

# FrontRunner™ 3200 Access Switch Router with TDM Telephony Capability

## Quick Start Guide



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**Part Number (of this document)**

1200-100005-0000, Rev 1.6

**Applicable Product**

Jedai FrontRunner 3200 (Part Number: 200200)

Jedai FrontRunner 3200 with T-1 Synchronization Card (Part Number: 200230)

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## ABOUT THE QUICK START GUIDE

This document presents a quick look at the *FrontRunner 3200*. It helps the reader:

- Gain a quick understanding of the functionality of the *FrontRunner 3200*
- Identify the *FrontRunner 3200* physical components
- Physically install the *FrontRunner 3200*, including:
  - Preparing for installation
  - Mounting the unit (table, rack or wall)
  - Grounding the unit
  - Connecting cabling
- Start the *FrontRunner 3200*

### Related Documentation

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This document does **not** intend to provide an in-depth look at the *FrontRunner 3200*. This is provided by other Jedai customer documentation.

### Documentation CD

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A copy of relevant documentation usually accompanies delivery of the *FrontRunner 3200*. Documentation arrives on CD, and/or as hard copy.

To view documentation from the documentation CD:

1. Insert the CD into a CD-ROM Drive;  
*An HTML menu page appears*
2. From the menu page, click on the document name;  
*The document opens*

**Note:** PDF Documentation



**Documentation on CD appears in .pdf format. Use Adobe Acrobat Reader to view .pdf documentation. An installation file of Adobe Acrobat Reader free-ware is included on the documentation CD.**

## Related Documents

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Related documents include:

- Jedai **FrontRunner 3200 Installation and Operation Guide**. This document presents an in-depth look at physical installation, configuration and maintenance of the **FrontRunner 3200**. To order this document, specify Jedai part number 1200-100002-0000.
- Jedai **FrontRunner 3200 Command Reference Guide**. This document presents a complete list of Command Line Interface commands, including explanations, syntax, shortcuts and examples. To order this document, specify Jedai part number 1200-100003-0000.
- Jedai **FrontRunner 3200 MIBs and Traps Reference Guide**. This document presents a complete list of public and proprietary MIBs and Traps used by the **FrontRunner 3200**. To order this document, specify Jedai part number 1200-100004-0000.
- Jedai **FrontRunner 3200 Release Notes**. This document presents known issues related to the specific release of the **FrontRunner 3200**. To order this document, specify Jedai part number 1200-100006-0000.
- Jedai **Installation Notes**. These one sheet documents present installation information as well as specifications for **FrontRunner 3200** components. They arrive together with ordered components. **Installation Notes** are available for Plug-in modules, T-1 Synchronization Card, Power Supply Units, Fan Tray and Wall Mounting Kit.

## Obtaining Additional Copies of Documents

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To obtain additional copies of this document, or to obtain related documentation, please contact Jedai Customer Support.

Contact Jedai customer support, by telephone, e-mail or fax.

*Phone: 1-866-JEDAI88 (toll free)*

*1-866-533-2488*

*E-mail: support@jedai.com*

*Fax: 1-732-758-9901*

# INTRODUCING THE FRONTRUNNER 3200

## 1.1 What is the FrontRunner 3200?

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The *FrontRunner 3200* is an intelligent Access Switch Router with integrated TDM telephony and data capability. It is part of Jedai Broadband Networks' overall IP Optical Access solution. It is a carrier class Ethernet platform that provides full featured routing and switching, control and management, multi-layer prioritization, Quality of Service and classification, per-port rate limiting, T1 Circuit Emulation (CES) and synchronous network timing propagation.



Figure 1.1: *FrontRunner 3200*

## 1.2 FrontRunner 3200 Physical Description

The *FrontRunner 3200* ships with separate components for varying installations. Components may need to be replaced or serviced over time.

The *FrontRunner 3200* unit appears below:

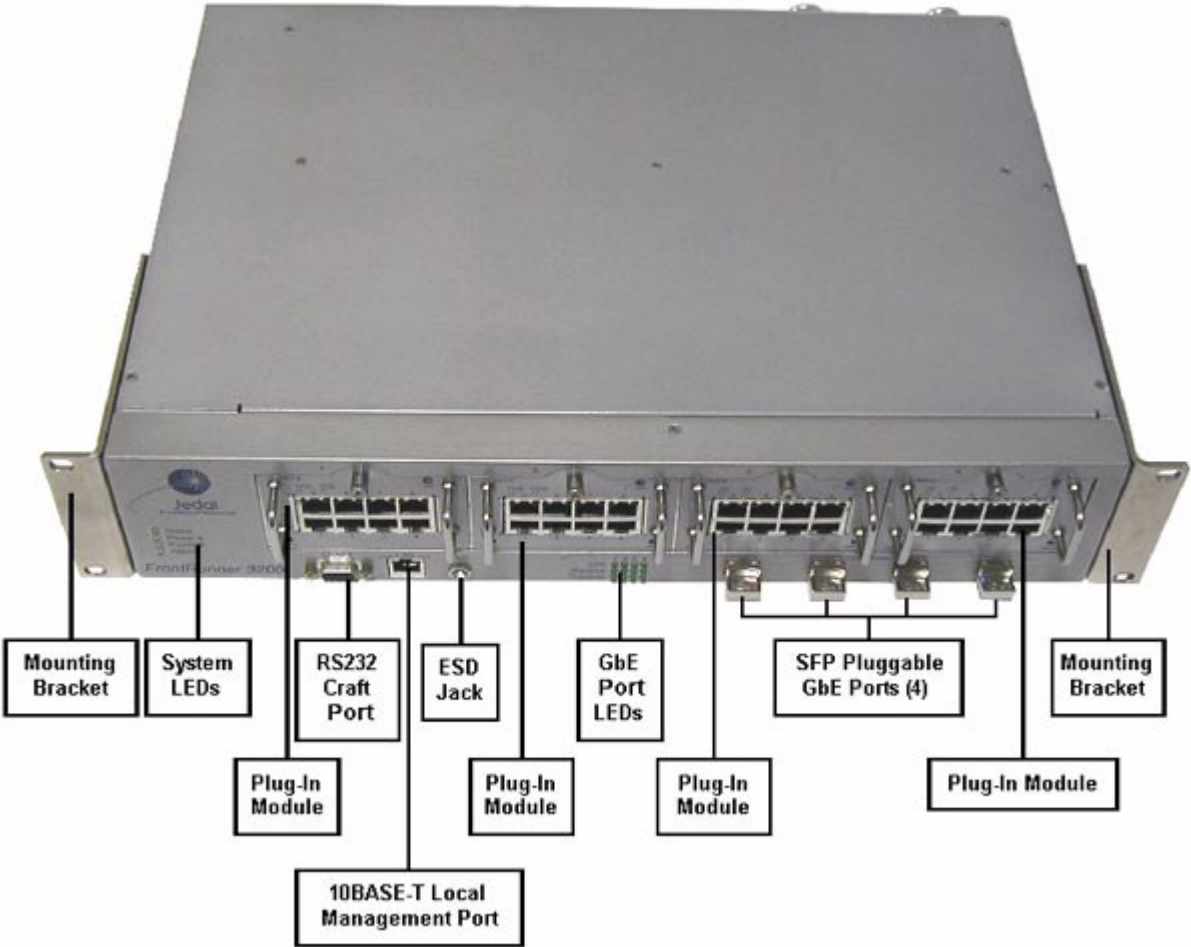


Figure 1.2: *FrontRunner 3200* Whole Unit

A rear view of the *FrontRunner 3200* appears below:

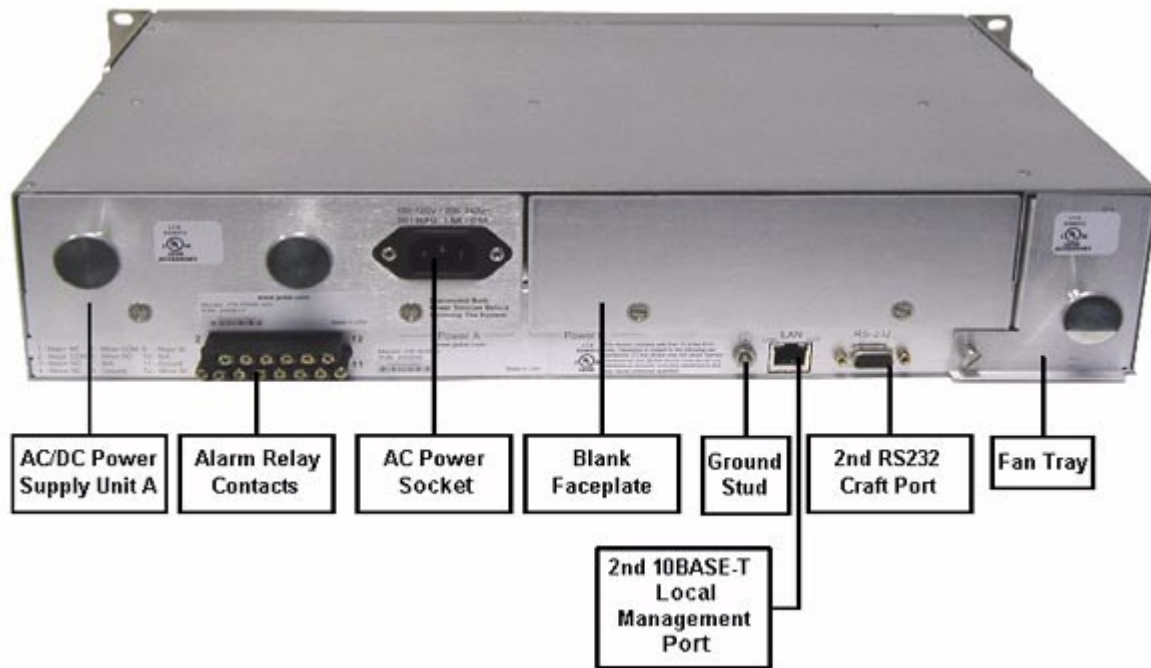


Figure 1.3: *FrontRunner 3200* Rear View

## 1.2.1 FrontRunner 3200 Components

Major *FrontRunner 3200* components are:

- Chassis frame with motherboard
- Power supply units
- Fan tray
- Plug-in modules
- SFP Pluggable GbE ports
- Software package

**Note:** *FrontRunner 3200 and the T-1 Synchronization Card*



When T-1 module(s) are part of the *FrontRunner 3200* physical configuration, a T-1 synchronization card needs to be installed in the unit. The synchronization card is a factory installed component. To order a *FrontRunner 3200* with a T-1 Synchronization Card, specify Jedai Part Number 200230. When the *FrontRunner 3200* will be used for Ethernet service only, a T-1 Synchronization Card is not needed. To order a *FrontRunner 3200* without a T-1 Synchronization Card, specify Jedai Part Number 200200.

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## STARTING THE FRONTRUNNER 3200

This chapter describes the steps needed to mount, ground, connect and start the *FrontRunner 3200*.

