



**DATASHEET
EOC-SI-8600
High Performance NIR Spectrometer**

Description:

The EOC-SI-8600 is a mini fiber optic spectrometer. It uses the InGaAs linear detector of 256 pixels, integrated design and reliable CCD installation and heat sink method, and offers improved measurement reliability. Simultaneously, the EOC-SI-8600 has specially customized ultra-low noise CCD signal-related double sampling processing circuit, which is the best level in the industry.

EOC-SI-8600 accepts SMA905 fiber input or free-space light and outputs measured spectral data via a Type-c or UART port.

EOC-SI-8600 requires only a 5V DC power supply and can be powered directly from the USB, making it easy to integrate.

Feature:

- Maximum working spectral range : 900-1700nm (max.interval 750nm)
- Resolution: Connected with slit size;
- Integration: 100 us- 22s
- CCD : 256×1 pixel, 25×250 um
- Power supply : DC 5V;
- ADC : 16bits;
- Scanning rate: 1MHz;
- Interface: SM905 or free;
- USB: Type-c or UART;
- 10 pins port;

Application:

- FBGA fiber modem;
- Laser wavelength monitoring;
- Raman spectrometer
- Food sorting;
- Waste water detection;
- Detection of moisture, protein, fat and fiber in crops;
- Paper sorting;
- Online monitoring of Chinese medicine production;
- Solar panel inspection;

MODEL	SPECIFICATION
EOC-SI-8600	Universal spectrometer
EOC-SI-8600FBG-C	Signal Demodulation for Fiber Sensors (C Band)
EOC-SI-8600FBG-L	Signal Demodulation for Fiber Sensors (L-Band)
EOC-SI-8600FBG-CL	Signal demodulation for fiber optic sensors (C+L band)
EOC-SI-8600RM	Dedicated to Raman spectrometer

1. PARAMETER

DETECTOR	
Model	Linear InGaAs CCD
Range	900-1700 nm (max.interval 750nm)
Pixel	256
Size	25 μ m \times 250 μ m
Full Range	13.75 Me-
Dynamic	14667
Sensitivity	160 nV/ e-
PERFORMANCE	
Wavelength	900-1700nm, Customized (max.interval 750nm)
Resolution	4-20 nm (Depend on the slit, the actual spectral range)
Wavelength resolution	20pm-100pm
SNR	>2255:1
Working T	-10-50 °C
Working H	< 90%RH
OPTICAL	
Design	f/4 cross-symmetric C-T
Slit size	5、10、25、50、100、150、200、300 μ m (Customized)
Interface	SMA905 fiber optic interface, free
ELECTRICAL	
Integration	0.1ms-22s
Data Output	USB Type-c or UART
ADC	16 bits
Power Supply	5V DC \pm 5%
Current	<0.8 A
Storage T	-20°C to +70°C
Operating T	-10°C to +50°C
Physical	
Size	102 \times 57.5 \times 29mm
Weight	280g

2. Electrical Pin-out

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,5Vcompatible)				
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, 2.00 mm pitch) and Type-c type interface. The 10-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.



Figure 1: Spectrometer Side View

Table 2 Electrical Pin-Out

Pin#	Description	I/O	Function Description
1	VCC	/	Power Supply, 5V±0.5,
2	VCC	/	Ground
3	GND	/	Ground
4	GND	/	Ground
5	SPI_CLK	Output	LVTTL output
6	SPI_MOS	Output	LVTTL output
7	SPI_MISO	Input	LVTTL Input
8	SPI_CS	Output	LVTTL Output
9	UART_TX	Output	LVTTL Output
10	UART_RX	Input	LVTTL Input

3. Dimensions and installation structure data

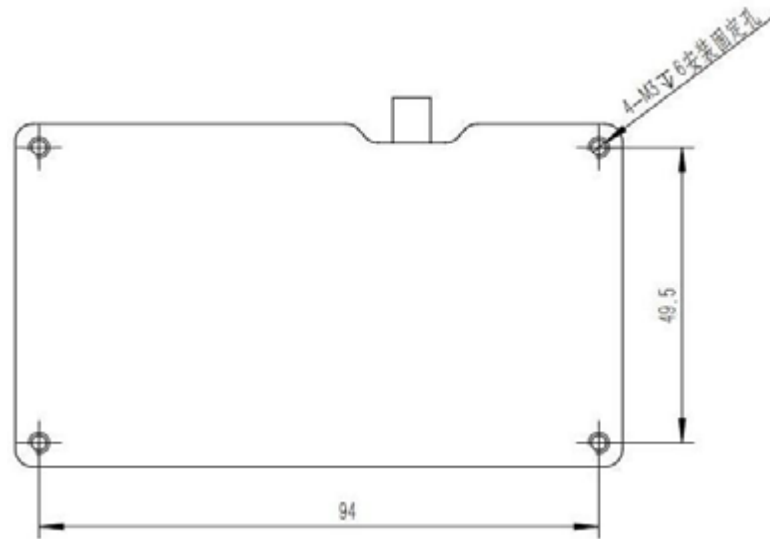


Figure 2: Mechanical Dimension Drawing (Top view)

