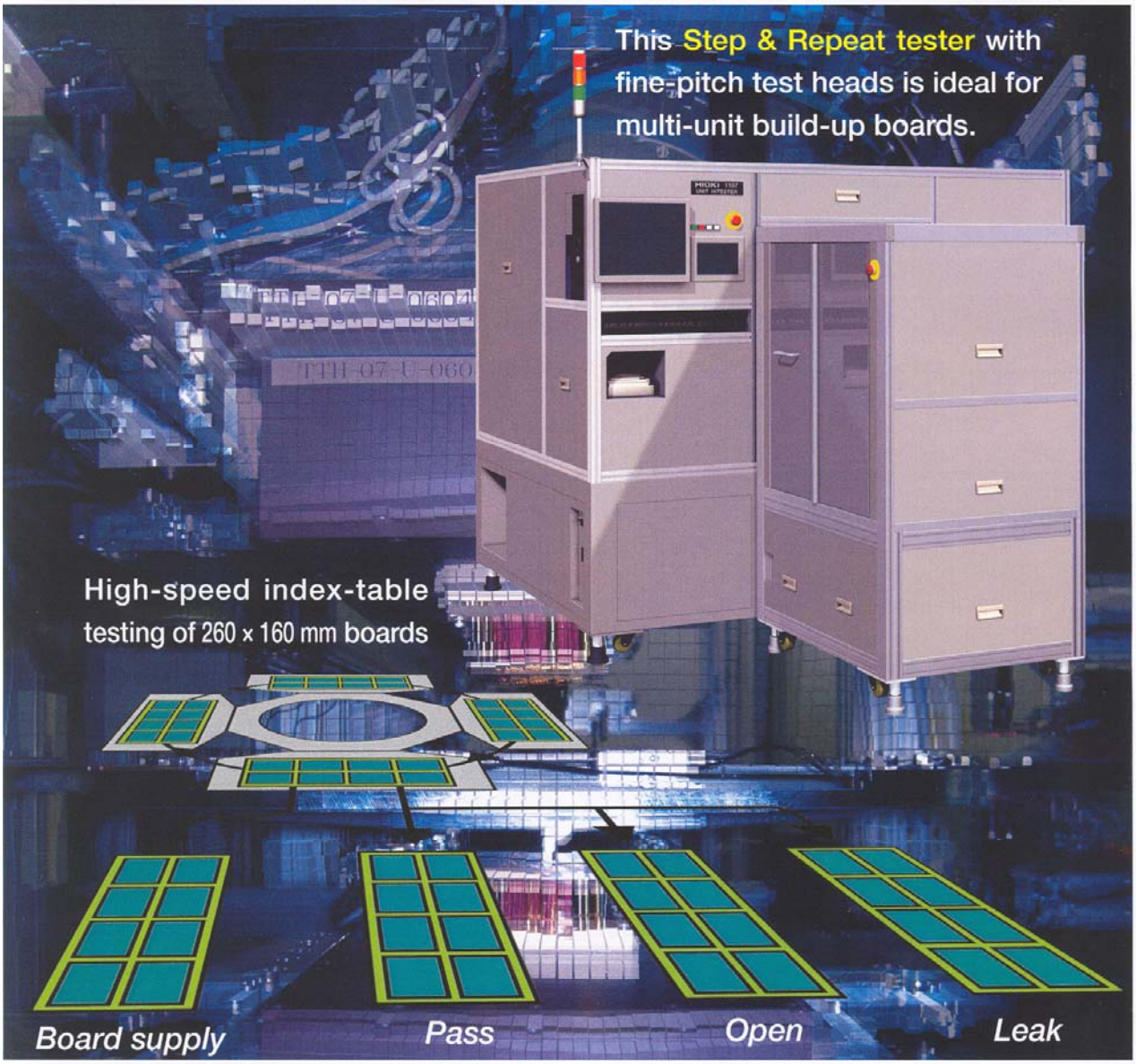
HIOKI

New

BARE BOARD HiTESTER 1107-62

Automatic Testing Equipment



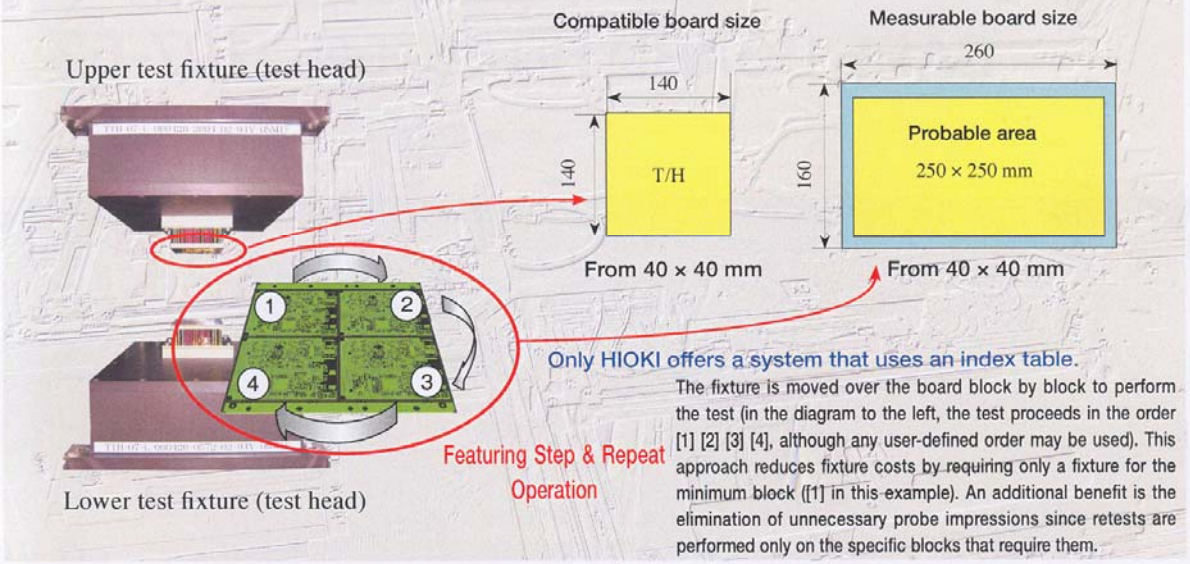
ISO14001
JQA-E-90091

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

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

Introducing the BARE BOARD HiTESTER 1107-62

The BARE BOARD HiTESTER 1107-62 is a high-speed testing system capable of inspecting mass-produced fine-pitch boards with test heads (text fixtures).



Only HIOKI offers a system that uses an index table.

The fixture is moved over the board block by block to perform the test (in the diagram to the left, the test proceeds in the order [1] [2] [3] [4], although any user-defined order may be used). This approach reduces fixture costs by requiring only a fixture for the minimum block ([1] in this example). An additional benefit is the elimination of unnecessary probe impressions since retests are performed only on the specific blocks that require them.

Effects of board defects — Detect these causes of board malfunctions.

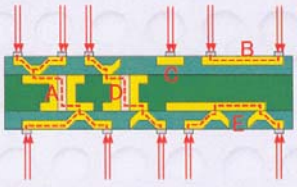
Latent Defect Detection I

Open vias

Vias are holes that make an electrical connection between different wiring layers on a printed circuit board. A hole where the contact is not complete is known as an open via. Open vias interfere with signal transmission by causing increased resistance and impedance.

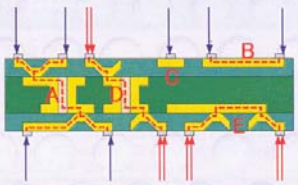
{Detection of bad contacts with 4-terminal measurement}

Four-terminal measurement is an effective low-resistance measurement technique. To avoid the higher fixture costs associated with applying 4-terminal probes to all points, the 1107-62 features a design based on the independent 4-terminal method, making it possible to limit fixture costs.



{Four-terminal probe method}

Four-terminal probes (2 probes for each endpoint) are used for all probes.

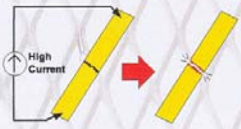


{Independent 4-terminal probe method}

The independent 4-terminal probe method is used for patterns such as A, enabling the number of probes to be cut in half.

