STAIRVILLE

DMX Invader 1024 NET

DMX controller

user manual

Table of contents

DMX Invader 1024 NET

thomann
MUSIC IS OUR PASSION

DMX controller

1 General information

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products and user manuals are subject to a process of continuous development. We therefore reserve the right to make changes without notice. Please refer to the latest version of the user manual which is ready for download under *www.thomann.de*.

th•mann
MUSIC IS OUR PASSION

1.1 Further information

On our website (*www.thomann.de)* you will find lots of further information and details on the following points:

Download	This manual is also available as PDF file for you to download.
Keyword search	Use the search function in the electronic version to find the topics of interest for you quickly.
Online guides	Our online guides provide detailed information on technical basics and terms.
Personal consultation	For personal consultation please contact our technical hotline.
Service	If you have any problems with the device the customer service will gladly assist you.

1.2 Notational conventions

This manual uses the following notational conventions:

Letterings

The letterings for connectors and controls are marked by square brackets and italics.

Examples: *[VOLUME]* control, *[Mono]* button.

Displays

Texts and values displayed on the device are marked by quotation marks and italics.

Examples: *'24ch'*, *'OFF'*.

th•mann
MUSIC IS OUR PASSION

Instructions

The individual steps of an instruction are numbered consecutively. The result of a step is indented and highlighted by an arrow.

Example:

1. ▸ Switch on the device.

2. ▸ Press *[Auto]*.

   ⇨ Automatic operation is started.

3. ▸ Switch off the device.

Cross-references

References to other locations in this manual are identified by an arrow and the specified page number. In the electronic version of the manual, you can click the cross-reference to jump to the specified location.

Example: See

DMX controller

1.3 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.

Warning signs	Type of danger
	Warning – danger zone.

2   Safety instructions

Intended use

This device is intended to be used to control spot lights, dimmers, light effects, moving heads or other DMX-controlled devices. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

th•mann
MUSIC IS OUR PASSION

Safety

> **DANGER!**
> **Danger for children**
>
> Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!
>
> Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!
>
> Never let children unattended use electrical devices.

> **DANGER!**
> **Electric shock caused by high voltages inside**
>
> Within the device there are areas where high voltages may be present. Never remove any covers.
>
> There are no user-serviceable parts inside.
>
> Do not use the device if covers, protectors or optical components are missing or damaged.

DANGER!
Electric shock caused by short-circuit
Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.

NOTICE!
Risk of fire
Do not block areas of ventilation. Do not install the device near any direct heat source. Keep the device away from naked flames.

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

> **!**
>
> **NOTICE!**
> **Operating conditions**
>
> This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.
>
> Only operate the device within the ambient conditions specified in the chapter 'Technical specifications' of this user manual. Avoid heavy temperature fluctuations and do not switch the device on immediately after it was exposed to temperature fluctuations (for example after transport at low outside temperatures).
>
> Dust and dirt inside can damage the unit. When operated in harmful ambient conditions (dust, smoke, nicotine, fog, etc.), the unit should be maintained by qualified service personnel at regular intervals to prevent overheating and other malfunction.

! **NOTICE!**

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

! **NOTICE!**

Possible damage due to installation of a wrong fuse

The use of different types of fuses can cause serious damage to the unit. Fire hazard!

Only fuses of the same type may be used.

3 Features

This DMX controller is specially suited for professional lighting requirements, such as at events, on rock stages, for dance bands, as well as for mobile DJ applications.

Special features of the device:

- 2 × three-pin DMX outputs
- 1024 DMX channels in total
- 62 DMX-capable lamps / moving heads with up to 36 channels each
- 62 programmable Chases (100 scenes per Chase)
- 62 programmable scenes
- Shape generator for creating up to 80 effects (e.g. circles, loops, lines)
- Sound-controlled, automatic and manual sequence selectable
- Macro function for recording processes (31 macros can be saved)
- 18 faders to control the 36 DMX channels of each DMX-capable lamp or DMX-capable moving head
- Standard MIDI ports for input, output and thru
- USB port for data backup and import of stored data
- Display with selectable font and background colour
- Built-in microphone

4 Installation

Unpack and check carefully there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the product against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

19" mounting   The device is designed for mounting in 19" consoles, it occupies two rack units (RU).

