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SMART TEST CELLS

Improving Efficiency and Convenience in
Test Setups

November 2022 | SEMICON München | Felix Patschkowski

ITEC – THE NEW VETERAN ON THE BLOCK

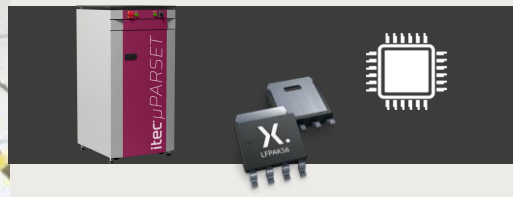
30+ years of semiconductor equipment & automation development experience

ADAT3 Assembly Platform



Leading in high volume Small Die Pick & Place

Parset Test Platform



Benchmark in Analogue Testing of Small Signal to Power devices

Inspection Platform



Best-In-Class Mold Defect and In-Tape Inspections

Smart Manufacturing



Leading in Industry 4.0 for mass production

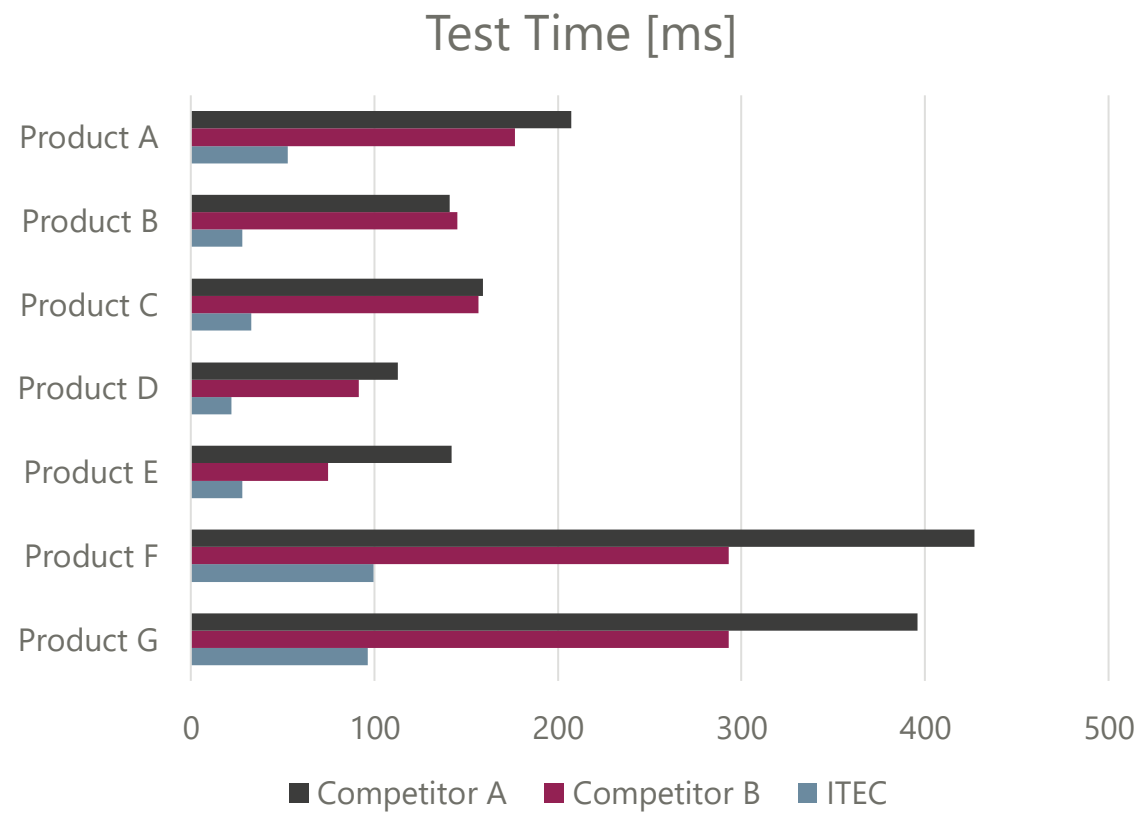
PARSET TESTER FAMILY



Model	(Power) μParset Tester
Features	92k UPH

Fastest Tester

3x – 5x times faster



PARSET GENERAL

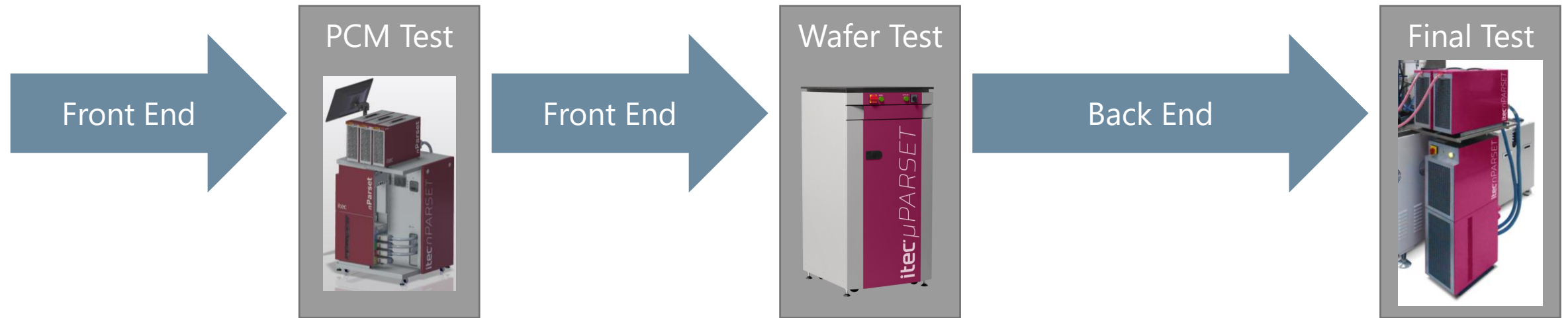


Feature Comparison

Feature	μParset	nanoParset	Power μParset
Max supply and current per channel	400V/3A	400V/3A	400V/30A
Test times	Very short	Ultra short	Short
# of handlers/probers	4/4	2/2	2/2
Extreme flexibility	☑	☑	☑
