DMX REFERENCE

Ahorn

Focke - Event Lighting Systems



Manufacturer	Focke - Event Lighting Systems
GDTF file	Focke_-_Event_Lighting_Systems_Ahorn_149519.gdtf
GDTF revision	v 1_1 · 2026-07-04
Generated	2026-11-24

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1 About this manual

This document describes the Ahorn by Focke - Event Lighting Systems. It was compiled from the GDTF file Focke_-_Event_Lighting_Systems_Ahorn_149519.gdtf from the GDTF-Share library.

File revision: “v 1_1”.

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 Focke - Event Lighting Systems; 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
3 Channel	3	170	1, 4, 7, 10, ...
8 Channel	9	56	1, 10, 19, 28, ...
12 Channel	12	42	1, 13, 25, 37, ...
22 Channel	22	23	1, 23, 45, 67, ...

No light? Check these channels

- 3 Channel: CH 1 Dimmer above 0
- 8 Channel: CH 1 Dimmer above 0; CH 4 Shutter at 0–46 “Open”
- 12 Channel: CH 1 Dimmer above 0; CH 2 Shutter at 0–46 “Open”
- 22 Channel: CH 1 Dimmer above 0; CH 2 Strobe at 0–46 “Open”



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 Ahorn device is a LED-strip controller to make LED-strips dmx capable. Ahorn supports the strips - WS2811 (5V) - WS2812 - WS2812b - WS2813 (3-Pin) - SK6812 (5V)”

5 Installation

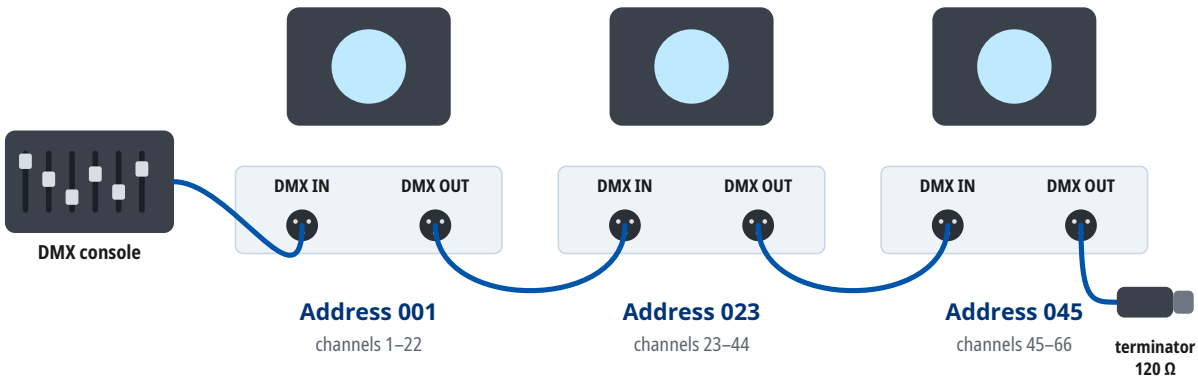
⚠ WARNING

- 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 22 Channel: every unit occupies 22 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

