Related Products	All Embedded Components boards with Phoenix BIOS
Subject	Restoring and Updating of Phoenix BIOS
Document Name	Phlash_EC_E112.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
12-Apr-02	JAP0034.DOC	Updated chapter 5 (Slot and PC/104 modules)	M.Ciolacu
25-Apr-02	JAP0034.DOC	English proofreading	D. Gunter
04-Jun-02	JAP0034.DOC	Updated chapter 5 (Slot and PC/104 modules)	M.Ciolacu
23-Aug-02	JAP0034.DOC	Changed to Kontron style	H. Bruhn
21-Jan-03	Phlash_E111.DOC	Update of Jrex boards, minor corrections, reformated	H. Bruhn
10.03.2003	Phlash_EC_E110.doc	Splitted EC and SBC products; updated crisis tool (ETX)	C. Hoch
12.02.2004	Phlash_EC_E111.doc	Updated information for ETX-PM.	D. Gunter
24.08.2004	Phlash_EC_E112.doc	Added information throughout document about using the onboard floppy when doing a crisis update for ETX modules.	D. Gunter

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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

Note: When using the Crisis Recovery Diskette for ETX modules in conjunction with a floppy drive you must use the ETX onboard floppy drive. The floppy-disk interface shares signals with the parallel-communication interface. The floppy interface is limited to one drive (drive_1). A standard floppy cable has two connectors for floppy drives. One connector has a non-twisted cable leading to it; the other has a twisted cable leading to it. When using the onboard floppy interface you must connect the floppy drive to the connector (drive_1) that has the non-twisted cable leading to it.

4. UPDATING A BIOS

You must request the Phoenix **Phlash** utilities from your local **Kontron Embedded Modules GmbH** support contact. It's available as a compressed file named **CRISxxxx.ZIP** or **CRDxxxxx.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	Programs the flash ROM
WINCRIS.EXE	Executable file for creating the Crisis Recovery Diskette from Windows
WINCRIS.HLP	The help file of WINCRISES.EXE
PLATFORM.BIN	Performs platform-dependent functions
BIOS.ROM	Standard BIOS image to be programmed into flash ROM
README.TXT*	Read me file that will contain special instructions for a specific Crisis Recovery Diskette

Table 1

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

Special ETX-PM Note: PHLASH16.EXE (instead of PLHASH.EXE) is used in the crisis recovery disk for ETX-PM. ETX-PM also has a BIOS.WHP instead of BIOS.ROM. Additionally there is no PLATFORM.BIN file. PLATFORM.BIN is implemented in the BIOS.WPH file. You must consider these differences when using a crisis recovery disk for ETX-PM.

Note: *This file may not be present in all Crisis Recovery Diskettes. If it is present please read the contents for specific instructions about how to use the Crisis Recovery Diskette.

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 is a standard BIOS image. It may not have all features and full support for your 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** which should also be stored in the local directory containing the **Phlash** utilities.

To update your Bios just key:

C:\PHLASH\PHLASH *nameofthebios*.ROM

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"