Pin Electronics	☑	☑	☑
Number of pins (FT and AT) - Every line has own MVI - 12 MVIs	6*	6**	6*
Upgradeable to max configuration	☑	☑	☑
High quality diagnostics and calibration	☑	☑	☑
High Accuracy	Very high	6 x higher	Very high
User definable parameters	☑	☑	☑
Test Heads - Current amplifier for fast leakage measurement - Short and open pins close to DUT - Dedicated test hardware	☑	☑	☑
Cabinet	600 x 665 x 1235	213 x 440	600 x 665 x 1235

*:FT and AT can be combined to 12 pins FT
 **: 4 test heads can be programmed as 1x 24 pin test head

TESTING IN THE SEMICONDUCTOR MANUFACTURING PROCESS



Different use-cases, same concept: The **Test Cell**

TYPICAL TEST CELL SETUPS

The Front End: Wafer Test

Special challenges

- Wafer maps and post-processing
- Sampling (wafer / die / ...)
- Full die/product traceability

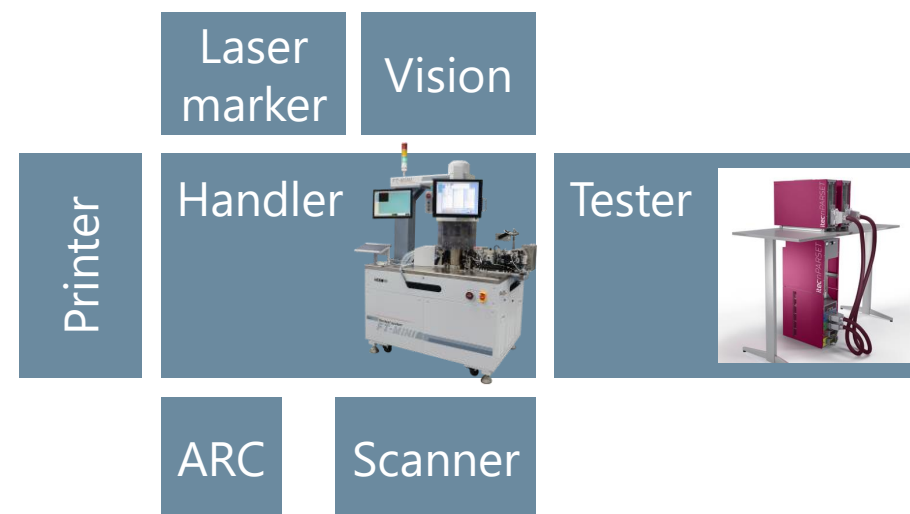
Transfer from FE to BE



The Back End: Final Test

Special challenges

- Marking / taping / binning
- Outlier detection for taping
- Full die/product traceability



