

Highlights

- Up to 35 expanded ports on 1 muxed port;
- Up to 12 independent serial hubs, each one composed by:
 - 1 muxed port,
 - 2 expanded ports on the same board,
 - freely expandable by setting the following board as "Expansion";
- 1 or 2 CPU (controller) boards;
- SNMP support;
- Fully-configurable serial interfaces:
 - Electrical standards (V.24, V.36, etc),
 - Baud rate (from 300 to 115200),
 - Timings (also using internal clock if not available on the external lines);
 - Mode DCE/DTE,
 - Anti-jitter function, independent on each single port.
 - Anti-streaming and modem eliminator functions
- Data retimer function, on the muxed port (Retimer buffer);
- Access policy management, by C105 (based on C105 circuit activation), by Flags (monitoring HDLC filling flags), or On Demand (user command),
- Centralization and remote control (FTP, Web server, SNMP or proprietary NMS).



The SH unit (Serial Hub) is the equipment of Media Switch family specifically designed to act as a user-configurable set of "Serial Hubs". It can:

- Manage a minimum of a single serial hub, composed by 1 muxed port and a number expanded ports ranging from 2 to 35,
- Manage up to 12 independent serial hubs, each one with 1 muxed port and 2 expanded ports,
- Integrate advanced remote control functions via FTP, WEB server, SNMP or proprietary NMS.

Main features

The SH unit manages up to 12 independent sections, each one able to realize a complete serial hub with 1 muxed port and 2 expanded port (V.24 or V.36 with optional adapter cable).

Each section can also operate as an expansion of an existing serial hub (Master Serial Hub), providing three additional expanded ports.

In this way, the same equipment can implement more independent serial hubs, each one configured as a basic serial hub or as an expanded serial hub.

Moreover, the SNMP support of the SH unit allows any workstation on the LAN to obtain detailed information from the unit.

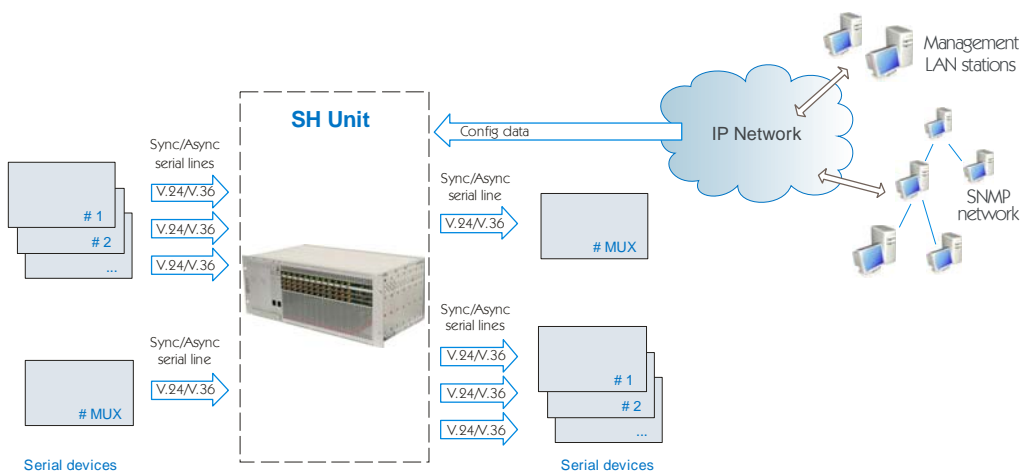
Thanks to the modular design of the SH unit, it can be easily extended, thus preserving the user's investment upon technological changes.

Typical applications

The unique ability to match different serial line types makes the SH unit the ideal solution to operate in application scenarios where both new and old generation modems coexist (V.24, V.36 and/or V.35). Each unit can be configured:

