

Photon Backup

User's Guide

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Overview

The Photon Back Up is a compact system that provides full playback capability and basic editing functions.

Playback Functions

The A/B crossfader	Controllers
Go	Go chaser
Hold	Hold chaser
Sequence	Step
Auto	Change chaser rate
Change fade rate	Automatic fade
	Manual fade (for controllers 1 – 10)

Editing Functions

Basic memory editing functions are available:

- selecting channels
- assigning intensity
- assigning scroller frame value
- storing a memory
- Convert memories to editor groups.
- Absolute intensity assignments using the @ key.
- Relative intensity/scroller frame assignments using the **UP** and **DOWN** keys.

Data Storage and Retrieval

You can load shows from a floppy disk. The files stored on the disk are displayed on the LCD display during the load function.

Photon Back Up is compatible with shows recorded on Photon, Spark, Super Applause, and Super Ovation.

Photon Back Up does not recognize spot information from shows recorded on Spark and Super Ovation. The system also does not recognize Snaps, Macros, auto assignments, and Events from shows recorded on Super Ovation.

You can record a new show file with any of the memory modifications or additional Snaps and Macros that you have added while working on the Photon Back Up.

Panel Layout

Editor

Key	What it does
	Toggle to controller assignments 11 - 20.
-	Select the previous channels, memory, event, or snap.
→	A "through" key for selecting ranges of channels or memories.
•	The dot is used for sub-decimal memories, intensity assignment, or fade time assignments that are less a whole number. If the system is defined as 'USA' it is unnecessary to use this key for sub decimal intensity assignments. Also, recall last intensity assignment, recall last selection, and 'cut' time.
@	Set the numeric keypad for intensity assignment.
+	Select the next channel, memory, event, or snap.
=	Put system in memory recording mode. It is unnecessary to use this key for memory storage if the system is defined as 'USA' (see Appendix 1 - Service Tools/System Config/Special Function). Also Use for memory exchange.
0 thru 9	Numbers for any numeric selection.
CHANNEL	Set the keypad for channel selection.
CLEAR	A regressive clear function used to clear the command line and the editor.
DOWN	This key simulates the wheel, decreasing intensity for selected channels or scroller frames.
ENTER	Convert a selected memory to a group of channels/ in the editor, preserving the channels' associated levels. May be used to end any keystroke sequence. Operate Snap or Event.
FRAME	Access scroller frame selection on the numeric keypad.
FULL	Assign 100% as dimmer intensity.
LOAD	View files on diskette, select show file and load.
MEMORY	Set the keypad to memory mode. If the system is defined as "USA" this key enters memory recording mode.
RESET	Release all channels held in the editor and bring the editor to an idle state. One press causes the output from the editor to fade out, two quick presses bumps them out. Exit menu mode or exit a specific menu function and return to the menu list.
SHIFT ↓	Use to access the secondary function of the double function editor keys. Use to access the additional functions of the controller soft keys.
STORE	Store memories and snaps.

Key	What it does
TEST	This function facilitates flashing through the rig for a channel check.
UP	This key simulates the wheel. Increasing intensity for selected channels or advancing through the scroller frames.
DOWN	This key simulates the wheel. Decreasing intensity for selected channels or advancing through the scroller frames.

Display Control

Key	What it does
←	Scroll display to the left.
↓	Scroll display down.
→	Scroll display to the right.
↑	Scroll display up.
EXAM	Access Exam displays. Use [SHIFT]
STAGE	Toggle between channel display and x-fade exam and returns you to stage display from most exam displays.

