COGNISYS
SCOUT
FLASH

Owner's Manual

Revision 1.2

COGNISYS INC.
Capture the Hidden World

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Table of Contents

1. Safety Instructions

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Follow all CAUTION notices to reduce the risk of personal injury, prevent damage to the Scout equipment, accessories, and devices (computers, cameras, flashes, etc). Failure to follow all CAUTION notices may void your warranty. CAUTION may also indicate a potentially hazardous situation which, if not avoided, may result in personal injury.

The safety alert symbol ⚠ precedes a general CAUTION or WARNING statement.

The electrical hazard symbol ⚡ precedes an electric shock hazard CAUTION or WARNING statement.

⚠ **CAUTION:** Only use approved power sources for Scout equipment. Use of other power adapters or batteries may damage the flash and/or attached equipment.

⚠ **CAUTION:** Misuse of Scout equipment could potentially damage your equipment. Cognisys, Inc. will not be held liable for damage to your equipment. If you have questions about safety please contact us!

⚠WARNINGS: Follow the warnings below. Otherwise, death or serious injuries may result

- Do not look directly into the flash during operation. Eye damage may result.
- Do not activate the flash in direct contact with your body or other objects. This may result in the risk of burns and fire.
- Do not disassemble or modify the flash. There are no user serviceable parts inside. The flash has internal components that may cause death or serious injury.
- Do not submerge the flash in any liquids.
- Do not use the flash in environments with volatile/flammable chemicals or gasses.
- Do not operate the flash without the battery door (and seal) fully installed and tightened.
- If the equipment is dropped exposing internal electronics do not touch the electronics. Hazardous voltage may be present.

2. Getting Started

The latest version of this manual is available on our website at:
https://www.cognisys-inc.com/store/scout-flash.html

The graphics/menus included in this manual may not be identical to the software that you are running. Improvements and adjustments to the software may happen prior to an updated version of the manual.

Not big on reading manuals? (What? No thumbs-up? We worked hard on this you know!) We have a few real world setups in the "5 - Examples" section. You can always come back to the technical details if you get stuck. You really should finish reading this section though – it goes through battery replacement and the basic care of the flash.

2.1 What is the Scout Flash?

The Scout Flash is an ideal solution for short-term or long-term trail photography. It is designed to be used with the Scout Camera Box but can also be used with the Scout Receiver.

The Scout Flash has several features not available with other flashes:

- Weatherproof
- Exceptional battery life (90 – 200 days)
- Wireless (up to 1/500 flash sync speed)
- Fast recycle time
- Quartz tube for durability and longevity
- Easy to use OLED dot matrix display
- All flashes can be controlled wirelessly through the Camera Box app (easy setup)
- Power level adjustments in 1/3 stops
- Time windows of operation – only fire when desired
- ¼-20 tripod mount ideal for inexpensive ball-heads
- Uses the Scout Li-Ion battery pack
- External sync jack for wired operation
- External power jack
- High performance low power ARM processor
- Wide operating temperature range: -40C – 70C (-40F – 158F)

2.2 What is Included

The Scout Flash includes:

- Scout Flash
- Scout 5200mAh battery
- Optional battery charger
- Quick-start guide insert

If you purchased the Scout Flash as a kit it may include additional accessories.

2.3 Battery Installation

Battery installation is a simple process and because the Scout Flash has excellent battery life – you won't have to do it often!

The Flash requires a Scout 5200mAh battery. You can optionally use the Scout six AA (LR6) battery pack. The AA battery pack is not recommended as the cycle time will increase and overall battery life will be considerably less. For details about maximizing battery life see section "5.4 - Maximum Battery Life".

