# **MC01 Software Manual**

Release 6.8

Embention

2023-08-21

# CONTENTS

1	Quick Start					
2 Software Applications						
	2.1 Veronte Link	5				
	2.2 1x PDI Builder	5				
	2.3 MC01S PDI Builder	5				
	2.4 MC01B PDI Builder	$\epsilon$				
3	CAN bus protocol	7				

1

In this manual the user can consult a brief description of all the applications created and designed to work together with the **Veronte MC01**.

In addition, links are available to access the manuals for each of these applications.

Composition decentration of Control Contrel Control Control Control Control Control Control Control Contr	Connects multiple control stations and autopilot units, so they can operate simultaneously.			
Docs » Veronte Link tware installation w to use Veronte Link sions ubleshooting tgration examples W port configuration	Connects multiple control stations and autopilot units, so they can operate simultaneously. ports the main Operating Systems (Windows, Linux and MacOS X). Contact Embention and we will the software that better fits your requirements. Also, you must have updated the latest version of			
Inte Link tware installation w to use Veronte Link sions ubleshooting egration examples M port configuration Veronte Link suppo provide you with th java.	Link connects multiple control stations and autopilot units, so they can operate simultaneously. ports the main Operating Systems (Windows, Linux and MacOS X). Contact Embention and we will the software that better fits your requirements. Also, you must have updated the latest version of			
sions Veronte Link interco ubleshooting Veronte Link suppo gration examples Veronte Link suppo M port configuration provide you with th java.	connects multiple control stations and autopilot units, so they can operate simultaneously. oorts the main Operating Systems (Windows, Linux and MacOS X). Contact Embention and we will the software that better fits your requirements. Also, you must have updated the latest version of			
gration examples Veronte Link suppo M port configuration provide you with th java.	oorts the main Operating Systems (Windows, Linux and MacOS X). Contact Embention and we will the software that better fits your requirements. Also, you must have updated the latest version of			
	Veronte Link supports the main Operating Systems (Windows, Linux and MacOS X). Contact Embention and we will provide you with the software that better fits your requirements. Also, you must have updated the latest version of java.			
Software in	Software installation			
Once a Veronte dev user will receive an received within 72h	evice is delivered, a shared folder between the Customer and Embention is automatically created. The n email from the Support Team containing the information needed to access. If the email is not 2h, please contact with <b>support@embention.com</b> and our Support Team will be happy to help you.			
	Sign in			
	http://supportembention.com Your connection to this site is not private			
	Username Username			

#### CHAPTER

# **QUICK START**

To configure the **MC01**, users have to follow the steps:

- 1. A Veronte Autopilot 1x must establish connection with a PC using Veronte Link. Read its user manual to use it.
- 2. Configure the Autopilot 1x to operate as a CAN-USB (or CAN-RS) converter, with a Serial to CAN setup.

To configure a Serial to CAN communication, read the Input/Output -> I/O Setup section of the **1x PDI Builder** user manual.

- 3. Configure the MC01 with the corresponding PDI Builder:
  - MC01S PDI Builder for stepper version. Click here to read the user manual.
  - MC01B PDI Builder for brushless version. Click here to read the user manual.

To configure a Veronte device (CEX, MEX, 1x or 4x) and control the **MC01**, use its respective PDI Builder. An example can be found in the Integration examples -> MC01 section of the **1x PDI Builder** user manual.

#### CHAPTER

TWO

#### SOFTWARE APPLICATIONS

#### 2.1 Veronte Link

**Veronte Link** stablishes communication between a computer and any Veronte product by creating a VCP bridge. It allows to use multiple control stations and autopilots 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.

Fore more information, read its user manual.

## 2.2 1x PDI Builder

**1x PDI Builder** is the main configuration tool to adapt a **Veronte Autopilot 1x** to a specific application, including user-defined communication protocols. **1x PDI Builder** includes:

- Telemetry: real-time onboard UAV metrics, such as sensors, actuators and control states.
- Configuration: edit vehicle settings, such as servo trim, interface/port management and modes.
- Automations: actions that are automatically executed when a set of configured conditions are accomplished.
- Block Programs: Veronte Autopilot 1x can be programmed with a friendly-user programming language.

For more information, visit the 1x PDI Builder user manual.

## 2.3 MC01S PDI Builder

**MC01S PDI Builder** configures the stepper variant of **MC01** (MC01S). This application allows to adapt control, communications and telemetry to each motor implementation.

To know more, read the MC01S PDI Builder user manual.

# 2.4 MC01B PDI Builder

**MC01B PDI Builder** configures the brushless variant of **MC01** (MC01B). This application allows to adapt control, communications and telemetry to each motor implementation.

To use it, consult the MC01B PDI Builder user manual.

#### CHAPTER

## THREE

## **CAN BUS PROTOCOL**

All CAN messages for **MC01** follow the same structure: a chain of bits divided in three groups:

Position	Name	Size	Description	
1	CAN Id	2 bytes	If the Id matches with the Id of the <b>MC01</b> ,	
	the message will be read. Otherwh		ad. Otherwhise, it will	
			be ignored	
2	Mode	1 byte	It indicates what kind of order is receiving	
			the MC01	
			Value	Order
			0	Turn off
			3	Move to the angular
				position written in
				Data
			4	Move to the angular
				speed written in
				Data
3	Data	3 bytes	• With <b>Mode 3</b> , it indicates the dec	
			angular position in radians	
			• With <b>Mode 4</b> , it indicates the decoded	
			angular speed in radians per second	

The parameter that is configured in the MC01 is the CAN Id. To do it, use its respective PDI Builder and manual:

- For MC01B read MC01B PDI Builder manual -> Input/Output.
- For MC01S read MC01S PDI Builder manual -> Input/Output.