

# OKTOMAG

## USER MANUAL & OPERATION GUIDE

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**OKTOTECH**   
Film Services

[www.oktotech.com](http://www.oktotech.com)

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# INTRODUCTION

## OVERVIEW

**OktoMag** is an unique stand-alone portable device designed for filmmakers who work for TV Series, TV Commercials, Feature Films and Documentaries. It basically records videos and plays for all crew.



There are a lots of game changer features on OktoMag. It is combining most wanted features with smart solutions for Video Assist Professions and also for non-technical crew members.

You will be able to find recorded videos in a very short time with OktoMag's intelligence on-screen thumbnail browser. You can also personally view live frame or play all videos by your smart phone. Video mixer and instant sharing capabilities are will be time saving for VFX Technicians and on-set Editors. And multi-camera sets are now easy to handle with Gang features.

OktoMag is uses DNxHD codec that supported by several editing softwares. It is possible to record brilliant quality videos and store all of 10-weeks-long-shoot just into a storage (Based on SSD of 1 TB).

You will find every use case in the following sections of this manual.

# FEATURES

## YOU CAN ...

- **Record & Playback** videos in DNxHD36 codec in MOV or MXF container.
- **Auto Record** videos with SDI flag and also you can save them by getting filename from compatible cameras.
- **Find recorded videos** with a powerful on screen thumbnail browser or via tag supported web remote mode.
- **Mix your videos** or make **chroma keying** with live source.
- **Instant share videos** to a VFX technician or an on-set Editor through ethernet or a wireless router in a second after recording.
- **Remotely connect** to OktoMag by using your phone/tablet/Mac/PC with a “sophisticated but easy to use” interface named “WebRemote” and you can do anything as like as you are sitting front of OktoMag.
- **Gang OktoMags** connects each other in seconds and you can record & playback synchronously with multiple cameras. No need settings! Also you can seek frame by frame in parallel records of multiple cameras. It isn't matter if you are shooting with 32 cameras.
- **Import videos** and images from USB or from a connected OktoMags.
- **Use your OktoMag on rush sets** with any 12V type of batteries on the market, OktoMag consumes very low power.

## INPUTS & OUTPUTS



Rear Connections

- 1x BNC Video Input HD-SDI
- 1x BNC Video Output HD-SDI
- 1x XLR Female Mono Balanced Audio Input
- 1x XLR Male Mono Balanced Audio Output
- 2x Network (Ethernet) port (10/100/1000 Mbps)
- 2x USB 3.0
- 1x Power Input #1 (Hot-Swap 12-27V, 29Watt)
- 1x Power Input #2 / Output (12V, Max:3A)
- 1x Service port (Not for end user)
- 1x Headphone Jack 3.5mm (on front interface)

## FRONT INTERFACE

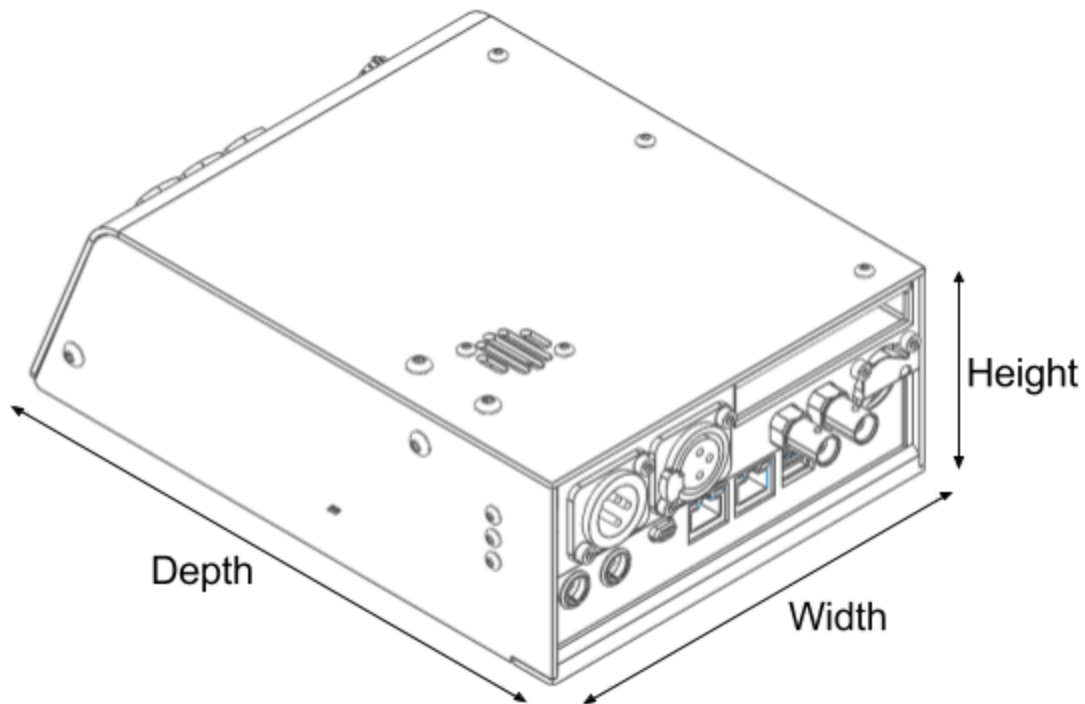


Front Interface

- 1x OLED Display (160x128 pixel with Color) (Not shows live or playback)
- 3x Big buttons (Live/Record, Stop, Play)
- 1x Knob for Headphone volume control
- 1x Headphone Jack 3.5mm
- 1x Navigator buttons with Jog
- 1x Power On/Off button

## PHYSICAL

OktoMag has very durable chassis thanks to its aluminium case and mono blocked aluminium back panel.



Physical dimensions are measured without storage disk. Temperature limitations are based on most weak internal components of OktoMag.

Height:	8.3cm (3.27")
Width:	15.5cm (6.10")
Depth:	22.5cm (8.86")
Weight:	1.6kg (3.52 pounds)
Operation Temperature:	5°C to 40°C (41°F to 104°F)
Storage Temperature:	-20°C to 60°C (-4°F to 140°F)
Relative Humidity:	0% to 90% non-condensing

## QUICK START

OktoMag is designed as a video assist device to be the most favorite device of most departments. If you are a beginner user for this device or a non-technical crew member, following steps will be a guide for you.

### 1. Connect Power Source

Plug its own AC Power Adaptor to 3-pin socket at the left-bottom side of rear. Or you may use a battery as a source. Onboard OLED display placed on front interface will show the voltage value of source in 3 seconds after connecting power. This means OktoMag get powered correctly, but it won't start until you press On/Off.

### 2. Start OktoMag

Press and hold On/Off button on front interface for less than a second. Button will blink while you are pushing it. After releasing, it will become solid blue and OktoMag will start booting. Onboard display will show how many seconds are remaining to be ready. It generally takes less than 60 seconds according to previously recorded takes count. Notice that, button's blue will blink for a short time while booting, it is normal. It means OktoMag is ready when you see the menu on onboard display. OktoMag always starts in Recorder mode with live source view.

### 3. Insert Storage Disk (Mag)

OktoMag uses ordinary 2.5" sized SSD's as media storage that we called "Mag". You can use NTFS pre-formatted disks. Just insert it, it is hot-plug. Notice that, socket part of disk will be at the bottom side. If Mag is ready for working, Record button will become yellow. You can format Mag in OktoMag menu, if it is not pre-formatted. Go to main menu by pressing middle of the jog (OK Button), and follow Menu > Main Settings > Format. (You may also plug or unplug it while OktoMag is not running, or you may leave it on OktoMag after shutdown)

### 4. Connect Camera

If you want to record new takes, you need to connect SDI cable coming from camera to "SDI IN" socket at rear panel. After connecting camera, you will see the auto-detected video format something like "1080i25" on OLED display in a second. If unsupported video feed or nothing attached to "SDI IN", same area will be seen as "NO SIGNAL".

## 5. Connect Monitor

You can connect your SDI monitor to “SDI OUT” on rear side. It is possible to use OktoMag without a SDI Monitor, if you want to just record takes or access to takes via other connection features like instant sharing or WebRemote.

