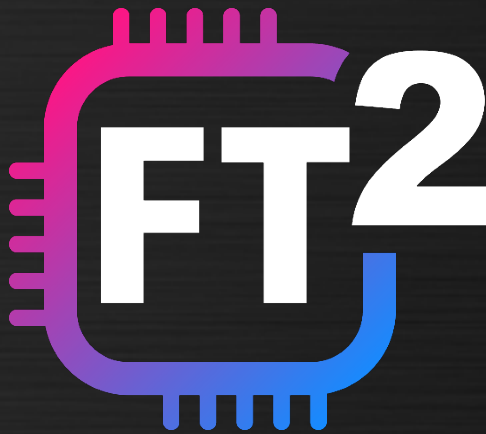


Pyroterra Lighttoys  
presents

# FT USER GUIDE



V2.1  
(ENG)

# Introduction

Welcome to the world of FT products from Pyroterra Lighttoys! This guide will explain the basic operation as well as advanced and unique features, so you can utilize your Lighttoys props to their full potential!

## The concept of FT

The Future Chip Technology (FT) is a term used to describe all Lighttoys products with any FT chip inside. FT chip is utilizing a smart 2.4GHz wireless protocol, which enables using many Lighttoys props easily and reliably together.

## Difference between FT, FT2 (& Visual) props

Two variations of the FT chip exist, depending on their technical capabilities:

- **FT chip** – designed to control analog RGB LEDs, can control two independent A/B segments separately.  
*Example : Zebra Poi FT*
- **FT2 chip** – designed to control digital pixel LEDs, can display graphic patterns. When an FT2 product is also capable to display logos and pictures with high fidelity, we use the designation: **Visual**.  
*Example : Visual Hoop*

You can use Lighttoys FT props in 2 different ways:

## Predefined patterns

This is the simplest way how to enjoy your Lighttoys FT props. You can play with various predefined colors & patterns; the FT products will react accordingly as you press the buttons on the paired FT remote:



## Programmed mode

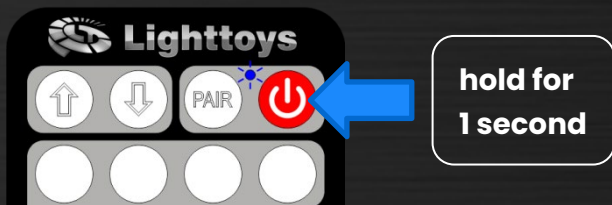
You can prepare 4 unique programmed light sequences (shows) and upload them into the memory of your FT products for later synchronized start.

These uploaded shows can be started either manually from the FT device itself, remotely using the FT remote or by sending a command from your computer:



## Powering ON / OFF

In order to use your new FT products, you need to power on both the FT remote and the Lighttoys FT device.

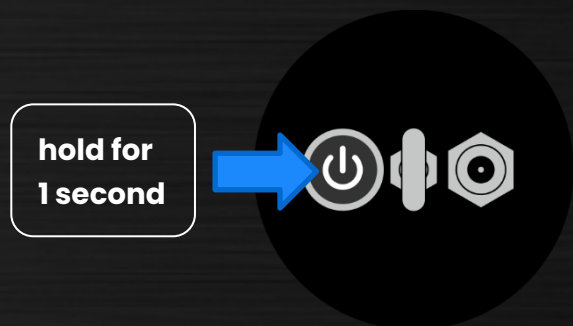


To turn on the FT remote, press and hold the red button for **1 second**, until the blue LED indicator on the remote starts shining.

To turn off, press and hold the red button again until the blue LED indicator stops shining.

To turn on your FT device, locate its power button. Press and hold it for **1 second**, until the LEDs blink twice with a fade-in effect.

To turn off, press and hold the power button for **1 second**, until the LEDs blink twice with a fade-out effect.



