

## ASM Debugger

- Supports almost all file formats
- 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

The TRACE32 ASM debugger is an integrated feature of all TRACE32 systems. The debugger has its own data base and interfaces to most common standard assemblers.

The ASM debugger offers easy source level debugging with advanced features.

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## Features

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### Symbolic Debugging

- Global or local symbols
- EQU constants
- Browse for unknown or partially known symbols

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### Assembler Source Level Debugging

- Show source with comments
- Single Step assembler macros
- Direct link to source

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### Real-Time Debugging

- Serve interrupts or watchdogs
- Background task on TRACE32-ICE
- ROM monitors allow interrupts when application is stopped
- Dual-port access on TRACE32-ICE and selected ICDs

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### Inline Assembler

- Inline or window operation
- Write short programs (including labels) with window assembler
- Modify instructions or operands with inline assembler

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### Memory Displays

- Show memory in multiple windows
- Many display formats and options
- Floating point values

## Advanced Memory Display

address	data	value	symbol
0 (0.)			
SD:0001004C	00 00 12 34	1234	\\mca\Global\_flags
SD:00010050	3F CC CC CD	1.6	\\mca\Global\_flags+4
SD:00010054	61 62 63 00...	'abczzzzzz'	\\mca\Global\_flags+8
1 (1.)			
SD:0001005C	00 00 00 00	0	\\mca\Global\_flags+10
SD:00010060	40 30 00 00	2.75	\\mca\Global\_flags+14
SD:00010064	00 00 00 00...	'zzzzzzzzzz'	\\mca\Global\_flags+18
2 (2.)			
SD:0001006C	00 00 00 00	0	\\mca\Global\_flags+20
SD:00010070	3F F3 33 33	1.9	\\mca\Global\_flags+24
SD:00010074	00 00 00 00...	'zzzzzzzzzz'	\\mca\Global\_flags+28
3 (3.)			
SD:0001007C	00 00 00 00	0	\\mca\Global\_flags+30
SD:00010080	00 00 00 00	0.0	\\mca\Global\_flags+34
SD:00010084	00 00 00 00...	'zzzzzzzzzz'	\\mca\Global\_flags+38

- Show arrays of structured types
- Graphical display of arrays
- Scroll thru linked lists
- Show memory referenced by current instruction

## File Download and Upload

- Directly loads various formats
- Generate hex files for programmer with ODD/EVEN splitting

## Memory Operations

- Copy
- Fill with various patterns
- Compare
- Compare to pattern
- Find string
- Calculate various checksums

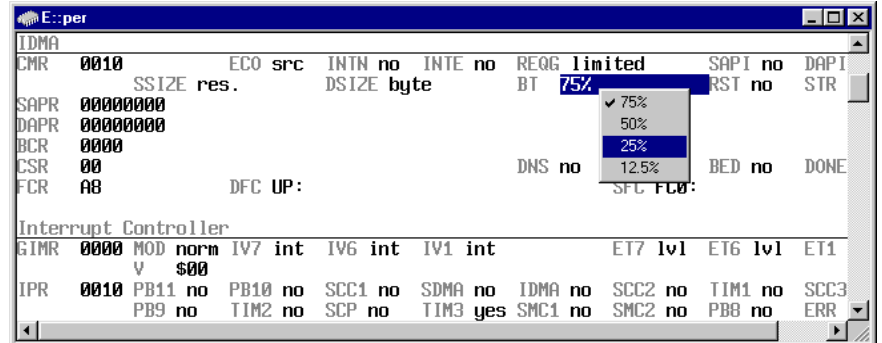
## Memory Tests

- Non-destructive test
- Repetitive tests
- Destructive tests
- Oscilloscope loops

## Flash Programming

- Supports most standard Flash devices
- Uses fast algorithms (up to 150KByte/second via BDM)
- Onchip Flash Memory supported
- Target or host based algorithms
- Programs multiple devices in parallel

## Peripheral Windows



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

## Conditional Step and Go

- Step till condition is true
- Go till condition is true
- Pass breakpoints on condition

## FPU Support

- Display of FPU registers
- Change of FPU registers with the mouse
- Floating point arithmetic in command line
- Support of special floating point formats

## MMU Support

- Display and modification of registers
- Symbolic dump of translation tables
- Translation between logical and physical addresses
- Extended 48-bit logical address (separate address spaces for each task)

## Terminal Windows



- Uses normal memory, dual-ported memory or special hardware for communication
- Single character or block oriented protocols
- Fast guaranteed reaction time on TRACE32-ICE (down to 20us)
- Non-Stop operation with dual-port memory or special hardware
- Very fast operation
- Adjustable size of the virtual terminal
- Selectable terminal emulation
- Redirect input from file
- Redirect output to file
- Multiple terminal windows

## Semi-Hosting

- Can use any terminal protocol
- Access the filesystem of the host by the target program
- Access to some Host OS functions
- High speed

## User Defined Windows

- Peripheral windows
- Windows tracking expressions
- PRACTICE generated windows
- Hyperprocessor defined windows
- Adapted multitask debugger windows

## Breakpoints

- Hardware or software program breakpoints
- Execution stopped before instruction is executed
- Spotpoints for "Snapshots"
- Unlimited breakpoints on TRACE32-ICE
- Support for onchip breakpoints

## Multiprocessor Synchronization

- Synchronized target start and stop
- Software or hardware controlled
- Inter-Debugger communication between multiple debuggers



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