ting Started Guide



tinyTILE has been designed in collaboration with Intel

Getting Started with tinyTILE

tinyTILE is an Intel[®] Curie[™]-based board, a miniaturised adaptation of the Arduino/Genuino 101 board with an outline suitable for wearable and IoT applications. tinyTILE features Bluetooth[®] Low Energy capabilities and on-board 6-axis accelerometer/gyroscope, allowing users to create imaginative projects.

For more details please visit: www.element14.com/tinytile.

There are two software environment options for tinyTILE, the Intel[®] Curie[™] Open Developer Kit and the Arduino IDE.

For the Intel Curie Open Developer Kit (CODK) visit: <u>https://software.intel.com/en-us/node/674972</u> to get started.

For the Arduino IDE follow the instructions below.

Installation of the Arduino Software (IDE):

Based on the chosen operating system, step-by-step instructions are available to set-up the Arduino Software (IDE) on user's computer.

The following OS options are compatible with Arduino Software (IDE).

- Windows
- Mac OS X
- Linux
- Portable IDE (Windows and Linux)

Links are available at: https://www.arduino.cc/en/Guide/HomePage

The following instructions are for the Windows OS.

Downloading the Arduino Software (IDE):

Users should visit <u>https://www.arduino.cc/en/Main/Software</u> for the latest version. Available options allow users to install an '.exe' file or download the Zip package. The '.exe' installs the IDE and the necessary drivers. The Zip file would require drivers to be installed manually but allows the user to create portable installation, independent of a computer.

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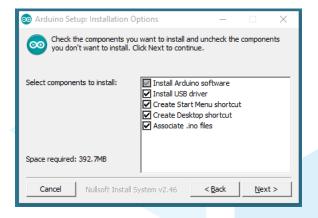




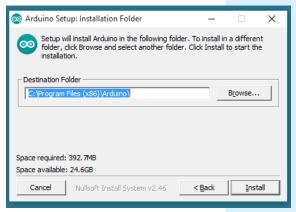
When the download is finished, proceed with the installation, allowing for the driver installation process to run through when warned by the operating system.

Note: if the Arduino IDE is not already installed follow the steps below, otherwise go to Installing Intel Curie boards package section.

Choose the components to install



Choose the installation directory (recommend to keep to the default).



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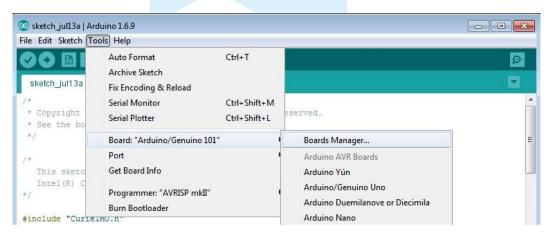
The process will extract and install all the required files to execute Arduino Software (IDE) properly.

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Installing Intel Curie boards package:

The Arduino Software (IDE) should now be installed on the user's computer. The next step requires the addition of the Intel Curie boards package to the Arduino Software (IDE).

To do this, select Tools menu, then Boards and lastly Boards Manager, as shown below.



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From the Board Manager, scroll and locate Intel Curie Boards by Intel. Select the box and click on the Install button.

Boards Manager	
Type All	
Boards included in this package: Galileo. <u>More info</u>	•
Intel i686 Boards by Intel Boards included in this package: Edison. More info	E
Intel Curie Boards by Intel version 1.0.5 INSTALLED Boards included in this package: Arduino/Genuino 101.	
More info 1.0.6 ▼ Install	Update Remove
Atmel AVR Xplained-minis by Atmel University France Boards included in this package: atmega168pb-xmini, atmega328pb-xmini, atmega328p-xmini. Online help	
Online help	Close

Boards Manager		2
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Intel Curie Boards by Intel version 1.0.5 INSTALLED Boards included in this package: Arduino/Genuino 101. More info	Installing	
Atmel AVR Xplained-minis by Atmel University France Boards included in this package: atmega168pb-xmini, atmega328pb-xmini, atmega328p-xmini. <u>Online help</u>		-
Downloading tools (1/2). Downloaded 2,998kb of 9,418kb.	Can	cel

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After installation of the package, the new platform (Arduino/Genuino 101) will be listed under the Boards menu as shown below.

Edit Sketch To	ools] Help		
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Copyright See the bo		Shift+M Shift+L	
	Board: "Arduino/Genuino 101"	Boards Manager	
This sketc Intel(R) C	Port Get Board Info	Arduino AVR Boards Arduino Yún Arduino/Genuino Uno	
	Programmer: "AVRISP mkII" Burn Bootloader	Arduino Duemilanove or Diecimila Arduino Nano	
242		Arduino/Genuino Mega or Mega 2560	
while (!Seria // initialize serial.printl CurieIMU.begi // Set the ac CurieIMU.setA id loop() { int axRaw, ay float ax, ay,	<pre>device n("Initializing IMU device"); n(); celerometer range to 2G ccelerometerRange(2); Raw, azRaw; // raw accel</pre>	Arduino Mega ADK Arduino Leonardo Arduino/Genuino Micro Arduino Esplora Arduino Mini Arduino Ethernet Arduino BT LilyPad Arduino USB LilyPad Arduino	
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tinyTILE can now be connected to the computer.

At the first time of connecting, the computer may go through the new hardware installation process and load appropriate drivers.

Check Windows Device Manager to ensure the board is detected.

🚔 Device Manager	- • •
File Action View Help	
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P 4 Biometric Devices	
⊳ d. Computer	
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DVD/CD-ROM drives	
> 🕼 Human Interface Devices	
Example The ATA/ATAPI controllers	
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Sound, video and game controllers	
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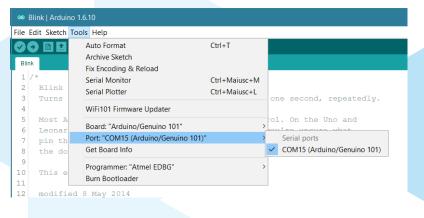
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From the menu on the IDE, go to Tools, select the Board as Arduino 101.

Select the appropriate board and then select the COM Port that is labelled with the same name as the board.



Next, select File → Examples → CurieIMU → Accelerometer

<mark>و</mark> 1		sketch_aug30b A	rduino 1.6.9
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		Examples from Libraries Adafruit NeoPixel Bridge CurieBLE CurieEEPROM CurieI2S CurieIMU 3 CurieSoftwareSerial CurieSoftwareSerial	MotionDetect RawlmuDataSerial ShockDetect StepCount TapDetect TapDoubleDetect ZeroMotionDetect
		CurieTime	Ardu

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To upload the sketch to the board, click the upload button. This is the icon with arrow next to the tick icon.



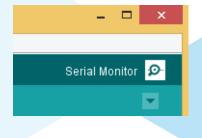
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Now the user needs to go bac	k to the ID	E to open	Serial Mo	nitor under	
the Tools menu.					



The user can now observe the output on the Serial Monitor. For the example used in this instance, the output is for accelerometer example.

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tinyTILE board has now been set up successfully with a sketch illustrating the application. For more tutorials and examples refer to the Arduino.cc at <u>https://www.arduino.cc/en/Tutorial/HomePage.</u>

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