

HD SkyLink Falcon/Kite HDMI/SDI

Note: The HDMI version was used for the illustrations in this manual.



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Safety Instructions

- When operating this equipment, read and follow all the instructions in this manual.
- Keep these instructions in a safe and accessible place for future reference.
- Clean only with a dry cloth.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Use only accessories specified or recommended by Amimon.
- The main plug of the power cord must remain readily accessible.
- Protect the power cord from damages by pinching, squeezing etc.
- Do not block the air ventilation openings.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Caution! Shock Hazard. Do not open the unit.
- Refer to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Warning:

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



HD SkyLink

Disclaimer

Please read this disclaimer carefully prior to the first use of this product. You agree to this disclaimer by using this product and you hereby confirm that you have read the manual. Please strictly follow this manual when you install and operate this device. Neither the manufacturer nor the seller are held responsible for any damages or injuries caused by the use of this product.

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HD SkyLink

Product overview

The HD SkyLink system was designed to establish wireless HD video signal transmission without any latency over large distances. Amimon finally made this possible with revolutionary technology!

The HD SkyLink is a lightweight but still very powerful wireless HD system, which is the perfect solution for live streaming from your multicopter or from a steadycam system.

The HD SkyLink transmits encoded (128 AES) but uncompressed signals, broadcasting is therefore possible without any delay (latency less than 1ms). This is the ideal live streaming equipment for sports events, movies and TV productions.

Multicasting is supported, the signal of one transmitter can be received by multiple receivers at the same time, which allows parallel streaming and live preview for the camera operator during recording.

You have the possibility to set the used frequencies (according to the planned usage and the frequencies assigned by the Federal Network Agency) on location via USB port. The system allows you to have full control and you can follow the legal regulations of your country or region.

In the box

Please verify that the following items are in the shipping box, prior to the installation of transmitter and receiver.

Transmitter and accessories:

<p>1x HD video transmitter</p>	
<p>1x HDMI cable (HDMI version only)</p>	
<p>2x 2dBi omnidirectional antennas</p>	
<p>2x 5dBi omnidirectional antennas</p>	

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<p>1x LEMO power cable</p>	
<p>2x -9dBm attenuators</p>	

Receiver and accessories

<p>1x HD-SDI video receiver</p>	
<p>1x 12V Power supply</p>	
<p>1x Cylindrical DC power cable</p>	
<p>5x 2dBi omnidirectional antennas</p>	

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<p>5x 5dBi omnidirectional antennas</p>	
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Additional accessory:

<p>1x Remote control</p>	
<p>1x IR remote extension connector</p>	

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Product description

The HD SkyLink Kite transmitter



1. Antenna connectors	7. 5V 2pin generic connector
2. Network status LED	8. MiniUSB port The USB port can be used for firmware updates.
3. Video status LED	9. 7-17V LEMO connector / 2 cables Soldering option, directly to the LEMO holes
4. Low battery LED	10. HDMI or HD-SDI input port For connecting the HD video source to the HD SkyLink Kite transmitter
5. Registration button For registering the transmitter to additional receivers	11. Slide switch #1
6. Reset button	12. Slide switch #2

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LED signals (transmitter)

Network status LED

Signal	Meaning
Solid	A connection to the receiver is established
Slow blinking	Device is in listen mode (DFS frequencies)
Normal blinking	During link setup mode
Normal blinking	During registration (after pressing the registration button)
Fast blinking	(together with the video LED) System error

Video status LED

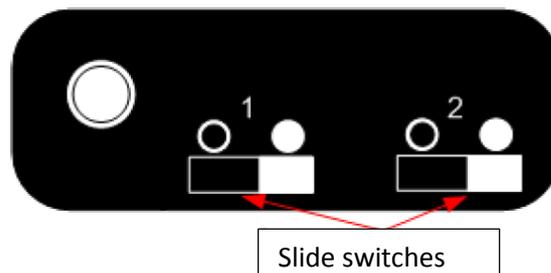
Signal	Meaning
Solid	Video signal is being transmitted
Normal blinking	Video is not supported
Fast blinking	(together with the network LED) System error

