MANUAL FOR THE MEDIAPLAYER MOLITOR MP 02 4K

Manual Version 01.02

Firmware Version 1.1.0_MP02

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1 TECHNICAL DATA

1.1 SUPPORTED FILE FORMATS

1.1.1 Video

Video Formats	
H.265/HEVC: Main Profile and Main 10 Profile	3840 x 2160 @60p Max. Bitrate: 40Mbit/s
VP9	3840 x 2160 @60p Max. Bitrate: 40Mbit/s
AVC (H.264/MPEG-4 Part 10) with MVC support	1920 x 1080 @60p Max. Bitrate: 80Mbit/s
MPEG-2	1920 x 1080 @60p Max. Bitrate: 80Mbit/s
VC-1	1920 x 1080 @60i
DivX	1920 x 1080 @60i
MPEG-4 SP (MPEG-4 Part 2)	1920 x 1080 @60i
VP8	1920 x 1080 @60p

Video Container	.mov, .mp4, .mkv, .webm

1.1.2 Pictures

Picture Formats	
JPG	Max. resolution 8192 x 8192 pixels Greyscale & YUV 4:4:4, 4:2:2, 4:2:0 8 bits per pixel
PNG	8192 x 8192 pixel (8bpp) 2048 width (RGBA) 1024 width (16-bit)

Important Notes

Due to the capability of the Still Image Decoder, all images and graphics will be displayed with a maximum resolution of 1920x1080px, regardless of their native resolution. If you want to use the maximum resolution, you can convert the images to 4k video files using our provided UltraHD-Converter.

1.1.3 Audio

Audio Formats	
AAC	32kHz, 44.1kHz, 48kHz
MP3	32kHz, 44.1kHz, 48kHz
WAV	32kHz, 44.1kHz, 48kHz
FLAC	32kHz, 44.1kHz, 48kHz

1.1.4 Data Storage

Data Storage	File System
SDHC/SDXC Card	FAT32 NTFS exFAT
USB	FAT32 NTFS exFAT

1.1.5 Technical Details

Technical Details	
Length x Width x Height	238 x 177.5 x 39.7 mm
Weight	940g, metal case
Power	12V / 2A
Power Consumption	12W Typical when playing video
Temperature Range	-10 to +40 °C

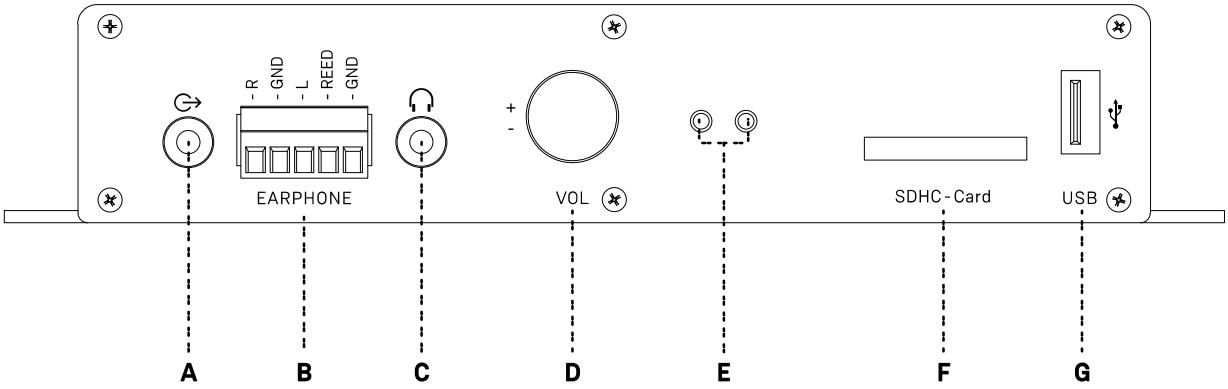
1.1.6 Scope of Delivery

Scope of Delivery
molitor MP 02 4K
Power Adaptor 12V / 2A
16GB SDHC Card

Manual on SD Card
Test Files on SD Card

2 HARDWARE OVERVIEW

2.1 FRONT



A Audio Line Output

B Headphone Output/Reed Input

C Headphone Output

D Volume Regulator

E Power and Status LEDs

F SD Card Slot

G USB Input

2.1.1 Audio Line Output

Connect your audio device here via 3.5mm Stereo Jack. This output level cannot be adjusted and should be used for connection with an amplifier.

2.1.2 Headphone Output/Reed Input

Connect your audio device here via Phoenix Plug. Automatic start ‘Reed Contact’ devices should also be connected here. Output level can be adjusted.

Overview of Headphone Connection
Pin 1 = Audio output right

Pin 2 = Ground (GND)
Pin 3 = Audio output left
Pin 4 = Reed contact
Pin 5 = Ground (GND)

2.1.3 Headphone Output

Kopfhörer-Ausgang (Stereo-Klinkenstecker 3,5 mm), regelbare Lautstärke.

2.1.4 Volume Regulator

Adjust the volume of the headphone outputs via this knob.

2.1.5 Power and Status LEDs

Power:

- Green: molitor MP 02 4K running in playback
- Orange/Red: molitor MP 02 4K booting
- Green/Red: Synchronisation is switched on, and no network has been found
- Off: molitor MP 02 4K not connected to power

Status:

- Green: molitor MP 02 4K running in playback
- Red: Playback Error
- Picture Resolution > 8192x8192 Pixels
- Video Bitrate > 40Mbit/s
- Incorrect Video Codec
- General decoding error
- Off: molitor MP 02 4K booting or in an error state

2.1.6 SD Card Input

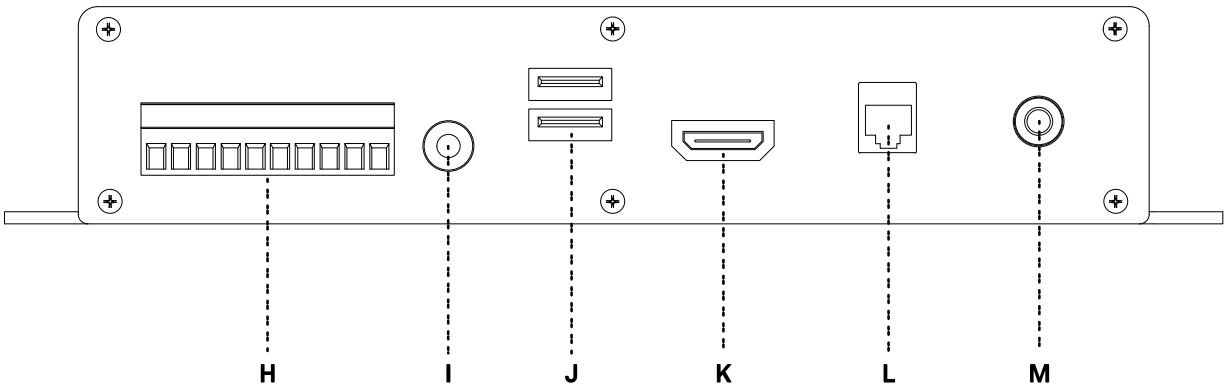
Insert the SD Card with your playback content.
File systems supported are FAT32, NTFS or exFAT.

2.1.7 USB Input

USB 3.0 Port for playback content.
Supported file formats: FAT32, NTFS, exFAT
If a SD Card is present, it will be prioritized.
You can update the SD Card content via the USB storage (see chapter 9.3 USB Content Update).

This input can also be used for other external devices such as: Mouse, Keyboard, Presenter, GPS Antenna, Touchscreens, etc...

2.2 BACK



H GP-INs – General Purpose Inputs

I CVBS / Composite Video Output

J USB 3.0 Inputs

K HDMI 2.0b Output

L Gigabit LAN Port

M Power Adaptor

2.2.1 GPINs – General Purpose Inputs

To control the molitor MP 02 4K with buttons, capacitive contacts, etc., connect the switched contacts to the 9 terminals of the Phoenix connector, with ground (GND) as reference potential. Up to 9 switched contacts can be connected simultaneously.

2.2.2 CVBS / Composite Video Output

Connect an analogue display for Composite Video output here via 3.5mm TRRS Mini-Jack (L, R, Video, GND). The video signal is in PAL format and is active parallel to the HDMI output.

2.2.3 USB 3.0 Inputs

USB 3.0 Port for playback content.
Supported file formats: FAT32, NTFS, exFAT
If a SD Card is present, it will be prioritized.
You can update the SD Card content via the USB storage (see chapter 9.3 USB Content Update).

This input can also be used for other external devices such as: Mouse, Keyboard, Presenter, GPS Antenna, Touchscreens, etc...

2.2.4 HDMI2.0b Output

Connect your digital display or projector to this HDMI Port. Resolutions up to 3840x2160 pixels are supported.

2.2.5 Gigabit LAN Port

Connect the molitor MP 02 4K to your local network via the Gigabit RJ45 Port. DHCP will be used by default. This can be changed in the settings.

2.2.6 Power Adapter

Connect the provided 12V/2A power adapter to this port.

3 FIRST STEPS

3.1 SETUP

Unbox the molitor MP 02 4K and place it on a suitable surface. Do not stack multiple molitor MP 02 4K to avoid overheating.

3.2 CONNECTING OUTPUTS

3.2.1 Video

Connect the molitor MP 02 4K to your display or projector using the HDMI2.0b port on the rear of the device.

By default, the molitor MP 02 4K will choose a suitable resolution automatically. If you are not satisfied with the result, you can adjust the resolution in the settings (see chapter 4.1.1.1 Video and Audio Setup)

When neither SD Card nor USB storage are present, you will see the setup screen on the display.

3.2.2 Audio Output / Reed Input

The MP 02 has a built-in headphone amplifier that can support up to two audio handsets or headphones without the need for any external amplification. There is a separate non-adjustable line-level audio output that should be used when connecting to an external amplifier if more headphones or any speakers are required.

- Line Level Output via 3.5mm Mini-Jack –
  This output has a fixed audio level and should be used to connect external amplifiers and active speakers.
- Headphone Output via 5-pin Headphone/Reed Contact phoenix socket
  This output has an adjustable level that can be changed via the volume regulator or in the settings and programming. It should be used to connect your headphones or audio handsets.
- Headphone Output via 5-pin Headphone/Reed Contact phoenix socket
  Pin 1 = Audio output right
  Pin 2 = Ground (GND)
  Pin 3 = Audio output left
  Pin 4 = Switch contact
  Pin 5 = Ground (GND)

This output has an adjustable level that can be changed via the volume regulator or in the settings and programming. It should be used to connect your headphones or audio handsets.

The audio and reed contact circuits of up to two audio handsets can be connected here.
The audio connection to a mono-handset always requires a connection to Ground (GND) and to an audio output (either left or right).
If two handsets are used, please ensure that the reed contacts are connected in parallel in order to ensure that the circuit works correctly. As long as one of the handsets is lifted, the player will start. If both handsets are placed back, the playback will stop.

All outputs are active simultaneously. You do not need to change any settings except the volume.

3.3 CONNECTING TO YOUR NETWORK

The following features will only be usable, if the molitor MP 02 4K is connected to your local network.

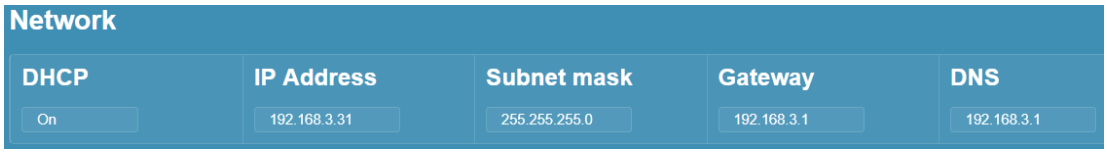
- Configuration via Webinterface
- Synchronous playback of multiple Molitor MP 02 4K
- UDP Control
- FTP access or automatic FTP download
- Set time and date via NTP server

Please follow these steps to connect the molitor MP 02 4K to your local network:

I. Connect a CAT5 Ethernet cable to the Gigabit LAN Port on the back.

II. IP Address:
By default, DHCP is activated. If you have a DHCP Server in your network, you do not need to configure anything. The obtained IP can be seen on the display, if neither SD Card nor USB storage is present.
To assign a static IP address, you can either to it via the settings screen on the display or the CFPSetup.txt file.

a. On screen:
Connect a USB Mouse, Touchscreen, or USB Keyboard to one of the USB Ports. Either remove SD Card and USB storage, or press “CTRL+S” on the keyboard.
The IP can be set on the Maininfo page.



b. With CFPSetup.txt:

Create a text file called “CFPSetup.txt” or edit the one provided on the SD Card. Set DHCP to Off, or any IP setup will be ignored. Follow this syntax:

DHCP Off
IP 192.168.0.2
Subnet 255.255.255.0
Gateway 192.168.0.2

Save this file on the SD Card or USB storage and insert it into the Molitor MP 02 4K. The new setting will be applied instantly.

III. Via Computer, Tablet, Smartphone

Your PC and the molitor MP 02 4K must be in the same IP Range.

If you want to connect the molitor MP 02 4K directly to your PC with a RJ45 cable, you must assign a static IP address.

IV. Enter the IP address of the molitor MP 02 4K in a web browser of your choice. Now you can proceed with the configuration.

3.4 STARTING THE MOLITOR MP 02 4K

Connect the 12V/2A power adapter to the POWER port on the rear of the Molitor MP 02 4K. The Power LED on the front will change from orange to red and you will see a boot screen on the display. As soon as the molitor MP 02 4K starts playback, the LED will change to green and your content or the setup screen will appear on the display.

3.5 PLAYBACK FILES

Copy your media files to the root directory of the SD Card or USB storage.
Playback will start in alphanumerical order. After the last file has ended, playback will continue with the first item.

If you want to change the playback order, you can create a Playlist (see chapter 5.2 With Playlist).

4 CONFIGURATION OF THE MOLITOR MP 02 4K

There are two ways to configure the Molitor MP 02 4K.

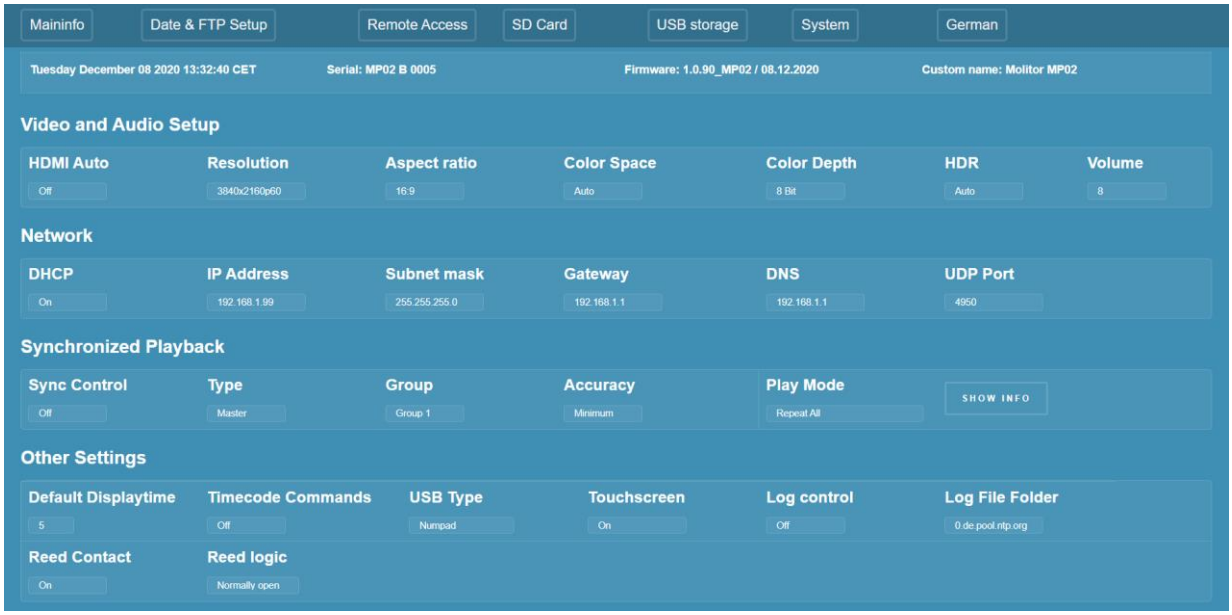
1. Via the Webinterface
2. Via the Setup file “CFPSetup.txt”

Hint: New Users should begin with the Webinterface.
The CFPSetup-files can be very useful, when multiple molitor MP 02 4K have to be configured equally.

