

AutoAdjust Tests

Test Number Cross-Reference	6-2
System	6-3
Module Control Card	6-5
ASRU Card	6-7
Hybrid-144 Non-multiplexed Pin Card	6-12
Hybrid Pin Card	6-13
Hybrid32 Pin Card	6-15
Download and Upload	6-16

The AutoAdjust tests are numbered in the 4000s. These tests include two system calibration tests and two fixture handling tests that are used during AutoAdjust.

The AutoAdjust tests are documented according to card types. To find a specific test, see [Table 6-1](#).

NOTE

The AutoAdjust tests are designed to run simultaneously (from **AutoAdjust All**). Avoid running these tests from **Test Number Entry**. However, Calibration Tests are different; they must be run from **Test Number Entry**.

NOTE

DO NOT troubleshoot from AutoAdjust failure messages. Instead, troubleshoot only from Diagnostic error messages

Test Number Cross-Reference

Table 6-1 Test number cross-reference

Test	Card/Function	Test	Card/Function	Test	Card/Function
4250	ASRU Card	4363	Download/Upload	4507	HybridPlus Pin Card
4251	ASRU Card	4364	Download/Upload	4508	Download/Upload
4255	ASRU Card	4365	Download/Upload	4509	HybridPlus Pin Card
4260	ASRU Card	4370	Download/Upload	4510	HybridPlus Pin Card
4275	ASRU Card	4371	Download/Upload	4511	HybridPlus Pin Card
4280	ASRU Card	4372	Download/Upload	4512	HybridPlus Pin Card
4285	ASRU Card	4373	Download/Upload	4513	HybridPlus Pin Card
4290	ASRU Card	4374	Download/Upload	4517	Hybrid32 Pin Card
4302	Module Control Card	4375	Download/Upload	4520	ASRU Card
4305	Module Control Card	4390	ASRU Card	4530	ASRU Card
4315	HybridPlus Pin Card	4391	ASRU Card	4536	ASRU Card
4317	Hybrid32 Pin Card	4395	System	4537	ASRU Card
4319	Hybrid-144 Card	4396	System	4572	HybridPlus Pin Card
4325	HybridPlus Pin Card	4397	ASRU Card	4750	Module Control Card
4327	Hybrid32 Pin Card	4398	ASRU Card	4751	Module Control Card
4329	Hybrid-144 Card	4419	Hybrid-144 Card	4752	Module Control Card
4348	Download/Upload	4429	Hybrid-144 Card	4753	Module Control Card (XT)
4349	Download/Upload	4495	System	4762	Module Control Card
4350	Download/Upload	4496	System	4763	Module Control Card
4351	Download/Upload	4499	ASRU Card	4764	Module Control Card
4352	Download/Upload	4500	ASRU Card	4800	System
4353	Download/Upload	4501	ASRU Card	4801	System
4354	Download/Upload	4502	ASRU Card		
4355	Download/Upload	4503	ASRU Card		
4360	Download/Upload	4504	ASRU Card		
4361	Download/Upload	4505	ASRU Card		
4362	Download/Upload	4506	ASRU Card		

System

- Test 4395
- Test 4396
- Test 4495
- Test 4496
- Test 4800
- Test 4801

Test 4395

Calibrate ASRU

This test calibrates the ASRU Card.

Test 4396

Display Calibration Date

This test returns the last ASRU Card calibration date to the screen.

Test 4495

Release Fixture

This test checks for the presence of a fixture pulled down on the system and then releases it if present.

Test 4496

Pull Down Fixture

If test 4495 finds a fixture during AutoAdjust, this test pulls the fixture down when AutoAdjust is finished.

Test 4800

Check for Board Handler

This test checks for the presence of a board handler in the system configuration file.

Test 4801

Board Handler Verification

This test verifies system communication with the board handler.

Module Control Card

- Test 4302
- Test 4305
- Test 4750
- Test 4751
- Test 4752
- Test 4753
- Test 4762
- Test 4763
- Test 4764

Test 4302

Calibrate TIC

This test calibrates the timing interval counter.

Test 4305

TCLK Period Measurement

This test measures the period of the TCLK timing circuitry.

Test 4750

Calibrate TCLK Advance (Mux system)

This test calibrates the TCLK timing circuitry.

Test 4751

Prepare for Multi-Module TCLK Tests (Mux system)

This test prepares for later multi-module TCLK tests. Depending on the number of modules present in the system, test 4762, 4763, or 4764 will run.

Test 4752

Calibrate Event Trigger Timing (Mux system)

This test calibrates event trigger timing.

Test 4753

Calibrate Event Trigger Timing (Mux system)

This test calibrates event trigger timing. It is the same as Test 4752, but for the ControlXT Card only.

Test 4762

Calibrate Two-Module TCLK

This test calibrates multi-module TCLK timing in a two-module system.

