DMX REFERENCE

Liberation_DMX_Input

Liberation

Manufacturer	Liberation
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1 About this manual

This document describes the Liberation DMX Input by Liberation. It was compiled from the GDTF file Liberation_Liberation_DMX_Input_168602.gdtf from the GDTF-Share library.

File revision: “v2_0_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 Liberation; 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
Basic16	16	32	1, 17, 33, 49, ...
Extended32	32	16	1, 33, 65, 97, ...

No light? Check these channels

- Basic16: CH 2 Dimmer above 254
- Extended32: CH 2 Dimmer above 254



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.

⚠ WARNING

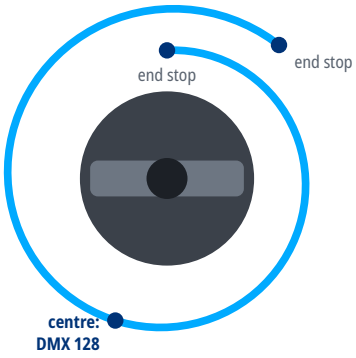
- The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
- Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts, move them by hand, or obstruct their movement; this can cause injury (pinching) and damage the drive.
- Do not carry the device by its moving parts. If the device has a transport lock, engage it before transport and release it before switching on.

4 Product description

Range of movement

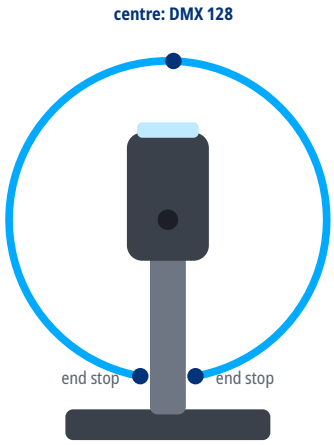
Pan 400°

top view



Tilt 400°

side view



5 Installation

⚠ **WARNING**

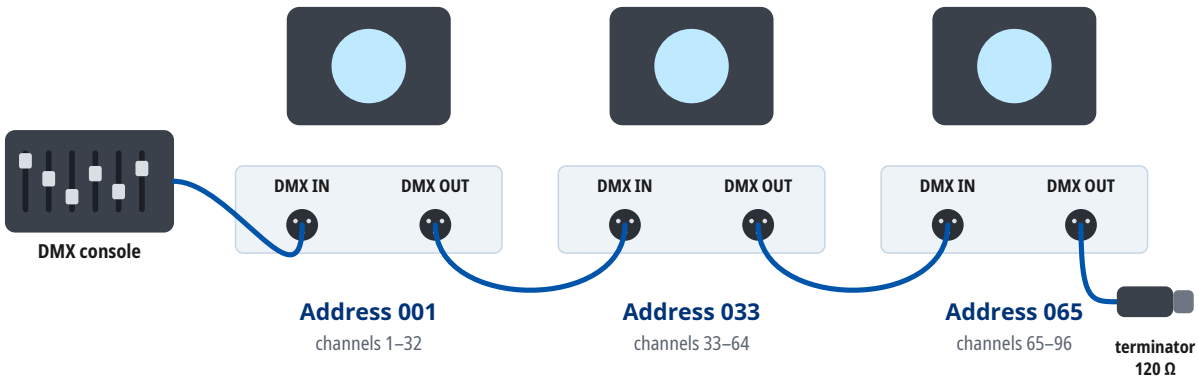
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Use suitable mounting hardware (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 Extended32: every unit occupies 32 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 “Extended32”: 32.
- 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 “Extended32”, you can use, for example, the start addresses 1, 33, 65, 97.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

