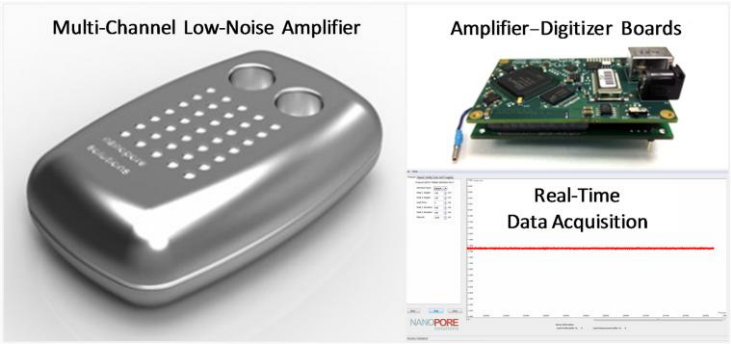
USB Controlled Amplifier

Data Sheet

NANOPORE solutions
www.nanoporesolutions.com

PRODUCT DESCRIPTION

Nanopore Solutions offers an affordable, multi-channel, low-noise integrated amplifier, featuring high bandwidth, sensitivity, and dynamic range to measure bidirectional currents for nanopore sensing while allowing control of the voltage at the input node (voltage clamping). It can be USB powered from a laptop, making it an ideal choice for benchtop or field experiments.



FEATURES

- Complete system – includes amplifier and digitizer
- Small unit fits in the palm of your hand
- USB controller allows data acquisition on PCs running Window XP (32-bit) – other OS compatibility coming soon
- Included software package provides high-level, real-time control over amplifier functions and plots
- Data can be saved to disk and files are compatible with popular applications, such as ClampFit

SPECIFICATIONS

- Clamping Voltage: ± 500 mV in 50 µV steps
- Output Swing: 1.5 V
- Sampling rate up to 20 kHz
- Power Supply: 3.3 V
- Power Consumption: 27 mV
- Max Linearity Error: 0.5 %
- Dynamic Range: 87 dB (switched capacitance range)
- Minimum Noise Levels:
  - 47 fA RMS in a 1 kHz bandwidth
  - 356 fA RMS in a 4 kHz bandwidth
  - 969 fA RMS in a 10 kHz bandwidth

— ELECTRICAL CHARACTERISTICS —

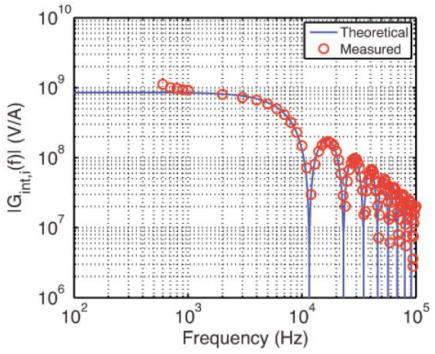


Figure 1. Amplifier gain vs. frequency (F_s = 10 kHz, C_f = 100 fF)

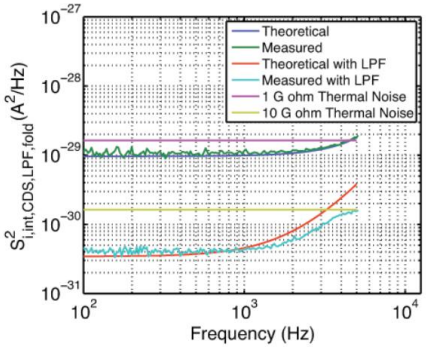


Figure 2. Amplifier noise spectrum (C_f = 100 fF)

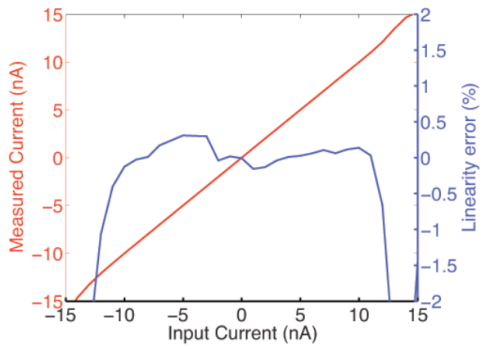


Figure 3. Linearity error (C_f = 100fF)

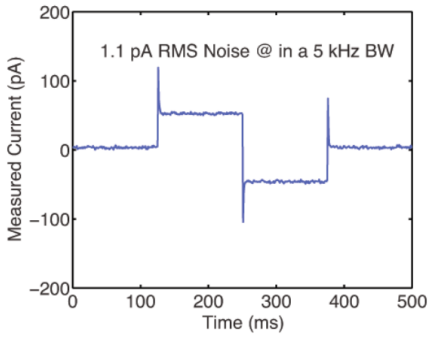


Figure 4. Functional example measuring 1 GΩ in parallel with 7 pF

Request a quote: info@nanoporesolutions.com