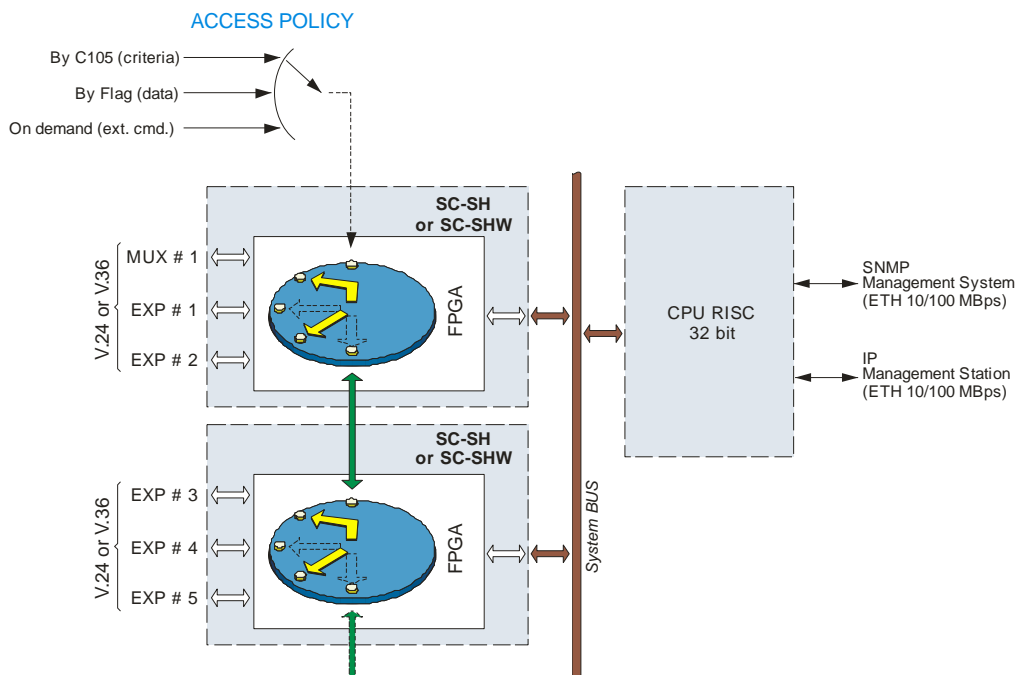
- from a minimum of a single SC-SH (or SC-SHW) board, which implements a complete serial hub with 1 muxed port and 2 expanded port (V.24 or V.36 with optional adapter cable),
- to a maximum of 12 boards type SC-SH (or SC-SHW), each one able to operate as a single serial hub or as an expansion of an existing hub, thus obtaining a serial hub with a maximum of 35 expanded ports.

In this way, the same equipment can implement more independent serial hubs.



The unit is fully remotely configurable, by FTP, WEB, SNMP or proprietary NMS.

Each Serial Hub can be assigned a specific access policy management, by C105 (based on C105 circuit activation), by Flags (monitoring HDLC filling flags), or On Demand (upon user command).



Unit features

Flexible design

The unit flexible functional architecture allows its use in several different operative scenarios. In each condition the SH can be tailored to the actual needs.

The unit is made up of:

- *redundant power distribution*, typically composed by two +5V power supply modules, in redundant configuration, each one able to provide the full current requirement of the unit when in max configuration;
- *redundant CPU*, based on one or two (in redundant configuration) CPU boards, which manages the FPGA configuration of the SH boards, through the system BUS (proprietary protocol), and interfaces the LAN 10/100 Ethernet network, to link the host PC used to perform unit configuration and monitoring;
- *serial hubs*, each one composed by one or more SC-SH (or SC-SHW) boards (up to 12 boards in maximum configuration).

The SC-SH (or SC-SHW) board can, through the FPGA capabilities:

- realize a basic serial hub (if set as *single/master*) to manage one muxed and two expanded serial ports,
- expand a Master board (if set as *expanded*) to increase by three additional expanded ports the serial hub based on the master board,
- manage the serial hub access policy with 3 available options: based on the C105 circuit activation, by monitoring HDLC flags or upon user command,
- interface mixed DCE/DTE configuration,
- use an internal timing, when the clock is not available on the external lines,
- activate antistreaming and modem eliminator functions,
- retiming the data sent to the muxed port (Retimer function),
- insert (if required) the anti-jitter function.

The unit is endowed with several proprietary communication bus that support high speed data transfer and configuration information exchange.

Serial hubs are fully user-configurable via Remote Control software.

Reliability and Maintainability

SH unit highlights are:

- *high reliability*; the state-of-the-art architecture and components are designed to achieve a high MTBF, and all its parts can be redundant, to avoid any possible breakdown;
- *optimized maintainability*, with redundant modules hot-swap interfaces, thus obtaining an extremely low MTTR (Mean Time to Restore) and a network down time close to zero (99.9999% availability).

Technical Specifications

Operational:

The unit can manage one or more independent serial hubs, each one composed by a SC-SH board, set as Master, which can operate in connection with one or more additional SC-SH boards, set as Expanded (each expanded board increases the serial hub by three expanded ports).

Max configuration:

Up to 12 SC-SH (or SC-SHW) boards, managing:

- one serial hub with up to 35 expanded ports
- up to 12 serial hubs (1 mixed and 2 expanded ports).

Serial port characteristics:

Each serial hub port can be set for a different type, standard, baud rate or timing.

- Synchronous / asynchronous
- Baud rate or timing are user configurable (internal clock generator available)
- ITU-T standard: V.24, V.36

Remote setting:

Via WEB server.

Operation:

Local: monitoring functions, by frontal panel LEDs.

Remote: configuration and operation monitoring, via LAN.

MTBF

>500.000 hours for each serial hub
(MIL-HDBK-217F Part stress)

Power distribution

Power distribution is based on two power supplies, in redundant configuration

Mains:

Typical: 220 Vac / 50 Hz

Max range: 90 to 264 Vac

Power consumption:

0,16A (max configuration)

Dimensions

Height: 176 mm (4 U rack 19")

Width: 482 mm (19" rack mount)

Depth: 250 mm (mainframe)
max size 280 mm

For more information about our products, please visit

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