BUSINESS TRENDS

Customer perspective

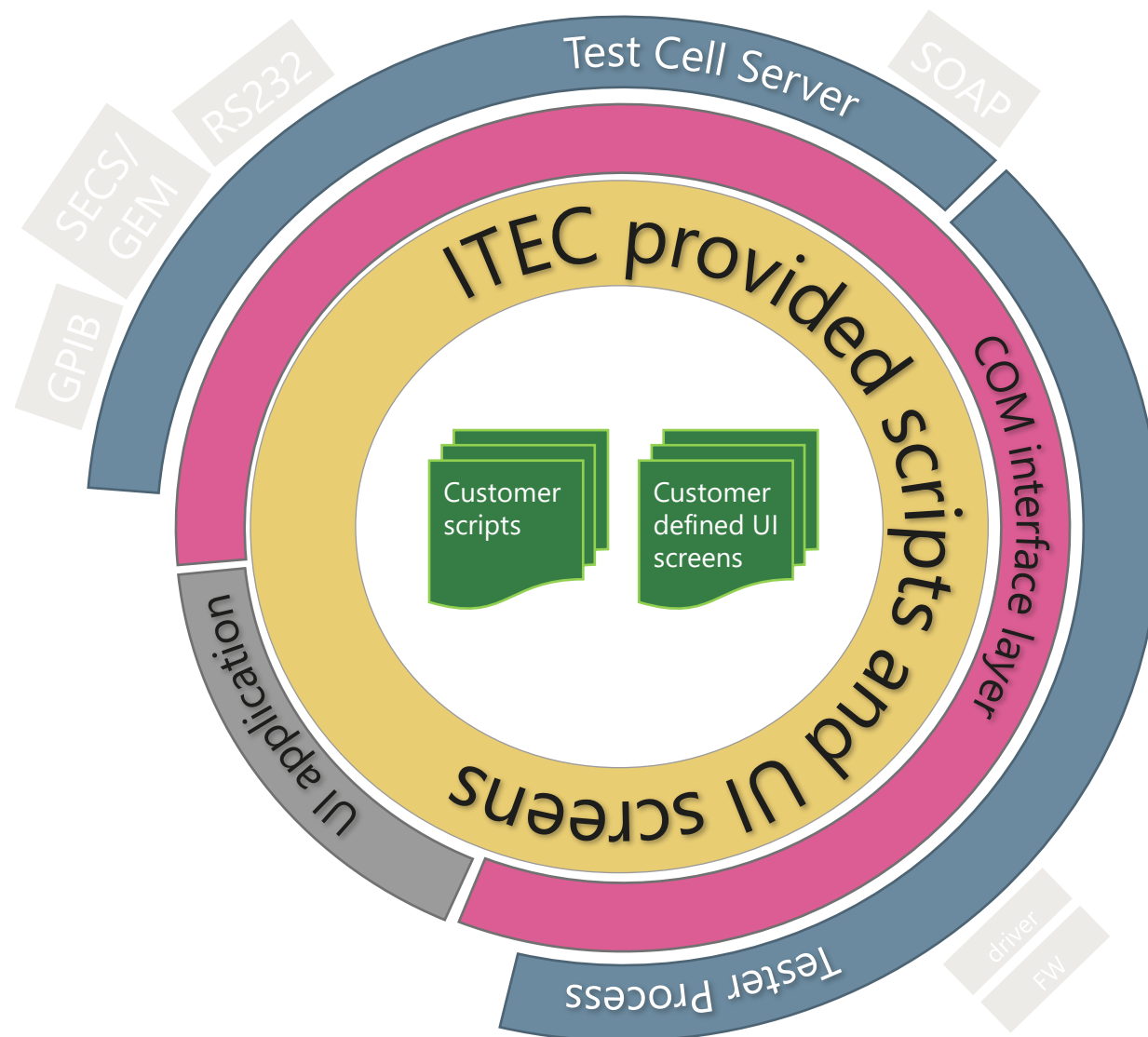
Smart Manufacturing

- Increasing data demand from metrology equipment
- More & varying equipment added to the Test Cell
- Need for customizable WoW / processes at the Test Cells (PCM/wafer testing, final test, ...)