Wires/connectors on this side

Pull-strap
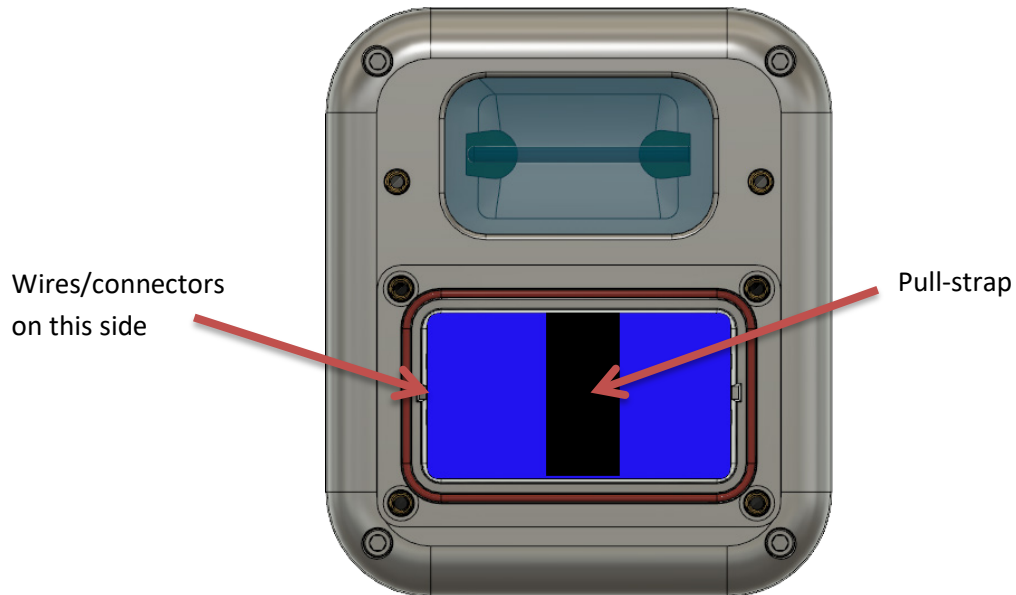
1. Be sure the Flash is clean prior to replacing the battery pack otherwise dirt may compromise the weatherproof seal.
2. Turn off the flash.
3. Remove the four thumb screws from the front of the flash.
4. Remove the battery door.
5. Remove the battery pack and disconnect it from the flash.
6. Install a fresh battery pack. The pull-strap of the battery should be facing out and the battery wires facing to the left side (toward the flash). If the battery wire is facing to the right the battery may not fully install.
7. Verify the orange O-ring is still installed.
8. Install the battery door.
9. Tighten the four thumb screws.

You can also power the Scout Flash with external power using the optional power cable available here:
https://www.cognisys-inc.com/store/3pin-extpwr-cable.html

⚠ If using the external power you MUST remove the internal battery.

The internal battery should be removed if storing the flash for an extended duration.

2.4 Quick Start Guide

Want to be up and running in two minutes or less? Here's the quick-start guide in case you misplaced it:

SCOUT Quick Start
FLASH

Press to turn on the Scout Flash.
Press and hold to turn off.

Enter button - use to change settings or enter menus.

Up and Down buttons - adjust flash power and navigate menus.

Flash fire - use to test fire the flash.

If you are using multiple flashes at once - make certain each flash wireless ID is different. Press Enter then:

Settings → Wireless Settings → ID

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https://www.cognisys-inc.com/scout-flash

SCOUT System Connections

SCOUT CAM CONTROL

Inside Camera Box

Hot Shoe w/
PC to Male RCA

Coiled 3.5mm Shutter Cable
*Included with Scout Receiver

Scout Sensor, Flash, and
Camera Box connected
via wireless.

Wireless ID = 1
Channel = 15

Wireless ID = 2
Channel = 15

Please let us know if you have any questions. We're glad to help!

support@cognisys-inc.com
www.cognisys-inc.com

Phone: 231-943-2425

2.5 Cleaning and Care

We want your Scout equipment to last – so here are some brief steps to keep it happy!

2.5.1 Cleaning

Turn off the flash prior to cleaning and wait at least two minutes. For cleaning we recommend a slightly dampened (not wet) micro-fiber cloth. Do not spray water directly into the inside of the equipment. Any liquid that goes into the flash may cause an electrical failure of the device. Do not use a flammable liquid/solvents or cleaning agents on the flash – just a micro-fiber cloth (dampened if needed).

2.5.2 Care and storage

Scout equipment is designed to handle normal wear and tear but there are some things to avoid:

- Do not get the unit wet internally.
- If not using the external connectors be sure to attach the protective cover or water may leak into the controller causing damage.
- Do not drop the unit (the display, much like a cell-phone, is made of glass). The flash tube itself may be damaged if the flash is dropped.
- Protect the unit's display and membrane when packing up your gear. If a tripod fights the display or membrane on the flash – the flash will lose.
- Do not allow dirt to get into the weatherproof seal. This could cause seal failure and damage to the flash.
- **Remove the battery pack prior to long term storage**.

Failure to properly care for the Scout Flash could result in a leak that may cause damage. The product warranty does not cover water damage resulting from user error.

2.5.3 Maintaining Weatherproof Design

Scout equipment is designed to meet the most challenging environmental conditions. It does, however, require some care to maintain its weatherproof sealing.

Prior to opening the equipment turn it off, wait at least two minutes, and rinse it under gently running water if it is dirty.

It's very important to keep the housing's battery door silicone seal clean. A single hair or grain of sand could potentially cause the housing to leak and damage the equipment. The goal is to prevent dirt from getting into the seal! If you need to clean the gasket use a pair of tweezers to remove the seal, rinse it under water, allow it to dry, and re-install.