## 6. Record new takes

OktoMag has auto-record feature, but also recording is possible manually. If big RECORD button is yellow, it means it is available to press. If you are in live view, it starts to record when it is pressed. This button switches monitor out to live view if you are in playback mode. Button will become red while it is recording. To stop recording, just press STOP near the Record. Record button will become yellow again. *(Notice that, buttons blinks fastly while OktoMag is going to record or going to stop.)* Take number will increase automatically after every record. You can edit scene, shot or take name/number by pressing RIGHT navigation button as seen labeled “Clapper” on onboard display.

## 7. Playback

Big PLAY button indicates there is at least one take to play in disk, when it is yellow. Press it to start playback. OktoMag always goes to last take when PLAY button pressed in Recorder mode (live view). After freezed first frame loaded for playback, you can press PLAY again to start playing. If you want to select other takes to play, use LEFT or RIGHT navigation buttons for previous and next takes. Other method is using “On-screen thumbnail browser” for surfing between takes. Just press UP navigation in anytime to open it. It is also accessible while you are in Live View if OktoMag is not recording.

## 8. Check Status of OktoMag

If you want to check general status of device, you can use fast information screen by pressing DOWN navigation key. It is accessible while you are in live or playback mode. 4 indicators labeled “Power, Mag, Video, Cold” will appear on OLED display. These are the things which OktoMag is loving. If you see one of them in red color, you need to take an action. *(If you press and hold the DOWN key for 3 seconds, INFO screen become locked on display. Press DOWN again to unlock it.)*

That's all. It was a quick look to most primitive usage of OktoMag. Keep going with detailed sections.

# POWER SPECIFICATIONS

OktoMag is quite small, portable and consumes low power according to what it can do. There are several ways in which you can supply the energy needed to operate the device. We will be showing the parts that need attention, in accordance with the technical needs of the device. Also you can find the necessary power accessories in the Accessories section of the manual.

## POWER CONSUMPTION

OktoMag needs **29 Watt** while fully functioning. If you want to use OktoMag as a power source for a connected accessory like onboard monitor or a wireless unit, you also need to add power requirements of the accessory.

Any unregulated DC power source can be use as input between 12V and 27V. OktoMag can work approximately 3 hours with a 90 Watt standard onboard battery.

OktoMag has 2 power inputs working as hot-swap which detailed in Power IOs section.

## POWER OUT

OktoMag generates regulated power out for its onboard accessories. You can connect an onboard monitor, a wireless unit like Teradek, a HDMI convertor, etc. Virtually any 12V powered device that consumes power less than 36 Watt, can be supplied with OktoMag's power out.

Regulated Power Out: **12 Volt**  
Maximum Current: **3 Amp**

Please be careful about connecting devices to power out because of there is no limiter or an embedded fuse for power out. **Do not connect a device to POWER OUT that draining power more than 36Watt.** It may be harmful for onboard device or OktoMag.

## HOT-SWAP CAPABILITY

OktoMag is a hot-swap powered device. It means you can supply power by two different sources at the same time. For instance, while you are working with AC Power Adaptor, you can connect a battery as backup power.

You can use these feature for swapping batteries without shutting down the OktoMag while in a mobile usage. If one of supply is corrupted or empty, OktoMag will use the other source. This also prevents possible data loss or technical malfunction.

OktoMag prefers to use higher voltage when supplied with two different power sources. For instance, while working with 19.5V AC Power Adaptor and a 12-16V battery as backup, OktoMag will drain power from only AC Adaptor. This is a reason for suggest using AC Power Adaptor that has higher voltage than your batteries.

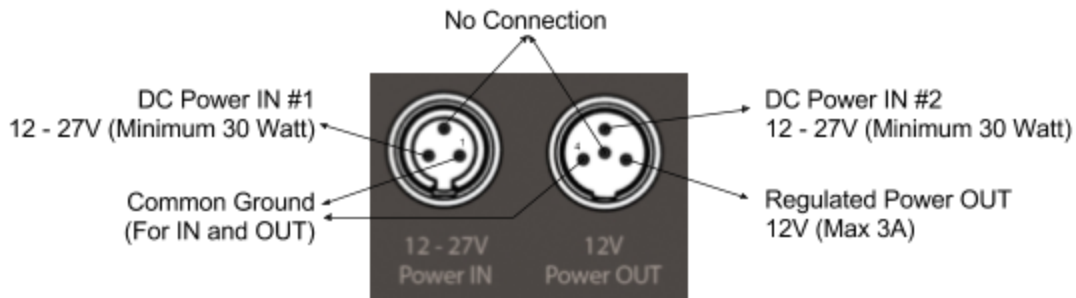
This feature must be used correctly while working with two batteries as sources. When voltages (remaining percentage of capacity) of two batteries are same, OktoMag will drain power from two of them at the same time.

## POWER IOs

OktoMag has 2 mini XLR sockets for two of Power Input and one of Power Out:

- 1x **3pin Mini XLR male** for “Power IN”
- 1x **4pin Mini XLR male** for “Power IN/OUT”

Power OUT connector also contains second Power IN pin. This means you may use Power OUT connector for another power input like a battery with hot-swap capability.



Power IN and OUT Connection's Pin Layout

Please notice that, if you want to connect Power IN and Power OUT to second connection at same time, you need to use a separator cable designed for this Power OUT Connector. We call this cable as “Power Y” which has input and output connectors. You will find it inside of supplied accessories.

If you need to make another cable to use with this connections, it is in your responsibility. Please avoid shortcut of power pins, and obey the power requirements.

# MAIN MODES

OktoMag is mainly works on three different modes: **Recorder**, **Playback** and **Video Mixer**. Menu contents and button behaviors are change according which mode is running. Other features like “Instant Sharing”, “Web Remote” and “Gang Usage” is not affected because of running mode.

If you are not familiar with OktoMag, please check “QUICK START” section before going on these main modes.

You can check the mode indicator on OLED Display or colors of big buttons to understand which mode is running. Button lights are useful when you are looking from long distance on set.

RECORD	STOP	PLAY	Running Mode	Description
None	None	None	Recorder	No live source, disk is empty
None	None	Yellow		No live source, playback available
Yellow	None	None		Watching Live, disk is empty
Yellow	None	Yellow		Watching Live, playback available
Red	Yellow	None		Recording Live
Yellow	Green	Yellow	Playback	Playback Paused
Yellow	Yellow	Green		Playing video
None	Yellow	None	Video Mixer	No file selected for Playback
None	Green	Yellow		Playback file is paused
None	Yellow	Green		Playing File

Table: Button backlights describing which mode is running

Following sections are describing the mode differences. Please notice that, all following directives are assumes that you are working with one OktoMag and:

- Compatible live video source is connected to SDI IN.
- Compatible monitor is connected to SDI OUT.
- Storage is correctly formatted, plugged and ready to use.

# RECORDER

Recorder mode is simply for watching live source and recording new takes. OktoMag boots always in Recorder mode. If you are not in Recorder mode, you can press big RECORD button to switch to Recorder (live view) while in any mode or in any time.

## Recording

If you are in Recorder Mode, pressing RECORD button will manually start recording and colors of buttons will change as you see on related table of main modes. Pressing RECORD button again while Recording will set bookmark on actual time. You can quickly seek between these bookmarks while you are playing the file. To stop recording, you need to press STOP button. If any auto-record function enabled, recording will be stop automatically according to the selection.

OktoMag shows last take's duration with big letters on its onboard display. You will find the actual timecode at right-bottom corner of duration. Timecode area shows SDI IN timecode.

While OktoMag is not recording takes, it is possible to use onscreen thumbnail browser by pressing UP navigation button. *(You can find using details of Onscreen Browser in FEATURES section.)*

## Supported SDI Formats

Resolution	FPS
1080i	60, 59.94, 50
1080PsF	30, 29.97, 25, 24, 23.98
1080p	30, 29.97, 25, 24, 23.98
720p	60, 59.94, 50
625i PAL	25

## Recorder Settings

Recorder mode has 3 special settings. You can go to these settings menu as indicated bottom-center of OLED Display, by pressing OK button placed in center of navigation. These settings are:

### → Recorder > Menu > Audio source

You can select which audio source will be recorded for new takes. This setting also redirects the audio to SDI OUT (monitor) and headphone jack on front interface. If you have a sound technician on set, please ask him/her to which source will be used. There are two options:

- ◆ **SDI EMBED:** OktoMag will use SDI embedded audio attached to camera's SDI signal. Use this settings if camera is feed with audio, or camera has an internal microphone.
- ◆ **ANALOG XLR:** OktoMag will use Analog XLR input. Notice that, this input works as mono.