Latent Defect Detection II

Near-opens



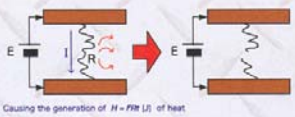
Near-opens are pseudo-breaks in the board's circuitry such as cracked patterns, via opens, and detached vias. Because near-opens are latent defects, associated problems associated tend to emerge long after the affected board is manufactured.

{Detection of near-open defects}

The 1107-62 supports continuity testing with a current setting of up to 150 mA. The momentary application of high current allows the detection of patterns that are about to suffer a break.

Latent Defect Detection III

Micro-shorts



Micro-shorts are characterized by an extremely minute short between two patterns. Even blown (ruptured) micro-shorts can cause problems with signal transmission during high-frequency operation.

{Detection of micro-shorts}

Micro-shorts can be detected non-destructively by performing an isolation test while varying the applied voltage.

Features

High Speed　Simplicity　Reliability

One-touch Test Fixture Clamping

To install a test fixture on the 1107-62, simply slide it into position on the mount and press the clamp switch. No troublesome wiring work is required.

The one-touch connectors (comprising the HiTESTER's fixture receivers) accommodate up to 4,096 pins. Select any of the following combinations (the 1107-62 supports up to 8,192 pins):

Upper receiver	Lower receiver	Total	Model
1,024 pins	3,072 pins	4,096 pins	1153-13
2,048 pins	2,048 pins	4,096 pins	1153-22
3,072 pins	1,024 pins	4,096 pins	1153-31

*Other combinations are available.

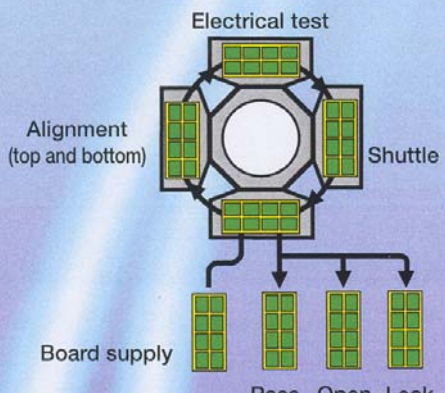
The 1107-62 ships with a scanner board capacity of 4,096 pins (with support for up to 8,192 pins).

- Mixed 2-terminal and 4-terminal probing is supported (as per user specifications).
- When using 4-terminal measurement, each probing point uses 2 channels.

Universal Board Clamp

The use of a mechanical clamp eliminates the need for separate clamp jigs for each board. Boards are placed on a rotating table, eliminating unnecessary movement and enabling high-speed testing.

Index Table



Handling Unit

The 1107-62's ability to sort boards smoothly and quickly keeps the testing process running smoothly, while the use of a separate handler makes it easy to custom-build systems to user specifications.

■Specifications

[Mechanical]

▮XY-axis units (Upper and lower units share specifications.)

Measurable board size	:	1107-62; 50 × 50 mm to 260 × 160 mm
Measurable board thickness	:	0.3 to 3.2 mm (Some thicknesses are not supported; contact HIOKI for more information about applications involving unusually thin or thick boards.)
Positioning resolution	:	1 µm
Repeatability	:	Within ±5 µm

▮θ-axis units (Upper and lower units share specifications.)

Repeatability	:	Within ±6 seconds
Range of rotation	:	±3° (during testing)

▮Z-axis units (Upper and lower units share specifications.)

Movement stroke	:	Max. 40 mm
Repeatability	:	±5 µm

▮Index table unit

Transport height	:	1,000 ±10 mm
Repeatability	:	Within ±6 seconds

▮Cycle time

Cycle time	:	8 seconds (1 sheet with 4 boards; no. of endpoints: 4,906; no. of nets: 2,048) to perform continuity test (50 mA/100 Ω) and isolation test (200 V/20 MΩ)

▮Test heads

Probing area	:	40 × 40 mm to 140 × 140 mm
Maximum number of pins	:	Max. 4,096 pins per side (Total of top and bottom, max. 8,192 pins)
Inter-probe pitch	:	Min. 150 µm (Contact HIOKI for more information about 110 µm pitch probes.)

