

# **Building an application with ADC peripherals on STM32**

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**Abstract:** In this study, we focus on designing and implementing an application system based on the Analog-to-Digital Converter (ADC) peripheral on the STM32 microcontroller. The topic is chosen due to the need for collecting digital data from analog sources in practical applications such as environmental quality control, technical monitoring, and automation control. The project aims to build a system capable of accurately converting analog signals into digital form for use in analysis and information processing. The research method combines ADC conversion theory with experimentation on the STM32 platform to ensure system efficiency and accuracy. The expected results will bring significant value to the automation and engineering industries while providing a flexible solution for collecting analog data in real-world applications.

**Keywords:** STM32, Analog-to-Digital Converter (ADC), Environmental quality control, Automation, Data collection