FIREFLY

FireFly Wireless Firing Module
Patent Pending

Operating and Safety Instructions
- FOR PERSONAL USE ONLY -

IMPORTANT SAFEGUARDS

Definitions

Whenever used, the following items identify safety and property damage messages and designate a level of hazard seriousness.

⚠ - This is the safety alert symbol. It alerts you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER – Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury. Usage of this signal word is limited to the most extreme situations.

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

CAUTION – Indicates a potentially hazardous situation, which, if not avoided, may result in minor/moderate injury.

NOTICE – Addresses practices not related to personal injury, such as device and/or property damage.

READ ALL INSTRUCTIONS BEFORE USE.

⚠ **WARNING -- To reduce the risk of fire, electric shock, or serious personal injury:**

- Keep this device at least 3 feet (about 1 meter) away from the fireworks/cracker.
- Keep this device out of the reach of children and pets. Do not leave the device unattended while the power is on.
- Do not immerse the device in water or other liquids.
- Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

⚠ **CAUTION -- To reduce the risk of personal injury:**

- Always ensure the device is <u>OFF</u> while connecting it to fireworks/crackers.

- Always ensure the device is lying on a flat, solid surface (ground).
- In cold weather (e.g. below 32 degree Fahrenheit), insert a wooden board under the device to isolate the device from the cold. Failure to do so many cause low power output.
- Do not touch the FireFly Clip heating coil after ignition, as the high temperature will cause injury.
- Do not allow the Connection Cables to hang over the edge of a table or counter to avoid accidental pushing or pulling of device.

Battery Handling and Usage:

- Keep batteries away from children and pets. Only adults should handle batteries. Ensure Battery Compartment Cover is securely attached to the Battery Compartment in accordance with all device usage instructions.
- Follow the battery manufacturer's safety and usage instructions.
- Do not mix a used battery with a new battery or mix different chemistries of batteries. Use only 1.5V "D" size **alkaline** batteries in this device.
- Never throw batteries into a fire or expose them to fire or other heat sources.
- Insert the batteries into the device observing the proper polarity (+/−) as indicated inside the Battery Compartment. See the "Battery Installation" subsection for detailed instructions.
- Remove spent or discharged batteries from the device Battery Compartment.
- Remove batteries when not using the device for an extended period.
- Dispose or recycle spent/discharged batteries in compliance with all applicable laws. For detailed information, contact your local solid waste authority.

NOTICE -- To reduce the risk of device and/or property damage:

- This device is intended for non-commercial and non-industrial use only.
- Always power off after use.
- Do not subject the device to excessive force, violent shocks, extreme temperatures, humidity levels, or lengthy periods of direct sunlight.
- Do not attempt to repair the device. This device contains no user-serviceable parts. If the unit stops operating, take it to an electronics repair shop of your choice.
- Use the device away from other electronic devices to reduce possible interference.
- Do not use liquid or aerosol cleaners to clean the device. Use a soft, damp cloth.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE
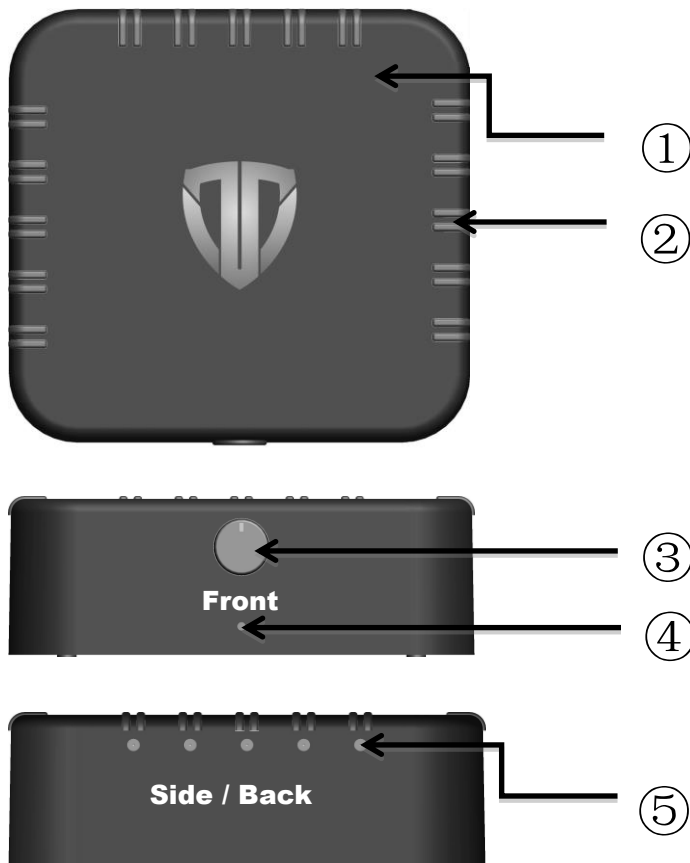
Introduction

FireFly Wireless Firing Module has a wireless operating range up to 50 feet (16 meters) and is compatible with Bluetooth® v1.2 to v4.0. To get the most out of this device, read this manual entirely.

