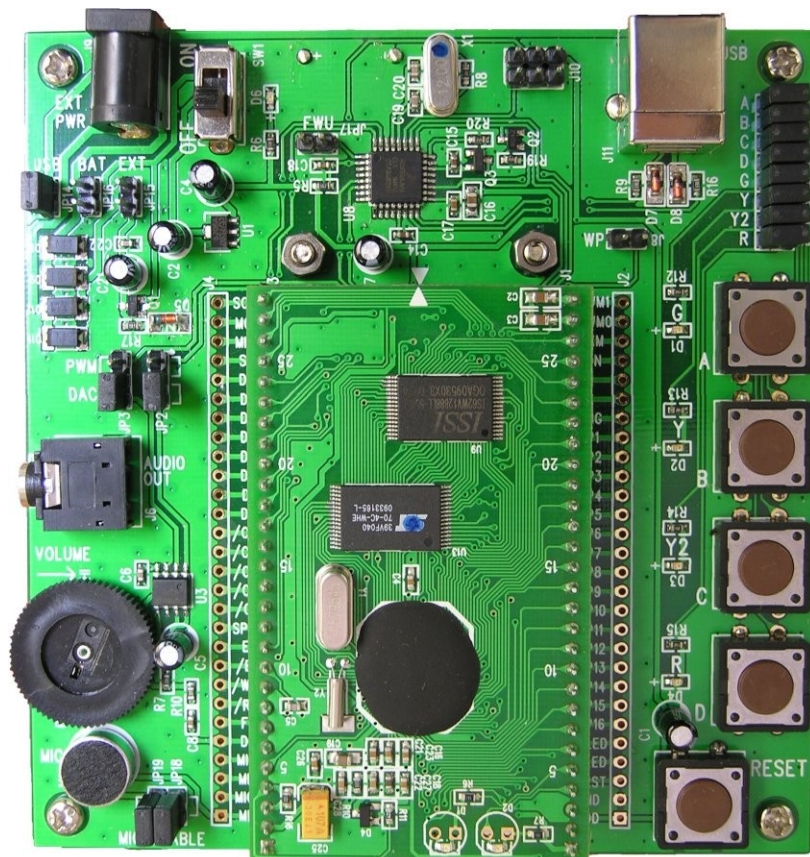


VoiceGP Development Kit



Quick Start Guide

Ver. 1.1

Hardware Setup

First of all check jumpers settings on the Development Board, in particular:

- JP14, JP15 and JP16 are for selecting power source. Only one of these jumpers must be closed, selecting your preferred power source from USB, on-board batteries or external power source connected to EXT PWR Jack.
In the following example we consider to use USB as power source, therefore only JP14 will be closed
- JP3 and JP2 are for selecting the audio output between PWM and amplified DAC. Both jumpers must be placed according to the PWM or DAC position. In the following example we consider to use the amplified DAC audio output
- JP18 and JP19 are for microphone enable, they both must be closed in order to use the on-board microphone
- JP6 to JP9 are for enabling push buttons A to D respectively. In the following example we consider to enable all buttons (i.e. jumpers closed)
- JP10 to JP13 are for enabling on board LEDS (Green¹, Yellow, Yellow2 and Red). In the following example we consider to enable all LEDs (i.e. jumpers closed)

Then plug the VoiceGP module into the Development Board by aligning the two white arrows on both boards, as in the following picture.

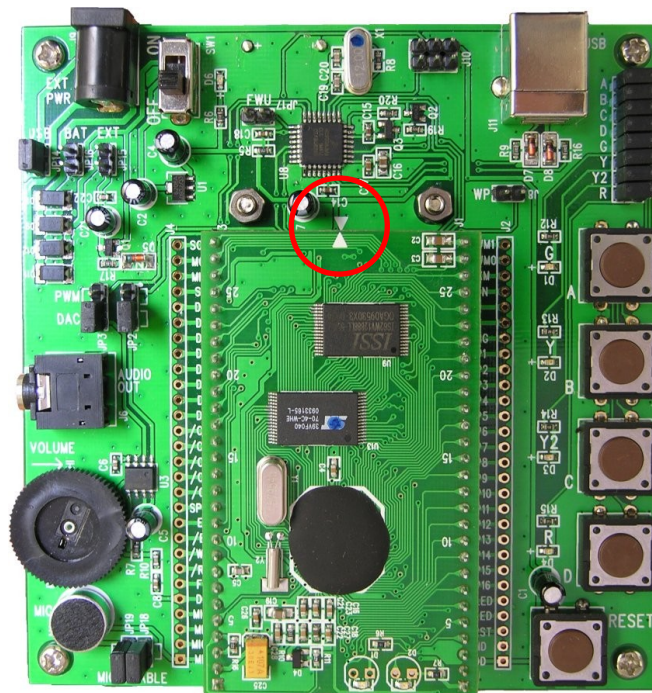


Figure 1: boards alignment and jumpers position

Connect your headphones or speakers to the Audio Out jack (mono output, with stereo speakers only one channel is active). You are now ready to proceed with software installation.



Be careful with volume: very loud sounds can damage your hears!

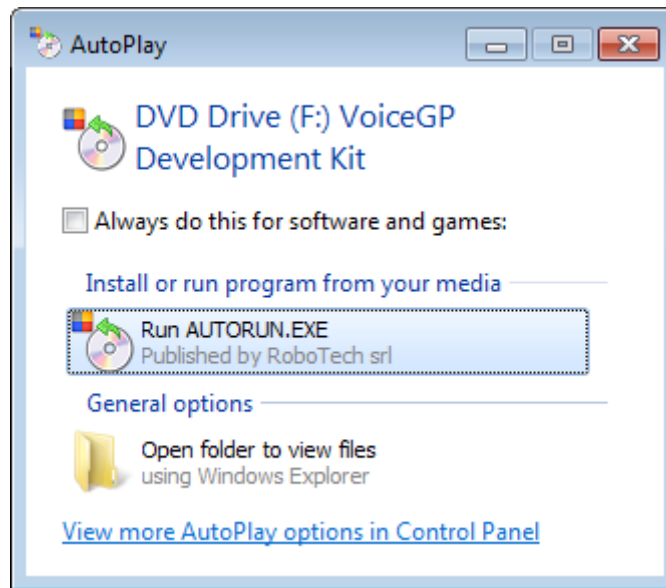


Do NOT connect the USB cable to your computer until all software is successfully installed.

