S700(F) FC Hard Drive F/W Upgrade Tech Notes

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Document Description

This document provides the SOP for upgrading the Firmware of FC Hard Drives in S700(F). The Spheras Storage Utilities (SSU, including asFirmware.exe & asAnalyze.exe, running on Windows 2000) are used to perform the Firmware upgrade function, since the Spheras Storage Director (SSD) does not support this function in the version 2.1.

Products Affected

S700(F) Storage System

QLogic QLA234x FC HBA

QLogic QLA2200 FC HBA (with HSSDC interface, not in AVL, optional)

Date	Revision	Page Changed	Description
3/1	1.0		First release the document

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Scope

This document provides the SOP for upgrading the Firmware of FC Hard Drives in S700(F). The Spheras Storage Utilities (SSU, including asFirmware.exe & asAnalyze.exe, running on Windows 2000) are used to perform the Firmware upgrade function, since the Spheras Storage Director (SSD) does not support this function in the version 2.1.

While SSU is intended for use on S700 JBOD primarily, it does contain support for some RAID system whereby the RAID controller can be bypassed and the enclosures within the RAID system can be managed/monitored as if the RAID controller were not there. Currently, only S700F RAID controller is supported. Intel SRCFC22C (Paulden) is NOT supported on SSU. Please refer to the following two supported architectures/configurations.

The SSU and hard drive Firmware files could be gotten from Acer kCenter, GCSD Website, and Acer Storage Team in ITBG.

It is mandatory to backup all data on the relevant disk drives in S700(F) before performing the firmware upgrade.

F/W Upgrade Architecture & Configuration

Architecture 1 – S700F & QLA234x

QLA234x

LC-LC Cable
(FC Switch in-between optional)

S700F with RAID Controller
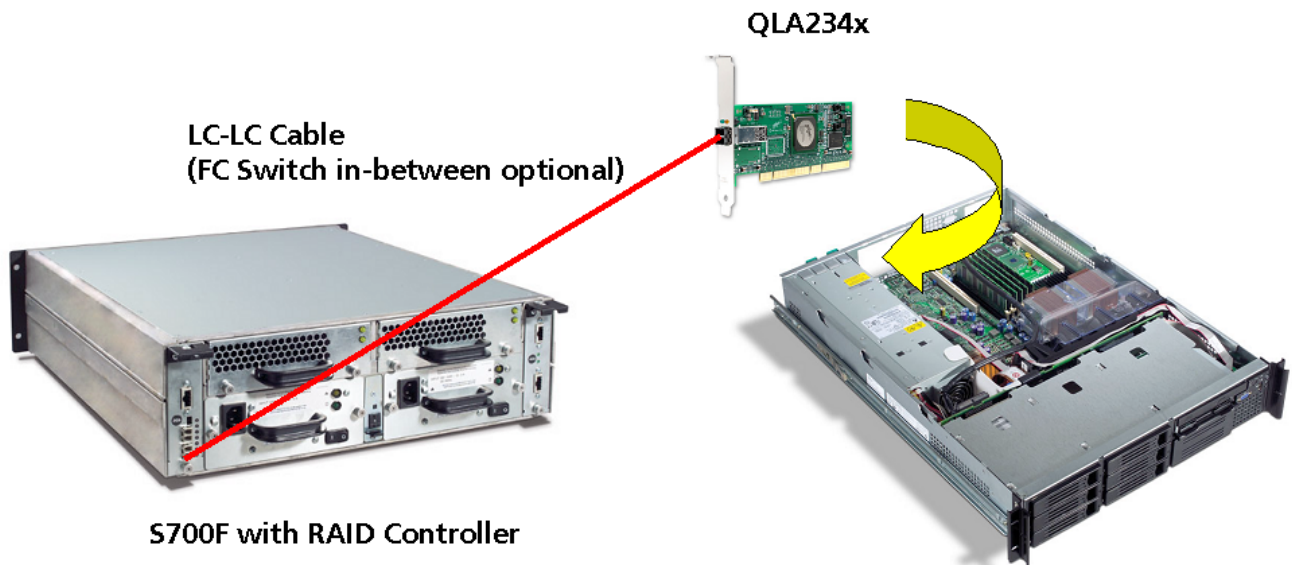
Architecture 2 – S700 & QLA2200

