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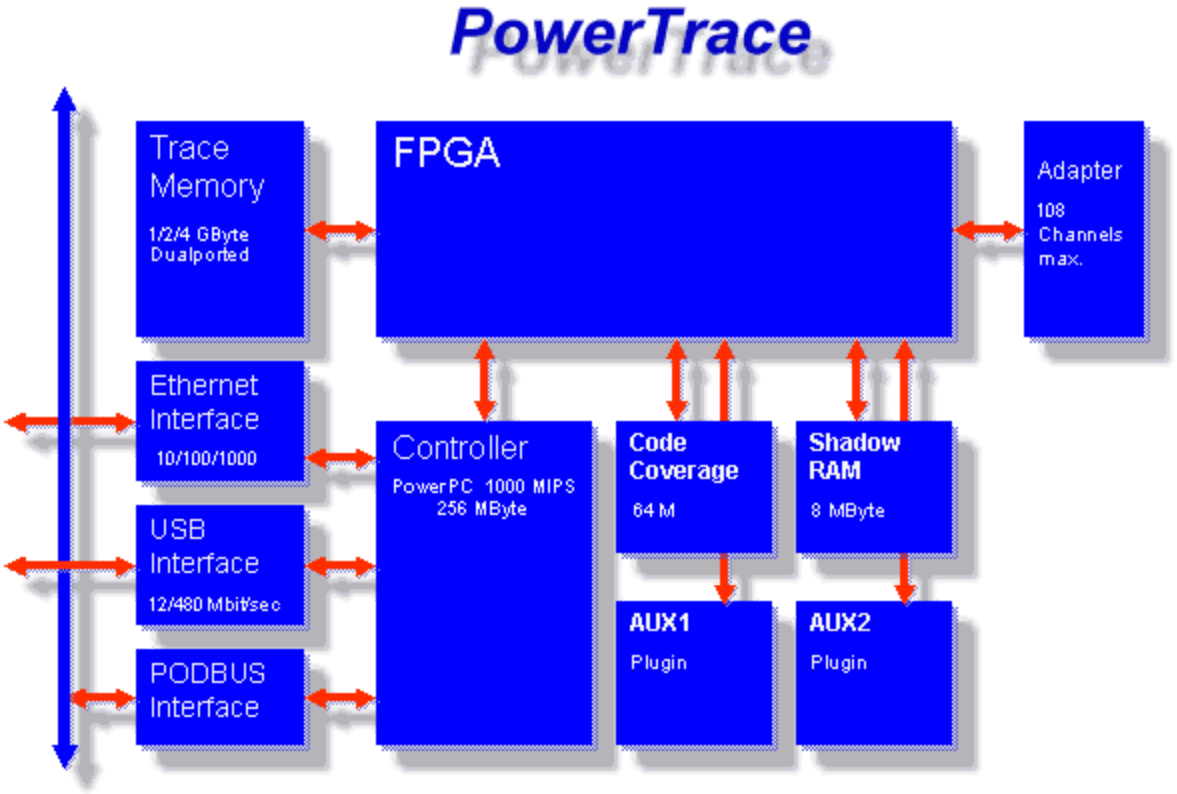
- PowerTrace-II Concept
- Active Debugger
- Trace Analyzer
- Software Debugger
- Supported Processor Lines
- Extensions
- Configuration Examples



Highlights

- High speed Real Time Trace
- Upload and full processing within 30 seconds per Gigabyte trace storage
- Hardware breakpoints and trigger (if supported by the on-chip debugging unit)
- Program and data flow trace
- 1, 2 or 4 GByte trace memory
- 500+ MHz effective sample rate with AUTOFOCUS-II self calibration
- 16 GBit/s total trace port bandwidth
- Statistic functions
- Performance analysis
- Code Coverage
- Energie Test (with optional Analog Probe)
- 17 logic analyzer channels
- PodBusExpress interface to PowerDebug II (Host interface of PowerDebug II: USB2 and Ethernet 10/100/1000)

PowerTrace-II Concept



The PowerTrace-II Module includes all systems for trace. Debugging and interfacing is made by the PowerDebug-II module with USB-2 and Gigabit Ethernet Interface.

