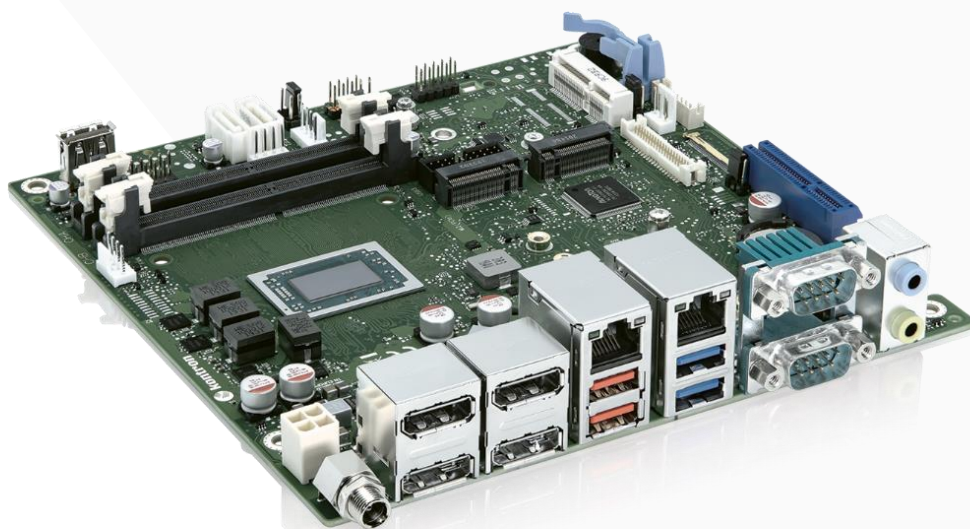


BIOS Release Document

AMD Emb. Ryzen™ (R2000) mITX Series



mITX series

- D3723-Rx mini-ITX

Revision History

Revision	Change description	Date
V1.0	First mass production release R1.2.0 for D3723-Rx.	2023-03-06
V1.1	New BIOS Release R1.3.0 for D3723-Rx; updated document layout	2023-07-07

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1 General Notes

1.1 Released OS versions and drivers

- MS Windows 10 (64bit)
- MS Windows 11 (64bit)
- Linux¹ (64bit, Ubuntu 22.04 LTS Kernel 5.15)

1.2 Released drivers

An overview about released drivers for AMD Ryzen Embedded platform is available on FTP server. Just click on the links in the HTML file to download the driver packages.

<https://ftp.kontron.com/main.html?download&weblink=f5df31d4c91ce832df3d38b99f203ce8&realfilename=Drivers%5FRYZ%2Ehtml>

1.3 Datasheets

- D3723-Rx:
<https://ftp.kontron.com/main.html?download&weblink=f5df31d4c91ce832df3d38b99f203ce8&subfolder=Documentation&realfilename=DS%5FD3723%2DR%5FmITX%2Epdf>