### → Recorder > Menu > Auto record

OktoMag has ability to obey the camera for start recording if you activate auto-record by one of these settings:

- ◆ **OFF:** Auto-record disabled. Recording is only possible manually.
- ◆ **TIMECODE:** OktoMag starts recording when SDI embedded Timecode start running, and stops when timecode stop. If you are working with a timecode supported camera, you can use this feature. (*Important Note: OktoMag can't work properly while camera working on a "Free Run Timecode" mode. Use "Rec Run Timecode" on camera.*)
- ◆ **ALEXA:** OktoMag specially recognize Arri Alexa metadata through SDI signal and gets actual file name and Timecode of the camera. With these data, OktoMag auto-records in same filename with same timecode. This means OktoMag recording Proxy files, and can be used as offline on-set editing, or on-set VFX testing.

### → Recorder > Menu > File Container

You can choose one of file containers for your takes. This is not matter for OktoMag's internal workflow. But, you can prefer container according to needs of your PC/Mac video player or video editing software. These file containers are:

- ◆ MOV
- ◆ MXF

## Typing Clapper Data

OktoMag makes group of takes by Scene and Shot names. This feature makes an easier browsing experience in WebRemote and Onscreen Thumbnail Browser.

You can edit Scene, Shot or Take name/number by pressing RIGHT navigation button as seen labeled “Clapper” on onboard display. When pressed RIGHT, new selections appears on screen. Press RIGHT again to edit “Shot”, press DOWN to edit “Take” or press UP for edit “Scene” name. You can go back by pressing LEFT.

After selection of one of labels, a virtual keyboard will appear on OLED display. This innovative keyboard is named JogBoard. You can type new value in here. *(You can find using details of JOGBOARD in MORE DETAILS section.)*

Scene or Shot fields accepts any type of alphanumeric name, but Take name has special limitations. Take field must have a alphabetic part and a numeric part after it. Like “take 1”. You may type something like “rehearsal” as take name, but OktoMag will convert it to “rehearsal 1”. This helps auto increment of take names.

# PLAYBACK

You can switch to Playback mode from Recorder mode by just simply pressing PLAY button. If you press PLAY button while in Recorder mode, Playback mode will load last recorded file automatically. Or you can use Onscreen Thumbnail Browser to select a take you want OktoMag to play in Recorder or Player mode. If you are in Video Mixer mode, you have to go to Recorder mode first.

## Take Selection

Playback mode starts with freezed first frame of loaded or selected file. This feature prevents missing of beginning part of the file because of most monitors goes black for a while when changing SDI signal. After seeing first frame, you need to press PLAY again for playback.

You can use LEFT navigation button to go to previous take or RIGHT navigation button to go to next take when they are available. Press UP navigation button If you want to use onscreen thumbnail browser to select take. *(You can find using details of Onscreen Browser in FEATURES section.)*

## Play, Pause and Stop

You can play the selected take with big PLAY button. When you are playing take, OLED display will show the timeline with current time of take and current Timecode of the file. STOP button pauses the playback if you press it while playing. When you press STOP during pause, OktoMag will return to first frame of the take. If Mark IN point set for the take, OktoMag will return to Mark IN frame when you press STOP during pause.

## Mark IN/OUT

If you had started recording the take when very earlier from the director's action command you may want to skip the beginning part of the take. You can set Mark IN frame in this situation. You need to hold OK button that in center of navigation and press LEFT navigation button in sametime to set Mark IN frame. It will set the current frame as Mark IN. If you press same combination again, it will remove the Mark IN frame. Setting Mark OUT is possible with similar way by holding OK and RIGHT navigation button. You will see the timeline bar will updated according your marks on OLED display.

## Jog Seeker

If you want to seek in take frame by frame, you can use Jog of navigation. Every click of jog will seek one frame according to your direction of rotating. It will go to next frame if you rotate to clockwise direction, and it will go back vise versa. You can rotate it fastly, it will skip the frames according its refresh rate.

**Tip:** If you want to seek with long time jumps, it is possible by holding PLAY button and rotating Jog in same time.

## Playback Settings

### → Playback > Menu > Repeat

There are two options:

- ◆ **ON:** Player will go to first frame (or Mark IN frame if set).
- ◆ **OFF:** OktoMag will stop at last frame (or Mark OUT frame if set)

### → Playback > Menu > Send Video to Mixer

This command will open selected take into Video Mixer mode. If it is first time of selection the take for mixer, the take will be converted for Video Mixer mode. Mixer loads take directly without convert if the take already loaded for mixer before. If you have any preset for video channel in Video Mixer mode, the parameters of video will not change. *(You can find using details of mixer in VIDEO MIXER section.)*

### → Playback > Menu > Rename video

This menu has selection of **Scene**, **Shot** or **Take** submenus to rename current take. When you select one of them, JobBoard will appear on OLED display for editing. *(You can find using details of JogBoard in MORE DETAILS section.)* If you rename **Scene** or **Shot**, it will move the take to desired new labels on Onscreen Thumbnail Browser. If new Scene or Shot name doesn't exist in the browser, it will be created.

### → Playback > Menu > Delete Take

This action will delete the take permanently after a last confirmation.

# VIDEO MIXER

You need to use Menu shown on OLED display to activate the Mixer mode. Press OK button in center of navigation to enter to menu, and go on “Switch to Mixer” line by arrows or Jog, then press OK again. This menu is accessible in both Recorder and Playback modes. Also, If you are in Playback mode and playing the take that you want to mix with live source, you can use the “Send Video to Mixer” menu to enter Video Mixer. This second method detailed on *Playback Settings* section of this manual.

Video mixer has an interface different than Recorder and Playback modes. There are two main page of Mixer, named “Mixer Preview Page” and “Layer Details Page”. Video mixer mode starts with “Mixer Preview Page” on load.

## Mixer Preview Page

This page works as a preview screen about enabled layers and their screen positions.

You will see the available layers at the bottom of the display. These layers are “Live”, “Video”, “Img1” and “Img2”. This short names represents “Live source”, “Video Playback”, “Image Layer 1” and “Image Layer 2”.

Layer names with gray color means the layer is disabled or layer source is not selected. When you enable or select source for any layer as described below, the labels will get their colors. The big empty rectangle in the center represents the positions of layers with the same color of enabled layers.

You can browse between layers by pressing LEFT or RIGHT navigation buttons. Cursor will go to highlighted label, and representing rectangle will bring to top in preview area.

You can go to Mixer Settings menu by UP button or you can press DOWN navigation button to change display to Layer Details Page.

## Layer Details Page

In this page, you will see the layer labels becomes a tab view. And you can browse between layers by pressing LEFT or RIGHT navigation buttons. While the cursor on the layer title, It is possible to go back to Preview Page by pressing UP button.

## Changing Layer Parameters

When you go with DOWN key in “Layer Details Page”, you will see the small cursor will change its place on OLED. You can browse mixer layer parameters like this, by using UP/DOWN buttons.

OktoMag shows a table view of parameters of selected layer when cursor is not on a parameter. This table view shows default values as gray color. When you change any parameter to any value other than default, table indicates it with white color. It gives a quick look to all parameters while working with multiple layers.

The headlines listed below will describe parameters of every layer:

### → **Enabled / Disabled**

This parameter completely disables or enables the layer. When you disabled a layer, it conserves their values and hides it. Just press OK button to toggle it when cursor is on the line.

### → **File:** (source)

This parameter is not visible for Live layer, because of it is already dedicated as SDI IN of OktoMag. In other layers, this parameter defines which file or take will be use as layer source.

If you are on Video Layer’s File parameter, you can use your Jog roller to seek video frame by frame. You can do fast seeking as same as playback mode by holding PLAY button and rotating jog. Also, video can be Stop or Play with big buttons in anywhere of mixer mode.

To go to file browser to select source, press OK button on this line. You will see “Mag & Imported Files” under the title of “Select source:”. This folder represents SSD disk named “Mag”. Also if you plug any USB disk to OktoMag, they will be listed in this screen. (*OktoMag recognizes Windows based disk formats like NTFS, FAT and exFAT*) It is possible to browse other OktoMags if you are working with multiple OktoMags when they connected to Network socket as Gang. Gang OktoMags will appear with their Serial Numbers in the same list.

Use UP/DOWN or Jog roller to select line in browser. The small green cursor will indicate where you are. You may turn back with LEFT button, or you can select the line with OK or RIGHT button. When a folder selected, OktoMag will list the inside of the folder. If a file selected as source,

OktoMag will decide to convert it or use local converted copy to open it.

