Software Requirements Specification (SRS)

ADC (Analog To Digital Converter)

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1 Introduction

This document contains the Software Requirements Specification (SRS) for the ADC software driver.

1.1 Purpose:

The purpose of this document is to define the requirements for the software system that interacts with an ADC (Analog to Digital converter).

1.2 Scope

This document covers the functional and non-functional requirements of the ADC software system.

1.3 Definitions, Acronyms, and Abbreviations:

ADC: Analog to Digital Converter.

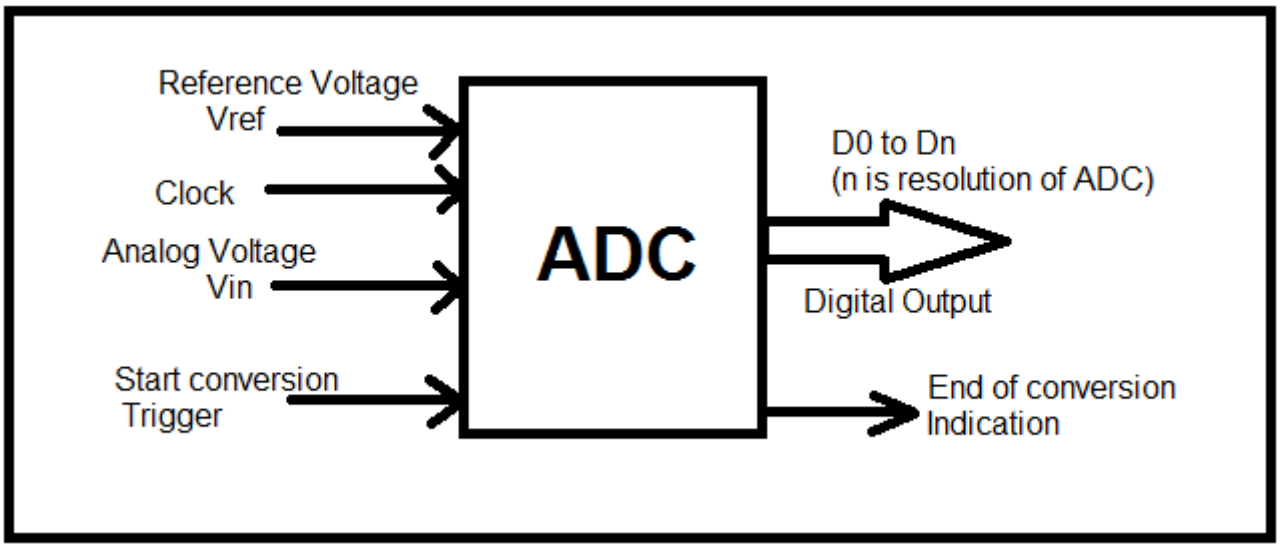
SAR: Successive approximation register

2 System overview

2.1 Description

An analog-to-digital converter (ADC) is a device that converts an analog signal, such as a voltage or current, into a digital signal. This allows the signal to be processed and stored by a Microprocessor or other digital device.

2.2 System Context



3 Functional Requirements

3.1 Configuration:

To be able to choose the voltage reference and the left hand adjustment and the prescaller.

3.2 Synchronous Conversion

Waiting until the Sensor data is read from a specific channel and the ADC Complete the conversion.

3.3 Asynchronous Conversion

Don’t wait until the Sensor data is read from a specific channel and the ADC Complete the conversion and use interrupt to be able to do any required actions.

3.4 Multiple conversions

Being able to perform a multiple conversions from different channels on the ADC.

4 Non-functional Requirements

4.1 Usability:

Define the usability requirements, including user interface guidelines, intuitive navigation, and clear readability.

4.2 Reliability:

It is important that the ADC is reliable and durable for any application.

4.3 Power consumption:

The ADC should consume as little power as possible. Power consumption is typically measured in mill watts (mW).

5 State Machine