

Racal Instruments™

6088

Dual 18-bit Digitizer/Waveform Generator

OBSOLETE

The Racal Instruments™ 6088 Digitizer and Digital-to-Analog Converter (DAC) features 18-bit resolution for high-precision waveform capture or waveform generation at sample rates up to 1 MS/s.

Key Features

- High-precision, waveform capture and digital-to-analog conversion with 18-bit resolution and a sample rate up to 1 MS/s
- Flexible configurations with matched digitizer and digital-to-analog converter
- Flexible triggering and synchronization
- Ideal for semiconductor, medical, and telecommunications test
- 512 k of waveform capture and generation memory
- Register-based for high throughput

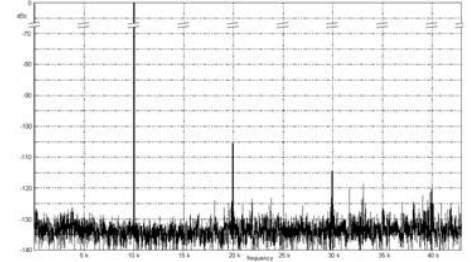
Product Information

The 6088 achieves excellent performance in both the time and frequency domains. The plot shows an FFT of a 1 kHz tone sampled at 500 kS/s with spurious signals well below the specified SFDR of 92 dB.

Both channels can be synchronized to each other or to an external clock.

The 6088 supports up to two channels of waveform capture or waveform generation. The space saving design enables a matching Digitizer and DAC to be combined in a single-slot VXI module.

Applications include ADC and DAC test, audio device test, defibrillator test or whenever very high resolution sampling is required.



Specifications

Note: The Astronics Test Systems policy is one of continuous development and improvement. Consequently, the equipment may vary in detail from the description and specifications in this publication.

Input Characteristics

Resolution

- 18 bits

Sample Rate (max)

- 1 MS/s, usable to 1.1 MS/s

Sample Memory

- 512 k words

Input Ranges

- 1 V, 3 V, 5 V and 7 V

Input Configuration

- Differential or Single-ended

Input Impedance

- 10 M Ω or 50 Ω

Input Operating Area

- -7.5 V to +7.5 V

Input Filters

- None, 40 kHz, 200 kHz
- 4-pole, Butterworth

Absolute Accuracy

- ± 75 μ V (excluding DC uncertainty)

DC Uncertainty

- 25 μ V_{rms}

Relative Accuracy (INL)

- ± 4 ppm of Input Range

Spurious (Fin = 1 kHz)

- SFDR (Fsamp = 0.5 MHz): 92 dB
- SINAD (Fsamp = 0.5 MHz): 87 dB

Minimum Warm-up Time

- 1 minute

Output Characteristics

Resolution

- 18 bits

Sample Rate (max.)

- 1 MS/s, usable to 1.5 MS/s

Sample Memory

- 512 k words

Output Ranges

- 1 to 10 V Proportional

Offset Range

- -5 V to +5 V

Offset Resolution

- 20-bits

Signal + Offset Range

- -5 V TO +10 V

Output Config/Impedance

- 2 W/4 W: 50 Ω
- 2 W: 0.2 Ω
- 4 W: 1 m Ω

Load Regulation (typical)

- 1 μ s (small swing)

Output Filters

- None, 40 kHz, 200 kHz
- 4-pole, Butterworth

Absolute Accuracy

- ± 75 μ V

Relative Accuracy (INL)

- ± 4 ppm of Output Range

Settling Time

- 1 μ s (small swing)

Spurious (Fin = 1 kHz)

- SFDR ($F_{\text{samp}} = 0.5$ MHz): 102 dB
- SINAD ($F_{\text{samp}} = 0.5$ MHz): 96 B

Trigger Characteristics

Input Sources

- External: Front panel SMB
- VXI Backplane: TTLTrg0-7
- Software

Pulse Width

- 30 ns, min

Slope

- + or -, selectable

Trigger Level

- TTL

Interface

(Single slot, Register-based, VXIbus 1.4 Compliant)

Front Panel I/O

Inputs

- Clock In: SMB, TTL, 1 MHz max
- Sense: SMB
- Trigger: SMB
- External Reference: SMB
- In +: SMB, Differential +
- In -: SMB, Differential -

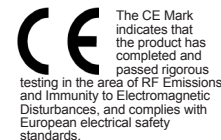
Outputs

- Main Output: SMB, Direct or 50 Ω

Software

Drivers

- LabVIEW™, LabWindows™/CVI, VXIplug&play support for frameworks based on Microsoft Win32® application programming interface



Ordering Information

407889-118 : Racal Instruments™ 6088A (Obsolete)

18-bit Digitizer/Waveform Generator

407889-018 : Racal Instruments™ 6088B-1 (Obsolete)

1-Channel, 18-bit Waveform Generator

407889-028 : Racal Instruments™ 6088B-2 (Obsolete)

2-Channel, 18-bit Waveform Generator

407889-108 : Racal Instruments™ 6088C-1 (Obsolete)

1-Channel 18-bit Digitizer

407889-208 : Racal Instruments™ 6088C-2 (Obsolete)

2-Channel, 18-bit Digitizer

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