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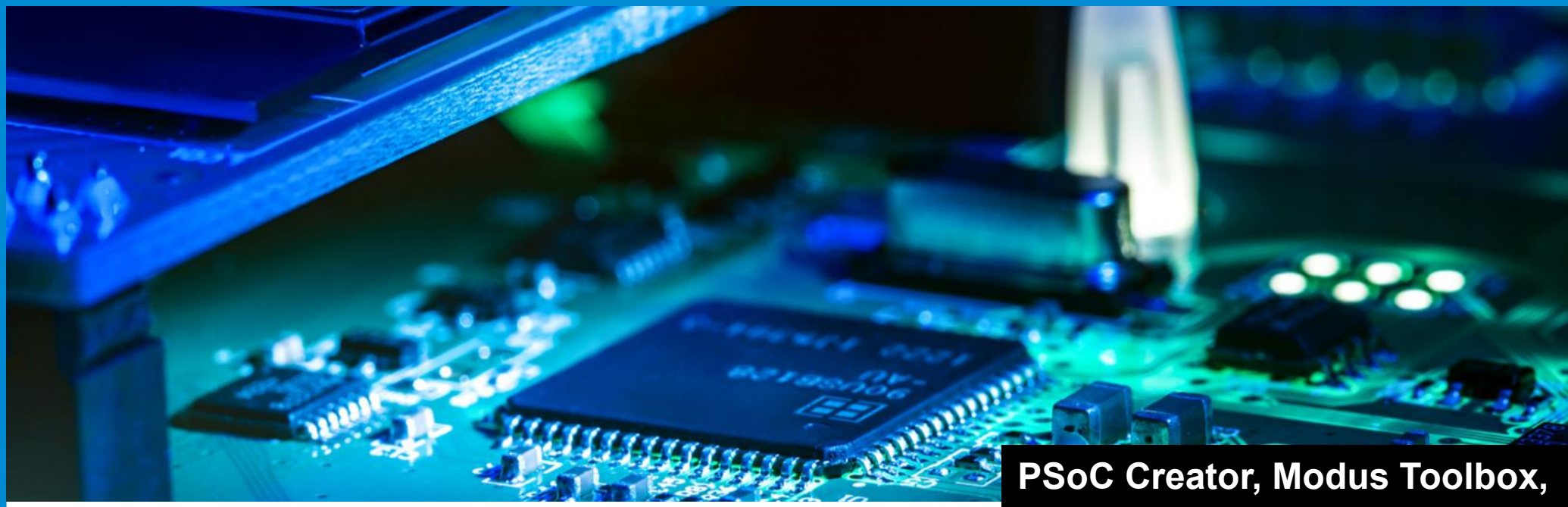
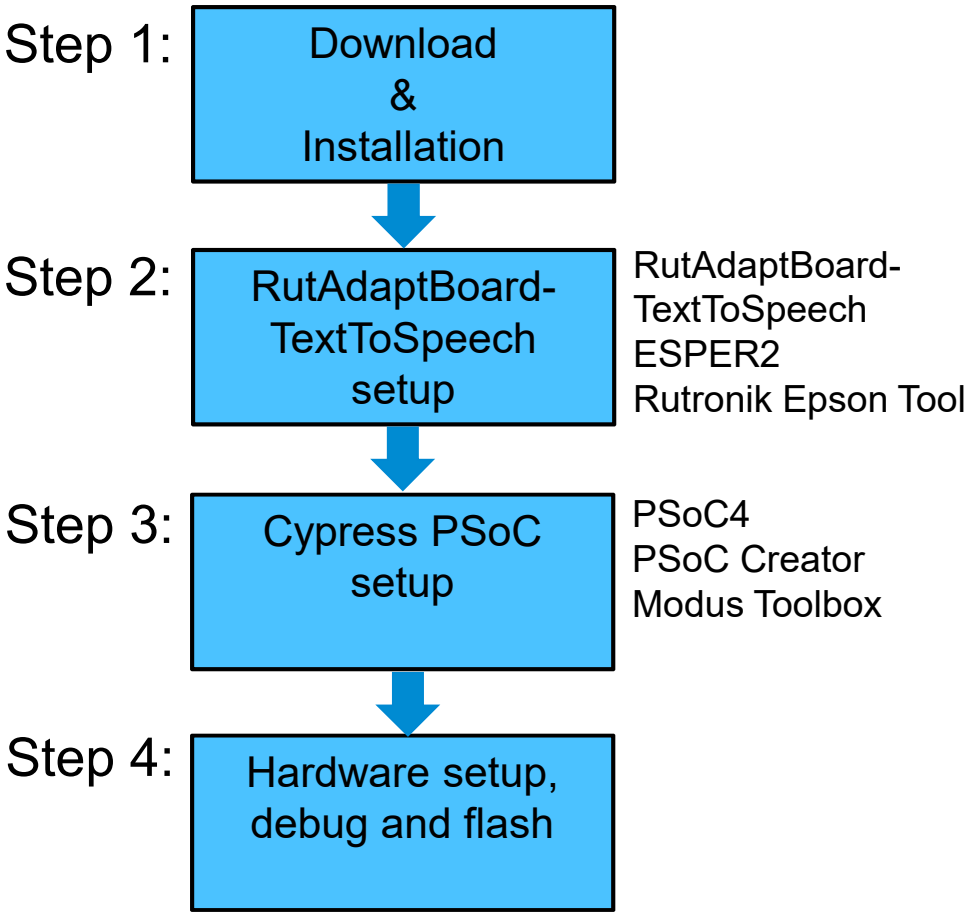


PSoC Creator, Modus Toolbox, ESPER2, Rutronik Flash Tool

Cypress Toolchain for RutAdaptBoard-TextToSpeech

Overview



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Infineon + CYPRESS EMBEDDED IN TOMORROW™

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Download & Installation

Registration / Where to find…

1. Please register at the EPSON & Cypress Homepage
   (license generation takes up to several days)

2. Please download following tools:
   - ESPER2 (Epson)
   - Rutronik Epson Tool (Rutronik)*
   - PSoC Creator (Cypress)
   - Modus Toolbox (Cypress)
   - USB-Serial Driver- Windows (Cypress)
3. Install them on your desired location

* Rutronik PMA Digital exclusive

Introduction of the Software

ESPER2:

- ESPER2 = Easy Speech Phrase Editor Release 2
- Easy creation of speech and audio files without the need of a studio recording
- 12 languages are supported (American English, Chinese, Japanese, Korean, American Spanish, British English, Canadian French, French, German, Italian, Russian and Spanish)

Rutronik Epson Tool:

- In-house software for flashing the RutAdaptBoard-TextToSpeech
- Easy further processing of the files output by ESPER2
- The simple and uncomplicated design allows a fast flashing of the RutAdaptBoard-TextToSpeech.

Introduction of the tools

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PSoC Creator

- PSoC = Programmable System on Chip
- Free Windows-based IDE
- Supporting PSoC3, PSoC4,PSoC5, PSoC6 and FM0+ systems
- Hardware design with complete schematic capture and “Drag & Drop” functionality
- Over 150 pre-verified, production-ready Components with full Datasheet support
- Easy learning through numerous and very well done instructional videos directly from the manufacturer

Modus Toolbox

- Eclipse-based IDE
- Multi-platform development tools GitHub-hosted firmware libraries
- ModusToolbox resources are compatible with Linux®, macOS®, and Windows®-hosted environments
- Supporting PSoC4, PSoC6 and XMC
- Almost all firmware is provided as Apache® 2.0-licensed source code and is exhaustively tested with GNU Arm Embedded v9, Arm Compiler 6, and IAR C/C++ Compiler v8

For development in general with the PSoC6 but especially with the PSoC62 the use of the Modus Toolbox is recommended by the manufacturer, for other controllers you can also use the PSoC Creator.

