MegaSig

PM 6143 数据采集卡
产品规格书

PM 6143 Data Acquisition Card
Product Specification

产品介绍

4通道输入，4通道输出数据采集卡

PM6143是一款专门针对高性价比设计的动态信号采集卡。

4通道模拟信号输入，可手动选择启用或禁用IEPE恒流源激励器，用于调理麦克风，人工耳，加速度计等IEPE供电传感器。

4通道模拟信号输出，可选择直接线路出或连接功放底板后输出，进而实现人工嘴驱动，喇叭等大功率负载驱动。

该产品具有通道资源丰富，指标优秀，是一款极具性价比的动态信号采集卡。

基本特点

- 4通道输入，4通道输出
- 定位通用动态信号采集
- 高度集成，内置IEPE电源，内置功放通道

产品参数

整体参数	
模拟采集通道数	4
模拟输出通道数	4
IEPE通道	4路（内置在采集前端）
IEPE电源	4mA
功放通道	3通道
功放功率	16W（每通道）
总线	USB
产品尺寸(mm)	240*240*76
接口类型	BNC
适用温度	-20℃~50℃

AI 模拟采集通道特性参数

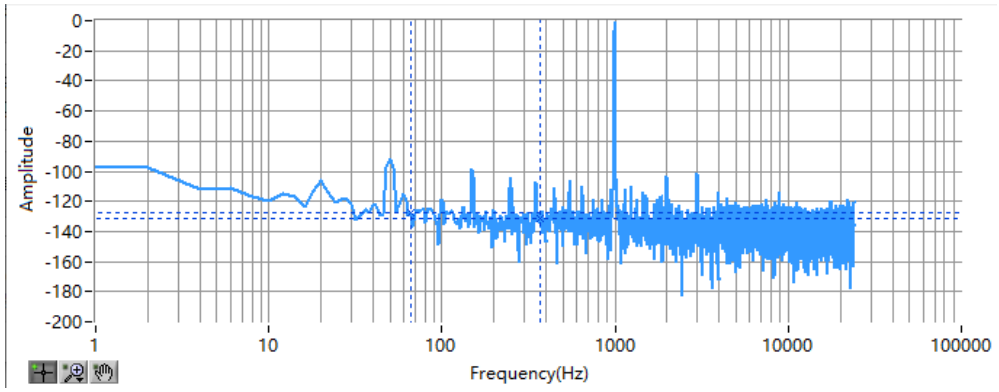
AI 通道参数	
ADC精度	24 Bit
ADC类型	Δ-Σ
采样率范围	1kHz~192kHz
FIFO缓冲大小	1024
数据传输方式	DMA
输入电压范围	+/- 1Vrms
增益误差	+/- 0.03dB
输入阻抗	正输入端对地之间：1Mohm
平坦度	20Hz~20kHz ， 小于+/- 0.1dB 10Hz~60KHz ， 小于+/- 1dB

AI 空闲通道噪声 Idle noise (uVrms)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	15	17	28
注：[1]短路源阻抗小于50Ω，工作温度23±5℃ [2]线性计权			

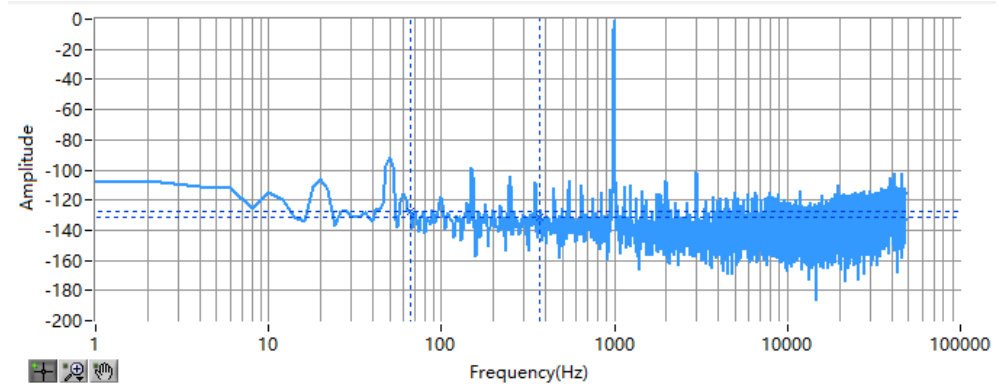
AI 信噪比 SNR (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最小值	94	95	90
注：[1]差分输入，交流耦合，输入信号 1kHz 正弦波，0dBFS [2]带宽 20Hz-20kHz			

