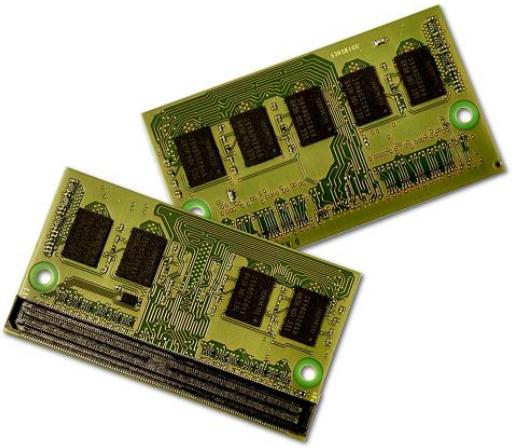
SFF-SIG Unveils RS-DIMM Rugged Memory Specification



The Small Form Factor Special Interest Group (SFF-SIG), a collaboration of leading suppliers of embedded component, board and system technologies, announced the public availability of the new RS-DIMM Rugged Memory Specification. The Specification defines a highly rugged, DDR3 mezzanine memory
module with a pin-and-socket connector optimized for small form factor CPU boards in applications with exceptional shock and vibration requirements.

Use of this standardized memory module provides significant flexibility in memory sizes compared to memory soldered to a CPU board. A RS-DIMM module provides a significantly higher level of resistance to shock and vibration than commercial grade memory expansion modules such as SO-DIMM. In addition, the specification provides for both RAM and a Flash memory SSD drive on the same module through a SATA-2 interface.

“For years, designers of SFF CPU boards intended for rugged applications have had to choose between limited configurations of soldered memory or straps or glue to tie down commercial grade memory,” said Paul Rosenfeld, president of SFF-SIG. “The RS-DIMM Specification is the first open-standard off-the-shelf expansion memory module designed specifically for rugged applications.” The Specification was created by the Rugged Memory Working Group at SFF-SIG,consisting of connector, memory module, and CPU board suppliers working together to achieve an optimal definition. Simultaneously with this announcement, two memory module suppliers,Swissbit AG (Bronschhhofen, Switzerland) and Virtium Technology (Rancho Santa Margarita, CA), are each introducing RS-DIMM modules.

"The new RS-DIMM Specification gives us the first opportunity to meet the requirements of our customers for memory modules specifically designed for rugged applications," said Ulrich Brandt, General Manager of Swissbit. "Swissbit was

pleased to participate in theWorking Group and to help develop, validate, and test prototypes of the new technology."

"The new RS-DIMM Specification not only gives us an off-the-shelf memory solution for rugged applications, but it gives us an opportunity to showcase our industry-leading SSDDR (Solid State Disk plus DDR memory) combination in a single module", said Phan Hoang, Vice President of Product Design for Virtium and chairperson of the SFF-SIG Rugged Memory Working Group.

The RS-DIMM Specification defines a small 67.5 mm x 38 mm module that stacks 7.36mm above the CPU board. RS-DIMM uses DDR3 technology and is specified for both unbuffered and registered implementations. Memory sizes up to 4GB, with optional ECC (error correction circuitry) are supported using either 9-chip or 18-chip designs. Ruggedness is achieved by using a 240-pin Samtec BTH/BSH connector pair on the memory module and CPU board, along with two mounting holes.

By avoiding the socket "wings" that hold an SO-DIMM in place, RS-DIMM modules can fit on a number of small form factor CPU boards, such as Processor AMC modules,which cannot use SO-DIMM because of the overall width (72mm). Finally, the pin definition for RS-DIMM closely aligns with the SO-DIMM pin definition, making it easy to adapt an existing SO-DIMM-based design to use a rugged RS-DIMM module. Both Swissbit and Virtium are contributing their module designs for use by other SFF-SIG members, which further ensures interoperability across RS-DIMM manufacturers.

The RS-DIMM Specification is freely available on the SFF-SIG web site and can be downloaded free of charge and without license or registration.A prototype RS-DIMM module has been tested on a LiPPERT COM Express module being announced simultaneously, with the shock and vibration results exceeding the levels defined in the ANSI/VITA 47-2005 (R2007) specification.

Information about other specifications and membership in SFF-SIG may be found at www.sffsig.org/join.html [1].

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