

PM 6183 差分DSA数据采集卡

产品规格书

PM 6183 Differential DSA Data Acquisition Card

Product Specification

产品规格书-中文.....	1
Product introduction-EN.....	7

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产品简介

PM 6183差分DSA数据采集卡

PM 6183是一款专门针对产线量产测试而设计的数据采集卡。

8通道模拟信号输入，2通道模拟信号输出，可接入4组3.5mm音频线达到立体声监听，监听增益可调；可启用或禁用IEPE恒流源激励器，AC/DC耦合可调，用于调理麦克风，人工耳，加速度计等IEPE供电传感器。

采用数字光耦隔离，超强抗干扰能力，支持转速信号采集。

适合声学品质分析，电声分析，振动分析，NVH分析等，各种要求苛刻的测量应用中捕获声音和振动数据。

还有PM 6183开放应用协议接口，一个轻量级的，与平台无关的接口，用于您自己的（或第三方）软件编程PM 6183数据采集。



功能特点

- 8 通道线路输入，2 通道线路输出
- 立体声监听信号10倍内无极可调
- 差分信号
- 内置IEPE电源
- AC/DC耦合方式可调
- Trigger内外部同步触发，超低延时1.2ms
- 数字光耦隔离

规格参数

产品参数	
模拟采集通道数	8
模拟输出通道数	2
IEPE 通道	8路（内置在采集前端）
立体声监听通道	8路（4组L/R）
IEPE 电源	4mA
总线	USB-B
产品尺寸 L*W*H (mm)	240*270*76.5（不含BNC）
接口类型	BNC
适用温度	-20℃ ~ 50℃
工作电压	220V
耦合方式	AC/DC耦合
Trigger同步触发	内部触发延时：1.2ms

AI模拟采集通道特性参数

AI 通道参数	
ADC 精度	24 Bit
ADC 类型	$\Delta\Sigma$
采样率范围	1k-100k
FIFO 缓冲大小	1024
数据传输方式	DMA
输入电压范围	+/- 10Vrms（量程挡位1Vrms、5Vrms、10Vrms）
增益误差	AC耦合：+/- 0.03dB DC耦合：+/-0.1dB
输入阻抗	正输入端对地之间：200Kohm
平坦度	20Hz - 20kHz，最大值0.03dB 5Hz - 50KHz，最大值0.08dB

AI 空闲通道噪声 Idle noise (uVrms)		
采样率	fs=48kS/s	fs=96kS/s
最大值	11	15

注：[1]短路源阻抗小于 50Ω，工作温度 23±5℃，AC耦合，线性计权，1Vrms挡位

AI 信噪比 SNR (dB)		
采样率	fs=48kS/s	fs=96kS/s
最小值	115	113
注: [1]差分输入, 交流耦合, 输入信号 1kHz 正弦波, 10Vrms挡位, 10Vrms [2]带宽分别为 22.4k、45k [3]线性加权		

AI 动态范围 (dB)		
采样率	fs=48kS/s	fs=96kS/s
最小值	110	109
注: [1]差分输入, 交流耦合, 输入信号 1kHz 正弦波, 5Vrms挡位, 2Vrms [2]带宽分别为22.4k、45k [3]线性加权, SFDR法测试		

AI 总谐波失真加噪声 THD+N (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-96	-96
注: [1]差分输入, 交流耦合, 输入信号 1kHz 正弦波, 5Vrms挡位, 2Vrms [2]带宽分别为 22.4k、45k [3]线性加权		

AI 总谐波失真 THD (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-110	-109
注: [1]差分输入, 交流耦合, 输入信号 1kHz 正弦波, 5Vrms挡位, 2Vrms [2]带宽分别为 22.4k、45k [3]线性加权		

AI 串扰 Cross talk (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-104	-100
注: [1]差分输入, 交流耦合, 输入信号 1kHz 正弦波, 5Vrms挡位, 2Vrms [2]带宽分别为 22.4k、45k [3]线性加权		

AO模拟采集通道特性参数

AO 通道参数	
DAC 精度	24 Bit
采样率范围	1k - 192k
输出电压范围	+/- 10Vrms （量程挡位5Vrms、10Vrms）
增益误差	AC 耦合: +/- 0.03dB DC 耦合: +/-0.1dB
输出阻抗	正输入端对负输入端: 75ohm
平坦度	20Hz - 20kHz, 最大值0.12dB 5Hz - 80kHz, 最大值0.5dB

