

GigaDevice Semiconductor Inc.

**Reference Manual for EtherCAT Protocol
Stack Code Porting**

**Application Note
AN246**

Revision 1.0

(Apr. 2025)

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1. Preface

This document is specifically designed for users of GD32 MCU products who need a brief explanation of the steps and methods for porting EtherCAT protocol stack code.

This application note is divided into two parts: the first part describes the process of generating protocol stack code using the SSC TOOL, and the second part explains the process of embedding and compiling the protocol stack code within a project.

Before using this application, users are required to be members of the ETG organization in order to obtain access to the SSC TOOL for generating protocol stack code.

2. Generating Protocol Stack Code Using SSC TOOL

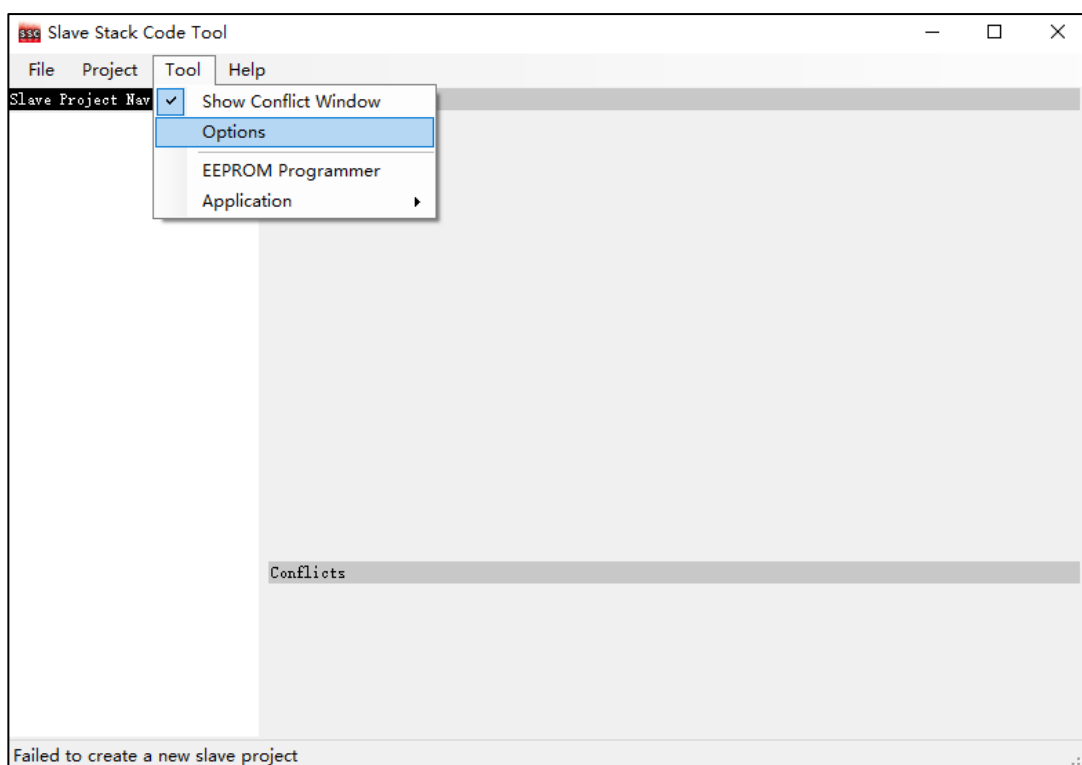
Users must first complete the download of the SSC TOOL. Refer to the ETG official website for download instructions:

https://www.ethercat.org/en/downloads/downloads_01DCC32A10294F2EA866F7E46FB0285F.htm.

