

TANGO™

Macintosh® FireWire®/USB Combo Card

Quick Start Guide for the Tango FireWire/USB

Operating System Compatibility

At this printing, the Tango is compatible with Mac® OS 9.0 through OS X Version 10.2.2. For up-to-date Mac OS compatibility information, check our web site.

You Should Have

The following items should be included in your product package:

- One Tango FireWire/USB Combo Card

The following item may be required for installing Tango:

- Medium Phillips screwdriver

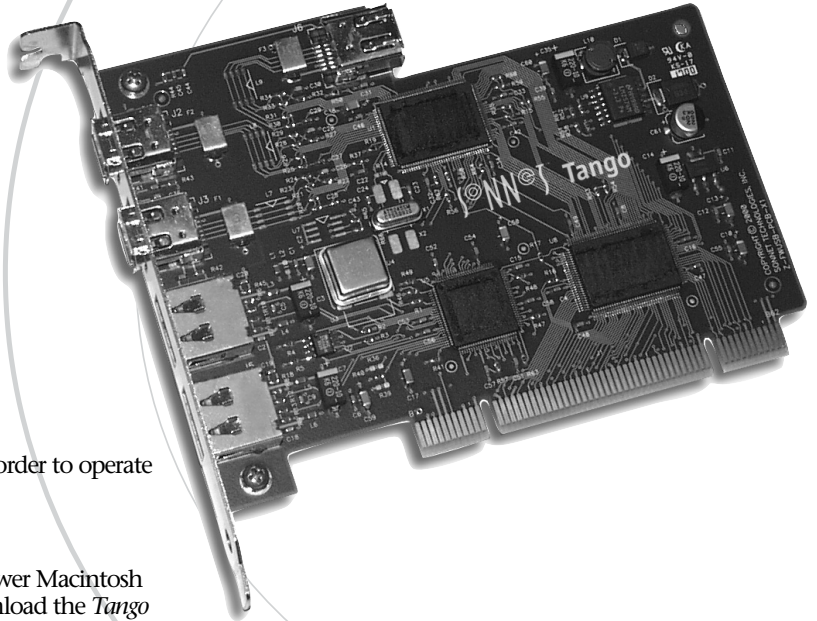
You may need the following items to connect peripherals to the Tango:

- One or more FireWire (IEEE 1394) cables (sold separately)
- One or more USB cables (sold separately)
- One or more USB hubs (sold separately)

System Requirements

The Tango FireWire/USB combo card requires the following in order to operate in your system:

- One available PCI slot
- Tango Firmware Patch—**ONLY** for installation of Tango in Power Macintosh 5500 or 6500, or in Twentieth Anniversary Macintosh. (Download the *Tango Firmware Patch* from www.sonnettech.com/support/tango; install it *before* installing FireWire and USB drivers.)
- Mac OS FireWire driver software*
- Mac OS USB driver software*



Support Note: We recommend you make a backup of important information on your system's current hard drive(s) prior to installing new hardware or software.


When handling computer products, you must take care to prevent components from being damaged by static electricity. Before opening your computer or removing parts from their packages, always ground yourself first by touching a metal part of the computer, such as a port access cover, and work in an area free of static electricity; avoid carpeted areas. Handle all electronic components by their edges, and avoid touching connector traces and component pins.

* Depending on your operating system, you may need to install these drivers; instructions follow.