First of all, OktoMag needs converted source file to be mixed. This means, if you select or import a file to be mixed first time, OktoMag will convert it to an internal codec to work faster. After conversation, file will be saved in “MixerImported” folder that you will see in file browser.

If file conversation is needed, a progress indicator appears on screen. Please wait it to be completed. If conversation is not needed, OktoMag returns back to Layer Details Page with selected source.

◆ **Video layer can import file types:** .avi, .mpeg, .mpg, .mp4, .mov, .mkv, .qt, .m2v, .m4v, .mxf, .mpe, .mpv, .webm

◆ **Image layers can import file types:** .png (with transparency), .jpg, .jpeg, .bmp, .gif, .tiff, .tif, .tga

#### → **Alpha / Chroma**

This parameter has two sub parameters. Alpha parameter changes the opacity of the layer. Chroma parameter changes the chroma tolerance of the layer. You can toggle selected sub parameter by pressing OK navigation button. When your cursor on the parameter, use Jog roller to define a value between 0 to 100 percent. Also a circular indicator will show the actual value. For instance, Alpha: Zero means layer will not be visible. Chroma: Zero means chroma filter will not applied to the layer.

#### → **Scale**

This parameter changes the frame size of the layer. When your cursor on the parameter, use Jog roller to define a value between 0 to 100 percent. You can fastly change value by “holding Play and rotating Jog”. Also a frame rectangle will make a preview of layer according to screen position.

#### → **Pos**

This short label represents **Position** of layer. It has two internal parameters for X(horizontal) and Y(vertical) coordinates. When your cursor on it, you can change the value of selected axis by Jog roller. And you can toggle between X and Y axis by pressing OK navigation button. X value can be in range of -1920 and 1920, and Y value can be in range of -1080 to 1080. You can fastly change value by “holding Play and rotating Jog”. Also a frame rectangle will make a preview of layer according to screen position.

→ **Zoom**

Zoom works like an ordinary camera zoom. It doesn't change frame size or position. It just changes size of in-frame. When your cursor on the parameter, use Jog roller to define a value between 0 to 100 percent. You can fastly change the value by "holding Play and rotating Jog".

→ **Z.Pos**

This short label represents **Zoom Position** of layer. You can change the position of area where to zoom. It does not effect when Zoom parameter is zero. It has two internal parameters for X(horizontal) and Y(vertical) coordinates. When your cursor on it, you can change the value of selected axis by Jog roller. And you can toggle between X and Y axis by pressing OK navigation button. X and Y values can be in range of 0 to 100 percent. You can fastly change the value by "holding Play and rotating Jog".

→ **CropX**

This parameter crops frame from left or right. You can change the percentage of cropping. It has two internal parameters for Left crop and Right crop. When your cursor on it, you can change the value of selected parameter by Jog roller. And you can toggle between Left and Right by pressing OK navigation button. Left and Right values can be in range of 0 to 100 percent. Zero means frame is not cropped. For instance, Left:20% means frame will be cropped 384 pixel from left side. You can fastly change the value by "holding Play and rotating Jog".

→ **CropY**

This parameter crops frame from Top or Bottom. You can change the percentage of cropping. It has two internal parameters for Top crop and Bottom crop. When your cursor on it, you can change the value of selected parameter by Jog roller. And you can toggle between Top and Bottom by pressing OK navigation button. Top and Bottom values can be in range of 0 to 100 percent. Zero means frame is not cropped. For instance, Top:20% means frame will be cropped 216 pixel from Top side. You can fastly change the value by "holding Play and rotating Jog".

## **Preset Loading / Saving**

OktoMag can save its all mixer parameters as presets with desired names for future use. Mixer parameters turn back to its default values when OktoMag fresh started. But it is possible to save settings and load them in future use. Please access to Load / Save features from Mixer Settings.

## **Mixer Mode's Resolution Limitations**

OktoMag designed as quite small, portable and consumes low power according to what it can do. This design features unfortunately brings some processor limitations along. Because of these limitations, OktoMag down converts its mixed out resolution. Default resolution of mixed SDI out is 720p50. If you applied chroma key to any layer, mixed SDI out resolution becomes 576i50.

# FEATURES

## ONSCREEN BROWSER

OktoMag presents an innovative way for browsing takes. OktoMag can use their SDI out as a thumbnail browser. It shows the thumbnails of the takes on monitor in an intuitively sorted by Scenes and Shots. This feature shorten the time to find desired takes while using device as stand-alone or in gang.

This feature is accessible in Recorder or Playback modes. You can open onscreen browser by pressing UP navigation button while not in recording. When you are in recorder mode, onscreen browser initializes with Selection indicator on last recorded take. If you are in Playback mode, it will initializes on take that you are playing.

You can use jog or arrow navigation buttons for browsing between takes. A rectangle colored red will indicate which thumbnail is selected.

(Details will be added soon.)

## GANG (MULTI CAMERA)

If you are shooting with multiple cameras, you have to use an OktoMag for each camera. In this case, OktoMags can be connected to each other via their Network (Ethernet) ports for easier usage. OktoMag has two Network ports, so you can connect more than two OktoMags like daisy-chain, or you can use different types of connections. It is possible to connect up to 16 OktoMags in a setup. OktoMag doesn't need any special calibration or setting for it. Please check "SETTING UP WIRELESS/NETWORK" section for connection details.

When you connect OktoMags to each other, they recognize each other automatically and starts sharing information between them. Because of there is no master or any slave devices, all OktoMags behaves like one united device. This means, you can control all of them by just using any of them. When you start recording, all of them starts record and when play one of them, they synchronize its players and playback all takes in same time. Also any OktoMag's jog controls all of playbacks.

You can use different cameras or different type of SDI sources for each OktoMag. OktoMag works with "time based" synchronization, means, you can still playback in sync when one of SDI format in 25fps and the other one in 30fps.

Gang feature has smart solutions for different type of working. For instance, If you are working with two cameras that auto record enabled, OktoMags starts recording with first camera's start and they stops recording by last camera's cut. This feature helps playbacks to be stay in sync. For another instance, if any camera goes off for a single-camera plan, It only records running camera and this setup doesn't breaks gang specification. Or, you can split into two unit for a day to shoot different plans. When you become united into one set again, OktoMag's synchronizations will be kept. When you try to playback a take from one of them, OktoMag will check the other OktoMags in Gang and it will decide to play the take alone or play the take with other OktoMags in sync.

This feature also automatically provides "combined thumbnail browsing" in WebRemote that described in its related section.

In any special circumstances, this feature can be disabled in "Main Settings". If you disable it, other features like "Instant Video Sharing" or "WebRemote" that using same Network port, won't be affected. To check if it is enabled, you need to enter "Main Settings" menu via OLED display that is described in "MAIN SETTINGS" section.

# INSTANT VIDEO SHARING

If you are working in a set that needs fast on-set editing, or needs special visual effects beyond Video Mixer capabilities of OktoMag, you can use this feature. You don't need to wait for DIT to copy or convert files anymore.

OktoMag shares its recorded takes without any effort. It can work as a “network folder” for your PC or Mac via its Network (Ethernet) port. You can reach all takes via an ethernet cable plugged between your computer and OktoMag. Or you can use any Wifi router to use this feature wirelessly. Takes will be ready instantly as MXF or MOV files in a second after OktoMag stops recording. Only thing you have to do is drag & drop the files to the timeline of your editing software.

Common video editing softwares supports OktoMag's video file format without any converting process. So, the recorded takes can be draggable directly to the timeline.

## Connection by a Mac

To get access to files with a Mac, follow these 5 steps after connection described in “SETTING UP WIRELESS/NETWORK” section.

1. On Mac desktop, go to “**Go**” menu and find “**Connect to Server...**”. Or you can use Shortcut: *Command + K*

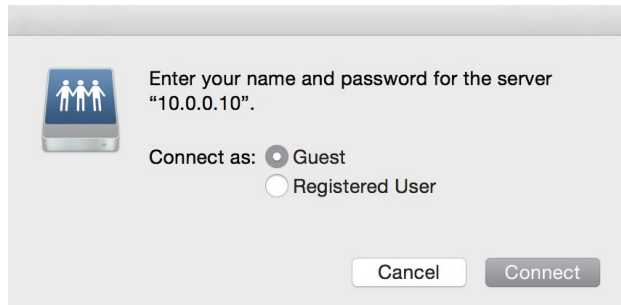


2. You will see the window.



You need to write “Server Address” as “smb://10.0.0.X” without quotes. The X represents the serial number of OktoMag that shown on OktoMag’s bottom label or OLED display with a # symbol. Example showing serial number 9. Click “Connect” button.

