

Tracewell S31 8-Slot CompactPCI Mainframe

Rev. 00

Models 531-1000-F00-00, 531-1000-F01-00, 531-1000-F10-00, 531-1000-F11-00,
531-1000-F20-00, and 531-1000-F21-00

IMPORTANT INSTALLATION, MAINTENANCE AND SAFETY INSTRUCTIONS

For Your Safety

This equipment contains voltages that are hazardous to human life and safety, and is capable of causing serious injury.

- ? **Live Circuits**—The protective covers must remain in place when operating or servicing the CompactPCI Mainframe. Repairs and adjustments to internal components must be done by qualified service personnel. The mains connector to the building wiring must be disconnected during any servicing operation.
- ? **Explosive Atmospheres**—Do not operate the mainframe where flammable gases are present. This equipment is unsafe under these conditions and may ignite any gases or fumes that are present.
- ? **Parts Replacement**—When replacing parts, use only parts that are exact replacements both electrically and mechanically. Replacement Power Modules and Storage Modules are available directly from Tracewell Systems. To obtain information on these and other replacement parts contact Tracewell Systems, Inc. Installation of parts that are not direct replacements may cause injury to operating personnel and/or damage to the mainframe including the possibility of fire.
- ? **Modification**—Any modifications to the mainframe from its original condition may result in safety hazards.

Installation

1. Operating Environment

The CompactPCI Mainframe is designed for operation within an ambient temperature range of 0-50 deg. C and a Relative Humidity of 10-95%.

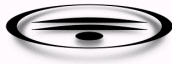
2. Selecting Line Voltage

The CompactPCI Mainframe arrives from the factory configured for use with the standard North American voltage of 115 VAC 60 Hz.

The supplied power cord is rated for up to 125 VAC only. Use of the Mainframe with a higher voltage will require a different power cord. Consult Tracewell Systems for information on obtaining the proper power cord.

The Mainframe can also operate from a 230 VAC 60 Hz North American Source as detailed below:

- a. Detach the supplied power cord from the IEC Inlet at the rear of the unit.
- b. Locate the voltage selector switch to the left of the IEC Inlet (red switch with "115" on it).
- c. Insert a small flat bladed screwdriver into the slot above the "115" notation in the voltage selector switch and slide the switch downward until "230" appears.
- d. Install the proper power cord that is rated for the higher voltage.



Warning

To avoid a shock hazard, connect the factory supplied three-conductor line cord to a properly grounded power outlet. Do not use a two-conductor adapter or extension cord; this will break the protective ground connection creating a shock hazard.

3. Connecting to Line Power

Attach input power through the rear panel AC inlet using the appropriate power cord. Plug the male end of the line cord into a properly grounded 15A AC outlet. The power switch allows you to turn the mainframe on or place it in standby mode. Push the power switch to the On position and observe that the fans turn on.



Caution ***Always place the mainframe in Standby mode before inserting or removing CompactPCI modules***

4. Maximum Load Available from Power Supply

The total combined maximum load of all installed drives and CompactPCI Modules is 300W. Each of the individual power supply outputs also has a maximum rated load that must not be exceeded. These are detailed below:

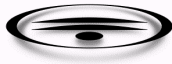
<u>Voltage</u>	<u>Maximum Load (Amps)</u>	<u>Maximum Load (Watts)</u>
3.3V*	23.0	75.9
5.0V*	32.0	160
+12V	12.0	144
-12V	1.0	12
-5V	0.5	2.5
+5 VSB	0.85	4.25

*Total combined load on the 3.3V and 5.0V outputs is 170W Maximum.

All Modules/Drives should be checked for power consumption prior to installation to ensure that their combined power requirements do not exceed the capability of the mainframe's power supply.