Refer to the following steps to generate protocol stack code:

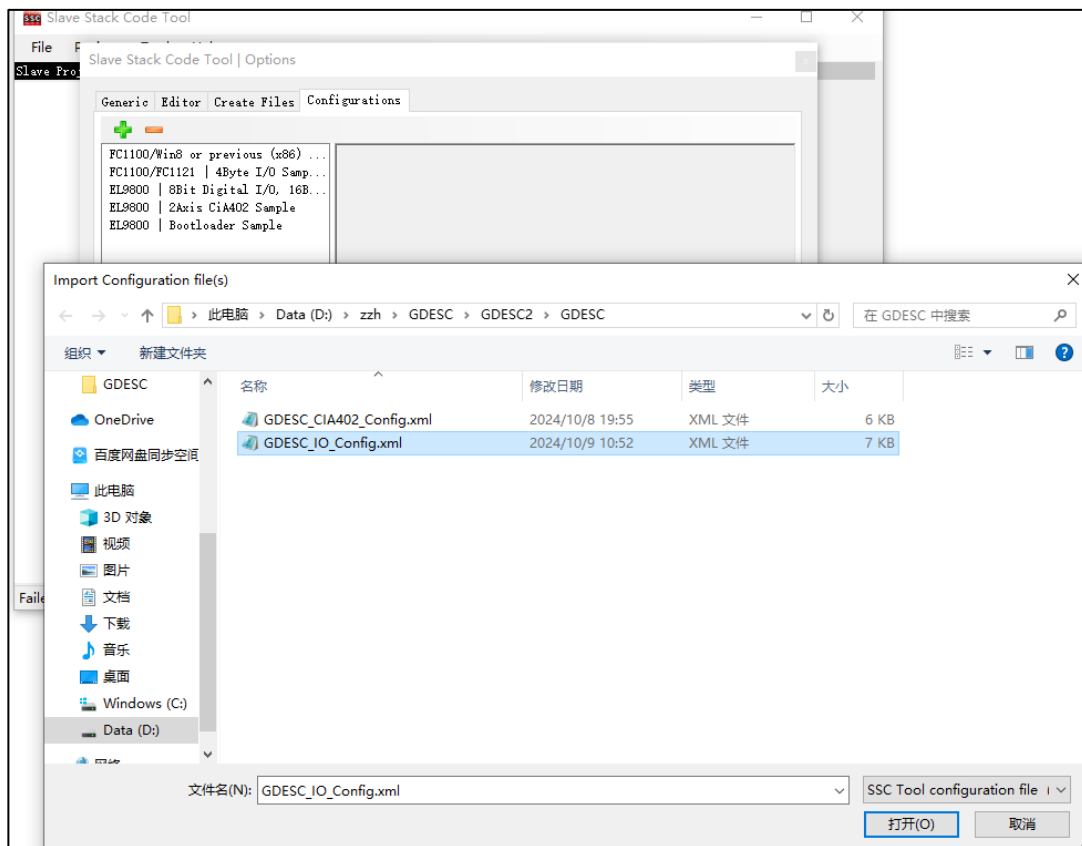
1. Open the SSC Tool and select ****Tool->Options****.

