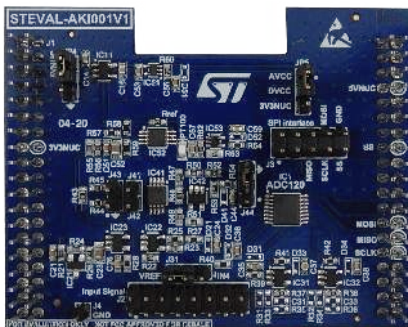


Evaluation board for the ADC120 8-channel, 50ksps to 1MSPS, 12-bit analog to digital converter



Features

- 12-bit ADC implementing SAR technology
- 50 kSPS to 1 MSPS conversion rate
- 8-to-1-channel input MUX
- 3.3 V operating supply
- SPI, serial digital output
- Very low power consumption
- RoHS compliant

Description

The [STEVAL-AKI001V1](#) evaluation board allows the user to evaluate the conversion performance of the [ADC120](#) 8-channel analog-to-digital converter designed for 50 kSPS to 1 MSPS conversion.

The board has several on-board sources like temperature sensor and strain gauge signals, and can accept external signals to allow measurement and evaluation of the [ADC120](#) conversion performance based on its successive approximation register (SAR) with internal track-and-hold cell.

The board is supplied ready-to-use in standalone mode, or it can be plugged onto a [NUCLEO-L476RG](#) board with SMT32 microcontroller, which enables further signal processing and PC communication.

Product summary	
evaluation board for ADC120 8-Channel, 50kSPS to 1MSPS, 12-bit ADC	STEVAL-AKI001V1
low-power, eight-channel pure CMOS 12-bit ADC from 50kSPS to 1MSPS	ADC120
Recommended Nucleo boards	NUCLEO-L476RG
Applications	Power Supplies and Converters

