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FIG 1 The new Signal Analyzer Module R&S®TS-PAM for multichannel and parallel data acquisition provides floating measurement technology – a feature that is in demand especially in the automotive industry.

Signal Analyzer Module R&S®TS-PAM for the R&S®CompactTSVP Floating, parallel signal analysis based on CompactPCI/PXI

The Signal Analyzer Module

R&S®TS-PAM expands the range

of measurement and switching

modules for the Open Test Platform

R&S®CompactTSVP. These modules are

used in function and in-circuit tests

of electronic modules. A distinctive

feature of the new module for multi-

channel and parallel data acquisition

is floating measurement technology –

which is in demand especially in the

automotive industry.

Continuously improving

The CompactPCI/PXI-based Open Test Platform R&S®CompactTSVP from Rohde & Schwarz [*] provides a fundamental range of T&M functionalities and communication interfaces for hardware and software. Since application scenarios for a such an industrial test platform are permanently changing, the platform needs to be improved continuously and without delay.

The new Signal Analyzer Module R&S®TS-PAM (FIG 1) is the answer to the constant demand for floating measurement with integrated signal conditioning and switching. Its measurement card permits multichannel recording of analog and digital data, in a similar way as a mixed-signal oscilloscope. A free, hardware-independent analysis library simplifies the evaluation of recorded sig-

nals with regard to their waveform and time characteristic.

Flexibility ensures success

The R&S®TS-PAM includes two independently operating measurement units. Their recording method and sampling frequencies are user-configurable (FIGs 2 and 3). Each unit has four input channels that are sampled by an A/D converter with a quick 4:1 multiplexer, either statically or quasi-simultaneously by means of a special scan method. The measured signals are routed to the measurement unit either directly via the front connector of the module or from the switching modules via the analog measurement bus of the Open Test Platform R&S®CompactTSVP. The separately programmable input sensitivities of the eight channels allow you ▶