Test 4763

Calibrate Three-Module TCLK

This test calibrates multi-module TCLK timing in a three-module system.

Test 4764

Calibrate Four-Module TCLK

This test calibrates multi-module TCLK timing in a four-module system.

ASRU Card

- Test 4250
- Test 4251
- Test 4255
- Test 4260
- Test 4275
- Test 4280
- Test 4285
- Test 4290
- Test 4390
- Test 4391
- Test 4397
- Test 4398
- Test 4499
- Test 4500
- Test 4501
- Test 4502
- Test 4503
- Test 4504
- Test 4505
- Test 4506
- Test 4520
- Test 4530
- Test 4536
- Test 4537
- Test 4538

Test 4250

Calibrate DC Integrator

This test performs AutoAdjust calibration of the DC integrator.

Test 4251

EEPROM

This test reads the calibration constants from the EEPROM, stores them in DRAM, and evaluates them to determine if they are within reasonable limits. The limit check verifies that the constants have not become corrupt.

Test 4255

Calibrate AC Detector Amplitude

This test calibrates the AC detector.

Test 4260

Calibrate AC Detector Timing

This test calibrates the timing of the AC detector.

Test 4275

Calibrate DC Source

This test calibrates the DC source.

Test 4280

Calibrate AC Source

This test calibrates the AC source.

Test 4285

Calibrate MOA Voltage Compliance DAC

This test calibrates MOA voltage compliance DAC (digital-to-analog converter).

Test 4290

Calibrate ASRU Probe DC

This test calibrates the DC level of the ASRU probe.

Test 4390

Write Card Identification, Serial, and Revision Number to EEPROM

This test writes the ASRU Card's ID number, serial number, and revision number to the EEPROM. Run this test from **Test Number Entry**.

Test 4391

Read Card Identification, Serial, and Revision Number from EEPROM

This test reads the ASRU Card's ID number, serial number, and revision number from the EEPROM to the screen. Run this test from **Test Number Entry**.

Test 4397

Store AC Line Frequency

This test stores the AC line frequency.

Test 4398

Read AC Line Frequency

This test reads the AC line frequency.

Test 4499

Write System Temperature to AutoAdjust Table

This test writes the system temperature, as measured on the ASRU Card, to the AutoAdjust table. Test 4499 does not return the temperature to the screen. Run this test only as part of a full AutoAdjust.

Test 4500

Calibrate Sample-and-Hold Detector

This test calibrates the detector's sample-and- hold circuit.

Test 4501

Calibrate Source Output Resistors

This test calibrates the source output resistors.

Test 4502

Calibrate Auxiliary Source

This test calibrates the auxiliary source.

Test 4503

Calibrate Attenuator

This test calibrates the detector range amplifier's attenuator.

Test 4504

Calibrate MOA Input Bias Current

This test calibrates the MOA input bias current.

Test 4505

Calibrate MOA Offset Voltage

This test calibrates the MOA offset voltage.

Test 4506

Calibrate Feedback Resistors

This test calibrates the MOA feedback resistors.

Test 4520

Calibrate Format Chip Drive Path Delays

This test calibrates the ASRU Card formatter channel drive path delays.

Test 4530

Calibrate Format Chip Receive Path Delays

This test calibrates the ASRU Card formatter channel receive path delays.

Test 4536

Probe Presence

This test looks for a probe in the system configuration file.

Test 4537

Calibrate Probe

This test calibrates the probe receiver levels. Test 4537 runs only if test 4536 determines a probe is present

Test 4538

Calibrate DMC in ASRU Revision N Card

This test calibrates the Digitized Measurement Circuit (DMC) in the ASRU Revision N Card and returns source offset, MOA offset voltage, calibration voltage, offsets and full scale values for detectors A, B, I, O in all ranges and the results of feedback resistor measurements.

Hybrid-144 Non-multiplexed Pin Card

These tests are for UnMux systems only.

- Test 4319
- Test 4329
- Test 4419
- Test 4429

Test 4319

Calibrate Driver Delay

This test calibrates driver delay on the Hybrid-144 Pin Card.

Test 4329

Check Driver Calibration Values

This test verifies the stored driver calibration values.

Test 4419

Calibrate Receiver Delay

This test calibrates receiver delay on the Hybrid-144 Pin Card.

Test 4429

Check Receiver Calibration Values

This test verifies the stored receiver calibration values.

Hybrid Pin Card

These tests are for Mux systems only.

- Test 4315
- Test 4325
- Test 4507
- Test 4509
- Test 4510
- Test 4511
- Test 4512
- Test 4517

Test 4315

Calibrate Driver Delay

This test calibrates driver delay on the HybridPlus Pin Card.

Test 4325

Calibrate Receiver Delay

This test calibrates receiver delay on the HybridPlus Pin Card.

Test 4507

Calibrate Driver Gain and Offset

This test calibrates driver gain and offset on the HybridPlus and Hybrid32 Pin Cards.