Low battery LED

Signal	Meaning
Solid	Low battery, when voltage is less than 6.5V

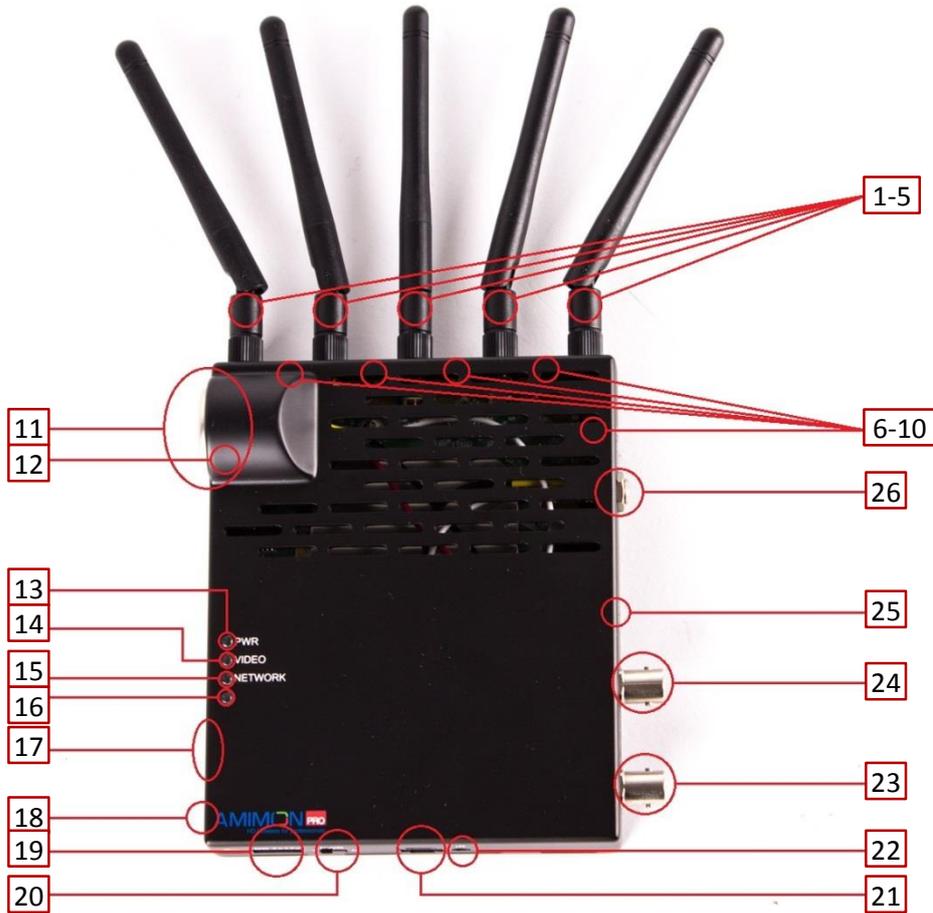
Position of the slide switches

The slide switches of the HD SkyLink Kite transmitter both have to be set to the left position. Other combinations of switch positions are not supported or have no function.



Switch #1	Switch #2	Mode
		1. Standard mode (FCC, 19dBm)

The HD SkyLink Falcon receiver



1-5	External antennas	18	Binding button
6-10	Internal antennas	19	(Input voltage connector 7-17V – do not use!)
11	XLR 4 pin power connector 7-17V	20	ON/OFF Switch
12	DFS antenna (located on the other side)	21	USB port
13	LED #4 Power	22	IR input connector
14	LED #3 Video	23	HD-SDI output
15	LED #2 Network	24	HD-SDI output
16	LED #1 Not used	25	Reset button
17	DIP switches – all switches should be up	26	Cylindrical DC power connector 7-17V

It is highly recommended NOT to use connector #19 for power supply. Even though it is shaped XH style, the connector is not compatible with XH balancer plugs of lipo batteries. Connecting such battery with the balancer port will destroy the ground unit. Such damage is warranty void.

We recommend to use the DC barrel plug #26

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Pin configuration of the XLR 4 pin connector
(only the outer pins are used)



LED signals (receiver)

Network status LED

Signal	Meaning
Solid	A connection to the transmitter is established
Slow blinking	Device is in listen mode (DFS frequencies)
Normal blinking	During link setup mode
Normal blinking	During registration (after pressing the registration button)
Fast blinking	(together with the video LED) System error

Video status LED

Signal	Meaning
Solid	Video signal is being transmitted
Fast blinking	(together with the network LED) System error

Power LED

Signal	Meaning
Solid	The LED is ON when power is supplied and the ON/OFF switch is ON

DIP switch function

DIP switch no.	Function
1	Not used- should be Up
2	Not used- should be Up
3	External antenna (Up) / Internal antenna (Down)
4	Not used - should be Up

Frequency settings

The HD SkyLink system is flexible and easy to adjust to all different fields of use and to meet the regional and national frequency requirements and laws.