AO 空闲通道噪声 Idle noise (uVrms)		
采样率	fs=48kS/s	fs=96kS/s
最大值	18	34

注: [1]采集设备阻抗大于1Mohm, 工作温度为 23±5℃, AC耦合, 5Vrms挡位

AO 信噪比 SNR (dB)		
采样率	fs=48kS/s	fs=96kS/s
最小值	108	103

注: [1]差分输出, 交流耦合, 输出信号 1kHz 正弦波, 10Vrms挡位, 10Vrms
[2]带宽分别为22.4k、45k
[3]线性计权

AO 动态范围 (dB)		
采样率	fs=48kS/s	fs=96kS/s
最小值	108	108

注: [1]差分输出, 交流耦合, 输出信号 1kHz 正弦波, 5Vrms挡位, 4.5Vrms
[2]带宽分别为 22.4k、45k
[3]线性计权, SFDR测试法

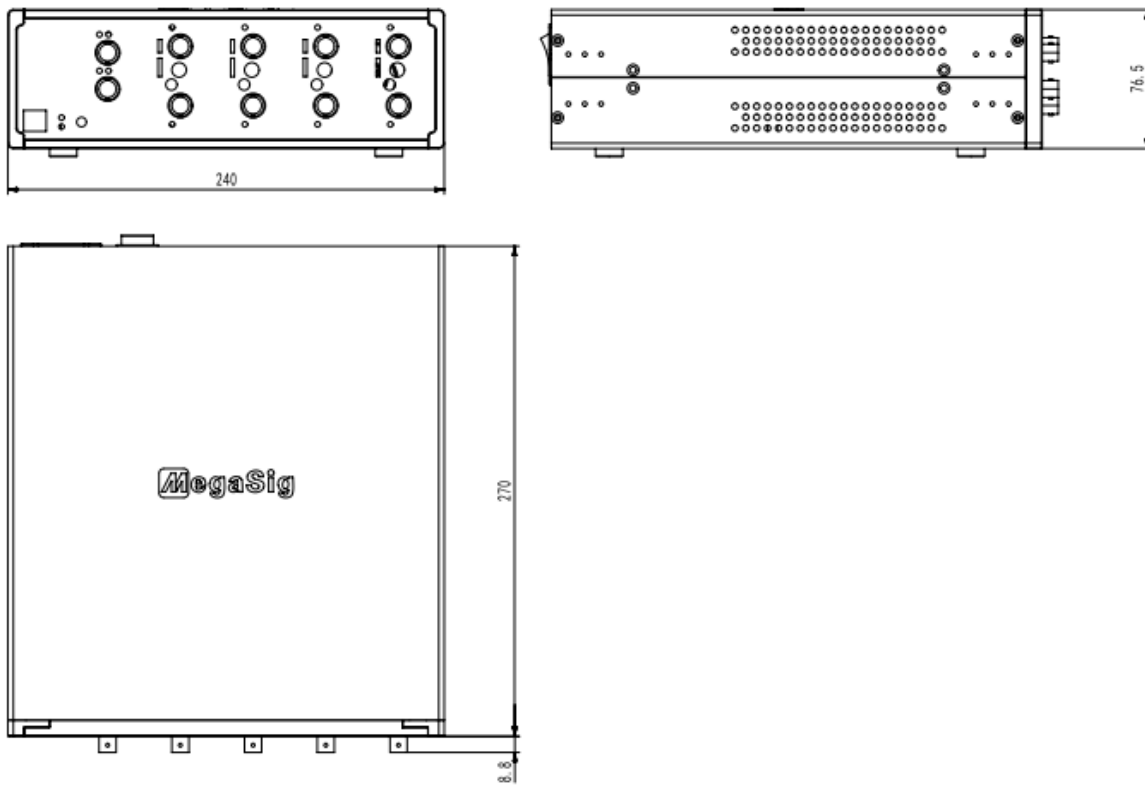
AO 总谐波失真加噪声 THD+N (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-103	-98
注：[1]差分输出，交流耦合，输出信号 1kHz 正弦波，5Vrms挡位，4.5Vrms [2]带宽分别为22.4k、45k [3]线性计权		

AO 总谐波失真 THD (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-108	-108
注：[1]差分输出，交流耦合，输出信号 1kHz 正弦波，5Vrms挡位，4.5Vrms [2]带宽分别为22.4k、45k [3]线性计权		

AO 串扰 Cross talk (dB)		
采样率	fs=48kS/s	fs=96kS/s
最大值	-99	-99
注：[1]差分输出，交流耦合，输出信号 1kHz 正弦波，5Vrms挡位，4.5Vrms [2]带宽分别为 22.4k、45k [3]线性计权		

尺寸与结构

单位: mm



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Product introduction



Differential DSA data acquisition card

PM 6183 is a data acquisition card specifically designed for production line testing.

