TECHNICAL FEATURES

SYSTEM DESCRIPTION

Control system
- Tower case PC [current model Pentium]
- 2 of 21” TFT Color Monitor with BE-Precision Technology proprietary interfaces

Software
- Microsoft Windows® XP/7
- Microsoft Excel [spreadsheet and database]
- BE-PT Manager V executive system
- BE-PT System diagnostics
- BE-PT System calibration software

Measurement center
- All measurement electronics and I/O connections are contained in the system kiosk.
- The measurement center is supplied as standard with 4,500 channels. Upgradable up to 88,000 channels.
- Mechanics are mounted on a rock solid base, both probe card and motherboards are mounted onto a comfortable flip table which rotates to the front.
- Temperature monitoring featuring Temp Alarm during test and rework.
- Rework of probe card from the front position is facilitated by a flip table, coordinated camera tracking and image translation.

MEASUREMENT DESCRIPTION

More detailed information is available in our datasheet or see www.probecardtester.com

- Contact resistance 0-9 ohms, 10 milli ohm resolution
- Leakage 0-300 nanoamps, 0.1 nano-amp resolution
- Planarity travel 25 mm 0.1 micron resolution
- Alignment travel 450 mm diameter 0.1 micron resolution
- Motherboards up to 1200 mm square max 200 Kg
- Powerful Z stage lift up to 600 Kg
- Flying Microscope with CCD camera
- Auto fine leveling for different probe card platforms [optical tilt]

Options
- Expandable PMU channel up to 88,000
- Gram Force 1-30 gram 0.1 gram resolution
- Hot chuck/bussed probes, relay control board
- LCR components board
- NIST calibration card
- Ultra low leakage measurement parametric probe cards
- RF Tag inventory control system
- BE-PT SPC Analysis software
- Professor II; 3-D profiler

Operating environment
- Temperature: 20-23 degrees Celsius (68-75 °F)
- Humidity: 30-50% RH
- Mains voltage: 120VAC 60 Hz or 220 VAC 50 Hz

Weight and dimensions desk
- Dimensions: 220 X 160 X 160 CM

MANAGER V is a registered trademark of BE Precision Technology.
All specifications are subject to change without notice. Windows and Excel are registered trademarks of Microsoft Corporation.

MANAGER V is manufactured by
BE Precision Technology

Your local sales contact
Complete Probe Solutions Inc.
9175 Crest Hill Court
Gilroy, California 95020
Telephone: +1 (408) 755-5567
FAX: +1 (408) 413-5290
E-mail: sales@completeprobesolutions.com
Website: www.completeprobesolutions.com

MANAGER V is a registered trademark of BE Precision Technology.
All specifications are subject to change without notice. Windows and Excel are registered trademarks of Microsoft Corporation.
**MANAGER V**

**YOUR PROBLEM IS OUR CHALLENGE**

Yield problems? Inconsistent test results? The probe card is a crucial part of a wafer test set up. The probe card is the mechanical interface between the test system and the bond pads on the wafer. Probe tip misalignment, high contact resistance, and signal leakage will cause inconsistent test results and/or even rejects. Eliminate this variable by checking and managing the probe card physical and electrical condition. **MANAGER V** informs you quickly and accurately the condition of your probe cards. Physical check of the probe tip locations in 3D (X–Y–Z) will generate a detailed status report and necessary repair instructions. Electrical verification informs you about the contact resistance throughout the entire probe card all the way to the probe tip as well as the leakage between the probe tips and their connections.

**INTRODUCTION**

Today more complex probe cards are being used. More pins, higher density and larger array requires a new approach in probe card analysis. With the soaring cost of new generation probe cards, repair of defective cards becomes a necessity. BE Precision Technology offers all capabilities with the new **MANAGER V**. Future proof, up to 450 mm full wafer contact probe cards can be analyzed with up to 88,000 test channels. High-end materials are used to stand extra tough requirements—such as 500 mm diameter diamante viewing window, ultra stiff carbon flip-table, high power Z–stage to generate 600 Kg of contact force.