Test 4509

Calibration Driver Slew Rate

This test calibrates the driver slew rate of the Series II HybridPlus Pin Card.

Test 4510

Calibrate Channel Slew Time

This test calibrates channel slew time on the HybridPlus Pin Card.

Test 4511

Calibrate Current Limit Gain and Offset

This test calibrates the current limit circuitry on the HybridPlus Pin Card.

Test 4512

Calibration Driver Slew Rate

This test is the same as Test 4509, but for the Series 3 HybridPlus Pin Card. (See [Test 4513](#) for the Hybrid32 Pin Card.)

Test 4517

Calibrate Receiver Gain and Offset

This test calibrates receiver gain and offset on the HybridPlus Pin Card.

Hybrid32 Pin Card

These tests are for Mux systems only.

- **Test 4317**
- **Test 4327**
- **Test 4513**

Test 4317

Calibrate Driver Delay

This test is the same as Test 4315, but for the Hybrid32 Pin Card; it calibrates the driver delay.

Test 4327

Calibrate Receiver Delay

This test is the same as Test 4325, but for the Hybrid32 Pin Card; it calibrates receiver delay.

Test 4513

Calibration Driver Slew Rate

This test is the same as Test 4509, but for the Hybrid32 Pin Card; it calibrates the driver slew rate.

Download and Upload

- Test 4348
- Test 4349
- Test 4350
- Test 4351
- Test 4352
- Test 4353
- Test 4355
- Test 4360
- Test 4361
- Test 4362
- Test 4363
- Test 4365
- Test 4370
- Test 4371
- Test 4372
- Test 4373
- Test 4375
- Test 4508

Test 4348

Un-Modify AutoAdjust Tables

This test removes the offset values obtained during the **Calibrate through Fixture Interface Pins** that were used to modify the original AutoAdjust tables, and restores the un-modified AutoAdjust table.

Test 4349

Modify AutoAdjust Tables

This test modifies the AutoAdjust tables with the offsets measured during **Calibrate through Fixture Interface Pins**.

Test 4350

Upload ASRU Card AutoAdjust Table to Disk

This test moves the new AutoAdjust tables to disk.

Test 4351

Upload Pin Card AutoAdjust Tables to Disk (Mux system)

This test moves the new AutoAdjust tables to disk.

Test 4352

Upload Module Control Card AutoAdjust Tables to Disk

This test moves the new AutoAdjust tables to disk.

Test 4353

Upload Multi-Module AutoAdjust Table to Disk

This test moves the new AutoAdjust table to disk.

Test 4355

Return and Store Calibrate through Fixture Interface Pins AutoAdjust Table

This test returns the **Calibrate through Fixture Interface Pins** AutoAdjust table and stores it on disk.

Test 4360

Download ASRU Card AutoAdjust Table to Module

This test downloads the current AutoAdjust tables for the ASRU Card from the system disk to the Module Control Card memory.

Test 4361

Download Pin Card AutoAdjust Table to Module (Mux system)

This test downloads the current AutoAdjust tables for the Pin Cards from the system disk to the Module Control Card memory.

Test 4362

Download Module Control Card AutoAdjust Table to Module

This test downloads the current AutoAdjust tables for the Module Control Card from the system disk to the Module Control Card memory.

Test 4363

Download Multi-Module AutoAdjust Table to Module

This test downloads the current AutoAdjust tables for multi-module testing from the system disk to the Module Control Card memory.

Test 4365

Download Calibrate through Fixture Interface Pins AutoAdjust Table

This test is the **Calibrate through Fixture Interface Pins** AutoAdjust table download routine.

NOTE

During AutoAdjust, the cards' measured performance values are stored in individual calibration tables that are written to disk and downloaded to the testhead during boot.

If, for example, the ASRU card in module 0 passes, its data is written to the file named `aim0`; if the card fails, the data is written to the file named `badaim0`.

Tests 4370-75 allow manually overriding the system and downloading bad AutoAdjust tables to the testhead.

Test 4370

Download Bad ASRU Card Calibration Table

This test is the bad ASRU Card calibration table download routine.

Test 4371

Download Bad HybridPlus Card AutoAdjust Table (Mux system)

This test is the bad HybridPlus Card AutoAdjust table download routine.

Test 4372

Download Bad Module Control Card AutoAdjust Table

This test is the bad Module Control Card AutoAdjust table download routine.

Test 4373

Download Bad Modified AutoAdjust Table

This test is the bad modified AutoAdjust table download routine

Test 4375

Download Bad Calibrate through Fixture Interface Pins AutoAdjust Table

This test is the bad **Calibrate through Fixture Interface Pins** AutoAdjust table download routine

Test 4508

Upload ASRU Card AutoAdjust Table for Diagnostics

This test loads a partial ASRU Card AutoAdjust table to disk for Diagnostics access.