*Zebra Poi FT*

## Auto power OFF function

Both the FT remote and the FT devices feature an auto power off functionality to save battery when inactive. The timer of this functionality is reset by any of the following events:

- any button press
- ongoing programmed show 1-4
- received USB command from PC (for FT remote)
- received radio command (for FT/FT2 units)
- attached USB power (for FT2 units)

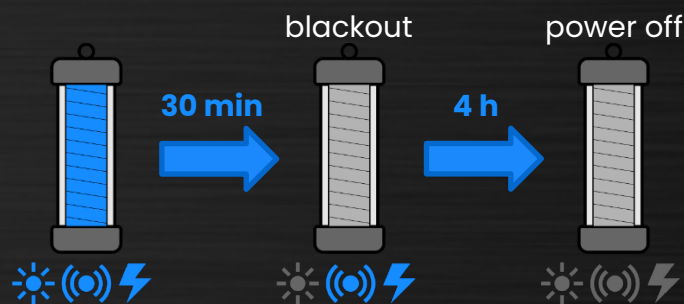
### FT remote

FT remote will turn off after **30 minutes** of no activity.

### FT device

FT device will enter a so called "blackout mode" after **30 minutes** of no activity. In blackout mode the LEDs are turned off, but the FT device is ready to react to radio signals and user input normally.

FT device will turn off completely after **4 hours** of inactivity spent in blackout mode:



# Pairing procedure

A pairing procedure synchronizes your FT remote with the FT devices of your choice, so you can control them.



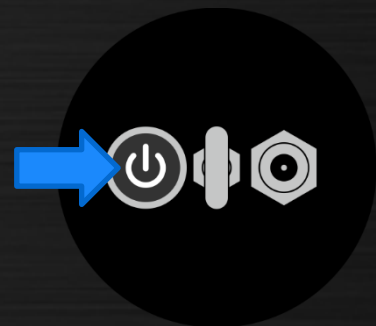
hold for  
**1 second**

First, press and hold the **PAIR** button for **1 second**. The blue LED indicator will start blinking. This indicates the remote has entered a pairing mode.

Prepare all devices you want to pair and make sure they are all turned off.

For each FT device, press and hold its power button for **3 seconds** to enter the pairing mode. The LEDs will blink twice in white color once successfully paired to the FT remote.

hold for  
**3 second**

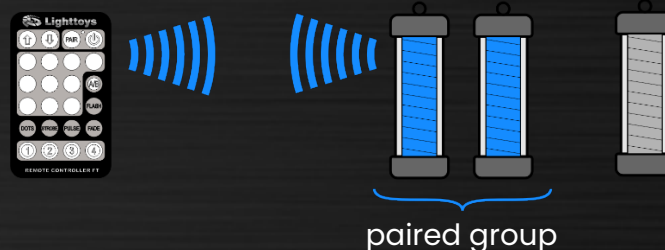


*Zebra Poi FT*

After all FT devices are paired, press and hold the **PAIR** button for **1 second**. The indicator LED will stop blinking.

Congratulations, the pairing procedure is now completed!

After a successful pairing, you have created a so-called "paired group" – a group of FT devices that react in unison to the commands from the FT remote:



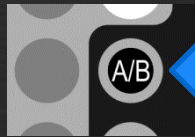
To expand an existing paired group with extra FT units, simply repeat the pairing procedure described above.

You can pair unlimited number of FT devices to a single FT remote.

## New pairing (group erase)

In some situations you may want to completely erase the existing paired group and start a fresh new pairing.

To do so, initiate the pairing procedure as usual by holding the **PAIR** button for **1 second** on the FT remote. The blue LED indicator will start blinking.



**hold for  
1 second**

Now press and hold the **A/B** button for **1 second**. The current paired group will be erased and the blue LED indicator will start blinking intermittently, indicating the group is empty.

Continue with the pairing of new FT devices as usual, and finish the pairing procedure again by holding the **PAIR** button for **1 second**. The blue indicator LED will stop blinking.