Figure 2-1. SSC Tool Options Page



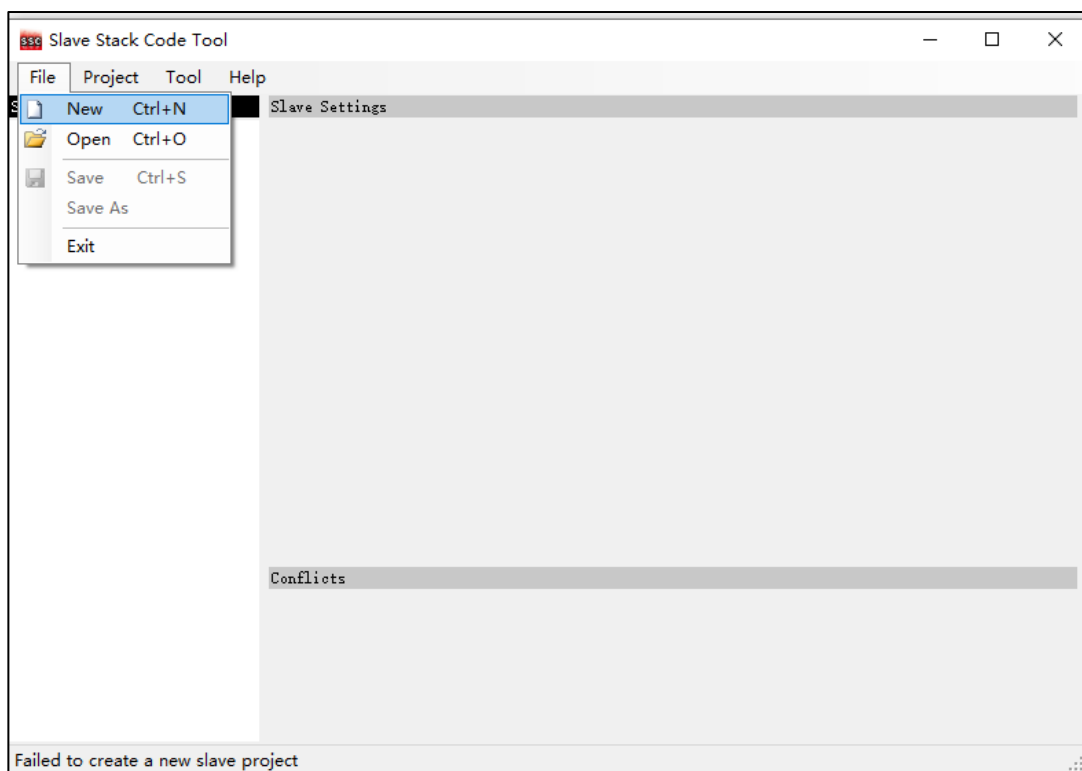
2. Click on Configurations and select to add the configuration file GDESC_IO_Config.xml.

Figure 2-2. ConfigurationsPage



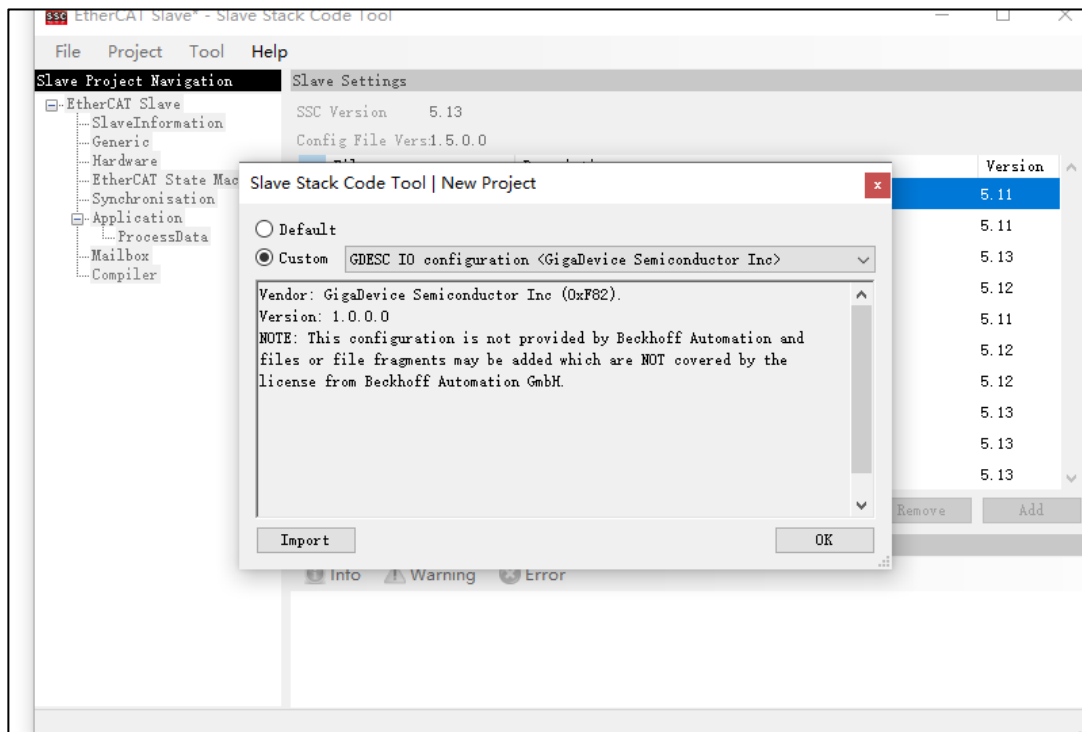
3. Create a new project in the SSC Tool by clicking ****File->New****.