8- channel analog input and 2- channel analog output, supporting connections for 4 sets of 3.5mm audio cables to achieve stereo monitoring with adjustable monitoring gain. The card allows enabling or disabling the IEPE constant current source excitation and supports adjustable AC/DC coupling for conditioning microphones, artificial ears, accelerometers, and other IEPE-powered sensors.

With digital optocoupler isolation, it provides strong anti-interference capability and supports rotational speed signal acquisition.

It is suitable for acoustic quality analysis, electroacoustic analysis, vibration analysis, NVH analysis, and other demanding measurement applications to capture sound and vibration data.

Additionally, the PM 6183 offers an open application protocol interface, which is a lightweight and platform-independent interface designed for programming data acquisition from the PM 6183 using your own (or third-party) software.

Features

- 8-channel line input, 2-channel line output
- Stereo monitoring signal adjustable within a 10-fold range in a stepless manner
- Differential signals
- Built-in IEPE power supply
- AC/DC coupling mode adjustable
- Internal/external synchronous triggering with ultra-low latency of 1.2ms
- Digital optocoupler isolation

Specification parameters

Specification	
Number of analog input channels	8
Number of analog output channels	2
IEPE channel	8-channel (built-in the collection front end)
Stereo monitoring channel	8-channel (4 pairs of L/R)
IEPE power supply	4mA
Bus line	USB-B
Product dimensions L*W*H (mm)	240*270*76.5 (Excluding BNC)
Interface type	BNC
Operating temperature	-20°C - 50°C
Operating voltage	220V
Coupled mode	AC/DC
Synchronization trigger	Internal trigger delay: 1.2ms

Analog input channel characteristic parameters

AI Channel Parameters	
ADC accuracy	24 Bit
ADC type	$\Delta\Sigma$
Sampling rate range	1k-100k
FIFO buffer size	1024
Data transmission mode	DMA
Input voltage range	+/- 10Vrms (Measurement ranges: 1Vrms、5Vrms、10Vrms)
Gain error	AC coupling: +/- 0.03dB DC coupling: +/-0.1dB
Input impedance	Between positive input and ground: 200K ohm
Flatness	20Hz - 20kHz, maximum 0.03dB 5Hz - 50KHz, maximum 0.08dB

AI Idle Channel Noise (uVrms)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	11	15
Note : [1] Short-circuit source impedance less than 50Ω , operating temperature 23±5°C, AC coupling , linear weighting, 1Vrms gear		

AI Signal Noise Ratio (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Minimum	115	113
Note: [1] Differential input, AC coupling, input signal: 1 kHz sine wave, measurement range set to 10Vrms, input amplitude 10Vrms [2] Bandwidths are respectively: 22.4 k、45 k [3] Linear weighting		

AI Dynamic Range (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Minimum	110	109
Note: [1] Differential input, AC coupling, input signal: 1 kHz sine wave, measurement range set to 5Vrms, input amplitude 2Vrms [2] Bandwidths are respectively: 22.4 k、45 k [3] Linear weighting, SFDR method testing		

AI THD+N (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-96	-96
Note: [1] Differential input, AC coupling, input signal: 1 kHz sine wave, measurement range set to 5Vrms, input amplitude 2Vrms [2] Bandwidths are respectively: 22.4 k、45 k [3] Linear weighting		

AI THD (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-110	-109
Note: [1] Differential input, AC coupling, input signal: 1 kHz sine wave, measurement range set to 5Vrms, input amplitude 2Vrms [2] Bandwidths are respectively: 22.4 k、45 k [3] Linear weighting		

AI Cross Talk (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-104	-100
Note: [1] Differential input, AC coupling, input signal: 1 kHz sine wave, measurement range set to 5Vrms, input amplitude 2Vrms [2] Bandwidths are respectively: 22.4 k、45 k [3] Linear weighting		

Analog output channel characteristic parameters

AO Channel Parameters	
DAC accuracy	24 Bit
Sampling rate range	1k ~ 192k
Output voltage range	+/- 10Vrms (Range settings: 5Vrms、10Vrms)
Gain error	AC coupling : +/- 0.03dB DC coupling : +/- 0.1dB
Output impedance	Between positive input and negative ground: 75ohm
Flatness	20Hz - 20kHz, maximum: 0.12dB 5Hz - 50kHz, maximum: 0.5dB

