

AX58400 BSP User Guide

Revision 1.00
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1. Introduction

The AX58400 2/3-port Dual-Core EtherCAT Slave Controller SoC is a System-in-Package (SiP) product based on the STM32H755 microcontroller from STMicroelectronics. AX58400 is equipped with Dual-Core 32-bit ARM® Cortex®-M7 core with DSP extension runs up to 480 MHz, 32-bit ARM® Cortex®-M4 core with Adaptive Real-Time Accelerator (ST ART Accelerator™) runs up to 240 MHz and EtherCAT Slave Controller (ESC) with two integrated Fast Ethernet PHYs. AX58400 supports AES/TDES/HASH/HMAC hardware cryptographic accelerators, ROP/PCROP/Anti-tamper security techniques, true random number generator, and additional communication interfaces such as 10/100Mbps Ethernet MAC, USB OTG, Camera I/F, TFT-LCD Controller, JPEG Codec, SPI/UART/I2C/I2S/SAI/CAN/SDMMC/ADC/DAC/HDMI-CEC/PWM/DFSDM, etc.

The AX58400 is interoperable with all EtherCAT systems with standard EtherCAT protocols such as CoE, FoE, VoE, etc. and is suitable for motor/motion control, digital I/O control, sensors data acquisition, robotics, EtherCAT IO-Link master, EtherCAT Junction slave module, EtherCAT communication module, etc. industrial automation fieldbus applications.

The AX58400 BSP (Board Support Package) provides ASIX EtherCAT related reference design resource additionally. Users can use this BSP to evaluate/develop their production that target on ASIX AX58400 evaluation board or hardware platform.

2. Directory Information

Directory	Description
Datasheet	AX58400 datasheet
Document	Reference user manual and revision history
Hardware_Design	The related reference schematics, PCB, Layout, Application Design Note and BOM files
SampleCode	Several samples or reference codes
AX58400 BSP User Guide	Board Support Package user guide for AX58400

3. Datasheet

File Name	Description
AX58400 Datasheet	AX58400 in chip level description

4. Document

File Name	Description
AX58400 Product Brief	Product brief of AX58400
AX58400 ESI Design Note	ESI design note for AX58400
AX58400 Production Introduction	Production introduction of AX58400
AX58400 GpioAio User Guide	User guide of AX58400 Analog/Digital I/O reference design
AX58400 MotorControl User Guide	User guide of AX58400 MotorControl reference design
AX58400 SSC Tool Configuration Import User Guide	How to import the configuration file of AX58400 GPIO / AIO and MotorControl application to generate related source files

5. Hardware_Design

File Name	Description
BOM	The BOM files for AX58400 EVB/EXB boards
Layout	The Layout files for AX58400 EVB/EXB boards
Layout_Guide	AX58400 Application Design Note
Schematics	The reference schematics of AX58400 EVB/EXB boards

6. SampleCode

Folder Name	Description
AX58400_Bldr	Bootloader
AX58400_GpioAio	EtherCAT reference code for Analog/Digital I/O application
AX58400_MotorControl	EtherCAT reference code for MotorControl application

7. Revision History

Revision	Date	Description
V1.00	2021/09/24	Preliminary release

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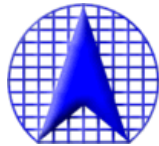
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ASIX Electronics Corporation.

**4F, No.8, Hsin Ann Rd., Hsinchu Science Park,
Hsinchu, Taiwan, R.O.C.**

TEL: +886-3-5799500

FAX: +886-3-5799558

Email: support@asix.com.tw

Web: <http://www.asix.com.tw>