

模块参数		
参数名称	参数值	备注
模块型号	DAC8552	
模块类型	数模转换模块	
模块供电	DC9V-24V	
模块电流	10mA (MAX)	
模块通讯协议	SPI 串行	
模块提供例程	STM32F103RBT6	
例程平台	STM32F103X-M3	KEIL5版本源码
模块输出电压范围	0-5V	
DAC分辨率位数	16位	
输出通道数	2通道独立	
模块输出接口	SMA	24小时镀盐雾抗氧化
模块输出信号	电压	DAC8552直接输出，驱动能力有限
基准电压	5V	可切换外部输入基准
电压建立时间	10uS	
DAC输出模拟带宽	100KHz	
模块特点	多种	具有输出缓冲放大器，超低交流串扰，快速建立时间
模块应用	多种	可编程电压源，仪表和控制系统，传感器激励，运动过程控制
模块重量	16g	
模块规格	45*43*12	长*宽*高-PCB尺寸
模块接口类型		SMA信号输出以及外部基准输入，DC5.5电源座子XH2.54排针数据接口

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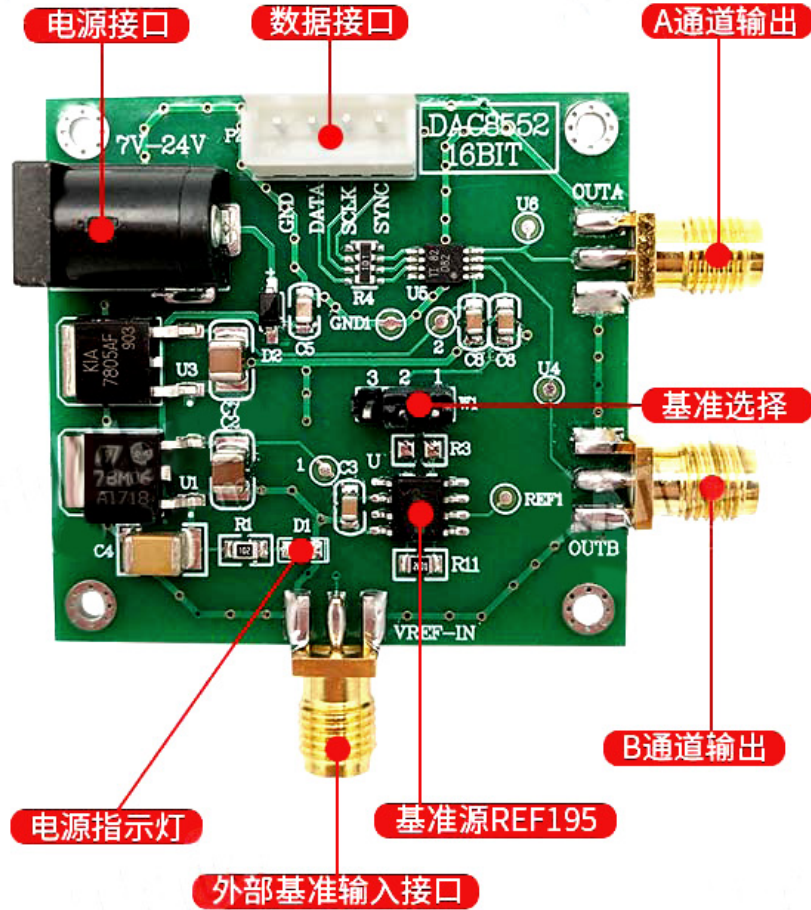
模块描述

DAC8552是一款16位，双通道，电压输出数模转换器（DAC），可提供低功耗操作和灵活的串行主机接口。允许在5V的电源范围内实现轨至轨输出摆幅。支持标准的3线串行接口，能够在VDD = 5V的情况下以高达30MHz的输入数据时钟频率工作。

DAC8552外部基准电压为5V，每个DAC通道的输出范围0-5V。还内置了上电复位电路，该电路可确保DAC输出以零电平上电并保持在那里，直到发生有效写操作为止。DAC8552提供了一种灵活的掉电功能，可通过串行接口访问该器件，从而将器件的电流消耗在5V时降至700nA。通常可用于可编程电压源，仪表和控制系统，传感器激励，运动过程控制等设备。

