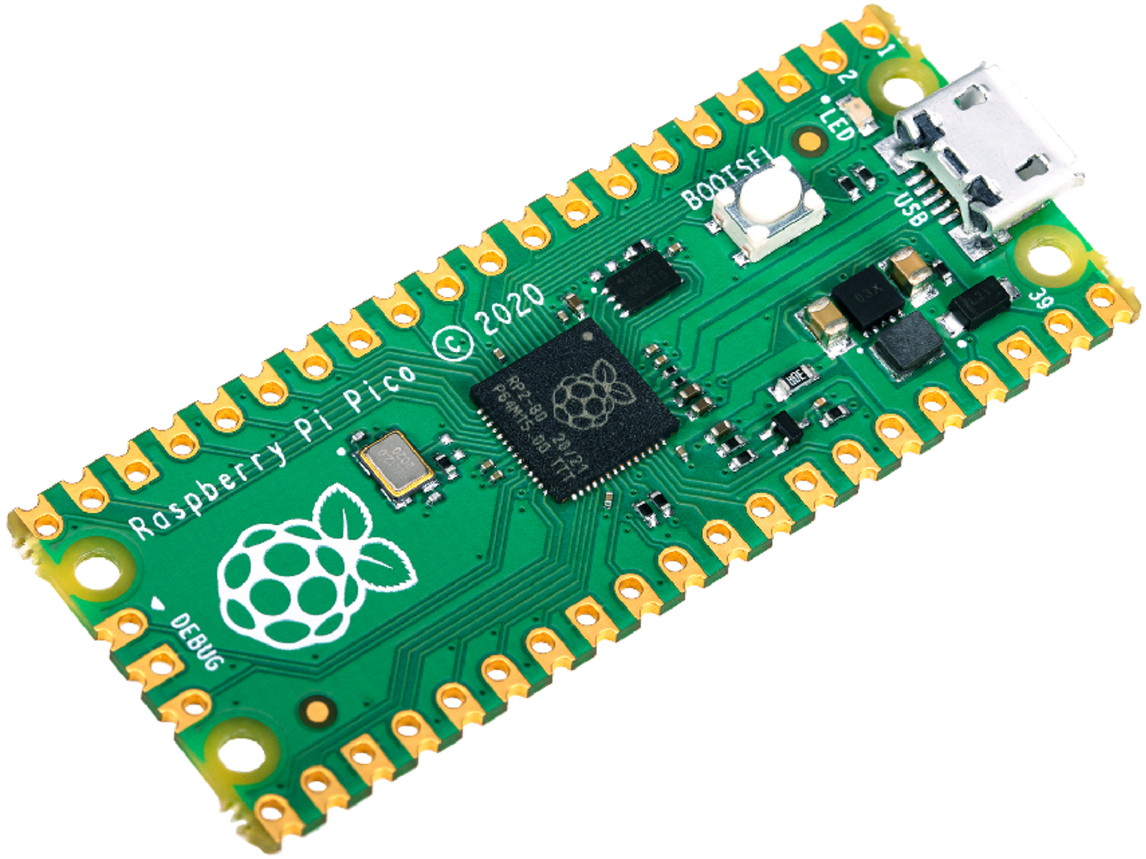
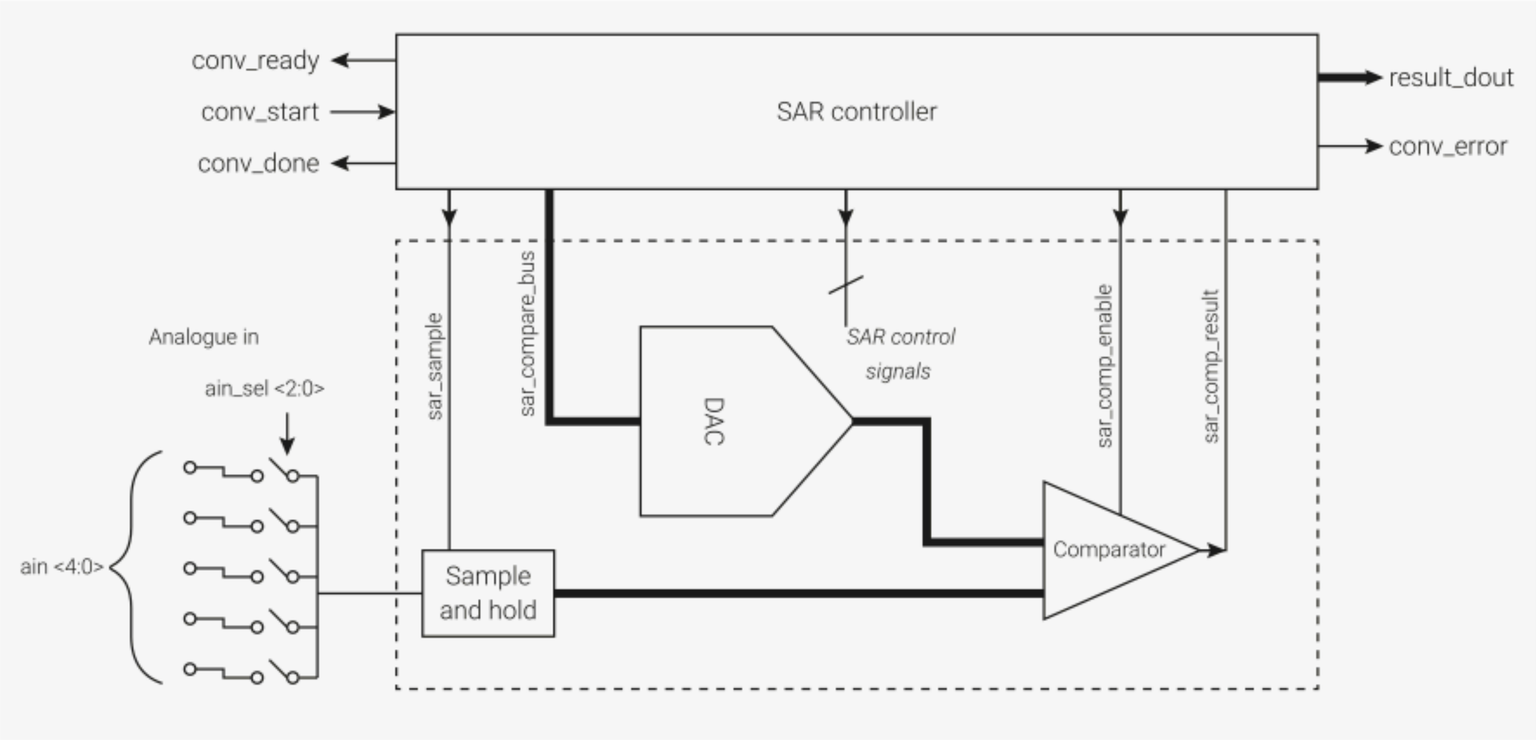


