PX154

DMX - MP3 Player

INSTRUCTION MANUAL

PXM®

CONTENTS

1. GENERAL DESCRIPTION

PX154 DMX-MP3 Player is a device, that allows to play the compressed audio files mp3 MPEG I, II-Layer 3, controlled with the DMX-512 protocol or directly, with the keys placed on the device's front panel. You can place up to 26 tracks on the SD/MMC memory card.

The module can co-operate with the DMX devices in two modes: taking up four or seven DMX channels, in the first case the tone equalizer adjusted with the DMX controller is unavailable.

The player can be connected to the PC computer through the built-in USB port, that allows to transfer the mp3 files from the computer to the SD/MMC card and vice versa. The device is identified as a removable disc then.

The features supported by the PX154 DMX-MP3 Player allow to play the tracks, choose a particular tune, loop one or all tracks, adjust the volume in a 32-grades scale, adjust the equalizer of high, medium and low tones and to set the DMX address.
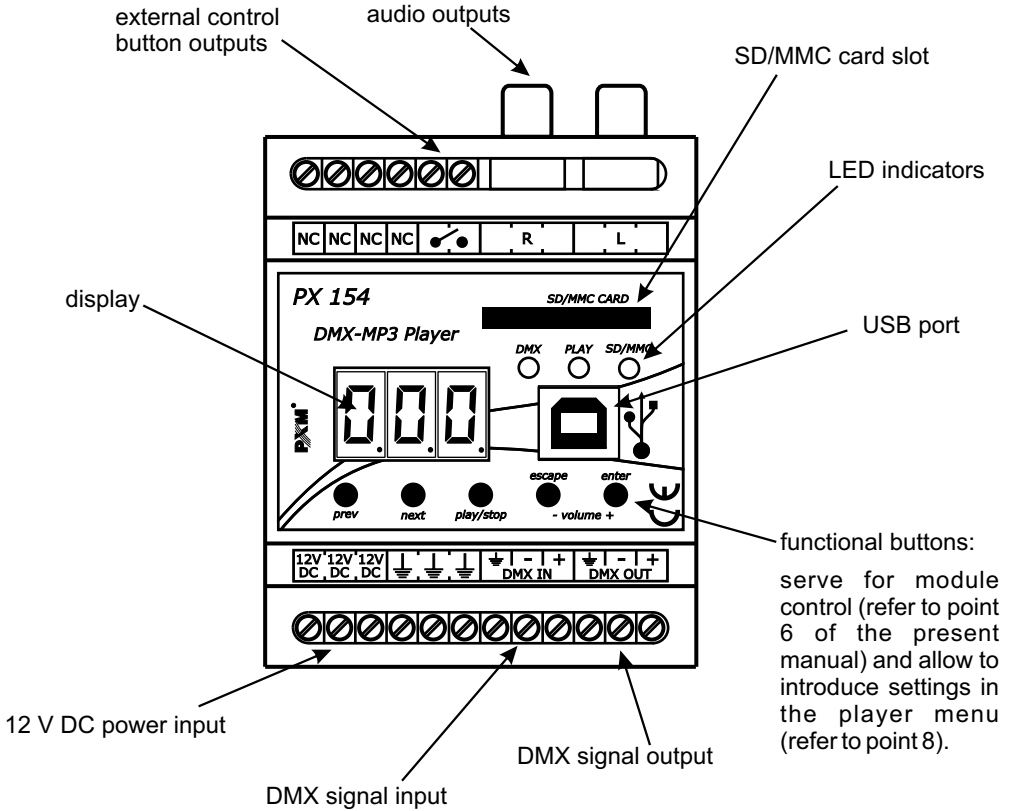
The module is manufactured in a casing for DIN rails mounting.

2. SAFETY CONDITIONS

PX154 DMX-MP3 Player is a device powered with safe voltage 12 V; however, during its installation and use the following rules must be strictly observed:

1. The device can only be connected to 12 V DC with current-carrying capacity compatible with technical data.
2. All the conductors should be protected against mechanical and thermal damage.
3. In the event of damaging any conductor, it should be replaced with a conductor of the same technical data and attestations.
4. Connection of DMX signal can be made with shielded conductor only.
5. All repairs and connections of outputs or DMX signal can be made with cut off power supply only.
6. PX154 should be strictly protected against contact with water and other liquids.
7. All sudden shocks, particularly dropping, should be avoided.
8. The device cannot be turned on in places with humidity exceeding 90%.
9. The device cannot be used in places with temperature lower than 2°C or higher than 40°C.
10. Clean with damp duster only.

