

STARS Performance Analyzer for Embedded Microcontroller Development

Ashling's STARS Performance Analyzer (Software Test, Analysis and Reporting System) is a high-speed execution analyzer for embedded systems that use the 80C51, 80C51Mx and 80C51XA microcontroller families. STARS is non-intrusive, non-statistical and measures all event times accurately and securely.

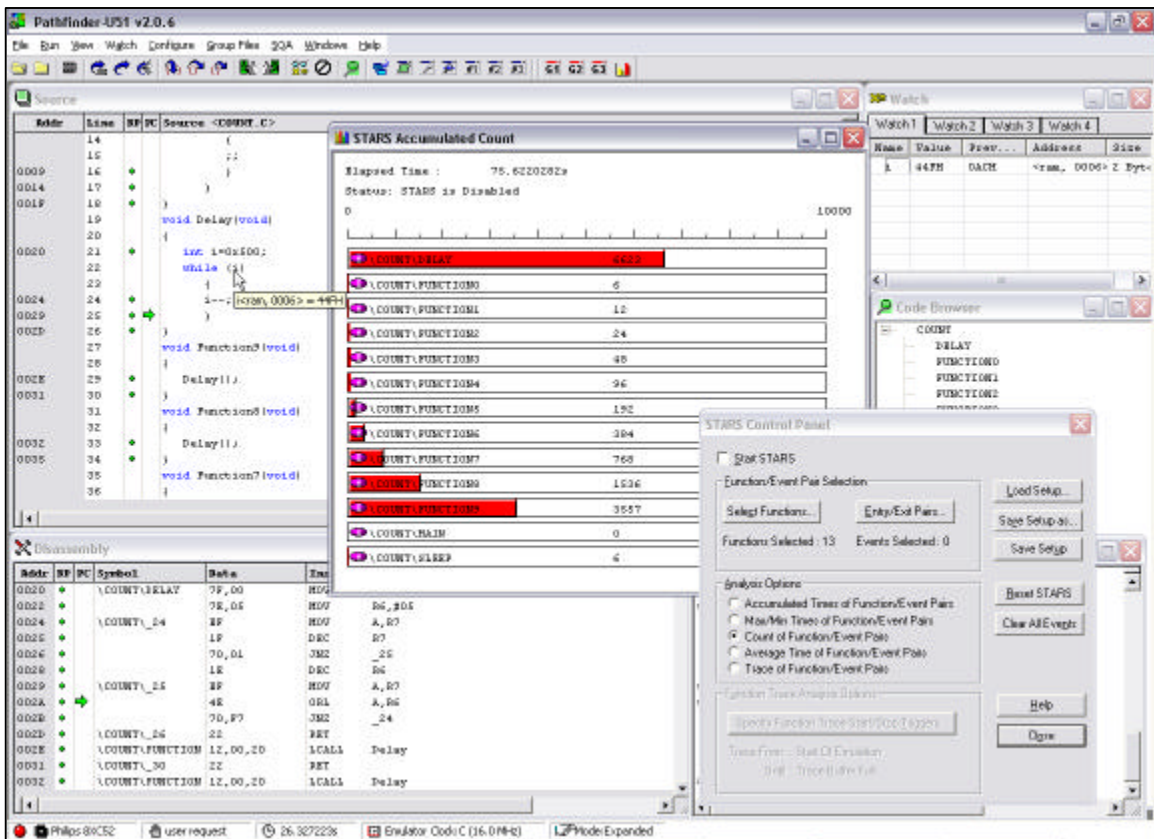
STARS Features

Performance Analysis STARS measures the Minimum, Maximum and Total execution time for every selected function in your program. Total actual execution time and the percentage of overall time used by each function is measured and displayed as a bar-graph with numerical results. The number of occurrences of each function is also recorded.

Function Trace The STARS Performance Analyzer records and time-stamps program execution flow from function to function. The calling sequence of functions and the absolute or relative times of all entries and exits are displayed, showing the run-time nesting of calls. Start and Stop triggers can be used to selectively qualify the data collected. Function Trace also displays task execution and allocation in a Real-Time Operating System (RTOS). Report generators provide documentary evidence of system analysis, as required by many Software Quality Assurance procedures.

Non-intrusive Analysis Data is read without code instrumentation, without halting, slowing or in any way affecting program execution.

Saving reports STARS results can be stored on disk; printed reports of system performance results are produced.



The STARS Performance Analyzer is integrated into Ashling's Ultra-series In-Circuit Emulator and PathFinder source debugger. The display above shows the Maximum and Minimum execution times of all C functions in an executing embedded program.

STARS Performance Analyzer Specification

Hardware	The STARS Performance Analyzer is installed as a hardware and software option for Ashling's Ultra-Series Microprocessor Development Systems.
Software	The STARS Performance Analyzer software is integrated in Ashling's PathFinder Source Level Debugger.
Selecting Functions	Functions to be analyzed are selected from a list of the C functions in your program. The entry and exit points of each function are automatically selected (multiple exits are supported). Alternatively, you can select code sections for analysis by specifying symbolic or absolute entry and exit addresses.
Measurement Options	Measures continuously, in real-time, the following parameters, for up to 8192 functions in the program-under-test: <ul style="list-style-type: none">◆ Performance analysis measurement◆ Accumulated time for each function◆ Number of times each function is entered and exited◆ Average time spent in each function◆ Minimum and Maximum execution-times for each function◆ For the time measurements, you may choose to include or exclude time spent in called functions and interrupt routines◆ Function Trace measurement has user-selectable triggering:<ul style="list-style-type: none">◆ Start triggers:<ul style="list-style-type: none">○ Start of program execution○ Specified execution address○ Emulator multi-level trigger system (cross triggering)◆ Stop triggers:<ul style="list-style-type: none">○ Program execution halted○ Specified execution address○ Emulator multi-level trigger system (cross triggering)○ When Function Trace buffer is full
User interface	PathFinder Source Level Debugger for C and Assembly. Automatic synchronization of Source Code, Traced Executed Source Code, Disassembled Code Memory, Port Activity and Code Coverage windows; on-chip RAM, Banked External Data memory, Special-function Registers, Status, Stack, and Variables windows.
Host	PC with Windows9x/Me/2000/XP

DS184 V8

Ashling Microsystems Ltd. is Certified to I.S. EN ISO 9001:2000, NSAI Registration No. 19.09069.

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