ASIX Launches New EtherCAT Slave Controller with Dual-Core MCU Solution
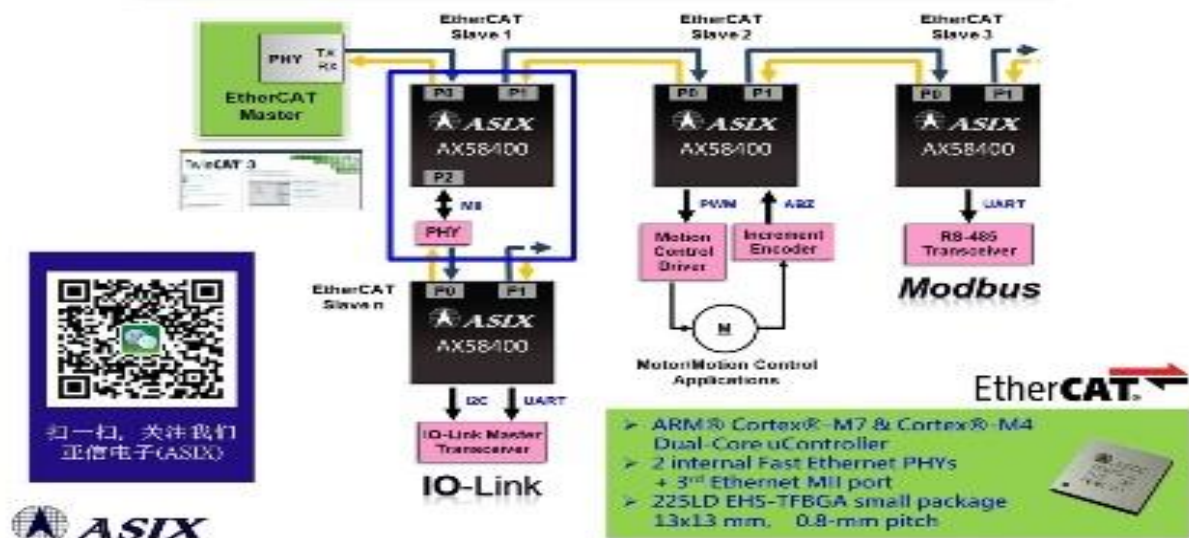
ASIX AX58400 EtherCAT Slave Controller with Dual-Core MCU is equipped with the highest-performing 480MHz ARM® Cortex®-M7 core, 240MHz ARM® Cortex®-M4 core, and EtherCAT Slave Controller integrated with two embedded Fast Ethernet PHYs.

HSINCHU, Taiwan – Nov. 24th, 2021

Following the launch of the first generation AX58100 EtherCAT Slave Controller in 2018 and the launch of next generation small package AX58200 EtherCAT Slave Controller SoC in 2019, ASIX Electronics Corporation (Taiwan Stock Exchange: 3169:Taiwan) today launches the newest generation "AX58400 EtherCAT Slave Controller with Dual-Core MCU", which is equipped with the industry's highest-performing ARM® Cortex®-M family dual-core microcontroller.

The AX58400 EtherCAT Slave Controller with Dual-Core MCU is a System-in-Package (SiP) product based on the STM32H755 microcontroller from STMicroelectronics. AX58400 is equipped with 480MHz 32-bit ARM® Cortex®-M7 core, the highest-performing member of ARM® Cortex®-M family, with double-precision FPU, DSP extension and L1 cache, 240MHz 32-bit ARM® Cortex®-M4 core with Adaptive Real-Time Accelerator (ST ART Accelerator™), and embedded 2 Mbytes dual-bank Flash memory and 1 Mbyte RAM. Using ST ART Accelerator™ technology and efficient L1 cache, AX58400 enables perfectly optimized processor-memory interactions with a performance equivalent to zero wait states. AX58400 supports AES/TDES/HASH/HMAC hardware cryptographic accelerators, ROP/PCROP/Anti-tamper security techniques, and rich communication interfaces such as 10/100Mbps Ethernet MAC with MII/RMII, USB 2.0 OTG, Camera I/F, TFT-LCD Controller, JPEG Codec, SPI/UART/I2C/I2S/SAI/CAN/SDMMC/ADC/DAC/HDMI-CEC/PWM/DFSDM, etc.

AX58400 EtherCAT Slave Controller (ESC) is integrated with two embedded Fast Ethernet PHYs and supports 9 Kbytes DPRAM, 8 FMMUs, 8 sync managers and 64-bit distributed clock. The AX58400 is interoperable with all EtherCAT systems with standard EtherCAT protocols such as CoE, FoE, VoE, etc., and is suitable for various industrial automation fieldbus applications, such as motor/motion control, digital I/O control, sensors data acquisition, robotics, EtherCAT to IO-Link master gateway, EtherCAT to Modbus TCP gateway, EtherCAT Junction slave module, EtherCAT communication module, etc.

Designers can easily develop AX58400 on more complicate EtherCAT slave applications by using AX58400 powerful dual-core MCU and large capacity Flash memory and RAM. Taking the development of EtherCAT to IO-Link master gateway application for example, designer can use the highest-performing ARM® Cortex®-M7 core to process the real-time, more complex EtherCAT protocol stack, and use the ARM® Cortex®-M4 core to process the IO-Link master protocol stack in parallel. Utilizing the dual-core MCU architecture can effectively reduce the CPU loading of microcontroller, and can simplify the co-working for AX58400 firmware code development, thereby shortening the project development timeline.

To simplify AX58400 EtherCAT products design, ASIX offers AX58400 evaluation boards and free Board Support Package (BSP), which includes datasheet, reference schematics, PCB design guidelines, hardware/software design guides, software tools, sample firmware sources, etc. for designers to easily design AX58400 EtherCAT slave products. ASIX has outstanding engineering teams to provide customers the professional and timely technical services. For more information, please contact ASIX Electronics Corp. via e-mail: sales@asix.com.tw, or visit ASIX website: https://www.asix.com.tw/.