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模块接口图



STM32单片机管脚

本店DAC8552管脚

功能

PC9
PC10
PC11
GND



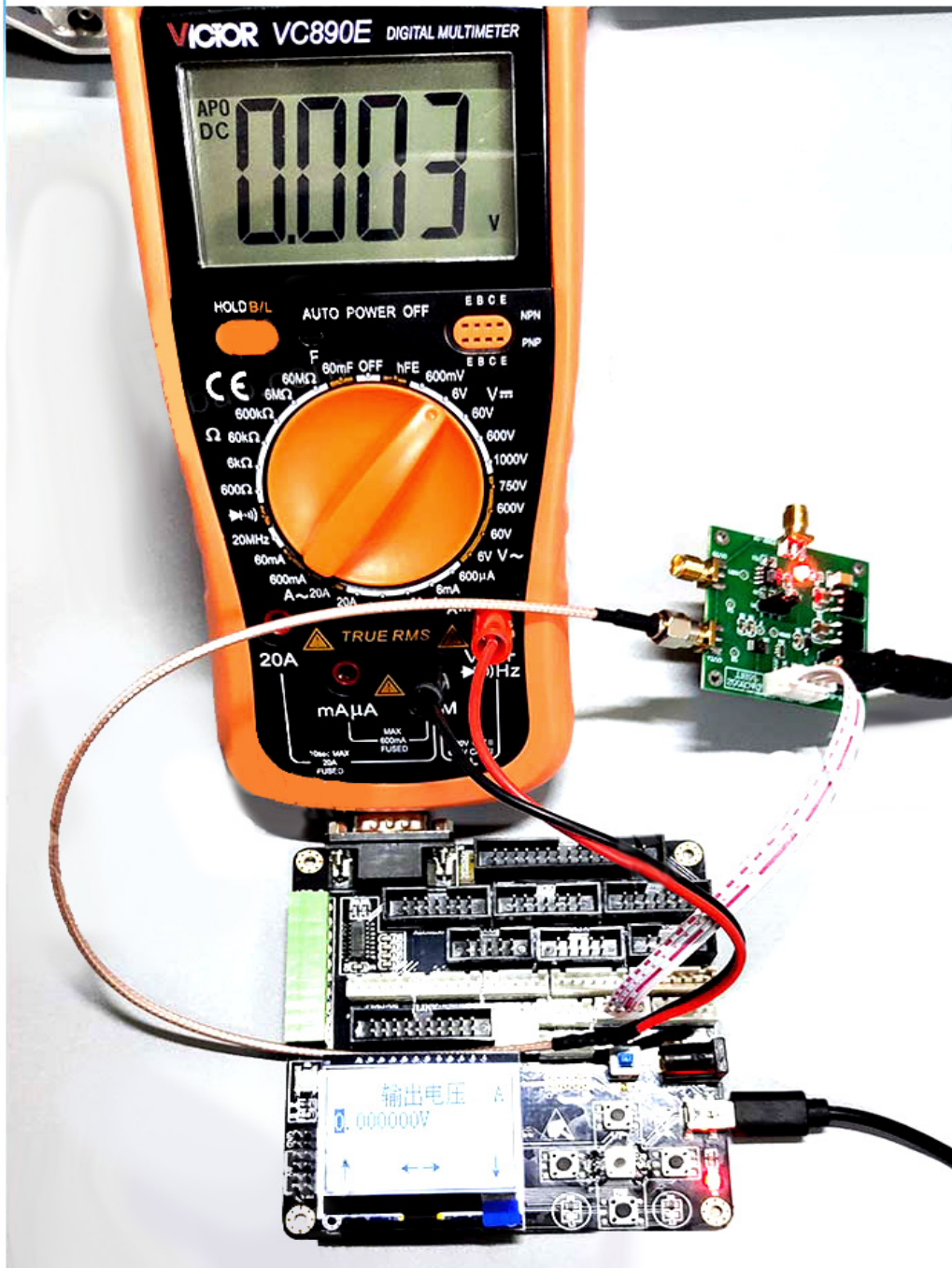
