TECHNICAL DATA SHEET

Interface module

Component of the Pioneer Set

Intended Use

The hardware and software components of the EIT Pioneer Set are intended for laboratory applications, exclusively. They must not be used on humans! Set-up and use of the components is the sole responsibility of the user.

Specifications

The Interface Module connects the PC with the SensorBeltConnector, provides 4kV isolation, and creates the galvanic isolated power needed by the SensorBeltConnector.
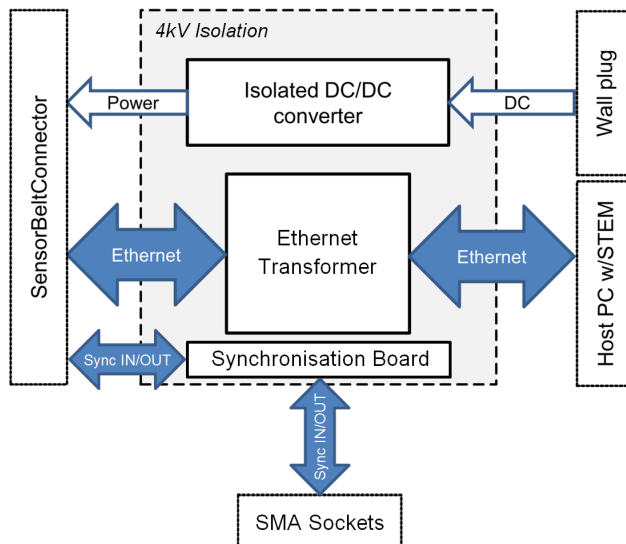
A block diagram is given below.

Figure 1: Block diagram of Interface module. The left connections lead to the SensorBeltConnector, the right connections lead to the PC and a power supply. DC power is provided by a wall-plug module with the specifications given below. A synchronisation signal can be received and transmitted via SMA sockets.

Swisstom AG

The vision of Swisstom AG is to become a globally active and leading provider of life saving, non-invasive medical technology for patient monitoring – to the benefit of patients, physicians, caregivers and society.

Swisstom AG was founded in Landquart (Switzerland) in September 2009 by Josef X. Brunner, Stephan H. Böhm and Peter Seitz. Swisstom AG develops innovative medical devices for the monitoring of lung and heart function in ICU patients and patients undergoing general anesthesia. End-users include physicians (primarily intensivists and anesthesiologists) and other health care professionals.

Unlike traditional tomographic methods, Swisstom´s imaging is driven by electrical impedance tomography (EIT). This technology will serve Swisstom as a platform for future product developments.

Figure 2: Interface module
Module contains galvanic isolation for SensorBeltConnector and Ethernet connection to PC.

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The data interface to the attached PC follows the Ethernet standard and provides galvanic isolation. The power is provided by a separate medical grade AC/DC converter. The SBC Interface delivers the power for the SensorBeltConnector and the Data Interface, both with galvanic isolation.

Activating the synchronisation input (Sync IN) sets the Sync OUT signal for a defined number of periods to high level. All I/Q-payload data is set to zero while the Sync OUT signal is on high level.

Connection to SensorBeltConnector

Signal	Description	
Ethernet Tx+	Digital Signal	Serial Communication
Ethernet Tx-	Digital Signal	Serial Communication
Ethernet Rx+	Digital Signal	Serial Communication
Ethernet Rx-	Digital Signal	Serial Communication
Source V_{cc}	+ 6 VDC, 1A	Supply
Source GND	GND	Supply
Source V_{ee}	- 6 VDC, 0.5A	Supply

Connection to Wall Power Supply

	DC Input	Min	Typ	Max	Unit
V_{CC}	Supply voltage	10.0	12.0	15.0	V
I_{CC}	Current	n.a.	1000	2000	mA

Connection to Synchronisation

	DC Input
Sync IN	Open collector input (switch or 3.3V/0V voltage)
Sync OUT	Square wave with 50% duty cycle, corresponds with frame rate

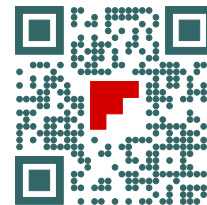**For more information**

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