

ShowMe!
The Debug Tool for Analyzing DTS Cluster Test Models

Introduction

When enabled from the Debug menu, “ShowMe!” writes a parsed list of test values for each pin and variable in a cluster test to a specified data capture file. The list shows the values in relation to DTS instructions as a test runs. The captured data represent actual values driven and captured from scan pins and are best viewed in a text editor having vertical and horizontal screen splitters such as Textpad or in an Excel spreadsheet. The comma-delimited option uses commas to separate test values written to the capture file and should be selected when using Excel to facilitate importing text instructions.

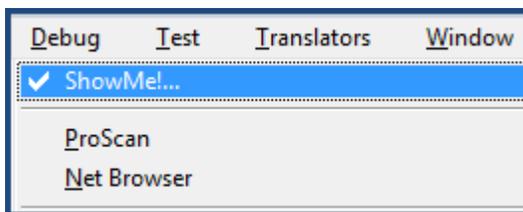


Fig. 1 Select ShowME!

A notebook style dialogue will open and “ShowMe!” can be enabled as shown.

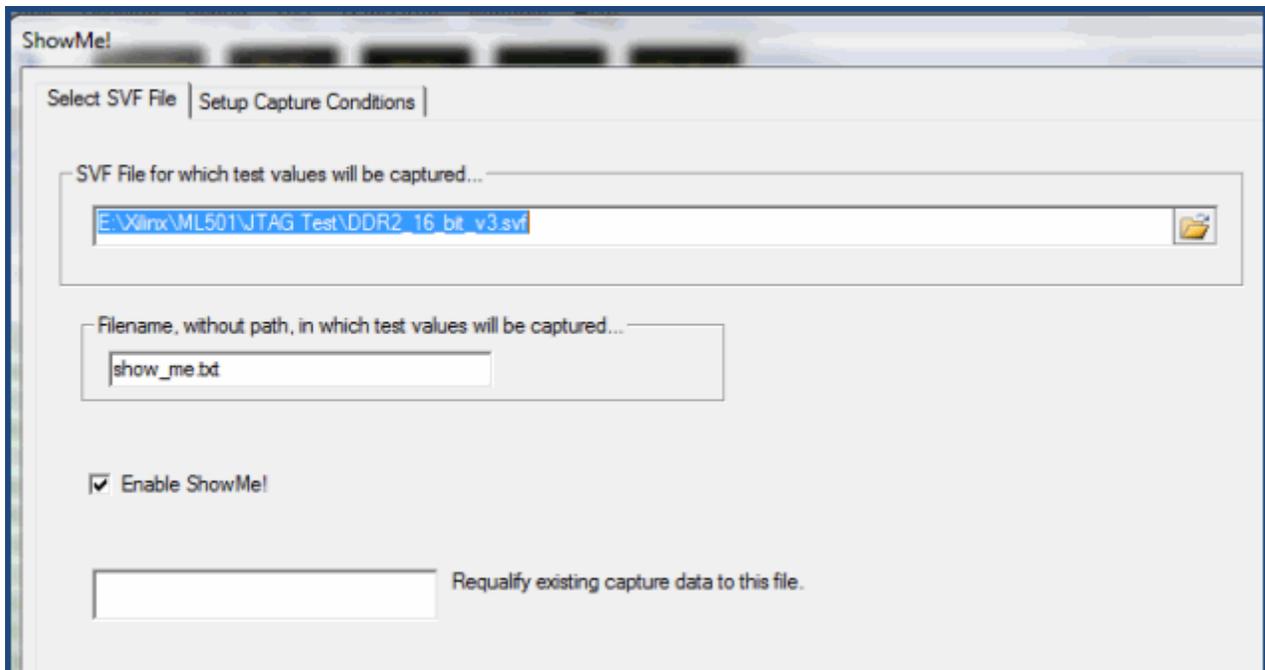


Fig.2 Specify SVF file, capture text file name, and enable ShowMe!

Using the browse control, browse to a cluster test-based SVF model and enter a filename without the path in which the test values will be captured. Click Enable “ShowMe!” In this example, test data will be captured to show_me.txt.