4.1 THE WEBINTERFACE OF THE MOLITOR MP 02 4K

Without SD Card or USB storage present, you will see the Webinterface on the connected display. It is also visible, if you press “CTRL+S” or “CTRL+F5” on a connected USB Keyboard.
Once the molitor MP 02 4K is integrated in your network, you can access the Webinterface with any web browser. Then you will see the Main Page.

4.1.1 MainInfo



All pages of the Webinterface show the navigation on top:

- **MainInfo** (Audio, Video, Network, Sync setup, Play Mode, USB, Log, Reed Contact)
- **Date & FTP Setup** (Date, FTP Server and automatic FTP download)
- **Remote Access** (Control the playback remotely)
- **SD Card** (Content of the SD Card & Playlist Editor)
- **USB Storage** (Content of the USB storage & Playlist Editor)
- **System** (Custom name, Security, Reboot, Reset, Update Firmware)
- **German** (Change language to German)

Next line is:

1. Current time and date
2. Serial
3. Firmware-Version
4. Custom name (ex.: Entrance, First floor, ...)

4.1.1.1 Video and Audio Setup

- HDMI Auto
- **Off:** Your chosen settings are applied.
- **On**: The molitor MP 02 4K will apply the resolution recommended by the display.

- Resolution
- Choose a resolution. Non-supported resolutions are displayed in red.
- Aspect ratio
- Aspect ratio of content. Default is auto and will be chosen to match your video resolution. The ratio is only applied to video files.
- Color Space
- RGB
- YCbCr 4:4:4
- YCbCr 4:2:2
- YCbCr 4:2:0
- **Auto:** Choose automatically
- Color Depth
- Auto: Choose automatically
  Some displays request a 10 bit Color Space but only support 8 bit. In case you see a black screen, please set this manually to 8 bit
- 8 Bit
- 10 Bit
- HDR (High Dynamic Range)
- HDR10
- SDR
- HLG (Hybrid Log-Gamma)
- **Auto:** HDR will be activated if the video file supports it. If the video is only SDR, HDR will be deactivated.
- Volume
- Values from 0 to 10
- 0 is mute
  - 8 approx. 0dB
- 10 is max

4.1.1.2 Network

- DHCP
- **Off:** Your IP, Subnet, Gateway, DNS settings will be applied.
- **On:** IP settings will be provided by DHCP server. Custom values will be ignored.
- IP Address
- Subnetmask
- Gateway
- DNS
- **UDP Port:** Default Port is **4950**. For Sync Playback, all molitor MP 02 4K have to use the same port.

4.1.1.3 Synchronized Playback

You can synchronize multiple Molitor MP 02 4K. Videowalls can be realized with this setting.

Important Notes

All molitor MP 02 4K **must** be in the same network and have to use the same UDP Port! Sync will fail otherwise

Important Notes

If you are using a PLAYLIST, the ITEM numbers have to match on all Molitor MP 02 4K. For example, if ITEM 5 is started on the Master, ITEM 5 will be started on all slave players.

- Activation
- Off
- On
- Type
- **Master:** This is the Master player that controls all others in the group. If you want to use any external controls, you should only send commands to this player. It will forward all commands to the other players.

  Important Notes
  Only **one** Master is permitted per Sync Group!

- **Slave:** A Slave player is controlled by the Master in its Sync Group. You can add as many Slave Players as your network supports.
- Group
  - Assign a Sync Group to the player
- You can choose between the Group 01 to Group 10
- Different Sync Groups are independent
- Accuracy
  You can choose the accuracy of the synchronization.
- **Min.:** Sync Commands will only be sent on start of the ITEM
- **Low:** Sync will be accurate with a tolerance of +- 1s
- **Medium:** Sync will be accurate with a tolerance of +- 33ms
- **High:** Sync will be accurate with a tolerance of half frame at 60fps

4.1.1.4 Play Mode

You can choose between three play modes, when not using a PLAYLIST:

- Repeat All:
  All files will be looped in alphanumerical order.
- Repeat first:
  First ITEM will be played in loop. If another ITEM is triggered, it will be played and at the end of the file, the first ITEM will be looped again.
- Repeat current:
  First ITEM will be played in loop. If another ITEM is triggered, this file will be played in loop.

4.1.1.5 Cuepoints

You can perform certain functions points in time of a video or image. Among other things UDP telegrams via network are possible.
For this you have to create a file with the name of the video and the special file extension sze.
Information about the structure can be found in chapter 7 (Cuepoints (*.sze file))

Important Notes

This function **must** be activated, so that the commands from the *.sze file can be executed.

Example:
Film name: Film1.mp4
SZe Datei: Film1.mp4.sze

4.1.1.6 Other settings

- Picture Displaytime
- Displaytime in seconds:
  Duration that images or HTML content is displayed on screen in seconds.
- Cuepoint Commands
- Off (*.sze files are ignored)
- On
- USB Type
- **Numpad:** USB Numpad
- **Touch:** USB Touchscreen
- **TouchCalibrate:** USB Touchscreen Show coordinates
- **Presenter:** Wireless USB Presenter
- **GPS:** USB GPS Antenna
- **RFID:** USB RFID Reader
- **RFID Show:** Not yet implemented
- Touchscreen
- **Off** Touchscreen events are ignored
- **On** Touchscreen with scaling to 1920x1080 (normal)
- **Raw** Touchscreens using different touch coordinates
- Log Activation
- A log file can be written if activated here. Events like item start, end, break, errors can be logged.
- Log Folder
  - Specify a subfolder on the SD Card or USB storage, where the log file will be stored.
- Reed Contact
- **On:** Connected reed contact devices will be used
- **Off:** Connected reed contact devices will be ignored
- Reed Logic
- **Normally Open:** The connected reed contact device has a ‘Normally Open Switch’
- **Normally Closed:** The connected reed contact device has a ‘Normally Closed Switch’

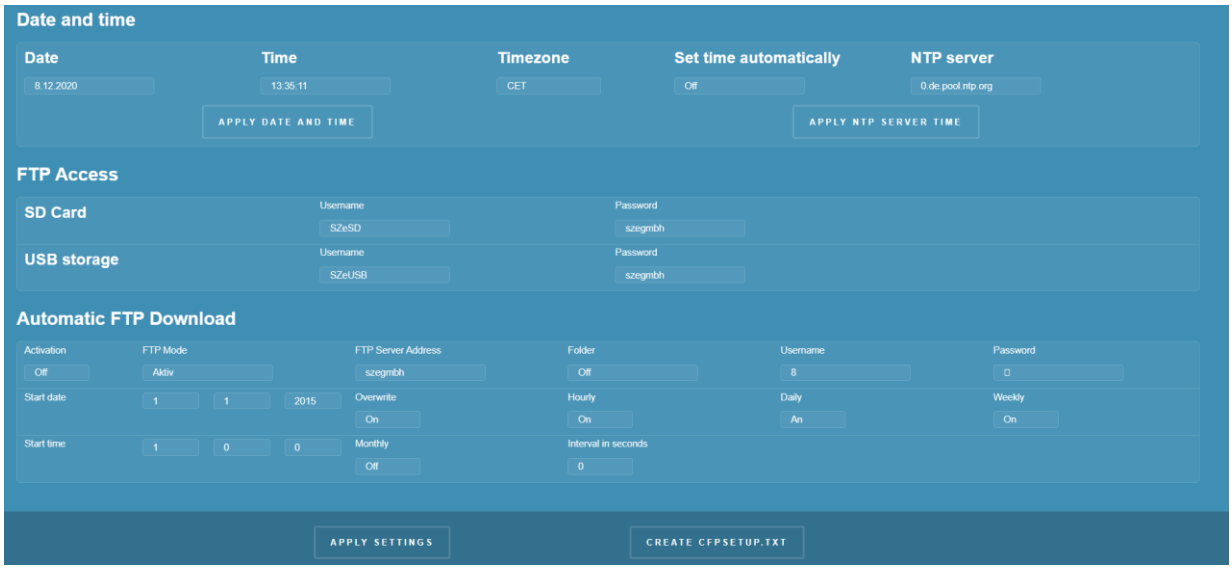
4.1.1.7 Apply settings or create CFPSetup.txt

On the bottom of the page, you will find the two buttons for applying the settings or creating and downloading the CFPSetup.txt to your PC.

Important Notes

If a SD Card or USB storage is present, the containing CFPSetup.txt will be renamed to CFPSetupAlt.txt and the new settings will be stored in the new CFPSetup.txt

4.1.2 Date & FTP Setup



4.1.2.1 Date and time

- Date
- Time
- Timezone

Apply the changes to time, date and Timezone:

- Set time automatically
- **Off:** Date and time have to be set manually and keeps counting continuously
- **On:** At every new boot of the Molitor MP 02 4K. The date and time of the NTP server will be applied
- NTP server
- URL of the NTP server chosen for your time synchronization

Synchronize with NTP server now:

4.1.2.2 FTP Access

An ftp server is running on the molitor MP 02 4K that grants you access to the SD Card and USB storage. You can connect with a FTP Client (FileZilla www.filezilla-project.org/) and modify the contents on the storage.

- SD Card
  - **Username:** Default is ***SZeSD***
  - **Password:** Default is ***szegmbh***
- USB storage
  - **Username:** Default is ***SZeUSB***
  - **Password:** Default is ***szegmbh***

After changing one of these values, please reboot the molitor MP 02 4K once to fully apply the changes.

4.1.2.3 Automatic FTP Download

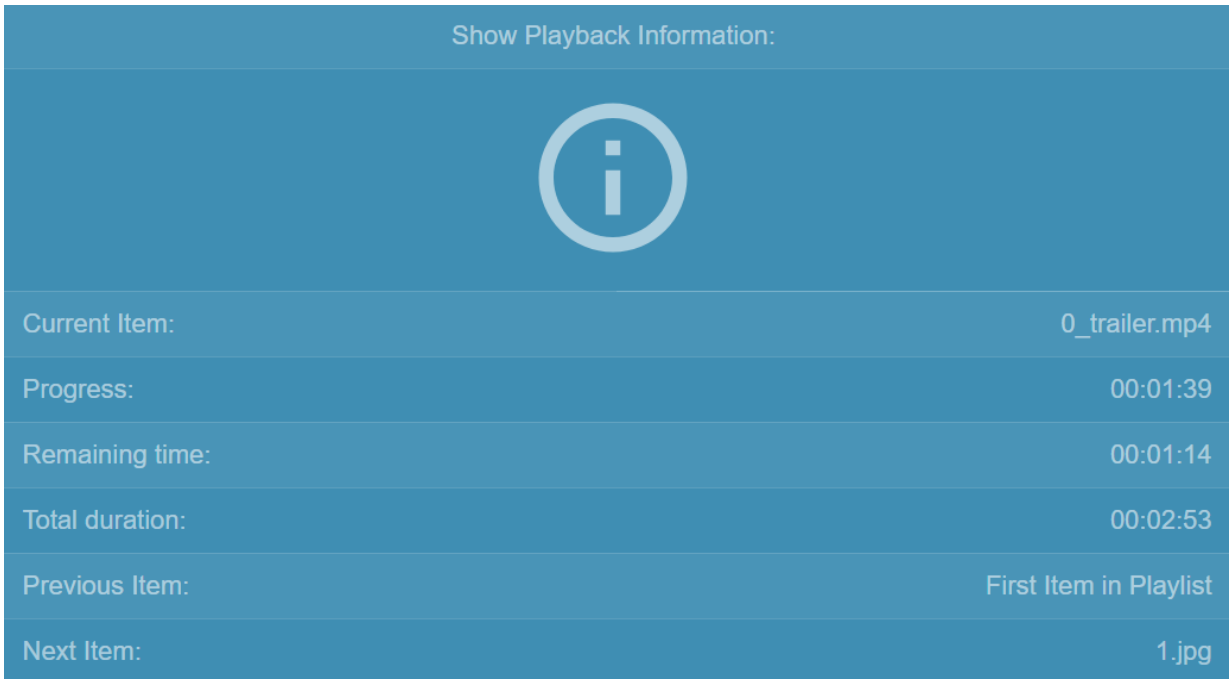
The molitor MP 02 4K can be configured to download new content from a chosen ftp server.

- Activation
- **Off:** FTP Autodownload deactivated
- **On:** FTP Autodownload activated
- FTP Server Address
- IP Address of remote ftp server
- Folder
- Subfolder on remote ftp server for this player
- Username
- Login Username of remote ftp server
- Password
- Login Password of remote ftp server
- Start date
- Date of first automatic ftp download
- Start time
- Time of first automatic ftp download
- Overwrite
- **Off:** Playback continues while download runs in background
- **Off:** Playback is suspended until download is completed
- Hourly
- Start download every 60 minutes starting from first date and time.

- Daily
- Start download every 24 hours starting from first date and time.
- Weekly
- Start download every 7 days starting from first date and time.
- Monthly
- Start download every 4 weeks starting from first date and time.
- Interval in seconds
- Start download every X seconds, starting from first date and time.

4.1.3 Remote Access

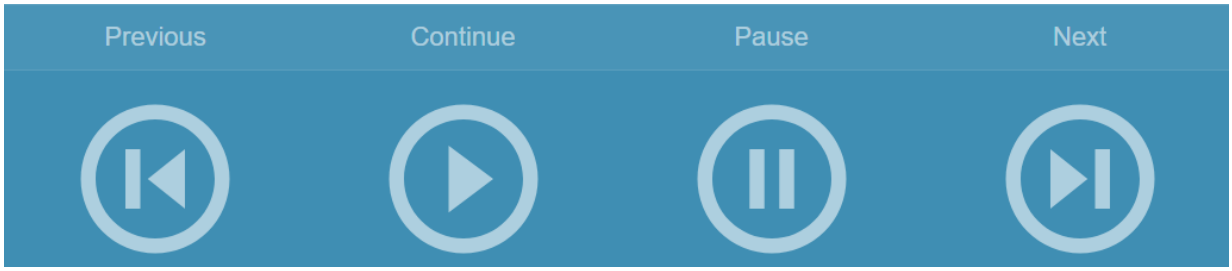
Control the molitor MP 02 4K remotely or retrieve information about current playback.



