DMX_BOX

DMX Control • Time Code • Master

User Manual

PiroshoW
PROFESSIONAL ARTISTIC SOLUTIONS

www.piroshow.com

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1. Introduction The Piroshow DMX_BOX is an advanced device for controlling scenic effects via DMX512 protocol. Designed to ensure reliability, precision and integration with Piroshow systems, the DMX_BOX can be used in stand-alone mode or synchronized via Master or Time Code.

2. Package Contents

- 1x Piroshow DMX_BOX Module complete with antenna
- 1x Feeding cable
- 1x User manual downloadable in pdf directly from the www.piroshow.com website

3. Key Features

- Up to 255 DMX universes, each with 512 channels and a capacity of 30,000 instructions per universe.
- Full support for SMPTE Time Code

- Compatible with Master Piroshow
- Programmable Stand-Alone Mode
- Integrated display with intuitive menu navigation
- Weather resistant (IP certified)
- Firmware upgradable via USB

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4. Technical specifications

- Power supply: 9-24V DC
- Consumption: max 1.5A
- Dimensions: 180x120x70 mm
- Weight: 650 g
- Connettori: DMX IN/OUT, USB, RJ45, DC Power

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5. Uploading Files to DMX_BOX

To upload files to the DMX_BOX's internal storage (maximum capacity: 3 MB), follow these simple steps:

1. Connect the DMX_BOX to the computer when it is turned off via USB cable.
2. Turn on your device and your computer will automatically recognize it as an external storage drive.
3. Copy the desired files directly to the memory.
4. Safely eject the DMX_BOX from your computer and unplug it.

The memory is managed like a normal external drive, so no additional software is required. Each uploaded show is saved in the **internal library**, where it can be managed and deleted if necessary directly from the computer.

It is also possible to load **the same list intended for the Master on the** DMX_BOX, including the **firing channels**, making programming even faster, more efficient and synchronized with the Piroshow system.

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6. Main Functions

6.1. Power On

- Press the ON/OFF button for 3 seconds
- A beep and red LED confirm the ignition
- Wait for the welcome screen and the main menu to appear

6.2. Menu Navigation

Press and hold OK for about 3 sec. to access the main functions.

Use the ▲ and ▼ arrows to scroll through the entries. Press OK to select.

- UNIVERSES
- ID FORM
- RF CHANNEL
- NETWORK ID
- SMPTE LTC
- OFFSET

Use OK to select an entry.

UNIVERSE Setup

- Select the number of the DMX universe to associate with the module (useful in multiverse configurations).
- Supported values: 1–255.

The DMX_BOX is equipped with **255 DMX universes**, each with **512 channels** and a capacity of **30,000 instructions per universe**.

ID Form Setup

- Set a unique identifier for the form (from 1 to 126). Always set an ID that is different from other forms. The Master will recognize the DMX_BOX module with the color blue.

RF CHANNEL Setting

- Select the radio channel:
  - 1–99 → Communication with Master Module
  - The Master must be set to the same channel

Press OK to confirm and return to the home screen.

Network ID Setting

- Assign a network identifier to differentiate multiple networks in the same environment.
- Set a value between 1 and 99 according to your system configuration.
- The Master must also be set to the same value.

SMPTE LTC Setup

- It allows the synchronization of the DMX signal with SMPTE LTC (Longitudinal Time Code) signals.
- Enable/disable the feature as needed.
- It supports 24, 25, and 30 fps formats.

OFFSET function

The DMX_BOX allows you to manage firing lists with a duration ranging from **0 to 24 hours**. Regardless of the duration, each list always starts from **time 0**, i.e. the absolute beginning of the timeline.

Thanks to the **OFFSET function**, it is possible **to postpone the start of the execution** in time, without changing the list itself. This way, the show can automatically start at a set time, keeping the original programming intact.

Practical example:

If the list contains effects programmed from 00:00:00 to 00:10:00, and you set an OFFSET of 5 minutes, the execution will start at **00:05:00**, but always starting from time 0 of the list.

