

18 Cue PYRO-D-Lite Firing System (FCC)



Contents

Product Description 4

Hand Transmitter Overview..... 5

Please Note:..... 5

Firing System Overview 6

Getting Started 7

Prepping the System to Fire..... 9

Firing the System 10

Additional Information: 11

V: 5.10

Product Description

Congratulations in purchasing an expandable and dependable firing system. This system is simple enough and powerful enough to meet the needs of professionals and hobbyists alike.

This system operates in the 315 frequency band and has been tested and certified to be FCC certified when used as sold without any electronic alterations. This device has an internal SLA (sealed lead acid) battery which will provide 12V of output power when fully charged. The system has an electronic power monitoring system which will alert the user if the system needs to be charged. When the system is powered on, you should see a green light momentarily indicate. If while using the system, the battery light begins to flash red, it is indicating the power for the system is running low and it needs to be recharged. Additionally, when used with a full charge this system can fire between 1-5 easylight, stinger 6, or e-matches per cue. Other igniters may work but have not been tested.

CHARGING THE SYSTEM: *Before use, it is recommended that you fully charge the system. To do this, simply locate the supplied 12v power wall charger that came with the system and plug into a 110v wall socket and the system adaptor plugged into the system charge port. The system does not need to be on to charge, however you will see the charging status of the battery if it is on. When the system is on and charging, a steady green light indicates your system has taken a full charge.*

UNPACKING YOUR SYSTEM: *As you unpack your system for the first time, make sure that the following accessories have been packed:*

- 1) *Arming Key: These should be in the arming port in the system.*
- 2) *Antennae: This may be either a flexible whip or metal twist on that should be located within the system case.*
- 3) *External power wall charger: Should be located within the shipping box near the firing system.*

If any of these are missing, please contact www.mortartubes.net for speedy correction.

Hand Transmitter Overview

This system uses a digital coded transmission in the 315 frequency band to communicate with the receiver. Your transmitter actually has 4 selectable channels to choose from although the 4th channel is dedicated to a special function transmission which can be used to control up to 16 systems in the sequence mode or step mode. We will discuss this in greater detail later in the manual. This then leaves us with 3 selectable channels to transmit with discrete control. This means that if the transmitter is in the 1st channel, pressing the firing buttons 1-18 will fire all cues 1-18 on any system synced to the 1st channel. Switching the transmitter to the 2nd channel will fire any firing system synced to the 2nd channel.

You should also notice besides the numbers 1-18 (which stands for cues 1-18), the system also has the following buttons:

- 1) **Cont.**: *sequence button, used to fire all cues once pushed with a specific time delay.*
- 2) **Step**: *will fire the cues in order from 1-18 each time you push Step.*
- 3) **All**: *will fire all the cues at once when pushed*

Please Note:

These firing systems have a failsafe built in to prevent the technician from accidentally pushing the wrong transmitter firing program during the show. This failsafe requires the technician to program the receiver to fire in the desired firing mode; (single, All, cont, or step)

Firing System Overview

You will notice this system uses a rugged ABS case that will help protect the sensitive electronics from debris. When the case is closed and latched, it will also provide a barrier that is resistant to moisture. However, care should always be used not to allow the system to be exposed to a high moisture environment for long. When the system's case is open, use care not to let it get rained on as this may cause damage to the internal electronics.

When you open the case, you will notice 18 firing cues, an arming key, a power switch with fire and test, an LCD display, and 2 sets of metal quick connects, and programming buttons. We will describe each in detail:

- 1) Firing Cues: There are 18 cues on this system and each cue is made up with 1 black and 1 red terminal spring plate. This is where you will take your e-match or clip style igniter and insert it into the cue. Polarity is not important when using these igniters as you are simply completing a circuit.*
- 2) Arming Key: This key switch has 2 positions: on or off. If the key is off and you push a button on the transmitter, the receiver will receive the signal but the computer will not allow the cue to receive power. As a safety note, anytime the system is connected to a fireworks product treat it like a loaded weapon that can go off at anytime even if the key is off.*
- 3) LCD screen: This will indicate which program mode the receiver has been programmed to as well as indicate when the system is powered to fire or test. It also has a signal reception indicator LED that lets you know the receiver is receiving a radio code.*
- 4) 2 sets of metal quick connects: You will find 1 set on each side of the system. These can be used to daisy chain an infinite number of 18 cues together in the field. There is 1 set of input triggers and 1 set of output triggers. When these are used, you link many 18 cue firing systems together in the sequence mode. For example, as the first 18 cue system completes firing its 18th cue off, the output trigger sends a volt pulse to the 2nd system's input trigger. When the system detects the pulse in the input trigger, it executes its sequence program firing its 18 cues in sequence. This goes on and on until all your systems connected to the input/output triggers have fired. On this system, when you decide to use a sequence function, all cues on that system must be programmed to the same time delay. You may however have the next system programmed to its own delay as long as every cue on that specific system has the same delay.*
- 5) Programming buttons: Add, Program, Right Facing Arrow, Up Facing Arrow, OK/Delete*

ADD BUTTON: *This is used to assign a specific address to one specific firing system. This is used if you have multiple 18 cue firing system and want to use the special function that we spoke about in the beginning of the manual. We will deal with this more at the end.*

PROGRAM BUTTON: *This system is capable of storing many digital codes which means it can be programmed to fire with more than one remote. This means that if you want to link it to just one transmitter you must first clear its memory and then lock the signal onto the desired transmitter.*

RIGHT FACING ARROW: *This button is used to scroll the cursor to the right on the LCD screen and to change the firing mode.*

UP FACING ARROW: *This is used to increase the value number for the sequence delay time.*

OK/DELETE: *This button is used to delete/reset the prior firing code or to lock in the desired firing code.*

Getting Started

PROGRAMMING THE TRANSMITTER TO THE FIRING SYSTEM:

Step 1) *Ensure your desired transmitter is on and the correct channel is set. (Usually channel 1)*

Step 2) *Ensure your firing system is powered on and the key is set to arm or on, and the antenna is attached.*

Step 3) *Press and hold the program button for about 10 seconds. A red program light will illuminate. Continue pressing this button until the light goes off. This clears the memory cache of any previously locked signals.*

Step 4) *Push the OK/Delete button on the firing system until the LCD screen resets to 0.00. Next, push the Right arrow button until the word SIN appears in the LCD. This stands for Single mode. Press and release the Ok/Delete button to confirm your firing mode.*

Step 5) Push the program button and release. Immediately press and hold any button 1-18 on the transmitter. You will see the signal indicator on the LCD flicker quickly and then slow. You will also see whatever the corresponding cue fire on the system that you pushed on the transmitter. It is important to hold the transmitter button for a few seconds to give the system time to lock-onto the signal. It may be necessary to do this again in case the lock-on was not absolute. Once it has successfully been locked onto a channel, the receiver will remember it until the power level is completely drained (never recommended) or you deprogram the receiver.

Step 6) Test the system by pushing any buttons 1-18 on the transmitter. As long as the receiver is on and the key is armed you will see the corresponding cue fire on the receiver. If the key is not armed or you push a firing program button that has not been programmed to the system, you will see a signal LED indicates in the LCD, but the firing LED light above the cue will not illuminate.

Steps 7) by following the 1st 6 steps above you have programmed your system to fire in the single firing mode. Which means that you can single fire any cue at any time by pushing any button 1-18 on the transmitter.

If you want to change the firing program, simply push and hold the Delete/OK button until the LCD screen resets to 0.00.

0.00 stands for the "Cont" or sequence fire. You can use the up arrow to increase the value on the first 0. Next if you push the right arrow, the cursor will move to the next 0 place. Pushing the arrow in this slot will increase this slots value. Now if you push the right button one more time, you will move the cursor to the last 0 slot. Pressing the up arrow will increase this value.

You can program the delay fire between the cues from as fast as 0.01 to as slow as 9.99 seconds between the cues. When complete, press and release the Ok/Delete button to confirm.

ALL: If you want to fire all the cues at once by pressing the all firing button on the transmitter, simply press and hold the Ok/Delete button until you see 0.00 on the LCD. Next press the right arrow button 3 times. This will move the cursor from the 1st 0 through the 3rd 0 and into the next fire mode which is "ALL" mode. Lastly press and release the Ok/Delete button to confirm.