Clicking the i-Icon will give you information about the current playback. This contains:

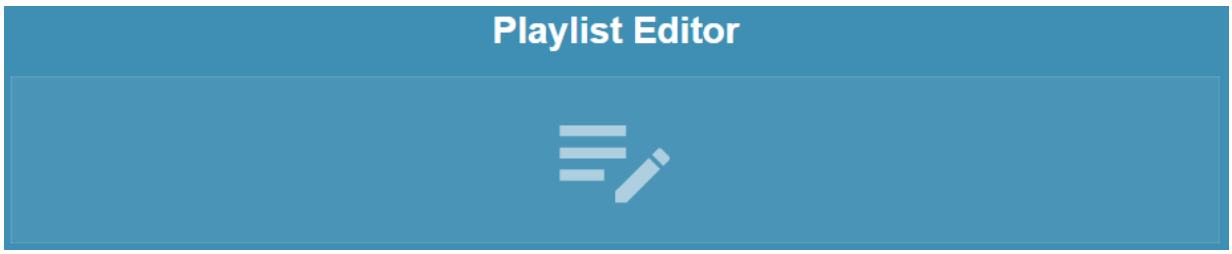
- Current item
- Progress
- Remaining time
- Total duration
- Previous item
- Next item

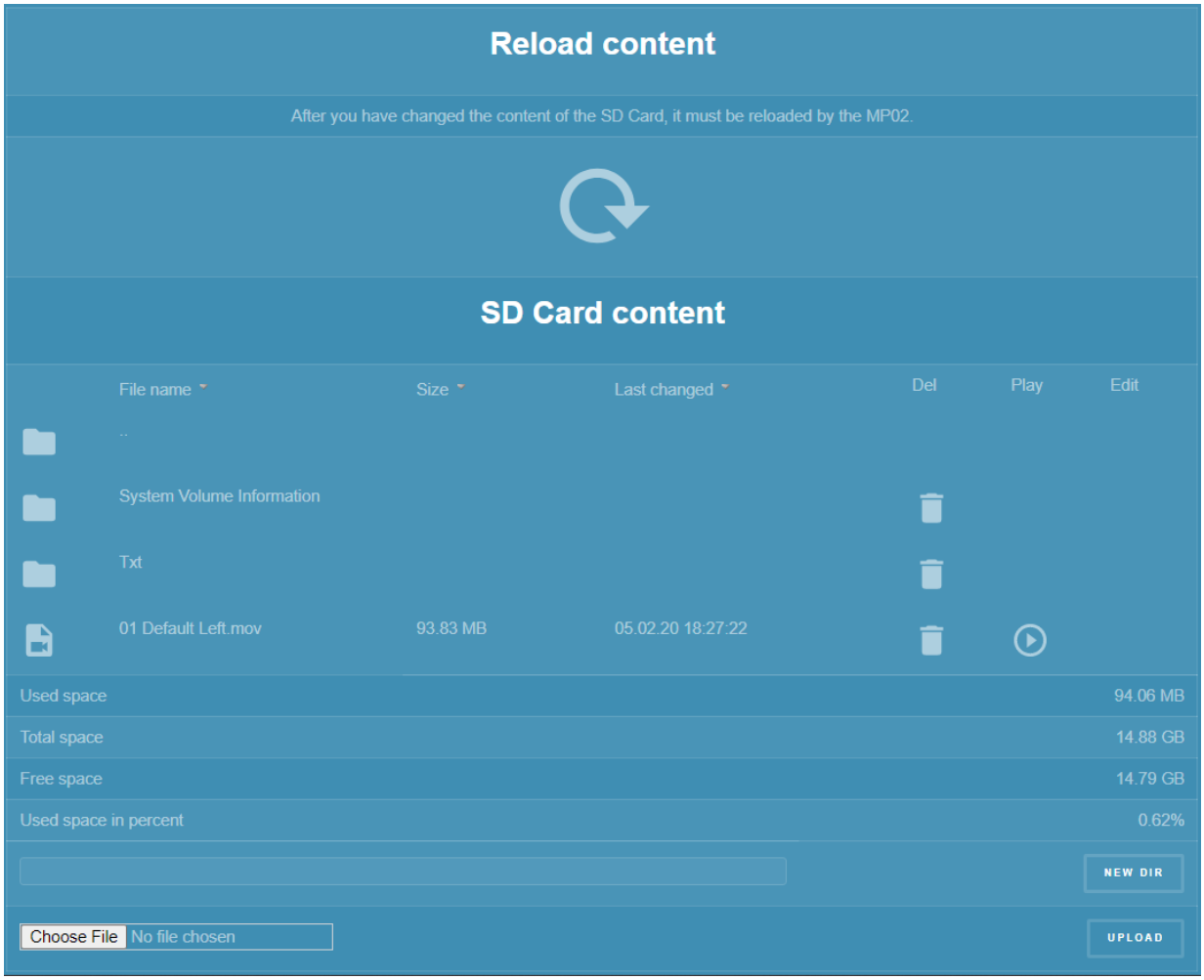
Control playback via these 4 buttons.



- **Previous:** Jumps to previous item
- **Continue:** Resume playback, in case it was stopped
- **Pause:** Pause playback
- **Next:** Jump to next item

4.1.4 SD Card / USB Storage





- Playlist Editor
  - Create a Playlist.txt using mouse and/or keyboard.
- Reload content
  - If any content on SD Card / USB storage has been added or removed, the new files have to be reloaded by clicking the icon.
- SD Card content
  - All files on the SD Card / USB storage are listed including size, date of last change.
    Files can be:
    - **Deleted (Trashcan icon):** file will be deleted (cannot be undone)
    - **Play (Play icon):** Start playback of file on Molitor MP 02 4K
    - **Edit (Pen icon):** Text- or Setup files can be edited
- New Dir
  - Create a new directory on SD Card / USB storage
  - Only available when accessing Webinterface remotely. Not available on Setup screen on display.
- Upload
  - Small files can be uploaded (< 2MB). Playlist or CFPSetup.txt for example.
- **Important Notes**

  Media files cannot be uploaded!

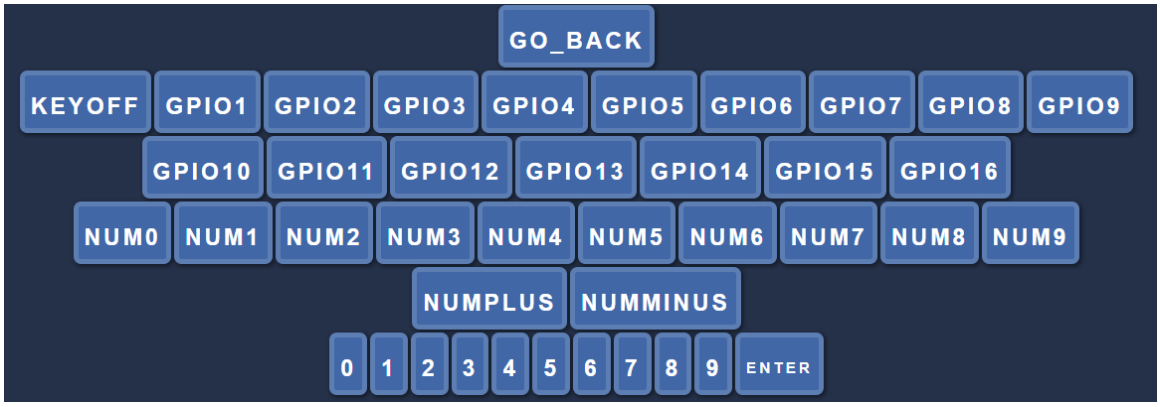
After uploading new files, you must reload SD Card content!

4.1.4.1 Playlist Editor

Playlists can be created / edited. A virtual keyboard appears on screen:

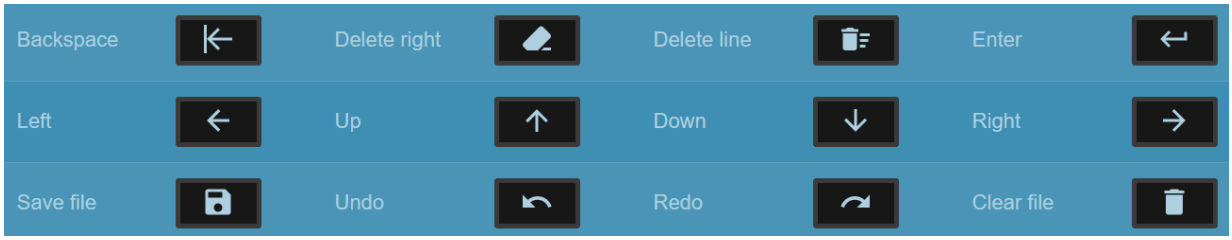
- **FILE** Inserts “File=”
- **FILELIST** A new keyboard listing all media files on SD Card / USB storage appears

- GO_BACK
- If a filename is clicked on, it will be inserted in Playlist
- **Enter** Inserts a line ending
- **DISPLAYTIME** Inserts “Displaytime=”
- **SUCCESSOR** Inserts „Succ=“
- **LOOP** Inserts „Loop=“
- **SHOWGPIO** A new keyboard listing all GPIOs appears

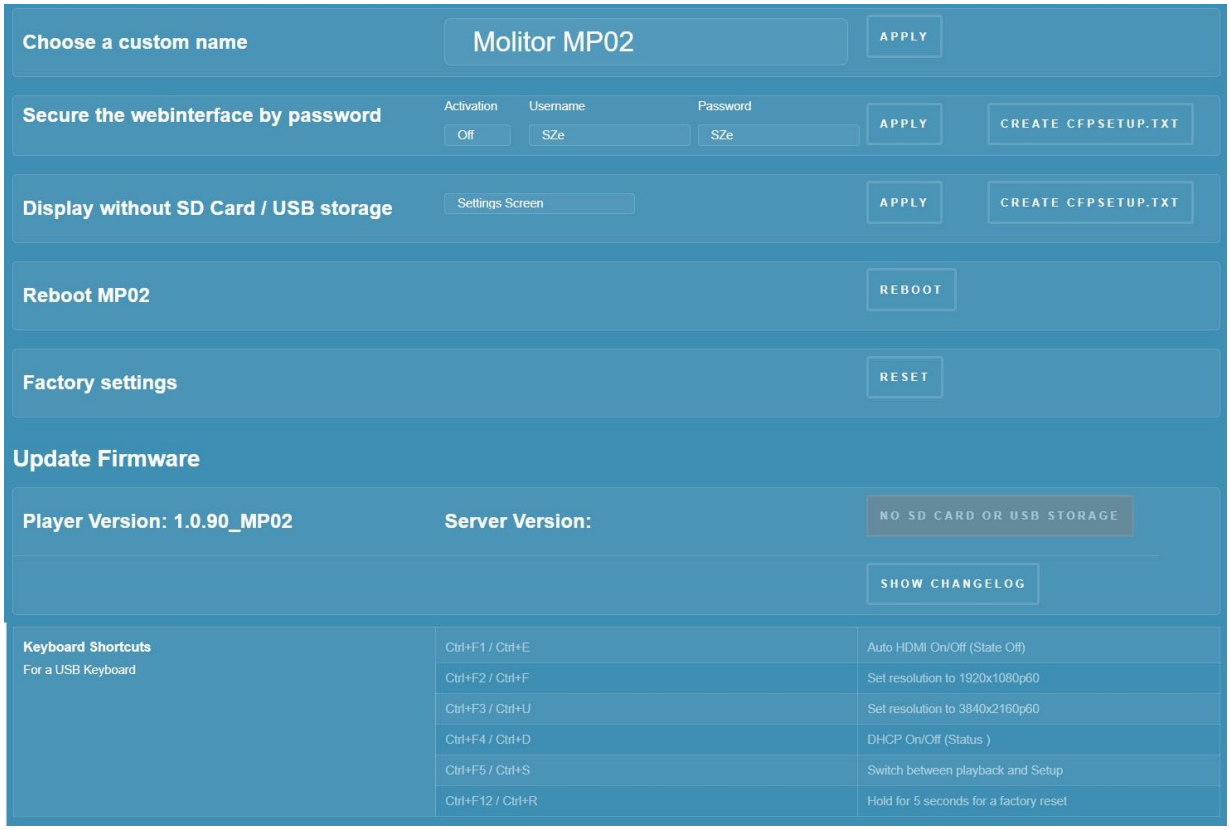


- **ITEM** Inserts „[ITEM“
- **BKSP** Backspace
- **ENTER** Enter / Return
- **DEL** Delete character to the right

The virtual keyboard can only edit text that has been edited with it. Any preexisting text cannot be edited. For this purpose, the following buttons were added.



4.1.5 System



Custom name

Can be chosen freely (e.g. Lobby, Meeting room 1, ...).

4.1.5.1 Secure the Webinterface by password

- Activation
  Access is secured by username and password
- Username
  Login-Name
- Password
  Login-Password
- Apply
- Create CFPSetup.txt

Important Notes

Will only apply after a reboot of the Molitor MP 02 4K

4.1.5.2 Display without SD Card

- Choose, if Settings Screen is displayed when no SD Card or USB storage is inserted. Will be displayed by default.
- **Settings Screen** Settings Screen is displayed
- **Black Screen** Display stays black

4.1.5.3 Reboot Molitor MP 02 4K

Reboot molitor MP 02 4K immediately

4.1.5.4 Factory settings

Revert the molitor MP 02 4K to factory settings.

4.1.5.5 Update Firmware

For this feature to be enabled, the molitor MP 02 4K must be connected to the internet.

- **Player Version** Current Firmware version
- **Server Version** Online Firmware version
- **Update Button** 4 possible states
- Firmware Up-To-Date
  Server Offline
- **No SD Card or USB storage**
  For the update to be possible, a SD Card or USB storage MUST be inserted.
- **Update**
  Update can be started
- Show Changelog
  See the recent Changes made to the Firmware. Currently only available in German. Please contact us for new in English language.

4.1.5.6 Keyboard Shortcuts

When a keyboard is connected, the following shortcuts are available.

Keyboard Shortcuts For a USB Keyboard	Ctrl+F1 / Ctrl+E	Auto HDMI On/Off (State Off)
	Ctrl+F2 / Ctrl+F	Set resolution to 1920x1080p60
	Ctrl+F3 / Ctrl+U	Set resolution to 3840x2160p60
	Ctrl+F4 / Ctrl+D	DHCP On/Off (Status)
	Ctrl+F5 / Ctrl+S	Switch between playback and Setup
	Ctrl+F12 / Ctrl+R	Hold for 5 seconds for a factory reset

4.2 CFPSETUP.TXT FILE

Play Mode Repeat All
Reed Contact On
Reed Normally Open
HDMI Auto On
Resolution 3840x2160p60
Color Space Auto
Color Depth 8bit

HDR Auto
Aspect Auto
Volume 9
Sync Control On
Sync Type Master
Sync Accuracy Min
Sync Group 1
DHCP On
IP 192.168.0.2
Subnet 255.255.255.0
Gateway 192.168.0.1
DNS 192.168.0.1
UDP Port 4950
NTP Control On
NTP Server 0.de.pool.ntp.org
Timezone CET
Default Displaytime 5
FTP Server On
FTP SD Username SZeSD
FTP SD Password szegmbh
FTP USB Username SZeUSB
FTP USB Password szegmbh
Log Off
Log Folder Log
USB Type Numpad
Touchscreen Off
CuePoints Off
Webinterface Login Off
Webinterface Username SZe
Webinterface Password SZe
FTP Download On
FTP Download Server none
FTP Download Username none
FTP Download Password none
FTP Download Mode passive
FTP Download Date 1.1.2015
FTP Download Time 1:0:0
FTP Download hourly Off
FTP Download daily Off
FTP Download weekly Off
FTP Download monthly Off
FTP Download Interval 0
FTP Download Server Folder Off
FTP Download Overwrite Off

4.2.1 Play mode

Play Mode Repeat All

You can choose between three playback modes, when not using a PLAYLIST

- Repeat All:
  All files will be looped in alphanumerical order.
- Repeat first:
  First ITEM will be played in loop. If another ITEM is triggered, it will be played and at the end of the file, the first ITEM will be looped again.
- Repeat Selected:
  First ITEM will be played in loop. If another ITEM is triggered, this file will be played in loop.