1 Schematic diagrams

Figure 1. STEVAL-AKI001V1 schematic diagram - functional blocks

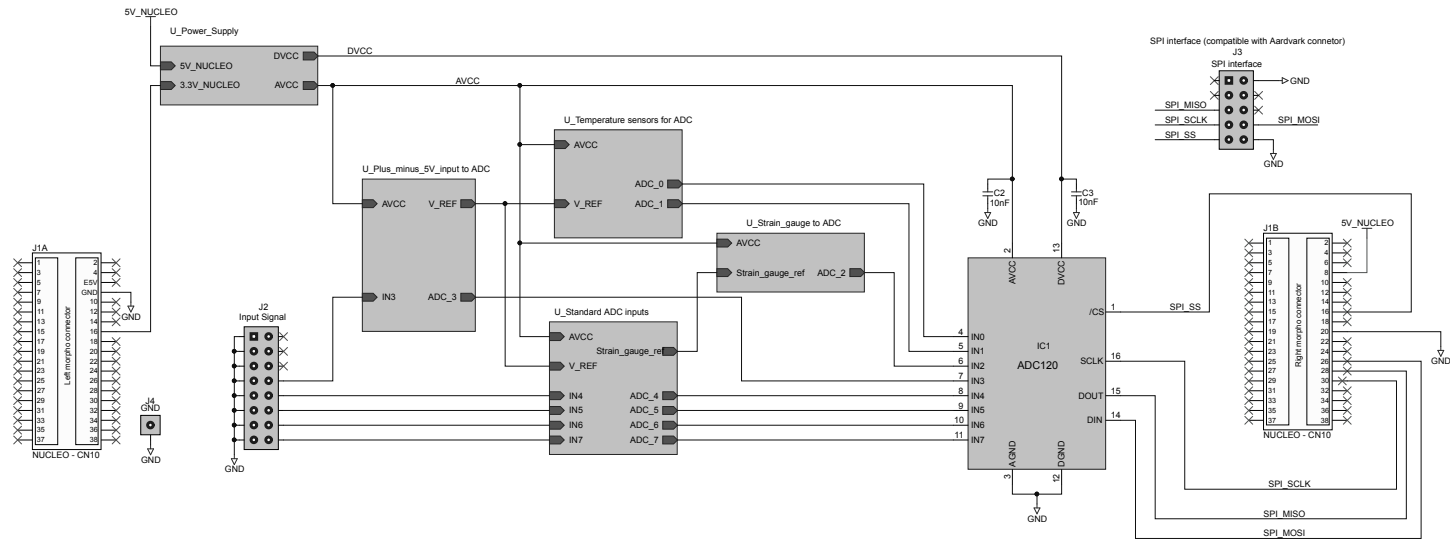


Figure 2. STEVAL-AKI001V1 schematic diagram - power supply 3V3

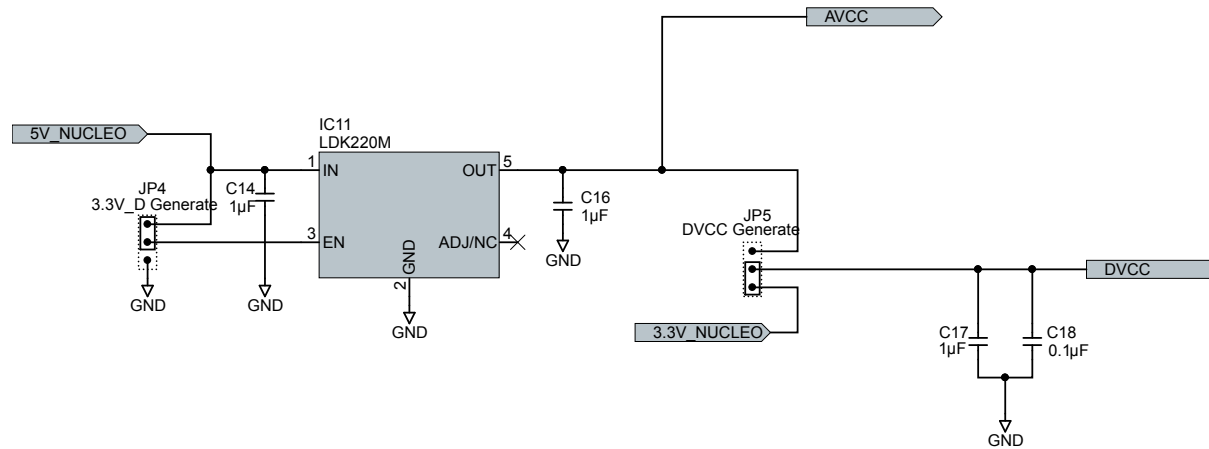
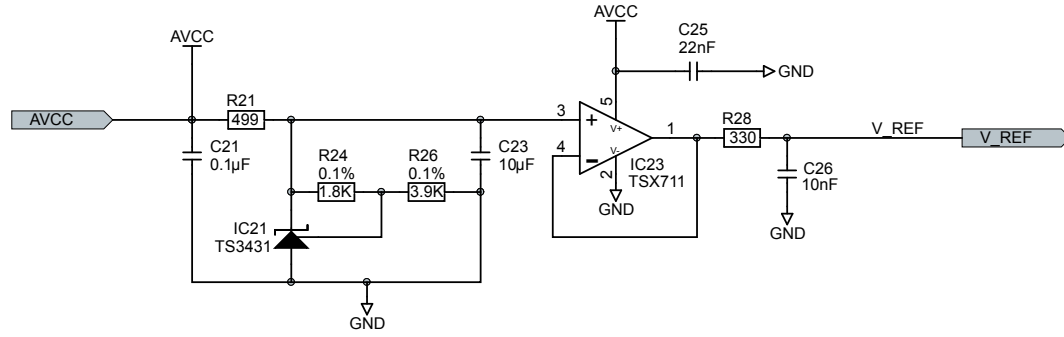


