Product Change Notice

Numonyx NOR Flash Die Shrink 130nm to 65nm

Keith & Koep GmbH

1.0 Overview

Keith & Koep Gmbh delivers CPU Modules with Numonyx NOR Flash Memory. Numonyx discontinued the 130nm process and converted the NOR Flash parts to the new 65nm Process. The new 65nm Flash parts come with small technical improvements but some system-software has to be changed to be compatible or to take advantage of the new improvements.

Affected NOR Flash parts

PC28F128P3XB85A conversion to PCF28F128BF65A
PC28F256P3XB85A conversion to PCF28F256BF65A

The detailed numonyx product change notification can be downloaded as a pdf:www.keith-koep.com/service/doku.php/service/hardware/pcn/65nm

2.0 Impact on HW

The 65nm Flash Part is HW drop-in compatible to the 130nm Part. Access times are faster so that bus-timings are approved. Power-On timings and other issues are verified to match the Trizeps environments.

TABLE 1. Conversion Table

Module	Old Part Nr.	New Part Nr.
Trizeps II-FX/C400/R64/J32.2/COD	18000	on request
Trizeps II/PXA255-400/UCB1400/R64/F16	11203	on request
Trizeps IV/C520/R128/P33.64/N0/nETH	**16220/16223/24223**	**27223***
Trizeps IV/C520/R128/P33.32/N1G/ETH	16240/24243	27243
Trizeps IV/C416/R128/P33.32/N0/nETH	16260/24263	27263
Trizeps IV/C520/R128/P33.64/N0/ETH	**16360/24363**	**27363***
Trizeps IV/C520/R64/P33.32/N0/ETH	**16105/24383**	**27383***
Trizeps IVC312/R64/P33.32/N0/ETH	16410/16420/24413	27413
Trizeps IVC312/R128/P33.64/N0/ETH	16440/24443	27443

Module	Old Part Nr.	New Part Nr.
Trizeps IV/C520/R64/P33.64/N0/ETH	16460/24463	27463
Trizeps IV/C312/R64/P33.32/N0/nETH	16480/24483	27483
Trizeps IV/C416/R64/P33.32/N0/ETH	16500/24503	27503
Trizeps IV-/C416/R64/P33.64/N0/ETH	16510/16513/24513	27513
Trizeps IV/E312/X64/P33.32/N0/nETH	16540/24543	27453
Trizeps IV/C312/R128/P33.32/N0/ETH	16603/24603	27603
Trizeps IV/C624/R128/P33.64/N0/ETH	24643	27643
Trizeps IV/C624/R128/P33.64/N1G/ETH	24663	27663
Trizeps V/C806/R128/P32.33/N0/ETH	**21020**	**21120***
Trizeps V/C806/R256/P32.33/N0/ETH	21040	21140
Trizeps IV-WL/C520/R128/P30.32.1/N1G/ WL/COD	19012211/19014211	on request

***best selling modules**

3.0 Impact on Sowftware

3.1 Bootloader

Old bootloaders do not take advantage of the new writebuffer size. The user experience will be slower deployment compared to new bootloaders, but same boot performance.

New bootloaders (newer than:) are using the new writebuffer. The resulting deploy process is much faster compared to 130nm Flash.

3.2 Persistant Registry

The OS-Images contain HAL code writing the persistant registry. This code part uses the same procedures as the bootloader. The write speed is slower compared to updated firmware, but working.

3.3 Flashdisk Folder

The flashdisk folder is represented through a transaction based filemanager, written by Intel/Numonyx, the Intel Persistant Storage Manager (IPSM).

There are Major Versions 3 and 4 available. Within the last years customers used mainly Versions 3.7 or 4.0

3.3.1 IPSM4.0 IPSM4.14

The IPSM Version 4 takes full advantage of the increased writebuffer size and can be used unmodified.

3.3.2 IPSM3.7 and older versions

The IPSM in Version 3.7 allocates 64Words for the writebuffer. Unfortunately the software queries the writebuffersize from the CFI and does not test sizes against hardcoded bounds. IPSM3.x will not work unmodified.

All Images using IPSM3.x should be modified using the updated Versions of the latest Version of IPSM3.7. Please refer to the Keith & Koep Service page (mentioned above) describing how to update.

Please call +49 202 25253-0 in case that you have questions around migration.