

**Q4100**

Electrical, Optical & Thermal  
Imaging & Test Systems

# Battery Pack Cycle Test System

Battery Pack Cycle Test System Q4100 is a high-performance system that can test and evaluate Battery Modules or Battery Packs and can be manufactured as a portable type according to the user's request. This system is a special system which is composed of a single system of Cycle Test and Cell Balancing Test. It is capable of high current / high voltage test, high speed control, high speed measurement, high speed data storage, various pattern control and cell voltage monitoring.

Charge/Discharge + Cycle Test + Portable + Cell Balancing

DCR + TRA + Sequence + Metadata + Big Data



Charge/Discharge & Cycle Test  
Portable System  
DC Internal Resistance  
TRA  
Sequence Builder  
Cell Balancing Charge  
Over Discharge Test  
Metadata Compiler  
Big Data Manager

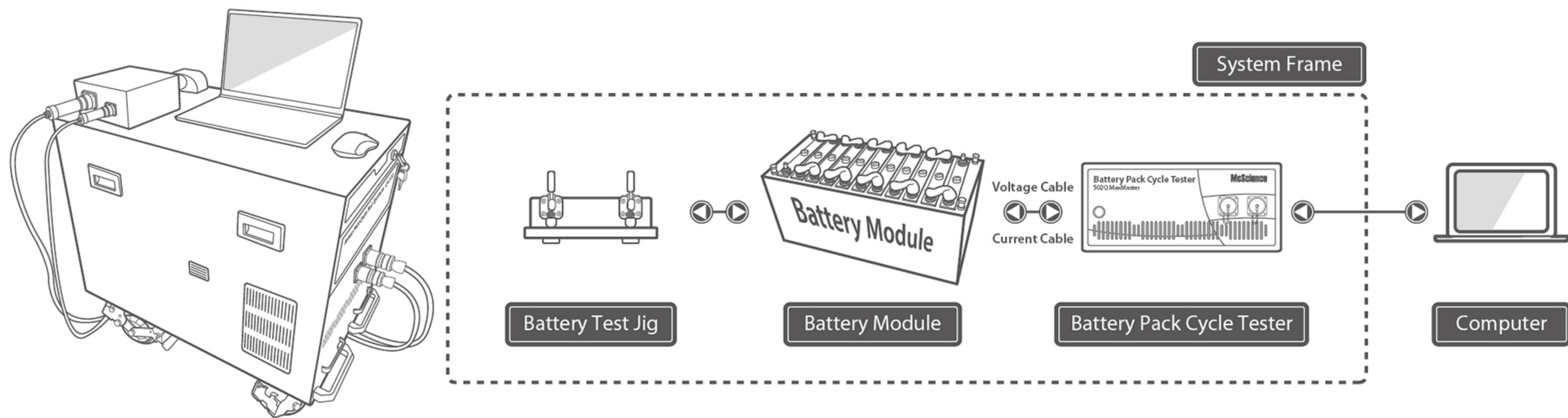


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## System Configuration



## System Components



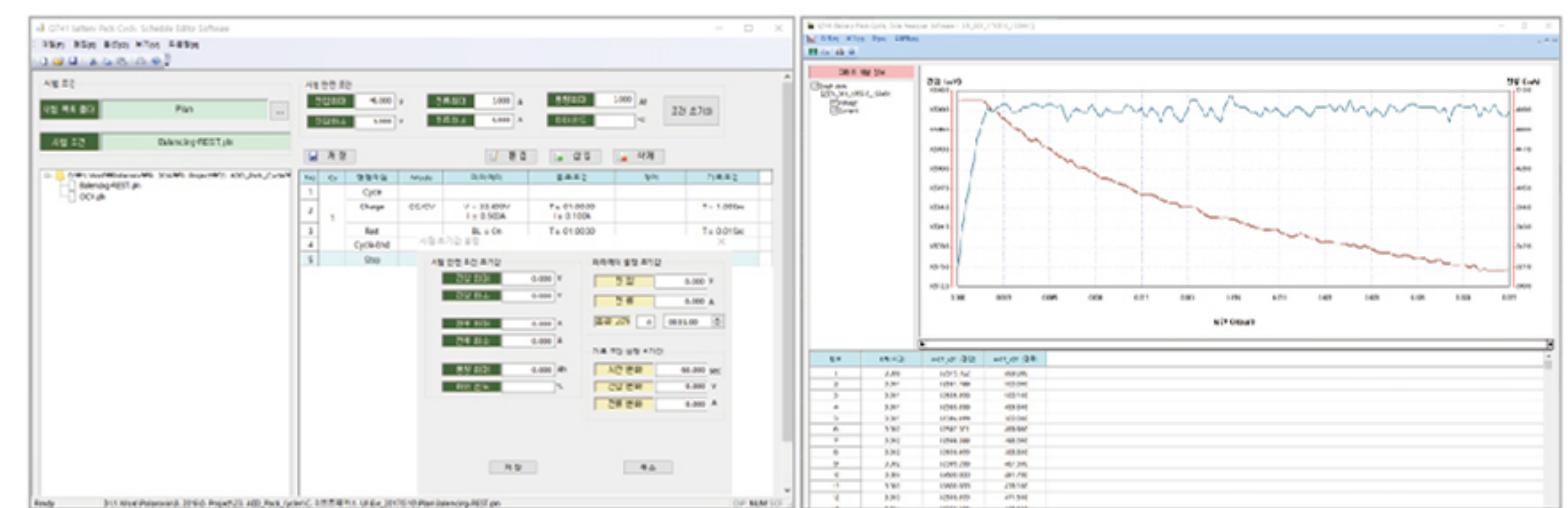
<System Frame>



<Cycle Tester>



<Battery Module>



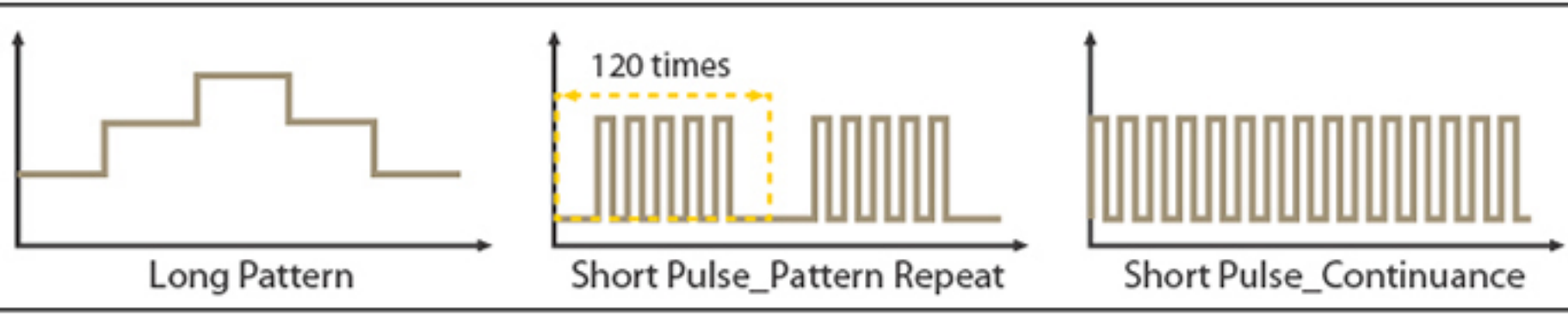
<Measurement S/W>

## System Specification

### Hardware

Channel	1Channel
Configuration	1Ch per 1Subrack
Test Pack Type	8-cell Serial
Operation Mode	CC, CV, CP, CC/CV, OCV, Rest, Pulse, Pattern
Voltage Programming Range	5 ~ 40V
Voltage Programming Accuracy	Under FS $\pm 0.1\%$
Charge Current Programming Range	20A, 2A (2Range)
Charge Current Programming Accuracy	FS $\pm 0.1\%$