Reed Contact On

- Reed Contact
- **Off:** Ignore any connection to the reed input.
- **On:** First ITEM will be played in a loop until a connected reed contact handset has been lifted. Second ITEM will then be played and the programming followed from there. When the handset has been replaced, it will return to looping the first ITEM.

Reed Normally Open

- Reed Normally
- **Open:** Use this in conjunction with a Normally Open reed contact device such as the molitor VIA and USO handsets.
- **Closed:** Use this in conjunction with a Normally Closed reed contact device.

4.2.2 Audio and Video Settings

HDMI Auto On
Resolution 3840x2160p60
Color Space Auto
Color Depth 8bit
HDR Auto
Aspect Auto
Volume 9

- HDMI Auto
  - **Off:** Selected Resolution will be applied.
  - **On:** The Resolution will be selected according to the displays preferred resolution, if supported by molitor MP 02 4K
- Resolution
  - Select the resolution of the display
- Color Space
  - RGB
  - YCbCr 4:4:4

- YCbCr 4:2:2
- YCbCr 4:2:0
- **Auto:** Der Farbraum wird automatisch passend zum angeschlossenen Display gewählt.

- Color Depth
  - **Auto:** Color Depth is selected automatically
  - 8 Bit
  - 10 Bit
- HDR (High Dynamic Range)
  - HDR10
  - SDR
  - HLG (Hybrid Log-Gamma)
  - **Auto:** HDR is set according to video format. If the video file is a 10 bit HDR format, the display will be set to HDR automatically.
- Aspect ratio
  - Aspect ratio of displayed content. Set to auto by default.
- Volume
  - 0 to 10
    - 0 mute
    - 8 approx. 0dB
    - 10 max. Volume

4.2.3 Synchronized Playback

Sync Control On
Sync Type Master
Sync Group 1
Sync Accuracy Medium

You can synchronize multiple Molitor MP 02 4K. Videowalls can be realized with this setting.

Important Notes

All molitor MP 02 4K **must** be in the same network and must use the same UDP Port! Otherwise, Sync will fail!
If you are using a PLAYLIST, the ITEM numbers have to match on all Molitor MP 02 4K. For example, if ITEM 5 is started on the Master, ITEM 5 will be started on all slave players.

- Sync Control
  - Off
  - On
- Sync Type
  - This is the Master player that controls all others in the group. If you want to use any external controls, you should only send commands to this player. It will forward all commands to the other players.

    Important Notes
    Only **one** Master is permitted per Sync Group!

- **Slave:** A Slave player is controlled by the Master in its Sync Group. You can add as many Slave Players, as your network supports.

- Sync Group
  - Assign a Sync Group to the Molitor MP 02 4K
  - You can choose between Group 01 to Group 10
  - Different Sync Groups are independent
- Sync Accuracy
  You can choose the accuracy of the synchronization.

  - **Min:** Sync Commands will only be sent on start of an item.
  - **Low:** Sync will be accurate with a tolerance of +- 1s
  - **Medium:** Sync will be accurate with a tolerance of +- 33ms
  - **High:** Sync will be accurate with a tolerance of half frame at 60fps

4.2.4 Network

DHCP On
IP 192.168.0.2
Subnet 255.255.255.0
Gateway 192.168.0.1
DNS 192.168.0.1
UDP Port 4950

- DHCP
- **Off:** Your IP, Subnet, Gateway, DNS settings will be applied.
- **On:** IP settings will be provided by DHCP server. Custom values will be ignored.
- IP Address
- Subnet mask
- Gateway
- DNS
- UDP Port
  Default Port is 4950. For Sync Playback, all molitor MP 02 4K must use the same port.

4.2.5 Date and Timezone

NTP Control On
NTP Server 0.de.pool.ntp.org
Timezone CET

- NTP Control
- **Off:** Date and time must be set manually and keeps counting continuously
- **On:** At every new boot of the Molitor MP 02 4K. The date and time of the NTP server will be applied
- NTP Server
- URL of the NTP server chosen for your time synchronization.
- Timezone
- Time zone, the molitor MP 02 4K should apply.

4.2.6 Default Displaytime

Default Displaytime

Duration that images or HTML content are displayed on screen in seconds by default.

4.2.7 FTP Server

FTP Server On
FTP SD Username SZeSD
FTP SD Password szegmbh
FTP USB Username SZeUSB
FTP USB Password szegmbh

An ftp server is running on the molitor MP 02 4K that grants you access to the SD Card and USB storage. You can connect with a FTP Client (FileZilla www.filezilla-project.org/) and modify the contents on the storage.

- FTP Server
  - Off
  - On
- **FTP SD** FTP access to SD Card
  - **Username:** Default is ***SZeSD***
  - **Password:** Default is ***szegmbh***
- **FTP USB** FTP access to USB storage
  - **Username:** Default is ***SZeUSB***
- Password: Default is *szegmbh*

4.2.8 Automatic FTP download

FTP Download Off
FTP Download Server ftp.sze.com
FTP Download Username none
FTP Download Password none
FTP Download Modus passive
FTP Download Datum 1.1.2010
FTP Download Zeit 1:0:0
FTP Download hourly
FTP Download daily Off
FTP Download weekly Off
FTP Download monthly
FTP Download interval 0
FTP Download Server Folder Off
FTP Download Overwrite Off

The molitor MP 02 4K can be configured to download new content from a chosen ftp server.

- FTP Download
- **Off:** FTP Autodownload deactivated
- **On:** FTP Autodownload activated

- FTP Download Server
- IP address of remote ftp server
- FTP Download Username
- Login username of remote ftp server
- FTP Download Password
- Login password of remote ftp server
- FTP Download Date
- Date of first automatic ftp download
- FTP Download Time
- Time of first automatic ftp download
- FTP Download hourly
- Start download every 60 minutes starting from first date and time
- FTP Download daily
- Start download every 24 hours starting from first date and time
- FTP Download weekly
- Start download every 7 days starting from first date and time.
- FTP Download monthly
- Start download every 4 weeks starting from first date and time.
- FTP Download Interval
- Start download every X seconds, starting from first date and time.
- FTP Download Server Folder
- Subfolder on remote ftp server for this player
- FTP Download Overwrite
- **Off:** Playback continues while download runs in background
- **On:** Playback is suspended until download is completed

4.2.9 Log

A log file can be written. Events like item start, end, break, errors can be logged including a timestamp.

Log On
Log Folder Log

- Log
- Off
- On
- Log Folder
- A log file can be written if activated here. Events like item start, end, break, errors can be logged.

4.2.10 External Devices

USB Type Numpad

- USB Type
- **Numpad:** USB Numpad
- **Touch:** USB Touchscreen
- **Touch Coordinates:** USB Touchscreen show coordinates of touch event

- **Presenter:** Wireless USB-Presenter
- **GPS:** USB GPS Antenna
- **RFID:** USB RFID Reader
- **RFID Show:** Not implemented yet

4.2.11 Touchscreen

Touchscreen On

- Touchscreen
- **Off** Touchscreen events are ignored
- **On** Touchscreen with scaling to 1920x1080 (normal)
- **Raw** Touchscreens using different touch coordinates

4.2.12 Webinterface Login

Webinterface Login Off
Webinterface Username SZe
Webinterface Password SZe

- Webinterface Login
  - **Off** Login deactivated
  - **On** Login activated
- Webinterface Username Login Username
- Webinterface Password Login Password

Important Notes
The password login will be activated only after a reboot of the Molitor MP 02 4K

4.2.13 CuePoints

Cuepoints Off

- CuePoints
- **Off** *.sze files ignored
- **On** *.sze files interpreted

5 PLAYBACK

5.1 WITHOUT PLAYLIST

The easiest way to playback media files is to:

1. Copy the files to the root directory of the SD Card / USB storage.
2. Plug the SD Card / USB storage into the Molitor MP 02 4K.

The molitor MP 02 4K starts the playback of the files in alphanumerical order (0-9, A-Z). Videos will be played once, pictures and HTML5 content are displayed for the duration defined as Displaytime (Default is 5 seconds)

Once all files have been played, the cycle will restart with the first item.

Special cases:

- **Single video on SD Card:** Will be looped seamlessly (no black frame)
- **Single picture on SD Card:** Will be displayed continuously

Example of the alphanumerical playback order:

1. 0.jpg
2. 05_movie5.mp4
3. 1.mp4
4. movie1.mov
5. picture2.jpg

The reed contact can also be used for playback without a playlist. Its function is described below

5.1.1 Play mode

You can choose between three different play modes, that define the playback behaviour without PLAYLIST present on the SD Card or USB storage:

- Repeat All:
  All files will be looped in alphanumerical order.
- Repeat first:
  First ITEM will be played in loop. If another ITEM is triggered, it will be played and at the end of the file, the first ITEM will be looped again.
- Repeat current:
  First ITEM will be played in loop. If another ITEM is triggered, this file will be played in loop.

The modes "First" and "Loop" are useful if you use an external control. These can be GPIO keys, digital I/O adapters, web commands or UDP.

5.1.2 Reed Contact (Without PLAYLIST.txt)

You can still make use of an auto-start handset with a reed contact, even if you are not using a playlist. Ensure the reed contact setting has been turned on to make use of the auto-start feature of the MP 02.

The playback logic will be based on the ‘Play Mode’. (See above, chapter 5.1.1 Play mode)

In standby, with the handset down, the player will either loop the first alphanumeric file with ‘Repeat first’ or ‘Repeat current’, or it will cycle through all files with ‘Repeat All’.

When a handset has been lifted, it will then playback according to the above logic from the second Item.

During the initial standby loop, all inputs will be ignored.

5.2 WITH PLAYLIST (PLAYLIST.TXT)

If you want to have full control over the order in which the items will be played, or if you want to use advanced features during playback, you can create a PLAYLIST.txt.

It is created as a normal text file, that contains the file names and optional entries, that control the succession of an item or advanced features.

You can choose between three possibilities to create such a PLAYLIST.txt:

- Create a text file with a text editor of your choice and name it “PLAYLIST.txt”
- Use the Webinterface of the Molitor MP 02 4K. Navigate to the SD Card / USB storage tab and choose Playlist editor. Additional information can be found in chapter 4.1.4.1 (Playlist Editor).

Example:

[ITEM 0]
File=Movie1.mp4

[ITEM 1]
File=Pic1.jpg
Displaytime=12

[ITEM 2]
File=Movie2.mp4

5.2.1 Reed Contact (With PLAYLIST.txt)

Ensure the reed contact setting has been turned on to make use of the auto-start feature of the MP 02.

The MP 02 will loop ITEM 0 and not accept any external inputs until a connected auto-start handset has been lifted from the holder. It will then jump to ITEM 1 and follow the programming within the PLAYLIST.txt file until the handset has been replace on the holder.

5.2.2 Required parameters

Important Notes

Most parameters can be written in English, but Playlist Editor will use the German definition.

- **[ITEM #]**
  Every item in the playlist must begin with this entry. Replace # with the index, that the file should have. This index defines the position of the item in the overall playback order.
  First index is 0.

- Example:
  [ITEM 0]

- **File=Name**
  Filename incl. file extension. Case sensitive! Spaces in the filename are not permitted.
- Example:
  File=Film1.mp4

- German: Datei=

5.2.3 Optional parameters

- **Displaytime =#**
  Value in seconds, that image or HTML5 content will be displayed until the next item starts.
  Default is 5 seconds.
  If you want to display the item permanently, enter -1.
- **Example:**
  Displaytime=6
  (Item will be displayed 6 seconds.)
  Displaytime=-1
  (Inhalt wird endlos lange angezeigt.)
- German:
  Abbruchzeit=

- **Succ=#**
  Successor of the current item.
- **Example:**
  Succ=1
  (Next will be ITEM 1.)

- **Loop =#**
  Defines, if current video should be looped
- **Example:**
  Loop=-1
  (Movie looped continuously)
  Loop=-5
  (The movie is looped 5 times until playback of next item starts.)

- **GPIO#=#**
  ITEM number will be jumped to when an input on GPIO has be received
- **Example:**
  GPIO1=4
  (When an input on GPIO1 is received, jump to ITEM4)

- **Volume=#**

Change volume for an item without changing the overall volume
0 (0%) to 10 (100%)

- Example:
  Volume=3

- **Interruptible** =
  Can the item be interrupted by an external command or will it play until the end.
- **Example:**
  Interruptible =TRUE
  (File may be interrupted)
  Interruptible =FALSE
  (File may not be interrupted)
  - **German: Unterbrechbar**

- **Random**
  The successor will be random
  - **Example: Random**
- German: Zufall

- **IP xxx.xxx.xxx.xxx**
  Send an UDP message to the IP xxx.xxx.xxx.xxx and Port PORT
- **Example:**
  IP 192.168.0.5 4095 Lamp On
  (Send the message „Lamp On“ to the IP 192.168.0.5 and Port 4095)

- **Relay**
  Switches one or multiple relays on or off. duration
- **Example:**
  Relay R1:On,R2:Off,R3:On
  Relay 1 closed, Relay 2 opened, Relay 3 closed
- **Example:**
  Relay R1-R4:On
  Relay 1 to Relay 4 are closed

5.2.4 Scheduled Playlist

You can define time windows, in which a file is valid for playback. You can define start and end dates as well as start and end times. Additionally, you can define weekdays.

Important Notes
Please make sure, that the molitor MP 02 4K is set to the correct time and date.

Example:

[ITEM 0]
File=Movie1.mp4
Start date=25.5.2018
End date=01.08.2018

Start time=00:05:00
End time=16:00:00
Weekdays=Mon,Tue,Sat

[ITEM 1]
File =Movie2.mp4
Start date=8.8.2008
End date=23.9.2008
Start time=10:15:0
End time=12:30:0

- **Start date=**
  First day that an ITEM is allowed to play
- Format: dd.mm.yyyy
- **Example.:**
  Start date=25.05.2018
  Don't play ITEM before 25.5.2018

- **End date=**
  Last date the ITEM is allowed to play
- Format: dd.mm.yyyy
- **Example.:**
  End date=01.08.2018
  ITEM will be played until 1.8.2018. It will not be played anymore on 2.8.2018

- Start time=
  Start time
- Format: hh:mm:ss
- Example:
  Start time=14:00:00
  ITEM plays after 14:00:00.

- **End time=**
  End time
- Format: hh:mm:ss
- **Example:**
  End time=18:00:00
  ITEM will be played until 18:00:00.

