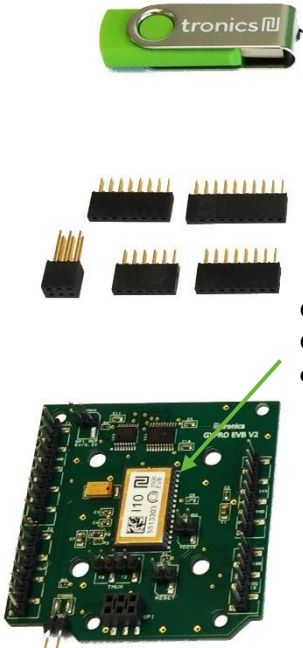# tronics
ENVISION MEMS | DELIVER MEMS

USER MANUAL

GYPRO® Evaluation Kit
Quick-start guide

Doc Ref: **UMGYPRO-EVK**
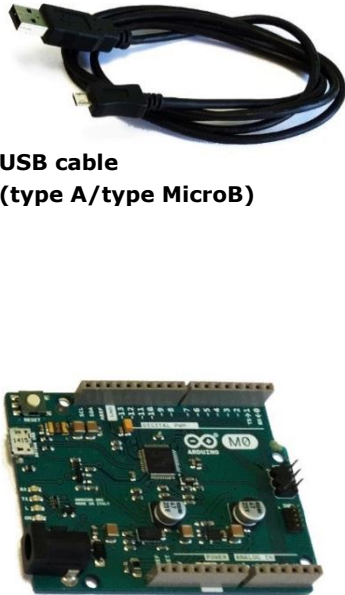**Rev:** 1.0
Date: Sept. 2016

GYPRO® Evaluation Kit

GYPRO®-EVB2
(as delivered by Tronics)

Arduino M0 + USB cable
(to be purchased separately)

GYPRO® Evaluation Tool

**USB cable
(type A/type MicroB)**

Gypro2300
Gypro2300LD
or Gypro3300

**Software
supplied by Tronics**

Arduino M0 board

This user manual is intended to customers who have purchased GYPRO®-EVB2 Evaluation Board and who would like to implement it using Arduino platform. The following paragraphs explain how to set-up the full evaluation kit and how to configure Arduino M0 board.

Required:
- GYPRO®-EVB2 with a GYPRO® MEMS Gyro
- Header Connectors (x5)
- Tronics USB Flash drive.
- Arduino M0 board (**not included**).
- Micro-B USB Cable (**not included**).
- Computer running Window 7 or later version with USB port.

Supplied by Tronics

Note: If you intend to perform tests over temperature, make sure that your USB Cable can withstand the operating temperature range specified by Tronics

---

UMGYPRO-EVK_ rev 1.0
- PROPRIETARY INFORMATION-

1 Related documentation & resources

This document should be read in conjunction with
- UMGYPRO-EVB2 : User manual for GYPRO® Evaluation board
- SWMGYPRO-EVK : GYPRO® Evaluation Tool software user manual

You can also watch the tutorial video here.

2 System Requirements

GYPRO® Evaluation Tool software is compatible with OS Windows 7 or later versions. The program automatically adapts to the operating system on which it runs, eliminating the need for manual settings.

Recommended system configuration:
- Processor 1.6 GHz or faster
- 2 GB RAM
- 1280*960 pixels minimal screen resolution
- 780 MB free hard disk space for the Arduino IDE and the Tronics GYPRO® Evaluation Tool software (additional space is needed during installation only to accommodate the initial setup files).
- USB Port.
- Operating Systems: Windows 7, Windows Server 2008 R2, Windows Thin PC, Windows 8 / 8.1, Windows RT, Windows Server 2012 and Windows 10.

3 Setting Up

3.1 Installing Arduino 1.7.10 IDE

1. Plug the USB flash drive directly into an available USB port.

   NOTE: A message indicating that a new device has been detected should appear at the lower right hand of your screen. It may take a few seconds to be detected.

