DMX REFERENCE

BLINDER 400 RGB

MARK



Manufacturer	MARK
GDTF file	MARK_BLINDER_400_RGB_128228.gdtf
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1 About this manual

This document describes the BLINDER 400 RGB by MARK. It was compiled from the GDTF file MARK_BLINDER_400_RGB_128228.gdtf from the GDTF-Share library.

File revision: “Version1_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 MARK; 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

Parameter	Value
Weight	11.2 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
7CH (A)	7	73	1, 8, 15, 22, ...
16CH (D)	16	32	1, 17, 33, 49, ...

No light? Check these channels

- 7CH (A): CH 1 Dimmer above 0; CH 5 Strobe Duration at 0 “Open”
- 16CH (D): CH 1 Dimmer above 0; CH 2 Strobe Duration at 0 “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.

⚠ WARNING

- This device produces very intense flashes of light.
- Flash rates of about 3 to 30 flashes per second carry the highest risk for people with photosensitive epilepsy.
- Do not aim the device into the eyes of the audience or performers at close range.
- At public events, always give clear advance notice that strobe effects will be used.

4 Product description

Description in the GDTF file

“Blinder effect with 4x100W White + Warm White COB LEDs”

5 Installation

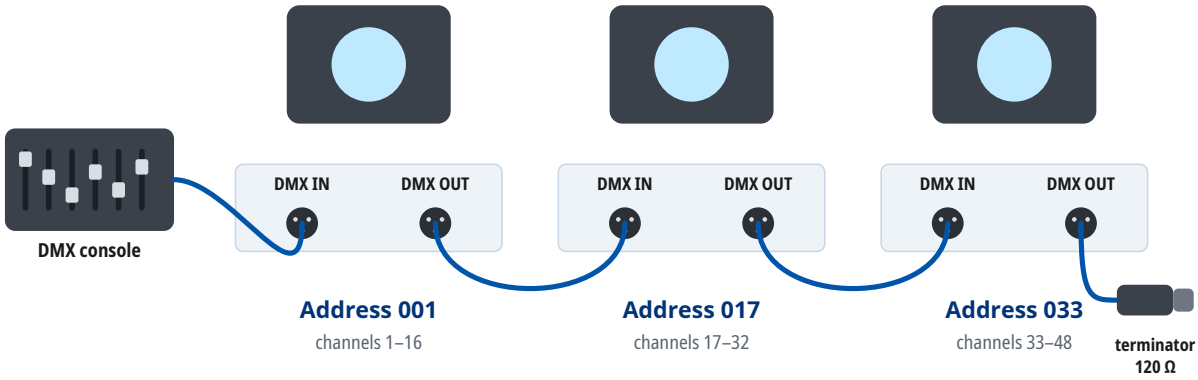
⚠ **WARNING**

- 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.
- Weight of the device: 11.2 kg.
- 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 16CH (D): every unit occupies 16 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

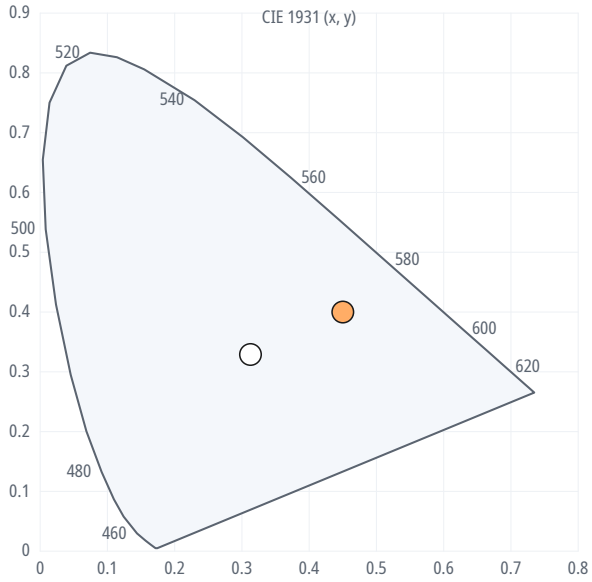
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “16CH (D)”: 16.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “16CH (D)”, you can use, for example, the start addresses 1, 17, 33, 49.
- 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

	7CH (A) 7 channels	16CH (D) 16 channels
Dimmer	1	1
Shutter / strobe	5	2
Color mixing	2–4	5–16
Effects / macros	6, 7	3, 4
Pixel control		✓

