GigaDevice Launches the New GD32E232 Series of MCU's Featuring the Arm® Cortex®-M23 core for Embedded Systems

San Jose, USA (January 8, 2020) - GigaDevice, an industry-leading semiconductor supplier (SSE code: 603986), officially released the GD32E232 microcontroller series based on the Arm® Cortex®-M23 core. The series is presently sampling and will officially move to mass production in February.

This new series integrates on-chip memory, timers, data converters and many peripheral interfaces in a compact package. They are available in 4x4 mm and 3x3 mm packages and are particularly suitable for applications that require high precision measurement with long delays such as high-frequency pulse measurements, long pulse width waveform captures, or periodic signals that produce large interval delays. These types of applications are seen in end equipment such as optical modules, photoelectric converters, fiber optic networks, base station systems, precision instruments, industrial control and automation systems.

GD32E232 Expands the Arm® Cortex®-M23 based MCU Series

Fully integrated control system

The chip provides up to four channel 12-bit precision DAC outputs, eliminating the need for an external digital potentiometer, which can reduce PCB size and BOM cost. The GD32E232 also includes a built-in acceleration unit, along with the hardware multiplier & divider of the Cortex®-M23 core. This allows the PWM duty cycle to be quickly calculated and the DAC outputs can be precisely controlled.

In order to improve the accuracy of the analog measurement, the chip integrates a 12-bit 2.6MSPS sampling rate high-performance ADC, with up to 16 reusable channels, while it supports 16-bit hardware oversampling filtering and resolution configuration function. The chip's sampling accuracy is higher than similar products on the market.

The newly equipped Configurable Logic Array (CLA) provides more hardware flexibility for field applications and can implement simple combinational logic and sequential logic operations. Furthermore, it helps to improve the working efficiency of the CPU and enhance the real-time performance of signal processing for cost-sensitive products.

These new highly integrated precision features are very useful for engineers of industrial control systems such as optical transceivers, optical modules, and access networks.   The GD32E232 series products can realize fully integrated digital control in such applications and can ensure precise control of optical drives and monitoring processes.

Main System Features

The GD32E232 series MCUs can enable the Cortex®-M23 core to perform analog-intensive operations at up to 72 MHz and are equipped with more standard peripheral resources for industrial applications, including: up to five 16-bit general-purpose timers, one 16-bit advanced vector control timer, which supports three-phase PWM output, two 16-bit basic timers, and a multi-channel DMA controller. As for the serial interface, it includes two USARTs, two SPIs, two I2Cs, and one I2S.

The MCU operates from 1.8V to 3.6V power supply in a -40 °C to + 105 °C industrial temperature range and is available in QFN32 and QFN24 packages. Additionally, the GD32E232 series MCU has a built-in I2C bootloader in a separate area of flash memory to meet the requirements of updating the program code in a small package and in a compact layout, Therefore, the existing standard I2C interface can be used directly to download programs and updates, providing a convenient solution for users in mass production.

GD32E23x series MCUs include GD32E230, GD32E231 and GD32E232 which consists of three series and 27 product models. All series are perfectly compatible in terms of software and pin packages, which makes it easier to implement code migration, expansion and upgrade, unleashing the full potential of the Cortex®-M23 core.

GD32E23x product series MCUs of Cortex®-M23 core

Mr. Eric Jin, Marketing Director of GigaDevice Semiconductor, expressed that: "We continue to invest heavily in the development of the Arm® Cortex®-M23 core and create new solutions for embedded design engineers. By promoting the best practices of Arm® technology and the latest architecture in project development, GD32 has matured into one of the largest Arm® microcontroller offerings in China. In the coming year, we will continue to provide a broader portfolio of Arm® -based MCUs with more integrated features to address new applications for the Internet of Things and in the Smart Industrial markets ."

About GD32 MCU

GigaDevice GD32 MCU is a leader in China's high-performance 32-bit general-purpose microcontroller market being the first to release China's Arm® Cortex®-M3, Cortex®-M4 and Cortex®-M23 core MCU product series. GD32 series MCUs have become the mainstream choice for China's 32-bit general-purpose MCU market. With a total of more than more than 300 million units shipped, more than 20,000 customers and 24 series with more than 350 part number selections, GigaDevice can provide solutions for a broad set of applications on the forefront of the market. GigaDevice GD32 MCU is also the first Chinese Arm® University Program (AUP) partner, an Arm® mbed™ IoT platform eco-

partner, and the title sponsor of the "GigaDevice Cup" in China Graduate Electronic Design Contest. All models are compatible with each other in terms of software with scalable lines of hardware pin packages. They are fully applicable to all kinds of high-performance, mainstream and entry-level embedded control requirements; enabling cost-effective value while providing a comprehensive ecosystem and ease of use.

About GigaDevice

GigaDevice Semiconductor (stock number 603986), founded in Silicon Valley in April 2005, is a global fabless semiconductor supplier engaged in advanced memory technology and microcontroller products. The company has global branch offices and a global marketing network located in China, Taiwan, Korea, Japan, Singapore, United States and United Kingdom amongst other countries. GigaDevice management system has achieved ISO 9001:2015 and ISO 14001:2015 certification. The company is committed to the success of our customers through continuous innovation, in-depth research, quality design and development. For more information, please visit our website www.GigaDevice.com.