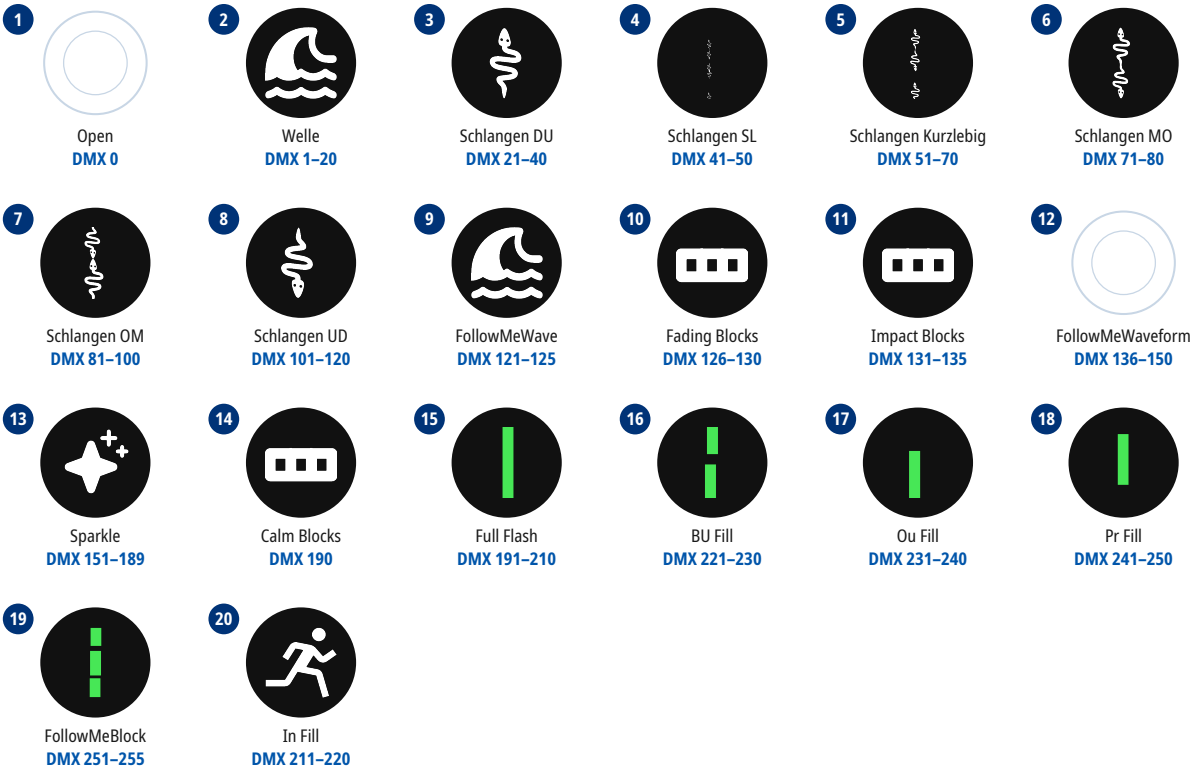
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “22 Channel”: 22.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “22 Channel”, you can use, for example, the start addresses 1, 23, 45, 67.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 Functions at a glance

