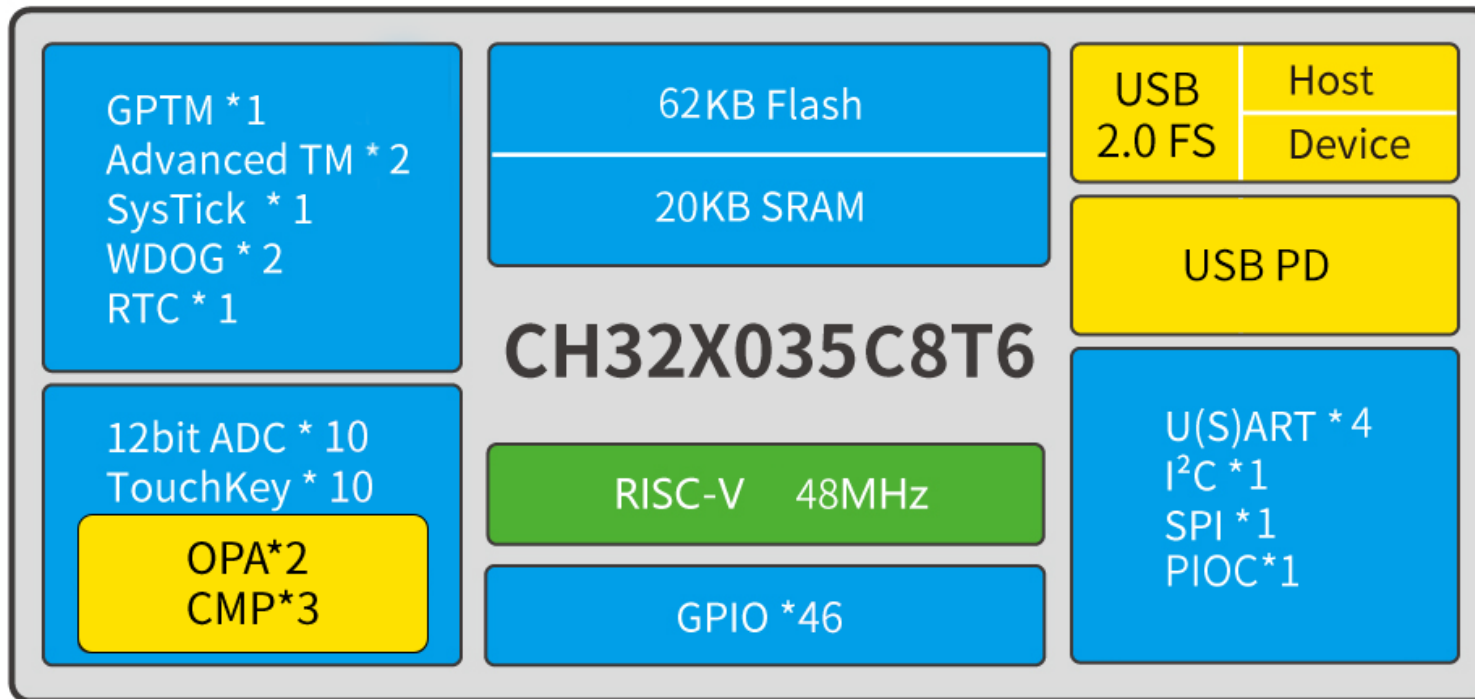


32-bit USB+USB PD MCU CH32X035

Overview

CH32X035 is an industrial-grade microcontroller based on the QingKe RISC-V core. CH32X035 has built-in USB and PD PHY, supports USB Host and USB Device functions, USB PD and type C fast charging functions, built-in programmable protocol I/O controller, provides 2 groups of OPA, 3 groups of CMP, 4 groups of USART, I2C, SPI, multiple timers, 12-bit ADC, 14-channel Touchkey and other rich peripheral resources.

System Block Diagram



Features

- RISC-V4C processor, up to 48MHz

- Support single cycle multiplication and hardware division
- 20KB SRAM, 62KB Flash
- Multiple low power modes: sleep/stop/standby
- Power up/down reset, programmable voltage detector
- 8-channel general-purpose DMA controller
- Programmable protocol I/O controller PIOC
- Multiple OPA/PGA/voltage comparators
- Multiple analogue voltage comparators CMP
- Multiple external 12-bit ADC conversion channels
- Multiple TouchKey channel detection
- 2 x 16-bit advanced-control timers
- 1 x 16-bit general-purpose timer
- 2 watchdog timers (Independent and window)
- 1 system time base timer
- Multiple USART serial ports: support LIN and ISO7816
- 1 I2C interface: support SMBus/PMBus
- 1 SPI interface
- USB 2.0 full-speed controller and PHY
- USB PD and Type C controller and PHY
- Fast GPIO port, support 24 external interrupts
- 96-bit chip unique ID
- 2-wire serial debug interface SDI
- Package forms: LQFP64M, LQFP48, QFN28, QSOP28, QFN20, TSSOP20

Selection Guide

Model	Flash	RAM	GPIO	Advanced-control timer	General-purpose timer	Serial port	Watchdog	USB Host	USB Device	USB PD typeC	ADC	OPA	CMP	Capacitive Touchkey	SPI	PIOC 1-wire interface	Package form
CH32X035R8T6	62K	20K	60	2	1	4	2	√	√	√	14+1	2	3	14	√	√	LQFP64M
CH32X035C8T6	62K	20K	46	2	1	4	2	√	√	√	10+1	2	3	10	√	√	LQFP48
CH32X035G8U6	62K	20K	27	2	1	4	2	√	√	√	10+1	2	1	10	√	√	QFN28
CH32X035G8R6	62K	20K	26	2	1	4	2	√	√	√	11+1	2	2	11	√	√	QSOP28
CH32X035F8U6	62K	20K	19	2	1	3	2	-	√	√	10+1	2	-	10	√	√	QFN20
CH32X035F7P6	48K	20K	18	2	1	3	2	-	√	√	11+1	1	1	11	√	√	TSSOP20
CH32X033F8P6	62K	20K	18	2	1	4	2	-	√	-	10+1	2	2	10	√	√	TSSOP20

Development Material

1. Product manual: [CH32X035DS0.PDF](#), [CH32X035RM.PDF](#)
2. CH32X035 Evaluation Board Description and Reference Application Routines: [CH32X035EVT.ZIP](#)
3. Integrated Development Environment (IDE): [MounRiver Studio\(MRS\)](#)