The 5 GHz frequency band is split up into 3 different types which can be used with the HD SkyLink system, the ISM frequencies, DFS frequencies and NON-DFS frequencies. Please view the following table to see the different frequencies and types of usage.

Please always check the used frequency for your application and country or region. To use DFS frequencies for remote controlled vehicles in the air, a special frequency registration at the Federal Network Agency is required. You can find further information about the necessary steps to be taken via the following link.

[Federal Network Agency](#)

Frequency table for Europe

Frequencies in MHz	Description	Usage
5190	NON-DFS	Indoor max. 200mW EIRP
5230	NON-DFS	
5270	DFS (short cac)	Indoor and outdoor Max. 200mW EIRP (For aerial usage, a special registration is required)
5310	DFS (short cac)	
5510	DFS (short cac)	
5550	DFS (short cac)	
5590	DFS (long cac)	
5630	DFS (long cac)	
5670	DFS (short cac)	
5755	ISM; NON-DFS	Indoor, outdoor and in the air Max. 25mW EIRP
5795	ISM; NON-DFS	
5835	ISM; NON-DFS	

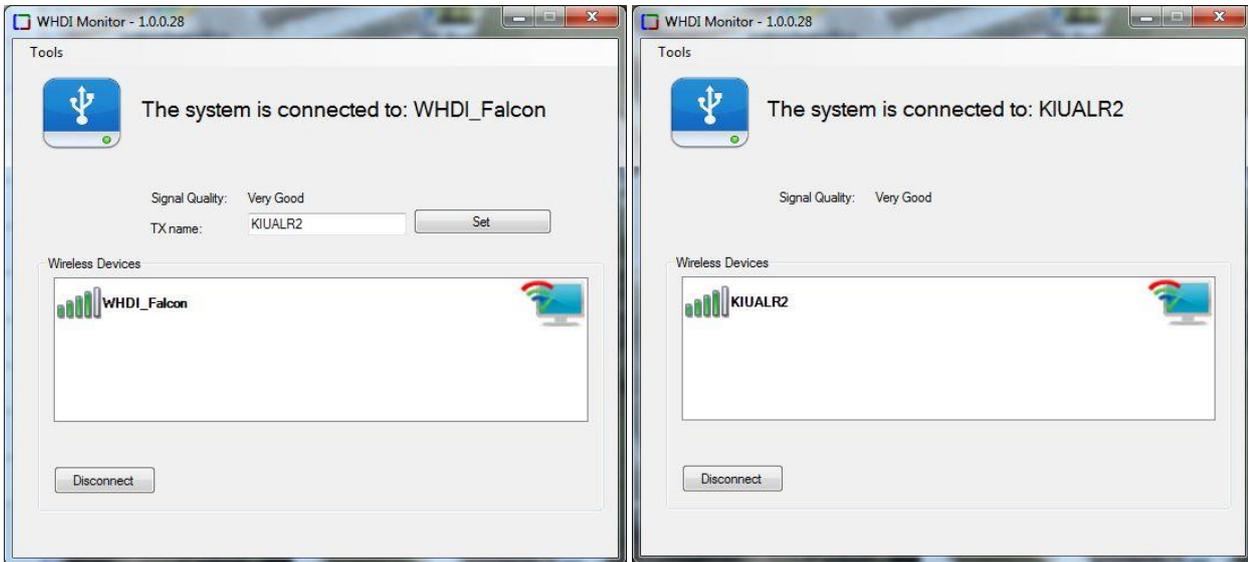
The HD SkyLink comes with activated DFS frequencies, which make the general use indoors and outdoors possible by default. To change the frequency settings, please follow the steps below.

1. Install the WHDI Monitor software (WHDI Monitor.exe) on your computer. Double click the file WHDI Monitor.exe and go through the necessary steps.
2. Power up your HD SkyLink device (frequency changes have to be done both for the transmitter and the receiver separately in the same way)
3. Connect your HD SkyLink Kite transmitter (and later the Falcon receiver) to your computer using the USB port. Your computer will install the necessary USB drivers automatically, if the driver is not found please install it manually from the .zip file you have downloaded.
4. Open the installed WHDI Monitor software and wait until your device is connected.

