

See Extraordinary

HYPERVSN

Masterbox

OPERATING MANUAL

Integrated 3D Holographic Display System

TABLE OF CONTENTS

1. OVERVIEW.....	4
2. TECHNICAL SPECIFICATIONS.....	6
3. PACKAGE CONTENTS	8
4. ORDER OF PRE-OPERATION PROCEDURES	10
5. MASTERBOX INSTALLATION	11
6. MASTERBOX ASSEMBLY	12
7. CONTENT UPLOADING AND OPERATION.....	14
7.1 AUDIO CONTENT UPLOADING ON THE MASTERBOX ...	14
7.2 MEDIA CONTENT DISPLAYING.....	20
8. TECHNICAL MAINTENANCE	22
9. SAFETY PROVISIONS	23
10. DISPOSAL	24
11. WARRANTY AND MAINTENANCE	25
12.1 WARRANTY.....	25
12.2 MAINTENANCE	25
12.3 SPECIAL REQUIREMENTS.....	25

Thank you for purchasing our product!



WARNING! This operating manual must be thoroughly read and understood before installation, assembling, placing into operation or using HYPERVSN Masterbox, HYPERVSN Devices or HYPERVSN Wall.

This manual is designed as a general guide for HYPERVSN Masterbox (hereinafter referred to as the Masterbox).

This operating manual covers an overview, safety rules and requirements, technical specifications and other information required to install, to assemble and to operate the Masterbox.

HYPERVSN Solo Device hereinafter is referred to as the Device.

Kino-mo Ltd, the manufacturer, disclaims all liability for any harm caused to the user or viewers by improper devices operation and usage.

No changes shall be made to the equipment without the manufacturer's permission as this may void the user's authority to operate the Device(s) or the Masterbox.

Safety and other symbols

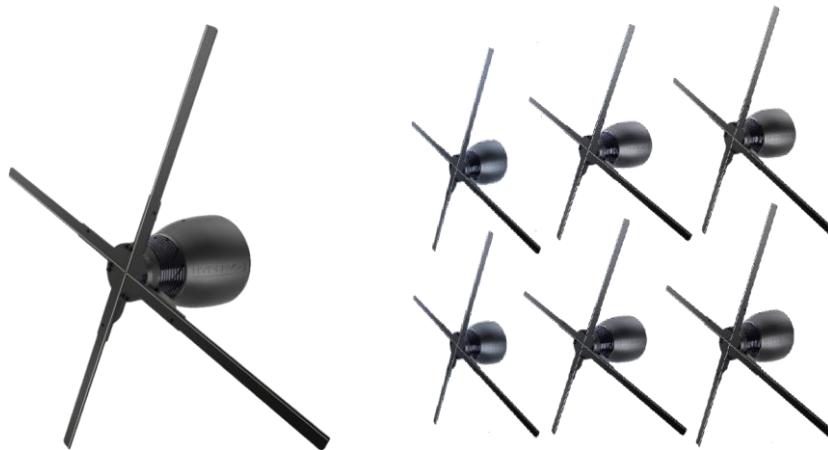
The following symbols are affixed to the Device and in this manual:

Table 1. Safety and other symbols

SYMBOL	MEANING
	CE mark
	Eurasian Conformity mark
	General Warning sign
	Protective Earth (grounding)
	22/99 RAEE Disposal See section 10.

1. OVERVIEW

The Device is a cutting-edge visual solution intended for creating, managing and displaying 3D video content perceived by viewers as hi-resolution holograms floating in the mid-air. Installed according to a specific pattern and synchronized, multiple Devices working together form the HYPERVSN Wall which allows to create a single large image (hereinafter referred to as the Wall).



Picture 1. Device and an example of Wall

The Masterbox is an additional component connected to the Device or to the Wall that provides their additional functionality.



Picture 2. Masterbox general view

Masterbox key features

- Providing a stable synchronization of a media content displaying on the Devices of the Wall.
- Audio output. The Masterbox providing possibility of sound reproduction when the appropriate audio facilities are connected to it. Soundtracks are playing synchronized with videos displaying on the Devices (the Device does not have any audio output).
- Managing number of the Devices of the Wall as a one metadvice. Managing media content.
- Calibration of the Wall.

The connection between the Masterbox and the Wall is performed through the wire interface RS-485.

The Masterbox is equipped with the remote control.



Picture 3. Remote control

Note. For detailed description of the Device and the Wall designs, pre-operation procedures, technical specifications, maintenance instructions, and safety rules see the operating manual for the Device and the Wall.

