

# *Introducing and Installing the SunATM-155 SBus Adapters 2.1*

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The SunATM-155/MMF SBus Adapter 2.1 and the SunATM-155/UTP5 SBus Adapter 2.1 are single-wide SBus adapters that conform to the specifications of the Asynchronous Transfer Mode (ATM) Forum. The adapters offer 155 Mbps network bandwidth over either Multimode fiber optic cable or Category 5 unshielded twisted pair (UTP) copper wire.

The SunATM-155 SBus adapters are designed for operation in systems that run under the Solaris environment, revision 2.4 or later. To use the SunATM-155 adapters, the system must also contain an OpenBoot™ PROM (OBP), level 2.0 or later. An on-board FCode PROM provides the configuration support that identifies the SunATM-155 SBus adapters to the system.

The highlights of the SunATM-155 SBus adapters 2.1 include:

- Conforms to IEEE 1496
- Supports 155-Mbps operation over:
  - 62.5/125  $\mu$  Multimode fiber (SunATM155/MMF Adapter) or
  - UTP Category 5 wire (SunATM-155/UTP5 Adapter)
- Integrate SBus/SAR (segmentation and reassembly) ASIC SAHI (SBus to ATM host interface) implemented in standard CMOS
- SAR function aligned with ATM Forum specified and International Telecommunications Union - Telecommunication Sector (ITU-TS) approved ATM Adaptation Layer (AAL) 5
- Supports the SONET/SDH (Synchronous Optical NETWORK/Synchronous Digital Hierarchy) physical layer framing structure

- Up to 126 simultaneous transmit channels and up to 1024 simultaneous open receive channels
- Compatible with relevant emerging standards (including existing ATM Forum baseline specifications and ITU-TS)

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**Note** – Level 2.x OpenBoot PROMs (or later) are *required* for systems using the SunATM-155 adapters. If lower-level boot PROMs are installed on your system, you must upgrade the boot PROMs before using SunATM-155 adapters.

To find the OpenBoot PROM (OBP) revision level on your system, type **.version** at the `<#0> ok` prompt.

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Figure 2-1 shows the SunATM-155/MMF SBus Adapter 2.1 and Figure 2-2 shows the SunATM-155/UTP5 SBus Adapter 2.1.