3. PLAYER DESCRIPTION

external control button outputs

audio outputs

SD/MMC card slot

LED indicators

display

USB port

functional buttons:

serve for module control (refer to point 6 of the present manual) and allow to introduce settings in the player menu (refer to point 8).

12 V DC power input

DMX signal output

DMX signal input

4. LED INDICATORS

The PX154 player is equipped with three LED indicators, that inform about the condition of the player, SD/MMC card, PC connection and the DMX signal presence.

> 1. SD/MMC LED indicator (green)
> > lights - the memory card and the selected file are correct
> > twinkles - memory card error or incorrect / missing file
> > off - the module is switched off
>
> 2. PLAY LED indicator (orange)
> > lights - mp3 file playing
> > twinkles - USB Master Mass Storage mode
> > off - module switched off or inactive
>
> 3. DMX LED indicator (blue)
> > twinkles - DMX signal is present
> > off - no DMX signal

5. CURRENT PLAYER STATUS

When the PX154 player is switched on, the software version number is displayed. After approximately 2 seconds the currently played track number appears. The direct control with the functional keys is possible, when the DMX signal is absent. The player starts with the 0 volume level and selects (does not play) track no. 000 then. The equalizer is set at the default level, as well as the single playing of one track. By pressing the PLAY/STOP key you can start playing the selected track. The special case is the "run" feature activated (refer to p. 8.3 of the manual).
When both volume keys are pressed simultaneously you can enter the player's menu, where the following parameters can be set: the DMX address, number of DMX control bytes, player reaction to DMX signal absence or interruption and the played track parameters.

ATTENTION: When the SD/MMC memory card is empty, the player can be used as the Master Mass Storage device, that is a removable disc, only! The control with the functional keys will not be possible.
Moreover, the number of files put on the SD/MMC card cannot exceed 26. If there is more files or any additional folders are put on the memory card, it can cause improper player operation during tracks changing. All the mp3 files <u>must</u> be saved in format 000.mp3, 001.mp3, ... , 025.mp3.

6. DIRECT CONTROL

Direct control (with the control keys) is possible when the DMX signal is absent (DMX LED off) only. You can operate with the four following keys:

PLAY/STOP - plays / stops / pauses / restarts playing
VOLUME "+" and "-" - adjust the volume level
NEXT - next track selection
PREV - previous track selection

7. DMX CONTROL

With the DMX protocol the player control can be held through four or seven channels. In the 7-channel control mode the following features are available: play / stop / restart, track number selection, reproduction mode (one track or all tracks once and one or all tracks in a loop), volume adjustment and a three tone equalizers (high, medium and low). When the 4-channel control mode is set the equalizer is unavailable - you can adjust the tones manually in the player's menu (dEF section).

Channel 1: stop, pause, start, restart
DMX values:
0 - 63   - stop
64 - 127   - pause
128 - 255   - start / restart
ATTENTION: You can start the track in a "stop" state only.
You can restart the track in a "pause" state only.

Channel 2: track number selection (0 - 25)

DMX values	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129
track number	000	001	002	003	004	005	006	007	008	009	010	011	012

DMX values	130-139	140-149	150-159	160-169	170-179	180-189	190-199	200-209	210-219	220-229	230-239	240-249	250-255
track number	013	014	015	016	017	018	019	020	021	022	023	024	025

Channel 3: reproduction mode - single (the selected track is played once), single looped (the selected track is played repeatedly), continuous single (starting from the selected track, playing comes to the last track and stops when the last track was played), continuous looped (starting from the selected track, tracks are played in turn, after the last track was, the player starts to play the first track, and so on)

DMX values:
- 0 - 63 - single reproduction
- 64 - 127 - looped single reproduction
- 128 - 191 - continuous single reproduction
- 192 - 255 - looped continuous reproduction

ATTENTION: each change of playing mode through the DMX protocol automatically selects the track and realizes the start / stop command

