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ABex[®]

Analog Bus Extension for PXI



Test Systems without Cables

The Analog Bus Extension for PXI (ABex) makes design and construction of PXI based automated test systems faster and easier than before. System integrators can reduce setup and development time and significantly improve signal quality. ABex is capable of routing of analog and digital measurement and control signals as well as Device Under Test (DUT) power with no discrete cabling. The ABex includes a standard PXI chassis, an additional signal backplane along with a powerful terminal module concept. The terminal modules allow implementation of functional extensions of PXI and software defined instruments can be created using FPGA based National Instruments FlexRIO boards and custom designed hardware front ends.

In combination, the PXI platform with its vast choices of instruments for virtually any measurement requirements, and the ABex system brings products faster to market and ensures higher quality of tests with reliable results.

Main Benefits

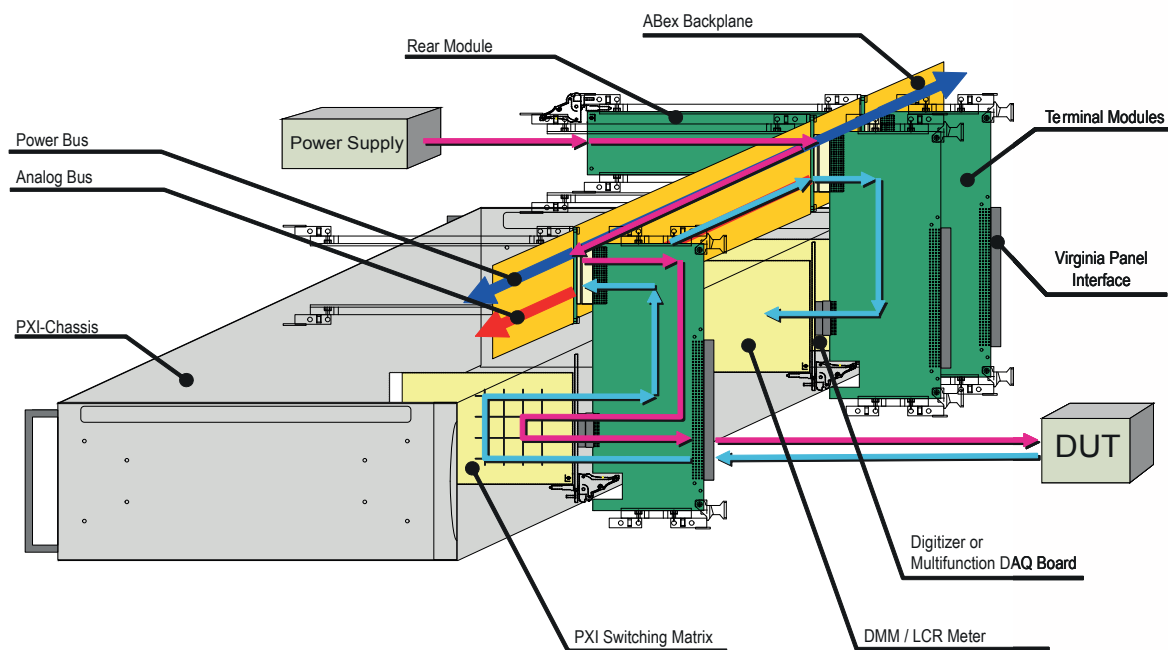
- Short setup and development time
- No discrete wiring between instruments
- Extended functionality for PXI modules
- FPGA-based software defined instruments
- Fast integration of non-PXI devices
- High pin count in-circuit test solutions
- Excellent signal quality
- Universal and reliable DUT interface

Application Areas

- Functional Test
- In-Circuit Test
- Semiconductor Test
- Automotive
- Aerospace / Avionics
- Telecommunication
- Medical Devices
- Consumer Electronics

