

IVIUM TECHNOLOGIES

Multichannel Battery Cyclers



innovative solutions for battery testing



HIGH PERFORMANCE RACK-MOUNTABLE BATTERY TEST SYSTEM WITH INTEGRATED IMPEDANCE ANALYSER

The OctoStat is a multi-channel test system with a fixed number of 8 channels per unit. Each channel is equipped with its own dedicated FRA/EIS and an input for temperature measurement. The OctoStat has an integrated DataSecure that stores all data independent of the PC to ensure that in the event of communication loss or computer crash, the measurement will continue and measurement data is never lost. This system stability makes the OctoStat a perfect system for long term testing applications. The OctoStat is built into a 19inch rack-mountable housing.

CONNECTION

- USB
- LAN / Ethernet

EXPANDABILITY

Different OctoStats can be combined in the same rack and connected/controlled from the same computer. Upon connection to the PC all channels of each unit are automatically assigned ascending channel names. These channel names are also automatically stored in all data files for easy data retrieval.

19INCH RACK-MOUNTABLE HOUSING

Each OctoStat unit is built into a 19inch rack-mountable housing. Multiple units and combinations of OctoStats can be built into the same rack.

SIMULTANEOUS CONTROL

The IviumSoft control software allows control of separate channels or all channels simultaneously with synchronized start. Data can be plotted per channel or simultaneously for all channels on a single screen.



EACH CHANNEL

- Dedicated embedded FRA/EIS
- Dedicated software for battery testing
- Capable of EIS during DC charge/discharge
- Overload handled via clamping (not shut-off) so measurements continue

OCTOSTAT OVERVIEW

	OctoStat30	OctoStat200	OctoStat5000	OctoBoost16000
Channel performance				Powerbooster
Current compliance	±30mA	±200mA	±5A	±16A
Maximum output Voltage	±10V	±10V	±10V	-2 to +9V, or ±5V
Channel combination	No	No	No	Yes*
Potentiostat				
Applied potential range	±10V; 0.08mV res.			-2 to +9V, or ±5V
Applied potential accuracy	0.2%, or 2mV			0.2%, or 2mV
Current ranges	±100pA to ±10mA	±100pA to ±100mA	±100pA to ±10A	±10A, ±100A
Measured current resolution	0.003% of CR, min. 3fA			0.003% of CR, min. 0.3mA
Measured current accuracy	±20pA + 0.025% of FSR			0.025% of FSR
Galvanostat				
Galvanostatic current ranges	±10nA to ±10mA	±10nA to ±100mA	±10nA to ±10A	±10A, ±100A
Measured potential ranges	±1mV to ±10V			
Measured potential resolution	0.0008% of range; min. 7nV			
Impedance analyser				
Frequency range	10µHz to 100kHz standard; 1MHz optional			10µHz to 10kHz
Amplitude	0.15mV to 2.0V, and 0.03% to 100% of CR			
Peripheral				
Analog/Digital I/O	1 Anout, 2 Anin; ±10V			—

*Channels can be combined to increase current, for example 4x ±32A, 2x ±64A, 1x ±64A and 4x ±16A, 1x ±128A, etc.

HIGH CHANNEL COUNT RACK-MOUNTABLE BATTERY TEST SYSTEM WITH OPTIONAL IMPEDANCE ANALYSER

The IviCycle is a multi-channel test system with a fixed number of channels per unit. The channels are divided over four modules each. It is possible to mix and match modules to get the desired number of channels. The IviCycle unit can optionally be equipped with FRA/EIS in such a way that each channel has its own integrated FRA/EIS for parallel impedance testing (parallel, not multiplexed!). The IviCycle has an integrated DataSecure that stores all data for each channel independent of the PC to ensure that in the event of communication loss or computer crash, the measurement will continue and measurement data is never lost. This system stability makes the IviCycle perfect for high throughput long term testing applications. The IviCycle unit is built into a 19inch rack mountable housing.



CONNECTION

- USB
- LAN / Ethernet

AUTOMATIC CHANNEL DESIGNATION

When the IviCycle is connected to the PC all channels are automatically connected and assigned ascending channel names. These channel names are also automatically stored in all data files for easy data retrieval.