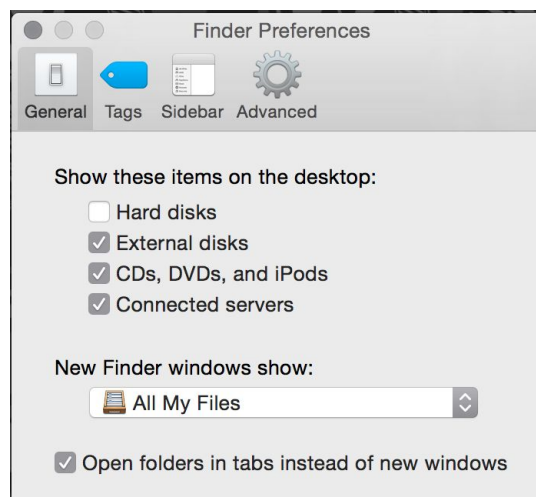
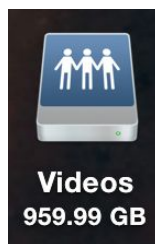
3. After the connect command, Mac is going to ask the type of the user.



“Guest” mode has to be selected to reach to folder.

4. Then you will see the folder selection window to access the files. Select “Videos” folder.

5. You will see the “Videos” icon on your drive list and desktop. If not you need set your Mac setting on “Finder Preferences”. Be sure “Connected servers” selected to see the files on your desktop.



Name	Date Modified	Size	Kind
10-170111-152144-0001.mov	Jan 11, 2017, 3:21 PM	77.1 MB	QT movie
10-170111-152144-0001.xml	Jan 11, 2017, 3:21 PM	18 KB	XML text
10-170111-223345-0002.mov	Jan 11, 2017, 10:33 PM	193.6 MB	QT movie
10-170111-223345-0002.xml	Jul 17, 2016, 10:55 AM	20 KB	XML text
10-170111-223645-0003.mov	Jan 11, 2017, 10:36 PM	361.8 MB	QT movie
10-170111-223645-0003.xml	Jan 11, 2017, 10:36 PM	20 KB	XML text
10-170111-223922-0004.mov	Jan 11, 2017, 10:39 PM	62 MB	QT movie
10-170111-223922-0004.xml	Jul 17, 2016, 11:05 AM	20 KB	XML text
10-170112-172942-0005.mov	Jan 12, 2017, 5:29 PM	214.3 MB	QT movie
10-170112-172942-0005.xml	Jan 12, 2017, 5:29 PM	18 KB	XML text
10-170112-173119-0006.mov	Jan 12, 2017, 5:31 PM	321.1 MB	QT movie
10-170112-173119-0006.xml	Jan 12, 2017, 5:31 PM	18 KB	XML text
10-170112-173731-0007.mov	Jan 12, 2017, 5:37 PM	279.9 MB	QT movie
10-170112-173731-0007.xml	Jul 18, 2016, 5:57 AM	16 KB	XML text
10-170112-174146-0008.mov	Jan 12, 2017, 5:41 PM	299.6 MB	QT movie
10-170112-174146-0008.xml	Jan 12, 2017, 5:41 PM	16 KB	XML text
10-170112-174311-0009.mov	Jan 12, 2017, 5:43 PM	305.1 MB	QT movie
10-170112-174311-0009.xml	Jan 12, 2017, 5:43 PM	18 KB	XML text
10-170112-174708-0010.mov	Jan 12, 2017, 5:47 PM	315.5 MB	QT movie
10-170112-174708-0010.xml	Jan 12, 2017, 5:47 PM	17 KB	XML text
10-170112-175022-0011.mov	Jan 12, 2017, 5:50 PM	293.4 MB	QT movie
10-170112-175022-0011.xml	Jul 18, 2016, 6:10 AM	18 KB	XML text
10-170112-175536-0012.mov	Jan 12, 2017, 5:55 PM	329.7 MB	QT movie
10-170112-175536-0012.xml	Jan 12, 2017, 5:55 PM	18 KB	XML text
10-170112-180240-0013.mov	Jan 12, 2017, 6:02 PM	367.7 MB	QT movie
10-170112-180240-0013.xml	Jan 12, 2017, 6:02 PM	17 KB	XML text
10-170112-180437-0014.mov	Jan 12, 2017, 6:04 PM	320.5 MB	QT movie
10-170112-180437-0014.xml	Jan 12, 2017, 6:04 PM	18 KB	XML text
10-170112-180723-0015.mov	Jan 12, 2017, 6:07 PM	278.1 MB	QT movie
10-170112-180723-0015.xml	Jul 18, 2016, 6:28 AM	19 KB	XML text
10-170112-193232-0016.mov	Jan 12, 2017, 7:32 PM	400.3 MB	QT movie
10-170112-193232-0016.xml	Jul 18, 2016, 7:53 AM	21 KB	XML text

**.mov** or **.mxf** files are the recorded footage. As a default, if OktoMag is not working in filename matched auto-record mode, filenames will be named as default notation:

Serial Number - Year Month Day - Hour Minutes Seconds - Clip Number . mov/mxf

If your editing software supports DNxHD codec all to do is drag the files into to timeline. If not, you can find the DNxHD plugins for several editing softwares. We suggest to copy the files to your internal drives to reliable experience.

## Connection by a Windows PC

To get access to files with a Windows based PC, follow these 3 steps after connection described in “SETTING UP WIRELESS/NETWORK” section.

1. Open “My Computer” window in Windows Explorer. Click to “Computer” menu and select “Connect to Network Drive”.
2. Select any available drive letter and type “\\10.0.0.X\videos” as folder name without quotes. The X represents the serial number of OktoMag that shown on OktoMag’s bottom label or OLED display with a # symbol. Click “Finish” button.
3. Then you will see the videos folder as drive letter you selected.

**.mov** or **.mxf** files are the recorded footage. As a default, if OktoMag is not working in filename matched auto-record mode, filenames will be named as default notation:

Serial Number - Year Month Day - Hour Minutes Seconds - Clip Number .  
mov/mxf

If your editing software supports DNxHD codec all to do is drag the files into to timeline. If not, you can find the DNxHD plugins for several editing softwares. We suggest to copy the files to your internal drives to reliable experience.

## WEB REMOTE

OktoMag provides mobile connectivity for all the crew. Anyone who has permissions can access to OktoMag's features via his/her mobile device. Any user can watch live view, search and playback the takes personally on his/her device, types clapper data and additional information for takes, generates PDF shooting reports, etc.

Users can watch live view at 3 frames per second, because of processor limitations. This feature makes it possible to check main frame for any crew member, specially for the members who can not access monitors directly. It is not a good practice to think of OktoMag as a live streaming device, it just provides live view. But it can playback personally in same FPS with the recorded format.

OktoMag is also very secure device for production privacy. You can completely disable WebRemote function if you want. The device has user permissions that can be changed by administrator user named "super-user". Super-user can control the OktoMag remotely, he/she can customize the authorized users on set. Super-user also can adjust the playback limitations for selected sensitive scenes or shots.

For instances, the boom operator can adjust the boom position without being disturb to anybody via the attached smart phone to the arm. Makeup artist can decide to making adjustments, hairdresser can check look of actress hair, costume department can check live view for making corrections and they can play the recorded takes for checking continuity. Or agency producer can share ongoing takes to their office for creative teams approvement while working for a TV Commercial. Variations may increase...

In Gang usage for multi camera shooting, WebRemote also unites their interfaces into one. This means, you can control all of OktoMags by an interface.

OktoMag uses an internal Web Server for this feature. This Web Server provides a responsive web interface that can work virtually every device without a limitation of screen size. You can use same interface within a huge monitored Mac/PC based system, or with a smart phone.

## Connection to WebRemote

OktoMag not provides any onboard wireless system. Before starting a connection to WebRemote, please continue with “SETTING UP WIRELESS/NETWORK” section.

After the completion of setting up a network connection, you can reach to WebRemote Interface via any internet browser. OktoMag supports most of browsers. Using Safari for Apple devices, and Google Chrome for all other devices recommended.

