

DIGITAL INDUSTRIES SOFTWARE

Simcenter SCADAS ES Power and Network Units

Simcenter/SCES/PNIU/2026

Product Information Sheet

Summary

The following Simcenter SCADAS ES Unit(s) provide backbone stable power, synchronization, connectivity and the on-board Simcenter SCADAS Go Configuration / Recorder, Simcenter SCADAS ES and RS stacks daisy chaining, remote On/Off, Uninterruptible Power Supply, extended input voltage range, USB charging port and Wi-Fi connection:

	Power out	Power in		Connectivity					
Code		External	Internal battery	Host	ES daisy chain	RS daisy chain	IRIG-B	Remote On/Off	Wi-Fi
SCES-PNI	96W	ACDC48V		✓	✓	✓	✓	✓	
SCES-PNU	96W	9.5V..54V or USB3	✓	✓	✓	✓	✓	✓	✓

FEATURES

- Enables Simcenter SCADAS ES stack power, data, calibration and synchronization backbone
- 96 W deliverable power
- 2x 1 Gbps Ethernet host and daisy chain ports (Simcenter SCADAS ES stacks)
- 1x 100 Gbps Ethernet daisy chain port (Simcenter SCADAS RS stacks)
- IRIG-B synchronization
- Remote On/Off
- On/Off button
- On-board Simcenter SCADAS Go Configuration or Recorder
- Software selectable ground lift
- UPS Unit: Internal battery, extended input voltage, Wi-Fi, USB charging port.

BENEFITS

- High performance lab and mobile solutions
- Reliable high-speed, high-channel data acquisition
- Easy mounting and instrumentation
- Easy stacking of units without tools
- Centralized and distributed configurations
- Daisy chaining between stacks
- Use with Simcenter Testlab or with the on-board Simcenter SCADAS Go Configuration / Recorder (accessible through any web browser via PNI or PNU units)

Simcenter SCADAS ES Product Family

Simcenter SCADAS ES is a laboratory and mobile system, part of the Simcenter SCADAS signal conditioning and data acquisition systems family.

Simcenter SCADAS ES is both a distributed and centralized system for front-end signal conditioning and data acquisition hardware. Simcenter SCADAS ES is especially designed for high-performance lab and mobile solutions, reliable and high-speed throughput data acquisition, ideal for high-channel count testing.

Simcenter SCADAS ES Units are combined and stacked by a toolless mechanism, and come in 1 or 2 slot sizes. Some of them come in different connector flavours, normally indicated by its product code suffix.

Each Simcenter SCADAS ES stack can deliver a total throughput up to 17 MSamples/s using 1 Gbps Ethernet ports via a Powered Network Interface Unit (PNI) or a Uninterruptible Power Network Interface Unit (PNU), and supports up to 8x slots of Conditioning Units and a REC unit.

Use Simcenter Testlab or the on-board Simcenter SCADAS Go Configuration and Simcenter SCADAS Go Recorder for instrumentation, channel setup, calibration, sensor validation, measurement control, on-line data viewing and after measurement.



