

HDZero Video Receiver

What is HDZero?

PUSH YOUR SKILLS TO THE LIMIT

HDZero offers industry-leading low latency, giving you more time to react and the best possible chance of hitting that next gap. With its smooth, consistent FPV video feed, you'll experience the same locked-in feeling you get with analog video—but with the clarity of HD.

MAKE IT AN EVENT

HDZero supports the standard 5.8ghz video channels, meaning you can have up to 8 simultaneous pilots flying either full-quality HDZero or analog video. When you're ready to take a break and spectate, you can tune in to any channel and view the pilot's feed with no loss of quality, giving you the same feeling of being in the air yourself.

UPGRADE YOUR FLEET

From 1S whoops to long-range wings, HDZero offers a variety of VTX and camera options to suit every build. You may even be able to use the gear you already have—the HDZero receiver will work with any FPV goggle with an HDMI input. HDZero can grow with your needs and fit perfectly into your preferred FPV craft.

RAPIDLY EVOLVING SYSTEM

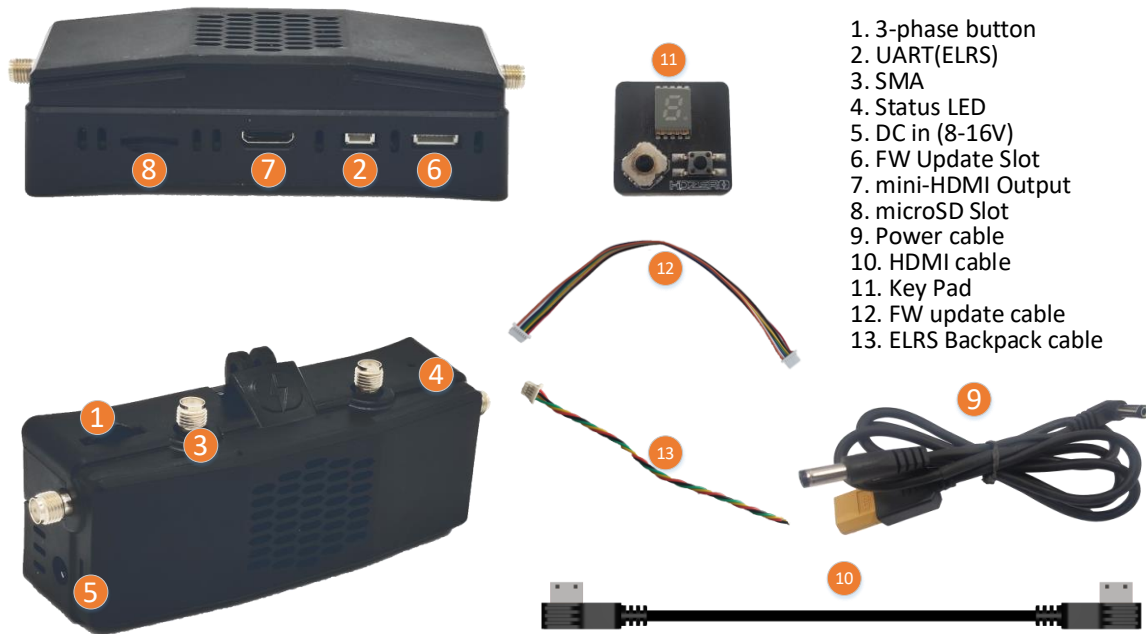
HDZero is rapidly evolving. Please always use the latest firmware that is located at www.hd-zero.com/document.

Contents

What is HDZero?	1
Introduction	3
Accessories.....	3
HDZero VRX.....	3
Power cable.....	3
FW update cable	3
HDMI cable.....	4
Keypad.....	4
ELRS backpack.....	5
VRX Operation.....	6
Key Navigation	6
Auto Recording	6
SD Card.....	6
VTX update Guide	6
VRX update Guide	7

Introduction

The HDZero Goggle module (VRX) is a digital HD receiver that is compatible with many existing FPV goggles. The VRX has 4 SMA antenna inputs, DVR, built-in mic, and a real time clock (RTC). The VRX also comes with a DC input cable ⑨ which is a direct pass cable connecting battery input via XT60 connector, and outputs two DCs for goggle and VRX respectively. A mini HDMI cable ⑩ for connecting VRX and goggle is also included.



