SpiNSAW – The SpaceWire Network System Administrator Workstation
Session: Test & Verification

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Introduction

• An important task in SpaceWire interconnections is network switches administration

• A user should have an opportunity to set any parameters of any switch in a network

• For this task the software tool with GUI SpaceWire Network System Administrator Workstation (SpiNSAW) was built

• This tool provides state monitoring and operating modes settings for SpaceWire switches in a SpaceWire network in a simple way
SpiNSAW operating mode

Simple mode is for users who would not like to know any details about switch internal structure.
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SpiNSAW operating mode

Extended mode. Routing and adaptive group routing registers
SpiNSAW operating mode

Extended mode. General settings
SpiNSAW operating mode

Extended mode. Status / Mode / Speed registers
Local switch administration

The SpiNSAW can be used for configuration of one switch MCK, which is connected to the PC by a COM-port.

In this case SpiNSAW forms instructions according to user’s operations in a certain format and sends them to the switch through the COM-port.

Switch MCK01 processes such instructions, form answers on them and sent them back to the SpiNSAW.
Remote switch administration

To provide SpiNSAW access to the remote switch in the network the RMAP is used. We can form RMAP packets automatically in case of known address space distribution or by hand.
RMAP

Form for an RMAP packet generation
SpiNSAW with third party SpW units

- Without a switch connected to the PC through the COM-port the SpiNSAW also can be used.
- It is possible to use such off-the shelf devices as PCI-SpaceWire Bridge, USB brick, etc.
- In this case SpiNSAW forms RMAP-packet and transmits it to the software of the device that is used.
- The device software transmits it to the network through the SpaceWire channel. When reply an RMAP-packet is received, the device’s software should send it to the SpiNSAW for the further processing.

![Diagram of SpiNSAW with third party SpW units](image-url)
Conclusion

• SpiNSAW is a convenient tool for SpaceWire switches network administration.

• It makes possible to set switches’ operating modes in the network and to control and monitor their state in a simple way.

• The SpiNSAW allows to send time-codes, distributed interrupts, RMAP-packets and data packets that can be convenient for distributed system work testing.

• SpiNSAW can be used for the network administration with different types of devices.

• SpiNSAW can be used without GUI, as a library of network routers administration functions, in other operating systems (e.g. Linux, etc.) also, for building specific network administration software