



## Product Change Notice

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QMS Approval n° 9910354

### Product Change Notice #: 025.2

Date: 20<sup>st</sup> June 2016

Title of Change: Nand Flash Modules Revision and EOL (updated version)

### Type Of Change

- |   |   |
|---|---|
| <input type="checkbox"/> Manufacturing Site Change    | <input type="checkbox"/> Shipping / Packaging Material Change |
| <input type="checkbox"/> Manufacturing Process Change | <input type="checkbox"/> Packing / Label / Marking Change     |
| <input checked="" type="checkbox"/> Product Revision  | <input checked="" type="checkbox"/> Product End Of Life (EOL) |
| <input type="checkbox"/> Material Change              | <input type="checkbox"/> Data Sheet Change                    |

### Description of Change

3D PLUS introduces new Space Qualified Nand Flash Modules with space qualified 2Gx8b (16Gb) Nand Flash basic devices for high performance and high density space designs.

As a consequence, 3D PLUS Ends of Life (EOL) several modules with 1Gx8b (8Gb) die. To support existing designs, replacement modules will be introduced with the same configuration and form factor as these newly EOL'ed products – See affected product table below.

However, this Product Change will not affect 3D PLUS Nand Flash Memory Modules based on the 512Mx8b Nand Flash basic device – See not affected product table below.

### Reason for Change

- Product density improvements through the successful characterization and space qualification of a new 16Gb Nand Flash core device:

- Higher Density: 16Gb to 128Gb,
- Improved Radiation performance:
  - TID: >60 Krad(Si),
  - SEL: >60 Mev.cm2/mg
  - SEU & SEFI Characterized
- Worldwide Delivery Guarantee.

- 3D PLUS Space Qualified new Nand Flash Memory Modules are Function – Package - Footprint compatible with existing 3D PLUS Nand Flash modules, while enabling a doubling of the memory module density.

- The new Nand Flash Memory Modules are fully compliant to the 3D PLUS Capability Domain qualified by European Space Agency (ESA) for Space Applications and benefit from all the 3D PLUS Qualification Data.

The detailed qualification report and the Radiation test (TID, SEE) reports are available on request.

## Contact Information

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## Product Affected (2Gx8b&1Gx8b Basic Devices)

Module Description	New introduced P/N	EOL P/N	Replacement P/N
16Gx8bits Nand Flash	3DFN128G08VS8308		
8Gx8bits Nand Flash	3DFN64G08VS4309		
4Gx8bits Nand Flash	3DFN32G08VS2711		
2Gx8bits Nand Flash	3DFN16G08VS1712		
1Gx8bits Nand Flash		3DFN8G08VS1307	3DFN8G08VS1706
2Gx8bits Nand Flash		3DFN16G08VS2306	3DFN16G08VS2705
4Gx8bits Nand Flash		3DFN32G08VS4304	3DFN32G08VS4704
8Gx8bits Nand Flash		3DFN64G08VS8305	3DFN64G08VS8695
4Gx16bits Nand Flash		3DFN64G16VS8477	3DFN64G16VS8710

## Product Not Affected (512Mx8b Basic Device)

Module Description	Part Number
512Mx8bits Nand Flash	3DFN4G08VS1636
1Gx8bits Nand Flash	3DFN8G08VS2635
2Gx8bits Nand Flash	3DFN16G08VS4643
4Gx8bits Nand Flash	3DFN32G08VS8633

## Design Update

Product Affected table lists <New introduced P/Ns>, which is based on new 2Gx8b die, and <Replacement P/Ns>, which is based on new 1Gx8b die. Below is the table to summary the main differences of them comparing with 1Gx8b die inside of <EOL P/Ns>:

	EOL 8Gb die	Replacement 8Gb die	New introduced 16Gb die
Page	(4096+128)Bytes	(4096+224)Bytes	(4096+224)Bytes
Block	64pages	128 pages	128 pages
Die	4096 Blocks	2048 Blocks	4096 Blocks
Page Program time	200µs (TYP)	230µs (TYP)	230µs (TYP)
Block Erase Time	1.5ms (TYP)	700µs (TYP)	700µs (TYP)
ONFI compliant	Non	ONFI 2.1 compliant	ONFI 2.1 compliant

The designs based on <EOL P/Ns> should be updated to move to <Replacement P/Ns> or <New introduced P/Ns>.

## 3D PLUS Sites Affected

3D PLUS Buc High Rel.  3D PLUS Buc Indus.

## Coming into force

PCN Coming into force: effective immediately