Use ICP DAS EtherCAT I/O device in eLogger

Please make sure you have installed ICPDAS ECDAQ SDK before use. You can download and install it from the following website:

https://www.icpdas.com/en/product/guide+Software+Development__Tools+ECATDAQ

Step1: Put the files in the eLogger folder.

 Please download the required files from the following website(eLogger_ECATDAQ.zip)

https://www.icpdas.com/en/download/show.php?num=8802

- 2. Unzip the downloaded file.
- 3. Place the **eECATDAQ.dll** files in For Developer_driver folder to the \ eLogger_Vxxx_yyyymmdd \ Developer \ Driver.
- Place the **eECATDAQ.dll** files in For RuntimePC folder to the \ eLogger_Vxxx_yyyymmdd \ RuntimePC.

Note: The two eECATDAQ.dll files are not the same.

Step2: Create a device in eLoggerDeveloper.

1. Execute eLoggerDeveloper.exe •



2. Click Driver on the left, select eECATDAQ and click Next.

| System | New Driver | ? 💌 |
|---|---------------|--------------|
| I ag Mapping (0) I Procedure Page Web Page Web Page | Driver eECATD | AQ ~ Next |

3. Click Install •

| | ver : | | | E |
|-----------------|--------|----------|--------|---|
| Driver property | Demo | | | |
| Install | Remove | + Device | Cancel | |
| Ready | | | L | |

4. Click **eECATDAQ** on the left , and then click **+Device**.

| System | DriverForm eECATDAQ Driver : Driver property Demo | × |
|------------------------------|---|---|
| e⊢mage ⊕–mage ₩eb Page | Install Remove + Device Cancel | |
| | Ready | |

5. Select the device and make related settings. For device with AI and AO channels, you need to select the configuration code. After setting, click **Add**

| | Name | ECAT205 | b ~ | |
|-------------|--------|----------|-----------------|-------|
| DI Channels | 8 | | | |
| DO Channels | 8 | | | |
| Al Channels | 0 | Al Range | Select AI Confi | g ~ |
| AO Channels | 0 | AO Range | Select AO Con | fig ~ |
| Add | Remove | Modify | Cance | I |

6. If there are other EtherCAT devices that need to be installed, please repeat steps 4 and 5 to install them. You can confirm them in the left window. After confirming that the installation is complete, skip to step 7 for subsequent settings.



Step3: Add corresponding tags in eLoggerDeveloper.

1. Double-click **Tag Mapping** on the left, and then select a tag (using AI as an example).

| System Driver ECATDAQ ECAT2055ID0 CAT2011HID1 CAT2021D2 | Memory Address InputRegister[0] InputRegister[1] InputRegister[2] InputRegister[3] | Name Al0 Al1 | Location eECATDAQ->ECAT2011HID1->AI0 eECATDAQ->ECAT2011HID1-> eECATDAQ->ECAT2011HID1->AI1 eECATDAQ->ECAT2011HID1-> | Description Analog Input Channel 0 Analog Input Channel 1 |
|---|--|--------------------------------------|--|--|
| | InputRegister[4] InputRegister[5] InputRegister[6] InputRegister[7] InputRegister[8] | AI2 AI3 AI4 | eECATDAQ->ECAT2011HID1->Al2 eECATDAQ->ECAT2011HID1-> eECATDAQ->ECAT2011HID1->Al3 eECATDAQ->ECAT2011HID1->Al4 eECATDAQ->ECAT2011HID1->Al4 | Analog Input Channel 2 Analog Input Channel 3 Analog Input Channel 4 |
| Page → Web Page | New Tag | Delete Tag Descrip Description | Scaling Hemory Addi Address Type | ess Data Type Gain Offset |

2. Click New Tag, enter the number of new tags, and click OK.

| 🛃 Add Tag | × |
|-----------------------|--------|
| Number of tags to add | |
| 8 | |
| OK | Cancel |