Channel 4: 32-grades volume adjustment

Channels 5, 6, 7: tone equalizer - in sequence: low tones, medium and high (32 grades each)

DMX values	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63
volume level	0	1	2	3	4	5	6	7
equalizer level	1	2	3	4	5	6	7	8

DMX values	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
volume level	8	9	10	11	12	13	14	15
equalizer level	9	10	11	12	13	14	15	16

DMX values	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191
volume level	16	17	18	19	20	21	22	23
equalizer level	17	18	19	20	21	22	23	24

DMX values	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
volume level	24	25	26	27	28	29	30	31
equalizer level	25	26	27	28	29	30	31	32

8. PLAYER MENU

The player menu allows to define the parameters of a played track, set the player reaction to DMX signal interruption, choose the control mode (number of DMX control bytes) and to set the DMX address. When the programming is performed, the tracks reproduction is not interrupted (the only exception is the dEF menu parameters programming).

To enter the player main menu press both volume adjustment (VOLUME + and -) keys simultaneously. Moving around the menu and options selection is performed with the following keys:

VOLUME "+" - ENTER (enters the successive submenu and confirms your selection)
VOLUME "-" - ESCAPE (returns to the previous menu and discards changes made)
NEXT - scrolls the menu forwards and increases the parameters values
PREV - scrolls the menu backwards and decreases the parameters values

8.1. Adr MENU

This is a first parameter to be set. In this menu you can select the player DMX address. The address set corresponds to the first channel, the following channels will be ascribed to the subsequent DMX addresses. The range you can choose from is from 1 to 505, regardless of the control bytes number.

$$\boxed{Adr} \xrightarrow{\text{VOLUME +}} \boxed{001} \xrightarrow{\text{NEXT}} \boxed{002} \xrightarrow{\text{NEXT}} | \xrightarrow{\text{NEXT}} \boxed{504} \xrightarrow{\text{NEXT}} \boxed{505}$$
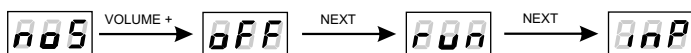
8.2. Cbn MENU

It defines the control mode through the DMX protocol. Allows to select one of two available modes: 7-byte (7-channel) control (all playing parameters, volume and tone adjusting is available) and 4-byte (4-channel) control, that ignore the tone equalizer. This parameter can be adjusted manually in the dEF menu then.

$$\boxed{Cbn} \xrightarrow{\text{VOLUME +}} \boxed{B7b} \xrightarrow{\text{NEXT}} \boxed{B4b}$$

8.3. noS MENU

Defines the player reaction to DMX control signal absence or interruption. You may choose from three following options:

> oFF - playing is stopped and all the parameters are being reset, the player status is the same as it is after turning the device on. Full control with the functional keys on the front panel is possible.
>
> run - the device automatically plays the track defined in the dEF menu with the parameters set in the dEF menu as well
>
> InP - you can launch the track with the external button, it is played with the parameters set in the dEF menu, by pressing the external button once more, you will restart the player with dEF parameters as well

$$\boxed{noS} \xrightarrow{\text{VOLUME +}} \boxed{oFF} \xrightarrow{\text{NEXT}} \boxed{run} \xrightarrow{\text{NEXT}} \boxed{InP}$$

