DMX REFERENCE

MADRIX 5

Madrix

Manufacturer	Madrix
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Contents

1 About this manual 2
2 Quick reference 2
3 Safety instructions 3
4 Product description 3
5 Installation 4
6 Connections 4
7 Operation 5
8 DMX channels 5
Mode Essential 5
Mode Standard 7
9 Technical specifications 11
10 Maintenance and cleaning 11
11 Troubleshooting 11
12 Disposal 11

1 About this manual

This document describes the MADRIX 5 by Madrix. It was compiled from the GDTF file Madrix_MADRIX_5_28063.gdtf from the GDTF-Share library.

File revision: “V1.0”.

The DMX modes, the channel functions and the technical data are given as the GDTF file states them. Installation, operation from the device's control panel, service and safety instructions are described in the manufacturer's original user manual, which takes precedence over this document.

This document was not issued or endorsed by Madrix; product names and trademarks belong to their owners.

Safety notices are marked with signal words according to the severity of the hazard: DANGER – an imminent hazard that will result in death or serious injury; WARNING – a potential hazard that could result in death or serious injury; CAUTION – a potential hazard that could result in minor injury or property damage; NOTE – additional information for correct and safe use.

> **NOTE** This product is designed for stage and effect lighting. It is not suitable for household room illumination.

2 Quick reference

DMX modes

Mode	Channels	Units in one universe	First start addresses
Essential	6	85	1, 7, 13, 19, ...
Standard	36	14	1, 37, 73, 109, ...

No light? Check these channels

- Essential: CH 1 Master above 0
- Standard: CH 1 Master above 0


Read the manual before use


Do not stare into the light


Indoor use only

3 Safety instructions



Read the manual before use



Do not stare into the light



Indoor use only

⚠ WARNING

- This device is intended for professional use. Installation, connection, setup and maintenance must be carried out only by suitably qualified persons who have read this manual.
- Use the device only for its intended purpose and as described in this manual.
- Do not open the housing and do not modify or tamper with the device. Refer all repairs to an authorized service center.
- Do not use the device if its housing, power or data cable, or a connector is damaged, if the device has been dropped, or if liquid or a foreign object has entered it. In such a case, have it checked by a service center.
- Disconnect the device from the power supply before cleaning, maintenance or any work on the connections.
- After moving the device from a cold to a warm environment, let it reach room temperature before switching it on to prevent condensation inside.
- The device is not a toy; keep it out of the reach of children.

⚠ WARNING

- This device is designed for indoor use only. Protect it from rain, splashing water, moisture and dust, and do not place containers with liquids on it.
- Do not operate the device in high humidity, near water, or where condensation can form on it.

⚠ CAUTION

- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do not aim the beam at flammable or heat-sensitive materials at close range.

⚠ CAUTION

- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them longer than necessary.

4 Product description

Description in the GDTF file

“The powerful yet simple LED lighting controller for ultimate pixel mapping in 2D or 3D”