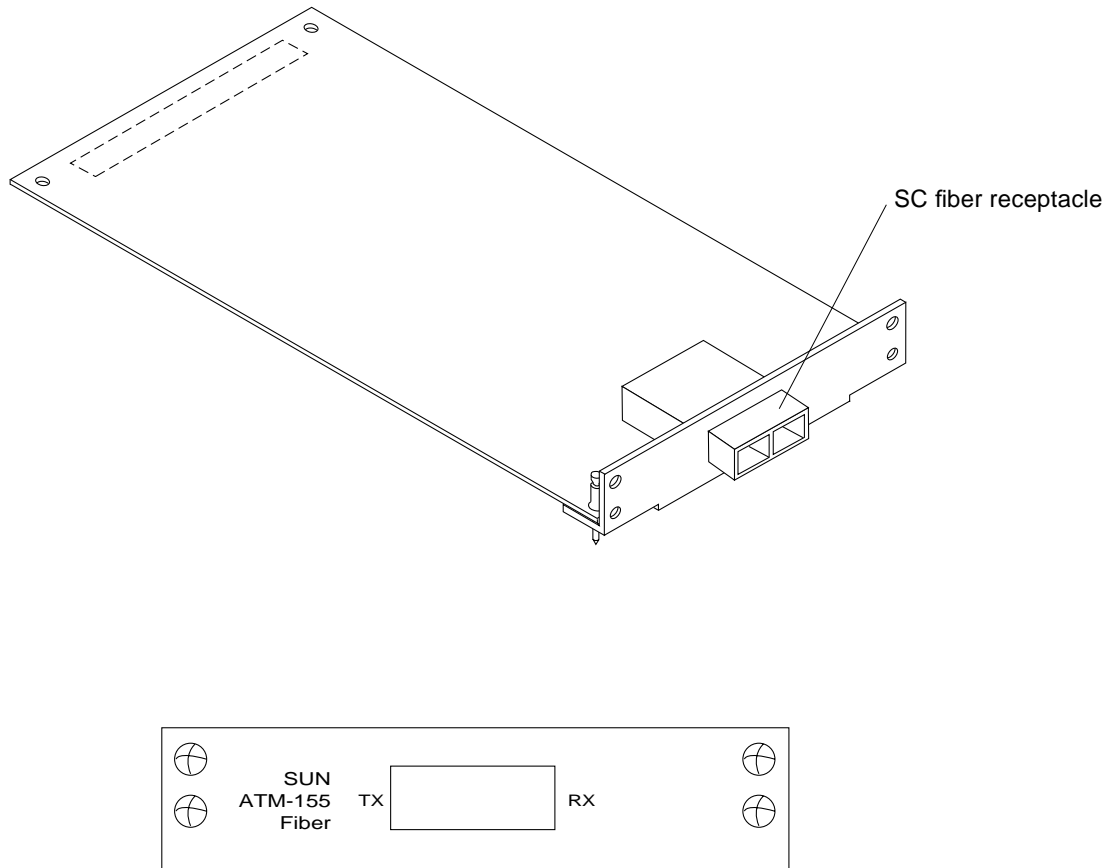


Figure 2-1 SunATM-155/MMF SBus Adapter 2.1 and Back Panel

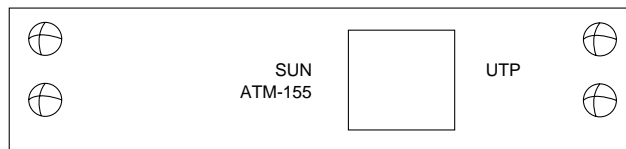
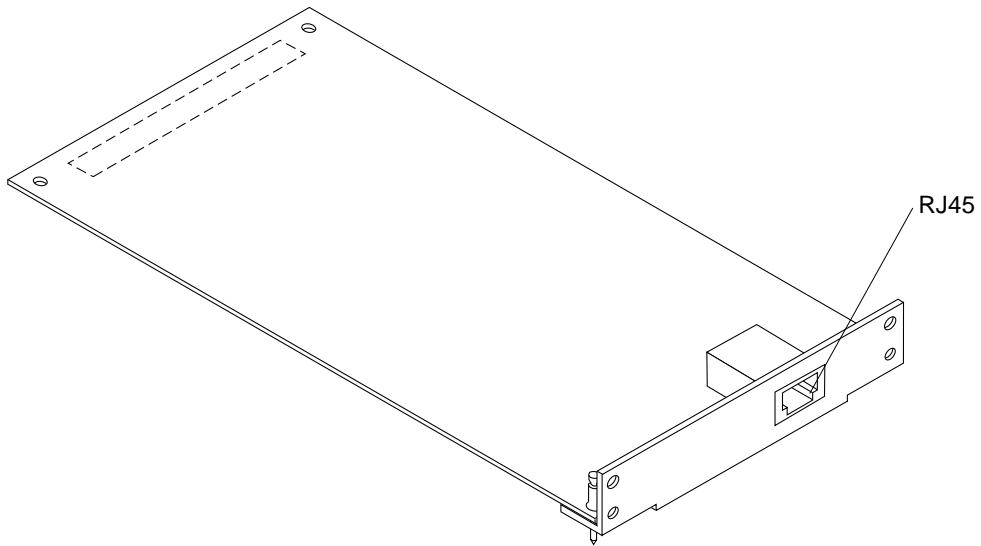


Figure 2-2 SunATM-155/UTP5 SBus Adapter 2.1 and Back Panel

## 2.1 Hardware Requirements

You need an ATM switch to build an ATM network. To connect the SunATM-155 SBus adapters to the ATM switch, you need the following cables:

- SunATM-155/MMF SBus Adapter 2.1 - Multimode fiber cable with an SC connector
- SunATM-155/UTP5 SBus Adapter 2.1 - Category 5 UTP with a RJ-45 connector

Refer to the manual supplied with the ATM switch for specific instructions about cable connections.

Table 2-1 shows the SBus based Sun-4U, Sun-4m, Sun-4d, and Sun-4c architecture systems that support the SunATM-155 SBus adapters 2.1.

*Table 2-1 Platform Architecture with Examples of Systems*

<b>Platform Architecture</b>	<b>System Type</b>
Sun-4U	Sun Ultra™ 1 Creator Series Sun Ultra 1 Series Sun Ultra 2 Series Ultra Enterprise™ 1 Ultra Enterprise 2 Ultra Enterprise 3000 Ultra Enterprise 4000 Ultra Enterprise 5000 Ultra Enterprise 6000
Sun-4m	SPARCstation™ Classic SPARCstation LX SPARCstation 4 SPARCstation 5 SPARCstation 10 SPARCstation 10SX SPARCstation 20 Series SPARCstation 600 Series
Sun-4d	SPARCserver™ 1000 and 1000E SPARCcenter™ 2000 and 2000E
Sun-4c	SPARCstation 2 SPARCstation IPX™

## 2.2 *Software Requirements*

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**Note** – Before installing the SunATM 2.1 software packages, you must first install the SunATM SBus adapter into the system.

