



**AX88772C/AX88772B/AX88772A/AX88760/AX88772  
Mac OS X Driver Installation Guide**

---

**AX88772C/AX88772B/AX88772A/AX88760/AX88772  
Mac OS X Driver Installation Guide**

Revision 2.10  
Mar. 8<sup>th</sup>, 2013

## Revision History

Revision	Date	Description
1.00	2010/08/12	Initial release.
1.10	2011/04/27	Modified the script files in Appendix.
1.20	2011/08/15	Added Mac OS X 10.7 support.
1.30	2011/09/14	Modified the description to exclude Mac OS X 10.4 support.
1.31	2011/10/13	Rearranged the document format and added more detailed driver installation/uninstallation procedures information.
1.32	2011/10/14	1. Moved some Section 1 descriptions to Appendix A.
2.00	2012/08/03	1. Changed the document name to "AX88772B/AX88772A/AX88760/AX88772 Mac OSX Driver Installation Guide". 2. Removed AX88178 related information. 3. Added Appendix C "Apple Mac OSX Native USB to LAN Drivers Supported Devices List". 4. Modified some descriptions in Section 1 and 2.
2.01	2012/08/22	1. Added Section 4 "Troubleshooting".
2.02	2012/09/26	1. Modified some descriptions in Section 1.
2.10	2013/03/08	1. Added AX88772C related strings. 2. Added Section 4-1 "How to identify the Vendor ID and Product ID of your USB dongle?". 3. Modified some descriptions in Section 2, 3, 4 and Appendix B.

## **Contents**

<b>1. Introduction .....</b>	<b>4</b>
<b>2. Driver Installation Procedures .....</b>	<b>4</b>
<b>3. Driver Uninstallation Procedures .....</b>	<b>11</b>
<b>4. Troubleshooting .....</b>	<b>12</b>
4-1. How to identify the Vendor ID and Product ID of your USB dongle?..	12
4-2. Driver Installation Failure on OS X 10.8 Issue .....	13
<b>Appendix A. Script Files Descriptions .....</b>	<b>18</b>
<b>Appendix B. AX88772C/772B/772A/760/772 Script Files .....</b>	<b>19</b>
<b>Appendix C. Apple Mac OSX Native USB to LAN Drivers Supported Devices List .....</b>	<b>21</b>

## 1. Introduction

This document contains the installation and uninstallation information of ASIX's AX88772C/AX88772B/AX88772A/AX88760/AX88772 Mac OS X 10.5 to 10.8 driver.

The native "AppleUSBEthernet" driver of Mac OS X 10.8/10.7/10.6/10.5 systems already support AX88772A/AX88760/AX88772 dongles so users need not to manually install ASIX's standard AX88772A/AX88760/AX88772 Mac OSX driver if you don't have any issue on Apple's native driver.

The native "AppleUSBEthernet" driver of Mac OS X 10.8/10.7/10.6/10.5 systems doesn't support AX88772C/AX88772B dongles yet so users MUST manually install this AX88772C/AX88772B Mac OSX driver especially after upgrading OS X 10.8 system from Mac OSX 10.7 system.

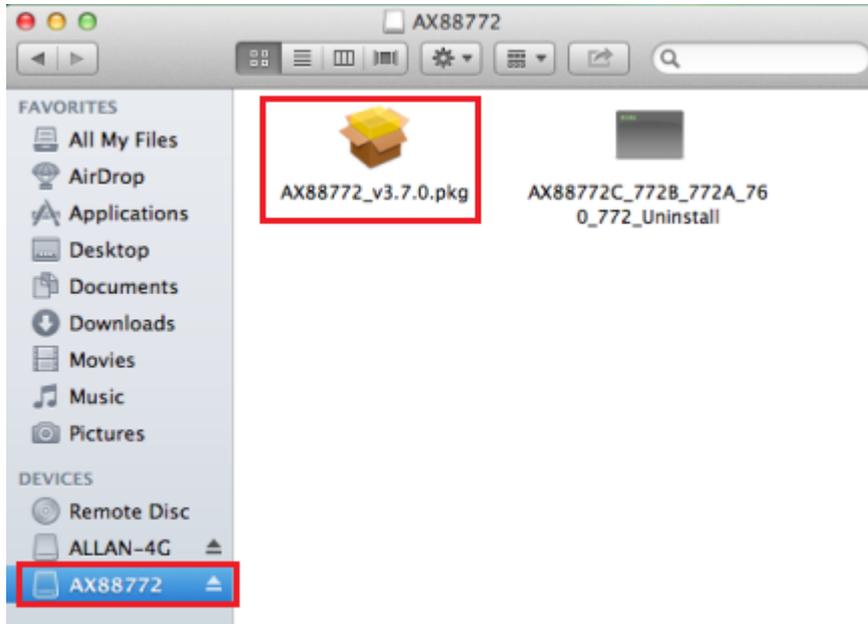
If both Apple's native driver and ASIX's standard driver couldn't work fine with your USB-to-LAN dongle, please contact the support guys of your USB-to-LAN dongle manufacturer for further support.