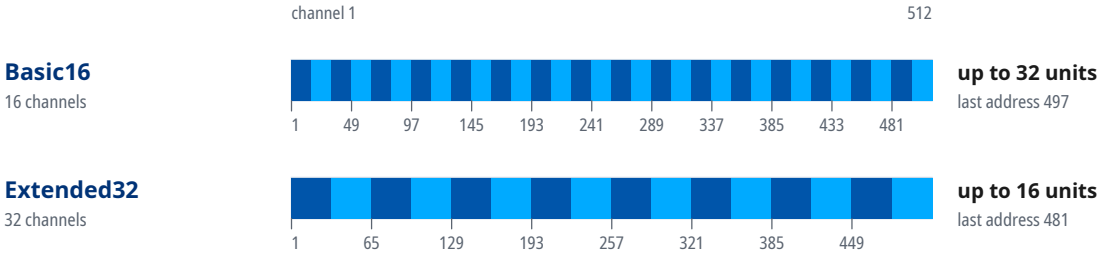
8 Functions at a glance

Functions in each DMX mode

	Basic16 16 channels	Extended32 32 channels
Pan / Tilt	12, 14	12, 14
Dimmer	2	2
Color mixing	5–7	5–7
Gobo wheel	4	4
Gobo rotation	16	16

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Extended32”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	161	11	321	16	481
2	33	7	193	12	353	17	U2 · 1
3	65	8	225	13	385	18	U2 · 33
4	97	9	257	14	417	19	U2 · 65
5	129	10	289	15	449	20	U2 · 97

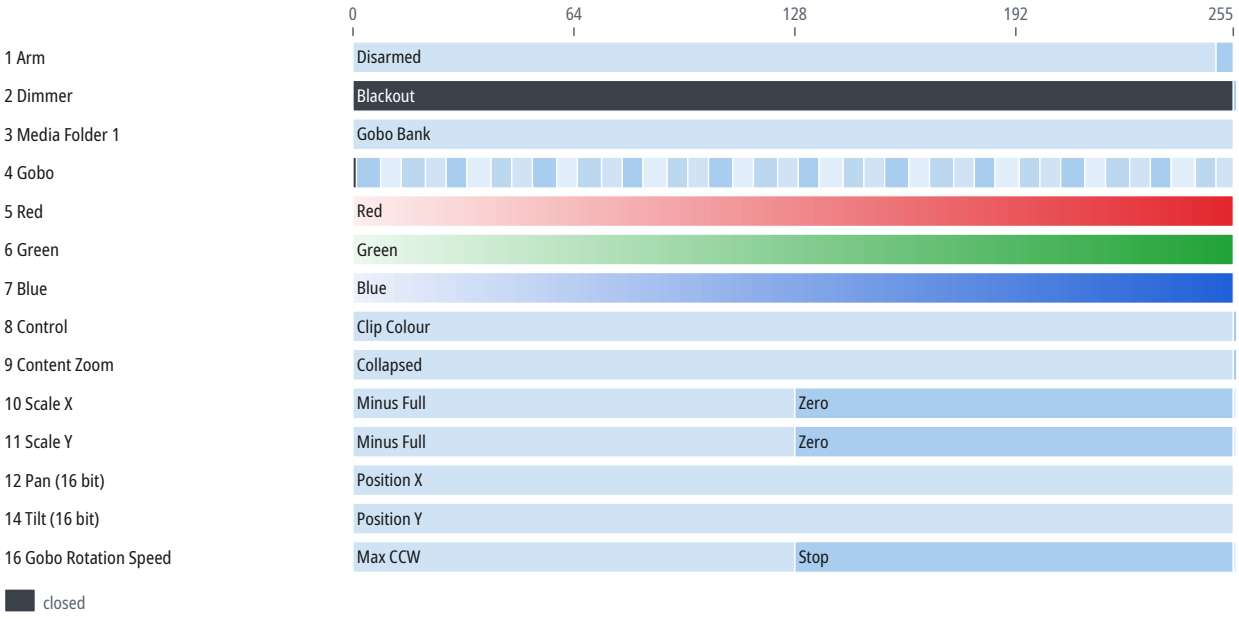
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode Basic16

16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 2 Dimmer above 254.

