USING THE ESA/DUNDEE SPACEWIRE RMAP CORE

Session: SpaceWire Components

Long Paper

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ABSTRACT

The SpaceWire RMAP core is a VHDL IP core based on the Remote Memory Access Protocol (RMAP) which has been defined by the SpaceWire Working Group and is being prepared for standardisation as ECCS-E-ST-50-51C. RMAP allows devices to read and write from memory spaces in a standard way, increasing device interoperability and reducing development time.

The RMAP core was developed under contract from the European Space Agency (ESA). It is available from ESA for use on European space missions or projects and available from STAR-Dundee for other applications. The core is designed to be a highly configurable VHDL IP core which can be used as an RMAP target or initiator. The core can be implemented in a number of technologies, including the radiation tolerant Actel RTAX which is widely used in the Space industry.

This paper describes the architecture of the IP core, its interfaces and configuration options. It then describes several potential use cases for the IP core covering a range of applications, for example interfacing to a host system with a processor and memory attached.