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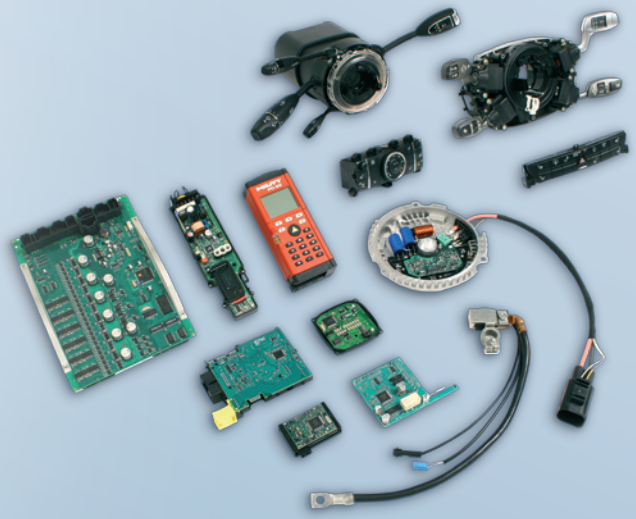
TSA 4000

Universal function test system for electronic and mechatronic modules



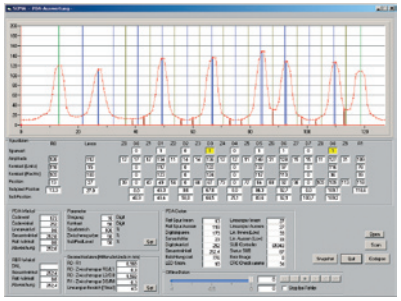
powerful — universally applicable — reuseable — quickly customizable

TSA 4000 –
Universal function test system for electronic and mechatronic modules

The Challenge

Powerful function test systems, used in the production of electronic and mechatronic components and modules, have to meet a multiplicity of technical and economical requirements to qualify for an universally applicable standard test system:

- Provision of sufficient and powerful measurement, multiplexing and stimulation functions
- Cost and time efficient implementation of testing orders by short testing times and hence high testing throughput
- Comfortable integration into the production environment
- Flexible possible field of application and reuseability for a wide product range



The Solution

The before listed requirements to an all-purpose function test platform have been systematically realized upon the development of the PC-based TSA 4000:

- Use of worldwide available19˝ precision measurement and stimulation systems
- 32 channel multifunction module SOMA TSM 3202 whereas each channel can be universally used as measurement, stimulation, switching and multiplexing channel
- Changeable DUT-specific project modules with stimulation and load wiring for fast change-over to new products
- SOMA basic module TSM 3201 for insertion and application of TSA 4000's measurement and stimulation systems and also as a supplier of many useful fixed voltage sources
- Digital 24 V inputs and outputs for controlling of mechanical test adapter
- Customary bus system interfaces, e.g. CAN and LIN bus in the automotive industry for communication purposes with ECUs and mechatronic modules

In order to guarantee an efficient test software development and to allow for a function integration into existing software development platforms, the complete TSA 4000 functional volume is provided in the form of software libraries (ActiveX-DLLs) which are comprehensively documented.

Thus, the application of the TSA 4000 for testing purposes is not exclusively linked to a particular development platform.

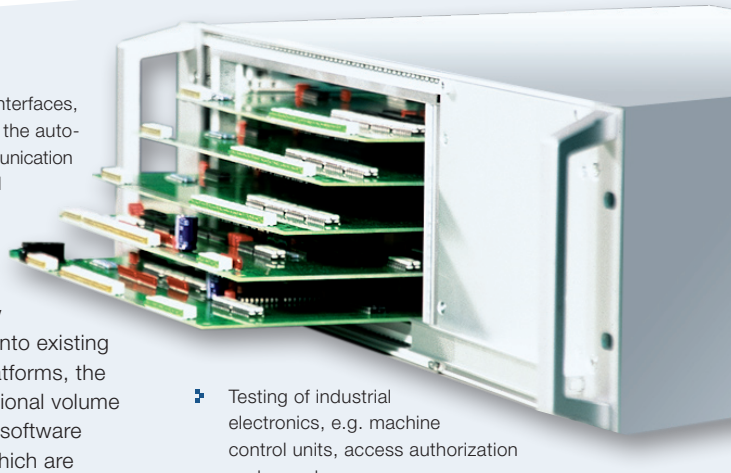
Alternatively, SOMA offers the realization of entire test projects based on the TSA 4000 in-house test software.

The Result

Four years after the TSA 4000 market launch in the year 2003, more than two-hundred successful TSA 4000 installations are operating in different fields of industry worldwide. They contribute to the goal, that products reach their customers in tested and high graded quality at the end of a long value-added process.

The range of possible TSA 4000 application in the field of function testing is extremely manifold. Some exemplary applications are:

- End-Of-Line (EOL) function testing of body and comfort electronics, single switches and control panels, door and roof ECUs etc.



- Testing of industrial electronics, e.g. machine control units, access authorization systems etc.
- Function testing of different sensors, e.g. intelligent battery sensors, rain/light sensors, revolution sensors etc.
- Testing of electronic drive units and power electronics
- Mechatronic function testing with mechanical and electrical stimulation, e.g. for steering angle sensors, steering column modules etc.

TSA 4000 – Technical Data

- Power Supply 1: 50V/2A
- Power Supply 2: 60V/9A (optional)
- Function Generator (optional)
- Multimeter 6½-digit
- 2-Channel, 100 MHz Scope (optional)
- 19˝-Industrial PC
  - Intel Pentium M CPU
  - 4 serial ports
  - 2 CAN controllers (4 channels)
  - IEC bus interface
- Basic Module SOMA TSM 3201
  - Multiplexer 16 x 2
  - 16 relays for signal switching
  - 16 relays for mech. adapter control
  - 16 digital inputs (24 volts)
  - Fast switching functions for measurement and stimulation systems
  - +24V/5A; +12V/2A; -12V/0,5A; +5V/1A
- Multi Module SOMA TSM 3202
  - Multiplexer 32 x 2
  - 32 digital inputs (0 - 100V)
  - 32 relays for signal switching
  - 8 general purpose relays
  - Changeable DUT-specific project modules
  - Control of system resources by internal CAN bus
- Max. 160 channels by use of 5 TSM 3202 Multi Modules; expandable to 1,024 channels by means of an external expander

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