

Micro Spectrometer

ATP2500

Features

Concave grating
 Spectral range: 185nm-1100nm
 Signal acquisition frame rate: ≥ 800 fps
 Detector: Linear low noise cmos
 Detector pixels: 2048 pixels
 Spectral resolution: 0.2-3 nm
 Light path structure: Concave grating
 Integration time: 0.2ms-60s
 Power supply: Dc 5v
 Adc: 16bit, 15msps
 Optical fiber input interface: Sma905
 Data output interface: Usb2.0 or uart
 20-pin dual-row programmable external expansion interface

Application

Industrial measurement sensors
 LED spectrophotometer
 Fluorescence photometer
 Biochemical analyzer
 Transmittance detection
 Reflectivity detection
 UV gas analyzer

Description

ATP2500 high-speed micro spectrometer is an ultra-high frame rate, low-noise 、Acoustic, high performance, high speed, miniature fiber optic spectrometer. ATP2500 Use ultra-low stray light concave grating light path to achieve extremely low stray light, Yes, its sensor is a 2048-pixel CCD, and the CCD signal acquisition frame rate can Reaching 0.8Kfps, the maximum spectral response range is 185nm-1100nm.

ATP2500 due to its high A/D converter frequency and high-speed data transmission. It is very suitable for rapid detection. Spectrometer coefficients of ATP2500, such as The wavelength calibration coefficients and linear coefficients are all programmed into the onboard memory chip, improving the stability of the system.

It outputs spectral data via USB 2.0 or RS232 interface to PC. The ATP2500 operates on +5VDC power supplied by USB.