5. Rack Mount Installation

- ? The CompactPCI Mainframe is designed to be either rack mounted in a standard 19" equipment rack or placed on a tabletop.
- ? The CompactPCI Mainframe and its associated rack are stable during the installation and removal of the mainframe, under normal conditions. The floor should be essentially level and leaning or other adverse force should be avoided when installing or removing the mainframe. Always be sure that all mounting hardware is installed and secured when installation is complete.
- ? If the unit is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Special care must be taken that the ambient temperature of the rack environment is not greater than 40 deg. C.
- ? Installation of the equipment in a rack should be such that airflow into and out of the mainframe is not reduced.
- ? Be sure not to overload any outlet within the rack to which this product is attached, by checking all of the device nameplate ratings that are connected to a given branch circuit.



- ? Reliable earthing of rack-mounted equipment must be maintained. Adequate grounding should be checked and established for proper protection against shock hazards when using power strips or other means of connection other than direct connection to the branch circuit.

6. Cooling Considerations

- ? The area around the air filter on the front of the mainframe must be kept clear of obstructions.
- ? The exhaust perforations on the rear and sides of the mainframe must be kept clear of obstructions.
- ? To optimize module cooling performance, install filler panels into unused or empty slots. Secure with captive mounting screws.

Maintenance

The information in this section is for use by qualified service personnel only. Read the For Your Safety section at the beginning of this document before attempting any service procedures.



Warning *Always power off the mainframe and disconnect the line cord from the IEC Inlet at the rear of the mainframe before any cleaning or servicing operation.*



only be done in a static-free environment. Observe standard handling precautions for static-sensitive devices during servicing of the mainframe. Always wear a grounded wrist strap, or equivalent, during any service operation.

Recommended Service Intervals

- ? Clean the air filter every 6 months or more frequently if the mainframe is operated in a dusty environment.
- ? Clean dust and dirt from the exterior (and interior) of the mainframe as needed. Routine cleaning will increase the reliability of the mainframe.

Exterior Cleaning

Clean the exterior of the mainframe using a dry lint-free cloth or soft bristle brush. Use a cloth moistened with a mild soap and water solution followed by a cloth moistened with clear water for more stubborn dirt. Do not use abrasive cleaning agents when cleaning the mainframe.

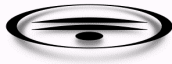
Interior Cleaning

Use a dry, low velocity stream of air to clean dust from the interior of the mainframe. A soft bristle brush may be used to clean around components.

Cleaning Fan Filter

Use the following procedure to clean the fan filter.

- Use a small Phillips head screwdriver (#1) to turn the black screw at the top of the air filter grill in a counterclockwise direction until the filter grill is released.
- Remove the filter element from the grill and wash in soapy water.
- Rinse the filter element thoroughly.
- Shake out excess water, and then allow the filter element to dry thoroughly before reinstalling it.
- Reinstall the filter element by performing the removal steps in the reverse order.



Installation/Removal of Storage and Power Supply Modules

To remove either the Storage Module or Power Supply Module, loosen the 4 captive screws at the top and bottom corners of the Module (2 top and 2 bottom). Gently slide the Module straight out of the mainframe until it is free from the mainframe. When removing the Storage Module be sure to disconnect the power and data connections to any installed drives as soon as the connectors on the rear of the drives are accessible. To remove the cables gently grasp the cable by the connector and pull straight out until it is free from the drive. ALWAYS grasp the cable by the connector during removal; NEVER grasp the cable by the wire, as this may damage the cable. If there is more than one drive already installed, be sure to note which data cable (flat ribbon style cable) is attached to which drive for proper reattachment later. When installing either Module use the above directions in reverse order being sure to align the side plates of the respective Module with its proper card guides in the mainframe. Always be sure that the four captive screws securing the Module are properly tightened before re-attaching the line cord and powering up the mainframe.

Installation/Removal of Disk Drives-General Information

The CompactPCI Mainframe includes one of two Storage Module options. The embedded storage or S1 module can accommodate 1 - 5.25" CD-ROM, 1 - 3.5" Floppy Drive, and up to 3 - 1" high 3.5" Hard Drives. The multi-media or S2 module can accommodate up to 2 - 5.25" CD-ROMs and up to 2 - 3.5" Floppy Drives.

