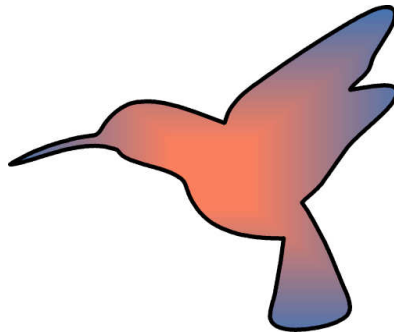


## User Manual

### Colibri

Inertial Motion Tracker



Subject to technical modifications

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## 1 Safety Instructions

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### 1.1 Prescribed Use

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The product is designed to measure inertial movements and to transfer the amount of acceleration, angular rate and magnetic field via a USB or RS232 port to a PC. The power is supplied via a USB port.

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### 1.2 General Safety Hints

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- ➔ Avoid getting the cable entangled around your neck, body or arms.
- ➔ To ensure that the device does not fall off during use, always make sure it is attached with an adequate fixation to the object or body.

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### 1.3 Warning for Electrical Products

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- ➔ Avoid using and storing the Colibri at wet, humid, dusty and smoky surroundings and extreme temperatures.
- ➔ Do not use Colibri at temperatures below 0°C and above +70°C.
- ➔ Always switch off and unplug the Colibri when it will not be used.
- ➔ In case of damage contact your retailer. There are no user serviceable parts. Only qualified service personnel should perform any service required on this product.

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## 2 General Operating Instructions

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### 2.1 Installing Software

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Please install the Colibri driver software downloaded from [www.trivisio.com](http://www.trivisio.com) **before** you connect the device to your PC using the USB-cable for the first time. Then Microsoft Windows® will recognize new hardware automatic.

Run the setup file “Colibri-[version]-Windows-x86.exe” and follow the instructions. More details can be found in the separate manual “UserManual\_Colibri\_GUI” which can be found in the installation folder (Start, Programs, Trivisio – Colibri) or downloaded separately from website [www.trivisio.com](http://www.trivisio.com).

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## 2.2 Connecting to USB Port of PC

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After installing the software you can connect the Colibri (2) with the USB cable (3) to the PC. Plug the USB connector (1) into a free USB port on your computer.

After installing the driver/software and connecting the USB plug, Windows will recognise the new hardware and complete the driver installation. Then the software can be started.



To avoid damage (and to prevent premature aging) please unplug the USB-cables between Colibri and PC during lightning storm and when unused for long periods of time.

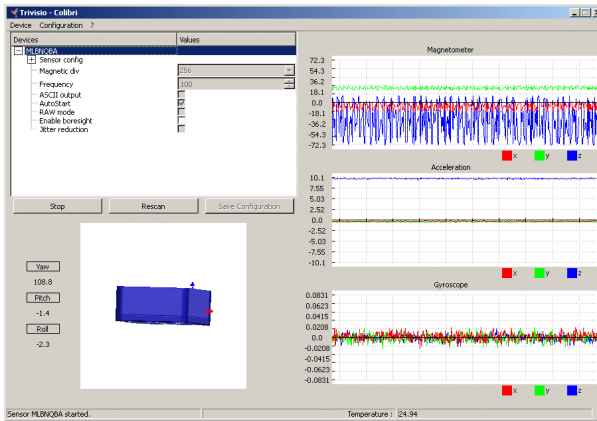
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## 2.3 Operation

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Attach the Colibri to the object you want to track. Pay attention to have it tightened and secured.

The Colibri software shows the movements of the sensor after pressing Start button:



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## 2.4 Calibration

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The Colibri sensors are factory calibrated and tested before being shipped. However, the magnetic calibration is very sensitive to environmental changes. Especially metal and electromagnetic fields emitted by other devices can influence the quality of the tracking results. To obtain the best possible orientation estimates, the Colibri should have its magnetometers recalibrated once it has been mounted in the way it is intended to be used. Not doing so will result in degraded orientation estimates. To recalibrate the magnetometers follow the instructions in separate manual “UserManual\_Colibri\_GUI” chapter calibration. This manual can be found in the installation folder (Start, Programs, Trivisio – Colibri) or downloaded separately from website [www.trivisio.com](http://www.trivisio.com).