Hardware Installation Steps

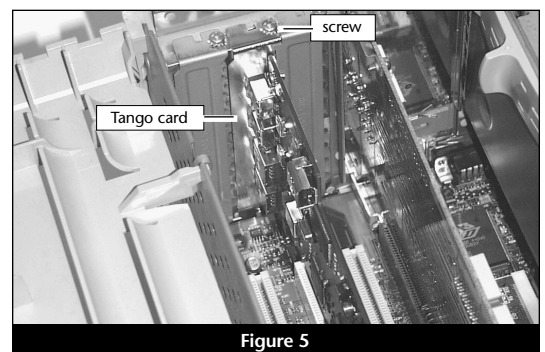
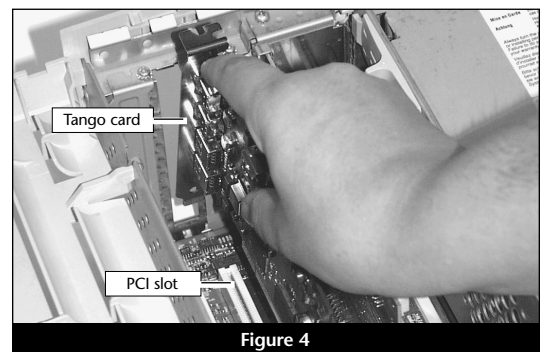
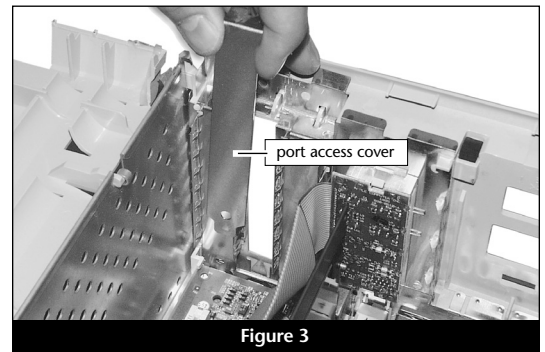
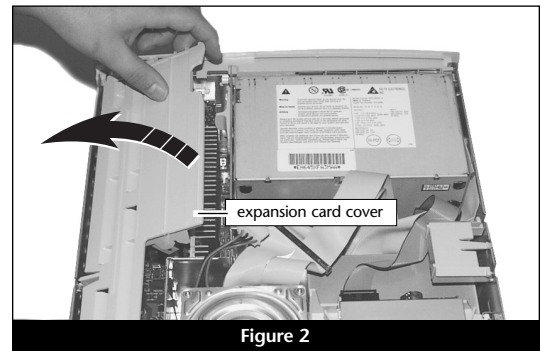
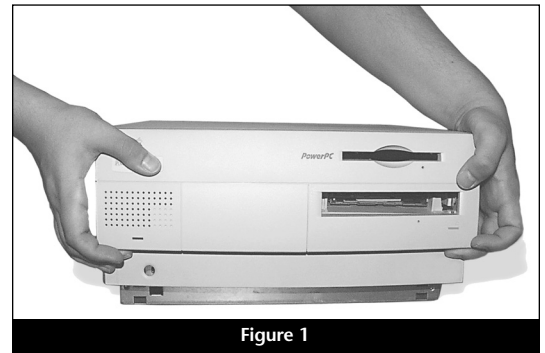
This guide contains general instructions for installing the Tango FireWire/USB combo card into most PCI-based computers. (For our example, we have used an Apple Power Macintosh desktop model.) For more detailed installation instructions, refer to your computer's user guide.

1. Shut down your computer.
2. Disconnect all the cables connected to the computer except for the power cord, then touch a port access cover on the back of your computer to discharge any static.

 **Support Note:** To avoid generating a static charge in your body, do not walk around the room until after you finish installing the Tango card and close the computer.

3. Disconnect the power cord from your computer.
4. Remove the case cover from the computer (**Figure 1**).
5. Access the expansion card area of the the computer (**Figure 2**).
6. Locate an available PCI slot inside your computer and remove its port access cover, if present, from the rear of the computer. (**Figure 3**). If you removed a screw, set it aside for later use.
7. Remove the Tango from its anti-static package, making sure to handle the board by its edges.
8. Install the Tango into the PCI slot; **make sure the card is firmly seated and secured (Figure 4)**.

9. If you removed a screw earlier, secure the Tango with it. (**Figure 5**).
10. Close up the computer and carefully replace its case cover.
11. Reconnect all the cables to the computer.



FireWire and USB 1.1 Driver Installation Steps

The Tango requires that FireWire and USB 1.1 drivers be installed in your system to enable the FireWire and USB ports. Locate the following section that applies to your system for information and instructions.

Tango Firmware Patch Information

Only For Power Macintosh 5500 and 6500, and Twentieth Anniversary Macintosh users. You must install an open firmware patch that enables your system to fully support the Tango before you install any FireWire or USB drivers. Log onto the Internet, go to www.sonnettech.com/support/tango, and then locate and click on the *Tango Firmware Patch* link. Download the file, and then follow the included instructions to install the patch.