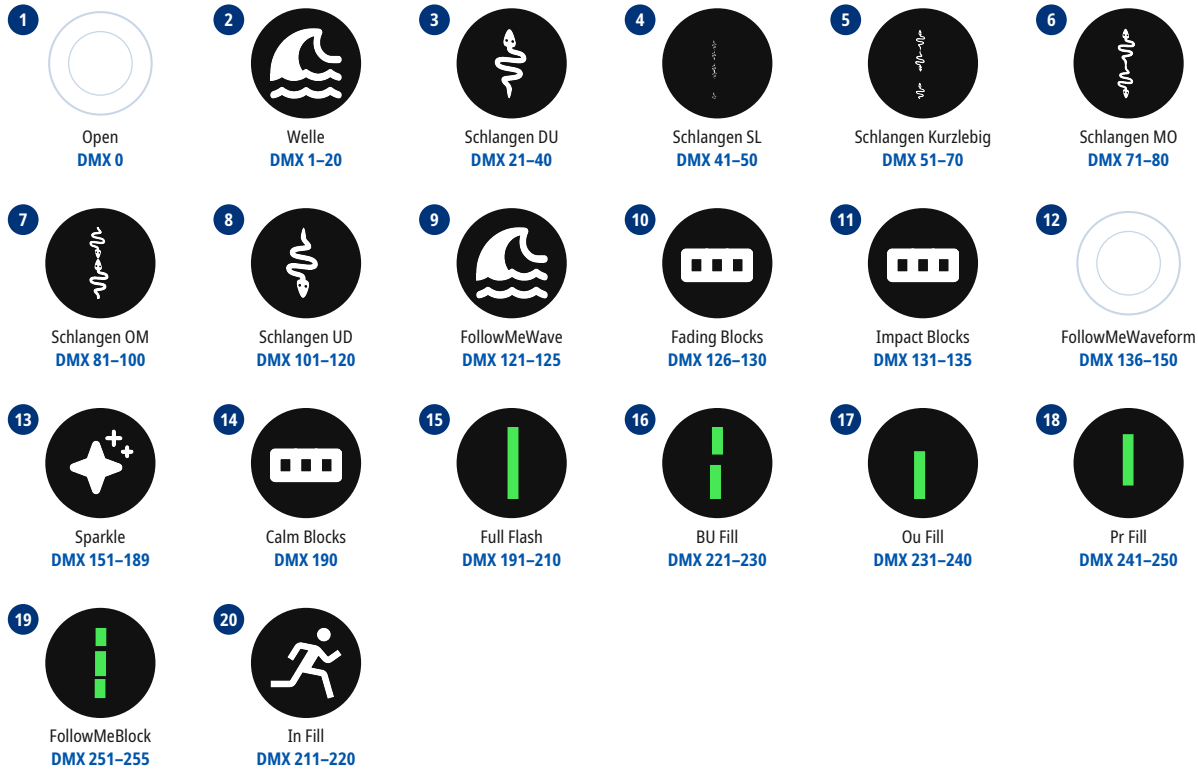
Functions in each DMX mode

	3 Channel 3 channels	8 Channel 9 channels	12 Channel 12 channels	22 Channel 22 channels
Dimmer	1	1	1	1
Shutter / strobe		4	2	2
Color mixing				3–5, 13–15
Animation wheel	3	3, 7, 8	4, 5, 9, 10	6 channels (7–20)