Connections in DMX mode

Connect the DMX output of the device (C) to the DMX input of the first DMX device (1). Connect the output of the first DMX device to the input of the second one, and so on to form a daisy chain. Always ensure that the output of the last DMX device in the daisy chain is terminated with a resistor (110 Ω, ¼ W).
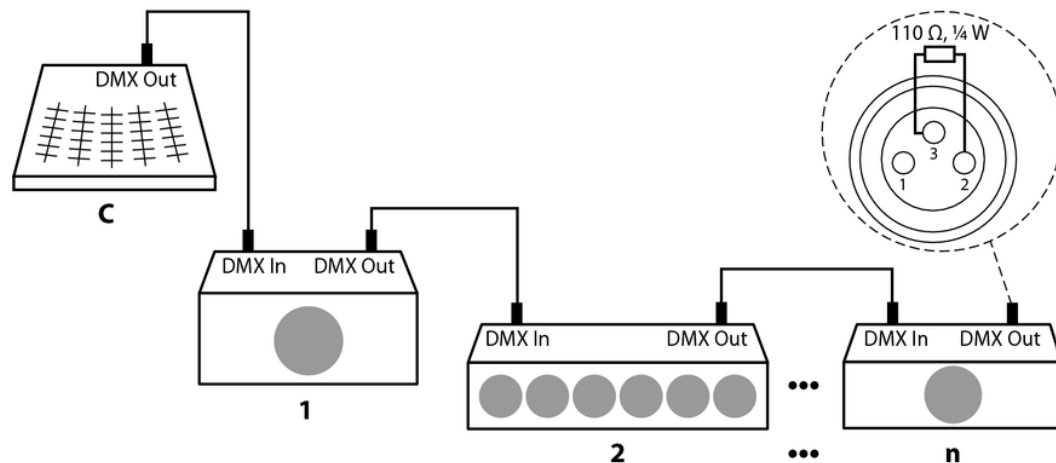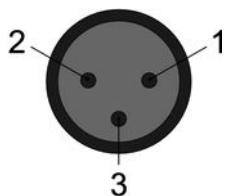
DMX outputs

Two three-pin XLR sockets serve as DMX outputs. The following figure and the table show the pin assignment of the sockets.

1	Ground
2	DMX data (−)
3	DMX data (+)

DMX address and control channels

For each function of a DMX device (e.g., colour, brightness, flash interval, etc.), a dedicated control channel is provided. The control channels can be assigned to a block of channel faders on the light control console.

The DMX address defines the number of the first DMX control channel of a device (1 – 512).

5 Connections and operating elements

Front panel
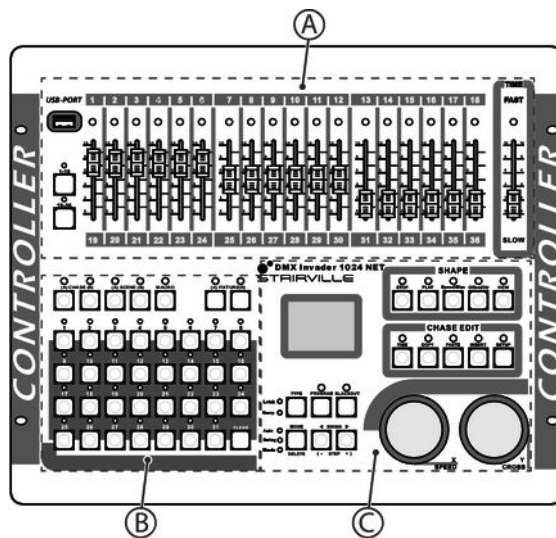
A	Fader
B, C	Function buttons
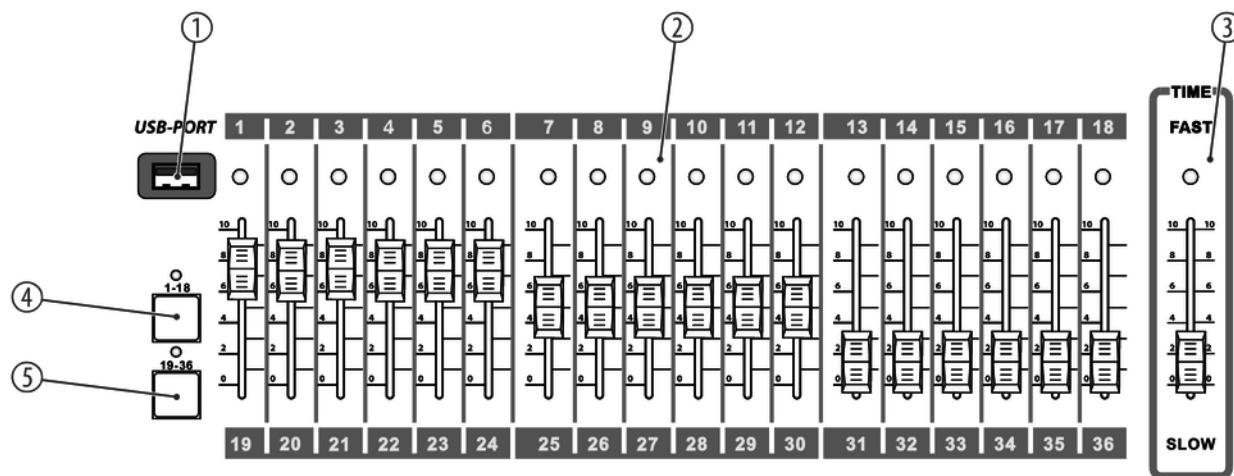
DMX Invader 1024 NET