Figure 2-3. Project Creation Page



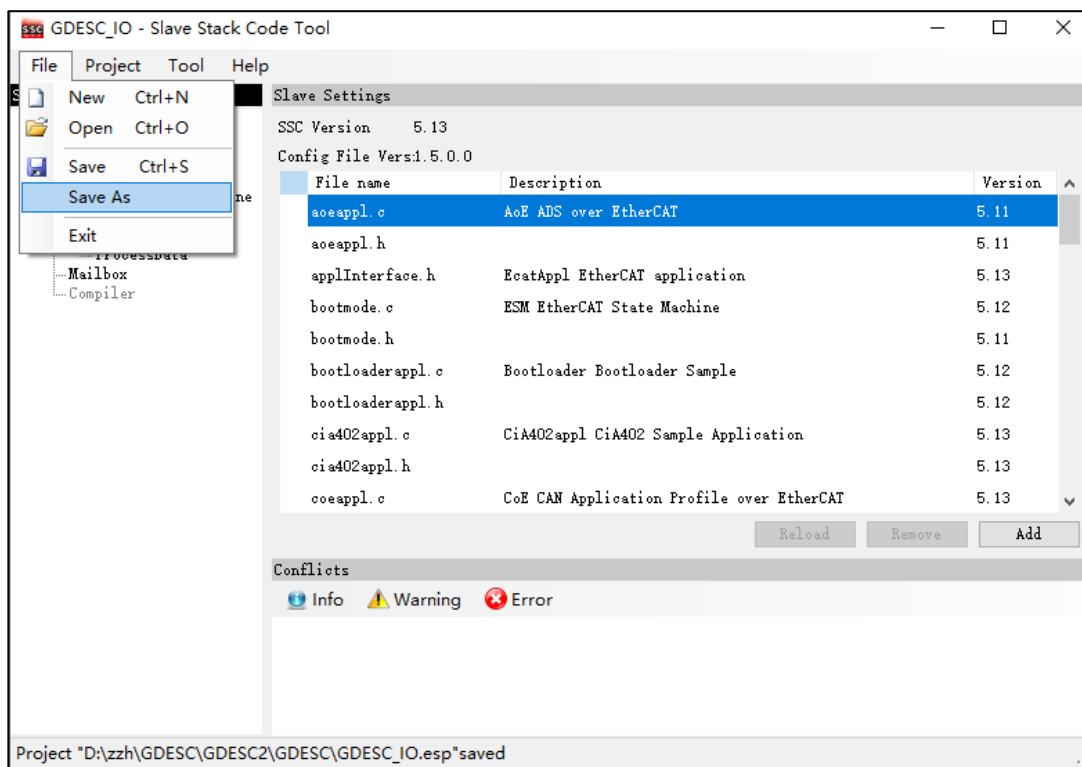
- Click on the ****Custom**** option, and select ****GDESC IO configuration <GigaDevice Semiconductor Inc >**** from the dropdown list.

Figure 2-4. Select GD Project Page



- Save the project file and specify the save path.