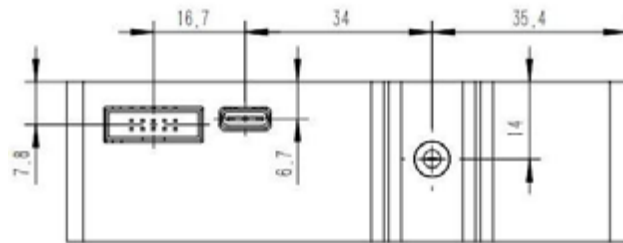


Figure 3: Mechanical Dimension Drawing (Horizontal view)

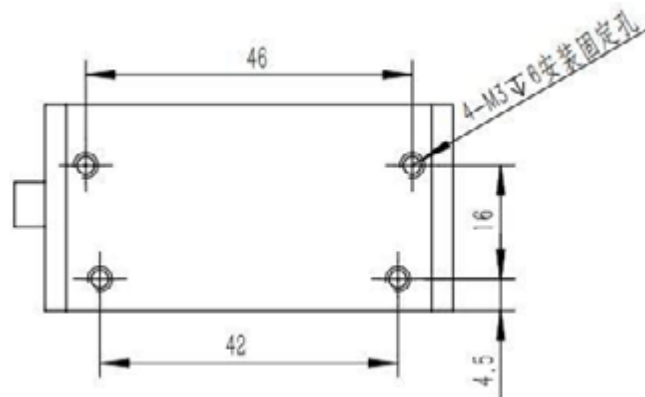
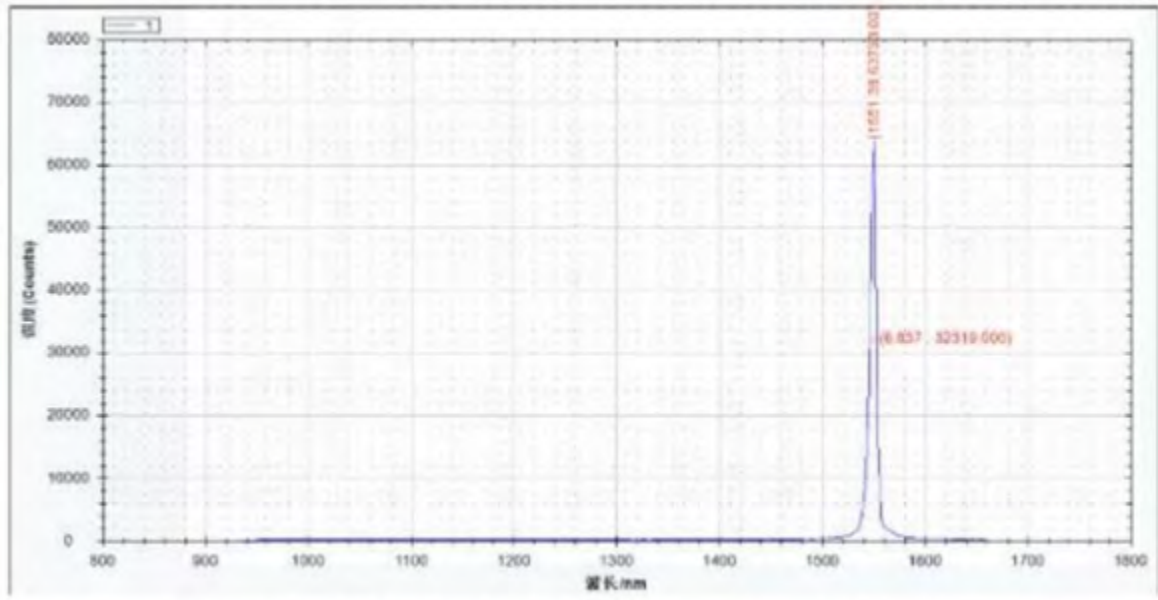


Figure 4 Mechanical Dimension Drawing (Side view)

(4 holes are fixing holes for mounting and fixing.)

4. ORDERING GUIDE

Model	EOC-SI-8600	EOC-SI-8600FBG-C	EOC-SI-8600FBG-L	EOC-SI-8600FBG-CL	EOC-SI-8600 RM
Description	Universal spectrometer	Signal Demodulation for Fiber Sensors (C Band)	Signal Demodulation for Fiber Sensors (L-Band)	Signal demodulation for fiber optic sensors (C+L band)	Dedicated to Raman spectrometer
Wavelength Range	900-1700 nm Customized (max. interval 750nm)	1520-1570 nm	1560nm-1630 nm	1510 - 1600 nm	200-2600 cm-1
Resolution	0.1-10nm	20 pm	20 pm	40 pm	15 cm-1
Detector Type	Linear InGaAs				
Slit Size	5、15、25、50、100、200、300μm, Customized				



Spectra measured by EOC-SI-8600, 940-1660nm, optical resolution 6.84nm