CH18W

18 CUE WATERPROOF WIRELESS FIRING SYSTEM WITH EXTERNAL TRIGGER

USER MANUAL v.2

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DISCLAIMER

The manufacturer(s), distributor(s) and / or seller(s) accept no responsibility whatsoever for any damage, injury or loss, financial or otherwise, resulting directly or indirectly from the use, misuse, function or malfunction of this device. By purchasing and using this device you understand and accept this disclaimer.

SAFETY

Safety is the user's responsibility.

All pyrotechnic effect and firework safety guidelines should be followed completely.

DESCRIPTION

CH18W is an 18 cue waterproof wireless firing system for pyrotechnics and fireworks. It features a sequencer, handheld remote control and external trigger function.

It is expandable up to 54 cues in single fire mode using up to 3 receivers. Single fire mode means the operator has full control of each individual cue and can fire a cue on command.

It is also expandable up to 288 cues in CONTINUOUS, STEP or ALL fire mode using up to 16 receivers. This means that the operator does not have full control of each cue. The operator may only fire the cues manually in sequence (STEP mode), continuously with a preset delay between each cue (CONTINUOUS mode) or fire all cues simultaneously (ALL mode).

Unlike previous models, the operator can now disable the SINGLE, CONTINUOUS, STEP or ALL fire functions to prevent accidental firing.

ACCESSORIES

The optional waterproof transmitter can be used with this system.

- Professional.
- Waterproof when closed.
- Start and Stop the Sequencer.
- Long range.
- Long battery life.
- Fire more Cues.
- Safe "2 Button" firing.
- Metal ARM key switch.
- FCC Approved.

CHARGING THE SYSTEM

The Battery Status Light will only operate when the unit is switched ON and in FIRE mode. However the system will charge even when switched off.

Battery Status Light	Description
RED (flashing)	Battery Low.
RED (steady)	Battery Charging.
RED / GREEN (flashing)	Battery Almost Full.
GREEN (steady)	Battery Full.

Lead Acid Batteries naturally discharge over time. To keep the battery in good condition it is recommended the system is charged every 3 months.

Storing the system in extremely low or high temperatures will shorten the life of the battery.

BASIC OPERATION

Note: *When using multiple receivers, it is good practise to re-programme each receiver with the correct remote control before use.*

Ensure the battery is fully charged before use.

For maximum safety please follow the firing procedure below.

1. Clear the receiver and program it with a transmitter.
2. Ensure SAFETY SWITCH is keyed to OFF and FUNCTION SELECTION is set to TEST.
3. Connect igniters.
4. Check continuity. The display will read "E[XX]" where [XX] is the cue numbers that DO NOT have continuity.
5. Set the correct mode of operation (X.XX, ALL, SINGLE, STEP).
6. Set FUNCTION SELECTION to FIRE.
7. Key SAFETY SWITCH to ON.
8. Extend receiver antenna.
9. Ensure the area is safe and secure and retreat to a safe distance.
10. Extend transmitter antenna.
11. Switch transmitter ON.
12. Set transmitter SLIDE SWITCH to correct position.
13. Fire desired cues.

Transmitter Control Description

Button	Description
1 - 18	Fires individual cue.
ALL	Fires all the cues.
STEP	Fires the cues sequentially with each successive button press. Holding STEP down will cause multiple cues to fire.
CONT	Fires the cues in sequence with a set delay between each cue.
Slide Switch (1,2,3,4)	Selects which receiver to control when up to 3 receivers are used. Should be set in position 4 when the system is configured with more than 3 receivers.

Receiver Control Description

Button	Description
Function Selection (FIRE, OFF, TEST)	Controls the mode of the receiver. TEST mode tests the cues for continuity. OFF mode turns the receiver off. FIRE mode allows the system to be programmed and cues to be fired.
Safety Switch (ON, OFF)	This arms and disarms the system.
Program	Programs the receiver with a new transmitter.
Up-Arrow	Increments the selected delay digit.
Right-Arrow	Sets which delay digit to change AND changes the receiver operating mode.
OK / Delete	Enters the current time and Operating Mode setting / Deletes the current time setting and resets the Operating Mode.
Add	Sets 1 of 16 possible receiver Addresses for expansion up to 16 receivers, giving 288 cues available in ALL, STEP and CONT firing modes.

PROGRAMMING THE RECEIVER WITH A NEW TRANSMITTER

WARNING

Never program the receiver when another transmitter is transmitting. This may cause the receiver to be programmed with the wrong transmitter.

