Timecode Systems

GENERATE. SYNC. SHARE

Clip and Go

For the latest user guide, please visit:

www.timecodesystems.com/support/product-manuals

SyncBac™ PRO WORKS WITH GoPro

SyncBac PRO for GoPro® HERO4

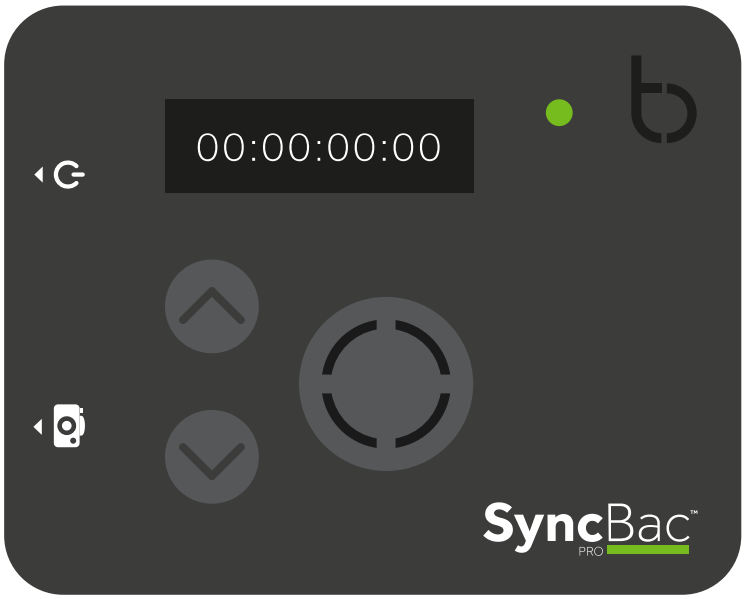
User Guide

Contents

Welcome to SyncBac PRO

Thank you for choosing Timecode Systems' SyncBac PRO as your embedded timecode solution for GoPro HERO.

In this user guide, you will find everything you need to know about using your SyncBac PRO.

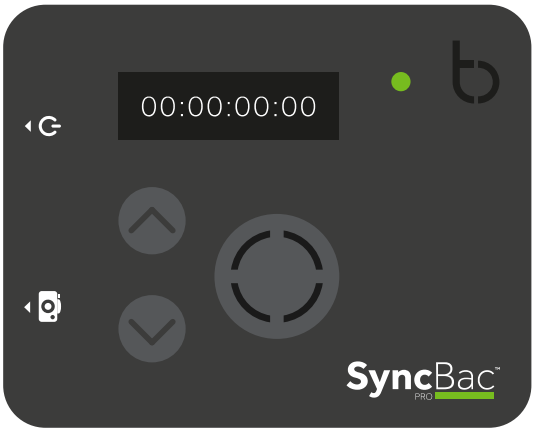


Your Timecode Revolution Starts Here...

Chapter 1 Overview

In this chapter, you can learn about the screen, buttons, and ports of your SyncBac PRO, and its technical specifications.

SyncBac PRO for Synchronisation



SyncBac PRO is a highly accurate timecode generator and multichannel digital timecode transceiver. It can be used:

- With other SyncBac PROs for **multi camera synchronisation**.
- With **Timecode Systems :pulse mini-base stations**, as a complete 'on-set' solution for synchronising GoPro® HERO cameras with other professional cameras and audio recorders.

> **Tip:** If you use SyncBac PRO with a :pulse, you have free access to BLINK Hub app, which provides **remote control** and **remote monitoring** of your SyncBac PRO and HERO. For more details, see Remote Control and Monitoring with :pulse on page 62.

You can learn more about these modes in Networks and Modes on page 21.

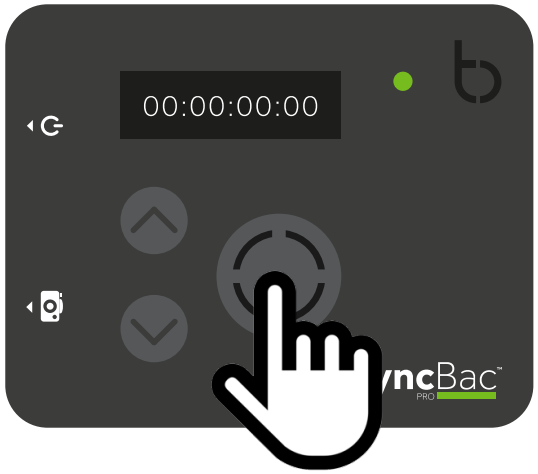
Connect SyncBac PRO to a GoPro HERO

You have now physically connected your GoPro HERO to your SyncBac PRO. But the two will not work together until you have set up your SyncBac PRO.

Switch SyncBac PRO On and Off

To switch your SyncBac PRO **on**:

1. Press and hold the **Select** button. Keep the button pressed down.



   The SyncBac PRO screen lights up and displays the message:

   Push Up/Dn twice to switch on

2. Press the **up** or **down** button twice to turn on the SyncBac PRO. This extra step is designed to prevent you from accidentally turning the SyncBac PRO on. If you do not press the up or down button twice within a 5 second period, the SyncBac PRO stays off.

When the SyncBac PRO comes on, it shows the main screen by default (Display and Controls on page 14

> **Note:** If your SyncBac PRO does not come on when you press and hold the **Select** button, the battery may need to be charged (see Charging your SyncBac PRO on page 19). The LED lights red when the battery charge is running out.

To switch your SyncBac PRO **off**:

1. Press and hold the **Select** button. Keep the button pressed down. A countdown appears on the screen:

   Shutting down in 3

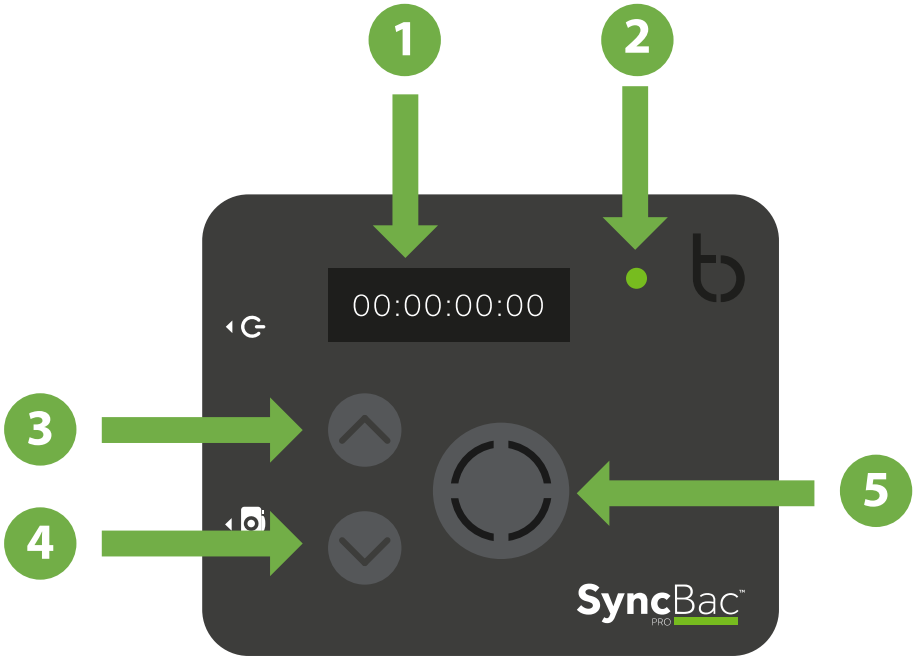
2. Keep the button pressed down until the countdown is finished and the following message is displayed:

   Push Up/Dn twice to switch off

3. Press the **Up** or **Down** button twice to turn off the SyncBac PRO. This extra step is designed to prevent you from accidentally turning the SyncBac PRO off. If you do not press the up or down button twice within a 5 second period, the SyncBac PRO stays on and the screen reverts to showing the main display.

Tip: If your SyncBac PRO is connected to a HERO and is a slave of a :pulse, you can use the BLINK Hub app to turn the HERO on and off remotely. This is a great way to save battery power.

Display and Controls



Key	Description
1	OLED
2	LED
3	Up
4	Down
5	Select

OLED Display

The OLED display is a blue 128 × 32 pixels screen. When you switch on the SyncBac PRO, all status information, messages, and menus and options are shown on this screen.

To learn about the various status displays, refer to:

- Main Screen (see page 54)
- Version Number and Serial Number (see page 55)
- Power and Battery (see page 56)
- GoPro Status (see page 57)
- Synchronisation Status (see page 58).

LED

The LED to the right of the OLED display acts as a colour-coded status indicator.

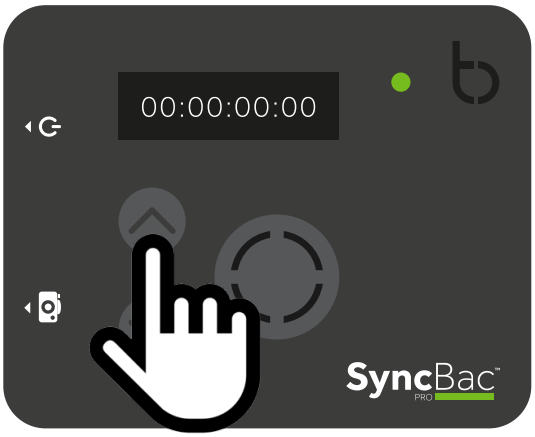
Colour	Description
Green	If the SyncBac PRO is switched on and set to run as an RF slave, a green light indicates that the SyncBac PRO is communicating with a master device. Its timecode **is synchronised** with a master device's timecode. If the SyncBac PRO is switched off, the green light indicates that the battery is fully charged.
Blue	A blue light indicates that the SyncBac PRO has been synchronised with a master device but is currently 'free running'. It has lost its connection with the master and is using its own highly accurate internal timecode. When the master is back in range, the SyncBac PRO will attempt to reconnect and re-synchronise. A flashing blue light means that the SyncBac PRO is in the process of synchronising with a master.
Red	If the SyncBac PRO is switched on, a red light indicates a warning message is displayed on screen or that the battery power is low.