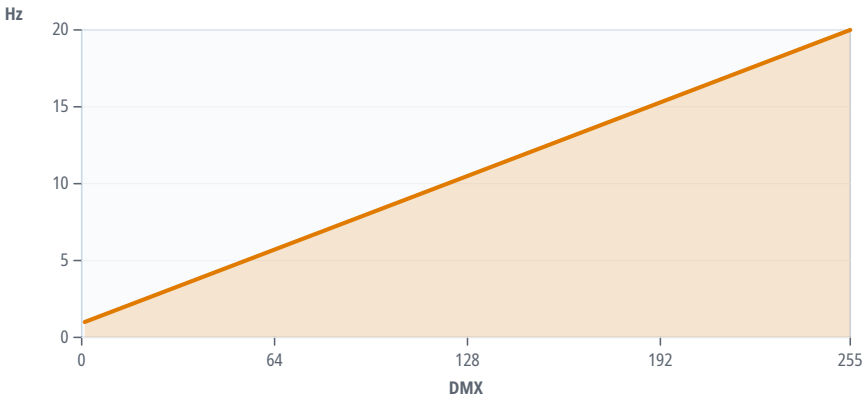
LED colors



LED	x	y
Cold White	0.313	0.329
Warm White	0.450	0.400

The dots are the LED colors the GDTF file states.

Strobe rate

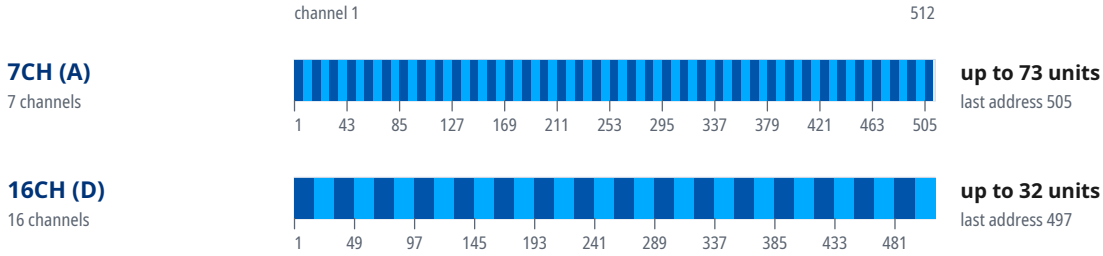


CH 2 · 16CH (D)

1–255: 1–20 Hz
Strobe Slow to Fast

9 DMX channels

Units in one DMX universe



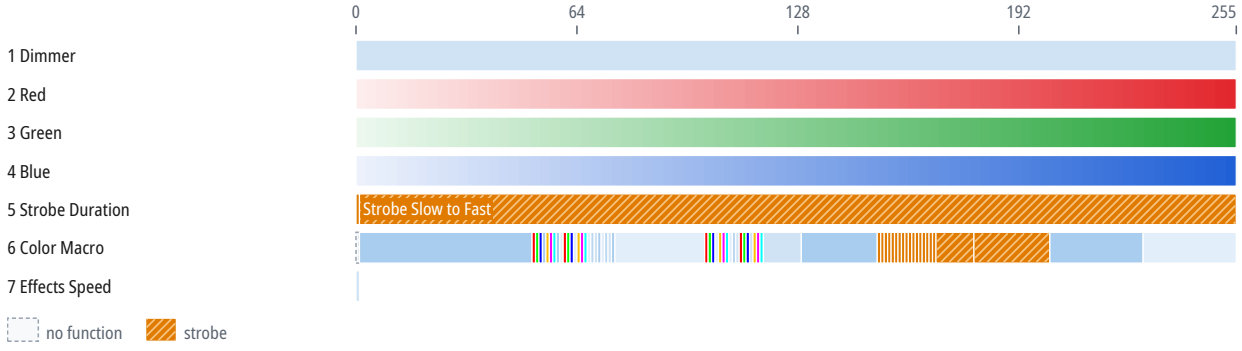
Start addresses of 20 units in the mode “16CH (D)”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	81	11	161	16	241
2	17	7	97	12	177	17	257
3	33	8	113	13	193	18	273
4	49	9	129	14	209	19	289
5	65	10	145	15	225	20	305

Mode 7CH (A)

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 5 Strobe Duration at 0 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Red 255, CH 3 Green 255, CH 4 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	
2	Red	0–255	
3	Green	0–255	
4	Blue	0–255	
5	Strobe Duration	0	Open
		1–255	Strobe Slow to Fast (1–20 Hz)
6	Color Macro	0	No Function
		1–50	Static Color Mode (Use Speed Ch)
		51	Red Jump 1