Active Debugger

Trace Analyzer

Trace Port

- Max. 92 Trace Channels for 150 MHz Operation
- Max. 46 Trace Channels for 300 MHz Operation
- Max. 23 Trace Channels for up to 600 MHz Operation
- High effective trace rate by self calibration



- 16 Channels external trace

Supported Adapters



MICTOR Adaption

- 1 Mictor probes (16 channels) can be used
- 512 MSample transient
- 200 MHz

Trace Storage

- 1/2/4 GByte Trace Storage
- 64/128/256 MFrames
- 256/512/1024 M ETM or NEXUS Frames typically
- Full Dual-ported
- 620 MByte/sec sample rate
- Time Stamp up to 5 ns Resolution
- Time Correlation and Tracking with other TRACE32 Tools

Code Coverage

- Hardware Code Coverage
- 16 Segments with 2 MByte each

Data Coverage

- Hardware Data Coverage
- 4 Segments with 512 KByte each

Shadow Memory

- 4 Segments with 512 KByte each

Breakpoints

- 4 Breakpoint Memory with 512 KBit each

Trigger Sequencer

- 4 Trigger Events
- 4 Trigger Levels
- 3 Trigger Counters

Trigger Delay

- 0 .. 300 s

External Trigger

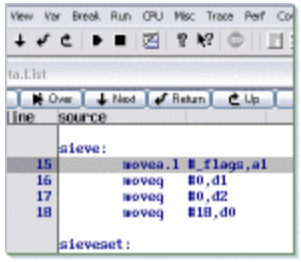
- Input from PODBUS
- Output to PODBUS

Performance Analyzer

Support for EPROM/FLASH Simulator

- Breakpoints in ROM Area
- 8, 16 and 32 Bit EPROM/FLASH Emulation

Software Debugger



ASM Debugger

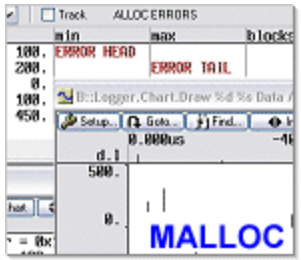
- Supports almost all file formats
- Fast operation
- Assembler source-level debugging
- Advanced memory display
- Inline assembler
- Memory tests
- Customizable windows
- Peripheral windows

- Terminal window
- Semi-hosting
- Flash programming
- Full support for peripherals



HLL Debugger

- Supports multiple languages
- Full support for C++
- Integrated into TRACE32 environment
- Supports most compilers and hosts
- Same user interface on different hosts
- High speed download
- Debugs optimized code
- Display of function nesting
- Display of linked lists
- Fast operation
- Powerful expression evaluation



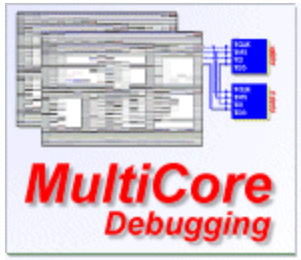
Memory Analysis

- Display of allocated memory blocks
- Memory allocation Statistics
- Check for out-of-bounds writes
- Trace of allocation calls
- Graphical displays of memory usage



LIGHTSPEED Differential Download Technology

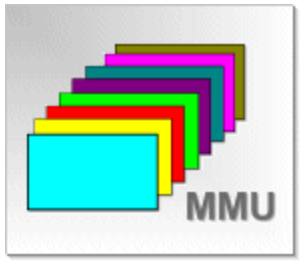
- Up to 30 times higher download speed
- Boost download speed on MPC8260, MPC8560 or MPC755
- Boost download speed on low-frequeny devices
- Boost download speed on serial ROM monitors



Multicore Debugging

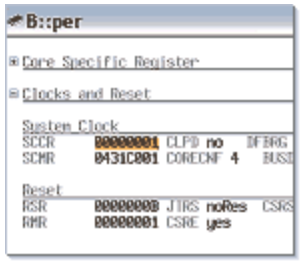
- Debugging support for homogeneous and heterogeneous multiprocessor/multicore embedded applications
- High quality standard debuggers can be combined for multiprocessor/multicore debugging
- All TRACE32-ICD debuggers are designed to work together in a multiprocessor/multicore debugging environment
- Fast integration of third party debuggers

- Several processors in a single piece of silicon can share the same debug port
- Start and stop synchronisation



