Software Tools

User Manual

Revision: 1.5
June 29, 2011

Important Information

Safety and Handling

The circuit boards are delicate and require care in handling and installation. Do not remove circuit boards from their protective plastic coverings or from the shipping box until you are ready to install the boards.

If a board is removed from the chassis for any reason, be sure to store it in its original shipping box. Do not store boards on top of workbenches or other areas where they might be susceptible to damage or exposure to strong electromagnetic or electrostatic fields. Store circuit boards in protective anti-electrostatic wrapping and away from electromagnetic fields.

Disclaimer

In no event shall Test Evolution be liable for any consequential damages whatsoever (including unlimited damages for loss of business profits, business interruption, loss of business information, or any other losses) arising out of the use of or inability to use this product, even if Test Evolution has been advised of the possibility for such damages.

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Table of Contents

1 About This Manual

Manual Scope and Organization

This manual is intended to describe the capabilities and operation of the Test Evolution software tools under **version 1.5.xxxx** of the Tev AXI software.

Conventions

`monospace`	examples of syntax and programming examples
bold	denotes items that you must enter or select. Also denotes default conditions of API parameters.
italic	specialized terms, …

Related Documentation

Test Evolution General System Manuals
Test Evolution DPS12 User Manual
Test Evolution DD48 User Manual

2 Installation

The Test Evolution software tools are installed as part of the normal installation of the TEV software.

Software tools can be accessed from the standard Window menus at:
Start/AllPrograms/TEV/AXI

By default, the software tool executables are located at:
…\Program Files\TEV\AXI\bin

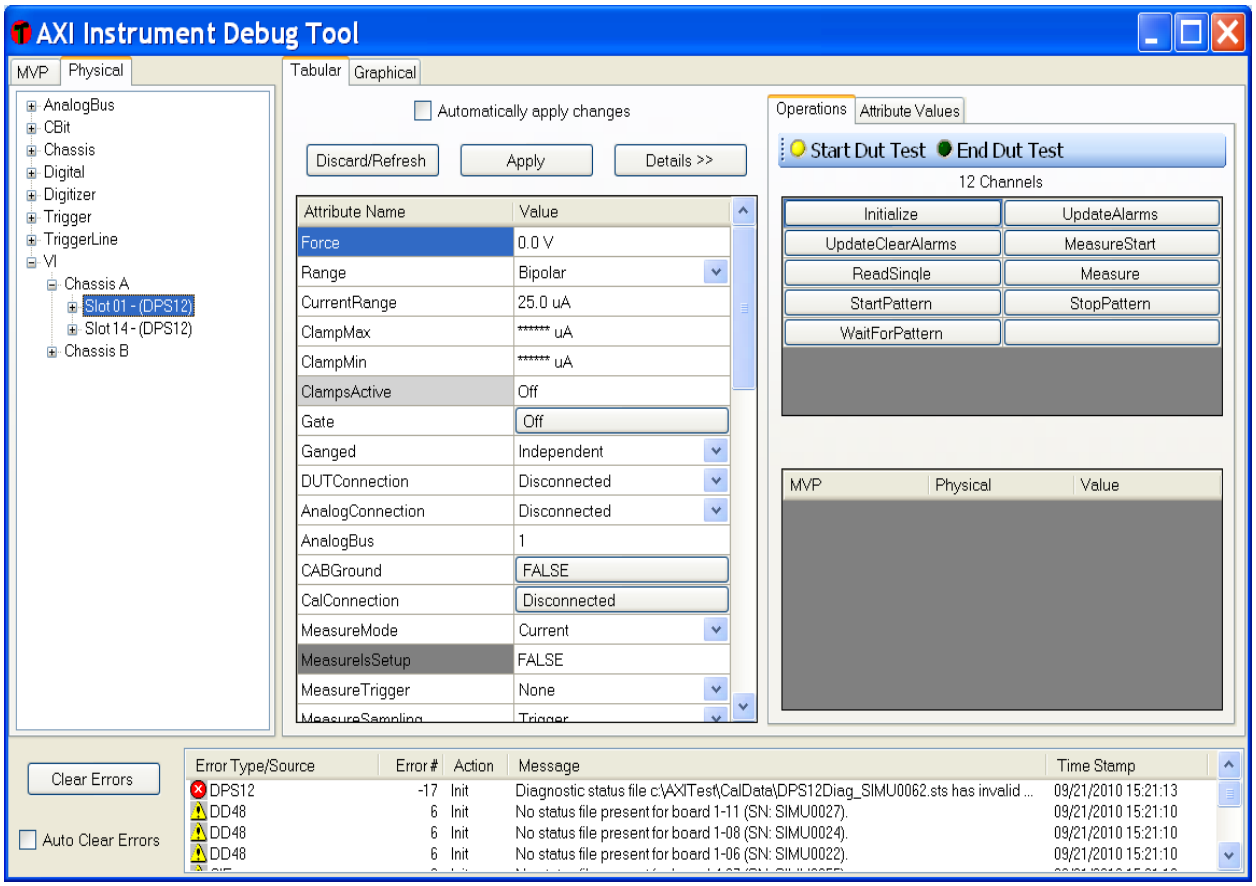
and are Application file types (.exe).

3 Instrument Debug Tool

The Instrument Debug Tool displays state of the programmable parameters for all instruments.
It also provides a means to interactively set/modify instrument parameters and actions.

Philosophy of shared memory space used by both drivers and tools.

Each TEV Instrument driver is designed to publish all the attributes as well as the set of operations.
This information is automatically picked up by the IDT. This includes the valid range of numerical parameters, etc.



Basic organization – 4 panes

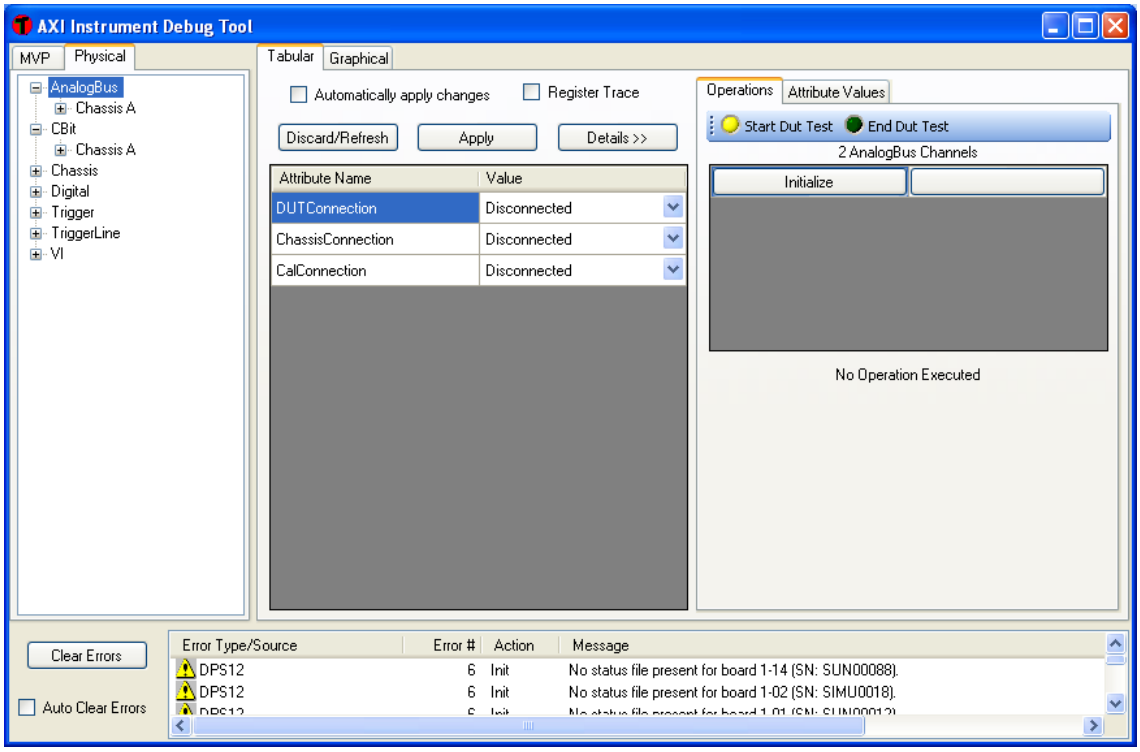
Left Instrument inventory

Center Instrument parameters

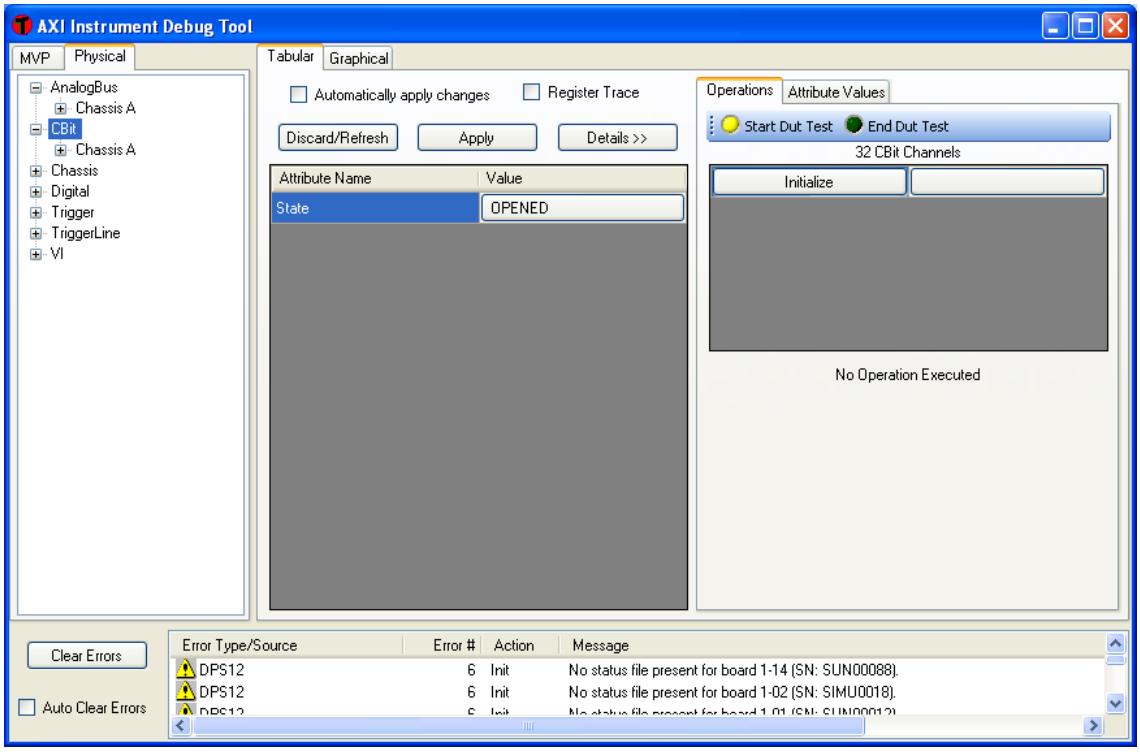
Right Instrument Operations /??? Attributes