¹ LED marked with G could be blue on some boards

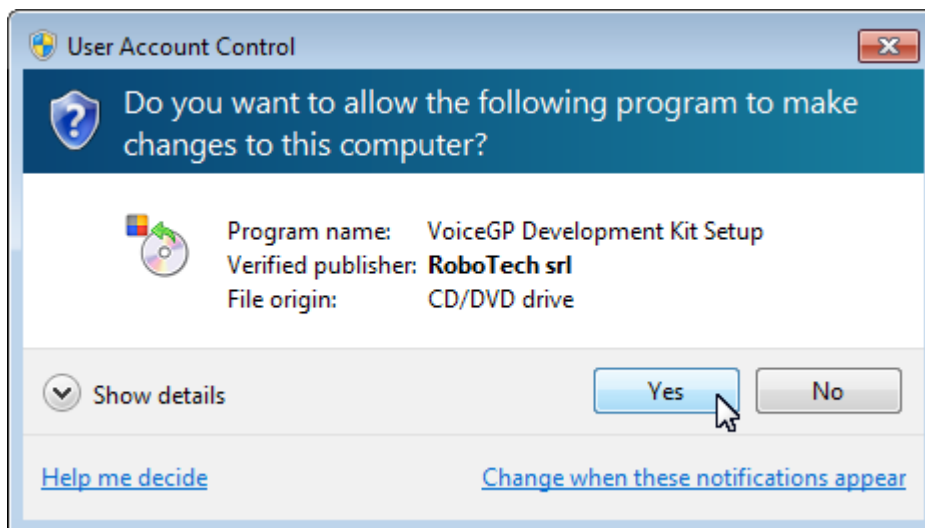
Software Installation

Insert the CD included in the kit and wait for the autorun to start. On Windows Vista and Windows 7 you could be prompted to click on "Run AUTORUN.EXE" to start the installer.



In case you have autorun disabled in your operating system, just open the CD contents and double click on the "Autorun" icon.

On Windows Vista and Windows 7, depending on your User Account Control (UAC) settings, you may need to allow the program to start by clicking "Yes" on the following window:



Once the Installer is started, you will see the following window:

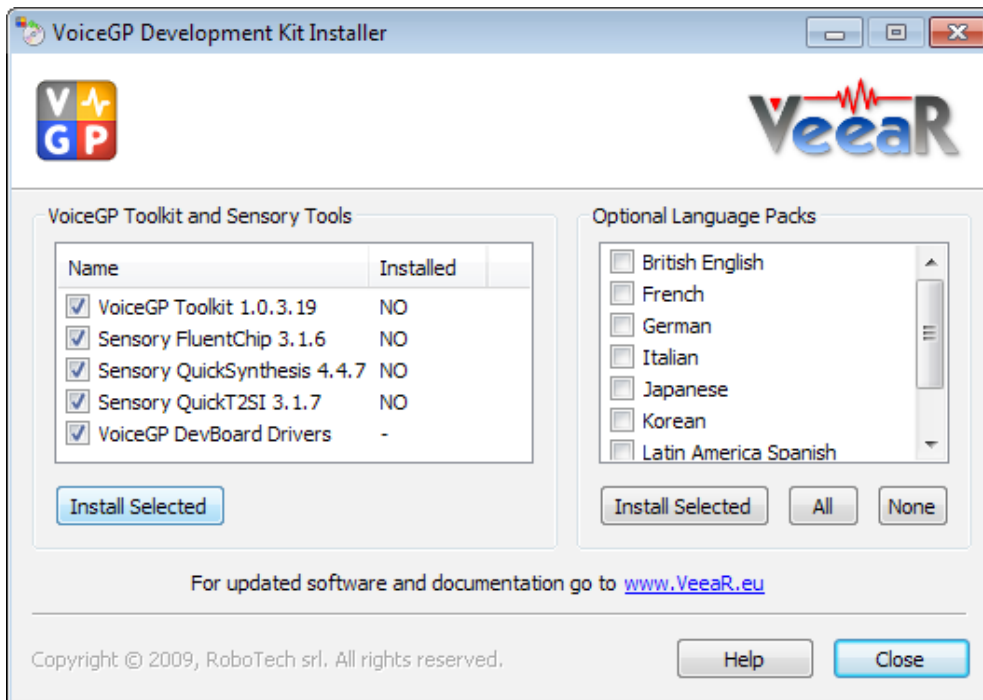


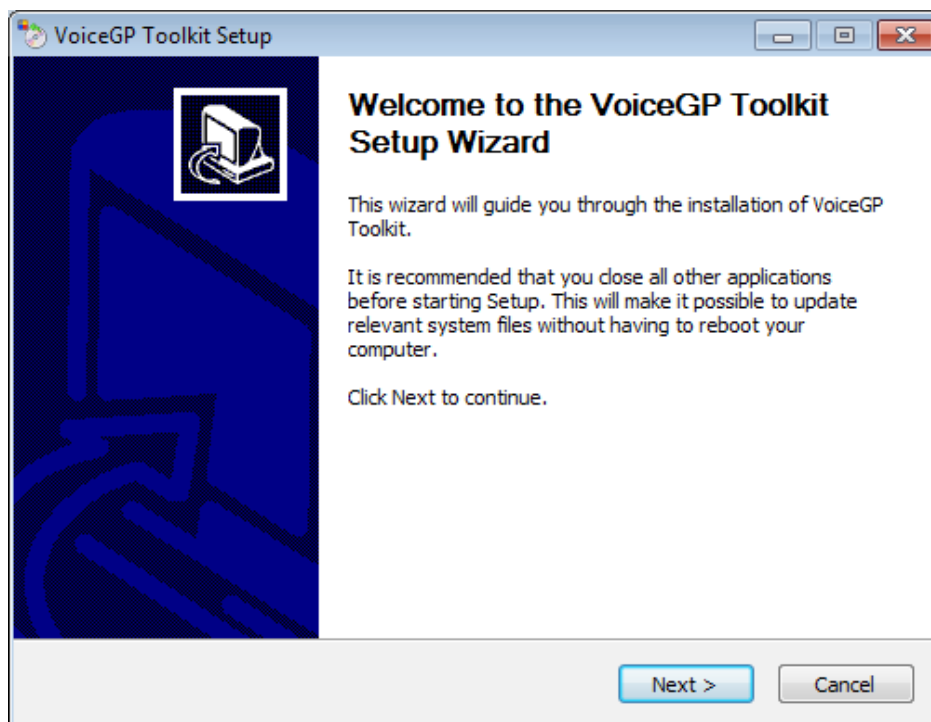
Figure 2: Installer window

The Installer will automatically check if any software is already installed in your computer and, if not or outdated, it will propose you to install it.