## Useful tip



*During the pairing process, the 2.4GHz radio spectrum is scanned and best channel is selected (with least interference). When performing with Lighttoys FT props in a new venue with a lot of radio interference, it is recommended to perform a new pairing procedure close to the actual gig where performance is about to happen.*

## Standby mode

After a successful pairing, all of your FT devices will enter a so-called “standby mode”. In standby mode, LEDs will shine either in blue color, indicating strong signal and trouble-free response; or in pink color, indicating a weak signal or no response at all:



FT remote is responding, signal quality is good.



Paired FT remote is turned off, or signal quality is weak.

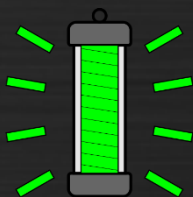
You can also access the standby mode by pressing the **PAIR** button on your FT remote. This is useful when you have many paired FT products and want to check their status.

## Power management

### Battery indication

All Lighttoys FT devices come equipped with a battery status indicator, giving you a rough idea, how much power is still left for your performance.

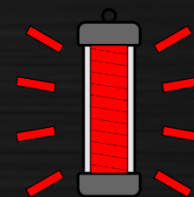
The battery level indication is displayed every time you turn your FT device on or off. The LEDs will double blink with a fade effect in a color progressing from green to red as the charge level drops:



Fully charged



Low battery charge when possible



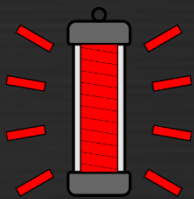
Empty charge immediately

## Auto-reduction of brightness

All Lighttoys FT devices offers a handy functionality – when the battery is approaching a nearly empty level, the brightness output is automatically lowered (by about 40%).

This extends battery life and can prevent adverse situations, like the device turning off during a running show.

## Over discharge protection



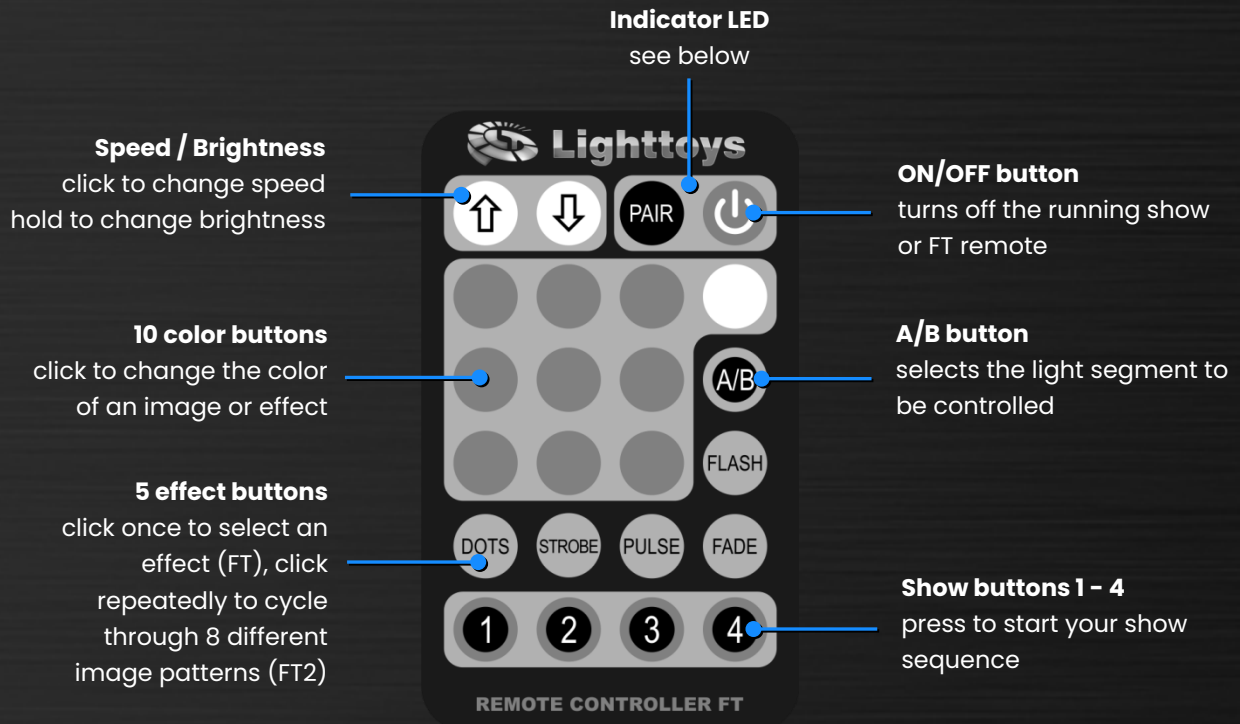
When the battery capacity reaches a critically low level, the device starts blinking in red color for **10 seconds**, then turns off completely to protect the battery from deep discharge.

