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Data Sheet

August 2, 2026

ASTRONICS / EADS / RACAL

Astronics / EADS / Racal 3161 300MS/s Waveform Synthesizer

Astronics / EADS / Racal 3161 300MS/s Waveform Synthesizer The Astronics / EADS / Racal 3161 is a single-slot VXIbus waveform synthesizer with 300 MS/s sample-rate performance, frequency agility, and modulation capability. Signal output spans about 100 uHz to 150 MHz with 12-bit resolution. Real-time frequency agility supports up to 256 frequency hops at clock rates that are integer division ratios of the sample clock (division ratios from 1 to 64k), controllable via a front-panel D-sub. External modulation inputs support AM and PM plus FSK. The unit can phase-lock to external analog signals up to about 18.75 MHz with programmable phase offset, and includes a built-in about 6-digit frequency counter. WaveCAD software supports waveform creation from equations, freehand drawing, built-in functions, and imports. The Astronics / EADS / Racal 3161 is a single-slot VXIbus waveform synthesizer with 300 MS/s sample-rate performance, frequency agility, and modulation capability. Signal output spans about 100 uHz to 150 MHz with 12-bit resolution. Real-time frequency agility supports up to 256 frequency hops at clock rates that are integer division ratios of the sample clock (division ratios from 1 to 64k), controllable via a front-panel D-sub. External modulation inputs support AM and PM plus FSK. The unit can phase-lock to external analog signals up to about 18.75 MHz with programmable phase of



MODEL

**Astronics / EADS /
Racal 3161**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

3161

LISTING

[https://aumictechlabs.c
om/products/3161-2/](https://aumictechlabs.com/products/3161-2/)

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Astronics / EADS / Racal 3161 is a single-slot VXIbus waveform synthesizer delivering 300 MS/s sampling for high-fidelity arbitrary waveform generation across aerospace, defense, and telecommunications applications. The instrument generates complex signals from 100 μ Hz to 150 MHz with 12-bit resolution and supports real-time frequency hopping between 256 programmable frequencies, external modulation inputs (AM, PM, FSK), and phase-coherent synchronization to external analog signals up to 18.75 MHz. Technical Specifications Sampling Rate: 300 MS/s Output Frequency Range: 100 μ Hz to 150 MHz Resolution: 12-bit Waveform Memory: 256k points standard; 1 Meg points optional Harmonics: Typically below -30 dB (150 MHz sine wave) Phase Offset Resolution: Programmable in 1-point increments Frequency Counter: Built-in 6-digit counter for external signal measurement External Sync Bandwidth: Up to 18.75 MHz Key Features Real-time frequency hopping between 256 selectable frequencies Variable clock rates via inter-division ratios (1 to 64k) for memory-efficient sequencing Front panel D-sub control for hop selection and modulation inputs External modulation: Amplitude Modulation (AM), Phase Modulation (PM), and Frequency Shift Keying (FSK) Automatic phase locking to external analog reference signals WaveCAD software compatibility for equation-based, freehand, or function-based waveform design Waveform import from spreadsheets, math applications, and digitizers Typical Applications Aerospace and defense signal simulation, telecommunications signal generation, frequency-agile test scenarios, and modulated waveform synthesis requiring sub-harmonics control and phase coherence. Compatibility & Integration VXIplug&play drivers supported. Front panel connector maintains backward compatibility with legacy 3151, 3151A, and 3151A+ models. Integrates with WaveCAD waveform design software.

Features & description

From manufacturer datasheet

Features

- 300 MS/s waveform synthesizer
- About 100 uHz to 150 MHz output class
- 12-bit resolution
- Up to 256 frequency hops; programmable hop clock division
- External AM, PM, and FSK modulation
- PLL to external analog signals (to about 18.75 MHz)
- Built-in about 6-digit frequency counter
- WaveCAD waveform creation software
- Single-slot VXI format

3161 Characteristics / Specifications

PARAMETER	VALUE
Model	3161
Manufacturer	Astronics Test Systems / EADS / Racal Instruments
Instrument Type	High-speed VXI waveform synthesizer / AWG
Form Factor	Single-slot VXIbus
Sample Rate	300 MS/s
Frequency Range	about 100 uHz to 150 MHz
Vertical Resolution	12 bits
Frequency Hops	up to 256; division ratios 1 to 64k
Modulation	AM, PM, FSK (external)
PLL	locks to external analog to about 18.75 MHz; programmable phase offset (1-point steps class)
Counter	built-in about 6-digit frequency counter
Software	WaveCAD Standard Operating Conditions Install incompatible VXI mainframe. Use 50 ohm loads for specified spectral performance. Observe front-panel modulation and hop-control connector ratings. Operational Notes Confirm 3161 vs slower 3151/3152-class synthesizers. Harmonic performance examples (e.g., about -30 dBc at 150 MHz sine) are typical Artisan/OEM class claims—verify on the unit for critical applications.
Bandwidth	VXI stimulus generation; frequency-hopping and agile RF/IF test signals; AM/PM/FSK modulated stimuli; PLL-locked multi-module test systems.

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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Applications
High-bandwidth VXI stimulus generation; frequency-hopping and agile RF/IF test signals; AM/PM/FSK modulated stimuli; PLL-locked multi-module test systems.

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 - About 100 uHz to 150 MHz output class
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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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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.