DATA
SCLK
SYNC
GND

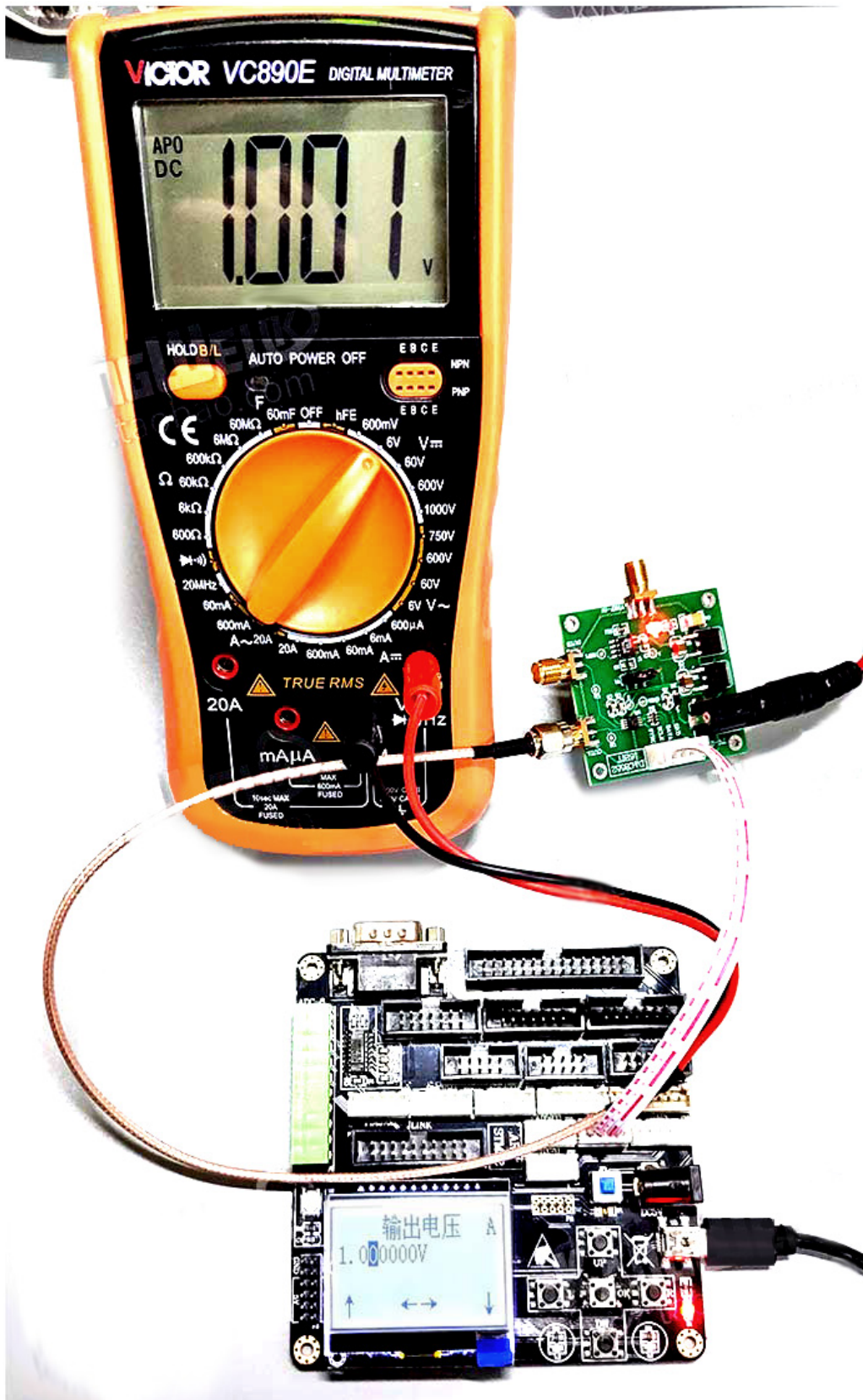
DIN(串行数据)
SCLK(串行时钟)
 $\overline{\text{SYNC}}$ (同步触发)
GND