If you are unfamiliar with master and slave devices, you can learn more in the following sections:

- Set the Timecode Mode (see page 39)
- Master and Slave Relationship (see page 22).

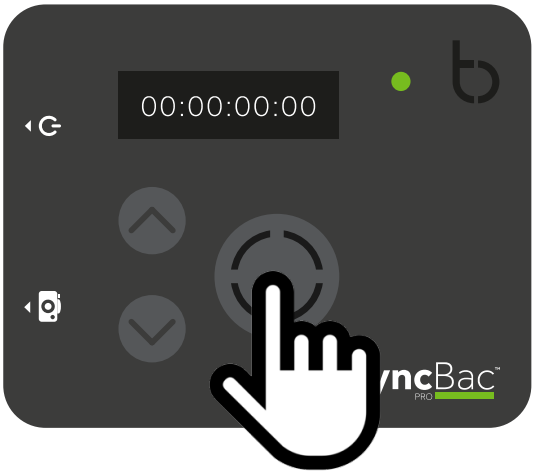
Up and Down

Use the **Up** and **Down** buttons to scroll through the menus and menu options, and also to scroll through the status displays.



Select

Use the **Select** button to choose a menu or option. You will also use **Select** to switch your SyncBac PRO on and off.



To make a selection, use the **Up** and **Down** buttons to scroll to a menu or option and then press the **Select** button once.

To switch your SyncBac PRO on or off, press and hold the **Select** button (see Switch SyncBac PRO On and Off on page 11, for more details).

Ports

Your SyncBac PRO has a variety of ports for connecting with other devices and chargers.

On the left edge of the SyncBac PRO, you will see the mini USB 2.0 port, which is used for:

- Charging the SyncBac PRO (and HERO when attached). The port is 5v power IN.
- Connecting the SyncBac PRO to a PC or Mac for downloading firmware updates.

The HEROBus connector that protrudes from the rear of the SyncBac PRO is for connecting the SyncBac PRO to the Go Pro HERO. It fits into the battery pack slot on the back of the HERO.

On the right edge of the SyncBac PRO is an MMCX connector, which is for connecting an external aerial.

By using an external aerial, you can increase the range of the SyncBac PRO (see Technical Specification on page 20).

Charging your SyncBac PRO

SyncBac PRO has a built-in Li-Polymer 3.7V battery and it should last around 10-12 hours from a full charge.

Note: Battery life may be reduced if your SyncBac PRO is used in extreme temperatures. Both very hot and very cold conditions can affect battery performance.

If the battery in your SyncBac PRO is running out of power, the LED flashes red and the following message is displayed on screen:

The low battery power is also indicated on the battery icon in the bottom-right of the main screen, next to the channel number. The amount of white in the inner of the battery icon represents the amount of charge left in the battery. In the image below, the inner of the battery icon is black, which means there is no charge in the battery.

It is also shown on the battery status screen (see Power and Battery (see page 56).

To recharge the battery, you will need the mini USB cable that is supplied with your SyncBac PRO and a mini USB compatible charger socket (not supplied). The mini USB cable connects to the SyncBac PRO via the mini USB port on the left-hand edge (see Ports on page 18).

Note: You do not have to disconnect your SyncBac PRO from the HERO when charging.

Technical Specification

Category	Specification
OLED Display	Blue 128 × 32 Pixels
Timecode Generator Accuracy	TCX0 0.5ppm when free running. In practice, approximately 1 frame drift in 24 hours. Zero ppm when RF locked to a master.
Supported FPS Modes	23.976 25 29.97
External Power	mini USB 2.0 (5V DC)
Internal Power	Built-in Li-Polymer (3.7V battery)
T/C Input	Provided by a Master Timecode Systems product, such as a :pulse base station or another SyncBac PRO.
T/C Outputs	HEROBus connector Embedded timecode metadata in MP4 camera media
Multi-Channel Digital Receiver	**UK:** 865.050 - 868.550 MHz **FCC:** 915.050 - 922.200 MHZ **JAPAN:** 920.600 - 923.300 MHZ
Range*	If your SyncBac PRO is using its **internal aerial** only, the typical range for synchronisation with a master is approximately 200m (256 feet, 219 yards)*. If your SyncBac PRO has an **external aerial** attached, the typical range is 500-600m (1640-1968 feet, 546-656 yards)*. *These are typical ranges. The range can vary and is based on an uninterrupted line of sight. If there are obstacles between a slave and master, the range can be reduced.

Chapter 2 Networks and Modes

Timecode Systems devices, including your SyncBac PRO, can synchronise wirelessly. To synchronise, they use our proprietary radio protocol, and have to be set up to operate in a network.

In the following sections, you will learn about the different types of network, the master and slave relationships that are used for synchronisation, and the different timecode modes that your SyncBac PRO supports:

Master and Slave Relationship

Timecode Systems products, including your SyncBac PRO unit, use a relationship to maintain highly accurate timecode settings. It is important that you understand how the master-slave relationship works, as you will need to set each SyncBac PRO in your RF network to run in either master mode (**GP Master TX**) or slave mode (**RF Slave**).

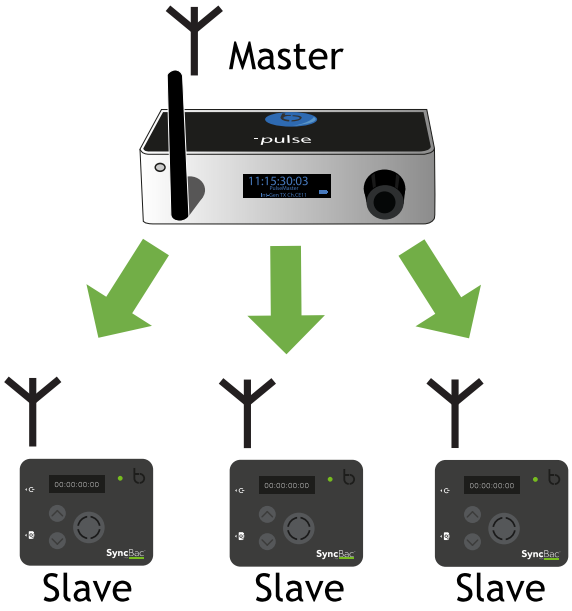
> **Tip:** If you use a Timecode Systems :pulse as the master, you can do much more than synchronise the timecode. With the free BLINK Hub app, you can remotely control and monitor your SyncBac PRO units and the HERO cameras they are attached to (see Remote Control and Monitoring with :pulse on page 62).

To synchronise the timecode of multiple Timecode Systems devices, you need to set up an RF network. An RF network is a group of devices that are all set to the same country/area and the same RF Channel. In the network, one device has to be set to run as the master, and the other devices have to be set to run as slaves.

The master is the dominant device, and it can either:

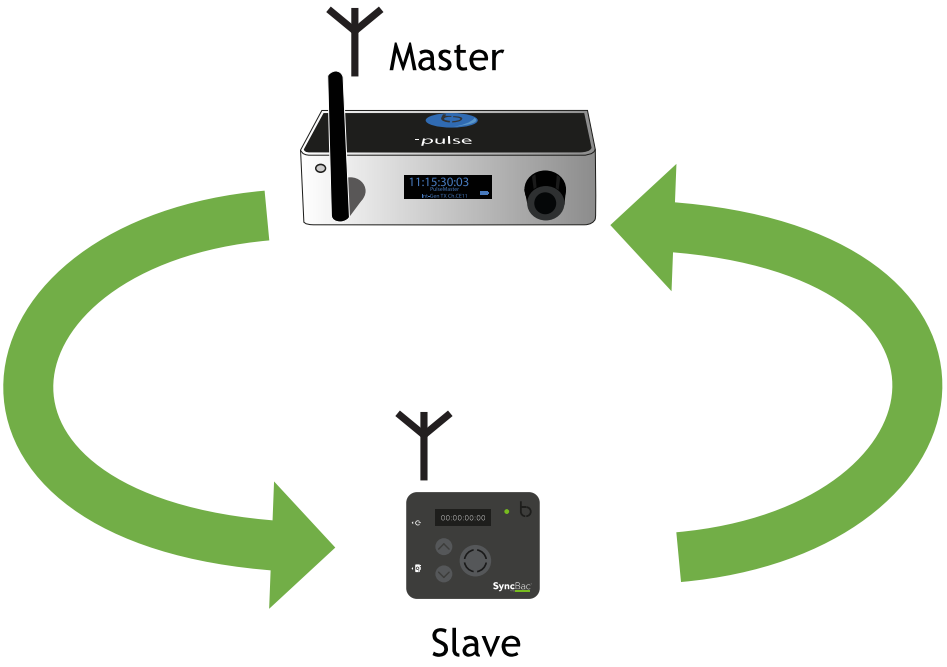
- Generate the timecode and pass it to all other connected devices
- Receive and retransmit the timecode.

The master sends its timecode data to the slaves (via radio). When the slaves receive the timecode, they change their own timecode settings to match.



In the image shown, the SyncBac PRO units are set to run as slaves and the master is a Timecode Systems:pulse. In an RF network, your SyncBac PRO can run as a slave or as a master.

Each slave communicates with the master regularly, to make sure they remain synchronised.



If a slave is out of range of the master, it will free-run (see What if a Slave Cannot Find a Master? on page 25).

Note: There should be no more than one master per RF network. For more details, see Multiple Masters in the Same Network on page 26.