Channel functions at a glance



CH	Function	DMX	Description
1	Arm	0–249	Disarmed
		250–255	Armed
2	Dimmer	0–254	Blackout
		255	Full
3	Media Folder 1		Gobo Bank
		0–255	Gobo Bank
4	Gobo		Gobo Select
		0	Blackout
		1–7	Clip Slot 01
		8–13	Clip Slot 02
		14–20	Clip Slot 03
		21–26	Clip Slot 04
		27–32	Clip Slot 05
		33–39	Clip Slot 06
		40–45	Clip Slot 07
		46–51	Clip Slot 08
		52–58	Clip Slot 09
		59–64	Clip Slot 10
		65–71	Clip Slot 11
		72–77	Clip Slot 12
		78–83	Clip Slot 13
		84–90	Clip Slot 14
		91–96	Clip Slot 15
		97–102	Clip Slot 16
		103–109	Clip Slot 17
		110–115	Clip Slot 18
		116–122	Clip Slot 19
		123–128	Clip Slot 20
		129–134	Clip Slot 21
		135–141	Clip Slot 22
		142–147	Clip Slot 23
		148–153	Clip Slot 24
		154–160	Clip Slot 25
		161–166	Clip Slot 26
		167–173	Clip Slot 27
		174–179	Clip Slot 28
		180–185	Clip Slot 29
		186–192	Clip Slot 30
		193–198	Clip Slot 31
		199–204	Clip Slot 32

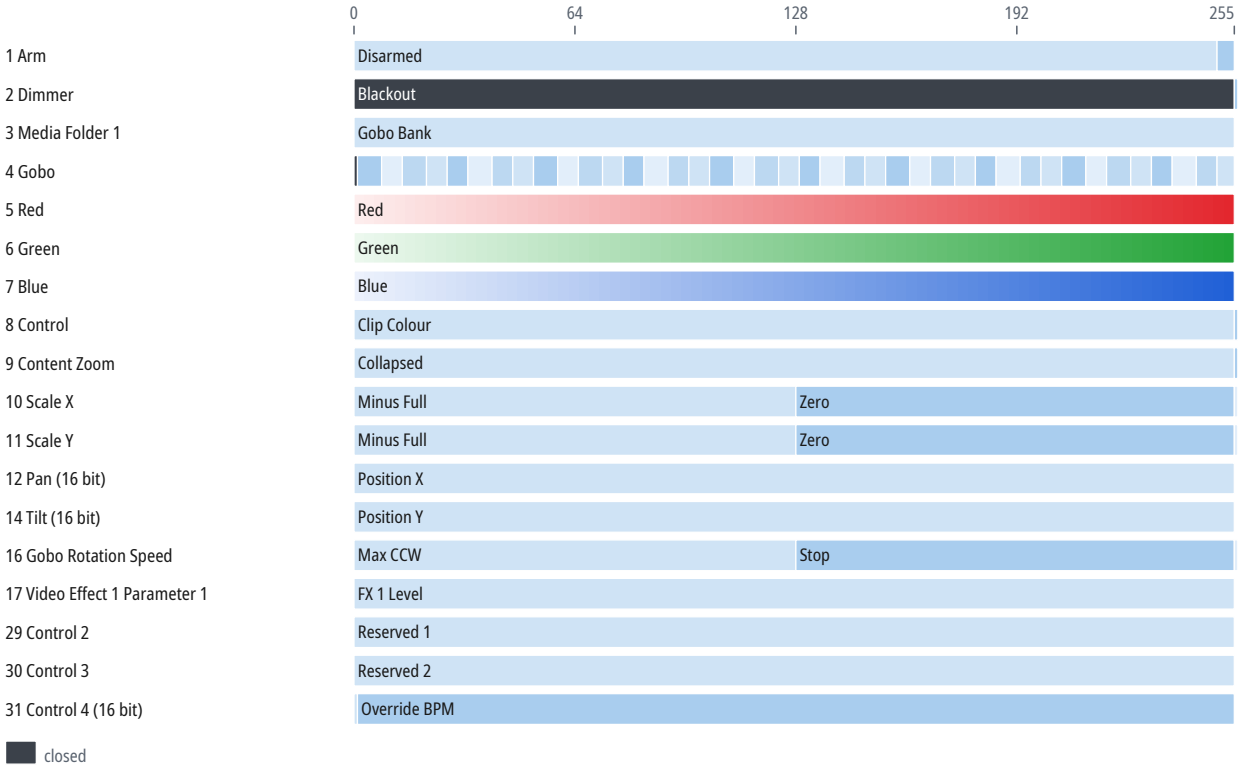
CH	Function	DMX	Description
4	Gobo (continued)	205–211	Clip Slot 33
		212–217	Clip Slot 34
		218–224	Clip Slot 35
		225–230	Clip Slot 36
		231–236	Clip Slot 37
		237–243	Clip Slot 38
		244–249	Clip Slot 39
		250–255	Clip Slot 40
5	Red	0–255	Red
6	Green	0–255	Green
7	Blue	0–255	Blue
8	Control		Colour Blend
		0–254	Clip Colour
		255	Desk RGB
9	Content Zoom	0–254	Collapsed
		255	Normal
10	Scale X	0–127	Minus Full
		128–254	Zero
		255	Full
11	Scale Y	0–127	Minus Full
		128–254	Zero
		255	Full
12	Pan		Position X
		0–255	Position X (400°)
13	Pan Fine	0–255	Fine adjustment of CH 12
14	Tilt		Position Y
		0–255	Position Y (400°)
15	Tilt Fine	0–255	Fine adjustment of CH 14
16	Gobo Rotation Speed	0–127	Max CCW
		128–254	Stop
		255	Max CW

