

BATTERYFLEX

Battery Testing and Analysis Platform



Medical Device Edition

BATTERYFLEX

BatteryFlex is a platform for evaluation and characterization of a wide range of battery cells and battery packs used in medical devices.

BatteryFlex relies on instrumentation in a PXI chassis platform, which allows the additional of unlimited input or output signals, controls, or measurements. Combined with user-made sequence scripts and playback of real-world simulated load scenarios, the capabilities of BatteryFlex are defined by you.

- Evaluate or compare one or more products
- Generate or reproduce datasheet contents
- Playback charge/discharge/usage scenarios
- Long-Term Life Test
- Accelerated Life Test
- Any other application, defined by User Scripts



STANDARD FEATURES

- High-Resolution, High-Speed Measurements
- PXI Platform
- Playback and Record Load Scenarios
- Data Logging, Analysis, and Storage
- Output to any format report or datasheet
- Thermal Monitoring and Measurement
- Safety Interlocks and shutdown

STANDARD INSTRUMENTS

- 4-Quadrant SMU ($\pm 60V$, $\pm 3A$, 100fA Meas)
- 7.5 Digit Multimeter ($\pm 3A$, 1.8MS/s)
- Thermocouple or RTD Measurement
- Serial, CAN, I2C, SPI communication

PXI Modular Architecture provides unlimited instruments, channels, and 3rd party devices available

STANDARD MEASUREMENTS & TEST ACTIVITY

- Open Circuit Voltage (OCV), State of Charge
- Charge Discharge Scenarios and Load Simulation
- Power Cycle Test (PCT)
- Capacity (Static, Script, Pattern/Pulse)
- Leakage (FCT)
- High-Frequency EIS (2MHz)
- DC Internal Resistance (DCIR)
- AC Internal Resistance (ACIR)

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SPECIFICATIONS

Accuracy (at 23°C ± 5°C)

Digital Multimeter (NI PXIe-4081)

Accuracy	7 1/2 Digits
Voltage	± 1000 V
Current	± 3 A
Speed	1.8 MS/s

Source Measurement Unit (NI PXIe-4139)

Number of SMU Channels	1
Voltage Range	± 60 V
Current Range DC	± 3 A
Pulsed Current Range	± 10 A
Current Sensitivity	100 fA to 1 µA
Max DC Source Power	40 W
Max DC Sink Power	40 W
Settling Time (Current)	<200 µs to <1100ms
Maximum AC Voltage	7.07 V RMS
Maximum AC Current	70.7 mA RMS

Chassis (NI PXIe-1092)

Peripheral Slots	10 (7 Hybrid)
Speed	24 GB/s
DC output	± 12 V
Module cooling	Forced air
Slot cooling capacity	82 W



OPTIONAL FEATURES

- Thermal Chamber Integration
- 2D Color Machine Vision and IR Thermal Imaging
- Additional batteries and packs tested in batch or parallel test mode
- Customizable User Interface