QLA2200 (HSSDC)

S700 with JBOD I/O Module

HSSDC-HSSDC Cable

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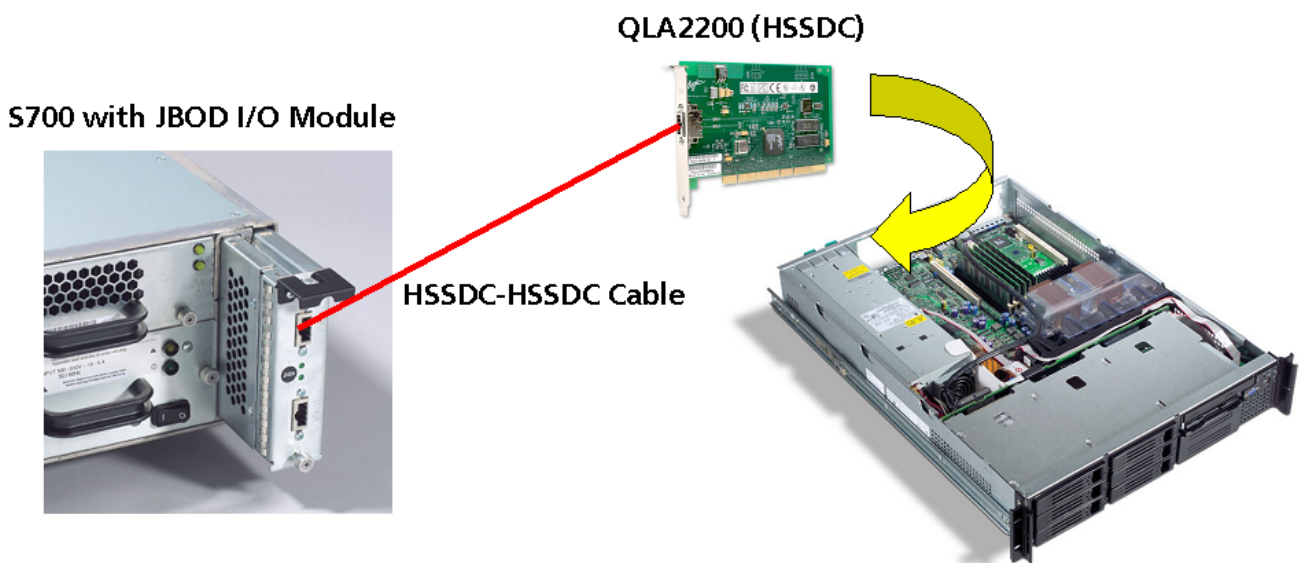
S700(F) Configuration

RAID Controller F/W	9.4
LSM F/W	2.50

QLA234x Configuration

BIOS	1.30 / 1.34

QLA2200 Configuration

BIOS	1.83

QLA2200 is not an AVL item, and only for support purpose if necessary.

Firmware Upgrade Processes

Important Notices

Downloading firmware to Disk Drives is a fundamentally dangerous operation and the following points should be taken into consideration before the download is carried out:

1. A full backup of all data on the relevant Disk Drive(s) is mandatory.

2. All activity to the relevant Disk Drive(s) must be stopped.

3. Any host-based monitoring software must be stopped.

4. Any interruption in power during the download may permanently damage the relevant Disk Drive(s).

5. Any interruption in communication (Fibre Channel LIP) during the download may permanently damage the relevant Disk Drive(s).

6. Operational Fault Management must be turned off on any/all RAID controllers attached to the Disk Drive(s). Automatic Rebuild Management should be also turned off as the following picture. You could enable them after the hard driver firmware upgrade process is ok.