Figure 3. STEVAL-AKI001V1 schematic diagram - reference voltage



±5V input to 0-3V ADC

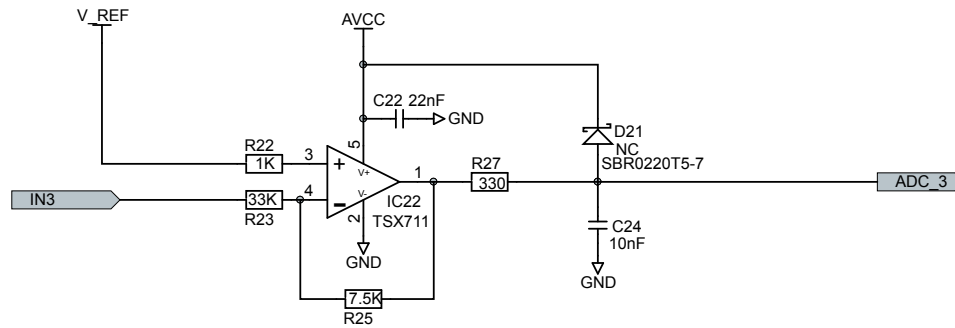
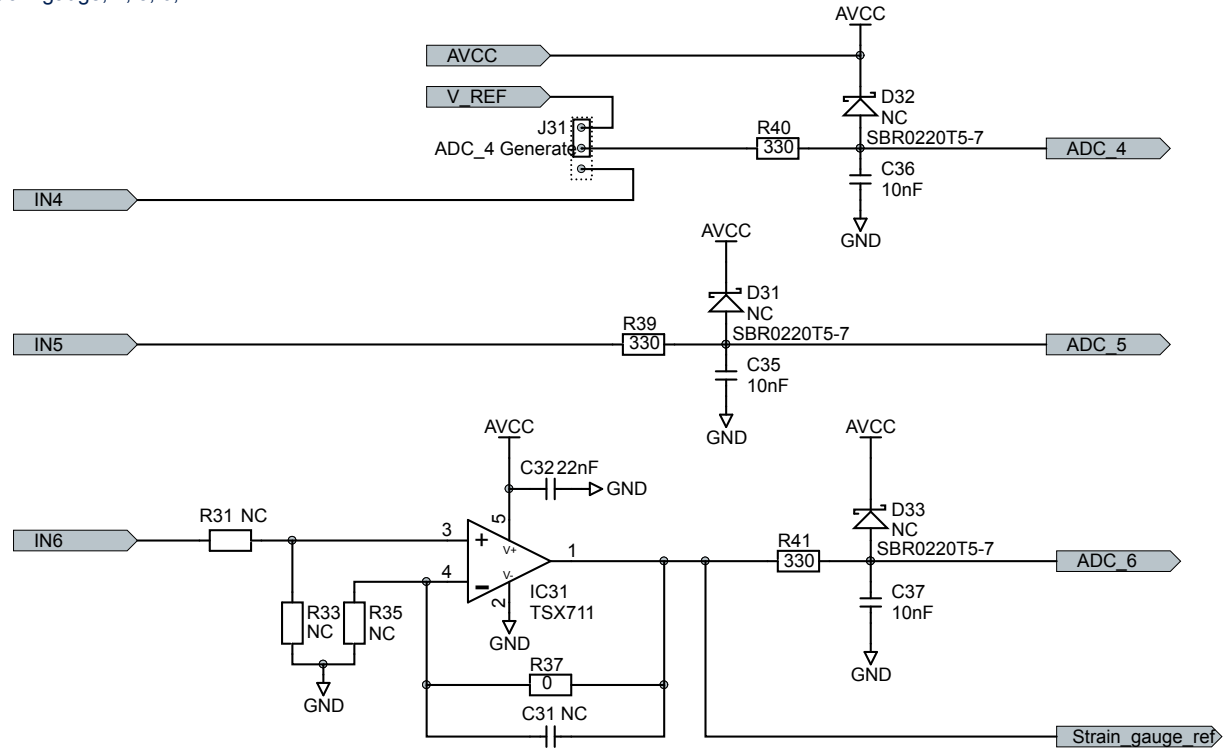
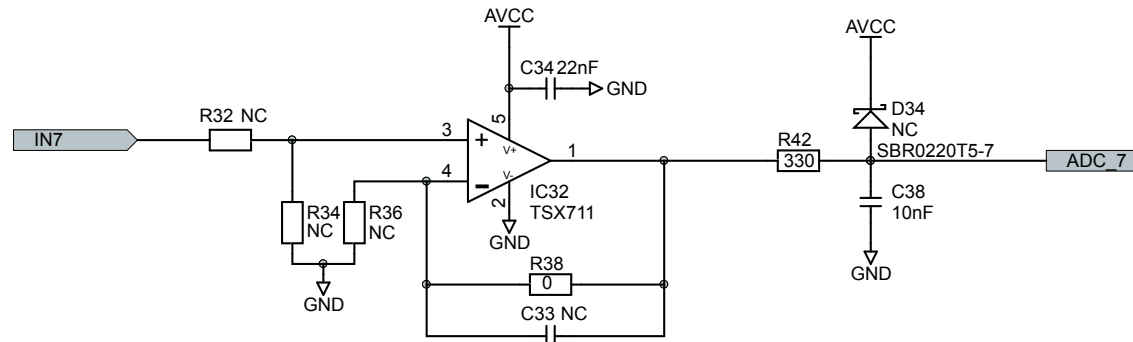