2. If the USB flash drive or external drive folder does NOT open automatically, follow these steps:
   a. Click Start > Computer.
   b. Double-click on the "**TRONICS USB**" associated with the USB flash drive.
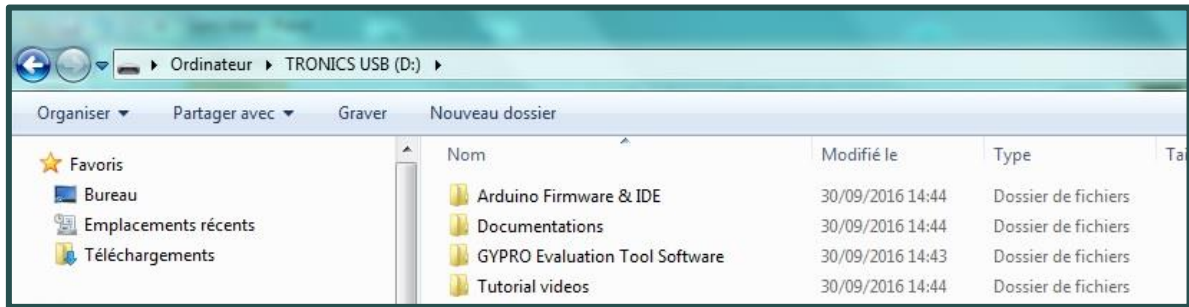
3. Double-click on "**Installation**" folder then on *arduino-1.7.10.org-windows.exe* and proceed with the installation (please authorize the driver installation process).

   NOTE: The latest version of this software is also available on our **website**.

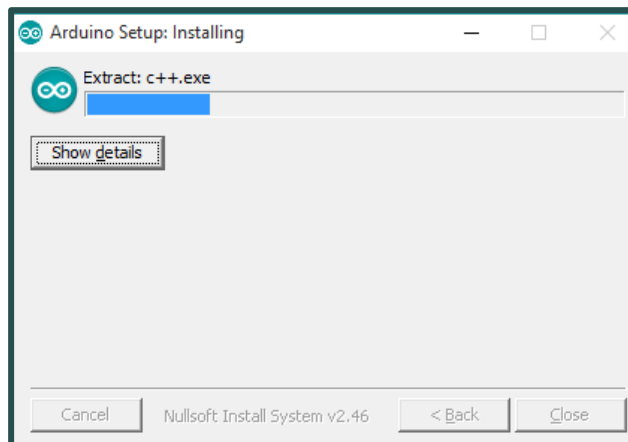4. Select all the components and then click on "**Next**" button.
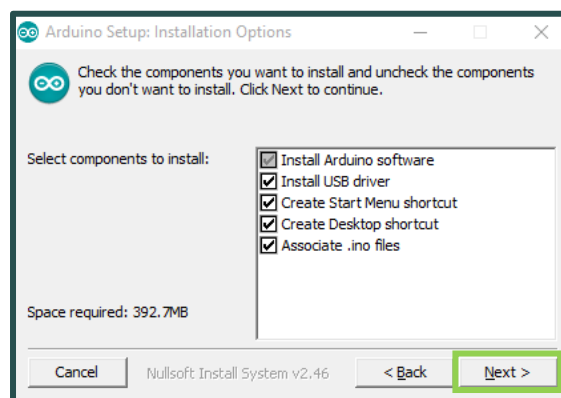
5. Choose the installation directory (we suggest to keep the default one) then click on the "**Install**" button.
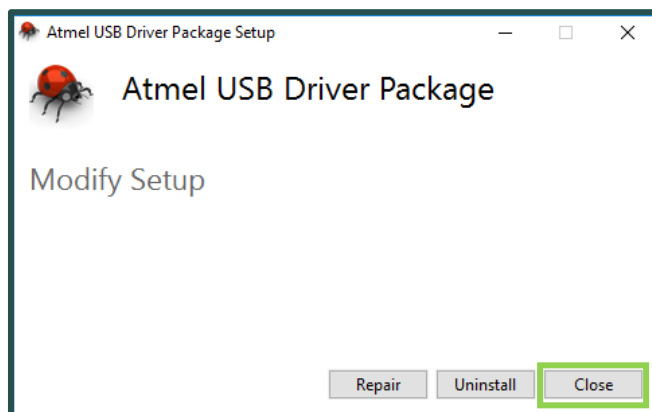

UMGYPRO-EVK_ rev 1.0
- PROPRIETARY INFORMATION-
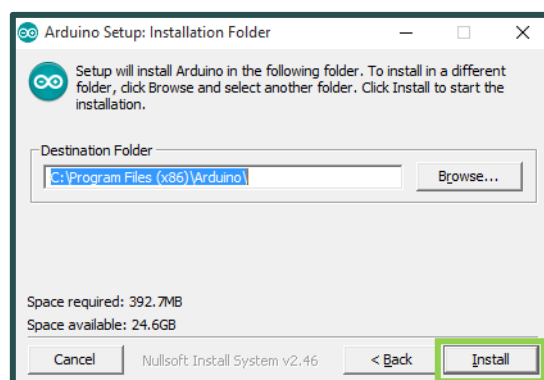
6. The process will extract and install all the required files to execute properly the Arduino Software (IDE).