Contents

- Bluetooth® Wireless Firing Module ("the Module" below)
- Connection Cables (8 pcs of 1-meter & 7 pcs of 3-meter) with FireFly Clip

Controls and Features

1. Casing
2. Connectivity Status Indicators
3. Power Button with Red LED Indicator
4. Reset Button
5. Input Port for Connection Cable

① ②

Front
③ ④

Side / Back
⑤

Battery Installation

1. Locate the Battery Compartment Cover from the bottom of Module.

2. Loosen the screws in the Battery Compartment Cover with a Phillips-head screwdriver.

3. Insert eight (8) 1.5V "D" size <u>alkaline</u> batteries, observing the proper polarity (+/-) as indicated inside the Battery Compartment.

4. Replace the Battery Compartment Cover.

NOTES:
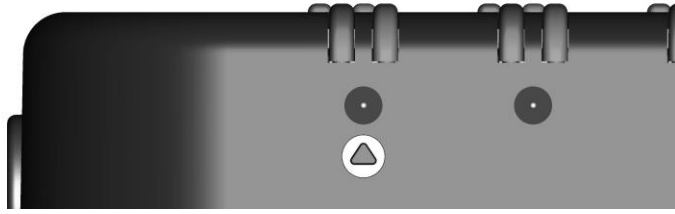- *To conserve battery power, turn the Module off when not in use.*

Powering On/Off
1. To turn Module on, press the Power Button (1) on the front of Module. The Red Connectivity Status Indicator lights up, indicating the unit is ON.

2. To turn Module off, press the Power Button (1) on the front of Module. The Red Connectivity Status Indicator goes off, indicating the unit is OFF.

Connection Cable

The Module is equipped with 15 specially designed Connection Cables with FireFly Clip, which enable you to connect up to fifteen (15) fireworks. Do NOT modify or attempt to strip these wires. Doing so may short circuit the Module.

1. Plug in the Connection Cable into any one of the Input Ports on Module.

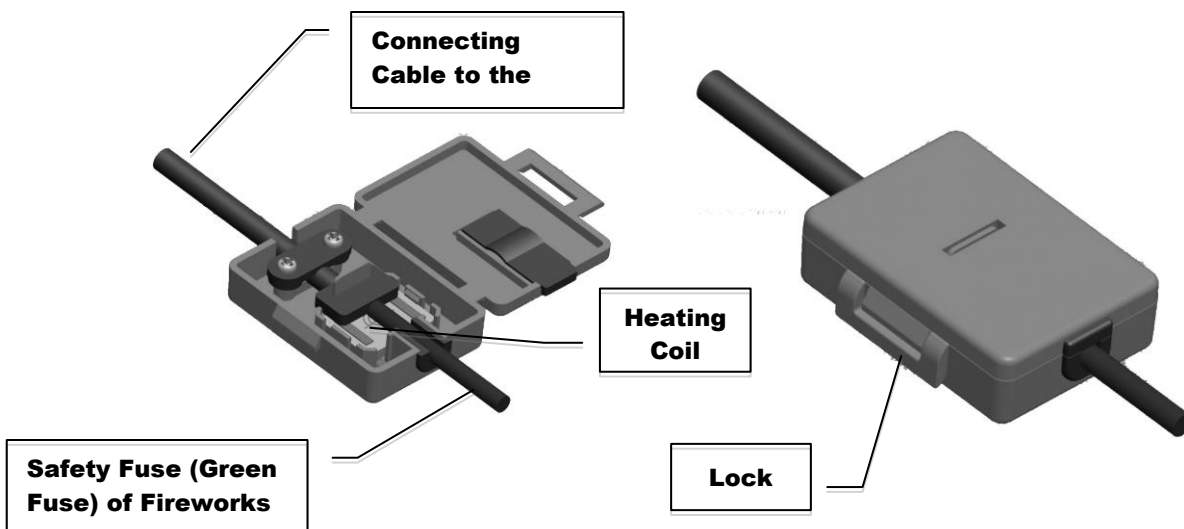2. Observe the triangle marking on the casing for position number 1.