2. TECHNICAL SPECIFICATIONS

Table 2. Operational environmental conditions (indoors)
of the Device with the connected Masterbox

CONDITIONS	VALUE
Air temperature range	from 0 °C to + 35 °C
Relative humidity	up to 75%

Table 3. Basic technical specifications

PARAMETERS DESCRIPTION	VALUE
Length	92 mm
Width	92 mm
Height	31 mm
Net weight	215 g
Rated voltage	5 V
Rated current	2.4 A
Audio outputs	3.5 jack
	S/PDIF (optic connection) – recommended
Sockets	micro USB
	RJ45
	USB - 4 pcs.
	RJ12
	3.5 jack

PARAMETERS DESCRIPTION		VALUE
Circuit boards		Raspberry Pi 3B
		Custom extension: • 3.3V Lithium Battery • Real-time clock • RS-485 interface with level shifters • 1 operation mode switcher.
Housing material		metal
Housing thickness		1 mm
Terminator	resistance voltage	120 Ohm 0.5 W
Remote control (optional)		IR type
Battery (for the remote control)		CR3032, 3V
IR-sensor		• external • 38 kHz • 3,5 mm jack plug • cable length 1,5 m

The Masterbox has Class A electromagnetic compatibility.

Attention. Operation of this equipment in a residential environment could cause radio interference.

The Masterbox is supplied with 12 W line adapter with a micro USB cable connected and can be operated continuously while plugged in.

3. PACKAGE CONTENTS

Table 4. Package contents

COMPONENT NAME	QUANTITY (# OF PIECES)
Masterbox	1
MB wall mount	1
Line adapter	1
Micro USB – USB cable	1
Plug AU	1
Plug EU	1
Plug US	1
Plug UK	1
Cable RJ12 3 m	1
Cable RJ12 0.1 m with a terminator	1
Remote control	1
IR sensor	1
Operating manual	1

Tools and fittings required (not supplied)

To install the Masterbox on a wall, you will need the following tools and fittings that are not supplied with the Masterbox:

- Drill – to make holes in a wall where the Masterbox will be mounted.
Holes diameter:
 - a) for a partition wall – 4.3 mm,
 - b) for a solid wall – 4.0 mm.

- Fasteners – 3 pieces to attach the MB wall bracket (M4 mounting hardware, appropriate for the mounting surface – a partition or a solid wall).
- Screwdriver – a type depends on fasteners used.

To manage the Masterbox using the SDK application, you will need the following equipment that is not supplied with the Masterbox:

- Computer (Windows operated only with disabled firewall programs and anti-viruses software)
- Router
- Rj45 cable, its length must be sufficient to connect a router with the Masterbox.

4. ORDER OF PRE-OPERATION PROCEDURES

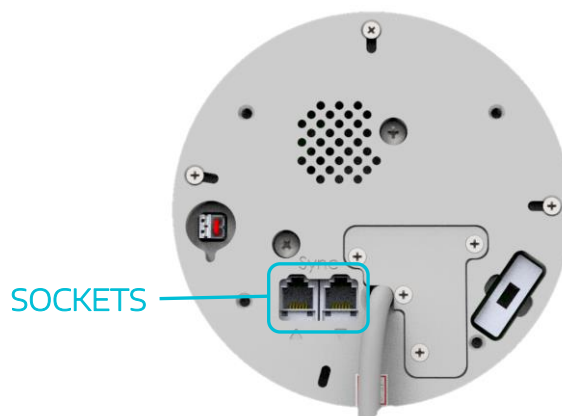
Attention. Before installing or assembling the Masterbox, make a visual check of its components integrity. The Masterbox should not have any cracks, dents or other visual damage.

Contact your supplier if you notice any irregularities during the visual check.

Pre-operation procedures order

In order to use the Masterbox the following procedures must be performed:

1. Assemble the Devices.
2. Mount the Devices according to the Wall installation pattern.
3. Connect the Devices one by one with signal cables (one signal cable is supplied with each Device). Use the appropriate sockets at the bottom of the stator.



Picture 4. Sockets at the bottom of the stator

4. Activate the Devices.
5. Upload a media content on the Devices.

Attention. For more detailed information about steps 1-5 see the operating manuals for the Device and for the Wall.

6. Install the Masterbox (see section 5) (optionally).
7. Assemble the Masterbox (see section 6).
8. Upload a media content on the Masterbox (see section 7).

Important. If the Masterbox has been stored in low temperatures, leave it indoors for at least 2 hours before use to avoid moisture condensing on internal components of the Masterbox. This may damage the Masterbox.