## 2. Driver Installation Procedures

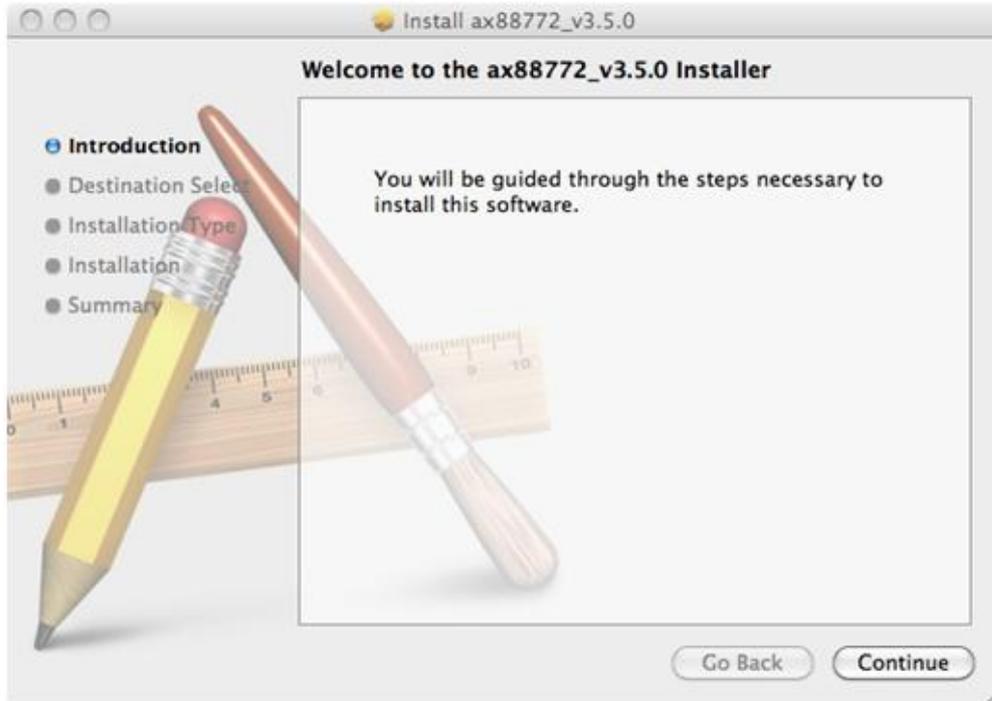
The AX88772C/772B/772A/760/772 Mac OSX driver installation package is "AX88772.dmg".

The following is an example of ASIX's AX88772C/772B/772A/760/772 Mac OSX driver installation procedures.

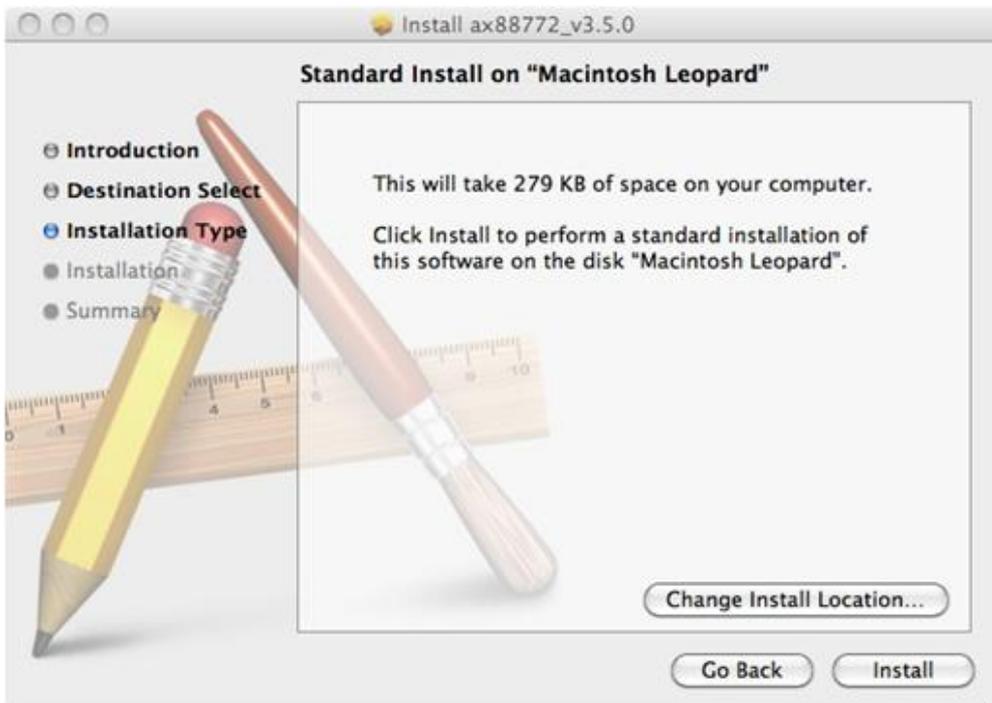
Step 1: Click the "AX88772.dmg", the following "AX88772" virtual disk will be appeared on the Devices list of your Mac OSX system. (This "AX88772" virtual disk will be auto-removed after rebooting Mac OSX system.)



Step 2: Click the “AX88772\_v3.x.0.pkg” (“3.x.0” is driver revision number), the following driver setup dialog will appear. Click the [Continue] button to start the installation operation and follow the instructions to continue the installation.



Step 3: Click the [Install] button to continue the installation operation.



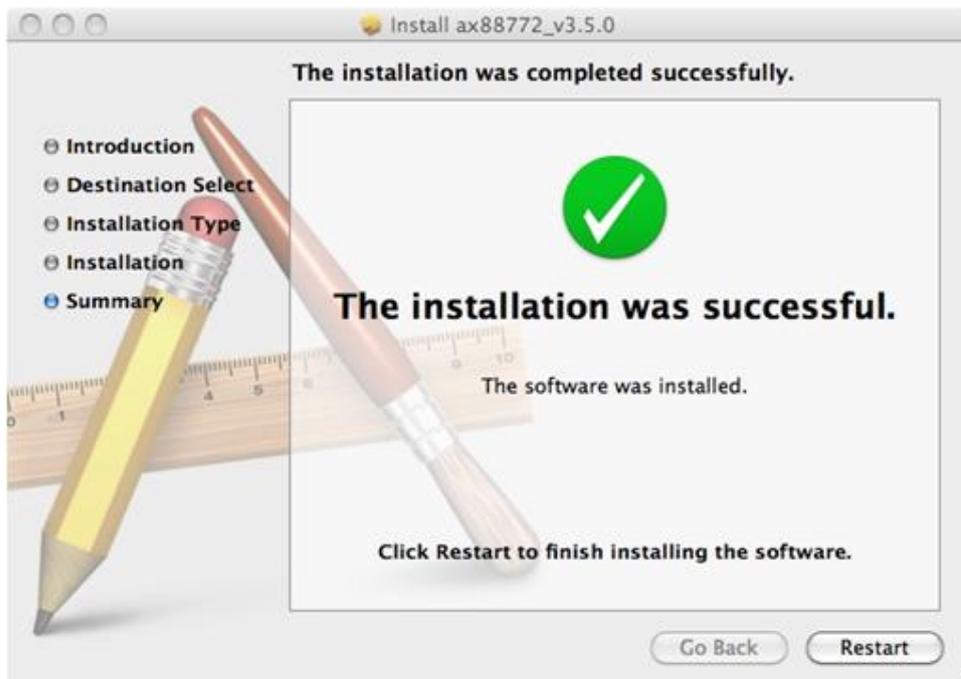
Step 4: You might need to enter your user/password during the driver installation.



