# Joystick 16CH Software Manual

***Release 6.12***

**Embention**

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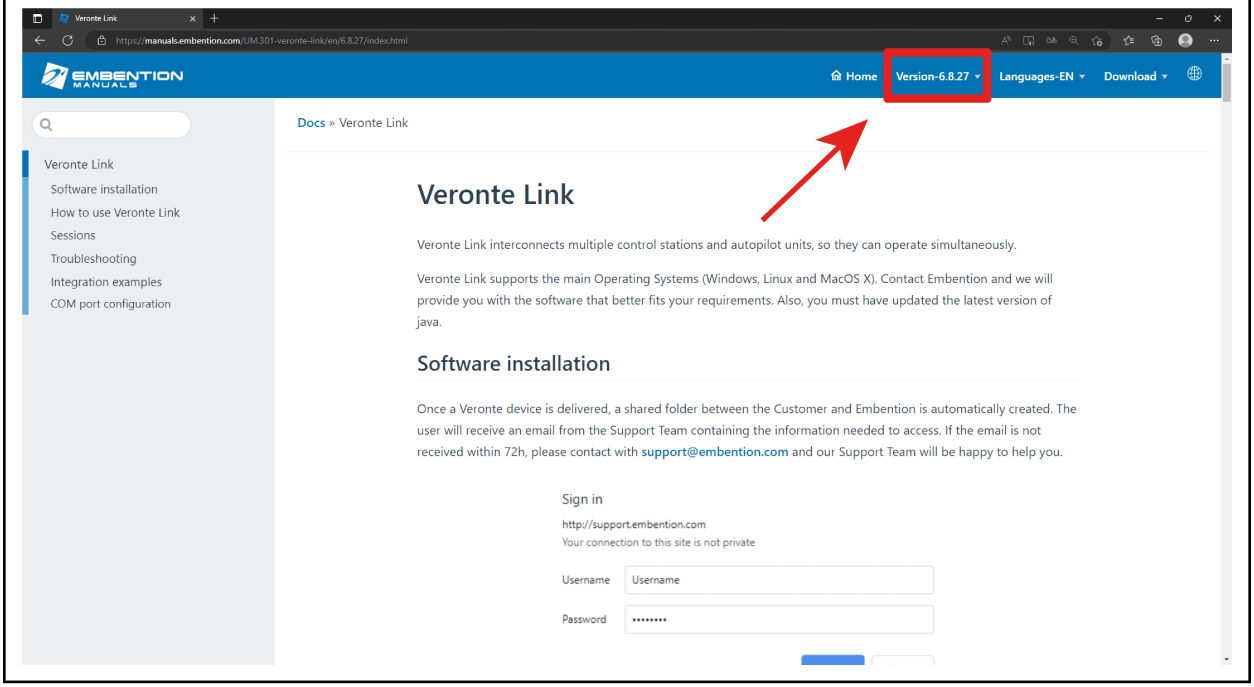
Before reading this document, it is recommended to read the Hardware Manual , in order to understand the product and connect it to a computer.

**Warning:** Select your version before reading any user manual for software. The following image shows where to select a version from any Embention user manual.



CHAPTER

ONE

# SOFTWARE APPLICATIONS

## 1.1 Veronte Link

**Veronte Link** establishes communication between a computer and Veronte products (such as **Autopilot 1x**) by creating a VCP bridge. It allows to use multiple control stations and devices to be interconnected, operating simultaneously. **Veronte Link** also includes a post-flight viewer, to reproduce all recorded data from previous flights and generate plots and reports.

Read the user manual for Veronte Link to know more.

## 1.2 1x PDI Builder

**1x PDI Builder** is the main configuration tool to adapt a **Veronte Autopilot 1x** to a specific vehicle, including commnication protocols defined by the user.

**1x PDI Builder** includes different configurations for **Joystick 16CH**:

- **CAN tunnel:** To communicate **MEX** with a computer, **1x** can be employed as a CAN tunnel by reading CEX/MEX - Integration examples section.
- **Receive signal from Joystick 16CH:** To configure the **1x** in the **PCS**, read Joystick 16CH - Integration examples section.

Read the user manual for 1x PDI Builder to know more.

## 1.3 Veronte Ops

**Veronte Ops** is the application employed to operate and monitor the **Autopilot 1x** during missions. It is also used to operate **Joystick 16CH** through **Autopilot 1x**, by configuring the Virtual Stick according to Stick widget - Integration examples section.

Read the user manual for Veronte Ops to know more.

## 1.4 MEX PDI Builder

**Important:** The internal **MEX** of **Joystick 16CH** is already configured for operation. Therefore, it may be changed only by advanced users for specific scenarios.

**MEX PDI Builder** is the main configuration tool to adapt a **MEX** to a specific vehicle, including user-defined commnication protocols. It includes:

- Telemetry: real-time onboard UAV metrics, such as sensors, actuators and control states.
- Communications: through general purpose inputs and outputs, PWMs and CAN channels.
- Stick control signal management: compatible with **Stick Expander**, Futaba, Jeti, FrSky and TBS. It includes custom configuration for other sticks.
- Arbitration: **MEX** is able to send PWM signals using arbitration in the same way Veronte Autopilot 4x does.

Read the user manual for MEX PDI Builder for more details.

## 1.5 MEX PDI Calibration

**MEX PDI Calibration** is a straightforward application employed to calibrate the magnetometer embedded in **MEX**. It is recommended to use the **MEX PDI Calibration** the first time and every time **MEX** is employed at a different region, since the magnetic field of the Earth may change.

For more details, read the user manual for MEX PDI Calibration.

CHAPTER

TWO

# LISTS OF VARIABLES

**Joystick 16CH** includes an internal MEX to manage the CAN bus. **MEX** variables are defined in the Lists of variables - Lists of interest section of the **MEX Software Manual**.

CHAPTER

THREE

# CAN BUS PROTOCOL

The CAN bus protocol of the **MEX** is explained in detail in the CAN Bus protocol section of the **MEX Software Manual**.