AO Idle Channel Noise (uVrms)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	18	34
Note:[1] Collecting device impedance is more than 1Mohm, operating temperature 23±5°C, AC coupling, 5Vrms gear		

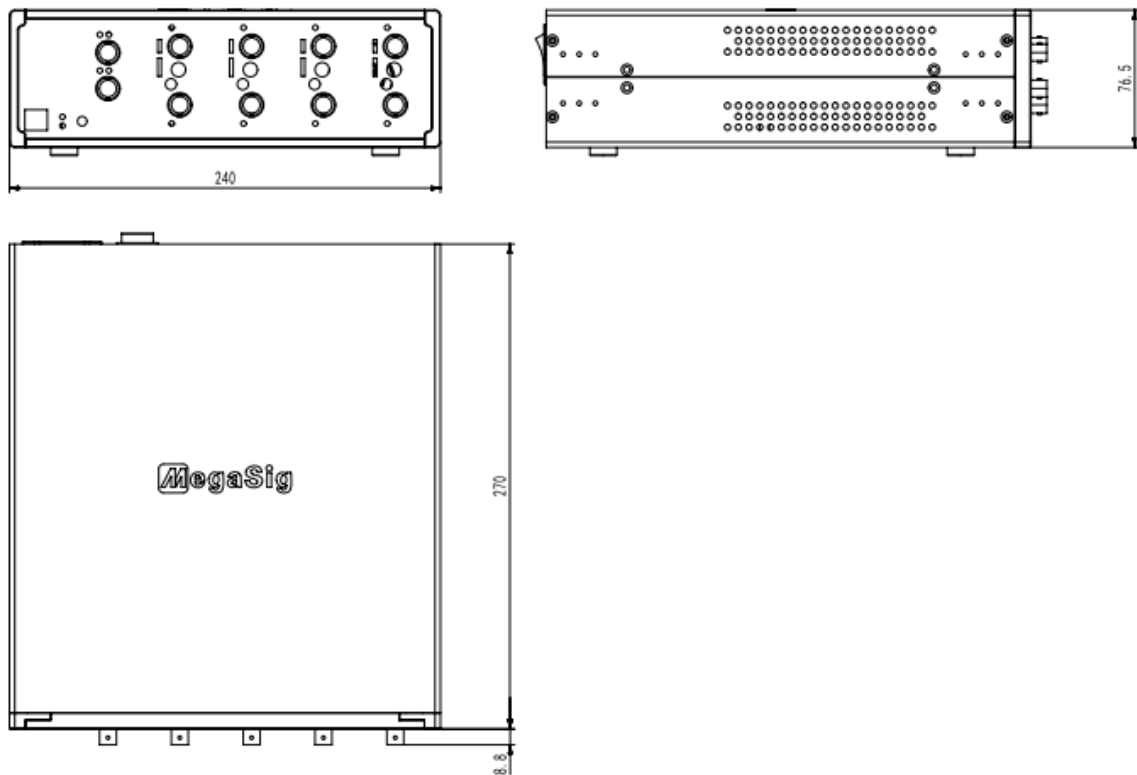
AO Signal Noise Ratio (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Minimum	108	103
Note: [1] Differential output, AC-coupling, output signal 1 kHz sine wave, 10Vrms range, 10Vrms [2] Bandwidths are respectively: 22.4 k、45 k [3] Linear weighting		

AO Dynamic Range (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Minimum	108	108
Note: [1] Differential output, AC-coupled, output signal 1 kHz sine wave, 5 Vrms range, 4.5 Vrms. [2] Bandwidths are respectively :22.4 k、45 k [3] Linear weighting, SFDR test method		

AO THD+N (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-103	-98
Note: [1] Differential output, AC-coupling, output signal 1 kHz sine wave, 5Vrms range, 4.5Vrms [2] Bandwidths are respectively :22.4 k、45 k [3] Linear weighting		

AO THD (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-108	-108
Note: [1] Differential output, AC-coupling, output signal 1 kHz sine wave, 5Vrms range, 4.5Vrms [2] Bandwidths are respectively :22.4 k、45 k [3] Linear weighting		

AO Cross Talk (dB)		
Sampling rate	fs=48kS/s	fs=96kS/s
Maximum	-99	-99
Note: [1] Differential output, AC-coupling, output signal 1 kHz sine wave, 5Vrms range, 4.5Vrms [2] Bandwidths are respectively :22.4 k、45 k [3] Linear weighting		

Size and Structure**Unit: mm**

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