Model	Detector pixels	Detector cooled
ATP2500	2048 pixels	no



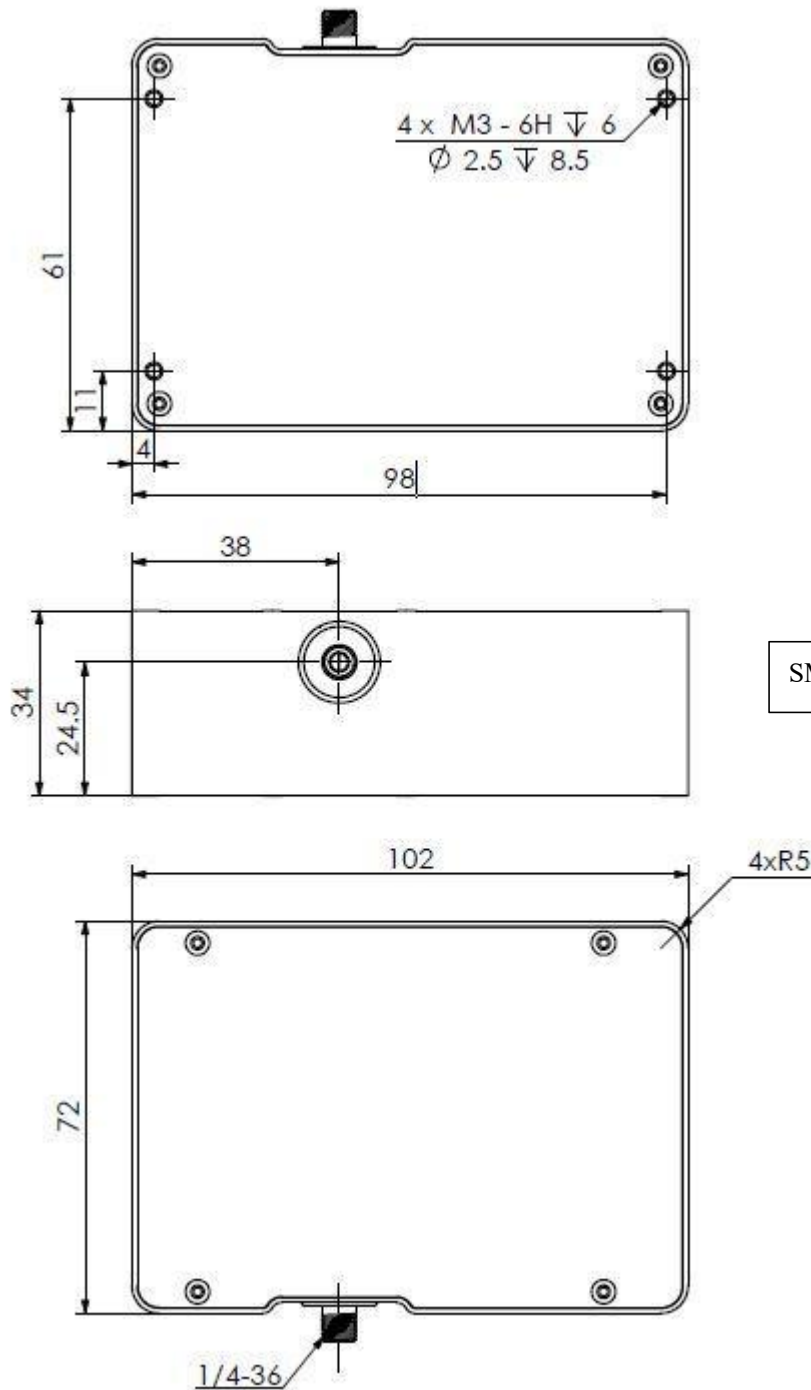
1. Parameter

Detector	
Type	Linear image sensor CMOS
Maximum spectral response range	185nm-1100nm
pixels	2048
Pixel size	14 μ m \times 200 μ m
Effective photosensitive area length	28.672 mm
Sensitivity	1300 V/(lx-s)
Dark noise	13 RMS @13* $^{\circ}$ C
Optical parameters	
Wavelength range	185nm-1100nm
Optical resolution	0.1-3 nm
Signal-to-noise ratio	>450:1
Dynamic range	8.5x 10 ² ,2000:1
Working temperature	-25-50 $^{\circ}$ C
Working humidity	<90%RH
Optical path parameters	
Optical design	Concave grating light path
Incident slit width	50 μ m,other sizes can be customized
Incident light interface	SMA905 optical fiber interface or free space optical path
Electrical parameters	
Integration time	0.2 ms -60 s
Data output interface	USB 2.0 (High speed)
A D C bit	16 bit
Power supply	DC4.5 to 5.5V(type @5V
Working current	370mA
Storage temperature	-30 $^{\circ}$ Cto+70 $^{\circ}$ C
Operating temperature	-25 $^{\circ}$ Cto+50 $^{\circ}$ C
Physical parameters	
Dimensions	102 \times 72 \times 34 mm ³
Weight	0.2 kg

2、Physical Map



3、Mechanical Structure



Fixing space: 4 M3 screw holes

SMA905 optical fiber standard interface

ATP2500 Dimensions

4、Electrical Interface

Table 1 Electrical Characteristics

Parameter	Min	TyP	Max	Unit
Power Supply		5		
Operating voltage range	4.5		5.5	V
Operating current		170		mA
Logic Inputs(3.3V LVTTL Five-volt tolerant)				
High level input voltage	1.7		3.6	V
Low level input voltage	0.3		1.0	V
Logic Output(3.3V LVTTL)				
High level output voltage	2.4			V
Low level output voltage			0.4	V

The module is equipped with a 20-pin male angled box header(2x10, 2.00 mm pitch) and USB2.0 B type interface. The 20-pin connector is a Samtec part # STMM-110-02-L-D-RA connector. The mate to this is a Samtec part # TCSD-10-D-XX.XX-01-N.

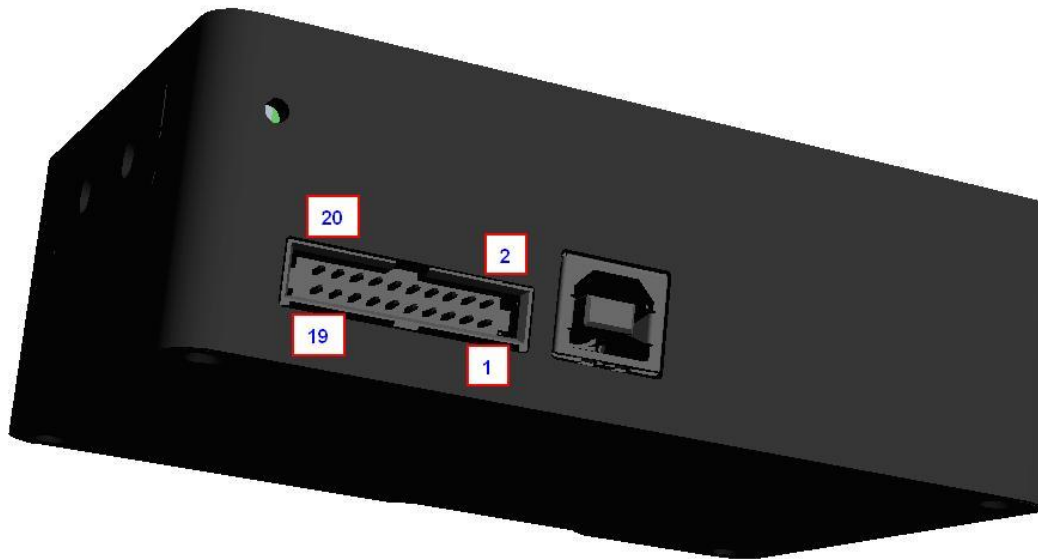


Table 2 Electrical Pin-Out

Pim#	Description	NO	Function Description
1	VCC	/	Power Supply,5V±0.5,
2	GND	/	Ground
3	RS232_TX	Output	RS232 Transmit signal
4	RS232_RX	Input	RS232 Receive signal
5	Lamp_En	Output	LVTTL output the lamp enable signal
6	Continuous_strobe	Output	LVTTL output the continues strobe signal
7	Ext_trigger_in	Input	LVTTL input the trigger signal
8	Single_strobe	Output	LVTTL output the single strobe signal
9	SPI_SCK	Output	The SPI Clock signal for communications to other SPI peripherals
10	SPI_MOS	Output	The SPI Master Out Slave In (MOSI)signal for communications to other SPI peripherals
11	SP_MISO	Input	The SPI Master In Slave Out (MISO)signal for communications to other SPI peripherals
12	SPI_CS	Output	The SPI Chip/Device Select signal for communications to other SPI peripherals
13	GPIO0	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic
14	GPIO1	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic
15	GPIO2	Input IOupu	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic
16	GPIO3	Input IOupu	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic
17	GPIO4	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic
18	GPIO5	Input IOupu	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic
19	GPIO6	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic
20	GPIO7	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs LVTTL Logic