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FIG 1 The Industrial Controller R&S®PSL1 comes with a wealth of equipment, yet takes up only one height unit.

Industrial Controller R&S®PSL1

Compact yet sophisticated

Controllers are expected to ensure smooth operation, making them a pivotal part of complex measurement systems. The R&S®PSL1 from Rohde & Schwarz, the latest member of the R&S®PSL industrial controller family, is a controller that satisfies ambitious requirements and whose low height is virtually unrivalled.

Purchase with the future in mind

Today you can buy a controller at the electronics supermarket rather than develop or produce it yourself. This solution is tempting in an age when computers are available at almost every corner and often at rock-bottom prices. But what happens just six months later if you require a controller of the same type or a spare part for the PC on which complex and expensive system software has run smoothly to date? You will usually have a hard time finding a suitable replacement, and the allegedly compatible new controller may interact in a completely different way with software that worked fine in the past. You may suddenly find yourself forced to make expensive and lengthy software adaptations and modifications that no one was expecting. This is the nightmare of every system provider. Such situations make you even more appreciative of having a manufacturer that offers powerful industrial controllers that remain reliable for a long time to come. Rohde & Schwarz is now introducing the R&S®PSL1, the latest addition to the R&S®PSL [*] industrial controller family. This powerful controller with flat 19" housing takes up only one height unit and is thus ideal for installations where space is limited (FIG 1).

Emission impossible

Systems for measuring, analyzing or locating electromagnetic signals must contain equipment with minimum radiated emission. However, unwelcome surprises may be in store for you if a controller does not live up to the promises made in the EMC specifications of its data sheet. The R&S®PSL1 won't let you down: Owing to comprehensive testing in the Rohde&Schwarz EMC labs and its sophisticated design, the controller verifiably radiates minimum emission to the outside (FIG 2). For example, when the motherboard was designed, it was crucial that it comply with EMC requirements. The numerous inputs and outputs were complemented by EMC filters and the entire housing was designed as a metal cage. Controller components such as a keyboard or mouse were checked and, if necessary, modified and adapted to meet the desired quality standard. Such refined shielding prevents any unwanted radiated emission and, vice versa, protects the R&S®PSL1 and its internal modules against strong electromagnetic fields. This ensures smooth operation even when it is close to antennas of powerful transmitter systems.

Long-term failsafety

The core of each controller is the motherboard and its CPU. This sensitive component must function reliably and without errors to ensure long-term smooth operation of the entire system. The R&S®PSL industrial controller family uses the same computer kernels that are used in T&M equipment from Rohde&Schwarz, which have been tried-and-tested ten thousands of times. Thus, the controllers in this family achieve above-average meantime between failure (MTBF) values and significantly contribute to the failsafety of a system. Each motherboard is populated with high-end components, and the other device components such as power supply or drives must meet the high quality criteria that Rohde&Schwarz stands for.

Wealth of interfaces

Despite its compact size, the R&S®PSL1, which is primarily used as a central controller, comes with a wide variety of interfaces. In addition to several Ethernet and USB connections, it also provides an IEC/IEEE bus or five serial interfaces plus an audio input/output, depending on the model. Even with this wealth of equipment, the instrument is so compact in design that it offers an internal PCI slot for installing an additional expansion board.

Low power dissipation

Since its motherboard is populated with power-saving components, the R&S®PSL1 has very low power consumption. This drastically reduces power dissipation and minimizes warm-up of the surrounding environment. Since failure rate, which is strongly temperature-dependent, and susceptibility of the system devices to interference need to be kept to a minimum, this is a significant advantage.

Thomas A. Kneidel

More information at www.rohde-schwarz.com (search term: PSL1)

REFERENCES

[*] Industrial Controller R&S®PSL3: New controller generation provides ideal characteristics for industry. News from Rohde&Schwarz (2003) No. 179, pp 16–18

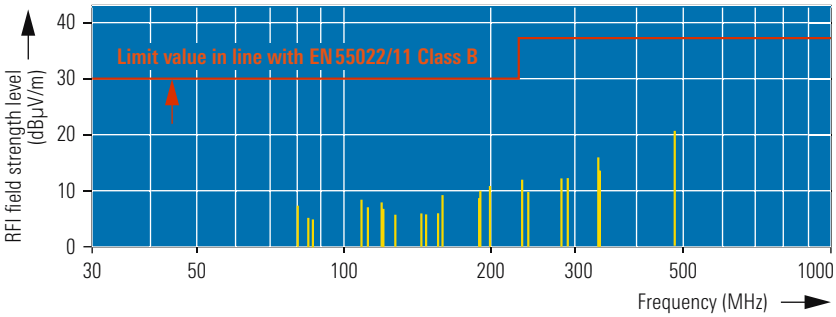


FIG 2 Typical interference level of the R&S®PSL1.

Condensed data of the R&S®PSL1

Processor	latest generation of Intel™ processors
Drives	hard disk and combined DVD/CD-RW disk drive
Interfaces	PCI slot VGA, DVI-D 2 × Ethernet, 4 × USB, 1 × RS-232-C and IEC/IEEE or 5 × RS-232-C and Audio-In/Out, Mic-In
Dimensions	19", 1 HU
Power supply	100 V to 240 V
Power consumption	approx. 35 W

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