- 3. Select the added Tag (you can hold down the mouse button and drag the cursor to select multiple tags).
- 4. Change the Data Type to 32-bit Float.

| Memo | ory Address | Name | Location | Description | 1 | Note | | | |
|--------|--------------------------|--------------------------|--|--|--|----------------------------|---------------|------------------------------|--|
| InputF | Register[0] | AIO | eECATDAQ->ECAT20 | 11HID1->AI0 | Analog Inpu | ut Channel 0 | | | |
| InputF | Register[1] | | eECATDAQ->ECAT20 | 11HID1-> | | | | | |
| InputF | Register[2] | AI1 | eECATDAQ->ECAT2011HID1->Al1 Analog Input Channel 1 | | | | | | |
| Input | Register[3] | | eECATDAQ->ECAT20 | 11HID1-> | | | | | |
| Input | Register[4] | AI2 | eECATDAQ->ECAT20 | 11HID1->AI2 | Analog Inpu | ut Channel 2 | | | |
| InputF | Register[5] | | eECATDAQ->ECAT20 | 11HID1-> | | | | | |
| Input | Register[6] | AI3 | eECATDAQ->ECAT20 | 11HID1->AI3 | Analog Inpu | ut Channel 3 | | | |
| InputF | Register[7] | | eECATDAQ->ECAT20 | 11HID1-> | | | | | |
| InputF | Register[8] | AI4 | eECATDAQ->ECAT20 | 11HID1->AI4 | Analog Inpu | ut Channel 4 | | | |
| Ta | ag Name | Delete rag Descript | tion | Memory Addre | ess | Data Type | Ga | ain | Offset |
| | | | | -1 | 16-hit Sign | ed Integer | | 0 | 0 |
| | Tag Name | Description | Memory | Data 1 | 16-bit Sig 16-bit Sig | ned Integer ned Integer | ~ − Offset | | Range |
| | AIO | AIO | 0 | 16-bit Sigr | Ty 16-bit Uns 32-bit Sig | signed Integer ned Long | 0 | -327 | 768.000~32767.000 |
| | Al1 | AI1 | 1 | 16-bit Sigr | ne 32-bit Uns 32-bit Flo | signed Long at | 0 | -327 | 68.000~32767.000 |
| - 1 | AI2 | AI2 | 2 | 16-bit Sign | nea mieger | | 0 | -327 | 68.000~32767.000 |
| | | | | | | | | | |
| ~~ 1 | AI3 | AI3 | 3 | 16-bit Sigr | ned Integer | 1 | 0 | -327 | 68.000~32767.000 |
| 3 | AI3 AI4 | AI3 AI4 | 3 4 | 16-bit Sigr 16-bit Sigr | ned Integer ned Integer | 1 1 | 0 | -327 -327 | 768.000~32767.000 768.000~32767.000 |
| 3 | AI3 AI4 AI5 | AI3 AI4 AI5 | 3 4 5 | 16-bit Sigr 16-bit Sigr 16-bit Sigr | ned Integer ned Integer ned Integer | 1 1 1 | 0 0 0 | -327 -327 -327 | 768.000~32767.000 768.000~32767.000 768.000~32767.000 |
| 3 | AI3 AI4 AI5 AI6 | AI3 AI4 AI5 AI6 | 3 4 5 6 | 16-bit Sigi 16-bit Sigr 16-bit Sigr 16-bit Sigr | ned Integer ned Integer ned Integer ned Integer | 1 1 1 1 | 0 0 0 | -327 -327 -327 -327 | 768.000~32767.000 768.000~32767.000 768.000~32767.000 768.000~32767.000 |