Step 5: Click the [Continue Installation] button to continue the installation operation.

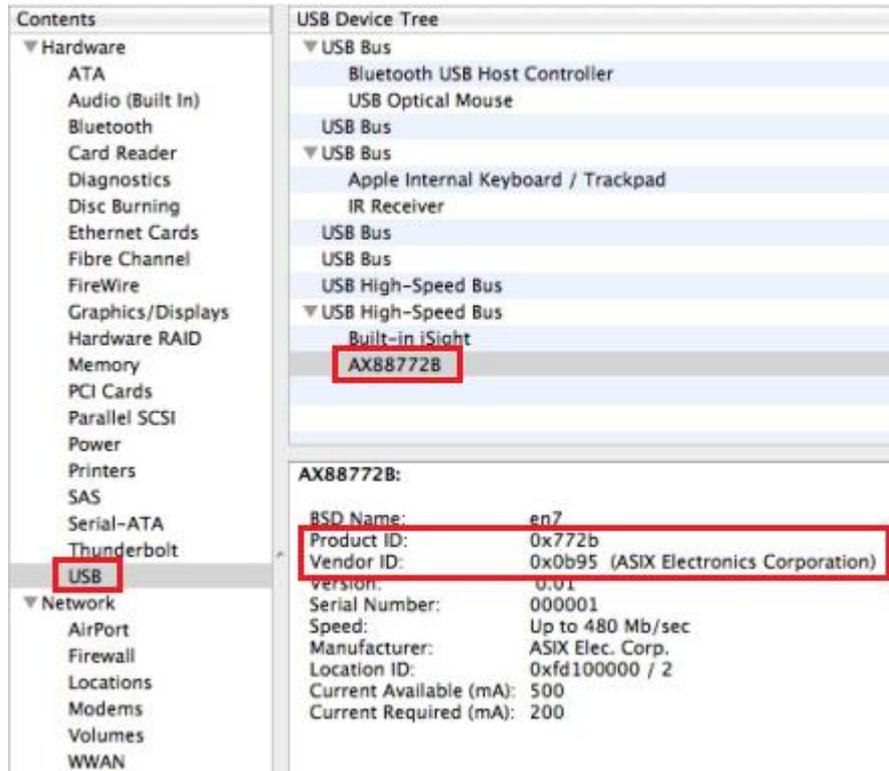


Step 6: Click the [Restart] button to restart Mac OSX system to take effect the revised driver installation.



Step 7: After booting up your Mac OS X system, plug your AX88772C/772B/772A/760/772 USB dongle onto the USB port of your Mac OS X system and refer to the following information to double check if your USB dongle had been identified properly by Mac OS X system and the AX88772C/AX88772B/AX88772A/AX88760/AX88772 Mac OS X driver was installed correctly or not.

(1) You can check the Vendor/Product ID information of your USB dongle from here.



The screenshot shows the 'System Information' window in Mac OS X. The left sidebar is expanded to 'Hardware' > 'USB'. The main pane shows the 'USB Device Tree' with 'AX88772B' highlighted under 'Built-in iSight'. Below the tree, the 'AX88772B:' section provides the following details:

BSD Name:	en7
Product ID:	0x772b
Vendor ID:	0x0b95 (ASIX Electronics Corporation)
Version:	0.01
Serial Number:	000001
Speed:	Up to 480 Mb/sec
Manufacturer:	ASIX Elec. Corp.
Location ID:	0xfd100000 / 2
Current Available (mA):	500
Current Required (mA):	200

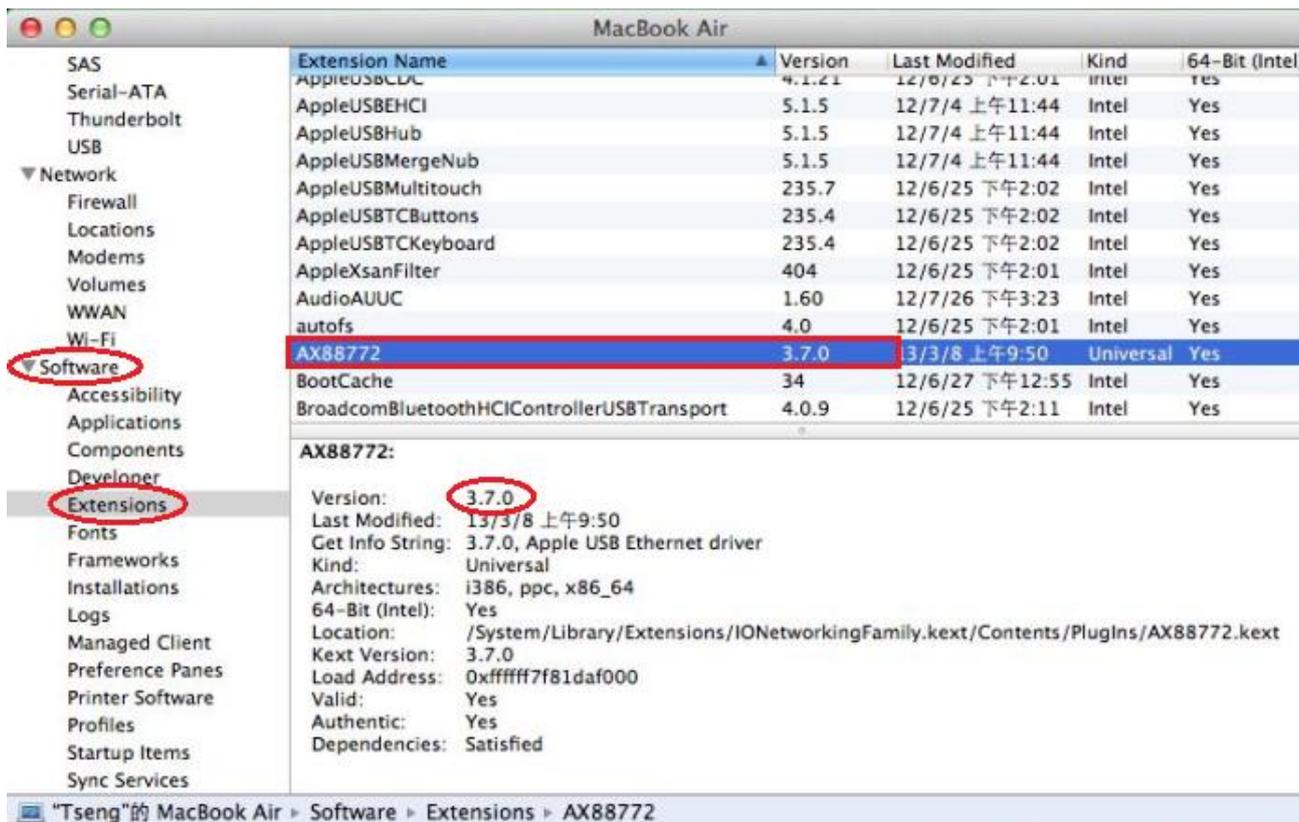
(2) You can check the installed AX88772C/AX88772B/AX88772A/AX88760/AX88772 Mac OS X driver version information by running the “**kextstat**” command or referring to below picture.