## Overheat protection



When the temperature of the FT chip reaches a critically high level, the FT device starts blinking in yellow color for **10 seconds**, then turns off completely to protect its circuits against damage from heat.

# FT remote overview



## Indicator LED

The blue LED indicator located at the top of the FT remote indicates the different conditions of the remote:



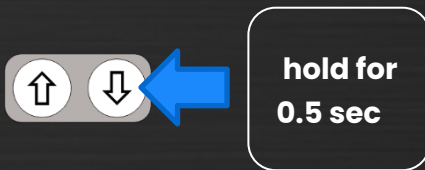
## Playback speed



The speed of the preloaded dynamic effects and images can be changed by clicking the **UP / DOWN** button repeatedly.

There are 8 speeds to choose from. When you reach the slowest speed, clicking the **DOWN** button once more will reverse the playback direction of the effect, indicated by a momentary dimming of the LEDs.

## Brightness level

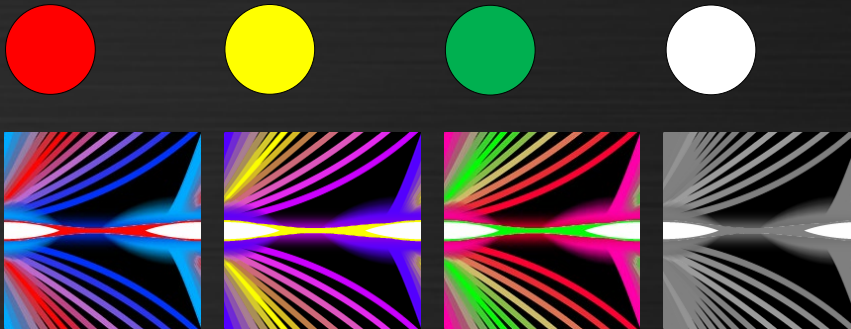


The brightness level of all images and programmed shows can be changed in steps by holding the **UP / DOWN** button for **0.5 seconds**.

There are up to 6 levels to choose from. The selected brightness level is shared between the default effects / images and programmed shows.

## Color buttons

There are 10 color buttons on the FT remote, which when pressed change the color of a dynamic effect or preloaded image in unique ways. An example follows for the FT2 device - STROBE picture #5 together with red, yellow, green and white color button pressed on the FT remote:



It is also possible to display a pure static color across all LEDs on FT2 devices, without any dynamic effect. To do so, first activate the Standby mode (press the **PAIR** button) then click the desired **color** button.

Alternatively, when the dynamic mode is already running, press & hold the desired **color** button for **0.5 seconds**.

## Effect buttons

There are 5 effect buttons available on the FT remote, which work slightly different depending on the type of FT device currently under control:

### FT device:

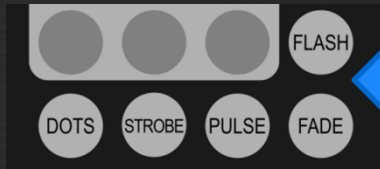
there is one unique dynamic effect available under each button FLASH, DOTS, STROBE, PULSE, FADE. Press the effect button to activate it.