In order to correctly use the VoiceGP Toolkit you need to install all items in the list "VoiceGP Toolkit and Sensory Tools", as in Figure 2.

Click "Install Selected" in order to start the installation of the selected items.

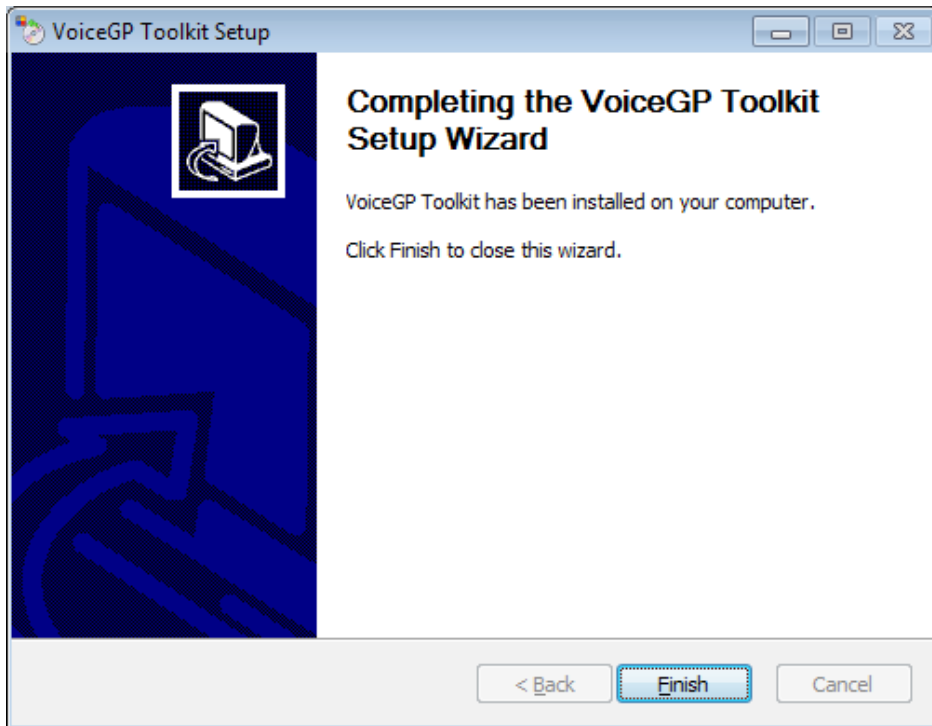
On the first "VoiceGP Toolkit Setup" window click "Next" and then leave default options and proceed with installation².



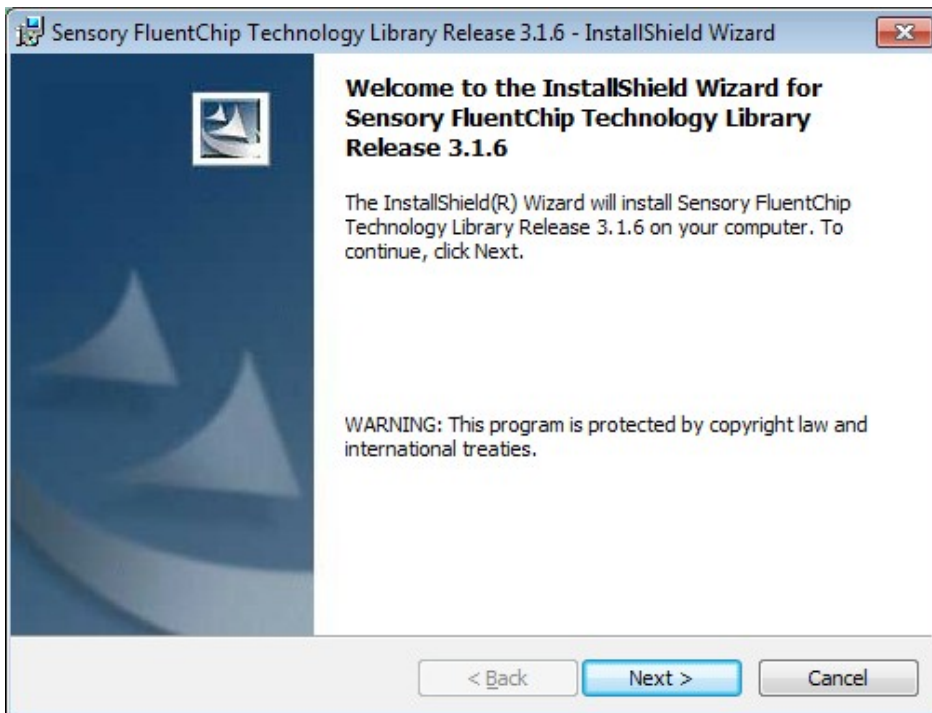
² During the installation process you will be requested to review some License Agreements.

Go to www.Veear.eu for updated documents and examples!