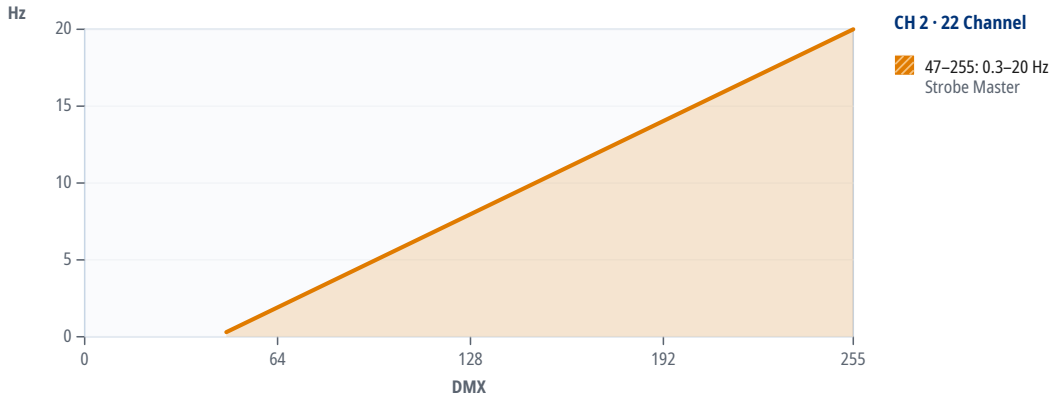
Animation wheel 1



Animation wheel 2

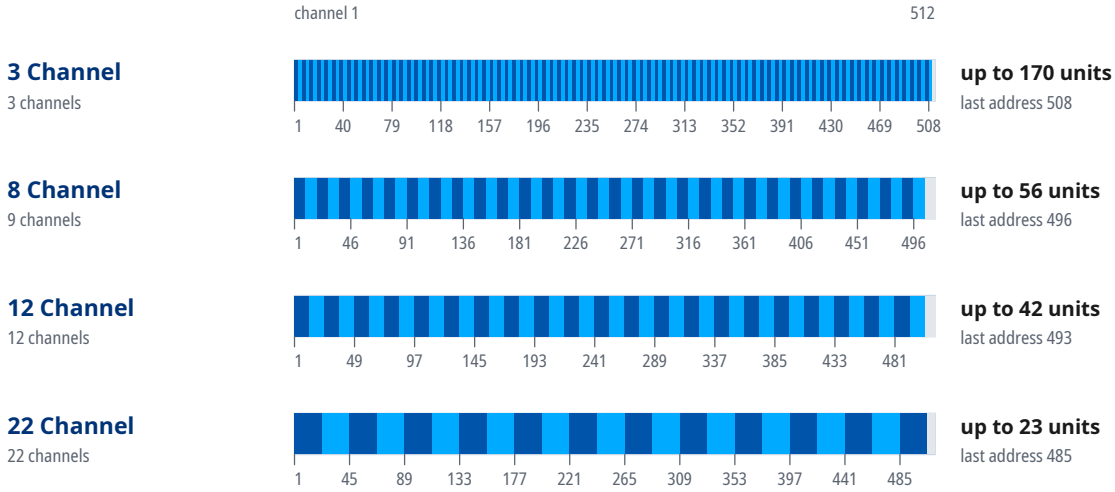


Strobe rate



9 DMX channels

Units in one DMX universe



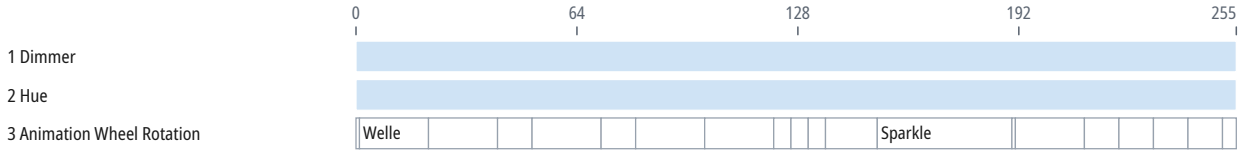
Start addresses of 20 units in the mode “22 Channel”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	111	11	221	16	331
2	23	7	133	12	243	17	353
3	45	8	155	13	265	18	375
4	67	9	177	14	287	19	397
5	89	10	199	15	309	20	419

Mode 3 Channel

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

Channel functions at a glance



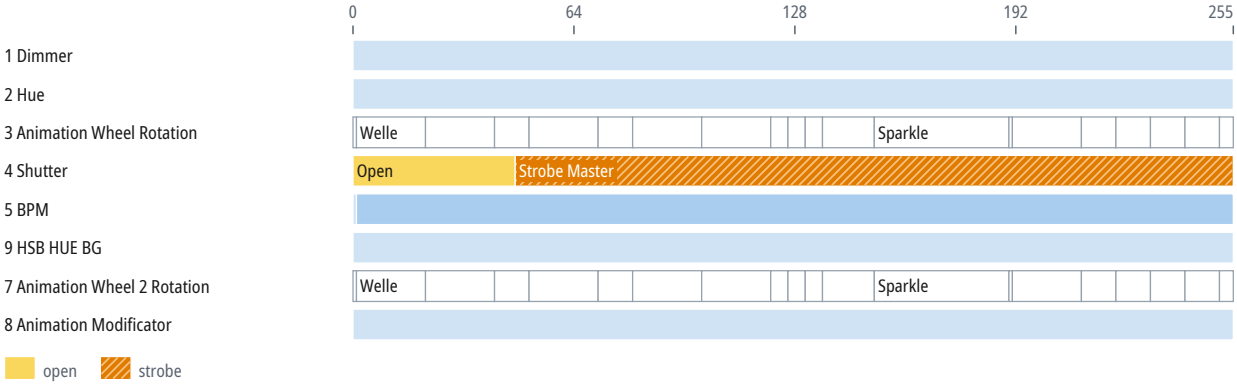
CH	Function	DMX	Description
1	Dimmer	0–255	
2	Hue	0–255	
3	Animation Wheel Rotation		Animation FG
		0	Open
		1–20	Welle
		21–40	Schlangen DU
		41–50	Schlangen SL
		51–70	Schlangen Kurzlebig
		71–80	Schlangen MO