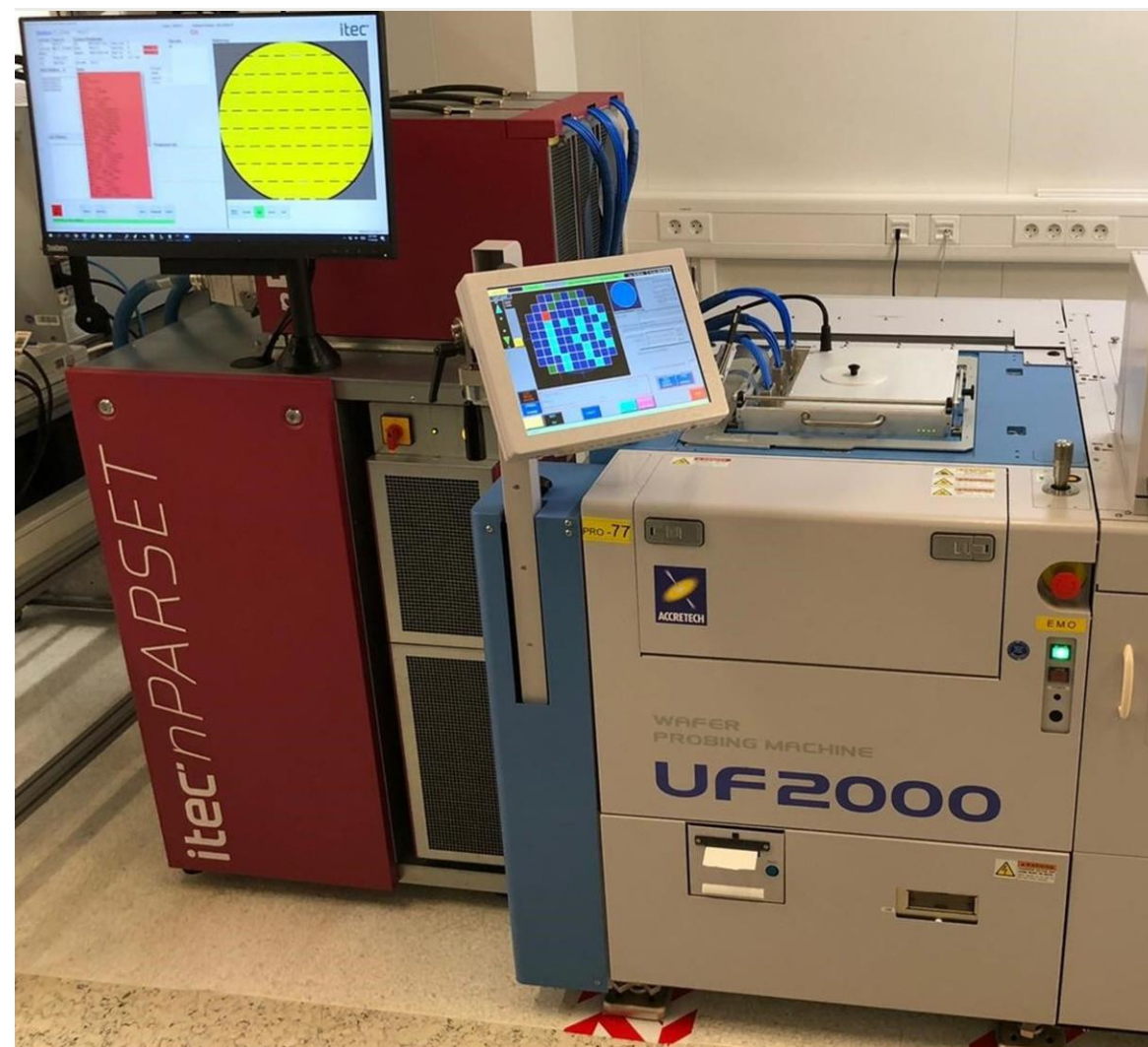
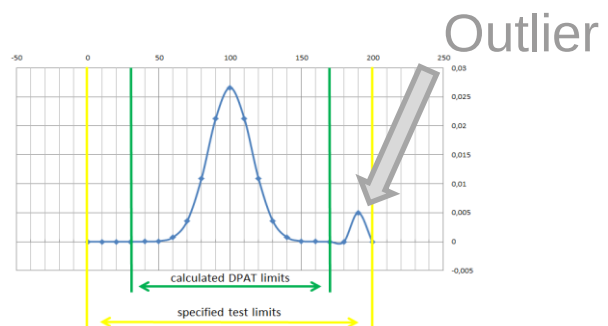
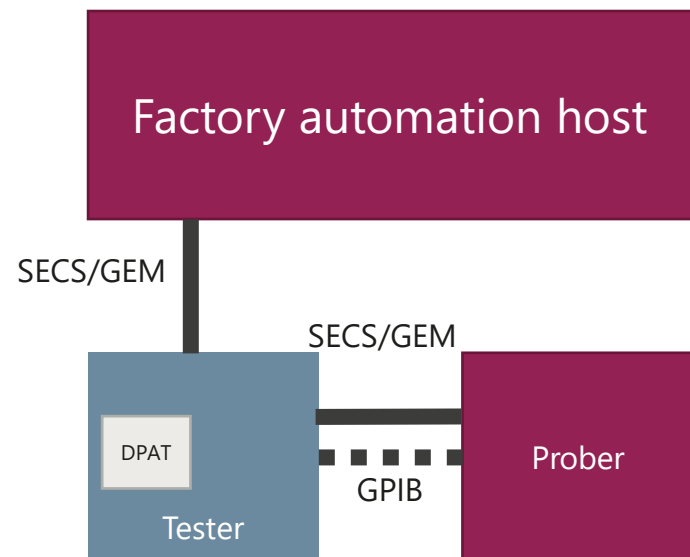
Conclusion: More automation of the Test Cell wanted



