MegaSig

N 961数据采集卡

产品规格书

N 961 Audio Data Acquisition Card

Product Specification

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产品简介

N 961数据采集卡



N 961数据采集卡是一款专为声音与振动测试设计的高精度音频分析仪。

该产品提供两通道模拟信号输入，每通道均内置IEPE恒流源激励，支持AC/DC耦合切换，可直接连接麦克风、加速度计等IEPE传感器。设备采用以太网通信接口，基于TCP/IP协议实现高速数据传输，并支持上位机实时波形显示与秒级数据缓存功能。

在供电方面，N 961支持POE供电(IEEE802.3af)与9-24V宽范围外接直流电源输入，具备双路冗余供电与无缝切换能力，保障设备在复杂测试环境中的连续稳定运行。

基本特性

- 2通道线路输入；
- 采样精度24bit，采样率(48k/96k)可调；
- 内置IEPE电源，AC/DC信号切换；
- 10/100 M 以太网，TCP/IP（LWIP)；
- POE供电和外部供电(9~24V)，可切换。

产品参数

产品参数	
模拟采集通道数	2路
IEPE 通道	2路（内置在采集前端）
IEPE 电源	4mA/24V
通讯接口	百兆网口
接口类型	BNC
产品尺寸(mm)	99*36*149（W*H*L）
适用温度	-20℃ - 60℃
净重量(kg)	0.32
包装尺寸(mm)	250*165*65
包装重量(kg)	0.53

AI模拟采集通道特性参数

AI 通道参数	
ADC 精度	24 Bit
ADC 类型	Δ-Σ
采样率范围	48k/96k
数据传输方式	DMA
输入电压范围	±3Vrms
增益误差	±0.02dB
输入阻抗	正输入端对地之间：100k ohm
平坦度	1Hz-20kHz 3dB 20Hz - 20kHz 0.1dB 20Hz - 50kHz 0.3dB

AI 空闲通道噪声 Idle noise (uVrms)		
采样率	fs=48kS/s	fs=96kS/s
最大值	9.2	8.3
注：[1]短路源阻抗小于 50Ω，工作温度 23±5℃		

AI 信噪比 SNR (dB)		
采样率	fs=48kS/s	fs=96kS/s
最小值	98	94
注：[1]差分输入，交流耦合，输入信号1kHz 正弦波，0dBFS (3 Vrms) [2]带宽分别为22.4k、45k、51k [3]线性计权		

AI 动态范围 (dB)		
采样率	fs=48kS/s	fs=96kS/s
最小值	98	93
注：[1]差分输入，交流耦合，输入信号 1kHz 正弦波，-1dBFS (2.67Vrms) [2]带宽分别为22.4k、45k、51k [3]线性计权，DR测试法		

AI 总谐波失真加噪声 THD+N (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-98	-94
注：[1]差分输入，交流耦合，输入信号 1kHz 正弦波，-1dBFS (2.67Vrms) [2]带宽分别为22.4k、45k、51k [3]线性计权，DR测试法		

AI 总谐波失真 THD (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-114	-114
注：[1]差分输入，交流耦合，输入信号 1kHz 正弦波，-1dBFS (2.67Vrms) [2]带宽分别为22.4k、45k、51k [3]线性计权，DR测试法		

AI 串扰 Cross talk (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-98	-93
注：[1]差分输入，交流耦合，输入信号 1kHz 正弦波，-1dBFS (2.67Vrms) [2]带宽分别为 22.4k、45k、90k [3]线性计权		

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N 961 Data Acquisition Card

N 961 Data Acquisition Card is a high-precision audio analyzer specifically designed for sound and vibration testing.

This product offers 2-channels of analog signal input, with each channel featuring a built-in IEPE constant current source excitation. It supports AC/DC coupling switching, enabling direct connection to IEPE sensors such as microphones and accelerometers. The device utilizes an Ethernet communication interface, facilitating high-speed data transmission based on the TCP/IP protocol. Additionally, it supports real-time waveform display on the host computer and has a second-level data buffering capability.

In terms of power supply, the N 961 supports Power over Ethernet (PoE) (IEEE802.3af) and a wide range of external DC power inputs from 9 to 24 volts. It features dual-channel redundant power supply with seamless switching capability, ensuring continuous and stable operation of the device in complex testing environments.

Basic features

- 2-channel line inputs;
- 24-bit sampling precision with adjustable sampling rates (48k/96k);
- Built-in IEPE power supply, supporting AC/DC signal switching;
- 10/100 M Ethernet, TCP/IP (LWIP);
- Support for both PoE and external power supply (9~24V), with switchable capability.

Specifications

Specifications	
Number of analog input channels	2-channels
IEPE channel	2-channels （ built into the acquisition front-end ）
IEPE power supply	4mA/24V
Communication interface	100 Mbps Ethernet port
Interface type	BNC
Product dimensions (mm)	99*36*149（W*H*L）
Operating temperature	-20℃ - 60℃
Net weight (kg)	0.32
Packaging dimensions (mm)	250*165*65
Packaging weight (kg)	0.53

AI Channel parameters	
ADC accuracy	24 Bit
ADC type	Δ-Σ
Sampling rate range	48k/96k
Data transmission mode	DMA
Input voltage range	±3 Vrms
Gain error	±0.02dB
Input impedance	Between the positive input terminal and ground:100k ohm
Flatness	1Hz-20kHz 3dB 20Hz - 20kHz 0.1dB 20Hz - 50kHz 0.3dB

AI idle channel noise (uVrms)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	9.2	8.3
Note: [1] Short-circuit source impedance is less than 50 Ω， operating temperature is 23 ± 5 ℃.		

AI Signal noise ratio (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Minimum	98	94
Note: [1] Differential input, AC coupling, with an input signal of a 1 kHz sine wave at 0 dBFS (3 Vrms). [2] Bandwidths are respectively 22.4 kHz, 45 kHz, and 51 kHz. [3] Linear weighting.		

AI Dynamic range (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Minimum	98	93
Note: [1] Differential input, AC coupling, with an input signal of a 1 kHz sine wave at -1 dBFS (2.67 Vrms). [2] Bandwidths are respectively 22.4 kHz, 45 kHz, and 51 kHz. [3] Linear weighting, using the DR test method.		

AI THD+N (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-98	-94
Note: [1] Differential input, AC-coupled, with an input signal of a 1 kHz sine wave at -1 dBFS (2.67 Vrms). [2] Bandwidths are respectively 22.4 kHz, 45 kHz, and 51 kHz. [3] Linear weighting applied, using the DR testing method.		

AI THD (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-114	-114
Note: [1] Differential input, AC-coupled, with an input signal of a 1 kHz sine wave at -1 dBFS (2.67 Vrms). [2] Bandwidths are respectively 22.4 kHz, 45 kHz, and 51 kHz. [3] Linear weighting, using the DR testing method.		

AI Cross talk (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-98	-93
Note: [1] Differential input, AC-coupled, with an input signal of a 1 kHz sine wave at -1 dBFS (2.67 Vrms). [2] Bandwidths are respectively 22.4 kHz, 45 kHz, and 90 kHz. [3] Linear weighting.		

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