CH	Function	DMX	Description
6	Color Macro (continued)	52	Green Jump 1
		53	Blue Jump 1
		54	White Jump 1
		55	Amber Jump 1
		56	Magenta Jump 1
		57	Cyan Jump 1
		58	Color Jump 1
		59	Color Jump 2
		60	Red Jump 2
		61	Green Jump 2
		62	Blue Jump 2
		63	White Jump 2
		64	Amber Jump 2
		65	Magenta Jump 2
		66	Cyan Jump 2
		67–74	Color Jump 3...10
		75–100	Jump Macros 1-26
		101	Red Gradual 1
		102	Green Gradual 1
		103	Blue Gradual 1
		104	White Gradual 1
		105	Amber Gradual 1
		106	Magenta Gradual 1
		107	Cyan Gradual 1
		108	Color Gradual 1
		109	Color Gradual 2
		110	Color Gradual 3
		111	Red Gradual 2
		112	Green Gradual 2
		113	Blue Gradual 2
		114	White Gradual 2
		115	Amber Gradual 2
		116	Magenta Gradual 2
		117	Cyan Gradual 2
		118–128	Color Gradual 4-14
		129–150	Gradual Macros (Generic)
		151	Red Pulse 1
		152	Green Pulse 1
		153	Blue Pulse 1
		154	White Pulse 1
		155	Amber Pulse 1
		156	Magenta Pulse 1

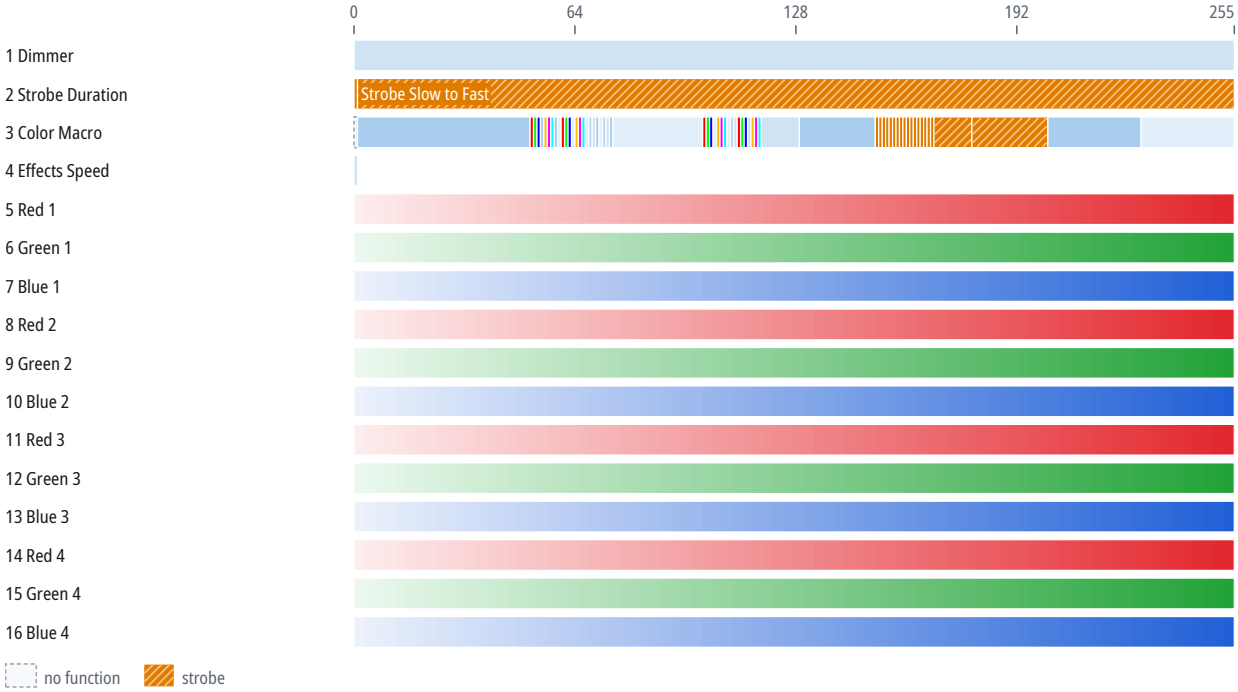
CH	Function	DMX	Description
6	Color Macro (continued)	157	Cyan Pulse 1
		158	Color Pulse 1
		159	Color Pulse 2
		160	Color Pulse 3
		161	Red Pulse 2
		162	Green Pulse 2
		163	Blue Pulse 2
		164	White Pulse 2
		165	Amber Pulse 2
		166	Magenta Pulse 2
		167	Cyan Pulse 2
		168–178	Color Pulse 4-14
		179–200	Pulse Macros (Generic)
		201–227	Sound Mode 1
		228–255	Sound Mode 2
7	Effects Speed		When CH 6 is 51–200:
		0–255	
			When CH 6 is 1–50:
		0–2	Red LED 1
		3–5	Red LED 2
		6–8	Red LED 3
		9–11	Red LED 4
		12–14	Green LED 1
		15–17	Green LED 2
		18–20	Green LED 3
		21–23	Green LED 4
		24–26	Blue LED 1
		27–29	Blue LED 2
		30–32	Blue LED 3
		33–35	Blue LED 4
		36–38	White LED 1
		39–41	White LED 2
		42–44	White LED 3
		45–47	White LED 4
		48–59	All Ambers
		60–71	All Magentas
		72–83	All Cyans
		84–209	Pairs/Mixes (See Manual)
		210–212	All Red
		213–215	All Green
		216–218	All Blue

