Teradyne ICT Application Brief	Teradyne, Inc www.teradyne.com	Author: Alan Albee Published Date: September 2009

Controlling Framescan Power Sequencing

Built-in System Subroutine allows programmers to manually control power sequencing for Framescan tests

Application Overview

By default the Runtime System expects the Framescan fixture hardware to be powered by the TestStation's Fixed Power Supply option. The software automatically powers up the Fixed supplies just before the Framescan tests begin and it automatically powers down the Fixed supplies just after the Framescan tests end.

This can be a problem for some manufacturers that…

- Have Alliance supplies installed in the Fixed Power Supply slot locations.
- Use the Fixed Power Supplies to power custom circuitry in their test fixture.
- Want to manually control when the Fixed Power Supplies are turned on and off.
- Do not like the additional delay associated with turning the Fixed Power Supplies on and off each time the Framescan tests are executed.

To provide manufacturers with greater flexibility in solving these problems, Teradyne has developed a System Subroutine called **PINOPENS_MANUAL_POWER** that allows programmers to develop custom power up and power down sequences for the Framescan tests and use alternative supplies to power the Framescan fixture hardware.

Hardware Requirements

The PINOPENS_MANUAL_POWER system subroutine does not use any tester hardware, it is simply a software command that tells the Run-Time System whether or not to turn the Fixed Power Supplies on and off during the Framescan tests.

Of course, the Framescan fixture hardware must be powered by alternative supplies if the Fixed Supplies are not used and these alternative supplies must be programmed to the proper voltages and wired to the Framescan fixture hardware prior to the Framescan tests. Manufacturers must ensure that whatever supplies are used to replace the TestStation Fixed Supplies have equivalent or better electrical specifications.

Software Requirements

The PINOPENS_MANUAL_POWER system subroutine is available in the most recent software patches for 228X/TestStation software versions 5.8.0 and 6.4.0 and greater.

Application Examples

Example 1: Tester does not have Fixed Supply

In this example, the PINOPENS_MANUAL_POWER system subroutine is used because the target tester does not have a Fixed Supply. The user must add code to power the Framescan hardware with an alternative supply.

```
/* Add Declarations at start of program that are needed for the
PINOPENS_MANUAL_POWER System Subroutine */

DECLARE SYSTEM PINOPENS_MANUAL_POWER(CSTRING CONTROL(8));
DECLARE GLOBAL CSTRING CONTROL(8);

/* Include code here to program external supply or alternative Alliance
supply that is wired to the Framescan fixture hardware */

/* Now add System Subroutine call that tells the RTS that the Framescan
hardware is being powered by an alternative supply. Setting it to 'ON'
tells the RTS not to automatically turn on and off the Fixed Supplies */

CALL PINOPENS_MANUAL_POWER(CONTROL='ON');

/* Now the Framescan tests can be run and the RTS will not attempt to
turn the Fixed Supplies on or off */

TEST PINOPENS;

/* To return the RTS to its default so that it automatically uses the
Fixed Power Supplies, you would call the System Subroutine with the 'OFF'
keyword */

CALL PINOPENS_MANUAL_POWER(CONTROL='OFF');
```

Example 2: Tester is using Fixed Supplies to power additional fixture circuitry

In this scenario the programmer may need to use the Fixed Supplies to power up custom fixture circuitry in addition to the Framescan hardware. In this case they would like to power up the Fixed Supplies at the start of the program and always leave them on. The code is similar to the first example, except the programmer would need to add code to power up the Fixed Supplies at the start of the program.

Example 2: Programmer wants to avoid delay associated with powering Framescan hardware to achiever faster test throughput

This scenario is similar to the other two, except the programming code to power the Framescan hardware would be placed inside of a Load subroutine so that it only occurs once at program load time. This would save the approximately 2 seconds it takes to power up and power down the Fixed Supplies each time the program is run.

Additional Information

For more information on this application, along with programming examples and considerations, please refer to Teradyne's latest "*TestStation Framescan and Junction Xpress Vectorless Test Techniques User's Guide*", (Part # 606-247-00).