Information

NEW

HIOKI

1220 IN-CIRCUIT HITESTER

Automatic Testing Equipment

Space-Saving High-Speed Testing

In-circuit testing functions are integrated in a single measurement cabinet. Space-saving and customer-application-specific test facilities can be constructed. As well as providing faster in-circuit test performance than former models (testing S/O, components and ICs), a new macro test (impedance test) capability enables effective testing even when only a few measurement points are available. With Model 1220,testing efficiency is significantly improved.

ISO14001
JQA-E-90091

INTERNET HIOKI Website

http://www.hioki.co.jp/

HIOKI company overview, new products, environmental considerations and other information are available on our website.

Product Features

◆Functions combined in one bench-top cabinet

In-circuit testing functions are assembled into a system or line to save space in the testing facility, enabling easy support of cell production.

◆Macro test

Includes the macro test, a high-performance capability for testing even with only a few measurement points (see page 3 for details)

◆High-speed test 1

Faster in-circuit testing is achieved by a new measurement board design

◆High-speed test 2

Optional board parallel testing greatly shortens test time.

◆Scanner boards

Two types of boards are available: scanner boards for speed, and relay boards for high power and precision.

A variety of test functions are available to suit individual applications.

◆Man-Machine interface

Communication with Windows-based PCs via LAN is available. Operation is easy in an environment familiar to everyone.

◆Strengthened data editing functions

Use these functions to develop and modify groups of test data such as for multi-cut boards or data managed in multiple files, by modifying only the necessary parts.

◆Statistical analysis

Data measured by Model 1220 can be saved to a PC's hard disk for each board tested. Data is stored in CSV format, which can be adapted to many applications.

◆Remote self-diagnostics

Self-diagnosis of Model 1220 can be initiated over the Internet, enabling remote maintenance support even at factories located overseas.

◆Compatibility

Test data from the HIOKI 1105 can be converted.

Model 1101/1102 test data can be converted by the 1137-02 data generation software.

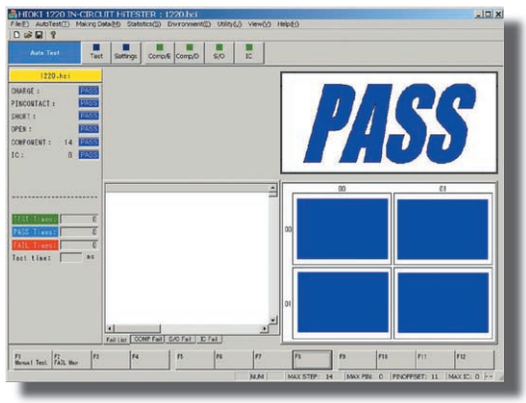
Data conversion functions also support data from other companies.

◆System development

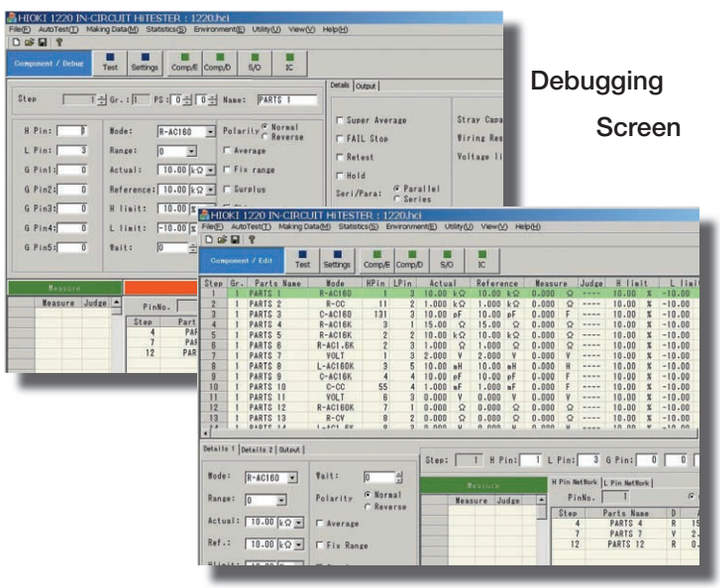
Because of its easy network configuration, customers can operate the system as their requirements demand.

Test data from multiple 1220s can be centrally managed by a server PC.

