DIGITAL INDUSTRIES SOFTWARE

Simcenter SCADAS Lab 20-slot main-frame for Vibration Control

Simcenter/SCL2E20V-RB/2406/20240625

Product Information Sheet

Simcenter SCADAS Lab Mainframe

Simcenter SCADAS Lab is a state-of-the-art laboratory data acquisition system that supports a wide range of applications through a variety of signal conditioning and flexible transducer connectivity.

The SCL2E20V-RB incorporates the proven Simcenter SCADAS Lab technology and is designed with industrial grade components having extended temperature range for optimized reliability.

The SCL2E20V-RB is designed in a 19” rack mountable frame allowing up to twenty slots for variety of input and output modules and a high-speed Ethernet interface for communication to the host computer.

BENEFITS

- Easy 19” rack mounting mainframe
- Configurable from 8 to hundreds of channels

FEATURES

- Up to 480 input channels in one frame (using V24 modules)
- 24-bit effective DAC output for Vibration Control with Reduced Bandwidth (V-RB series) with 5 kHz real-time control bandwidth including tapered start-up and shut-down
- Status output for advanced synchronization purposes
- Safely control via hardware emergency stop and AC power watchdog
- Industrial grade components with extended temperature range for optimized reliability
- LCD front-panel indicators for enhanced user feedback and easy channel identification
- 1.25 GBit hotlink fiber optic main-secondary connection with long optical cables for distributed system configurations.

Enhanced user feedback is supported with digital displays indicating module identification and adaptive channel numbering. Channel expansion and lab-mobility is supported via 1.25 GBit hotlink fiber optic main-secondary interface for arbitrary mix & match with additional SCADAS Lab/Mobile/Recorder mainframes.
The system controller includes dual channel 24-bit bit-stream arbitrary source excitation for signal generation up to 5 kHz.
Fully under hardware control, it guarantees a controlled shutdown procedure in case of an emergency shutdown, communication loss or power failure situations. By default, the system controller is equipped with an IRIG-B input for multiple frame synchronization and absolute time annotation. The IRIG-B mode can behave as tacho input via a software toggle.

Safety Precautions
The Simcenter SCADAS Lab continuously

interrogates the host to establish valid communication line. In case of communication loss, the hardware initiates controlled shut down process. The unit optionally supports DAC shut-down control unit for emergency stop” as well as preventing unauthorized enabling after controlled shutdown procedure.

The shutdown control unit is equipped with two connectors with “Normally Open” and “Normally Closed” contacts for enhanced safety conditions. The LED indicators provide clear visual feedback on the status of the output for DAC enable, manual abort, “Normally open” & “Normally closed” faults.

Specifications SCL2E20V-RB
Number of slots:

The SCL2E20V-RB mainframe has 21 slots; one is reserved for system controller

Power input

Auto ranging input; 90- 240 VAC, 40~400 Hz.

Power management:

Rear ON/OFF switch,

Power consumption

190 W maximum

Cooling

Rear fan cooling
SPL levels measured at 1m distance (microphone pointing at middle of the side facing the microphone): 42dB(A) rear, 33dB(A) front, 36dB(A) side.

SYNC with IRIG-B Time Code

- Multi-purpose input as SYNC/IRIG-B or Tacho input (software selectable)
- Analog & digital IRIG-B time code mode (software selectable)

- IRIG-B AM (analog) according to B126 code format
- IRIG-B DCLS (digital) according to B006 code format
- External clock and time-of-the-day synchronization
- Isolated TTL input
- Input can be switched to output to generate a digital IRIG-B signal (software selection) for synchronization of external clocks

*Requires specific conditions and is not guaranteed in all circumstances

with the SCADAS clock (Note: clock signal is IRIG-B compatible with accuracy required for sample-accurate data acquisition using SCADAS frames)

Tacho mode*

- Analog and digital tacho modes
- Input pulse rates in analog mode up to 40 kHz and in digital mode up to 204.8 kHz (up to 1MHz using 'pulses to skip')
- Tacho accuracy of 1.2 nsec
- Input range from 200 mV to 40 V
- Supporting ICP type tacho sensor
- Voltage sensor supply 5 V and current supply 5 mA @ 28 V
- (*Simultaneous use of DAC and Tacho is not possible.)