### FT2 device:

comes preloaded with 40 beautiful image patterns, 8 under each button. Press the same effect button repeatedly, to cycle through the available patterns.

## Random mode

Press & hold any of the 5 effect buttons for **0.5 seconds**, to active a random playback of dynamic effects available on the FT and FT2 devices.



hold for  
**0.5 sec**

Each **8 seconds** a random effect is selected together with a random color.



click

When the random mode is running, press the **A/B** button to cycle between variant 1 and 2 of the random mode:

**Variant 1** – the random effect always happens across all LEDs together:



A+B

**Variant 2** – the random effect happens either on A/B segments independently or across all LEDs (random mix of both styles):



A & B



A+B

Random mode is useful for festivals or product displays, when you just want to play and have something interesting happening on your props :)

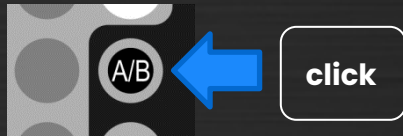
## Blackout mode

You can use the **ON/OFF** button on the FT remote to turn off the light output of the FT device, entering the blackout mode. In this mode you can start programmed shows discretely, without the audience noticing.

When you are in the blackout mode, press the **ON/OFF** button again to return to the previous mode, or press any color or effect button to turn on the light output.

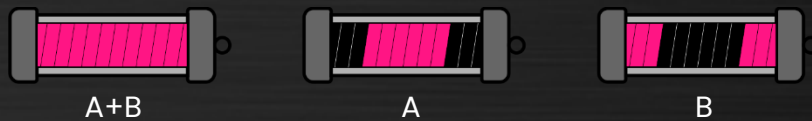
## A/B segments

Most of Lighttoys FT products come with two separate light segments that can be controlled independently.

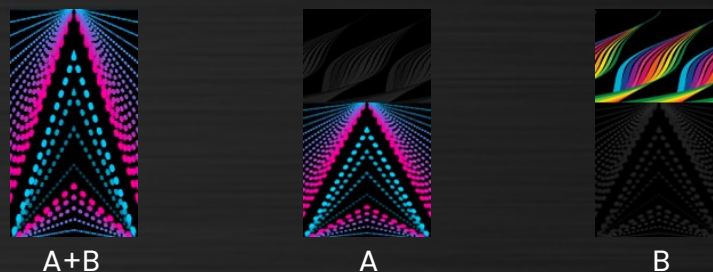


The **A/B** button on the FT remote selects which segment you currently control. Press it repeatedly to cycle between **A+B**, **A** or **B** segment.

FT device:



FT2 device:



*As you press the A/B button, the selected segment will dim its LEDs momentarily, so you know which segment is currently under control.*

## Creating & uploading shows

To start using the powerful programming capability of your Lighttoys FT props, download our free, easy to use, flexible composition software called [LtComposer](#), available for both Windows and Mac OS platforms.



With LtComposer you can create your light sequences (shows) built from images and patterns, preview them with music, and upload them to your FT devices for later synchronized start during your performance.

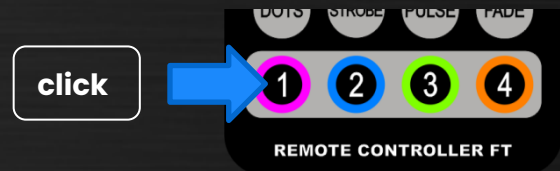
There are 4 different memory banks to choose from on each FT device, each bank can hold a different light show sequence. To learn all the great features and nuances of LtComposer, read the latest [user manual](#) on our support page.

## Starting the shows

Your uploaded shows can be started and stopped in several different ways, each suitable for different scenarios. Let's check them out!

### Via the FT remote

The most straightforward way to start your shows is from a paired FT remote by pressing a corresponding button labeled 1 to 4. The show sequence will start running immediately on all FT devices in the paired group.