5. Enter the start address in the Memory Address field (the rest of address will automatically be filled).

| Home | and ddroop | Name L | ocation | [| Description | | Note | |
|-------|-------------|-------------|-----------------------------|--------------|---------------------|--------|---------------|----------------|
| Input | Register[0] | AIO el | ECATDAQ->ECAT2011 | HID1->AIO | Analog Input Channe | el O | | |
| Input | Register[1] | e | ECATDAQ->ECAT2011 | HID1-> | | | | |
| Input | Register[2] | Al1 el | ECATDAQ->ECAT2011 | HID1->AI1 | Analog Input Channe | el 1 | | |
| Input | Register[3] | el | ECATDAQ->ECAT2011 | HID1-> | | | | |
| Input | Register[4] | NI2 el | ECATDAQ->ECAT2011 | HID1->AI2 | Analog Input Channe | el 2 | | |
| Input | Register[5] | ei | eECATDAQ->ECAT2011HID1-> | | | | | |
| Input | Register[6] | AI3 el | eECATDAQ->ECAT2011HID1->AI3 | | Analog Input Channe | el 3 | | |
| Input | Register[7] | el | ECATDAQ->ECAT2011 | HID1-> | | | | |
| Input | Register[8] | AI4 e | ECATDAQ->ECAT2011 | HID1->AI4 | Analog Input Channe | el 4 | | |
| | New Tag | Delete Tag | Scaling | Help | 2 | | | |
| | | | | | | | | |
| 1 | ag Name | Description | | | Data Type |) | Gain | Unset |
| - | | | | | 2-bit Float | ~ | 0 | 0 |
| | Tag Name | Description | Memory Address | Data Type | Gain | Offset | Ran | nge |
| | AIO | AIO | 0 | 32-bit Float | 1 | 0 | -9999999.000 | 0~9999999.000 |
| | AI1 | Al1 | 2 | 32-bit Float | 1 | 0 | -99999999.000 | 0~9999999.000 |
| | AI2 | AI2 | 4 | 32-bit Float | 1 | 0 | -9999999.000 | 0~9999999.000 |
| | AI3 | AI3 | 6 | 32-bit Float | 1 | 0 | -9999999.000 | 0~99999999.000 |
| | AI4 | AI4 | 8 | 32-bit Float | 1 | 0 | -9999999.000 | 0~9999999.000 |
| | AI5 | AI5 | 10 | 32-bit Float | 1 | 0 | -99999999.000 | 0~99999999.000 |
| | AI6 | AI6 | 12 | 32-bit Float | 1 | 0 | -9999999.000 | 0~9999999.000 |
| • | AI7 | AI7 | 14 | 32-bit Float | 1 | 0 | -99999999.000 | 0~9999999.000 |

| - | | | | | . 1 | | | | | | |
|---|----------|-------------|-------------------|-------|--------------|---|---------|---|-----------|--------|----------------------|
| | Tag Name | Description | Memory Address | | | | Tag Nam | е | Descripti | on | Memory Address |
| | D10 | D10 | 0 | | | | DO0 | | DOO |) | 0 |
| | DI1 | DI1 | | 1 | | | D01 | | DO1 | | 1 |
| | DI2 | DI2 | | 2 | | | DO2 | | DO2 | | 2 |
| | DI3 | DI3 | | 3 | | | D03 | | DO3 | | 3 |
| | DI4 | DI4 | | 4 | | | DO4 | | DO4 | | 4 |
| | DI5 | DI5 | | 5 | | | DO5 | | DO5 | ; | 5 |
| | D16 | DI6 | 6 | | | | DO6 | | DO6 | | 6 |
| • | DI7 | DI7 | | 7 | | • | D07 | | D07 | , | 7 |
| | Tag Name | Description | Mer | mory | Data | | Gain | | Offset | | Range |
| | _ | - | Add | iress | туре | | | | | | |
| | AO0 | AO0 | | 0 | 32-bit Float | | 1 | | 0 | -99999 | 999.000~99999999.000 |
| • | AO1 | AO1 | | 2 | 32-bit Float | | 1 | | 0 | -99999 | 999.000~99999999.000 |
| | | | | Mem | 00/ | | | | | | |
| | Tag Name | Descripti | ion | Addre | ess | | | | | | |
| • | String0 | String | g0 | (| 0 | | | | | | |

6. The practice of AO, DI, DO, String is the same.

Step4: Create HMI page in eLoggerDeveloper.