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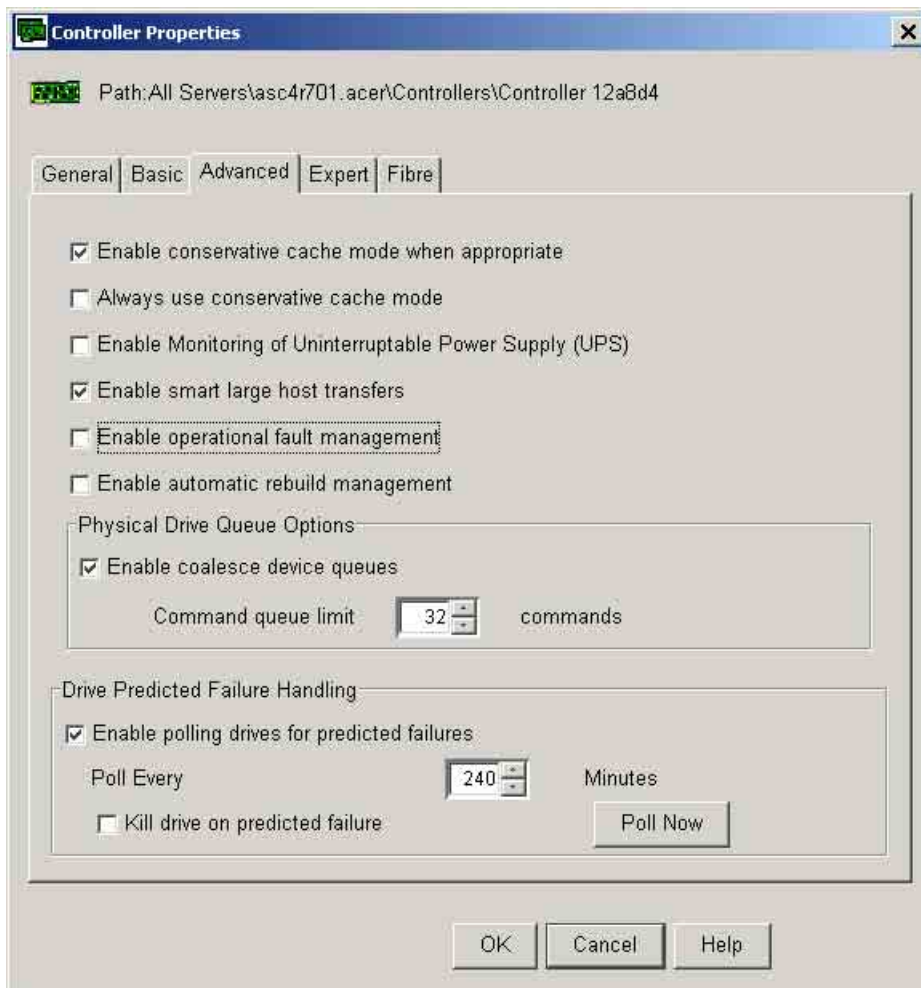
Check Firmware Version

You can check the hard drive firmware version by executing "asAnalyze.exe" on Windows 2000 command line as follows. Refer to the Appendix for the detailed command usage.

```
> asAnalyze –y FFx -y

Adaptec Storage Analysis Utility. (c) 2003 Adaptec, Inc. All rights reserved.

This program will analyze all FFx-based subsystems attached to this system.

Searching for FFx-based subsystems, please wait ... 1 found.

Controller #1 - Serial Number: 12A8D4 - Enclosures: 1

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

General Controller Information

==============================

Controller Name          : MYLEX DACFFx2

Vendor Name              : EUROLOGC

Firmware Version         : 09.40-00

Serial Number            : 12A8D4

MAC Address / WWN         : 0080E512A8D4 / 20000080E512A8D4

Partner Status           : Active

Disk Drives Present      : 14

Logical Drives Present   : 2

Memory Size              : 32 MB

Cache Memory Size        : 256 MB

Battery Present          : Yes

Bus Type (Width)         : Fibre Channel (1-bit)


Physical Disk Drives: 14

========================
```

##	Ch	Tg	Vendor	Product	Rev.	Serial Number	Capacity	Current State	Disk Group
1	0	3	SEAGATE	ST336753FC	0005	3HX06G48	34712 MB	Unconfigured	-
2	0	5	SEAGATE	ST336753FC	0005	3HX07L46	34712 MB	Unconfigured	-
3	0	7	SEAGATE	ST336753FC	0005	3HX07D80	34712 MB	Unconfigured	-
4	0	9	SEAGATE	ST336753FC	0005	3HX07T8T	34712 MB	Unconfigured	-
5	0	11	SEAGATE	ST336753FC	0005	3HX07SSG	34712 MB	Online Optimal	1
6	0	13	SEAGATE	ST336753FC	0005	3HX07DM7	34712 MB	Online Optimal	1

