# Technical Information

# System Process Controllers R&S SPCx

## Powerful controllers for modern systems

The System Process Controllers R&S SPCx come in three basic models covering a wide variety of applications:

- **R&S SPCR**: rackmount model for stationary and mobile systems

- **R&S SPCT**: tower model for stationary applications

- **R&S SPCN**: notebook model - extremely compact, offering high flexibility

- Options for customized extension of basic models

- Various monitors and printers

- All components installed and tested

- Tried and tested compatibility of controller hardware and installed Rohde & Schwarz software, especially Monitoring Software R&S ARGUS

## ROHDE & SCHWARZ

## Introduction

The System Process Controllers R&S SPCx are state-of-the-art controllers with high computing power and functionality to handle the tasks in a system.

Featuring special characteristics, the controllers come into their own chiefly in systems. The high electromagnetic compatibility of R&S SPCR enables its use in environments with strong interference. Low self-generated emission ensures that measurements will not be impaired by fields produced by the controller.

Three standard models and a wide range of options are available to allow the controllers to be configured optimally and conveniently for a given system using time-tested components.

## Overview

Only the functions and data are specified for the controller models and components presented here. Manufacturers' designations were deliberately left out since, taking into account the rapid development on the computer market, it is not possible to foresee what components will still be available in the near future and what will be replaced by new, better products.

The System Process Controllers R&S SPCx always incorporate state-of-the-art technology and the most up-to-date products. In the selection of components, constant high quality and compatibility of hardware and software products are of primary importance.

Powerful computers need powerful software. It goes without saying that the R&S SPCx controllers support various operating systems such as Windows 98, Windows ME, Windows NT, Windows 2000 and Windows XP.

Different applications call for different solutions. Rohde & Schwarz therefore offers three basic models of System Process Controller R&S SPCx:

♦ **Rackmount model R&S SPCR**
  This model is suitable for use both in stationary and mobile systems. The 19" controller can easily be rackmounted together with other instruments of a system. Designed to withstand adverse environmental effects, the sturdy unit can also be used in vehicles and shelters.

♦ **Tower model R&S SPCT**
  This model is normally used in stationary systems, especially in air-conditioned rooms for operating personnel, where sturdy design, high temperature loading capacity and low space requirements are of minor importance. The tower model has the same high computing power and configuration level as the other models.

♦ **Notebook model R&S SPCN**
  A notebook is the ideal solution where space is at a premium, for example in small vehicles. R&S SPCN is a process controller and operator workstation in one and takes up only a minimum of space. Moreover, it can be conveniently used in applications with frequently changing sites.
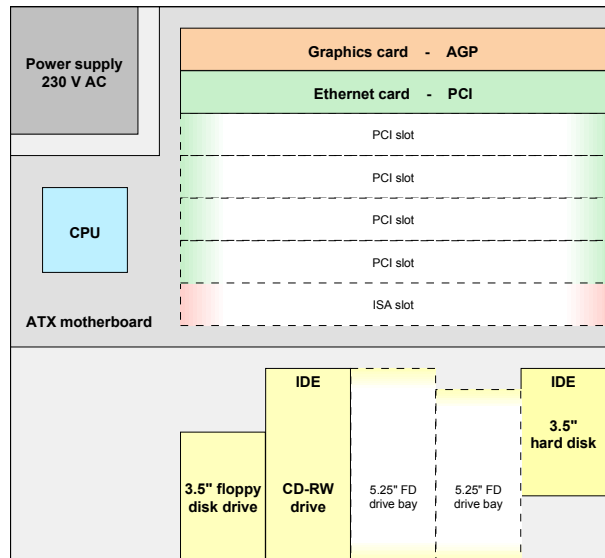
# Rackmount Model R&S SPCR

The rackmount model R&S SPCR is the controller most frequently used in Rohde & Schwarz monitoring systems. The 19" model can easily be integrated in a rack and, thanks to its sturdy design, is an ideal choice also for mobile applications in vehicles.