Mode Extended32

16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 2 Dimmer above 254.

Channel functions at a glance



CH	Function	DMX	Description
1	Arm		Same as CH 1 in the mode “Basic16” (p. 7)
2	Dimmer		Same as CH 2 in the mode “Basic16” (p. 7)
3	Media Folder 1		Same as CH 3 in the mode “Basic16” (p. 7)
4	Gobo		Same as CH 4 in the mode “Basic16” (p. 7)
5	Red	0–255	Red
6	Green	0–255	Green
7	Blue	0–255	Blue
8	Control		Same as CH 8 in the mode “Basic16” (p. 8)
9	Content Zoom		Same as CH 9 in the mode “Basic16” (p. 8)
10	Scale X		Same as CH 10 in the mode “Basic16” (p. 8)
11	Scale Y		Same as CH 11 in the mode “Basic16” (p. 8)
12	Pan		Same as CH 12 in the mode “Basic16” (p. 8)
13	Pan Fine	0–255	Fine adjustment of CH 12
14	Tilt		Same as CH 14 in the mode “Basic16” (p. 8)
15	Tilt Fine	0–255	Fine adjustment of CH 14
16	Gobo Rotation Speed		Same as CH 16 in the mode “Basic16” (p. 8)
17	Video Effect 1 Parameter 1		FX 1 Level

CH	Function	DMX	Description
17	Video Effect 1 Parameter 1 (continued)	0–255	FX 1 Level
29	Control 2		Reserved 1
		0–255	Reserved 1
30	Control 3		Reserved 2
		0–255	Reserved 2
31	Control 4		Tempo override coarse
		0	Follow App Tempo
		1–255	Override BPM
32	Control 4 Fine	0–255	Fine adjustment of CH 31

CH 17–28: 12 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 17); the table below gives each cell's channel numbers.

Cell	Video Effect Parameter	Cell	Video Effect Parameter	Cell	Video Effect Parameter	Cell	Video Effect Parameter	Cell	Video Effect Parameter	Cell	Video Effect Parameter
1	17	2	18	3	19	4	20	5	21	6	22
7	23	8	24	9	25	10	26	11	27	12	28

10 Technical specifications

Parameter	Value
Pan	400°
Tilt	400°
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Gobo rotation	up to 180 °/s (30 rpm)

11 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.

12 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.
Movement is reversed	Check whether Pan/Tilt inversion is enabled in the device menu or in the controller.
Moving parts do not reach the correct position after power-on or transport	Switch the device off and on again to reset the position, and make sure the transport lock, if any, is released. If this does not help, contact a service center.
Movement is jerky	Check the value of the Pan/Tilt speed channel, if the device has one, and the stability of the DMX signal.

13 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.