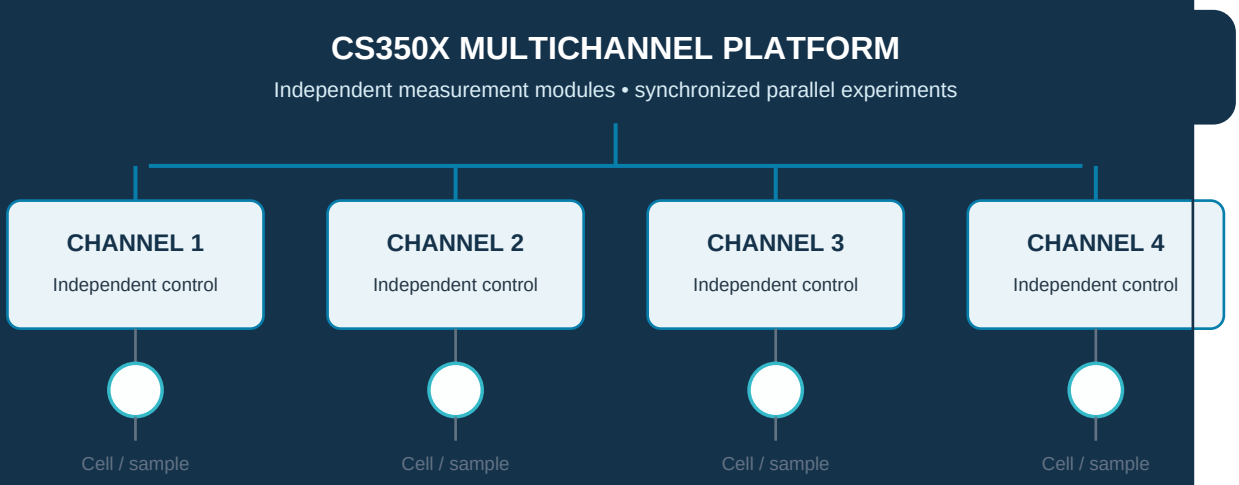
SPECIALIST TECHNICAL CATALOG

CS350X

Multichannel Electrochemical Workstation

Parallel electrochemical testing for corrosion, energy materials, electrochemical conversion and advanced materials research.



Core architecture: modular multichannel design derived from CorrTest's CS1350Pro platform. The manufacturer describes up to four channels operating simultaneously per group, with individual channels also usable separately.

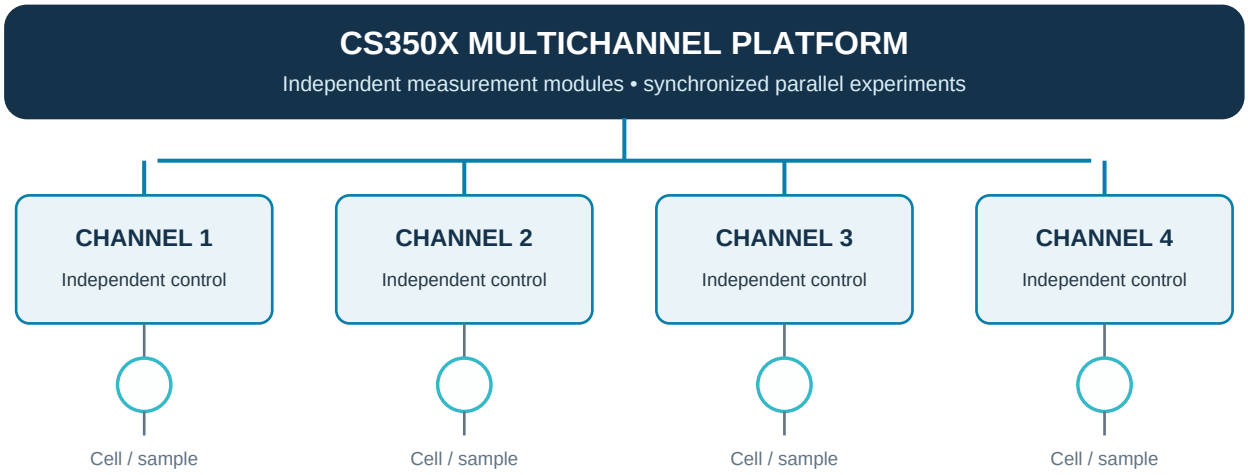
ENGLISH EDITION • TECHNICAL OVERVIEW

1. Platform Overview

The CorrTest CS350X is a multichannel electrochemical workstation intended to increase experimental throughput by allowing several electrochemical measurements to be conducted in parallel. CorrTest describes the CS350X as an extension of its CS1350Pro platform, using an independent-module architecture. The channel arrangement can be used as a group or as individual channel(s), depending on the experiment and configured system.