Below is an image indicating the seal location. It is recessed in a groove in the battery compartment.
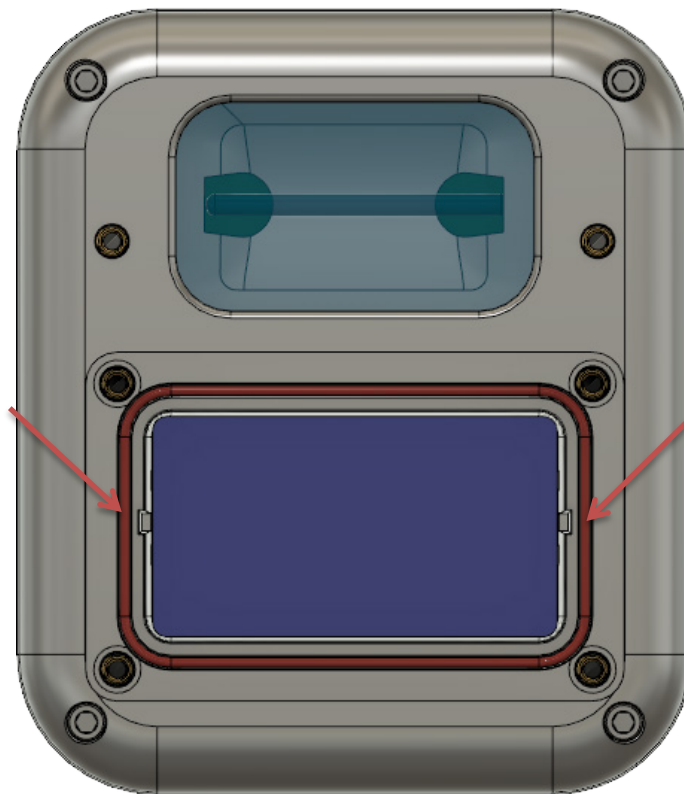
2.5.4   Painting the housing

Many of our customers will want to paint their housings to help camouflage the equipment for the environment they are shooting in. Good news! Your Scout Flash has already been primed for painting!

We recommend a spray paint designed for adhering to plastic such as "Rust-Oleum Painter's Touch Ultra Cover 2X". It bonds well and is quite durable. A few notes before you get started:

1. Cover the lens opening with masking tape.
2. Cover the rear membrane with masking tape.
3. Cover the ePTFE vent with a small circle of masking tape. Paint can damage the vent and void your warranty. Here is the location of the vent:

4.   Place the dust-caps on prior to painting. The dust caps do not have to be masked.

We also sell a simple masking kit with pre-cut acrylic plugs for the membrane and lens area to simplify the painting process.

2.6 The Scout Flash

SCOUT
Connection Diagram

External Power
Cable - 2m
(Optional)

4m Scout Cable
Included

Use camera to control
Flash(es)

Flash Sync In

12VDC In

Connect to Scout
Weatherproof Flash

Coiled 3.5mm Shutter Cable
(Included)

Scout RX
pics: 8
Volts: 8.34

COGNISYS
SCOUT
RECEIVER

13

There are two external connectors on the Scout Flash (left to right):

1. External power connector (3-pin)
        10-18V external power with optional power cable

2. Flash connector (4-pin)
        Wake/ready control for the Scout Flash
        Flash sync from the camera/camera controller
        Wake from the camera controller
        Ready from the flash to the camera controller

The Scout Flash uses weather-resistant connectors and cables. If the flash will be used outside during the rain, snow, or condensing humidity be sure to have the connectors locked in place (including the included connector caps).

The small four holes in between the two connectors is a waterproof ePTFE vent.

3. Basic Navigation

In this section we'll go into the basics of adjusting settings for the Scout Flash. If you find your eyes glossing over with all the technical discussion you can always skip to the "5 - Examples" section to start using your Scout Flash.

3.1 Buttons

There are five buttons on the Scout Flash:

This is the power button. Press this button to turn on the Scout Flash. You will see the Scout logo at power-on. At the bottom of the screen is the current version of the software.

To turn off the Scout Flash simply press and hold this button for approximately two seconds.

Note: You can also give the power button a quick press to take you back to the main screen. This is helpful if you're three levels deep in the menus and just want to get going!

This is the enter button. On the main screen this will bring up the various settings. Use this button to select or modify any setting.

 and

On the main screen this will adjust the current power level of the flash. If you are in the settings use these buttons to navigate the menus.

Test fire the flash. It will use the current power level.

3.2 Main Screen Icons

The Scout Flash will display different icons depending on what features you have turned on.

1,2,3

This is the current wireless ID of the Flash. The Flash will show up as "Flash x" in the app, where "x" is this wireless ID.

Wireless is turned on. If using hard-wired flashes you can turn wireless off to save a small amount of battery life. See section "4.2.5.1 - Wireless Settings" for details.

Displays the current power setting. This affects how long the battery life will be. See section "4.2.4 - Power Settings" for details.

The flash will not fire because the current time is outside either of the two time windows. See section "4.2.5.2 - Time Settings".