Discharge Current Programming Range	100A (1Range)
Discharge Current Programming Accuracy	FS $\pm 0.1\%$
Control Interval	100mSec
Data Acquisition Interval	10mSec
Data Storage Interval	10mSec
Cell Balancing Channel	8Ch
Cell Balancing Resolution	1mV, 1mA
Cell Balancing Accuracy	Balancing Voltage: <10mV
Temperature Measurement	RTD 1Ch
Protect Option	Over Voltage/Over Current/Over Temperature /Circuit Over Temperature/EMG S/W

### Software

Cycle Condition Management	Input and manage detailed conditions according to production process conditions Up to 100 steps available Repeat a given step for a given number of times
Pulse Discharge Function	 Long Pattern      Short Pulse_Pattern Repeat      Short Pulse_Continuance
Live Monitoring	Live monitoring of data of each cell in the current process (Voltage, current, capacity, time, internal resistance, Watt Hr, temperature) Start/Pause/Restart/Stop job check communication status and error log)
Data Management	Report function of measurement data (per tray, per cell) Excel, Text file conversion (print function)
Cell Protection	Detecting set voltage, current abnormality or less during charging/discharging -> Channel stop Full channel stop when circuit overheated
Data Recovery	Recover lost data (within 7days)
Automatic Stop	Automatic stop when voltage/ current suddenly changes when rated voltage / current is exceeded
Emergency Stop	Pause work in progress in case of emergency stop The process will re-start after releasing select progress/restart/stop