Detailed instructions are provided for:

- Preparing for installation
- Mounting
  - Table-top mounting
  - Rack mounting (19” or 23”, flush mounting or mid-mounting)
  - Wall mounting
- Grounding
- Connecting network cabling
- Connecting power supply cabling
- Starting the *FrontRunner 3200*

**Note:** *Installation and Configuration Instructions in Other Documents*



*This document provides instructions for connecting and starting the FrontRunner 3200. It does not provide details regarding physical installation prior to unit mounting, nor does it provide details regarding FrontRunner 3200 software configuration.*

*For physical installation instructions (of plug-in modules and physical components), refer to the FrontRunner 3200 Installation and Operation Guide. Additionally, refer to Installation Notes that accompany individual system components.*

*For configuration instructions, refer to the FrontRunner 3200 Installation and Operation Guide, as well as to the FrontRunner 3200 Command Reference Guide.*

## 2.1 Preparing for Installation

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Preparing for installation involves the following:

### 2.1.1 Reviewing Shipped Items

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Assure that the shipped items include the following:

- **FrontRunner 3200** 2RU unit
- Jedai Product Documentation compact disc
- Quick Start Guide (this document)
- Release Notes
- Accessory Kit, including:
  - RS-232 male connector
  - RS-232 female connector
  - Flat crossover cable
  - Rack mounting kit (clips and screws)
  - Disposable ESD Anti-Static Wristband

### 2.1.2 Verifying Site Appropriateness

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- Does the site have adequate access to adequate electrical power outlets?
  - Are the outlets tested, grounded, functional, surge protected?
- Does the site adequately meet Environmental/Network requirements?
  - Adequate room for the unit? Adequate room for air flow? Clean? Unexposed to extreme temperatures?
  - Access to network cabling?

### **2.1.3 Gathering Needed Equipment**

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- Number 2 Phillips screwdriver
- Standard 3/8" flat blade screwdriver
- Adjustable 3/8" wrench
- ESD Anti-static wristband
- Tape measure (optional)
- Level (optional)
- Cable ties (optional)
- Cable marking equipment such as tags, pens, etc. (optional)
- Optical attenuator (optional)
- Optical power meter (optional)
- Optical fiber jumpers (optional)

In certain installation scenarios, basic configuration is performed at the same session as physical installation. For those situations, include the following in the list of items to gather:

- Initial configuration information
- Asynchronous terminal or PC (desktop or laptop) running terminal emulation software

## 2.2 Mounting the FrontRunner 3200

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The *FrontRunner 3200* can be mounted in three ways. These include:

- Table top mounting
- Rack mounting
- Wall mounting

### 2.2.1 Table Top Mounting

---

The *FrontRunner 3200* can be mounted on a table top. To mount a *FrontRunner 3200* on a table top:

1. Assure that the table meets the following conditions:
  - Table is stable
  - Table can support over 30 lbs. weight (13.6 kg)
  - Table has sufficient room for the unit: at least 17.4 inches (44.2 centimeters) width and 12 inches (30 centimeters) depth
  - Table provides adequate access to cables and to electrical power supply
2. Assure that the table top is clean and free of obstructions
3. Place the *FrontRunner 3200* on the table top, such that the unit rests securely

*Table top mounting is now complete.*

## 2.2.2 Rack Mounting

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The *FrontRunner 3200* can be mounted in standard 19 inch and 23 inch equipment racks. Equipment for 19 inch rack mounting arrives with the unit. A rack mounting kit for a 23 inch rack can be ordered separately (specify Jedai part number 200227).

### 2.2.2.1 Rack Mounting Safety Procedures

When rack mounting the *FrontRunner 3200*, be sure to observe the following safety procedures.

**Caution:** **Observe Rack Mounting Safety Procedures**



**Observing rack mounting safety procedures will prevent damage to the FrontRunner 3200 and to surrounding equipment.**

- If the *FrontRunner 3200* is to be mounted in a closed or multi-unit rack assembly, the operating ambient temperature of the rack may be greater than the room ambient temperature. Be careful not to exceed the rated maximum temperature of the unit.
- Assure that rack installation allows for sufficient air flow. Reduced air flow may hamper proper functioning of the unit.
- Assure that the *FrontRunner 3200* and additional rack mounted equipment are mounted evenly. Assure that equipment is level, and that no hazardous conditions due to uneven loading are present.
- Assure that electrical supply circuits are not overly taxed by the *FrontRunner 3200* and other rack mounted equipment. Give consideration to the effect of overloading of circuits on overcurrent protection and supply wiring.
- Assure that reliable earth grounding of rack mounted equipment be maintained. Pay particular attention to supply connections other than direct connections to the branch (e.g. use of power strips). Refer to “Grounding the FrontRunner 3200” on page 2-20 for additional grounding information.

### 2.2.2.2 Rack Mounting in a 19 Inch Rack

Mounting the *FrontRunner 3200* in a 19 inch can be achieved in one of two ways:

- Flush mounting
- Mid-mounting

#### 2.2.2.2.1 Flush Mounting

The *FrontRunner 3200* arrives with 19 inch mounting brackets attached. Flush mounting involves attaching the *FrontRunner 3200* such that the mounting brackets are flush against the opening of the rack.

To flush mount the *FrontRunner 3200*:

1. Locate the holes on each side of the 19 inch rack where the *FrontRunner 3200* will be mounted
2. Lift the bracketed *FrontRunner 3200* to the approximate level of the intended rack holes
3. Push the rear of the bracketed *FrontRunner 3200* through the open area between the sides of the 19 inch rack, such that the brackets rest over the intended holes
4. Holding the bracketed *FrontRunner 3200*, screw the bracket screw through the right bracket into the right side of the rack, as in the figure below:



Figure 2.1: Rack Mounting - Right

5. Holding the bracketed *FrontRunner 3200*, screw the bracket screw through the left bracket into the left side of the rack, as in the figure below:



Figure 2.2: Rack Mounting - Left

The **FrontRunner 3200** is now flush mounted in the 19 inch rack.

