SMART® Modular Technologies

DDR3 MIP-Module in a Package

DDR3 MIP

SMART's new MIP (module in a package) is a Tiny Form Factor (TFF) memory module that combines the benefits of industry standard SO-DIMMs with SMART's proprietary stacking technology.

About the size of a nickel, SMART's MIP occupies 1/5th the area of a SO-DIMM while offering higher performance and lower power. Key advantages of the MIP over SO-DIMMs include 42% power savings, 42% jitter reduction, and 39% PK/PK savings. These benefits are critical for applications such as broadcast video, mobile routing, high-end video/graphics cards and embedded computing applications where memory density in a small space (without the need for ECC) is essential. MIPs contain on-package address and control signal termination, eliminating the need in DRAM-down board usage scenarios.

The MIP leverages SMART's extensive stacking technology into new markets and new applications. It addresses OEMs' need for faster memory in space-saving cube-computing applications for networking, telecom and embedded markets. The MIP is offered in densities of 2GB with speeds up to DDR3-1866.

"SMART has been stacking off-the-shelf DRAMs for many years, providing key space-saving benefits to OEMs. The MIP is a natural extension of this expertise and combines with SMART's values to deliver high quality, highly unique memory solutions."

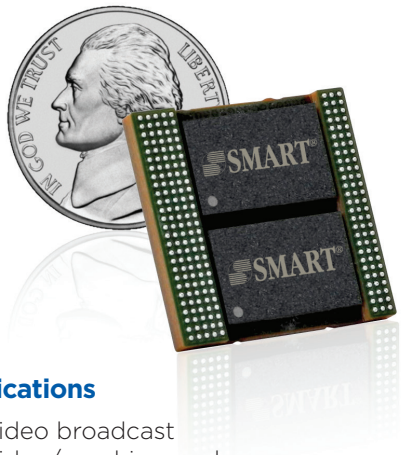
Mike Rubino, SMART's VP of Engineering

Features & Benefits

- Tested at speeds up to DDR3-1866
- Occupies only 1/5th the space of an SO-DIMM
- Up to 42% power savings vs SO-DIMMs
- Superior ruggedness – soldered down; no sockets or clips
- Leverages SMART's proven stacking technology

Product Family Overview

Capacity	Speed	Operating Temperature
2GB	DDR3-1600 to DDR3-1866	Commercial 0°C to +70°C Industrial -40°C to +85°C



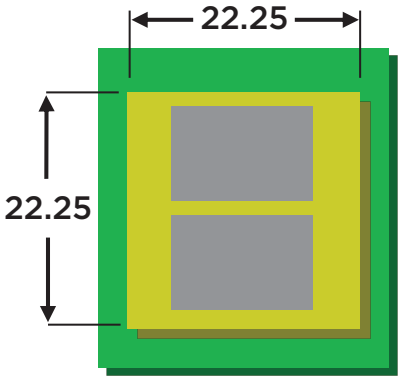
Applications

- Video broadcast
- Video/graphics cards
- Embedded computing
- Telecom
- Defense/Aerospace
- Automotive

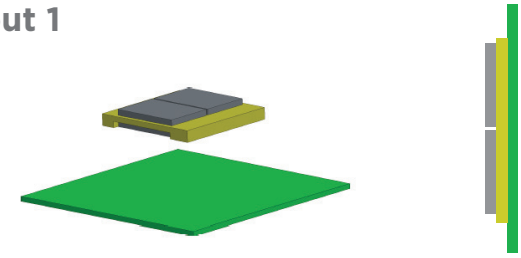
Ordering Information

SMART Part Number	Density	Dimensions (mm)	Module Config	Device Config	Speed	Voltage	Temperature
SH2566MP321616SE	2GB	22.25 x 22.25	256M x64	256M x16	1600 MT/s	1.35V	0°C to +70°C
SH2566MP321616MP	2GB	22.25 x 22.25	256M x64	256M x16	1600 MT/s	1.35V	0°C to +70°C
SH2566MP321638SE	2GB	22.25 x 22.25	256M x64	256M x16	1866 MT/s	1.35V	0°C to +70°C
SH2566MP321638MP	2GB	22.25 x 22.25	256M x64	256M x16	1866 MT/s	1.35V	0°C to +70°C
SH2566MP321616ND	2GB	22.25 x 22.25	256M x64	256M x16	1600 MT/s	1.35V	0°C to +70°C
SHT2566MP321616ND	2GB	22.25 x 22.25	256M x64	256M x16	1600 MT/s	1.35V	-40°C to +85°C

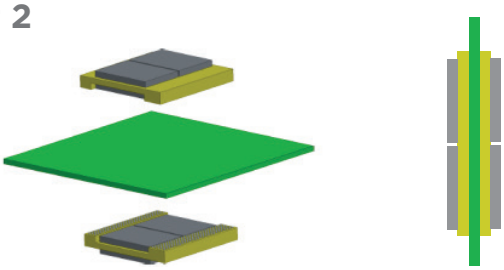
DDR3 MIP



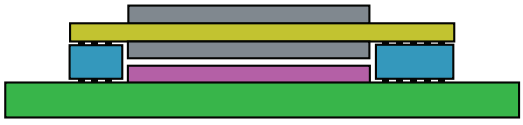
Layout 1



Layout 2



Layout 3: with ECC



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