Ultra-mini fiber spectrometer

Features

- Wavelength range：200-1100 nm；customized
- Light path: C-T;
- Detector: 1024 pixels CMOS;
- Integration time: 1ms-256s
- Power: 5V DC @<200mA;
- Power interface: MicroUSB or interface
- ADC: 16 bit;
- ADC sample rate: 1MHz;
- Light input: SM905 or free space
- Data output: USB2.0 (high speed) or UART;
- 10 pin connect (2x5, 1.27mm pitch)

Application

- LED sorting；
- Colour measurement
- Micro-volumn spectrometer
- UV gas measurement
- Spectrum analysis, radiometer
- Fluorescence;
- Reflection, transmission measurement;

Description

ATP1000 uses a 1500-pixel linear CMOS and can be used to the 200-1100nm wavelength range. The exposure time of the CMOS detector can be controlled within 1ms. Customers can precisely control the signal-to-noise ratio of the spectrometer.

The ATP1000 is highly reliable, ultra-high-speed, low-cost, and cost-effective, and can be adapted to miniature spectrometers for various environmental applications such as on-line testing.

ATP1000 is ideal for UV, visible, and near-infrared spectroscopy applications. Different slits, gratings, mirrors, and filters are available. You can configure spectrometers for different applications depending on your requirements. Spectral ranges from 200 nm Up to 1100nm, the spectral resolution can be selected from 0.5 to 5.0nm, and OPT Spectrum can also provide OEM customers with customized options.

The ATP1000 can receive optical fiber input or free-space input light from the SMA905 interface, measure it according to the set integration time, and output the measurement result via USB2.0 (high speed) or UART.
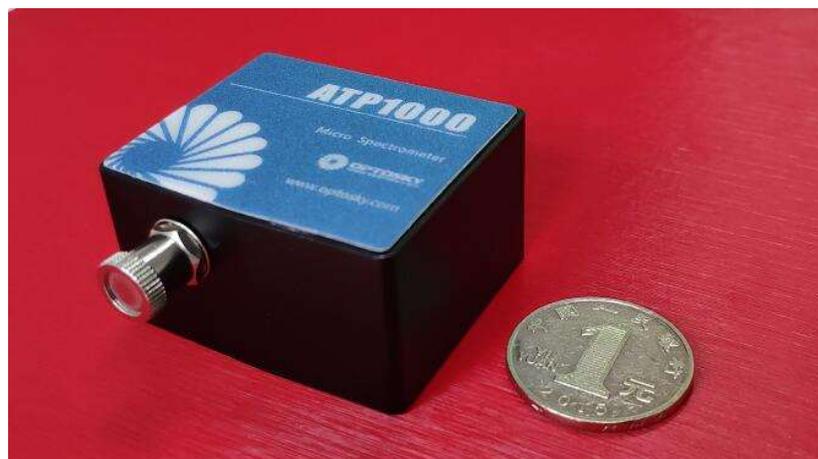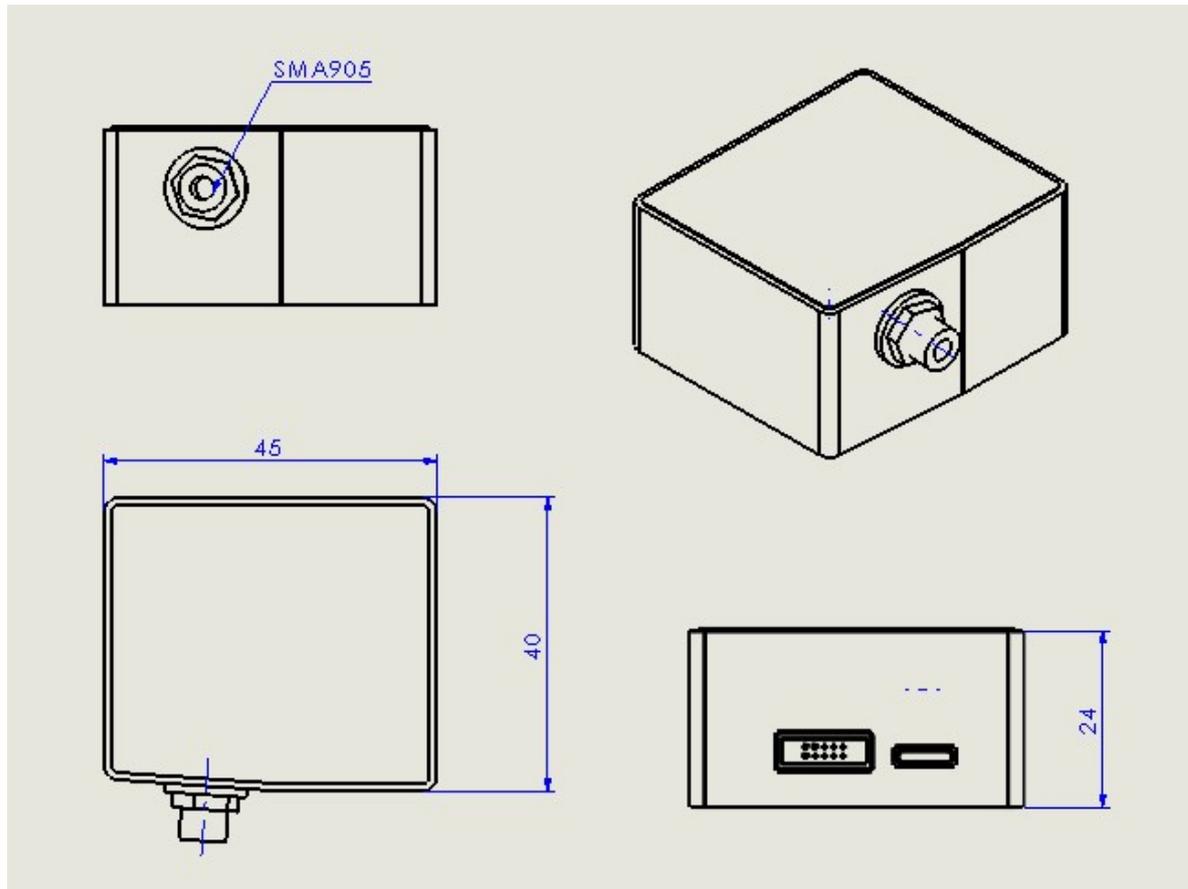
1. Parameters