[Measurement unit]

Number of test points	:	4,096 channels standard (expandable to 8,192 channels)
Number of test steps	:	Max. 100,000 steps of component test data
S/O tests	:	Isolation test (FAIL when LEAK) Test voltage: 1 V to 250 V DC (set in 1 V steps) Measurement ranges 10 V: 2 kΩ to 20 MΩ 50 V: 10 kΩ to 100 MΩ 100 V and higher: 50 kΩ to 200 MΩ
	:	Continuity test (FAIL when OPEN) Test current: 10 mA to 150 mA DC (5 ranges) Measurement range: 40 mΩ to 1 kΩ (Measurement range varies with range.)
	:	Measurement time 0.4 sec/1,024 points (2 points per pattern; measurement of known-good master board; 200 V/20 MΩ isolation test, 50 mA/100 Ω continuity test)
Step tests	:	Isolation test (FAIL when LEAK) Test range: 1 V to 250 V DC (set in 1 V steps) Measurement ranges 10 V: 2 kΩ to 20 MΩ 50 V: 10 kΩ to 200 MΩ 100 V and higher: 50 kΩ to 200 MΩ
	:	Continuity test (FAIL when OPEN) Test current: 10 mA to 150 mA DC (5 ranges) Measurement range: 0.4 Ω to 1 kΩ (Measurement range varies with range.)
	:	Resistance: 4 Ω to 4 MΩ
	:	Low resistance (4-terminal measurement):400 µΩ to 400 kΩ Insulation resistance: 200 Ω to 200 MΩ
	:	Capacitors: 4 µF to 400 mF
	:	Diodes/transistors: 400 m to 25 V
	:	Zener diodes: 400 m to 25 V

[General specifications]

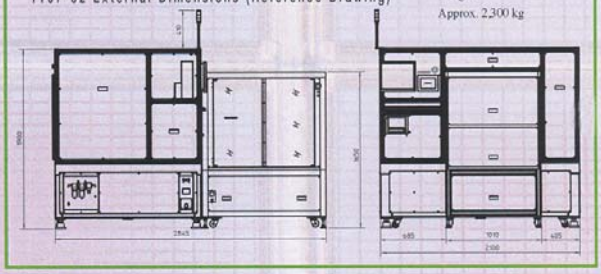
Power supply	:	200 V AC ±10% (3-phase) 50/60 Hz Power consumption: 5 kVA (1107-62 HiTESTER: 3.5 kVA; 1188 AHS: 1.5 kVA)
Air supply	:	Operating pressure (primary): 0.6 to 0.99 MPa (dry air) Set pressure (secondary): 0.5 ±0.1 MPa
Operating environment	:	Operating temperature/humidity: 23°C ±3°C, 60% RH or lower (Non-condensing)
	:	Storage temperature/humidity: 10°C to 43°C, 80% RH or lower (Non-condensing) (Temperature and humidity conditions for test head storage are the same as operating temperature/humidity.)
	:	Storage temperature/humidity: 10°C to 43°C, 80% RH or lower (Non-condensing) (Temperature and humidity conditions for test head storage are the same as operating temperature/humidity.)
Atmosphere	:	Avoid use in atmospheres characterized by dust, vibration, or corrosive gasses.

Model	HiTESTER dimensions	Weight
1107-62	Approx. 2,100 (W) × 1,900 (H) × 1,535 (D) mm*1	Approx. 2,300 kg

*1 Varies with specifications.
For more information, contact your nearest HIOKI Sales Office.

1107-62 External Dimensions (Reference Drawing)

Weight:
Approx. 2,300 kg



●Options

Printer Paper	1196
Probe Impression Sheet	1134-04
Scanner Board (256 channels)	1138-03
Data Creation Application	1139-04
FL-Link5 FLY-LINE Link Application	1139-54

●Factory Options

Ion Blower Unit	1910-05
One-touch Receivers	1153-XX

The 1107-62 ships with standard support for up to 4,096 pins. Additional pin capacity can be added 1,024 pins at a time. This requires separately available one-touch receivers and scanner boards. (For more information, contact your nearest HIOKI Sales Office.)

Machine test records and proof of calibration must be ordered separately to ensure availability at time of purchase.

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