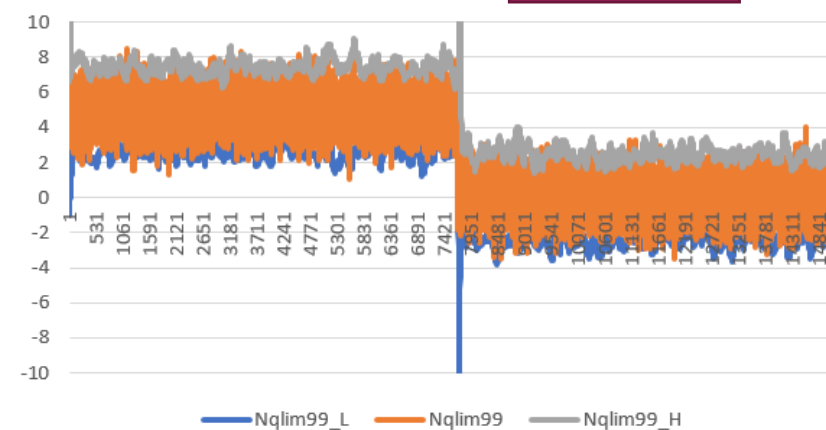
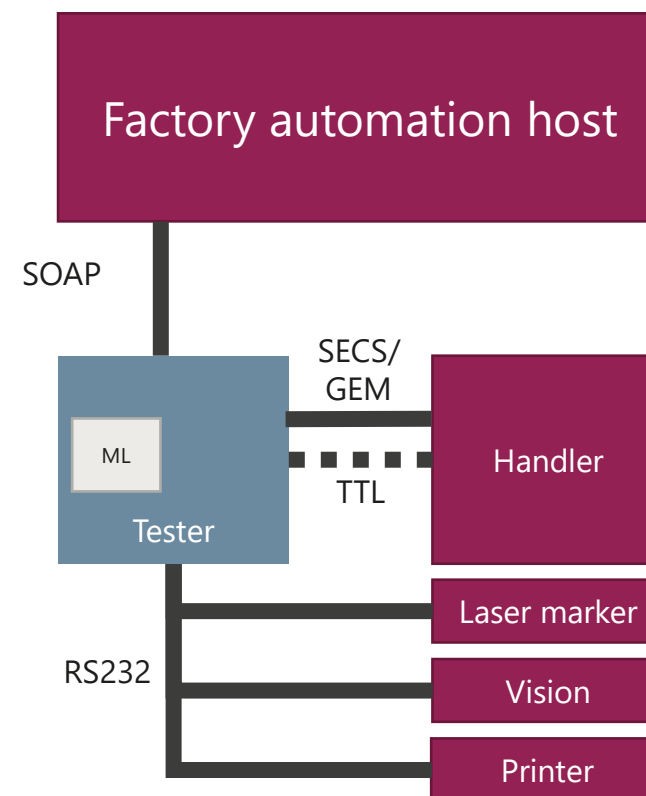
