



AKT's solution for high throughput array pixel testing, the AKT electron beam array tester, offers large area vector E-beam addressing providing high display layout flexibility and system reliability, better defect detection and lower running costs. Different design models of testers are available covering the whole range from G5 to G10.

STANDARD MAINFRAME COMPONENTS

Provides dynamic pixel and TFT characterization and functional test of flat panel matrix in mass production

- Electron beam columns further increase throughput and minimize system footprint
- Throughput dependent on number of pixels, not area — low TACT for LCD TVs
- Fast test and re-test provide high test accuracy and detailed defect characterization of each individual pixel
- Proprietary test algorithms are compatible with all shorting bar configurations
- Contacts to shorting bars are provided by one of two options, both providing fast device change:
 - Auto prober, can adapt to different devices by adjusting probe heads
 - Mini prober with in-chamber storage of up to 3 frames
 - Dedicated test sequence provides high sensitivity to pixel leakage
- Beam addressing and beam-to-substrate alignment replace high precision and fast moving mechanics
- Long life beam emitters provide low scheduled down time and low running cost

PLATE DESCRIPTION

| | |
|------------------------|-------------------------------------|
| Technology | TFT and others |
| Array size | Any |
| Thickness | 0.6 mm to 1.1 mm |
| Minimum Pixel diameter | 68 µm, down to 40 µm in center area |

DEFECT DETECTION

| | |
|---------------------------------|----------------------------------|
| Line open | Low TFT off resistance (leakage) |
| Line short | High TFT on resistance |
| Pixel open | Defect localization to one pixel |
| Pixel short | a-Si residue |
| TFT threshold voltage variation | |

SYSTEM OUTPUT

Type of defect
 Position of defect
 Defect map
 User configurable binning parameters and defect statistics

THROUGHPUT

Simulations available upon request

OPTIONAL AUTO-PROBER OR MINI-PROBER (PATENT PENDING)

Auto-prober adjustable contact heads and up to three mini-prober inside chamber storage allows device change without need for traditional prober exchange.

SHORTING BAR PROBER

Prober moves with stage and steps a few times depending on prober coverage. Shorting bar probe contact frame for different display designs exchangeable.

OPERATOR INTERFACE

Simple icon driven control commands
 Menu driven system set up functions

CONTROL COMPUTERS

Distributed microprocessor VME controller
 Sun Ultra with Solaris OS
 Mouse
 LCD color monitor
 Ethernet interface for factory automation

SECS

Integration available

FACTORY INTERFACE

Adapts to various cassette handling systems including AGV; also adaptable to single substrate in-line delivery

SYSTEM DIMENSIONS AND FACILITY REQUIREMENTS

Available upon request

| Product | Substrate Size | E beam Columns | Beam Emitters |
|-------------|--|----------------|---------------|
| AKT-15K EBT | 1100 mm x 1300 mm | 4 | 4 |
| AKT-25K EBT | 1500 mm x 1800 mm 1500 mm x 1850 mm | 4 | 4 |
| AKT-40K EBT | 1870 mm x 2200 mm | 4 | 4 |
| AKT-55K EBT | 2200 mm x 2500 mm | 7 | 7 |
| AKT-90K EBT | 2850 mm x 3050 mm | 9 | 9 |

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