SWTEST
PROBE TODAY, FOR TOMORROW

SWTest Conference
2025

turbodynamics
MADE IN GERMANY

Probe Card Analyzer Motherboard Flexibility and Performance Improvement

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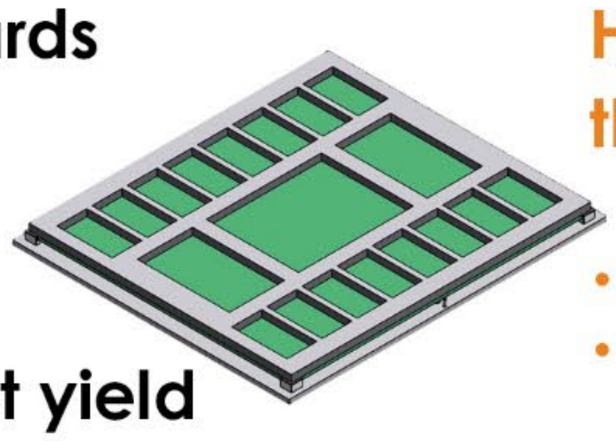
Introduction

New Generation Probe Cards → **Very high pin count > 6000 I/O**

Expensive Probe Cards

Deflections at high contact forces are jeopardizing test yield

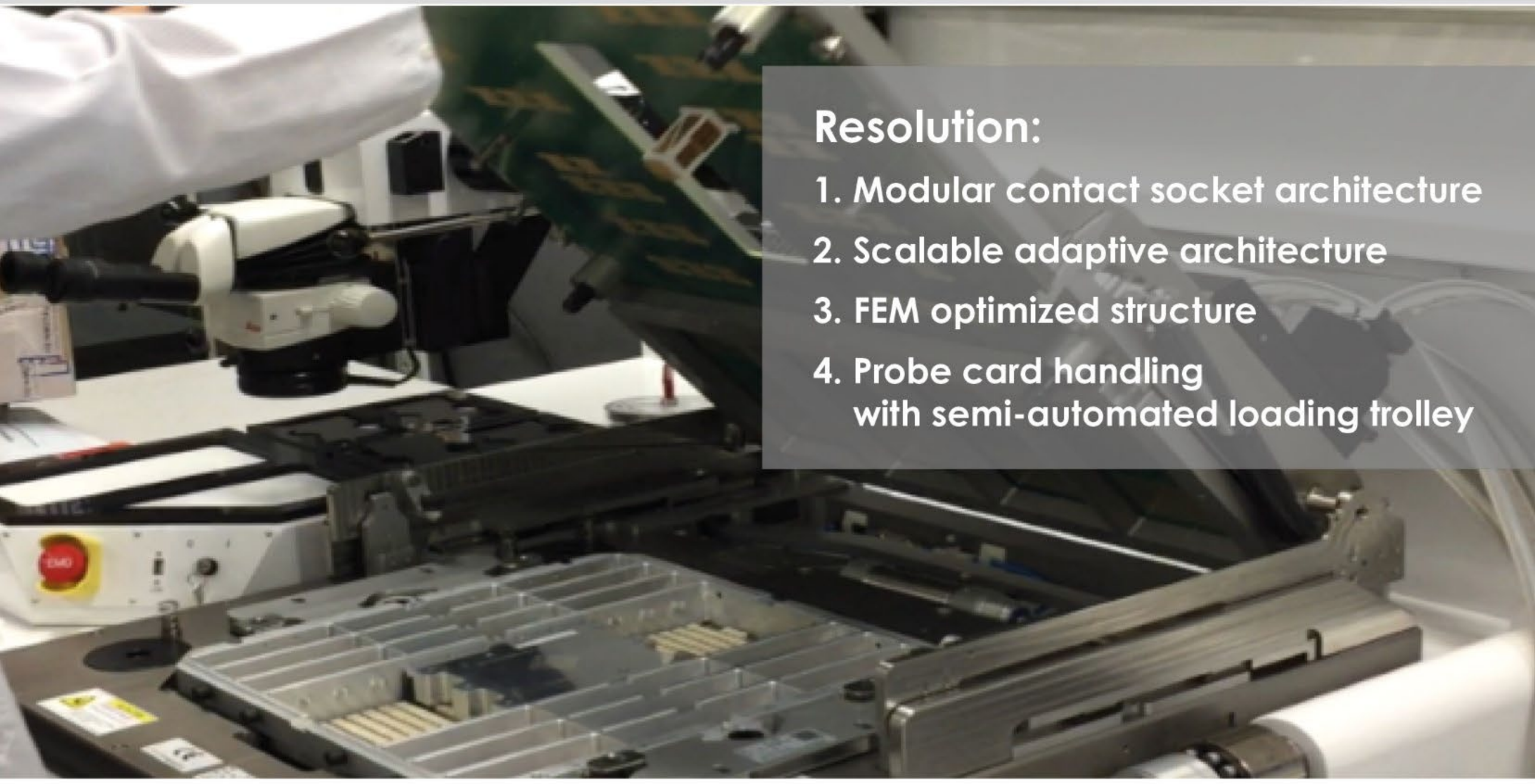


How to test off-line the yield performance ?

- Probe card analyzer
- Is the motherboard reflecting the final test environment?