Bottom Error messages

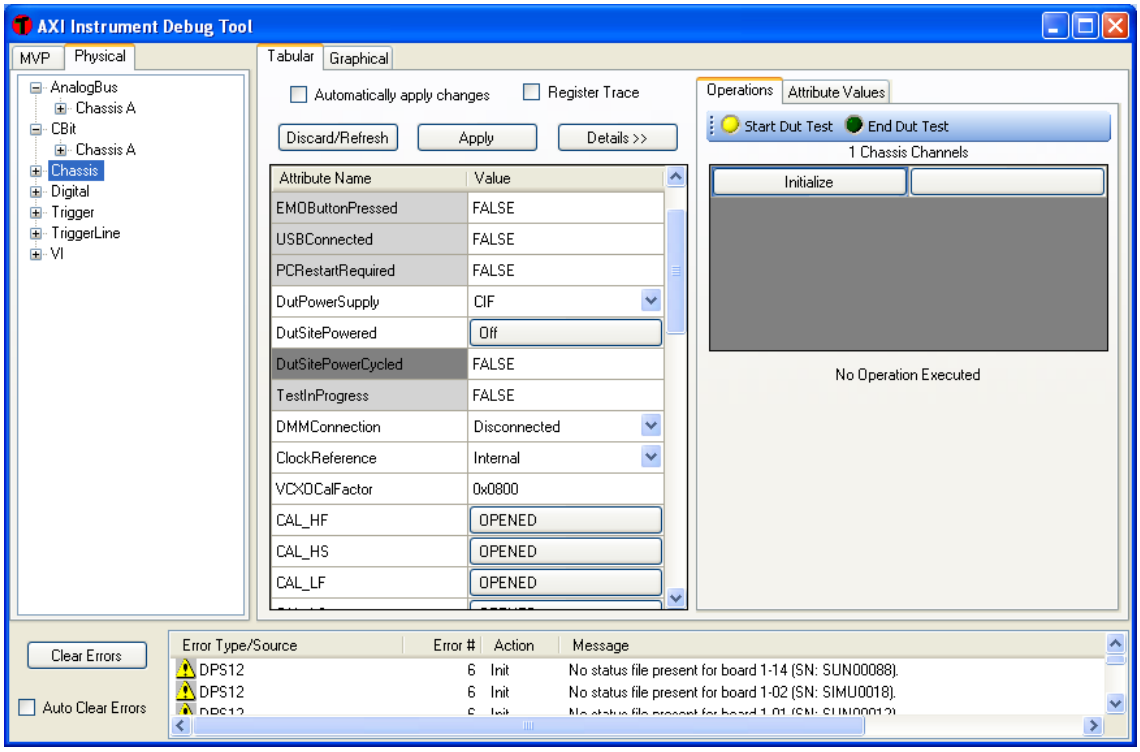
Analog Bus



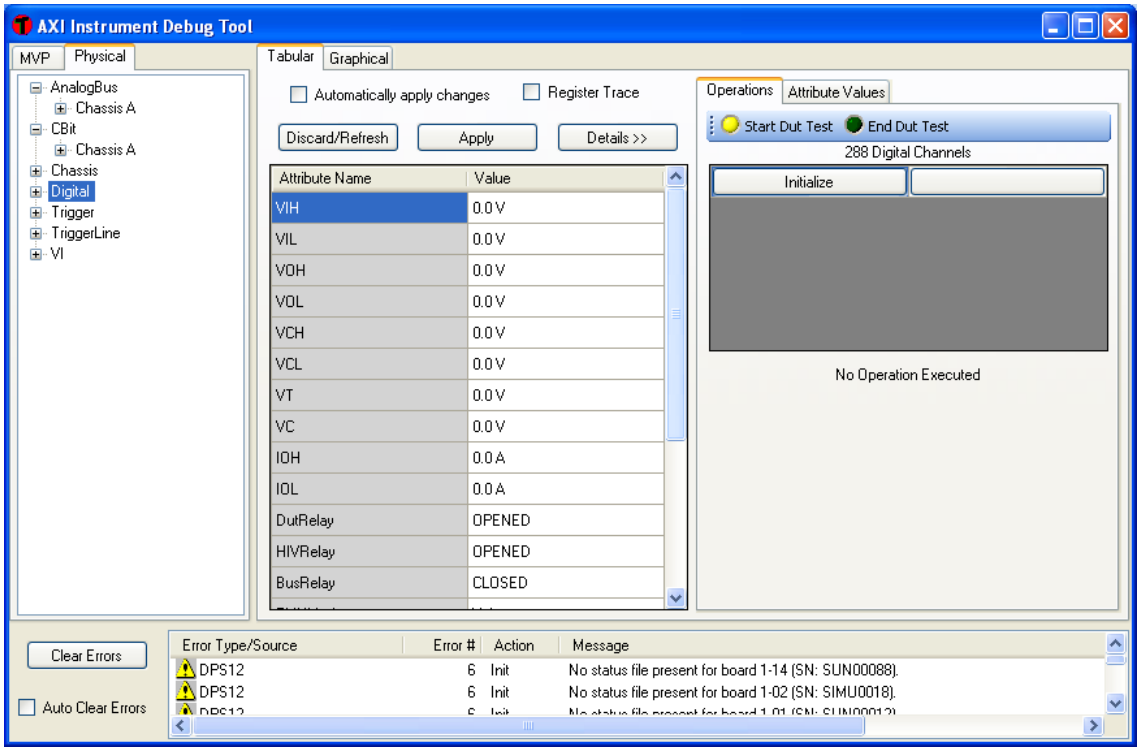
CBits



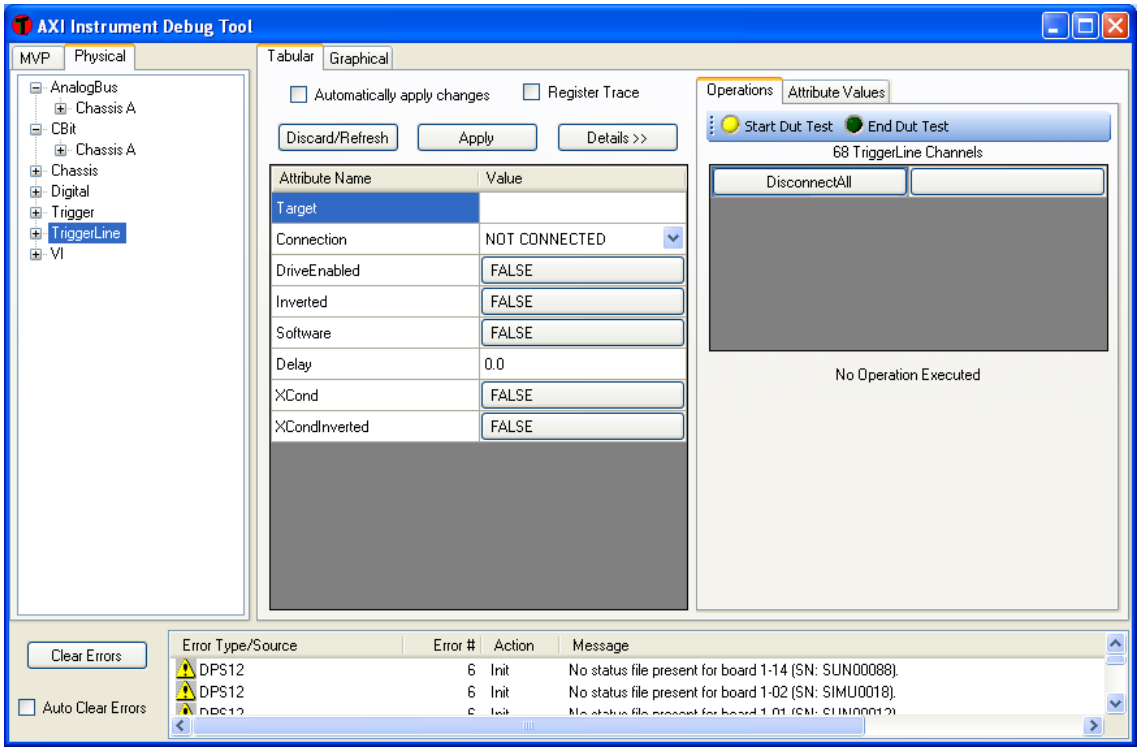
Chassis



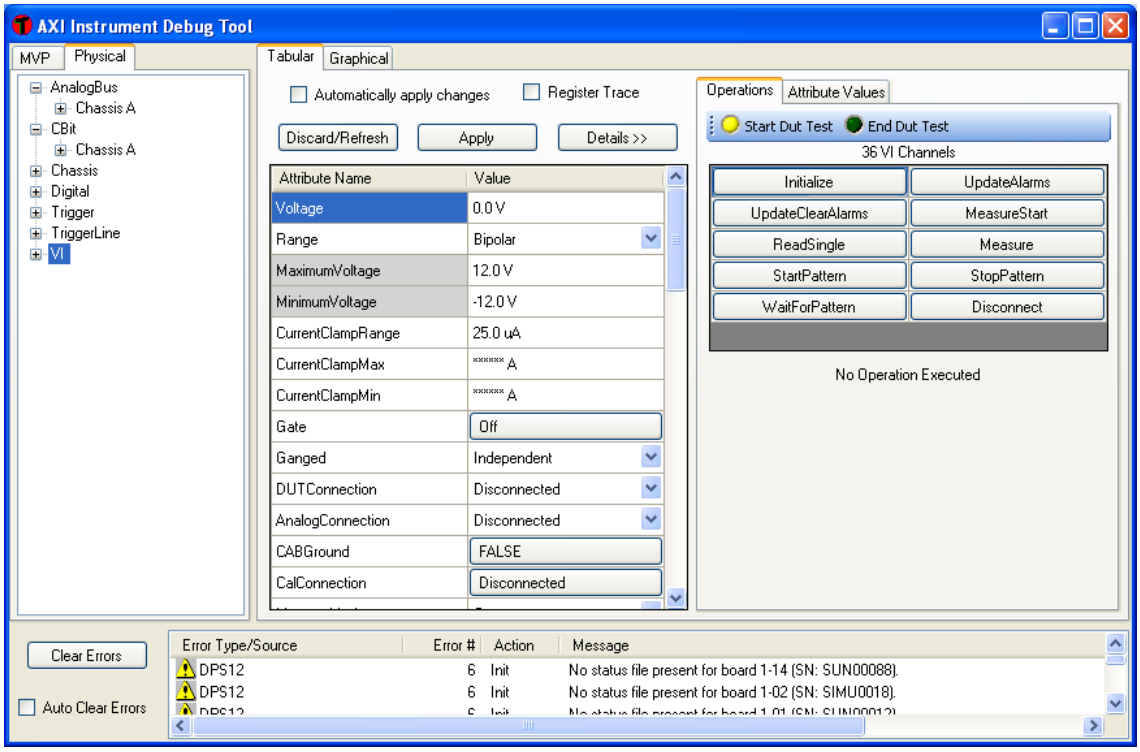
Digital



Trigger Line



VI



4 Pattern Debug Tool

The Pattern Debug Tool provides interactive operation of the Dynamic Digital Subsystem (DD48)
Works with hardware data directly.
Changes made in the tool do not affect pattern files or the API calls in the test program…

Capabilities include:

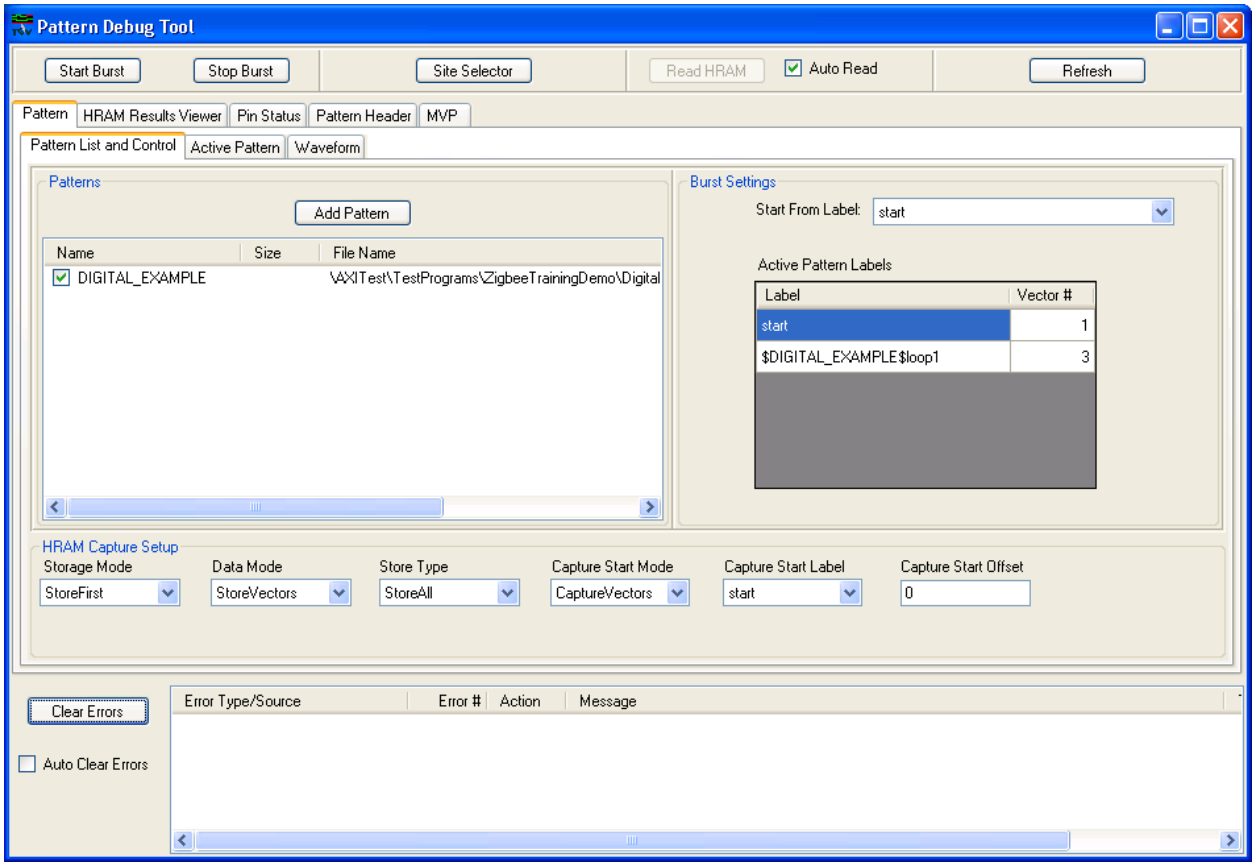
- Load MVP data and patterns.
- Manage HRAM capture.
- Modify vector and pin pattern data.
- Burst pattern and view results.
- Change pin setup data (levels, edges, relays, etc.).
- Works with running test program

Top level navigation is provided by a list of functional areas

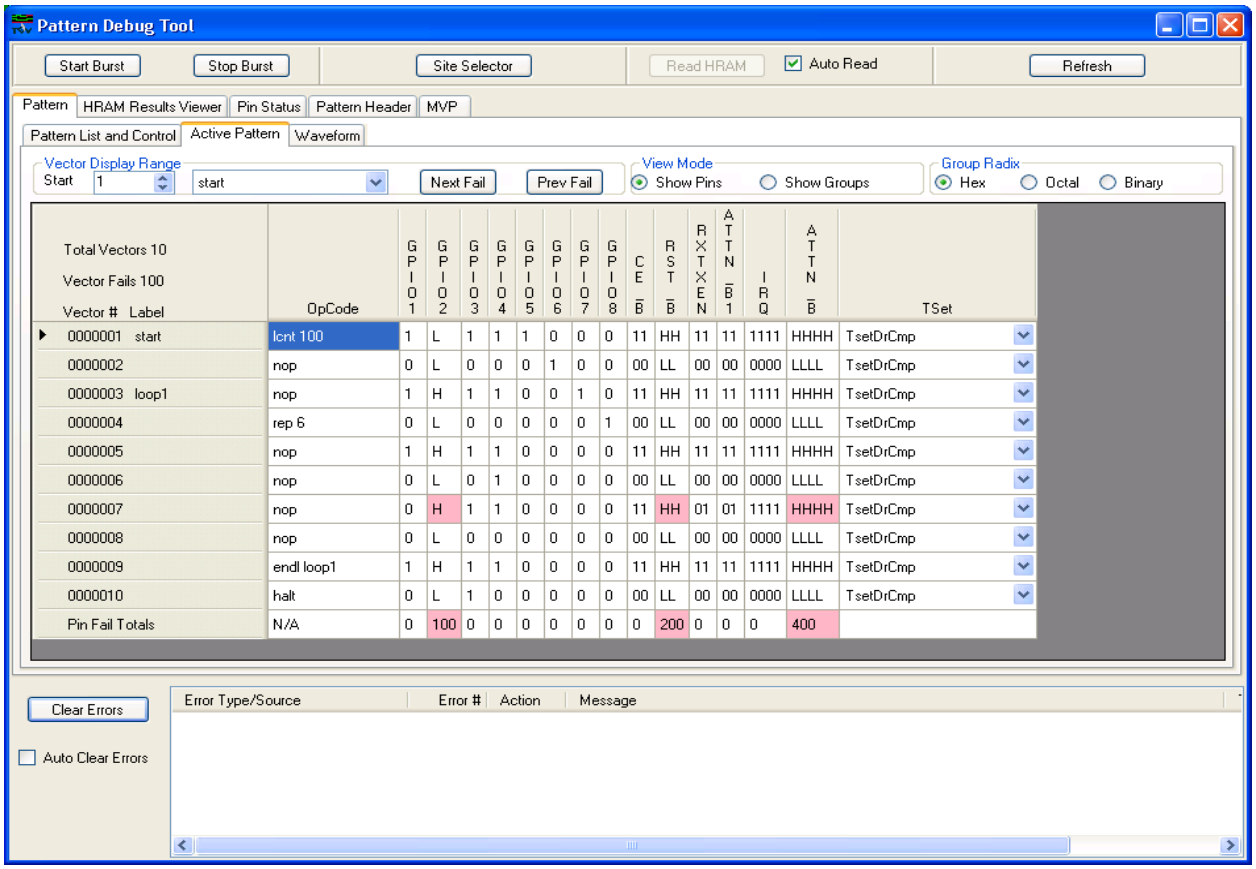
- Pattern
- HRAM
- Pin Status
- Pattern Header
- MVP

Selecting one of these options displays a secondary list of capabilities specific to that option

