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# Nuvoton Unveils MA35H0 Series Microprocessor for Industrial HMI Applications

## *Dual Arm Cortex-A35 Cores, Graphics Acceleration, Connection, and On-Chip Hardware Security*

**Hsinchu, Taiwan, February 1, 2024 –** Nuvoton is pleased to announce the NuMicro® MA35H0 series, a high-performance microprocessor for industrial HMI (Human Machine Interface) applications. As well as general control and user interface applications, this MPU is ideal for numerous sophisticated tasks across industrial and commercial applications – in fields as diverse as industrial HMI, factory automation, smart buildings, smart homes, smart appliances, smart medical services, and new energy.

The MA35H0 is built around dual power-efficient 64/32-bit Cortex-A35 cores based on the Armv8-A architecture, running at up to 650 MHz, with 32KB of L1 cache for each core, and 512KB of shared L2 cache. There’s no need for external memory as 128 MB of DDR SDRAM is stacked inside the 24 mm2 LQFP216 package (part number MA35H04F764C), saving space and reducing electromagnetic interference (EMI) and cost.

This MPU supports Arm® TrustZone secure boot and other security features to safeguard valuable code and data. It also features high-performance hardware floating-point units (FPU) that enhance its digital signal processing (DSP) capabilities. MA35H0 MPUs are suitable for harsh environments thanks to their industrial-grade internal operating temperature range (Tj) of -40 °C to 125°C.

Emphasizing the strong visual nature of modern user interfaces, this MPU includes the Arm NEON Advanced Single Instruction Multiple Data (SIMD) engine, dramatically improving media encoding/decoding, UI, and 2D graphics performance. It has built-in 2D graphics and video decoder, with smooth, crisp 60fps 1280x800 LCD output support. Powerful on-chip security support and a wide choice of high-speed connectivity options make the MA35H0 series a perfect choice as the heart of a responsive, attractive, and secure user interface for almost any device.

### Practical Security for Industrial HMI

The MA35H0 emphasizes the practical security features that today’s applications demand, including the root of trust and secure boot via the internal boot ROM with an OTP key. Hardware cryptographic acceleration functions (AES, SHA, ECC, RSA, SM2/3/4, and TRNG) are built-in, supporting the secure key store and OTP memory, which are walled off from direct CPU access for additional security. The MA35H0 series can easily establish fast encrypted communications, keep sensitive user data safe, and offer a secure environment for critical applications.

### Integrated LCD Display Controller. Graphics and Video Decoder. High-Speed Connectivity

The built-in LCD controller provides a sharp and responsive user interface at up to 1280x800, aided by 2D graphics hardware acceleration and fast on-chip JPEG and H.264 video decoding – capable of providing full-screen video at 60fps.

The MA35H0 is ready to fit into any application environment, thanks to its vast variety of built-in high-speed connectivity and I/O features. These include megabit Ethernet with IEEE 1588v2, USB 2.0 High-Speed Host and Device, SDIO3.0, QSPI, CAN FD, UARTs, and I2S. The chip also supports 4/5-wire resistive touchscreens without external IC decoders.

### Rich Development and Design Resources

The NuMicro MPU Platform and its abundant design resources get projects off to a flying start. A full-featured evaluation board (NuMaker-HMI-MA35H0-A1) and HMI application demos include an EV charging station, industrial control, coffee machine, and vehicular speed and data display. OS support includes Linux, RTOS, and Bare Metal.

Find out more about the [Nuvoton MA35H0 MPU for industrial HMI](https://www.nuvoton.com.cn/products/microprocessors/arm-cortex-a35-mpus/ma35h0-industrial-hmi-series/?utm_source=pr&utm_medium=pr) on the Nuvoton webpage.

### About Nuvoton Technology

Nuvoton Technology Corporation (Nuvoton) was founded to bring innovative semiconductor solutions to the market. Nuvoton was spun-off as a Winbond Electronics affiliate in July 2008 and went public in September 2010 on the Taiwan Stock Exchange (TWSE). Nuvoton focuses on the development of microcontroller, microprocessor, smart home, cloud security IC, battery monitoring IC, components, visual sensing and IoT with security. The company has a strong market share in Industrial, Automotive, Communication, Consumer and Computer markets. Nuvoton owns 6-inch wafer fabs equipped with diversified processing technologies to provide professional wafer foundry services. Nuvoton provides products with a high performance/cost ratio for its customers by leveraging flexible technology, advanced design capability, and integration of digital and analog technologies. Nuvoton values long term relationships with its partners and customers and is dedicated to continuous innovation of its products, processes, and services. Nuvoton has established subsidiaries in the USA, China, Israel, India, Singapore, Korea and Japan to strengthen regional customer support and global management. For more information, please visit [https://www.nuvoton.com](https://www.nuvoton.com/).