Applications can be constructed to include operations such as capturing test history, statistical data and operating conditions of each machine.

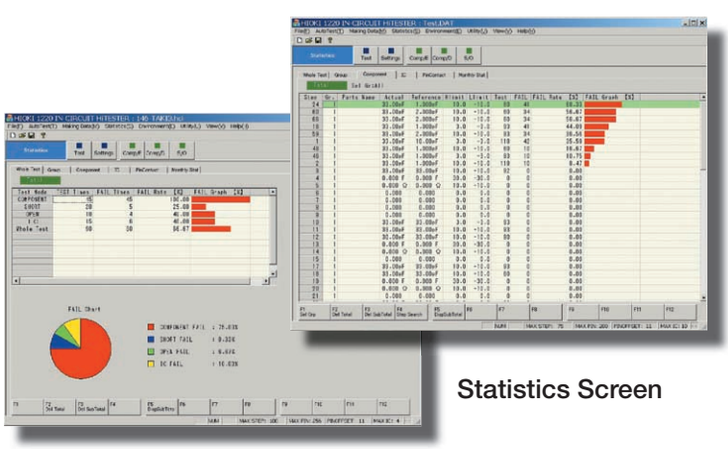


Automatic Testing Screen

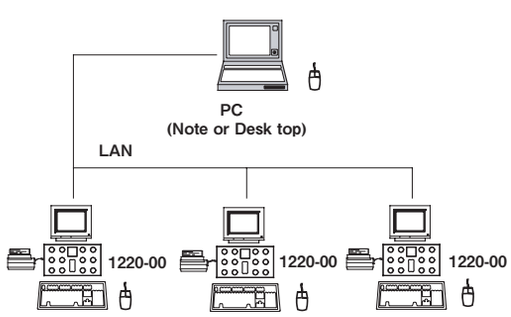


Debugging Screen

Editing Screen



Statistics Screen



Centralized data management via network

◆Macro test

Test Method 1

Macro test (alternating impedance test between one pin and all others)

Connect one pin to the measurement circuit and all other pins to signal sources, and measure the current flowing to the one pin from the whole circuit net.

Operating theory

Pins on the fixture are selected sequentially from the first to the last to generate the test steps (equal to the number of specified pins) and acquire the required test data.

For example, one step (using pin (a) as the measurement pin) calculates the total current flow through resistances R1 and R2, and another step (using pin (b) as the measurement pin) calculates total current flow through resistance R2 and capacitance C. Later, when these two steps are performed on a board that has R2 missing, the measured current is detected as being too low and a Fail evaluation occurs.

Macro testing applies equally well to S/O tests.

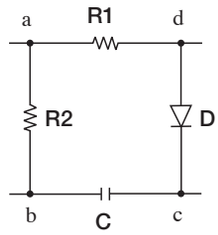
Test Method 2

Inter-pin test (alternating testing between specified pins)

This test measures the current flow between any two pins.

Guard pins can be specified for inter-pin testing.

Component groups are gathered into modules and impedance measurements performed.



Features

1. Broad applicability

Even on high-density boards where the former jig-type testers cannot make contact at all points, valid tests can be performed by gathering component groups into modules and performing impedance measurements with fewer test points.

Functions are included to test wiring harnesses as well as boards, so it can be used in a wide variety of applications.

The easy copying and linking capabilities of the data editing function facilitate support for both multi-cut and segmented boards.

Support for double fixtures enables interlinked tests at both fixtures.

2. Reduced user programming workload

User programming efforts are lightened by collecting data from known-good boards and determining Pass evaluation ranges by measurement dispersion.

◆System configuration

With the 1220-00, various system configurations can be employed to suit different applications.

Configuration 1.
Machine + PC (with keyboard and mouse) + CRT/LCD

Configuration 2.
Machine + CRT/LCD + keyboard (mouse) + mini printer
(available soon)

Configuration 3.
Machine + CRT/LCD + keyboard (mouse)
(available soon)

Configuration 4.
Machine + mini printer
(available soon)

Configuration 5.
Machine only
(available soon)