In order to install or remove any Disk Drives the Storage Module must first be removed from the mainframe as detailed under the section "Installation/Removal of Storage and Power Supply Modules" above. After the Storage Module is removed drives can be added or removed using the following procedures.

Installing/Removing Disk Drives in the S1 Storage Module-General Information

The CD-ROM in the S1 Storage Module is mounted in the lower left of the module using two mounting brackets. The lower mounting bracket, known as the Lower CD-ROM/3.5" Disk Drive Mounting Bracket, is also used as the lower mounting bracket for the 3.5" Floppy Disk Drive and the lower 3.5" Hard Drive. The upper mounting bracket, known as the Upper CD-ROM/3.5" Disk Drive Mounting Bracket, is also used as the upper mounting bracket for the two 3.5" Hard Drives that may be installed in the upper portion of the Storage Module.

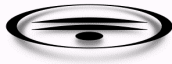
The lower 3.5" Disk Drives (1 Floppy, 1 Hard) are mounted into the Storage Module using the aforementioned Lower CD-ROM/3.5" Disk Mounting Bracket and the Floppy/Hard Drive Mounting Bracket.

The upper 3.5" Hard Drives are mounted into the Storage Module using the aforementioned Upper CD-ROM/3.5" Disk Mounting Bracket and the Hard Drive Mounting Bracket.

Follow the instructions below while referring to the illustrations on page 7 titled "S1 Storage Module-Exploded View" and "S1 Storage Module-Rear View" to install/remove disk drives in the Storage Module.

Installing 3.5" Disk Drives in the S1 Storage Module

1. Remove the two screws securing the Upper or Lower CD-ROM/3.5" Disk Drive Mounting Bracket to the front panel of the Storage Module, depending on whether installing drives into the top or bottom of the Storage Module.
2. Remove the screw securing the Hard Drive or Floppy/Hard Drive Mounting Bracket to the front panel of the Storage Module, depending on whether installing drives into the top of bottom of the Storage Module.



3. If installing a drive into the top of the module, remove the screw securing the Hard Drive mounting bracket to the right side of the Storage Module (as viewed from the front).
4. If installing a drive into the bottom of the module, remove the screw securing the Floppy/Hard Drive mounting bracket to the right side of the Storage Module (as viewed from the front).
5. Remove the mounting brackets from the Storage Module.
6. Mount the disk drive(s) to the mounting brackets using the screws supplied/recommended by the disk drive manufacturer.
7. Re-install the disk drive brackets (with drive(s) mounted) into the Storage Module being sure to mount it such that the power and data connectors on the disk drive(s) are towards the rear of the Storage Module.
8. Connect the power and data cables to the disk drive(s) following the drive manufacturer's instructions.
9. Re-install the Storage Module into the mainframe following the instructions in the section above titled "Installation/Removal of Storage and Power Supply Modules".

Installing a CD-ROM in the S1 Storage Module

1. Remove the two screws securing the Upper and Lower CD-ROM/3.5" Disk Drive Mounting Brackets to the front panel of the Storage Module.
2. Remove the eight screws (4 per bracket) securing the Upper and Lower CD-ROM/3.5" Disk Drive Mounting Brackets to the sides of the Storage Module and remove the brackets from the Storage Module.
3. Mount the CD-ROM to the mounting brackets using the screws supplied/recommended by the drive manufacturer.
4. Re-install the brackets (with CD-ROM mounted) into the Storage Module being sure to mount it such that the power and data connectors on the CD-ROM are towards the rear of the Storage Module.
5. Connect the power and data cables to the CD-ROM following the drive manufacturer's instructions.
6. Re-install the Storage Module into the mainframe following the instructions in the section above titled "Installation/Removal of Storage and Power Supply Modules".

Removal of 3.5" Disk Drives/CD-ROM drives from the S1 Storage Module

To remove either 3.5" disk drives or the CD-ROM from the S1 Storage module, follow in reverse order the instructions for mounting the drives.