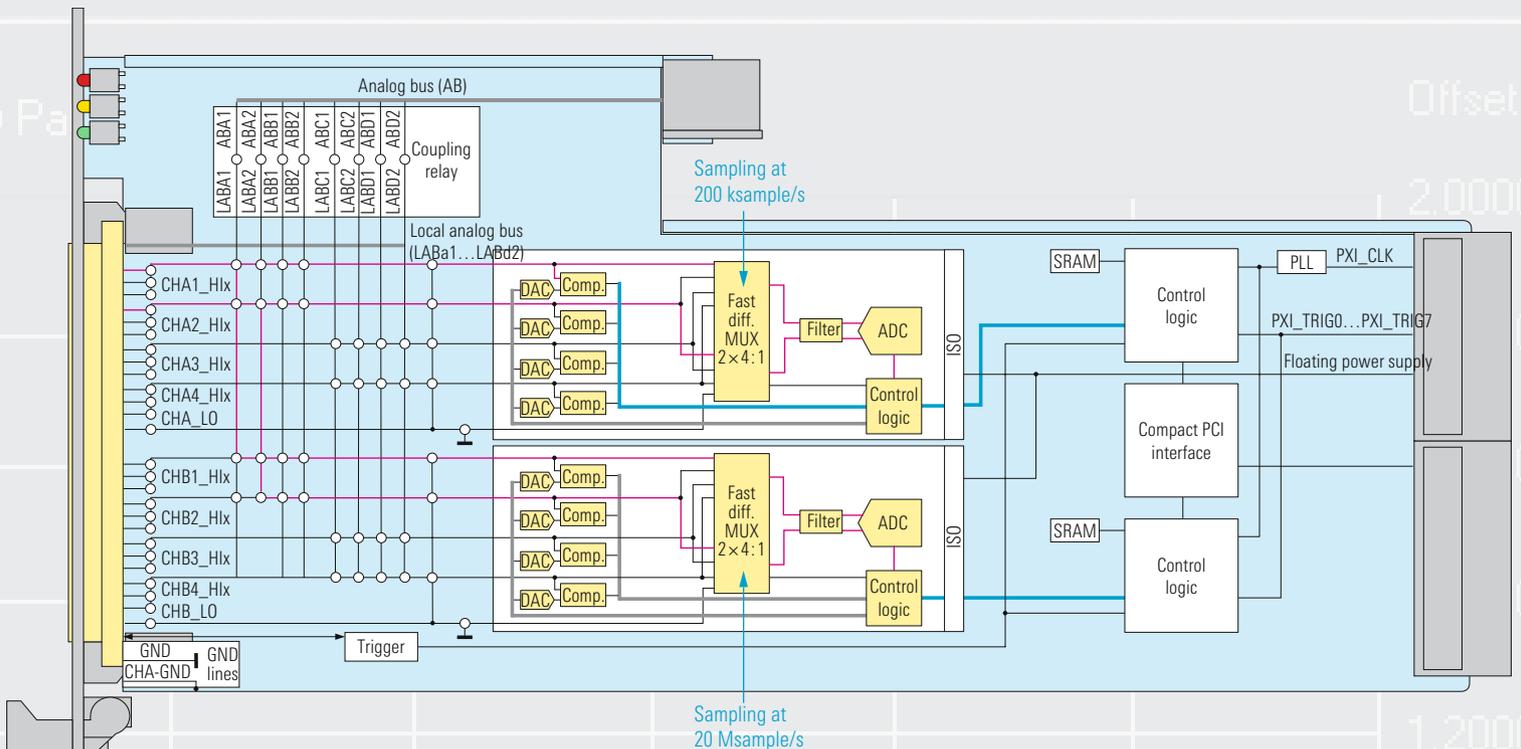


FIG 2 Block diagram of the Signal Analyzer Module R&S®TS-PAM showing the path of the signals to be analyzed (red) and the trigger signals (blue).