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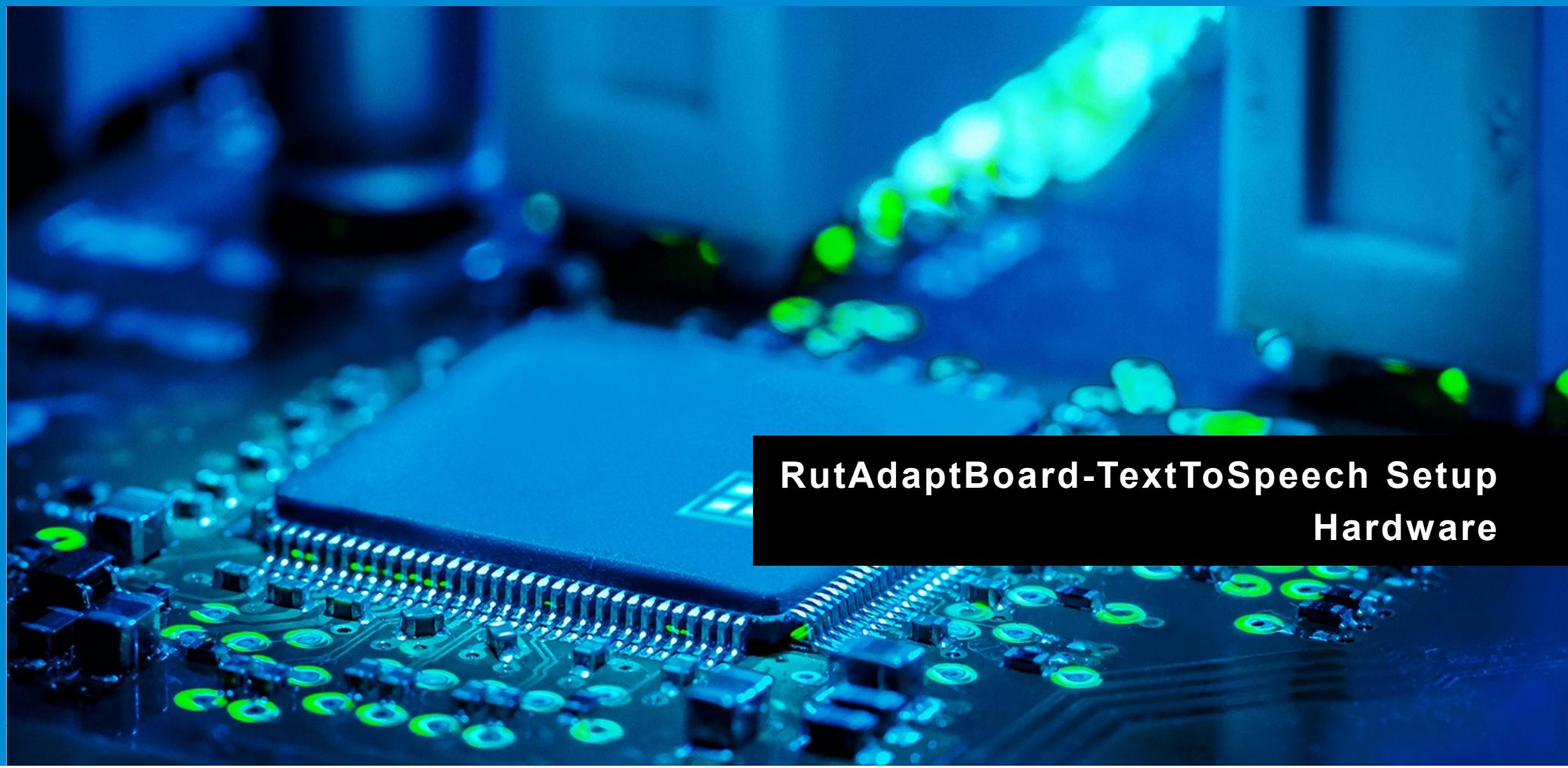
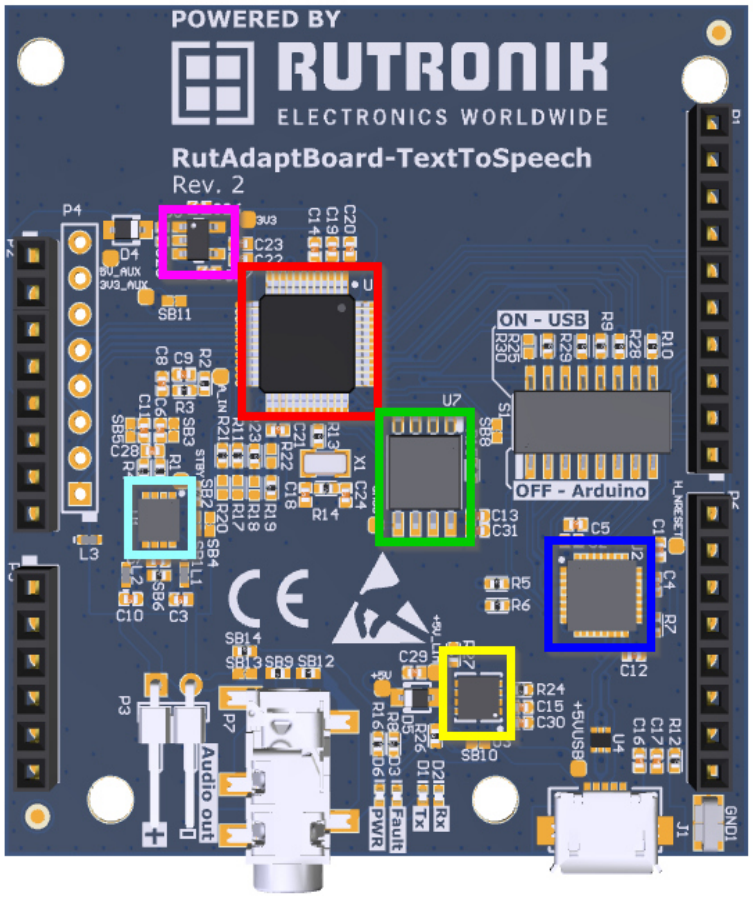


RutAdaptBoard-TextToSpeech Setup Hardware

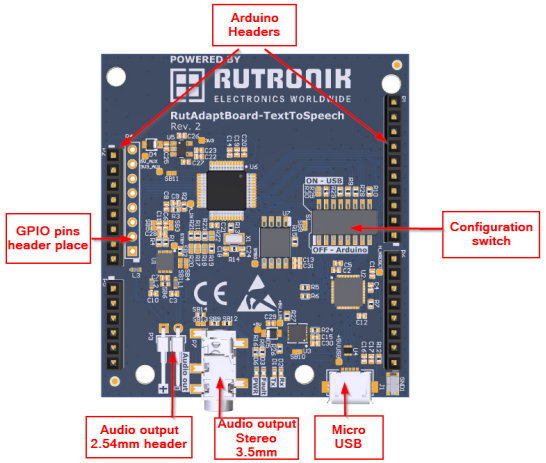
RutAdaptBoard-TextToSpeech Hardware

- Voice/Sound ASIC: **S1V3G340** (EPSON)
- USB to SPI: **CY7C65215** (Cypress)
- NOR-Flash: **S25FL064L** (Cypress)
- Audio Amplifier: **TS4962** (ST Microelectronics)
- Power Switch: **ST890** (ST Microelectronics)
- LDO Voltage Regulator: **LDK130M33R** (STMicroelectronics)

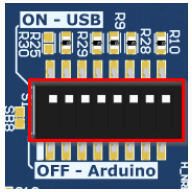


Getting started RutAdaptBoard-TextToSpeech

1. Connect your RutAdaptBoard-TextToSpeech via USB and Aux cable
2. Select the right switch setting



For PC communication configuration and Flash programming all switches should be in “ON - USB” position.



Connect speakers with 8 or more ohms, or headphones via the 3.5mm audio connector

Connect a Windows based PC via USB Cable – A to Micro B

RutAdaptBoard Software Cycle

ESPER2 Tool

Rutronik Epson Tool

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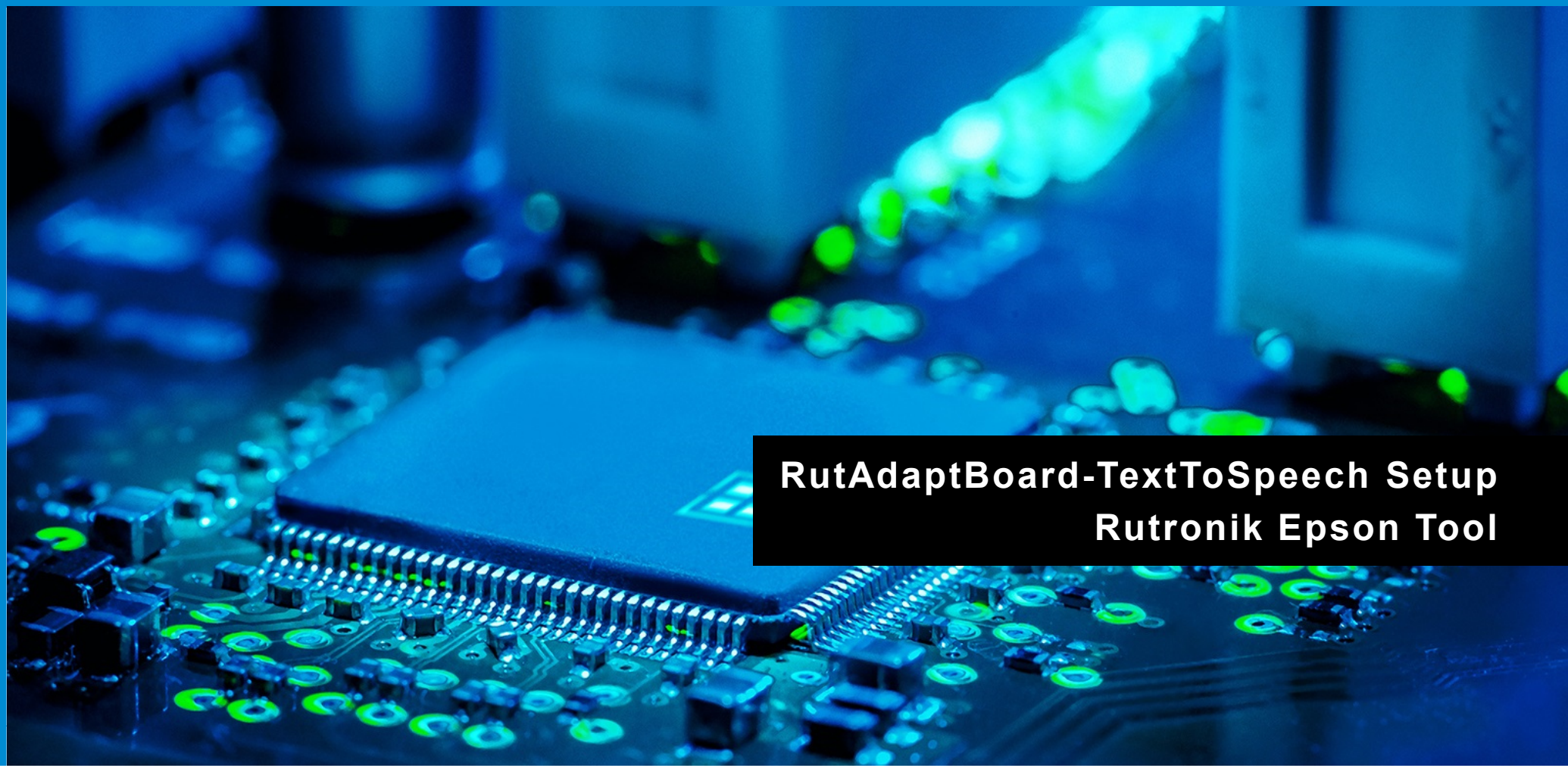