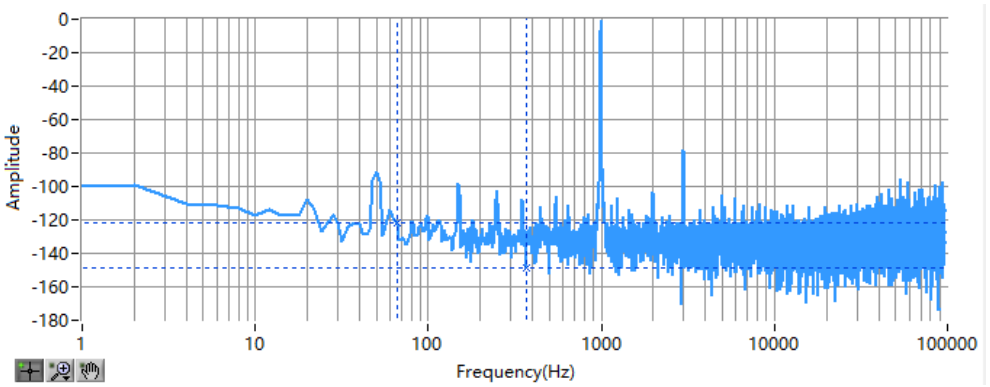
AI 动态范围 (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最小值	100	99.7	82
注：[1]差分输入，交流耦合，输入信号1kHz正弦波，-1dBFS (0.89Vrms) [2] Nyquist 带宽			

AI, fs=48kS/s, 典型, FFT, -1dBFS



AI, fs=96kS/s, 典型, FFT, -1dBFS



AI fs=192kS/s, 典型, FFT, -1dBFS


AI 总谐波失真加噪声 THD+N (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	-88	-88	-73
注：[1]差分输入，交流耦合，输入信号1kH正弦波，-1dBFS(0.89Vrms) [2]带宽 20Hz-80kHz			

AI 总谐波失真 THD (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	-98	-99	-87
注：[1]差分输入，交流耦合，输入信号1kH正弦波，-1dBF (0.89Vrms) [2]带宽 20Hz-80kHz			

AI 串扰 Cross talk (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	-90	-94	-90
注：[1]差分输入，交流耦合，输入信号1kH正弦波，-1dBFS (0.89Vrms) ，无信号端短路源小于 50ohm [2]带宽 20Hz-20kHz			

AO 模拟输出通道特性参数

AO 通道参数	
DAC精度	24 Bit
采样率范围	1kHz~192kHz
输出电压范围	+/- 2Vrms
增益误差	+/- 0.03dB
输出阻抗	正输入端对负输入端：1ohm
平坦度	20Hz~20kHz ， 小于+/- 0.2dB 10Hz~60KHz ， 小于+/- 1dB

AO 空闲通道噪声 Idle noise (uVrms)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	4	6	10
注：[1]采集设备阻抗大于1Mohm ，工作温度 23±5°C [2]线性计权			

AO 信噪比SNR (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最小值	110	108	102
注：[1]差分输出，交流耦合，输出信号 1kHz 正弦波，0dBFS (2Vrms)			