5. MASTERBOX INSTALLATION



Picture 5. MB wall mount

The Masterbox may be mounted on a wall. The MB wall mount is intended for it.

There are three holes in the MB wall mount of 4.3 mm diameter:

Attention. The length of the cable intended to connect the Masterbox with the Device is 3 m. The MB wall mount must be mounted at the distance sufficient to the Masterbox to be connected to the nearest mounted Device.

Installation procedure

1. Mark the desired position of the center of the MB box mount on the wall.
2. Position the MB wall mount on the wall so that its central hole lines up with the position of the previously made mark. Keep orientation of the MB wall mount as indicated in the Picture 6 and be sure that it is level.
3. Mark the position of the 3 mounting holes on the wall.
4. Drill 3 holes in the marked positions.
5. Using the appropriate mounting hardware, firmly attach the MB wall mount to the wall.



Picture 6. Masterbox installation on a wall

6. Place the Masterbox on the MB wall mount and slide it firmly downwards.

6. MASTERBOX ASSEMBLY



Picture 7. Masterbox sockets (front view)

Assembly procedure



Picture 8. Connection scheme

1. Connect the one end of RJ12 cable (3m) to the Masterbox RJ12 socket (Picture 7).
2. Connect the second end of the RJ12 cable to the appropriate socket (Picture 4) of the nearest mounted (first) Device of the Wall.
3. Connect the micro USB connector of the micro USB-USB cable to the appropriate socket of the Masterbox.
4. Connect the USB connector of the micro USB-USB cable to USB socket of the line adapter.
5. Connect the required plug (select the one of the type required) to the appropriate socket of the line adapter.
6. Connect the connector of the cable with a terminator to the appropriate socket of the last connected Device of the Wall.

7. Connect the IR-sensor cable plug to the Masterbox IR 3,5 jack socket.



Picture 9. Masterbox sockets (back view)

8. Switch the “On”/”Off” switch of the Masterbox into the “On” position (Picture 9).

The Masterbox is ready to be connected to the power mains.



WARNING!

- **Do not turn on the Devices or the Masterbox until it is fully and properly assembled and inspected.**
- **Before switching on the Devices make sure that there is no any person at a distance of at least 0,5 meters from the Devices (except for the Devices equipped with a dome).**

Addition steps (optionally)

When required to manage the Masterbox using SDK application, connect the Masterbox to your router using RJ45 cable (use the RJ45 socket of the Masterbox, see Picture 7).

If required, the audio facilities may be connected to the Masterbox. Use the appropriate sockets (3.5 jack or S/PDIF) (Picture 7).

Status indication on the Device

The blue indicator of the Device is blinking when the Masterbox is connected to the Device.



Picture 10. Device status indicators

7. CONTENT UPLOADING AND OPERATION

7.1 AUDIO CONTENT UPLOADING ON THE MASTERBOX

There are two variants of uploading an audio content on the Masterbox.

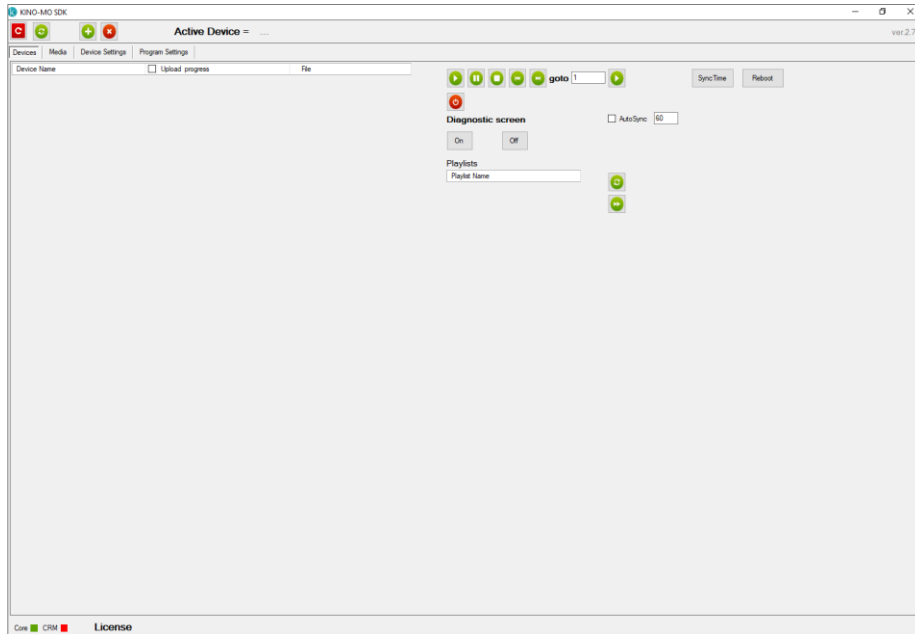
Adding an audio content to the Masterbox via a flash drive (variant 1)

1. Connect the Masterbox to the power mains.
2. Insert the flash drive (containing the required audio content) to the USB socket of the Masterbox (Picture 7). The audio content will start to download automatically.