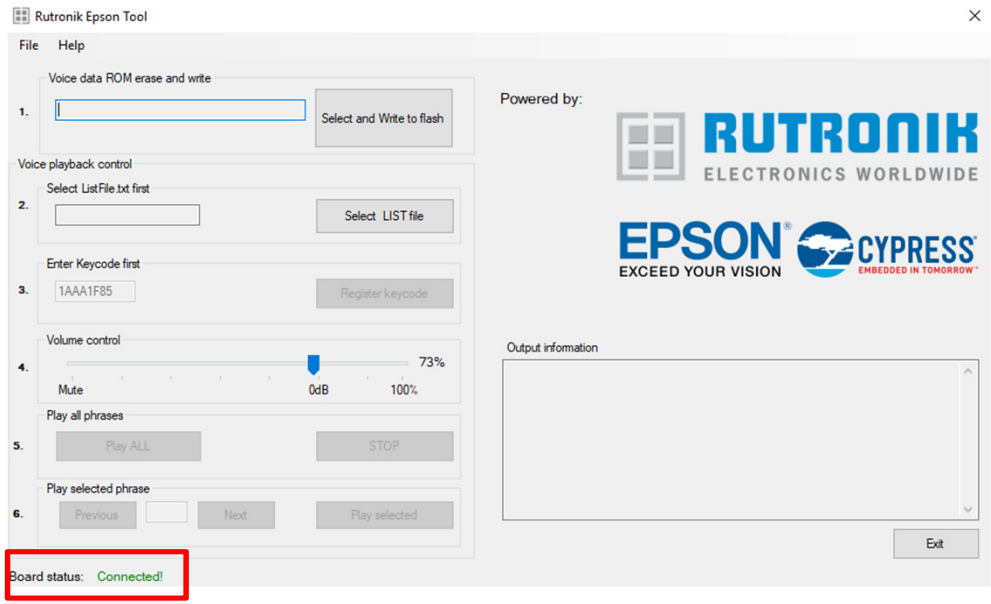
RutAdaptBoard-TextToSpeech Setup
Rutronik Epson Tool

Rutronik Epson Tool

Please Unzip the File “RutronikVoiceDemo” provided by us Rutronik.

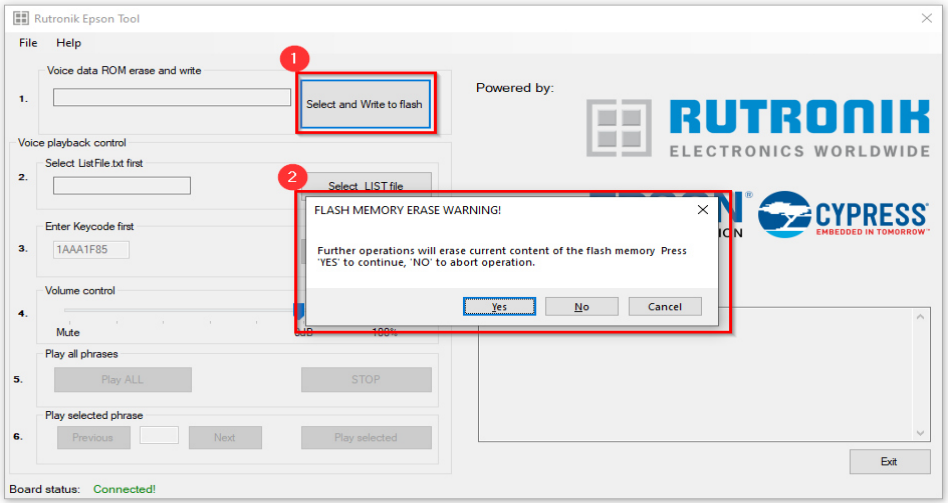
Open the Rutronik Flash Tool

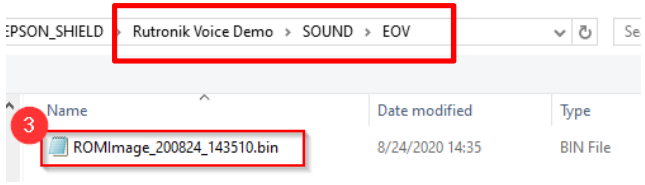
Before we begin, please make sure your board is connected to your PC (bottom right). If not, update your USB driver here.



Rutronik Epson Tool

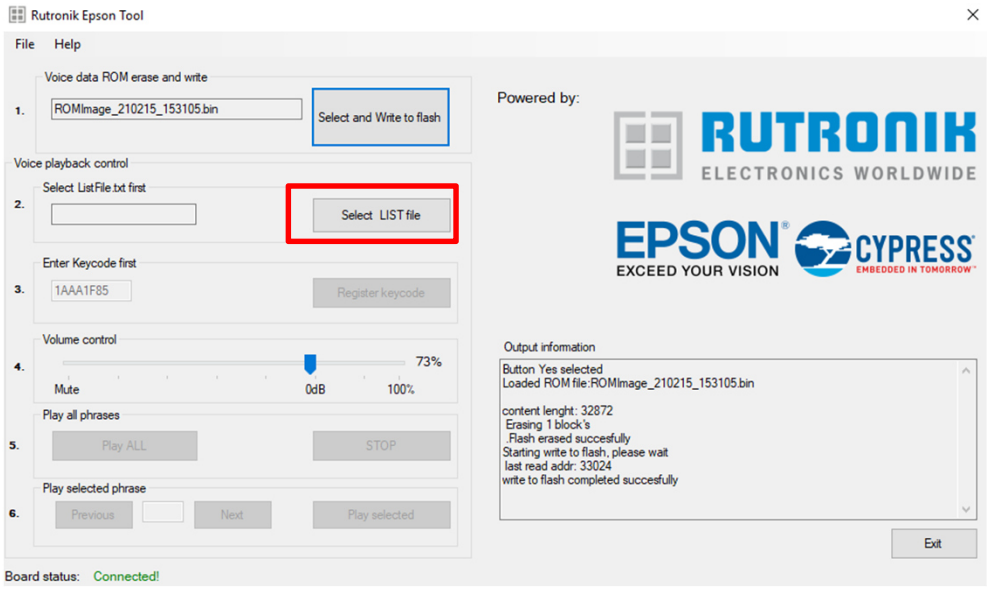
1. Use the “Select and Write to Flash” button
2. Accept that the current content will be erased
3. Select you Rom Image .bin file

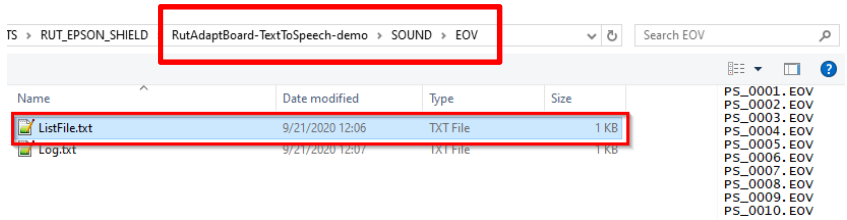




Rutronik Epson Tool

1. Press the “Select LIST file” button
2. Choose you ListFile.txt file out of your project ordner



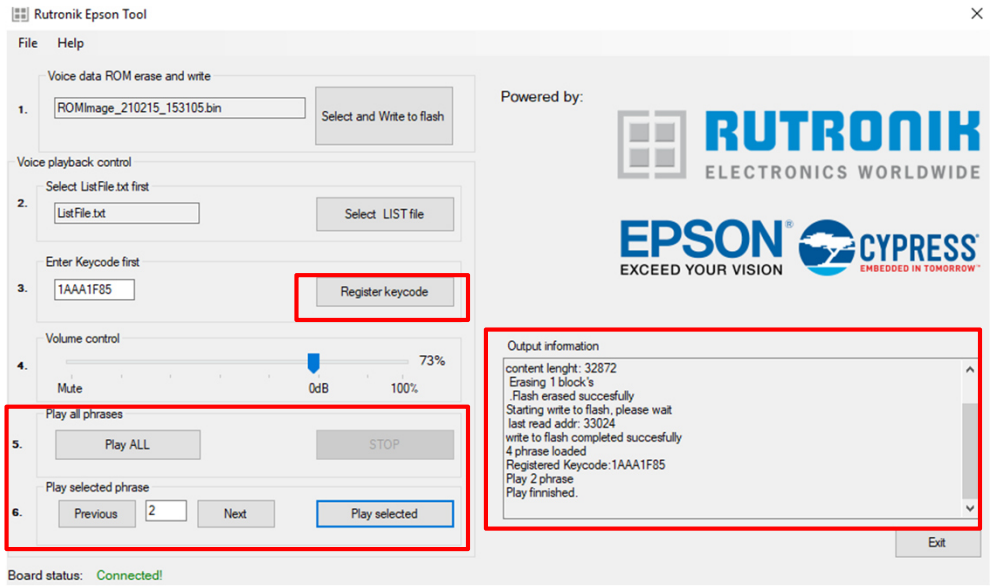


Rutronik Epson Tool

1. Enter keycode and press “Register keycode”*.
2. Select phrase and press “Play selected” to start playback.
3. Check output window information.
4. If you do not hear sound, please check the connection with your speakers and connect them to a separate power source

