

► Signal Concentrator Unit

The Signal Concentrator Unit (SCU) is a real-time distribution system for ship sensor data. The SCU has been designed for mission-critical applications and therefore intrinsically supports a dual-redundant configuration of two or more SCUs.

Functions

The SCU will typically provide the following functions :

- Receives data from the following sensors: 2 Doppler Logs, 4 GPSs, 2 Electromagnetic Logs, 2 Weather Stations, 2 Echo Sounders and 2 Inertial Navigation Systems
- Monitors status of sensors
- Monitors link status to sensors
- Selects best source of sensor data
- Timestamps sensor data
- Provides age of data for selected sensor data
- Distributes sensor data
- Distributes SCU status
- Distributes status of each sensor and status of the link sensor status
- Displays the status of the SCU, sensors and sensor links

Features

- Configurable
- Flexible
- Scalable
- Replicated Architecture
- Fault-Tolerant
- Networked
- Cost-Effective

Design and Architecture

The SCU implements a distributed hardware architecture ensuring a high level of reliability and freedom from any single point of failure.

Applications

- Naval Ships
- Merchant Ships



SCU Front View



SCU Rear View

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Interfaces

The SCU provides the following interfaces:

- Configurable up to 96 high-speed serial interfaces (UART or HDLC configurable up to 20 Mbps maximum per interface)
- Up to 24 low-speed serial interfaces (UART up to 115 kbps maximum per interface)
- 2 Ultra high-speed LAN interfaces (FDDI, Gigabit Ethernet, 10 Gigabit Ethernet, 4 Gigabit Fibre Channel, etc.)
- Up to 14 PMC slots
- Up to 6 spare VME slots

Specifications	
Power Supply	115 V, 60 Hz or 240 V, 50 Hz The power supply requirements are specified by STANAG 1008
Power Consumption	Typically 3 A
Total Mass	20 kg +/- 10 kg
Temperature	0 C to 70 C Options : 0 C to 55 C, -15 C to +75 C, -40 C to +85 C
Shock	25 g (5 ms)
IP Rating	IP 54 (OEC-60529)
Heat Dissipation	150 W
Noise	< 6 dBA
Dimensions	L = 420 mm B = 483 mm H = 450 mm +/- 100 mm
Performance	Sensor data latency of less than 1 ms for selected high-speed serial interfaces Age of data estimation, from end of reception to end of transmission, accurate to within 100 µs for sensor data on selected high-speed serial interfaces Flash RAM Storage Data for increased vibration tolerance
Software	VxWorks Real-Time Operating System C, C++ Application Software
Options	VME Multibus II Compact PCI PC/104 PCI