Pattern / Pattern List



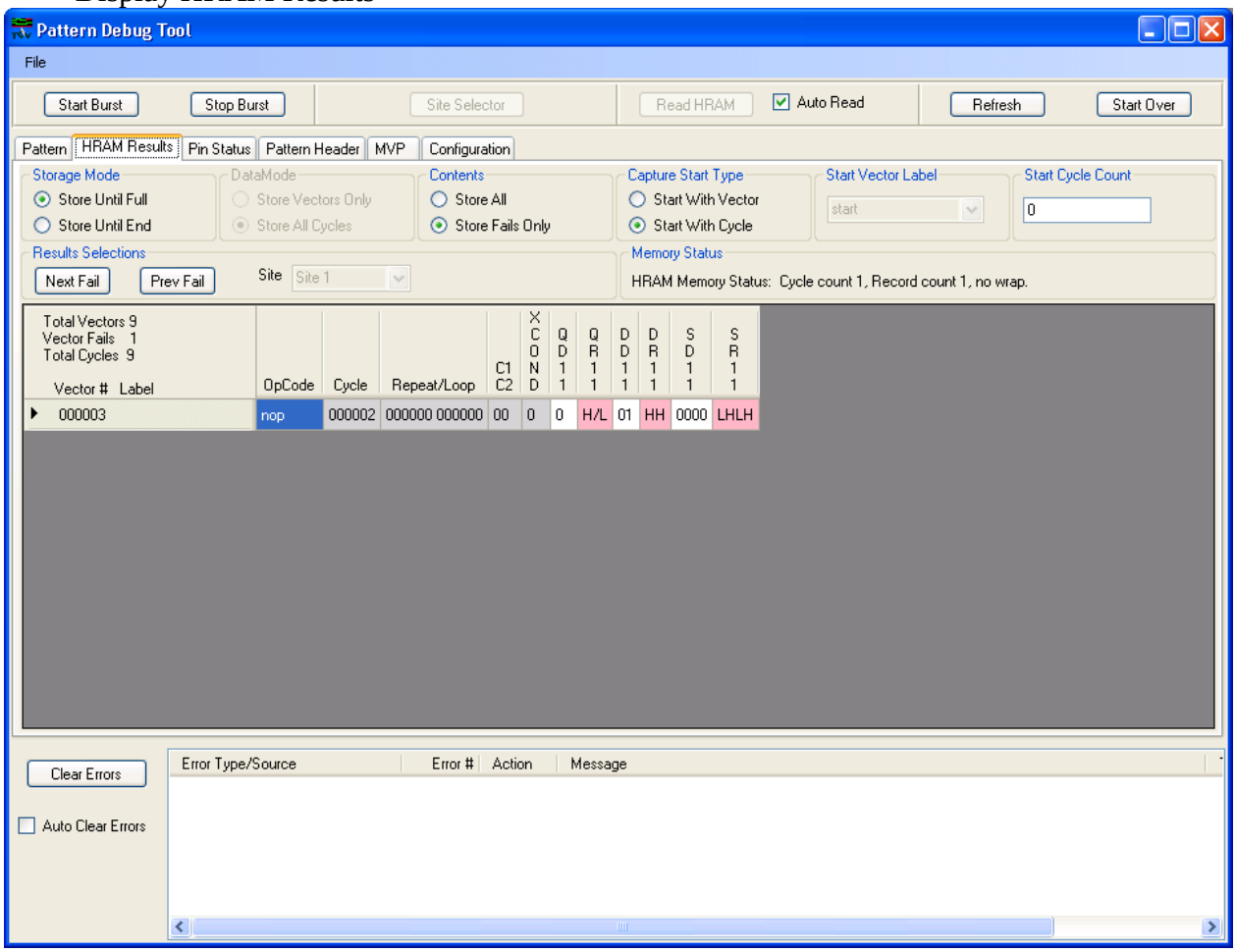
Pattern / Active Pattern



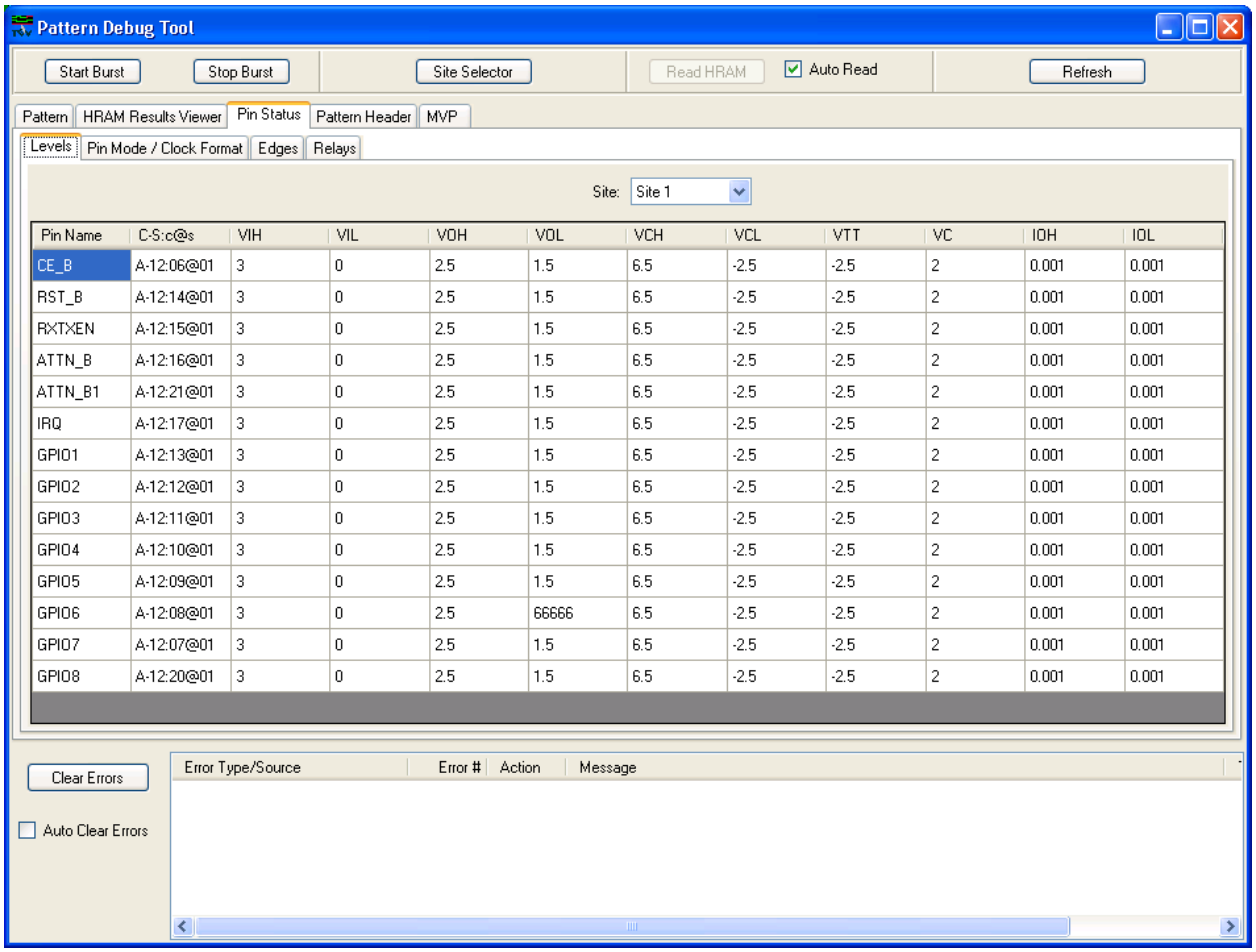
History Ram (HRAM) –

Setup HRAM capture conditions.