CH	Function	DMX	Description
7	Effects Speed (continued)	219–255	All White
			When CH 6 is 201–255:
		0–255	Sound Sensitivity

Mode 16CH (D)

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Strobe Duration at 0 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 5 Red 1 255, CH 6 Green 1 255, CH 7 Blue 1 255, CH 8 Red 2 255, CH 9 Green 2 255, CH 10 Blue 2 255, CH 11 Red 3 255, CH 12 Green 3 255, CH 13 Blue 3 255, CH 14 Red 4 255, CH 15 Green 4 255, CH 16 Blue 4 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	
2	Strobe Duration		Same as CH 5 in the mode “7CH (A)” (p. 8)
3	Color Macro		Same as CH 6 in the mode “7CH (A)” (p. 8)
4	Effects Speed		When CH 3 is 51–200:
		0–255	
			When CH 3 is 1–50:
		0–2	Red LED 1
		3–5	Red LED 2
		6–8	Red LED 3
		9–11	Red LED 4
		12–14	Green LED 1
		15–17	Green LED 2

CH	Function	DMX	Description
4	Effects Speed (continued)	18–20	Green LED 3
		21–23	Green LED 4
		24–26	Blue LED 1
		27–29	Blue LED 2
		30–32	Blue LED 3
		33–35	Blue LED 4
		36–38	White LED 1
		39–41	White LED 2
		42–44	White LED 3
		45–47	White LED 4
		48–59	All Ambers
		60–71	All Magentas
		72–83	All Cyans
		84–209	Pairs/Mixes
		210–212	All Red
		213–215	All Green
		216–218	All Blue
		219–255	All White
			When CH 3 is 201–255:
		0–255	Sound Sensitivity
5	Red 1	0–255	
6	Green 1	0–255	
7	Blue 1	0–255	
8	Red 2	0–255	
9	Green 2	0–255	
10	Blue 2	0–255	
11	Red 3	0–255	
12	Green 3	0–255	
13	Blue 3	0–255	
14	Red 4	0–255	
15	Green 4	0–255	
16	Blue 4	0–255	

10 Technical specifications

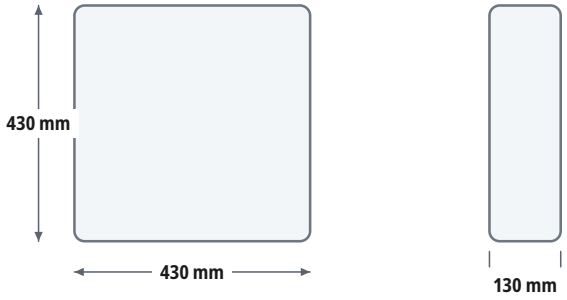
Parameter	Value
Light source	LED
Weight	11.2 kg
Operating temperature	0 to 40 °C

Speeds and ranges

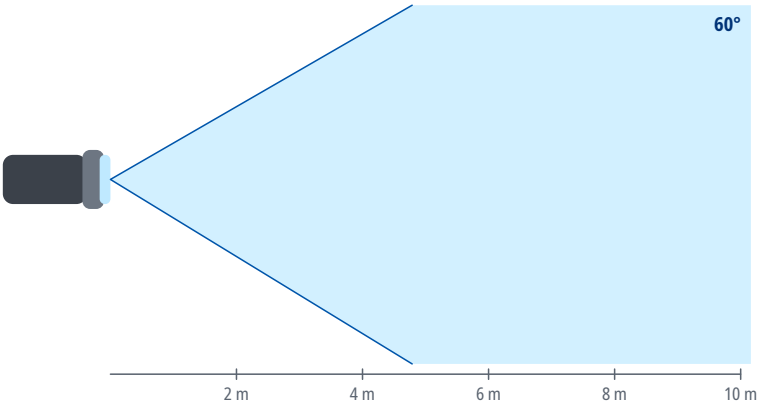
Parameter	Value
Strobe frequency	1–20 Hz

Dimensions

weight 11.2 kg



Spot diameter



Distance	Ø 60°
2 m	2.3 m
4 m	4.6 m
6 m	6.9 m
8 m	9.2 m
10 m	11.5 m
15 m	17.3 m

Spot diameter square to the beam axis, calculated from the beam angle.

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.