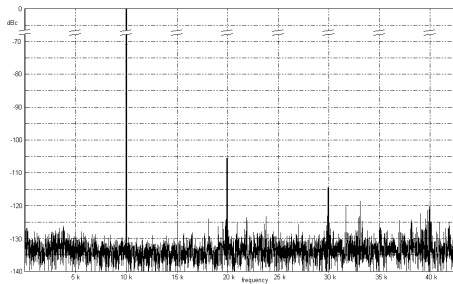




Dual 18-bit Digitizer and Digital-to-Analog Converter 6088

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.

- ◆ **High-Precision, Waveform Capture and Digital-to-Analog Conversion with 18-bit Resolution and a Sample Rate up to 1MS/s**
- ◆ **Flexible Configurations with Matched Digitizer and Digital-to-Analog Converter**
- ◆ **Flexible Triggering and Synchronization**
- ◆ **Ideal for Semiconductor, Medical, and Telecommunications Test**
- ◆ **512k of Waveform Capture and Generation Memory**
- ◆ **Register-Based for High Throughput**



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.

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

$\pm 75 \mu\text{V}$ (excluding DC uncertainty)

DC Uncertainty

25 μ Vrms

Relative Accuracy (INL)

± 4 ppm of Input Range

Spurious ($F_{in} = 1$ kHz)

SFDR ($F_{samp} = 0.5$ MHz): 92 dB
SINAD ($F_{samp} = 0.5$ 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 – 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 μs (small swing)

Output Filters

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

Absolute Accuracy

$\pm 75 \mu\text{V}$

Relative Accuracy (INL)

± 4 ppm of Output Range

Settling Time

1 μs (small swing)

Spurious ($F_{in} = 1$ kHz)

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

TRIGGER CHARACTERISTICS

Input Sources

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

Pulse Width

30 ns, min.

Slope

+ or -, selectable

Trigger Level

TTL

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

VXibus INTERFACE DATA

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

Drivers

LabVIEW, LabWindows/CVI,
VXIplug&play (WIN95/WINNT Frameworks)

CE The CE Mark indicates that the product has completed and passed rigorous testing in the area of RF Emissions, Immunity to Electromagnetic Disturbances and complies with European electrical safety standards.

ORDERING INFORMATION

MODEL/DESCRIPTION

Racal Instruments 6088A 18-bit Digitizer/DAC
Racal Instruments 6088B-1, 1-Channel, 18-bit DAC
Racal Instruments 6088B-2, 2-Channel, 18-bit DAC
Racal Instruments 6088C-1, 1-Channel 18-bit Digitizer
Racal Instruments 6088C-2, 2-Channel, 18-bit Digitizer

PART NUMBER

407889-118
407889-018
407889-028
407889-108
407889-208

