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HEWLETT PACKARD 650933-B21

HP H220 Host Bus Adapter

Model: 650933-B21

Brand: HEWLETT PACKARD

INTRODUCTION

The HP H220 Host Bus Adapter (HBA) is a factory-integrated component designed to provide high-performance connectivity for SAS (Serial Attached SCSI) and SATA (Serial Advanced Technology Attachment) storage devices. This adapter facilitates the connection of internal or external storage drives to a server or workstation, enabling data transfer and storage management. It is compatible with various operating systems, including Windows and Linux.

SAFETY INFORMATION

- Always power off and unplug the computer system before installing or removing any internal components.
- Wear an anti-static wrist strap and work on an anti-static mat to prevent electrostatic discharge (ESD) damage to the HBA and other components.
- Handle the HBA by its edges; avoid touching the gold connectors or integrated circuits.
- Ensure proper ventilation within the computer chassis to prevent overheating.
- Do not attempt to modify or repair the HBA. Refer servicing to qualified personnel.

PACKAGE CONTENTS

Verify that all components are present before proceeding with installation:

- HP H220 Host Bus Adapter card
- Low-profile bracket (may be pre-installed or included separately)

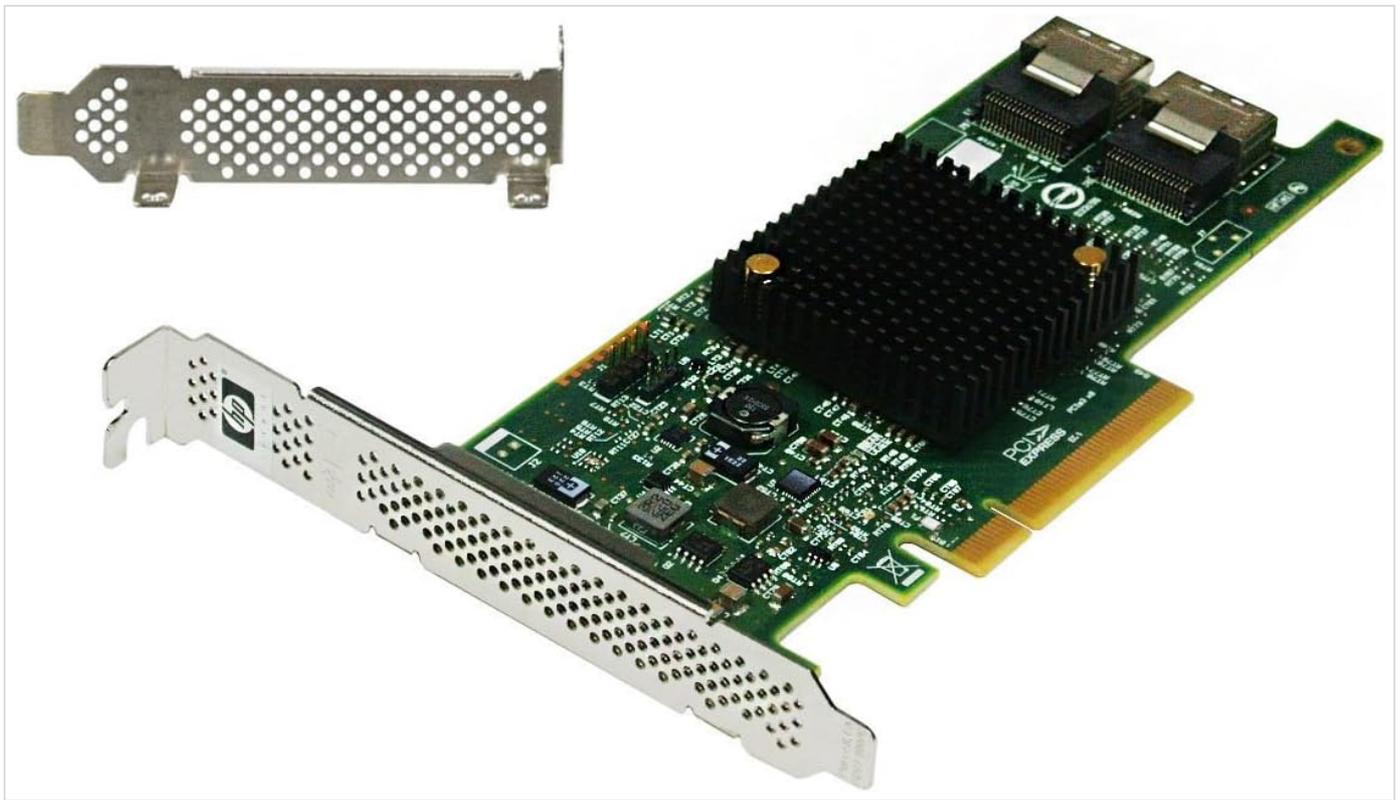


Image: The HP H220 Host Bus Adapter card shown with both a standard-height bracket and a separate low-profile bracket, illustrating the physical components included.

