

WHITE PAPER

APRIL 2001

Armada Docking: Recovery Steps with Sudden Loss of AC Power

The purpose of this white paper is to outline Compaq's recommendations for Armada notebooks in a docking environment when AC Power is lost. The issues detailed in this document occur with the Armada notebooks under the following conditions:

- The notebook is docked to the ArmadaStation EM or Convenience Base EM
- Both the notebook and expansion base are powered on
- The notebook is in a docked profile under Windows and is receiving its power from the expansion base
- A sudden loss of AC power is experienced (i.e. expansion base unplugged from wall, black-outs, brown-outs, other loss of AC)

Symptoms:

Following an unexpected loss of AC power, the final state of the notebook may be one of the following:

- Powered on in undocked profile
- Blue screen
- Hard lock-up that requires a hardware reset (2 button reset)

Cause:

The reason for the failure conditions noted above stems from the fact that the docked notebook physically extends its PCI bus into the expansion base. With this extension, the docked notebook effectively acts like a desktop computer. When loss of AC occurs, as with a desktop, the system will immediately shut down and the "state" of the system will be indeterminate.

Recommendations:

The most reliable solution to insure no loss of functionality with the system is to use the docked system with an Uninterrupted Power Supply (UPS).

If the system is powered on and docked when AC power is lost, the customer should take the following steps:

Using the notebook while docked in expansion base with no AC power

- Using the notebook in an expansion base with no AC power is not recommended because of the possibility of a subsequent lock-up if AC power is restored.
- No peripherals connected to the expansion will work or be seen and the notebook will be in an undocked state in Windows
- It is recommended that the customer shut down and undock the notebook following the steps listed below

Shutting down the docked notebook with no AC Power

- If notebook is not locked up, save applications and use the windows start bar to shut down notebook
- If notebook is locked up, try using power button to turn off notebook
- If power button will not work, use hardware reset (Standby + Power Button) to turn off notebook

Removing the notebook from the ArmadaStation EM with no AC power

- The issue of removing the notebook is compounded by the fact that the ArmadaStation EM uses a motorized dock/undock mechanism to remove the notebook. When the expansion base has no power, it is unable to eject the notebook with the motor
- To manually remove the notebook, use manual eject lever to push notebook out of ArmadaStation EM. The manual eject level is a small white lever located inside the back cover of the base. To remove the notebook, push the white lever to the left. Slight pulling is required to remove the notebook completely out of the base

Removing a locked up notebook from the ArmadaStation EM that has AC power

- If the notebook becomes locked up due to AC loss / re-application, the notebook should be ejected using the following steps:
 1. Push Eject button once on expansion base to remove notebook.
 2. If this does not work, push and hold eject button for ~5 seconds to eject notebook.
 3. If this does not work (highly unlikely), cycle AC power on the expansion base and try steps 2 and 3 again.

FAQ

Q: Can the expansion base run off of the battery in the notebook?

A: The power requirements of the ArmadaStation EM far exceed the available power the battery can provide. The typical notebook will use 40-50 Watts maximum. The expansion base power supply is designed to provide over 130 Watts to the expansion base. Also, the interface is designed to only provide power to the notebook, not power from the notebook to the expansion base.

Q: Why does the Armada Port Replicator not lock up when AC is removed, but the ArmadaStation EM does?

A: The ArmadaStation EM is a full function desktop equivalent expansion base that has a PCI to PCI bridge and multiple PCI devices. The OS cannot tolerate these devices going away without any warning. The Port Replicator passes through the I/O ports and the controller is in the notebook, which continues to run off of battery power.

Q: Why is the behavior intermittent (locks up sometimes, works sometimes)?

A: A race condition will exist between the expansion base crashing and the OS logically undocking. Depending on load and user scenario, the outcome is unreliable.

Notice

The information in this publication is subject to change without notice.

COMPAQ COMPUTER CORPORATION SHALL NOT BE LIABLE FOR TECHNICAL OR EDITORIAL ERRORS OR OMISSIONS CONTAINED HEREIN, NOR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS MATERIAL.

Compaq and Armada are trademarks of Compaq Computer Corporation and are registered with the United States Patent and Trademark Office.

Intel, Pentium, Celeron, MMX and other names of Intel products are trademarks and/or registered trademarks of Intel Corporation.

Microsoft, Windows, Windows NT and other names of Microsoft products are trademarks and/or registered trademarks of Microsoft Corporation.

Other product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.

©2001 Compaq Computer Corporation. All rights reserved. Printed in the U.S.A.