Raspberry Pi Pico (RP2040)

Lecture 7: ADC and Introduction to DMA

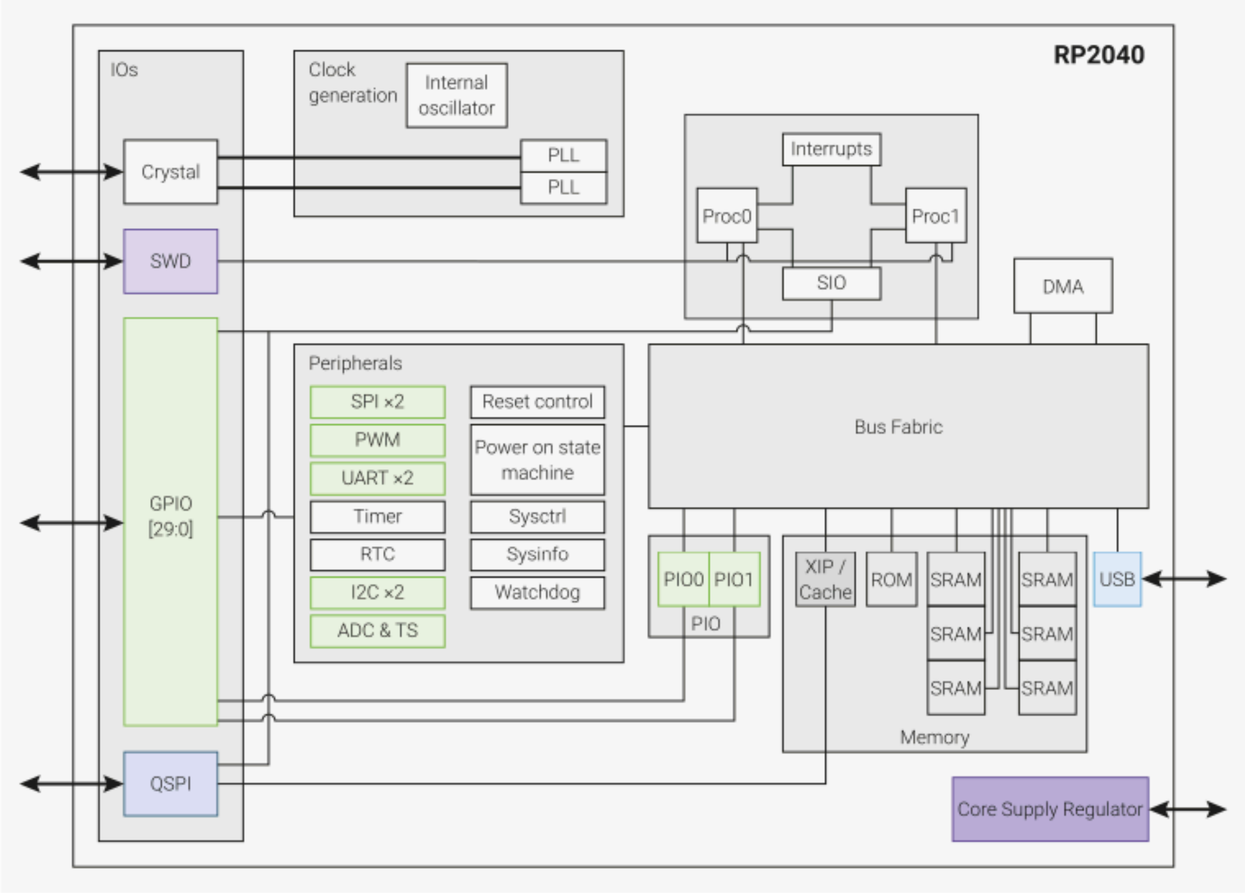
The ADC



- Uses separate 48MHz clock
- Each sample takes 96 cycles of that clock (2us)
- Places 1pF across input
- ENOB of 8.7
- 4-element receive sample FIFO
- 5-input MUX
- Interrupt generator and DMA interface

To the code!

DMA



- Move data from one place in memory to another
  - peripheral to memory
  - memory to peripheral
  - memory to memory
  - peripheral to peripheral
- You configure:
  - Transfer size (8, 16, or 32 bits)
  - Source and destination
  - Number of transfers
  - Transfer start trigger (DREQ, chaining)
- Can perform one read access and one write access, up to 32 bits, every clock cycle
- 12 independent channels
- Can write to one another's control registers

To the code!