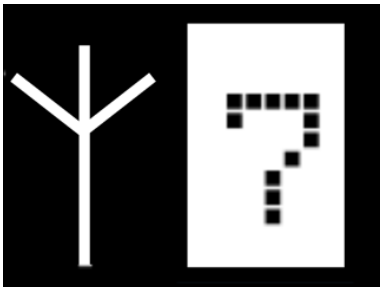
See also:

- How Can I Tell if a Slave is Communicating with a Master? (see page 24)
- RF Slave (see page 32).

How Can I Tell if a Slave is Communicating with a Master?

You can tell when a slave is connected with a master by looking at its main screen display.

An antenna icon flashes in the top-right corner when the slave and master are communicating. The number shown to the right of the antenna icon shows the signal strength (0-7 where 7 is the maximum signal strength).



Note: The LED flashes green in time with the master when a connection is established and maintained. The LED flashes blue if it has lost its connection to the master.

What if a Slave Cannot Find a Master?

Sometimes, your SyncBac PRO may be out of range of its master. In this situation, your SyncBac PRO cannot receive timecode from the master and so uses its own internal timecode instead. This is called 'free running'.

If your SyncBac PRO cannot connect to a master device, it will use its own timecode settings instead. The most likely reasons for a slave being unable to connect to a master are:

- The master is out of range
- The devices in the RF network are all set to run as slaves (so there is no master).

When a SyncBac PRO slave is 'free running', it will continue to try and find a master device. As soon as it finds a master device within range and in the same RF network, it will try to connect and synchronise with the master.

Example:

Let's say you want to film two riders in a mountain bike event. Both of the riders are wearing HERO cameras that have SyncBac PROs attached. The first rider, Paul, sets his SyncBac PRO to run in GP Master TX mode and selects RF Channel 4. The second rider, Susan, sets her SyncBac PRO to run in RF Slave mode and also selects RF Channel 4. At the start, Paul and Susan's SyncBac PROs are within range of each other and so their timecode is synchronised.

During the event, Paul has a puncture and has to stop to repair it. During this time, Susan continues ahead and goes out of range of Paul. At this point, Susan's SyncBac PRO loses communication with Paul's master SyncBac PRO, and so it carries on using the timecode that it has in place.

Paul fixes his puncture and catches up with Susan. His master SyncBac PRO is back in range of Susan's slave SyncBac PRO and so they re-connect and re-synchronise.

Multiple Masters in the Same Network

You should set up your Timecode Systems devices so that there is **one master device per network (RF channel)**. This ensures that all of the slave devices synchronise with the same timecode data (the timecode of the master device).

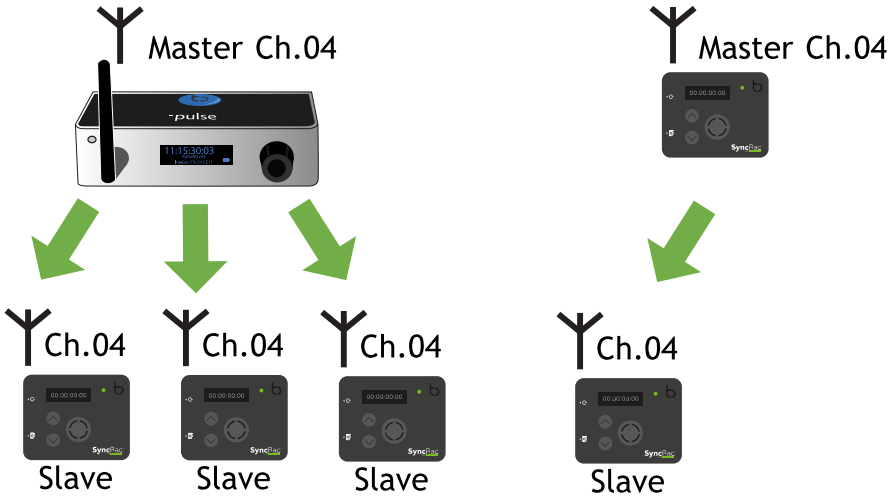
If you have multiple masters in the same network, each slave will connect to the first master that detects it. There is no guarantee that all of the slaves will connect to the same master, and so you could have slaves using the wrong timecode. To avoid this mistake, set the devices in your network to use the same unique channel.

Example: Bad Network Configuration

Let's say you have a network where all of the devices are set to use RF Channel 4. There is one :pulse master, and three SyncBac PRO slaves.

The devices in the network are all turned off and you add a new SyncBac PRO to the network. It is set to run in **GP Master TX** mode. When the devices are turned back on, there are two masters in the network - the :pulse and the new SyncBac PRO.

The slaves attempt to connect to the first master they find. Two of the slaves connect to the :pulse master first, and so synchronise with the :pulse. The other slave connects with the new SyncBac PRO first and so synchronises with that. As a result, the devices in the network are not synchronised to the same timecode.



RF Network

To synchronise two or more Timecode Systems products, you need to set them to operate in a network. There are two different types of network:

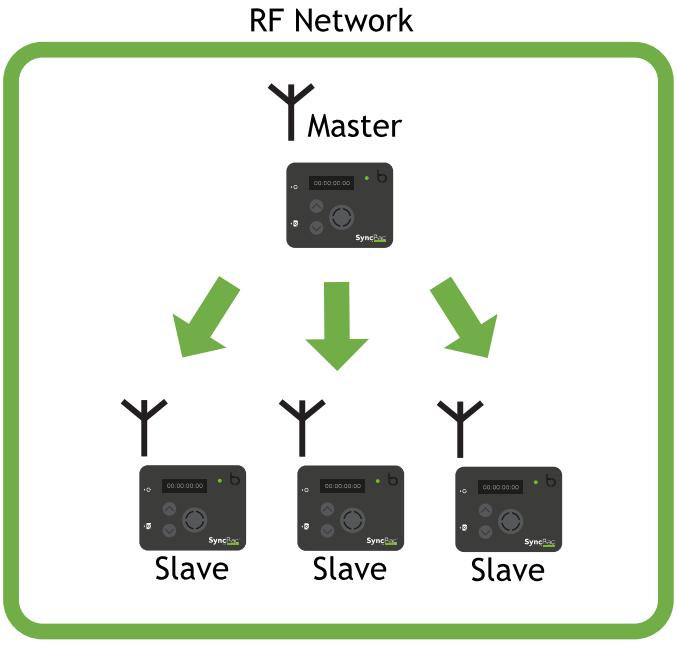
- RF network
- BLINK network.

In this section, we are going to look at the RF Network. To learn about the BLINK network, see BLINK Network on page 29.

What is an RF Network?

An RF network is a group of Timecode Systems devices that are all set to communicate on the same radio frequency (RF channel). The devices in an RF network can synchronise with each other over distances of 200m* (with internal antenna), and they communicate using our proprietary RF protocol.

*200m clear line of sight.



In the network, one of the devices has to be set as a GP Master TX, and the others have to be set as RF slaves.

The master sends the following data to the slaves via RF:

- Timecode
- Frames-Per-Second
- User bits (metadata).

When a slave receives this data, it updates its own internal settings to match, so that it is synchronised with the master.

To learn more about the relationships between devices in an RF network, see Master and Slave Relationship on page 22.

BLINK Network

To synchronise two or more Timecode Systems products, you need to set them to operate in a network. There are two different types of network:

- RF network
- BLINK network.

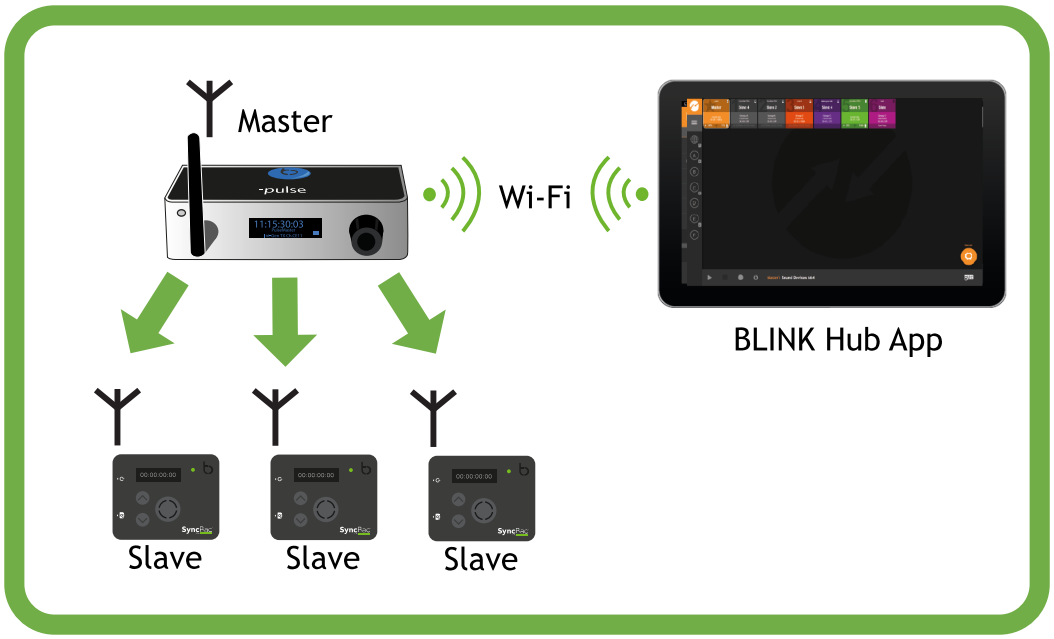
In this section, we are going to look at the BLINK Network. To learn about the RF network, see RF Network on page 27.

What is a BLINK Network?

A BLINK network is an RF network with added remote control and remote monitoring functionality. The extra functionality is provided by the free BLINK Hub app.

In a BLINK network, the master device has to be a :pulse or a :wave. In the following image, a :pulse is the master and it connects to BLINK Hub via wi-fi.

