

DIGITAL INDUSTRIES SOFTWARE

# Simcenter SCADAS Mobile Mainframes

Simcenter/SCM2E0x/2406/20240625

## Product Information Sheet

### Frame

The SCADAS Mobile is a very compact front-end that accommodates dual source, dual tacho (one of which can be switched to digital/analog IRIG-B mode), single CAN-bus and up to 216 input channels. Its compact size, low weight and battery operation makes it the ideal mobile sound and vibration analyzer.

SCADAS Mobile frames support a high-speed Ethernet interface to the host. With a throughput rate of maximum 14 MSamples/sec, the SCADAS Mobile offers full bandwidth throughput to the host for all channels.

## BENEFITS

- Ultra compact size, low weight and rugged housing for rough environments
- Modular system with precision signal conditioning and channel count independent sampling frequency.
- Accommodates 8 to 216 input channels as a single frame configuration or 1024 input channels as a Main-Secondary configuration

## FEATURES

- Built-in battery for independent operation
- 3.8-14 MSamples/sec throughput via Ethernet interface
- Ultra quiet, no fan cooling
- True main-secondary configuration beyond clock synchronization: fully synchronized data is saved in one measurement file
- Onboard dual tachometer input, SYNC in and output for Sound Camera connection, CAN bus interface and dual signal generator output

### Measure anywhere

Because of its robustness, exceptional environmental specifications, flexible power requirements and wide operating temperature range, the SCADAS Mobile can be employed in virtually any mobile test campaign.

### Ultra-quiet, no fan cooling

Having no cooling fan, the SCADAS Mobile is the ideal system for critical acoustic measurements. The

combination of three advanced techniques eliminates fans

- The input modules are based on low power components, reducing power consumption to less than 0.5 W per channel.
- Heat is dissipated via an integrated cooling block on the rear of the frame. The heat from the printed circuit boards is transferred via the back plane connectors and via cold walls.
- An intelligent power management system, monitoring system activity, sets SCADAS Mobile in power down mode when no measurements are done.



### Battery operation

The SCADAS Mobile mainframe includes a built-in battery for mains independent operation of maximum 2½ hours (SCM2E01). The battery is charged automatically when external power is connected.

Model	Operation time from battery (typical)
SCM2E01	150 min/21 channels
SCM2E02	90 min/48 channels

	(60 min with VB8)
SCM2E05	60 min/120 channels
SCM2E09	60 min/216 channels

### Specifications

#### Number of free slots

SCM2E01: 1 slot

SCM2E02: 2 slots

SCM2E05: 5 slots

SCM2E09: 9 slots

Each frame has one additional slot dedicated for the system controller Simcenter

#### Main-secondary interface

SCADAS Mobile supports measurements up to 1024 channels in maximum 31 frames (1 main and 30 secondary frames). Not available on SCM2E01).

#### 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 WF12(-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.

#### Power input

Wide range DC input from 10.8 VDC to 42 VDC (on the DC-IN connector) with inverse voltage protection; AC operation via external mains adapter.

Switch from external DC power to the internal battery operation when DC input at DC-IN drops below 9 VDC.

**Power management**

ON/OFF switch, automatic sleep mode

**Remote on/off**

With the remote on/off functionality, Simcenter SCADAS Recorder switches on/off by an external signal, using SCX-CAS22 breakout box. (Available from TL18.1 in Frontend mode if SPM50 or SPM80 power supply is installed in the frame)

**Power consumption (typical)**

SCM2E01: 15 W  
 SCM2E02: 25 W  
 SCM2E05: 40 W  
 SCM2E09: 85 W

**Rechargeable Li-ion battery charging time**

**SCM2E01-SCM2E05**

Device on: 5 hrs (0.5 A)  
 Device off: 2.5 hrs (1 A)

**SCM2E09**

Device on: 10 hrs (0.25 A/batt)  
 Device off: 2.5 hrs (1 A/batt)  
 Nominal voltage: 22.2 V

Charging during measurements limits temperature range to 40 °C;

**Tacho input\***

- Dual 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
- 5 V sensor supply delivering up to 200 mA per 2 tacho inputs
- ICP sensor supply of 5 mA from 28 V
- (\*Simultaneous use of DAC and Tacho is not possible.)

**Sound Camera support**

Configurable Sync (IRIG-B) output provided on tacho connection for

synchronization with HW-SSL-SC45 Sound Camera.

**SYNC with IRIG-B Time Code**

- Multi-purpose input as IRIG-B or Tacho input 2 (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 2 can be switched to output to generate a digital IRIG-B signal (software selection) for synchronization of external clocks with the SCADAS clock (Note: clock signal is IRIG-B compatible with – accuracy required for sample-accurate data acquisition using SCADAS frames)

**Signal generator**

- Two short circuit protected single ended outputs via grounded LEMO socket
- 24-bit bit-stream DAC
- Dynamic range is 110 dB referred to maximum output signal for 20 kHz bandwidth
- Interpolation filters are a combination of analog reconstruction filters and digital interpolation filters with noise shaping
- Signal generation up to 40 kHz
- Maximum output voltage of ±10 V can be attenuated in software down to ±300 mV

**CAN FD support:**

The Simcenter SCADAS Mobile SYSICON module accommodates CAN-FD bus interface that are compatible with the ISO11898-1:2015 (CAN-FD) standard.