Why a multichannel architecture matters

Parallel testing can reduce run-to-run variation caused by changing laboratory conditions and can make concentration series, coating comparisons, catalyst screening and replicate studies more efficient. For scientifically defensible comparisons, each cell still needs controlled electrode geometry, electrolyte composition, temperature, exposed area, reference-electrode condition and preconditioning history.



Conceptual diagram only. It illustrates a four-channel parallel arrangement; it is not a photograph or a wiring diagram for a specific supplied configuration.

Design and configuration notes

• Modular use: the manufacturer describes independent modules and the ability to operate one or several channels. Confirm the exact number of supplied channels and module arrangement on the quotation or instrument configuration sheet.
• High-current platform: CorrTest's current product information describes the CS350X as a high-current multichannel system, with up to ±5 A per channel stated in a recent product announcement. Confirm whether this rating applies to the exact hardware revision and all requested operating conditions.
• EIS and technique availability: do not assume that every channel includes an independent EIS module. Verify the EIS channel count, frequency limits, AC amplitude and software licence for the ordered configuration.

Technical values in this document are distinguished from configuration-dependent items. Where the manufacturer's public English page does not publish a CS350X-specific value, it is intentionally marked for confirmation rather than inferred from another model.

2. Measurement Principles and Techniques

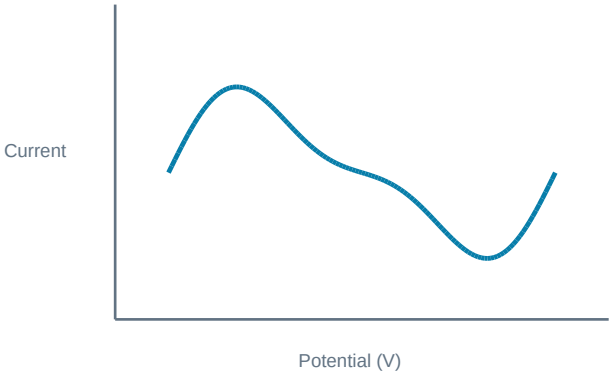
Potentiostatic and galvanostatic control

In potentiostatic operation, the instrument controls the working-electrode potential relative to the reference electrode and measures the resulting current. In galvanostatic operation, it controls current and records the potential response. Selection depends on the question being studied: potential-controlled kinetics and voltammetry typically use potentiostatic control, while imposed-current charging, discharge or electrolysis studies often use galvanostatic control.

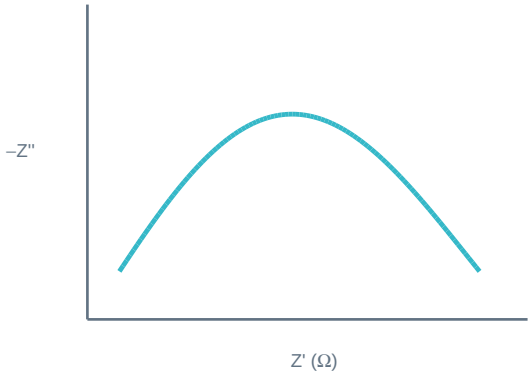
Common electrochemical methods

Method	What it measures	Typical research use
OCP	Open-circuit potential versus time	Stabilization, corrosion potential, conditioning checks
CV	Current response during a potential sweep	Redox behaviour, reaction reversibility, catalyst screening
LSV	Current response during a linear potential sweep	Onset potential, polarization behaviour, electrocatalysis
CA / CP	Current or potential response following a step	Transient kinetics, diffusion response, deposition
EIS	Frequency-dependent impedance response	Interfacial resistance, coatings, batteries and equivalent-circuit analysis
GCD	Potential response under charge/discharge current	Battery and supercapacitor cycling; capacity and stability

Cyclic voltammetry (illustrative)



EIS Nyquist plot (illustrative)



Illustrative curves only; they are not measured data and do not represent guaranteed CS350X software output.

EIS interpretation requires more than a visually good fit. Confirm linearity and stationarity, use a suitable perturbation amplitude, inspect residuals, and justify the equivalent circuit from the physical system. For parallel-channel work, check cell-to-cell comparability before comparing fitted parameters.