Detector	
Type	Linear CMOS
Response range	200-1100 nm
Active pixel	1024
Pixel size	7.8 ×125 μm
Full well	~100 ke-
Sensitive	6.74 V/lx•s
Dark noise	0.8 mVrms
Optical	
Spectral range	200-400nm, 350-810nm, 200-850nm, 200-1000 nm or customized
Resolution	0.5-5 nm (Depend on slit, grating)
SNR	>300:1
Dynamic range	800: 1
Working temperature	0-40 ℃
Working humidity	< 90%RH
Light path	
Light path	f/4 C-T
Focus length	40 mm for incidence / 60 mm for output
Slit	5、10、25、50、100、150、200 μm optional or customized
Light input	SMA905 fiber interface or free space
Electrical paramters	
Integration time	1 ms - 130 second
Data output interface	USB 2.0 or UART
ADC	16 bit
Power	DC4.5 to 5.5 V (type @5V)
current	<100mA
Storage temperature	-20°C to +70°C
Physical parameter	
Size	45×40×24 mm^3
Weight	60 g

2. Mechanical Diagrams

SMA905 Female Fiber interface

3. Electrical Pin-out

Table 1 Electrical Characteristics

Parameter	Min	Typ	Max	Unit
Power Supply				
Operating voltage range	4.5	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

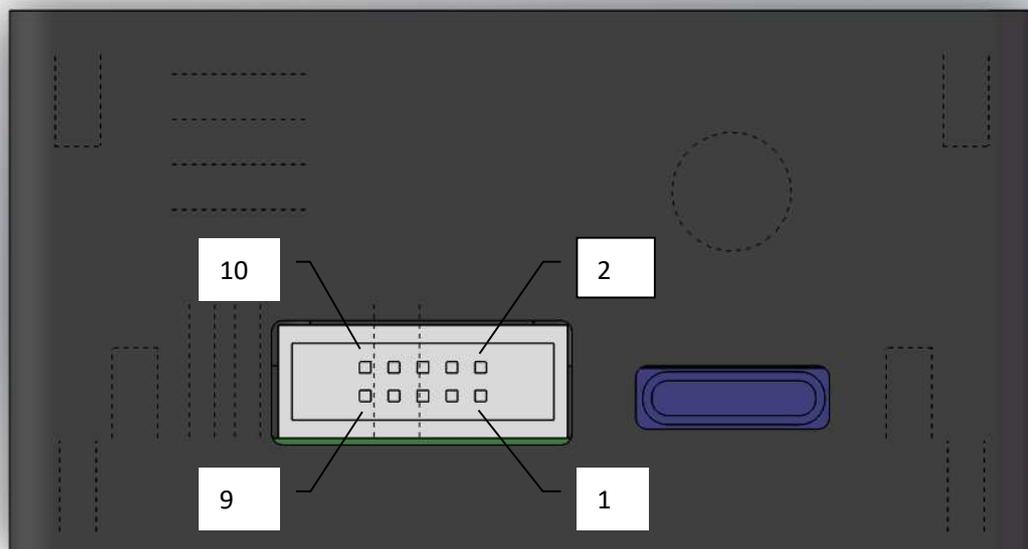The module is equipped with a 10-pin male angled box header(2x5, 1.27mm pitch) and micro USB type interface.

Table 2 Electrical Pin-Out

Pin#	Description	I/O	Function Description
1	NC	/	Not Connect
2	NC	/	Not Connect
3	Remained		Undefined

4	Remained		Undefined
5	Remained		Undefined
6	Remained		Undefined
7	RX	Input	UART Receive signal
8	TX	Output	UART Transmit signal
9	VCC	/	Power Supply, 5V±0.5,@500mA
10	GND	/	Ground

订购指南:

PN	Spectrum range		Slit	
ATP1000	Start wavelength	End wavelength	Slit width	

For example:

What to buy ATP1000, spectral region: 200-850nm, slit width is 50 um, then the order no is:

ATP1000-200-850-050

Order No	Spectral region	Slit	
ATP1000-200-400-###	200~400	10　μm	
ATP1000-200-850-###	200~850	25　μm	
ATP1000-200-1100-###	200~1000	50　μm	
ATP1000-340-850-###	340~850	100 μm	
ATP1000-600-1100-###	600~1100	200 μm	
ATP1000-###-###-###	Other	Other:_____μm	