Figure 2-5. Save Path Page



6. Import the application EXCEL file.

Figure 2-6. EXCEL File Select Page

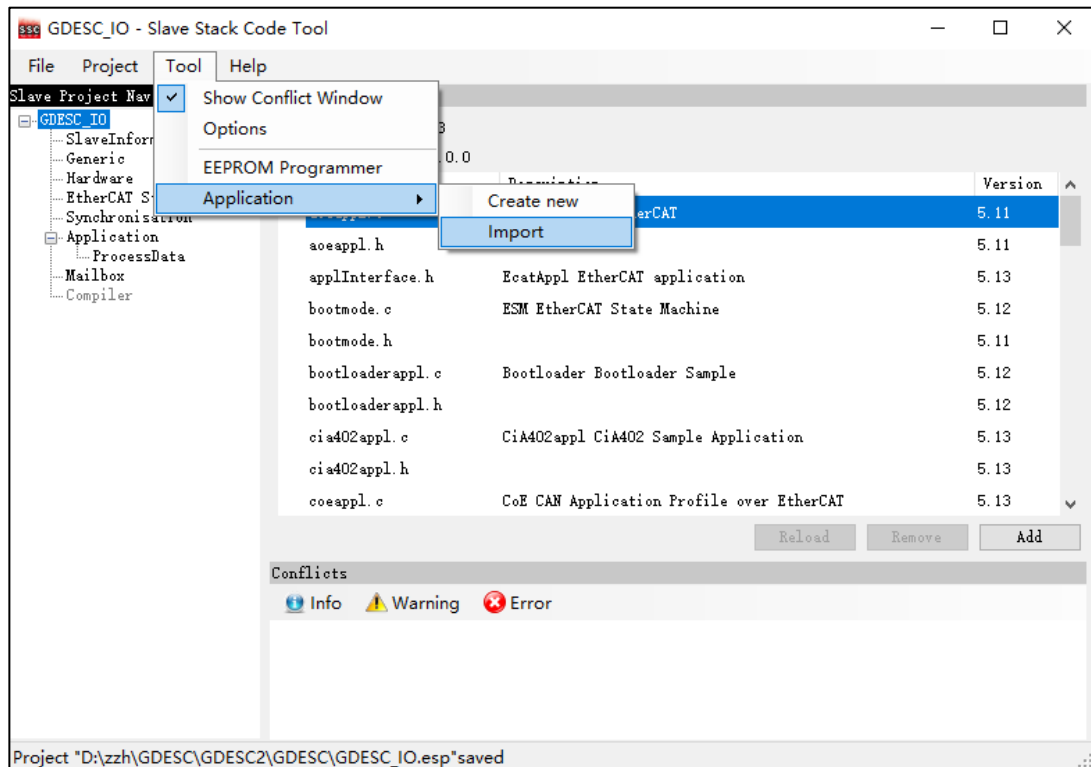
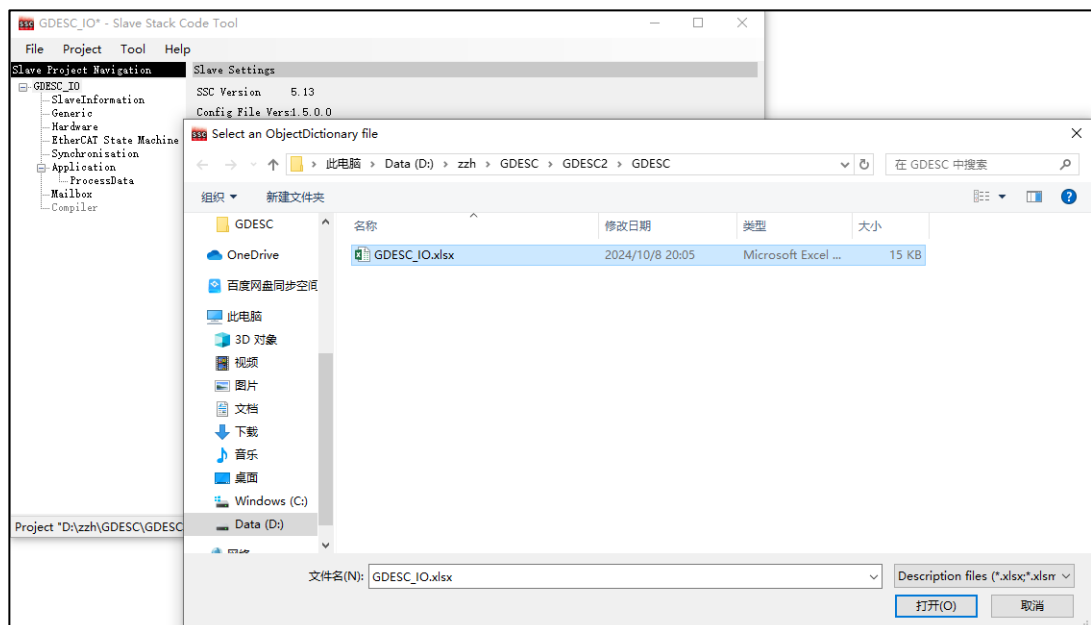
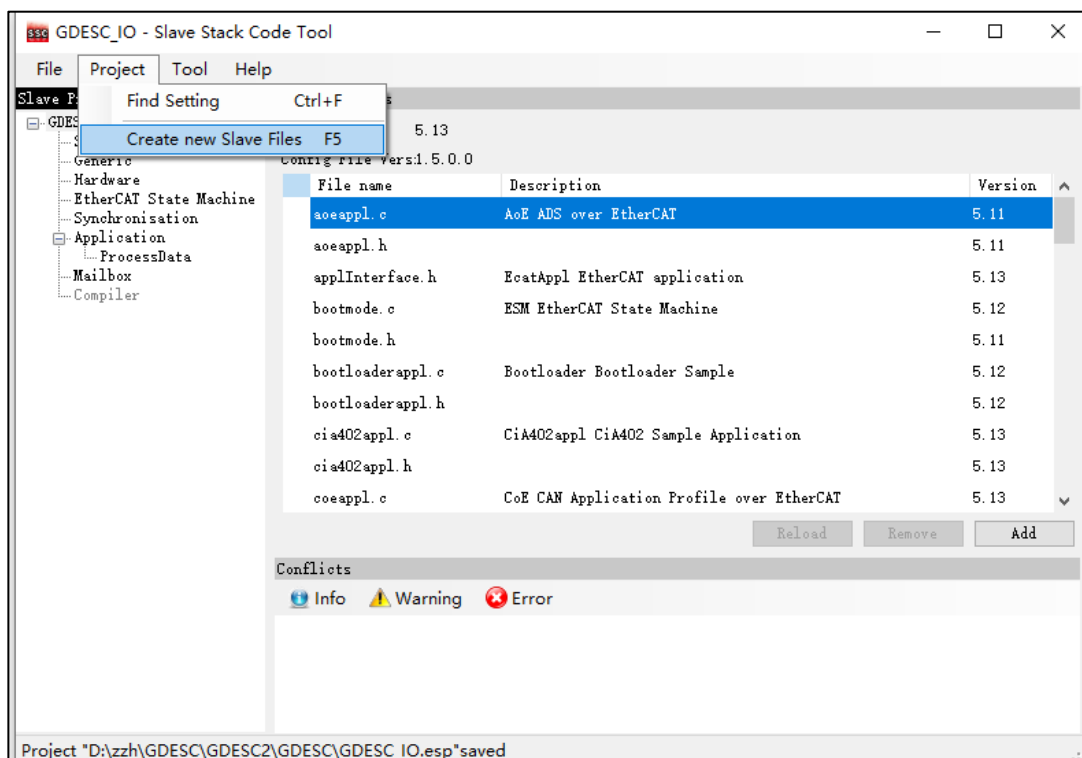


