

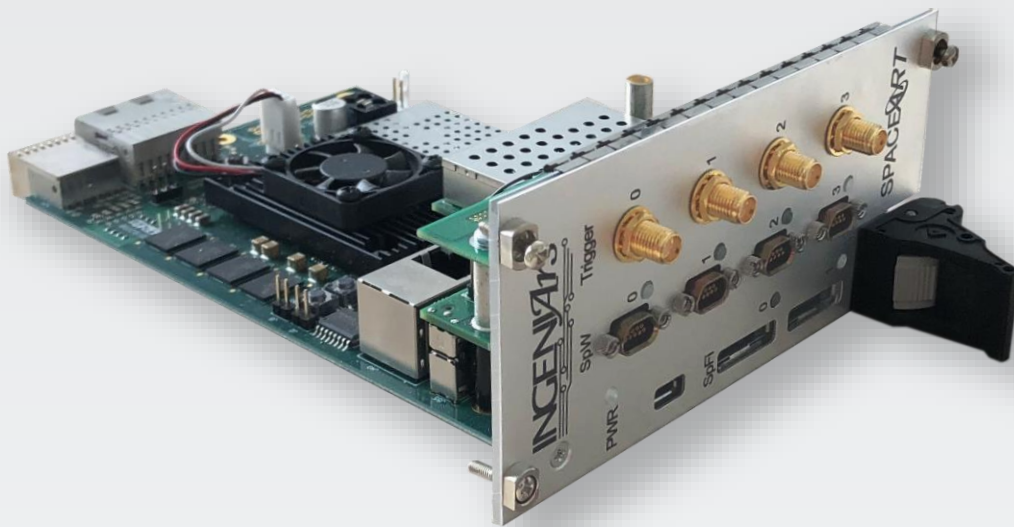
SpaceART

SpaceART® – SpaceWire/SpaceFibre/WizardLink Analyser Real-Time – is the complete testing solution for high speed links in space applications, supporting **SpaceWire** (SpW), **SpaceFibre** (SpFi) standards and **WizardLink** (WzL) interfaces.

SpaceART® can operate as **SpW/SpFi/WzL EGSE**, generating, processing and consuming SpW/SpFi/WzL packets in real time, allowing the

validation of SpW/SpFi/WzL-based devices at their full bandwidth.

The traffic can be analyzed at packet, frame or character level, in order to identify issues at any level in the protocol stack. Additionally, regarding SpFi and WzL, SpaceART® is capable of measuring the **eye-diagram** to aid in determining problems related to the physical layer.



Key features

- 4x **SpaceWire** interfaces compliant with ECSS-E-ST-50-12C, running up to 400 Mbps configurable by user
- 2x optional **High-Speed Serial Link** (HSSL) interfaces can be used to implement either **SpaceFibre**, compliant with ECSS-E-ST-50-11C, or **WizardLink**
- HSSL interfaces support link rate is up to 3.125 Gb/s, configurable by user
- 8 Virtual Channels per SpaceFibre interface (configurable on request)
- Options for host PC interface: **Gigabit Ethernet, Compact PClexpress, PClexpress**
- Real-time packet generation, processing and consumption through PCIe communication
- Analysis at different levels: packet, frame, character
- Eye-diagram measurement on HSSL
- 4x user configurable trigger inputs/outputs (SMA)
- SpaceWire/SpaceFibre bridging
- Selectable hardware packet generator and consumer to allow the easy saturation of the SpaceFibre link
- Time-tagging of the received SpW packets
- 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
- Easy-to-use, yet powerful **graphical user interface**
- Programmable via **software API** for test automation and advanced processing

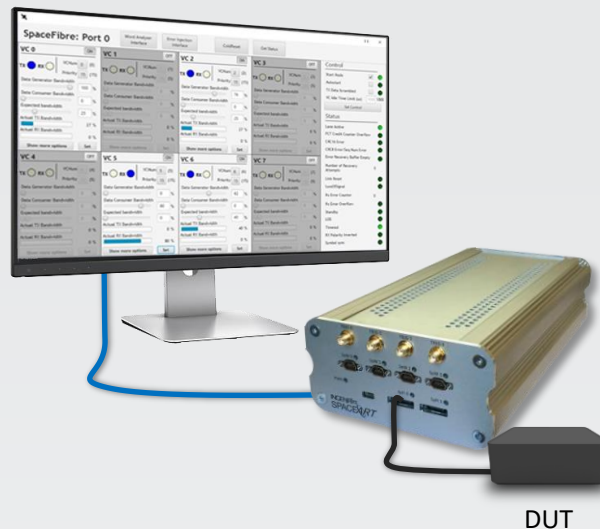
Typical use-case

EGSE/Device emulator

Emulates on-board SpaceFibre/SpaceWire/WizardLink instruments or components

- Packet generation
- Packet consumption and processing
- Error injection
- Traffic analysis at packet / frame / character level

IngeniArs developed the **SpaceART® SpaceWire Sniffer** specifically designed to perform link monitoring between two SpW nodes.



SpaceART Graphical User Interface

- Different window for each SpaceFibre/SpaceWire/WizardLink port
- Easily set up ports to send and receive packets
- Standard protocol configuration and status parameters
- Automatic measurement of actual Bandwidth both for TX and RX sides
- Fully compatible with Linux and Windows O.S.

