



Kingdom New 20 Cue Wireless Firing System

KFE2204D **Instruction Manual**

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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.

Warning:

1. Only the person who has fireworks license is allowed to purchase the product, or the person of whom there isn't fireworks purchase limit in his/her country or district is allowed to purchase the products. Kingdom is not with responsibility for any illegal usage.
2. Safety is the user's responsibility. All pyrotechnic effect and firework safety guidelines should be followed completely.
3. You must deprogram the system prior to trying to re-program the module to prevent accidental code storage thereby creating a secure firing environment

Description:

It is a 20 cue advanced wireless firing system for pyrotechnics and fireworks. This system is not only powerful, compact ,waterproof and reliable, it also is expandable. With the supplied handheld transmitter it is expandable up to 60cues using up to 3 receivers. Each receiver can be controlled by the transmitter(1-3 channel)independently in Single Firing, Step Firing, Sequence Firing and All Firing. You can also program multiple receivers to the same channel to infinity if you need simultaneous ignition from multiple firing locations.

As with all our products, this one can be used safely and securely with our other systems. Additionally, it can be combined with our advanced control desk (KFE2209/18/2) offering you the ability to take control of all the operating systems in your show in one convenient location.

It is also expandable up to 320 cues in Sequencer Firing modes up to 16 receiver modules controlled by S channel on the radio control desk KFE2209/18/2.

Each mode needs to be set on the receiver module before it is used. The operator can not switch between modes without returning to the receiver modules. This is a safety feature to prevent the operator activating a mode accidentally.

With advanced over-loading protection function, it can ensure the firing systems for long time use.

With the advanced interface and musical fireworks show software, it can be used for creating a professional fireworks show.

Technical data sheet:

Module Size (cm)	28 x 23 x10	Built-in power (V)	12V2.3Ah Lead Acid Battery
Unit weight (kg)	2.92	Charging power	DC 15V-0.5A
Range (meter)	300	Output power	DC 24V
Over-loading protection	2014 version with it	Test current (mA)	0.8MA

What is included:

- 1 Piece of individual 20 cue receiver module
- 2 Pieces of safety keys.
- 1 Piece of 3x20 channel transmitter.
- 1 Instruction manual.
- 1 Piece of charger with 15V 0.5A output power.

What is not included:

Battery for Transmitter.

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 2-3months. Storing the system in extremely low or high temperatures will shorten the life of the battery.

Firing mode definitions:

Button	Description
1-20	Single Fire Mode: 1-20 Fire individual cues.
CONT	Sequence Fire Mode: Fire the cues in sequence with a set delay between each cue.
STEP	Step Fire Mode: Fire the cues sequentially with each successive button press. Holding STEP down continuously will cause multiple cues to fire.
ALL	All Fire Mode: Fire all the cues.
Slide Switch (1,2,3,4)	Transmitter Address: Position 1,2,3: Select which receiver(s) to control when more than 1 receiver is used. Position 4: Should only be set in position 4 when the system is configured with receivers operating together automatically in series(one after the other)

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 address for expansion up to 16 receivers, giving 320cues available in CONT firing modes.
T / M	Different time delay mode: Allow a different time delay to be set between each cue.

Deprogramming module and re-programming

You must deprogram the system prior to trying to re-program the module. This system has a fail-safe for digital rectifying that will prevent accidental code storage thereby creating a secure firing environment..

Step 1. Put the rocket switch to the (F) fire position. Turn the key on the module to “ON” position. Extend the antenna on the module. Ensure that the transmitter is on.

Step 2. Press and hold the red (P)program button. The red LED above the button will illuminate for about 10 seconds. This LED light will go out when the code is deleted. It has deleted the previous program. No remote transmitter can control it anymore.

Step 3. Press and release the red (P)program button again. Immediately press any channel button on the remote transmitter. Keep your fingers on the button until you see the firing LED lights. Which indicates the receiver module has locked onto the signal.

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

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 Screen	Description
Continuous (Same time or Different time Sequencer)	SA0.00.00 or DI DIFF. Time range: 0.01s – 9m59.99s	Sequencer with same time or different time delay between each cue,
All Fire	ALL	Fires all cues when the ALL button on transmitter is pressed.
Single Fire	SIN	Fires the correct cue when the button 1-20 is pressed on the transmitter.
Step	STE	Fires the next cue when STEP is pressed on the transmitter.

To set the receiver operation mode follow the steps below:

1. Hold down OK/DELETE button until the display reads SA 0.00.00
2. Press Right-Arrow button to cycle through the digits and operating modes.
3. Press OK/DELETE button to set the correct receiver operating mode.

How to set the different time delay:

1. Hold on the OK/DELETE button until the display shows SA0.00.00
2. Press Right-Arrow button to select 1st digit. Shows **SA0**.00.00
3. Press T/M button to enter in the different time delay mode.