#### 2.2.2.2.2 Mid-Mounting

Mid-mounting the **FrontRunner 3200** in a 19 inch involves the following:

- Removing the pre-installed brackets
- Repositioning the brackets
- Mounting the bracketed **FrontRunner 3200** in a 19 inch rack

To remove the preinstalled brackets:

1. Locate the attached mounting bracket on the side of the **FrontRunner 3200**
2. With a Phillips screwdriver, unscrew the bracket screws
3. Remove the bracket such that the mounting nubs are visible, as in the figure below:



*Figure 2.3: Exposed Mounting Nubs*

4. Repeat the above procedures for the other side of the **FrontRunner 3200**

*The preinstalled brackets are now removed.*

To reposition the brackets for mid-mounting:

1. Hold a mounting bracket such that the L shaped extension faces away from the **FrontRunner 3200** and the screw holes are over the **FrontRunner 3200** mounting nubs, as in the picture below:



*Figure 2.4: Positioned Mid-Mount Bracket*

2. With a Phillips screwdriver, screw the mounting screws through the bracket into the mounting nubs
3. Repeat the above procedures for the other mounting bracket

*The brackets are now repositioned.*

To mid-mount the bracketed **FrontRunner 3200** into a 19 inch rack:

1. Locate the holes on each side of the 19 inch rack where the **FrontRunner 3200** will be mounted
2. Lift the bracketed **FrontRunner 3200** to the approximate level of the intended rack holes
3. Push the rear of the bracketed **FrontRunner 3200** through the open area between the sides of the 19 inch rack, such that the mid-mounted brackets rest over the intended holes
4. Holding the bracketed **FrontRunner 3200**, screw the bracket screw into the right side of the rack
5. Holding the bracketed **FrontRunner 3200**, screw the bracket screw through the left bracket supplement into the left side of the rack

*The FrontRunner 3200 is now mid-mounted.*

### 2.2.2.3 Rack Mounting in a 23 Inch Rack

To rack mount in a 23 inch rack, utilize the Jedai 23 inch Rack Mounting Kit. Obtain this kit by ordering part number 200227.

The *FrontRunner 3200* can be mounted in a 23 rack in two ways:

- Flush mounting
- Mid-mounting

#### 2.2.2.3.1 Flush Mounting in a 23 Inch Rack

Flush mounting the *FrontRunner 3200* in a 23 inch rack requires two basic steps:

- Attaching the bracket supplements to the L shaped brackets
- Flush mounting the bracketed *FrontRunner 3200* into the rack

To attach the bracket supplements to the L shaped brackets:

1. Approach the mounted right bracket of the *FrontRunner 3200*
2. Lift a bracket supplement such that slotted holes face the outside of the unit

**Note:** *One or Two Piece Bracket Supplements*



*Bracket supplements may arrive as one-piece units, or as two-piece units together reaching the same size as the one-piece unit. The two-piece unit is pictured below.*

3. Place the bracket supplement behind the mounted bracket, aligning the holes
4. With a flat blade screwdriver, screw a flat head 8/32 screw through the bracket and bracket supplement until secure, as in the figure below:

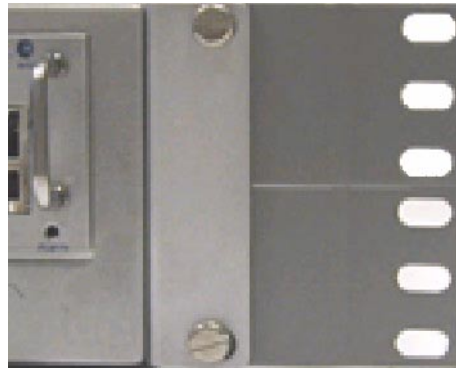


Figure 2.5: Attached Right Mounting Bracket Supplement

5. Repeat the above steps for the left side of the unit until secure, as in the figure below:



Figure 2.6: Attached Left Mounting Bracket Supplement

*The bracket supplements are now attached.*

To flush mount the bracket supplemented **FrontRunner 3200** into a 23 inch rack:

1. Locate the holes on each side of the 23 inch rack where the **FrontRunner 3200** will be mounted
2. Lift the bracket supplemented **FrontRunner 3200** to the approximate level of the intended rack holes
3. Push the rear of the bracketed **FrontRunner 3200** through the open area between the sides of the 23 inch rack, such that the bracket supplements rest over the intended holes
4. Holding the bracket supplemented **FrontRunner 3200**, screw the bracket screw through the right bracket supplement into the right side of the rack
5. Holding the bracketed **FrontRunner 3200**, screw the bracket screw through the left bracket supplement into the left side of the rack

*The **FrontRunner 3200** is now flush rack mounted in the 23 inch rack.*

### 2.2.2.3.2 Mid-Mounting in a 23 Inch Rack

Mid-mounting the *FrontRunner 3200* in a 23 inch rack involves the following basic steps:

- Removing the pre-installed brackets
- Repositioning the brackets
- Attaching the bracket supplements
- Mid-mounting the *FrontRunner 3200* into the rack

To remove the pre-installed brackets:

1. Locate the attached mounting bracket on the side of the *FrontRunner 3200*
2. With a Phillips screwdriver, unscrew the bracket screws
3. Remove the bracket such that the mounting nubs are visible, as in the figure below:



Figure 2.7: Exposed Mounting Nubs

4. Repeat the above procedures for the other side of the *FrontRunner 3200*

*The preinstalled brackets are now removed.*

To reposition the brackets for mid-mounting:

1. Hold a mounting bracket such that the L shaped extension faces away from the **FrontRunner 3200** and the screw holes are over the **FrontRunner 3200** mounting nubs, as in the picture below:



Figure 2.8: Positioned Mid-Mount Bracket

2. With a Phillips screwdriver, screw the mounting screws through the bracket into the mounting ears
3. Repeat the above procedures for the other mounting bracket

*The brackets are now repositioned.*

To attach the bracket supplements:

1. Approach the mounted right bracket of the **FrontRunner 3200**
2. Lift a bracket supplement such that slotted holes face the outside of the unit

**Note:** **One or Two Piece Bracket Supplements**



**Bracket supplements may arrive as one-piece units, or as two-piece units together reaching the same size as the one-piece unit. The two-piece unit is pictured below.**

3. Place the bracket supplement behind the mounted bracket, aligning the holes

4. With a flat blade screwdriver, screw a flat head 8/32 screw through the bracket and bracket supplement until secure, as in the figure below:



Figure 2.9: Attached Right Mounting Bracket Supplement

5. Repeat the above steps for the left side of the unit until secure, as in the figure below:



Figure 2.10: Attached Left Mounting Bracket Supplement

*The bracket supplements are now attached.*

To mid-mount the bracket supplemented **FrontRunner 3200** into a 23 inch rack:

1. Locate the holes on each side of the 23 inch rack where the **FrontRunner 3200** will be mounted
2. Lift the bracketed supplemented **FrontRunner 3200** to the approximate level of the intended rack holes
3. Push the rear of the bracketed supplemented **FrontRunner 3200** through the open area between the sides of the 23 inch rack, such that the mid-mounted bracket supplements rest over the intended holes
4. Holding the **FrontRunner 3200**, screw the bracket screw into the right side of the rack
5. Holding the bracketed **FrontRunner 3200**, screw the bracket screw through the left bracket supplement into the left side of the rack

*The **FrontRunner 3200** is now mid-mounted.*

## 2.2.3 Wall Mounting

The *FrontRunner 3200* can be mounted on a wall. To wall mount, utilize the Jedai Wall Mounting Kit (part number 200226).

**Note:** Wall Mounting on Plywood



**Wall mounting should take place on plywood attached to the designated wall, rather than on drywall, masonry or other surfaces. Plywood wall mounting is considered the most sound and secure wall mounting method. References to wall mounting in this document refer to 3/4" plywood attached to the wall.**

The wall mounting kit includes:

- 1 wall mounting panel
- 2 nuts with star washers (attached to the top of the wall mounting panel)
- 1 wall mounting attaching bracket
- 4 wall mounting screws

Mounting the *FrontRunner 3200* on a wall requires three basic steps:

- Removing the pre-installed brackets
- Affixing the wall mounting panel to a wall
- Attaching the *FrontRunner 3200* to the wall mounting panel

To remove the preinstalled brackets:

1. Locate the attached mounting bracket on the side of the *FrontRunner 3200*
2. With a Phillips screwdriver, unscrew the bracket screws, and save them for later use (to secure the unit to the wall mounting bracket)
3. Remove the bracket such that the mounting nubs are visible, as in the figure below:



Figure 2.11: Exposed Mounting Nubs

4. Repeat the above procedures for the other side of the *FrontRunner 3200*. The preinstalled brackets are now removed.

To attach the wall mounting panel to a wall:

1. Locate the wall mounting panel (pictured below):



Figure 2.12: Wall Mounting Panel

2. Hold the wall mounting panel against the intended plywood covered wall location. Hold the panel in an “L” shape, as in the above picture
3. With a level, assure that the panel is horizontally level
4. With a pencil, mark the location for the 4 screws (at the top of each of the four slots)

**Note:** **Recommended Wall Mounting Screws**



**For mounting on plywood, 3/4” long #10 screws are recommended.**

5. Hold the wall mounting panel once more at its intended wall location
6. Secure screws into the plywood, such that the wall mounting panel is firmly affixed  
*The wall mounting panel is now affixed.*

To attach the *FrontRunner 3200* to the wall mounting panel:

1. Locate the *FrontRunner 3200* to be attached
2. Tilt the *FrontRunner 3200* such that it is in a vertical position, with the fan tray at the bottom

**Caution:** Wall Mount Positioning Recommendation



*It is recommended (though not required) that the FrontRunner 3200 rest with the fan tray toward the floor and the bottom of the unit facing the wall, when wall mounted. This is to enhance air flow (with heat rising).*

3. Remove the nuts with star washers from the top of the wall mounting panel
4. Place the tilted *FrontRunner 3200* onto the extended arm of the affixed wall mounting panel



Figure 2.13: *FrontRunner 3200* Placed in Wall Mounting Panel

5. Locate the attaching bracket, pictured below:



*Figure 2.14: Wall Mounting Attaching Bracket*

6. Place the attaching bracket over the top of the tilted **FrontRunner 3200**, such that:
- The protruding screws of the wall mounting panel fit in the slots of the bracket
  - The right mounting nubs of the **FrontRunner 3200** fits under the right slot of the bracket, and
  - The vent of the **FrontRunner 3200** is under the large aperture of the attaching bracket:



*Figure 2.15: Attaching Bracket Placement*

7. Attach the nuts with star washers to the wall panel studs. Tighten with a 3/8" wrench until secure
8. Using 2 rack mounting bracket screws (removed earlier), fasten the wall bracket to the right **FrontRunner 3200** mounting nubs, until secure

*The **FrontRunner 3200** is now attached to the wall mounting panel. Wall mounting is complete.*

**Note:** **Room between the FrontRunner 3200 and the Wall**



**Wall mounting does not leave the FrontRunner 3200 flush against the wall. Rather, a space remains between the unit and the wall. Utilize this space as deemed appropriate (e.g. for thin documents).**

## 2.3 Grounding the FrontRunner 3200

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When the *FrontRunner 3200* has been physically installed and mounted, proceed with electrical grounding.