Tsengteki-MacBook-Air:~ allan\$ **kextstat**

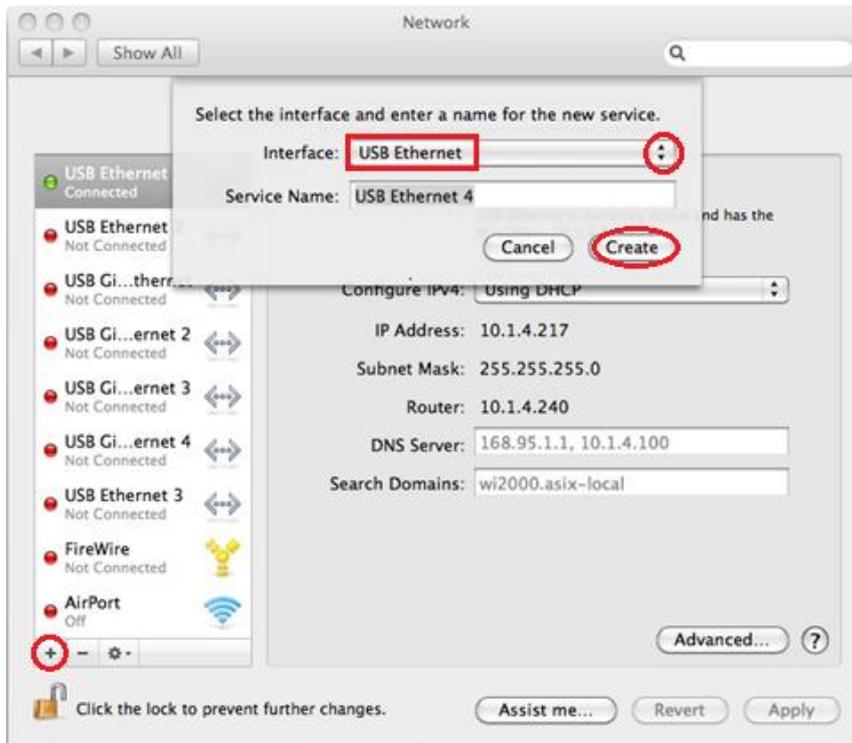
```

Index Refs Address      Size      Wired      Name (Version) <Linked Against>
.....
110  0 0xfffff7f81daf000 0xa000    0xa000    com.apple.driver.AppleUSBEthernet (3.7.0) <38 33 7 5 4 3 1>
111  0 0xfffff7f81d69000 0x9000    0x9000    com.apple.driver.AppleUSBGigEthernet (3.6.0) <38 33 7 5 4 3 1>
112  0 0xfffff7f81d72000 0x8000    0x8000    com.asix.driver.ax88179 (1.1.0) <38 33 7 5 4 3 1>
.....

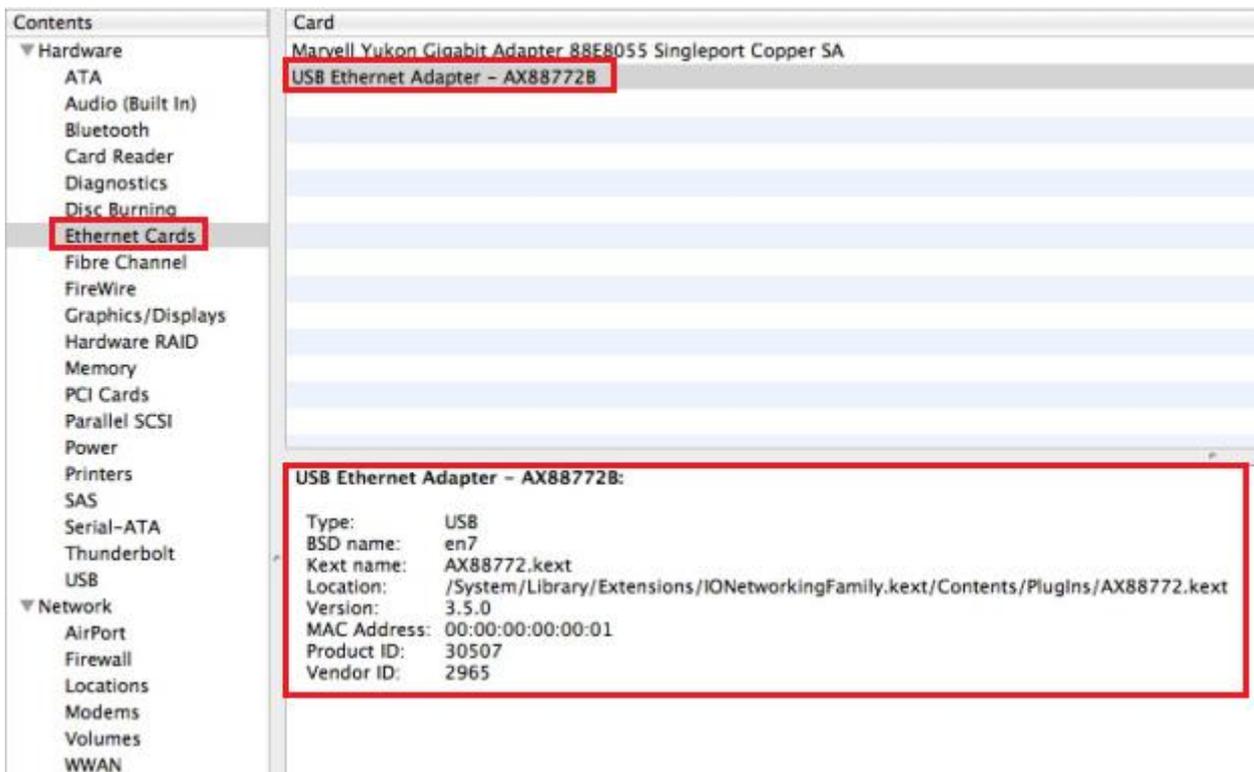
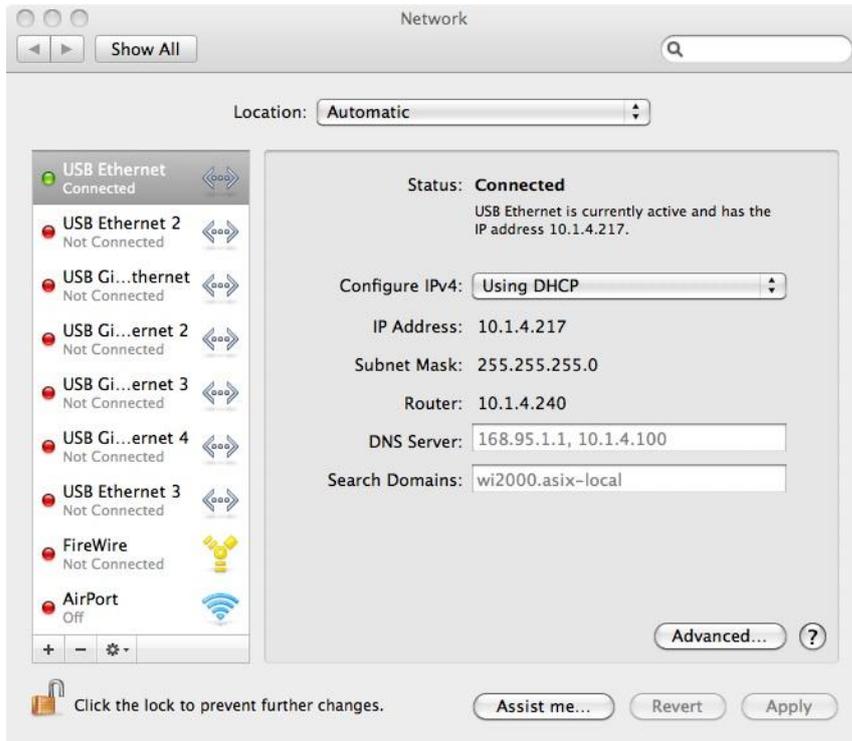
```