**PHYSICAL VERIFICATION**

- X/Y position by HD camera; Air image and Scrub image
- Z (planarity) by electrical contact. (first-contact, full-contact) force per pin and force for entire card

**Electrical Verification**

- Contact resistance from tester connection point to probe tip leakage measurements
- Flip Table
- Easy access to repair the probe card, motorized zoom microscope for clear view
- Probe tip conditioning with Z motion
  - Reshaping
  - Cleaning

**FAST AND ACCURATE**

- Fully automated probe card analyzer
- Up to 450 mm large probe cards for alignment check
- Ergonomic front position repair position
- Flying microscope for repair assistance
- Up to 600 Kg Z–stage force
- Up to 88,000 electrical test channels
- Fast and accurate

**SYSTEM DIAGRAM**

**EASY OPERATION**

**MANAGER V** comes with easy to use software. Adding probe cards to the system can be done by self teaching or importing probe card design files. Tools like Trace Probe provide easy and fast probe card file creation. When the analysis is complete the software indicates pass/fail with a traffic light icon. Defective card repair has now become a more efficient job by easy repair functions support.

**TEST ELECTRICAL PARAMETERS**

In addition to alignment and planarity, the system can measure contact resistance (including ultra low resistance) and compare the results against the stored reference data file. Probe tips can be cleaned or reshaped with the **MANAGER V** for better contact resistance performance. **MANAGER V** has two user selectable leakage test modes to test each probe to all other probes:
- While probe card is in the air
- While probe card is with normal overtravel on isolated chuck surface.

Bussed probes can be checked by optional single electrode. Electronic components on the probe-card are tested with optional LCR instruments. Up to 88,000 channels can be checked.

**MANAGER V AS A PRODUCTION TOOL**

Although **MANAGER V** has considerable measurement and analytical capability, **MANAGER V** has been designed from the beginning to serve as a verification system. Its primary purpose is to ensure the integrity of probe card assemblies and verify that they are ready for test. SPC characterization before and after wafer sort will also allow analysis of probe card performance characteristics and facilitate correlation to test yield.

**MANAGER V HIGHLIGHTS**

- Fully automated probe card analyzer
- Up to 450 mm large probe cards for alignment check
- Ergonomic front position repair position
- Flying microscope for repair assistance
- Up to 600 Kg Z–stage force
- Up to 88,000 electrical test channels
- Fast and accurate
- Direct docking of tester on motherboard ASB (in development)
- Neural software evaluation of probe tip characteristic
- Imports industry standard data files
- Server Attached Systems (SAS)
YOUR PROBLEM IS OUR CHALLENGE

Yield problems? Inconsistent test-results? The probe card is a crucial part of a wafer test setup. The probe card is the mechanical interface between the test system and the bond pads on the wafer. Probe tip misalignment, high contact resistance and signal leakage will cause inconsistent test results and/or even rejects. Eliminate this variable by checking and managing the probe card physical and electrical condition. MANAGER V informs you quickly and accurately the condition of your probe cards. Physical check of the probe tip locations in 3D (X–Y–Z) will generate a detailed status report and necessary repair instructions. Electrical verification informs you about the contact resistance throughout the entire probe card all the way to the probe tip as well as the leakage between the probe tips and their connections.

INTRODUCTION

Today more complex probe cards are being used. More pins, higher density and larger array requires a new approach in probe card analysis. With the soaring cost of new generation probe cards, repair of defective cards becomes an necessity. BE Precision Technology offers all capabilities with the new MANAGER V. Future proof, up to 450 mm full wafer contact probe cards can be analyzed with up to 88,000 test channels. High-end materials are used to stand extra tough requirements—such as 500 mm diameter diamonds viewing window, ultra stiff carbon flip-table, high power Z–stage to generate 600 Kg of contact force.

