

# SpaceART



SpaceART – SpaceWire/SpaceFibre Analyser Real-Time – is a complete testing solution for high-speed links in space applications. SpaceART supports both SpaceWire (SpW) and SpaceFibre (SpFi) standards.

SpaceART can operate as a **SpW/SpFi EGSE**, generating, processing and consuming SpW/SpFi packets in real time, allowing the validation of SpFi/SpW based devices at their full bandwidth.

SpaceART can also act as a **SpW/SpFi link analyser**, which allows the monitoring of the link.

## Key Features

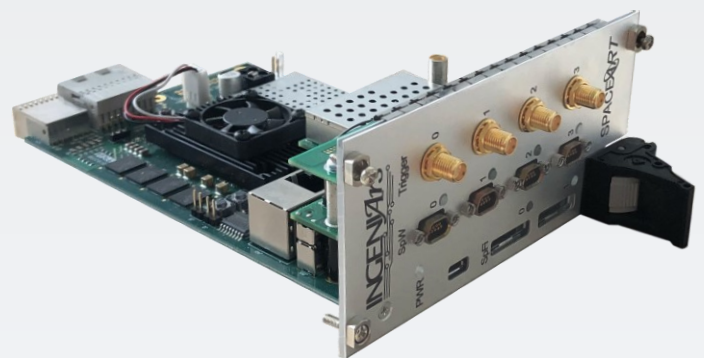
- 4x SpaceWire interfaces running up to 400 Mbps configurable by user
- 2x SpaceFibre interfaces running up to 2.5Gbps configurable by user (optional)
- 8 Virtual Channels per SpaceFibre interface
- Options for host PC interface:
  - Gigabit Ethernet
  - Compact PCIeexpress
  - PCIeexpress
- Real-time packet generation, processing and consumption through PCIe communication
- 4x user configurable trigger inputs/outputs
- SpaceWire/SpaceFibre bridging
- Selectable hardware packet generator and consumer to allow the easy saturation of the SpaceFibre link
- Easy user interface to check the status of each SpaceWire and SpaceFibre link, including standard flags and link/data rate measurement
- Time-tagging of the received SpW/SpFi packets

SpaceART is available in different versions:

**Standalone:** connected with the Host-PC using Ethernet protocol;

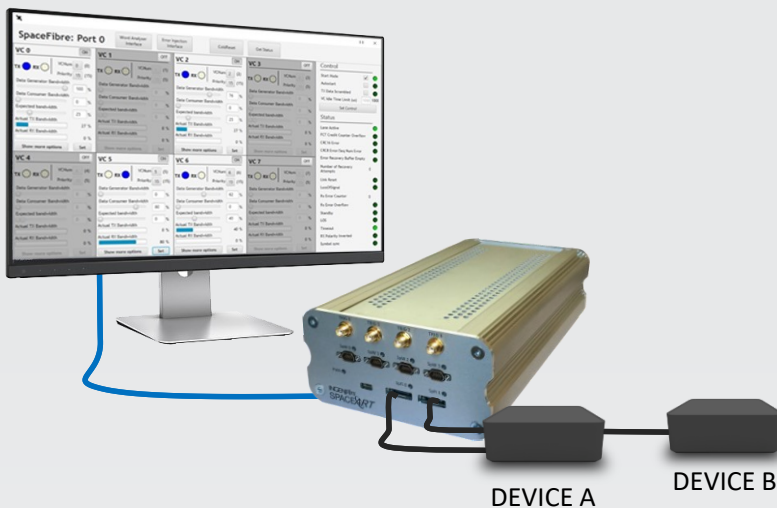
**CompactPCIexpress:** this Eurocard 3U format solution offers the capabilities to transfer data with the host-PC in real-time communicating with cPCIe protocol.

**PCIexpress** option is also available.



- Advanced Error injection/Word replacement capability to facilitate conformance testing of the system under-test
- Trace memory of 8192 words (or more on request) to analyse protocol-specific features such as flow-control, acknowledgement, frame re-transmission
- Simple yet powerful graphical user interface
- Programmable via software API for test automation and advanced processing
  - C/C++
  - LabVIEW
  - more options on request

# Typical scenarios



## Link Monitoring

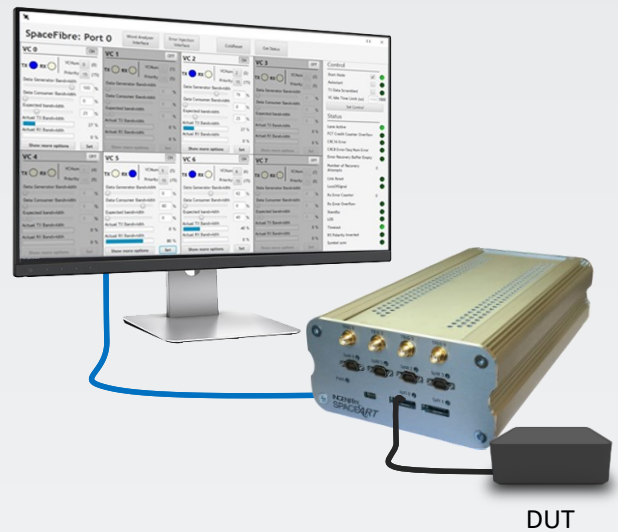
Perform link monitoring between two SpaceFibre/SpaceWire devices

- Packet Analyser
- Character Analyser
- Error injection

## EGSE/Device emulator

Emulates on-board SpaceFibre/SpaceWire instruments or components

- Packet generation
- Packet consumption and processing
- Error injection



## SpaceART standalone application

- Different window for each SpaceFibre/SpaceWire port
- Automatic measurement of actual Bandwidth both for TX and RX sides
- Fully compatible with Linux and Windows O.S.

