

The P1800 precision source measure unit (SMU) is an easy-to-use and cost-effective solution for high-performance electrical testing. It integrates a high-precision power supply plus voltage, current, and resistance measurements in a compact chassis. The series supports transient time-domain testing, pulse and arbitrary waveform generation and measurement, and four-quadrant IV characterization. The 7-inch color touchscreen and graphical interface deliver clear results and efficient operation. The free LabExpress Community Edition PC software unlocks advanced analysis. Multiple control interfaces and standard command compatibility ensure reliable connection, stable operation, and easy integration from research to production.



### Application Scenarios

- Electronic Components & Discrete Devices
  - Resistors and rheostats
  - BJTs and FETs
  - Diodes and PN junctions
  - Photodetectors
  - SiC and GaN
- Advanced Materials & Devices
  - Graphene and carbon nanotubes
  - Metallic materials and 2D materials
  - Organic materials and flexible electronics
  - LED and thin-film transistors
  - Photovoltaics and solar cells
- Integrated Circuits & Printed Circuits
  - Analog circuits
  - Application-specific circuits
  - Radio-frequency integrated circuits
  - System-on-chip
  - Printed circuit boards
- Production Testing & Test System Integration
  - Semiconductor device packaging and testing
  - MEMS and sensor testing
  - TEG and display panel testing
  - Wafer-level reliability testing
  - Integrated testing systems

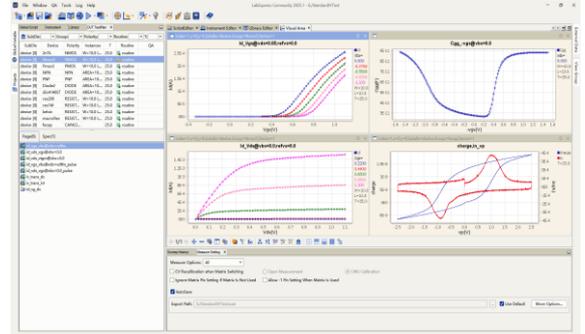
### Hardware Specifications

- P1811/P1812, P1821/P822 SMU
  - DC IV
    - Bias range  $\pm 200\text{V}/1\text{A}$ , DC Power 20W
    - Minimum current accuracy 50pA
    - Current Measurement Resolution 10fA
    - Four-quadrant operating range
  - Pulse IV (P1821/P822 )
    - Bias range  $\pm 200\text{V}/1\text{A}$
    - Minimum Pulse Width 500us
    - Pulse Resolution 100us, Pulse Period 5ms~5s
  - Transient IV Sampling (P1821/P822 )
    - Transient sampling time 1us
  - Suitable for general electrical metrology and high-density integrated testing scenarios
- P1815/P1816, P1825/P1826 SMU
  - DC IV
    - Bias range  $\pm 200\text{V}/1\text{A}$ , DC Power 20W
    - Minimum current accuracy 100fA
    - Current Measurement Resolution 0.1fA
    - Four-quadrant operating range
  - Pulse IV (P1825/P826 )
    - Bias range  $\pm 200\text{V}/1\text{A}$
    - Minimum Pulse Width 500us
    - Pulse Resolution 100us, Pulse Period 5ms~5s
  - Transient IV Sampling (P1825/P826 )
    - Transient sampling time 1us
  - Satisfying requirements for ultra-low current characterization

### Software Features

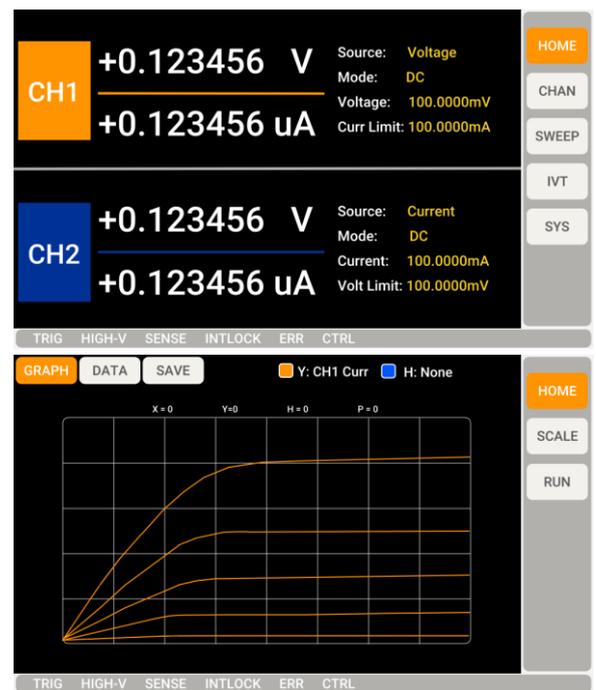
LabExpress Electrical Parameter Test Software is a professional tool designed for electrical parameter testing applications in semiconductor device R&D and production environments, supporting a wide range of test instrument, powerful measurement, and analysis functions, as well as flexible customization capabilities through a user-friendly graphical interface. Now, you can install this software on personal computers to operate the P1800 series products, unlocking enhanced testing capabilities.

- IV, Transient IV sampling, JEDEC standard reliability test
- Rich ready-to-use library of test algorithms, even a beginner can quickly complete test tasks
- Built-in various signal generation and sweep function, define complex waveform without the pain of programming
- Data analysis feature enables an instant analysis and comparison right after testing
- Multiple data file formats for further analysis and importing to modeling tool



### Application Advantages

- Comprehensive Testing Functions
  - Supports DC testing, pulse testing, 2-wire and 4-wire resistance test, and transient time-domain sampling test with a sampling rate of up to 1MS/s
  - Built-in signal sweep modes and custom waveform functions enable test results to be displayed in numerical, list, and curve formats, with USB data storage support
- Seamless Compatibility
  - Supports USB/LAN/GPIB interfaces
  - Enables high-speed triggering, multi-unit synchronization, and scalable parallel testing architectures
- Easy Testing and Analysis
  - Designed for usability, the compact unit features a 7-inch color touchscreen with an intuitive graphical interface that simplifies test setup and data visualization



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