Figure 2-7. Import Page



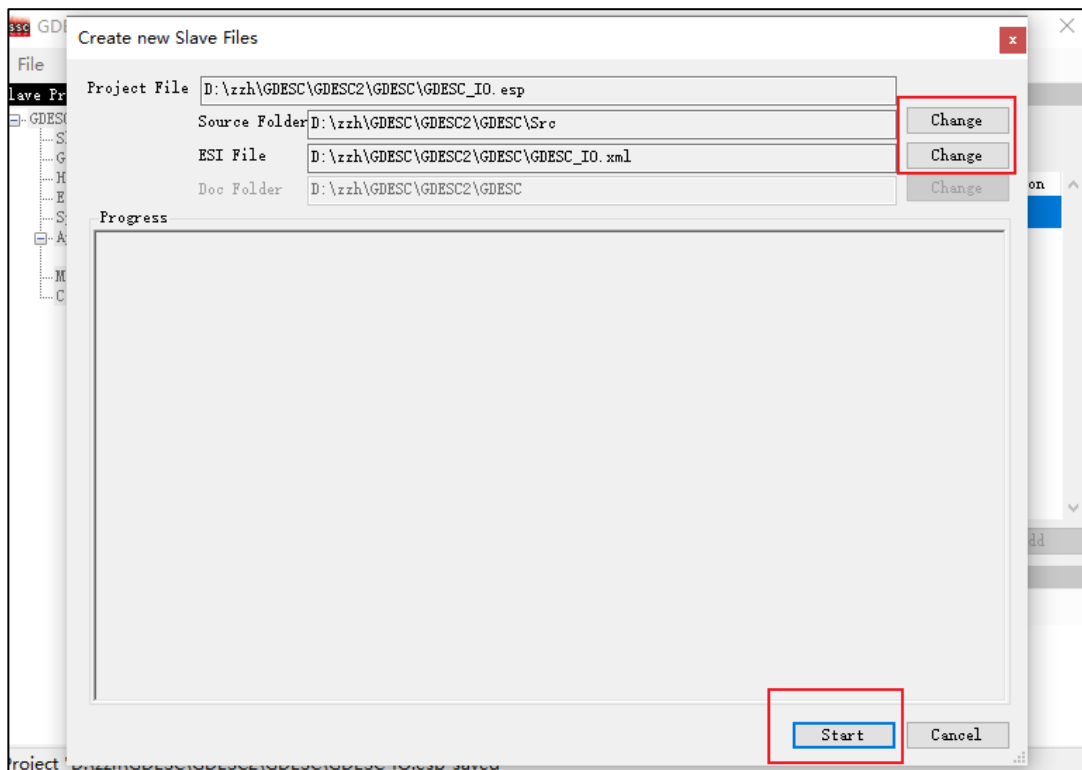
7. Protocol Stack Code Generation Page

Figure 2-8. Protocol Stack Code Generation Page



8. Select the path to save the protocol stack code and configuration XML file.

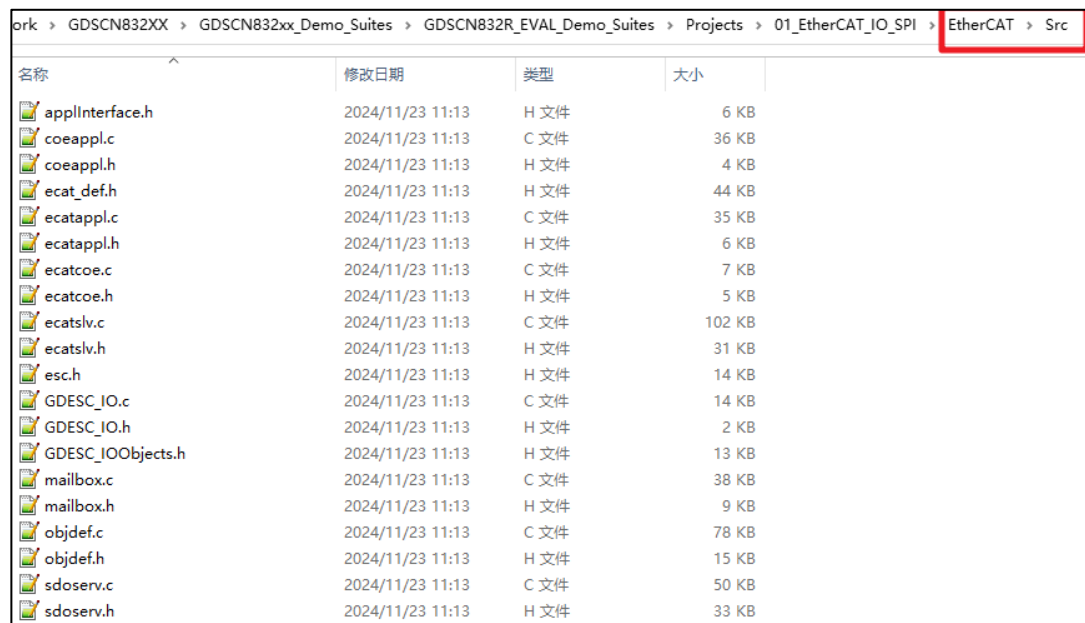
Figure 2-9. Save Path Page



3. Embedding Protocol Stack Code into the Project

1. Copy the generated protocol stack code to the EtherCAT/Src directory under the project folder.

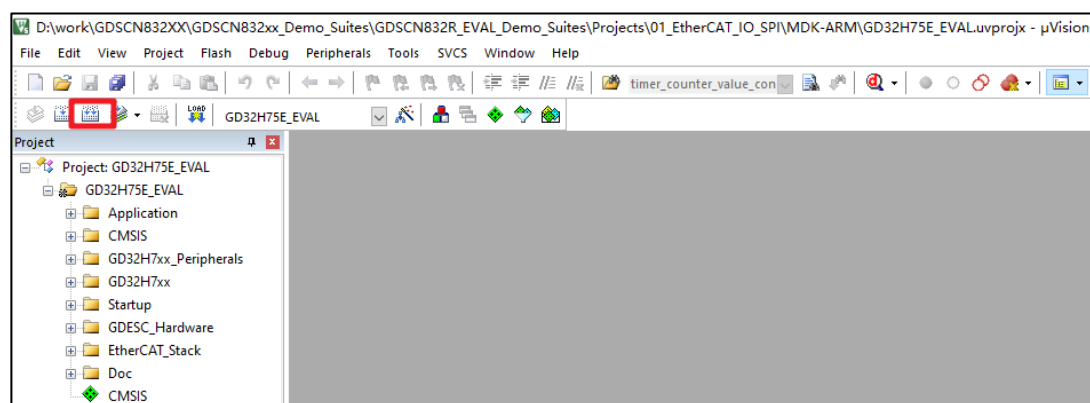
Figure 3-1. Source File Directory Page



名称	修改日期	类型	大小
applInterface.h	2024/11/23 11:13	H 文件	6 KB
coeappl.c	2024/11/23 11:13	C 文件	36 KB
coeappl.h	2024/11/23 11:13	H 文件	4 KB
ecat_def.h	2024/11/23 11:13	H 文件	44 KB
ecatappl.c	2024/11/23 11:13	C 文件	35 KB
ecatappl.h	2024/11/23 11:13	H 文件	6 KB
ecatcoe.c	2024/11/23 11:13	C 文件	7 KB
ecatcoe.h	2024/11/23 11:13	H 文件	5 KB
ecatslv.c	2024/11/23 11:13	C 文件	102 KB
ecatslv.h	2024/11/23 11:13	H 文件	31 KB
esc.h	2024/11/23 11:13	H 文件	14 KB
GDESC_IO.c	2024/11/23 11:13	C 文件	14 KB
GDESC_IO.h	2024/11/23 11:13	H 文件	2 KB
GDESC_IOObjects.h	2024/11/23 11:13	H 文件	13 KB
mailbox.c	2024/11/23 11:13	C 文件	38 KB
mailbox.h	2024/11/23 11:13	H 文件	9 KB
objdef.c	2024/11/23 11:13	C 文件	78 KB
objdef.h	2024/11/23 11:13	H 文件	15 KB
sdoserv.c	2024/11/23 11:13	C 文件	50 KB
sdoserv.h	2024/11/23 11:13	H 文件	33 KB

2. Directly compile the project file.

Figure 3-2. Project Compilation Page



4. Revision history

Table 4-1. Revision history

Revision No.	Description	Date
1.0	Initial Release	Apr.08 2025

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