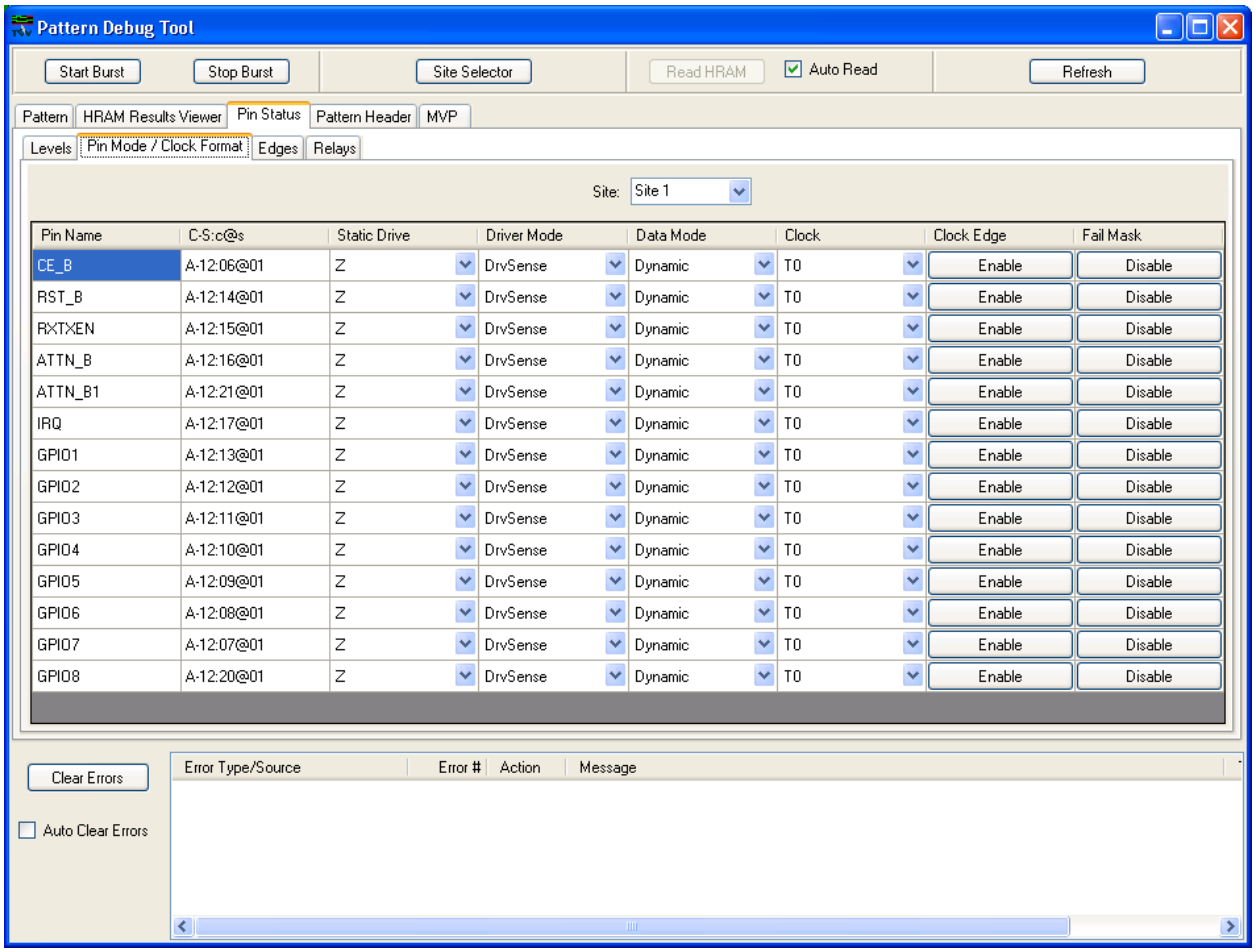
Display HRAM Results



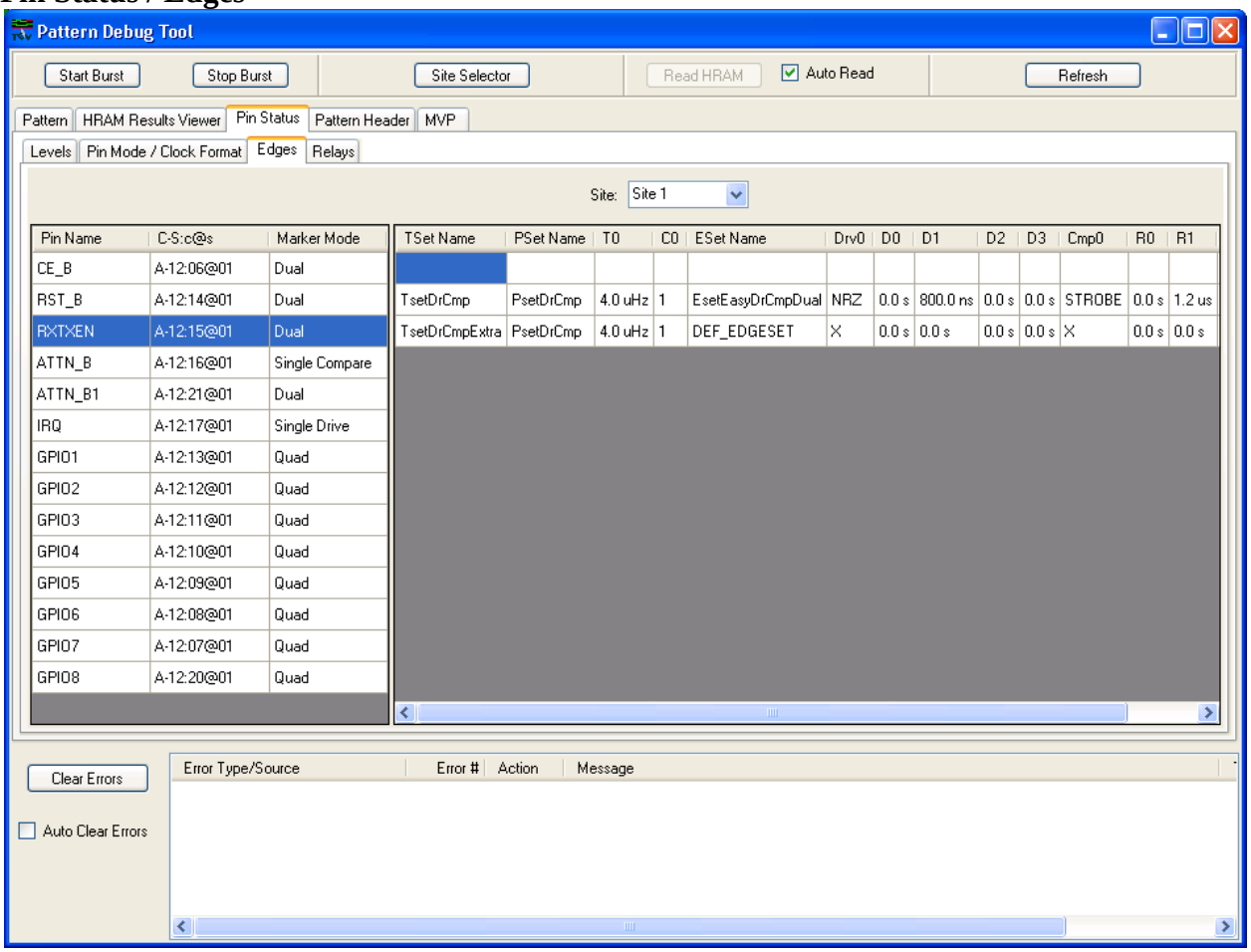
Pin Status / Levels



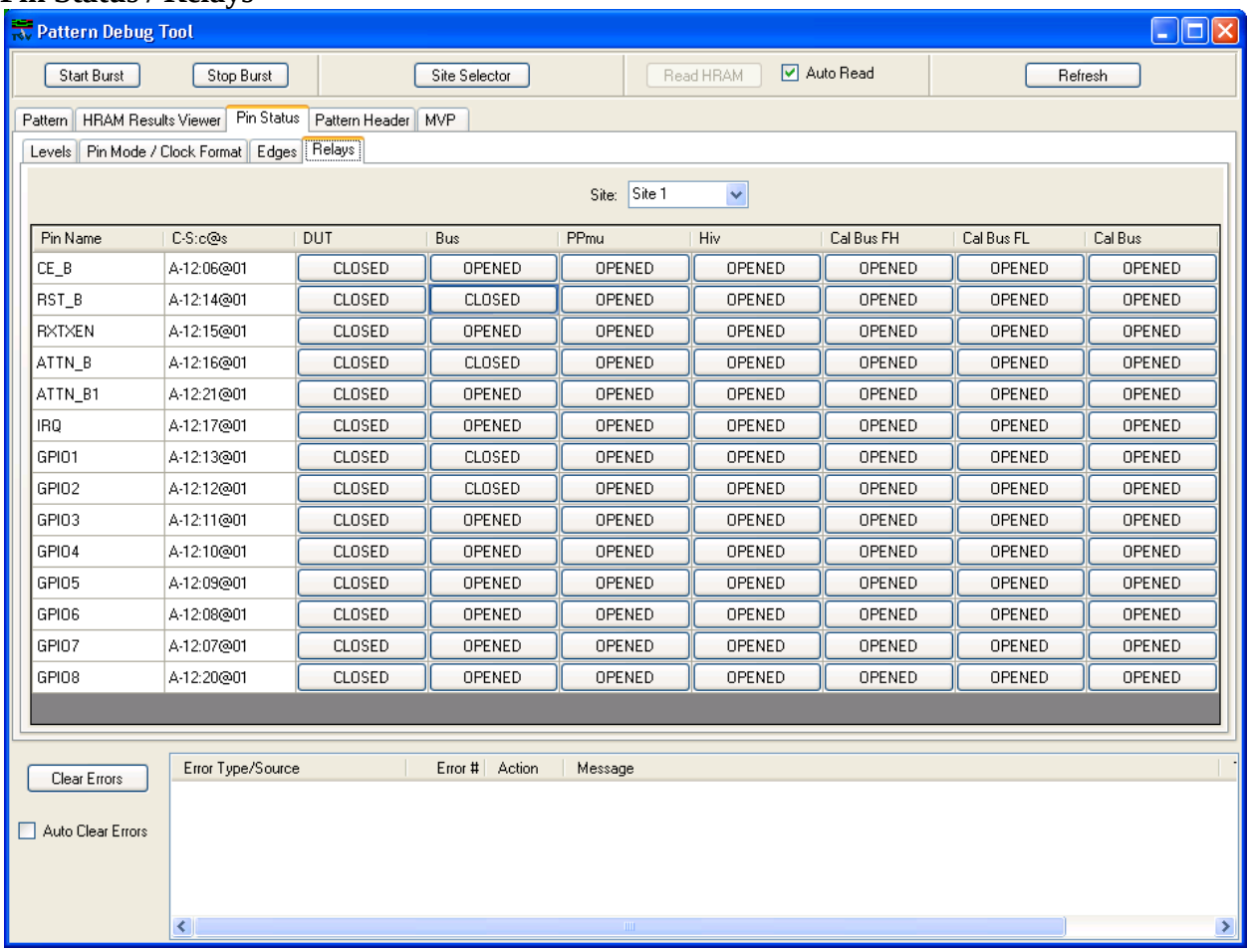
Pin Status / Pin Mode & Clock Format



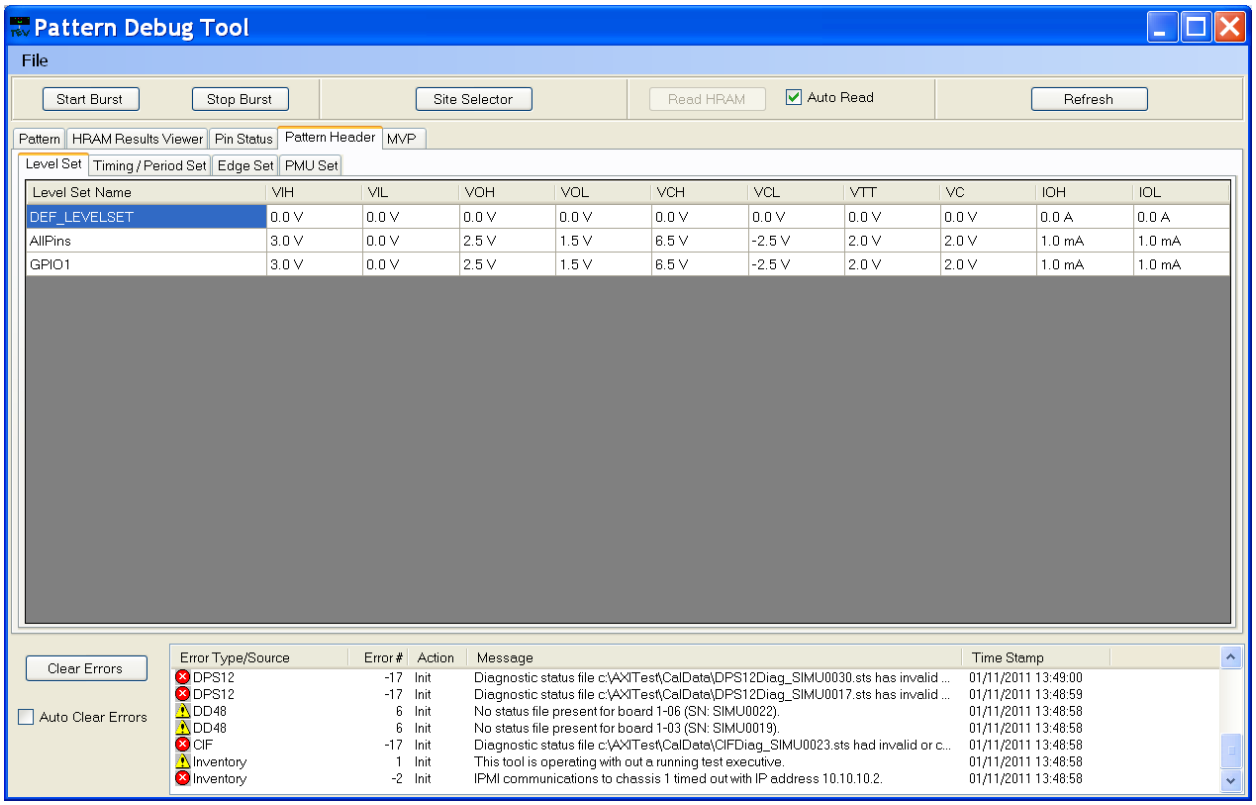
Pin Status / Edges



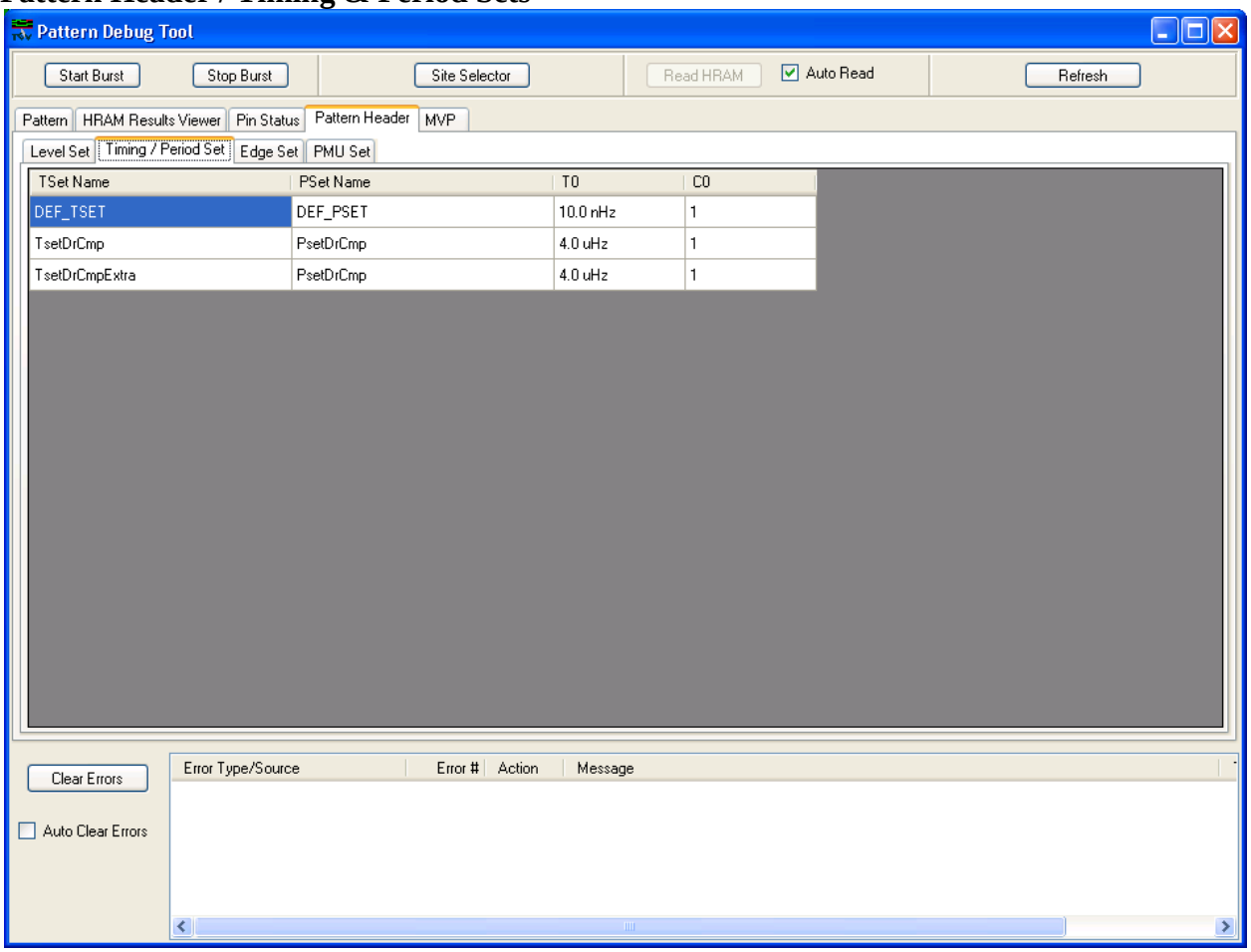
Pin Status / Relays



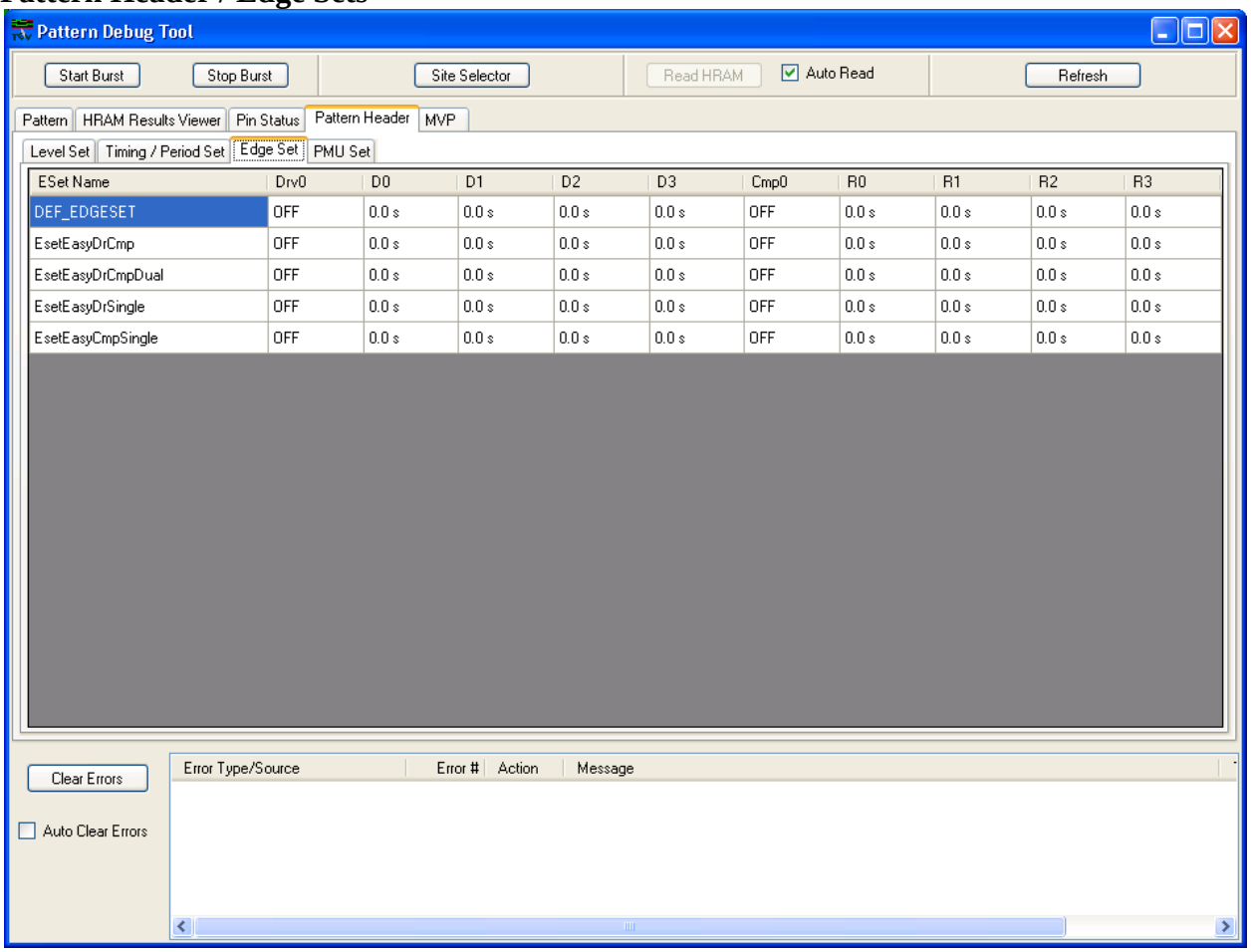
Pattern Header / Level Sets



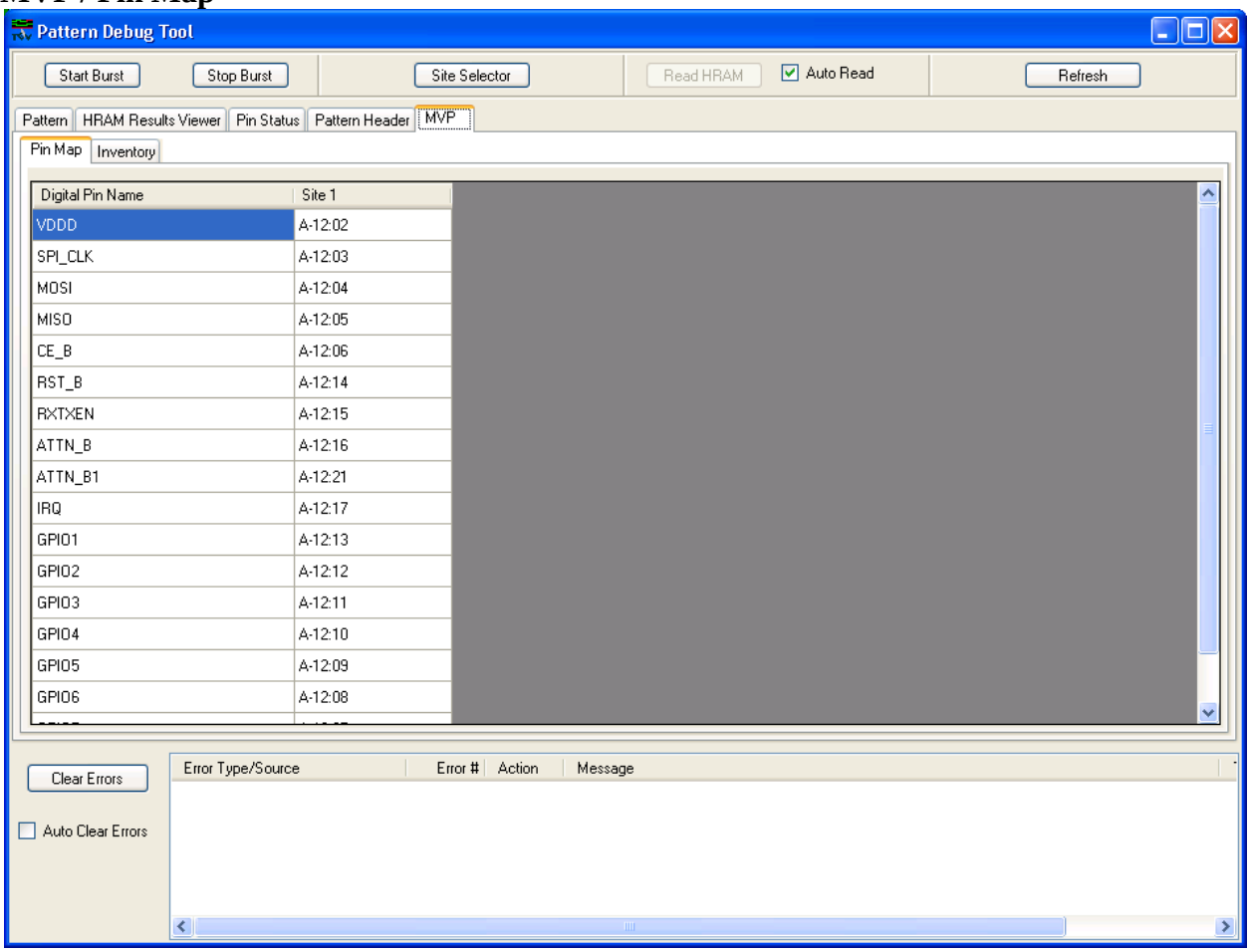
Pattern Header / Timing & Period Sets



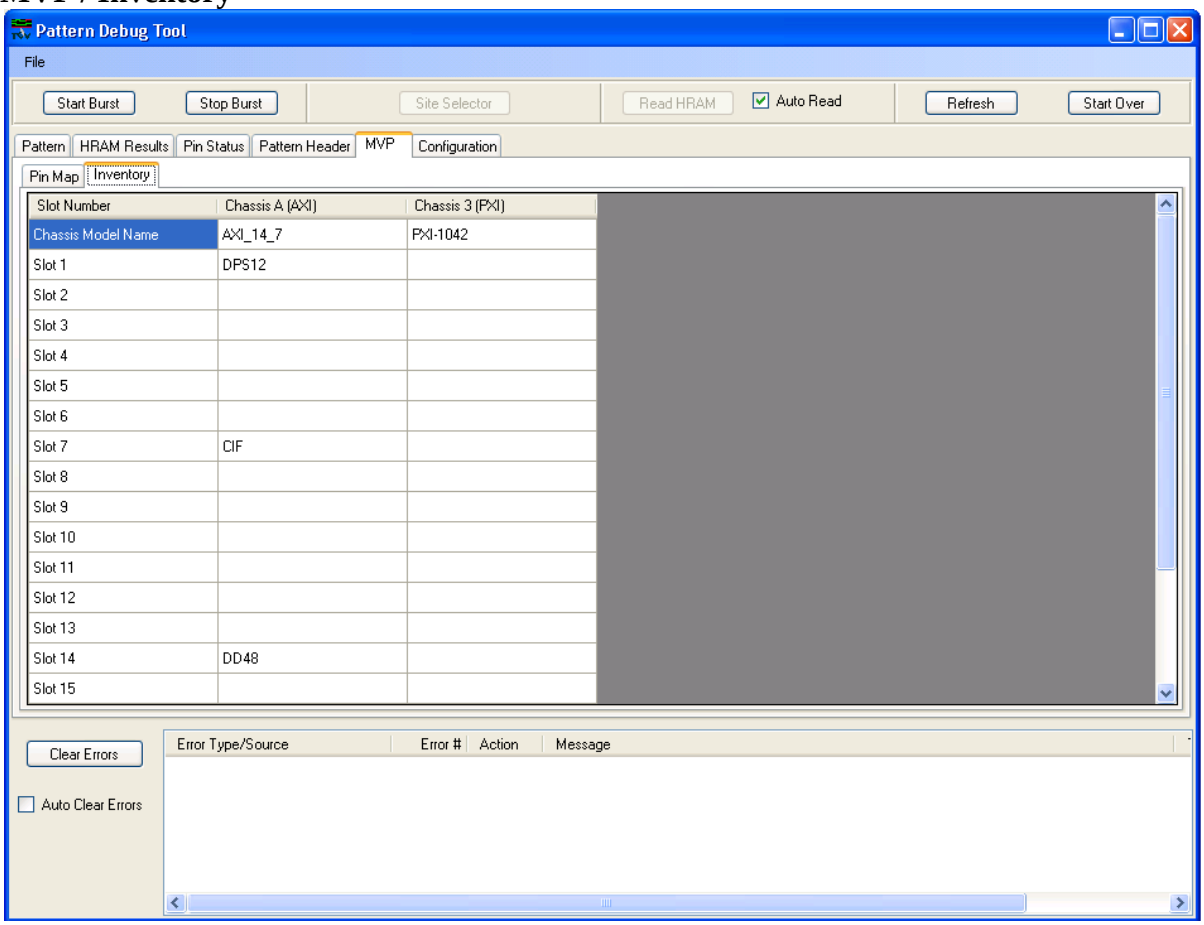
Pattern Header / Edge Sets



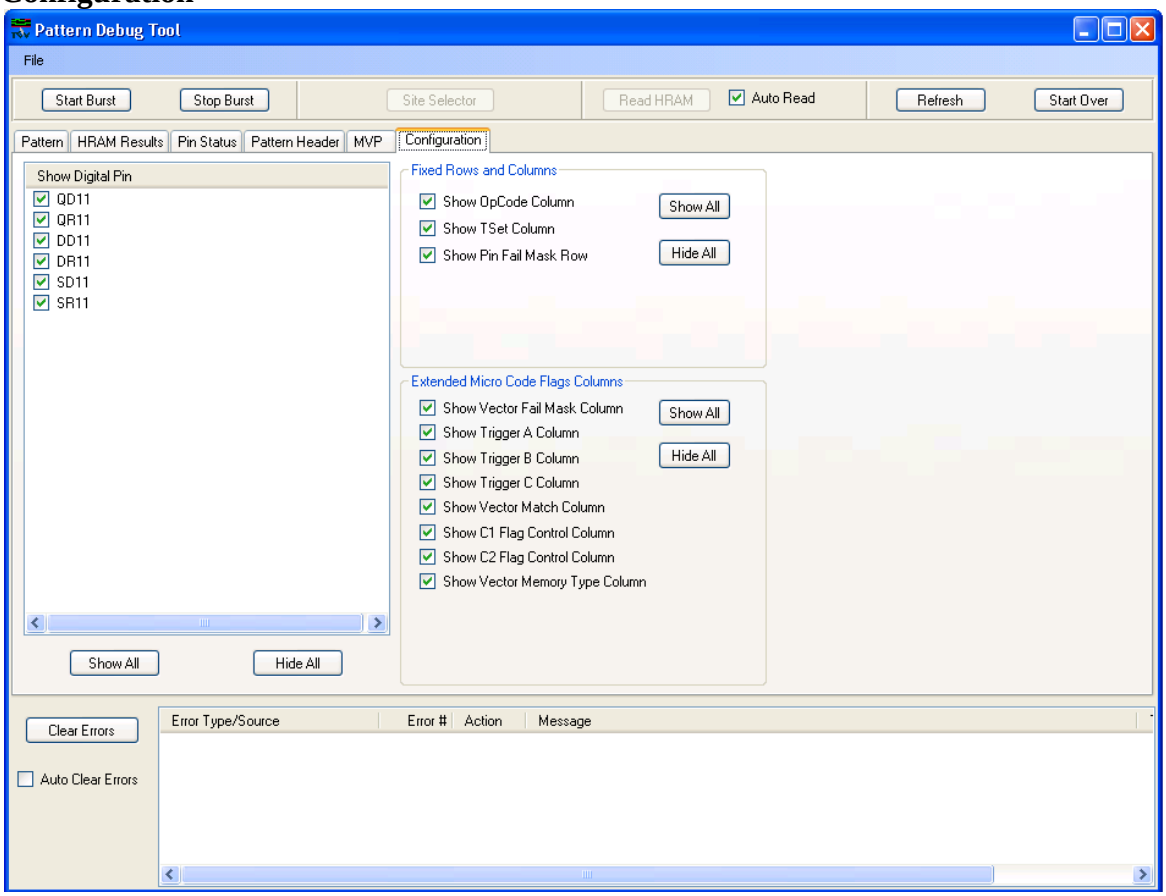
MVP / Pin Map


Pattern Debug Tool
Start Burst
Stop Burst
Site Selector
Read HRAM
Auto Read
Refresh
Pattern
HRAM Results Viewer
Pin Status
Pattern Header
MVP
Pin Map
Inventory
Digital Pin Name
Site 1
VDDD A-12:02
SPI_CLK A-12:03
MOSI A-12:04
MISO A-12:05
CE_B A-12:06
RST_B A-12:14
