Press

RELEASES

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GigaDevice launches the GD32G5 series high-performance MCUs with Cortex®-M33 core, unleashing innovation potential in industrial applications

Beijing, China (November 12, 2024) – GigaDevice (Stock Code: 603986), a leading semiconductor supplier, distributed by Macnica ATD Europe, today officially announced the launch of the GD32G5 series high-performance microcontrollers, based on the Arm® Cortex®-M33 core.

The GD32G5 series MCUs, featuring exceptional processing performance, a wide range of digital and analog interface resources, and enhanced security capabilities, can be widely applied across diverse scenarios such as digital power systems, charging stations, energy storage inverters, frequency converters, servo motors, and optical communication. This new product lineup offers 14 models across 7 package types, including LQFP, QFN, and WLCSP. Samples and development boards are now available, and mass production and shipments will begin in December.

Powerful Performance Empowering the Industrial Market

The GD32G5 series MCUs are powered by the high-performance Arm® Cortex®-M33 core, with a clock frequency of up to 216 MHz. These MCUs feature an advanced DSP hardware accelerator and a single-precision floating-point unit (FPU). They also integrate a hardware trigonometric function accelerator (TMU), supporting 10 types of function calculations, along with various other hardware acceleration units, including filter algorithms (FAC) and Fast Fourier Transform (FFT), which significantly enhance processing efficiency. At maximum frequency, the GD32G5 series MCUs deliver performance of up to 316 DMIPS, achieving an impressive CoreMark® score of 694.

The GD32G5 series MCUs are equipped with 256KB to 512KB of embedded Flash memory, supporting the dual-bank Flash feature, and 128KB of SRAM, which includes 32KB Tightly Coupled Memory RAM (TCMRAM) for zero-wait execution of critical instructions and data. Additionally, they feature high-speed cache memory, with up to 2KB I-Cache and 512B D-Cache, further boosting core processing performance.

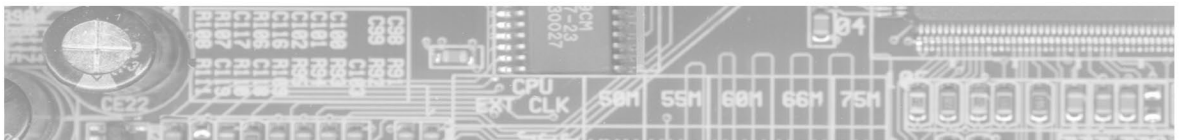
Extensive Peripherals Enable Development Innovation

The GD32G5 series MCUs integrate a comprehensive range of peripheral resources. They support four 12-bit ADCs with a sampling rate of up to 5.3 MSPS and up to 42 channels, as well as four 12-bit DACs, two of which offer sampling rates as high as 15 MSPS. Additionally, the series includes eight high-speed comparators (COMPs) and a suite of high-precision analog peripherals designed to meet the demands of motor and power control applications. The GD32G5 series also features a 16-channel high-precision timer (HRTimer) with accuracy reaching 145 ps, along with three advanced 8-channel timers, two 32-bit general-purpose timers, five 16-bit general-purpose timers, two 16-bit basic timers, and one low-power timer.

In terms of communication interfaces, the GD32G5 series offers five U(S)ARTs, four I2Cs, three SPIs, and one QSPI supporting up to 200 MHz DDR/SDR interfaces. The MCUs are equipped with three CAN-FD modules, ideal for high-speed communication applications. Additionally, they integrate one HPDF (high-performance digital filter) supporting 8 channels and 4 filters, with external Σ-Δ modulator support. The series also includes four configurable logic modules (CLAs) and the Trigsel module, which allows flexible configuration of trigger sources. Designed to operate in a wide temperature range from -40°C to 105°C, the GD32G5 series is well-suited for demanding applications such as optical modules, industrial power supplies, and high-speed motor control, where stringent temperature requirements must be met.

Building a Strong Foundation of Quality with Security and Reliability

The GD32G5 series MCUs are equipped with multiple security features that provide robust protection mechanisms during communication, including secure OTA updates,



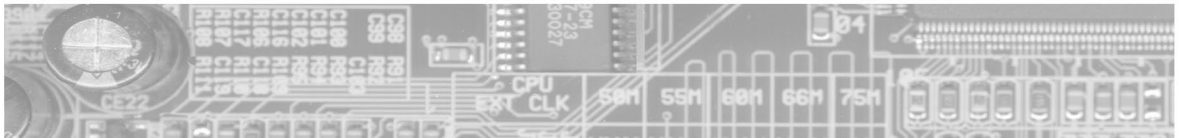
secure boot, secure debug, and secure firmware upgrades. The MCUs offer 2KB of OTP (One-Time Programmable) storage to ensure that code and data remain unaltered, safeguarding device security and integrity. Additionally, the entire Flash/SRAM region supports ECC (Error Correction Code). The series includes built-in hardware encryption and decryption modules supporting DES, Triple DES, and AES algorithms, ensuring the security of data during communication. Furthermore, the product includes a True Random Number Generator (TRNG) for enhanced security.

