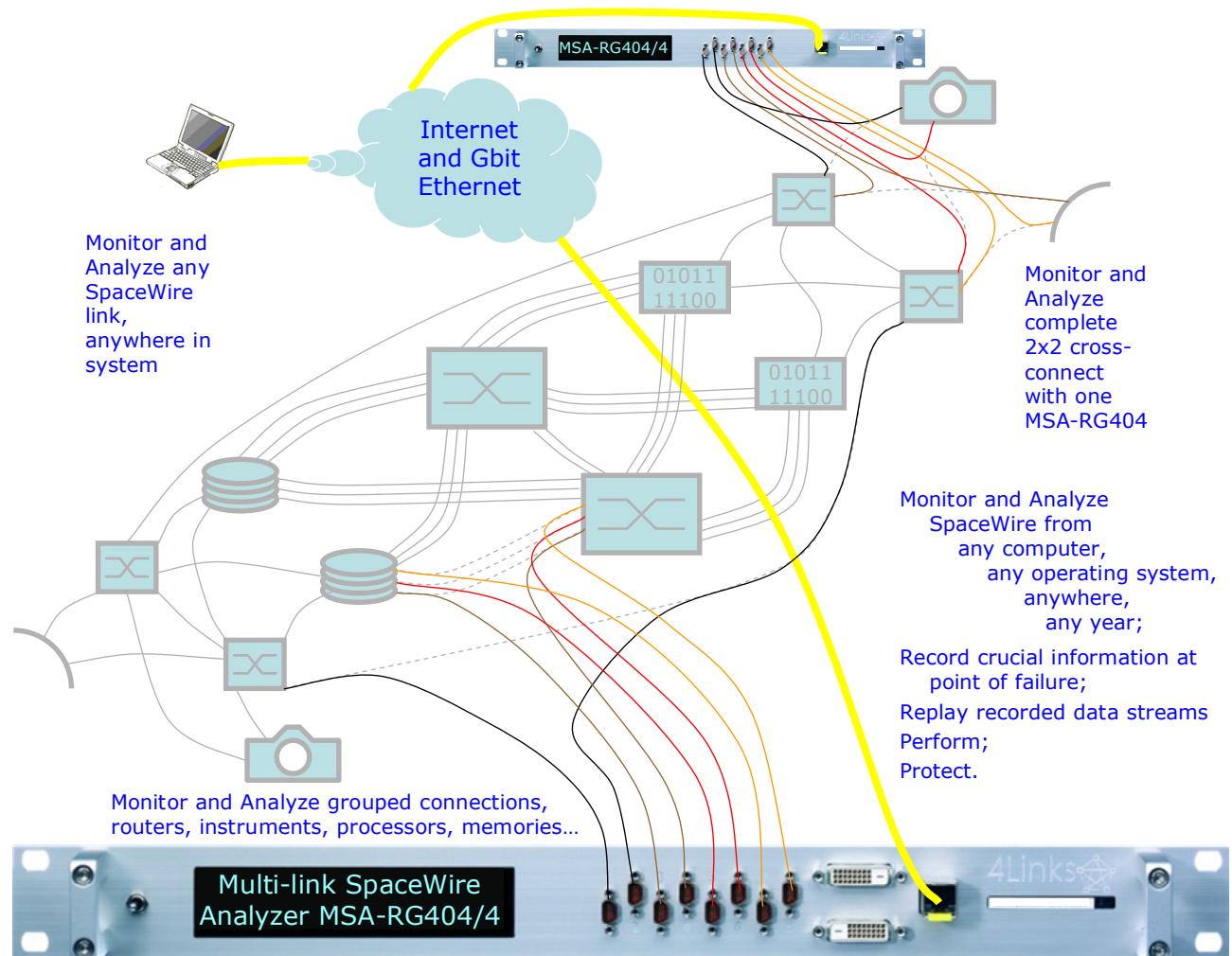*Product brief*

Protocol Monitor/Analyzer for SpaceWire, interfaced to Gbit Ethernet and IP

Eight 400Mbits/s SpaceWire ports monitoring and analyzing four SpaceWire links

The MSA-RG404/4 monitors and provides remote analysis of up to four SpaceWire links running at speeds up to 400Mbits/s. It can be used stand-alone to show the monitored status of links, and also connected via Gigabit Ethernet to a remote computer for analysis and statistics of traffic flow. The wire signals are captured in the event of triggers such as SpaceWire protocol errors. The recorded errors can be time tagged and, with the –ls or -ms hardware options, multiple units can be synchronized so that time tags are consistent across the whole network