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```
7  0  15 SEAGATE  ST336753FC      0005 3HX07KEL       34712 MB Online Optimal    1

8  1  4  SEAGATE  ST336753FC      0005 3HX07GWS       34712 MB Unconfigured      -

9  1  6  SEAGATE  ST336753FC      0005 3HX079H2       34712 MB Unconfigured      -

10 1  8  SEAGATE  ST336753FC      0005 3HX07ABZ       34712 MB Unconfigured      -

11 1  10 SEAGATE  ST336753FC      0005 3HX07N0B       34712 MB Online Optimal    1

12 1  12 SEAGATE  ST336753FC      0005 3HX07SZ7       34712 MB Online Optimal    1

13 1  14 SEAGATE  ST336753FC      0005 3HX07L8Q       34712 MB Online Optimal    1

14 1  16 SEAGATE  ST336753FC      0005 3HX07TDC       34712 MB Online Optimal    1


Enclosure Services Modules: 2

==============================

## Vendor   Model            Part Number     Serial Number    Kernel    App. Ver.  Build

-- -------- ---------------- --------------- ---------------- ---------- ---------- -----

1 Acer     Altos S700       EMABXF110 -D01  IECEL00035JBF7D5 0.4        2GB_ACE250 0135

2 Acer     Altos S700       EMABXF110 -D01  IECEL00035JBF7D2 0.4        2GB_ACE250 0135
```

For Architecture 1, you can also check the hard drive firmware on SSD as below.

Physical Drive Properties

Path:...\Controllers\Controller 12a8d4\Physical Drives\Configured

General

Status:	Configured
Negotiated Transfer Speed:	Asynchronous
Negotiated Transfer Width:	1
Channel:	0
ID:	3
Enclosure:	0
Capacity:	33.9 GB
Vendor :	SEAGATE
Product:	ST336753FC
Revision:	0005
Serial Number:	3HX06G48
ANSI Version:	3
Linked Commands:	Yes
Command Queue:	Yes
Maximum Transfer Width:	Serial

OK   Help
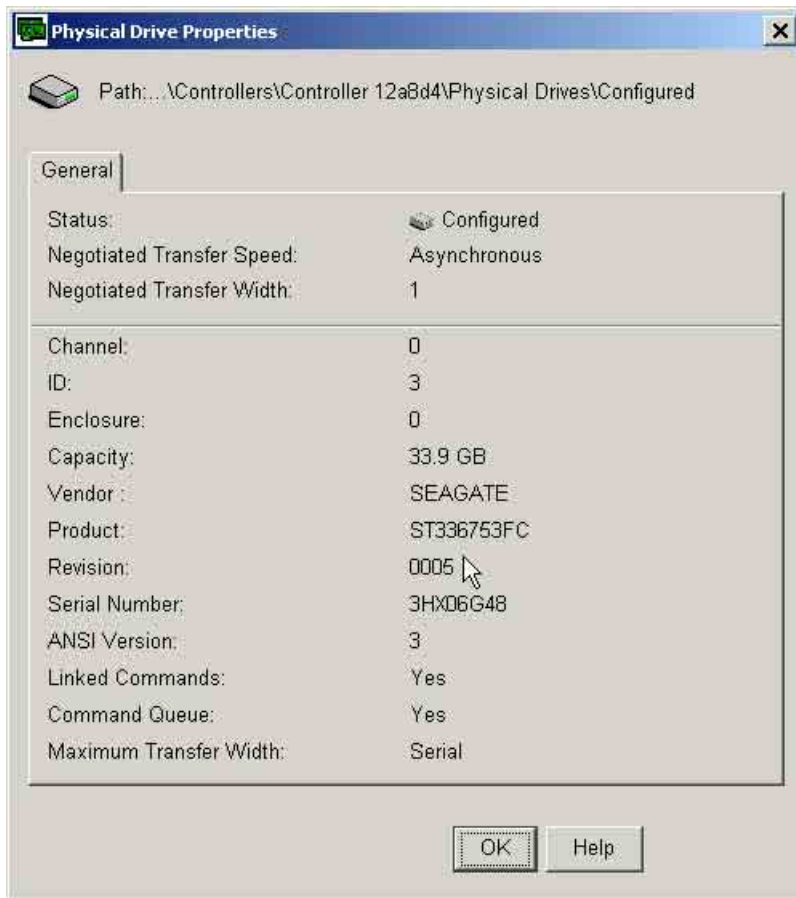
Upgrade Hard Drive Firmware

You could execute the batch files on Windows 2000 command line. The firmware upgrade batch files could be gotten from Acer kCenter, GCSD Website and Acer Storage Team in ITBG. Refer to the Appendix for the detailed command usage.