1	**USB-PORT**
	USB port for data backup and import of stored data.
2	**Fader**
	These faders set the DMX values for each channel 1 … 36.
3	**TIME**
	Use this fader to change the duration of chase steps.
4	*[1-18]*
	Buttons for selecting faders for channels 1 … 18.
	When the button is activated, the LED lights up.
5	*[19-36]*
	Buttons for selecting faders for channels 19 … 36.
	When the button is activated, the LED lights up.
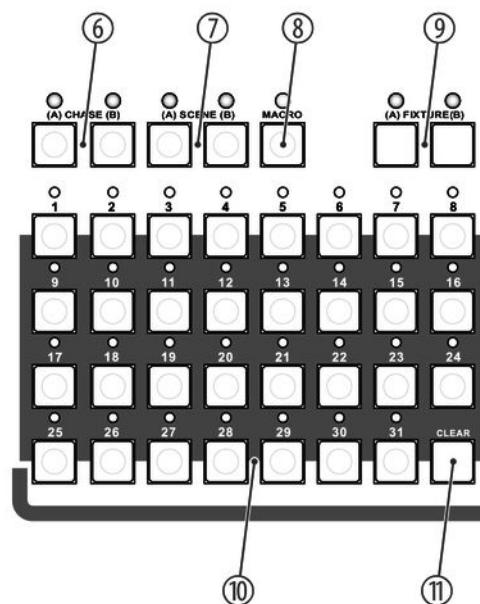
6	[CHASE]
	Buttons for subsequently selecting a programmed Chase (sequence of several scenes).
	To select group A (programmed chaser A1 … A31), press *[A]*. When the button is activated, the LED lights up.
	To select group B (programmed chaser B1 … B31), press *[B]*. When the button is activated, the LED lights up.
7	[SCENE]
	Buttons for subsequently selecting a programmed scene.
	To select group A (programmed scene A1 … A31), press *[A]*. When the button is activated, the LED lights up.
	To select group B (programmed scene B1 … B31), press *[B]*. When the button is activated, the LED lights up.
8	[MACRO]
	Button for subsequent recording of various procedures (chases, scenes and manual settings). When the button is activated, the LED lights up.

9	*[FIXTURE]*
	To select group A (A1 … A31), press *[A]*. When the button is activated, the LED lights up.
	To select group B (B1 … B31), press *[B]*. When the button is activated, the LED lights up.
	If you press *[FIXTURE]* and then address the devices with the number buttons *[1] … [31,]* the control channels of the devices are immediately assigned to the channel faders.
	Requirement: The DMX address of the connected devices was assigned according to the fixture number address list (see ⚡ *'DMX address list for the numbers of external devices' on page 41*) (the first device of group A gets DMX address A001, the next A007, the next but one A009, etc.).
10	**Numeric buttons 1 – 31**
	Buttons for selecting programmed chases, scenes or device groups, depending on which mode is activated. If the buttons are activated, the LEDs light up.
11	*[CLEAR]*
	Button to deactivate the current selection of number buttons.

12	**Display**
	Indicates the current device activity or programme status.
13	*[STOP]*
	Button to exit the Shape Generator. When the button is activated, the LED lights up.
14	*[PLAY]*
	Button for subsequent selecting and editing a movement via *[Speed/Size]*. When the button is activated, the LED flashes.
15	*[Speed/Size]*
	Button for selecting and editing the speed of movement and size. When the button is activated, the LED lights up.
16	*[Offset/Dir]*
	Button for selecting and editing position and direction. When the button is activated, the LED lights up.
17	*[VIEW]*
	Button to call up the current shapes. When the button is activated, the LED lights up.
18	*[TIME]*
	Button for subsequent editing PAN and TILT. When the button is activated, the LED lights up.

DMX Invader 1024 NET

th•mann

MUSIC IS OUR PASSION

19	[COPY]
	Button for copying a step within chase editing. When the button is activated, the LED lights up.
20	[PASTE]
	Button for pasting copied steps within chase editing. When the button is activated, the LED lights up.
21	[INSERT]
	Button for inserting a new step within chase editing. When the button is activated, the LED lights up.
22	[SETUP]
23	[Y / CROSS]
	Rotary control to adjust TILT. When the button is activated, the LED lights up.
	In Edit mode: Sets the crossfading for the current chase.
24	[X / SPEED]
	Rotary control to adjust PAN. When the button is activated, the LED lights up.
	In Edit mode: Sets the speed for the current chase.