Step 8: Please refer to below figure to add a new “USB Ethernet” network interface and then press the [Apply] button to take effect the new network interface.



Step 9: The new “USB Ethernet” driver should be ready now.

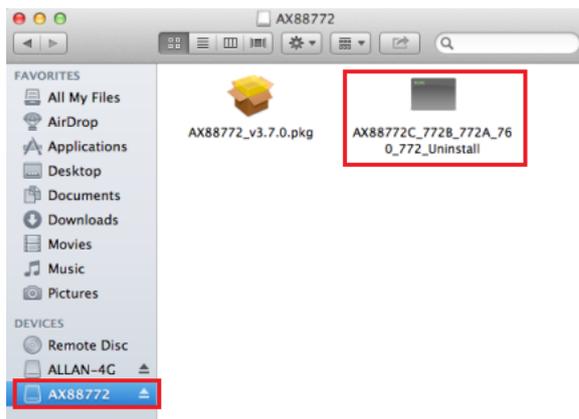


## 3. Driver Uninstallation Procedures

The AX88772C/772B/772A/760/772 Mac OS X driver uninstallation script file is “AX88772C\_772B\_772A\_760\_772\_uninstall”.

The following is an example of ASIX’s AX88772C/772B/772A/760/772 Mac OS X driver uninstallation procedures.

Step 1: Click the “AX88772.dmg”, the following “AX88772” virtual disk will be appeared on the Devices list of your Mac OS X system. (This “AX88772” virtual disk will be auto-removed after rebooting Mac OS X system.)



Step 2: Click the “AX88772C\_772B\_772A\_760\_772\_uninstall” script file to uninstall ASIX’s AX88772C/772B/772A/760/772 Mac OS X driver.

**Situation 1:** If the AX88772C/772B/772A/760/772 USB dongle was installed, you will see below messages.

```
Terminal — 80x24
Last login: Thu Oct 13 14:04:02 on console
/Volumes/DISK\ IMAGE/AX88772_772A_772B_760_uninstall ; exit;
asix-testde-macbook:~ test$ /Volumes/DISK\ IMAGE/AX88772_772A_772B_760_uninstall
; exit;
Password:
logout

[Process completed]
```