The first wizard ends by clicking on "Finish" on the last window:

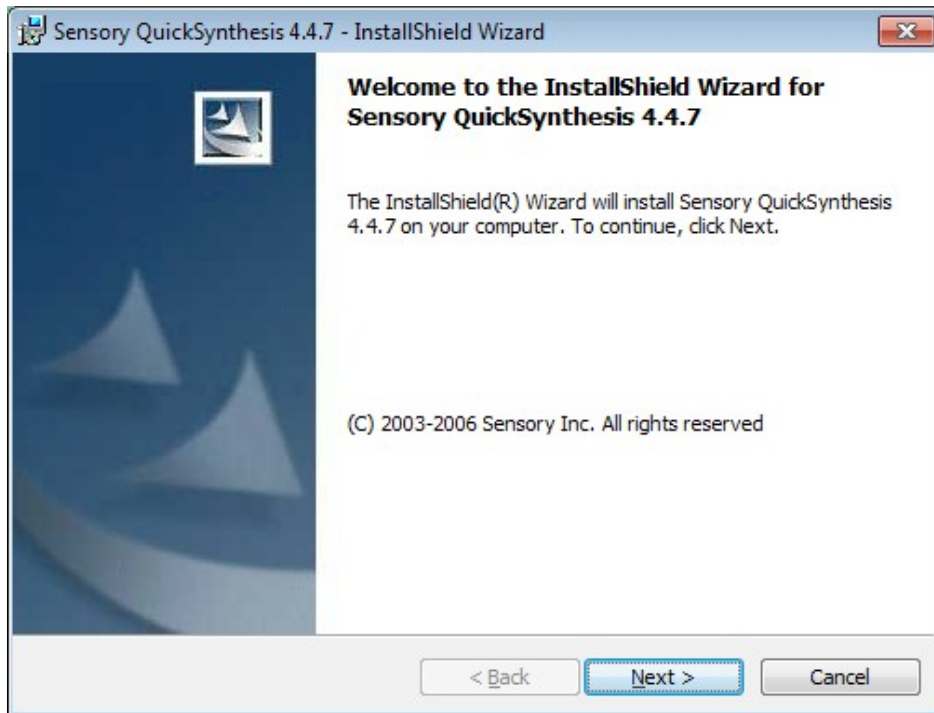


Then the installation process continues with the FluentChip Library wizard:



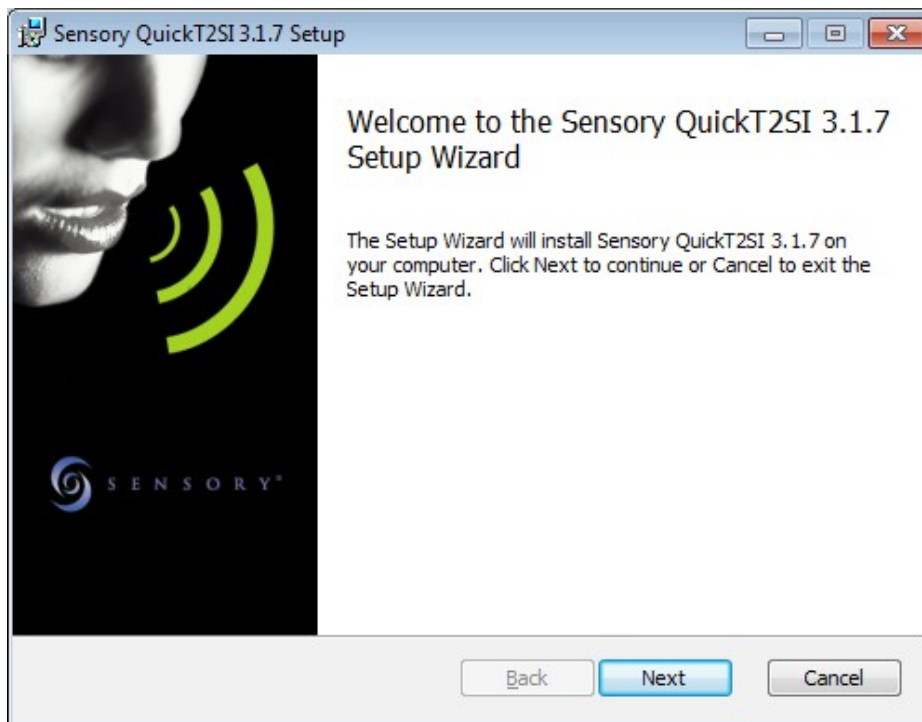
As before, click "Next" and then leave default options and proceed with installation.

Click "Finish" on the last window of the FluentChip Library wizard and the installation process then continues with the QuickSynthesis wizard:



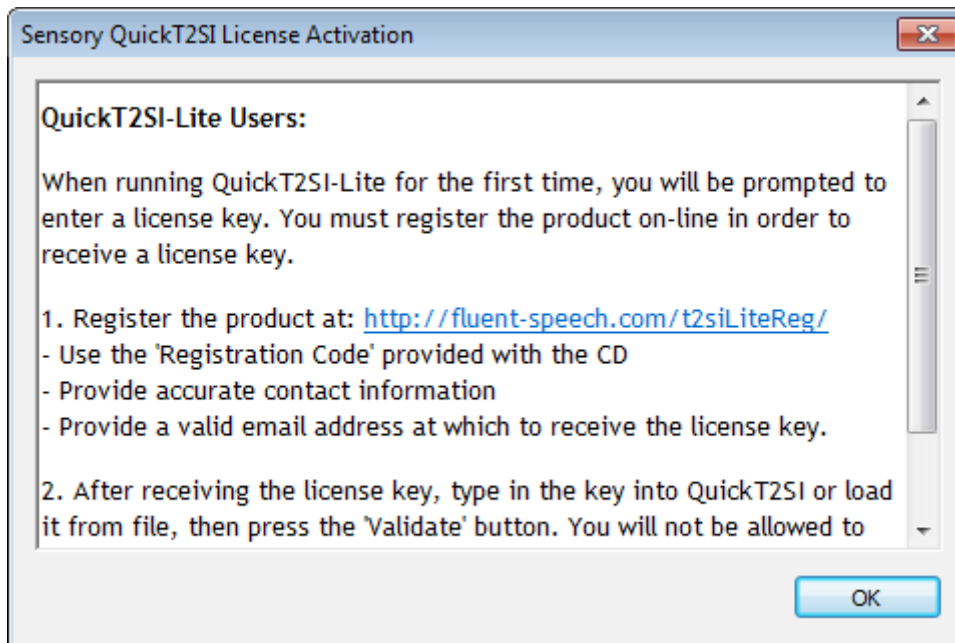
As before, click "Next" and then leave default options and proceed with installation.