Support Note: Many peripherals require their own drivers and application software to operate or have full functionality. The Apple drivers already installed, or that you are about to install, in your system provide only limited support for some items. You should also install software included with the device, or available to download from the device manufacturer's web site. Check the peripheral's user's manual for information about necessary software.

Mac OS 9.2.x and OS X (Existing or Upgrade Installation)

If your system is already running Mac OS 9.2.x and/or Mac OS X, the Apple drivers that enable the FireWire and USB ports on the Tango have already been installed. When you are upgrade to Mac OS 9.2.x or Mac OS X, the appropriate drivers will be installed automatically.

Mac OS 9.1.x (Existing Installation)

Complete these steps only if you installed Mac OS 9.1 before installing the Tango. Please note, *if your system has built-in USB and FireWire ports, you may skip these steps.*

1. Insert the Mac OS 9.1 CD into your computer's CD-ROM drive. In the finder menu, select Special: Restart, then immediately press and hold down the C key on your keyboard until your system restarts and the Welcome to Mac OS screen appears.
2. Double-click the Mac OS Install application icon. In the *Select Destination* window, click the Select button. Proceed through the next several screens until you reach the *Install Software* window. Click the Customize button. In the *Custom Installation and Removal* window, deselect all the Software component check boxes (click on each check or dash until the box is empty), except Mac OS 9.1. Click the pop-up menu to the right of Mac OS 9.1. Change from "Recommended Installation" to "Customized Installation." The *Select Mac OS 9.1 Features to Install* window will appear shortly.
3. Change "Recommended Installation" to "Customized Installation" from the pop-up menu. Deselect all the feature check boxes except "Network and Connectivity." Click the arrow next to "Network and Connectivity" to view the features. Deselect all the features except "FireWire" and "USB Adapter Card Support". Click OK, Start, then Continue to complete the installation. After the software is installed, quit the Mac OS Install application and restart your computer from the hard drive where Mac OS 9.1 is installed.
4. Your installation is complete.

FireWire and USB 1.1 Driver Installation Steps (continued)

Mac OS 9.1.x (Upgrade from Lower Mac OS Version)

Complete these steps only when upgrading your system to Mac OS 9.1 from a lower Mac OS version; FireWire and USB driver software will be installed automatically. Please note, *if your system has built-in USB and FireWire ports, you may skip these steps.*

1. Insert the Mac OS 9.1 CD into your computer's CD-ROM drive. In the finder menu, select Special: Restart, then immediately press and hold down the C key on your keyboard until your system restarts and the Welcome to Mac OS screen appears.
2. Double-click the Mac OS Install application icon. In the *Select Destination* window, click the Options button and click the Perform Clean Installation check box that appears in the subsequent screen. Click the Select button. Proceed through the next several screens until you reach the *Install Software* window. Click OK, Start, then Continue, and complete the installation. After the software is installed, quit the Mac OS Install application and restart your computer from the hard drive where Mac OS 9.1 is installed.
3. Your installation is complete.

Mac OS 9.0.x (Existing Installation)

If Mac OS 9.0.x is installed in your computer, you must download and install the appropriate FireWire and USB driver software. Please note, *if your system has built-in USB and FireWire ports, you may skip these steps.*

1. Turn on your computer.
2. Log on to the Internet and type www.sonnettech.com/support/tango.
3. Locate and click on the link for FireWire and USB drivers.
4. Read the information on the page, then click on each link to download both drivers.
5. Install the drivers, then restart your computer from the hard drive where Mac OS 9 is installed.
6. Your installation is complete.

Mac OS 9 (Upgrade from Lower Mac OS Version)

Complete these steps only when upgrading your system to Mac OS 9.0 from a lower Mac OS version.

1. Insert the Mac OS 9 CD into your computer's CD-ROM drive. In the finder menu, select Special: Restart, then immediately press and hold down the C key on your keyboard until your system restarts and the Welcome to Mac OS screen appears.
2. Double-click the Mac OS Install application icon. In the *Select Destination* window, click the Options button and click the Perform Clean Installation check box that appears in the subsequent screen. Click the Select button. Proceed through the next several screens until you reach the *Install Software* window. Click OK, Start, then Continue, and complete the installation. After the software is installed, quit the Mac OS Install application and restart your computer from the hard drive where Mac OS 9 is installed.

