

EVALUATING SPACEWIRE SYSTEMS

Session: SpaceWire Test and Verification

Short Paper

Dr Barry M Cook, C Paul H Walker

4Links Limited

E-mail: barry@4Links.co.uk paul@4Links.co.uk

ABSTRACT

The 4Links family of SpaceWire development and test equipment continues to evolve in response to customer need. It now comprises a wide range of functions which is briefly described in this paper, with the emphasis on improved functions and new units developed within the last 12-months. It will serve to update readers as to the support they have available when designing SpaceWire devices and systems.

The range includes interfaces, monitors, and instrumented simulators.

Interfaces range from a simple one SpaceWire port unit up to a full diagnostic interface with up to eight ports, and a new Wireless interface. Monitors include an Analyzer that gathers statistics of the traffic from up to four links, and a Recorder that records the traffic, again from up to four links. Instrumented simulators include a routing switch, with packet statistics, and a multiple RMAP responder with hardware response times.

An absolute time interface is available to synchronize a test system to the IRIG time standard, and to provide a source of low-jitter Time Codes.

Units will be described in terms of their functionality, application area and performance capability. User scenarios will be used to illustrate the wide range of applicability including testing and validating new designs, measuring performance under different operating conditions, simulating the units controlled by an OBC, and archiving the results of a long series of tests. These scenarios cover the use of individual test units for a single subsystem and multiple, synchronized, units for a complete mission.