



MindMotion MM32 for Industrial Application

Jim Zhuang

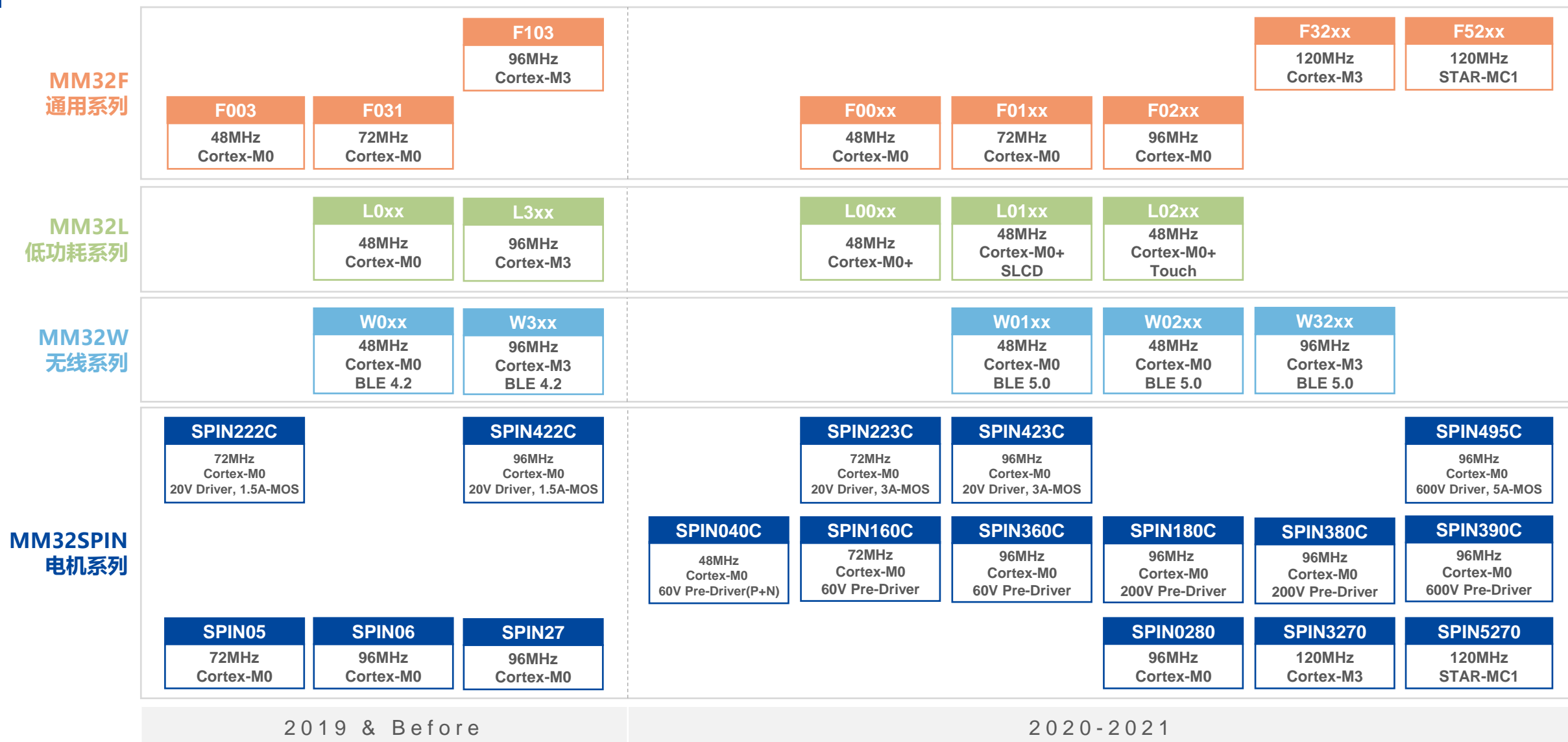


灵动简介

- ◆ 成立于 2011 年，是中国本土领先的通用 **32 位** MCU 产品及解决方案供应商
- ◆ 以基于 **Arm Cortex-M** 系列内核的 MM32 MCU 为平台
- ◆ 至今已发布 200 多个型号，累计交付超**3亿**颗，在本土通用 32 位 MCU 公司中位居前列
- ◆ MM32 MCU 被广泛应用于智能工业、汽车电子、通信基建、医疗健康、智慧家电、物联网、个人设备、手机与电脑等领域
- ◆ 凭借自主的 IP 和芯片设计，灵动是同时获得了 Arm-KEIL、IAR、SEGGER 等开发工具官方支持的本土 MCU 公司
- ◆ 是为数不多的建立了全面的、完整的 MCU 生态体系的公司，致力于为客户提供从芯片硬件到软件算法、从参考方案到系统设计的全方位支持