Simcenter SCADAS ES Stack

Included Units

Simcenter SCADAS ES Power and Network Interface Unit	Simcenter SCADAS ES UPS and Network Interface Unit
 Product Code SCES-PNI Description This SCES unit provides power, synchronization, connectivity and an on-board App to a SCES stack in a single slot unit Features and connectivity • 96 W deliverable power (max) • 2x 1 Gbps Ethernet host and daisy chain ports (Simcenter SCADAS ES stacks) • 1x 100 Gbps Ethernet daisy chain port (Simcenter SCADAS RS stacks) • IRIG-B synchronization • Remote On/Off • On/Off button • On-board Simcenter SCADAS Go Configuration or Recorder Connectors • PREV/NEXT: 2x RJ45 (Ethernet) • 100: 100 Mbps Ethernet: 8-pin Yamaichi RS daisy chain • SYNC: 1x 4-pin Yamaichi (Simcenter SCADAS RS REC compatible) • CAL: 9-pin Yamaichi (Simcenter SCADAS RS Conditioning Units compatible) • REM: 3-pin Yamaichi (Simcenter SCADAS RS UPS compatible) • PW: 4-pin mini-DIN Stack Calibration Dedicated CAL connector (internal use) Size 1-slot Power input	 Product Code SCES-PNU Description This SCES unit provides uninterruptible power from an extended voltage input range, USB charging port, synchronization, connectivity, including Wi-Fi, and an on-board App to a SCES stack in a double slot unit Features and connectivity • (Same as PNI Unit) • Internal battery (58.4 Wh net) • Wi-Fi • USB charging port. Profiles: 20 V / 5 A (100W) for a limited stack configuration, 28 V / 5 A (140W) for a full stack configuration Connectors • (Same as PNI Unit) • Wi-Fi: RP-SMA antenna connector (All Simcenter SCADAS compatible) • USB: USB3.0 (type C) Stack Calibration Dedicated CAL connector (internal use) Size 2-slot Power input 9.5..54 V (from external power source, battery, or

Simcenter SCADAS ES Power and Network Interface Unit		Simcenter SCADAS ES UPS and Network Interface Unit	
	48 V (from Siemens approved AC/DC adapter [SCESA-ACDC]). Reverse polarity without damage: <54 VDC. Grounding notes Liftable: Unit (and stack) chassis may be grounded via PW socket shielding connection (and cable braid) via software: • Default: grounded • When lifted: Grounding kit accessory [SCESA-CAB001] may be used instead The RJ45 socket connector shielding is not directly connected to unit chassis.		Siemens approved AC/DC adapter [SCESA-ACDC]). Reverse polarity without damage: <54 VDC. Grounding notes (Same as PNI Unit).

General

Each system may consist of one or more Simcenter SCADAS ES stacks and is based on Linux OS, providing connectivity and the on-board web app Simcenter SCADAS Go Configuration (or Simcenter SCADAS Go Recorder when a Recorder unit is present in the stack).

Data protocol	Ethernet based.
Backbone bus	Each unit shares this bus with power and data when stacked via backbone connector. • Input power • 1 Gbit Ethernet for data and control 48V DC distribution power • Clock reference signal • Real-time bus with low latency • Calibration and input channel diagnostics reference signal • System & Power control signals
Non-volatile memory	Configuration and channel settings stored in the unit.
Unit feedback	Following unit information is reported via LED and to the user interface: booting, upgrading, identification, internal error, active.
Grounding	Units in a stack have a provision for grounding from PNI or PNU via backbone.
Boot time	PNI or PNU will boot a stack of units within 3 min.
User interface	Via on-board Simcenter SCADAS Go Configuration / Recorder web application available in PNI and PNU units.
Dimensions	• Units come in 2 flavors: 1 slot or 2 slot units. • Dimensions when stacked [W x H x D]: ◦ 1 slot unit: 24 x 173 x 282 [mm].

	2 slot unit: 49 x 173 x 282 [mm]. NOTES: - Width does not include 8 mm stacking feet - Depth does not include front connector sockets
Weight	1 slot unit: 1.3 kg average. 2 slot unit: 2 kg average.
Stack calibration	Via dedicated CAL connector available in PNI and PNU units.

Clock synchronization

Clock source

Internal (PNI or PNU): generates the internal clock signal PTP for the backbone of the stack of units.

External: supports a present clock source in the backbone generated by another unit.