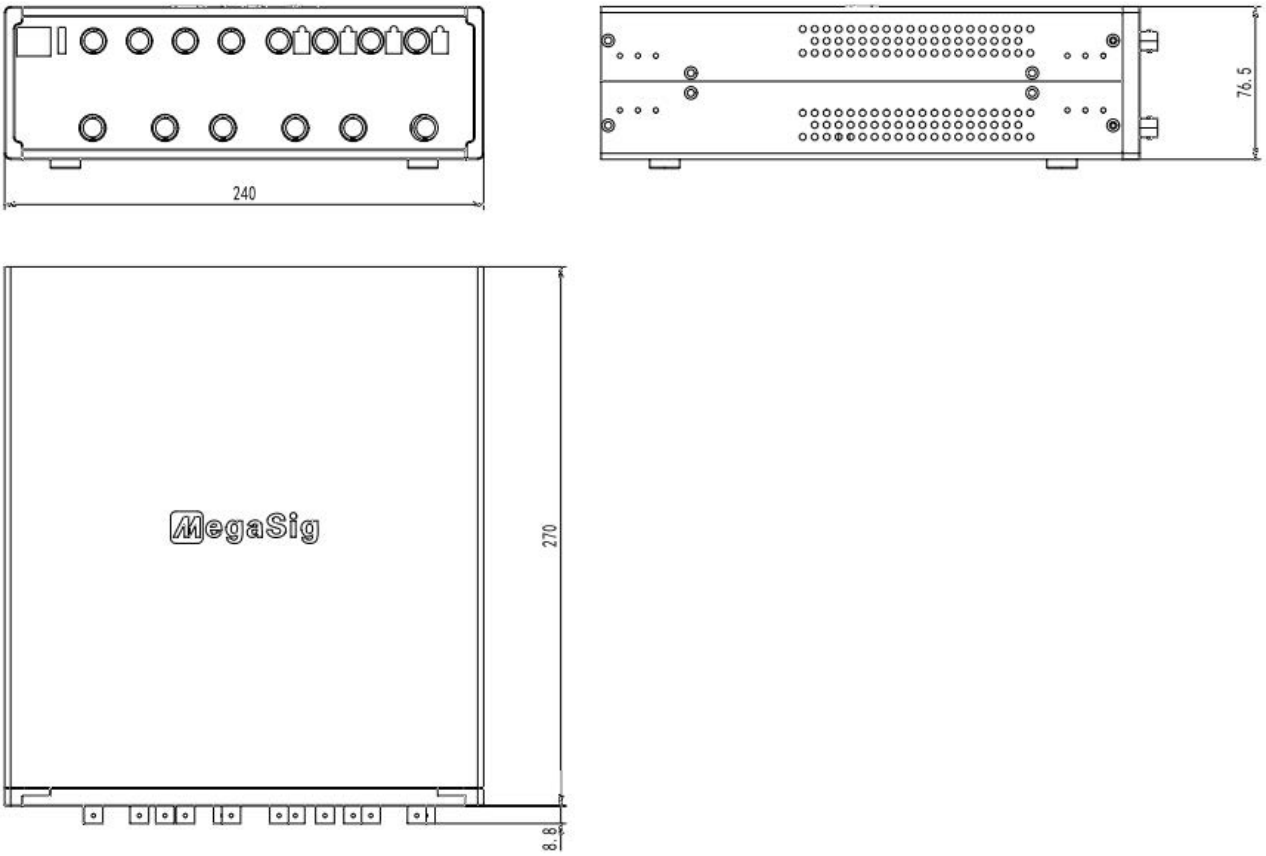
AO 动态范围 (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最小值	90	90	90
注：[1]差分输出，交流耦合，输出信号 1kHz 正弦波，-1dBFS (1.78Vrms) [2]带宽 20Hz-80kHz			

AO 总谐波失真加噪声 THD+N (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	-89	-88	-88
注：[1]差分输出，交流耦合，输出信号 1kHz 正弦波，-1dBFS (1.78Vrms) [2]带宽 20Hz-80kHz			

AO 总谐波失真 THD (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	-90	-90	-91
注：[1]差分输出，交流耦合，输出信号1kHz 正弦波，-1dBFS (1.78Vrms) [2]带宽 20Hz-80kHz			

AO 串扰 Cross talk (dB)			
采样率	fs=48kS/s	fs=96kS/s	fs=192kS/s
最大值	-100	-100	-100
注：[1]差分输出，交流耦合，输出信号1kHz正弦波，-1dBFS (1.78Vrms)			

尺寸单位: mm



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版本号：1.3_20260509_CN

4-channel input，4-channel output Data Acquisition Card

PM 6143 is a dynamic signal acquisition card specifically designed for high cost-performance.