This feature is especially useful for:

- Align the show with other events (e.g., audio, lighting, video, fireworks).
- Synchronize the startup with an **external Time Code**.
- Carry out tests with a delayed start without having to rewrite the list.

Press ok to select and return to the home screen.

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7. Connection and Wiring

- Connect the DMX output of the DMX_BOX to the first DMX fixture using an XLR cable.
- Continue daisy chain wiring to connect other DMX fixtures.

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8. How to Use

The DMX_BOX can operate in three different modes, offering flexibility of integration and control according to the needs of the entertainment system.

1. Track Selection

    - Press and hold the left arrow to access the library.
    - Use the interface controls to navigate through the available tracks.
    - Select the track you want for playback.

Standalone Mode

The DMX_BOX is able to operate in complete autonomy.
Once the show is loaded, simply connect the device to your DMX equipment and use the built-in PLAY and PAUSE commands to start or stop playing.
This mode does not require any external connection or remote control, press OK and the show goes running.

Time Code Mode (SMPTE – All Frames)

The DMX_BOX can be synchronized via TIME CODE SMPTE signal, compatible with all frame formats.
It is equipped with XLR and RCA inputs for connection with external Time Code sources (e.g. audio/video control units or control systems).
The FORCE TIME CODE option allows you to maintain synchronization even in the event of a momentary interruption of the signal, ensuring continuity of execution.

Execution of the show via external source SMPTE – DMX_BOX

1. Source Connection:
    - Connect the SMPTE external source to the DMX_BOX.
2. SMPTE Mode Activation:
    - Press OK on the DMX_BOX to enter the home screen.
    - Select the SMPTE ON item.
    - If you want to set a TIME OFFSET, select it at this step.
    - Press OK to return to the home screen.
3. Preparation for execution:
    - The system will appear as UNARMED (indication at the top right).
    - Press OK to arm the DMX_BOX.

4. Start of the show:
    - Start the SMPTE signal from the connected external device.
    - If a time OFFSET has been set, the DMX_BOX display will show:
        - Prima riga: Time Code – TC.
        - Second line: OFFSET set.
5. Behavior in case of SMPTE signal loss:
    - If the FORCE option is not active:
        - If the external device is disconnected, the show will stop.
        - It will resume automatically as soon as the SMPTE signal is available again.
    - If the FORCE option is on:
        - Even in the absence of the SMPTE signal, the show will continue to perform.
6. Activating the FORCE option:
    - Access the function menu. ○ Select the SMPTE ON item. ○ Press the up arrow and the word FORCE will appear.
    - The mode will now be active.

Master Mode (Integration with Piroshow system)

When used within a Piroshow system, the DMX_BOX can be managed remotely via the Master units, behaving like a normal firing module. In this configuration:

- The DMX_BOX has its own programming ID.
- Supports changing NETWORK ID and RF CHANNEL parameters, ensuring flexible integration into custom RF networks.
- It receives direct commands from the Master for starting, stopping, and synchronizing the show.

Procedure for the automatic performance of a show with the DMX_BOX and the Master:

2. Power On and Connect:
    - Turn on the Master. ○ Turn on the DMX_BOX.
    - Connect the DMX_BOX to the first DMX fixture via cable.
3. DMX_BOX configuration:

- Press OK on the DMX_BOX to access the function menu. ○ If necessary, change the settings (e.g. DMX addresses, modes, etc.).
- Press OK to exit the menu.

4. Connection check from the Master:
   - On the Master, go to System Test.
   - If the DMX_BOX is connected correctly, it will be displayed in light blue.
5. Selecting the file to run:
   - Return to the Master home screen. ○ Press UPLOAD, then OPEN to open the file library.
   - Select the desired file: the selected file will be colored blue. ○ Press on UPLOAD FILE (bottom right) to confirm.
   - You will automatically return to the home screen.
6. Performance of the show:
   - Press on AUTO FIRE. ○ Press ARM to arm the system. ○ Press FIRE to start the show.
   - During the performance, you can use the PLAY/PAUSE function to pause or resume the show.

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9. Maintenance and safety

- Keep the device away from heat and moisture.
- Clean regularly with a dry, soft cloth.
- Do not open the unit; for technical interventions, contact Piroshow support.