If any audio facilities are connected to the Masterbox, it will produce the “Start update” sound message. Once the downloading procedure is successfully finished, the “Update success” sound message will be produced. The “Update failure” sound message will be produced, if the downloading procedure is finished incorrectly.
3. Take off the flash drive out of the socket.
4. Disconnect the Masterbox from the power mains.

Adding audio content to the Masterbox via SDK application (variant 2)

1. Connect your computer to the Internet (via RJ45 cable connect your computer to a router).
2. Download the .zip file with a content (via the link provided when you purchase the Wall).
3. Extract the current .zip file.
4. Using the rj45 cable, connect the Masterbox to a router (use RJ45 socket, see Picture 7).
5. Connect the Masterbox on to the power mains.
6. Run SDK application (KINO-MO-UI.exe). The following window will open:



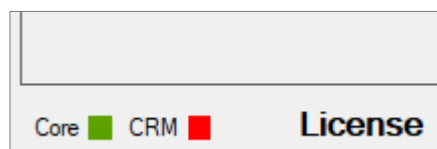
Picture 11. SDK start screen

Note. The SDK application is supplied with the Devices.

7. Make sure the “Core” indicator is green (is in the left lower corner).

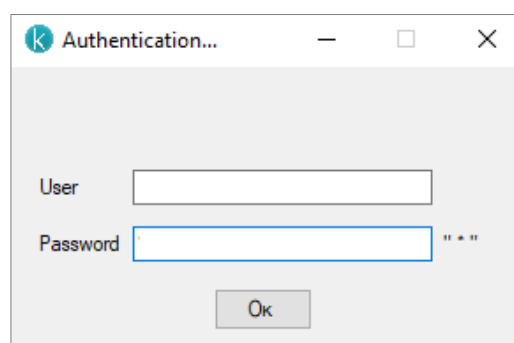
Note: If it is red, the SDK application has no connection with the Masterbox and the Wall. Check security rules of firewalls, anti-viruses programs, Windows brandmauer (open 123 port, enable a broadcast udp).

8. Click the “CRM” indicator.



Picture 12. Indicators

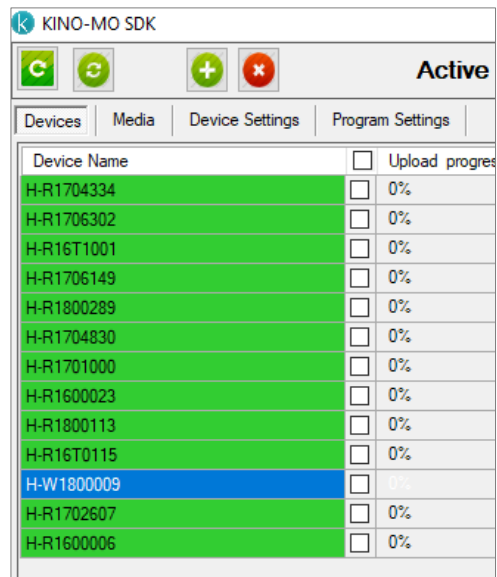
The authorization dialog window will open.



Picture 13. Authorization dialog window (login screen)