Soft Key Modes

Key	What it does
ASSIGN	This mode is used to assign memories or groups of channels to the controllers. Releases the assignments on playback faders and controllers.
Soft Keys	Controller Soft Keys are used to assign memories, groups of channels, chasers, or snaps to controllers. The color of the LED depends on type of assignment and run mode. If the assignment is a group or memory assignment these keys function as Bump Buttons. Pressing [SHIFT] accesses Soft Key secondary functions.
HARD	Assign a hard chaser. Hard mode bumps from step to step.
MACRO	Change the SKs to Macro mode. A single hit on the key makes Macro the temporary mode. A double hit makes Macro the default mode.
SNAP	Change the SKs to Snap mode. A single hit on the key makes Snap the temporary mode. A double hit makes Snap the default mode.
SOFT	Assign a soft chaser. Soft mode fades from step to step in recorded memory time. Access using the [SHIFT] key.

Playback

Key	What it does
A	Assign or free crossfader A.
AUTO	When activated (LED on) the system executes any preprogrammed events, assigned to memories. When disabled (LED off) any event assignments are ignored. It is automatically activated when an assignment is made to A or B. Access using [SHIFT] . Events are pre-programmed on the main console.
B	Assign or free crossfader B.
CHASE	When selected the “wheel” keys are used to manually override the chaser rate.
GO	Initiates a crossfade on the A/B faders. Any events assigned to memories are executed in conjunction with memories sequencing on A/B.
HOLD	Halt any crossfade in progress until the fade is reactivated by pressing [GO]
RATE A/B	When selected the “wheel” keys are used to manually override the crossfader rate.
SEQ	When activated, the next memory in the numerical sequence is automatically loaded into the fader that is at its zero limit. [SEQ] automatically activated when an assignment is made to A or B. Automatic activation can be disabled in the System Parameters menu.

General Master

The General Master controls the entire output of the desk.

[B.O], the black out switch for the G.M., blacks out the entire dimmer output of the board. This key can be disabled in the System Parameters menu. If you wish to disable the key, do so on the main console and record your show. The toggle in System Parameters menu is including with the rest of the show data.

Switches and Other Panel Features

- Main on/off - The main on/off switch is the key located on the back panel. It disconnects the desk from the power supply.
- Disk drive - The disk drive accepts 1.44 Mb diskettes. Photon Back Up is compatible with show files recorded on Photon, Spark, and Super Ovation/Super Applause.

Loading Show Files

Show files recorded on Photon, Spark, and Super Ovation/Super Applause can be loaded to Photon Back Up. **[LOAD]** is accessed with **[SHIFT]**.

Keypresses

1. Insert diskette with show files in the disk drive
2. Press **[LOAD]**
3. Enter the show file number on the keypad
4. Press **[LOAD]**

Results/Comments

- Ascertain that the LCD display is set to the playback display. See page 6.
- Select the load function. *LOAD* appears in the first line of the LCD display.
- Give the load command. *WAIT* is displayed while the show is loading.

Warning Difference

If the configuration file in the show files differs from the configuration of the Photon Back Up, the *WARNING DIFFERENCE* message is displayed.

The configuration data displayed includes:

- Channels
- Dimmers
- Scrollers
- Maximum number of frames

The system also looks at spot and DMX input configuration.

If the show was recorded on a system with spots, for example, it will display *WARNING DIFFERENCE*.

To override the *WARNING DIFFERENCE MESSAGE* and continue loading: Press **[LOAD]** again.

Recording Show Files

You can record any modifications you have made to your show while working on Photon Back Up.

Keypresses

1. Insert a diskette to the disk drive.
2. Press **[REC]**
3. Enter the number of the show file on the keypad.
4. Press **[REC]**

The LCD Display

The LCD display contains 2 rows of 40 characters each.

There are 3 basic displays:

1. The command line/playback display
2. Stage display
3. Exam displays

Command line/playback display

<i>COMMAND LINE</i>		<i>MASTER %</i>
<i>SOFT KEY STATUS</i>	<i>%A-ASSIGNMENT</i>	<i>%B-ASSIGNMENT</i>

Pressing **[STAGE]** toggles between this display and the “stage” display.

Stage Display

Use the arrow keys to scroll right and left, up and down.

The example below shows a typical display.

denotes channel numbers. @ is intensity level.

<i>STAGE #</i>	<i>4 10 20</i>	
	<i>@ FL 60 80</i>	

To view scroller frames scroll down:

A number preceded by an *s* denotes scroller channels.