First of all, you need WebRemote to switch ON if it is not. To check it, you need to enter “Main Settings” menu via OLED display that is described in “MAIN SETTINGS” section.

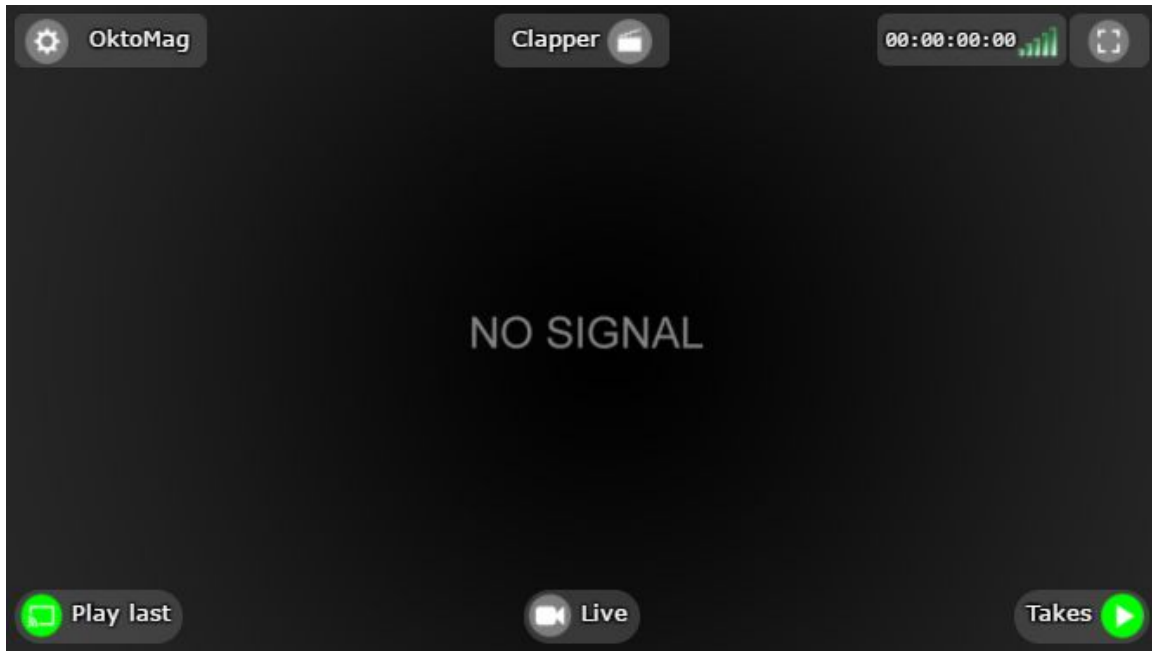
To get in WebRemote, you need to know OktoMag’s IP address. Default IP address of OktoMag matches with its serial number. You need to write address as “http://10.0.0.**X**” without quotes to your browser address bar. The **X** represents the serial number of OktoMag that shown on OktoMag’s bottom label or OLED display with a # symbol. When you hit enter, OktoMag WebRemote will initialize in **main view**.

If you are working with multiple OktoMags as Gang, it doesn’t matter which OktoMag you are connected. WebRemote works like an unified interface as described in Gang section.

While using WebRemote with a mobile device or tablet, you can use it as a Full Screen Web-App for better user experience. You can do it by adding it to your home screen. Please check your mobile device and browser specifications about “how to add a web page to home screen”.

## WebRemote - Main View

This interface mainly duplicates what you see on SDI out Monitor. If OktoMag is in recorder mode, it shows live image. If OktoMag playing a take for its SDI out, this main view shows it. Also this represents the main interface of WebRemote:



Notice that, this monitor duplication only shows 3 FPS with approximately 0.5 second delay.

WebRemote shows SDI frame in fullscreen in your browser. If you are working WebRemote with Gang OktoMags, It splits screen to viewports for showing all OktoMags in a screen. When you tap on a view, it becomes full screen, and it returns multi-view when you tap it again.

Here is the buttons descriptions:

**OktoMag:** Access to settings, and all other details.

**Clapper:** This button opens a form that you can enter Scene, Shot, Take Name, Tags and other descriptions for next or recording take.

**00:00:00:00:** This area states actual frame's timecode. And provides some quick notification about device. It opens a detailed INFO screen when tapped. **[ ]:** This button toggles fullscreen mode.

**Play last:** When you tap on this button, it plays the last recorded take on SDI out monitor. The label becomes “Live” when you are playing back some take on SDI out, and it switch mode back to to recorder when you tap it again.

**Live:** This middle button indicates running mode of OktoMag. It becomes RED when you are recording, or becomes green when you are playing back on SDI out monitor. When you tap it, it opens controller of running mode like Record/stop button or a timeline slider. You can swipe up over main area for ease access to this button. Check Mode Controller for details.

**Takes:** Opens list of takes when you tap it. You can easily access this menu by swiping left the main area.

## WebRemote - Settings

You can access here by tapping on OktoMag labeled button on main view. This settings menu provides all settings of OktoMag including onboard ones. Also it provides WebRemote specificated menus like user permissions, PDF exporting, etc.

## WebRemote - Mode Controller

When you tap on the button placed at middle-bottom (or when you swipe up main view) a controller appears according to running mode of OktoMag:



This controllers makes everything possible as you are sitting in front of OktoMag. If you are a super-user (or you have permissions for remote controlling) you can make manual records, playbacks, or video mixes from this interface. This interface also controls all Gang OktoMags described in “GANG (MULTI CAMERA)” section.

## WebRemote - Takes

This list can be accessible by tapping “Takes” button in main view. Also, you can easily access same menu by swiping left the main area.



In this menu, thumbnails of takes will be listed according to your search filters and user permissions. Thumbnails also indicates ratings with overlapped stars.

When you tap a thumbnail in here, It opens the take on mobile player and plays “only” on your device. This means, it is possible to browse and playback takes personally while OktoMag is recording another take, or playing a different take to the director. If you want to preview takes before you play it out, this feature is for you.

If you have permissions for “playing back on SDI out monitor”, you can use little green buttons that positioned near every thumbnail to do that. When you tap it, OktoMag opens the file like you selected it by onscreen browser.

Lists of takes of all OktoMags becomes a combined take list when you working with Gang OktoMags. Thumbnails splits up to 4 pieces of thumbnails to show the frames of synchronized takes.

# MORE DETAILS

## ONBOARD OLED DISPLAY

This little colored 1.69" mini OLED display indicates most important values of OktoMag. It doesn't show any picture from live feed or from playback. But it indicates running mode, timecode and durations of takes, audio VU meter, names of Scenes Shots and Takes, actual position of slider, heat of boards, power percentage and more...

While working in RECORDER or PLAYER mode, two stripes appear on top and bottom side of the display. This stripe indicates the navigation button behaviors. For instance, when you are in RECORDER mode, it shows "Videos" label with a mini UP arrow. This means when you press **UP** navigation arrow, Videos will be displayed. Or, you can notice a RIGHT arrow labeled "Clapper". When you press **RIGHT**, the labels of stripes change to new values to select which Clapper value you want to select. Look at these stripes to decide which button you have to press while using OktoMag.

There is a special button labeled INFO in RECORDER and PLAYER modes.

You will see this INFO label with a Down arrow on the top-right corner of OLED display. When you press and hold **DOWN** button, 4 indicators labeled "Power, Mag, Video, Cold" will appear on OLED display. These are the things which OktoMag is loving. If you see one of them in red color, you need to take an action. If you press and hold the DOWN key for more than 3 seconds, INFO screen becomes locked on display. This INFO screen sticks to OLED while you are switching between RECORDER and PLAYER modes if it is locked. Press **DOWN** again to unlock it.

While in a list menu,

OLED display can be controlled by **UP** and **DOWN** navigation buttons as well as with **Jog** controller to select a line. A green little cursor will move when you use the buttons. If you want to select a line highlighted by cursor, use **OK** button that is placed center of navigation. And you can generally use **LEFT** button to return back unless otherwise stated on OLED.

# MAIN SETTINGS

This settings is accessible from RECORDER and PLAYBACK menu while OktoMag is not recording. Main settings provides properties that independent from running mode. You can enter to this settings through Menu by pressing OK navigation button in RECORDER or PLAYBACK mode, and then selecting “Main settings”. Using method of navigation buttons to browse the menus is described in “ONBOARD MENU” section.

## → Menu > Main settings > Gang mode

This property has two option. It may take 4 seconds to be toggled.

