info@pi-lit.com
+1(949)415-9411

pi-Lit® Sequential Flare (ICS) – *Quick Start Guide*

IMPORTANT: A tap is a momentary press; a hold is a 3-second press!

- **Battery Status**
  - When Flare is OFF, press for 3 seconds the square π (*pi*) button.
  - A yellow/green LED will begin to flash
    - 5 yellow = full batteries, 4 yellow = good batteries, 3 yellow, 2 red = low batteries, 1 red = batteries depleted (time to change batteries)
- **Turning on Flares – Rapid Deployment System (RDS) – Simply pull off case! (<u>Rechargeable only</u>) OR,**
  - Briefly tap either button.
    - Yellow/Green LED will illuminate indicating that the flare is turning on.
    - First flare takes approximately 3 seconds to turn on
    - The remaining flares will take approximately 1 sec to turn on
  - Wait untiil the flare begins flashing, then turn on the next flare.
  - ***Remember to wait until the flare begins to flash before turning on the next flare in line.***
- **<u>Tilt Sensor – Choice of LEDs – Locking Orientation of LEDs</u>**
  - There are 16 LEDs on the SIDE of the flare and 4 LEDs on the TOP.
  - The flare has a tilt sensor: When placed flat on a surface the side LEDs flash. When magnetically attached to a vertical panel, or when on its edge, the "top" LEDs will flash.
  - To disable the tilt sensor, simply TAP the square π (*pi*) button while the flare is operating. This will send the command to all the flares to "lock" on the 4 TOP LEDs even if it is in the HORIZONTAL position. TAP the square π (*pi*) button again and the 16 side LEDs will be locked on (irrespective of orientation). The 3rd TAP of the square π (*pi*) button will bring the flare back to its default state where the tilt sensor controls the choice of LEDs.
- **Changing Patterns**
  - To change patterns, simply TAP the round power button on any flare that is flashing.
  - **Reverse Sequence:** With flares on, momentarily tap both buttons simultaneously on any flare. This will reverse the sequence (stored in memory for next time).
- **Turning OFF the Flares**
  - There are two ways of turning OFF the flares:
    - To turn off all the flares: Press and hold the power (round) button for 3 seconds. All the flares will turn off and a red LED will flash for a few seconds to indicate flare is turning off.
    - To turn off a single flare: Press and hold the square *pi* button for 3 seconds.

info@pi-lit.com
+1(949)415-9411

Pairing Groups of Flares Together

Not part of Quick Start – To save the environment we added this to the back of Quick Start rather than print an additional piece of paper. For those techies out there that might be interested.

Groups, Frequency and Channels:

The Ice Cream Sandwich Flare uses radio communication to establish a "network" connecting individual flares. This is how they establish their proper sequence number. If one fire unit deployed a set of 10 ICS flares on the east-bound side of a roadway and a law enforcement unit deployed a set of 10 ICS flares on the west-bound lane, or upstream on the same side, the radios might "hear" each other. If fire turned on number 1 flare and police turned on number 1 on their side around the same time, one of these flares might think it should be number 2. You can envision other scenarios where flares operating in proximity might lead to asynchrony. Close is 200 feet.

To avoid this crosstalk interference we have developed a "pairing mode" system. Up to 10 groups of flares may be used in proximity without interfering with each other, OR, they can be paired on the same frequency to create one large group of unlimited numbers of flares.

This is done automatically for you. Easy stuff.

PAIRING:

Turn on a flare. Wait until it flashes to turn on the next flare...and so on. You will notice that a small red "indicator" LED is flashing on the top (middle) of each flare as it turns on. This red flashing LED indicates that the flare is in "Pair" mode. While the flares are in Pair mode any flare turned on will join that group. Simple as that. The Pair mode will time-out in 5 minutes after the last flare is turned on, OR, you can end pair mode by holding both buttons on any flashing flare down for 3 seconds.

Once the group of flares is no longer in Pair mode (either by timing out or holding down both buttons for 3 seconds) any flare that is turned on in proximity will create a new group. This new group will be on a different frequency and will not talk to the first group that you lit up.

So, to recap, pairing starts automatically when you turn on a flare. Any flare turned on will automatically join that group while the small indicator red LED is flashing. Once Pair mode ends, any flare turned on will create a new group, and any flare turned on will join this new group. End of story!

info@pi-lit.com
+1(949)415-9411

Lithium Rechargeable Ice Cream Sandwich Flare
The cat's meow!