25	*[SWING / STEP]*
	Button for changing the direction of chases.
	In Swing mode: Button for changing the rhythm of chases. If you press the button at a certain rhythm, the chase will be performed at the same rhythm.
26	*[MODE / DELETE]*
	Button for selecting the trigger mode.
	Auto: The speed of the chase is controlled by the timing of the scenes and the Time fader.
	Swing: The speed of the Chase is controlled by the Swing button.
	Music: The speed of the chase is controlled by the rhythm of the music.
27	*[TYPE]*
	Button for configuring the number buttons.
	Latch: Several number buttons can be selected at the same time.
	Swop: Only one number button can be selected at a time.

DMX Invader 1024 NET

th•mann

MUSIC IS OUR PASSION

28	[PROGRAM]
	Button for setting the Programme mode. Press *[PROGRAM]* to go from work mode to edit mode and back to work mode.
29	[BLACKOUT]
	Button to activate the blackout

Rear panel
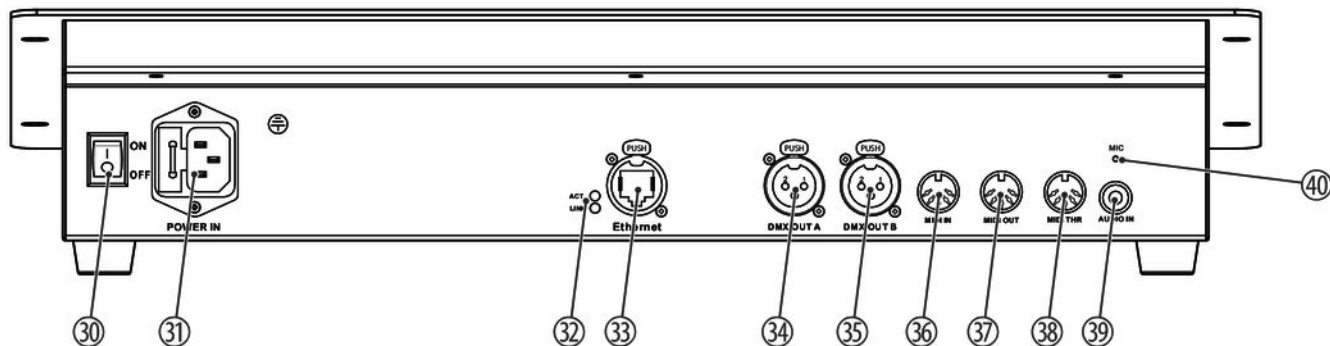
30	[ON / OFF]
	Switch to turn the device on or off.
31	[POWER IN]
	Connect the IEC chassis connector with fuse holder via the supplied power cord to an AC outlet that provides the voltage specified in the Technical Data.
32	[ACT / LINK]
	ACT: LED lights on network activity
	LINK: LED lights up on Ethernet connection to a signal source
33	[Ethernet]
	Ethernet socket for connecting a data cable
34, 34	[DMX OUT A] / [DMX OUT B]
	These two terminals send DMX signals to DMX capable devices. Use a cable with 3-pin XLR connectors to connect the devices.
36	[MIDI IN]
	The device receives MIDI data via the "MIDI IN" socket.

DMX Invader 1024 NET

thomann

MUSIC IS OUR PASSION

37	*[MIDI OUT]*
	The device sends MIDI data via the "MIDI OUT" socket.
38	*[MIDI THR]*
	The "MIDI THRU" socket will forward the incoming MIDI data to the next MIDI device.
39	*[AUDIO IN]*
	You can connect audio line signals (0,1 V ~ 1 V $_{pp}$) to this RCA socket to be used for the sound-controlled mode. When this switch socket is used, the built-in microphone is deactivated.
40	*[MIC]*
	Built-in microphone

6 Operating

6.1 Changing basic settings

Calling up the menu

1. ▸ Press and hold *[SETUP]* for at least 2 seconds to enter the main menu.

2. ▸ Turn the jog wheel *[Y/CROSS]* to the left or right to select the desired submenu.

3. ▸ When the desired submenu is highlighted, press the jog wheel *[Y/CROSS]*.

   ⇨ The submenu opens up.

4. ▸ To return to the next higher menu level without changes, press *[SETUP]*.

5. ▸ To return to the start screen, press *[SETUP]* for at least 2 seconds.

Changing parameter or value

1. ▸ Use the jog wheel *[Y/CROSS]* to select the parameter you want to change in the desired submenu.

2. ▸ When the desired parameter is highlighted, press the jog wheel *[Y/CROSS]*.

3. ▶ Turn the jog wheel *[Y/CROSS]* to the left or right to set the desired value and press the jog wheel *[Y/CROSS]* to confirm.

⇨ The setting is accepted.

4. ▶ To return to the next higher menu level without changes, press *[SETUP]*.

The following settings can be made in the main menu:

No.	Display	Function
1	RDM function	Changes the parameters of all RDM-compatible devices.
2	Set IP Address	Sets the IP address. The device has a 100 Mbps Ethernet interface. To use the network function, the IP address must be set.
3	Set Net Mask	Sets the network mask for the Ethernet interface.
4	Set MIDI	Sets the MIDI channel.
5	Set Audio	Sets the sensitivity of the audio interface.