CH	Function	DMX	Description
3	Animation Wheel Rotation (continued)	81–100	Schlangen OM
		101–120	Schlangen UD
		121–125	FollowMeWave
		126–130	Fading Blocks
		131–135	Impact Blocks
		136–150	FollowMeWaveform
		151–189	Sparkle
		190	Calm Blocks
		191–210	Full Flash
		211–220	In Fill
		221–230	BU Fill
		231–240	Ou Fill
		241–250	Pr Fill
		251–255	FollowMeBlock

Mode 8 Channel

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 4 Shutter at 0–46 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

Channel functions at a glance



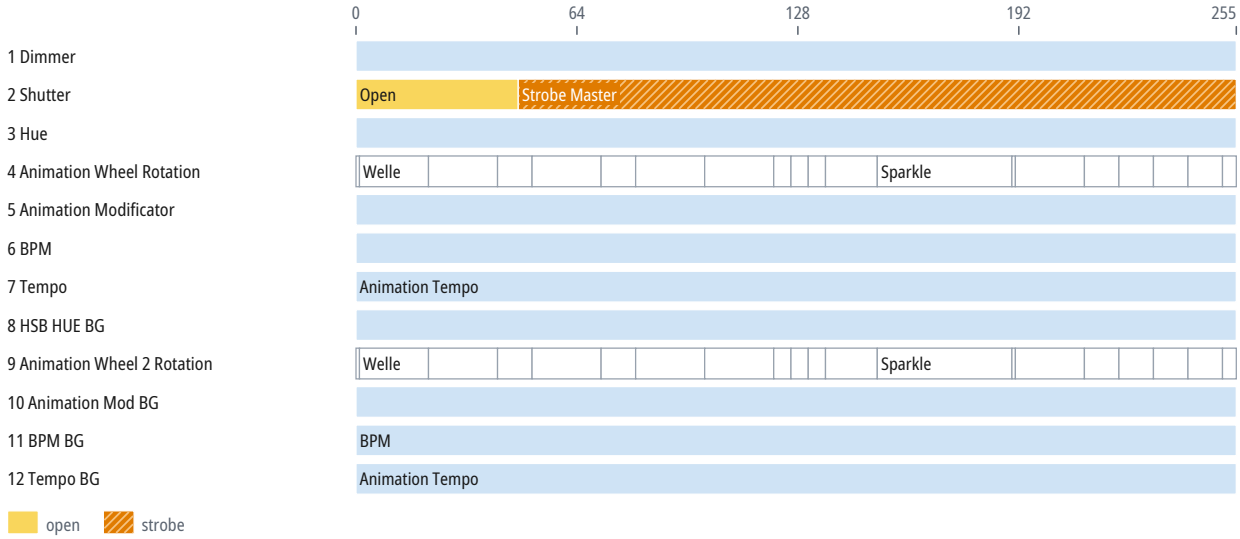
CH	Function	DMX	Description
1	Dimmer	0–255	
2	Hue	0–255	
3	Animation Wheel Rotation		Same as CH 3 in the mode “3 Channel” (p. 8)
4	Shutter	0–46	Open
		47–255	Strobe Master (0.3–20 Hz)
5	BPM	0	Default BPM: BPM
		1–255	BPM
7	Animation Wheel 2 Rotation		Animation FG
		0	Open
		1–20	Welle
		21–40	Snakes DU

CH	Function	DMX	Description
7	Animation Wheel 2 Rotation (continued)	41–50	Snakes SL
		51–70	Snakes Kurzlebig
		71–80	Snakes MO
		81–100	Snakes OM
		101–120	Snakes UD
		121–125	FollowMeWave
		126–130	Fading Blocks
		131–135	Impact Blocks
		136–150	FollowMeWaveform
		151–189	Sparkle
		190	Calm Blocks
		191–210	Full Flash
		211–220	In Fill
		221–230	BU Fill
		231–240	Ou Fill
		241–250	Pr Fill
		251–255	FollowMeBlock
8	Animation Modificator	0–255	
9	HSB HUE BG	0–255	