19INCH RACK MOUNTABLE HOUSING

The IviCycle unit is built into a 19inch rack mountable housing. Multiple units and combinations of IviCycle can be built into the same rack. Because the IviCycle is a completely self contained unit, any commercially available 19inch rack be used.

SIMULTANEOUS CONTROL

The IviSoft control software allows control of separate channels or all channels simultaneously with synchronized start. Data can be plotted per channel or simultaneously for all channels on a single screen.

" MIX & MATCH
C030 AND
C200 MODULES "

OPTIONAL FRA/EIS

The IviCycle unit (all channels) can optionally be equipped with an integrated FRA/EIS for impedance measurements. Each channel will have its own dedicated FRA/EIS for parallel testing (not multiplexed):

- 10µHz to 20kHz each channel
- Channel-dedicated EIS
- Automated advanced impedance spectroscopy
- Also capable of EIS during DC charge/discharge

IVICYCLE OVERVIEW

	C030	C200	C3000
System			
Number of modules per system	4		
Number of channels per module	8		4
Current compliance	±30mA	±200mA	±3A
Maximum output voltage	±10V		±5V
Potentiostat			
Applied potential range	±10V; 0.08mV res.		±5V; 0.08mV res.
Applied potential accuracy	0.2%, or 1mV		
Current ranges	±10nA to ±100mA		±1mA to ±1A
Measured current resolution	0.003% min. 0.3pA		0.003% of CR, min. 30nA
Measured current accuracy	±20pA + 0,025% of FSR		0.025% of FSR
Galvanostat			
Galvanostatic current ranges	±10µA to ±100mA		±1mA to ±1A
Measured potential ranges	±1mV to ±10V		
Measured potential resolution	0.0008% of range; min. 7nV		
Impedance analyser (optional)			
Frequency range	10µHz to 20kHz		
Amplitude	0.15mV to 2.0V, and 0.03% to 100% of CR		
Peripheral			
Analog/Digital I/O	1 Analog input or temperature measurement		