Step: If you want to push the step fire each time you want a cue to fire from 1-18, then push the Ok/Delete button until 0.00 appears in the LCD. Continue pressing the right arrow button until you see STEP indicate in the LCD. Lastly, press and release the Ok/Delete button to confirm.

Single: If you want to be able to single fire each cue as you push the corresponding button marked 1-18, push the Ok/Delete button until the LCD resets to 0.00. Next push the right arrow button until you scribe through all the 0's and continue to press and release the right arrow button as you flash through the available firing modes. When you see "SIN" this is the single firing mode. Once it is displayed on the LCD, press and release the OK/Delete button to confirm.

Prepping the System to Fire

After you have successfully setup the system, (synced the transmitter to the receiver and set and confirmed the firing mode), you are ready to actually use the system.

It is rather important to test the condition of the single e-match or igniter clip for conductivity prior to launching your show. To do this, load a single e-match or igniter clip into whatever cues you plan to fire. Next you will power on the system by pushing the power button to the test position. (Opposite position as fire and a blue LED light will illuminate in the LCD screen) You should keep the key switch off for safety.

You will see a blue LED light illuminate in the LCD screen indicating the system is in TEST mode. Additionally, all e-matches or igniter clips that are good will have a bright LED light indicate over the corresponding cue. If the LED light does not indicate, remove the e-match or igniter and make sure that the copper bare wire leads are in good condition and then try to reattach to the cue. If the blue test cue light comes on, the igniter is good, (it just had a bad connection). If however the LED remains off, you should discard this igniter and use another. (It is possible that the thin nichrome bridge wire is broken or there is another break in the circuit on the igniter.) After all igniters are in place and there is a blue LED test light on in every cue you are using, the system is prepped to fire.

Now that you have a basic idea of what the TEST function does, you are ready to attach to the igniters to the consumer grade fireworks.

Step 1) you have already programmed the receiver to the transmitter and you have already programmed the firing system to operate your desired firing mode. You have also dry tested the firing system. (This means with **no** wires attached to the system and its cues, you have powered it on, armed the key, and tested the receiver.)

Step 2) you will attach the igniters to the fireworks paying attention to the order you want the fireworks to light. For example, the first desired fireworks piece should be attached to the 1st cue. The 2nd piece attached the 2nd cue and so forth. Once all 18 cues are used you are ready to test. Make sure you do not lean over any fireworks at this time, as they have a potential of firing at anytime.

Firing the System

Safety is your responsibility. Fireworks are innately dangerous and even with proper use, accidents can occur. You must mitigate these risks to ensure safety to yourself, your crew and your spectators. Please see our disclaimer.

After you are certain that the scene is safe and your crew and spectators are safe from any falling debris or shells that might malfunction, you may begin your show at your discretion.

Step 1.) Do your final safety check. This entails looking about for any unseen safety hazards or possible weather that will make the show unsafe. You are also making sure that the spectators are in a safe location and remain there.

Step 2) Make sure that your transmitter is off. Do not carry it in your pocket as you run the risk of accidentally turning it on as you walk and leading to an accidental cue firing. Instead, place the “off” transmitter at your shoot site and have a trusted member of your crew watch over it.

Step 3) With the Transmitter off and safely stored at your shooting point, walk towards the receivers. Take this time to continue to scan for safety hazards.

Step 4) Approach the 1st receiver (firing system). Do not lean over any fireworks pieces and treat them as if they could go off at any second. Power the firing system to “fire” and observe a red led light illuminate in the LCD screen.

Step 5) Arm the safety KEY to on.

Step 6) this firing system is now “HOT” and will fire when the transmitter is powered on and the appropriate firing button is pressed. Lastly, gently partially close the lid to protect the face of the system. (Do not force)

Step 7) Continue down your firing line powering on and arming the Key switches till all your firing systems are "HOT".

Step 8) Proceed to your shoot/firing observation point taking the time to again to do an additional safety check.

Step 9) Ensure your transmitter is set to the desired channel (Channel 1, 2, 3) which will correspond to your 1st desired firing system.

Step 10) Power on the transmitter.

*Step 11) Fire **when ready**, changing the channel after all 18 cues have been fired in the 1st channel, etc.*

Additional Information:

There are additional resources available to help you use this product safely. Please locate the videos regarding this product at www.mortartubes.net for a video demonstration.