That was all we had to do in Rutronik Epson Tool

Now we can start with the Cypress setup



*Keycode is provided by Epson after registration at Epson page

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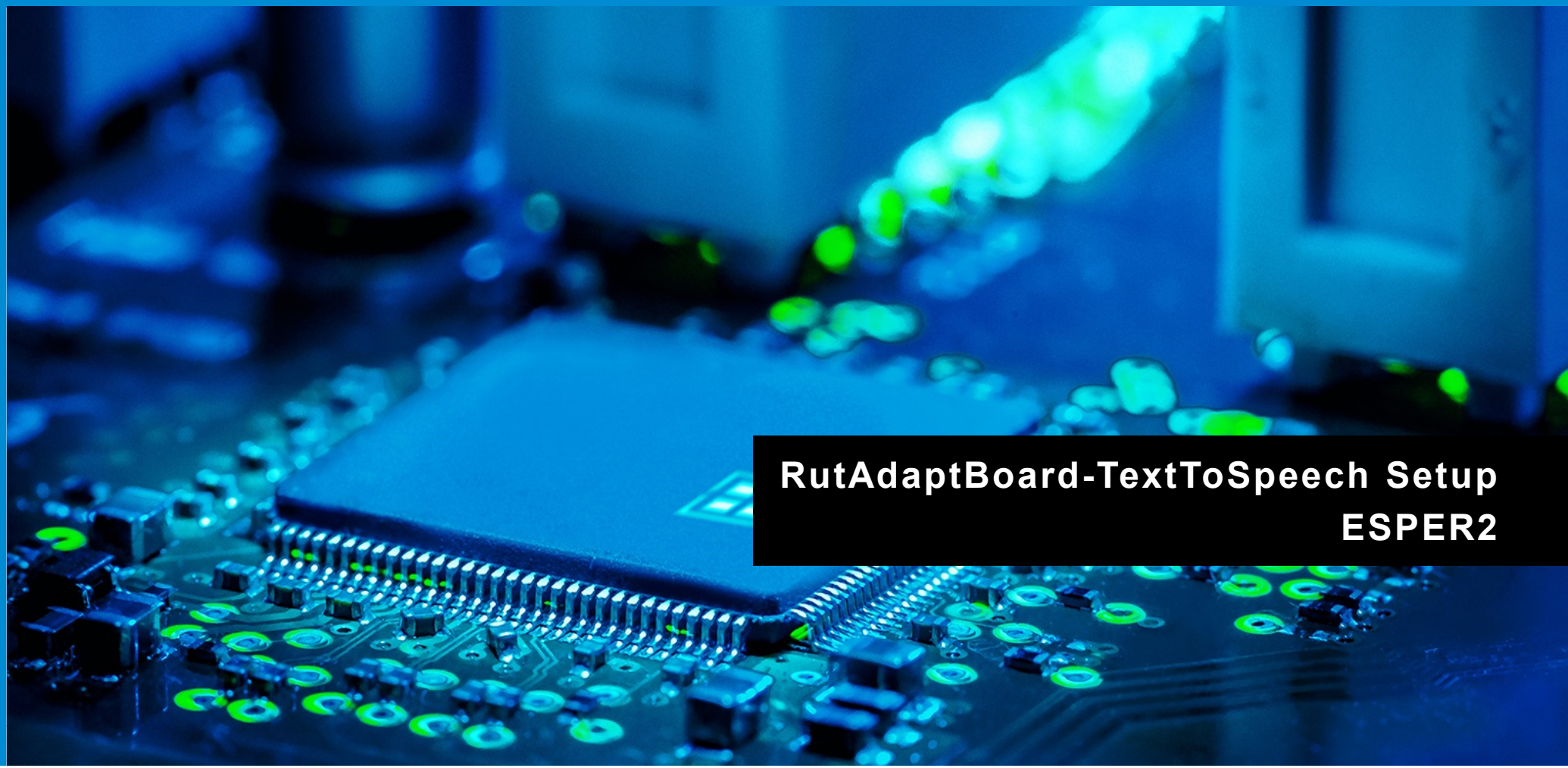
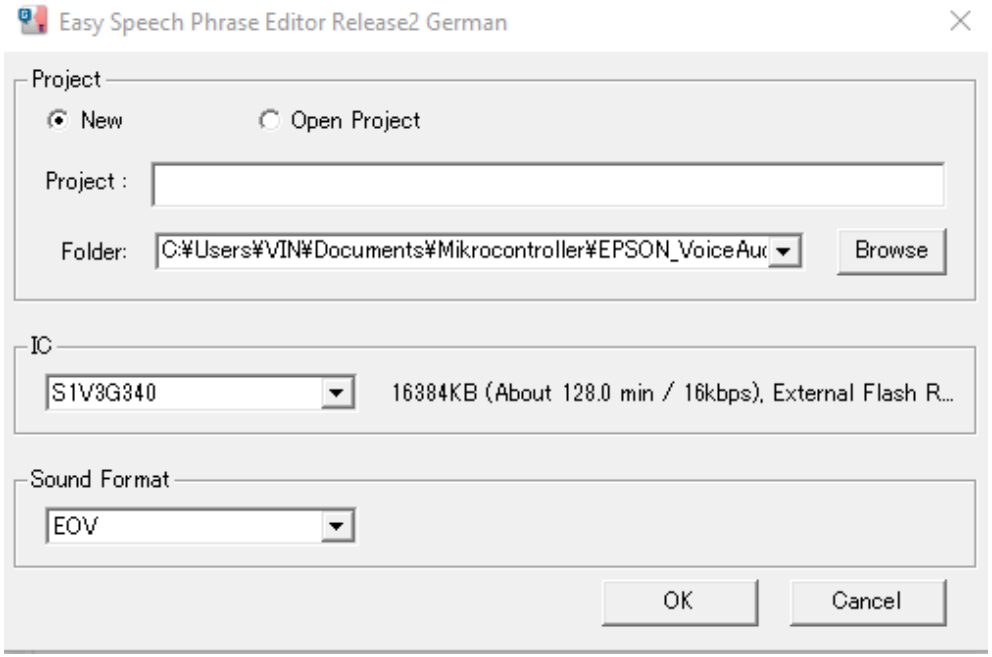


RutAdaptBoard-TextToSpeech Setup
ESPER2

ESPER2 Software

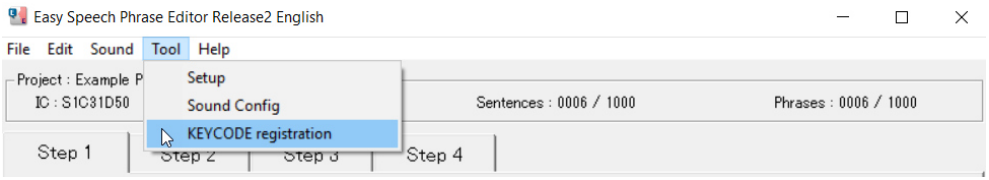
With the ESPER2 Software you can easily create your own speech and audio files for the RutAdaptBoard-TextToSpeech

1. Launch the ESPER2 program in your desired Language
2. Name your project and the target folder
3. Select the “S1V3G340” IC
4. Sound Format = EOV
5. Press OK



ESPER2 Software

Unlock your project by enter the verification code* sent by EPSON in the tool option “Keycode registration”



*The key will be sent to you after registration on the homepage of epson

ESPER2 Software

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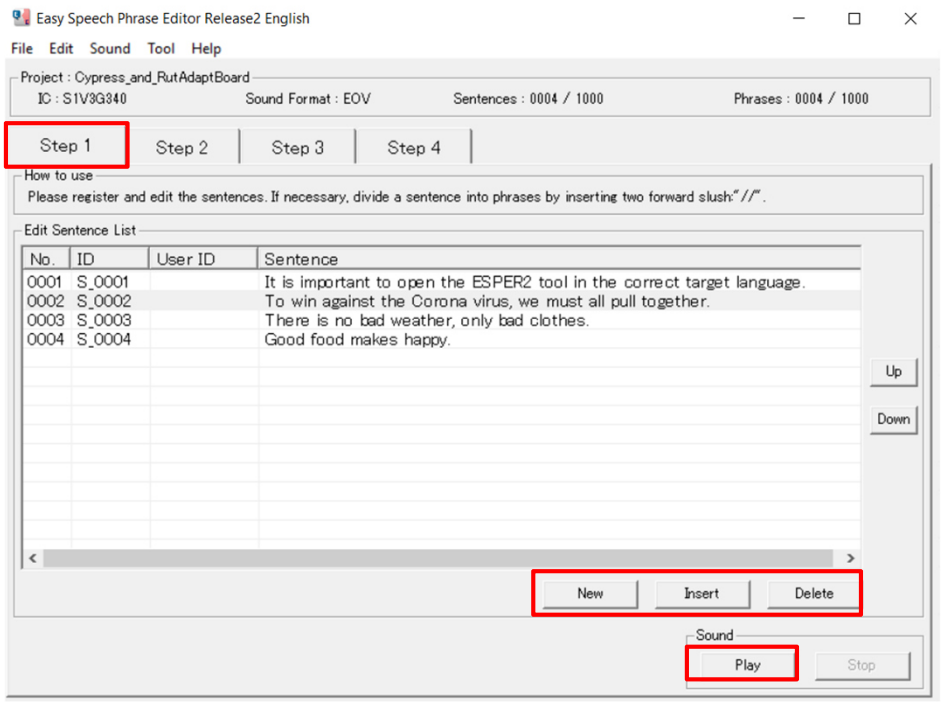
Step 1 Sentences creation:

1. Create new sentences with the “New” or “Insert” function
2. With the functions "Up" and "Down" you can change the order
3. With the function "Play" and "Stop" the sentence is played/paused by your PC

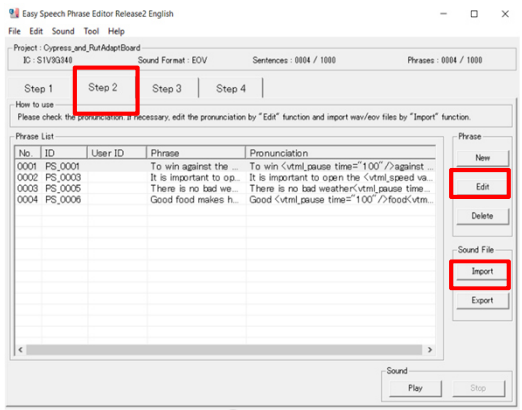


ESPER2 Software

RUTRONIK ELECTRONICS WORLDWIDE

Step 2 Individual pronunciation:

1. By using the “Import” Button you can add “wav” or “EOV” files
2. Select the sentences you want to Edit and press “Edit”
3. In the editing window you can do various optimizing on your sentences like playback speed, pitch, pauses, volume and more
4. With the “Play” function you can test your changes, or reset them with the “Reset” button
5. Accept your changes with “OK”



● Tool Menu

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① Pronunciation register window
- Pronunciation edit will be reflected.

② Speech Speed menu
- adjust speech speed(%).

③ Speech Pitch menu
- adjust voice low/high

④ Pause insert menu
- insert silence time(ms)

⑤ Volume menu
- adjust volume(%)

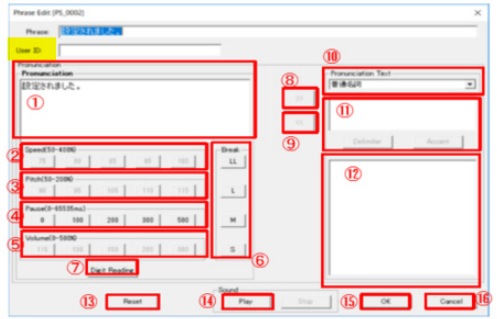
⑥ Break menu
- LL: Sentence separation
- L : read with major break
- M : read with minor break
- L : read continuously

⑦ Digit Reading
- Read the number by Digit
- 123:「ichi ni san」

⑧ current pronunciation display button

⑨ Edit pronunciation reflect button

⑩ Set Word Class



⑪ Edit Pronunciation window
- Adjust pronunciation by Katakana, accent mark

⑫ Dictionary menu
- Select pronunciation from listed dictionary

⑬ Edit Reset button
- Reset the edit

⑭ Play button

⑮ OK button

⑯ Cancel button

ESPER2 Software

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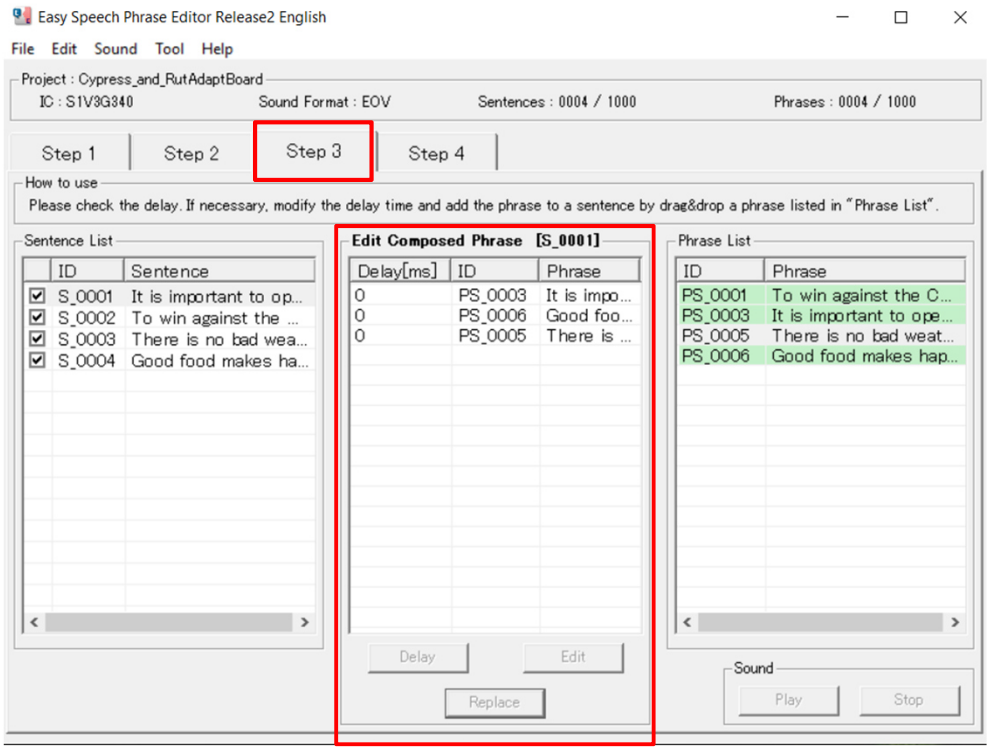
Step 3 Sound combinations:

1. Select the sentences in the left window “Sentence List” which you want to combine
2. Drag & Drop elements out of the right window “Phrase List” into the center “Edit Composed Phrase”
3. Add delays with the “Delay” function or step back into the pronouncing window with the “Edit” function
4. Listen to your results by using the “Play” function



ESPER2 Software

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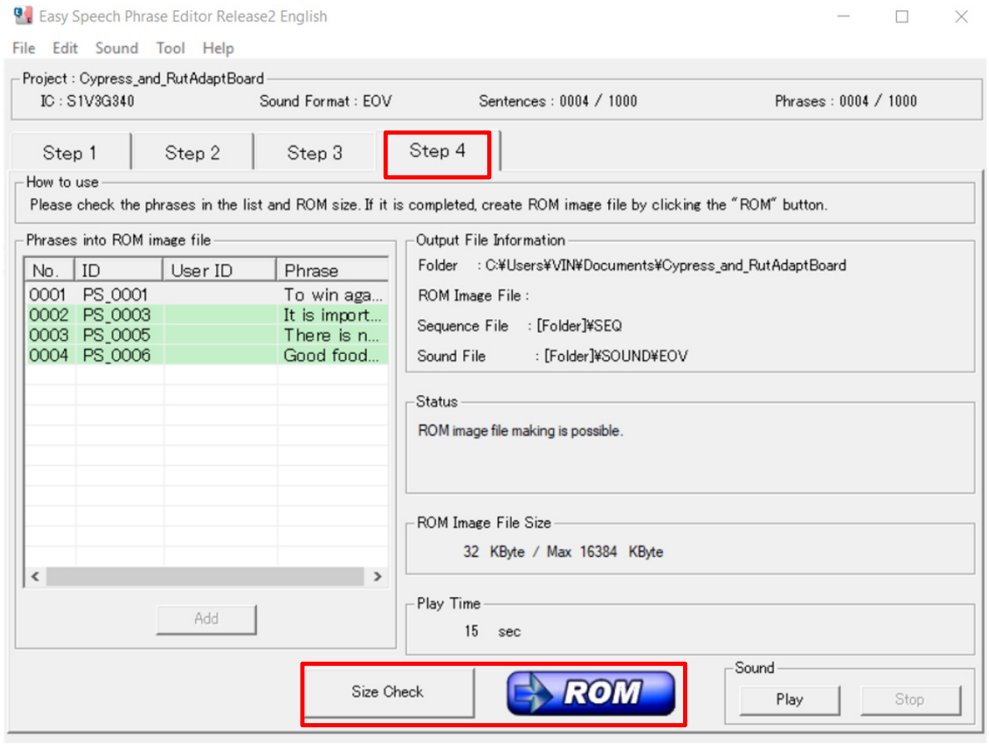
Step 4 Rom file creation:

1. By using the “No” , “ID” , “User ID” , “Phrase” functions sort your sentences.
2. Use “Size Check” to get detailed Information about your creation
3. Press “ROM” to create your own sound file