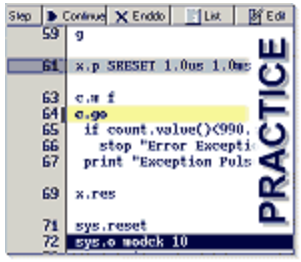
MMU Support

- Full integrated support of processor's MMU
- Display of processor MMU registers
- Display of MMU table entries
- Display of address translation table
- 'Shadowing' MMU address translation inside debugger
- Full virtual and physical access to target at any time
- Debugger has optionally write access to write protected memory areas
- Detection and decoding of software MMU tables built by operating systems
- Support for several user space MMU tables side by side
- TLB context tracking and git statistics via CTS



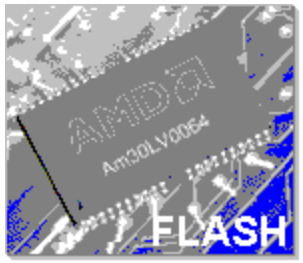
Peripheral Browser

- Display of onchip peripherals
- User definable windows
- Interactive window definition with softkey support
- Pulldown menues for selection of choices
- Additional description for each field



PRACTICE Script Language

- Structured Language
- Menu Support
- Command Logs
- Custom Menues
- Custom Toolbars and Buttons
- Custom Dialog Windows
- 64-Bit Arithmetic
- Numeric, Logical and String Operators
- Direct Access to System States



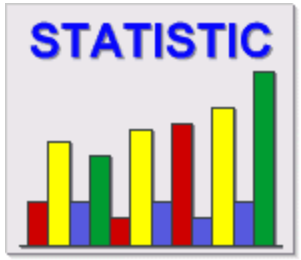
FLASH Programming

- Internal and/or external FLASH memories
- All common FLASH types
- Programming of multiple FLASH devices
- Provided by ICE, FIRE, ICD product line



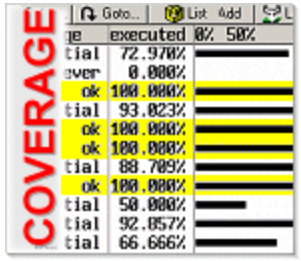
SIM Instruction Set Simulators

- Easy high-level and assembler debugging
- Interface to all compilers
- Trace Buffer
- Powerful script language
- Software compatible to all TRACE32 tools
- Hardware simulation



Statistic Analyzer

- Detailed analysis of function run-times
- Detailed analysis of task run-times and state
- Graphical analysis of variable values over the time
- Analysis of the time interval of a single event (e.g. Interrupt)
- Analysis of the time interval between 2 defined events



Coverage Analyzer

- Long-Time Hardware Coverage Analysis for Emulator and ETM
- Trace Based Coverage Analysis for ICD and Emulator
- Analysis on ASM and HLL
- Coverage summary on modul/function level



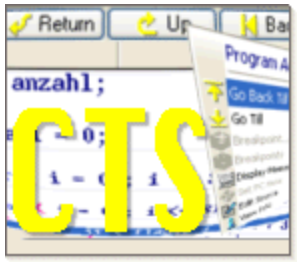
Performance Analyzer

- Long-time performance analysis for functions
- Long-time performance analysis for tasks
- Long-time analysis of the contents of a variable or memory location and more



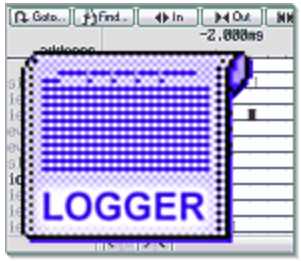
SmartTrace

- Fills in missing code
- Direct branch reconstruction
- Indirect branch reconstuction with CTS
- Memory and Register values from CTS



Context Tracking System

- Single Stepping of realtime programs
- Local and global variable display
- Stack frame display
- Step, Back Step and Stepover
- Conditional Stepping
- Display of register variables in trace
- Display of function nesting with parameters in trace



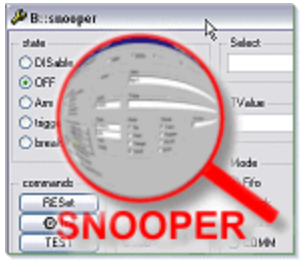
Logger

- Software trace of any size stored in an array structure on the target
- General trace format provided by TRACE32-PowerView
- Configuration and display commands provided by TRACE32-PowerView
- Works as trace with address and data information
- Works as a program flow trace (SH4, PowerPC)
- Time stamp possible
- Predefined algorithms to fill the trace provided by Lauterbach
- User defined algorithms to fill the trace also possible