ROI Short Comings of traditional VRX4 Motherboards

1. **Lacking flexibility** for product specific layouts.
2. **Missing scalability** for different boards and stiffeners.
3. **Low rigidity** at high contact forces resulting in yield losses at the final test setup.
4. **Risk of damage** at loading of heavy probe cards.



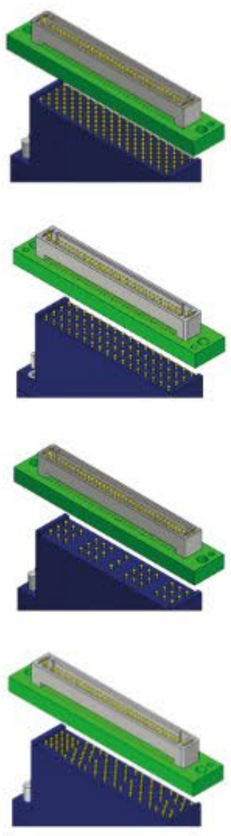
Resolution:

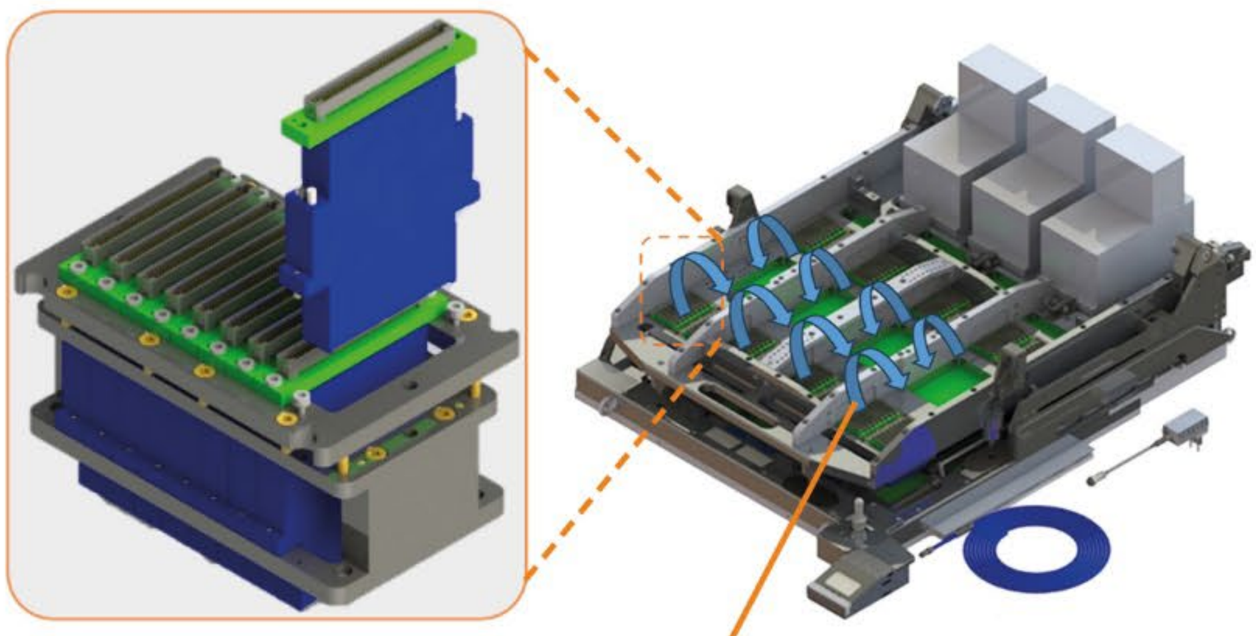
1. Modular contact socket architecture
2. Scalable adaptive architecture
3. FEM optimized structure
4. Probe card handling with semi-automated loading trolley