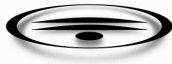
Installing/Removing Disk Drives in the S2 Storage Module-General Information

Each of the 3.5" disk drives are mounted into the module using a single mounting bracket (supplied) for each drive. The two CD-ROM drives are mounted side by side into the module using a pair of mounting brackets (supplied), one bracket for the top of both drives and one for the bottom of both drives.

Follow the instructions below while referring to the illustration on page 8 titled "S2 Storage Module-Exploded View" to install/remove disk drives in the S2 Storage Module.

Installing 3.5" Disk Drives in the S2 Storage Module

1. If installing a disk drive into the lower position, first remove the two screws securing the mounting bracket to the front panel of the Storage Module.
2. Remove the four screws (two per side) securing the mounting bracket to the sides of the Storage Module and remove the bracket from the Storage Module.
3. Mount the disk drive to the mounting bracket using the screws supplied/recommended by the disk drive manufacturer.



4. Re-install the disk drive bracket (with drive mounted) into the Storage Module being sure to mount it such that the power and data connectors on the disk drive are towards the rear of the Storage Module.
5. Connect the power and data cables to the disk drive following the drive manufacturer's instructions.
6. Re-install the Storage Module into the mainframe following the instructions in the section above titled "Installation/Removal of Storage and Power Supply Modules".