- **Weekdays=**
  Weekdays, on which the ITEM is allowed to play.
- Format: Mon,Tue,Wed,Thu,Fri,Sat,Sun
- **Example:**
  Weekdays=Mon,Tue,Sat,Sun
  ITEM is only allowed to play on Mondays, Tuesdays, Saturdays and Sundays.

Important Notes

These are time windows. A movie will not be stopped as soon as the end time is reached. It will continue playing until the end of the file and then not be started anymore if past the end time.

5.2.5 HTML5 Browser

You can display HTML5 files on the internal Web browser of the Molitor MP 02 4K.

The browser can display HTML5, php, CSS, JavaScript, etc...
It is based on a webkit-browser, which means you must use the webkit- syntax for advanced CSS features:
(i.e. -webkit-transition: ...)

There are two possibilities to display HTML5 content:

1. Copy all files including subfolders to the SD card / USB storage. Even the main html/php files may be located in subfolders.

- **Displaytime=#**
  Displaytime in seconds. Default is 5 seconds. You can change the default value in the configuration (see chapter 4.2.6 Default Displaytime).
  If you want to display the item permanently, enter -1.
  - **Example:**
    Displaytime=6 Content will be displayed for 6 seconds.
    Displaytime=-1 Content will be displayed permanently.

- **HTML=**
  Filename of the main file of your HTML5 project. The paths are relative to the root directory of the SD card or USB storage.

Choose an online HTML source to display. Make sure to define complete URL including "http://".

Example:

[ITEM 0]
HTML=http://www.molitor-berlin.de
Displaytime=-1

[ITEM 1]
File=Movie2.mp4

You can mix HTML content and videos and images in the PLAYLIST.txt.

Important Notes

The URL must be accessible! Otherwise, the ITEM will be skipped instantly.

6 SYNCHRONIZED PLAYBACK

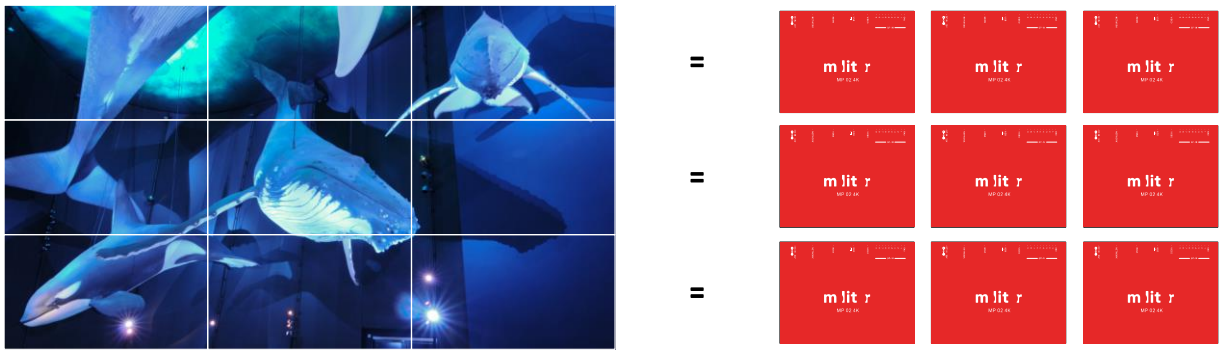
Multiple molitor MP 02 4K can be frame synchronized via network to create multi-display projects or videowalls. The synchronization is actively regulated, which means even if on molitor MP 02 4K is added later, it will instantly be resynchronized with the other players.
You can even mix molitor MP 02 4K with Molitor MP 02 4KUltraHD!

There is one master player that controls the slave players. If you want to use any interactivity, only control the master player. It will forward the commands to the slave players.

You can create up to 10 different Sync Groups within the same network. They operate independently.

Important Notes
All the molitor MP 02 4K of a Sync Group must be in the same local network **and** use the same UDP Port!

Example of a Videowall with 9 Molitor MP 02 4KUltraHD (possible resolution 9 times UHD (9 * 3840 * 2160 pixel):



There is no limitation to the number of players that can be synced apart from the limitations of the IP4-protocol.

6.1 SETUP VIDEOWALL

6.1.1 Prepare the content

For a perfect Synchronization, there are a few factors to be respected.

Videos must have:

- the exact same duration
- the exact same frame rate
- the same, if possible fixed, bitrate

6.1.2 Distribute content to different players

Copy the content onto the SD card / USB storage according to the arrangement of the displays.

6.1.3 Playback

6.1.3.1 Without PLAYLIST.txt

The files will be played in alphanumerical order. If you have chosen another Play Mode (see chapter 4.2.1 Play mode), it will define the order.

Important Notes
Synchronization could fail, if the alphanumerical order of the files is not consistent throughout all players in a Sync Group.

Example:

molitor MP 02 4K number 1 content:
Movie1_left.mp4
Movie2_left.mp4
Movie3_left.mp4

molitor MP 02 4K number 2 content:
Movie1_center.mp4
Movie2_center.mp4
Movie3_center.mp4

(etc ...)

6.1.3.1 With PLAYLIST.txt

Important Notes
The ITEM numbers and the total amount of ITEMs must be consistent throughout all players in a Sync Group.

Example:

molitor MP 02 4K number 1 PLAYLIST.txt:

[ITEM 0]
File=Movie1_left.mp4

[ITEM 1]
File=Movie2_left.mp4

molitor MP 02 4K number 2 PLAYLIST.txt:

[ITEM 0]
File=Movie1_center.mp4

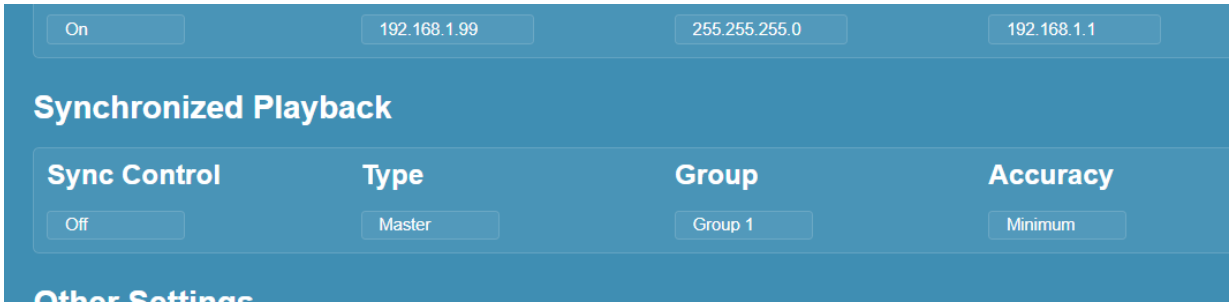
[ITEM 1]
File=Movie1_center.mp4

6.1.4 Integration into a local network

All players must be in the same network. Details can be found in chapter 4.1.1.2 (Network).

6.1.5 Synchronisation Options

Sync Control On
Sync Type Master
Sync Accuracy min
Sync Group 1



- Sync Control
- Off
- On
- Type
- **Master:** This is the Master player that controls all others in the group. If you want to use any external controls, you should only send commands to this player. It will forward all commands to the other players.

  Important Notes
  Only **one** Master is permitted per Sync Group!

- **Slave:** A Slave player is controlled by the Master in its Sync Group. You can add as many Slave Players as your network supports.
- Group
  - Assign a Sync Group to the player
- You can choose between the Group 01 to Group 10
- Different Sync Groups are independent
- Accuracy
  You can choose the accuracy of the synchronization.
- **Min.:** Sync Commands will only be sent on start of the ITEM
- **Low:** Sync will be accurate with a tolerance of +- 1s
- **Medium:** Sync will be accurate with a tolerance of +- 33ms
- **High:** Sync will be accurate with a tolerance of half frame at 60fps

The option to set the Sync Accuracy to lower values is implemented in case slave players output audio. When the video sync is very accurate, the slave players re-sync within the shortest intervals to the master's playback. This can sometimes lead to audio jittering on the slave player. Setting down the Sync Accuracy to a lower value will stop this.

Important Notes

All devices in a Sync project should have the same Sync Accuracy.

7 CUEPOINTS (*.SZE FILE)

The CuePoint functionality can be activated in the Webinterface or the CFPSetup.txt:

Cuepoints On

If this feature is enabled, you can schedule many different commands at a specific timecode during a media item. These are also available for picture items (timecode will be calculated).

7.1 CREATING THE CUEPOINTS *.SZE FILE

The CF Player will search for a matching .sze file at the beginning of each media item.
This file must be named identical to the media item, **including** the filename extension of the item (.mp4,.mp3, jpg...), and have a new filename extension .sze.

Example:
Filename: Movie1.mp4
Cuepoint-filename: Movie1.mp4.sze

Filename: Pic1.jpg
Cuepoint-filename: Pic1.jpg.sze

1. Add a new line starting with the „@“ symbol.
2. Add one space
3. Specify the timecode, at which the command should be executed.
   Format: **hh:mm:ss.ms** (hour:minute:second.millisecond)

Important Notes
Add a . between seconds and milliseconds

The accuracy is one frame at 60 frames per second: 16ms.

Example:
@ 0:0:1.500

7.2 AVAILABLE COMMANDS

7.2.1 Pause

Important Notes
No „>“ Sign or other parameter needed

Syntax
@ 00:00:01.500

Function
Pause the ITEM until it is resumed manually.

Example
@ 00:00:01.500

7.2.2 Pause_Hold

Syntax
@ 00:00:01.500 > Pause_Hold Holdtime

Function
Pause the ITEM for a duration in seconds

Parameter
Holdtime: Duration in seconds the item should pause

Example
@ 00:00:01.500 > Pause_Hold 25

7.2.3 UDP Message

Syntax
@ 00:00:01.500 > IP PORT Message

Function
Send a UDP message to a specific IP and PORT

Parameter
IP: IP Address of receiver
PORT: Port of Receiver
Message: Message to send

Example
@ 00:00:01.500 > 192.168.178.50 4950 Lamp On

7.2.4 Relay

Syntax
@ 00:00:01.500 > Relay Nr:State

Function
Close or open a Relay of USB Card

Parameter
Nr: ID of Relay to be controlled
With one USB Relay Card 1 bis 8
With two USB Relay Cards 1 bis

State:

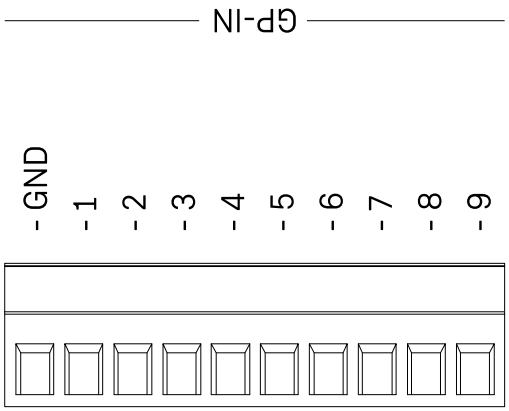
- On: Relay is closed
- Off: Relay is opened

Example
@ 00:00:01.500 > Relay R1:On,R2:Off,R7:Off
@ 00:00:07.500 > Relay R1-R7:Off
@ 00:00:10.500 > Relay R3-R6:On

8 EXTERNAL CONTROL

8.1 CONTROL VIA GP-INPUT – 10-PIN PHOENIX CONNECTOR

Pin assignment of the 10-pin input port



Pins

GND	Ground
1	Switch Contact 1
2	Switch Contact 2
3	Switch Contact 3
4	Switch Contact 4
5	Switch Contact 5
6	Switch Contact 6
7	Switch Contact 7
8	Switch Contact 8
9	Switch Contact 9

Here you can connect potential-free buttons and sensors, which can then be assigned to functions in the playlist. It is recommended to loop the ground (GND) from one button to the next if you wish to connect several buttons.

All buttons should be wired into the required input contact and the ground.

8.1.1 Default assignment

By default, the GPIO inputs will automatically be assigned to their respective ITEM numbers without having to write anything in your Playlist.txt.

Example:
GPIO 1 when closed will jump to ITEM1
GPIO 3 when closed will jump to ITEM3

8.1.2 Custom assignment with KeyOff

If you want to assign custom functions to the contacts, you can use the parameter “KeyOff” in the PLAYLIST.txt

KeyOff

This entry is only valid for the ITEM it is part of. The next ITEM will use the default assignments, if no KeyOff is added,

Example:

[ITEM 1]
File=001.jpg
Displaytime=-1
Succ=0
KeyOff
GPIO1=6
GPIO2=5
GPIO3=4
GPIO4=3
GPIO5=2
GPIO6=1

Code	Type	Parameter	Function	Example
.d	Distance	+ Number of items - Number of items	Jump forward X items Jump backward X items	*GPIO1=+1.d* *GPIO2=-1.d*
.t	Trickmode	+1 (PAUSE) -1 (PLAY) 2 (PAPL)	Pause Resume Pause/Play	*GPIO1=+1.t* *GPIO2=-1.t* *GPIO3=2.t*
.v	Volume	+ Number (Max: 10) - Number (Min:0)	Increase Volume Decrease Volume	*GPIO1=+5.v* *GPIO2=-5.v*
.j	Jump	+ seconds forward -seconds backward	Jump X seconds forward in video Jump X seconds backward in video	*GPIO1=+10.j* *GPIO2=-10.j*
.x	Random	1	Jump to random item in playlist	*GPIO1=1.x* *GPIO2=1.x*
.a	Audio track	ID of audio track	Select audio track of video	*GPIO1=1.a* *GPIO2=2.a*

8.2 CONTROL VIA UDP (USER DATAGRAM PROTOCOL)

The molitor MP 02 4K can be controlled via UDP messages. You can access the player with its IP address and the configured UDP Port. The default Port is 4950 but can be assigned freely (see chapter 4.1.1.2 Network).

8.3 PLAYBACK COMMANDS PAUSE

8.3.1 PAUSE

Syntax
PAUSE

Alternative
PAUS

Function
Playback is paused

8.3.2 CONTINUE

Syntax
CONTINUE

Alternative
CONT / FORTSETZEN / RESUME / RESU

Function
Continue playback of a paused ITEM

8.3.3 PAPL

Syntax
PAPL

Alternative
PAUSEPLAY

Function
Pause/Play toggles Pause and Continue.
If playback is paused, it will continue.
If playback is running, it will be paused.

8.3.4 STATUS?

Syntax
STATUS?

Function
Return the current playback state: playing, paused or stopped

8.3.5 NEXT

Syntax
NEXT

Function
Triggers the next ITEM
If the current ITEM is the last ITEM, playback will restart with the first ITEM.

8.3.6 PREV

Syntax
PREV

Function
Triggers the previous ITEM

8.3.7 PLAY

Syntax
PLAY=nnnn

Alternative
PLAYINDEX=nnnn

Function
Starting playback of ITEM with index nnnn

Parameter
nnnn
Index of ITEM to be played

The index is either the ITEM number in the PLAYLIST.txt [ITEM nnnn] or the position of the file in alphanumerical order on the SD card / USB storage.