5 Installation

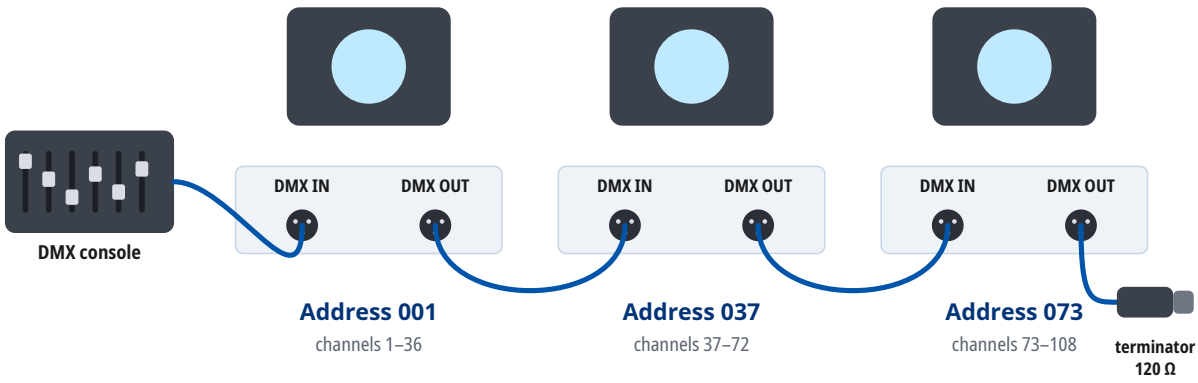
⚠ WARNING

- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Use suitable mounting hardware (for example truss clamps) and tighten all screw connections properly.
- Always secure the suspended device against falling with a safety cable of adequate load capacity, routed through a fixed point of the device and around the supporting structure.
- During installation and removal, keep people out of the area below the work position.
- Regularly inspect the fixings and the safety cable for damage, corrosion and loosening.

6 Connections

- Use shielded cable designed for DMX512 with an impedance of 110 Ω. Ordinary microphone cable is not suitable for DMX, especially over longer distances.
- Connect the devices in a daisy chain: connect the DMX OUT of one device to the DMX IN of the next. Do not split the line with Y-cables or wire it in a star; the line may be split only with a DMX splitter.
- Connect the shield to pin 1 only. Do not connect the shield (ground) to the metal shell of the connector; this can cause short circuits or erratic behavior.
- XLR pin assignment: pin 1 – shield (ground), pin 2 – Data- (Data Complement), pin 3 – Data+ (Data True). On 5-pin connectors, pins 4 and 5 are not connected; a 5-pin connector can be connected to a 3-pin one with a cable adapter.
- Terminate the end of the line (for impedance matching): plug an XLR connector with a 120 Ω, ¼ W resistor between pins 2 and 3 into the DMX OUT of the last device. This reduces the risk of erratic behavior.
- Connect no more than 32 devices to one DMX line. For more devices or longer runs, use a DMX splitter or booster.

DMX line



Mode Standard: every unit occupies 36 channels from its address. At most 32 units on one line; for more units or longer runs use a DMX splitter. A 120 Ω terminator closes the last DMX OUT.

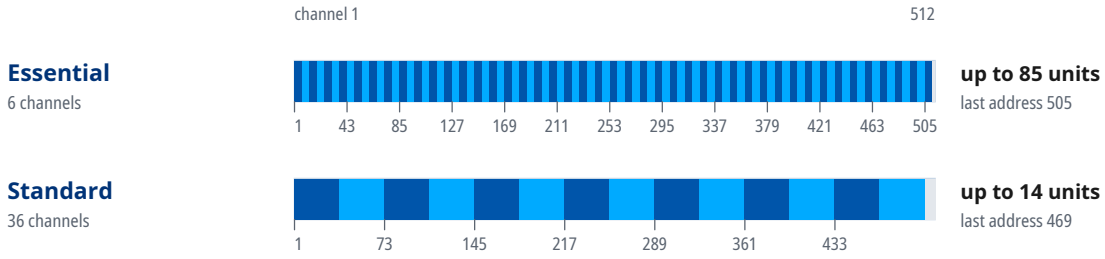
7 Operation

Setting the DMX address

- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Standard”: 36.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “Standard”, you can use, for example, the start addresses 1, 37, 73, 109.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Standard”