Click "Finish" on the last window of the QuickSynthesis wizard and then proceed with the QuickT2SI (Text to Speaker Independent) setup:

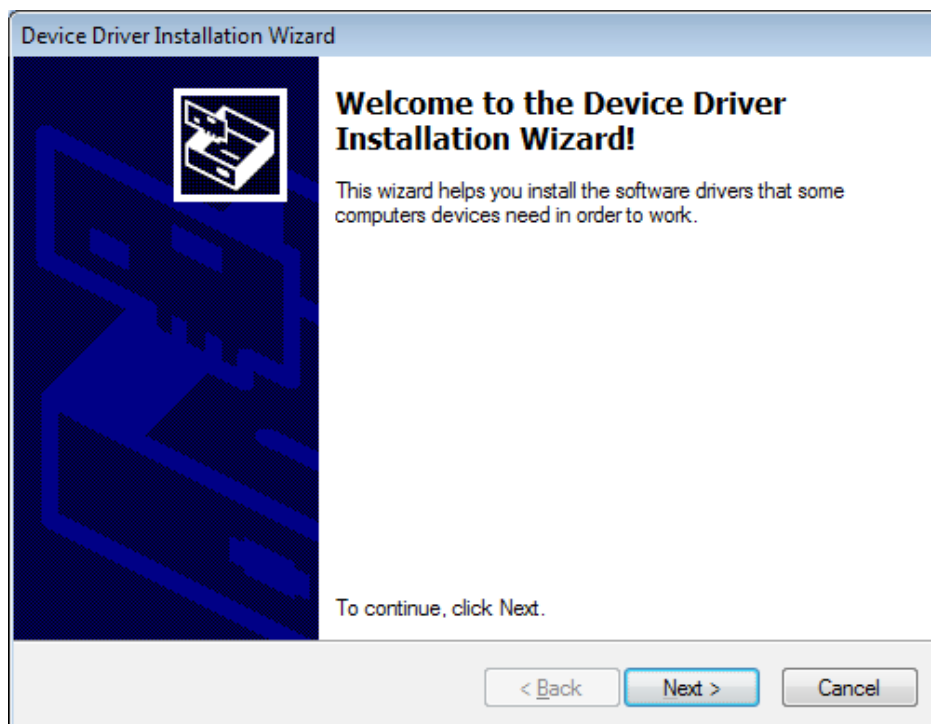


As before, click "Next" and then leave default options and proceed with installation.

After clicking on "Finish" on the last window of this wizard, a new window will remind you how to obtain a valid license key in order to activate your copy of QickT2SI-Lite.



After clicking on "OK" the installation process continues with the driver installation:



Click on next and, depending on your operating system, you will see a window asking if you want to proceed with this installation:

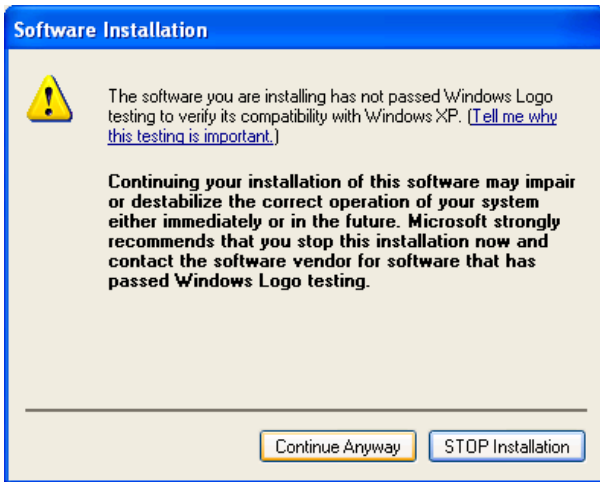


Figure 3: Driver Installation in Windows XP

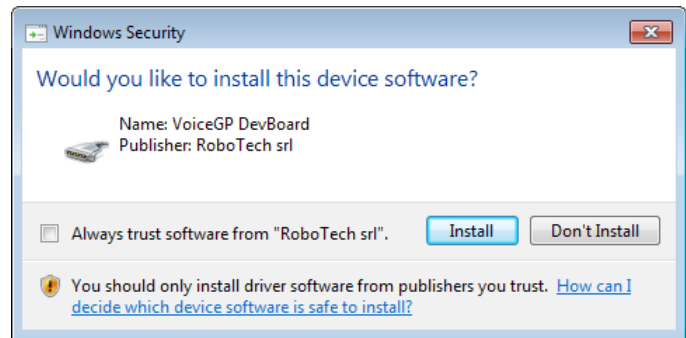
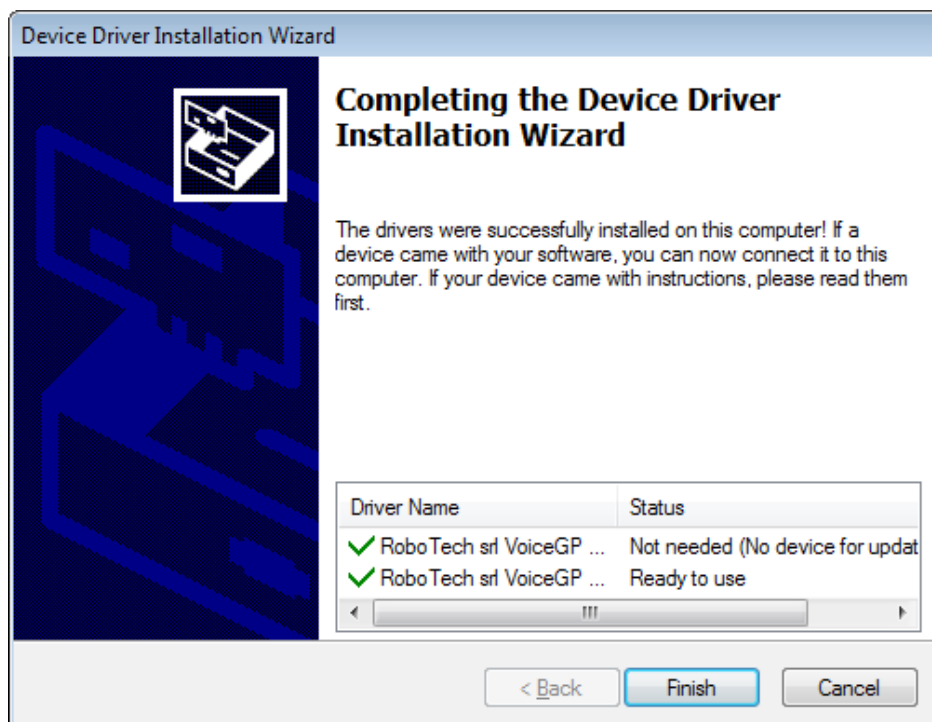


Figure 4: Driver Installation in Windows Vista or 7

Click on "Continue Anyway" if you are using Windows XP (see Figure 3)³ or "Install" if you are using Windows Vista or 7 (see Figure 4)⁴.

