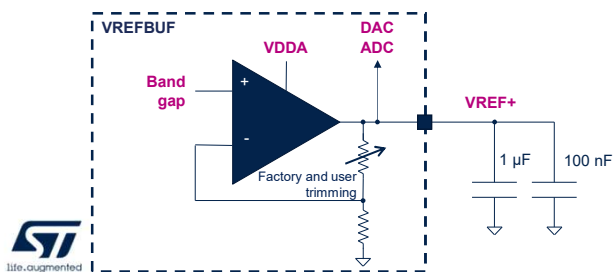




Hello and welcome to this presentation of the STM32H5 Voltage Reference buffer. It covers the main features of this block, which creates an on-chip reference voltage.

VREFBUF

- VREFBUF functionalities and improvements
 - More output voltage choices
 - 1.5V, 1.8V, 2.048V and 2.5V
 - Calibration done on each output voltage during production tests
 - When the VRS bits change, the calibration value will be automatically uploaded to the trim register from the engineering option bytes
 - VREFBUF is available in packages with more than 100 pins



2

The VREF buffer embedded in STM32H5 microcontrollers provides a stable voltage based on an internal bandgap reference for use by both the analog-to-digital and digital-to-analog converters.

When VREFBUF is used as an internal voltage reference, it is output on the VREF+ pin in order to provide this reference to external devices.

When an external voltage reference is implemented, the VREF+ pin is an input.

The VRS bitfield selects the value generated by the voltage reference buffer.

STM32H5 VREFBUF supports 4 different output voltages, which are 1.5, 1.8, 2.048 and 2.5 Volt.

The output voltage is factory calibrated and trimming data

is stored in the engineering option bits.

At reset, and each time the Voltage Reference Scale setting is changed, the calibration data is automatically loaded to the TRIM register.

The VREFBUF output pin VREF+ is available only on packages having 100 pins or more.

In the WLCSP25, UFQFPN32, LQFP48, UFQFPN48, LQFP64, VFQFPN68 and WLCSP80 packages, the VREF+ pin is double-bonded with the VDDA(or VDD) pin, and therefore the voltage reference buffer is not available and must be kept disabled.

Thank you

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The STM32H5's analog-to-digital and digital-to-analog converters use this VREF Buffer output.
Please refer to the training modules for these peripherals for additional information.