Mode 12 Channel

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Shutter at 0–46 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

Channel functions at a glance



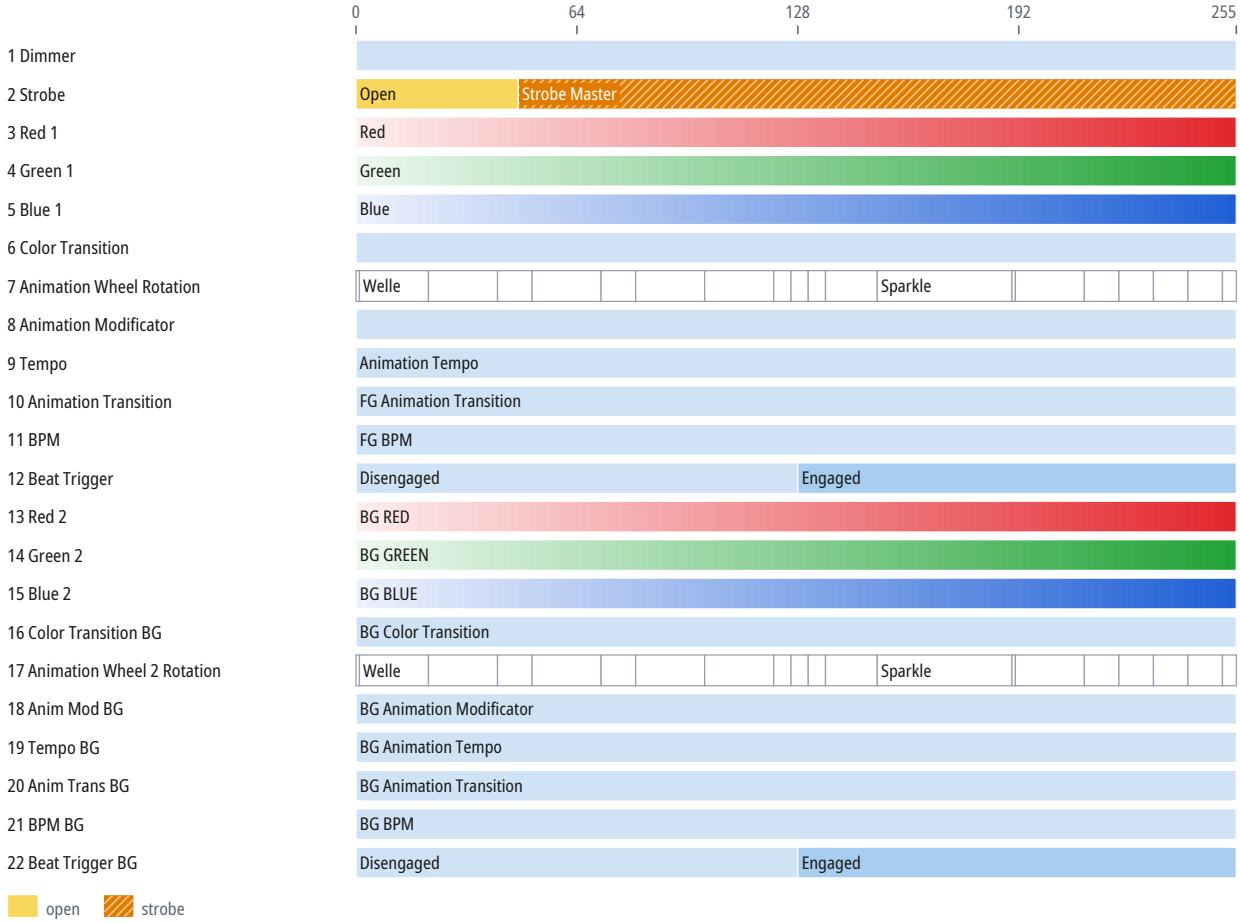
CH	Function	DMX	Description
1	Dimmer	0–255	
2	Shutter		Same as CH 4 in the mode “8 Channel” (p. 9)
3	Hue	0–255	
4	Animation Wheel Rotation		FG Animation
		0	Open
		1–20	Welle
		21–40	Schlangen DU
		41–50	Schlangen SL
		51–70	Schlangen Kurzlebig
		71–80	Schlangen MO
		81–100	Schlangen OM
		101–120	Schlangen UD
		121–125	FollowMeWave
		126–130	Fading Blocks
		131–135	Impact Blocks
		136–150	FollowMeWaveform
		151–189	Sparkle
		190	Calm Blocks
		191–210	Full Flash
		211–220	In Fill
		221–230	BU Fill
		231–240	Ou Fill
		241–250	Pr Fill
		251–255	FollowMeBlock
5	Animation Modificator		FG Animation Modificator
		0–255	
6	BPM		FG BPM
		0–255	
7	Tempo		Animation Tempo
		0–255	Animation Tempo
8	HSB HUE BG	0–255	
9	Animation Wheel 2 Rotation		BG Animation
		0	Open
		1–20	Welle
		21–40	Schlangen DU
		41–50	Schlangen SL
		51–70	Schlangen Kurzlebig
		71–80	Schlangen MO
		81–100	Schlangen OM
		101–120	Schlangen UD