That was all we had to do in ESPER2 Tool

You will find your created files in your project folder



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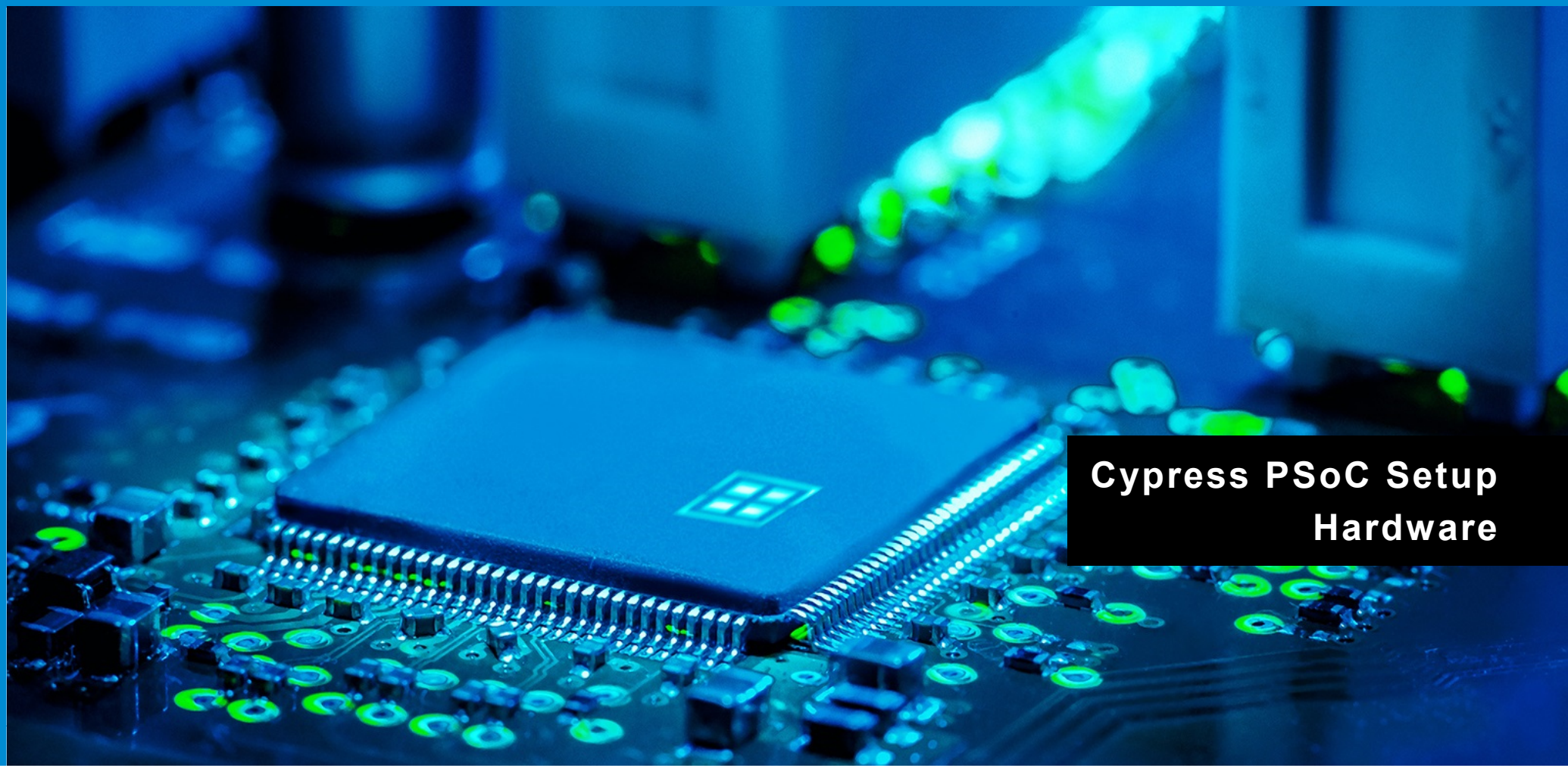


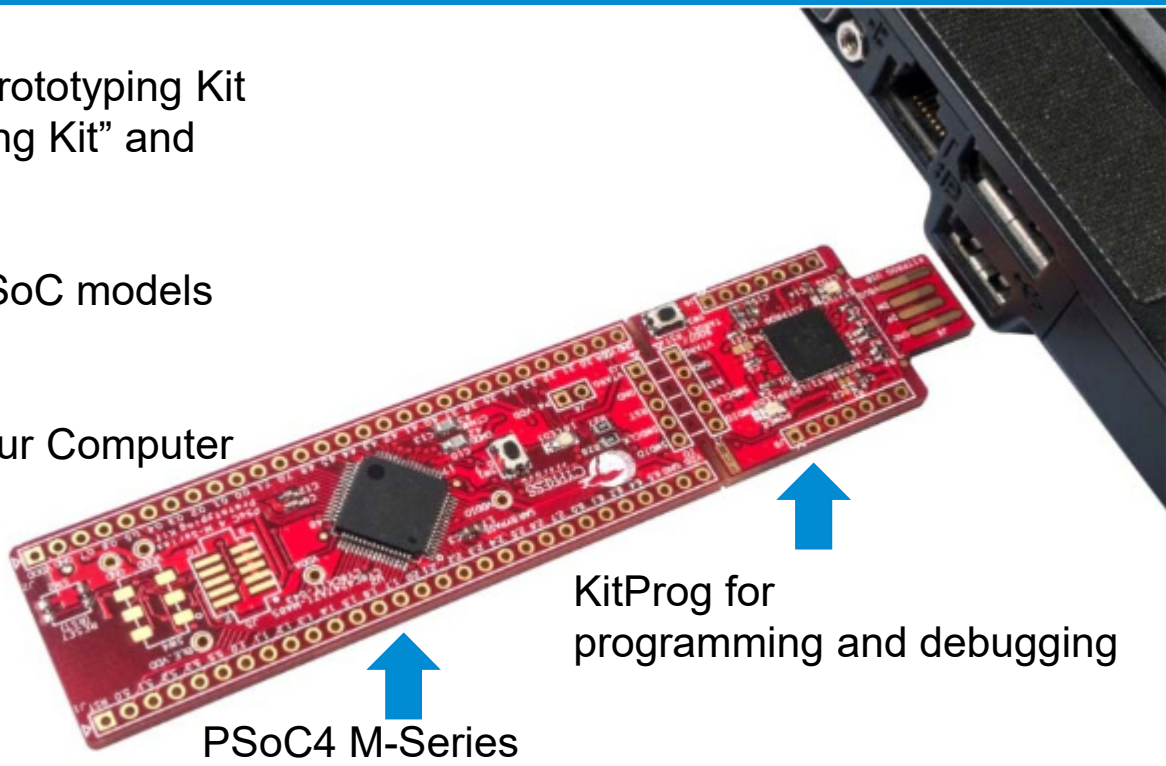
Cypress PSoC Setup Hardware

Getting started Cypress PSoC4 Prototyping-kit

In this Guide we used the Cypress PSoC4 Prototyping Kit “CY8CKIT-043 PSoC® 4 M-Series Prototyping Kit” and programmed it with the PSoC Creator V4.4

The PSoC Creator supports also different PSoC models like PSoC3, PSoC5 or PSoC6

1. Connect the Device directly via USB to your Computer



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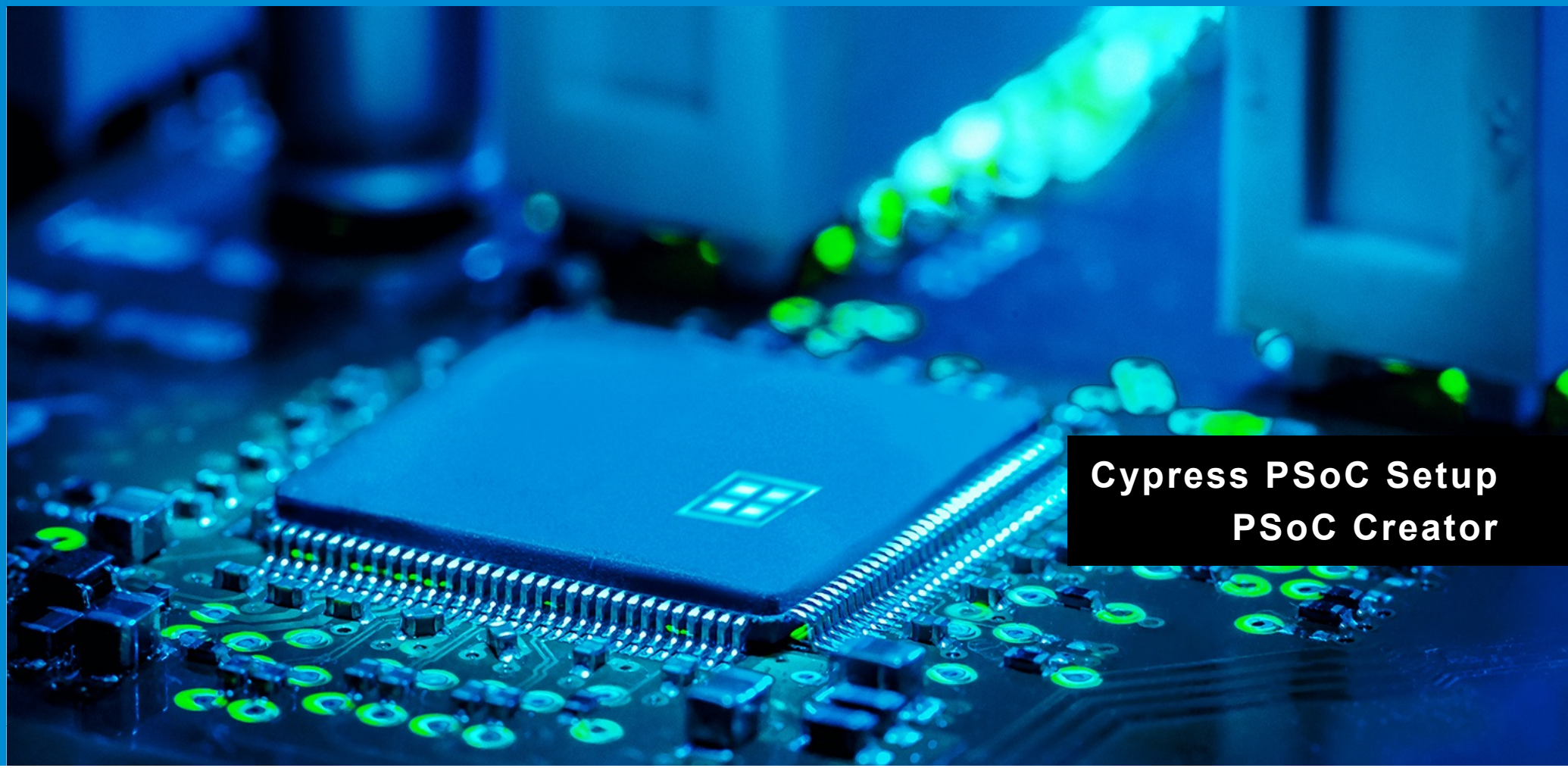