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The SunATM-155 SBus adapters are supported on systems running under the Solaris environment, revision 2.4 or later.

The SunATM 2.1 CD-ROM that shipped with the SBus adapter contains the *required* driver software that must be installed in order to connect a SunATM-155 SBus adapter to a network.

## 2.3 *Installing the SunATM-155 SBus Adapters*

Before installing the SunATM 2.1 software packages, you must install the SunATM-155 SBus adapter into the system.

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**Note** – SunATM-155 adapters are supported on systems running the Solaris software environment, revision 2.4 or later.

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Up to two SunATM-155 adapters are supported per SBus. For example, on desktop machines that have only one SBus per system (even though there may be multiple SBus slots), no more than two SunATM-155 adapter are supported per system.

### 2.3.1 SunATM-155 SBus Adapter Installation

An extender plate (part number: 560-1977-01) is included with the SunATM-155 SBus adapter. You must attach this extender plate to the SBus adapter before installing the adapter in some older systems. Refer to the hardware installation or service manual that shipped with your system for information about installing SBus adapters.



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**Caution** – Make sure you use a wrist strap. It provides grounding for static electricity between your body and the system chassis. If you do not wear a wrist strap, the system components can be damaged by harmful electrical discharge.

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**Note** – The SunATM-155/MMF SBus adapter is shipped with a rubber plug that keeps the connector free of dust. To install the adapter, the plug must first be removed.

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1. **Install the SunATM-155 SBus adapter according to the SBus installation procedures in the hardware installation or service manual for your system.**
2. **Verify the hardware installation by executing a test command.**



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**Caution** – Do not boot the operating system until SunATM installation is verified. See “Testing the SunATM-155 SBus Adapter Before Booting” on page 2-10.

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The following two sections provide an introduction to the physical connectors and wiring characteristics of the SunATM-155/MMF and SunATM-155/UTP5 SBus adapters, respectively.

### 2.3.2 SunATM-155/MMF SBus Adapter 2.1 Wiring Configuration

The SunATM-155/MMF SBus adapter is shipped with the SC connector already keyed. As you hold the SBus adapter with the connector pointed toward you, “transmit” is on the left and “receive” is on the right.

To connect the SunATM-155/MMF adapter to the network:

- ◆ **Connect one end of the multimode fiber cable into the fiber receptacle on the SBus adapter and connect the other end to the ATM switch (Figure 2-3).**

Refer to the installation or users manual supplied with the hardware interface for additional information.

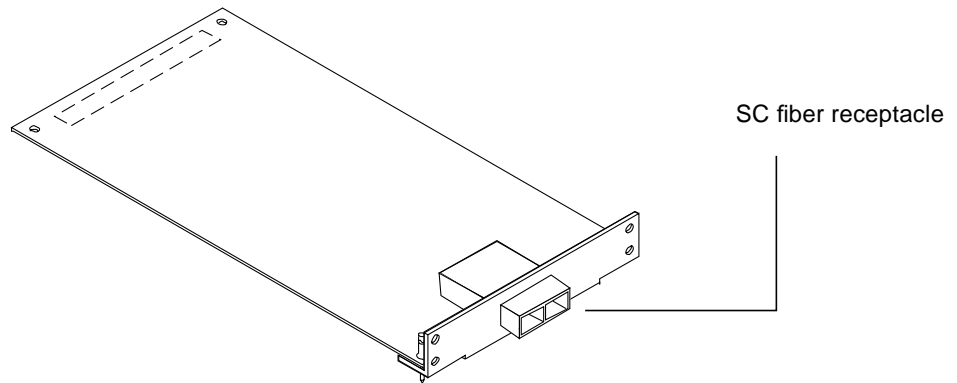


Figure 2-3 SunATM-155/MMF SBus Adapter 2.1



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**Caution** – Do not boot the operating system until the installation is tested and verified.

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### 2.3.3 SunATM-155/UTP5 SBus Adapter 2.1 Wiring Configuration

The SunATM-155/UTP5 SBus adapter is shipped with the RJ45 connector already keyed for “transmit” (Pair 2, pins 1 and 2) and “receive” (Pair 4, pins 7 and 8) in accordance with the EIA/TIA (T568B) wiring scheme (see Appendix A, “Wiring Scheme and Pin Descriptions”).

To connect the SunATM-155/UTP5 SBus adapter to the network:

- ◆ **Plug one end of the Category 5 UTP network cable into the RJ45 receptacle on the SBus adapter and connect the other end to the ATM switch (Figure 2-4).**

Refer to the installation or users manual supplied with the hardware interface for additional information.