MM32 产品路线图



生态系统

产品选型

选型手册



在线服务



QQ



微信



论坛

应用方案



开发设计

IDE、调试器



开发板评估套件



RTOS 支持



样机测试

编程下载器



小批量样片采购



FAE 线上线下支持



可靠性测试服务



量产升级

量产烧录工具



用户固件保护

安全升级服务

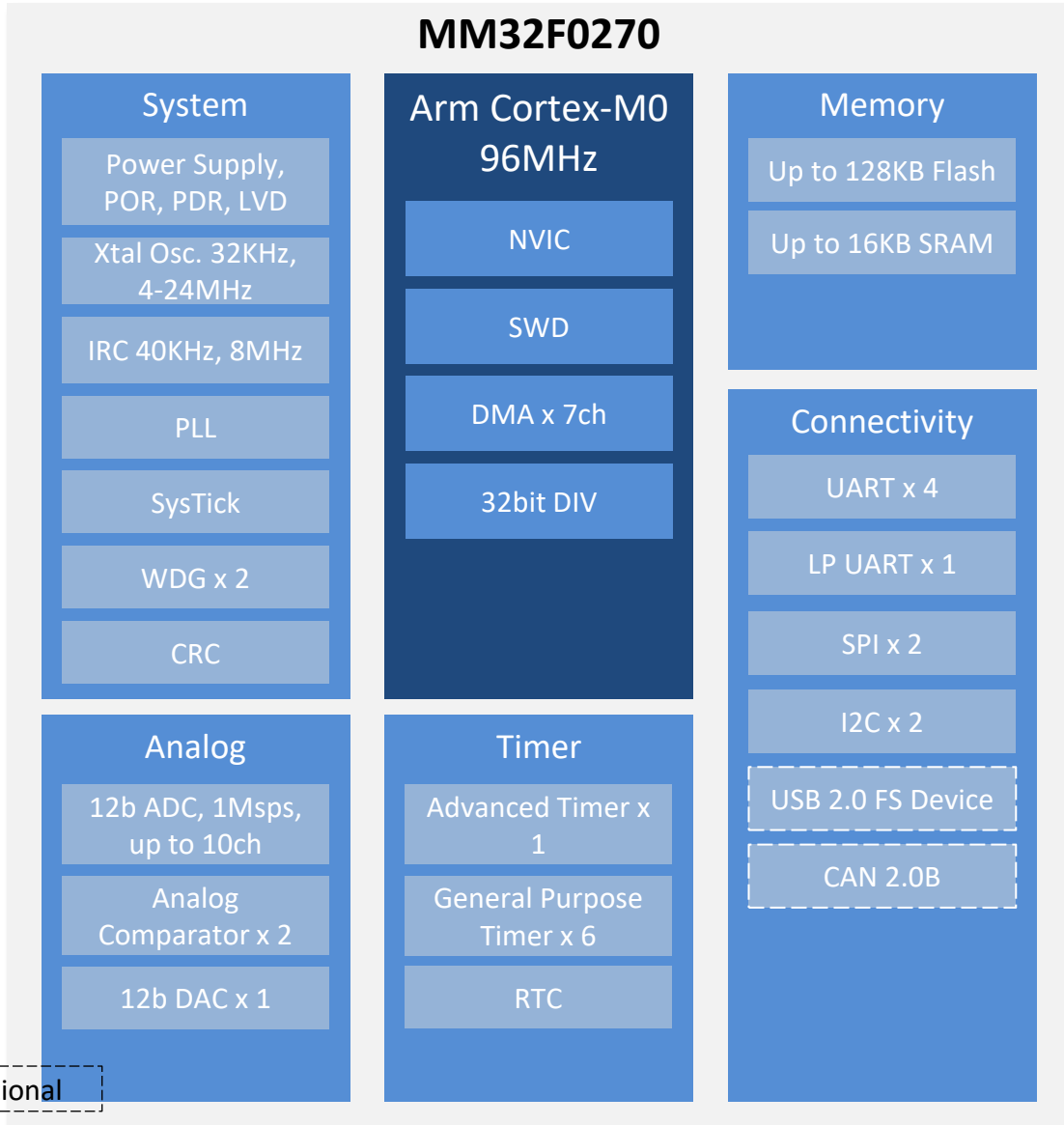
MindSafe™



应用领域

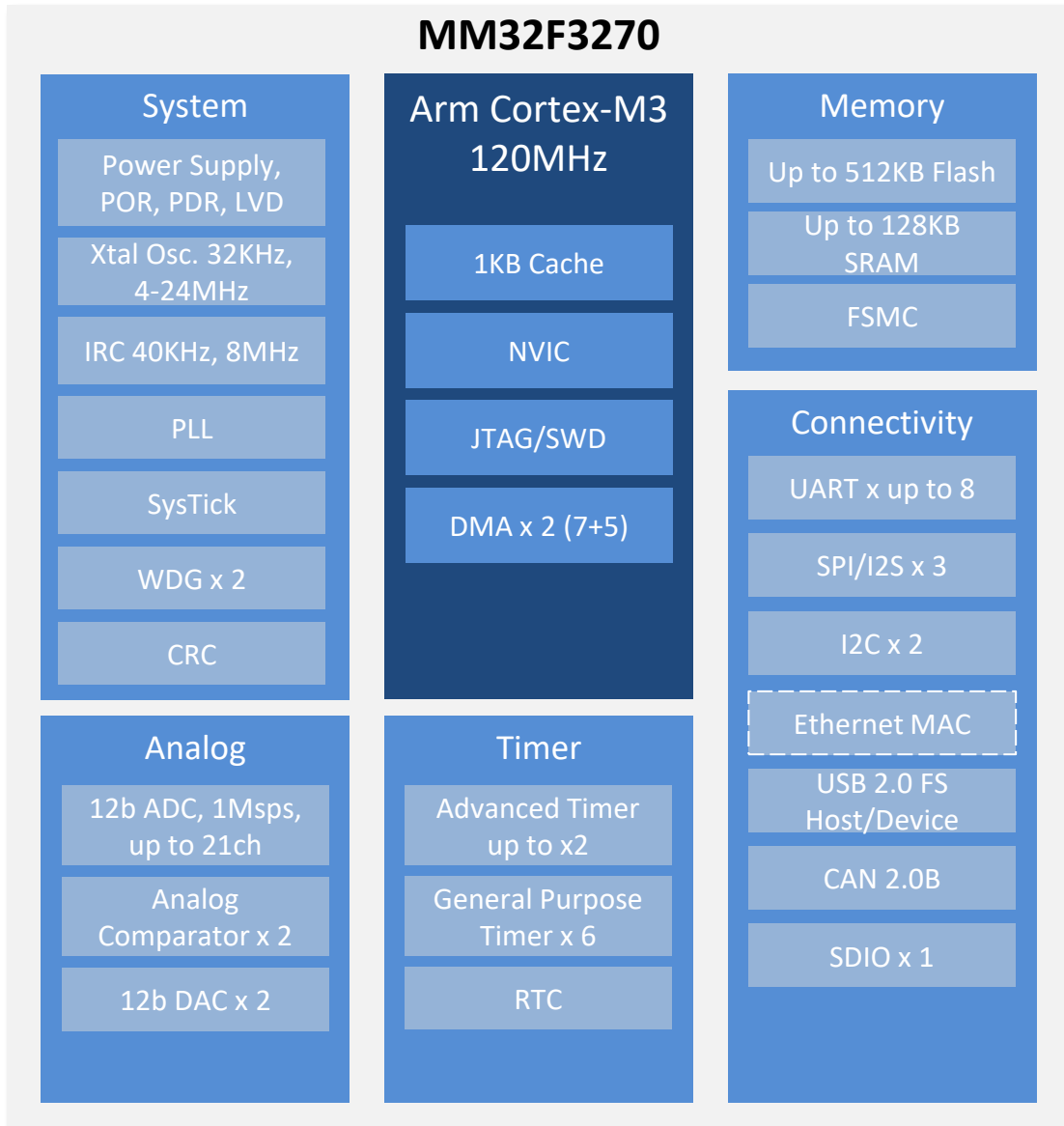


MM32F0270



- ◆ Core Platform
 - ▶ Up to **96MHz** Cortex-M0
- ◆ Memory
 - ▶ Up to 128KB Flash
 - ▶ Up to 16KB SRAM
- ◆ System Control
 - ▶ POR, PDR, PVD
 - ▶ IRC or Xtal
- ◆ Timer
 - ▶ Adv. Timer x 1 for Motor Control. 6ch PWM with dead time control
 - ▶ General Purpose Timer x 6
 - ▶ WDG x 2
 - ▶ **RTC with Vbat**
- ◆ Interfaces
 - ▶ UART x up to 4
 - ▶ LP UART x 1
 - ▶ SPI x up to 2
 - ▶ I2C x 2
 - ▶ USB 2.0 FS Device
 - ▶ **CAN 2.0B**
- ◆ Analog
 - ▶ 10ch, 12b ADC with 1Mpsps
 - ▶ Analog Comparator x 2
 - ▶ **12b DAC**
- ◆ Others
 - ▶ **2.0 – 5.5V power supply**
 - ▶ Operation Temperature: -40~85C/105C
- ◆ Package and Pin Counts
 - ▶ LQFP100, LQFP64, LQFP48, QFN32/LQFP32