RXTXEN A-12:15
ATTN_B A-12:16
ATTN_B1 A-12:21
IRQ A-12:17
GPIO1 A-12:13
GPIO2 A-12:12
GPIO3 A-12:11
GPIO4 A-12:10
GPIO5 A-12:09
GPIO6 A-12:08
Clear Errors
Auto Clear Errors
Error Type/Source
Error #
Action
Message

MVP / Inventory



Configuration



5 Pin Margin Tool

The Pin Margin Tool provides a convenient way to set up and save margin tests that provide insight into the behavior/timing of device signals. Typically these test are based on running a pattern multiple times while varying one or more timing/voltage parameters of the device.

Basic organization – 3 panes

Left Marginable resources

Right Parameter Setup / Results Display

Bottom Error messages

Pin Margin Setup

Margin parameters are selected and added to the parameter pane.

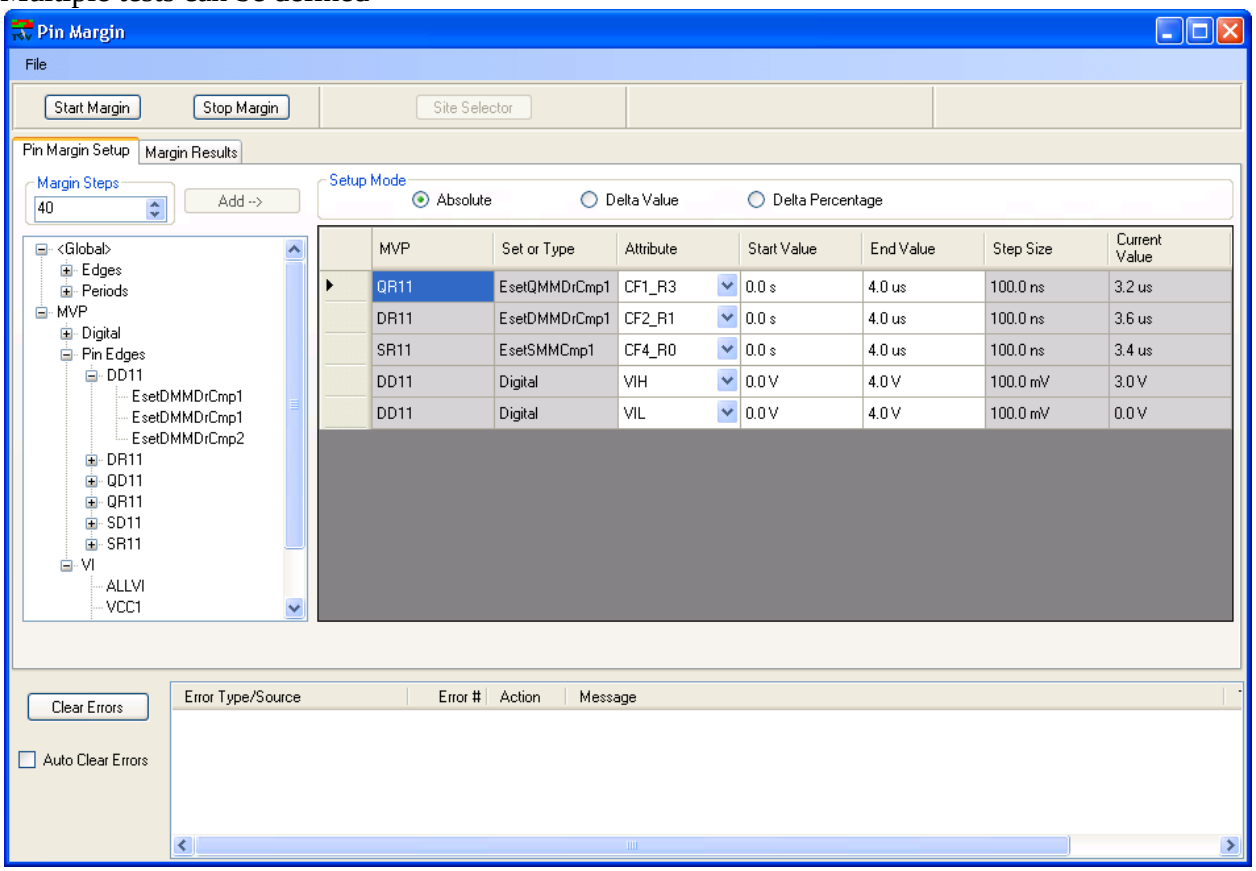
MVP attribute (Digital pin level, VI level) | Pin timing edge | Global timing edge | TO