F is frame.

The scroller frame display looks like this:

<i>STAGE #</i>	<i>s4 s10 s20</i>	
	<i>F 6 8 32</i>	

Exam Displays

Use the arrow keys to scroll through the displays.

The exam displays available are:

- Memory list exam - displays the memory list.
- Selected memory exam - shows the memory number, channels, and intensity assignments.
- Selected channel exam - shows in which memory the channel appears and its intensity assignment.
- Controller exam - shows generic controller assignments.
- Soft key exam for assignments - view the contents of individual controller assignments.
- Macro exam - view selected macro contents.
- Snap exam - view the snap list.
- View current system configuration, current show file, and software version.

Viewing the memory list

[MEMORY] [EXAM]

Examining a memory

[MEMORY] # [EXAM]

Examining selected channels

[CHANNEL] # [EXAM]

Examining controller assignment type

[ASSIGN] [EXAM]

The LCD display shows the generic type of assignments: CHS (chaser), MEM, (memory), GRP (group).

Examining selected controller assignments

[SHIFT EXAM] [ASSIGN] [Soft Key]

If the controller assignment is a memory, the memory number and its contents are displayed.

If the controller assignment is a group, the exam display shows the channels included in the group and any relevant intensity values.

If the controller assignment is a chaser, the exam shows the current memory in the same format as memory assignments.

Examining Macros

Keypresses

1. Press **[MACRO]**
2. Use the **Arrow keys** scroll through the Macro list.
3. When the macro that you wish to view is the first one on the left, press **[EXAM]**. The keystrokes contained in the macro appear in the LCD display.

Examining Snaps

Press **[SNAP] [EXAM]**

Viewing the system data

This display shows:

- The current software version.
- The percentage of memory left.
- The current loaded show files.
- The system configuration.

Press the **[•]** (DOT)

Here is an example of this display:

```
VERSION--%M---PLAY/a-----CHN-DIM-SCL  
##### # ##### ### ## #
```

Soft Keys

The Photon Back Up has 10 actual controllers and 10 virtual controllers with associated Soft Keys. The fader levels control the output level for assignments on controllers 1 - 10. The Soft Keys, in addition to flashing the controller assignment, is used for assignments and operating macros and snaps. The Soft Keys perform the same functions for the actual (1 - 10) and the virtual (11 - 20) controllers.

The Soft Keys have 4 basic function modes.

1. **ASSIGN** Assign mode: where the controllers accept assignments of groups of channels or memories or chasers. In assign mode, the Soft Keys are used as step keys for chaser assignments or go keys to fade the memory or group assignment.
2. **HARD/SOFT** (chaser) 10 chasers can be assigned. Chaser assignments run in hard run mode or soft run mode and can be easily changed. View the dedicated chaser display by hitting this key twice.
3. **MACRO** The macro mode provides direct access to 20 macros.
4. **SNAP** The snap mode provides direct access to 20 snap with 2 snap functions modes - non-forcing (additive) and forcing (override).

Change Soft Key Mode

A double hit on any of the mode keys changes the current default mode of the Soft Keys.

A single hit on any of the mode keys changes the default mode until the next key press.

Example: The current default mode is assign. You want to go, temporarily, to macro mode in order to operate macro 06. Press **MACRO** and the **Soft Key** for controller 6. The soft key mode now returns to assign mode.

When the soft keys are in a temporary mode, both the temporary and current default modes are shown on the controller display.

Each soft key mode has a secondary function that is accessed by pressing: **SHIFT**.

In Assign mode

SHIFT The Soft Keys now function as automatic 'go' keys if the assignment is a memory or a group. This initiates a fade of the controller contents, regardless of where the level of the controller. This is called the "go controller" function.

If the assignment is a chaser the Soft Keys function as 'step'. To step through a chaser hold down **SHIFT** and press the Soft Key as many times as required.

In Macro mode

PAGE Operate macros 21 – 40.