SETUP AND INSTALLATION

- 1. Prepare the System:** Power down the computer system and disconnect all power cables. Open the computer chassis to access the internal components.
- 2. Select a PCIe Slot:** Locate an available PCI Express (PCIe) expansion slot on your motherboard. The H220 HBA requires a PCIe x8 slot for optimal performance, though it may function in a PCIe x16 slot.
- 3. Install the HBA:**
 - Remove the metal slot cover from the chosen PCIe slot on the computer chassis.
 - Carefully align the HBA's PCIe connector with the slot on the motherboard.
 - Apply even pressure to both ends of the card until it is fully seated in the slot. Ensure the retention clip (if present) engages.
 - Secure the HBA to the chassis with a screw or retention mechanism.

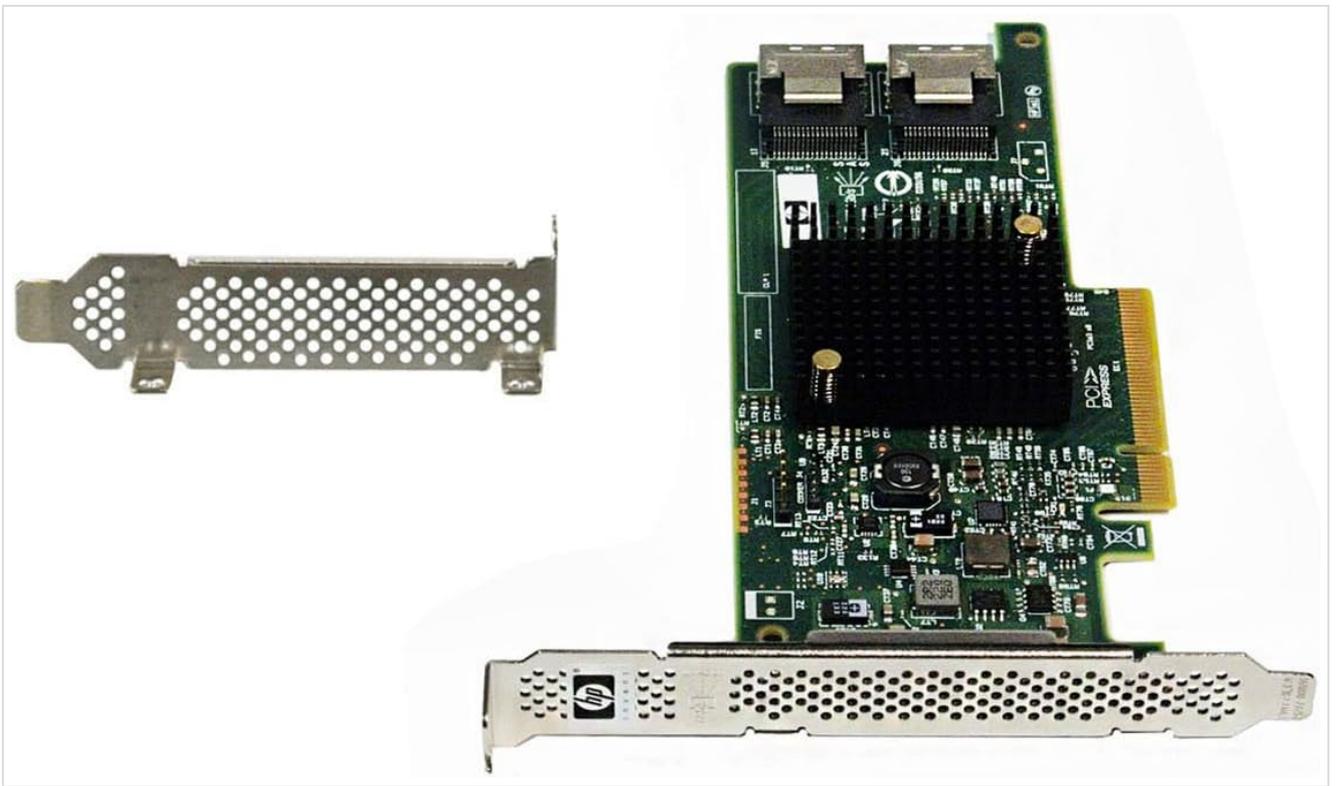


Image: A top-down view of the HP H220 Host Bus Adapter, highlighting the PCIe connector and the two Mini-SAS ports, alongside a separate low-profile bracket.

4. Connect Storage Devices:

- Connect Mini-SAS to SATA/SAS breakout cables (not included) to the two Mini-SAS ports on the HBA.
- Connect the other end of the breakout cables to your SAS or SATA storage drives. Ensure proper cable routing to avoid obstructing airflow.

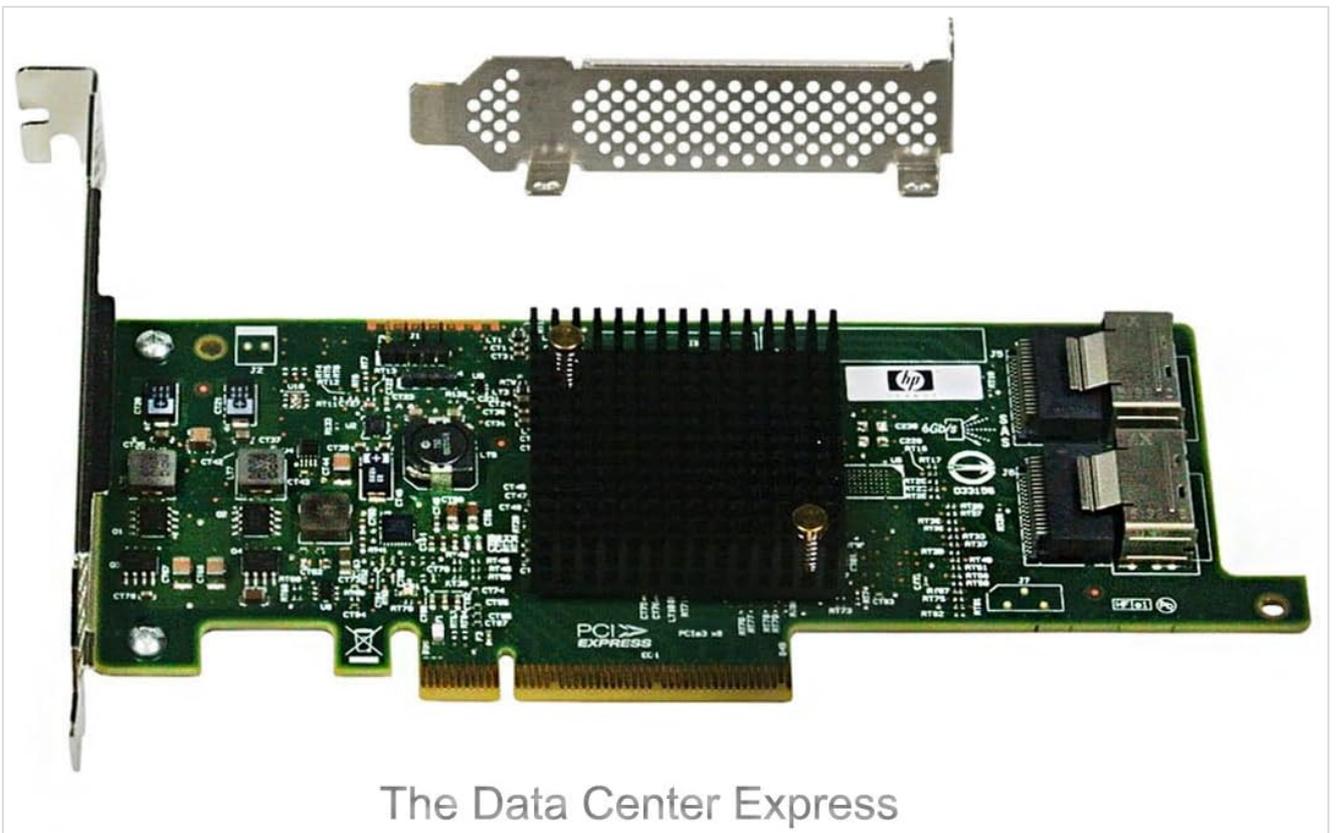


Image: An angled view of the HP H220 Host Bus Adapter, showing the heatsink, PCIe interface, and the two Mini-SAS connectors for attaching storage devices.