Multi-flash is enabled.

HOT

The flash has reached its maximum operating temperature. It will resume normal operation as soon as it cools down.

CHG

⚠

A malfunction has occurred that is preventing the flash from reaching its proper operating voltage. The flash will automatically turn off in a few seconds. If this comes up it is time to contact us!

3.3 Menu Icons

Inside the menus you will see the following icons:

✓

This checkmark means the feature is enabled (turned on).

←

This will take you back to the previous menu. If you would like to go back to the main screen you can also just tap the "power" button.

3.4 The Screen

The Scout Flash features an OLED display. Wonderfully readable – but the display is a little power hungry. By default, the flash will turn off the display after 30 seconds of inactivity (You can adjust this though – See section "4.2.5.3 - Screen "). If the display is off all you need to do to turn it on is tap any button.

How do you know if the Flash didn't just turn off? When you first turn it on you will see a short "splash screen" that shows "Scout Flash" and also the current software version. If the flash was already on, however, you'll go right to the last screen you were on.

You probably want the display to turn off anyways – no point in drawing attention to the flash (from either two or four-leggeds!).

As soon as the display goes out the LED indicators will also not light up.

3.5 LED Indicators

The "Green" LED will light when the flash is charging. "Red" indicates that the flash is fully charged.

The flash may still be able to fire even if it is charging (but at a reduced power level).

4. Settings

4.1 Settings Navigation Map

Below is the navigation map for all the settings. The links are "clickable" to get you to the specific details about the setting.

Power Level Adjustment

Mode   ⟶

      Manual
      Master
      Pulsed

Multi Settings

Power Settings ⟶

      Low
      Medium
      High

System Settings ⟶

      Wireless Settings ⟶

            Enabled
            Channel
            ID
            Scan Channels
            Wake Up

      Time Settings ⟶

            Set current time
            Window On
            Set Start Time
            Set End Time
            Window On
            Set Start Time
            Set End Time

      Screen Timeout ⟶

            Off
            30 Sec
            2 minute

Brightness ——————————>
       High
       Low

Lockout ——————————>
       On/Off
       Change PIN
       Current PIN

LED Debug

Load Defaults

Statistics

4.2 Setting Descriptions

4.2.1 Power Level Adjustment

On the main screen you can use the "Up" and "Down" buttons to adjust the current power level of the flash. It is adjustable in 1/3 stops.

4.2.2 Mode

There are three operating modes available on the Scout Flash.

4.2.2.1 Manual

This is the typical operating mode you would use for trail photography. The power level is adjusted manually. The flash will fire once every time it is commanded to do so.

4.2.2.2 Master

If one flash is configured as the "Master" flash it will fire any other flashes in the system. Only one flash should be configured as a master. This mode is useful if using the flashes with non-Scout equipment. This mode allows you to only hardwire one flash – the rest will be fired via wireless and all controlled by the master flash.

4.2.2.3 Pulsed

The flash will fire multiple times for every time it is activated.

4.2.3 Multi Settings

If you've configured your flash for the "Mode: Pulsed" you can choose the power level, the number of flashes, and the frequency of the flashes.

This setting is only visible if the "Mode" is changed to pulsed.

Allowable flash rate is dependent on the flash power setting.

4.2.4 Power Settings

The Scout Flash has three different power modes available. Most applications should leave this setting at "Medium" (the default). If you're interested in the expected battery life for the different power modes please see section "8 - Specifications". Here is more detail about the different power modes.

High:

The flash will never enter sleep mode and will always keep itself fully charged. This significantly affects battery life. We recommend to use it only for day shoots or if using a large external power source.

Medium:

The flash will enter a lower power mode significantly improving battery life. It will reduce its internal charge voltage but periodically top it off so it can quickly respond to an event. The flash will always respond to a trigger signal from the camera box or the wired port in this power mode.

Low:

The flash will not keep itself charged at all and when an event occurs it will start charging. When using this mode it is important to wake up the flash a couple of seconds before a flash is needed. If the flash is asleep for long enough, the low power setting will allow the capacitor to become fully discharged – the flash is not always ready in this mode. The low power setting is typically how most standard speed light flashes function in sleep mode. If using the flash with the Camera Box or Scout Receiver it will be requested to fully charge its capacitor prior to activating the camera.

4.2.5   System Settings

The "Settings" category contains less frequently adjusted settings.

4.2.5.1 Wireless Settings

Wireless is used by the Scout Flash to communicate with other Scout equipment. It uses a 2.4 GHz proprietary RF protocol.

4.2.5.1.1   Enabled

Normally you would leave wireless enabled. It only minimally decreases battery performance if left on.

4.2.5.1.2   Channel

This determines what frequency the flash operates on. All Scout equipment for a given setup must be on the same channel to operate properly.

If using more than one Scout setup in the same area (within 60 meters / 200 feet) you should assign each setup its own unique channel.