To clear the receiver of previously stored transmitters:

1. Put FUNCTION SELECTION switch to FIRE position.
2. Hold the PROGRAM button until the program light goes out.

To program the receiver with a new transmitter:

1. Put FUNCTION SELECTION switch to FIRE position.
2. Press and hold a button on the transmitter.
3. Press and release the PROGRAM button briefly. The program light blinks twice to indicate the receiver has been programmed.

SETTING THE RECEIVER OPERATING MODE

The receiver must be set to the correct mode before using the system. This ensures that accidentally pressing a button on the transmitter will not have an unwanted effect!

Mode	Display Shows …	Description
Continuous (Sequencer)	0.00 **or** the current delay between cues.	Sequencer with a set delay between each cue.
All Fire	ALL	Fires all cues when the ALL button on transmitter is pressed.
Single Shot	SIN	Fires the correct cue when the button 1- 18 is pressed on the transmitter.
Step	STE	Fires the next cue when STEP is pressed on the transmitter.

To set the receiver operating mode follow the steps below.

1. Hold down OK button until the display reads **0.00**
2. Press RIGHT-ARROW to cycle through the digits and operating modes.
3. Press OK to set the correct receiver operating mode.

SETTING THE TIME DELAY FOR CONTINUOUS MODE (SEQUENCER)

The time delay is used when firing in *continuous* mode. The delay can be set from 0.01 to 9.99 seconds.

1. Hold OK button until the display reads **0.00** .
2. Press RIGHT-ARROW to cycle through the digits.
3. Press UP-ARROW to increment the time delay.
4. Press OK to set the time.

USING THE TRIGGER FUNCTION

The sequencer can be started by applying a 6 – 30 volt DC pulse into the Trigger Input terminals. At the end of the sequencer a voltage pulse will appear at the Trigger Output terminals.

This feature can be used to make the CH18W system a 'slave' sequencer of another firing system. Simply connecting the Trigger Input to any cue on the 'master' firing system and the CH18W sequencer will start when the 'master' cue is fired.

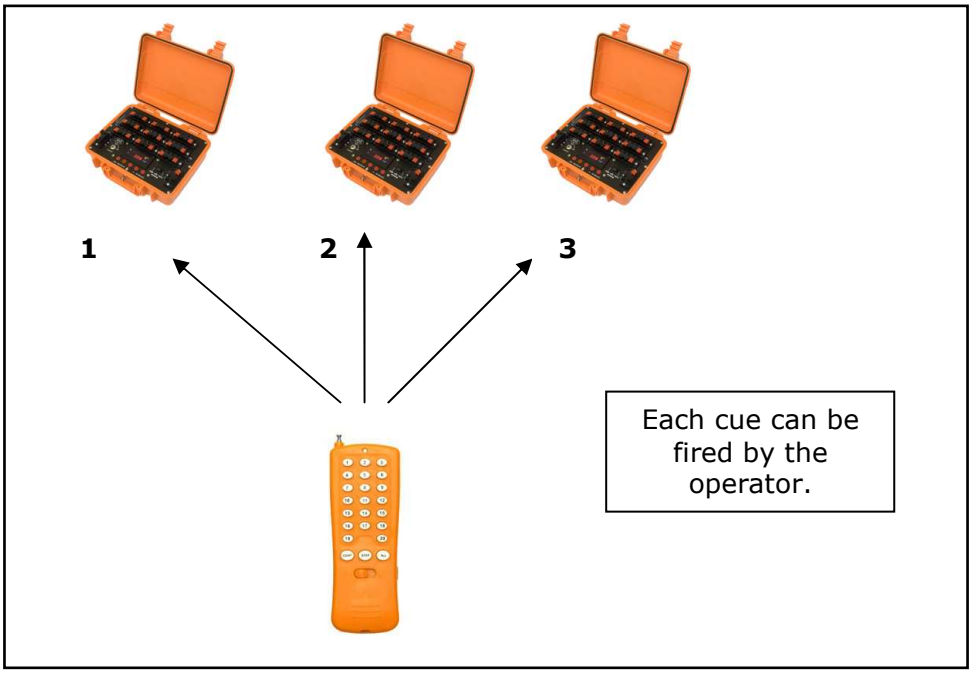
EXPANDING THE SYSTEM

The system can be used with other CH18W systems or it can be used in combination with other CH20S and CH20W systems.