3. If the Connection Cable is fully connected to the Module, both green and red Connectivity Status Indicators will illuminate.

4. If for any reason the Connection Cable is not properly connected to the Module or the FireFly Clip heating coil is burned out or broken, the Connectivity Status Indicators will not illuminate fully. In the case of non-continuity, replace Connection Cables. Do not attempt to repair them.

Setup Fireworks

FireFly Wireless Firing Module is NOT designed for industrial or professional use. Make sure the fireworks being set off with this device belong to Consumer Fireworks category defined by your country. Additionally, make sure to follow instructions provided on each individual firework product package.

1. FireFly should be powered off.

2. Make sure the primary fireworks ignition fuse is a "safety" type, normally green in color.

3. Carefully place the ignition fuse so that _the tip of fuse is positioned at the center of FireFly Clip heating coil._

4. Close and lock the FireFly Clip accordingly.

5. Ready for fire.

Connecting Cable to the

Heating Coil

Safety Fuse (Green Fuse) of Fireworks

Lock

ATTENTION:
- *After each fire, carbon residue may build up on the heating coil affecting the next ignition. If subsequent carbon residue accumulates on the coil, the fireworks __may not__ ignite/set off. It is recommended that the user clean the coil with a soft brush after each ignition and manually fire the coil without a fuse as the heat alone will help burn off any remaining residue. FireFly should be powered off during this cleaning process.*

To Pair (Link) User Portable Device

1. **Visit ShootFireFly.ca to download the FireFly Application on your Android™ or Apple® portable wireless device.**

2. Make sure the Bluetooth® feature of the portable wireless device is turned on (refer to the instruction guide of portable device for operation).

3. Open the FireFly Application on the portable device.

4. First time users will be asked to register the application by entering an email address or logging in via Facebook or Google. After that, users will receive an email from the system. Please click on the link in the email to complete the activation process.

5. Press "Firing Device" button to enter the Application.

6. Turn on the FireFly Wireless Firing Module (refer to the Power On/Off section of this manual).

7. Once the Module is detected by your device, it will appear in the FireFly Application ONLY. The Module device will not appear in the Bluetooth® setup on the portable device. This has been purposely designed to enhance the security of the system.

8. Select the "GT2404-A1" device when it appears.

9. Enter "000000" as the password and press ">" to pair.

10. When the Module is successfully paired, the Main Menu page will appear in the Application.

NOTE: *If the Module fails to pair, an error message will pop up. Turn the Module off for 5 seconds and then turn it on again. Retry from step 3 above. If it still fails to pair, press the reset button (4) by a small pin to reset the Module.*

NOTE: *These steps will not need to be repeated after initial pairing.*

For instructions of FireFly App usage and designing your show, visit ShootFireFly.ca

Troubleshooting

Problem	Reason for Problem	Solution
Slow Response	1. The Module is placed too far from the portable device. The effective distance is around 60 feet (18 meters).	Shorten the distance between the portable device and Module.
	2. Low battery power could seriously affect Module's response.	Replace batteries.
	3. Low power level of portable device could affect the transmission signal to the Module.	Charge your portable device.
	4. In extreme cold, the batteries and electronic components may respond slowly.	Put a flat, wooden board under the Module to isolate it from the cold ground.
	5. Because the Module uses Bluetooth® wireless technology, it may be interfered with by surrounding devices.	Keep a distance from other people who are using any electronic devices with 2.4 GHz radio frequency.
No ignition	1. The FireFly Connection Cable is not plugged into the Module completely.	Check whether the red and green Status Indicators at the input port both light up.
	2. Heating coil is dirty.	Clean the heating coil by brushing it gently to remove the carbon residue after each firing.
Pairing Lost	1. Bluetooth® on the portable device may not be turned on or may have disconnected.	Within the settings of your portable wireless device, make sure Bluetooth® is turned on. It may be necessary to repeat the pairing steps again.
All Lights Flashing	1. System overloaded	Restart system and set cues further apart

Specifications

Bluetooth® Version	v 4.0
Operating Time	up to 300 ignitions
Standby Time	up to 150 hours

Model# Titan-1
FCC ID: 2ALI3T201700001
IC: 23380-T201700001

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For FireFly Wireless Firing Module information, questions, or customer service, e-mail: fireflysupport@ti-techs.com

Imported by / importé par:

Rocket Fireworks Inc.
Toronto, ON MBZ 2T4
www.rocket.ca

THANK-YOU

FCC & Industry Canada NOTES

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules and Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limit set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.