Example of a R&S SPCR

The R&S SPCR standard model is equipped as follows:

♦ robust, shielded 19" rackable case with front cover protecting the drives, control and display elements, rear connectors and built-in 230 $V_{AC}$ power supply

♦ four PCI slots, one ISA slot, one full-length and one short 5.25" drive bay for optional extensions (maximum 4 IDE devices)

♦ two serial interfaces, one parallel interface

♦ two USB interfaces

♦ CPU

♦ RAM

♦ 100 Mbps Ethernet card

♦ VGA graphics card, AGP

♦ internal hard disk, IDE

♦ 1.44 Mbyte 3.5" floppy disk drive

♦ CD-RW, IDE

Offering ample functionality already in the basic version, R&S SPCR meets the requirements of most monitoring systems. Should a more sophisticated configuration be required, a variety of **options** is available to match R&S SPCR optimally to a given application:

♦ different types of monitors

♦ different types of keyboards

♦ mouse or trackball

♦ different types of printers

♦ additional hard disks, DVD-ROM drives, CD-RW drive, streamer

♦ PCI cards for GPIB, serial port extensions, sound or TTL

♦ ISA card for GPIB

♦ RAM extension

# Tower Model R&S SPCT

The tower model R&S SPCT is particularly suitable for use in stationary applications in air-conditioned rooms. The compact mini-tower case can be placed on or under the user's desk so that the drives are easily accessible. No rack is needed for installation of the controller. The configuration level and computing power of R&S SPCT are essentially the same as those of the rackmount model.
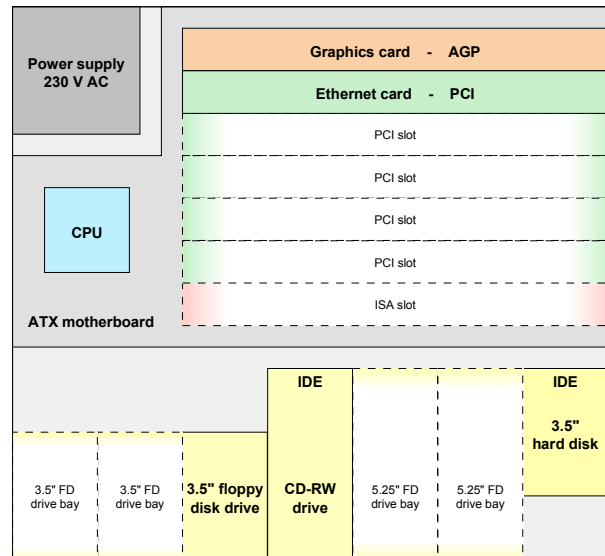


Example of a R&S SPCT

The R&S SPCT standard model is equipped as follows:

♦ mini-tower case with front drives, rear connectors and built-in 230 $V_{AC}$ power supply

♦ four PCI slots, one ISA slot,
two 5.25" and two 3.5" drive bays
for optional extensions
(maximum 4 IDE devices)

♦ two serial, one parallel interface

♦ two USB interfaces

♦ CPU

♦ RAM

♦ 100 Mbps Ethernet card

♦ VGA graphics card, AGP

♦ internal hard disk, IDE

♦ 1.44 Mbyte 3.5" floppy disk drive

♦ CD-RW, IDE



The tower model R&S SPCT likewise comes with a wide range of **options** for tailoring the controller to special requirements:

♦ different types of monitors

♦ different types of keyboards

♦ mouse or trackball

♦ different types of printers

♦ additional hard disks, DVD-ROM drives, CD-RW drive, streamer

♦ PCI cards for GPIB, serial port extensions, sound and TTL

♦ ISA card for GPIB

♦ RAM extension

## Notebook Model R&S SPCN

High flexibility, mobility, compact size and top-class equipment – these are the highlights of notebook model R&S SPCN. Especially in smaller systems, it serves as a controller and workstation in one.



Example of a R&S SPCN

The R&S SPCN standard model is equipped as follows:

- 14.1" TFT display
- PC card slots for optional extension by various PC cards
- one serial, one parallel interface
- one USB interface
- CPU
- RAM
- integrated 10/100 Mbps Ethernet card and V.90 modem
- hard disk
- 1.44 Mbyte 3.5" floppy disk drive
- CD-RW drive
- lithium-ion battery with quick-charge function
- power supply
- carrying bag

The notebook model R&S SPCN likewise comes with a wide range of **options** for tailoring the controller to special requirements:

- different types of monitors
- different types of additional keyboards
- additional mouse or trackball
- different types of printers
- additional DVD-ROM drive
- PCMCIA cards for IEEE 488 and serial port extensions
- docking station
- 12 V car adapter
- lithium-ion battery

## Monitors

The system process controllers can be combined with various monitors to match a given application or specific conditions of use.