PHYSICAL VERIFICATION

- X/Y position by HD camera; Air image and Scrub-image
- Z (planarity) by electrical contact. (first-contact, full-contact) force per pin and force for entire card

Electrical Verification

- Contact resistance from tester connection point to probe tip leakage measurements
- Flip Table
- Easy access to repair the probe card, motorized zoom microscope for clear view
- Probe tip conditioning with Z motion
  - Reshaping
  - Cleaning

FAST AND ACCURATE

- Fully automated probe card analyzer
- Up to 450mm large probe cards for alignment check
- Ergonomic front position repair position
- Flying microscope for repair assistance
- Up to 600 Kg Z–stage force
- Up to 88,000 electrical test channels
- Fast and accurate

EASY OPERATION

MANAGER V comes with easy to use software. Adding probe cards to the system can be done by self teaching or importing probe card design files. Tools like Trace Probe provide easy and fast probe card file creation. When the analysis is complete the software indicates pass/fail with a traffic light icon. Defective card repair has now become a more efficient job by easy repair functions support.

TEST ELECTRICAL PARAMETERS

In addition to alignment and planarity, the system can measure contact resistance (including ultra low resistance) and compare the results against the stored reference data file. Probe tips can be cleaned or reshaped with the MANAGER V for better contact resistance performance. MANAGER V has two user selectable leakage test modes to test each probe to all other probes:
  - While probe card is in the air
  - While probe card is with normal overtravel on isolated chuck surface.
Bussed probes can be checked by optional single electrode. Electronic components on the probe-card are tested with optional LCR instruments. Up to 88,000 channels can be checked.

MANAGER V AS A PRODUCTION TOOL

Although MANAGER V has considerable measurement and analytical capability, MANAGER V has been designed from the beginning to serve as a verification system. Its primary purpose is to ensure the integrity of probe card assemblies and verify that they are ready for test. SPC characterization before and after wafer sort will also allow analysis of probe card performance characteristics and facilitate correlation to test yield.

MANAGER V HIGHLIGHTS

- Fully automated probe card analyzer
- Up to 450mm large probe cards for alignment check
- Ergonomic front position repair position
- Flying microscope for repair assistance
- Up to 600 Kg Z–stage force
- Up to 88,000 electrical test channels
- Fast and accurate
- Direct docking of tester on motherboard ASB (in development)
- Neural software evaluation of probe tip characteristic
- Imports industry standard data files
- Server Attached Systems (SAS)
TECHNICAL FEATURES

SYSTEM DESCRIPTION

Control system
- Tower case PC (current model Pentium)
- 2 off 21” TFT Color Monitor with BE-Precision Technology proprietary interfaces

Software
- Microsoft Windows® XP/7
- Microsoft Excel (spreadsheet and database)
- BE-PT Manager V executive system
- BE-PT System diagnostics
- BE-PT System calibration software

Measurement center
- All measurement electronics and I/O connections are contained in the system kiosk.
- The measurement center is supplied as standard with 4,500 channels. Upgradable up to 88,000 channels.
- Mechanics are mounted on a rock solid base, both probe card and motherboards are mounted onto a comfortable flip table which rotates to the front.
- Temperature monitoring featuring Temp Alarm during test and rework.
- Rework of probe card from the front position is facilitated by a flip table, coordinated camera tracking and image translation.

MEASUREMENT DESCRIPTION

More detailed information is available in our datasheet or see www.probecardtester.com

- Contact resistance 0-9 ohms, 10 milli ohm resolution
- Leakage 0-300 nanoamps, 0.1 nano-amp resolution
- Planarity travel 25 mm 0.1 micron resolution
- Alignment travel 450 mm diameter 0.1 micron resolution
- Motherboards up to 1200 mm square max 200 Kg
- Powerful Z stage lift up to 600 Kg
- Flying Microscope with CCD camera
- Auto fine leveling for different probe card platforms (optical tilt)

Options
- Expandable PMU channel up to 88,000
- Gram Force 1-30 gram 0.1 gram resolution
- Hot chuck/bussed probes, relay control board
- LCR components board
- NIST calibration card
- Ultra low leakage measurement parametric probe cards
- RF Tag inventory control system
- BE-PT SPC Analysis software
- Professor II, 3-D profiler

Operating environment
- Temperature: 20-23 degrees Celsius (68-75 °F)
- Humidity: 30-50% RH
- Mains voltage: 120VAC 60 Hz or 220 VAC 50 Hz

Weight and dimensions desk
- Dimensions: 220 X 160 X 160 CM