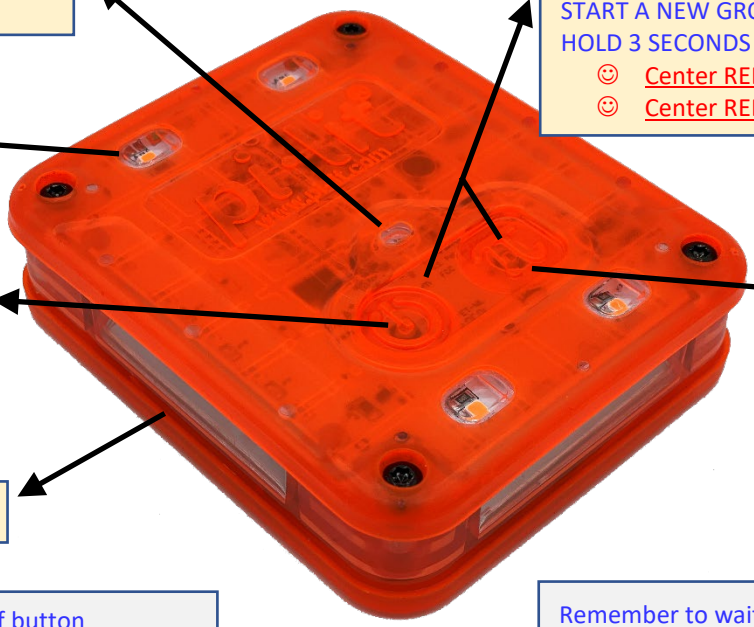
Instructions: Simply plug wall adapter or cigarette lighter cord into carrying case. Attach flares to the case (magnetic adhesion). The red indicator LED designates charging. A yellow-green LED comes on when charge is completed. The flare is without power while charging (by design). When removed from the charge case the flare microprocessor will reboot BUT will not turn on. Do not confuse this with the RDS where the flare turns on when removed from an UNPOWERED carrying case.

If the red or green LED flashes instead of burning steadily, the charge management circuit has identified a fault with the battery. Simply remove the flare or unplug the cord. Try again. If this persists then contact Pi Variables, Inc. at +1(949)415-9411 or email info@pi-lit.com .

1) Must use the Pi Variables, Inc. cigarette cord and wall adapter – these are 12-volt designs. DO NOT USE USB SOURCE. Must be 12-volts at 2.5 amperes; DC regulated.
2) Charging time for a completely depleted battery is approximately 5-6 hours.
3) Battery will automatically disconnect when voltage drops below a predetermined (6.0 volt) level. This protects the lithium battery from "under-voltage" which compromises battery life (fewer recharge cycles). The flare will turn off when this voltage is reached.
4) Our design incorporates two heat protection switches. Either switch will protect the battery from charging or discharging when the temperature is above a predetermined critical level. One of the switches also protects from operation when exposed to very high temperatures. The cutoff is +60C (140 degrees Fahrenheit).
5) **DO NOT LEAVE FLARES IN HOT CAR IN DIRECT SUNLIGHT**! You can leave them in a shaded location in the car, but not exposed to direct sunlight. For example, do not place the flare on the dash or rear window deck exposed to direct sunlight. You may place the flares in a sun-protected area within the car, such as on the floor behind a seat or in the trunk of the car.
6) **Summary: Do not place the flares in direct sunlight with windows closed on a hot summer day.** The flare becomes inoperable at 140°F, and returns to function at 104°F. It will take approximately 40 minutes for the flare to cool to operating temperature. The flare will not charge or operate at these temperatures. This is by design to both protect the battery and to prevent bad things from happening.

IMPORTANT SHIPPING INFORMATION: The Rapid Deployment System (RDS) has been enabled prior to shipping. The batteries are fully charged. If a flare was momentarily disconnected during shipping it will have turned on and the battery will now be depleted. Please check battery by holding Square Pi button for 3 seconds ***while the flare is off***. Make sure 4 or 5 green flashes are seen. If necessary, recharge before using.

pi-Lit® Sequential Flare (ICS) INSTRUCTIONS



CENTER LED INDICATOR
- SOLID RED – Charging
- SOLID GREEN – Fully charged
- BLINKING RED – Pair Mode

TOP LEDS (4)

⏻ ON / OFF
See more functions below

16 SIDE LEDS (4 Each side)

⏻ + π BUTTONS SIMULTANEAOUSLY
TAP – Both simultaneously – Reverse Sequence
☺ Sequence Reversed (saved in memory)
START A NEW GROUP - Enter / Exit Pair Mode
HOLD 3 SECONDS
☺ Center RED LED Blink = Pair Mode On
☺ Center RED LED Off = Pair Mode Off

π BUTTON
See more Functions below

* TAP = a momentary press of button
* HOLD = 3 second hold of button

Remember to wait until the flare begins to flash before turning on the next flare in line.