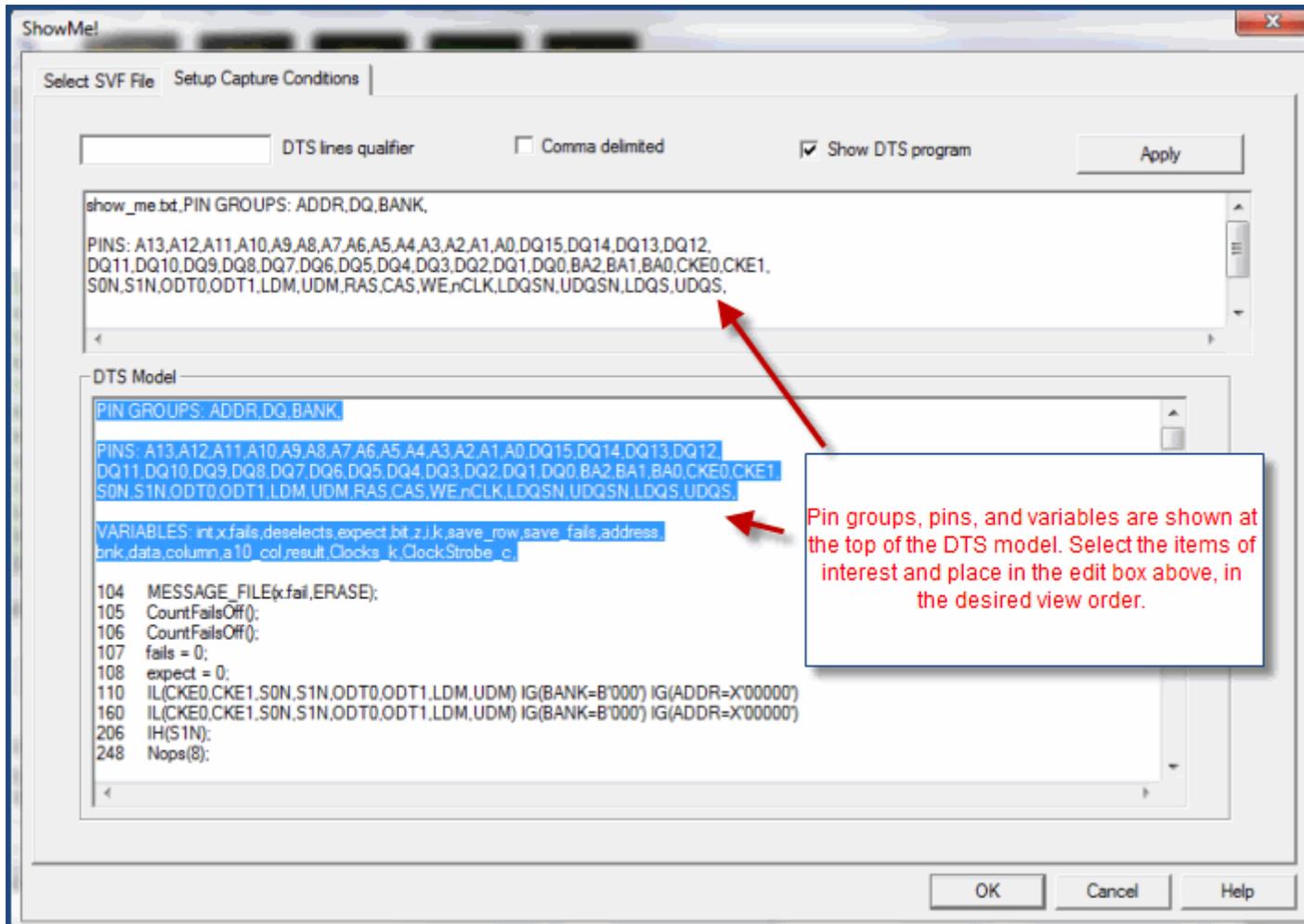


Fig.3 Specify ShowMe! Setups.

On entering the Setup Capture Condition page, the DTS model will be shown that controls the selected SVF file, and the pin groups, pins, and variables used in the DTS are shown at the top of the edit box. Select the items that are of interest and place them in the edit box above, Data values will be captured for the specified items at each test step. The left-to-right order of the entries will be the order that data was formatted in the specified capture data file.

In addition to selecting particular pin groups, pins and variables, the capture process can be further qualified by specifying selected lines in the DTS model that should be captured. The line numbers are shown in the column to the left of the DTS, and are entered as comma delimited ranges, e.g., 1-100,350-450.