Clock accuracies

PTP (IEEE1588)	< 70 ns (when Sync-E is not supported in the network)
Sync-E + PTP	< 10 ns
GNSS	180 ns (typ, from another unit in the stack like REC)
IRIG-B	< 100 ns
NTP	< 1 ms (TBC)
Free running mode	< 5 ppm at 25 °C

Connectivity

General	All Simcenter SCADAS ES Units are accessible via PNI or PNU units.
Host port	1 GbE: To network or host PC. This interface is isolated.
ES Daisy Chain	1 GbE: To another Simcenter SCADAS ES stack (PNI or PNU). This interface is isolated.
DATA / RS Daisy Chain	100 Mbps (1.7 MSamples/s): To another Simcenter SCADAS RS stack (UPS) or other supported Ethernet based devices.
IRIG-B	- Synchronization with IRIG-B Time Code. - IRIG-B DCLS (digital) time code according to B006 code format. - External clock and time-of-the-day synchronization. - Isolated TTL input.
Wi-Fi	- Connector for external Wi-Fi antenna. - IEEE802.11ac (6 MSamples/s) and IEEE802.11g (800 kSamples/s). - Up to 3x simultaneous connections (DHCP server hands out up to 6x leases for different devices in 24h). 5 GHz support.
LTE	Via external modem device (See SCX-SCMUMA1, SCX-SCMUMB1, SCX-SCMUMEU).

Remote On/Off	External voltage source	ON: If there is a voltage source within the range (6.5 V..60 V) OFF (Shutdown): Otherwise (< 4.5 V)
	Potential free switch	Only available when external DC power (from a non-USB source) is present. ON: When switch is closed OFF (Shutdown): Otherwise
On/Off button	Power Up	Button push (3 s)
	Shut Down (gracefully)	Button push (3 s)
	Power Down (override shutdown)	Button long push (> 10 s)

Environmental

Temperature range	- Operating: -20 °C to +55 °C (40 °F to 149 °F) - Storage: -40 °C to +85 °C (40 °F to 185 °F)
Ambient pressure	0.5 bar to 1.3 bar (50 kPa to 130 kPa) according to IEC 60068-2-13. Altitude: –2000 m (mining) to 5000 m (mountains).
Water and dust protection	IP20
Humidity	Resistant to humidity according to IEC 60068-2-30 (cyclic damp heat 12 h + 12 h).
Vibration	MIL-STD-810H, Method 514.8, category 24, 7.7 gRMS, 20-2000 Hz, 1 h per axis.
Shock	MIL-STD-810H, Method 516.8, Procedure I, Operational, Half-Sine pulse, 50 g, 11 ms.
Drop	MIL-STD-810H, Method 516.8 - Procedure IV: Transit Drop. Non-operational, Free fall from 122 cm height, unpackaged.
ESD	- EN61000-4-2 level 4 - ISO 10605
EMC requirements	IEC 61326-1
Calibration	Compliant with ISO 17025. Factory calibration of equipment with voltage channels in our ISO/IEC 17025 accredited calibration laboratory provides formal recognition to competent laboratories and provides a guaranteed & validated calibration method for Siemens SCADAS systems. Siemens will present a full ISO 17025 compliant report according to the accredited published scope and with the official RvA (registration number K159) & ILAC labels.
Certifications	CE, FCC

Connectors and Pinout

General

All connectors support at least 2500 mating cycles, unless specifically indicated.

Power input

Unit product codes	Connector	Pin function
SCES-PNI SCES-PNU	 4-pin mini-DIN power connector Socket: 24-03361	A.DC- B.DC+ C.DC- D.DC+ Shielding: Unit and stack chassis ground (software selectable). When unit is OFF, shielding is not connected to unit and stack chassis ground. NOTE: Shielding is expected to be connected to Earth ground via cable braid (Siemens approved AC/DC adaptor is compliant).
SCES-PNU	 USB type C Socket : 10167129-00031LF	(See standard)

Connectivity

Ethernet

Unit product codes	Connector	Pin function
SCES-PNI SCES-PNU SCES-REC	 RJ45 (1 Gbps for Host and ES daisy chain) NOTE : Only data (no power)	1.DA+ 2.DA- 3.DB+ 4.DC+ 5.DC- 6.DB- 7.DD+ 8.DD- Shielding: N.C.