CH	Function	DMX	Description
9	Animation Wheel 2 Rotation (continued)	121–125	FollowMeWave
		126–130	Fading Blocks
		131–135	Impact Blocks
		136–150	FollowMeWaveform
		151–189	Sparkle
		190	Calm Blocks
		191–210	Full Flash
		211–220	In Fill
		221–230	BU Fill
		231–240	Ou Fill
		241–250	Pr Fill
		251–255	FollowMeBlock
10	Animation Mod BG		BG Animation Modificator
		0–255	
11	BPM BG		BG BPM
		0–255	BPM
12	Tempo BG		BG Tempo
		0–255	Animation Tempo

Mode 22 Channel

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Strobe at 0–46 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	
2	Strobe	0–46	Open
		47–255	Strobe Master (0.3–20 Hz)
3	Red 1	0–255	Red
4	Green 1	0–255	Green
5	Blue 1	0–255	Blue
6	Color Transition	0–255	
7	Animation Wheel Rotation		Same as CH 4 in the mode “12 Channel” (p. 11)
8	Animation Modificator		Same as CH 5 in the mode “12 Channel” (p. 11)
9	Tempo		FG Animation Tempo
		0–255	Animation Tempo
10	Animation Transition		FG Animation Transition
		0–255	FG Animation Transition
11	BPM	0–255	FG BPM

CH	Function	DMX	Description
12	Beat Trigger		FG Beat Trigger
		0–127	Disengaged
		128–255	Engaged
13	Red 2		BG RED
		0–255	BG RED
14	Green 2		BG GREEN
		0–255	BG GREEN
15	Blue 2		BG BLUE
		0–255	BG BLUE
16	Color Transition BG		BG Color Transition
		0–255	BG Color Transition
17	Animation Wheel 2 Rotation		Same as CH 9 in the mode “12 Channel” (p. 11)
18	Anim Mod BG		BG Animation Modificator
		0–255	BG Animation Modificator
19	Tempo BG		BG Animation Tempo
		0–255	BG Animation Tempo
20	Anim Trans BG		BG Animation Transition
		0–255	BG Animation Transition
21	BPM BG		BG BPM
		0–255	BG BPM
22	Beat Trigger BG		BG Beat Trigger
		0–127	Disengaged
		128–255	Engaged

10 Technical specifications

Parameter	Value
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.3–20 Hz

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.

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.