Example
PLAY=2
Playback of ITEM 2 is started

8.3.8 PLAYFILE

Syntax
PLAYFILE=Filename.fileextension

Alternative
PLAYDATEI=Filename.fileextension

Function
Start playback of given file

Parameter
Filename including file extension

Example
PLAYFILE=FILM1.mp4

8.3.9 SYNC (Only UDP)

Syntax
SYNC=nnnn

Function
Starting playback of ITEM with index nnnn

Parameter
nnnn
nnnnIndex of ITEM to be played

The index is either the ITEM number in the PLAYLIST.txt [ITEM nnnn] or the position of the file in alphanumerical order on the SD card / USB storage. If current ITEM is already nnnn, nothing will happen.

Example
SYNC=2
Playback of ITEM 2 is started

8.3.10 JUMP

Syntax
JUMP=nnnn

Alternative
JUMPTIME=nnnn

Function
Jump to a given position in a video.

Parameter
nnnn
Position to be jumped to in milliseconds.

Values from 0 to total duration of video.

Example:
Jump=20000

Jump to 20 seconds.

8.3.11 RUNTIME?

Syntax
RUNTIME?

Alternative
LAUFZEIT?

Function
Returns the runtime of the ITEM

Example
RUNTIME?
Returns: *RUNTIME=25000*
Current runtime of ITEM is 25 seconds

8.3.12 TIMETOFINISH?

Syntax
TIMETOFINISH?

Alternative
RESTLAUFZEIT?

Function
Returns the remaining duration of the ITEM in milliseconds

Example
TIMETOFINISH?
TIMETOFINISH=25000
Current ITEM has a remaining duration of 25 seconds

8.3.13 SPEED=

Syntax
SPEED=nnn

Function
Set playback speed

Parameter
nnn
Playback speed in percent

Example
SPEED=25

Set playback speed to 25%

8.3.14 SPEED?

Syntax
SPEED?

Function
Get the current playback speed

Example
SPEED?
Speed=100
Current playback speed is 100%

8.3.15 UDPMONITOR=IP (UDP only)

Syntax
UDPMONITOR=IPAddress

Function
Playback information messages are sent.

Messages
PLNG x: Sent at start of ITEM. x is the ITEM number of current ITEM.
DONE x: Sent at end of ITEM. x is the ITEM number of currently ended ITEM.

Example
UDPMONITOR=192.168.0.44

8.3.16 UDPMONITOROFF (UDP only)

Syntax
UDPMONITOROFF

Function
Stops the playback information.

8.3.17 SPEED=

Syntax
SPEED=nnn

Function
Change the playback speed

Parameter

nnn
Playback speed in percent

Example
SPEED=25
Set playback speed to 25%

8.3.18 SPEED?

Syntax
SPEED?

Function
Get the current playback speed

Example
SPEED?
Example Reply:
Speed=100
Current playback speed is 100%

8.4 AUDIO COMMANDS

8.4.1 VOLUP

Syntax
VOLUP

Function
Increase volume by one step

Example
VOLUP

8.4.2 VOLDOWN

Syntax
VOLDOWN

Function
Decrease volume by one step

Example
VOLDOWN

8.4.3 VOLUME=

Syntax
VOLUME=nn

Function
Set the volume

Parameter
nn
0 (Mute) to 10 (max)

Example
VOLUME=8

8.4.4 VOLUME?

Syntax
VOLUME?

Function
Get current volume

Example
VOLUME?
Example Reply:
Volume=8
Current volume is 8

8.4.5 MUTE

Syntax
MUTE

Function
Muting audio output

Example
MUTE
Volume is set to 0

8.4.6 UNMUTE

Syntax
UNMUTE

Function
Unmute audio output

Example

UNMUTE
Volume is set to previous value

8.4.7 MUTE?

Syntax
MUTE?

Function
Get current muting state

Example
MUTE?
Example Reply:
Mute=0
Mute=0 Muting deactivated
Mute=1 Muting activated

8.4.8 AUDIO TRACK=

Syntax
AUDIOTRACK=nn

Function
Choose the audiotrack of ITEM, if it has more than one

Parameter
nn
Audiotrack to select

Example
AUDIOTRACK=3
Third audiotrack is selected

8.4.9 AUDIOTRACK?

Syntax
AUDIOTRACK?

Function
Get current audiotrack

Example
AUDIOTRACK?
Example Reply:
Audiotrack=1
Current audiotrack is 1.

8.5 FILE COMMANDS

8.5.1 INDEXLIST?

Syntax
INDEXLIST?

Function
Get the indexlist of all files on SD Card / USB Storage

Example
INDEXLIST?
Example Reply:
0:Movie1.mp4
1:Movie2.mp4

8.5.2 PLAYLISTUPDATE

Syntax
PLAYLISTUPDATE

Function
Content of SD Card / USB Storage is rescanned. Necessary, if new files have been uploaded or deleted remotely.

Example:
PLAYLISTUPDATE

8.5.3 PLAYLIST?

Syntax
PLAYLIST?

Function
Get contents of Playlist

Example:
PLAYLIST?

Example Reply:
[ITEM 0]
File=1.jpg
Displaytime=2

[ITEM 1]
File=2.mp4

8.5.4 FOLDERLIST?

Syntax
FOLDERLIST?

Function
Get content of SD Card or USB Storage

Example
FOLDERLIST?

Example Reply:
1.jpg
2.mp4
PLAYLIST.txt
CFPSetup.txt

8.5.5 STARTFTPDOWNLOAD?

Syntax
STARTFTPDOWNLOAD?

Function
Start the FTP Download from a FTP Server

Example:
STARTFTPDOWNLOAD?

8.6 SYSTEM COMMANDS

8.6.1 DATE=

Syntax
DATE=TT.MM.JJJJ SS:MM:ss

Function
Set time and date on Molitor MP 02 4K

Parameter
Time and date that should be set

Example
DATE=04.07.2018 10:15:00

8.6.2 WEBINTERFACE

Syntax
WEBINTERFACE

Function
Show Webinterface on display. Playback is continued in the background.

Example:
WEBINTERFACE

8.6.3 SHOWPLAYBACK

Syntax
SHOWPLAYBACK

Function
Show playback, if Webinterface is currently shown on display.

Example:
SHOWPLAYBACK

8.6.4 OUTPUTON

Syntax
OUTPUTON

Function
Activate HDMI output

Example
OUTPUTON

8.6.5 OUTPUTOFF

Syntax
OUTPUTOFF

Function
Deactivate HDMI output

Example
OUTPUTOFF

8.6.6 SYNCON

Syntax
SYNCON

Function
Synchronized playback is activated

Example:

SYNCON

8.6.7 SYNCOFF

Syntax
SYNCOFF

Function
Synchronized playback is deactivated

Example:
SYNCOFF

8.7 USB TOUCHSCREEN

The molitor MP 02 4K can be controlled by a Touchscreen connected via USB.

With most Touchscreens the molitor MP 02 4K can be configured by a Touchscreen.
Starting from Firmware Version 1.0.40 there is a new setting “Touchscreen” in the Setup. This settings has priority over the selected „USB Type“
This setting allows you to use a Touchscreen simultaneously to other USB devices.

- Entry in CFPSetup.txt

Touchscreen On

Touchscreen

- Contact us for supported models
- **Off** Touchscreen events are ignored. Except for setup screen navigation
- **On** Touchscreen with 1920x1080 scaling.
- **Raw** Touchscreens, that use custom touch resolution. See info below.

For every ITEM in the Playlist a total of 127 touch fields can be defined. These fields are only active during the playback of this ITEM.

The touch fields are defined by X and Y coordinates and their height and width.

8.7.1 Natively supported Touchscreens

The molitor MP 02 4K scales the touchscreen coordinates for most Touchscreens to the resolution

1920 X 1080 pixels (except for special cases!)

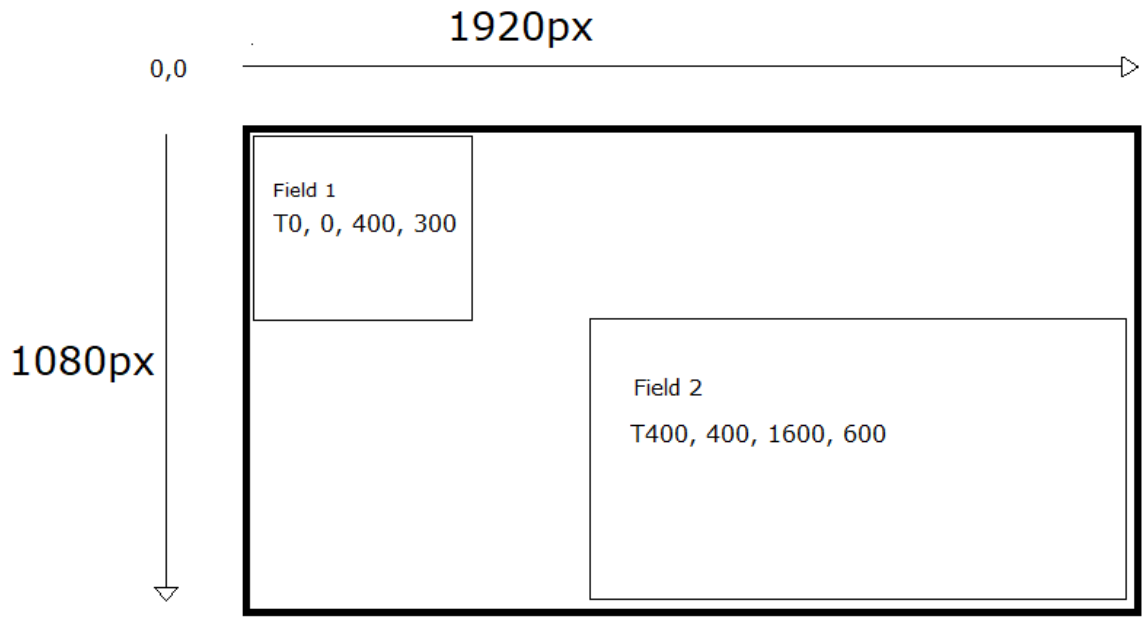
The coordinate X:0 and Y:0 is located at the top left.

You can easily determine, whether your touchscreen is supported natively, by trying to control the Setup

Screen by touch events. This is independent of the setting for the Touchscreen.
If the molitor MP 02 4K reacts to touching the display, your touchscreen is automatically scaling the coordinates to 1920x1080 pixels.

Important Notes
HTML Touch control only works with such touchscreens!

If no reaction to touch events on the Setup Screen happens, you must follow the instructions for other touchscreens. The basic principle is identical, but the touch coordinates can have different values (e.g. 0 – 4095. Or 0 - 65535...).
Also, the 0,0 point can be located on the top-right or bottom-right/left.



Playlist for the example above:

[ITEM 0]
File=Film1.mp4
T0, 0, 400, 300, 0=PLAY 1
T400, 400, 1600, 600, 0=PLAY 3

[ITEM 1]
File=Film2.mp4
T0, 0, 1920, 1080, 0=PLAY 0

Command Syntax	**Txxxx, yyyy, wwww, hhhh, a, cccc[=pppp]**

T	Syntax for touch event
xxxx,	X-coordinate of upper-left edge of touch field
yyyy,	Y-coordinate of upper-left edge of touch field
wwww,	Width of touch field
hhhh,	Height of touch field
a=	1: React when touch is first detected 0: React when touch is removed
cccc	Command – See list below
[=pppp]	Optional parameter. Eg Item number “PLAY= 2”
Example	*T0, 0, 1280, 720, 1=PLAY 0*

Command	**Function**
PAUSE	Pause playback
CONTINUE	Continue playback
PAPL	PAUSE/PLAY
NEXT	Start next item
PREV	Start previous item
PLAY nn	Start playback of item “nn”
VOLUME=nn	Set volume to nn (Min:0, Max: 10)
AUDIOTRACK=nn	Select audiotrack nn

8.7.2 Other Touchscreens

If no reaction to touch events on the Setup Screen happens, your touchscreen is not supported natively and you must select a different touchscreen mode.

Entry in CFPSetup.txt:

Touchscreen Raw

To see, if your touchscreen works with the molitor MP 02 4K and to determine the touch coordinate system (resolution and 0,0-point), you must choose this “USB Type”:

USB Type TouchCalibrate

Important Notes
HTML control by touch does not work with such touchscreens!

These values must be used to create the playlist for the touch project.

8.8 USB NUMBLOCK

You can use any USB Numblock to control playback on the Molitor MP 02 4K.

- Entry in CFPSetup.txt:

USB Type Numblock

By default, pressing Keys 0-9 will start ITEM 0-9.
Key 1: ITEM 1
Key 2: ITEM 2

...

You can define custom commands to the keys, as described in chapter 8.7.1 (Natively supported Touchscreens).

[ITEM 1]
...
KeyOff
Num0=0
Num1=1
Num2=2
Num3=3
Num4=4
Num5=3
Num6=3
Num7=3
Num8=3
Num9=3
NumPlus=1.d
NumMinus=-1.d

8.9 USB PRESENTER

You can use a USB Presenter to control the playback. Currently supported are Logitech models like R400.

- Entry in CFPSetup.txt:

USB Type Presenter

Default assignment of the 4 keys:
Prev (Key25), Next (Key26), Play/Pause (Key27/28), Jump to first Item(Key29)

Play/Pause key is toggling Key27 und Key28.
Key27 – Klick – Key28 – Klick – Key27 – Klick – Key28 ...

You can define custom commands to the keys, as described in chapter 9.1 (Manual access via ftp client).
The 4-5 Keys are Key25 to Key29.

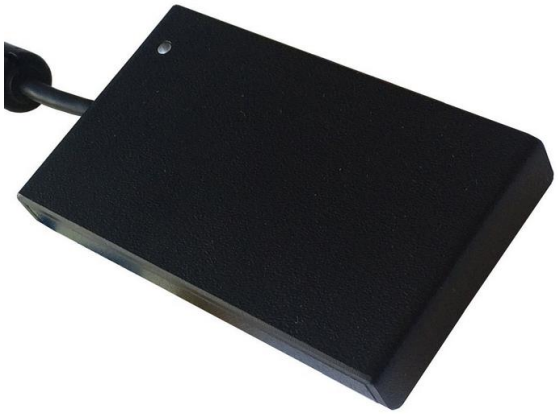
[ITEM 1]
...
KeyOff
Key25=0
Key26=1
Key27=2
Key28=3
Key29=4

8.10 USB GPS ANTENNA

You can connect a GPS USB Antenna to the molitor MP 02 4K and control the playback depending on the geolocation of the device. Please contact us for further information, if you are interested in this feature.

8.11 USB RFID READER

You can connect an RFID Reader via USB to the Molitor MP 02 4K.



- Entry in CFPSetup.txt:

USB Type RFID

You can define IDs in the PLAYLIST.txt, that are linked to certain commands.

[ITEM 0]
File=Picture1.jpg
Displaytime=-1
RFID 04AF821A0A4080 PLAY 1
RFID 04D0821A0A4080 PLAY 2
RFID 04D1821A0A4080 PLAY 3

[ITEM 1]
File=Picture2.jpg
Displaytime=20
RFID 04AF821A0A4080 PLAY 1
RFID 04D0821A0A4080 PLAY 2
RFID 04D1821A0A4080 PLAY 3

The available commands are the same as the Touch commands in chapter 8.7.1 (Natively supported Touchscreens).