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10. Safety Warnings

- Do not disassemble the module
- Do not expose to direct heat sources
- Do not use with damaged cables
- Protect against surges

- Use only in dry or properly protected environments
- Always carry out a full test before the show

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11. Technical Support For technical support and firmware updates:

- Email: info@piroshow.com
- Web: www.piroshow.com
- Tel: +39 0931 875921

Function	Description	Mode	Notes
Power On	Turn on the device by holding down the ON/OFF for 3 seconds	Standalone, Time Code, Master's Degree	Beep and red LED confirm power-on
Uploading File	Connect via USB and copy the Files to Internal Storage	Standalone, Time Code	Maximum capacity 3 MB
Setting Universe	Configure the number of the DMX universe	All Modes	Up to 255 universes, each with 512 channels
Mode Standalone	Automatic execution of the Show	Standalone	Boot via OK button, no external connection required
Time Mode Queues	Synchronization with signal SMPTE via XLR or RCA	Time Code	Supports 24, 25 and 30 fps; FORCE option for continuity in case of signal loss
Master Mode	System integration Piroshow	Master's Degree	Remote management via Master Piroshow
Time Offset	Scheduled delay of the start of the show	Standalone, Time Code	Used to synchronize startup with external events
RF Setting Channel	Configure the Radio Channel (1-99)	Master's Degree	Must match the channel set on the Master
Network ID	Identifier for RF networks Customized	Master's Degree	Setting 1 to 99
Maintenance	Regular cleaning and inspection	-	Avoid opening the form; Maintenance by authorized personnel only
Security	Precautions and rules for a Safe use	-	Includes connection control and weather protection

Product entirely designed and assembled in Italy by Smartech S.r.l.

Complete tutorial available on the Piroshow YouTube channel
https://www.youtube.com/watch?v=tI4LVHLI4wo

Warranty Conditions

All Piroshow products are covered by an international warranty for manufacturing defects and malfunctions, in accordance with the European Directive 1999/44/EC and the Legislative Decree 206/2005 of the Italian State. Duration and validity of the warranty

- The warranty is valid for 2 years from the date of purchase.
- It only covers manufacturing defects or malfunctions that are not attributable to improper use.
- The warranty is void in the event of tampering, improper use or lack of maintenance.

In the event of delivery of a defective or malfunctioning product, the buyer has the right to a replacement or withdrawal, subject to notification within the legal deadlines.

Rules for the validity of the warranty

To keep the warranty active, you must comply with the following guidelines:

- Each Piroshow module must be used only after careful reading of the user manual.
- Avoid unauthorized access to the firing field and prevent any interference with ignition systems.
- The correct functioning of the modules also depends on compliance with the instructions for use of pyrotechnic items, especially those sensitive to electromagnetic fields.
- Modules declared weather-resistant must be used with a hermetically sealed case. If this is not possible, it is necessary to protect them with suitable covers.
- Where indicated, modules are resistant to heat and ash, but should never be exposed directly to flames or placed too close to fires and effects.
- The communication and wiring ports between the modules are waterproof only if used correctly and with the airtight caps closed, except for the time strictly necessary for connection.
- Use only undamaged modules, with no visible or suspected damage. In the event of a malfunction, do not use them or attempt repairs yourself.
- The modules must be checked before use, especially in the case of rental to third parties.
- The ports and connectors should be cleaned regularly to prevent dirt buildup.
- Maintenance and repair of Piroshow products may only be carried out by authorized personnel. Any opening of the module by a third party will result in the immediate forfeiture of the warranty.

Improper use of a module can compromise the safety of the operator, assistants and the public!

Safety rules

The following rules are used to better understand the most relevant safety regulations. The safety standards are the result of our experience and daily contact with our customers and allow the safe application of all components of our radio-controlled ignition systems. Piroshow is pleased to welcome further suggestions from pyrotechnicians to further improve the indications relating to safety in the implementation and execution of the shows. The following safety rules are part of the instructions for all our systems. The instructions should be made available to all persons who are involved in this topic in your company. Any technical device can potentially cause errors. Incorrect use, damage, wear and tear and aging favor the introduction of errors. The Piroshow electronic ignition system is the most valid support for pyrotechnics for the electronic ignition of shows and to enhance their artistic creativity, but it relates to a type of material, pyrotechnics, dangerous by their very definition. This is why these rules were born.