In Snap mode

SHIFT The soft keys now perform in snap forcing (override) mode. This is like pressing in the editor.

Color Code for Soft Key LEDs

Colored LEDs provide information pertaining to the type of assignment and the fade status of the controllers/soft keys.

Example: Controller 1 is assigned a chaser. The chaser is on hold (not running). The LED under the controller blinks red. When the chaser is running the LED is red and does not blink.

LEDs:	red	blinking red	green	orange
Assign mode	chaser running	chaser on hold	group, memory, submaster assignment	chaser running in step mode
Macro mode	*****	*****	*****	Macro present
Snap mode	*****	*****	*****	Snap present

Assign Mode

Assign mode is used to assign groups of channels and memories to controllers.

The discussion of the Assign mode assumes that the default Soft Key mode is Assign or that the Assign mode is temporarily selected.

Assigning memories to controllers

Assigning a single memory

Keypresses	Results/Comments
1. Select memory 4	
2. Press ASSIGN	Select assign mode.
3. Press controller 5's Soft Key	Memory 4 can be activated by raising the controller manually or by using the "go controller" function (see below).

Assigning a range of memories to the controllers

Example: assign memories 30 - 35 to controllers 6 - 10.

Keypresses	Results/Comments
1. Select memories 30 → 35	
2. Press ASSIGN	Select assign mode.
3. Press controller 6 's Soft Key	Pressing controller 6 will load memory 30 to controller 6, memory 31 to controller 7, etc.

Assigning an unspecified range of memories to the controllers

Example: Assign memory 1 to controller 7, memory 2 to controller 8, memory 3 to controller 9, until all the available controllers have been assigned.

Keypresses	Results/Comments
1. Select Memory 1.	
2. Press →	
3. Press [ASSIGN]	
4. Press controller 7's Soft Key	Assign memory 1 to controller 7, memory 2 to controller 8, etc.

Assigning channels to controllers

Assigning a range of channels to a controller

Example: Assign channels 30 - 35 to controller 6.

Keypresses	Results/Comments
1. Select channels 30 → 35.	
2. Press ASSIGN	The Assign display is now on view.
3. Press controller 6's Soft Key	Raising the fader fades the assigned channels.

Assigning a channel with a proscribed intensity

Example: Assign channel 1 at 45% and channels 3 - 8 at full to controller 7.

Keypresses	Results/Comments
1. Select channel 1.	
2. Assign an intensity level to channel 1.	
3. Select a range of channels.	
4. Press FULL	
5. Press ASSIGN	The Assign display is now on view.
6. Press controller 7's Soft Key	When controller 7 is raised to its upper limit channel 1 appears at 45% and channels 3 through 8 at 100%

Assigning a range of channels to sequential controllers

Example: assign channel 40 to controller 3, channel 41 to controller 4, channel 42 to controller 5, channel 43 to controller 6, until all the controllers from 8 until the last available controller have been assigned with single channels.

Keypresses	Results/Comments
1. Select channel 40	
2. Press →	Do not select the last channel.
3. Press ASSIGN	The Assign display is now on view.
4. Press controller 4's Soft Key for.	Channel 40 is assigned to controller 8, channel 41 to controller 9, channel 42 to controller 10, etc.

Adding a channel to a group assignment

Example: add channel 36 to the group of channels already assigned to controller 6.

Keypresses	Results/Comments
1. Select channel 36.	
2. Press ASSIGN	The Assign display will now be on view.
3. Press controller 6's Soft Key	Channel 36 is added to the group of channels already resident in controller 6

Freeing a controller assignment

Example: Release the current assignment on controller 7.

Keypresses	Results/Comments
1. Press [FREE]	The message displayed is <i>Assign Key Expected</i>
2. Press controller 7's Soft Key	
3. Press any key	Any key press exits free mode.

Freeing all controllers

Keypresses	Results/Comments
1. Press [FREE]	
2. Press [→]	All of the controller assignments are released.
3. Press any key	Any key press exits free mode.

