

PILOT BT BATTERY TEST

The Flying Probe System for Cells bonding Test

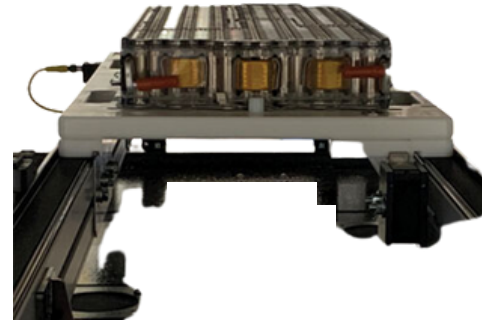
The increasing demand from the Electric Vehicles (EV) battery industry for electric cars has changed the high-volume production battery arrays test.

To meet the most complex technical needs, Seica has designed and developed the **PILOT BT** flying prober, the latest addition to the NEXT>, which is a validated, verified and completely automated system to test full-size EV lithium-ion battery packs.



The EV battery manufacturers produce many types of battery families with different physical shapes and electrical characteristics. PILOT BT is designed to guarantee a maximum testing area of 1050 mm x 865 mm (41.33 '' x 34.05 '') to accommodate all types of battery packs through a Seica's conveyor system or a custom system designed or chosen by the customer.

Thanks to the flexible architecture and the most advanced measurement system, the PILOT BT can guarantee a very accurate measurement, down to a few $\mu\Omega$ the incredible rate of 4800 bonding/min, achieving a very high production throughput.



DIRECT MEASUREMENTS ON THE FOUR FLYING HEADS

The system features up to 4 independent test heads driven with synchronous brushless motors (XYZ), to provide a high-level dynamic response. Each one of the four heads features a mini fixture to test up to four individual cells in a single movement in either an X or Y axis orientation.

FLYING MINI-FIXTURE: 4-WIRE KELVIN TEST

The tester aims to measure one of the most important parameters of the battery: the bonding resistance.

Each one of the four mini-fixtures is equipped with:

- Four thermally stabilized and insulated resistance meters, which enable the measurement of the bonding resistance of a single battery cell to the common plate. It is possible to discriminate m Ω resistor values with 1 $\mu\Omega$ resolution and high accuracy.
- A 200 MHz Digital Signal Processor (DSP) for processing the analog measurements to ensure fast and efficient data processing through a 1 Gigabit Ethernet connection with the system PC.



TECHNICAL TABLE

| | |
|---|--|
| System Architecture | Horizontal |
| DUT Loading/unloading | Automatic, fixed rail |
| Size-adjustable battery conveyor system | Option |
| Embedded instruments | 4 on each head (Optional: up to 8 on each head) |
| Max mobile resources | 4 |
| Laser sensor | Yes |
| HD color camera | High-resolution cameras |
| Lighting unit | RGB |
| Marker Tool | Optional |
| Barcode reading | Optional |
| ICT Test | Yes, 4-wire Kelvin Test |
| SMEMA | Compatible |

GENERAL REQUIREMENTS

| | |
|--------------------------------------|--|
| Temperature | 23 ± 5 °C |
| Humidity | Min. 20% - Max. 80% |
| Power Supply | 400 VAC, (16 A) 50-60 Hz Single-phase |
| Power Consumption | Max. 2.5 kW |
| Weight | 1800 kg |
| Dimensions (Length x Width x Height) | (1850 x 1800 x 1796) mm ¹⁾ |

SOFTWARE FEATURES

| | |
|----------------------------------|--|
| PC/Operating System | Industrial PC – I5, Windows10 64 bit configuration |
| Software Architecture | VIP platform - VIVA Next> |
| Automatic Test Generation | Yes |
| Autodebug | Yes |
| Parallel Test Capabilities | Yes, Up to 16 battery cells tested simultaneously |
| Data Input Format | CAD Data |
| Active Test Area | (1050 x 865) mm (41.33" x 34.05") ²⁾ |
| Maximum Battery Height | 1200 mm |
| Max number of measurable bonding | 2400 bonding/min *4800 bonding/min optional |

¹⁾ Height without lamp buzzer

²⁾ Depending on the battery layout

*Universal carrier for unique board configurations.