The EtherSpaceLink products can be used for testing, monitoring, analyzing, validating, modelling and emulating any or all the chips, boards, subsystems, and instruments in a SpaceWire network.

MSA-RG404/4

Internet and Gbit Ethernet

Monitor and Analyze any SpaceWire link, anywhere in system

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01011 11100

Monitor and Analyze complete 2x2 cross-connect with one MSA-RG404

Monitor and Analyze SpaceWire from any computer, any operating system, anywhere, any year;

Record crucial information at point of failure;

Replay recorded data streams
Perform;
Protect.

Monitor and Analyze grouped connections, routers, instruments, processors, memories…

Multi-link SpaceWire Analyzer MSA-RG404/4

Update, Reconfigure and Re-use the same hardware platform throughout the project life cycle

4Links®

EtherSpaceLink test and monitoring equipment for aerospace

Product brief (Continued)

Monitor and analyze SpaceWire from any computer, any operating system

Because almost every computer and every operating system is able to connect to Ethernet and to the Internet Protocol, the MSA-RG404/4 can monitor SpaceWire networks and provide analysis from the computer and operating system of the user's choice. With the -ls or -ms hardware options, multiple units can be synchronized to the same clock, to provide a uniform view of time across the network.

anywhere,

The Internet Protocols allow monitoring and analysis of SpaceWire to be done remotely from the equipment under test, whether from an engineers desk (outside the clean room), or from across continent or ocean.

any year

While PCs need to be replaced every few years, projects can last a decade or more. Ethernet and IP allow the use of the test equipment throughout the project, even as the computers and OS are changed.

Record crucial information at point of failure

Detailed information about the wire signals, before during and after a SpaceWire protocol error, is also recorded and sent via Ethernet for off-line analysis.

Replay recorded data streams

Other members of the EtherSpaceLink family such as the EtherSpaceLink itself or the Diagnostic SpaceWire Interface (or this hardware reconfigured by its memory card to become either of these) can replay a recorded data stream. So a problem can be replayed from the recording, with the user able to change the interaction from a program controlling the DSI-RG401/8, and with the interactions monitored by the MSA-RG404/4.

Gather statistics

Link speed and statistics are displayed on the computer for each type of SpaceWire character received in each direction on each link.

Perform

Test equipment should perform faster than the equipment under test, and the MSA-RG404/4 is probably still the highest performance SpaceWire monitor/ analyzer available, at above 400Mbits/s.

Protect

Test and simulation equipment must protect flight equipment from any possible damage caused by the test equipment. The MSA-RG404/4 protects flight equipment with five layers of current and voltage protection.

Choose the options required

Platforms: RG408-l, RG408-m, RG408-ls or RG408--ms: (platforms above RG408-l are not required for MSA-RG404/4 but are useful for other functions and: synchronized time and triggers). **Firmware options**: None: the monitoring/analysis functions, including error waveforms, are included.

Update, Reconfigure and Re-use throughout the project life cycle

The function of the MSA-RG404/4 is defined by a plug-in memory card, which plugs into one of the 4Links 8-port platforms. The memory card can be replaced to provide a different function such as an EtherSpaceLink, diagnostic interface, routing switch, packet generator, recorder or other function.

Please note: The product code for this product has changed from MSA-RG404/8 to MSA-RG404/4, to be more consistent in showing that it monitors all the four links that can be connected through the eight ports of the 8-port platforms

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