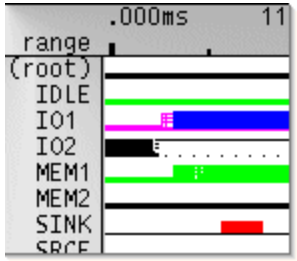
FDX (Fast Data eXchange) Framework

- Interaction of target application with 3rd party host application
- No additional hardware necessary
- High bandwidth
- Real time data transfer
- Software trace capabilities



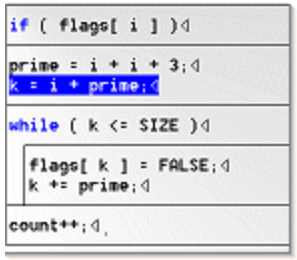
Snooper

- Samples memory while application is running
- Support for special debug communication channels
- All trace display and analysis functions can be used
- Trigger on specific values
- Dynamic performance analysis



RTOS Debugger

- Statistic evaluation and graphic display of task run times
- Task related evaluation of function run times
- Statistic evaluation and graphic display of task states
- Manual executed system calls
- Task stack coverage
- PRACTICE functions for OS data
- RTOS related pull-down menu
- Task selective debugging



Integration of 3rd Party Tools

- Editor Integration
- CASE Tool Integration
- Kernel Integration



Help System

- Acrobat Based Documentation
- Fast Text Search
- Device Specific Filtering
- Basic and Advanced Help
- Training Manuals Included
- WWW Update

Supported Processor Lines



Supported CPUs by Trace



Other WWW Sites

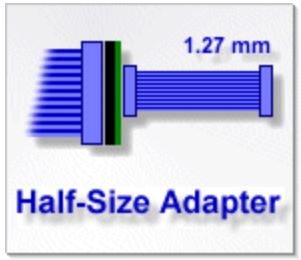
ARM-ETM Trace
ARM7 Family Real-Time Trace
C166 Family Real-Time Trace
ColdFire Real-Time Trace
Embedded Trace Buffer Real-Time Trace

Extensions



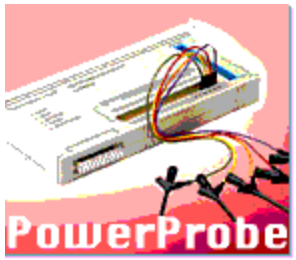
FLEX Adapter

- Highly Flexible Adapters
- For Debuggers and ICD Trace
- High Signal Quality
- Adapted Impedance
- MICTOR
- 100 MIL
- SAMTEC
- YAMAICHI



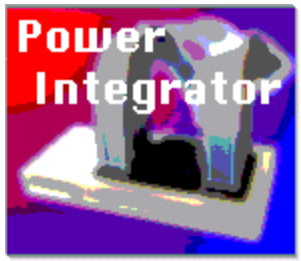
Half-Size Adapters for Debuggers

- 100 mil to 50 mil Adapters
- Small Footprint for Target Connector



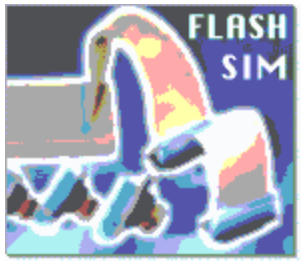
Logic and Protocol Analyzer (PowerProbe)

- Timing Analyzer up to 400 MHz
- State Analyzer up to 100 MHz
- 64 Input Channels
- Transient Recording
- Time Correlation with RISC Trace
- Clock Qualifier for State Clock
- Mixed State and Timing Mode
- 4 State Clock Inputs
- Optional FPGA Onchip Trace
- Optional Pattern Generator
- Protocol Support for CAN, USB, etc.



Bus Analyzer (PowerIntegrator)

- Timing Analyzer with 500 MHz on all Channels
- State Analyzer up to 200 MHz DDR
- 204 Input Channels
- Transient Recording
- Time Correlation with other Tracetools
- Clock Qualifier for State Clock
- Mixed State and Timing Mode
- 4 Clock Inputs
- MICTOR and Standard Probes (single ended)
- MICTOR differential Probes
- Analog Voltage and Current Probe
- 3G/DigRF Protocol Support



EPROM/FLASH Simulator

- 8, 16 or 32 Bit Operation
- 2, 8, 16 or 64 MBit Versions
- DIL or PLCC Adapters
- SO Adapter
- TSOP Adapter
- ESI-CON for In-Circuit Simulation
- Monitor Control
- NMI and RESET Generation

