Semiconductor Equipment Testing
SEMI® E84 PI/O Communications

GCI E84 HANDHELD TESTER

GCI05001

GCI's E84 Handheld Tester (HHT) is the portable solution for E84 maintenance, troubleshooting and installation applications. It is an integrated E84 test tool with real-time signal display, voltage and current measurement and test result storage in one easy-to-use instrument. Use the E84 Handheld Tester to find fast answers to problems with your E84 interfaces.

Due to the quantity of E84 I/O signals and their open-collector logic, standard meter measurement does not provide enough detail to determine E84 fault causes. Signal anomalies that cause E84 interface problems are best examined using analog voltage and current measurements provided by the HHT.

The newly updated HHT now includes an SD Flash Card interface for test data storage. This interface enhances the organization of results storage, and simplifies the transfer of results to the PC for detailed analysis.

The industry standard E84 Test Suite provided by the GCI E84 Emulator has also been added to the HHT. Now operators can run through the same series of tests in a troubleshooting environment that were used during tool acceptance testing.

E84 HANDHELD TESTER FEATURES

- Menu driven interface
- Internal IR Transceiver
- Supports external IR Transceiver
- Voltage and Current display of each E84 signal
- Automated Active and Passive Load and Unload Tests
- Manual control of each E84 Output with I/O monitoring
- Automated IR Transceiver Testing
- Real-time signal display when connected to a GCI E84 DLD
- NEW! EL Backlight
- NEW! GCI E84 Emulator Test Suite
- NEW! Save test results to SD Flash Card
- NEW! Organize test results based on Process Tool ID
- NEW! Upload data from GCI E84 DLD to SD Flash Card
- Easily transfer saved data and logged DLD data to PC
- Use GCI Data Recorder Analysis Application to analyze data
- Built-in clock and calendar
- Rechargeable battery
- Firmware upgradable via PC and Internet

SPECIFICATIONS

- Built-In E84 compliant IR Transceiver
- Active and Passive Electrical E84 interfaces
- DB-25 male (active) and DB-25 female (passive) terminations
- Self-contained rechargeable battery
- NEW! SD Flash Card interface
- RS-232 Serial Communications interface
- NEW! EL Backlight
- 9.3" x 4.9" x 1.6" (236mm x 125 mm x 41mm)

PACKAGE CONTENTS

- GCI E84 Handheld Tester
- 64 MB SD Flash Card
- USB SD Flash Card Reader
- 6' male-female DB-9 Cable
- +15 VDC Wall Supply (120 VAC)
- GCI Handheld Tester User's Guide

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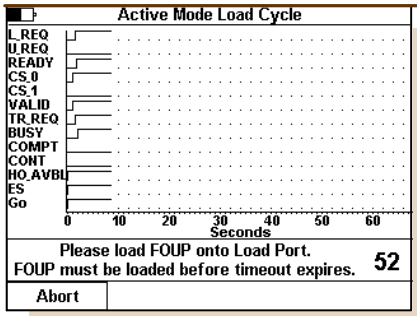
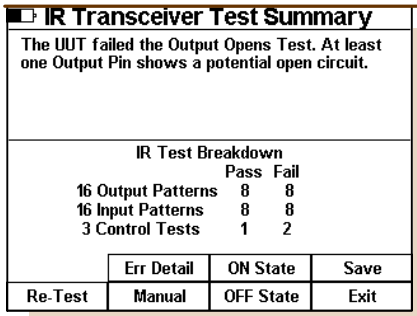


LOAD / UNLOAD TEST

Perform Load and Unload Tests using the Internal IR to recreate E84 faults. Alternateively, use an External IR device if the IR communications distance exceeds the Internal IR's one meter range.

The E84 Handheld Tester plots the E84 signals in real-time as the handoff operation progresses. It prompts for a FOUP (Load) or the removal of the FOUP (Unload) and simultaneously displays a countdown timer.

Test results stored to SD Flash Card include test setup details (TA and TP Timer settings, cycle type), test completion status, and the real-time graph. Use the E84 Analysis Application for detailed analysis of the time plot.



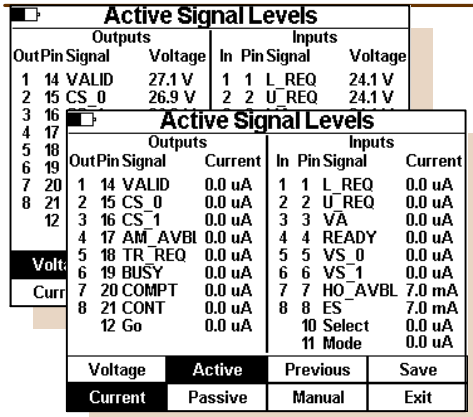
OPTICAL TRANSCEIVER TEST

Connect an Optical Transcever to the Handheld Tester and perform the IR Transcever Test to isolate E84 faults to the transceiver or the process tool.

The IR Transceiver Test verifies each optical transceiver signal independently and produces a summary report. Voltage and current measurements can also be displayed for each signal, in both the On and Off states.

Failure analysis include tests for shorts between signals, test for shorts between signals and ground, and tests for open signals.

Test results stored to SD Flash Card include all voltage and current measurements, pattern test results, and failure analysis error messages in a formatted text file.



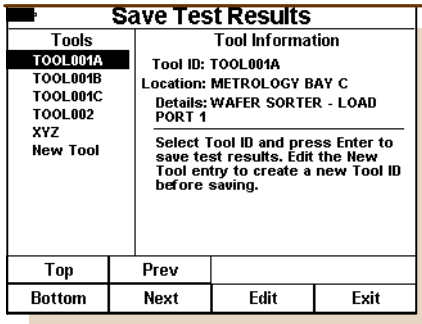
VOLTAGE / CURRENT MEASUREMENTS

Connect the E84 Handheld Tester directly to the process tool's E84 Controller to measure and display E84 interface voltage levels. All E84 I/O signals are displayed, including the signal Name, pin assignment, I/O number, and DC voltage measurement. Measurements are displayed in real-time.

Switch between Voltage and Current measurement display with a single option button.

Select Manual mode to change the E84 Handheld Testers output states, and monitor the process tools response.

Save measurements from the current state of the E84 interface to SD Flash Card. Saved test results include all voltage and current measurements for all E84 I/O signals.



TEST RESULTS ORGANIZATION

Test Results stored on the SD Flash Card are organized by Process Tool ID. Each Process Tool is given an 8 character ID tag. Detailed Process Tool information can be entered to identify individual tools.

Process Tool ID's and Information records can be created / edited on the PC using a standard text editor (Notepad ®). New Tool ID tags can be created in the FAB using the E84 Handheld Tester's softkey interface.

Test Results can be easily transfered to the PC using the included USB SD Card Reader. Test Results are organized as individual files within a standard Windows ® folder structure. Most results files can be opened using a text editor or imported into a word processor for report generation. Some files (cycle tests, manual control strip charts) can be viewed using GCI's E84 Analysis Application.