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Data Sheet

August 13, 2026

STANFORD RESEARCH SYSTEMS

Stanford Research FS700

Stanford Research Systems FS700 LORAN-C Frequency Standard The SRS FS700 is a LORAN-C disciplined frequency standard that tracks terrestrial cesium-controlled LORAN transmitters for NIST-traceable 10 MHz in much of the northern hemisphere. Long-term stability follows the LORAN-C cesium ($1e-12$ class). Short-term stability is $1e-10$ with the standard ovenized oscillator, or $1e-11$ with the low-phase-noise option. Four rear 10 MHz sine outputs (1 Vpp into 50 ohm) plus a front-panel TTL synthesizer (0.01 Hz to 10 MHz, 1-2.5-5 sequence) and a phase meter (100 kHz to 10 MHz) support laboratory distribution. The FS710 amplifier extends 10 MHz over long cables. The SRS FS700 is a LORAN-C disciplined frequency standard that tracks terrestrial cesium-controlled LORAN transmitters for NIST-traceable 10 MHz in much of the northern hemisphere. Long-term stability follows the LORAN-C cesium ($1e-12$ class). Short-term stability is $1e-10$ with the standard ovenized oscillator, or $1e-11$ with the low-phase-noise option. Four rear 10 MHz sine outputs (1 Vpp into 50 ohm) plus a front-panel TTL synthesizer (0.01 Hz to 10 MHz, 1-2.5-5 sequence) and a phase meter (100 kHz to 10 MHz) support laboratory distribution. The FS710 amplifier extends 10 MHz over long cables. NIST-traceable 10 MHz without GPS; laboratory frequency distribution; phase comparison of external oscillators; LORAN-locked timebase for counters and



MODEL

**Stanford Research
Systems FS700**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

FS700

LISTING

<https://aumictechlabs.com/products/fs700-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Stanford Research Systems FS700 is a LORAN-C frequency standard that locks an oven-stabilized crystal oscillator to LORAN-C radio transmissions controlled by cesium clocks, delivering a 10 MHz output with stability comparable to atomic cesium standards at significantly lower cost. The instrument provides NIST traceable frequency references for research, development, and production environments across the USA, Europe, and Asia. Its integrated receiver combines amplifiers, filters, and data acquisition circuitry with a remote antenna to establish reliable long-term frequency locking.

Technical Specifications

Frequency Output Four rear-panel 10 MHz sine wave outputs Front-panel adjustable frequency TTL output: 0.01 Hz to 10 MHz (1, 2.5, 5 sequence) Long-term stability: Comparable to cesium clock standards Short-term stability: 10^{-10} (10^{-11} optional) Phase Detector Measures phase shift between external timebase and internal frequency source Calibrates precision oscillators from 100 kHz to 10 MHz Output: 0.01 V/degree across 0 to $\pm 360^\circ$ range Oscillator Input Input impedance: 1 k Ω Input voltage range: 0.5 V to 5.0 V

Key Features Four dedicated 10 MHz outputs for simultaneous multi-channel applications Programmable TTL output with flexible frequency selection Integrated phase detector for precision oscillator characterization IEEE-488 GPIB control for automated measurement systems Optional RS-232 serial interface (300–19,200 baud) Low phase noise oscillator option available Lightning protection module available Replacement antenna (O700ANT) supported

Typical Applications Frequency calibration and verification in metrology labs Atomic clock synchronization validation Precision oscillator testing and characterization Time and frequency standard distribution Production test environments requiring NIST traceability

Compatibility & Integration IEEE-488 GPIB interface enables direct integration into automated test systems. Optional RS-232 interface accommodates legacy serial-based control architectures.

Features & description

From manufacturer datasheet

Features

- Four 10 MHz sine outputs
- Front-panel TTL 0.01 Hz to 10 MHz
- Built-in phase detector 0.01 V/degree, 0 to +/-360 deg
- GPIB standard; optional RS-232
- Standard AT-cut or optional SC-cut low-noise oscillator
- Rear TTL LOCK output indicates receiver lock

FS700 Characteristics / Specifications

PARAMETER	VALUE
Model	FS700
Manufacturer	Stanford Research Systems
Instrument Type	LORAN-C Frequency Standard
Alias	FS700; SRS FS700
Long Term Stability	1e-12, same as LORAN-C transmitter cesium clock
Short Term Stability Standard	1e-10
Short Term Stability Low Noise Option	1e-11
Traceability	NIST traceable via LORAN-C
Reception	throughout most of the northern hemisphere (OEM statement)
Ten MHz Output Count	four
Ten MHz Output Level	1 Vpp sine into 50 ohm
Lock Output	rear-panel TTL indicates receiver lock
Front Panel TTL Range	0.01 Hz to 10 MHz in a 1-2.5-5 sequence
Front Panel TTL Termination	can be 50 ohm terminated
Standard Oscillator Type	ovenized AT-cut
Low Noise Oscillator Type	ovenized SC-cut
Oscillator Aging	5e-10 per day (both oscillator types)
Allan Variance One Second Standard	5e-11
Allan Variance One Second Low Noise	5e-12
Temperature Stability Standard	0.005 ppm (0 to 50 C)
Temperature Stability Low Noise	less than 2e-9 (0 to 50 C)
Phase Noise Ten Hz Low Noise	-125 dBc/Hz (table)
Phase Noise One Hundred Hz Standard	-130 dBc/Hz
Phase Noise One Hundred Hz Low Noise	-155 dBc/Hz
Phase Noise One kHz Low Noise	-165 dBc/Hz

PARAMETER	VALUE
Phase Meter Frequency Range	100 kHz to 10 MHz
Phase Meter Scale	0.01 V/degree, 0 to +/-360 deg
Oscillator Input Impedance	1 kOhm
Oscillator Input Level	0.5 V min, 5.0 V max
Interface Standard	GPIB IEEE-488
Interface Optional	RS-232 300 to 19200 baud DCE
Companion Distributor	FS710 7-channel 10 MHz AGC amplifier
Standard Oscillator Frequency	10.000 MHz
Low Noise Oscillator Frequency	10.000 MHz Notes Specs from historical SRS FS700 catalog sheet (LORAN-C frequency standard). LORAN-C transmitter availability is site/coverage issue independent of the instrument. Confirm standard versus low-phase-noise oscillator option and whether an FS710 is paired for remote distribution.

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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Phase Noise One kHz Low Noise	-165 dBc/Hz
Phase Meter Frequency Range	100 kHz to 10 MHz

PARAMETER	VALUE
Phase Meter Scale	0.01 V/degree, 0 to +/-360 deg
Oscillator Input Impedance	1 kOhm
Oscillator Input Level	0.5 V min, 5.0 V max
Interface Standard	GPiB IEEE-488
Interface Optional	RS-232 300 to 19200 baud DCE
Companion Distributor	FS710 7-channel 10 MHz AGC amplifier
Standard Oscillator Frequency	10.000 MHz
Low Noise Oscillator Frequency	10.000 MHz

Notes

Specs from historical SRS FS700 catalog sheet (LORAN-C frequency standard). LORAN-C transmitter availability is a site/coverage issue independent of the instrument. Confirm standard versus low-phase-noise oscillator option and whether an FS710 is paired for remote distribution.

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.