No.	Display	Function
6	Set Net Protocol	Selects the DMX protocol. The device supports the Art-Net protocol and the sACN protocol.
7	Set Universe	Defines a DMX universe. In the Art-Net and sACN protocols, the user must define a universe for two DMX universes.
8	Set Colors	Sets the foreground and background colour for the display.
9	Language	Sets the language of the display. English and Chinese are available.
10	Update font	Changes the font. Another font can be loaded via a USB stick.
11	Load File	Loads a file with a saved show from the USB stick. Caution: The file loaded from the USB stick overwrites the current file in the device.

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

No.	Display	Function
12	Save File	Saves the current file in the device to a USB stick.
13	Set Default	Resets the device to factory defaults.
14	Version	Displays the current firmware version.

Setting the MIDI channel

If you want the device to receive information via the MIDI interface, you can select the desired transmission channel.

Command	MIDI Note-on	Note number	Entry
Fader Value	0×90	00×00–0×12	Fader number
Fader Page	0×90	0×13	Page number
Chase Page	0×90	0×14	Page number
Scene Page	0×90	0×15	Page number
Macro Page	0×90	0×16	Page number
Fixture Page	0×90	0×17	Page number
Clear	0×90	0×18	
Type	0×90	0×19	Latch: Several number buttons can be selected at the same time. Swop: Only one number button can be selected at a time.

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

Command	MIDI Note-on	Note number	Entry
Mode	0×90	0×1A	Auto: The speed of the chase is controlled by the timing of the scenes and the Time fader. Swing: The speed of the Chase is controlled by the Swing button. Music: The speed of the chase is controlled by the rhythm of the music.
Swing <	0×90	0×1B	
Swing >	0×90	0×1C	
Blackout	0×90	0×1D	
Shape Play	0×90	0×1E	Shape number
Shape Stop	0×90	0×1F	Shape number
Shape Speed	0×90	0×20	Speed value

Command	MIDI Note-on	Note number	Entry
Shape Size	0×90	0×21	Size value
Shape Offset	0×90	0×22	Offset value
Shape Dir	0×90	0×23	clockwise (0) counter-clockwise (1)
Shape View	0×90	0×24	
Pan Fine	0×90	0×25	Fine adjustment Pan disabled (0) Fine adjustment Pan enabled (1)
Tilt Fine	0×90	0×26	Fine adjustment Tilt disabled (0) Fine adjustment Tilt enabled (1)

DMX Invader 1024 NET

th•mann

MUSIC IS OUR PASSION

6.2 Assigning external devices

Fixed assignment of DMX addresses

When assigning the fixed DMX addresses, make sure that the number of channels and the control parameters match the configuration of the connected external devices.

The device is set for 62 external devices with 36 channels for each external device. The channel value of the external devices is controlled by the channel faders *[1 … 18]* .

DMX address list for the numbers of external devices

The following table shows you which DMX address is assigned to the 36 channel faders by pressing the number buttons [1] … [31] . Important: The LEDs [A] or [B] of the [FIXTURE] button must light up at that!

Number buttons	DMX address	Number buttons	DMX address
A1	A001	A17	A223
A2	A007	A18	A239
A3	A009	A19	A255
A4	A025	A20	A271
A5	A041	A21	A287
A6	A057	A22	A303
A7	A073	A23	A319
A8	A089	A24	A335

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

Number buttons	DMX address	Number buttons	DMX address
A9	A095	A25	A351
A10	A111	A26	A367
A11	127	A27	A383
A12	A143	A28	A399
A13	A159	A29	A415
A14	A175	A30	A431
A15	A191	A31	A447
A16	A207		

DMX controller

Number buttons	DMX address	Number buttons	DMX address
B1	A453	B17	B180
B2	A469	B18	B196
B3	A485	B19	B212
B4	B001	B20	B228
B5	B017	B21	B244
B6	B033	B22	B260
B7	B049	B23	B276
B8	B065	B24	B292
B9	B081	B25	B308
B10	B097	B26	B324
B11	B113	B27	B340
B12	B129	B28	B356
B13	B145	B29	B372

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

Number buttons	DMX address	Number buttons	DMX address
B14	B161	B30	B388
B15	B177	B31	B404
B16	B178		

Assignment of Pan and Tilt channels

You can dynamically assign a DMX channel to each connected external device. A maximum of 62 external devices, each with up to 36 channels, can be selected. The channel value of the connected external devices is controlled by the channel faders *[1 … 18]* .

1. ▶ Press *[PROGRAM]* to call up the programming mode.

   ⇨ The *[PROGRAM]* LED flashes.

2. ▶ Press *[FIXTURE (A)]* or *[FIXTURE (B)]* twice to select the assignment area A or B.

   ⇨ The *[FIXTURE]* LED flashes.