1. Smoking and holding utensils capable of creating sparks is always prohibited in the performance area
2. Depending on the pyrotechnic items to be used and the local conditions, implement all necessary fire and first aid measures.
3. Always take into account national laws, technical standards and instructions on the use of pyrotechnic objects and their clauses.
4. Make sure that unauthorized persons do not have access to pyrotechnics and ignition systems.
5. Observe the safety zones prescribed by law and by the manufacturer. Keep strangers at a safe distance with barriers.
6. The instructions of the manufacturer of pyrotechnic articles must be observed.
7. The use of ignition installations should only take place after appropriate precautions.
8. Piroshow products indicated as expressly resistant to atmospheric agents must be used with a hermetically sealed case. If, for any reason, this is not possible, the pyrotechnician must take care to protect the modules with suitable covering.
9. Where expressly indicated, Piroshow products are resistant to heat and ash produced during the performance of the show. However, it is important that the modules are not placed in the immediate vicinity of the fireworks and pyrotechnic effects. In any case, Piroshow modules are not resistant to exposure to flames.
10. For the execution of fireworks displays, use only intact products that are perfectly intact in all their parts. In case of suspected malfunction, do not use the module and do not try to make DIY repairs. The use of a non-intact and fully functional module jeopardizes the health of the pyrotechnician, his assistants and the spectators! The inspection and testing of the modules is essential in the case of rental by other pyrotechnic companies!
11. Thunderstorms or electrostatic fields that form before thunderstorms can cause accidental ignitions. With the storm approaching, Piroshow recommends suspending the work of setting up the show and securing what has already been placed.

12. The igniters must be inserted into the appropriate terminals or quick clips, making sure that the relative Slave 30ch 100v, Easy Fire, Smart Slave modules are switched off or without connections to supply power. Any pyrotechnic effect is in any case to be considered active from the moment the cables are connected to the ignition device, regardless of whether the device is on or off.
13. Always check the integrity of the electrical wire connected to the igniter.
14. Do not allow fuzes and their cables to be close to or in contact with current-conducting materials if there is a risk of electrostatic discharge.
15. Always check the integrity of the electrical wiring cables of the system.
16. Avoid all sources of early ignition, including high voltages of electric, magnetic and electromagnetic fields and voltage sources.
17. Mobile phones, radio transmitters and in general all instruments with an internal battery represent a danger that is too often underestimated: if handled at the same time as the ignition igniters are installed, they can cause accidental ignition. WARNING!
18. Fireworks, depending on their composition, can produce ionized gases. These cause the air to become a conductor of current. Ionization processes, if they take place near high voltage cables, can cause deadly overlaps for those nearby. Keep in mind that the air currents on the ground can be different from those found at a height of a few meters.
19. Use cables that are long enough for your safety and that of the appliances.
20. During the test or simulation phase of the show, it is a good habit, despite the extreme safety of Piroshow testing procedures, that no pyrotechnician or worker is present in the vicinity of the pyrotechnic stations.
21. Always carry out a complete functional check of all modules and connections before the day of the show, to detect malfunctions in advance.
22. Carefully check that the programmed ignition sequences are consistent with the safety distances and the provisions provided for in the safety plan of the show.
23. Always keep the manuals of the modules and control units easily accessible during the preparation and execution of the show.
24. All personnel involved must wear flame-retardant clothing, safety shoes, and hearing and visual protection equipment when performing the show.
25. Avoid overheating or short-circuiting the batteries, and dispose of damaged batteries immediately in accordance with current environmental regulations.
26. In the presence of strong winds, heavy rain or snow, suspend operations if minimum safety conditions are not guaranteed.
27. Ensure that each operator has received appropriate technical training in the use of the modules and is familiar with emergency procedures.
28. Always have an action plan in place in the event of an accident or malfunction, with roles assigned and escape routes clearly identified.