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Data Sheet

July 30, 2026

STANFORD RESEARCH SYSTEMS

Stanford Research Systems QCM200 Data Generator

The Stanford Research SR844 is a high-performance 200 MHz lock-in amplifier designed for precision measurement of signals in noisy environments. It features a wide frequency range, excellent dynamic reserve, and versatile signal processing capabilities. Ideal for scientific research and engineering applications requiring sensitive signal detection.



MODEL

**Stanford Research
Systems SR844**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

SR844

LISTING

<https://aumictechlabs.com/products/sr844-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Stanford Research SR844 200 MHz Lock-In Amplifier delivers high-performance signal detection across RF frequencies from 25 kHz to 200 MHz. Built on proven Digital Signal Processing architecture, this instrument combines exceptional sensitivity with dynamic reserve up to 80 dB, making it suitable for precision measurements in noise-rich environments. Technical Specifications Signal Input Single-ended BNC connector with selectable input impedance: 50 Ω or 1 M Ω + 30 pF Bandwidth: 25 kHz to 200 MHz Damage threshold: ± 5 V (DC + AC) Full-scale sensitivities: 100 nVrms to 1 Vrms, spanning -127 dBm to +13 dBm Gain accuracy: ± 0.25 dB below 50 MHz; ± 0.50 dB below 200 MHz Gain stability: 0.2 %/°C RF attenuation/gain: 60 dB attenuation or 20 dB gain in 20 dB steps Input noise floor: 2 nV/ $\sqrt{\text{Hz}}$ typical (50 Ω); 5 nV/ $\sqrt{\text{Hz}}$ typical (1 M Ω) Coherent pickup: <100 nV typical below 10 MHz; <2.5 μV below 50 MHz; <25 μV below 200

MHzReference Channel External reference: 25 kHz to 200 MHz with 50 Ω or 10 k Ω + 40 pF impedance; accepts 0.7 Vpp pulses or 0 dBm sine waves Internal reference: 25 kHz to 200 MHz with 3-digit frequency resolution and ± 0.1 accuracy in the 3rd digit Harmonic detection at 2F from 50 kHz to 200 MHz Front panel reference output: 25 kHz to 200 MHz square wave, 1.0 Vpp nominal into 50 Ω Rear panel TTL output: 25 kHz to 1.5 MHz, 0 to +5 V nominalOutput Filters Time constants: 100 μ s to 30 ks with selectable rolloff: 6, 12, 18, or 24 dB/octave- Key Features Low zero-drift for stable dc-coupled measurements Precise RF phase shifting capability Digital output filtering with multiple time constant options Automatic reference acquisition below 10 s; sub-1 s within same frequency octave Dynamic reserve supports measurement of signals masked by noise up to 80 dB stronger- Typical ApplicationsOptical heterodyne detection, phase-sensitive RF measurements, weak-signal spectroscopy, and precision impedance characterization in the 25 kHz to 200 MHz band.

Features & description

From manufacturer datasheet

Features

- Stand-alone QCM controller with built-in frequency counter and resistance meter
- Measures series resonance frequency and series resistance
- Includes crystal oscillator electronics, crystal holder, and three quartz crystals
- Windows software for real-time acquisition, display, analysis, and storage
- Analog frequency output for potentiostat / EQCM interfacing
- Capacitance cancellation for true series-resonance operation
- Heavy-load capability up to about 5 kOhm
- Front-panel or RS-232 PC control
- External 10 MHz timebase input for enhanced long-term stability

SR844 Characteristics / Specifications

PARAMETER	VALUE
Model	QCM200
Manufacturer	Stanford Research Systems
Instrument Type	Quartz Crystal Microbalance System
Crystal Frequency	5 MHz (nominal), AT-cut, plano-plano
Crystal Diameter	1 inch
Electrodes	Cr/Au standard; Ti/Au and Ti/Pt optional Frequency Measurement
Gate Times	0.1 s, 1 s, 10 s (user selectable)
Display Resolution	0.01 Hz (10 s gate); 0.1 Hz (1 s gate); 1.0 Hz (0.1 s gate)
Internal Timebase Stability	typically less than about 2e-9 to 4e-9 Allan variance class performance
Accuracy	+/-1.5 ppm (internal timebase)
Frequency Analog Output	+/-10 V full scale (20-bit)
Frequency Output	5 MHz nominal TTL square wave, 50 Ohm source impedance
External Timebase Input	10 MHz, about 1 Vpp nominal Resistance Measurement
Range	10 pF to 40 pF (20 pF nominal)
Resolution	5 digits; 0.001 Ohm below 100 Ohm; 0.01 Ohm from 100 to 1000 Ohm; 0.1 Ohm from 1000 to 5000 Ohm
Conductance/Resistance Analog Output	logarithmic voltage representation covering 0 to 5000 Ohm Capacitance Cancellation
Adjustment Limit	0.01 pF Interfaces And Physical
Interface	RS-232, 9600 baud
Analog Connectors	BNC
Crystal Holder Materials	Kynar holder with Viton O-ring
Dimensions	approximately 10.6 in x 2 in x 7 in (WxHxD)
Weight	approximately 2 lbs
Operating Temperature	0 C to 40 C