⏻ Button

TO TURN ON
- ☺ PULL OFF CASE - (Rechargeable Lithium Ion only)
- ☺ TAP Power or (π) "pi" Button (Alkaline batteries)

TAP – FOR PATTERN CHANGE FLARE (SAVED INTO MEMORY)
- ☺ 1- Wave Slow/Smooth Pattern
- ☺ 2- Rapid March (Quick Flash)
- ☺ 3- All Flares Flash Simultaneously
- ☺ 4- Steady Burn

π Button

DYNAMIC TILT SENSOR ENABLED - (saved in the memory)
- ☺ TAP 1 – Locks TOP LED – 4 Total
- ☺ TAP 2 – Locks SIDE LED – 16 Total
- ☺ TAP 3 – Return to Dynamic Tilt Sensor Enabled

HOLD 3 SEC. – BATTERY STATUS CHECK
- ☺ IMPORTANT - Flare Must Be Off
  - ○ 5 green flashes = Full batteries.
  - ○ 4 green flashes = Full batteries.
  - ○ 3 green flashes = Good batteries.
  - ○ 2 red flashes = Low batteries.
  - ○ 1 red flash = Very low batteries.

⏻ and π Buttons Simultaneously

TAP – REVERSE SEQUENCE
- ☺ Sequence Reversed (saved in memory)

HOLD 3 SEC - ENTER/EXIT PAIR MODE - START A NEW GROUP
- ☺ Center RED LED Blink = Pair Mode On
- ☺ Center RED LED not Blinking = Pair Mode Off

Power Off ⏻ or π

HOLD ⏻ BUTTON 3 SECONDS
- ☺ Flare Group Off (turn off string of flares)

HOLD π BUTTON 3 SECONDS
- ☺ Individual Flare Off

info@pi-lit.com

pi-Lit® "Ice Cream Sandwich" Flare – Instructions

1) **Turning on the First Flare:** Tap either button (do not hold down). Once the button is pressed a steady green LED will illuminate. This indicates that the flare and radio are powering up. The first flare will take approximately 4 seconds to turn on. At the end of the 3 seconds the green LED will disappear and the 16 LEDs around the side of the flare or the 4 bright LEDs on the top of the flare will begin flashing (depending upon orientation of flare).
2) **NEW FEATURE: "RDS"** (Rapid Deployment System) – Simply pull the flare off the carrying case and it will turn on automatically. No need to press a button. Wearing gloves, dark and can't find buttons? No problem. We made it that easy. (***Can be deactivated: See New Feature Description Instruction Page***) (*Not available on alkaline version*)

2) Turning on additional flares: *Once the first flare is on and flashing*, turn on the 2nd flare by removing it from the carrying case or pressing either button. Like the first flare, once on, a steady green LED will illuminate indicating that the flare is powering up. The following flares will take 1 second to turn on. At the end of the 1 second period the green LED will disappear, and the side LEDs or top LEDs will flash. This 2nd flare will now be in sequence with the 1st flare. As you begin to turn on the remaining flares they will automatically pick up the correct sequence. Turn on the remaining flares using the same instructions as above. **Important: a)** *the preceding flare must be flashing before turning on the next flare*. Only then is the flashing flare transmitting its sequence number. Failure to wait may result in non-sequential behavior. It only takes a second; **b)** for maximum range hold the flare above the ground in line-of-site of the preceding flare when turning on. Ground is like a sponge for radio signals. By holding the flare in the air, it can receive a stronger signal from the preceding flare that is on the ground.

3) Turning Off Flares: There are 2 ways of powering down the flares. 1) **Single Flare Off** - You can turn off a single flare by pressing and holding (3 seconds) the square *pi* (π) button. A red LED will flash twice indicating it has turned off; 2) **Group Off** - You can turn off the entire string of flares by simply holding down the power button for 3 seconds. The red LED will begin to slowly flash indicating that the radios on all the flares have received the turn-off command and are powering down. The red indicator LED flashes while the off command is being sent up and down the string. You must wait until the red LED stops flashing before turning a flare back on.

We strongly recommend that you pick up all the flares and place them in the carry case **while they are still flashing**. This will ensure that you don't accidently leave one on the side of the road. In addition, the case will glow with the flashing flares providing illumination and warning for on-coming vehicles. When safely in your vehicle take any one of the flares and hold down the power button to extinguish the entire group of flares.

4) Battery Status Check: While the flare is off, hold for 3 seconds the *pi* (π) square button. This feature eliminates the need of changing (or charging) batteries arbitrarily. With a simple press of a button the user can check the state of the batteries. The green or red LED will flash the status of the batteries. 5 green flashes = full batteries, 4 green flashes = full batteries, 3 green flashes = good batteries, 2 red flashes = low batteries, 1 red flash = very low batteries. We suggest changing batteries between the 3 green flashes and 2 red flashes.

