

Cyberon DSpotterSDK Maker User Guide (for Arduino Platform)

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Leading Speech Solution Provider
<http://www.cyberon.com.tw>

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1 INTRODUCTION

Cyberon DSpotterSDK Maker, providing local voice trigger and command recognition function on Arduino supported boards for Arduino developers.

Below are features of DSpotter algorithm:

- SI (speaker-independent) voice recognition for preset keywords
- High accuracy and noise-robustness
- Low and flexible resources requirement
- Easy to create customized commands
- Worldwide language support: currently more than 40 languages available
- Supported Platforms(Boards): Nano RP2040 Connect, Nano 33 BLE Sense and Portenta H7

In this document, you will know how to:

- Get started with the Free Demo Version.
- Configure a user defined keyword model and test the Custom Trial Version on the Arduino board.
- Upgrade to the Custom Formal Version to unlock the Custom Trial limits.

For developer who would like to know the SDK API usage, please refer to the programming guides:

[DSpotterSDK Maker Programming Guide](#)
[DSpotterSDK MakerHL Programming Guide](#)

2 GETTING STARTED WITH THE FREE DEMO VERSION

Before using the Free Demo Version, you must retrieve a valid Free Demo License for a specific device. You can run the demo by following these steps:

Step 1. Install the Cyberon_DSotterSDK_Maker library.
There are three ways to install the SDK library:

- (a) Install by Arduino Library Manager:
 - i. Go to 'Tool -> Manage Libraries...' and type 'Cyberon_DSpotterSDK_Maker' in the search bar.
 - ii. Click install, the 'Cyberon_DSpotterSDK_Maker' will be installed automatically to the 'library' folder under the 'sketchbook location' path.

- (b) Add the .ZIP library:
 - i. Go to 'Sketch -> Include Library -> Add .ZIP Library...'
 - ii. Select the .ZIP library file 'Cyberon_DSpotterSDK_Maker.zip' and Click 'Open'.
 - iii. The 'Cyberon_DSpotterSDK_Maker' will be extracted to the 'library' folder under the 'sketchbook location' path.

- (c) Manually add the library:
 - i. Extract the 'Cyberon_DSpotterSDK_Maker.zip' file to the 'library' folder under the 'sketchbook location' path.

Step 2. To get license data for each board, the serial number of the board is needed.

- (a) In Arduino IDE, choose 'File -> Examples -> DSpotterSDK_Maker -> GetSerialNumber' to open the example of getting serial number.
- (b) Verify & Upload code to the device. You will see the serial number of the board on the console.

Step 3. Once the serial number is obtained, you can copy the serial number and paste it to the GetLicense page:

[GetLicense Page](#)

Step 4. Copy the result (the heximal values shows in the license page) to the license array g_lpdwLicense in the CybLicense.h file under the example folder, then Verify & Upload code to the device.

Step 5. Now the Free Demo should be ready for recognition.

3 CUSTOMIZING A KEYWORD MODEL

If you want to customize your own keyword model and test the performance, you can use the customized model in the Custom Trial Version but with limitations: :

- 20 sec waiting time before each trigger.
- 50 recognition limit per start.

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This section will show how to customize a keyword model:

- Step 1. Go to the DSpotter Model Configuration Page:
[DSpotter Model Configuration Page](#)
- Step 2. Enter an e-mail address, select the board type and enter the serial number of the board, then click "Next". The model will be sent to the e-mail address after it is built successfully.
- Step 3. In the "Model language" of "Create New Project" part, select the language you would like to use for the keywords. Please note that in some languages different dialects are provided (as in parentheses). Once you select the language, click "Create" to go to the Edit Trigger Page. Note that you can also import an existing project by importing a .dsproj file.
- Step 4. As the figure below, you can add the wanted trigger keyword by text input. The ID in the box is used to differ the recognition results and can be set to the same or different. The left shows some tips for designing a good trigger word. Once the trigger keyword is set, click "Next" to go to the Edit Command Page.
- Step 5. You can add your wanted command keywords. The ID in the box is used to differ the recognition results and can be set to the same or different. The left shows some tips for designing good command words. Once the command keywords are set, click "Next" to go to the Review Page.
- Step 6. If all the information are correct in the Review Page, click "Confirm" to build the model.
- Step 7. The model will be built and mailed to the e-mail address.

4 INTEGRATING THE CUSTOMIZED MODEL

After you complete the model customization process, the customized model will be mailed to your mailbox. There should be four files in the email attachments:

- **CybLicense_xxx.h**: The license file that binds to the model and the device.
- **Model_xxx.h**: The model file that binds to the license and the device.
- **Info_xxx.txt**: A text file that describes the contents of the model.
- **Model_xxx_[boardtype].dsproj**: The model project file used in the import page.

To use the customized model, there are simply 4 steps:

- Step 1. Download and copy the attached file in the mail to the same folder as the example sketch.
- Step 2. Include the new license and model header files.

```
#include "CybLicense_xxx.h"

#include "Model_xxx.h"
```

- Step 3. Verify & Upload code to the device.
- Step 4. The Custom Trial Version with the Customized Model is ready to go.

5 UNLOCK THE CUSTOM TRIAL LIMITATIONS

If you are satisfied with the recognition performance, you could upgrade the model to the Custom Formal Version to unlock the Custom Trial Version limits:

- To lift the Custom Trial Version restriction, you must purchase a Voucher Code on the Arduino Online Web Store Page:
[Arduino Online Web Store](#)
- Go to the DSpotter Model License Page:
[DSpotter Model License Page](#)
- Enter an e-mail address, select the board type and enter the serial number of the board. The model will be sent to the e-mail address after the model is successfully built.
- Enter the Voucher Code purchased from the Arduino Online Web Store Page and import the .dsproj file created previously, then click "Next".
- If all the model contents are correct in the review page, click "Confirm".
- The model will be built and mailed to the your e-mail address.

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