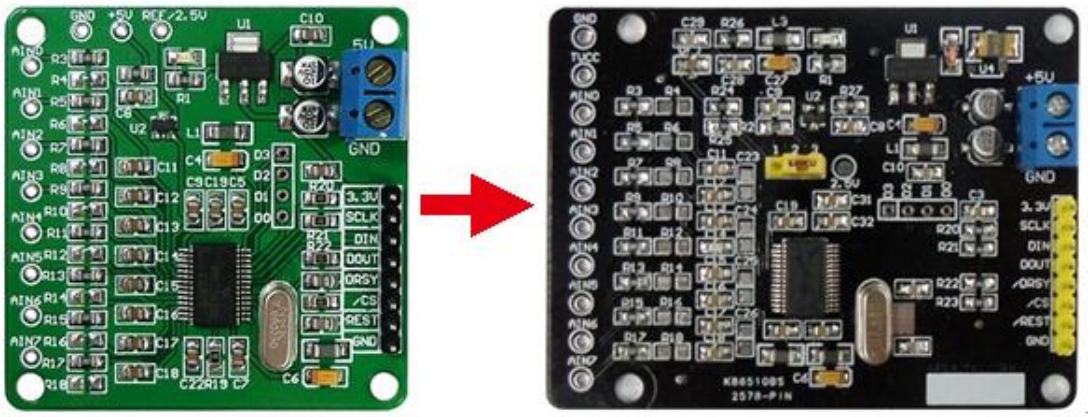
The new ADS1256 module instruction manual - a must-see before use

1. Module Specifications

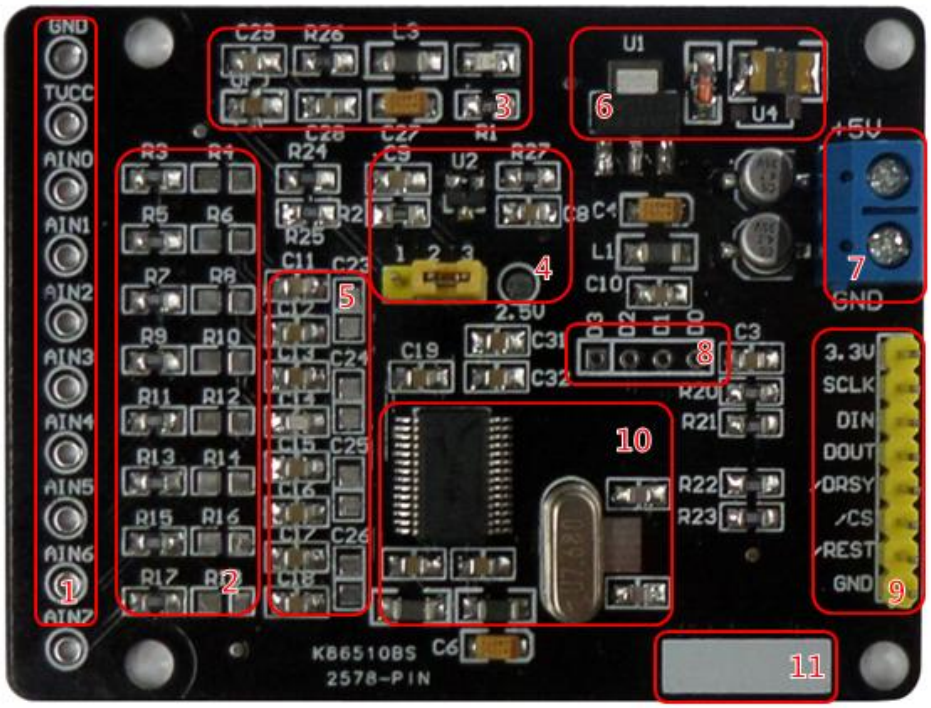
Power supply	DC5V ± 10%
Operating temperature	-20-70 ° C
Power	Less than 0.25W
Input voltage range	7 range of options, the maximum individual 0-5V, or Differential -5V --- + 5V
Acquisition Rate	2.5 --- 30,000 times per second, the rate can be set
Input channel	8 individual input channel can also be set up 4 sets of differential input
Internal amplifier	1-64 times optional
Effective acquisition accuracy	Stable 23 @ 2.5sps namely 1/8388608
Linearity	± 0.001%
Internal current source	0.5uA --- 10uA be set
External reference	Onboard 2.5V reference or excitation filter
Communication	Standard SPI communication, 3.3V level

2. Module Upgrade Note



- Use special chips, increase supply overvoltage, overcurrent, anti-reverse protection.
- Increase the sensor power supply interface, taking into account the acquisition bridge module often pull / pressure sensors, electrical resistive temperature sensors, module adds π type LC filter and EMI filter circuit, external provide incentives cleaner power.
- Select the port to add external precision, the reference voltage selectable in two ways
- Considering the module module is often used for differential voltage acquisition, increase the differential filter circuit.

3. Module Introduction



1) AIN0 --- AIN7 collection of eight analog voltage inputs, can be programmed settings for individual input mode or differential input mode. Default input module voltage range -5V --- + 5V. TVCC point excitation source + 5V outputs, can be power supply for external sensors.

2) Analog input current limiting, attenuation network. But with odd-numbered resistance, and capacitor form an RC low-pass filter circuit numeral 5, the default by frequency rate 300HZ. When the even-numbered resistance welding to form attenuation network. can for the acquisition of more than 5V voltage signal.

3) πtype LC filter network and EMI filter circuit. Murata EMI Filter Selection device 

, The price is several times the ordinary capacitance. The main part of the circuit to function is to provide a 5V external power supply filtering process, as far as possible the filtered power supply ripple, to provide maximum 500mA of TVCC point excitation supply.

4) External reference. Selection of TI original REF3125 reference chip, and official push unanimously recommended circuit. External Reference Option: When 1 connection, the choice of excitation after generating 2.5V voltage reference source partial pressure, mainly used in the excitation source to use when the power sensor, the sensor provides consistent power and output. When 2, 3 connection, using a reference generated by the chip 2.5V voltage reference made major used in the ordinary voltage acquisition.

5) Filter capacitor, C11 --- C18 single-ended filter capacitor. C23 --- C26 for the poor sub-filter capacitor, when using a differential output, the proper value on this welding 0805 capacitance can be.

6) Supply overvoltage, overcurrent, anti-reverse protection, maximum protection voltage 24V, protection current 1.3A.

7) + 5V input.

8) chip programmable input and output IO ports.

9) standard SPI interface, and all 3.3V microprocessors.

10) ADS1256 chip minimize system.

11) tab.