4-channel analog signal input allows manual selection to enable or disable the IEPE constant current source exciter, which is used to regulate IEPE-powered sensors such as microphones, artificial ears, and accelerometers.

4-channels of analog signal output, which can be directly routed out or connected to the amplifier base plate and output, and then realize the high-power load drive such as artificial mouth and speaker.

This product features abundant channel resources and excellent indicators, making it a highly cost-effective dynamic signal acquisition card.

Basic features

- 4-channel line input，4-channel line output
- Positioning general dynamic signal acquisition
- Highly integrated with built-in IEPE power supply and amplifier channels

Specifications

Specifications	
Number of analog input channels	4
Number of analog output channels	4
IEPE channel	4-channel (built into the collection front end)
IEPE power supply	4mA
Power amplifier channel	3-channel
Amplifier power	16W (per channel)
Bus line	USB
Product dimensions (mm)	240*240*76
Interface type	BNC
Operating temperature	-20℃~50℃

Analog input channel characteristic parameters

AI Channel parameters	
ADC accuracy	24 Bit
ADC type	Δ-Σ
Sampling rate range	1kHz~192kHz
FIFO buffer size	1024

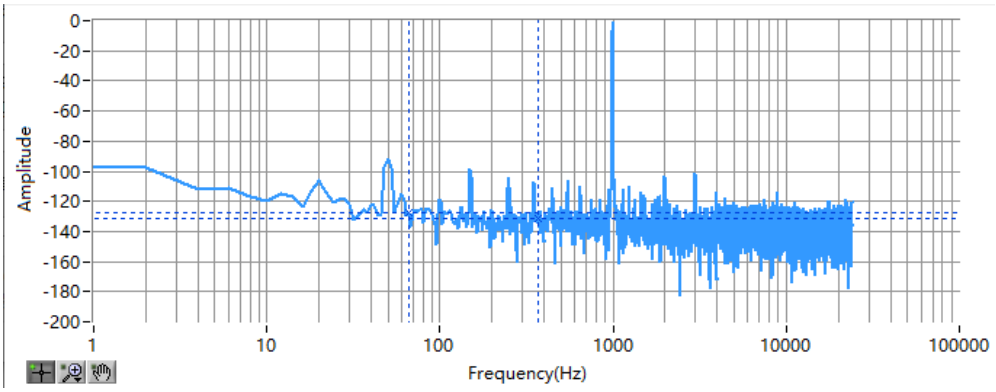
Data transmission mode	DMA
Input voltage range	+/- 1Vrms
Gain error	+/- 0.03dB
Input impedance	Between positive input and ground：1Mohm
Flatness	20Hz~20kHz，less than +/- 0.1dB 10Hz~60KHz，less than +/- 1dB

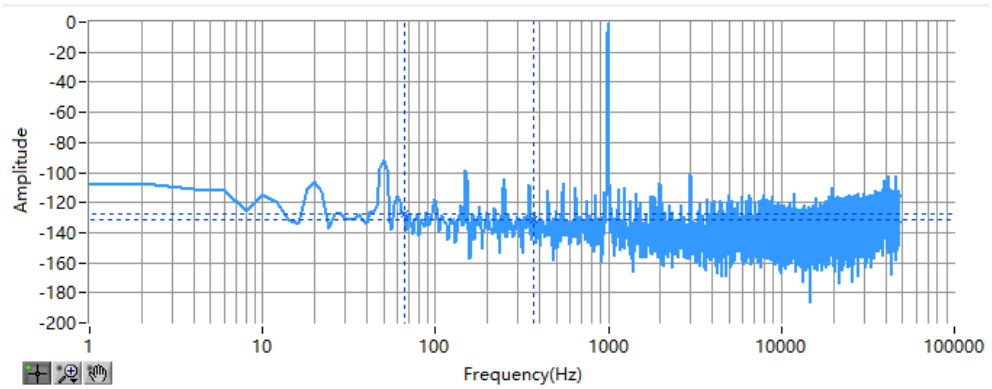
AI idle channel noise (uVrms)			
Sample rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	15	17	28
Note：[1] Short-circuit source impedance less than 50Ω，operating temperature 23±5℃ [2] Linear weighting			