3. ▶ Press the number buttons *[1 … 31]* to select one or more external devices. If multiple external devices are selected at the same time, they must be of the same type.

   ⇨ The control automatically switches to the last selected external device. The LED of the active, last selected external device lights up. The previously edited external devices are in hold state. The LEDs of the external devices in hold state flash slowly. The channel value of the external devices in hold state is not changed.

4. ▶ Turn the jog wheel *[X/SPEED]* to the left or right to select the parameters you want to edit.

5. ▶ Turn the jog wheel *[Y/CROSS]* to the left or right to change the value.

6. ▶ If necessary, repeat steps 3 … 5 to make assignments for additional external devices.

7. ▶ Press *[PROGRAM]* to confirm the selected settings and exit the menu.

You can make the following settings when dynamically assigning DMX addresses:

> *If the device to be assigned does not have a fine adjustment channel for Pan and Tilt, '**' should be set as the value.*

Name	Meaning	Value
1. Channel Num	Total number of device channels	** … 36
2. XH Offset	Channel Pan movement, coarse adjustment channel (8 bit)	** … 36
3. XL Offset	Channel Pan movement, fine adjustment channel (8 bit)	** … 36
4. X Dir	Pan movement, direction	<, >
5. YH Offset	Channel Tilt movement, coarse adjustment channel (8 bit)	** … 36

Name	Meaning	Value
6. YL Offset	Channel Tilt movement, fine adjustment channel (8 bit)	** … 36
7. Y Dir	Tilt movement, direction	<, >

External devices with 16-bit resolution are controlled by two data channels per axis. External devices with 8-bit resolution are only controlled by one data channel per axis.

Manual control of devices

1. ▶ Press *[FIXTURE (A)]* or *[FIXTURE (B)]* to select the assignment area A or B.

   ⇨ The *[FIXTURE]* LED lights up.

2. ▶ Press the number buttons *[1 … 31]* to select one or more external devices. If multiple external devices are selected at the same time, they must be of the same type.

   ⇨ The control automatically switches to the last selected external device. The LED of the active, last selected device lights up. The previously edited devices are in hold state. The LEDs of the devices in hold state flash slowly. The channel value of the devices in hold state is not changed.

3. ▶ Use the faders *[1 … 18]* to adjust the channel values of the active device. Use the toggle key *[1–18]* if the channel faders *[1 … 18]* are to be addressed, and the toggle key *[19–36]* if the channel faders *[19 … 36]* are to be addressed.

4. ▶ Use the jog wheels *[X/SPEED]* or *[Y/CROSS]* to adjust the Pan and Tilt position.

5. ▶ To make assignments for additional devices, repeat steps 2 … 4.

6. ▶ Press *[CLEAR]* to cancel the current setting without saving the channel values.

If the X / Y channel is controlled by the jog wheels, the channel faders are locked automatically. The X / Y position of the units can only be changed with the jog wheels.

6.3 Editing scenes

A scene is a combination of the set channel values of the external devices. The device can store 62 scenes, which can be executed arbitrarily.

> *In order to be able to execute several scenes and several chases simultaneously, the different values of the same control channel are calculated according to the HTP technique.*

Recording a scene

1. ▶ Select the desired external devices and set the channel values and the X / Y position (⭲ *'Manual control of devices' on page 48*).

2. ▶ Press *[PROGRAM]* to enter the Edit mode.

⇨ The *[PROGRAM]* LED flashes.

3. ▶ Press *[SCENE (A)]* or *[SCENE (B)]* to open the edit menu for the scene selection.

4. ▶ Press the number buttons *[1 … 31]* to select the number under which you want to save the scene.

⇨ *'Save OK!'* appears in the display. The scene is being saved under the desired number. The device exits Edit mode and returns to working mode.

Example: You want to save the device's current setting as scene A10: Press *[PROGRAM]*. Press *[SCENE (A)]*. Press the number button *[10]*.

Copying an existing scene

1. ▶ Use *[SCENE (A)]* or *[SCENE (B)]* and the number buttons *[1 … 31]* to call up the scene you what to copy.

2. ▶ Press *[PROGRAM]*.

3. ▶ Press *[SCENE (A)]* or *[SCENE (B)]* and press the number buttons *[1 … 31]* to select the number under which you want to save the copied scene.

⇨ *'Save OK!'* appears in the display. The copied scene is being saved under the desired number. The device exits Edit mode and returns to working mode.

Example: You want to save a copy of scene A2 as scene A10: Press *[FIXTURE (A)]* and the number button *[2]*. Press *[PROGRAM]*. Press *[SCENE (A)]*. Press the number button *[10]*.

6.4 Editing a Chase

The device can store 62 chaser programmes, each with up to 100 steps. Steps correspond to scenes.

Inserting steps in or removing from a chase

1. ▷ Press *[PROGRAM]* to enter the Edit mode.

   ⇨ The *[PROGRAM]* LED flashes.