7. The installation of Arduino 1.7.10 includes "Atmel USB Driver Package" installation. *You don't need to install this package if you don't use other boards than the Arduino M0 in the future.*


8. Once the status "Completed" is displayed, Arduino IDE 1.7.10 is installed and is ready to be used. You can close the Installer.
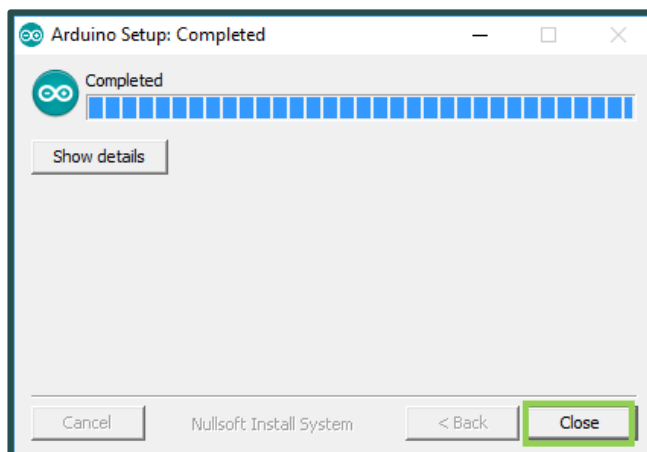
3.2   Configuring Arduino M0 Board

1. Connect the Arduino M0 board to your computer using the USB cable and the Native USB Port. *If this is the first time you are connecting an Arduino M0 Board to your computer, please wait a few minutes before going on, as Windows needs to install all the necessary drivers.*


Native USB Port ->
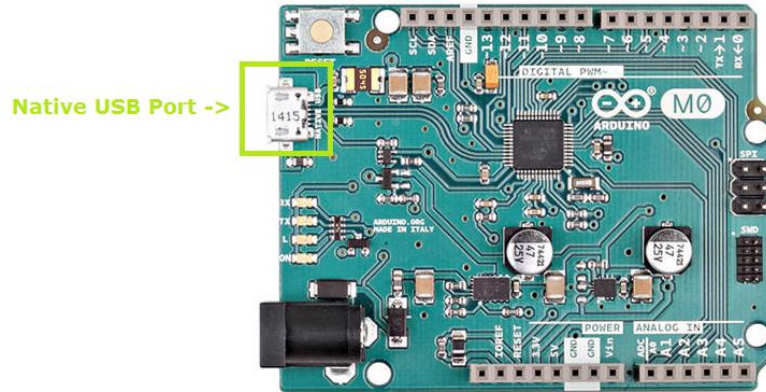
2. Open (Double-click) the *Tronics_Firmware_Arduino_M0.ino* program (sketch) available in the "*Tronics_Firmware_Arduino_M0*" folder of the Tronics USB Flash drive.

3. Select "Arduino M0" in the *Tools > Board* menu.
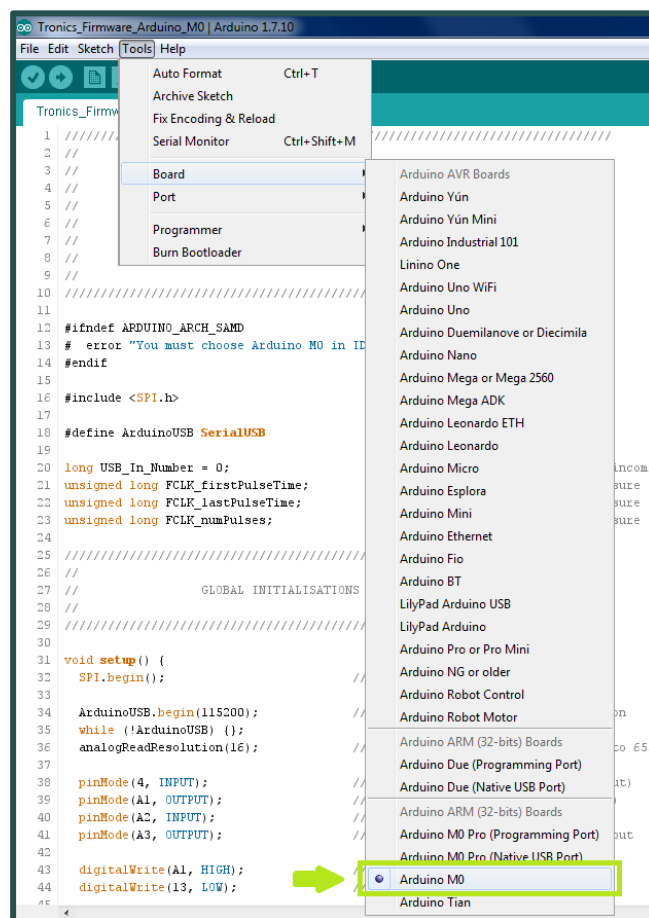
4. Select the serial port number corresponding to the Arduino board in the *Tools > Port* menu. The name "Arduino M0" should be associated with the correct COM port.
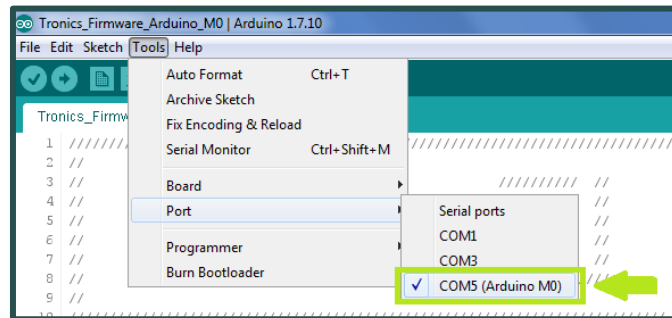