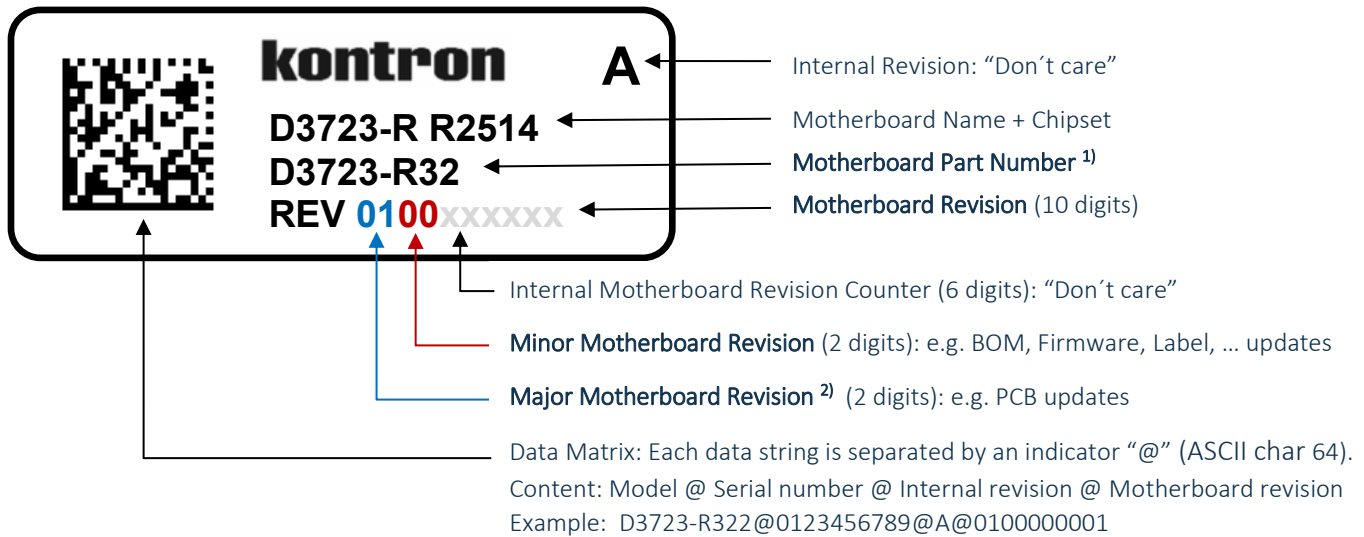
1.4 Product change notification

Product related changes communicated through “Product Change Notification” (PCN) on FTP server:

- D3723-Rx:
<https://ftp.kontron.com/main.html?download&weblink=f5df31d4c91ce832df3d38b99f203ce8&subfolder=PCN>

¹ Running test only – no full approval!

1.5 Motherboard labeling and revision scheme



1) Motherboard part number example:

- D3723-R12:
 - **D3723**-R12: Kontron boards family (technology based family)
 - **D3723**-R12: Formfactor and board variant
 - D3723-R**12**: Number for derivate of board variant
 - D3723-R**12**: PCB version

2) Major revision is always "01" for first release to manufacturing, even "PCB version" on the revision label (R32) indicates that this is already the second PCB version.

For evaluation/pre-production motherboards the major revision is marked with alphabetic letters (0A, 0B, ...).

Example:

Development revision of D3723-R3 motherboard: **0B02**xxxxxx

Initial released motherboard revision: **0100**xxxxxx

2 BIOS Update Options

The default update method for D3723-R boards changed to “Runtime” update instead of “Capsule flash”. The script files are adjusted accordingly (compared to D3713 update method).

2.1 EFI Flash Update

Use ZIP-file for EFI-based BIOS Update

1. Copy all content of *Dxxxx-Yzz.R1.*.0.zip* to any FAT32 formatted USB drive/stick:
2. Switch on system and boot to UEFI shell. Included autostart script (startup.nsh) will automatically select the BIOS update stick and starts the BIOS update.
3. Follow the screen instructions.
Do not touch or power off the system during BIOS update!
4. After BIOS update has finished please restart the system with “`reset -c`” (power cycle reset).

Please refer to *BIOS-Flash-Tools documentation* for detailed information:

[Kontron FTP \(HTTP\): BIOS-Flash-Tools](#)

Note: AMD Ryzen D37xx BIOS does not support FUJITSU Update Utility (via Boot menu entry).

2.2 Windows Flash Update

Use ZIP-file for Windows-based BIOS Update

1. Extract BIOS package *Dxxxx-Yzz.R1.*.0.zip* to any folder on the target machine
2. Open a command line window (with administrator rights) and navigate to the zip\Windows sub-directory.
3. Execute “Deskflash64Bit_UPD.bat” and follow the screen instructions.
Note: Do not touch or power off the system during BIOS update!
4. After BIOS update has finished please **shutdown the system!** A simple reboot will lead to a black screen. The BIOS needs a clean shutdown from OS in order to re-initialise correctly after BIOS update.

2.3 BIOS Recovery

Note: BIOS Recovery support on D37xx boards only supported from SATA drive.

Instruction how to recover BIOS:

- Copy the complete content of BIOS ZIP package (including D*.ROM, D*.UPD, efiflash.efi, startup.nsh) to a FAT32 formatted SATA drive.
- Connect SATA drive to the system and change connect jumper to “Recovery” position (see [BIOS FlashTools HowTo](#) or TechNotes for details)
- Disconnect all other drives. Power On the system. (If removing drives is not possible, select the connected SATA recovery media via BootMenu F12).
- Instead of loading the BIOS code from NVRAM chip, system boots from ROM file content. Afterwards EFI shell is starting.
- After EFI shell is started, startup.nsh script automatically detect the BIOS update file (D*.UPD) and starts Efiflash.efi. Otherwise manually run Efiflash.efi /AUTO to update the BIOS.
 - **Hint:** please extend startup.nsh flash parameter with “/runtime /noreset” as mentioned in next chapter “BIOS update error handling” to ensure that BIOS recovery update gets executed in any circumstances.
- Wait for update process finished. Disconnect DC-power, remove the jumper and recovery drive.
- Reconnect all drives and power on the system. Done.