2. ▷ Press *[CHASE (A)]* or *[CHASE (B)]* and the number buttons *[1 … 31]* to select the number of the chase you want to edit.

3. ▷ To insert a new step into the chase, press *[INSERT]*.

   ⇨ The sum of the steps in the chase and the number of the current step are shown in the display. The last step of a chase is marked with a *.

4. ▷ To copy the current step, press *[COPY]*.

5. ▷ To copy all the steps of a chase, press and hold *[COPY]* for about 1 second.

6. ▷ To insert a copied step from another chase into the current chase, press *[PASTE]*.

7. ▷ To delete the current step, press *[DELETE]*.

Editing a step in a chase

1. ▶ Press *[STEP +]* or *[STEP -]* to select the step in a chase you want to edit.

2. ▶ Press and hold *[TIME]* while turning the jog wheel *[X/SPEED]* to set the running speed of the current step.

3. ▶ Press and hold *[TIME]* while turning the jog wheel *[Y/CROSS]* to set the fade time before and after the current step.

Assigning external devices to a chase

1. ▶ Press *[FIXTURE (A)]* or *[FIXTURE (B)]* and the number buttons *[1 … 31]* to select the external device you want to assign to the chase.

2. ▶ Set the values for the external device with the channel faders *[1 … 18]* .

3. ▶ To exit Edit mode, press *[PROGRAM]*.

   ⇨ Chase editing is complete.

6.5 Macros

The individual combinations of manual settings, scenes, chasers and shapes can be stored together in macros. The device can record 31 macros that are accessed via the buttons.

Recording a macro

1. ▶ Press *[PROGRAM]* to enter the Edit mode.
   - ⇨ The *[PROGRAM]* LED flashes.
2. ▶ Press *[MACRO]*.
3. ▶ Use the number buttons *[1 … 31]* to assign a number to the macro.
   - ⇨ The device will now record all subsequent steps. At this, manual settings, scene settings and chaser settings can be combined.
4. ▶ To exit Edit mode, press *[PROGRAM]*.

Executing a macro

1. ▶ Press *[MACRO]*.
2. ▶ Press the number buttons *[1 … 31]* twice with the number of the macro you want to play.
   - ⇨ The macro is being executed.

6.6 Enabling programme run

Playing scenes

Scenes can be played individually or as a sequence of multiple scenes. To start a sequence of multiple scenes, all scenes must be in the same group (A) or (B).

1. ▶ Press *[SCENE (A)]* or *[SCENE (B)]*.

2. ▶ Press *[TYPE]* until either the *[Latch]* LED or the *[Swop]* LED lights up.

In Latch mode (Toggle) several scenes can be selected.

In Swop mode (Trigger) only one scene can be selected.

If neither of the two variants is activated, the flash mode is activated.

3. ▶ Select the desired scene or scenes using the number buttons *[1 … 31]*.

⇨ The desired scene or scenes are being played.

Playing a Chaser

1. ▶ Press *[CHASE (A)]* or *[CHASE (B)]*.

2. ▶ Press *[TYPE]* until either the *[Latch]* LED or the *[Swop]* LED lights up.

In Latch mode several chases can be selected.

In Swop mode, only one chase can be selected.

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

3. ▶ Select the desired chase or chases using the number buttons *[1 … 31]*.

⇨ The desired chase or chases are being played.

If the number of chases to be played at the same time exceeds the permissible number, the message *'Chase over load!'* appears in the display.

If several chases are played simultaneously, the display shows the settings of the last chase in the sequence.

Changing the fade mode for chasers

Chasers can be played with two fade modes:

■ In the default setting *'Only x/y'* only the X and Y channels can be assigned a fade effect, all other channels have no fade effect.
■ In the setting *'All channel'*, all channels can be assigned a fade effect.

1. ▶ Press *[PROGRAM]* for 3 seconds.

⇨ The fade effect is switched.

2. ▶ Release *[PROGRAM]* .

⇨ The new setting is active.

Setting up triggers for chasers

There are three types of triggers for chasers:

- ■ Auto: The speed of the chase is controlled by the timing of the scenes and the Time fader.
- ■ Swing: The speed of the Chase is controlled by the Swing button.
- ■ Music: The speed of the chase is controlled by the rhythm of the music.

▶ Press *[MODE]* until the LED of the desired trigger lights up.

Setting up chaser speed

In Trigger mode *'Auto'*, the running speed of the chase currently shown on the display can be manually adjusted with the *[TIME]* slider.

- ■ SLOW: The chase speed is slowed down.
- ■ FAST: The chase speed is accelerated.
  The display shows the change in running speed caused by the slider. At 100%, the running speed is the speed and fade time set in the scenes and chases. At *'Stop'* you can navigate to the previous or next step with the arrow buttons < and >.