- ◆ **ON:** OktoMag is discoverable by other OktoMags, and also this OktoMag discover other ones. Gang features are available now.
- ◆ **OFF:** OktoMag refuses the Gang features and works like a stand-alone device even if it is connected to others by its network port. This option doesn't disable WebRemote or Instant Video Sharing.

## → Menu > Main settings > Web remote

This property has two option. It may take 3 seconds to be toggled.

- ◆ **ON:** OktoMag's WebRemote features are accessible now.
- ◆ **OFF:** OktoMag refuses the WebRemote requests and nobody can access the WebRemote interfaces. Also breaks ongoing WebRemote sessions of users. This option doesn't disable the Gang features or Instant Video Sharing.

## → Menu > Main settings > Date/Time

Sets current date or time of OktoMag. Please be aware of OktoMag uses current Date/Time values to generate filenames when it is not in a proxy auto-recording mode. Also, on-screen thumbnail browser sorts the takes according their creation Date and Time. Using wrong Date/Time value may cause of misordered takes on browser.

- ◆ Use LEFT and RIGHT navigation buttons to select a digit you want to change. Use UP and DOWN navigation buttons for changing the selected value. Press center OK button when you changed all digits to their correct values. If you want exit from this property without saving changements, use LEFT navigation button when year selection is highlighted.

## → Menu > Main settings > Format Disk

Formats the 2.5" disk to NTFS, that plugged from rear slot of OktoMag.

**Caution:** The disk and all takes will be permanently unreadable when this action proceed. Also disk can contain other type of files that OktoMag can't recognize. Please double check everything and be sure before perform the operation.

→ **Menu > Main settings > Delete all takes**

This menu deletes all takes from the disk plugged from rear slot of OktoMag. It doesn't deletes other files if any exists.

**Caution:** All takes will be permanently unreadable when this action proceed. Please double check everything and be sure before perform the operation.

→ **Menu > Maintenance > Write a command**

This property is designed for features not revealed in menu structure. When you enter here, JOGBOARD appears to type a command. Please do not use this part until technical service give instructions.

# JOGBOARD

You can type any alphanumeric value via OktoMag's innovatively designed JOGBOARD. Its name comes from "JOG as a keyBOARD".

You can enter here from many menus. When you enter this screen you will see a title indicating what you are typing, like "Enter filename:". Also you will see the QWERTY keyboard drawn on OLED display. JOGBOARD designed for fast typing without a real keyboard. If you are familiar with ordinary keyboards, it will take very short time to learn how to use it.

You will notice the "red cursor" in center of the JOGBOARD that indicates where is your virtual finger. When you rotate Jog to clockwise the cursor will move to right, and it will move to left when rotate it anticlockwise. But it also jumps to vertical lines while you are rotating. You can highlight the letter that you want to type with this red cursor, and press OK button to pick it. The cursor returns to the center of JOGBOARD after every pick. So, you can rotate it fastly while you are thinking to next letter that will be typed.

UP navigation button cancels the operation and returns back. DOWN button toggles the letters to upper cases. LEFT button deletes the last typed letter, and RIGHT saves the typed text.

(Graphical instructions will be added soon.)

## SETTING UP WIRELESS / NETWORK

OktoMag has two of 1Gb/s Network (ethernet) ports for multiple purpose of use. It can instantly share its recorded takes over it, It can be connected to other OktoMags as Gang for multiple camera shootings, and It serves a WebRemote interface for remote access to the device.

OktoMag internally uses a DHCP server. So, you don't need to calibrate or set IP addresses. Just leave your IP settings of PC/Mac/Mobile devices in automatic mode. You can also use any of Network ports for connection because of they internally bridged.

If you want to connect to OktoMag through WiFi, only thing you need to set is an ordinary wireless router. Please be aware of your "WiFi connection range" and "maximum user capacity" are vary depends on your wireless router specifications. You can use a USB powered and small sized "Ethernet to Wireless Router", but it limits your experience. Using gaming type high-end wireless routers are recommended for crowded sets.

If you are not succeed with automatic IP settings, you can use these parameters for your device to connect to OktoMag(s). This method is not recommended by default.

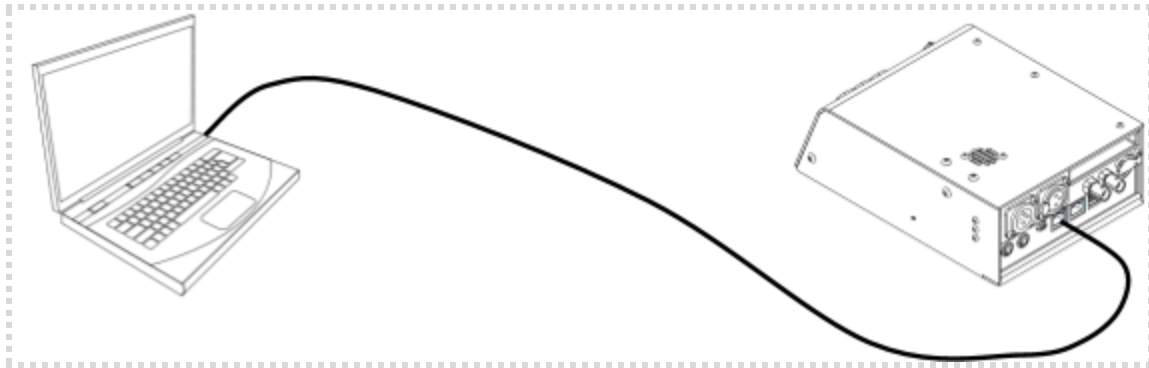
IP Address:	10.0.3.Y
Subnet Mask:	255.255.0.0
Default Gateway:	10.0.0.X
DNS Server:	10.0.0.X

**Y:** A unique number between 5 to 250 for your every device. For example: 15 for your Laptop and 16 for your iPad.

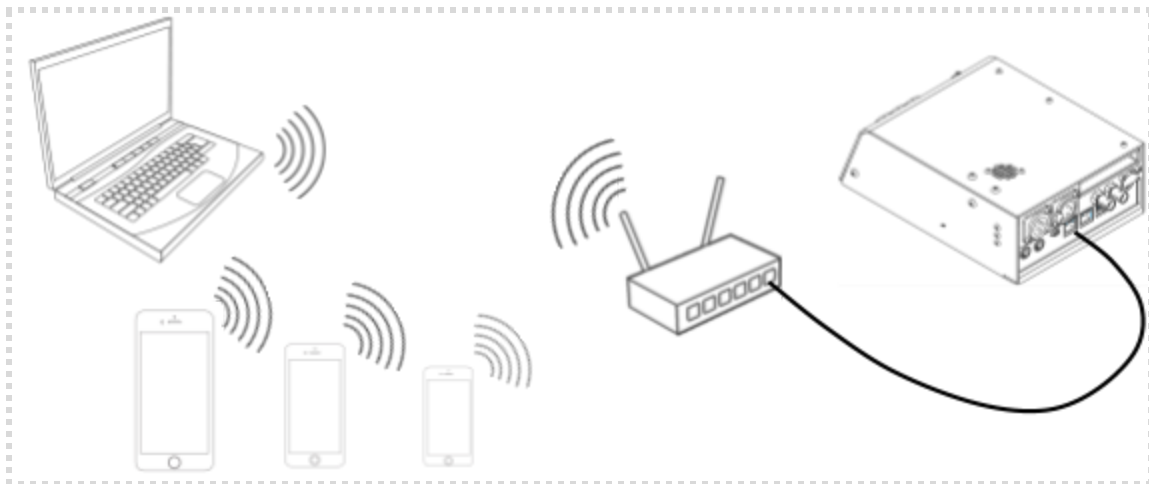
**X:** Serial number of OktoMag that shown on OktoMag's bottom label or OLED display with a # symbol.

Following diagrams shows examples of different type of usage.