```
C:\Tmp\firmwareDisk>asFirmware -t ENC_DISK -i ST336753FC_0005.lod -enc 1 -model ST336753FC

Adaptec Firmware Download Utility. (c) 2003 Adaptec, Inc. All rights reserved.

The specified firmware will be downloaded to every Disk Drive in Enclosure #1.

Downloading firmware to Disk Drives is a fundamentally dangerous operation and the following points
should be taken into consideration before the download is carried out:

 1. A full backup of all data on the relevant Disk Drive(s) is highly recommended.

 2. All activity to the relevant Disk Drive(s) must be stopped.

 3. Any host-based monitoring software must be stopped.

 4. Any interruption in power during the download may permanently damange the relevant Disk Drive(s).
```

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  5. Any interruption in communication (Fibre Channel LIP) during the download may permanently damange the relevant Disk Drive(s).

  6. Operational Fault Management must be turned Off on any/all RAID controllers attached to the Disk Drive(s).

Do you wish to continue (y/n) ? y

Searching for JBOD enclosures, please wait ...

Found 1 JBOD enclosure(s).

Programming Disk in Slot #1 (SEAGATE ST336753FC 0005 3HX06G48) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #2 (SEAGATE ST336753FC 0005 3HX07GWS) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #3 (SEAGATE ST336753FC 0005 3HX07L46) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #4 (SEAGATE ST336753FC 0005 3HX079H2) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #5 (SEAGATE ST336753FC 0005 3HX07D80) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #6 (SEAGATE ST336753FC 0005 3HX07ABZ) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #7 (SEAGATE ST336753FC 0005 3HX07T8T) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #8 (SEAGATE ST336753FC 0005 3HX07N0B) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #9 (SEAGATE ST336753FC 0005 3HX07SSG) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #10 (SEAGATE ST336753FC 0005 3HX07SZ7) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #11 (SEAGATE ST336753FC 0005 3HX07DM7) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #12 (SEAGATE ST336753FC 0005 3HX07L8Q) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #13 (SEAGATE ST336753FC 0005 3HX07KEL) ...

Device is restarting, please wait .... done.

Programming Disk in Slot #14 (SEAGATE ST336753FC 0005 3HX07TDC) ...

Device is restarting, please wait .... done.

```
Disk Drive Firmware Download Summary

====================================

Enclosure Number:  1

Enclosure S/N:     IECEL00035QBM86C

Slot(s) Selected:  All

Firmware Image:    ST336753FC_0005.lod

Block Size:        32768 bytes per block


## Vendor   Product          Rev. Serial Number         Status

-- -------- ---------------- ---- -------------------- ------------

1  SEAGATE  ST336753FC       0005 3HX06G48             OK

2  SEAGATE  ST336753FC       0005 3HX07GWS             OK

3  SEAGATE  ST336753FC       0005 3HX07L46             OK

4  SEAGATE  ST336753FC       0005 3HX079H2             OK

5  SEAGATE  ST336753FC       0005 3HX07D80             OK

6  SEAGATE  ST336753FC       0005 3HX07ABZ             OK

7  SEAGATE  ST336753FC       0005 3HX07T8T             OK

8  SEAGATE  ST336753FC       0005 3HX07N0B             OK

9  SEAGATE  ST336753FC       0005 3HX07SSG             OK

10 SEAGATE  ST336753FC       0005 3HX07SZ7             OK

11 SEAGATE  ST336753FC       0005 3HX07DM7             OK

12 SEAGATE  ST336753FC       0005 3HX07L8Q             OK

13 SEAGATE  ST336753FC       0005 3HX07KEL             OK

14 SEAGATE  ST336753FC       0005 3HX07TDC             OK
```

At last, make sure the hard drives have been upgraded with the proper firmware version and ok status.

Appendix

Command Usage: asAnalyze.exe