The default "channel" is 15 and typically gives the best performance.

4.2.5.1.3   ID

If using multiple flashes in a setup each flash should have its own ID (1 – 8). Inside the Camera Box app the flash will correspond to its given ID. If this is set to "3", then the flash will show up as "Flash 3" inside the app. Just be sure that each flash is unique – otherwise in the app you won't know which flash you're talking to!

4.2.5.1.4   Auto ID

Normally if you have more than one LED at the same location they have to have their own unique ID set or else the app (and you!) won't know how to differentiate between them. The LED's have the ability to automatically assign their own ID. If you wish to override this feature you can turn off the "Auto ID" feature.

4.2.5.1.5   Scan Channels

If selected the flash will scan the current radio frequency environment and display a bar graph showing the "cleanest" channels to operate on. For maximum range you should select the channel with the highest bar on the graph. You can use the ⬆ and ⬇ buttons to navigate through the channels. If you press the ⏎ button while on a channel your settings will be updated to use that channel. To make no changes use the ⬆ or ⬇ buttons to navigate to the ↩ symbol and then press the ⏎ button.

4.2.5.1.6   Wake Up

When a subject is detected, your Scout sensor will send a wakeup signal to the other Scout equipment (Camera Box, Flash(es)) to get them ready to take a photo (provided Wireless is enabled).

The "Wake Up" setting determines the speed of wireless wakeup. "Normal" works for most applications but if you need a faster response time you can change this setting to "Fast".

Note: All Scout equipment for a given setup must have its wakeup speed set to the same value. Equipment may not wake properly if not set to the same "Wake up" setting.

Battery consumption will increase on all devices when wake-up speed is set to "Fast".

4.2.5.2 Time Settings

The Scout Flash can limit when it will activate based on the time of day. If you are only interested in using the flashes for night photographs you can use the "time settings" to create a "window" of time. You simply set the current time, a start time, and an end time, and turn on the window.

Two windows are supported. This lets you set up more complex scenarios for triggering (two hours in the morning, two hours in the evening).

If the current time is outside of both of the "windows" then you will see $^z{}_z{}_z$ on the main screen indicating that the flash is sleeping and will not activate (wired or wirelessly).

4.2.5.2.1   Set current time

This will set the current time for the flash. The flash will remember this time even if the batteries are removed (for over 12 hours).

If using the Camera Box app the current time is set automatically using your phone/tablet/computer's current time.

4.2.5.2.2   Window On

A ✓ next to this indicates that the window is enabled. It will use it's corresponding "Start Time" and "End Time" for when it should be allowed to flash.

4.2.5.2.3   Set Start Time

The "Start Time" sets when the window begins.

4.2.5.2.4   Set End Time

This will set the end time for the window. Here are a couple of examples:

Start Time: 6:00AM
End Time: 8:00AM

In this case, the flash will only activate for a two hour period in the morning.

The next example is a little different:

Start Time: 6:00PM
End Time: 8:00AM

Since the start time is after the end time (because it is set to **PM**), the flash will activate for 14 hours – starting at 6:00PM and ending at 8:00AM the following day. So please be sure to pay attention to the AM/PM – it could easily get you into trouble!

4.2.5.3 Screen Timeout

There's no hiding it – OLED displays are a little hungry for battery life. They also may draw some unwanted attention to the flash! In this setting you can adjust how long the screen will remain on after a button press:

1) Off. Do not turn off the screen.
2) 30 seconds (default)
3) 2 minutes

The "Lockout" feature (see below) will not function if the "Screen Timeout" feature is turned off.

4.2.5.4 Brightness

The flash has two brightness levels – "Low" and "High". "Low" is the default.

4.2.5.5 Lockout

"Lockout" is for those paranoid (and rightly so!) people out there who don't want humans stopping by and changing your settings. You've invested in clever ways of securing your camera trapping equipment. That might prevent theft – but it doesn't prevent people from simply turning off your equipment! "Lockout" lets you choose a 4-digit security PIN number that must be entered **any time the screen is turned on**. If you have the "Screen Saver" setting set to "Off", obviously the "Lockout" feature won't work. Enabling the "Lockout" is straight-forward:

1) Select "Change PIN" and choose your PIN number. Do NOT use 0000 as that is the default PIN when the user is prompted.
2) Select "Enable".

Much like your bank card it is best to remember the PIN. The flash will remember the PIN and even if you turn off the power OR even remove the batteries – you will not be able to use the flash until the correct PIN is entered.

4.2.5.6 LED Debug

If "LED Debug" is enabled then the flash will periodically (about 100ms) briefly blink the green LED just to let you know that it is still operating. This can be useful for setups that are close to home. It could, however, attract attention from animals (including two-leggeds!). It defaults to off.

4.2.5.7 Load Defaults

This will load the factory default settings for everything.