Example: **Button 1** was pressed, all paired FT devices with correctly uploaded show sequence to memory bank **number 1** will start playing.

A running show can be stopped by holding the **ON/OFF** button on the FT remote for **1 second** or with a long press of the power button on the FT device.

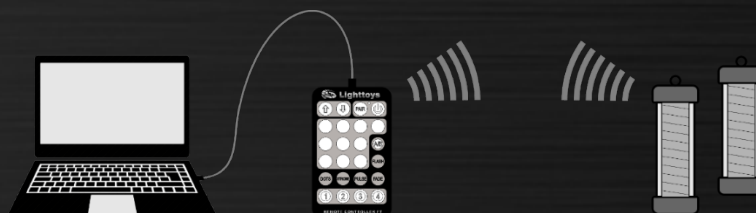


*When the show playback finishes, the paired FT devices will return to the previous state before the show was launched (e.g. color, effect, standby, or blackout mode).*

### Via LtComposer or other software

For users seeking more flexibility and control, like synchronized start of the light sequence and the underlying music track, there are several options.

The FT remote then acts as an intermediary transmitter (bridge), accepting USB serial commands from the connected computer and the software running on it:



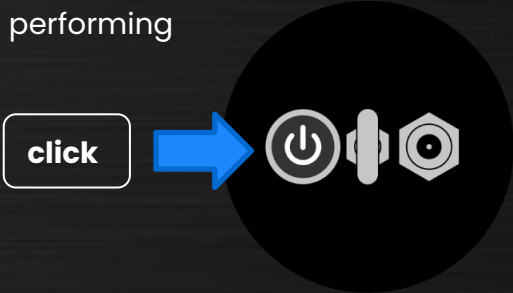
[LtComposer](#) with its "run show" & OSC command support is one possibility (consult the user manual for more details). There is also an FT module for the flexible software [Chataigne](#). One of our customers had success with using FT in the [Ableton](#) software.

For the technically skilled out there, the FT remote can even be controlled directly via serial commands sent over the USB line. This enables unlimited freedom and integration into any environment (contact us for more details).

## Manually on the FT device

The shows can be also started directly on the FT device via its power button. This might come handy in some special situations:

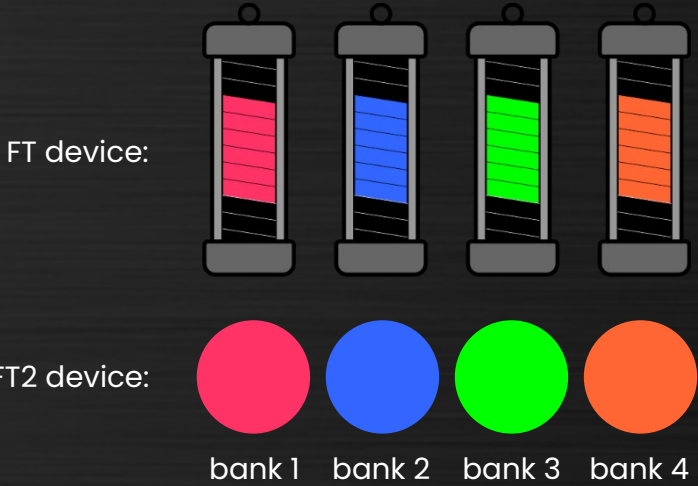
- when the FT remote is impractical for the performing act
- in case of a strong radio interference



Press the power button once in any mode (except blackout mode or a running show).

*Zebra Poi FT*

The FT device will enter the memory bank selection, where you can select which show to play. It is indicated either with the color of the **A** segment (FT device) or on the 4 LEDs closest to the beginning of the LED strip (FT2 device):



Press the power button repeatedly to cycle your selection between bank 1-4:



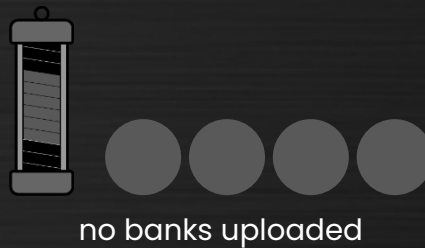
To confirm your selection, make a longer press of the power button – the FT device will enter a “prelaunch state”, indicated by a darker color of the LED(s), ready to start the show at a single click:



When you are ready, press the power button and the show sequence will start to play immediately. To stop the show, hold the power button on the FT device for **1.5 seconds**.