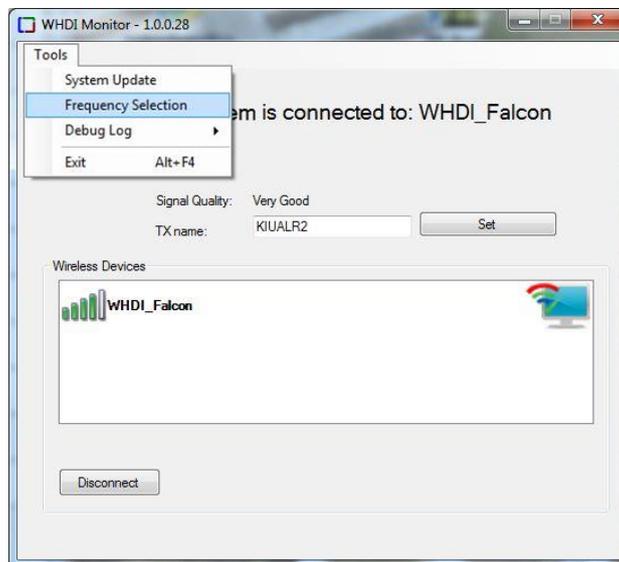
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HD SkyLink Kite transmitter

HD SkyLink Falcon receiver

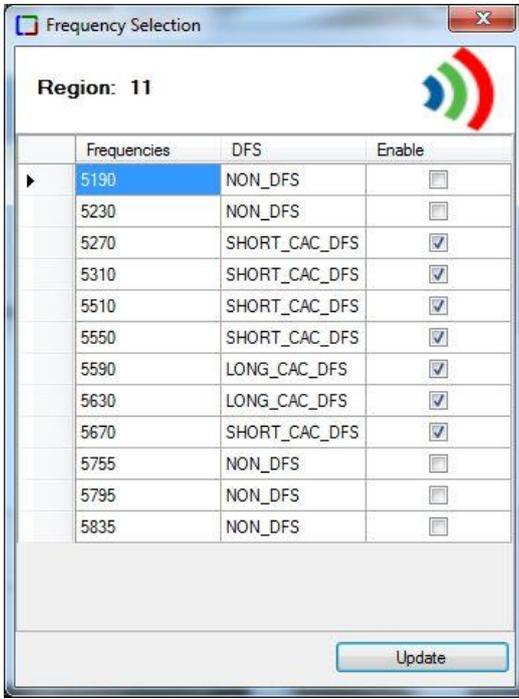


5. When the connection is established, please navigate to “Tools” and choose “Frequency Selection”.



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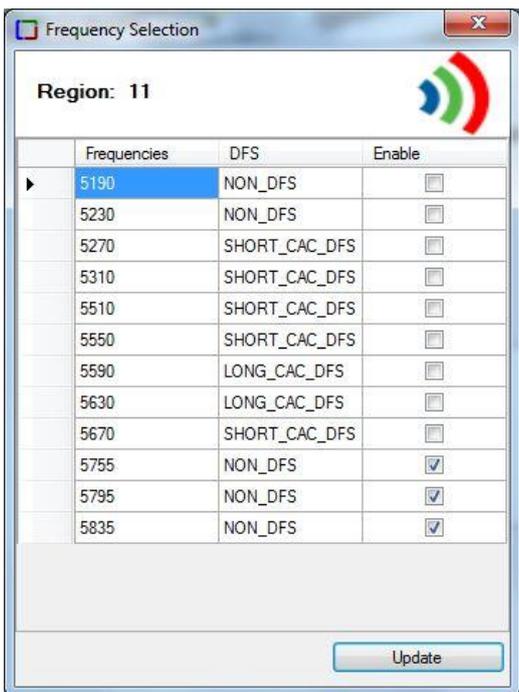
- A new window with the frequency table will open. The default setting of enabled DFS frequencies can be used for standard indoor and outdoor operation. Remember that you need a frequency registration if you want to use the HD SkyLink system in the air.



DFS frequencies for the use on the ground indoors and outdoors.

The use in the air is permitted with a special registration, but only with the explicitly authorized frequencies.

- For aerial use (without special registration), please enable the 3 ISM frequencies and use the -9dBm attenuators to limit transmission power to 25mW EIRP. Press Update to confirm and save the frequency selection.



ISM in Europe, 25 mW EIRP max.