Installing CD-ROMs in the S2 Storage Module

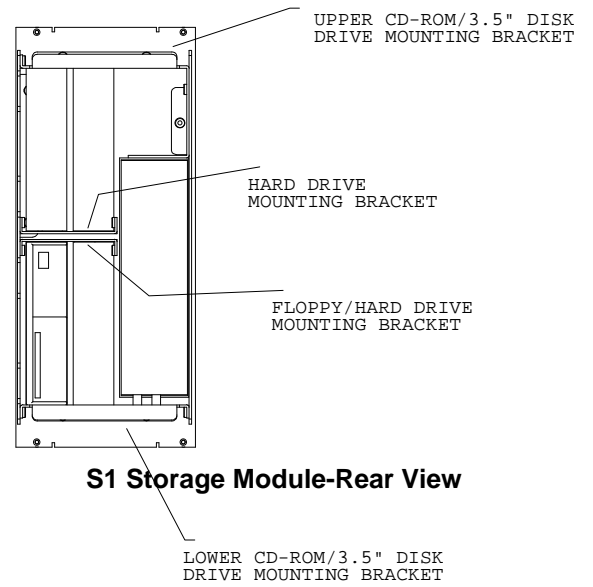
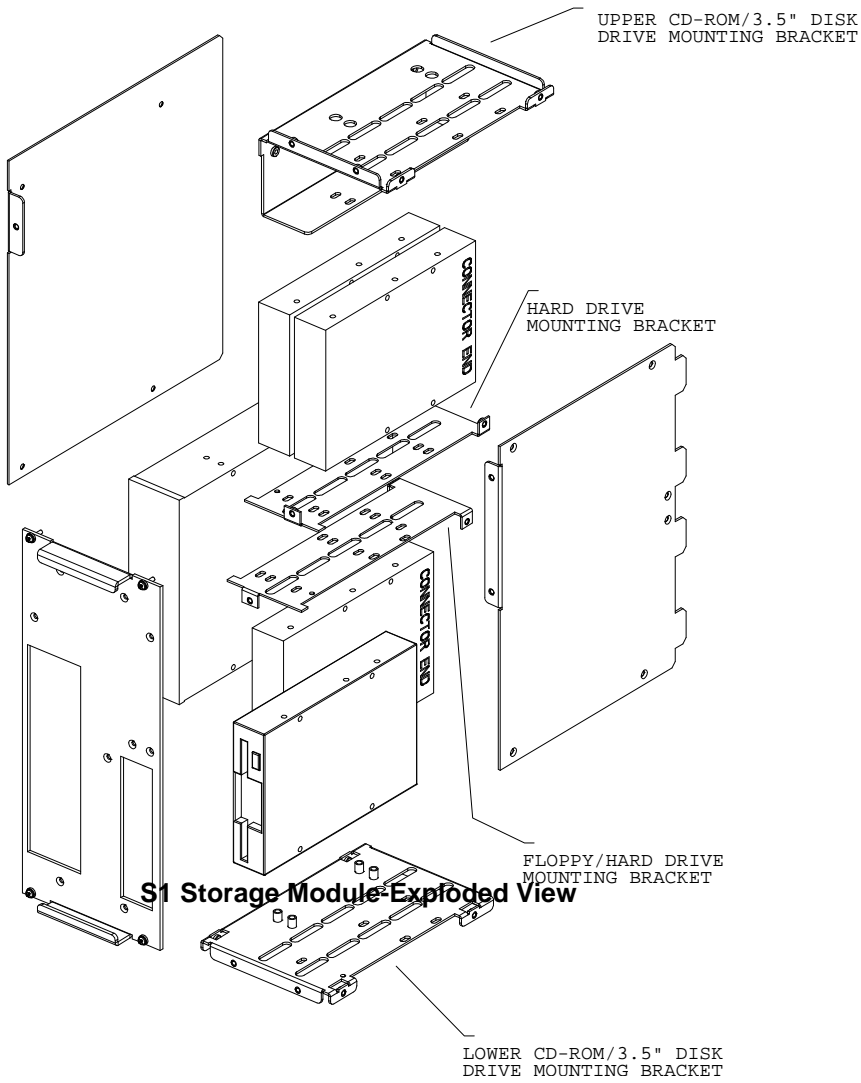
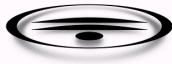
1. Remove the two screws securing the Upper CD-ROM/3.5" Disk Drive Mounting Bracket to the front panel of the Storage Module.
2. Remove the two screws securing the Lower CD-ROM/3.5" Disk Drive Mounting Bracket to the front panel of the Storage Module.
3. Remove the eight screws (four per bracket) securing the mounting brackets to the sides of the Storage Module and remove the brackets from the module.
4. Mount the CD-ROM(s) to the Upper and Lower CD-ROM Mounting Brackets using the screws supplied/recommended by the drive manufacturer.
7. Re-install the CD-ROM Mounting Brackets (with CD-ROM(s) mounted) into the Storage Module being sure to mount them such that the power and data connectors on the CD-ROM(s) are towards the rear of the Storage Module.
5. Connect the power and data cables to the CD-ROM(s) following the drive manufacturer's instructions.
6. Re-install the Storage Module into the mainframe following the instructions in the section above titled "Installation/Removal of Storage and Power Supply Modules".