4.2.5.8 Statistics

The Scout Flash keeps track of a handful of items. These can help us track down problems you might be having. They include:

> Maximum battery voltage
> Number of flashes
> External sync signals
> Min/Max temperature
> Wireless statistics
> Usage statistics

These statistics are in no way wirelessly transmitted to Cognisys, Inc.

5. Examples

In the following sections we will walk you through some real-world setups/examples using your Scout Flash. Be sure to check out our website and follow us on YouTube (http://www.youtube.com/user/CognisysInc/) for video examples. Sometimes watching a video makes the whole process much easier to understand!

5.1 Wireless Flash

This is the ideal setup. The Scout Camera Box (or Scout Receiver) will wirelessly wake up and activate the flash(es).

The first step is to make sure that each flash has its own unique "Wireless ID". On the flashes go to:
Settings->Wireless Settings->ID   and change the ID so each flash has its own unique ID.

For the Camera Box no additional settings changes are required. You simply need a cable inside the box to connect your camera's PC sync connection (or via a hot shoe if your camera doesn't have a PC sync connector) to the Camera Box controller. The cable is a C_PC_RCAM_LOCK:
https://www.cognisys-inc.com/store/pc-sync-cable-locking.html

If using the Scout Receiver **without** the Camera Box you will need the above cable as well. In order to properly activate the flashes you need to turn off the feature to use the Camera Box. You only turn off this feature if using the Scout Receiver by itself. On the Receiver turn off:
Settings->System Settings->Use Cam Ctrl (uncheck it).

The system will then follow this process for the Camera Box setup:

1. The infrared beam (or PIR) detects a subject.
2. The Receiver (or PIR) tells the camera box a subject has been detected.
3. The Camera Box tells the camera to take a photograph.
4. When the camera takes a photograph it will send the flash sync signal to the Camera Box.
5. The Camera Box will then fire the flash(es).

The system will then follow this process for the Receiver Only setup:

1. The infrared beam detects a subject.
2. The Receiver tells the camera to take a photograph.
3. When the camera takes a photograph it will send the flash sync signal to the Receiver.
4. The Receiver will then fire the flash(es).

Inside the Camera Box app the additional flashes will show up. This makes adjusting lighting for a camera trap incredibly easy – especially if the flashes are mounted in "difficult" places.
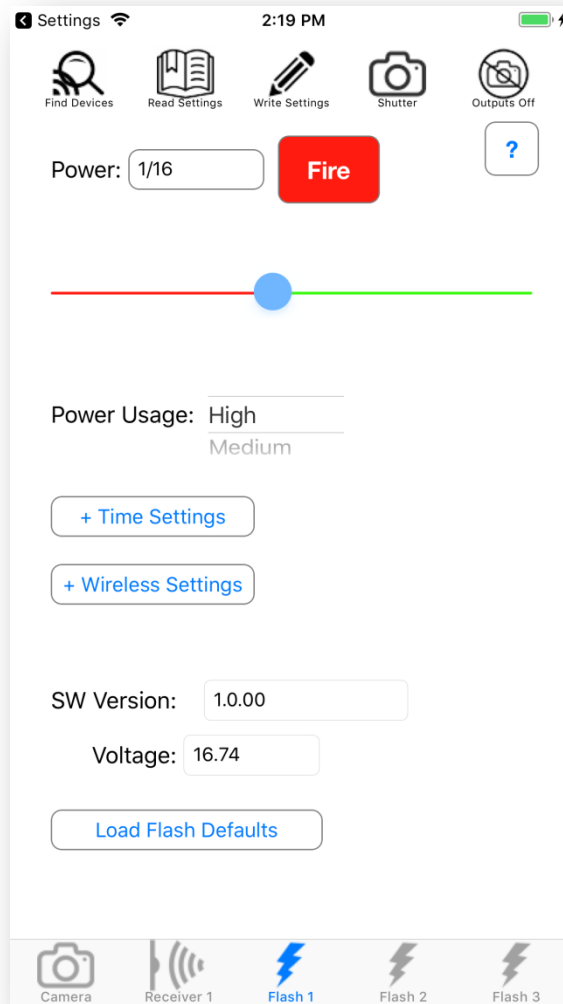
5.2 Wired Flash (Scout Camera Box/Receiver controls flashes)

Not wanting to use wireless? No problem! In this scenario the 4-pin Flash connector is used on the Camera Box or Receiver.

You still need a way to connect the Camera Box or Receiver to your camera's PC sync connection using the C_PC_RCAM_LOCK cable. Then the flashes are connected to the Camera Box or Receiver's flash connector using 4-pin cables and "T" adapters.

https://www.cognisys-inc.com/store/camera-box-flash-cables.html

No additional settings changes on the Camera Box or Receiver are required!