Figure 4. STEVAL-AKI001V1 schematic diagram - ADC inputs

ADC inputs: strain gauge, 4, 5, 6, 7



Resistor divider is used to provide acceptable voltage to ADC input
The gain can be changed by customer



Resistor divider is used to provide acceptable voltage to ADC input
The gain can be changed by customer

Figure 5. STEVAL-AKI001V1 schematic diagram - Instrumentation amplifier for strain gauge

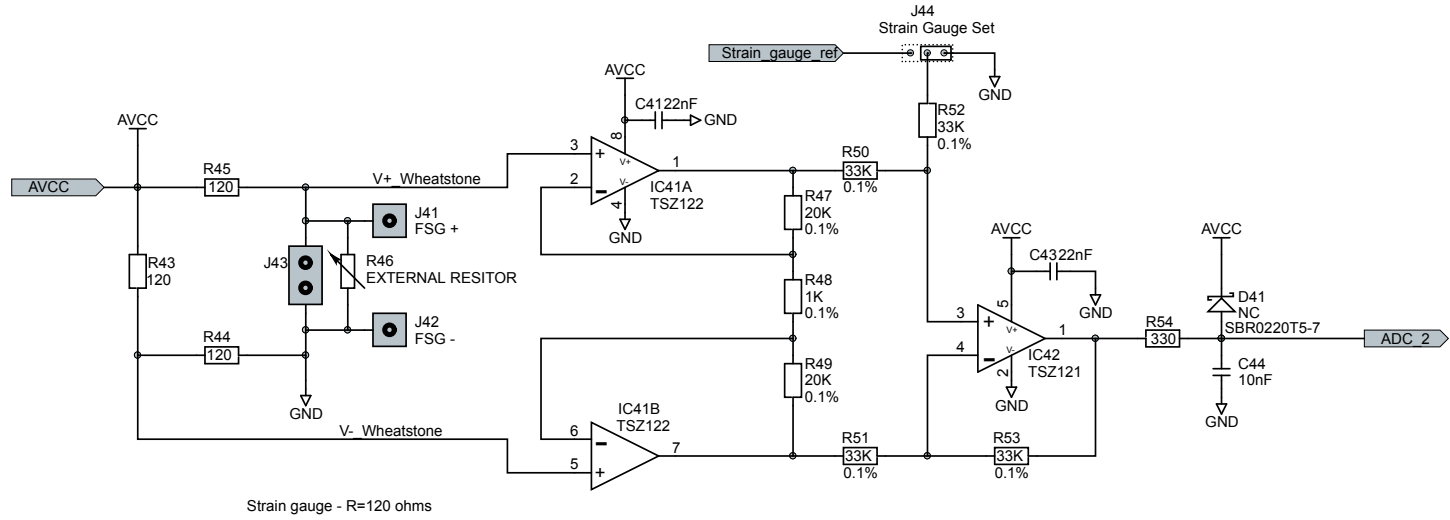