1. Modular Contact Socket Architecture

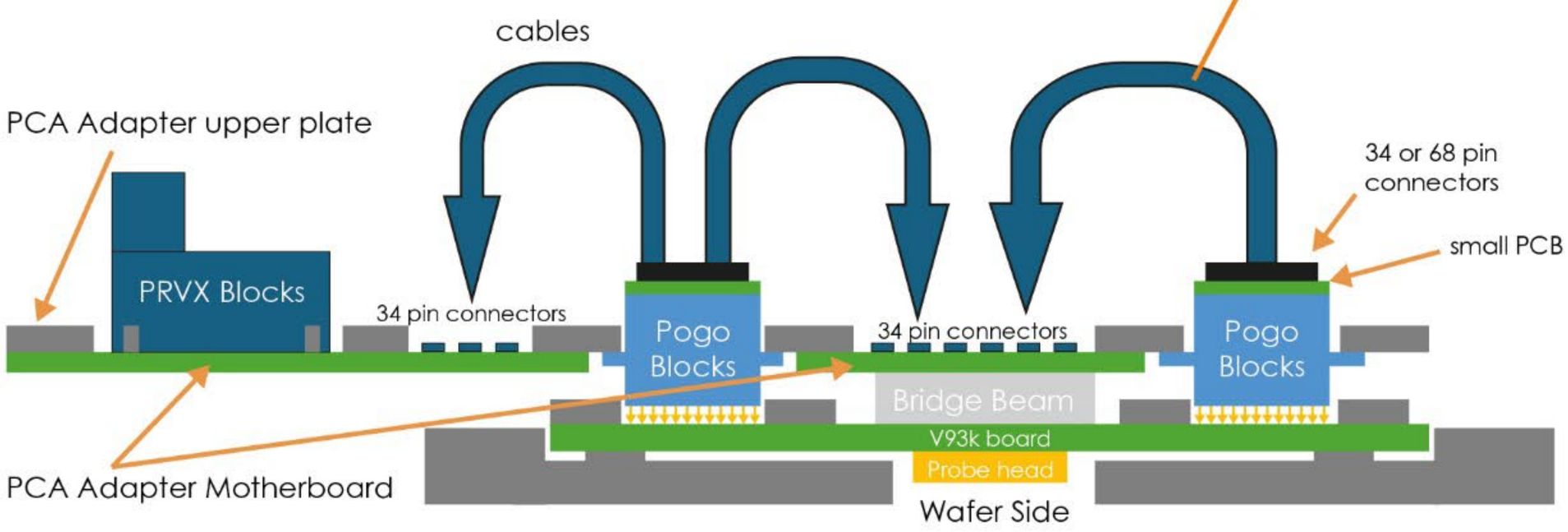
for various I/O layouts with cable interface to a universal motherboard

- **Very high density** pogo block
- **High density, PDS64, utility** pogo blocks
- **MSDPS** pogo block
- **UHC4** pogo block