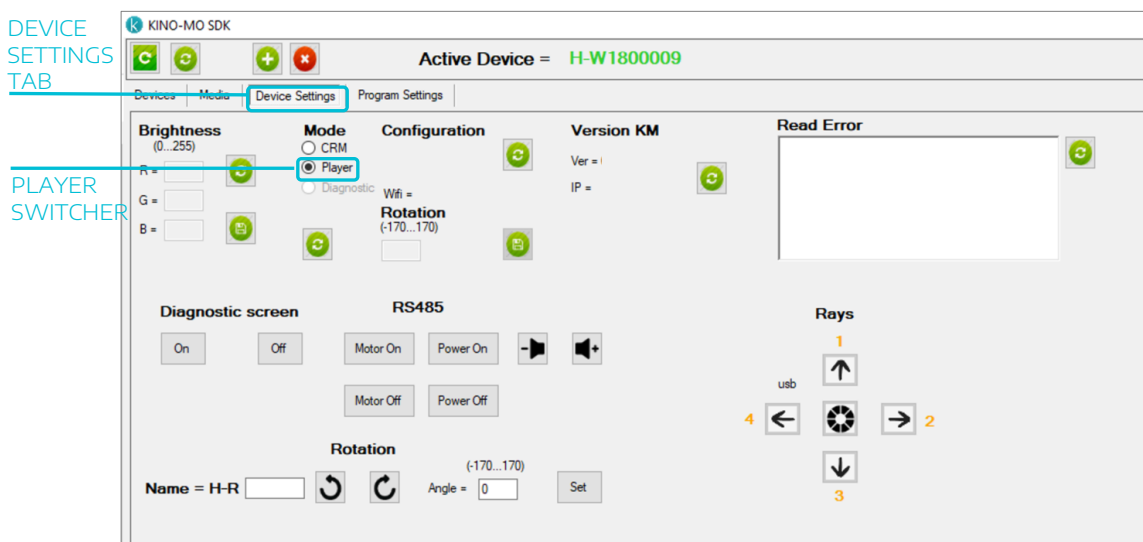
9. Enter your credentials (credentials you use to enter your account at the CMS).

The list of available devices will appear.



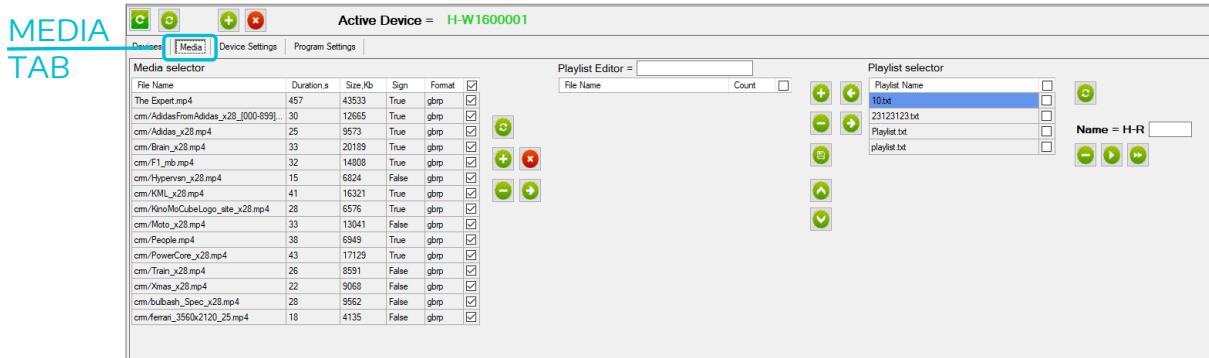
Picture 14. List of devices, selecting the device

10. Click the Masterbox name (Picture 14) in the list of devices. The Masterbox name has the next format: H-WXXXXXXXX.
11. Go to the **Device Settings** tab. Make sure the **Mode** switcher is in the “Player” position.



