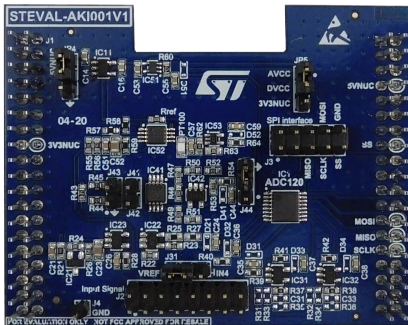


## Evaluation board for the ADC120 8-channel, 50ksps to 1MSPs, 12-bit analog to digital converter



### Features

- 12-bit ADC implementing SAR technology
- 50 kps to 1 Mps 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 kps to 1 Mps 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	<a href="#">STEVAL-AKI001V1</a>
low-power, eight-channel pure CMOS 12-bit ADC from 50ksps to 1MSPs	<a href="#">ADC120</a>
Recommended Nucleo boards	<a href="#">NUCLEO-L476RG</a>
Applications	Power Supplies and Converters

# 1 Schematic diagrams

Figure 1. STEVAL-AKI001V1 schematic diagram - functional blocks

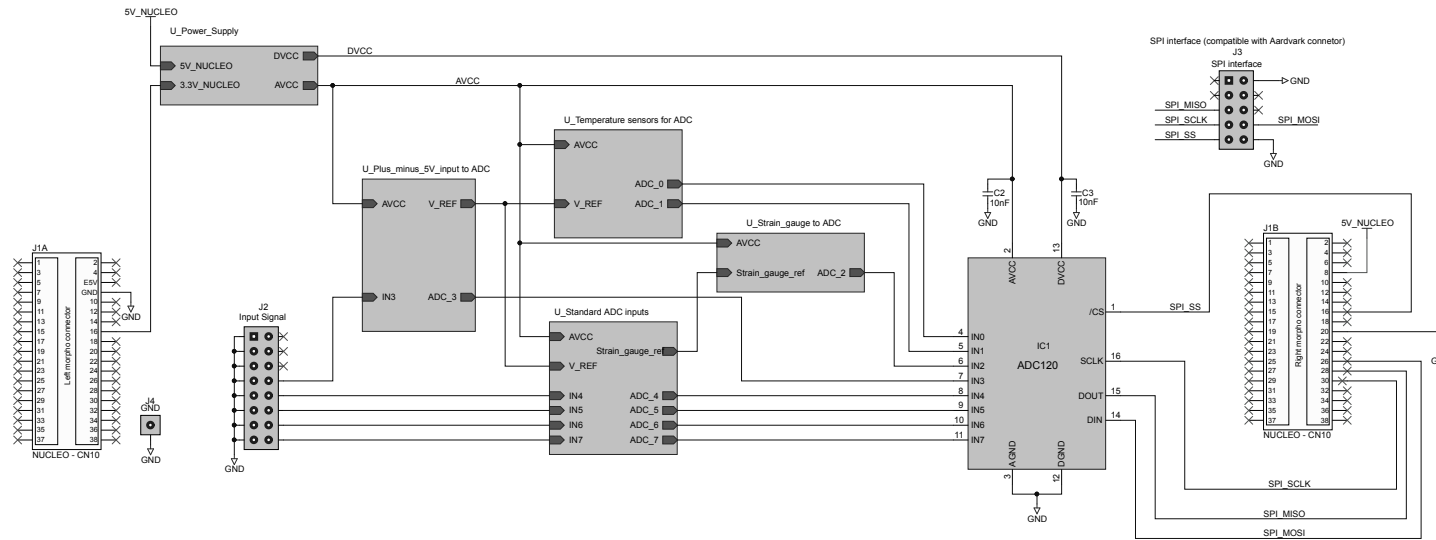


Figure 2. STEVAL-AKI001V1 schematic diagram - power supply 3V3

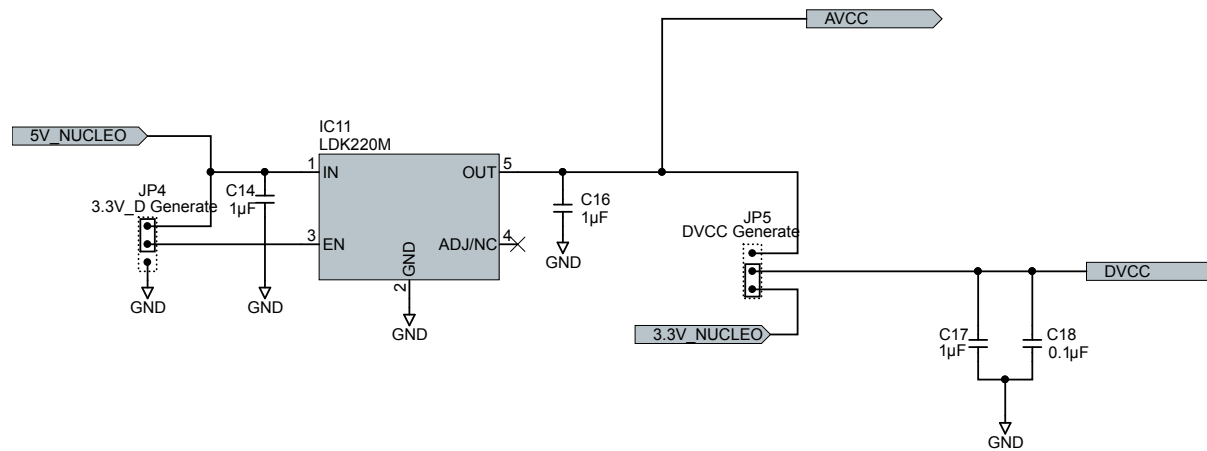
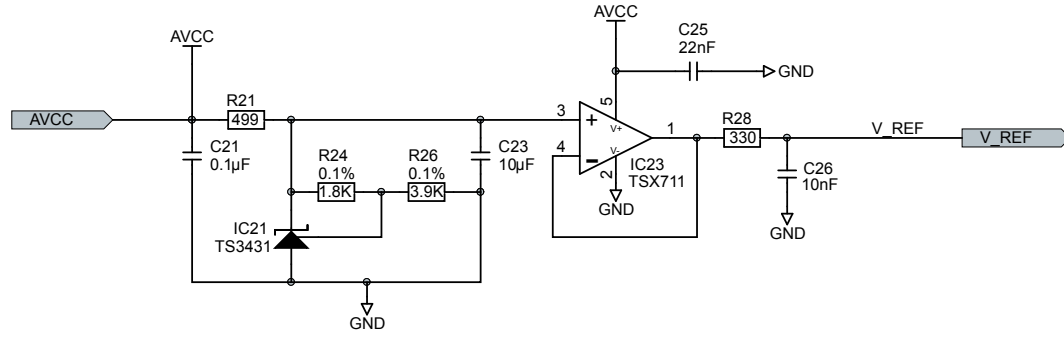


