

PowerBGA™ Measurement System

Dramatically Improves Reliability and Increases Yields

Product Summary

The PowerBGA™ Measurement system* from RVSI Acuity CiMatrix is designed to meet BGA device manufacturers' needs for accurate and repeatable sphere placement measurement and device quality inspection. The PowerBGA offers the flexibility to inspect a wide range of BGA device types and pad array layouts. The system, when installed at critical points in the assembly process helps ensure high yields with zero post-assembly defects.



The PowerBGA system shown is integrated with an automated BGA sphere attach workcell conducting 100% inspection prior to the reflow process.

Based on over fifteen years of vision industry experience and expertise in demanding applications, Acuity's PowerBGA system offers a simple, flexible user interface for quick setup and changeover. A robust calibration process corrects for camera perspective and provides measurements in real world units.

RVSI Acuity CiMatrix's proprietary lighting*, designed specifically for the BGA assembly process, ensures even illumination across the entire field of view. A user-definable reporting module provides statistical, device and ball level measurement data which may be easily integrated with factory-wide SPC and data collection systems.

Integration and 24-hour technical support are provided to both OEMs and semiconductor manufacturers through Acuity's worldwide network of factory trained applications engineers and business partners.

Applications

- Sphere presence/absence
- Placement accuracy
- Ball size
- Ball quality and geometry
- Pitch accuracy
- Package quality inspection
- Mark verification
- Pin 1 orientation

Features

- Simple device set-up
- Accurate, repeatable and reliable performance
- High-speed BGA-specific measurement tools
- Supports full range of BGA device layouts
- Robust calibration for accurate, real world measurements
- Detailed, user-definable reporting module
- Worldwide application engineering support
- 24 hour technical support

PowerBGA™ Specifications

Performance

Speed

PowerBGA up to 1200 Spheres/sec

Ball Placement Accuracy

0.001" @ 3 sigma*

Ball Pitch Accuracy

0.002" @ 3 sigma*

Ball Diameter Range

0.012" - 0.040"

Ball Diameter Accuracy

0.001" @ 3 sigma*

Ball Pitch Range

0.020" - 0.060"

Device Tests per Library

32

Number of Libraries

Unlimited

Toleranced Measurements

Maximum X Offset	Maximum Y Offset
Maximum Radial Offset	Minimum Diameter
Maximum Diameter	Minimum Pitch
Maximum Circularity Error	Missing Ball
Extra Ball	Misplaced Ball

User Definable Reporting Options

Coded Digital Output	Statistical Reporting
Device Level Reporting	Ball Level Reporting

Video Input/Output

RS-170 Video Input
High Resolution (1K x 1K) Digital Camera Input
Strobed Camera Support
Near Real-time Video Display

Communications

24-bit parallel/digital I/O TTL level
2 RS-232, RS-422 serial
1 10BASE-T Ethernet
1 AAUI-15 Ethernet

Networking User Interface

Built-in Ethernet w/TCP/IP protocol
Color GUI
15" Color Monitor

System Requirements

Power

PowerBGA 930, 940 - factory switchable 115-230 VAC
90-130 VAC, 50-60 Hz, single phase, 5 amps

Environment

Operating 50-120°F (10-50°C)
5-95% relative humidity (noncondensing)

Physical Dimensions

PowerBGA 930, 940

17.2" x 6" x 18.18"**, 30 lbs
(437 mm x 152 mm x 462 mm, 13.6 kg)

15" Color Monitor**

16.7" x 15.9" x 17.8", 31 lbs
(424 mm x 404 mm x 452 mm, 14.1 kg)

* Based on standard resolution camera and 2" field of view.

** Note: Recommended additional 6" clearance for cable strain relief.

*** 17" color monitor also available.

Acuity CiMatrix

5 Shawmut Road
Canton, MA 02021
Tel. 781-821-0830
Fax 781-828-8942
1-800-646-6664
www.rvsi.com

RVSI Asia

230 Victoria Street
#05 10-11 Bugis Junction Towers
Singapore 188024
Tel. 011 65 336 5122
Fax 011 65 336 2366

RVSI Europe

RVSI House
Claybrook Drive
Redditch
Worcestershire,
B98 0FH England
Tel 011 44 1 527 505000
Fax 011 44 1 527 505001

PBGA 07/00 5M

All referenced trademark product names are the property of RVSI.

All other referenced product names are trademarks of their respective companies.

Specifications subject to change without notice.