Command	Function
PAUSE	Pause playback
CONTINUE	Continue playback
PAPL	PAUSE/PLAY
NEXT	Start next item
PREV	Start previous item
PLAY nn	Start playback of item “nn”
VOLUME=nn	Set volume to nn (Min:0, Max: 10)
AUDIOTRACK=nn	Select audiotrack nn

8.12 USB KEYBOARD

You can connect a USB keyboard to the molitor MP 02 4K and control the Setup Screen or the HTML5 browser. Additionally, there are some keyboard shortcuts available:

Keyboard Shortcut	Action
Ctrl+F1 / Ctrl+E	Auto HDMI On / Off
Ctrl+F2 / Ctrl+F	Set resolution to 1920 x 1080p60
Ctrl+F3 / Ctrl+U	Set resolution to 3840 x 2160p60
Ctrl+F4 / Ctrl+D	DHCP On / Off
Ctrl+F5 / Ctrl+S	Show / Hide Setup Screen
Ctrl+F11 / Ctrl+R	Hold for 5 seconds to return to default settings

8.13 USB MOUSE

You can connect a USB mouse to the molitor MP 02 4K and control the Setup Screen or the HTML5 browser. For the text input fields, a virtual keyboard will be displayed.

8.14 CUSTOMIZED WEBINTERFACES

You can create customized Webinterfaces as HTML files for web access and control of the Molitor MP 02 4K. These are stored on the SD Card or USB Storage.

8.14.1 “Websites” Folder

Create a folder called „Websites“ on the SD Card. Place your HTML and other files inside this folder and optional subfolders.

8.14.2 Open URL in browser

Open the URL in your web browser: www.playerip/Websites/YourPage.html

8.14.3 Embed Commands in HTML

To embed Commands in HTML, these must be implemented as Links.
Use the following syntax:

<a href="../Commands.php?Command=CustomPlay&PlayID=3 ">

8.14.3.1 Play

Syntax
Command=Play&PlayID=nnnn

Function
Starting playback of ITEM with index nnnn

Parameter
PlayID=nnnnIndex of ITEM to be played
The index is either the ITEM number in the PLAYLIST.txt [ITEM nnnn] or the position of the file in alphanumerical order on the SD card / USB storage.

Example
Command=Play&PlayID=2
Playback of ITEM 2 is started

8.14.3.2 Jump

Syntax
Command=Jump&Milliseconds=nnnn

Function
Jump to a given position in a video.

Parameter
Milliseconds=nnnn
Position to be jumped to in milliseconds.
Values from 0 to total duration of video.

Example
Command= Jump&Milliseconds=20000
Jump to 20 seconds

8.14.3.3 Switch Audiotrack

Syntax
Command=ChannelSwitch&Spur=nn

Function
Choose the audiotrack of ITEM, if it has more than one

Parameter
nn
Audiotrack to select

Example
Command= Audiotrack&Track=nn
Third audiotrack is selected

8.14.3.4 Increase volume

Syntax
Command=VolPlus&Value=nn

Function
Increase volume by value

Example
Command=VolPlus&Value=2
Increase volume by two steps

8.14.3.5 Decrease volume

Syntax
Command=VolMinus&Value=nn

Function
Decrease volume by value

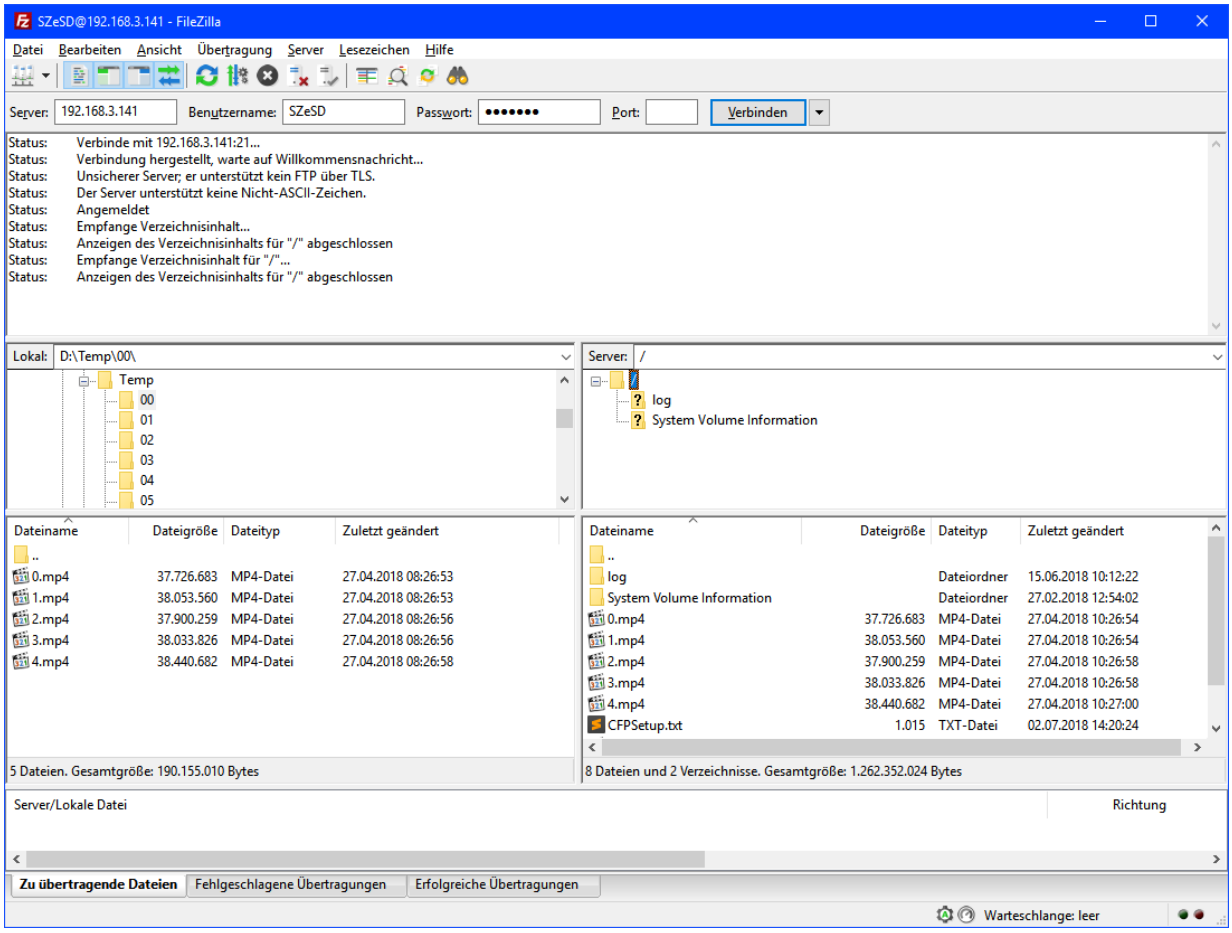
Example
Command= VolMinus&Value=2
Decrease volume by two steps

```
<!DOCTYPE html>
<html lang="en"><head><meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<meta name="keywords" content="">
</head>

<body>
   <table>
      <tr>
         <td>
            <a href="../Commands.php?Command=Jump&Milliseconds=28000"><img src="1.png" >
            /></a>
         </td>
         <td>
            <a href="../Commands.php?Command=Jump&Milliseconds=200"><img src="2.png"
            /></a>
         </td>
      </tr>
      <tr>
         <td>
            <a href="../Commands.php?Command=CustomPlay&PlayID=3"><img src="3.png" /></a>
         </td>
         <td>
            <a href="../Commands.php?Command=CustomPlay&PlayID=4"><img src="4.png" /></a>
         </td>
      </tr>
   </table>
</body>
</html>
```

9 CONTENT-UPDATE

9.1 MANUAL ACCESS VIA FTP CLIENT



An ftp server is running on the molitor MP 02 4K that grants you access to the SD Card and USB storage. You can connect with a FTP Client (FileZilla www.filezilla-project.org/) and modify the contents on the storage.

You can either access the SD card or the USB storage. Usernames and passwords can be defined in the CFPSetup.txt or the Webinterface.

Defaults are:

- **Access SD Card:**
  Username: SZeSD
  Password: szegmbh
- **Access USB storage:**
  Username: SZeUSB
  Password: szegmbh

On the left you can navigate through your local files on your PC. On the right side are the files of the player. You can either Drag'n'Drop new files to the right window or right click on a file and select "upload".

Important Notes

You must apply any uploads or deletion of files by clicking "Reload Content" on the SD or USB page of the Webinterface.

9.2 AUTOMATIC CONTENT UPDATE VIA FTP

You can configure the molitor MP 02 4K to download new files periodically from a predefined server. They can be updated every hour, day, weekly, monthly or after a custom interval in seconds.

FTP Download On
FTP Download Server none
FTP Download Username test
FTP Download Password test
FTP Download Mode passive
FTP Download Date 1.1.2012
FTP Download Time 1:0:0
FTP Download hourly Off
FTP Download daily Off
FTP Download weekly Off
FTP Download monthly Off
FTP Download Interval 0
FTP Download Server Folder /
FTP Download Overwrite Off

.

- FTP Download
- **On:** FTP Autodownload deactivated
- **Off:** FTP Autodownload activated
- FTP Download Server
  - IP address of remote ftp server
- FTP Download Username
  - Login username of remote ftp server
- FTP Download Password
  - Login password of remote ftp server
- FTP Download Date
  - Date of first automatic ftp download
- FTP Download Time
  - Time of first automatic ftp download
- FTP Download hourly
  - Start download every 60 minutes starting from first date and time
- FTP Download daily
  - Start download every 24 hours starting from first date and time
- FTP Download weekly
  - Start download every 7 days starting from first date and time.
- FTP Download monthly
  - Start download every 4 weeks starting from first date and time.
- FTP Download Interval in seconds
  - Start download every X seconds starting from first date and time.
- FTP Download Server Folder
- Subfolder on remote ftp server for this player

- FTP Download Overwrite
- **Off:** Playback continues while download runs in background
- **On:** Playback is suspended until download is completed

9.2.1 With FileList.txt

First, the file „FileList.txt" will be downloaded. This file defines the additional operations.
Available are:

1. Delete files on SD / USB
2. Download files to SD /USB

FileList.txt
SD:test1.mp4
SD:PLAYLIST.txt
Delete_SD:test.mp3
USB:test2.mp4
Delete_USB:test5.mp4

- **SD :**
  File should be downloaded to SD card
- **Delete_SD :**
  File should be deleted from SD card
- **USB :**
  File should be downloaded to USB storage
- **Delete_USB :**
  File should be deleted from USB storage

9.2.2 Without FileList.txt

All files from the ftp server will be downloaded.

9.3 USB CONTENT UPDATE

Important Notes
Only works when a SD card is present.

You can update the files on a SD card by inserting a USB storage into the Molitor MP 02 4K.

9.3.1 With FileList.txt

First, the FileList.txt on the USB storage will be interpreted.

FileList.txt
SD:test1.mp4
SD:PLAYLIST.txt

Delete_SD:test.mp3

- **SD:**
  File should be copied to SD card
- **Delete_SD:**
  File should be deleted from SD card

9.3.2 Without FileList.txt

All files from the USB storage will be copied to the SD Card.

During the transfer, the playback will be aborted, and a USB update screen will appear on the display. As soon as all operations are completed, playback will resume with the new files.

10 APPENDIX

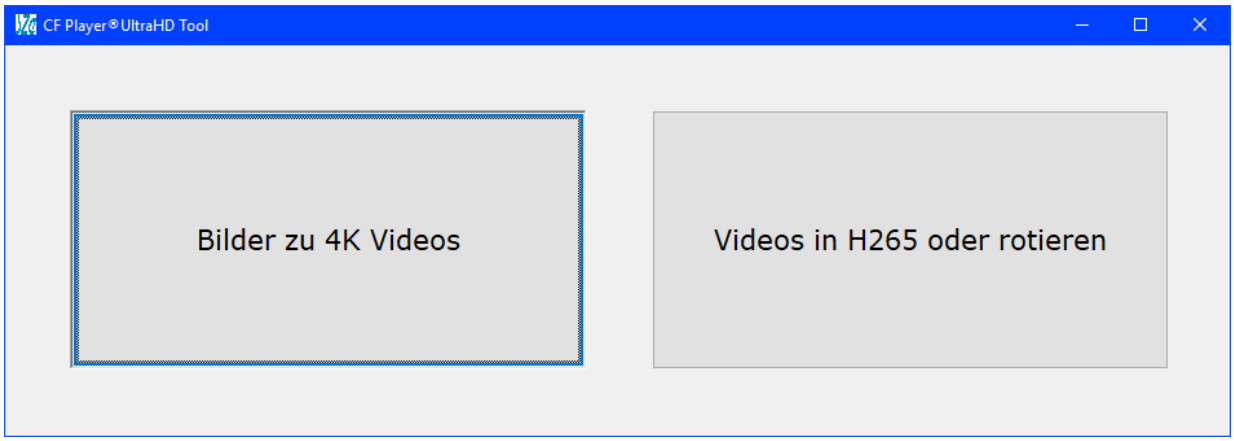
10.1 ULTRAHD VIDEOTOOL

10.1.1 Java Installation

In order to start the UltraHD Converter, you will need the current version of Java installed on your PC. You can download and install this free of charge here: www.java.com/en/download/

10.1.2 Starting the UltraHD VideoTool

Now you can start UltraHD_Video.jar by double clicking it. The following window will open:



The molitor MP 02 4K VideoTool consists of two components:

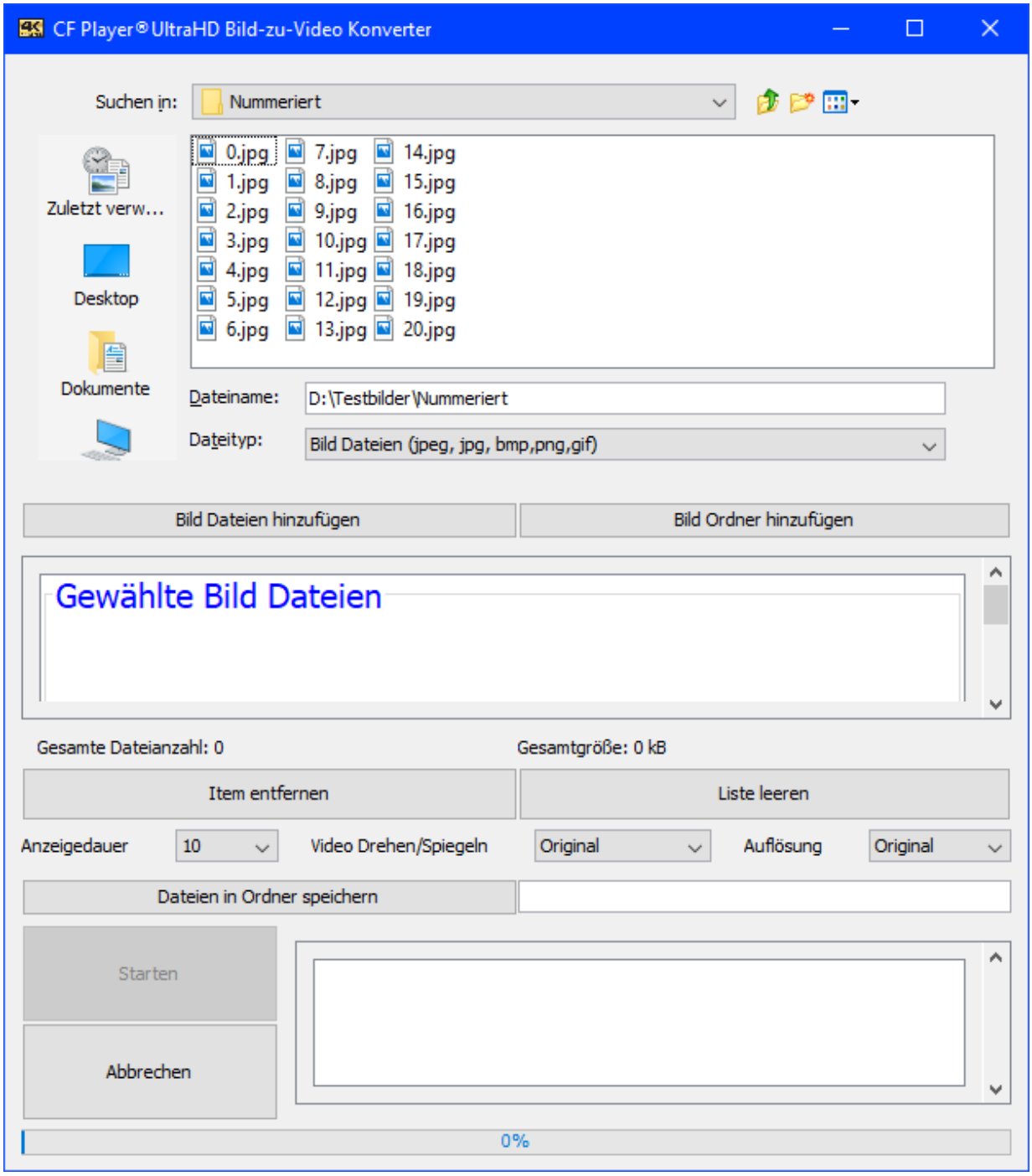
1. Images to 4K Videos (Left):
   The molitor MP 02 4K can display pictures in a maximum resolution of full HD (1920 x 1080pixels). If you would like to display in UltraHD resolution, you can convert the pictures to 4K videos with this included UltraHD converter!

