Software Electronics

ITgroup

Castle^{IT} system for bus-coded communication

Product description

The system is used for universal bus-coded communication (CAN, LIN, K-Line) between a test PC and the connected DUTs as well as for continuous monitoring of their communication and function states.

Field of application

Laboratory, endurance test, end-of-line test in the area of production/manufacturing

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Technical data

Test bench / device

- Slots for up to 6 castle-pim^{IT} in 19" rack insert/3 U with partial front panel
- Internal power supply unit for pim supply with 230 V
- Common backplane bus
- CAN connection to the PC, on the front (D-Sub-9)
- Supply inputs Kl. 15, Kl. 30 on the front (D-Sub-15)
- µcontroller ARM 32-bit

Software

- 32-bit multitasking operating system castle-pim^{IT}, embedded
- Separation between functional and communication level
- Download of the communication level via CAN bus from the superordinate test PC
- Communication matrix PC = communication matrix castle-pim^{IT}
- Only one castle-pimIT is needed for different types of test units - configuration is done completely via software
- Flexible communication changes, as the communication matrix can be edited on the PC in ASCII format.
- Functions of the communication level
  - Direct forwarding of DUT messages with minimum time offset, max. 5 ms
  - Network management, automatic transmission of predefined messages via superordinate PC on/off switchable
  - Monitoring of selected messages for timing (resolution 1 ms) and CRC
  - Monitoring of selected messages for content, mask comparison, e.g. for switch position monitoring
  - Residual bus simulation by continuous transmission of predefined messages
  - Various communication protocols (OSEK, KWP2000, CAN direct, LIN, ...)
  - Intermediate storage of DTC errors sent by the DUT
  - Measurement and monitoring of the analogue inputs (voltage, current Kl15, Kl.30, + optionally 4 more)
  - Switching of the digital outputs (Kl.15, Kl.30 + 2x Rel. + optionally 4 more)
  - Querying and monitoring the digital inputs (optionally 8 free inputs)

Scope of testing

- 2-point calibration of current and voltage measurements, download of calibration values
- DUT connection via D-SUB 15-pin at the front, optionally D-SUB 37-pin at the rear
- 1x CAN 2.0A to the unit under test, baud rate programmable
- Low-speed CAN via internal additional adapter, optional
- 1x LIN or K-bus, switchable via software
- Output signals Kl.15, Kl.30 switched, supply via external power supply unit
- 2 additional relay outputs C, NC, switchable via software
- Analogue measurement current consumption Kl.15, Kl.30, 0-1000 mA / 16 bit resolution
- Analogue measurement voltage Kl.15, Kl.30, 0-30 V / 16 Bit resolution
- 1x RS232C interface

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Scope of testing

- Option board "Single-wire CAN“
  - Integrated CAN dongle to achieve a single-wire CAN bus instead of CAN node 2.
  - Monitoring error pin from CAN transceiver
- Option board "I/O/ANA" via D_SUB 37-pin.
  - 4 additional analogue measuring channels 10 V differential / 16 bit resolution
  - 8 additional digital inputs, opto-decoupled
  - 4 additional digital outputs, opto-decoupled

Input-/visualisation units

- Communication through higher-level test PC

Dimensions/Transport

- Approx. 430x134x420 (WxHxD in mm)

Test time

- Individual, depending on test scope

Exemplary device type

- 356 1512

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