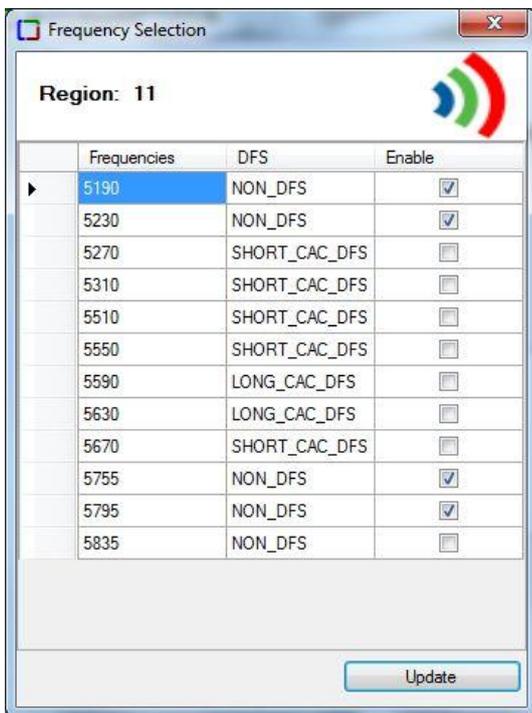
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How to use the attenuators

To limit the transmission power to 25 mW, the -9dBm attenuators simply have to be screwed on between the two 2dBi omnidirectional antennas and the HD SkyLink Kite transmitter.



8. To use the HD SkyLink in the USA, please activate the following channels.



ISM band USA

Installation

Transmitter

1. Turn on the signal source.
2. Connect the HD SkyLink Kite transmitter to the HD video source.
(HDMI or HD-SDI input port #10, see the product description section)
3. Connect the HD SkyLink Kite transmitter to a power source (7-17V)
via the LEMO connector #9
4. Arrangement of the antennas: It is recommended to disperse the antennas in the shape of a "V" and orthogonal to the line of sight between the transmitter and the receiver.



Receiver

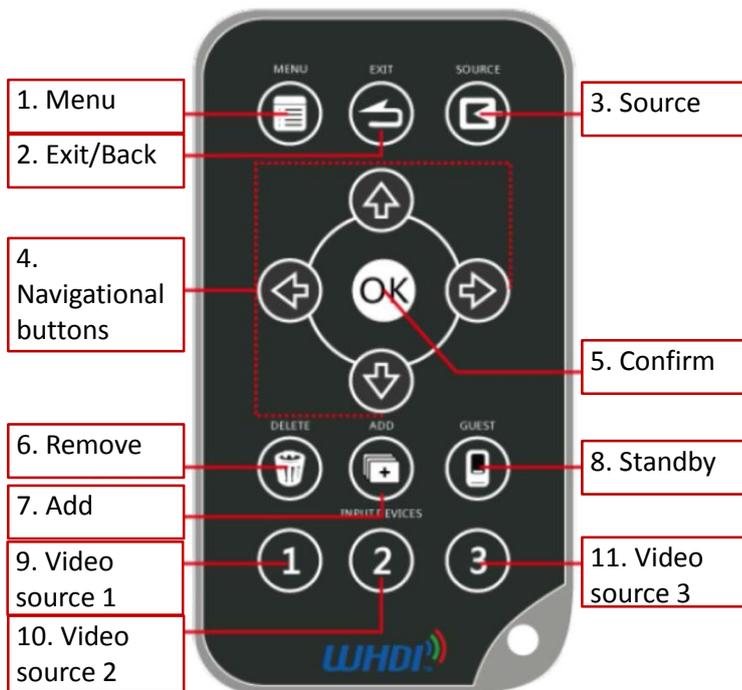
5. Turn on the video output device, e.g. a monitor.
6. Connect the HD SkyLink Falcon receiver to the monitor using a HD-SDI cable.
(HD-SDI output port #23 / #24 or both, see the product description section)
7. Make sure that all the DIP switches are in the upper position.
(DIP switch #17, see the product description section)
8. Connect the HD SkyLink Falcon receiver to a power source (7-17V).
 - a. Connect the power plug to the matching input voltage connector.
(Power connector #11/#19/#26, see the product description section)
 - b. Slide the On/Off switch in position "1" to turn the receiver on.
9. Arrangement of the antennas: It is recommended to disperse the antennas in the shape of an open hand and orthogonal to the line of sight between the transmitter and the receiver.



Hints to get the maximum range

- Make sure that there is a line of sight between the transmitter and the receiver.
- Avoid placing any unnecessary obstacles besides the transmitter or the receiver.
- Mount both transmitter and receiver with the antennas pointing upwards for maximum performance.
- Mount the transmitter and the receiver with proper air ventilation.
- If you use multiple receivers, keep a minimum distance of 2 meters between them.

Infrared remote control



	1. Enter the main menu
	2. Return to previous menu
	3. Select video source
	4. Navigation on the menu screen (Up, down, left, right)
	5. Press OK to confirm
	6. Remove video source
	7. Add new video source
	8. Standby (receiver)
	9. Connect to video source 1
	10. Connect to video source 2
	11. Connect to video source 3

WHDI Remote control

Remote control hotkeys

The "Add" hotkey

Pressing this button starts the registration process on the receiver.