Features at a Glance

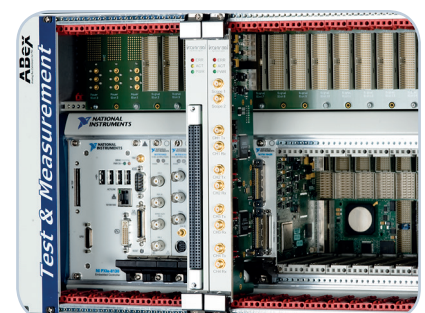
- Extends standard PXI chassis
- 30 analog lines (10x differential + 10x shield)
- Digital Bus for TTL, I²C, CAN, serial, etc.
- 2 High-speed busses
- Voltages up to 60V
- Power bus with 40A power input
- 6 lines at 5A + 12 lines at 1A
- Rear I/O to all slots



Expanded Bus Backplane

An expanded bus backplane is added to the PXI system for routing analog and digital measurement signals and power signals across the complete test system. Signals are grouped into analog, digital and power signals. This core feature eliminates any discrete wiring between the DUT interface, switching matrices and measurement instruments.

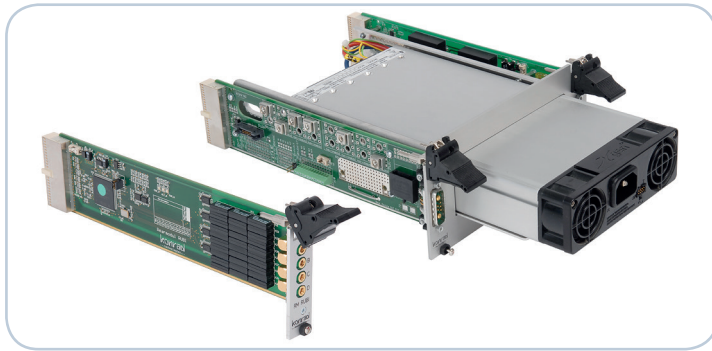
The backplane has connectors on all 18 PXI slots and can be accessed via terminal modules from the instruments, the DUT connector at the front and via rear modules.



Terminal Modules

The bridge between instruments, bus backplane and DUT interface are the terminal modules. Terminal modules use high quality relays to access all lines of the bus backplane and are software controlled via a central ABex controller.

Many popular instruments are currently supported. Included are popular instruments like National Instruments' (NI) PXI-407x DMM series, NI's lines of PXI scopes, Konrad's in-circuit test amplifier or NI's M or X series multifunction DAQ boards. New instruments can be developed using the ABex Development Kit.



Rear Modules

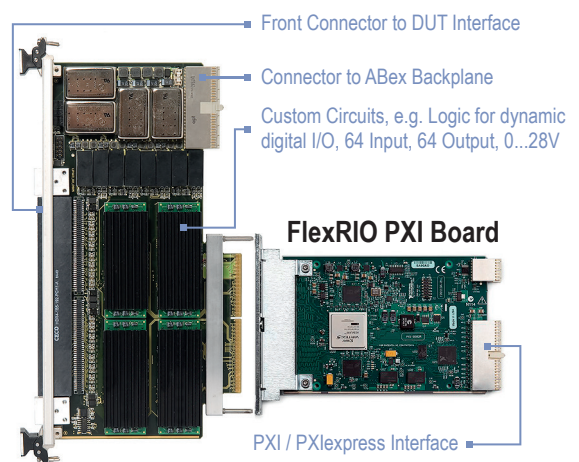
The ABex backplane offers access to all slots from the rear. This is useful for applying power or other signals to the system. Modules are available with shunts for dynamic current measurements and for DUT powering. Rear modules are also the interface to any non-PXI resource of the system, like loads, power supplies and others. Also, hardware debugging becomes very easy when setting up or maintaining test systems in the field.

Functional Extension and Custom Software Defined Instruments

The terminal module concept allows functional extensions and even the creation of completely new instruments. Terminal modules offer space for additional circuits, e.g. for signal conditioning. One example is the smart module carrier terminal module which can be used for NI's FPGA-boards to implement SPI or I2C communication.