MM32F3270



- ◆ Core Platform
 - ▶ Up to 120MHz Cortex-M3
- ◆ Memory
 - ▶ 1KByte Cache
 - ▶ Up to 512KByte Flash
 - ▶ Up to 128KByte SRAM
- ◆ System Control
 - ▶ POR, PDR, PVD
 - ▶ IRC or Xtal
- ◆ Timer
 - ▶ **Adv. Timer x 2** for Motor Control. 6ch PWM with dead time control
 - ▶ General Purpose Timer x 6
 - ▶ WDG x 2
 - ▶ RTC with Vbat
- ◆ Analog
 - ▶ Up to 21ch, 12b ADC with 1Msps
 - ▶ 12b DAC x 2
 - ▶ Analog Comparator x 2
- ◆ Interfaces
 - ▶ **UART x up to 8**, with Auto Baud Rate
 - ▶ **SPI/I2S x up to 3**
 - ▶ I2C x 2
 - ▶ Ethernet 10/100bps MAC x 1
 - ▶ USB 2.0 FS OTG
 - ▶ **CAN 2.0B**
- ◆ Others
 - ▶ **2.0 – 5.5V power supply**
 - ▶ Operation Temperature: -40C~85C/105C
- ◆ Package and Pin Counts
 - ▶ LQFP144/100/64, QFN/LQFP48, QFN40

