

**Aumictech**

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Data Sheet

July 30, 2026

STANFORD RESEARCH

Stanford Research CG649 – LVDS up to 2050MHz

The Stanford Research CG649 is a LVDS clock and data generator engineered for applications demanding signal integrity up to 2050 MHz. It delivers stable, low-jitter differential outputs via rear-panel RJ-45 connectors on twisted pairs, with 100 Ω source impedance matched to standard CAT-6 terminations. The instrument provides precise frequency, amplitude, and timing control essential for characterizing high-speed digital systems and validating complex electronic designs. Compatibility & Integration Works with optional line receivers to convert LVDS outputs to complementary logic levels on SMA connectors. Designed for CAT-6 twisted-pair cabling with matched 100 Ω termination networks. Aumictech offers NIST-traceable calibration and repair for the Stanford Research CG649. Calibration covers output frequency accuracy, output power level accuracy across the full frequency range, AM/FM/PM/pulse modulation accuracy, harmonic and spurious output levels, and phase noise floor verification. All calibrations ship with a NIST-traceable certificate. Turnaround is typically 1–3 business days after receipt. Common Stanford Research CG649 faults: YIG oscillator failure (no output or loss of lock), step attenuator wear (output drops or steps at set attenuation), ALC loop failure (uncontrolled output power), I/Q modulator assembly failure. HP/Agilent 836xx series most common faults are YIG oscillator failure and step attenuator contact wear causing output steps or drops at specific attenuation settings. Keysight E4428C/E4438C units most commonly develop ALC loop failure and I/Q modulator



MODEL	CALIBRATION
Stanford Research CG649	Available on request
CONDITION	STATUS
Used	In stock
RFQ / SKU	LISTING
CG649	https://aumictechlabs.com/products/cg649-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

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Technical Specifications

Clock Generation Maximum Output Frequency: 2050 MHz

Output Signal Type: LVDS (Low-Voltage Differential Signaling)

Output Connectors: Rear-panel RJ-45 for differential square wave clocks on twisted pairs

Output Impedance: 100 Ω source impedance

Cable Compatibility: Shielded CAT-6 cable with 100 Ω terminations

Auxiliary Output: ± 5 VDC power available on RJ-45 connector for optional line receivers

Timing Performance Jitter (RMS): Less than 1 ps RMS Rise/Fall Time: Typically 80 ps Phase Adjustment: High-precision control with resolutions to one nanodegree Time Modulation: ± 5 ns modulation range via rear-panel input; 1 ns/V sensitivity; DC to >10 kHz bandwidth

Interfaces & Power Rear-Panel Connectivity: RJ-45 for LVDS and RS-485 signals Auxiliary Power: ± 5 VDC for optional line receivers providing complementary logic on SMA connectors

Key Features Sub-picosecond jitter performance for demanding timing applications Fast signal edges enabling high-fidelity differential transmission Nanodegree-resolution phase control for precision synchronization Low-frequency modulation capability via analog input Integrated power supply for optional receiver modules

Typical Applications High-speed digital system testing and characterization LVDS clock distribution and synchronization Differential signaling validation Advanced electronics development and validation

Compatibility & Integration Works with optional line receivers to convert LVDS outputs to complementary logic levels on SMA connectors. Designed for CAT-6 twisted-pair cabling with matched 100 Ω termination networks.

Features & description

From manufacturer datasheet

Technical Specifications

Maximum Output Frequency: 2050 MHz Output Signal Type: LVDS (Low-Voltage Differential Signaling)
Output Connectors: Rear-panel RJ-45 for differential square wave clocks on twisted pairs Output
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terminations Auxiliary Output: ± 5 VDC power available on RJ-45 connector for optional line receivers
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Key Features

Sub-picosecond jitter performance for demanding timing applications Fast signal edges enabling high-
fidelity differential transmission Nanodegree-resolution phase control for precision synchronization
Low-frequency modulation capability via analog input Integrated power supply for optional receiver
modules

Stanford Research CG649 — Repair & Calibration Service

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Stanford Research CG649 price

This Stanford Research CG649 is listed at . Calibration is available separately from . Contact us for volume pricing or if you need multiple units.

Stanford Research CG649 calibration cost

NIST-traceable calibration for the Stanford Research CG649 is (standard — pass/fail certificate and calibration sticker) or (full measured data at every test point, reference standards documented, traceability chain included). Calibration for this instrument covers output frequency accuracy, output power level accuracy across the full frequency range, AM/FM/PM/pulse modulation accuracy, harmonic and spurious output levels, and phase noise floor verification. Turnaround is 1 to 3 business days after receipt. See full calibration details →

Applications

High-speed digital system testing and characterization LVDS clock distribution and synchronization Differential signaling validation Advanced electronics development and validation Compatibility & Integration Works with optional line receivers to convert LVDS outputs to complementary logic levels on SMA connectors. Designed for CAT-6 twisted-pair cabling with matched 100 Ω termination networks.

Unit notes

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CG649 Specifications

PARAMETER	VALUE
Frequency Range	DC to 2050 MHz Voltage / Current Range: ±5 VDC

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.

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Key Features

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Standard Cal Pass/fail cert + NIST sticker Cal with Data Full NIST cert with measured values

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Differential signaling validation Advanced electronics development and validation

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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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<https://aumictechlabs.com>

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