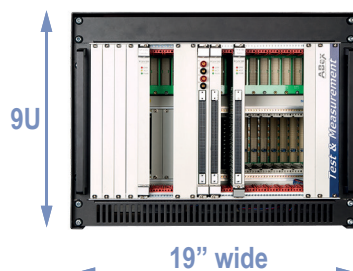
Software defined instruments are designed using the FlexRIO PXI boards with their powerful Xilinx FPGAs as the base and implementing any custom hardware functionality on terminal modules. Examples for such instruments are the universal pin electronic KT-TM-403 DIG50IO, the KT-7411 UHF instrument for protocol aware tests and the dynamic digital I/O board KT-TM-401.

ABex Terminal Module



Chassis Dimensions:

482,6mm x 370mm x 590mm



Chassis and DUT Interface

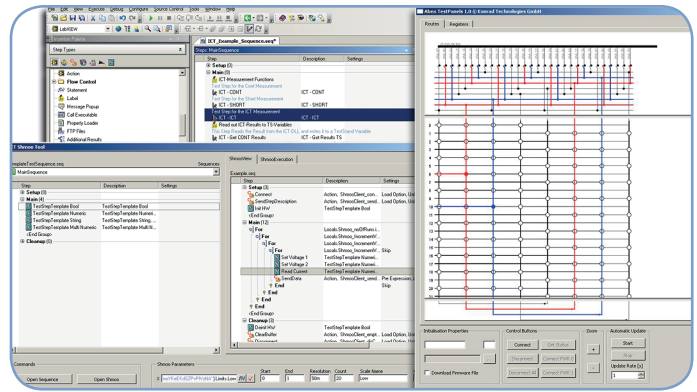
System designers can choose from different types of ABex chassis which contain standard PXI chassis from 8 to 18 slots. Variants are available for desktop and rack mounting as well as integration in fully automated test handlers.

Based on Virginia Panel technology, a reliable interface to your product specific test adapters is available with a wide variety of connector technologies, including 192 position pin/socket, power and RF contacts. A fitting interchangeable test adapter frame is available for building test adapters

Software Support

ABEx systems are programmed using the software tools provided by vendors of the PXI instruments. Signal routing to the backplane and all additional terminal module functions are programmed using ABEx API functions and individual test panels.

Common test languages, including NI LabVIEW, NI TestStand and other programming languages like C++, C# are used for test program generation. For fast and easy editing of signal routes, a switch routing management solution is available.



ABEx Systems Alliance

Development of the ABEx standard is managed by the members of the ABEx systems alliance. Founding member Konrad Technologies offers many of the available ABEx products. Interested companies can apply for membership and will receive development kits, allowing them to develop their own ABEx terminal modules and other products. Visit the website of the ABEx systems alliance for details: www.abexstandard.org

About Konrad Technologies

Since 1992, we specialize in developing test systems for the electronic manufacturing industry and many other application fields, including automotive and aerospace. The spectrum of Konrad's solutions span from single hardware and software modules, up to fully automated turnkey systems. Among customized test solutions, Konrad offers a series of standard test systems, including the KT-7500 FINN semiconductor test platform and the KT-6000 PAUL avionic tester. Konrad offers the whole service spectrum, including consulting, project planning, construction, project implementation, software development and after-sales support.

Our Services

- Feasibility studies for specific measurement and adaptation concepts
- Project management and supervision as general contractor
- Software development (applications, drivers, tools)
- CAD data processing and test program generation
- Tester integration in factory infrastructure
- Test system customization regarding handling and docking requirements
- Technical data management and analysis
- Comprehensive after-sales services, including maintenance and service contracts
- Obsolescence management
- Individual customer trainings

Contact us!

Call us and start discussing your test requirements with our experts today! Our high qualified technical sales and project management team assists you in finding appropriate solutions for your test demands.



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