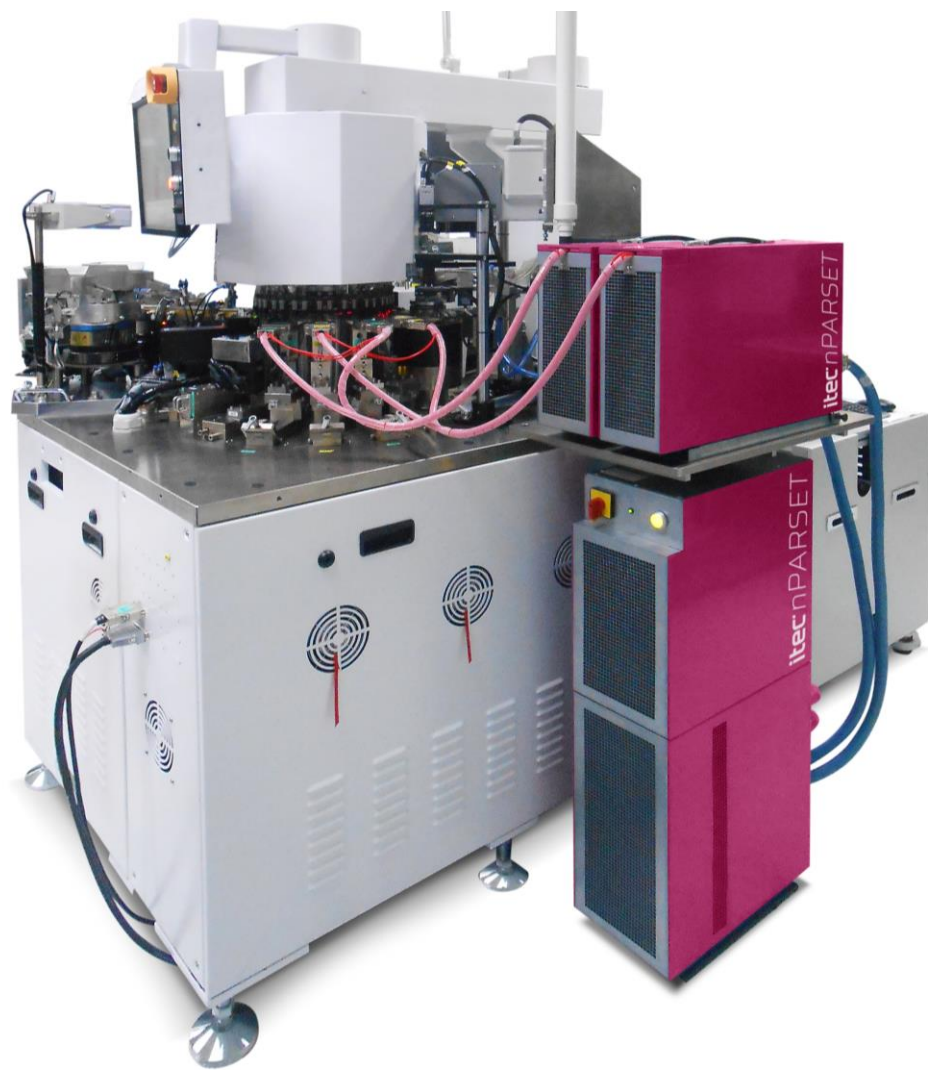
台 – A CUSTOMER FOCUSED EXPERIENCE