8.4. dEF MENU

Allows to define the parameters of a played track. You have seven channels at disposal, for each channel you can set the value in a range from 0 - 255, same as in a 7-channel DMX control. When the parameters are being adjusted, you have the possibility to hear the changes made.
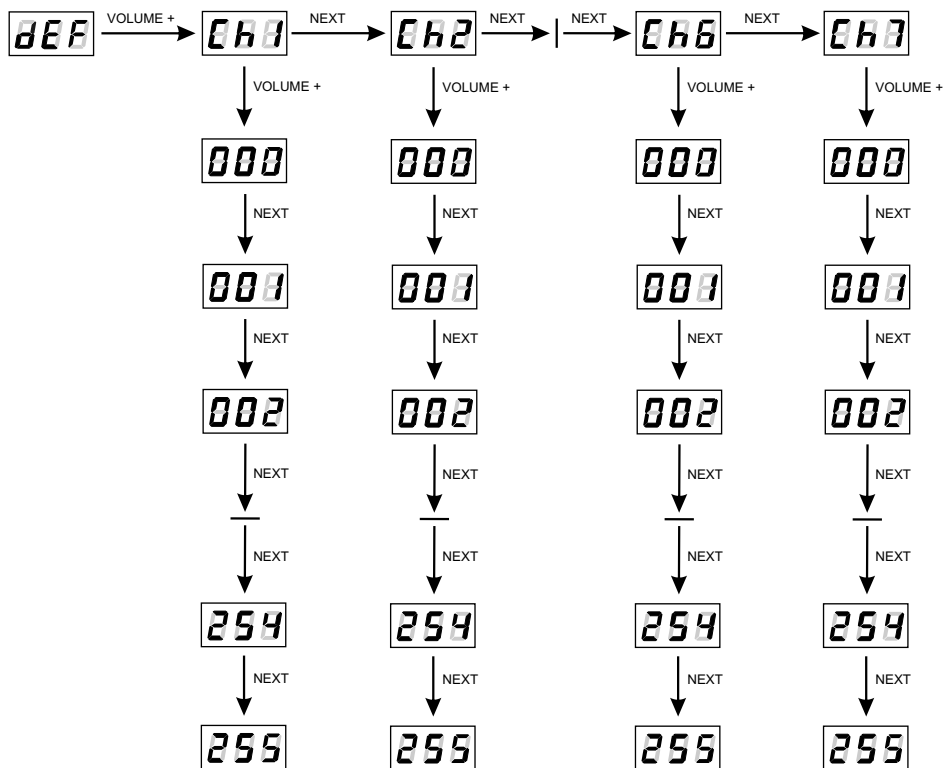
> **ATTENTION:**
> When the DMX signal is absent, the dEF menu settings after leaving the dEF submenu, are held until any key is pressed - in this moment the playing mode, if different, is changed into single.
> When the DMX signal is present, leaving the dEF submenu causes the instant launch of a command set on a DMX controller.

Ch1 - stop / pause / play / restart
Ch2 - track number
Ch3 - playing mode

Ch4 - volume
Ch5 - low tones adjustment
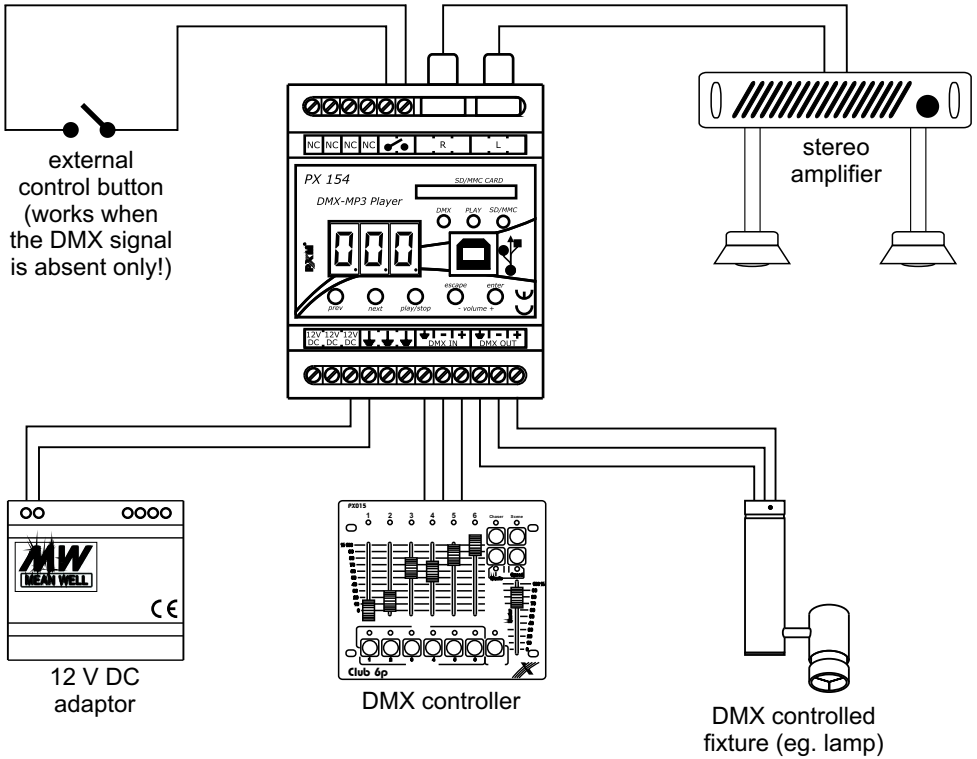Ch6 - medium tones adjustment
Ch7 - high tones adjustment