```
Adaptec Storage Analysis Utility. (c) 2003 Adaptec, Inc. All rights reserved.
```

Usage: **asAnalyze -t <type> [-h] [-y]**

```
<type> is one of:

  ALL      - Analyze all aspects of this system.

  HOST     - Analyze this host system.

  SECURITY - Analyze the Security settings on this system.

  SCSI     - Analyze the SCSI devices attached to this system.

  RESCAN   - Perform a rescan of every SCSI Adapter in this system.

  ENCS     - Print a summary of the enclosures attached to this system.

  RAIDS    - Print a summary of the RAID controllers attached to this system.

  ASSET    - Analyze the asset information for all attached enclosures.

  STATUS   - Print the Status Code of each component for all attached enclosures.

  FFx      - Analyze all FFx-based subsystems.


Specify -y to bypass confirmation of your choice.
```

Command Usage: asFirmware.exe

```
Adaptec Firmware Download Utility. (c) 2003 Adaptec, Inc. All rights reserved.
```

Usage: **asFirmware -t <type> -i <image> [-b <blocksize>] | [-d <delay>] -cont <contnum> -enc <encnum> -model <model> [-slot <slot>]] [-h] [-force]**

```
<type> is one of:

  SB2100_ES  - All Enclosure Services devices in all SANbloc 2100 enclosures.

  UB2100_ES  - All Enclosure Services devices in all ULTRAbloc 2100 enclosures.

  SB2500_ES  - All Enclosure Services devices in all SANbloc 2500 subsystems.

  SC4100_ES  - All Enclosure Services devices in all Adaptec SC4100 enclosures.

  SC4100_IO  - All IO Modules in all Adaptec SC4100 enclosures.

  FS4100_ES  - All Enclosure Services devices in all Adaptec FS4100 enclosures.

  FC4100_ES  - All Enclosure Services devices in all Adaptec FC4100 enclosures.
```

```
SB2500_FFx  - All FFx 1Gb RAID Controllers in all SANbloc 2500 subsystems.

SB2500_FFx2 - All FFx 2Gb RAID Controllers in all SANbloc 2500 subsystems.

FS4100_FST  - All SANARIO-FST devices in all Adaptec FS4100 enclosures.

ENC_DISK    - The specified Disk Drive(s) in the specified enclosure.
```

is a valid filename which contains the binary image to be downloaded.

<contnum> is the number of the controller to be downloaded. This parameter is optional and only applies to RAID controller downloads.

<encnum> is the number of the enclosure containing the Disk Drive(s) to be downloaded. This parameter is optional and only applies to Disk Drive downloads.

<model> is the model number of the Disk Drive(s) to be downloaded. Only Disk Drives of this model will be downloaded.

<slot> is the slot number (within enclosure <encnum>) containing the Disk Drive(s) to be downloaded. This parameter is optional and only applies to Disk Drive downloads. If it is 0 or not specified, all Disk Drives in the enclosure will be downloaded.

<blocksize> is the number of bytes to be sent in each block. Must be >= 100 and <= 32768 (32768 for Disk Drive downloads). This parameter is optional.

<delay> is the number of milliseconds to pause between each block sent. Must be >= 10 and <= 5000. This parameter is optional and only applies to ES targets.

-force will force the firmware to download even if it is already at that revision.

For More Information

1. Acer Storage AVL (Certification Matrix) and Technical Update/Notes from Acer kCenter (ASPS).

2. Acer Global Customer Service (GCSD) Website for the latest tested firmware, driver, and utility.
    http://csd.acer.com.tw/

3. http://global.acer.com/products/index.asp

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