The display shows **01**0.00.00

4. Press Right-Arrow button to cycle through the digits.
5. Press Up-Arrow to increment the time delay.
6. Press the OK/DELETE to set the time delay.

Each time OK/DELETE button is pressed after setting a delay, the delay number increases. Once the final delay has been set, the display reads **DI DIFF**. To review the time delays press the T/M button.

The system is now ready to fire in different time sequence fire mode. It is very good for the small show that the effect time of each item is fixed. Just start the machine and it will automatically ignite each item as fixed time delay.

Expanding the system:

More receivers can be added to expand the system. By programming the receivers with different transmitter identities, the receivers can be controlled in parallel (at the same time), individually or a mixture of both.

Example 1. The receivers are programmed with the same transmitter identity so they are controlled in parallel(at the same time)

1. Program receiver A,B and C with the transmitter slide switch in the same position.

Example 2. The receivers are programmed with same transmitter identity, but the slide switch not in same position so that they are controlled separately.

1. Program receiver A with the transmitter slide switch in 1 position.
2. Program receiver B with the transmitter slide switch in 2 position.

3. Program receiver C with the transmitter slide switch in 3 position.

Example 3. The receivers can be controlled separately by using the professional radio control desk KFE2209/18/2.

1. Program receiver A with the control desk rotary switch in 1 position.
2. Program receiver B with the control desk rotary switch in 2 position.
3. Program receiver C with the control desk rotary switch in 3 position.

Example 3. 16 Receivers (16x20=320cues) are programmed with same transmitter identity in sequence fire mode with different addresses. Transmitter slide switch in position 4. Control desk rotary switch in position S.

1. Set the address numbers on each receiver. 1-16.
 2. Set the same time delay on each receiver. Example: SA 0.0010.
 3. Set the communication between the transmitter (or control desk) and the receivers.
- When CONT button is pressed to start the sequence, all receivers receive the signal at the same time. Every cue will fire at a time delay of 0.1second from 1-20 on 1st receiver, then it will automatically transfer to 2nd receiver and fire cue 21-40, then it will transfer to next one till the 16th receiver.

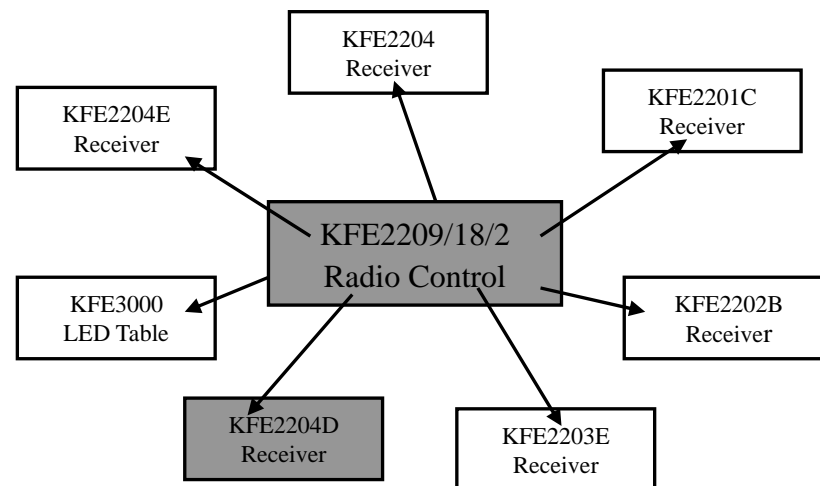
This function is good for making the special effects like round-shaped sequence firing of the mines or comets in stadium.

Over-loading Protection:

New version firing systems have overload protection. The function is not through fuse, it is through special design in hardware and firmware. You don't need to worry about short igniter or any misoperation will damage the firing systems and don't need to replace fuse. It is a advanced technology can ensure the system for long time use.

Optional upgrade:

1. This system also can be used for doing the musical show. There is the special software and interface for this firing systems. Item number: 1820A. For more details, please read the instruction of this device



2. Optional Components:

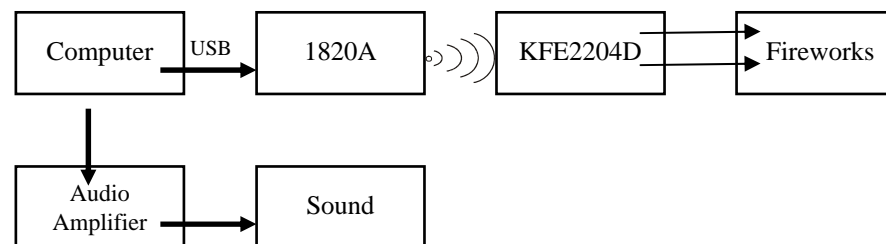


KFE2201C/60
Transmitter

1820A
Interface for music show

KFE2209/18/2
Control Desk

KFE2210
Antenna



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