PARAMETER**VALUE****Power**

15 W; 100/120/220/240 VAC, 50/60 Hz Operational Notes Resonant frequency changes approximately linearly with deposited mass on the crystal surface. Resistance at resonance changes with the viscosity/elasticity of material contacting the crystal. Proper shunt-capacitance cancellation is required for true series resonance and to avoid frequency/resistance errors. For highest long-term frequency stability, a precision external 10 MHz reference (for example SRS FS725) may be connected.

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 C to 40 C
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Power	15 W; 100/120/220/240 VAC, 50/60 Hz Operational Notes Resonant frequency changes approximately linearly with deposited mass on the crystal surface. Resistance at resonance changes with the viscosity/elasticity of material contacting the crystal. Proper shunt-capacitance cancellation is required for true series resonance and to avoid frequency/resistance errors. For highest long-term frequency stability, a precision external 10 MHz reference (for example SRS FS725) may be connected.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications

Specifications

PARAMETER	VALUE
Model	QCM200
Manufacturer	Stanford Research Systems
Instrument Type	Quartz Crystal Microbalance System
Crystal Frequency	5 MHz (nominal), AT-cut, plano-plano
Crystal Diameter	1 inch
Electrodes	Cr/Au standard; Ti/Au and Ti/Pt optional

Frequency Measurement

Frequency Measurement

PARAMETER	VALUE
Gate Times	0.1 s, 1 s, 10 s (user selectable)
Display Resolution	0.01 Hz (10 s gate); 0.1 Hz (1 s gate); 1.0 Hz (0.1 s gate)
Internal Timebase Stability	typically less than about 2e-9 to 4e-9 Allan variance class performance
Accuracy	+/-1.5 ppm (internal timebase)
Frequency Analog Output	+/-10 V full scale (20-bit)

Analog Delta-f Ranges: +/-200 kHz, +/-100 kHz, +/-50 kHz, +/-20 kHz, +/-10 kHz, +/-5 kHz, +/-2 kHz
Frequency Output: 5 MHz nominal TTL square wave, 50 Ohm source impedance
External Timebase Input: 10 MHz, about 1 Vpp nominal

Resistance Measurement

Specifications

PARAMETER	VALUE
Range	0 to 5000 Ohm
Resolution	5 digits; 0.001 Ohm below 100 Ohm; 0.01 Ohm from 100 to 1000 Ohm; 0.1 Ohm from 1000 to 5000 Ohm
Conductance/Resistance Analog Output	logarithmic voltage representation covering 0 to 5000 Ohm

Capacitance Cancellation
Range: 10 pF to 40 pF (20 pF nominal)
Adjustment Limit: 0.01 pF

Specifications

PARAMETER	VALUE
Interface	RS-232, 9600 baud
Analog Connectors	BNC
Crystal Holder Materials	Kynar holder with Viton O-ring

Controller-to-Oscillator Cable: Cat-5, approximately 3 ft

Specifications

PARAMETER	VALUE
Dimensions	approximately 10.6 in x 2 in x 7 in (WxHxD)
Weight	approximately 2 lbs
Operating Temperature	0 C to 40 C
Power	15 W; 100/120/220/240 VAC, 50/60 Hz

Operational Notes

Resonant frequency changes approximately linearly with deposited mass on the crystal surface. Resistance at resonance changes with the viscosity/elasticity of material contacting the crystal. Proper shunt-capacitance cancellation is required for true series resonance and to avoid frequency/resistance errors. For highest long-term frequency stability, a precision external 10 MHz reference (for example SRS FS725) may be connected.

Notes

This manual OEM source was compiled from official Stanford Research Systems QCM200 catalog pages, specifications, and user manual documentation.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.