

The following are the AX58100 EtherCAT Slave Controller (ESC) Slave Information Interface (SII) Area information for customers to modify the AX58100 EtherCAT Slave Information (ESI) file. Please refer to *Section 3.2 “Hardware Configuration EEPROM (HWCFGEE)” of AX58100 Datasheet* for details of AX58100 ESC Configuration Area definition.

ESC SII Field	Length (Bytes)	Default Value	Descriptions
ESC Configuration Area (EEPROM Byte Offset 0x0D - 0x00)	14	-	Refer to Table 4: AX58100 ESC Configuration Area Table or assigned by customers based on their exact applications
Vendor ID	4	0x00000B95	ASIX’s Vendor ID assigned by ETG or assigned by customers based on their own ETG Vendor ID
Product Code	4	-	Refer to Table 2: AX58100 Product Code Field Definition Table , Table 3: AX58100 Recommended Product Code Table or assigned by customers based on their own Product Code
Revision Number	4	-	ASIX assigned revision number or assigned by customers based on their own requirements This field should be increased on the revised firmware or ESI file in Table 5.
Serial Number	4	0x00000000	Assigned an unique Serial Number for each device by vendor 0 if there is no serial number given

Table 1. AX58100 SII (Slave Information Interface) Area Table

The following is an example of AX58100 SPI Master ADC/DIO Demo Board ESI file.

```

<Eeprom>
  <ByteSize>2048</ByteSize>
  <ConfigData>040f0044102700f0000050000001</ConfigData> ESC Configuration Area
</Eeprom>

<Vendor>
  <Id>#x00000b95</Id> ➡ Vendor ID
  <Name>ASIX Electronics Corporation</Name>
  <ImageData16x14>

<Devices>
  <Device Physics="YY"> Product Code Revision Number
    <Type>ProductCode="#x110100" RevisionNo="#x00000002"-SPI Master ADC Converter Digital I/O : 8 Input/8 Output</Type>
    <Name>AX58100 SPI_ADC_DIO_8In_8Out</Name>
    <GroupType>ADC_DAC_DIO</GroupType>
    <Fmmu>Outputs</Fmmu>
    <Fmmu>Inputs</Fmmu>
    <Sm StartAddress="#xf03" ControlByte="#x44" Enable="1">Outputs</Sm>
    <Sm ControlByte="#x00000000" StartAddress="#x1002" Enable="1">Inputs</Sm>
  </Device>
  
```

Bit	Description
31:28	Reserved (0000b)
27:16	Interface Mode bit 27:25: Reserved bit 24: MII Interface (1: Enabled; 0: Disabled) bit 23: GPIO Interface (1: Enabled; 0: Disabled) bit 22: ABZ/Hall Encoder Interface (1: Enabled; 0: Disabled) bit 21: PWM/STEP Interface (1: Enabled; 0: Disabled) bit 20: SPI Master Interface (1: Enabled; 0: Disabled) bit 19: 8-bit Async. Local Bus PDI (1: Enabled; 0: Disabled) bit 18: 16-bit Async. Local Bus PDI (1: Enabled; 0: Disabled) bit 17: SPI Salve PDI (1: Enabled; 0: Disabled) bit 16: Digital I/O PDI (1: Enabled; 0: Disabled)
15:8	Application Type This field defines the application type. 00h: No specific/identified application (default) 01h: Multi-function application 02h: Digital I/O Control 03h: Motion/Motor Control 04h: Sensors Data Acquisition 05h: Communication Module 06h: PC Card 07h: 3-port EtherCAT Junction Slave others: Reserved
7:0	Vendor Specific Configuration/Sub-Application Type This field defines the vendor specific requirements or Sub-application type. 00h: No specific requirement (default) 10h: STM NUCLEO-F303RE Motor Control 11h: STM NUCLEO-F303RE Two-axes Position Control 12h: STM NUCLEO-H745 One-axes Position Control 13h: Ax58100_GpioAio 14h: Ax58100_MotorControl 20h: Nuvoton NuMicro® M487 EtherCAT to IO-Link Control others: Reserved

