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Data Sheet

July 30, 2026

STANFORD RESEARCH

Stanford Research CG647 – CML/NIM up to 2050MHz

Stanford Research CG647 – CML/NIM up to 2050MHz The Stanford Research Systems CG647 is an optional CML/NIM clock receiver module for the CG635 Synthesized Clock Generator. SRS documentation describes it as a remote line receiver that converts the CG635 rear-panel RS-485/LVDS clock output into complementary CML/NIM logic levels on SMA connectors for use at a distance from the instrument. The CG647 is intended for delivering clean, complementary CML or NIM clock signals to high-speed digital, communications, and nuclear instrumentation systems. It is used with the CG635 when standard CML/NIM levels are required at the device under test or system under test, especially where the receiver can be placed near the load while the CG635 remains remotely located. The Stanford Research Systems CG647 is an optional CML/NIM clock receiver module for the CG635 Synthesized Clock Generator. SRS documentation describes it as a remote line receiver that converts the CG635 rear-panel RS-485/LVDS clock output into complementary CML/NIM logic levels on SMA connectors for use at a distance from the instrument. The CG647 is intended for delivering clean, complementary CML or NIM clock signals to high-speed digital, communications, and nuclear instrumentation systems. It is used with the CG635 when standard CML/NIM levels are required at the device under test or system under test, especially where the receiver



MODEL

**Stanford Research
CG647**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

CG647

LISTING

<https://aumictechlabs.com/products/cg647-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Stanford Research CG647 is a clock and signal generator that produces CML (Current Mode Logic) and NIM (Nuclear Instrumentation Module) outputs spanning frequencies up to 2050 MHz. Built for demanding scientific, research, and industrial applications, it delivers exceptional frequency accuracy and stability required in precision timing systems.

Technical Specifications

Output Signal Characteristics Signal Type: CML / NIM Frequency Range: Up to 2050 MHz

Frequency Accuracy: Exceptional **Frequency Stability:** Exceptional

Input Interface Line Receiver Input: LVDS clocks via RJ-45 connector

Key Features Direct CML and NIM output generation for nuclear and high-frequency instrumentation LVDS clock input acceptance enables flexible system architecture RJ-45 input connector for standardized connectivity

Typical Applications Nuclear instrumentation and detection systems High-frequency timing and synchronization in research environments Precision clock distribution in scientific instruments Industrial timing applications requiring stable signals to 2050 MHz

Compatibility & Integration The CG647 integrates with CG646-CG647 line receivers, which accept differential LVDS clock inputs and convert them to CML or NIM outputs delivered on SMA connectors. This architecture allows flexible system design where the CG647 is a signal source feeding downstream CML/NIM-compatible instrumentation.

Features & description

From manufacturer datasheet

Features

- CML/NIM clock receiver accessory for CG635
- Operates up to 2.05 GHz
- Complementary Q and /Q outputs on SMA connectors
- 100 ps transition times
- 50 Ohm source and load impedance design
- Connects via Category-6 cable to CG635 rear-panel RJ-45 output
- Remote placement of logic-level clocks away from the instrument
- Part of the CG640–CG649 optional receiver family

CG647 Characteristics / Specifications

PARAMETER	VALUE
Stanford Research CG6	CML/NIM up to 2050MHz Overview The Stanford Research Systems CG647 is an optional CML/NIM clock receiver module for the CG635 Synthesized Clock Generator. SRS documentation describes it as a remote line receiver that converts the CG635 rear-panel RS-485/LVDS clock output into complementary CML/NIM logic levels on SMA connectors for use at a distance from the instrument.
Model	CG647
Manufacturer	Stanford Research Systems
Instrument Type	Optional Clock Receiver Module
Parent Instrument	CG635 Synthesized Clock Generator
Output Logic Family	CML/NIM
Logic Levels	0 V / -0.8 V
Maximum Frequency	2.05 GHz (2050 MHz)
Transition Time	100 ps
Source Impedance	50 Ohm
Load Impedance	50 Ohm
Inputs	RJ-45; connects to CG635 via standard Category-6 cable
Outputs	Complementary Q and $\bar{Q}$ on SMA connectors
Termination	Both SMA outputs should be terminated with 50 Ohm loads
Operation Above Fmax	Continues to operate above maximum specified frequency with reduced amplitude
Cable Length Guidance	At 2 GHz, Category-6 cable may be up to about 10 feet; at 10 MHz, cable may be up to about 200 feet
Power	Powered from the CG635 rear-panel RJ-45 interface (+/-5 VDC supplied for optional line receivers) System Context The CG647 belongs to the SRS optional receiver set used with the CG635: - CG640 CMOS (+5 Vcc) - CG641 CMOS (+3.3 Vcc) - CG642 CMOS (+2.5 Vcc) - CG643 PECL (+5 Vcc) - CG644 PECL (+3.3 Vcc) - CG645 PECL (+2.5 Vcc) - CG646 RF (+7 dBm) - CG647 CML/NIM - CG648 ECL - CG649 LVDS - CG650 All ten receivers (CG640–CG649)

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	
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PARAMETER	VALUE
Model	CG647
Manufacturer	Stanford Research Systems
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Parent Instrument	CG635 Synthesized Clock Generator
Output Logic Family	CML/NIM
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Cable Length Guidance	At 2 GHz, Category-6 cable may be up to about 10 feet; at 10 MHz, cable may be up to about 200 feet
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Operational Notes	
The CG635 rear-panel RJ-45 connector provides differential LVDS clocks (to 2.05 GHz) and RS-485 clocks (to	

105 MHz), along with power for optional receivers. The CG647 receives the differential LVDS clock over CAT-6 cable and converts it to complementary CML/NIM outputs. Maximum usable frequency also depends on Category-6 cable length and cable quality.

Notes

This manual OEM source was compiled from official Stanford Research Systems CG635 catalog and user manual documentation covering the CG647 CML/NIM receiver module.

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.