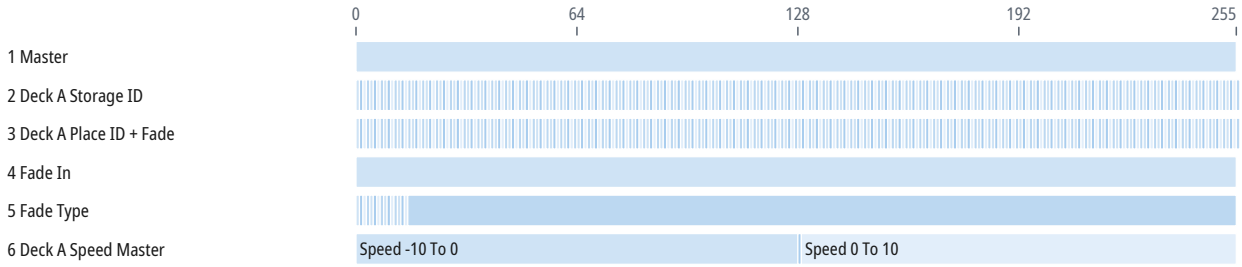
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	181	11	361	16	U2 · 37
2	37	7	217	12	397	17	U2 · 73
3	73	8	253	13	433	18	U2 · 109
4	109	9	289	14	469	19	U2 · 145
5	145	10	325	15	U2 · 1	20	U2 · 181

Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode Essential

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Master above 0.