Sweep Parameter values are set

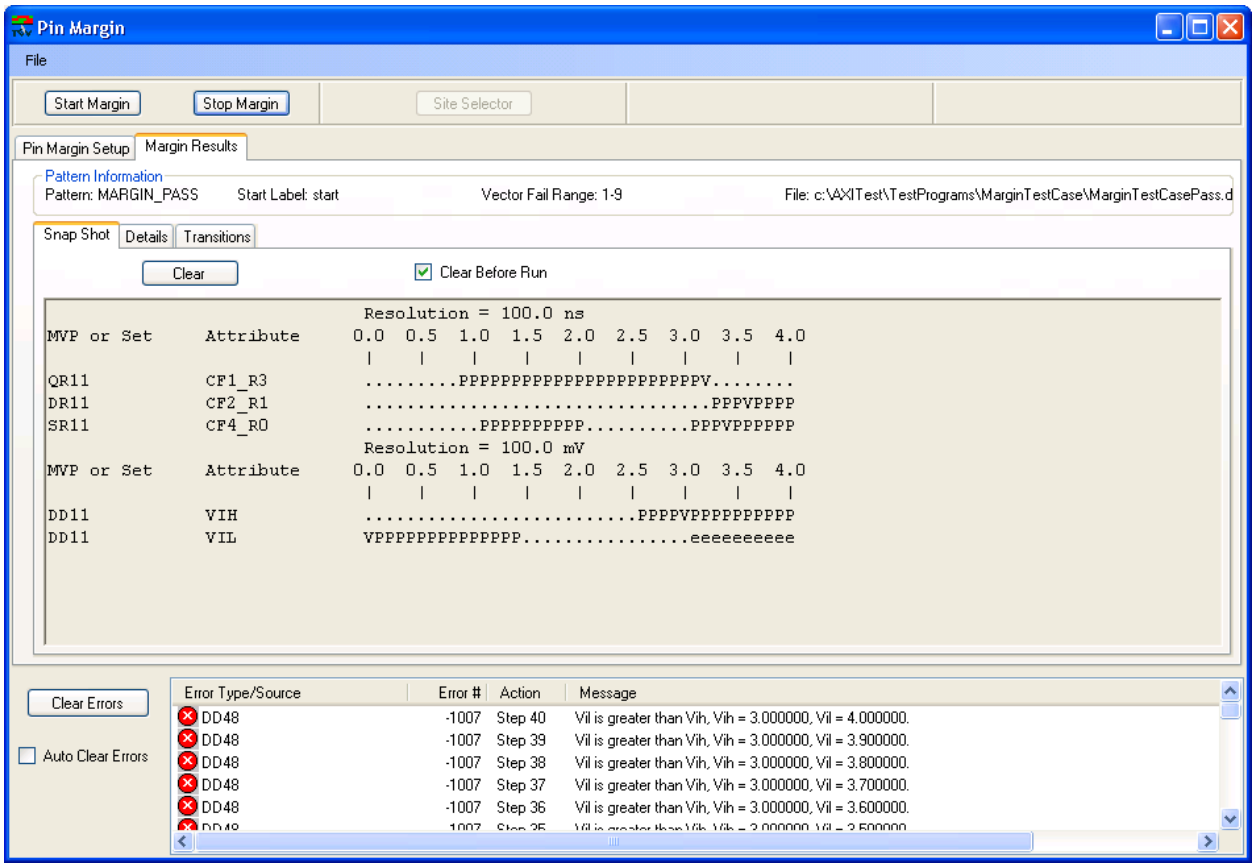
Absolute (Start, Stop) | Delta (Plus, Minus) | Percentage (Plus, Minus)

Margin step size is set

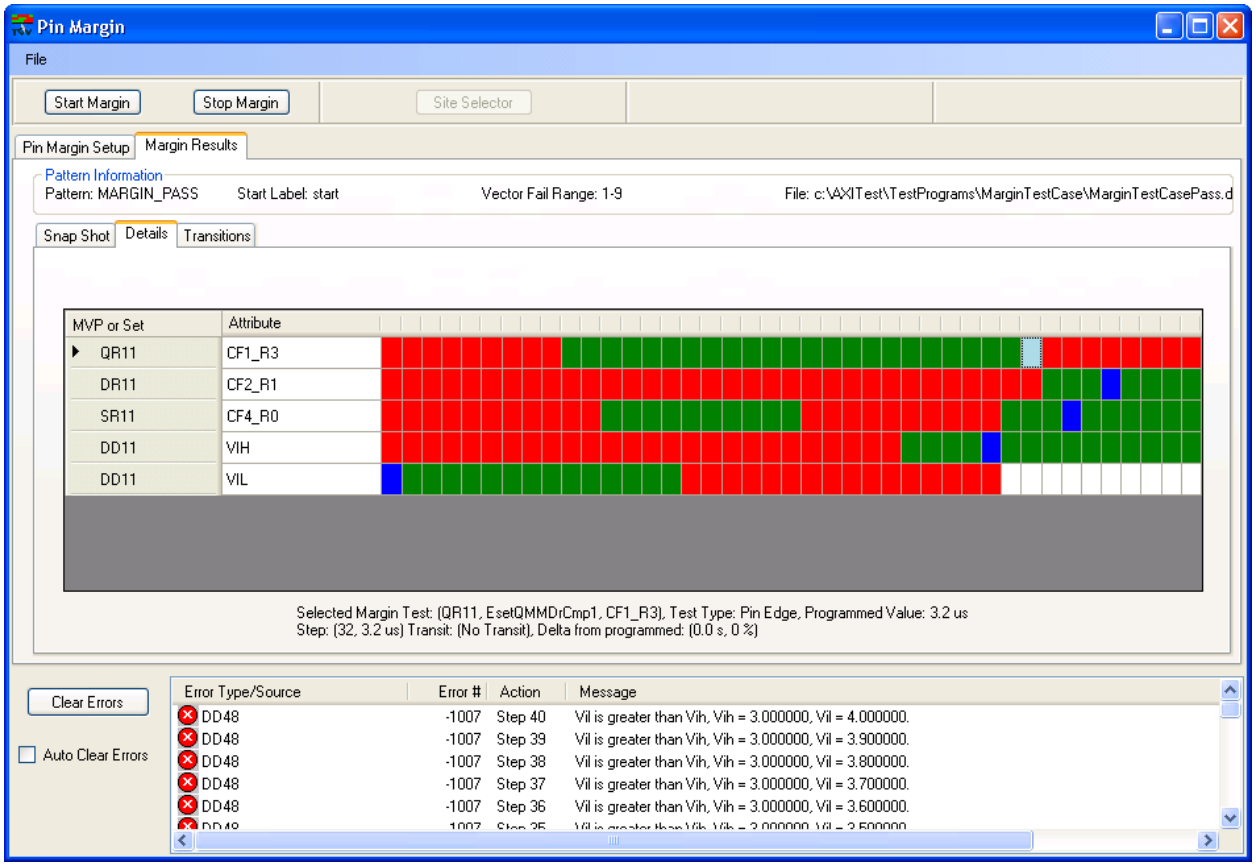
Multiple tests can be defined



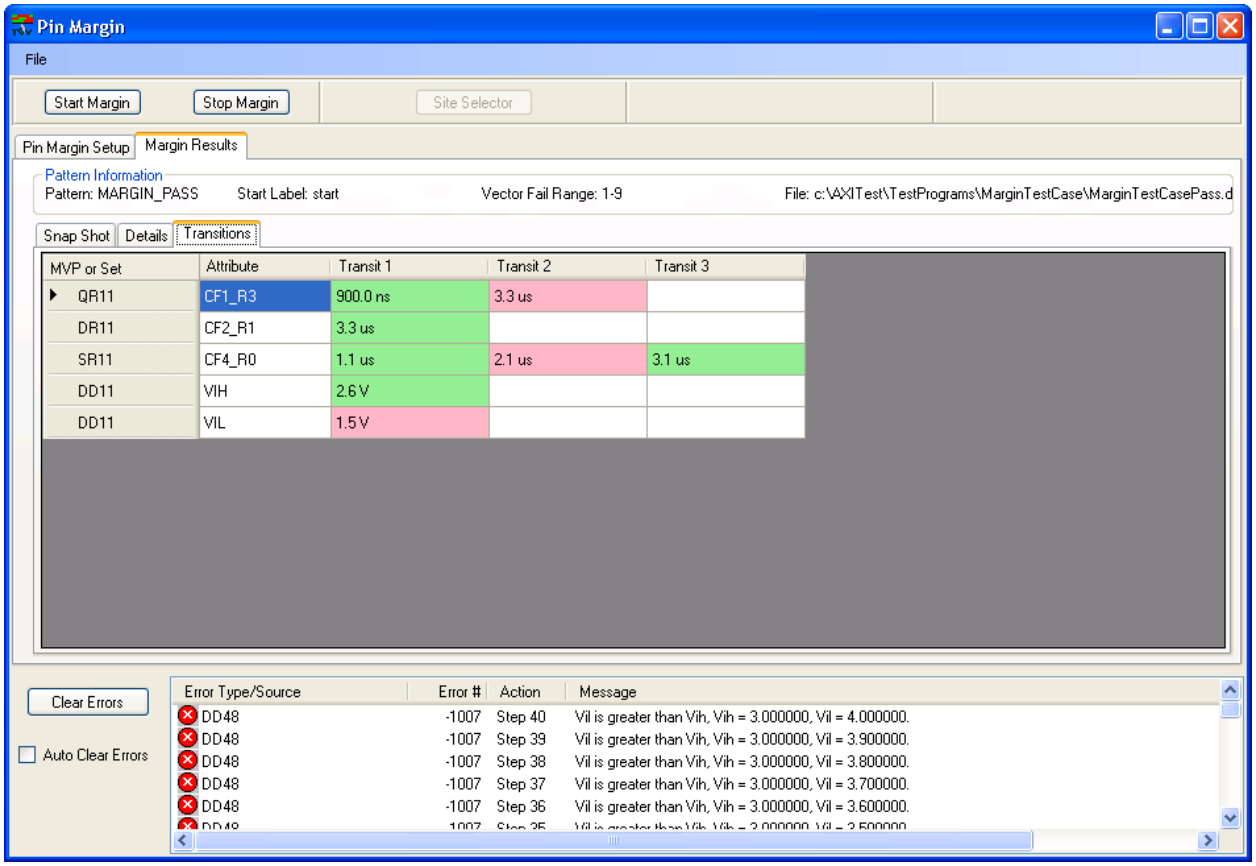
Pin Margin Results / Snap Shot
Text-based view provides a copy/pasteable view of margin results.



Pin Margin Results / Details
More detailed, graphical view of the margin results



Pin Margin Results / Transitions
Numerical details of the edge transitions.



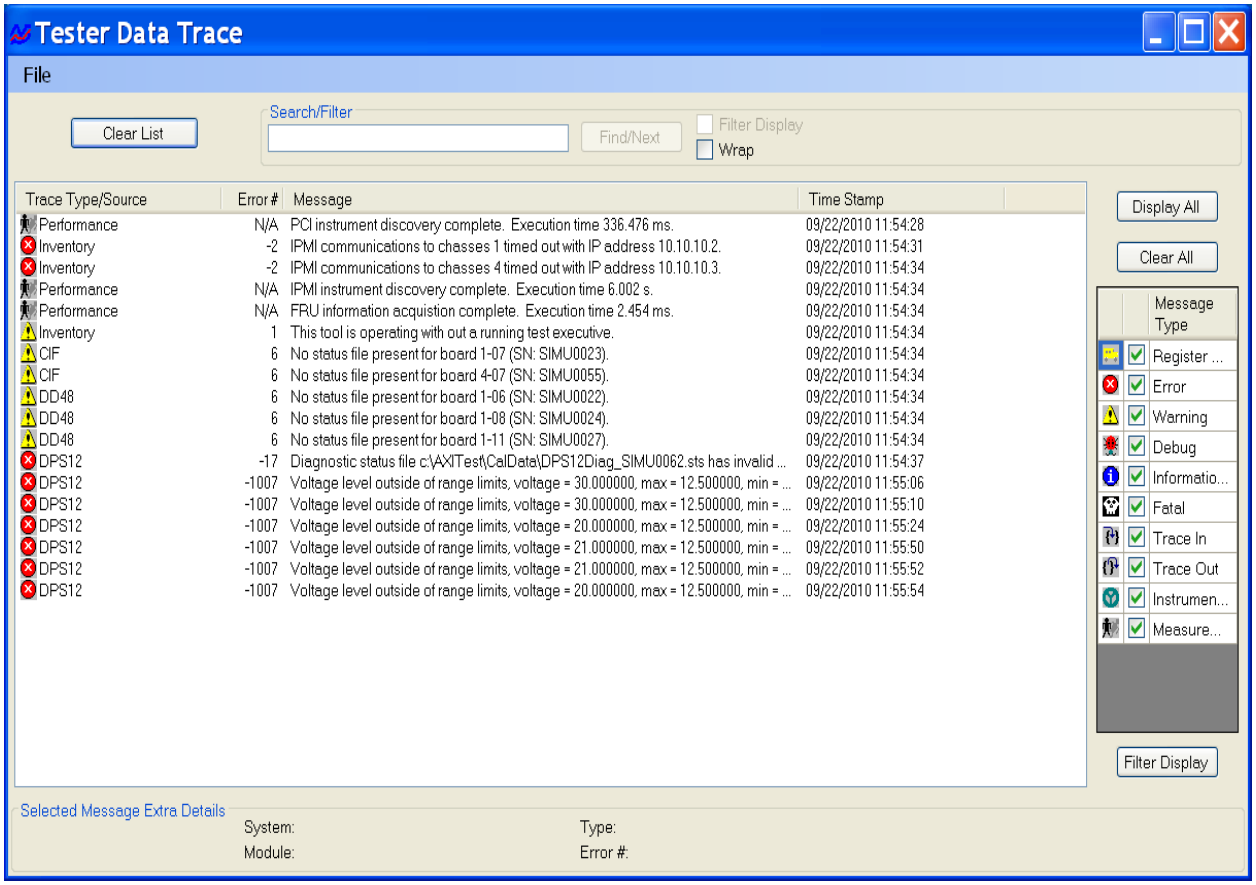
6 Trace Tool

The Trace Tool provide a central point to monitor the various error and warning messages generated as a test program is being debugged.