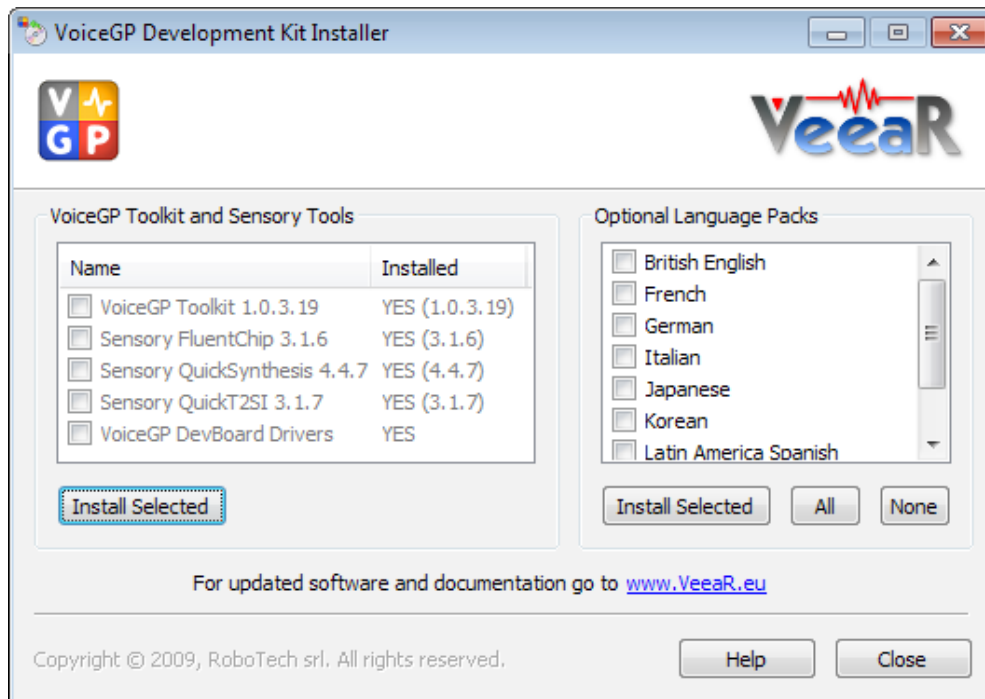
At the end of the driver installation you will see a window with two green check marks, indicating a successful installation.



³ In Windows XP you will see the same window of Figure 3 also the first time you connect the Development Board to a USB port on your computer: just click again on "Continue Anyway".

⁴ If you check "Always trust software from "RoboTech srl"" you will need to click on "Install" just once in Windows Vista/7, otherwise you will need to click on "Install" in two different windows because two different drivers will be installed.

After clicking "Finish" on the last window, if everything has been installed properly, you will see the updated VoiceGP Development Kit Installer window:



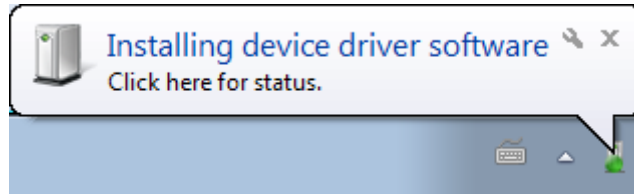
Now you can install Optional Language Packs, if needed, by checking the desired languages and then clicking on "Install Selected".

Then you can close the installer by clicking "Close" and you are ready to go!

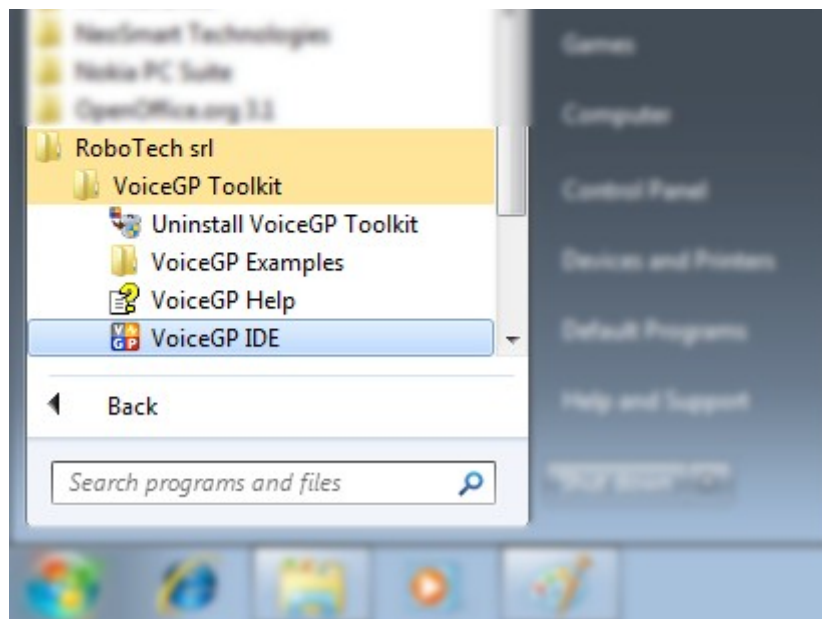
Running your first project

Connect one end of the USB cable to an available port on your computer and the other end to the VoiceGP Development Board then switch the board ON.