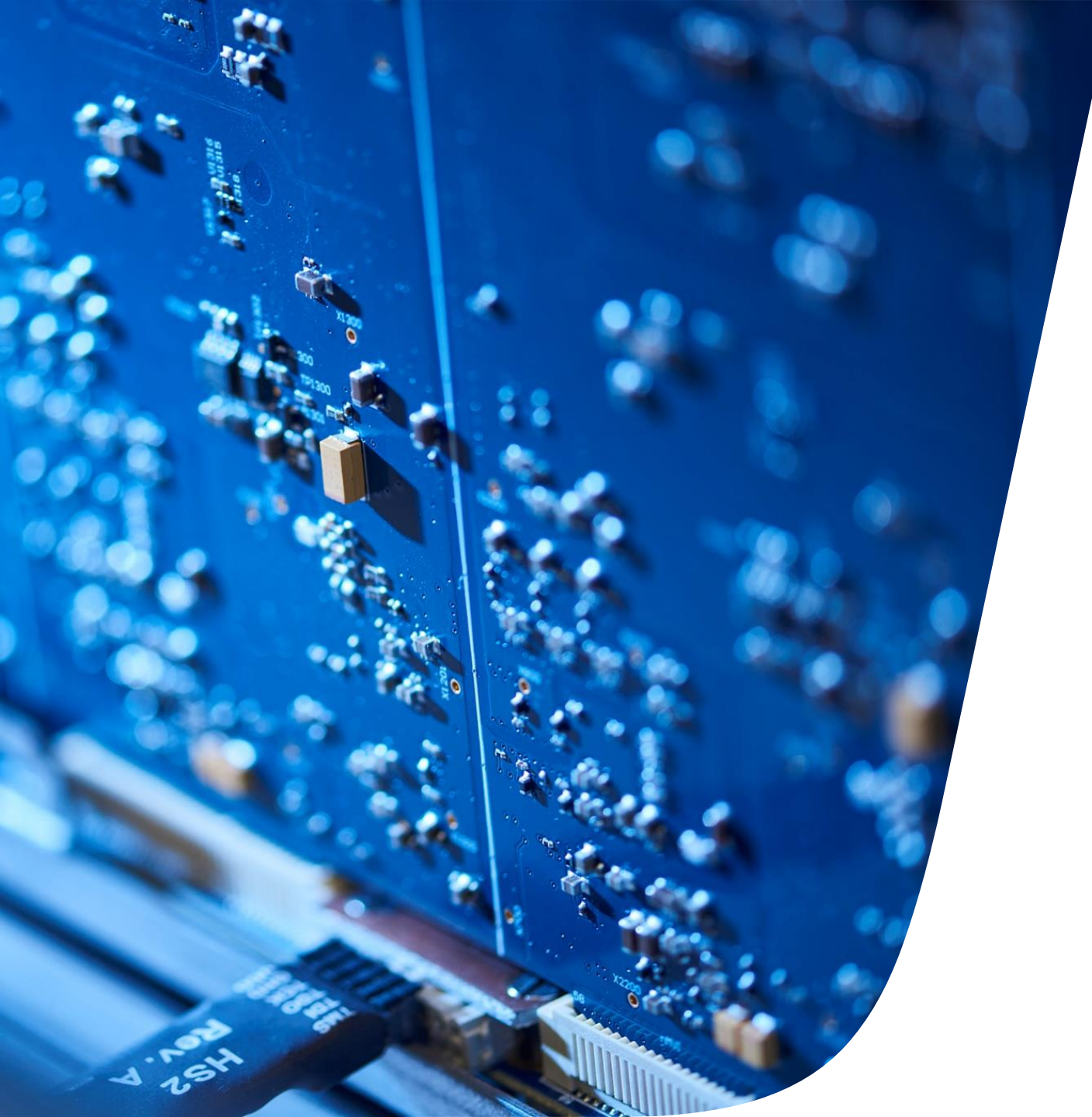


USE CASE 1: WAFER TEST



USE CASE 2: FINAL TEST





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