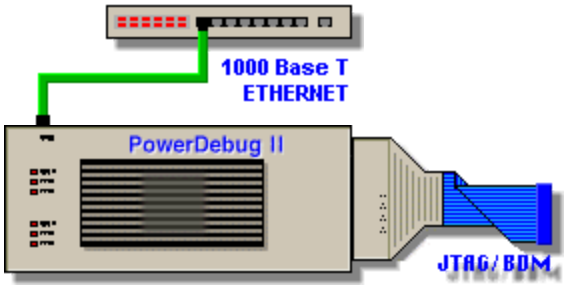


Trigger Probe

- Works with ICE, FIRE and ICD
- Asynchronous Trigger
- Synchrounous Trigger
- Pulse Width Trigger
- Glitch Trigger
- Scope Trigger Output

Configuration Examples

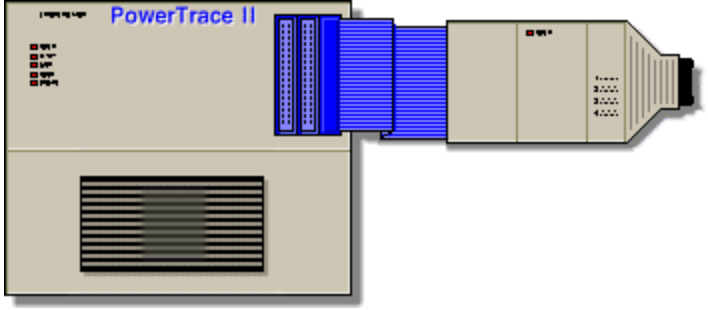
Debugger and Trace on PC or Workstation Get Quote



TRACE32 PowerTools

10/100/1000-Mbit-Ethernet

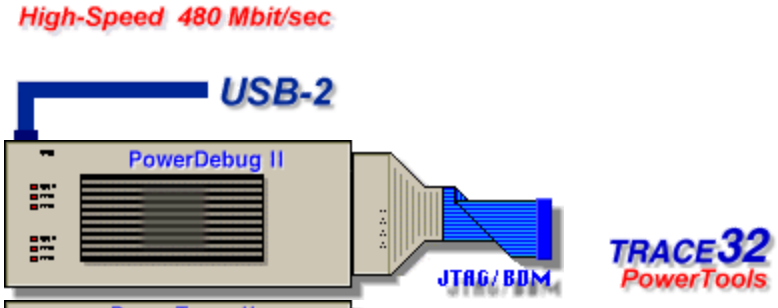
PowerDebug-II Module



PowerTrace-II Module

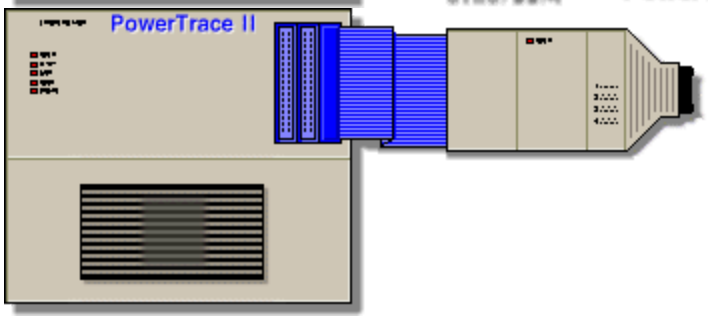
Debugger and Trace on PC with USB Interface