5.3 Wired Flash (3rd party sensors)

Have another sensor you want to use with the flash(es)? Unfortunately that sensor won't have the capability to properly wake the flashes for first-picture functionality. You have two options:

1) Don't let your flash enter low power mode. You should get about two weeks of battery life in this mode. Go to:
   Settings->System Settings->Power Mode (see section "4.2.4 - Power Settings" for details) and change it to "High".
2) Alternatively you may be able to configure your sensor so that the first camera activation wakes the flashes and the second will properly expose the image. This means that you will always have a first dark frame in the photograph but you can still take advantage of the 90+ days of battery life on the flash.

5.4 Maximum Battery Life

Battery life is a tricky business. There is some magic chemistry going on inside of those things that can significantly affect the performance of your Scout equipment. Here are some things to consider:

1. Operating temperature – batteries are typically rated at 25C. They lose some of their capacity at warmer temperatures but at cold it's *really* bad. A 5200 mAh battery at -20C (-4 F) could only have 2600mAh of capacity. So if your Scout Flash normally had 80 days of battery life it would be cut down to 40 days – a big difference! If you're planning on long-term deployments at cold temperatures you may want to consider an external battery pack.
2. The Scout Flash displays the current voltage it is receiving from either the internal or external battery pack. This will help you decide when it is time to replace the battery. The voltage is also reported in the Scout Camera Box app for each flash. For the Scout Li-Ion pack 16.8V is fully charged, 14.8V is middle of the road, and completely empty is around 12V.
3. Only charge Li-Ion batteries at room temperature. Their capacity can be damaged if charged when cold or hot.

Now that we've worked through the battery chemistry here are a few things you can do to extend the battery life of the flash:

1. Make sure the "Power Mode" is set to "Medium" or "Low". For camera trapping typically the camera is the slowest element, often taking nearly a quarter of a second to wake up and take a photograph.
2. Turn off the wireless option if not using it (See "4.2.5.1 - Wireless Settings"). This won't make a large difference but every little bit helps!
3. Leave the Screen Saver at the default 30 seconds (See "4.2.5.3 - Screen Timeout").
4. If possible keep the flash out of direct sunlight. Electronics tend to draw more current when warm.

Following these steps can help you get nearly three months of battery life from the Scout Flash!

6. Installing the Reflash software (optional)

What is "reflash"? It's a small program that allows you to update the firmware on your Scout Products. **You do not need this program to use your Scout equipment.** Rest assured if you just purchased your Scout it ships with the latest software available. If, however, new firmware becomes available you may want to upgrade your controller. Do you have to upgrade your firmware? No. Should I upgrade your firmware? Maybe. We say "maybe" because as new firmware is released we are adding and improving features. This means changes to the user interface and things might not look exactly how they did before you updated the firmware. So if you discover that a new feature is available that you absolutely have to have, then by all means go ahead and reflash your controller. Just keep in mind that things might look and behave a little different! The other consequence to reflashing your controller is that you *may* lose any stored settings.

Scout products can only be updated over USB. The USB connector for the Scout Flash is located inside the battery compartment in the back. The reflash process takes a few seconds.

Reflash requires a firmware package (instructions included). You can find the package here: http://www.cognisys-inc.com/products/scout/scout_tech_specs.php

 Whether you use Windows or OS X, you will **need** Oracle's Java installed for Reflash to load. You can download it here: http://java.com/download

6.1 Windows Installation

Windows installations should automatically detect and download the USB drivers required. Some operating system settings can prevent automatically downloading the drivers. If that is the case, use the above link in section "6 - Installing the Reflash software

Once the installation is complete you will have a "Start Menu" folder called Cognisys. Underneath that you will find the Reflash icon.

6.2 OS X Installation

Reflash requires Java 1.7 or later from Oracle. This version of Java requires that your OS X version be 10.7.3 (Lion) or above. It has not been tested with older versions of Java or earlier versions of OS X and is not supported.

Use the above link in section "6 - Installing the Reflash software".

Once installation completes you will have a "Reflash" icon on your Launch Pad:

7. Troubleshooting

Problem	Cause	Solution
Display does not light when power button is pressed.	Battery pack not installed.	Insert batteries.
	Battery pack is low.	Recharge the battery pack.
Display keeps turning off	Screen Saver is on	This is normal in order to conserve energy. You can disable the screen saver. See section 4.2.5.3 for details.
Flash asks for PIN code every time.	"Lockout" is enabled.	See section 4.2.5.5 for disabling the "Lockout" feature.
Flash does not activate when sensor is activated.	Flash is turned off.	Press the power button to wake the flash.
	Wrong wireless channel	Make sure that the flash matches the wireless channel of the Camera Box or Receiver.
	Camera is off/not connected.	Turn on the camera. The Camera Box/Receiver need to see the sync signal from the camera in order to operate properly. If the camera doesn't take a picture, there won't be a sync signal, and no flash.
	PC Sync cable not attached/loose.	Verify that the cable is fully seated (PC connections are less than ideal). If using a hot-shoe on your camera press the test button a couple of times to make sure the connection is good.
	$^{z}z_{z}$ is on the display.	"Time window" is preventing the flash from firing. See section 4.2.5.2.
	$\overset{\text{HOT}}{\triangle}$ is on the display.	The flash has exceeded its operating temperature. Allow it to cool down and it will automatically resume operation.
Need to restore factory settings	You just want to start over!	With the flash powered off, press and hold the power button until the red power light goes out. Release the power button. Optionally you can load the defaults from the settings page. See section 4.2.5.7.

