The GD32VF103 is a 32-bit general-purpose microcontroller based on the RISC-V core with an impressive balance of processing power, low power consumption and peripheral set.

The GD32VF103 incorporates the RISC-V 32-bit processor core operating up to 108 MHz with Flash accesses zero wait states to obtain maximum efficiency. It provides up to 128 KB on-chip Flash memory and 32 KB SRAM memory. An extensive range of enhanced I/Os and peripherals are connected by two APB buses. The device offers up to two 12-bit ADCs, two 12-bit DACs, four general 16-bit timers, two basic timers plus a PWM advanced timer as well as standard and advanced communication interfaces: up to three SPIs, two I2Cs, three USARTs, two UARTs, two I2Ss, two CANs and USBFS. The RISC-V processor core is also tightly coupled with an Enhancement Core-Local Interrupt Controller (ECLIC), SysTick timer and advanced debug support.

The devices operate from a 2.6V to 3.6V power supply and they are available in –40°C to +85 °C temperature range. Several power saving modes provide the flexibility for maximum optimization between wakeup latency and power consumption, which is an essential consideration for designing low power applications.

The above features make the GD32VF103 devices suitable for a wide range of interconnected applications, especially in areas such as industrial control, motor drives, power monitor and alarm systems, consumer and handheld equipment, POS, vehicle GPS, LED display and so on.

**Features**

- Flexible memory configurations with up to 128KB on-chip Flash memory and up to 32KB SRAM memory
- Extensive range of enhanced I/Os and peripherals connected to two APB buses
- Wide range of standard and advanced communication interfaces, including SPI, I2C, USART and I2S
- Two 12-bit 1Msps ADC with 16 channels, up to four general-purpose 16-bit timers and one PWM advanced timer
- Three power saving modes for maximum optimization between wakeup latency and energy consumption for low-power applications