Click Apply to establish the desired “ShowMe!” capture conditions. Data will be captured whenever the selected SVF file is run and the “Enable ShowMe!” is selected. This not remembered and must be reselected each time that onTAP is started.

show_me.txt		ADDR	DQ	BANK	A13	A12
ep	DTS					
95	}	2fa	10	2	0	0
96	MESSAGE("***** TESTING DATA BUS *****");	2fa	10	2	0	0
97	row = 0;	2fa	10	2	0	0
98	bnk = 0;	2fa	10	2	0	0
99	data = 0;	2fa	10	2	0	0
00	column = 0x0400 ;	2fa	10	2	0	0
01	FOR (BIT = 1; BIT <= 16; ++BIT)	2fa	10	2	0	0
02	{	2fa	10	2	0	0
03	x = bit - 1;	2fa	10	2	0	0
04	FOR (ROW = 0; ROW < 4; ++ROW)	2fa	10	2	0	0
05	{	2fa	10	2	0	0
06	data = bit;	2fa	10	2	0	0
07	column = 0x0400 ;	2fa	10	2	0	0
08	WriteData();	2fa	10	2	0	0
09	WRITEDATA	2fa	10	2	0	0
10	{	2fa	10	2	0	0
11	IL(S0N S1N CLK LDQS UDQS ODT0 ODT1 LDM UDM) IH(2fa	10	2	0	0
12	IL(RAS) IH(CAS WE) IG(BANK=bnk) IG(ADDR=row) I	0	10	0	0	0
13	ClockStrobe(1);	0	10	0	0	0
14	CLOCKSTROBE	0	10	0	0	0
15	{	0	10	0	0	0
17	FOR (CLOCKSTROBE_C = 1; CLOCKSTROBE_C <= CLO	0	10	0	0	0
18	{	0	10	0	0	0
19	IH(CLK LDQS UDQS) IL(nCLK LDQSN UDQSN);	0	10	0	0	0
20	IL(CLK LDQS UDQS) IH(nCLK LDQSN UDQSN);	0	10	0	0	0
21	}	0	10	0	0	0
22	FOR (CLOCKSTROBE_C = 1; CLOCKSTROBE_C <= CLO	0	10	0	0	0
23	}	0	10	0	0	0
24	IG(DQ=data) IH(RAS) IL(CAS WE) IG(BANK=bnk) IG(400	1	0	0	0
25	ClockStrobe(1);	400	1	0	0	0
26	CLOCKSTROBE	400	1	0	0	0
27	}	400	1	0	0	0

Fig.4 Initial ShowMe! Capture data.

After running the selected SVF file, the show_me.txt has the captured data and is shown using a Textpad editor as seen in Fig.4. All of the instructions in the DTS file are shown as well as the values that pin groups, pins, and variables assumed as the test executed.

In some cases it is desirable to qualify the captured data so that only the portions of a DTS model or items of interest are presented.

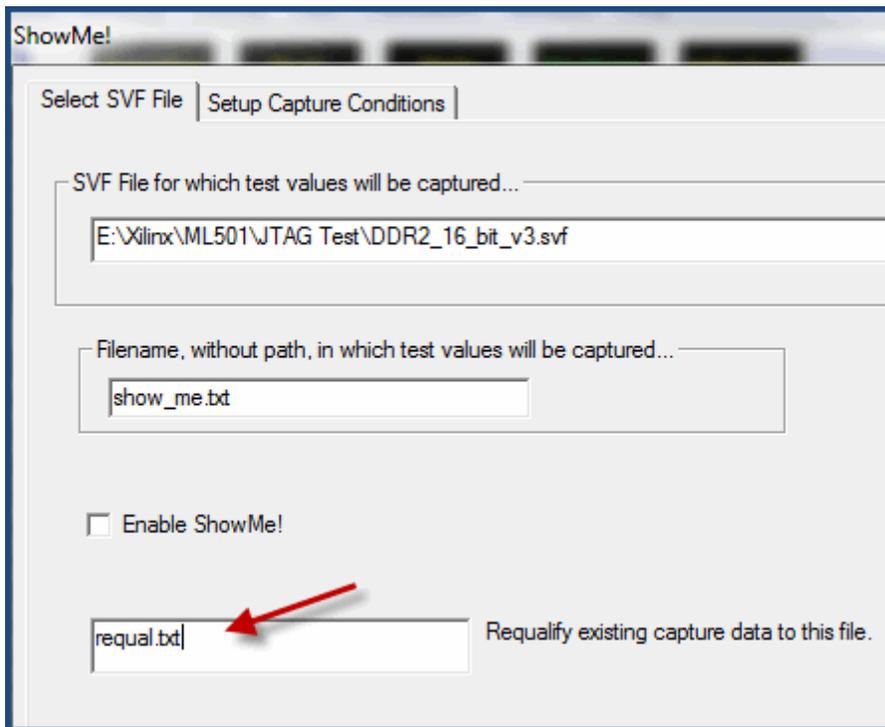


Fig. 5. Specify text file used to re-qualify captured data.