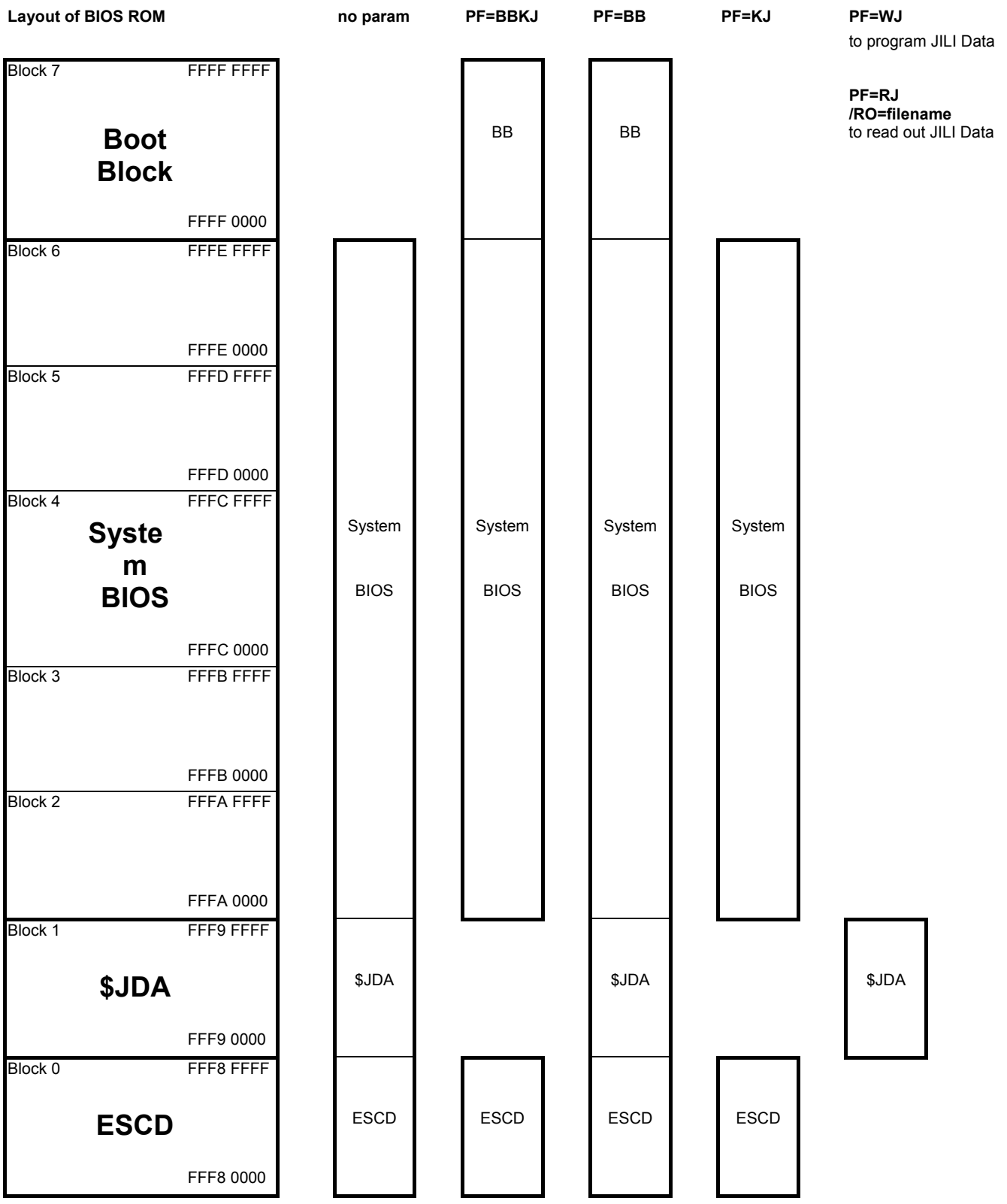
If you see this message after you execute **Phlash**, you must disable the memory manager on your system or you can re-enter the **Phlash** command with the following switch.

C:\PHLASH\PHLASH *nameofthebios*.ROM /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.

4.1. Update parameters

The Phlash tool of the Phoenix BIOS also allows you to update different parts of the Kontron BIOS ROM. For example the Boot Block (BB) or/and the JILI-File (JDA – JILI Data Area). For further information about the JILI files please see also Application Note JILI3_ETX_E1xx.



Command line parameters:

/PF=WJ	writes the JDA
/RO=filename or /PF=RJ	reads the JDA to a file named filename
/PF=KJ	updates the BIOS but not the JDA
/PF=BB	update everything
/PF=BBKJ	updates everything except the JDA

Without a parameter and in crisis recovery mode, everything is updated except the Boot Block.

Example:

BIOS and Bootblock has to be updated on a ETX-P3 (MOD6), but JILI-File (JDA – JILI Data Area) should remain the same:

phlash mod6R123.rom / PF=BBKJ

Note: You must use capital letters for the above switch because it's case sensitive.

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	Programs the flash ROM
PLATFORM.BIN	Performs platform-dependent functions
BIOS.ROM	Actual BIOS image to be programmed into flash ROM

Table 2

If the BIOS image (BIOS.ROM) 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** image onto the diskette with the new name **BIOS.ROM**.