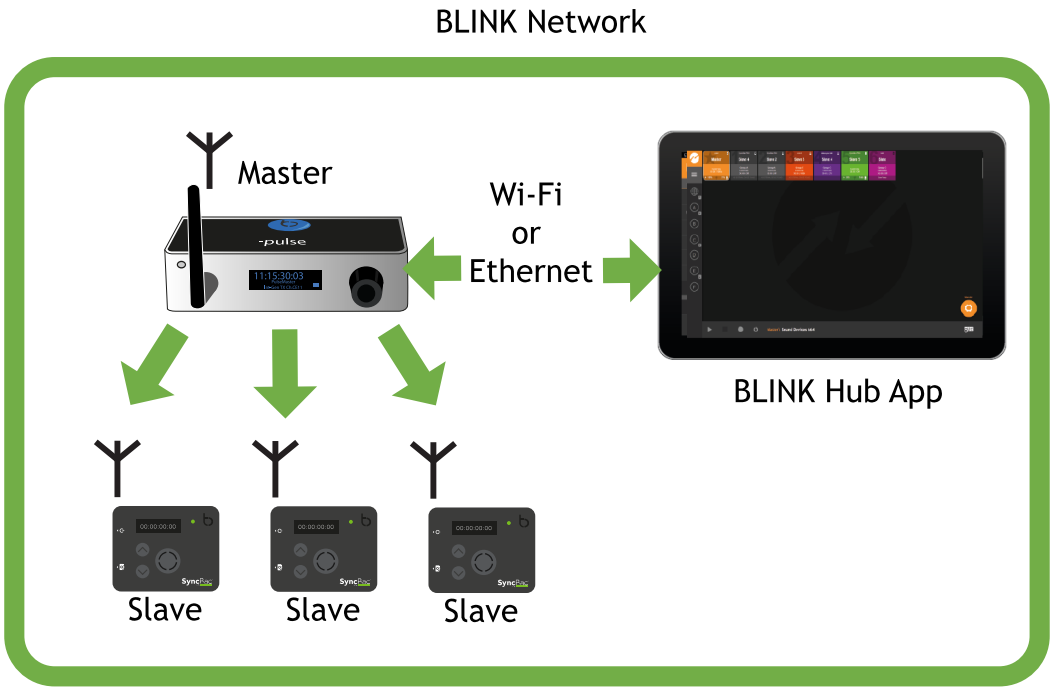
BLINK Network



Notice that the :pulse is the master and it communicates with the slaves via RF. The communications between the :pulse and the slaves is the same as a regular RF network, so the :pulse is acting as an RF master and a BLINK network master.

The BLINK Hub app communicates with the :pulse via wi-fi (it can communicate with :pulse units via wi-fi or Ethernet, and :wave units are wi-fi-only).

The BLINK network master is an intermediary between the slave devices and the BLINK Hub app.



You can install the BLINK hub app on a computer, tablet, or smartphone and use it for remote monitoring and control of many Timecode Systems products.

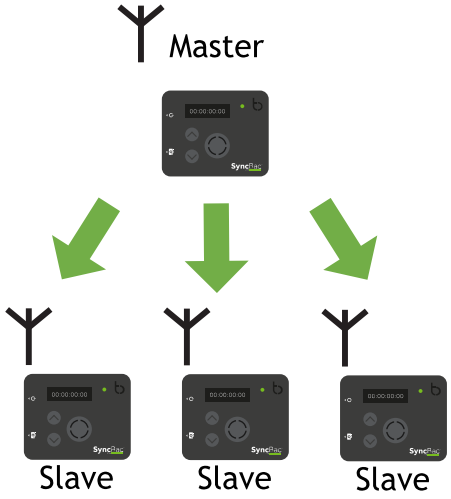
To learn more about BLINK Hub, see Remote Control and Monitoring with :pulse on page 62.

GP Master TX

You can set your SyncBac PRO to run in **GP Master TX** mode, where it acts as a master in an RF Network (see page 27). You should use the **GP Master TX** mode if:

- You want to use your SyncBac PRO independently. Your SyncBac PRO will provide timecode to a connected device, but will not synchronise with other Timecode Systems products.
- You want your SyncBac PRO to run as the master and provide the timecode that is used by slave devices in the network.

As the master, your SyncBac PRO will send its timecode, frames-per-second, and user bits to all of the slave devices (that are in range and communicating on the same RF channel).

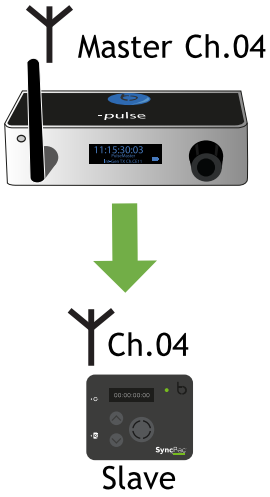


To set your SyncBac PRO to be a master in an RF network, see Set the Timecode Mode on page 39.

If you are unfamiliar with the concept of master and slaves, see Master and Slave Relationship on page 22.

RF Slave

If you want your SyncBac PRO to receive its timecode from another Timecode Systems device, set it to run in **RF Slave** mode. It will then try to connect with the master device in the network. If it is in range of the master, and using the same RF channel, it will synchronise with the master's timecode (see RF Network on page 27).



The master sends the following data to the slaves via RF:

- Timecode
- Frames-Per-Second
- User bits (metadata).

When a slave receives this data, it updates its own internal settings to match, so that it is synchronised with the master.

> **Note:** If your slave cannot connect to a master, it runs in free mode (see What if a Slave Cannot Find a Master? on page 25).

To set your SyncBac PRO to be a master in an RF network, see Set the Timecode Mode on page 39.

Chapter 3 Quick Set Up

If you know how to access your SyncBac PRO's settings and understand the different modes, you can use the quick set up instructions to get started.

Quick Set Up as RF Slave

If you want your SyncBac PRO to have its timecode set by another device, such as another SyncBac PRO or a :pulse, set it to run as an **RF Slave**.

1. Connect SyncBac PRO to a GoPro HERO (see page 11).
2. Switch your SyncBac PRO on Switch SyncBac PRO On and Off on page 11).
3. Set the RF Country/Area (see page 38).

   This is important as your SyncBac PRO has to be set to use the appropriate frequency range for your country.
4. Set the **Timecode Mode** to **RF Slave** (see Set the Timecode Mode on page 39).

   This is important as it defines how your SyncBac PRO synchronises with other devices.

   Timecode devices use a master-slave relationship for synchronisation. If this concept is new to you, you can find explanations in Master and Slave Relationship (see page 22).
5. Set the RF Channel (see page 41).

   The **RF Channel** defines which RF network your SyncBac PRO will be a member of, and therefore, which master or slaves it can communicate with.

When you have completed these steps, you have applied the minimum required settings for your SyncBac PRO in RF Slave mode. But to work with its attached GoPro HERO, the SyncBac PRO must first synchronise with a master device. If there is no master device in your RF network, you will need to set one up and make sure your SyncBac PRO is in range so that it can synchronise for the first time.

Quick Set Up as GP Master TX

If you want your SyncBac PRO to be the master, set it to run as a **GP Master TX**. As the master, the SyncBac PRO will send its timecode settings to slave SyncBac PROs in the same RF network. The slaves will receive the timecode and apply it so that they synchronise with the master SyncBac PRO.

1. Connect SyncBac PRO to a GoPro HERO (see page 11).
2. Switch your SyncBac PRO on Switch SyncBac PRO On and Off on page 11).
3. Set the RF Country/Area (see page 38).

   This is important as your SyncBac PRO has to be set to use the appropriate frequency range for your country.
4. Set the **Timecode Mode** to **GP Master TX** (see Set the Timecode Mode on page 39).

   This is important as it defines how your SyncBac PRO synchronises with other devices.

   Timecode devices use a master-slave relationship for synchronisation. If this concept is new to you, you can find explanations in Master and Slave Relationship (see page 22).
5. Set the RF Channel (see page 41).

   The **RF Channel** defines which RF network your SyncBac PRO will be a member of, and therefore, which master or slaves it can communicate with.
6. Set the SyncBac PRO's **FPS** rate to the appropriate value (see Set the Frame Rate Per Second for the Master on page 46).

   Note: The FPS for the SyncBac PRO is not an exact match of the HERO's FPS setting. The SyncBac PRO uses more precise values than the HERO.
7. Set the SyncBac PRO's timecode or '**T/C**' (see Set the Timecode for the Master on page 45). This sets the SyncBac PRO master's timecode. The timecode is then sent to any slaves in the same RF network.

When you have completed these steps, you have applied the minimum required settings for your SyncBac PRO in **GP Master TX** mode. It should now be able to time stamp your HERO recordings and use the appropriate timecode (it will use its own timecode settings and these settings will also be used by slave SyncBac PROs in the same RF network).

Chapter 4
Configuration Settings

In this chapter, you can learn how to perform various configuration tasks. You will have to complete some of the tasks to get your SyncBac PRO up and running, but other tasks are optional.

Set the RF Country/Area

Your SyncBac PRO can communicate with other devices via radio. Before you use your SyncBac PRO, you need to set it to use the correct radio frequencies for the country you are in. This is because the regulations for the use of radio frequencies vary in different countries.

> **Note:** The **RF Country/Area** setting does not apply to SyncBac PRO units sold in North America and Canada. If you purchased your SyncBac PRO in the US or Canada and wish to use it in another country, please contact Timecode Systems. We can provide you with a **free updater** application that will allow you to set the country/area.

To set the RF country/area:

1. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
2. Press the **Select** button.
3. Use the **Up** and **Down** buttons to scroll to the **System Settings** option.
4. Press the **Select** button.
5. Use the **Up** and **Down** buttons to scroll to the **Set RF Country/Area** option.
6. Press the **Select** button.
7. Use the **Up** and **Down** buttons to select the appropriate area:
   - **Europe/UK**
   - **Japan/China**
   - **US/CA/AU/NZ** (for USA, Canada, Australia, or New Zealand).