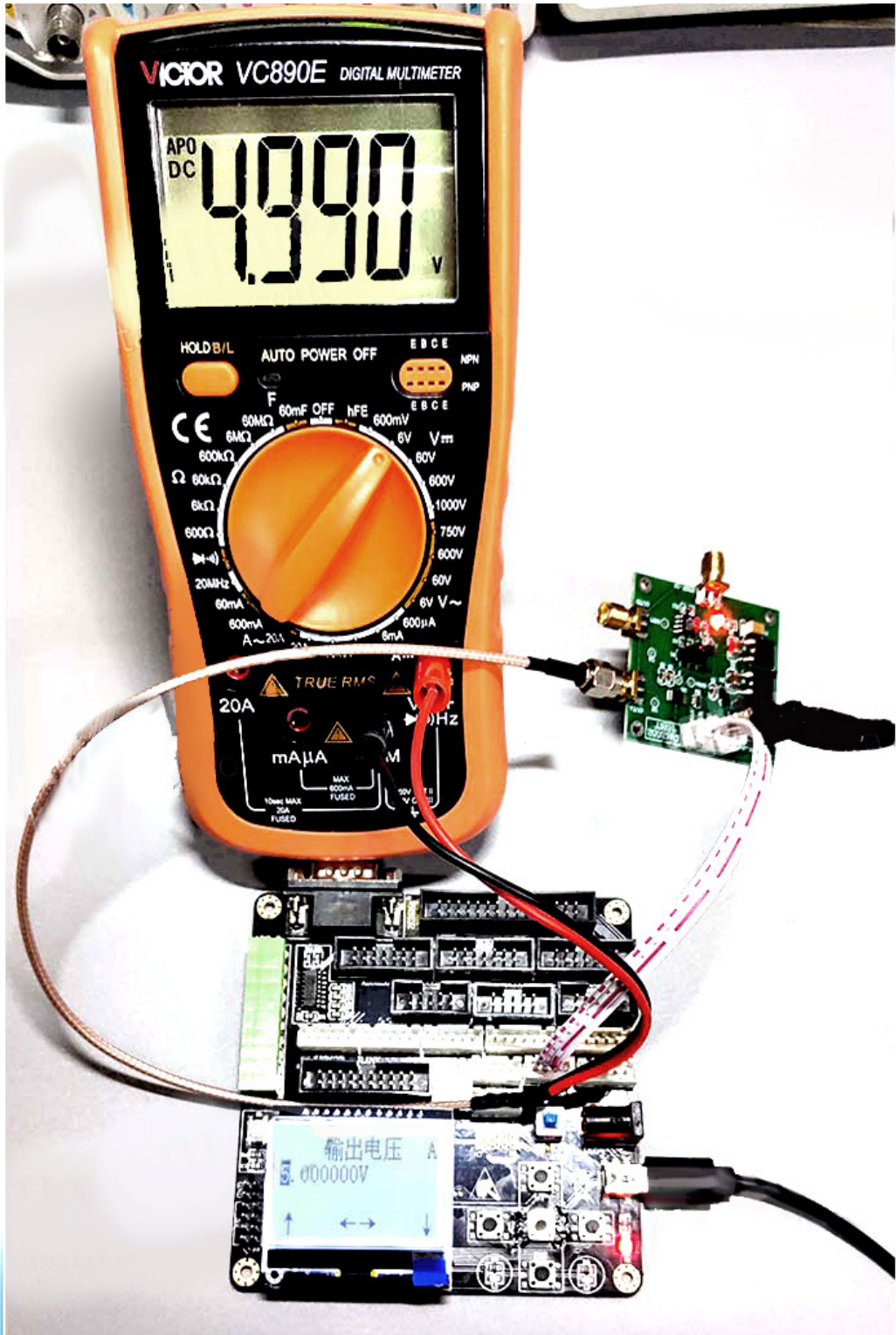
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模块使用注意事项

- (1) 模块供电电源不超过24V,电压高,模块发热量大。
- (2) 由于模块是高精度器件,为了避免不必要的干扰,建议使用线性电源供电。
- (3)输出信号线建议使用SMA对应接口。接口不匹配容易导致接触不良,劣质的线材可能导致信号衰减或者噪声过大。
- (4) 配送的代码仅为配套主控板使用,不提供单片机教程,宝贝详情展示以外的功能需要自行开发。
- (5) 如需简单测试模块功能,建议搭配本店控制板使用,正确接线后给控制板供电即可实现模拟电压输出。







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常见问题解答

Q: DAC8552能做为参考源吗? 输出抖动是多少?