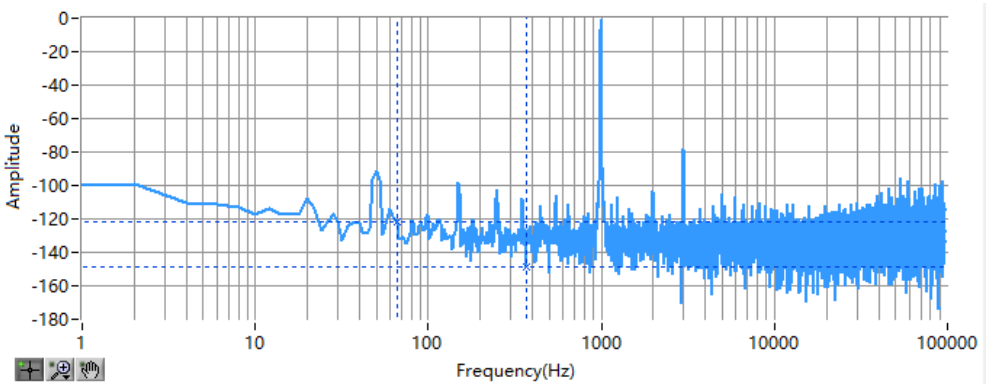
AI signal noise ratio (dB)			
Sampling rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Minimum	94	95	90
Note：[1] Differential input，AC coupling，input signal 1kHz sine wave，0dBF [2] Bandwidths: 20Hz-20kHz			

AI dynamic range (dB)			
Sampling rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Minimum	100	99.7	82
Note：[1] Differential input，AC coupling，input signal 1kHz sine wave，-1dBFS (0.89Vrms) [2] Nyquist bandwidth			

AI, fs=48kS/s, typical, FFT, -1dBFS



AI, fs=96kS/s, typical, FFT, -1dBFS


AI fs=192kS/s, typical, FFT, -1dBFS


AI THD+N (dB)			
Sample rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	-88	-88	-73
Note：[1] Differential input，AC coupling，input signal 1kHz sine wave，-1dBFS(0.89Vrms) [2]Bandwidth：20Hz-80kHz			

AI THD (dB)			
Sample rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	-98	-99	-87
Note：[1]Differential input，AC coupling，input signal 1kHz sine wave，-1dBF (0.89Vrms) [2]Bandwidth：20Hz-80kHz			

AI cross talk (dB)			
Sample rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	-90	-94	-90
Note：[1] Differential input，AC coupling，input signal 1kHz sine wave，-1dBFS (0.89Vrms) ，no-signal port's short-circuit source impedance is less than 50Ω [2] Bandwidth 20Hz-20kHz			

Analog output channel characteristic parameters

AO channel parameters	
DAC accuracy	24 Bit
Sampling rate range	1kHz~192kHz
Output voltage range	+/- 2Vrms
Gain error	+/- 0.03dB
Output impedance	Positive input terminal to negative input terminal：1ohm
Flatness	20Hz~20kHz ， less than +/- 0.2dB 10Hz~60KHz ， less than +/- 1dB

AO idle channel noise (uVrms)			
Sampling rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	4	6	10
Note：[1] Collecting device impedance is more than 1Mohm ， operating temperature 23±5℃ [2] Linear weighting			

AO signal noise ratio (dB)			
Sampling Rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Minimum	110	108	102
Note：[1] Differential output，AC coupling，output signal 1kHz sine wave，0dBFS (2Vrms)			