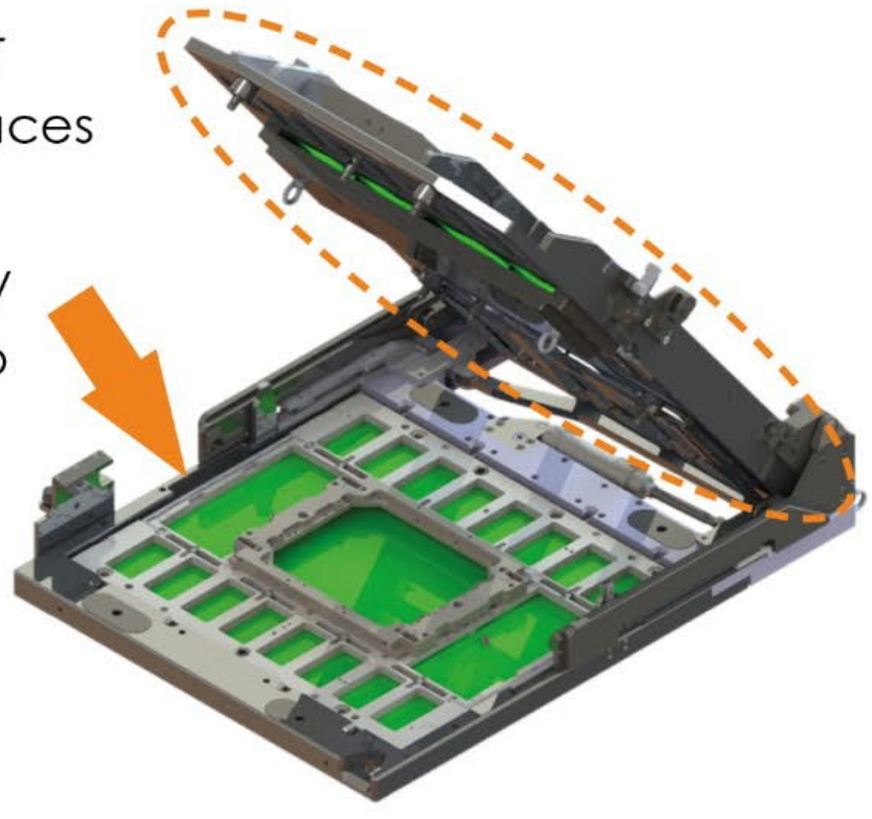
Tester Side Top



2. Scalable Adaptive Architecture

with stiffener adaptor and exchangeable hinged top assembly

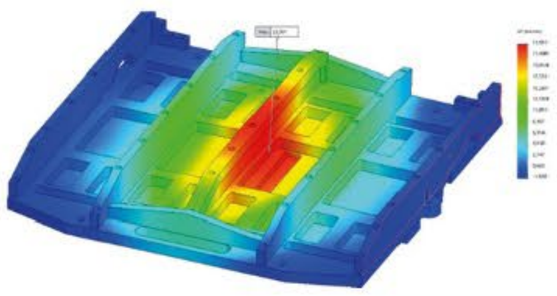
- **Stiffener adaptor**
  Modular interface for different tester interfaces
  - V93k PS1600 legacy
  - V93k Exa Scale Duo
  - UFLEX
  - UFLEX+



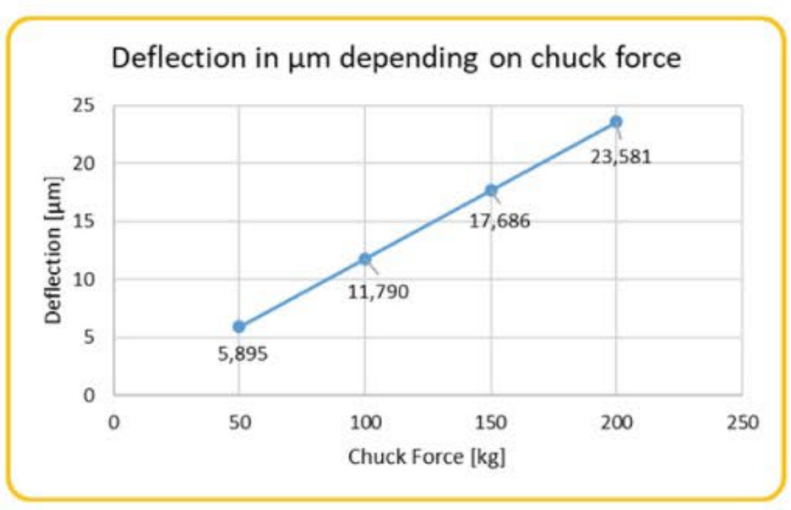
- **Exchangeable hinged motherboard top assembly**
  Converting for tester specific
  - Universal motherboard PCB
  - Contact block position
  - Bridge beam type