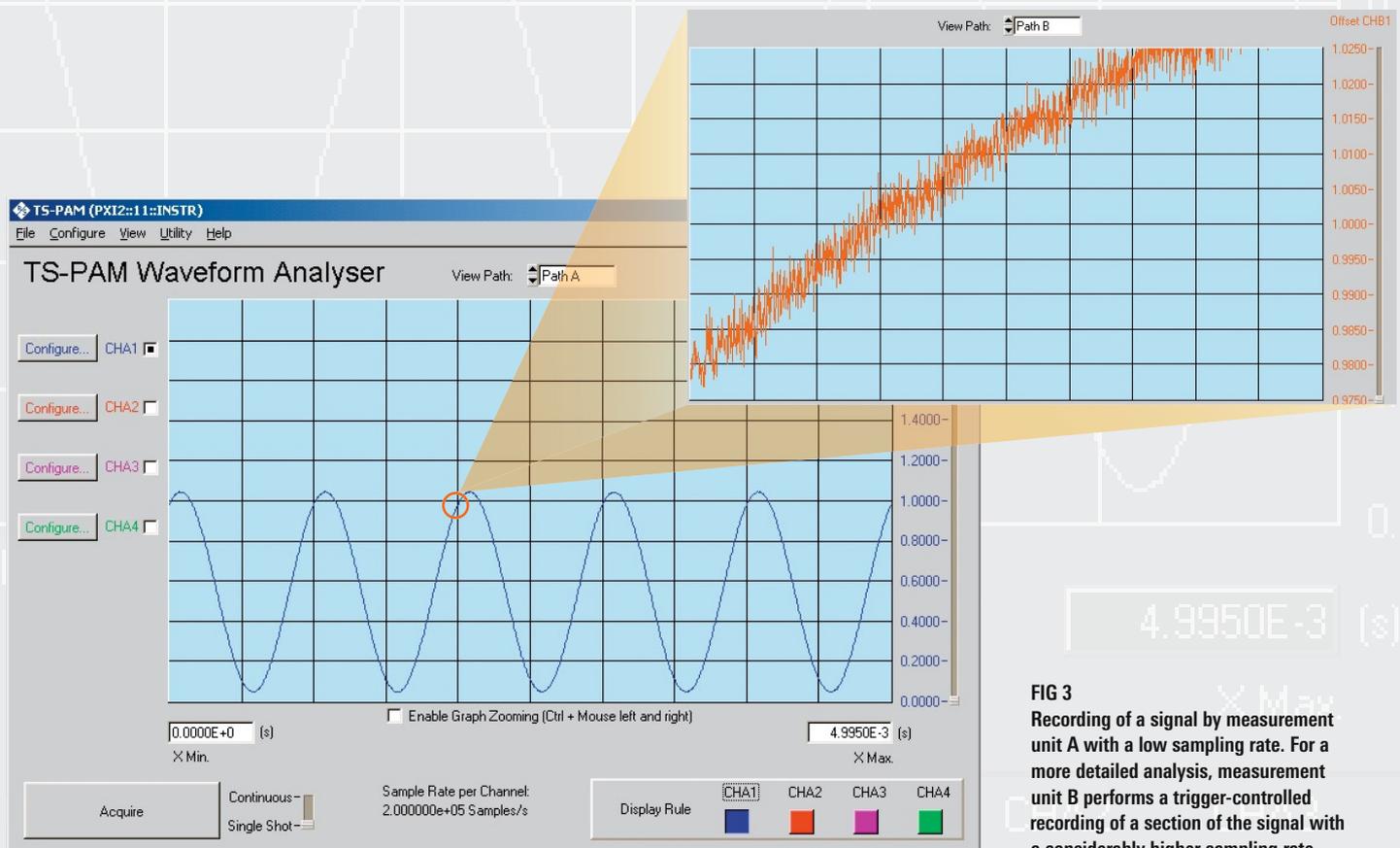


FIG 3 Recording of a signal by measurement unit A with a low sampling rate. For a more detailed analysis, measurement unit B performs a trigger-controlled recording of a section of the signal with a considerably higher sampling rate.

- ▶ to simultaneously record signals in the millivolt range as well as up to 100 V.

In single-channel mode, the maximum clock rate is 20 Msample/s per measurement unit. With simultaneous recording, you can achieve a sampling rate of 5 Msample/s for each channel. In both operating modes, the analog data is continuously stored on the module together with the status of the digital trigger inputs. In conjunction with pre- and post-triggering, you can perform an analysis of the measurement data with regard to time by using digital reference signals. Each input channel is able to trigger its own measurement unit as well as further measurement and stimuli cards via a PXI trigger bus.

All-inclusive features for keeping up with the times

The Signal Analyzer Module R&S®TS-PAM provides a functional software interface that permits interactive operation. This interface makes it easier for you to configure the switching paths and the measurement units, and thus to interactively perform measurement tasks during system integration.

For convenient test program development, the powerful and hardware-independent R&S®GTSL software packet is available. Like all cards of the R&S®CompactTSVP product line, the R&S®TS-PAM module also offers self-test capabilities allowing functionality diagnosis as part of a system selftest. This reduces costs caused by production losses as a result of long downtimes.

Summary

With its R&S®TS-PAM, Rohde & Schwarz is the first company to offer a signal analyzer module with floating and parallel data acquisition measurement technology. This is an important basic functionality of a state-of-the-art test platform, especially in the automotive field. Flexible configuration possibilities of the measurement units in conjunction with extensive software support make it possible to solve even complex measurement tasks using only one module.

Owing to the extensive portfolio of measurement and stimuli cards and the unique system concept of the R&S®CompactTSVP, Rohde & Schwarz is able to offer its customers innovative solutions for the production of electronic components.

Christian Hof; Michael Grandauer

Type	Description	Data sheet
R&S®TS-PCA3	Test and Measurement Platform	PD 0758.0597.32
R&S®TS-PWA3	Switching Application Platform	PD 0758.0622.32
R&S®TS-PSAM	Analog Source and Measurement Module	PD 0758.0580.32
R&S®TS-PICT	In-Circuit Test (ICT) Extension Module	PD 0758.1964.32
R&S®TS-PDFT	Digital Functional Test Module	PD 0758.0645.32
R&S®TS-PFG	Arbitrary Waveform and Function Generator Module	PD 0758.0639.32
R&S®TS-PAM	Analyzer and Data Acquisition Module	PD 0758.0668.32
R&S®TS-PMB	Switching Matrix Module	PD 0758.0600.32
R&S®TS-PSM1	Power Switching Module	PD 0758.0616.32

Further data sheets for the R&S®TSVP product line.

Abbreviations and instrument designations

CompactPCI	Standardized PCI-based bus system for industrial use.
PXI	PCI-eXtension for Instrumentation – extension of CompactPCI to synchronize T&M modules via reference clock and trigger lines.
R&S®CompactTSVP	Test system versatile platform – platform concept for PC-based T&M equipment with CompactPCI/PXI from Rohde & Schwarz.
R&S®GTSL	Generic test software library – comprehensive library of software from Rohde & Schwarz.

More information and data sheets at www.rohde-schwarz.com



R&S®CompactTSVP



R&S®TS-PAM

For more information and data on the Signal Analyzer Module R&S®TS-PAM, refer to the data sheet.

The Open Test Platform R&S®CompactTSVP brochure provides an overview of the R&S®CompactTSVP modules with specifications and application notes. Visit the Internet pages of Rohde & Schwarz to download the data sheets of the individual measurement and stimuli cards (table left).

REFERENCES

- [*] Modular test equipment based on CompactPCI/PXI. News from Rohde & Schwarz (2003) No. 180, pp 14–20