

Related Products	All Standard Components boards with Phoenix BIOS
Subject	Restoring and Updating of Phoenix BIOS
Document Name	Phlash_SC_E113.doc
Usage	Common

1. REVISION HISTORY

Date	Document Name	Subjects added, changed, deleted	Changed by
22-Sep-00	JAP0034.DOC	Initial release	M. Unverdorben
04-May-01	JAP0034.DOC	Update for ETX-P3, C3, Bootblock-update, Com1 on ETX-modules, names of update tools	M. Unverdorben
18-Jun-01	JAP0034.DOC	Tools updated	M. Unverdorben
12-Apr-02	JAP0034.DOC	Updated chapter 5 (ETX and DIMM modules)	C. Hoch
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03-Nov-03	Phlash_SC_E112.DOC	Splitted EC and SC products, added new crisis information	H. Bruhn
07-Oct-04	Phlash_SC_E113.DOC	Added PHLASH16 information, added MOPSIcdVE and JReX-PM	H. Bruhn

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3. GENERAL INFORMATION

The Phoenix BIOS flash utility **Phlash** gives you the ability to update your BIOS from a floppy disk without having to install a new ROM chip. Phoenix **Phlash** is a utility for “flashing” a BIOS ROM file to the Flash ROM installed on our modules that have a Phoenix Bios.

Use Phoenix **Phlash** for the following tasks only:

- ◆ Update the current BIOS with a newer version
- ◆ Restore a BIOS when it has become corrupted

4. UPDATING A BIOS

You can get the Phoenix **Phlash** utilities from the **Kontron Embedded Modules GmbH** web pages. It's available as a compressed file named **CRDxxxxxRyyy.ZIP** (refer to chapter 6 for details) that contains the following files:

CRISDISK.BAT	Batch file for complete creation of a Crisis Recovery Diskette
MAKEBOOT.EXE	Creates the custom boot sector on the Crisis Recovery Diskette
CRISBOOT.BIN	The Crisis Recovery boot sector code
MINIDOS.SYS	Allows the system to boot in Crisis Recovery Mode
PHLASH.EXE Or PHLASH16.EXE	Programs the flash ROM. PHLASH.EXE requires a PLATFORM.BIN. PHLASH16.EXE does not require a PLATFORM.BIN
WINCRIS.EXE	Executable file for creating the Crisis Recovery Diskette from Windows
WINCRIS.HLP	The help file of WINCRIS.EXE
PLATFORM.BIN	Performs platform-dependent functions
BIOS.ROM Or BIOS.WPH	Standard BIOS image to be programmed into flash ROM. BIOS.ROM is used with PHLASH.EXE tool. BIOS.WPH is used with PHLASH16.EXE tool.

Table 1

Note: The files PLATFORM.BIN, BIOS.ROM and BIOS.WPH of different crisis ZIP-files are different and board specific. Only use this files for the corresponding board.

To install Phoenix **Phlash** on your hard disk, unzip the content of the file into a local directory, presumable **C:\PHLASH**.

The file BIOS.ROM or BIOS.WPH is a standard BIOS image. It may not have all features and full support for a customized Kontron board. If you need a certain BIOS then please contact your technical support team. You will get a file with the actual update BIOS called **nameofthebios.ROM** or **nameofthebios.WPH** which should also be stored in the local directory containing the **Phlash** utilities.

To update your Bios just key:

either **C:\PHLASH\PHLASH *nameofthebios*.ROM**
 or **C:\PHLASH\PHLASH16 *nameofthebios*.WPH**

Phoenix **Phlash** will automatically update the BIOS. **Phlash** may fail if your system is using memory managers, in that case the utility will display the following message:

“Cannot flash when memory manager are present”

If you see this message after you execute **Phlash**, you must disable the memory manager on your system or you can re-enter the **Phlash** command with the following switch.

either **C:\PHLASH\PHLASH *nameofthebios*.ROM /X**
 or **C:\PHLASH\PHLASH16 *nameofthebios*.WPH /X**

After the first reboot with the new Bios the Checksum of your system is not correct, key <F1> to resume or <F2> to enter your BIOS settings.

Please note that a new BIOS version normally comes with a new structure of the BIOS-Setup entries. If you work with images of the CMOS-RAM or the non-volatile EEPROM, your old images will not match the new BIOS-Setup entry structure. You may need to generate new images in most cases.

5. RESTORING A BIOS

5.1. Creation of a Crisis Recovery Disk

To create the Crisis Recovery Diskette insert a clean diskette into the floppy drive and execute **CRISDISK.BAT** (see Table 1). This enables the disk to be bootable with minimal DOS and copies the following four files onto the Crisis Recovery Diskette:

MINIDOS.SYS	Allows the system to boot in Crisis Recovery Mode
PHLASH.EXE Or PHLASH16.EXE	Programs the flash ROM. PHLASH.EXE requires a PLATFORM.BIN. PHLASH16.EXE does not require a PLATFORM.BIN
PLATFORM.BIN	Performs platform-dependent functions
BIOS.ROM Or BIOS.WPH	Standard BIOS image to be programmed into flash ROM. BIOS.ROM is used with PHLASH.EXE tool. BIOS.WPH is used with PHLASH16.EXE tool.

Table 2

If the BIOS image (BIOS.ROM or BIOS.WPH) changes due to an update or bug fix, or you get a new bios from your support team, you can easily update the Crisis Recovery Disk. Just copy the **nameofthebios.ROM** or **nameofthebios.WPH** image onto the diskette with the new name **BIOS.ROM** respectively **BIOS.WPH**.

5.2. Checksum failure during booting

Updating the BIOS may create a possible hazard: power failures or fluctuations that occur during updating the Flash ROM can damage the BIOS code, making the system unbootable.