The system is expandable in the following ways:

1) UP TO 3 RECEIVERS GIVING 54 INDIVIDUALLY ADDRESSABLE CUES

Program receiver 1 with the transmitter slide switch in position '1', program receiver 2 with the transmitter slide switch in position '2', program receiver 3 with the transmitter slide switch in position '3'.



54 Cue Configuration

2) UP TO 16 RECEIVERS GIVING 288 CUES

Each receiver will need to be set up with an address in the following way.

1. Press ADD button.
2. Use RIGHT-ARROW and UP-ARROW to set 1 of 16 addresses.
3. Press ADD button again.

All the receivers will need to be programmed with the transmitter in the usual way **<u>except</u>** the transmitter slide switch **<u>must</u>** be in position '4' at all times.

The cues can only be fired in the ALL, STEP and CONT firing modes.

INFORMATION

For CONT mode, all receivers need to have the same time delay.

Note: *This is because for receivers above number 1, a receiver offsets the time it starts sequencing from by the following formula:*

Time to sequence begin = delay x 18 x (receiver number-1)

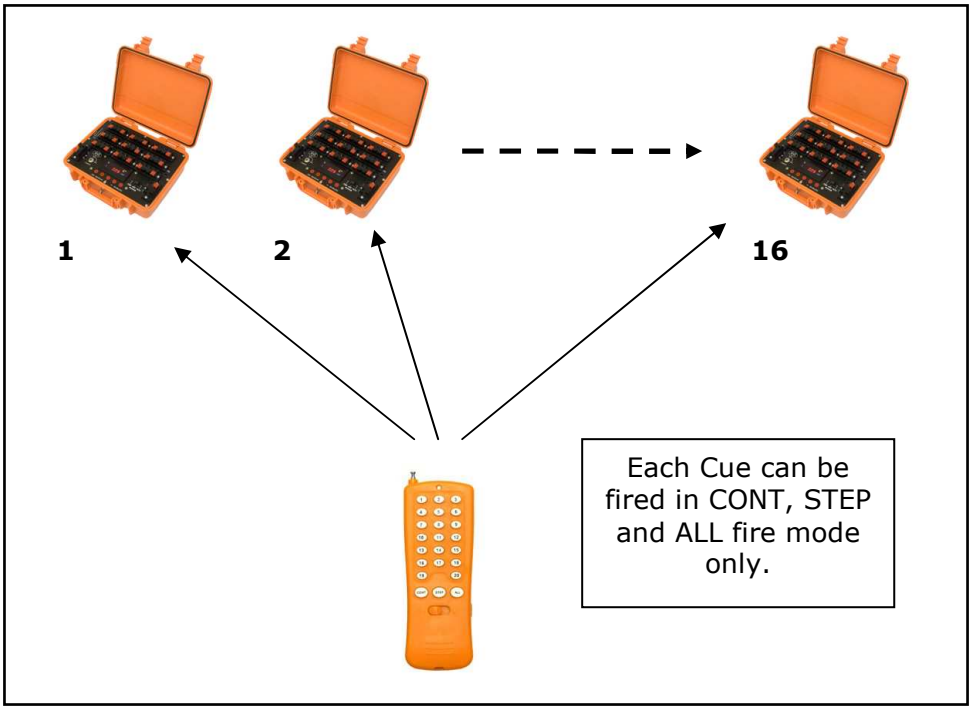
Example: *Assume time delay is set to 1 second and 4 receivers are in the system. When CONT is pressed, all receivers receive the signal at the same time. Receiver 1 starts to sequence immediately. Receiver 2 starts to sequence after 18 seconds. Receiver 3 starts to sequence after 36 seconds. Receiver 4 starts to sequence after 54 seconds etc. There is no communication between receivers, so if, for example receiver 3 is OFF, then receivers 1, 2 and 4 will still operate, albeit with a 18 second gap between receivers 2 and 4.*

CONT and STEP mode will only work ONCE. All receivers will need to be switched OFF and ON again to use those modes again.

Example: *6 receivers are set up giving 108 cues. Press CONT and all cues will fire in sequence with the programmed delay. However, CONT will not be able to be used again until all receivers are switched OFF and ON again.*

Example: *10 receivers are set up giving 180 cues. Press STEP and each cue will fire one after the other on each sequential button press. Holding down STEP will cause multiple cues to fire rapidly. However once all cues are fired STEP will not be able to be used again until all receivers are switched OFF and ON again.*

Example: *16 receivers are set up giving 288 cues. Press ALL and all cues will fire on all receivers. ALL can be used again without switching the receivers OFF and ON again.*



288 Cue Configuration