# **T28 Software Manual**

Release 5.42

Embention

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# CONTENTS

1 Configuration					
	1.1	Sending vehicle position over to T28			
2	Oper	ration	ļ		
	2.1	Connection	ç		
		2.1.1 Interface	9		
		2.1.2 Veronte Pipe	9		
		2.1.3 USB	11		
		2.1.4 TCP (Point to Point)	1		
		2.1.5 Broadcast (UDP)	12		
	2.2	Start operation	14		
	2.3	Tilt activation with range	1:		
3	Trou	bleshooting	1′		
3.1 TCP Connection cannot be stablished					

### Veronte Pipe is required to connect a computer to a PCS with T28 and configure it.

<b>Warning:</b> Select your select a version from an	version before reading any user manual for software. The following image shows where to any Embention user manual.
Veronte Link x +     C      A https://manuals.embention.com/UM.30     EMBENTION	- ۲۰۰۰ × ۱-weronte-link/ery6.8.27/index.teml ۲-weronte-link/ery6.8.27/index.teml ۲-weronte-link/ery6.8.27/index.teml ۲- ۲۰۰۰ × ۲- ۲۰۰۰ × ۲۰۰۰ × ۲۰۰۰ × ۲۰۰۰ × ۲۰۰۰ ×
Q	Docs » Veronte Link
Veronte Link Software installation How to use Veronte Link Sessions Troubleshooting Integration examples COM port configuration	Veronte Link Veronte Link interconnects multiple control stations and autopilot units, so they can operate simultaneously. 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 installation
	Once a Veronte device is delivered, a shared folder between the Customer and Embention is automatically created. The user will receive an email from the Support Team containing the information needed to access. If the email is not received within 72h, please contact with support@embention.com and our Support Team will be happy to help you. Sign in http://support.embention.com Your connection to this site is not private Username Username Password

#### CHAPTER

# CONFIGURATION

After installing, the default configuration of **PCS** is already prepared for standard operation.

If this configuration needs to be restored to factory configuration, please find the necessary steps in the *Troubleshooting* section.

# 1.1 Sending vehicle position over to T28

For the operation with **T28** the following configuration needs to be added on the **AIR UNIT** Setup:

• Click on 'Setup' in the Air Unit dropdown menu



• In the 'Telemetry' menu, press the '+' button and click on the created 'Data link to Pipe'

Fixed Wing V-Tail UAV 🛪 🙆	0 🗄 🔇	) 🗱 🚮 🗀	<b>*</b>
<ul> <li>System Variables</li> </ul>	Search	Сору	Freq 10.0 Hz
Telemetry			Enabled
- Data link to Pipe	Name		
Data link to Pipe			
Onboard Log			
User Log			
Fast Log			
Sniffer			
			DISABLED
	IAS (Ind	licated Airspeed)	
	🕂 TAS (Tru	ue Airspeed)	
	GS (Gro	und Speed)	
	Heading	9	
	- Flight P	ath Angle	
	1		

• Select 'Veronte Tracker' from the dropdown menu in the top right corner

Fixed Wing V-Tail UAV 🔾	🐵 🧿 🛱 😵 🦚 🖾 🔺	
<ul> <li>System Variables</li> </ul>	Search Copy Frequency 10.0 Hz Address Veronte Tracker ( 🔻	
<ul> <li>Telemetry</li> </ul>	Enabled Pipe fixed	
— Data link to Pipe	Name Broadcast	
— Data link to Pipe	Veronte Tracker (Veronte 1044	I)
Onboard Log		
User Log		
Fast Log		
Sniffer		
	DISABLED	
	IAS (Indicated Airspeed)	
	TAS (True Airspeed)	
	GS (Ground Speed)	
	Heading	
	Flight Path Angle	
	Bank	
	V V	

• In the 'Search' tab, write 'UAV' and add 'UAV position' to the telemetry vector

Fixed Wing V-Tail UAV 🛪	🐵 🧰 😵 🗱 🔐 🗂 🔺
<ul> <li>System Variables</li> <li>Telemetry</li> <li>Data link to Pipe</li> </ul>	uav Copy Frequency 10.0 Hz Address Veronte Tracker (   Enabled Name
Data link to Pipe	Wante
Onboard Log User Log Fast Log • 🕂 Sniffer	
	DISABLED
	+ UAV position

• The final configuration should look like this:

Fixed Wing V-Tail UAV 🔾	🐵 🧿 葦 🥝 📽 蹬 🗂 🔺
<ul> <li>System Variables</li> <li>Telemetry</li> </ul>	uav     Copy     Frequency     10.0     Hz     Address     Veronte Tracker (
- Data link to Pipe	Name
Data link to Pipe Onboard Log	- 🐥 👚 📑 Absolute: UAV position
User Log	
Sniffer	
	DISABLED

Attention: The above configuration needs to be done on the UAV unit and not on the ground station.

#### CHAPTER

### TWO

# **OPERATION**

# 2.1 Connection

Follow the steps below in order to setup the connection of **PCS** with a PC.

### 2.1.1 Interface

There are three different communication interfaces that can be used to connect the control station PC with PCS/T28:

#### USB

Connect the available USB connector directly to one of the USB ports on the PC.

#### Ethernet

- If the PCS/T28 setup is Point-to-Point (TCP), connect it to the PC directly via Ethernet.
- If the **PCS/T28** setup is Broadcast (UDP), connect it via Ethernet directly to the net access port. A router that provides an IP adress to Veronte PCS via DHCP will be needed for operation.

#### Wifi

If the **PCS** has an enabled Wifi net, it will be possible to connect it using its wireless network.SSID and password can be found on the PCS case, along with the product Serial Number.