To prevent this possible hazard our boards are equipped with a boot block Flash ROM. The boot block region contains a fail-safe recovery routine. If the boot block code finds a corrupted BIOS (checksum failure), it boots into the crisis recovery mode and loads a BIOS image from a special crisis diskette.

5.3. System is unbootable

If the BIOS is damaged and the system is unbootable, you have to force the system to a Crisis Recovery with an update key. This key must be plugged into the parallel interface. With the Crisis Recovery Diskette in the floppy drive the BIOS is restored using the Bios image on the diskette.

If the system does not detect an update key you will get the following error message:

**Flash Crisis Recovery disk
Remove and press any key**

If you see this message, please insert the update key and reboot.

During Crisis Recovery you won't get any display. The system does not detect if the Crisis Recovery is finished, so after you see that the LED on the FDD is off for a short time you can switch the system off and remove the Crisis Recovery Disk as well as the update key from the parallel port, then switch the system on.

After the first reboot with the new Bios the Checksum is not correct, key F1 to resume or F2 to enter your BIOS settings.

5.4. Layout of Update Key

5.4.1. Key for Parallel Port

Function	Kontron 26 Pin No. *	D-Type-25 Pin No.
NSTROBE	1	1
Data0	3	2
Data1	5	3
Data2	7	4
Data3	9	5
Data4	11	6
Data5	13	7
Data6	15	8
Data7	17	9
nAck	19	10
Busy	21	11
Paper-Out / Paper-End	23	12
Select	25	13
nAuto-Linefeed	2	14
nError / nFault	4	15
nInitialize	6	16
nSelect-Printer / nSelect-In	8	17
Ground	10,12,14, 16, 18, 20, 22, 24	18-25

**PLEASE CONNECT
THE PINS AS
FOLLOWS**

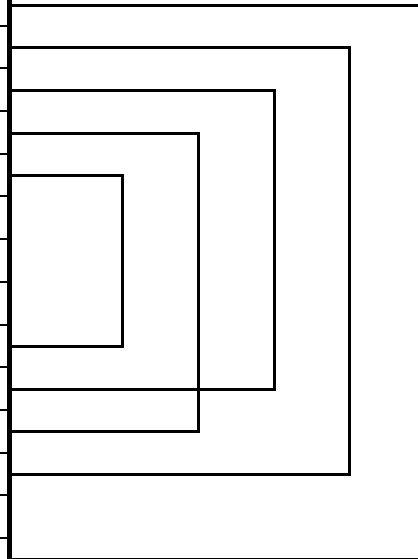


Table3

5.5. Update of Bootblock

The PHLASH.EXE tool of the Phoenix BIOS also allows you to update the bootblock. This might be necessary if there is a BIOS in use without any bootblock.

To do this you need to update the BIOS with the switch:

plash xxxx.rom /PF=BB

(You have to use capital letters for the switch, because it's case sensitive!)

Please use this feature only if it is really necessary and when asked by your Kontron support. A hazard during bootblock update can cause the system not to boot anymore and even the crisis recovery may not help anymore.

Please note that the PHLASH16.EXE tool does not support this feature so far.

6. KONTRON STANDARD COMPONENTS BOARDS WITH PHOENIX BIOS

6.1. SLOT PC Boards

Update Key: Parallel Port (see Table 3)

CPU modules	Crisis Tool	Comment
coolMONSTER <i>discontinued</i>	CRISLEU2.ZIP	BIOS size is 256kB
littleMONSTER/2 <i>discontinued</i>	CRISLEU2.ZIP	BIOS size is 256kB
coolMONSTER/S	CRISLEU3.ZIP	BIOS size is 256kB
coolMONSTER/C3 (300/400MHz)	CRD2LEU6R???.ZIP	BIOS size is 256kB
coolMONSTER/P3 (400/700MHz)	CRD2LEU6R???.ZIP	BIOS size is 256kB
coolMONSTER/P3 (850MHz)	CRD2LEU6R???.ZIP	BIOS size is 256kB
coolMONSTER/VE	CRD1LEUER???.ZIP	BIOS size is 512kB
coolMONSTER/VC	CRD1LEUER???.ZIP	BIOS size is 512kB

6.2. PC/104 CPU Boards

Update Key: Parallel Port (see Table 3)

CPU modules	Crisis Tool	Comment
MOPS/386A	CRD2P389R???.ZIP	BIOS size is 256kB
MOPS/520	CRD3P489R???.ZIP	BIOS size is 256kB
MOPS/MZ and MOPS/lcdMZ <i>discontinued</i>	CRD2PMZ1.ZIP	BIOS size is 512kB
MOPS/686+ and MOPS/lcd6	CRD2P588R???.ZIP	BIOS size is 256kB
MOPS/686+ and MOPSlcd6 (redesign)	CRD1P58RR???.ZIP	BIOS size is 256kB
MOPS/lcdGX1	CRD2PGX1R???.ZIP	BIOS size is 512kB
MOPSlcd7	CRD1PVC3R???.ZIP	BIOS size is 512kB
MOPSlcdVE	CRD1PMVER???.ZIP	BIOS size is 512kB

6.3. 3.5" CPU Boards

Update Key: Parallel Port (see Table 3)

CPU modules	Crisis Tool	Comment
JRex-GX1	CRD1BQG1R???.ZIP	BIOS size is 512kB
JRex-C3	CRD1BQP3R???.ZIP	BIOS size is 512kB
JRex-P3	CRD1BQP3R???.ZIP	BIOS size is 512kB
JRex-VE	CRD1BQC3R???.ZIP	BIOS size is 512kB
JRex-VC	CRD1BQC3R???.ZIP	BIOS size is 512kB
JRex-PM	CRD1BQBAR???.ZIP	BIOS size is 1024kB