

# Satpro Digital Video, XVHD

## Digital Video, XVHD

### Table of Content:

- [Default Configuration XVRE y XVTR.](#)
- [Installation digital video receiver XVRE in SATPRO.](#)
- [Connetion, XVTR with XB00ST24G8W and Video Camera.](#)
  - [View digital video signal on GCS, TV monitor or similar throught HDMI.](#)
  - [View digital video signal on GCS, TV monitor or similar throught TX & RX 60Ghz wireless HDMI.](#)
  - [View digital video signal on PC, external PC or similar device throught Ethernet.](#)



The purpose of this guide is to check the operation of the XVHD digital video system, XVRE digital video receiver that is placed on the side of the SATPRO, the XVTR digital video transmitter and XB00ST24G8W video booster.

You will use: The SATPRO tracker antenna together with XVRE, XVTR, XB00ST24G8W and (XLRS GCS, Monitor TV or a PC connected to the network), you can also have the WMX481 connected to the SATPRO.

### Attention:

XVRE and XVTR are already linked at the factory, please don't modify any parameters in XVRE o XVTR and perform the tests below. [Default configuration XVRE, Video Receiver \(Ground](#)

## Unit)

**IP:** 192.168.1.36

**Gateway:** 192.168.1.1

**Ground RTSP Server:** rtps://192.168.1.36:554/Stream0

**IP Camera Address:** RTPS:// 192.168.1.100:554/Stream0

## Default configuration XVTR, Video Transmitter (Air unit)

**IP:** 192.168.1.100

**Gateway:** 192.168.1.1

**Installation digital video receiver XVRE in SATPRO** If you have purchased the XVHD digital video system separately, you will need to install the XVRE video receiver in your SATPRO.

If you have already purchased SATPRO together with the XVHD digital video system, XVRE will already be factory installed on your SATPRO.

## Accessories:

These are the accessories and cables that are included in the XVRE, digital video receiver.



## Steps to install and connect XVRE in SATPRO:

1- Take the plastic piece along with the two M3x10 countersunk screws, place them in the two central holes and screw them into the side of SATPRO



2- Take XVRE and place it on the plastic piece, now take the

two M5x20 allen screws along with two M6 Nylon washers and screw them into the holes at the ends of the aluminum piece of the XVRE.



3- Take the "RX VIDEO COMMUNICATIONS" cable and connect it to the SATPRO.



4- Pass the cable through the two plastic guides under the SATPRO until it reaches the XVRE.



5- Connect each cable with its connector: COM5, RCB, "DC/UART1", video amplifier power to XVRE and ethernet cable between XVRE and SATPRO.



6- Finally, connect the directional antenna (ANT17DB24G) or parabolic antenna (ANT24G24DB) or similar antenna to the SMA-Female "ANT MAIN" connector of XVRE.

#### Connection, XVTR with XB00ST24G8W and Video Camera



1- Connect the MMCX-Male to SMA-Female cable to the "ANT. TX MAIN" connector of XVTR, then connect an SMA-Male to SMA-Male adapter to the SMA-Female connector of the cable XVTR and connect it to the "To XVTR" input with the XB00ST24G8W connector.

2- On video antenna output from the XB00ST24G8W connect an SMA-Male-RP to SMA-Female adapter and place a 2.4Ghz 5 dBi omnidirectional antenna.

3- From XVRE connect the power cable to the XB00ST24G8W.



#### 4- Video camera.

4.1- HDMI: Take the HDMI cable, connect it between XVTR and the video camera.



4.2- Ethernet: Take the "XVTR Ethernet" cable and from XVTR connect it to the "ETH" port and to the video camera through the "RJ45" port.



5- Take the power cable for XVTR and plug it into the XT30 Male connector. XVTR power between 8-28V.



**View digital video signal on GCS, TV monitor or similar through HDMI.** 1- Turn on XVTR + XB00ST24G8W + Gimbal connected by HDMI.



2- Check the XVTR LEDs, at this moment they should be in the following states:



#### **XVTR Power indicator:**

Fixed Red Led.

#### **Video Transmitter power indicator:**

This indicator is solid green when air unit is booting. When air unit has started, indicator light blinks once per second if there is no video source input to HDMI.

#### **Link indicator:**

Led off, no link (Waiting for link with XVRE).

### **Status Indicator:**

Led off (Waiting for link with XVRE).

### **RSSI Indicator:**

All leds off, there isn't wireless signal. (Waiting to receive video signal once it has a link with XVRE).

3- In XVRE connect an HDMI cable to the GCS HDMI input or to a TV monitor.



4- Turn on SATPRO together with XVRE and GCS connected by RCBUS.

**Important for this test:** Don't connect the autopilot so that SATPRO doesn't receive Mavlink, if you have the autopilot connected and you start receiving Mavlink telemetry it is possible that SATPRO starts to move and the HDMI cable can wrap around SATPRO and can damage an XLR5 device.



6- If you are using GCS remember to activate the configuration on the screen to display the HDMI input or if the PC is displayed on the large screen then you have to press the switch button to switch to the video input.

7- Wait a few minutes until XVTR obtains a link with XVRE.

8- Once you are receiving video and have a link, check the status of the LEDs to verify that everything is working well:



### **XVTR Power indicator:**

Fixed red Led.

### **Video Transmitter power indicator:**

Indicator light will be solid green if there is video source.

### **Link indicator:**

Led green on, wireless link with XVRE is established.

### **Status Indicator:**

Led green, blink 3 times Initialization ok.

### **RSSI Indicator:**

3 solid green wireless signal is strongest.

2 solid green wireless signal is medium.

1 solid green wireless signal is weak.

9- If everything is ok, you should see the video from the GCS screen or from your Monitor.

