Contents of Chapter 9

Highest quality and reliability: Industrial Controller R&S® PSL3

Designation	Description	Type	Page
Portable Industrial Controller	Mobile measurements and control; Intel Pentium Mobile processor, 512 Mbyte RAM, 3½" drive Interfaces: IEEE 488.2, 2 × COM, 1 × LPT, PC CARD, 2 × Ethernet Graphics: variable from VGA to 1600 × 1200 pixels, 8.4" colour LCD	R&S®PSP7	374
Industrial Controller	Intel Pentium Mobile Processor, 512 MByte RAM, 3½" drive, DVD-Combo drive Interfaces: IEEE 488.2, 2 × COM, 1 × LPT, 2 × Ethernet	R&S®PSL3	376

Measurement software is described in connection with its specific applications in the individual chapters of the catalog.

Portable Industrial Controller R&S®PSP 7

Mobile measurements and their

control made to perfection

Brief description

At long last Portable Industrial Controller makes measurements and their control mobile. Thanks to its compact size and rechargeable batteries, the built-in test and measurement facilities of R&S®PSP can be used at any location and in any situation. The principle of "switch on and go" was consistently applied to the development of the R&S®PSP as with all of Rohde & Schwarz's previous process controllers. Everything one is likely to need is included as standard. Low emission and highly effective shielding are as much part of the R&S®PSP as shock and vibration resistance.

Operation

The front-panel keypad comprises a numeric block, programmable function keys and a cursor block with a spinwheel. The softkeys are fully integrated into Windows. The keypad includes as many keys as are needed to operate programs effectively under Windows, and few enough to avoid input errors. This is especially important for applications in the field of production. Whenever necessary, a keyboard and a monitor can be connected and run parallel to the front-panel keypad and the built-in display.

Fully independent powering

Through the DC input connector R&S®PSP can be powered by a solar panel. R&S®PSP also accepts DC voltages from cars, ships or aeroplanes. With the aid of cascadeable internal batteries the R&S®PSP can be kept in operation for several hours. The power management function informs the user on how long the R&S®PSP can operate with the remaining battery charge, and thus optimizes the available capacity and extends battery life.

Powerful hardware and software components

R&S®PSP comes with an IEC/IEEE bus fitted as standard. Software drivers for almost any programming language are included so that the time-consuming task of installing hardware and software becomes unnecessary. Moreover R&S®PSP with LabWindows/CVI comprises a highly specialized tool for software development.

LabWindows/CVI

National Instruments' LabWindows/CVI (C for Virtual Instrumentation) is an interactive base for the programming of virtual instruments on the R&S®PSP and is regarded by most as today's industry standard. The software is delivered with a selection of drivers and extensive analysis functions. With LabWindows/CVI a C source code can be generated in next to no time, allowing communication with measuring instruments via IEC/IEEE bus or serial interface.

Interfaces

Numerous interfaces like 2 × serial, 1 × parallel, IEC/IEEE bus, PC card are the links to communication between the controller and the controlled devices.

Modular expansion

Despite its small size, R&S®PSP incorporates everything one needs for standard measurement tasks. And in the case that expansions should be necessary for unusual tasks, R&S®PSP can accommodate up to four additional long-size measuring cards.

Best of EMC characteristics

R&S®PSP was developed and implemented along existing EMC guidelines. Extensive filtering measures for the electric components paired with effective shielding and a novel design of the casing led to an industrial controller that can safely be employed even in the vicinity of highly sensitive receivers without impairing the measurement results.

Portable Industrial Controller R&S®PSP7

Fit for the future

All of the components used in the
R&S®PSP were developed and selected
with long-term availability in mind so that
the R&S®PSP will be able to be serviced
or extended even in many years' time. An
advantage that especially production
engineers and system planners value.

*Interactive development and
testing of measurement soft-
ware is a prominent feature of
LabWindows/CVI*
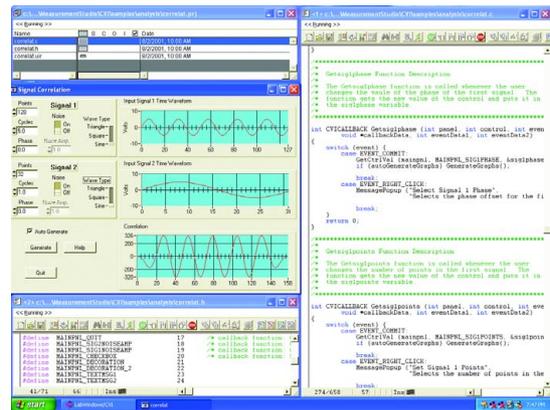
Specifications in brief

**You will find detailed and binding data on the enclosed CD
(../DATASHEET/PSP7.pdf), or, for the latest updates, visit
www.rohde-schwarz.com, search term: PSP7**