Three **CRT monitors** of different size are available, offering a value-for-money solution especially for applications in stationary systems:

- 17" CRT monitor
- 19" CRT monitor
- 21" CRT monitor



CRT monitor - example

The monitors feature flickerfree display with resolution of 1280 x 1024 or 1600 x 1200, depending on the model. Moreover, the displays stand out for their ergonomic design, brilliant colours and high-contrast display.

The three **flat-screen LCD monitors** are particularly suitable for integration in vehicles, where small depth and low power consumption play an important role. Models with 1024 x 768 or 1280 x 1024 or even 1600 x 1200 resolution are available.

- 15" TFT monitor
- 18" TFT monitor
- 20" TFT monitor



LCD monitor - example

For special applications an **15.7" LCD monitor** with integrated **cable TV tuner** is available. When used as PC monitor, it offers 1280 x 1024 resolution.



LCD / TV monitor - example

The choice of monitors is rounded off by a **17" rackmount monitor** for installation into 19" racks or console workstations used in special systems. If, for example, a monitor is needed for servicing purposes at an unmanned remote station, this 17" monitor can easily be integrated into the system rack, doing away with a separate workstation.



Rackmount monitor - example

## Printers

Often, the results obtained with a monitoring system have to be documented on site by means of hardcopies. Rohde & Schwarz therefore offers various printers as extras for its range of system process controllers:

- colour inkjet printers
- B/W laser printers
- colour laser printers

The favourably priced **colour inkjet printer** is used both in stationary and mobile applications. Featuring a resolution of 600 dpi and a speed of up to 11 pages/minute for black and white printouts and up to 8 pages/minute for colour printouts, this printer is ideal for many monitoring systems. Its compact size and low power consumption are of advantage especially for use in vehicles.



Colour inkjet printer - example

The **B/W laser printer** is primarily intended for systems with average printing volume of up to 7000 pages per month. The resolution is 600 dpi, the printing speed up to 8 pages per minute. The printer is small enough to be integrated in larger vehicles or shelters.



B/W laser printer - example

The **colour laser printer** is available to meet more exacting demands, especially in stationary systems where large printing volumes of up to 35,000 pages per month have to be handled. The resolution is 600 x 600 dpi, and the speed up to 16 pages/minute for black and white and up to 4 pages/minute for colour printouts.



Colour laser printer - example

# Specifications

## R&S SPCR

**Processing unit**

| | |
|---|---|
| CPU | $\geq$ Pentium III |
| Clock frequency | $\geq$ 933 MHz |
| RAM | 256 Mbyte (extendable to 512 Mbyte) |
| Cache | 256 kbyte |

**Mass storage**

| | |
|---|---|
| Hard disk | $\geq$ 40 Gbyte, IDE |
| Floppy disk drive | 1.44 Mbyte, 3.5" |
| CD-RW drive | $\geq$ 16x (write), $\geq$ 10x (re-write), $\geq$ 40x (read), IDE |

**Interfaces**

| | |
|---|---|
| Serial | COM1, COM2 |
| Printer | LPT1 |
| Video | 15-pin jack |
| Keyboard | PS/2 connector |
| Mouse | PS/2 connector |
| Network | 100 Mbps Ethernet |
| USB | 2 ports (not supported by Windows NT 4.0) |

**Video**

| | |
|---|---|
| Graphics card | AGP, VGA, $\geq$ 16 Mbyte, $\geq$ 1280 x 1024 |

**Audio**

| | |
|---|---|
| Sound card | onboard |
| | **Please note:** For AllAudio software it is recommended to disable the onboard-sound and use a sound card of type Soundblaster instead (see option list). |

**Software**

| | |
|---|---|
| Operating system | Windows 2000 English |

**General data**

| | |
|---|---|
| Power supply | 230 $V_{AC}$, 50 to 60 Hz |
| Dimensions (W x H x D) | 19" rackmount: 438 mm x 178 mm x 488 mm (overall dimensions: 484 mm x 178 mm x 542 mm) |
| Weight | approx. 15.8 kg (depending on options installed) |