✘ ✘ **View digital video signal on GCS, TV monitor or similar through TX & RX 60Ghz Wireless HDMI.** In this example we will use the 1080p 60Ghz HDMI TX and RX wireless modules, without delay, to receive the HDMI video signal from the XVRE video receiver without using HDMI cables to a GCS, TV monitor or similar.

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### **Additional Information:**

Transmission range 5 meters (LOS).

Please always take keep the transmitter's logo side (the antenna side), upward towards to the receiver's logo side.

The signal transmission requires the receiving and

transmitting antenna to be aligned withing 60 degrees; Two angles can be ajusted. 30° (The longest transmission distance), 90° (The strongest signal).

Don't block antenna in any condition or the signal quality will be affeted!

### **Steps:**

1- Turn on XVTR + XB00ST24G8W + Gimbal connected by HDMI or ethernet.



2- Check the XVTR LEDs, at this moment they should be in the following states:



#### **XVTR Power indicator:**

Fixed Red Led.

#### **Video Transmitter power indicator:**

This indicator is solid green when air unit is booting. When air unit has started, indicator light blinks once per second if there is no video source input to HDMI.

#### **Link indicator:**

Led off, no link (Waiting for link with XVRE).

#### **Status Indicator:**

Led off (Waiting for link with XVRE).

#### **RSSI Indicator:**

All leds off, there isn't wireless signal. (Waiting to

receive video signal once it has a link with XVRE).

3- In the XVRE connect the 60Ghz HDMI wireless TX, you can power the TX by connecting a USB cable between the TX and the XVRE.



4- In the GCS Monitor, TV Monitor or similar connect the 60Ghz HDMI wireless RX, you can power RX by connecting a USB to a standard mobile phone power supply or directly to a USB port on your PC or similar.



5- Turn on SATPRO together with XVRE and GCS connected by RCBUS.



6- If you are using GCS remember to activate the configuration on the screen to display the HDMI input or if the PC is displayed on the large screen then you have to press the switch button to switch to the video input.

7- Wait a few minutes until XVTR obtains a link with XVRE.

8- Once you are receiving video and have a link, check the status of the LEDs to verify that everything is working well:



**XVTR Power indicator:**

Fixed red Led.

**Video Transmitter power indicator:**

Indicator light will be solid green if there is video source.

**Link indicator:**



Led green on, wireless link with XVRE is established.

**Status Indicator:**

Led green, blink 3 times Initialization ok.

**RSSI Indicator:**

3 solid green wireless signal is strongest.

2 solid green wireless signal is medium.

1 solid green wireless signal is weak.

9- Check the link of the TX and RX 60Ghz wireless HDMI.

The transmitter and receiver come pre-paired from factory, after connected, just check the color of the indicator light and waiting for automatically Pairing, while the light shows Green color, it's establish the connection.

**States of signal indicator:**

**Red:** Power On.

**Blue:** Searching Signal.

**Green:** Pair and Connect Successful.



**Reset button:**

If the product is restarted or powered off, the HDMI signal output will be given priority after the restart, and USB-C will be next. The signal will be output from UBS-C port when HDMI isn't connected.

If the TX or RX continues to display blue light, it means that the device isn't connected. Please press reset button of the TX once, wait 5-6 seconds to establish connection. If the connection still can't be established, please reset the device.

Method: Press and hold the reset button of the TX and RX for 10 seconds simultaneously. After the indicator is off, release reset button, and the device will establish the connection.

10- If everything is ok, you should see the video from the GCS screen, TV Monitor or similar, range max 5meters (LOS).

  **View digital video signal on GCS PC, external PC or similar device through ethernet network.** In this example we are going to connect the digital video system to the gimbal through the ethernet interface, then from our PC browser we will access the gimbal's IP to view the video.

### **IP default configuration:**

XVTR IP: 192.168.1.100

XVRE IP: 192.168.1.36

Gimbal IP: 192.168.1.102

### **Important:**

The IP configuration of the Gimbal must be on the same network as the XVTR and XVRE.

### **Steps:**

1- Turn on XVTR + XB00ST24G8W + Gimbal connected by ethernet.



2- Check the XVTR LEDs, at this moment they should be in the following states:

**XVTR Power indicator:**

Fixed Red Led.

**Video Transmitter power indicator:**

This indicator is solid green when air unit is booting. When air unit has started, indicator light blinks once per second if there is no video source input to HDMI.

**Link indicator:**

Led off, no link (Waiting for link with XVRE).

**Status Indicator:**

Led off (Waiting for link with XVRE).

**RSSI Indicator:**

All leds off, there isn't wireless signal. (Waiting to receive video signal once it has a link with XVRE).

3- In XVRE connect the Ethernet cable from XVRE to SATPRO (Use the short Ethernet cable that comes in the SATPRO case).



4- From the SATPRO external connections, we connect an ethernet cable from SATPRO to the network.



5- Connect GCS PC, external PC or similar device to the network.

7- Wait a few minutes until XVTR obtains a link with XVRE.

8- Once you are receiving video and have a link, check the status of the LEDs to verify that everything is working well:



### **XVTR Power indicator:**

Fixed red Led.

### **Video Transmitter power indicator:**

Indicator light will be solid green if there is video source.

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2 solid green wireless signal is medium.

1 solid green wireless signal is weak.

9- From the web browser or from your software, access your gimbal, add the IP of the Gimbal in this case by default it is configured at IP: 192.168.1.102 and establishes communication.



10- If you want see the gimbal video signal from Mission Planner or similar software, then we open MP, on the main page in the HUB we right click, select Video/Set GStreamer Source and input the address: `rtspsrc location=rtsp://192.168.1.36/stream0 latency=0 ! decodebin ! videoconvert ! video/x-raw,format=BGRA ! appsink name=outsink`, press OK and would show the video integrated into the map.