CPU	Intel Pentium Mobile Processor
RAM	512 Mbyte
Display	LCD colour, 8.4"
Screen	anti-glare
Mass storage	
Hard disk drive	3 ½"
Floppy disk drive	1.44 Mbyte, 3 ½"
Interfaces	
-internal-	
Available interfaces	3 × 16 bits, dimensions (L × H):
ISA	330 mm × 140 mm
ISA	330 mm × 140 mm
ISA	312 mm × 140 mm
ISA/PCI	1 × 16 bit or 32 bit with L × H: 312 mm × 140 mm
-external-	
IEEE/IEC	IEEE 488.2, compatible with NI NAT
Serial	2 × RS-232-C
Printer	Centronics LPT1 (ECP, EPP)
PCMCIA	release 2.0, type III, connector
Keyboard, mouse	5-contact DIN, 5-contact R&S®PS/2
USB	2 × USB 1.1
Ethernet	1 × 10/100 Mbit/s, RJ-45 1 × 10/100/1000 Mbit/s, RJ-45
Software	
Operating system	Windows XP Embedded (E) (optional)
Test & measurement software	LabWindows/CVI (optional)
Graphics	
With integrated LCD	VGA standard: 800 × 600 pixels
For external monitors	1600 × 1200 pixels max.
General data	
Rated temperature range	+5°C to +45°C
Power supply	
AC supply	100 V to 120 V ±10%, 50 Hz to 400 Hz ±5% 220 V to 240 V ±10%, 50 Hz to 60 Hz ±5%
DC supply	DC, 10 V to 32 V
Dimensions (W × H × D)	412 mm × 198 mm × 380 mm
Weight	8 kg

Ordering information

Portable Industrial Controller	R&S®PSP7	1099.6002.74
Accessories supplied	pocket guide, manuals, power cable, connector for external DC operation	

Options

Software		
(only together with R&S®PSP, factory fitted)		
Windows XP Embedded (E)	R&S®PSP-K12	1091.4700.32
Windows XP Embedded (E) + LabWindows/CVI from NI	R&S®PSP-K13	1091.4800.32
Interfaces		
2nd IEC/IEEE Bus (AT GPIB, 488.2)	R&S®PS-B4	1006.6207.04
TTL I/O Interface, 40 I/O ports, 8 relays, 8 optocouplers, 3 timer	R&S®PS-B11	1006.7303.02
TTL I/O Interface without relays, optocouplers, timers	R&S®PS-B11	1006.7303.04
SCSI Host Adapter	R&S®PS-B27	1064.5500.02
SCSI PC Card Adapter	R&S®PS-B5	1134.8101.02
External USB CD-ROM Drive	R&S®PS-B6	1134.8207.02
Memory		
256 Mbyte Memory Card PCMCIA Type III	R&S®CMU-Z1	1100.7490.04
Recommended extras		
Compact keyboards with integrated trackball (37 cm × 13.8 cm × 1.9 cm)		
German	R&S®PSP-Z1	1091.4000.02
English	R&S®PSP-Z2	1091.4100.02
(other keyboards on request)		
IEC/IEEE bus Cable		
0.5 m	R&S®PCK	0292.2013.05
1 m	R&S®PCK	0292.2013.10
2 m	R&S®PCK	0292.2013.20
4 m	R&S®PCK	0292.2013.40

Industrial Controller R&S®PSL3

Powerful controller integrates

easily in test environments

New

Brief description

Maximum reliability
Reliability, long service life and user-friendly service are of primary importance, particularly in industry. The R&S®PSL3 was optimized to meet exactly these requirements. Thus, we have good reason for using the R&S®PSL3 as the standard controller in our own Rohde & Schwarz system solutions.

Excellent price/performance ratio
Although industrial controllers tend to be expensive, the R&S®PSL3 is favourably priced. By focusing on the main functions, we were able to achieve an excellent price/performance ratio without compromising on the hardware components. The sophisticated concept offers maximum flexibility. Functionality can be expanded almost limitlessly.

**Tried-and-tested
Rohde & Schwarz quality**
Rohde & Schwarz is well-known for the high quality of its products and has years of expertise in the field of industrial controllers. Values specified in the data sheet such as mechanical resistance, temperature, safety and EMC characteristics are reliably checked and optimized through complex tests.

Main features

◆ Maximum reliability due to fully optimized design and comprehensive tests in manufacture
◆ All development done inhouse and "made in Germany", ensuring availability for spare parts for years to come
◆ Excellent EMC values ensure minimum emission and block out electromagnetic interference
◆ Comprehensive interfaces for quick integration in test environments
◆ Energy-saving design throughout, thus low temperature stress on the components
◆ Customized and flexibly expandable
◆ Compact design, installable in racks
◆ Excellent price/performance ratio in the industrial segment

Characteristics

Device concept – compact and flexible
Despite its small dimensions, the robust housing is extremely expandable. Cards can be inserted in four unused PCI slots and two ISA slots, thus protecting investments in existing systems that are based on the earlier bus system, and were in some cases expensive because they were customized. Clamps ensure the controller is locked firmly in place. The housing has

sufficient space to accommodate a second hard disk. A CD-RW/DVD disk drive is just as much part of the standard equipment as the 3.5" disk drive.