**Situation 2:** If the AX88772C/772B/772A/760/772 USB dongle was not installed, you will see below messages but the driver uninstallation can still be completed successfully.

```
Terminal — 80x24
Last login: Thu Oct 13 13:35:16 on ttys000
asix-testde-macbook:~ test$ /Volumes/DISK\ IMAGE\ 1/AX88772_772A_772B_760_uninst
all ; exit;
Password:
(kernel) Kext com.apple.driver.AppleUSBEthernet not found for unload request.
Failed to unload com.apple.driver.AppleUSBEthernet - (libkern/kext) not found.
logout

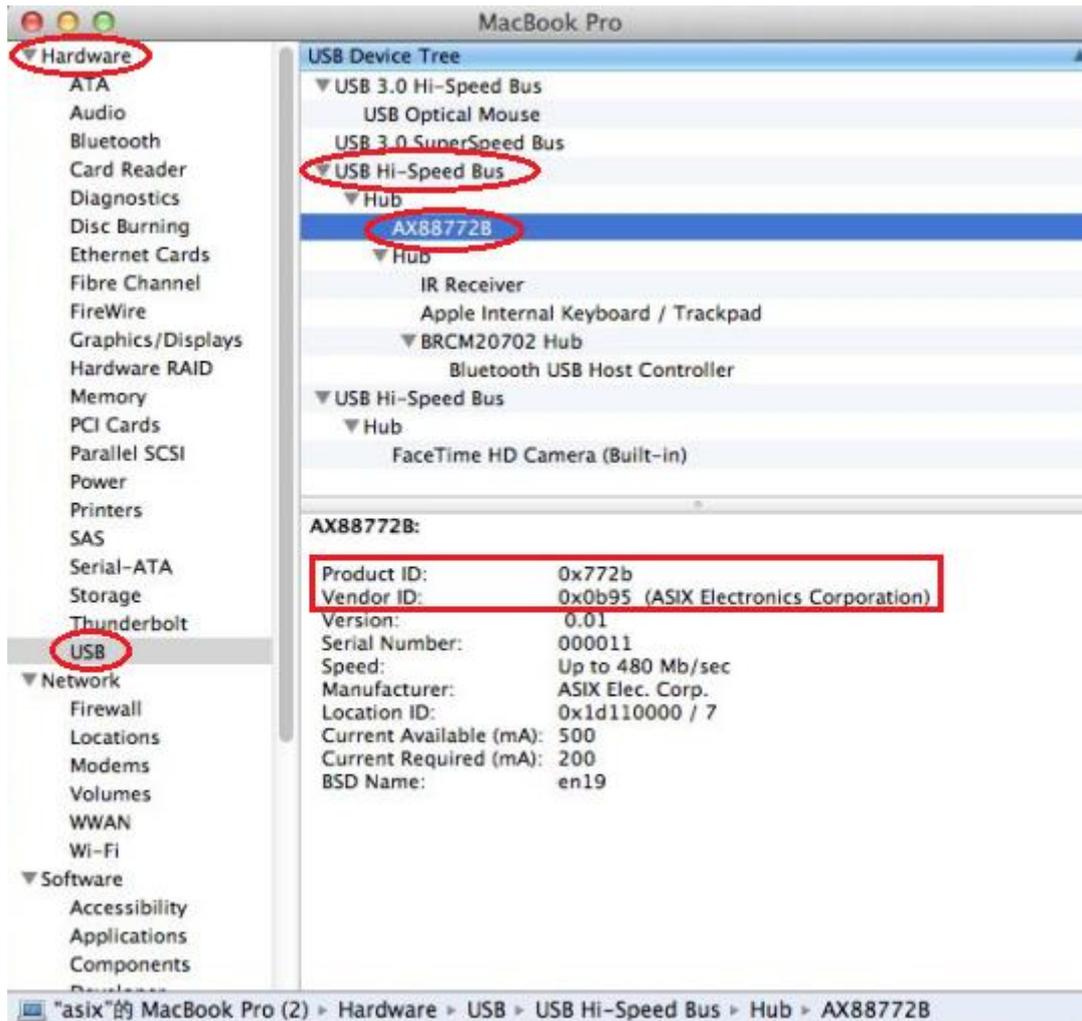
[Process completed]
```

## 4. Troubleshooting

(The figures in this section are examples for your reference)

### 4-1. How to identify the Vendor ID and Product ID of your USB dongle?

Please refer to below picture to make sure if the Vendor ID and Product ID of your USB dongle are ASIX's default values or not? If no, please contact the manufacturer of your USB dongle to get a proper driver directly.



## 4-2. Driver Installation Failure on OS X 10.8 Issue

The Mac OSX driver might not be able to be installed properly on OS X 10.8 system with below sample error message if you downloaded the driver package from ASIX web site on your OS X 10.8 platform.



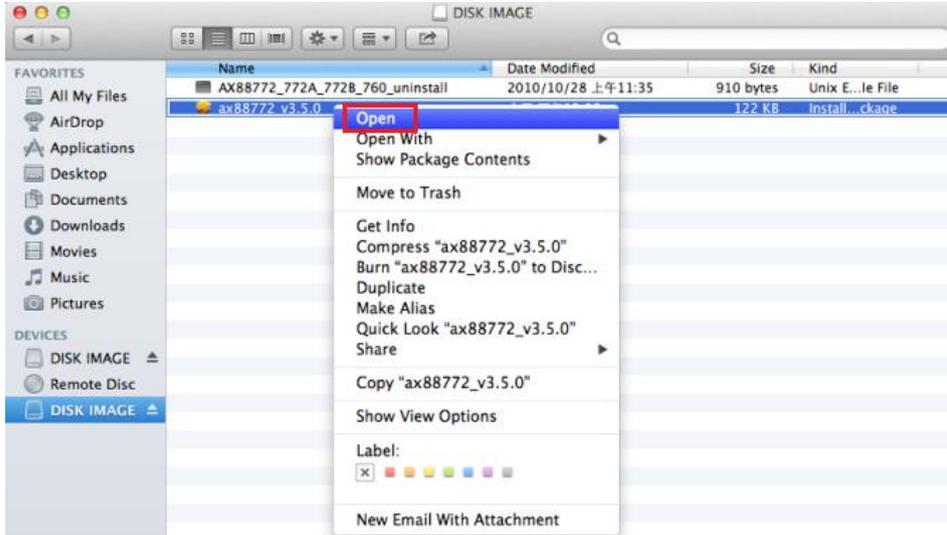
The OS X 10.8 system includes new features to improve security for users. One of the new default options prevents users from being able to install or launch applications that are not downloaded from the Mac App Store, or that have not been digitally signed by the developers. ASIX's Mac OSX driver installers are not digitally signed at this time and ASIX will improve this point soon.

Before that time, you can use one of the following solutions to install ASIX's Mac OSX driver package that was downloaded from ASIX web site on your OS X 10.8 platform.

Solution 1: Download ASIX's Mac OSX driver package on other Windows machines and then copy it via USB Flash drive onto your OS X 10.8 platform. The installer should launch and function normally now.

Solution 2: Override Gatekeeper for only the current installer

- (1) Control-Click on the installer and then select 'Open'.  
OS X 10.8 will display a warning message that the installer app is from an unidentified developer and ask the user to confirm that they want to open it.