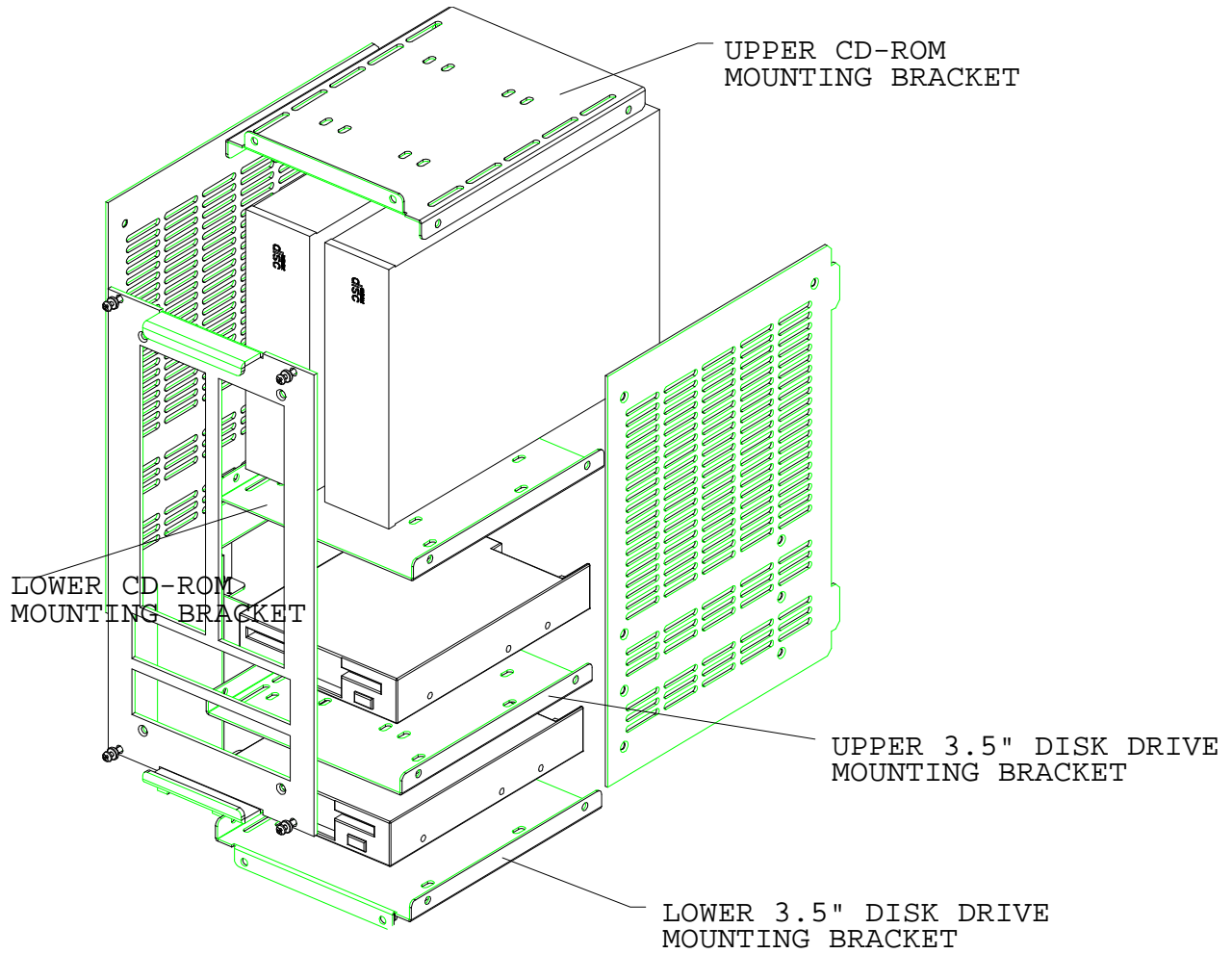
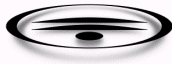
Removal of 3.5" Disk Drives/CD-ROM drives from the S2 Storage Module

To remove either 3.5" disk drives or CD-ROMs from the S2 Storage module, follow in reverse order the instructions for mounting the drives.

Safety and EMC Compliance Information

- ? The CompactPCI Mainframe has been designed and tested in accordance with ANSI/UL 1950 (1997) and CAN/CSA-C22.2 No. 950-95, Safety of Information Technology Equipment, Including Electrical Business Equipment.
- ? The power supply installed in the CompactPCI Mainframe meets the requirements of FCC Part 15, Subpart B and CISPR 22 for a Class B digital device.
- ? The mainframe is considered a subassembly by the FCC and as such is not required to meet the FCC emission limits for a Digital Device.
- ? The end user is required to test the completed system (with CompactPCI Modules Installed) for compliance to FCC Emission requirements found in CFR 47, Part 15, Subpart B for a Class A Digital Device
- ? The CompactPCI Mainframe is certified for use only in the United States and Canada. International Safety and EMC Regulations strictly prohibit use in any other country. Contact Tracewell Systems for units certified for worldwide use.





S2 Storage Module-Exploded View