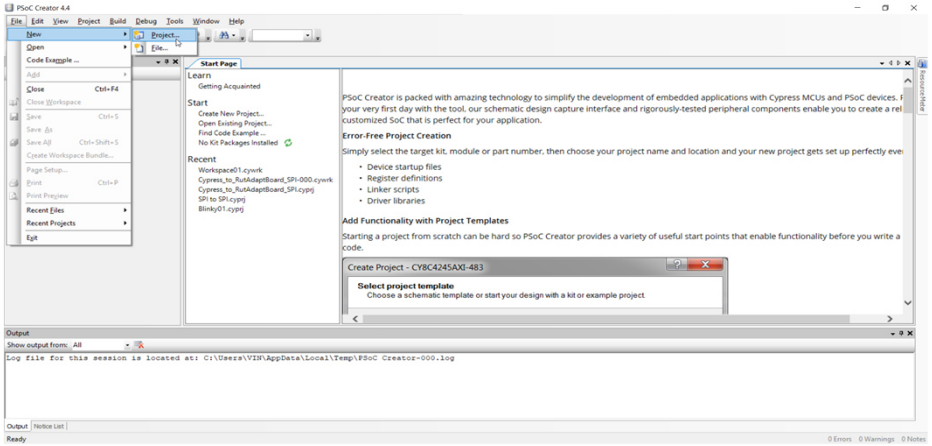
Cypress PSoC Setup
PSoC Creator

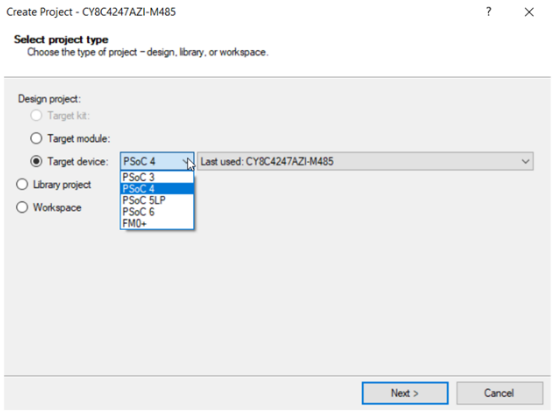
PSoC Creator Software Tool Explanation

After successful setup of the PSoC Creator on your system, please open the program

The first step will be to create your own project

1. Select “File” then “New” and “Project”
2. Select your “Target device” out of the supported portfolio* and press “Next”





*If you use a PSoC6 controller and cant find him in the library you have to use the Modus Toolbox Tool

PSoC Creator Software
Tool Explanation

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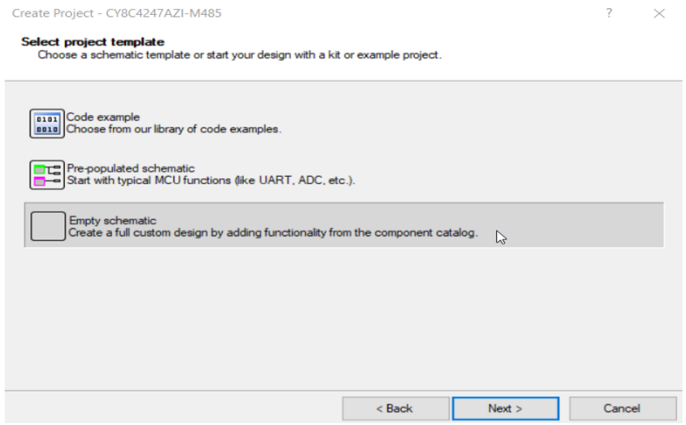
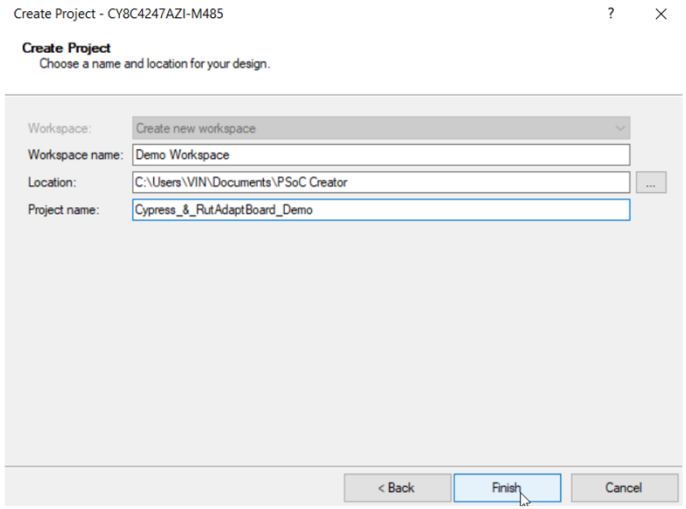
1. Select an “Empty schematic” and go “Next”



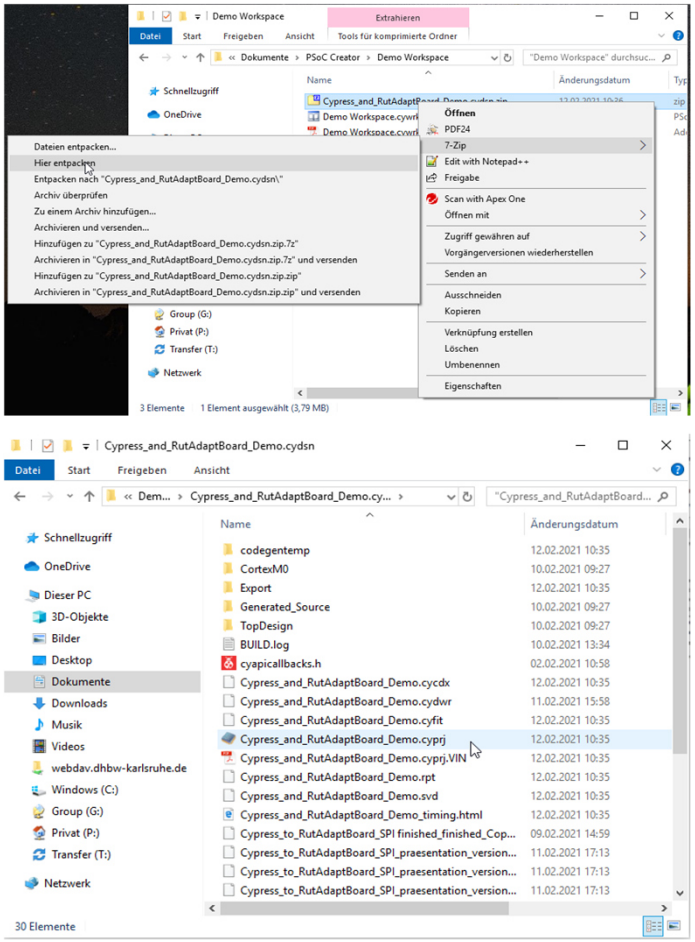
2. Give your workspace and project a name
3. If you want select a different saving location



PSoC Creator Software
Tool Explanation

From here on you need the ZIP folder with the driver program, which is exclusively available at the PM Digital department

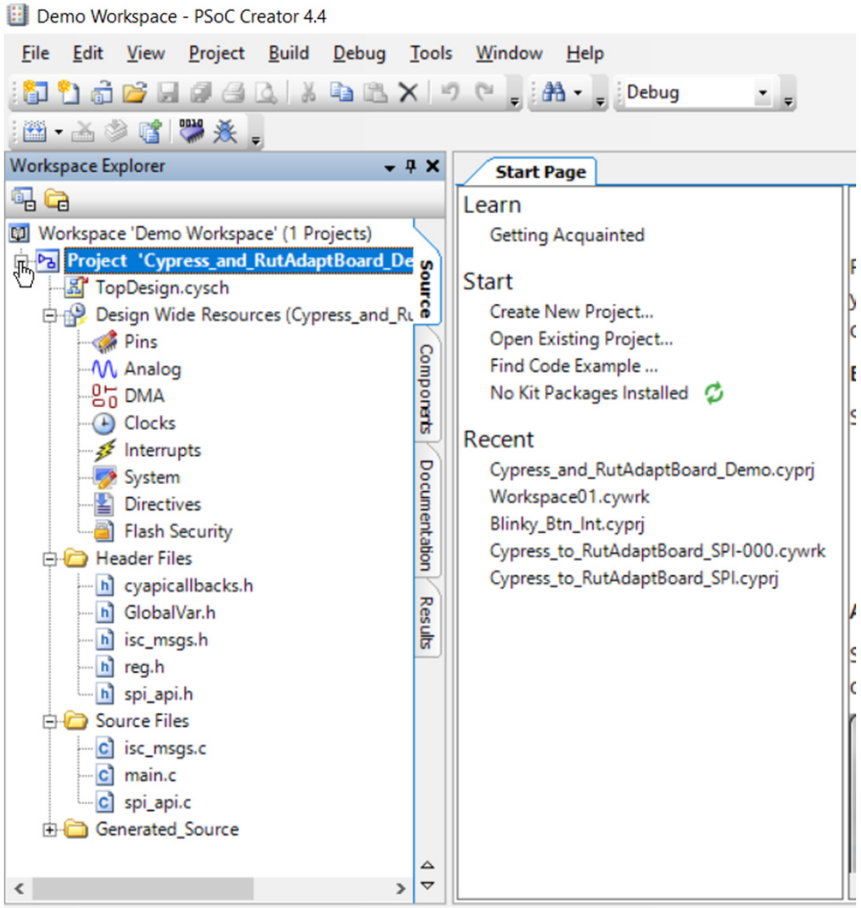
1. Please unzip this folder in your created Demo Workspace
2. After unpacking please open the “[Project Name].cyprj" file