Channel functions at a glance

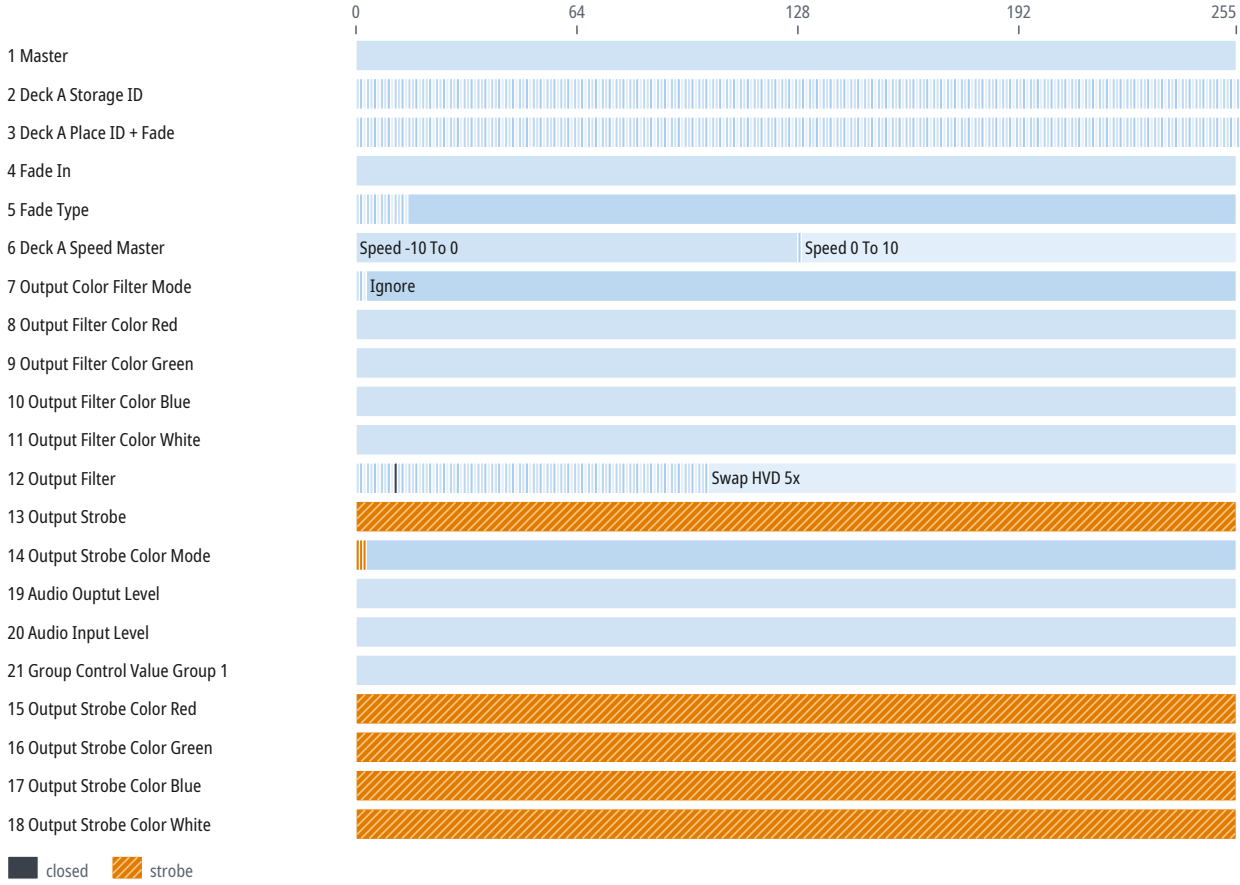


CH	Function	DMX	Description
1	Master	0–255	
2	Deck A Storage ID	0–255	Storage 1...256
3	Deck A Place ID + Fade	0–255	Place 1...256
4	Fade In	0–255	
5	Fade Type	0	XF
		1	WF
		2	BF
		3	Wipe X
		4	Wipe Y
		5	Wipe XC
		6	Wipe YC
		7	Slide X
		8	Slide Y
		9	Slide XC
		10	Slide YC
		11	Wipe Z
		12	Wipe ZC
		13	Slide Z
		14	Slide ZC
		15–255	Fade Type 1
6	Deck A Speed Master	0–127	Speed -10 To 0
		128	Speed 0
		129–255	Speed 0 To 10

Mode Standard

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Master above 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Master	0–255	
2	Deck A Storage ID	0–255	Storage 1...256
3	Deck A Place ID + Fade	0–255	Place 1...256
4	Fade In	0–255	
5	Fade Type		Same as CH 5 in the mode “Essential” (p. 6)
6	Deck A Speed Master		Same as CH 6 in the mode “Essential” (p. 6)
7	Output Color Filter Mode	0	Allow Through
		1	Filter Out
		2	Colorize
		3–255	Ignore
8	Output Filter Color Red	0–255	
9	Output Filter Color Green	0–255	
10	Output Filter Color Blue	0–255	
11	Output Filter Color White	0–255	
12	Output Filter	0	No FX
		1	Blur

CH	Function	DMX	Description
12	Output Filter (continued)	2	Blur B-Spline
		3	Blur Catmull Rom
		4	Blur Gauss
		5	Blur Mitchell
		6	Sharpen
		7	XYZ (Brightness Graph)
		8	XZY (Brightness Graph)
		9	YXZ (Brightness Graph)
		10	Brighten (Color Correction)
		11	Darken (Color Correction)
		12	Grayscale (Color Correction)
		13	Invert Color (Color Correction)
		14	BGR
		15	BRG
		16	GRB
		17	GBR
		18	RBG
		19	WBGR
		20	WBRG
		21	WGRB
		22	WGBR
		23	WRBG
		24	WRGB
		25	BWGR
		26	BWRG
		27	GWRB
		28	GWBR
		29	RWBG
		30	RWGB
		31	BGWR
		32	BRWG
		33	GRWB
		34	GBWR
		35	RBWG
		36	RGWB
		37	R
		38	G
		39	B
		40	W
		41	RG
		42	RB

CH	Function	DMX	Description
12	Output Filter (continued)	43	GB
		44	RW
		45	GW
		46	BW
		47	RGB
		48	RGW
		49	RBW
		50	GBW
		51	6x (Kaleidoscope)
		52	8x (Kaleidoscope)
		53	12x (Kaleidoscope)
		54	Low (Quantization)
		55	Middle (Quantization)
		56	High (Quantization)
		57	Edges
		58	Edges Popup
		59	Emboss
		60	Emboss Popup
		61	Mirror H
		62	Mirror V
		63	Mirror D
		64	Mirror HV
		65	Mirror HD
		66	Mirror VD
		67	Mirror HVD
		68	Swap H 1x
		69	Swap H 2x
		70	Swap H 3x
		71	Swap H 4x
		72	Swap H 5x
		73	Swap V 1x
		74	Swap V 2x
		75	Swap V 3x
		76	Swap V 4x
		77	Swap V 5x
		78	Swap HV 1x
		79	Swap HV 2x
		80	Swap HV 3x
		81	Swap HV 4x
		82	Swap HV 5x
		83	Swap D 1x

