

## UPCOMING DDR4 FULL ECOSYSTEM FOR SPACE

Buc, 8<sup>th</sup> July 2020 - 3D PLUS has developed a new space DDR4 Ecosystem family including three types of DDR4 memories, a DDR4 Termination Regulator and a Radiation Intelligent Memory Controller (RIMC). The DDR4 brings increased performances to get higher frequencies and better efficiency. The RIMC DDR4 allows enhanced protection and mitigation against SEU/SEFI.

3D PLUS DDR4 Ecosystem becomes the first fully space qualified solution. This unique high speed computing ecosystem is built in accordance with ESA (European Space Agency) certification for all space missions looking for high reliability and long term solution.

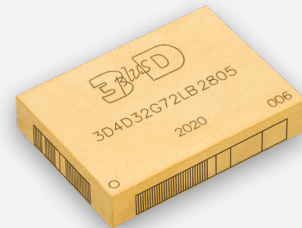
This DDR4 ecosystem consists of all-in-one space qualified solution to afford a complete solution around state-of-the-art high-end digital cores for Space applications. It allows designers to gain all the benefits from latest high performing Digital Cores, for any Space challenging computing application.

### DDR4 SDRAM MEMORY

3D PLUS introduces a fully space qualified DDR4 SDRAM memory product range up to 72 bits data bus width operating at 2.4 GHz, 2.400 MT/s. The first part **3D4D32G72LB2805** offers a 32 Gbit capacity and is perfectly fitting space applications requiring best in class-high performing computing memories, offering high bandwidth and enhanced transmission.

#### Key features:

- 32 Gbit, organized x72b
- Radiation Hardened design:
  - TID > 100 krad(Si)
  - SEL Immunity > 75 MeV.cm<sup>2</sup>/mg
  - SEU/SEFI protection/mitigation thanks to RIMC
- Operating temperature range: -40°C to +105°C
- BGA363 package, pitch 1 mm
- Size: 32 mm x 21 mm x 7 mm



### MEMORY CONTROLLER

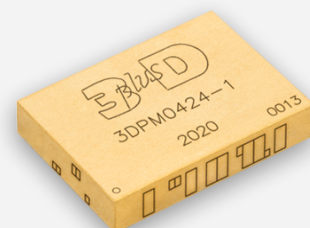
The Radiation Intelligent Memory Controller (RIMC) **3DIPMC0815-1** is a fully configurable DDR4 SDRAM memory controller IP core designed to work with 3D PLUS DDR4 modules to achieve a global radiation hardened DDR4 solution. The RIMC IP core offers Single Event Upset (SEU) mitigation and Single Event Functional Interrupt (SEFI) protection to be able to work in radiation environments.

### TERMINATION REGULATOR

The **3DPM0424-1** is a compact and flexible, Rad Hard by Design, sink/source Termination Regulator for low input voltage, low-noise DDR4 memories. This termination regulator provides all power requirements for DDR4 V<sub>TT</sub> bus designs, reducing power dissipation while improving accuracy for data transmission.

#### Key features:

- Radiation Hardened design:
  - TID > 75 krad(Si)
  - SEL and SET Immunity > 60 MeV.cm<sup>2</sup>/mg
- Operating temperature range: -40°C to +105°C
- BGA259 package
- Size: 30 mm x 22 mm x 6.4 mm



[Link to datasheet](#)