The *FrontRunner 3200* includes the grounding related features. Read these features and follow grounding recommendations to assure proper product functioning.

### 2.3.1 Grounding Features and Recommendations

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- The rear panel of the *FrontRunner 3200* has a grounding stud. Connect an electrical ground to the grounding stud, as per local electrical requirements.
- The front panel of the *FrontRunner 3200*, to the right of the 10BASE-T Local Management port, has an electrostatic discharge (ESD) grounding jack. Attach the plug from the ESD Anti-Static Wristband to the grounding jack when handling the unit or its components.
- A disposable ESD Anti-Static Wrist Band is provided with each unit and with the unit's removable components. Follow instructions on the wrist band package for proper grounding.

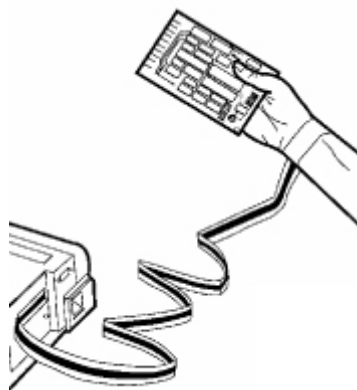


Figure 2.16: ESD Anti-Static Wristband

- The *FrontRunner 3200* mounting brackets are nickel plated. This assures grounding between mounting racks and the *FrontRunner 3200* chassis

## 2.4 Connecting Network Cabling

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When the *FrontRunner 3200* has been fitted with plug-in modules (as may be required in certain installation scenario - see related documents for installation instructions), mounted and grounded, proceed with network cabling.

**Note:** *Optional Sequence - Network Cabling can be Performed Later*



*Proceeding with network cabling is suggested though not required at this point. Cabling can proceed following unit activation as well.*

Network cabling involves plugging network cables into their appropriate ports.

Network cabling generally consists of:

- Cabling for Administrative purposes
- Cabling for Plug-in Modules
- Cabling for Gbe Ports

### 2.4.1 Administrative Cabling

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Administrative cabling is used for local management of the *FrontRunner 3200*. Connect the following cabling, as warranted by the individual management scenario.

- Connect the serial cable to the *FrontRunner 3200* RS232 (Craft) port, and to the serial port of the PC or terminal



Figure 2.17: Connected Serial Cable

- Connect RJ-45 cabling to the 10BASE-T LAN port of the *FrontRunner 3200* and to the network interface card of the local network



Figure 2.18: Connected RJ-45 Cabling in LAN Port

## 2.4.2 Cabling for Plug-in Modules

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Cabling for Plug-in Modules allows for T-1 and Ethernet provisioning.

- Connect RJ45 cables to appropriate ports in 10/100BASE-TX and T-1 plug-in modules

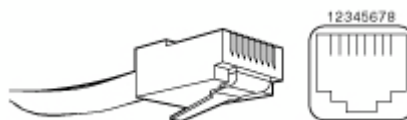


Figure 2.19: RJ45 Cable and RJ45 Port

9. Connect LC (Single-Mode or Multi-Mode) Connectors to appropriate ports in 100BASE-FX plug-in modules



Figure 2.20: LC Connector

## 2.4.3 Cabling for GbE Ports

Cabling for GbE ports allows for network and data connections on the GbE links.

- Connect single mode or multi mode (as per the transceivers to be used) GbE cables to ports into Small Form Pluggable (SFP) transceivers (matching the transmit and receive jacks of the cables and transceiver), and then into appropriate GbE Ports. It is recommended that jacketed cables be used, with jacket size greater than 1.6mm.

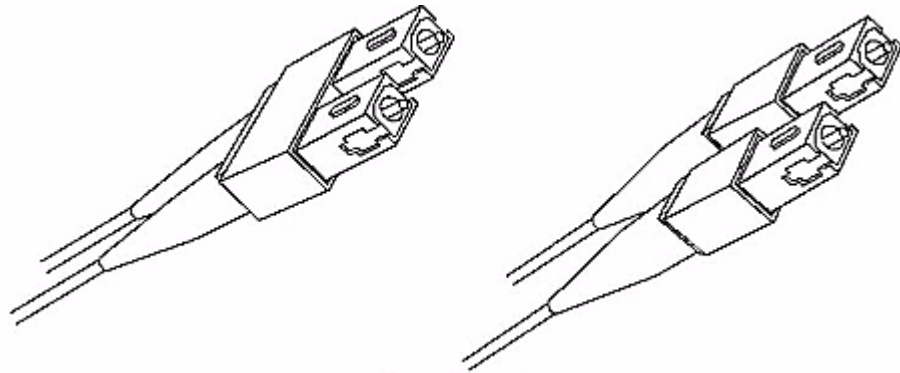


Figure 2.21: Duplex or Simplex Cables for SFP GbE Ports

To connect GbE cabling, follow these procedures:

**Caution:** ESD Sensitive Device



**Transceivers contain sensitive electronic components. To avoid damage to them, be sure to:**

- **Wear an anti-static wristguard**
- **Refrain from touching the printed circuit board**

