MiNT Systems®

MiNT SYSTEMS CORPORATION

Lithium / Fuel Cell Test System 7020B

MiNT 7020B Lithium / Fuel Cell Test System is designed with advanced test and measurement technology for the power cell research and development for laboratory use.

The fully independent Tester-per-Channel architecture and flexible modularized system allows the user to program the system for various cell technologies of both primary and secondary power cells including lithium cells and fuel cells.

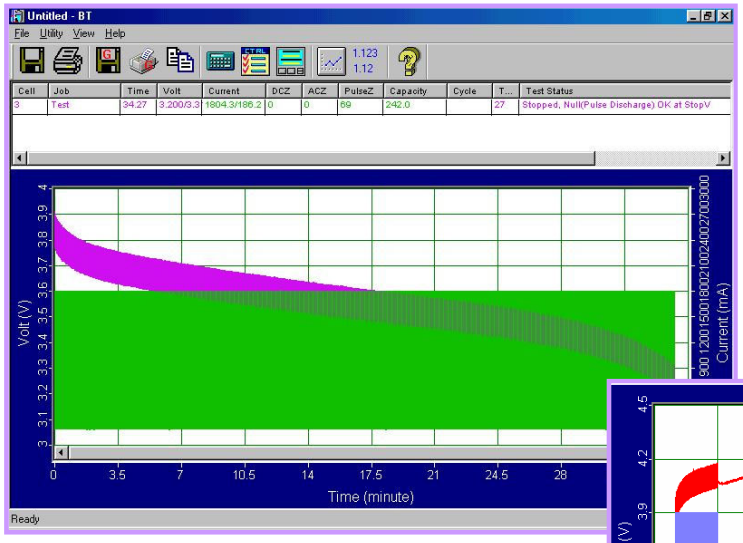
The high degree of accuracy, flexible test flow programming, and powerful measurement data analysis tools make the MiNT 7020B the ideal tool for power cell testing and electrical performance characterization. In addition, the system is perfect for quality control, quality assurance, and reliability certification.

Features:

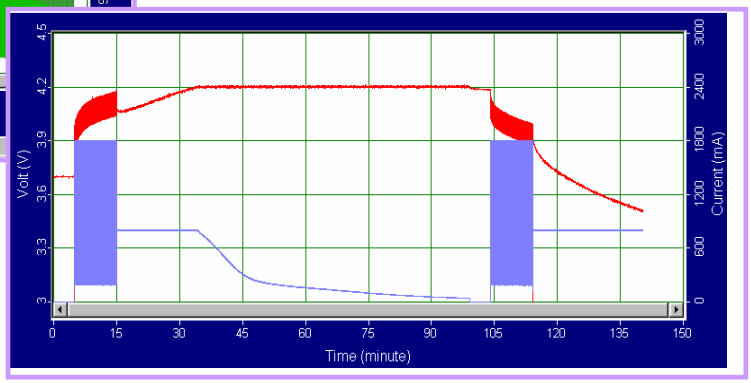
- **Fully independent Tester-per-Channel architecture**
- **Flexible test flow - any test (e.g., internal resistance, pulse, leakage, etc.) can be performed as frequently as needed, at any time and at any sequence in the test flow.**
- **Cell leakage test**
- **Pulsed and profile test**
- **Auto-ranging with multiple current ranges for ultimate accuracy**
- **Extensive data acquisition and data analysis capability**
- **Support cycle life and aging profile analysis**
- **Portable desk top instrumentation for lab mobility**

Per Channel Test Functions:

- **Constant Current Constant Voltage (CCCV) charging and discharging with smooth programmable CC to CV mode transition**
- **Pulsed charging and discharging**
- **AC, DC, or pulsed internal resistance measurement**
- **GSM, CDMA, CDMA2 pulsed testing**
- **Leakage testing to sort out high leakage cells**
- **Temperature measurement**
- **OCV**
- **Voltage and current ramping control**
- **Reference (Auxiliary Input) electrode**



GSM Pulse Discharge Runtime Display



Example of a OCV, Charge IR, Pulse Charge, CCCV, Discharge IR, Pulse Discharge, and CC Discharge Test Flow Runtime Display

Specifications[1]:

Series 7020B
Lithium / Fuel Cell Test System

Battery Test Control

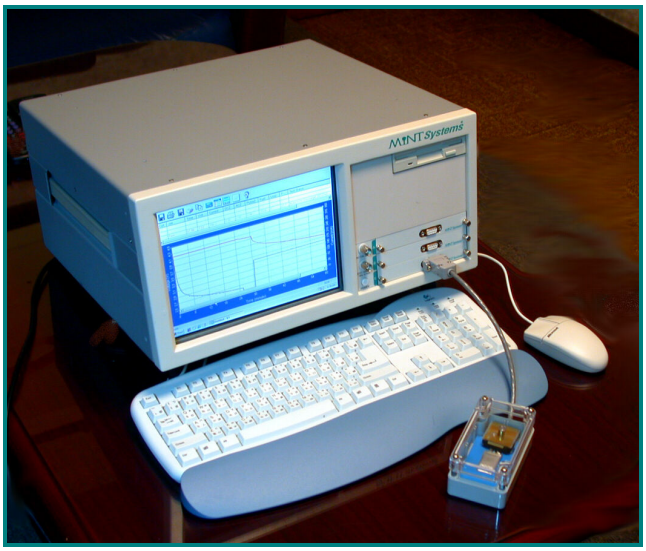
Operating Modes:	CC, CV, CP, CR, AC-1KHz, Pulse, Leakage, V Ramping, I Ramping, Arbitrary Profile
Charging Voltage:	0V to 5V
Discharging Voltage:	0.2V (< 2A) to 5V
Voltage Accuracy:	0.1% FS ± 2mV
Current Range:	4 ranges with auto-ranging 5A, 2A, 250mA, 100mA
Current Accuracy:	0.5% FS ± 10μA
Charging Current	2A max
Discharging Current	5A max
Pulse Range:	100μs to 5s
Pulse Resolution:	10μs
Built in Pulse waveforms:	GSM, CDMA, CDMA2
Pulse Rise Time:	50μs

Cell Test Measurement

Cell Voltage:	0 to 5V
Voltage Accuracy:	0.1% FS ± 2mV
Reference (Auxiliary Input) Electrode:	–5V to 5V
Reference (Auxiliary Input) Accuracy:	0.2% FS ± 4mV
Current Range:	4 ranges with auto-ranging 5A, 2A, 250mA, 100mA
Current Accuracy:	0.5% FS ± 10μA
Leakage Current Accuracy:	± 5μA
Temperature:	0°C to 100°C
Internal Resistance:	4 types 1KHz AC, DC, and Pulse
Internal Resistance Accuracy:	Accuracy 1% ± 1mΩ

Software

MiNT LBETS III application software:	MS Windows platform, runtime graphics display, test flow control, data analysis tools
Test Steps:	256 steps with >1,000,000 test block loops
Test End Criteria:	Voltage, Current, Time, Reference (Auxiliary Input), Temperature, AH, WH
Data Recording Criteria:	Time, dV, dI, dT, dWH, dP, dAH



General

System Configuration:	3 channels stand alone or 2/3 channel in parallel
Test Fixture:	5-wire Kelvin connection
AC Power Requirement:	115/230VAC ± 10%, single phase 47Hz to 65Hz, 6A
Humidity:	20% to 80% RH, non-condensing
Operating Temperature:	10°C to 30°C

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[1] *Preliminary specifications subject to change without notice.*