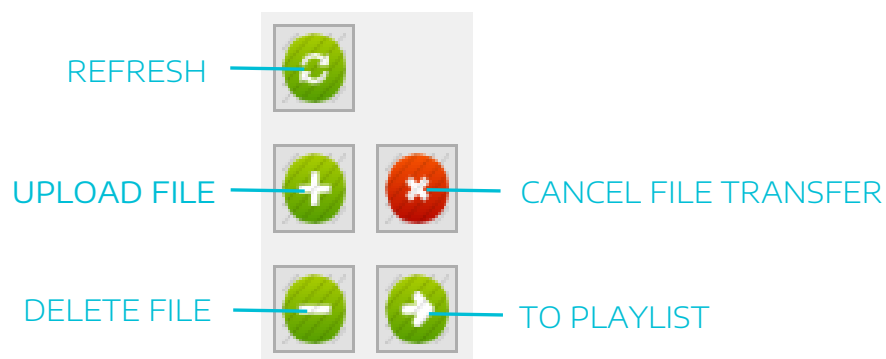
Picture 15. Player mode switcher

12. Go to the **Media** tab.

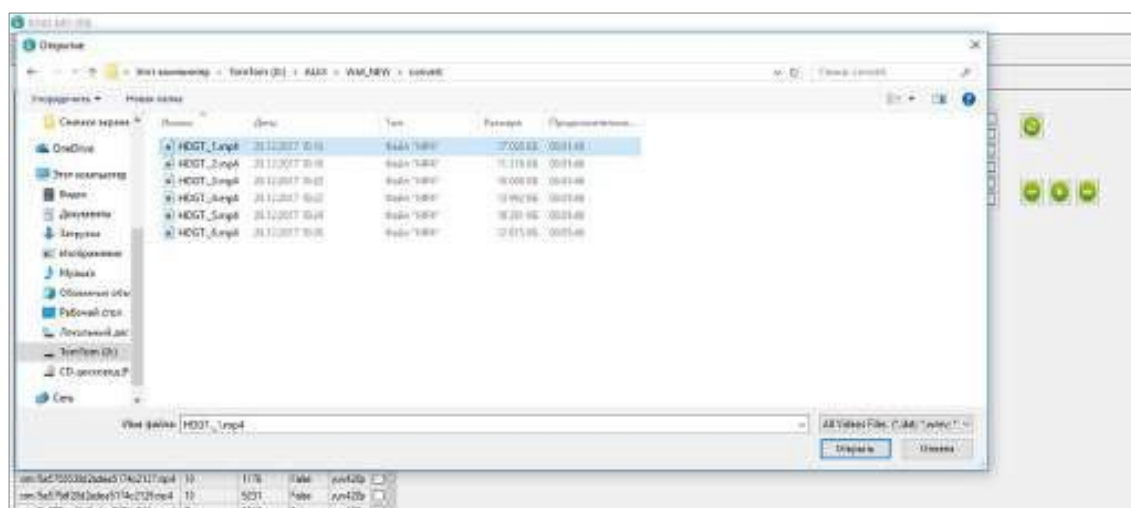


Picture 16. Media tab

13. Click the **Upload file** (plus) button to add the necessary media file (Picture 17). Select a media file in the open window (it may be selected a media file intended for any of the Devices of the Wall).



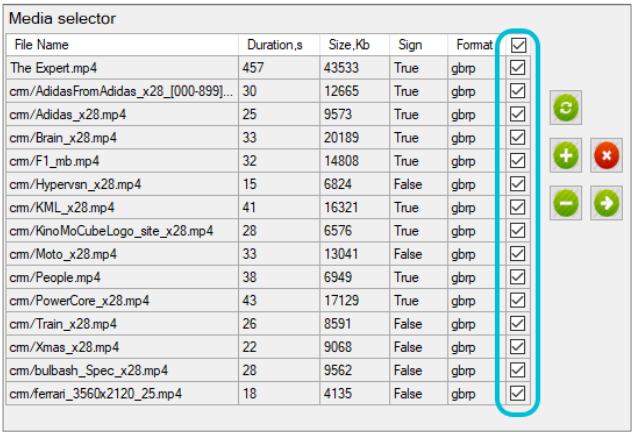
Picture 17. Buttons for managing media files



Picture 18. Selecting a media file

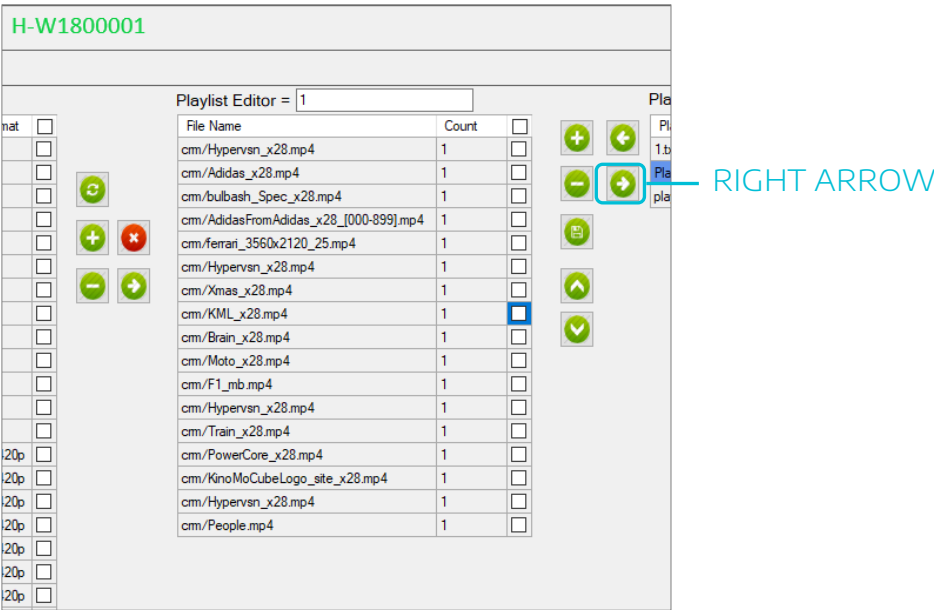
14. Wait till the download is complete.