Optional

MM32 Solution for Elevator System

◆ 主控板: MM32F3270

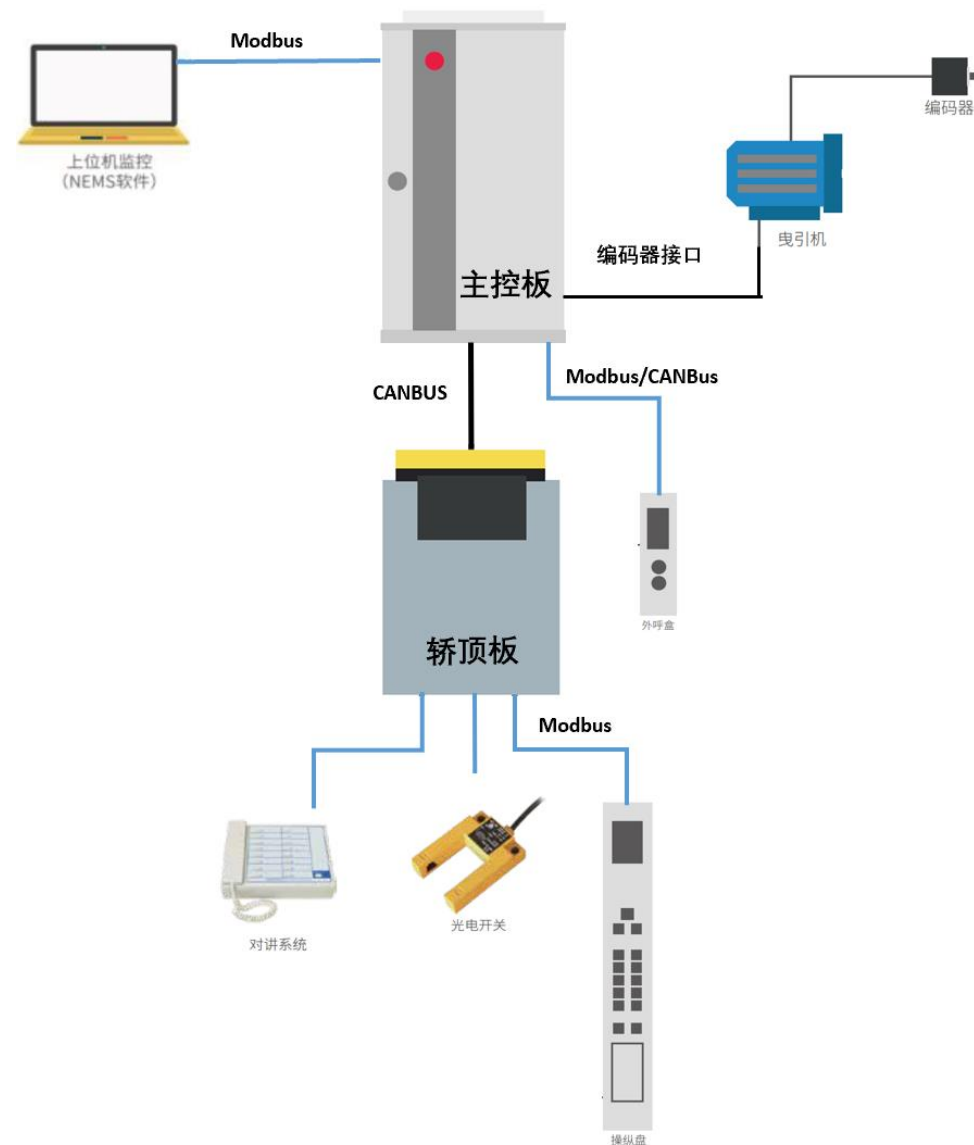
◆ 轿顶板: MM32F0270

◆ 外呼板: MM32F0130

◆ 配件:

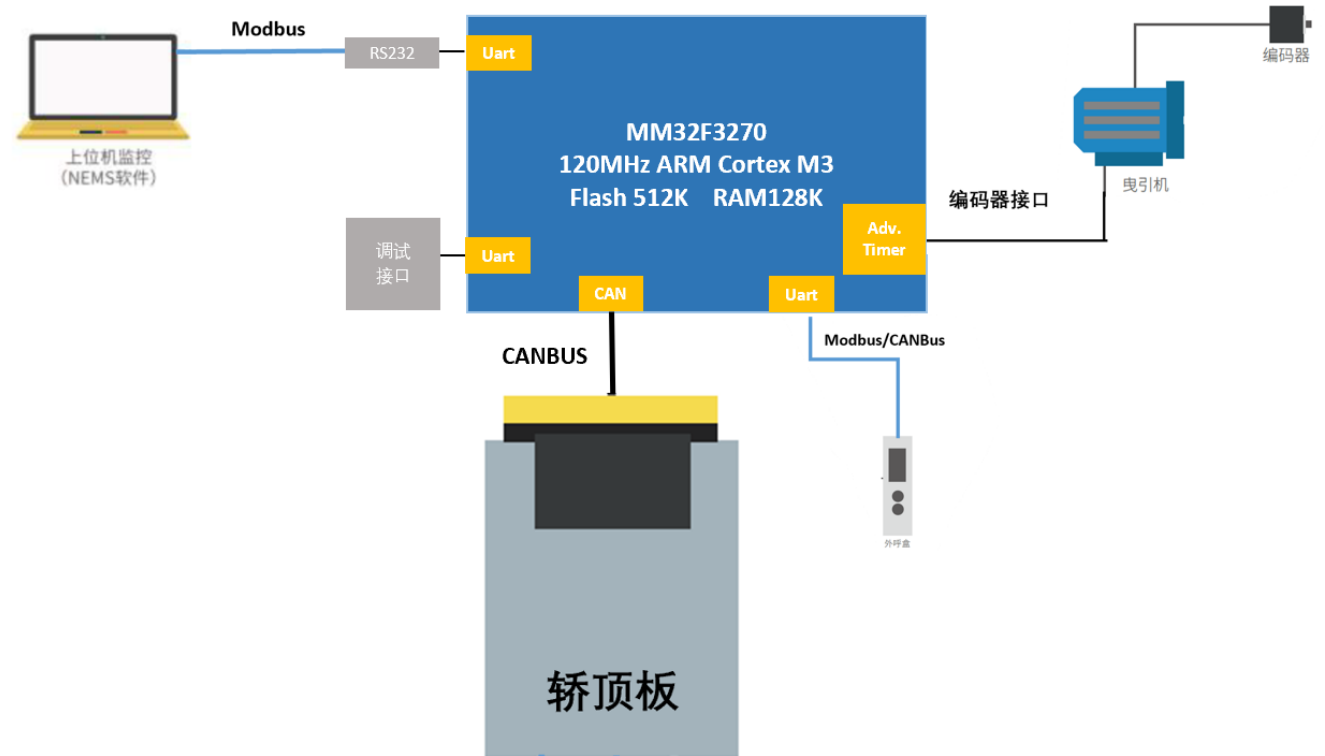
光电开关: MM32F0010

自动求援装置ARD: MM32F0130



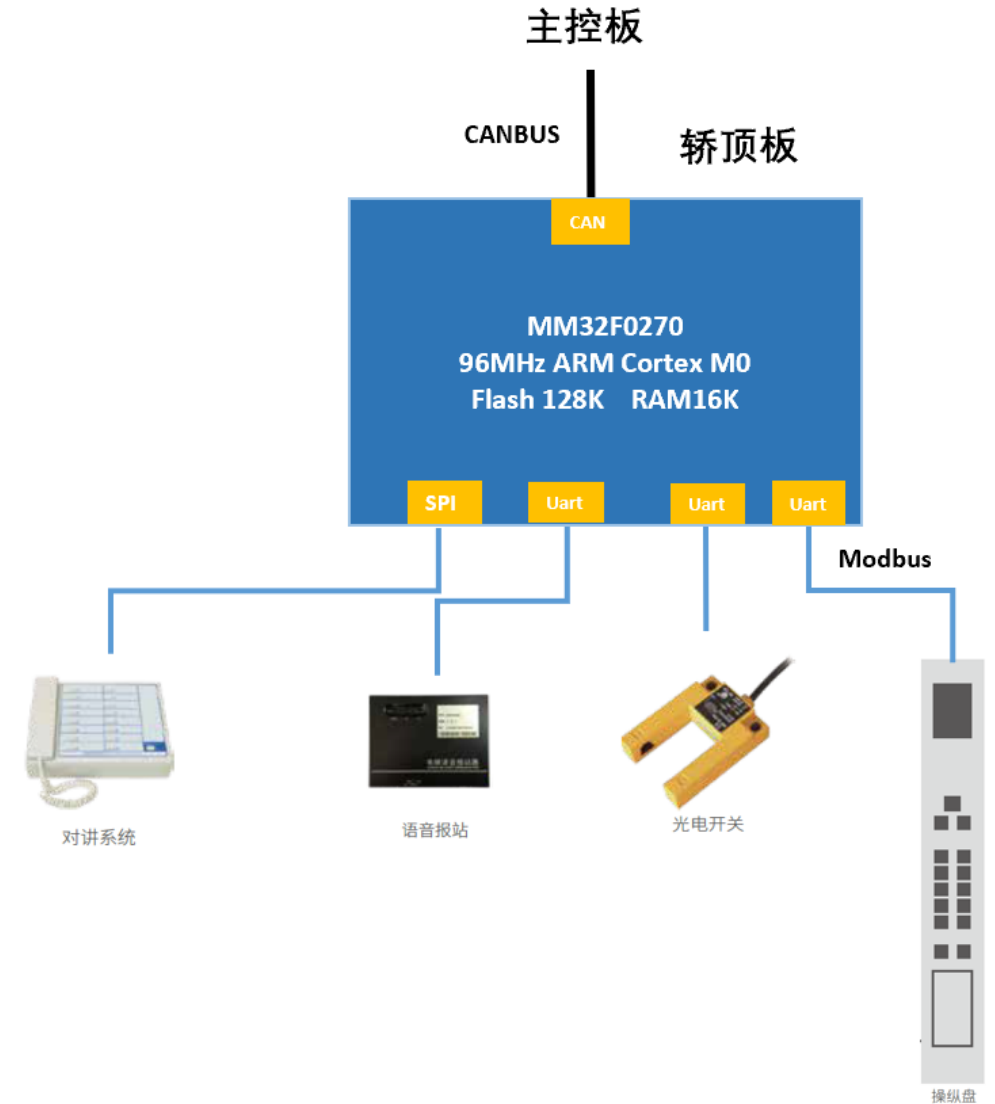
MM32F3270 Features for Elevator Main Control Board

- ◆ 120MHz ARM Cortex-M3
- ◆ CAN 2.0B with 20 group of filters
- ◆ USB OTG FS 2.0
- ◆ Advanced Timer x 2, Encoder Mode
- ◆ ADC x 3, with 21 channel
- ◆ ESD_HBM: +-8KV
- ◆ UART x up to 8, with Auto Baud Rate