1. Remove port covers from the **FrontRunner 3200** GbE port(s), pictured below:



Figure 2.22: Covered GbE Ports

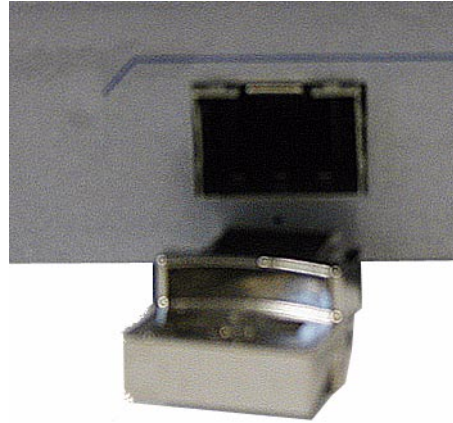


Figure 2.23: GbE Port with Cover Removed

2. Locate the SFP transceiver (as per the sample below)

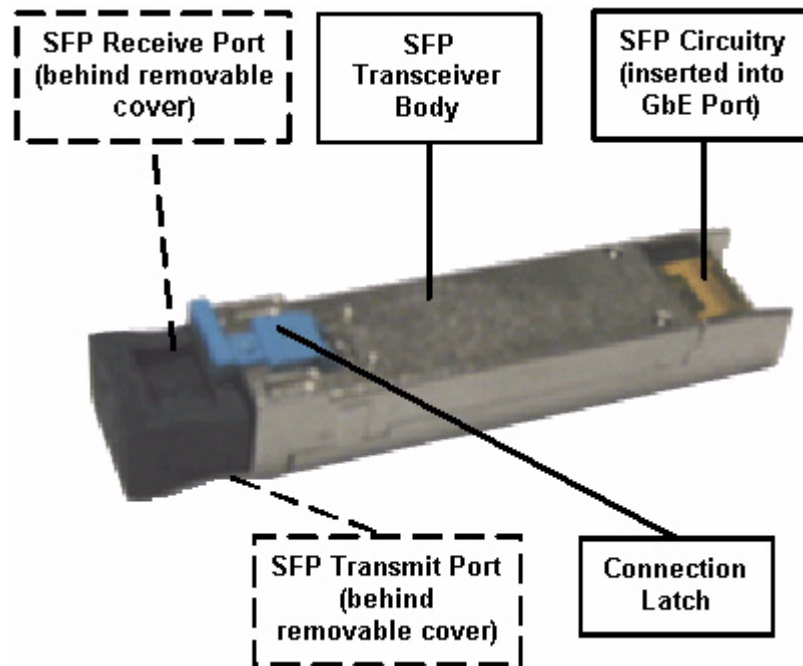


Figure 2.24: Sample SFP Transceiver

3. Remove the black rubber port cover from the transceiver

4. Holding the transceiver with the latch cover on top, the exposed circuitry to the back and the ports close to your hand, insert the transceiver into the GbE port until it clicks, as in the figure below:



Figure 2.25: Inserted SFP Transceiver in GbE Port 1  
(Receive to the left, Transmit to the Right)

5. Insert fiber optic cabling into the appropriate SFP transceiver ports (receive is the port on the left of the installed transceiver, transmit is the port on the right of the installed transceiver), as in the figure below:

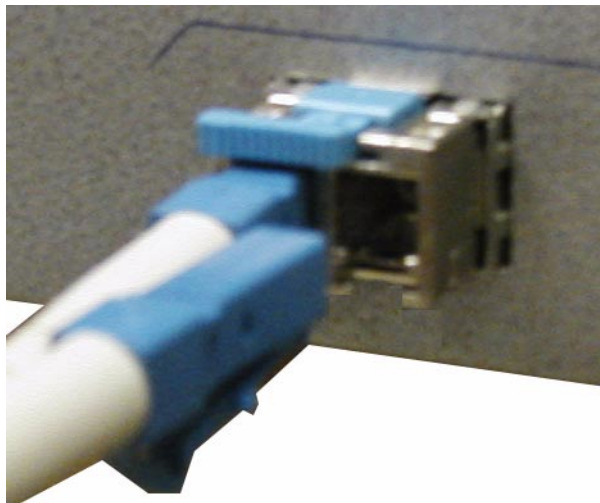


Figure 2.26: Inserting Fiber Optic Cabling

**Warning:** Do Not Look into Fiber Optic Connectors



*Though the light used in most fiber optical transmission is not visible to the naked eye, potentially harmful levels of optical laser radiation may be present at the optical output ports and unconnected fiber cables. Do not, under any circumstances, look directly into a fiber optic connector.*

## 2.5 Connecting the FrontRunner 3200 Power Supply Cord

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When the *FrontRunner 3200* has been fitted with plug-in modules, mounted, grounded, connected to the network, and connected to a console or PC with a configured terminal emulation program, proceed to connect the unit's power supply cord.

Procedures for connecting the power supply cord differ for AC and DC power.