- 15. Click **Refresh** (Picture 17).
- 16. Repeat steps 11-15 for every media file that is required to be uploaded.
- 17. Select the uploaded file(s) with a checkbox(s) (Picture 19) and click **To playlist** (Picture 17).



Picture 19. Checkboxes to select media files for a playlist

The media will be displayed in the “Playlists” list.



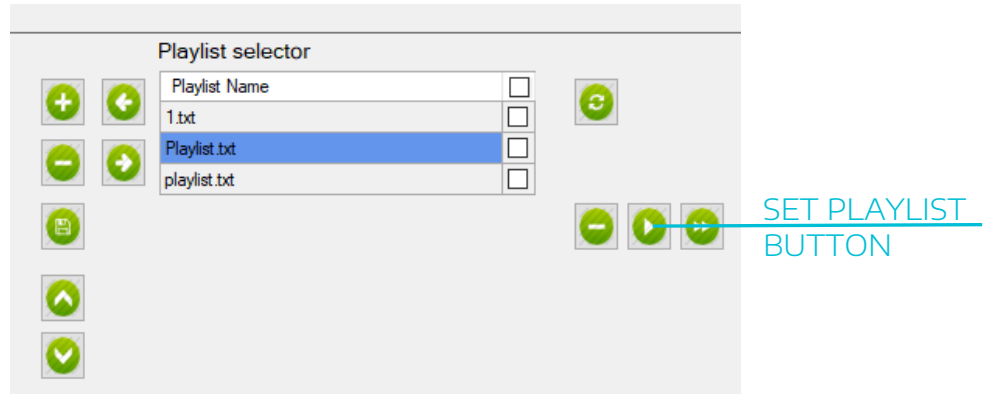
Picture 20. Playlist

- 18. Enter a playlist name to the Playlist name field.



Picture 21. Field to enter a playlist name

19. Select the playlist(s) with a checkbox(s). Click on the **Right arrow** button (Picture 20) to upload the checked playlist(s) to the Masterbox.
20. Select the added playlist file(s) with a checkbox(s), click **Set playlist**.



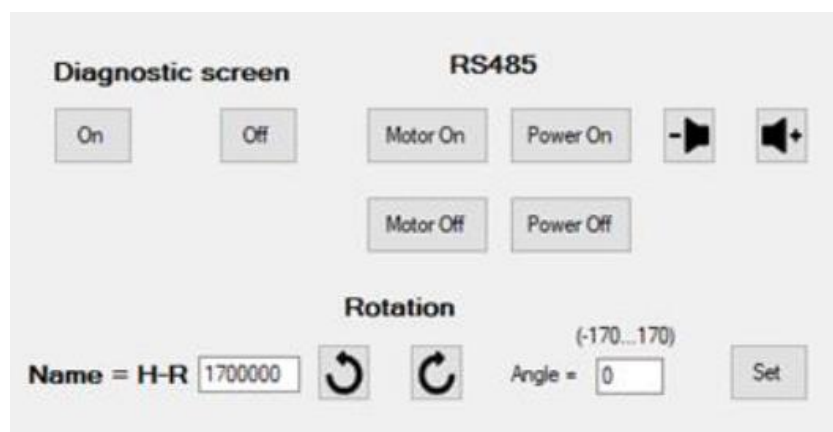
Picture 22. Set playlist

Attention.

- Soundtracks must have the same order and the same length (duration) as the videos uploaded on the Devices.
- The number of soundtracks must be the same as the number of videos on the Devices.

7.1.1 Managing the Masterbox with SDK application

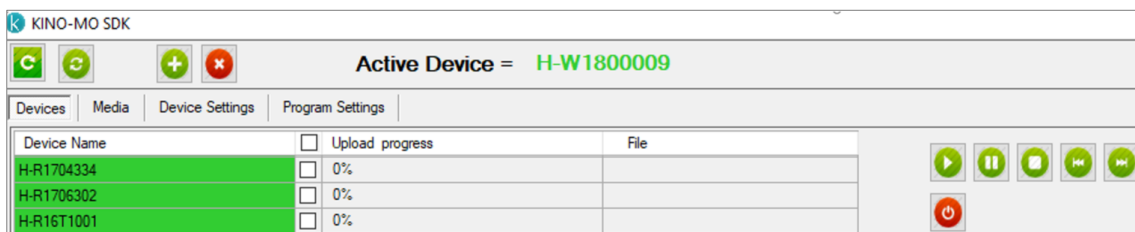
- To turn on/off the Devices of the Wall: go the “Device Settings” tab, click **Power On/Power Off** in **RS485** area.