Model 1220-00 Bench-top Type

Standard 128 pins (Expandable in 64-pin units)
Up to 320 pins

Model 1912 Expansion Cabinet

Up to 640 pins
Up to three Expansion Cabinets

◆Configuration example

Options

I/O Board
Electrolytic capacitor polarity detection function
Reverse-mounted IC detection function
High-voltage Zener diode (VZ) measurement function (25 to 250V, available soon)
High-current diode (VF) measurement function (200 mA, available soon)
High-voltage measurement function (25 to 250V, available soon)
DCmΩ low-resistance measurement function (40 μΩ to 0.4 Ω, available soon)
Multi-cut board high-speed testing function (available soon)

1131-01 Scanner Board: Analog switch (high-speed type, specify when ordering)
1131-03 Relay Board: Reed relays (high-voltage type, specify when ordering)
1137-02 1220 Data Generation Software
1142 Press Unit (bench-top, pneumatic, for 1220-00 only)
1144 Press Unit (for large boards)
1152-04 Scanner Cable (64 pins/pc)
1160 Pin Board
1162 Pin Board (for 1220-00 only)
1912 Expansion Cabinet (for 1220-00 only)

1220-00, -01 and -02 In-Circuit HiTESTER Specifications

	1220-00, -01 and -02 In-Circuit HiTESTER Specifications
Number of inspection steps	Component data: Max. 10,000 steps Macro data: Max. 10,000 steps
Inspection items and ranges	Exhaustive short/open: 4 Ω to 4 MΩ Macro test: 10 Ω to 10 MΩ (impedance, available soon) Component testing Resistance: 400 mΩ to 40 MΩ Low-resistance (optional) 40 μΩ to 400 mΩ (available soon) Capacitance: 10 pF to 400 mF Inductance: 10 H to 100 H Diodes, transistors: 100 mV to 25 V High-current diodes (optional): 100 mV to 25 V (available soon) Zener diodes: 100 mV to 25 V High-voltage Zener diodes (optional): 25 V to 250 V (available soon) Digital transistors: 100 mV to 25 V Photocoupler test function: 100 mV to 25 V DC voltage measurement: 100 mV to 25 V DC high-voltage measurement (optional):25 V to 250 V (available soon) Open circuit: 4 Ω to 4 MΩ Short circuit: 400 m to 400 kΩ Discharge Reversely mounted capacitor detection (optional) Reversely mounted IC detection (optional)
Inspection signals	DC low voltage: 0.1 and 0.4 V two ranges DC low current: 200 nA to 200 mA eight ranges AC ammeter: 160 Hz 0.1 Vrms single range 1.6 kHz 0.1 Vrms single range 0.2 to 2.0 Vrms @0.1 V/step 16 kHz 0.1 Vrms single range 160 kHz 0.1 Vrms single range 0.2 to 2.0 Vrms @0.1 V/step
Measurement section	DC voltmeter: 800 μV f.s. to 25 V f.s.eight ranges DC ammeter: 100 nA f.s. to 250 mA f.s. eight ranges AC ammeter: 10 μA f.s. to 10 mA f.s. four ranges
Evaluation range	-99.9% to +999.9% or absolute value
Measurement time	Exhaustive short/open: Approx. 0.8 ms per pin Components: Approx. 0.9 ms per step
Guarding	Max. 5 points per step
Self-Diagnostics	Initiation method: One-time (Manual), upon startup and during automatic testing (Auto)
Statistical functions	Stepwise, groupwise and overall failure rates, sums and graphical displays Monthly statistics, histogram functions, dynamic linking with Excel(available soon)
Automatic data-generation function	ATG function (available soon) (Automatic acquisition of data from known-good boards and automatic setting of guard points) Acquisition of reference levels from known-good boards Cancellation of floating admittance and residual impedance Specifiable groups
Measurable board dimensions	Determined by test jig unit
External I/O	Standard I/O 28 input and 28 output points
Operating environment	Operating temperature and humidity: 23 ± 10ºC @75% RH or less Other conditions: avoid dust, vibration, corrosive gas and other unusual conditions Storage temperature: 10 to 43ºC
Control section	PC System architecture: IBM PC/AT compatible Installed operating system: Japanese or English version Windows 2000/XP*1 Data storage devices: Floppy disk drive, hard disk drive, CD-ROM Display: 15-inch LCD User input devices: PS/2 keyboard and PS/2 mouse External I/O: Six USB ports, one 10BASE-T/100BASE-TX for thernet (LAN), one SIO port, one PIO port Main machine System architecture: Single-board computer Installed operating system: Real-time OS Data storage device: One Compact Flash