Flashing and Fading with Soft Keys

Soft Keys are also used to flash or automatically fade the controller assignments. Pressing **SHIFT** and a Soft Key provides additional fade functions.

Type of Assignment	Key Sequence	What the Soft Key does
Group assignment	Soft Key [SHIFT] [Soft Key]	Flashes the assignment to 100%. Fades the controller assignment in the system's default memory time. (see below - Go Controller function)
Memory assignments	Soft Key [SHIFT] [Soft Key]	Flashes the assignment to 100%. Fades the controller assignment in the recorded memory time. (see below)
Chaser Assignments	Soft Key [SHIFT] [Soft Key]	If the chaser is on hold, this acts as a go key. If the chaser is running this acts as a hold key. The chaser status is signaled by the LEDs. Hold down the SHIFT and press the Soft Key as many times as desired. Each press advances the chaser 1 step.

Automatic fading for controllers assignments

For memory and group assignments, pressing **SHIFT** and a **Soft Key** initiates a fade of the controller assignment. See the table below.

When a controller fade is in progress, pressing the **Soft Key** stops the fade. Re-instate the fade by pressing the **Soft Key** again.

➤ Note

The **[SHIFT]** key must be kept depressed while pressing the soft keys to initiate the fades.

Any number of soft keys can be pressed to initiate as many fades as required.

CONTROLLER LEVEL	WHAT HAPPENS
0%	The memory or group of channels assigned to the controller fades to full.
100%	The memory or group of channels fades down to 0%.
If the controller is less than 100%	The memory or group of channels assigned to the controller fades to full.

Chasers

Chasers can run on any of the 10 controllers simultaneously.

Chasers are assigned as "hard" chasers (the chaser automatically steps from memory to memory in 1/10 of recorded memory time) or "soft" chasers (the chaser fades from memory to memory in recorded memory time.)

Chasers run automatically or can be stepped through manually.

Assigning chasers to controllers

When assigning a memory loop as a chaser, select only the first memory of the loop.

The examples below use memory loops. A range of memories can also be selected.

Assigning a hard chaser

Keypresses	Results/Comments
1. Select the first memory of the loop.	
2. Press [HARD]	
3. Press a Soft Key.	The LED blinks, indicating a chaser assignment on hold.

Assigning a soft chaser

Keypresses	Results/Comments
1. Select the first memory number of the loop.	
2. Press [SOFT]	
3. Press a Soft Ke.	The selected memory loop as a soft chaser. The LED blinks, indicating a chaser assignment on hold.

Playing back chasers

GO

If the controller is at 0% there is no output even if the chaser is running. Before activating the chaser, raise the level controller or raise the level controller after starting the chaser, thus fading into the chaser. Press the soft key of the controller assigned a chaser to run the chaser. The LED stops blinking and shows solid red.

HOLD

Press the Soft Key to stop the chaser. Stopping the chaser blacks out the dimmer.

STEP

Press and hold down **SHIFT** and press the chaser's Soft Key to step through the chaser. The LED is now orange. To exit the step run mode it is necessary to press twice on the soft key.

Changing the chaser rate

The chaser rate can be modified at any time.

When is pressed, use the “wheel” keys (**[UP/DOWN]**) to modify the fade rate. Up increases the fade rate, the upper limit being Cut. Down slows the fade rate, the lower limit being Hold.

Keypresses	Results/Comments
1. Press and hold [SHIFT] and press [RATE]	
2. Press the chaser 's Soft Key	
3. Press [UP] or [DOWN] to modify the chaser rate.	
4. (Optional) Press [STORE]	The modified rate is stored to the memory loop. Whenever this memory loop is assigned, it runs at the new rate.

Macro Mode

Macros 1 - 20 are automatically assigned to the controllers as they are created. When in Macro mode, an orange LED indicates the presence of a macro. There are 2 pages of macros available, thus you can operate macros 1 – 10 from page 1 and macros 11 – 20 from page 2.