Picture 23. Diagnostic screen, RS485 and Rotation areas of the Device Settings tab

- To turn on/off the Devices motors: go the “Device Settings” tab, click **Motor On/Motor Off** in the **RS485** area (Picture 23).
- To calibrate the Devices:
 - Go the “Device Settings” tab.
 - Click **On** in the **Diagnostic screen** area (Picture 23).
 - Enter the serial number of the Device required to be calibrated into the **Name** field.
 - Click  and  buttons or enter the required value into the **Angle** field and click **Set**.
 - Click **Off** in the **Diagnostic screen** area.
- To adjust a sound level: Go the “Device Settings” tab, click  to decrease it, click  to increase it.

To play/pause a content displaying: go the **Device** tab, click  /  buttons. To stop a content displaying click  button.



Picture 24. Devices tab area

7.2 MEDIA CONTENT DISPLAYING

Attention. To display a media content the Devices of the Wall must be in the Operating mode.

Switching on

1. Connect the Device/ the Wall and the Masterbox to the power mains.
2. Press the On button of the remote control, pointing the remote control towards the IR-sensor. The Device/the Wall will start displaying the media content.

If any audio facilities are connected to the Masterbox and powered, the audio content output will be provided while the Devices are displaying videos.

Switching off

1. Press the Off button of the remote control, pointing the remote control towards the IR-sensor. The Device/the Wall will stop displaying the media content. If any audio facilities are connected to the Masterbox, the audio content output will be stopped.
2. Disconnect the Device/the Wall and audio facilities (if any) from the power mains.

8. TECHNICAL MAINTENANCE



WARNING! For technical maintenance unplug the power cord from the power mains and make sure the rotating rays have fully stopped.

The Device needs to undergo technical maintenance at least once a month with the following actions required:

- a) Visual check of the cables.
- b) Visual check of the line adapter and the plugs.

The equipment should not have any cracks or cuts compromising its base insulation. If there are any faults of this nature, stop using the Masterbox immediately until the faults are fixed or the Masterbox is replaced.

- c) Clean the Masterbox from dust.

Important. When cleaning the Masterbox, do not use a moist rag.

9. SAFETY PROVISIONS

Additional safety requirements that have not been mentioned above yet are outlined below:

- The Masterbox belongs to class 1 in regard to protection against electric injuries. Operating the Masterbox without the proper grounding is strictly prohibited.
- To avoid electrical injuries, never turn on the Masterbox while it's housing is removed.
- The power voltage where being operated must match the required one.
- Since the Masterbox relates to TYPE A pluggable equipment it is necessary to have an easy-to-reach socket nearby.
- Do not use the Masterbox if cables, it is equipped, are damaged. Make sure the cables are not in contact with any sharp edges or hot surfaces.
- Do not pull on the cables and do not wind it around any part of the Devices.
- Do not let children play with the Masterbox. This is not a toy.
- When the Devices are in operation, keep the cables and power cords as far from the rotating elements (the rotor and the rays) as possible. You can also use wiring duct the color of which matches the color of the mounting surface.

The user shall bear full responsibility for ensuring that the Masterbox is utilized in a safe manner and compliant with all specified safety measures as well as local laws and requirements.

10. DISPOSAL

The Masterbox packaging is environmentally friendly and reusable. All plastic parts contain special labels, e.g. >PE< for polyethylene, >PS< for polystyrene.

The  sign on the package means that the Masterbox cannot be disposed of as domestic waste. Instead, please pass it to an electric equipment recycling center for proper disposal.

By adhering to disposal regulations, one can prevent causing potential damage to the environment resulting from mishandling this type of waste disposal.

11. WARRANTY AND MAINTENANCE

12.1 WARRANTY

The Masterbox warranty is 12 months or as required by local law. The average operational life is 5 years, depending on maintenance, use environment, operational hours and other factors.

If any of the guarantee labels are broken or removed, the Masterbox warranty is considered voided.

12.2 MAINTENANCE

If the Masterbox needs to be repaired or if spare parts need to be purchased, please contact your vendor.

12.3 SPECIAL REQUIREMENTS

The Masterbox complies with ISSED's license-exempt RSSs. The Masterbox operation is subject to the following conditions:

1. It may not cause harmful interference, and
2. it may accept any interference, including interference that may cause undesired operation of the Masterbox.

This Masterbox complies with the FCC radiation exposure limits for an uncontrolled environment. This equipment shall be installed and operated with a minimum distance of 20 cm between user and/or bystanders and this device.

The Masterbox complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

***Note.** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.*

Attention. No changes shall be made to the Masterbox without the manufacturer's permission as it may void the user's authority to operate the device.

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