Figure 3. STEVAL-AKI001V1 schematic diagram - reference voltage



±5V input to 0-3V ADC

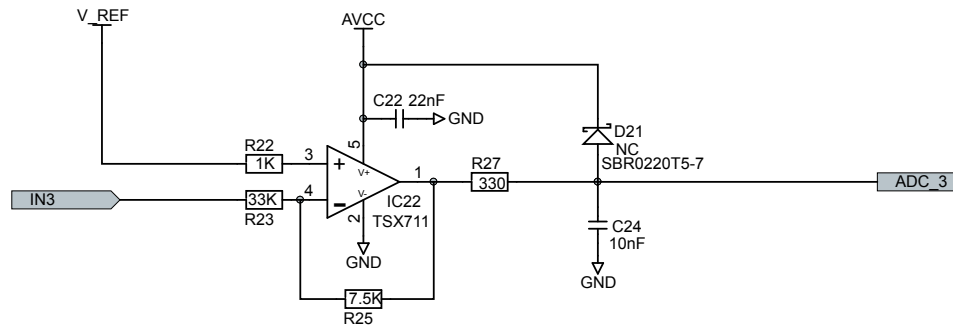
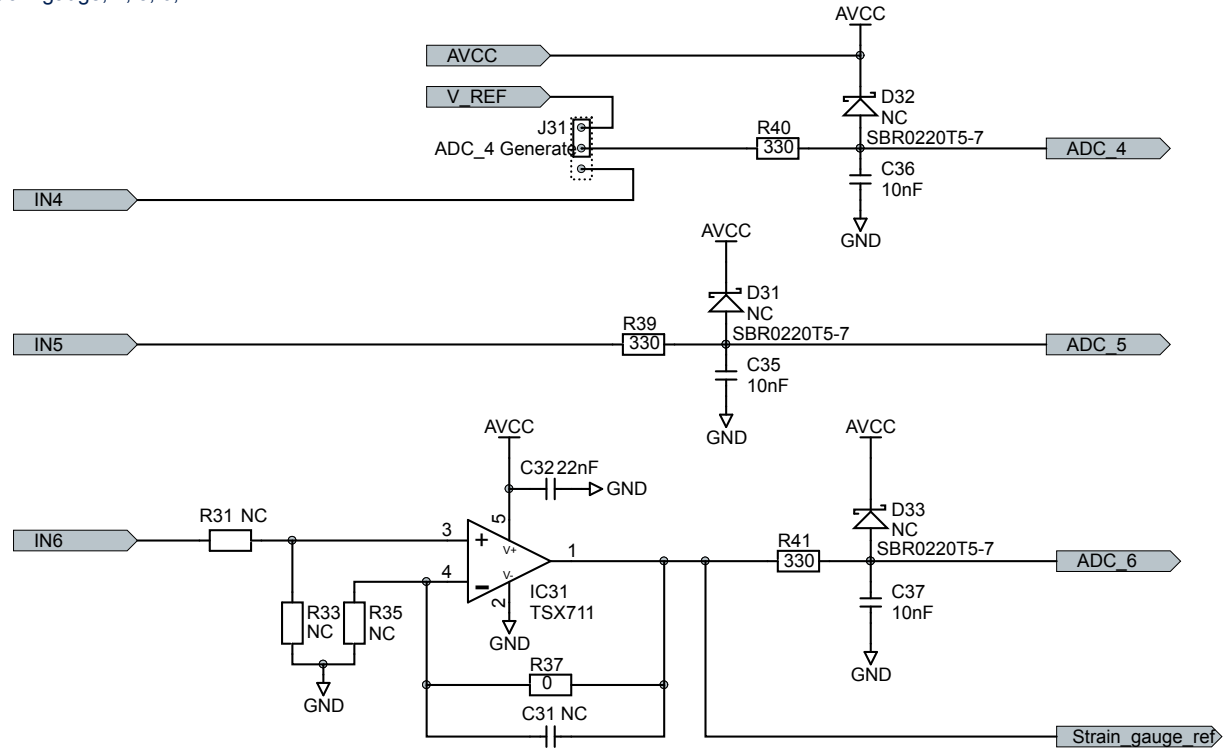
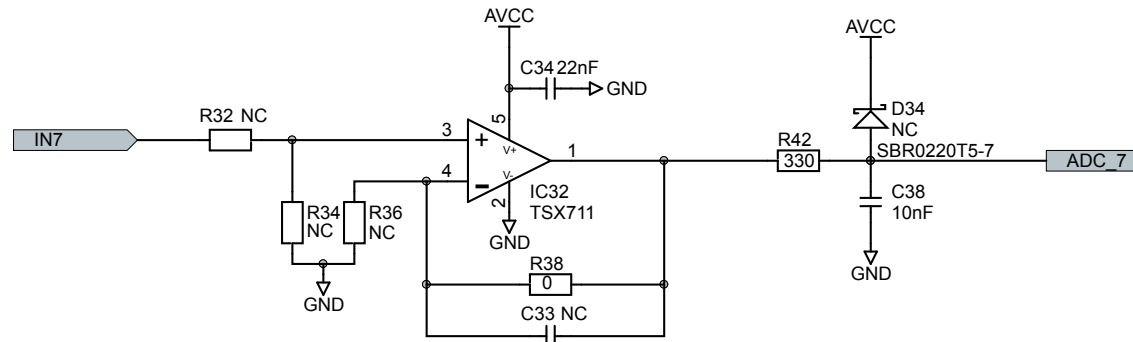