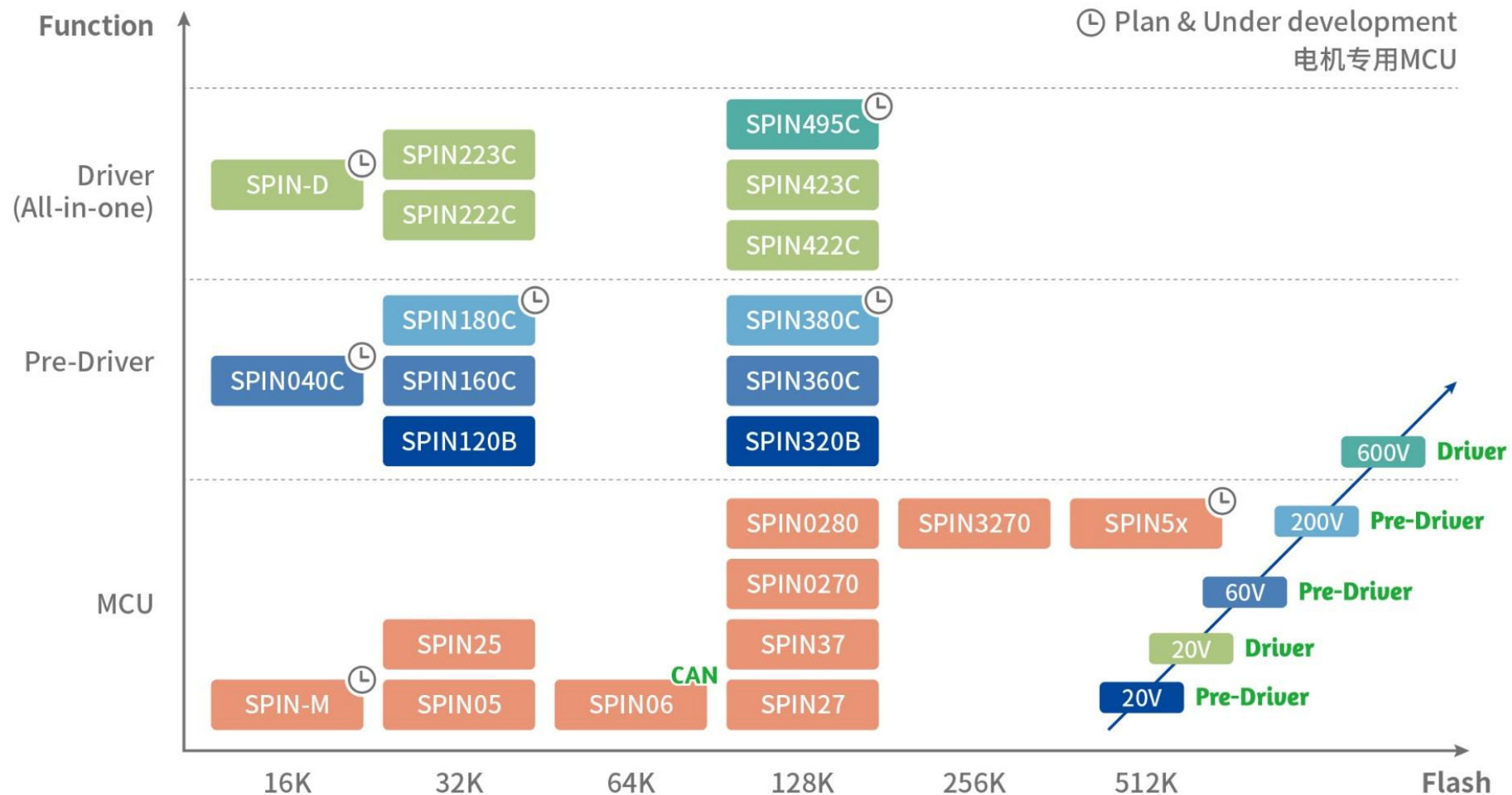


MM32F0270 Features for Elevator TOP Board

- ◆ 96MHz ARM Cortex-M0
- ◆ Up to 128KB Flash, 16KB RAM
- ◆ 5x UART, 2x SPI, 2x I2C, 1x CAN 2.0B, 1x USB
- ◆ Low Power mode: LPTIMER, LPUART
- ◆ Advanced Timer
- ◆ 12bit ADC, 12bit DAC, Analog Comparator
- ◆ ESD_HBM: +/-8KV
- ◆ Up to 100PIN, >90GPIO