Special ETX-PM Note: PHLASH16.EXE (instead of PLHASH.EXE) is used in the crisis recovery disk for ETX-PM. ETX-PM also has a BIOS.WHP instead of BIOS.ROM. Additionally there is no PLATFORM.BIN file. PLATFORM.BIN is implemented in the BIOS.WPH file. You must consider these differences when using a crisis recovery disk for ETX-PM.

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 (DIMM-PC) or serial interface (ETX COM1 only). With the Crisis Recovery Diskette in the floppy drive the BIOS is restored using the Bios image on the diskette. It is important to note that when using the Crisis Recovery Diskette for ETX modules in conjunction with a floppy drive you must use the ETX onboard floppy drive. The floppy-disk interface shares signals with the parallel-communication interface. The floppy interface is limited to one drive (drive_1). A standard floppy cable has two connectors for floppy drives. One connector has a non-twisted cable leading to it; the other has a twisted cable leading to it. When using the onboard floppy interface you must connect the floppy drive to the connector (drive_1) that has the non-twisted cable leading to it. 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 will not have 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, 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 Keys

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

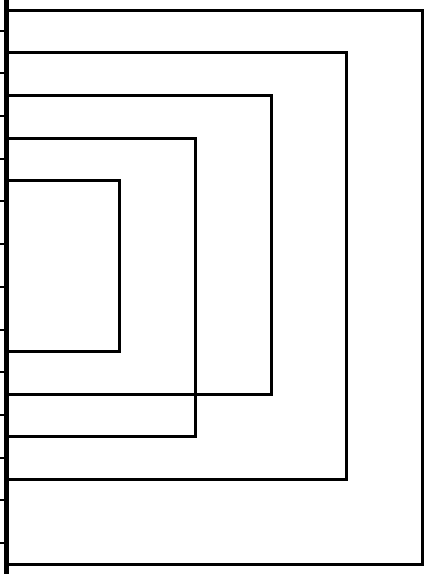


Table3

5.4.2. Key for Serial Port

Function	Kontron 10 Pin No. *	D-Type-25 Pin No.	D-Type-9 Pin No.
TD	5	2	3
RD	3	3	2
RTS	4	4	7
CTS	6	5	8
DSR	2	6	6
SG	9	7	5
CD	1	8	1
DTR	7	20	4
RI	8	22	9

PLEASE CONNECT THE PINS AS FOLLOWS

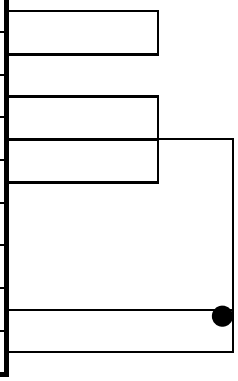


Table 4

- **See the manual of your specific product**

6. EMBEDDED COMPONENTS MODULES WITH PHOENIX BIOS

6.1. ETX Modules

Update Key: Serial Port, must be COM1 (see Table 4)

CPU Board	Crisis Tool	Comment
ETX-mgx (up to CE Rev. 3.0)	CRD2MOD1	BIOS size 256kB
ETX-mgx (from CE Rev. 4.0)	CRD3MOD1 or newer	BIOS size 512kB
ETX-P1 (up to CE Rev. 2.1)	CRD2MOD5	BIOS size 256kB
ETX-P1 (from CE Rev. 3.0)	CRD3MOD5 or newer	BIOS size 512kB
ETX-P3/C3	CRD2MOD6 or newer	BIOS size 512kB
ETX-P3E/C3E	CRD1MOD7 or newer	BIOS size 512kB
ETX-P3m	CRD1MOD8 or newer	BIOS size 512kB
ETX-Vex **ETX-PM**	CRD1MOD9 or newer CRD1MODB or newer	BIOS size 512kB BIOS size 1MB

6.2. DIMM-PC Modules

Update Key: Parallel Port (see Table 3)

CPU Board	Crisis Tool	Comment
DIMM-PC/520-I/IE/IU	CRD1D501 or newer	BIOS size is 256kB
DIMM-PC/586-IE *discontinued*	CRD1D502	BIOS size is 256kB