   > **Note:** If you want to use your SyncBac PRO in another region, please contact Timecode Systems for advice.

8. Press the **Select** button to confirm. Your SyncBac PRO will now communicate using radio frequencies that are appropriate for the region you selected.

Set the Timecode Mode

SyncBac PRO has two different Timecode modes: **RF Slave** and **GP Master TX**. These modes define how your SyncBac PRO's timecode is synchronised with other devices, and so it is important that you choose the appropriate setting.

> **Note:** If you are unfamiliar with the concept of master and slave devices, please read Master and Slave Relationship on page 22.

To set the **Timecode Mode**:

1. Connect SyncBac PRO to a GoPro HERO on page 11.
2. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
3. Press the **Select** button.
4. Use the **Up** and **Down** buttons to scroll to the **Timecode Mode** option.
5. Press the **Select** button.
6. Use the **Up** and **Down** buttons to scroll to the appropriate mode:

Operation	Timecode Mode
SyncBac PRO is master and sets the timecode of: • Its own HERO camera (the HERO camera that is connected to the master SyncBac PRO) • Other SyncBac PROs in the same RF network.	GP Master TX
SyncBac PRO is slave and has its timecode set by another device in the same BLINK network	RF Slave

*When a SyncBac PRO is free running and in RF Slave mode, it uses its own timecode but continues to search for a master on the same RF network. If it finds a master, the master will set the timecode.

> **Note:** A SyncBac PRO can only be the master to SyncBac PRO slaves - it cannot be a master to other Timecode Systems products, such as :wave, :pulse, or minitrx+.

7. Press the **Select** button.

8. Use the **Up** and **Down** buttons to set the RF Channel that the SyncBac PRO will use to communicate with the master device. The master device can only communicate with slave devices that use the same RF Channel as the master.
9. Press the **Select** button.

The following table shows how you should set your SyncBac PRO when there are other Timecode Systems devices in the same network.

Products in Workflow	Recommended Set-up
SyncBac PROs only	Set one as the master and all others as slaves for timecode sync.
:pulse and SyncBac PROs	Set :pulse as timecode master and SyncBac PROs to RF slave mode, for timecode sync and BLINK Hub control. Other products in the workflow can be set to RF slave mode for timecode sync only.
SyncBac PRO with other TCS products	Set one unit as the master (preferably a :pulse, :wave or UltraSync ONE) with all other units set to RF slave mode, for timecode sync.

Set the RF Channel

SyncBac PRO is designed to synchronise with other devices in an RF network, so that all of the devices have the same, highly accurate timecode settings. An RF network is a group of devices that are all set to communicate on the same RF channel.

To get your SyncBac PRO to join a network, set it to use the same RF channel as the other devices in that RF network.

You need to set the RF Channel when:

- You first set up your SyncBac PRO to join an RF network
- Your SyncBac PRO is in an RF network but you want it to join a different RF network instead
- You are changing the master device in the RF network. Your SyncBac PRO needs to have its RF Channel reset if you introduce a different master device, even if the same channel is going to be used.

Note: SyncBac PROs can only be part of one RF network. If you need to remove a SyncBac PRO from a network and set it to join another one, change the SyncBac PRO's RF Channel.

To set your SyncBac PRO to join an RF network:

1. Connect SyncBac PRO to a GoPro HERO on page 11.
2. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
3. Press the **Select** button.
4. Use the **Up** and **Down** buttons to scroll to the **Set RF Channel No.** option.
5. Press the **Select** button.
6. Use the **Up** and **Down** buttons to change the channel number. You need to set the SyncBac PRO to use the same channel number as the other devices in the same network.
7. Press the **Select** button to confirm.

Look at the main screen to find out which channel a SyncBac PRO is set to use. The channel is shown in the bottom-right corner, next to the battery indicator.

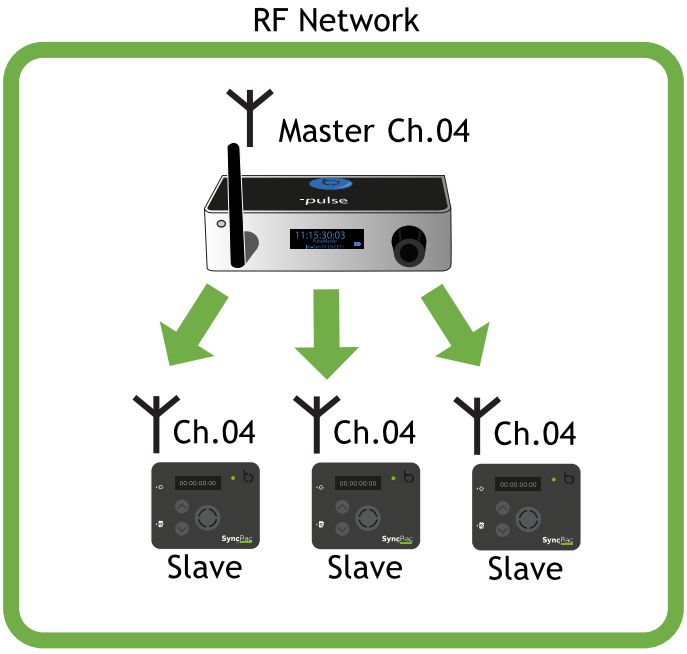
In the image above, Ch.CE09 indicates that the SyncBac PRO is set to use RF Channel 09.

Example 1: Join an RF network

Let's say you have three SyncBac PRO units and a :pulse unit. The :pulse unit is set to be the 'master' and uses **RF Channel 4**.

To get the SyncBac PRO units to synchronise with the :pulse unit, you need to set all three of the SyncBac PROs to use **RF Channel 4**. They also need to be set to the correct **country/area** and to run in **RF Slave** mode.

With these settings in place, the master :pulse unit will connect to the slave SyncBac PROs and set their timecode (as long as the slave SyncBac PROs are within range of the master).

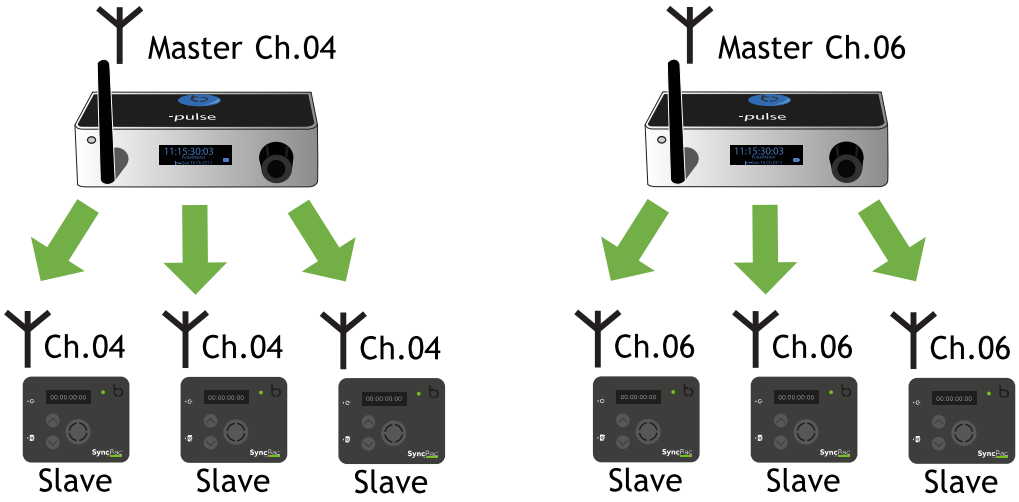


Example 2: Multiple RF networks in range

Let's say you have six SyncBac PROs and two :pulse units and you want to arrange them in separate networks. For the purpose of this example, we will assume you want three SyncBac PROs in each network, but you could allocate them differently if you wanted.

For the first network, you set the :pulse and the three SyncBac PROs to have the correct country/area setting and to use RF Channel 4. You set the :pulse to run as the master and the SyncBac PROs to run in RF Slave mode. The :pulse and the three SyncBac PROs are all in the RF Channel 4 network.

For the second network, you set the :pulse and the three SyncBac PROs to have the correct country/area setting and to use RF Channel 6. You set the :pulse to run as the master and the SyncBac PROs to run in RF Slave mode. The :pulse and the three SyncBac PROs are all in the RF Channel 6 network.



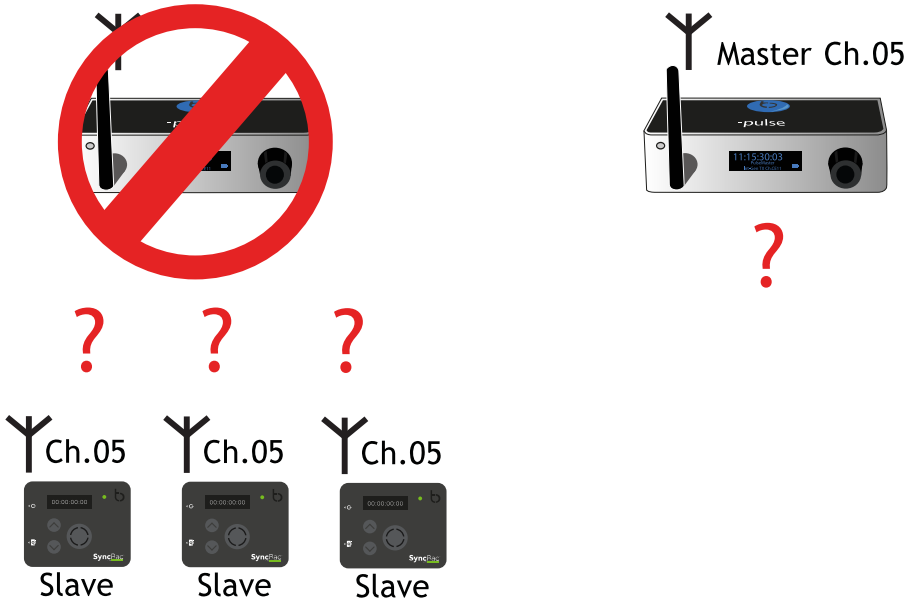
The two networks are completely separate and the devices in one network will not communicate with devices in another network.