The „Delete“ hotkey

This button opens the "Remove Video Source" option in the OSD menu, which allows the user to choose which device to remove.

The „Input Devices“ hotkeys

The buttons 1-3 switch the receiver to work with the first, second or third source as appeared on the registered sources list.



Binding procedure

IMPORTANT NOTICE: In delivered condition, the transmitter and the receiver are already bound and will connect automatically. If you only want to use this standard configuration, you can skip the following section of the manual. The binding procedure only becomes necessary if you want to change the configuration of the devices.

The transmitter and the receiver must be bound to establish a wireless connection. The binding process can be started with the remote control, during the process device codes are exchanged to ensure safety. The binding procedure is required only once. After that, the devices will connect automatically when they are powered up.

Binding one transmitter to one receiver

If there is no transmitter connected to the receiver, a menu will appear on the screen.

1. *Connect the HD video source to the HD SkyLink Kite transmitter.
2. Connect the HD-SDI cable of the HD SkyLink Falcon receiver with the HD display.
3. Power up transmitter and receiver.
4. Take the remote control and press the „Add“ hotkey. 
5. Now the following message will appear on the screen: „Please Activate the Registration on Transmitter Unit“. The binding process must then be started on the transmitter as well.
6. Press the binding button on the transmitter and the network status LED will start blinking.
7. Wait until the following message appears on the screen: „Adding [Sendername] Press OK to continue or Exit to cancel“.
8. Press „OK“  on the remote control to confirm the HD SkyLink Kite transmitter.
9. Wait until the binding process is completed. During the binding process, there is a status bar and the message of step 7 („Adding...“) is still displayed.
10. The binding process is completed and a wireless video connection is established.

Note: Once the binding process was started on the receiver, 30s remain to start binding on the transmitter. If the binding process on the transmitter was not started in time, you have to restart the binding process with step 4.

*The binding process can be done without HD source, an OSD message will inform you about the missing video source.

Binding one transmitter to multiple receivers

The HD SkyLink Kite transmitter can be bound to up to 4 receivers at the same time.

1. At first, you need to make sure that the transmitter is not transmitting video to other receivers. All receivers which are already bound to the transmitter should be powered down while binding to an additional receiver.
2. Carry out steps 1-10 like in the previous section about the binding of one transmitter to one receiver. Make sure that only the receiver to be bound is powered up.
3. Please follow steps 1 and 2 of this section to bind additional receivers.
4. After all receivers had been bound separately, all devices can be powered up at the same time. The

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video signal should now be available on all receivers.

Binding multiple transmitters to one receiver

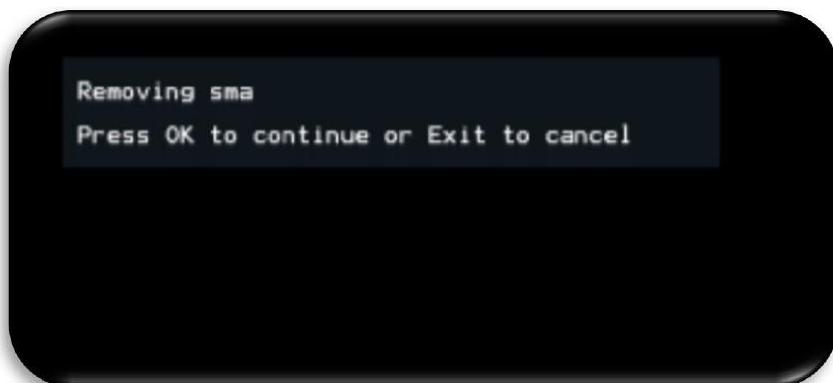
1. Multiple transmitters can be bound to one receiver, the desired transmitter/signal source can then be chosen with the remote control.
2. Carry out steps 1-10 like in the previous section about the binding of one transmitter to one receiver. Make sure that only the receiver to be bound is powered up.

Removing bound transmitters

1. Power up the HD SkyLink Falcon receiver.
2. Take the remote control of your HD SkyLink Falcon receiver and press the „Delete“ button. 
3. Use the navigational buttons to choose the source to remove and confirm with „OK“. 



4. Confirm that you want to remove the chosen signal source by pressing the „OK“ button , or abort with the „Exit“ button. 