The GD32G5 series supports the system-level IEC 61508 SIL2 functional safety standard, offering a comprehensive Safety Package, which includes a Safety Manual, FMEDA (Failure Modes, Effects, and Diagnostic Analysis), and a self-test library. These resources help users accurately identify potential safety risks, providing a solid foundation for the stability and reliability required in industrial applications.

The GD32 development ecosystem is rapidly expanding, with GigaDevice providing a free development environment. The GD32 Embedded Builder IDE, along with debugging and downloading tools like GD-LINK and the all-in-one programming tool, GD32 All-In-One Programmer is now available for the new GD32G5 series high-performance microcontrollers. Major embedded tool vendors in the industry, such as Arm® KEIL, IAR, and SEGGER, will also offer comprehensive support for the GD32G5 series, including development, compilation, and debugging tools. Documentation, software libraries, ecosystem documents, and tools for the series are now available on the website, providing customers with extensive development references.

Availability and Pricing

The GD32G5 product lineup offers 14 models across 7 package types, including LQFP128/100/80/64/48, WLCSP81, and QFN48. Accompanying development boards have also been launched, including the GD32G553Q-EVAL and GD32G553R-EVAL full-feature evaluation boards, as well as the GD32G553V-START, GD32G553M-START, and GD32G553C-START entry-level learning kits, corresponding to different packages and pin configurations, facilitating user development and



debugging. More Information about availability, samples and pricing, please visit email: sales.europe@macnica.com.

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About GigaDevice

GigaDevice Semiconductor Inc. (SSE Stock Code 603986) is a global leading fabless supplier. The company was founded in April 2005 and headquartered in Beijing, China, with branch offices in many countries and regions worldwide, providing local support at customers' fingertips. Committed to building a complete ecosystem with four major product lines – Flash memory, MCU, sensor and analog – as the core driving force, GigaDevice can provide a wide range of solutions and services in the fields of industrial, automotive, computing, consumer electronics, IoT, mobile, networking and communications.

GigaDevice has received the ISO26262:2018 automotive functional safety ASIL D certification, IEC 61508 functional safety production certification, as well as ISO9001, ISO14001, ISO45001, and Duns certifications. In a constant quest to expand our technology offering to customers, GigaDevice has also formed strategic alliances with leading foundries, assembly, and test plants to streamline supply chain management.

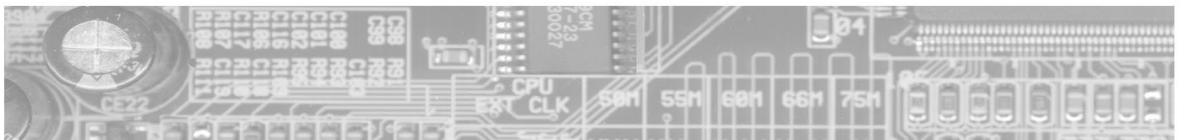
For more details, please visit: www.gigadevice.com.

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About Macnica ATD Europe GmbH

Macnica's ATD Europe GmbH, (former Macnica GmbH), was originally established in the UK in 2006, and moved to Germany in July 2008, to increase efficacy of its service for European customers.

By it's acquisition of the Munich based company Scantec Mikroelektronik in 2014 Macnica Europe formed a powerful semiconductor distribution with headquarter in



Ingolstadt and offices in Munich, Regensburg, Milton Keynes (UK) and Warsaw offering an attractive and competitive portfolio of highly sophisticated devices.

Macnica provides end to end support from design-in to production through its global service network to its customers, regardless of the final destination of the product shipment to customers' manufacturing locations.

About Macnica ATD Europe S.A.S.
Founded in 1990 as ATD Electronique, Macnica ATD Europe headquarter offers innovative components dedicated to imaging applications for the European market. Its product portfolio includes: image sensors (CCD, CMOS, InGaAs, Thermal etc.), optics, interface circuits, FPGA & IPs, imaging processors, cables and OLED microdisplays.

It also covers development tools and design services enabling fast and efficient realization of new high-performance camera systems for markets such as machine vision, medical, life sciences, surveillance, automotive and others. After the acquisition of the company by Macnica Inc. as of October 1, 2020 the company operates under the name Macnica ATD Europe.

About Macnica, Inc.
Macnica was established in 1972 as a semiconductor distribution company headquartered in Yokohama, Japan, and has over 85 sales offices worldwide in eastern Asia, Europe and the USA. Total number of employees is over 3,900 and its consolidated revenue for fiscal 2021 was approximately US$ 7.6 B.

Macnica is famous for having an excellent engineering team of more than 900 application support engineers, IC designers and software developers with strong focus on providing technical support for its customers including custom design services. Macnica is continuing to extend its presence globally by having successful partners in strategic areas in the electronics market.

More information about Macnica: https://www.macnica.com/global/en/home.html.