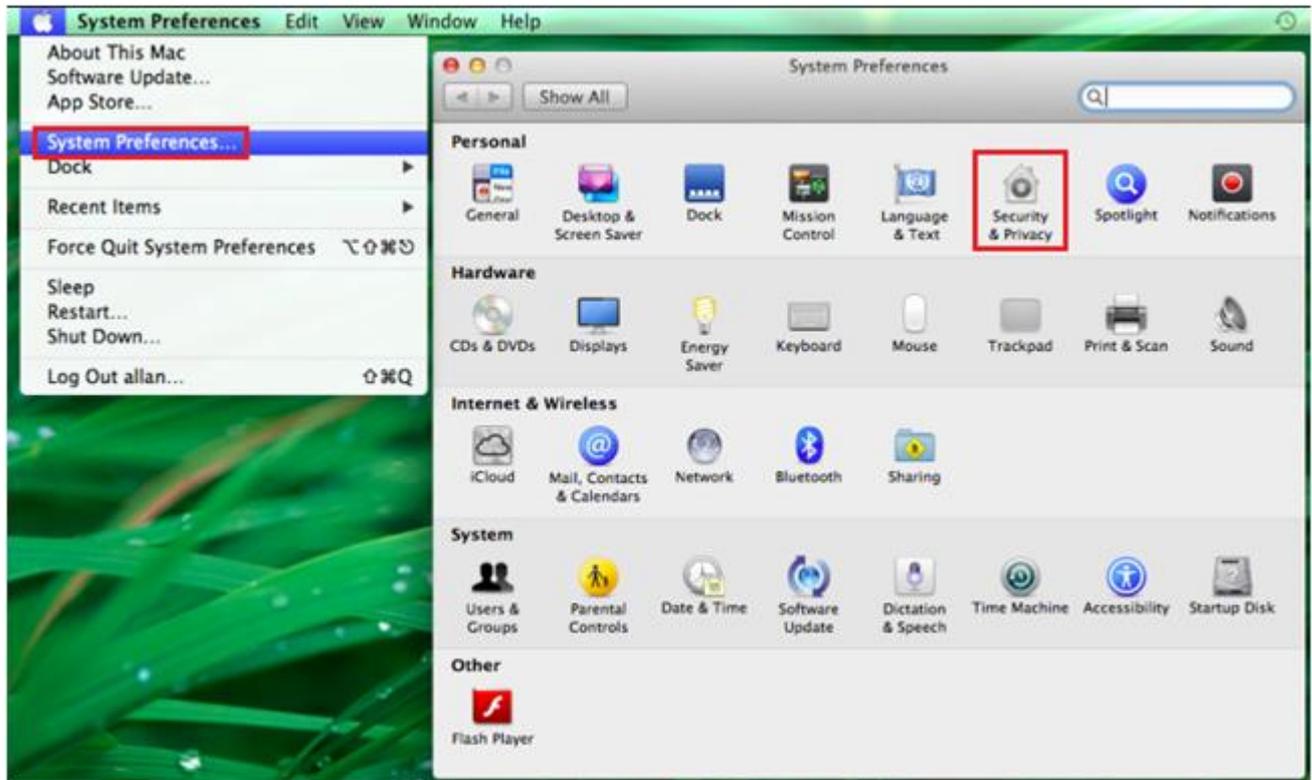


- (2) Click on the 'Open' button. This will allow the installer to run on your computer.
- (3) The installer should launch and function normally now.

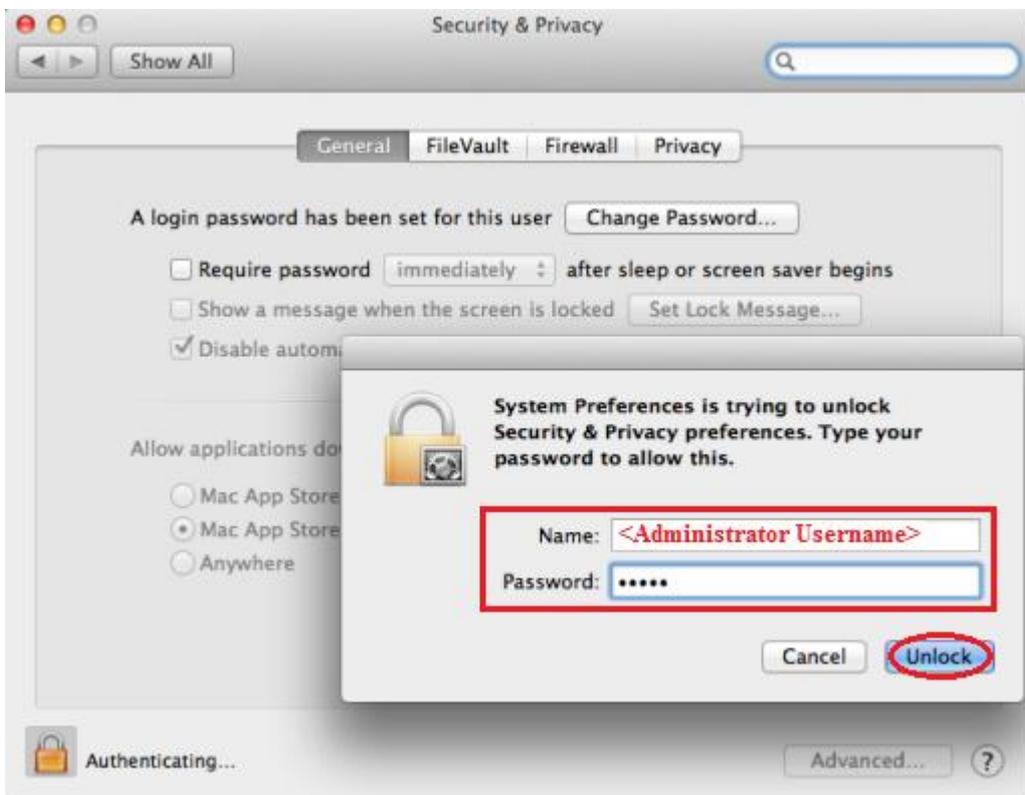
## Solution 3: Override Gatekeeper altogether

NOTE: Users should change the security setting back to **“Mac App Store and identified developers”** or **“Mac App Store”** as desired, for improved security.