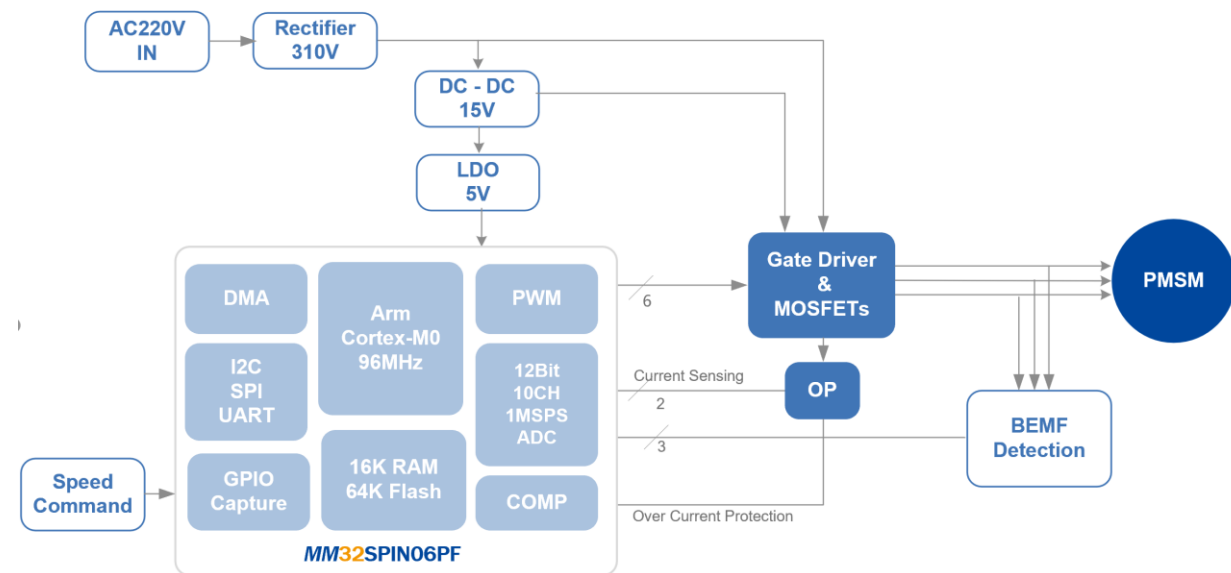
MM32 SPIN Product Portfolios



MM32SPIN06 for High Speed Motor

- ◆ ARM Cortex-M0 96MHz主频
- ◆ 支持DMA, UART, I2C, SPI; 内置比较器
- ◆ FOC Sensorless方案
- ◆ 400mS至最大转速, 支持 150 000RPM
- ◆ 支持欠压, 过流, 堵转, 短路保护

Function Block

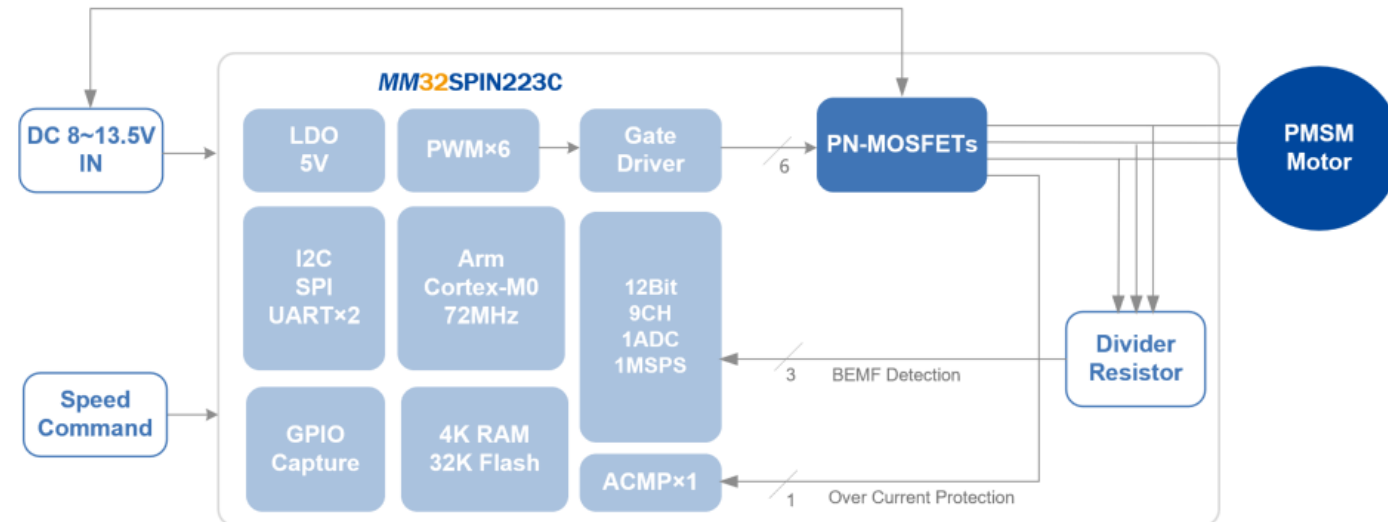


MM32SPIN223C for Water Pump Solution

- ◆ 72MHz ARM Cortex[®]-M0
- ◆ 集成5V输出LDO，内置6个MOSFET，最高支持3A
- ◆ 支持3-16V系统
- ◆ 4*4mm QFN32封装，高集成度
- ◆ 无感方波或FOC控制算法支持



Function Block





Thanks



MM32MCU
灵动微电子微信公众号



294016370
MM32 QQ技术交流群



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