*Note: when there are no shows uploaded to the device memory, it will be indicated on the LEDs in dim white color.*



# Perfect Sync

Perfect Sync is a unique functionality of FT products. It makes sure that your devices always start and run synchronized, no matter how strong the electronic interference on the stage is or when the performer stops the show accidentally.

## How it works

When you press the button 1-4 on the FT remote to start the programmed light sequence, the remote begins to send repeatedly this start signal along with a current time mark (actual position into the running show):



If some FT device doesn't catch the initial start signal, the moment it finally gets it, it will calculate its precise position in the show (with 2 millisecond accuracy) and start from there!

Perfect Sync feature helps to rescue the following unfavorable situations:

- SITUATION 1 – some FT device(s) don't catch the start signal.  
*Remedy: wait for the FT device(s) to catch the signal; when the interference is strong, come closer with the FT remote.*
- SITUATION 2 – the artist stops the show by a long press of the main button.  
*Remedy: turn on the FT device, it will start from the correct time position immediately.*
- SITUATION 3 – some FT devices(s) were not turned on when the show started.  
*Remedy: turn on the FT device, it will start from the correct time position immediately.*

The following video shows the Perfect sync feature in action:

<https://youtu.be/avgoezJM9Z0>.

## Device charging

### FT remote

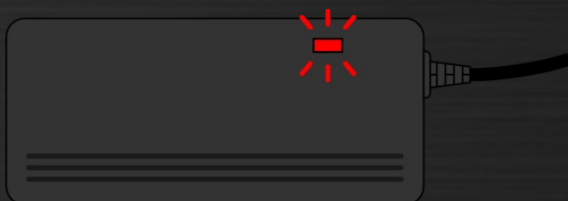
When the blue LED indicator starts to show low battery status (intermittent dimming), charge the FT remote.

You can use any 5V USB charger with a USB-C cable. FT remote is also charged whenever attached to a computer. The FT remote is designed to last several days of constant use.



### FT & FT2 devices

For charging your Lighttoys FT devices, please use the specific Lighttoys charger included. The charger has a red / green LED indicator to display its charging status:



**red** – battery is being charged  
**green** – battery full / no device connected



*Do not leave the charger connected to your FT devices without the mains cable also connected to your power outlet. If you do so, it will slowly discharge the device battery.*

For charging your Lighttoys FT2 devices, you can use any 5V USB charger, ideally with fast charging capability (2.0A or higher).

The battery charging is indicated on the FT2 device by pulsing of the blue LED indicator next to the USB connector. Once the charging is finished and battery is full, the LED indicator will turn off.



*Never leave your props fully discharged, this will substantially shorten the Li-ion battery lifespan. When not in use, it is recommended to store your props slightly discharged (at about 70% battery capacity).*

## Tips & tricks

### Silent ping

Silent ping is a special feature of all FT devices, increasing the comfort and assurance of artists on the stage.

If you press the power button of any FT device in blackout mode, it will blink softly in white color, giving you a visual indication that the device is turned on and ready for a show.

This feature works even during black passages of a running show.



*Zebra Poi FT*

### Turn off all devices

It is possible to turn off all paired FT devices from the FT Remote controller remotely, saving time when packing your props after the show. To do so, click and hold the **ON/OFF + DOWN ARROW** buttons together, for **1 second**:



## Other useful resources

### Lighttoys Academy

To quickly get to know how to use the LtComposer software with your Lighttoys props, please watch our short instructional videos in the [Lighttoys Academy](#).

*We wish you many great moments  
with Lighttoys FT!*