Table 2. AX58100 Product Code Field Definition Table

Board Name	Product Code	Descriptions
AX58100 EVB (DIO)	0x00010200	Digital I/O : 16 Input/16 Output
AX58100 32 Digital Input	0x00010201	Digital I/O : 32 Input
AX58100 32 Digital Output	0x00010202	Digital I/O : 32 Output
AX58100 SPI Master ADC/DIO Demo Board	0x00110100	SPI Master ADC Converter Digital I/O : 8 Input/8 Output Multi-function (Sensor & DIO)
AX58100 Six-Step PWM BLDC Motor Control/SPI Slave MCU Demo Board	0x00620300	PWM/Hall Encoder SPI Slave PDI Motor Control
AX58100 Local Bus Demo Board	0x00040600	AX58100 + AX99100 EtherCAT Slave PCIe Card 16-bit Async. Local Bus PC Card
AX58100 Stepper Motor Control Demo Board	0x00610300	STEP/ABZ Digital I/O : 8 Input/8 Output Motor Control
AX58100 3-port EtherCAT Junction Slave Board	0x01000700	3-port EtherCAT Junction Slave
AX58100-EVB-SSPDI-1 Board + STM NUCLEO- F303RE Motor Control Demo	0x00020310	SPI Slave PDI Motor Control [7:0] = 0x10 for STM NUCLEO-F303RE Motor Control Demo
AX58100-EVB-SSPDI-1 Board + STM NUCLEO- F303RE Two-axes Position Control Demo	0x00020311	SPI Slave PDI Two-axes Position Control [7:0] = 0x11 for STM NUCLEO-F303RE Two-axes Position Control Demo
AX58100-EVB-SSPDI-1 Board + STM NUCLEO- H745 One-axes Position Control Demo	0x00020312	SPI Slave PDI One-axes Position Control [7:0] = 0x12 for STM NUCLEO-H745 One-axes Position Control Demo
Ax58100_GpioAio	0x00820013	Combination: AX58100-EVB-SSPDI-1 + NUCLEO-F303RE-64
Ax58100_MotorControl	0x00020314	Combination: AX58100-EVB-SSPDI-1 + NUCLEO-F303RE-64 + X-NUCLEO-IHM08M1 + BL60M24D8E00430080
AX58100-EVB-SSPDI-1 Board + Nuvoton NuMicro® M487 EtherCAT to IO-Link Control Demo	0x00020520	SPI Slave PDI IO-Link Control [7:0] = 0x20 for Nuvoton NuMicro® M487 EtherCAT to IO-Link Control Demo

Table 3. AX58100 Recommended Product Code Table

ESC Configuration Area	Value	Descriptions
AX58100 EVB (DIO)	040f0044102700ff000000000000	Digital I/O : 16 Input/16 Output
AX58100 32 Digital Input	040f004410270000000000000000	Digital I/O : 32 Input
AX58100 32 Digital Output	040f00441027ffff000000000000	Digital I/O : 32 Output
AX58100 SPI Master ADC/DIO Demo Board	040f0044102700f0000050000001	SPI Master ADC Converter Digital I/O : 8 Input/8 Output Multi-function (Sensor & DIO)
AX58100 Six-Step PWM BLDC Motor Control/SPI Slave MCU Demo Board	050603440a00000000001a00003c	PWM/Hall Encoder SPI Slave PDI Motor Control
AX58100 Local Bus Demo Board	080000000a000000000000000000	AX58100 + AX99100 EtherCAT Slave PCIe Card 16-bit Async. Local Bus PC Card
AX58100 Stepper Motor Control Demo Board	040f00441027f000000000000003c	STEP/ABZ Digital I/O : 8 Input/8 Output Motor Control
AX58100 3-port EtherCAT Junction Slave Board	000f00441027f0ff000000000000	3-port EtherCAT Junction Slave
AX58100-EVB-SSPDI-1 Board + STM NUCLEO- F303RE Motor Control Demo	050603440a00000000001a000000	SPI Slave PDI Motor Control
AX58100-EVB-SSPDI-1 Board + STM NUCLEO- F303RE Two-axes Position Control Demo	050e03440a00000000001a000000	SPI Slave PDI Two-axes Position Control
AX58100-EVB-SSPDI-1 Board + STM NUCLEO- H745 One-axes Position Control Demo	050e03440a00000000001a000000	SPI Slave PDI One-axes Position Control
Ax58100_GpioAio	050c03440a00000000001a000000	
Ax58100_MotorControl	050c03440a00000000001a000000	
AX58100-EVB-SSPDI-1 Board + Nuvoton NuMicro® M487 EtherCAT to IO-Link Control Demo	050603440a00000000001a000000	SPI Slave PDI IO-Link Control