FireWire and USB 1.1 Driver Installation Steps (continued)

Mac OS 9 (Upgrade from Lower Mac OS Version, continued)

3. Log on to the Internet and type www.sonnettech.com/support/tango.
4. Locate and click on the link for FireWire and USB drivers.
5. Read the information on the page, then click on each link to download both drivers.
6. Install the drivers, then restart your computer.
7. Your installation is complete.

Connect FireWire (IEEE 1394) and USB peripherals

The Tango card has four external ports—two FireWire and two USB—for connecting peripherals. If your peripherals did not include cables, you must purchase the correct ones. Check your peripheral(s) to determine the type of cable(s) you need.

When connecting cables to the Tango card, be sure to firmly insert the connectors into the ports, but do not force them; these connectors can only be inserted one way. **Figure 6** shows a FireWire cable connector and the two external FireWire ports on the Tango, while **Figure 7** shows a USB cable connector and the two USB ports.

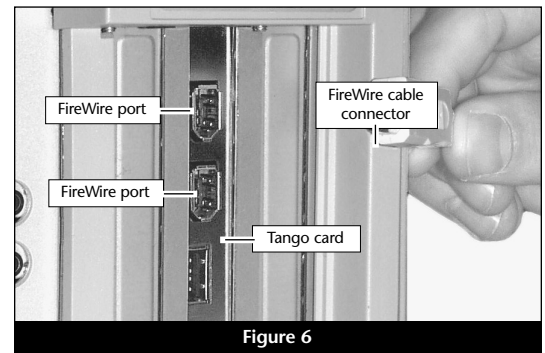


Figure 6

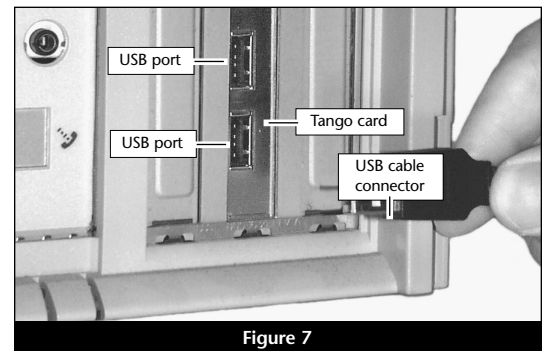


Figure 7

Using FireWire and USB devices with Tango

Known Issues and Advice

FireWire and USB interfaces have many technological advantages over older interfaces such as ADB and SCSI, not the least of which is hot-plugging capability. However, there are some limitations you should be aware of, and some advice we have listed here. Refer to the peripheral manufacturers' web sites and user's guides for more specific information.

- While USB keyboards and mice are compatible with Tango, certain functions cannot be supported on pre-G3 machines; this is an Apple ROM issue and not a problem with the Sonnet Tango. Because pre-G3 Macintosh computers were built before Apple added onboard USB support, certain features, including keyboard startup, wake from sleep (by pressing a key or moving the mouse), and others, will not work. We recommend that you keep an ADB keyboard and mouse connected to your system to support such functionality.
- Many peripherals require additional drivers and application software to operate or have full functionality. Software should be included with the device, or available to download from the manufacturer's web site. Check the peripheral's user manual for information about necessary software.
- Disconnecting USB or FireWire peripherals (including external storage devices, cameras, memory card readers, printers, etc.) while they are transferring or receiving data, may result in damage to the file(s) being transferred, or cause your system to hang.
- Always unmount ("eject" or drag to the trash) a drive from the desktop before disconnecting it from its cable or the Tango card.

Using FireWire and USB devices with Tango (continued)

Known Issues and Advice (continued)

- Do not forget to connect external power supplies to the peripherals that require them. Although many peripherals may draw power directly from the Tango card, other devices require an external power source.
- You may use USB 2.0 peripherals with the Tango, however they will operate at USB 1.1 speeds.
- When the Tango is installed in a pre-G3 Macintosh computer, connected FireWire drives cannot be used as the system startup (boot) drive.
- When transferring data from a digital video camera using a FireWire port on the Tango, we do not recommend using another FireWire device at the same time.
- Do not connect FireWire devices in a loop, nor terminate a FireWire chain; there are no terminators or ID settings required for any FireWire device.