# R&S SPCT

**Processing unit**

| | |
|---|---|
| CPU | $\geq$ Pentium III |
| Clock frequency | $\geq$ 933 MHz |
| RAM | 256 Mbyte (extendable to 512 Mbyte) |
| Cache | 256 kbyte |

**Mass storage**

| | |
|---|---|
| Hard disk | $\geq$ 40 Gbyte, IDE |
| Floppy disk drive | 1.44 Mbyte, 3.5" |
| CD-RW drive | $\geq$ 16x (write), $\geq$ 10x (re-write), $\geq$ 40x (read), IDE |

**Interfaces**

| | |
|---|---|
| Serial | COM1, COM2 |
| Printer | LPT1 |
| Video | 15-pin jack |
| Keyboard | PS/2 connector |
| Mouse | PS/2 connector |
| Network | 100 Mbps Ethernet |
| USB | 2 ports (not supported by Windows NT 4.0) |

**Video**

| | |
|---|---|
| Graphics card | AGP, VGA, $\geq$ 16 Mbyte, $\geq$ 1280 x 1024 |

**Audio**

| | |
|---|---|
| Sound card | onboard |
| | **Please note:** For AllAudio software it is recommended to disable the onboard-sound and use a sound card of type Soundblaster instead (see option list). |

**Software**

| | |
|---|---|
| Operating system | Windows 2000 English |

**General data**

| | |
|---|---|
| Power supply | 230 $V_{AC}$, 50 to 60 Hz |
| Dimensions (W x H x D) | mini tower 225 mm x 382 mm x 420 mm |
| Weight | approx. 12.8 kg (depending on options installed) |

# R&S SPCN

**Processing unit**
| | |
|---|---|
| CPU | $\geq$ Pentium III |
| Clock frequency | $\geq$ 866 MHz |
| RAM | 256 Mbyte |

**Mass storage**
| | |
|---|---|
| Hard disk | $\geq$ 20 Gbyte |
| Floppy disk drive | 1.44 Mbyte, 3.5" |
| CD-RW drive | $\geq$ 8x (write), $\geq$ 4x (re-write), $\geq$ 24x (read) |

**Interfaces**
| | |
|---|---|
| Serial | COM1 |
| Printer | LPT1 |
| Video | VGA |
| External keyboard/mouse | PS/2 connector |
| Modem | V.90 |
| LAN | 10 / 100 Mbps Ethernet |
| USB | 1 port (not supported by Windows NT 4.0) |
| PCMCIA | 2 type I or type II cards or 1 type III card |

**Screen**
| | |
|---|---|
| Display | 14.1" TFT display, 1024 x 768, 32 bit colour depth |

**Power supply**
| | |
|---|---|
| Mains | 115 / 230 $V_{AC}$, 50 to 60 Hz |
| Battery | lithium-ion, $\geq$ 53 Wh |

**Software**
| | |
|---|---|
| Operating system | Windows 2000 English |

**General data**
| | |
|---|---|
| Power supply | 110 to 240 $V_{AC}$, 50 to 60 Hz |
| Dimensions (W x H x D) | 320 mm x 36 mm x 354 mm |
| Weight | approx. 2.7 kg (depending on options installed) |

# Ordering Information

**Basic versions**

| | | |
|---|---|---|
| System Process Controller (Rackmount Model) | R&S SPCR | 3023.8536.02 |
| System Process Controller (Tower Model) | R&S SPCT | 3023.8542.02 |
| System Process Controller (Notebook Model) | R&S SPCN | 3023.8559.02 |