5) LED Orientation: *pi*-Lit® ICS Flares use an accelerometer to determine which LEDs will flash. When the flare is in the horizontal position (lying flat on the ground) the 16 side LEDs will flash. When the flare is in the vertical position (e.g., magnetically attached to the back of a truck tailgate) the 4 Top LEDs will flash. The flare will automatically choose top or side LEDs based upon the flare's orientation.

6) Lighting up a cone! Locking LED Orientation: ***A unique feature the pi-Lit® ICS flares offer is the ability to illuminate a cone.*** In order to do this, you must "lock" on the top LEDs even if the flare is horizontal on the surface of the roadway. This directs the red light upward to light up the inside of the cone. To lock the orientation of the LEDs press the *pi* (π) button while the flare is flashing. The default is "dynamic" positioning – the gravity sensor will determine which LEDs will flash. To override the dynamic selection, tap the square *pi* (π) button and the bright "top" LEDs will be locked on. The green LED will flash once to indicate that the flare is locked. The 2nd tap of the *pi* (π) button will lock the side LEDs. The green LED will flash once. The third tap will return to the default state of dynamic positioning. The green LED will flash three times to indicate the flare is now in the default state.

7) Patterns: Once the flares are operating, the user has the option of choosing between 4 patterns. To change patterns, the operator simply taps (**do not hold; this turns off the group**) the power button. This will cycle through the patterns. Pattern 1 (default), Pattern 2, Pattern 3, Pattern 4, and back to Pattern 1. Default pattern is pattern number 1. This is a single lamp flash. Pattern (2) is a rapid march and quick flash; Pattern (3) all flares flash simultaneously; Pattern (4) is steady burn.

8) Reverse March: The direction of sequential march can be reversed by simply tapping (do not hold) both buttons simultaneously.

9) Changing Batteries & Cleaning: You will need a **Number 1** Phillips screwdriver. Carefully unscrew the two screws, use a flat object to pry open the magnet door, and replace the 4 AA alkaline batteries. Pay careful attention to battery polarity. Use a key or other object to pry batteries out if they are tight. **Clean flare with a cloth wet with Simple Green® or soapy water.**

10) Groups: Should the operator wish to use several strings of flares in close proximity, the flares can be set to different "frequencies" – we call these different Groups. Our new system uses a "Pair" system. This is explained on the back page of ***Quick Start Guide***.

Email: info@pi-lit.com
www.pi-lit.com

Special Production
New Features Description:

This new ICS™ flare incorporates the latest technology from Pi Variables, Inc.
We have made it even easier to use our sequential technology.
IMPORTANT: Wait for each flare to flash before tuning on the next! (Read Instructions)

Automatic Turn On: (Available on lithium rechargeable set only) Simply pull the flare off the charge-carrying case and the flare will turn on. No searching for a button. You have the option to disable the pull-off feature. To **disable**:

1) Flare MUST BE **OFF**.
2) Press and hold both buttons until a red or green indicator LED flashes - ***Immediately*** release both buttons. A red indicator flash means that the RDS pull off feature is disabled. Pressing the square button will toggle between red and green (disabled and enabled). When you have chosen the proper LED (red-disiabled; green-enabled) stop tapping the square button. After 3 seconds the red LED will flash indicating that the choice has been saved in memory.
3) Be safe! Have fun! Enjoy the ICS™ technology. (Confused? Call us – 24x7)

If you find there is false triggering – that is, turning on when handling, you can disable the feature using the instructions above. False turn-on results from mechanical separation (millisecond) of the spring contacts and has been mitigated using firmware but may occur.

New Function: Reverse Sequence (Available on all sets)
While the flares ARE FLASHING, simultaneously tap (momentary – don't hold) both buttons (square and round). Now the flares will sequence in the reverse order! This function will be remembered when you turn the flare off.

Purpose: Law enforcement and fire personnel have told us that they are accustomed to deploying incendiary flame flares as they walk away from their vehicle TOWARDS oncoming traffic. This new function allows this method of deployment. The first flare that you turn on will be the last to sequence. The last flare that is turned on will be the first to sequence. Does not matter how many flares are deployed. Try it. You'll like it!

NOTE:
A tap is a momentary press of a button.
A hold is a 3-second press of a button.

Email: info@pi-lit.com
www.pi-lit.com

Pi Variables, Inc. products are protected by one or more of the following U.S. and foreign patents:

United States;
8,154,424
9,847,037
8,564,456
9,288,088
D778,752
9,835,319
D778,753

Australia;
366289

Canada;
165009

European Community:
004142503-0001
004142503-0002
004142503-0003
004142503-0004

Additional patents pending:
European Union – 3218887 – Published
Japan – 2017-537448 – Published
U.S.A. – WO2016/077812 – Published

Additional patents pending not yet published.

May 2018