Example 3: Replacing a Master in a Network

If you need to change the master device in a network, you may need to set the RF channels again. This is because the slaves store the master and channel details in memory, and need to be refreshed if a different master is used.

Let's say you have a :pulse as master and three slave SyncBac PROs. They are all set to use RF Channel 05. The SyncBac PROs and their connected HERO cameras all synchronise with the master correctly and filming begins.

Unfortunately, there is an accident and the :pulse gets damaged. You have another :pulse unit available, and so you swap it for the damaged one. You set the new :pulse to use RF Channel 05, but the slave SyncBac PROs do not connect with it. This is because they are 'locked' to the :pulse that was damaged.



To get them to connect to the replacement :pulse, you can either turn the SyncBac PRO slaves off and then on again to refresh their memory. Alternatively, you can set them to use RF Channel 5 again (re-applying the RF Channel also refreshes the SyncBac PRO's memory).

For details on country/area, see Set the RF Country/Area on page 38.

For details on RF Slave mode, see Set the Timecode Mode on page 39.

To learn more about master and slave relationships, see Master and Slave Relationship on page 22

Set the Timecode for the Master

> **Note:** This section only applies if you have set your SyncBac PRO to run in GP Master TX mode (see Set the Timecode Mode on page 39).

You need to set the timecode for the master SyncBac PRO, so that it has the time settings you require. These time settings will then be sent to the slave SyncBac PROs that are in the same RF network as the master SyncBac PRO.

To set your SyncBac PRO's timecode:

1. Connect SyncBac PRO to a GoPro HERO on page 11.
2. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
3. Press the **Select** button.
4. Use the **Up** and **Down** buttons to scroll to the **Set TimeCode** option. This option is only available if the SyncBac PRO is in **GP Master TX** mode (see Set the Timecode Mode on page 39).
5. Press the **Select** button.
6. Use the **Up**, **Down**, and **Select** buttons to set the SyncBac PRO's time. Press **Up** or **Down** to change the value of a character, and then press Select to confirm that value and move to the next character (from left to right). When you have set the last value, pressing **Select** will confirm the time entry.

If you are setting up a SyncBac PRO to run as a master, you also need to Set the Frame Rate Per Second for the Master (see page 46).

Set the Frame Rate Per Second for the Master

Note: This section only applies if you have set your SyncBac PRO to run in GP Master TX mode (see Set the Timecode Mode on page 39).

Your SyncBac PRO can add accurate time stamps to each frame that is recorded by a GoPro HERO (attached to the SyncBac PRO). To make these time stamps, the SyncBac PRO needs to be set to have a frame rate per second (FPS) that matches the FPS of the HERO. But it is not an exact match - the HERO uses FPS values that are rounded up, whereas the SyncBac PRO FPS is very precise and accurate.

1. Connect SyncBac PRO to a GoPro HERO on page 11.
2. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
3. Press the **Select** button.
4. Use the **Up** and **Down** buttons to scroll to the **Set FPS Rate** option.
5. Press the **Select** button.
6. Use the **Up** and **Down** buttons to set the SyncBac PRO's FPS to the appropriate value.

GoPro HERO FPS	SyncBac PRO FPS
24	23.98 =GoPro:24
25	25:00 =GoPro:25
30	29.97 =GoPro:30
50	25:00 =GoPro:25
60	29.97 =GoPro:30

7. Press the **Select** button to confirm.

Note: Your HERO must be set to either NTSC for 30 fps and its multiples or PAL for 25 fps and its multiples. Please refer to your HERO documentation for details on how to set the camera FPS.

Change the LED Brightness

You can set your SyncBac PRO so that its LED is more/less bright, depending on your requirements.

To change the LED brightness:

1. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
2. Press the **Select** button.
3. Use the **Up** and **Down** buttons to scroll to the **System Settings** option.
4. Press the **Select** button.
5. Use the **Up** and **Down** buttons to scroll to the Set LED Brightness option.
6. Press the **Select** button.
7. Use the **Up** and **Down** buttons to change the value. The brightness range is 1 to 5, where 1 is the dullest and 5 is the brightest.
8. Press the **Select** button to confirm.

Change the Screen Brightness

In certain conditions, you may need to change the brightness of the screen. For example, if you are filming in dark conditions, you may want to increase the screen brightness to make it easier to see the settings. When you have finished setting up, you might want to reduce the screen brightness back down.

To change the brightness of the screen:

1. Connect SyncBac PRO to a GoPro HERO on page 11.
2. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
3. Press the **Select** button.
4. Use the **Up** and **Down** buttons to scroll to the **Display Settings** option.
5. Press the **Select** button.
6. Use the **Up** and **Down** buttons to scroll to the **Set Brightness** option.
7. Press the **Select** button.
8. Use the **Up** and **Down** buttons to set the brightness value (1 is dullest, 5 is brightest).
9. Press the **Select** button to confirm.

Change the Screen Light Time

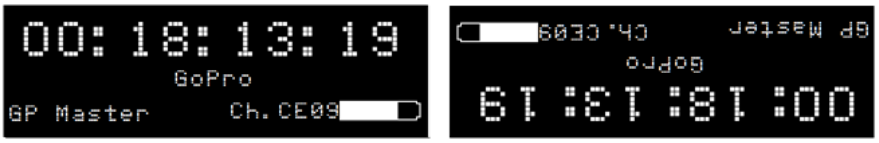
By default, the SyncBac PRO's screen is lit at the set brightness level all of the time. This makes it easier to read the display, but uses up more battery power. If you want to reduce the use of battery power, or just prefer the screen to dim after a short amount of time, you should change the **Display Settings**.

1. Connect SyncBac PRO to a GoPro HERO on page 11.
2. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
3. Press the **Select** button.
4. Use the **Up** and **Down** buttons to scroll to **Display Settings**.
5. Press the **Select** button.
6. Use the **Up** and **Down** buttons to scroll to your preferred screen light display time:
    - **Always on** to have the screen lit all of the time.
    - **Short timed on** to have the screen lit for approximately 10 seconds after the last press of the **Up**, **Down**, or **Select** button. The screen will dim as long as you don't press any of the buttons.
    - **Long timed on** to have the screen lit for approximately 20 seconds after the last press of the **Up**, **Down**, or **Select** button. The screen will dim as long as you don't press any of the buttons.

    
    Note: As soon as you press the **Up**, **Down**, or **Select** button, the dim timer is reset.
7. Press the **Select** button to confirm.

Flip the Display

In some locations, you may need to mount the HERO so that it hangs upside-down. But this doesn't mean you have to look at the SyncBac PRO display upside-down too - by using the **Flip Display** option, you can rotate the screen display by 180°.



To flip the display:

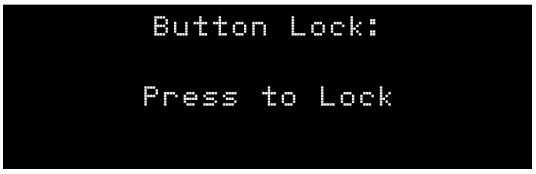
1. Connect SyncBac PRO to a GoPro HERO on page 11.
2. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
3. Press the **Select** button.
4. Use the **Up** and **Down** buttons to scroll to the **Display Settings** option.
5. Press the **Select** button.
6. Use the **Up** and **Down** buttons to scroll to the **Flip Display** option.
7. Press the **Select** button to confirm.
8. Repeat steps 3-7 inclusive to rotate the screen display to its previous orientation.

Button Lock

In some situations, you may find that your SyncBac PRO's control buttons are pressed accidentally, which can affect the settings. For example, if you are a skier and you are wearing your SyncBac PRO and HERO, you may find that your clothing or body knocks into the controls as you move. To prevent these accidental button presses from affecting your SyncBac PRO, you can turn on the Button Lock.

With the Button Lock enabled, any accidental presses of the Select button will have no effect. To get into the menus when Button Lock is enabled, you first have to manually deactivate the lock.

1. Display the Main Screen (see page 54)
2. Use the **Up** and **Down** buttons to scroll to the screen that shows **Button Lock:** at the top.



   The Button Lock screen will present you with one of two messsages:

   - **Press to Lock** - This message is shown if Button Lock is currently disabled. if you press the Select button, Button Lock will be enabled. SyncBac PRO will not allow you to access the menu options again until the Button Lock has been disabled.
   - **Press to Un-Lock** - This message is only shown if Button Lock is currently enabled. If you press the Select button, Button Lock will be disabled. You will be able to access the menus again by pressing the Select button.

3. Press the **Select** button to confirm.

Chapter 5
Status Information

Your SyncBac PRO has a collection of status displays that you can use to view current information about the unit. To learn about the displays, see:

Main Screen

The Main screen is displayed when you are not using the SyncBac PRO to view other status displays or to access menu options.

You can use the Main screen to view:

- The current timecode that is used by the SyncBac PRO
- The mode of the SyncBac PRO (GP Master or RF Slave)
- The RF channel that is used by the SyncBac PRO
- A battery icon that shows the amount of battery charge remaining.

Version Number and Serial Number

If you contact Timecode Systems technical support, you may be asked to provide the serial number of your SyncBac PRO. You may also be asked what version of the firmware your SyncBac PRO is running. To find this information:

1. Display the Main Screen (see page 54)
2. Use the **Up** and **Down** buttons to scroll to the screen that shows **:syncbac.pro** at the top.

The **sbpVb** value is the version number of the firmware that is installed on your SyncBac PRO.

The **Ser.No** value is the serial number of your SyncBac PRO unit.