**Options for R&S SPCR / R&S SPCT**

| | | |
|---|---|---|
| RAM Extension: 256 Mbyte SDRAM for R&S SPCR / R&S SPCT | R&S SPCRT01 | 3023.8565.00 |
| Hard Disk Frame for R&S SPCR / R&S SPCT | R&S SPCRT02 | 3023.8571.00 |
| Additional IDE Hard Disk for R&S SPCR / R&S SPCT | R&S SPCRT03 | 3023.8588.00 |
| Additional IDE DVD-ROM Drive for R&S SPCR / R&S SPCT | R&S SPCRT05 | 3023.8607.00 |
| SCSI Controller for R&S SPCR / R&S SPCT | R&S SPCRT06 | 3023.8613.00 |
| Additional SCSI Hard Disk for R&S SPCR / R&S SPCT | R&S SPCRT07 | 3023.8620.00 |
| Additional SCSI CD-RW Drive for R&S SPCR / R&S SPCT | R&S SPCRT09 | 3023.8642.00 |
| Additional SCSI DVD-ROM Drive for R&S SPCR / R&S SPCT | R&S SPCRT10 | 3023.8659.00 |
| SCSI Tape Streamer for R&S SPCR / R&S SPCT | R&S SPCRT16 | 3023.8965.00 |
| GPIB Controller AT-GPIB/TNT with Software and Manual for R&S SPCR / R&S SPCT | R&S SPCRT11 | 4050.0068.00 |
| GPIB Controller PCI-GPIB with Software and Manual for R&S SPCR / R&S SPCT | R&S SPCRT12 | 3023.8694.00 |

| | | |
|---|---|---|
| PCI 4x Serial Port Extension Card for R&S SPCR / R&S SPCT | R&S SPCRT13 | 4049.9636.00 |
| PCI 8x Serial Port Extension Card for R&S SPCR / R&S SPCT | R&S SPCRT14 | 4049.9642.00 |
| PCI Sound Card for R&S SPCR / R&S SPCT | R&S SPCRT15 | 3023.8707.00 |
| PCI TTL Card for R&S SPCR / R&S SPCT | R&S SPCRT17 | 3023.8971.00 |

**Options for R&S SPCN**

| | | |
|---|---|---|
| GPIB Controller PCMCIA-GPIB with Software and Manual for R&S SPCN | R&S SPCN01 | 3023.8788.00 |
| PCMCIA 2x Serial Port Extension Card for R&S SPCN | R&S SPCN02 | 3023.8720.00 |
| Docking Station for R&S SPCN | R&S SPCN03 | 3023.8736.00 |
| Port Replicator for R&S SPCN | R&S SPCN04 | 3023.8742.00 |
| Additional DVD-ROM drive for R&S SPCN | R&S SPCN05 | 3023.8759.00 |
| Additional Battery for R&S SPCN | R&S SPCN06 | 3023.8765.00 |
| Car Adapter for R&S SPCN | R&S SPCN07 | 3023.8771.00 |

**Options for R&S SPCx**

| | | |
|---|---|---|
| 17" CRT Monitor for R&S SPCx | R&S SPCE01 | 3023.8813.00 |
| 19" CRT Monitor for R&S SPCx | R&S SPCE02 | 3023.8820.00 |
| 21" CRT Monitor for R&S SPCx | R&S SPCE03 | 3023.8836.00 |
| 15" TFT Monitor for R&S SPCx | R&S SPCE04 | 3023.8842.00 |
| 18" TFT Monitor for R&S SPCx | R&S SPCE05 | 3023.8859.00 |
| 20" TFT Monitor for R&S SPCx | R&S SPCE16 | 3023.8871.00 |
| 15.7" TFT Monitor + TV Tuner for R&S SPCx | R&S SPCE17 | 3023.8888.00 |
| 17" CRT Rackmount Monitor for R&S SPCx | R&S SPCE06 | 3023.8865.00 |

| | | |
|---|---|---|
| US Keyboard PS/2 for R&S SPCx | R&S SPCE07 | 4049.9671.00 |
| German Keyboard PS/2 for R&S SPCx | R&S SPCE08 | 4049.9665.00 |
| US Keyboard PS/2 with Trackball for R&S SPCx | R&S SPCE09 | 4049.9694.00 |
| German Keyboard PS/2 with Trackball for R&S SPCx | R&S SPCE10 | 4049.9688.00 |
| Mouse PS/2 for R&S SPCx | R&S SPCE11 | 4050.0080.00 |
| Trackball PS/2 for R&S SPCx | R&S SPCE12 | 4050.0074.00 |
| | | |
| Colour Inkjet Printer for R&S SPCx | R&S SPCE13 | 3023.8913.00 |
| B/W Laser Printer for R&S SPCx | R&S SPCE14 | 3023.8920.00 |
| Colour Laser Printer for R&S SPCx | R&S SPCE15 | 3023.8936.00 |

Further options are available on request.

**ROHDE & SCHWARZ**