PSoC Creator Software
Project Information

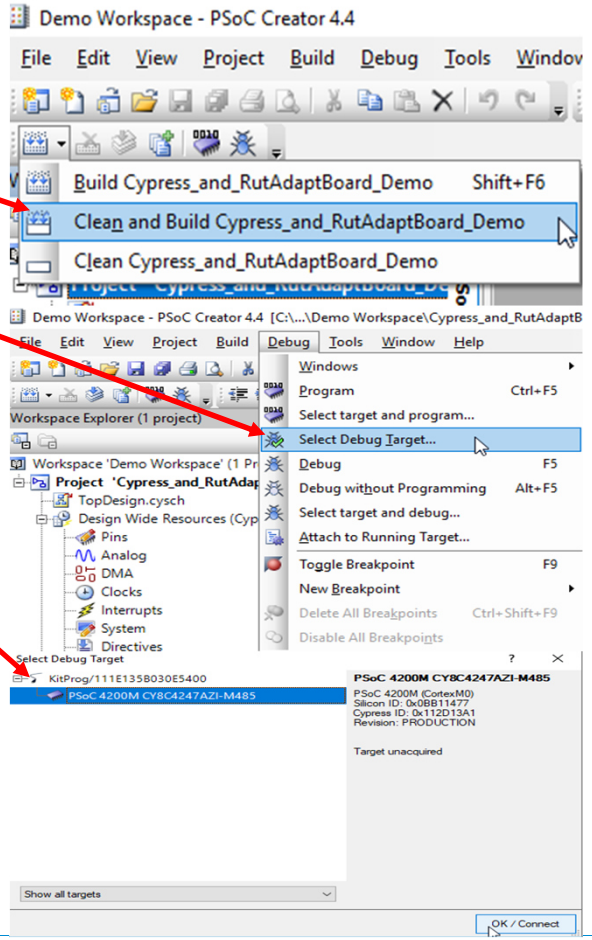
After you have opened the project you will land on the “Start Page” of PSoC Creator.

1. Via the plus symbol next to your project you can fold out additional information



PSoC Creator Software
Build Project

1. Clean and build your project with the “Clean and Build [Project Name]” function
2. Open the “Select Debug Target” Tool
3. Select your device and connect it



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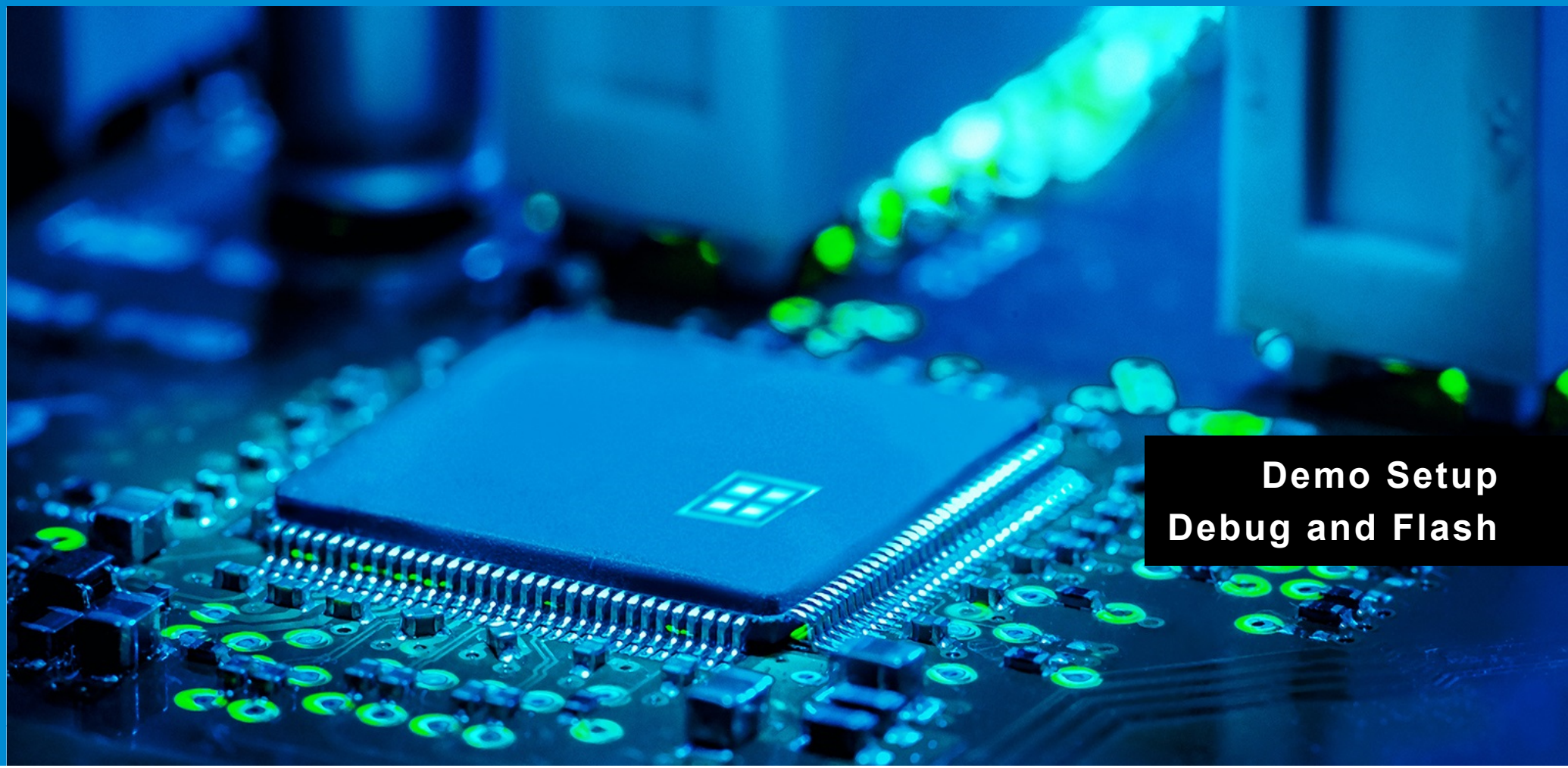
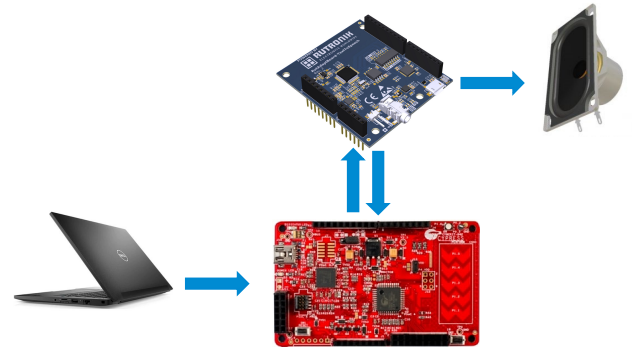
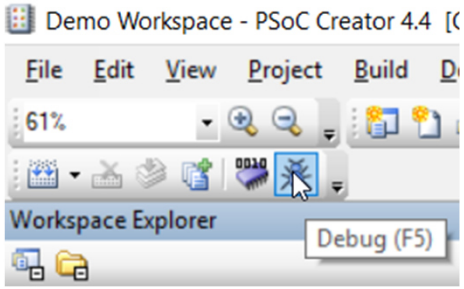


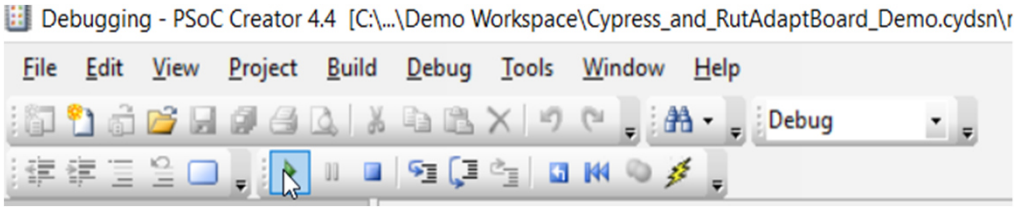
Demo Setup
Debug and Flash

Demo Setup
Debug and Flash

1. Disconnect the RutAdaptBoard-TextToSpeech from the PC
2. Set the configuration switches of the RutAdaptBopard-TextToSpeech to OFF-Arduino
3. Connect the RutAdaptBoard-TextToSpeech via Arduino Header with your PSoC
4. Connect the speakers to the RutAdaptBoard-TextToSpeech
5. Reconnect your PSoC via USB to the PC
6. Use the Debug function to debug and flash your controller
7. Press play in the Software







Thank you very much!
Are there any questions?

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eMail : Marvin.Schiffel@rutronik.com