iSAFT SpaceFibre Interface Board

The iSAFT Quad SpaceFibre Interface Board is an advanced PCIe interface, supporting SpaceFibre simulation. It is suitable for multiple applications in the space sector, including Data Front-Ends, EGSE/SCOEs.

The board is based on an industry proven SpaceFibre codec, and it has been already validated in ESA representative SpaceFibre test benches.

The board is delivered with a practical SDK, and can be complemented with additional software modules allowing to save development / integration time.

Main Features

- Full height / Half length PCIe form factor board with multi-Gbps overall throughput
- Four single lane data ports (Type C connectors) supporting up to 16VCs total and link rates of 1, 1.25, 2, 2.5, 3.125 Gbps, according to ECSS-E-ST-50-11C DIR1
- SpFi Simulation / Emulation capabilities with built-in packet recording functions
- IRIG-B002/006 generator / receiver TTL/RS-422 electrical levels, with down to 8 nano-seconds accuracy / resolution, with IRIG signal regeneration capability in order to cascade multiple boards/systems
- Asynchronous transmission & Traffic generation support
- Per port / packet triggered transmission conditions
- Data reception and packet truncation support, Broadcast message transmission / reception, Data / BC reception timestamping, Statistics support for Tx/Rx packets and BCs
- Provision of several trigger in/out signals with multipurpose functionality (start of capture stimulation, generation of events, synchronization with external equipment, etc.)
- Multiple loopback configurations (Physical Layer and parallel SerDes Near-End / Far-End loopback, Lane / Network layer loopback)
- Flight equipment protection according to the SpaceFibre standard

Competitive Advantages

- 8 nano-seconds timestamping resolution
- 4 ports supporting rates up to 3.125 Gbps
- Multi-board management, concurrent access
- Seamless integration with EGSE software
- Proven solution in reference SpaceFibre testbeds

Environmental Information

- Operating temperature range: 0°C to 50°C
- Storage temperature range: -55°C to 125°C
- RoHS compliant

Ordering Information

- iSAFT-NIC601: Quad SpFi PCIe NIC - G1 (with IRIG support)

Software

Standard

- Windows / Linux driver APIs
- iSAFT Configuration / Self-test utility

Optional

- TCP/IP remote client APIs in C++ / Python
- EDEN, CCSDS C&C APIs
- iSAFT SpaceFibre Simulator / SPY Tool (board management, SpFi / RMAP / CPTP packet editors, simulation, traffic generation, recording, off-line analysis, statistics, Wireshark protocol analyzer)

Application Areas

- SpFi Data Front Ends with online data recording
- Electrical Ground Support Equipment (EGSE) / Test Benches
- Hardware In the Loop Simulation
- New prototyping / experimentation

CONTACT

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