5. Upload the program: Simply click on the "**Upload**" button in the environment. Wait a few seconds, and you should see the RX and TX LEDs on the board flashing. If the upload is successful, the message "Done uploading." will appear in the status bar at the bottom of the window.

6. Close Arduino IDE 1.7.10

➔ **Now your Arduino M0 board is programmed and ready to be used with Tronics GYPRO® Evaluation kit**

3.3   Assembling GYPRO®-EVB2 with Arduino M0 board

Arduino M0 board

Header connectors
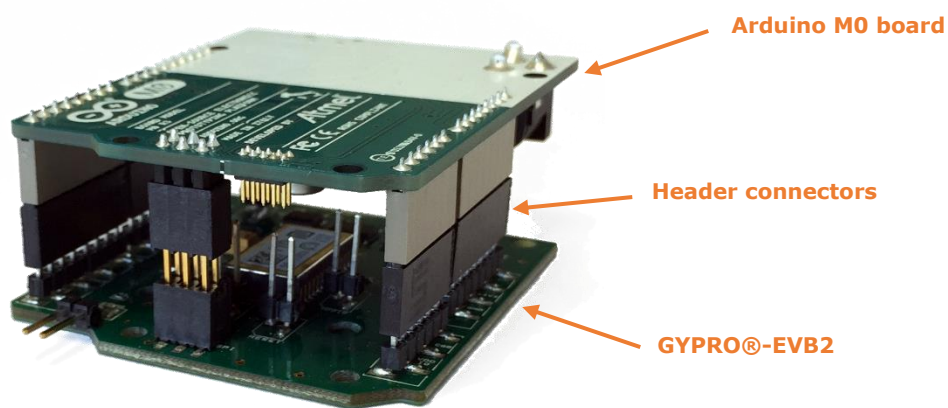
GYPRO®-EVB2

1. Disconnect your Arduino board from the computer, since the Arduino Board should be switched-off for the next step.

2. Plug the Tronics GYPRO® Evaluation Board V2 on the Arduino M0 Board, using the 5 connectors supplied by Tronics. **The correct position is to have the Arduino board on top (above the GYPRO® Evaluation board).**

UMGYPRO-EVK_ rev 1.0

- PROPRIETARY INFORMATION-

3. Connect the Arduino M0 Board to your computer using the USB cable and the Native Port.

4. **Now you can launch *GYPRO® Evaluation Tool.exe* software on your computer!**

4 Basic Operation of GYPRO® Evaluation Tool Software

The GYPRO® Evaluation Tool is made of 5 tabs:

- **Reading GYPRO® (Main Tab)**:
  Reads the sensor data (Angular rate and Temperature) and displays them on two real-time charts.

- **System Register (SR)**:
  Enables reading, writing or changing the output format of the data (Raw, Compensated or Calibrated) by modifying the GYPRO® System Register.

- **Multi-Time-Programmable (MTP)**:
  Useful to read and program new temperature compensation coefficients in the MTP of the sensor.

- **Others:**
  To check Analog and Logical Self-Test, to read Drive Frequency and to generate debug reports for Tronics support team.