Accessories

HDZero VRX

The VRX includes a fan mount bracket for mounting to many common FPV goggles.

Power cable

It is a direct pass cable with XT60 in and Y type 2x DC barrel output. Please note that there is no DC regulator integrated. The VRX requires 2S-6S voltage.

Warning: Check your goggle input voltage range before using this power cable. Some goggles, such as HDQ2, do not support 6S power input. Make sure the battery does not exceed your goggle input range.

FW update cable

This cable is required for updating VTX firmware. The firmware update cable is 150mm.

HDMI cable

It is a HDMI mini to HDMI mini cable for connecting HDZero VRX to the goggles. This cable is designed for Fat Shark and Skyzone goggles. Here are some alternative cables for connecting to other brand goggles:

[Amazon.com: Monoprice 9inch 30AWG High Speed HDMI Mini Connector male to HDMI Mini Connector male - Black : Electronics](#)

[CHENYANG CYFPV 20 cm lengte FPC lint platte kabel 0,5 mm steek 20pin voor HDMI HDTV FPV Multicopter luchtfoto : Amazon.nl: Elektronica](#)

[HDMI Right Angle Mini to Mini HDMI Cables - 877.522.3779 - USBFireWire.com](#)

Keypad

The keypad is used for adjusting camera* and VTX** settings

- Only Runcam Nano HD (orange) and Foxeer Digisight V1/V2 are supported by this keypad;
- All other HDZero branded cameras (HDZero Nano lite, HDZero Micro V2, and HDZero Nano camera) support stick commands for camera settings;
- HDZero Micro V1 and Foxeer Digisight V3 camera does not have user changeable camera settings.
- The Whoop Lite VTX does not support this keypad, but all other VTXes do.

To adjust Camera settings:

Use ① for setting camera setup

- Press Middle: Enter
- Press Up: Up
- Press Down: Down
- Press Left: Left
- Press Right: Right

To adjust VTX settings:

Use ② and ③ for setting VTX parameters.

To change channel:

- Short press ②, LED will show current channel number (R1-R8,F2,F4), press it to change to next channel. Wait 15 seconds, LED will diminish.

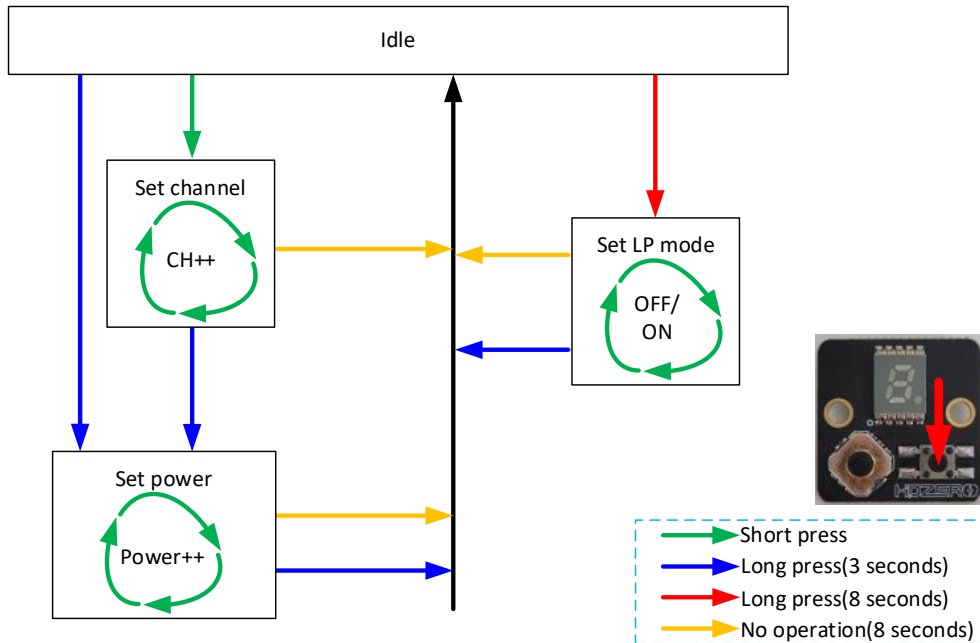
To change power level:



- Press and hold ② for 3 seconds, LED will blink 'P' then show current power level (1.=25mW, 2.=200mW,3.=500mW,4=1000mW), short press it to move to the next level. Wait 15 seconds, LED will diminish.