Describe the message types

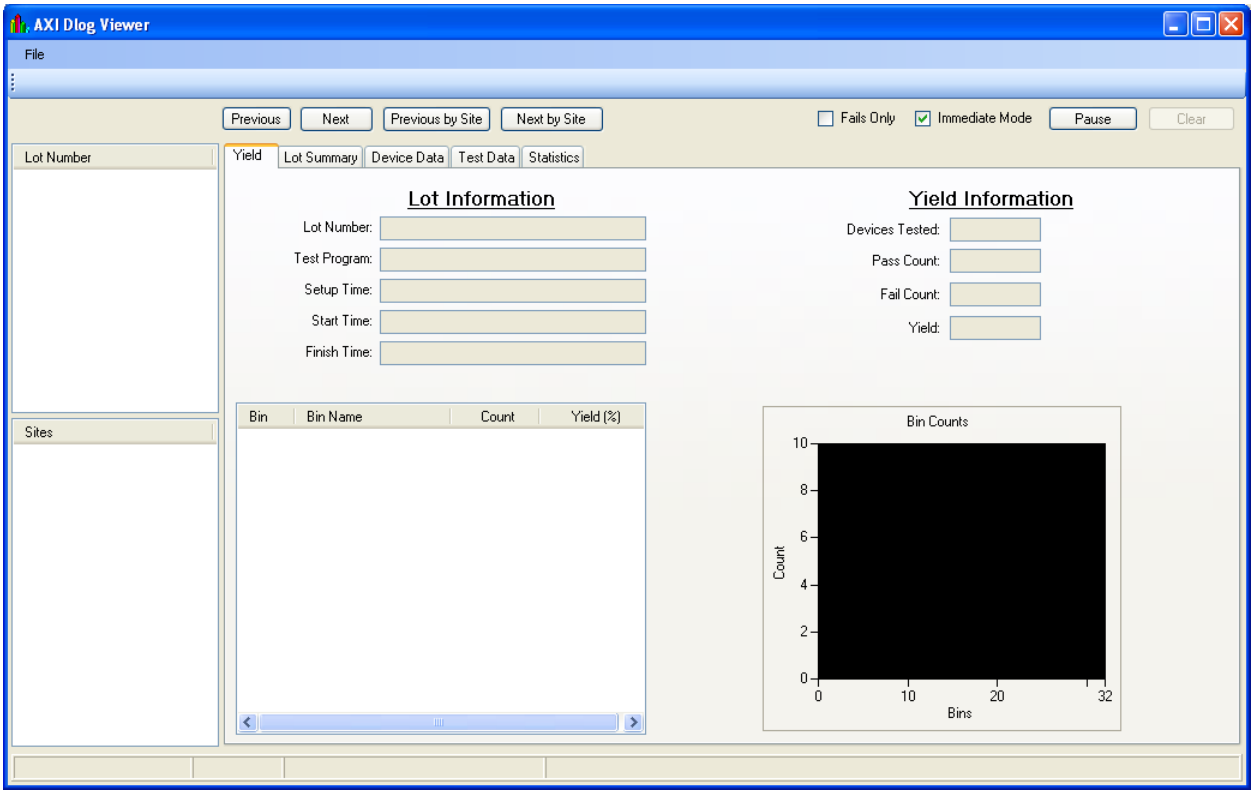
Filter display functionality

Test program APIs / output to



7 Datalog Viewer

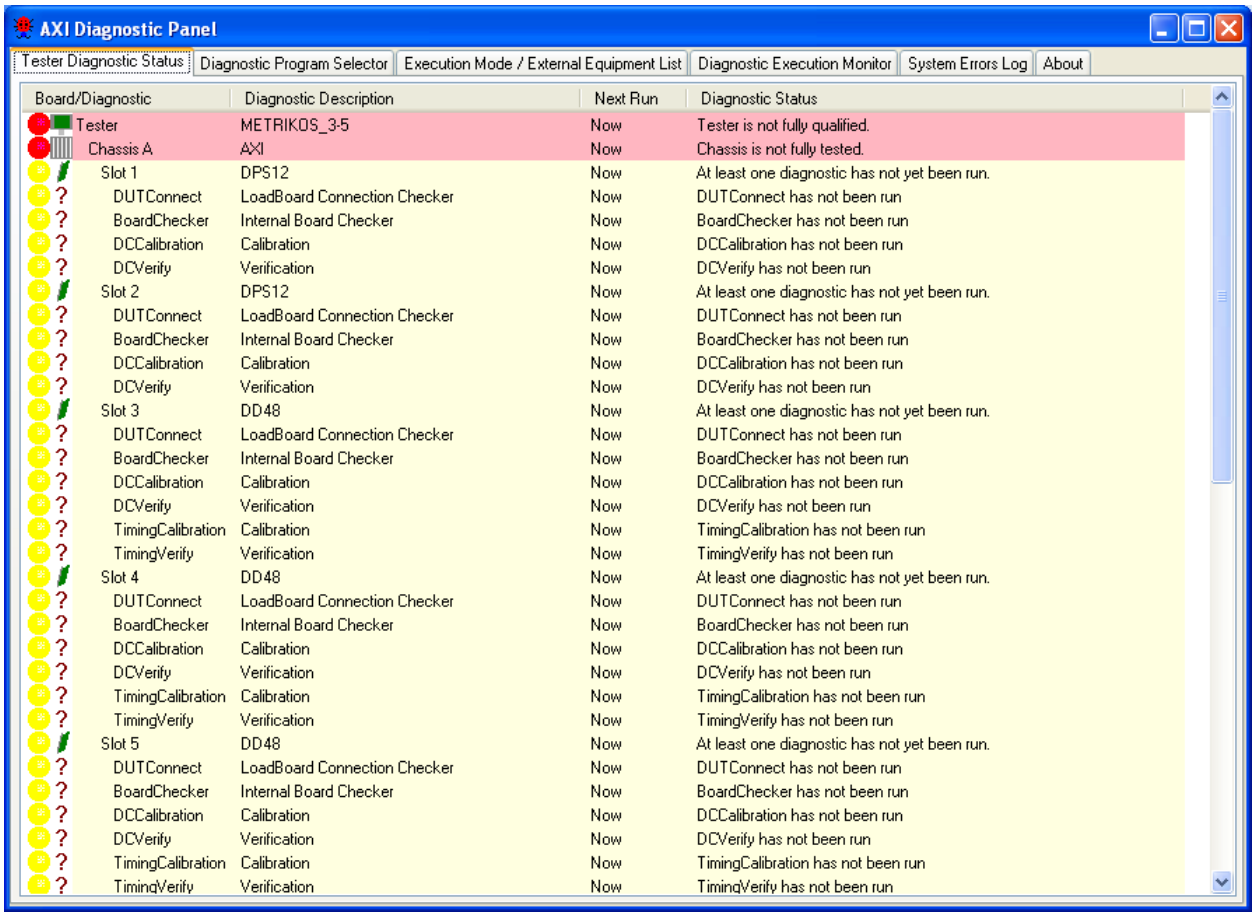
The Datalog Viewer provides the ability to view the results of a test program both during execution and after one or more devices have been tested. The results of Tev diagnostic programs can also be viewed with this tool.

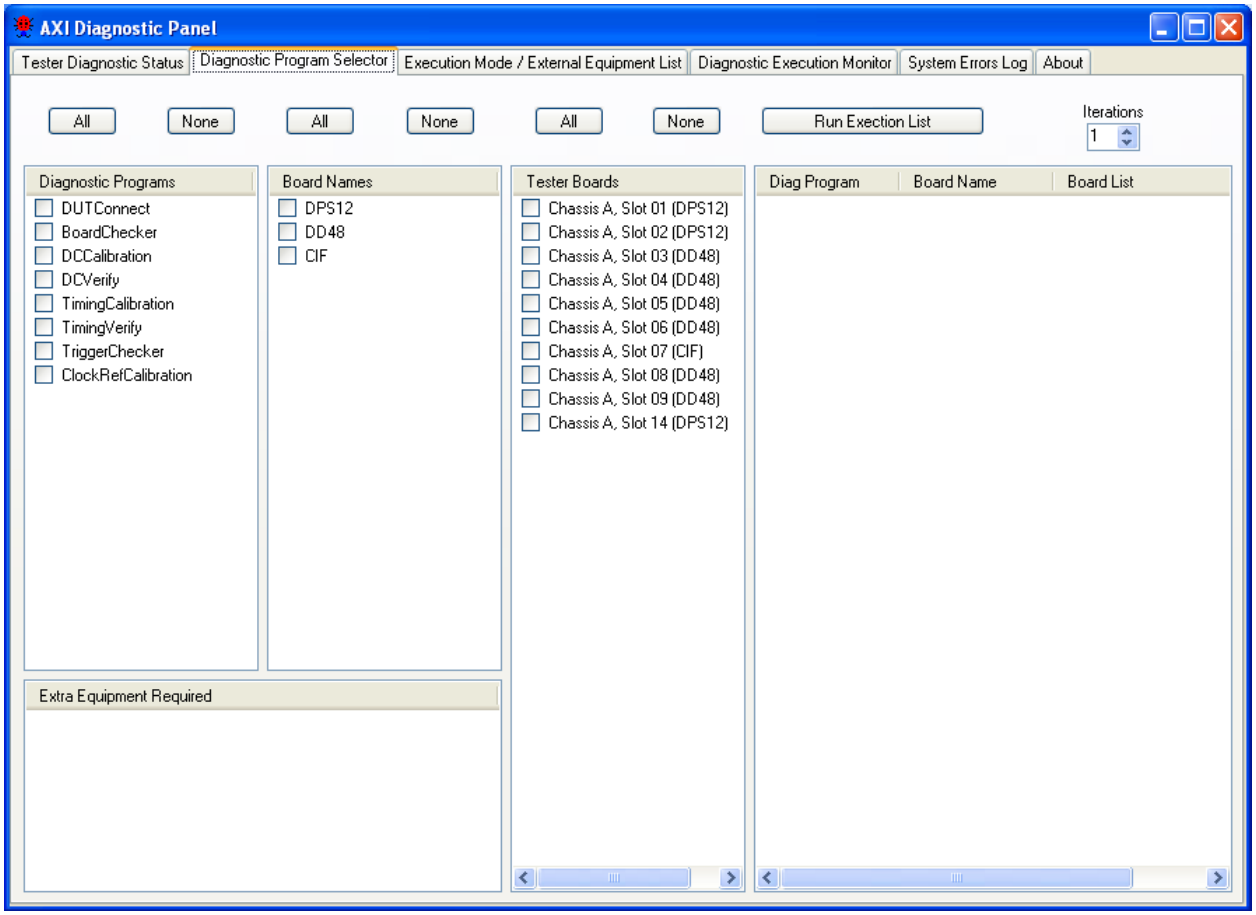


8 Diagnostic Tool

The Diagnostic Tool is the control center for running the various diagnostic programs.