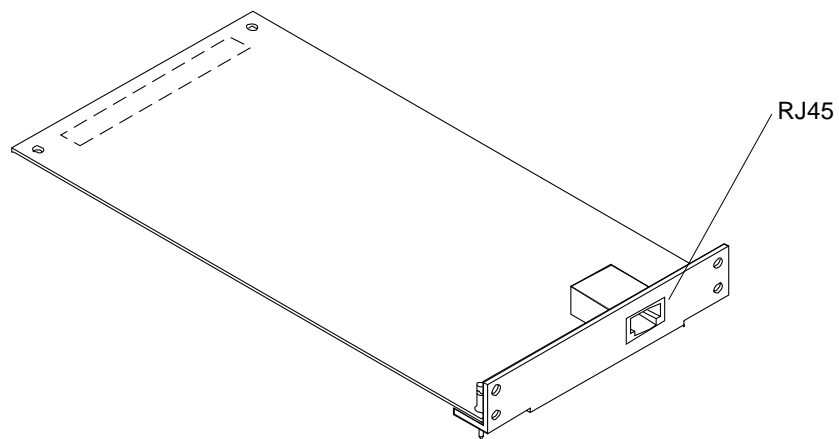


Figure 2-4 SunATM-155/UTP5 SBus Adapter 2.1



**Caution** – Do not boot the operating system until the installation is tested and verified.

## 2.4 Testing the SunATM-155 SBus Adapter Before Booting

After you have installed the SunATM-155 SBus adapter, *but before booting the system*, verify installation by executing the `show-devs` command.



**Caution** – Do not change the SBus slot in which a SunATM-155 SBus adapter is installed once the system has been booted. The Solaris 2.x software environment remembers the location of each SBus adapter that has been installed. Switching SBus slots will cause the operating system to assume that you removed your original SunATM-155 SBus adapter and added a second adapter to the system. Refer to the `path_to_inst` man page for more information.

**1. Use the `show-devs` command to display the device information.**

The `show-devs device path` command displays all devices known to the system directly beneath a given level in the device hierarchy.

The `show-devs` command used by itself shows the entire device tree. Examples below show information for a SPARCstation 10 system.

**Note** – The SunATM-155 SBus adapters 2.1 shipped with the SunATM 2.1 software will be identified by the driver name `ba`.

**Note** – The `/SUNW,ba@3,0` bold entries in the responses to both commands indicate that the system recognizes the SunATM-155 SBus adapter plugged into SBus slot 3.

```
<#0> ok show-devs /iommu/sbus
/iommu@f,e0000000/sbus@f,e0001000/SUNW,ba@3,0
/iommu@f,e0000000/sbus@f,e0001000/SUNW,DBRIe@f,8010000
/iommu@f,e0000000/sbus@f,e0001000/SUNW,bpp@f,4800000
/iommu@f,e0000000/sbus@f,e0001000/ledma@f,400010
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000
/iommu@f,e0000000/sbus@f,e0001000/SUNW,DBRIe@f,8010000/mmcdec
/iommu@f,e0000000/sbus@f,e0001000/ledma@f,400010/le@f,c00000
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000/esp@f,800000
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000/esp@f,800000/st
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000/esp@f,800000/sd
<#0> ok
```

```
<#0> ok show-devs
/TI,TMS390Z50@f,f8fffffc
/eccmemctl@f,0
/virtual-memory@0,0
/memory@0,0
/obio
/iommu@f,e0000000
/openprom
/aliases
/options
/packages
/obio/power@0,a01000
/obio/auxio@0,800000
/obio/SUNW,fdtwo@0,700000
/obio/interrupt@0,400000
/obio/counter@0,300000
/obio/eprom@0,200000
/obio/zs@0,0
/obio/zs@0,100000
/iommu@f,e0000000/sbus@f,e0001000
/iommu@f,e0000000/sbus@f,e0001000/SUNW,ba@3,0
/iommu@f,e0000000/sbus@f,e0001000/SUNW,DBRIe@f,8010000
/iommu@f,e0000000/sbus@f,e0001000/SUNW,bpp@f,4800000
/iommu@f,e0000000/sbus@f,e0001000/ledma@f,400010
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000
/iommu@f,e0000000/sbus@f,e0001000/SUNW,DBRIe@f,8010000/mmcodec
/iommu@f,e0000000/sbus@f,e0001000/ledma@f,400010/le@f,c00000
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000/esp@f,800000
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000/esp@f,800000/st
/iommu@f,e0000000/sbus@f,e0001000/espdma@f,400000/esp@f,800000/sd
/packages/obp-tftp
/packages/deblocker
/packages/disk-label
<#0> ok
```

## 2. Boot the system.

Refer to the *Solaris 2.x Peripheral's Handbook* for more information.