5. **Close Chassis and Power On:** Close the computer chassis, reconnect all power cables, and power on the system.

6. **Driver Installation:**

- Upon first boot, the operating system (Windows or Linux) may automatically detect and install generic drivers.
- For optimal performance and compatibility, download the latest drivers from the official Hewlett Packard Enterprise (HPE) support website for your specific operating system. Search for "HP H220 HBA drivers".

OPERATING INSTRUCTIONS

Once installed and drivers are loaded, the HP H220 HBA functions as a pass-through controller, presenting connected SAS and SATA drives directly to the operating system. This allows the operating system or software RAID solutions (e.g., ZFS, mdadm) to manage the drives.

- **BIOS/UEFI Configuration:** In most cases, the HBA will be detected automatically. If necessary, consult your system's BIOS/UEFI settings to ensure the PCIe slot is enabled and configured correctly.
- **Operating System Recognition:** Verify that the operating system recognizes the HBA and all connected drives. In Windows, check Device Manager under "Storage controllers". In Linux, use commands like `ls SCSI` or check `/dev/sd*` entries.
- **Storage Management:** Use your operating system's native disk management tools or third-party software to initialize, partition, and format the connected drives.

MAINTENANCE

- **Dust Removal:** Periodically inspect the HBA and surrounding components for dust accumulation. Use compressed air to gently clean the heatsink and PCB to ensure proper cooling.
- **Firmware Updates:** Check the HPE support website for any available firmware updates for the H220 HBA. Firmware updates can improve stability, performance, and compatibility. Follow the provided instructions carefully when performing firmware updates.
- **Cable Integrity:** Ensure all Mini-SAS cables are securely connected and free from damage. Loose or damaged cables can lead to data corruption or connectivity issues.

TROUBLESHOOTING

Problem	Possible Cause	Solution
HBA not detected by system.	Card not fully seated; faulty PCIe slot; insufficient power; BIOS/UEFI setting.	<ul style="list-style-type: none">◦ Reseat the HBA firmly in the PCIe slot.◦ Try a different PCIe slot.◦ Ensure system power supply is adequate.◦ Check BIOS/UEFI settings for PCIe slot enablement.
Connected drives not recognized.	Incorrect or missing drivers; faulty cables; drive issues; HBA not functioning.	<ul style="list-style-type: none">◦ Install or update HBA drivers from HPE website.◦ Verify Mini-SAS to SATA/SAS cables are correctly connected and not damaged.◦ Test drives individually if possible.◦ Ensure drives are powered on.

Problem	Possible Cause	Solution
System instability or crashes.	Driver conflict; overheating; faulty HBA.	<ul style="list-style-type: none"> ◦ Ensure correct and latest drivers are installed. ◦ Check system temperatures and ensure adequate cooling. ◦ If issues persist, contact HPE support.

SPECIFICATIONS

Feature	Detail
Brand	HEWLETT PACKARD
Model Number	650933-B21
Hardware Interface	PCI Express (PCIe), SAS
Compatible Devices	Desktop Computer, Server
Operating System Support	Windows, Linux
Product Dimensions (LxWxH)	6.61 x 2.7 x 0.63 inches
Item Weight	6.4 ounces (approx. 0.4 Pounds)
Manufacturer	HP ISS
Date First Available	August 4, 2012

WARRANTY INFORMATION

This HP H220 Host Bus Adapter is covered by the standard manufacturer's warranty provided by Hewlett Packard Enterprise (HPE). The specific terms and duration of the warranty may vary by region and point of purchase. Please retain your proof of purchase for warranty claims. For detailed warranty information, refer to the official HPE website or contact your vendor.

SUPPORT

For technical assistance, driver downloads, firmware updates, or further information regarding the HP H220 Host Bus Adapter, please visit the official Hewlett Packard Enterprise (HPE) support website:

HPE Support Website: <https://www.hpe.com/support>

When contacting support, please have your product model number (650933-B21) and any relevant system information readily available.