Wealth of interfaces that leave almost nothing to be desired
◆ Two USB controllers provide four USB ports, two of which are located at the front which is particularly advantageous in rack-mounting
◆ Two independent Ethernet controllers permit the flexible integration of the R&S®PSL3 in Ethernet networks (LAN). Here, too, one of the two interfaces is available at the controller front
◆ Two serial (COM1/COM2) and one parallel (LPT1 (ECP, EPP)) interface permit connections also to conventional test environments
◆ In addition to the analog VGA standard connection, the R&S®PSL3 also offers a digital DVI interface which allows operation of suitable TFT monitors without conversion losses (at different resolutions). The result is impressive – truly brilliant images
◆ Of course, an industrial controller would not be complete without a GPIB interface. It is included in the base unit and compatible with the quasi industrial standard set by National Instruments (AT-GPIB/TNT)

Industrial Controller R&S®PSL3

**Our commitment:
excellent EMC values**

The outstanding EMC values of the R&S®PSL3 block out all electromagnetic interference with the test setups. The controller was developed and designed thoroughly in accordance with EMC directives, with the core know-how of Rohde & Schwarz implemented in every aspect. Interfaces to the exterior are specially filtered, and keyboard (option R&S®PSL-Z2) and mouse (option R&S®PSL-Z10) have also been very carefully selected and tested in accordance with the latest EMC directives.

Rear view of the R&S®PSL3: View on the interfaces and free PCI and ISA slots

Specifications in brief

You will find detailed and binding data on the enclosed CD (../DATASHEET/PSL3.pdf), or, for the latest updates, visit www.rohde-schwarz.com, search term: PSL3

CPU	Low Voltage Intel® Pentium Mobile Processor
Memory	L2 Cache, 512 kbyte
	SDRAM, 512 Mbyte
Drives	
Hard disk	3.5" 2nd HD with option R&S®PSL-B7
DVD-Combodrive CD	up to 700 MB, CD-R read/write 24×/24× or better CD-RW read/write 24×/10× or better
DVD	up to 8.5 Gbyte, DVD read 8× or better
Floppy disk	3 ½ ", 1.44 MB
Internal interfaces	

Free slots
  PCI
  ISA
	4 × 32 bit, max 330 mm × 106 mm
	2 × 16 bit, max 337 mm × 121 mm

External interfaces	

Display (max 1600 × 1200)
  DVI
  VGA
	DVI-D connector
	15-pin sub-D connector

USB	4 × USB 1.1 with 2 USB controller
Ethernet	1 × 10/100 MBit/s, RJ45 1 × 10/100/1000 MBit/s, RJ45
Serial	2 × RS-232-C (COM), 9-pin sub-D connector
Parallel	Centronics LPT1 (ECP, EPP), 25-pin sub-D connector
IEC/IEEE	IEC 60625-2 (IEEE 488.2), compatible with NI TNT, 24-pin Amphenol connector

Software	
BIOS	AWARD
Operating System (optional)	Windows XP embedded (english)
Measurement software (optional)	LabWindows/CVI
General data	
Rated temperature range	+5°C to +45°C, meets EN 60068-2-1 or -2

Power supply
 	
  Input
  Power consumption (base unit)
	Power factor correction meets EN61000-3-2
	100 V to 240 V (AC) ±10%, 2.2 A to 0.15 A,
	50 Hz to 60 Hz
	approx. 35 W

Dimensions (W × H × D)	465 mm × 150 mm × 517 mm (19"; 3 height units)
Weight (base unit)	approx. 9.5 kg

Ordering information

Description	Type	Order number
Industrial Controller	R&S®PSL3	1161.5000.04
Accessories supplied	Pocket guide, driver (CD), power cable	
Recommended extras		
2nd Hard disk	R&S®PSL-B7	1157.6470.02
Keyboard, US character set, USB	R&S®PSL-Z2	1157.6870.03
Mouse, optical, USB	R&S®PSL-Z10	1157.7060.02
Operating System Windows XP embedded (english)	R&S®PSL-K12	1157.7160.02
Operating System Windows XP embedded (english) + Labwindows/CVI, full development version	R&S®PSL-K13	1157.7260.02
19"-Rack Adapter for R&S®PSL3	R&S®ZZA-311	1096.3277.00

IEC/IEEE Bus Cables
  0.5 m
  1 m
  2 m
  4 m
	R&S®PCK	0292.2013.05
		0292.2013.10
		0292.2013.20
		0292.2013.40