Table 4. AX58100 Recommended ESC Configuration Area (EEPROM Byte Offset 0x0D - 0x00) Table

Bit	Description
31:24	Reserved (00h)
23:20	The field is reserved by AX58100 Expansion Board Reference Schematic 0h: No specific requirement (default) 1h: AX58100-EVB-SSPDI-1 2h: AX58100-EXB-SMDIO-1 3h: AX58100-EXB-SSPWM-1 others: Reserved
19:16	The field is reserved by AX58100 Evaluation Board Reference Schematic 0h: No specific requirement (default) 1h: AX58100 EVB 2h: AX58100 Local Bus Demo Board others: Reserved
15:0	The field is reserved by application firmware version information

Table 5. AX58100 Revision Number Field Definition Table

(*): AX58100 Revision Number Field Definition Table is starting from v105 for related applications.

Revision History

Revision	Date	Description
0.10	2018/05/14	Preliminary release
1.00	2018/11/28	<ol style="list-style-type: none"> 1. Modified some descriptions in Table 1. 2. Added an example of AX58100 SPI Master ADC/DIO Demo Board ESI file for Table 1. 3. Updated the default ESC Configuration Area values of AX58100 SPI Master ADC/DIO Demo Board and AX58100 Six-Step PWM BLDC Motor Control/SPI Slave MCU Demo Board in Table 4.
1.01	2018/12/27	<ol style="list-style-type: none"> 1. Modified some descriptions in Table 2. 2. Added the ESI configuration for AX58100 Stepper Motor Control Demo Board in Table 3 & 4.
1.02	2019/02/13	<ol style="list-style-type: none"> 1. Added “bit 24: MII Interface” and “07h: 3-port EtherCAT Junction Slave” definitions in Table 2. 2. Added “3-port EtherCAT Junction Slave” definitions in Table 3 & Table 4.
1.03	2019/02/21	<ol style="list-style-type: none"> 1. Added “Digital I/O : 32 Input” & “Digital I/O : 32 Output” definitions in Table 3 & Table 4
1.04	2019/05/29	<ol style="list-style-type: none"> 1. Added “AX58100-EVB-SSPDI-1 Board + STM NUCLEO-F303RE Motor Control Demo” definitions in Table 3 & Table 4
1.05	2019/11/28	<ol style="list-style-type: none"> 1. Added “AX58100-EVB-SSPDI-1 Board + STM NUCLEO-F303RE Two-axes Position Control Demo” definitions in Table 3 & Table 4 2. Added “AX58100-EVB-SSPDI-1 Board + Nuvoton NuMicro® M487 EtherCAT to IO-Link Control Demo” in Table 3 & Table 4 3. Added Table 5.
1.06	2020/11/27	<ol style="list-style-type: none"> 1. Added “AX58100-EVB-SSPDI-1 Board + STM NUCLEO-H745 One-axes Position Control Demo” definitions in Table 3 & Table 4
1.07	2025/01/20	<ol style="list-style-type: none"> 1. Added “Ax58100_GpioAio” and “Ax58100_MotorControl” product codes.

Copyright © 2018-2025 ASIX Electronics Corporation. All rights reserved.

DISCLAIMER

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose, without the express written permission of ASIX. ASIX may make changes to the product specifications and descriptions in this document at any time, without notice.

ASIX provides this document “as is” without warranty of any kind, either expressed or implied, including without limitation warranties of merchantability, fitness for a particular purpose, and non-infringement.

Designers must not rely on the absence or characteristics of any features or registers marked “reserved”, “undefined” or “NC”. ASIX reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. Always contact ASIX to get the latest document before starting a design of ASIX products.

TRADEMARKS

ASIX, the ASIX logo are registered trademarks of ASIX Electronics Corporation. All other trademarks are the property of their respective owners.

EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.



**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: <https://www.asix.com.tw>