Power and Battery

You can view the amount of charge remaining in the battery on the Main screen or on the dedicated Power and Battery screen. The Power and Battery screen also provides information about any external power source, such as a mains charger.

1. Display the Main Screen (see page 54)
2. Use the **Up** and **Down** buttons to scroll to the screen that shows **Power** at the top.

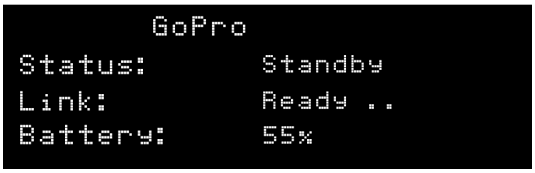
The **Power** value shows the status of the external power supply (EXT-OFF means there is no external power supply, EXT-OK means there is an external power supply).

The **Battery** value is a 5 bar icon that shows the battery charge (1 bar being low, 5 bars being maximum charge).

GoPro Status

You can use your SyncBac PRO to view the status of a GoProHERO (the HERO needs to be connected to the SyncBac PRO).

1. Display the Main Screen (see page 54)
2. Use the **Up** and **Down** buttons to scroll to the screen that shows **GoPro** at the top.



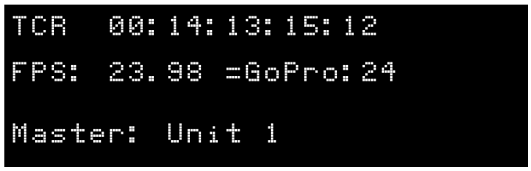
The Status shows what the GoPro is currently doing - **Standby** means it is connected but is not being used, **Recording** means it is filming, and **Not Ready** means the GoPro is disconnected or off.

The Link shows whether the GoPro is connected to the SyncBac PRO and turned on. **Wait Cam On** means the SyncBac PRO is either not connected to a GoPro, or the GoPro is turned off. **Ready** means the GoPro is connected, has power, and is synchronised. After the Ready value, you should see a sequence of one dot followed by two dots. This sequence shows that the SyncBac PRO is communicating with the HERO camera.

The Battery status shows the amount of power remaining in the GoPro's battery (as a percentage of its maximum charge).

Synchronisation Status

When you add or change devices in a network, you should check that they are synchronising correctly and using the correct frame-per-second settings. An easy way to do this is to look at the Synchronisation Status screen.



1. Display the Main Screen (see page 54)
2. Use the **Up** and **Down** buttons to scroll to the screen that shows **TCR** or **TCG** at the top.

Status	Description
TCR or **TCG**	**TCR** (timecode receiving) is shown if your SyncBac PRO is a slave. The timecode shown is the time that your SyncBac PRO is using, and this was received from the master device. **TCG** (timecode generated) is shown if your SyncBac PRO is a master. The timecode shown is the time of your SyncBac PRO's internal clock. This setting is used by your SyncBac PRO and is also sent to the slave SyncBac PROs in the network. For more details, see Master and Slave Relationship on page 22.
FPS	The frames-per-second setting that is currently used by your SyncBac PRO. The first part of the value shows the actual FPS and the =GoPro part shows the equivalent setting in the GoProHERO camera. The SyncBac PRO and HERO need to have compatible FPS settings, so if your SyncBac PRO is set to 23.98 =GoPro:24, your GoPro camera should be set to 24 FPS. For more details, see Set the Frame Rate Per Second for the Master on page 46.

Status	Description
Master	This status is only shown if your SyncBac PRO is running in RF Slave mode. It shows one of two possible values: • **The 'friendly' name of a :pulse master**. This is a user-defined name, and should make it easy for you to identify which :pulse is the master. The default 'friendly' name is Unit 1. • **UnConnected**. This means the SyncBac PRO is only receiving timecode data. You will see this when the SyncBac PRO is a slave to a SyncBac PRO master or a :wave master.

Note: If you can see a 'friendly' master name and the LED is flashing blue, it means that your SyncBac PRO has lost its connection with the :pulse master. This could be due to the master being out of range or having no power.

Chapter 6 BLINK Hub

You can make changes to some of your SyncBac PRO's settings remotely, by using the free BLINK Hub app on a smartphone or tablet. You can also use BLINK Hub to view some status information.

To learn about BLINK Hub, see:

Remote Control and Monitoring with :pulse

Did you know that you can monitor and control your SyncBac PRO and HERO remotely, via a tablet or desktop PC or Mac? All you need is a Timecode Systems :pulse in your RF network and the free BLINK Hub application. When a network has remote monitoring and control capabilities, we call it a BLINK network (it is an RF network with remote features provided by BLINK Hub and a :pulse).

In BLINK Hub, each device in the BLINK network has its own status panel. The status panel shows a variety of status information about the device and its attachments. So you can view the status of your SyncBac PROs and the HEROs to which they are connected.

Even better, you can use BLINK Hub for remote control. With a :pulse as the master, you can switch slaves on and off and start and stop recordings from your desktop, tablet or smartphone. To control a SyncBac PRO remotely, it must be set to run in RF Slave mode, and a :pulse must be set as the master (see Set the Timecode Mode on page 39).

For instructions on how to use BLINK Hub, please refer to the BLINK Hub documentation, which is provided with :pulse mini-base stations.

Tip: Visit www.timecodesystems.com or contact your local stockist for more information on :pulse mini base stations.

Timecode Systems
GENERATE. SYNC. SHARE

Chapter 7
Warranty and Conformity

To learn about the warranty and the conformity declarations, see:

Warranty

All products sold by Timecode Systems Limited are warranted to the original purchaser against defects in materials and workmanship for (one) year from the date of original purchase.

However, this warranty excludes accessories, batteries and cables. Also, this warranty does not apply to any instrument determined by Timecode Systems Limited to have been subjected to customer alteration, modification, negligence or misuse.

In the event of any defects determined to be covered by this warranty, Timecode Systems Limited will, at its sole option, repair or replace the defective instrument without charge. To obtain warranty service the defective instrument must be returned within one year from purchase to:

TIMECODE SYSTEMS LIMITED

ATTN: Repair Department

Unit 6, Elgar Business Centre

Moseley Road, Hallow

Worcester, WR2 6NJ, UK

Telephone +44 (0) 1700 808 600

All transportation and shipping costs are the responsibility of the purchaser.

Quality Declarations

Use of External Antenna(s)

This device has been approved by Industry Canada & FCC to operate with the antenna types listed below with the maximum permissible gain of 5.4 dBi and required antenna impedance of 50 Ohms for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Name: Linx Model ANT-916-MHW-RPS-S (with adapter Amphenol model 242141RP or equiv).

RF Exposure Warning Statement:

To comply with FCC/IC RF exposure limits for general population / uncontrolled exposure, the external antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Warning Statement:

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Statements:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Industry Canada - Class B This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matérial brouilleur: “Appareils Numériques,” NMB-003 édictée par l’Industrie.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

EC Declaration of Conformity

We,

Timecode Systems Ltd.

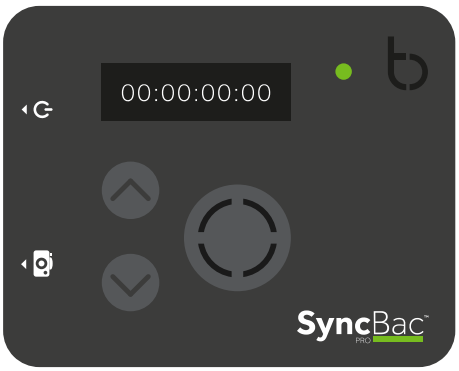
Unit 6, Elgar Business Centre

Moseley Road, Hallow, Worcester WR2 6NJ UK

declare that the Declaration of Conformity is issued under our sole responsibility and belongs to the following product(s):

Type of Product	Wireless GoPro timecode sync accessory
Model	SyncBac PRO SPR01

Object of the declaration:



The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

EMC Directive 2014/30/EU

Low Voltage Directive (LVD) 2014/35/EU

R&TTE Directive 1999/5/EC

The following harmonized standards and technical specifications have been applied:

EN 300 220-2	V2.4.1:2012
EN 301 489-3	V1.6.1:2013
EN 55024	2010
EN 55032	2012

Paul Scurrell

Timecode Systems

Chapter 8
Troubleshooting and FAQs

In this chapter, you can find troubleshooting information, answers to popular questions, and instructions on how to reset your SyncBac PRO. If you are experiencing problems that are not covered here, please visit https://support.timecodesystems.com for up-to-date FAQs and manuals.

Troubleshooting

If you are having difficulty setting up your SyncBac PRO, the following troubleshooting sections may help:

- SyncBac PRO Slave not Connecting to Master (see page 70)
- Slave is Connecting to Wrong Master (see page 71)
- SyncBac PRO Slave Not Detecting GoPro HERO Camera (see page 71)
- SyncBac PRO Not Responding to Select Button (see page 71)
- SyncBac PRO Battery is Not Charging (see page 71).

If you are experiencing problems that are not covered here, please visit **https://support.timecodesystems.com** for up-to-date FAQs and manuals.

SyncBac PRO Slave not Connecting to Master

If your SyncBac PRO is not receiving timecode from a master device, it could be due to:

- The master device being switched off. Make sure the master device is on and has sufficient battery power.
- SyncBac PRO is set to GP Master TX mode. The SyncBac PRO can only connect with a master device if the SyncBac PRO is running in RF Slave mode. For more information, see Set the Timecode Mode on page 39 and Master and Slave Relationship on page 22.
- The master is out of range. The SyncBac PRO will use its own timecode until the master is back in range. If you are only using the internal aerial, you could increase the range by attaching an external aerial - contact Timecode Systems for advice.
- The SyncBac PRO is not set to use the same RF Channel as the master. SyncBac PRO slave - master communications can only take place between devices that are in the same network (are set to use the same RF Channel). For more information, see Set the RF Channel on page 41.
- The SyncBac PRO and/or the master are not set to the correct country/area. You need to set the SyncBac PRO and master to the country/area in which they are being used (see Set the RF Country/Area on page 38).