Get Quote



USB2

PowerDebug-II Module



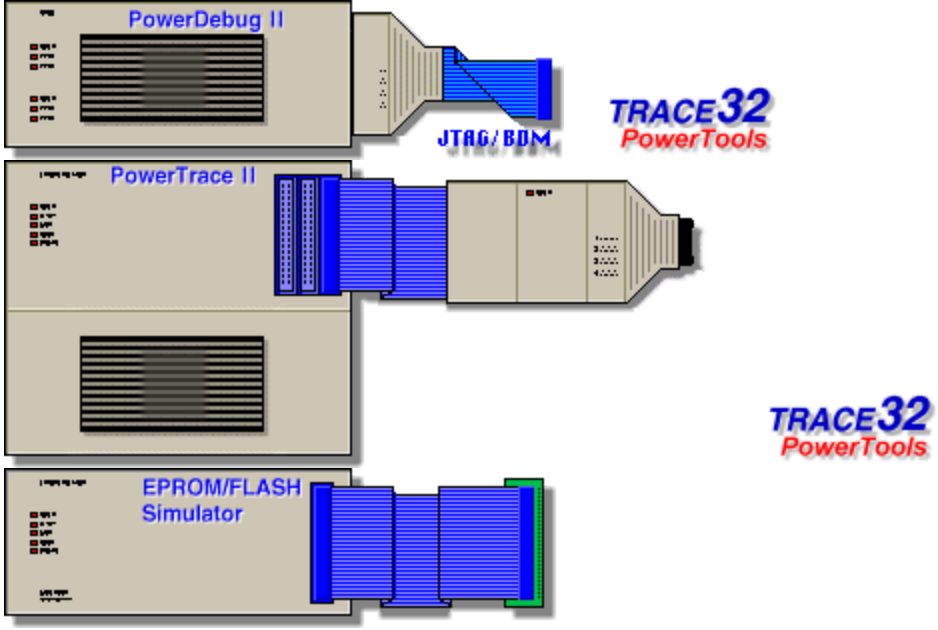
PowerTrace-II Module

Debugger, Trace and EPROM/FLASH Simulator on PC with USB Interface

Get Quote



USB2



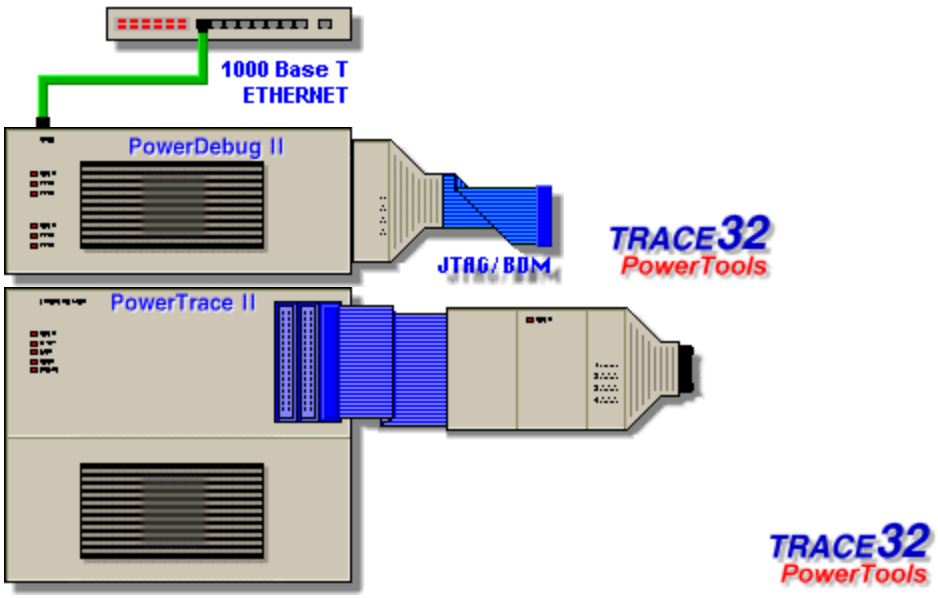
PowerDebug-II Module

PowerTrace-II Module

EPROM/FLASH Simulator Module

PowerTrace and Timing/State Analyzer on PC or Workstation

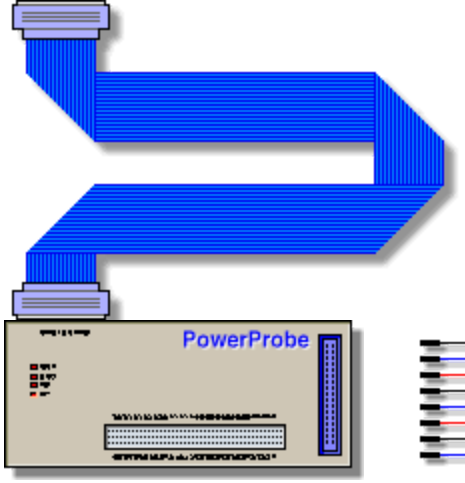
Get Quote



10/100/1000-Mbit-Ethernet

PowerDebug-II Module

PowerTrace-II Module