1. Double-click the **page** on the left, there is a default page 0, or you can enter a name and click **New** to create a new page.

| System | | |
|-----------------|---------|--------|
| 🖕 🖳 Driver | example | New |
| 🖻 📲 DAQCard | | |
| | Page0 | ¬ |
| 🗄 📲 Tag Mapping | example | Rename |
| Al Tag | example | |
| AO Tag | | |
| DI Tag | | Remove |
| DO Tag | | |
| String Tag | | Import |
| 🗄 – 🚺 Procedure | | import |
| 📮 🔁 Page | | |
| | | Export |
| - A example | | |
| 🗄 📲 Web Page | | |
| | | |
| | | |
| | | Help |
| | | |

2. Click the page you want to edit on the left (take **example** as an example). Click an object in the toolbar, and add it into the page with mouse click-drag-release.



3. Select an object to display the property pane and then set parameters

| | 00 | Тад Туре | Al Tag 🗸 🗸 |
|---------------|-----------------------------|---------------------|------------|
| ECAT-2011H AI | 23.45 23.45 | Tag Name | ~ |
| FOAT 0004 40 | | Tag Description | Al0 Al1 |
| ECAI-2024 AO | 23.45 23.45 | Output Limit (Min.) | AI2 |
| ECAT-2055 DI | | Output Limit (Max.) | AI4 |
| | | Address Type | AI5 AI6 |
| ECAT-2055 DO | Off Off Off Off Off Off Off | Address | A17 |
| | | Data Type | |
| | | Gain | |
| | | 044-1 | |

Step5 : Upload the project and run.

1. Execute **RuntimeXP.exe** in the RuntimePC folder on the PC with the installed device.

| RuntimeAPI.dll | | | |
|---|------------------------|------------|--------|
| 🌏 RuntimeXP.exe | | | |
| SharedMemory.dll | | | |
| 🗟 SharedMemoryNet.dll | | | |
| 🧿 eLogger V2.0.0.0 2019/1 | 1/11 | | × |
| Execute Project | PC ID: | 🗌 Auto Run | |
| | N License Kesr | Court | |
| - Open Project | Bacchae Hely. | Save | 5 |
| | Registration Status: | * * | |
| 👗 Log In | System Info: | | |
| 🝰 Log Out | | | |
| Admin login Project: Chicpdestel o gent Puntim | PC1Project1Demo wez | | ^ |
| Tioject. C. acpussed ogger available | er en rojeertoenio.wez | | |
| | | | |
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| | | | |

2. Back to eLogger Developer, click **Project** >> **Remote Machine** in the menu bar.

| Project Edit Back | | Background Pictu |
|-------------------|-------------|------------------|
| | Simulation | Ctrl+M |
| | Remote Mach | nine Ctrl+R |
| | New | Ctrl+N |
| 2 | Open | Ctrl+O |
| | Save | Ctrl+S |
| | Save as | Ctrl+A |
| | Export | • |
| | Languaga | |

3. Enter the IP address of the PC running **RuntimeXP.exe**, click **Connect**, and then click **Upload and Run** to upload the project and run it.

| 🛃 RemoteMachine | | | ? × |
|-------------------------|--------------|----------------|------------|
| IP Address | 10.0.8.27 | Connect | Disconnect |
| Remote Control Run Stop | | Upload and Run | |
| Admin Password | Set Password | | |
| Power User Password | Set Password | | |
| Status | | Clo | ose |

4. The execution result is shown in the figure. You can click AO, DO to control the device (hardware wiring AO0 is connected to AI0, AO1 is connected to AI1, and DO0 is connected to DI0).



Supported device: ECAT-2000 DIO series ECAT-2000 AI series ECAT-2000 AO series EC2-DIO series