2. Convert videos to H.265 or Rotate (Right):

The molitor MP 02 4K only supports the full 4K resolution (3840 x 2160p60) with H.265 or VP9 videos. If you want to play H.264/AVC videos in 4K, you will first need to convert them to H.265.

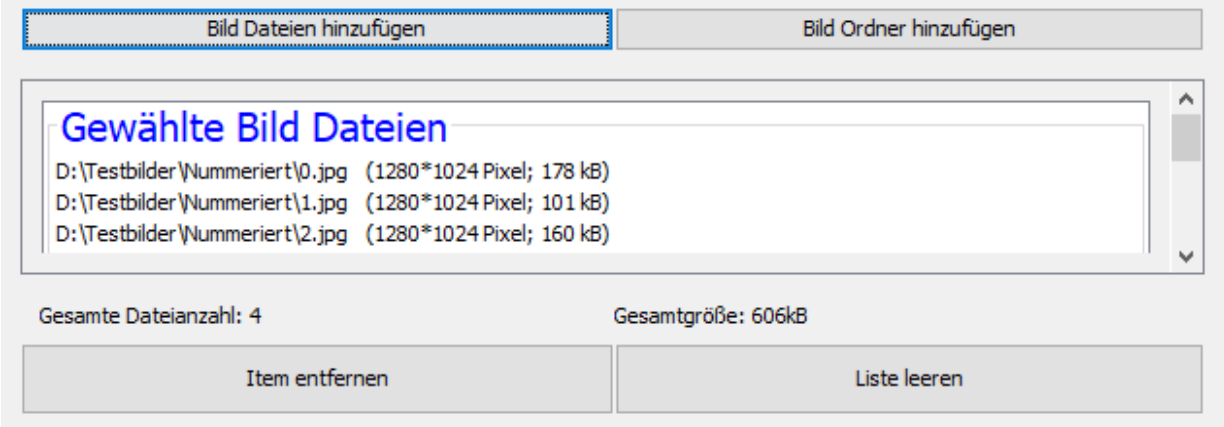
10.1.3 Converting images to 4K videos

In order to display your pictures in the best possible resolution of 3840x2160 pixels, they must first be converted to videos with the H.265 video codec.
At the same time you can also adjust the orientation (rotated / mirrored), or the resolution.
In addition, you can freely determine the image display duration.

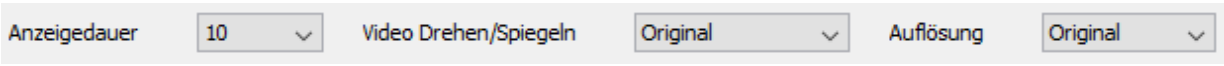


10.1.3.1 Select image files

Now select your folder with the 4k images in the Explorer window and then press "Add image files" (Bild Dateien Hinzufügen).
The selected files will then appear in the list under "Selected image files" (Gewählte Bild Dateien).



10.1.3.2 Choose Settings



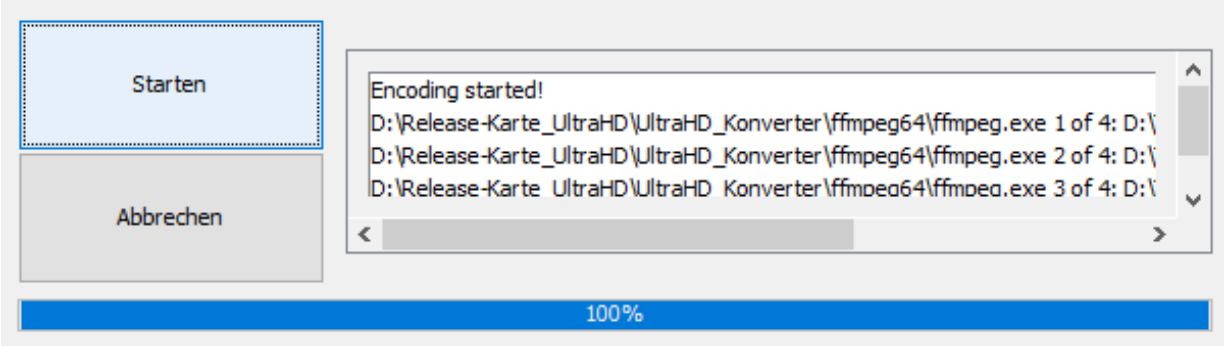
- Select the length of the resulting video under Display Duration (Anzeigedauer) in seconds.
- Select the orientation of the resulting video (original, 90° Right, 180° Mirrored, 270° Right). (Video Drehen/Spiegeln)
- Select the resolution of the resulting video. For the highest resolution, choose 3840 x 2160. (Auflösung).

10.1.3.3 Choose destination folder

Choose where the videos should be saved.

10.1.3.4 Start the conversion

Click on Start (Starten), to begin the conversion.
You can see the conversion status via the progress bar at the bottom. When all videos have been created, a window will open to let you know.

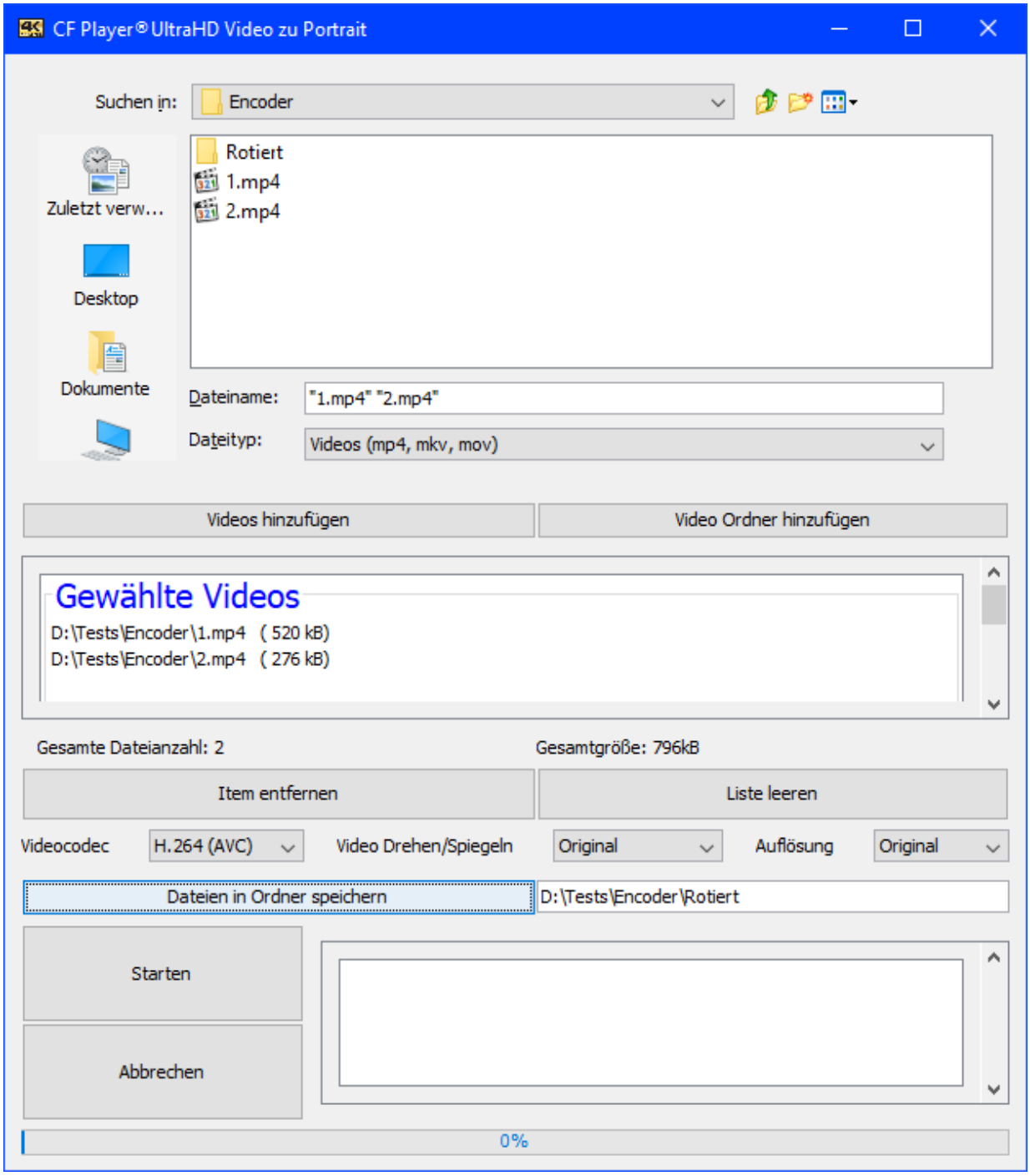


10.1.3.5 Copying files to your SD Card/USB Storage device

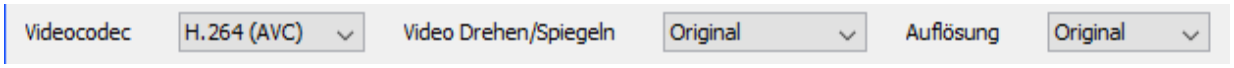
You can now copy the converted videos to your SD Card or USB stick and insert it into the molitor MP 02 4K. Afterwards you can enjoy your pictures in the best 4K resolution.
Soon it will also be possible to convert the pictures to HDR videos for even better contrast.

10.1.4 Converting Videos to H.265 or changing the orientation (Rotate / Mirror)

Select your video folder in the explorer window and then press Add Videos (Videos hinzufügen)
The selected files will then appear in under the list Selected Videos (Gewählte Videos)



10.1.4.1 Choose Settings



- Video Codec:
- H.264(AVC):

Maximum resolution 1920x1080p60
- H.265(HEVC):
  Maximum resolution 3840x2160p60
- Video Rotate/Mirror (Drehen/Spiegeln):
- Original
- 90° Right
- 180° Mirrored
- 90° Left
- Resolution (Auflösung):
- Original
- 3840x2160
- 1920x1080
- 1280x720
- 720x576

10.1.4.2 Choose destination folder

Choose where the videos should be saved.

10.1.4.3 Start the conversion

Click on Start (Starten), to begin the conversion.
You can see the conversion status via the progress bar at the bottom. When all videos have been created, a window will open to let you know.

10.1.4.4 Copying files to your SD Card/USB Storage device

You can now copy the converted videos to your SD Card or USB stick and insert it into the molitor MP 02 4K. Afterwards you can enjoy your converted videos in the best 4K resolution.

10.2 UPDATE FIRMWARE

10.2.1 Automatic Update

You can update the firmware automatically by accessing the Webinterface remotely and open the System page. You can also open the Setup Screen with the Ctrl+S(Ctrl+F5) shortcut and then navigate to the System tab.

Important Notes
You **must** have an SD Card or USB Storage inserted in the molitor MP 02 4K for the Update to be possible.

10.2.2 Download files

You can update the firmware locally by downloading the files from our FTP Server and then copy them onto an SD Card or USB Storage.
Connect with any FTP Client to our Server using the following details:

Server: ftp.sze.com
Username: szeweb493web3ftp5
Password: SZeKunden18!

There you will find the folders

- fullHD2.0 (ignored in this manual. Files for Molitor MP 02 4K)
- UltraHD
- Firmware (Update files)
- Manual (English and German version)
- Release Card (All files of SD Card included in delivery)
- Release Karte (German Version)

Inside the Firmware folder:

- Recovery (Only for emergency. In case that molitor MP 02 4K does not boot anymore)
- Release (Update files for normal update)
- Changelog.txt

10.2.3 Release Update

In most cases, you should only work with this folder.
Inside, you will see subfolders named after the firmware version. Choose the highest firmware number.
Included are the following files:

- md5
- SZe_X.X.X.cfp

Download these files and copy them onto a SD Card along with a video file. Insert this SD Card into the molitor MP 02 4K and power on the device.
Please wait until the update process is completed and the molitor MP 02 4K has rebooted and resumed playback.

During the update process, this screen will be displayed.

Important Notes

Do not remove the SD Card or Power off the molitor MP 02 04 until Update is completed!

10.2.4 Recovery Update

For the very rare case, that the molitor MP 02 4K is not working properly at all, even after a factory reset.
Example: Does not boot properly, etc.... You can completely reformat the device.
Download all files inside the recovery folder with the highest firmware number:

- Kernel
- Md5
- recovery.cfp
- Serial.txt (Please enter the Serial Number of the molitor MP 02 4K manually)
- sysinit.txt

Copy all files on a USB Stick that is formatted as FAT32. Plug the USB Stick into any of the USB Ports of the molitor MP 02 4K.
The molitor MP 02 4K will start the process of reformatting.
When the process is completed, the molitor MP 02 4K will start playback.

10.3 EC- DECLARATION OF CONFORMITY

We herewith declare that the product

Product Name	**molitor MP 02 4K**
Description	Device to playback digital video files stored on SD Cards
conforms with the provisions of the directive:	**89/336/EEC (EMC directive)** amended by 91/263/ECC, 92/31/ECC, 93/68/ECC
The application of this directive is according to the declaration in the instruction manual. And furthermore, declare that the following parts of standards and documents have been applied:	**EN61000-6-1** Immunity for residential, commercial and light industrial **EN61000-6-3** Emissions for residential, commercial and light industrial

molitor GmbH
Schlesische Straße 31
10997 Berlin

Berlin, 30.06.2020