3. Application Areas and Experimental Design

Corrosion and protective coatings

Parallel channels can compare metals, coating formulations, inhibitors or surface treatments under a common test plan. Depending on the selected method and configuration, useful outputs may include open-circuit potential, polarization behaviour, corrosion-related current response and impedance trends. For coating studies, document exposed area, immersion time, electrolyte aeration, temperature, coating defect area and the frequency range used for EIS.

Batteries and supercapacitors

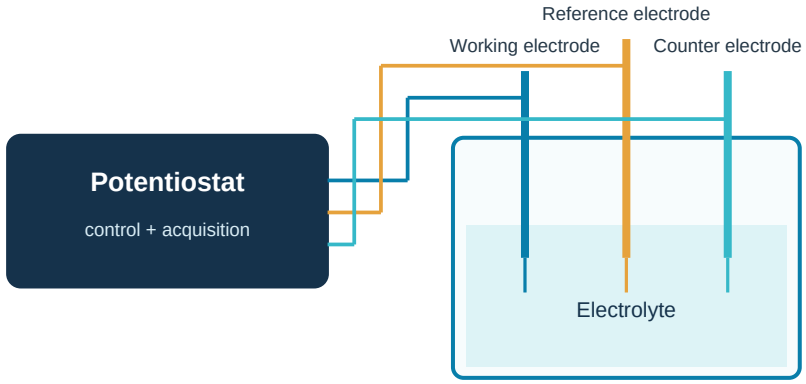
A multichannel setup can support screening of electrode formulations, electrolyte variants and replicate cells. Charge/discharge tests should specify current density or C-rate, voltage limits, rest periods, cycle count, temperature and the capacity normalization basis. For coin cells or other compact formats, use suitable holders and confirm lead/cell compatibility before testing.

Electrocatalysis and electrochemical conversion

Parallel testing is useful for catalyst ink composition, loading, substrate treatment and electrolyte comparisons. For meaningful activity comparisons, control geometric area, catalyst loading, rotation rate when applicable, iR compensation method, gas management and preconditioning protocol. Report the reference electrode and conversion to the relevant reference scale.

Electrodeposition and electrochemical synthesis

Current-controlled or potential-controlled experiments can compare deposition conditions, pulse programmes and bath chemistry. Record electrode spacing, solution conductivity, temperature, agitation, deposition charge and post-treatment. High-current capability may be relevant for larger-area or lower-resistance cells, but the safe operating envelope depends on the specific channel, cabling, cell resistance and compliance voltage.



Electrochemical cell (schematic)

Schematic three-electrode arrangement. Actual connections, cell accessories and channel-to-cell isolation must follow the CS350X user manual and the supplied cable labelling.

4. Technical Data and Configuration Checklist

Publicly documented CS350X-specific information

Item	Publicly available description	Status
Instrument type	Multichannel electrochemical workstation / potentiostat platform	Manufacturer page
Platform lineage	Expanded from the CS1350Pro platform	Manufacturer page
Channel architecture	Independent-module design; up to four channels simultaneously per group; one or several channels can be used	Manufacturer page
Current capability	A recent manufacturer product announcement states ±5 A per channel	Confirm hardware revision and conditions
EIS availability	Channel count and frequency range not confirmed in the accessible CS350X-specific English material	Confirm before specification
Interfaces / software	Exact interface, operating-system compatibility, software modules and licence scope not verified for CS350X	Confirm with supplier

Before purchase, installation or method transfer

1. Confirm channel count, independent control architecture and whether channels can run different methods simultaneously.
2. Confirm maximum current per channel, compliance voltage, current ranges, potential range, accuracy, resolution and permitted duty cycle.
3. Confirm whether EIS is included, how many channels can perform EIS concurrently, the frequency range, AC amplitude range and any channel-specific restrictions.
4. Confirm included cables, electrode connectors, cell fixtures, battery holders, Faraday cage, software modules and calibration / verification procedures.
5. Obtain the current CS350X user manual, PC requirements, driver/software package, warranty terms and service contact for the exact serial-number revision.

A note on model-specific accuracy

This is an independently prepared English technical overview, not an official CorrTest-issued brochure or substitute for the instrument manual. Product information is based on public CorrTest material available at preparation time. No unverified specifications have been borrowed from the CS350M, CS310X or CS1350Pro models and presented as guaranteed CS350X specifications.

Manufacturer resources

Official CS350X product family page: CorrTest multichannel electrochemical workstation
English download center: CorrTest Downloads
Manufacturer contact listed on the English site: sales2@corrtest.com.cn | +86 13469965984

Prepared as a practical technical reference for researchers and laboratory teams. Illustrations are schematic and should not be used as installation or wiring instructions.