If you cannot resolve a problem with your Scout Flash, please contact us at support@cognisys-inc.com. We want to make sure that you are completely satisfied!

8. Specifications

Specifications are intended for reference only. The design may be modified to improve features or functionality without notice.

Specifications	MIN	NOM	MAX	UNITS
Input Voltage	5	14.8	18	Vdc
Input Current – Power Mode High	-	14	-	mAdc
Input Current – Power Mode Medium		2.3		mAdc
Input Current – Power Mode Low		0.7		mAdc
Ready Output Current Sink	-	-	1	Adc
Battery life – Power Mode High (Scout Li-Ion) [1]	-	14		days
Battery life – Power Mode Medium		90		days
Battery life – Power Mode Low		220		days
Full power flashes per battery charge		2600		cycles
Power-on to full charge		2.87		sec
Power-on to flash capable		1.83		sec
Full power flash recycle to full charge		1.88		sec
Full power flash recycle to flash capable		1.13		sec
¼ power flash recycle to full charge		0.51		sec
¼ power flash recycle to flash capable		0.05		sec
Real-time clock life without batteries	-	16	-	hours
Wireless Range [2]		15	30	m
		50	100	feet
Operating Temperature [3]	-20	25	70	C
	-20	77	158	F

- 32-bit high performance low current ARM Processor
- OLED dot matrix display – great readability in direct sunlight!
- Wireless connectivity: Proprietary 2.4GHz
- Real-time clock for time-windowed triggering (two windows provided)
- USB for reprogramming

[1] See section "5.4 - Maximum Battery Life" for additional information on battery life.

[2] Several factors can affect the wireless range. Congestion, terrain, etc…

[3] This cold limitation is due to the battery technology. If external power is supplied -40C is possible.

Flash Duration	t.5 (time)	t.5 (speed)	t.1 (time)	t.1 (speed)
1/1	1.99 ms	1/500	3.50 ms	1/285
1/2	1.32 ms	1/750	1.34 ms	1/750
1/4	642 us	1/1550	662 us	1/1600
1/8	348 us	1/2070	369 us	1/2700
1/16	162 us	1/6200	170 us	1/5880
1/32	128 us	1/7800	148 us	1/6750
1/64	85 us	1/11800	105 us	1/9500
1/128	48 us	1/20800	70 us	1/14290

Flash durations are a mix of marketing and science. There are two different methods for measuring: t.5 and t.1.

t.1 is the flash duration where 90% of the light is produced.

t.5 is the flash duration where 50% of the light is produced. Obviously the 50% duration will result in better numbers than the t.1. That's why some flash manufacturers use this method – it makes their flashes *look* faster! We've included both for your reference.

The flash times in the above chart are exact – the flash speed (the reciprocal of the time) is an approximate to more round numbers.

The flash durations were measured using a high-speed PIN photo-diode.

9. Warranty

Limited Warranty

The Scout Receiver, Transmitter, Base Transmitter, PIR, Flash, and Camera Controller (hereby referred to as "Scout Equipment"), software, and related equipment is provided by Cognisys, Inc. "as is" and "with all faults." Cognisys, Inc. makes no representations or warranties of any kind concerning the safety, suitability, lack of viruses, inaccuracies, typographical errors, or other harmful components of Scout Equipment and its related software. There are inherent dangers in the use of any product, and you are solely responsible for determining whether Scout Equipment is compatible with your equipment and other software installed on your equipment. You are also solely responsible for the protection of your equipment and backup of your data, and Cognisys, Inc. will not be liable for any damages you may suffer in connection with using or modifying Scout Equipment and/or its related software.

All electronic products are warranted to be free from defects in materials or workmanship for two (2) years from the date of purchase. Within this period, Cognisys Inc. will, at its sole option, repair or replace any components which fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alterations or repairs. This warranty is non-transferable.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL COGNISYS BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Cognisys, Inc. retains the exclusive right to repair or replace the product or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

10.   Revision History

Revision	Date	Change
1.0	02/07/2019	Initial Release
1.1	10/29/2019	Added "Auto ID" for wireless and the main screen display.
1.2	02/24/2022	Clarified operating temperature at cold.