

Diagnostic SpaceWire Interface

Ethernet/TCP/IP diagnostic bridge to multiple SpaceWire ports



Product brief

The 4Links Diagnostic SpaceWire Interface (DSI) is the reference for SpaceWire design, enabling a full range of validation tests and providing excellent diagnostic tools so that users can solve problems quickly.

- Use it simply as an interface, or to detect and resolve bugs, or to measure the performance parameters;
- Use it with devices, instruments, boards, subsystems or complete systems, with from one to many ports;
- Use it from almost any computer, any operating system, any where, via the Internet and Ethernet
- Like all 4Links EtherSpaceLink family of products, full software is provided including an API and examples (all with source code), and user interfaces with comprehensive scripting capability.

Bug detection

- The DSI has been used by 4links to detect bugs such as incorrect initialization, loss of flow-control credit, inability to recover after a noise disturbance, loss of occasional data characters, timeouts beyond the limits specified in the standard, and many more, that had not been detected by other methods. It has been used by 4Links customers to detect and remove a wide range of functional and performance-related bugs.
- With Error Injection for negative testing, and for testing flow-control behaviour, and with Simultaneous Outputs for testing routing switch and other arbiters, users can stimulate many potential bugs.

Bug diagnosis

- Even without the diagnostic options, the DSI offers comprehensive reporting of detected errors, and record and replay for of-line analysis and for regression testing;
- With Event Waveforms, errors and other events can be captured and easily analyzed, immediately or later;

Characterization

- With finely tuned transmit speed, Receiver operating margins can be measured to know how well it works;
- With Time Tags, a wide range of delays can be measured to characterize system performance

Product codes

The Diagnostic SpaceWire Interface is available in a variety of EtherSpaceLink family platforms, and with a range of additional diagnostic options:

Platform	RG408-1	RG408-ls*	RG408-ms*
Two active ports	DSI-RG402/8-1	DSI-RG402/8-ls	DSI-RG402/8-ms
Four active ports	DSI-RG404/8-1	DSI-RG404/8-ls	DSI-RG404/8-ms
Eight active ports			DSI-RG408-ms

* any number of units running on the RG408-ls or RG408-ms platforms can be synchronized so that their time tags are different by at most $\pm 3\text{ns}$

Options

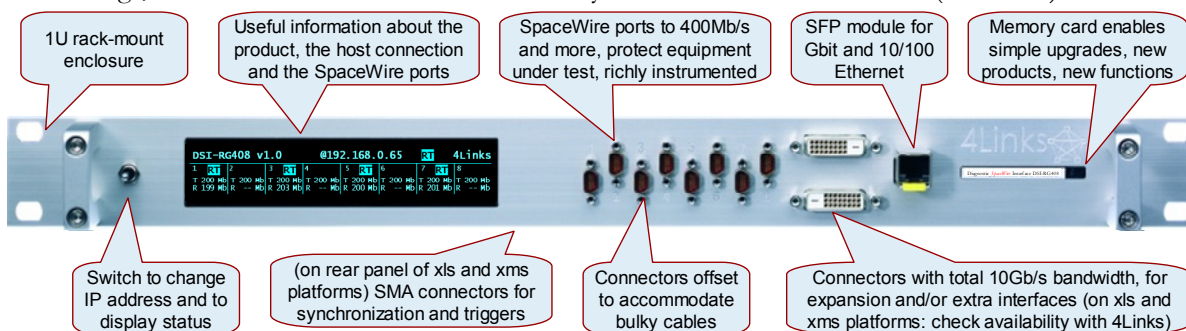
ER: Error Reporting (included in standard product)

EI: Error Injection: Precise error injection and full control over flow-control-credit and Nulls

EW: Event Waveforms: Waveform capture available from a wide range of trigger sources, including errors

SO: Synchronized Outputs: Can be synchronized within one unit or between many units (-ls or -ms) to $\pm 20\text{ns}$

TT: Time Tags, to a resolution of less than 1.5ns and synchronization between units (-ls or -ms) of $\pm 3\text{ns}$



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