Figure 4. STEVAL-AKI001V1 schematic diagram - ADC inputs

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

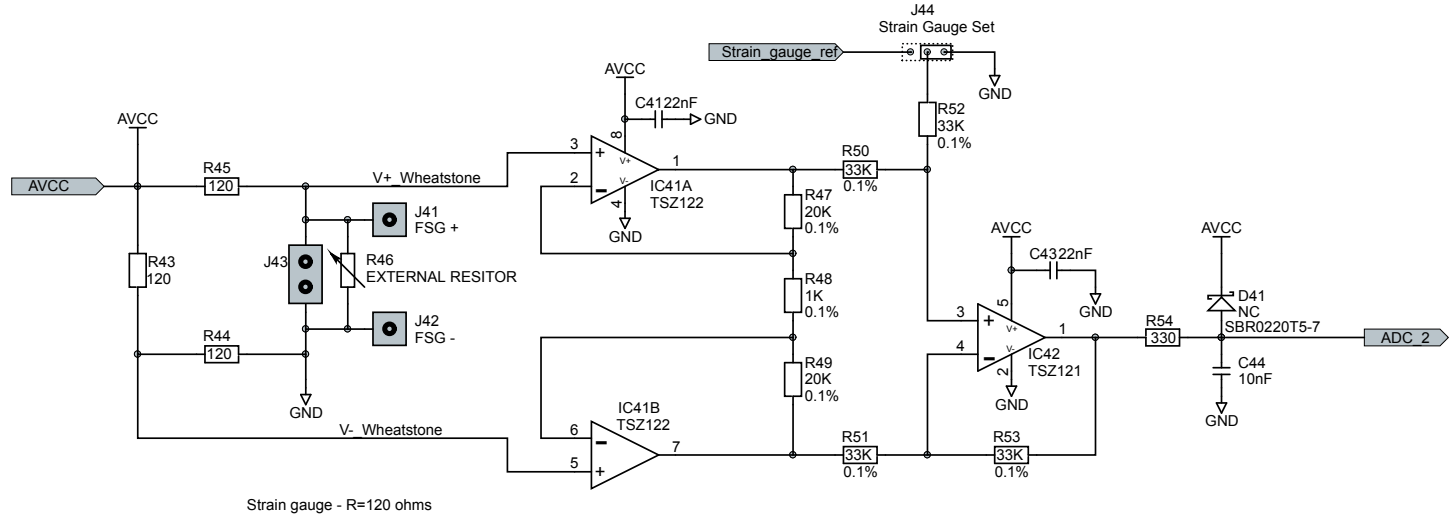
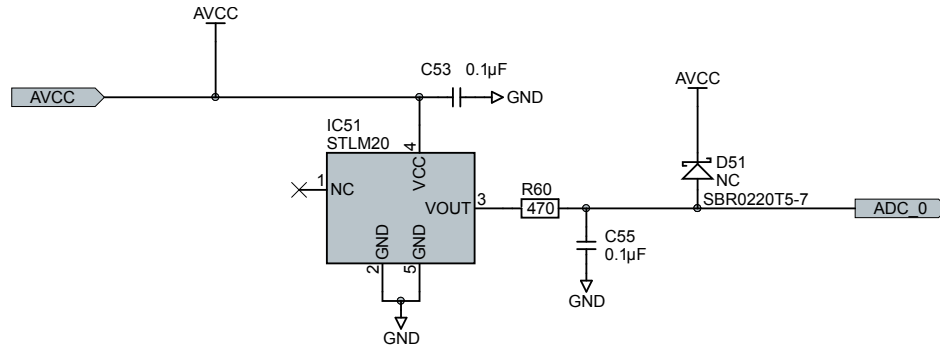
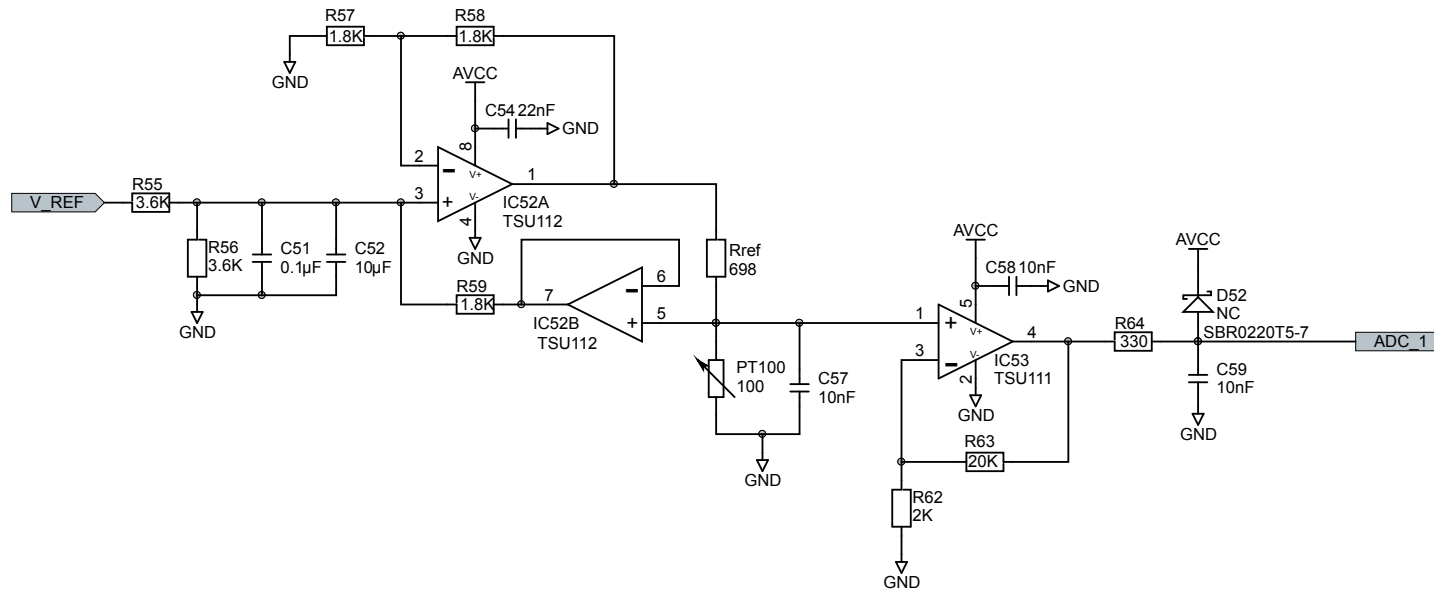


Figure 6. STEVAL-AKI001V1 schematic diagram - temperature measurement



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 <a href="#">Section 1</a> Schematic diagrams

**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, please refer to [www.st.com/trademarks](http://www.st.com/trademarks). All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2020 STMicroelectronics – All rights reserved



# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[STMicroelectronics:](#)

[STEVAL-AKI001V1](#)