2.4 BIOS update error handling

If you discover any problems after a BIOS flash please try if “Load Optimized Default Values” (F3) in BIOS Setup solves the problem.

Only use power supply with sufficient power. Using underrated DC-PSU can cause black screen (graphic is disabled, but BIOS update is executed in the background) during update.

2.5 Additional information Deskflash for Windows / Linux

If you discover error messages like “Hardware not supported”, please check [Bios-Flash-Tools HowTo PDF](#), chapter “System Requirements”.

2.6 Modify BIOS Setup Settings and Defaults (Tool GabiSettings.efi, BIOSSET)

BIOS settings can be modified by the Windows and Linux tool BIOSSET (Modify BIOS Setup Settings and Defaults). See BIOSSET tool help (parameter -h) for further details.

For EFI shell environment, you can use GabiSettings.efi tool.

For more details about these tools, please have a look in our *Manufacturing-Tools HowTo* document:

[Kontron FTP \(HTTP\): Common-Mainboard-Tools](#)

2.7 What's about DOS support and where are the DOS tools?

There is no “Legacy” OS support (CSM mode) implemented anymore. So only usage of UEFI operating systems is possible.

We provide tools and documentation for Windows, Linux and EFI:

[Kontron FTP \(HTTP\): Common-Mainboard-Tools](#)

2.8 Note: Customer Service Release BIOS

Besides the released BIOS versions there may be additional BIOS versions (Customer Service Release BIOS = CSR BIOS) that solve specific customer problems.

Please note: These versions are not pre-installed ex factory.

3 Released BIOS versions

3.1 UEFI core version

- AMI Aptio V5.0.0.17

3.2 BIOS Download

The released BIOS version is available here:

- D3723-R:
https://ftp.kontron.com/main.html?download&weblink=f5df31d4c91ce832df3d38b99f203ce8&subfolder=BIOS_D37x3/D3723-R

Note: There are different update packages for specific boards:

- “D3723-**R1x**.R1.*.0.ZIP” for D3723-**R1**
- “D3723-**Rxx**.R1.*.0.ZIP” for D3723-**R2**, **-R3** and **-R4**

3.3 BIOS R1.2.0

First released mass production BIOS

- Several bug fixes compared to latest BIOS evaluation version.
- CPU microcode 0x08108109

Known Issues and Limitations:

- Info: Access to AMD BIOS menu “AMD CBS” in [Advanced] blocked to prevent unwanted BIOS settings changes, which can affect stable operation of the system. Menu text is still visible, but empty and not accessible.
- Info: BIOS capsule update not supported. Use Runtime flash instead. Provided update scripts were adjusted accordingly.
- BIOS recovery only possible via SATA drive. Recovery via USB stick not yet supported.
- Limited support for D3352-A PCIe-M.2 carrier board with some specific NVMe M.2 modules. Problems during power state change can occur (e.g. Windows shutdown).
- Feature “Keyboard Wake” is not working from S5 / G0 power state. This is a technology limitation of AMD Embedded SoC.
- “Force LAN boot” after WoL event is not working first time after AC-Fail.

3.4 BIOS R1.3.0 [new V1.1]

Changes vs. previous released BIOS

- Fixed: BIOS update via capsule update method sporadically fails
 - **Important:** This fix only takes effect for updating BIOS from R1.3.0 to any other version.
- Fixed: Black screen after BIOS update from OS with Deskflash
 - **Important:** This fix only takes effect for updating BIOS from R1.3.0 to any other version.
- Fixed: CPU TDP values are not correct after “F3+F4” in BIOS setup.
- Fixed: Forced LAN boot after Wake-On-LAN is not working on first boot after power resume.

Known Issues and Limitations:

- Info: Access to AMD BIOS menu “AMD CBS” in [Advanced] blocked to prevent unwanted BIOS settings changes, which can affect stable operation of the system. Menu text is still visible, but empty and not accessible.
- BIOS recovery only possible via SATA drive. Recovery via USB stick not yet supported.
- Limited support for D3352-A PCIe-M.2 carrier board with some specific NVMe M.2 modules. Problems during power state change can occur (e.g. Windows shutdown).
- Feature “Keyboard Wake” is not working from S5 / G0 power state. This is a technology limitation of AMD Embedded SoC.



About Kontron

Kontron is a global leader in IoT/Embedded Computing Technology (ECT). Kontron offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

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