- **Compass:**
  Displays a real-time compass using GYPRO®.
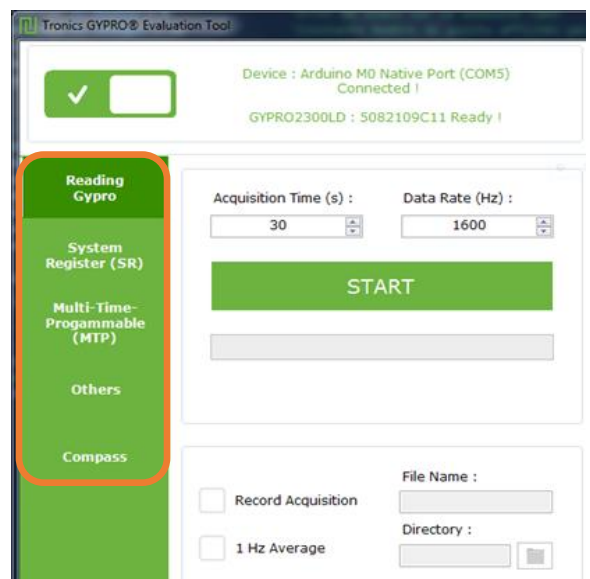
Once the Arduino board is detected by the software, you can click on the top left power ON/OFF button. The application will start and read the GYPRO® sensor information (serial number and type of sensor).

Choose an Acquisition time (1s minimum) and a Data Rate (from 1 to 2000 Hz) and click on the "**Start/Stop"** button.
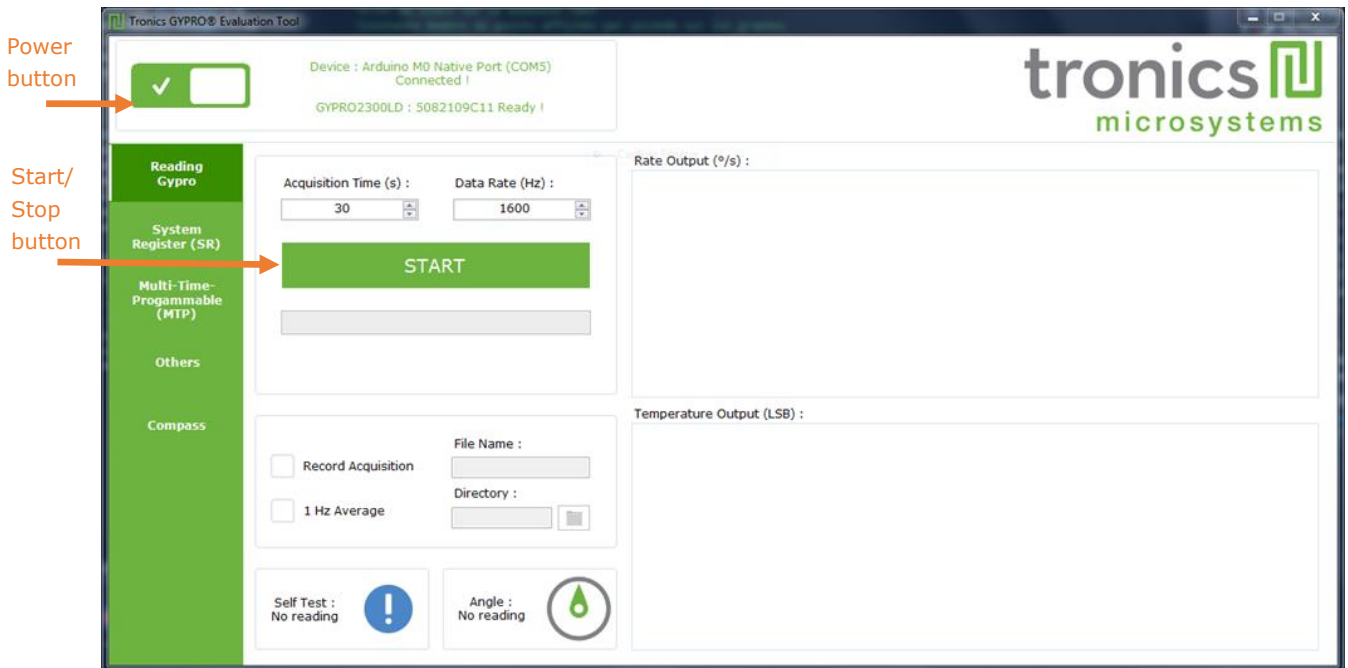
→ **For detailed description of Tronics GYPRO® Evaluation Tool Software please read the document SWMGYPRO-EVK**

5 Additional information

The latest versions of all documents related to GYPRO® sensors and evaluation kit can be downloaded from Tronics website: sensor datasheets, evaluation kit user manuals, softwares, etc.

Should you encounter any issue while using GYPRO® Evaluation Kit, please contact Tronics technical support by sending an email to *support@tronicsgroup.com*.

6 Document change control

Rev	Date		Change description
1.0	Sept 2016		Initial release