CH	Function	DMX	Description
12	Output Filter (continued)	84	Swap D 2x
		85	Swap D 3x
		86	Swap D 4x
		87	Swap D 5x
		88	Swap HD 1x
		89	Swap HD 2x
		90	Swap HD 3x
		91	Swap HD 4x
		92	Swap HD 5x
		93	Swap VD 1x
		94	Swap VD 2x
		95	Swap VD 3x
		96	Swap VD 4x
		97	Swap VD 5x
		98	Swap HVD 1x
		99	Swap HVD 2x
		100	Swap HVD 3x
		101	Swap HVD 4x
		102–255	Swap HVD 5x
13	Output Strobe	0–255	
14	Output Strobe Color Mode	0	Ouptut And Strobe Color
		1	Ouptut And Black
		2	Black And Strobe Color
		3–255	Output Strobe Color Mode 1
15	Output Strobe Color Red	0–255	
16	Output Strobe Color Green	0–255	
17	Output Strobe Color Blue	0–255	
18	Output Strobe Color White	0–255	
19	Audio Ouptut Level	0–255	
20	Audio Input Level	0–255	
21	Group Control Value Group 1	0–255	

CH 21–36: 16 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 21); the table below gives each cell's channel numbers.

Cell	Group Control Value	Cell	Group Control Value	Cell	Group Control Value	Cell	Group Control Value	Cell	Group Control Value	Cell	Group Control Value
1	21	2	22	3	23	4	24	5	25	6	26
7	27	8	28	9	29	10	30	11	31	12	32
13	33	14	34	15	35	16	36				

9 Technical specifications

Parameter	Value
Operating temperature	0 to 40 °C

10 Maintenance and cleaning

- Before cleaning and maintenance, switch the device off, disconnect it from the power supply and let it cool down.
- Clean the housing with a soft, dry or slightly damp cloth. Do not use solvents, abrasive cleaners or pressure washers, and make sure no liquid gets into the device.
- Clean optical parts (lenses, front glass), if the device has any, with a soft lint-free cloth and a cleaner intended for optics or glass.
- Regularly inspect the housing, cables, connectors and fixings. Have damaged parts replaced by a service center.
- How often to clean depends on the environment; dust, smoke and fog make the device dirty much faster.

11 Troubleshooting

Problem	Remedy
The device does not switch on	Check the supply voltage, the cables and the fuse, if the device has one.
The device does not respond to DMX	Check the start address, the selected DMX mode and whether it matches the profile in the controller, the cable connection to DMX IN, and the controller output (universe).
The device behaves erratically or flickers	Check the terminator at the end of the line, the condition and wiring of the cables (shield on pin 1 only), the number of devices on the line (32 at most), and that the line is not split without a splitter.
Only some devices on the line respond	Check the cable and connectors between the last working and the first non-working device, and make sure all devices on the line are switched on.
Devices respond to the wrong channels or affect each other	Check that the addresses do not overlap and that the DMX mode on the devices matches the patch in the controller.
The device or the connected load does not light up although it receives DMX	Check the values of the dimmer, shutter and strobe channels against the DMX channel table. For the DMX modes for which the sources state it, the chapter DMX channels gives under the mode's heading which channels must be open.

12 Disposal

The crossed-out wheeled bin symbol on the product, in the manual or on the packaging means that the product must not be disposed of with unsorted household waste at the end of its life.

Take the end-of-life equipment to a collection point, for example a municipal collection site or a retailer. Proper disposal enables materials to be recycled and helps prevent possible negative effects on the environment and human health.

Follow the regulations applicable in your country; in the Czech Republic, take-back is governed by Act No. 542/2020 Coll., on End-of-Life Products.

Recycle the packaging materials according to their type.