To change LP mode:

- Press and hold ② for 10 seconds, LED will blink 'P' then 'L', show "O" (ON) or 'F' (OFF), short press it to toggle between on and off. Wait 15 seconds, LED will diminish.



ELRS backpack

The VRX has a 4-pin connector with a 10cm cable.

Red	5V
Black	Ground
Green	RX
Yellow	TX



For more information, please visit:

[ExpressLRS HDZero Backpack Manual v1.0 - Google Docs](#)

VRX Operation

Key Navigation

- Press 3 phase button to the left is defined as L key, to right as R key, and middle as M key.
- Long press L key (press and hold for 3 seconds, then release) to switch between **Video** mode and **Setup** mode. In video mode, HDMI outputs live video, while setup mode outputs setting screen.
- On Setup mode, L and R keys are for navigating and M key is for confirmation, and long press L key will return to previous menu.

Auto Recording

- In video mode, DVR will automatically start to record if there is valid video signal and SD card is inserted with over 200MB free space.
- If SD card is full, recording will be stopped while live video output is not affected.
- Switching to setup mode will stop recording, and switching back to video mode will start recording but to a different file.
- Status LED (4) will lit when powered on, and blink if recording in progress.
- The record will not start if there is no SD inserted or no enough free space.
- The recorded files are named as SB_XXX.TS. XXX is automatically increased for next file.

SD Card

- Format SD card before using:
 - Use VRX to format SD card
 - Use Windows to format (Choose FAT32 and Allocation Unit size to 4096 bytes)
- An 8GB-32GB SD card is recommended

Antennas

- The 4 SMA connectors allow you to select antennas that best fit your flying environment.
- It is highly recommended to attach antennas to all 4 SMA connectors.
- For best results, use matching antennas for the two top SMA connectors, and matching antennas for the two side SMA connectors.
- The antennas should be 5.8 GHz antennas. If using polarized antennas, right-hand circular polarized (RHCP) antennas are recommended.

VTX update Guide

All the zip file for each VTX contains HDZERO_TX.bin.

Steps to update VTX firmware:

- (1) Format SD card (Choose FAT32 and Allocation Unit size to 4096 bytes);
- (2) Power off VRX if it is on;
- (3) Unzip content of corresponding VTX zip file onto SD-card, and insert SD to the VRX module;
- (4) Connect cable with module and VTX as shown right;
- (5) Power on VRX module
- (6) If “Wait to Connect VTX...” or “Check cable ...”, make sure (4) is secured;
- (7) If “Firmware update failed”, Repeat steps from (1);
- (8) If “Firmware update successful”, VTX is updated.
- (9) HDZERO_TX.bin is removed from SD card automatically.

Note: Putting an empty file named as “DONOTREMOVE.txt” file on SD card root directory will prevent HDZERO_TX.bin from being removed. It is useful when updating multiple VTXes.

VRX update Guide

Steps to update VRX:

- (1) Disconnect the cable connecting VRX and VTX, if it is connected;
- (2) Unzip content of HDZeroVRX_4SMA_Revddmmyyyy.zip onto SD-card, insert SD to the module
- (3) Power on VRX, and waiting for “Success”.

The firmware will be automatically deleted from SD card after updating.

Note: Do not power off VRX while updating firmware until “Update Completed”. Otherwise VRX will not be able to boot up next time.

Steps to flush VRX in case of not booting up:

- (1) Power off VRX;
- (2) Unzip content of HDZeroVRX_4SMA.Revddmmyyyy.zip onto SD-card, insert SD to the module;
- (3) Move the switch to Bottom position with tweezers (not included);
- (4) Power on goggle module, the red LED will be lit;
- (5) Wait for red LED to turn off, on, and then off again (it may take over 10 min to complete);
- (6) Power off, and move the switch to TOP position with tweezers;
- (7) Repower goggle module, it should now boot up normally.

TOP POSITION

BOTTOM POSITION

RED LED

BACK OF MODULE