3. FEM Optimized Rigid Structure

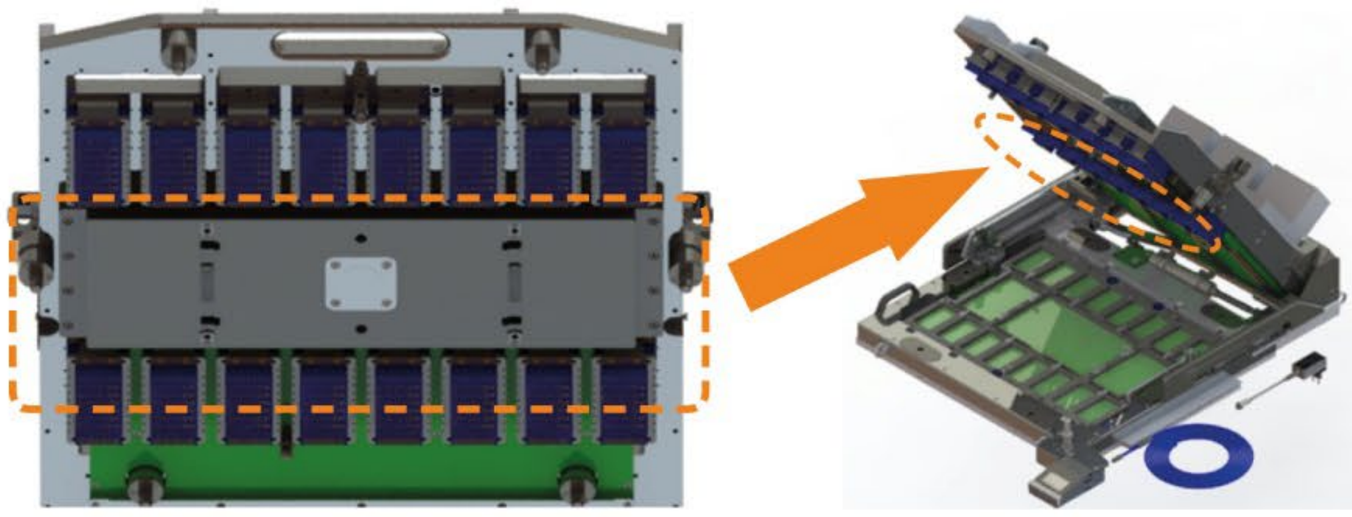
with bridge beam reflecting boundary conditions of final test environment



➔ **Deflection <25µm @ 200 kg contact force**

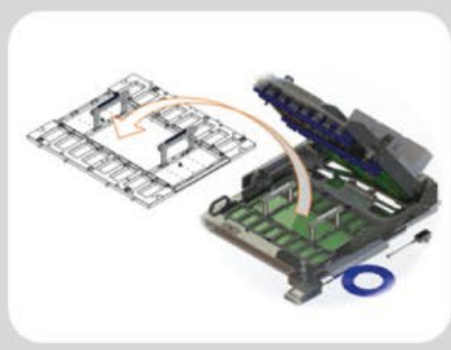


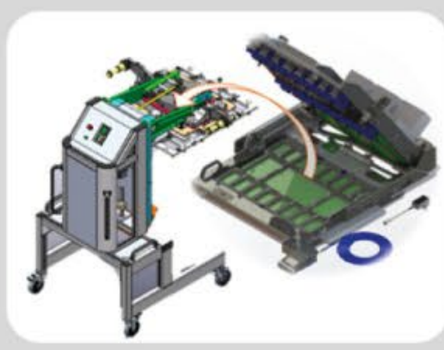
➔ **Weight optimized bridge beam**



4. Probe Card Handling

with semi-automated and manual loading tools to eliminate risk of damage





Removeable Lifting Handles

for ergonomic manual probe card exchange and handling

Probe Card Universal Trolley XL

for fail safe guided manual probe card exchange and handling

Lift Trolley

for motherboard unit conversation or exchange

Benefits

➔ **Capital invest savings for metrology** through flexibility and scalability

➔ **Maintenance lab floor space saving** through flexibility and scalability

➔ **Resulting in production yield loss savings**

➔ **Handling risk reduction** using the handling tools

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