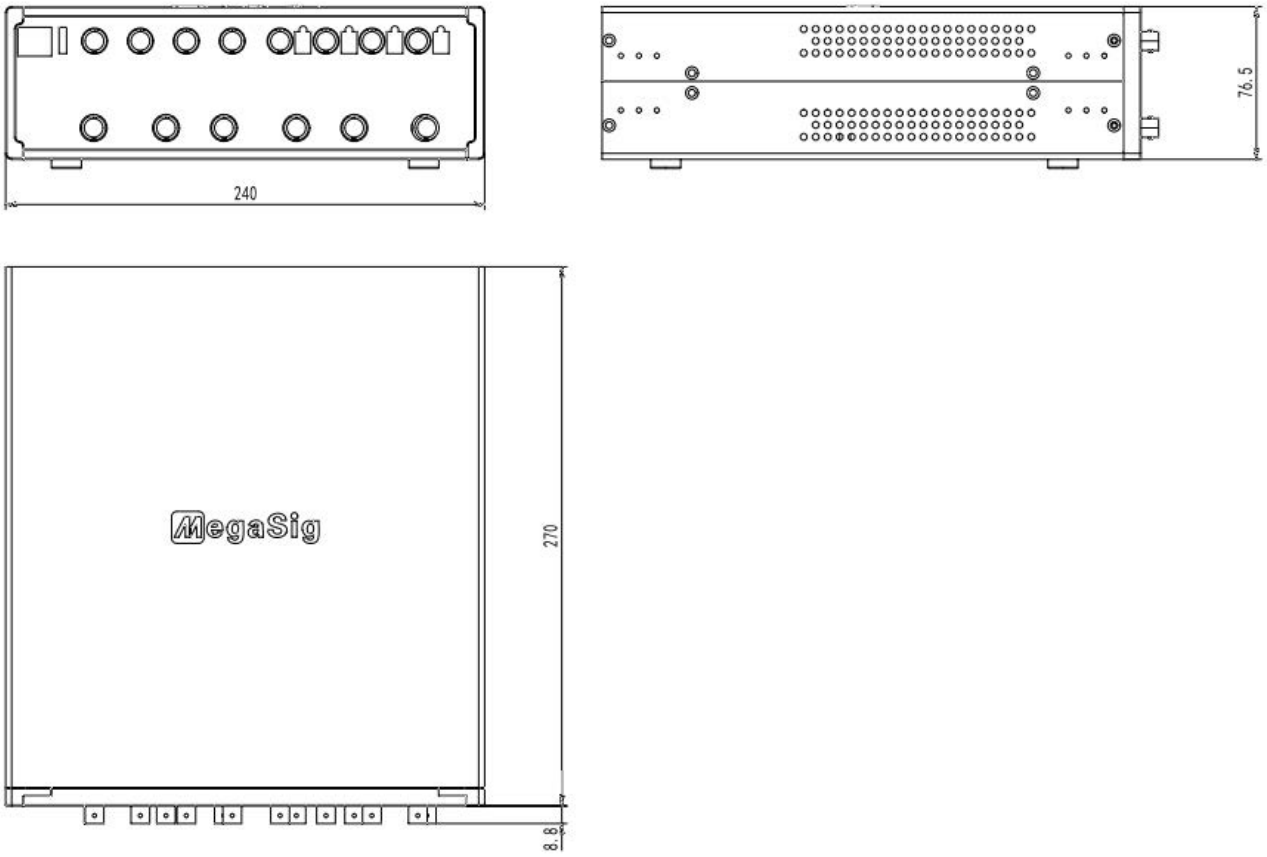
AO dynamic range (dB)			
Sampling rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Minimum	90	90	90
Note：[1] Differential output，AC coupling，output signal 1kHz sine wave，-1dBFS (1.78Vrms) [2] Bandwidth 20Hz-80kHz			

AO THD+N (dB)			
Sampling rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	-89	-88	-88
Note：[1] Differential output，AC coupling，output signal 1kHz sine wave，-1dBFS (1.78Vrms) [2] Bandwidth 20Hz-80kHz			

AO THD (dB)			
Sampling rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	-90	-90	-91
Note：[1] Differential output，AC coupling，output signal 1kHz sine wave，-1dBFS (1.78Vrms) [2] Bandwidth 20Hz-80kHz			

AO cross talk (dB)			
Sampling rate	fs=48kS/s	fs=96kS/s	fs=192kS/s
Maximum	-100	-100	-100
Note：[1] Differential output，AC coupling，output signal 1kHz sine wave，-1dBFS (1.78Vrms)			

Dimensional unit: mm



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