Signal generator

- Two short circuit protected single ended outputs via grounded BNC socket with an output impedance of 50 Ω
- 24-bit bit-stream DAC
- Dynamic range is 110 dB
- Interpolation filters are a combination of analog reconstruction filters and digital interpolation filters with noise shaping
- Signal generation up to 5 kHz
- Maximum output voltage of ±10 V can be attenuated in software down to ±300 mV

Main-secondary interface

Optical data transfer and clock distribution; the total main-secondary coverage is over 250 meters point-to-point

Multi-frame configurations

SCADAS Lab, Mobile and Recorder frames can be combined in a single measurement configuration. All frames can be connected to a single 10Gbit switch that streams the combined data to a single PC running Testlab™.

Maximum throughput is guaranteed up to 186 channels at 204.8kHz (requires PC and hard disk capable of handling these throughputs).

Note: multi-frame functionality is fully supported and available on E-frames only (SCL2Exx, SCM2Exx, SCR2Exx) in combination with conditioning modules of generation E or more recent. Restrictions apply for modules of type WFI2(-KR), CIM2, AO16 and ESO64. Synchronization is based on internal timing mechanisms, GPS is disabled in case of Multi-frame operation.

Contact your local representative for more information.

Ethernet interface

The 1Gbit connection provides a throughput rate up to 19 MSamples* of 24 bits. Simcenter SCADAS Hardware supports measurements for up to 1024 channels in up to 31 frames (1 main and 30 secondary frames). Max length 80m.

Calibration section

Calibration module includes system clock and voltage reference using 24 bits DSP and a dedicated high accuracy digital to analog converter

Sound Camera support

Configurable Sync (IRIG-B) output provided on tacho connection for synchronization with HW-SSL-SC45 Sound Camera.

Dimensions

Width: 448 mm (19")

Height: 177 mm

Depth: 448 mm

Weight:

18 kg

Temperature:

Operating: 0 ºC to +45 ºC

Storage: -20 °C to +70 °C

Pressure operating range

Atmospheric pressure from 0.5 to 2.5 bar

Relative humidity:

Up to 95 % non-condensing

Vibration:

(Sinusoidal, conform IEC 68-2-6):

24-60 Hz @ 0.15 mm peak,

60-150 Hz @ 2 g,

10 sweep cycles in each axis, sweep rate 1 Oct/min (non-operating).

Shock:

(Conform to IEC 68-2-29):

10 g for 16 ms, ½ sine wave, 500 bumps in each direction, 2 bumps per second (non-operating).

Ordering information:

Support of Simcenter SCADAS Frames and Modules may be restricted in specific Simcenter Testlab application workbooks.

Please check with your local representative for full details.

SCL2E20V-RB:	Simcenter SCADAS Lab 20-slot, 19-inch vibration control mainframe (with integrated optical Main-Secondary option). Reduced Bandwidth (V-RB) according to EC Treaty 428/2009

- USB Gigabit LAN adapter for notebook
- Optional Gigabit PC adapter card can be selected (SCX-HI-E-D)
- LEMO to 2x BNC adapter cable - 50cm
- LEMO to 1x BNC adapter cable - 50cm
- 1m main-secondary fiber optic cable
- Jumper plug for Stop connection
- 2m CAT6 FTP cable

Included accessories

Recommended Accessories

SCx-DSCU-II:	SCADAS DAC shutdown control unit

Optional Accessories

SCL21S: Simcenter SCADAS Lab 21-slot 19-inch secondary frame

CE

When installed in SCM//SCL/SCR/SCD platforms,

This hardware is in conformity with the provisions of EU Directives 2014/35/EU, 2014/30/EU and 2011/65/EU

Classification and Export Control EAR99. This equipment is not listed on Commerce Control Lists. This equipment is not classified as dual use.

This equipment is manufactured by Siemens Industry Software Netherlands B.V, The Netherlands, on behalf of the intellectual property owner Siemens Industry Software NV, Belgium.