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

6.7   Working with shapes

Shapes are graphic movements (circle, line, square, etc.) that create dynamic effects. With the Shape Generator, different shapes can be created in different sizes, which run at different speeds. Each shape generator can drive various external devices.

Up to 80 different shape effects can be generated:

- ■   20 × circle
- ■   10 × fader circle
- ■   10 × circles arranged in triangular form
- ■   10 × 8 loops
- ■   10 × horizontal line
- ■   10 × vertical line
- ■   5 × square
- ■   5 × triangle

> *Connected external devices with faster response speed lead to better shapes.*

Editing shapes

The Shape Generator can be used in manual mode, in scenes and chases.

1. ▶ Use *[FIXTURE (A)]* or *[FIXTURE (B)]* and the number buttons *[1 … 31]* to call up the desired external devices.

2. ▶ Set the centre of the shape for the desired external devices using the X and Y coordinates.

3. ▶ Press *[PLAY]*.

⇨ The *[PLAY]* LED flashes.

4. ▶ Turn the jog wheel *[X/SPEED]* or *[Y/CROSS]* to the left or right to select the desired shape generator.

5. ▶ Press *[Speed/Size]* to change the speed and size of the current shape.

Turn the jog wheel *[X/SPEED]* to the left or right to change the speed of the current shape.

Turn the jog wheel *[Y/CROSS]* to the left or right to change the size of the current shape.

6. ▶ Press *[Offset/Dir]* to change the home position and direction of the current shape.

Turn the jog wheel *[X/SPEED]* to the left or right to change the home position of the current shape.

Turn the jog wheel *[Y/CROSS]* to the left or right to change the direction of the current shape.

7. Press *[STOP]* to exit editing the Shape Generator.

> *When the console is restarted, the set values are reset to the standard values.*

Playing shapes

Press *[PLAY]*.

⇨ The *[PLAY]* LED lights up. The shapes are being played.

Deleting shapes

1. Press *[PLAY]* twice.

⇨ The *[PLAY]* LED flashes.

2. Turn the jog wheel *[X/SPEED]* or *[Y/CROSS]* to the left or right to select the shape generator *'0.Null'*.

⇨ The call up of shape generators is suppressed.

Displaying shapes   ⮕ Press *[VIEW]*.

⇨ The display shows the number of shape generators used in the current scene.

6.8 Installing firmware update

1. ⮕ Copy the file with the firmware update from the "DMX_MASTER" folder to a USB stick.

2. ⮕ Turn off the device.

3. ⮕ Insert the USB stick with the firmware update file into the USB port of the device.

4. ⮕ Press and hold *[Y / CROSS]* and switch on the device at the same time.

⇨ The menu *'Firmware Update'* opens up.

5. ⮕ Turn *[X / SPEED]* until the name of the firmware update file is shown in the display.

6. ⮕ Press *[X / SPEED]* to confirm the selection.

⇨ The firmware update is being installed. After the installation is complete, the device automatically restarts.

7   Technical specifications

Control protocols	DMX512	
Number of DMX channels	1024	
Input connections	MIDI	3 × DIN socket, 5-pin
	Audio signal	RCA socket, 100 mV, 1 Vpp
	Voltage supply	IEC chassis plug C14
	Network	RJ45 socket
Output connections	DMX control	2 × XLR panel socket, 3-pin
Power consumption	20 W	
Operating supply voltage	100 – 240 V ∼ 50/60 Hz	
Fuse	5 mm × 20 mm, 1 A, 250 V, slow-blow	
Mounting properties	19 inch, 2 RU	
Dimensions (W × H × D)	483 × 105 × 400 mm	

Weight	5.8 kg	
Ambient conditions	Temperature range	0 °C…40 °C
	Relative humidity	50 %, non-condensing

Further information

Preset function	Yes
External storage option	Yes
DMX universes	2
Max. control channels	1024
Ethernet	Yes

DMX Invader 1024 NET

th•mann
MUSIC IS OUR PASSION

8 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment so that a perfect light experience is guaranteed.

Please take our tips, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into a socket, the result of an incorrect connection may be a destroyed DMX controller, a short circuit or 'just' a not working light show!
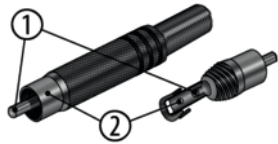
DMX connections

The unit offers a 3-pin XLR socket for DMX output and a 3-pin XLR plug for DMX input. Please refer to the drawing and table below for the pin assignment of a suitable XLR plug.

Pin	Configuration
1	Ground, shielding
2	Signal inverted (DMX–, 'cold signal')
3	Signal (DMX+, 'hot signal')

RCA connection

Drawing and table indicate the pin assignment of an RCA plug.

1	Signal
2	Ground, shielding

th•mann
MUSIC IS OUR PASSION

9 Protecting the environment

Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

Disposal of your old device

This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) in its currently valid version. Do not dispose with your normal household waste.

Dispose of this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.