9. COMMUNICATION WITH A PC COMPUTER

PX154 DMX-MP3 Player may be connected to the PC computer through the USB cable. When connected, the USb inscription will be displayed and the MP3 LED will twinkle. The computer identifies the player as a removable disc. The file transfer can be performed with the easiest methods: "drag and drop" or "copy / paste". If the SD/MMC memory card is empty, the device can be used as the Master Mass Storage device (removable disc) only. Moreover, if the PC is equipped with the memory card slot, the files can be transferred directly to the SD/MMC card.
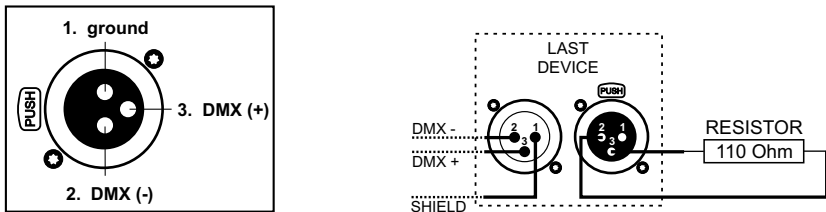
ATTENTION:
The number of files put on the SD/MMC card cannot exceed 26. If there is more files or any additional folders are put on the memory card, it can cause improper player operation during tracks changing. All the mp3 files <u>must</u> be saved in format 000.mp3, 001.mp3, ... , 025.mp3.
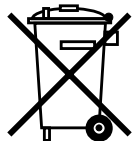
10. CONNECTION SCHEME

external control button (works when the DMX signal is absent only!)

PX 154
DMX-MP3 Player

SD/MMC CARD

DMX PLAY SD/MMC

prev next play/stop escape enter – volume +

12V 12V 12V DC DC DC DMX IN DMX OUT

stereo amplifier

12 V DC adaptor

MEAN WELL

DMX controller

Club 6p

DMX controlled fixture (eg. lamp)

11. DMX SIGNAL CONNECTION

1. ground
3. DMX (+)
2. DMX (-)
PUSH

LAST DEVICE
PUSH
DMX -
DMX +
SHIELD
RESISTOR
110 Ohm

1. To connect the devices application of the microphone cable is strictly recommended (two strands in a shield).
2. The devices have to be connected in series.
3. To split the DMX line it is necessary to use the DMX SPLITTER (PX094).
4. In case of the great number of devices or long distances use the DMX REPEATER (PX097). It is an amplifier of the DMX signal.
5. In the last device a terminator must be installed. It is a 110 Ohm resistor.

12. TECHNICAL SPECIFICATION

- control	DMX-512 protocol
- DMX channels	4
- maintained file formats	mp3 MPEG I, II - Layer 3
- maintained sampling frequencies	44.1 kHz
- power supply	12 V DC
- current consumption	200 mA
- AB P0 class power preamplifier initial	
degree	30 mW (R = 32 Ohm)
- dimensions	
- width	70 mm (4 DIN rail modules)
- heigth	86 mm
- depth	60 mm

PXM

ul. Przemysłowa 12
30-701 Kraków, Poland

tel: +48 12 626 46 92
fax: +48 12 626 46 94

e-mail: info@pxm.pl
http://www.pxm.pl

DECLARATION OF CONFORMITY
according to guide lines 89/336/EWG

Name of producer: PXM s.c.

Address of producer: ul. Przemysłowa 12
30-701 Kraków

declares that the product:

Name of product: **DMX-MP3 Player**

Type: **PX154**

answers the following product specifications:

EMC: **PN-EN 55103-1**
PN-EN 55103-2

Additional informations: The DMX-512 output must be shielded and the shielding
must be connected to the ground responding to the DMX
connectors.

PXM S.C.
Danuta i Marek Żupnik
30-701 Kraków, ul. Przemysłowa 12
NIP 677-002-54-53

Kraków, 01.06.2007

Marek Żupnik M.Sc.