### 2.1.2 Veronte Pipe

Once the selected interface is connected, last step is to enable the connection in Veronte Pipe.

• Open Veronte Pipe



• On the top left corner, click on 'Preferences'



• On the Preferences menu, access the 'Connections' Tab



### 2.1.3 USB

- Click on 'Add' and then 'Serial COM'
- If a COM Port was detected, it will be listed here. Click on it in order to enable the connection



### 2.1.4 TCP (Point to Point)

For this setup, **Veronte PCS** creates a net where it holds a static IP address. The first device connected to the net will be also assigned a specific IP address.

This setup only allows to connect to one device at the same time.

**Warning:** If a different device wants to be connected, the system needs to be rebooted, or no device should remain connected to the net for 2 minutes. At this point, IP address will be available and can be claimed by a new device.

- TCP settings can be found on the upper left corner.
- On 'Port' field, type '3000'.

• Click on 'Enable' box.



Tip: If connection is not setup correctly, please visit the *Troubleshooting* section.

### 2.1.5 Broadcast (UDP)

For this setup, once connected to the net, **T28** will wait for an IP assignment from a router device via DHCP. Once the IP address is correctly assigned:

• Click on 'Add' and then 'Ethernet'

🖸 Preferences 🏟 🗔 🛡 💉 🕅	
TCP Server	Send telemetry
Port 3000	Enable           Host         127.0.0.1           Port         3000           Frequency         10.0           Hz
Autodiscover COMs	
Serial COM	And A Della

• On the displayed dropdown list, select the net adapter that is currently being used to connect to the network.

🖸 Preferences 🏶 🐼 🛡 🖋 🕅	
TCP Server	Send telemetry
Port 3000	Enable           Host         127.0.0.1           Port         3000           Frequency         10.0           Hz
Autodiscover COMs Ethernet	Multicast IP 239.0.0.1 Port 12345 Network Interface Realtek PCIe GbE Family Controller Local IP Address 192.168.1.9 Local Subnet Mask 255.255.252.0
Add 👻	

## 2.2 Start operation



- After powering the **T28**, the motors will set the antenna to a 45° position with respect to the horizontal axis. Once the **PCS** has been switched on, the antenna will move to 0°.
- In Veronte Pipe, the position of the aircraft and the T28 should appear in the map once the GPS signal is stablished.
- Press the neutral position command (0).
- Trim the antenna by pointing North, using the **arrow buttons**.
- Press the antenna button in order to start tracking.

Note: Use the aid of a compass device in order to trim **T28**. A trimming accuracy of  $\pm 5^{\circ}$  is enough for a correct operation with Veronte **T28**.

Attention: Always check that GPS position for both air and ground segments has been stablished before sending the tracking command.

# 2.3 Tilt activation with range

By default, a circular area is attached to the GPS position of Veronte **T28**. Tilting movement of antenna is only activated if the target UAV is located **outside** this area

The radius of the circle can be changed in **T28** by right clicking on it and setting a value for the radius or simply by dragging with the mouse the circumference.



### CHAPTER

# TROUBLESHOOTING

# 3.1 TCP Connection cannot be stablished

In order to correctly establish the connection with **PCS/T28** through TCP, the device running the Veronte Pipe software must be assigned the following IP address: **192.168.8.3**. This address should be automatically assigned when connecting to **T28** network.

If this is not the case, please follow the example below in order to assign a static IP address to your device:

• Click on 'Open Network Internet settings' in the dropdown menu of the Internet configuration



• Click on 'Change adapter options' and select your Internet connection method by double clicking on it

🖣 Ethernet Statu	S	>	<
General			
Connection —			
IPv4 Connectivi	ty:	Internet	
IPv6 Connectivi	ty:	No network access	
Media State:		Enabled	
Duration:		01:54:21	
Speed:		1.0 Gbps	
Details			
Activity			
	Sent —	Received	
Bytes:	47,514,953	943,347,349	
Properties	🕂 Disable	Diagnose	
		Close	

• Click on 'Properties' and select IPv4 Internet Protocol, then click on 'Properties'

Ethernet	Properties	×		
Networking	Sharing			
Connect us	ing:			
🚍 Real	tek PCIe GBE Family Controller			
This conne	Configure	]		
	<ul> <li>Cliente para redes Microsoft</li> <li>Uso compartido de archivos e impresoras para redes M</li> <li>Programador de paquetes QoS</li> <li>Protocolo de Internet versión 4 (TCP/IPv4)</li> <li>Protocolo de multiplexor de adaptador de red de Micros</li> <li>Controlador de protocolo LLDP de Microsoft</li> <li>Protocolo de Internet versión 6 (TCP/IPv6)</li> </ul>			
Insta	II Uninstall Properties			
Description Protocolo TCP/IP. El protocolo de red de área extensa predeterminado que permite la comunicación entre varias redes conectadas entre sí.				
	OK Cance			

- Select 'Use the following IP address:' and type in the 'IP address' tab 192.168.8.3
- 'Subnet mask' should be automatically fulfilled as observed in the following image, else manually type the same subnet mask

Protocolo de Internet versión 4 (TCP/IPv4) Properties				
General				
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings. Obtain an IP address automatically				
IP address:	192.168.8.3			
Subnet mask:	255 . 255 . 255 . 0			
Default gateway:				
Obtain DNS server address automatically				
Ose the following Divs server add	resses:			
Preferred DNS server:				
Alternative DNS server:				
Validate settings upon exit Advanced				
	OK Cancel			

• Click on 'Ok' and close the windows opened