5. Wait 30 seconds until the process is completed.



6. The transmitter has been removed successfully.

Switching between transmitters

1. To change the signal source/the transmitter, please press the „Source“ button  to view the list of transmitters.
2. Use the navigational buttons to select the desired transmitter and press „OK“. 
3. The current video connection will now be cut, within the next 30 seconds the chosen transmitter will be bound and the video connection will be established.

Supported resolution

The HD SkyLink system automatically detects changes of the resolution. The transmitter gets the list of supported resolutions from all receivers. The most compatible resolution will then be used for all wireless video connections.

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OSD menu (On-Screen-Display)

The HD SkyLink Falcon receiver generates an OSD menu. This is used for adding/removing devices, showing the link status and technical information.

OSD setup window

In order to open the setup window, take the remote control of the HD SkyLink Falcon receiver and press the „Menu“ hotkey. 

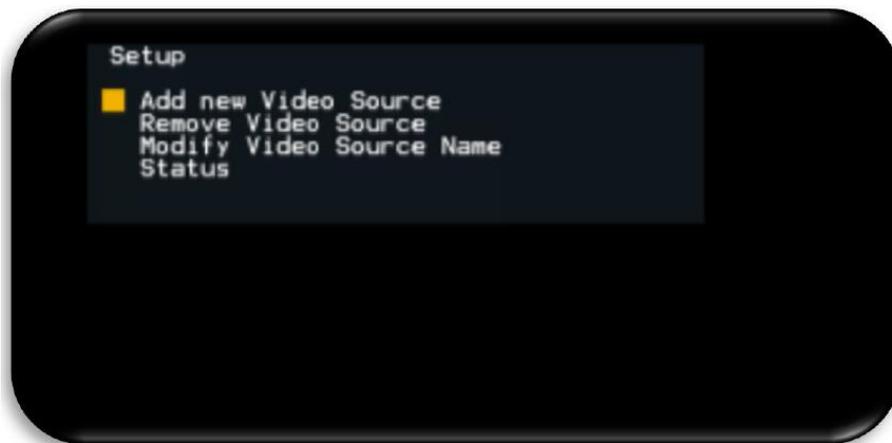
The setup window contains the following options:

Add new Video Source

Remove Video Source

Modify Video Source Name

Status



Add new Video Source

To add a new video source, please see the section “Binding one transmitter to one receiver”.

Remove Video Source

To remove a video source, please see the section “Removing bound transmitters”.

Modify Video Source name



In order to modify the source name, please follow the instructions below:

1. Please take the remote control of your HD SkyLink Falcon receiver and press the „Menu“ hotkey  to open the OSD menu.
2. Use the navigational buttons to select „Modify Video Source Name“.
3. Press the „OK“ button. 
4. Now a list of all bound transmitters will be displayed.
5. Use the navigational buttons to select the video source to be renamed.
6. Press the „OK“ button  to be able to rename the source.
7. Select the alphabetic character you wish to modify with the navigational buttons for left and right, and use the buttons for up and down to select the new character.



8. Press the „OK“ button  to save the modified name.

Note: the transmitter name is modified on the receiver only, so if the transmitter is registered to another receiver, the original name of the transmitter will be visible on that receiver.

Technical specifications

General

Video resolution	1080p/50, 1080p/60, 1080/59.94i, 1080/50i, 1080/29.97p, 1080/23.98p, 720/59.94p, 720/50p, 525i/59.94, 625i/50, 1080/24p.
Used frequencies	NON-DFS frequencies: 5.19 ~ 5.23 GHz and 5.755~5.835 GHz for EU (ISM) 5.19 ~ 5.23 GHz and 5.755~5.795 GHz for US (ISM) DFS frequencies: 5.27 ~ 5.55 GHz and 5.67 for EU & US
Video interface	Transmitter: HDMI or HD-SDI Receiver: SDI with automatic detection (SD, HD und 3G) over 75 OHM BNC
Environment	Operating temperature: 0-40°C at 10-90% humidity Storage temperature: 0-55°C at 10-90% humidity
Range	Up to several hundred meters (if there is a line of sight between TX/RX)
Product conformity	CE,FCC, RoHS, ESD +2Kv, DFS

HD SkyLink Kite transmitter

Video interface	HDMI or HD-SDI
Audio	Over HDMI or HD-SDI, supports up to 7.1 channels
Frequency control	Automatic
Antenna	2 Antennas (2 transmitting, 1 receiving)
Operating voltage	7-17V (±10%)
Size	Without housing: 90mm x 60mm x 12mm With housing: 95mm x 65mm x 28mm
Weight	Without housing: 73g With housing: 129g
Switches and connectors	<ul style="list-style-type: none"> • 3 LEDs indicating power status, video status and network status • USB connector for software updates • Binding button • Reset button • 2 slide switches for mode selection