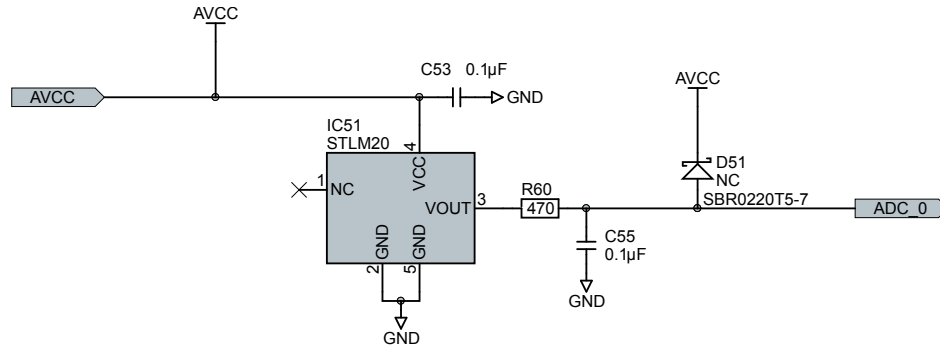
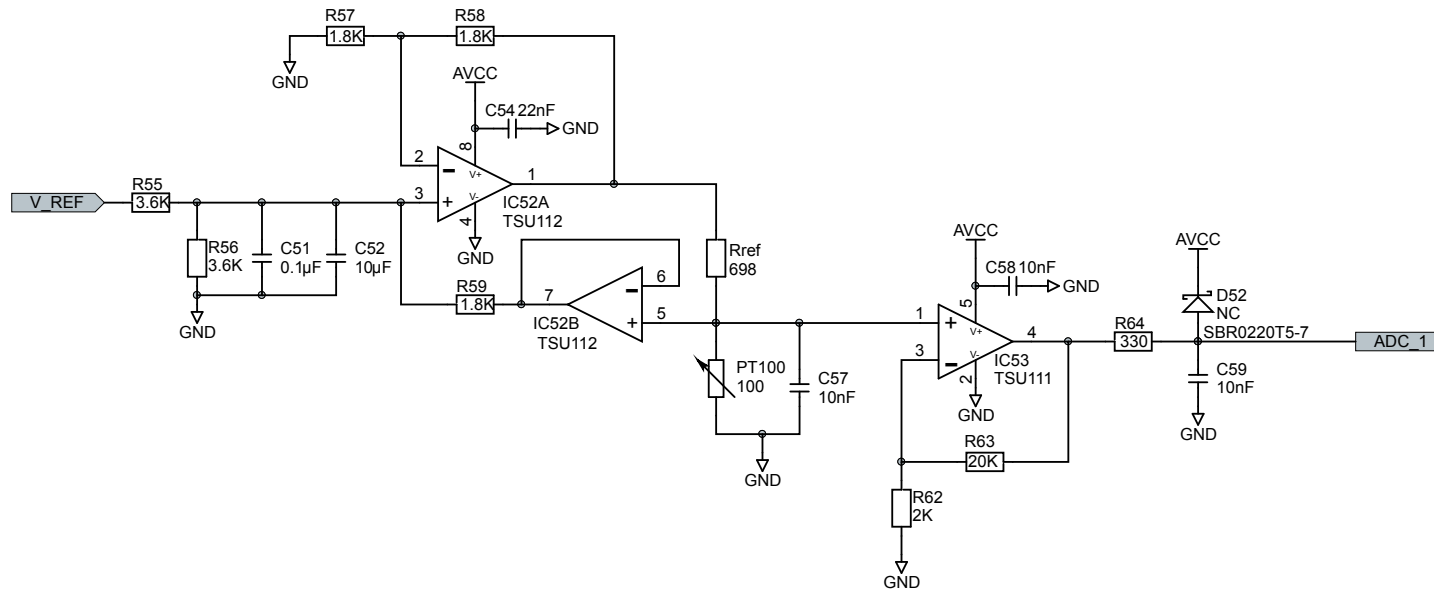


Figure 6. STEVAL-AKI001V1 schematic diagram - temperature measurement



Temperature measurement - STLM20



Temperature measurement - PT100



Revision history

Table 1. Document revision history

Date	Version	Changes
13-Feb-2020	1	Initial release.
07-Apr-2020	2	Updated schematic diagrams
10-Sep-2020	3	Updated Section 1 Schematic diagrams

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