Operating macros 1 - 10

Keypresses	Results/Comments
1. Press [MACRO]	Skip this step if the default mode is Macro mode.
2. Press the Soft Key to operate a Macro.	To operate Macro 6 press Soft Key 6, Macro 10 Soft Key 10, etc.

Operating macros 11 – 20

Macros 11 – 20 are found on the second page of controllers.

Keypresses	Results/Comments
1. Press [MACRO]	Skip this step if the default mode is Macro mode.
2. Press [PAGE]	The second page of macros (macros 11 – 20) is now available.
3. Press the Soft Key to operate a Macro.	To operate Macro 11 press Soft Key 1, Macro 20 Soft Key 10, etc.

Snap Mode

Operating Snaps

You can operate Snaps 1 – 10 using the Soft Keys. As they are programmed, the first 10 snaps are assigned automatically.

There are 2 Snap operation functions: non-forcing and forcing modes.

Non-forcing (additive) mode

The default operation is the snap non-forcing (additive) mode. This does not force the replacement of any existing assignments that are active.

Snaps 1 – 10 can be operated using the Soft Keys. All Snaps can be operated in the editor.

Keypresses	Results/Comments
1. Press [SNAP]	Skip this step if the default mode is Snap mode.
2. Press the Soft Key to operate a snap.	To operate macro 6 press Soft Key 6, macro 12 Soft Key 12, etc.

Keypresses	Results/Comments
1. Press [SNAP]	
2. Enter the snap number on the numeric keypad.	
3. Press [ENTER]	All assignments to playback devices that are not active are executed. If a controller is off its 0-end stop, any snap assignment waits until the controller is returned to 0%.

Forcing (override) mode

The secondary Snap function is forcing mode. This is an override Snap, meaning that the Snap assignments are forced regardless of whether the controllers or A/B is active.

Keypresses	Results/Comments
1. Press [SNAP]	Skip this step if the default mode is Snap mode.
2. Press [SHIFT]	
3. Press the Soft Key to operate a Snap.	To operate Snap 6 press Soft Key 6, Snap12 Soft Key 12, etc.

Keypresses	Results/Comments
1. Press [SNAP]	
2. Press [+]	
3. Enter the Snap number on the keypad.	
4. Press [ENTER]	All assignments stored in the Snap are executed.

Recording Snaps

New Snaps can be stored while working in the Photon Back Up.

If you store new Snaps be sure to record your show.

Keypresses
1. Make assignments to the playback devices.
2. Press [SNAP]
3. Enter the snap number on the numeric keypad.
4. Press [STORE]

Controllers 11 - 20

Controllers 11 – 20 are virtual controllers. Assignments to the virtual controllers can be faded using the Soft Keys, Macros, and Events.

Assignments to controllers 11 – 20 are forced to full on assignment. **The physical fader levels do not influence the output of assignments on controllers 11 - 20.**

Access controllers 11 – 20 by pressing **PAGE**.

The functions available for controllers 11 -20 are:

- Free
- Go Chaser
- Hold Chaser
- Step Chaser
- Automatic fade of memory and group assignments.

Editing Memories

You can program new memories and modify existing memories.

The program and modification key sequences are identical to the key sequences on the main console within, of course, the parameters of the keys available on the Back Up desk.

Service Tools

The Service Tools program for Photon Back Up is identical to the Service Tools for the main console. All functions and messages appear on the LCD display.

All operations are identical to the Service Tools operations on the console. Instructions for specific operations can be found in the Photon User's Guide, Appendix B - Service Tools.

Entering Service Tools

Keypresses	Results/Comments
1. Press and Hold down [CLEAR] and [ENTER]	
2. Turn on the power. After a few seconds release [CLEAR] and [ENTER]	After boot up the Service Tools main menu is displayed on the LCD display.

Accessing the Functions

Under each function the access key is displayed. Example of format: **SH – 1**; you must press [SHIFT] and a number.

To return to the previous level of the menu, select *Service Mnu* by pressing • (dot).

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