC address is 04:32:F4:FD:E9:21

StartupApp: Launching process NAME='xamlperf.exe', CMD='₩windows₩bounce.xaml' StartupApp: Process created OK

StartupApp: Process timed out, TA code: 0x1

Writer 까지 완료 합니다. Reboot 를 하면 정상으로 작동 확인

#### 1.4. How to SD that NK Writer and boot setting

```
NK.nb0를 비어있는 SD 카드에 복사 후 mango1808에 삽입
NAND Boot SW [1], [5] ON 나머진 OFF
Reset
MANGO1808 initialization passed!
Booting TI User Boot Loader
        UBL Version: 1.65
        UBL Flashtype: NAND
Starting NAND Copy...
Valid magicnum, 0x55424CBB, found in block 0x0000006.
   DONE
?1ping to entry point at 0xC7F60000.
Microsoft Windows CE Bootloader Common Library Version 1.4 Built Mar 29 2013 19:06:40
INFO:OALLogSetZones: dpCurSettings.ulZoneMask: 0xb
Microsoft Windows CE EBOOT 1.0 for AM1808 OMAPL138/AM18X EVM. Built Apr 4 2013 at
16:58:07
BSP version 01.10.00, SOC version 01.10.00
   CODE : 0xC7F60000 -> 0xC7FA0000
   DATA : 0xC7FA0000 -> 0xC7FE0000
  STACK : 0xC7FE0000 -> 0xC8000000
Enabled OAL Log Zones : ERROR, WARN, INFO,
Platform Init done
System ready!
Preparing for download...
Predownload...
FMD:ReadID Device not Supported Mfg=0xec, Dev=0xda
ERROR: EBOOT: FMD Init call failed!
WARN: Invalid boot configuration found (using defaults)
INFO: MAC address: 04:32:f4:fd:e9:21
WARN: Invalid BSP_ARGS data found (using defaults)
```

WARN: Unable to get hardware entropy
Hit space to enter configuration menu 2
[1] Show Current Settings
[2] Boot Settings
[3] Network Settings
[5] Video Settings
[6] Save Settings
[7] Peripheral Tests
[8] Bitmap Tests
[R] Reset Settings To Default Values
[0] Exit and Continue
Selection:
Selection: 2
Boot Settings
[1] Show Current Settings
[2] Select Boot Device
[3] Select Boot Delay
[4] Select Debug Device
[5] Force Clean Boot
[6] Write Download RAM NK to Flash
[7] Set Device ID String
[8] Allow DSP to Boot
[0] Exit and Continue
Selection:
Selection: 2
Select Boot Device

# [1] EMAC[2] NK from SD[3] NK from NAND flash

[0] Exit and Continue

Selection (actual NK from SD):

Reset

#### 1.5. Error

#### 1.5.1. dotNet Framework Initaialization Error



#### 위의 error발생시

http://www.microsoft.com/en-us/download/details.aspx?id=17718

Quick detail	S		
Version: Change language:	4 English	Date published:	2/21/2011
File name		Size	
dotNetFx40_Full_x86_x64	.exe	48.1 MB	DOWNLOAD



파일 열기 - 보만 경고 🛛 🔀			
이 파일을 실행하시겠습니까?			
이름: <u>dotNetFx40_Full_x86_x64,exe</u> 게시자: <u>Microsoft Corporation</u> 형식: 응용 프로그램 출처: D:\\dos\\CRZ_main_board\\CRZ_mango1808\\mme, 실행(R) 취소			
✓ 이 파일을 열기 전에 항상 확인(₩)			
이 형식의 파일은 사용자의 컴퓨터에 피해를 줄 수 있습니다. 신뢰할 수 있는 게시자로부터의 소프트웨어만 실행하십시오. <u>위험성</u>			



Some work Strate	k 4 설치		
.NET Framework 4 설치 계속하려면 사용 약관에 동의하	하십시오.		.NET
MICROSOFT 소프	프트웨어 추가	사용권 계약서	
HICROCOFT MINDOWC	0 M =1 -1 0 10000	COLT NET COMPLEXA	
✓ 동의함(A)			3
예상 다운로드 크기: 예상 다운로드 시간:	0 MB 전화 접속: 0분		
	광대역: 0분		
🗌 예, Microsoft에 설치 경험	에 대한 정보를 보냅니[	IKY).	
자세한 내용은 <u>데이터 수집 정</u>	<u>성책</u> 을 참조하십시오.		
		설치(])	취소

Microsoft .NET Framev	vork 4 설치		×
<b>설치 진행</b> .NET Framework가 설치!	되는 동안 잠시 기다려 주십시오.	.NET	14:
파일 보안 확인: 모든 파일이 확인되었습니 설치 진행률:			
.NET Framework 4 Clie	nt Profile 설지 중	취소	]



#### 1.5.2. Access to the port 'COM11' is denied

아래와 같이 메시지가 뜨면

Access to the port 'COM11' is denied. This application failed to open the COM port. Most likely it is in use by some other application.

실행중인 터미널 창이 있는지 확인하여 닫아주면 됩니다.