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## 2.5 Firmware Update

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In case you need to update the firmware of your Colibri sensor, please download the latest version from Trivisio website:  
[www.trivisio.com/index.php/support/software](http://www.trivisio.com/index.php/support/software)

More details and a step by step description how to update the firmware can be found in the separate manual “UserManual\_Colibri\_GUI” chapter “Firmware update”. This manual can be found in the installation folder (Start, Programs, Trivisio – Colibri) or downloaded separately from website [www.trivisio.com](http://www.trivisio.com).

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## **2.6 Software Development (SDK)**

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More details about developing own applications using the Colibri is available in the separate manual "UserManual\_Colibri\_API". This manual describes the API and structure of the Colibri software. The manual can be found in the installation folder (Start, Programs, Trivisio – Colibri) or downloaded separately from website [www.trivisio.com](http://www.trivisio.com).

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### **3 Maintenance and Cleaning Instructions**

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To clean the Colibri, use a damp cloth. A light rinsing agent may be added to the water. Do not use any detergents.

In case of damage contact your retailer. There are no user serviceable parts. Only qualified service personnel should perform any service required on this product.

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## 4 Troubleshooting

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<b>Problem</b>	<b>Cause</b>	<b>Remedy</b>
<b>Colibri not detected by MS-Windows</b>	Windows conflict.	Try unplugging and re-connecting USB cable again.
<b>Software does not detect the Colibri</b>	Old software or drivers	Users of previous versions of the Trivisio GUI need to update their Colibri drivers (for more details see FAQ on website <a href="http://www.trivisio.com">www.trivisio.com</a> )
<b>Software and GUI does not work correctly</b>	Old firmware	If you are running a Colibri with firmware 1.4 you must update to f/w 1.5 or higher
<b>I cannot see anything in the GUI software</b>	Wrong settings	Try to enable orientation. Enable all sensors Disable ASCII and RAW mode and start the sensor again
<b>Problems with Magnetometer</b>	Magnetic interference	Pay attention to any ferro magnetic metal in the surrounding. This could be for example table-legs. Recommended is a distance of >1m. 2. Calibrate the magnetometers in working conditions (attached the the tracking object)

All other problems should be performed by a trained and authorised service provider !

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## 5 Returning used electronic devices in EU countries

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	<p>This Colibri inertial measurement unit (IMU) and accessories shall not be treated as household waste. The separate collection is a condition for reuse, recycling and utilisation of used electronic devices, which ensures the protection of resources. To comply with German ElektroG (Ruecknahme und Entsorgung von Elektro- und Elektronikaltgeraeten) and European WEEE (Waste Electrical and Electronic Equipment) electronic used devices from private households can be returned free of charge. For details please contact your local distributor or directly Trivisio Prototyping GmbH (<a href="http://www.trivisio.com">www.trivisio.com</a>).</p>
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## 6 Technical Data

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Accelerometer	Scale: $\pm 16g$   Resolution: 13-bit
Gyroscope	Scale: $\pm 1500^\circ/s$   Resolution: 13-bit
Magnetic sensor	Scale: $\pm 1100\mu T$   Resolution: from $0.0263\mu T$ (10Hz) to $0.8421\mu T$ (250Hz)
Working frequency	100 Hz
Orientation accuracy	Pitch/roll: $0.5^\circ$   Yaw: $1^\circ$
Temperature sensor	Accuracy: $\pm 0.5^\circ C$   Range: $0^\circ C$ to $+70^\circ C$
Power consumption	5V 40mA max (from USB)
PC connection	2m USB cable (or up to 5m custom length)
Weight	22g (without cable)
Dimensions (W/H/D)	30mm/13mm/30mm

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