Analog-to-digital converter (ADC)

The 12-bit ADC is a successive approximation analog-to-digital converter. It has up to 19  
multiplexed channels allowing it to measure signals from 16 external sources, two internal  
sources, and the V BAT channel. The A/D conversion of the channels can be performed in  
single, continuous, scan or discontinuous mode. The result of the ADC is stored into a left-  
or right-aligned 16-bit data register.

**ADC main features**  
• 12-bit, 10-bit, 8-bit or 6-bit configurable resolution  
• Interrupt generation at the end of conversion, end of injected conversion, and in case of  
analog watchdog or overrun events  
• Single and continuous conversion modes  
• Scan mode for automatic conversion of channel 0 to channel ‘n’  
• Data alignment with in-built data coherency  
• Channel-wise programmable sampling time  
• External trigger option with configurable polarity for both regular and injected  
conversions  
• Discontinuous mode  
• ADC supply requirements: 2.4 V to 3.6 V at full speed and down to 1.8 V at slower  
speed  
• ADC input range: V REF– ≤V IN ≤V REF+  
• DMA request generation during regular channel conversion