Unit product codes	Connector	Pin function
SCES-PNI SCES-PNU	 8-pin Yamaichi (RS daisy chain compatible) NOTE : Only data (no power) Socket : YCP-BWI12FCX-08FPEZX-000X Plug : YCP-TPR12FCX-08MSEEX-0xxX	1.N.C. 2.N.C. 3.TX+ 4.TX- 5.RX+ 6.RX- 7.N.C. 8.N.C. Shielding: Unit chassis ground

IRIG-B

Unit product codes	Connector	Pin function
SCES-PNI SCES-PNU	 4-pin Yamaichi (Simcenter SCADAS RS REC compatible) Socket : YCP-BWI12ACX-04FPGZX-000X Plug : YCP-BPR12ACX-04MSGEX-0xxB YCP-ABR12BT0xxX bend relief	1.SYNC in + 2.SYNC in - 3.SYNC out 4.GND Shielding: Unit chassis ground

Remote ON/OFF

Unit product codes	Connector	Pin function
SCES-PNI SCES-PNU	 3-pin Yamaichi (SCRS-UPS compatible)	1.On/Off 2.GND 3.PwrOut Shielding: Unit chassis ground

Unit product codes	Connector	Pin function
	Socket : YCP- BWI09BCX-03FPGZX-000X Plug : YCP- TPR09BCX-03MSGEX-0xxX YCP-ABR09BT0xxX bend relief	

CAL

Unit product codes	Connector	Pin function
SCES-PNI SCES-PNU	 9-pin Yamaichi Cal Socket : YCP- BWI09FCX-09FPCXX-000X Plug : YCP- SPR09XCX-02MSGEX-041B Incl. bend relief black	(internal use). Grounding kit may be used together with this connector to bring Earth ground to the unit and stack chassis ground.

On-board Simcenter SCADAS Go Configuration / Recorder**General**

License-free embedded software on the Simcenter SCADAS ES PNI and PNU units. If a Recorder is present in the stack, the application becomes Simcenter SCADAS Go Recorder.

Provides a multi-user parallel web user interface, accessible through any web browser, wired or wireless (PNU) connection.

Instrumentation

- Single channel setup
- Channel list (grid and card views)
- Persist settings on each connected unit
- Calculated channels setup
- Template management

Calibration & checks

- DC calibration
- Shunt calibration

- Offset balancing
- Verification checks

Monitoring

- Status info: health status, warnings and alarms
- Statistics: overall and instantaneous
- Time data
- Frequency data (FFT)
- Variety of customizable displays: digital, analog, strip chart, XY, 2D

Detailed info

See Simcenter SCADAS Go Configuration / Recorder Manual within the application.

Accessories

Delivered with Units

Product code	Product name	SCES-PNI	SCES-PNU
SCX-HIC-E2*	SCx spare 2-m serial interface cable	1	1
F-LMSSCDNL-G*	Wi-Fi antenna (1x) (SAP# 33002005)		1
SCESA-ACDC	AC/DC adapter PNI/PNU	1	1
SCESA-CAB001	Grounding cable, 3m	1	1
SCESA-USBC	USB-C to USB-C cable 1m		1
F-LMSSCDNL-G	Protective cap backbone	1	1

(*) Compatible with Simcenter SCADAS Mobile/Recorder/Lab modules.

Optional

Product code	Product name	SCES-PNI	SCES-PNU
SCESA-CAB011	Cable remote power pigtail, 5m	1	
SCESA-CAB009	Cable DC power IN, 1.5m	1	1
SCESA-DPC05*	SCES car cigarette lighter cable, 2m		1
SCESA-HAND	SCES stack handgrip set	1	1
SCESA-CASE02	SCES flightcase for full stack	1	1
SCESA-CASE01	SCES flightcase for small stack	1	1

(*) Not yet available