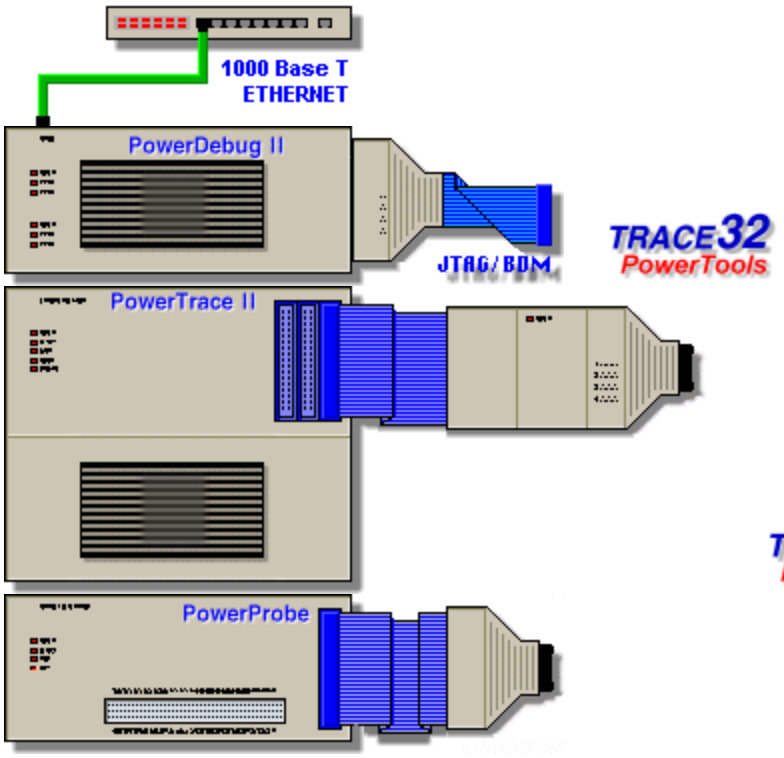


Extension Cable

State/Timing Analyzer

PowerTrace and Timing/State Analyzer on PC or Workstation

Get Quote



10/100/1000-Mbit-Ethernet

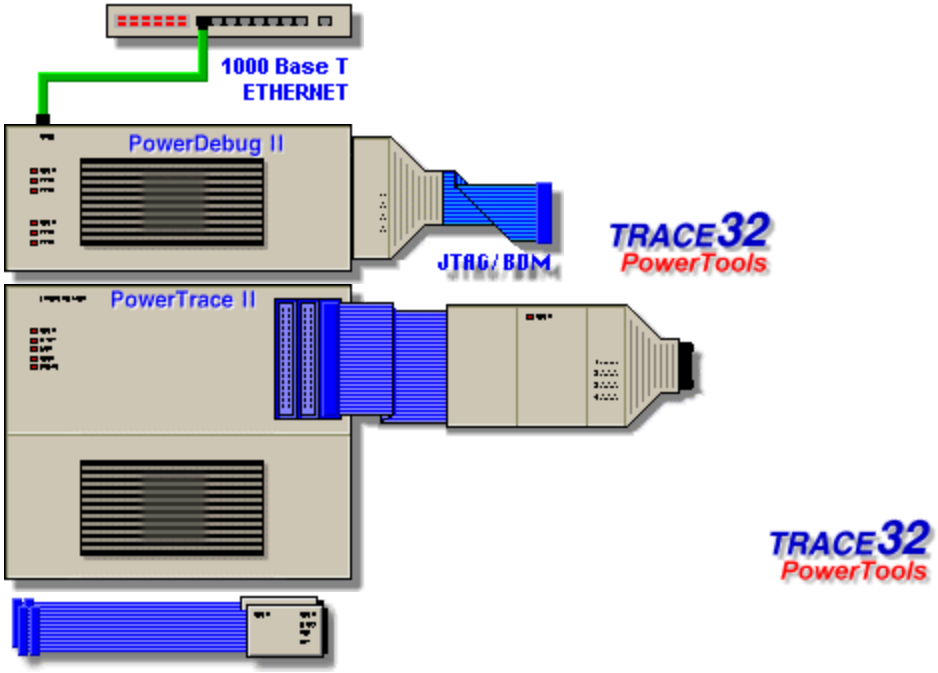
PowerDebug-II Module

PowerTrace-II Module

Timing Analyzer SOC (ASIC/FPGA)

PowerTrace with MICTOR probes on PC or Workstation

Get Quote



10/100/1000-Mbit-Ethernet

PowerDebug-II Module

PowerTrace-II Module

Mictor Probes

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