Define data source

Select (part(s) of) data to be shown

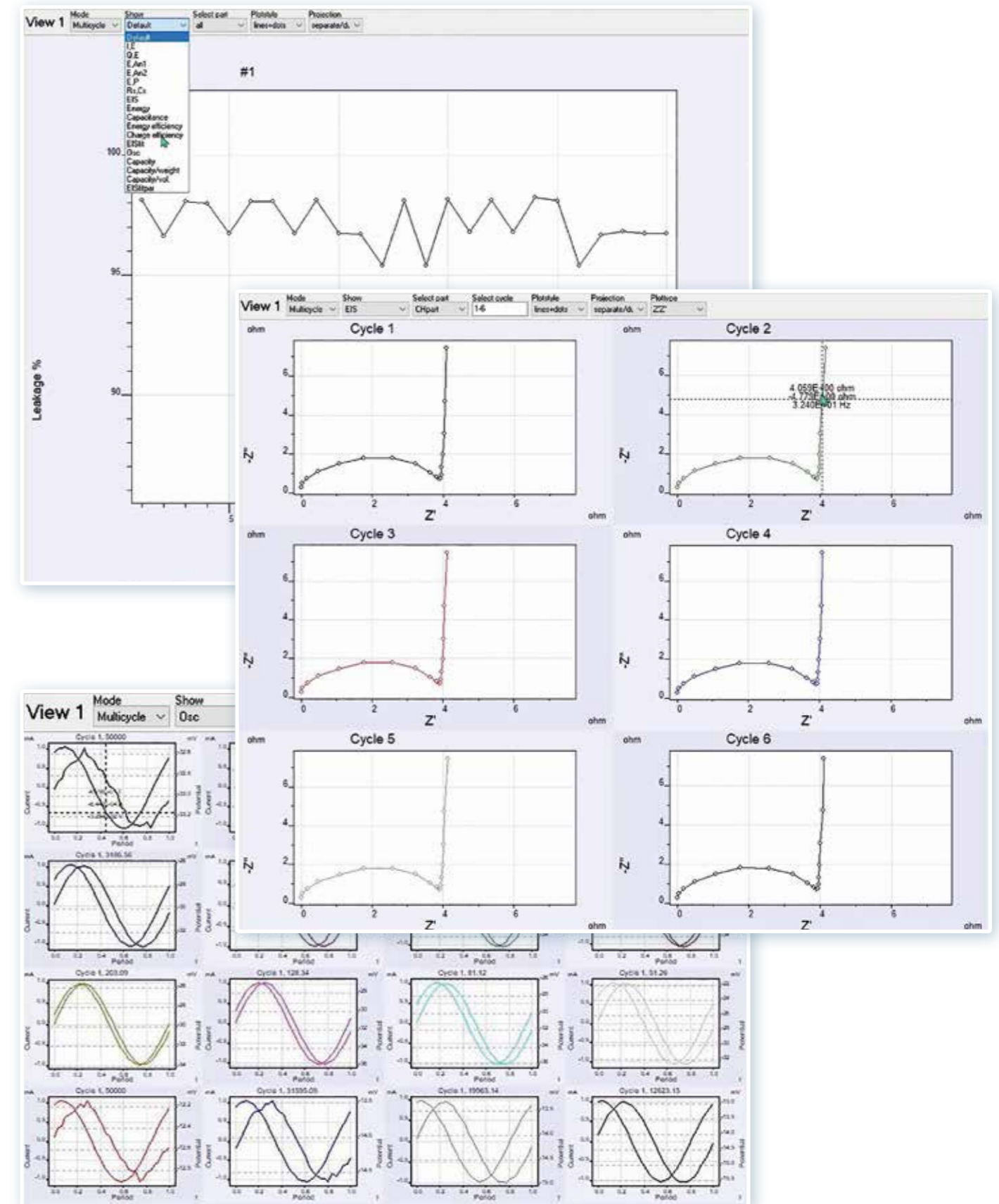
Filter data

Select database(s)

Operations:

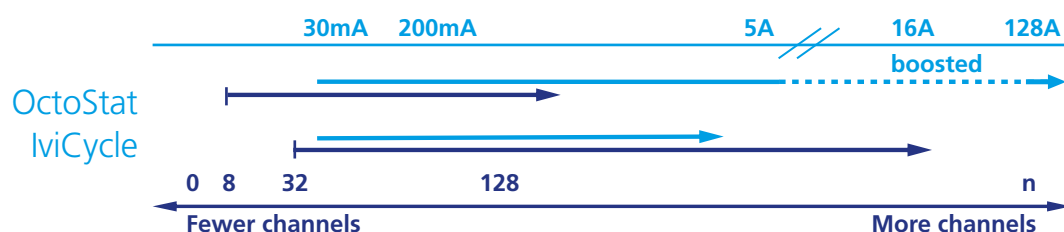
- Analysis
- Export
- Fitting

- Analysis of multiple charge-discharge cycles...
...with embedded EIS stages
- Automated EIS/impedance batch-fitting
- Verification of measurement reliability
- Automatic calculation of battery performance indicators
- Handle large datasets > 20M datapoints per channel



OctoStat vs. IviCycle

The OctoStat and IviCycle are multi-channel cyclers that have been designed for battery testing, for short term as well as long term measurements. Both instruments have on-board data storage to compensate for computer and connection instability. Both instruments also have channel-dedicated impedance capability. To help you select the appropriate model for you, a comparison on key aspects is given below.



COMPARISON	OctoStat	IviCycle
Application	Medium volume testing	High volume testing
Pricing	Competitive price per channel	Low price per channel
Characteristics	Minimum order: 8 channels; multiple units can be connected to 1 PC	Minimum order: 4 modules; MIX&MATCH modules
	Impedance: included in each channel	Impedance: optional
Key technical specs		
Channel current	30mA, 200mA, 5A, 16A	30mA, 200mA, 3A
Impedance	10μHz - 100kHz (1MHz optional), multisine EIS, DC offset subtraction	10μHz - 20kHz
IR compensation	Yes	No
Expansion	Yes: power booster, multiplexer, LinScan, etc.	---
Peripheral I/O per channel	Analog I/O, temperature measurement	1 Analog input or temperature measurement
Filters	5 user selectable analog filters, digital filtering	Digital filtering only



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