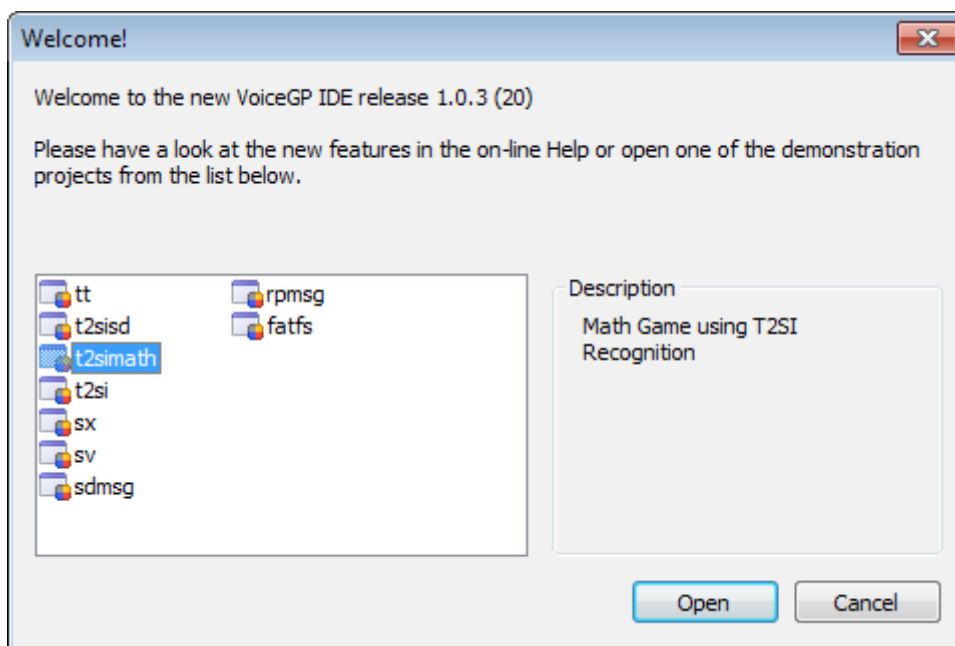
The first time you turn on the board connected to your computer, Windows will install the drivers:



After that you can run the VoiceGP IDE:



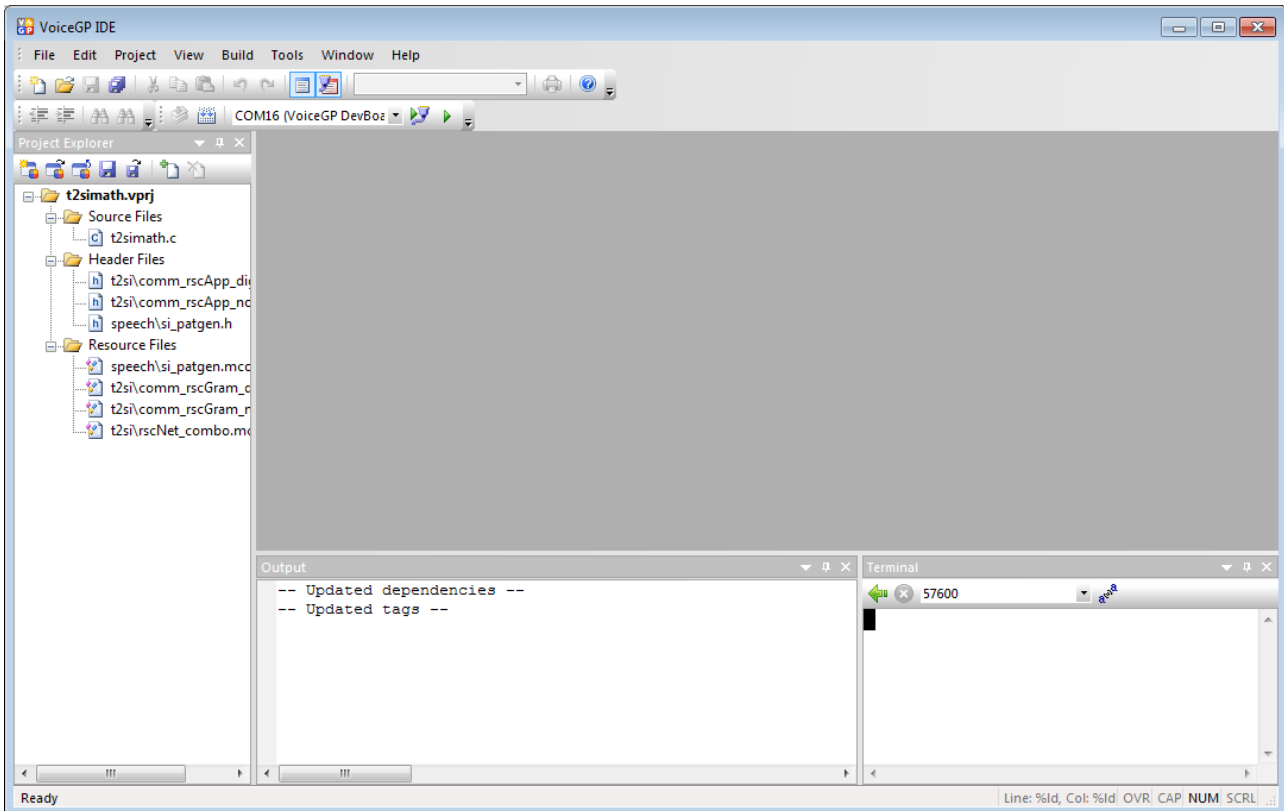
The first time you run the IDE you will see a welcome message:



Let's select the "t2simath" Demo Project and click "Open".

Go to www.VeeR.eu for updated documents and examples!

You will see the following window:



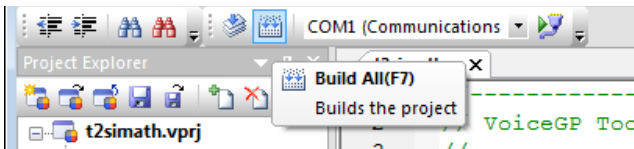
You can double click on "t2simath.c" on the Project Explorer window on the left in order to have a look at the main code of this project.