- (1) Go to System Preferences > Security & Privacy



(2) Click the lock icon in the lower-left corner and enter your administrator username and password



- (3) Under “Allow applications downloaded from” , select “Anywhere” and then press the “Allow From Anywhere” button.



- (4) The installer should launch and function normally now.

## Appendix A. Script Files Descriptions

When installing ASIX's AX88772C/772B/772A/760/772 Mac OSX driver, the driver setup program will execute the **preflight** and **postflight** scripts to remove the corresponding Apple's default AX88772A/760/772 USB-to-LAN driver "**AppleUSBEthernet.kext**" before installing ASIX's driver.

The script files will do the following operations in order.

- (1) Create a "/asix\_temp" folder.
- (2) Backup Apple's default driver ("AppleUSBEthernet.kext") from "**/System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/**" folder to "**asix\_temp**" folder.
- (3) Unload and remove Apple's default driver from "**/System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/**" folder.
- (4) Set the permission access mode of Apple's default driver.
- (5) Update the access and modification times of ASIX's AX88772C/772B/772A/760/772 driver.

While uninstalling ASIX's AX88772C/772B/772A/760/772 driver, the driver uninstallation script will remove ASIX's driver and then re-install the corresponding Apple's default AX88772A/760/772 USB-to-LAN driver back to the system.

The uninstallation script will do the following operations in order:

- (1) Copy Apple's default driver from "/asix\_temp" folder to "**/System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/**" folder.
- (2) Remove "**asix\_temp**" folder.
- (3) Unload and remove ASIX's AX88772C/772B/772A/760/772 driver.
- (4) Set the permission access mode of Apple's default driver.
- (5) Set Apple's default driver files to be owned by root/wheel.
- (6) Update the access and modification times of Apple's default driver.

## Appendix B. AX88772C/772B/772A/760/772 Script Files

Below are **preflight** and **postflight** script files:

```
#!/bin/sh
#filename:autopack.sh

if [ -d /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AppleUSBEthernet.kext ]
then
sudo mkdir /asix_temp
sudo cp -R /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AppleUSBEthernet.kext
/asix_temp/AppleUSBEthernet.kext
sudo kextunload
/System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AppleUSBEthernet.kext
sudo rm -rf /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AppleUSBEthernet.kext
sudo chmod -R 755 /asix_temp/AppleUSBEthernet.kext
sudo chown -R root:wheel /asix_temp/AppleUSBEthernet.kext
fi

if [ -d /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AX88772.kext ]
then
sudo kextunload /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AX88772.kext
sudo rm -rf /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AX88772.kext
fi

if [ -d /System/Library/Extensions/AppleUSBEthernet.kext ]
then
sudo kextunload /System/Library/Extensions/AppleUSBEthernet.kext
sudo rm -rf /System/Library/Extensions/AppleUSBEthernet.kext
fi

if [ -d /System/Library/Extensions/AX88772.kext ]
then
sudo kextunload /System/Library/Extensions/AX88772.kext
sudo rm -rf /System/Library/Extensions/AX88772.kext
fi

if [ -d /asix_temp ]
then
sudo chflags hidden /asix_temp
fi
```

```
#!/bin/sh
#filename:autopack.sh

sudo touch /System/Library/Extensions
```



## AX88772C/AX88772B/AX88772A/AX88760/AX88772 Mac OS X Driver Installation Guide

---

Below is **AX88772C\_772B\_772A\_760\_772\_uninstall** script file

```
#!/bin/sh
#filename:autopack.sh

sudo cp -R /asix_temp/AppleUSBEthernet.kext
/System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns
sudo rm -rf /asix_temp/AppleUSBEthernet.kext

if [ -d /System/Library/Extensions/AX88772.kext ]
then
sudo kextunload /System/Library/Extensions/AX88772.kext
sudo rm -rf /System/Library/Extensions/AX88772.kext
fi

if [ -d /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AX88772.kext ]
then
sudo kextunload /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AX88772.kext
sudo rm -rf /System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AX88772.kext
fi

sudo chmod -R 755
/System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AppleUSBEthernet.kext
sudo chown -R root:wheel
/System/Library/Extensions/IONetworkingFamily.kext/Contents/PlugIns/AppleUSBEthernet.kext
sudo touch /System/Library/Extensions
```

## Appendix C. Apple Mac OSX Native USB to LAN Drivers Supported Devices List

Apple native drivers “AppleUSBEthernet” and “AppleUSBGigEthernet” of MacBook Air OSX 10.5/10.6/10.7/10.8 systems already support the following AX88178/AX88772A/AX88760/AX88772 USB-to-LAN dongles.

Vendor	Model Name	VID	PID	Comments
ASIX Electronics Corp.	AX88178	0B95h	1780h	
ASIX Electronics Corp.	AX88772A/AX88760	0B95h	772Ah	
ASIX Electronics Corp.	AX88772	0B95h	7720h	
Apple	Apple USB Ethernet Adapter	05ACh	1402h	
Linksys	USB200M	13B1h	0018h	
D-Link Corp.	DUB-E100 Fast Ethernet	2001h	3C05h	
Linksys	USB1000	1737h	0039h	
Belkin Components	F5D5055	050Dh	5055h	
MelCo., Inc.	USB Gigabit Ethernet	0411h	006Eh	
I-O Data Device, Inc.	ETG-US2	04BBh	0930h	

For the other USB-to-LAN dongles with ASIX solution inside, please download the latest ASIX’s standard Mac OSX drivers from ASIX web site (<http://www.asix.com.tw/download.php?sub=driver>). If you still have problems, please contact the support guys of your USB-to-LAN dongle manufacturer for further support.

**Note:** End users should get proper driver from the manufacturer of your USB-to-LAN dongle if both Apple’s native driver and ASIX’s standard driver couldn’t work with your USB-to-LAN dongle.



**ASIX** Electronics Corporation.

**4F, No.8, Hsin Ann Rd., Hsinchu Science Park,  
Hsinchu, Taiwan, R.O.C.**

**TEL: +886-3-5799500**

**FAX: +886-3-5799558**

**Email: [support@asix.com.tw](mailto:support@asix.com.tw)**

**Web: <http://www.asix.com.tw>**