The SYSICON CAN is compliant with the CAN 2.0A/B and CAN-FD message protocol which is widely accepted and used by most vehicle manufacturers, and also supports the SAE J1939 truck and bus standard.

The raw CAN data stream can be recorded and stored on the disc and it can be de-coded later in Testlab. Only selected channels will be resampled during acquisition.

**Ethernet interface**

The industry standard Ethernet host interface connection provides a maximum throughput rate at 24 bits: SCM2E01: 3.8 MSamples  
 SCM2E02 – SCM2E09: 14 MSamples  
 Max length 80m.

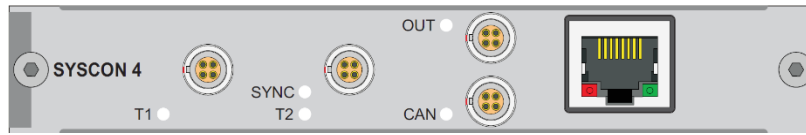
**Dimensions & Weight**

	Width (mm)	Height (mm)	Depth (mm)	Weight* (kg)
SCM2E01	203	58	260	2.5
SCM2E02	216	76	271	3.5
SCM2E05	340	78	295	6.2
SCM2E09	345	140	300	10.5

\*Full configuration

**Temperature**

Operating: -20 °C to +55 °C  
 Storage: -20 °C to +70 °C



**Cooling**

Heat conduction via printed circuit board connectors; sides of the printed circuit boards are cooled via cold walls connected to cooling block at the rear

**Pressure operating range**

Atmospheric pressure from 0.5 to 1.5 bar

**Relative humidity**

Up to 95 % non-condensing at 23 °C and 50 % at 45 °C

**Vibration protection**

Random vibration, non-operational, method 514.5 (Procedure 1, Category 24)

Condition: Mounted on a S&V fixture

Test directions: 3, perpendicular

Testing time: 60 min/direction

Designation: MIL-STD-810F, method 514.5

RMS: 7.7 grms

**Shock protection**

Shock test, non-operational, based on 516.5

Condition: Mounted on a S&V fixture

Test directions : 6, (X-, X+, Y-, Y+, Z-, Z+)

Number of shocks per direction: 3

Shock (Amplitude): 60 gpk

Duration: 11 ms saw tooth shock pulse

Designation: Based on MIL-STD-810F, 516.5, pre-pulse greater than 3 g

Vibration MIL-STD-810F

20-2000 Hz (random): 7.7 grms

**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.

SCM2E01: Simcenter SCADAS Mobile mainframe with one free slot

SCM2E02: Simcenter SCADAS Mobile mainframe with two free slots

SCM2E05: Simcenter SCADAS Mobile mainframe with five free slots

**Upgrade options:**

SCM2E01-U Simcenter SCADAS Mobile 1 slot frame upgrade to SYSCON 4

SCM2E02-U Simcenter SCADAS Mobile 2 slots frame upgrade to SYSCON 4

SCM2E05-U Simcenter SCADAS Mobile 5 slots frame upgrade to SYSCON 4

SCM2E09-U Simcenter SCADAS Mobile 9 slots frame upgrade to SYSCON 4

**Included accessories**

- USB 3.0 to Gigabit LAN Ethernet adapter
- Optional Gigabit PC adapter card can be selected (SCX-HI-E-D)LEMO size 00 connector plug
- LEMO to 2x BNC adapter cable - 50cm
- LEMO to 1x BNC adapter cable - 50cm
- LEMO to 1x SUB-D adapter cable - 50cm
- 2m CAT6 FTP cable
- Mobile grounding assembly 1.5m
- AC-DC adapter 160W+24V/6.67A
- DC power cable (banana plug for SCR/SCM09-10 frames, cigar lighter plug for all other frames)

**Secondary frames**

SCM03S: Simcenter SCADAS Mobile

Secondary frame with three free slots

SCM06S: Simcenter SCADAS Mobile

Secondary frame with six free slots

SCM10S: Simcenter SCADAS Mobile

Secondary frame with ten free slots

SCM-MS: Simcenter SCADAS Mobile

main-secondary interface option for

SCADAS Mobile Main frames (included

in secondary frames)

**Accessories**

SCX-CAS22: Simcenter SCADAS

Breakout box for Remote On/Off

SCM-CSFIX05: Simcenter SCADAS

Mobile car seat fixing frame for 5/7/9-

slots frames



SCM-CSFIX05



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.