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HD SkyLink Falcon receiver

Video interface	SDI-Splitter with option to connect external connector board
Audio	Over SDI
Frequency control	Automatic
Antenna	5 Antennas (5 receiving, 1 transmitting)
Operating voltage	7-17V (±10%)
Size	Without housing: 130mm x 106mm x 12mm With housing: 135mm x 115mm x 28/42mm
Weight	With housing: 310g
Switches and connectors	<ul style="list-style-type: none"> • 3 LEDs indicating power status, video status and network status • USB connector for software updates • Binding button • Reset button

Frequently asked questions

Failure of the binding process

- Make sure both transmitter and receiver are powered on.
- Make sure that pairing units are the only Amimon devices currently powered on.
- Bring the transmitter and receiver closer together but with a minimal distance of 1 meter.
- Make sure that there are no obstacles in the line of sight between the transmitter and the receiver.

No signal on Monitor

- Make sure that the receiver and the monitor are powered up.
- Check the cable connection between receiver and monitor.
- Make sure that the monitor is set to display video from the right source (HD-SDI1, HD-SDI2 etc.).
- Power cycle the receiver.
- Unplug the connection cable from both devices and plug it back in.
- Replace the HD-SDI cable.

No video over the established wireless connection

- Make sure the transmitter is properly connected to the source.
- Make sure the source is powered on.
- Unplug and then re-plug the transmitter to the source.

Abnormal color or noise on the monitor

- Unplug and then re-plug the HD-SDI cable between the receiver and the monitor.
- Unplug and then re-plug the HDMI or HD-SDI cable between the transmitter and the source.
- Bring the transmitter and receiver closer together but with a minimal distance of 1 meter.
- Make sure that there are no obstacles in the line of sight between the transmitter and the receiver.
- Power cycle the system.

No Audio

- Check the mute and audio volume settings on the monitor.
- Check whether the audio format setting on the source is compatible with system. If necessary, change the output format of the source to PCM 2.0, DTS or Dolby Digital.

Infrared remote control malfunctions

- Make sure that the plastic cover of the battery was removed.
- Make sure that the remote control battery is full.
- Make sure that the IR receiver is connected to the HD SkyLink Falcon receiver.
- Make sure there is enough distance between the IR receiver and any fluorescent light sources or radiation which could interfere with the IR signals.

Other malfunctions

The receiver keeps displaying the “Searching...” message, and the network LED is blinking:

It should not take longer than one minute to establish a wireless link. If the link was not established after one minute, check if the transmitter is powered on and that it is not connected to another receiver.

The receiver shows the message “Connected to source name, Please Check Video Source”:

Check the HD-SDI connection between the transmitter and the video source.

The receiver displayed a connection failure message and now a “Wireless Off” message appears:

If there is more than one registered transmitter and the receiver failed to connect to it within a minute or two, the receiver will go into standby mode and shut down the RF module. In order to connect to the desired source, press the “SOURCE” button and choose the desired transmitter.

The network LED flashes rapidly and no video is displayed on the monitor:

Power cycle the unit. If the issue remains, the device might be faulty. Please contact Amimon support team.

The wireless link cannot be established or the video/audio quality is low:

Try to decrease the range between the transmitter and the receiver or remove obstacles from the line of sight between the transmitter and receiver.

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Hiermit erklärt die Globe Flight GmbH, dass dieses Gerät den produktspezifisch geltenden EU-Richtlinien entspricht. Das Gerät ist mit dem CE-Symbol gekennzeichnet, welches auf die Konformität mit den Richtlinien verweist. Somit darf das Gerät in den Mitgliedsstaaten der Europäischen Union und der EFTA verkauft und verwendet werden.

Dieses Gerät verwendet zur Signalübertragung das 5,2 GHz bis 5,8 Frequenzband. Der verwendete Frequenzbereich kann über die Software/App den rechtlichen Vorgaben des jeweiligen Landes angepasst werden. Nähere Infos finden Sie auf der Seite 13 dieser Anleitung. Es obliegt in der Verantwortung des Benutzers, sich über die regional gültigen rechtlichen Vorgaben in Kenntnis zu setzen und das Gerät rechtskonform zu verwenden.

Die ausführliche Bedienungsanleitung und die detaillierte Konformitätserklärung nebst Zertifikat finden Sie auf unserer Homepage im Reiter „Anleitungen und Software“ dieses Produktes.



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Irrtum und technische Änderungen vorbehalten.