SUPERVISOR IV
PROBE CARD ANALYZER AND MANAGEMENT SYSTEM

BE Precision Technology
BE probe card test solution for the semiconductor industry
SUPERVISOR IV

INTRODUCTION
Yield problems and 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 using the Supervisor IV to analyze and manage the probe-card physical and electrical condition.

YOUR PROBLEM IS OUR CHALLENGE
The Supervisor IV informs you quick and accurate on the condition of your probe cards. Physical check of the probe tip locations in 3-D (X-Y-Z) generates 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.

SYSTEM DIAGRAM

SUPERVISOR IV OFFERS:

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

Electrical Verification:
- Contact resistance from tester connection point to probe tip
- Leakage measurements probe tip conditioning
- Reshaping
- Cleaning

EASY OPERATION
Supervisor IV 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 cards repair has now become a more efficient job by easy repair functions support.

[NOTE]
Edge connector type probe cards can be connected without a analyzer motherboard, tester pogo tower and smartblock pogo. The connection goes directly on the edge connector.
PROBE CARD ANALYZER

CONTACT FORCE
Supervisor IV offers two options to check:
• The contact force (gram force) measures all probes in one movement and calculates the average value
• Measure each individual probe, linearity, gram force and spring rate motherboard with contact blocks for easy connections

GRAPHIC DISPLAY
Supervisor IV provides a clear, easy to read display for all individual probe specific parameters.

SUPERVISOR IV AS A PRODUCTION TOOL
Although Supervisor IV has considerable measurement and analytical capabilities, Supervisor IV 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.

CLEAR REPORTS
Supervisor IV provides clear test reports in the universally familiar MS Excel format. Reports can be displayed to the screen and used as input for the BEPT Analyst SPC software.

SUPERVISOR IV HIGHLIGHTS
• Fully automated probe-card analyzer
• Up to 4” X 4” large probe-cards for alignment check
• Neural software evaluation of probe tip characteristics
• Motherboard with contact blocks for easy connections
• Imports industry standard data files
• Server Attached Systems (SAS)

For all types of probe cards up to 1,000+ contact points
**TECHNICAL FEATURES**

**SYSTEM DESCRIPTION**

**Computer**
- Tower case PC (current model Pentium)
- 21" TFT color monitor
- BE-Precision Technology proprietary interfaces

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

**Measurement center**
- All measurement electronics and I/O connections are contained in the system kiosk
- The measurement center comes as standard with 750 channels
- Mechanics are mounted on a rock solid base, both probe card and motherboards are mounted onto a comfortable table

**Different models available**
- Standard for small probe cards (4" to 6")
- XL for large probe cards (4" to 8")
- XXL for large probe cards multiple die (4" to 12")

**MEASUREMENT DESCRIPTION**

- Contact resistance: 0-9 ohms, 1 milli ohm resolution
- Leakage: 0-300 nano-amps, 0.1 nano-amp
- Planarity travel: 10 or 20 mm 0.1 micron resolution
- Alignment travel: FOV 1 X 1 inch (X & Y) 0.1 micron resolution
- Gram Force: 1-30 gram 0.1 gram resolution
- Motherboards: up to 18 inch square

**Options**
- Expandable PMU channel up to 10,000
- Powerful Z-stage lift to 100 Kg
- Hot chuck/bussed probes, Relay control board
- LCR components board
- Microscope Leica/other configurations
- N.I.S.T. calibration card
- Ultra low leakage measurement parametric probe cards
- RF tag inventory control system
- Auto fine leveling for different probe card platforms

**Operating environment**
- Temperature 20-23 degrees Celsius (65-75 °F)
- Humidity 30-50% RH
- Mains voltage 120 VAC 60 Hz or 220 VAC 50 Hz

**Weight and dimensions desk**
- Dimensions 31 X 84 X 60 CM
- (Height X Depth X Width)
- Weight 70 Kg including PC and belongings