A: DAC8552可以作为可编程基准源, 基准精度大部分取决于8552的基准。

Q: 模块的输出电压范围能到增大么? 精度是多少? 输出电流的能力是多少?

A: 目前模块的电路只能输出0-5V, 输出电压精度为0.1mV (电源纹波极低)。电流输出10mA以内。

Q: 用DAC8552来生成正弦波, 频率最高是多少? 可以实现两通道正弦波正交么?

A: 一般5K以内的正弦波还可以, 可以实现两通道正弦波正交, 但是需要自己编程实现哦。



Zero-Drift, Single-Supply, Rail-to-Rail Input/Output Operational Amplifiers

AD8551/AD8552/AD8554

FEATURES

- Low offset voltage: 1 μV
- Input offset drift: 0.005 $\mu\text{V}/^\circ\text{C}$
- Rail-to-rail input and output swing
- 5 V/2.7 V single-supply operation
- High gain, CMRR, PSRR: 130 dB
- Ultralow input bias current: 20 pA
- Low supply current: 700 $\mu\text{A}/\text{op amp}$
- Overload recovery time: 50 μs
- No external capacitors required

APPLICATIONS

- Temperature sensors
- Pressure sensors
- Precision current sensing
- Strain gage amplifiers
- Medical instrumentation
- Thermocouple amplifiers

GENERAL DESCRIPTION

This family of amplifiers has ultralow offset, drift, and bias current. The AD8551, AD8552, and AD8554 are single, dual, and quad amplifiers featuring rail-to-rail input and output swings. All are guaranteed to operate from 2.7 V to 5 V with a single supply.

The AD8551/AD8552/AD8554 provide the benefits previously found only in expensive auto-zeroing or chopper-stabilized amplifiers. Using Analog Devices, Inc. topology, these new zero-drift amplifiers combine low cost with high accuracy. No external capacitors are required.

With an offset voltage of only 1 μV and drift of 0.005 $\mu\text{V}/^\circ\text{C}$, the AD8551/AD8552/AD8554 are perfectly suited for applications in which error sources cannot be tolerated. Temperature, position and pressure sensors, medical equipment, and strain gage amplifiers benefit greatly from nearly zero drift over their operating temperature range. The rail-to-rail input and output swings provided by the AD8551/AD8552/AD8554 make both high-side and low-side sensing easy.

The AD8551/AD8552/AD8554 are specified for the extended industrial/automotive temperature range (-40°C to $+125^\circ\text{C}$). The AD8551 single amplifier is available in 8-lead MSOP and 8-lead narrow SOIC packages. The AD8552 dual amplifier is available in 8-lead narrow SOIC and 8-lead TSSOP surface-mount packages. The AD8554 quad is available in 14-lead narrow SOIC and 14-lead TSSOP packages.

PIN CONFIGURATIONS

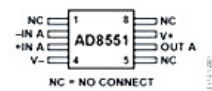


Figure 1. 8-Lead MSOP (RM Suffix)



Figure 2. 8-Lead SOIC (R Suffix)



Figure 3. 8-Lead TSSOP (RU Suffix)

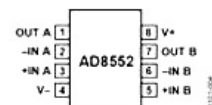


Figure 4. 8-Lead SOIC (R Suffix)



Figure 5. 14-Lead TSSOP (RU Suffix)

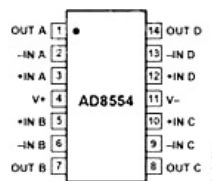


Figure 6. 14-Lead SOIC (R Suffix)

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