Every demo has comments at the beginning of the main code describing what the demo actually does, for instance the "t2simath" demo has the following description:

```
// OPERATION:  
//  
// T2SIMATH illustrates Text to Speaker Independent technology,  
// using more than one command grammar with a common acoustic model. The data  
// files for this sample were built using the QT2SI Acoustic Model Combiner tool.  
//  
// Button A causes the program to generate a random math problem,  
// ask it and wait for an answer. If the answer has a low confidence level,  
// the program re-prompts for confirmation,  
// then announces the final Correct/Incorrect result.  
// Button A can be used to interrupt speech or recognition.  
//  
// The program goes into a low-power sleep if there is no activity  
// for approximately 3 minutes and needs a reset to wake up.  
//  
//-----
```

Go to www.VeeR.eu for updated documents and examples!

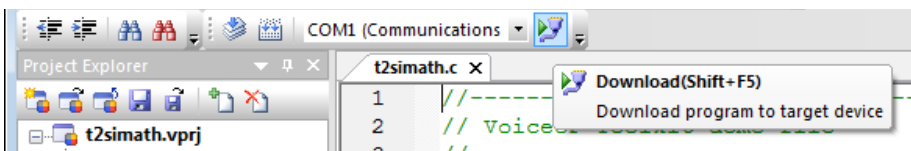
Now you are ready to build and download your first project.
Click on the "Build All" icon:



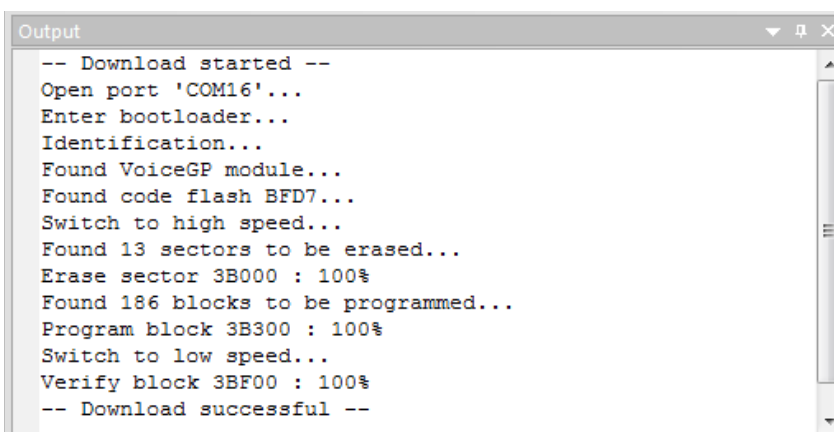
...the Output window will tell you if the Build was successful:



...now click on the "Download" icon:



...the Output window will tell you if the Download has been done:



Then you will hear a "beep" and a voice telling you "Press the A button for a new problem!"... Just press the A button and start "playing"!

Using Sensory Tools with VoiceGP

Compressed speech

The Sensory QuickSynthesis4™ tool is designed to help create and manage speech and sound synthesis for Sensory RSC4x micro-controller applications, using a variety of compression technologies with a wide range of data rates. It provides a graphical user interface to create lists of sounds and phrases and to compile them into object modules that can then be linked into the final application.

The VoiceGP platform with Virtual Machine firmware supports these compression technologies:

- SXH (SX-2 to SX-6, 8KHz or 9.3KHz)
- ADPCM (4-bit, 8KHz)
- PCM (8-bit, 8KHz or 9.3KHz)

Music and LipSync technologies are not currently supported (they might be available with future VM firmware revisions).

When you build a QS4 project for use with the VoiceGP VM platform, select the default options:

- “Build Linkable Module (most cases)”
- “Load in CONST space (share ROM with program)”
- “Load above or at: 0”

The tool generates four kind of files, with the same name as the project file and a different extension. To use the generated data you need to add the “.H” and “.MCO” files to your VoiceGP IDE project and include the “.H” file in your source files where necessary.

Please see the “sx” demo project in the VoiceGP IDE for examples of use in C language and the FluentChip Reference manual for syntax and documentation (also available from VoiceGP IDE Help menu).

You can experiment with QS4 by using the “sample.qxp” project file, located in the folder “QuickSynthesis4\projects\sample” under your “Program Files” folder or wherever you chose during setup.

Please refer to the QuickSynthesis4™ on-line Help for details and usage information.

Note: direct download to the VoiceGP module from the QS4 tool, for testing compression results, is not currently supported!

Speaker Independent vocabularies

The Sensory QuickT2SI™ tool is designed to support the T2SI™ (Text-to-Speaker-Independent) engine, which is a small-footprint, speaker-independent, phonemic speech recognizer that runs on the RSC-4x family of mixed-signal speech processors. It provides a graphical user interface to enter speech command lists and compile them into object modules that can then be linked into the final application.

The QuickT2SI™ Lite license enables creation of recognition sets with up to 12 commands each.

When you build a QT2SI project for use with the VoiceGP VM platform, make sure you select the default options in the Hardware tab:

- “Target Device: RSC-4128”
- “Acoustic Model Memory Space: const”
- “Trigger Grammar Memory Space: const”
- “Command Grammar Memory Space: const”

The VoiceGP platform with Virtual Machine firmware has room for up to 320KB of T2SI data. You may check the amount of memory needed by your set at the end of the build (see “Total ROM size”).

The tool generates three kind of files, with the same name as the project file and a different extension. To use the generated data you need to add the “.H” and “.MCO” files to your VoiceGP IDE project and include the “.H” file in your source files where necessary.

Please see the “t2si” demo project in the VoiceGP IDE for examples of use in C language and the FluentChip Reference manual for syntax and documentation (also available from VoiceGP IDE Help menu).

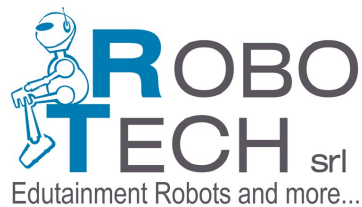
You can experiment with QT2SI by using the “sample.rsc” project file, located in the folder “VoiceGP Examples\t2si\t2si” under your “Shared Documents” folder (Windows XP) or “Public Documents” folder (Windows Vista/7).

Please refer to the QuickT2SI™ on-line Help for details and usage information.

Note: direct download to the VoiceGP module from the QT2SI tool, for testing recognition results, is not currently supported!

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Go to www.Veear.eu for updated documents and examples!