Re-qualifying captured data can be accomplished as shown in Fig. 5., and then returning to the Setup Capture Conditions tab.

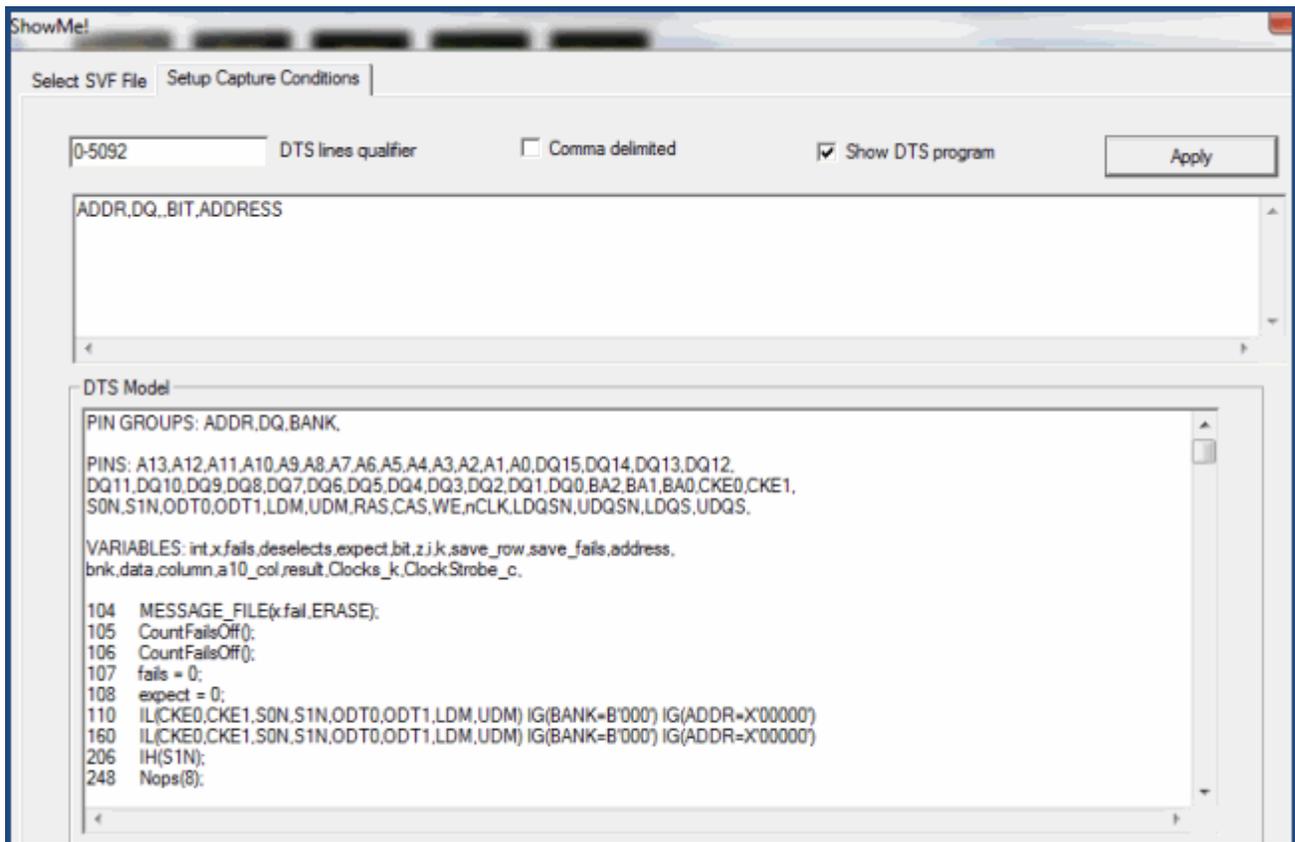


Fig. 6. Setups to re-qualify captured data.

As long as “Requalify existing capture data to this file” has a filename entry, then new qualifiers, typically a subset of the initial qualifying setups, can be entered, and when Apply is clicked, the data from the original capture file will be reparsed into the requalify file. The test does not need to be executed.