

USB-61901/61902/61903

8/16 通道 16 位 250 kS/s 多功能 USB 数据采集模块



USB-61901/61902/61903



简介

简仪科技全新系列USB接口多功能数据采集模块USB-61901/61902/61903，具有16位高分辨率，最高可达250kS/s模拟输入采样频率，提供高性能的A/D和D/A转换，且更新频率达1MS/s模拟输出，其中USB-61903模块内建高精度转换电阻，可直接量测0至20mA的电流信号。

简仪科技USB-61900系列，强调兼顾硬件与软件上即插即用的功能，着重于可便携式的便利性，采用两组20-针可拆式接头，让使用者更容易配线。可锁固的USB连接线，对于与机台设备连接的使用者，可提高USB接线时的强固性。同时提供多样化弹性机构底座设计，除一般可便携式应用外，也可用于导轨固定或壁挂。另外，可自定义装置ID的设计，便于使用者辨识目前操作中的USB DAQ装置。

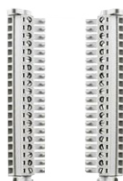
引脚定义

特点

- USB2.0高速传输
 - USB总线供电
 - 16通道250 kS/s电压输入(USB-61901/61902)
 - 8通道250 kS/s电流输入(USB-61903)
 - 2通道1 MS/s电压输出(USB-61902/61903)
 - 模拟和数字信号触发
 - 可拆卸的螺丝端子
 - 可锁式USB接头设计，确保连接稳固
- 操作系统
- Windows 7/8x64/x86
 - Linux
 - Max OS X

标准配件

- 一对 20- 针可拆式接头
- 2 米长可锁式 Tpye A 至 mini-B USB 线缆



- 多功能底座

- 导轨安装套件



USB-61901/61902

ECLK	20	40	AOTG*
NC	19	39	AITG
NC	18	38	GPI7
GPO3	17	37	GPI6
GPO2	16	36	GPI5
GPO1	15	35	GPI4
GPO0	14	34	GPI3
DGND	13	33	GPI2
AGND	12	32	GPI1
*AO1	11	31	GPI0
*AO0	10	30	DGND
AGND	9	23	AISE
AI7(AIL3)	8	28	AI15(AIL7)
AI6(AIH3)	7	27	AI14(AIH7)
AI5(AIL2)	6	26	AI13(AIL6)
AI4(AIH2)	5	25	AI12(AIH6)
AI3(AIL1)	4	24	AI11(AIL5)
AI2(AIH1)	3	23	AI10(AIH5)
AI1(AIL0)	2	22	AI9(AIL4)
AI0(AIH0)	1	21	AI8(AIH4)

USB-61903

ECLK	20	40	AOTG
NC	19	39	AITG
NC	18	38	GPI7
GPO3	17	37	GPI6
GPO2	16	36	GPI5
GPO1	15	35	GPI4
GPO0	14	34	GPI3
DGND	13	33	GPI2
AGND	12	32	GPI1
AO1	11	31	GPI0
AO0	10	30	DGND
AGND	9	23	AISE
CI3-	8	28	CI7-
CI3+	7	27	CI7+
CI2-	6	26	CI6-
CI2+	5	25	CI6+
CI1-	4	24	CI5-
CI1+	3	23	CI5+
CI0-	2	22	CI4-
CI0+	1	21	CI4+

* 不适用于 USB-61901

订购指南

- USB-61901
16 通道 16 位 250kS/s 模拟输入 USB 数据采集模块
- USB-61902
16 通道 16 位 250kS/s 多功能 USB 数据采集模块
- USB-61903
8 通道 16 位电流输入多功能 USB 数据采集模块

可选配件

- RST-20P
一对 20- 针可拆式接头
- USB-2M-L
2 米长可锁式 Tpye A 至 mini-B USB 线缆

Specifications

Model Name	USB-61901	USB-61902	USB-61903
Analog Input			
Resolution	16-Bit		
Number of channels	16 SE / 8 Pseudo-diff, voltage input	8 Current inputs	
Maximum sampling rate (single channel)	250 kS/s(Multiplexing, channel-gain-queue)		
Programmable gain	1, 5, 10, 50	1	
Input range (Voltage)	$\pm 10\text{ V}, \pm 2\text{ V}, \pm 1\text{ V}, \pm 200\text{ mV}$		N/A
Input range (Current)	N/A		0-20 mA
Offset error	$\pm 0.1\text{ mV (gain=1)}$		$\pm 0.01\text{ mA (typical)}$
Gain error	$\pm 0.05\%$ of FSR (gain=1)		$\pm 0.05\%$ of FSR (typical)
-3dB small signal bandwidth (gain=1)	600 kHz		
CMRR (gain=1)	90 dB	-	
SFDR (gain=1)	108 dB	-	
SINAD (gain=1)	89 dB	-	
THD (gain=1)	102 dB	-	
SNR (gain=1)	89 dB	-	
ENOB (gain=1)	14.5-Bit	-	
FIFO buffer size	4 k samples		
Trigger sources	Software, external digital, analog trigger (from one of analog input channels)		
Trigger mode	Post trigger, delay trigger, retrigger, gate trigger		
External conversion source	Yes (up to 250 kS/s)		
Input coupling	DC		
Overvoltage protection	Continuous $\pm 24\text{ V}$		
Input impedance	High impedance $> 1\text{ G}\Omega$	249.5 Ω (input resistor)	
Data transfer	Programmed I/O, continuous (USB bulk transfer mode)		
Analog Output			
Number of channels	N/A	2 voltage outputs	
Resolution	-	16-Bit	
Maximum update rate	-	1 MS/s (simultaneous update)	
Output range	-	$\pm 10\text{ V}$	
Offset error	-	$\pm 0.15\text{ mV}$	
Gain error	-	$\pm 0.05\%$ of FSR	
INL	-	$\leq 1\text{ LSB}$	
DNL	-	$< 1\text{ LSB}$	
Output driving capacity	-	$\pm 5\text{ mA}$	
Slew rate	-	2.2 V/ μs	
Settling time (0.1% of Full scale)	-	26 μs	
Rising time	-	6 μs	
Falling time	-	6 μs	
FIFO	-	10 k samples (2-CH sharing)	
Output mode	-	Programmed I/O, continuous (USB bulk transfer mode)	
Function I/O			
Mode*	Digital I/O, general timer/counter, pulse generation		
Digital I/O	8 DI / 4 DO (TTL level)		
General timer/counter	Two 32-Bit, base clock: 80 MHz, external to 10 MHz		
Pulse generation	Two PWM outputs (Modulation frequency: 0.01 Hz to 5 MHz; Duty cycle: 1%-99%)		
General Specifications			
Interface	USB 2.0 high speed, mini-USB connector		
I/O connector	Two 20-pin screw terminals		
Operating temperature	0 to 55°C (32°F to 131°F)		
Storage temperature	-20 to 70°C (-4°F to 158°F)		
Relative humidity	5 to 95% non-condensing		
Power requirements	5V@400 mA (USB bus powered)		
Dimensions	114 mm (H) x 156.5 mm (L) x 41.3 mm (W) (4.5" x 6.16" x 1.63") (without connector and stand)		

Note: The function I/O share the same I/O pins. Only one of these modes can be selected.