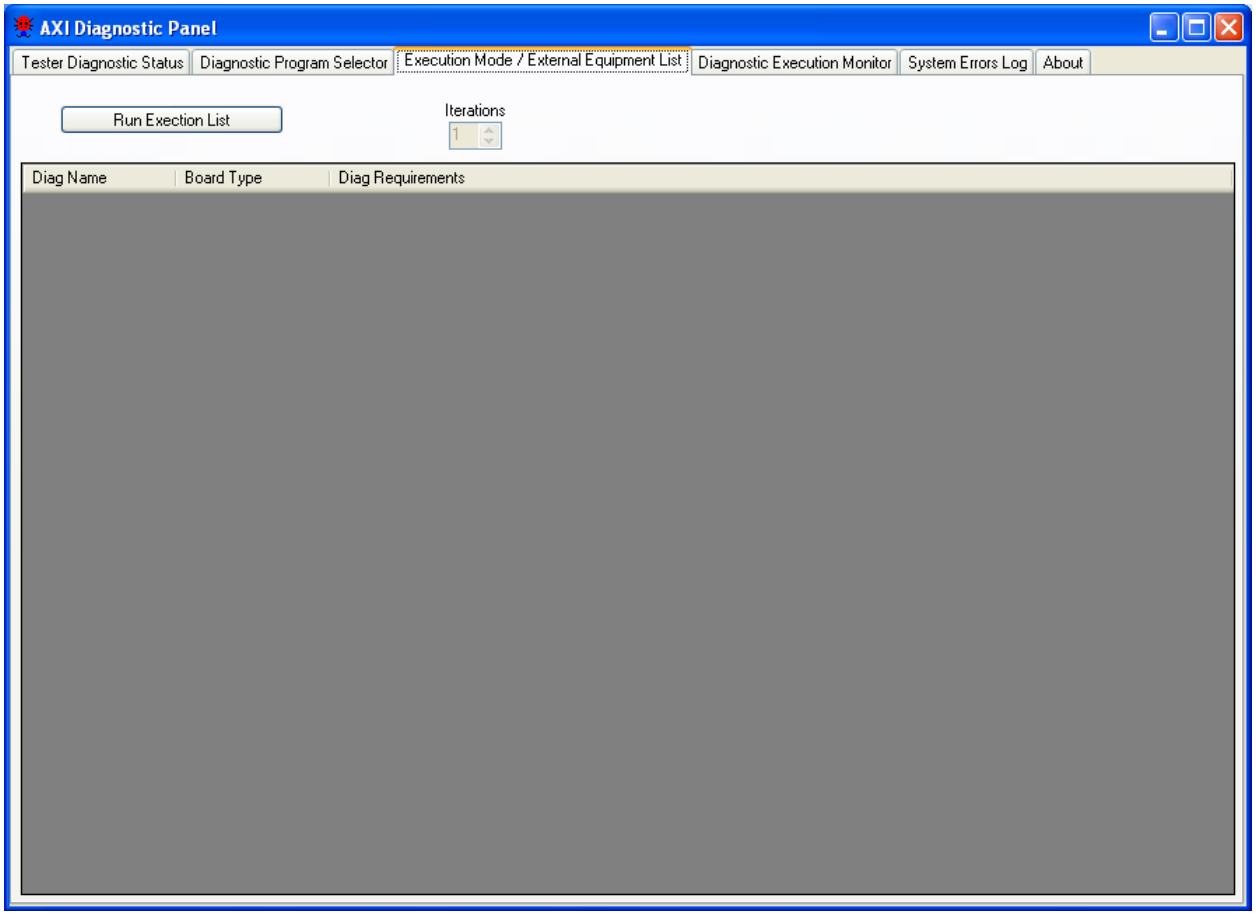
Organization

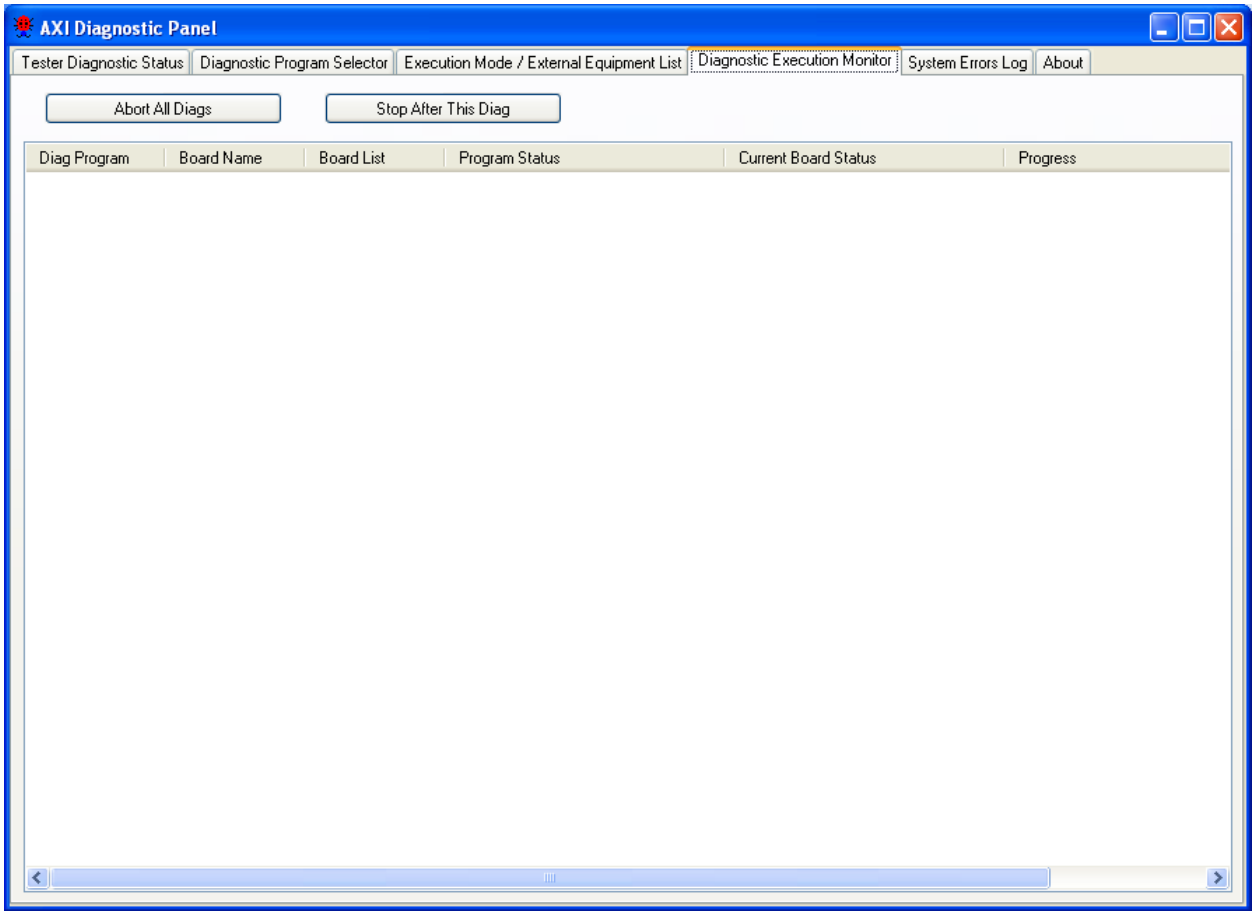


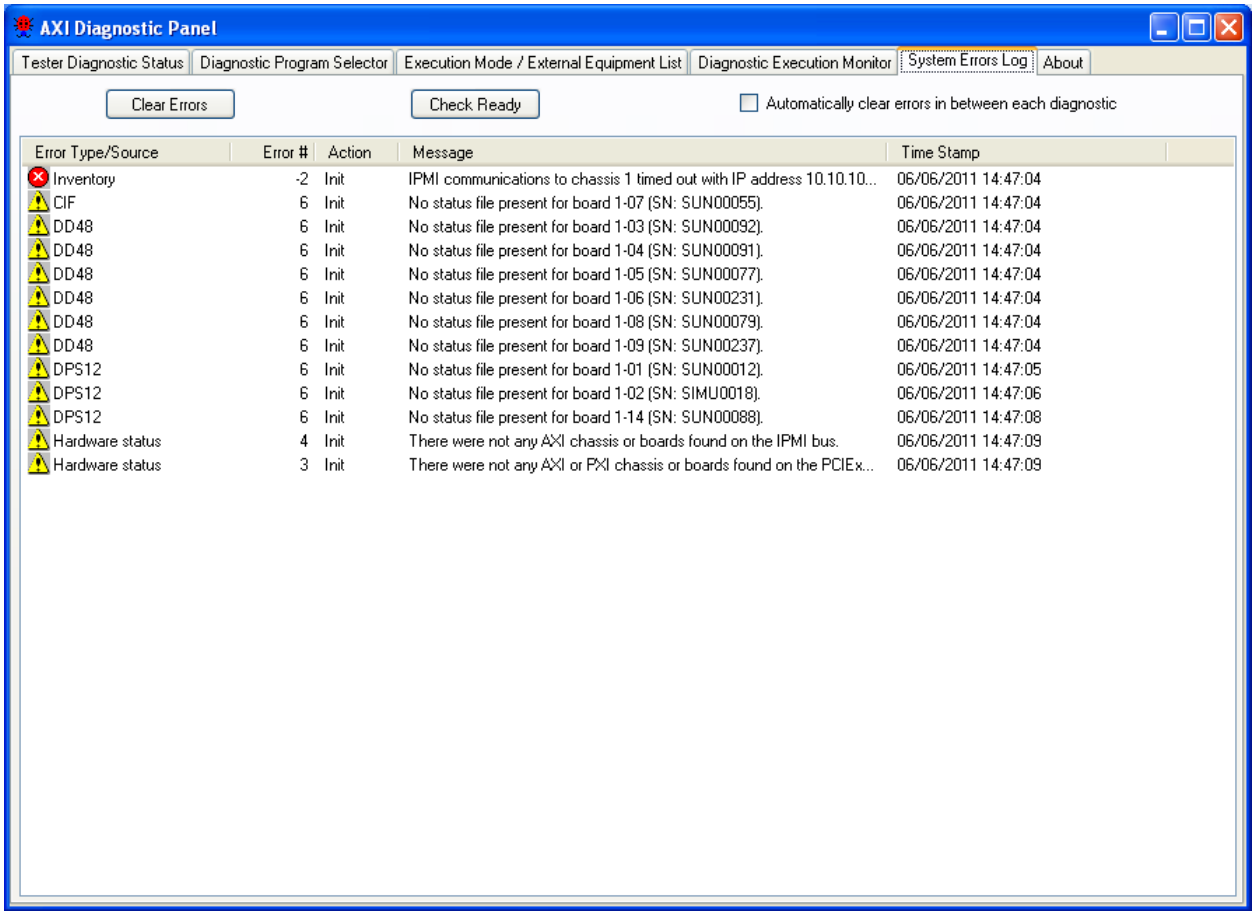


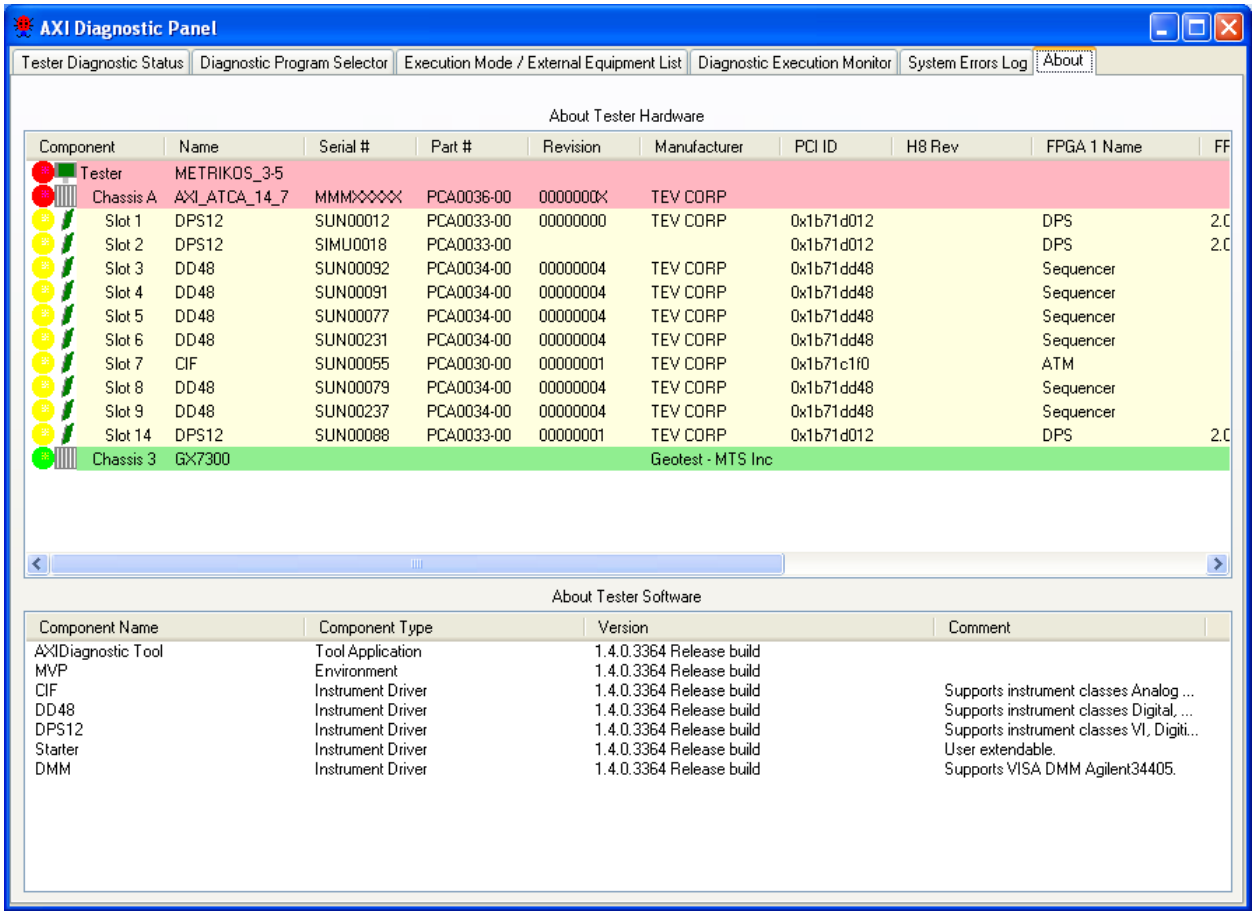
This tab provides the ability to select which diagnostics will be run

Left	Diagnostic Programs
	Board Names (which type of instrument boards)
	Tester Boards (which physical boards)
Right clicked	Resulting sequence of diagnostic programs to be run when **Run Execution List** is


AXI Diagnostic Panel
Tester Diagnostic Status
Diagnostic Program Selector
Execution Mode / External Equipment List
Diagnostic Execution Monitor
System Errors Log
About
Run Exection List
Iterations
1
Diag Name
Board Type
Diag Requirements


AXI Diagnostic Panel
Tester Diagnostic Status
Diagnostic Program Selector
Execution Mode / External Equipment List
Diagnostic Execution Monitor
System Errors Log
About
Abort All Diags
Stop After This Diag
Diag Program
Board Name
Board List
Program Status
Current Board Status
Progress


AXI Diagnostic Panel
Tester Diagnostic Status
Diagnostic Program Selector
Execution Mode / External Equipment List
Diagnostic Execution Monitor
System Errors Log
About
Clear Errors
Check Ready
Automatically clear errors in between each diagnostic
Error Type/Source
Error #
Action
Message
Time Stamp
Inventory -2 Init IPMI communications to chassis 1 timed out with IP address 10.10.10... 06/06/2011 14:47:04
CIF 6 Init No status file present for board 1-07 (SN: SUN00055). 06/06/2011 14:47:04
DD48 6 Init No status file present for board 1-03 (SN: SUN00092). 06/06/2011 14:47:04
DD48 6 Init No status file present for board 1-04 (SN: SUN00091). 06/06/2011 14:47:04
DD48 6 Init No status file present for board 1-05 (SN: SUN00077). 06/06/2011 14:47:04
DD48 6 Init No status file present for board 1-06 (SN: SUN00231). 06/06/2011 14:47:04
DD48 6 Init No status file present for board 1-08 (SN: SUN00079). 06/06/2011 14:47:04
DD48 6 Init No status file present for board 1-09 (SN: SUN00237). 06/06/2011 14:47:04
DPS12 6 Init No status file present for board 1-01 (SN: SUN00012). 06/06/2011 14:47:05
DPS12 6 Init No status file present for board 1-02 (SN: SIMU0018). 06/06/2011 14:47:06
DPS12 6 Init No status file present for board 1-14 (SN: SUN00088). 06/06/2011 14:47:08
Hardware status 4 Init There were not any AXI chassis or boards found on the IPMI bus. 06/06/2011 14:47:09
Hardware status 3 Init There were not any AXI or PXI chassis or boards found on the PCIEx... 06/06/2011 14:47:09


AXI Diagnostic Panel
Tester Diagnostic Status
Diagnostic Program Selector
Execution Mode / External Equipment List
Diagnostic Execution Monitor
System Errors Log
About
About Tester Hardware
Component
Name
Serial #
Part #
Revision
Manufacturer
PCI ID
H8 Rev
FPGA 1 Name
FF
Tester
METRIKOS_3-5
Chassis A
AXI_ATCA_14_7
MMMXXXXX
PCA0036-00
0000000X
TEV CORP
Slot 1
DPS12
SUN00012
PCA0033-00
00000000
TEV CORP
0x1b71d012
DPS
2.0
Slot 2
DPS12
SIMU0018
PCA0033-00
0x1b71d012
DPS
2.0
Slot 3
DD48
SUN00092
PCA0034-00
00000004
TEV CORP
0x1b71dd48
Sequencer
Slot 4
DD48
SUN00091
PCA0034-00
00000004
TEV CORP
0x1b71dd48
Sequencer
Slot 5
DD48
SUN00077
PCA0034-00
00000004
TEV CORP
0x1b71dd48
Sequencer
Slot 6
DD48
SUN00231
PCA0034-00
00000004
TEV CORP
0x1b71dd48
Sequencer
Slot 7
CIF
SUN00055
PCA0030-00
00000001
TEV CORP
0x1b71c1f0
ATM
Slot 8
DD48
SUN00079
PCA0034-00
00000004
TEV CORP
0x1b71dd48
Sequencer
Slot 9
DD48
SUN00237
PCA0034-00
00000004
TEV CORP
0x1b71dd48
Sequencer
Slot 14
DPS12
SUN00088
PCA0033-00
00000001
TEV CORP
0x1b71d012
DPS
2.0
Chassis 3
GX7300
Geotest - MTS Inc
About Tester Software
Component Name
Component Type
Version
Comment
AXIDiagnostic Tool
Tool Application
1.4.0.3364 Release build
MVP
Environment
1.4.0.3364 Release build
CIF
Instrument Driver
1.4.0.3364 Release build
Supports instrument classes Analog ...
DD48
Instrument Driver
1.4.0.3364 Release build
Supports instrument classes Digital, ...
DPS12
Instrument Driver
1.4.0.3364 Release build
Supports instrument classes VI, Digiti...
Starter
Instrument Driver
1.4.0.3364 Release build
User extendable.
DMM
Instrument Driver
1.4.0.3364 Release build
Supports VISA DMM Agilent34405.