**Note:** *No On/Off Switch - Do not Plug into Power Supply until Ready to Initialize*



*The FrontRunner 3200 does not have an On/Off switch. Connecting to electrical power turns on the machine. Disconnecting from electrical power turns off the machine. Therefore, only plug the power cord into the electrical power source when ready to initialize the unit.*

### 2.5.1 Connecting the AC Electrical Power Cord

---

To connect the *FrontRunner 3200* AC electrical cord:

1. Locate the electrical power cord that was shipped with the unit
2. Locate the power supply unit power receptacle, pictured below:



Figure 2.27: AC Power Jack

3. Insert the female end of the power cord into the power supply unit's power receptacle
4. When ready to start the unit, insert the male end of the power cord into the electrical socket (see "Starting the FrontRunner 3200" on page 2-28)

## 2.5.2 Connecting to DC Electrical Power

---

To connect the *FrontRunner 3200* to DC electrical power:

1. Locate the DC electrical power contacts
2. Locate the DC power feed unit power receptacle (socket), pictured below:

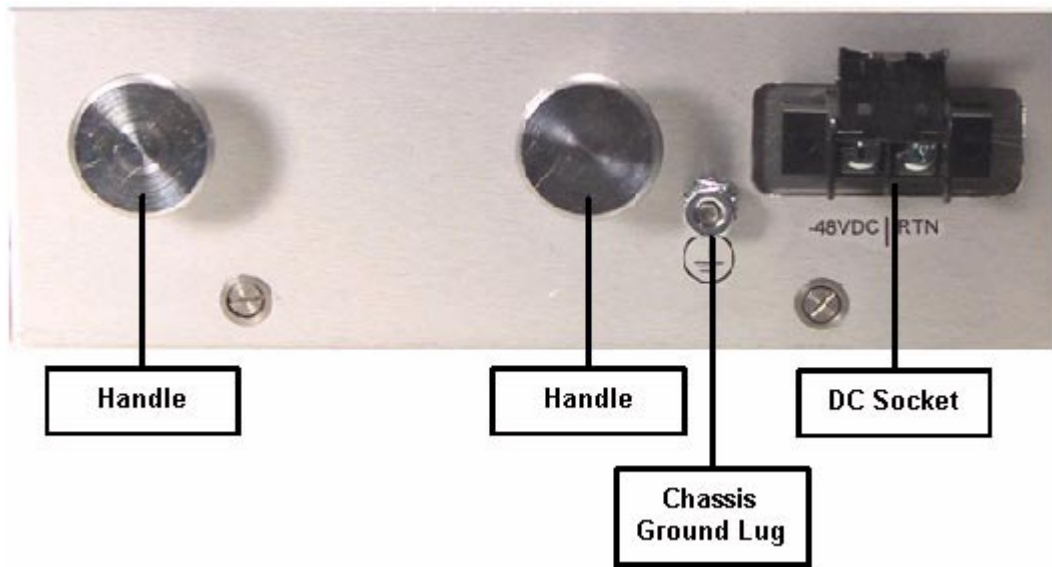


Figure 2.28: DC Power Feed Unit

Attach the DC power contacts to the DC power supply unit power receptacle. Use of a 16 AWG stranded wire of 7 or more strands is recommended.

## 2.6 Starting the FrontRunner 3200

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When the *FrontRunner 3200* has been mounted, grounded and cabled, proceed to connect the unit's power supply cord to the facility's power supply. This will initialize the unit.

When power is connected to the *FrontRunner 3200*, the unit activates. Upon activation, the following distinguishable events occur:

1. Fan units and circuitry activate (fan noise sounds)
2. After a few seconds, system LEDs activate (see below)
3. Software load status messages appear (observable via console - see the *FrontRunner 3200 Installation and Operation Guide* for further detail)

### 2.6.1 Observing System LED Activation

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System LEDs appear to the left of the front of the *FrontRunner 3200*:

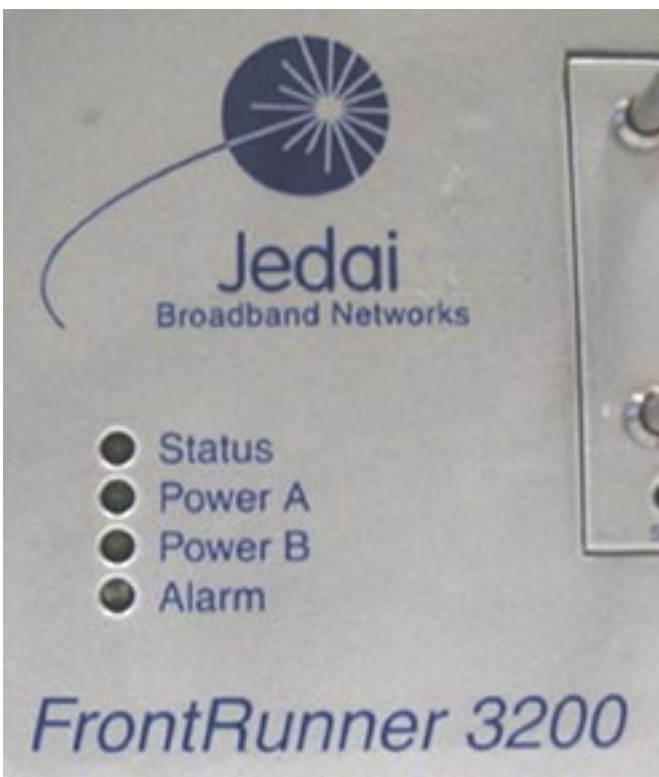


Figure 2.29: System LEDs

When the **FrontRunner 3200** is initialized, LEDs activate in the following sequence:

1. Lights flash
2. Status LED remains steady at green
3. Power A or Power B (depending on active power supply unit) remains steady at green. If both are installed and functioning, both appear green. If only one Power Supply Unit is installed, the LED corresponding to the uninstalled unit remains unlit. If both are installed and one is not functioning, the related LED will appear yellow, indicating a need for replacement.
4. Alarm indicator remains unlit (if there are no alarms) or red (if alarms exist). Prior to connection to the network, red alarm light will remain lit. Following network connection, if no alarm situations are present, alarm LED will remain unlit. (See the **FrontRunner 3200 Installation and Operation Guide** for further detail)

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