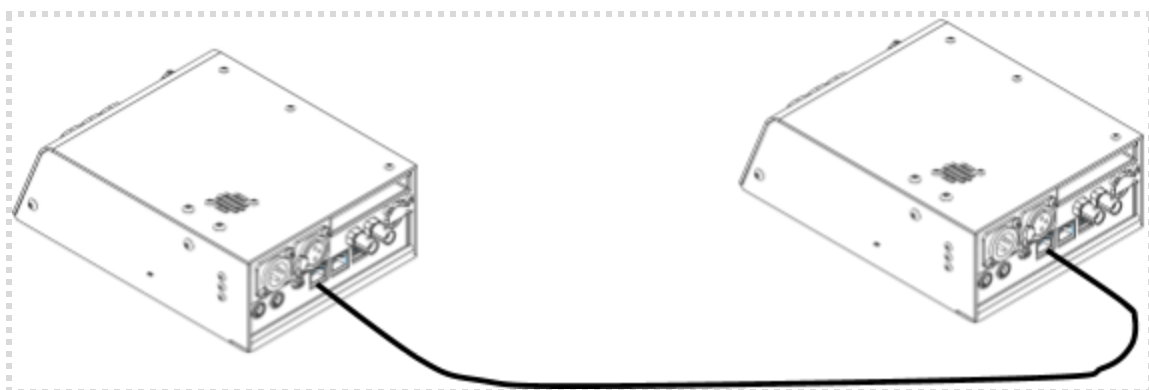
## Connection Examples of OktoMag



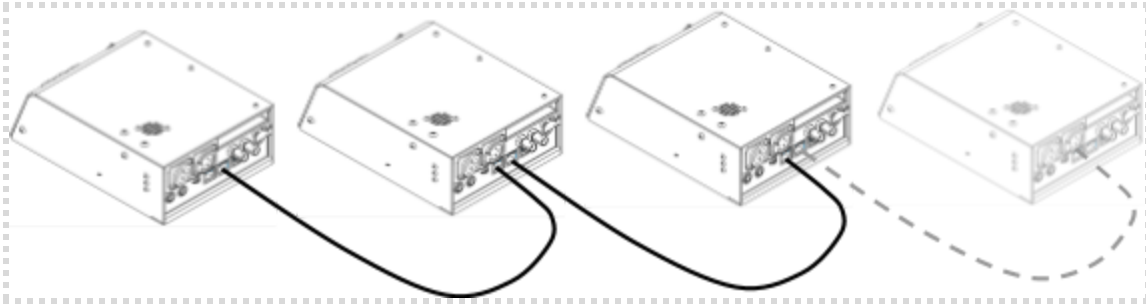
Wired connection of a single PC/Mac to an OktoMag for WebRemote and/or Instant Video Sharing



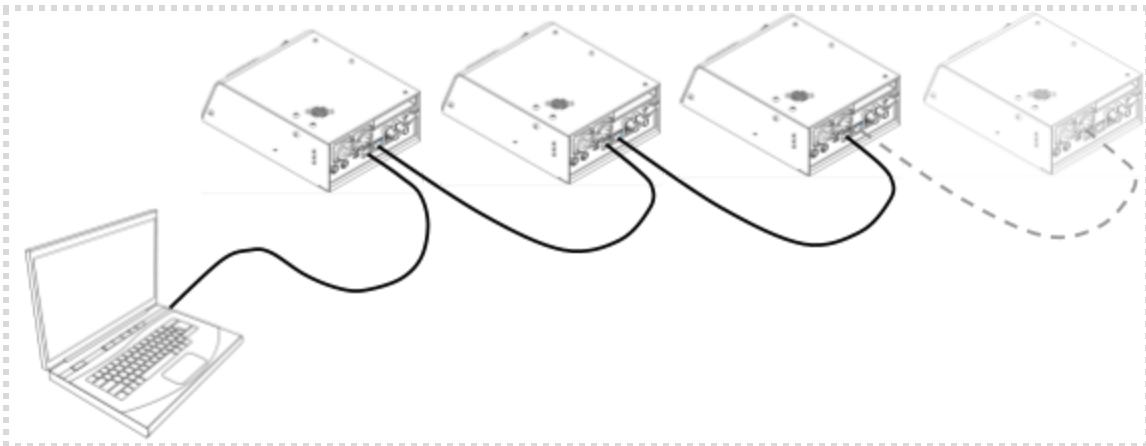
Wireless connection of any device to an OktoMag for WebRemote and/or Instant Video Sharing



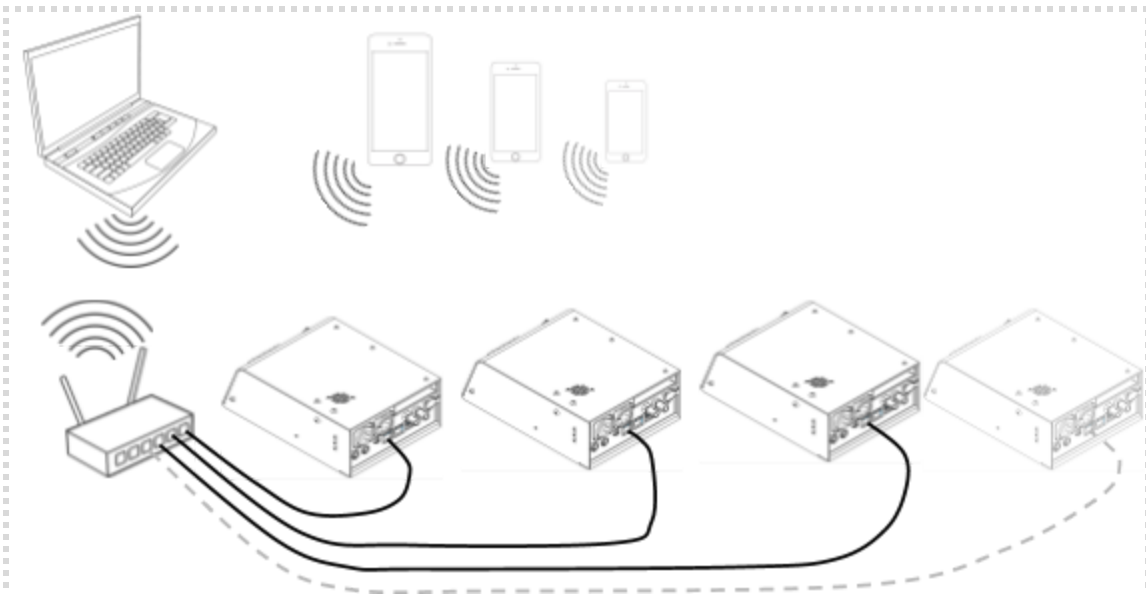
Stand alone connection of two OktoMags into Gang for two camera shooting



Daisy-chain stand alone connection of more than two OktoMags into Gang for multiple camera shooting



Daisy-chain connection of a single PC/Mac to several OktoMags into Gang for multiple camera shooting and also for WebRemote and/or Instant Video Sharing.



Daisy-chain connection of several OktoMags into Gang for multiple camera shooting and also for WebRemote and/or Instant Video Sharing.

# UPDATING FIRMWARE

OktoMag firmware updates can be done via its WebRemote feature. First of all, you need to be connected to WebRemote as described in "WEB REMOTE" section of this manual.

## Before starting update:

1. Please visit [www.oktomag.com](http://www.oktomag.com) and be sure about using most up-to-date User Manual that includes newest method for updating firmware.
2. OktoMag's disk structure can be changed in new firmware. OktoMag tries supporting old disk structure but it doesn't gives any warranty to do that. So, do not update your device in an ongoing project. Otherwise, your old files may become permanently unreadable.
3. Updating process has not be interrupted by anyway, including power faults. So, use a stable power source with a UPS, or connect backup battery beside of main power source during update. Otherwise, OktoMag needs to be repaired by a licenced technical service.
4. Just connect to OktoMag's WebRemote via Network port and unplug unnecessary cables from OktoMag. These are SDI cables, USB ports, XLR Audio sockets and headphone jack. Otherwise, in any case of static discharge of electricity occurs during update, OktoMag needs to be repaired by a licenced technical service.

## Updating Firmware

Oktotech releases firmware updates officially at [www.oktomag.com](http://www.oktomag.com). Please visit the web site and download latest firmware updates from Support section.

After downloading the file, you need to connect to "http://10.0.0.X/update" from your internet browser. The **X** represents the serial number of the OktoMag that you want to be update. Serial number shown on OktoMag's bottom label or OLED display with a # symbol.

At this point, you need to follow on screen instructions to complete to update.

# ACCESSORIES

(Details will be added soon.)

**Power Adaptor (AC to DC)**

**Power Y Cable**

**Accessory Extension Bracket**

**Battery Mount (BP-U)**

**Battery Mount (V-Mount)**

**Battery Mount (Gold)**

**Rig for 7" Monitor**

**7" Monitor**