	1220-00, -01 and -02 Common Specifications		
Miscellaneous	Bad-Contact Retry, Reversed Polarity Retry/Retest functions FAIL Stop, Test Jump, Test Hold functions Test Data and Test Results Output functions (Printer/RS-232C/Drive) FAIL Map Display function Mask Pin Setting function Surplus Test function Continuous FAIL Stop function Password Protection function Test Data Auto Backup function Read/Convert Existing Model Data (1105 data and text data) Switch Test (A/B) Data function Network Connectivity Remote Self-Diagnostics (available soon)		
	1220-00	**1220-01**	**1220-02**
Number of test points	Standard: 128 pins (expandable in 64-pin units) Maximum: 320 pins (main unit only) Maximum: 2,176 pins (with up to three Expansion Cabinets of 640 pins each)	Standard: 320 pins (expandable in 64-pin units) Maximum: 2,176 pins (with up to three Expansion Racks)	Standard: 320 pins (expandable in 64-pin units) Maximum: 1,536 pins (with up to two Expansion Racks)
Press section	None	Theoretical thrust 3.96 kN (@0.5 MPa) Compatible pin board: Model 1160 (Measurable board dimensions 420 × 300 mm) Pneumatic pressure: 0.5 to 1.0 MPa (dry)	
Operating power	Main Unit 100 to 240 V AC (±10%) Single-phase 50/60 Hz Power consumption: Max. 700 VA (with full 320-pin Scanner Board) Expansion Cabinet 100 to 240 V AC (±10%) Single-phase 50/60 Hz Power consumption: Max. 700 VA (with full 640-pin Scanner Board)	Main Unit 100, 120, 200, 220 or 240 V AC (±10%) (specify when ordering) Single-phase 50/60 Hz Power consumption: Max. 1 kVA (with full Scanner Board)	Main Unit 100, 120, 200, 220 or 240 V AC (±10%) (specify when ordering) Single-phase 50/60 Hz Power consumption: Max. 1 kVA (with full Scanner Board)
Size and Weight	Main Unit Size: 200W × 298D × 325H mm Weight: Approx. 10 kg (with two standard Scanner Boards installed) Approx. 15 kg (with all Relay Boards installed) Expansion Cabinet Size: 200W × 298D × 325H mm Weight: Approx. 15 kg (with two standard Scanner Boards installed) Approx. 20 kg (with all Relay Boards installed)	Main Unit Size:1030W × 710D × 1470H mm Weight: Approx. 220 kg	Main Unit Size: 670W × 710D × 1600H mm Weight: Approx. 180 kg
Standard Accessories	One each instruction manual, power cable, extra fuse, test lead One 1220 system disk (Compact Flash) One 1220 PC application program (CD-ROM)		
Accessories	Two scanner cables	Five scanner cables	

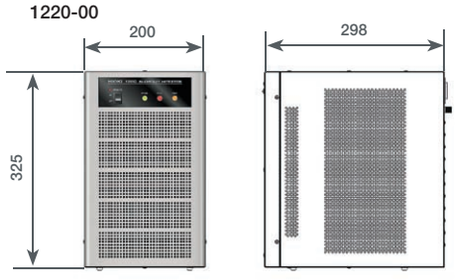
*1. Windows 2000 and Windows XP are registered trademarks of Microsoft Corporation, USA.

◆Product Series

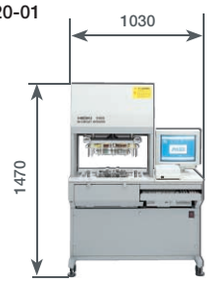
The 1220 Model line will include the following products. We expect it to satisfy many customer needs.

1220-00 In-Circuit HiTester (Bench-top type)
1220-01 In-Circuit HiTester (Off-line type)
1220-02 In-Circuit HiTester (Space-saving type)
1220-11 In-Circuit HiTester (Standard in-line type)

1220-00



1220-01



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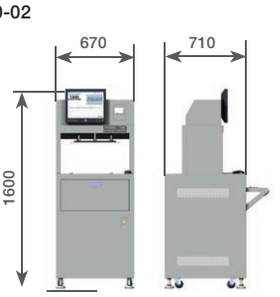

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