Slave is Connecting to Wrong Master

If your SyncBac PRO is running in slave mode and connects to the wrong master device, it is likely that there are multiple masters in the same network. An RF network should only have one master device, see Set the Timecode Mode on page 39.

SyncBac PRO Slave Not Detecting GoPro HERO Camera

If you have a SyncBac PRO set to run as a slave, it needs to synchronise with a master device before it can be used with a HERO. This is because when you set a SyncBac PRO to run as a slave, it expects to get its timecode from a master device at least once.

1. Display the main status screen on your SyncBac PRO (see Main Screen on page 54).
2. Use the **Up** and **Down** buttons to scroll to the GoPro status screen.
3. Look at the Status and Link entries. If the Status is Not Ready and Link is Wait RF Lock, it means that the SyncBac PRO slave has not synchronised with a master (it is waiting for an RF lock with a master, which is when the timecode is set).

To resolve this issue, make sure the SyncBac PRO slave uses the correct channel for the RF network and is in range of the master device. You will also need to make sure the master device is set up correctly and connected to the network.

SyncBac PRO Not Responding to Select Button

In the unlikely event that your SyncBac PRO does not display the menu when you press the Select button, try a Hard Reset (see page 72).

SyncBac PRO Battery is Not Charging

If the SyncBac PRO battery is not re-charging when you use a mini USB charger:

1. Switch your SyncBac PRO off (see Switch SyncBac PRO On and Off on page 11).
2. Check that the mini USB port on the SyncBac PRO is clear. Mini USB ports can get clogged with lint from pockets or dirt and dust from the environment.
3. Try using a different mini USB charger.
4. Try using a different mini USB cable.

If the problem persists, contact Timecode Systems for advice.

Restore Factory Settings

You can reset your SyncBac PRO to its original state by selecting **Set Factory Defaults**. This can be useful if you want to use your SyncBac PRO in a different RF network or for a different purpose and you want to start with a completely fresh SyncBac PRO.

Note: If you want to reset the SyncBac PRO without losing the existing settings, see Hard Reset on page 72.

To reset a SyncBac PRO:

1. Switch on your SyncBac PRO (see Switch SyncBac PRO On and Off on page 11).
2. Press the **Select** button.
3. Use the **Up** and **Down** buttons to scroll to the **System Settings** option.
4. Press the **Select** button.
5. Use the **Up** and **Down** buttons to scroll to **Set Factory Defaults**.
6. Press the **Select** button. The SyncBac PRO is reset to have all the default settings in place and the main screen is displayed.

Hard Reset

In the highly unlikely event that your SyncBac PRO becomes unresponsive and you cannot access the menus, you can perform a 'hard reset'. A hard reset reboots the SyncBac PRO. It is similar to turning the SyncBac PRO off and back on again - the settings that were in place before the hard reset are kept. This is different to a factory reset, where the existing settings are lost (see Restore Factory Settings on page 72).

To perform a hard reset:

1. Press and hold both the **Up** and the **Down** buttons at the same time. Don't worry if the screen flickers a little as you hold the buttons down - this is normal.
2. Keep the **Up** and **Down** buttons pressed down until the SyncBac PRO appears to switch off.
3. Release the **Up** and **Down** buttons. The SyncBac PRO restarts.

FAQs

In this section, you can find some of the most frequently asked questions about SyncBac PRO, and our answers to these problems. If you have a question, you may find that the answer is right here. If your question is not covered, please contact Timecode Systems for assistance.

Can you Genlock the GoPros?

The SyncBac PRO is a timecode solution for GoPro HERO, and it embeds the timecode as metadata into the mp4 file. Unfortunately, we are unable to offer genlock/sensor sync as HERO cameras do not have the architecture to support an external genlock.

Is the SyncBac PRO the Right Solution for my VR Rig?

It depends on your requirements. SyncBac PRO is a timecode-only solution and does not provide genlock or sensor synchronisation.

Using SyncBac PRO for timecode synchronisation does have advantages over using visual/audible markers. With SyncBac PRO, you simply attach a SyncBac PRO to each GoPro HERO in the rig and then begin filming. You then create a multi clip using timecode for the synchronisation in your NLE and trim off the front of the recording, before putting it through your stitching software.

If you use SyncBac PROs with a :pulse master, you also have the option of remote control for start/stop recording and switching the HEROs on/off. Remote control can be very useful when your cameras are set up in a rig.

The remote control features are provided by our free BLINK Hub app.

Can SyncBac PRO be used as a Master Unit?

Yes. SyncBac PRO, like all of our devices, is a timecode over RF transceiver, and so can be set as either a master transmitting unit or a slave receiving unit. If you are only using GoPro HERO cameras in your workflow, you can use one SyncBac PRO as the master unit and set all of the other SyncBac PROs to run as receivers (slaves).

However, if you are in a multi camera/sound workflow you need to use the :pulse as the master unit as it is our mini base station. With :pulse, you have access to our BLINK Hub app, which allows you to monitor your devices remotely. BLINK Hub also provides remote control features for GoPro HERO cameras.

Can a Master Device use Drop-Frame Timecode?

No. The master device has to run non-drop-frame timecode to work with SyncBac PRO.

Do I Need a SyncBac PRO on Each GoPro?/Do I need a TCS Unit on Each Device?

To make sure that all devices in your workflow stay synchronised, you need to attach one of our devices to each of your cameras/sound recorders on set. All of our devices are compatible with one another, so just pick one as the master and set the others as slaves (receivers).

How Long Does it Take for SyncBac PRO to Re-Sync?

If your SyncBac PRO moves out of range of the master, it will no longer be synchronising with the master. It will re-synchronise with the master when it is back in range of the master, but the amount of time the re-sync takes can vary:

SyncBac PRO Out of Range for	Approx. Time to Resync
Less than 10 seconds	Almost instantaneous
More than 10 seconds	Several seconds

Note: If there are other masters in range, the re-synchronisation may take considerably longer. This applies even if the other masters use different RF channels.

Does SyncBac PRO Record Timecode on the Audio Track?

No – the SyncBac PRO is not a work-around. It is a full timecode solution for GoPro. With a SyncBac PRO attached, timecode is generated at source and stamped directly onto the camera's media file. At the end of a shoot, the camera's SD card contains a single MP4 file with embedded, frame-accurate timecode. You can upload the MP4 directly into AVID Media Composer, Apple Final Cut Pro X or Adobe Premiere PRO.

Will using SyncBac PROs Affect How I Mount my GoPros?

The SyncBac PRO is the same size as all standard GoPro HERO BacPac Accessories. It is fully compatible with HERO standard BacPac backdoor housings.

Does using SyncBac PRO Affect the GoPro HERO Battery Life?

The SyncBac PRO has its own 12 hour internal battery and so will not drain the HERO's power. Although the SyncBac PRO cannot be used to power the camera, if you connect the SyncBac PRO to a power source while attached to a GoPro HERO, both units will charge simultaneously.

SyncBac PRO can help to conserve the GoPro's battery life. If you use a :pulse as the master unit, you can use the BLINK Hub app to toggle your HERO's on and off from your smartphone or tablet. (The HEROs can only be turned on and off and controlled remotely if they are connected to SyncBac PROs).

Timecode Systems
GENERATE. SYNC. SHARE

Chapter 9
Safety and Disposal

Please read the important safety and recycling information regarding your SyncBac PRO and its battery:

Battery Safety and Disposal

SyncBac PRO contains a battery. The battery may contain toxic heavy metals and is subject to hazardous waste regulations.

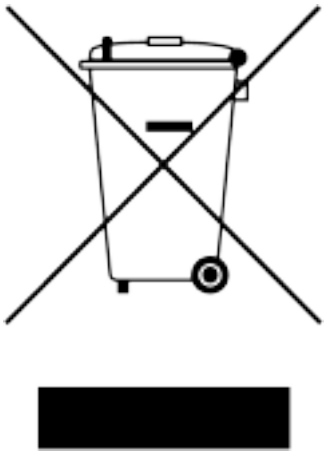
To make sure you use and dispose of your SyncBac PRO safely and responsibly, please follow these safety and disposal instructions.

Battery Safety

	**DANGER - Risk of burns, injury, battery damage**
	Do not attempt to remove or disassemble the battery.
	Do not expose the battery to heat or liquid.
	Do not use or charge the battery in temperatures above 60°C.
	Do not bend, pierce, or crush the battery.
	Do not allow the battery to come into contact with metal objects.
	Do not weld the battery.
	Only use the product and charge the battery as described in the user guide. Incorrect use could result in fire, explosion, smoke, heat, and battery leakage.
	Do not use a damaged battery.
	Do not put product or battery into a microwave over, dryer, or high-pressure container.
	If the battery does not charge in the expected time, stop charging and contact Timecode Systems for advice.
	Stop using the product if there is abnormal heat, odour, discoloration, or deformation when in use, charging or in storage.
	If the battery leaks on to your skin or clothes, wash with fresh water immediately.
	If liquid from the battery gets into your eyes, do not rub them. Wash your eyes with fresh water and seek medical attention immediately.

Disposal and Recycling

Please **do not** dispose of your SyncBac PRO, its battery, or accessories such as chargers, with your household waste. Make sure you follow the local legal requirements for battery disposal and recycling.



By disposing of the battery in the proper manner, you help to avoid possible hazards to the environment and public health that could otherwise be caused by improper treatment of batteries. The recycling of materials contributes to the conservation of natural resources.

For further information on disposal and recycling, please contact Timecode Systems.

Index

U

V

W

Timecode Systems

Unit 6, Elgar Business Centre, Hallow

Worcester, WR2 6NJ, UK

+44 (0) 1700 808 600

contact@timecodesystems.com